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All data, including phase data, are available on CD-ROM/DVD-ROM and from the internet - http://www.isc.ac.uk

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Addendum I

From data-month September 2002 onwards, the printed ISC Bulletins have been generated directly from the ISC Relational Database.

From data-month October 2002, a new location program ISCloc has been used in operations. Also, the IASPEI standard seismic phase list has now been adopted by the ISC, please see the last pages of this Bulletin for details.

From data-month January 2003 onwards, an updated regionalisation scheme has been adopted (Young,J.B., B.W.Presgrave, H.Aichele, D.A.Wiens, E.A.Flinn The Flinn-Engdahl Regionalisation Scheme: the 1995 Revision, Physics of the Earth and Planetary Interiors 96 (1996), 223-297)

These developments have prompted the need to review and revise the format of the Bulletin.

The following example illustrates the changes :-

September 2002

*NEIC **01** 18:45:41.7±1.7,21°.70S×179°.55W,h600km,mb4.6/6,*
Error ellipse: s-maj=75.5km s-min=25.7km az=151.0
*IDC **01** 18:45:46.3±2.6,21°.76S×179°.70W,h627km±37km,mb3.5/4,*
mb1 3.7/4,mb1mx3.2/14,Error ellipse: s-maj=83.2km
s-min=20.6km az=159.0
ISC 01 18:45:43.1±2.7,22°.3S±0°.2×179°.6W±0°.3,h613km±42km,
n22,σ1s15/21,mb4.4/9,1C,South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase	Op	ID ISC	Time h m s	Res ISC
HBZ	**Hicks Bay**	**15.41**	**186**	*e*P		**P**	**18 48 53.1**	**-1.7**
URZ	**Urewera**	**16.21**	**189**	P		**P**	**18 49 01.5**	**-0.9**
MRZ	**Mangatainoka R**	**18.81**	**192**	*e*P		**P**	**18 49 26.7**	**0.0**
DIW	**D'Urville Isla**	**19.30**	**195**	*e*P		**P**	**18 49 27.3**	**-3.9**
CAW	**Cannon Point**	**19.34**	**192**	*e*P		**P**	**18 49 31.7**	**+0.1**
OTW	**Orongorongo Tu**	**19.52**	**192**	*e*P		**P**	**18 49 33.0**	**-0.2**
MOW	**Moikau**	**19.61**	**192**	*e*P		**P**	**18 49 35.5**	**+1.5**
THZ	**Tophouse**	**20.46**	**196**	*e*P		**P**	**18 49 42.0**	**+0.2**
KHZ	**Kahutara**	**20.93**	**194**	P		**P**	**18 49 46.2**	**+0.2**
ARMA	**Armidale**	**27.03**	**246**	*e*P		**P**	**18 50 42.4**	**+2.3**
	4.9nm,0.5s,mb4.4							
CTA	**Charters Tower**	**31.93**	**267**	ĵ *i*P		**P**	**18 51 22.3**	**+0.4**
	13nm,0.5s,mb4.8							
STKA	**Stephens Creek**	**35.75**	**246**	*e*P		**P**	**18 51 55.3**	**+1.8**
	3.1nm,0.4s,mb4.2							
ASAR	**Alice Springs**	**42.74**	**259**	P		**P**	**18 52 50.1**	**+0.3**
	9.8nm,0.5s,mb4.6,baz=92,slow=8.2,SNR=47							
ASAR				S		**S**	**18 58 31.3**	**-0.1**
	1.0nm,0.8s,baz=95,slow=15,SNR=5.7							
ASPA	**Alice Springs**	**42.74**	**259**	*e*P		**P**	**18 52 50.1**	**+0.2**
WRA	**Warramunga Arr**	**42.96**	**264**	P		**P**	**18 52 51.0**	**-0.7**
	1.8nm,0.3s,mb4.0,baz=96,slow=7.8,SNR=93							
WRA				S		**S**	**18 58 33.0**	**-1.5**
	0.3nm,0.9s,baz=99,slow=14,SNR=3.0							
KAKA	**Kakadu**	**46.64**	**273**	*e*P		**P**	**18 53 18.2**	**-1.8**
	14nm,0.4s,mb4.8							
FITZ	**Fitzroy Crossi**	**51.39**	**264**	*e*P		**P**	**18 53 54.3**	**-0.7**
	12nm,0.3s,mb4.8							
MBWA	**Marble Bar**	**56.08**	**259**	*e*P		**P**	**18 54 27.1**	**-0.7**
	11nm,0.6s,mb4.2							
CMAR	**Chiang Mai Arr**	**89.35**	**290**	P		**P**	**18 57 38.1**	**+1.0**
	1.3nm,0.8s,mb3.8,baz=135,slow=3.1,SNR=8.1							
ARCES	**ARCESS Array B**	**130.36**	**349**	PKP		PKP	19 03 43.7	-0.5
	0.7nm,0.6s,baz=282,slow=4.2,SNR=3.5							
FINES	**FINESS Array B**	**137.02**	**342**	PKP		PKP	19 03 57.3	+0.5
	3.7nm,1.1s,baz=158,slow=3.2,SNR=3.4							
MLR	**Muntele Rosu**	**148.85**	**324**	PKPbc		PKP	19 04 22.7	+5.2
	0.2nm,0.7s,baz=1.2,slow=23,SNR=2.3							

Epicentral Estimates

Origin times - The superscripts have been removed and a simpler format adopted.
Magnitudes - All magnitudes that were reported to the ISC are now shown. Only two per agency were allowed in the past.
Error Ellipses - The keywords have been shortened.

Observational Data

The station code, station name, epicentral distance and azimuth are all shown in **bold** for Initial phases. For Secondary phases, only the station code (in normal font) is repeated.

Phase ID's - The Operator's identification is shown in normal font. The Operator's residual is no longer printed. When the arrival time of an initial or secondary phase has contributed to the location - the ISC's identification, the arrival time and the ISC's travel-time residual are all shown in **bold** .

Phase Parameters - The following parameters are included on supplementary lines where appropriate :-

Component, amplitude and period (or logA/T) - reported by the Operator.
Station magnitude estimate - computed by the ISC.
Slowness, Back-Azimuth, Signal-to-Noise ratio - measured by the Operator.

Addendum II

From data-month January 2006 the ISC hypocentres are computed using the AK135 earth velocity model (*Kennett, B.L.N. Engdahl, E.R. & Buland R., 1995. Constraints on seismic velocities in the Earth from travel times, Geophys J Int, 122, 108-124; B.L.N. Kennett, 2005. Seismological tables: ak135. Research School of Earth Sciences, the Australian National University, Canberra*) and then reviewed by the ISC seismologists. The ISC still produces the hypocentre solutions based on Jeffreys-Bullen travel time tables (agency code ISCJB), yet these solutions are no longer reviewed.

The ISC is planning to re-compute the entire ISC dataset using AK135 once new location procedures are designed, tested, discussed and approved by the ISC Governing Council. Until that time the automatic ISCJB locations will continue to be produced alongside the AK135 solutions to observe the long-time continuity of the ISC Bulletin.

Addendum III

From data month January 2009 the ISC hypocentres are computed using the new ISC location algorithm and all reported IASPEI seismic phases, for which ak135 predictions are available. This algorithm is described in: *Bondár, I. and D.A. Storchak (2011), Improved location procedures at the International Seismological Centre, Geophys. J. Int., 186, 1220-1244, doi:10.1111/j.1365-246X.2011.05107.x*

The alternative locations based on JB-tables are still produced with the original location algorithm for consistency with the past data. It is still the plan that by the middle of calendar year 2014 all ISC locations (1960-2008) are going to be re-computed with the new locatin algorithm and ak135 as part of the ISC Bulletin Re-Build project, sponsored by the US NSF and several agencies from Japan, China and India.

*ISK **01** 00:04:04.7, 38°.92N×28°.15E, h3km, MD2.4*
*DDA **01** 00:04:05.5, 38°.92N×28°.12E, h7km, Md2.6*
*CSEM **01** 00:04:05.7±0.2, 38°.92N×28°.12E, h2km, MD2.6, Error ellipse: s-maj=4.0km s-min=3.0km az=131.0*
ISC 01 00:04:05.4±0.9**, 38°.92N**±0°.03×**28°.13E**±0°.03**, h13**km±9km**, n14, σ0s.30**/25**, Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
AKHS	**Akhisar**	**0.25**	**261**	*i* P	**Pg**	**00 04 10.4**	**-0.2**
AKHS				*i* S	**Sg**	**00 04 14.1**	**-0.1**
AKHS	**Akhisar**	**0.25**	**261**	P	**Pg**	**00 04 10.4**	**-0.2**
AKHS				S	**Sg**	**00 04 14.1**	**-0.1**
AKS	**Akhisar**	**0.25**	**261**	*e*PG	**Pg**	**00 04 10.7**	**0.0**
AKS	**Akhisar**	**0.25**	**261**	*e*Pg	**Pg**	**00 04 10.7**	**0.0**
DEMI	**Demirci**	**0.48**	**75**	*i* P	**Pb**	**00 04 15.5**	**-0.3**
DEMI				*i* S	**Sg**	**00 04 21.7**	**+0.4**
DEMI	**Demirci**	**0.48**	**75**	P	**Pb**	**00 04 15.5**	**-0.3**
DEMI				S	**Sg**	**00 04 21.7**	**+0.4**
KULA	**Kula-Manisa**	**0.58**	**134**	*e*PG	**Pg**	**00 04 16.4**	**-0.4**
KULA				*e*SG	**Sg**	**00 04 25.1**	**+0.5**
KULA	**Kula-Manisa**	**0.58**	**134**	*e*Pg	**Pg**	**00 04 16.4**	**-0.4**
KULA				*e*Sg	**Sg**	**00 04 25.1**	**+0.5**
DURS	**Dursunbey**	**0.73**	**22**	*i* P	**Pb**	**00 04 20.1**	**-0.1**
DURS				*i* S	**Sn**	**00 04 32.7**	**0.0**
DURS	**Dursunbey**	**0.73**	**22**	P	**Pb**	**00 04 20.1**	**-0.1**
DST	**Dursunbey**	**0.79**	**29**	*e*PG	**Pg**	**00 04 20.4**	**-0.2**
DST				*e*SG	**Sb**	**00 04 31.9**	**+0.3**
DST	**Dursunbey**	**0.79**	**29**	*e*Pg	**Pg**	**00 04 20.4**	**-0.2**
DST				*e*Sg	**Sb**	**00 04 31.9**	**+0.3**
AYDB	**Zeytinkoy-Aydi**	**0.99**	**191**	*e*PG	**Pb**	**00 04 24.5**	**0.0**
AYDB				*e*SG	**Sn**	**00 04 39.0**	**-0.1**
AYDB	**Zeytinkoy-Aydi**	**0.99**	**191**	*e*Pg	**Pb**	**00 04 24.5**	**0.0**
AYDB				*e*Sg	**Sn**	**00 04 39.0**	**-0.1**

GUC 01 00:13:27.6±0.4**, 22°.60S×67°.07W, h295**km±9km**, ML3.6, 2C-2D, Chile-Bolivia border region**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
PB06	**IPOC Station P**	**2.32**	**267**⇓	*e*P	Pn	00 14 18.3	+1.5
PB06				*e*S	S	00 14 56.8	+0.9
PB06				AML	AML	00 15 02.2	
	comp=N,22nm,0.2s						
PB01	**IPOC Station P**	**2.73**	**304**⇓	*e*P	Pn	00 14 22.0	+1.5
PB01				*e*S	S	00 15 03.7	+0.9
PB01				AML	AML	00 15 05.0	
	comp=E,93nm,0.3s						
PB07	**IPOC Station P**	**2.76**	**288**⇑	*e*P	Pn	00 14 22.8	+1.9
PB07				*e*S	S	00 15 04.3	+1.0
PB07				AML	AML	00 15 05.4	
	comp=N,82nm,0.2s						
PB04	**IPOC Station P**	**2.87**	**275**	*e*P	Pn	00 14 23.7	+1.8
PB04				*e*S	S	00 15 06.5	+1.3
PB08	**IPOC Station P**	**3.13**	**321**	*e*P	Pn	00 14 26.8	+2.1
PB08				*e*S	S	00 15 11.9	+1.6
PB08				AML	AML	00 15 13.8	
	comp=N,31nm,0.5s						
PB10	**IPOC Station P**	**3.34**	**254**⇑	*e*P	Pn	00 14 28.3	+1.8
PB10				*e*S	S	00 15 14.3	+0.8
PB11	**IPOC Station P**	**3.72**	**319**	*e*P	Pn	00 14 32.1	+1.4
PB11				*e*S	S	00 15 21.6	+0.4

IDC 01 00:15:28.1±16.0**, 3°.86S×145°.60E, h0**km**, mb3.4**/2**, mb1 3.9**/3**, mb1mx3.4**/32**, mbtmp3.6**/3**, ML3.6**/1**, MS3.0**/3**, Ms1 3.0**/3**, ms1mx2.6**/23**, Error ellipse: s-maj=379.4km s-min=36.2km az=84.0, Near north coast of New Guinea**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**5.73**	**164**	LR	LR	00 18 59.2	
	comp=Z,37nm,18.0s,baz=288,slow=37						
WRA	**Warramunga Arr**	**19.39**	**214**	P	Pn	00 19 56.5	-0.5
	0.2nm,0.3s,baz=37,slow=11,SNR=4.7						
ASAR	**Alice Springs**	**22.70**	**209**	P	P	00 20 31.4	-0.3
	0.9nm,0.6s,baz=32,slow=13,SNR=11						
ASAR				LR	LR	00 29 16.0	
	comp=Z,81nm,19.6s,baz=73,slow=36						
FITZ	**Fitzroy Crossi**	**24.13**	**233**	LR	LR	00 30 52.4	
	comp=Z,50nm,18.8s,baz=61,slow=38						
H11N3	**WAKE ISLAND Hy**	**31.43**	**41**	T	T	00 55 43.0	
	SNR=3.8						
H11N2	**WAKE ISLAND Hy**	**31.43**	**41**	T	T	00 55 39.6	
	SNR=4.7						
CMAR	**Chiang Mai Arr**	**51.02**	**297**	P	P	00 24 32.3	-0.1
	0.4nm,0.4s,baz=118,slow=7.7,SNR=3.8						

IDC 01 00:18:26.2±2.6**, 36°.63N×144°.00E, h0**km**, mb3.3**/5**, mb1 3.5**/6**, mb1mx3.3**/43**, mbtmp3.3**/6**, ML3.2**/1**, Error ellipse: s-maj=74.9km s-min=26.5km az=176.0, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
MJAR	**Matsushiro Arr**	**4.66**	**271**	Pn	Pn	00 19 38.4	+0.4
	1.0nm,0.3s,baz=87,slow=28,SNR=3.8						
MAT	**Matsushiro**	**4.67**	**271**	P	Pn	00 19 37.2	-0.7
SONM	**Songino Array**	**29.73**	**304**	P	P	00 24 34.6	+0.4
	0.1nm,0.5s,baz=91,slow=6.1,SNR=1.5						
MKAR	**Makanchi Array**	**46.09**	**303**	P	P	00 26 50.6	-1.3
	0.3nm,0.6s,baz=92,slow=12,SNR=1.4						
KURBB	**Kurchatov Arra**	**47.88**	**309**	P	P	00 27 06.2	+0.4
	0.3nm,0.4s,baz=80,slow=6.8,SNR=6.7						
ILAR	**Eielson Array**	**48.73**	**32**	P	P	00 27 12.2	0.0
	0.4nm,0.8s,baz=263,slow=6.8,SNR=4.6						
TXAR	**Lajitas Array**	**88.70**	**54**	P	P	00 31 21.9	0.0
	0.1nm,0.5s,baz=137,slow=24,SNR=3.0						

JMA 01 00:18:49.1±0.3**, 38°.57N×144°.58E, h44**km**, M3.7, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**2.33**	**284**	P	Pn	00 19 25.9	+1.0
JIO	**Ouri**	**2.54**	**268**	P	Pn	00 19 28.9	+1.2
JIO				S	Sn	00 19 58.4	+1.0
JOM	**Ohasama**	**2.71**	**290**	P	Pn	00 19 31.7	+1.5
JOM				*e*S	Sn	00 20 01.3	-0.5
JMM	**Marumori**	**3.06**	**258**	*e*S	Sn	00 20 11.8	+1.4
JOU	**Okura**	**3.08**	**267**	S	Sn	00 20 13.2	+2.4
JRG	**Rokugo**	**3.18**	**286**	P	Pn	00 19 39.0	+2.4
JYK	**Kaneyama**	**3.32**	**277**	P	Pn	00 19 40.6	+2.1
JTM	**Tenmabayashi**	**3.50**	**310**	S	Sn	00 20 22.9	+1.8
JFT	**Otama**	**3.51**	**254**	S	Sn	00 20 22.7	+1.3
JNBK	**Urakawa-nobuka**	**3.96**	**340**	P	Pn	00 19 48.4	+1.1
JNBK				*e*S	Sn	00 20 34.1	+1.7
JCH	**Churui**	**4.14**	**347**	P	Pn	00 19 49.8	0.0
JCH				S	Sn	00 20 37.1	+0.1
JKB	**Kayabe**	**4.28**	**322**	P	Pn	00 19 53.6	+1.9
JKB				*e*S	Sn	00 20 42.0	+1.6
MAT	**Matsushiro**	**5.45**	**250**	*e*S	Pn	00 20 09.1	+1.3

---

*JMA **01** 00:20:58.6±0.2, 24°.06N×121°.71E, h0km, M3.1*
*TAP **01** 00:20:59.1, 24°.09N×121°.75E, h8km, ML3.8, B*
ISC 01 00:20:59.9±0.9**, 24°.09N**±0°.02×**121°.75E**±0°.03**, h11**km±6km**, n54, σ0s.96**/85**, 5C-8D, Taiwan**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
TWD	**Chiawan**	**0.14**	**267**⇓	*i*P	**Pg**	**00 21 02.8**	**-0.4**
	baz=276						
TWD				*i* S	**Sg**	**00 21 05.3**	**-0.3**
	baz=276						
HWA	**Hwalien**	**0.17**	**231**	*e*P	**Pg**	**00 21 04.2**	**+0.4**
	baz=237						
EHP	**Heping Village**	**0.22**	**357**	P	**Pg**	**00 21 05.0**	**+0.4**
	baz=358						
EHP				*e*S	**Sg**	**00 21 09.1**	**+1.4**
	baz=358						
ESF	**Shoufeng Towns**	**0.31**	**226**	*e*P	**Pb**	**00 21 07.3**	**-0.3**
	baz=237						
ENA	**Nanau**	**0.34**	**358**⇑	*i*P	**Pg**	**00 21 06.4**	**-0.4**
	baz=358						
ENA				*i* S	**Sg**	**00 21 11.6**	**+0.3**
	baz=358						
ESL	**Shilin**	**0.40**	**227**	*e*P	**Pg**	**00 21 07.4**	**-0.4**
	baz=240						
ESL				*e*S	**Sb**	**00 21 13.8**	**-1.4**
	baz=240						
WHF	**Hehuan Shan**	**0.45**	**277**⇓	*i*P	**Pg**	**00 21 08.5**	**-0.4**
	baz=279						
WHF				*i* S	**Sg**	**00 21 14.8**	**-0.1**
	baz=279						
NNS	**Nan Shan**	**0.49**	**315**⇑	*i*P	**Pg**	**00 21 09.4**	**-0.3**
	baz=315						
NNS				S	**Sg**	**00 21 16.2**	**0.0**
	baz=315						
TWC	**Suao**	**0.53**	**10**	*i* P	**Pb**	**00 21 10.0**	**-1.2**
	baz=3.0						
TWC				*i* S	**Sb**	**00 21 17.7**	**-1.1**
	baz=3.0						
TWT	**Tachien**	**0.55**	**287**⇓	*i*P	**Pb**	**00 21 11.0**	**-0.8**
	baz=288						
TWT				*e*S	**Sb**	**00 21 18.7**	**-1.1**
	baz=288						
ENTT	**Nioudou**	**0.58**	**343**⇑	*i*P	**Pb**	**00 21 11.2**	**-0.9**
	baz=340						
ENTT				S	**Sb**	**00 21 19.4**	**-0.9**
	baz=340						
TWE	**Neicheng**	**0.64**	**353**	*i* P	**Pb**	**00 21 12.3**	**-0.8**
	baz=353						
TWE				*i* S	**Sb**	**00 21 21.3**	**-0.7**
	baz=353						
ILA	**Ilan**	**0.68**	**360**	*e*P	**Pb**	**00 21 14.0**	**+0.3**
	baz=345						
NSK	**Sanguang**	**0.69**	**328**⇑	*i*P	**Pb**	**00 21 13.3**	**-0.7**
	baz=328						
NSK				*i* S	**Sb**	**00 21 22.4**	**-1.2**
	baz=328						
EHY	**Hungye**	**0.70**	**214**	*e*P	**Pg**	**00 21 13.1**	**-0.4**
	baz=214						
SMLT	**Sun Moon Lake**	**0.81**	**256**⇓	*i*P	**Pb**	**00 21 15.6**	**-0.5**
	baz=259						
SMLT				S	**Sb**	**00 21 26.4**	**-0.7**
	baz=259						
TYC	**Yuchr**	**0.84**	**258**⇓	*i*P	**Pb**	**00 21 15.9**	**-0.7**
	baz=261						
TYC				*i* S	**Sb**	**00 21 27.1**	**-0.7**
	baz=261						
TWF1	**Yuli**	**0.84**	**210**	*e*P	**Pg**	**00 21 15.1**	**-1.1**
	baz=228						
TWF1				*e*S	**Sn**	**00 21 29.9**	**-0.4**
	baz=228						
NSTT	**Nanjuang**	**0.87**	**308**	*e*P	**Pb**	**00 21 16.9**	**-0.2**
	baz=308						
NSTT				*e*S	**Sb**	**00 21 29.1**	**+0.3**
	baz=308						
TWA	**Mucha**	**0.90**	**350**	*e*P	**Pb**	**00 21 17.3**	**-0.4**
	baz=348						
TWA				S	**Sb**	**00 21 29.9**	**+0.2**
	baz=348						
TWQ1	**Liyutan**	**0.93**	**286**	P	**Pn**	**00 21 18.5**	**-0.6**
	baz=285						
TWB1	**Santiao Chiao**	**0.94**	**13**	*e*P	**Pb**	**00 21 18.0**	**-0.3**
	baz=3.0						
YUS	**Yu-Shan**	**0.94**	**231**	*i* P	**Pb**	**00 21 18.1**	**-0.5**
	baz=235						
YUS				S	**Sn**	**00 21 32.2**	**-1.2**
	baz=235						
NSY	**Sanyi**	**0.96**	**290**	*e*P	**Pn**	**00 21 18.9**	**-0.6**
	baz=289						
TAP1	**Taipei**	**0.97**	**348**	*e*P	**Pn**	**00 21 19.0**	**-0.5**
	baz=345						
TAP1				*e*S	**Sb**	**00 21 31.1**	**-0.5**
	baz=345						
NWF	**Wu-fen Shan**	**0.98**	**1**⇑	*i*P	**Pn**	**00 21 19.0**	**-0.7**
	baz=343						
TCU	**Taichung**	**0.99**	**274**	*i* P	**Pn**	**00 21 20.2**	**+0.5**
	baz=271						
TCU				*e*S	**Sn**	**00 21 35.6**	**+1.9**
	baz=271						
WNT	**Mingjian**	**1.00**	**258**	P	**Pn**	**00 21 20.0**	**0.0**
	baz=262						
WNT				*e*S	**Sn**	**00 21 34.9**	**+0.8**
	baz=262						
HSN	**Hsinchu**	**1.01**	**315**	*e*P	**Pn**	**00 21 20.9**	**+0.8**
	baz=313						
NCU	**National Centr**	**1.02**	**330**	*e*P	**Pn**	**00 21 20.6**	**+0.4**
	baz=324						
ALS	**Alishan**	**1.04**	**237**⇓	*i*P	**Pb**	**00 21 20.0**	**-0.2**
	baz=242						
ALS				*e*S	**Sn**	**00 21 34.7**	**-0.9**
	baz=242						
CHKT	**Chengkung**	**1.05**	**200**	*e*P	**Pg**	**00 21 19.2**	**-0.9**
	baz=189						
TWS1	**Kuangyinshan**	**1.05**	**343**	*e*P	**Pn**	**00 21 21.3**	**+0.5**
	baz=341						
TWS1				*e*S	**Sn**	**00 21 36.7**	**+1.2**
	baz=341						
CHN5	**Tsauling**	**1.10**	**244**	*i* P	**Pn**	**00 21 21.7**	**+0.3**
	baz=240						
CHN5				*e*S	**Sn**	**00 21 38.5**	**+1.8**
	baz=240						
ELDTW	**Lidau**	**1.12**	**217**	*e*P	**Pb**	**00 21 20.9**	**-0.6**
	baz=221						
JYNG	**Yonagunijimaku**	**1.15**	**71**	P	**Pb**	**00 21 21.3**	**-0.5**
JYNG				S	**Sn**	**00 21 36.8**	**-0.9**
TWY	**Chenhua**	**1.19**	**353**	*e*P	**Pn**	**00 21 23.0**	**+0.4**
	baz=349						
YOJ	**Yonaguni jima**	**1.21**	**72**	*e*P	**Pg**	**00 21 23.6**	**+0.5**
	baz=73						
CHN4	**Tsaushan**	**1.29**	**236**	P	**Pg**	**00 21 25.0**	**+0.3**
	baz=241						
CHN4				S	**Sn**	**00 21 44.0**	**+2.7**
	baz=241						
CHN2	**Minshiung**	**1.29**	**245**	*e*P	**Pg**	**00 21 25.5**	**+0.6**
	baz=249						
STYT	**Tauyuan**	**1.30**	**225**	⇓P	**Pn**	**00 21 23.6**	**-0.5**
	baz=230						
STYT				S	**Sn**	**00 21 43.0**	**+1.4**
	baz=230						
WTP	**Ta-pu**	**1.34**	**232**	P	**Pg**	**00 21 25.3**	**-0.4**
	baz=237						
WTP				*e*S	**Sg**	**00 21 46.0**	**+2.9**
	baz=237						
CHY	**Chiayi**	**1.35**	**245**	*e*P	**Pg**	**00 21 25.9**	**0.0**
	baz=249						
TWG	**Pinlang**	**1.41**	**207**	*e*P	**Pn**	**00 21 25.1**	**-0.5**
	baz=205						
TWK	**Hsinying**	**1.42**	**235**	⇓P	**Pg**	**00 21 27.1**	**-0.1**
	baz=240						
TWK				*e*S	**Sg**	**00 21 48.4**	**+2.8**
	baz=240						
CHN1	**Nanshi**	**1.44**	**232**	*e*P	**Pg**	**00 21 27.1**	**-0.5**
	baz=237						
CHN1				*e*S	**Sg**	**00 21 48.2**	**+1.9**
	baz=237						
SGST	**Jiashian**	**1.47**	**227**	*e*P	**Pg**	**00 21 28.0**	**-0.2**
	baz=234						
SGST				*e*S	**Sg**	**00 21 48.5**	**+1.2**
	baz=234						
WSF	**Szhu**	**1.47**	**253**	*e*P	**Pg**	**00 21 27.3**	**-0.9**
	baz=256						
SSD	**Sandimen**	**1.69**	**218**	*e*P	**Pb**	**00 21 30.4**	**-0.6**
	baz=207						
TWM1	**Shoushan**	**1.75**	**224**	*e*P	**Pb**	**00 21 30.9**	**-1.3**
	baz=227						
IRIF	**Iriomote-Funau**	**1.82**	**82**	S	**Sb**	**00 21 56.5**	**+0.3**
SCZT	**Fangliau**	**2.00**	**212**	*e*P	**Pb**	**00 21 36.0**	**-0.4**
	baz=198						
PNG	**Penghu**	**2.08**	**256**	*e*P	**Pb**	**00 21 35.7**	**-2.0**
	baz=257						
WDGT	**Dungji**	**2.09**	**247**	*e*P	**Pn**	**00 21 34.9**	**-0.1**
	baz=236						
WDGT				*e*S	**Sb**	**00 22 04.0**	**+0.2**
	baz=236						

JMA 01 00:24:55.9±0.3**, 38°.16N×142°.47E, h30**km**, M3.5, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
JIO	**Ouri**	**0.93**	**289**	P	Pn	00 25 13.0	+0.1
JIO				S	Sn	00 25 24.7	-0.5
OFUJ	**Ofunato**	**1.11**	**326**	P	Pn	00 25 15.5	+0.1
JMK	**Ichinoseki**	**1.26**	**309**	P	Pb	00 25 18.6	-0.4
JMM	**Marumori**	**1.36**	**258**	P	Pn	00 25 18.9	+0.1
JOU	**Okura**	**1.44**	**279**	P	Pn	00 25 20.9	+1.0
JOU				S	Sn	00 25 38.7	+0.9
MIYJ	**Miyakonagasawa**	**1.50**	**340**	P	Pn	00 25 21.1	+0.3
MIYJ				*e*S	Sn	00 25 39.7	+0.3
JOM	**Ohasama**	**1.60**	**325**	P	Pn	00 25 23.4	+1.2
JFT	**Otama**	**1.81**	**250**	P	Pn	00 25 26.4	+1.4
JYK	**Kaneyama**	**1.82**	**295**	P	Pn	00 25 26.8	+1.6
JYK				*e*S	Sb	00 25 49.1	-1.8
JRG	**Rokugo**	**1.89**	**311**	P	Pn	00 25 24.8	-1.4
JYS	**Shirataka**	**1.90**	**273**	P	Pn	00 25 27.6	+1.4
JYS				S	Sn	00 25 50.5	+1.4
JKZ	**Kuzumaki**	**2.03**	**334**	P	Pn	00 25 29.7	+1.6
MAT	**Matsushiro**	**3.76**	**246**	P	Pn	00 25 54.3	+2.4
MAT				*e*S	Sn	00 26 24.4	-11

JMA 01 00:32:08.5±0.1**, 44°.28N×140°.54E, h2**km±2km**, M3.6, Eastern Sea of Japan**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
JYG	**Yagishiri**	**0.65**	**77**	P	Pg	00 32 21.2	+0.2
JSK	**Shakotan**	**0.93**	**183**	P	Pg	00 32 26.6	+0.3
JSK				*e*S	Sb	00 32 39.4	-0.6
JSS	**Shosan**	**0.95**	**82**	P	Pb	00 32 27.2	-0.5
JSS				*e*S	Sb	00 32 40.2	-0.5
JHR	**Hokuryu**	**1.01**	**122**	P	Pg	00 32 28.1	+0.3
JHR				*e*S	Sb	00 32 42.2	-0.2
JRR	**Rishiri**	**1.02**	**32**	P	Pb	00 32 28.7	-0.1
JRR				*e*S	Sb	00 32 42.7	0.0
JWK2	**Keihoku**	**1.42**	**43**	P	Pn	00 32 35.1	-0.2
JWK2				*e*S	Sn	00 32 54.7	+0.2
JAB	**Ashibetsu**	**1.44**	**122**	P	Pn	00 32 35.2	-0.4
JAB				*e*S	Sg	00 32 54.4	-0.4
ASAJ	**Asahikawa**	**1.49**	**96**	P	Pn	00 32 35.3	-1.0
JEW	**Eniwo**	**1.58**	**155**	P	Pn	00 32 37.4	-0.2
JSE	**Soyaes**	**1.61**	**64**	P	Pn	00 32 37.2	-0.7
JKK2	**Kamakawa 2**	**1.64**	**104**	P	Pn	00 32 37.7	-0.7

IDC 01 00:33:40.9±1.4**, 7°.14S×127°.50E, h0**km**, mb3.6**/2**, mb1 4.2**/5**, mb1mx3.6**/41**, mbtmp4.0**/5**, ML4.2**/3**, Error ellipse: s-maj=94.1km s-min=21.7km az=68.0, Banda Sea**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**11.05**	**189**	Pn	Pn	00 36 20.8	+0.5
	2.0nm,0.3s,baz=27,slow=10,SNR=31						
FITZ				Sn	Sn	00 38 15.0	-10
	1.1nm,0.3s,baz=96,slow=22,SNR=4.5						
WRA	**Warramunga Arr**	**14.36**	**153**	Pn	Pn	00 37 03.5	-2.0
	1.0nm,0.3s,baz=327,slow=13,SNR=11						
WRA				Sn	Sn	00 39 26.6	-19
	1.9nm,0.3s,baz=325,slow=24,SNR=8.1						
ASAR	**Alice Springs**	**17.55**	**160**	P	Pn	00 37 46.1	-1.0
	0.9nm,0.3s,baz=339,slow=11,SNR=47						
ASAR				S	Sn	00 40 47.9	-16
	0.5nm,0.3s,baz=316,slow=16,SNR=7.8						
STKA	**Stephens Creek**	**27.91**	**154**	P	P	00 39 33.7	+0.9
	1.6nm,1.0s,baz=315,slow=16,SNR=3.0						
MKAR	**Makanchi Array**	**67.00**	**328**	P	P	00 44 35.9	+0.3
	0.2nm,0.6s,baz=114,slow=7.6,SNR=4.0						
KURBB	**Kurchatov Arra**	**71.35**	**330**	P	P	00 45 02.2	-0.3
	baz=130,slow=5.1						

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*ISCJB **01** 00:36:34.2±0.4, 51°.49N±0°.02×6°.44E±0°.03, h0km, Error ellipse: s-maj=3.5km s-min=2.3km az=43.0*
*BUG **01** 00:36:35.8, 51°.54N×6°.60E, h1km, ML2.3*
BUG Felt III EMS.
*CSEM **01** 00:36:35.6±0.2, 51°.48N×6°.53E, h1km, ML3.1/17, Error ellipse: s-maj=4.6km s-min=3.3km az=139.0*
*LDG **01** 00:36:36.8±0.1, 51°.48N×6°.54E, h1km, Md3.5/1, Ml3.1/14, Error ellipse: s-maj=2.1km s-min=1.4km az=149.0, Suspected Mining induced.*
*BNS **01** 00:36:36.4±0.9, 51°.50N×6°.58E, h1km, ML2.4*
*BGR **01** 00:36:37.0±0.6, 51°.47N×6°.60E, h1km, ML2.5/6, Error ellipse: s-maj=10.0km s-min=4.4km az=124.0*
*UCC **01** 00:36:37.7, 51°.51N×6°.73E, h10km, ML2.2*
ISC 01 00:36:34.8±0.8**, 51°.47N**±0°.02×**6°.51E**±0°.02**, h0**km**, n123, σ1s.06**/175**, 1D, Germany**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
BRHE	**Rheinberg**	**0.06**	**38**	Pg	**Pg**	**00 36 36.6**	**+0.6**
BRHE				Sg	**Sg**	**00 36 37.8**	**+1.0**
BRHE	**Rheinberg**	**0.06**	**38**	Pg	**Pg**	**00 36 36.6**	**+0.6**
BRHE				Sg	**Sg**	**00 36 37.8**	**+1.0**
LAUG	**Laupendahl**	**0.29**	**113**	Pg	**Pg**	**00 36 41.6**	**+1.2**
LAUG				Sg	**Sg**	**00 36 45.5**	**+1.2**
	276nm,0.4s						
LAUG	**Laupendahl**	**0.29**	**113**	*e*Pg	**Pg**	**00 36 41.6**	**+1.2**
LAUG				*e*Sg	**Sg**	**00 36 45.5**	**+1.2**
	276nm,0.4s						
RWB	**Wassenberg**	**0.43**	**212**	Pg	**Pb**	**00 36 45.4**	**+0.2**
RWB	**Wassenberg**	**0.43**	**212**	*e*Pg	**Pb**	**00 36 45.4**	**+0.2**
RWB				*e*Sg	**Sb**	**00 36 52.5**	**+0.2**
	275nm,0.2s						
BUG	**Bochum--Univer**	**0.47**	**93**⇓	*i*Pg	**Pg**	**00 36 44.8**	**+0.9**
BUG				Sg	**Sg**	**00 36 51.3**	**+1.3**
PLH	**Pulheim**	**0.50**	**157**	Pg	**Pb**	**00 36 46.2**	**-0.3**
PLH				Sg	**Sg**	**00 36 53.0**	**+2.0**
	292nm,0.3s						
PLH	**Pulheim**	**0.50**	**157**	*e*Pg	**Pb**	**00 36 46.2**	**-0.3**
PLH				*e*Sg	**Sg**	**00 36 53.0**	**+2.0**
	292nm,0.3s						
WTSB	**Winterswijk**	**0.53**	**20**	*e*Pg	**Pg**	**00 36 46.0**	**+1.1**
WTSB				*e*Sg	**Sg**	**00 36 52.7**	**+0.9**
BOPT	**Opiter**	**0.66**	**237**	P	**Pn**	**00 36 52.4**	**+1.1**
BOPT	**Opiter**	**0.66**	**237**	P	**Pn**	**00 36 52.4**	**+1.1**
HOBG	**Hohbusch**	**0.71**	**133**	Pg	**Pb**	**00 36 49.9**	**-0.1**
HOBG	**Hohbusch**	**0.71**	**133**	*e*Pg	**Pb**	**00 36 49.9**	**-0.1**
GSH	**Grosshau**	**0.74**	**187**	Pg	**Pb**	**00 36 50.8**	**+0.3**
GSH				Sg	**Sb**	**00 37 01.5**	**+0.4**
	82nm,0.2s						
GSH	**Grosshau**	**0.74**	**187**	*e*Pg	**Pb**	**00 36 50.8**	**+0.3**
GSH				*e*Sg	**Sb**	**00 37 01.5**	**+0.4**
	82nm,0.2s						
HGN	**Heimansgroeve**	**0.79**	**208**	*e*Pg	**Pn**	**00 36 53.8**	**+0.6**
	139nm,0.2s						
HGN				*e*Sg	**Sn**	**00 37 06.1**	**+0.3**
HGN	**Heimansgroeve**	**0.79**	**208**	*e*Pg	**Pn**	**00 36 53.8**	**+0.6**
	139nm,0.2s						
HGN				*e*Sg	**Sn**	**00 37 06.1**	**+0.3**
WBS	**Wahnbachtalspe**	**0.82**	**143**	Sg	**Sg**	**00 37 02.8**	**+1.6**
	80nm,0.2s						
WBS	**Wahnbachtalspe**	**0.82**	**143**	*e*Sg	**Sg**	**00 37 02.8**	**+1.6**
	80nm,0.2s						
DREG	**Dreilaegerbach**	**0.82**	**192**	Pg	**Pb**	**00 36 52.6**	**+0.6**
DREG	**Dreilaegerbach**	**0.82**	**192**	*e*Pg	**Pb**	**00 36 52.6**	**+0.6**
KLL	**Kalltalsperre**	**0.83**	**189**	Pg	**Pb**	**00 36 52.7**	**+0.6**
KLL	**Kalltalsperre**	**0.83**	**189**	*e*Pg	**Pb**	**00 36 52.7**	**+0.6**
BEBN	**Eben Emael**	**0.85**	**218**	P	**Pn**	**00 36 54.8**	**+0.7**
BEBN	**Eben Emael**	**0.85**	**218**	P	**Pn**	**00 36 54.0**	**-0.1**
STB	**Steinbach**	**0.90**	**167**	Pg	**Pb**	**00 36 54.2**	**+0.9**
STB				Sg	**Sb**	**00 37 06.9**	**+1.1**
	121nm,0.4s						
STB	**Steinbach**	**0.90**	**167**	*e*Pg	**Pb**	**00 36 54.2**	**+0.9**
STB				*e*Sg	**Sb**	**00 37 06.9**	**+1.1**
	121nm,0.4s						
MEM	**Membach**	**0.92**	**201**	P	**Pb**	**00 36 54.4**	**+0.8**
MEM	**Membach**	**0.92**	**201**	P	**Pb**	**00 36 54.3**	**+0.8**
BMOL	**Mol**	**0.93**	**255**	P	**Pn**	**00 36 56.5**	**+1.4**
BMOL	**Mol**	**0.93**	**255**	P	**Pn**	**00 36 56.4**	**+1.4**
TDN	**Todenfeld**	**0.94**	**163**	Sg	**Sb**	**00 37 06.8**	**0.0**
	36nm,0.2s						
TDN	**Todenfeld**	**0.94**	**163**	*e*Sg	**Sb**	**00 37 06.8**	**0.0**
	36nm,0.2s						
OLFT	**Oleftalsperre**	**0.98**	**183**	Pg	**Pb**	**00 36 55.2**	**+0.6**
OLFT				Sg	**Sb**	**00 37 08.8**	**+0.7**
OLFT	**Oleftalsperre**	**0.98**	**183**	*e*Pg	**Pb**	**00 36 55.2**	**+0.6**
OLFT				*e*Sg	**Sb**	**00 37 08.8**	**+0.7**
AHRW	**Bad Neuenahr-A**	**0.99**	**159**	*e*Pg	**Pb**	**00 36 55.7**	**+0.9**
BSTI	**Sart Tilman**	**1.07**	**214**	P	**Pn**	**00 36 58.4**	**+1.4**
BSTI	**Sart Tilman**	**1.07**	**214**	P	**Pn**	**00 36 58.4**	**+1.4**
IBBN	**Ibbenburen**	**1.14**	**42**	Pg	**Pg**	**00 36 56.9**	**+0.2**
IBBN				Sg	**Sg**	**00 37 12.5**	**+1.0**
IBBN	**Ibbenburen**	**1.14**	**42**	*e*Pg	**Pg**	**00 36 56.9**	**+0.2**
IBBN				*e*Sg	**Sg**	**00 37 12.5**	**+1.0**
HILG	**Hillesheim**	**1.18**	**175**	Pg	**Pn**	**00 36 59.2**	**+0.6**
HILG	**Hillesheim**	**1.18**	**175**	*e*Pg	**Pn**	**00 36 59.1**	**+0.6**
BHE	**Schloss Buerre**	**1.19**	**159**	Pg	**Pb**	**00 36 58.7**	**+0.4**
BHE				Sg	**Sb**	**00 37 14.7**	**+0.4**
	46nm,0.2s						
BHE	**Schloss Buerre**	**1.19**	**159**	*e*Pg	**Pb**	**00 36 58.7**	**+0.4**
BHE				*e*Sg	**Sb**	**00 37 14.7**	**+0.4**
	46nm,0.2s						
BCLA	**Clavier**	**1.30**	**217**	P	**Pn**	**00 37 01.9**	**+1.7**
BCLA	**Clavier**	**1.30**	**217**	P	**Pn**	**00 37 01.9**	**+1.7**
KOE	**Koeppel**	**1.30**	**143**	Pg	**Pb**	**00 37 00.6**	**+0.5**
KOE	**Koeppel**	**1.30**	**143**	*e*Pg	**Pb**	**00 37 00.7**	**+0.5**

BGES	Gesves	1.41	220	P	Pb	00 37 03.3	+1.3
BGES	Gesves	1.41	220	P	Pb	00 37 03.2	+1.3
RCHB	Rochefort	1.55	212	P	Pg	00 37 06.0	+1.5
RCHB	Rochefort	1.55	212	P	Pg	00 37 05.9	+1.5
BMRD	Maredsous	1.61	224	P	Pg	00 37 08.1	+2.5
BMRD	Maredsous	1.61	224	P	Pg	00 37 08.0	+2.5
GIVF	Givet	1.74	219	*e*Pn	Pg	00 37 08.3	+0.2
GIVF				*e*Sg	Sg	00 37 31.8	+1.2
	83nm,0.4s						
GIVF	Givet	1.74	219	*e*Pn	Pg	00 37 08.3	+0.2
GIVF				*e*Sg	Sg	00 37 31.8	+1.2
	41nm,0.4s						
TNS	Taunus Mts	1.75	135	Pn	Pn	00 37 07.0	+0.6
TNS	Taunus Mts	1.75	135	Pg	Pg	00 37 09.1	+0.8
TNS	Taunus Mts	1.75	135	*e*Pn	Pn	00 37 07.0	+0.6
TNS				*e*Pg	Pg	00 37 09.1	+0.8
WLF	Walferdange	1.82	187	P	Pg	00 37 11.0	+1.3
WLF	Walferdange	1.82	187	Pg	Pg	00 37 10.8	+1.1
WLF				Sg	Sg	00 37 33.8	+0.6
WLF	Walferdange	1.82	187	*e*Pg	Pg	00 37 10.8	+1.1
WLF				*e*Sg	Sg	00 37 33.8	+0.6
BAIF	Baives	2.03	227	*e*Pn	Pn	00 37 10.0	-0.3
BAIF	Baives	2.03	227	*e*Pg	Pg	00 37 14.9	+1.2
BAIF				*e*Sg	Sg	00 37 41.0	+0.9
	36nm,0.6s						
BAIF	Baives	2.03	227	*e*Pn	Pn	00 37 10.0	-0.3
BAIF	Baives	2.03	227	*e*Pg	Pg	00 37 14.9	+1.2
BAIF				*e*Sg	Sg	00 37 41.0	+0.9
	18nm,0.6s						
CLZ	Clausthal	2.43	80	Pg	Pg	00 37 21.5	+0.1
CLZ	Clausthal	2.43	80	*e*Pg	Pg	00 37 21.5	+0.1
CLZ				*e*Sg	Sb	00 37 50.0	-0.1
PAGF	Fort de Pagny	2.96	190	*e*Pn	Pn	00 37 23.3	+0.3
PAGF	Fort de Pagny	2.96	190	*e*Pg	Pg	00 37 31.7	+0.2
	baz=12						
PAGF				*e*Sg	Sg	00 38 09.7	-0.2
	3.8nm,0.4s,baz=16						
PAGF	Fort de Pagny	2.96	190	*e*Pn	Pn	00 37 23.3	+0.3
PAGF	Fort de Pagny	2.96	190	*e*Pg	Pg	00 37 31.7	+0.2
PAGF				*e*Sg	Sg	00 38 09.7	-0.2
	1.9nm,0.4s						
CDF	Champ du Feu	3.10	171	*e*Pn	Pn	00 37 25.3	+0.3
CDF	Champ du Feu	3.10	171	*e*Pg	Pg	00 37 34.7	+0.5
CDF				*e*Sg	Sg	00 38 14.3	0.0
	5.6nm,0.3s						
CDF	Champ du Feu	3.10	171	*e*Pn	Pn	00 37 25.3	+0.3
CDF	Champ du Feu	3.10	171	*e*Pg	Pg	00 37 34.7	+0.5
CDF				*e*Sg	Sg	00 38 14.3	0.0
	2.8nm,0.3s						
MEZF	Maizieres J'vi	3.12	198	*e*Pn	Pn	00 37 26.0	+0.8
	baz=16						
MEZF				*e*Sg	Sg	00 38 15.1	+0.3
	30nm,0.5s,baz=17						
MEZF	Maizieres J'vi	3.12	198	*e*Pn	Pn	00 37 26.0	+0.8
MEZF				*e*Sg	Sg	00 38 15.1	+0.3
	15nm,0.5s						
ECH	Echery	3.28	172	Pn	Pn	00 37 28.1	+0.6
ECH	Echery	3.28	172	*e*Pn	Pn	00 37 28.1	+0.6
MOX	Moxa	3.32	102	Pn	Pn	00 37 29.1	+1.1
MOX	Moxa	3.32	102	*e*Pn	Pn	00 37 29.1	+1.1
BFO	Black Forest	3.35	159	Pn	Pn	00 37 29.3	+0.8
BFO	Black Forest	3.35	159	*e*Pn	Pn	00 37 29.3	+0.8
SFTF	Sexfontaines	3.40	197	*e*Pn	Pn	00 37 29.4	+0.3
	baz=9.6						
SFTF	Sexfontaines	3.40	197	*e*Pg	Pg	00 37 40.3	+0.3
	baz=22						
SFTF				*e*Sg	Sg	00 38 23.8	-0.3
	14nm,0.4s						
SFTF	Sexfontaines	3.40	197	*e*Pn	Pn	00 37 29.4	+0.3
SFTF	Sexfontaines	3.40	197	*e*Pg	Pg	00 37 40.3	+0.3
SFTF				*e*Sg	Sg	00 38 23.8	-0.3
	6.9nm,0.4s						
HAU	Haudompre	3.47	182	*e*Sg	Sg	00 38 25.8	-0.4
	16nm,0.5s						
HAU	Haudompre	3.47	182	*e*Sg	Sg	00 38 25.8	-0.4
	8.0nm,0.5s						
HINF	Hinteralfeld	3.66	176	*e*Pn	Pn	00 37 33.0	+0.3
HINF	Hinteralfeld	3.66	176	*e*Pg	Pg	00 37 44.9	-0.1
HINF				*e*Sg	Sg	00 38 31.8	-0.6
	4.3nm,0.3s						
HINF	Hinteralfeld	3.66	176	*e*Pn	Pn	00 37 33.0	+0.3
HINF	Hinteralfeld	3.66	176	*e*Pg	Pg	00 37 44.9	-0.1
HINF				*e*Sg	Sg	00 38 31.8	-0.6
	2.2nm,0.3s						
MANZ	Manzenberg	3.85	110	Pn	Pn	00 37 35.9	+0.6
MANZ	Manzenberg	3.85	110	*e*Pn	Pn	00 37 35.9	+0.6
ROTZ	Rotzenmuhle	4.01	113	Pn	Pn	00 37 38.0	+0.6
ROTZ	Rotzenmuhle	4.01	113	*e*Pn	Pn	00 37 38.0	+0.6
CLL	Collm	4.07	90	*e*Pg	Pg	00 37 52.0	-0.8
CLL				*e*Sg	Sg	00 38 45.0	-0.5
LOR	Lormes	4.55	203	*e*Pn	Pn	00 37 45.1	+0.2
	baz=27						
LOR				*e*Sg	Sg	00 39 00.4	-0.4
LOR	Lormes	4.55	203	*e*Pn	Pn	00 37 45.1	+0.2
LOR				*e*Sg	Sg	00 39 00.4	-0.4
BRG	Berggiesshubel	4.71	94	SG	Sg	00 39 05.5	-0.7
	3.4nm,0.8s						
SSF	Saint Saulge	4.83	205	*e*Pn	Pn	00 37 48.5	-0.2
SSF				*e*Sg	Sg	00 39 09.1	-0.8
	10nm,0.4s						
SSF	Saint Saulge	4.83	205	*e*Pn	Pn	00 37 48.5	-0.2
SSF				*e*Sg	Sg	00 39 09.1	-0.8
	5.2nm,0.4s						
CABF	La Chapelle	4.87	183	*e*Pn	Pn	00 37 49.3	-0.1
CABF	La Chapelle	4.87	183	*e*Pn	Pn	00 37 49.3	-0.1
AVF	Avril sur Loir	5.12	205	*e*Pn	Pn	00 37 52.9	+0.2
AVF	Avril sur Loir	5.12	205	*e*Pn	Pn	00 37 52.9	+0.2
SMF	Signal de Mont	5.14	201	*e*Pn	Pn	00 37 53.2	+0.3
SMF				*e*Sg	Sg	00 39 18.4	-1.3
	5.8nm,0.3s						
SMF	Signal de Mont	5.14	201	*e*Pn	Pn	00 37 53.2	+0.3
SMF				*e*Sg	Sg	00 39 18.4	-1.3
	2.9nm,0.3s						
LDF	La Druitiere	5.15	239	*e*Pn	Pn	00 37 53.5	+0.3
LDF				*e*Sn	Sn	00 38 49.8	-3.5
LDF	La Druitiere	5.15	239	*e*Pn	Pn	00 37 53.5	+0.3
LDF				*e*Sn	Sn	00 38 49.8	-3.5
FLN	La Foliniere	5.25	242	*e*Pn	Pn	00 37 54.7	+0.2
	baz=55						
FLN				*e*Sn	Sn	00 38 52.1	-3.6
	3.1nm,0.3s						
FLN	La Foliniere	5.25	242	*e*Pn	Pn	00 37 54.7	+0.2
FLN				*e*Sn	Sn	00 38 52.1	-3.6
	1.5nm,0.3s						
BGF	Bois d'Agland	5.47	208	*e*Pn	Pn	00 37 57.5	-0.1
BGF				*e*Sn	Sn	00 38 57.7	-3.5
	16nm,0.4s						
BGF	Bois d'Agland	5.47	208	*e*Pn	Pn	00 37 57.5	-0.1
GRR	Gorron	5.67	240	*e*Pn	Pn	00 38 00.7	+0.5
GRR				*e*Sn	Sn	00 39 01.5	-4.5
GRR	Gorron	5.67	240	*e*Pn	Pn	00 38 00.7	+0.5
TCF	Toulx Ste Croi	5.91	210	*e*Pn	Pn	00 38 03.5	-0.1
TCF	Toulx Ste Croi	5.91	210	*e*Pn	Pn	00 38 03.5	-0.1
RJF	Les Rejaudoux	7.01	210	*e*Pn	Pn	00 38 17.9	-0.7
RJF	Les Rejaudoux	7.01	210	*e*Pn	Pn	00 38 17.9	-0.7

*NIED **01** 00:37:00, 36°40N×143°50E, h5km, Mw3.7 Best double couple: M0 4.68000×10^14 NP1:φs36.00000°, δ20.00000°, λ-94.00000°. NP2:φs221.00000°, δ70.00000°, λ-88.00000°.*

*IDC **01** 00:37:03.0±1.0, 36°29N×143°72E, h0km, mb3.5/7, mb1 3.8/8, mb1mx3.6/45, mbtmp3.5/8, ML3.1/1, MS2.7/5, Ms1 2.7/5, ms1mx2.4/46, Error ellipse: s-maj=29.4km s-min=24.8km az=91.0*

*ISCJB **01** 00:37:06.5±0.7, 36°30N±0°10×143°65E±0°06, h33km, mb3.6/7, MS2.5/1, Error ellipse: s-maj=13.8km s-min=7.0km az=5.7*

*JMA **01** 00:37:09.0±0.2, 36°37N×143°52E, h62km, M3.8*

ISC 01 00:37:08.5±0.9**, 36°3N**±0°1×**143°58E**±0°08**, h35**km**, n24, σ1s76**/19**, mb3.7**/7**, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	Chosi	2.29	255	P	Pn	00 37 44.9	+1.1
JHO	Hitachi	2.44	278	P	Pn	00 37 46.5	+0.6
JHO				S	Sn	00 38 15.0	+0.4
JYT	Yasato	2.74	269	P	Pn	00 37 51.1	+1.2
JYT				*e*S	Sn	00 38 21.3	-0.5
JFT	Otama	2.86	296	P	Pn	00 37 52.5	+0.9
JFT				S	Sn	00 38 25.8	+1.0
BSO3	Boso 3	2.93	240	P	Pn	00 37 53.4	+1.1
JAG	Ashikaga	3.33	273	S	Sn	00 38 37.4	+0.9
MJAR	Matsushiro Arr	4.34	274	Pn	Pn	00 38 09.4	-2.5
	0.9nm,0.3s,baz=87,slow=8.3,SNR=5.0						
MAT	Matsushiro	4.34	274	P	Pn	00 38 11.5	-0.5
MAT				*e*S	Sn	00 38 56.4	-4.9
JHJ	Hachijo jima 2	4.47	225	LR	LR	00 40 13.2	
	comp=Z,60nm,19.2s,baz=240,slow=42						
JNU	Nakatsue	10.93	257	LR	LR	00 44 38.7	
	comp=Z,26nm,18.0s,baz=116,slow=41						
KSRS	Korea Array	12.59	280	LR	LR	00 45 03.6	
	comp=Z,30nm,19.7s,baz=61,slow=38						
KLR	Kul'dur	15.53	330	LR	LR	00 46 15.9	
	comp=Z,45nm,19.8s,baz=296,slow=35						
GUMO	Guam	22.67	177	LR	LR	00 48 27.7	
	comp=Z,20nm,21.2s,baz=143,slow=30						
H11N2	WAKE ISLAND Hy	26.29	123	T	T	01 09 49.8	
	baz=314,slow=75,SNR=13						
H11N1	WAKE ISLAND Hy	26.30	123	T	T	01 09 53.2	
	baz=314,slow=75,SNR=5.8						
H11N3	WAKE ISLAND Hy	26.31	123	T	T	01 09 51.3	
	baz=314,slow=75,SNR=8.0						
H11S3	WAKE ISLAND Hy	27.02	125	T	T	01 12 15.1	
	SNR=6.9						
SONM	Songino Array	29.62	305	P	P	00 43 12.9	+2.4
	0.2nm,0.3s,baz=117,slow=8.6,SNR=3.7						
MKAR	Makanchi Array	45.97	303	P	P	00 45 26.8	-1.2
	0.1nm,0.6s,baz=185,slow=26,SNR=2.4						
ILAR	Eielson Array	49.17	32	P	P	00 45 51.9	-0.8
	0.4nm,0.7s,baz=260,slow=6.3,SNR=6.0						
WRA	Warramunga Arr	56.64	190	P	P	00 46 48.0	-0.1
	0.8nm,0.4s,baz=15,slow=7.3,SNR=4.4						
ASAR	Alice Springs	60.36	190	P	P	00 47 13.9	-0.2
	0.7nm,0.8s,baz=11,slow=7.0,SNR=5.2						
NOA	NORSAR Array B	75.50	338	P	P	00 48 50.3	+1.4
	1.2nm,0.8s,baz=136,slow=26,SNR=2.5						
TXAR	Lajitas Array	89.16	54	P	P	00 49 59.5	-1.3
	0.3nm,0.7s,baz=335,slow=5.5,SNR=3.5						

IDC 01 00:48:06.7±2.0**, 42°65N**×**146°41E, h0**km**, mb3.4**/3**, mb1 3.7**/4**, mb1mx3.3**/38**, mbtmp3.5**/4**, ML3.8**/1**, Error ellipse: s-maj=57.9km s-min=34.2km az=167.0, Off southeast coast of Hokkaido**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MJAR	Matsushiro Arr	8.79	229	Pn	Pn	00 50 14.9	-0.1
	1.1nm,0.3s,baz=47,slow=12,SNR=6.9						
SONM	Songino Array	28.41	294	P	P	00 54 04.6	+1.7
	0.6nm,1.0s,baz=87,slow=7.9,SNR=3.9						
MKAR	Makanchi Array	44.62	298	P	P	00 56 19.2	-1.5
	0.1nm,0.5s,baz=86,slow=10,SNR=3.2						
TXAR	Lajitas Array	83.71	56	P	P	01 00 37.9	+0.2
	0.3nm,0.7s,baz=308,slow=3.1,SNR=4.7						

JMA 01 00:48:46.2±0.1**, 39°55N**×**142°54E, h28**km±1km**, M2.8, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MIYJ	Miyakonagasawa	0.56	273	P	Pb	00 48 57.2	-0.3
MIYJ				S	Sb	00 49 05.1	-0.1
JTH	Tanohata	0.65	307	P	Pb	00 48 58.7	-0.3
JTH				S	Sb	00 49 07.6	-0.2
OFUJ	Ofunato	0.82	236	P	Pb	00 49 01.3	-0.6
JOM	Ohasama	0.97	266	P	Pn	00 49 04.0	+0.1
JOM				S	Sb	00 49 16.9	+0.1
JKZ	Kuzumaki	1.03	295	P	Pn	00 49 05.1	+0.3
JKZ				*e*S	Sn	00 49 18.3	0.0
JANG	Nango	1.14	317	P	Pn	00 49 06.3	0.0
JANG				*e*S	Sb	00 49 21.4	-0.3
JMK	Ichinoseki	1.19	240	P	Pn	00 49 07.3	+0.4
JMK				*e*S	Sn	00 49 22.5	+0.4

*NIED **01** 00:49:00, 38°10N×142°10E, h5km, Mw3.6 Best double couple: M0 2.85000×10^14 NP1:φs347.00000°, δ30.00000°, λ-58.00000°. NP2:φs131.00000°, δ64.00000°, λ-107.00000°.*

JMA 01 00:49:11.5±0.1**, 38°15N**×**142°08E, h9**km±2km**, M3.6, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	Ouri	0.65	298	P	Pg	00 49 24.1	0.0
JIO				S	Sg	00 49 33.1	+0.5
OFUJ	Ofunato	0.98	341	P	Pg	00 49 30.2	-0.2
JMK	Ichinoseki	1.05	320	S	Sg	00 49 45.3	+0.1
JMM	Marumori	1.05	255	P	Pg	00 49 31.0	-0.8
JMM				S	Sg	00 49 45.6	+0.1
JOU	Okura	1.14	281	P	Pg	00 49 32.9	-0.4
JOU				*e*S	Sb	00 49 48.6	+0.4
MIYJ	Miyakonagasawa	1.44	352	*e*S	Sn	00 49 54.3	-2.5
JOM	Ohasama	1.46	335	P	Pn	00 49 37.8	-0.2
JOM				*e*S	Sn	00 49 55.9	-1.3
JFT	Otama	1.52	246	P	Pb	00 49 39.8	0.0
JFT				S	Sb	00 49 59.0	-0.2
JYK	Kaneyama	1.55	300	P	Pn	00 49 39.5	+0.2
JYK				S	Sb	00 50 00.2	0.0
JYS	Shirataka	1.59	273	P	Pn	00 49 40.3	+0.5
JYS				S	Sb	00 50 01.5	+0.3
MAT	Matsushiro	3.48	244	P	Pb	00 50 13.7	+0.4
MAT				*e*S	Sb	00 50 53.5	-2.1

*CSEM **01** 00:58:54.5±0.4, 36°17N×21°82E, h10km, ML3.6, Error ellipse: s-maj=9.5km s-min=4.7km az=38.0*

*THE **01** 00:58:55.7, 36°21N×21°90E, h7km±1km, ML3.6/6, Error ellipse: s-maj=2.0km s-min=1.0km az=41.0*

*ATH **01** 00:58:57.0, 36°28N×21°97E, h41km±3km, ML3.4/4, Error ellipse: s-maj=5.0km s-min=1.5km az=52.0*

*IDC **01** 00:59:13.2±3.6, 36°38N×21°65E, h210km±40km, mb2.9/6, mb1 3.0/7, mb1mx2.8/44, mbtmp3.4/7, Error ellipse: s-maj=26.4km s-min=14.7km az=152.0*

ISC 01 00:58:56.7±1.2**, 36°25N**±0°04×**21°87E**±0°04**, h33**km±4km**, n97, σ1s29**/122**, mb3.6**/5**, Southern Greece**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PYL	PYLOS	0.66	351	P	Pn	00 59 09.7	+0.1
PYL				S	Sn	00 59 18.9	+0.1
PYL	PYLOS	0.66	351	P	Pn	00 59 09.7	+0.1
PYL				S	Sn	00 59 18.9	+0.1
ITM	Ithomi	0.93	3	P	Pn	00 59 14.0	+0.6
ITM				S	Sb	00 59 28.1	+1.6
ITM	Ithomi	0.93	3	P	Pn	00 59 14.0	+0.6
ITM				S	Sb	00 59 28.0	+1.6
ITM	Ithomi	0.93	3	P	Pn	00 59 13.8	+0.3
ITM				S	Sb	00 59 28.0	+1.6
ITM				AML	AML	00 59 32.6	
	comp=N,3626μm,0.5s						
ITM				AML	AML	00 59 34.0	
	comp=E,4069μm,0.6s						
KYTH	Kithira	0.94	88	P	Pn	00 59 14.1	+0.5
KYTH				S	Sb	00 59 26.9	+0.2
KYTH	Kithira	0.94	88	P	Pn	00 59 14.1	+0.5
KYTH				S	Sb	00 59 26.9	+0.2
KYTH	Kithira	0.94	88	P	Pb	00 59 14.4	-0.2
VLI	Veliai	0.98	61	P	Pn	00 59 14.0	-0.1
VLI				S	Sb	00 59 28.0	+0.3
VLI	Veliai	0.98	61	P	Pn	00 59 14.0	-0.1
VLI				S	Sb	00 59 28.6	+0.9
VLI	Veliai	0.98	61	P	Pn	00 59 13.8	-0.2
VLI				S	Sb	00 59 28.6	+0.9
VLI				AML	AML	00 59 31.0	
	comp=N,5042μm,0.5s						
VLI				AML	AML	00 59 32.4	
	comp=E,5387μm,0.7s						
VLX	Vlachokerasia	1.19	20	P	Pn	00 59 18.0	+0.9
VLX				S	Sb	00 59 35.5	+1.5
VLX	Vlachokerasia	1.19	20	P	Pn	00 59 18.0	+0.9
VLX				S	Sb	00 59 35.5	+1.5
VLX	Vlachokerasia	1.19	20	P	Pn	00 59 18.0	+0.9
VLX				S	Sn	00 59 32.1	-0.1
VLX				AML	AML	00 59 38.0	
	comp=E,5581μm,0.5s						
VLX				AML	AML	00 59 39.8	
	comp=N,6377μm,0.6s						
ANKY	Antikythira Is	1.22	108	P	Pn	00 59 18.4	+1.1
ANKY				S	Sb	00 59 35.3	+0.7
ANKY	Antikythira Is	1.22	108	P	Pn	00 59 18.4	+1.1
ANKY				S	Sb	00 59 35.3	+0.7
ANKY	Antikythira Is	1.22	108	P	Pb	00 59 18.7	-0.5
ANKY				S	Sb	00 59 36.1	+1.6
ANKY				AML	AML	00 59 40.1	
	comp=N,1997μm,0.4s						
ANKY				AML	AML	00 59 43.5	
	comp=E,2690μm,0.6s						
AMT	Artemida-Makis	1.29	354	P	Pb	00 59 20.3	-0.1
AMT				S	Sb	00 59 39.4	+2.7
AMT	Artemida-Makis	1.29	354	P	Pb	00 59 20.3	-0.1
AMT				S	Sb	00 59 39.4	+2.7
AMT	Artemida-Makis	1.29	354	P	Pb	00 59 20.8	+0.4
KRND	KRANIDI	1.53	42	P	Pn	00 59 22.6	+1.0
KRND				S	Sb	00 59 44.2	+0.8
KRND	KRANIDI	1.53	42	P	Pn	00 59 22.6	+1.0
KRND				S	Sb	00 59 44.2	+0.8
DID	Didima	1.67	41	P	Pn	00 59 23.8	+0.2
DID				S	Sb	00 59 47.8	+0.4
DID	Didima	1.67	41	P	Pn	00 59 23.8	+0.2
DID				S	Sb	00 59 47.8	+0.4
DRO	Drossia	1.71	356	P	Pb	00 59 26.1	-1.3
DRO				S	Sb	00 59 49.6	+1.1
DRO	Drossia	1.71	356	P	Pb	00 59 26.1	-1.3
DRO				S	Sb	00 59 49.6	+1.1
DRO	Drossia	1.71	356	P	Pb	00 59 26.3	-1.1
KLV	Kalavryta, Ach	1.81	7	P	Pb	00 59 28.0	-1.2
KLV	Kalavryta, Ach	1.81	7	P	Pn	00 59 26.7	+1.2
KLV	Kalavryta, Ach	1.81	7	P	Pn	00 59 26.7	+1.2
IMMV	Iera Moni Meta	1.88	114	P	Pn	00 59 27.0	+0.5
IMMV	Iera Moni Meta	1.88	114	P	Pn	00 59 27.0	+0.5
IMMV	Iera Moni Meta	1.88	114	P	Pn	00 59 26.4	-0.1
THAL	Thalero	1.89	19	P	Pn	00 59 27.8	+1.1
THAL	Thalero	1.89	19	P	Pn	00 59 28.0	+1.3
THAL	Thalero	1.89	19	P	Pn	00 59 27.9	+1.3
LTK	Loutraki	1.98	26	P	Pn	00 59 28.7	+0.9
LTK	Loutraki	1.98	26	P	Pn	00 59 28.7	+0.9
VAM	Vamos	2.07	113	P	Pn	00 59 28.7	-0.4
MHLO	Agia Marina, M	2.08	77	P	Pn	00 59 30.3	+1.0
MHLO	Agia Marina, M	2.08	77	P	Pn	00 59 30.3	+1.0
KALE	Kalithea	2.15	6	P	Pn	00 59 31.9	+1.7
KALE	Kalithea	2.15	6	P	Pn	00 59 31.9	+1.7
KALE	Kalithea	2.15	6	P	Pn	00 59 32.1	+1.9
SERG	Sergoula	2.17	4	P	Pn	00 59 32.7	+2.3
SERG	Sergoula	2.17	4	P	Pn	00 59 32.7	+2.3
VLS	Valsamata	2.18	332	P	Pn	00 59 32.0	+1.4
VLS	Valsamata	2.18	332	P	Pn	00 59 31.2	+0.6
DSF	Desfina	2.22	13	P	Pn	00 59 31.8	+0.6
DSF	Desfina	2.22	13	P	Pn	00 59 31.8	+0.6
DSF	Desfina	2.22	13	P	Pn	00 59 30.9	-0.3
PVO	Paravola	2.38	353	P	Pb	00 59 37.0	-1.9
PVO	Paravola	2.38	353	P	Pb	00 59 37.0	-1.9
PTL	Penteli	2.40	41	P	Pn	00 59 33.7	0.0
PTL	Penteli	2.40	41	P	Pn	00 59 33.7	0.0
PDO	Prodromos	2.41	347	P	Pn	00 59 36.2	+2.4
PDO				S	Sb	01 00 06.8	-1.9
PDO	Prodromos	2.41	347	P	Pn	00 59 36.2	+2.4
PDO				S	Sb	01 00 06.8	-1.9
PDO	Prodromos	2.41	347	P	Pb	00 59 38.1	-1.3
LKR	Lokris	2.56	20	P	Pn	00 59 36.2	+0.4
LKR	Lokris	2.56	20	P	Pn	00 59 36.2	+0.4
LKR	Lokris	2.56	20	P	Pn	00 59 35.2	-0.6
SIVA	Sivas	2.69	116	P	Pn	00 59 39.9	+2.3
SIVA	Sivas	2.69	116	P	Pn	00 59 39.9	+2.3
LKD2	Lefkada island	2.71	340	P	Pn	00 59 40.4	+2.4
LKD2	Lefkada island	2.71	340	P	Pn	00 59 40.4	+2.4
DSL	Palaion Diasel	2.95	348	P	Pn	00 59 43.5	+2.3
DSL	Palaion Diasel	2.95	348	P	Pn	00 59 43.5	+2.3
IGT	Igoumenitsa	3.50	340	P	Pn	00 59 49.7	+1.0
IGT	Igoumenitsa	3.50	340	P	Pn	00 59 49.7	+1.0
JAN	Janina	3.50	347	P	Pn	00 59 51.0	+2.3
JAN	Janina	3.50	347	P	Pn	00 59 51.0	+2.3
SGD	Sagiada	3.60	339	P	Pn	00 59 51.2	+1.1
SGD	Sagiada	3.60	339	P	Pn	00 59 51.2	+1.1
KPRO	Kipourio	3.72	354	P	Pn	00 59 54.7	+2.8
KPRO	Kipourio	3.72	354	P	Pn	00 59 54.7	+2.8
KEK	Kerkira	3.83	335	P	Pn	00 59 54.1	+0.9
KEK	Kerkira	3.83	335	P	Pn	00 59 54.1	+0.9
FNA	Florina	4.55	355	P	Pn	01 00 04.3	+1.1
FNA	Florina	4.55	355	P	Pn	01 00 04.3	+1.1
TAR1	Taranto	5.59	321	*e*Pn	Pn	01 00 17.5	+0.1
BARS	Barje	6.56	360	*e*Pn	Pn	01 00 31.1	+0.3
STON	Ston	7.36	335	*e*Pn	Pn	01 00 39.8	-1.8
STON				Sn	Sn	01 01 57.0	-7.0
IVAS	Ivanjica	7.44	350	*e*Pn	Pn	01 00 41.8	-1.1
BBLS	Lazići	7.84	347	*e*Pn	Pn	01 00 49.9	+1.5
TEKS	Tekeris	8.48	349	*e*Pn	Pn	01 00 55.8	-1.4
UDBI	Udbina	9.49	333	*e*Pn	Pn	01 01 11.1	0.0
UDBI				Sn	Sn	01 02 49.1	-7.4
UDBI	Udbina	9.49	333	*e*Pn	Pn	01 01 11.0	0.0
NVLJ	Novalja	9.87	329	*e*Pn	Pn	01 01 15.9	-0.2
NVLJ				Sn	Sn	01 02 57.8	-7.8
NVLJ	Novalja	9.87	329	*e*Pn	Pn	01 01 15.9	-0.2
BRTR	Keskin Array B	9.91	66	P	Pn	01 01 32.9	+16
	comp=E,0.1nm,0.3s,baz=256,slow=12,SNR=3.8						
KBZ	Khabaz	17.73	59	P	P	01 03 02.5	+1.1
	comp=E,0.1nm,0.3s,baz=259,slow=8.3,SNR=4.0						
ESDC	Sonseca Array	20.63	287	P	P	01 03 34.0	+0.7
	comp=E,0.1nm,0.3s,baz=79,slow=9.4,SNR=2.7						
FINES	FINESS Array B	25.36	5	P	P	01 04 19.6	-0.7
	comp=E,0.9nm,0.7s,baz=162,slow=23,SNR=3.4						
TORD	Torodi Ar. Bea	29.29	223	P	P	01 04 56.2	+0.1
	comp=E,0.2nm,0.5s,baz=39,slow=9.2,SNR=3.1						
ARCES	ARCESS Array B	33.40	2	P	P	01 05 30.9	-0.8
	comp=E,2.7nm,0.9s,baz=193,slow=9.9,SNR=5.4						
MKAR	Makanchi Array	45.42	57	P	P	01 07 10.7	-1.5
	comp=E,0.3nm,0.4s,baz=270,slow=7.4,SNR=9.2						
ZALV	Zalesovo Beam	46.20	47	P	P	01 07 17.5	-0.6
	comp=E,0.3nm,0.3s,baz=290,slow=9.1,SNR=2.4						

*NIED **01** 01:01:00, 36°30N×141°00E, h35km, Mw4.0 Best double couple: M0 1.04000×10^15 NP1:φs222.00000°, δ13.00000°, λ111.00000°. NP2:φs20.00000°, δ78.00000°, λ85.00000°.*

*IDC **01** 01:01:01.4±6.0, 35°51N×141°10E, h65km±37km, mb3.4/9, mb1 3.6/10, mb1mx3.4/43, mbtmp3.7/10, ML3.8/1, MS3.2/7, Ms1 3.2/7, ms1mx2.9/32, Error ellipse: s-maj=85.7km s-min=25.1km az=172.0*

*ISCJB **01** 01:01:02.3±0.8, 36°33N±0°04×141°09E±0°08, h45km±6km, mb3.8/16, MS3.4/3, Error ellipse: s-maj=10.8km s-min=7.0km az=3.3*

*NEIC **01** 01:01:02.3±2.9, 36°02N×141°17E, h47km±17km, mb4.1/5, Error ellipse: s-maj=58.9km s-min=18.0km az=172.0*

*JMA **01** 01:01:02.7±0.1, 36°33N×141°03E, h47km±1km, M3.7*

JMA Felt I J1.

ISC 01 01:01:01.8±1.5**, 36°36N**±0°04×**141°11E**±0°07**, h28**km±10km**, n36, σ1s12**/31**, mb3.9**/16**, MS3.2**/3**, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHO	Hitachi	0.50	300	P	Pn	01 01 13.1	-0.1
JHO				S	Sn	01 01 20.1	-0.9
CHOJ	Chosi	0.68	197	P	Pn	01 01 15.6	-0.1
CHOJ				S	Sb	01 01 24.4	+0.1
JYT	Yasato	0.75	260	P	Pb	01 01 16.2	-0.1
JYT				*e*S	Sb	01 01 25.8	-0.4
ONAJ	Iwakimizuishiy	0.78	341	P	Pn	01 01 17.1	0.0
ONAJ				S	Sb	01 01 27.1	-0.2
JFT	Otama	1.31	332	P	Pb	01 01 25.8	-0.1
JFT				S	Sb	01 01 41.8	-0.5
JAG	Ashikaga	1.34	273	P	Pn	01 01 24.6	-0.1
MJAR	Matsushiro Arr	2.35	275	P	Pn	01 01 39.9	+1.4
	20nm,0.3s,baz=106,slow=8.7,SNR=92						
MJAR				LR	LR	01 02 42.3	
	comp=Z,254nm,20.4s,baz=115,slow=40						
MAJO	Matsushiro	2.35	275	*e*Pn	Pn	01 01 39.6	+1.0
MAT	Matsushiro	2.35	275	P	Pn	01 01 39.7	+1.1
MAT				S	Sn	01 02 06.5	0.0
JNU	Nakatsue	9.02	252	LR	LR	01 06 56.0	
	comp=Z,115nm,19.2s,baz=117,slow=40						
USRK	Ussuriysk Ar.	10.48	321	P	Pn	01 03 34.5	+4.4
	0.1nm,0.3s,baz=138,slow=46,SNR=2.8						
KSRS	Korea Array	10.62	280	LR	LR	01 07 16.5	
	comp=Z,88nm,20.9s,baz=84,slow=35						
KLR	Kul'dur	14.57	335	LR	LR	01 09 47.8	
	comp=Z,69nm,19.4s,baz=296,slow=34						
YAK	Yakutsk	26.68	348	LR	LR	01 17 52.6	
	comp=Z,55nm,19.5s,baz=92,slow=37						
SEY	Seymchan	27.50	11	P	P	01 06 48.6	+3.1
	0.7nm,0.6s,baz=200,slow=9.0,SNR=4.5						
SONM	Songino Array	27.97	305	P	P	01 06 50.3	+0.2

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
	1.0nm,0.7s,baz=98,slow=8.4,SNR=8.1						
SONM				LR	LR	01 17 30.5	
	comp=Z,52nm,18.3s,baz=67,slow=35						
H11N2	**WAKE ISLAND Hy**	**28.02**	**119**	T	T	01 36 40.5	
	baz=313,slow=75,SNR=8.3						
H11N1	**WAKE ISLAND Hy**	**28.03**	**119**	T	T	01 36 53.3	
	baz=313,slow=75,SNR=9.4						
H11N3	**WAKE ISLAND Hy**	**28.04**	**119**	T	T	01 36 54.5	
	baz=313,slow=75,SNR=9.1						
H11S1	**WAKE ISLAND Hy**	**28.71**	**121**	T	T	01 37 18.4	
	baz=314,slow=76,SNR=50						
H11S3	**WAKE ISLAND Hy**	**28.71**	**121**	T	T	01 37 11.2	
	baz=314,slow=76,SNR=39						
H11S2	**WAKE ISLAND Hy**	**28.72**	**121**	T	T	01 37 24.3	
	baz=314,slow=76,SNR=18						
ZALV	**Zalesovo Beam**	**42.19**	**313**	P	**P**	**01 08 52.2**	**+0.2**
	1.8nm,0.6s,baz=89,slow=6.6,SNR=12						
MKAR	**Makanchi Array**	**44.27**	**303**	P	**P**	**01 09 08.9**	**-0.1**
	0.7nm,0.7s,baz=87,slow=9.7,SNR=8.9						
KURK	**Kurchatov**	**46.16**	**309**	*e*P	**P**	**01 09 23.2**	**-0.6**
	12nm,0.8s						
TKM2	**Tokmak 2**	**49.74**	**299**	*e*P	**P**	**01 09 52.5**	**+0.7**
	2.2nm,0.9s						
ILAR	**Eielson Array**	**50.20**	**32**	P	**P**	**01 09 56.0**	**+1.2**
	0.8nm,0.8s,baz=263,slow=5.8,SNR=9.0						
AAK	**Ala-Archa**	**50.60**	**299**	*e*P	**P**	**01 09 58.0**	**-0.3**
	0.7nm,0.5s						
ARU	**Arti**	**56.71**	**319**	*e*P	**P**	**01 10 42.4**	**-0.3**
	3.0nm,1.0s						
RES	**Resolute Bay**	**63.31**	**14**	P	**P**	**01 11 27.3**	**-0.4**
	0.6nm,0.6s,baz=329,slow=9.2,SNR=3.6						
YKA	**Yellowknife Ar**	**64.52**	**30**	P	**P**	**01 11 36.7**	**+1.0**
	0.1nm,0.4s,baz=306,slow=6.6,SNR=4.8						
AKASG	**Malin Array Be**	**74.68**	**322**	P	**P**	**01 12 36.7**	**-2.0**
	0.4nm,0.4s,baz=52,slow=7.2,SNR=2.7						
BRTR	**Keskin Array B**	**79.12**	**311**	P	**P**	**01 13 05.4**	**+1.3**
	0.2nm,0.5s,baz=71,slow=30,SNR=3.8						
RAYN	**Ar Rayn**	**80.69**	**292**	*e*P	**P**	**01 13 12.2**	**-0.4**
	1.4nm,0.9s						
PSZ	**Piszkesteto**	**81.06**	**324**	*e*P	**P**	**01 13 14.3**	**0.0**
	3.2nm,0.9s						
TXAR	**Lajitas Array**	**90.73**	**52**	P	**P**	**01 13 59.5**	**-3.0**
	0.1nm,0.3s,baz=195,slow=9.1,SNR=3.7						
TXAR				LR	LR	01 51 17.3	
	comp=Z,44nm,20.7s,baz=0.0,slow=33						

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*ISCJB **01** 01:01:27.1±0.7, 36°.04N±0°.07×143°.6E±0°.2, h10km, mb4.0/13, MS3.4/1, Error ellipse: s-maj=20.3km s-min=10.2km az=171.7*
*IDC **01** 01:01:27.7±0.8, 35°.98N×143°.51E, h0km, mb3.9/10, mb1 4.1/11, mb1mx3.8/41, mbtmp3.9/11, ML2.5/1, MS3.4/1, Ms1 3.4/1, ms1mx2.3/43, Error ellipse: s-maj=26.2km s-min=19.9km az=79.0*
*NEIC **01** 01:01:32.8±0.6, 36°.08N×143°.50E, h35km, mb4.3/1, Error ellipse: s-maj=22.3km s-min=11.3km az=90.0*
ISC 01 01:01:29.3±0.7**, 36°.13N**±0°.09×**143°.7E**±0°.1**, h10km, n19, σ1s.68**/18**, mb4.0**/13**, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
ERM	**Erimo**	**5.89**	**356**	*e*Pn	**Pn**	**01 02 55.5**	**-1.1**
CBIJ	**Chichi jima**	**9.10**	**189**	*e*Pn	**Pn**	**01 03 40.1**	**-0.5**
USRK	**Ussuriysk Ar.**	**12.04**	**316**	Pn	**Pn**	**01 04 22.0**	**+1.1**
	0.3nm,0.3s,baz=127,slow=12,SNR=6.9						
KLR	**Kul'dur**	**15.74**	**330**	Pn	**Pn**	**01 05 07.3**	**-3.7**
	0.1nm,0.3s,baz=115,slow=12,SNR=3.6						
SONM	**Songino Array**	**29.81**	**305**	P	**P**	**01 07 35.4**	**-1.1**
	0.9nm,0.6s,baz=98,slow=8.7,SNR=6.8						
TLY	**Talaya**	**32.31**	**311**	P	**P**	**01 08 01.3**	**+3.0**
	1.1nm,0.3s,baz=208,slow=2.0,SNR=3.4						
NRIK	**Noril'sk**	**44.86**	**335**	LR	LR	01 28 59.6	
	comp=Z,38nm,18.4s,baz=110,slow=37						
MKAR	**Makanchi Array**	**46.16**	**303**	P	**P**	**01 09 54.4**	**+0.5**
	1.1nm,0.7s,baz=91,slow=8.3,SNR=5.7						
KURK	**Kurchatov**	**47.93**	**309**	*e*P	**P**	**01 10 06.8**	**-0.9**
	7.2nm,0.8s						
ILAR	**Eielson Array**	**49.28**	**32**	P	**P**	**01 10 19.9**	**+2.1**
	0.5nm,0.8s,baz=263,slow=5.6,SNR=5.0						
WRAB	**Tennant Creek**	**56.45**	**191**	*e*P	**P**	**01 11 10.3**	**-1.0**
	1.2nm,0.4s						
WRA	**Warramunga Arr**	**56.46**	**191**	P	**P**	**01 11 09.3**	**-2.1**
	1.9nm,0.6s,baz=13,slow=7.3,SNR=7.3						
ASAR	**Alice Springs**	**60.19**	**190**	P	**P**	**01 11 36.7**	**-0.6**
	1.0nm,0.7s,baz=14,slow=11,SNR=12						
RES	**Resolute Bay**	**63.01**	**15**	P	**P**	**01 11 55.3**	**-0.5**
	0.5nm,0.7s,baz=333,slow=8.3,SNR=4.9						
GEYT	**Alibeck**	**65.88**	**300**	P	**P**	**01 12 14.9**	**-0.4**
	0.9nm,0.6s,baz=52,slow=9.6,SNR=3.7						
FINES	**FINESS Array B**	**70.46**	**333**	P	**P**	**01 12 43.9**	**+0.4**
	0.8nm,0.6s,baz=173,slow=33,SNR=3.4						
KBZ	**Khabaz**	**72.88**	**312**	P	**P**	**01 12 58.6**	**+0.3**
	1.6nm,1.0s,baz=70,slow=4.8,SNR=4.3						
TXAR	**Lajitas Array**	**89.19**	**54**	P	**P**	**01 14 27.7**	**+2.0**
	0.2nm,0.6s,baz=297,slow=2.8,SNR=2.3						
LPAZ	**La Paz**	**145.51**	**63**	PKPbc	**PKPab**	**01 21 09.2**	**0.0**
	0.8nm,0.7s,baz=12,slow=10,SNR=3.6						

IDC 01 01:04:01.3±3.8**, 13°.88N×90°.73W, h0km, mb3.7**/4**, mb1 4.1**/6**, mb1mx3.7**/33**, mbtmp3.8**/6**, ML3.8**/2**, Error ellipse: s-maj=154.6km s-min=31.1km az=40.0, Near coast of Guatemala**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
ROSC	**El Rosal**	**18.50**	**117**	P	Pn	01 08 20.1	+0.4
	7.0nm,0.3s,baz=29,slow=23,SNR=8.1						
TXAR	**Lajitas Array**	**19.50**	**324**	P	Pn	01 08 31.9	+0.5
	0.1nm,0.3s,baz=159,slow=12,SNR=4.6						
NVAR	**Mina Array Bea**	**34.55**	**320**	P	P	01 10 52.1	+0.2
	0.4nm,0.6s,baz=127,slow=10,SNR=5.1						
YKA	**Yellowknife Ar**	**51.44**	**346**	P	P	01 13 07.9	0.0
	0.2nm,0.5s,baz=146,slow=8.0,SNR=3.9						
INK	**Inuvik**	**60.91**	**343**	P	P	01 14 15.5	-0.1
	2.0nm,0.3s,baz=216,slow=9.6,SNR=5.3						
ILAR	**Eielson Array**	**63.44**	**337**	P	P	01 14 31.6	-1.0
	0.4nm,0.8s,baz=187,slow=3.6,SNR=5.7						

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*ISCJB **01** 01:07:08.0±0.7, 6°.84N±0°.04×73°.07W±0°.05, h156km±6km, Error ellipse: s-maj=9.6km s-min=4.9km az=35.2*
*FUNV **01** 01:07:09.7, 6°.84N×73°.05W, h168km, MW2.6*
*RSNC **01** 01:07:10.3±0.9, 6°.79N×73°.10W, h145km±5km, ML2.5*
ISC 01 01:07:07.9±1.4**, 6°.83N**±0°.05×**73°.07W**±0°.06**, h160km**±8km**, n18, σ1s.24**/32**, 2C, Northern Colombia**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
BTLC	**Betulia, Santa**	**0.21**	**294**	*i* P	**Pn**	**01 07 29.8**	**+0.1**
BTLC				*e*S	**Sn**	**01 07 45.4**	**-0.9**
BARC	**Barichara**	**0.26**	**205**	*i* P	**Pn**	**01 07 29.6**	**-0.2**
BARC				*e*S	**Sn**	**01 07 44.5**	**-2.1**
BARC				*i*		01 07 45.9	
	comp=Z,48nm,0.5s						
GIRC	**Giron, Santand**	**0.28**	**334**	*e*P	**Pn**	**01 07 29.7**	**0.0**
GIRC				*e*S	**Sn**	**01 07 44.1**	**-2.4**
PAMC	**Pamplona, Colo**	**0.63**	**36**	*e*P	**Pn**	**01 07 32.5**	**+0.9**
PAMC				*e*S	**Sn**	**01 07 49.9**	**+0.1**
BRRC	**Barranca, Sant**	**0.69**	**293**	*e*P	**Pn**	**01 07 31.5**	**+0.1**
BRRC				*e*S	**Sn**	**01 07 49.0**	**-0.4**
BRRC				*i*		01 07 51.2	
	comp=Z,73nm,0.2s						
GRMC	**Gramalote, San**	**0.92**	**17**	*i* P	**Pn**	**01 07 35.4**	**+2.3**
GRMC				*e*S	**Sn**	**01 07 55.2**	**+2.6**
GRMC				*i*		01 07 56.3	
	comp=Z,43nm,0.4s						
CAPV	**Capacho**	**1.27**	**36**	⇑*i*P	**Pn**	**01 07 37.5**	**+1.2**
CAPV				*e*S	**Sn**	**01 07 58.9**	**+0.9**
OCAC	**Ocana**	**1.42**	**350**	*e*P	**Pn**	**01 07 38.3**	**+0.7**
OCAC				*i*		01 08 04.9	
	comp=Z,41nm,0.5s						
YOPC	**Yopal, Colombi**	**1.60**	**156**	*e*P	**Pn**	**01 07 39.9**	**+0.5**
YOPC				*e*S	**Sn**	**01 08 04.2**	**+0.5**
CHIC	**Chingaza**	**2.28**	**197**	⇑*i*P	**Pn**	**01 07 47.8**	**+0.5**
CHIC				*e*S	**Sn**	**01 08 17.0**	**-0.8**
CHIC				*i*		01 08 20.6	
	comp=Z,12nm,0.7s						
HELC	**Santa Helena**	**2.52**	**256**	*e*P	**Pn**	**01 07 51.4**	**+1.2**
HELC				*e*S	**Sn**	**01 08 23.1**	**+0.3**
VIGV	**El Vigia**	**2.62**	**40**	*e*P	**Pn**	**01 07 52.1**	**+1.2**
VIGV				*e*S	**Sn**	**01 08 22.2**	**-2.1**
SOCV	**Socops**	**2.63**	**57**	*e*P	**Pn**	**01 07 52.0**	**+0.9**
SOCV				*e*S	**Sn**	**01 08 23.0**	**-1.5**
TOLC	**Tolima**	**3.16**	**225**	*e*P	**Pn**	**01 07 58.3**	**+0.3**
PRAC	**Prado**	**3.58**	**210**	*e*P	**Pn**	**01 08 03.8**	**+0.6**
PRAC				*e*S	**Sn**	**01 08 45.6**	**-0.5**
PRAC				*i*		01 08 48.4	
	comp=Z,25nm,0.3s						
VIRV	**Villa del Rosa**	**3.71**	**10**	*e*P	**Pn**	**01 08 04.2**	**-0.4**
VIRV				*e*S	**Sn**	**01 08 46.9**	**-2.0**
CURV	**Curarigua**	**4.41**	**44**	*e*P	**Pn**	**01 08 14.2**	**+0.4**
BAUV	**El Baul**	**5.41**	**67**	*e*P	**Pn**	**01 08 27.1**	**+0.3**

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*ISCJB **01** 01:11:22.2±0.5, 16°.7S±0°.1×174°.3W±0°.1, h111km, mb4.1/15, Error ellipse: s-maj=20.7km s-min=10.2km az=42.1*
*IDC **01** 01:11:22.5±2.8, 16°.71S×174°.21W, h99km±25km, mb3.8/10, mb1 4.0/11, mb1mx3.8/37, mbtmp4.1/11, MS3.8/3, Ms1 3.8/3, ms1mx3.1/31, Error ellipse: s-maj=28.4km s-min=13.9km az=131.0*
*NEIC **01** 01:11:24.9±5.1, 16°.75S×174°.22W, h123km±45km, mb4.3/4, Error ellipse: s-maj=14.6km s-min=11.6km az=125.0*
ISC 01 01:11:23.4±0.6**, 16°.7S**±0°.1×**174°.1W**±0°.1**, h111km, n45, σ0s.83**/41**, mb4.2**/15**, 10C-2D, Tonga Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
AFI	**Afiamalu**	**3.56**	**40**	P	**Pn**	**01 12 17.2**	**+0.3**
	57nm,0.3s,baz=179,slow=1.8,SNR=26						
AFI				S	**Sn**	**01 12 55.6**	**-2.7**
	428nm,0.3s,baz=51,slow=20,SNR=46						
MSVF	**Nonsavu**	**7.57**	**261**	*e*Pn	Pn	01 13 18.7	+7.5
	31nm,0.9s						
URZ	**Urewera**	**22.84**	**198**	P	**P**	**01 16 16.5**	**-0.6**
	2.9nm,0.4s,baz=298,slow=3.2,SNR=5.3						
HNR	**Honiara**	**26.26**	**283**	LR	LR	01 26 11.6	
	comp=Z,91nm,19.6s,baz=345,slow=34						
H11S2	**WAKE ISLAND Hy**	**39.72**	**331**	T	T	02 00 58.6	
	SNR=26						
H11S3	**WAKE ISLAND Hy**	**39.73**	**331**	T	T	02 01 34.2	
	SNR=21						
H11S1	**WAKE ISLAND Hy**	**39.74**	**331**	T	T	02 00 20.8	
	SNR=19						
STKA	**Stephens Creek**	**42.82**	**241**	P	**P**	**01 19 10.1**	**-0.4**
	5.3nm,0.6s,baz=93,slow=8.9,SNR=10						
WRAB	**Tennant Creek**	**48.89**	**258**	*e*P	**P**	**01 19 57.2**	**-1.2**
	1.8nm,0.3s						
WRA	**Warramunga Arr**	**48.90**	**258**	P	**P**	**01 19 57.0**	**-1.5**
	1.0nm,0.3s,baz=96,slow=8.3,SNR=8.1						
WRA				PcP	**PcP**	**01 21 20.9**	**-0.4**
	0.5nm,0.3s,baz=88,slow=3.4,SNR=2.8						
ASAR	**Alice Springs**	**49.08**	**253**	P	**P**	**01 19 58.9**	**-1.0**
	23nm,0.5s,baz=88,slow=8.4,SNR=312						
ASAR				PcP	**PcP**	**01 21 21.9**	**0.0**
	1.0nm,0.7s,baz=98,slow=5.2,SNR=3.8						
SOEI	**Soe**	**60.20**	**268**	*e*P	**P**	**01 21 20.5**	**+0.2**
VNDA	**Vanda**	**62.04**	**186**	P	**P**	**01 21 32.4**	**+0.8**
	0.8nm,0.8s,baz=9.3,slow=6.8,SNR=5.4						
QSPA	**South Pole Qui**	**73.37**	**180**	*e*P	**P**	**01 22 43.0**	**-0.1**
	26nm,1.2s						
PETK	**Petropavlovsk-**	**73.64**	**343**	P	**P**	**01 22 45.9**	**+1.3**
	3.8nm,0.7s,baz=138,slow=9.2,SNR=4.6						
LPIG	**La Paz**	**74.28**	**58**	LR	LR	01 48 39.4	
	comp=Z,136nm,21.8s,baz=131,slow=30						
NVAR	**Mina Array Bea**	**75.73**	**42**	P	**P**	**01 22 57.9**	**+0.6**
	1.3nm,0.8s,baz=224,slow=9.6,SNR=9.9						
TXAR	**Lajitas Array**	**81.89**	**56**	P	**P**	**01 23 31.4**	**+0.5**
	0.2nm,0.6s,baz=191,slow=5.9,SNR=4.2						
MNAI	**Manna**	**82.00**	**268**	*e*P	**P**	**01 23 31.5**	**-0.4**
MCK	**McKinley**	**82.50**	**11**	*e*P	**P**	**01 23 33.5**	**+0.2**
	2.1nm,0.7s						
SEY	**Seymchan**	**83.57**	**345**	P	**P**	**01 23 39.2**	**+0.4**
	3.4nm,0.7s,baz=130,slow=6.5,SNR=14						
PDAR	**Pinedale Array**	**83.67**	**42**	P	**P**	**01 23 40.9**	**+0.8**
	0.7nm,0.9s,baz=223,slow=3.5,SNR=3.9						
COLA	**College**	**83.74**	**11**	*e*P	**P**	**01 23 40.3**	**+0.8**
	3.0nm,0.6s						
ILAR	**Eielson Array**	**83.83**	**11**	P	**P**	**01 23 40.4**	**+0.3**
	0.3nm,0.3s,baz=212,slow=5.3,SNR=15						
PLCA	**Paso Flores**	**89.16**	**132**	LR	LR	02 00 01.7	
	comp=Z,44nm,18.9s,baz=8.5,slow=33						
ARCES	**ARCESS Array B**	**125.77**	**352**	PKP	**PKPdf**	**01 30 11.8**	**+0.4**
	2.4nm,0.9s,baz=336,slow=5.7,SNR=5.5						
KMBO	**Kilima Mbogo**	**144.36**	**243**	PKP	**PKPdf**	**01 30 47.4**	**-0.5**
	3.4nm,0.8s,baz=61,slow=7.7,SNR=12						
CLL	**Collm**	**144.99**	**352**	*i* PKPbc	**PKPab**	**01 30 47.1**	**+0.1**
	comp=Z,5.0nm,0.8s						
BRG	**Berggiesshubel**	**145.28**	**351**	*e*(P)	**PKPab**	**01 30 48.6**	**+0.5**
	comp=Z,4.0nm,1.1s						
BRG				*e*		01 30 54.8	
	comp=Z,1.8nm,0.7s						
BURAR	**Bucovina Array**	**145.28**	**337**	⇑*i*P	**PKPab**	**01 30 50.0**	**+1.6**
TESR	**Tescani**	**145.61**	**334**	⇓*i*P	**PKPbc**	**01 30 49.0**	**-0.2**
TLCR		**145.68**	**331**	⇑*i*P	**PKPab**	**01 30 50.8**	**+1.0**
CFR	**Carcaliu**	**146.00**	**331**	⇑*i*P	**PKPab**	**01 30 51.0**	**0.0**
VRI	**Vrincioaia**	**146.09**	**334**	⇑*i*P	**PKPab**	**01 30 51.2**	**-0.2**
PLOR	**Plostina**	**146.14**	**334**	⇑*i*P	**PKPab**	**01 30 51.5**	**-0.1**
BRTR	**Keskin Array B**	**146.69**	**319**	PKPbc	**PKPbc**	**01 30 53.4**	**+0.6**
	comp=Z,3.0nm,0.8s,baz=139,slow=2.5,SNR=22						
MLR	**Muntele Rosu**	**146.72**	**334**	⇑*i*P	**PKPab**	**01 30 53.9**	**-0.1**
DRGR		**146.89**	**339**	⇑*i*P	**PKPab**	**01 30 54.2**	**-0.3**
KHC	**Kasperske Hory**	**147.03**	**351**	*e*PKP	**PKPdf**	**01 30 50.0**	**-1.1**
VOIR		**147.14**	**335**	⇓*i*P	**PKPab**	**01 30 55.2**	**-0.4**
GERES	**GERESS Array B**	**147.29**	**350**	PKPbc	**PKPbc**	**01 30 54.9**	**+0.8**
	comp=Z,0.5nm,0.6s,baz=234,slow=4.5,SNR=2.9						
ARR	**Arges**	**147.37**	**335**	⇑*i*P	**PKPab**	**01 30 56.5**	**0.0**
GZR	**Gura Zlata**	**148.06**	**337**	⇑*i*P	**PKPbc**	**01 30 56.6**	**+0.4**
BZS	**Buzias**	**148.29**	**339**	⇑*i*P	**PKPbc**	**01 30 57.0**	**+0.3**
TORD	**Torodi Ar. Bea**	**174.64**	**130**	PKP	**PKPdf**	**01 31 19.7**	**-1.3**
	comp=Z,0.6nm,0.8s,baz=259,slow=1.5,SNR=3.9						

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*CSEM **01** 01:12:05.6±0.3, 39°.77N×41°.68E, h15km, MD2.7, Error ellipse: s-maj=7.8km s-min=6.1km az=3.0*
*ISK **01** 01:12:05.7, 39°.83N×41°.77E, h14km, MD2.7*
*ISCJB **01** 01:12:06.2±0.5, 39°.79N±0°.03×41°.76E±0°.04, h13km±4km, Error ellipse: s-maj=5.0km s-min=4.4km az=37.1*
*DDA **01** 01:12:06.7, 39°.90N×41°.68E, h7km, Md2.7*
ISC 01 01:12:05.9±1.1**, 39°.82N**±0°.03×**41°.71E**±0°.02**, h16km**±9km**, n21, σ0s.94**/36**, Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
HOMI	**Horasan**	**0.27**	**33**	*i* P	**Pg**	**01 12 11.5**	**-0.5**
HOMI				*i* S	**Sb**	**01 12 17.0**	**+0.1**
ERZM	**Erzurum**	**0.28**	**288**	*i* P	**Pb**	**01 12 12.1**	**-0.6**
ERZM				*i* S	**Sb**	**01 12 18.7**	**+1.4**
ERZM	**Erzurum**	**0.28**	**288**	P	**Pb**	**01 12 12.1**	**-0.6**
ERZM				S	**Sb**	**01 12 18.7**	**+1.4**
EZM	**Erzurum**	**0.28**	**287**	*e*PG	**Pb**	**01 12 12.3**	**-0.5**
EZM				*e*SG	**Sb**	**01 12 18.2**	**+0.8**
EATA	**Eleskirt**	**0.60**	**86**	*i* P	**Pg**	**01 12 18.0**	**+0.1**
EATA				*i* S	**Sn**	**01 12 28.9**	**-0.7**
EATA	**Eleskirt**	**0.60**	**86**	P	**Pg**	**01 12 18.0**	**+0.1**
EATA				S	**Sn**	**01 12 28.9**	**-0.7**
VRTB	**Varto-Mus**	**0.69**	**197**	*e*PG	**Pb**	**01 12 20.0**	**+0.4**
VRTB				*e*SG	**Sb**	**01 12 30.3**	**+1.4**
VRTB	**Varto-Mus**	**0.69**	**197**	*e*Pg	**Pb**	**01 12 20.0**	**+0.4**
VRTB				*e*Sg	**Sb**	**01 12 30.3**	**+1.4**
AGRB	**Hanur-Agry**	**1.02**	**104**	*e*PG	**Pb**	**01 12 25.0**	**-0.3**
AGRB				*e*SG	**Sb**	**01 12 38.9**	**+0.5**
AGRB	**Hanur-Agry**	**1.02**	**104**	*e*Pg	**Pb**	**01 12 25.0**	**-0.3**
AGRB				*e*Sg	**Sb**	**01 12 38.9**	**+0.5**
DDEM	**Demirkent**	**1.07**	**2**	*i* P	**Pn**	**01 12 26.4**	**+0.1**
DDEM	**Demirkent**	**1.07**	**2**	P	**Pn**	**01 12 26.4**	**+0.1**
BNGB	**Bing˜¶l**	**1.15**	**224**	*e*PN	**Pg**	**01 12 28.4**	**+0.1**
BNGB				*e*SN	**Sn**	**01 12 44.9**	**+2.0**
DBAD	**Bademkaya**	**1.20**	**359**	*i* P	**Pb**	**01 12 28.1**	**-0.2**
DBAD				*i* S	**Sg**	**01 12 45.5**	**+0.8**
DBAD	**Bademkaya**	**1.20**	**359**	P	**Pb**	**01 12 28.1**	**-0.2**
DBAD				S	**Sg**	**01 12 45.5**	**+0.8**
DAGI	**Agillar**	**1.27**	**7**	*i* P	**Pn**	**01 12 28.3**	**-0.7**
DAGI				*i* S	**Sg**	**01 12 47.4**	**+0.5**
BAYT	**Ayd˜–ntepe-Bay**	**1.33**	**296**	*e*PN	**Pg**	**01 12 31.2**	**-0.5**
BAYT	**Ayd˜–ntepe-Bay**	**1.33**	**296**	*e*Pn	**Pg**	**01 12 31.2**	**-0.5**
BINT	**Bingol**	**1.34**	**226**	*e*Pn	**Pn**	**01 12 28.4**	**-1.6**
BINT				*e*Sn	**Sb**	**01 12 44.9**	**-2.7**
DBOC	**Borcka**	**1.52**	**359**	*i* P	**Pb**	**01 12 34.1**	**+0.4**
DBOC	**Borcka**	**1.52**	**359**	P	**Pb**	**01 12 34.2**	**+0.4**

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*IDC **01** 01:12:39.7±5.5, 33°.05N×140°.07E, h0km, mb3.5/4, mb1 3.5/5, mb1mx3.3/42, mbtmp3.5/5, ML3.5/1, Error ellipse: s-maj=97.7km s-min=48.4km az=152.0*
*JMA **01** 01:12:52.8±0.2, 36°.63N×141°.73E, h54km±4km, M3.1*
ISC 01 01:12:50.5±1.9**, 36°.66N**±0°.09×**141°.8E**±0°.1**, h10km, n12, σ1s.29**/16**, mb3.3**/4**, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.95**	**298**	P	**Pg**	**01 13 08.8**	**+0.1**
ONAJ				S	**Sg**	**01 13 21.4**	**+0.3**
JHO	**Hitachi**	**1.02**	**268**	P	**Pg**	**01 13 09.8**	**-0.4**
JHO				*e*S	**Sg**	**01 13 21.8**	**-1.7**
JYT	**Yasato**	**1.39**	**253**	P	**Pn**	**01 13 15.2**	**-0.8**
JMM	**Marumori**	**1.47**	**326**	P	**Pn**	**01 13 16.8**	**-0.2**
JFT	**Otama**	**1.48**	**306**	P	**Pn**	**01 13 17.9**	**+0.7**
JFT				S	**Sn**	**01 13 35.7**	**-0.9**
JFY	**Yanaizu**	**1.86**	**294**	P	**Pn**	**01 13 23.3**	**+0.8**
JFY				*e*S	**Sn**	**01 13 45.4**	**-0.8**
MJAR	**Matsushiro Arr**	**2.92**	**269**	Pn	**Pn**	**01 13 39.3**	**+2.3**
	3.3nm,0.3s,baz=99,slow=9.4,SNR=66						
MAT	**Matsushiro**	**2.92**	**269**	P	**Pn**	**01 13 38.6**	**+1.5**
MAT				S	**Sn**	**01 14 13.8**	**+1.5**
SEY	**Seymchan**	**27.10**	**11**	P	P	01 18 58.0	+25
	0.8nm,0.3s,baz=214,slow=4.7,SNR=5.6						
SONM	**Songino Array**	**28.28**	**304**	P	**P**	**01 18 44.9**	**+0.8**
	0.4nm,0.7s,baz=106,slow=7.3,SNR=2.5						
ZALV	**Zalesovo Beam**	**42.42**	**313**	P	**P**	**01 20 45.6**	**+0.6**
	0.3nm,0.4s,baz=112,slow=3.4,SNR=2.5						
MKAR	**Makanchi Array**	**44.61**	**302**	P	**P**	**01 21 00.7**	**-2.2**
	0.2nm,0.7s,baz=102,slow=6.3,SNR=2.9						

IDC 01 01:13:28.6±10.0**, 54°.13N×159°.91E, h0km, Error ellipse: s-maj=105.6km s-min=35.9km az=53.0, Near east coast of Kamchatka Peninsula**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
I44RU	**PETROPAVLOVSK-**	**1.67**	**233**	*i*		01 22 40.0	
	baz=50,slow=331,SNR=20						
PETK	**Petropavlovsk-**	**1.67**	**233**	Pn	Pn	01 13 59.1	0.0
	0.3nm,0.3s,baz=55,slow=18,SNR=4.1						
I53US	**FAIRBANKS INFR**	**27.75**	**46**	*i*		04 00 40.0	
	baz=272,slow=333,SNR=1.0						

IDC 01 01:13:33.6±2.3**, 8°.13S×118°.32E, h0km, mb3.7**/3**, mb1 3.9**/4**, mb1mx3.5**/40**, mbtmp3.7**/4**, ML3.9**/1**, Error ellipse: s-maj=212.3km s-min=26.0km az=53.0, Sumbawa region**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**19.46**	**129**	P	Pn	01 18 03.4	+0.1
	0.3nm,0.3s,baz=311,slow=9.1,SNR=3.4						
ASAR	**Alice Springs**	**21.49**	**138**	P	P	01 18 25.1	+1.0
	0.8nm,0.4s,baz=318,slow=8.2,SNR=14						
STKA	**Stephens Creek**	**32.05**	**141**	P	P	01 20 00.3	-2.0
	1.7nm,0.5s,baz=323,slow=12,SNR=2.9						
MKAR	**Makanchi Array**	**63.38**	**333**	P	P	01 24 05.0	+0.2
	0.4nm,0.6s,baz=137,slow=7.7,SNR=4.3						

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*NIED **01** 01:13:00, 38°.70N×144°.20E, h5km, Mw3.7 Best double couple: M0 3.62000×10^14 NP1: φs 11.00000°, δ30.00000°, λ-104.00000°. NP2: φs 206.00000°, δ61.00000°, λ-82.00000°.*
*IDC **01** 01:13:37.4±1.2, 38°.34N×143°.21E, h0km, mb3.7/7, mb1 3.8/7, mb1mx3.5/40, mbtmp3.7/7, MS2.5/2, Ms1 2.5/2, ms1mx2.2/44, Error ellipse: s-maj=41.3km s-min=24.3km az=79.0*
*JMA **01** 01:13:38.8±0.2, 38°.72N×144°.24E, h31km, M3.9*
ISC 01 01:13:37.4±1.1**, 38°.52N**±0°.08×**144°.04E**±0°.08**, h14km, n21, σ0s.91**/18**, mb3.8**/7**, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**1.93**	**287**	P	**Pb**	**01 14 12.2**	**-0.2**
JIO	**Ouri**	**2.11**	**269**	S	**Sb**	**01 14 42.7**	**+1.2**
JTH	**Tanohata**	**2.20**	**311**	S	**Sn**	**01 14 40.8**	**+0.2**
JMK	**Ichinoseki**	**2.24**	**282**	*e*S	**Sb**	**01 14 46.3**	**+1.0**
JMM	**Marumori**	**2.64**	**257**	S	**Sb**	**01 14 56.2**	**-0.5**
JOU	**Okura**	**2.65**	**268**	S	**Sb**	**01 14 57.6**	**+0.5**
JRG	**Rokugo**	**2.79**	**289**	*e*S	**Sb**	**01 14 59.7**	**-1.4**
JFT	**Otama**	**3.09**	**252**	*e*S	**Sb**	**01 15 08.4**	**-1.3**
JTM	**Tenmabayashi**	**3.22**	**316**	S	**Sn**	**01 15 04.4**	**-1.3**
MAT	**Matsushiro**	**5.04**	**249**	P	Pn	01 14 57.3	+4.7
MAT				*e*S	**Sn**	**01 15 50.2**	**-0.4**
JHJ	**Hachijo jima 2**	**6.40**	**214**	LR	LR	01 17 32.7	
	comp=Z,35nm,20.3s,baz=268,slow=40						
USRK	**Ussuriysk Ar.**	**10.68**	**306**	Pn	**Pn**	**01 16 11.4**	**+1.5**
	0.2nm,0.3s,baz=98,slow=12,SNR=5.9						
KSRS	**Korea Array**	**12.76**	**270**	LR	LR	01 20 40.8	
	comp=Z,26nm,20.3s,baz=108,slow=35						
ZALV	**Zalesovo Beam**	**42.47**	**311**	P	**P**	**01 21 31.6**	**-0.2**
	0.4nm,0.4s,baz=89,slow=9.5,SNR=2.8						
MKAR	**Makanchi Array**	**45.11**	**301**	P	**P**	**01 21 52.7**	**-0.4**
	0.5nm,0.7s,baz=82,slow=9.9,SNR=5.2						
ILAR	**Eielson Array**	**47.12**	**33**	P	P	01 22 16.7	+8.0
	0.1nm,0.6s,baz=60,slow=29,SNR=3.0						
WRA	**Warramunga Arr**	**58.86**	**191**	P	**P**	**01 23 35.9**	**+0.1**
	1.0nm,0.6s,baz=12,slow=7.2,SNR=4.5						
ASAR	**Alice Springs**	**62.59**	**190**	P	**P**	**01 24 01.8**	**+0.7**
	0.5nm,0.7s,baz=17,slow=7.0,SNR=3.9						
GEYT	**Alibeck**	**64.92**	**299**	P	**P**	**01 24 16.5**	**0.0**
	0.6nm,0.4s,baz=57,slow=5.3,SNR=3.6						
FINES	**FINESS Array B**	**68.45**	**333**	P	**P**	**01 24 38.2**	**-0.4**
	1.2nm,0.5s,baz=48,slow=8.9,SNR=8.7						
TORD	**Torodi Ar. Bea**	**117.69**	**318**	PKP	**PKPdf**	**01 32 22.9**	**-0.8**
	0.2nm,0.7s,baz=4.6,slow=3.3,SNR=3.2						

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*ISCJB **01** 01:17:05.9±0.5, 38°.21N±0°.03×26°.67E±0°.03, h2km±5km, Error ellipse: s-maj=5.1km s-min=3.7km az=33.1*
*DDA **01** 01:17:05.2, 38°.21N×26°.61E, h13km, Md2.7*
*ISK **01** 01:17:05.7, 38°.24N×26°.67E, h5km, MD2.8*
*CSEM **01** 01:17:06.0±0.2, 38°.22N×26°.65E, h2km, MD2.7, Error ellipse: s-maj=4.8km s-min=3.8km az=54.0*
ISC 01 01:17:06.0±0.9**, 38°.23N**±0°.02×**26°.67E**±0°.03**, h8km**±8km**, n43, σ0s.64**/58**, Aegean Sea**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
ZEY	**˜zmir**	**0.13**	**275**	*i* P	**Pg**	**01 17 08.3**	**-0.6**
ZEY				*i* S	**Sg**	**01 17 10.6**	**-0.3**
URLA	**Izmir**	**0.14**	**336**	*i* P	**Pg**	**01 17 09.0**	**-0.2**
URLA				*i* S	**Sg**	**01 17 11.9**	**+0.6**
URLA	**Izmir**	**0.14**	**336**	P	**Pg**	**01 17 09.0**	**-0.2**
URLA				S	**Sg**	**01 17 11.9**	**+0.6**
BLCB	**Balcova**	**0.33**	**61**	*e*PG	**Pg**	**01 17 12.5**	**0.0**
BLCB				*e*SG	**Sb**	**01 17 18.1**	**-1.5**
BLCB	**Balcova**	**0.33**	**61**	*e*Pg	**Pg**	**01 17 12.5**	**0.0**
BLCB				*e*Sg	**Sb**	**01 17 18.1**	**-1.5**
CHOS	**Chios island**	**0.51**	**288**	*e*PG	**Pg**	**01 17 16.1**	**+0.2**
CHOS				*e*SG	**Sg**	**01 17 23.5**	**+0.9**
CHOS	**Chios island**	**0.51**	**288**	*e*Pg	**Pg**	**01 17 16.1**	**+0.2**
CHOS				*e*Sg	**Sg**	**01 17 23.5**	**+0.9**
GCAM	**G?zelcaml?**	**0.69**	**140**	*i* P	**Pg**	**01 17 19.3**	**0.0**
GCAM				*i* S	**Sg**	**01 17 28.9**	**+0.7**
GCAM	**G?zelcaml?**	**0.69**	**140**	P	**Pg**	**01 17 19.3**	**0.0**
GCAM				S	**Sg**	**01 17 28.9**	**+0.7**
DKL	**Dikili**	**0.86**	**12**	*e*PG	**Pg**	**01 17 22.1**	**-0.5**
DKL				*e*SG	**Sb**	**01 17 34.8**	**-0.1**
DKL	**Dikili**	**0.86**	**12**	*e*Pg	**Pg**	**01 17 22.1**	**-0.5**
DKL				*e*Sg	**Sb**	**01 17 34.8**	**-0.1**
AYDB	**Zeytinkoy-Aydi**	**1.00**	**106**	*e*PG	**Pb**	**01 17 25.5**	**-0.2**
AYDB				*e*SG	**Sb**	**01 17 39.6**	**+0.7**
AYDB	**Zeytinkoy-Aydi**	**1.00**	**106**	*e*Pg	**Pb**	**01 17 25.5**	**-0.2**
AYDB				*e*Sg	**Sb**	**01 17 39.7**	**+0.7**
AYVA	**Ayvalik**	**1.08**	**1**	*i* P	**Pg**	**01 17 26.2**	**-0.5**
AYVA	**Ayvalik**	**1.08**	**1**	P	**Pg**	**01 17 26.2**	**-0.5**
AKS	**Akhisar**	**1.11**	**54**	*e*PN	**Pb**	**01 17 27.4**	**+0.1**
AKS	**Akhisar**	**1.11**	**54**	*e*Pn	**Pb**	**01 17 27.4**	**+0.1**
AKHS	**Akhisar**	**1.11**	**54**	*i* P	**Pg**	**01 17 27.0**	**-0.2**
AKHS	**Akhisar**	**1.11**	**54**	P	**Pg**	**01 17 27.0**	**-0.2**
AYDN	**Tasoluk**	**1.11**	**120**	*i* P	**Pn**	**01 17 27.9**	**+0.1**
AYDN				*i* S	**Sb**	**01 17 42.2**	**+0.2**
AYDN	**Tasoluk**	**1.11**	**120**	P	**Pn**	**01 17 28.0**	**+0.1**
AYDN				S	**Sb**	**01 17 42.2**	**+0.2**
SIGR	**SIGRI**	**1.17**	**327**	*e*PN	**Pn**	**01 17 28.5**	**-0.1**
SIGR	**SIGRI**	**1.17**	**327**	*e*Pn	**Pn**	**01 17 28.5**	**-0.1**
BODT	**Bodrum**	**1.27**	**156**	*e*PN	**Pn**	**01 17 30.1**	**+0.1**
BODT	**Bodrum**	**1.27**	**156**	*e*Pn	**Pn**	**01 17 30.1**	**+0.1**
BDRM	**Kayabasi**	**1.31**	**152**	*i* P	**Pn**	**01 17 28.9**	**-1.7**
BDRM	**Kayabasi**	**1.31**	**152**	P	**Pn**	**01 17 28.9**	**-1.7**
APE	**Apeiranthos**	**1.47**	**218**	*e*PN	**Pg**	**01 17 34.3**	**+0.1**

APE	**Apeiranthos**	**1.47**	**218**	*e*Pn	**Pg**	**01 17 34.3**	**+0.1**
KULA	**Kula-Manisa**	**1.59**	**79**	*e*PN	**Pb**	**01 17 35.6**	**-0.1**
KULA	**Kula-Manisa**	**1.59**	**79**	*e*Pn	**Pb**	**01 17 35.6**	**-0.1**
YER	**Yerkesik**	**1.68**	**130**	*e*PN	**Pb**	**01 17 36.7**	**-0.5**
YER	**Yerkesik**	**1.68**	**130**	*e*Pn	**Pb**	**01 17 36.7**	**-0.5**
BALY	**Balya**	**1.68**	**26**	*i* P	**Pb**	**01 17 37.1**	**0.0**
BALY	**Balya**	**1.68**	**26**	P	**Pb**	**01 17 37.2**	**0.0**
BALB	**Balikesir**	**1.70**	**33**	*e*PN	**Pb**	**01 17 37.2**	**-0.2**
BALB	**Balikesir**	**1.70**	**33**	*e*Pn	**Pb**	**01 17 37.2**	**-0.2**
DEMI	**Demirci**	**1.80**	**62**	*i* P	**Pg**	**01 17 39.8**	**-0.6**
DEMI	**Demirci**	**1.80**	**62**	P	**Pg**	**01 17 39.8**	**-0.6**
DURS	**Dursunbey**	**1.96**	**45**	*i* P	**Pb**	**01 17 41.9**	**-0.2**
DURS	**Dursunbey**	**1.96**	**45**	P	**Pb**	**01 17 41.9**	**-0.2**
TVSB	**Tavsanli**	**2.50**	**60**	*e*PN	**Pn**	**01 17 48.5**	**+1.5**
TVSB	**Tavsanli**	**2.50**	**60**	*e*Pn	**Pn**	**01 17 48.5**	**+1.5**

ISCJB ***01*** *01:27:49.7±1.2, 7°.05N±0°.03×77°.98W±0°.02, h2km±8km, mb4.5/89, MS3.7/12, Error ellipse: s-maj=4.9km s-min=3.0km az=39.1*
RSNC ***01*** *01:27:51.3±0.6, 7°.02N×78°.06W, h0km±6km, ML4.2*
NEIC ***01*** *01:27:52.4±1.9, 6°.99N×77°.92W, h12km±12km, mb4.7/79, Error ellipse: s-maj=5.6km s-min=4.1km az=45.0*
BJI ***01*** *01:27:53.4, 7°.21N×78°.05W, h24km*
IDC ***01*** *01:27:57.2±1.8, 6°.99N×77°.95W, h47km±17km, mb4.0/21, mb1 4.2/26, mb1mx4.2/37, mbtmp4.3/26, ML3.6/5, MS3.7/17, Ms1 3.7/17, ms1mx3.6/29, Error ellipse: s-maj=15.6km s-min=9.9km az=48.0*
ISC 01 01:27:50.5±1.4, **7°.03N**±0°.04×**77°.97W**±0°.04, **h0**km±9km, **n292**, σ**1s.28**/306, **mb4.6**/89, **MS3.7**/12, **1C-1D**, **Panama-Colombia border region**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
SOLC	**Bahia Solano**	**0.97**	**145**	*i* P	**Pg**	**01 28 09.3**	**+0.1**
SOLC				*e*S	**Sn**	**01 28 24.2**	**-1.7**
SOLC				*i*		01 28 27.3	
	comp=Z,8μm,0.3s						
DBBC	**Dabeiba**	**1.74**	**90**	*e*P	**Pb**	**01 28 22.9**	**-0.6**
DBBC				*e*S	**Sg**	**01 28 47.0**	**+0.3**
DBBC				*i*		01 28 53.5	
	comp=Z,1μm,0.7s						
HELC	**Santa Helena**	**2.56**	**109**	⇓*i*P	**Pn**	**01 28 34.3**	**+0.7**
HELC				*e*S	**Sb**	**01 29 08.4**	**-1.4**
HELC				*i*		01 29 14.9	
	comp=Z,1μm,0.4s						
ZANG	**Zanguenga, Cho**	**2.68**	**316**	*e*P	**Pn**	**01 28 34.3**	**-0.6**
BCIP	**Isla Barro Col**	**2.82**	**319**	*e*Pn	**Pn**	**01 28 35.7**	**-1.1**
BCIP				*e*Sn	**Sn**	**01 29 09.8**	**-1.7**
BCIP	**Isla Barro Col**	**2.82**	**319**	⇑*i*P	**Pn**	**01 28 35.6**	**-1.2**
BCIP				*e*S	**Sn**	**01 29 09.7**	**-1.8**
BCIP				*i*		01 29 24.3	
	comp=Z,1μm,0.3s						
MOTC	**Monteria, Cord**	**2.87**	**53**	*e*P	**Pn**	**01 28 39.0**	**+1.5**
MOTC				*e*S	**Sn**	**01 29 14.8**	**+2.1**
MOTC				*i*		01 29 22.6	
	comp=Z,458nm,0.5s						
PINA	**Piqa, Costa Ab**	**3.03**	**317**	*e*P	**Pn**	**01 28 38.9**	**-0.9**
PINA				*e*S	**Sn**	**01 29 17.7**	**+0.9**
PINA				AML	AML	01 29 47.2	
	comp=Z,2μm,0.5s						
GUYC	**Guyana, Colomb**	**3.13**	**125**	*e*P	**Pn**	**01 28 42.8**	**+1.3**
GUYC				*i*		01 28 54.3	
	comp=Z,1μm,0.5s						
NORC	**Norcasia**	**3.41**	**115**	*e*P	**Pn**	**01 28 46.1**	**+1.1**
TOLC	**Tolima**	**3.58**	**133**	*e*P	**Pn**	**01 28 48.6**	**+0.9**
GRGC	**Isla de Gorgon**	**4.01**	**183**	*e*P	**Pn**	**01 28 53.2**	**0.0**
ROSC	**El Rosal**	**4.23**	**121**	P	**Pn**	**01 28 59.9**	**+3.2**
	comp=Z,10nm,0.3s,baz=37,slow=20,SNR=26						
ROSC				S	**Sg**	**01 30 04.5**	**-2.1**
	comp=Z,14nm,0.3s,baz=193,slow=23,SNR=5.4						
ROSC	**El Rosal**	**4.23**	**121**	*e*Pn	**Pn**	**01 29 00.4**	**+3.7**
ROSC				*e*Sn	Sn	01 29 32.6	-14
ROSC				S	**Sg**	**01 30 04.5**	**-2.1**
PRAC	**Prado**	**4.50**	**137**	*e*S	**Sn**	**01 29 52.7**	**-0.5**
POPC	**Popayan, Colom**	**4.64**	**164**	*e*P	**Pn**	**01 29 02.4**	**+0.2**
CRUC	**La Cruz**	**5.52**	**169**	*e*P	**Pn**	**01 29 15.5**	**+1.1**
BUS	**Buena Vista**	**6.26**	**294**	*e*P	**Pn**	**01 29 24.9**	**+0.4**
URSC	**Urasca**	**6.39**	**296**	*e*P	**Pn**	**01 29 24.8**	**-1.4**
HDC	**Heredia**	**6.76**	**296**	*e*Pn	**Pn**	**01 29 30.9**	**-0.2**
HDC				*e*Pg	**Pb**	**01 29 46.0**	**-3.0**
OTAV	**Otavalo**	**6.76**	**184**	*e*Pn	**Pn**	**01 29 32.5**	**+0.9**
CGA2	**Cerro Gallo 2**	**7.08**	**295**	*e*P	**Pn**	**01 29 35.3**	**-0.2**
SDV	**Santo Domingo**	**7.49**	**75**	P	**Pn**	**01 29 43.5**	**+2.2**
	comp=Z,13nm,0.3s,baz=291,slow=11,SNR=78						
SDV				S	**Sn**	**01 31 09.6**	**+2.4**
	comp=Z,39nm,0.3s,baz=70,slow=20,SNR=6.3						
SDV				LR	LR	01 33 01.5	
	comp=Z,662nm,18.6s,baz=244,slow=41						
SDV	**Santo Domingo**	**7.49**	**75**	*e*Pn	**Pn**	**01 29 43.3**	**+1.9**
SDV				*e*Sn	**Sn**	**01 31 02.6**	**-4.6**
JTS	**JuntasAbangare**	**7.63**	**296**	P	**Pn**	**01 29 45.9**	**+2.9**
	comp=Z,0.7nm,0.3s,baz=168,slow=6.7,SNR=7.6						
JTS				LR	LR	01 32 59.3	
	comp=Z,1μm,19.5s,baz=115,slow=39						
JTS	**JuntasAbangare**	**7.63**	**296**	*e*Pn	**Pn**	**01 29 43.6**	**+0.6**
STH	**Stony Hill**	**11.04**	**6**	*i* P	**Pn**	**01 30 34.0**	**+4.3**
STH				*i* S	**Sn**	**01 32 29.5**	**-4.6**
MTDJ	**Mount Denham**	**11.14**	**2**	*e*Pn	**Pn**	**01 30 32.2**	**+1.0**
MTDJ				*e*Sn	**Sn**	**01 32 40.3**	**+3.7**
BNJ	**Bonny Gate**	**11.27**	**5**	*e*P	Pn	01 30 53.0	+20
BBJ	**Bamboo Saint A**	**11.30**	**3**	*e*P	Pn	01 30 38.6	+5.2
GTBY	**Guantanamo Bay**	**13.12**	**12**	*e*Pn	**P**	**01 31 04.4**	**-4.3**
BANI	**BANI**	**13.51**	**33**	*e*Pn	**Pn**	**01 31 03.6**	**-0.1**
BANI				*e*Sn	Sn	01 33 20.5	-14
SDDR	**Presa de Saban**	**13.54**	**28**	*e*Pn	**Pn**	**01 31 07.5**	**+3.5**
SDDR				*e*Sn	**Sn**	**01 33 37.1**	**+1.7**
ATAH	**Atahualpa**	**14.08**	**182**	P	**Pn**	**01 31 15.5**	**+3.7**
	comp=Z,0.5nm,0.3s,baz=327,slow=7.0,SNR=4.7						
MPR	**Mayaguez**	**15.32**	**43**	*e*Pn	**Pn**	**01 31 27.0**	**-1.2**
	comp=Z,104nm,1.6s						
SJG	**San Juan**	**15.94**	**45**	P	**Pn**	**01 31 35.5**	**-0.7**
	comp=Z,4.1nm,0.3s,baz=229,slow=14,SNR=12						
SJG				S	**Sn**	**01 34 31.2**	**-2.5**
	comp=Z,0.4nm,0.3s,baz=67,slow=21,SNR=3.7						
SJG				LR	LR	01 38 39.0	
	comp=Z,128nm,21.5s,baz=242,slow=40						
SJG	**San Juan**	**15.94**	**45**	*e*Pn	**Pn**	**01 31 34.8**	**-1.4**
	comp=Z,24nm,0.6s						
SJG				S	**Sn**	**01 34 31.2**	**-2.5**
HUMP	**Col San Antoni**	**16.17**	**46**	*e*Pn	**Pn**	**01 31 38.0**	**-1.3**
	comp=Z,30nm,0.9s						
CBYP	**Canovanas**	**16.25**	**45**	*e*Pn	**P**	**01 31 41.8**	**-1.7**
	comp=Z,46nm,1.2s						
STVI	**Saint Thomas**	**16.95**	**47**	*e*Pn	**P**	**01 31 50.1**	**-1.2**
	comp=Z,34nm,0.9s						
NNA	**Nana**	**18.93**	**177**	*e*P	**P**	**01 32 12.3**	**-0.8**
	comp=Z,91nm,1.2s						
CMIG	**Matias Romero**	**19.31**	**303**	LR	LR	01 40 49.7	
	comp=Z,319nm,21.8s,baz=126,slow=40						
PTGA	**Pitinga**	**19.55**	**113**	P	**Pn**	**01 32 20.3**	**-0.8**
	comp=Z,1.2nm,0.3s,baz=287,slow=12,SNR=10						
PTGA				LR	LR	01 40 31.7	
	comp=Z,503nm,21.6s,baz=294,slow=39						
SAML	**Samuel**	**21.66**	**137**	*e*P	**P**	**01 32 40.9**	**-1.9**
	comp=Z,14nm,0.6s						
LPAZ	**La Paz**	**25.13**	**157**	P	**P**	**01 33 18.0**	**-0.1**
	comp=Z,2.3nm,0.6s,baz=326,slow=8.4,SNR=13						
LPAZ				LR	LR	01 46 05.4	
	comp=Z,219nm,18.8s,baz=314,slow=43						
LPAZ	**La Paz**	**25.13**	**157**	*e*P	**P**	**01 33 18.0**	**-0.1**
	comp=Z,7.1nm,0.9s						
344A	**Westbrook Farm**	**27.07**	**335**	P	**P**	**01 33 36.5**	**+1.7**
	baz=151						
035A	**Encino**	**27.54**	**318**	P	**P**	**01 33 40.1**	**+1.0**
	baz=132						
034A	**Hebbronville**	**28.00**	**318**	P	**P**	**01 33 44.8**	**+1.4**
	baz=132						
HKT	**Hockley**	**28.32**	**326**	*e*P	**P**	**01 33 45.6**	**-0.4**
	comp=Z,3.1nm,0.8s						
SIV	**San Ignacio**	**28.34**	**144**	P	**P**	**01 33 46.1**	**-0.3**
	comp=Z,3.2nm,0.5s,baz=334,slow=12,SNR=13						
SIV				LR	LR	01 45 34.6	
	comp=Z,257nm,18.1s,baz=346,slow=37						
834A	**Tilden**	**28.63**	**320**	P	**P**	**01 33 49.7**	**+0.8**
	baz=133						
636A	**Smothers Creek**	**28.67**	**324**	P	**P**	**01 33 50.1**	**+0.9**
	baz=138						
TKL	**Tuckaleechee C**	**28.99**	**350**	LR	LR	01 45 43.9	
	comp=Z,114nm,18.5s,baz=194,slow=37						
PB01	**IPOC Station P**	**29.11**	**164**	*e*P	**P**	**01 33 54.7**	**+1.4**
	comp=Z,14nm,0.9s						
833A	**Chaparral WMA,**	**29.31**	**319**	P	**P**	**01 33 55.8**	**+0.8**
	baz=132						
832A	**Faith Ranch, C**	**29.67**	**318**	P	**P**	**01 33 58.8**	**+0.7**
	baz=131						
Z40A	**Long Farm, Mag**	**29.77**	**333**	P	**P**	**01 34 00.1**	**+1.2**
	baz=148						
633A	**Saathoff Ranch**	**29.95**	**321**	P	**P**	**01 34 00.9**	**+0.3**
	baz=134						
236A	**Katherine and**	**30.28**	**328**	P	**P**	**01 34 04.6**	**+1.1**
	baz=141						
137A	**Heron Place, G**	**30.35**	**329**	P	**P**	**01 34 05.3**	**+1.2**
	baz=143						
X40A	**Basin Creek Fa**	**30.57**	**335**	P	**P**	**01 34 06.3**	**+0.3**
	baz=150						
136A	**Ennis**	**30.65**	**328**	P	**P**	**01 34 07.6**	**+0.9**
	baz=142						
Y39A	**Lockesburg**	**30.65**	**333**	P	**P**	**01 34 07.7**	**+1.0**
	baz=147						
433A	**Art**	**30.80**	**323**	P	**P**	**01 34 08.6**	**+0.5**
	baz=136						
X39A	**Fountain Ranch**	**31.14**	**334**	P	**P**	**01 34 11.9**	**+0.9**
	baz=148						
333A	**Richland Sprin**	**31.15**	**324**	P	**P**	**01 34 11.8**	**+0.6**
	baz=137						
234A	**Clairette**	**31.16**	**326**	P	**P**	**01 34 12.1**	**+0.8**
	baz=139						
W39A	**Magazine**	**31.58**	**335**	P	**P**	**01 34 15.6**	**+0.7**
	baz=149						
X38A	**Whitesboro**	**31.59**	**333**	P	**P**	**01 34 15.7**	**+0.6**
	baz=147						
233A	**Rising Star**	**31.61**	**325**	P	**P**	**01 34 15.7**	**+0.5**
	baz=138						
V40A	**Witts Springs**	**31.71**	**337**	P	**P**	**01 34 17.0**	**+0.9**
	baz=151						
W38A	**Poteau**	**31.79**	**334**	P	**P**	**01 34 17.7**	**+0.9**
	baz=148						
USIN	**University of**	**32.03**	**345**	*e*P	**P**	**01 34 19.6**	**+0.8**
	comp=Z,30nm,0.8s						
133A	**Hamilton Ranch**	**32.05**	**325**	P	**P**	**01 34 19.1**	**0.0**
	baz=138						
V39A	**Pettigrew**	**32.07**	**336**	P	**P**	**01 34 19.3**	**0.0**
	baz=150						
U40A	**Yellville**	**32.21**	**337**	P	**P**	**01 34 20.5**	**0.0**
	baz=152						
X36A	**Centrahoma**	**32.23**	**331**	P	**P**	**01 34 20.6**	**0.0**
	baz=144						
V38A	**Canehill**	**32.41**	**335**	P	**P**	**01 34 22.0**	**-0.2**
	baz=148						
U39A	**Green Forest**	**32.48**	**336**	P	**P**	**01 34 22.9**	**+0.1**
	baz=150						
W36A	**Wetumka**	**32.63**	**332**	P	**P**	**01 34 24.5**	**+0.4**
	baz=145						
T40A	**Mansfield**	**32.78**	**338**	P	**P**	**01 34 25.7**	**+0.3**
	baz=153						
TXAR	**Lajitas Array**	**32.84**	**316**	P	**P**	**01 34 26.7**	**+0.6**
	comp=Z,1.2nm,0.7s,baz=137,slow=8.7,SNR=17						
TXAR				PcP	**PcP**	**01 37 12.5**	**+1.2**
	comp=Z,0.7nm,0.8s,baz=156,slow=3.7,SNR=4.0						
TX31	**Lajitas Ar. Si**	**32.84**	**316**	*e*P	**P**	**01 34 26.8**	**+0.6**
U38A	**Gravette**	**32.90**	**335**	P	**P**	**01 34 26.1**	**-0.4**
	baz=149						
BLO	**Bloomington**	**32.92**	**348**	*e*P	**P**	**01 34 27.8**	**+1.3**
	comp=Z,15nm,0.6s						
W35A	**Tecumseh**	**32.95**	**331**	P	**P**	**01 34 27.2**	**+0.2**
	baz=144						
X34A	**Smith Ranch, M**	**32.99**	**329**	P	**P**	**01 34 27.9**	**+0.5**
	baz=142						
TUL1	**Leonard**	**33.06**	**333**	P	**P**	**01 34 28.1**	**+0.2**
	baz=146						
TUL1	**Leonard**	**33.06**	**333**	*e*P	**P**	**01 34 27.8**	**-0.1**
	comp=Z,5.7nm,0.6s						
O56A	**Blue Knob Stat**	**33.10**	**359**	P	**P**	**01 34 29.0**	**+0.8**
	baz=179						
S40A	**Lebanon**	**33.17**	**339**	P	**P**	**01 34 28.9**	**0.0**
	baz=153						
X33A	**Lawton**	**33.29**	**328**	P	**P**	**01 34 29.7**	**-0.2**
	baz=141						
T38A	**Diamond**	**33.37**	**336**	P	**P**	**01 34 30.6**	**0.0**
	baz=150						
W34A	**Bridge Creek,**	**33.46**	**330**	P	**P**	**01 34 31.4**	**0.0**
	baz=142						
WMOK	**Wichita Mounta**	**33.59**	**328**	*e*P	**P**	**01 34 32.0**	**-0.6**
	comp=Z,4.7nm,0.8s						
T37A	**Cheneyville 18**	**33.70**	**335**	P	**P**	**01 34 32.8**	**-0.6**
	baz=149						
V34A	**Guthrie**	**33.81**	**331**	P	**P**	**01 34 34.0**	**-0.4**
	baz=143,SNR=6.3						
R39A	**Chumby, Stover**	**34.00**	**339**	P	**P**	**01 34 35.5**	**-0.6**
	baz=153						
W32A	**Sentinel**	**34.12**	**328**	P	**P**	**01 34 37.1**	**-0.1**
	baz=140,SNR=7.2						
V33A	**Lossen Ranch,**	**34.17**	**330**	P	**P**	**01 34 37.2**	**-0.5**
	baz=142						
S37A	**Fort Scott**	**34.21**	**336**	P	**P**	**01 34 37.0**	**-0.9**
	baz=149,SNR=5.0						
T35A	**Sooner Cattle**	**34.22**	**333**	P	**P**	**01 34 38.1**	**+0.1**
	baz=146						
Q40A	**Laux Farm, Aux**	**34.27**	**340**	P	**P**	**01 34 38.1**	**-0.3**
	baz=155						
U34A	**Anderson Ranch**	**34.30**	**331**	P	**P**	**01 34 38.3**	**-0.4**
	baz=144						
T34A	**McClaskey Farm**	**34.61**	**332**	P	**P**	**01 34 41.3**	**-0.1**
	baz=145						
Q39A	**Willow Grove F**	**34.63**	**339**	P	**P**	**01 34 40.9**	**-0.6**
	baz=153						
S35A	**Otter Creek Ra**	**34.77**	**334**	P	**P**	**01 34 42.9**	**+0.2**
	baz=147						
Q38A	**Cooks Store, C**	**34.78**	**338**	P	**P**	**01 34 43.0**	**+0.1**
	baz=152						
HDIL	**Hopedale**	**34.89**	**345**	P	**P**	**01 34 43.2**	**-0.5**
	baz=160						
R35A	**Emporia Munici**	**35.25**	**335**	P	**P**	**01 34 47.0**	**+0.1**
	baz=148						
MSTX	**Muleshoe**	**35.27**	**323**	P	**P**	**01 34 47.3**	**0.0**
	baz=134						
MSTX	**Muleshoe**	**35.27**	**323**	*e*P	**P**	**01 34 47.0**	**-0.3**
	comp=Z,6.3nm,0.8s						
MNTX	**Cornudas Mount**	**35.45**	**317**	P	**P**	**01 34 48.8**	**0.0**
	baz=128,SNR=10						
MNTX	**Cornudas Mount**	**35.45**	**317**	*e*P	**P**	**01 34 48.4**	**-0.3**
	comp=Z,9.9nm,1.1s						
R34A	**Isabella, Hill**	**35.69**	**334**	P	**P**	**01 34 50.7**	**0.0**
	baz=146						
S32A	**Newby Ranch, P**	**35.98**	**331**	P	**P**	**01 34 53.7**	**+0.5**
	baz=143						
Q34A	**Chapman**	**36.07**	**334**	P	**P**	**01 34 54.4**	**+0.4**
	baz=147						
KSU1	**Kansas State U**	**36.08**	**335**	P	**P**	**01 34 54.7**	**+0.7**
	baz=148						
KSU1	**Kansas State U**	**36.08**	**335**	*e*P	**P**	**01 34 53.5**	**-0.6**
	comp=Z,4.7nm,0.4s						
Q33A	**Connelly Farm,**	**36.52**	**334**	P	**P**	**01 34 58.2**	**+0.4**
	baz=146						
P34A	**Walnut Farm, R**	**36.55**	**335**	P	**P**	**01 34 58.2**	**+0.2**
	baz=148						
BDFB	**Brasilia**	**37.25**	**127**	P	**P**	**01 35 03.5**	**-0.9**
	comp=Z,2.5nm,0.8s,baz=340,slow=13,SNR=3.7						
BDFB				LR	LR	01 51 41.2	
	comp=Z,252nm,18.1s,baz=300,slow=38						
JFWS	**Jewell Farm**	**37.34**	**345**	*e*P	**P**	**01 35 04.2**	**-0.5**
	comp=Z,26nm,1.5s						
121A	**Cookes Peak, D**	**37.58**	**316**	P	**P**	**01 35 08.5**	**+1.4**
	baz=126						
SADO	**Sadowa**	**37.61**	**359**	*e*P	**P**	**01 35 07.3**	**+0.4**
	comp=Z,34nm,1.6s						
P31A	**Stockton**	**37.64**	**332**	P	**P**	**01 35 08.6**	**+1.2**
	baz=144						
L36A	**Harm Buss Farm**	**37.93**	**340**	P	**P**	**01 35 09.7**	**0.0**
	baz=152						
319A	**Douglas**	**37.97**	**314**	*e*P	**P**	**01 35 12.5**	**+2.1**
	comp=Z,9.1nm,0.8s						
ANMO	**Albuquerque**	**38.19**	**321**	P	**P**	**01 35 13.4**	**+1.2**
	comp=Z,4.4nm,0.8s,baz=142,slow=9.1,SNR=13						
ANMO	**Albuquerque**	**38.19**	**321**	P	**P**	**01 35 13.4**	**+1.2**
	baz=130						
ANMO	**Albuquerque**	**38.19**	**321**	*e*P	**P**	**01 35 12.9**	**+0.7**
	comp=Z,12nm,1.3s						
T25A	**Trinidad**	**38.44**	**325**	P	**P**	**01 35 15.3**	**+1.0**
	baz=135,SNR=7.9						
CPUP	**Villa Florida**	**38.74**	**150**	P	**P**	**01 35 15.6**	**-1.1**
	comp=Z,2.5nm,0.8s,baz=336,slow=8.5,SNR=5.1						
CPUP				LR	LR	01 53 33.8	
	comp=Z,152nm,19.8s,baz=328,slow=40						
P28A	**Saint Francis**	**38.82**	**330**	P	**P**	**01 35 18.4**	**+1.1**
	baz=140						
I38A	**Scanlan Farm,**	**38.95**	**343**	P	**P**	**01 35 17.9**	**-0.4**
	baz=157						
SDCO	**Great Sand Dun**	**39.48**	**325**	P	**P**	**01 35 23.9**	**+0.7**
	baz=134,SNR=7.4						
SDCO	**Great Sand Dun**	**39.48**	**325**	*e*P	**P**	**01 35 24.2**	**+1.0**
	comp=Z,15nm,1.4s						
TUC	**Tucson**	**39.55**	**314**	P	**P**	**01 35 24.5**	**+0.9**
	baz=122						
TUC	**Tucson**	**39.55**	**314**	*e*P	**P**	**01 35 23.4**	**-0.2**
	comp=Z,4.6nm,0.9s						
X18A	**Snowflake**	**40.21**	**317**	*e*P	**P**	**01 35 29.0**	**-0.1**
	comp=Z,6.9nm,0.8s						
S22A	**4UR Ranch, Cre**	**40.25**	**324**	P	**P**	**01 35 30.9**	**+1.3**
	baz=132,SNR=5.8						
W18A	**Petrified Fore**	**40.41**	**318**	P	**P**	**01 35 31.9**	**+1.1**
	baz=126						
W18A	**Petrified Fore**	**40.41**	**318**	*e*P	**P**	**01 35 32.0**	**+1.2**
	comp=Z,39nm,1.6s						
214A	**Organ Pipe Nat**	**40.84**	**312**	P	**P**	**01 35 35.9**	**+1.6**
	baz=120,SNR=6.5						
214A	**Organ Pipe Nat**	**40.84**	**312**	*e*P	**P**	**01 35 35.5**	**+1.3**
	comp=Z,41nm,1.0s						
ISCO	**Idaho Springs**	**40.98**	**327**	P	**P**	**01 35 36.6**	**+1.0**
	baz=136						
H32A	**Carlson Farm,**	**41.01**	**339**	P	**P**	**01 35 36.3**	**+0.9**
	baz=150						
X16A	**Lo Mia Camp, P**	**41.16**	**316**	*e*P	**P**	**01 35 36.9**	**-0.1**
	comp=Z,3.0nm,0.8s						
J29A	**Okreek**	**41.21**	**335**	P	**P**	**01 35 37.4**	**+0.3**
	baz=145						
E36A	**McGregor**	**41.49**	**344**	P	**P**	**01 35 38.7**	**-0.6**
	baz=157						
PV01	**Paradox Valley**	**41.54**	**323**	*e*P	**P**	**01 35 41.0**	**+0.8**
WUAZ	**Wupatki**	**41.73**	**318**	P	**P**	**01 35 42.9**	**+1.2**
	baz=125,SNR=9.5						
WUAZ	**Wupatki**	**41.73**	**318**	*e*P	**P**	**01 35 42.6**	**+0.9**
	comp=Z,11nm,1.0s						
PV05	**Paradox Valley**	**41.83**	**322**	*e*P	**P**	**01 35 43.5**	**+1.0**
D37A	**Cotton**	**41.86**	**345**	P	**P**	**01 35 41.6**	**-0.7**
	baz=158						
PV04	**Paradox Valley**	**41.91**	**323**	*e*P	**P**	**01 35 43.6**	**+0.5**
C39A	**Grand Marais**	**41.95**	**348**	P	**P**	**01 35 43.2**	**+0.2**
	baz=162						
113A	**Mohawk Valley,**	**41.95**	**312**	*e*P	**P**	**01 35 45.0**	**+1.7**
	comp=Z,5.5nm,1.0s						
Y14A	**Wickenburg**	**41.99**	**314**	*e*P	**P**	**01 35 44.9**	**+1.2**
	comp=Z,15nm,0.7s						
D36A	**Goodland**	**42.07**	**345**	P	**P**	**01 35 42.8**	**-1.2**
	baz=157						
C37A	**Embarrass**	**42.33**	**346**	P	**P**	**01 35 45.7**	**-0.5**
	baz=159						
EYMN	**Ely**	**42.37**	**347**	P	**P**	**01 35 45.5**	**-1.0**
	baz=160						
O20A	**White River Ci**	**42.67**	**325**	P	**P**	**01 35 50.2**	**+0.9**
	baz=132						
U15A	**North Rim**	**42.86**	**318**	*e*P	**P**	**01 35 52.6**	**+1.6**
	comp=Z,9.5nm,1.1s						
GLA	**Glamis**	**42.86**	**312**	P	**P**	**01 35 51.6**	**+0.8**
	baz=119						
GLA	**Glamis**	**42.86**	**312**	*e*P	**P**	**01 35 52.8**	**+2.0**
	comp=Z,17nm,1.0s						
Y12C	**Blythe**	**42.98**	**313**	P	**P**	**01 35 52.5**	**+0.8**
	baz=120						
PDMCI	**Parker Dam,Lak**	**42.99**	**314**	P	**P**	**01 35 52.4**	**+0.7**
	baz=121						
W13A	**Hualapai Mount**	**43.22**	**315**	*e*P	**P**	**01 35 55.9**	**+2.0**
	comp=Z,6.6nm,0.8s						
B35A	**Bob, Littlefor**	**43.31**	**345**	P	**P**	**01 35 54.5**	**+0.4**
	baz=157						
SRU	**San Rafael Swe**	**43.34**	**322**	*e*P	**P**	**01 35 55.9**	**+1.1**
	comp=Z,7.8nm,0.9s						
RSSD	**Black Hills**	**43.41**	**333**	P	**P**	**01 35 56.1**	**+0.9**
	baz=141						
P18A	**Preston Nutter**	**43.50**	**323**	*e*P	**P**	**01 35 57.4**	**+1.2**
	comp=Z,38nm,2.0s						
SWSC	**Sam W. Stewart**	**43.53**	**312**	P	**P**	**01 35 57.4**	**+1.3**
	baz=118						
KNB	**Kanab**	**43.55**	**318**	*e*P	**P**	**01 35 58.2**	**+1.8**
	comp=Z,5.7nm,0.9s						
BC3	**Big Chuckawall**	**43.61**	**313**	P	**P**	**01 35 58.1**	**+1.1**
	baz=119,SNR=5.8						
IRM	**Iron Mountain**	**43.63**	**313**	P	**P**	**01 35 58.6**	**+1.6**
	baz=120,SNR=5.6						
P17A	**Butcher Ranch,**	**43.70**	**323**	*e*P	**P**	**01 35 59.3**	**+1.6**
	comp=Z,13nm,1.3s						
LCMT	**Little Creek M**	**43.82**	**318**	*e*P	**P**	**01 36 00.3**	**+1.7**
	comp=Z,8.1nm,1.3s						
AGMN	**Agassiz Nation**	**43.84**	**343**	P	**P**	**01 35 58.9**	**+0.5**
	baz=154						
MONP2	**Monument Peak**	**43.97**	**311**	P	**P**	**01 36 01.4**	**+1.5**
	baz=117						
MSU	**Marysvale**	**44.00**	**321**	*e*P	**P**	**01 36 01.8**	**+1.6**
BELC	**Belle Mtn. Jos**	**44.18**	**313**	P	**P**	**01 36 02.6**	**+1.1**
	baz=119,SNR=14						
GMRC	**Granite Mounta**	**44.31**	**314**	P	**P**	**01 36 03.3**	**+0.7**
	baz=120,SNR=5.8						
PFO	**Pinyon Flats O**	**44.33**	**312**	P	**P**	**01 36 02.1**	**-0.7**
	comp=Z,7.9nm,1.0s,baz=98,slow=6.6,SNR=5.4						
PFO	**Pinyon Flats O**	**44.33**	**312**	P	**P**	**01 36 03.7**	**+0.9**
	baz=118						
PFO	**Pinyon Flats O**	**44.33**	**312**	*e*P	**P**	**01 36 03.5**	**+0.7**
	comp=Z,17nm,1.4s						
MPU	**Maple Canyon**	**44.58**	**323**	*e*P	**P**	**01 36 06.3**	**+1.6**
	comp=Z,9.3nm,1.2s						
TUQ	**Turquoise Moun**	**44.82**	**315**	P	**P**	**01 36 07.4**	**+0.7**
	baz=120,SNR=6.1						
MURC	**Murrieta**	**44.87**	**312**	P	**P**	**01 36 08.6**	**+1.7**
	baz=117						
BBRC	**Big Bear Solar**	**44.97**	**313**	P	**P**	**01 36 09.7**	**+1.7**
	baz=118						
PSUT	**Pine Spring**	**45.08**	**320**	*e*P	**P**	**01 36 10.4**	**+1.7**
	comp=Z,6.9nm,1.0s						
PDAR	**Pinedale Array**	**45.18**	**327**	P	**P**	**01 36 10.4**	**+0.9**
	comp=Z,0.8nm,0.6s,baz=117,slow=10,SNR=9.1						
PDAR				LR	LR	01 59 47.0	
	comp=Z,97nm,18.6s,baz=40,slow=42						
BW06	**Boulder Array**	**45.18**	**327**	*e*P	**P**	**01 36 09.9**	**+0.4**
GSC	**Goldstone, Bar**	**45.39**	**314**	P	**P**	**01 36 12.2**	**+1.1**
	baz=119,SNR=10						
GSC	**Goldstone, Bar**	**45.39**	**314**	*e*P	**P**	**01 36 12.6**	**+1.5**
	comp=Z,8.9nm,0.8s						
DUG	**Dugway, Tooele**	**45.40**	**322**	P	**P**	**01 36 12.3**	**+1.1**
	baz=127,SNR=5.8						
DUG	**Dugway, Tooele**	**45.40**	**322**	*e*P	**P**	**01 36 12.6**	**+1.4**
	comp=Z,9.2nm,1.4s						
BFSC	**Mount Baldy Ra**	**45.50**	**312**	P	**P**	**01 36 12.4**	**+0.3**
	baz=117						
HWUT	**Hardware Ranch**	**45.54**	**324**	*e*P	**P**	**01 36 11.0**	**-1.3**
	comp=Z,4.4nm,0.9s						
ULM	**Lac du Bonnet**	**45.61**	**344**	P	**P**	**01 36 11.8**	**-0.6**
	comp=Z,1.5nm,0.5s,baz=164,slow=5.7,SNR=4.1						
ULM				LR	LR	01 54 56.2	
	comp=Z,94nm,21.3s,baz=152,slow=36						
TPNV	**Topopah Spring**	**45.82**	**316**	P	**P**	**01 36 16.0**	**+1.5**
	baz=121,SNR=8.9						
TPNV	**Topopah Spring**	**45.82**	**316**	*e*P	**P**	**01 36 16.2**	**+1.6**
	comp=Z,5.8nm,0.9s						
BGU	**Big Grassy Mou**	**45.98**	**323**	*e*P	**P**	**01 36 16.7**	**+0.9**
	comp=Z,6.5nm,1.1s						
FURC	**Furnace Creek,**	**46.00**	**315**	P	**P**	**01 36 17.3**	**+1.6**
	baz=120						
EDW2	**Edwards Air Fo**	**46.05**	**313**	P	**P**	**01 36 17.0**	**+0.8**
	baz=118,SNR=7.9						
LRMC	**Laurel Mtn Rad**	**46.10**	**314**	P	**P**	**01 36 17.7**	**+0.9**
	baz=118,SNR=7.8						
R11A	**Troy Canyon, C**	**46.11**	**318**	P	**P**	**01 36 17.8**	**+1.0**
	baz=123,SNR=11						
MPMC	**Manual Prospec**	**46.24**	**314**	P	**P**	**01 36 18.1**	**+0.1**
	baz=119,SNR=6.3						
GRAC	**Grapevine Rang**	**46.61**	**316**	P	**P**	**01 36 21.9**	**+1.2**
	baz=120						
ARVC	**Arvin**	**46.77**	**313**	P	**P**	**01 36 23.3**	**+1.4**
	baz=117						
CWC	**Cottonwood Cre**	**46.84**	**315**	P	**P**	**01 36 23.5**	**+0.9**
	baz=119						
TRQA	**Tornquist**	**47.27**	**163**	*e*P	**P**	**01 36 25.2**	**-0.5**
	comp=Z,15nm,1.2s						
VES	**Vestal, Richgr**	**47.28**	**313**	P	**P**	**01 36 26.5**	**+0.7**
	baz=117						
GCMT	**Greycliff**	**47.33**	**330**	*e*pP		01 36 33.6	
PKM	**Mcpherson Peak**	**47.38**	**312**	P	**P**	**01 36 27.2**	**+0.3**
	baz=116						
NV11	**Mina Array Sit**	**47.87**	**317**	*e*P	**P**	**01 36 32.1**	**+1.5**
	comp=Z,15nm,1.2s						
NV01	**Mina Array Sit**	**47.97**	**317**	*e*P	**P**	**01 36 32.5**	**+1.1**
NVAR	**Mina Array Bea**	**47.97**	**317**	P	**P**	**01 36 32.7**	**+1.2**
	comp=Z,5.1nm,0.7s,baz=129,slow=6.4,SNR=45						
NVAR				PcP	**PcP**	**01 38 00.3**	**+0.5**
	comp=Z,0.8nm,0.7s,baz=125,slow=4.5,SNR=2.3						
NVAR				LR	LR	02 01 50.3	
	comp=Z,71nm,18.6s,baz=180,slow=42						
PLCA	**Paso Flores**	**48.02**	**172**	P	**P**	**01 36 32.0**	**+0.5**

Code	Station Name	Δ°	AZ°	Op	ISC	Time	Res
	comp=Z,6.5nm,0.8s,baz=12,slow=9.7,SNR=14						
PLCA	**Paso Flores**	**48.02**	**172**	*e*P	**P**	**01 36 31.9**	**+0.5**
	comp=Z,11nm,1.1s						
BOZ	**Bozeman (W)**	**48.23**	**329**	P	**P**	**01 36 33.8**	**+0.5**
	baz=132						
BOZ	**Bozeman (W)**	**48.23**	**329**	*e*P	**P**	**01 36 33.5**	**+0.2**
	comp=Z,3.0nm,0.9s						
BMN	**Battle Mountai**	**48.30**	**320**	*e*P	**P**	**01 36 35.0**	**+1.1**
	comp=Z,10nm,1.0s						
HLID	**Hailey**	**48.40**	**325**	P	**P**	**01 36 35.2**	**+0.6**
	baz=128						
HLID	**Hailey**	**48.40**	**325**	*e*P	**P**	**01 36 35.5**	**+0.8**
	comp=Z,2.6nm,0.9s						
SCHQ	**Schefferville**	**48.50**	**9**	P	**P**	**01 36 35.6**	**+0.6**
	comp=Z,6.7nm,1.0s,baz=189,slow=5.2,SNR=4.2						
SCHQ				LR	LR	01 57 39.5	
	comp=Z,57nm,20.4s,baz=44,slow=37						
WAKR	**Walker**	**48.78**	**316**	*e*P	**P**	**01 36 39.4**	**+1.7**
MFID	**Camas Ranch**	**49.13**	**324**	*e*P	**P**	**01 36 41.1**	**+0.9**
	comp=Z,6.0nm,1.1s						
WVOR	**Wild Horse Val**	**50.28**	**321**	*e*P	**P**	**01 36 49.7**	**+0.7**
	comp=Z,14nm,1.1s						
I03D	**Drain, OR**	**53.89**	**320**	P	**P**	**01 37 16.0**	**+0.4**
	baz=119						
YKA	**Yellowknife Ar**	**61.48**	**342**	P	**P**	**01 38 08.1**	**-0.6**
	comp=Z,2.7nm,0.7s,baz=131,slow=7.0,SNR=58						
YKW3	**Yellowknife Ar**	**61.53**	**342**	*e*P	**P**	**01 38 08.7**	**-0.4**
	comp=Z,4.1nm,0.7s						
RES	**Resolute Bay**	**68.31**	**355**	*e*P	**P**	**01 38 51.6**	**-1.5**
	comp=Z,2.0nm,0.8s						
SUMG	**Summit**	**69.72**	**12**	*e*P	**P**	**01 39 01.9**	**-0.5**
	comp=Z,10nm,1.1s						
INK	**Inuvik**	**71.24**	**341**	P	**P**	**01 39 11.4**	**+0.2**
	comp=Z,3.3nm,0.5s,baz=96,slow=6.2,SNR=13						
INK	**Inuvik**	**71.24**	**341**	*e*P	**P**	**01 39 11.5**	**+0.2**
	comp=Z,5.3nm,0.6s						
EGAK	**Eagle**	**72.44**	**336**	*e*P	**P**	**01 39 18.9**	**+0.4**
	comp=Z,11nm,1.4s						
DBIC	**Dimbokro**	**72.51**	**85**	P	**P**	**01 39 19.9**	**0.0**
	comp=Z,2.1nm,0.6s,baz=336,slow=2.7,SNR=7.5						
DBIC				LR	LR	02 08 54.4	
	comp=Z,30nm,19.7s,baz=232,slow=34						
ESDC	**Sonseca Array**	**73.24**	**51**	P	**P**	**01 39 24.4**	**+0.5**
	comp=Z,1.0nm,0.5s,baz=268,slow=5.7,SNR=12						
DOT	**Dot Lake**	**73.24**	**335**	*e*P	**P**	**01 39 24.6**	**+1.2**
	comp=Z,40nm,0.8s						
ES19	**SONSECA Array**	**73.29**	**51**	*e*P	**P**	**01 39 24.8**	**+0.6**
PAX	**Paxson**	**73.64**	**334**	*e*P	**P**	**01 39 26.3**	**+0.5**
	comp=Z,9.7nm,1.3s						
SCM	**Sheep Creek Mo**	**74.16**	**333**	*e*P	**P**	**01 39 29.5**	**+0.7**
	comp=Z,20nm,1.0s						
SML	**Sawmill**	**74.61**	**332**	*e*P	**P**	**01 39 32.0**	**+0.5**
	comp=Z,24nm,1.3s						
HDA	**Harding Lake**	**74.68**	**335**	*e*P	**P**	**01 39 32.2**	**+0.4**
	comp=Z,39nm,1.5s						
IL1	**Eielson Array**	**74.76**	**336**	*e*P	**P**	**01 39 31.7**	**-0.4**
ILAR	**Eielson Array**	**74.76**	**336**	P	**P**	**01 39 32.2**	**0.0**
	comp=Z,2.6nm,0.6s,baz=118,slow=4.6,SNR=38						
COLA	**College**	**75.19**	**336**	*e*P	**P**	**01 39 33.4**	**-1.2**
	comp=Z,4.9nm,0.8s						
RND	**Reindeer**	**75.23**	**334**	*e*P	**P**	**01 39 35.8**	**+0.8**
	comp=Z,18nm,0.7s						
MCK	**McKinley**	**75.35**	**334**	*e*P	**P**	**01 39 36.1**	**+0.5**
	comp=Z,12nm,1.0s						
MDM	**Murphy Dome**	**75.36**	**336**	*e*P	**P**	**01 39 38.4**	**+2.7**
	comp=Z,4.9nm,0.8s						
TRF	**Thorofare Moun**	**75.87**	**334**	*e*P	**P**	**01 39 38.6**	**-0.2**
	comp=Z,6.4nm,0.8s						
KTH	**Kantishna Hill**	**76.17**	**334**	*e*P	**P**	**01 39 39.8**	**-0.6**
	comp=Z,7.8nm,0.9s						
BPAW	**Bear Paw Mtn.**	**76.32**	**334**	*e*P	**P**	**01 39 41.3**	**+0.1**
	comp=Z,12nm,0.8s						
MLY	**Manley**	**76.42**	**335**	*e*P	**P**	**01 39 41.8**	**0.0**
	comp=Z,9.2nm,1.0s						
PPLA	**Purkeypile**	**76.60**	**333**	*e*P	**P**	**01 39 42.3**	**-0.7**
	comp=Z,13nm,0.7s						
CAST	**Castle Rocks**	**76.66**	**334**	*e*P	**P**	**01 39 43.0**	**-0.1**
	comp=Z,8.8nm,1.0s						
SVW2	**Sparrevohn**	**77.89**	**331**	*e*P	**P**	**01 39 49.4**	**-0.7**
	comp=Z,11nm,0.7s						
TOA0	**Torodi Ar. Sit**	**78.41**	**78**	*e*P	**P**	**01 39 53.6**	**-0.2**
TORD	**Torodi Ar. Bea**	**78.41**	**78**	P	**P**	**01 39 53.5**	**-0.2**
	comp=Z,1.6nm,0.6s,baz=283,slow=6.5,SNR=21						
WLF	**Walferdange**	**80.88**	**41**	*e*P	**P**	**01 40 06.8**	**+0.2**
	comp=Z,5.9nm,0.8s						
TAM	**Tamanrasset**	**81.33**	**68**	*e*P	**P**	**01 40 10.7**	**+1.0**
	comp=Z,3.2nm,1.0s						
NB2	**NORSAR Subarra**	**83.50**	**29**	P	**P**	**01 40 21.1**	**+0.9**
	comp=Z,1.0nm,0.7s,baz=275,slow=5.3						
NOA	**NORSAR Array B**	**83.50**	**29**	P	**P**	**01 40 20.2**	**+0.1**
	comp=Z,2.5nm,0.9s,baz=278,slow=5.0,SNR=5.7						
KEST	**Kesra**	**83.77**	**55**	LR	LR	02 15 12.5	
	comp=Z,25nm,20.9s,baz=284,slow=34						
GAMB	**Gambell**	**85.40**	**334**	*e*P	**P**	**01 40 29.6**	**0.0**
	comp=Z,4.2nm,0.8s						
GERES	**GERESS Array B**	**85.86**	**41**	P	**P**	**01 40 32.7**	**+0.3**
	comp=Z,1.0nm,0.6s,baz=238,slow=2.5,SNR=6.0						
GERES				LR	LR	02 12 57.1	
	comp=Z,28nm,20.8s,baz=284,slow=31						
VYHS	**Vyhne**	**89.28**	**41**	*e*P	**P**	**01 40 52.0**	**+3.2**
FINES	**FINESS Array B**	**90.52**	**28**	P	**P**	**01 40 53.7**	**-0.5**
	comp=Z,1.6nm,0.8s,baz=256,slow=5.7,SNR=5.1						
STHS	**Stebnicka Huta**	**90.67**	**40**	*e*P	**P**	**01 40 56.6**	**+1.4**
CRVS	**Cervenica-Dubn**	**90.91**	**41**	*e*P	**P**	**01 40 57.1**	**+0.7**
AKASG	**Malin Array Be**	**95.32**	**38**	P	**P**	**01 41 20.7**	**+4.1**
	comp=Z,0.2nm,0.3s,baz=340,slow=6.8,SNR=2.6						
ZALV	**Zalesovo Beam**	**117.54**	**11**	PKP	**PKPdf**	**01 46 38.4**	**0.0**
	comp=Z,0.5nm,0.4s,baz=294,slow=4.6,SNR=2.9						
MKAR	**Makanchi Array**	**123.61**	**16**	PKP	**PKPdf**	**01 46 49.3**	**-1.1**
	comp=Z,0.6nm,0.6s,baz=349,slow=2.0,SNR=6.1						
CN2	**Changchun**	**125.14**	**339**	*e*PKP	**PKPdf**	**01 46 52.0**	**-1.4**
SONM	**Songino Array**	**125.24**	**356**	PKP	**PKPdf**	**01 46 53.1**	**-0.5**
	comp=Z,0.7nm,0.8s,baz=291,slow=2.5,SNR=5.5						
WMQ	**Urumqi**	**127.75**	**13**	*e*PKP	**PKPdf**	**01 46 56.8**	**-1.6**
KSH	**Kashi**	**127.78**	**25**	*e*PKP	**PKPdf**	**01 46 59.0**	**+0.3**
KSRS	**Korea Array**	**129.57**	**333**	PKP	**PKPdf**	**01 47 01.9**	**0.0**
	comp=Z,1.6nm,0.7s,baz=35,slow=4.6,SNR=4.7						
KSAR	**Wonju Array Be**	**129.59**	**333**	PKP	**PKPdf**	**01 47 01.9**	**-0.1**
HHC	**Hu-ho-hao-te**	**131.56**	**350**	*e*PKP	**PKPdf**	**01 47 03.3**	**-2.5**
LZH	**Lanzhou**	**137.08**	**358**	*e*PKP	**PKPdf**	**01 47 18.6**	**+2.2**
NJ2	**Nanjing**	**137.95**	**338**	*e*PKP	**PKPdf**	**01 47 19.2**	**+1.3**
CD2	**Chengdu**	**142.24**	**358**	PKP	**PKPdf**	**01 47 23.3**	**-2.5**
AS01	**Alice Springs**	**145.19**	**238**	*e*PKPbc	**PKPbc**	**01 47 29.2**	**-1.4**
AS31	**Alice Springs**	**145.23**	**238**	*e*PKPbc	**PKPbc**	**01 47 29.7**	**-1.0**
ASAR	**Alice Springs**	**145.23**	**238**	PKPbc	**PKPbc**	**01 47 29.4**	**-1.4**
	comp=Z,11nm,0.8s,baz=119,slow=3.6,SNR=71						
WRAB	**Tennant Creek**	**146.14**	**245**	*e*PKPbc	**PKPdf**	**01 47 32.4**	**-0.3**
WRA	**Warramunga Arr**	**146.15**	**244**	PKPbc	**PKPdf**	**01 47 32.6**	**-0.2**
	comp=Z,5.0nm,0.7s,baz=102,slow=3.4,SNR=20						
CMAR	**Chiang Mai Arr**	**154.49**	**7**	PKP	**PKPdf**	**01 47 44.1**	**-1.7**
	comp=Z,1.2nm,0.3s,baz=253,slow=33,SNR=3.5						
CMAR				PKPbc	**PKPbc**	**01 47 53.9**	**-0.3**
	comp=Z,1.7nm,0.6s,baz=318,slow=3.5,SNR=7.9						

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*JMA **01** 01:28:23.2±0.1, 23°90N×121°53E, h12^{km}±3^{km}, M3.0*
*IASPEI **01** 01:28:24.5±0.9, 23°93N±0°02×121°51E±0°03, h20^{km}±3^{km}, Error ellipse: s-maj=4.2km s-min=2.1km az=113.8, GT5 selection from ISC bulletin GT5 identified by Bondˆ¡r and McLaughlin (2009) selection criteria Bondˆ¡r and McLaughlin, A new ground truth data set for seismic studies, <i>Seism. Res. Let.</i>, 80, 465-472, 2009*
*ISCJB **01** 01:28:24.4±0.2, 23°92N±0°01×121°55E±0°02, h21^{km}±2^{km}, Error ellipse: s-maj=3.1km s-min=1.9km az=38.7*
*TAP **01** 01:28:24.2, 23°95N×121°47E, h19^{km}, ML3.7, B*
ISC 01 01:28:24.4±0.9**, 23°92N**±0°02×**121°52E**±0°02**, h18**^{km}±2^{km}**, n66, σ0^{s}85**/109**, 9C-4D, Taiwan**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
ESF	**Shoufeng Towns**	**0.05**	**198**	*e*P	**Pg**	**01 28 28.7**	**+1.0**
	baz=158						
ESF				S	**Sg**	**01 28 31.2**	**+1.3**
	baz=158						
HWA	**Hwalien**	**0.09**	**53**	⇑*i*P	**Pg**	**01 28 28.7**	**+0.7**
	baz=77						
HWA				*i* S	**Sg**	**01 28 32.0**	**+1.5**
	baz=77						
ESL	**Shilin**	**0.14**	**218**	⇓*i*P	**Pg**	**01 28 28.5**	**0.0**
	baz=192						
ESL				S	**Sg**	**01 28 31.1**	**-0.2**
	baz=192						
TWD	**Chiawan**	**0.17**	**23**	⇑*i*P	**Pb**	**01 28 29.1**	**+0.8**
	baz=35						
TWD				*i* S	**Sg**	**01 28 32.2**	**+0.1**
	baz=35						
TEGC	**Jichi Village**	**0.21**	**176**	*e*P	**Pg**	**01 28 31.2**	**+1.7**
	baz=164						
WHF	**Hehuan Shan**	**0.33**	**313**	⇑*i*P	**Pg**	**01 28 30.9**	**-0.8**
	baz=312						
WHF				*e*S	**Sg**	**01 28 34.9**	**-1.7**
	baz=312						
WDT	**Danda**	**0.39**	**245**	⇓*i*P	**Pg**	**01 28 32.4**	**-0.4**
	baz=231						
WDT				*i* S	**Sg**	**01 28 37.6**	**-0.7**
	baz=231						
EHP	**Heping Village**	**0.43**	**27**	*e*P	**Pb**	**01 28 34.3**	**+0.7**
	baz=36						
EHY	**Hungye**	**0.45**	**204**	*e*P	**Pg**	**01 28 33.0**	**-0.6**
	baz=190						
EHY				S	**Sg**	**01 28 39.7**	**-0.1**
	baz=190						
TWT	**Tachien**	**0.46**	**316**	⇑*i*P	**Pg**	**01 28 33.4**	**-0.4**
	baz=311						
TWT				*e*S	**Sg**	**01 28 38.9**	**-1.3**
	baz=311						
NNS	**Nan Shan**	**0.54**	**345**	⇑*i*P	**Pg**	**01 28 34.7**	**-0.5**
	baz=359						
NNS				*i* S	**Sg**	**01 28 41.3**	**-1.1**
	baz=359						
ENA	**Nanau**	**0.54**	**21**	P	**Pb**	**01 28 34.5**	**-0.8**
	baz=29						
SMLT	**Sun Moon Lake**	**0.57**	**266**	*i* P	**Pb**	**01 28 35.3**	**-0.6**
	baz=263						
SMLT				*i* S	**Sb**	**01 28 42.2**	**-1.5**
	baz=263						
TWF1	**Yuli**	**0.60**	**200**	⇑P	**Pb**	**01 28 34.7**	**-1.6**
	baz=194						
TWF1				*e*S	**Sb**	**01 28 44.6**	**+0.1**
	baz=194						
TYC	**Yuchr**	**0.61**	**269**	⇑*i*P	**Pb**	**01 28 35.7**	**-0.7**
	baz=266						
TYC				S	**Sb**	**01 28 43.1**	**-1.5**
	baz=266						
YUS	**Yu-Shan**	**0.68**	**231**	⇓*i*P	**Pb**	**01 28 37.8**	**-0.1**
	baz=217						
YUS				S	**Sb**	**01 28 46.7**	**-0.4**
	baz=217						
ENTT	**Nioudou**	**0.72**	**3**	*e*P	**Pb**	**01 28 35.9**	**-2.5**
	baz=8.0						
ENTT				*e*S	**Sb**	**01 28 47.4**	**-0.5**
	baz=8.0						
TWC	**Suao**	**0.75**	**23**	P	**Pb**	**01 28 38.0**	**-0.9**
	baz=28						
TWC				*e*S	**Sb**	**01 28 47.9**	**-0.8**
	baz=28						
NSK	**Sanguang**	**0.77**	**349**	*i* P	**Pb**	**01 28 38.6**	**-0.6**
	baz=346						
NSK				S	**Sb**	**01 28 48.3**	**-1.1**
	baz=346						
WNT	**Mingjian**	**0.77**	**267**	*e*P	**Pb**	**01 28 39.1**	**-0.1**
	baz=265						
WNT				*e*S	**Sg**	**01 28 50.4**	**+0.7**
	baz=265						
ALS	**Alishan**	**0.78**	**238**	*i* P	**Pb**	**01 28 39.4**	**-0.1**
	baz=240						
TWE	**Neicheng**	**0.81**	**9**	P	**Pb**	**01 28 39.6**	**-0.3**
	baz=14						
TWE				S	**Sb**	**01 28 49.5**	**-1.0**
	baz=14						
TWQ1	**Liyutan**	**0.81**	**302**	⇑*i*P	**Pb**	**01 28 40.0**	**+0.1**
	baz=303						
TCU	**Taichung**	**0.81**	**286**	*e*P	**Pb**	**01 28 40.2**	**+0.4**
	baz=286						
TCU				*e*S	**Sg**	**01 28 52.1**	**+1.2**
	baz=286						
CHKT	**Chengkung**	**0.83**	**190**	*e*P	**Pb**	**01 28 38.8**	**-1.5**
	baz=185						
CHN5	**Tsauling**	**0.84**	**248**	*i* P	**Pb**	**01 28 40.8**	**+0.4**
	baz=245						
CHN5				*i* S	**Sg**	**01 28 52.5**	**+0.5**
	baz=245						
NSTT	**Nanjuang**	**0.85**	**326**	⇑P	**Pb**	**01 28 40.4**	**-0.3**
	baz=330						
NSY	**Sanyi**	**0.85**	**305**	P	**Pb**	**01 28 40.7**	**0.0**
	baz=316						
NSY				S	**Sb**	**01 28 52.1**	**+0.3**
	baz=316						
ELDTW	**Lidau**	**0.86**	**213**	*e*P	**Pb**	**01 28 40.0**	**-0.9**
	baz=215						
ELDTW				*e*S	**Sb**	**01 28 51.5**	**-0.7**
	baz=215						
ILA	**Ilan**	**0.86**	**14**	*e*P	**Pb**	**01 28 41.0**	**+0.2**
	baz=19						
WGK	**Gukeng**	**0.91**	**255**	*e*P	**Pb**	**01 28 42.0**	**+0.4**
	baz=253						
WGK				*e*S	**Sg**	**01 28 55.0**	**+0.8**
	baz=253						
HSN	**Hsinchu**	**1.01**	**330**	*e*P	**Pn**	**01 28 44.4**	**+0.7**
	baz=341						
HSN				*e*S	**Sg**	**01 28 58.8**	**+1.4**
	baz=341						
CHN4	**Tsaushan**	**1.02**	**237**	P	**Pn**	**01 28 44.3**	**+0.5**
	baz=223						
CHN4				S	**Sg**	**01 28 58.7**	**+0.9**
	baz=223						
STYT	**Tauyuan**	**1.03**	**223**	⇓*i*P	**Pb**	**01 28 43.7**	**0.0**
	baz=210						
STYT				S	**Sb**	**01 28 56.9**	**-0.1**
	baz=210						
TWA	**Mucha**	**1.06**	**3**	*e*P	**Pb**	**01 28 44.2**	**+0.1**
	baz=16						
WTP	**Ta-pu**	**1.07**	**231**	P	**Pb**	**01 28 44.6**	**+0.2**
	baz=218						
WTP				S	**Sg**	**01 28 59.7**	**+0.5**
	baz=218						
NCU	**National Centr**	**1.09**	**344**	*e*P	**Pn**	**01 28 45.3**	**+0.6**
	baz=346						
NCU				S	**Sg**	**01 29 00.9**	**+1.1**
	baz=346						
CHY	**Chiayi**	**1.09**	**248**	*e*P	**Pb**	**01 28 45.1**	**+0.3**
	baz=243						
TAP1	**Taipei**	**1.11**	**360**	*e*P	**Pn**	**01 28 44.6**	**-0.4**
	baz=2.0						
TAP1				*e*S	**Sn**	**01 29 00.8**	**+0.9**
	baz=2.0						
TAP	**Taipei**	**1.11**	**359**	*e*P	**Pg**	**01 28 47.0**	**+1.1**
	baz=17						
WTCT	**Ta-ch'eng**	**1.14**	**267**	*e*P	**Pn**	**01 28 46.0**	**+0.6**
	baz=266						
WTCT				*e*S	**Sn**	**01 29 00.9**	**+0.3**
	baz=266						
TWK	**Hsinying**	**1.15**	**236**	*e*P	**Pb**	**01 28 46.4**	**+0.6**
	baz=233						
TWK				*e*S	**Sg**	**01 29 01.9**	**+0.1**
	baz=233						
TWB1	**Santiao Chiao**	**1.16**	**21**	*e*P	**Pn**	**01 28 44.0**	**-1.7**
	baz=17						
NWF	**Wu-fen Shan**	**1.17**	**11**	*e*P	**Pn**	**01 28 44.6**	**-1.3**
	baz=22						
NWF				S	**Sb**	**01 29 01.5**	**+0.6**
	baz=22						
CHN1	**Nanshi**	**1.17**	**231**	*e*P	**Pn**	**01 28 46.2**	**+0.4**
	baz=219						
CHN1				*e*S	**Sg**	**01 29 03.1**	**+0.6**
	baz=219						
TWG	**Pinlang**	**1.17**	**201**	*e*P	**Pn**	**01 28 45.6**	**-0.2**
	baz=183						
TWS1	**Kuangyinshan**	**1.18**	**355**	*e*P	**Pn**	**01 28 46.6**	**+0.7**
	baz=9.0						
TWS1				*e*S	**Sg**	**01 29 03.5**	**+0.9**
	baz=9.0						
SGST	**Jiashian**	**1.20**	**226**	*e*P	**Pb**	**01 28 47.2**	**+0.6**
	baz=208						
SGST				S	**Sg**	**01 29 03.8**	**+0.4**
	baz=208						
TWY	**Chenhua**	**1.35**	**3**	*e*P	**Pn**	**01 28 48.4**	**+0.1**
	baz=7.0						
JYNG	**Yonagunijimaku**	**1.40**	**68**	P	**Pn**	**01 28 48.5**	**-0.5**
JYNG				*e*S	**Sn**	**01 29 07.2**	**+0.2**
YOJ	**Yonaguni jima**	**1.46**	**68**	P	**Pn**	**01 28 49.5**	**-0.3**
YOJ				*e*S	**Sn**	**01 29 09.2**	**+0.7**
YOJ	**Yonaguni jima**	**1.46**	**68**	*e*P	**Pn**	**01 28 49.0**	**-0.8**
	baz=83						
YOJ				*e*S	**Sn**	**01 29 09.2**	**+0.7**
	baz=83						
TWM1	**Shoushan**	**1.49**	**223**	*e*P	**Pg**	**01 28 53.6**	**+0.5**
	baz=218						
EAST	**Anshuo**	**1.65**	**202**	*e*P	**Pb**	**01 28 54.0**	**-0.4**
	baz=186						
SCZT	**Fangliau**	**1.75**	**209**	*e*P	**Pb**	**01 28 55.4**	**-0.6**
	baz=198						
WDGT	**Dungji**	**1.83**	**249**	*e*P	**Pn**	**01 28 55.1**	**+0.2**
	baz=243						
PNG	**Penghu**	**1.84**	**259**	*e*P	**Pn**	**01 28 53.2**	**-1.8**
	baz=257						
PNG				*e*S	**Sn**	**01 29 18.1**	**+0.3**
	baz=257						
LAY	**Lan-yu**	**1.87**	**179**	*e*P	**Pn**	**01 28 54.1**	**-1.4**
	baz=164						
IRIF	**Iriomote-Funau**	**2.06**	**78**	P	**Pn**	**01 28 57.7**	**-0.3**
TWK1	**Hengchun**	**2.08**	**199**	*e*P	**Pn**	**01 28 59.6**	**+1.3**
	baz=186						
HATJ	**Hateruma jima**	**2.09**	**86**	*e*S	**Sn**	**01 29 24.2**	**+0.2**
JKRS	**Kuro-shima**	**2.29**	**82**	P	**Pn**	**01 29 01.9**	**+0.6**
JKRS				S	**Sn**	**01 29 30.4**	**+1.4**
JIJ	**Ishigaki jima**	**2.43**	**79**	P	**Pn**	**01 29 02.4**	**-0.8**
JIJ				*e*S	**Sn**	**01 29 31.6**	**-0.9**
JISG	**Ishigakijimahi**	**2.63**	**75**	P	**Pn**	**01 29 05.5**	**-0.4**
JISG				*e*S	**Sn**	**01 29 37.4**	**+0.1**
KNM	**Kinmen**	**2.87**	**281**	*e*P	**Pn**	**01 29 09.9**	**+0.7**
	baz=277						
JTJ	**Tarama**	**2.99**	**75**	P	**Pn**	**01 29 09.0**	**-1.8**
JTJ				*e*S	**Sn**	**01 29 46.6**	**+0.4**

MEX 01 01:32:14.7±0.6**, 16°69N**×**96°36W, h66**^{km}±6^{km}**, MD3.6, Oaxaca**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
VHO	**Vista Hermosa**	**0.53**	**317**	*i* P	Pn	01 32 26.0	-1.7
VHO				*i* S	Sn	01 32 35.4	-1.7
HUIG	**Huatulco**	**0.94**	**165**	*e*P	Pn	01 32 30.7	-1.6
HUIG				*e*S	Sn	01 32 43.9	-1.5
PNIG	**Pinotepa**	**1.72**	**260**	*e*P	Pn	01 32 40.6	-2.0
PNIG				*e*S	Sn	01 33 01.8	-1.8
TPIG	**Tehuac#an**	**1.97**	**331**	*e*P	Pn	01 32 45.1	-1.0
TPIG				*e*S	Sn	01 33 07.5	-2.3
TLIG	**Tlapa**	**2.28**	**293**	*e*P	Pn	01 32 50.0	-0.3
	56nm,0.3s						
TLIG	**Tlapa**	**2.28**	**293**	*e*P	Pn	01 32 49.5	-0.7
TLIG				*e*S	Sn	01 33 15.6	-1.8

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*NIED **01** 01:35:00, 36°90N×144°60E, h5^{km}, Mw4.2 Best double couple: $M_0$2.42000×10^{15} NP1:ϕ_s38.00000°, δ15.00000°, λ-80.00000°. NP2:ϕ_s208.00000°, δ75.00000°, λ-93.00000°.*
*IDC **01** 01:35:20.6±0.6, 36°79N×144°79E, h0^{km}, mb4.1/18, mb1 4.3/24, mb1mx4.2/45, mbtmp4.1/24, ML3.7/6, MS3.1/10, Ms1 3.1/10, ms1mx2.9/39, Error ellipse: s-maj=17.4km s-min=13.7km az=149.0*
*JMA **01** 01:35:21.9±0.3, 36°94N×144°56E, h30^{km}, M4.2*
*ISCJB **01** 01:35:23.0±0.4, 36°95N±0°04×144°51E±0°04, h26^{km}, mb4.2/33, MS3.2/3, Error ellipse: s-maj=6.2km s-min=4.0km az=152.4*
*NEIC **01** 01:35:25.8±0.3, 36°84N×144°68E, h35^{km}, mb4.4/14, Error ellipse: s-maj=9.3km s-min=6.6km az=162.0*
ISC 01 01:35:24.9±0.5**, 36°98N**±0°05×**144°57E**±0°07**, h26**^{km}**, n72, σ1^{s}80**/77**, mb4.3**/33**, MS3.2**/3**, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**2.95**	**301**	*e*S	**Sn**	**01 36 43.6**	**-1.0**
ONAJ	**Iwakimizuishiy**	**3.02**	**273**	P	**Pn**	**01 36 09.0**	**-2.1**
ONAJ				*e*S	**Sn**	**01 36 44.6**	**-1.9**
JMK	**Ichinoseki**	**3.30**	**308**	P	**Pn**	**01 36 13.9**	**-1.0**
BSO1	**Boso 1**	**3.73**	**233**	P	**Pn**	**01 36 19.2**	**-1.1**
BSO1				S	**Sn**	**01 37 01.8**	**-1.3**
JRY	**Ryogami san**	**4.67**	**260**	P	**Pn**	**01 36 32.6**	**-1.2**
JRY				*e*S	**Sn**	**01 37 23.8**	**-3.3**
JOD2	**Odawara 2**	**4.76**	**251**	P	**Pn**	**01 36 34.3**	**-0.7**
JOD2				*e*S	**Sn**	**01 37 25.8**	**-3.5**
MJAR	**Matsushiro Arr**	**5.13**	**267**	Pn	**Pn**	**01 36 40.9**	**+0.8**
	7.4nm,0.3s,baz=82,slow=9.9,SNR=34						
MJAR				Sn	**Sn**	**01 37 40.8**	**+2.4**
	4.8nm,0.3s,baz=95,slow=28,SNR=5.9						
MJAR				LR	LR	01 39 20.7	
	comp=Z,105nm,20.1s,baz=130,slow=46						
MAJO	**Matsushiro**	**5.13**	**267**	*e*Pn	**Pn**	**01 36 40.1**	**0.0**
	33nm,0.4s						
MAJO				*e*Sn	**Sn**	**01 37 39.9**	**+1.4**
MAT	**Matsushiro**	**5.13**	**267**	P	**Pn**	**01 36 40.4**	**+0.3**
MAT				S	**Sn**	**01 37 35.7**	**-2.8**
ERM	**Erimo**	**5.15**	**348**	*e*Pn	**Pn**	**01 36 39.2**	**-1.1**
	28nm,0.6s						
JOT	**Ohata**	**5.18**	**329**	P	**Pn**	**01 36 40.3**	**-0.4**
JOT				*e*S	**Sn**	**01 37 35.7**	**-3.9**
JHJ2	**Mitsune**	**5.49**	**227**	P	**Pn**	**01 36 43.0**	**-2.0**
JHJ2				S	**Sn**	**01 37 41.6**	**-5.6**
JHJ	**Hachijo jima 2**	**5.50**	**227**	Pn	**Pn**	**01 36 43.4**	**-1.8**
	29nm,0.3s,baz=130,slow=23,SNR=7.6						
JHJ				Sn	**Sn**	**01 37 43.6**	**-4.0**
	99nm,0.3s,baz=236,slow=22,SNR=9.3						
JHJ				LR	LR	01 38 40.2	
	comp=Z,61nm,21.1s,baz=212,slow=36						
JKB	**Kayabe**	**5.62**	**332**	P	**Pn**	**01 36 46.7**	**0.0**
JKB				*e*S	**Sn**	**01 37 48.2**	**-2.1**
JCH	**Churui**	**5.71**	**351**	P	**Pn**	**01 36 46.4**	**-1.5**
JCH				*e*S	**Sn**	**01 37 48.4**	**-4.1**
NEM2	**Nemuro 2**	**6.44**	**8**	P	Pn	01 36 54.3	-3.7
NEM2				S	Sn	01 38 04.1	-6.5
JOSM	**Okushiri--Mats**	**6.44**	**324**	P	**Pn**	**01 36 57.8**	**-0.2**
JTKR	**Abashiri--Toko**	**7.00**	**356**	P	**Pn**	**01 37 04.0**	**-1.7**
JTKR				*e*S	**Sn**	**01 38 19.1**	**-5.4**
JHR	**Hokuryu**	**7.10**	**343**	P	**Pn**	**01 37 07.4**	**+0.4**
JHR				*e*S	**Sn**	**01 38 24.3**	**-2.5**
JNU	**Nakatsue**	**11.86**	**255**	Pn	**Pn**	**01 38 13.8**	**+1.3**
	0.3nm,0.3s,baz=75,slow=9.4,SNR=4.4						
JNU				LR	LR	01 43 10.2	
	comp=Z,80nm,19.0s,baz=120,slow=39						
JNU	**Nakatsue**	**11.86**	**255**	*e*Pn	**Pn**	**01 38 12.3**	**-0.2**
USRK	**Ussuriysk Ar.**	**11.97**	**311**	Pn	**Pn**	**01 38 16.1**	**+2.3**
	0.5nm,0.3s,baz=120,slow=15,SNR=6.5						
USRK				LR	LR	01 42 34.2	
	comp=Z,139nm,21.1s,baz=149,slow=36						
KSRS	**Korea Array**	**13.28**	**277**	Pn	Pn	01 38 35.4	+3.7
	0.4nm,0.3s,baz=91,slow=14,SNR=10.0						
KSRS				LR	LR	01 43 25.6	
	comp=Z,113nm,19.9s,baz=80,slow=36						
KSAR	**Wonju Array Be**	**13.31**	**277**	Pn	Pn	01 38 35.4	+3.2
KLR	**Kul'dur**	**15.39**	**327**	Pn	**P**	**01 39 03.5**	**-1.0**
	0.2nm,0.3s,baz=133,slow=14,SNR=3.7						
KLR				LR	LR	01 44 54.4	
	comp=Z,104nm,19.6s,baz=128,slow=37						
PETK	**Petropavlovsk-**	**18.55**	**25**	LR	LR	01 48 55.6	
	comp=Z,21nm,18.4s,baz=196,slow=44						
H11N2	**WAKE ISLAND Hy**	**26.00**	**125**	T	T	02 07 36.2	
	baz=316,slow=75,SNR=1090						
H11N1	**WAKE ISLAND Hy**	**26.00**	**125**	T	T	02 07 39.8	
	baz=316,slow=75,SNR=182						
H11N3	**WAKE ISLAND Hy**	**26.02**	**125**	T	T	02 07 41.3	
	baz=316,slow=75,SNR=316						
SEY	**Seymchan**	**26.42**	**8**	P	**P**	**01 41 01.3**	**+2.1**
	2.8nm,0.6s,baz=174,slow=6.6,SNR=13						
H11S1	**WAKE ISLAND Hy**	**26.76**	**127**	T	T	02 08 38.5	
	baz=318,slow=76,SNR=168						
H11S3	**WAKE ISLAND Hy**	**26.76**	**127**	T	T	02 08 39.6	
	baz=318,slow=76,SNR=54						
H11S2	**WAKE ISLAND Hy**	**26.78**	**127**	T	T	02 08 35.0	
	baz=318,slow=76,SNR=143						
ULN	**Ulaanbaatar**	**29.48**	**304**	*e*P	**P**	**01 41 27.0**	**+0.1**
	3.5nm,0.8s						
SONM	**Songino Array**	**29.92**	**303**	P	P	01 41 35.4	+4.7
	0.8nm,0.9s,baz=151,slow=3.4,SNR=4.2						
SONM				PcP	**PcP**	**01 44 32.7**	**-0.3**
	0.3nm,0.5s,baz=69,slow=2.0,SNR=3.4						
TLY	**Talaya**	**32.29**	**310**	LR	LR	01 55 38.4	
	comp=Z,64nm,18.5s,baz=98,slow=37						
BILL	**Bilibino**	**33.40**	**15**	*e*P	**P**	**01 42 01.0**	**+0.1**
	2.1nm,0.5s						
ZALV	**Zalesovo Beam**	**43.82**	**312**	P	**P**	**01 43 31.0**	**+2.5**
	0.8nm,0.4s,baz=101,slow=4.7,SNR=4.3						
ZALV				PcP	**PcP**	**01 45 14.7**	**+0.1**
	3.7nm,0.5s,baz=93,slow=2.5,SNR=9.8						
CMAR	**Chiang Mai Arr**	**43.94**	**258**	P	**P**	**01 43 31.6**	**+1.7**
	1.9nm,0.5s,baz=44,slow=7.8,SNR=11						
CMAR				LR	LR	02 02 46.7	
	comp=Z,22nm,20.5s,baz=75,slow=37						
MKAR	**Makanchi Array**	**46.28**	**303**	P	**P**	**01 43 49.5**	**+1.3**
	2.1nm,0.8s,baz=85,slow=9.6,SNR=19						
MKAR				PcP	**PcP**	**01 45 23.3**	**0.0**
	0.9nm,0.8s,baz=66,slow=2.9,SNR=5.6						
MKAR				LR	LR	02 03 41.1	
	comp=Z,27nm,19.7s,baz=44,slow=36						

KURK	Kurchatov	47.95	309	eP	P	01 44 01.8	+0.7
	3.9nm,0.6s						
ILAR	Eielson Array	48.19	32	P	P	01 44 03.0	+0.2
	3.1nm,1.0s,baz=264,slow=6.1,SNR=18						
DIV	Divide	48.79	37	eP	P	01 44 08.1	+0.5
	3.5nm,0.3s						
TKM2	Tokmak 2	51.87	299	eP	P	01 44 31.5	+0.2
	10nm,1.3s						
BRVK	Borovoye	52.53	313	eP	P	01 44 36.7	+1.0
	6.4nm,1.4s						
INK	Inuvik	53.28	27	P	P	01 44 41.7	+0.7
	1.5nm,0.3s,baz=344,slow=3.7,SNR=3.6						
WRAB	Tennant Creek	57.42	191	eP	P	01 45 08.9	-2.5
	4.8nm,0.9s						
WRA	Warramunga Arr	57.43	191	P	P	01 45 09.7	-1.7
	2.3nm,0.5s,baz=8.7,slow=7.2,SNR=8.4						
ASAR	Alice Springs	61.15	191	P	P	01 45 35.9	-1.3
	0.9nm,0.6s,baz=11,slow=8.5,SNR=10						
YKA	Yellowknife Ar	62.57	31	P	P	01 45 46.5	+0.3
	0.8nm,0.8s,baz=300,slow=6.6,SNR=4.7						
GEYT	Alibeck	66.06	300	P	P	01 46 10.9	+1.4
	1.9nm,0.8s,baz=76,slow=7.8,SNR=6.4						
FINES	FINESS Array B	70.02	333	P	P	01 46 34.7	+0.7
	0.5nm,0.6s,baz=260,slow=21,SNR=2.8						
BMO	Blue Mountains	70.09	48	eP	P	01 46 34.3	-0.5
	2.5nm,0.9s						
FFC	Flin Flon	72.36	34	eP	P	01 46 48.3	0.0
	2.9nm,0.9s						
KIV	Kislovodsk	72.83	312	eP	P	01 46 52.3	+0.9
	3.8nm,0.7s						
KBZ	Khabaz	72.84	312	P	P	01 46 52.9	+1.6
	3.2nm,0.9s,baz=75,slow=2.1,SNR=10						
NVAR	Mina Array Bea	72.98	55	P	P	01 46 53.3	+0.8
	1.4nm,0.7s,baz=286,slow=6.1,SNR=11						
H17A	Grant Village	74.31	46	eP	P	01 46 59.3	-1.0
	6.1nm,1.0s						
R11A	Troy Canyon, C	74.78	53	eP	P	01 47 02.9	-0.2
	4.3nm,1.4s						
NB2	NORSAR Subarra	75.19	339	P	P	01 47 05.6	+0.8
	comp=Z,0.6nm,0.7s,baz=37,slow=5.9						
NOA	NORSAR Array B	75.19	339	P	P	01 47 05.1	+0.3
	comp=Z,1.7nm,0.9s,baz=37,slow=5.6,SNR=4.4						
AKASG	Malin Array Be	75.86	324	P	P	01 47 08.4	-0.4
	comp=Z,0.6nm,0.4s,baz=48,slow=5.8,SNR=5.7						
PDAR	Pinedale Array	75.88	47	P	P	01 47 07.8	-1.5
	comp=Z,0.5nm,0.6s,baz=256,slow=0.6,SNR=5.5						
ISCO	Idaho Springs	80.05	47	eP	P	01 47 32.4	-0.3
	comp=Z,1.7nm,0.7s						
BRTR	Keskin Array B	80.76	313	P	P	01 47 37.6	+1.3
	comp=Z,3.7nm,1.2s,baz=108,slow=4.0,SNR=10						
RAYN	Ar Rayn	83.00	294	eP	P	01 47 48.8	+0.6
	comp=Z,2.0nm,0.8s						
TXAR	Lajitas Array	88.13	54	P	P	01 48 13.5	-0.2
	comp=Z,0.6nm,0.8s,baz=310,slow=3.9,SNR=5.8						
TORD	Torodi Ar. Bea	119.12	318	PKP	PKPdf	01 54 11.1	-0.9
	comp=Z,0.5nm,0.6s,baz=38,slow=1.9,SNR=8.4						
DBIC	Dimbokro	128.01	320	PKP	PKPdf	01 54 28.5	-0.6
	comp=Z,1.5nm,0.7s,baz=240,slow=13,SNR=3.3						
LPAZ	La Paz	144.50	63	PKP	PKPdf	01 54 59.9	-0.3
	comp=Z,1.1nm,0.7s,baz=269,slow=2.8,SNR=5.5						
LCO	Las Campanas	149.50	85	ePKPbc	PKPbc	01 55 11.9	-0.4
PLCA	Paso Flores	152.50	109	PKPbc	PKPbc	01 55 19.2	+0.4
	comp=Z,1.0nm,0.8s,baz=272,slow=4.1,SNR=4.0						

JMA 01 01:41:28.1±0.1, 36°.58N×140°.98E, h47km±1km, M2.7, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
JHO	Hitachi	0.33	275	P	Pn	01 41 37.4	+0.1
JHO				S	Sn	01 41 43.6	-0.2
ONAJ	Iwakimizuishiy	0.54	344	P	Pn	01 41 39.3	-0.5
ONAJ				S	Sn	01 41 47.1	-1.0
CHOJ	Chosi	0.88	186	P	Pn	01 41 44.1	0.0
CHOJ				S	Sn	01 41 55.7	-0.1
MAT	Matsushiro	2.23	270	P	Pn	01 42 04.3	+1.7
MAT				S	Sn	01 42 32.5	+3.5

*NIED **01** 01:42:00, 36°.20N×141°.30E, h8km, Mw3.8 Best double couple: M₀4.73000×10¹⁴ NP1:φs278.00000°, δ19.00000°, λ-69.00000°. NP2:φs75.00000°, δ72.00000°, λ-97.00000°.*
*IDC **01** 01:42:27.7±0.8, 36°.16N×141°.27E, h0km, mb3.7/12, mb1 3.9/13, mb1mx3.8/47, mbtmp3.7/13, ML3.4/1, Error ellipse: s-maj=20.7km s-min=19.9km az=145.0*
*JMA **01** 01:42:30.0±0.1, 36°.18N×141°.31E, h45km±3km, M3.5*
ISC 01 01:42:29.8±1.8, 36°.22N±0°.05×141°.24E±0°.06, h13km±11km, n27, σ0s.61/28, mb3.8/12, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
CHOJ	Chosi	0.60	211	P	Pb	01 42 42.3	+0.1
CHOJ				S	Sb	01 42 51.0	+0.4
JHO	Hitachi	0.67	306	P	Pb	01 42 43.9	+0.5
JHO				eS	Sn	01 42 54.3	-1.1
JYT	Yasato	0.85	271	P	Pb	01 42 46.6	+0.2
JYT				S	Sb	01 42 58.3	+0.6
ONAJ	Iwakimizuishiy	0.95	338	P	Pg	01 42 47.7	-0.5
JAG	Ashikaga	1.46	279	P	Pn	01 42 55.5	-0.4
JAG				S	Sn	01 43 14.1	-0.8
JFT	Otama	1.48	331	P	Pn	01 42 56.3	0.0
JFT				eS	Sn	01 43 14.8	-0.8
BSO1	Boso 1	1.58	188	P	Pn	01 42 57.1	+0.1
MJAR	Matsushiro Arr	2.47	278	Pn	Pn	01 43 10.8	+1.0
	8.8nm,0.3s,baz=84,slow=9.7,SNR=25						
MAT	Matsushiro	2.47	278	P	Pn	01 43 10.5	+0.7
MAT				S	Sn	01 43 39.0	-0.9
JHJ	Hachijo jima 2	3.32	202	Pn	Pn	01 43 24.8	+3.3
	20nm,0.3s,baz=122,slow=22,SNR=7.7						
H11N2	WAKE ISLAND Hy	27.86	119	T	T	02 17 24.3	
	baz=319,slow=75,SNR=12						
H11N3	WAKE ISLAND Hy	27.88	119	T	T	02 17 25.6	
	baz=315,slow=75,SNR=13						
SONM	Songino Array	28.13	305	P	P	01 48 22.2	+0.6
	0.4nm,0.5s,baz=112,slow=10,SNR=4.4						
H11S1	WAKE ISLAND Hy	28.54	121	T	T	02 18 16.1	
	baz=132,slow=74,SNR=23						
H11S3	WAKE ISLAND Hy	28.55	121	T	T	02 18 14.4	
	baz=314,slow=74,SNR=20						
ZALV	Zalesovo Beam	42.36	313	P	P	01 50 23.1	-0.4
	1.1nm,0.5s,baz=85,slow=6.8,SNR=4.3						
MKAR	Makanchi Array	44.44	303	P	P	01 50 40.4	0.0
	0.3nm,0.6s,baz=91,slow=10,SNR=4.6						
ILAR	Eielson Array	50.26	32	P	P	01 51 25.4	0.0
	0.8nm,0.6s,baz=263,slow=5.9,SNR=14						
WRA	Warramunga Arr	56.24	188	P	P	01 52 08.9	-1.0
	1.0nm,0.8s,baz=4.8,slow=7.5,SNR=3.0						
ASAR	Alice Springs	59.96	188	P	P	01 52 35.6	-0.3
	0.3nm,0.6s,baz=23,slow=8.2,SNR=3.6						
YKA	Yellowknife Ar	64.58	30	P	P	01 53 06.9	+0.5
	1.5nm,1.0s,baz=303,slow=6.5,SNR=1.9						
AKASG	Malin Array Be	74.86	322	P	P	01 54 09.8	-0.1
	0.8nm,0.4s,baz=46,slow=5.9,SNR=8.8						
NB2	NORSAR Subarra	74.88	337	P	P	01 54 09.9	-0.1
	comp=Z,0.5nm,0.6s,baz=40,slow=6.2						
NOA	NORSAR Array B	74.88	337	P	P	01 54 10.2	+0.2
	comp=Z,0.6nm,0.6s,baz=40,slow=5.8,SNR=4.2						
NVAR	Mina Array Bea	75.59	53	P	P	01 54 15.8	+1.1
	comp=Z,0.5nm,0.6s,baz=313,slow=5.6,SNR=5.2						
PDAR	Pinedale Array	78.34	45	P	P	01 54 29.6	-0.5
	comp=Z,0.2nm,0.6s,baz=325,slow=1.8,SNR=3.6						
TXAR	Lajitas Array	90.73	52	P	P	01 55 32.8	0.0
	comp=Z,0.1nm,0.6s,baz=343,slow=12,SNR=3.0						

*NIED **01** 01:45:00, 37°.40N×142°.40E, h20km, Mw4.2 Best double couple: M₀2.62000×10¹⁵ NP1:φs12.00000°, δ20.00000°, λ-162.00000°. NP2:φs265.00000°, δ84.00000°, λ-71.00000°.*
*ISCJB **01** 01:45:14.5±0.4, 37°.41N±0°.04×142°.54E±0°.05, h21km, mb4.2/32, MS3.4/6, Error ellipse: s-maj=6.5km s-min=5.8km az=136.5*
*NEIC **01** 01:45:14.5±3.2, 37°.37N×142°.61E, h11km±20km, mb4.4/11, Error ellipse: s-maj=10.6km s-min=7.0km az=123.0*
*JMA **01** 01:45:15.0±0.3, 37°.45N×142°.38E, h14km, M4.4*
*IDC **01** 01:45:19.6±2.1, 37°.37N×142°.47E, h46km±20km, mb3.8/20, mb1 4.1/25, mb1mx3.9/49, mbtmp4.1/25, ML3.8/5, MS3.3/13, Ms1 3.3/13, ms1mx3.1/45, Error ellipse: s-maj=16.3km s-min=12.8km az=124.0*
ISC 01 01:45:17.3±0.7, 37°.56N±0°.09×142°.50E±0°.07, h21km, n62, σ0s.91/45, mb4.3/32, MS3.4/6, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
JIO	Ouri	1.27	315	P	Pn	01 45 38.5	-1.3
JIO				eS	Sn	01 45 55.6	-0.6
JMM	Marumori	1.39	283	P	Pn	01 45 39.0	-2.4
JOU	Okura	1.66	300	eS	Sn	01 46 05.4	-0.4
JMK	Ichinoseki	1.71	324	P	Pn	01 45 46.0	+0.1
JOM	Ohasama	2.13	334	P	Pn	01 45 52.0	+0.4
MJAR	Matsushiro Arr	3.58	255	P	Pn	01 46 11.7	+0.1
	20nm,0.3s,baz=89,slow=15,SNR=27						
MJAR				LR	LR	01 47 47.1	
	comp=Z,354nm,18.4s,baz=55,slow=42						
MAJO	Matsushiro	3.58	255	ePn	Pn	01 46 11.9	+0.3
MAT	Matsushiro	3.58	255	P	Pn	01 46 11.5	-0.1
MAT				S	Sn	01 46 55.3	+2.1
ERM	Erimo	4.48	6	ePn	Pn	01 46 22.9	-0.9
JHJ	Hachijo jima 2	4.96	207	P	Pn	01 46 26.9	-3.5
	59nm,0.3s,baz=323,slow=22,SNR=10.0						
JHJ				S	Sn	01 47 20.0	-7.2
	92nm,0.3s,baz=254,slow=22,SNR=6.7						
JHJ				LR	LR	01 48 10.8	
	comp=Z,157nm,19.8s,baz=304,slow=36						
YSS	Yuzh-Sakhalins	9.39	1	ePn	Pn	01 47 32.1	+0.8
USRK	Ussuriysk Ar.	10.35	313	P	Pn	01 47 49.6	+5.1
	0.8nm,0.3s,baz=124,slow=13,SNR=17						
USRK				LR	LR	01 51 32.2	
	comp=Z,224nm,20.6s,baz=140,slow=36						
CBIJ	Chichi jima	10.44	182	P	Pn	01 47 39.0	-6.7
CBIJ				S	Sn	01 49 30.7	-11
JCJ	Chichijima	10.44	182	P	Pn	01 47 39.0	-6.7
	6.8nm,0.3s,baz=265,slow=14,SNR=3.1						
JCJ				S	Sn	01 49 30.7	-11
JNU	Nakatsue	10.47	248	P	Pn	01 47 46.2	0.0
	0.6nm,0.3s,baz=68,slow=4.7,SNR=6.3						
JNU				LR	LR	01 52 37.0	
	comp=Z,69nm,18.3s,baz=116,slow=42						
KSRS	Korea Array	11.58	274	P	Pn	01 48 03.8	+2.6
	0.5nm,0.3s,baz=93,slow=13,SNR=5.9						
KSRS				LR	LR	01 52 37.1	
	comp=Z,49nm,18.0s,baz=84,slow=38						
KSAR	Wonju Array Be	11.61	274	P	Pn	01 48 03.8	+2.1
KLR	Kul'dur	14.02	330	P	Pn	01 48 33.5	-1.0
	0.1nm,0.3s,baz=143,slow=13,SNR=3.7						
KLR				LR	LR	01 54 09.9	
	comp=Z,298nm,18.2s,baz=119,slow=37						
PETK	Petropavlovsk-	18.80	29	P	Pn	01 49 37.5	+1.7
	0.1nm,0.3s,baz=246,slow=13,SNR=3.1						
PETK				LR	LR	01 57 38.0	
	comp=Z,64nm,18.5s,baz=221,slow=39						
MA2	Magadan	22.67	11	P	P	01 50 17.9	+0.9
	5.0nm,0.4s,baz=220,slow=9.5,SNR=9.3						
MA2				LR	LR	02 01 14.6	
	comp=Z,67nm,18.1s,baz=236,slow=42						
MA2	Magadan	22.67	11	eP	P	01 50 16.8	-0.1
	28nm,0.6s						
GUMO	Guam	23.97	174	LR	LR	01 57 53.5	
	comp=Z,38nm,20.9s,baz=344,slow=32						
YAK	Yakutsk	25.76	346	LR	LR	02 01 31.2	
	comp=Z,197nm,18.1s,baz=156,slow=38						
SEY	Seymchan	26.11	10	P	P	01 50 51.4	+2.0
	7.5nm,0.7s,baz=193,slow=7.3,SNR=26						
H11N2	WAKE ISLAND Hy	27.69	123	T	T	02 20 09.0	
	baz=315,slow=75,SNR=7.7						
H11N1	WAKE ISLAND Hy	27.70	123	T	T	02 19 53.5	
	baz=315,slow=75,SNR=12						
H11N3	WAKE ISLAND Hy	27.71	123	T	T	02 19 52.0	
	baz=315,slow=75,SNR=14						
ULN	Ulaanbaatar	27.78	303	eP	P	01 51 04.8	0.0
	4.3nm,0.8s						
SONM	Songino Array	28.22	303	P	P	01 51 08.6	0.0
	4.6nm,0.7s,baz=96,slow=8.6,SNR=36						
SONM				LR	LR	02 03 03.3	
	comp=Z,57nm,19.4s,baz=104,slow=38						
ENH	Enshi	28.24	265	eP	P	01 51 06.9	-2.0
	10nm,0.7s						
H11S1	WAKE ISLAND Hy	28.44	125	T	T	02 20 50.3	
	baz=317,slow=76,SNR=84						
H11S3	WAKE ISLAND Hy	28.44	125	T	T	02 20 47.2	
	baz=317,slow=76,SNR=87						
H11S2	WAKE ISLAND Hy	28.45	125	T	T	02 20 54.7	
	baz=317,slow=76,SNR=85						
BILL	Bilibino	33.28	16	eP	P	01 51 53.2	+0.4
	1.6nm,0.4s						
ZALV	Zalesovo Beam	42.20	312	P	P	01 53 08.1	-0.3
	3.9nm,0.8s,baz=85,slow=6.6,SNR=16						
CMAR	Chiang Mai Arr	42.47	256	P	P	01 53 11.0	0.0
	2.5nm,0.4s,baz=336,slow=28,SNR=3.8						
MKAR	Makanchi Array	44.57	302	P	P	01 53 27.2	-0.5
	1.9nm,0.7s,baz=89,slow=9.2,SNR=16						
KDAK	Kodiak Island	46.13	42	P	P	01 53 53.9	+14
	6.6nm,1.0s,baz=288,slow=4.2,SNR=4.7						
KURK	Kurchatov	46.29	308	eP	P	01 53 40.1	-1.0
	18nm,0.7s						
ILAR	Eielson Array	48.59	33	P	P	01 53 59.0	+0.1
	0.9nm,0.8s,baz=260,slow=6.9,SNR=11						
AAK	Ala-Archa	51.00	298	eP	P	01 54 18.3	+0.6
	1.7nm,0.6s						
INK	Inuvik	53.52	27	P	P	01 54 35.8	0.0
	1.2nm,0.3s,baz=303,slow=5.2,SNR=2.3						
ARU	Arti	56.54	319	eP	P	01 54 57.2	-0.6
	6.7nm,0.8s						
WRAB	Tennant Creek	57.70	189	eP	P	01 55 03.2	-3.1
	7.5nm,0.8s						
WRA	Warramunga Arr	57.71	189	P	P	01 55 03.9	-2.6
	5.2nm,0.7s,baz=7.3,slow=7.2,SNR=19						
ASAR	Alice Springs	61.44	189	P	P	01 55 29.9	-2.2
	2.3nm,0.7s,baz=10,slow=6.9,SNR=19						
YKA	Yellowknife Ar	62.92	31	P	P	01 55 42.4	+0.8
	0.6nm,0.7s,baz=303,slow=6.5,SNR=4.1						
ARCES	ARCESS Array B	63.81	340	LR	LR	02 25 48.5	
	comp=Z,45nm,20.6s,baz=354,slow=38						
GEYT	Alibeck	64.33	299	P	P	01 55 51.0	-0.5
	1.0nm,0.5s,baz=76,slow=6.3,SNR=2.7						
FINES	FINESS Array B	68.75	333	P	P	01 56 18.9	-0.3
	2.8nm,0.6s,baz=44,slow=8.5,SNR=11						
SUMG	Summit	70.16	0	eP	P	01 56 28.4	+0.2
	2.2nm,0.6s						
KBZ	Khabaz	71.21	311	P	P	01 56 34.4	-0.2
	1.5nm,0.8s,baz=85,slow=2.5,SNR=6.4						
KBZ				LR	LR	02 29 46.0	
	comp=Z,48nm,19.7s,baz=3.5,slow=37						
FFC	Flin Flon	72.79	33	eP	P	01 56 43.5	-0.4
	1.8nm,0.7s						
NVAR	Mina Array Bea	73.98	54	P	P	01 56 52.2	+0.7
	0.1nm,0.5s,baz=300,slow=6.0,SNR=2.9						
NB2	NORSAR Subarra	74.03	338	P	P	01 56 50.2	-1.0
	comp=Z,1.2nm,0.6s,baz=40,slow=6.2						
NOA	NORSAR Array B	74.03	338	P	P	01 56 51.0	-0.2
	comp=Z,0.7nm,0.7s,baz=39,slow=5.9,SNR=4.5						
AKASG	Malin Array Be	74.41	323	P	P	01 56 52.9	-0.5
	comp=Z,1.5nm,0.5s,baz=44,slow=6.0,SNR=6.3						
PDAR	Pinedale Array	76.68	46	P	P	01 57 06.5	-0.5
	comp=Z,0.3nm,0.7s,baz=249,slow=4.1,SNR=3.4						
BRTR	Keskin Array B	79.14	312	P	P	01 57 20.5	-0.1
	comp=Z,0.4nm,0.6s,baz=93,slow=2.7,SNR=4.0						
PSZ	Piszkesteto	80.73	325	eP	P	01 57 28.6	-0.3
	comp=Z,2.6nm,0.6s						
RAYN	Ar Rayn	81.25	293	eP	P	01 57 31.4	-0.7
	comp=Z,1.3nm,0.9s						
TXAR	Lajitas Array	89.11	53	P	P	01 58 11.0	-0.4
	comp=Z,0.3nm,0.8s,baz=316,slow=3.5,SNR=3.3						

*IDC **01** 01:48:12.2±0.9, 16°.51S×177°.52W, h0km, mb4.1/9, mb1 4.3/9, mb1mx3.9/38, mbtmp4.1/9, MS3.9/10, Ms1 3.8/10, ms1mx3.6/24, Error ellipse: s-maj=40.5km s-min=20.0km az=138.0*
*ISCJB **01** 01:48:15.9±0.7, 16°.5S±0°.2×177°.7W±0°.1, h33km, mb4.1/10, MS3.9/8, Error ellipse: s-maj=24.1km s-min=9.2km az=152.0*
*NEIC **01** 01:48:15.3±7.4, 16°.47S×177°.65W, h21km±51km, mb4.5/1, Error ellipse: s-maj=25.8km s-min=21.0km az=128.0*
ISC 01 01:48:17.9±0.7, 16°.6S±0°.2×177°.7W±0°.1, h35km, n37, σ1s.55/36, mb4.1/10, MS3.8/8, 8C-6D, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
MSVF	Nonsavu	4.26	254	ePn	Pn	01 49 19.0	-1.3
MSVF				eSn	Sn	01 50 07.6	-1.2
AFI	Afiamalu	6.27	66	LR	LR	01 51 32.4	
	comp=Z,964nm,19.1s,baz=244,slow=33						
DZM	Mont Dzumac	15.96	247	LR	LR	01 57 04.5	
	comp=Z,432nm,21.4s,baz=76,slow=33						
URZ	Urewera	22.09	191	P	P	01 53 10.4	+0.4
	8.0nm,0.8s,baz=48,slow=4.5,SNR=4.2						
URZ				LR	LR	02 00 00.1	
	comp=Z,344nm,21.5s,baz=50,slow=32						
CTA	Charters Tower	34.39	259	P	P	01 55 04.3	+2.3
	6.1nm,0.9s,baz=130,slow=22,SNR=1.7						
STKA	Stephens Creek	39.90	240	P	P	01 55 49.7	+1.0
	3.0nm,0.9s,baz=52,slow=15,SNR=4.0						
STKA				LR	LR	02 09 51.2	
	comp=Z,102nm,21.3s,baz=39,slow=32						
WRA	Warramunga Arr	45.59	258	P	P	01 56 35.2	+0.2
	0.5nm,0.3s,baz=88,slow=6.1,SNR=2.8						
WRA				LR	LR	02 15 20.7	
	comp=Z,104nm,19.5s,baz=60,slow=36						
ASAR	Alice Springs	45.85	253	P	P	01 56 35.9	-1.2
	1.1nm,0.8s,baz=86,slow=8.5,SNR=7.4						
ASAR				LR	LR	02 14 37.5	
	comp=Z,270nm,19.2s,baz=97,slow=34						
PETK	Petropavlovsk-	72.58	345	P	P	01 59 42.5	+1.3
	6.2nm,1.0s,baz=157,slow=9.5,SNR=4.0						
PETK				LR	LR	02 26 59.6	
	comp=Z,25nm,19.2s,baz=112,slow=32						
NVAR	Mina Array Bea	77.97	44	P	P	02 00 11.7	-1.2
	1.1nm,0.8s,baz=223,slow=7.4,SNR=4.9						
MCK	McKinley	83.08	12	eP	P	02 00 37.2	-2.4
	3.0nm,0.8s						
ILAR	Eielson Array	84.43	13	P	P	02 00 44.6	-1.8
	1.6nm,1.0s,baz=227,slow=6.0,SNR=9.0						
ILAR				LR	LR	02 29 51.9	
	comp=Z,54nm,20.5s,baz=196,slow=30						
TXAR	Lajitas Array	84.68	57	P	P	02 00 48.9	+0.3
	0.6nm,1.1s,baz=240,slow=7.1,SNR=3.6						
MAW	Mawson	85.35	200	LR	LR	02 36 37.4	
	comp=Z,143nm,19.1s,baz=63,slow=34						
PLCA	Paso Flores	91.73	133	LR	LR	02 34 55.2	
	comp=Z,30nm,19.2s,baz=257,slow=31						
BRTR	Keskin Array B	144.32	317	PKP	PKPdf	02 07 50.0	-0.8
	1.4nm,0.9s,baz=90,slow=1.2,SNR=8.3						
UPC	Upice	144.40	345	ePKP	PKPdf	02 07 51.4	+1.0
DPC	Dobruska-Polom	144.46	345	ePKP	PKPab	02 07 47.3	-1.5
DPC				epPKP	PKiKP	02 07 54.5	+0.3
MLR	Muntele Rosu	145.04	331	⇓iP	PKPbc	02 07 50.0	-1.2
PRU	Pruhonice	145.23	346	ePKP	PKPdf	02 07 53.7	+1.9
VRAC	Vranov	145.34	344	⇑iP	PKPbc	02 07 51.3	-0.6
DRGR		145.44	335	⇑iP	PKPbc	02 07 50.7	-1.7
VOIR		145.50	331	⇓iP	PKPab	02 07 53.9	+1.1
PSZ	Piszkesteto	145.56	339	ePKPbc	PKPdf	02 07 51.9	-0.7
ARR	Arges	145.74	332	⇑iP	PKPdf	02 07 52.9	0.0
KHC	Kasperske Hory	146.25	347	ePKP	PKPdf	02 07 53.8	+0.1
KHC				epPKP	PKiKP	02 07 57.7	-0.2
KHC				esPKP		02 08 01.2	
SIRR	Siria	146.29	336	⇑iP	PKPab	02 07 55.7	0.0
GERES	GERESS Array B	146.50	346	PKPbc	PKPdf	02 07 54.0	-0.1
	1.5nm,0.8s,baz=356,slow=5.4,SNR=3.0						
CONA	Conrad Observa	146.80	343	⇓pPKPdf	PKPab	02 07 59.6	+1.8
	4.7nm,0.9s						
BZS	Buzias	146.84	335	⇑iP	PKPab	02 08 01.3	+3.5
MOA	Molln	147.29	345	⇑esPKPdf	PKPab	02 08 03.6	+4.0
	8.5nm,1.3s						
ARSA	Arzberg	147.52	343	⇓pPKPdf	PKPab	02 08 01.2	+0.7
	4.0nm,0.9s						
SOKA	Soboth	148.18	343	⇑iPKiKP	PKPbc	02 08 00.4	+0.1
WTTA	Wattenberg	148.44	348	⇓iPKiKP	PKPbc	02 08 01.1	0.0
	5.5nm,1.2s						
ABTA	Abfaltersbach	148.74	346	⇑ipPKPdf	PKPbc	02 08 03.0	+1.2
	5.8nm,1.0s						
FETA	Feichten	148.84	349	⇓ipPKiKP	PKPab	02 08 08.6	+2.7
	4.9nm,1.0s						
TORD	Torodi Ar. Bea	176.54	170	PKP	PKPdf	02 08 24.1	-1.3
	0.7nm,1.1s,baz=225,slow=1.8,SNR=3.0						

IDC 01 01:49:34.9±5.9, 15°.21S×173°.08W, h0km, mb4.1/4, mb1 4.4/4, mb1mx3.8/37, mbtmp4.1/4, MS3.8/3, Ms1 3.9/3, ms1mx3.2/27, Error ellipse: s-maj=287.2km s-min=19.6km az=142.0, Tonga Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
AFI	Afiamalu	1.81	44	Pn	Pn	01 50 06.9	-0.5
	9.2nm,0.3s,baz=358,slow=17,SNR=3.7						
AFI				Sn	Sn	01 50 30.8	-0.2
	53nm,0.3s,baz=40,slow=22,SNR=12						
RAR	Rarotonga	13.97	117	LR	LR	01 57 25.0	
	comp=Z,394nm,18.0s,baz=280,slow=34						
WRA	Warramunga Arr	50.19	257	P	P	01 58 32.1	-0.8
	0.7nm,0.3s,baz=89,slow=7.0,SNR=4.4						
ASAR	Alice Springs	50.47	252	P	P	01 58 34.8	-0.2
	4.4nm,0.7s,baz=86,slow=8.4,SNR=23						
ILAR	Eielson Array	82.20	11	P	P	02 01 57.6	+0.2
	0.2nm,0.7s,baz=230,slow=7.0,SNR=2.4						
INK	Inuvik	88.02	14	P	P	02 02 26.6	+0.1
	2.2nm,0.3s,baz=225,slow=10.0,SNR=3.1						
LPAZ	La Paz	99.58	110	LR	LR	02 39 01.7	
	comp=Z,69nm,21.4s,baz=249,slow=30						
ROSC	El Rosal	99.69	88	LR	LR	02 40 09.7	
	comp=Z,30nm,21.6s,baz=172,slow=30						
BRTR	Keskin Array B	146.21	321	PKPbc	PKPbc	02 09 17.8	0.0
	0.4nm,0.7s,baz=54,slow=2.5,SNR=2.6						

*ISCJB **01** 01:54:22.5±0.4, 37°.00N±0°.04×142°.35E±0°.04, h10km, mb4.1/32, Error ellipse: s-maj=6.0km s-min=4.0km az=154.2*
*JMA **01** 01:54:23.7±0.3, 36°.99N×142°.30E, h18km±4km, M4.2*
JMA Felt I J1.
*MOS **01** 01:54:26.0±1.1, 37°.05N×142°.32E, h35km, mb4.3/12, Error ellipse: s-maj=9.9km s-min=7.5km az=85.4*
*IDC **01** 01:54:29.9±2.0, 36°.95N×142°.17E, h52km±19km, mb3.8/19, mb1 4.0/24, mb1mx3.9/36, mbtmp4.1/24, ML4.1/3, MS3.1/4, Ms1 3.1/4, ms1mx2.8/54, Error ellipse: s-maj=16.1km s-min=11.2km az=105.0*
*NEIC **01** 01:54:29.0±1.1, 37°.05N×142°.25E, h43km±9km, mb4.2/7, Error ellipse: s-maj=12.1km s-min=7.4km az=134.0*
ISC 01 01:54:24.4±0.5, 37°.02N±0°.05×142°.14E±0°.05, h10km, n74, σ1s.46/72, mb4.1/32, 4C-1D, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
ONAJ	Iwakimizuishiy	1.07	275	P	Pn	01 54 45.4	-0.1
ONAJ				S	Sn	01 55 01.2	+0.7
JHO	Hitachi	1.32	252	P	Pn	01 54 48.9	0.0
JHO				S	Sg	01 55 08.0	+1.0
JMM	Marumori	1.36	309	P	Pb	01 54 49.6	-0.4
JMM				S	Sg	01 55 08.5	+0.3
JFT	Otama	1.52	290	P	Pb	01 54 52.9	+0.2
JIO	Ouri	1.56	337	P	Pb	01 54 52.4	-1.0
JOU	Okura	1.78	319	P	Pb	01 54 56.7	-0.4
MJAR	Matsushiro Arr	3.19	263	P	Pb	01 55 18.0	-3.1
	18nm,0.3s,baz=88,slow=16,SNR=52						
MJAR				LR	LR	01 56 49.8	
	comp=Z,386nm,18.1s,baz=90,slow=44						
MAJO	Matsushiro	3.19	263	eP	Pb	01 55 18.4	-2.8
MAJO	Matsushiro	3.19	263	ePn	Pb	01 55 18.3	-2.9
MAT	Matsushiro	3.19	263	P	Pb	01 55 18.0	-3.2
MAT				S	Sb	01 55 57.7	-2.4
JHJ	Hachijo jima 2	4.34	207	P	Pn	01 55 30.9	+0.5
	86nm,0.3s,baz=74,slow=22,SNR=14						
JHJ				S	Sn	01 56 21.7	+0.6
	150nm,0.3s,baz=61,slow=23,SNR=10						
JHJ				LR	LR	01 57 28.1	
	comp=Z,183nm,21.4s,baz=270,slow=42						
ERM	Erimo	5.05	9	eP	Pn	01 55 38.7	-1.4
ERM				e		01 56 35.5	
ERM				pmax	pmax		
	comp=Z,34nm,1.0s						
ERM	Erimo	5.05	9	ePn	Pn	01 55 38.7	-1.4
	comp=Z,34nm,1.0s						
ERM				eSn	Sn	01 56 35.5	-3.0
YUK	Yuzh-Kuril'sk	7.56	21	eP	Pn	01 56 13.5	-1.1
YUK				pmax	pmax		
	comp=N,33nm,0.3s						
YUK				pmax	pmax		
	comp=Z,86nm,0.3s						
YUK				pmax	pmax		
	comp=E,31nm,0.1s						
SHO	Shikotan	7.72	26	eP	Pn	01 56 17.1	+0.3
SHO				eS	Sn	01 57 34.2	-10
SHO				pmax	pmax		
	comp=N,17nm,0.7s						
SHO				pmax	pmax		
	comp=E,13nm,0.7s						
SHO				pmax	pmax		
	comp=Z,34nm,0.7s						
KUR	Kuril'sk	9.27	26	eP	Pn	01 56 35.1	-2.9
JNU	Nakatsue	10.01	250	P	Pn	01 56 54.0	+5.6
	comp=Z,0.5nm,0.3s,baz=52,slow=5.9,SNR=3.5						

JNU LR LR 02 01 06.4
comp=Z,98nm,18.9s,baz=132,slow=40
JNU Nakatsue 10.01 250 ePn Pn 01 56 52.8 +4.5
comp=Z,7.5nm,1.1s
USRK Ussuriysk Ar. 10.53 316 P Pn 01 57 00.9 +5.6
comp=Z,0.2nm,0.3s,baz=134,slow=14,SNR=6.2
KSRS Korea Array 11.34 276 P Pn 01 57 11.8 +5.4
comp=Z,0.5nm,0.3s,baz=94,slow=13,SNR=4.5
KSRS LR LR 02 01 36.2
comp=Z,91nm,18.6s,baz=94,slow=37
KSAR Wonju Array Be 11.37 276 P Pn 01 57 11.8 +4.9
KSAR Wonju Array Be 11.37 276 P Pn 01 57 11.8 +4.9
KLR Kul'dur 14.35 332 P P 01 57 59.9 +5.3
comp=Z,0.1nm,0.3s,baz=155,slow=8.5,SNR=4.2
PETK Petropavlovsk- 19.41 29 P Pn 01 58 51.2 -0.5
baz=193,slow=12,SNR=2.4
MA2 Magadan 23.25 11 P P 01 59 32.1 +0.4
comp=Z,3.8nm,0.2s,baz=210,slow=12,SNR=6.5
SEY Seymchan 26.70 10 P P 02 00 04.8 +1.4
comp=Z,4.0nm,0.6s,baz=180,slow=6.5,SNR=19
SEY Seymchan 26.70 10 iP P 02 00 02.1 -1.3
H11N2 WAKE ISLAND Hy 27.65 122 T T 02 29 10.8
baz=314,slow=75,SNR=30
H11N1 WAKE ISLAND Hy 27.65 122 T T 02 29 08.0
baz=314,slow=75,SNR=28
H11N3 WAKE ISLAND Hy 27.66 122 T T 02 29 12.1
baz=314,slow=75,SNR=29
ULN Ulaanbaatar 27.84 304 iP P 02 00 14.3 +0.2
ULN pmax pmax
comp=Z,1.0nm,0.6s
SONM Songino Array 28.27 304 P P 02 00 18.9 +1.0
comp=Z,2.3nm,0.8s,baz=98,slow=8.9,SNR=16
H11S1 WAKE ISLAND Hy 28.37 124 T T 02 30 01.2
baz=316,slow=76,SNR=20
H11S3 WAKE ISLAND Hy 28.37 124 T T 02 30 11.9
baz=316,slow=76,SNR=13
H11S2 WAKE ISLAND Hy 28.39 124 T T 02 30 10.8
baz=316,slow=76,SNR=11
TLY Talaya 30.78 311 eP P 02 00 40.3 +0.4
TLY pmax pmax
comp=Z,2.0nm,1.1s
BILL Bilibino 33.88 16⇓eP P 02 01 06.9 0.0
BILL e*PP sP 02 01 17.6 +6.4
BILL 02 02 19.0
BILL 02 03 42.0
BILL pmax pmax
comp=Z,3.0nm,1.0s
CMAR Chiang Mai Arr 42.05 256 P P 02 02 16.4 0.0
comp=Z,0.9nm,0.3s,baz=234,slow=30,SNR=5.2
CMAR Chiang Mai Arr 42.05 256ceP P 02 02 16.3 -0.1
CMAR pmax pmax
comp=Z,1.0nm,0.3s
ZALV Zalesovo Beam 42.35 312 P P 02 02 18.9 +0.5
comp=Z,0.7nm,0.3s,baz=85,slow=6.4,SNR=7.7
ZALV PcP PcP 02 04 11.5 -0.1
comp=Z,0.7nm,0.5s,baz=90,slow=7.4,SNR=3.2
MKAR Makanchi Array 44.62 302 P P 02 02 37.1 +0.3
comp=Z,1.5nm,0.7s,baz=86,slow=10,SNR=18
MKAR Makanchi Array 44.62 302ceP P 02 02 37.0 +0.2
MKAR pmax pmax
comp=Z,2.0nm,0.7s
KURK Kurchatov 46.40 308 eP P 02 02 50.7 -0.1
KURK pmax pmax
comp=Z,7.0nm,0.6s
KURK Kurchatov 46.40 308 eP P 02 02 50.7 -0.1
comp=Z,6.7nm,0.6s
COLA College 48.78 32 eP P 02 03 09.0 -0.1
COLA pmax pmax
comp=Z,2.0nm,0.9s
ILAR Eielson Array 49.20 32 P P 02 03 12.2 -0.1
comp=Z,1.6nm,0.8s,baz=262,slow=6.2,SNR=15
AAK Ala-Archa 51.01 299 eP P 02 03 27.1 +0.5
AAK pmax pmax
comp=Z,1.0nm,0.6s
AAK Ala-Archa 51.01 299 eP P 02 03 27.1 +0.5
comp=Z,0.8nm,0.6s
INK Inuvik 54.13 27 P P 02 03 49.7 +0.6
comp=Z,1.6nm,0.3s,baz=296,slow=8.9,SNR=4.5
ARU Arti 56.75 319c iP P 02 04 08.2 0.0
ARU 02 06 10.5
ARU S S 02 12 00.3 -0.5
ARU SS SS 02 15 46.9 -1.2
ARU pmax pmax
comp=Z,9.0nm,1.7s
ARU Arti 56.75 319 eP P 02 04 07.9 -0.3
comp=Z,1.8nm,0.5s
WRAB Tennant Creek 57.12 189 eP P 02 04 10.9 -0.3
WRAB pmax pmax
comp=Z,4.0nm,0.7s
WRAB Tennant Creek 57.12 189 eP P 02 04 10.9 -0.3
comp=Z,4.2nm,0.7s
WRA Warramunga Arr 57.13 189 P P 02 04 10.3 -0.9
comp=Z,2.2nm,0.6s,baz=7.9,slow=7.2,SNR=8.5
ASAR Alice Springs 60.86 189 P P 02 04 36.7 -0.4
comp=Z,0.8nm,0.6s,baz=14,slow=7.8,SNR=11
YKA Yellowknife Ar 63.53 30 P P 02 04 54.3 -0.2
comp=Z,0.5nm,0.7s,baz=302,slow=6.9,SNR=7.4
ARCES ARCESS Array B 64.21 340 P P 02 04 59.4 +0.5
comp=Z,0.9nm,0.6s,baz=38,slow=6.1,SNR=3.7
FINES FINESS Array B 69.09 332 P P 02 05 30.1 -0.1
comp=Z,3.1nm,0.8s,baz=46,slow=5.5,SNR=9.7
KBZ Khabaz 71.35 311 P P 02 05 45.5 +1.1
comp=Z,1.5nm,0.8s,baz=26,slow=1.8,SNR=6.0
KIV Kislovodsk 71.35 311 eP P 02 05 43.5 -1.0
KIV pmax pmax
comp=Z,4.0nm,1.1s
GNI Garni 72.18 307 eP P 02 05 50.6 +1.0
GNI pmax pmax
comp=Z,9.0nm,0.9s
FFC Flin Flon 73.40 33 eP P 02 05 55.9 -0.5
FFC pmax pmax
comp=Z,2.0nm,0.7s
FFC Flin Flon 73.40 33 eP P 02 05 55.9 -0.5
comp=Z,2.3nm,0.7s
NOA NORSAR Array B 74.42 338 P P 02 06 02.7 +0.3
comp=Z,0.6nm,0.6s,baz=54,slow=6.9,SNR=3.0
NVAR Mina Array Bea 74.53 53 P P 02 06 04.3 +0.7
comp=Z,1.1nm,0.6s,baz=288,slow=6.4,SNR=12
AKASG Malin Array Be 74.66 323 P P 02 06 02.3 -1.6
comp=Z,0.7nm,0.5s,baz=41,slow=5.3,SNR=6.1
AKASG Malin Array Be 74.66 323ceP P 02 06 03.7 -0.1
AKASG pmax pmax
comp=Z,1.0nm,0.4s
KIEV Kiev 74.67 323 eP P 02 06 03.2 -0.7
KIEV pmax pmax
comp=Z,2.0nm,1.0s
R11A Troy Canyon, C 76.31 52 eP P 02 06 13.8 -0.1
comp=Z,1.2nm,0.8s
PDAR Pinedale Array 77.26 46 P P 02 06 19.1 -0.1
comp=Z,0.6nm,0.7s,baz=288,slow=2.3,SNR=6.9
RAYN Ar Rayn 81.19 293 eP P 02 06 41.4 +0.6
comp=Z,1.4nm,0.8s
ANMO Albuquerque 84.15 50 eP P 02 06 56.1 0.0
ANMO pmax pmax
comp=Z,1.0nm,1.0s
TXAR Lajitas Array 89.67 53 P P 02 07 23.1 +0.1
comp=Z,0.8nm,0.8s,baz=282,slow=2.9,SNR=12
LPAZ La Paz 146.20 60 PKPbc PKPbc 02 14 05.6 -0.6
comp=Z,2.1nm,0.6s,baz=22,slow=12,SNR=8.6

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*TEH **01** 02:03:15.9, 27.35N×55.57E, h6km, ML3.3*
*OMAN **01** 02:03:15.9, 27.35N×55.57E, h6km*
*ISCJB **01** 02:03:18.6±0.4, 27.38N±0.04×55.68E±0.03, h15km, mb3.4/4, Error ellipse: s-maj=5.5km s-min=3.9km az=26.5*
*CSEM **01** 02:03:19.2±0.2, 27.36N×55.70E, h10km, ML3.3, Error ellipse: s-maj=5.8km s-min=4.4km az=39.0*
*IDC **01** 02:03:19.4±4.3, 28.01N×55.46E, h0km, mb3.4/4, mb1 3.4/4, mb1mx3.2/38, mbtmp3.4/4, Error ellipse: s-maj=198.6km s-min=26.2km az=152.0*
*DSN **01** 02:03:21.5±0.7, 27.23N×55.99E, h13km, ML3.0, Error ellipse: s-maj=19.7km s-min=4.8km az=77.0*
ISC 01 02:03:18.9±0.8**, 27.33N**±0.04×**55.69E**±0.04**, h15km, n60, σ1s12**/65**, mb3.4**/4**, Southern Iran**

Code Station Name Δ° AZ° Phase ID (Op, ISC) Time (h m s) Res (ISC)
BNDS Bandar-Abbas 0.43 80 ePg Pg 02 03 26.3 -1.3
BNDS eSg Sg 02 03 33.0 -0.6
GENO Geno 0.43 80 ePg Pg 02 03 26.7 -0.9
GENO Geno 0.43 80 ePg Pg 02 03 26.7 -0.9
IBND Bandar-abas 0.76 80 ePg Pg 02 03 33.3 -0.4
IBND eSg Sn 02 03 45.7 -0.7
IBND eAMB AMB 02 03 56.6
comp=Z,17μm,0.2s
IBND Bandar-abas 0.76 80 ePg Pg 02 03 33.3 -0.4
IBND eSg Sn 02 03 45.7 -0.7
NIAN Nian 1.04 77 ePg Pn 02 03 39.1 +0.1
NIAN Nian 1.04 77 ePg Pn 02 03 39.1 +0.1
KHSK Kohestak 1.34 115 ePn Pg 02 03 44.4 -0.3
KHSK Kohestak 1.34 115 ePn Pg 02 03 44.4 -0.3
BANOM Banah 1.50 159 eP Pn 02 03 45.7 +0.4
SNR=117
BANOM Banah 1.50 159 Pn Pn 02 03 45.7 +0.4
SNR=117
BANOM Banah 1.50 159 Pn Pn 02 03 45.7 +0.4
SNR=117
BANOM Banah 1.50 159 P Pn 02 03 45.7 +0.4
SNR=117
NGRK Negar Kerman 2.48 21 ePn Pn 02 03 59.3 +0.1
NGRK Negar Kerman 2.48 21 ePn Pn 02 03 59.3 +0.1
HATD Hatta, Dubai 2.52 171 P Pn 02 04 01.0 +1.7
HATD Hatta, Dubai 2.52 171 P Pn 02 04 01.0 +1.7
FAQ Al Faqa, Dubai 2.57 182 eP Pn 02 04 02.0 +2.0
SNR=10
FAQ Al Faqa, Dubai 2.57 182 P Pn 02 04 02.0 +2.0
SNR=10
GHIR Ghir-Karzin 2.58 292 ePn Pn 02 04 01.1 +0.9
GHIR eSg Sb 02 04 38.1 +1.6
ASHO Ashiyiah 2.65 173 eP Pn 02 04 02.5 +1.4
SNR=43
ASHO Ashiyiah 2.65 173 P Pn 02 04 02.5 +1.4
SNR=43
ASHO Ashiyiah 2.65 173 Pn Pn 02 04 02.7 +1.6
SNR=43
ASHO Ashiyiah 2.65 173 P Pn 02 04 02.7 +1.6
SNR=43
ASUD Al Ashush, Dub 2.71 187 eP Pn 02 04 03.9 +2.1
SNR=19
ASUD Al Ashush, Dub 2.71 187 P Pn 02 04 03.9 +2.1
SNR=19
KRBR Kerman 2.81 19 ePn Pn 02 04 04.5 +1.0
TVBK TV Kerman 2.81 19 ePn Pn 02 04 05.1 +1.5
TVBK TV Kerman 2.81 19 ePn Pn 02 04 05.1 +1.5
CHMN Cheshme madani 3.00 32 ePn Pn 02 04 08.0 +1.7
CHMN Cheshme madani 3.00 32 ePn Pn 02 04 08.0 +1.7
ISRV Sarvestan 3.06 313 ePn Pn 02 04 07.8 +0.8
ISRV Sarvestan 3.06 313 ePn Pn 02 04 07.8 +0.8
KHGB Koh Gabri 3.12 13 ePn Pn 02 04 09.1 +1.4
KHGB Koh Gabri 3.12 13 ePn Pn 02 04 09.1 +1.4
IPAR Pars 3.42 318 ePn Pn 02 04 12.7 +0.8
IPAR eAMB AMB 02 05 17.4
comp=Z,172nm,0.3s
IPAR Pars 3.42 318 ePn Pn 02 04 12.7 +0.8
IMEH Mehriz 4.16 347 ePn Pn 02 04 23.0 +0.9
IMEH eAMB AMB 02 04 25.5
comp=Z,233nm,0.1s
IMEH Mehriz 4.16 347 ePn Pn 02 04 23.0 +0.9
IKAZ Kazeroun 4.18 307 ePn Pn 02 04 21.8 -0.6
IKAZ eAMB AMB 02 05 22.6
comp=Z,509nm,0.1s
IKAZ Kazeroun 4.18 307 ePn Pn 02 04 21.8 -0.6
ISAD Sadrabad 4.89 340 ePn Pn 02 04 33.3 +1.1
ISAD eAMB AMB 02 04 36.1
comp=Z,172nm,0.1s
ISAD Sadrabad 4.89 340 ePn Pn 02 04 33.3 +1.1
ICHK Chekchek 5.03 347 ePn Pn 02 04 34.9 +0.9
ICHK eAMB AMB 02 04 39.8
comp=Z,94nm,0.1s
ICHK Chekchek 5.03 347 ePn Pn 02 04 34.9 +0.9
IRAM Ramesheh 5.32 328 ePn Pn 02 04 38.2 +0.2
IRAM eAMB AMB 02 04 40.4
comp=Z,123nm,0.1s
IRAM Ramesheh 5.32 328 ePn Pn 02 04 38.2 +0.2
BTHS 5.46 234 S Sn 02 05 40.5 -1.7
BTHS P Pn 02 04 39.3 -0.4
IGAR Gharneh 5.97 329 ePn Pn 02 04 47.2 +0.3
IGAR eAMB AMB 02 04 48.0
comp=Z,310nm,0.1s
IZEF Zefreh 6.27 333 ePn Pn 02 04 50.3 -0.8
IZEF eAMB AMB 02 04 58.6
comp=Z,40nm,0.1s
IZEF Zefreh 6.27 333 ePn Pn 02 04 50.3 -0.8
IPIR Pirpir 6.77 323 ePn Pn 02 04 57.5 -0.5
IPIR eAMB AMB 02 04 59.4
comp=Z,233nm,0.1s
IPIR Pirpir 6.77 323 ePn Pn 02 04 57.5 -0.5
IKLH Kolahrood 6.95 330 ePn Pn 02 05 00.8 +0.4
IKLH eAMB AMB 02 05 03.2
comp=Z,90nm,0.1s
IKLH Kolahrood 6.95 330 ePn Pn 02 05 00.8 +0.4
QAM Ghamsar 7.39 331 eAMB AMB 02 05 10.6
comp=Z,116nm,0.1s
QAM ePn Pn 02 05 06.1 -0.3
MKAR Makanchi Array 28.56 40 P P 02 09 14.7 +0.6
comp=Z,0.1nm,0.4s,baz=247,slow=5.2,SNR=2.7
ZALV Zalesovo Beam 34.14 31 P P 02 10 00.8 -2.3
comp=Z,0.6nm,0.3s,baz=239,slow=10.0,SNR=3.8
SONM Songino Array 44.19 48 P P 02 11 27.1 -0.3
comp=Z,0.2nm,0.7s,baz=35,slow=39,SNR=2.5
TORD Torodi Ar. Bea 52.22 266 P P 02 12 31.4 +1.7
comp=Z,0.4nm,0.5s,baz=63,slow=8.2,SNR=8.4

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*ISCJB **01** 02:14:29.8±0.4, 10.50S±0.04×118.70E±0.04, h51km, mb4.3/8, MS3.5/2, Error ellipse: s-maj=6.9km s-min=4.2km az=30.8*
*NEIC **01** 02:14:31.3±0.7, 10.53S×118.64E, h46km±9km, mb4.3/4, Error ellipse: s-maj=10.0km s-min=6.8km az=48.0*
*IDC **01** 02:14:33.6±4.0, 10.38S×118.81E, h66km±36km, mb4.0/4, mb1 4.0/8, mb1mx3.6/30, mbtmp4.2/8, ML4.0/3, MS3.2/4, Ms1 3.2/4, ms1mx2.7/45, Error ellipse: s-maj=35.3km s-min=14.6km az=54.0*
*DJA **01** 02:14:33.2±1.6, 10°S±5°×11°9E±°, h28km±20km, M4.5/9, mb4.9/3, MLv4.4/9*
ISC 01 02:14:31.4±0.7**, 10.50S**±0.06×**118.72E**±0.04**, h51km, n35, σ1s65**/38**, mb4.3**/8**, South of Sumbawa**

Code Station Name Δ° AZ° Phase ID (Op, ISC) Time (h m s) Res (ISC)
PLAI Plampang 1.90 331 P Pn 02 15 01.5 +0.1
PLAI S Sn 02 15 19.4 -4.8
TWSI Taliwang, Sumb 2.52 314 P Pn 02 15 10.7 +0.9
TWSI S Sn 02 15 39.1 -0.3
DNP Denpasar 3.91 297 P Pn 02 15 34.9 +6.0
DNP S Sn 02 16 18.1 +4.6
MMRI Maumere 3.93 62 P Pn 02 15 30.2 +1.0
MMRI S Sn 02 16 23.4 +9.2
MMRI Maumere 3.93 62 ePn Pn 02 15 29.7 +0.4
MMRI eSn Sn 02 16 15.5 +1.3
BSSI Bau Bau, Buton 4.67 22 P Pn 02 15 39.9 +0.5
BSSI S Sn 02 16 29.5 -2.8
BATI Baumata 4.87 87 P Pn 02 15 44.2 +2.0
BATI S Sn 02 16 37.4 +0.1
9.0nm,0.3s,baz=284,slow=23,SNR=7.4
BATI Baumata 4.87 87 P Pn 02 15 42.9 +0.7
JAGI Jajag, Banyuwa 4.94 294 P Pn 02 15 42.6 -0.4
JAGI Jajag, Banyuwa 4.94 294 ePn Pn 02 15 42.1 -0.9
JAGI eSn Sn 02 16 37.6 -1.3
ABJI Asem Bagus 5.18 301 P Pn 02 15 49.4 +3.0
104nm,0.6s,0.4nm
SOEI Soe 5.51 83 P Pn 02 15 52.0 +1.0
125nm,0.8s,0.5nm
SOEI Soe 5.51 83 ePn Pn 02 15 52.5 +1.4
72nm,0.7s
KAPI Kappang 5.54 11 P Pn 02 15 51.3 -0.1
3.7nm,0.3s,baz=208,slow=6.1,SNR=11
KAPI S Sn 02 16 54.4 +0.6
9.8nm,0.3s,baz=280,slow=22,SNR=11
KAPI LR LR 02 18 08.2
comp=Z,201nm,20.1s,baz=187,slow=40
KAPI Kappang 5.54 11 ePn Pn 02 15 52.2 +0.8
42nm,0.8s
KAPI eSn Sn 02 16 54.3 +0.5
GMJI Gumukmas 5.66 293 P Pn 02 15 52.2 -0.7
FITZ Fitzroy Crossi 10.10 139 P Pn 02 16 52.7 -1.2
1.4nm,0.3s,baz=334,slow=8.5,SNR=20
FITZ S Sn 02 18 38.8 -6.9
1.9nm,0.3s,baz=180,slow=19,SNR=7.8
MBWA Marble Bar 10.64 175 ePn Pn 02 17 01.1 -0.1
LEM Lembang 11.57 287 LR LR 02 21 33.2
comp=Z,82nm,19.9s,baz=216,slow=36
WRA Warramunga Arr 17.74 124 P P 02 18 35.6 +0.5
0.6nm,0.3s,baz=303,slow=13,SNR=5.0
WRA S Sn 02 21 36.4 -15
0.3nm,0.3s,baz=0.7,slow=25,SNR=2.6
WRAB Tennant Creek 17.75 124 eP P 02 18 35.6 +0.4
4.1nm,0.5s
ASAR Alice Springs 19.52 134 P Pn 02 18 57.0 +0.7
0.6nm,0.3s,baz=319,slow=12,SNR=35
ASAR S S 02 22 28.9 -3.8
0.3nm,0.3s,baz=312,slow=23,SNR=5.3
NWAO Narrogin (SRO) 22.36 183 P P 02 19 36.8 +12
7.9nm,0.6s,baz=269,slow=0.3,SNR=8.3
NWAO S S 02 23 27.9 0.0
13nm,0.7s,baz=175,slow=0.1,SNR=6.7
PSI Prapat 23.73 303 P P 02 19 39.4 +0.2
6.3nm,0.7s,baz=110,slow=21,SNR=5.1
H08S2 Diego Garcia H 45.71 270 T T 03 12 19.2
baz=96,slow=75,SNR=6.7
H08S3 Diego Garcia H 45.72 270 T T 03 12 22.2
baz=96,slow=75,SNR=6.7
H08S1 Diego Carcia H 45.73 270 T T 03 12 23.6
baz=96,slow=75,SNR=7.0
SONM Songino Array 59.10 350 P P 02 24 26.7 +0.2
1.7nm,0.8s,baz=160,slow=7.9,SNR=14
MKAR Makanchi Array 65.66 333 P P 02 25 10.6 +0.2
1.7nm,0.7s,baz=145,slow=7.6,SNR=24
AAK Ala-Archa 66.55 326 eP P 02 25 17.0 +0.7
1.8nm,0.8s
EKS2 Erkin-Say 66.97 326 eP P 02 25 19.7 +0.7
2.8nm,0.9s
KURK Kurchatov 70.22 334 eP P 02 25 38.9 +0.1
2.0nm,0.4s
ZALV Zalesovo Beam 70.34 340 P P 02 25 39.1 -0.4
1.4nm,0.3s,baz=145,slow=4.0,SNR=8.1
BRTR Keskin Array B 92.88 310 LR LR 03 13 28.5
comp=Z,9.6nm,18.7s,baz=50,slow=38
TSUM Tsumeb 96.91 249 LR LR 03 06 55.2
comp=Z,23nm,18.1s,baz=158,slow=32

CASC 01 02:30:38.2±1.6**, 8.66N**×**83.20W, h9km**±12km**, MD3.8, 2C-3D, Costa Rica**

Code Station Name Δ° AZ° Phase ID (Op, ISC) Time (h m s) Res (ISC)
PBNC Punta Burica N 0.29 165⇓iP Pg 02 30 44.3 +0.2
PBNC iS Sb 02 30 49.5 -1.2
CTCR Cotoan 0.50 62⇓iP Pg 02 30 48.5 +0.6
CTCR iS Sb 02 30 55.9 -0.9
BRU2 Volcan 0.53 75⇓iP Pg 02 30 48.9 +0.4
BRU2 iS Sb 02 30 57.4 -0.1
TBS2 0.56 76⇑iP Pb 02 30 50.2 -0.1
TBS2 ⇑iS Sb 02 30 59.5 +1.1
BUS Buena Vista 1.05 329 eP Pg 02 30 57.4 -1.1
BUS eS Sb 02 31 12.8 0.0
URSC Urasca 1.30 334 eP Pn 02 31 01.5 -1.2
URSC eS Sn 02 31 20.7 +0.3
CGA2 Cerro Gallo 2 1.84 317 eP Pb 02 31 11.2 -0.9
CGA2 eS Sb 02 31 34.5 -0.8
JTS JuntasAbangare 2.37 313 eP Pn 02 31 17.1 -0.3
JTS eS Sn 02 31 46.4 -0.1

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*ISCJB **01** 02:47:42.3±0.7, 51.59N±0.03×16.11E±0.05, h0km, Error ellipse: s-maj=4.8km s-min=4.1km az=140.5*
*CSEM **01** 02:47:45.2±0.7, 51.52N×16.06E, h2km, ML2.9/8, Error ellipse: s-maj=11.0km s-min=7.2km az=16.0*
*PRU **01** 02:47:46.0, 51.52N×16.06E, h0km*
*VIE **01** 02:47:46.5±1.0, 51.42N×16.00E, h0km, mb2.2/2, ml2.3/3, Error ellipse: s-maj=8.2km s-min=4.3km az=38.0, Suspected Mining induced.*
ISC 01 02:47:43.7±1.0**, 51.61N**±0.04×**16.11E**±0.04**, h0km, n23, σ0s75**/45**, 1C-1D, Poland**

Code Station Name Δ° AZ° Phase ID (Op, ISC) Time (h m s) Res (ISC)
KSP Ksiaz 0.78 171 ePg Pg 02 47 58.9 +0.3
KSP eSg Sg 02 48 08.3 -0.4
KSP Ksiaz 0.78 171 ePg Pg 02 47 58.9 +0.3
KSP eSg Sg 02 48 08.3 -0.4
UPC Upice 1.11 183 ePG Pg 02 48 04.9 0.0
UPC eSG Sg 02 48 18.7 -0.5
comp=Z,23nm,0.2s
UPC Upice 1.11 183 Pg Pg 02 48 04.9 0.0
UPC Sg Sg 02 48 18.7 -0.5
23nm,0.2s
DPC Dobruska-Polom 1.27 174 ePG Pg 02 48 07.8 -0.2
DPC eSG Sg 02 48 23.3 -1.2
comp=Z,7.8nm,0.2s
DPC Dobruska-Polom 1.27 174 Pg Pg 02 48 07.8 -0.2
DPC Sg Sg 02 48 23.3 -1.2
7.8nm,0.2s
PVCC Panska Ves 1.46 222 ePG Pb 02 48 12.2 +0.5
PVCC eSG Sn 02 48 31.0 0.0
comp=Z,46nm,0.2s
PVCC Panska Ves 1.46 222 Pg Pb 02 48 12.2 +0.5
PVCC Sg Sn 02 48 31.0 0.0
46nm,0.2s
BRG Berggiesshubel 1.55 242 PG Pb 02 48 13.5 +0.2
BRG SG Sn 02 48 34.5 +1.2
32nm,0.4s
GOPC GO Pecny, Ondr 1.90 207 ePG Pg 02 48 19.9 -0.1
GOPC eSG Sb 02 48 43.1 -0.3
comp=Z,7.1nm,0.3s
GOPC GO Pecny, Ondr 1.90 207 Pg Pg 02 48 19.9 -0.1
GOPC Sg Sb 02 48 43.1 -0.3
7.1nm,0.3s
PRU Pruhonice 1.91 212 ePG Pb 02 48 19.3 0.0
PRU eSG Sb 02 48 43.4 -0.3
comp=Z,7.7nm,0.3s
PRU Pruhonice 1.91 212 Pg Pb 02 48 19.3 0.0
PRU Sg Sb 02 48 43.4 -0.3
7.7nm,0.3s
CLL Collm 1.97 262 ePn Pn 02 48 18.0 -0.3
CLL ePg Pb 02 48 21.0 +0.6
CLL eSg Sg 02 48 47.0 +0.1
comp=Z,12nm,0.4s
OKC Ostrava-Krasne 2.20 143 eSG Sg 02 48 53.2 -1.1
comp=Z,6.6nm,0.5s
OKC Ostrava-Krasne 2.20 143 Sg Sg 02 48 53.2 -1.1
comp=Z,6.6nm,0.5s
KHC Kasperske Hory 2.96 214 ePN Pn 02 48 32.6 +0.5
KHC ePG Pb 02 48 38.5 +1.1
KHC eSN Sn 02 49 08.5 +0.2
KHC eSG Sg 02 49 17.7 -1.2
comp=Z,5.1nm,0.5s
KHC Kasperske Hory 2.96 214 Pn Pn 02 48 32.6 +0.5
KHC Kasperske Hory 2.96 214 Pg Pb 02 48 38.5 +1.1
KHC Sg Sg 02 49 17.7 -1.2
comp=Z,5.1nm,0.5s
BSD Bornholm Skovb 3.58 349 iP Pn 02 48 40.9 +0.5
BSD eS Sn 02 49 21.7 -1.7
CONA Conrad Observa 3.69 183⇓ePn Pn 02 48 42.9 +0.8
comp=Z,0.4nm,0.2s
CONA ⇑iSg Sg 02 49 40.9 -1.3
comp=Z,1.7nm,0.3s
CONA Conrad Observa 3.69 183 Pn Pn 02 48 42.9 +0.8
comp=Z,0.4nm,0.2s
CONA Sg Sg 02 49 40.9 -1.3
comp=Z,1.7nm,0.3s
STHS Stebnicka Huta 3.94 122 ePG Pg 02 49 00.0 +0.7

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*BJI **01** 02:55:54.9, 39.42N×144.57E, h7km, mb4.4/9, mB4.9/5*
*IDC **01** 02:55:56.4±0.7, 39.15N×144.38E, h0km, mb4.1/24, mb1 4.2/28, mb1mx4.1/52, mbtmp4.1/28, ML3.4/4, MS3.1/6, Ms1 3.2/6, ms1mx2.8/40, Error ellipse: s-maj=17.9km s-min=14.5km az=154.0*
*MOS **01** 02:55:58.8±1.2, 39.25N×144.41E, h30km, mb4.6/15, Error ellipse: s-maj=9.7km s-min=6.5km az=97.1*
*ISCJB **01** 02:55:58.5±1.4, 39.27N±0.04×144.28E±0.04, h23km±10km, mb4.2/41, MS3.2/4, Error ellipse: s-maj=6.6km s-min=4.9km az=153.5*
*JMA **01** 02:55:59.8±0.2, 39.33N×144.25E, h35km, M4.4*
*NEIC **01** 02:55:60.0±2.0, 39.20N×144.34E, h21km±14km, mb4.4/11, Error ellipse: s-maj=8.3km s-min=5.6km az=119.0*
ISC 01 02:55:58.8±1.0**, 39.25N**±0.05×**144.34E**±0.06**, h14km**±6km**, n93, σ1s03**/103**, mb4.3**/41**, MS3.2**/4**, 2C-3D, Off east coast of Honshu**

Code Station Name Δ° AZ° Phase ID (Op, ISC) Time (h m s) Res (ISC)
MIYJ Miyakonagasawa 1.98 280 P Pn 02 56 31.1 -0.7
MIYJ S Sn 02 56 54.2 -2.2
JTH Tanohata 2.03 290 P Pn 02 56 31.5 -1.1
JTH S Sn 02 56 55.2 -2.5
OFUJ Ofunato 2.08 266 P Pn 02 56 32.6 -0.7
JOM Ohasama 2.37 276 P Pn 02 56 37.0 -0.2

Code	Station Name	Δ°	AZ°	Op	ISC	Time	Res
JOM				S	Sn	02 57 04.4	-1.7
JMK	Ichinoseki	2.44	264	P	Pn	02 56 37.9	-0.3
JMK				S	Sn	02 57 06.2	-1.7
JANG	Nango	2.44	298	P	Pn	02 56 36.9	-1.4
JRG	Rokugo	2.88	274	P	Pn	02 56 44.4	+0.2
ERM	Erimo	2.90	342	*e*P	Pn	02 56 44.4	-0.1
ERM				*e*		02 57 17.5	
ERM	Erimo	2.90	342	*e*Pn	Pn	02 56 44.4	-0.1
ERM				*e*Sn	Sn	02 57 17.5	-1.7
JTM	Tenmabayashi	2.94	302	P	Pn	02 56 44.7	-0.4
JTM				S	Sn	02 57 18.1	-2.0
JAH	Hinai	3.00	289	P	Pn	02 56 46.0	+0.1
JAH				S	Sn	02 57 20.6	-1.1
JOU	Okura	3.00	254	P	Pn	02 56 45.8	-0.2
JOU				S	Sn	02 57 19.7	-2.0
JYK	Kaneyama	3.11	265	P	Pn	02 56 47.5	0.0
JYK				S	Sn	02 57 24.1	-0.3
JNBK	Urakawa-nobuka	3.25	339	P	Pn	02 56 49.1	-0.3
JNBK				S	Sn	02 57 26.1	-1.8
JOT	Ohata	3.29	311	P	Pn	02 56 49.6	-0.3
YUK	Yuzh-Kuril'sk	4.91	13	*e*P	Pn	02 57 09.7	-2.4
YUK				*e*S	Sn	02 58 02.2	-6.5
YUK				pmax	pmax		
	comp=Z,195nm,0.3s						
YUK				pmax	pmax		
	comp=E,62nm,0.2s						
YUK				pmax	pmax		
	comp=N,80nm,0.1s						
SHO	Shikotan	4.98	21	*e*P	Pn	02 57 10.0	-3.0
SHO				*e*S	Sn	02 58 02.7	-7.6
SHO				pmax	pmax		
	comp=E,23nm,0.5s						
SHO				pmax	pmax		
	comp=Z,58nm,0.5s						
SHO				pmax	pmax		
	comp=N,20nm,0.2s						
MJAR	Matsushiro Arr	5.55	243	Pn	Pn	02 57 21.7	+0.7
	comp=N,5.7nm,0.3s,baz=67,slow=12,SNR=29						
MJAR				LR	LR	02 59 45.8	
	comp=N,261nm,20.7s,baz=65,slow=42						
MAJO	Matsushiro	5.55	243	*d i*P	Pn	02 57 21.2	+0.2
MAJO	Matsushiro	5.55	243	*e*Pn	Pn	02 57 21.7	+0.7
	comp=N,31nm,0.6s						
MAT	Matsushiro	5.55	243	P	Pn	02 57 21.5	+0.5
MAT				S	Sn	02 58 22.5	-2.1
KUR	Kuril'sk	6.52	23	P	Pn	02 57 32.6	-1.7
KUR				*e*S	Sn	02 58 41.4	-7.0
KUR				pmax	pmax		
	comp=Z,231nm,5.0s						
KUR				smax	smax		
	comp=E,63nm,0.4s						
KUR				smax	smax		
	comp=N,49nm,0.2s						
KUR				pmax	pmax		
	comp=N,164nm,4.3s						
KUR				pmax	pmax		
	comp=E,226nm,4.3s						
USRK	Ussuriysk Ar.	10.47	302	Pn	Pn	02 58 30.7	+2.4
	comp=E,0.9nm,0.3s,baz=97,slow=13,SNR=26						
JNU	Nakatsue	12.47	245	LR	LR	03 04 05.9	
	comp=E,146nm,19.4s,baz=294,slow=39						
JNU	Nakatsue	12.47	245	*e*Pn	Pn	02 58 55.1	-0.8
KSRS	Korea Array	13.01	267	Pn	Pn	02 59 04.0	+0.8
	comp=E,0.2nm,0.3s,baz=89,slow=13,SNR=10						
KSRS	Korea Array	13.01	267	P	Pn	02 59 04.0	+0.8
KSAR	Wonju Array Be	13.04	267	P	Pn	02 59 04.0	+0.4
KSAR	Wonju Array Be	13.04	267	Pn	Pn	02 59 04.0	+0.4
KLR	Kul'dur	13.43	322	Pn	Pn	02 59 10.2	+1.3
	comp=E,0.2nm,0.3s,baz=129,slow=17,SNR=7.0						
PETK	Petropavlovsk-	16.62	29	LR	LR	03 05 59.4	
	comp=E,28nm,21.8s,baz=200,slow=36						
MA2	Magadan	20.75	9	P	Pn	03 00 40.1	-1.1
	comp=E,2.2nm,0.4s,baz=154,slow=16,SNR=3.7						
MA2				LR	LR	03 09 49.1	
	comp=E,39nm,18.8s,baz=141,slow=40						
SEY	Seymchan	24.20	9	P	P	03 01 15.9	+1.3
	comp=E,3.7nm,0.8s,baz=193,slow=9.1,SNR=10						
SEY	Seymchan	24.20	9	*i* P	P	03 01 15.2	+0.6
YAK	Yakutsk	24.51	343	*e*P	P	03 01 17.7	+0.3
YAK				pmax	pmax		
	comp=Z,23nm,0.9s						
BOD	Bodaibo	27.00	323	*e*P	P	03 01 39.9	-0.1
BOD				pmax	pmax		
	comp=Z,7.0nm,0.9s						
H11N3	WAKE ISLAND Hy	27.53	129	T	T	03 30 23.8	
	SNR=3.9						
ULN	Ulaanbaatar	28.13	300	*ce*P	P	03 01 51.8	+1.4
ULN				pmax	pmax		
	comp=Z,6.0nm,1.2s						
ULN	Ulaanbaatar	28.13	300	*e*P	P	03 01 50.6	+0.2
	comp=Z,1.9nm,0.5s						
SONM	Songino Array	28.57	300	P	P	03 01 54.4	+0.1
	comp=Z,1.7nm,0.8s,baz=97,slow=7.6,SNR=12						
TLY	Talaya	30.72	307	P	P	03 02 14.7	+1.5
	comp=Z,2.2nm,0.6s,baz=122,slow=5.2,SNR=2.8						
ZAK	Zakamensk	30.80	305	*e*P	P	03 02 14.0	0.0
ZAK				pmax	pmax		
	comp=Z,2.0nm,0.9s						
BILL	Bilibino	31.26	16⇓	*e*P	P	03 02 17.3	-0.4
BILL				*e**PP	sP	03 02 24.1	+0.3
BILL				*SP	pP	03 02 29.0	+7.0
BILL				*e*		03 03 20.4	
BILL				*e*		03 05 18.4	
BILL				pmax	pmax		
	comp=Z,1.0nm,1.3s						
BILL				MLR	MLR		
	comp=Z,75nm,20.0s						
GTA	Gaotai	34.17	285	*e*P	P	03 02 44.2	+0.5
GTA				pP	pP	03 02 48.7	+0.7
GTA				sP	sP	03 02 51.3	+1.5
GTA				pmax	pmax		
	comp=Z,4.0nm,0.7s						
ZALV	Zalesovo Beam	42.17	311	P	P	03 03 51.2	+0.6
	comp=Z,3.9nm,0.5s,baz=89,slow=8.0,SNR=13						
ZALV				PcP	PcP	03 05 45.0	+0.3
	comp=Z,1.2nm,0.6s,baz=108,slow=1.8,SNR=3.9						
CMAR	Chiang Mai Arr	44.29	255	P	P	03 04 09.2	+1.0
	comp=Z,0.6nm,0.3s,baz=42,slow=6.2,SNR=4.8						
CMAR				LR	LR	03 23 50.3	
	comp=Z,22nm,18.0s,baz=125,slow=38						
MKAR	Makanchi Array	44.93	301	P	P	03 04 13.4	+0.4
	comp=Z,2.6nm,0.7s,baz=83,slow=9.2,SNR=30						
ILAR	Eielson Array	46.38	33	P	P	03 04 24.6	+0.4
	comp=Z,0.9nm,0.8s,baz=261,slow=6.8,SNR=12						
KURK	Kurchatov	46.41	307	*e*P	P	03 04 24.4	-0.3
KURK				pmax	pmax		
	comp=Z,11nm,0.8s						
KURK	Kurchatov	46.41	307	*e*P	P	03 04 24.4	-0.3
	comp=Z,12nm,0.8s						
KURBB	Kurchatov Arra	46.49	307	P	P	03 04 25.4	+0.1
	comp=Z,6.8nm,0.8s,baz=80,slow=8.2,SNR=54						
BRVK	Borovoye	50.86	312	*i* P	P	03 04 58.6	-0.3
BRVK				pmax	pmax		
	comp=Z,9.0nm,2.5s						
BRVK	Borovoye	50.86	312	*e*P	P	03 04 59.2	+0.3
	comp=Z,2.4nm,0.6s						
INK	Inuvik	51.35	28	P	P	03 05 02.1	-0.2
	comp=Z,0.5nm,0.5s,baz=330,slow=6.1,SNR=4.7						
AAK	Ala-Archa	51.48	298	*e*P	P	03 05 04.3	+0.4
AAK				pmax	pmax		
	comp=Z,2.0nm,0.8s						
AAK	Ala-Archa	51.48	298	*e*P	P	03 05 04.3	+0.4
	comp=Z,1.7nm,0.8s						
ARU	Arti	56.23	318	P	P	03 05 38.9	+0.7
	comp=Z,2.4nm,0.2s,baz=47,slow=4.8,SNR=7.4						
ARU	Arti	56.23	318	*d i*P	P	03 05 38.4	+0.2
ARU						03 07 45.1	
ARU				S	S	03 13 28.7	+1.5
ARU				SS	SS	03 17 14.4	+1.2
ARU				pmax	pmax		
	comp=Z,13nm,1.7s						
ARU	Arti	56.23	318	*e*P	P	03 05 38.2	0.0
	comp=Z,2.0nm,0.6s						
AKTO	Aktyubinsk	58.91	312	P	P	03 05 57.0	-0.2
	comp=Z,2.8nm,0.8s,baz=71,slow=11,SNR=13						
AKTO	Aktyubinsk	58.91	312	P	P	03 05 57.0	-0.2
WRAB	Tennant Creek	59.61	191	*e*P	P	03 06 02.2	0.0
WRAB				pmax	pmax		
	comp=Z,5.0nm,1.1s						
WRAB	Tennant Creek	59.61	191	*e*P	P	03 06 02.2	0.0
	comp=Z,5.1nm,1.1s						
WRA	Warramunga Arr	59.62	191	P	P	03 06 00.4	-1.9
	comp=Z,1.1nm,0.6s,baz=6.5,slow=7.1,SNR=4.7						
RES	Resolute Bay	59.87	15	P	P	03 06 04.0	+0.6
	comp=Z,3.5nm,0.8s,baz=305,slow=6.6,SNR=18						
KLMR	Klimovskoe	63.11	328	*e*P	P	03 06 23.8	-1.7
KLMR				pmax	pmax		
	comp=Z,17nm,1.7s						
ASAR	Alice Springs	63.35	191	P	P	03 06 26.9	-0.5
	comp=Z,0.7nm,0.8s,baz=11,slow=6.5,SNR=5.0						
ASAR	Alice Springs	63.35	191	P	P	03 06 27.0	-0.5
GEYT	Alibeck	64.77	299	P	P	03 06 36.6	-0.2
	comp=Z,1.2nm,0.3s,baz=22,slow=4.8,SNR=4.4						
FINES	FINESS Array B	67.91	333	P	P	03 06 56.9	+0.3
	comp=Z,2.0nm,0.6s,baz=49,slow=6.0,SNR=19						
SUMG	Summit	68.45	1	*e*P	P	03 07 01.2	+1.0
SUMG				pmax	pmax		
	comp=Z,2.0nm,0.6s						
SUMG	Summit	68.45	1	*e*P	P	03 07 01.2	+1.0
	comp=Z,2.3nm,0.6s						
GOF	Gofitskoye	70.32	312⇑	*e*P	P	03 07 12.7	+0.9
FFC	Flin Flon	70.58	34	*e*P	P	03 07 13.4	+0.2
FFC				pmax	pmax		
	comp=Z,2.0nm,0.8s						
FFC	Flin Flon	70.58	34	*e*P	P	03 07 13.3	+0.2
	comp=Z,2.1nm,0.8s						
ZEI	Tsey	71.15	310	*e*P	P	03 07 16.1	-1.1
ZEI				pmax	pmax		
	comp=Z,9.0nm,1.0s						
KIV	Kislovodsk	71.18	312	*i* P	P	03 07 17.1	0.0
KIV				*i*		03 07 28.9	
KIV				*i*		03 07 35.8	
KIV				pmax	pmax		
	comp=Z,14nm,1.1s						
KIV	Kislovodsk	71.18	312	*e*P	P	03 07 17.3	+0.1
	comp=Z,13nm,1.0s						
KBZ	Khabaz	71.19	311	P	P	03 07 18.4	+1.4
	comp=Z,5.2nm,0.9s,baz=82,slow=1.3,SNR=17						
NVAR	Mina Array Bea	71.82	55	P	P	03 07 22.7	+1.4
	comp=Z,0.5nm,0.8s,baz=292,slow=8.0,SNR=4.1						
GNI	Garni	72.21	307	*e*P	P	03 07 24.3	+0.8
GNI				pmax	pmax		
	comp=Z,23nm,1.1s						
NB2	NORSAR Subarra	73.01	338	P	P	03 07 27.7	0.0
	comp=Z,1.3nm,0.7s,baz=39,slow=6.2						
NOA	NORSAR Array B	73.01	338	P	P	03 07 28.1	+0.3
	comp=Z,2.6nm,0.8s,baz=38,slow=6.0,SNR=9.6						
R11A	Troy Canyon, C	73.59	54	*e*P	P	03 07 32.0	+0.2
	comp=Z,2.2nm,1.1s						
AKASG	Malin Array Be	73.93	323	P	P	03 07 32.5	-0.7
	comp=Z,1.7nm,0.6s,baz=46,slow=6.4,SNR=7.5						
KIEV	Kiev	73.94	323	*e*P	P	03 07 32.3	-1.0
KIEV				pmax	pmax		
	comp=Z,2.0nm,1.0s						
PDAR	Pinedale Array	74.47	47	P	P	03 07 37.2	+0.4
	comp=Z,0.6nm,0.8s,baz=316,slow=4.1,SNR=4.3						
BRTR	Keskin Array B	79.08	313	P	P	03 08 03.4	+0.5
	comp=Z,0.7nm,0.6s,baz=134,slow=3.6,SNR=6.4						
RAYN	Ar Rayn	81.91	294	*e*P	P	03 08 17.9	-0.3
	comp=Z,6.8nm,1.2s						
LPIG	La Paz	86.10	62	LR	LR	03 43 04.8	
	comp=Z,22nm,19.3s,baz=7.0,slow=33						
TXAR	Lajitas Array	86.95	54	P	P	03 08 43.8	+0.1
	comp=Z,0.2nm,0.6s,baz=264,slow=1.3,SNR=4.6						
VNA2	Neumayer--Watz	145.08	196	P	PKPbc	03 15 33.2	-0.8
	baz=76,slow=0.3						
VNA3	Neumayer Olymp	145.29	194	P	PKPbc	03 15 32.9	-1.9

*IDC **01** 03:01:34.5±1.0, 37°.79N×144°.23E, h0km, mb3.6/6, mb1 3.9/7, mb1mx3.6/41, mbtmp3.6/7, ML3.7/1, MS3.0/2, Ms1 3.0/2, ms1mx2.5/40, Error ellipse: s-maj=31.5km s-min=24.0km az=110.0*
*ISCJB **01** 03:01:38.4±0.8, 37°.97N±0°.06×144°.28E±0°.06, h33km, mb3.7/6, Error ellipse: s-maj=8.9km s-min=6.2km az=17.3*
*JMA **01** 03:01:38.3±0.2, 38°.07N×144°.06E, h4km, M4.2*
ISC 01 03:01:40.1±1.0**, 37°.98N**±0°.08×**144°.28E**±0°.08**, h35**km**, n22,** σ0s.**96**/28**, mb3.7**/6**, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
OFUJ	Ofunato	2.33	299	P	Pn	03 02 15.3	-0.6
JIO	Ouri	2.36	283	P	Pn	03 02 15.9	-0.4
JIO				S	Sn	03 02 43.2	-0.8
JMK	Ichinoseki	2.59	293	P	Pn	03 02 19.3	-0.2
JMK				S	Sn	03 02 49.5	-0.3
JTH	Tanohata	2.72	317	S	Sn	03 02 52.0	-0.9
JMM	Marumori	2.76	269	P	Pn	03 02 21.3	-0.6
JMM				S	Sn	03 02 52.9	-1.1
JOM	Ohasama	2.77	304	P	Pn	03 02 21.9	-0.2
JOM				S	Sn	03 02 54.4	+0.1
JOU	Okura	2.88	279	P	Pn	03 02 23.4	-0.1
JOU				S	Sn	03 02 57.0	+0.1
JFT	Otama	3.16	263	P	Pn	03 02 28.4	+1.0
JFT				S	Sn	03 03 03.6	-0.3
JRG	Rokugo	3.19	298	P	Pn	03 02 28.7	+1.0
JRG				S	Sn	03 03 05.5	+1.0
JANG	Nango	3.22	319	P	Pn	03 02 28.1	0.0
JANG				S	Sn	03 03 04.1	-1.1
JYK	Kaneyama	3.22	288	P	Pn	03 02 28.7	+0.5
JYK				S	Sn	03 03 06.3	+1.0
JTM	Tenmabayashi	3.75	319	P	Pn	03 02 35.9	+0.4
JTM				S	Sn	03 03 16.3	-2.1
MJAR	Matsushiro Arr	5.05	255	Pn	Pn	03 02 48.3	-5.1
	3.1nm,0.3s,baz=99,slow=14,SNR=19						
MAT	Matsushiro	5.05	255	P	Pn	03 02 48.0	-5.4
MAT				*e*S	Sn	03 03 26.4	-24
USRK	Ussuriysk Ar.	11.16	308	LR	LR	03 09 10.3	
	comp=Z,66nm,18.2s,baz=109,slow=40						
KSRS	Korea Array	12.97	273	LR	LR	03 09 03.9	
	comp=Z,72nm,20.7s,baz=76,slow=35						
MKAR	Makanchi Array	45.56	302	P	P	03 09 57.6	+1.2
	1.2nm,0.9s,baz=85,slow=9.6,SNR=8.7						
ILAR	Eielson Array	47.47	33	P	P	03 10 10.8	-0.4
	0.6nm,1.0s,baz=243,slow=6.0,SNR=4.2						
WRA	Warramunga Arr	58.36	191	P	P	03 11 30.0	-1.8
	1.2nm,0.8s,baz=12,slow=7.0,SNR=3.4						
ASAR	Alice Springs	62.09	191	P	P	03 11 56.0	-1.3
	0.4nm,0.5s,baz=9.5,slow=14,SNR=4.1						
NOA	NORSAR Array B	74.18	338	P	P	03 13 13.0	+0.2
	0.5nm,0.6s,baz=38,slow=5.7,SNR=3.9						
TXAR	Lajitas Array	87.73	54	P	P	03 14 27.2	+1.6
	0.1nm,0.3s,baz=300,slow=2.0,SNR=2.4						

JMA 01 03:04:30.3±0.3**, 37°.70N**×**144°.36E, h43**km**, M4.0, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
JIO	Ouri	2.49	289	P	Pn	03 05 09.7	+1.4
JIO				S	Sn	03 05 39.0	+1.5
JMK	Ichinoseki	2.77	298	P	Pn	03 05 13.9	+1.8
JMK				S	Sn	03 05 46.5	+2.2
JMM	Marumori	2.83	274	P	Pn	03 05 14.2	+1.2
JMM				S	Sn	03 05 47.6	+1.8
JOM	Ohasama	2.98	307	P	Pn	03 05 17.1	+2.0
JOM				S	Sn	03 05 51.3	+1.6
JOU	Okura	2.99	284	P	Pn	03 05 17.2	+2.0
JFT	Otama	3.20	268	P	Pn	03 05 19.9	+1.8
JFT				S	Sn	03 05 57.3	+2.3
JYK	Kaneyama	3.37	292	P	Pn	03 05 22.3	+1.8
JYK				S	Sn	03 06 01.9	+2.7
JRG	Rokugo	3.38	301	P	Pn	03 05 22.9	+2.4
JRG				S	Sn	03 06 01.8	+2.5
JANG	Nango	3.47	321	P	Pn	03 05 23.2	+1.4
JANG				S	Sn	03 06 01.4	-0.2
JTM	Tenmabayashi	4.00	321	P	Pn	03 05 30.5	+1.4
JTM				S	Sn	03 06 14.0	-0.7
MAT	Matsushiro	5.05	259	P	Pn	03 05 46.0	+2.5
MAT				S	Sn	03 06 41.0	+0.4

*CSEM **01** 03:08:15.9±0.2, 40°.77N×42°.43E, h10km, MD2.7, Error ellipse: s-maj=6.7km s-min=3.3km az=17.0*
*DDA **01** 03:08:15.4, 40°.73N×42°.42E, h7km, Md2.7*
*ISCJB **01** 03:08:16.2±0.6, 40°.78N±0°.04×42°.42E±0°.04, h6km±11km, Error ellipse: s-maj=7.5km s-min=4.4km az=20.1*
ISC 01 03:08:15.8±1.3**, 40°.79N**±0°.04×**42°.43E**±0°.03**, h15**km±11km**, n19,** σ0s.**43**/32**, Turkey**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
DAGI	Agillar	0.48	307	*i* P	Pg	03 08 25.6	+0.2
DAGI				*i* S	Sb	03 08 33.5	+0.5
DDEM	Demirkent	0.52	281	*i* P	Pg	03 08 26.0	-0.1
DDEM				*i* S	Sb	03 08 33.9	-0.2
DDEM	Demirkent	0.52	281	P	Pg	03 08 26.0	-0.1
DDEM				S	Sb	03 08 33.9	-0.2
KARS	Kars	0.52	108	*e*PG	Pg	03 08 25.9	-0.3
KARS				*e*SG	Sb	03 08 34.7	+0.5
KARS	Kars	0.52	108	*e*Pg	Pg	03 08 25.9	-0.3
KARS				*e*Sg	Sb	03 08 34.7	+0.5
ARTV	Artvin	0.54	316	*i* P	Pb	03 08 27.3	+0.1
ARTV				*i* S	Sb	03 08 35.5	+0.6
ARTV	Artvin	0.54	316	P	Pb	03 08 27.3	+0.1
ARTV				S	Sb	03 08 35.5	+0.6
DBAD	Bademkaya	0.60	292	*i* P	Pg	03 08 27.6	0.0
DBAD				*i* S	Sb	03 08 36.4	0.0
DBAD	Bademkaya	0.60	292	P	Pg	03 08 27.6	0.0
DBAD				S	Sb	03 08 36.4	0.0
EPOS	Posof	0.75	18	*i* P	Pb	03 08 30.8	+0.2
EPOS				*i* S	Sn	03 08 42.6	-0.5
EPOS	Posof	0.75	18	P	Pb	03 08 30.8	+0.2
EPOS				S	Sn	03 08 42.6	-0.5
DBOC	Borcka	0.80	314	*i* P	Pg	03 08 31.2	-0.1
DBOC				*i* S	Sb	03 08 42.6	+0.6
DBOC	Borcka	0.80	314	P	Pg	03 08 31.2	-0.1
DBOC				S	Sb	03 08 42.6	+0.6
HOMI	Horasan	0.84	208	*i* P	Pn	03 08 33.5	+0.1
EAK	Akyaka	0.90	96	*i* P	Pb	03 08 32.8	-0.5
EAK	Akyaka	0.90	96	P	Pb	03 08 32.8	-0.5
AGRB	Hanur-Agry	1.29	160	*e*PN	Pg	03 08 41.7	+1.1
BAYT	Ayd˜–ntepe-Bay	1.78	258	*e*PN	Pb	03 08 47.9	-0.4
BAYT	Ayd˜–ntepe-Bay	1.78	258	*e*Pn	Pb	03 08 47.9	-0.4

*CSEM **01** 03:10:04.1, 36°.42N×25°.42E, h3km, ML1.0/3*
THE 01 03:10:04.1, 36°.42N×25°.42E, h3km±1km**, ML1.0**/3**, Error ellipse: s-maj=1.1km s-min=0.3km az=74.0, Dodecanese Islands**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
THR7	Fira-Santorini	0.01	78	P	Pg	03 10 04.9	+0.2
THR7	Fira-Santorini	0.01	78	P	Pg	03 10 04.9	+0.2
THR3	Thira Island,	0.02	230	P	Pg	03 10 04.8	+0.1
THR3	Thira Island,	0.02	230	P	Pg	03 10 04.8	+0.1
THR2	Thira island,	0.03	28	P	Pg	03 10 05.0	+0.1
THR2	Thira island,	0.03	28	P	Pg	03 10 05.0	+0.1
THT1	Athinios (Pele	0.04	165	P	Pg	03 10 05.0	+0.1
THT1				S	Sg	03 10 05.8	+0.3
THT1	Athinios (Pele	0.04	165	P	Pg	03 10 05.0	+0.1
THT1				S	Sg	03 10 05.8	+0.3
CMBO	Columbo, Santo	0.05	349	P	Pg	03 10 05.3	+0.1
CMBO				S	Sg	03 10 06.3	+0.3
CMBO	Columbo, Santo	0.05	349	P	Pg	03 10 05.3	+0.1
CMBO				S	Sg	03 10 06.3	+0.3
THR5	Thira Island,	0.06	266	P	Pg	03 10 05.6	+0.3
THR5	Thira Island,	0.06	266	P	Pg	03 10 05.6	+0.3
SANT	Santorini	0.06	146	P	Pg	03 10 05.5	+0.1
SANT				S	Sg	03 10 06.8	+0.6
SANT	Santorini	0.06	146	P	Pg	03 10 05.5	+0.1
SANT				S	Sg	03 10 06.8	+0.6
THR6	Thira Island,	0.07	195	P	Pg	03 10 05.8	+0.3
THR6	Thira Island,	0.07	195	P	Pg	03 10 05.8	+0.3

*CSEM **01** 03:10:16.5, 34°.94N×25°.33E, h22km, ML2.0/1*
ATH 01 03:10:16.4, 34°.94N×25°.33E, h22km±6km**, ML2.0**/1**, Error ellipse: s-maj=7.6km s-min=1.2km az=357.0, Crete**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
LAST	Lasithi	0.25	29	P	Pb	03 10 21.8	-0.9
LAST				S	Sb	03 10 26.8	-0.2
LAST	Lasithi	0.25	29	P	Pb	03 10 21.8	-0.9
NPS	Neapolis	0.40	36	P	Pb	03 10 24.1	-0.7
NPS				S	Sn	03 10 32.2	-1.5
NPS	Neapolis	0.40	36	P	Pb	03 10 24.1	-0.7
NPS				S	Sn	03 10 32.2	-1.6
SIVA	Sivas	0.43	280	P	Pb	03 10 25.6	+0.2
SIVA				S	Sb	03 10 32.3	+0.8
SIVA	Sivas	0.43	280	P	Pb	03 10 25.6	+0.2
SIVA				S	Sb	03 10 32.3	+0.8
ZKR	Zakros	0.75	76	P	Pb	03 10 30.8	0.0
ZKR				S	Sn	03 10 42.9	+0.5
ZKR	Zakros	0.75	76	P	Pb	03 10 30.8	0.0
ZKR				S	Sn	03 10 42.9	+0.5
ZKR				AML	AML	03 10 43.2	
	comp=E,200μm,0.5s						
ZKR				AML	AML	03 10 43.8	
	comp=N,269μm,0.3s						
VAM	Vamos	1.04	297	P	Pb	03 10 36.4	+0.7

*ISCJB **01** 03:13:39.0±0.5, 38°.80N±0°.05×31°.63E±0°.04, h10km±7km, Error ellipse: s-maj=8.2km s-min=5.2km az=15.7*
*CSEM **01** 03:13:38.9±0.1, 38°.84N×31°.63E, h2km, MD2.6, Error ellipse: s-maj=3.5km s-min=1.8km az=22.0*
*DDA **01** 03:13:38.9, 38°.84N×31°.62E, h7km, Md2.3*
*ISK **01** 03:13:40.1, 38°.80N×31°.74E, h7km, MD2.6*
ISC 01 03:13:38.8±0.9**, 38°.83N**±0°.04×**31°.63E**±0°.03**, h11**km±9km**, n19,** σ0s.**29**/28**, Turkey**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
KIZT	Kizilcal	0.20	77	*e*PG	Pg	03 13 43.2	0.0
KIZT				*e*SG	Sg	03 13 46.1	-0.1
KIZT	Kizilcal	0.20	77	*e*Pg	Pg	03 13 43.2	0.0
KIZT				*e*Sg	Sg	03 13 46.2	-0.1
KDHN	Kadinhani	0.49	129	*i* P	Pg	03 13 48.4	-0.1
KDHN				*i* S	Sb	03 13 56.4	-0.3
KDHN	Kadinhani	0.49	129	P	Pg	03 13 48.4	-0.1
KDHN				S	Sb	03 13 56.4	-0.3
BOLV	Bolvadin	0.55	258	*i* P	Pg	03 13 49.6	+0.1
BOLV				*i* S	Sg	03 13 57.3	+0.5
BOLV	Bolvadin	0.55	258	P	Pg	03 13 49.6	+0.1
BOLV				S	Sg	03 13 57.3	+0.5
SVRH	Sivrihisar-ESK	0.62	352	*e*PG	Pn	03 13 53.6	0.0
LADK	Ladik-KONYA	0.85	138	*e*PG	Pg	03 13 55.5	+0.1
LADK				*e*SG	Sg	03 14 06.8	+0.2
LADK	Ladik-KONYA	0.85	138	*e*Pg	Pg	03 13 55.5	+0.1
LADK				*e*Sg	Sg	03 14 06.8	+0.2
ESKT	Eskisehir	0.92	319	*i* P	Pg	03 13 56.4	-0.1
SEYT	Eskypehyr	0.92	319	P	Pg	03 13 56.4	-0.1
AUKIR	K˜–rka- Seyitg	0.96	298	*i* P	Pg	03 13 57.4	-0.1
AUKIR				*i* S	Sg	03 14 09.8	-0.2
AUKIR	K˜–rka- Seyitg	0.96	298	P	Pg	03 13 57.4	-0.1
CHBY	Cihanbeyli	1.02	104	*e*PG	Pg	03 13 58.2	-0.2
CHBY	Cihanbeyli	1.02	104	*e*Pg	Pg	03 13 58.2	-0.2
AFSR	Af¯ar-Bala (A	1.27	61	*e*PN	Pg	03 14 04.0	+0.6
AFSR	Af¯ar-Bala (A	1.27	61	*e*Pn	Pg	03 14 04.0	+0.6
BORA	Eskisehir	1.39	319	*i* P	Pb	03 14 04.7	-0.1
BORA	Eskisehir	1.39	319	P	Pb	03 14 04.7	-0.1

*NIED **01** 03:23:00, 37°.70N×143°.40E, h14km, Mw4.7 Best double couple: M0 1.47000×10^16 NP1:φs347.00000°, δ27.00000°, λ-129.00000°. NP2:φs209.00000°, δ69.00000°, λ-72.00000°.*
*IDC **01** 03:23:15.2±0.4, 37°.63N×143°.42E, h0km, mb4.7/31, mb1 4.8/38, mb1mx4.7/51, mbtmp4.7/38, ML3.8/5, MS4.1/30, Ms1 4.1/30, ms1mx4.0/39, Error ellipse: s-maj=11.7km s-min=10.3km az=115.0*
*ISCJB **01** 03:23:15.2±0.8, 37°.64N±0°.02×143°.34E±0°.02, h9km±5km, mb4.9/218, MS4.4/53, Error ellipse: s-maj=4.1km s-min=2.4km az=162.0*
*BJI **01** 03:23:17.8, 37°.76N×143°.20E, h20km, mb5.0/78, mB5.1/52, Ms4.7/83, Ms7 4.6/77*
*JMA **01** 03:23:17.4±0.2, 37°.66N×143°.39E, h45km, M4.9*
JMA Felt I J1.
*MOS **01** 03:23:18.1±0.9, 37°.70N×143°.33E, h28km, mb5.1/80, MS4.5/14, Error ellipse: s-maj=6.5km s-min=4.5km az=108.1*
*NEIC **01** 03:23:20.3±0.4, 37°.62N×143°.34E, h33km±2km, mb4.9/142, Error ellipse: s-maj=3.3km s-min=2.0km az=151.0*
ISC 01 03:23:18.9±0.4**, 37°.64N**±0°.03×**143°.36E**±0°.03**, h25**km±2km**, h24**km**:pP-P, n485,** σ1s.**47**/535**, mb4.9**/225**, MS4.5**/54**, 38C-9D, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
JIO	Ouri	1.78	298	P	Pn	03 23 46.9	-1.3
JIO				*e*S	Sn	03 24 08.3	-1.7
JMM	Marumori	2.05	277	P	Pn	03 23 50.6	-1.2

JMK Ichinoseki 2.13 309 P **Pn** **03 23 51.5 -1.5**
JOU Okura 2.25 290 P **Pn** **03 23 54.1 -0.5**
JOU eS **Sn** **03 24 21.0 -0.6**
JFT Otama 2.41 268 P **Pn** **03 23 56.4 -0.3**
JFT eS **Sn** **03 24 25.1 -0.3**
JOM Ohasama 2.44 319 P **Pn** **03 23 55.8 -1.5**
JOM S **Sn** **03 24 24.4 -2.0**
JYK Kaneyama 2.69 299 P **Pn** **03 23 59.9 -0.7**
JYK eS **Sn** **03 24 31.7 -0.6**
JANG Nango 3.08 333 P **Pn** **03 24 05.6 -0.5**
JANG eS **Sn** **03 24 38.9 -3.3**
JNS Sasagawa 3.21 274 P **Pn** **03 24 07.9 +0.1**
JAW Awa shima 3.35 285 P **Pn** **03 24 09.8 +0.1**
JAG Ashikaga 3.35 250 P **Pn** **03 24 09.2 -0.6**
JAG S **Sn** **03 24 49.1 +0.3**
BSO1 Boso 1 3.55 214 P **Pn** **03 24 10.9 -1.1**
BSO1 S **Sn** **03 24 53.1 +0.3**
JRY Ryogami san 3.93 247 P **Pn** **03 24 17.2 -0.5**
JRY S **Sn** **03 25 01.0 -2.0**
JSD Sado 4.06 277 P **Pn** **03 24 19.0 -0.4**
JOD2 Odawara 2 4.18 237 P **Pn** **03 24 20.4 -0.8**
JOD2 eS **Sn** **03 25 06.6 -2.6**
MJAR Matsushiro Arr 4.26 257 Pn **Pn** **03 24 22.6 +0.3**
74nm,0.3s,baz=75,slow=9.5,SNR=364
MJAR Sn **Sn** **03 25 12.1 +0.9**
18nm,0.3s,baz=96,slow=25,SNR=3.1
MAJO Matsushiro 4.26 257*c i*P **Pn** **03 24 22.7 +0.4**
MAJO Matsushiro 4.26 257 ePn **Pn** **03 24 22.8 +0.5**
MAT Matsushiro 4.26 257 P **Pn** **03 24 22.6 +0.3**
MAT S **Sn** **03 25 11.0 -0.3**
ERM Erimo 4.37 358 eP **Pn** **03 24 21.1 -2.7**
ERM e 03 25 08.3
ERM Erimo 4.37 358 ePn **Pn** **03 24 21.1 -2.7**
ERM eSn **Sn** **03 25 08.3 -5.5**
JHJ2 Mitsune 5.37 214 ePn **Pn** **03 24 36.8 -0.6**
JHJ Hachijo jima 2 5.37 214 Pn **Pn** **03 24 35.9 -1.7**
217nm,0.3s,baz=94,slow=23,SNR=64
JHJ Sn **Sn** **03 25 34.6 -4.0**
210nm,0.3s,baz=52,slow=22,SNR=6.6
JHJ LR LR 03 26 18.7
comp=Z,700nm,18.9s,baz=232,slow=34
INU Inuyama 5.60 248 ePn **Pn** **03 24 41.5 +0.8**
YUK Yuzh-Kuril'sk 6.66 16 eP **Pn** **03 24 51.9 -3.3**
YUK pmax pmax
comp=Z,598nm,0.2s
YUK pmax pmax
comp=E,198nm,0.3s
YUK pmax pmax
comp=N,58nm,0.1s
YUK MLR MLR
comp=Z,2μm,12.0s
YUK MLR MLR
comp=E,1μm,9.0s
YUK MLR MLR
comp=N,890nm,11.0s
SHO Shikotan 6.76 22 eP Pn 03 24 51.6 -4.9
SHO pmax pmax
comp=N,210nm,0.5s
SHO pmax pmax
comp=E,100nm,0.5s
SHO pmax pmax
comp=Z,325nm,0.5s
KUR Kuril'sk 8.31 23 eP **Pn** **03 25 15.4 -2.3**
KUR pmax pmax
comp=Z,97nm,0.4s
KUR pmax pmax
comp=N,65nm,0.3s
KUR pmax pmax
comp=E,64nm,0.4s
KUR MLR MLR
comp=Z,1μm,10.0s
YSS Yuzh-Sakhalins 9.32 357⇓eP **Pn** **03 25 30.7 -1.0**
YSS eS **Sn** **03 27 10.8 -4.8**
YSS pmax pmax
comp=Z,40nm,1.0s
YSS MLR MLR
comp=Z,1μm,14.0s
YSS MLR MLR
comp=N,1μm,18.0s
YSS MLR MLR
comp=E,1μm,15.0s
YSS Yuzh-Sakhalins 9.32 357 ePn **Pn** **03 25 30.6 -1.0**
CBIJ Chichi jima 10.56 186 ePn **Pn** **03 25 45.2 -3.5**
CBIJ eSn Sn 03 27 33.8 -12
JCJ Chichijima 10.56 186 Pn **Pn** **03 25 44.8 -3.9**
comp=E,108nm,0.3s,baz=274,slow=21,SNR=34
JCJ Sn Sn 03 27 34.4 -12
USRK Ussuriysk Ar. 10.81 311 Pn **Pn** **03 25 53.2 +1.2**
comp=E,1.1nm,0.3s,baz=119,slow=13,SNR=20
USRK LR LR 03 30 03.7
comp=E,2μm,18.1s,baz=112,slow=38
JNU Nakatsue 11.14 250 Pn **Pn** **03 25 57.2 +0.5**
comp=E,1.5nm,0.3s,baz=58,slow=8.8,SNR=63
JNU LR LR 03 30 21.7
comp=E,591nm,19.4s,baz=110,slow=38
JNU Nakatsue 11.14 250 ePn **Pn** **03 25 56.8 +0.2**
KSRS Korea Array 12.26 274 Pn **Pn** **03 26 13.4 +1.5**
comp=E,0.5nm,0.3s,baz=87,slow=13,SNR=48
KSRS LR LR 03 30 58.0
comp=E,1μm,18.2s,baz=91,slow=38
KS01 Wonju Array Si 12.28 274 ePn **Pn** **03 26 12.4 +0.2**
KS15 Wonju Array Si 12.29 274 ePn **Pn** **03 26 14.1 +1.8**
KSAR Wonju Array Be 12.29 274 P **Pn** **03 26 13.4 +1.1**
KSAR Wonju Array Be 12.29 274 Pn **Pn** **03 26 13.4 +1.1**
HABR Khabarovsk 12.41 333 eP **Pn** **03 26 10.1 -3.7**
HABR eS **Sn** **03 28 25.2 -6.0**
HABR pmax pmax
comp=E,76nm,1.6s
HABR pmax pmax
comp=Z,197nm,1.6s
HABR pmax pmax
comp=N,62nm,1.6s
HABR MLR MLR
comp=Z,708nm,15.0s
MDJ Mudanjiang 12.49 308 P **Pn** **03 26 15.4 +0.3**
TYV Tymovskoe 13.23 358 eP **Pn** **03 26 22.5 -2.6**
TYV pmax pmax
comp=Z,20nm,0.8s
TYV MLR MLR
comp=N,2μm,15.0s
TYV MLR MLR
comp=Z,2μm,15.0s
INCN Inchon 13.28 274 ePn **Pn** **03 26 27.3 +1.5**
INCN Inchon 13.28 274 P **Pn** **03 26 27.7 +1.8**
SNR=5.7
KLR Kul'dur 14.31 328 Pn **Pn** **03 26 37.1 -2.7**
comp=Z,0.8nm,0.3s,baz=134,slow=12,SNR=100
KLR LR LR 03 32 18.6
comp=Z,1μm,19.2s,baz=121,slow=38
CN2 Changchun 14.90 300 eP **Pn** **03 26 45.1 -2.8**
CN2 *es*P P 03 26 59.0 +5.6
CN2 eS **Sn** **03 29 28.7 -3.4**
CN2 pmax pmax
comp=Z,10.0nm,1.0s
CN2 pmax pmax
comp=Z,50nm,3.0s
CN2 LR LR
comp=Z,1μm,14.0s
CN2 LR LR
comp=Z,800nm,14.0s
CN2 LR LR
comp=Z,600nm,16.0s
NKL Nikolayevsk 15.62 354 eP **Pn** **03 26 52.0 -5.3**
NKL pmax pmax
comp=Z,34nm,1.0s
SNY Shenyang 15.78 292 ⇓P **Pn** **03 26 58.0 -1.4**
SNY pmax pmax
comp=Z,32nm,1.0s
SNY pmax pmax
comp=Z,350nm,10.8s
SNY LR LR
comp=Z,1μm,13.7s
SNY LR LR
comp=Z,3μm,18.1s
SNY LR LR
comp=Z,4μm,17.3s
SKR Severo-Kuril's 15.90 31 P **P** **03 27 07.4 +3.0**
SKR pmax pmax
comp=Z,120nm,0.8s
SKR MLR MLR
comp=E,3μm,14.0s
SKR MLR MLR
comp=Z,2μm,14.0s
JOW Kunigami 16.68 234 Pn **P** **03 27 12.6 -0.7**
comp=Z,1.0nm,0.3s,baz=101,slow=6.2,SNR=4.3

JOW Kunigami 16.68 234 *e*Pn **Pn** **03 27 11.4 +0.4**
comp=Z,28nm,0.9s
DL2 Dalian 17.11 281 P **Pn** **03 27 16.5 +0.2**
DL2 S **Sn** **03 30 27.6 +1.8**
DL2 pmax pmax
comp=Z,98nm,0.9s
DL2 pmax pmax
comp=Z,770nm,3.7s
DL2 LR LR
comp=Z,1μm,18.6s
DL2 LR LR
comp=Z,1μm,16.9s
PEA0 Petropavlovsk- 18.40 28 *e*P **Pn** **03 27 32.2 0.0**
PEA0B Petropavlovsk- 18.40 28 *e*P **P** **03 27 30.7 -1.4**
comp=E,65nm,1.4s
PETK Petropavlovsk- 18.40 28 P **P** **03 27 31.9 -0.2**
comp=Z,0.3nm,0.3s,baz=201,slow=12,SNR=5.3
PETK LR LR 03 37 04.9
comp=Z,188nm,18.0s,baz=210,slow=45
PET Petropavlovsk 18.70 30 *e*P **Pn** **03 27 35.7 -0.1**
PET eS **Sn** **03 31 04.7 +0.5**
PET pmax pmax
comp=Z,200nm,8.1s
PET pmax pmax
comp=Z,19nm,1.1s
PET pmax pmax
comp=Z,100nm,13.8s
PET MLR MLR
comp=Z,400nm,15.0s
PET MLR MLR
comp=Z,500nm,16.0s
NJ2 Nanjing 20.84 262 *e*P **P** **03 27 55.2 -3.6**
NJ2 pmax pmax
comp=Z,22nm,0.6s
NJ2 LR LR
comp=Z,800nm,9.6s
NJ2 LR LR
comp=Z,1μm,9.6s
NJ2 LR LR
comp=Z,1μm,12.5s
TIA Tai'an 21.00 274 ⇓P **P** **03 27 58.5 -2.1**
TIA pP **pP** **03 28 06.3 -1.1**
TIA sP **sP** **03 28 10.1 -0.5**
TIA pmax pmax
comp=Z,90nm,1.1s
TIA LR LR
comp=Z,670nm,13.5s
TIA LR LR
comp=Z,1μm,14.3s
TIA LR LR
comp=Z,1μm,14.7s
BJI Beijing 21.28 285 P **P** **03 28 01.3 -2.2**
BJI pP **sP** **03 28 13.2 -0.3**
BJI S **S** **03 31 58.6 -0.1**
BJI pmax pmax
comp=Z,110nm,1.2s
BJI pmax pmax
comp=Z,270nm,3.5s
BJI LR LR
comp=Z,1μm,12.8s
BJI LR LR
comp=Z,550nm,13.3s
BJI LR LR
comp=Z,470nm,18.9s
BJT Baijiatuau 21.29 285 *e*P **P** **03 28 02.0 -1.6**
BJT pmax pmax
comp=Z,154nm,1.1s
BJT Baijiatuau 21.29 285 *e*P **P** **03 28 02.0 -1.6**
comp=Z,154nm,1.1s
YOJ Yonaguni jima 21.77 239 *e*P **P** **03 28 08.7 -0.1**
YOJ pmax pmax
comp=Z,203nm,1.7s
YOJ Yonaguni jima 21.77 239 *e*P **P** **03 28 08.7 -0.1**
comp=Z,202nm,1.7s
MA2 Magadan 22.46 10 P **P** **03 28 16.3 +0.3**
comp=Z,8.6nm,0.7s,baz=223,slow=9.8,SNR=10.0
MA2 LR LR 03 38 53.7
comp=Z,194nm,18.6s,baz=199,slow=42
MA2 Magadan 22.46 10 *e*P **P** **03 28 15.7 -0.3**
comp=Z,101nm,1.0s
YHNB Yeheng 22.76 242 *e*P **P** **03 28 19.6 +0.1**
comp=Z,135nm,1.8s
CLNS Chul'man 22.80 333 *e*P **P** **03 28 18.3 -1.3**
CLNS pmax pmax
comp=Z,21nm,1.0s
CLNS pmax pmax
comp=N,21nm,1.4s
CLNS pmax pmax
comp=E,16nm,1.2s
CLNS MLR MLR
comp=E,486nm,14.0s
NACB Ninganchiao 22.93 240 *e*P **P** **03 28 21.0 -0.2**
comp=E,27nm,1.0s
SSLB Suanglung 23.62 241 *e*P **P** **03 28 27.3 -0.9**
comp=E,32nm,1.1s
YULB Yu-li 23.65 239 *e*P **P** **03 28 27.9 -0.5**
comp=E,49nm,1.3s
GUMO Guam 23.99 176 LR LR 03 37 07.0
comp=E,237nm,20.5s,baz=20,slow=35
GUMO Guam 23.99 176 *e*P **P** **03 28 31.3 -0.3**
GUMO pmax pmax
comp=Z,292nm,1.4s
GUMO Guam 23.99 176 *e*P **P** **03 28 31.3 -0.3**
comp=Z,292nm,1.4s
TPUB Ta-pu 24.17 240 *e*P **P** **03 28 33.0 -0.3**
comp=Z,183nm,1.4s
TIY Taiyuan 24.43 280 *e*P **P** **03 28 37.3 +1.6**
TIY S **S** **03 32 56.2 +2.1**
TIY pmax pmax
comp=Z,96nm,1.2s
TIY LR LR
comp=Z,290nm,11.9s
TIY LR LR
comp=Z,530nm,12.7s
TIY LR LR
comp=Z,950nm,16.9s
QZH Quanzhou 24.58 246 *e*P **P** **03 28 37.5 +0.5**
QZH S **S** **03 32 56.4 -0.1**
QZH LR LR
comp=Z,1μm,13.8s
QZH LR LR
comp=Z,840nm,11.6s
QZH LR LR
comp=Z,1μm,13.9s
HHC Hu-ho-hao-te 24.76 287 *e*P **P** **03 28 37.0 -1.7**
HHC pP pP 03 28 46.0 0.0
HHC sP sP 03 28 50.4 +1.3
HHC PP **PnPn** **03 29 13.4 +2.3**
HHC S **S** **03 32 55.1 -4.4**
HHC sS sS 03 33 12.2 +0.6
HHC pmax pmax
comp=Z,42nm,1.4s
HHC pmax pmax
comp=Z,180nm,2.8s
HHC LR LR
comp=Z,810nm,13.7s
HHC LR LR
comp=Z,1μm,14.9s
HHC LR LR
comp=Z,1μm,13.7s
WHN Wuhan 24.98 262 ⇑P **P** **03 28 40.5 -0.1**
WHN S **S** **03 32 55.9 -7.1**
WHN LR LR
comp=Z,3μm,13.8s
WHN LR LR
comp=Z,2μm,13.5s
WHN LR LR
comp=Z,3μm,14.0s
CIT Chita 25.34 314 *e*P **P** **03 28 42.9 -0.9**
CIT *e* 03 28 52.3
CIT *e* 03 28 56.6
CIT pmax pmax
comp=Z,365nm,1.8s
YAK Yakutsk 25.85 345 P **P** **03 28 48.0 -0.2**
comp=Z,2.7nm,0.3s,baz=334,slow=19,SNR=9.3
YAK LR LR 03 38 42.6
comp=Z,236nm,21.6s,baz=149,slow=36
YAK Yakutsk 25.85 345 *e*P **P** **03 28 47.9 -0.2**
YAK *e**PP **sP** **03 28 57.7 -0.8**
YAK *e* 03 29 26.9
YAK *e*PPP PPP 03 29 36.1
YAK *e* 03 32 12.8
YAK eS **S** **03 33 19.5 +3.4**
YAK *e**SS sS 03 33 37.1 +8.8
YAK eSS **SnSn** **03 34 19.2 +6.3**
YAK eSSS SSS 03 34 35.0

YAK *e* 03 39 41.2
YAK pmax pmax
comp=Z,61nm,0.9s
YAK pmax pmax
comp=E,5.0nm,0.8s
YAK pmax pmax
comp=N,19nm,1.3s
YAK pmax pmax
comp=Z,34nm,0.9s
YAK pmax pmax
comp=N,94nm,1.8s
YAK pmax pmax
comp=E,39nm,1.8s
YAK smax smax
comp=N,477nm,2.3s
YAK smax smax
comp=E,191nm,2.0s
YAK MLR MLR
comp=N,528nm,17.0s
YAK MLR MLR
comp=Z,494nm,13.0s
YAK MLR MLR
comp=E,213nm,10.0s
YAK Yakutsk 25.85 345 *e*P **P** **03 28 48.1 -0.1**
comp=E,68nm,0.8s
SEY Seymchan 25.92 9 P **P** **03 28 49.1 +0.3**
comp=E,6.9nm,0.6s,baz=190,slow=6.5,SNR=25
SEY Seymchan 25.92 9⇑*i*P **P** **03 28 49.2 +0.4**
BTO Baotou 25.95 287 *e*P **P** **03 28 47.7 -1.7**
H11N2 WAKE ISLAND Hy 27.17 125 T T 03 57 49.0
baz=317,slow=75,SNR=46
H11N1 WAKE ISLAND Hy 27.18 125 T T 03 57 22.1
baz=317,slow=75,SNR=15
H11N3 WAKE ISLAND Hy 27.18 125 T T 03 57 22.9
baz=317,slow=75,SNR=50
BOD Bodaibo 27.87 326 *e*P **P** **03 29 06.0 -0.4**
BOD pmax pmax
comp=Z,57nm,1.4s
H11S1 WAKE ISLAND Hy 27.93 127 T T 03 58 34.3
baz=318,slow=76,SNR=9.4
H11S3 WAKE ISLAND Hy 27.93 127 T T 03 58 23.4
baz=318,slow=76,SNR=12
H11S2 WAKE ISLAND Hy 27.95 127 T T 03 58 17.1
baz=318,slow=76,SNR=14
XAN Xi'an 28.05 273 P **P** **03 29 08.2 -0.2**
XAN sP sP 03 29 21.5 +2.7
XAN PP **PnPn** **03 29 57.3 +1.2**
XAN S **S** **03 33 47.0 -4.6**
XAN SS **SnSn** **03 35 08.9 +1.6**
XAN pmax pmax
comp=Z,24nm,0.9s
XAN pmax pmax
comp=Z,160nm,8.8s
XAN LR LR
comp=Z,780nm,15.9s
XAN LR LR
comp=Z,150nm,16.8s
XAN LR LR
comp=Z,740nm,13.2s
ULN Ulaanbaatar 28.32 303*c i*P **P** **03 29 11.0 +0.3**
ULN Ulaanbaatar 28.32 303 *e*P **P** **03 29 10.7 0.0**
comp=Z,33nm,0.9s
ULN Ulaanbaatar 28.32 303 P **P** **03 29 11.8 +1.1**
SNR=18
SONA1 Songino Array 28.75 303 *e*P **P** **03 29 14.7 +0.2**
SONA1 *e*ScP **ScP** **03 36 04.3 +0.4**
SONM Songino Array 28.75 303 P **P** **03 29 15.4 +0.8**
comp=Z,12nm,0.8s,baz=87,slow=8.6,SNR=48
SONM ScP **ScP** **03 36 04.6 +0.7**
comp=Z,0.4nm,0.7s,baz=40,slow=2.5,SNR=3.9
SONM LR LR 03 41 19.6
comp=Z,544nm,18.6s,baz=100,slow=38
ENH Enshi 28.93 265 *e*P **P** **03 29 17.0 +0.9**
comp=Z,128nm,1.0s
IRK Irkutsk 30.86 311 *e*P **P** **03 29 34.6 +1.6**
IRK *e* 03 29 50.5
IRK pmax pmax
comp=Z,50nm,1.1s
TLY Talaya 31.12 310 P **P** **03 29 37.9 +2.5**
comp=Z,16nm,0.8s,baz=118,slow=5.7,SNR=25
TLY Talaya 31.12 310 *e*P **P** **03 29 35.5 +0.1**
TLY eS **S** **03 34 40.2 +0.8**
TLY pmax pmax
comp=Z,46nm,1.2s
TLY MLR MLR
comp=Z,594nm,14.0s
TLY Talaya 31.12 310 *e*P **P** **03 29 35.6 +0.3**
comp=Z,33nm,1.0s
TLY Talaya 31.12 310 P **P** **03 29 36.5 +1.2**
SNR=22
ZAK Zakamensk 31.13 307 *e*P **P** **03 29 35.4 -0.1**
ZAK pmax pmax
comp=Z,23nm,1.1s
LZH Lanzhou 31.50 279 *e*P **P** **03 29 39.1 +0.1**
LZH pP pP 03 29 47.6 +1.2
LZH sP sP 03 29 51.1 +1.7
LZH PcP **PcP** **03 32 35.4 +3.8**
LZH eS **S** **03 34 39.0 -6.9**
LZH sS sS 03 34 53.7 -4.3
LZH SS **SnSn** **03 36 27.7 -3.6**
LZH pmax pmax
comp=Z,56nm,1.1s
LZH pmax pmax
comp=Z,140nm,4.4s
LZH LR LR
comp=Z,1μm,16.2s
LZH LR LR
comp=Z,2μm,14.4s
LZH LR LR
comp=Z,2μm,15.1s
GSTR Great Sitkin T 31.73 50 *es*P **sP** **03 29 55.3 +4.2**
GSTR *e*PcP **PcP** **03 32 31.2 -0.5**
MOY Mondy 32.75 309 *e*P **P** **03 29 51.5 +1.8**
MOY pmax pmax
comp=Z,36nm,2.7s
GYA Guiyang 32.85 261⇓*i*P **P** **03 29 50.6 -0.3**
GYA pP sP 03 30 02.8 +1.5
GYA PP **PnPn** **03 31 01.4 +1.6**
GYA PcP **PcP** **03 32 37.6 +2.2**
GYA S **S** **03 35 06.0 -1.0**
GYA sS sS 03 35 23.3 +4.1
GYA ScP **ScP** **03 36 17.2 -0.6**
GYA SS **SnSn** **03 37 05.0 +0.7**
GYA ScS **ScS** **03 40 15.5 -2.5**
GYA pmax pmax
comp=Z,40nm,0.9s
GYA pmax pmax
comp=Z,130nm,5.6s
GYA LR LR
comp=Z,720nm,17.8s
GYA LR LR
comp=Z,650nm,18.0s
GYA LR LR
comp=Z,610nm,18.4s
BILL Bilibino 33.02 16 P **P** **03 29 52.0 +0.2**
BILL *e**PP **sP** **03 30 01.4 -0.8**
BILL *SP **pP** **03 30 04.0 +4.9**
BILL *e* 03 32 43.6
BILL pmax pmax
comp=Z,12nm,1.7s
BILL Bilibino 33.02 16 *e*P **P** **03 29 51.3 -0.5**
comp=Z,23nm,1.5s
CD2 Chengdu 33.22 270 P **P** **03 29 53.8 -0.2**
CD2 sP sP 03 30 08.8 +4.3
CD2 PP **PP** **03 31 09.2 -0.1**
CD2 PcP **PcP** **03 32 36.1 -0.2**
CD2 S **S** **03 35 11.0 -1.6**
CD2 sS sS 03 35 29.2 +4.4
CD2 pmax pmax
comp=Z,60nm,0.9s
CD2 pmax pmax
comp=Z,170nm,4.6s
CD2 LR LR
comp=Z,1μm,18.0s
CD2 LR LR
comp=Z,620nm,19.2s
GTA Gaotai 33.87 287 ⇑P **P** **03 30 00.7 +1.0**
GTA pP sP 03 30 10.9 +0.7
GTA sP pP 03 30 15.1 +8.0
GTA S **S** **03 35 22.9 +0.2**
GTA sS sS 03 35 39.2 +4.3
GTA SS **SnSn** **03 37 30.6 +1.8**
GTA pmax pmax
comp=Z,73nm,1.2s
GTA pmax pmax

comp=Z,240nm,4.4s
GTA LR LR
comp=Z,520nm,16.6s
GTA LR LR
comp=Z,800nm,18.4s
GTA LR LR
comp=Z,990nm,19.0s
QIZ Qiongzhong 34.59 247 P P 03 30 05.2 -0.8
QIZ S S **03 35 39.4 +5.6**
QIZ LR LR
comp=Z,610nm,11.4s
QIZ LR LR
comp=Z,410nm,15.6s
TIXI Tiksi 34.89 352 *i* P P 03 30 07.0 -1.0
TIXI pmax pmax
comp=Z,4.0nm,0.7s
TIXI Tiksi 34.89 352 *e*P P 03 30 06.9 -1.0
comp=Z,7.2nm,1.0s
KWAJ Kwajalein Atol 36.12 136 *e*P P 03 30 19.2 +0.1
KWAJ pmax pmax
comp=Z,237nm,1.1s
KWAJ Kwajalein Atol 36.12 136 *e*P P 03 30 19.2 +0.1
comp=Z,237nm,1.1s
NIKH Nikolski High 36.21 49 *e*P P 03 30 20.2 +0.7
comp=Z,44nm,1.2s
KMI Kunming 36.58 262 P P 03 30 25.6 +2.3
KMI pP pP 03 30 31.5 +0.8
KMI sP sP 03 30 34.6 +0.8
KMI PP PP **03 31 48.1 +1.4**
KMI S S **03 36 04.8 0.0**
KMI sS sS 03 36 14.2 -2.9
KMI SS SnSn **03 38 32.4 -2.6**
KMI pmax pmax
comp=Z,24nm,0.8s
KMI pmax pmax
comp=Z,110nm,3.8s
KMI LR LR
comp=Z,670nm,16.4s
KMI LR LR
comp=Z,500nm,16.1s
KMI LR LR
comp=Z,730nm,14.7s
GAMB Gambell 37.40 31 *e*P P 03 30 29.0 -0.5
comp=Z,12nm,1.5s
KRAR Krasnoyarsk 38.11 315 *e*P P 03 30 36.0 +0.4
KRAR pmax pmax
comp=Z,68nm,1.2s
WMQ Urumqi 41.95 297 P P 03 31 09.1 +1.3
WMQ pP sP 03 31 19.7 +1.4
WMQ sP pP 03 31 24.1 +8.8
WMQ S S **03 37 26.6 +1.8**
WMQ pmax pmax
comp=Z,25nm,0.8s
WMQ pmax pmax
comp=Z,58nm,4.4s
WMQ LR LR
comp=Z,230nm,14.4s
WMQ LR LR
comp=Z,200nm,13.0s
WMQ LR LR
comp=Z,84nm,14.2s
ZAA0 Zalesovo Array 42.66 312 *e*P P 03 31 13.6 +0.3
ZALV Zalesovo Beam 42.66 312 P P 03 31 13.5 +0.3
comp=Z,17nm,0.8s,baz=90,slow=7.4,SNR=47
ZALV PcP PcP 03 33 05.1 +0.2
comp=Z,2.0nm,0.5s,baz=71,slow=2.9,SNR=4.4
ZALV LR LR 03 49 55.0
comp=Z,595nm,18.1s,baz=70,slow=38
CHTO Chiang Mai 42.94 257 *e*P P 03 31 16.3 +0.3
CHTO pmax pmax
comp=Z,18nm,1.2s
CHTO Chiang Mai 42.94 257 *e*P P 03 31 16.3 +0.3
comp=Z,18nm,1.2s
CMAR Chiang Mai Arr 43.15 256 P P 03 31 18.8 +1.1
comp=Z,4.7nm,0.8s,baz=46,slow=6.3,SNR=24
CMAR LR LR 03 52 32.9
comp=Z,203nm,18.4s,baz=52,slow=41
CM01 Chiang Mai Arr 43.16 256 *e*P P 03 31 18.2 +0.5
NRIK Noril'sk 43.38 335 P P 03 31 18.9 +0.1
comp=Z,1.8nm,0.3s,baz=111,slow=11,SNR=5.5
NRIK LR LR 03 50 41.1
comp=Z,778nm,19.3s,baz=111,slow=38
NVS Novosibirsk 43.55 313 *e*P P 03 31 17.6 -2.8
NVS pmax pmax
comp=Z,36nm,1.5s
NVS pmax pmax
comp=E,19nm,0.9s
TTA Tatalina 44.04 35 *e*P P 03 31 24.9 +0.5
TTA Tatalina 44.04 35 *e*P P 03 31 24.9 +0.5
SVW2 Sparrevohn 44.10 38 *e*P P 03 31 25.8 +1.0
comp=E,22nm,1.0s
MK01 Makanchi Array 45.11 302 *e*P P 03 31 33.1 0.0
MK31 Makanchi Array 45.11 302 P P 03 31 32.8 -0.3
MK31 pmax pmax
comp=Z,40nm,0.9s
MK31 Makanchi Array 45.11 302 *e*P P 03 31 33.3 +0.2
MKAR Makanchi Array 45.11 302 P P 03 31 33.3 +0.1
comp=Z,34nm,0.9s,baz=87,slow=8.7,SNR=82
MKAR LR LR 03 50 57.6
comp=Z,235nm,18.0s,baz=82,slow=37
MAKZ Makanchi 45.32 302 *e*P P 03 31 35.1 +0.3
MAKZ pmax pmax
comp=Z,39nm,0.9s
MAKZ Makanchi 45.32 302 *e*P P 03 31 35.1 +0.3
comp=Z,39nm,0.9s
RSO Redoubt South 45.46 39 *e*P P 03 31 36.3 +0.4
KDAK Kodiak Island 45.61 42 P P 03 31 51.8 +15
comp=Z,8.2nm,0.6s,baz=261,slow=4.6,SNR=11
KDAK LR LR 03 47 25.0
comp=Z,64nm,20.5s,baz=245,slow=32
KDAK Kodiak Island 45.61 42 *i* P P 03 31 37.2 +0.4
PPLA Purkeypile 45.78 35 *e*P P 03 31 39.6 +1.3
comp=Z,56nm,1.7s
SPU Mount Spurr 45.81 38 *e*P P 03 31 39.3 +0.8
CAST Castle Rocks 45.85 34 *e*P P 03 31 39.8 +1.1
comp=Z,43nm,2.0s
BPAW Bear Paw Mtn. 46.37 34 *e*P P 03 31 42.9 +0.1
comp=Z,13nm,1.5s
KTH Kantishna Hill 46.38 34 *e*P P 03 31 42.7 -0.2
comp=Z,20nm,1.2s
MLY Manley 46.51 32 *e*P P 03 31 44.9 +0.9
comp=Z,10nm,1.0s
TRF Thorofare Moun 46.66 34 *e*P P 03 31 46.0 +0.7
comp=Z,24nm,1.6s
KURK Kurchatov 46.78 308 *e*P P 03 31 45.9 -0.2
KURK pmax pmax
comp=Z,136nm,0.8s
KURK Kurchatov 46.78 308 *e*P P 03 31 45.9 -0.2
comp=Z,136nm,0.8s
KURK Kurchatov 46.78 308 P P 03 31 46.4 +0.2
SNR=24
KURBB Kurchatov Arra 46.85 308 P P 03 31 46.7 -0.1
comp=Z,50nm,0.8s,baz=82,slow=8.1,SNR=452
COLD Coldfoot 46.87 29 *e*P P 03 31 47.1 +0.5
comp=Z,7.3nm,1.3s
PMG Port Moresby 46.93 175 P P 03 31 48.0 +0.4
comp=Z,23nm,0.9s,baz=308,slow=5.6,SNR=5.6
PMG Port Moresby 46.93 175 *e*P P 03 31 48.0 +0.4
PMG pmax pmax
comp=Z,39nm,1.1s
PMG Port Moresby 46.93 175 *e*P P 03 31 48.0 +0.4
comp=Z,39nm,1.1s
RC01 Rabbit Creek A 46.94 38 *e*P P 03 31 47.1 -0.1
comp=Z,17nm,0.9s
SEW Seward 47.12 39 *e*P P 03 31 49.0 +0.4
comp=Z,50nm,1.4s
PMR Palmer 47.21 37 *e*P P 03 31 48.7 -0.6
PMR pmax pmax
comp=Z,24nm,1.2s
PMR Palmer 47.21 37 *e*P P 03 31 48.7 -0.6
comp=Z,24nm,1.2s
MCK McKinley 47.27 34 *e*P P 03 31 49.8 0.0
MCK pmax pmax
comp=Z,7.0nm,0.9s
MCK McKinley 47.27 34 *e*P P 03 31 49.8 0.0
comp=Z,7.2nm,0.9s
RND Reindeer 47.30 35 *e*P P 03 31 49.9 -0.2
RND pmax pmax
comp=Z,16nm,1.0s
RND Reindeer 47.30 35 *e*P P 03 31 49.9 -0.2
comp=Z,16nm,1.0s
MDM Murphy Dome 47.58 32 *e*P P 03 31 52.7 +0.5
comp=Z,15nm,0.9s
SML Sawmill 47.58 37 *e*P P 03 31 52.0 -0.3
SML pmax pmax
comp=Z,17nm,1.0s
SML Sawmill 47.58 37 *e*P P 03 31 52.0 -0.3
comp=Z,17nm,1.0s
WRH Wood River Hil 47.63 33 *e*P P 03 31 52.6 0.0
comp=Z,4.6nm,0.9s
COLA College 47.74 33 *e*P P 03 31 53.8 +0.4
COLA pmax pmax
comp=Z,8.0nm,0.9s
COLA College 47.74 33 *e*P P 03 31 53.8 +0.4
comp=Z,8.0nm,0.9s
CCB Clear Creek Bu 47.76 33 *e*P P 03 31 53.3 -0.3
comp=Z,11nm,1.5s
PDGK Podgornoye 47.87 298 P P 03 31 54.4 -0.3
PDGK pmax pmax
comp=Z,55nm,1.2s
ODAN Odare 47.92 274 *e*P P 03 31 56.1 +0.5
comp=Z,30nm,0.8s
DHY Denali Highway 47.98 35 *e*P P 03 31 55.5 0.0
comp=Z,26nm,1.8s
SCM Sheep Creek Mo 48.06 37 *e*P P 03 31 56.5 +0.4
SCM pmax pmax
comp=Z,17nm,0.9s
SCM Sheep Creek Mo 48.06 37 *e*P P 03 31 56.5 +0.4
comp=Z,17nm,0.9s
HDA Harding Lake 48.13 33 *e*P P 03 31 56.1 -0.4
comp=Z,8.7nm,0.9s
IL1 Eielson Array 48.15 33 *e*P P 03 31 56.1 -0.5
ILAR Eielson Array 48.15 33 P P 03 31 56.2 -0.4
comp=Z,5.5nm,0.8s,baz=264,slow=6.5,SNR=67
ILAR LR LR 03 54 25.0
comp=Z,87nm,19.0s,baz=223,slow=39
ILB Eielson Array 48.15 33 *e*P P 03 31 56.3 -0.4
RAMN Ramite 48.51 275 *e*P P 03 32 00.6 +0.4
comp=Z,32nm,0.8s
GUN Gumba 48.64 276 *e*P P 03 32 01.9 +0.6
comp=Z,121nm,0.9s
KLU Klutina 48.75 37 *e*P P 03 32 02.1 +0.7
comp=Z,14nm,0.9s
FYU Fort Yukon 48.81 30 *e*P P 03 32 03.0 +1.4
comp=Z,31nm,1.3s
DIV Divide 48.85 38 *e*P P 03 32 03.0 +0.8
comp=Z,22nm,1.0s
KKN Kakani 49.16 276 *e*P P 03 32 05.7 +0.5
comp=Z,82nm,1.0s
PKIN Phulchoki 49.17 276 *e*P P 03 32 05.3 0.0
comp=Z,22nm,0.8s
BMRM Bremner River 49.44 38 *e*P P 03 32 07.8 +1.2
comp=Z,22nm,1.2s
GKN Gorkha 49.58 277 *e*P P 03 32 08.7 +0.4
comp=Z,85nm,1.0s
MENT Mentasta 49.65 35 *e*P P 03 32 08.8 +0.6
comp=Z,14nm,1.2s
KOLN Koldanda 50.50 277 *e*P P 03 32 15.8 +0.5
comp=Z,53nm,1.0s
TKM2 Tokmak 2 50.71 299 *e*P P 03 32 17.7 +1.0
TKM2 pmax pmax
comp=Z,88nm,1.5s
TKM2 Tokmak 2 50.71 299 *e*P P 03 32 17.7 +1.0
comp=Z,88nm,1.5s
PYUN Piuthan 50.83 278 *e*P P 03 32 18.3 +0.5
comp=Z,99nm,1.0s
VOSK Vostochnaya 51.03 312 *e*P P 03 32 18.7 -0.1
VOSK pmax pmax
comp=Z,27nm,0.9s
VOSK Vostochnaya 51.03 312 *e*P P 03 32 18.7 -0.1
comp=Z,27nm,0.9s
BVA0 Borovoye Array 51.31 312 P P 03 32 20.3 -0.6
BVA0 pmax pmax
comp=Z,16nm,1.0s
COEN Coen 51.32 180 *e*P P 03 32 21.8 +0.6
comp=Z,51nm,1.4s
BRVK Borovoye 51.37 312*c i*P P 03 32 21.3 +0.1
BRVK pmax pmax
comp=Z,19nm,0.8s
BRVK Borovoye 51.37 312 *e*P P 03 32 21.4 +0.1
comp=Z,20nm,0.9s
BRVK Borovoye 51.37 312 P P 03 32 21.8 +0.6
SNR=9.1
BRVK P P 03 32 21.8 +0.6
SNR=9.1
FRU Bishkek 51.42 299 *e*P P 03 32 22.0 +0.2
FRU *e* 03 34 21.0
FRU pmax pmax
comp=Z,53nm,1.8s
AAK Ala-Archa 51.57 299*c i*P P 03 32 23.3 +0.2
AAK pmax pmax
comp=Z,13nm,0.9s
AAK Ala-Archa 51.57 299 *e*P P 03 32 23.5 +0.4
comp=Z,19nm,0.9s
KSH Kashi 51.57 294 P P 03 32 27.6 +4.4
KSH *es*P sP 03 32 41.6 +7.8
KSH *e*PP PP **03 34 26.2 +5.7**
KSH S S **03 39 45.9 +3.4**
KSH pmax pmax
comp=Z,16nm,1.0s
KSH pmax pmax
comp=Z,160nm,3.9s
KSH LR LR
comp=Z,580nm,16.1s
KSH LR LR
comp=Z,550nm,14.0s
KSH LR LR
comp=Z,720nm,15.7s
EKS2 Erkin-Say 52.06 299 *e*P P 03 32 27.3 +0.5
EKS2 pmax pmax
comp=Z,17nm,0.9s
EKS2 Erkin-Say 52.06 299 *e*P P 03 32 27.2 +0.5
comp=Z,17nm,0.9s
ZRNK Zerenda 52.14 312 *e*P P 03 32 27.3 +0.3
ZRNK pmax pmax
comp=Z,26nm,1.0s
ZRNK Zerenda 52.14 312 *e*P P 03 32 27.3 +0.3
comp=Z,26nm,1.0s
MNAS Manas 53.00 299 P P 03 32 34.4 +0.6
MNAS pmax pmax
comp=Z,38nm,0.9s
INK Inuvik 53.14 27 P P 03 32 34.8 +0.7
comp=Z,2.1nm,0.5s,baz=292,slow=7.1,SNR=18
INK Inuvik 53.14 27 *e*P P 03 32 33.9 -0.2
INK pmax pmax
comp=Z,12nm,1.4s
INK Inuvik 53.14 27 *e*P P 03 32 33.9 -0.2
comp=Z,12nm,1.4s
SFK Sufi-Kurgan 53.17 296 P P 03 32 35.5 +0.3
SFK pmax pmax
comp=Z,56nm,1.3s
KK31 Karatay Array 54.16 300 *i* P P 03 32 42.1 0.0
KK31 pmax pmax
comp=Z,20nm,1.0s
KKAR Karatay Array 54.16 300 *e*P P 03 32 42.4 +0.3
KKAR Karatay Array 54.16 300 *e*P P 03 32 42.4 +0.3
GSI Gunungsitoli 55.45 240 *e*P P 03 32 50.0 -1.7
comp=Z,59nm,1.2s
SVE Sverdlovsk 55.72 319⇑ *e*P P 03 32 53.9 +0.8
SVE pmax pmax
comp=Z,30nm,0.9s
SVE MLR MLR
comp=Z,1μm,16.0s
SOKR Solikamsk 56.79 323*c i*P P 03 32 59.0 -1.6
SOKR pmax pmax
comp=Z,20nm,1.0s
SOKR MLR MLR
comp=Z,397nm,17.0s
ARU Arti 56.93 319*c i*P P 03 33 01.9 +0.1
ARU 03 35 07.9
ARU S S **03 40 55.7 +1.7**
ARU SS SS **03 44 40.8 -1.1**
ARU pmax pmax
comp=Z,33nm,1.2s
ARU MLR MLR
comp=Z,853nm,16.0s
ARU Arti 56.93 319 *e*P P 03 33 01.8 +0.1
comp=Z,26nm,1.0s
DLBC Dease Lake 57.19 39 P P 03 33 05.4 +1.8
comp=Z,4.6nm,0.8s,baz=302,slow=9.2,SNR=8.4
DLBC Dease Lake 57.19 39 *e*P P 03 33 05.3 +1.6
comp=Z,29nm,1.8s
WRAB Tennant Creek 57.89 190 *e*P P 03 33 07.6 -1.2
WRAB pmax pmax
comp=Z,46nm,0.8s
WRAB Tennant Creek 57.89 190 *e*P P 03 33 07.6 -1.2
comp=Z,46nm,0.8s
WB2 Warramunga Arr 57.90 190 *e*P P 03 33 08.0 -0.9
comp=Z,40nm,0.8s
WRA Warramunga Arr 57.90 190 P P 03 33 07.9 -1.0
comp=Z,29nm,0.7s,baz=10,slow=7.3,SNR=63
KBL Kabul 58.64 291 *e*P P 03 33 14.6 +0.2
KBL pmax pmax
comp=Z,20nm,1.1s
KBL Kabul 58.64 291 *e*P P 03 33 14.6 +0.2
comp=Z,20nm,1.1s
ABKAR Akbulak array 58.73 310 *e*P P 03 33 14.3 -0.1
HYB Hyderabad 59.77 269 *i* P P 03 33 22.0 -0.1
KBS Kingsbay 60.32 350 *e*P P 03 33 25.7 +0.7
KBS pmax pmax
comp=Z,7.0nm,0.8s
KBS Kingsbay 60.32 350 *e*P P 03 33 25.7 +0.7
comp=Z,6.5nm,0.8s
AS01 Alice Springs 61.62 190 *e*P P 03 33 33.6 -0.9
AS31 Alice Springs 61.62 190 *e*P P 03 33 34.3 -0.2
comp=Z,2.5nm,0.9s
RES Resolute Bay 61.62 15 *e*P P 03 33 33.4 -0.5
RES pmax pmax
comp=Z,6.0nm,0.8s
RES Resolute Bay 61.62 15 *e*P P 03 33 33.4 -0.5
comp=Z,6.2nm,0.8s
ASAR Alice Springs 61.62 190 P P 03 33 34.0 -0.5
comp=Z,7.3nm,0.8s,baz=13,slow=5.6,SNR=54
ASAR Alice Springs 61.62 190 P P 03 33 34.0 -0.5
YKA Yellowknife Ar 62.50 31 P P 03 33 39.2 -0.7
comp=Z,2.0nm,0.7s,baz=302,slow=6.5,SNR=34
TMCR Tamitsa 62.95 332 *e*P P 03 33 42.7 -0.2
TMCR pmax pmax
comp=Z,18nm,1.0s
DZM Mont Dzumac 63.24 156 P P 03 33 46.6 +1.2
comp=Z,37nm,1.1s,baz=23,slow=10,SNR=8.4
ARCES ARCESS Array B 63.97 340 P P 03 33 49.8 +0.2
comp=Z,3.0nm,0.7s,baz=47,slow=7.1,SNR=11
ARCES LR LR 04 08 22.6
comp=Z,190nm,18.1s,baz=62,slow=42
KLMR Klimovskoe 64.07 328 *e*P P 03 33 46.0 -4.3
KLMR *e**SP **sP** 03 33 59.5 -1.6
KLMR *e* 03 34 23.1
KLMR pmax pmax
comp=Z,24nm,1.5s
GEYT Alibeck 64.89 300 P P 03 33 56.7 +0.5
comp=Z,12nm,0.8s,baz=29,slow=3.4,SNR=21
GEYT LR LR 04 04 16.9
comp=Z,274nm,18.4s,baz=55,slow=38
DAG Danmarks Havn 65.30 356 *i* P P 03 33 54.4 -3.7
comp=Z,3.5nm,0.9s
DAG Danmarks Havn 65.30 356 *e*P P 03 33 54.4 -3.7
DAG pmax pmax
comp=Z,3.0nm,0.9s
F04A Amboy 66.75 49 *e*P P 03 34 08.9 +0.9
comp=Z,19nm,0.8s
H04A Detroit Lake 67.53 50 *e*P P 03 34 13.4 +0.3
comp=Z,15nm,0.8s
MOS Moscow 67.68 324 *e*P P 03 34 24.5 +11
ARMA Armidale 68.14 172 *e*P P 03 34 16.7 -0.2
comp=Z,45nm,1.5s
VRH Novokhopyorsk 68.17 318 *e*P P 03 34 15.3 -1.5
VRH pmax pmax
comp=Z,10.0nm,0.4s
VRH MLR MLR
comp=Z,830nm,17.0s
OBN Obninsk 68.53 324⇓ *i*P P 03 34 18.4 -0.6
OBN *i* 03 34 41.8
OBN *e* 03 36 51.6
OBN *i*S S **03 43 19.0 -0.4**
OBN *e*SS SS **03 47 51.1 +8.3**
OBN pmax pmax
comp=Z,7.0nm,0.6s
OBN MLR MLR
comp=Z,404nm,15.0s
NEW Newport 68.61 45 *e*P P 03 34 20.0 +0.2
NEW pmax pmax
comp=Z,8.0nm,1.1s
NEW Newport 68.61 45 *e*P P 03 34 20.0 +0.2
comp=Z,7.8nm,1.1s
FIA1 FINESS Array S 68.99 333 *e*P P 03 34 22.1 +0.3
comp=Z,18nm,0.9s
FINES FINESS Array B 68.99 333 P P 03 34 22.0 +0.2
comp=Z,12nm,0.7s,baz=47,slow=8.4,SNR=38
FINES LR LR 04 06 58.1
comp=Z,316nm,19.1s,baz=52,slow=38
STKA Stephens Creek 69.18 182 P P 03 34 23.1 0.0
comp=Z,4.1nm,0.6s,baz=323,slow=5.4,SNR=13
STKA Stephens Creek 69.18 182 *e*P P 03 34 23.2 0.0
comp=Z,3.1nm,0.8s
VSR Storozhevoye 69.49 319 *e*P P 03 34 24.6 -0.5
VSR pmax pmax
comp=Z,10.0nm,0.7s
VSR MLR MLR
comp=Z,600nm,14.0s
WALA Waterton Lakes 69.94 43 *e*P P 03 34 28.4 +0.3
comp=Z,5.4nm,0.9s
SUMG Summit 70.07 1 *i* P P 03 34 28.8 0.0
SUMG Summit 70.07 1 *i* P P 03 34 28.8 0.0
SUMG Summit 70.07 1 *e*P P 03 34 29.1 +0.3
comp=Z,83nm,2.0s
BMO Blue Mountains 70.38 48 *e*P P 03 34 30.4 -0.4
BMO pmax pmax
comp=Z,5.0nm,0.8s
BMO Blue Mountains 70.38 48 *e*P P 03 34 30.4 -0.4
comp=Z,5.4nm,0.8s
JTMT Jette 70.48 44 *e*P P 03 34 31.9 +0.5
YBMT Yellow Bay 70.57 44 *e*P P 03 34 33.7 +1.8
VSU Vasula 70.71 330 *i* P P 03 34 32.5 +0.1
VSU pmax pmax
comp=Z,31nm,0.8s
SWMT Swartz Lake 70.78 44 *e*P P 03 34 33.5 +0.2
GOF Gofitskoye 70.84 312⇑ *i*P P 03 34 34.3 +0.8
GOF pmax pmax
comp=Z,49nm,0.8s
WVOR Wild Horse Val 70.91 51 *e*P P 03 34 33.6 -0.5
WVOR pmax pmax
comp=Z,7.0nm,1.0s
WVOR Wild Horse Val 70.91 51 *e*P P 03 34 33.6 -0.5
comp=Z,6.9nm,1.0s
NCK Nalchik 71.39 311 *e*P P 03 34 37.2 +0.3
NCK pmax pmax
comp=Z,15nm,0.9s
DGRG David-gareji 71.45 308 P P 03 34 38.2 +0.9
DGRG David-gareji 71.45 308 P P 03 34 38.2 +0.9
ZEI Tsey 71.61 310 *e*P P 03 34 37.5 -0.9
ZEI pmax pmax
comp=Z,22nm,0.8s
KIV Kislovodsk 71.67 312*c i*P P 03 34 39.4 +0.7
KIV *i* 03 35 00.4
KIV *i* 03 37 18.9
KIV pmax pmax
comp=Z,66nm,1.0s
KIV Kislovodsk 71.67 312 *e*P P 03 34 39.0 +0.3
comp=Z,52nm,0.9s
KIV Kislovodsk 71.67 312 P P 03 34 39.9 +1.2
SNR=17
KIV P P 03 34 39.9 +1.2
SNR=17
KBZ Khabaz 71.68 311 P P 03 34 39.3 +0.8
comp=Z,21nm,0.9s,baz=52,slow=4.9,SNR=70
TBLG Delisi 71.69 309 P P 03 34 41.2 +2.5
TBLG Delisi 71.69 309 P P 03 34 41.2 +2.5
ONI Oni 71.99 310 P P 03 34 41.7 +1.1
ONI Oni 71.99 310 P P 03 34 41.7 +1.1
NEY Neytrino 72.06 311 *e*P P 03 34 41.5 +0.4
NEY pmax pmax
comp=Z,2.0nm,0.9s
MFID Camas Ranch 72.06 49 *e*P P 03 34 41.2 +0.2
comp=Z,6.1nm,0.8s
CMB Columbia Colle 72.25 56 *e*P P 03 34 42.6 +0.4
CMB pmax pmax
comp=Z,21nm,1.7s
CMB Columbia Colle 72.25 56 *e*P P 03 34 42.6 +0.4
comp=Z,21nm,1.7s
FFC Flin Flon 72.35 34 *e*P P 03 34 42.0 -0.4
FFC pmax pmax
comp=Z,12nm,0.9s
FFC Flin Flon 72.35 34 *e*P P 03 34 42.0 -0.4
comp=Z,12nm,0.9s
GNI Garni 72.58 307 *i* P P 03 34 43.8 -0.4
GNI pmax pmax
comp=Z,93nm,1.2s
GNI Garni 72.58 307 *e*P P 03 34 44.1 -0.1
comp=Z,10nm,0.9s
LRM Limekiln Ridge 72.62 45 *e*P P 03 34 44.9 +0.4
AKH Akhalkalaki 72.64 309⇑ *i*P P 03 34 45.8 +1.2
CHVG Ch'k'valeri 72.74 311 P P 03 34 51.0 +6.0
CHVG Ch'k'valeri 72.74 311⇑ *i*P P 03 34 46.4 +1.4
EGMT Eagleton 72.79 42 *e*P P 03 34 45.2 0.0
comp=Z,32nm,1.9s
DLMT Dillon 72.81 46 *e*P P 03 34 46.1 +0.6
comp=Z,7.4nm,0.8s
HLID Hailey 72.82 48 *e*P P 03 34 46.0 +0.3

comp=Z,5.2nm,0.9s
BMN Battle Mountai 72.92 52 *e*P **P 03 34 47.2 +0.9**
BMN pmax pmax
comp=Z,7.0nm,1.0s
BMN Battle Mountai 72.92 52 *e*P **P 03 34 47.2 +0.9**
comp=Z,7.4nm,1.0s
BOZ Bozeman (W) 73.19 45 *e*P **P 03 34 48.0 +0.2**
BOZ pmax pmax
comp=Z,8.0nm,0.7s
BOZ Bozeman (W) 73.19 45 *e*P **P 03 34 48.0 +0.2**
comp=Z,7.6nm,0.7s
NV01 Mina Array Sit 73.38 54 *e*P **P 03 34 49.2 +0.1**
NVAR Mina Array Bea 73.38 54 P **P 03 34 49.7 +0.6**
comp=Z,4.4nm,0.8s,baz=284,slow=6.3,SNR=39
NVAR LR LR 04 02 12.7
comp=Z,111nm,21.5s,baz=326,slow=32
NV11 Mina Array Sit 73.47 54 *e*P **P 03 34 50.2 +0.6**
comp=Z,9.1nm,1.4s
SOC Sochi 73.64 313 *e*P **P 03 34 49.5 -0.7**
SOC *e* 03 37 38.2
SOC *e*PPP PPP 03 39 18.9
SOC *e*S **S 03 44 19.0 -0.1**
SOC *e*SS **SS 03 49 05.0 +3.4**
SOC *e*SSS SSS 03 52 21.2
SOC pmax pmax
comp=Z,15nm,0.6s
SOC MLR MLR
comp=Z,318nm,16.0s
QLMT Earthquake Lak 73.79 46 *e*P **P 03 34 52.0 +0.6**
NB2 NORSAR Subarra 74.22 338 P **P 03 34 53.2 -0.2**
comp=Z,1.6nm,0.7s,baz=37,slow=5.9
NOA NORSAR Array B 74.22 338 P **P 03 34 53.5 +0.1**
comp=Z,2.5nm,0.7s,baz=39,slow=5.8,SNR=10
NOA LR LR 04 12 58.3
comp=Z,233nm,18.2s,baz=5.0,slow=40
ANN Anapa 74.22 315 *e*P **P 03 34 52.0 -1.6**
ANN pmax pmax
comp=Z,18nm,0.8s
ANN MLR MLR
comp=Z,262nm,17.0s
YFT Old Faithful 74.36 46 *e*P **P 03 34 57.3 +2.6**
comp=Z,71nm,0.3s
H17A Grant Village 74.54 46 *e*P **P 03 34 57.2 +1.3**
comp=Z,16nm,0.8s
FLWY Flagg Ranch 74.66 46 *e*P **P 03 34 58.0 +1.5**
comp=Z,22nm,1.6s
AKASG Malin Array Be 74.76 323 P **P 03 34 56.5 -0.1**
comp=Z,5.2nm,0.7s,baz=44,slow=5.8,SNR=22
AKASG LR LR 04 10 50.1
comp=Z,256nm,19.1s,baz=60,slow=38
KIEV Kiev 74.77 323 *e*P **P 03 34 56.3 -0.4**
KIEV pmax pmax
comp=Z,7.0nm,0.9s
KIEV Kiev 74.77 323 *e*P **P 03 34 56.6 -0.1**
comp=Z,7.6nm,0.8s
RLMT Red Lodge 74.83 44 *e*P **P 03 34 58.0 +0.6**
comp=Z,4.1nm,0.9s
MOOW Moose Ponds 74.84 46 *e*P **P 03 34 58.1 +0.6**
comp=Z,6.4nm,0.8s
HVU Hansel Valley 74.85 49 *e*P **P 03 34 58.4 +0.8**
HVU pmax pmax
comp=Z,6.0nm,0.8s
HVU Hansel Valley 74.85 49 *e*P **P 03 34 58.4 +0.8**
comp=Z,6.4nm,0.8s
LOHW Long Hollow 75.01 46 *e*P **P 03 34 59.3 +0.8**
comp=Z,20nm,1.8s
R11A Troy Canyon, C 75.16 53 *e*P **P 03 34 59.5 +0.1**
comp=Z,6.1nm,1.0s
BGU Big Grassy Mou 75.21 50 *e*P **P 03 35 00.3 +0.7**
comp=Z,2.7nm,0.9s
AHID Auburn Hatcher 75.24 47 *e*P **P 03 35 00.0 +0.2**
comp=Z,6.5nm,0.7s
LAO LASA Array 75.50 42 *e*P **P 03 35 01.5 +0.5**
comp=Z,12nm,1.1s
TPNV Topopah Spring 75.56 54 *e*P **P 03 35 02.2 +0.4**
TPNV pmax pmax
comp=Z,6.0nm,0.9s
TPNV Topopah Spring 75.56 54 *e*P **P 03 35 02.2 +0.4**
comp=Z,5.5nm,0.9s
HWUT Hardware Ranch 75.67 48 *e*P **P 03 35 02.2 -0.1**
comp=Z,13nm,1.3s
DUG Dugway, Tooele 75.78 50 *e*P **P 03 35 03.3 +0.4**
DUG pmax pmax
comp=Z,7.0nm,0.8s
DUG Dugway, Tooele 75.78 50 *e*P **P 03 35 03.3 +0.4**
comp=Z,7.2nm,0.8s
SIM Simferopol' 75.97 316 *e*P **P 03 35 04.6 +0.9**
SIM MLR MLR
comp=Z,180nm,16.0s
TCUT Toone Canyon 76.07 49 *e*P **P 03 35 05.5 +0.8**
comp=Z,14nm,0.6s
CTU Camp Tracy 76.12 49 *e*P **P 03 35 05.5 +0.6**
comp=Z,5.7nm,0.8s
BW06 Boulder Array 76.13 46 *e*P **P 03 35 04.9 -0.1**
comp=Z,5.7nm,0.8s
PD31 Pinedale Array 76.13 46 *e*P **P 03 35 04.9 -0.1**
PDAR Pinedale Array 76.13 46 P **P 03 35 04.7 -0.3**
comp=Z,4.5nm,0.7s,baz=259,slow=2.2,SNR=52
PSUT Pine Spring, 76.14 52 *e*P **P 03 35 05.6 +0.5**
comp=Z,6.1nm,1.1s
JLU Jordanelle 76.36 49 *e*P **P 03 35 06.9 +0.6**
comp=Z,5.0nm,0.9s
NLU North Lily Min 76.38 50 *e*P **P 03 35 07.0 +0.6**
comp=Z,5.0nm,0.8s
MPU Maple Canyon 76.61 50 *e*P **P 03 35 08.3 +0.7**
comp=Z,7.9nm,0.8s
MSU Marysvale 77.20 51 *e*P **P 03 35 11.6 +0.5**
MSU Marysvale 77.20 51 *e*P **P 03 35 11.6 +0.5**
PFO Pinyon Flats O 77.41 57 P **P 03 35 12.6 +0.3**
comp=Z,1.4nm,0.7s,baz=229,slow=4.4,SNR=4.4
LCMT Little Creek M 77.45 53 *e*P **P 03 35 13.2 +0.8**
comp=Z,6.5nm,0.9s
P17A Butcher Ranch, 77.48 50 *e*P **P 03 35 13.3 +0.7**
comp=Z,10.0nm,0.7s
P18A Preston Nutter 77.69 49 *e*P **P 03 35 14.5 +0.7**
comp=Z,19nm,1.6s
KNB Kanab 77.71 53 *e*P **P 03 35 15.0 +1.1**
KNB pmax pmax
comp=Z,26nm,1.5s
KNB Kanab 77.71 53 *e*P **P 03 35 14.9 +1.1**
comp=Z,26nm,1.5s
SRU San Rafael Swe 77.84 50 *e*P **P 03 35 15.0 +0.4**
SRU pmax pmax
comp=Z,13nm,0.8s
SRU San Rafael Swe 77.84 50 *e*P **P 03 35 15.0 +0.4**
comp=Z,13nm,0.8s
ULM Lac du Bonnet 78.14 34 P **P 03 35 14.9 -0.9**
comp=Z,3.4nm,0.8s,baz=316,slow=6.5,SNR=9.0
ULM LR LR 04 10 18.6
comp=Z,31nm,21.3s,baz=336,slow=36
ULM Lac du Bonnet 78.14 34 *e*P **P 03 35 15.1 -0.7**
ULM pmax pmax
comp=Z,22nm,1.8s
ULM Lac du Bonnet 78.14 34 *e*P **P 03 35 15.1 -0.7**
comp=Z,22nm,1.8s
RSSD Black Hills 78.34 43 *e*P **P 03 35 16.6 -0.7**
RSSD pmax pmax
comp=Z,6.0nm,0.9s
RSSD Black Hills 78.34 43 *e*P **P 03 35 16.6 -0.7**
comp=Z,5.6nm,0.9s
U15A North Rim 78.41 53 *e*P **P 03 35 18.4 +0.4**
KWP Kalwaria Pacla 78.53 325 *e*P **P 03 35 19.3 +1.3**
KWP Kalwaria Pacla 78.53 325 *e*P **P 03 35 19.3 +1.3**
O20A White River Ci 78.56 48 *e*P **P 03 35 18.7 +0.1**
comp=Z,7.2nm,0.8s
BUR08 Bucovina Ar. S 78.77 323 *e*P **P 03 35 20.3 +0.8**
BURAR Bucovina Array 78.79 323 ⇑*i*P **P 03 35 20.1 +0.5**
TESR Tescani 78.85 321 ⇑*i*P **P 03 35 20.1 +0.3**
CFR Carcaliu 79.01 319 ⇓*i*P **P 03 35 21.0 +0.3**
PV09 Paradox Valley 79.07 50 *e*P **P 03 35 22.2 +0.7**
PV10 Paradox Valley 79.20 50 *e*P **P 03 35 23.1 +0.9**
KOLS Kolonicke sedl 79.23 325 *e*P **P 03 35 22.3 +0.5**
KOLS *e*PP **PP 03 38 21.4 +0.5**
VRI Vrincioaia 79.26 321 ⇓*i*P **P 03 35 23.3 +1.2**
STHS Stebnicka Huta 79.34 326 *e*P **P 03 35 23.8 +1.3**
STHS pmax pmax
comp=Z,6.0nm,0.9s
STHS Stebnicka Huta 79.34 326 *e*P **P 03 35 23.8 +1.3**
PV05 Paradox Valley 79.36 50 *e*P **P 03 35 23.8 +0.8**
TIRR Tirgusor 79.36 319 ⇑*i*P **P 03 35 23.7 +1.1**
OJC Ojcow 79.39 327 *e*P **P 03 35 23.5 +0.9**
OJC Ojcow 79.39 327 *e*P **P 03 35 23.6 +0.9**
OJC Ojcow 79.39 327 *e*P **P 03 35 23.6 +0.9**
comp=Z,14nm,1.0s
N23A Red Feather La 79.40 46 *e*P **P 03 35 23.7 +0.4**
comp=Z,8.3nm,0.8s

Y14A Wickenburg 79.49 55 *e*P **P 03 35 24.0 +0.4**
comp=Z,23nm,1.0s
AGMN Agassiz Nation 79.55 36 *e*P **P 03 35 22.7 -0.9**
comp=Z,4.3nm,0.8s
WUAZ Wupatki 79.56 53 *e*P **P 03 35 24.8 +0.7**
comp=Z,7.1nm,0.9s
BR131 Keskin Array S 79.60 312 *e*P **P 03 35 24.9 +0.8**
BRTR Keskin Array B 79.60 312 P **P 03 35 24.4 +0.2**
comp=Z,1.4nm,0.7s,baz=92,slow=3.7,SNR=13
BRTR PP **PP 03 38 23.1 -1.3**
comp=Z,2.7nm,1.1s,baz=76,slow=5.2,SNR=5.5
BRTR LR LR 04 15 55.0
comp=Z,55nm,18.3s,baz=43,slow=40
CRVS Cervenica-Dubn 79.62 325 *e* P 03 35 29.1 +5.1
PV01 Paradox Valley 79.64 50 *e*P **P 03 35 25.1 +0.6**
DOPR Dopca 79.86 321 ⇑*i*P **P 03 35 26.7 +1.4**
MLR Muntele Rosu 79.91 321 ⇑*i*P **P 03 35 25.4 -0.4**
MLR Muntele Rosu 79.91 321 *e*P **P 03 35 28.8 +3.0**
MLR pmax pmax
comp=Z,10.0nm,1.3s
MLR Muntele Rosu 79.91 321 *e*P **P 03 35 28.8 +3.0**
comp=Z,9.9nm,1.3s
MSAB Monastry St. A 79.92 319 ⇑*i*P **P 03 35 26.8 +1.2**
BR231 Keskin MP Arra 80.03 313 *e*P **P 03 35 25.2 -1.2**
X16A Lo Mia Camp, P 80.21 54 *e*P **P 03 35 28.4 +0.8**
comp=Z,5.5nm,0.9s
MVCO Mesa Verde 80.28 50 *e*P **P 03 35 28.6 +0.5**
comp=Z,19nm,1.5s
ISCO Idaho Springs 80.31 47 *e*P **P 03 35 28.9 +0.6**
ISCO pmax pmax
comp=Z,21nm,1.8s
ISCO Idaho Springs 80.31 47 *e*P **P 03 35 28.9 +0.6**
comp=Z,21nm,1.8s
LANS Liptovska Anna 80.33 326 *e*P **P 03 35 29.7 +1.9**
LANS Liptovska Anna 80.33 326 *e*P **P 03 35 29.6 +1.8**
KECS Kecovo 80.37 325 *e*P P 03 35 22.3 -5.7
KECS pmax pmax
comp=Z,4.0nm,1.0s
KECS Kecovo 80.37 325 *e*P **P 03 35 30.2 +2.2**
VOIR 80.40 321 ⇑*i*P **P 03 35 29.6 +1.3**
DRGR 80.57 323 ⇑*i*P **P 03 35 29.5 +0.3**
ARR Arges 80.66 321 ⇑*i*P **P 03 35 31.1 +1.4**
MORC Moravsky Berou 80.69 328 *e*P **P 03 35 30.7 +1.0**
MORC pmax pmax
comp=Z,27nm,1.0s
MORC Moravsky Berou 80.69 328 *e*P **P 03 35 30.7 +1.0**
comp=Z,27nm,1.0s
DPC Dobruska-Polom 80.76 329 *e*P **P 03 35 31.1 +1.0**
DPC Dobruska-Polom 80.76 329 *e*P **P 03 35 31.1 +1.0**
UPC Upice 80.76 329 *e*P **P 03 35 31.0 +0.9**
UPC Upice 80.76 329 *e*P **P 03 35 31.0 +0.9**
S22A 4UR Ranch, Cre 80.94 49 *e*P **P 03 35 32.5 +0.9**
comp=Z,6.0nm,1.0s
LOT Lotru 81.03 322 ⇑*i*P **P 03 35 29.9 -1.8**
PSZ Piszkesteto 81.05 325 *e*P **P 03 35 32.9 +1.1**
PSZ pmax pmax
comp=Z,15nm,1.2s
PSZ Piszkesteto 81.05 325 *e*P **P 03 35 32.9 +1.1**
comp=Z,15nm,1.2s
VYHS Vyhne 81.10 326 *e*P **P 03 35 32.7 +0.8**
VYHS pmax pmax
comp=Z,3.0nm,0.9s
VYHS Vyhne 81.10 326 *e*P **P 03 35 32.7 +0.8**
BRG Berggiesshubel 81.31 330 *e*P **P 03 35 33.2 +0.2**
comp=Z,6.1nm,1.2s
comp=N,180nm,11.2s
comp=E,282nm,16.0s
comp=Z,429nm,18.8s
BRG Berggiesshubel 81.31 330 *e*P **P 03 35 33.2 +0.2**
BRG pmax pmax
comp=Z,6.0nm,1.2s
BRG MLR MLR
comp=N,180nm,11.2s
BRG MLR MLR
comp=E,282nm,16.0s
BRG MLR MLR
comp=Z,429nm,18.8s
CLL Collm 81.33 331 *i* P **P 03 35 33.2 +0.1**
comp=Z,8.0nm,0.9s
CLL *e*pP **sP 03 35 44.0 0.0**
CLL LmH 04 10 00.0
comp=N,100nm,18.9s
CLL LmH 04 10 00.0
comp=E,300nm,18.4s
CLL Collm 81.33 331 *i* P **P 03 35 33.2 +0.1**
CLL *e* 03 35 41.0
CLL *e* 03 35 44.0
CLL pmax pmax
comp=Z,8.0nm,0.9s
VRAC Vranov 81.44 328 ⇑*i*P **P 03 35 34.8 +1.1**
GZR Gura Zlata 81.55 322 ⇑*i*P **P 03 35 34.6 +0.1**
GOPC GO Pecny, Ondr 81.72 329 *e*P **P 03 35 36.2 +1.0**
GOPC AMS AMS 04 14 00.0
comp=Z,400nm,21.7s
GOPC GO Pecny, Ondr 81.72 329 *e*P **P 03 35 36.2 +1.0**
GOPC MLR MLR
comp=Z,400nm,21.7s
SDCO Great Sand Dun 81.73 48 *e*P **P 03 35 36.4 +0.6**
comp=Z,5.0nm,1.2s
PRU Pruhonice 81.76 329 *e*P **P 03 35 36.3 +0.9**
PRU AMS AMS 04 14 10.0
comp=Z,300nm,16.9s
PRU Pruhonice 81.76 329 *e*P **P 03 35 36.3 +0.9**
PRU MLR MLR
comp=Z,300nm,16.9s
RAYN Ar Rayn 81.85 293 *e*P **P 03 35 36.3 -0.1**
comp=Z,12nm,1.3s
TREC Trest 81.92 329 *e*P **P 03 35 36.8 +0.5**
TREC Trest 81.92 329 *e*P **P 03 35 36.8 +0.5**
BZS Buzias 81.95 323 ⇑*i*P **P 03 35 36.5 0.0**
ECSD EROS Data Cent 82.47 39 *e*P **P 03 35 38.8 -0.5**
comp=Z,8.3nm,0.9s
MDVR Moldovita 82.51 322 ⇑*i*P **P 03 35 39.4 -0.1**
T25A Trinidad 82.78 48 *e*P **P 03 35 41.4 +0.1**
comp=Z,9.1nm,1.0s
CONA Conrad Observa 82.82 327 ⇑*i*PcP **P 03 35 42.2 +1.2**
comp=Z,5.5nm,0.8s
KHC Kasperske Hory 82.83 329 *e*P **P 03 35 41.8 +0.8**
KHC *e*pP **sP 03 35 52.0 0.0**
KHC Kasperske Hory 82.83 329 *e*P **P 03 35 41.8 +0.8**
KHC *e* 03 35 52.0
KHC Kasperske Hory 82.83 329 *e*P **P 03 35 41.9 +0.9**
comp=Z,2.6nm,0.9s
CSS Mathiatis 82.90 309 *e*P **P 03 35 41.9 +0.2**
comp=Z,1.6nm,0.8s
GEC2 GERESS Array S 83.00 329 *e*P **P 03 35 42.8 +0.8**
GEC2 pmax pmax
comp=Z,5.0nm,1.2s
GEC2 GERESS Array S 83.00 329 *e*P **P 03 35 42.8 +0.8**
comp=Z,4.6nm,1.2s
GERES GERESS Array B 83.00 329 P **P 03 35 42.4 +0.4**
comp=Z,1.9nm,0.8s,baz=29,slow=6.1,SNR=9.7
GERES LR LR 04 15 19.6
comp=Z,268nm,18.5s,baz=28,slow=38
ANMO Albuquerque 83.01 51 *e*P **P 03 35 42.8 +0.4**
ANMO pmax pmax
comp=Z,7.0nm,1.1s
ANMO Albuquerque 83.01 51 *e*P **P 03 35 43.1 +0.7**
comp=Z,9.3nm,1.1s
PMOR Pomariorio Ree 83.01 115 *e*T T 05 07 05.4
comp=Z,1.5nm,0.2s
VTS Vitosha 83.36 320 ⇑*i*P **P 03 35 45.5 +1.4**
VTS Vitosha 83.36 320 *e*P **P 03 35 45.2 +1.1**
VTS pmax pmax
comp=Z,13nm,1.4s
VTS Vitosha 83.36 320 *e*P **P 03 35 45.1 +1.1**
comp=Z,13nm,1.4s
ARSA Arzberg 83.49 327 ⇑*i*P **P 03 35 45.0 +0.6**
comp=Z,3.7nm,0.8s
PPT Papeete 83.53 118 LR LR 04 11 08.7
comp=Z,132nm,18.3s,baz=332,slow=34
319A Douglas 83.54 55 *e*P **P 03 35 45.6 +0.5**
comp=Z,12nm,1.0s
PPT2 Papeete2 83.54 118 *e*LR LR 04 01 40.4
comp=Z,254nm,24.5s
SOKA Soboth 84.14 327 ⇑*i*P **P 03 35 48.4 +0.4**
comp=Z,6.1nm,0.7s
SCHQ Schefferville 84.32 17 LR LR 04 16 29.6
comp=Z,53nm,20.2s,baz=22,slow=38
OBKA Obir 84.48 327 ⇓*i*P **P 03 35 49.8 +0.1**
comp=Z,4.8nm,0.8s
KBA Koelnbreinsper 84.55 328 ⇑*i*PcP **P 03 35 50.7 +0.7**
comp=Z,4.0nm,0.8s
MYKA Terra Mystica 84.78 328 ⇓*i*P **P 03 35 50.6 -0.5**
comp=Z,2.9nm,0.5s
TAOE Nuku Hiva Isla 84.82 105 *e*LR LR 04 02 06.8
comp=Z,222nm,32.7s
ABTA Abfaltersbach 85.15 329 ⇑*i*PcP **P 03 35 53.9 +0.9**
comp=Z,2.5nm,0.9s
MOTA Moosalm 85.25 330 ⇑*i*PcP **P 03 35 54.9 +1.3**
comp=Z,4.3nm,0.8s
RETA Reutte 85.27 330 ⇑*i*PcP **P 03 35 54.0 +0.5**
comp=Z,8.2nm,0.8s
BFO Black Forest 85.52 332 *e*P **P 03 35 54.2 -0.5**
BFO pmax pmax
comp=Z,11nm,1.1s
BFO Black Forest 85.52 332 *e*P **P 03 35 54.2 -0.5**
comp=Z,11nm,1.1s
FETA Feichten 85.66 330 ⇑*i*P **P 03 35 54.5 -1.1**
comp=Z,5.1nm,0.8s
DAVA Damuels 85.78 330 ⇑*i*PcP **P 03 35 56.6 +0.3**
comp=Z,7.5nm,0.8s
MNTX Cornudas Mount 85.83 53 *e*P **P 03 35 56.6 0.0**
comp=Z,12nm,1.5s
AMTX Amarillo 85.94 48 *e*P **P 03 35 57.7 +0.5**
comp=Z,13nm,0.9s
TBI Tubuai 87.52 122 *e*LR LR 04 03 19.6
comp=Z,213nm,23.0s
WMOK Wichita Mounta 87.74 47 *e*P **P 03 36 05.8 0.0**
WMOK pmax pmax
comp=Z,7.0nm,1.1s
WMOK Wichita Mounta 87.74 47 *e*P **P 03 36 05.8 0.0**
comp=Z,6.7nm,1.1s
TX31 Lajitas Ar. Si 88.52 54 *e*P **P 03 36 09.7 -0.1**
TXAR Lajitas Array 88.52 54 P **P 03 36 09.3 -0.5**
comp=Z,2.2nm,0.8s,baz=290,slow=2.8,SNR=22
TXAR LR LR 04 11 12.5
comp=Z,66nm,19.9s,baz=0.0,slow=32
WHTX Lake Whitney, 90.48 48 *e*P **P 03 36 18.9 +0.2**
comp=Z,12nm,0.9s
KEST Kesra 95.46 324 LR LR 04 26 04.9
comp=Z,211nm,18.2s,baz=267,slow=40
ESDC Sonseca Array 97.41 335 LR LR 04 25 41.6
comp=Z,102nm,18.1s,baz=10.0,slow=38
TORD Torodi Ar. Bea 117.98 317 PKP **PKPdf 03 42 02.7 -1.4**
comp=Z,0.2nm,0.5s,baz=33,slow=2.5,SNR=3.1
SDV Santo Domingo 123.85 42 *e*PKPdf **PKPdf 03 42 15.3 -0.3**
SNAA Sanae 141.78 197 PKP PKPpre 03 42 38.7
SAML Samuel 142.71 47 *e*PKPdf **PKPdf 03 42 50.3 -0.3**
VNA2 Neumayer--Watz 143.32 196 PKP PKPbc 03 42 47.0 -0.1
baz=97,slow=2.1
VNA3 Neumayer Olymp 143.54 194 PKP PKPab 03 42 46.8 0.0
VNA1 Neumayer--Stat 143.72 196 PKP PKPab 03 42 47.6 +0.2
LPAZ La Paz 145.04 61 PKPbc **PKPab 03 42 54.9 +0.2**
comp=Z,2.4nm,0.6s,baz=360,slow=3.6,SNR=13
LCO Las Campanas 150.40 83 *e*PKPbc **PKPbc 03 43 08.6 -0.1**
PLCA Paso Flores 153.63 107 PKPbc **PKPbc 03 43 16.0 +0.6**
comp=Z,1.7nm,0.9s,baz=230,slow=2.8,SNR=5.3

ISCJB ***01*** *03:28:50.8±0.6,37.51N±0.04×38.70E±0.03,h9km±4km, Error ellipse: s-maj=6.2km s-min=3.8km az=168.0*
DDA ***01*** *03:28:50.3,37.54N×38.71E,h7km,Md2.8*
CSEM ***01*** *03:28:50.9±0.1,37.51N×38.72E,h10km,MD2.9, Error ellipse: s-maj=4.0km s-min=3.5km az=12.0*
ISK ***01*** *03:28:50.0,37.49N×38.70E,h7km, MD2.9*
NSSC ***01*** *03:28:56.0±0.6,36.82N×38.86E,h38km±7km, ML1.9*
ISC 01 03:28:50.4±0.9,37.49N±0.03×38.72E±0.02,h13km±6km, n29,σ1ş23/43,Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
URFA	**Urfa**	**0.10**	**121**	*e*PG	**Pg**	**03 28 53.1**	**-0.3**
URFA	**Urfa**	**0.10**	**121**	*e*Pg	**Pg**	**03 28 53.1**	**-0.3**
ATAB	**Bozova**	**0.34**	**267**	*i* P	**Pg**	**03 28 57.0**	**-0.3**
ATAB				*i* S	**Sg**	**03 29 01.8**	**-0.2**
SURC	**SANLIURFA_SURC**	**0.62**	**188**	*i* P	**Pb**	**03 29 03.2**	**+0.2**
SURC				*i* S	**Sb**	**03 29 13.2**	**+1.7**
SURC	**SANLIURFA_SURC**	**0.62**	**188**	P	**Pb**	**03 29 03.2**	**+0.2**
SURC				S	**Sb**	**03 29 13.2**	**+1.7**
GZT	**Gaziantep**	**0.93**	**262**	*i* P	**Pg**	**03 29 08.1**	**-0.3**
GZT				*i* S	**Sn**	**03 29 23.2**	**+0.8**
AKCD	**Akcadag**	**1.02**	**322**	*i* P	**Pn**	**03 29 10.4**	**-0.1**
AKCD	**Akcadag**	**1.02**	**322**	P	**Pn**	**03 29 10.4**	**-0.1**
ELZG	**Elazig**	**1.03**	**12**	*i* P	**Pg**	**03 29 09.1**	**-1.1**
ELZG				*i* S	**Sn**	**03 29 24.8**	**-0.1**
DYBB	**Diyarbakir**	**1.22**	**67**	*e*PN	**Pg**	**03 29 14.0**	**+0.2**
DYBB				*e*SN	**Sn**	**03 29 31.1**	**+1.6**
GAZ	**Gaziantep**	**1.24**	**256**	*e*PN	**Pg**	**03 29 14.0**	**-0.3**
GAZ				*e*SN	**Sn**	**03 29 30.9**	**+0.8**
GAZ	**Gaziantep**	**1.24**	**256**	*e*Pn	**Pg**	**03 29 14.0**	**-0.3**
GAZ				*e*Sn	**Sn**	**03 29 30.9**	**+0.8**
DIY	**Diyarbakir**	**1.26**	**71**	*e*Pn	**Pb**	**03 29 14.0**	**0.0**
DIY				*e*Sn	**Sg**	**03 29 31.1**	**0.0**
MAZI	**Mazidag**	**1.37**	**91**	*e*PN	**Pg**	**03 29 16.6**	**-0.2**
MAZI				*e*SN	**Sg**	**03 29 35.2**	**+0.5**
MAZI	**Mazidag**	**1.37**	**91**	*e*Pn	**Pg**	**03 29 16.6**	**-0.2**
MAZI				*e*Sn	**Sg**	**03 29 35.2**	**+0.5**
KMRS	**Kahramanmaras**	**1.45**	**271**	*e*PN	**Pb**	**03 29 17.1**	**-0.1**
KMRS	**Kahramanmaras**	**1.45**	**271**	*e*Pn	**Pb**	**03 29 17.1**	**-0.1**
DARE	**Darende-Malaty**	**1.46**	**318**	*e*PN	**Pg**	**03 29 17.7**	**-0.6**
DARE	**Darende-Malaty**	**1.46**	**318**	*e*Pn	**Pg**	**03 29 17.7**	**-0.6**
AYKD	**Aykdinkavak**	**1.52**	**268**	*i* P	**Pn**	**03 29 17.1**	**-0.2**
AYKD				*i* S	**Sn**	**03 29 36.8**	**-0.1**
KBSD	**Kabsdagh**	**1.54**	**108**	*e*P	**Pb**	**03 29 18.9**	**+0.2**
KBSD				*e*S	**Sn**	**03 29 34.9**	**-2.4**
KBSD				AML	AML	03 29 42.3	
comp=Z,24nm,0.2s							
KBSD	**Kabsdagh**	**1.54**	**108**	*e*P	**Pb**	**03 29 18.2**	**-0.4**
KBSD				*e*S	Sn	03 29 31.0	-6.2
comp=Z,24nm,0.2s							
SFNV	**Sufian**	**1.54**	**133**	*e*P	Pn	03 29 11.7	-5.9
SFNV				*e*S	Sn	03 29 21.5	-16
comp=Z,19nm,0.2s							
KSRV	**Kasrt alli**	**1.64**	**172**	*e*P	**Pg**	**03 29 21.8**	**0.0**
KSRV				AML	AML	03 29 45.9	
comp=Z,21nm,0.4s							
KSRV	**Kasrt alli**	**1.64**	**172**	*e*P	**Pb**	**03 29 20.7**	**+0.3**
KSRV				*e*S	**Sn**	**03 29 35.5**	**-4.2**
comp=Z,21nm,0.4s							
KAMA	**Osmaniye**	**1.66**	**260**	*i* P	**Pb**	**03 29 20.9**	**0.0**
DRWC	**Darouich**	**1.86**	**243**	*e*P	**Pb**	**03 29 24.5**	**+0.3**
DRWC				*e*S	**Sn**	**03 29 45.2**	**0.0**
DRWC				AML	AML	03 29 52.1	
comp=E,16nm,0.4s							
DRWC				AML	AML	03 29 55.4	
comp=N,19nm,0.4s							
MZRK	**Al-Mazaregh**	**2.27**	**136**	*e*P	Pn	03 29 24.3	-3.3
MZRK				*e*S	Sn	03 29 44.5	-11
MZRK				AML	AML	03 30 05.7	
comp=Z,16nm,0.6s							
BTCH	**Batrach**	**2.32**	**232**	*e*P	**Pn**	**03 29 29.0**	**+0.7**
BTCH				*e*S	**Sn**	**03 29 52.1**	**-4.6**
BTCH				AML	AML	03 30 11.3	
comp=N,24nm,0.4s							
BTCH				AML	AML	03 30 11.6	
comp=E,24nm,1.0s							

NIED ***01*** *03:36:00,38.50N×142.20E,h20km,Mw4.2 Best double couple: M0 1.99000×10^15 NP1:φs142.00000°,δ26.00000°, λ-62.00000°. NP2:φs291.00000°,δ67.00000°, λ-103.00000°.*
ISCJB ***01*** *03:36:20.5±1.0,38.42N±0.03×142.35E±0.05,h16km±6km, mb4.1/37,MS3.6/1,Error ellipse: s-maj=7.1km s-min=4.3km az=27.1*
JMA ***01*** *03:36:22.9±0.1,38.46N×142.24E,h32km±2km,M4.4*
JMA Felt II J1.
MOS ***01*** *03:36:23.1±1.3,38.52N×142.39E,h34km,mb4.4/11,Error ellipse: s-maj=9.8km s-min=6.1km az=87.3*
NEIC ***01*** *03:36:23.1±2.3,38.41N×142.26E,h19km±14km,mb4.6/8, Error ellipse: s-maj=6.5km s-min=4.8km az=103.0*
IDC ***01*** *03:36:27.4±2.1,38.36N×142.23E,h54km±19km,mb3.7/22, mb1 3.9/27,mb1mx3.8/39,mbtmp4.0/27,ML3.8/4,MS3.5/5, Ms1 3.5/5,ms1mx3.1/37,Error ellipse: s-maj=16.0km s-min=11.2km az=95.0*
ISC 01 03:36:22.5±0.7,38.46N±0.04×142.30E±0.04,h17km±4km, n94,σ1ş49/98,mb4.2/37,1C-2D,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**0.75**	**270**	P	**Pg**	**03 36 36.3**	**-0.9**
JIO				S	**Sg**	**03 36 45.2**	**-1.9**
OFUJ	**Ofunato**	**0.79**	**321**	P	**Pb**	**03 36 37.1**	**-0.7**
JMK	**Ichinoseki**	**0.98**	**300**	P	**Pb**	**03 36 39.9**	**-1.1**
JMK				S	**Sb**	**03 36 52.3**	**-1.3**

JOM	**Ohasama**	**1.28**	**322**	P	**Pn**	**03 36 44.8**	**-0.8**
JOM				S	**Sb**	**03 37 00.4**	**-1.9**
JOU	**Okura**	**1.29**	**266**	P	**Pn**	**03 36 44.8**	**-1.0**
JOU				S	**Sb**	**03 37 01.1**	**-1.5**
JMM	**Marumori**	**1.33**	**244**	P	**Pn**	**03 36 44.5**	**-1.8**
JMM				S	**Sn**	**03 37 00.3**	**-3.3**
JYK	**Kaneyama**	**1.58**	**287**	P	**Pn**	**03 36 49.0**	**-0.8**
JRG	**Rokugo**	**1.60**	**306**	P	**Pn**	**03 36 49.5**	**-0.5**
JRG				*e*S	**Sn**	**03 37 10.2**	**-0.1**
JYS	**Shirataka**	**1.77**	**263**	P	**Pn**	**03 36 51.6**	**-0.8**
JYS				S	**Sn**	**03 37 13.0**	**-1.6**
JFT	**Otama**	**1.82**	**239**	P	**Pn**	**03 36 52.1**	**-0.9**
JFT				S	**Sn**	**03 37 14.1**	**-1.5**
ERM	**Erimo**	**3.61**	**10**	*e*P	**Pn**	**03 37 17.6**	**0.0**
ERM				*e*		03 37 59.5	
ERM	**Erimo**	**3.61**	**10**	*e*Pn	**Pn**	**03 37 17.6**	**0.0**
ERM				*e*Sn	**Sn**	**03 37 59.5**	**-0.3**
MAJO	**Matsushiro**	**3.78**	**241**	*e*P	**Pn**	**03 37 20.3**	**+0.3**
MAJO	**Matsushiro**	**3.78**	**241**	*e*Pn	**Pn**	**03 37 20.3**	**+0.3**
MAT	**Matsushiro**	**3.78**	**241**	P	**Pn**	**03 37 19.7**	**-0.3**
MAT				S	**Sn**	**03 38 08.6**	**+4.5**
MJAR	**Matsushiro Arr**	**3.78**	**241**	P	**Pn**	**03 37 22.9**	**+2.9**
	4.2nm,0.3s,baz=60,slow=11,SNR=42						
MJAR				LR	LR	03 38 58.0	
	comp=Z,727nm,18.3s,baz=65,slow=41						
JHJ	**Hachijo jima 2**	**5.71**	**202**	P	**Pn**	**03 37 46.4**	**-0.2**
	38nm,0.3s,baz=86,slow=21,SNR=6.2						
JHJ				S	**Sn**	**03 38 50.5**	**-1.3**
	51nm,0.3s,baz=265,slow=22,SNR=7.0						
JHJ				LR	LR	03 40 07.5	
	comp=Z,464nm,20.9s,baz=284,slow=39						
YUK	**Yuzh-Kuril'sk**	**6.18**	**25**	*e*P	**Pn**	**03 37 50.7**	**-2.2**
YUK				*e*S	**Sn**	**03 39 00.0**	**-3.1**
YUK				pmax	pmax		
	comp=Z,113nm,0.7s						
YUK				pmax	pmax		
	comp=E,62nm,0.6s						
YUK				pmax	pmax		
	comp=N,47nm,0.5s						
SHO	**Shikotan**	**6.39**	**31**	*e*P	**Pn**	**03 37 53.2**	**-2.6**
SHO				*e*S	**Sn**	**03 39 03.2**	**-5.1**
SHO				pmax	pmax		
	comp=Z,64nm,0.9s						
SHO				pmax	pmax		
	comp=E,33nm,0.4s						
SHO				pmax	pmax		
	comp=N,41nm,0.7s						
KUR	**Kuril'sk**	**7.94**	**30**	*e*P	**Pn**	**03 38 16.3**	**-0.7**
KUR				*e*S	**Sn**	**03 39 42.8**	**-3.6**
KUR				pmax	pmax		
	comp=Z,47nm,0.1s						
YSS	**Yuzh-Sakhalins**	**8.49**	**2**	⇑*e*P	**Pn**	**03 38 26.0**	**+1.3**
YSS				*e*S	Sn	03 39 51.0	-9.0
YSS				pmax	pmax		
	comp=Z,40nm,0.8s						
USRK	**Ussuriysk Ar.**	**9.64**	**310**	P	Pn	03 38 44.8	+4.4
	comp=Z,0.2nm,0.3s,baz=105,slow=15,SNR=3.2						
USRK				LR	LR	03 41 54.3	
	comp=Z,216nm,18.4s,baz=96,slow=34						
JNU	**Nakatsue**	**10.70**	**244**	P	**Pn**	**03 38 57.4**	**+2.4**
	comp=Z,0.6nm,0.3s,baz=51,slow=8.7,SNR=13						
JNU				LR	LR	03 43 09.2	
	comp=Z,285nm,18.8s,baz=112,slow=38						
JNU	**Nakatsue**	**10.70**	**244**	*e*Pn	**Pn**	**03 38 57.0**	**+2.0**
	comp=Z,4.6nm,0.7s						
JNU	**Nakatsue**	**10.70**	**244**	*e*ScS	**Pn**	**03 38 57.6**	**+2.6**
CBIJ	**Chichi jima**	**11.34**	**181**	*e*Pn	**Pn**	**03 39 03.6**	**-0.1**
JCJ	**Chichijima**	**11.34**	**181**	S	**Sn**	**03 41 06.4**	**-3.6**
	comp=Z,6.7nm,0.3s,baz=281,slow=22,SNR=4.1						
KSRS	**Korea Array**	**11.40**	**269**	P	Pn	03 39 07.8	+3.4
	comp=Z,0.3nm,0.3s,baz=79,slow=14,SNR=3.4						
KSAR	**Wonju Array Be**	**11.43**	**269**	P	Pn	03 39 07.9	+3.0
KSAR	**Wonju Array Be**	**11.43**	**269**	P	**Pn**	**03 39 07.8**	**+2.9**
TYV	**Tymovskoe**	**12.40**	**1**	*e*P	**Pn**	**03 39 17.2**	**-0.9**
KLR	**Kul'dur**	**13.17**	**328**	P	**Pn**	**03 39 29.4**	**+0.8**
	comp=Z,0.1nm,0.3s,baz=127,slow=12,SNR=3.9						
PETK	**Petropavlovsk-**	**18.10**	**31**	LR	LR	03 46 56.6	
	comp=Z,96nm,21.1s,baz=225,slow=34						
MA2	**Magadan**	**21.81**	**12**	P	**P**	**03 41 16.0**	**+2.4**
	comp=Z,13nm,0.8s,baz=207,slow=9.5,SNR=9.5						
MA2	**Magadan**	**21.81**	**12**	*e*P	**P**	**03 41 14.6**	**+1.0**
MA2				pmax	pmax		
	comp=Z,36nm,0.7s						
MA2	**Magadan**	**21.81**	**12**	*e*P	**P**	**03 41 14.6**	**+1.0**
	comp=Z,36nm,0.7s						
YAK	**Yakutsk**	**24.84**	**346**	*e*P	**P**	**03 41 42.8**	**-0.9**
YAK				pmax	pmax		
	comp=Z,11nm,1.0s						
SEY	**Seymchan**	**25.25**	**11**	P	**P**	**03 41 49.4**	**+2.0**
	comp=Z,10nm,0.9s,baz=189,slow=7.0,SNR=30						
SEY	**Seymchan**	**25.25**	**11**	*e*P	**P**	**03 41 48.4**	**+1.0**
BOD	**Bodaibo**	**26.72**	**326**	*e*P	**P**	**03 41 59.4**	**-1.4**
BOD				pmax	pmax		
	comp=Z,3.0nm,1.2s						
ULN	**Ulaanbaatar**	**27.17**	**302**	*e*P	**P**	**03 42 05.5**	**+0.4**
ULN				pmax	pmax		
	comp=Z,2.0nm,0.6s						
ULN	**Ulaanbaatar**	**27.17**	**302**	*e*P	**P**	**03 42 05.5**	**+0.4**
	comp=Z,1.6nm,0.6s						
SONM	**Songino Array**	**27.60**	**301**	P	**P**	**03 42 10.3**	**+1.4**
	comp=Z,0.6nm,0.7s,baz=90,slow=7.4,SNR=3.7						
ENH	**Enshi**	**28.18**	**263**	*e*P	**P**	**03 42 13.1**	**-1.0**
	comp=Z,14nm,0.8s						
H11N2	**WAKE ISLAND Hy**	**28.32**	**124**	T	T	04 12 01.6	
	baz=316,slow=75,SNR=772						
H11N1	**WAKE ISLAND Hy**	**28.33**	**124**	T	T	04 12 01.0	
	baz=316,slow=75,SNR=598						
H11N3	**WAKE ISLAND Hy**	**28.34**	**124**	T	T	04 12 04.4	
	baz=316,slow=75,SNR=602						
H11S1	**WAKE ISLAND Hy**	**29.09**	**126**	T	T	04 13 36.4	
	baz=318,slow=76,SNR=212						
H11S3	**WAKE ISLAND Hy**	**29.09**	**126**	T	T	04 13 36.5	
	baz=318,slow=76,SNR=250						
H11S2	**WAKE ISLAND Hy**	**29.11**	**126**	T	T	04 13 33.5	
	baz=318,slow=76,SNR=188						
TLY	**Talaya**	**29.95**	**309**	P	**P**	**03 42 30.5**	**+0.8**
	comp=Z,1.2nm,0.5s,baz=234,slow=7.7,SNR=3.1						
ZAK	**Zakamensk**	**29.96**	**306**	*e*P	**P**	**03 42 29.9**	**0.0**
ZAK				pmax	pmax		
	comp=Z,2.0nm,1.0s						
BILL	**Bilibino**	**32.46**	**17**	⇓*e*P	**P**	**03 42 52.2**	**+0.7**
BILL				*e**PP	**sP**	**03 42 59.8**	**+0.9**
BILL				*e**SP	pP	03 43 07.6	+11
BILL						03 44 04.0	
BILL				*e*SS	SS	03 49 59.3	-25
BILL				*e*SSS	SSS	03 50 15.2	
BILL				pmax	pmax		
	comp=Z,4.0nm,1.1s						
BILL				MLR	MLR		
	comp=Z,91nm,15.0s						
BILL	**Bilibino**	**32.46**	**17**	*e*P	**P**	**03 42 52.0**	**+0.5**
	comp=Z,5.0nm,0.9s						
TIXI	**Tiksi**	**33.96**	**352**	*e*P	**P**	**03 43 03.0**	**-1.6**
TIXI				pmax	pmax		
	comp=Z,2.0nm,0.9s						
ZALV	**Zalesovo Beam**	**41.49**	**311**	P	**P**	**03 44 08.4**	**0.0**
	comp=Z,1.5nm,0.5s,baz=93,slow=6.8,SNR=7.1						
ZALV				PcP	PcP	03 46 14.2	+8.5
	comp=Z,1.3nm,0.6s,baz=58,slow=3.7,SNR=3.6						
NVS	**Novosibirsk**	**42.38**	**313**	*e*P	P	03 44 22.7	+7.1
CMAR	**Chiang Mai Arr**	**42.55**	**255**	P	**P**	**03 44 17.9**	**+0.5**
	comp=Z,1.5nm,0.3s,baz=46,slow=5.8,SNR=5.8						
MKAR	**Makanchi Array**	**43.97**	**301**	P	**P**	**03 44 28.9**	**+0.2**
	comp=Z,1.1nm,0.7s,baz=86,slow=9.9,SNR=12						
KURK	**Kurchatov**	**45.62**	**307**	*e*P	**P**	**03 44 41.1**	**-0.6**
KURK				pmax	pmax		
	comp=Z,23nm,0.8s						
KURK	**Kurchatov**	**45.62**	**307**	*e*P	**P**	**03 44 41.1**	**-0.6**
	comp=Z,23nm,0.8s						
ILAR	**Eielson Array**	**47.91**	**33**	P	**P**	**03 45 00.3**	**+0.9**
	comp=Z,0.7nm,0.7s,baz=266,slow=6.1,SNR=9.7						
BVAR	**Borovoye Array**	**50.14**	**312**	P	**P**	**03 45 17.0**	**+0.3**
	comp=Z,0.6nm,0.5s,baz=79,slow=7.7,SNR=3.5						
BVAR				PcP	**PcP**	**03 46 35.7**	**-0.2**
	comp=Z,1.5nm,0.6s,baz=39,slow=5.7,SNR=4.7						
BRVK	**Borovoye**	**50.20**	**312**	*e*P	**P**	**03 45 17.6**	**+0.5**
BRVK				pmax	pmax		
	comp=Z,2.0nm,0.6s						
BRVK	**Borovoye**	**50.20**	**312**	*e*P	**P**	**03 45 17.6**	**+0.5**
	comp=Z,1.9nm,0.6s						
INK	**Inuvik**	**52.80**	**28**	P	**P**	**03 45 37.8**	**+1.4**
	comp=Z,0.5nm,0.5s,baz=316,slow=6.4,SNR=4.0						
ARU	**Arti**	**55.76**	**318**	*d i*P	P	03 46 06.0	+7.9
ARU						03 48 10.8	
ARU				S	S	03 54 00.9	+17
ARU				pmax	pmax		
	comp=Z,7.0nm,1.0s						
ARU	**Arti**	**55.76**	**318**	*e*P	**P**	**03 45 58.5**	**+0.4**
	comp=Z,7.1nm,1.0s						
WRAB	**Tennant Creek**	**58.56**	**189**	*e*P	**P**	**03 46 17.5**	**-0.8**
WRAB				pmax	pmax		
	comp=Z,32nm,0.9s						
WRAB	**Tennant Creek**	**58.56**	**189**	*e*P	**P**	**03 46 17.2**	**-1.1**
	comp=Z,3.2nm,0.5s						
WRA	**Warramunga Arr**	**58.58**	**189**	P	**P**	**03 46 17.5**	**-0.8**
	comp=Z,11nm,0.7s,baz=6.2,slow=7.2,SNR=45						
YKA	**Yellowknife Ar**	**62.22**	**31**	P	**P**	**03 46 43.1**	**+0.3**
	comp=Z,0.2nm,0.5s,baz=300,slow=5.7,SNR=4.3						
ASAR	**Alice Springs**	**62.30**	**189**	P	**P**	**03 46 43.2**	**-0.6**
	comp=Z,5.1nm,0.7s,baz=11,slow=6.4,SNR=42						
FINES	**FINESS Array B**	**67.88**	**332**	P	**P**	**03 47 19.7**	**+0.1**
	comp=Z,2.4nm,0.8s,baz=84,slow=5.9,SNR=7.2						
FINES	**FINESS Array B**	**67.88**	**332**	*i* P	**P**	**03 47 20.8**	**+1.2**
FINES				pmax	pmax		
	comp=Z,2.0nm,0.7s						
SUMG	**Summit**	**69.26**	**0**	*e*P	**P**	**03 47 29.2**	**+0.7**
SUMG				pmax	pmax		
	comp=Z,3.0nm,0.7s						
SUMG	**Summit**	**69.26**	**0**	*e*P	**P**	**03 47 29.2**	**+0.7**
	comp=Z,3.5nm,0.7s						
STKA	**Stephens Creek**	**69.98**	**181**	P	**P**	**03 47 33.3**	**+0.4**
	comp=Z,2.1nm,0.8s,baz=343,slow=9.9,SNR=3.6						
KIV	**Kislovodsk**	**70.50**	**311**	*i* P	P	03 47 42.7	+6.4
KIV				pmax	pmax		
	comp=Z,14nm,1.1s						
KBZ	**Khabaz**	**70.50**	**311**	P	**P**	**03 47 36.9**	**+0.8**
	comp=Z,1.6nm,0.8s,baz=0.5,slow=4.4,SNR=7.0						
NB2	**NORSAR Subarra**	**73.14**	**337**	P	**P**	**03 47 51.8**	**0.0**
	comp=Z,2.3nm,0.8s,baz=40,slow=6.5						
NB2	**NORSAR Subarra**	**73.14**	**337**	P	**P**	**03 47 51.7**	**0.0**
	comp=Z,2.0nm,0.7s,baz=40,slow=6.2						
NOA	**NORSAR Array B**	**73.14**	**337**	P	**P**	**03 47 52.2**	**+0.4**
	comp=Z,1.0nm,0.8s,baz=39,slow=5.9,SNR=5.1						
NVAR	**Mina Array Bea**	**73.57**	**54**	P	**P**	**03 47 56.4**	**+1.4**
	comp=Z,0.5nm,0.8s,baz=144,slow=38,SNR=2.9						
AKASG	**Malin Array Be**	**73.60**	**322**	P	**P**	**03 47 54.3**	**-0.3**
	comp=Z,0.8nm,0.5s,baz=46,slow=5.7,SNR=8.9						
AKASG	**Malin Array Be**	**73.60**	**322**	*i* P	**P**	**03 47 54.2**	**-0.3**
AKASG				pmax	pmax		
	comp=Z,2.0nm,0.6s						
PDAR	**Pinedale Array**	**76.17**	**46**	P	**P**	**03 48 10.9**	**+1.0**
	comp=Z,0.5nm,0.5s,baz=272,slow=0.7,SNR=7.2						
BRTR	**Keskin Array B**	**78.43**	**312**	P	**P**	**03 48 23.3**	**+0.8**
	comp=Z,0.3nm,0.5s,baz=29,slow=37,SNR=3.6						
CLL	**Collm**	**80.20**	**330**	*i* P	**P**	**03 48 32.3**	**+0.5**
	comp=Z,4.0nm,0.9s						
CLL				*i* pP	**sP**	**03 48 39.9**	**+0.4**
	comp=Z,7.0nm,1.1s						
CLL	**Collm**	**80.20**	**330**	*i* P	**P**	**03 48 32.3**	**+0.5**
CLL				*i*		03 48 39.9	
CLL				pmax	pmax		
	comp=Z,4.0nm,0.9s						
GERES	**GERESS Array B**	**81.86**	**329**	P	**P**	**03 48 40.9**	**+0.1**
	comp=Z,0.2nm,0.4s,baz=19,slow=8.6,SNR=2.9						
TXAR	**Lajitas Array**	**88.70**	**53**	P	**P**	**03 49 16.1**	**+0.8**
	comp=Z,0.3nm,0.6s,baz=290,slow=2.9,SNR=7.4						
LPAZ	**La Paz**	**145.36**	**59**	PKPbc	**PKPab**	**03 56 00.9**	**+0.2**
	comp=Z,0.9nm,0.5s,baz=346,slow=4.1,SNR=5.9						
LCO	**Las Campanas**	**151.11**	**81**	*e*PKPbc	**PKPbc**	**03 56 15.4**	**+0.3**

*JMA **01** 03:43:04.1±0.1, 36°.48N×141°.25E, h46^{km}±2^{km}, M2.6*
ISC 01 03:43:05.7±2.0**, 36°.46N**±0°.07×**141°.0E**±0°.1**, h32**^{km}**, n5,**
σ**2**s**23**/7**, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHO	**Hitachi**	**0.40**	**292**	P	**Pn**	**03 43 15.9**	**+0.6**
JHO				S	**Sn**	**03 43 24.3**	**+2.5**
ONAJ	**Iwakimizuishiy**	**0.67**	**343**	P	**Pb**	**03 43 17.7**	**-1.3**
CHOJ	**Chosi**	**0.77**	**191**	P	**Pb**	**03 43 19.8**	**-0.9**
MJAR	**Matsushiro Arr**	**2.28**	**273**	Pn	**Pb**	**03 43 43.9**	**-2.2**
	1.6nm,0.3s,baz=106,slow=8.9,SNR=10						
MAT	**Matsushiro**	**2.28**	**273**	P	**Pb**	**03 43 43.9**	**-2.3**
MAT				*e*S	**Sb**	**03 44 14.8**	**+0.8**

*ISCJB **01** 03:43:17.7±1.7, 37°.2N±0°.1×141°.5E±0°.2, h60^{km}, mb3.4/3,*
Error ellipse: s-maj=21.6km s-min=17.2km az=12.7
*JMA **01** 03:43:17.3±0.3, 37°.29N×141°.58E, h39^{km}±3^{km}, M3.2*
*IDC **01** 03:43:18.0±2.5, 36°.54N×139°.91E, h0^{km}, mb3.5/3, mb1 3.7/3, mb1mx3.3/29, mbtmp3.5/3, Error ellipse: s-maj=60.5km s-min=29.3km az=51.0*
ISC 01 03:43:19.8±1.8**, 37°.3N**±0°.1×**141°.4E**±0°.2**, h60**^{km}**, n7,**
σ**1**s**31**/7**, mb3.4**/3**, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.50**	**245**	S	**Sn**	**03 43 39.3**	**-1.3**
JMM	**Marumori**	**0.72**	**321**	P	**Pn**	**03 43 32.6**	**-1.6**
JFT	**Otama**	**0.85**	**284**	P	**Pn**	**03 43 36.0**	**+0.1**
JOU	**Okura**	**1.19**	**332**	P	**Pn**	**03 43 40.1**	**-0.2**
SONM	**Songino Array**	**27.60**	**304**	P	**P**	**03 49 02.8**	**+1.4**
	0.3nm,0.5s,baz=115,slow=9.7,SNR=3.5						
MKAR	**Makanchi Array**	**43.94**	**302**	P	**P**	**03 51 21.4**	**+0.7**
	0.5nm,0.8s,baz=87,slow=9.8,SNR=5.1						
WRA	**Warramunga Arr**	**57.33**	**188**	P	**P**	**03 53 01.4**	**-0.2**
	0.5nm,0.8s,baz=7.3,slow=7.0,SNR=2.5						

MEX 01 03:58:27.1±0.6**, 15°.58N**×**93°.35W, h102**^{km}±5^{km}**, MD3.5,**
Near coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PCIG		**0.18**	**44**	*e*P	Pn	03 58 40.3	-1.1
PCIG				*e*S	Sn	03 58 50.5	-1.7
TGIG		**1.21**	**10**	*e*P	Pn	03 58 48.8	-1.3
TGIG				*e*S	Sn	03 59 05.4	-2.1
CCIG	**Comitan**	**1.36**	**59**	*e*P	Pn	03 58 51.4	-0.6
CCIG				*e*S	Sn	03 59 09.6	-1.1

*ISCJB **01** 04:12:18.0±0.3, 43°.13N±0°.02×77°.31E±0°.02, h5^{km}±2^{km},*
Error ellipse: s-maj=3.5km s-min=2.0km az=172.1
*NNC **01** 04:12:17.2±0.7, 43°.04N×77°.34E, h0^{km}, mb3.1, mpv2.9,*
Error ellipse: s-maj=7.1km s-min=3.6km az=15.0
*KRNET **01** 04:12:17.8±0.1, 43°.09N×77°.26E, h22^{km}, mb3.5*
*SOME **01** 04:12:18.0, 43°.07N×77°.28E, h15^{km}*
*KNET **01** 04:12:19.6±1.6, 43°.03N×77°.10E, h7^{km}±6^{km}, ml2.9, Error ellipse: s-maj=10.2km s-min=4.6km az=80.0*
ISC 01 04:12:17.2±0.9**, 43°.08N**±0°.02×**77°.28E**±0°.01**, h13**^{km}±7^{km}**,**
n52, σ**0**s**99**/90**, 41C-29D, Lake Issyk-Kul region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MDOK	**Medeo**	**0.19**	**296**	⇑*i*P	**Pg**	**04 12 22.6**	**+1.0**
	316nm,0.4s						
MDOK				⇓*i*S	**Sg**	**04 12 25.7**	**+1.0**
	1µm,0.5s						
TNSS	**Tian-Shan**	**0.25**	**261**	*e*P	**Pb**	**04 12 23.8**	**0.0**
	32nm,0.1s						
TNSS				*e*S	**Sb**	**04 12 28.0**	**-0.2**
	2µm,0.2s						
KNDC	**Almaty**	**0.27**	**301**	⇑P	**Pb**	**04 12 24.0**	**+0.1**
	132nm,0.3s						
KNDC				⇓S	**Sb**	**04 12 28.4**	**0.0**
	418nm,0.3s						
AAA	**Alma-Ata**	**0.31**	**308**	⇓*i*P	**Pb**	**04 12 24.6**	**0.0**
	868nm,0.1s						
AAA				⇓*i*S	**Sb**	**04 12 29.5**	**-0.2**
	2µm,0.1s						
ANVS	**Anan'yevo**	**0.41**	**136**	⇑*i*P	**Pb**	**04 12 26.5**	**+0.1**
	baz=136						
ANVS				⇑*i*S	**Sb**	**04 12 32.7**	**0.0**
	baz=136						
IZV	**Izvestkoviy**	**0.49**	**265**	*e*P	**Pb**	**04 12 27.9**	**+0.1**
	37nm,0.2s						
IZV				*e*S	**Sb**	**04 12 35.0**	**+0.1**
	2µm,0.2s						
MTBS	**Maitube**	**0.63**	**275**	⇑*i*P	**Pb**	**04 12 29.9**	**-0.1**
	63nm,0.2s						
MTBS				⇓*i*S	**Sb**	**04 12 38.5**	**-0.2**
	309nm,0.2s						
KTBS	**Karatobe**	**0.77**	**326**	*e*P	**Pb**	**04 12 32.1**	**-0.3**
KTBS				*e*S	**Sb**	**04 12 42.2**	**-0.6**
KURS	**Kuram**	**0.77**	**58**	*e*P	**Pb**	**04 12 32.3**	**-0.1**
KURS				*e*S	**Sb**	**04 12 42.6**	**-0.1**
CHKK	**Chushkaly**	**0.81**	**346**	*e*P	**Pb**	**04 12 32.8**	**-0.5**
CHKK				*e*S	**Sb**	**04 12 43.4**	**-0.7**
	2µm,0.2s						
SATY	**Saty**	**0.82**	**91**	⇑*i*P	**Pb**	**04 12 33.5**	**0.0**
	98nm,0.3s						
SATY				⇑*i*S	**Sb**	**04 12 44.6**	**0.0**
	919nm,0.1s						
ZHN	**Zhinishke**	**0.85**	**84**	*e*P	**Pb**	**04 12 33.6**	**-0.3**
	43nm,0.1s						
ZHN				*e*S	**Sb**	**04 12 44.7**	**-0.5**
	988nm,0.2s						
PRZ	**Przheval'sk**	**1.02**	**126**	⇑*i*P	**Pn**	**04 12 38.2**	**+0.9**
	baz=126						
PRZ				⇑*i*S	**Sn**	**04 12 52.4**	**+0.9**
	baz=126						
KUU	**Kurty**	**1.06**	**320**	*e*P	**Pb**	**04 12 37.2**	**-0.2**
	77nm,0.1s						
KUU				*e*S	**Sb**	**04 12 51.0**	**-0.3**
	387nm,0.1s						
KPKS	**Kokpek**	**1.09**	**69**	*e*P	**Pb**	**04 12 38.2**	**+0.2**
	86nm,0.2s						
KPKS				*e*S	**Sb**	**04 12 52.5**	**+0.2**
	267nm,0.2s						
DGS	**Degeres**	**1.11**	**279**	*e*P	**Pb**	**04 12 38.3**	**-0.1**
	20nm,0.4s						
DGS				*e*S	**Sb**	**04 12 53.0**	**+0.2**
	571nm,0.4s						
ULHL	**Ulahol**	**1.13**	**223**	⇑*i*P	**Pn**	**04 12 39.2**	**+0.3**
	baz=222						
ULHL				⇑*i*S	**Sb**	**04 12 54.2**	**+0.8**
	baz=222						
ULHL	**Ulahol**	**1.13**	**223**	⇓P	**Pn**	**04 12 39.3**	**+0.3**
	55nm,0.2s						
ULHL				⇓S	**Sb**	**04 12 54.2**	**+0.8**
	61nm,0.1s						
BOOM	**Boomskoye usch**	**1.15**	**240**	⇓*i*P	**Pb**	**04 12 39.1**	**+0.1**
	baz=239						
BOOM				⇓*i*S	**Sb**	**04 12 55.0**	**+1.1**
	baz=239						
ARXS	**Arharly**	**1.20**	**19**	*e*P	**Pb**	**04 12 39.6**	**-0.2**
	32nm,0.2s						
ARXS				*e*S	**Sb**	**04 12 55.3**	**+0.1**
	618nm,0.3s						
TKM2	**Tokmak 2**	**1.25**	**263**	⇑*i*P	**Pn**	**04 12 40.9**	**+0.4**
	baz=263						
TKM2				⇑*i*S	**Sb**	**04 12 57.4**	**+0.7**
	baz=263						
TKM2	**Tokmak 2**	**1.25**	**263**	⇑P	**Pn**	**04 12 40.8**	**+0.3**
	2.6nm,0.2s						
TKM2				⇓S	**Sn**	**04 12 57.8**	**+0.6**
	50nm,0.3s						
TKM2	**Tokmak 2**	**1.25**	**263**	⇓P	**Pn**	**04 12 40.9**	**+0.4**
	20nm,0.1s						
TKM2				⇓S	**Sn**	**04 12 58.2**	**+0.9**
	225nm,0.1s						
MNBS	**Baschi**	**1.29**	**39**	*e*P	**Pb**	**04 12 41.0**	**-0.3**
	14nm,0.2s						
MNBS				*e*S	**Sb**	**04 12 57.8**	**0.0**
	37nm,0.2s						
PDGK	**Podgornoye**	**1.63**	**81**	⇑*i*P	**Pg**	**04 12 47.2**	**-1.3**
	baz=81						
PDGK				⇑*i*S	**Sg**	**04 13 08.3**	**-1.3**
	baz=81						
PDGK	**Podgornoye**	**1.63**	**81**	⇑Pn	**Pb**	**04 12 47.0**	**0.0**
	6.1nm,0.3s						
PDGK				⇑Sn	**Sg**	**04 13 08.4**	**-1.3**
	59nm,0.5s						
KBK	**Karagaybulak**	**1.77**	**257**	⇑*i*P	**Pg**	**04 12 50.1**	**-1.0**
	baz=257						
KBK				⇑*i*S	**Sg**	**04 13 13.1**	**-0.9**
	baz=257						
KBK	**Karagaybulak**	**1.77**	**257**	⇓P	**Pg**	**04 12 50.3**	**-0.8**
	87nm,0.2s						
KZA	**Kyzart**	**1.80**	**237**	⇑*e*P	**Pg**	**04 12 51.3**	**-0.5**
	baz=236						
KZA				⇑*i*S	**Sg**	**04 13 14.8**	**-0.5**
	baz=236						
KZA	**Kyzart**	**1.80**	**237**	⇓P	**Pg**	**04 12 51.3**	**-0.5**
	14nm,0.2s						
CHMS	**Chumysh**	**1.86**	**268**	⇑*i*P	**Pb**	**04 12 50.7**	**-0.3**
	baz=268						
CHMS				⇑*i*S	**Sb**	**04 13 15.0**	**+0.9**
	baz=268						
NRN	**Naryn**	**1.90**	**210**	⇑*e*P	**Pg**	**04 12 52.7**	**-1.0**
	baz=210						
NRN				⇑*i*S	**Sg**	**04 13 17.7**	**-0.7**
	baz=210						
USP	**Ospenovka**	**2.04**	**276**	⇓*i*P	**Pb**	**04 12 53.2**	**-1.0**
	baz=276						
USP				⇓*i*S	**Sb**	**04 13 20.2**	**+0.7**
	baz=276						
AAK	**Ala-Archa**	**2.10**	**259**	⇑*i*P	**Pb**	**04 12 55.4**	**+0.3**
	baz=258						
AAK				⇑*i*S	**Sg**	**04 13 23.5**	**-1.1**
	baz=258						
AAK	**Ala-Archa**	**2.10**	**259**	⇑Pn	**Pb**	**04 12 55.5**	**+0.3**
	13nm,0.5s						
AAK				⇓Sn	**Sg**	**04 13 24.0**	**-0.6**
	32nm,0.3s						
AAK	**Ala-Archa**	**2.10**	**259**	⇑P	**Pb**	**04 12 55.4**	**+0.3**
	20nm,0.2s						
UCH	**Uchtor**	**2.21**	**248**	⇑*i*P	**Pg**	**04 12 58.2**	**-1.4**
	baz=248						
UCH				⇑*i*S	**Sg**	**04 13 27.7**	**-0.7**
	baz=248						
UCH	**Uchtor**	**2.21**	**248**	⇓P	**Pg**	**04 12 58.4**	**-1.3**
	38nm,0.4s						
KTMS	**Ketmen**	**2.27**	**80**	*e*P	**Pb**	**04 12 58.2**	**+0.1**
	3.3nm,0.2s						
KTMS				*e*S	**Sb**	**04 13 27.1**	**+0.9**
	131nm,0.6s						
ARLS	**Aral**	**2.50**	**242**	⇓*e*P	**Pb**	**04 13 02.0**	**-0.1**
	baz=242						
ARLS				⇓*e*S	**Sb**	**04 13 34.1**	**+1.2**
	baz=242						
EKS2	**Erkin-Say**	**2.61**	**262**	⇓*i*P	**Pb**	**04 13 02.4**	**-1.4**
	baz=262						
EKS2				⇓*i*S	**Sg**	**04 13 38.8**	**-2.2**
	baz=262						
EKS2	**Erkin-Say**	**2.61**	**262**	⇓P	**Pb**	**04 13 02.5**	**-1.4**
	6.5nm,0.2s						
AML	**Almayashu**	**2.81**	**251**	⇑*e*P	**Pb**	**04 13 06.8**	**-0.7**
	baz=251						
AML				⇑*i*S	**Sg**	**04 13 45.3**	**-2.3**
	baz=251						
AML	**Almayashu**	**2.81**	**251**	⇑P	**Pb**	**04 13 06.7**	**-0.7**
	5.9nm,0.2s						
MRKS	**Merke**	**3.00**	**265**	*e*P	**Pb**	**04 13 11.8**	**+1.3**
	7.9nm,0.2s						
MRKS				*e*S	**Sg**	**04 13 50.5**	**-3.0**
	33nm,0.3s						
MNAS	**Manas**	**3.57**	**262**	⇓*i*P	**Pn**	**04 13 14.8**	**+2.5**
	baz=262						
MNAS				⇓*i*S	**Sn**	**04 13 57.3**	**+2.9**
	baz=262						
MNAS	**Manas**	**3.57**	**262**	⇑Pn	**Pb**	**04 13 18.4**	**-1.8**
	0.3nm,0.3s						
MNAS				⇑Lg	Lg	04 14 10.3	
	2.9nm,0.3s						
SFK	**Sufi-Kurgan**	**4.17**	**224**	⇑Pg	**Pg**	**04 13 35.4**	**-1.7**
	0.5nm,0.3s						
SFK				⇑Lg	Lg	04 14 31.2	
	6.5nm,0.5s						
KK31	**Karatay Array**	**4.96**	**273**	⇓Pg	**Pg**	**04 13 50.4**	**-1.7**
	0.5nm,0.3s,baz=86,slow=16,SNR=13						
KK31				⇑Lg	Lg	04 14 52.3	
	1.8nm,0.3s,baz=85,slow=29,SNR=5.8						
MK31	**Makanchi Array**	**5.14**	**42**	⇓Pn	**Pn**	**04 13 35.9**	**+2.1**
	0.1nm,0.2s,baz=216,slow=15,SNR=4.7						
MK31				⇓Lg	Lg	04 14 57.2	
	2.3nm,0.5s,baz=221,slow=28,SNR=7.0						
OTUK	**Ortayu**	**6.22**	**328**	⇓Lg	Lg	04 15 31.4	
	7.9nm,0.5s						
VOSK	**Vostochnaya**	**10.53**	**339**	⇑Lg	Lg	04 17 53.1	
	2.7nm,0.7s						

*NIED **01** 04:14:00, 38°.40N×142°.00E, h44^{km}, Mw3.9 Best double couple: $M_0$7.36000×10^{14} NP1:ϕ_s29.00000°, δ39.00000°, λ180.00000°. NP2:ϕ_s119.00000°, δ90.00000°, λ51.00000°.*
*ISCJB **01** 04:14:17.7±0.9, 38°.37N±0°.04×142°.05E±0°.08, h41^{km}±8^{km}, mb3.8/13, Error ellipse: s-maj=10.3km s-min=5.9km az=12.5*
*NEIC **01** 04:14:19.2±0.6, 38°.41N×142°.20E, h35^{km}, mb4.5/1, Error ellipse: s-maj=17.8km s-min=8.3km az=130.0*
*JMA **01** 04:14:19.0±0.1, 38°.44N×141°.96E, h42^{km}±1^{km}, M3.8*
JMA Felt I J1.
*IDC **01** 04:14:20.9±2.5, 38°.32N×142°.10E, h55^{km}±24^{km}, mb3.4/11,*

mb1 3.7/15, mb1mx3.5/44, mbtmp3.8/15, ML3.8/3, MS3.0/2, Ms1 3.0/2, ms1mx2.4/31, Error ellipse: s-maj=23.3km s-min=13.4km az=97.0

ISC 01 04:14:17.6±1.7, **38°.38N**±0°.04×**142°.02E**±0°.07, **h26**km±12km, **n36**, σ**1s.06**/35, **mb4.0**/13, **Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
JIO	Ouri	0.53	278	P	Pn	04 14 29.6	+0.1
JIO				S	Sb	04 14 36.7	+1.0
OFUJ	Ofunato	0.75	339	P	Pb	04 14 32.1	0.0
JMK	Ichinoseki	0.85	313	P	Pb	04 14 33.6	-0.1
JMK				eS	Sb	04 14 44.0	-0.7
JOU	Okura	1.07	270	P	Pn	04 14 37.1	+0.2
JOU				S	Sn	04 14 50.3	-0.6
JMM	Marumori	1.10	242	P	Pn	04 14 37.2	-0.1
JMM				eS	Sn	04 14 49.2	-2.4
JOM	Ohasama	1.23	333	P	Pn	04 14 39.1	0.0
JOM				eS	Sn	04 14 54.4	-0.5
JYK	Kaneyama	1.41	293	P	Pn	04 14 41.9	+0.3
JYK				eS	Sn	04 14 59.5	+0.2
JRG	Rokugo	1.48	314	P	Pn	04 14 42.9	+0.3
JRG				eS	Sn	04 15 01.8	+0.6
JYS	Shirataka	1.55	265	P	Pn	04 14 44.0	+0.5
JYS				eS	Sn	04 15 03.4	+0.7
MJAR	Matsushiro Arr	3.54	240	P	Pn	04 15 15.2	+4.2
	13nm,0.3s,baz=51,slow=10,SNR=54						
MJAR				LR	LR	04 17 02.0	
	comp=Z,141nm,20.7s,baz=70,slow=45						
MAJO	Matsushiro	3.55	240	ePn	Pn	04 15 13.1	+2.1
MAT	Matsushiro	3.55	240	P	Pn	04 15 13.0	+2.0
MAT				S	Sb	04 15 59.5	-2.7
ERM	Erimo	3.73	13	ePn	Pn	04 15 13.4	-0.1
JHJ	Hachijo jima 2	5.56	200	P	Pn	04 15 40.1	+1.5
	26nm,0.3s,baz=73,slow=21,SNR=4.8						
JHJ				S	Sn	04 16 41.2	-0.4
	32nm,0.3s,baz=90,slow=22,SNR=9.4						
USRK	Ussuriysk Ar.	9.53	311	P	Pn	04 16 38.0	+5.0
	0.1nm,0.3s,baz=120,slow=13,SNR=5.3						
JNU	Nakatsue	10.46	243	P	Pn	04 16 49.8	+3.8
	0.3nm,0.3s,baz=170,slow=7.8,SNR=7.4						
JNU				LR	LR	04 21 14.5	
	comp=Z,115nm,19.5s,baz=124,slow=39						
JNU	Nakatsue	10.46	243	ePn	Pn	04 16 49.5	+3.5
MA2	Magadan	21.94	12	P	P	04 19 09.3	+0.5
	2.1nm,0.3s,baz=200,slow=4.6,SNR=3.8						
SEY	Seymchan	25.38	11	P	P	04 19 43.0	+0.6
	1.2nm,0.3s,baz=189,slow=5.3,SNR=7.5						
H11N2	WAKE ISLAND Hy	28.46	124	T	T	04 50 23.1	
	baz=316,slow=75,SNR=190						
H11N1	WAKE ISLAND Hy	28.47	124	T	T	04 50 24.7	
	baz=316,slow=75,SNR=156						
H11N3	WAKE ISLAND Hy	28.48	124	T	T	04 50 25.4	
	baz=316,slow=75,SNR=192						
H11S1	WAKE ISLAND Hy	29.22	126	T	T	04 51 22.4	
	baz=317,slow=76,SNR=58						
H11S3	WAKE ISLAND Hy	29.22	126	T	T	04 51 24.2	
	baz=317,slow=76,SNR=87						
H11S2	WAKE ISLAND Hy	29.24	126	T	T	04 51 22.6	
	baz=317,slow=76,SNR=65						
NRIK	Noril'sk	42.25	335	P	P	04 22 11.7	+3.5
	1.8nm,0.4s,baz=163,slow=3.6,SNR=4.5						
MKAR	Makanchi Array	43.83	301	P	P	04 22 20.9	-0.5
	0.4nm,0.7s,baz=90,slow=6.2,SNR=4.8						
KURK	Kurchatov	45.49	307	eP	P	04 22 33.6	-0.9
	1.8nm,0.3s						
KURBB	Kurchatov Arra	45.56	307	P	P	04 22 34.2	-0.9
	1.9nm,0.6s,baz=82,slow=8.2,SNR=20						
ILAR	Eielson Array	48.10	33	P	P	04 22 55.0	+0.3
	0.2nm,0.6s,baz=274,slow=6.4,SNR=4.3						
AKTO	Aktyubinsk	58.14	312	P	P	04 24 10.8	+1.9
	0.3nm,0.3s,baz=25,slow=12,SNR=3.8						
WRA	Warramunga Arr	58.46	188	P	P	04 24 11.3	0.0
	1.8nm,0.6s,baz=4.7,slow=7.1,SNR=6.3						
ASAR	Alice Springs	62.19	188	P	P	04 24 36.9	+0.1
	0.9nm,0.7s,baz=5.2,slow=5.4,SNR=7.7						
YKA	Yellowknife Ar	62.40	31	P	P	04 24 37.0	-0.8
	0.1nm,0.3s,baz=300,slow=6.0,SNR=3.7						
PDAR	Pinedale Array	76.38	46	P	P	04 26 04.8	-0.1
	0.2nm,0.4s,baz=228,slow=3.8,SNR=3.1						
TXAR	Lajitas Array	88.92	53	P	P	04 27 09.4	-0.7
	0.1nm,0.7s,baz=207,slow=1.4,SNR=2.6						

*IDC **01** 04:22:49.9±1.1, 39°.03N×144°.39E, h0km, mb3.7/12, mb1 3.9/14, mb1mx3.8/48, mbtmp3.8/14, ML3.1/2, MS2.8/3, Ms1 2.8/3, ms1mx2.5/36, Error ellipse: s-maj=27.1km s-min=19.0km az=156.0*
*ISCJB **01** 04:22:50.7±0.7, 39°.20N±0°.06×144°.25E±0°.06, h10km, mb3.7/11, MS3.1/1, Error ellipse: s-maj=9.5km s-min=5.6km az=157.5*
*JMA **01** 04:22:52.4±0.1, 39°.22N×144°.26E, h30km, M3.8*
ISC 01 04:22:52.1±0.8, **39°.19N**±0°.07×**144°.24E**±0°.08, **h10**km, **n31**, σ**1s.17**/34, **mb3.7**/11, **Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
MIYJ	Miyakonagasawa	1.92	283	P	Pn	04 23 24.3	-0.4
MIYJ				S	Sn	04 23 47.6	-1.3
JTH	Tanohata	1.98	293	P	Pn	04 23 25.1	-0.6
OFUJ	Ofunato	2.00	268	P	Pn	04 23 25.4	-0.5
JOM	Ohasama	2.30	278	P	Pn	04 23 30.1	0.0
JOM				S	Sn	04 23 57.8	-0.7
JMK	Ichinoseki	2.36	265	P	Pn	04 23 30.7	-0.1
JMK				S	Sn	04 23 59.1	-0.8
JANG	Nango	2.41	300	P	Pn	04 23 30.6	-0.9
JRG	Rokugo	2.81	275	P	Pn	04 23 37.5	+0.5
JOU	Okura	2.91	255	P	Pn	04 23 38.8	+0.3
JOU				S	Sn	04 24 12.4	-1.1
JTM	Tenmabayashi	2.91	304	P	Pn	04 23 38.7	+0.3
JAH	Hinai	2.95	291	P	Pn	04 23 38.7	-0.3
JYK	Kaneyama	3.03	266	P	Pn	04 23 40.5	+0.4
JNBK	Urakawa-nobuka	3.29	340	P	Pn	04 23 43.2	-0.4
JNBK				S	Sn	04 24 20.8	-2.0
MJAR	Matsushiro Arr	5.45	243	Pn	Pn	04 24 14.3	+0.9
	2.9nm,0.3s,baz=58,slow=11,SNR=41						
MJAR				LR	LR	04 26 39.7	
	comp=Z,87nm,19.5s,baz=70,slow=42						
MAT	Matsushiro	5.45	243	P	Pn	04 24 14.1	+0.7
MAT				eS	Sn	04 25 05.1	-11
USRK	Ussuriysk Ar.	10.44	303	Pn	Pn	04 25 25.4	+3.7
	0.3nm,0.3s,baz=97,slow=13,SNR=6.8						
JNU	Nakatsue	12.37	245	LR	LR	04 30 50.8	
	comp=Z,36nm,21.6s,baz=299,slow=39						
KLR	Kul'dur	13.44	322	Pn	P	04 26 12.1	0.0
	0.2nm,0.3s,baz=134,slow=9.3,SNR=7.8						
SEY	Seymchan	24.28	9	P	P	04 28 10.2	+1.0
	4.8nm,0.9s,baz=174,slow=6.0,SNR=12						
SONM	Songino Array	28.54	300	P	P	04 28 50.1	+2.2
	0.8nm,0.6s,baz=90,slow=8.7,SNR=6.0						
ZALV	Zalesovo Beam	42.16	311	P	P	04 30 44.5	0.0
	1.1nm,0.6s,baz=75,slow=6.3,SNR=3.7						
MKAR	Makanchi Array	44.90	301	P	P	04 31 06.9	+0.2
	0.7nm,0.7s,baz=91,slow=7.2,SNR=7.8						
ILAR	Eielson Array	46.48	33	P	P	04 31 18.4	-0.6
	0.5nm,0.7s,baz=259,slow=6.7,SNR=6.7						
INK	Inuvik	51.45	28	P	P	04 31 56.6	-0.3
	1.8nm,1.1s,baz=282,slow=1.8,SNR=2.5						
WRA	Warramunga Arr	59.54	191	LR	LR	05 02 57.8	
	comp=Z,12nm,18.1s,baz=190,slow=40						
YKA	Yellowknife Ar	60.82	31	P	P	04 33 05.6	+1.6
	0.0nm,0.3s,baz=310,slow=31,SNR=2.6						
ASAR	Alice Springs	63.27	191	P	P	04 33 19.3	-1.6
	0.3nm,0.5s,baz=4.5,slow=6.4,SNR=4.3						
KBZ	Khabaz	71.17	311	P	P	04 34 11.3	+0.5
	1.6nm,0.9s,baz=325,slow=21,SNR=4.3						
NB2	NORSAR Subarra	73.04	338	P	P	04 34 19.7	-2.2
	comp=Z,4.1nm,1.1s,baz=36,slow=6.2						
NOA	NORSAR Array B	73.04	338	P	P	04 34 22.1	+0.3
	comp=Z,1.1nm,0.8s,baz=329,slow=20,SNR=3.5						
AKASG	Malin Array Be	73.94	323	P	P	04 34 27.0	-0.3
	comp=Z,0.3nm,0.5s,baz=44,slow=6.1,SNR=4.8						
PDAR	Pinedale Array	74.57	47	P	P	04 34 30.9	-0.5
	comp=Z,0.4nm,0.9s,baz=17,slow=5.4,SNR=3.0						

*IDC **01** 04:28:16.9±6.9, 36°.09N×144°.54E, h0km, mb3.5/4, mb1 3.6/5, mb1mx3.4/41, mbtmp3.5/5, ML3.7/1, Error ellipse: s-maj=165.5km s-min=31.6km az=168.0*
*JMA **01** 04:28:26.9±0.4, 37°.73N×143°.44E, h41km, M3.4*
*ISCJB **01** 04:28:29.4±1.6, 37°.80N±0°.07×143°.1E±0°.1, h10km, mb3.4/4, Error ellipse: s-maj=13.1km s-min=9.5km az=19.2*
ISC 01 04:28:26.3±1.9, **37°.76N**±0°.10×**143°.4E**±0°.1, **h10**km, **n15**, σ**1s.23**/15, **mb3.5**/4, **Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
JIO	Ouri	1.73	294	P	Pn	04 28 56.5	+0.2
JIO				S	Sn	04 29 18.2	-0.2
OFUJ	Ofunato	1.87	315	P	Pn	04 28 58.3	0.0
JMM	Marumori	2.03	274	P	Pn	04 29 00.3	-0.2
JMM				S	Sn	04 29 23.7	-2.2
JMK	Ichinoseki	2.06	306	P	Pn	04 29 01.5	+0.6
JOU	Okura	2.21	287	P	Pn	04 29 03.8	+0.8
JOM	Ohasama	2.35	317	S	Sn	04 29 33.9	0.0
JFT	Otama	2.41	265	P	Pn	04 29 06.3	+0.6
JFT				S	Sn	04 29 34.7	-0.5
JYK	Kaneyama	2.62	297	P	Pn	04 29 09.8	+1.1
JRG	Rokugo	2.69	308	P	Pn	04 29 11.2	+1.7
JANG	Nango	2.98	332	S	Sn	04 29 49.9	+0.6
MJAR	Matsushiro Arr	4.28	255	Pn	Pn	04 29 34.0	+2.4
	2.6nm,0.3s,baz=91,slow=16,SNR=8.7						
SONM	Songino Array	28.68	302	P	P	04 34 32.0	+8.6
	0.3nm,0.5s,baz=102,slow=7.5,SNR=2.7						
ZALV	Zalesovo Beam	42.57	312	P	P	04 36 28.4	+6.3
	0.9nm,0.6s,baz=69,slow=10,SNR=3.1						
MKAR	Makanchi Array	45.05	302	P	P	04 36 47.1	+4.9
	0.5nm,0.7s,baz=79,slow=10,SNR=5.8						
ILAR	Eielson Array	48.05	33	P	P	04 37 04.4	-1.0
	0.4nm,1.0s,baz=270,slow=7.2,SNR=4.2						

*ISCJB **01** 04:32:36.0±0.8, 11°.66S±0°.07×111°.83E±0°.06, h35km, mb3.6/4, Error ellipse: s-maj=11.2km s-min=6.4km az=41.0*
*DJA **01** 04:32:39.2±0.4, 11°S±3°×11°2E±°, h25km, M4.7/23, mb4.5/7, mB5.6/5, MLv4.7/23, Mw(mB)5.1/5*
*IDC **01** 04:32:40.0±3.2, 11°.21S×112°.99E, h0km, mb3.7/4, mb1 4.1/5, mb1mx3.7/40, mbtmp3.9/5, ML4.6/1, Error ellipse: s-maj=161.3km s-min=20.9km az=45.0*
ISC 01 04:32:37.4±1.7, **11°.7S**±0°.1×**111°.82E**±0°.09, **h35**km, **n21**, σ**0s.93**/19, **mb3.5**/4, **South of Jawa**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
PCJI	Pacitan	3.51	350	P	Pn	04 33 30.0	+0.5
PCJI				S	Sn	04 34 08.7	-1.2
GMJI	Gumukmas	3.73	26	P	Pn	04 33 32.4	-0.2
WOJI	Wonogiri, Jawa	3.91	347	P	Pn	04 33 34.4	-0.6
WOJI				S	Sn	04 34 19.7	0.0
JAGI	Jajag, Banyuwa	3.92	36	P	Pn	04 33 35.9	+0.7
UGM	Wanagama	3.95	341	P	Pn	04 33 36.7	+1.1
UGM				S	Sn	04 34 20.6	-0.1
NGJI	Ngawi	4.29	355	P	Pn	04 33 43.5	+3.2
ABJI	Asem Bagus	4.53	32	P	Pn	04 33 45.7	+2.2
SMRI	Semarang	4.79	343	P	Pn	04 33 47.8	+0.6
SRBI	Singaraja	4.88	43	P	Pn	04 33 48.8	+0.3
CMJI	Cimerak	5.09	319	P	Pn	04 33 51.6	+0.3
KPJI	Karang Pucung	5.17	326	P	Pn	04 33 55.8	+3.5
	47nm,0.7s,0.5nm						
CISI	Cisompet, Garu	5.68	316	P	Pn	04 33 59.8	+0.3
	86nm,0.7s,8μm1.0nm						
TWSI	Taliwang, Sumb	5.77	60	P	Pn	04 34 00.8	+0.1
	22nm,0.5s,4μm0.5nm						
CNJI	Cibinong	6.34	313	P	Pn	04 34 08.7	+0.3
	73nm,1.4s,2μm0.4nm						
PLAI	Plampang	6.51	65	P	Pn	04 34 11.1	+0.3
	19nm,1.2s,0.2nm						
CGJI	Cibinong	7.86	309	P	Pn	04 34 30.8	+1.4
FITZ	Fitzroy Crossi	14.80	117	Pn	Pn	04 36 01.3	-3.0
	2.0nm,0.3s,baz=301,slow=8.7,SNR=46						
FITZ				Sn	Sn	04 38 33.5	-14
	0.4nm,0.3s,baz=181,slow=22,SNR=4.5						
WRA	Warramunga Arr	23.16	114	P	P	04 37 39.5	-1.5
	0.7nm,0.4s,baz=287,slow=11,SNR=5.5						
ASAR	Alice Springs	24.15	123	P	P	04 37 50.5	0.0
	1.2nm,0.7s,baz=305,slow=10.0,SNR=10						
CMAR	Chiang Mai Arr	32.52	337	P	P	04 39 12.3	+7.1
	1.2nm,0.4s,baz=175,slow=7.1,SNR=5.6						
MKAR	Makanchi Array	63.92	338	P	P	04 43 15.7	+8.8
	0.2nm,0.4s,baz=152,slow=8.4,SNR=5.6						

*JMA **01** 04:36:31.4±0.1, 39°.43N×142°.55E, h32km±1km, M3.6*
*IDC **01** 04:36:47.1±4.0, 39°.64N×140°.86E, h87km±38km, mb3.2/6, mb1 3.3/7, mb1mx3.1/37, mbtmp3.5/7, Error ellipse: s-maj=31.0km s-min=23.1km az=73.0*
ISC 01 04:36:32.1±2.5, **39°.44N**±0°.05×**142°.5E**±0°.1, **h25**km±13km, **n17**, σ**1s.33**/21, **mb3.5**/6, **Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
MIYJ	Miyakonagasawa	0.53	285	P	Pb	04 36 42.8	+0.1
MIYJ				S	Sb	04 36 50.7	+0.7
JTH	Tanohata	0.69	317	P	Pb	04 36 45.1	-0.3
OFUJ	Ofunato	0.72	240	P	Pb	04 36 45.5	-0.5
JOM	Ohasama	0.92	272	P	Pb	04 36 49.1	-0.2
JOM				S	Sn	04 37 01.7	0.0
JKZ	Kuzumaki	1.04	302	P	Pn	04 36 51.0	0.0
JKZ				S	Sn	04 37 05.0	+0.2
JMK	Ichinoseki	1.09	244	P	Pn	04 36 51.3	-0.4
JMK				S	Sb	04 37 06.2	+0.1
JANG	Nango	1.19	322	P	Pn	04 36 52.5	-0.6
JANG				S	Sn	04 37 08.0	-0.4
JIO	Ouri	1.32	222	P	Pn	04 36 54.0	-0.9
JIO				S	Sn	04 37 10.9	-0.7
JRG	Rokugo	1.43	269	P	Pb	04 36 57.2	-0.8
MJAR	Matsushiro Arr	4.44	231	P	Pn	04 37 42.0	+4.2
	1.1nm,0.3s,baz=38,slow=11,SNR=12						
MAT	Matsushiro	4.44	231	P	Pn	04 37 36.5	-1.3
SONM	Songino Array	27.22	300	P	P	04 42 11.7	-2.2
	0.3nm,0.6s,baz=206,slow=24,SNR=3.3						
ZALV	Zalesovo Beam	40.95	310	P	P	04 44 12.8	+0.4
	0.9nm,0.5s,baz=92,slow=7.9,SNR=3.9						
MKAR	Makanchi Array	43.59	300	P	P	04 44 34.1	+0.1
	0.3nm,0.7s,baz=89,slow=11,SNR=3.1						
ILAR	Eielson Array	47.02	34	P	P	04 45 13.9	+13
	0.3nm,0.9s,baz=277,slow=7.2,SNR=3.4						
WRA	Warramunga Arr	59.56	189	P	P	04 46 41.7	+8.3
	0.3nm,0.5s,baz=6.2,slow=6.9,SNR=3.0						
FINES	FINESS Array B	67.08	332	P	P	04 47 24.2	+1.4
	1.4nm,0.8s,baz=252,slow=23,SNR=2.8						

*IDC **01** 04:39:05.5±0.8, 37°.32N×144°.95E, h0km, mb3.4/7, mb1 3.7/8, mb1mx3.5/36, mbtmp3.4/8, ML3.8/1, MS2.6/4, Ms1 2.6/4, ms1mx2.4/33, Error ellipse: s-maj=26.8km s-min=20.3km az=127.0*
*ISCJB **01** 04:39:09.4±0.7, 37°.55N±0°.07×144°.72E±0°.05, h33km, mb3.5/7, MS2.5/1, Error ellipse: s-maj=10.3km s-min=6.1km az=6.9*
*JMA **01** 04:39:10.3±0.2, 37°.66N×144°.63E, h29km, M4.2*
ISC 01 04:39:11.2±0.9, **37°.58N**±0°.08×**144°.75E**±0°.08, **h35**km, **n28**, σ**1s.13**/27, **mb3.5**/7, **Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
JIO	Ouri	2.83	289	P	Pn	04 39 53.5	-0.4
JIO				S	Sn	04 40 25.5	-1.2
OFUJ	Ofunato	2.85	303	P	Pn	04 39 53.9	-0.3
JMK	Ichinoseki	3.10	297	P	Pn	04 39 56.9	-0.8
JMM	Marumori	3.15	276	P	Pn	04 39 57.8	-0.6
JMM				S	Sn	04 40 34.0	-0.8
JOM	Ohasama	3.31	306	P	Pn	04 40 00.7	+0.2
JOM				S	Sn	04 40 37.7	-0.9
JOU	Okura	3.33	285	P	Pn	04 40 00.9	+0.1
JFT	Otama	3.51	270	S	Sn	04 40 43.0	-0.7
JRG	Rokugo	3.71	301	P	Pn	04 40 06.5	+0.5
JRG				S	Sn	04 40 48.3	-0.1
JYK	Kaneyama	3.71	292	P	Pn	04 40 06.2	+0.2
JYK				S	Sn	04 40 48.5	0.0
JANG	Nango	3.76	319	P	Pn	04 40 06.3	-0.5
JTM	Tenmabayashi	4.30	319	P	Pn	04 40 13.9	-0.2
JTM				S	Sn	04 41 00.4	-2.6
MJAR	Matsushiro Arr	5.34	261	Pn	Pn	04 40 28.0	-0.4
	3.1nm,0.3s,baz=91,slow=16,SNR=9.4						
MJAR				Sn	Sn	04 41 29.7	+1.1
	1.5nm,0.3s,baz=99,slow=23,SNR=10.0						
MJAR				LR	LR	04 42 28.6	
	comp=Z,60nm,21.4s,baz=110,slow=37						
MAT	Matsushiro	5.34	261	P	Pn	04 40 28.9	+0.5
MAT				eS	Sn	04 41 20.4	-8.3
JHJ	Hachijo jima 2	6.02	224	LR	LR	04 43 57.6	
	comp=Z,65nm,18.1s,baz=129,slow=49						
KSRS	Korea Array	13.37	275	LR	LR	04 47 16.4	
	comp=Z,22nm,18.6s,baz=94,slow=36						
MA2	Magadan	22.35	8	LR	LR	04 53 27.7	
	comp=Z,17nm,18.2s,baz=85,slow=38						
H11N2	WAKE ISLAND Hy	26.23	127	T	T	05 12 52.1	
	baz=318,slow=76,SNR=47						
H11N1	WAKE ISLAND Hy	26.24	127	T	T	05 12 59.0	
	baz=318,slow=76,SNR=55						
H11N3	WAKE ISLAND Hy	26.25	127	T	T	05 13 05.1	
	baz=318,slow=76,SNR=56						
H11S1	WAKE ISLAND Hy	27.02	129	T	T	05 13 56.9	
	baz=320,slow=74,SNR=5.1						
H11S3	WAKE ISLAND Hy	27.02	129	T	T	05 14 02.0	
	baz=125,slow=74,SNR=5.1						
MKAR	Makanchi Array	46.08	302	P	P	04 47 33.9	+2.1
	0.2nm,0.6s,baz=71,slow=11,SNR=2.5						
ILAR	Eielson Array	47.60	33	P	P	04 47 44.4	+1.1
	0.5nm,0.9s,baz=257,slow=6.2,SNR=6.4						
WRA	Warramunga Arr	58.05	192	P	P	04 48 58.2	-2.6
	2.0nm,0.7s,baz=13,slow=7.3,SNR=7.3						
ASAR	Alice Springs	61.77	191	P	P	04 49 25.3	-1.0
	0.3nm,0.6s,baz=15,slow=9.7,SNR=3.3						
YKA	Yellowknife Ar	61.98	31	P	P	04 49 28.3	+0.9
	0.2nm,0.6s,baz=274,slow=33,SNR=2.8						
AKASG	Malin Array Be	75.47	324	P	P	04 50 52.4	+0.9
	0.2nm,0.4s,baz=42,slow=6.0,SNR=4.6						
TXAR	Lajitas Array	87.66	54	P	P	04 51 54.9	-1.5
	0.1nm,0.4s,baz=216,slow=6.2,SNR=2.9						

*NIED **01** 04:50:00, 39°.20N×143°.00E, h5km, Mw3.9 Best double couple: M0 6.96000×10^14 NP1:φs345.00000°, δ14.00000°, λ165.00000°. NP2:φs90.00000°, δ86.00000°, λ76.00000°.*
JMA 01 04:50:48.9±0.2, **39°.15N**×**142°.99E**, **h10**km±3km, **M3.8**, **Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
MIYJ	Miyakonagasawa	1.00	296	P	Pg	04 51 07.5	-0.7
MIYJ				S	Sg	04 51 20.9	-0.3
JTH	Tanohata	1.17	312	P	Pb	04 51 11.1	-0.2
JOM	Ohasama	1.36	284	P	Pn	04 51 13.8	-0.1
JOM				S	Sb	04 51 31.0	-0.8
JMK	Ichinoseki	1.39	262	S	Sn	04 51 32.3	-0.5
JIO	Ouri	1.46	242	S	Sn	04 51 34.5	+0.1
JKZ	Kuzumaki	1.53	304	P	Pn	04 51 16.8	+0.5
JKZ				S	Sb	04 51 36.8	-0.1
JANG	Nango	1.67	318	eS	Sn	04 51 39.3	-0.4
JRG	Rokugo	1.84	278	P	Pb	04 51 22.3	-0.4
JRG				eS	Sb	04 51 46.6	+0.7
JYK	Kaneyama	2.06	264	P	Pb	04 51 25.1	-1.3
JAH	Hinai	2.09	300	P	Pb	04 51 25.8	-1.1
JAH				eS	Sb	04 51 52.2	-0.8
JTM	Tenmabayashi	2.20	319	P	Pn	04 51 25.6	+0.1
JTM				S	Sb	04 51 54.9	-1.3

*IDC **01** 04:51:39.7±3.8, 34°.83N×139°.97E, h59km±32km, mb3.3/8, mb1 3.5/9, mb1mx3.3/34, mbtmp3.6/9, ML3.4/1, Error ellipse: s-maj=30.6km s-min=25.2km az=73.0*
*ISCJB **01** 04:51:42.7±1.1, 36°.18N±0°.10×140°.59E±0°.08, h50km, mb3.5/8, Error ellipse: s-maj=14.2km s-min=8.7km az=160.5*
*JMA **01** 04:51:44.1±0.1, 36°.25N×140°.48E, h51km±1km, M3.1*
JMA Felt II J1.
ISC 01 04:51:44.2±1.2, **36°.2N**±0°.1×**140°.51E**±0°.08, **h50**km, **n20**, σ**0s.93**/19, **mb3.5**/8, **Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
JYT	Yasato	0.26	268	P	Pn	04 51 53.0	+0.1
JYT				S	Sn	04 51 59.3	+0.1
JHO	Hitachi	0.37	7	P	Pn	04 51 53.9	-0.2
JHO				S	Sn	04 52 00.8	-0.3
JAG	Ashikaga	0.88	283	P	Pn	04 51 59.8	-0.5
JKT	Katashina	1.15	298	P	Pn	04 52 03.8	-0.2
JKT				S	Sn	04 52 18.6	0.0
JFT	Otama	1.28	354	P	Pn	04 52 06.3	+0.5
JRY	Ryogami san	1.32	261	P	Pn	04 52 05.9	-0.4
JFY	Yanaizu	1.33	331	P	Pn	04 52 06.6	+0.1
MJAR	Matsushiro Arr	1.88	280	P	Pn	04 52 14.2	+0.2
	10nm,0.3s,baz=102,slow=9.2,SNR=42						
MAT	Matsushiro	1.88	280	P	Pn	04 52 14.4	+0.4
MAT				S	Sn	04 52 38.9	+2.3
SONM	Songino Array	27.64	305	P	P	04 57 25.7	-1.4
	0.2nm,0.4s,baz=117,slow=10.0,SNR=2.9						
H11N2	WAKE ISLAND Hy	28.39	118	T	T	05 27 15.4	
	baz=318,slow=76,SNR=6.0						
H11N1	WAKE ISLAND Hy	28.39	118	T	T	05 27 32.8	
	baz=318,slow=76,SNR=4.3						
H11N3	WAKE ISLAND Hy	28.41	118	T	T	05 27 33.2	
	baz=318,slow=76,SNR=4.1						
ZALV	Zalesovo Beam	41.92	313	P	P	04 59 29.6	0.0
	0.7nm,0.5s,baz=86,slow=6.1,SNR=4.3						
MKAR	Makanchi Array	43.93	303	P	P	04 59 45.6	-0.5
	0.5nm,0.6s,baz=83,slow=9.9,SNR=4.8						
ILAR	Eielson Array	50.55	32	P	P	05 00 41.9	+4.6
	0.2nm,0.6s,baz=274,slow=5.3,SNR=3.9						
WRA	Warramunga Arr	56.18	187	P	P	05 01 02.7	-16
	0.8nm,0.7s,baz=5.8,slow=6.8,SNR=2.9						
AKASG	Malin Array Be	74.48	322	P	P	05 03 16.3	-0.8
	0.5nm,0.4s,baz=47,slow=5.9,SNR=3.5						
NOA	NORSAR Array B	74.64	337	P	P	05 03 17.4	-0.5
	0.7nm,0.7s,baz=39,slow=6.0,SNR=3.9						
TXAR	Lajitas Array	91.18	52	P	P	05 04 46.2	+2.0
	0.1nm,0.7s,baz=259,slow=1.3,SNR=2.6						

JMA 01 04:59:52.1±0.1, **36°.65N**×**141°.14E**, **h26**km±2km, **M3.3**, **Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
JHO	Hitachi	0.46	265	P	Pb	05 00 01.1	-0.6
JHO				S	Sb	05 00 08.2	0.0
ONAJ	Iwakimizuishiy	0.53	329	P	Pb	05 00 02.5	-0.4
ONAJ				S	Sb	05 00 10.5	+0.3
JYT	Yasato	0.87	241	P	Pb	05 00 08.4	-0.2
JYT				S	Sn	05 00 20.2	-0.3
JSB	Shiboa	1.03	288	P	Pb	05 00 11.5	+0.2
JSB				eS	Sn	05 00 26.1	+1.6
JFT	Otama	1.08	324	P	Pb	05 00 12.1	0.0
JFT				S	Sb	05 00 26.7	+0.9
JMM	Marumori	1.25	347	P	Pn	05 00 13.4	-0.4
JMM				S	Sn	05 00 29.9	+0.1

IDC 01 05:00:04.3±1.5, **36°.80N**×**140°.46E**, **h0**km, **mb3.5**/2, **mb1 3.8**/3, **mb1mx3.3**/39, **mbtmp3.5**/3, **ML2.5**/1, **Error ellipse: s-maj=28.9km s-min=25.7km az=179.0, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
MJAR	Matsushiro Arr	1.83	262	Pn	Pn	05 00 36.4	-0.7
	5.0nm,0.3s,baz=84,slow=17,SNR=17						
MJAR				Sn	Sb	05 01 02.2	0.0
	5.2nm,0.3s,baz=79,slow=16,SNR=6.8						
USRK	Ussuriysk Ar.	9.80	322	Pn	Pn	05 02 26.1	-0.4
	0.4nm,0.3s,baz=113,slow=15,SNR=4.8						
WRA	Warramunga Arr	56.73	187	P	P	05 09 50.0	+0.1
	0.5nm,0.3s,baz=5.2,slow=7.5,SNR=3.1						
TXAR	Lajitas Array	90.86	52	P	P	05 13 10.1	-0.1
	0.2nm,0.8s,baz=349,slow=8.3,SNR=2.7						

*IDC **01** 05:07:09.6±0.6, 31°.58N×104°.11E, h0km, mb4.2/20, mb1 4.3/22, mb1mx4.1/52, mbtmp4.2/22, ML4.0/2, MS3.3/8, Ms1 3.3/8, ms1mx3.0/55, Error ellipse: s-maj=22.9km s-min=12.8km az=59.0*
*ISCJB **01** 05:07:10.0±0.2, 31°.56N±0°.03×104°.10E±0°.04, h14km, mb4.4/49, MS3.3/7, Error ellipse: s-maj=4.7km s-min=3.8km az=29.9*
*BJI **01** 05:07:11.5, 31°.59N×104°.01E, h10km, mb4.2/19, mB4.4/11, ML4.3/18, Ms4.0/23, Ms7 3.8/20*
*MOS **01** 05:07:13.1±0.8, 31°.62N×104°.15E, h33km, mb4.4/14, Error ellipse: s-maj=9.9km s-min=6.2km az=109.4*
*NEIC **01** 05:07:13.6±1.0, 31°.56N×104°.16E, h25km±7km, mb4.7/22, Error ellipse: s-maj=5.3km s-min=4.9km az=211.0*
NEIC Felt [II] at Chengdu.

ISC 01 05:07:10.7±0.4, 31°.49N±0°.03×104°.17E±0°.04, h14km, n131, σ1s.68/132, mb4.4/49, MS3.1/7, 3C-1D, Sichuan

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
CD2	Chengdu	0.68	211	Pg	Pn	05 07 26.0	0.0
CD2				Sg	Sn	05 07 37.0	+0.6
CD2				smax	smax		
	comp=N,9µm,0.6s						
CD2				smax	smax		
	comp=E,9µm,0.7s						
CD2	Chengdu	0.68	211	Pg	Pn	05 07 26.0	0.0
CD2				Sg	Sn	05 07 37.0	+0.6
LZH	Lanzhou	4.59	357	ePn	Pn	05 08 22.0	+2.2
LZH				Pg	Pb	05 08 33.4	+2.3
LZH				Sn	Sn	05 09 15.0	+2.0
LZH				Sg	Sg	05 09 32.7	-5.4
LZH				LR	LR		
	comp=N,850nm,4.9s						
LZH				LR	LR		
	comp=E,950nm,4.6s						
LZH				LR	LR		
	comp=Z,680nm,6.5s						
LZH	Lanzhou	4.59	357	eP	Pn	05 08 22.0	+2.2
LZH						05 09 15.0	
LZH	Lanzhou	4.59	357	ePn	Pn	05 08 22.0	+2.2
LZH				Pg	Pb	05 08 33.4	+2.3
LZH				Sg	Sn	05 09 15.0	+2.0
LZH				Sg	Sg	05 09 32.7	-5.4
ENH	Enshi	4.73	104	ePn	Pn	05 08 24.6	+3.0
XAN	Xi'an	4.74	56	Pn	Pn	05 08 23.5	+1.7
XAN				Pg	Pg	05 08 41.5	0.0
XAN				Sn	Sn	05 09 16.6	+0.1
XAN				Sg	Sg	05 09 42.0	-0.8
XAN				smax	smax		
	comp=N,470nm,1.0s						
XAN				smax	smax		
	comp=E,740nm,0.9s						
XAN	Xi'an	4.74	56	P	Pn	05 08 23.5	+1.7
XAN						05 09 16.6	
XAN	Xi'an	4.74	56	Pn	Pn	05 08 23.5	+1.7
XAN				Pg	Pg	05 08 41.5	0.0
XAN				Sn	Sn	05 09 16.6	+0.1
XAN				Sg	Sg	05 09 42.0	-0.8
GYA	Guiyang	5.47	156	Pn	Pb	05 08 38.8	-7.3
GYA				Sn	Sb	05 09 47.1	-4.6
GYA				smax	smax		
	comp=N,380nm,0.8s						
GYA				smax	smax		
	comp=E,330nm,0.9s						
GYA				LR	LR		
	comp=N,450nm,11.3s						
GYA				LR	LR		
	comp=E,570nm,9.4s						
GYA				LR	LR		
	comp=Z,670nm,11.0s						
KMI	Kunming	6.47	192	Pn	Pn	05 08 48.8	+3.0
KMI				Sn	Sn	05 10 01.3	+1.8
KMI				smax	smax		
	comp=N,96nm,0.9s						
KMI				smax	smax		
	comp=E,100nm,0.6s						
KMI				LR	LR		
	comp=N,560nm,12.1s						
KMI				LR	LR		
	comp=E,310nm,10.3s						
KMI				LR	LR		
	comp=Z,560nm,13.1s						
GTA	Gaotai	8.66	337	eP	Pg	05 09 53.5	-2.9
GTA				pP	pP	05 10 03.4	
GTA				sP	sP	05 10 07.6	
GTA				pmax	pmax		
	comp=Z,8.0nm,1.3s						
GTA	Gaotai	8.66	337	eP	Pn	05 09 19.9	+4.2
GTA				pP	pP	05 09 24.2	
GTA				sP	sP	05 09 27.5	
GTA				S	Sn	05 11 00.6	+7.4
GTA				sS	sS	05 11 06.2	
GTA				pmax	pmax		
	comp=Z,5.0nm,1.0s						
GTA				pmax	pmax		
	comp=Z,55nm,5.3s						
GTA				LR	LR		
	comp=Z,510nm,10.5s						
GTA				LR	LR		
	comp=Z,510nm,11.4s						
GTA				LR	LR		
	comp=Z,610nm,11.2s						
HHC	Hu-ho-hao-te	11.08	31	eP	Pn	05 09 46.0	-2.8
HHC				S	Sn	05 11 48.6	-3.9
HHC				pmax	pmax		
	comp=Z,8.0nm,0.9s						
HHC				pmax	pmax		
	comp=Z,31nm,2.5s						
HHC				LR	LR		
	comp=N,220nm,4.4s						
HHC				LR	LR		
	comp=E,450nm,4.4s						
HHC				LR	LR		
	comp=Z,230nm,5.6s						
LSA	Lhasa	11.36	264	eP	Pn	05 09 56.9	+3.8
LSA	Lhasa	11.36	264	ePn	Pn	05 09 56.9	+3.8
NJ2	Nanjing	12.51	84	eP	P	05 10 16.3	-3.7
NJ2				S	Sn	05 12 40.1	+13
NJ2				pmax	pmax		
	comp=Z,12nm,0.5s						
NJ2				LR	LR		
	comp=Z,330nm,6.8s						
NJ2				LR	LR		
	comp=Z,470nm,7.7s						
NJ2				LR	LR		
	comp=Z,780nm,8.2s						
BJI	Beijing	12.94	45	P	Pn	05 10 11.0	-3.1
BJI				pmax	pmax		
	comp=Z,8.0nm,2.2s						
BJI				pmax	pmax		
	comp=Z,130nm,3.4s						
QIZ	Qiongzhong	13.43	156	P	P	05 10 27.6	-2.7
QIZ				S	Sn	05 13 00.7	+11
QIZ				LR	LR		
	comp=E,390nm,12.7s						
QIZ				LR	LR		
	comp=Z,350nm,9.4s						
CHTO	Chiang Mai	13.48	202	eP	P	05 10 29.8	-1.1
CHTO	Chiang Mai	13.48	202	ePn	P	05 10 29.8	-1.1
CMAR	Chiang Mai Arr	13.81	201	Pn	Pn	05 10 29.5	+3.3
	comp=Z,0.4nm,0.3s,baz=14,slow=11,SNR=18						
CMAR				LR	LR	05 16 46.3	
	comp=Z,34nm,18.6s,baz=15,slow=42						
CMAR	Chiang Mai Arr	13.81	201c	eP	P	05 10 32.2	-2.4
CMAR				pmax	pmax		
	comp=Z,3.0nm,0.7s						
RAMN	Ramite	15.99	258	eP	Pn	05 10 54.6	-0.9
	comp=Z,10nm,0.6s						
GUN	Gumba	16.29	262	eP	Pn	05 10 58.2	-1.2
	comp=Z,79nm,1.1s						
SONM	Songino Array	16.41	5	Pn	Pn	05 11 00.9	+0.3
	comp=Z,0.3nm,0.3s,baz=187,slow=13,SNR=16						
SONA1	Songino Array	16.42	5	ePn	Pn	05 11 01.0	+0.2
ULN	Ulaanbaatar	16.50	7	i P	Pn	05 11 02.0	+0.2
ULN				pmax	pmax		
	comp=Z,5.0nm,1.0s						
ULN	Ulaanbaatar	16.50	7	ePn	Pn	05 11 01.8	0.0
	comp=Z,3.3nm,0.8s						
PKIN	Phulchoki	16.80	261	eP	Pn	05 11 03.9	-1.9
	comp=Z,16nm,0.6s						
KKN	Kakani	16.83	262	eP	Pn	05 11 05.3	-0.9
DMN	Daman	17.03	262	eP	Pn	05 11 07.1	-1.7
	comp=Z,58nm,1.0s						
GKN	Gorkha	17.32	263	eP	Pn	05 11 11.2	-1.0
	comp=Z,36nm,0.9s						
WMQ	Urumqi	17.89	318	P	Pn	05 11 17.8	-1.4
WMQ				pP	pP	05 11 22.0	-1.7
WMQ				PP	PnPn	05 11 32.9	+2.9
WMQ				S	Sn	05 14 34.0	-4.5
WMQ				pmax	pmax		
	comp=Z,17nm,4.6s						
WMQ				LR	LR		
	comp=Z,130nm,12.6s						
WMQ				LR	LR		
	comp=Z,88nm,11.4s						
KOLN	Koldanda	18.26	264	eP	Pn	05 11 21.7	-2.3
	comp=Z,32nm,1.0s						
PYUN	Piuthan	18.69	265	eP	P	05 11 26.6	-2.2
	comp=Z,27nm,0.9s						
ZAK	Zakamensk	18.88	358	eP	Pn	05 11 31.5	+0.3
ZAK				pmax	pmax		
	comp=Z,5.0nm,1.3s						
TLY	Talaya	20.18	359	LR	LR	05 20 13.4	
	comp=Z,91nm,18.7s,baz=167,slow=39						
TLY	Talaya	20.18	359	eP	Pn	05 11 46.6	0.0
TLY				pmax	pmax		
	comp=Z,5.0nm,1.4s						
TLY				MLR	MLR		
	comp=Z,84nm,10.0s						
KSAR	Wonju Array Be	20.41	67	P	Pn	05 11 50.0	+0.6
KSAR	Wonju Array Be	20.41	67	P	Pn	05 11 50.0	+0.6
KSRS	Korea Array	20.44	67	P	Pn	05 11 50.0	+0.2
	comp=Z,3.7nm,0.7s,baz=252,slow=9.6,SNR=10						
KSRS				LR	LR	05 21 24.5	
	comp=Z,43nm,18.8s,baz=202,slow=42						
KSRS	Korea Array	20.44	67	P	Pn	05 11 50.0	+0.2
KSRS				pmax	pmax		
	comp=Z,4.0nm,0.8s						
KSRS				MLR	MLR		
	comp=Z,43nm,18.8s						
CN2	Changchun	20.78	48	⇓P	Pn	05 11 54.0	+0.3
CN2				esP	sP	05 12 02.0	+4.9
CN2				pmax	pmax		
	comp=Z,40nm,0.5s						
MK01	Makanchi Array	22.71	318	eP	P	05 12 12.8	+0.8
MK31	Makanchi Array	22.73	318	i P	P	05 12 12.3	+0.1
MK31				pmax	pmax		
	comp=Z,12nm,1.1s						
MK31	Makanchi Array	22.73	318	eP	P	05 12 12.9	+0.7
MKAR	Makanchi Array	22.73	318	P	P	05 12 12.8	+0.6
	comp=Z,3.5nm,0.6s,baz=121,slow=12,SNR=45						
MKAR				LR	LR	05 21 41.4	
	comp=Z,54nm,18.5s,baz=156,slow=38						
MKAR	Makanchi Array	22.73	318	eP	P	05 12 12.9	+0.7
MAKZ	Makanchi	22.91	318	eP	P	05 12 15.2	+1.1
MAKZ				pmax	pmax		
	comp=Z,6.0nm,0.8s						
MAKZ	Makanchi	22.91	318	eP	P	05 12 15.2	+1.1
	comp=Z,6.1nm,0.8s						
KSH	Kashi	24.24	297	eP	P	05 12 32.1	+4.8
KSH				epP	sP	05 12 36.1	+2.7
KSH				ePP	PnPn	05 13 07.2	+10
KSH				S	S	05 16 47.7	+2.1
KSH				pmax	pmax		
	comp=Z,63nm,3.7s						
KSH				LR	LR		
	comp=Z,110nm,6.5s						
KSH				LR	LR		
	comp=Z,110nm,6.0s						
KSH				LR	LR		
	comp=Z,190nm,7.0s						
USRK	Ussuriysk Ar.	25.23	52	LR	LR	05 23 28.2	
	comp=Z,59nm,19.0s,baz=56,slow=39						
TKM2	Tokmak 2	25.34	305	P	P	05 12 38.4	+1.1
TKM2				pmax	pmax		
	comp=Z,5.0nm,1.3s						
TKM2	Tokmak 2	25.34	305	eP	P	05 12 39.0	+1.6
	comp=Z,5.7nm,1.1s						
AAK	Ala-Archa	26.03	304	P	P	05 12 47.9	+4.3
	comp=Z,2.1nm,0.7s,baz=136,slow=5.3,SNR=7.7						
AAK	Ala-Archa	26.03	304	eP	P	05 12 44.1	+0.5
AAK				pmax	pmax		
	comp=Z,6.0nm,0.9s						
AAK	Ala-Archa	26.03	304	eP	P	05 12 46.9	+3.3
	comp=Z,5.5nm,1.1s						
ZAA0	Zalesovo Array	26.40	334	eP	P	05 12 46.9	+0.4
ZALV	Zalesovo Beam	26.40	334	P	P	05 12 47.4	+0.8
	comp=Z,11nm,0.7s,baz=135,slow=9.2,SNR=31						
ZALV				LR	LR	05 23 48.4	
	comp=Z,58nm,20.8s,baz=70,slow=38						
KURBB	Kurchatov Arra	26.96	323	P	P	05 12 52.5	+0.8
	comp=Z,6.5nm,0.7s,baz=130,slow=8.9,SNR=22						
KURK	Kurchatov	26.97	323	P	P	05 12 51.7	0.0
KURK				pmax	pmax		
	comp=Z,21nm,1.1s						
KURK	Kurchatov	26.97	323	eP	P	05 12 52.9	+1.2
	comp=Z,10nm,1.1s						
KLR	Kul'dur	27.26	41	P	P	05 12 59.4	+5.0
	comp=Z,1.8nm,0.2s,baz=254,slow=19,SNR=12						
NVS	Novosibirsk	27.68	334	eP	P	05 12 54.4	-3.6
PSI	Prapat	28.97	191	LR	LR	05 25 51.2	
	comp=Z,83nm,18.2s,baz=0.5,slow=38						
KK31	Karatay Array	28.99	303	P	P	05 13 10.1	+0.2
KK31				pmax	pmax		
	comp=Z,2.0nm,0.8s						
KKAR	Karatay Array	28.99	303	eP	P	05 13 10.7	+0.8
KKAR	Karatay Array	28.99	303	eP	P	05 13 10.7	+0.8
KBL	Kabul	29.52	285	eP	P	05 13 17.0	+2.0
KBL				pmax	pmax		
	comp=Z,5.0nm,0.6s						
KBL	Kabul	29.52	285	eP	P	05 13 17.0	+2.0
	comp=Z,4.7nm,0.6s						
VOSK	Vostochnaya	32.06	321	eP	P	05 13 37.9	+1.0
VOSK				pmax	pmax		
	comp=Z,4.0nm,0.9s						
VOSK	Vostochnaya	32.06	321	eP	P	05 13 37.9	+1.0
	comp=Z,4.4nm,0.9s						
BVA0	Borovoye Array	32.52	321	i P	P	05 13 39.8	-1.2
BVA0				pmax	pmax		
	comp=Z,1.0nm,0.6s						
BVAR	Borovoye Array	32.52	321	P	P	05 13 42.0	+1.0
	comp=Z,1.7nm,0.6s,baz=115,slow=10.0,SNR=10						
BRVK	Borovoye	32.59	321	i P	P	05 13 41.8	+0.2
BRVK				pmax	pmax		
	comp=Z,2.0nm,0.6s						
BRVK	Borovoye	32.59	321	eP	P	05 13 42.6	+1.1
	comp=Z,3.3nm,0.7s						
ZRNK	Zerenda	33.23	321	eP	P	05 13 48.0	+0.8
ZRNK				pmax	pmax		
	comp=Z,4.0nm,0.7s						
ZRNK	Zerenda	33.23	321	eP	P	05 13 48.0	+0.8
	comp=Z,4.0nm,0.7s						
AB31	Akbulak array	37.46	311	i P	P	05 14 24.2	+0.6
AB31				pmax	pmax		
	comp=Z,3.0nm,0.9s						
ABKAR	Akbulak array	37.46	311	eP	P	05 14 24.6	+1.0
NRIK	Noril'sk	39.06	351	P	P	05 14 37.5	+0.7
	comp=Z,1.4nm,0.4s,baz=152,slow=9.8,SNR=4.4						
ARU	Arti	40.16	322c	iP	P	05 14 46.8	+0.7
ARU				S	S	05 20 53.5	+1.4
ARU				pmax	pmax		
	comp=Z,17nm,1.0s						
ARU	Arti	40.16	322	eP	P	05 14 47.0	+0.9
	comp=Z,13nm,0.8s						
KLMR	Klimovskoe	50.78	325	eP	P	05 16 08.1	-2.0
KLMR				e*PP	sP	05 16 15.7	-0.6
KLMR				pmax	pmax		
	comp=Z,14nm,0.9s						
FITZ	Fitzroy Crossi	53.45	154	P	P	05 16 31.6	+1.2
	comp=Z,4.5nm,1.0s,baz=354,slow=10,SNR=3.4						
ARCES	ARCESS Array B	56.93	336	P	P	05 16 55.5	+0.5
	comp=Z,1.5nm,0.7s,baz=61,slow=6.0,SNR=6.3						
AKASG	Malin Array Be	57.16	313	P	P	05 16 56.8	-0.1
	comp=Z,0.8nm,0.4s,baz=70,slow=6.6,SNR=8.5						
AKASG	Malin Array Be	57.16	313c	eP	P	05 16 56.7	-0.2
AKASG				pmax	pmax		
	comp=Z,1.0nm,0.4s						
FIA1	FINESS Array S	57.28	326	eP	P	05 16 58.3	+0.8
	comp=Z,55nm,1.8s						
FINES	FINESS Array B	57.28	326	P	P	05 16 58.0	+0.5
	comp=Z,3.9nm,0.7s,baz=101,slow=8.0,SNR=12						
WRA	Warramunga Arr	58.77	146	P	P	05 17 11.1	+2.6
	comp=Z,2.8nm,0.9s,baz=338,slow=7.4,SNR=9.2						
ASAR	Alice Springs	61.79	149	P	P	05 17 31.2	+2.0
	comp=Z,0.9nm,0.5s,baz=339,slow=7.0,SNR=9.0						
STHS	Stebnicka Huta	62.46	313	eP	P	05 17 35.3	+1.9
STHS	Stebnicka Huta	62.46	313	eP	P	05 17 35.3	+1.9
VYHS	Vyhne	64.25	313	eP	P	05 17 46.6	+1.3
VYHS	Vyhne	64.25	313	eP	P	05 17 46.6	+1.3
NB2	NORSAR Subarra	64.36	327	P	P	05 17 45.2	-0.6
	comp=Z,1.6nm,0.8s,baz=72,slow=6.9						
NOA	NORSAR Array B	64.36	327	P	P	05 17 45.5	-0.3
	comp=Z,1.9nm,0.7s,baz=74,slow=6.6,SNR=7.1						
NC204	NORSAR Array S	64.49	328	eP	P	05 17 46.1	-0.6
TTA	Tatalina	66.69	29	eP	P	05 18 01.8	+0.9
TTA				pmax	pmax		
	comp=Z,19nm,1.8s						
TTA	Tatalina	66.69	29	eP	P	05 18 01.8	+0.9
	comp=Z,19nm,1.8s						
TT01	Tatalina	66.70	29	eP	P	05 18 02.0	+1.1
COLD	Coldfoot	67.09	24	eP	P	05 18 04.4	+1.1
	comp=Z,4.9nm,1.1s						
GERES	GERESS Array B	67.32	314	P	P	05 18 06.0	+0.9
	comp=Z,0.8nm,0.7s,baz=84,slow=4.2,SNR=7.5						
MLY	Manley	67.89	26	eP	P	05 18 09.5	+1.0
	comp=Z,9.3nm,1.7s						
BPAW	Bear Paw Mtn.	68.23	27	eP	P	05 18 12.1	+1.5
	comp=Z,22nm,2.0s						
GRFO	Grafenberg	68.49	316	eP	P	05 18 13.6	+1.2
GRFO				pmax	pmax		
	comp=Z,10.0nm,0.6s						
GRFO	Grafenberg	68.49	316	eP	P	05 18 13.6	+1.2
	comp=Z,9.7nm,0.6s						
TRF	Thorofare Moun	68.80	28	eP	P	05 18 16.2	+1.9
	comp=Z,27nm,1.9s						
MDM	Murphy Dome	68.87	26	eP	P	05 18 15.5	+0.9
	comp=Z,4.3nm,1.0s						
IL1	Eielson Array	69.46	26	eP	P	05 18 18.2	0.0
ILAR	Eielson Array	69.46	26	P	P	05 18 17.9	-0.3
	comp=Z,0.5nm,0.8s,baz=284,slow=4.5,SNR=6.7						
PMR	Palmer	70.17	29	eP	P	05 18 23.8	+1.2
PMR				pmax	pmax		
	comp=Z,24nm,1.7s						
PMR	Palmer	70.17	29	eP	P	05 18 23.8	+1.2
	comp=Z,24nm,1.7s						
OHAK	Old Harbor	70.41	34	eP	P	05 18 25.2	+1.1
	comp=Z,132nm,1.8s						
KMBO	Kilima Mbogo	71.05	257	P	P	05 18 29.6	+0.6
	comp=Z,1.2nm,0.3s,baz=41,slow=10,SNR=6.6						
EGAK	Eagle	71.52	24	eP	P	05 18 31.2	+0.4
	comp=Z,16nm,1.9s						
MENT	Mentasta	71.62	27	eP	P	05 18 32.2	+0.7
	comp=Z,23nm,0.2s						
INK	Inuvik	71.77	19	eP	P	05 18 32.8	+0.6
INK				pmax	pmax		
	comp=Z,12nm,1.8s						
INK	Inuvik	71.77	19	eP	P	05 18 32.8	+0.6
	comp=Z,12nm,1.8s						
STKA	Stephens Creek	72.30	147	P	P	05 18 37.1	+1.3
	comp=Z,1.3nm,0.6s,baz=337,slow=11,SNR=2.9						
BMRM	Bremner River	72.36	28	eP	P	05 18 37.2	+1.3
	comp=Z,40nm,1.8s						
DAWY	Dawson	72.56	24	eP	P	05 18 37.7	+0.7
	comp=Z,26nm,2.0s						
KEST	Kesra	75.89	303	P	P	05 18 56.8	-0.3
	comp=Z,3.1nm,0.9s,baz=146,slow=12,SNR=2.2						
YKA	Yellowknife Ar	81.30	17	P	P	05 19 26.9	+0.7
	comp=Z,0.6nm,0.5s,baz=328,slow=5.2,SNR=15						
YKB5	Yellowknife Ar	81.30	17	eP	P	05 19 26.5	+0.3
SCHQ	Schefferville	93.68	355	P	P	05 20 25.8	-0.9
	comp=Z,3.3nm,0.8s,baz=272,slow=10,SNR=2.4						
ULM	Lac du Bonnet	96.70	13	LR	LR	06 08 37.4	
	comp=Z,100nm,18.1s,baz=324,slow=38						
BANI	BANI	130.12	353	ePKPdf	PKPdf	05 26 22.2	+1.1
OTAV	Otavalo	148.34	5	ePKPbc	PKPab	05 26 59.4	-1.6

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*IDC **01** 05:10:17.6±1.3, 38°.30N×144°.65E, h0km, mb3.6/7, mb1 3.7/8, mb1mx3.5/46, mbtmp3.6/8, ML3.7/1, Error ellipse: s-maj=31.1km s-min=23.7km az=115.0*
*ISCJB **01** 05:10:21.5±0.8, 38°.41N±0°.05×144°.41E±0°.06, h29km, mb3.6/7, Error ellipse: s-maj=7.9km s-min=6.1km az=168.3*
*JMA **01** 05:10:22.8±0.2, 38°.41N×144°.33E, h34km, M4.2*
ISC 01 05:10:22.9±1.0, 38°.41N±0°.07×144°.45E±0°.08, h29km, n22, σ1s.21/34, mb3.8/7, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
OFUJ	Ofunato	2.27	288	P	Pn	05 10 58.2	-0.2
JIO	Ouri	2.43	272	P	Pn	05 11 00.1	-0.5
JIO				S	Sn	05 11 27.8	-1.6
JTH	Tanohata	2.52	308	P	Pn	05 11 01.4	-0.4
JTH				S	Sn	05 11 31.0	-0.6
JMK	Ichinoseki	2.58	283	P	Pn	05 11 02.7	0.0
JMK				S	Sn	05 11 32.4	-0.7
JOM	Ohasama	2.68	294	P	Pn	05 11 04.2	+0.2
JOM				S	Sn	05 11 35.1	-0.4
JMM	Marumori	2.93	260	P	Pn	05 11 06.8	-0.7
JMM				S	Sn	05 11 39.7	-2.0
JOU	Okura	2.97	270	P	Pn	05 11 08.2	+0.1
JOU				S	Sn	05 11 42.4	-0.4
JANG	Nango	3.00	312	P	Pn	05 11 09.1	+0.7
JANG				eS	Sn	05 11 42.0	-1.4
JRG	Rokugo	3.13	289	P	Pn	05 11 11.1	+0.8
JRG				S	Sn	05 11 47.0	+0.3
JYK	Kaneyama	3.24	280	P	Pn	05 11 12.2	+0.5
JYK				S	Sn	05 11 49.3	0.0
JFT	Otama	3.37	256	P	Pn	05 11 13.8	+0.3
JFT				S	Sn	05 11 51.5	-1.1
JTM	Tenmabayashi	3.52	313	P	Pn	05 11 15.8	+0.1
JTM				S	Sn	05 11 55.0	-1.4
MJAR	Matsushiro Arr	5.30	251	Pn	Pn	05 11 41.1	+1.0
	2.7nm,0.3s,baz=58,slow=9.1,SNR=17						
MAT	Matsushiro	5.30	251	P	Pn	05 11 40.8	+0.7
MAT				eS	Sn	05 12 38.0	-2.2
JOW	Kunigami	17.83	234	P	P	05 14 33.6	+4.3
	2.0nm,0.3s,baz=124,slow=24,SNR=6.1						
SEY	Seymchan	25.02	9	P	P	05 15 43.4	-0.6
	1.5nm,0.6s,baz=200,slow=5.6,SNR=6.0						
ZALV	Zalesovo Beam	42.79	311	P	P	05 18 17.2	-0.5
	0.5nm,0.3s,baz=95,slow=4.9,SNR=2.8						
MKAR	Makanchi Array	45.44	301	P	P	05 18 39.9	+0.8
	0.5nm,0.8s,baz=98,slow=6.1,SNR=4.2						
ILAR	Eielson Array	47.04	33	P	P	05 18 51.1	-0.2
	0.1nm,0.6s,baz=272,slow=7.7,SNR=3.6						
KURBB	Kurchatov Arra	47.06	307	P	P	05 18 52.0	+0.4
	0.9nm,0.6s,baz=80,slow=8.0,SNR=5.1						
WRA	Warramunga Arr	58.82	191	P	P	05 20 16.8	-1.9
	0.8nm,1.0s,baz=14,slow=7.1,SNR=3.0						
FINES	FINESS Array B	68.70	333	P	P	05 21 23.6	+0.3
	0.3nm,0.3s,baz=351,slow=37,SNR=2.6						

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*NIED **01** 05:16:00, 38°.50N×141°.70E, h68km, Mw3.8 Best double couple: M₀5.45000×10¹⁴ NP1:φs257.00000°, δ22.00000°, λ120.00000°. NP2:φs46.00000°, δ71.00000°, λ78.00000°.*
*ISCJB **01** 05:16:37.8±0.8, 38°.51N±0°.05×141°.76E±0°.09, h60km±5km, mb3.6/8, MS4.1/1, Error ellipse: s-maj=12.9km s-min=6.5km az=20.2*
*JMA **01** 05:16:38.8±0.1, 38°.54N×141°.71E, h55km±1km, M3.8*
JMA Felt I J1.
*IDC **01** 05:16:43.4±3.0, 38°.46N×141°.57E, h96km±27km, mb3.3/8, mb1 3.4/10, mb1mx3.2/44, mbtmp3.6/10, MS4.1/1, Ms1 4.1/1, ms1mx2.3/30, Error ellipse: s-maj=25.0km s-min=16.8km az=85.0*
ISC 01 05:16:38.8±1.2, 38°.53N±0°.05×141°.75E±0°.09, h51km±9km, n21, σ0s.84/27, mb3.6/8, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
JIO	Ouri	0.32	256	P	Pn	05 16 48.4	+0.2
JIO				eS	Sn	05 16 54.8	-0.1
OFUJ	Ofunato	0.55	354	P	Pn	05 16 50.9	+0.2
JMK	Ichinoseki	0.58	316	P	Pn	05 16 51.4	+0.3
JMK				S	Sn	05 17 00.1	+0.1
JOU	Okura	0.86	259	P	Pn	05 16 54.6	-0.1
JOU				S	Sn	05 17 06.3	-0.1
JOM	Ohasama	1.00	340	P	Pn	05 16 56.7	+0.1
JOM				S	Sn	05 17 09.7	0.0
JMM	Marumori	1.00	229	P	Pn	05 16 56.0	-0.5
JMM				eS	Sn	05 17 08.9	-0.8
JYK	Kaneyama	1.15	290	P	Pn	05 16 58.6	+0.1
JRG	Rokugo	1.22	315	P	Pn	05 16 59.6	+0.1
JRG				eS	Sn	05 17 15.5	+0.6
JYS	Shirataka	1.36	257	P	Pn	05 17 01.5	+0.2
JYS				eS	Sn	05 17 18.7	+0.5
MAT	Matsushiro	3.44	236	P	Pn	05 17 31.3	+1.4
MAT				eS	Sn	05 18 09.8	+0.3
MJAR	Matsushiro Arr	3.44	236	P	Pn	05 17 32.4	+2.4
	2.0nm,0.3s,baz=38,slow=12,SNR=16						
USRK	Ussuriysk Ar.	9.26	311	P	Pn	05 18 53.7	+4.1
	0.3nm,0.3s,baz=121,slow=14,SNR=3.6						
SIJI	Sorong	40.38	196	LR	LR	05 38 48.6	
	comp=Z,258nm,19.7s,slow=33						
ZALV	Zalesovo Beam	41.11	311	P	P	05 24 16.8	-0.7
	0.6nm,0.4s,baz=65,slow=7.0,SNR=3.4						
MKAR	Makanchi Array	43.56	301	P	P	05 24 37.1	-0.4
	1.1nm,0.8s,baz=85,slow=8.7,SNR=9.0						
KURBB	Kurchatov Arra	45.30	307	P	P	05 24 50.6	-0.7
	2.1nm,0.5s,baz=80,slow=8.0,SNR=21						
ILAR	Eielson Array	48.09	33	P	P	05 25 14.8	+1.9
	0.1nm,0.6s,baz=262,slow=3.4,SNR=2.8						
WRA	Warramunga Arr	58.58	188	P	P	05 26 29.0	-1.3
	0.7nm,0.6s,baz=6.8,slow=7.2,SNR=3.3						
ASAR	Alice Springs	62.31	188	P	P	05 26 55.4	-0.4
	0.3nm,0.7s,baz=8.5,slow=7.5,SNR=3.1						

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
YKA	Yellowknife Ar	62.38	31	P	P	05 26 55.5	-0.3
	0.1nm,0.6s,baz=300,slow=6.5,SNR=3.2						
AKASG	Malin Array Be	73.27	322	P	P	05 28 04.0	-0.5
	0.4nm,0.4s,baz=38,slow=4.5,SNR=4.0						

JMA 01 05:27:46.0±0.3, 37°.47N×142°.61E, h0km, M3.7, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
JIO	Ouri	1.40	315	P	Pn	05 28 12.5	-0.3
JIO				S	Sg	05 28 31.1	+0.1
ONAJ	Iwakimizuishiy	1.49	256	P	Pn	05 28 13.7	-0.4
JMM	Marumori	1.50	286	P	Pn	05 28 13.5	-0.6
JMM				S	Sn	05 28 34.3	0.0
JOU	Okura	1.78	301	P	Pn	05 28 18.5	+0.5
JOU				S	Sn	05 28 41.7	+0.3
JFT	Otama	1.81	272	P	Pb	05 28 19.7	-0.3
JFT				eS	Sg	05 28 44.1	0.0

*ISCJB **01** 05:34:05.7±1.7, 36°.96N±0°.05×141°.63E±0°.10, h22km±9km, mb3.5/6, Error ellipse: s-maj=13.5km s-min=8.8km az=13.0*
*IDC **01** 05:34:06.2±1.3, 36°.74N×141°.00E, h0km, mb3.5/6, mb1 3.6/6, mb1mx3.4/64, mbtmp3.5/6, Error ellipse: s-maj=36.2km s-min=27.6km az=70.0*
*JMA **01** 05:34:07.5±0.2, 36°.93N×141°.49E, h48km±2km, M3.5*
ISC 01 05:34:05.6±2.2, 36°.99N±0°.07×141°.61E±0°.09, h11km±12km, n12, σ1s.07/17, mb3.5/6, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
ONAJ	Iwakimizuishiy	0.66	280	P	Pg	05 34 19.5	+1.1
ONAJ				S	Sg	05 34 28.0	+0.9
JHO	Hitachi	0.92	246	P	Pg	05 34 22.5	-0.8
JHO				S	Sg	05 34 33.4	-1.8
JMM	Marumori	1.09	324	P	Pn	05 34 26.4	-0.5
JMM				S	Sb	05 34 39.8	-1.0
JFT	Otama	1.15	298	P	Pn	05 34 27.8	+0.2
JFT				S	Sb	05 34 41.9	-0.5
JIO	Ouri	1.48	352	P	Pn	05 34 32.2	0.0
JIO				S	Sn	05 34 49.4	-2.2
JFY	Yanaizu	1.58	286	P	Pn	05 34 34.3	+0.7
JFY				S	Sn	05 34 53.4	-0.6
SONM	Songino Array	27.94	304	P	P	05 39 56.9	+0.8
	0.6nm,0.7s,baz=103,slow=9.1,SNR=3.1						
ZALV	Zalesovo Beam	42.06	312	P	P	05 41 57.2	0.0
	0.3nm,0.3s,baz=45,slow=1.0,SNR=2.3						
MKAR	Makanchi Array	44.28	302	P	P	05 42 15.3	+0.1
	0.5nm,0.6s,baz=88,slow=11,SNR=5.2						
ILAR	Eielson Array	49.45	32	P	P	05 43 01.4	+6.0
	0.3nm,0.8s,baz=238,slow=5.2,SNR=3.6						
WRA	Warramunga Arr	57.03	188	P	P	05 43 51.6	0.0
	0.7nm,0.3s,baz=0.6,slow=16,SNR=3.3						
AKASG	Malin Array Be	74.43	322	P	P	05 45 44.7	+1.1
	0.3nm,0.3s,baz=56,slow=8.2,SNR=4.4						

*IDC **01** 05:34:37.2±0.7, 38°.00N×143°.89E, h0km, mb3.7/12, mb1 4.0/13, mb1mx3.8/63, mbtmp3.7/13, ML2.5/1, MS3.0/3, Ms1 3.0/3, ms1mx2.5/56, Error ellipse: s-maj=21.5km s-min=19.4km az=119.0*
*ISCJB **01** 05:34:40.4±0.7, 38°.0N±0°.1×143°.8E±0°.1, h33km, mb3.7/12, Error ellipse: s-maj=17.5km s-min=15.0km az=15.3*
ISC 01 05:34:42.6±0.9, 38°.0N±0°.2×143°.8E±0°.1, h35km, n22, σ0s.80/13, mb3.7/12, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
MJAR	Matsushiro Arr	4.70	253	LR	LR	05 38 06.6	
	comp=Z,156nm,18.1s,baz=70,slow=44						
USRK	Ussuriysk Ar.	10.83	308	Pn	Pn	05 37 14.1	-0.9
	0.3nm,0.3s,baz=90,slow=13,SNR=4.6						
JNU	Nakatsue	11.60	249	LR	LR	05 42 36.5	
	comp=Z,65nm,18.4s,baz=115,slow=41						
KSRS	Korea Array	12.59	272	LR	LR	05 42 05.8	
	comp=Z,65nm,19.4s,baz=67,slow=35						
H11N2	WAKE ISLAND Hy	27.11	126	T	T	06 09 12.1	
	baz=313,slow=76,SNR=19						
H11N1	WAKE ISLAND Hy	27.12	126	T	T	06 09 25.2	
	baz=313,slow=76,SNR=21						
H11N3	WAKE ISLAND Hy	27.13	126	T	T	06 09 13.1	
	baz=313,slow=76,SNR=20						
H11S1	WAKE ISLAND Hy	27.89	128	T	T	06 10 20.4	
	baz=315,slow=76,SNR=8.6						
H11S3	WAKE ISLAND Hy	27.89	128	T	T	06 10 05.1	
	baz=315,slow=76,SNR=8.8						
H11S2	WAKE ISLAND Hy	27.91	128	T	T	06 10 05.7	
	baz=315,slow=76,SNR=8.9						
SONM	Songino Array	28.84	302	P	P	05 40 38.0	+0.5
	0.8nm,0.6s,baz=107,slow=8.3,SNR=5.2						
ZALV	Zalesovo Beam	42.66	312	P	P	05 42 37.0	+1.5
	1.3nm,0.6s,baz=93,slow=7.6,SNR=5.1						
MKAR	Makanchi Array	45.20	302	P	P	05 42 55.9	-0.1
	1.7nm,0.7s,baz=85,slow=9.4,SNR=4.2						
ILAR	Eielson Array	47.63	33	P	P	05 43 14.7	-0.2
	0.4nm,0.8s,baz=269,slow=6.0,SNR=5.2						
INK	Inuvik	52.63	28	P	P	05 43 52.3	-0.2
	0.6nm,0.6s,baz=331,slow=4.4,SNR=6.8						
WRA	Warramunga Arr	58.35	190	P	P	05 44 33.5	-0.8
	3.6nm,0.7s,baz=12,slow=7.3,SNR=12						
YKA	Yellowknife Ar	61.98	31	P	P	05 44 58.0	-0.7
	0.5nm,0.7s,baz=304,slow=6.7,SNR=9.5						
ASAR	Alice Springs	62.07	190	P	P	05 45 00.1	+0.4
	0.8nm,0.7s,baz=11,slow=7.9,SNR=6.9						
NVAR	Mina Array Bea	72.87	54	P	P	05 46 09.5	+1.3
	0.4nm,0.6s,baz=274,slow=5.7,SNR=4.4						
AKASG	Malin Array Be	74.65	323	P	P	05 46 18.4	+0.3
	0.2nm,0.4s,baz=46,slow=5.8,SNR=3.1						
PDAR	Pinedale Array	75.61	47	P	P	05 46 24.1	0.0
	0.4nm,0.6s,baz=83,slow=0.3,SNR=4.6						
TXAR	Lajitas Array	88.01	54	P	P	05 47 28.9	-0.5
	0.1nm,0.7s,baz=343,slow=2.8,SNR=2.6						

*IDC **01** 05:38:02.8±0.8, 39°.45S×75°.10W, h0km, mb3.9/9, mb1 4.2/11, mb1mx4.0/30, mbtmp3.9/11, ML3.9/2, MS3.5/5, Ms1 3.5/5, ms1mx3.3/17, Error ellipse: s-maj=23.1km s-min=22.3km az=74.0*
*ISCJB **01** 05:38:06.1±0.4, 39°.58S±0°.05×74°.95W±0°.06, h33km, mb4.4/20, MS3.4/3, Error ellipse: s-maj=7.4km s-min=5.8km az=38.3*
*GUC **01** 05:38:06.4±0.3, 39°.21S×71°.76W, h18km±2km, ML3.9*
*NEIC **01** 05:38:06.3±3.7, 39°.58S×75°.09W, h23km±26km, mb4.6/12, Error ellipse: s-maj=14.7km s-min=8.5km az=91.0*
NEIC Felt at Osorno and Valdivia.
ISC 01 05:38:07.7±0.5, 39°.55S±0°.06×74°.97W±0°.08, h35km, n52, σ1s.00/54, mb4.5/20, MS3.5/3, Off coast of central Chile

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
VLCH	Valdivia	1.35	102	i P	Pn	05 38 29.3	-0.7
VLCH				i S	Sn	05 38 46.5	-0.3
VLCH				AML	AML	05 38 51.6	
	comp=N,4μm,0.1s						
PSCH	Puerto Saavedr	1.43	59	i P	Pn	05 38 29.7	-1.4
PSCH				i S	Sn	05 38 47.6	-1.1
PSCH				AML	AML	05 39 02.2	
	comp=N,4μm,0.4s						
CCSP	San Pedro de C	3.07	29	i S	Sn	05 39 21.6	-7.5
HUNY	Huinay	3.43	146	i P	Pn	05 38 57.5	-1.0
HUNY				i S	Sn	05 39 36.6	-1.3
HUNY				AML	AML	05 39 45.4	
	comp=E,274nm,0.4s						
PLCA	Paso Flores	3.59	111	Pn	Pn	05 39 01.1	+0.2
	comp=E,2.0nm,0.3s,baz=323,slow=10,SNR=73						
PLCA				Sn	Sn	05 39 48.5	+6.5
	comp=E,8.6nm,0.3s,baz=232,slow=21,SNR=9.2						
PLCA				LR	LR	05 40 36.1	
	comp=E,620nm,21.7s,baz=347,slow=41						
PLCA	Paso Flores	3.59	111	ePn	Pn	05 39 01.6	+0.8
PLCA				Sn	Sn	05 39 48.5	+6.5
TRQA	Tornquist	10.25	86	ePn	Pn	05 40 34.2	+2.0
USHA	Ushuaia	15.91	166	Pn	Pn	05 41 46.5	-2.2
	comp=E,4.2nm,0.3s,baz=160,slow=6.8,SNR=2.3						
PB01	IPOC Station P	19.03	16	eP	Pn	05 42 27.5	-0.2
	comp=E,20nm,1.4s						
CPUP	Villa Florida	19.77	53	P	P	05 42 34.5	-0.2
	comp=E,0.1nm,0.3s,baz=232,slow=9.5,SNR=8.8						
CPUP				LR	LR	05 51 04.2	
	comp=E,231nm,19.1s,baz=229,slow=40						
CPUP	Villa Florida	19.77	53	eP	P	05 42 35.0	+0.3
LPAZ	La Paz	23.93	16	P	P	05 43 18.1	-1.1
	comp=E,1.5nm,0.8s,baz=182,slow=5.3,SNR=6.5						
LPAZ	La Paz	23.93	16	eP	P	05 43 21.6	+2.4
	comp=E,6.6nm,0.9s						
SIV	San Ignacio	26.42	31	P	P	05 43 42.4	+1.2
	comp=E,2.2nm,0.8s,baz=225,slow=9.8,SNR=5.9						
SIV				LR	LR	05 54 52.2	
	comp=E,54nm,20.0s,baz=271,slow=38						
BDFB	Brasilia	33.49	52	P	P	05 44 44.0	+0.1
	comp=E,2.7nm,0.8s,baz=279,slow=7.4,SNR=3.8						
BDFB				LR	LR	05 58 12.8	
	comp=E,89nm,18.6s,baz=220,slow=36						
SNAA	Sanae	47.42	156	eP	P	05 46 39.7	+1.4
	comp=E,1μm,1.5s						
QSPA	South Pole Qui	50.70	180	eP	P	05 47 04.3	+0.8
VNDA	Vanda	58.20	192	P	P	05 47 58.8	+1.2
	comp=E,0.9nm,0.8s,baz=2.0,slow=5.3,SNR=8.6						
TXAR	Lajitas Array	73.55	334	P	P	05 49 36.9	-0.1
	comp=E,0.9nm,0.6s,baz=157,slow=8.8,SNR=19						
TX31	Lajitas Ar. Si	73.55	334	eP	P	05 49 36.9	-0.1
SRIG	Santa Rosalia	75.05	326	eP	P	05 49 46.1	+0.5
	comp=E,14nm,0.8s						
DBIC	Dimbokro	79.16	72	LR	LR	06 22 02.9	
	comp=E,23nm,19.1s,baz=122,slow=33						
ANMO	Albuquerque	79.63	334	eP	P	05 50 11.9	+0.6
	comp=E,4.7nm,1.0s						
T25A	Trinidad	80.98	337	eP	P	05 50 18.6	0.0
	comp=E,5.0nm,0.9s						
SADO	Sadowa	84.02	357	P	P	05 50 32.6	-1.3
	comp=E,5.0nm,1.1s,baz=301,slow=2.1,SNR=3.3						
ECSD	EROS Data Cent	85.18	344	eP	P	05 50 39.2	-0.6
	comp=E,16nm,1.5s						
PSUT	Pine Spring	85.49	330	eP	P	05 50 43.2	+1.3
	comp=E,2.6nm,1.0s						
MPU	Maple Canyon	85.98	333	eP	P	05 50 45.4	+1.2
	comp=E,6.3nm,1.2s						
JLU	Jordanelle	86.43	333	eP	P	05 50 46.6	+0.1
	comp=E,11nm,1.9s						
DUG	Dugway, Tooele	86.56	332	eP	P	05 50 47.4	+0.4
	comp=E,14nm,1.8s						
NVAR	Mina Array Bea	87.18	327	P	P	05 50 50.8	+0.6
	comp=E,0.4nm,0.8s,baz=133,slow=6.3,SNR=3.1						
HWUT	Hardware Ranch	87.36	333	eP	P	05 50 51.5	+0.6
	comp=E,4.6nm,0.9s						
BW06	Boulder Array	87.72	335	eP	P	05 50 52.4	-0.3
PDAR	Pinedale Array	87.72	335	P	P	05 50 52.9	+0.2
	comp=E,0.8nm,0.8s,baz=158,slow=4.8,SNR=5.9						
HVU	Hansel Valley	87.94	333	eP	P	05 50 53.7	+0.1
	comp=E,3.6nm,1.0s						
TORD	Torodi Ar. Bea	88.26	71	P	P	05 50 56.8	+1.2
	comp=E,0.4nm,0.8s,baz=251,slow=4.4,SNR=2.7						
RND	Reindeer	118.02	331	ePKPdf	PKPdf	05 56 51.4	+1.7
CCB	Clear Creek Bu	118.30	332	ePKPdf	PKPdf	05 56 51.4	+1.3
GEYT	Alibeck	143.69	77	PKP	PKPbc	05 57 36.8	+0.5
	comp=E,3.3nm,0.4s,baz=355,slow=3.4,SNR=4.0						
MA2	Magadan	145.14	320	PKPbc	PKPbc	05 57 39.5	-0.5
	comp=E,1.9nm,0.4s,baz=138,slow=4.1,SNR=4.0						
ARU	Arti	145.40	45	PKPbc	PKPab	05 57 41.6	+0.4
	comp=E,1.2nm,0.3s,baz=265,slow=6.6,SNR=5.2						
AKTO	Aktyubinsk	145.55	56	PKPbc	PKPbc	05 57 41.8	+0.1
	comp=E,0.7nm,0.3s,baz=305,slow=1.0,SNR=4.3						
TIXI	Tiksi	145.64	347	ePKPdf	PKPdf	05 57 39.9	-1.1
ABKAR	Akbulak array	146.80	58	ePKPdf	PKPbc	05 57 45.2	-0.3
NRIK	Noril'sk	148.72	12	PKPbc	PKPbc	05 57 49.8	-0.2
	comp=E,1.2nm,0.3s,baz=324,slow=5.1,SNR=2.7						
ZRNK	Zerenda	152.04	49	ePKPbc	PKPbc	05 57 58.6	+0.1
BVAR	Borovoye Array	152.83	49	PKPbc	PKPbc	05 58 01.0	+0.7
	comp=E,1.0nm,0.6s,baz=311,slow=3.2,SNR=7.2						
KURBB	Kurchatov Arra	158.38	50	PKP	PKPdf	05 57 59.5	-1.0
	comp=E,0.3nm,0.3s,baz=291,slow=1.5,SNR=3.4						
KURBB				PKPab	PKPab	05 58 35.2	0.0
	comp=E,0.3nm,0.3s,baz=284,slow=4.0,SNR=4.2						
KURK	Kurchatov	158.40	50	PKP	PKPdf	05 57 59.5	-1.0
KURK				PKPab	PKPab	05 58 35.2	-0.1
WMQ	Urumqi	166.36	66	ePKP	PKPdf	05 58 07.4	-1.4
CD2	Chengdu	171.32	173	PKP	PKPdf	05 58 11.8	-0.6
HHC	Hu-ho-hao-te	174.83	287	ePKP	PKPdf	05 58 12.0	-1.5

*CSEM **01** 05:41:26.2, 34°.10N×25°.31E, h14km, ML3.1/6*
*ATH **01** 05:41:26.2, 34°.10N×25°.31E, h14km±2km, ML3.1/4, Error ellipse: s-maj=3.4km s-min=1.5km az=4.0*
*IDC **01** 05:41:27.6±1.0, 34°.18N×25°.27E, h0km, mb3.7/6, mb1 3.7/12, mb1mx3.5/55, mbtmp3.6/12, ML3.7/5, Error ellipse: s-maj=17.2km s-min=12.9km az=64.0*
ISC 01 05:41:28.2±2.1, 34°.21N±0°.10×25°.28E±0°.04, h12km±11km, n28, σ1s.27/34, mb3.8/6, Crete

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
SIVA	Sivas	0.90	334	P	Pn	05 41 45.7	-1.0
SIVA				S	Sb	05 41 58.1	+0.4
SIVA	Sivas	0.90	334	P	Pn	05 41 45.7	-1.0
SIVA				S	Sb	05 41 58.1	+0.4
LAST	Lasithi	0.97	10	P	Pb	05 41 46.3	-0.7
LAST				S	Sg	05 42 00.8	+1.3
LAST	Lasithi	0.97	10	P	Pb	05 41 46.3	-0.7
NPS	Neapolis	1.09	14	P	Pb	05 41 48.7	-0.3
NPS				S	Sg	05 42 04.9	+1.5
NPS	Neapolis	1.09	14	P	Pb	05 41 48.7	-0.3
NPS				S	Sg	05 42 04.9	+1.5
NPS				AML	AML	05 42 07.8	
	comp=N,1045μm,0.7s						
NPS				AML	AML	05 42 08.9	
	comp=E,1154μm,0.6s						
IDI	Anoyia	1.13	343	Pg	Pn	05 41 49.1	-0.7
	comp=E,6.9nm,0.3s,baz=153,slow=16,SNR=32						
IDI				Lg	Lg	05 42 06.0	
	comp=E,74nm,0.3s,baz=214,slow=14,SNR=28						
IDI				LR	LR	05 42 36.7	
	comp=E,57nm,20.2s,baz=206,slow=60						
IDI	Anoyia	1.13	343	P	Pn	05 41 47.8	-2.1
IDI	Anoyia	1.13	343	P	Pn	05 41 47.8	-2.1
GVD	Gavdhos	1.17	303	P	Pg	05 41 50.0	-0.8
GVD				S	Sg	05 42 08.3	+2.3
GVD	Gavdhos	1.17	303	P	Pg	05 41 50.0	-0.8
GVD				S	Sg	05 42 08.3	+2.3
GVD				AML	AML	05 42 09.9	
	comp=E,3234μm,0.5s						
GVD				AML	AML	05 42 12.2	
	comp=N,2968μm,0.4s						
ZKR	Zakros	1.19	40	P	Pg	05 41 50.1	-1.0
ZKR				S	Sg	05 42 07.9	+1.3
ZKR	Zakros	1.19	40	P	Pg	05 41 50.1	-1.0
ZKR				S	Sg	05 42 07.9	+1.3
ZKR				AML	AML	05 42 16.2	
	comp=N,1200μm,0.7s						
ZKR				AML	AML	05 42 17.7	
	comp=E,1189μm,0.5s						
VAM	Vamos	1.49	324	P	Pb	05 41 55.0	-0.9
VAM				S	Sg	05 42 17.4	+1.1
IMMV	Iera Moni Meta	1.65	320	P	Pb	05 41 57.0	-1.5
IMMV				S	Sg	05 42 22.2	+1.0
IMMV	Iera Moni Meta	1.65	320	P	Pb	05 41 57.0	-1.5
IMMV				S	Sg	05 42 22.2	+1.0
IMMV				AML	AML	05 42 27.3	
	comp=E,1016μm,0.5s						
IMMV				AML	AML	05 42 36.3	
	comp=N,882μm,0.7s						
MMAI	Mount Meron Ar	8.53	95	Pn	Pn	05 43 34.1	+2.6
	comp=N,1.3nm,0.3s,baz=267,slow=15,SNR=2.4						
BRTR	Keskin Array B	8.66	48	Pn	Pn	05 43 36.4	+3.0
	comp=N,0.1nm,0.3s,baz=216,slow=21,SNR=2.8						
EIL	Elat	9.38	116	Pn	Pn	05 43 43.5	+0.3
	comp=N,0.6nm,0.3s,baz=302,slow=9.0,SNR=6.3						
KBZ	Khabaz	16.65	50	Pn	P	05 45 24.2	+0.5
	comp=N,0.1nm,0.3s,baz=243,slow=8.3,SNR=4.5						
AKASG	Malin Array Be	16.74	9	Pn	P	05 45 23.9	-0.6
	comp=N,0.5nm,0.3s,baz=201,slow=11,SNR=4.8						
GERES	GERESS Array B	16.97	333	Pn	P	05 45 27.2	-0.1
	comp=N,0.1nm,0.3s,baz=149,slow=30,SNR=3.6						
ESDC	Sonseca Array	23.95	292	P	P	05 46 42.9	+0.6
	comp=N,0.2nm,0.3s,baz=74,slow=9.3,SNR=3.1						
MDT	Midelt	24.93	275	P	P	05 46 52.8	+1.4
	comp=N,1.0nm,0.9s,baz=177,slow=21,SNR=2.6						
TORD	Torodi Ar. Bea	29.96	231	P	P	05 47 37.8	+1.3
	comp=N,0.8nm,0.6s,baz=39,slow=9.2,SNR=7.1						
MKAR	Makanchi Array	44.22	56	P	P	05 49 38.6	+1.4
	comp=N,1.2nm,0.6s,baz=277,slow=6.7,SNR=16						
ZALV	Zalesovo Beam	45.60	45	P	P	05 49 49.2	+1.2
	comp=N,0.8nm,0.4s,baz=275,slow=10,SNR=2.6						
SONM	Songino Array	60.02	50	P	P	05 51 36.5	+1.7
	comp=N,0.5nm,0.5s,baz=281,slow=7.3,SNR=5.3						

MAN 01 05:42:21, 15°.87N×121°.04E, h33km, mb4.3, ML3.1, MS2.9, Luzon

JMA 01 05:49:26.4±0.1, 36°.25N×141°.10E, h47km±2km, M2.6, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
JHO	Hitachi	0.56	310	P	Pn	05 49 38.4	+0.2
JHO				S	Sn	05 49 46.2	-0.5
CHOJ	Chosi	0.58	200	P	Pn	05 49 38.2	-0.3
CHOJ				S	Sn	05 49 46.4	-0.7
ONAJ	Iwakimizuishiy	0.88	344	S	Sn	05 49 53.1	-1.3
MAT	Matsushiro	2.35	278	P	Pn	05 50 04.4	+1.8
MAT				S	Sn	05 50 33.6	+3.4

JMA 01 05:54:49.4±0.1, 36°.86N×141°.13E, h48km±1km, M2.6, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
ONAJ	Iwakimizuishiy	0.36	312	P	Pn	05 54 58.7	-0.3
ONAJ				S	Sn	05 55 05.5	-0.3
JHO	Hitachi	0.52	241	P	Pn	05 55 00.5	-0.2
JHO				S	Sn	05 55 08.4	-0.4
JFT	Otama	0.91	316	P	Pn	05 55 06.9	+1.0
JFT				S	Sn	05 55 19.0	+1.0
JMM	Marumori	1.04	345	P	Pn	05 55 07.6	0.0
JMM				S	Sn	05 55 20.6	-0.4

*ISCJB **01** 05:55:20.0±0.3, 20°.82S±0°.08×179°.29W±0°.06, h619km, mb4.5/78, Error ellipse: s-maj=11.9km s-min=4.8km az=151.1*
*IDC **01** 05:55:19.8±1.5, 20°.86S×179°.17W, h602km±16km, mb3.8/14, mb1 4.0/15, mb1mx3.6/37, mbtmp4.7/15, Error ellipse: s-maj=28.8km s-min=10.1km az=158.0*
*NEIC **01** 05:55:22.2±0.6, 20°.83S×179°.28W, h632km±7km, mb4.5/61, Error ellipse: s-maj=8.7km s-min=4.4km az=151.0*
ISC 01 05:55:20.8±0.5, 20°.8S±0°.1×179°.14W±0°.08, h619km, n103, σ1s.08/109, mb4.5/77, Fiji Islands region

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
MSVF	Nonsavu	4.04	319	eP	P	05 56 49.4	+1.3
AFI	Afiamalu	9.81	47	P	P	05 57 36.5	-1.8
	4.9nm,0.3s,baz=154,slow=18,SNR=4.8						
AFI				S	S	05 59 28.4	-2.8
	3.6nm,0.3s,baz=162,slow=7.5,SNR=3.0						
DZM	Mont Dzumac	13.48	262	P	P	05 58 16.2	+2.0
	1.7nm,0.3s,baz=88,slow=19,SNR=7.6						
OUZ	Omahuta	15.72	202	eP	P	05 58 35.0	+0.4
	44nm,1.6s						
MLZ	Mavora Lakes	26.66	200	eP	P	06 00 11.6	-0.8
	58nm,1.4s						
WHZ	Wether Hill Ro	27.18	200	eP	P	06 00 16.2	-0.7
	13nm,0.6s						
EIDS	Eidsvold	27.74	255	eP	P	06 00 21.8	-0.3
	10nm,0.9s						
ARMA	Armidale	27.98	244	eP	P	06 00 24.6	+0.3
	13nm,0.7s						
CTA	Charters Tower	32.40	265	P	P	06 01 02.2	+0.2
	31nm,0.4s,baz=91,slow=11,SNR=44						
CTAO	Charters Tower	32.40	265	eP	P	06 01 01.9	-0.1
	39nm,0.4s						
PMG	Port Moresby	34.37	284	P	P	06 01 19.1	+0.5
	33nm,0.7s,baz=77,slow=6.5,SNR=10						
PMG	Port Moresby	34.37	284	eP	P	06 01 19.1	+0.5
	189nm,0.8s						
COEN	Coen	36.54	275	eP	P	06 01 36.9	+0.4
	12nm,0.8s						
STKA	Stephens Creek	36.70	244	P	P	06 01 37.4	-0.1
	10.0nm,0.5s,baz=93,slow=9.6,SNR=33						
STKA	Stephens Creek	36.70	244	eP	P	06 01 37.5	-0.1
	4.1nm,1.1s						
BBOO	Buckleboo	41.46	244	eP	P	06 02 14.9	-0.7
	21nm,0.5s						
JAY	Jayapura	43.13	290	P	P	06 02 29.6	+0.7
	4.2nm,0.5s,baz=149,slow=23,SNR=19						
AS01	Alice Springs	43.37	257	eP	P	06 02 29.9	-0.7
AS31	Alice Springs	43.41	257	eP	P	06 02 30.5	-0.5
	9.0nm,0.6s						
ASAR	Alice Springs	43.41	257	P	P	06 02 30.5	-0.4
	26nm,0.5s,baz=91,slow=8.0,SNR=19						
ASAR				PcP	PcP	06 04 05.1	+0.1
	1.3nm,0.6s,baz=92,slow=2.8,SNR=4.1						
ASAR				ScP	ScP	06 07 01.1	+2.6
	1.9nm,0.7s,baz=105,slow=4.0,SNR=9.1						
ASAR				S	S	06 08 14.1	-1.9
	1.4nm,1.0s,baz=91,slow=15,SNR=7.1						
WB2	Warramunga Arr	43.49	263	eP	P	06 02 30.9	-0.8
	29nm,1.0s						
WRAB	Tennant Creek	43.49	263	eP	P	06 02 31.0	-0.6
	45nm,1.2s						
WRA	Warramunga Arr	43.50	263	P	P	06 02 30.8	-1.0
	17nm,0.5s,baz=97,slow=7.8,SNR=127						
WRA				ScP	ScP	06 07 00.9	+2.1
	0.8nm,0.4s,baz=90,slow=3.4,SNR=4.5						
MTN	Manton Dam	48.10	271	eP	P	06 03 06.2	-0.2
	115nm,1.6s						
FAKI	Fak Fak	50.53	284	eP	P	06 03 23.4	-0.9
	35nm,1.2s						
SOEI	Soe	55.44	272	eP	P	06 03 58.9	-0.3
	109nm,0.5s						
MBWA	Marble Bar	56.75	258	eP	P	06 04 07.2	-0.7
	21nm,0.8s						
NWAO	Narrogin (SRO)	57.28	244	eP	P	06 04 10.8	-0.5
	32nm,1.4s						
LUWI	Luwuk	59.94	281	eP	P	06 04 29.0	-0.4
	22nm,0.7s						
JAGI	Jajag, Banyuwa	65.31	270	eP	P	06 05 02.3	-1.6
	17nm,0.9s						
UGM	Wanagama	68.89	269	eP	P	06 05 24.9	-0.9
	708nm,1.8s						
TPUB	Ta-pu	73.25	304	eP	P	06 05 50.4	-0.5
	180nm,2.0s						
SDPT	Sand Point	77.50	11	eP	P	06 06 13.7	+0.1
	65nm,1.3s						
NJ2	Nanjing	79.25	310	eP	P	06 06 24.0	+0.5
NJ2				pmax	pmax		
	comp=Z,9.0nm,0.8s						
ARVC	Arvin	79.77	46	eP	P	06 06 27.7	+1.5
YBH	Yreka Blue Hor	81.19	39	eP	P	06 06 34.9	+1.4
	5.3nm,0.8s						
GSC	Goldstone, Bar	81.24	47	eP	P	06 06 34.9	+1.0
	3.7nm,1.1s						
WAKR	Walker	81.29	43	eP	P	06 06 35.4	+1.2
GLA	Glamis	81.43	50	eP	P	06 06 35.7	+0.9
	6.1nm,0.8s						
HUMO	Hull Mountain	81.59	38	eP	P	06 06 37.4	+2.0
	23nm,1.6s						
NV01	Mina Array Sit	81.98	44	eP	P	06 06 38.5	+0.8
NVAR	Mina Array Bea	81.98	44	P	P	06 06 38.6	+0.9
	4.2nm,0.8s,baz=225,slow=7.9,SNR=24						
NV11	Mina Array Sit	82.08	44	eP	P	06 06 39.3	+1.1
	4.1nm,0.9s						
LDFC	Landfair	82.30	48	eP	P	06 06 41.0	+1.7
	11nm,0.8s						
TPNV	Topopah Spring	82.52	46	eP	P	06 06 41.4	+1.0
	3.8nm,0.8s						
MOD	Modoc Plateau	82.73	40	eP	P	06 06 42.5	+1.1
	4.3nm,0.8s						
K05A	Summer Lake	82.87	39	eP	P	06 06 43.4	+1.3
	9.4nm,0.8s						
W13A	Hualapai Mount	83.16	49	eP	P	06 06 45.0	+1.3
	2.1nm,0.8s						
H04A	Detroit Lake	83.31	37	eP	P	06 06 44.8	+0.8
	47nm,1.8s						
PSI	Prapat	83.46	275	P	P	06 06 44.9	-0.6
	2.0nm,0.3s,baz=0.3,slow=14,SNR=2.4						
TUC	Tucson	84.01	52	eP	P	06 06 49.6	+1.8
	4.4nm,1.0s						
319A	Douglas	84.69	54	eP	P	06 06 52.9	+1.7
	9.8nm,1.0s						
KNB	Kanab	84.89	47	eP	P	06 06 53.0	+0.9
	16nm,1.8s						
U15A	North Rim	84.95	48	eP	P	06 06 54.2	+1.6
	5.7nm,0.6s						
BJI	Beijing	85.36	316	P	P	06 06 53.7	-0.3
BJI				pmax	pmax		
	comp=Z,5.0nm,0.6s						
TT01	Tatalina	85.40	10	eP	P	06 06 54.8	+1.1
PMR	Palmer	85.56	14	eP	P	06 06 54.6	+0.1

Code	Station Name	Δ°	AZ°	Op	ISC	Time	Res
	28nm,1.8s						
GYA	Guiyang	85.87	300	eP	P	06 06 58.0	+1.0
GYA				pP	pP	06 09 12.6	+4.0
GYA				sP	sP	06 10 15.2	+4.8
GYA				PP	PP	06 10 31.8	+2.9
GYA				SKS	SKSac	06 16 22.0	-2.9
GYA				S	S	06 16 38.8	-1.4
GYA				sS	sS	06 20 37.3	+2.7
GYA				pmax	pmax		
	comp=Z,10.0nm,1.0s						
BMRM	Bremner River	86.11	16	eP	P	06 06 57.9	+0.7
	24nm,1.4s						
SCM	Sheep Creek Mo	86.19	15	eP	P	06 06 57.7	+0.2
	21nm,0.6s						
MFID	Camas Ranch	86.31	41	eP	P	06 06 59.8	+1.2
	3.8nm,1.0s						
D08A	Wollman Farm,	86.56	36	eP	P	06 07 00.6	+1.1
	6.3nm,0.7s						
CAST	Castle Rocks	86.59	12	eP	P	06 06 58.2	-1.1
	13nm,1.8s						
TRF	Thorofare Moun	86.97	13	eP	P	06 07 01.1	-0.2
	5.4nm,0.7s						
B08A	Colville Reser	87.09	35	eP	P	06 07 02.6	+0.6
	4.8nm,0.8s						
RND	Reindeer	87.23	13	eP	P	06 07 02.7	+0.3
	8.1nm,1.0s						
HLID	Hailey	87.25	41	eP	P	06 07 04.6	+1.5
	3.7nm,1.1s						
MCK	McKinley	87.50	13	eP	P	06 07 04.2	+0.6
	12nm,1.4s						
SRU	San Rafael Swe	87.50	46	eP	P	06 07 05.5	+1.1
	5.6nm,0.7s						
MNTX	Cornudas Mount	87.80	55	eP	P	06 07 07.0	+1.2
	2.9nm,0.9s						
TX31	Lajitas Ar. Si	88.12	58	eP	P	06 07 08.8	+1.4
TXAR	Lajitas Array	88.12	58	P	P	06 07 08.7	+1.3
	2.9nm,0.8s,baz=218,slow=6.1,SNR=42						
MLY	Manley	88.30	12	eP	P	06 07 06.7	-0.6
	20nm,2.0s						
WRH	Wood River Hil	88.33	13	eP	P	06 07 07.4	0.0
	3.7nm,0.8s						
ANMO	Albuquerque	88.43	52	eP	P	06 07 09.6	+0.8
	11nm,2.0s						
HDA	Harding Lake	88.52	13	eP	P	06 07 08.1	-0.2
	24nm,2.0s						
DOT	Dot Lake	88.52	15	eP	P	06 07 08.6	+0.2
	35nm,1.5s						
KMI	Kunming	88.54	297	P	P	06 07 09.9	+0.3
KMI				pmax	pmax		
	comp=Z,14nm,1.1s						
CCB	Clear Creek Bu	88.54	13	eP	P	06 07 07.9	-0.5
	3.2nm,0.9s						
MDM	Murphy Dome	88.73	13	eP	P	06 07 08.9	-0.4
	13nm,1.7s						
HHC	Hu-ho-hao-te	88.80	315	eP	P	06 07 09.4	-0.9
HHC				pmax	pmax		
	comp=Z,21nm,1.4s						
HHC				pmax	pmax		
	comp=Z,74nm,5.0s						
ILAR	Eielson Array	88.85	13	P	P	06 07 09.5	-0.3
	0.8nm,0.5s,baz=213,slow=5.3,SNR=18						
ILB	Eielson Array	88.85	13	eP	P	06 07 09.2	-0.6
IL1	Eielson Array	88.85	13	eP	P	06 07 09.6	-0.2
CM01	Chiang Mai Arr	89.18	290	eP	P	06 07 13.6	+1.1
CMAR	Chiang Mai Arr	89.21	290	P	P	06 07 13.8	+1.2
	1.6nm,0.6s,baz=128,slow=3.0,SNR=11						
O20A	White River Ci	89.54	46	eP	P	06 07 14.9	+1.0
	31nm,2.0s						
YBMT	Yellow Bay	89.77	38	eP	P	06 07 13.7	-0.9
PLCA	Paso Flores	89.84	134	P	P	06 07 15.6	+0.4
	1.2nm,0.7s,baz=270,slow=3.4,SNR=5.4						
PLCA	Paso Flores	89.84	134	eP	P	06 07 15.1	-0.1
	49nm,1.9s						
BW06	Boulder Array	89.91	44	eP	P	06 07 16.7	+1.1
	8.4nm,1.7s						
PD31	Pinedale Array	89.91	44	eP	P	06 07 16.1	+0.4
PDAR	Pinedale Array	89.91	44	P	P	06 07 16.0	+0.4
	1.3nm,0.7s,baz=204,slow=3.6,SNR=16						
DAWY	Dawson	90.04	16	eP	P	06 07 15.9	+0.4
	17nm,1.9s						
CD2	Chengdu	90.06	303	P	P	06 07 15.5	-0.8
CD2				pmax	pmax		
	comp=Z,1.0nm,0.5s						
EGAK	Eagle	90.17	15	eP	P	06 07 16.3	+0.4
	14nm,1.8s						
YKA	Yellowknife Ar	97.23	25	P	Pdif	06 07 48.2	+0.2
	0.2nm,0.4s,baz=250,slow=5.1,SNR=5.3						
ARU	Arti	124.84	325	PKP	PKPdf	06 13 12.2	+1.0
	5.4nm,0.2s,baz=292,slow=18,SNR=3.8						
ARCES	ARCESS Array B	129.02	349	PKP	PKPdf	06 13 18.8	0.0
	2.4nm,0.9s,baz=354,slow=4.3,SNR=5.0						
AKASG	Malin Array Be	142.75	330	PKhKP	PKPpre	06 13 41.7	
	1.7nm,0.5s,baz=44,slow=4.6,SNR=9.9						
RGN	Rugen	145.00	347	ePKPdf	PKPdf	06 13 47.9	-0.5
BRTR	Keskin Array B	146.24	311	PKPbc	PKPbc	06 13 53.6	0.0
	0.7nm,0.6s,baz=119,slow=5.3,SNR=4.2						
BR231	Keskin MP Arra	146.80	312	ePKPbc	PKPbc	06 13 54.4	-0.7

*ROM **01** 06:00:25.3±0.5, 46.°08N×13.°91E, h8^{km}±2^{km}, Md2.5/6, Ml2.0/6, Error ellipse: s-maj=4.6km s-min=2.5km az=72.0*
*ISCJB **01** 06:00:26.7±0.4, 46.°05N±0.°02×13.°80E±0.°02, h14^{km}±4^{km}, Error ellipse: s-maj=3.3km s-min=2.3km az=32.6*
*LJU **01** 06:00:26.7, 46.°06N×13.°80E, h14^{km}, ML1.9*
*CSEM **01** 06:00:27.2±0.1, 46.°06N×13.°80E, h10^{km}, ML2.4/15, Error ellipse: s-maj=2.2km s-min=1.7km az=32.0*
*VIE **01** 06:00:27.4±0.6, 46.°05N×13.°81E, h11^{km}±8^{km}, mb1.5/4, ml2.0/6, Error ellipse: s-maj=3.5km s-min=2.1km az=23.0*
ISC 01 06:00:27.1±0.8**, 46.°06N**±0.°02×**13.°79E**±0.°02**, h12**^{km}±4^{km}**, n60, σ0^{s}75**/106**, 12C-16D, Austria**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
VOJS	Vojsko	0.07	110	⇑iPg	Pg	06 00 29.7	0.0
VOJS				i Sg	Sg	06 00 31.6	-0.1
	comp=Z,251nm,0.1s						
VOJS	Vojsko	0.07	110	⇑iPg	Pg	06 00 29.7	0.0
VOJS				i Sg	Sg	06 00 31.6	-0.1
	comp=Z,251nm,0.1s						
SABO	M.te Sabotino	0.15	240	Pg	Pg	06 00 30.7	0.0
SABO				Sg	Sg	06 00 33.3	+0.1
	comp=Z,498nm,0.4s						
SABO	M.te Sabotino	0.15	240	Pg	Pg	06 00 30.7	0.0
SABO				Sg	Sg	06 00 33.3	+0.1
	comp=Z,498nm,0.4s						
SABO	M.te Sabotino	0.15	240	⇓ePg	Pg	06 00 30.7	0.0
SABO				eSg	Sg	06 00 33.4	+0.1
DRE	Drenchia	0.15	320	ePg	Pg	06 00 30.7	-0.1
DRE				eSg	Sg	06 00 33.4	0.0
DRE	Drenchia	0.15	320	⇓ePg	Pg	06 00 30.7	-0.1
DRE				eSg	Sg	06 00 33.4	0.0
CADS	Cadrg	0.18	349	⇓iPg	Pg	06 00 30.9	-0.2
CADS				i Sg	Sg	06 00 33.7	-0.2
	comp=Z,84nm,0.1s						
CADS	Cadrg	0.18	349	⇓iPg	Pg	06 00 30.9	-0.2
CADS				i Sg	Sg	06 00 33.7	-0.2
	comp=Z,84nm,0.1s						
JAVS	Javornik	0.25	130	⇑iPg	Pg	06 00 32.3	-0.1
JAVS				eSg	Sg	06 00 36.6	+0.6
	comp=Z,130nm,0.1s						
JAVS	Javornik	0.25	130	⇑iPg	Pg	06 00 32.3	-0.1
JAVS				eSg	Sg	06 00 36.6	+0.6
	comp=Z,130nm,0.1s						
ROBS	Robic	0.27	314	⇓iPg	Pg	06 00 32.4	-0.3
ROBS				i Sg	Sg	06 00 36.8	+0.3
	comp=Z,14nm,0.1s						
ROBS	Robic	0.27	314	⇓iPg	Pg	06 00 32.4	-0.3
ROBS				i Sg	Sg	06 00 36.8	+0.3
	comp=Z,14nm,0.1s						
COLI	Coloredo	0.29	285	ePg	Pg	06 00 33.3	+0.2
COLI				eSg	Sb	06 00 38.4	-0.8
COLI	Coloredo	0.29	285	⇓ePg	Pg	06 00 33.3	+0.2
COLI				eSg	Sb	06 00 38.4	-0.8
GORS	Gorjuse	0.30	29	i Pg	Pg	06 00 33.0	-0.3
GORS				eSg	Sg	06 00 37.4	0.0
	comp=Z,28nm,0.1s						
GORS	Gorjuse	0.30	29	i Pg	Pg	06 00 33.0	-0.3
GORS				eSg	Sg	06 00 37.4	0.0
	comp=Z,28nm,0.1s						
CRNS	Crni Vrh	0.33	85	i Pg	Pg	06 00 33.5	-0.3
CRNS				eSg	Sg	06 00 38.5	+0.2
CRNS	Crni Vrh	0.33	85	i Pg	Pg	06 00 33.5	-0.3
CRNS				eSg	Sg	06 00 38.5	+0.2
TRI	Trieste	0.35	183	Pg	Pg	06 00 34.0	-0.1
TRI				Sg	Sg	06 00 39.3	+0.6
	comp=Z,121nm,0.2s						
TRI	Trieste	0.35	183	Pg	Pg	06 00 34.0	-0.1
TRI				Sg	Sg	06 00 39.3	+0.6
	comp=Z,121nm,0.2s						
TRI	Trieste	0.35	183	⇓ePg	Pg	06 00 33.9	-0.1
VINO	Villanova	0.41	300	eSg	Sb	06 00 41.4	-1.0
VINO	Villanova	0.41	300	⇓ePg	Pg	06 00 34.8	-0.4
VINO				eSg	Sb	06 00 41.4	-1.0
BAD	Bernadia	0.42	296	eSg	Sb	06 00 42.1	-0.7
BAD	Bernadia	0.42	296	⇓ePg	Pg	06 00 35.0	-0.4
BAD				eSg	Sb	06 00 42.1	-0.7
LSR	Lussari	0.46	337	⇓ePg	Pg	06 00 35.5	-0.6
PTCC	Patocco-Chiusa	0.46	319	Pg	Pg	06 00 35.4	-0.8
PTCC				Sg	Sb	06 00 43.0	-1.0
	comp=Z,37nm,0.5s						
BUA	Buia	0.49	290	ePg	Pg	06 00 36.2	-0.5
MOZS	Mozjanca	0.52	62	ePg	Pg	06 00 37.0	-0.2
	comp=Z,36nm,0.2s						
MOZS	Mozjanca	0.52	62	ePg	Pg	06 00 37.0	-0.2
	comp=Z,36nm,0.2s						
LJU	Ljubljana	0.52	91	ePg	Pg	06 00 35.8	-1.4
LJU				i Sg	Sb	06 00 45.2	-0.3
	comp=Z,87nm,0.2s						
ACOM	Acomizza, Ital	0.53	339	Pg	Pg	06 00 36.9	-0.6
ACOM				Sg	Sg	06 00 44.5	0.0
	comp=Z,54nm,0.4s						
ACOM	Acomizza, Ital	0.53	339	Pg	Pg	06 00 36.9	-0.6
ACOM				Sg	Sg	06 00 44.5	0.0
	comp=Z,54nm,0.4s						
ACOM	Acomizza, Ital	0.53	339	ePg	Pg	06 00 37.0	-0.6
SKDS	Skadanscina	0.53	163	i Pg	Pg	06 00 37.1	-0.4
SKDS				eSg	Sb	06 00 45.2	-0.8
SKDS	Skadanscina	0.53	163	i Pg	Pg	06 00 37.1	-0.4
SKDS				eSg	Sb	06 00 45.2	-0.8
MYKA	Terra Mystica	0.58	350	⇑ePg	Pg	06 00 38.1	-0.4
	comp=Z,0.4nm,0.1s						
MYKA				⇑eSg	Sb	06 00 47.1	-0.5
	comp=Z,11nm,0.3s						
MYKA	Terra Mystica	0.58	350	Pg	Pg	06 00 38.1	-0.4
	comp=Z,0.4nm,0.1s						
MYKA				Sg	Sb	06 00 47.1	-0.5
	comp=Z,11nm,0.3s						
MPRI	Monte Prat	0.59	289	eSg	Sb	06 00 47.9	+0.3
MPRI	Monte Prat	0.59	289	⇓ePg	Pg	06 00 38.6	0.0
MPRI				eSg	Sb	06 00 47.9	+0.3
VNDS	Vrh nad Dolski	0.64	86	i Pg	Pg	06 00 39.3	-0.2
	comp=Z,19nm,0.1s						
VNDS	Vrh nad Dolski	0.64	86	i Pg	Pg	06 00 39.3	-0.2
	comp=Z,19nm,0.1s						
OBKA	Obir	0.70	49	⇑ePg	Pb	06 00 41.4	+0.2
	comp=Z,1.2nm,0.1s						
OBKA				⇑iSg	Sb	06 00 51.2	+0.4
	comp=Z,5.5nm,0.1s						
OBKA	Obir	0.70	49	Pg	Pb	06 00 41.4	+0.2
	comp=Z,1.2nm,0.1s						
OBKA				Sg	Sb	06 00 51.2	+0.4
	comp=Z,5.5nm,0.1s						
CLUD	Cludinico	0.75	303	ePg	Pg	06 00 40.8	-0.7
CLUD				eSg	Sn	06 00 53.4	-1.3
CLUD	Cludinico	0.75	303	ePg	Pg	06 00 40.8	-0.7
ZOU	Zoufplan	0.76	312	⇑ePg	Pg	06 00 41.0	-0.7
ZOU				eSg	Sb	06 00 53.4	+0.8
STAL	STALIGIAL	0.78	286	Pg	Pg	06 00 41.6	-0.5
STAL				Sg	Sn	06 00 54.1	-1.4
	comp=Z,55nm,0.3s						
STAL	STALIGIAL	0.78	286	Pg	Pg	06 00 41.6	-0.5
STAL				Sg	Sn	06 00 54.1	-1.4
	comp=Z,55nm,0.3s						
CIMO	Cimolais	0.97	286	ePg	Pb	06 00 45.6	-0.2
CIMO	Cimolais	0.97	286	⇓ePg	Pb	06 00 45.6	-0.2
SOKA	Soboth	1.06	54	⇓iPg	Pg	06 00 47.5	-0.1
SOKA				⇓eSg	Sg	06 01 01.8	+0.4
	comp=Z,5.6nm,0.3s						
SOKA	Soboth	1.06	54	Pg	Pg	06 00 47.5	-0.1
SOKA				Sg	Sg	06 01 01.8	+0.4
	comp=Z,5.6nm,0.3s						
KBA	Koelnbreinsper	1.07	344	⇓ePg	Pn	06 00 48.1	+0.1
	comp=Z,1.0nm,0.1s						
KBA				⇑iSg	Sn	06 01 02.6	-0.3
	comp=Z,5.0nm,0.3s						
KBA	Koelnbreinsper	1.07	344	Pg	Pn	06 00 48.1	+0.1
	comp=Z,1.0nm,0.1s						
KBA				Sg	Sn	06 01 02.6	-0.3
	comp=Z,5.0nm,0.3s						
ABTA	Abfaltersbach	1.12	309	⇑iPg	Pg	06 00 50.5	+1.8
	comp=Z,2.7nm,0.1s						
ABTA				⇑iSg	Sn	06 01 07.7	+3.6
	comp=Z,8.2nm,0.2s						
ABTA	Abfaltersbach	1.12	309	Pg	Pg	06 00 50.5	+1.8
	comp=Z,2.7nm,0.1s						
ABTA				Sg	Sn	06 01 07.7	+3.6
	comp=Z,8.2nm,0.2s						
NVLJ	Novalja	1.68	152	i Pn	Pb	06 00 57.6	-0.2
NVLJ				Sg	Sg	06 01 21.4	+0.3
NVLJ	Novalja	1.68	152	i Pn	Pb	06 00 57.6	-0.2
NVLJ				Sg	Sg	06 01 21.3	+0.3

*NIED **01** 06:04:00, 34.°90N×142.°20E, h14^{km}, Mw4.9 Best double couple: M$_0$2.56000×10^{16} NP1:ϕ$_s$229.00000°, δ52.00000°, λ140.00000°. NP2:ϕ$_s$346.00000°, δ60.00000°, λ45.00000°.*
*JMA **01** 06:04:25.9±0.3, 34.°86N×142.°24E, h44^{km}, M4.4*
*ISCJB **01** 06:04:32.0±0.8, 34.°89N±0.°03×141.°60E±0.°03, h33^{km}±5^{km}, mb4.6/103, MS4.6/54, Error ellipse: s-maj=6.1km s-min=4.4km az=152.7*
*MOS **01** 06:04:31.7±1.2, 35.°02N×141.°58E, h30^{km}, mb5.0/38, MS4.5/13, Error ellipse: s-maj=9.3km s-min=5.2km az=122.2*
*IDC **01** 06:04:33.3±3.5, 34.°88N×141.°70E, h33^{km}±27^{km}, mb4.1/28, mb1 4.2/35, mb1mx4.1/56, mbtmp4.3/35, ML4.0/6, MS4.3/35, Ms1 4.3/35, ms1mx4.1/64, Error ellipse: s-maj=14.8km s-min=12.8km az=93.0*
*BJI **01** 06:04:33.0, 34.°95N×141.°32E, h31^{km}, mb4.7/54, mB4.9/49, Ms5.0/55, Ms7 4.8/52*
*NEIC **01** 06:04:34.0±1.8, 34.°92N×141.°57E, h34^{km}±13^{km}, mb4.8/40, Error ellipse: s-maj=6.3km s-min=5.1km az=142.0*
ISC 01 06:04:33.2±0.7**, 34.°93N**±0.°04×**141.°69E**±0.°04**, h32**^{km}±3^{km}**, n250, σ1^{s}77**/262**, mb4.6**/103**, MS4.6**/55**, 12C-4D, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BSO1	Boso 1	0.64	245	P	Pb	06 04 44.6	-1.1
BSO2	Boso 2	0.79	257	S	Sn	06 05 03.3	+5.0
BSO3	Boso 3	0.97	263	P	Pn	06 04 50.2	-0.2
BSO3				eS	Sb	06 05 07.3	+3.4
CHOJ	Chosi	1.02	319	P	Pn	06 04 49.8	-1.6
CHOJ				S	Sb	06 05 07.5	+1.9
BSO4	Boso 4	1.11	274	P	Pn	06 04 52.5	+0.1
BSO4				S	Sb	06 05 10.5	+2.7
KTR	Katsuura	1.15	281	S	Sb	06 05 12.0	+3.0
JCN	Nagara	1.31	292	P	Pn	06 04 55.9	+0.6
JCN				eS	Sb	06 05 15.6	+1.9
JIM2	Oshima 3	1.87	264	P	Pn	06 05 02.2	-0.8
JOD2	Odawara 2	2.15	280	P	Pn	06 05 06.0	-0.9
JAG	Ashikaga	2.35	310	P	Pn	06 05 09.4	-0.2
JHJ2	Mitsune	2.39	221	ePn	Pn	06 05 09.7	-0.4
JHJ	Hachijo jima 2	2.40	222	Pn	Pn	06 05 09.1	-1.1
	47nm,0.3s,baz=19,slow=23,SNR=20						
JHJ				Sn	Sn	06 05 33.8	-4.8
	111nm,0.3s,baz=214,slow=21,SNR=8.7						
JHJ				LR	LR	06 06 26.7	
	comp=Z,4μm,20.4s,baz=257,slow=48						
MJAR	Matsushiro Arr	3.25	301	Pn	Pn	06 05 22.4	+0.4
	14nm,0.3s,baz=107,slow=12,SNR=88						
MAJO	Matsushiro	3.25	301	c iP	Pn	06 05 22.7	+0.7
MAJO	Matsushiro	3.25	301	ePn	Pn	06 05 22.8	+0.7
MAT	Matsushiro	3.25	301	P	Pn	06 05 21.5	-0.6
MAT				S	Sb	06 06 07.2	-2.3
INU	Inuyama	3.85	278	ePn	Pn	06 05 30.5	+0.3
ERM	Erimo	7.17	9	eP	Pn	06 06 14.0	-1.7
ERM	Erimo	7.17	9	ePn	Pn	06 06 14.0	-1.7
CBIJ	Chichi jima	7.82	177	Pn	Pn	06 06 22.8	-2.0
CBIJ				Sn	Sn	06 07 38.1	-14
JCJ	Chichijima	7.82	177	Pn	Pn	06 06 22.8	-2.0
	11nm,0.3s,baz=62,slow=22,SNR=5.4						
JCJ				Sn	Sn	06 07 38.1	-14
	32nm,0.3s,baz=300,slow=20,SNR=6.5						
JNU	Nakatsue	9.15	262	Pn	Pn	06 06 45.0	+2.0
	1.7nm,0.3s,baz=355,slow=0.6,SNR=9.8						
JNU				LR	LR	06 10 31.1	
	comp=Z,1μm,20.0s,baz=64,slow=39						
JNU	Nakatsue	9.15	262	ePn	Pn	06 06 44.7	+1.7
KSRS	Korea Array	11.40	287	Pn	Pn	06 07 14.6	+0.8
	0.8nm,0.3s,baz=255,slow=31,SNR=4.9						
KSRS				LR	LR	06 12 11.4	
	comp=Z,2μm,18.2s,baz=84,slow=40						
KSAR	Wonju Array Be	11.43	287	P	Pn	06 07 14.6	+0.4
KSAR	Wonju Array Be	11.43	287	Pn	Pn	06 07 14.6	+0.4
USRK	Ussuriysk Ar.	11.89	324	Pn	Pn	06 07 21.0	+0.5
	0.7nm,0.3s,baz=139,slow=14,SNR=10						
USRK				LR	LR	06 12 21.1	
	comp=Z,2μm,18.4s,baz=128,slow=39						
YSS	Yuzh-Sakhalins	12.04	4	⇓eP	Pn	06 07 18.5	-4.0
YSS				pmax	pmax		
	comp=Z,30nm,0.9s						
YSS				MLR	MLR		
	comp=N,2μm,14.0s						
YSS				MLR	MLR		
	comp=Z,2μm,14.0s						
YSS				MLR	MLR		
	comp=E,2μm,13.0s						
HABR	Khabarovsk	14.40	342	eP	Pn	06 07 50.1	-4.6
HABR				eS	Sn	06 10 26.6	-6.6
HABR				pmax	pmax		
	comp=Z,128nm,1.6s						
HABR				pmax	pmax		
	comp=Z,48nm,1.5s						
HABR				pmax	pmax		
	comp=N,48nm,1.4s						
HABR				MLR	MLR		
	comp=Z,1μm,16.0s						
CN2	Changchun	15.35	310	eP	Pn	06 08 08.0	+0.6
SNY	Shenyang	15.77	301	⇑P	Pn	06 08 10.4	-2.4
SNY				pmax	pmax		
	comp=Z,15nm,0.8s						
SNY				pmax	pmax		
	comp=Z,360nm,12.0s						
SNY				LR	LR		
	comp=Z,2μm,19.0s						
SNY				LR	LR		
	comp=Z,1μm,18.4s						
SNY				LR	LR		
	comp=Z,3μm,15.0s						
TYV	Tymovskoe	15.94	2	eP	Pn	06 08 11.8	-3.2
TYV				pmax	pmax		
	comp=Z,15nm,0.8s						
TYV				MLR	MLR		
	comp=N,3μm,13.0s						
TYV				MLR	MLR		
	comp=Z,3μm,15.0s						
KLR	Kul'dur	16.06	336	Pn	Pn	06 08 15.4	-1.1
	comp=Z,0.4nm,0.3s,baz=129,slow=13,SNR=7.2						
KLR				LR	LR	06 14 43.2	
	comp=Z,919nm,18.0s,baz=138,slow=38						
SSE	Sheshan	17.61	263	P	Pn	06 08 34.9	-1.2
SSE				S	Sn	06 11 51.9	+0.6
SSE				pmax	pmax		
	comp=Z,30nm,0.8s						
SSE				pmax	pmax		
	comp=Z,300nm,10.8s						
SSE				LR	LR		
	comp=Z,5μm,18.4s						
SSE				LR	LR		
	comp=Z,1μm,18.4s						
SSE				LR	LR		
	comp=Z,3μm,15.3s						
NKL	Nikolayevsk	18.23	358	eP	Pn	06 08 37.0	-6.5
NKL				e		06 12 06.0	
NKL				pmax	pmax		
	comp=N,2μm,16.0s						
NKL				pmax	pmax		
	comp=E,500nm,16.0s						
NKL				pmax	pmax		
	comp=Z,2μm,16.0s						
NJ2	Nanjing	19.25	268	eP	P	06 08 54.4	-0.5
NJ2				S	Sn	06 12 27.8	-3.2
NJ2				pmax	pmax		
	comp=Z,28nm,0.6s						
NJ2				LR	LR		
	comp=Z,2μm,12.5s						
NJ2				LR	LR		
	comp=Z,3μm,16.3s						
NJ2				LR	LR		
	comp=Z,3μm,13.9s						
BJI	Beijing	20.84	292	P	P	06 09 10.7	-1.5
BJI				pP	pP	06 09 20.5	-0.3
BJI				sP	sP	06 09 25.8	+1.0
BJI				S	S	06 13 02.6	-0.4
BJI				pmax	pmax		
	comp=Z,13nm,1.3s						
BJI				pmax	pmax		
	comp=Z,220nm,3.7s						
BJI				LR	LR		
	comp=Z,2μm,15.6s						
BJI				LR	LR		
	comp=Z,900nm,18.6s						
BJI				LR	LR		
	comp=Z,930nm,16.9s						
PETK	Petropavlovsk-	21.43	27	LR	LR	06 20 49.9	
	comp=Z,210nm,18.1s,baz=209,slow=46						
HIA	Hailar	21.58	318	eP	P	06 09 18.8	-1.3
HIA				pmax	pmax		
	comp=Z,18nm,0.7s						
HIA	Hailar	21.58	318	eP	P	06 09 18.8	-1.3
	comp=Z,18nm,0.7s						
PET	Petropavlovsk	21.73	28	eP	P	06 09 25.7	+4.2
PET				eS	S	06 13 18.6	-1.5
PET				pmax	pmax		
	comp=Z,22nm,1.0s						
PET				pmax	pmax		
	comp=Z,100nm,12.0s						
PET				pmax	pmax		
	comp=Z,600nm,5.5s						
PET				MLR	MLR		
	comp=Z,500nm,16.0s						
PET				MLR	MLR		
	comp=Z,600nm,14.0s						
WHN	Wuhan	23.37	267	P	P	06 09 28.0	-11
WHN				S	S	06 13 44.7	-5.2
HHC	Hu-ho-hao-te	24.42	293	eP	P	06 09 48.6	-0.4
HHC				pP	pP	06 09 58.0	-0.2
HHC				S	S	06 14 01.8	-5.0
HHC				SS	SnSn	06 14 52.7	+0.8
HHC				pmax	pmax		
	comp=Z,22nm,1.4s						
HHC				pmax	pmax		
	comp=Z,150nm,3.6s						
HHC				LR	LR		
	comp=Z,1μm,16.2s						
HHC				LR	LR		
	comp=Z,1μm,14.9s						
HHC				LR	LR		
	comp=Z,1μm,14.9s						
CLNS	Chul'man	24.70	338	eP	P	06 09 52.1	+0.9
CLNS				pmax	pmax		
	comp=Z,24nm,1.0s						
CLNS				pmax	pmax		
	comp=N,33nm,1.4s						
CLNS				pmax	pmax		
	comp=E,12nm,1.0s						
MA2	Magadan	25.37	11	P	P	06 09 58.8	+1.6
	comp=E,3.6nm,0.2s,baz=203,slow=8.6,SNR=4.9						
H11N2	WAKE ISLAND Hy	26.93	118	T	T	06 38 15.6	
	baz=309,slow=75,SNR=7.7						
H11N1	WAKE ISLAND Hy	26.94	118	T	T	06 38 19.3	
	baz=309,slow=75,SNR=8.6						
H11N3	WAKE ISLAND Hy	26.95	118	T	T	06 38 25.3	
	baz=309,slow=75,SNR=8.7						
XAN	Xi'an	26.96	278	P	P	06 10 11.2	-0.7
XAN				pP	sP	06 10 24.2	-0.8
XAN				S	S	06 14 51.4	+4.3
XAN				pmax	pmax		
	comp=E,11nm,1.1s						
XAN				pmax	pmax		
	comp=E,120nm,6.7s						
XAN				LR	LR		
	comp=E,1μm,16.0s						
XAN				LR	LR		
	comp=E,1μm,15.5s						
XAN				LR	LR		
	comp=E,2μm,14.8s						
ENH	Enshi	27.45	269	eP	P	06 10 16.2	-0.1
	comp=E,11nm,0.8s						
H11S1	WAKE ISLAND Hy	27.58	120	T	T	06 39 07.1	
	baz=312,slow=75,SNR=9.2						
H11S3	WAKE ISLAND Hy	27.58	120	T	T	06 39 09.5	
	baz=312,slow=75,SNR=9.9						

H11S2 WAKE ISLAND Hy 27.59 120 T T 06 39 16.2
baz=312,slow=75,SNR=7.1
ULN Ulaanbaatar 28.76 307*c iP* **P 06 10 28.5 +0.5**
ULN pmax pmax
comp=Z,20nm,1.2s
ULN Ulaanbaatar 28.76 307 *eP* **P 06 10 28.8 +0.8**
comp=Z,16nm,1.1s
SEY Seymchan 28.81 10 P **P 06 10 29.0 +0.9**
comp=Z,0.8nm,0.4s,baz=199,slow=7.6,SNR=6.6
SEY Seymchan 28.81 10*c eP* **P 06 10 28.1 0.0**
SONA1 Songino Array 29.18 307 *eP* **P 06 10 32.1 +0.4**
SONM Songino Array 29.18 307 P **P 06 10 33.1 +1.3**
comp=Z,9.9nm,0.8s,baz=106,slow=8.4,SNR=44
SONM LR LR 06 22 22.4
comp=Z,558nm,20.1s,baz=100,slow=37
BOD Bodaibo 29.44 330 *eP* **P 06 10 33.4 -0.3**
BOD pmax pmax
comp=Z,27nm,1.3s
LZH Lanzhou 30.70 283 *eP* **P 06 10 45.9 +0.6**
LZH pP sP 06 10 56.9 -1.6
LZH sP pP 06 11 02.2 +7.6
LZH PP **PnPn** **06 11 49.4 +3.9**
LZH SS SS 06 17 22.6 -35
LZH pmax pmax
comp=Z,22nm,1.0s
LZH pmax pmax
comp=Z,99nm,4.3s
LZH LR LR
comp=Z,2µm,13.6s
LZH LR LR
comp=Z,2µm,14.1s
LZH LR LR
comp=Z,2µm,15.2s
GYA Guiyang 31.15 264⇓ *iP* **P 06 10 50.0 +0.7**
GYA pP sP 06 11 01.8 -0.7
GYA PP **PnPn** **06 11 53.2 +1.7**
GYA PcP **PcP** **06 13 45.0 +1.0**
GYA S **S** **06 15 50.6 -2.7**
GYA sS sS 06 16 11.2 +2.6
GYA ScP **ScP** **06 17 23.8 -0.7**
GYA SS **SnSn** **06 17 36.0 -0.4**
GYA ScS **ScS** **06 21 18.5 -3.5**
GYA pmax pmax
comp=Z,20nm,0.9s
GYA pmax pmax
comp=Z,120nm,5.4s
GYA LR LR
comp=Z,620nm,17.9s
GYA LR LR
comp=Z,550nm,18.2s
GYA LR LR
comp=Z,610nm,18.0s
DAV Davao City (W) 31.44 212 LR LR 06 24 05.6
comp=Z,332nm,18.4s,baz=350,slow=37
ZAK Zakamensk 31.78 311 *eP* **P 06 10 55.3 +0.7**
ZAK pmax pmax
comp=Z,9.0nm,1.2s
TLY Talaya 31.91 313 P **P 06 10 56.6 +1.0**
comp=Z,5.4nm,0.7s,baz=113,slow=6.4,SNR=14
TLY Talaya 31.91 313*c iP* **P 06 10 57.0 +1.4**
TLY *eS* **S** **06 16 10.8 +6.4**
TLY pmax pmax
comp=Z,21nm,1.3s
TLY MLR MLR
comp=Z,643nm,12.0s
TLY Talaya 31.91 313 *eP* **P 06 10 55.6 0.0**
comp=Z,11nm,0.9s
CD2 Chengdu 31.96 274 P **P 06 10 54.7 -1.6**
CD2 sP sP 06 11 12.2 +2.7
CD2 PcP **PcP** **06 13 45.0 -1.0**
CD2 S **S** **06 16 04.0 -1.7**
CD2 sS sS 06 16 22.9 +1.8
CD2 pmax pmax
comp=Z,30nm,0.5s
CD2 pmax pmax
comp=Z,150nm,7.3s
CD2 LR LR
comp=Z,3µm,15.0s
CD2 LR LR
comp=Z,4µm,15.6s
QIZ Qiongzhong 32.32 249 P **P 06 10 58.4 -1.1**
QIZ S **S** **06 16 11.3 -0.1**
QIZ LR LR
comp=Z,900nm,16.9s
QIZ LR LR
comp=Z,610nm,17.5s
GTA Gaotai 33.45 290 P **P 06 11 08.9 -0.4**
GTA pP pP 06 11 16.1 -2.5
GTA sP sP 06 11 19.3 -3.2
GTA S **S** **06 16 26.8 -2.0**
GTA sS sS 06 16 38.0 -6.2
GTA SS **SnSn** **06 18 27.6 -4.2**
GTA pmax pmax
comp=Z,5.0nm,1.1s
GTA pmax pmax
comp=Z,140nm,6.1s
GTA LR LR
comp=Z,940nm,20.0s
GTA LR LR
comp=Z,1µm,13.8s
GTA LR LR
comp=Z,2µm,14.7s
MOY Mondy 33.49 313 *eP* **P 06 11 10.3 +0.7**
KMI Kunming 34.92 264 P **P 06 11 22.3 -0.1**
KMI pP sP 06 11 35.2 -0.4
KMI sP pP 06 11 40.5 +8.8
KMI pmax pmax
comp=Z,15nm,0.9s
KMI pmax pmax
comp=Z,100nm,4.3s
BILL Bilibino 35.99 15⇑ *eP* **P 06 11 30.4 -0.3**
BILL *eS* **S** **06 17 10.0 +3.0**
BILL SSS SSS 06 19 52.0
BILL pmax pmax
comp=Z,6.0nm,1.4s
BILL MLR MLR
comp=Z,611nm,18.0s
TIXI Tiksi 37.40 353⇓ *eP* **P 06 11 42.1 -0.6**
TIXI pmax pmax
comp=Z,2.0nm,0.9s
KRAR Krasnoyarsk 39.15 318⇑ *eP* **P 06 11 55.7 -1.9**
KRAR pmax pmax
comp=Z,7.0nm,0.8s
CHAI Chaiyaphum 40.23 252 P **P 06 12 06.0 -1.0**
comp=Z,10nm,0.7s
UTTA Uttaradit 40.32 256 P **P 06 12 07.5 -0.3**
comp=Z,5.0nm,1.0s
LAMP Lampang 40.63 257 P **P 06 12 12.2 +1.8**
comp=Z,3.6nm,1.2s,comp=Z,183nm
PBKT Sadao Pong 40.64 254 P **P 06 12 09.7 -0.8**
comp=Z,21nm,1.2s,comp=Z,1µm
CMMT Chiang Mai 41.03 258 P **P 06 12 14.0 +0.3**
comp=Z,6.6nm,1.4s,comp=Z,610nm
CHTO Chiang Mai 41.03 258 P **P 06 12 14.0 +0.3**
comp=Z,38nm,1.1s
CHTO Chiang Mai 41.03 258 *eP* **P 06 12 13.0 -0.7**
CHTO pmax pmax
comp=Z,24nm,1.7s
CHTO Chiang Mai 41.03 258 *eP* **P 06 12 13.0 -0.7**
comp=Z,24nm,1.7s
SUKH Sukhothai 41.20 256 P **P 06 12 15.7 +0.7**
comp=Z,4.3nm,0.8s
CM31 Chiang Mai Arr 41.22 258 *eP* **P 06 12 14.9 -0.4**
CMAR Chiang Mai Arr 41.22 258 P **P 06 12 14.8 -0.4**
comp=Z,1.6nm,0.3s,baz=49,slow=7.5,SNR=9.8
CMAR LR LR 06 30 53.0
comp=Z,445nm,18.7s,baz=45,slow=38
CM01 Chiang Mai Arr 41.23 258 *eP* **P 06 12 15.8 +0.4**
WMQ Urumqi 42.02 299 P **P 06 12 23.0 +1.4**
WMQ pP sP 06 12 34.7 -0.2
WMQ sP pP 06 12 40.4 +9.3
WMQ PP **PP** **06 14 03.8 +4.8**
WMQ S **S** **06 18 39.8 +1.3**
WMQ pmax pmax
comp=Z,12nm,1.8s
WMQ pmax pmax
comp=Z,140nm,4.8s
WMQ LR LR
comp=Z,770nm,21.4s
WMQ LR LR
comp=Z,280nm,16.6s
WMQ LR LR
comp=Z,160nm,19.0s
SRDT SRDT 43.37 253 P **P 06 12 33.5 +0.7**
comp=Z,64nm,1.2s

ZAA0 Zalesovo Array 43.51 314 *eP* **P 06 12 31.1 -2.3**
ZALV Zalesovo Beam 43.51 314 P **P 06 12 33.6 +0.1**
comp=Z,6.3nm,0.7s,baz=97,slow=6.7,SNR=9.2
ZALV PcP **PcP** **06 14 20.7 -0.2**
comp=Z,1.3nm,0.6s,baz=99,slow=3.3,SNR=3.3
ZALV LR LR 06 30 12.7
comp=Z,213nm,19.0s,baz=70,slow=35
KHLT Khaolaem Dam 43.53 254 P **P 06 12 35.0 +0.9**
comp=Z,4.5nm,1.4s
NRIK Noril'sk 45.27 336 P **P 06 12 48.6 +1.3**
comp=Z,1.0nm,0.3s,baz=132,slow=5.9,SNR=4.5
NRIK LR LR 06 34 06.3
comp=Z,649nm,19.7s,baz=108,slow=39
MK01 Makanchi Array 45.44 304 *eP* **P 06 12 49.1 0.0**
MK31 Makanchi Array 45.45 304 *eP* **P 06 12 49.2 +0.1**
MK31 Makanchi Array 45.45 304 *eP* **P 06 12 49.1 +0.1**
MKAR Makanchi Array 45.45 304 P **P 06 12 49.0 0.0**
comp=Z,3.9nm,0.7s,baz=89,slow=9.9,SNR=17
MKAR PcP **PcP** **06 14 27.2 -0.5**
comp=Z,0.7nm,0.6s,baz=94,slow=5.8,SNR=1.8
MKAR LR LR 06 31 48.4
comp=Z,181nm,19.8s,baz=90,slow=36
MAKZ Makanchi 45.66 304 *eP* **P 06 12 51.2 +0.4**
MAKZ pmax pmax
comp=Z,6.0nm,0.7s
MAKZ Makanchi 45.66 304 *eP* **P 06 12 51.2 +0.4**
comp=Z,5.7nm,0.7s
ODAN Odare 46.80 276 *eP* **P 06 12 59.6 -0.7**
comp=Z,22nm,1.0s
TTA Tatalina 47.03 34 *eP* **P 06 13 03.5 +2.1**
TTA pmax pmax
comp=Z,15nm,1.7s
TTA Tatalina 47.03 34 *eP* **P 06 13 03.5 +2.1**
comp=Z,14nm,1.7s
HNR Honiara 47.38 155 LR LR 06 30 13.8
comp=Z,242nm,21.6s,baz=329,slow=32
RAMN Ramite 47.41 276 *eP* **P 06 13 04.2 -0.8**
comp=Z,39nm,0.7s
KURK Kurchatov 47.42 310 *eP* **P 06 13 04.3 -0.2**
KURK pmax pmax
comp=Z,17nm,0.7s
KURK Kurchatov 47.42 310 *eP* **P 06 13 04.3 -0.2**
comp=Z,17nm,0.7s
KURBB Kurchatov Arra 47.49 310 P **P 06 13 05.0 0.0**
comp=Z,3.3nm,0.4s,baz=86,slow=7.6,SNR=19
GUN Gumba 47.62 278 *eP* **P 06 13 06.9 +0.2**
comp=Z,27nm,0.7s
PDGK Podgornoye 47.98 300 P **P 06 13 08.0 -0.9**
PDGK pmax pmax
comp=Z,28nm,1.0s
PKIN Phulchoki 48.14 278 *eP* **P 06 13 10.1 -0.6**
comp=Z,11nm,0.7s
KKN Kakani 48.15 278 *eP* **P 06 13 10.6 -0.1**
comp=Z,32nm,0.9s
DMN Daman 48.37 278 *eP* **P 06 13 11.6 -0.8**
GKN Gorkha 48.59 278 *eP* **P 06 13 15.0 +0.9**
comp=Z,103nm,1.1s
PPLA Purkeypile 48.78 34 *eP* **P 06 13 17.7 +2.7**
comp=Z,30nm,1.6s
KTH Kantishna Hill 49.38 33 *eP* **P 06 13 20.5 +1.0**
comp=Z,19nm,1.6s
MLY Manley 49.52 31 *eP* **P 06 13 21.6 +1.1**
comp=Z,6.7nm,1.1s
KOLN Koldanda 49.53 279 *eP* **P 06 13 21.4 +0.1**
comp=Z,68nm,1.3s
TRF Thorofare Moun 49.66 33 *eP* **P 06 13 23.6 +1.9**
comp=Z,21nm,1.6s
PYUN Pinhan 49.89 279 *eP* **P 06 13 24.4 +0.4**
comp=Z,128nm,1.1s
RND Reindeer 50.30 33 *eP* **P 06 13 27.4 +0.9**
RND pmax pmax
comp=Z,9.0nm,1.2s
RND Reindeer 50.30 33 *eP* **P 06 13 27.4 +0.9**
comp=Z,8.7nm,1.2s
SML Sawmill 50.57 35 *eP* **P 06 13 29.4 +0.9**
SML pmax pmax
comp=Z,78nm,2.0s
SML Sawmill 50.57 35 *eP* **P 06 13 29.4 +0.9**
comp=Z,78nm,2.0s
MDM Murphy Dome 50.59 31 *eP* **P 06 13 29.5 +0.9**
comp=Z,24nm,1.5s
WRH Wood River Hil 50.64 32 *eP* **P 06 13 31.1 +2.1**
comp=Z,17nm,1.6s
CCB Clear Creek Bu 50.77 32 *eP* **P 06 13 32.4 +2.6**
comp=Z,2.6nm,0.8s
TKM2 Tokmak 2 50.85 300 *eP* **P 06 13 31.8 +0.7**
TKM2 pmax pmax
comp=Z,80nm,1.9s
TKM2 Tokmak 2 50.85 300 *eP* **P 06 13 31.8 +0.7**
comp=Z,80nm,1.9s
PSI Prapat 50.93 241 LR LR 06 33 58.2
comp=Z,312nm,21.6s,baz=351,slow=35
SCM Sheep Creek Mo 51.04 35 *eP* **P 06 13 33.5 +1.4**
SCM pmax pmax
comp=Z,20nm,1.3s
SCM Sheep Creek Mo 51.04 35 *eP* **P 06 13 33.5 +1.4**
comp=Z,20nm,1.3s
HDA Harding Lake 51.14 32 *eP* **P 06 13 33.2 +0.5**
comp=Z,4.4nm,0.8s
IL1 Eielson Array 51.16 31 *eP* **P 06 13 32.4 -0.5**
ILAR Eielson Array 51.16 31 P **P 06 13 32.5 -0.3**
comp=Z,2.2nm,0.7s,baz=271,slow=6.1,SNR=23
ILAR LR LR 06 39 00.7
comp=Z,117nm,19.0s,baz=270,slow=40
ILB Eielson Array 51.16 31 *eP* **P 06 13 33.4 +0.5**
KSH Kashi 51.49 296 P **P 06 13 39.8 +4.0**
KSH *es*P sP 06 13 57.4 +8.1
KSH *e*PP **PP** **06 15 38.1 +5.0**
KSH *e*ScP **ScP** **06 18 44.3 +0.3**
KSH PcS **PcS** **06 18 49.1 +1.3**
KSH S **S** **06 20 56.9 +2.9**
KSH pmax pmax
comp=Z,170nm,6.1s
KSH LR LR
comp=Z,360nm,13.1s
KSH LR LR
comp=Z,690nm,13.9s
KSH LR LR
comp=Z,870nm,15.0s
AAK Ala-Archa 51.70 300 P **P 06 13 38.1 +0.6**
comp=Z,1.9nm,0.8s,baz=100,slow=6.4,SNR=7.3
AAK LR LR 06 37 31.0
comp=Z,531nm,18.1s,baz=63,slow=38
AAK Ala-Archa 51.70 300⇑ *eP* **P 06 13 37.9 +0.4**
AAK pmax pmax
comp=Z,19nm,1.5s
AAK Ala-Archa 51.70 300 *eP* **P 06 13 36.6 -0.8**
comp=Z,13nm,1.6s
OTUK Ortayu 51.85 307 P **P 06 13 37.1 -1.2**
CHKZ Chkalovo 51.92 314 P **P 06 13 37.1 -1.6**
CHKZ pmax pmax
comp=Z,20nm,1.2s
BVA0 Borovoye Array 52.16 314 *i* P **P 06 13 39.3 -1.2**
BVA0 pmax pmax
comp=Z,7.0nm,0.9s
BVAR Borovoye Array 52.16 314 P **P 06 13 40.7 +0.2**
comp=Z,4.4nm,0.8s,baz=79,slow=7.7,SNR=20
EKS2 Erkin-Say 52.21 300 *eP* **P 06 13 40.5 -0.6**
EKS2 pmax pmax
comp=Z,29nm,2.0s
EKS2 Erkin-Say 52.21 300 *eP* **P 06 13 40.5 -0.6**
comp=Z,29nm,2.0s
BRVK Borovoye 52.22 314 *eP* **P 06 13 40.6 -0.3**
BRVK pmax pmax
comp=Z,11nm,0.9s
BRVK Borovoye 52.22 314 *eP* **P 06 13 40.6 -0.3**
comp=Z,11nm,0.9s
GSI Gunungsitoli 52.94 241 *eP* **P 06 13 46.2 -0.5**
comp=Z,59nm,1.1s
ZRNK Zerenda 53.00 314 *eP* **P 06 13 46.5 -0.2**
ZRNK pmax pmax
comp=Z,14nm,1.0s
ZRNK Zerenda 53.00 314 *eP* **P 06 13 46.5 -0.2**
comp=Z,14nm,1.0s
MNAS Manas 53.16 300 P **P 06 13 47.5 -0.7**
SFK Sufi-Kurgan 53.16 297 P **P 06 13 48.4 0.0**
SFK pmax pmax
comp=Z,5.0nm,0.7s
KK31 Karatay Array 54.39 301 *i* P **P 06 13 56.9 -0.1**
KK31 pmax pmax
comp=Z,18nm,1.0s
KKAR Karatay Array 54.39 301 *eP* **P 06 13 57.3 +0.3**
KKAR Karatay Array 54.39 301 *eP* **P 06 13 57.3 +0.3**
DAWY Dawson 54.46 32 *eP* **P 06 13 59.3 +2.0**
comp=Z,15nm,1.7s
FITZ Fitzroy Crossi 54.90 199 *eP* **P 06 14 01.4 +0.5**
comp=Z,66nm,1.9s

WRA Warramunga Arr 55.01 188 P **P 06 14 00.2 -1.5**
comp=Z,3.6nm,0.7s,baz=6.8,slow=7.6,SNR=10
INK Inuvik 56.16 26 P **P 06 14 09.3 -0.1**
comp=Z,1.0nm,0.7s,baz=306,slow=5.2,SNR=8.7
INK Inuvik 56.16 26 *eP* **P 06 14 09.9 +0.5**
INK pmax pmax
comp=Z,18nm,1.6s
INK Inuvik 56.16 26 *eP* **P 06 14 09.9 +0.5**
comp=Z,18nm,1.6s
SVE Sverdlovsk 56.88 320⇑ *eP* **P 06 14 15.2 +0.5**
SVE pmax pmax
comp=Z,25nm,1.2s
DZET Dzherino 56.98 297 P **P 06 14 15.6 -0.2**
DZET pmax pmax
comp=Z,12nm,0.6s
ARU Arti 58.09 319 P **P 06 14 23.3 +0.1**
comp=Z,6.1nm,0.3s,baz=80,slow=2.2,SNR=18
ARU LR LR 06 44 30.9
comp=Z,207nm,18.3s,baz=72,slow=41
ARU Arti 58.09 319*c iP* **P 06 14 23.1 -0.1**
ARU 06 16 26.9
ARU S **S** **06 22 22.7 +0.9**
ARU SS **SS** **06 26 11.1 -1.8**
ARU pmax pmax
comp=Z,37nm,1.2s
ARU MLR MLR
comp=Z,469nm,16.0s
ARU Arti 58.09 319 *eP* **P 06 14 22.6 -0.5**
comp=Z,22nm,0.9s
HYB Hyderabad 58.39 270 *i P* **P 06 14 26.0 +0.1**
AS31 Alice Springs 58.74 188 *eP* **P 06 14 29.6 +1.5**
comp=Z,1.9nm,0.6s
ASAR Alice Springs 58.74 188 P **P 06 14 29.1 +1.0**
comp=Z,1.6nm,0.7s,baz=15,slow=11,SNR=12
AB31 Akbulak array 59.47 311 *i* P **P 06 14 32.0 -0.9**
AB31 pmax pmax
comp=Z,3.0nm,0.6s
ABKAR Akbulak array 59.47 311 *eP* **P 06 14 31.9 -1.0**
MBWA Marble Bar 59.55 204 *eP* **P 06 14 34.3 +0.7**
comp=Z,67nm,1.7s
AKTO Aktyubinsk 60.26 313 P **P 06 14 38.2 -0.1**
comp=Z,4.8nm,0.7s,baz=75,slow=12,SNR=18
POO Poona 61.70 274 *eP* **P 06 14 46.0 -2.6**
PALK Pallekele 62.16 259 P **P 06 14 51.3 -0.4**
comp=Z,6.6nm,0.7s,baz=115,slow=12,SNR=4.6
PALK LR LR 06 44 47.1
comp=Z,222nm,19.0s,baz=112,slow=39
GEYT Alibeck 65.06 300 P **P 06 15 10.7 +0.1**
comp=Z,4.0nm,0.5s,baz=58,slow=3.7,SNR=6.4
YKA Yellowknife Ar 65.52 30 P **P 06 15 12.8 -0.2**
comp=Z,0.2nm,0.7s,baz=300,slow=6.1,SNR=5.6
YKA PP **PP** **06 17 38.6 +1.7**
comp=Z,0.2nm,0.3s,baz=337,slow=10,SNR=4.6
AFI Afiamalu 65.63 129 LR LR 06 41 04.5
comp=Z,277nm,18.7s,baz=45,slow=33
KLMR Klimovskoe 65.65 328 *eP* **P 06 15 12.4 -1.6**
KLMR *e* 06 17 37.5
KLMR pmax pmax
comp=Z,13nm,1.1s
ARCES ARCESS Array B 66.04 340 P **P 06 15 16.1 -0.2**
comp=Z,2.1nm,0.8s,baz=40,slow=9.6,SNR=3.6
ARCES LR LR 06 47 02.3
comp=Z,350nm,21.7s,baz=50,slow=39
VRH Novokhopyorsk 69.29 319 *eP* **P 06 15 34.6 -2.5**
VRH pmax pmax
comp=Z,2.0nm,0.3s
VRH MLR MLR
comp=Z,660nm,15.0s
OBN Obninsk 69.92 324⇓ *iP* **P 06 15 40.0 -0.9**
OBN *i* 06 15 45.3
OBN *e* 06 18 15.6
OBN *es*SS SS 06 29 18.2 +1.3
OBN pmax pmax
comp=Z,9.0nm,0.5s
OBN MLR MLR
comp=Z,625nm,16.0s
LPSR Galich'ya Gora 70.06 321 *eP* **P 06 15 40.9 -0.9**
LPSR pmax pmax
comp=Z,10.0nm,1.8s
LPSR MLR MLR
comp=Z,940nm,15.0s
VSR Storozhevoye 70.66 319 *eP* **P 06 15 43.9 -1.6**
VSR pmax pmax
comp=Z,10.0nm,1.2s
VSR MLR MLR
comp=Z,680nm,19.0s
FIA1 FINESS Array S 70.78 333 *eP* **P 06 15 46.0 -0.1**
FINES FINESS Array B 70.78 333 P **P 06 15 45.5 -0.5**
comp=Z,2.4nm,0.8s,baz=57,slow=7.0,SNR=7.6
FINES LR LR 06 50 02.4
comp=Z,505nm,18.1s,baz=42,slow=38
GOF Gofitskoye 71.66 312⇑ *eP* **P 06 15 51.6 -0.1**
KBZ Khabaz 72.44 311 P **P 06 15 57.1 +0.7**
comp=Z,3.3nm,1.0s,baz=54,slow=7.0,SNR=6.4
KBZ LR LR 06 49 42.4
comp=Z,427nm,18.1s,baz=48,slow=37
KVAR Kislovodsk Arr 72.45 312 LR LR 06 50 23.3
comp=Z,284nm,18.6s,baz=54,slow=38
KIV Kislovodsk 72.46 312 *i* P **P 06 15 57.4 +0.8**
KIV *i* 06 16 07.9
KIV pmax pmax
comp=Z,21nm,1.7s
KIV Kislovodsk 72.46 312 *eP* **P 06 15 56.9 +0.3**
comp=Z,59nm,1.8s
F10A Beach Ranch, E 72.64 46 *eP* **P 06 15 59.9 +2.2**
comp=Z,36nm,0.9s
GNI Garni 73.15 307 LR LR 06 49 30.8
comp=Z,90nm,19.8s,baz=68,slow=37
NV01 Mina Array Sit 76.08 53 *eP* **P 06 16 18.7 +0.7**
NVAR Mina Array Bea 76.08 53 P **P 06 16 18.2 +0.3**
comp=Z,1.2nm,0.9s,baz=278,slow=5.7,SNR=7.2
NVAR LR LR 06 50 18.3
comp=Z,121nm,18.6s,baz=310,slow=36
AKASG Malin Array Be 76.10 323 P **P 06 16 15.9 -1.6**
comp=Z,2.0nm,0.7s,baz=41,slow=5.8,SNR=16
AKASG LR LR 06 53 20.0
comp=Z,370nm,19.8s,baz=40,slow=38
KIEV Kiev 76.11 323 *eP* **P 06 16 17.3 -0.3**
KIEV pmax pmax
comp=Z,5.0nm,0.9s
KIEV Kiev 76.11 323 *eP* **P 06 16 17.3 -0.3**
comp=Z,5.2nm,0.9s
AK11 Malin Array Si 76.14 323 *eP* **P 06 16 17.7 -0.1**
NC204 NORSAR Array S 76.17 338 *eP* **P 06 16 17.7 -0.2**
NB2 NORSAR Subarra 76.21 338 P **P 06 16 17.5 -0.6**
comp=Z,1.4nm,0.7s,baz=39,slow=5.9
NOA NORSAR Array B 76.21 338 P **P 06 16 17.7 -0.4**
comp=Z,2.3nm,0.8s,baz=40,slow=5.7,SNR=11
NOA LR LR 06 53 35.2
comp=Z,393nm,19.4s,baz=40,slow=39
H17A Grant Village 77.41 44 *eP* **P 06 16 28.9 +3.5**
comp=Z,3.8nm,0.9s
DUG Dugway, Tooele 78.57 49 *eP* **P 06 16 32.7 +0.9**
DUG pmax pmax
comp=Z,14nm,1.8s
DUG Dugway, Tooele 78.57 49 *eP* **P 06 16 32.7 +0.9**
comp=Z,14nm,1.8s
RAR Rarotonga 78.75 126 LR LR 06 48 52.3
comp=Z,186nm,19.9s,baz=282,slow=34
EL2 El Mirage 2 78.77 56 *eP* **P 06 16 34.6 +1.6**
PDAR Pinedale Array 78.99 45 P **P 06 16 37.0 +2.8**
comp=Z,0.4nm,0.6s,baz=266,slow=3.0,SNR=5.2
LCMT Little Creek M 80.18 52 *eP* **P 06 16 40.9 +0.3**
comp=Z,2.7nm,1.0s
BRTR Keskin Array B 80.41 312 P **P 06 16 42.3 +0.4**
comp=Z,1.3nm,0.8s,baz=98,slow=2.6,SNR=7.4
BRTR LR LR 06 55 14.8
comp=Z,137nm,19.0s,baz=24,slow=38
KNB Kanab 80.44 51 *eP* **P 06 16 43.8 +1.7**
KNB pmax pmax
comp=Z,19nm,1.6s
KNB Kanab 80.44 51 *eP* **P 06 16 43.8 +1.7**
comp=Z,19nm,1.6s
SRU San Rafael Swe 80.63 49 *eP* **P 06 16 45.5 +2.4**
SRU pmax pmax
comp=Z,4.0nm,0.9s
SRU San Rafael Swe 80.63 49 *eP* **P 06 16 45.5 +2.4**
comp=Z,3.7nm,0.9s
STHS Stebnicka Huta 80.81 325 *eP* P 06 16 51.9 +8.3
STHS Stebnicka Huta 80.81 325 *eP* P 06 16 51.9 +8.3
BR231 Keskin MP Arra 80.87 312 *eP* **P 06 16 43.0 -1.3**
U15A North Rim 81.14 52 *eP* **P 06 16 47.1 +1.1**
comp=Z,14nm,1.8s
LANS Liptovska Anna 81.82 326 *eP* **P 06 16 52.2 +3.2**
LANS Liptovska Anna 81.82 326 *eP* **P 06 16 52.2 +3.2**
OKC Ostrava-Krasne 81.93 327 AMS AMS 06 57 20.0

comp=Z,700nm,15.7s
PV10 Paradox Valley 82.00 49 *e*P P 06 16 52.1 +1.6
DPC Dobruska-Polom 82.36 328 *e*P P 06 16 54.0 +2.2
DPC AMS AMS 06 58 20.0
comp=Z,500nm,11.8s
DPC Dobruska-Polom 82.36 328 *e*P P 06 16 54.0 +2.2
DPC MLR MLR
comp=Z,500nm,11.8s
UPC Upice 82.37 328 AMS AMS 06 57 10.0
comp=Z,600nm,16.4s
PV01 Paradox Valley 82.44 48 *e*P P 06 16 53.0 +0.2
VYHS Vyhne 82.58 326 *e*P P 06 16 54.8 +1.8
VYHS Vyhne 82.58 326 *e*P P 06 16 54.8 +1.8
PVCC Panska Ves 82.97 329 AMS AMS 07 00 30.0
comp=Z,500nm,17.1s
CLL Collm 83.03 330 *e*P P 06 16 54.0 -1.2
GOPC GO Pecny, Ondr 83.34 329 AMS AMS 06 57 50.0
comp=Z,600nm,19.6s
PRU Pruhonice 83.39 329 AMS AMS 06 57 40.0
comp=Z,500nm,16.6s
PPT Papeete 83.50 117 LR LR 06 52 04.5
comp=Z,167nm,19.4s,baz=328,slow=34
TREC Trest 83.50 328 AMS AMS 06 58 40.0
comp=Z,500nm,14.9s
PPT2 Papeete2 83.51 117 *e*LR LR 06 43 02.6
comp=Z,111nm,22.5s
KHC Kasperske Hory 84.45 329 *e*P P 06 17 02.9 +0.3
KHC *e*pP sP 06 17 15.0 -1.5
KHC AMS AMS 07 01 40.0
comp=Z,600nm,19.3s
KHC Kasperske Hory 84.45 329 *e*P P 06 17 02.9 +0.3
KHC *e* 06 17 15.0
KHC MLR MLR
comp=Z,600nm,19.3s
GERES GERESS Array B 84.61 328 P P 06 17 00.3 -3.3
comp=Z,0.3nm,0.3s,baz=35,slow=4.9,SNR=6.2
GERES LR LR 06 59 01.5
comp=Z,352nm,18.3s,baz=33,slow=39
TAOE Nuku Hiva Isla 85.45 104 *e*LR LR 06 43 54.7
comp=Z,138nm,27.6s
ANMO Albuquerque 85.77 50 *ce*P P 06 17 11.5 +1.8
ANMO pmax pmax
comp=Z,2.0nm,1.2s
TBI Tubuai 87.26 121 *e*LR LR 06 44 46.5
comp=Z,154nm,21.0s
SCHQ Schefferville 87.30 16 LR LR 06 57 17.1
comp=Z,135nm,21.5s,baz=20,slow=36
TX31 Lajitas Ar. Si 91.23 53 *e*P P 06 17 36.5 +0.9
TXAR Lajitas Array 91.23 53 P P 06 17 36.0 +0.4
comp=Z,0.4nm,0.8s,baz=286,slow=2.4,SNR=5.3
TXAR LR LR 06 58 27.4
comp=Z,146nm,18.2s,baz=0.0,slow=35
PARMO Parma 94.19 39 *e*P P 06 17 49.6 +0.6
comp=Z,41µm,0.8s
KEST Kesra 96.83 323 LR LR 07 07 10.2
comp=Z,265nm,18.7s,baz=303,slow=39
RKT Rikitea 97.75 113 *e*LR LR 06 49 38.5
comp=Z,197nm,26.2s
ESDC Sonseca Array 99.27 334 LR LR 07 07 39.7
comp=Z,236nm,19.6s,baz=35,slow=38
SAML Samuel 145.55 47 *e*PKPdf PKPdf 06 24 08.4 -0.4
LPAZ La Paz 147.51 63 PKPbc PKPbc 06 24 15.9 +0.5
comp=Z,1.7nm,0.7s,baz=90,slow=11,SNR=7.9

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*IDC **01** 06:10:33.3±1.2, 37°.46N×144°.53E, h0km, mb4.0/4, mb1 4.1/5, mb1mx3.5/64, mbtmp3.9/5, ML3.5/1, MS2.7/1, Ms1 2.7/1, ms1mx2.6/57, Error ellipse: s-maj=35.8km s-min=25.9km az=103.0*
*ISCJB **01** 06:10:37.0±0.9, 37°.63N±0°.06×144°.35E±0°.07, h33km, mb3.9/4, MS2.7/1, Error ellipse: s-maj=9.4km s-min=7.0km az=24.6*
*JMA **01** 06:10:38.2±0.3, 37°.69N×144°.26E, h37km, M4.0*
ISC 01 06:10:38.7±1.2**, 37°.65N**±0°.08×**144°.37E**±0°.09**, h35**km**, n16, σ0s.91**/24**, mb4.0**/4**, Off east coast of Honshu**

Code Station Name Δ° AZ° Phase ID Op ISC Time h m s Res ISC
JIO Ouri 2.52 289 P Pn 06 11 17.0 0.0
JIO S Sn 06 11 45.5 -1.0
JMK Ichinoseki 2.80 299 S Sn 06 11 52.9 -0.5
JMM Marumori 2.84 275 P Pn 06 11 21.2 -0.3
JMM S Sn 06 11 53.2 -1.4
JTH Tanohata 3.01 320 P Pn 06 11 24.4 +0.6
JTH S Sn 06 11 56.5 -2.1
JOU Okura 3.01 285 P Pn 06 11 24.1 +0.2
JOU *e*S Sn 06 11 58.8 0.0
JOM Ohasama 3.02 308 P Pn 06 11 24.2 +0.2
JOM S Sn 06 11 58.3 -0.6
JFT Otama 3.21 269 P Pn 06 11 27.2 +0.6
JFT *e*S Sn 06 12 03.2 -0.4
JYK Kaneyama 3.40 293 P Pn 06 11 29.5 +0.3
JYK *e*S Sn 06 12 08.7 +0.4
JRG Rokugo 3.41 302 P Pn 06 11 30.1 +0.8
JRG S Sn 06 12 08.6 +0.1
MJAR Matsushiro Arr 5.05 259 Pn Pn 06 11 51.9 0.0
1.8nm,0.3s,baz=88,slow=15,SNR=6.2
MAT Matsushiro 5.05 259 P Pn 06 11 53.5 +1.6
MAT S Sn 06 12 49.4 +0.3
JAY Jayapura 40.11 186 LR LR 06 36 02.8
comp=Z,10.0nm,18.4s,baz=45,slow=38
KURBB Kurchatov Arra 47.48 308 P P 06 19 11.1 +1.2
0.6nm,0.3s,baz=80,slow=8.0,SNR=4.2
ILAR Eielson Array 47.70 33 P P 06 19 12.0 +0.5
0.3nm,0.7s,baz=257,slow=6.8,SNR=3.4
WRA Warramunga Arr 58.06 191 P P 06 20 26.7 -1.6
2.2nm,0.6s,baz=13,slow=7.3,SNR=7.1
ASAR Alice Springs 61.78 191 P P 06 20 53.0 -0.9
0.5nm,0.5s,baz=11,slow=7.3,SNR=6.1

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*IDC **01** 06:17:38.2±0.5, 0°.76S×137°.36E, h0km, mb4.4/16, mb1 4.6/19, mb1mx4.3/45, mbtmp4.5/19, ML4.7/3, MS3.7/8, Ms1 3.7/8, ms1mx3.3/42, Error ellipse: s-maj=18.6km s-min=10.1km az=82.0*
*NEIC **01** 06:17:39.9±3.8, 0°.83S×137°.26E, h8km±23km, mb4.8/24, Error ellipse: s-maj=9.0km s-min=6.5km az=47.0*
*ISCJB **01** 06:17:40.6±0.2, 0°.92S±0°.03×137°.25E±0°.03, h26km, mb4.6/43, MS3.7/7, Error ellipse: s-maj=5.0km s-min=3.9km az=151.1*
*DJA **01** 06:17:41.3±1.6, 1°S±7°×13°7E±°, h24km±15km, M4.8/14, mb4.7/14, mB5.3/4, MLv4.8/7, Mw(mB)4.8/4*
*BJI **01** 06:17:42.7, 0°.90S×137°.10E, h39km, mb4.6/20, mB4.9/5, Ms4.8/5, Ms7 4.4/4*
ISC 01 06:17:42.5±0.4**, 0°.89S**±0°.05×**137°.28E**±0°.05**, h26**km**, n116, σ1s.34**/117**, mb4.6**/44**, MS3.8**/7**, Irian Jaya region**

Code Station Name Δ° AZ° Phase ID Op ISC Time h m s Res ISC
RKPI Ransiki, Papua 3.17 259 P Pn 06 18 30.2 -0.5
GENI Genyem 3.34 120 P Pn 06 18 34.9 +1.7
GENI S Sn 06 19 10.6 -1.5
JAY Jayapura 3.78 115 Pn Pn 06 18 37.0 -2.3
1.4nm,0.3s,baz=222,slow=21,SNR=20
JAY Sn Sn 06 19 22.2 -0.8
3.1nm,0.3s,baz=276,slow=24,SNR=8.7
JAY Jayapura 3.78 115 P Pn 06 18 36.3 -2.9
JAY S Sn 06 19 20.7 -2.3
KMPI Kaimana, Papua 4.52 232 P Pn 06 18 48.6 -0.7
FAKI Fak Fak 5.42 248 P Pn 06 19 00.5 -1.2
190nm,0.6s,2µm0.6nm
FAKI S Sn 06 20 01.7 -1.7
190nm,0.6s,2µm0.6nm
FAKI Fak Fak 5.42 248 *e*Pn Pn 06 19 00.6 -1.2
SWI Sorong 6.02 270 P Pn 06 19 09.2 -0.8
57nm,0.7s,958nm0.3nm
KDU Kakadu 12.66 202 P Pn 06 20 38.5 -2.5
baz=13,SNR=10
MTN Manton Dam 13.35 207 P Pn 06 20 48.8 -1.8
baz=13,SNR=72
MTN Manton Dam 13.35 207 *e*Pn Pn 06 20 49.3 -1.2
COEN Coen 14.23 156 *e*Pn Pn 06 21 03.3 +0.7
SOEI Soe 15.66 235 *e*Pn Pn 06 21 21.7 -0.1
58nm,0.9s
GUMO Guam 16.23 27 LR LR 06 27 58.6
comp=Z,170nm,18.5s,baz=260,slow=39
BATI Baumata 16.41 235 Pn P 06 21 33.0 -0.8
3.1nm,0.3s,baz=148,slow=24,SNR=4.5
BATI Baumata 16.41 235 P Pn 06 21 32.2 +1.0
28nm,0.9s
TTSI Tana Toraja 17.59 263 P P 06 21 49.7 +2.8
SPSI Sidrap Palu 17.76 260 P P 06 21 50.1 +1.3
24nm,0.9s
KAPI Kappang 17.98 256 P P 06 21 52.1 +0.9
2.6nm,0.3s,baz=170,slow=20,SNR=2.8
MTSU Mount Surprise 18.48 158 P Pn 06 21 58.6 +1.6
baz=19,SNR=10
WB2 Warramunga Arr 19.16 188 *e*P Pn 06 22 04.7 -0.5
29nm,1.0s
WRA Warramunga Arr 19.16 188 P Pn 06 22 04.7 -0.4
2.5nm,0.3s,baz=8.9,slow=12,SNR=47
WRA S Sn 06 25 31.8 -7.4
0.3nm,0.3s,baz=13,slow=22,SNR=5.2
WRA LR LR 06 30 40.4
comp=Z,340nm,18.0s,baz=0.0,slow=40
QIS Mount Isa 19.68 174 P Pn 06 22 10.7 -0.7
baz=20,SNR=9.8
FITZ Fitzroy Crossi 20.58 213 P P 06 22 19.5 -0.1
8.0nm,0.7s,baz=30,slow=9.3,SNR=13
FITZ LR LR 06 31 02.7
comp=Z,179nm,18.5s,baz=20,slow=39
FITZ Fitzroy Crossi 20.58 213 P P 06 22 19.6 0.0
baz=21,SNR=4.4
FITZ Fitzroy Crossi 20.58 213 *e*P P 06 22 19.9 +0.2
76nm,1.8s
PLAI Plampang 20.96 247 P P 06 22 20.5 -3.4
75nm,0.8s
CTA Charters Tower 21.00 156 P P 06 22 25.3 +1.0
8.7nm,0.6s,baz=334,slow=12,SNR=12
CTAO Charters Tower 21.00 156 *e*P P 06 22 25.8 +1.5
73nm,1.8s
TWSI Taliwang, Sumb 21.76 248 P P 06 22 31.2 -1.2
20nm,0.8s
BBKI Banjar Baru 22.57 263 P P 06 22 40.5 -0.7
94nm,0.8s,7µm
AS01 Alice Springs 22.87 188 *e*P P 06 22 44.4 +0.1
AS31 Alice Springs 22.88 188 *e*P P 06 22 44.6 +0.3
9.3nm,0.6s
ASAR Alice Springs 22.88 188 P P 06 22 44.6 +0.3
18nm,0.7s,baz=22,slow=11,SNR=102
ASAR S S 06 26 59.1 +6.5
2.4nm,0.9s,baz=10,slow=26,SNR=4.7
ASAR LR LR 06 32 10.1
comp=Z,213nm,19.6s,baz=10.0,slow=38
SBUM Sibu 25.28 278 *e*P P 06 23 05.2 -1.9
10nm,0.7s
WRKA Warakurna 25.53 199 P P 06 23 08.7 -0.6
baz=26,SNR=64
QLP Quilpie 26.41 166 P P 06 23 18.6 +1.5
baz=27,SNR=6.5
MBWA Marble Bar 26.45 219 *e*P P 06 23 16.7 -0.9
42nm,1.1s
STKA Stephens Creek 31.09 173 P P 06 23 58.8 0.0
3.6nm,0.5s,baz=348,slow=8.3,SNR=27
STKA Stephens Creek 31.09 173 P P 06 23 58.6 -0.2
baz=31,SNR=22
STKA Stephens Creek 31.09 173 *e*P P 06 23 58.9 +0.1
1.6nm,0.6s
BBOO Buckleboo 31.78 182 P P 06 24 04.7 -0.1
baz=32,SNR=6.6
BBOO Buckleboo 31.78 182 *e*P P 06 24 04.9 +0.1
16nm,1.0s
HTT Hallett 32.41 177 P P 06 24 10.7 +0.3
baz=33,SNR=4.0
KMBL Kambalda 33.64 204 P P 06 24 21.1 -0.1
baz=34,SNR=5.2
MNAI Manna 34.46 264 *e*P P 06 24 26.7 -1.9
228nm,1.2s
KLBR Kellerberrin 35.69 209 P P 06 24 39.2 +0.3
baz=36,SNR=5.8
KULM Kulim 37.10 280 *e*P P 06 24 49.1 -2.1
12nm,0.8s
NJ2 Nanjing 37.12 334 *e*P P 06 24 50.7 -0.3
NJ2 pmax pmax
comp=Z,15nm,0.8s
PSI Prapat 38.52 276 P P 06 25 02.3 -1.1
20nm,0.9s,baz=90,slow=4.1,SNR=14
PSI Prapat 38.52 276 *e*P P 06 25 01.9 -1.5
18nm,0.8s
KS15 Wonju Array Si 39.12 348 *e*P P 06 25 10.4 +2.5
KSRS Korea Array 39.12 348 LR LR 06 40 09.3
comp=Z,48nm,19.7s,baz=170,slow=35
KS01 Wonju Array Si 39.15 348 *e*P P 06 25 10.0 +1.9
GYA Guiyang 40.13 315 *e*P P 06 25 17.8 +1.1
GYA pmax pmax
comp=Z,10.0nm,0.8s
KMI Kunming 42.26 310 P P 06 25 35.7 +1.4
KMI pP pP 06 25 41.5 -0.7
KMI sP sP 06 25 43.7 -1.6
KMI pmax pmax
comp=Z,13nm,1.0s
CM01 Chiang Mai Arr 42.28 299 *e*P P 06 25 33.7 -0.6
CMAR Chiang Mai Arr 42.31 299 P P 06 25 33.8 -0.8
2.2nm,0.8s,baz=116,slow=6.7,SNR=13
CD2 Chengdu 44.88 318 P P 06 25 55.0 -0.1
CD2 pmax pmax
comp=Z,20nm,0.5s
BJI Beijing 45.07 337 P P 06 25 57.8 +1.4
BJI pmax pmax
comp=Z,11nm,1.2s
BJI pmax pmax
comp=Z,60nm,3.7s
CN2 Changchun 45.73 348 *e*P P 06 26 04.7 +3.1
LZH Lanzhou 48.18 323 *e*P P 06 26 26.9 +5.8
LZH pP sP 06 26 33.9 +1.7
LZH sP pP 06 26 38.4 +9.4
LZH pmax pmax
comp=Z,28nm,1.3s
LZH pmax pmax
comp=Z,140nm,5.3s
GTA Gaotai 52.77 324 *e*P P 06 26 55.8 +0.1
GTA pP pP 06 27 04.0 +0.3
GTA sP sP 06 27 08.0 +1.2
GTA pmax pmax
comp=Z,4.0nm,0.9s
LSA Lhasa 53.47 309 *e*P P 06 27 02.3 +0.9
comp=Z,7.3nm,0.7s
TAPN Taplejung 55.27 305 *e*P P 06 27 14.3 -0.1
comp=Z,28nm,0.8s
ODAN Odare 55.35 304 *e*P P 06 27 14.7 -0.2
comp=Z,32nm,0.7s
SONM Songino Array 55.48 335 P P 06 27 14.5 -0.8
comp=Z,0.2nm,0.5s,baz=144,slow=5.3,SNR=2.9
RAMN Ramite 56.04 304 *e*P P 06 27 19.9 0.0
comp=Z,33nm,0.8s
PETK Petropavlovsk- 56.45 15 P P 06 27 20.6 -1.4
comp=Z,1.6nm,0.7s,baz=171,slow=20,SNR=3.1
JIRN Jiri 56.64 304 *e*P P 06 27 23.7 -0.6
comp=Z,0.1nm,0.4s
GUN Gumba 56.99 304 *e*P P 06 27 26.6 -0.1
comp=Z,21nm,0.6s
PKIN Phulchoki 57.27 304 *e*P P 06 27 27.8 -0.8
KKN Kakani 57.44 304 *e*P P 06 27 29.5 -0.2
comp=Z,28nm,0.8s
DMN Daman 57.52 304 *e*P P 06 27 30.3 -0.1
GKN Gorkha 58.05 304 *e*P P 06 27 33.8 -0.1
comp=Z,45nm,0.8s
KOLN Koldanda 58.83 303 *e*P P 06 27 39.5 0.0
comp=Z,30nm,0.9s
PYUN Piuthan 59.45 304 *e*P P 06 27 43.8 0.0
comp=Z,103nm,0.8s
TLY Talaya 59.59 336 LR LR 06 54 06.5
comp=Z,60nm,18.0s,baz=98,slow=37
WMQ Urumqi 62.70 322 P P 06 28 06.2 +0.8
WMQ pP sP 06 28 18.3 +1.6
WMQ sP pP 06 28 21.3 +7.7
WMQ S S 06 36 31.2 -1.4
WMQ SS SS 06 40 40.5 +2.9
WMQ pmax pmax
comp=Z,3.0nm,0.6s
WMQ LR LR
comp=Z,29nm,13.8s
WMQ LR LR
comp=Z,38nm,15.6s
YAK Yakutsk 63.02 356 LR LR 06 52 46.0
comp=Z,112nm,18.6s,baz=177,slow=34
SEY Seymchan 64.66 8 P P 06 28 18.1 +0.3
comp=Z,1.3nm,0.2s,baz=191,slow=12,SNR=4.6
MK01 Makanchi Array 67.47 322 *e*P P 06 28 35.8 -0.4
MK31 Makanchi Array 67.48 322 *e*P P 06 28 36.4 +0.1
MKAR Makanchi Array 67.48 322 P P 06 28 36.1 -0.2
comp=Z,2.8nm,0.6s,baz=110,slow=8.1,SNR=36
MKAR Makanchi Array 67.48 322 *e*P P 06 28 36.4 +0.1
MAKZ Makanchi 67.68 322 *e*P P 06 28 37.2 -0.3
comp=Z,5.2nm,0.7s
KSH Kashi 68.80 313 P P 06 28 46.1 +1.2
KSH pmax pmax
comp=Z,4.0nm,0.8s
ZAA0 Zalesovo Array 69.65 330 *e*P P 06 28 48.2 -1.4
TKM2 Tokmak 2 70.25 317 *e*P P 06 28 54.0 +0.1
comp=Z,1.9nm,0.6s
KURK Kurchatov 71.42 325 *e*P P 06 28 59.3 -1.1
comp=Z,6.9nm,0.8s
EKS2 Erkin-Say 71.42 316 *e*P P 06 29 00.3 -0.6
comp=Z,2.8nm,0.8s
KURBB Kurchatov Arra 71.43 325 P P 06 29 00.2 -0.4
comp=Z,3.9nm,0.8s,baz=116,slow=5.5,SNR=20
TIXI Tiksi 72.62 357 *e*P P 06 29 08.2 +0.9
comp=Z,3.8nm,0.7s
BVAR Borovoye Array 77.01 325 P P 06 29 32.8 -0.3
comp=Z,5.7nm,0.6s,baz=115,slow=7.0,SNR=37
BRVK Borovoye 77.08 325 *e*P P 06 29 33.3 -0.2
comp=Z,13nm,0.7s
NRIK Noril'sk 77.58 344 P P 06 29 35.7 -0.2
comp=Z,0.8nm,0.3s,baz=131,slow=7.2,SNR=2.4
VNDA Vanda 77.71 175 P P 06 29 37.3 +0.7
comp=Z,2.3nm,0.7s,baz=327,slow=6.5,SNR=13
VNDA Vanda 77.71 175 *e*P P 06 29 37.4 +0.8
comp=Z,26nm,2.0s
ZRNK Zerenda 77.78 325 *e*P P 06 29 37.0 -0.4
comp=Z,9.7nm,0.8s
ABKAR Akbulak array 82.42 320 *e*P P 06 30 02.0 -0.5
MAW Mawson 83.27 202 P P 06 30 07.2 +0.7
comp=Z,5.8nm,0.7s,baz=75,slow=3.9,SNR=5.9
MAW Mawson 83.27 202 *e*P P 06 30 07.5 +1.0
comp=Z,11nm,1.9s
AKTO Aktyubinsk 83.84 321 P P 06 30 09.0 -0.9
comp=Z,1.3nm,0.6s,baz=86,slow=8.6,SNR=4.0
CCB Clear Creek Bu 84.36 25 *e*P P 06 30 13.7 +1.5
comp=Z,4.1nm,1.0s
ARU Arti 84.50 327 P P 06 30 12.6 -0.5
comp=Z,6.6nm,0.2s,baz=341,slow=3.4,SNR=6.8
ARU Arti 84.50 327 *e*P P 06 30 12.3 -0.8
comp=Z,8.1nm,1.0s
ILAR Eielson Array 84.78 25 P P 06 30 12.0 -2.4
comp=Z,0.4nm,0.6s,baz=200,slow=29,SNR=5.6
ILAR LR LR 07 02 19.0
comp=Z,53nm,21.3s,baz=228,slow=32
DAWY Dawson 87.86 26 *e*P P 06 30 31.0 +1.5
comp=Z,7.7nm,1.0s
QSPA South Pole Qui 89.05 180 *e*P P 06 30 35.5 +0.3
YKA Yellowknife Ar 99.09 27 P Pdif 06 31 17.4 -3.7
comp=Z,0.0nm,0.3s,baz=267,slow=2.7,SNR=3.6
PLCA Paso Flores 131.45 152 PKP PKPdf 06 36 52.6 -0.7
comp=Z,1.3nm,0.8s,baz=81,slow=1.3,SNR=3.7
TORD Torodi Ar. Bea 134.37 288 PKP PKPdf 06 36 59.7 +0.4
comp=Z,1.1nm,0.8s,baz=71,slow=2.0,SNR=7.1
BANI BANI 147.77 56 *e*PKPdf PKPbc 06 37 25.2 -1.0
CPUP Villa Florida 149.49 154 PKPbc PKPbc 06 37 30.9 +0.6
comp=Z,3.3nm,0.8s,baz=249,slow=4.6,SNR=4.1
CPUP Villa Florida 149.49 154 *e*PKPbc PKPbc 06 37 30.7 +0.4
STVI Saint Thomas 152.11 50 *e*PKPbc PKPbc 06 37 36.9 +0.2

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*IDC **01** 06:32:25.9±1.1, 32°.63S×176°.34W, h0km, mb3.9/5, mb1 4.1/7, mb1mx3.9/38, mbtmp4.0/7, ML4.0/2, Error ellipse: s-maj=39.8km s-min=24.5km az=155.0*
*ISCJB **01** 06:32:29.5±0.9, 32°.98S±0°.07×176°.4W±0°.1, h33km, mb4.2/8, Error ellipse: s-maj=17.6km s-min=7.0km az=28.5*
*NEIC **01** 06:32:31.5±0.8, 32°.68S×176°.41W, h35km, mb4.6/4, Error ellipse: s-maj=17.8km s-min=12.7km az=129.0*
ISC 01 06:32:32.2±0.9**, 32°.90S**±0°.10×**176°.4W**±0°.1**, h35**km**, n25, σ1s.66**/30**, mb4.2**/8**, South of Kermadec Islands**

Code Station Name Δ° AZ° Phase ID Op ISC Time h m s Res ISC
PUZ Puketiti 6.73 218 PN Pn 06 34 06.6 -2.0
PUZ SN Sn 06 35 23.9 -0.2
HAZ Te Kaha 6.77 223 PN Pn 06 34 08.1 -0.9
HAZ SN Sn 06 35 26.6 +1.8
TWGZ Tauwhareparae 6.96 219 SN Sn 06 35 30.0 +0.4
MWZ Matawai 7.32 220 PN Pn 06 34 14.5 -2.1
MWZ SN Sn 06 35 37.1 -1.3
RIGZ Rimuhau 7.47 217 SN Sn 06 35 41.8 -0.3
URZ Urewera 7.50 223 Pn Pn 06 34 19.2 +0.2
1.4nm,0.3s,baz=254,slow=1.8,SNR=9.0
URZ Sn Sn 06 35 39.6 -3.1
6.4nm,0.3s,baz=249,slow=9.8,SNR=10
URZ Urewera 7.50 223 SN Sn 06 35 41.7 -1.0
URZ Urewera 7.50 223 *e*Pn Pn 06 34 20.0 +1.0
URZ Sn Sn 06 35 39.6 -3.1
URZ *e*Sn Sn 06 35 44.6 +1.8
BKZ Black Stump Fm 8.48 220 PN Pn 06 34 33.2 +0.7
BKZ SN Sn 06 36 03.9 -3.0
OUZ Omahuta 8.58 252 *e*Pn Pn 06 34 34.8 +0.8
CTZ Chatham Island 10.82 181 PN Pn 06 35 03.8 -0.8
THZ Tophouse 12.25 221 *e*Pn Pn 06 35 25.3 +1.2
THZ *e*Sn Sn 06 37 34.0 -5.4
RPZ Rata Peaks 14.58 219 Pn Pn 06 35 57.4 +1.6
0.9nm,0.3s,baz=98,slow=2.7,SNR=3.1
STKA Stephens Creek 35.28 260 P P 06 39 24.8 +1.0
1.7nm,0.9s,baz=328,slow=9.7,SNR=2.3
CTA Charters Tower 35.55 282 P P 06 39 25.6 -0.6
6.4nm,0.9s,baz=92,slow=20,SNR=3.9
CTAO Charters Tower 35.55 282 *e*P P 06 39 26.4 +0.2
2.3nm,0.8s
ASAR Alice Springs 44.34 269 P P 06 40 38.3 -0.9
0.5nm,0.7s,baz=114,slow=7.0,SNR=5.7
WRAB Tennant Creek 45.55 274 *e*P P 06 40 46.9 -1.9
13nm,1.4s
WRA Warramunga Arr 45.55 274 P P 06 40 47.1 -1.7
1.0nm,0.6s,baz=118,slow=7.4,SNR=3.8
QSPA South Pole Qui 57.22 180 *e*P P 06 42 18.3 +2.5
4.8nm,0.8s
MBWA Marble Bar 57.29 265 *e*P P 06 42 18.7 +2.0
46nm,1.8s
NVAR Mina Array Bea 89.19 42 P P 06 45 22.5 -1.9
0.1nm,0.3s,baz=256,slow=11,SNR=2.6
FINES FINESS Array B 147.94 340 PKPbc PKPdf 06 52 11.1 +1.2
2.6nm,0.6s,baz=57,slow=3.9,SNR=13
NOA NORSAR Array B 151.40 352 PKPbc PKPbc 06 52 19.9 -1.7
1.3nm,0.8s,baz=13,slow=4.1,SNR=3.7
TORD Torodi Ar. Bea 160.27 175 PKPab PKPab 06 53 08.9 0.0
0.2nm,0.7s,baz=188,slow=8.7,SNR=2.7

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*CSEM **01** 06:35:14.3±0.1, 43°.89N×15°.55E, h2km, MD2.9, Error ellipse: s-maj=2.4km s-min=1.9km az=12.0*
*ROM **01** 06:35:14.3±0.2, 43°.84N×15°.64E, h10km, Md2.9/8, Ml2.4/4, Error ellipse: s-maj=7.8km s-min=1.7km az=149.0*
*BEO **01** 06:35:14.6±0.8, 43°.82N×15°.60E, h0km, M2.8/7*
ISC 01 06:35:13.8±1.3**, 43°.89N**±0°.02×**15°.54E**±0°.02**, h3**km±11km**, n59, σ0s.78**/95**, 2C, Adriatic Sea**

Code Station Name Δ° AZ° Phase ID Op ISC Time h m s Res ISC
UDBI Udbina 0.66 14 *e*Pg Pg 06 35 25.8 -0.7
UDBI Sg Sg 06 35 35.9 +0.9
UDBI Udbina 0.66 14 *e*Pg Pg 06 35 25.7 -0.7
UDBI Sg Sg 06 35 35.9 +0.9
NVLJ Novalja 0.83 325 *i* Pg Pg 06 35 29.0 -0.7
NVLJ Sg Sb 06 35 42.5 +0.1
NVLJ Novalja 0.83 325 *i* Pg Pg 06 35 29.0 -0.7
NVLJ Sg Sb 06 35 42.5 +0.1
AOI Ancona 1.45 257 Pn Pb 06 35 41.3 -0.2
AOI Sn Sg 06 36 01.8 +1.5
AOI Ancona 1.45 257 Pn Pb 06 35 41.3 -0.2
AOI Sn Sg 06 36 01.8 +1.5
BLY Banja Luka 1.46 53 Pn Pn 06 35 40.3 -0.8
BLY Sn Sn 06 35 59.6 -1.2
BLY Banja Luka 1.46 53 *e*Pg Pn 06 35 40.5 -0.6
BLY *e*Sg Sg 06 36 01.8 +1.1
BLY Banja Luka 1.46 53 Pn Pn 06 35 40.3 -0.8
BLY Sn Sn 06 35 59.6 -1.2
BLY *e*Sg Sg 06 36 01.8 +1.1
BOJS Bojanci 1.63 353 *i* Pn Pb 06 35 44.6 +0.1
BOJS *i* Sn Sg 06 36 07.1 +1.0
comp=Z,34nm,0.3s
BOJS Bojanci 1.63 353 *i* Sg Sg 06 36 07.1 +1.0
comp=Z,34nm,0.3s
SISC Sisak 1.69 20 Sn Sg 06 36 08.5 +0.5
SISC Sisak 1.69 20 Sn Sg 06 36 08.5 +0.5
GBRS Gornja Briga 1.72 343 *i* Pn Pb 06 35 46.0 -0.2
STON Ston 1.87 122 *e*Pn Pn 06 35 47.0 +0.2
STON Sn Sb 06 36 12.9 +0.4
STON Ston 1.87 122 *e*Pg Pn 06 35 46.7 -0.1
STON *e*Sg Sb 06 36 11.5 -1.0
STON Ston 1.87 122 *e*Pg Pn 06 35 46.7 -0.1
STON Ston 1.87 122 *e*Pn Pn 06 35 47.2 +0.4
STON *e*Sn Sb 06 36 11.5 -1.0
CRES Cresnjev 1.94 358 *e*Pn Pb 06 35 48.7 -1.1
CRES *i* Sn Sb 06 36 14.7 +0.3

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
CRES	**Cresnjev**	**1.94**	**358**	⇑*i*Pn	**Pb**	**06 35 48.9**	**-0.9**
CRES				*e*Sn	**Sb**	**06 36 13.5**	**-0.9**
VISS	**Visnje**	**1.98**	**346**	*e*Sn	**Sb**	**06 36 16.1**	**+0.5**
VISS	**Visnje**	**1.98**	**346**	*e*Sn	**Sb**	**06 36 16.1**	**+0.5**
FDMO	**Fiordimonte**	**1.98**	**245**	Pn	**Pn**	**06 35 48.3**	**0.0**
FDMO	**Fiordimonte**	**1.98**	**245**	Pn	**Pn**	**06 35 48.3**	**0.0**
SKDS	**Skadanscina**	**1.98**	**327**	*i* Pn	**Pn**	**06 35 48.6**	**+0.2**
SKDS	**Skadanscina**	**1.98**	**327**	*i* Pn	**Pn**	**06 35 48.6**	**+0.2**
SNTG	**Esanatoglia**	**2.00**	**252**	Pn	**Pb**	**06 35 50.2**	**-0.6**
	comp=Z,14nm,0.5s						
SNTG	**Esanatoglia**	**2.00**	**252**	Pn	**Pb**	**06 35 50.2**	**-0.6**
	comp=Z,14nm,0.5s						
CEY	**Cerknica**	**2.01**	**337**	*e*Pn	**Pn**	**06 35 49.7**	**+0.9**
CEY				*e*Sn	**Sb**	**06 36 15.4**	**-1.2**
DOB	**Doboj**	**2.02**	**64**	*e*Sn	**Sn**	**06 36 14.6**	**0.0**
RM32	**Poggio Cancell**	**2.11**	**232**	Pn	**Pn**	**06 35 50.2**	**0.0**
RM32				Sn	**Sb**	**06 36 17.9**	**-1.6**
	comp=Z,62nm,1.4s						
RM32	**Poggio Cancell**	**2.11**	**232**	Pn	**Pn**	**06 35 50.2**	**0.0**
RM32				Sn	**Sb**	**06 36 17.9**	**-1.6**
	comp=Z,62nm,1.4s						
RM33	**Pellescritta (**	**2.19**	**232**	Pn	**Pn**	**06 35 51.5**	**+0.2**
RM33				Sn	**Sn**	**06 36 19.5**	**+0.5**
	comp=Z,23nm,0.5s						
RM33	**Pellescritta (**	**2.19**	**232**	Pn	**Pn**	**06 35 51.5**	**+0.2**
RM33				Sn	**Sn**	**06 36 19.5**	**+0.5**
	comp=Z,23nm,0.5s						
PIEI	**Pieia**	**2.21**	**262**	Pn	**Pn**	**06 35 52.3**	**+0.8**
PIEI	**Pieia**	**2.21**	**262**	Pn	**Pn**	**06 35 52.3**	**+0.8**
LNSS	**Leonessa**	**2.24**	**236**	Pn	**Pn**	**06 35 52.1**	**+0.2**
	comp=Z,28nm,0.3s						
LNSS	**Leonessa**	**2.24**	**236**	Pn	**Pn**	**06 35 52.1**	**+0.2**
	comp=Z,28nm,0.3s						
LJU	**Ljubljana**	**2.27**	**342**	*e*Pn	**Pn**	**06 35 53.6**	**+1.3**
LJU				*e*Sn	**Sb**	**06 36 21.9**	**-2.1**
TREB	**Trebinje**	**2.36**	**119**	⇑*i*Pn	**Pn**	**06 35 54.2**	**+0.7**
TREB				*e*Sn	**Sn**	**06 36 23.9**	**+0.9**
BRY	**Bratogost**	**2.40**	**113**	*e*Pn	**Pn**	**06 35 55.5**	**+1.3**
BRY				*e*Sn	**Sn**	**06 36 25.0**	**+0.9**
HAPS	**Han Pijesak,Bl**	**2.47**	**84**	*e*Pn	**Pn**	**06 35 55.9**	**+0.8**
HAPS				*e*Sn	**Sn**	**06 36 25.8**	**0.0**
UPM	**Unac-Piva**	**2.54**	**105**	*e*Pn	**Pn**	**06 35 57.2**	**+1.0**
UPM				*e*Sn	**Sn**	**06 36 27.7**	**0.0**
BBLS	**Lazići**	**2.79**	**89**	*e*Pn	**Pn**	**06 36 00.2**	**+0.7**
BBLS				*e*Sn	**Sn**	**06 36 33.8**	**0.0**
BBLS	**Lazići**	**2.79**	**89**	*e*Pn	**Pn**	**06 36 00.2**	**+0.7**
BBLS				*e*Sn	**Sn**	**06 36 34.5**	**+0.7**
TEKS	**Tekeris**	**2.94**	**76**	*e*Pn	**Pn**	**06 36 02.4**	**+0.9**
TEKS				*e*Sn	**Sn**	**06 36 38.5**	**+1.1**
TEKS	**Tekeris**	**2.94**	**76**	*e*Pn	**Pn**	**06 36 02.0**	**+0.5**
TEKS				*e*Sn	**Sn**	**06 36 38.5**	**+1.1**
DRME	**Dracevica, Mon**	**3.17**	**121**	*e*Pn	**Pn**	**06 36 04.9**	**+0.3**
DRME				*e*Sn	**Sn**	**06 36 43.5**	**+0.6**
DIVS	**Divibare**	**3.22**	**85**	*e*Pn	**Pn**	**06 36 06.1**	**+0.7**
DIVS	**Divibare**	**3.22**	**85**	*e*Pn	**Pn**	**06 36 06.1**	**+0.7**
SJES	**Sjenica**	**3.28**	**100**	*e*Pn	**Pn**	**06 36 07.0**	**+0.7**
SJES				*e*Sn	**Sn**	**06 36 45.3**	**-0.6**
FGSL	**Fruska Gora**	**3.30**	**66**	*e*Pn	**Pn**	**06 36 07.0**	**+0.5**
FGSL				*e*Sn	**Sn**	**06 36 47.2**	**+0.8**
FRGS	**Fruska Gora**	**3.30**	**66**	*e*Pn	**Pn**	**06 36 07.0**	**+0.5**
FRGS				*e*Sn	**Sn**	**06 36 47.2**	**+0.8**
TRUS	**Trudelj**	**3.52**	**83**	*e*Pn	**Pn**	**06 36 09.8**	**+0.3**
TRUS				*e*Sn	**Sn**	**06 36 52.1**	**+0.4**
TRUS	**Trudelj**	**3.52**	**83**	*e*Pn	**Pn**	**06 36 09.8**	**+0.3**
TRUS				*e*Sn	**Sn**	**06 36 52.1**	**+0.4**
GRUS	**Gruza**	**3.74**	**88**	*e*Pn	**Pn**	**06 36 13.2**	**+0.7**
GRUS	**Gruza**	**3.74**	**88**	*e*Pn	**Pn**	**06 36 13.2**	**+0.7**
SELS	**Selova**	**4.11**	**97**	*e*Pn	**Pn**	**06 36 17.6**	**0.0**
SELS	**Selova**	**4.11**	**97**	*e*Pn	**Pn**	**06 36 17.6**	**0.0**

DJA 01 06:39:09.9±0.7**, 6°S**±5°×**10°4E**±°**, h38**km±6km**, M3.6**/7**, MLv3.6**/7**, Southern Sumatera**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
KASI	**Kota Agung**	**0.52**	**49**	P	Pn	06 39 21.9	+1.0
KASI				S	Sn	06 39 30.7	+2.1
LWLI	**Liwa**	**0.85**	**357**	P	Pn	06 39 26.5	+1.0
LWLI				S	Sn	06 39 37.3	+0.5
BLSI	**Bandar Lampung**	**1.24**	**66**	P	Pn	06 39 30.4	-0.4
KLI	**Kotabumi**	**1.25**	**37**	P	Pn	06 39 31.5	+0.6
KLI				S	Sn	06 39 48.2	+1.7
MDSI	**Maura Dua**	**1.38**	**3**	P	Pn	06 39 33.2	+0.6
CGJI	**Cibinong**	**1.75**	**115**	P	Pn	06 39 38.1	+0.4
CGJI				S	Sn	06 39 59.5	+0.8
MNAI	**Manna**	**1.88**	**323**	P	Pn	06 39 39.7	+0.1
MNAI				S	Sn	06 40 02.6	+0.5

*NIED **01** 06:42:00, 37°.50N×142°.80E, h11km, Mw3.8 Best double couple: M₀5.87000×10^14 NP1:φs204.00000°, δ41.00000°, λ-143.00000°. NP2:φs85.00000°, δ67.00000°, λ-55.00000°.*
*ISCJB **01** 06:42:49.0±0.5, 37°.54N±0°.05×142°.81E±0°.05, h24km, mb3.9/21, Error ellipse: s-maj=8.3km s-min=4.8km az=152.9*
*IDC **01** 06:42:49.5±0.7, 37°.98N×142°.79E, h0km, mb3.8/17, mb1 4.0/18, mb1mx3.9/56, mbtmp3.8/18, ML3.5/1, Error ellipse: s-maj=19.6km s-min=17.8km az=137.0*
*JMA **01** 06:42:49.1±0.2, 37°.50N×142°.82E, h39km, M3.9*
*NEIC **01** 06:42:54.5±0.5, 37°.91N×142°.66E, h35km, mb4.1/5, Error ellipse: s-maj=14.1km s-min=9.1km az=139.0*
ISC 01 06:42:50.9±0.7**, 37°.55N**±0°.07×**142°.81E**±0°.07**, h24**km**, n48, σ1ˢ31**/46**, mb3.9**/21**, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**1.47**	**308**	P	**Pn**	**06 43 14.5**	**-1.3**
JIO				S	**Sn**	**06 43 32.6**	**-1.6**
JMM	**Marumori**	**1.63**	**282**	P	**Pn**	**06 43 16.5**	**-1.6**
JMM				S	**Sn**	**06 43 36.5**	**-1.8**
ONAJ	**Iwakimizuishiy**	**1.67**	**255**	P	**Pn**	**06 43 16.3**	**-2.4**
ONAJ				*e*S	**Sn**	**06 43 36.5**	**-2.8**
OFUJ	**Ofunato**	**1.77**	**330**	P	**Pn**	**06 43 18.4**	**-1.6**
JMK	**Ichinoseki**	**1.88**	**319**	P	**Pn**	**06 43 20.4**	**-1.1**
JOU	**Okura**	**1.88**	**296**	P	**Pn**	**06 43 20.8**	**-0.8**
JFT	**Otama**	**1.97**	**270**	P	**Pn**	**06 43 22.1**	**-0.7**
JHO	**Hitachi**	**2.02**	**243**	P	**Pn**	**06 43 22.1**	**-1.4**
JHO				S	**Sn**	**06 43 45.4**	**-2.7**
JOM	**Ohasama**	**2.26**	**329**	P	**Pn**	**06 43 25.8**	**-0.9**
JYK	**Kaneyama**	**2.36**	**306**	P	**Pn**	**06 43 27.6**	**-0.6**
CHOJ	**Chosi**	**2.42**	**221**	P	**Pn**	**06 43 26.9**	**-2.1**
MJAR	**Matsushiro Arr**	**3.82**	**256**	Pn	**Pn**	**06 43 49.1**	**+0.9**
	3.2nm,0.3s,baz=323,slow=14,SNR=7.5						
MAJO	**Matsushiro**	**3.82**	**256**	*e*Pn	**Pn**	**06 43 48.3**	**+0.1**
MAT	**Matsushiro**	**3.82**	**256**	P	**Pn**	**06 43 48.4**	**+0.2**
MAT				*e*S	**Sn**	**06 44 33.5**	**+1.1**
ERM	**Erimo**	**4.46**	**3**	*e*Pn	**Pn**	**06 43 54.4**	**-2.7**
USRK	**Ussuriysk Ar.**	**10.54**	**312**	Pn	**Pn**	**06 45 22.7**	**+2.3**
	0.2nm,0.3s,baz=205,slow=31,SNR=3.0						
SEY	**Seymchan**	**26.08**	**10**	P	**P**	**06 48 22.4**	**+0.1**
	2.8nm,0.8s,baz=211,slow=7.5,SNR=7.2						
H11N1	**WAKE ISLAND Hy**	**27.49**	**124**	T	T	07 17 38.1	
	baz=198,slow=74,SNR=36						
H11N3	**WAKE ISLAND Hy**	**27.50**	**124**	T	T	07 17 37.0	
	baz=314,slow=74,SNR=40						
H11S1	**WAKE ISLAND Hy**	**28.23**	**126**	T	T	07 18 32.3	
	baz=317,slow=76,SNR=28						
H11S3	**WAKE ISLAND Hy**	**28.23**	**126**	T	T	07 18 33.0	
	baz=317,slow=76,SNR=30						
H11S2	**WAKE ISLAND Hy**	**28.25**	**126**	T	T	07 18 29.3	
	baz=317,slow=76,SNR=19						
SONM	**Songino Array**	**28.43**	**303**	P	**P**	**06 48 44.8**	**+1.0**
	0.6nm,0.7s,baz=104,slow=11,SNR=3.6						
ZALV	**Zalesovo Beam**	**42.39**	**312**	P	**P**	**06 50 42.8**	**-0.3**
	1.3nm,0.7s,baz=106,slow=9.4,SNR=5.5						
MKAR	**Makanchi Array**	**44.79**	**302**	P	**P**	**06 51 02.8**	**+0.1**
	0.2nm,0.5s,baz=158,slow=23,SNR=3.0						
KURK	**Kurchatov**	**46.49**	**308**	P	**P**	**06 51 16.0**	**0.0**
KURBB	**Kurchatov Arra**	**46.56**	**308**	P	**P**	**06 51 16.0**	**-0.5**
	1.0nm,0.4s,baz=83,slow=8.1,SNR=5.5						
BPAW	**Bear Paw Mtn.**	**46.68**	**34**	*e*P	**P**	**06 51 17.6**	**+0.3**
	3.2nm,2.1s						
KTH	**Kantishna Hill**	**46.69**	**34**	*e*P	**P**	**06 51 17.9**	**+0.5**
	9.4nm,1.5s						
ILAR	**Eielson Array**	**48.46**	**33**	P	**P**	**06 51 30.9**	**-0.2**
	0.9nm,0.7s,baz=261,slow=6.1,SNR=12						
INK	**Inuvik**	**53.42**	**27**	P	**P**	**06 52 09.1**	**+0.9**
	0.3nm,0.6s,baz=287,slow=5.6,SNR=4.9						
INK	**Inuvik**	**53.42**	**27**	*e*P	**P**	**06 52 08.2**	**0.0**
	1.1nm,0.9s						
ARU	**Arti**	**56.71**	**319**	P	**P**	**06 52 32.0**	**-0.2**
	3.9nm,0.2s,baz=276,slow=22,SNR=3.6						
ARU	**Arti**	**56.71**	**319**	*e*P	**P**	**06 52 32.3**	**+0.1**
	2.8nm,0.5s						
WRA	**Warramunga Arr**	**57.74**	**189**	P	P	06 52 45.0	+5.2
	1.6nm,0.7s,baz=10,slow=7.5,SNR=5.4						
ASAR	**Alice Springs**	**61.47**	**189**	P	P	06 53 12.4	+6.9
	0.8nm,0.8s,baz=13,slow=6.3,SNR=5.8						
RES	**Resolute Bay**	**61.82**	**15**	*e*P	**P**	**06 53 06.4**	**-0.9**
	1.1nm,0.8s						
YKA	**Yellowknife Ar**	**62.80**	**31**	P	**P**	**06 53 13.9**	**0.0**
	0.3nm,0.6s,baz=302,slow=6.7,SNR=7.6						
ARCES	**ARCESS Array B**	**63.90**	**340**	P	**P**	**06 53 21.6**	**+0.4**
	3.2nm,0.9s,baz=23,slow=6.6,SNR=3.9						
FINES	**FINESS Array B**	**68.87**	**333**	P	**P**	**06 53 53.0**	**-0.1**
	1.4nm,0.5s,baz=46,slow=11,SNR=6.3						
KBZ	**Khabaz**	**71.41**	**311**	P	**P**	**06 54 09.9**	**+0.9**
	0.5nm,0.4s,baz=336,slow=6.8,SNR=3.6						
NB2	**NORSAR Subarra**	**74.13**	**338**	P	**P**	**06 54 24.5**	**-0.4**
	comp=Z,0.8nm,0.6s,baz=39,slow=6.2						
NOA	**NORSAR Array B**	**74.13**	**338**	P	**P**	**06 54 24.9**	**0.0**
	comp=Z,1.1nm,0.6s,baz=39,slow=5.8,SNR=6.0						
AKASG	**Malin Array Be**	**74.56**	**323**	P	**P**	**06 54 27.7**	**+0.2**
	comp=Z,0.1nm,0.3s,baz=44,slow=6.2,SNR=6.9						
PDAR	**Pinedale Array**	**76.51**	**46**	P	**P**	**06 54 38.9**	**-0.3**
	comp=Z,0.3nm,0.6s,baz=300,slow=2.0,SNR=4.6						
TXAR	**Lajitas Array**	**88.92**	**53**	P	**P**	**06 55 43.5**	**-0.2**
	comp=Z,0.3nm,0.6s,baz=300,slow=3.6,SNR=7.4						
QSPA	**South Pole Qui**	**127.29**	**180**	*e*PKPdf	**PKPdf**	**07 01 55.7**	**+3.3**
LPAZ	**La Paz**	**145.47**	**61**	PKPbc	**PKPab**	**07 02 28.4**	**+0.1**
	comp=Z,0.5nm,0.5s,baz=20,slow=4.9,SNR=2.9						

*SOME **01** 06:42:52.0, 37°.60N×76°.38E, h15km*
*BJI **01** 06:42:57.8, 37°.52N×75°.79E, h6km, ML3.7/7*
*IDC **01** 06:43:04.9±3.2, 37°.50N×75°.87E, h54km±29km, mb3.5/8, mb1 3.6/14, mb1mx3.4/56, mbtmp3.8/14, ML3.5/6, MS3.7/2, Ms1 3.7/2, ms1mx2.8/40, Error ellipse: s-maj=25.8km s-min=21.0km az=71.0*
*NNC **01** 06:43:05.3±2.0, 37°.88N×75°.95E, h0km, mb3.9, mpv3.5, Error ellipse: s-maj=19.1km s-min=13.1km az=23.0*
ISC 01 06:42:58.8±1.0**, 37°.42N**±0°.06×**75°.78E**±0°.08**, h10**km**, n32, σ1ˢ69**/26**, mb3.7**/8**, 7C-6D, Tajikistan-Xinjiang border region**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
KSH	**Kashi**	**2.10**	**4**	Pg	Pn	06 43 27.5	-6.7
KSH				Sg	Sn	06 43 47.1	-13
KSH				smax	smax		
	comp=N,560nm,0.5s						
KSH				smax	smax		
	comp=E,340nm,0.2s						
SFK	**Sufi-Kurgan**	**3.15**	**326**	⇑Pn	**Pb**	**06 43 53.3**	**-1.7**
	7.4nm,0.4s						
SFK				⇑Lg	Lg	06 44 35.1	
	59nm,0.4s						
AAK	**Ala-Archa**	**5.30**	**350**	P	Pn	06 44 21.2	+3.0
	3.2nm,0.3s,baz=149,slow=7.5,SNR=32						
AAK	**Ala-Archa**	**5.30**	**350**	⇓Pn	Pn	06 44 20.8	+2.5
	4.7nm,0.5s						
AAK				⇓Lg	Lg	06 45 41.5	
	9.2nm,0.7s						
TKM2	**Tokmak 2**	**5.50**	**359**	⇓Pn	Pn	06 44 23.1	+2.1
	3.9nm,0.5s						
TKM2				⇑Lg	Lg	06 45 45.8	
	14nm,0.6s						
KST	**Kastek**	**5.62**	**1**	*e*P	**Pb**	**06 44 36.6**	**-0.5**
	1.3nm,0.1s						
KST				*e*S	Sg	06 45 51.7	-7.6
	16nm,0.5s						
MNAS	**Manas**	**5.66**	**335**	⇓Pn	Pn	06 44 25.3	+2.3
	2.3nm,0.5s						
MNAS				⇑Sn	**Sn**	**06 45 30.1**	**+2.0**
	7.9nm,0.6s						
MNAS				⇓Lg	Lg	06 45 52.0	
	9.9nm,0.8s						
MRKS	**Merke**	**5.67**	**341**	*e*P	Pg	06 44 40.2	-7.2
	2.8nm,0.4s						
MRKS				*e*S	**Sg**	**06 45 58.5**	**-2.4**
	13nm,0.6s						
DGS	**Degeres**	**5.82**	**360**	*e*P	**Pb**	**06 44 38.9**	**-1.5**
	2.2nm,0.6s						
DGS				*e*S	Sg	06 45 56.0	-10
	37nm,0.6s						
MDOK	**Medeo**	**5.82**	**9**	*e*P	Pb	06 44 33.5	-7.0
	7.0nm,0.5s						
MDOK				*e*S	**Sb**	**06 45 46.5**	**-3.8**
	18nm,1.4s						
KTBS	**Karatobe**	**6.33**	**6**	*e*P	**Pb**	**06 44 48.2**	**-0.8**
KTBS				*e*S	Sg	06 46 12.0	-10
CHKK	**Chushkaly**	**6.51**	**8**	*e*P	Pb	06 44 48.2	-3.9
	3.4nm,0.5s						
CHKK				*e*S	**Sb**	**06 46 11.9**	**+1.9**
	14nm,0.9s						
PDGK	**Podgornoye**	**6.54**	**24**	⇑Pn	**Pn**	**06 44 34.7**	**-0.4**
	1.5nm,0.5s						
PDGK				⇑Pg	Pg	06 44 56.7	-7.4
	3.2nm,0.5s						
PDGK				⇑Lg	Lg	06 46 18.1	
	17nm,0.6s						
MNBS	**Baschi**	**6.95**	**16**	*e*P	**Pb**	**06 44 56.9**	**-2.7**
	1.5nm,0.8s						
MNBS				*e*S	Sb	06 46 26.9	+4.3
	3.0nm,1.2s						
KK31	**Karatay Array**	**6.96**	**326**	Pn	Pn	06 44 42.2	+1.4
	1.0nm,0.3s,baz=133,slow=13,SNR=15						
KK31				⇓Sn	**Sn**	**06 46 01.5**	**+1.4**
	4.6nm,0.6s,baz=148,slow=24,SNR=7.9						
ARXS	**Arharly**	**6.96**	**12**	*e*P	**Pb**	**06 44 57.0**	**-2.9**
	1.5nm,0.6s						
ARXS				*e*S	Sb	06 46 26.9	+3.8
	20nm,0.6s						
MKAR	**Makanchi Array**	**10.54**	**25**	P	**Pn**	**06 45 29.9**	**0.0**
	0.1nm,0.3s,baz=202,slow=15,SNR=5.5						
WMQ	**Urumqi**	**11.08**	**51**	*e*P	Pn	06 45 38.6	+1.3
WMQ				S	**Sn**	**06 47 42.7**	**+1.4**
KURBB	**Kurchatov Arra**	**13.35**	**8**	P	**Pn**	**06 46 08.5**	**+0.3**
	0.1nm,0.3s,baz=198,slow=9.1,SNR=4.4						
BVAR	**Borovoye Array**	**16.06**	**348**	P	**P**	**06 46 48.0**	**0.0**
	0.5nm,0.3s,baz=156,slow=11,SNR=18						
ZALV	**Zalesovo Beam**	**17.67**	**18**	P	**P**	**06 47 06.1**	**+0.3**
	0.5nm,0.3s,baz=219,slow=12,SNR=4.1						
AKTO	**Aktyubinsk**	**18.19**	**321**	P	**P**	**06 47 14.0**	**+2.4**
	0.3nm,0.3s,baz=121,slow=14,SNR=5.9						
SONM	**Songino Array**	**24.66**	**55**	P	**P**	**06 48 19.9**	**+0.1**
	0.6nm,0.7s,baz=250,slow=10,SNR=4.7						
PALK	**Pallekele**	**30.34**	**170**	P	**P**	**06 49 12.8**	**+2.1**
	2.1nm,0.4s,baz=83,slow=0.8,SNR=2.6						
FINES	**FINESS Array B**	**38.92**	**324**	P	**P**	**06 50 25.4**	**+1.0**
	0.6nm,0.4s,baz=118,slow=9.1,SNR=7.3						
ARCES	**ARCESS Array B**	**41.81**	**336**	P	**P**	**06 50 48.6**	**+0.4**
	1.2nm,0.6s,baz=108,slow=8.7,SNR=10						
NOA	**NORSAR Array B**	**45.98**	**322**	P	**P**	**06 51 21.9**	**+0.1**
	0.4nm,0.5s,baz=84,slow=7.4,SNR=2.4						
DAV	**Davao City (W)**	**54.26**	**111**	LR	LR	07 16 02.1	
	comp=Z,64nm,20.2s,baz=336,slow=36						
GUMO	**Guam**	**65.32**	**92**	LR	LR	07 20 50.6	
	comp=Z,56nm,21.6s,baz=12,slow=35						
TORD	**Torodi Ar. Bea**	**69.55**	**271**	P	**P**	**06 54 07.5**	**-0.7**
	0.3nm,0.5s,baz=44,slow=5.7,SNR=5.5						
INK	**Inuvik**	**72.33**	**11**	P	**P**	**06 54 23.7**	**-0.5**
	0.8nm,0.9s,baz=350,slow=3.6,SNR=2.2						
YKA	**Yellowknife Ar**	**80.08**	**5**	P	**P**	**06 55 07.7**	**-0.7**
	0.3nm,0.6s,baz=348,slow=5.2,SNR=5.3						

*IDC **01** 06:43:39.2±1.1, 19°.78S×168°.26E, h0km, mb3.8/8, mb1 4.1/9, mb1mx3.9/32, mbtmp3.9/9, ML3.8/1, MS3.3/2, Ms1 3.3/2, ms1mx2.8/36, Error ellipse: s-maj=33.8km s-min=21.7km az=140.0*
*NEIC **01** 06:43:40.8±0.7, 19°.83S×168°.27E, h10km, mb4.5/5, Error ellipse: s-maj=17.8km s-min=13.0km az=146.0*
*ISCJB **01** 06:43:41.5±0.8, 19°.85S±0°.10×168°.2E±0°.1, h25km, mb4.0/11, MS3.5/1, Error ellipse: s-maj=19.9km s-min=10.5km az=32.9*
ISC 01 06:43:43.1±0.9**, 19°.9S**±0°.1×**168°.2E**±0°.2**, h25**km**, n16, σ0ˢ95**/15**, mb3.9**/11**, Vanuatu Islands**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**2.75**	**217**	Pn	**Pn**	**06 44 24.9**	**-0.8**
	15nm,0.3s,baz=49,slow=8.8,SNR=108						
DZM				Sn	**Sn**	**06 44 57.6**	**-0.5**
	44nm,0.3s,baz=103,slow=21,SNR=12						
DZM				LR	LR	06 45 33.3	
	comp=Z,356nm,20.7s,baz=7.5,slow=40						
CTA	**Charters Tower**	**20.64**	**266**	P	Pn	06 48 22.4	-1.0
	6.8nm,1.0s,baz=74,slow=15,SNR=2.2						
CTAO	**Charters Tower**	**20.64**	**266**	*e*P	**P**	**06 48 21.6**	**+0.6**
	19nm,1.3s						
STKA	**Stephens Creek**	**26.70**	**238**	P	**P**	**06 49 22.4**	**+2.0**
	2.1nm,0.8s,baz=82,slow=12,SNR=2.9						
WRAB	**Tennant Creek**	**31.81**	**264**	*e*P	**P**	**06 50 05.3**	**-0.7**
	14nm,1.8s						
WRA	**Warramunga Arr**	**31.82**	**264**	P	**P**	**06 50 05.3**	**-0.8**
	0.5nm,0.4s,baz=89,slow=8.5,SNR=4.7						
ASAR	**Alice Springs**	**32.04**	**257**	P	**P**	**06 50 07.7**	**-0.3**
	1.6nm,0.6s,baz=82,slow=8.6,SNR=14						
FITZ	**Fitzroy Crossi**	**40.22**	**265**	LR	LR	07 06 19.5	
	comp=Z,67nm,18.6s,slow=34						
FITZ	**Fitzroy Crossi**	**40.22**	**265**	*e*P	**P**	**06 51 18.4**	**+0.4**
	10nm,0.9s						
MBWA	**Marble Bar**	**45.29**	**260**	*e*P	**P**	**06 51 59.1**	**0.0**
	4.8nm,0.8s						
VNDA	**Vanda**	**57.77**	**182**	P	**P**	**06 53 32.1**	**+0.5**
	0.5nm,1.0s,baz=334,slow=6.1,SNR=3.1						
QSPA	**South Pole Qui**	**70.19**	**180**	*e*P	**P**	**06 54 53.7**	**+0.1**
	10nm,1.1s						
SONM	**Songino Array**	**87.15**	**324**	P	**P**	**06 56 27.5**	**+0.5**
	0.3nm,0.4s,baz=130,slow=2.3,SNR=3.7						
NVAR	**Mina Array Bea**	**89.94**	**49**	P	**P**	**06 56 41.3**	**+0.7**
	0.2nm,0.3s,baz=210,slow=7.1,SNR=3.5						
ILAR	**Eielson Array**	**91.12**	**18**	P	**P**	**06 56 43.6**	**-1.6**
	0.2nm,0.8s,baz=254,slow=5.4,SNR=4.3						
BFO	**Black Forest**	**147.29**	**335**	*e*PKPbc	**PKPbc**	**07 03 23.7**	**-0.7**

*JMA **01** 06:44:10.6±0.2, 37°.58N×142°.67E, h14km, M4.3*
JMA Felt I J1.
*NEIC **01** 06:44:17.3±0.8, 37°.52N×142°.84E, h79km±7km, mb4.3/14, Error ellipse: s-maj=9.6km s-min=6.4km az=137.0*
*IDC **01** 06:44:18.2±2.6, 37°.52N×142°.83E, h87km±24km, mb3.8/21, mb1 4.0/24, mb1mx3.8/58, mbtmp4.1/24, MS2.8/2, Ms1 2.8/2, ms1mx2.5/48, Error ellipse: s-maj=16.0km s-min=14.6km az=105.0*
ISC 01 06:44:07.5±3.6**, 37°.56N**±0°.05×**142°.84E**±0°.07**, h1**km±22km**, n60, σ1ˢ15**/57**, mb4.3**/35**, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**1.47**	**308**	P	**Pn**	**06 44 35.1**	**0.0**
JIO				S	**Sn**	**06 44 52.8**	**-2.2**
JMM	**Marumori**	**1.65**	**281**	P	**Pn**	**06 44 37.5**	**0.0**
ONAJ	**Iwakimizuishiy**	**1.69**	**255**	P	**Pn**	**06 44 38.5**	**+0.3**
ONAJ				S	**Sn**	**06 44 58.1**	**-2.3**
JMK	**Ichinoseki**	**1.88**	**318**	P	**Pn**	**06 44 41.5**	**+0.7**
JMK				S	**Sn**	**06 45 03.1**	**-2.0**
JOU	**Okura**	**1.89**	**296**	P	**Pn**	**06 44 41.5**	**+0.5**
JOU				S	**Sn**	**06 45 04.1**	**-1.4**
JFT	**Otama**	**1.99**	**269**	P	**Pn**	**06 44 43.2**	**+1.0**
JFT				S	**Sn**	**06 45 07.1**	**-0.6**
JHO	**Hitachi**	**2.05**	**243**	P	**Pn**	**06 44 43.9**	**+0.9**
JYK	**Kaneyama**	**2.37**	**305**	P	**Pn**	**06 44 48.8**	**+1.3**
CHOJ	**Chosi**	**2.44**	**221**	P	**Pn**	**06 44 49.0**	**+0.5**
CHOJ				S	**Sn**	**06 45 16.8**	**-2.2**
MJAR	**Matsushiro Arr**	**3.84**	**256**	P	**Pb**	**06 45 16.3**	**+0.3**
	5.4nm,0.3s,baz=2.6,slow=1.2,SNR=5.8						
MAJO	**Matsushiro**	**3.84**	**256**	*e*Pn	**Pb**	**06 45 13.8**	**-2.2**
MAT	**Matsushiro**	**3.84**	**256**	P	Pn	06 45 12.0	+4.3
MAT				*e*S	**Sn**	**06 45 57.7**	**+4.2**
ERM	**Erimo**	**4.45**	**3**	*e*Pn	Pb	06 45 22.9	-3.5
JCJ	**Chichijima**	**10.45**	**183**	LR	LR	06 50 03.9	
	comp=Z,54nm,21.8s,baz=267,slow=33						
USRK	**Ussuriysk Ar.**	**10.55**	**312**	P	Pn	06 46 47.5	+7.7
	0.7nm,0.3s,baz=122,slow=14,SNR=10						
JNU	**Nakatsue**	**10.72**	**249**	P	Pn	06 46 47.5	+5.3
	0.4nm,0.3s,baz=218,slow=12,SNR=3.4						
JNU				LR	LR	06 50 25.2	
	comp=Z,54nm,19.5s,baz=120,slow=34						
KSRS	**Korea Array**	**11.85**	**274**	P	Pn	06 47 01.9	+4.4
	0.4nm,0.3s,baz=9.7,slow=39,SNR=4.0						
KSAR	**Wonju Array Be**	**11.88**	**274**	P	Pn	06 47 01.9	+4.0
SEY	**Seymchan**	**26.06**	**10**	P	**P**	**06 49 43.4**	**+1.2**
	4.7nm,0.7s,baz=183,slow=7.8,SNR=9.2						
H11N2	**WAKE ISLAND Hy**	**27.47**	**124**	T	T	07 18 47.1	
	baz=316,slow=75,SNR=40						
H11N1	**WAKE ISLAND Hy**	**27.48**	**124**	T	T	07 18 42.2	
	baz=316,slow=75,SNR=3.7						
H11N3	**WAKE ISLAND Hy**	**27.49**	**124**	T	T	07 18 51.2	
	baz=316,slow=75,SNR=4.8						
SONM	**Songino Array**	**28.44**	**303**	P	**P**	**06 50 05.3**	**+1.5**
	1.3nm,0.8s,baz=102,slow=8.5,SNR=5.9						
ZALV	**Zalesovo Beam**	**42.40**	**312**	P	**P**	**06 52 03.4**	**+0.1**
	0.8nm,0.4s,baz=86,slow=6.5,SNR=5.8						
MKAR	**Makanchi Array**	**44.80**	**302**	P	**P**	**06 52 23.4**	**+0.6**
	0.6nm,0.7s,baz=95,slow=7.3,SNR=3.6						
PPLA	**Purkeypile**	**46.09**	**35**	*e*P	**P**	**06 52 33.7**	**+0.8**
	23nm,1.8s						
KURK	**Kurchatov**	**46.50**	**308**	*e*P	**P**	**06 52 37.8**	**+1.7**
	14nm,0.8s						
KURBB	**Kurchatov Arra**	**46.57**	**308**	P	**P**	**06 52 36.6**	**-0.1**
	3.3nm,0.8s,baz=84,slow=8.3,SNR=6.0						
BPAW	**Bear Paw Mtn.**	**46.66**	**34**	*e*P	**P**	**06 52 38.2**	**+1.0**
	0.5nm,1.1s						
KTH	**Kantishna Hill**	**46.67**	**34**	*e*P	**P**	**06 52 37.4**	**0.0**
	6.3nm,1.4s						
TRF	**Thorofare Moun**	**46.96**	**34**	*e*P	**P**	**06 52 41.4**	**+1.6**
	2.0nm,1.0s						
COLD	**Coldfoot**	**47.14**	**29**	*e*P	**P**	**06 52 40.8**	**-0.1**
	1.0nm,0.9s						
MCK	**McKinley**	**47.56**	**34**	*e*P	**P**	**06 52 44.3**	**+0.1**
ILAR	**Eielson Array**	**48.44**	**33**	P	**P**	**06 52 50.9**	**-0.1**
	1.9nm,0.7s,baz=264,slow=6.5,SNR=18						
EGAK	**Eagle**	**50.89**	**32**	*e*P	**P**	**06 53 09.5**	**-0.2**
	1.1nm,0.8s						
BVAR	**Borovoye Array**	**51.06**	**312**	P	**P**	**06 53 11.5**	**+0.4**
	0.6nm,0.6s,baz=96,slow=11,SNR=3.6						
INK	**Inuvik**	**53.40**	**27**	P	**P**	**06 53 28.5**	**+0.3**
	1.2nm,0.6s,baz=309,slow=7.0,SNR=9.6						
ARU	**Arti**	**56.71**	**319**	P	**P**	**06 53 51.3**	**-1.1**
	3.9nm,0.2s,baz=73,slow=5.8,SNR=3.6						
WRAB	**Tennant Creek**	**57.74**	**189**	*e*P	**P**	**06 53 58.7**	**-1.3**
	10nm,1.0s						
WRA	**Warramunga Arr**	**57.76**	**189**	P	**P**	**06 53 59.3**	**-0.8**
	4.3nm,0.8s,baz=8.8,slow=7.3,SNR=9.7						
AKTO	**Aktyubinsk**	**59.16**	**312**	P	**P**	**06 54 10.2**	**+0.5**
	0.9nm,0.6s,baz=42,slow=7.9,SNR=4.2						
ASAR	**Alice Springs**	**61.48**	**189**	P	**P**	**06 54 25.1**	**-0.7**
	1.6nm,0.7s,baz=8.6,slow=6.6,SNR=11						
RES	**Resolute Bay**	**61.80**	**15**	*e*P	**P**	**06 54 27.1**	**-0.2**
	2.9nm,0.8s						
YKA	**Yellowknife Ar**	**62.78**	**31**	P	**P**	**06 54 33.6**	**-0.5**
	0.8nm,0.6s,baz=302,slow=6.6,SNR=13						
ARCES	**ARCESS Array B**	**63.90**	**340**	P	**P**	**06 54 41.0**	**-0.4**
	3.3nm,0.9s,baz=46,slow=7.3,SNR=5.2						
FINES	**FINESS Array B**	**68.87**	**333**	P	**P**	**06 55 13.6**	**+0.2**
	2.8nm,0.6s,baz=35,slow=11,SNR=7.6						
SUMG	**Summit**	**70.15**	**0**	*e*P	**P**	**06 55 21.1**	**-0.5**
	8.0nm,1.2s						
WVOR	**Wild Horse Val**	**71.28**	**51**	*e*P	**P**	**06 55 28.9**	**+0.2**
	1.6nm,0.5s						
KBZ	**Khabaz**	**71.41**	**311**	P	**P**	**06 55 30.9**	**+1.7**
	1.9nm,1.0s,baz=86,slow=2.1,SNR=3.4						
FFC	**Flin Flon**	**72.64**	**33**	*e*P	**P**	**06 55 36.1**	**-0.3**
	4.0nm,0.9s						
NVAR	**Mina Array Bea**	**73.76**	**54**	P	**P**	**06 55 44.3**	**+0.7**
	1.2nm,0.8s,baz=282,slow=6.7,SNR=9.3						
NB2	**NORSAR Subarra**	**74.13**	**338**	P	**P**	**06 55 44.8**	**-0.4**
	comp=Z,1.7nm,0.8s,baz=40,slow=6.2						
NOA	**NORSAR Array B**	**74.13**	**338**	P	**P**	**06 55 45.1**	**-0.1**
	comp=Z,2.0nm,0.7s,baz=39,slow=5.8,SNR=8.2						
AKASG	**Malin Array Be**	**74.57**	**323**	P	**P**	**06 55 47.4**	**-0.5**
	comp=Z,1.5nm,0.4s,baz=44,slow=6.2,SNR=9.4						
KIEV	**Kiev**	**74.58**	**323**	*e*P	**P**	**06 55 47.5**	**-0.4**
	comp=Z,1.8nm,0.4s						
DUG	**Dugway, Tooele**	**76.15**	**50**	*e*P	**P**	**06 55 57.1**	**-0.2**
	comp=Z,1.5nm,0.8s						
PDAR	**Pinedale Array**	**76.48**	**46**	P	**P**	**06 55 59.2**	**-0.1**
	comp=Z,0.7nm,0.5s,baz=278,slow=1.6,SNR=10						
TXAR	**Lajitas Array**	**88.90**	**53**	P	**P**	**06 57 03.8**	**-0.1**
	comp=Z,0.6nm,0.6s,baz=298,slow=2.9,SNR=11						
LPAZ	**La Paz**	**145.45**	**61**	PKPbc	**PKPbc**	**07 03 48.3**	**-0.1**
	comp=Z,1.0nm,0.4s,baz=347,slow=4.3,SNR=7.5						
LCO	**Las Campanas**	**150.82**	**83**	*e*PKPbc	**PKPbc**	**07 04 02.0**	**-0.1**

IDC 01 06:44:32.2±3.7**, 6°.26S**×**148°.41E, h0**km**, mb3.0**/1**, mb1 3.6**/3**, mb1mx3.3**/39**, mbtmp3.4**/3**, ML3.4**/1**, Error ellipse: s-maj=123.9km s-min=34.4km az=106.0, New**

Britain region

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
PMG	Port Moresby	3.36	202	Pn	Pn	06 45 26.7	+0.6
	6.8nm,0.3s,baz=52,slow=5.0,SNR=12						
PMG				Sn	Sn	06 46 08.6	+1.9
	14nm,0.3s,baz=1.4,slow=20,SNR=8.3						
WRA	Warramunga Arr	19.28	224	P	Pn	06 49 00.2	+0.5
	0.1nm,0.3s,baz=50,slow=11,SNR=6.0						
ASAR	Alice Springs	22.23	217	P	P	06 49 29.0	-1.7
	0.6nm,0.8s,baz=48,slow=9.9,SNR=6.1						
TORD	Torodi Ar. Bea	146.51	284	PKPbc	PKPbc	07 04 16.0	-0.7
	0.4nm,0.6s,baz=80,slow=4.9,SNR=3.2						

SKHL 01 06:51:09.1±0.9,51°.19N×131°.24E,h9km±1km,mb3.5/5, Southeastern Siberia

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
EKMR	Ekimchan	2.16	29	ePn	Pn	06 51 45.0	-0.2
EKMR				ePg	Pb	06 51 48.0	-0.3
EKMR				AMB	AMB	06 51 50.3	
	8.0nm,0.4s						
EKMR				eSg	Sg	06 52 17.3	-1.1
EKMR				A	A	06 52 20.5	
	70nm,0.5s						
EKMR				A	A	06 52 20.5	
	64nm,0.5s						
EKMR				A	A	06 52 20.5	
	60nm,0.5s						
GRNR	Gornyy	3.30	95	ePg	Pb	06 52 08.7	+0.9
GRNR				AMB	AMB	06 52 10.0	
	10.0nm,0.4s						
GRNR				eSg	Sg	06 52 52.0	-3.1
GRNR				A	A	06 52 53.5	
	56nm,0.8s						
ZEA	Zeya	3.53	318	eSg	Sg	06 53 00.5	-1.9
ZEA				A	A	06 53 02.1	
	50nm,0.7s						
BMKR	Bomnak	3.81	339	ePn	Pn	06 52 08.9	+0.9
BMKR				ePg	Pb	06 52 18.1	+1.6
BMKR				AMB	AMB	06 52 21.0	
	5.0nm,0.4s						
BMKR				eSg	Sg	06 53 08.0	-3.5
BMKR				A	A	06 53 12.9	
	15nm,0.5s						
KROS	Kirovskiy	4.15	323	ePn	Pn	06 52 13.8	+1.1
KROS				AMB	AMB	06 52 14.2	
	6.0nm,0.5s						
KROS				sPn	sPn	06 52 19.0	+2.9
KROS				eSg	Sg	06 53 19.0	-3.4
KROS				A	A	06 53 23.0	
	16nm,0.5s						

CSEM 01 07:12:27.0,37°.53N×24°.85W,h0km,ML2.4
PDA 01 07:12:27.0±0.4,37°.53N×24°.85W,h0km±9km,MD2.7, ML2.4,Error ellipse: s-maj=14.3km s-min=1.0km az=74.0,Azores Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
BART	Pico Bartolome	0.36	314	eP	Pg	07 12 33.6	-0.2
BART				eS	Sg	07 12 38.7	+0.2
BART	Pico Bartolome	0.36	314	eP	Pg	07 12 33.6	-0.2
BART				eS	Sg	07 12 38.7	+0.2
BART				A	A	07 12 39.2	
	268nm,0.2s						
PSMN	Pico do Norte,	0.55	199	eP	Pg	07 12 36.9	-0.7
PSMN				eS	Sg	07 12 44.4	-0.4
PSMN	Pico do Norte,	0.55	199	eP	Pg	07 12 36.9	-0.7
PSMN				eS	Sg	07 12 44.4	-0.4
PSMN				A	A	07 12 45.6	
	53nm,0.3s						
PSMA	Santa Maria	0.58	203	eP	Pg	07 12 37.4	-0.7
PSMA				eS	Sg	07 12 45.0	-0.6
CMLA	Cha da Macela	0.59	294	eP	Pg	07 12 37.5	-0.8
CMLA				eS	Sg	07 12 45.3	-0.6
CMLA	Cha da Macela	0.59	294	eP	Pg	07 12 37.5	-0.8
CMLA				eS	Sg	07 12 45.3	-0.6
GRON	Grota Negra	0.59	294	eP	Pg	07 12 36.1	-2.3
GRON				eS	Sg	07 12 42.7	-3.4
GRON				A	A	07 12 43.3	
	93nm,0.2s						
PDA	Ponta Delgada	0.68	289	eS	Sg	07 12 47.9	-1.1
PDA	Ponta Delgada	0.68	289	eS	Sg	07 12 47.9	-1.1
PDA				A	A	07 12 49.1	
	70nm,0.1s						
PSET	Sete Cidades	0.75	293	eP	Pg	07 12 39.9	-1.6
PSET				eS	Sg	07 12 49.8	-1.4
PSET	Sete Cidades	0.75	293	eP	Pg	07 12 39.9	-1.6
PSET				eS	Sg	07 12 49.8	-1.4
PSET				A	A	07 12 50.4	
	107nm,0.3s						

JMA 01 07:14:49.3±0.3,38°.54N×142°.88E,h8km±4km,M3.6,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
JIO	Ouri	1.20	266	P	Pb	07 15 11.4	-0.9
JIO				eS	Sg	07 15 27.4	-0.6
MIYJ	Miyakonagasawa	1.32	322	P	Pn	07 15 13.1	-1.0
MIYJ				S	Sb	07 15 30.8	-0.7
JMK	Ichinoseki	1.36	288	P	Pn	07 15 14.4	-0.2
JMK				eS	Sb	07 15 32.5	-0.1
JOM	Ohasama	1.55	307	P	Pb	07 15 17.8	-0.4
JOU	Okura	1.75	265	P	Pb	07 15 20.9	-0.7
JKZ	Kuzumaki	1.88	321	P	Pn	07 15 22.4	+0.6
JKZ				S	Sn	07 15 46.5	+0.8
JRG	Rokugo	1.95	297	P	Pb	07 15 24.5	-0.5
JYK	Kaneyama	2.01	282	P	Pb	07 15 24.8	-1.2
JANG	Nango	2.11	330	P	Pn	07 15 25.9	+0.9
JANG				eS	Sb	07 15 53.3	-1.0

ISCJB 01 07:21:24.0±0.6,38°.69N±0°.04×144°.19E±0°.04,h14km, mb3.6/13,MS3.4/1,Error ellipse: s-maj=6.7km s-min=4.7km az=161.6
IDC 01 07:21:23.2±0.8,38°.53N×144°.46E,h0km,mb3.6/13, mb1 3.9/14,mb1mx3.7/37,mbtmp3.6/14,ML3.6/1,MS2.9/3, Ms1 2.9/3,ms1mx2.5/61,Error ellipse: s-maj=21.4km s-min=17.1km az=139.0
JMA 01 07:21:26.2±0.2,38°.75N×144°.21E,h40km,M4.0
ISC 01 07:21:25.5±0.7,38°.74N±0°.06×144°.21E±0°.07,h14km,n30, σ1s.22/34,mb3.6/13,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
JTH	Tanohata	2.18	304	P	Pn	07 22 01.1	-0.2
JTH				eS	Sn	07 22 27.2	-0.9
JIO	Ouri	2.26	264	S	Sn	07 22 28.1	-2.0
JMK	Ichinoseki	2.35	276	eS	Sn	07 22 31.8	-0.4
JOM	Ohasama	2.39	289	P	Pn	07 22 04.6	+0.4
JOM				S	Sn	07 22 33.0	-0.2
JANG	Nango	2.65	309	P	Pn	07 22 07.2	-0.6
JMM	Marumori	2.83	253	S	Sn	07 22 41.6	-2.4
JRG	Rokugo	2.86	284	P	Pn	07 22 11.6	+0.9
JRG				S	Sn	07 22 45.1	+0.2
JYK	Kaneyama	3.02	275	P	Pn	07 22 13.1	+0.3
JTM	Tenmabayashi	3.17	311	P	Pn	07 22 14.7	-0.2
JTM				eS	Sn	07 22 50.9	-1.7
JFT	Otama	3.29	250	S	Sn	07 22 54.3	-1.2
JNBK	Urakawa-nobuka	3.71	343	P	Pn	07 22 22.7	+0.4
JNBK				S	Sn	07 23 05.6	-0.2
JCH	Churui	3.93	351	P	Pn	07 22 25.5	+0.2
JCH				S	Sn	07 23 08.3	-2.9
MJAR	Matsushiro Arr	5.24	247	Pn	Pn	07 22 44.5	+1.1
	2.1nm,0.3s,baz=64,slow=12,SNR=14						
MJAR				LR	LR	07 24 42.8	
	comp=Z,54nm,21.1s,baz=80,slow=38						
MAT	Matsushiro	5.25	247	P	Pn	07 22 44.3	+0.8
MAT				eS	Sn	07 23 43.2	-0.5
JNU	Nakatsue	12.17	247	LR	LR	07 30 12.1	
	comp=Z,50nm,18.5s,baz=297,slow=43						
SEY	Seymchan	24.73	9	P	P	07 26 47.8	+1.8
	2.5nm,0.7s,baz=195,slow=7.6,SNR=9.5						
SONM	Songino Array	28.75	301	P	P	07 27 26.1	+3.6
	0.4nm,0.5s,baz=84,slow=9.4,SNR=3.1						
ZALV	Zalesovo Beam	42.44	311	P	P	07 29 20.6	+1.1
	0.5nm,0.3s,baz=313,slow=39,SNR=3.4						
MKAR	Makanchi Array	45.11	301	P	P	07 29 43.4	+2.1
	0.4nm,0.8s,baz=86,slow=9.3,SNR=3.0						
KURBB	Kurchatov Arra	46.72	307	P	P	07 29 54.7	+0.9
	0.2nm,0.4s,baz=83,slow=8.1,SNR=4.7						
ILAR	Eielson Array	46.87	33	P	P	07 29 54.8	+0.1
	0.5nm,0.8s,baz=269,slow=5.4,SNR=5.6						
PMG	Port Moresby	47.97	176	LR	LR	07 49 08.7	
	comp=Z,40nm,18.6s,baz=72,slow=35						
INK	Inuvik	51.86	28	P	P	07 30 33.6	+0.8
	1.2nm,0.6s,baz=302,slow=6.8,SNR=14						
WRA	Warramunga Arr	59.10	191	P	P	07 31 24.2	-1.2
	1.9nm,0.7s,baz=14,slow=7.5,SNR=7.6						
YKA	Yellowknife Ar	61.22	31	P	P	07 31 40.0	+0.6
	0.1nm,0.6s,baz=299,slow=6.3,SNR=3.2						
ASAR	Alice Springs	62.82	191	P	P	07 31 49.3	-1.4
	0.3nm,0.8s,baz=13,slow=8.0,SNR=5.3						
NVAR	Mina Array Bea	72.20	55	P	P	07 32 50.9	+0.7
	0.6nm,0.8s,baz=287,slow=5.0,SNR=4.3						
PDAR	Pinedale Array	74.89	47	P	P	07 33 05.6	-0.5
	0.2nm,0.5s,baz=319,slow=3.7,SNR=3.1						
TXAR	Lajitas Array	87.33	54	P	P	07 34 11.6	-0.7
	0.2nm,0.6s,baz=309,slow=4.3,SNR=5.4						
VNA2	Neumayer--Watz	144.56	196	PKP	PKPab	07 40 57.0	-1.9
	baz=122,slow=1.5						

IDC 01 07:38:10.1±2.7,37°.11N×143°.37E,h0km,mb3.3/3, mb1 3.5/4,mb1mx3.2/63,mbtmp3.3/4,ML3.1/1,Error ellipse: s-maj=91.3km s-min=33.8km az=178.0
JMA 01 07:38:24.9±0.1,37°.48N×141°.43E,h27km±2km,M3.2
ISC 01 07:38:20.7±2.2,37°.41N±0°.05×141°.54E±0°.08,h0km±13km, n13,σ0s.48/21,mb3.3/3,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
ONAJ	Iwakimizuishiy	0.67	243	P	Pn	07 38 37.0	-0.4
ONAJ				S	Sb	07 38 45.1	+0.1
JMM	Marumori	0.75	308	P	Pb	07 38 36.9	+0.3
JMM				S	Sg	07 38 45.6	+0.9
JFT	Otama	0.96	277	P	Pn	07 38 41.4	-0.1
JFT				eS	Sb	07 38 53.2	-0.3
JIO	Ouri	1.05	352	P	Pb	07 38 41.9	+0.1
JIO				eS	Sg	07 38 54.0	-0.6
JHO	Hitachi	1.11	225	P	Pn	07 38 43.6	+0.1
JHO				eS	Sg	07 38 56.1	-0.4
JOU	Okura	1.18	324	P	Pn	07 38 44.5	0.0
JOU				eS	Sg	07 38 58.4	-0.2
JYS	Shirataka	1.42	305	P	Pb	07 38 48.4	+0.3
JYS				eS	Sg	07 39 05.8	-0.6
JFY	Yanaizu	1.46	270	P	Pb	07 38 49.5	+0.7
JFY				eS	Sg	07 39 06.7	-1.0
MJAR	Matsushiro Arr	2.80	253	Pn	Pg	07 39 14.6	+0.1
	1.2nm,0.3s,baz=79,slow=16,SNR=5.7						
MAT	Matsushiro	2.81	253	P	Pn	07 39 07.1	+0.3
MAT				eS	Sn	07 39 40.9	-0.5
MKAR	Makanchi Array	44.01	302	P	P	07 46 30.0	+0.2
	0.3nm,0.7s,baz=82,slow=10,SNR=3.0						
KURBB	Kurchatov Arra	45.85	308	P	P	07 46 44.4	0.0
	0.3nm,0.4s,baz=89,slow=8.0,SNR=5.6						
TXAR	Lajitas Array	89.81	52	P	P	07 51 06.3	-15
	0.1nm,0.6s,baz=326,slow=3.2,SNR=2.2						

IDC 01 07:43:36.1±1.2,5°.11S×145°.82E,h204km±11km,mb3.4/5, mb1 3.6/8,mb1mx3.3/42,mbtmp3.9/8,Error ellipse: s-maj=16.0km s-min=10.5km az=82.0
ISC 01 07:43:18.0±1.0,4°.78S±0°.09×146°.0E±0°.1,h27km,n8, σ1s.82/9,mb3.9/5,Eastern New Guinea region

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
PMG	Port Moresby	4.73	167	P	Pb	07 44 44.7	+4.4
	2.5nm,0.3s,baz=26,slow=5.0,SNR=5.8						
PMG				S	Sb	07 45 37.0	+0.2
	19nm,0.3s,baz=147,slow=23,SNR=18						
JAY	Jayapura	5.78	293	P	Pb	07 45 00.0	+1.8
	1.0nm,0.3s,baz=357,slow=23,SNR=19						
JAY				S	Sb	07 46 05.7	-1.4
	0.2nm,0.3s,baz=278,slow=23,SNR=2.0						
WRA	Warramunga Arr	18.90	216	P	Pn	07 47 38.0	+0.6
	1.2nm,0.3s,baz=40,slow=12,SNR=21						
ASAR	Alice Springs	22.13	211	P	P	07 48 12.4	+0.7
	1.6nm,0.7s,baz=44,slow=7.7,SNR=14						
ASAR				S	S	07 51 57.9	-16
	1.1nm,0.8s,baz=37,slow=22,SNR=6.5						
FITZ	Fitzroy Crossi	23.94	235	P	P	07 48 28.7	-1.5
	2.4nm,0.7s,baz=51,slow=14,SNR=2.8						
PETK	Petropavlovsk-	58.51	8	P	P	07 53 14.2	+2.4
	7.7nm,1.1s,baz=178,slow=8.5,SNR=4.4						
MKAR	Makanchi Array	75.95	321	P	P	07 55 01.1	-1.6
	0.2nm,0.4s,baz=99,slow=7.6,SNR=3.8						
ILAR	Eielson Array	84.74	23	P	P	07 55 47.6	-1.8
	1.3nm,0.7s,baz=252,slow=5.2,SNR=22						

ISCJB 01 07:44:34.5±0.5,38°.17N±0°.04×142°.27E±0°.05,h30km, mb3.8/18,MS3.9/1,Error ellipse: s-maj=6.6km s-min=5.0km az=149.4
JMA 01 07:44:36.4±0.2,38°.28N×142°.20E,h39km±3km,M4.0
JMA Felt I J1.
NEIC 01 07:44:39.6±1.3,38°.23N×142°.22E,h58km±12km,mb4.4/3, Error ellipse: s-maj=16.6km s-min=11.8km az=116.0
IDC 01 07:44:43.3±2.8,38°.18N×142°.00E,h93km±25km,mb3.4/15, mb1 3.5/18,mb1mx3.4/55,mbtmp3.7/18,MS3.8/1, Ms1 3.8/1,ms1mx2.5/30,Error ellipse: s-maj=19.2km s-min=15.8km az=91.0
ISC 01 07:44:36.3±0.7,38°.19N±0°.05×142°.10E±0°.06,h30km,n41, σ1s.03/40,mb3.8/18,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
JIO	Ouri	0.65	294	P	Pn	07 44 49.7	+0.3
JIO				S	Sn	07 44 58.7	0.0
OFUJ	Ofunato	0.95	339	P	Pn	07 44 52.7	-0.9
JMK	Ichinoseki	1.03	318	P	Pn	07 44 54.7	+0.1
JMM	Marumori	1.08	253	eS	Sb	07 45 10.6	+0.3
JOU	Okura	1.15	279	S	Sb	07 45 13.2	+1.1
MIYJ	Miyakonagasawa	1.40	351	P	Pn	07 44 58.6	-1.2
JOM	Ohasama	1.43	334	P	Pn	07 45 00.2	0.0
JOM				eS	Sn	07 45 17.4	-0.5
JYK	Kaneyama	1.55	298	P	Pb	07 45 03.2	-1.1
JFT	Otama	1.55	245	S	Sb	07 45 24.0	+0.3
JRG	Rokugo	1.66	317	P	Pb	07 45 05.1	-1.2
JKZ	Kuzumaki	1.89	342	P	Pn	07 45 07.0	+0.4
JANG	Nango	2.22	348	P	Pn	07 45 11.6	+0.5
MJAR	Matsushiro Arr	3.51	243	P	Pb	07 45 35.7	-2.1
	1.4nm,0.3s,baz=63,slow=10,SNR=6.7						
MAJO	Matsushiro	3.51	243	ePn	Pb	07 45 35.5	-2.3
MAT	Matsushiro	3.51	243	P	Pb	07 45 35.2	-2.6
MAT				S	Sn	07 46 12.1	+2.6
ERM	Erimo	3.90	12	ePn	Pn	07 45 34.6	+0.4
JHJ2	Mitsune	5.40	201	ePn	Pn	07 45 55.7	+0.8
USRK	Ussuriysk Ar.	9.70	311	P	Pn	07 46 59.2	+5.5
	0.2nm,0.3s,baz=120,slow=13,SNR=4.5						
KSRS	Korea Array	11.24	271	P	Pn	07 47 19.0	+4.1
	0.3nm,0.3s,baz=146,slow=41,SNR=3.9						
KSAR	Wonju Array Be	11.28	271	P	Pn	07 47 19.0	+3.7
SEY	Seymchan	25.55	11	P	P	07 50 03.3	+1.2
	0.4nm,0.3s,baz=194,slow=5.6,SNR=5.7						
SONM	Songino Array	27.61	302	P	P	07 50 20.5	-0.6
	0.3nm,0.4s,baz=98,slow=24,SNR=2.3						
ZALV	Zalesovo Beam	41.55	311	P	P	07 52 21.4	+0.5
	0.9nm,0.4s,baz=72,slow=7.6,SNR=3.4						
MKAR	Makanchi Array	43.98	301	P	P	07 52 39.7	-1.0
	0.5nm,0.7s,baz=94,slow=7.8,SNR=4.7						
KURK	Kurchatov	45.66	307	eP	P	07 52 54.5	+0.5
	4.8nm,0.7s						
KURBB	Kurchatov Arra	45.73	307	P	P	07 52 54.5	0.0
	2.1nm,0.6s,baz=81,slow=8.0,SNR=17						
ILAR	Eielson Array	48.22	33	P	P	07 53 14.1	+0.2
	0.6nm,0.7s,baz=266,slow=6.8,SNR=7.9						
INK	Inuvik	53.11	28	eP	P	07 53 50.7	+0.2
	1.4nm,1.2s						
ARU	Arti	55.86	318	eP	P	07 54 10.9	+0.2
	3.2nm,0.7s						
CTA	Charters Tower	58.10	175	LR	LR	08 19 19.2	
	comp=Z,99nm,21.9s,baz=193,slow=36						
WRA	Warramunga Arr	58.28	189	P	P	07 54 28.7	+0.4
	0.2nm,0.4s,baz=8.5,slow=6.9,SNR=3.0						
AKTO	Aktyubinsk	58.31	312	P	P	07 54 28.9	+0.7
	0.8nm,0.5s,baz=90,slow=14,SNR=3.8						
ASAR	Alice Springs	62.01	189	P	P	07 54 52.6	-1.2
	0.4nm,0.8s,baz=18,slow=9.2,SNR=2.8						
YKA	Yellowknife Ar	62.53	31	P	P	07 54 56.7	-0.1
	0.4nm,0.8s,baz=306,slow=7.4,SNR=5.1						
FINES	FINESS Array B	68.05	332	P	P	07 55 31.5	-1.0
	1.8nm,0.7s,baz=27,slow=11,SNR=5.8						
NB2	NORSAR Subarra	73.33	337	P	P	07 56 04.6	-0.1
	comp=Z,1.6nm,0.8s,baz=41,slow=6.2						
NOA	NORSAR Array B	73.33	337	P	P	07 56 04.8	+0.1
	comp=Z,0.9nm,0.8s,baz=292,slow=15,SNR=3.7						
AKASG	Malin Array Be	73.72	322	P	P	07 56 07.0	-0.1
	comp=Z,0.3nm,0.2s,baz=40,slow=36,SNR=2.6						
PDAR	Pinedale Array	76.47	46	P	P	07 56 23.7	+0.2
	comp=Z,0.2nm,0.4s,baz=293,slow=4.2,SNR=2.8						
TXAR	Lajitas Array	88.98	53	P	P	07 57 29.0	+0.5
	comp=Z,0.2nm,0.7s,baz=45,slow=38,SNR=3.1						
LCO	Las Campanas	151.31	81	ePKPbc	PKPbc	08 04 28.3	+1.0

CSEM 01 07:52:31.5,46°.04N×14°.76E,h0km,ML0.5
LJU 01 07:52:31.5,46°.05N×14°.76E,h9km,ML0.5,7C-2D, Northwestern Balkan Peninsula

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
VNDS	Vrh nad Dolski	0.07	325	⇑iPg	Pg	07 52 33.7	+0.1
VNDS				i Sg	Sg	07 52 35.2	+0.1
	comp=Z,10.0nm,0.1s						
VNDS	Vrh nad Dolski	0.07	325	Pg	Pg	07 52 33.7	+0.1
VNDS				i Sg	Sg	07 52 35.2	+0.1
	comp=Z,10.0nm,0.1s						
LJU	Ljubljana	0.16	270	⇑iPg	Pg	07 52 35.2	+0.2
LJU				i Sg	Sg	07 52 37.5	+0.2
	comp=Z,2.0nm,0.0s						
LJU	Ljubljana	0.16	270	⇑iPg	Pg	07 52 35.2	+0.2
LJU				i Sg	Sg	07 52 37.5	+0.2
	comp=Z,2.0nm,0.0s						
PDKS	Podkum	0.17	84	⇑iPg	Pg	07 52 35.1	+0.1
PDKS				i Sg	Sg	07 52 37.6	+0.1
	comp=Z,3.0nm,0.1s						
PDKS	Podkum	0.17	84	⇑iPg	Pg	07 52 35.1	0.0
PDKS				i Sg	Sg	07 52 37.6	+0.1
	comp=Z,2.0nm,0.1s						
GBAS	Gorenja Brezov	0.25	244	⇑iPg	Pg	07 52 36.6	+0.1
GBAS				i Sg	Sg	07 52 40.0	+0.1
	comp=Z,2.0nm,0.1s						
GBAS	Gorenja Brezov	0.25	244	⇑iPg	Pg	07 52 36.6	+0.1
GBAS				i Sg	Sg	07 52 40.0	+0.2
VISS	Visnje	0.25	167	⇓iPg	Pg	07 52 36.7	+0.2
VISS				eSg	Sg	07 52 40.5	+0.6
	comp=Z,1.0nm,0.0s						
VISS	Visnje	0.25	167	⇓iPg	Pg	07 52 36.7	+0.2
VISS				eSg	Sg	07 52 40.5	+0.6
	comp=Z,1.0nm,0.0s						
CRNS	Crni Vrh	0.35	276	i Pg	Pg	07 52 38.4	0.0
CRNS	Crni Vrh	0.35	276	i Pg	Pg	07 52 38.4	0.0

CASC 01 07:54:11.7±4.1,9°.38N×83°.22W,h13km±20km,MD3.9, 8C-5D,Fault plane solution: NP1:φs193.34000°, δ43.96000°,λ-22.18000°.,Costa Rica

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
BUS	Buena Vista	0.56	288	⇑iP	Pg	07 54 22.1	-0.7
BUS				eS	Sg	07 54 29.8	-0.5
CTCR	Cotoan	0.66	136	⇑iP	Pg	07 54 24.3	-0.3
URSC	Urasca	0.71	310	⇑iP	Pg	07 54 25.4	-0.2
URSC				eS	Sg	07 54 35.0	-0.2
BRU2	Volcan	0.78	138	⇑iP	Pg	07 54 26.5	-0.3
	baz=350,slow=1.9						
BRU2				i S	Sg	07 54 37.2	+0.1
TBS2		0.80	136	⇓iP	Pg	07 54 26.6	-0.7
TBS2				i S	Sg	07 54 37.4	-0.5
LCR2	La Lucha 2	0.85	295	⇑iP	Pg	07 54 27.1	-1.2
LCR2				eS	Sg	07 54 38.3	-1.2
QCR	Quepos	0.94	273	⇑iP	Pg	07 54 28.6	-1.2
QCR				eS	Sg	07 54 41.0	-1.0
PBNC	Punta Burica N	1.00	175	⇑eP	Pb	07 54 29.7	-1.3
PBNC				i S	Sb	07 54 43.1	-1.0
CGA2	Cerro Gallo 2	1.38	297	⇓eP	Pn	07 54 36.8	-0.1
CGA2				eS	Sn	07 54 54.9	-0.3
JCR	Jicaral	1.93	284	⇓iP	Pb	07 54 45.9	-0.8
JCR				eS	Sb	07 55 09.6	-1.1
JTS	JuntasAbangare	1.94	298	⇓eP	Pb	07 54 45.8	-1.0
JTS				i S	Sb	07 55 10.8	-0.2
A494	Palo Verde	2.31	295	eP	Pn	07 54 48.4	-1.1
A494				eS	Sb	07 55 22.1	+0.3
AZU	Azuero	3.31	118	⇑eP	Pb	07 55 06.9	-3.4
AZU				i S	Sb	07 55 47.5	-3.1
ZANG	Zanguenga, Cho	3.34	97	eP	Pn	07 55 05.5	+1.9
BCIP	Isla Barro Col	3.34	93	⇓eP	Pn	07 55 05.3	+1.6
BCIP				i S	Sn	07 55 44.4	+1.0

ISCJB 01 07:54:33.7±0.8,45°.74N±0°.03×26°.73E±0°.05,h132km±5km, Error ellipse: s-maj=6.0km s-min=5.2km az=136.2
CSEM 01 07:54:33.7,45°.75N×26°.70E,h137km,MD3.9/2
BUC 01 07:54:33.7±0.8,45°.75N×26°.70E,h137km±7km,MD3.9/2, Error ellipse: s-maj=6.3km s-min=4.9km az=9.0
SOF 01 07:54:39.0,45°.21N×26°.80E,h1km,MD2.8
ISC 01 07:54:33.1±1.5,45°.76N±0°.03×26°.70E±0°.03,h139km±8km, n68,σ0s.79/99,33C-18D,Romania

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
PLOR	Plostina	0.10	338	⇑iP	Pn	07 54 52.1	+0.2
PLOR	Plostina	0.10	338	⇑iP	Pn	07 54 52.1	+0.2
PLOR				i S	Sn	07 55 05.2	-1.1
PLOR	Plostina	0.10	338	⇑iP	Pn	07 54 52.1	+0.2
PLOR				i S	Sn	07 55 05.2	-1.1
VRI	Vrincioaia	0.11	9	⇑iP	Pn	07 54 52.2	+0.3
VRI	Vrincioaia	0.11	9	⇑iP	Pn	07 54 52.2	+0.3
VRI				i S	Sn	07 55 05.3	-1.0
VRI	Vrincioaia	0.11	9	⇑iP	Pn	07 54 52.2	+0.3
VRI				i S	Sn	07 55 05.3	-1.0
PETR	Petresti	0.37	95	⇓iP	Pn	07 54 53.3	+0.8
PETR	Petresti	0.37	95	⇓iP	Pn	07 54 53.3	+0.8
PETR				i S	Sn	07 55 07.5	+0.2
PETR	Petresti	0.37	95	⇓iP	Pn	07 54 53.3	+0.8
PETR				i S	Sn	07 55 07.5	+0.2
GRER		0.42	153	⇑iP	Pn	07 54 54.0	+1.2
GRER		0.42	153	⇑iP	Pn	07 54 54.0	+1.2
GRER				i S	Sn	07 55 08.0	+0.3
GRER		0.42	153	⇑iP	Pn	07 54 54.0	+1.2
GRER				i S	Sn	07 55 08.0	+0.3
MLR	Muntele Rosu	0.60	244	⇑iP	Pn	07 54 54.2	+0.3
MLR	Muntele Rosu	0.60	244	⇑iP	Pn	07 54 54.2	+0.3
MLR				i S	Sn	07 55 08.6	-1.1
MLR	Muntele Rosu	0.60	244	⇑iP	Pn	07 54 54.2	+0.3
MLR				i S	Sn	07 55 08.6	-1.1
ISR	Istrita	0.65	190	⇓iP	Pn	07 54 55.0	+0.8
ISR	Istrita	0.65	190	⇓iP	Pn	07 54 55.0	+0.8
ISR				i S	Sn	07 55 09.2	-0.9
ISR	Istrita	0.65	190	⇓iP	Pn	07 54 55.0	+0.8
ISR				i S	Sn	07 55 09.2	-0.9
TESR	Tescani	0.76	357	⇑iP	Pn	07 54 55.1	+0.3
TESR	Tescani	0.76	357	⇑iP	Pn	07 54 55.1	+0.3
TESR				i S	Sn	07 55 10.1	-1.3
TESR	Tescani	0.76	357	⇑iP	Pn	07 54 55.1	+0.3
TESR				i S	Sn	07 55 10.1	-1.3
DOPR	Dopca	0.94	283	⇑iP	Pn	07 54 56.7	+0.4
DOPR	Dopca	0.94	283	⇑iP	Pn	07 54 56.7	+0.4
DOPR				i S	Sn	07 55 13.4	-0.6
DOPR	Dopca	0.94	283	⇑iP	Pn	07 54 56.7	+0.4
DOPR				i S	Sn	07 55 13.4	-0.6
PLAR	PLOIESTI	0.97	210	S	Sn	07 55 14.9	+0.6
PLAR	PLOIESTI	0.97	210	i S	Sn	07 55 14.9	+0.6
PLAR	PLOIESTI	0.97	210	i S	Sn	07 55 14.9	+0.6
SULR		1.12	197	⇑iP	Pn	07 54 58.7	+0.7
SULR		1.12	197	⇑iP	Pn	07 54 58.7	+0.7
SULR				i S	Sn	07 55 17.0	+0.1
SULR		1.12	197	⇑iP	Pn	07 54 58.7	+0.7
SULR				i S	Sn	07 55 17.0	+0.1
CFR	Carcaliu	1.16	119	⇓iP	Pn	07 54 58.5	+0.2
CFR	Carcaliu	1.16	119	⇓iP	Pn	07 54 58.5	+0.2
CFR				i S	Sn	07 55 16.5	-1.0
CFR	Carcaliu	1.16	119	⇓iP	Pn	07 54 58.5	+0.2
CFR				i S	Sn	07 55 16.5	-1.0
LEOM	Leova	1.29	56	⇑iP	Pn	07 55 00.8	+1.3
LEOM	Leova	1.29	56	⇑iP	Pn	07 55 00.8	+1.3
LEOM				i S	Sn	07 55 20.0	+0.2
LEOM	Leova	1.29	56	⇑iP	Pn	07 55 00.8	+1.3

LEOM				*i* S	Sn	07 55 20.0	+0.2
HARR	Harsova	1.38	140	⇑*i*P	Pn	07 55 00.8	+0.3
HARR	Harsova	1.38	140	⇑*i*P	Pn	07 55 00.8	+0.3
HARR	Harsova	1.38	140	⇑*i*P	Pn	07 55 00.8	+0.3
BUC1	Bucharest	1.49	199	S	Sn	07 55 23.0	-0.5
BUC1	Bucharest	1.49	199	*i* S	Sn	07 55 23.0	-0.5
BUC1	Bucharest	1.49	199	*i* S	Sn	07 55 23.0	-0.5
ARR	Arges	1.51	256	⇓*i*P	Pn	07 55 02.3	+0.3
ARR	Arges	1.51	256	⇓*i*P	Pn	07 55 02.3	+0.3
ARR				*i* S	Sn	07 55 24.1	+0.1
ARR	Arges	1.51	256	⇓*i*P	Pn	07 55 02.3	+0.3
ARR				*i* S	Sn	07 55 24.1	+0.1
GOLR		1.53	234	S	Sn	07 55 24.8	+0.4
GOLR		1.53	234	*i* S	Sn	07 55 24.8	+0.4
GOLR		1.53	234	*i* S	Sn	07 55 24.8	+0.4
TLCR		1.59	110	⇑*i*P	Pn	07 55 03.3	+0.5
TLCR		1.59	110	⇑*i*P	Pn	07 55 03.3	+0.5
TLCR				*i* S	Sn	07 55 25.4	-0.1
TLCR		1.59	110	⇑*i*P	Pn	07 55 03.3	+0.5
TLCR				*i* S	Sn	07 55 25.4	-0.1
HUMR	Humele	1.73	225	S	Sn	07 55 27.0	-1.4
HUMR	Humele	1.73	225	*i* S	Sn	07 55 27.0	-1.4
HUMR	Humele	1.73	225	*i* S	Sn	07 55 27.0	-1.4
TIRR	Tirgusor	1.77	136	⇓*i*P	Pn	07 55 05.3	+0.4
TIRR	Tirgusor	1.77	136	⇓*i*P	Pn	07 55 05.3	+0.4
TIRR				*i* S	Sn	07 55 27.2	-2.0
TIRR	Tirgusor	1.77	136	⇓*i*P	Pn	07 55 05.3	+0.4
TIRR				*i* S	Sn	07 55 27.2	-2.0
MSAB	Monastry St. A	1.85	154	⇑*i*P	Pn	07 55 06.3	+0.6
MSAB	Monastry St. A	1.85	154	⇑*i*P	Pn	07 55 06.3	+0.6
MSAB				*i* S	Sn	07 55 29.3	-1.4
MSAB	Monastry St. A	1.85	154	⇑*i*P	Pn	07 55 06.3	+0.6
MSAB				*i* S	Sn	07 55 29.3	-1.4
PSN	Preselentsi	2.33	153	*i* P	Pn	07 55 12.3	+0.8
SZH	Strazhica	2.55	193	*i* P	Pn	07 55 14.3	0.0
PRD	Provadia	2.60	169	*i* P	Pn	07 55 15.9	+0.9
SORM	Soroca	2.63	25	⇓*i*P	Pn	07 55 16.1	+0.8
SORM	Soroca	2.63	25	⇓*i*P	Pn	07 55 16.1	+0.8
SORM				*i* S	Sn	07 55 46.7	-1.1
SORM	Soroca	2.63	25	⇓*i*P	Pn	07 55 16.1	+0.8
SORM				*i* S	Sn	07 55 46.7	-1.1
ROIA	ROIAK	2.71	169	*i* P	Pn	07 55 17.0	+0.7
MPEP	Malo Peshtene	3.20	222	P	Pn	07 55 27.0	+4.4

JMA 01 07:57:56.0±0.1, 38°.27N×142°.07E, h43km±2km, M3.8, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	Ouri	0.60	288	P	Pn	07 58 08.2	+0.1
JIO				S	Sn	07 58 16.5	-0.2
OFUJ	Ofunato	0.87	339	P	Pn	07 58 11.8	0.0
JMK	Ichinoseki	0.95	316	P	Pn	07 58 13.3	+0.4
JMK				S	Sn	07 58 25.6	+0.3
JMM	Marumori	1.09	249	P	Pn	07 58 14.5	-0.2
JMM				*e*S	Sn	07 58 28.4	-0.2
JOU	Okura	1.11	275	P	Pn	07 58 15.9	+0.8
JOU				S	Sn	07 58 30.0	+0.8
MIYJ	Miyakonagasawa	1.32	352	P	Pn	07 58 18.0	0.0
MIYJ				S	Sn	07 58 33.6	-0.8
JOM	Ohasama	1.35	333	P	Pn	07 58 19.2	+0.9
JOM				S	Sn	07 58 35.8	+0.8
JYK	Kaneyama	1.49	296	P	Pn	07 58 21.2	+0.9
JFT	Otama	1.56	242	P	Pn	07 58 22.3	+1.0
JFT				*e*S	Sn	07 58 41.3	+0.9
JYS	Shirataka	1.58	269	P	Pn	07 58 22.6	+1.1
JRG	Rokugo	1.59	316	P	Pn	07 58 23.2	+1.6
JKZ	Kuzumaki	1.81	342	P	Pn	07 58 26.2	+1.5
JKZ				S	Sn	07 58 47.8	+1.4
JANG	Nango	2.14	349	P	Pn	07 58 30.5	+1.2
JANG				S	Sn	07 58 56.8	+2.1
MAT	Matsushiro	3.53	242	P	Pn	07 58 53.1	+4.8
MAT				*e*S	Sn	07 59 40.3	+12

IDC 01 07:57:59.5±1.1, 36°.81N×144°.26E, h0km, mb3.6/7, mb1 3.7/9, mb1mx3.5/55, mbtmp3.6/9, ML3.4/2, Error ellipse: s-maj=28.8km s-min=20.2km az=89.0, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MJAR	Matsushiro Arr	4.87	269	Pn	Pn	07 59 13.9	-0.1
	1.8nm,0.3s,baz=67,slow=13,SNR=12						
KLR	Kul'dur	15.39	328	Pn	Pn	08 01 38.6	+0.7
	0.1nm,0.3s,baz=140,slow=14,SNR=4.1						
SEY	Seymchan	26.63	8	P	P	08 03 39.5	+0.1
	1.5nm,0.7s,baz=193,slow=6.6,SNR=9.1						
SONM	Songino Array	29.81	304	P	P	08 04 10.1	+2.0
	0.3nm,0.4s,baz=107,slow=9.8,SNR=4.5						
MKAR	Makanchi Array	46.17	303	P	P	08 06 25.0	-0.8
	0.9nm,0.9s,baz=83,slow=9.9,SNR=4.9						
KURBB	Kurchatov Arra	47.93	309	P	P	08 06 38.0	-1.5
	0.4nm,0.5s,baz=82,slow=7.9,SNR=3.7						
ILAR	Eielson Array	48.46	32	P	P	08 06 43.4	0.0
	0.4nm,0.8s,baz=263,slow=6.5,SNR=5.4						
WRA	Warramunga Arr	57.22	191	P	P	08 07 47.0	-1.5
	0.4nm,0.3s,baz=4.4,slow=6.7,SNR=4.8						
ASAR	Alice Springs	60.94	191	P	P	08 08 15.6	+1.4
	0.3nm,0.6s,baz=16,slow=14,SNR=3.5						

ISCJB 01 08:00:00.9±1.0, 52°.54N±0°.07×35°.4E±0°.1, h10km, mb3.2/3, Error ellipse: s-maj=13.2km s-min=9.7km az=24.9
IDC 01 08:00:01.9±1.3, 52°.13N×35°.68E, h0km, mb3.3/3, mb1 3.6/7, mb1mx3.3/47, mbtmp3.5/7, ML3.2/5, Error ellipse: s-maj=16.9km s-min=9.5km az=128.0
ISC 01 08:00:02.9±1.1, 52°.48N±0°.08×35°.37E±0°.09, h10km, n10, σ1.45/12, mb3.3/3, Baltic States-Belarus-Northwestern Russia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OBN	Obninsk	2.73	15	Pn	Pb	08 00 52.5	+0.7
	6.8nm,0.3s,baz=300,slow=14,SNR=3.3						
OBN				Sn	Sg	08 01 29.8	-0.7
	5.9nm,0.3s,baz=354,slow=23,SNR=8.6						
AKASG	Malin Array Be	4.23	247	Pn	Pn	08 01 06.9	-0.4
	0.8nm,0.3s,baz=61,slow=15,SNR=3.1						
AKASG				Pg	Pb	08 01 17.6	+0.4
	2.1nm,0.3s,baz=61,slow=16,SNR=6.0						
AKASG				Sn	Sn	08 01 58.5	+1.9
	2.6nm,0.3s,baz=60,slow=20,SNR=3.8						
AKASG				Lg	Lg	08 02 15.3	
	5.4nm,0.3s,baz=66,slow=33,SNR=9.8						
I43RU	DUBNA INFRASON	4.38	13	*i*		08 27 20.0	
	baz=188,slow=313,SNR=1.9						
FINES	FINESS Array B	10.31	334	Pn	Pn	08 02 30.2	-0.4
	0.3nm,0.3s,baz=151,slow=13,SNR=8.1						
FINES				Sn	Sn	08 04 26.4	+0.4
	0.2nm,0.3s,baz=143,slow=26,SNR=3.9						
FINES				Lg	Lg	08 05 34.3	
	0.3nm,0.3s,baz=144,slow=29,SNR=2.8						
HFS	Hagfors	14.21	311	Pn	Pn	08 03 21.2	-2.7
	0.2nm,0.3s,baz=117,slow=15,SNR=3.9						
I31KZ	AKTYUBINSK INF	14.27	89	*i*		09 20 20.0	
	baz=285,slow=318,SNR=4.6						
ARCES	ARCESS Array B	17.72	349	Pn	P	08 04 10.3	+0.1
	0.4nm,0.3s,baz=163,slow=8.9,SNR=14						
MKAR	Makanchi Array	30.47	82	P	P	08 06 14.9	-0.7
	0.5nm,1.0s,baz=289,slow=9.9,SNR=2.6						
TORD	Torodi Ar. Bea	47.58	227	P	P	08 08 37.9	-0.8
	0.2nm,0.6s,baz=23,slow=9.6,SNR=2.4						
YKA	Yellowknife Ar	62.94	345	P	P	08 10 31.1	+2.3
	0.1nm,0.5s,baz=15,slow=6.7,SNR=3.6						

IDC 01 08:10:20.2±1.4, 19°.92S×168°.07E, h0km, mb3.8/6, mb1 4.0/7, mb1mx3.8/34, mbtmp3.8/7, ML3.6/1, MS3.4/5, Ms1 3.4/5, ms1mx3.1/33, Error ellipse: s-maj=51.6km s-min=21.4km az=135.0
NEIC 01 08:10:21.5±0.8, 19°.97S×168°.11E, h10km, mb4.5/3, Error ellipse: s-maj=24.5km s-min=14.7km az=138.0
ISCJB 01 08:10:22.5±0.9, 19°.9S±0°.1×168°.0E±0°.2, h27km, mb4.0/9, MS3.6/3, Error ellipse: s-maj=24.4km s-min=10.6km az=32.2
ISC 01 08:10:24.0±1.0, 20°.0S±0°.2×168°.1E±0°.2, h27km, n13, σ1.14/12, mb3.8/9, MS3.5/3, Vanuatu Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	Mont Dzumac	2.60	217	Pn	Pn	08 11 03.6	-0.9
	12nm,0.3s,baz=47,slow=8.5,SNR=51						
DZM				LR	LR	08 11 31.4	
	comp=Z,162nm,19.6s,baz=55,slow=27						
DZM				Sn	Sn	08 11 36.1	+0.9
	71nm,0.3s,baz=97,slow=18,SNR=13						
URZ	Urewera	19.79	159	LR	LR	08 21 01.4	
	comp=Z,142nm,19.3s,baz=6.0,slow=32						
STKA	Stephens Creek	26.57	238	P	P	08 16 01.8	+1.9
	2.5nm,0.9s,baz=56,slow=9.6,SNR=3.3						
STKA				LR	LR	08 25 13.3	
	comp=Z,67nm,18.2s,baz=36,slow=34						
WRAB	Tennant Creek	31.73	264	*e*P	P	08 16 44.5	-1.4
	6.3nm,1.3s						
WRA	Warramunga Arr	31.74	264	P	P	08 16 44.5	-1.5
	0.7nm,0.7s,baz=89,slow=8.4,SNR=3.3						
ASAR	Alice Springs	31.94	257	P	P	08 16 47.2	-0.6
	1.6nm,0.8s,baz=82,slow=8.7,SNR=15						
ASAR				LR	LR	08 29 14.5	
	comp=Z,85nm,18.4s,baz=93,slow=36						
FITZ	Fitzroy Crossi	40.14	265	*e*P	P	08 17 58.1	+0.1
	7.1nm,0.9s						
QSPA	South Pole Qui	70.06	180	*e*P	P	08 21 33.1	-0.4
	18nm,1.3s						
SONM	Songino Array	87.21	324	P	P	08 23 08.8	+0.8
	0.4nm,0.8s,baz=90,slow=1.9,SNR=3.4						
YAK	Yakutsk	87.28	343	LR	LR	08 57 44.2	
	comp=Z,76nm,19.8s,baz=90,slow=33						
ILAR	Eielson Array	91.26	18	P	P	08 23 26.0	-0.4
	0.2nm,0.7s,baz=232,slow=5.6,SNR=3.5						
TXAR	Lajitas Array	98.04	62	P	P	08 23 58.6	+0.1
	0.2nm,0.8s,baz=251,slow=2.8,SNR=3.7						
GERES	GERESS Array B	144.65	330	PKP	PKPdf	08 29 59.1	+0.8
	0.2nm,0.3s,baz=245,slow=2.1,SNR=3.2						

LJU 01 08:10:46.1, 45°.62N×13°.84E, h0km, ML0.7, 1C Artificial, Northern Italy

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SKDS	Skadanscina	0.15	121	⇑*i*Pg	Pg	08 10 49.0	+0.2
SKDS				*i* Sg	Sg	08 10 51.6	+0.8
	comp=Z,12nm,0.1s						
JAVS	Javornik	0.32	30	*e*Pg	Pg	08 10 51.8	-0.4
JAVS				*i* Sg	Sg	08 10 57.4	+1.2
	comp=Z,4.0nm,0.2s						
VOJS	Vojsko	0.41	5	*i* Pg	Pg	08 10 53.7	-0.3
VOJS				*e*Sg	Sg	08 11 00.3	+1.0
CEY	Cerknica	0.43	74	*i* Pg	Pg	08 10 53.8	-0.5
CEY				*i* Sg	Sg	08 11 00.5	+0.6
	comp=Z,11nm,0.2s						

IDC 01 08:13:26.9±0.9, 36°.72N×140°.62E, h0km, mb3.4/7, mb1 3.7/7, mb1mx3.5/40, mbtmp3.4/7, Error ellipse: s-maj=22.6km s-min=20.9km az=16.0
ISCJB 01 08:13:27.2±0.9, 36°.69N±0°.04×140°.71E±0°.06, h13km±4km, mb3.4/7, Error ellipse: s-maj=8.7km s-min=5.7km az=28.5
JMA 01 08:13:28.4, 36°.73N×140°.59E, h7km±1km, M3.3
JMA Felt II J1.
ISC 01 08:13:28.3±1.0, 36°.72N±0°.03×140°.59E±0°.05, h9km±6km, n15, σ0.54/22, mb3.5/7, 3C, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHO	Hitachi	0.11	187	P	Pg	08 13 31.0	0.0
JHO				S	Sg	08 13 32.8	-0.1
ONAJ	Iwakimizuishiy	0.41	24	⇑P	Pg	08 13 36.4	-0.1
ONAJ				S	Sg	08 13 42.3	+0.3
JYT	Yasato	0.59	213	⇑P	Pg	08 13 39.7	0.0
JYT				S	Sg	08 13 47.9	+0.5
JSB	Shiboa	0.59	295	⇑P	Pb	08 13 40.5	-0.3
JSB				S	Sb	08 13 49.1	-0.1
JFT	Otama	0.82	346	P	Pg	08 13 44.2	+0.1
JFT				S	Sg	08 13 55.0	+0.2
JFY	Yanaizu	0.98	314	P	Pg	08 13 47.3	+0.1
MJAR	Matsushiro Arr	1.92	265	Pn	Pn	08 14 02.1	+0.9
	13nm,0.3s,baz=82,slow=12,SNR=72						
MJAR				Sn	Sb	08 14 26.9	-0.7
	19nm,0.3s,baz=91,slow=28,SNR=24						
MJAR				LR	LR	08 14 51.8	
	comp=Z,50nm,19.1s,baz=95,slow=44						
MAT	Matsushiro	1.92	265	P	Pn	08 14 01.5	+0.3
MAT				S	Sb	08 14 27.5	-0.1
SONM	Songino Array	27.41	305	P	P	08 19 13.9	-0.3
	0.6nm,0.8s,baz=108,slow=9.3,SNR=2.8						
MKAR	Makanchi Array	43.72	302	P	P	08 21 33.9	+0.2
	0.1nm,0.3s,baz=81,slow=8.9,SNR=2.5						
KURBB	Kurchatov Arra	45.67	308	P	P	08 21 48.7	-0.4
	0.9nm,0.6s,baz=83,slow=8.1,SNR=8.2						
ILAR	Eielson Array	50.11	32	P	P	08 22 23.6	+0.3
	0.2nm,0.7s,baz=252,slow=5.6,SNR=3.6						
WRA	Warramunga Arr	56.66	187	P	P	08 23 10.6	-1.3
	0.6nm,0.8s,baz=3.6,slow=7.3,SNR=2.8						
ASAR	Alice Springs	60.39	187	P	P	08 23 38.9	+1.0
	0.3nm,0.7s,baz=0.0,slow=7.8,SNR=3.6						
TXAR	Lajitas Array	90.83	52	P	P	08 26 32.5	0.0
	0.2nm,0.7s,baz=336,slow=2.0,SNR=3.4						

IDC 01 08:17:40.4±6.0, 18°.87S×134°.07E, h0km, mb1 3.2/2, mb1mx3.1/36, mbtmp3.1/2, ML3.5/1, Error ellipse: s-maj=37.4km s-min=11.2km az=167.0, Northern Territory

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	Warramunga Arr	1.10	167	Pg	Pg	08 18 00.2	-1.2
	1.1nm,0.3s,baz=344,slow=17,SNR=13						
WRA				Lg	Lg	08 18 17.6	
	2.1nm,0.3s,baz=346,slow=27,SNR=8.0						
ASAR	Alice Springs	4.78	182	Pn	Pn	08 18 54.7	+1.0
	0.1nm,0.3s,baz=11,slow=8.6,SNR=3.0						
ASAR				Sn	Sn	08 19 50.5	+0.7
	0.2nm,0.3s,baz=5.8,slow=28,SNR=6.3						
ASAR				Lg	Lg	08 20 12.4	
	0.1nm,0.3s,baz=5.0,slow=31,SNR=4.7						
STKA	Stephens Creek	14.62	154	Pn	Pn	08 21 09.4	+0.8
	0.1nm,0.3s,baz=332,slow=17,SNR=2.0						

IDC 01 08:25:21.4±1.1, 37°.08N×141°.26E, h0km, mb3.4/4, mb1 3.6/5, mb1mx3.3/56, mbtmp3.3/5, ML3.0/1, Error ellipse: s-maj=32.6km s-min=25.2km az=102.0
ISCJB 01 08:25:22.5±1.0, 36°.96N±0°.03×140°.93E±0°.07, h9km±5km, mb3.5/4, Error ellipse: s-maj=9.9km s-min=5.2km az=10.7
JMA 01 08:25:24.0, 36°.98N×140°.77E, h8km±1km, M2.9
JMA Felt I J1.
ISC 01 08:25:23.3±1.2, 36°.98N±0°.03×140°.83E±0°.07, h11km±7km, n12, σ1.04/20, mb3.5/4, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	Iwakimizuishiy	0.13	348	P	Pg	08 25 26.7	+0.3
ONAJ				*e*S	Sg	08 25 28.7	0.0
JHO	Hitachi	0.42	210	P	Pg	08 25 31.9	+0.3
JHO				S	Sg	08 25 37.3	+0.1
JFT	Otama	0.67	324	P	Pg	08 25 36.4	+0.1
JFT				S	Sg	08 25 45.1	0.0
JSB	Shiboa	0.73	270	P	Pb	08 25 37.9	-0.2
JSB				S	Sb	08 25 47.9	-0.2
JMM	Marumori	0.89	358	P	Pg	08 25 40.4	0.0
JMM				S	Sb	08 25 52.4	-0.2
JYT	Yasato	0.91	215	P	Pg	08 25 40.6	-0.2
JYT				*e*S	Sg	08 25 52.5	-0.1
MJAR	Matsushiro Arr	2.15	259	Pn	Pb	08 26 01.8	-0.5
	3.1nm,0.3s,baz=86,slow=16,SNR=24						
MJAR				Sn	Sb	08 26 29.0	+0.1
	12nm,0.3s,baz=78,slow=31,SNR=18						
MAT	Matsushiro	2.15	259	P	Pb	08 26 00.9	-1.4
MAT				S	Sb	08 26 28.2	-0.8
KURBB	Kurchatov Arra	45.67	308	P	P	08 33 46.2	+2.3
	0.2nm,0.4s,baz=87,slow=8.5,SNR=2.9						
WRA	Warramunga Arr	56.94	187	P	P	08 35 08.6	-0.1
	0.7nm,0.7s,baz=5.1,slow=7.5,SNR=3.2						
ASAR	Alice Springs	60.67	187	P	P	08 35 36.3	+1.8
	0.2nm,0.5s,baz=17,slow=9.7,SNR=3.1						
YKA	Yellowknife Ar	64.09	30	P	P	08 35 54.6	-2.4
	0.1nm,0.4s,baz=306,slow=7.0,SNR=3.4						

ISCJB 01 08:26:40.0±0.8, 36°.70N±0°.07×71°.76E±0°.08, h106km, mb3.4/9, Error ellipse: s-maj=10.4km s-min=8.9km az=146.6
IDC 01 08:26:44.8±4.0, 36°.91N×71°.79E, h130km±31km, mb3.2/9, mb1 3.3/14, mb1mx3.2/68, mbtmp3.7/14, Error ellipse: s-maj=28.2km s-min=19.6km az=6.0
NNC 01 08:26:49.9±2.5, 37°.36N×71°.49E, h161km±23km, mb3.1, mpv4.2, Error ellipse: s-maj=24.1km s-min=9.6km az=161.0
ISC 01 08:26:42.2±1.0, 36°.83N±0°.09×71°.73E±0°.09, h106km, n22, σ1.59/26, mb3.3/9, 6C-7D, Afghanistan-Tajikistan border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZET	Dzherino	3.03	312	⇑P	Pn	08 27 32.1	+3.5
	4.3nm,0.2s						
DZET				⇑S	Sn	08 28 05.7	+1.3
	30nm,0.2s						
SFK	Sufi-Kurgan	3.47	23	⇓P	Pn	08 27 38.4	+3.8
	36nm,0.2s						
SFK				⇓S	Sn	08 28 17.2	+2.2
	39nm,0.3s						
MNAS	Manas	5.69	6	⇓P	Pn	08 28 06.4	+2.0
	52nm,0.3s						
MNAS				⇓S	Sn	08 29 05.8	-2.6
	33nm,0.6s						
AAK	Ala-Archa	6.18	19	P	Pn	08 28 13.4	+2.3
	10nm,0.3s,baz=164,slow=6.5,SNR=94						
AAK				S	Sn	08 29 19.9	-0.4
	1.7nm,0.3s,baz=314,slow=21,SNR=7.9						
AAK	Ala-Archa	6.18	19	⇓P	Pn	08 28 13.0	+2.0
	17nm,0.3s						
AAK				⇑S	Sn	08 29 20.6	+0.2
	7.6nm,0.4s						
KK31	Karatay Array	6.34	352	P	Pn	08 28 14.7	+1.6
	5.7nm,0.3s,baz=177,slow=13,SNR=151						
KK31				⇓S	Sn	08 29 19.9	-4.1
	13nm,0.4s,baz=178,slow=23,SNR=17						
TKM2	Tokmak 2	6.77	25	⇓P	Pn	08 28 20.7	+1.5
	11nm,0.6s						
MKAR	Makanchi Array	12.68	35	P	Pn	08 29 39.5	+0.8
	0.1nm,0.3s,baz=224,slow=16,SNR=8.0						
KURBB	Kurchatov Arra	14.63	17	P	Pn	08 30 02.1	-1.7
	0.1nm,0.3s,baz=236,slow=42,SNR=7.3						
AB31	Akbulak array	15.10	329	⇑P	Pn	08 30 09.9	+0.3
	0.3nm,0.2s,baz=35,slow=24,SNR=29						
AB31				⇑S	Sn	08 32 44.1	-12
	1.5nm,0.6s,baz=145,slow=23,SNR=9.4						
AKTO	Aktyubinsk	16.80	328	P	P	08 30 32.6	+1.4
	0.3nm,0.3s,baz=120,slow=8.9,SNR=5.4						
AKTO	Aktyubinsk	16.80	328	⇑P	Pn	08 30 30.8	-0.1
	0.6nm,0.5s						
ZALV	Zalesovo Beam	19.38	24	P	P	08 30 59.5	0.0
	0.8nm,0.3s,baz=219,slow=12,SNR=6.7						
SONM	Songino Array	27.67	56	P	P	08 32 20.5	+0.4
	0.3nm,0.5s,baz=249,slow=8.3,SNR=2.9						
ARCES	ARCESS Array B	41.07	337	P	P	08 34 15.3	+0.4
	1.8nm,0.9s,baz=102,slow=5.1,SNR=6.3						
HFS	Hagfors	43.17	322	P	P	08 34 32.2	0.0
	2.2nm,0.8s,baz=93,slow=10,SNR=5.1						
NOA	NORSAR Array B	44.48	323	P	P	08 34 41.7	-0.8
	0.4nm,0.5s,baz=96,slow=7.8,SNR=2.3						
TORD	Torodi Ar. Bea	66.31	269	P	P	08 37 19.5	-0.1
	0.3nm,0.8s,baz=36,slow=5.1,SNR=2.4						
INK	Inuvik	73.49	10	P	P	08 38 02.0	-0.6
	0.3nm,0.5s,baz=334,slow=4.6,SNR=6.8						
ILAR	Eielson Array	74.30	16	P	P	08 38 06.4	-1.1
	0.3nm,0.9s,baz=304,slow=4.4,SNR=3.6						
YKA	Yellowknife Ar	80.89	3	P	P	08 38 43.2	-1.0
	0.2nm,0.6s,baz=347,slow=5.3,SNR=5.8						
ASAR	Alice Springs	83.96	125	P	P	08 39 00.3	-0.4
	0.2nm,0.5s,baz=302,slow=5.3,SNR=3.1						

IDC 01 08:28:40.4±1.4, 51°.79N×75°.62E, h0km, mb1 2.5/3, mb1mx2.5/71, mbtmp2.5/3, ML2.0/3, Error ellipse: s-maj=28.8km s-min=11.4km az=30.0
NNC 01 08:28:43.3±1.6, 51°.86N×75°.74E, h0km, mb3.0, mpv2.6, Error ellipse: s-maj=47.8km s-min=8.9km az=26.0, Suspected Mining explosion.
ISC 01 08:28:39.9±1.0, 51°.7N±0°.2×75°.30E±0°.09, h0km, n10, σ1.07/13, 6C-3D, Eastern Kazakhstan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KURBB	Kurchatov Arra	2.31	117	Pg	Pn	08 29 19.6	+0.4
	0.3nm,0.3s,baz=304,slow=19,SNR=24						
KURBB				Lg	Lg	08 29 49.2	
	0.3nm,0.3s,baz=306,slow=30,SNR=16						
KURBB	Kurchatov Arra	2.31	117	⇓Pn	Pn	08 29 19.6	+0.4
	1.8nm,0.3s,baz=305,slow=15						
KURBB				⇑Sn	Sn	08 29 49.2	+0.9
	36nm,0.8s,baz=308,slow=27						
KURK	Kurchatov	2.32	114	⇑Pn	Pn	08 29 19.0	-0.2
	3.5nm,0.6s						
KURK				⇑Sn	Sn	08 29 48.7	+0.3
	24nm,0.8s						
VOSK	Vostochnaya	2.84	292	⇓Pn	Pb	08 29 31.5	0.0
	1.0nm,0.7s						
VOSK				⇓Sn	Sb	08 30 08.2	+1.5
	8.5nm,0.9s						
BVA0	Borovoye Array	3.28	295	⇑Pn	Pg	08 29 40.9	-1.8
	2.0nm,0.8s,baz=98,slow=14,SNR=4.3						
BVA0				⇑Sn	Sg	08 30 24.8	-0.4
	4.3nm,0.8s,baz=110,slow=24,SNR=5.0						
BVAR	Borovoye Array	3.28	295	Pn	Pn	08 29 34.4	+1.9
	0.3nm,0.3s,baz=127,slow=16,SNR=3.3						
BVAR				Sn	Sn	08 30 12.9	+0.7
	0.3nm,0.3s,baz=107,slow=24,SNR=2.9						
BVAR				Lg	Lg	08 30 22.2	
	0.3nm,0.3s,baz=112,slow=31,SNR=4.1						
I46RU	ZALESOVO INFRA	6.19	65	*i*		09 03 40.0	
	baz=253,slow=318,SNR=1.4						
ZALV	Zalesovo Beam	6.19	65	Pn	Pn	08 30 12.1	-0.2
	0.1nm,0.3s,baz=254,slow=13,SNR=2.1						
MK31	Makanchi Array	6.72	134	⇑Lg	Lg	08 32 11.4	
	3.2nm,1.1s,baz=328,slow=25,SNR=4.9						
MKAR	Makanchi Array	6.72	134	Pn	Pn	08 30 19.6	-0.2
	0.0nm,0.3s,baz=320,slow=13,SNR=2.5						
MKAR				Lg	Lg	08 32 09.0	
	0.1nm,0.3s,baz=332,slow=28,SNR=7.3						

NIED 01 08:34:00, 36°.20N×140°.50E, h65km, Mw3.9 Best double couple: M0 8.23000×10^14 NP1:φs218.00000°, δ22.00000°, λ120.00000°. NP2:φs6.00000°, δ71.00000°, λ78.00000°.
ISCJB 01 08:34:43.0±0.6, 36°.28N±0°.05×140°.50E±0°.07, h57km±4km, mb3.7/11, Error ellipse: s-maj=9.0km s-min=8.5km az=7.4
JMA 01 08:34:43.4±0.1, 36°.25N×140°.48E, h52km±1km, M3.5 Broadband fault plane solution: P waves. NP1: φs21.00000°, δ81.00000°, λ96.00000°. NP2:φs164.00000°, δ11.00000°, λ54.00000°. Principal axes: T Plg53.0000°, Azm298.0000°; N Plg6.0000°, Azm200.0000°; P Plg36.0000°, Azm105.0000°;
JMA Felt II J1.
IDC 01 08:34:46.9±1.8, 36°.14N×140°.25E, h84km±17km, mb3.5/11, mb1 3.6/13, mb1mx3.4/60, mbtmp3.8/13, MS2.7/1, Ms1 2.7/1, ms1mx2.3/37 Error ellipse: s-maj=23.3km s-min=12.0km az=70.0
ISC 01 08:34:43.6±0.9, 36°.30N±0°.06×140°.47E±0°.06, h51km±6km, n25, σ1.16/24, mb3.7/11, 4D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JYT	Yasato	0.23	252	⇓P	Pn	08 34 52.3	0.0
JYT				S	Sn	08 34 58.5	0.0
JHO	Hitachi	0.32	15	⇓P	Pn	08 34 53.3	+0.2
JHO				S	Sn	08 35 00.1	+0.3
JAG	Ashikaga	0.83	279	⇓P	Pn	08 34 59.2	+0.1
JAG				S	Sn	08 35 10.7	+0.3
JKT	Katashina	1.09	296	⇓P	Pn	08 35 03.1	+0.5
JKT				S	Sn	08 35 18.0	+1.3
MJAR	Matsushiro Arr	1.84	278	P	Pn	08 35 13.2	+0.4
	20nm,0.3s,baz=104,slow=9.1,SNR=122						
MAT	Matsushiro	1.84	278	P	Pn	08 35 13.5	+0.7
MAT				*e*S	Sn	08 35 36.1	+1.1
JHJ	Hachijo jima 2	3.23	190	P	Pn	08 35 33.6	+1.9
	17nm,0.3s,baz=308,slow=23,SNR=8.0						
JHJ				S	Sn	08 36 09.1	+0.1
	27nm,0.3s,baz=141,slow=23,SNR=6.8						
KSRS	Korea Array	10.12	280	P	Pn	08 37 11.5	+5.3

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
	0.1nm,0.3s,baz=94,slow=15,SNR=3.8						
KSRS				LR	LR	08 40 30.9	
	comp=Z,45nm,21.5s,baz=22,slow=34						
USRK	Ussuriysk Ar.	10.20	323	P	Pn	08 37 11.5	+4.2
	0.2nm,0.3s,baz=139,slow=47,SNR=4.1						
SONM	Songino Array	27.58	305	P	P	08 40 24.3	-1.5
	1.0nm,0.8s,baz=104,slow=8.4,SNR=7.7						
H11N1	WAKE ISLAND Hy	28.45	118	T	T	09 10 36.3	
	baz=311,slow=74,SNR=3.3						
H11N3	WAKE ISLAND Hy	28.46	118	T	T	09 10 44.7	
	baz=201,slow=74,SNR=3.3						
H11S1	WAKE ISLAND Hy	29.12	120	T	T	09 11 30.9	
	baz=314,slow=75,SNR=24						
H11S3	WAKE ISLAND Hy	29.12	121	T	T	09 11 27.7	
	baz=314,slow=75,SNR=5.4						
H11S2	WAKE ISLAND Hy	29.14	121	T	T	09 11 32.7	
	baz=314,slow=75,SNR=21						
ZALV	Zalesovo Beam	41.85	313	P	P	08 42 29.1	+0.7
	2.0nm,0.5s,baz=93,slow=6.8,SNR=7.8						
MKAR	Makanchi Array	43.87	303	P	P	08 42 44.9	0.0
	1.3nm,0.8s,baz=92,slow=9.6,SNR=12						
KURBB	Kurchatov Arra	45.86	308	P	P	08 43 00.7	+0.2
	2.6nm,0.7s,baz=85,slow=8.3,SNR=25						
ILAR	Eielson Array	50.52	32	P	P	08 43 37.2	+0.9
	0.4nm,0.9s,baz=278,slow=6.1,SNR=4.4						
INK	Inuvik	55.38	27	P	P	08 44 14.0	+2.0
	0.3nm,0.5s,baz=306,slow=5.8,SNR=4.5						
WRA	Warramunga Arr	56.24	187	P	P	08 44 16.1	-2.5
	0.7nm,0.9s,baz=5.2,slow=8.0,SNR=2.7						
KBZ	Khabaz	70.80	310	P	P	08 45 55.4	+0.8
	0.6nm,0.5s,baz=27,slow=4.5,SNR=4.0						
AKASG	Malin Array Be	74.41	322	P	P	08 46 13.9	-2.0
	0.4nm,0.3s,baz=41,slow=6.4,SNR=4.2						
NOA	NORSAR Array B	74.56	337	P	P	08 46 16.9	+0.2
	1.2nm,0.9s,baz=40,slow=5.8,SNR=3.1						
TXAR	Lajitas Array	91.17	52	P	P	08 47 43.9	+0.5
	0.2nm,0.8s,baz=204,slow=2.0,SNR=2.9						

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*SJA **01** 08:36:30.2±0.5, 24°14S×66°77W, h240km±38km, ML2.5, MW2.5*
*ISCJB **01** 08:36:31.1±0.6, 24°12S±0°05×66°9W±0°1, h200km, mb3.0/2, Error ellipse: s-maj=18.1km s-min=6.4km az=172.4*
*IDC **01** 08:36:35.8±10.0, 23°73S×66°48W, h199km±73km, mb2.8/3, mb1 3.3/5, mb1mx3.1/17, mbtmp3.5/5, Error ellipse: s-maj=107.6km s-min=22.8km az=21.0*
ISC 01 08:36:31.6±0.9, **24°10S**±0°07×**67°0W**±0°1, **h200**km, **n11**, σ**1.31**/12, **Salta Province**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
AHML	Horco Molle	3.05	152	eP	Pn	08 37 21.8	-0.1
AHML				eS	Sn	08 38 00.1	-1.2
AHML				IAML		08 38 00.1	
	comp=Z,8.7nm,2.9s						
CYA	Choya	4.45	167	eP	Pn	08 37 39.1	+0.1
ACLC	CERRO LA CRUZ	5.30	180	eP	Pn	08 37 49.7	-0.4
AGUA	GUANDACOL	5.54	194	eP	Pn	08 37 53.3	+0.3
AMOG	MOGNA	6.95	191	eP	Pn	08 38 10.2	-1.1
ACHE	Chepes	7.04	178	eP	Pn	08 38 11.3	-1.2
LPAZ	La Paz	7.85	352	P	Pn	08 38 23.1	-0.6
	comp=Z,0.8nm,0.3s,baz=156,slow=8.1,SNR=17						
LPAZ				S	Sn	08 39 50.5	-2.1
	comp=Z,0.2nm,0.3s,baz=331,slow=11,SNR=3.9						
BDFB	Brasilia	19.68	68	P	P	08 40 45.7	-0.2
	comp=Z,0.6nm,0.3s,baz=241,slow=12,SNR=7.8						
TXAR	Lajitas Array	63.79	324	P	P	08 46 47.4	+4.7
	comp=Z,0.0nm,0.3s,baz=146,slow=6.6,SNR=3.0						
TORD	Torodi Ar. Bea	76.56	69	P	P	08 48 01.0	+0.7
	comp=Z,0.3nm,0.5s,baz=256,slow=5.5,SNR=7.2						
YKA	Yellowknife Ar	94.23	340	P	P	08 49 29.8	+2.5
	comp=Z,0.1nm,0.8s,baz=127,slow=4.1,SNR=3.2						

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*NIED **01** 08:39:00, 27°40N×143°10E, h17km, Mw4.0 Best double couple: M0 1.00000×10^15 NP1:φs204.00000°, δ48.00000°, λ166.00000°. NP2:φs304.00000°, δ79.00000°, λ42.00000°.*
*IDC **01** 08:39:28.3±1.0, 27°08N×142°88E, h0km, mb3.6/8, mb1 3.8/9, mb1mx3.6/43, mbtmp3.6/9, ML3.6/1, MS3.1/3, Ms1 3.1/3, ms1mx2.6/41, Error ellipse: s-maj=20.7km s-min=16.0km az=165.0*
*ISCJB **01** 08:39:31.1±0.8, 27°1N±0°1×142°8E±0°1, h32km, mb3.6/8, MS3.4/2, Error ellipse: s-maj=18.8km s-min=15.1km az=6.0*
ISC 01 08:39:33.0±1.0, **27°1N**±0°1×**142°9E**±0°1, **h32**km, **n19**, σ**1.73**/11, **mb3.5**/8, **Bonin Islands region**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
JCJ	Chichijima	0.62	267	Pn	Pn	08 39 44.2	-1.3
	496nm,0.3s,baz=350,slow=9.7,SNR=292						
JCJ				Sn	Sn	08 39 57.6	+3.2
	979nm,0.3s,baz=94,slow=24,SNR=17						
MJAR	Matsushiro Arr	10.19	338	Pn	Pn	08 41 55.9	-1.1
	0.5nm,0.3s,baz=161,slow=12,SNR=4.3						
JNU	Nakatsue	11.98	303	LR	LR	08 46 36.5	
	comp=Z,29nm,18.7s,baz=123,slow=36						
H11N2	WAKE ISLAND Hy	23.21	103	T	T	09 07 37.7	
	baz=316,slow=75,SNR=12						
H11N1	WAKE ISLAND Hy	23.21	103	T	T	09 07 47.6	
	baz=316,slow=75,SNR=13						
H11N3	WAKE ISLAND Hy	23.23	103	T	T	09 07 42.2	
	baz=316,slow=75,SNR=11						
H11S3	WAKE ISLAND Hy	23.54	106	T	T	09 08 38.8	
	baz=318,slow=76,SNR=16						
H11S1	WAKE ISLAND Hy	23.54	106	T	T	09 08 39.2	
	baz=318,slow=76,SNR=9.8						
H11S2	WAKE ISLAND Hy	23.55	106	T	T	09 08 36.5	
	baz=318,slow=76,SNR=12						
KLR	Kul'dur	23.68	342	P	P	08 44 42.3	+0.6
	0.7nm,0.5s,baz=226,slow=8.1,SNR=3.9						
SONM	Songino Array	35.12	316	P	P	08 46 22.4	-1.1
	0.3nm,0.4s,baz=123,slow=5.3,SNR=2.7						
WRA	Warramunga Arr	47.52	191	P	P	08 48 06.0	+0.6
	1.8nm,0.6s,baz=12,slow=8.6,SNR=6.1						
MKAR	Makanchi Array	50.93	310	P	P	08 48 30.1	-1.2
	0.2nm,0.4s,baz=94,slow=8.2,SNR=5.7						
ASAR	Alice Springs	51.24	191	P	P	08 48 31.9	-1.8
	0.3nm,0.6s,baz=202,slow=30,SNR=4.0						
ILAR	Eielson Array	57.38	29	P	P	08 49 18.8	+0.9
	0.3nm,0.9s,baz=247,slow=6.7,SNR=3.7						
PALK	Pallekele	61.99	264	LR	LR	09 17 11.4	
	comp=Z,16nm,20.0s,baz=115,slow=36						
INK	Inuvik	62.74	25	LR	LR	09 16 58.0	
	comp=Z,35nm,19.5s,baz=213,slow=36						
YKA	Yellowknife Ar	71.81	28	P	P	08 50 53.7	+1.5
	0.2nm,0.7s,baz=297,slow=4.1,SNR=4.4						
FINES	FINESS Array B	78.19	334	P	P	08 51 29.9	+1.0
	1.2nm,0.5s,baz=79,slow=4.7,SNR=9.7						

IDC 01 08:45:53.5±2.3, **36°27N**×**143°52E**, **h0**km, **mb3.5**/4, **mb1 3.6**/6, **mb1mx3.4**/38, **mbtmp3.5**/6, **ML3.5**/2, **Error ellipse: s-maj=57.7km s-min=24.9km az=62.0, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
MJAR	Matsushiro Arr	4.29	275	Pn	Pn	08 46 58.1	-2.1
	1.3nm,0.3s,baz=113,slow=9.8,SNR=13						
MJAR				Sn	Sn	08 47 44.5	-6.5
	0.5nm,0.3s,baz=69,slow=11,SNR=4.3						
JHJ	Hachijo jima 2	4.40	225	Pn	Pn	08 47 03.3	+1.7
	13nm,0.3s,baz=343,slow=16,SNR=4.3						
JHJ				Sn	Sn	08 47 51.5	-2.0
	16nm,0.3s,baz=71,slow=23,SNR=9.2						
SONM	Songino Array	29.61	305	P	P	08 51 59.6	-0.9
	0.3nm,0.3s,baz=98,slow=10,SNR=2.7						
MKAR	Makanchi Array	45.96	303	P	P	08 54 19.8	+1.6
	0.2nm,0.7s,baz=95,slow=9.1,SNR=3.7						
WRA	Warramunga Arr	56.58	190	P	P	08 55 37.6	-0.4
	0.7nm,0.7s,baz=11,slow=7.6,SNR=2.5						
ASAR	Alice Springs	60.30	190	P	P	08 56 03.9	-0.2
	0.4nm,0.8s,baz=7.8,slow=7.8,SNR=4.1						

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*ISCJB **01** 08:48:00.4±1.5, 7°25N±0°08×81°38W±0°03, h23km±15km, Error ellipse: s-maj=13.0km s-min=5.3km az=1.5*
*CASC **01** 08:48:01.7±4.6, 7°44N×81°40W, h7km±77km, MD4.3*
ISC 01 08:47:58.6±2.0, **7°25N**±0°10×**81°38W**±0°04, **h4**km±12km, **n18**, σ**1.55**/27, **3C-5D**, **Panama**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
AZU	Azuero	1.23	64	⇓iP	Pg	08 48 20.6	-1.5
AZU				iS	Sg	08 48 37.5	-0.6
PNME	Penonome	1.62	40	⇓iP	Pn	08 48 27.2	-0.8
PNME				iS	Sn	08 48 47.7	-1.6
TBS2		1.99	321	⇑iP	Pn	08 48 33.6	+0.4
TBS2				eS	Sn	08 48 57.6	-1.1
BRU2	Volcan	2.01	320	⇑eP	Pn	08 48 34.0	+0.5
BRU2				iS	Sn	08 48 58.9	-0.4
PBNC	Punta Burica N	2.06	303	⇓iP	Pn	08 48 33.8	-0.2
PBNC				eS	Sn	08 48 57.4	-2.8
CTCR	Cotoan	2.13	320	eP	Pn	08 48 35.4	+0.1
ZANG	Zanguenga, Cho	2.27	41	⇓eP	Pn	08 48 38.1	+1.2
ZANG				eS	Sn	08 49 04.0	-1.4
PINA	Piqa, Costa Ab	2.38	33	⇑iP	Pn	08 48 40.1	+1.6
BCIP	Isla Barro Col	2.44	39	⇓iP	Pn	08 48 40.6	+1.2
	baz=258,slow=10						
BCIP				iS	Sn	08 49 09.9	+0.1
BCIP	Isla Barro Col	2.44	39	eP	Pn	08 48 40.5	+1.1
BUS	Buena Vista	3.28	314	eP	Pn	08 48 51.9	+0.6
BUS				eS	Sg	08 49 46.8	+2.6
URSC	Urasca	3.50	318	eP	Pn	08 48 55.7	+1.7
URSC				eS	Sg	08 49 51.4	+0.4
QCR	Quepos	3.50	308	eP	Pn	08 48 54.9	+0.9
QCR				eS	Sg	08 50 04.0	+13
UPD2	Meteti	3.58	69	eP	Pn	08 48 56.8	+1.8
SOLC	Bahia Solano	4.08	104	eP	Pn	08 49 02.2	+0.3
JTS	JuntasAbangare	4.65	311	eP	Pn	08 49 11.2	+1.5
MOTC	Monteria, Cord	5.86	75	eP	Pn	08 49 28.6	+2.1
OCAC	Ocana	8.05	82	eP	Pn	08 49 60.0	+3.3

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*CASC **01** 08:58:06.1±8.3, 7°63N×80°66W, h319km±149km, MD5.0*
*ISCJB **01** 08:58:16.8±0.5, 7°26N±0°05×81°40W±0°04, h10km, mb3.8/9, MS3.4/8, Error ellipse: s-maj=8.7km s-min=4.7km az=29.9*
*IDC **01** 08:58:21.4±1.8, 8°21N×81°16W, h0km, mb3.7/9, mb1 4.1/13, mb1mx3.9/42, mbtmp3.9/13, ML3.1/4, MS3.5/13, Ms1 3.5/13, ms1mx3.2/32, Error ellipse: s-maj=58.5km s-min=18.2km az=26.0*
ISC 01 08:58:18.9±0.7, **7°44N**±0°07×**81°32W**±0°05, **h10**km, **n43**, σ**1.40**/38, **mb4.0**/9, **MS3.3**/8, **1C**, **Panama**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
ZANG	Zanguenga, Cho	2.08	43	ePn	Pb	08 58 55.0	-1.8
ZANG				eSn	Sg	08 59 24.4	-1.5
PINA	Piqa, Costa Ab	2.19	34	ePn	Pb	08 58 56.9	-1.7
BCIP	Isla Barro Col	2.26	40	ePn	Pn	08 58 57.1	+0.8
BCIP	Isla Barro Col	2.26	40	eP	Pn	08 58 57.2	+0.9
BUS	Buena Vista	3.20	311	⇑eP	Pn	08 59 08.8	-0.9
BUS				eS	Sg	09 00 02.0	+0.1
URSC	Urasca	3.41	315	eP	Pn	08 59 12.1	-0.2
QCR	Quepos	3.44	305	eP	Pn	08 59 11.8	-0.8
QCR				eS	Sg	09 00 07.6	-1.9
CGA2	Cerro Gallo 2	4.03	310	eP	Pn	08 59 21.1	+0.2
CGA2				eS	Sb	09 00 20.1	+1.1
SOLC	Bahia Solano	4.06	107	eP	Pn	08 59 19.3	-1.9
JTS	JuntasAbangare	4.58	309	Pn	Pn	08 59 28.7	+0.4
	9.1nm,0.3s,baz=186,slow=8.8,SNR=37						
JTS				LR	LR	09 01 26.5	
	comp=Z,725nm,20.4s,baz=124,slow=43						
DBBC	Dabeiba	5.08	94	eP	Pn	08 59 33.9	-1.4
MALC	Bahia Malaga	5.22	130	eP	Pn	08 59 36.6	-0.5
MOTC	Monteria, Cord	5.75	76	eP	Pn	08 59 46.0	+1.6
HELC	Santa Helena	5.88	102	eP	Pn	08 59 47.2	+0.7
GUYC	Guyana, Colomb	6.29	110	eP	Pn	08 59 53.7	+1.5
NORC	Norcasia	6.67	106	eP	Pn	08 59 56.5	-0.6
POPC	Popayan, Colom	6.71	136	eP	Pn	08 59 57.1	-0.8
CRUC	La Cruz	7.28	143	eP	Pn	09 00 05.0	-0.7
PRAC	Prado	7.39	120	eP	Pn	09 00 08.1	+1.1
ROSC	El Rosal	7.42	110	Pn	Pn	09 00 15.0	+7.3
	0.8nm,0.3s,baz=143,slow=18,SNR=3.6						
ROSC				LR	LR	09 03 08.0	
	comp=Z,233nm,19.4s,baz=234,slow=38						
BRRC	Barranca, Sant	7.55	92	eP	Pn	09 00 08.6	-0.5
CHIC	Chingaza	8.04	110	eP	Pn	09 00 17.4	+1.2
SDV	Santo Domingo	10.67	82	Pn	Pn	09 00 54.2	+2.0
	0.8nm,0.3s,baz=305,slow=13,SNR=9.9						
SDV				LR	LR	09 06 27.1	
	comp=Z,218nm,19.7s,baz=266,slow=46						
CMIG	Matias Romero	16.35	307	Pn	P	09 02 10.3	-1.4
	0.2nm,0.3s,baz=83,slow=9.5,SNR=13						
CMIG				LR	LR	09 08 59.7	
	comp=Z,169nm,20.4s,baz=149,slow=40						
SJG	San Juan	18.18	53	LR	LR	09 08 43.2	
	comp=Z,60nm,19.6s,baz=262,slow=35						
PTGA	Pitinga	22.79	110	LR	LR	09 12 36.6	
	comp=Z,102nm,19.8s,baz=290,slow=37						
LPAZ	La Paz	26.95	151	LR	LR	09 16 26.9	
	comp=Z,76nm,19.8s,baz=322,slow=39						
TKL	Tuckaleechee C	28.18	356	P	P	09 04 17.4	+5.8
	4.0nm,0.9s,baz=24,slow=4.1,SNR=2.6						
TXAR	Lajitas Array	30.28	319	P	P	09 04 31.6	+1.1
	0.0nm,0.3s,baz=226,slow=52,SNR=2.6						
TXAR				LR	LR	09 16 45.7	
	comp=Z,41nm,20.7s,baz=0.0,slow=37						
SIV	San Ignacio	30.72	139	LR	LR	09 16 10.3	
	comp=Z,70nm,21.3s,baz=2.0,slow=34						
BDFB	Brasilia	40.17	125	LR	LR	09 23 05.7	
	comp=Z,182nm,18.9s,baz=348,slow=37						
CPUP	Villa Florida	40.85	146	LR	LR	09 24 01.2	
	comp=Z,47nm,21.3s,baz=318,slow=37						
PDAR	Pinedale Array	43.08	329	P	P	09 06 18.2	-1.3
	0.1nm,0.5s,baz=119,slow=9.2,SNR=5.5						
PDAR				LR	LR	09 25 44.3	
	comp=Z,74nm,20.5s,baz=186,slow=39						
ULM	Lac du Bonnet	44.37	347	P	P	09 06 26.9	-2.5
	2.1nm,0.6s,baz=161,slow=9.0,SNR=4.7						
NVAR	Mina Array Bea	45.43	318	P	P	09 06 39.1	+0.7
	0.5nm,0.7s,baz=134,slow=7.2,SNR=3.6						
RCBR	Riachuelo	47.19	105	LR	LR	09 28 49.2	
	comp=Z,96nm,21.2s,baz=294,slow=39						
YKA	Yellowknife Ar	60.08	343	P	P	09 08 25.1	-0.9
	0.9nm,0.8s,baz=135,slow=7.2,SNR=15						
DLBC	Dease Lake	63.03	334	P	P	09 08 46.7	+0.6
	3.7nm,0.9s,baz=112,slow=4.8,SNR=3.4						
ILAR	Eielson Array	73.02	336	P	P	09 09 48.8	+0.1
	2.3nm,1.0s,baz=109,slow=4.5,SNR=11						
ESDC	Sonseca Array	75.56	51	P	P	09 10 04.8	+0.7
	0.4nm,0.4s,baz=276,slow=4.4,SNR=5.0						
TORD	Torodi Ar. Bea	81.57	78	P	P	09 10 40.1	+2.5
	0.4nm,0.9s,baz=290,slow=6.7,SNR=2.8						
ASAR	Alice Springs	142.57	240	PKP	PKPdf	09 17 55.4	+2.1
	0.7nm,0.7s,baz=112,slow=2.4,SNR=7.3						
WRA	Warramunga Arr	143.29	247	PKP	PKPdf	09 17 57.3	+2.8
	0.6nm,0.3s,baz=98,slow=1.7,SNR=3.5						

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*ISK **01** 08:58:46.8, 37°29N×28°18E, h2km, MD2.6*
*ISCJB **01** 08:58:48.6±0.6, 37°28N±0°03×28°20E±0°04, h0km, Error ellipse: s-maj=6.1km s-min=3.7km az=136.8*
*CSEM **01** 08:58:48.6±0.4, 37°28N×28°21E, h1km, MD2.6, Error ellipse: s-maj=9.9km s-min=5.5km az=49.0, Suspected Mining explosion.*
*DDA **01** 08:59:47.5, 37°24N×28°23E, h10km, Md2.5, Suspected Mining explosion.*
ISC 01 08:58:48.4±1.0, **37°29N**±0°03×**28°17E**±0°03, **h0**km, **n14**, σ**0.82**/26, **Turkey**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
YER	Yerkesik	0.18	149	ePG	Pg	08 58 51.2	-0.6
YER	Yerkesik	0.18	149	ePg	Pg	08 58 51.2	-0.6
AYDN	Tasoluk	0.44	328	iP	Pb	08 58 58.8	-0.3
AYDN				iS	Sb	08 59 06.4	+0.1
AYDN	Tasoluk	0.44	328	P	Pb	08 58 58.8	-0.3
AYDN				S	Sb	08 59 06.4	+0.1
TURN	Turunc	0.54	140	iP	Pg	08 58 58.1	-0.6
TURN				iS	Sg	08 59 06.9	+1.2
TURN	Turunc	0.54	140	P	Pg	08 58 58.1	-0.6
TURN				S	Sg	08 59 06.9	+1.2
DALY	Dalyan (Mu˜la	0.61	140	ePG	Pg	08 58 59.6	-0.5
DALY				eSG	Sg	08 59 09.0	+1.1
DALY	Dalyan (Mu˜la	0.61	140	ePg	Pg	08 58 59.6	-0.5
DALY				eSg	Sg	08 59 09.0	+1.1
BDRM	Kayabasi	0.62	249	iP	Pb	08 59 01.5	-0.6
BDRM				iS	Sb	08 59 11.1	-0.3
BDRM	Kayabasi	0.62	249	P	Pb	08 59 01.5	-0.6
BDRM				S	Sb	08 59 11.1	-0.3
AYDB	Zeytinkoy-Aydi	0.70	342	ePG	Pg	08 59 01.1	-0.7
AYDB				eSG	Sg	08 59 11.9	+1.1
AYDB	Zeytinkoy-Aydi	0.70	342	ePg	Pg	08 59 01.1	-0.7
AYDB				eSg	Sg	08 59 11.9	+1.1
BODT	Bodrum	0.72	252	ePG	Pg	08 59 01.8	-0.4
BODT				eSG	Sg	08 59 12.9	+1.4
BODT	Bodrum	0.72	252	ePg	Pg	08 59 01.8	-0.4
BODT				eSg	Sg	08 59 12.9	+1.4

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*IDC **01** 08:58:58.9±2.2, 47°70N×153°81E, h0km, mb3.4/7, mb1 3.6/8, mb1mx3.4/63, mbtmp3.5/8, ML2.9/1, MS3.2/1, Ms1 3.2/1, ms1mx2.4/35, Error ellipse: s-maj=51.2km s-min=27.6km az=168.0*
*KRSC **01** 08:59:08.8±1.8, 48°08N×156°00E, h31km±43km, ML4.3*
*MOS **01** 08:59:09.8±1.5, 48°31N×154°49E, h60km, mb4.4/1, Error ellipse: s-maj=63.9km s-min=7.2km az=71.4*
*SKHL **01** 08:59:11.4±4.7, 48°24N×154°62E, h74km±4km, mb4.5/1*
ISC 01 08:59:09.0±1.5, **48°1N**±0°1×**154°8E**±0°2, **h42**km, **n40**, σ**1.11**/30, **mb3.5**/7, **Kuril Islands**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
SKR	Severo-Kuril's	2.70	18	eP	Pn	08 59 51.2	+1.3
SKR				eS	Sn	09 00 21.4	+0.1
SKR	Severo-Kuril's	2.70	18	eP	Pn	08 59 51.1	+1.2
SKR				AMB	AMB	08 59 53.4	
	160nm,0.9s						
SKR				eS	Sn	09 00 21.2	-0.1
SKR				A	A	09 00 27.0	
	150nm,0.5s						
SKR				A	A	09 00 27.0	
	140nm,0.5s						
SKR	Severo-Kuril's	2.70	18	ePN	Pn	08 59 51.9	+2.0
SKR				eS	Sn	09 00 20.9	-0.4
SKR				pmax	pmax		
	comp=Z,160nm,0.9s						
SKR				smax	smax		
	comp=N,150nm,0.5s						
SKR				smax	smax		
	comp=E,140nm,0.5s						
PAU	Pauzhetka	3.59	20	eP	Pn	09 00 04.3	+2.2
PAU				eS	Sn	09 00 44.8	+1.6
PAU	Pauzhetka	3.59	20	eP	Pn	09 00 04.3	+2.2
PAU	Pauzhetka	3.59	20	PN	Pn	09 00 04.3	+2.2
PAU				S	Sn	09 00 44.8	+1.6
ASAK	Asacha	4.70	24	eP	Pn	09 00 19.2	+1.8
MTVR	Mutnovka	4.87	25	eP	Pn	09 00 21.3	+1.5
MTVR				eS	Sn	09 01 15.8	+0.9
RUS	Russkaya	4.92	27	eP	Pn	09 00 20.4	0.0
RUS				eS	Sn	09 01 15.0	-1.0
RUS	Russkaya	4.92	27	eP	Pn	09 00 20.4	0.0
RUS	Russkaya	4.92	27	PN	Pn	09 00 20.4	0.0
RUS				S	Sn	09 01 15.0	-1.0
KRMR	Karymshinskiy	5.17	23	eP	Pn	09 00 23.9	+0.2
KRMR	Karymshinskiy	5.17	23	PN	Pn	09 00 23.9	+0.2
PETK	Petropavlovsk-	5.32	19	Pn	Pn	09 00 28.2	+2.4
	comp=E,1.4nm,0.3s,baz=177,slow=12,SNR=34						
PETK				Sn	Sn	09 01 39.2	+13
	baz=150,slow=15,SNR=2.2						
PET	Petropavlovsk	5.48	25	eP	Pn	09 00 27.3	-0.7
UGLR	Uglovaya	5.69	25	eP	Pn	09 00 33.2	+2.1
AVH	Avacha	5.72	24	eP	Pn	09 00 34.2	+2.8
AVH	Avacha	5.72	24	eP	Pn	09 00 34.2	+2.8
AVH	Avacha	5.72	24	PN	Pn	09 00 34.2	+2.8
SMAR	Somma	5.73	25	P	Pn	09 00 34.3	+2.6
SMAR	Somma	5.73	25	PN	Pn	09 00 34.3	+2.6
SDLR	Sedlovina	5.77	25	eP	Pn	09 00 33.4	+1.2
SDLR	Sedlovina	5.77	25	PN	Pn	09 00 33.4	+1.2
KRX	Arik	5.78	23	eP	Pn	09 00 34.5	+2.2
NLC	Nalytchevo	5.81	28	eS	Sn	09 01 35.4	-2.5
GNL	Ganaly	5.92	18	eP	Pn	09 00 36.6	+2.4
GNL	Ganaly	5.92	18	PN	Pn	09 00 36.6	+2.4
SPN	Mys Shipunski	5.98	32	eP	Pn	09 00 35.3	+0.4
SPN				eS	Sn	09 01 40.0	-2.0
SPN	Mys Shipunski	5.98	32	eP	Pn	09 00 35.3	+0.4
SPN	Mys Shipunski	5.98	32	PN	Pn	09 00 35.3	+0.4
KBTR	Krutoberegovo	9.46	28	eP	Pn	09 01 22.7	+0.1
KBTR	Krutoberegovo	9.46	28	PN	Pn	09 01 22.7	+0.1
ILAR	Eielson Array	34.75	40	P	P	09 05 57.9	+3.1
	comp=E,0.1nm,0.6s,baz=243,slow=9.0,SNR=3.9						
INK	Inuvik	39.87	33	P	P	09 06 37.9	-0.2
	comp=E,0.4nm,0.5s,baz=320,slow=7.4,SNR=5.0						
ZALV	Zalesovo Beam	42.77	305	P	P	09 06 53.9	-8.2
	comp=E,0.5nm,0.4s,baz=80,slow=9.2,SNR=2.3						
YKA	Yellowknife Ar	49.13	38	P	P	09 07 53.4	+1.4
	comp=E,0.3nm,0.8s,baz=296,slow=7.6,SNR=4.8						
RES	Resolute Bay	49.16	19	P	P	09 07 51.5	-0.6
	comp=E,0.4nm,0.5s,baz=303,slow=6.2,SNR=3.2						
AKTO	Aktyubinsk	58.68	312	LR	LR	09 36 36.8	
	comp=E,21nm,18.5s,baz=37,slow=39						
FINES	FINESS Array B	63.30	335	P	P	09 09 31.0	-1.9
	comp=E,0.4nm,0.5s,baz=44,slow=10,SNR=2.9						
TXAR	Lajitas Array	75.81	62	P	P	09 10 51.7	+0.9
	comp=E,0.2nm,0.4s,baz=303,slow=6.7,SNR=5.0						

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*NIED **01** 09:00:00, 40°10N×142°80E, h26km, Mw4.0 Best double couple: M0 9.73000×10^14 NP1:φs219.00000°, δ17.00000°, λ95.00000°. NP2:φs34.00000°, δ73.00000°, λ88.00000°.*
*ISCJB **01** 09:00:17.2±0.5, 40°12N±0°06×142°99E±0°06, h12km, mb3.9/18, MS3.1/4, Error ellipse: s-maj=9.0km s-min=4.8km az=146.2*
*JMA **01** 09:00:20.7±0.2, 40°08N×142°81E, h25km±3km, M4.2*
JMA Felt I J1.
*IDC **01** 09:00:25.0±2.9, 40°03N×142°89E, h64km±26km, mb3.6/18, mb1 3.7/21, mb1mx3.5/65, mbtmp3.9/21, ML3.1/3, MS3.1/9, Ms1 3.1/9, ms1mx2.9/40, Error ellipse: s-maj=19.5km s-min=16.0km az=109.0*
ISC 01 09:00:19.1±0.7, **40°15N**±0°07×**142°85E**±0°07, **h12**km, **n41**, σ**0.91**/32, **mb4.0**/18, **MS3.0**/4, **Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
JTH	Tanohata	0.78	255	P	Pb	09 00 34.8	+0.2
JTH				eS	Sb	09 00 45.3	+0.1
MIYJ	Miyakonagasawa	0.97	235	P	Pg	09 00 37.3	-0.6
MIYJ				eS	Sg	09 00 49.3	-1.3
JANG	Nango	1.04	283	P	Pb	09 00 39.1	0.0
JANG				eS	Sb	09 00 51.9	-0.8
JKZ	Kuzumaki	1.18	263	P	Pb	09 00 41.1	-0.3
JOM	Ohasama	1.37	241	P	Pn	09 00 44.0	-0.1
OFUJ	Ofunato	1.40	221	P	Pn	09 00 44.5	+0.1
JTM	Tenmabayashi	1.50	296	P	Pb	09 00 46.9	0.0
MJAR	Matsushiro Arr	5.12	227	P	Pn	09 01 37.6	+2.0
	1.4nm,0.3s,baz=29,slow=14,SNR=14						
MJAR				LR	LR	09 03 49.0	
	comp=Z,128nm,19.6s,baz=55,slow=40						
MAT	Matsushiro	5.12	227	P	Pn	09 01 37.3	+1.7
MAT				eS	Sn	09 02 36.9	+2.2
USRK	Ussuriysk Ar.	9.02	300	P	Pn	09 02 34.6	+5.5
	0.6nm,0.3s,baz=95,slow=15,SNR=11						
USRK				LR	LR	09 05 55.1	
	comp=Z,158nm,18.2s,baz=141,slow=36						
JNU	Nakatsue	11.89	238	LR	LR	09 07 51.2	
	comp=Z,55nm,18.5s,baz=126,slow=38						
KSRS	Korea Array	11.95	262	P	Pn	09 03 14.0	+4.8
	0.2nm,0.3s,baz=92,slow=15,SNR=3.1						
KSRS				LR	LR	09 07 31.5	
	comp=Z,71nm,18.7s,baz=80,slow=36						
PETK	Petropavlovsk-	16.45	33	LR	LR	09 11 20.0	
	comp=Z,32nm,18.3s,baz=205,slow=40						
YAK	Yakutsk	23.33	344	LR	LR	09 14 32.9	
	comp=Z,45nm,18.5s,baz=96,slow=36						
SEY	Seymchan	23.52	11	P	P	09 05 28.4	-0.3
	1.7nm,0.3s,baz=194,slow=6.3,SNR=14						
GUMO	Guam	26.52	176	LR	LR	09 14 52.2	
	comp=Z,33nm,20.7s,baz=288,slow=33						
SONM	Songino Array	27.13	299	P	P	09 06 03.0	+1.0
	0.9nm,0.6s,baz=98,slow=8.1,SNR=7.1						
SONM				LR	LR	09 17 12.4	
	comp=Z,59nm,20.6s,baz=93,slow=37						
H11N2	WAKE ISLAND Hy	28.97	128	T	T	09 37 08.9	
	baz=318,slow=75,SNR=178						
H11N1	WAKE ISLAND Hy	28.98	128	T	T	09 37 00.1	
	baz=318,slow=75,SNR=243						
H11N3	WAKE ISLAND Hy	28.98	128	T	T	09 37 28.8	
	baz=318,slow=75,SNR=9.6						
H11S1	WAKE ISLAND Hy	29.79	129	T	T	09 38 11.7	
	baz=344,slow=76,SNR=75						
H11S3	WAKE ISLAND Hy	29.79	129	T	T	09 38 18.2	
	baz=344,slow=76,SNR=374						
H11S2	WAKE ISLAND Hy	29.80	129	T	T	09 38 19.7	
	baz=344,slow=76,SNR=84						

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
NRIK	Noril'sk	40.95	334	LR	LR	09 26 04.3	
	comp=Z,82nm,18.4s,baz=102,slow=38						
KURBB	Kurchatov Arra	45.03	306	P	P	09 08 34.7	+0.3
	5.3nm,0.6s,baz=81,slow=8.4,SNR=2.6						
ILAR	Eielson Array	46.28	34	P	P	09 08 44.4	+0.3
	0.3nm,0.7s,baz=258,slow=5.7,SNR=4.6						
BVAR	Borovoye Array	49.35	311	P	P	09 09 08.5	+0.4
	2.2nm,0.5s,baz=92,slow=14,SNR=2.8						
AAK	Ala-Archa	50.05	297	P	P	09 09 13.7	-0.1
	1.1nm,0.4s,baz=46,slow=5.3,SNR=3.2						
INK	Inuvik	51.11	28	P	P	09 09 21.9	+0.8
	0.4nm,0.4s,baz=283,slow=6.1,SNR=8.9						
RES	Resolute Bay	59.31	15	P	P	09 10 20.0	-0.1
	0.3nm,0.5s,baz=310,slow=7.9,SNR=6.9						
WRA	Warramunga Arr	60.30	189	P	P	09 10 25.7	-1.9
	0.5nm,0.4s,baz=9.0,slow=7.0,SNR=3.1						
YKA	Yellowknife Ar	60.56	31	P	P	09 10 29.2	+0.2
	0.1nm,0.5s,baz=300,slow=6.6,SNR=3.9						
ARCES	ARCESS Array B	61.49	339	P	P	09 10 34.5	-0.7
	2.3nm,0.9s,baz=357,slow=8.5,SNR=4.6						
ASAR	Alice Springs	64.03	189	P	P	09 10 51.0	-1.6
	0.1nm,0.4s,baz=0.9,slow=4.5,SNR=4.3						
FINES	FINESS Array B	66.59	332	P	P	09 11 08.4	-0.3
	1.6nm,0.6s,baz=56,slow=7.1,SNR=9.2						
KBZ	Khabaz	69.73	310	P	P	09 11 29.3	+0.5
	1.5nm,0.8s,baz=56,slow=3.1,SNR=3.5						
HFS	Hagfors	71.71	336	P	P	09 11 40.5	-0.1
	1.2nm,0.3s,baz=31,slow=6.1,SNR=10						
NB2	NORSAR Subarra	71.75	337	P	P	09 11 40.3	-0.5
	comp=Z,0.8nm,0.6s,baz=38,slow=6.2						
NOA	NORSAR Array B	71.75	337	P	P	09 11 40.1	-0.8
	comp=Z,1.5nm,0.8s,baz=40,slow=6.0,SNR=5.7						
AKASG	Malin Array Be	72.52	322	P	P	09 11 45.4	-0.2
	comp=Z,0.4nm,0.4s,baz=42,slow=6.4,SNR=3.1						
TXAR	Lajitas Array	87.35	53	P	P	09 13 06.5	+0.2
	comp=Z,0.1nm,0.4s,baz=260,slow=2.6,SNR=3.6						

*GUC **01** 09:11:39.7±0.4, 28°.42S×70°.46W, h73km±2km, ML3.9*
*ISCJB **01** 09:11:40.0±0.7, 28°.35S±0°.03×70°.88W±0°.07, h73km±8km, Error ellipse: s-maj=11.0km s-min=5.3km az=6.6*
*SJA **01** 09:11:43.5±0.8, 28°.54S×70°.45W, h160km±16km, ML3.7, MW3.3*
ISC 01 09:11:40.8±1.4**, 28°.35S**±0°.04×**70°.92W**±0°.07**, h65**km±11km**, n21, σ1s19**/28**, 1C-1D, Central Chile**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
VACH	Vallenar	0.27	148⇓	eP	Pn	09 11 51.0	-0.2
VACH				eS	Sn	09 11 59.2	+0.4
CPCH	Copiapo	1.11	27⇑	eP	Pn	09 11 59.0	-1.4
CPCH				eS	Sn	09 12 13.8	-1.3
CDCH	Caldera	1.28	4	eP	Pn	09 12 03.2	+0.6
CDCH				eS	Sn	09 12 21.1	+2.0
LSCH	La Serena	1.58	190	eP	Pn	09 12 06.9	+0.3
LSCH				eS	Sn	09 12 27.0	+0.9
TLL	Tololo Astrono	1.81	177	eP	Pn	09 12 09.3	-0.8
TLL				eS	Sn	09 12 31.7	-0.5
TLL				AML	AML	09 12 42.1	
	comp=N,2μm,0.3s						
AGUA	GUANDACOL	2.41	119	eP	Pn	09 12 19.5	+1.5
AGUA				eS	Sn	09 12 46.4	-0.1
VCA	Vinchina	2.42	100	eP	Pn	09 12 19.8	+1.7
VCA				IAML		09 12 55.8	
	comp=Z,498nm,0.2s						
AMOG	MOGNA	3.33	141	eP	Pn	09 12 31.3	+0.8
ACLC	CERRO LA CRUZ	3.64	108	eP	Pn	09 12 34.2	-0.7
RTLS	Leoncito	3.71	158	eP	Pn	09 12 37.5	+1.6
PB14	IPOC Station P	3.74	7	eP	Pn	09 12 36.4	+0.1
AVFE	Valle Fertil	3.80	128	eP	Pn	09 12 36.3	-0.6
AVFE				IAML		09 13 23.0	
	comp=Z,115nm,0.9s						
RTCV	Cerro Valdivia	4.06	150	eP	Pn	09 12 41.2	+0.7
AUSP	Uspallata	4.08	161	eP	Pn	09 12 42.7	+1.7
CYA	Choya	4.51	92	eP	Pn	09 12 45.7	-0.9
CYA				IAML		09 13 37.2	
	comp=Z,120nm,0.8s						
ASAL	Salagasta	4.59	157	eP	Pn	09 12 49.1	+1.3
ROCH	El Roble	4.61	181	eP	Pn	09 12 47.2	-0.9
ROCH				eS	Sn	09 13 38.6	-1.8
AAGR	Agrelo	5.05	160	eP	Pn	09 12 55.5	+1.4
ACAN	Cantantal	5.07	141	eP	Pn	09 12 53.8	-0.5
AHML	Horco Molle	5.20	74	eP	Pn	09 12 56.5	+0.5
AHML				IAML		09 13 59.6	
	comp=Z,11nm,0.6s						
MRA	San Martin	6.05	133	eP	Pn	09 13 06.2	-1.6

JMA 01 09:14:44.2±0.1**, 35°.76N×141°.03E, h37**km±1km**, M2.6, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
CHOJ	Chosi	0.15	248	P	Pn	09 14 50.5	-4.7
CHOJ				S	Sn	09 14 55.1	-11
BSO4	Boso 4	0.95	217	P	Pn	09 15 01.9	+1.0
BSO3	Boso 3	1.05	204	P	Pn	09 15 02.4	+0.3
BSO1	Boso 1	1.10	182	P	Pn	09 15 02.6	0.0
JOD2	Odawara 2	1.66	253	P	Pn	09 15 12.3	+1.5
MAT	Matsushiro	2.41	290	P	Pn	09 15 17.9	-3.2
MAT				eS	Sn	09 15 52.5	+3.1

*ISCJB **01** 09:15:28.0±0.9, 4°.02S±0°.06×134°.3E±0°.1, h10km, mb3.8/3, Error ellipse: s-maj=18.9km s-min=8.6km az=178.7*
*IDC **01** 09:15:27.0±1.2, 3°.79S×134°.93E, h0km, mb3.7/3, mb1 4.0/7, mb1mx3.7/39, mbtmp3.8/7, ML3.8/3, Error ellipse: s-maj=36.9km s-min=21.3km az=81.0*
*DJA **01** 09:15:39.9±0.7, 3°S±5°×13°4E±°, h10km, M3.6/5, MLv3.6/5*
ISC 01 09:15:29.7±0.8**, 3°.91S**±0°.08×**134°.33E**±0°.07**, h10**km**, n12, σ2s42**/13**, mb3.9**/3**, Irian Jaya region**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
KMPI	Kaimana, Papua	0.67	292	P	Pn	09 15 49.6	+4.3
FAKI	Fak Fak	2.30	295	P	Pn	09 16 09.8	+2.1
FAKI				S	Sn	09 16 32.0	-4.0
RKPI	Ransiki, Papua	2.39	356	P	Pn	09 16 10.0	+1.0
SWI	Sorong	4.31	315	P	Pn	09 16 36.1	+0.7
GENI	Genyem	5.98	78	P	Pg	09 17 24.4	+0.1
JAY	Jayapura	6.52	78	Pn	Pn	09 16 56.6	-9.2
	0.1nm,0.3s,baz=181,slow=23,SNR=3.6						
WRA	Warramunga Arr	15.94	180	Pn	Pn	09 19 15.4	+1.1
	0.3nm,0.3s,baz=4.0,slow=12,SNR=4.5						
WRA				Sn	Sn	09 21 59.2	-12
	0.2nm,0.3s,baz=334,slow=32,SNR=3.0						
FITZ	Fitzroy Crossi	16.47	210	Pn	P	09 19 25.0	+1.2
	0.2nm,0.3s,baz=39,slow=9.9,SNR=5.0						
FITZ				Sn	Sn	09 22 20.7	-3.4
	0.2nm,0.3s,baz=198,slow=18,SNR=4.3						
ASAR	Alice Springs	19.65	181	P	P	09 19 57.5	-1.4
	0.3nm,0.3s,baz=7.8,slow=11,SNR=39						
STKA	Stephens Creek	28.65	167	P	P	09 21 26.3	-0.4
	3.6nm,1.1s,baz=330,slow=18,SNR=4.1						
SONM	Songino Array	57.05	338	P	P	09 25 15.5	-0.6
	0.3nm,0.5s,baz=156,slow=6.2,SNR=3.1						
MKAR	Makanchi Array	68.13	324	P	P	09 26 30.7	+0.6
	0.4nm,0.5s,baz=127,slow=7.7,SNR=5.5						

*ISK **01** 09:15:30.3, 38°.83N×27°.83E, h5km, MD2.7*
*DDA **01** 09:15:30.5, 38°.88N×27°.86E, h5km, Md2.5, Suspected Mining explosion.*
*ISCJB **01** 09:15:31.3±0.4, 38°.85N±0°.02×27°.82E±0°.03, h0km, Error ellipse: s-maj=3.9km s-min=3.3km az=10.8*
*CSEM **01** 09:15:31.4±0.2, 38°.85N×27°.81E, h2km, MD2.5, Error ellipse: s-maj=5.0km s-min=3.7km az=124.0, Suspected Mining explosion.*
ISC 01 09:15:31.3±0.8**, 38°.86N**±0°.02×**27°.85E**±0°.02**, h0**km**, n28, σ0s51**/46**, Turkey**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
AKHS	Akhisar	0.03	301	i P	Pg	09 15 31.5	-0.4
AKHS				i S	Sg	09 15 32.0	-0.2
AKHS	Akhisar	0.03	301	P	Pg	09 15 31.5	-0.4
AKHS				S	Sg	09 15 32.0	-0.2
AKS	Akhisar	0.03	301	ePG	Pg	09 15 31.4	-0.5
AKS	Akhisar	0.03	301	ePg	Pg	09 15 31.4	-0.5
IZM	Izmir	0.65	225	ePG	Pg	09 15 43.3	-0.4
IZM				eSG	Sg	09 15 52.9	+0.7
IZM	Izmir	0.65	225	ePg	Pg	09 15 43.3	-0.4
IZM				eSg	Sg	09 15 52.9	+0.7
DEMI	Demirci	0.70	75	i P	Pg	09 15 45.0	+0.3
DEMI				i S	Sb	09 15 56.1	-0.5
DEMI	Demirci	0.70	75	P	Pg	09 15 45.0	+0.3
DEMI				S	Sb	09 15 56.1	-0.5
KULA	Kula-Manisa	0.72	118	ePG	Pg	09 15 45.4	+0.2
KULA				eSG	Sb	09 15 56.3	-1.0
KULA	Kula-Manisa	0.72	118	ePg	Pg	09 15 45.4	+0.2
KULA				eSg	Sb	09 15 56.3	-1.0
BLCB	Balcova	0.79	233	ePG	Pg	09 15 46.7	+0.3
BLCB	Balcova	0.79	233	ePg	Pg	09 15 46.7	+0.3
DURS	Dursunbey	0.88	33	i P	Pb	09 15 50.0	+0.5
DURS				i S	Sb	09 16 02.7	+0.8
DURS	Dursunbey	0.88	33	P	Pb	09 15 50.0	+0.5
DURS				S	Sb	09 16 02.7	+0.8
BALY	Balya	0.89	349	i P	Pg	09 15 48.3	-0.1
BALY				i S	Sb	09 16 02.5	+0.3
BALY	Balya	0.89	349	P	Pg	09 15 48.3	-0.1
BALY				S	Sb	09 16 02.5	+0.3
AYDB	Zeytinkoy-Aydi	0.92	178	ePG	Pg	09 15 48.5	-0.3
AYDB	Zeytinkoy-Aydi	0.92	178	ePg	Pg	09 15 48.5	-0.3
DST	Dursunbey	0.95	39	ePG	Pb	09 15 50.8	+0.1
DST	Dursunbey	0.95	39	ePg	Pb	09 15 50.8	+0.1
AYDN	Tasoluk	1.20	179	i P	Pg	09 15 54.2	-0.1
AYDN				i S	Sn	09 16 11.9	-0.5
AYDN	Tasoluk	1.20	179	P	Pg	09 15 54.2	-0.1
AYDN				S	Sn	09 16 11.9	-0.5
GDZ	Gediz	1.29	79	i P	Pg	09 15 55.9	-0.1
GDZ				i S	Sg	09 16 12.0	-0.8
GDZ	Gediz	1.29	79	P	Pg	09 15 55.9	-0.1
GDZ				S	Sg	09 16 12.0	-0.8
KHAL	Karahalli	1.38	110	i P	Pb	09 15 58.9	+0.9
KHAL				i S	Sn	09 16 17.0	+0.1
KHAL	Karahalli	1.38	110	P	Pb	09 15 58.9	+0.9
KHAL				S	Sn	09 16 17.0	+0.1
TVSB	Tavsanli	1.39	64	ePN	Pb	09 15 58.1	0.0
TVSB	Tavsanli	1.39	64	ePn	Pb	09 15 58.1	0.0

*NIED **01** 09:20:00, 44°.10N×148°.10E, h53km, Mw3.9 Best double couple: M0 7.94000×10^14 NP1: φs247.00000°, δ20.00000°, λ129.00000°. NP2: φs26.00000°, δ75.00000°, λ77.00000°.*
*JMA **01** 09:20:38.6±0.3, 44°.06N×148°.08E, h0km, M4.9*
*MOS **01** 09:20:38.9±1.4, 44°.55N×148°.12E, h63km, mb4.2/14, Error ellipse: s-maj=11.6km s-min=8.4km az=91.7*
*ISCJB **01** 09:20:39.0±0.7, 44°.45N±0°.04×148°.22E±0°.07, h63km±5km, mb3.9/20, Error ellipse: s-maj=9.8km s-min=4.9km az=36.8*
*SKHL **01** 09:20:39.6±0.9, 44°.45N×148°.31E, h71km±8km, mb4.7/7*
*IDC **01** 09:20:42.5±2.9, 44°.58N×148°.19E, h75km±25km, mb3.6/18, mb1 3.8/23, mb1mx3.6/52, mbtmp3.9/23, MS2.9/9, Ms1 2.9/9, ms1mx2.8/35, Error ellipse: s-maj=16.3km s-min=12.2km az=140.0*
ISC 01 09:20:40.3±1.1**, 44°.48N**±0°.05×**148°.18E**±0°.07**, h57**km±9km**, n84, σ1s44**/94**, mb3.9**/20**, MS3.0**/3**, 3C-3D, Kuril Islands**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
KUR	Kuril'sk	0.79	344	i P	Pn	09 20 55.1	-0.4
KUR				AMB	AMB	09 20 58.4	
	260nm,0.4s						
KUR				AMB	AMB	09 20 58.4	
	300nm,0.4s						
KUR				AMB	AMB	09 20 58.4	
	670nm,0.4s						
KUR				i S	Sn	09 21 06.8	+0.2
KUR				A	A	09 21 07.6	
	2μm,0.4s						
KUR				A	A	09 21 07.6	
	4μm,0.4s						
KUR	Kuril'sk	0.79	344	d iPN	Pn	09 20 55.1	-0.4
KUR				i S	Sn	09 21 06.7	+0.2
KUR				pmax	pmax		
	comp=Z,667nm,0.4s						
KUR				pmax	pmax		
	comp=E,298nm,0.3s						
KUR				pmax	pmax		
	comp=N,255nm,0.4s						
KUR				smax	smax		
	comp=E,4μm,0.4s						
KUR				smax	smax		
	comp=N,2μm,0.3s						
SHO	Shikotan	1.15	238	eP	Pn	09 20 58.9	-1.3
SHO				AMB	AMB	09 20 59.2	
	comp=N,720nm,0.3s						
SHO				i S	Sn	09 21 14.0	-0.9
SHO				A	A	09 21 14.8	
	comp=N,1μm,0.3s						
SHO				A	A	09 21 14.8	
	comp=N,5μm,0.3s						
SHO	Shikotan	1.15	238	d iPN	Pn	09 20 58.9	-1.3
SHO				i S	Sn	09 21 12.4	-2.5
SHO				pmax	pmax		
	comp=N,254nm,0.3s						
SHO				pmax	pmax		
	comp=E,312nm,0.3s						
SHO				pmax	pmax		
	comp=Z,716nm,0.3s						
SHO				smax	smax		
	comp=N,1μm,0.3s						
SHO				smax	smax		
	comp=E,5μm,0.3s						
YUK	Yuzh-Kuril'sk	1.72	256	i P	Pn	09 21 07.9	0.0
YUK				AMB	AMB	09 21 09.6	
	comp=E,390nm,0.2s						
YUK				AMB	AMB	09 21 09.6	
	comp=E,280nm,0.2s						
YUK				AMB	AMB	09 21 09.6	
	comp=E,1μm,0.2s						
YUK				i S	Sn	09 21 28.2	-0.6
YUK				A	A	09 21 34.0	
	comp=E,2μm,0.3s						
YUK				A	A	09 21 34.0	
	comp=E,3μm,0.3s						
YUK	Yuzh-Kuril'sk	1.72	256	d iPN	Pn	09 21 07.9	0.0
YUK				i S	Sn	09 21 28.7	-0.1
YUK				pmax	pmax		
	comp=Z,1μm,0.2s						
YUK				pmax	pmax		
	comp=N,389nm,0.1s						
YUK				pmax	pmax		
	comp=E,278nm,0.1s						
YUK				smax	smax		
	comp=N,2μm,0.2s						
YUK				smax	smax		
	comp=E,3μm,0.4s						
NEM2	Nemuro 2	2.08	239	P	Pn	09 21 11.7	-1.1
NEM2				eS	Sn	09 21 35.9	-1.7
JRA	Rausu	2.26	257	P	Pn	09 21 16.3	+1.0
JRA				eS	Sn	09 21 44.3	+2.3
JNK	Nakash	2.65	252	P	Pn	09 21 21.1	+0.5
JNK				eS	Sn	09 21 52.1	+0.6
JAK	Akkeshi	2.93	241	P	Pn	09 21 23.6	-0.8
JAK				eS	Sn	09 21 57.3	-1.0
JTKR	Abashiri--Toko	3.11	262	P	Pn	09 21 28.0	+1.1
JAR	Ashorobuto	3.40	251	P	Pn	09 21 32.1	+1.2
JOB	Onbets	3.52	245	P	Pn	09 21 33.0	+0.5
JOB				eS	Sn	09 22 12.9	0.0
JKK2	Kamakawa 2	3.95	263	P	Pn	09 21 40.7	+2.2
JCH	Churui	3.97	244	P	Pn	09 21 38.5	-0.1
JCH				eS	Sn	09 22 22.9	-0.9
JSE	Soyaes	4.02	279	P	Pn	09 21 40.8	+1.5
JFR	Furan	4.25	254	P	Pn	09 21 44.8	+2.3
ERM	Erimo	4.42	238	eP	Pn	09 21 47.0	+2.2
ERM	Erimo	4.42	238	cePN	Pn	09 21 47.0	+2.2
ERM				pmax	pmax		
	comp=Z,64nm,0.5s						
YSS	Yuzh-Sakhalins	4.53	305	i P	Pn	09 21 48.0	+1.6
YSS				AMB	AMB	09 21 49.5	
	comp=Z,50nm,0.6s						
YSS				eS	Sn	09 22 38.7	+1.0
YSS				A	A	09 22 42.4	
	comp=Z,30nm,0.5s						
YSS	Yuzh-Sakhalins	4.53	305⇑	iPN	Pn	09 21 48.0	+1.6
YSS				eS	Sn	09 22 32.6	-5.1
YSS				pmax	pmax		
	comp=Z,50nm,0.6s						
YSS				smax	smax		
	comp=N,30nm,0.7s						
YSS				smax	smax		
	comp=E,20nm,0.5s						
JWK2	Keihoku	4.54	283	P	Pn	09 21 49.3	+2.8
JHR	Hokuryu	4.71	263	P	Pn	09 21 53.0	+4.3
JKB	Kayabe	5.83	246	P	Pn	09 22 04.8	+0.7
JKB				eS	Sn	09 23 08.4	-1.2
UGL	Uglegorsk	6.23	320	ePN	Pn	09 22 06.7	-2.8
TYV	Tymovskoe	7.39	332	eP	Pn	09 22 27.5	+2.0
TYV				AMB	AMB	09 22 31.0	
	comp=E,10.0nm,0.6s						
TYV	Tymovskoe	7.39	332	ePN	Pn	09 22 27.5	+2.0
TYV				pmax	pmax		
	comp=Z,9.0nm,0.6s						
HABR	Khabarovsk	9.90	298	ePN	Pn	09 22 57.4	-2.3
HABR				pmax	pmax		
	comp=N,19nm,1.5s						
HABR				pmax	pmax		
	comp=E,24nm,1.5s						
HABR				pmax	pmax		
	comp=Z,49nm,1.5s						
HABR				MLR	MLR		
	comp=Z,73nm,11.0s						
GRNR	Gornyy	10.12	313	eP	Pn	09 23 04.9	+2.1
PETK	Petropavlovsk-	10.67	33	P	Pn	09 23 10.8	+0.5
	comp=Z,0.1nm,0.3s,baz=182,slow=15,SNR=4.8						
PETK				LR	LR	09 27 37.7	
	comp=Z,31nm,19.1s,baz=236,slow=39						
MJAR	Matsushiro Arr	10.97	227	P	Pn	09 23 13.2	-1.2
	comp=Z,0.5nm,0.3s,baz=27,slow=13,SNR=5.4						
MJAR				LR	LR	09 27 39.4	
	comp=Z,41nm,21.6s,baz=40,slow=38						
USRK	Ussuriysk Ar.	11.60	274	P	Pn	09 23 25.5	+2.4
	comp=Z,0.4nm,0.3s,baz=79,slow=17,SNR=8.9						
USRK				LR	LR	09 27 46.3	
	comp=Z,65nm,21.6s,baz=111,slow=36						
KLR	Kul'dur	12.20	299	P	Pn	09 23 35.8	+4.5
	comp=Z,0.1nm,0.3s,baz=113,slow=16,SNR=6.1						
KLR				LR	LR	09 28 07.6	
	comp=Z,65nm,21.8s,baz=297,slow=37						
KLR	Kul'dur	12.20	299	eP	Pn	09 23 30.3	-0.9
EKMR	Ekimchan	13.20	316	eP	Pn	09 23 45.0	+0.2
EKMR				AMB	AMB	09 23 49.3	
	comp=Z,8.0nm,0.9s						
BMKR	Bomnak	16.13	316	eP	Pn	09 24 21.9	-1.3
BMKR				AMB	AMB	09 24 25.0	
	comp=Z,2.0nm,0.6s						
KSRS	Korea Array	16.81	252	P	P	09 24 33.9	+0.8
	comp=Z,0.2nm,0.3s,baz=75,slow=12,SNR=4.5						
KSRS				LR	LR	09 30 18.5	
	comp=Z,41nm,19.1s,baz=18,slow=34						
KSRS	Korea Array	16.81	252	eP	P	09 24 36.5	+3.4
JNU	Nakatsue	17.58	236	P	P	09 24 44.0	+2.3
	comp=Z,0.4nm,0.3s,baz=43,slow=12,SNR=3.9						
JNU				LR	LR	09 31 22.6	
	comp=Z,35nm,18.1s,baz=117,slow=36						
SEY	Seymchan	18.65	6	P	P	09 24 53.4	+0.2
	comp=Z,0.2nm,0.3s,baz=189,slow=12,SNR=5.9						
SEY	Seymchan	18.65	6	eP	P	09 24 51.9	-1.3
SEY	Seymchan	18.65	6	i P	P	09 24 51.9	-1.3
YAK	Yakutsk	20.64	335	LR	LR	09 33 25.0	
	comp=Z,44nm,19.6s,baz=115,slow=37						
ULN	Ulaanbaatar	28.44	292	ceP	P	09 26 27.4	-2.4
ULN				pmax	pmax		
	comp=Z,8.0nm,2.5s						
SONM	Songino Array	28.88	292	P	P	09 26 34.5	+0.9
	comp=Z,0.6nm,0.5s,baz=86,slow=8.6,SNR=5.6						
H11N2	WAKE ISLAND Hy	29.19	142	T	T	09 57 26.4	
	baz=333,slow=76,SNR=319						
H11N1	WAKE ISLAND Hy	29.20	142	T	T	09 57 23.9	
	baz=333,slow=76,SNR=357						
H11N3	WAKE ISLAND Hy	29.21	142	T	T	09 57 25.7	
	baz=333,slow=76,SNR=321						
H11S1	WAKE ISLAND Hy	30.18	143	T	T	09 58 44.6	
	baz=333,slow=76,SNR=658						
H11S3	WAKE ISLAND Hy	30.19	143	T	T	09 58 40.6	
	baz=333,slow=76,SNR=495						
H11S2	WAKE ISLAND Hy	30.20	143	T	T	09 58 42.2	
	baz=333,slow=76,SNR=396						
TLY	Talaya	30.22	300	LR	LR	09 39 21.6	
	comp=Z,32nm,20.6s,baz=60,slow=37						
ILAR	Eielson Array	40.46	37	P	P	09 28 12.4	-0.5
	comp=Z,0.3nm,0.5s,baz=272,slow=7.1,SNR=6.7						
ZALV	Zalesovo Beam	41.16	307	P	P	09 28 21.4	+2.7
	comp=Z,0.6nm,0.3s,baz=158,slow=11,SNR=2.8						
ZALV				PcP	PcP	09 30 16.6	-0.4
	comp=Z,1.6nm,0.4s,baz=78,slow=3.4,SNR=7.0						
MKAR	Makanchi Array	44.91	297	P	P	09 28 49.3	+0.1
	comp=Z,0.8nm,0.5s,baz=77,slow=9.3,SNR=9.4						
MKAR				PcP	PcP	09 30 29.4	-0.3
	comp=Z,0.5nm,0.3s,baz=62,slow=3.7,SNR=8.6						
MKAR				LR	LR	09 48 36.2	
	comp=Z,25nm,20.6s,baz=22,slow=37						
KURK	Kurchatov	45.74	304	P	P	09 28 56.0	+0.3
KURK						09 30 33.3	
KURBB	Kurchatov Arra	45.83	304	P	P	09 28 56.0	-0.3
	comp=Z,0.4nm,0.3s,baz=71,slow=8.7,SNR=6.4						
KURBB				PcP	PcP	09 30 33.3	+0.4
	comp=Z,0.4nm,0.3s,baz=75,slow=3.3,SNR=7.7						
CMAR	Chiang Mai Arr	48.44	254	P	P	09 29 18.0	+0.9
	comp=Z,1.1nm,0.7s,baz=35,slow=7.0,SNR=6.1						
BVAR	Borovoye Array	49.62	309	P	P	09 29 26.8	+1.1
	comp=Z,0.5nm,0.4s,baz=226,slow=44,SNR=3.1						
BVAR				PcP	PcP	09 30 45.8	-0.6
	comp=Z,0.6nm,0.4s,baz=97,slow=6.1,SNR=3.7						
GUN	Gumba	51.71	273	eP	P	09 29 42.5	+0.3
	comp=Z,14nm,0.4s						
RAMN	Ramite	51.76	272	eP	P	09 29 42.6	+0.1
	comp=Z,32nm,0.3s						
KKN	Kakani	52.21	274	eP	P	09 29 46.1	+0.3
DMN	Daman	52.44	274	eP	P	09 29 47.7	+0.2
KOLN	Koldanda	53.42	275	eP	P	09 29 55.2	+0.5
	comp=Z,4.7nm,0.2s						
PYUN	Piuthan	53.66	275	eP	P	09 29 56.7	+0.2
	comp=Z,7.5nm,0.3s						
YKA	Yellowknife Ar	54.78	34	P	P	09 30 03.6	-0.2
	comp=Z,0.9nm,0.6s,baz=301,slow=7.3,SNR=21						
YKA				PcP	PcP	09 31 07.6	+2.0
	comp=Z,0.2nm,0.7s,baz=296,slow=6.5,SNR=2.5						
ARCES	ARCESS Array B	58.82	340	P	P	09 30 31.5	-0.9
	comp=Z,2.8nm,1.0s,baz=40,slow=7.1,SNR=5.7						
ARCES	ARCESS Array B	58.82	340	eP	P	09 30 32.8	+0.4
ARCES	ARCESS Array B	58.82	340	eP	P	09 30 32.8	+0.4
ARCES				pmax	pmax		
	comp=Z,3.0nm,1.0s						
FINES	FINESS Array B	64.56	333	P	P	09 31 09.2	-1.8
	comp=Z,1.0nm,0.5s,baz=35,slow=7.0,SNR=8.4						
FINES	FINESS Array B	64.56	333	i P	P	09 31 09.1	-1.9
FINES				pmax	pmax		
	comp=Z,1.0nm,0.5s						
FFC	Flin Flon	64.67	37	eP	P	09 31 12.0	+0.1
WRA	Warramunga Arr	65.34	194	P	P	09 31 16.6	0.0
	comp=Z,1.0nm,0.7s,baz=12,slow=6.4,SNR=11						
NVAR	Mina Array Bea	66.56	59	P	P	09 31 24.9	+0.2
	comp=Z,0.9nm,0.7s,baz=296,slow=7.0,SNR=8.4						
PDAR	Pinedale Array	68.87	50	P	P	09 31 39.0	-0.1
	comp=Z,0.4nm,0.5s,baz=284,slow=2.4,SNR=5.3						
ASAR	Alice Springs	69.06	194	P	P	09 31 40.6	+0.5
	comp=Z,0.7nm,0.6s,baz=12,slow=6.1,SNR=11						
NB2	NORSAR Subarra	69.19	339	P	P	09 31 39.5	-1.0
	comp=Z,1.1nm,0.8s,baz=30,slow=6.2						
NOA	NORSAR Array B	69.19	339	P	P	09 31 39.8	-0.7
	comp=Z,0.8nm,0.6s,baz=30,slow=6.7,SNR=8.4						
ULM	Lac du Bonnet	70.47	38	P	P	09 31 47.1	-1.4
	comp=Z,1.2nm,0.5s,baz=174,slow=4.0,SNR=3.6						
AKASG	Malin Array Be	71.43	324	P	P	09 31 52.7	-1.6
	comp=Z,0.3nm,0.3s,baz=38,slow=5.8,SNR=4.2						
STKA	Stephens Creek	76.23	186	P	P	09 32 23.4	+1.0
	comp=Z,1.8nm,0.7s,baz=91,slow=5.7,SNR=3.5						
TXAR	Lajitas Array	81.63	57	P	P	09 32 52.4	-0.1
	comp=Z,0.9nm,0.5s,baz=298,slow=4.1,SNR=26						
TORD	Torodi Ar. Bea	115.06	324	PKP	PKPdf	09 39 14.0	-1.3
	comp=Z,0.1nm,0.3s,baz=37,slow=2.1,SNR=3.9						
PLCA	Paso Flores	151.43	96	PKPbc	PKPbc	09 40 27.1	-0.3
	comp=Z,0.7nm,0.5s,baz=308,slow=6.0,SNR=5.4						

*CASC **01** 09:23:13.6±2.1, 7°.15N×81°.35W, h6km±33km, MD4.3*
*ISCJB **01** 09:23:14.4±0.6, 7°.30N±0°.05×81°.37W±0°.03, h10km, Error ellipse: s-maj=7.6km s-min=3.7km az=11.9*
ISC 01 09:23:14.9±1.3**, 7°.45N**±0°.08×**81°.36W**±0°.03**, h10**km**, n22, σ1s56**/30**, 2C-7D, Panama**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
AZU	Azuero	1.13	72⇓	iP	Pb	09 23 35.0	-1.5
AZU				i S	Sn	09 23 51.4	-0.9
PNME	Penonome	1.45	45⇓	iP	Pb	09 23 41.5	-0.5
PNME				i S	Sg	09 24 01.2	-0.4
TBS2		1.85	316⇓	iP	Pb	09 23 48.3	-0.7
TBS2				i S	Sn	09 24 11.2	+0.8

Code	Station Name	Δ°	AZ°	Op	ISC	Time	Res
BRU2	Volcan	1.88	315⇓	iP	Pb	09 23 48.5	-0.8
BRU2				iS	Sg	09 24 14.5	-0.8
PBNC	Punta Burica N	1.98	298⇑	iP	Pn	09 23 48.0	-0.4
CTCR	Cotoan	2.00	316⇑	iP	Pn	09 23 49.7	+0.8
CTCR				iS	Sb	09 24 17.3	+0.8
ZANG	Zanguenga, Cho	2.10	45⇓	iP	Pb	09 23 52.4	-0.8
ZANG				iS	Sg	09 24 20.9	-1.6
PINA	Piqa, Costa Ab	2.20	35	iP	Pb	09 23 54.2	-0.7
BCIP	Isla Barro Col	2.27	41⇓	iP	Pb	09 23 54.9	-1.1
	baz=219,slow=4.8						
BCIP				iS	Sg	09 24 26.3	-1.8
BCIP	Isla Barro Col	2.27	41	eP	Pb	09 23 54.7	-1.4
BUS	Buena Vista	3.16	312	eP	Pn	09 24 06.6	+1.5
URSC	Urasca	3.37	315	eP	Pn	09 24 10.2	+2.5
URSC				eS	Sg	09 25 02.2	-1.0
QCR	Quepos	3.40	305	eP	Pn	09 24 10.3	+2.3
QCR				eS	Sg	09 25 00.7	-3.4
UPD2	Meteti	3.49	72	eP	Pn	09 24 11.8	+2.5
UPD2				eS	Sn	09 24 52.4	+1.8
CGA2	Cerro Gallo 2	3.99	310	eP	Pn	09 24 18.8	+2.5
SOLC	Bahia Solano	4.11	107	eP	Pn	09 24 16.8	-0.9
JTS	JuntasAbangare	4.54	309⇓	iP	Pn	09 24 24.7	+1.0
DBBC	Dabeiba	5.13	94	eP	Pn	09 24 33.0	+1.1
MOTC	Monteria, Cord	5.79	76	eP	Pn	09 24 43.1	+2.2
HELC	Santa Helena	5.92	102	eP	Pn	09 24 44.6	+1.5
PRAC	Prado	7.43	120	eP	Pn	09 25 05.1	+1.5
CHIC	Chingaza	8.09	110	eP	Pn	09 25 16.6	+3.8

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*NIED **01** 09:48:00, 37°.10N×143°.40E, h5km, Mw4.6 Best double couple: M0 8.72000×10^15 NP1:φs35.00000°, δ23.00000°, λ-91.00000°. NP2:φs216.00000°, δ67.00000°, λ-89.00000°.*

*IDC **01** 09:48:47.3±0.5, 36°.97N×143°.53E, h0km, mb4.3/28, mb1 4.4/34, mb1mx4.4/44, mbtmp4.3/34, ML3.9/6, MS3.7/27, Ms1 3.7/27, ms1mx3.5/52, Error ellipse: s-maj=13.3km s-min=11.7km az=129.0*

*NEIC **01** 09:48:49.0±0.1, 36°.97N×143°.46E, h10km, mb4.8/79, Error ellipse: s-maj=4.0km s-min=2.5km az=159.0*

*ISCJB **01** 09:48:48.2±1.0, 37°.03N±0°.03×143°.33E±0°.02, h14km±5km, mb4.6/130, MS3.9/36, Error ellipse: s-maj=5.2km s-min=2.9km az=161.1*

*JMA **01** 09:48:49.4±0.2, 37°.11N×143°.36E, h44km, M4.4*

*MOS **01** 09:48:50.8±1.0, 37°.00N×143°.36E, h35km, mb4.9/44, Error ellipse: s-maj=8.0km s-min=6.3km az=111.6*

*BJI **01** 09:48:50.0, 37°.28N×143°.44E, h29km, mb4.7/59, mB4.9/38, Ms4.3/43, Ms7 4.2/43*

ISC 01 09:48:51.3±0.6, **37°.05N**±0°.04×**143°.42E**±0°.04, **h25**km±3km, **n294**, σ1s.41/302, **mb4.7**/130, **MS3.9**/37, **10C-7D**, **Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	Iwakimizuishiy	2.10	272	P	Pn	09 49 22.1	-2.8
ONAJ				eS	Sn	09 49 46.1	-4.1
JIO	Ouri	2.16	311	P	Pn	09 49 22.8	-2.9
JMM	Marumori	2.25	292	P	Pn	09 49 24.2	-2.6
JMM				eS	Sn	09 49 49.8	-3.9
JFT	Otama	2.50	282	P	Pn	09 49 28.6	-1.8
JFT				eS	Sn	09 49 57.3	-2.9
JMK	Ichinoseki	2.58	318	P	Pn	09 49 28.7	-2.7
JOM	Ohasama	2.95	326	P	Pn	09 49 33.6	-2.9
JOM				S	Sn	09 50 07.2	-3.8
JYK	Kaneyama	3.06	309	P	Pn	09 49 35.7	-2.3
BSO1	Boso 1	3.10	220	S	Sn	09 50 13.9	-0.3
JAG	Ashikaga	3.25	260	P	Pn	09 49 38.7	-1.9
JAG				S	Sn	09 50 15.4	-3.1
JAW	Awa shima	3.59	294	P	Pn	09 49 44.7	-0.7
JANG	Nango	3.64	336	P	Pn	09 49 44.2	-1.8
JANG				eS	Sn	09 50 22.0	-6.2
JRY	Ryogami san	3.78	256	P	Pn	09 49 46.1	-1.9
JRY				eS	Sn	09 50 28.2	-3.5
JOD2	Odawara 2	3.93	244	P	Pn	09 49 48.5	-1.5
MJAR	Matsushiro Arr	4.21	265	Pn	Pn	09 49 53.4	-0.5
	11nm,0.3s,baz=72,slow=12,SNR=127						
MAJO	Matsushiro	4.21	265	eP	Pn	09 49 53.6	-0.3
MAJO				e		09 50 42.7	
MAJO	Matsushiro	4.21	265	ePn	Pn	09 49 53.6	-0.3
MAJO				eSn	Sn	09 50 42.7	+0.3
MAT	Matsushiro	4.21	265	P	Pn	09 49 53.3	-0.6
MAT				S	Sn	09 50 36.2	-6.2
JHJ2	Mitsune	4.91	218	ePn	Pn	09 50 01.6	-1.9
JHJ2				eSn	Sn	09 50 57.5	-2.0
JHJ	Hachijo jima 2	4.92	218	Pn	Pn	09 50 02.9	-0.8
	20nm,0.3s,baz=318,slow=20,SNR=8.9						
JHJ				Sn	Sn	09 50 55.5	-4.4
	44nm,0.3s,baz=77,slow=23,SNR=4.4						
ERM	Erimo	4.97	358⇑	eP	Pn	09 50 01.1	-3.1
ERM	Erimo	4.97	358	ePn	Pn	09 50 00.9	-3.3
ERM				eSn	Sn	09 50 58.5	-2.3
INU	Inuyama	5.45	254	ePn	Pn	09 50 10.9	0.0
INU				eSn	Sn	09 51 13.3	+0.5
YUK	Yuzh-Kuril'sk	7.22	14	P	Pn	09 50 26.6	-8.6
YUK				pmax	pmax		
	comp=Z,146nm,0.4s						
YUK				pmax	pmax		
	comp=E,27nm,0.2s						
YUK				pmax	pmax		
	comp=N,69nm,0.4s						
SHO	Shikotan	7.29	20	eP	Pn	09 50 27.8	-8.4
SHO				pmax	pmax		
	comp=N,8.0nm,0.4s						
SHO				pmax	pmax		
	comp=Z,42nm,0.4s						
SHO				pmax	pmax		
	comp=E,7.0nm,0.7s						
KUR	Kuril'sk	8.84	21	eP	Pn	09 50 53.5	-3.8
YSS	Yuzh-Sakhalins	9.91	357⇓	eP	Pn	09 51 09.3	-2.8
YSS				pmax	pmax		
	comp=Z,30nm,0.9s						
YSS				MLR	MLR		
	comp=Z,600nm,16.0s						
YSS	Yuzh-Sakhalins	9.91	357	ePn	Pn	09 51 11.7	-0.4
	comp=Z,8.7nm,0.4s						
CBIJ	Chichi jima	9.98	186	Pn	Pn	09 51 10.1	-2.9
CBIJ				Sn	Sn	09 52 52.9	-11
JCJ	Chichijima	9.98	186	Pn	Pn	09 51 10.1	-2.9
	comp=Z,7.8nm,0.3s,baz=277,slow=24,SNR=12						
JCJ				Sn	Sn	09 52 52.9	-11
JCJ				LR	LR	09 58 03.1	
	comp=Z,64nm,18.5s,baz=70,slow=56						
JNU	Nakatsue	10.99	253	Pn	Pn	09 51 26.9	-0.1
	comp=Z,0.5nm,0.3s,baz=96,slow=2.5,SNR=15						
JNU	Nakatsue	10.99	253	ePn	Pn	09 51 27.3	+0.3
USRK	Ussuriysk Ar.	11.24	313	Pn	Pn	09 51 30.4	+0.2
	comp=Z,1.1nm,0.3s,baz=110,slow=13,SNR=11						
USRK				LR	LR	09 55 43.2	
	comp=Z,523nm,18.7s,baz=110,slow=37						
KSRS	Korea Array	12.36	277	Pn	Pn	09 51 46.5	+1.0
	comp=Z,0.5nm,0.3s,baz=91,slow=14,SNR=46						
KSRS				LR	LR	09 56 31.3	
	comp=Z,340nm,18.1s,baz=74,slow=37						
KS01	Wonju Array Si	12.38	277	ePn	Pn	09 51 46.4	+0.5
KS15	Wonju Array Si	12.39	277	ePn	Pn	09 51 46.7	+0.7
KSAR	Wonju Array Be	12.39	277	P	Pn	09 51 46.6	+0.6
KSAR	Wonju Array Be	12.39	277	Pn	Pn	09 51 46.5	+0.6
KLR	Kul'dur	14.84	329	Pn	Pn	09 52 15.3	-4.1
	comp=Z,1.1nm,0.3s,baz=131,slow=12,SNR=31						
KLR				LR	LR	09 57 51.1	
	comp=Z,382nm,20.5s,baz=125,slow=36						
CN2	Changchun	15.25	302	eP	Pn	09 52 26.1	+1.3
CN2				pmax	pmax		
	comp=Z,10.0nm,0.5s						
PET	Petropavlovsk	19.20	29	eP	Pn	09 53 15.9	+1.8
PET				eS	Sn	09 56 44.9	-3.5
PET				MLR	MLR		
	comp=Z,200nm,14.0s						
TIA	Tai'an	21.10	276	eP	P	09 53 31.5	-2.4
TIA				pmax	pmax		
	comp=Z,10.0nm,1.0s						
BJI	Beijing	21.49	286	P	P	09 53 35.2	-2.8
BJI				pmax	pmax		
	comp=Z,17nm,2.1s						
BJI				pmax	pmax		
	comp=Z,220nm,4.1s						
BJI				LR	LR		
	comp=Z,210nm,17.0s						
BJI				LR	LR		
	comp=Z,220nm,19.6s						
MA2	Magadan	23.04	10	P	P	09 53 54.5	+0.2
	comp=Z,1.6nm,0.4s,baz=224,slow=12,SNR=3.7						
MA2				LR	LR	10 03 58.9	
	comp=Z,95nm,19.8s,baz=256,slow=40						
MA2	Magadan	23.04	10	eP	P	09 53 53.6	-0.8
MA2				pmax	pmax		
	comp=Z,55nm,0.9s						
MA2	Magadan	23.04	10	eP	P	09 53 53.6	-0.8
	comp=Z,55nm,0.9s						
GUMO	Guam	23.39	176	LR	LR	10 01 44.7	
	comp=Z,74nm,20.4s,baz=2.0,slow=33						
TPUB	Ta-pu	23.92	241	eP	P	09 54 03.2	-0.1
WHN	Wuhan	24.95	264	P	P	09 54 11.5	-1.2
WHN				S	S	09 58 41.8	+7.0
WHN				LR	LR		
	comp=Z,650nm,10.9s						
WHN				LR	LR		
	comp=Z,880nm,14.5s						
WHN				LR	LR		
	comp=Z,790nm,21.7s						
HHC	Hu-ho-hao-te	24.99	289	eP	P	09 54 14.1	+1.0
HHC				sP	sP	09 54 27.6	+4.1
HHC				PP	PnPn	09 54 49.5	+3.0
HHC				S	S	09 58 34.2	-1.3
HHC				sS	sS	09 58 47.9	+0.2
HHC				pmax	pmax		
	comp=Z,9.0nm,1.1s						
HHC				pmax	pmax		
	comp=Z,96nm,5.0s						
HHC				LR	LR		
	comp=Z,250nm,16.2s						
HHC				LR	LR		
	comp=Z,270nm,13.7s						
HHC				LR	LR		
	comp=Z,290nm,12.4s						
YAK	Yakutsk	26.43	345	LR	LR	10 07 21.5	
	comp=Z,88nm,18.1s,baz=154,slow=42						
YAK	Yakutsk	26.43	345	eP	P	09 54 22.6	-3.2
YAK				pmax	pmax		
	comp=Z,17nm,0.8s						
SEY	Seymchan	26.50	9	P	P	09 54 27.0	+0.7
	comp=Z,5.8nm,0.9s,baz=191,slow=7.2,SNR=23						
SEY	Seymchan	26.50	9⇑	eP	P	09 54 26.8	+0.5
H11N2	WAKE ISLAND Hy	26.80	124	T	T	10 22 40.9	
	baz=315,slow=75,SNR=35						
H11N1	WAKE ISLAND Hy	26.80	124	T	T	10 22 36.9	
	baz=315,slow=75,SNR=27						
H11N3	WAKE ISLAND Hy	26.81	124	T	T	10 22 48.0	
	baz=315,slow=75,SNR=28						
H11S1	WAKE ISLAND Hy	27.54	126	T	T	10 23 42.5	
	baz=316,slow=75,SNR=19						
H11S3	WAKE ISLAND Hy	27.54	126	T	T	10 23 36.4	
	baz=316,slow=75,SNR=25						
H11S2	WAKE ISLAND Hy	27.56	126	T	T	10 23 39.6	
	baz=316,slow=75,SNR=26						
XAN	Xi'an	28.14	274	P	P	09 54 41.9	+0.4
XAN				pP	sP	09 54 51.1	-0.8
XAN				S	S	09 59 20.4	-4.9
XAN				pmax	pmax		
	comp=Z,11nm,1.0s						
XAN				pmax	pmax		
	comp=Z,95nm,5.6s						
XAN				LR	LR		
	comp=Z,140nm,14.1s						
XAN				LR	LR		
	comp=Z,200nm,13.6s						
XAN				LR	LR		
	comp=Z,240nm,12.0s						
BOD	Bodaibo	28.39	326	eP	P	09 54 42.2	-1.2
BOD				pmax	pmax		
	comp=Z,14nm,1.3s						
ULN	Ulaanbaatar	28.68	304	c iP	P	09 54 46.8	+0.5
ULN				pmax	pmax		
	comp=Z,11nm,0.8s						
ULN	Ulaanbaatar	28.68	304	eP	P	09 54 47.6	+1.3
	comp=Z,21nm,1.1s						
ENH	Enshi	28.93	267	eP	P	09 54 49.5	+0.9
	comp=Z,57nm,1.3s						
SONA1	Songino Array	29.11	304	eP	P	09 54 50.7	+0.7
SONM	Songino Array	29.11	304	P	P	09 54 51.4	+1.3
	comp=Z,9.9nm,0.9s,baz=106,slow=9.2,SNR=54						
SONM				LR	LR	10 06 29.1	
	comp=Z,163nm,19.8s,baz=102,slow=36						
ZAK	Zakamensk	31.52	308	eP	P	09 55 10.7	-0.6
ZAK				pmax	pmax		
	comp=Z,7.0nm,1.3s						
TLY	Talaya	31.54	310	P	P	09 55 13.9	+2.6
	comp=Z,4.1nm,0.7s,baz=114,slow=7.4,SNR=4.2						
TLY	Talaya	31.54	310	eP	P	09 55 11.8	+0.5
TLY				eS	S	10 00 22.4	+4.2
TLY				pmax	pmax		
	comp=Z,6.0nm,0.9s						
TLY				MLR	MLR		
	comp=Z,246nm,15.0s						
LZH	Lanzhou	31.65	280	eP	P	09 55 17.5	+4.9
LZH				pP	sP	09 55 26.8	+3.7
LZH				PP	PnPn	09 56 17.0	+0.5
LZH				pmax	pmax		
	comp=Z,23nm,1.0s						
LZH				pmax	pmax		
	comp=Z,83nm,4.0s						
LZH				LR	LR		
	comp=Z,2μm,15.0s						
GYA	Guiyang	32.81	262⇓	iP	P	09 55 23.5	+0.7
GYA				pP	sP	09 55 34.2	+0.9
GYA				PP	PnPn	09 56 33.0	+1.4
GYA				PcP	PcP	09 58 09.6	+2.0
GYA				S	S	10 00 36.3	-2.4
GYA				sS	sS	10 00 55.4	+4.5
GYA				ScP	ScP	10 01 49.0	-0.9
GYA				SS	SnSn	10 02 35.8	+0.2
GYA				ScS	ScS	10 05 47.2	-2.9
GYA				pmax	pmax		
	comp=Z,20nm,0.9s						
GYA				pmax	pmax		
	comp=Z,120nm,5.5s						
GYA				LR	LR		
	comp=Z,620nm,17.8s						
GYA				LR	LR		
	comp=Z,550nm,18.0s						
GYA				LR	LR		
	comp=Z,610nm,18.2s						
MOY	Mondy	33.16	310	eP	P	09 55 27.9	+2.2
CD2	Chengdu	33.28	271	P	P	09 55 24.9	-1.9
CD2				sP	sP	09 55 40.2	+2.9
CD2				PP	PP	09 56 40.4	-1.8
CD2				S	S	10 00 45.5	-0.3
CD2				sS	sS	10 01 00.7	+2.7
CD2				pmax	pmax		
	comp=Z,20nm,0.4s						
CD2				pmax	pmax		
	comp=Z,110nm,3.7s						
CD2				LR	LR		
	comp=Z,390nm,11.4s						
CD2				LR	LR		
	comp=Z,400nm,16.2s						
BILL	Bilibino	33.58	15⇓	iP	P	09 55 28.8	-0.1
BILL				i *PP	sP	09 55 40.3	+0.9
BILL				i *SP	pP	09 55 44.2	+7.8
BILL				e		09 56 49.7	
BILL				e		09 58 09.8	
BILL				pmax	pmax		
	comp=Z,11nm,1.7s						
BILL				MLR	MLR		
	comp=Z,59nm,17.0s						
BILL	Bilibino	33.58	15	eP	P	09 55 28.9	-0.1
	comp=Z,0.9nm,0.2s						
GTA	Gaotai	34.09	288	P	P	09 55 34.1	+0.2
GTA				pP	sP	09 55 46.3	+1.9
GTA				sP	pP	09 55 52.2	+11
GTA				PcP	PcP	09 58 12.4	+1.4
GTA				S	S	10 00 57.1	-1.3
GTA				sS	sS	10 01 16.6	+5.9
GTA				SS	SnSn	10 03 07.5	+1.0
GTA				pmax	pmax		
	comp=Z,10.0nm,1.1s						
GTA				pmax	pmax		
	comp=Z,150nm,5.8s						
GTA				LR	LR		
	comp=Z,130nm,14.8s						
GTA				LR	LR		
	comp=Z,190nm,15.5s						
GTA				LR	LR		
	comp=Z,240nm,17.6s						
QIZ	Qiongzhong	34.41	248	P	P	09 55 35.8	-0.9
QIZ				S	S	10 01 03.3	0.0
QIZ				LR	LR		
	comp=Z,160nm,15.6s						
TIXI	Tiksi	35.48	352⇑	eP	P	09 55 45.2	-0.1
TIXI				pmax	pmax		
	comp=Z,1.0nm,1.4s						
TIXI	Tiksi	35.48	352	eP	P	09 55 45.4	0.0
KMI	Kunming	36.55	263	P	P	09 55 57.3	+2.0
KMI				sP	sP	09 56 11.4	+5.5
KMI				pmax	pmax		
	comp=Z,23nm,1.1s						
KMI				LR	LR		
	comp=Z,130nm,16.8s						
KMI				LR	LR		
	comp=Z,210nm,19.1s						
KMI				LR	LR		
	comp=Z,220nm,20.2s						
KRAR	Krasnoyarsk	38.57	316⇓	eP	P	09 56 14.7	+3.0
KRAR				pmax	pmax		
	comp=Z,15nm,0.7s						
WMQ	Urumqi	42.27	297	P	P	09 56 45.2	+2.6
WMQ				pP	sP	09 56 54.3	+1.1
WMQ				sP	pP	09 56 56.5	+6.3
WMQ				PP	PP	09 58 27.7	+7.2
WMQ				S	S	10 03 05.5	+3.8
WMQ				pmax	pmax		
	comp=Z,5.0nm,0.8s						
WMQ				pmax	pmax		
	comp=Z,70nm,5.2s						
WMQ				LR	LR		
	comp=Z,46nm,20.0s						
WMQ				LR	LR		
	comp=Z,120nm,27.2s						
CMAR	Chiang Mai Arr	43.06	257	P	P	09 56 50.9	+1.7
	comp=Z,0.6nm,0.3s,baz=47,slow=6.0,SNR=5.0						
ZAA0	Zalesovo Array	43.09	312	eP	P	09 56 48.9	-0.2
ZALV	Zalesovo Beam	43.09	312	P	P	09 56 49.0	0.0
	comp=Z,8.2nm,0.9s,baz=93,slow=6.1,SNR=16						
ZALV				PcP	PcP	09 58 39.7	+1.1
	comp=Z,2.3nm,0.6s,baz=85,slow=3.5,SNR=3.9						
ZALV				LR	LR	10 15 24.6	
	comp=Z,143nm,19.3s,baz=70,slow=37						
NRIK	Noril'sk	43.93	335	P	P	09 56 56.0	+0.4
	comp=Z,1.0nm,0.3s,baz=95,slow=7.6,SNR=4.6						
NRIK				LR	LR	10 16 05.5	
	comp=Z,216nm,19.7s,baz=112,slow=37						
NVS	Novosibirsk	43.99	314	eP	P	09 56 56.3	0.0
MK01	Makanchi Array	45.47	302	eP	P	09 57 07.9	-0.3
MK31	Makanchi Array	45.47	302	eP	P	09 57 08.5	+0.2
MK31	Makanchi Array	45.47	302	eP	P	09 57 08.5	+0.2
MKAR	Makanchi Array	45.47	302	P	P	09 57 07.8	-0.4
	comp=Z,7.6nm,1.0s,baz=89,slow=8.9,SNR=32						
MKAR				PcP	PcP	09 58 48.0	+1.1
	comp=Z,1.3nm,0.7s,baz=96,slow=8.9,SNR=2.1						
MKAR				LR	LR	10 18 01.1	
	comp=Z,66nm,18.5s,baz=70,slow=38						
MKAR	Makanchi Array	45.47	302	P	P	09 57 07.8	-0.4
MKAR						09 58 48.0	
MKAR				pmax	pmax		
	comp=Z,12nm,0.9s						
MKAR				pmax	pmax		
	comp=Z,1.0nm,0.7s						
MKAR				MLR	MLR		
	comp=Z,66nm,18.5s						
MKAR	Makanchi Array	45.47	302	eP	P	09 57 08.5	+0.2
MKAR				PcP	PcP	09 58 48.0	+1.1
MAKZ	Makanchi	45.68	303	eP	P	09 57 10.4	+0.5
MAKZ				pmax	pmax		
	comp=Z,14nm,0.8s						
MAKZ	Makanchi	45.68	303	eP	P	09 57 10.4	+0.5
	comp=Z,14nm,0.8s						
CAST	Castle Rocks	46.31	34	eP	P	09 57 15.4	+0.7
	comp=Z,14nm,1.5s						
KTH	Kantishna Hill	46.84	34	eP	P	09 57 19.8	+0.9
	comp=Z,19nm,1.4s						
MLY	Manley	46.99	32	eP	P	09 57 20.7	+0.7
	comp=Z,21nm,1.6s						
KURK	Kurchatov	47.19	308	eP	P	09 57 20.9	-0.7
KURK				pmax	pmax		
	comp=Z,43nm,0.7s						
KURK	Kurchatov	47.19	308	eP	P	09 57 20.9	-0.7
	comp=Z,43nm,0.7s						
KURBB	Kurchatov Arra	47.26	308	P	P	09 57 21.4	-0.8
	comp=Z,5.2nm,0.7s,baz=81,slow=7.7,SNR=5.7						
TAPN	Taplejung	47.54	275	eP	P	09 57 24.7	-0.4
PMR	Palmer	47.66	37	eP	P	09 57 24.9	-0.2
PMR				pmax	pmax		
	comp=Z,20nm,1.4s						
PMR	Palmer	47.66	37	eP	P	09 57 24.9	-0.2
	comp=Z,20nm,1.4s						
RND	Reindeer	47.77	34	eP	P	09 57 26.0	-0.1
RND				pmax	pmax		
	comp=Z,14nm,1.2s						
RND	Reindeer	47.77	34	eP	P	09 57 26.0	-0.1
	comp=Z,14nm,1.2s						
ODAN	Odare	48.01	275	eP	P	09 57 28.6	-0.1
MDM	Murphy Dome	48.05	32	eP	P	09 57 28.6	+0.4
	comp=Z,14nm,1.2s						
WRH	Wood River Hil	48.11	33	eP	P	09 57 28.8	+0.2
	comp=Z,14nm,1.6s						
COLA	College	48.21	32⇑	eP	P	09 57 29.9	+0.6
COLA				pmax	pmax		
	comp=Z,4.0nm,1.0s						
RAMN	Ramite	48.60	275	eP	P	09 57 32.9	-0.3
	comp=Z,31nm,0.9s						
IL1	Eielson Array	48.62	32	eP	P	09 57 31.8	-0.7
ILAR	Eielson Array	48.62	32	P	P	09 57 32.2	-0.3
	comp=Z,2.5nm,0.9s,baz=261,slow=5.8,SNR=30						
ILB	Eielson Array	48.62	32	eP	P	09 57 32.3	-0.3
GUN	Gumba	48.75	277	eP	P	09 57 34.7	+0.2
	comp=Z,46nm,1.1s						
KKN	Kakani	49.28	277	eP	P	09 57 39.1	+0.7
FYU	Fort Yukon	49.30	30	eP	P	09 57 38.5	+0.9
	comp=Z,42nm,1.6s						
GKN	Gorkha	49.70	277	eP	P	09 57 42.0	+0.5
KOLN	Koldanda	50.62	278	eP	P	09 57 48.1	-0.5
PYUN	Piuthan	50.96	278	eP	P	09 57 50.6	-0.5
	comp=Z,28nm,0.9s						
TKM2	Tokmak 2	51.03	299	eP	P	09 57 52.7	+1.2
TKM2				pmax	pmax		
	comp=Z,19nm,1.0s						
TKM2	Tokmak 2	51.03	299	eP	P	09 57 52.7	+1.2
	comp=Z,19nm,1.0s						
FRU	Bishkek	51.74	299	eP	P	09 57 55.0	-1.6
BVAR	Borovoye Array	51.75	313	P	P	09 57 56.1	-0.3
	comp=Z,3.1nm,0.9s,baz=79,slow=7.7,SNR=11						
BRVK	Borovoye	51.80	313⇑	eP	P	09 57 57.1	+0.3
BRVK				pmax	pmax		
	comp=Z,15nm,2.5s						
BRVK	Borovoye	51.80	313	eP	P	09 57 56.5	-0.3
	comp=Z,6.1nm,0.9s						
KSH	Kashi	51.86	295	eP	P	09 58 04.0	+6.4
KSH				epP	sP	09 58 14.4	+6.0
KSH				ePP	PP	10 00 03.9	+8.5
KSH				S	S	10 05 25.9	+7.1
KSH				sS	sS	10 05 42.6	+11
KSH				pmax	pmax		
	comp=Z,140nm,6.3s						
KSH				LR	LR		
	comp=Z,220nm,7.7s						
KSH				LR	LR		
	comp=Z,110nm,6.8s						
KSH				LR	LR		
	comp=Z,260nm,6.5s						
AAK	Ala-Archa	51.89	299	LR	LR	10 20 52.2	
	comp=Z,188nm,19.9s,baz=72,slow=37						
AAK	Ala-Archa	51.89	299	eP	P	09 57 57.2	-0.7
AAK				pmax	pmax		
	comp=Z,6.0nm,0.9s						
AAK	Ala-Archa	51.89	299	eP	P	09 57 57.2	-0.7
	comp=Z,5.8nm,0.9s						
EKS2	Erkin-Say	52.39	299	eP	P	09 58 02.0	+0.5
EKS2				pmax	pmax		
	comp=Z,5.0nm,0.8s						
EKS2	Erkin-Say	52.39	299	eP	P	09 58 02.0	+0.5
	comp=Z,4.5nm,0.8s						
INK	Inuvik	53.64	27	P	P	09 58 10.2	0.0
	comp=Z,1.6nm,0.5s,baz=288,slow=6.2,SNR=18						
INK	Inuvik	53.64	27	eP	P	09 58 10.3	+0.1
INK				pmax	pmax		
	comp=Z,11nm,1.4s						
INK	Inuvik	53.64	27	eP	P	09 58 10.3	+0.1
	comp=Z,11nm,1.4s						
KKAR	Karatay Array	54.50	301	eP	P	09 58 16.8	-0.1
KKAR	Karatay Array	54.50	301	eP	P	09 58 16.8	-0.1
WRAB	Tennant Creek	57.31	190	d iP	P	09 58 35.9	-1.2
WRAB				pmax	pmax		
	comp=Z,75nm,1.2s						

WRAB Tennant Creek 57.31 190 *e*P P 09 58 36.2 -0.8
comp=Z,15nm,0.8s
WB2 Warramunga Arr 57.32 190 *e*P P 09 58 36.1 -1.0
comp=Z,19nm,0.8s
WRA Warramunga Arr 57.33 190 P P 09 58 36.2 -1.0
comp=Z,15nm,0.7s,baz=10,slow=7.4,SNR=55
FITZ Fitzroy Crossi 57.36 200 *e*P P 09 58 37.5 +0.1
comp=Z,5.3nm,0.8s
ARU Arti 57.41 319 LR LR 10 25 41.3
comp=Z,222nm,18.5s,baz=50,slow=38
ARU Arti 57.41 319*c* *i*P P 09 58 37.3 -0.1
ARU 10 00 43.5
ARU S S 10 06 33.3 +0.7
ARU SS SS 10 10 16.0 -5.7
ARU pmax pmax
comp=Z,17nm,1.7s
ARU MLR MLR
comp=Z,232nm,20.0s
ARU Arti 57.41 319 *e*P P 09 58 37.6 +0.1
comp=Z,23nm,1.3s
DLBC Dease Lake 57.62 38 P P 09 58 38.5 -0.5
comp=Z,1.7nm,1.0s,baz=291,slow=14,SNR=2.0
ABKAR Akbulak array 59.15 311 *e*P P 09 58 48.9 -0.8
HYB Hyderabad 59.81 270 *i* P P 09 58 55.0 +0.3
HYB *e* 09 59 00.0
AKTO Aktyubinsk 59.86 313 LR LR 10 25 51.6
comp=Z,89nm,19.0s,baz=59,slow=37
AS01 Alice Springs 61.04 190 *e*P P 09 59 01.7 -1.2
AS31 Alice Springs 61.05 190 *e*P P 09 59 02.2 -0.7
comp=Z,2.2nm,0.7s
ASAR Alice Springs 61.05 190 P P 09 59 02.1 -0.8
comp=Z,3.9nm,0.5s,baz=2.2,slow=6.4,SNR=75
RES Resolute Bay 62.18 15 *e*P P 09 59 09.5 -0.5
RES pmax pmax
comp=Z,5.0nm,0.8s
RES Resolute Bay 62.18 15 *e*P P 09 59 09.5 -0.5
comp=Z,4.6nm,0.8s
YKW3 Yellowknife Ar 62.95 31 *e*P P 09 59 15.5 +0.3
comp=Z,26nm,1.9s
YKA Yellowknife Ar 62.98 31 P P 09 59 14.8 -0.7
comp=Z,0.9nm,0.8s,baz=298,slow=6.5,SNR=16
YKA PcP PcP 09 59 53.1 -0.2
comp=Z,0.7nm,0.8s,baz=297,slow=4.0,SNR=6.9
YKB5 Yellowknife Ar 62.98 31 *e*P P 09 59 14.3 -1.2
PALK Pallekele 63.94 259 LR LR 10 30 04.5
comp=Z,50nm,18.6s,baz=116,slow=39
ARCES ARCESS Array B 64.54 340 P P 09 59 25.4 -0.3
comp=Z,1.6nm,0.8s,baz=60,slow=7.4,SNR=4.2
ARCES LR LR 10 30 06.7
comp=Z,55nm,18.6s,baz=68,slow=38
KLMR Klimovskoe 64.60 328 P P 09 59 24.5 -1.6
KLMR pmax pmax
comp=Z,5.0nm,0.8s
GEYT Alibeck 65.23 300 P P 09 59 31.2 +0.5
comp=Z,1.3nm,0.3s,baz=270,slow=0.1,SNR=3.8
STKA Stephens Creek 68.59 182 P P 09 59 51.2 -0.6
comp=Z,6.7nm,1.0s,baz=18,slow=5.8,SNR=7.3
STKA LR LR 10 30 07.9
comp=Z,36nm,20.5s,baz=23,slow=36
STKA Stephens Creek 68.59 182 *e*P P 09 59 51.3 -0.6
STKA pmax pmax
comp=Z,3.0nm,1.1s
STKA Stephens Creek 68.59 182 *e*P P 09 59 51.3 -0.6
comp=Z,2.8nm,1.1s
VRH Novokhopyorsk 68.64 319 *e*P P 09 59 50.3 -1.8
VRH *e**SP sP 10 00 02.4 -0.6
VRH pmax pmax
comp=Z,10.0nm,0.9s
OBN Obninsk 69.04 324 LR LR 10 31 53.6
comp=Z,37nm,19.7s,baz=108,slow=37
OBN Obninsk 69.04 324⇓*e*P P 09 59 54.7 +0.2
OBN *i* 10 00 18.4
OBN *i* 10 02 26.1
OBN *e*S S 10 08 47.0 -11
OBN *e*SS SS 10 13 25.4 +2.5
OBN pmax pmax
comp=Z,10.0nm,1.3s
OBN MLR MLR
comp=Z,168nm,14.0s
FINES FINESS Array B 69.54 333 P P 09 59 58.4 +0.9
comp=Z,4.0nm,0.7s,baz=53,slow=9.8,SNR=15
FINES PcP PcP 10 00 21.9 +1.4
comp=Z,4.3nm,0.8s,baz=54,slow=9.7,SNR=5.0
FINES LR LR 10 32 19.6
comp=Z,115nm,19.9s,baz=58,slow=38
K05A Summer Lake 69.69 51 *e*P P 10 00 00.5 +1.4
comp=Z,14nm,1.1s
VSR Storozhevoye 69.97 320 *e*P P 09 59 59.2 -1.1
VSR *e**SP sP 10 00 11.0 -0.2
VSR pmax pmax
comp=Z,6.0nm,0.6s
WALA Waterton Lakes 70.34 43 *e*P P 10 00 03.3 +0.5
comp=Z,10nm,1.4s
SUMG Summit 70.67 1 *e*P P 10 00 06.1 +1.3
SUMG Summit 70.67 1 *e*P P 10 00 06.1 +1.3
SWMT Swartz Lake 71.17 44 *e*P P 10 00 08.3 +0.4
VSU Vasula 71.25 330⇓*e*P P 10 00 07.0 -1.0
VSU pmax pmax
comp=Z,29nm,1.0s
KVAR Kislovodsk Arr 72.10 312 LR LR 10 33 32.0
comp=Z,47nm,20.5s,slow=37
KIV Kislovodsk 72.10 312 *i* P P 10 00 14.2 +0.7
KIV *i* 10 00 26.5
KIV *i* S S 10 09 25.7 -8.4
KIV pmax pmax
comp=Z,20nm,1.0s
KIV MLR MLR
comp=Z,88nm,17.0s
KBZ Khabaz 72.11 311 P P 10 00 14.6 +1.2
comp=Z,4.8nm,0.9s,baz=56,slow=3.6,SNR=12
WSAR Wadi Sarin 72.41 286 LR LR 10 35 13.6
comp=Z,44nm,18.7s,baz=86,slow=38
MFID Camas Ranch 72.42 49 *e*P P 10 00 15.5 0.0
comp=Z,25nm,1.9s
NEY Neytrino 72.48 311⇑*e*P P 10 00 16.3 +0.4
NEY pmax pmax
comp=Z,1.0nm,1.0s
CMB Columbia Colle 72.55 55 *e*P P 10 00 17.2 +0.9
CMB pmax pmax
comp=Z,17nm,1.6s
CMB Columbia Colle 72.55 55 *e*P P 10 00 17.2 +0.9
comp=Z,18nm,1.6s
FFC Flin Flon 72.82 34 *e*P P 10 00 17.2 -0.3
FFC pmax pmax
comp=Z,26nm,1.6s
FFC Flin Flon 72.82 34 *e*P P 10 00 17.2 -0.3
comp=Z,26nm,1.6s
GNI Garni 72.98 308 LR LR 10 34 52.7
comp=Z,45nm,20.8s,baz=52,slow=38
GNI Garni 72.98 308⇑*e*P P 10 00 19.3 +0.4
GNI pmax pmax
comp=Z,12nm,0.8s
LRM Limekiln Ridge 73.01 45 *e*P P 10 00 19.7 +0.6
DLMT Dillon 73.19 46 *e*P P 10 00 20.5 +0.4
comp=Z,22nm,1.5s
BOZ Bozeman (W) 73.58 45 *e*P P 10 00 22.6 +0.3
BOZ pmax pmax
comp=Z,6.0nm,0.9s
BOZ Bozeman (W) 73.58 45 *e*P P 10 00 22.6 +0.3
comp=Z,5.7nm,0.9s
NV01 Mina Array Sit 73.69 54 *e*P P 10 00 23.7 +0.5
NVAR Mina Array Bea 73.69 54 P P 10 00 23.8 +0.6
comp=Z,2.0nm,0.8s,baz=286,slow=6.0,SNR=19
NV11 Mina Array Sit 73.78 54 *e*P P 10 00 25.0 +1.3
comp=Z,19nm,1.8s
GCMT Greycliff 74.59 44 *e*P P 10 00 28.4 +0.2
NB2 NORSAR Subarra 74.78 338 P P 10 00 29.6 +0.6
comp=Z,6.1nm,0.7s,baz=39,slow=6.2
NOA NORSAR Array B 74.78 338 P P 10 00 29.7 +0.7
comp=Z,2.6nm,0.8s,baz=38,slow=5.9,SNR=8.9
NOA LR LR 10 35 57.1
comp=Z,68nm,21.9s,baz=45,slow=38
H17A Grant Village 74.92 46 *e*P P 10 00 32.5 +2.2
comp=Z,12nm,1.0s
FLWY Flagg Ranch 75.04 46 *e*P P 10 00 31.3 +0.3
comp=Z,19nm,1.4s
HVU Hansel Valley 75.20 49 *e*P P 10 00 32.1 +0.2
HVU pmax pmax
comp=Z,6.0nm,1.2s
HVU Hansel Valley 75.20 49 *e*P P 10 00 32.0 +0.2
comp=Z,5.5nm,1.2s
MOOW Moose Ponds 75.22 46 *e*P P 10 00 33.2 +1.2
comp=Z,11nm,1.4s
RLMT Red Lodge 75.22 44 *e*P P 10 00 32.8 +0.8
comp=Z,21nm,1.7s
AKASG Malin Array Be 75.26 323 P P 10 00 32.2 +0.4
comp=Z,1.4nm,0.6s,baz=46,slow=5.7,SNR=8.3
AKASG LR LR 10 36 29.2
comp=Z,79nm,19.5s,baz=355,slow=38
KIEV Kiev 75.27 323⇑*e*P P 10 00 31.6 -0.3
KIEV pmax pmax
comp=Z,4.0nm,1.0s
DAC Darwin (Calif) 75.38 56 *e*P P 10 00 33.0 0.0
DAC pmax pmax
comp=Z,18nm,2.0s
DAC Darwin (Calif) 75.38 56 *e*P P 10 00 33.0 0.0
comp=Z,18nm,2.0s
LOHW Long Hollow 75.38 46 *e*P P 10 00 33.6 +0.7
comp=Z,6.9nm,1.4s
REDW Red Top Meadow 75.39 47 *e*P P 10 00 34.0 +0.9
comp=Z,14nm,1.0s
R11A Troy Canyon, C 75.48 53 *e*P P 10 00 33.7 +0.2
comp=Z,21nm,1.9s
TPNV Topopah Spring 75.87 54 *e*P P 10 00 36.5 +0.7
TPNV pmax pmax
comp=Z,12nm,1.3s
TPNV Topopah Spring 75.87 54 *e*P P 10 00 36.5 +0.7
comp=Z,12nm,1.3s
LAO LASA Array 75.91 42 *e*P P 10 00 36.3 +0.6
comp=Z,16nm,1.0s
HWUT Hardware Ranch 76.03 48 *e*P P 10 00 37.6 +1.0
comp=Z,18nm,1.5s
DUG Dugway, Tooele 76.12 50 *e*P P 10 00 37.4 +0.2
DUG pmax pmax
comp=Z,7.0nm,1.1s
DUG Dugway, Tooele 76.12 50 *e*P P 10 00 37.4 +0.2
comp=Z,6.7nm,1.1s
GSC Goldstone, Bar 76.47 56 *e*P P 10 00 39.8 +0.7
GSC pmax pmax
comp=Z,11nm,1.5s
GSC Goldstone, Bar 76.47 56 *e*P P 10 00 39.8 +0.7
comp=Z,11nm,1.5s
PSUT Pine Spring 76.47 52 *e*P P 10 00 39.4 +0.1
comp=Z,4.5nm,1.0s
BW06 Boulder Array 76.50 46 *e*P P 10 00 39.1 -0.3
PD31 Pinedale Array 76.50 46 *e*P P 10 00 39.0 -0.4
PDAR Pinedale Array 76.50 46 P P 10 00 39.4 0.0
comp=Z,1.3nm,0.8s,baz=282,slow=2.1,SNR=13
JLU Jordanelle 76.71 49 *e*P P 10 00 41.0 +0.4
comp=Z,23nm,1.9s
MPU Maple Canyon 76.95 50 *e*P P 10 00 42.5 +0.6
comp=Z,3.0nm,0.7s
MSU Marysvale 77.53 51 *e*P P 10 00 46.5 +1.2
MSU Marysvale 77.53 51 *e*P P 10 00 46.5 +1.2
PFO Pinyon Flats O 77.69 57 *e*P P 10 00 47.0 +0.9
PFO pmax pmax
comp=Z,16nm,1.5s
PFO Pinyon Flats O 77.69 57 *e*P P 10 00 47.0 +0.9
comp=Z,16nm,1.5s
LCMT Little Creek M 77.77 53 *e*P P 10 00 47.2 +0.7
comp=Z,5.5nm,1.0s
P17A Butcher Ranch, 77.83 50 *e*P P 10 00 46.8 -0.1
comp=Z,10nm,1.1s
EML El Monte Cty P 77.85 58 *e*P P 10 00 46.6 -0.3
KNB Kanab 78.03 53 *e*P P 10 00 47.9 -0.1
KNB pmax pmax
comp=Z,15nm,1.3s
KNB Kanab 78.03 53 *e*P P 10 00 47.9 -0.1
comp=Z,15nm,1.3s
P18A Preston Nutter 78.04 49 *e*P P 10 00 48.7 +0.6
comp=Z,12nm,1.4s
BAR Barrett 78.10 58 *e*P P 10 00 48.6 +0.4
comp=Z,24nm,1.6s
SRU San Rafael Swe 78.19 50 *e*P P 10 00 49.3 +0.5
SRU pmax pmax
comp=Z,8.0nm,0.9s
SRU San Rafael Swe 78.19 50 *e*P P 10 00 49.2 +0.5
comp=Z,8.3nm,0.9s
K22A Casper 78.31 45 *e*P P 10 00 49.8 +0.3
comp=Z,37nm,2.0s
ULM Lac du Bonnet 78.60 34 P P 10 00 51.4 +0.8
comp=Z,1.5nm,0.8s,baz=302,slow=6.6,SNR=3.2
U15A North Rim 78.73 53 *e*P P 10 00 52.7 +0.7
PV09 Paradox Valley 79.42 50 *e*P P 10 00 56.0 +0.3
PV10 Paradox Valley 79.55 50 *e*P P 10 00 57.5 +1.0
PV05 Paradox Valley 79.70 50 *e*P P 10 00 57.8 +0.6
N23A Red Feather La 79.78 46 *e*P P 10 00 58.6 +1.0
comp=Z,9.1nm,1.1s
Y14A Wickenburg 79.79 55 *e*P P 10 00 57.6 +0.1
comp=Z,84nm,1.8s
PHWY Pilot Hill 79.79 46 *e*P P 10 00 54.5 -3.2
comp=Z,20nm,0.6s
STHS Stebnicka Huta 79.86 326 *e*P P 10 01 10.7 +13
STHS Stebnicka Huta 79.86 326 *e* P 10 01 10.6 +13
WUAZ Wupatki 79.88 53 *e*P P 10 00 59.0 +0.9
comp=Z,8.8nm,1.1s
PV01 Paradox Valley 79.99 50 *e*P P 10 00 58.6 -0.2
BR131 Keskin Array S 80.04 313 *e*P P 10 00 59.2 +0.3
BRTR Keskin Array B 80.04 313 P P 10 00 59.7 +0.8
comp=Z,1.3nm,1.0s,baz=92,slow=2.8,SNR=6.3
BRTR LR LR 10 41 34.8
comp=Z,15nm,18.9s,baz=42,slow=40
CRVS Cervenica-Dubn 80.14 325 *e*P P 10 01 00.7 +1.6
CRVS Cervenica-Dubn 80.14 325 *e*P P 10 01 00.6 +1.5
SMCO Snowmass 80.28 48 *e*P P 10 01 01.2 +0.7
comp=Z,19nm,1.7s
BR231 Keskin MP Arra 80.47 313 *e*P P 10 01 00.9 -0.3
MVCO Mesa Verde 80.62 50 *e*P P 10 01 03.0 +0.8
comp=Z,6.9nm,1.1s
ISCO Idaho Springs 80.68 47 *e*P P 10 01 02.8 +0.3
ISCO pmax pmax
comp=Z,14nm,1.7s
ISCO Idaho Springs 80.68 47 *e*P P 10 01 02.8 +0.3
comp=Z,14nm,1.7s
S22A 4UR Ranch, Cre 81.30 49 *e*P P 10 01 06.9 +1.0
comp=Z,6.9nm,1.1s
VYHS Vyhne 81.61 326 *e*P P 10 01 08.7 +1.7
VYHS Vyhne 81.61 326 *e*P P 10 01 08.7 +1.7
CLL Collm 81.87 331 *i* P P 10 01 08.9 +0.7
CLL *i* (sP) sP 10 01 20.1 +0.9
CLL Collm 81.87 331 *i* P P 10 01 01.6 -6.6
CLL *i* 10 01 08.9
CLL *i* 10 01 20.1
CLL pmax pmax
comp=Z,4.0nm,0.7s
SDCO Great Sand Dun 82.09 48 *e*P P 10 01 10.2 +0.1
comp=Z,5.2nm,1.3s
RAYN Ar Rayn 82.13 293 *e*P P 10 01 10.6 +0.5
comp=Z,7.9nm,1.5s
PMOR Pomariorio Ree 82.72 115 *e*T T 11 32 28.9
comp=Z,1.5nm,0.2s
ECSD EROS Data Cent 82.90 39 *e*P P 10 01 13.4 -0.4
comp=Z,23nm,1.8s
T25A Trinidad 83.14 48 *e*P P 10 01 15.6 +0.2
comp=Z,11nm,1.1s
PPT2 Papeete2 83.22 118 *e*LR LR 10 27 08.1
comp=Z,124nm,24.5s
ANMO Albuquerque 83.34 51 *e*P P 10 01 16.6 +0.1
ANMO pmax pmax
comp=Z,9.0nm,1.2s
ANMO Albuquerque 83.34 51 *e*P P 10 01 16.6 +0.1
comp=Z,8.7nm,1.2s
KHC Kasperske Hory 83.36 329 *e*P P 10 01 12.0 -4.1
KHC *e*x x 10 01 28.0
KHC Kasperske Hory 83.36 329 *e*P P 10 01 12.0 -4.1
KHC *e* 10 01 28.0
KHC Kasperske Hory 83.36 329 *e*P P 10 01 16.6 +0.6
comp=Z,0.5nm,0.3s
GERES GERESS Array B 83.53 329 P P 10 01 17.7 +0.6
comp=Z,1.0nm,0.6s,baz=60,slow=5.4,SNR=7.1
GERES LR LR 10 41 23.2
comp=Z,86nm,18.7s,baz=16,slow=38
ESK Eskdalemuir 83.67 342 *i* P P 10 01 10.6 -6.9
319A Douglas 83.84 55 *e*P P 10 01 18.6 -0.4
TAOE Nuku Hiva Isla 84.62 105 *e*LR LR 10 27 38.5
comp=Z,143nm,26.6s
CBKS Cedar Bluff 84.71 44 *e*P P 10 01 22.0 -1.2
CBKS pmax pmax
comp=Z,22nm,1.4s
CBKS Cedar Bluff 84.71 44 *e*P P 10 01 22.0 -1.2
comp=Z,22nm,1.4s
BFO Black Forest 86.06 332 *e*P P 10 01 29.1 -0.7
BFO pmax pmax
comp=Z,3.0nm,0.5s
BFO Black Forest 86.06 332 *e*P P 10 01 29.1 -0.7
comp=Z,3.2nm,0.5s
MNTX Cornudas Mount 86.15 53 *e*P P 10 01 30.8 +0.3
comp=Z,6.0nm,1.3s
WMOK Wichita Mounta 88.11 47 *e*P P 10 01 39.6 -0.3
WMOK pmax pmax
comp=Z,19nm,1.7s
WMOK Wichita Mounta 88.11 47 *e*P P 10 01 39.6 -0.3
comp=Z,18nm,1.7s
TX31 Lajitas Ar. Si 88.83 54 *e*P P 10 01 43.1 -0.4
TXAR Lajitas Array 88.83 54 P P 10 01 43.6 +0.1
comp=Z,1.8nm,0.8s,baz=296,slow=3.4,SNR=27
MIAR Mount Ida 91.21 44 *e*P P 10 01 54.5 +0.1
MIAR pmax pmax
comp=Z,30nm,1.6s
MIAR Mount Ida 91.21 44 *e*P P 10 01 54.5 +0.1
comp=Z,30nm,1.6s
ESDC Sonseca Array 97.97 335 LR LR 10 51 25.6
comp=Z,53nm,18.5s,baz=40,slow=38
TORD Torodi Ar. Bea 118.44 317 PKP PKPdf 10 07 36.9 -0.4
comp=Z,0.3nm,0.7s,baz=163,slow=2.1,SNR=2.5
VNA2 Neumayer--Watz 142.77 195 PKP PKPdf 10 08 17.1 -4.2
baz=52,slow=2.2
LPAZ La Paz 145.29 62 PKPbc PKPbc 10 08 27.3 -0.5
comp=Z,2.6nm,0.7s,baz=352,slow=4.1,SNR=9.9

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*CSEM **01** 09:52:48.7, 47°.50N×12°.86E, h0km, ML1.4/4, Suspected Mining induced.*

VIE 01 09:52:47.9±0.4**, 47°.49N×12°.86E, h0km, 12C-2D, Error ellipse: s-maj=3.5km s-min=3.3km az=4.0, Suspected Mining induced., Austria**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WTTA	**Wattenberg**	**0.86**	**255**	⇑Pg	Pg	09 53 02.6	-1.8
	3.7nm,0.2s						
WTTA				⇑Sg	Sb	09 53 17.7	-0.4
	2.7nm,0.3s						
WTTA	**Wattenberg**	**0.86**	**255**	⇑Pg	Pg	09 53 02.6	-1.8
	3.7nm,0.2s						
WTTA				⇑Sg	Sb	09 53 17.7	-0.4
	2.7nm,0.3s						
WTTA	**Wattenberg**	**0.86**	**255**	Pg	Pg	09 53 02.6	-1.8
	3.7nm,0.2s						
WTTA				Sg	Sb	09 53 17.7	-0.3
	2.7nm,0.3s						
WATA	**Walderalm**	**0.89**	**261**	⇑*e*Pg	Pg	09 53 03.6	-1.3
	1.6nm,0.1s						
WATA				⇑*e*Sg	Sb	09 53 18.2	-0.5
	2.0nm,0.1s						
WATA	**Walderalm**	**0.89**	**261**	⇑*e*Pg	Pg	09 53 03.6	-1.3
	1.6nm,0.1s						
WATA				⇑*e*Sg	Sb	09 53 18.2	-0.5
	2.0nm,0.1s						
WATA	**Walderalm**	**0.89**	**261**	Pg	Pg	09 53 03.6	-1.3
	1.6nm,0.1s						
WATA				Sg	Sb	09 53 18.2	-0.5
	2.0nm,0.1s						
MOA	**Molln**	**1.02**	**69**	Pg	Pn	09 53 09.1	-0.4
	0.3nm,0.1s						
MOA				Sg	Sb	09 53 22.2	-0.2
	0.6nm,0.2s						
MOTA	**Moosalm**	**1.20**	**264**	⇓*i*Pg	Pn	09 53 12.8	+0.7
	3.6nm,0.1s						
MOTA				⇑*e*Sg	Sn	09 53 29.7	+0.5
	5.0nm,0.2s						
MOTA	**Moosalm**	**1.20**	**264**	⇓*i*Pg	Pn	09 53 12.8	+0.7
	3.6nm,0.1s						
MOTA				⇑*e*Sg	Sn	09 53 29.7	+0.5
	5.0nm,0.2s						
MOTA	**Moosalm**	**1.20**	**264**	Pg	Pn	09 53 12.8	+0.6
	3.6nm,0.1s						
MOTA				Sg	Sn	09 53 29.7	+0.5
	5.0nm,0.2s						
FETA	**Feichten**	**1.52**	**253**	⇑Pg	Pn	09 53 16.4	-0.2
	0.7nm,0.3s						
FETA	**Feichten**	**1.52**	**253**	⇑Pg	Pn	09 53 16.4	-0.2
	0.7nm,0.3s						
FETA	**Feichten**	**1.52**	**253**	Pg	Pn	09 53 16.4	-0.2
	0.7nm,0.3s						

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*IDC **01** 09:57:31.2±0.5, 36°.99N×143°.50E, h0km, mb4.3/30, mb1 4.4/36, mb1mx4.4/45, mbtmp4.3/36, ML3.8/6, MS3.7/11, Ms1 3.7/11, ms1mx3.3/50, Error ellipse: s-maj=13.1km s-min=11.6km az=131.0*

*JMA **01** 09:57:33.6±0.3, 37°.12N×143°.32E, h50km, M4.3*

*BJI **01** 09:57:34.3, 37°.33N×143°.51E, h36km, mb4.6/52, mB5.0/32, Ms4.3/35, Ms7 4.2/31*

*NEIC **01** 09:57:35.0±1.4, 36°.97N×143°.41E, h23km±9km, mb4.8/80, Error ellipse: s-maj=4.5km s-min=3.6km az=141.0*

*MOS **01** 09:57:36.4±1.0, 37°.35N×143°.32E, h33km, mb4.8/41, Error ellipse: s-maj=7.7km s-min=5.6km az=107.2*

*ISCJB **01** 09:57:36.3±0.2, 37°.09N±0°.03×143°.21E±0°.02, h43km, mb4.6/133, MS4.0/18, Error ellipse: s-maj=4.6km s-min=2.7km az=169.8*

ISC 01 09:57:36.0±0.4**, 37°.04N**±0°.04×**143°.39E**±0°.04**, h30**km±2km**, h30km:pP-P, n278, σ1s.24**/304**, mb4.6**/133**, MS4.0**/19**, 7C-6D, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**2.07**	**273**	P	**Pn**	**09 58 06.1**	**-2.6**
JIO	**Ouri**	**2.15**	**312**	P	**Pn**	**09 58 06.6**	**-3.1**
JIO				S	**Sn**	**09 58 30.4**	**-4.9**
JMM	**Marumori**	**2.22**	**293**	P	**Pn**	**09 58 07.9**	**-2.9**
JHO	**Hitachi**	**2.30**	**260**	P	**Pn**	**09 58 09.2**	**-2.6**
JHO				S	**Sn**	**09 58 36.2**	**-2.9**
CHOJ	**Chosi**	**2.44**	**238**	P	**Pn**	**09 58 12.2**	**-1.5**
OFUJ	**Ofunato**	**2.45**	**327**	P	Pn	09 58 10.3	-3.6
JFT	**Otama**	**2.48**	**282**	P	**Pn**	**09 58 12.5**	**-1.8**
JOU	**Okura**	**2.53**	**302**	P	**Pn**	**09 58 12.7**	**-2.4**
JOU				*e*S	**Sn**	**09 58 41.4**	**-3.5**
JMK	**Ichinoseki**	**2.56**	**319**	P	**Pn**	**09 58 12.6**	**-2.9**
JOM	**Ohasama**	**2.94**	**327**	P	**Pn**	**09 58 17.5**	**-3.1**
JOM				S	**Sn**	**09 58 50.7**	**-4.2**
JYK	**Kaneyama**	**3.04**	**309**	P	**Pn**	**09 58 20.0**	**-2.0**
JAG	**Ashikaga**	**3.22**	**260**	P	**Pn**	**09 58 22.5**	**-1.9**
JANG	**Nango**	**3.64**	**337**	S	Sn	09 59 05.9	-6.2
JRY	**Ryogami san**	**3.75**	**256**	P	**Pn**	**09 58 29.7**	**-2.1**
JOD2	**Odawara 2**	**3.90**	**244**	P	**Pn**	**09 58 32.1**	**-1.8**
MJAR	**Matsushiro Arr**	**4.18**	**265**	Pn	**Pn**	**09 58 36.9**	**-0.8**
	14nm,0.3s,baz=74,slow=13,SNR=141						
MJAR				LR	LR	10 00 39.4	
	comp=Z,861nm,19.8s,baz=90,slow=44						
MAJO	**Matsushiro**	**4.18**	**265***c*	*i*P	**Pn**	**09 58 37.4**	**-0.4**
MAJO	**Matsushiro**	**4.18**	**265**	*e*Pn	**Pn**	**09 58 37.5**	**-0.3**
MAJO				*e*Sn	**Sn**	**09 59 24.7**	**-1.0**
MAT	**Matsushiro**	**4.18**	**265**	P	**Pn**	**09 58 36.9**	**-0.9**
MAT				S	**Sn**	**09 59 24.8**	**-0.9**
JHJ2	**Mitsune**	**4.89**	**218**	*e*Pn	**Pn**	**09 58 45.6**	**-1.8**
JHJ2				*e*Sn	**Sn**	**09 59 39.6**	**-3.3**
JHJ	**Hachijo jima 2**	**4.90**	**218**	Pn	**Pn**	**09 58 46.4**	**-1.2**
	24nm,0.3s,baz=132,slow=23,SNR=11						
JHJ				Sn	Sn	09 59 35.4	-7.9
	38nm,0.3s,baz=226,slow=21,SNR=3.3						
ERM	**Erimo**	**4.97**	**358***c*	*e*P	Pn	09 58 44.8	-3.8
ERM				pmax	pmax		
	comp=Z,29nm,0.8s						
ERM	**Erimo**	**4.97**	**358**	*e*Pn	Pn	09 58 45.3	-3.3
ERM				*e*Sn	**Sn**	**09 59 45.0**	**0.0**
INU	**Inuyama**	**5.42**	**254**	*e*Pn	**Pn**	**09 58 54.7**	**0.0**
YUK	**Yuzh-Kuril'sk**	**7.24**	**14**	*e*P	Pn	09 59 15.2	-4.5
YUK				*e*S	Sn	10 00 31.5	-9.3
YUK				pmax	pmax		
	comp=Z,170nm,0.5s						
YUK				pmax	pmax		
	comp=E,60nm,0.4s						
YUK				pmax	pmax		
	comp=N,49nm,0.5s						
YUK				MLR	MLR		
	comp=Z,1μm,11.0s						
SHO	**Shikotan**	**7.31**	**20**	*e*P	Pn	09 59 14.6	-6.1
SHO				*e*S	Sn	10 00 31.9	-11
SHO				pmax	pmax		
	comp=Z,79nm,0.6s						
SHO				pmax	pmax		
	comp=N,60nm,0.7s						
SHO				pmax	pmax		
	comp=E,47nm,0.7s						
KUR	**Kuril'sk**	**8.86**	**21**	P	**Pn**	**09 59 40.4**	**-1.4**
KUR				*e*S	Sn	10 01 12.5	-8.0
KUR				pmax	pmax		
	comp=Z,23nm,0.7s						
KUR				smax	smax		
	comp=N,25nm,0.5s						
KUR				smax	smax		
	comp=E,43nm,0.5s						
YSS	**Yuzh-Sakhalins**	**9.92**	**357**	*e*P	Pn	09 59 42.8	-14
YSS				pmax	pmax		

comp=Z,10.0nm,1.3s
YSS MLR MLR
comp=Z,700nm,13.0s
YSS MLR MLR
comp=N,1µm,12.0s
YSS MLR MLR
comp=E,1µm,18.0s
YSS Yuzh-Sakhalins 9.92 357 *e*Pn **Pn 09 59 56.9 +0.5**
CBIJ Chichi jima 9.96 186 Pn **Pn 09 59 54.6 -2.5**
JCJ Chichijima 9.96 186 Pn **Pn 09 59 54.6 -2.5**
comp=E,5.0nm,0.3s,baz=84,slow=20,SNR=5.4
JNU Nakatsue 10.96 253 Pn **Pn 10 00 10.8 -0.1**
comp=E,0.3nm,0.3s,baz=54,slow=10,SNR=9.7
JNU Nakatsue 10.96 253 *e*Pn **Pn 10 00 11.2 +0.3**
USRK Ussuriysk Ar. 11.23 313 Pn **Pn 10 00 14.7 +0.4**
comp=E,0.7nm,0.3s,baz=124,slow=10,SNR=10.0
USRK LR LR 10 04 07.0
comp=E,580nm,21.0s,baz=128,slow=35
KSRS Korea Array 12.33 277 Pn **Pn 10 00 30.5 +1.1**
comp=E,0.6nm,0.3s,baz=92,slow=14,SNR=34
KSRS LR LR 10 04 55.3
comp=E,409nm,20.8s,baz=84,slow=36
KS01 Wonju Array Si 12.35 277 *e*Pn **Pn 10 00 31.1 +1.4**
KS15 Wonju Array Si 12.36 277 *e*Pn **Pn 10 00 30.7 +0.9**
KSAR Wonju Array Be 12.36 277 P **Pn 10 00 30.5 +0.6**
KSAR Wonju Array Be 12.36 277 Pn **Pn 10 00 30.5 +0.6**
TYV Tymovskoe 13.83 358 *e*P Pn 10 00 46.5 -3.3
TYV pmax pmax
comp=Z,22nm,1.0s
KLR Kul'dur 14.83 329 Pn Pn 10 00 59.7 -3.7
comp=Z,0.6nm,0.3s,baz=130,slow=14,SNR=16
KLR LR LR 10 06 34.8
comp=Z,339nm,18.3s,baz=263,slow=36
CN2 Changchun 15.23 302 *e*P **Pn 10 01 10.0 +1.3**
CN2 pmax pmax
comp=Z,10.0nm,0.6s
PETK Petropavlovsk- 18.93 27 LR LR 10 12 05.8
comp=Z,124nm,18.1s,baz=209,slow=46
BJI Beijing 21.46 286 P **P 10 02 20.1 -1.7**
BJI S **S 10 06 16.3 -2.0**
BJI pmax pmax
comp=Z,9.0nm,1.6s
BJI pmax pmax
comp=Z,52nm,4.7s
BJI LR LR
comp=Z,340nm,14.9s
BJI LR LR
comp=Z,200nm,13.7s
MA2 Magadan 23.05 10 P **P 10 02 38.2 -0.4**
comp=Z,4.0nm,0.9s,baz=213,slow=8.4,SNR=5.2
MA2 LR LR 10 12 52.9
comp=Z,104nm,18.3s,baz=222,slow=40
GUMO Guam 23.39 176 LR LR 10 10 39.0
comp=Z,79nm,19.0s,baz=28,slow=34
HHC Hu-ho-hao-te 24.97 289 *e*P **P 10 02 58.9 +2.0**
HHC S **S 10 07 18.4 -0.3**
HHC pmax pmax
comp=Z,25nm,1.1s
HHC pmax pmax
comp=Z,96nm,6.2s
HHC LR LR
comp=Z,150nm,11.2s
HHC LR LR
comp=Z,330nm,11.2s
HHC LR LR
comp=Z,290nm,12.4s
CIT Chita 25.78 315 *e*P **P 10 03 05.7 +1.6**
CIT *e* 10 03 14.6
CIT *e* 10 03 17.3
YAK Yakutsk 26.44 345 *e*P **P 10 03 09.3 -0.5**
YAK pmax pmax
comp=Z,7.0nm,0.5s
SEY Seymchan 26.51 9 P **P 10 03 10.7 +0.2**
comp=Z,4.4nm,0.5s,baz=194,slow=7.2,SNR=24
SEY Seymchan 26.51 9*ce*P **P 10 03 09.4 -1.1**
H11N2 WAKE ISLAND Hy 26.81 124 T T 10 31 17.4
baz=316,slow=75,SNR=18
H11N1 WAKE ISLAND Hy 26.82 124 T T 10 31 23.0
baz=316,slow=75,SNR=11
H11N3 WAKE ISLAND Hy 26.83 124 T T 10 31 22.1
baz=316,slow=75,SNR=15
H11S1 WAKE ISLAND Hy 27.56 126 T T 10 32 11.9
baz=317,slow=76,SNR=13
H11S3 WAKE ISLAND Hy 27.56 126 T T 10 32 14.0
baz=317,slow=76,SNR=9.8
H11S2 WAKE ISLAND Hy 27.57 126 T T 10 32 17.1
baz=317,slow=76,SNR=12
BOD Bodaibo 28.38 326 *e*P **P 10 03 26.9 -0.4**
BOD pmax pmax
comp=Z,12nm,1.6s
ULN Ulaanbaatar 28.66 304 *e*P **P 10 03 31.6 +1.5**
ULN Ulaanbaatar 28.66 304 *e*P **P 10 03 31.6 +1.5**
ENH Enshi 28.91 267 *e*P **P 10 03 33.8 +1.5**
comp=Z,9.9nm,0.6s
SONA1 Songino Array 29.09 304 *e*P **P 10 03 34.0 +0.1**
SONM Songino Array 29.09 304 P **P 10 03 36.0 +2.1**
comp=Z,5.2nm,0.8s,baz=103,slow=9.5,SNR=21
SONM PcP **PcP 10 06 43.0 +1.7**
comp=Z,0.3nm,0.4s,baz=95,slow=1.6,SNR=3.2
SONM LR LR 10 15 12.7
comp=Z,158nm,18.8s,baz=83,slow=36
ZAK Zakamensk 31.51 308 *e*P **P 10 03 54.5 -0.7**
ZAK pmax pmax
comp=Z,4.0nm,1.0s
TLY Talaya 31.52 310 P **P 10 03 57.6 +2.3**
comp=Z,3.4nm,0.5s,baz=122,slow=2.8,SNR=3.6
TLY Talaya 31.52 310 *e*P P 10 04 07.7 +12
TLY pmax pmax
comp=Z,6.0nm,0.9s
TLY MLR MLR
comp=Z,300nm,21.0s
LZH Lanzhou 31.62 280 *e*P **P 10 03 57.3 +0.9**
LZH pP pP 10 04 06.1 +0.9
LZH sP sP 10 04 10.5 +1.6
LZH *e*S **S 10 08 59.4 -4.3**
LZH sS sS 10 09 20.2 +2.0
LZH pmax pmax
comp=Z,37nm,1.4s
LZH pmax pmax
comp=Z,86nm,4.2s
LZH LR LR
comp=Z,2µm,15.4s
LZH LR LR
comp=Z,2µm,14.6s
LZH LR LR
comp=Z,2µm,16.0s
GYA Guiyang 32.78 262 *i*P **P 10 04 07.6 +1.0**
GYA pP sP 10 04 18.0 -1.1
GYA PP **PnPn 10 05 16.2 +0.8**
GYA PcP **PcP 10 06 52.4 +1.0**
GYA S **S 10 09 20.8 -1.0**
GYA sS sS 10 09 38.2 +1.9
GYA ScP **ScP 10 10 33.0 -0.2**
GYA SS **SnSn 10 11 19.5 +0.6**
GYA ScS **ScS 10 14 31.6 -1.8**
GYA pmax pmax
comp=Z,20nm,0.9s
GYA pmax pmax
comp=Z,120nm,5.4s
GYA LR LR
comp=Z,540nm,17.6s
GYA LR LR
comp=Z,480nm,17.8s
GYA LR LR
comp=Z,510nm,18.0s
MOY Mondy 33.15 310 *e*P **P 10 04 12.2 +2.7**
CD2 Chengdu 33.25 271 P **P 10 04 09.8 -0.8**
CD2 sP sP 10 04 24.9 +1.8
CD2 PP **PP 10 05 25.2 -0.8**
CD2 S **S 10 09 27.5 -1.4**
CD2 sS sS 10 09 45.4 +2.0
CD2 pmax pmax
comp=Z,10.0nm,0.5s
CD2 pmax pmax
comp=Z,140nm,3.9s
CD2 LR LR
comp=Z,320nm,14.4s
CD2 LR LR
comp=Z,360nm,12.6s
BILL Bilibino 33.59 15 *e*P **P 10 04 11.7 -1.4**
BILL *e* 10 04 17.1
BILL *e**PP **sP 10 04 24.5 -1.1**
BILL *e* 10 06 53.2
BILL *e*SSS SSS 10 11 52.9
BILL pmax pmax
comp=Z,13nm,1.7s
BILL MLR MLR
comp=Z,95nm,14.0s
BILL Bilibino 33.59 15 *e*P **P 10 04 12.2 -0.9**
comp=Z,14nm,1.4s
GTA Gaotai 34.07 288 *e*P **P 10 04 17.9 +0.2**
GTA pP sP 10 04 30.7 +0.5
GTA sP pP 10 04 36.0 +9.4
GTA PcP **PcP 10 06 55.9 +1.0**
GTA S **S 10 09 41.0 -0.6**
GTA sS sS 10 10 01.0 +4.9
GTA SS **SnSn 10 11 50.7 +0.8**
GTA pmax pmax
comp=Z,4.0nm,0.9s
GTA pmax pmax
comp=Z,99nm,5.7s
GTA LR LR
comp=Z,190nm,17.6s
GTA LR LR
comp=Z,200nm,14.7s
GTA LR LR
comp=Z,310nm,17.6s
TIXI Tiksi 35.49 352*ce*P **P 10 04 28.2 -1.2**
TIXI pmax pmax
comp=Z,3.0nm,1.6s
KMI Kunming 36.52 263 P **P 10 04 41.9 +2.8**
KMI pmax pmax
comp=Z,15nm,1.2s
KMI LR LR
comp=Z,140nm,16.1s
KMI LR LR
comp=Z,200nm,18.1s
KMI LR LR
comp=Z,180nm,19.6s
KRAR Krasnoyarsk 38.55 316 *i*P **P 10 04 57.0 +1.4**
WMQ Urumqi 42.24 297 P **P 10 05 28.1 +1.7**
WMQ pP sP 10 05 39.1 +0.1
WMQ sP pP 10 05 43.1 +7.7
WMQ PcP **PcP 10 07 21.4 +1.4**
WMQ S **S 10 11 48.8 +3.8**
WMQ ScS **ScS 10 15 23.0 -3.3**
WMQ pmax pmax
comp=Z,4.0nm,0.6s
WMQ pmax pmax
comp=Z,57nm,3.6s
WMQ LR LR
comp=Z,47nm,16.4s
WMQ LR LR
comp=Z,110nm,26.0s
CMAR Chiang Mai Arr 43.03 257 P **P 10 05 34.0 +1.0**
comp=Z,1.1nm,0.3s,baz=59,slow=42,SNR=2.9
CMAR LR LR 10 25 44.0
comp=Z,87nm,18.0s,baz=35,slow=39
CMAR Chiang Mai Arr 43.03 257 P **P 10 05 34.0 +1.0**
ZAA0 Zalesovo Array 43.08 312 *e*P **P 10 05 33.1 +0.2**
ZAA0 *e*pP **sP 10 05 44.8 -0.8**
ZALV Zalesovo Beam 43.08 312 P **P 10 05 32.5 -0.5**
comp=Z,4.8nm,0.9s,baz=84,slow=6.8,SNR=9.8
ZALV PcP **PcP 10 07 24.1 +1.6**
comp=Z,1.6nm,0.7s,baz=44,slow=4.5,SNR=3.0
NRIK Noril'sk 43.93 335 P **P 10 05 40.0 +0.4**
comp=Z,1.5nm,0.4s,baz=107,slow=3.6,SNR=5.7
NRIK Noril'sk 43.93 335 P **P 10 05 40.0 +0.4**
NRIK pmax pmax
comp=Z,2.0nm,0.4s
NVS Novosibirsk 43.98 314 *e*P **P 10 05 41.6 +1.4**
NVS pmax pmax
comp=Z,12nm,1.3s
NVS pmax pmax
comp=E,10.0nm,1.0s
MK01 Makanchi Array 45.45 302 *e*P **P 10 05 51.6 -0.5**
MK31 Makanchi Array 45.45 302 *i*P **P 10 05 53.1 +1.0**
MK31 pmax pmax
comp=Z,7.0nm,0.8s
MK31 Makanchi Array 45.45 302 *e*P **P 10 05 52.1 0.0**
MKAR Makanchi Array 45.45 302 P **P 10 05 52.4 +0.3**
comp=Z,7.4nm,0.8s,baz=86,slow=9.8,SNR=27
MKAR PcP **PcP 10 07 32.0 +1.2**
comp=Z,1.7nm,0.9s,baz=92,slow=8.5,SNR=2.0
MKAR Makanchi Array 45.45 302 P **P 10 05 52.4 +0.3**
MKAR 10 07 32.0
MKAR pmax pmax
comp=Z,5.0nm,0.7s
MKAR pmax pmax
comp=Z,2.0nm,0.9s
MAKZ Makanchi 45.66 303 *e*P **P 10 05 54.0 +0.2**
MAKZ pmax pmax
comp=Z,6.0nm,0.8s
MAKZ Makanchi 45.66 303 *e*P **P 10 05 54.0 +0.2**
comp=Z,6.3nm,0.8s
KDAK Kodiak Island 46.04 42 P P 10 05 49.8 -6.7
comp=Z,2.1nm,0.5s,baz=38,slow=20,SNR=13
PPLA Purkeypile 46.26 35 *e*P **P 10 05 59.1 +0.6**
comp=Z,36nm,1.6s
SPU Mount Spurr 46.28 37 *e*P **P 10 05 59.4 +1.0**
CAST Castle Rocks 46.34 34 *e*P **P 10 05 58.6 -0.3**
comp=Z,40nm,1.8s
BPAW Bear Paw Mtn. 46.86 33 *e*P **P 10 06 03.6 +0.7**
comp=Z,9.3nm,1.4s
KTH Kantishna Hill 46.86 34 *e*P **P 10 06 03.8 +0.7**
comp=Z,29nm,1.6s
MLY Manley 47.01 32 *e*P **P 10 06 04.8 +0.6**
comp=Z,8.5nm,1.1s
KURK Kurchatov 47.17 308 *e*P **P 10 06 05.5 0.0**
KURK pmax pmax
comp=Z,35nm,0.6s
KURK Kurchatov 47.17 308 *e*P **P 10 06 05.5 0.0**
comp=Z,35nm,0.6s
KURBB Kurchatov Arra 47.24 308 P **P 10 06 05.5 -0.5**
comp=Z,33nm,0.6s,baz=82,slow=8.3,SNR=39
MCK McKinley 47.75 34 *e*P **P 10 06 09.9 0.0**
MCK pmax pmax
comp=Z,35nm,2.0s
MCK McKinley 47.75 34 *e*P **P 10 06 09.9 0.0**
comp=Z,35nm,2.0s
RND Reindeer 47.79 34 *e*P **P 10 06 10.0 -0.2**
RND pmax pmax
comp=Z,18nm,1.4s
RND Reindeer 47.79 34 *e*P **P 10 06 10.0 -0.2**
comp=Z,18nm,1.4s
SML Sawmill 48.05 36 *e*P **P 10 06 12.4 +0.1**
SML pmax pmax
comp=Z,1.0nm,0.8s
SML Sawmill 48.05 36 *e*P **P 10 06 12.4 +0.1**
comp=Z,1.4nm,0.8s
MDM Murphy Dome 48.07 32 *e*P **P 10 06 13.1 +0.7**
comp=Z,40nm,1.6s
WRH Wood River Hil 48.13 33 *e*P **P 10 06 12.8 0.0**
comp=Z,6.4nm,1.2s
PDGK Podgornoye 48.17 298 P **P 10 06 15.6 +2.3**
PDGK pmax pmax
comp=Z,9.0nm,1.2s
COLA College 48.23 32 *e*P **P 10 06 14.4 +0.9**
COLA pmax pmax
comp=Z,15nm,2.0s
IL1 Eielson Array 48.65 32 *e*P **P 10 06 16.4 -0.3**
ILAR Eielson Array 48.65 32 P **P 10 06 16.2 -0.6**
comp=Z,3.0nm,0.6s,baz=262,slow=6.1,SNR=61
ILB Eielson Array 48.65 32 *e*P **P 10 06 16.4 -0.4**
FYU Fort Yukon 49.32 30 *e*P **P 10 06 22.8 +0.9**
comp=Z,40nm,1.6s
DIV Divide 49.32 37 *e*P **P 10 06 22.5 +0.5**
comp=Z,10nm,0.8s
BMRM Bremner River 49.90 37 *e*P **P 10 06 26.7 +0.2**
comp=Z,6.9nm,1.0s
TKM2 Tokmak 2 51.01 299 *e*P **P 10 06 36.6 +1.3**
TKM2 pmax pmax
comp=Z,11nm,0.6s
TKM2 Tokmak 2 51.01 299 *e*P **P 10 06 36.6 +1.3**
comp=Z,11nm,0.6s
VOSK Vostochnaya 51.45 312 P **P 10 06 37.5 -0.7**
VOSK pmax pmax
comp=Z,7.0nm,1.3s
FRU Bishkek 51.73 299 *e*P **P 10 06 41.0 +0.6**
BVA0 Borovoye Array 51.73 313 *i*P **P 10 06 40.6 +0.3**
BVA0 pmax pmax
comp=Z,2.0nm,0.6s
BRVK Borovoye 51.79 313 *e*P **P 10 06 40.8 +0.1**
BRVK pmax pmax
comp=Z,2.0nm,1.2s
BRVK Borovoye 51.79 313 *e*P **P 10 06 41.0 +0.3**
comp=Z,5.8nm,1.1s
AAK Ala-Archa 51.87 299 *i*P **P 10 06 42.4 +0.7**
AAK pmax pmax
comp=Z,13nm,2.1s
MNAS Manas 53.31 299 P **P 10 06 53.6 +1.3**
MNAS pmax pmax
comp=Z,6.0nm,0.6s
SFK Sufi-Kurgan 53.45 296 P **P 10 06 56.9 +3.4**
SFK pmax pmax
comp=Z,4.0nm,0.6s
INK Inuvik 53.66 27 P **P 10 06 54.4 +0.1**
comp=Z,2.5nm,0.5s,baz=297,slow=6.9,SNR=24
INK Inuvik 53.66 27 *e*P **P 10 06 54.5 +0.1**
comp=Z,9.4nm,1.3s
KK31 Karatay Array 54.48 301 *i*P **P 10 07 00.7 0.0**
KK31 pmax pmax
comp=Z,3.0nm,0.6s
KKAR Karatay Array 54.48 301 *e*P **P 10 07 01.3 +0.6**
KKAR Karatay Array 54.48 301 *e*P **P 10 07 01.3 +0.6**
CISI Cisompet, Garu 55.46 224 *e*P **P 10 07 08.5 +0.4**
CISI *e*pP **sP 10 07 21.7 +0.8**
WRAB Tennant Creek 57.30 190*ce*P **P 10 07 19.7 -1.3**
WRAB pmax pmax
comp=Z,118nm,2.5s
WRAB Tennant Creek 57.30 190 *e*P **P 10 07 20.1 -0.8**
comp=Z,22nm,1.3s
WB2 Warramunga Arr 57.31 190 *e*P **P 10 07 20.7 -0.3**
comp=Z,27nm,1.3s
WB2 *e*pP **sP 10 07 32.6 -1.2**
WRA Warramunga Arr 57.31 190 P **P 10 07 20.2 -0.9**
comp=Z,5.8nm,0.8s,baz=11,slow=7.3,SNR=20
ARU Arti 57.40 319*d i*P **P 10 07 22.0 +0.7**
ARU 10 09 27.4
ARU S **S 10 15 18.4 +2.5**
ARU SS **SS 10 19 06.5 +1.4**
ARU pmax pmax
comp=Z,16nm,1.7s
ARU MLR MLR
comp=Z,241nm,21.0s
ARU Arti 57.40 319 *e*P **P 10 07 21.5 +0.1**
comp=Z,19nm,1.3s
DLBC Dease Lake 57.65 38 P **P 10 07 23.9 +0.7**
comp=Z,2.0nm,0.9s,baz=260,slow=1.2,SNR=3.8
DLBC Dease Lake 57.65 38 *e*P **P 10 07 24.6 +1.5**
comp=Z,240nm,1.8s
AB31 Akbulak array 59.14 311 P **P 10 07 32.5 -1.1**
AB31 pmax pmax
comp=Z,1.0nm,0.5s
ABKAR Akbulak array 59.14 311 *e*P **P 10 07 33.4 -0.2**
HYB Hyderabad 59.78 270 *i*P **P 10 07 40.0 +1.5**
AKTO Aktyubinsk 59.84 313 P **P 10 07 38.1 -0.4**
AKTO pmax pmax
comp=Z,7.0nm,1.1s
AS01 Alice Springs 61.03 190 *e*P **P 10 07 46.3 -0.4**
AS31 Alice Springs 61.03 190 *e*P **P 10 07 46.5 -0.3**
comp=Z,1.6nm,0.6s
ASAR Alice Springs 61.04 190 P **P 10 07 46.1 -0.7**
comp=Z,2.2nm,0.6s,baz=4.4,slow=7.1,SNR=55
RES Resolute Bay 62.20 15 P **P 10 07 53.4 -0.6**
comp=Z,2.1nm,0.6s,baz=322,slow=6.1,SNR=13
RES PcP **PcP 10 08 30.0 -3.8**
comp=Z,4.6nm,0.9s,baz=312,slow=6.4,SNR=6.7
RES Resolute Bay 62.20 15 *e*P **P 10 07 53.8 -0.2**
comp=Z,19nm,1.5s
RES PcP **PcP 10 08 30.0 -3.8**
YKW3 Yellowknife Ar 62.97 31 *e*P **P 10 07 58.8 -0.5**
comp=Z,16nm,1.7s
YKA Yellowknife Ar 63.01 31 P **P 10 07 59.0 -0.6**
comp=Z,1.1nm,0.7s,baz=303,slow=6.7,SNR=23
YKB5 Yellowknife Ar 63.01 31 *e*P **P 10 07 59.9 +0.3**
ARCES ARCESS Array B 64.54 340 P **P 10 08 08.7 -1.0**
comp=Z,1.4nm,0.8s,baz=344,slow=4.0,SNR=3.2
GEYT Alibeck 65.21 300 P **P 10 08 15.2 +0.6**
comp=Z,1.9nm,0.4s,baz=324,slow=15,SNR=3.4
GEYT LR LR 10 37 57.8
comp=Z,78nm,18.3s,baz=45,slow=37
STKA Stephens Creek 68.58 182 P **P 10 08 34.9 -0.9**
comp=Z,4.8nm,1.0s,baz=324,slow=5.6,SNR=4.8
OBN Obninsk 69.03 324 *e*P **P 10 08 38.9 +0.5**
OBN *e* 10 08 50.2
OBN *e* 10 11 15.1
OBN pmax pmax
comp=Z,9.0nm,0.5s
OBN MLR MLR
comp=Z,132nm,14.0s
FINES FINESS Array B 69.54 333 P **P 10 08 40.7 -0.8**
comp=Z,3.1nm,0.7s,baz=46,slow=8.2,SNR=9.5
K05A Summer Lake 69.72 51 *e*P **P 10 08 44.1 +1.0**
comp=Z,17nm,1.2s
SUMG Summit 70.67 1 *e*P **P 10 08 49.1 +0.3**
SUMG pmax pmax
comp=Z,3.0nm,0.6s
SUMG Summit 70.67 1 *e*P **P 10 08 49.1 +0.3**
comp=Z,2.8nm,0.6s
SWMT Swartz Lake 71.19 44 *e*P **P 10 08 51.9 -0.1**
GOF Gofitskoye 71.26 313 *e*P P 10 09 04.6 +12
WVOR Wild Horse Val 71.28 51 *e*P **P 10 08 52.9 +0.2**
WVOR pmax pmax
comp=Z,13nm,1.6s
WVOR Wild Horse Val 71.28 51 *e*P **P 10 08 52.9 +0.2**
comp=Z,13nm,1.6s
KIV Kislovodsk 72.09 312 *e*P **P 10 08 58.7 +1.3**
KIV *i* 10 09 11.2
KIV pmax pmax
comp=Z,10.0nm,1.0s
KIV MLR MLR
comp=Z,98nm,17.0s
KBZ Khabaz 72.09 311 P **P 10 08 58.6 +1.4**
comp=Z,3.5nm,0.9s,baz=42,slow=5.4,SNR=7.6
MFID Camas Ranch 72.45 49 *e*P **P 10 09 00.4 +0.8**
comp=Z,4.1nm,1.3s
CMB Columbia Colle 72.58 55 *e*P **P 10 09 01.0 +0.6**
CMB pmax pmax
comp=Z,6.0nm,1.0s
CMB Columbia Colle 72.58 55 *e*P **P 10 09 01.0 +0.6**
comp=Z,5.6nm,1.0s
FFC Flin Flon 72.84 33 *e*P **P 10 09 01.4 -0.2**
FFC *e**PP **sP 10 09 13.8 -0.7**
FFC pmax pmax
comp=Z,33nm,1.8s
FFC Flin Flon 72.84 33 *e*P **P 10 09 01.4 -0.2**
comp=Z,33nm,1.8s
FFC *e*pP **sP 10 09 13.8 -0.7**
LRM Limekiln Ridge 73.03 45 *e*P **P 10 09 03.4 +0.1**
LRM *e*pP **sP 10 09 16.4 +0.2**
HLID Hailey 73.21 48 *e*P **P 10 09 04.6 +0.4**
comp=Z,8.2nm,1.7s
EGMT Eagleton 73.22 42 *e*P **P 10 09 04.2 +0.2**
comp=Z,36nm,1.9s
DLMT Dillon 73.22 46 *e*P **P 10 09 04.8 +0.6**
comp=Z,5.9nm,0.8s
BOZ Bozeman (W) 73.60 45 *e*P **P 10 09 07.0 +0.5**
BOZ pmax pmax
comp=Z,6.0nm,0.9s
BOZ Bozeman (W) 73.60 45 *e*P **P 10 09 07.0 +0.5**
comp=Z,6.4nm,0.9s
NV01 Mina Array Sit 73.72 54 *e*P **P 10 09 07.8 +0.5**
NVAR Mina Array Bea 73.72 54 P **P 10 09 08.1 +0.8**
comp=Z,2.2nm,0.7s,baz=289,slow=5.6,SNR=19
NV11 Mina Array Sit 73.81 54 *e*P **P 10 09 08.7 +0.9**
comp=Z,15nm,1.8s
YMR Madison River 74.56 45 *e*P **P 10 09 13.2 +1.0**
comp=Z,8.7nm,1.1s
YFT Old Faithful 74.77 46 *e*P **P 10 09 14.0 +0.6**
comp=Z,6.6nm,0.9s
NB2 NORSAR Subarra 74.78 338 P **P 10 09 13.6 +0.7**
comp=Z,0.9nm,0.7s,baz=39,slow=5.9
NOA NORSAR Array B 74.78 338 P **P 10 09 12.8 -0.1**
comp=Z,2.6nm,0.9s,baz=39,slow=5.9,SNR=4.8
H17A Grant Village 74.95 46 *e*P **P 10 09 16.3 +1.9**
comp=Z,8.5nm,0.8s
FLWY Flagg Ranch 75.07 46 *e*P **P 10 09 16.7 +1.6**
comp=Z,22nm,1.7s
HVU Hansel Valley 75.23 49 *e*P **P 10 09 16.1 +0.1**
HVU pmax pmax
comp=Z,3.0nm,0.9s
HVU Hansel Valley 75.23 49 *e*P **P 10 09 16.1 +0.1**
comp=Z,2.6nm,0.9s
MOOW Moose Ponds 75.25 46 *e*P **P 10 09 17.4 +1.2**
comp=Z,12nm,1.5s
RLMT Red Lodge 75.25 44 *e*P **P 10 09 14.1 -2.0**
comp=Z,37nm,1.9s
AKASG Malin Array Be 75.25 323 P **P 10 09 15.8 +0.1**
comp=Z,0.6nm,0.4s,baz=40,slow=5.8,SNR=8.4
KIEV Kiev 75.26 323 *i*P **P 10 09 16.1 +0.3**
DAC Darwin (Calif) 75.41 56 *e*P **P 10 09 16.9 -0.3**
DAC pmax pmax
comp=Z,16nm,1.7s
DAC Darwin (Calif) 75.41 56 *e*P **P 10 09 16.9 -0.3**
comp=Z,16nm,1.7s
SNOW Snow King Moun 75.41 46 *e*P **P 10 09 18.5 +1.4**
comp=Z,6.8nm,1.1s

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
R11A	Troy Canyon, C	75.51	53	eP	P	10 09 18.4	+0.7
	comp=Z,11nm,1.4s						
TPNV	Topopah Spring	75.90	54	eP	P	10 09 20.6	+0.6
TPNV				pmax	pmax		
	comp=Z,6.0nm,1.0s						
TPNV	Topopah Spring	75.90	54	eP	P	10 09 20.6	+0.6
	comp=Z,5.5nm,1.0s						
HWUT	Hardware Ranch	76.06	48	eP	P	10 09 21.5	+0.7
	comp=Z,12nm,1.4s						
DUG	Dugway, Tooele	76.15	50	eP	P	10 09 21.9	+0.6
DUG				pmax	pmax		
	comp=Z,5.0nm,0.9s						
DUG	Dugway, Tooele	76.15	50	eP	P	10 09 21.9	+0.6
	comp=Z,5.0nm,0.9s						
GSC	Goldstone, Bar	76.50	56	eP	P	10 09 23.3	+0.1
GSC				pmax	pmax		
	comp=Z,17nm,1.8s						
GSC	Goldstone, Bar	76.50	56	eP	P	10 09 23.3	+0.1
	comp=Z,17nm,1.8s						
PSUT	Pine Spring	76.50	52	eP	P	10 09 24.1	+0.8
	comp=Z,3.4nm,0.9s						
BW06	Boulder Array	76.53	46	eP	P	10 09 23.6	+0.1
PD31	Pinedale Array	76.53	46	eP	P	10 09 23.6	+0.1
PDAR	Pinedale Array	76.53	46	P	P	10 09 23.2	-0.3
	comp=Z,1.1nm,0.7s,baz=249,slow=2.0,SNR=15						
JLU	Jordanelle	76.74	49	eP	P	10 09 25.1	+0.4
	comp=Z,3.6nm,1.0s						
MPU	Maple Canyon	76.98	50	eP	P	10 09 26.1	0.0
	comp=Z,11nm,1.6s						
MSU	Marysvale	77.56	51	eP	P	10 09 30.6	+1.2
MSU	Marysvale	77.56	51	eP	P	10 09 30.6	+1.2
PFO	Pinyon Flats O	77.72	57	eP	P	10 09 30.7	+0.5
PFO				pmax	pmax		
	comp=Z,7.0nm,1.3s						
PFO	Pinyon Flats O	77.72	57	eP	P	10 09 30.7	+0.5
	comp=Z,7.2nm,1.3s						
LCMT	Little Creek M	77.80	53	eP	P	10 09 31.3	+0.7
	comp=Z,4.5nm,0.9s						
P17A	Butcher Ranch,	77.86	50	eP	P	10 09 31.9	+1.0
	comp=Z,16nm,1.3s						
KNB	Kanab	78.06	53	eP	P	10 09 33.4	+1.3
KNB				pmax	pmax		
	comp=Z,27nm,1.7s						
KNB	Kanab	78.06	53	eP	P	10 09 33.4	+1.3
	comp=Z,27nm,1.7s						
P18A	Preston Nutter	78.06	49	eP	P	10 09 32.9	+0.7
	comp=Z,16nm,1.7s						
SRU	San Rafael Swe	78.21	50	eP	P	10 09 33.4	+0.4
SRU				pmax	pmax		
	comp=Z,8.0nm,0.9s						
SRU	San Rafael Swe	78.21	50	eP	P	10 09 33.4	+0.4
	comp=Z,8.2nm,0.9s						
W13A	Hualapai Mount	78.54	55	eP	P	10 09 36.8	+1.9
	comp=Z,3.7nm,1.2s						
ULM	Lac du Bonnet	78.62	34	P	P	10 09 34.0	-0.7
	comp=Z,0.9nm,0.4s,baz=359,slow=9.1,SNR=4.2						
ULM	Lac du Bonnet	78.62	34	eP	P	10 09 34.1	-0.7
ULM				pmax	pmax		
	comp=Z,16nm,1.4s						
ULM	Lac du Bonnet	78.62	34	eP	P	10 09 34.1	-0.6
	comp=Z,16nm,1.4s						
U15A	North Rim	78.76	53	eP	P	10 09 37.2	+1.1
	comp=Z,25nm,1.8s						
RAR	Rarotonga	78.89	127	LR	LR	10 38 35.2	
	comp=Z,157nm,20.5s,baz=284,slow=31						
O20A	White River Ci	78.95	48	eP	P	10 09 37.7	+0.7
	comp=Z,21nm,1.6s						
BUR08	Bucovina Ar. S	79.26	323	eP	P	10 09 38.9	+0.5
BUR08				epP	sP	10 09 53.4	+1.9
PV09	Paradox Valley	79.44	50	eP	P	10 09 40.6	+0.8
PV05	Paradox Valley	79.73	50	eP	P	10 09 42.2	+0.9
N23A	Red Feather La	79.81	46	eP	P	10 09 42.5	+0.7
	comp=Z,27nm,1.8s						
Y14A	Wickenburg	79.82	55	eP	P	10 09 42.3	+0.6
	comp=Z,85nm,1.8s						
Y14A				epP	sP	10 09 54.7	0.0
STHS	Stebnicka Huta	79.85	326	eP	P	10 09 40.3	-1.2
STHS	Stebnicka Huta	79.85	326	eP	P	10 09 40.3	-1.2
WUAZ	Wupatki	79.91	53	eP	P	10 09 42.3	+0.1
	comp=Z,13nm,1.4s						
WUAZ				epP	sP	10 09 55.6	+0.3
PV01	Paradox Valley	80.02	50	eP	P	10 09 43.6	+0.7
BR131	Keskin Array S	80.02	313	eP	P	10 09 43.6	+0.9
BR131				epP	sP	10 09 57.6	+1.8
BRTR	Keskin Array B	80.02	313	P	P	10 09 43.4	+0.6
	comp=Z,0.9nm,0.9s,baz=77,slow=5.3,SNR=5.8						
CRVS	Cervenica-Dubn	80.13	325	eP	P	10 09 43.7	+0.7
CRVS	Cervenica-Dubn	80.13	325	eP	P	10 09 43.7	+0.7
SMCO	Snowmass	80.31	48	eP	P	10 09 45.3	+0.6
	comp=Z,6.9nm,0.9s						
BR231	Keskin MP Arra	80.45	313	eP	P	10 09 43.8	-1.2
MVCO	Mesa Verde	80.65	50	eP	P	10 09 46.9	+0.6
	comp=Z,8.2nm,1.2s						
KECS	Kecovo	80.88	326	eP	P	10 09 47.7	+0.7
KECS	Kecovo	80.88	326	eP	P	10 09 47.7	+0.7
S22A	4UR Ranch, Cre	81.32	49	eP	P	10 09 51.1	+1.2
	comp=Z,10nm,1.4s						
VYHS	Vyhne	81.61	326	eP	P	10 09 52.3	+1.4
VYHS	Vyhne	81.61	326	eP	P	10 09 52.3	+1.4
CLL	Collm	81.87	331	eP	P	10 09 53.0	+0.8
CLL	Collm	81.87	331	eP	P	10 09 48.0	-4.2
SDCO	Great Sand Dun	82.12	48	eP	P	10 09 55.0	+0.8
	comp=Z,5.5nm,1.3s						
TUC	Tucson	82.29	55	eP	P	10 09 55.2	+0.4
TUC				pmax	pmax		
	comp=Z,9.0nm,1.7s						
TUC	Tucson	82.29	55	eP	P	10 09 55.2	+0.4
	comp=Z,9.1nm,1.7s						
ECSD	EROS Data Cent	82.93	39	eP	P	10 09 57.5	-0.3
	comp=Z,6.5nm,1.1s						
KHC	Kasperske Hory	83.35	329	eP	P	10 10 00.0	0.0
KHC	Kasperske Hory	83.35	329	eP	P	10 10 00.0	0.0
ANMO	Albuquerque	83.37	51	eP	P	10 10 01.1	+0.5
ANMO				e*PP	sP	10 10 14.2	+0.5
ANMO				pmax	pmax		
	comp=Z,10.0nm,1.3s						
ANMO	Albuquerque	83.37	51	eP	P	10 10 01.1	+0.5
	comp=Z,9.6nm,1.3s						
ANMO				epP	sP	10 10 14.2	+0.5
GERES	GERESS Array B	83.53	329	P	P	10 10 01.6	+0.6
	comp=Z,0.5nm,0.5s,baz=1.3,slow=5.9,SNR=5.5						
319A	Douglas	83.87	55	eP	P	10 10 03.5	+0.4
	comp=Z,10nm,1.1s						
121A	Cookes Peak, D	84.10	53	eP	P	10 10 05.3	+0.9
	comp=Z,5.9nm,0.9s						
SCHQ	Schefferville	84.89	17	P	P	10 10 08.2	+0.6
	comp=Z,3.4nm,1.0s,baz=333,slow=4.6,SNR=3.3						
BFO	Black Forest	86.06	332	iP	P	10 10 15.4	+1.7
MNTX	Cornudas Mount	86.18	53	eP	P	10 10 15.0	+0.4
	comp=Z,8.7nm,1.4s						
MNTX				epP	sP	10 10 27.6	-0.1
V34A	Guthrie	88.09	45	eP	P	10 10 23.8	+0.1
	comp=Z,9.7nm,1.0s						
WMOK	Wichita Mounta	88.14	47	eP	P	10 10 24.0	0.0
WMOK				pmax	pmax		
	comp=Z,18nm,1.5s						
WMOK	Wichita Mounta	88.14	47	eP	P	10 10 24.0	0.0
	comp=Z,18nm,1.5s						
TX31	Lajitas Ar. Si	88.86	54	eP	P	10 10 27.4	-0.2
TXAR	Lajitas Array	88.86	54	P	P	10 10 27.7	+0.1
	comp=Z,1.1nm,0.7s,baz=301,slow=3.2,SNR=22						
MIAR	Mount Ida	91.24	44	eP	P	10 10 38.7	+0.2
MIAR				e*PP	sP	10 10 50.9	-0.7
MIAR	Mount Ida	91.24	44	eP	P	10 10 38.7	+0.2
MIAR				epP	sP	10 10 50.9	-0.7
TORD	Torodi Ar. Bea	118.43	317	PKP	PKPdf	10 16 20.1	-1.0
	comp=Z,0.3nm,0.9s,baz=320,slow=14,SNR=2.3						
LPAZ	La Paz	145.31	62	PKPbc	PKPbc	10 17 11.3	-0.5
	comp=Z,1.5nm,0.6s,baz=301,slow=2.5,SNR=8.6						
LPAZ	La Paz	145.31	62	ePKIKP	PKPbc	10 17 11.7	-0.1
LPAZ	La Paz	145.31	62	ePKPbc	PKPbc	10 17 11.7	-0.1
SIV	San Ignacio	149.85	52	PKPbc	PKPbc	10 17 22.9	-0.8
	comp=Z,0.9nm,0.6s,baz=250,slow=4.9,SNR=3.0						
PLCA	Paso Flores	153.43	109	PKPbc	PKPbc	10 17 30.0	-1.2
	comp=Z,0.9nm,0.8s,baz=54,slow=20,SNR=2.1						
PLCA				PKPab	PKPab	10 17 44.4	+0.9
	comp=Z,2.5nm,1.0s,baz=330,slow=3.5,SNR=3.6						

MEX 01 10:01:45.3±0.7, 14°.21N×93°.40W, h20km±423km, MD3.9, Near coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
THIG		1.30	57	eP	Pn	10 02 05.2	-3.1
THIG				iP	Pn	10 02 05.4	-2.8
THIG				iS	Sn	10 02 20.6	-4.5
PCIG		1.50	7	eP	Pn	10 02 08.1	-2.9
PCIG				eS	Sn	10 02 25.5	-4.5
CCIG	Comitan	2.39	30	eP	Pn	10 02 23.5	-0.1
CCIG				eS	Sn	10 02 49.5	-2.9
TGIG		2.57	6	eP	Pn	10 02 25.4	-0.4
TGIG				eS	Sn	10 02 53.1	-3.4

JMA 01 10:02:15.3, 36°.89N×140°.50E, h8km±1km, M2.5, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
JHO	Hitachi	0.28	169	P	Pg	10 02 21.0	+0.1
JHO				S	Sg	10 02 24.9	+0.2
ONAJ	Iwakimizuishiy	0.32	48	P	Pg	10 02 21.7	+0.1
ONAJ				S	Sg	10 02 26.3	+0.4
JFT	Otama	0.64	348	P	Pg	10 02 27.8	+0.1
JFT				S	Sg	10 02 36.6	+0.5
MAT	Matsushiro	1.88	260	P	Pn	10 02 48.6	+0.9
MAT				S	Sb	10 03 12.7	-0.7

WEL 01 10:03:00.2±0.5, 37°.58S×176°.39E, h199km±3km, ML3.7/6, 5C-4D, Error ellipse: s-maj=3.3km s-min=3.0km az=0.0, North Island

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
OPRZ	Ohinepanea	0.29	153	⇑PN	Pn	10 03 27.0	+0.4
URZ	Urewera	0.88	140	⇓PN	Pn	10 03 28.7	-0.4
URZ				SN	Sn	10 03 51.3	-0.3
URZ				AML	AML	10 03 53.6	
TLZ	Tolley Road	1.00	222	⇑PN	Pn	10 03 30.2	+0.2
HAZ	Te Kaha	1.12	99	PN	Pn	10 03 30.1	-0.6
HAZ				SN	Sn	10 03 53.8	-0.4
MWZ	Matawai	1.17	130	PN	Pn	10 03 31.1	-0.1
MWZ				SN	Sn	10 03 55.5	+0.3
MWZ				AML	AML	10 03 57.5	
RAGZ	Rawiri	1.22	139	PN	Pn	10 03 31.8	+0.3
RAGZ				SN	Sn	10 03 56.8	+0.8
MRHZ	Matea Rd	1.25	179	PN	Pn	10 03 31.7	-0.1
TWGZ	Tauwhareparae	1.39	116	PN	Pn	10 03 33.4	+0.5
SNGZ	Shannon Statio	1.41	148	PN	Pn	10 03 33.3	+0.2
TKGZ	Te Karaka	1.43	127	PN	Pn	10 03 33.4	+0.2
RAHZ	Arahi	1.44	158	PN	Pn	10 03 33.7	+0.4
MXZ	Matakaoa Point	1.52	90	PN	Pn	10 03 34.0	-0.1
PUZ	Puketiti	1.56	109	PN	Pn	10 03 34.2	-0.2
RIGZ	Rimuhau	1.56	136	PN	Pn	10 03 34.7	+0.3
BKZ	Black Stump Fm	1.58	177	⇑PN	Pn	10 03 34.0	-0.7
BKZ				AML	AML	10 04 02.2	
BKZ				AML	AML	10 04 02.9	
WMGZ	Waiomatatini S	1.62	99	PN	Pn	10 03 35.1	+0.2
WHHZ	Waihua	1.63	156	PN	Pn	10 03 35.3	+0.3
CNGZ	Carnagh Statio	1.69	123	PN	Pn	10 03 36.3	+0.7
NGZ	Ngauruhoe	1.71	201	PN	Pn	10 03 35.9	0.0
ARHZ	Aropaoanui	1.74	164	PN	Pn	10 03 36.3	+0.2
KNZ	Kokohu	1.76	145	PN	Pn	10 03 35.9	-0.3
TUVZ	Tukino	1.78	199	PN	Pn	10 03 36.2	-0.4
PRGZ	Paritu Road	1.78	139	PN	Pn	10 03 36.4	-0.1
FWVZ	Far West T-bar	1.79	201	PN	Pn	10 03 36.6	-0.2
WNVZ	Wahianoa	1.85	199	⇓PN	Pn	10 03 36.7	-0.6
MOVZ	Moawhango	1.89	195	PN	Pn	10 03 36.5	-1.1
BHHZ	Black Hill Sta	1.92	188	PN	Pn	10 03 36.9	-1.0
MTVZ	Mangateitei	1.94	202	PN	Pn	10 03 37.5	-0.6
MHGZ	Mahia Peninsul	1.97	143	PN	Pn	10 03 38.3	0.0
KRHZ	Kereru	2.06	180	PN	Pn	10 03 38.5	-0.7
CKHZ	Cape Kidnapper	2.14	166	PN	Pn	10 03 39.9	-0.2
KAHZ	Kahuranaki	2.24	170	PN	Pn	10 03 40.6	-0.6
PNHZ	Pukenui	2.33	184	PN	Pn	10 03 41.1	-1.1
WAZ	Wanganui	2.43	206	PN	Pn	10 03 42.2	-1.1
PXZ	Pawanui	2.47	172	PN	Pn	10 03 42.5	-1.2
PXZ				AML	AML	10 04 17.7	
PXZ				AML	AML	10 04 19.0	
WPHZ	Waipukurau	2.48	179	PN	Pn	10 03 41.6	-2.2
TSZ	Takapari Road	2.49	188	PN	Pn	10 03 42.4	-1.6
DVHZ	Dannevirke	2.72	184	PN	Pn	10 03 44.6	-1.9
POWZ	Post Office Ro	2.85	190	PN	Pn	10 03 46.0	-2.0
ANWZ	Angora Road	2.87	179	⇓PN	Pn	10 03 46.9	-1.4
PRWZ	Pori Road	2.98	186	PN	Pn	10 03 47.8	-1.8
BFZ	Birch Farm	3.10	182	PN	Pn	10 03 48.8	-2.1
MRZ	Mangatainoka R	3.14	191	⇑PN	Pn	10 03 48.6	-2.7
MRZ				AML	AML	10 04 30.6	
TIWZ	Tintock	3.21	187	PN	Pn	10 03 50.0	-2.4
OGWZ	Otaki Gorge	3.37	196	PN	Pn	10 03 51.5	-2.6
HOWZ	Holdsworth Sta	3.38	191	PN	Pn	10 03 51.2	-3.1
KIW	Kapiti Island	3.47	199	PN	Pn	10 03 52.1	-3.2
TMWZ	Te Maipa	3.54	186	PN	Pn	10 03 53.3	-3.0
CAW	Cannon Point	3.67	196	PN	Pn	10 03 54.4	-3.4
DUWZ	D'Urville Isla	3.74	210	PN	Pn	10 03 55.3	-3.5
WEL	Wellington	3.90	198	PN	Pn	10 03 57.3	-3.4
MSWZ	Moikau Station	3.93	193	PN	Pn	10 03 57.4	-3.7
MSWZ				AML	AML	10 04 45.9	
TCW	Tory Channel	3.98	204	PN	Pn	10 03 58.1	-3.5
PLWZ	Palliser	4.08	192	PN	Pn	10 03 59.0	-3.9
TUWZ	Tuamarina	4.28	205	PN	Pn	10 04 01.4	-4.0
NNZ	Nelson	4.31	212	PN	Pn	10 04 02.0	-3.8
QRZ	Quartz Range	4.41	222	PN	Pn	10 04 03.7	-3.4
THZ	Tophouse	4.96	212	PN	Pn	10 04 11.0	-3.1
KHZ	Kahutara	5.30	204	⇓PN	Pn	10 04 14.0	-4.3
LTZ	Lake Taylor	6.07	210	PN	Pn	10 04 23.4	-5.0
OXZ	Oxford	6.63	209	PN	Pn	10 04 29.6	-5.9
MQZ	McQueen's Vall	6.74	204	⇑PN	Pn	10 04 31.2	-5.7

*ISCJB **01** 10:14:01.6±0.6, 1°.73S±0°.06×122°.60E±0°.06, h33km, mb3.5/6, Error ellipse: s-maj=9.7km s-min=7.2km az=40.3*
*DJA **01** 10:14:02.3±0.6, 2°S±5°×12°3E±°, h26km±9km, M4.5/10, mB5.0/1, mb4.7/2, MLv4.4/10, Mw(mB)4.4/1*
*IDC **01** 10:14:03.3±1.0, 2°.20S×122°.76E, h0km, mb3.4/6, mb1 3.6/7, mb1mx3.4/51, mbtmp3.5/7, ML3.9/1, MS2.2/1, Ms1 2.2/1, ms1mx2.1/31, Error ellipse: s-maj=34.9km s-min=17.3km az=69.0*
ISC 01 10:14:03.1±1.1, 1°.66S±0°.06×122°.58E±0°.06, h35km, n14, σ0s.56/12, mb3.5/6, Sulawesi

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
LUWI	Luwuk	0.64	18	P	Pn	10 14 15.5	-0.2
APSI	Ampana	1.19	309	P	Pn	10 14 22.6	-0.6
MRSI	Marisa	2.21	343	P	Pn	10 14 37.6	+0.3
TTSI	Tana Toraja	3.08	243	P	Pn	10 14 49.5	+0.2
SANI	Sanana	3.43	97	P	Pn	10 14 53.5	-0.6
KAPI	Kappang	4.37	220	Pn	Pn	10 15 06.8	-0.1
	6.7nm,0.3s,baz=38,slow=4.0,SNR=29						
KAPI				Sn	Sn	10 15 56.8	+0.2
	6.7nm,0.3s,baz=204,slow=21,SNR=6.6						
KAPI				LR	LR	10 16 45.7	
	comp=Z,34nm,21.2s,baz=75,slow=40						
BSSI	Bau Bau, Buton	4.92	205	P	Pn	10 15 14.3	-0.2
LBMI	Labuha	5.03	78	P	Pn	10 15 16.4	+0.4
	117nm,0.9s,2μm0.4nm						
WRA	Warramunga Arr	21.51	148	P	P	10 18 49.4	+0.3
	1.3nm,0.8s,baz=333,slow=10,SNR=3.5						
ASAR	Alice Springs	24.48	154	P	P	10 19 18.0	-1.1
	0.6nm,0.7s,baz=335,slow=7.4,SNR=7.2						
STKA	Stephens Creek	35.01	151	P	P	10 20 52.9	+0.5
	0.9nm,0.7s,baz=317,slow=19,SNR=1.7						
SONM	Songino Array	51.28	346	P	P	10 23 14.5	+11
	0.5nm,0.6s,baz=150,slow=8.5,SNR=2.4						
MKAR	Makanchi Array	59.80	329	P	P	10 24 13.6	+8.7
	0.3nm,0.7s,baz=120,slow=9.4,SNR=2.7						
KURBB	Kurchatov Arra	64.18	331	P	P	10 24 43.3	+9.1
	0.4nm,0.8s,baz=134,slow=6.6,SNR=2.9						

*IDC **01** 10:15:36.4±5.6, 35°.99N×71°.36E, h92km±44km, mb3.2/6, mb1 3.4/11, mb1mx3.2/63, mbtmp3.7/11, Error ellipse: s-maj=46.9km s-min=24.8km az=55.0*
*ISCJB **01** 10:15:39.0±1.1, 36°.39N±0°.08×70°.78E±0°.09, h102km, mb3.3/5, Error ellipse: s-maj=11.6km s-min=9.7km az=147.6*
*NNC **01** 10:15:42.9±2.2, 36°.59N×70°.59E, h128km±26km, mb3.3, mpv4.0, Error ellipse: s-maj=20.0km s-min=10.7km az=166.0*
ISC 01 10:15:37.5±1.3, 36°.2N±0°.1×70°.77E±0°.09, h102km, n19, σ1s.59/24, mb3.3/5, 6C-9D, Hindu Kush region

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
DZET	Dzherino	3.02	330	⇑P	Pn	10 16 25.1	+1.4
	7.1nm,0.2s						
DZET				⇓S	Sn	10 16 57.1	-2.1
	38nm,0.2s						
SFK	Sufi-Kurgan	4.37	29	⇑P	Pn	10 16 44.3	+2.5
	60nm,0.4s						
SFK				⇑S	Sn	10 17 33.3	+1.5
	30nm,0.3s						
MNAS	Manas	6.42	12	⇓P	Pn	10 17 10.3	+0.8
	5.4nm,0.5s						
MNAS				⇓S	Sn	10 18 20.9	-0.4
	9.0nm,0.4s						
KK31	Karatay Array	6.89	358	⇓P	Pn	10 17 16.3	+0.4
	8.8nm,0.3s,baz=179,slow=12,SNR=153						
KK31				⇓S	Sn	10 18 30.4	-2.3
	1.6nm,0.3s,baz=182,slow=21,SNR=7.8						
AAK	Ala-Archa	7.04	23	P	Pn	10 17 18.9	+1.0
	3.9nm,0.3s,baz=175,slow=6.0,SNR=40						
AAK				S	Sn	10 18 34.3	-2.1
	1.9nm,0.3s,baz=130,slow=22,SNR=9.5						
AAK	Ala-Archa	7.04	23	⇓P	Pn	10 17 18.7	+0.8
	3.5nm,0.3s						
AAK				⇓S	Sn	10 18 35.9	-0.5
	5.8nm,0.3s						
TKM2	Tokmak 2	7.67	28	⇑P	Pn	10 17 27.3	+0.7
	2.3nm,0.3s						
TKM2				⇑S	Sn	10 18 48.7	-3.2
	7.1nm,0.8s						
MKAR	Makanchi Array	13.64	36	P	Pn	10 18 45.8	-0.7
	0.2nm,0.3s,baz=220,slow=13,SNR=6.3						
AB31	Akbulak array	15.26	332	⇓P	Pn	10 19 07.3	+0.2
	1.7nm,0.4s,baz=153,slow=12,SNR=88						
AB31				⇓S	Sn	10 21 45.8	-10
	0.6nm,0.5s,baz=156,slow=24,SNR=4.9						
KURBB	Kurchatov Arra	15.46	19	P	P	10 19 10.8	-1.1
	0.0nm,0.3s,baz=204,slow=11,SNR=5.2						
BVAR	Borovoye Array	16.82	359	P	P	10 19 27.0	0.0
	0.3nm,0.3s,baz=158,slow=13,SNR=6.9						
AKTO	Aktyubinsk	16.95	331	P	P	10 19 30.5	+2.1
	0.4nm,0.3s,baz=147,slow=13,SNR=16						
AKTO	Aktyubinsk	16.95	331	⇑P	P	10 19 29.8	+1.4
	2.9nm,0.6s						
ZALV	Zalesovo Beam	20.26	24	P	P	10 20 04.8	+0.3
	1.9nm,0.4s,baz=229,slow=9.0,SNR=8.1						
ARCES	ARCESS Array B	41.35	338	P	P	10 23 16.4	+3.6
	1.2nm,0.8s,baz=114,slow=9.0,SNR=2.6						
ILAR	Eielson Array	75.11	16	P	P	10 27 08.8	+0.8
	0.4nm,1.1s,baz=11,slow=0.9,SNR=2.8						
YKA	Yellowknife Ar	81.55	3	P	P	10 27 43.9	+0.6
	0.1nm,0.5s,baz=349,slow=5.5,SNR=5.5						
WRA	Warramunga Arr	81.99	122	P	P	10 27 42.9	-3.4
	0.3nm,0.5s,baz=314,slow=4.9,SNR=2.4						
ASAR	Alice Springs	84.24	125	P	P	10 27 55.5	-2.4
	0.3nm,0.8s,baz=306,slow=4.4,SNR=3.9						

*NIED **01** 10:23:00, 38°.60N×142°.00E, h59km, Mw3.9 Best double couple: M₀7.70000×10¹⁴ NP1:φs320.00000°, δ57.00000°, λ-14.00000°. NP2:φs58.00000°, δ78.00000°, λ-146.00000°.*
*ISCJB **01** 10:23:56.9±1.1, 38°.62N±0°.05×142°.1E±0°.1, h54km±8km, mb3.4/7, Error ellipse: s-maj=14.3km s-min=7.5km az=11.6*
*JMA **01** 10:23:57.7±0.1, 38°.62N×141°.98E, h53km±1km, M3.8*
JMA Felt II J1.
*IDC **01** 10:24:00.5±3.3, 38°.64N×142°.04E, h74km±30km, mb3.2/7, mb1 3.4/10, mb1mx3.2/58, mbtmp3.5/10, Error ellipse: s-maj=28.0km s-min=17.2km az=93.0*
ISC 01 10:23:57.7±1.9, 38°.63N±0°.06×142°.1E±0°.1, h44km±16km, n25, σ1s.48/27, mb3.4/7, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
OFUJ	Ofunato	0.56	323	P	Pn	10 24 09.4	0.0
JIO	Ouri	0.61	254	P	Pn	10 24 09.4	-0.7
JIO				S	Sn	10 24 17.6	-1.3
JMK	Ichinoseki	0.76	295	P	Pn	10 24 11.6	-0.4
JMK				S	Sn	10 24 21.4	-0.9
JOM	Ohasama	1.05	324	P	Pn	10 24 15.9	-0.1
JOM				S	Sn	10 24 29.0	-0.5
JOU	Okura	1.16	257	P	Pn	10 24 16.6	-0.8
JOU				S	Sn	10 24 30.5	-1.6
JMM	Marumori	1.28	234	P	Pn	10 24 18.0	-1.1
JMM				S	Sn	10 24 33.0	-2.1
JRG	Rokugo	1.37	304	P	Pn	10 24 19.8	-0.6
JRG				S	Sn	10 24 37.0	-0.4
JYK	Kaneyama	1.39	282	P	Pn	10 24 20.0	-0.6
JYK				eS	Sn	10 24 36.8	-1.0
MJAR	Matsushiro Arr	3.73	237	P	Pn	10 24 54.3	+1.6
	2.6nm,0.3s,baz=41,slow=11,SNR=27						
MAT	Matsushiro	3.73	237	P	Pn	10 24 54.3	+1.6
MAT				eS	Sn	10 25 38.8	+3.4
USRK	Ussuriysk Ar.	9.41	309	P	Pn	10 26 12.9	+2.3
	0.2nm,0.3s,baz=113,slow=13,SNR=4.7						
KSRS	Korea Array	11.24	268	P	Pn	10 26 38.7	+3.1
	0.2nm,0.3s,baz=78,slow=15,SNR=5.0						
SEY	Seymchan	25.12	11	P	P	10 29 18.0	-0.1
	1.2nm,0.8s,baz=208,slow=7.6,SNR=7.4						
SONM	Songino Array	27.38	301	P	P	10 29 39.8	+1.0
	0.2nm,0.3s,baz=112,slow=10,SNR=2.7						
H11N2	WAKE ISLAND Hy	28.55	124	T	T	10 57 46.2	
	baz=317,slow=75,SNR=10						
H11N1	WAKE ISLAND Hy	28.56	124	T	T	10 57 42.5	
	baz=317,slow=75,SNR=12						
H11N3	WAKE ISLAND Hy	28.57	124	T	T	10 57 41.7	
	baz=317,slow=75,SNR=6.6						
H11S1	WAKE ISLAND Hy	29.32	126	T	T	10 58 36.1	
	baz=318,slow=76,SNR=11						
H11S3	WAKE ISLAND Hy	29.32	126	T	T	10 58 37.3	
	baz=318,slow=76,SNR=11						
H11S2	WAKE ISLAND Hy	29.33	126	T	T	10 58 38.7	
	baz=318,slow=76,SNR=12						
ZALV	Zalesovo Beam	41.26	311	P	P	10 31 37.1	-1.1
	0.5nm,0.4s,baz=87,slow=6.5,SNR=2.6						
MKAR	Makanchi Array	43.75	301	P	P	10 31 57.1	-1.5
	0.5nm,0.6s,baz=86,slow=11,SNR=6.1						
ILAR	Eielson Array	47.86	33	P	P	10 32 30.7	-0.1
	0.2nm,0.6s,baz=252,slow=5.6,SNR=2.4						
WRA	Warramunga Arr	58.72	189	P	P	10 33 50.2	-0.7
	0.4nm,0.7s,baz=5.1,slow=7.2,SNR=2.7						
ASAR	Alice Springs	62.44	188	P	P	10 34 16.2	0.0
	0.3nm,1.0s,baz=151,slow=34,SNR=2.8						

*NIED **01** 10:25:00, 38°.40N×142°.20E, h20km, Mw3.6 Best double couple: M₀2.65000×10¹⁴ NP1:φs90.00000°, δ30.00000°, λ-49.00000°. NP2:φs225.00000°, δ68.00000°, λ-111.00000°.*
JMA 01 10:25:57.2±0.2, 38°.38N×142°.25E, h36km±3km, M3.9, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
JIO	Ouri	0.71	276	P	Pn	10 26 10.8	+0.1
JIO				S	Sn	10 26 19.8	-0.6
OFUJ	Ofunato	0.83	327	P	Pn	10 26 12.5	+0.1
JMK	Ichinoseki	0.99	306	P	Pn	10 26 15.0	+0.5
MIYJ	Miyakonagasawa	1.24	344	P	Pn	10 26 18.2	+0.2
JOU	Okura	1.25	270	P	Pn	10 26 19.1	+1.0
JOU				S	Sn	10 26 34.8	+1.2
JMM	Marumori	1.26	246	P	Pn	10 26 18.4	+0.2
JOM	Ohasama	1.32	326	P	Pn	10 26 20.1	+1.0
JOM				S	Sn	10 26 37.1	+1.6
JYK	Kaneyama	1.57	291	P	Pn	10 26 24.1	+1.5
JRG	Rokugo	1.62	309	P	Pn	10 26 24.7	+1.5
JYS	Shirataka	1.73	265	P	Pn	10 26 26.0	+1.3
JFT	Otama	1.74	241	eS	Sn	10 26 46.7	+0.9
JKZ	Kuzumaki	1.75	336	P	Pn	10 26 26.7	+1.6
JANG	Nango	2.07	344	P	Pn	10 26 31.2	+1.8
MAT	Matsushiro	3.70	242	P	Pn	10 27 00.2	+8.3
MAT				eS	Sn	10 27 45.9	+12

*NIED **01** 10:28:00, 37°.40N×141°.40E, h32km, Mw4.1 Best double couple: M₀1.35000×10¹⁵ NP1:φs149.00000°, δ48.00000°, λ-39.00000°. NP2:φs268.00000°, δ62.00000°, λ-131.00000°.*
*ISCJB **01** 10:28:33.2±0.9, 37°.38N±0°.03×141°.48E±0°.06, h19km±6km, mb3.8/21, MS3.2/2, Error ellipse: s-maj=8.9km*

s-min=4.6km az=15.8

*JMA **01** 10:28:35.1±0.1,37°.41N×141°.35E,h32km±2km,M4.1*

JMA Felt II J1.

*IDC **01** 10:28:39.0±1.9,37°.34N×141°.26E,h56km±19km,mb3.6/19, mb1 3.9/24,mb1mx3.8/49,mbtmp4.0/24,ML3.0/3,MS3.2/8, Ms1 3.2/8,ms1mx2.9/43,Error ellipse: s-maj=17.7km s-min=11.2km az=89.0*

ISC 01 10:28:31.9±1.7,**37°.36N**±0°.04×**141°.49E**±0°.06,**h1**km±10km, **n46,**σ**0s.97**/43,**mb3.9**/21,**Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
ONAJ	Iwakimizuishiy	0.61	245	P	Pb	10 28 45.9	+0.5
ONAJ				S	Sb	10 28 53.6	-0.9
JMM	Marumori	0.75	313	P	Pb	10 28 47.3	-0.5
JMM				S	Sg	10 28 55.8	-0.2
JFT	Otama	0.93	280	P	Pb	10 28 50.8	-0.1
JFT				S	Sg	10 29 01.7	-0.2
JHO	Hitachi	1.05	225	P	Pg	10 28 52.1	+0.1
JHO				eS	Sg	10 29 04.3	-1.3
JIO	Ouri	1.10	354	P	Pg	10 28 53.2	+0.2
JIO				S	Sg	10 29 06.2	-1.1
JOU	Okura	1.20	327	P	Pg	10 28 55.0	+0.1
JOU				S	Sg	10 29 09.6	-0.9
MJAR	Matsushiro Arr	2.75	254	P	Pn	10 29 17.7	+0.5
	11nm,0.3s,baz=82,slow=16,SNR=30						
MAT	Matsushiro	2.75	254	P	Pn	10 29 18.0	+0.7
MAT				S	Sn	10 29 51.7	+0.5
JHJ	Hachijo jima 2	4.46	199	P	Pn	10 29 41.6	+0.9
	44nm,0.3s,baz=330,slow=18,SNR=11						
JHJ				S	Sn	10 30 33.4	+0.3
	41nm,0.3s,baz=86,slow=23,SNR=6.1						
JHJ				LR	LR	10 31 31.2	
	comp=Z,146nm,20.1s,baz=58,slow=39						
JNU	Nakatsue	9.65	247	P	Pn	10 30 54.2	+2.2
	0.1nm,0.3s,baz=28,slow=10,SNR=3.0						
USRK	Ussuriysk Ar.	9.93	316	P	Pn	10 30 57.2	+1.5
	0.3nm,0.3s,baz=116,slow=12,SNR=4.6						
USRK				LR	LR	10 34 22.4	
	comp=Z,151nm,21.0s,baz=125,slow=35						
JCJ	Chichijima	10.25	177	P	Pn	10 31 04.5	+4.3
	11nm,0.3s,baz=284,slow=23,SNR=5.5						
JCJ				LR	LR	10 34 07.3	
	comp=Z,306nm,21.4s,baz=293,slow=32						
KSRS	Korea Array	10.79	275	P	Pn	10 31 11.1	+3.5
	0.1nm,0.3s,baz=89,slow=13,SNR=6.5						
KSRS				LR	LR	10 35 10.8	
	comp=Z,128nm,18.5s,baz=104,slow=37						
KLR	Kul'dur	13.81	332	P	P	10 31 58.0	+0.6
	0.2nm,0.3s,baz=128,slow=10,SNR=3.8						
KLR				LR	LR	10 36 56.6	
	comp=Z,91nm,20.5s,baz=302,slow=36						
PETK	Petropavlovsk-	19.38	30	LR	LR	10 40 27.9	
	comp=Z,37nm,19.3s,baz=198,slow=36						
MA2	Magadan	23.02	12	P	P	10 33 38.8	+0.6
	5.8nm,0.7s,baz=217,slow=8.3,SNR=10.0						
YAK	Yakutsk	25.77	347	LR	LR	10 44 45.0	
	comp=Z,70nm,18.8s,baz=150,slow=38						
SEY	Seymchan	26.46	11	P	P	10 34 11.3	+1.1
	3.7nm,0.9s,baz=201,slow=7.8,SNR=16						
SONM	Songino Array	27.66	303	P	P	10 34 21.3	0.0
	1.0nm,0.7s,baz=102,slow=9.2,SNR=6.1						
H11N2	WAKE ISLAND Hy	28.26	121	T	T	11 04 38.0	
	baz=315,slow=75,SNR=71						
H11N1	WAKE ISLAND Hy	28.27	121	T	T	11 04 38.8	
	baz=315,slow=75,SNR=5.5						
H11N3	WAKE ISLAND Hy	28.28	121	T	T	11 04 39.6	
	baz=315,slow=75,SNR=111						
H11S1	WAKE ISLAND Hy	28.99	123	T	T	11 05 37.7	
	baz=316,slow=76,SNR=98						
H11S3	WAKE ISLAND Hy	28.99	124	T	T	11 05 43.0	
	baz=316,slow=76,SNR=6.0						
H11S2	WAKE ISLAND Hy	29.00	124	T	T	11 05 36.7	
	baz=316,slow=76,SNR=80						
TLY	Talaya	30.16	311	LR	LR	10 47 15.1	
	comp=Z,45nm,19.4s,baz=106,slow=37						
ZALV	Zalesovo Beam	41.74	312	P	P	10 36 21.3	-1.1
	1.3nm,0.6s,baz=94,slow=6.7,SNR=4.3						
MKAR	Makanchi Array	44.00	302	P	P	10 36 39.7	-1.2
	1.0nm,0.8s,baz=83,slow=9.9,SNR=5.6						
ILAR	Eielson Array	49.19	33	P	P	10 37 22.1	+0.9
	0.8nm,0.7s,baz=270,slow=6.4,SNR=10						
INK	Inuvik	54.07	27	P	P	10 37 57.8	+0.1
	0.9nm,1.0s,baz=292,slow=6.9,SNR=3.3						
WRA	Warramunga Arr	57.39	188	P	P	10 38 21.2	-0.8
	1.6nm,0.5s,baz=6.0,slow=7.5,SNR=14						
ASAR	Alice Springs	61.12	188	P	P	10 38 47.5	-0.3
	0.9nm,0.8s,baz=12,slow=10,SNR=10						
YKA	Yellowknife Ar	63.50	30	P	P	10 39 03.3	-0.1
	0.3nm,0.7s,baz=305,slow=6.9,SNR=6.7						
ARCES	ARCESS Array B	63.71	339	P	P	10 39 04.3	-0.4
	2.8nm,1.0s,baz=52,slow=7.9,SNR=4.6						
FINES	FINESS Array B	68.56	332	P	P	10 39 34.6	-1.3
	0.9nm,0.7s,baz=290,slow=34,SNR=3.8						
STKA	Stephens Creek	68.88	180	P	P	10 39 37.0	-1.1
	1.4nm,0.7s,baz=315,slow=10.0,SNR=3.4						
KBZ	Khabaz	70.74	311	P	P	10 39 51.4	+1.8
	0.6nm,0.5s,baz=338,slow=9.6,SNR=3.3						
NB2	NORSAR Subarra	73.91	337	P	P	10 40 07.3	-1.1
	comp=Z,1.3nm,0.7s,baz=40,slow=6.2						
NOA	NORSAR Array B	73.91	337	P	P	10 40 07.4	-1.0
	comp=Z,0.5nm,0.6s,baz=40,slow=5.8,SNR=3.5						
AKASG	Malin Array Be	74.08	322	P	P	10 40 08.0	-1.5
	comp=Z,1.0nm,0.4s,baz=46,slow=6.2,SNR=6.9						
NVAR	Mina Array Bea	74.75	53	P	P	10 40 15.0	+1.1
	comp=Z,0.7nm,0.7s,baz=286,slow=5.4,SNR=7.9						
PDAR	Pinedale Array	77.39	46	P	P	10 40 29.4	+0.4
	comp=Z,0.4nm,0.6s,baz=292,slow=1.2,SNR=4.7						
BRTR	Keskin Array B	78.68	312	P	P	10 40 37.7	+1.7
	comp=Z,0.3nm,0.5s,baz=27,slow=36,SNR=2.4						
GERES	GERESS Array B	82.47	328	P	P	10 40 54.7	-1.4
	comp=Z,0.2nm,0.3s,baz=264,slow=40,SNR=2.8						
TXAR	Lajitas Array	89.87	52	P	P	10 41 33.4	+0.4
	comp=Z,0.8nm,0.6s,baz=297,slow=3.0,SNR=15						
LPAZ	La Paz	146.47	59	PKPbc	PKPdf	10 48 14.8	+0.1
	comp=Z,1.1nm,0.5s,baz=272,slow=4.7,SNR=8.0						

JMA 01 10:30:27.4,36°.83N×140°.55E,h5km±1km,M3.0,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
JHO	Hitachi	0.22	176	P	Pg	10 30 31.7	0.0
JHO				S	Sg	10 30 34.8	+0.2
ONAJ	Iwakimizuishiy	0.34	36	P	Pg	10 30 34.1	+0.1
ONAJ				S	Sg	10 30 38.9	+0.5
JFT	Otama	0.71	346	P	Pg	10 30 41.4	+0.4
JFT				S	Sg	10 30 50.9	+0.7
JMM	Marumori	1.05	11	P	Pg	10 30 47.2	-0.4
JMM				S	Sg	10 31 00.8	-0.5
JOU	Okura	1.54	3	S	Sn	10 31 15.7	-0.1
MAT	Matsushiro	1.91	262	P	Pn	10 31 01.2	+0.6
MAT				S	Sn	10 31 25.8	+0.9

JMA 01 10:37:17.1,36°.26N×140°.96E,h34km±1km,M2.5,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
JHO	Hitachi	0.47	318	P	Pb	10 37 26.9	-0.4
JHO				S	Sb	10 37 34.0	-0.4
CHOJ	Chosi	0.56	188	P	Pn	10 37 28.2	-0.4
JRY	Ryogami san	1.68	262	P	Pn	10 37 44.7	+0.5
MJAR	Matsushiro Arr	2.24	278	Pn	Pn	10 37 53.3	+1.5
	0.7nm,0.3s,baz=116,slow=8.1,SNR=5.4						

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*IDC **01** 10:36:59.5±2.1,39°.58N×140°.08E,h0km,mb3.6/4, mb1 3.6/4,mb1mx3.3/42,mbtmp3.6/4,ML2.7/1,Error ellipse: s-maj=43.4km s-min=33.1km az=128.0*

*ISCJB **01** 10:37:24.0±0.6,41°.00N±0°.05×140°.0E±0°.1,h170km±4km, mb3.3/4,Error ellipse: s-maj=12.7km s-min=8.8km az=178.2*

*JMA **01** 10:37:24.9±0.1,41°.01N×140°.09E,h170km±1km,M3.0*

ISC 01 10:37:25.1±1.0,**40°.98N**±0°.06×**140°.03E**±0°.08,**h167**km±7km, **n15,**σ**0s.67**/22,**mb3.4**/4,**Eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
JSI2	Shiura 2	0.30	76	P	Pn	10 37 47.7	+0.1
JSI2				eS	Sn	10 38 04.9	0.0
JIW	Iwasaki	0.39	183	P	Pn	10 37 48.3	+0.3
JIW				eS	Sn	10 38 06.2	+0.7
JSR	Shiriuchi	0.62	28	P	Pn	10 37 48.8	-0.1
JSR				eS	Sn	10 38 06.8	-0.5
JTM	Tenmabayashi	0.81	104	P	Pn	10 37 50.1	0.0
JTM				eS	Sn	10 38 09.3	0.0
JOT	Ohata	0.86	62	P	Pn	10 37 50.4	-0.1
JAH	Hinai	0.92	150	P	Pn	10 37 51.0	+0.1
JOSM	Okushiri--Mats	1.17	339	P	Pn	10 37 52.8	-0.1
JOSM				eS	Sn	10 38 13.9	-0.5
JANG	Nango	1.28	118	P	Pn	10 37 53.3	-0.6
JOM	Ohasama	1.79	147	P	Pn	10 37 58.6	-0.4
JYK	Kaneyama	2.08	173	P	Pn	10 38 02.0	-0.2
JYK				eS	Sn	10 38 30.4	-0.5
JNBK	Urakawa-nobuka	2.42	57	P	Pn	10 38 05.8	-0.2
JNBK				eS	Sn	10 38 37.1	-0.7
ZALV	Zalesovo Beam	38.53	309	P	P	10 44 30.1	-0.9
	0.6nm,0.4s,baz=90,slow=7.6,SNR=1.8						
MKAR	Makanchi Array	41.21	298	P	P	10 44 53.0	-0.3
	0.7nm,0.9s,baz=84,slow=11,SNR=5.1						
KURBB	Kurchatov Arra	42.80	305	P	P	10 45 04.9	-1.1
	0.7nm,0.4s,baz=80,slow=8.6,SNR=6.6						
ILAR	Eielson Array	46.79	34	P	P	10 45 39.2	+1.8
	0.1nm,0.5s,baz=280,slow=8.9,SNR=4.3						

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*ISCJB **01** 10:39:47.4±1.3,7°.9S±0°.2×122°.00W±0°.09,h10km, mb4.7/48,MS3.8/8,Error ellipse: s-maj=25.5km s-min=12.0km az=4.8*

*IDC **01** 10:39:54.4±1.2,6°.84S×122°.31W,h0km,mb4.4/12, mb1 4.6/12,mb1mx4.4/28,mbtmp4.4/12,MS3.8/8, Ms1 3.8/8,ms1mx3.6/19,Error ellipse: s-maj=42.0km s-min=22.7km az=63.0*

*NEIC **01** 10:39:56.4±0.6,6°.84S×122°.25W,h10km,mb4.8/35,Error ellipse: s-maj=15.0km s-min=11.2km az=67.0*

ISC 01 10:39:56.2±0.8,**6°.8S**±0°.2×**122°.1W**±0°.2,**h10**km,**n339,** σ**0s.66**/326,**mb4.8**/48,**MS3.8**/8,**South Pacific Ocean**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
TAOE	Nuku Hiva Isla	17.99	262	eLR	LR	10 47 43.3	
	640nm,27.8s						
RKT	Rikitea	20.38	216	eLQ	LQ	10 48 22.8	
	517nm,30.0s						
RKT	Rikitea	20.38	216	eT	T	11 05 27.2	
	1.0nm,0.3s						
MEH	Mehetia	27.59	244	eT	T	11 13 41.7	
	15nm,0.2s						
PPT	Papeete	28.85	246	LR	LR	10 54 08.5	
	comp=Z,85nm,19.1s,baz=102,slow=30						
PPT2	Papeete2	28.85	246	eLR	LR	10 52 58.5	
	367nm,29.0s,baz=69						
TBI	Tubuai	31.00	235	eLR	LR	10 54 09.6	
	210nm,30.0s						
214A	Organ Pipe Nat	39.58	12	P	P	10 47 28.9	+1.0
	baz=195						
IBP	Imperial Bould	39.69	8	P	P	10 47 30.1	+1.3
	baz=190						
SCI2	San Clemente I	39.74	5	P	P	10 47 30.2	+1.1
	baz=186						
MONP2	Monument Peak	39.88	7	P	P	10 47 31.8	+1.3
	baz=189,SNR=7.7						
SWSC	Sam W. Stewart	40.01	8	P	P	10 47 32.2	+0.9
	baz=190						
TXAR	Lajitas Array	40.10	25	P	P	10 47 33.2	+0.9
	1.9nm,0.9s,baz=203,slow=12,SNR=21						
TXAR				PcP	PcP	10 49 35.8	-1.1
	0.3nm,0.8s,baz=198,slow=5.5,SNR=2.9						
TXAR				LR	LR	11 00 28.7	
	comp=Z,74nm,18.9s,baz=0.0,slow=31						
GLA	Glamis	40.27	9	P	P	10 47 34.8	+1.3
	baz=191						
TUC	Tucson	40.40	15	P	P	10 47 35.4	+0.7
	baz=198						
TUC	Tucson	40.40	15	eP	P	10 47 35.4	+0.7
	5.6nm,1.3s						
PFO	Pinyon Flats O	40.58	7	P	P	10 47 37.7	+1.5
	baz=189						
034A	Hebbronville	40.62	33	P	P	10 47 38.4	+1.9
	baz=217						
BC3	Big Chuckawall	40.76	9	P	P	10 47 39.0	+1.3
	baz=190,SNR=11						
832A	Faith Ranch, C	40.93	30	P	P	10 47 39.3	+0.3
	baz=215						
Y12C	Blythe	41.00	10	P	P	10 47 40.4	+0.9
	baz=192						
BELC	Belle Mtn. Jos	41.02	8	P	P	10 47 40.9	+1.0
	baz=189,SNR=5.5						
BFSC	Mount Baldy Ra	41.07	6	P	P	10 47 41.2	+1.0
	baz=187,SNR=5.9						
BBRC	Big Bear Solar	41.17	7	P	P	10 47 42.0	+0.8
	baz=188						
833A	Chaparral WMA,	41.26	31	P	P	10 47 42.3	+0.6
	baz=216						
IRM	Iron Mountain	41.30	9	P	P	10 47 43.0	+0.9
	baz=191,SNR=9.2						
OSI	Osito Audit: C	41.35	4	P	P	10 47 43.9	+1.4
	baz=185						
121A	Cookes Peak, D	41.46	18	P	P	10 47 44.4	+0.9
	baz=202,SNR=9.2						
121A	Cookes Peak, D	41.46	18	eP	P	10 47 44.3	+0.8
	16nm,1.0s						
MNTX	Cornudas Mount	41.51	22	P	P	10 47 44.2	+0.4
	baz=206,SNR=12						
MNTX	Cornudas Mount	41.51	22	eP	P	10 47 44.8	+0.9
	15nm,1.4s						
733A	Divot King Ran	41.63	31	P	P	10 47 44.9	+0.1
	baz=216						
EDW2	Edwards Air Fo	41.67	5	P	P	10 47 46.0	+0.9
	baz=186,SNR=9.0						
HEC	Hector,Ludlow	41.80	7	P	P	10 47 46.8	+0.7
	baz=189						
GMRC	Granite Mounta	41.84	8	P	P	10 47 47.5	+1.0
	baz=190,SNR=9.1						
GSC	Goldstone, Bar	42.21	6	P	P	10 47 50.6	+1.1
	baz=188,SNR=12						
633A	Saathoff Ranch	42.29	30	P	P	10 47 50.4	+0.2
	baz=215						
LRMC	Laurel Mtn Rad	42.29	5	P	P	10 47 51.0	+0.8
	baz=187,SNR=5.7						
TUQ	Turquoise Moun	42.45	7	P	P	10 47 52.5	+0.9
	baz=189,SNR=7.6						
JCT	Junction City	42.83	29	P	P	10 47 55.0	+0.4
	baz=214						
SHOC	Shoshone, Teco	42.86	7	P	P	10 47 55.8	+1.0
	baz=189,SNR=7.4						
MPMC	Manual Prospec	42.89	5	P	P	10 47 56.0	+0.8
	baz=187						
WUAZ	Wupatki	43.32	13	P	P	10 47 59.7	+1.0
	baz=196,SNR=6.3						
FURC	Furnace Creek,	43.36	6	P	P	10 47 59.5	+0.8
	baz=188,SNR=7.3						
433A	Art	43.40	29	P	P	10 47 59.2	0.0
	baz=214,SNR=11						
GRAC	Grapevine Rang	43.83	5	P	P	10 48 03.9	+1.3
	baz=187						
434A	Burnet	43.85	30	P	P	10 48 03.0	+0.2
	baz=215						
TPNV	Topopah Spring	43.90	7	P	P	10 48 04.6	+1.3
	baz=189,SNR=6.6						
333A	Richland Sprin	43.92	29	P	P	10 48 03.2	-0.1
	baz=214,SNR=9.4						
ANMO	Albuquerque	44.10	19	P	P	10 48 06.0	+0.9
	baz=203						
334A	Lometa	44.29	30	P	P	10 48 06.3	-0.1
	baz=215						
MSTX	Muleshoe	44.52	23	P	P	10 48 08.8	+0.4
	baz=208,SNR=10						
MSTX	Muleshoe	44.52	23	eP	P	10 48 08.7	+0.4
	29nm,1.1s						
233A	Rising Star	44.53	29	P	P	10 48 08.0	-0.2
	baz=214,SNR=5.6						
CMB	Columbia Colle	44.67	2	eP	P	10 48 10.8	+1.5
	21nm,1.0s						
ABTX	Abilene, Hawle	44.69	27	P	P	10 48 10.0	+0.4
	baz=213						
ABTX	Abilene, Hawle	44.69	27	eP	P	10 48 09.7	+0.2
	8.7nm,0.9s						
133A	Hamilton Ranch	45.01	28	P	P	10 48 12.2	+0.1
	baz=214						
336A	Riesel	45.03	31	P	P	10 48 12.6	+0.3
	baz=217						
NVAR	Mina Array Bea	45.17	4	P	P	10 48 14.9	+1.4
	4.4nm,0.8s,baz=190,slow=11,SNR=32						
NVAR				PcP	PcP	10 49 54.2	+0.4
	1.1nm,0.8s,baz=194,slow=6.4,SNR=5.1						
NVAR				LR	LR	11 03 15.0	
	comp=Z,238nm,18.0s,baz=198,slow=31						
WHTX	Lake Whitney,	45.21	30	P	P	10 48 13.8	+0.1
	baz=216						
R11A	Troy Canyon, C	45.36	7	P	P	10 48 15.9	+1.0
	baz=189,SNR=6.6						
MVCO	Mesa Verde	45.63	15	P	P	10 48 17.6	+0.4
	baz=199,SNR=7.7						
MVCO	Mesa Verde	45.63	15	eP	P	10 48 17.9	+0.8
	13nm,1.1s						
Z33A	Whitaker Ranch	45.65	28	P	P	10 48 17.7	+0.5
	baz=213,SNR=8.8						
236A	Katherine and	45.68	31	P	P	10 48 17.2	-0.2
	baz=217						
AMTX	Amarillo	45.76	24	P	P	10 48 18.3	+0.2
	baz=209						
Z34A	Collier Ranch,	46.11	28	P	P	10 48 21.1	+0.3
	baz=214						
Y33A	Hilltop Ranch,	46.31	27	P	P	10 48 22.6	+0.2
	baz=213						
X32A	Elmer	46.36	26	P	P	10 48 22.9	+0.1
	baz=212						
Z35A	Perchaven, San	46.40	29	P	P	10 48 23.0	0.0
	baz=215						
PV01	Paradox Valley	46.48	15	eP	P	10 48 24.6	+0.7
	1µm,1.7s						
S22A	4UR Ranch, Cre	46.59	17	P	P	10 48 24.7	-0.1
	baz=201,SNR=7.9						
Y34A	Reagan Ranch,	46.67	28	P	P	10 48 25.6	+0.4
	baz=214						
Z36A	Blue Ridge	46.75	30	P	P	10 48 26.4	+0.7
	baz=216						
239A	Gary	46.77	33	P	P	10 48 27.1	+1.1
	baz=219						
T25A	Trinidad	46.77	19	P	P	10 48 26.7	+0.5
	baz=205,SNR=11						
O03D	Paynes Creek	46.90	0	P	P	10 48 27.5	+0.6
	baz=181						
W32A	Sentinel	46.98	26	P	P	10 48 27.9	+0.4
	baz=212						
SDCO	Great Sand Dun	46.98	18	P	P	10 48 28.4	+0.5
	baz=203,SNR=9.4						
SDCO	Great Sand Dun	46.98	18	eP	P	10 48 28.9	+1.0
	8.4nm,1.3s						
X34A	Smith Ranch, M	47.17	28	P	P	10 48 29.6	+0.5
	baz=214						
Y36A	Durant	47.33	30	P	P	10 48 30.2	-0.1
	baz=216						
W33A	Caddo, Fort Co	47.34	27	P	P	10 48 30.4	+0.1
	baz=213						
X35A	Drake	47.40	28	P	P	10 48 30.3	-0.6
	baz=215,SNR=6.9						
V32A	Arapaho	47.57	26	P	P	10 48 32.4	+0.2
	baz=212						
DUG	Dugway, Tooele	47.58	10	P	P	10 48 33.5	+1.2
	baz=193,SNR=13						
DUG	Dugway, Tooele	47.58	10	eP	P	10 48 33.3	+1.0
	13nm,1.1s						
N02D	Trinity Center	47.58	359	P	P	10 48 33.3	+1.1
	baz=179						
Y37A	Hugo	47.72	30	P	P	10 48 34.1	+0.7
	baz=217,SNR=5.1						
ELK	Elko	47.77	7	eP	P	10 48 35.1	+1.3
	4.0nm,0.8s						
V33A	Lossen Ranch,	47.98	26	P	P	10 48 36.0	+0.6
	baz=213						
M02C	Callahan	48.00	359	P	P	10 48 36.5	+1.0
	baz=179						
X37A	Clayton	48.33	30	P	P	10 48 38.0	-0.1
	baz=217						
W36A	Wetumka	48.36	29	P	P	10 48 38.5	+0.3
	baz=216						
M04C	Macdoel	48.38	0	P	P	10 48 39.5	+1.0
	baz=180,SNR=7.2						
O20A	White River Ci	48.46	14	P	P	10 48 40.0	+0.8
	baz=199,SNR=10.0						
U33A	Lingo Farm, Me	48.57	26	P	P	10 48 40.0	+0.1
	baz=213						
V35A	Meyer Ranch, C	48.58	28	P	P	10 48 40.1	+0.1
	baz=214						
X38A	Whitesboro	48.66	30	P	P	10 48 40.8	+0.1
	baz=217						
W37B	Quinton	48.74	29	P	P	10 48 40.5	-0.7
	baz=216						
ISCO	Idaho Springs	48.84	17	P	P	10 48 43.2	+0.9
	baz=202,SNR=9.0						
ISCO	Idaho Springs	48.84	17	eP	P	10 48 43.6	+1.3
	9.3nm,1.0s						
X39A	Fountain Ranch	48.90	31	P	P	10 48 42.8	+0.3
	baz=218						
V36A	Jenks	49.02	28	P	P	10 48 43.0	-0.4
	baz=216						
ROSC	El Rosal	49.08	78	LR	LR	11 04 09.4	
	comp=Z,42nm,19.0s,baz=236,slow=30						
U35A	Pawnee	49.13	27	P	P	10 48 44.4	+0.2
	baz=214						
W38A	Poteau	49.14	30	P	P	10 48 44.2	0.0
	baz=218						
WVOR	Wild Horse Val	49.14	3	eP	P	10 48 45.6	+1.3
	16nm,1.4s						
HWUT	Hardware Ranch	49.16	10	eP	P	10 48 45.0	+0.4
	5.1nm,0.8s						
TUL1	Leonard	49.19	28	P	P	10 48 44.6	0.0
	baz=216						
MIAR	Mount Ida	49.20	31	P	P	10 48 44.8	0.0
	baz=219						
MIAR	Mount Ida	49.20	31	eP	P	10 48 44.7	0.0
	4.6nm,0.8s						
S32A	Newby Ranch, P	49.30	24	P	P	10 48 45.5	0.0
	baz=211						
T34A	McClaskey Farm	49.47	26	P	P	10 48 46.2	-0.6
	baz=213						
V37A	Hulbert	49.48	29	P	P	10 48 46.4	-0.5
	baz=216						
X40A	Basin Creek Fa	49.55	32	P	P	10 48 46.6	-0.8
	baz=220						
W39A	Magazine	49.60	31	P	P	10 48 47.6	-0.2
	baz=218						
T35A	Sooner Cattle	49.68	27	P	P	10 48 48.5	+0.1
	baz=214						
N23A	Red Feather La	49.77	16	P	P	10 48 50.3	+1.0
	baz=201,SNR=6.8						
V38A	Canehill	49.82	30	P	P	10 48 49.3	-0.2
	baz=217						
P28A	Saint Francis	49.87	21	P	P	10 48 50.8	+0.9
	baz=207						
J05D	Fort Rock, OR	49.89	1	P	P	10 48 51.0	+1.0
	baz=181,SNR=6.5						
U37A	Salina	49.91	29	P	P	10 48 50.1	-0.1
	baz=216						
CBKS	Cedar Bluff	49.94	23	P	P	10 48 50.7	+0.3
	baz=210						
W40A	Ferguson Farm,	49.97	31	P	P	10 48 50.7	+0.1
	baz=219						
R32A	Long Quarter,	50.01	24	P	P	10 48 50.9	0.0
	baz=211						
T36A	Boggs Farm, Ca	50.09	27	P	P	10 48 51.2	-0.3
	baz=215						
V39A	Pettigrew	50.18	30	P	P	10 48 52.1	-0.2
	baz=218						
P29A	Atwood	50.19	21	P	P	10 48 52.3	0.0
	baz=208						
U38A	Gravette	50.29	29	P	P	10 48 52.7	-0.3
	baz=217						
MFID	Camas Ranch	50.34	6	eP	P	10 48 54.1	+0.7
	14nm,1.0s						
P30A	Selden	50.38	22	P	P	10 48 53.9	+0.1
	baz=209						
I04A	Tendick Farm,	50.39	360	P	P	10 48 54.2	+0.5
	baz=180						
S35A	Otter Creek Ra	50.40	27	P	P	10 48 54.2	+0.3
	baz=214						
R34A	Isabella, Hill	50.51	25	P	P	10 48 54.4	-0.4
	baz=213						
Q32A	Meitler Ranch,	50.56	24	P	P	10 48 54.7	-0.3
	baz=211						
V40A	Witts Springs	50.57	31	P	P	10 48 54.5	-0.7
	baz=219						
T37A	Cheneyville 18	50.59	28	P	P	10 48 54.9	-0.4
	baz=216						
HLID	Hailey	50.64	7	P	P	10 48 56.8	+0.9
	baz=190,SNR=7.6						
HLID	Hailey	50.64	7	eP	P	10 48 56.7	+0.9
	3.0nm,0.8s						
BW06	Boulder Array	50.67	12	P	P	10 48 55.9	-0.2
	baz=196						
PDAR	Pinedale Array	50.67	12	P	P	10 48 56.0	0.0
	2.1nm,0.9s,baz=182,slow=5.5,SNR=15						
PDAR				PcP	PcP	10 50 12.3	-1.1
	0.8nm,0.9s,baz=108,slow=3.3,SNR=4.1						

U39A	Green Forest baz=218,SNR=11	50.69	30	P		P		10 48 56.2	+0.1
P31A	Stockton baz=210	50.69	23	P		P		10 48 56.8	+0.7
O29A	4D Ranch, Culb baz=208	50.70	21	P		P		10 48 56.5	+0.4
S36A	Lake Cedric, C baz=215	50.76	27	P		P		10 48 56.3	-0.3
T38A	Diamond baz=217	50.81	29	P		P		10 48 56.7	-0.3
Q33A	Connelly Farm, baz=212	50.86	24	P		P		10 48 57.7	+0.4
N28A	Pribbeno Ranch baz=207	50.94	20	P		P		10 48 58.0	0.0
I05D	Terrebonne, OR baz=181	50.94	1	P		P		10 48 58.5	+0.6
U40A	Yellville baz=219	50.98	31	P		P		10 48 57.8	-0.4
P32A	Huiting Farm, baz=211	51.08	23	P		P		10 48 58.9	-0.1
SNOW	Snow King Moun 6.0nm,1.0s	51.11	11	eP		P		10 48 59.8	+0.3
Q34A	Chapman baz=213	51.16	25	P		P		10 48 59.6	0.0
T39A	Clever baz=218	51.24	30	P		P		10 49 00.2	0.0
K22A	Casper baz=200,SNR=5.2	51.26	15	P		P		10 49 00.3	-0.1
K22A	Casper 10nm,1.0s	51.26	15	eP		P		10 49 00.6	+0.1
O31A	Woolen Ranch, baz=210	51.26	22	P		P		10 49 01.0	+0.7
P33A	Williams Farm, baz=212	51.29	24	P		P		10 49 00.7	+0.1
R36A	Gordon, Harris baz=215	51.29	27	P		P		10 49 00.6	0.0
KSU1	Kansas State U baz=213	51.45	25	P		P		10 49 01.7	0.0
S38A	Stockton baz=217	51.47	29	P		P		10 49 01.6	-0.3
M28A	Bar X Bar Ranc baz=207	51.62	20	P		P		10 49 02.7	-0.4
FLWY	Flagg Ranch 27nm,1.0s	51.72	10	eP		P		10 49 05.0	+1.1
P34A	Walnut Farm, R baz=213	51.74	25	P		P		10 49 03.8	0.0
S39A	Bolivar baz=218	51.80	29	P		P		10 49 04.1	-0.3
G05D	Wamic, OR baz=181	51.85	1	P		P		10 49 05.4	+0.8
O33A	Hebron baz=212	51.87	24	P		P		10 49 04.9	0.0
R38A	Fenwick Farm, baz=217	51.92	28	P		P		10 49 05.0	-0.2
H17A	Grant Village baz=195	52.05	10	P		P		10 49 07.3	+0.9
S40A	Lebanon baz=218	52.13	30	P		P		10 49 06.9	0.0
LKWY	Lake 3.4nm,0.8s	52.24	11	eP		P		10 49 09.5	+1.7
O34A	Beatrice baz=213	52.33	25	P		P		10 49 08.2	-0.1
R39A	Chumby, Stover baz=218	52.43	29	P		P		10 49 09.1	+0.1
Q38A	Cooks Store, C baz=217	52.67	28	P		P		10 49 10.3	-0.5
J25A	Sunshine Ranch baz=203	52.68	17	P		P		10 49 11.0	+0.1
L30A	Spencer Herefo baz=208	52.69	21	P		P		10 49 11.1	+0.2
R40A	Maddies Statio baz=218	52.78	29	P		P		10 49 11.3	-0.3
K28A	Ten Mile Ranch baz=206	52.81	19	P		P		10 49 12.4	+0.6
J26A	Sides Ranch, S baz=204	52.82	17	P		P		10 49 12.2	+0.3
P37A	Lathrop baz=216	52.84	27	P		P		10 49 12.0	-0.1
RLMT	Red Lodge baz=196	52.99	11	P		P		10 49 13.6	+0.3
Q39A	Willow Grove F baz=217	53.04	28	P		P		10 49 13.1	-0.4
BOZ	Bozeman (W) baz=193,SNR=5.9	53.08	9	P		P		10 49 13.8	-0.1
J27A	Elkhorn Farm, baz=205	53.09	18	P		P		10 49 14.4	+0.4
K29A	Lazy Trails An baz=208,SNR=5.8	53.20	20	P		P		10 49 15.3	+0.6
L31A	Butterfield Fa baz=209	53.20	22	P		P		10 49 15.3	+0.6
P38A	Dawn baz=216	53.24	27	P		P		10 49 14.5	-0.5
I25A	Rochford baz=203	53.27	16	P		P		10 49 15.1	-0.4
RSSD	Black Hills baz=203	53.28	16	P		P		10 49 15.1	-0.4
M33A	Taylor Creek F baz=212	53.30	23	P		P		10 49 15.0	-0.5
L32A	Elgin baz=210	53.36	22	P		P		10 49 16.4	+0.4
O37A	Wolven Farm, M baz=216	53.41	27	P		P		10 49 15.7	-0.5
Q40A	Laux Farm, Aux baz=218,SNR=5.9	53.43	29	P		P		10 49 15.9	-0.5
J28A	Allard Ranch, baz=206	53.49	19	P		P		10 49 17.1	+0.3
P39A	Salisbury baz=217,SNR=6.9	53.49	28	P		P		10 49 16.3	-0.5
I26A	New Underwood baz=204	53.54	17	P		P		10 49 17.6	+0.3
LPAZ	La Paz 1.8nm,0.9s,baz=239,slow=6.1,SNR=4.6	53.57	105	P		P		10 49 21.7	+3.1
LPAZ	comp=Z,64nm,19.3s,baz=274,slow=31			LR		LR		11 07 52.1	
SDV	Santo Domingo 4.4nm,0.8s	53.62	74	eP		P		10 49 19.5	+0.9
J29A	Okreek baz=207	53.77	20	P		P		10 49 19.0	+0.2
I27A	Quinn baz=205	53.81	18	P		P		10 49 19.4	+0.2
M35A	Neola baz=213	53.82	24	P		P		10 49 19.3	+0.1
N37A	Lee Faris, Mou baz=215	53.86	26	P		P		10 49 19.3	-0.2
P40A	Paris baz=218	53.86	29	P		P		10 49 19.3	-0.2
MSO	Missoula baz=190,SNR=14	53.92	7	P		P		10 49 20.7	+0.7
K32A	Verdigre baz=210,SNR=5.6	53.94	22	P		P		10 49 20.2	+0.1
J30A	Dallas baz=208	53.98	20	P		P		10 49 20.4	0.0
I28A	Midland baz=206	54.02	19	P		P		10 49 20.8	+0.1
O39A	Kirksville baz=217,SNR=5.9	54.20	28	P		P		10 49 21.5	-0.6
H27A	Howes baz=205	54.32	18	P		P		10 49 23.2	+0.3
N38A	Joes South For baz=216	54.32	27	P		P		10 49 22.3	-0.6
I29A	Vivian Onida baz=207	54.32	19	P		P		10 49 22.5	-0.4
O40A	La Belle baz=218	54.41	28	P		P		10 49 23.3	-0.3
L35A	Bielow Farm, R baz=213	54.42	24	P		P		10 49 23.4	-0.2
M37A	Trindle Farm, baz=215	54.45	26	P		P		10 49 23.6	-0.3
I30A	Oacoma baz=208	54.52	20	P		P		10 49 24.3	0.0
H28A	Mission Ridge baz=206	54.68	18	P		P		10 49 26.0	+0.5
N39A	Derby Farms, D baz=217,SNR=6.5	54.72	27	P		P		10 49 25.0	-0.8
G26A	Maurine baz=204,SNR=5.0	54.77	17	P		P		10 49 25.2	-1.0
M38A	Pleasantville baz=216	54.84	26	P		P		10 49 26.0	-0.7
B05A	Bryant baz=180	54.86	0	P		P		10 49 27.2	+0.5
H29A	Onida baz=207	54.89	19	P		P		10 49 26.9	-0.1
G27A	Dupree baz=205	55.04	17	P		P		10 49 27.6	-0.5
NEW	Newport baz=186	55.04	4	P		P		10 49 28.1	0.0
F25A	Bowman baz=203	55.11	16	P		P		10 49 28.1	-0.5
L37A	Phoenix Point, baz=215	55.17	25	P		P		10 49 28.5	-0.5
J34A	George baz=212	55.24	23	P		P		10 49 29.3	-0.2
F26A	Lodgepole baz=204	55.26	16	P		P		10 49 29.4	-0.2
K36A	Gilmore City baz=214	55.30	25	P		P		10 49 29.6	-0.4
ECSD	EROS Data Cent baz=211	55.37	22	P		P		10 49 29.9	-0.6
F27A	Lemmon baz=205	55.46	17	P		P		10 49 30.6	-0.5
L38A	Oak Wood Farm, baz=216	55.53	26	P		P		10 49 31.0	-0.6
E25A	Miller Ranch, baz=203,SNR=6.0	55.65	16	P		P		10 49 32.0	-0.5
EGMT	Eagleton baz=195	55.70	10	P		P		10 49 32.7	-0.1
H32A	Carlson Farm, baz=210	55.73	21	P		P		10 49 32.7	-0.4
K37A	Belmond baz=215	55.75	25	P		P		10 49 32.5	-0.7
F28A	McLaughlin baz=206	55.80	18	P		P		10 49 33.5	0.0
E26A	Carlson Angus baz=204	55.88	16	P		P		10 49 33.9	-0.3
HDIL	Hopedale baz=220	55.99	30	P		P		10 49 34.1	-0.8
F29A	Eureka baz=207	56.09	19	P		P		10 49 35.3	-0.3
E27A	Carson baz=205,SNR=5.7	56.10	17	P		P		10 49 35.0	-0.7
H33A	Prehn Over Nor baz=211	56.13	22	P		P		10 49 35.9	-0.1
D25A	Fairfield baz=203	56.27	15	P		P		10 49 37.1	+0.1
D26A	Manning baz=204,SNR=6.9	56.40	16	P		P		10 49 37.6	-0.3
H34A	Spellman Lake, baz=212	56.48	22	P		P		10 49 37.9	-0.5
E28A	Huff baz=206	56.49	18	P		P		10 49 37.9	-0.6
G33A	Ortonville baz=211	56.69	21	P		P		10 49 39.0	-0.8
D27A	Center baz=205	56.73	17	P		P		10 49 40.2	+0.1
E29A	Napoleon baz=207	56.80	18	P		P		10 49 40.3	-0.4
H35A	Sunnyside Ranc baz=213	56.87	23	P		P		10 49 40.2	-0.9
I37A	Lemond, Waseca baz=215	56.87	24	P		P		10 49 40.6	-0.6
PLCA	Paso Flores 1.8nm,0.9s,baz=239,slow=24,SNR=3.6	56.90	135	P		P		10 49 41.6	0.0
PLCA	comp=Z,111nm,20.5s,baz=268,slow=30			LR		LR		11 07 59.7	
SFIN	Lafayette baz=223	56.98	32	P		P		10 49 41.4	-0.6
H36A	Jessenland, He baz=214	57.12	24	P		P		10 49 42.6	-0.3
C26A	Wahner Farm, P baz=204	57.22	16	P		P		10 49 43.6	-0.1
DGMT	Dagmar baz=201,SNR=6.9	57.28	14	P		P		10 49 44.0	0.0
DGMT	Dagmar 23nm,1.1s	57.28	14	eP		P		10 49 44.0	0.0
C27A	Sayler Ranch, baz=205	57.28	16	P		P		10 49 44.1	0.0
F33A	5 Mile Ranch, baz=211	57.29	21	P		P		10 49 43.1	-1.0
I38A	Scanlan Farm, baz=216	57.34	25	P		P		10 49 43.8	-0.7
E31A	Nome baz=209	57.36	20	P		P		10 49 44.1	-0.6
D30A	Buchanan baz=208	57.56	19	P		P		10 49 45.4	-0.7
G36A	St. Michael baz=214	57.74	23	P		P		10 49 46.8	-0.5
F35A	Swanville baz=213	57.94	22	P		P		10 49 48.4	-0.4
MDND	Maddock baz=207	57.96	18	P		P		10 49 48.1	-0.7
E33A	Westby DABS, E baz=211	57.96	21	P		P		10 49 48.3	-0.5
A25A	Svangstu Ranch baz=202	57.98	15	P		P		10 49 48.7	-0.2
C30A	Mose, Pekin baz=208,SNR=6.7	58.18	19	P		P		10 49 49.8	-0.6
A26A	Wade Farm, Ken baz=204	58.22	15	P		P		10 49 50.3	-0.4
E34A	Wadena baz=212	58.27	22	P		P		10 49 50.3	-0.7
B28A	Dugan Ranch, T baz=206	58.27	17	P		P		10 49 50.5	-0.5
F36A	Milaca baz=214,SNR=5.8	58.35	23	P		P		10 49 50.7	-0.9
C31A	Landman Farms, baz=209	58.49	19	P		P		10 49 51.9	-0.6
D33A	AnnSam, Waubun baz=211	58.57	21	P		P		10 49 52.7	-0.3
B29A	Wagenman Farm, baz=207	58.59	18	P		P		10 49 52.8	-0.3
A28A	Rude Farm, Bot baz=206,SNR=9.2	58.72	17	P		P		10 49 53.9	-0.3
D34A	Park Rapids baz=212	58.75	21	P		P		10 49 53.7	-0.6
B30A	Myrvik Farm, E baz=208	58.89	18	P		P		10 49 54.6	-0.6
E36A	McGregor baz=214	59.00	23	P		P		10 49 55.0	-1.1
A29A	Manning Farm, baz=207,SNR=5.3	59.03	17	P		P		10 49 55.5	-0.8
B31A	Greenbush Farm baz=209	59.08	19	P		P		10 49 55.9	-0.6
C33A	Trail baz=211	59.12	20	P		P		10 49 56.2	-0.7
D35A	Remer baz=213	59.16	22	P		P		10 49 56.4	-0.8
A30A	Hoffart Farm, baz=208	59.33	18	P		P		10 49 57.9	-0.4
B32A	Ashes, Strandq baz=210	59.41	20	P		P		10 49 58.1	-0.8
AGMN	Agassiz Nation baz=211	59.56	20	P		P		10 49 59.3	-0.6
AGMN	Agassiz Nation 14nm,1.3s	59.56	20	eP		P		10 49 59.4	-0.5
C35A	Jirik Farms, M baz=213	59.71	22	P		P		10 49 59.9	-1.1
A32A	Rocking H Ranc baz=210	59.88	19	P		P		10 50 01.3	-0.8
B34A	Aery, Baudette baz=212	60.14	21	P		P		10 50 03.0	-0.9
C36A	Pine Crest Far baz=214	60.19	22	P		P		10 50 03.2	-1.0
A33A	Warroad baz=211	60.27	20	P		P		10 50 03.7	-1.0
COWI	Conover 12nm,1.0s	60.35	26	eP		P		10 50 05.0	-0.4
B35A	Bob, Littlefor baz=213,SNR=7.8	60.36	21	P		P		10 50 04.6	-0.8
C37A	Embarrass baz=215	60.41	23	P		P		10 50 05.5	-0.3
C38A	Sawbill Land. baz=216	60.76	23	P		P		10 50 07.0	-1.1
EYMN	Ely baz=215	60.85	23	P		P		10 50 08.2	-0.6
ULM	Lac du Bonnet 6.1nm,0.7s,baz=221,slow=6.4,SNR=16	61.24	19	P		P		10 50 10.4	-1.0
N54A	Moraine State baz=229	61.27	35	P		P		10 50 11.0	-0.8
C39A	Grand Marais baz=217	61.29	24	P		P		10 50 10.7	-1.0
M54A	Oil Creek Stat baz=230	61.81	35	P		P		10 50 14.4	-1.1
CPUP	Villa Florida comp=Z,87nm,19.8s,baz=268,slow=31	64.41	116	LR		LR		11 12 53.1	
DLBC	Dease Lake 9.7nm,0.8s,baz=199,slow=4.1,SNR=20	65.37	355	P		P		10 50 39.4	+0.7
YKA	Yellowknife Ar 5.3nm,0.7s,baz=182,slow=6.3,SNR=168	69.37	4	P		P		10 51 03.2	-0.6
BMRM	Bremner River 28nm,1.2s	69.86	349	eP		P		10 51 07.0	0.0
DIV	Divide 7.1nm,0.9s	70.25	348	eP		P		10 51 09.3	0.0
DAWY	Dawson 28nm,1.3s	71.90	352	eP		P		10 51 19.7	+0.4
DOT	Dot Lake 17nm,0.8s	72.23	350	eP		P		10 51 21.0	-0.3
EGAK	Eagle 15nm,1.0s	72.82	352	eP		P		10 51 24.3	-0.4
BDFB	Brasilia comp=Z,70nm,20.6s,baz=238,slow=32	72.91	104	LR		LR		11 19 11.8	
PPLA	Purkeypile 37nm,1.4s	73.24	346	eP		P		10 51 26.9	-0.5
TRF	Thorofare Moun 46nm,1.6s	73.28	347	eP		P		10 51 26.5	-1.2
KTH	Kantishna Hill 48nm,1.3s	73.51	347	eP		P		10 51 28.4	-0.5
ILAR	Eielson Array 1.2nm,0.8s,baz=157,slow=4.0,SNR=15	73.77	349	P		P		10 51 29.3	-1.0
BPAW	Bear Paw Mtn. 7.1nm,1.4s	74.00	347	eP		P		10 51 30.9	-0.8
COLA	College 13nm,1.1s	74.04	349	eP		P		10 51 31.6	-0.3
H11S2	WAKE ISLAND Hy baz=103,slow=74,SNR=7.5	74.54	291	T		T		12 12 55.2	
H11S1	WAKE ISLAND Hy baz=103,slow=74,SNR=5.3	74.55	291	T		T		12 12 53.3	
H11S3	WAKE ISLAND Hy baz=103,slow=74,SNR=5.5	74.56	291	T		T		12 12 53.2	
H11N2	WAKE ISLAND Hy baz=76,slow=74,SNR=4.8	74.64	293	T		T		12 13 03.4	
H11N1	WAKE ISLAND Hy baz=318,slow=74,SNR=2.9	74.64	293	T		T		12 13 00.5	
INK	Inuvik 22nm,1.2s	75.40	356	eP		P		10 51 39.0	-0.6
SCHQ	Schefferville 12nm,0.8s,baz=242,slow=4.3,SNR=14	76.65	29	P		P		10 51 47.0	-0.2
RES	Resolute Bay	83.07	7	P		P		10 52 20.6	-0.9
PETK	Petropavlovsk- 5.2nm,0.9s,baz=115,slow=10.0,SNR=5.4	89.56	324	P		P		10 52 53.6	-0.3
SEY	Seymchan 2.9nm,0.8s,baz=125,slow=3.1,SNR=17	93.99	333	P		P		10 53 14.5	+0.3
TORD	Torodi Ar. Bea 1.4nm,0.9s,baz=309,slow=3.0,SNR=7.3	124.39	79	PKP		PKPdf		10 58 56.5	-0.2
CMAR	Chiang Mai Arr 0.7nm,0.4s,baz=151,slow=2.1,SNR=2.7	138.42	290	PKP		PKPdf		10 59 25.9	+2.8
BRTR	Keskin Array B 1.7nm,0.8s,baz=299,slow=1.3,SNR=8.9	140.67	30	PKP		PKPdf		10 59 26.9	+0.2
TAPN	Taplejung 55nm,1.1s	145.12	309	eP		PKPbc		10 59 34.5	-0.1
ODAN	Odare 104nm,1.0s	145.61	309	eP		PKPab		10 59 36.2	-0.2
RAMN	Ramite 105nm,0.8s	146.18	310	eP		PKPbc		10 59 37.8	-0.1
GUN	Gumba 47nm,1.0s	146.21	312	eP		PKPdf		10 59 37.2	+0.1
KKN	Kakani	146.72	312	eP		PKPbc		10 59 39.0	-0.4
PKIN	Phulchoki 8.9nm,0.6s	146.75	312	eP		PKPdf		10 59 38.3	+0.4
GKN	Gorkha	147.07	313	eP		PKPbc		10 59 39.6	-0.8
KOLN	Koldanda 30nm,0.9s	147.96	314	eP		PKPbc		10 59 42.2	-0.7
PYUN	Piuthan 74nm,1.0s	148.19	315	eP		PKPbc		10 59 43.3	-0.2

NIED ***01*** *10:49:00,40˚.30N×140˚.40E,h5km,Mw4.9 Best double couple: M₀2.16000×10¹⁶ NP1:ϕ₀26.00000°,δ46.00000°, λ135.00000°. NP2:ϕ₀150.00000°,δ60.00000°,λ54.00000°.*

IDC ***01*** *10:49:42.7±0.5,40˚.29N×140˚.28E,h0km,mb4.6/25, mb1 4.8/29,mb1mx4.7/34,mbtmp4.6/29,ML4.6/4,MS4.1/34, Ms1 4.1/34,ms1mx4.0/51,Error ellipse: s-maj=13.8km s-min=11.0km az=93.0*

ISCJB ***01*** *10:49:43.8±0.4,40˚.27N±0˚.02×140˚.29E±0˚.02,h15km±2km, mb4.9/231,MS4.4/48,Error ellipse: s-maj=2.8km s-min=2.1km az=153.5*

JMA ***01*** *10:49:44.1,40˚.26N×140˚.36E,h12km±1km,M5.0 Broadband fault plane solution: P waves. NP1: ϕs121.00000°,δ80.00000°,λ25.00000°. NP2:ϕ₀26.00000°, δ65.00000°,λ169.00000°. Principal axes: T Plg25.0000°, Azm346.0000°; N Plg63.0000°, Azm141.0000°; P Plg10.0000°, Azm251.0000°;*

MOS ***01*** *10:49:46.5±1.0,40˚.28N×140˚.17E,h35km,mb5.1/91, MS4.3/21 Error ellipse: s-maj=6.7km s-min=4.5km az=94.6*

BJI ***01*** *10:49:48.6,40˚.35N×140˚.31E,h60km,mb4.7/41,mB5.0/37, Ms4.8/58,Ms7 4.5/55*

GCMT ***01*** *10:49:49.1±0.2,40˚.37N×140˚.25E,h17km,MW5.0/92, Moment Tensor Solution. s50,c67; s92,c138; Duration: 0 Moment tensor: Scale 10¹⁶Nm; Mrr2.90±.14; Mθθ0.88±.09; Mθϕ-3.78±.10; Mrθ0.01±.28; Mθϕ0.13±.07; Mϕr-1.65±.21; Best double couple: M₀3.72700×10¹⁶ NP1:ϕs179.00000°,δ58.00000°,λ91.00000°. NP2: ϕs357.00000°,δ32.00000°,λ88.00000°. Principal axes: T 3.2860, Plg77.0000°, Azm92.0000°; N 0.8810, Plg1.0000°, Azm359.0000°; P -4.1690, Plg13.0000°, Azm268.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

NEIC ***01*** *10:49:49.1±0.5,40˚.30N×140˚.21E,h40km±4km,mb5.0/173 Error ellipse: s-maj=4.2km s-min=3.0km az=162.0*

NEIC Recorded [5U JMA] in Akita.

ISC 01 10:49:46.4±0.5, 40˚29N±0˚.03×140˚34E±0˚.03, h25km±3km, n809,σ1§15/828,mb5.0/231,MS4.3/49,34C-27D,Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JAH	Hinai	0.25	115	⇓P	Pb	10 49 48.9	-3.8
JAH				eS	Sb	10 49 52.2	-4.8
JIW	Iwasaki	0.39	320	⇑P	Pb	10 49 52.7	-2.1
JIW				eS	Sb	10 49 58.3	-2.2
JOG2	Oga 2	0.56	228	⇓P	Pb	10 49 54.9	-2.8
JTM	Tenmabayashi	0.74	48	⇓P	Pb	10 49 58.4	-2.3
JYW	Yuwa	0.76	187	⇓P	Pb	10 49 58.1	-2.8
JSI2	Shiura 2	0.77	4	⇑P	Pb	10 49 59.3	-1.8
JKZ	Kuzumaki	0.82	112	⇓P	Pb	10 49 58.8	-3.3
JANG	Nango	0.91	85	⇓P	Pb	10 50 00.5	-2.9
JANG				eS	Sb	10 50 12.2	-2.9
JRG	Rokugo	0.93	166	⇑P	Pb	10 50 00.8	-3.0
JRG				eS	Sb	10 50 13.0	-2.7
JOM	Ohasama	1.10	138	⇑P	Pn	10 50 03.5	-2.8
JOT	Ohata	1.21	26	⇓P	Pn	10 50 06.7	-1.1
JTH	Tanohata	1.23	106	⇓P	Pn	10 50 05.8	-2.2
JTB	Tobi-shima	1.25	209	⇓P	Pn	10 50 06.1	-2.2
MIYJ	Miyakonagasawa	1.35	122	⇓P	Pn	10 50 07.8	-1.9
JYK	Kaneyama	1.38	179	⇑P	Pn	10 50 08.1	-1.9
JMK	Ichinoseki	1.50	153	⇑P	Pn	10 50 09.9	-1.9
OFUJ	Ofunato	1.59	139	⇑P	Pn	10 50 11.6	-1.4
JYA	Atsumi	1.77	196	⇓P	Pn	10 50 13.9	-1.5
JOU	Okura	1.94	172	⇑P	Pn	10 50 17.1	-0.8
JIO	Ouri	2.00	157	P	Pn	10 50 17.6	-1.0
JAW	Awa shima	2.02	205	⇓P	Pn	10 50 17.2	-1.7
ERM	Erimo	2.74	50	*d* iP	Pn	10 50 29.5	+0.8
ERM	comp=Z,1μm,0.8s			pmax	pmax		
ERM	Erimo	2.74	50	*e*Pn	Pn	10 50 29.4	+0.6
ERM				*e*Sn	Sn	10 51 04.3	+3.3
JSD	Sado	2.77	216	P	Pn	10 50 28.1	-1.1
JSZ	Suzu	3.67	220	P	Pn	10 50 40.9	-0.6
MAJO	Matsushiro	4.10	205	*d* iP	Pn	10 50 47.3	-0.3
MAJO	Matsushiro	4.10	205	*e*Pn	Pn	10 50 47.6	0.0
MAJO				*e*Sn	Sn	10 51 34.5	-0.3
MAT	Matsushiro	4.10	205	P	Pn	10 50 47.4	-0.2
MAT				S	Sn	10 51 33.8	-1.0
MAT	Matsushiro	4.10	205	P	Pn	10 50 47.4	-0.2
MJAR	Matsushiro Arr	4.10	205	Pn	Pn	10 50 47.6	0.0
MJAR	comp=Z,33nm,0.3s,baz=2.6,slow=16,SNR=104			Sn	Sn	10 51 34.7	-0.1
MJAR	comp=Z,63nm,0.3s,baz=199,slow=23,SNR=9.8			LR	LR	10 52 37.6	
JKG	comp=Z,3μm,18.5s,baz=20,slow=43 Kaga	5.10	219	P	Pn	10 51 01.7	+0.5
YUK	Yuzh-Kuril'sk	5.55	46	*e*P	Pn	10 51 06.4	-1.0
YUK				*e*S	Sn	10 52 10.6	+0.2
YUK	comp=N,100nm,0.3s			pmax	pmax		
YUK	comp=Z,446nm,0.3s			pmax	pmax		
YUK	comp=E,315nm,0.6s			pmax	pmax		
YUK	comp=N,5μm,18.0s			MLR	MLR		
YUK	comp=Z,4μm,18.0s			MLR	MLR		
YUK	comp=E,4μm,13.0s			MLR	MLR		
INU	Inuyama	5.59	209	*e*Pn	Pn	10 51 09.1	+1.1

SHO	**Shikotan**	**6.01**	**51**	*d* iP	**Pn**	**10 51 12.9**	**-0.8**
SHO				*i* S	**Sn**	**10 52 18.9**	**-2.8**
SHO				pmax	pmax		
	comp=Z,204nm,0.5s						
SHO				pmax	pmax		
	comp=N,77nm,0.3s						
SHO				pmax	pmax		
	comp=E,158nm,0.7s						
JKY	**Yasaka**	**6.23**	**223**	P	**Pn**	**10 51 17.8**	**+1.1**
JWT	**Wachi**	**6.35**	**220**	P	**Pn**	**10 51 20.0**	**+1.6**
JKSM	**Kasumi**	**6.49**	**225**	P	**Pn**	**10 51 21.3**	**+0.9**
YSS	**Yuzh-Sakhalins**	**6.88**	**14**	*α* iP	Pn	10 51 29.2	+3.5
YSS				*e*S	**Sn**	**10 52 46.9**	**+3.7**
YSS				pmax	pmax		
	comp=Z,90nm,0.8s						
YSS				pmax	pmax		
	comp=Z,1μm,5.5s						
YSS				MLR	MLR		
	comp=Z,4μm,13.0s						
YSS				MLR	MLR		
	comp=N,3μm,14.0s						
YSS				MLR	MLR		
	comp=E,3μm,12.0s						
JHJ	**Hachijo jima 2**	**7.17**	**184**	Pn	**Pn**	**10 51 30.9**	**+1.1**
	comp=E,54nm,0.3s,baz=266,slow=1.6,SNR=15						
JHJ2	**Mitsune**	**7.18**	**183**	*e*Pn	**Pn**	**10 51 29.9**	**+0.1**
USRK	**Ussuriysk Ar.**	**7.32**	**305**	Pn	**Pn**	**10 51 32.2**	**+0.5**
	comp=E,18nm,0.3s,baz=107,slow=14,SNR=123						
USRK				Sn	**Sn**	**10 52 54.8**	**+0.9**
	comp=E,11nm,0.3s,baz=112,slow=31,SNR=11						
USRK				LR	LR	10 54 15.6	
	comp=E,2μm,19.8s,baz=114,slow=37						
KUR	**Kuril'sk**	**7.42**	**46**	*c* iP	**Pn**	**10 51 33.9**	**+0.9**
KUR				*e*S	**Sn**	**10 52 58.2**	**+1.9**
KUR				pmax	pmax		
	comp=Z,102nm,0.9s						
KUR				smax	smax		
	comp=N,49nm,0.5s						
KUR				smax	smax		
	comp=E,50nm,0.5s						
JHS	**Saijyo**	**7.79**	**230**	P	**Pn**	**10 51 39.7**	**+1.5**
JHIK	**Hikimi**	**8.82**	**232**	P	**Pn**	**10 51 54.7**	**+2.4**
HABR	**Khabarovsk**	**9.01**	**337**	*e*P	**Pn**	**10 51 53.1**	**-1.7**
HABR				*e*S	**Sn**	**10 53 34.1**	**-1.2**
HABR				pmax	pmax		
	comp=Z,31nm,0.3s						
HABR				MLR	MLR		
	comp=Z,342nm,10.0s						
MDJ	**Mudanjiang**	**9.04**	**302**	P	**Pn**	**10 51 56.6**	**+1.4**
MDJ				S	Sn	10 53 40.1	+3.9
MDJ				pmax	pmax		
	comp=Z,26nm,0.5s						
MDJ				pmax	pmax		
	comp=Z,200nm,5.9s						
MDJ				LR	LR		
	comp=Z,6μm,12.5s						
MDJ				LR	LR		
	comp=Z,3μm,10.7s						
MDJ				LR	LR		
	comp=Z,3μm,11.6s						
MDJ	**Mudanjiang**	**9.04**	**302**	*e*Pn	**Pn**	**10 51 56.6**	**+1.4**
KSRS	**Korea Array**	**10.09**	**258**	Pn	Pn	10 52 13.3	+3.7
	comp=Z,11nm,0.3s,baz=68,slow=14,SNR=126						
KSRS				Sn	**Sn**	**10 54 05.5**	**+3.6**
	comp=Z,10nm,0.3s,baz=72,slow=24,SNR=24						
KSRS				LR	LR	10 55 52.4	
	comp=Z,944nm,18.3s,baz=82,slow=37						
KS01	**Wonju Array Si**	**10.10**	**258**	*e*Pn	**Pn**	**10 52 12.0**	**+2.2**
KS15	**Wonju Array Si**	**10.12**	**258**	*e*Pn	Pn	10 52 13.1	+3.0
KS15				*e*Sn	**Sn**	**10 54 04.1**	**+1.3**
JNU	**Nakatsue**	**10.43**	**230**	Pn	Pn	10 52 18.0	+3.6
	comp=Z,7.3nm,0.3s,baz=44,slow=2.5,SNR=76						
JNU				LR	LR	10 56 33.6	
	comp=Z,1μm,19.1s,baz=38,slow=40						
TYV	**Tymovskoe**	**10.69**	**8**	*e*P	Pn	10 52 22.0	+4.1
TYV				pmax	pmax		
	comp=Z,46nm,0.8s						
TYV				pmax	pmax		
	comp=Z,1μm,5.0s						
TYV				MLR	MLR		
	comp=N,4μm,12.0s						
TYV				MLR	MLR		
	comp=Z,4μm,13.0s						
KLR	**Kul'dur**	**10.81**	**329**	Pn	Pn	10 52 24.3	+4.8
	comp=Z,0.7nm,0.3s,baz=134,slow=12,SNR=49						
KLR				LR	LR	10 56 38.6	
	comp=Z,577nm,18.5s,baz=140,slow=38						
CN2	**Changchun**	**11.61**	**292**	⇑P	Pn	10 52 33.4	+2.9
CN2				*es*P		10 52 49.0	
CN2				*e*S	**Sn**	**10 54 42.5**	**+3.3**
CN2				pmax	pmax		
	comp=Z,20nm,1.2s						
CN2				pmax	pmax		
	comp=Z,200nm,4.0s						
CN2				LR	LR		
	comp=Z,2μm,13.0s						
CN2				LR	LR		
	comp=Z,3μm,13.0s						
CN2				LR	LR		
	comp=Z,600nm,14.0s						
SNY	**Shenyang**	**12.74**	**282**	⇑P	P	10 52 51.3	-5.5
SNY				S	Sn	10 55 10.9	+4.0
SNY				pmax	pmax		
	comp=Z,270nm,5.8s						
SNY				LR	LR		
	comp=Z,2μm,10.7s						
SNY				LR	LR		
	comp=Z,1μm,11.5s						
SNY				LR	LR		
	comp=Z,2μm,12.7s						
NKL	**Nikolayevsk**	**12.86**	**1**	*e*P	**Pn**	**10 52 48.0**	**+0.5**
NKL				pmax	pmax		
	comp=Z,140nm,2.0s						
NKL				pmax	pmax		
	comp=N,400nm,8.0s						
NKL				pmax	pmax		
	comp=Z,500nm,8.0s						
NKL				MLR	MLR		
	comp=N,2μm,13.0s						
NKL				MLR	MLR		
	comp=Z,3μm,13.0s						
JCJ	**Chichijima**	**13.25**	**173**	Pn	**Pn**	**10 52 51.6**	**-1.4**
	comp=Z,10nm,0.3s,baz=291,slow=18,SNR=5.0						
JCJ				LR	LR	10 58 29.7	
	comp=Z,694nm,18.5s,baz=338,slow=40						
DL2	**Dalian**	**14.49**	**271**	P	**P**	**10 53 15.7**	**-0.6**
DL2				S	S	10 55 59.1	-10
DL2				pmax	pmax		
	comp=Z,63nm,1.4s						
DL2				pmax	pmax		
	comp=Z,430nm,5.4s						
DL2				LR	LR		
	comp=Z,1μm,9.7s						
DL2				LR	LR		
	comp=Z,850nm,9.9s						
DL2				LR	LR		
	comp=Z,1μm,12.7s						
HIA	**Hailar**	**17.11**	**308**	*e*P	**P**	**10 53 45.9**	**+0.6**
HIA				pmax	pmax		
	comp=Z,13nm,0.9s						
HIA	**Hailar**	**17.11**	**308**	*e*Pn	**P**	**10 53 45.9**	**+0.6**
	comp=Z,13nm,0.9s						
PEA0	**Petropavlovsk-**	**17.43**	**37**	*e*Pn	**Pn**	**10 53 47.9**	**+0.1**
PETK	**Petropavlovsk-**	**17.43**	**37**	P	**Pn**	**10 53 45.0**	**-2.8**
	comp=Z,0.3nm,0.3s,baz=213,slow=8.9,SNR=8.0						
PETK				LR	LR	11 00 56.1	
	comp=Z,1μm,18.1s,baz=210,slow=39						
PETK	**Petropavlovsk-**	**17.43**	**37**	P	**Pn**	**10 53 45.0**	**-2.8**
PETK				MLR	MLR		
	comp=Z,1μm,18.1s						
PEA1	**Petropavlovsk-**	**17.44**	**37**	*e*Pn	**Pn**	**10 53 45.0**	**-2.8**
SSE	**Sheshan**	**18.03**	**245**	P	**Pn**	**10 53 52.3**	**-2.9**
SSE				S	**Sn**	**10 57 11.7**	**-3.9**
SSE				pmax	pmax		
	comp=Z,32nm,1.0s						
SSE				pmax	pmax		
	comp=Z,340nm,7.1s						
SSE				LR	LR		
	comp=Z,770nm,14.9s						
SSE				LR	LR		
	comp=Z,690nm,14.9s						
SSE				LR	LR		
	comp=Z,1μm,12.9s						
BJI	**Beijing**	**18.46**	**277**	P	**Pn**	**10 54 00.8**	**+0.4**
BJI				pP	**sP**	**10 54 10.7**	**+0.6**
BJI				S	**S**	**10 57 26.8**	**-2.7**
BJI				sS	**sS**	**10 57 40.7**	**+0.3**
BJI				pmax	pmax		
	comp=Z,560nm,9.0s						
BJI				LR	LR		
	comp=Z,2μm,12.0s						
BJI				LR	LR		
	comp=Z,960nm,13.0s						
BJI				LR	LR		
	comp=Z,930nm,30.2s						
TIA	**Tai'an**	**18.67**	**265**	⇓P	**Pn**	**10 54 03.9**	**+0.9**
TIA				pmax	pmax		
	comp=Z,20nm,0.8s						
TIA				pmax	pmax		
	comp=Z,760nm,3.4s						
TIA				LR	LR		
	comp=Z,2μm,10.1s						
TIA				LR	LR		
	comp=Z,1μm,12.6s						
TIA				LR	LR		
	comp=Z,1μm,11.6s						
NJ2	**Nanjing**	**19.16**	**251**	*e*P	**Pn**	**10 54 08.7**	**-0.3**
NJ2				S	**S**	**10 57 43.4**	**-0.2**
NJ2				pmax	pmax		
	comp=Z,12nm,0.6s						
NJ2				LR	LR		
	comp=Z,2μm,12.5s						
NJ2				LR	LR		
	comp=Z,1μm,9.1s						
NJ2				LR	LR		
	comp=Z,1μm,10.6s						
MA2	**Magadan**	**20.39**	**15**	P	**P**	**10 54 20.2**	**-1.0**
	comp=Z,21nm,0.7s,baz=224,slow=9.0,SNR=40						
MA2				LR	LR	11 03 45.7	
	comp=Z,417nm,18.2s,baz=219,slow=41						
MA2	**Magadan**	**20.39**	**15**	*e*P	**P**	**10 54 19.9**	**-1.2**
MA2				pmax	pmax		
	comp=Z,84nm,0.8s						
MA2	**Magadan**	**20.39**	**15**	*e*P	**P**	**10 54 19.9**	**-1.2**
	comp=Z,84nm,0.8s						
HHC	**Hu-ho-hao-te**	**21.82**	**281**	*e*P	**P**	**10 54 40.1**	**+3.2**
HHC				PP	**PnPn**	**10 55 03.8**	**+5.5**
HHC				S	**S**	**10 58 37.2**	**+0.2**
HHC				sS	Sn	10 58 48.3	+1.2
HHC				pmax	pmax		
	comp=Z,32nm,1.4s						
HHC				LR	LR		
	comp=Z,1μm,11.2s						
HHC				LR	LR		
	comp=Z,1μm,11.2s						
HHC				LR	LR		
	comp=Z,1μm,14.9s						
YAK	**Yakutsk**	**22.71**	**347**	P	**P**	**10 54 44.7**	**-1.3**
	comp=Z,1.6nm,0.4s,baz=341,slow=22,SNR=4.7						
YAK				LR	LR	11 03 26.9	
	comp=Z,431nm,18.6s,baz=158,slow=36						
YAK	**Yakutsk**	**22.71**	**347**	*e*P	**P**	**10 54 42.8**	**-3.2**
YAK				*e**PP	**pP**	**10 54 48.4**	**-4.4**
YAK				*e*		10 54 58.7	
YAK				*e*PPP	PPP	10 55 12.5	
YAK				*e*		10 58 38.2	
YAK				*e*S	**S**	**10 58 46.9**	**-5.9**
YAK				*e***SS	Sn	10 58 59.6	-8.1
YAK				*e*SSS	SSS	10 59 33.4	
YAK				*e*		11 05 58.5	
YAK				pmax	pmax		
	comp=N,10.0nm,1.0s						
YAK				pmax	pmax		
	comp=Z,20nm,1.0s						
YAK				pmax	pmax		
	comp=E,9.0nm,1.1s						
YAK				pmax	pmax		
	comp=E,55nm,2.5s						
YAK				pmax	pmax		
	comp=Z,105nm,2.3s						
YAK				pmax	pmax		
	comp=N,129nm,2.8s						
YAK				smax	smax		
	comp=E,180nm,2.8s						
YAK				smax	smax		
	comp=N,166nm,2.4s						
YAK				MLR	MLR		
	comp=E,729nm,14.0s						
YAK				MLR	MLR		
	comp=Z,1μm,12.0s						
YAK				MLR	MLR		
	comp=N,778nm,12.0s						
YAK	**Yakutsk**	**22.71**	**347**	*e*P	**P**	**10 54 43.4**	**-2.6**
	comp=N,29nm,0.8s						
WHN	**Wuhan**	**23.23**	**253**	P	P	10 54 59.0	+7.3
WHN				S	**S**	**10 58 58.3**	**-4.0**
WHN				LR	LR		
	comp=N,4μm,13.1s						
WHN				LR	LR		
	comp=E,1μm,11.8s						
WHN				LR	LR		
	comp=Z,4μm,14.4s						
QZH	**Quanzhou**	**23.78**	**237**	P	**P**	**10 54 57.1**	**+0.1**
QZH				S	**S**	**10 59 09.0**	**-2.1**
QZH				LR	LR		
	comp=Z,1μm,8.2s						
QZH				LR	LR		
	comp=Z,920nm,12.6s						
QZH				LR	LR		
	comp=Z,1μm,20.4s						
SEY	**Seymchan**	**23.79**	**14**	P	**P**	**10 54 55.6**	**-1.2**
	comp=Z,9.3nm,0.8s,baz=198,slow=8.0,SNR=34						
SEY	**Seymchan**	**23.79**	**14**	⇓*e*P	**P**	**10 54 56.4**	**-0.5**
BOD	**Bodaibo**	**24.35**	**325**	*e*P	**P**	**10 55 01.7**	**-0.4**
BOD				pmax	pmax		
	comp=Z,14nm,1.0s						
ULN	**Ulaanbaatar**	**24.93**	**299**	⇓*e*P	**P**	**10 55 08.5**	**+0.8**
ULN				pmax	pmax		
	comp=Z,14nm,2.5s						
SONA1	**Songino Array**	**25.37**	**299**	*e*P	**P**	**10 55 10.5**	**-1.1**
SONA0	**Songino Array**	**25.37**	**299**	*e*P	**P**	**10 55 10.7**	**-0.9**
	comp=Z,8.3nm,1.2s						
SONM	**Songino Array**	**25.37**	**299**	P	**P**	**10 55 10.7**	**-0.9**
	comp=Z,2.4nm,0.8s,baz=90,slow=8.7,SNR=9.6						
SONM				ScP	**ScP**	**11 02 24.2**	**+3.1**
	comp=Z,0.2nm,0.6s,baz=101,slow=3.0,SNR=4.0						
SONM				LR	LR	11 05 45.5	
	comp=Z,536nm,18.6s,baz=94,slow=38						
XAN	**Xi'an**	**25.71**	**266**	P	**P**	**10 55 17.7**	**+2.9**
XAN				S	**S**	**10 59 39.4**	**-2.7**
XAN				LR	LR		
	comp=Z,850nm,13.8s						
XAN				LR	LR		
	comp=Z,750nm,14.6s						
TLY	**Talaya**	**27.63**	**307**	LR	LR	11 06 33.2	
	comp=Z,347nm,18.6s,baz=100,slow=37						
ZAK	**Zakamensk**	**27.67**	**304**	*e*P	**P**	**10 55 31.4**	**-0.9**
ZAK				pmax	pmax		
	comp=Z,2.0nm,1.3s						
LZH	**Lanzhou**	**28.85**	**273**	*e*P	**P**	**10 55 45.2**	**+2.1**
LZH				pP	sP	10 55 57.6	+4.2
LZH				sP	pP	10 56 03.5	+13
LZH				*e*S	**S**	**11 00 33.5**	**+1.6**
LZH				SS	**SnSn**	**11 01 59.4**	**+5.0**
LZH				pmax	pmax		
	comp=Z,39nm,1.3s						
LZH				pmax	pmax		
	comp=Z,130nm,4.6s						
LZH				LR	LR		
	comp=Z,2μm,12.4s						
LZH				LR	LR		
	comp=Z,1μm,12.0s						
LZH				LR	LR		
	comp=Z,3μm,14.0s						
H11N2	**WAKE ISLAND Hy**	**30.61**	**124**	T	T	11 26 55.4	
	baz=318,slow=75,SNR=600						
H11N1	**WAKE ISLAND Hy**	**30.62**	**124**	T	T	11 26 52.6	
	baz=318,slow=75,SNR=598						
H11N3	**WAKE ISLAND Hy**	**30.63**	**124**	T	T	11 26 56.4	
	baz=318,slow=75,SNR=634						
GTA	**Gaotai**	**30.93**	**282**	*e*P	**P**	**10 56 01.7**	**+0.3**
GTA				pP	sP	10 56 13.7	+1.9
GTA				sP	pP	10 56 19.3	+11
GTA				PcP	**PcP**	**10 58 58.5**	**+1.1**
GTA				S	**S**	**11 01 01.2**	**-3.2**
GTA				sS	sS	11 01 22.0	+5.6
GTA				SS	**SnSn**	**11 02 45.1**	**+0.2**
GTA				pmax	pmax		
	comp=Z,100nm,5.2s						
GTA				LR	LR		
	comp=Z,1μm,16.6s						
GTA				LR	LR		
	comp=Z,900nm,16.2s						
GTA				LR	LR		
	comp=Z,990nm,16.2s						
CD2	**Chengdu**	**31.00**	**264**	P	**P**	**10 56 01.3**	**-0.6**
CD2				pP	sP	10 56 14.2	+1.9
CD2				sP	pP	10 56 20.4	+11
CD2				S	**S**	**11 01 02.3**	**-3.0**
CD2				sS	sS	11 01 24.8	+7.4
CD2				pmax	pmax		
	comp=Z,10.0nm,0.5s						
CD2				pmax	pmax		
	comp=Z,80nm,4.7s						
CD2				LR	LR		
	comp=Z,1μm,13.2s						
CD2				LR	LR		
	comp=Z,890nm,11.4s						
GYA	**Guiyang**	**31.12**	**254**	⇓*i*P	**P**	**10 56 03.8**	**+0.7**
GYA				pP	sP	10 56 18.2	+4.7
GYA				PP	**PnPn**	**10 57 08.0**	**+3.1**
GYA				PcP	**PcP**	**10 59 00.4**	**+2.3**
GYA				S	**S**	**11 01 04.8**	**-2.6**
GYA				sS	sS	11 01 27.2	+7.7
GYA				ScP	**ScP**	**11 02 37.5**	**-1.8**
GYA				SS	**SnSn**	**11 02 51.0**	**+1.4**
GYA				ScS	**ScS**	**11 06 32.4**	**-4.3**
GYA				pmax	pmax		
	comp=Z,20nm,0.9s						
GYA				pmax	pmax		
	comp=Z,120nm,5.6s						
GYA				LR	LR		
	comp=Z,580nm,17.8s						
GYA				LR	LR		
	comp=Z,520nm,18.0s						
GYA				LR	LR		
	comp=Z,550nm,18.4s						
BILL	**Bilibino**	**31.17**	**19**	*de*P	**P**	**10 56 04.2**	**+1.2**
BILL				*e**SP	**sP**	**10 56 15.8**	**+2.4**
BILL				*e*		10 58 59.0	
BILL				pmax	pmax		
	comp=Z,40nm,1.7s						
BILL				MLR	MLR		
	comp=Z,599nm,16.0s						
BILL	**Bilibino**	**31.17**	**19**	*e*P	**P**	**10 56 03.7**	**+0.7**
	comp=Z,81nm,1.9s						
H11S1	**WAKE ISLAND Hy**	**31.40**	**126**	T	T	11 27 50.2	
	baz=319,slow=76,SNR=117						
H11S3	**WAKE ISLAND Hy**	**31.40**	**126**	T	T	11 27 50.4	
	baz=319,slow=76,SNR=96						
H11S2	**WAKE ISLAND Hy**	**31.42**	**126**	T	T	11 27 57.9	
	baz=319,slow=76,SNR=108						
TIXI	**Tiksi**	**31.96**	**353**	*de*P	**P**	**10 56 08.8**	**-1.0**
TIXI				pmax	pmax		
	comp=Z,4.0nm,0.9s						
TIXI	**Tiksi**	**31.96**	**353**	*e*P	**P**	**10 56 09.1**	**-0.7**
	comp=Z,8.9nm,1.2s						
QIZ	**Qiongzhong**	**33.66**	**240**	P	**P**	**10 56 25.3**	**-0.1**
QIZ				S	**S**	**11 01 42.7**	**-4.2**
QIZ				LR	LR		
	comp=Z,730nm,12.5s						
QIZ				LR	LR		
	comp=Z,970nm,12.8s						
KMI	**Kunming**	**34.78**	**256**	P	**P**	**10 56 35.4**	**+0.2**
KMI				pP	sP	10 56 47.0	+1.4
KMI				PP	**PP**	**10 57 54.7**	**+0.5**
KMI				S	**S**	**11 02 02.1**	**-2.4**
KMI				SS	**SnSn**	**11 04 20.8**	**+2.1**
KMI				pmax	pmax		
	comp=Z,15nm,1.3s						
KMI				pmax	pmax		
	comp=Z,72nm,3.4s						
KMI				LR	LR		
	comp=Z,950nm,14.7s						
KMI				LR	LR		
	comp=Z,470nm,12.4s						
KMI				LR	LR		
	comp=Z,620nm,13.5s						
GAMB	**Gambell**	**36.42**	**34**	*e*P	**P**	**10 56 48.8**	**+0.2**
	comp=Z,18nm,1.6s						
WMQ	**Urumqi**	**38.70**	**293**	P	**P**	**10 57 10.5**	**+2.2**
WMQ				pP	sP	10 57 23.2	+4.5
WMQ				PP	**PnPn**	**10 58 43.2**	**+4.1**
WMQ				S	**S**	**11 03 01.0**	**-2.7**
WMQ				PcS	**PcS**	**11 03 11.2**	**+2.1**
WMQ				SS	**SnSn**	**11 05 48.5**	**-4.3**
WMQ				pmax	pmax		
	comp=Z,48nm,4.4s						
WMQ				LR	LR		
	comp=Z,400nm,10.6s						
WMQ				LR	LR		
	comp=Z,220nm,11.8s						
WMQ				LR	LR		
	comp=Z,130nm,25.8s						
ZAA0	**Zalesovo Array**	**39.14**	**309**	*e*P	**P**	**10 57 11.4**	**-0.3**
ZAA1	**Zalesovo Array**	**39.14**	**309**	*e*P	**P**	**10 57 11.5**	**-0.3**
ZAA1				*e*PcP	**PcP**	**10 59 21.5**	**+0.6**
ZALV	**Zalesovo Beam**	**39.14**	**309**	P	**P**	**10 57 11.5**	**-0.3**
	comp=Z,4.2nm,0.6s,baz=91,slow=7.5,SNR=12						
ZALV				PcP	**PcP**	**10 59 21.5**	**+0.6**
	comp=Z,3.1nm,0.5s,baz=104,slow=3.2,SNR=4.8						
ZALV				LR	LR	11 13 18.3	
	comp=Z,252nm,18.0s,baz=70,slow=36						
ZALV	**Zalesovo Beam**	**39.14**	**309**	P	**P**	**10 57 11.5**	**-0.3**
ZALV						10 59 21.5	
ZALV				pmax	pmax		
	comp=Z,7.0nm,0.6s						
ZALV				pmax	pmax		
	comp=Z,3.0nm,0.5s						
ZALV				MLR	MLR		
	comp=Z,252nm,18.0s						
NRIK	**Noril'sk**	**39.96**	**334**	P	**P**	**10 57 18.4**	**0.0**
	comp=Z,2.9nm,0.4s,baz=107,slow=9.6,SNR=8.4						
NRIK				LR	LR	11 14 03.9	
	comp=Z,307nm,21.1s,baz=109,slow=37						
NVS	**Novosibirsk**	**40.02**	**311**	*e*P	**P**	**10 57 18.6**	**-0.4**
NVS				pmax	pmax		
	comp=Z,9.0nm,1.2s						
NVS				pmax	pmax		
	comp=E,5.0nm,0.9s						
CHTO	**Chiang Mai**	**41.41**	**251**	*e*P	**P**	**10 57 31.0**	**+0.1**
CHTO				pmax	pmax		
	comp=Z,6.0nm,0.6s						
CHTO	**Chiang Mai**	**41.41**	**251**	*e*P	**P**	**10 57 30.9**	**+0.1**
	comp=Z,5.7nm,0.6s						
CMAR	**Chiang Mai Arr**	**41.64**	**251**	P	**P**	**10 57 32.9**	**+0.1**
	comp=Z,1.7nm,0.6s,baz=44,slow=7.6,SNR=10						
CMAR				LR	LR	11 14 54.6	
	comp=Z,314nm,19.5s,baz=75,slow=36						
MK01	**Makanchi Array**	**41.74**	**299**	*e*P	**P**	**10 57 32.2**	**-1.1**
MK31	**Makanchi Array**	**41.74**	**299**	P	**P**	**10 57 31.8**	**-1.6**
MK31				pmax	pmax		
	comp=Z,4.0nm,0.6s						
MK31	**Makanchi Array**	**41.74**	**299**	*e*P	**P**	**10 57 32.7**	**-0.6**
MK32	**Makanchi Array**	**41.74**	**299**	*e*P	**P**	**10 57 33.1**	**-0.3**
MKAR	**Makanchi Array**	**41.74**	**299**	P	**P**	**10 57 33.1**	**-0.3**
	comp=Z,3.6nm,0.6s,baz=85,slow=9.1,SNR=23						
MKAR				LR	LR	11 13 29.2	
	comp=Z,207nm,21.2s,baz=80,slow=34						
MKAR	**Makanchi Array**	**41.74**	**299**	*e*P	**P**	**10 57 32.7**	**-0.6**
MAKZ	**Makanchi**	**41.95**	**299**	*e*P	**P**	**10 57 34.5**	**-0.5**
MAKZ				pmax	pmax		
	comp=Z,6.0nm,1.0s						
MAKZ	**Makanchi**	**41.95**	**299**	*e*P	**P**	**10 57 34.5**	**-0.5**
	comp=Z,6.0nm,1.0s						
TT01	**Tatalina**	**43.27**	**37**	*e*P	**P**	**10 57 46.5**	**+1.0**
TTA	**Tatalina**	**43.27**	**37**	*e*P	**P**	**10 57 46.8**	**+1.2**
TTA				pmax	pmax		
	comp=Z,37nm,1.6s						
TTA	**Tatalina**	**43.27**	**37**	*e*P	**P**	**10 57 46.8**	**+1.2**
	comp=Z,37nm,1.6s						
KURK	**Kurchatov**	**43.31**	**305**	*e*P	**P**	**10 57 45.5**	**-0.5**
KURK				pmax	pmax		
	comp=Z,22nm,1.2s						
KURK	**Kurchatov**	**43.31**	**305**	*e*P	**P**	**10 57 45.5**	**-0.5**
	comp=Z,22nm,1.2s						
SVW2	**Sparrevohn**	**43.49**	**39**	*e*P	**P**	**10 57 49.2**	**+1.9**
	comp=Z,42nm,1.6s						
FAKI	**Fak Fak**	**43.64**	**192**	*e*P	**P**	**10 57 49.6**	**+0.6**
	comp=Z,25nm,0.9s						
PPLA	**Purkeypile**	**45.02**	**37**	*e*P	**P**	**10 58 01.0**	**+1.3**
	comp=Z,155nm,1.8s						
CAST	**Castle Rocks**	**45.05**	**36**	*e*P	**P**	**10 58 01.6**	**+1.8**
	comp=Z,18nm,1.0s						
SPU	**Mount Spurr**	**45.20**	**39**	*e*P	**P**	**10 58 02.9**	**+1.8**
KDAK	**Kodiak Island**	**45.29**	**44**	*i* P	**P**	**10 58 02.2**	**+0.5**
BPAW	**Bear Paw Mtn.**	**45.50**	**35**	*e*P	**P**	**10 58 04.9**	**+1.5**
	comp=Z,68nm,1.8s						

KTH **Kantishna Hill** 45.56 36 *e*P P 10 58 05.6 +1.6
comp=Z,103nm,1.6s
MLY **Manley** 45.57 34 *e*P P 10 58 05.6 +1.7
comp=Z,23nm,0.9s
COLD **Coldfoot** 45.75 31 *e*P P 10 58 06.3 +1.1
comp=Z,13nm,1.0s
TRF **Thorofare Moun** 45.85 36 *e*P P 10 58 07.4 +1.0
comp=Z,38nm,1.5s
RC01 **Rabbit Creek A** 46.32 39 *e*P P 10 58 10.8 +0.9
comp=Z,80nm,1.8s
MCK **McKinley** 46.43 35 *e*P P 10 58 11.6 +0.9
MCK pmax pmax
comp=Z,19nm,1.1s
MCK **McKinley** 46.43 35 *e*P P 10 58 11.6 +0.9
comp=Z,19nm,1.1s
RND **Reindeer** 46.50 36 *e*P P 10 58 11.9 +0.6
RND pmax pmax
comp=Z,45nm,1.4s
RND **Reindeer** 46.50 36 *e*P P 10 58 11.9 +0.6
comp=Z,45nm,1.4s
PMR **Palmer** 46.56 38 *e*P P 10 58 12.0 +0.4
PMR pmax pmax
comp=Z,17nm,1.0s
PMR **Palmer** 46.56 38 *e*P P 10 58 12.0 +0.4
comp=Z,17nm,1.0s
MDM **Murphy Dome** 46.64 34 *e*P P 10 58 13.8 +1.4
comp=Z,172nm,1.8s
WRH **Wood River Hil** 46.74 34 *e*P P 10 58 14.0 +0.9
comp=Z,12nm,1.0s
COLA **College** 46.81 34 *c i*P P 10 58 14.8 +1.2
COLA pmax pmax
comp=Z,26nm,1.0s
COLA **College** 46.81 34 *e*P P 10 58 15.3 +1.7
comp=Z,41nm,1.0s
CCB **Clear Creek Bu** 46.85 34 *e*P P 10 58 14.6 +0.7
comp=Z,49nm,1.8s
SML **Sawmill** 46.91 38 *e*P P 10 58 15.4 +0.9
SML pmax pmax
comp=Z,100nm,1.7s
SML **Sawmill** 46.91 38 *e*P P 10 58 15.4 +0.9
comp=Z,100nm,1.7s
DHY **Denali Highway** 47.20 36 *e*P P 10 58 17.6 +0.7
comp=Z,15nm,0.8s
ILAR **Eielson Array** 47.23 34 P P 10 58 17.6 +0.6
comp=Z,14nm,0.9s,baz=272,slow=5.9,SNR=120
ILB **Eielson Array** 47.23 34 *e*P P 10 58 17.6 +0.6
IL1 **Eielson Array** 47.23 34 *e*P P 10 58 17.3 +0.3
HDA **Harding Lake** 47.24 34 *e*P P 10 58 17.2 +0.3
comp=Z,19nm,0.9s
SCM **Sheep Creek Mo** 47.38 38 *e*P P 10 58 19.0 +0.8
SCM pmax pmax
comp=Z,54nm,1.5s
SCM **Sheep Creek Mo** 47.38 38 *e*P P 10 58 19.0 +0.8
comp=Z,54nm,1.5s
TKM2 **Tokmak 2** 47.40 296 *e*P P 10 58 19.0 +0.2
TKM2 pmax pmax
comp=Z,10.0nm,0.8s
TKM2 **Tokmak 2** 47.40 296 *e*P P 10 58 19.0 +0.2
comp=Z,9.9nm,0.8s
VOSK **Vostochnaya** 47.52 309 *e*P P 10 58 19.3 -0.1
VOSK pmax pmax
comp=Z,31nm,1.2s
VOSK **Vostochnaya** 47.52 309 *e*P P 10 58 19.3 -0.1
comp=Z,31nm,1.2s
FYU **Fort Yukon** 47.74 31 *e*P P 10 58 22.5 +1.7
comp=Z,368nm,1.8s
BVA0 **Borovoye Array** 47.79 310 *i*P P 10 58 21.2 -0.3
BVA0 pmax pmax
comp=Z,12nm,0.6s
BRVK **Borovoye** 47.85 310 *c i*P P 10 58 21.8 -0.1
BRVK pmax pmax
comp=Z,15nm,1.0s
BRVK **Borovoye** 47.85 310 *e*P P 10 58 21.9 0.0
comp=Z,14nm,0.8s
OTUK **Ortayu** 47.88 303 P P 10 58 20.6 -1.7
OTUK pmax pmax
comp=Z,9.0nm,1.0s
PAX **Paxson** 48.07 36 *e*P P 10 58 24.1 +0.5
PAX pmax pmax
comp=Z,8.0nm,0.9s
PAX **Paxson** 48.07 36 *e*P P 10 58 24.1 +0.5
comp=Z,8.1nm,0.9s
KLU **Klutina** 48.09 38 *e*P P 10 58 24.8 +1.0
comp=Z,45nm,1.4s
FRU **Bishkek** 48.11 296 *e*P P 10 58 25.0 +0.9
DIV **Divide** 48.22 39 *e*P P 10 58 26.4 +1.6
comp=Z,101nm,1.7s
AAK **Ala-Archa** 48.26 296 LR LR 11 18 02.0
comp=Z,197nm,18.2s,baz=62,slow=35
AAK **Ala-Archa** 48.26 296 *ce*P P 10 58 24.8 -0.7
AAK pmax pmax
comp=Z,14nm,1.3s
AAK **Ala-Archa** 48.26 296 *e*P P 10 58 25.5 0.0
comp=Z,5.4nm,1.1s
KSH **Kashi** 48.38 291 P P 10 58 30.7 +4.4
KSH *ep*P sP 10 58 43.0 +6.1
KSH *e*PcP **PcP** **10 59 56.2 +3.6**
KSH PcS **PcS** **11 03 51.1 +2.5**
KSH S **S** **11 05 27.8 +2.5**
KSH SS **SS** **11 08 52.5 -2.2**
KSH pmax pmax
comp=Z,110nm,4.7s
KSH LR LR
comp=Z,290nm,10.7s
KSH LR LR
comp=Z,470nm,12.7s
KSH LR LR
comp=Z,440nm,12.4s
DOT **Dot Lake** 48.60 35 *e*P P 10 58 28.0 +0.4
comp=Z,70nm,1.5s
ZRNK **Zerenda** 48.62 310 *e*P P 10 58 28.2 +0.3
ZRNK pmax pmax
comp=Z,25nm,0.6s
ZRNK **Zerenda** 48.62 310 *e*P P 10 58 28.2 +0.3
comp=Z,24nm,0.6s
EKS2 **Erkin-Say** 48.75 296 *e*P P 10 58 29.4 +0.3
EKS2 pmax pmax
comp=Z,4.0nm,0.7s
EKS2 **Erkin-Say** 48.75 296 *e*P P 10 58 29.4 +0.3
comp=Z,4.3nm,0.7s
BMRM **Bremner River** 48.81 39 *e*P P 10 58 30.2 +1.0
comp=Z,78nm,1.7s
MENT **Mentasta** 48.87 36 *e*P P 10 58 30.9 +1.3
comp=Z,104nm,2.0s
EGAK **Eagle** 49.66 33 *e*P P 10 58 36.7 +1.1
comp=Z,20nm,1.0s
MNAS **Manas** 49.69 296 P P 10 58 35.7 -0.6
MNAS pmax pmax
comp=Z,14nm,1.2s
BALM **Baldy** 49.88 38 *e*P P 10 58 38.8 +1.3
BALM pmax pmax
comp=Z,33nm,1.4s
BALM **Baldy** 49.88 38 *e*P P 10 58 38.8 +1.3
comp=Z,33nm,1.4s
SFK **Sufi-Kurgan** 49.93 293 P P 10 58 38.0 -0.4
SFK pmax pmax
comp=Z,11nm,0.8s
DAWY **Dawson** 50.55 34 *e*P P 10 58 43.4 +1.0
comp=Z,19nm,1.6s
KK31 **Karatay Array** 50.81 298 *i*P P 10 58 43.5 -1.2
KK31 pmax pmax
comp=Z,6.0nm,0.8s
KKAR **Karatay Array** 50.81 298 *e*P P 10 58 44.5 -0.3
KKAR **Karatay Array** 50.81 298 *e*P P 10 58 44.5 -0.3
INK **Inuvik** 51.89 28 *e*P P 10 58 53.6 +1.3
INK pmax pmax
comp=Z,22nm,0.8s
INK **Inuvik** 51.89 28 *e*P P 10 58 53.6 +1.3
comp=Z,22nm,0.8s
SVE **Sverdlovsk** 52.17 317⇑ *e*P P 10 58 55.7 +1.1
SVE pmax pmax
comp=Z,38nm,0.9s
SOKR **Solikamsk** 53.25 321⇑ *i*P P 10 59 00.8 -1.7
SOKR pmax pmax
comp=Z,24nm,1.1s
SOKR MLR MLR
comp=Z,300nm,17.0s
ARU **Arti** 53.38 317 LR LR 11 21 46.7
comp=Z,259nm,18.2s,baz=54,slow=36
ARU **Arti** 53.38 317 *c i*P P 10 59 03.6 0.0
ARU 11 00 09.2
ARU 11 01 00.8
ARU S **S** **11 06 36.5 +2.6**
ARU SS **SS** **11 10 13.7 +0.2**
ARU pmax pmax
comp=Z,37nm,1.0s
ARU MLR MLR
comp=Z,785nm,17.0s
ARU **Arti** 53.38 317 *e*P P 10 59 03.6 0.0
comp=Z,41nm,1.1s
DZET **Dzherino** 53.73 293 P P 10 59 05.1 -1.5
DZET pmax pmax
comp=Z,25nm,0.9s
COEN **Coen** 54.04 177 *e*P P 10 59 08.8 +0.1
comp=Z,52nm,1.5s
AB31 **Akbulak array** 55.23 308 *i*P P 10 59 16.9 -0.2
AB31 pmax pmax
comp=Z,7.0nm,0.6s
ABKAR **Akbulak array** 55.23 308 *e*P P 10 59 17.1 -0.1
KBL **Kabul** 55.52 288 *e*P P 10 59 19.2 -0.5
KBL pmax pmax
comp=Z,18nm,0.9s
KBL **Kabul** 55.52 288 *e*P P 10 59 19.2 -0.5
comp=Z,18nm,0.9s
AKTO **Aktyubinsk** 55.90 310 LR LR 11 23 18.2
comp=Z,161nm,19.2s,slow=36
AKTO **Aktyubinsk** 55.90 310 P P 10 59 21.0 -1.0
AKTO pmax pmax
comp=Z,10.0nm,0.8s
TMCR **Tamitsa** 59.49 330 *e*P P 10 59 47.2 +0.3
TMCR pmax pmax
comp=Z,11nm,0.6s
RES **Resolute Bay** 59.66 15 *e*P P 10 59 47.7 -0.3
RES pmax pmax
comp=Z,15nm,0.8s
RES **Resolute Bay** 59.66 15 *e*P P 10 59 47.7 -0.3
comp=Z,15nm,0.8s
WRAB **Tennant Creek** 60.17 186 *d*P P 10 59 51.6 -0.5
WRAB pmax pmax
comp=Z,39nm,1.0s
WB2 **Warramunga Arr** 60.18 186 *e*P P 10 59 51.3 -0.9
comp=Z,27nm,1.1s
WR1 **Warramunga Arr** 60.18 187 *e*P P 10 59 51.4 -0.8
comp=Z,27nm,1.2s
WR1 *e*PcP **PcP** **11 00 38.2 +0.7**
WRA **Warramunga Arr** 60.18 187 P P 10 59 51.4 -0.8
comp=Z,11nm,0.8s,baz=4.0,slow=7.1,SNR=36
WRA PcP **PcP** **11 00 38.2 +0.7**
comp=Z,2.1nm,0.5s,baz=359,slow=4.6,SNR=3.4
KLMR **Klimovskoe** 60.56 326 *e*P P 10 59 50.5 -3.8
KLMR *e*S S 11 08 01.1 -7.3
KLMR pmax pmax
comp=Z,26nm,1.2s
ARCES **ARCESS Array B** 60.66 339 P P 10 59 54.8 -0.1
comp=Z,3.2nm,0.7s,baz=51,slow=9.6,SNR=8.1
ARCES LR LR 11 28 01.5
comp=Z,180nm,18.2s,baz=46,slow=38
YKW3 **Yellowknife Ar** 61.39 31 *e*P P 11 00 00.2 +0.3
comp=Z,28nm,1.7s
YKA **Yellowknife Ar** 61.43 31 P P 11 00 00.6 +0.5
comp=Z,1.9nm,0.6s,baz=303,slow=6.4,SNR=42
YKA PcP **PcP** **11 00 42.5 +0.4**
comp=Z,1.3nm,0.7s,baz=305,slow=4.2,SNR=5.5
YKB5 **Yellowknife Ar** 61.43 31 *e*P P 10 59 60.0 -0.2
YKB5 *e*PcP **PcP** **11 00 42.5 +0.4**
GEYT **Alibeck** 61.56 297 P P 11 00 01.6 +0.1
comp=Z,5.7nm,0.6s,baz=20,slow=2.2,SNR=8.3
GEYT LR LR 11 26 41.5
comp=Z,123nm,21.1s,baz=5.0,slow=36
DAG **Danmarks Havn** 62.46 355 *i*P P 11 00 06.6 -0.3
comp=Z,8.4nm,1.0s
DAG **Danmarks Havn** 62.46 355 *i*P P 11 00 06.6 -0.3
DAG pmax pmax
comp=Z,8.0nm,1.0s
AS01 **Alice Springs** 63.91 187 *e*P P 11 00 16.3 -0.9
AS31 **Alice Springs** 63.91 187 *e*P P 11 00 16.6 -0.6
comp=Z,3.4nm,0.6s
ASAR **Alice Springs** 63.91 187 P P 11 00 16.6 -0.6
comp=Z,11nm,0.8s,baz=2.4,slow=7.7,SNR=132
ASAR PcP **PcP** **11 00 52.8 +0.1**
comp=Z,3.2nm,0.8s,baz=9.4,slow=5.6,SNR=4.5
ASAR LR LR 11 27 45.7
comp=Z,57nm,20.6s,baz=24,slow=36
ASAR PKP2bc 11 29 17.9
comp=Z,0.3nm,1.0s,baz=161,slow=2.9,SNR=4.7
VRH **Novokhopyorsk** 64.62 316 *e*P P 11 00 19.5 -2.0
VRH pmax pmax
comp=Z,10.0nm,0.4s
OBN **Obninsk** 65.00 322⇑ *e*P P 11 00 24.7 +0.8
OBN *e*S S 11 09 03.3 -0.8
OBN pmax pmax
comp=Z,10.0nm,0.5s
OBN MLR MLR
comp=Z,223nm,16.0s
LPSR **Galich'ya Gora** 65.28 319 *e*P P 11 00 24.7 -1.1
LPSR pmax pmax
comp=Z,10.0nm,0.8s
FIA1 **FINESS Array S** 65.55 331 *e*P P 11 00 27.3 -0.1
FIA0 **FINESS Array S** 65.55 331 *e*P P 11 00 27.5 +0.1
FIA0 **FINESS Array S** 65.55 331 *e*P P 11 00 27.4 +0.1
FINES **FINESS Array B** 65.55 331 P P 11 00 27.4 +0.1
comp=Z,15nm,0.8s,baz=59,slow=9.2,SNR=34
FINES LR LR 11 29 21.8
comp=Z,225nm,18.1s,baz=60,slow=36
B05A **Bryant** 65.67 47 P P 11 00 29.7 +1.2
baz=304
VSR **Storozhevoye** 65.94 317 *e*P P 11 00 29.6 -0.5
VSR pmax pmax
comp=Z,10.0nm,0.7s
D05A **Enumclaw** 66.33 48 *e*P P 11 00 34.1 +1.4
comp=Z,105nm,1.7s
LTY **Liberty** 67.03 47 *e*P P 11 00 38.3 +1.0
comp=Z,51nm,1.8s
B08A **Colville Reser** 67.14 45 *e*P P 11 00 38.6 +0.7
comp=Z,20nm,1.6s
VSU **Vasula** 67.23 329⇓ *e*P P 11 00 38.3 +0.1
VSU pmax pmax
comp=Z,31nm,1.0s
GOF **Gofitskoye** 67.32 310⇑ *e*P P 11 00 39.8 +0.8
GOF pmax pmax
comp=Z,18nm,0.6s
I03D **Drain, OR** 67.52 51 P P 11 00 42.2 +1.9
baz=305
H04A **Detroit Lake** 67.64 50 *e*P P 11 00 42.7 +1.5
comp=Z,63nm,1.8s
C09A **Chrisman Ranch** 68.04 45 *e*P P 11 00 44.4 +0.8
comp=Z,12nm,0.8s
ZEI **Tsey** 68.11 308 *e*P P 11 00 42.6 -1.7
ZEI pmax pmax
comp=Z,69nm,1.6s
KIV **Kislovodsk** 68.16 310 *c i*P P 11 00 44.9 +0.4
KIV *i* 11 00 59.6
KIV *i*S S 11 09 36.5 -6.6
KIV pmax pmax
comp=Z,34nm,1.0s
KIV MLR MLR
comp=Z,208nm,15.0s
KIV **Kislovodsk** 68.16 310 *e*P P 11 00 45.5 +1.0
comp=Z,30nm,1.0s
KBZ **Khabaz** 68.16 309 P P 11 00 45.3 +0.9
comp=Z,5.2nm,0.7s,baz=62,slow=4.6,SNR=16
KBZ LR LR 11 33 15.4
comp=Z,177nm,18.1s,baz=34,slow=38
G06A **Carlson Farm,** 68.22 49 *e*P P 11 00 46.5 +1.7
comp=Z,14nm,1.4s
I05D **Terrebonne, OR** 68.33 50 P P 11 00 46.3 +0.7
baz=306
NEW **Newport** 68.39 45 P P 11 00 46.5 +0.7
baz=307,SNR=7.0
NEW **Newport** 68.39 45 *e*P P 11 00 46.1 +0.3
NEW pmax pmax
comp=Z,9.0nm,1.0s
NEW **Newport** 68.39 45 *e*P P 11 00 46.1 +0.3
comp=Z,9.3nm,1.0s
NEY **Neytrino** 68.55 309⇓ *e*P P 11 00 48.4 +1.4
NEY pmax pmax
comp=Z,1.0nm,0.8s
J05D **Fort Rock, OR** 69.01 51 P P 11 00 50.8 +0.9
baz=306,SNR=5.7
YBH **Yreka Blue Hor** 69.03 53 *e*P P 11 00 51.7 +1.7
YBH pmax pmax
comp=Z,38nm,1.6s
YBH **Yreka Blue Hor** 69.03 53 *e*P P 11 00 51.7 +1.7
comp=Z,38nm,1.6s
GNI **Garni** 69.11 305⇓ *e*P P 11 00 52.0 +1.4
GNI pmax pmax
comp=Z,44nm,1.1s
M02C **Callahan** 69.14 53 P P 11 00 52.4 +1.8
baz=306
N02D **Trinity Center** 69.48 53 P P 11 00 54.4 +1.6
baz=306
M04C **Macdoel** 69.53 52 P P 11 00 54.5 +1.4
baz=306,SNR=5.9
K05A **Summer Lake** 69.54 51 *e*P P 11 00 55.2 +1.9
comp=Z,60nm,1.6s
WALA **Waterton Lakes** 69.60 42 *e*P P 11 00 54.5 +1.1
comp=Z,17nm,1.1s
F10A **Beach Ranch, E** 69.71 47 *e*P P 11 00 55.5 +1.4
comp=Z,12nm,1.3s
BSMT **Bassoo Peak** 69.89 44 *e*P P 11 00 56.4 +1.1
SOC **Sochi** 70.12 311 *e*P P 11 00 55.8 -0.7
SOC *e* 11 03 29.2
SOC *e*PPP PPP 11 05 11.2
SOC *e*S **S** **11 10 06.1 +0.1**
SOC *e*SS **SS** **11 14 32.9 -2.2**
SOC pmax pmax
comp=Z,10.0nm,0.4s
SOC MLR MLR
comp=Z,235nm,17.0s
JTMT **Jette** 70.22 44 *e*P P 11 00 58.8 +1.6
BMO **Blue Mountains** 70.34 48 *e*P P 11 00 59.2 +1.1
BMO pmax pmax
comp=Z,7.0nm,1.0s
BMO **Blue Mountains** 70.34 48 *e*P P 11 00 59.2 +1.1
comp=Z,7.1nm,1.0s
MOD **Modoc Plateau** 70.38 51 *e*P P 11 00 59.5 +1.1
comp=Z,6.0nm,1.1s
O03D **Paynes Creek** 70.43 54 P P 11 00 59.1 +0.5
baz=307,SNR=6.7
SWMT **Swartz Lake** 70.52 44 *e*P P 11 01 00.0 +1.0
NC405 **NORSAR Array S** 70.65 336 *e*P P 11 00 59.8 +0.3
NC204 **NORSAR Array S** 70.81 337 *e*P P 11 00 59.5 -1.1
NB2 **NORSAR Subarra** 70.86 336 P P 11 01 00.6 -0.2
comp=Z,16nm,1.1s,baz=40,slow=6.2
NB200 **NORSAR Array S** 70.86 336 *e*P P 11 01 00.8 0.0
NOA **NORSAR Array B** 70.86 336 P P 11 01 00.8 0.0
comp=Z,6.5nm,0.9s,baz=40,slow=6.0,SNR=15
NOA LR LR 11 35 10.6
comp=Z,163nm,18.8s,baz=40,slow=38
NBO02 **NORSAR Array S** 70.96 337 *e*P P 11 01 00.7 -0.7
MSO **Missoula** 70.97 44 P P 11 01 02.4 +0.6
baz=309,SNR=5.5
MSO **Missoula** 70.97 44 *e*P P 11 01 02.5 +0.6
comp=Z,22nm,1.7s
WVOR **Wild Horse Val** 71.05 50 *e*P P 11 01 03.4 +1.0
WVOR pmax pmax
comp=Z,21nm,1.4s
WVOR **Wild Horse Val** 71.05 50 *e*P P 11 01 03.4 +1.0
comp=Z,21nm,1.4s
AKASG **Malin Array Be** 71.22 321 P P 11 01 02.8 -0.3
comp=Z,5.8nm,0.5s,baz=45,slow=6.2,SNR=25
AKASG **Malin Array Be** 71.22 321 *ce*P P 11 01 02.7 -0.3
AKASG pmax pmax
comp=Z,7.0nm,0.5s
AKBB **Malin Array Si** 71.22 321 *e*P P 11 01 02.8 -0.3
AKBB pmax pmax
comp=Z,12nm,0.8s
AKBB **Malin Array Si** 71.22 321 *e*P P 11 01 02.8 -0.3
comp=Z,12nm,0.8s
KIEV **Kiev** 71.23 321 *ce*P P 11 01 02.8 -0.3
KIEV pmax pmax
comp=Z,10.0nm,0.9s
KIEV **Kiev** 71.23 321 *e*P P 11 01 02.9 -0.3
comp=Z,9.1nm,0.7s
AK11 **Malin Array Si** 71.26 321 *e*P P 11 01 02.7 -0.6
FFC **Flin Flon** 71.42 33 *e*P P 11 01 04.4 +0.2
FFC pmax pmax
comp=Z,12nm,0.9s
FFC **Flin Flon** 71.42 33 *e*P P 11 01 04.4 +0.2
comp=Z,12nm,0.9s
AFDM **Forest Hills D** 71.75 54 *e*P P 11 01 07.8 +1.2
comp=Z,23nm,1.6s
STKA **Stephens Creek** 71.82 179 P P 11 01 06.8 0.0
comp=Z,5.2nm,0.8s,baz=352,slow=5.9,SNR=11
STKA LR LR 11 33 45.9
comp=Z,102nm,19.4s,baz=17,slow=37
STKA **Stephens Creek** 71.82 179 *e*P P 11 01 05.8 -0.9
STKA pmax pmax
comp=Z,2.0nm,1.0s
STKA **Stephens Creek** 71.82 179 *e*P P 11 01 05.8 -0.9
comp=Z,1.9nm,1.0s
MFID **Camas Ranch** 72.07 48 *e*P P 11 01 09.7 +1.1
comp=Z,23nm,1.5s
HRY **Holter Researc** 72.17 43 *e*P P 11 01 10.4 +1.4
EGMT **Eagleton** 72.39 41 P P 11 01 11.0 +0.7
baz=311,SNR=8.4
EGMT **Eagleton** 72.39 41 *e*P P 11 01 11.0 +0.7
comp=Z,18nm,0.8s
LRM **Limekiln Ridge** 72.41 44 *e*P P 11 01 11.7 +1.0
DLMT **Dillon** 72.63 45 *e*P P 11 01 13.2 +1.3
comp=Z,12nm,0.8s
CMB **Columbia Colle** 72.67 55 *e*P P 11 01 13.7 +1.6
CMB pmax pmax
comp=Z,45nm,1.7s
CMB **Columbia Colle** 72.67 55 *e*P P 11 01 13.7 +1.6
comp=Z,45nm,1.7s
HLID **Hailey** 72.78 47 P P 11 01 13.7 +0.9
baz=310,SNR=8.7
HLID **Hailey** 72.78 47 *e*P P 11 01 13.8 +1.0
comp=Z,13nm,1.4s
BOZ **Bozeman (W)** 72.96 44 P P 11 01 15.0 +1.1
baz=311,SNR=16
BOZ **Bozeman (W)** 72.96 44 *e*P P 11 01 14.9 +1.1
BOZ pmax pmax
comp=Z,39nm,1.7s
BOZ **Bozeman (W)** 72.96 44 *e*P P 11 01 14.9 +1.1
comp=Z,39nm,1.7s
WAKR **Walker** 72.97 54 *e*P P 11 01 15.6 +1.5
BMN **Battle Mountai** 73.12 51 *e*P P 11 01 16.3 +1.4
BMN pmax pmax
comp=Z,9.0nm,0.9s
BMN **Battle Mountai** 73.12 51 *e*P P 11 01 16.2 +1.4
comp=Z,8.8nm,0.9s
NV01 **Mina Array Sit** 73.72 53 *e*P P 11 01 19.7 +1.2
NVAR **Mina Array Bea** 73.72 53 P P 11 01 20.2 +1.7
comp=Z,6.6nm,0.8s,baz=289,slow=5.4,SNR=52
NVAR LR LR 11 32 38.8
comp=Z,64nm,19.1s,baz=296,slow=35
NV11 **Mina Array Sit** 73.81 53 *e*P P 11 01 19.8 +0.9
comp=Z,38nm,1.8s
GCMT **Greycliff** 73.91 43 *e*P P 11 01 20.6 +1.2
YMR **Madison River** 73.96 45 *e*P P 11 01 21.3 +1.5
comp=Z,56nm,2.0s
ELK **Elko** 74.09 50 *e*P P 11 01 22.3 +1.6
ELK pmax pmax
comp=Z,6.0nm,1.3s
ELK **Elko** 74.09 50 *e*P P 11 01 22.3 +1.6
comp=Z,6.4nm,1.3s
YFT **Old Faithful** 74.17 45 *e*P P 11 01 23.4 +2.3
comp=Z,29nm,1.6s
LKWY **Lake** 74.33 44 *e*P P 11 01 25.1 +3.0
LKWY pmax pmax
comp=Z,8.0nm,1.0s
LKWY **Lake** 74.33 44 *e*P P 11 01 25.1 +3.0
comp=Z,8.1nm,1.0s
H17A **Grant Village** 74.35 45 P P 11 01 24.6 +2.5
baz=312,SNR=8.2
H17A **Grant Village** 74.35 45 *e*P P 11 01 25.3 +3.1
comp=Z,18nm,1.1s
FLWY **Flagg Ranch** 74.49 45 *e*P P 11 01 23.6 +0.7
comp=Z,52nm,1.9s
RLMT **Red Lodge** 74.56 44 P P 11 01 24.3 +1.0
baz=312,SNR=7.9
RLMT **Red Lodge** 74.56 44 *e*P P 11 01 24.5 +1.2
comp=Z,33nm,1.6s
MOOW **Moose Ponds** 74.68 45 *e*P P 11 01 25.6 +1.6
comp=Z,17nm,1.3s
DGMT **Dagmar** 74.82 39 P P 11 01 25.0 +0.6
baz=314
DGMT **Dagmar** 74.82 39 *e*P P 11 01 24.7 +0.2
comp=Z,61nm,1.8s
VES **Vestal, Richgr** 74.85 56 P P 11 01 25.2 +0.4
baz=309,SNR=6.6
HVU **Hansel Valley** 74.85 48 *e*P P 11 01 26.3 +1.3
HVU pmax pmax
comp=Z,7.0nm,1.0s
HVU **Hansel Valley** 74.85 48 *e*P P 11 01 26.3 +1.3
comp=Z,7.4nm,1.0s
LOHW **Long Hollow** 74.85 45 *e*P P 11 01 26.5 +1.5
comp=Z,7.2nm,1.3s
SNOW **Snow King Moun** 74.87 46 *e*P P 11 01 27.2 +2.0
comp=Z,7.8nm,1.1s
REDW **Red Top Meadow** 74.88 46 *e*P P 11 01 26.7 +1.5
comp=Z,15nm,1.3s
PKM **Mcpherson Peak** 74.97 57 P P 11 01 27.1 +1.3
baz=309
A25A **Svangstu Ranch** 75.00 38 P P 11 01 26.3 +0.8
baz=315
LAO **LASA Array** 75.06 41 P P 11 01 27.0 +1.0
baz=314

LAO **LASA Array** 75.06 41 *e*P P 11 01 27.5 +1.5
comp=Z,75nm,1.8s
GRAC **Grapevine Rang** 75.19 54 P P 11 01 28.4 +1.5
baz=310
BUR08 **Bucovina Ar. S** 75.23 321 *e*P P 11 01 27.7 +0.7
BURAR **Bucovina Array** 75.25 321⇑*i*P P 11 01 27.3 +0.2
BURAR **Bucovina Array** 75.25 321⇑P P 11 01 27.3 +0.2
BGU **Big Grassy Mou** 75.26 49 *e*P P 11 01 28.0 +0.6
comp=Z,13nm,1.5s
SPUT **South Promonto** 75.34 48 *e*P P 11 01 29.1 +1.3
comp=Z,19nm,1.6s
ABL **Mount Abel** 75.38 57 *e*P P 11 01 32.1 +3.9
R11A **Troy Canyon, C** 75.42 52 P P 11 01 29.6 +1.3
baz=310,SNR=16
R11A **Troy Canyon, C** 75.42 52 *e*P P 11 01 29.6 +1.3
comp=Z,37nm,1.7s
ARVC **Arvin** 75.45 56 P P 11 01 29.5 +1.1
baz=309
DAC **Darwin (Calif)** 75.51 55 *e*P P 11 01 29.6 +0.7
DAC pmax pmax
comp=Z,34nm,1.8s
DAC **Darwin (Calif)** 75.51 55 *e*P P 11 01 29.6 +0.7
comp=Z,34nm,1.8s
A26A **Wade Farm, Ken** 75.53 37 P P 11 01 29.1 +0.5
baz=316
HWUT **Hardware Ranch** 75.64 47 *e*P P 11 01 30.7 +1.1
comp=Z,27nm,1.4s
MPMC **Manual Prospec** 75.71 55 P P 11 01 31.0 +1.0
baz=310,SNR=16
VRI **Vrincioaia** 75.71 319⇓*i*P P 11 01 30.4 +0.7
VRI **Vrincioaia** 75.71 319⇓P P 11 01 30.4 +0.7
STHS **Stebnicka Huta** 75.82 324 *e*P P 11 01 31.8 +1.6
STHS pmax pmax
comp=Z,5.0nm,0.6s
STHS **Stebnicka Huta** 75.82 324 *e*P P 11 01 31.8 +1.6
FURC **Furnace Creek,** 75.84 54 P P 11 01 31.5 +1.0
baz=310,SNR=22
A27A **Ledoux Ranch,** 75.85 37 P P 11 01 31.8 +1.4
baz=316
DUG **Dugway, Tooele** 75.86 49 P P 11 01 32.2 +1.4
baz=311,SNR=12
DUG **Dugway, Tooele** 75.86 49 *e*P P 11 01 32.1 +1.4
DUG pmax pmax
comp=Z,11nm,1.0s
DUG **Dugway, Tooele** 75.86 49 *e*P P 11 01 32.1 +1.4
comp=Z,11nm,1.0s
OJC **Ojcow** 75.87 325 *e*P P 11 01 30.5 0.0
OJC **Ojcow** 75.87 325 *e*P P 11 01 30.5 0.0
OJC **Ojcow** 75.87 325 *e*P P 11 01 31.3 +0.8
comp=Z,17nm,0.9s
TPNV **Topopah Spring** 75.91 53 P P 11 01 32.5 +1.3
baz=310,SNR=22
TPNV **Topopah Spring** 75.91 53 *e*P P 11 01 32.5 +1.3
TPNV pmax pmax
comp=Z,20nm,0.9s
TPNV **Topopah Spring** 75.91 53 *e*P P 11 01 32.5 +1.3
comp=Z,20nm,0.9s
BLG **Laguna Peak, P** 75.95 57 P P 11 01 32.2 +1.0
baz=309
LRMC **Laurel Mtn Rad** 75.96 55 P P 11 01 32.0 +0.6
baz=310,SNR=6.9
BW06 **Boulder Array** 75.98 45 P P 11 01 32.2 +0.6
baz=312,SNR=6.6
BW06 **Boulder Array** 75.98 45 *e*P P 11 01 32.1 +0.6
PD31 **Pinedale Array** 75.98 45 *e*P P 11 01 32.1 +0.6
PDAR **Pinedale Array** 75.98 45 P P 11 01 32.1 +0.6
comp=Z,3.6nm,0.8s,baz=270,slow=2.5,SNR=25
PDAR LR LR 11 37 04.0
comp=Z,50nm,18.1s,baz=341,slow=37
BR101 **Keskin Array S** 76.08 310 *e*P P 11 01 32.2 +0.2
BR131 **Keskin Array S** 76.08 310 *e*P P 11 01 32.5 +0.5
BRTR **Keskin Array B** 76.08 310 P P 11 01 32.2 +0.2
comp=Z,2.4nm,0.5s,baz=50,slow=4.6,SNR=10
BRTR LR LR 11 40 32.1
comp=Z,69nm,18.2s,baz=44,slow=40
CRVS **Cervenica-Dubn** 76.09 323 *e*P P 11 01 32.5 +0.7
CRVS **Cervenica-Dubn** 76.09 323 *e*P P 11 01 32.5 +0.7
EDW2 **Edwards Air Fo** 76.14 56 P P 11 01 33.1 +0.8
baz=310,SNR=14
D25A **Fairfield** 76.16 39 P P 11 01 33.0 +0.8
baz=315
NIE **Niedzica** 76.24 324 *e*P P 11 01 33.5 +0.9
NIE **Niedzica** 76.24 324 *e*P P 11 01 33.5 +0.9
C26A **Wahner Farm, P** 76.27 38 P P 11 01 33.5 +0.7
baz=316
JLU **Jordanelle** 76.38 48 *e*P P 11 01 34.9 +1.1
comp=Z,17nm,1.5s
NLU **North Lily Min** 76.44 49 *e*P P 11 01 35.5 +1.3
comp=Z,8.0nm,0.9s
BR231 **Keskin MP Arra** 76.50 311 *e*P P 11 01 32.9 -1.5
MWC **Mount Wilson** 76.52 57 *e*P P 11 01 36.0 +1.3
MWC pmax pmax
comp=Z,47nm,1.5s
MWC **Mount Wilson** 76.52 57 *e*P P 11 01 36.0 +1.3
comp=Z,47nm,1.5s
B28A **Dugan Ranch, T** 76.62 37 P P 11 01 35.3 +0.5
baz=317
GSC **Goldstone, Bar** 76.62 55 P P 11 01 36.0 +0.8
baz=310,SNR=7.6
GSC **Goldstone, Bar** 76.62 55 *e*P P 11 01 36.6 +1.5
GSC pmax pmax
comp=Z,30nm,1.6s
GSC **Goldstone, Bar** 76.62 55 *e*P P 11 01 36.6 +1.5
comp=Z,30nm,1.6s
MPU **Maple Canyon** 76.66 49 *e*P P 11 01 36.1 +0.7
comp=Z,9.0nm,0.8s
SSK **Sunset Peak** 76.76 56 *e*P P 11 01 33.1 -2.9
BFSC **Mount Baldy Ra** 76.76 56 P P 11 01 36.4 +0.4
baz=310,SNR=9.0
A29A **Manning Farm,** 76.78 36 P P 11 01 36.1 +0.4
baz=318,SNR=11
CIS **Catalina Islan** 76.82 57 P P 11 01 36.5 +0.3
baz=310
KECS **Kecovo** 76.84 324 *e*P P 11 01 37.2 +1.2
KECS pmax pmax
comp=Z,3.0nm,1.0s
KECS **Kecovo** 76.84 324 *e*P P 11 01 37.2 +1.2
VOIR 76.85 319⇑*i*P P 11 01 36.9 +0.7
VOIR 76.85 319⇑P P 11 01 36.9 +0.7
OKC **Ostrava-Krasne** 76.87 326 AMS AMS 11 38 10.0
comp=Z,400nm,17.2s
F25A **Bowman** 76.97 40 P P 11 01 37.1 +0.3
baz=315
E26A **Carlson Angus** 77.06 39 P P 11 01 37.5 +0.1
baz=316
TUQ **Turquoise Moun** 77.09 54 P P 11 01 38.8 +1.0
baz=310,SNR=23
MORC **Moravsky Berou** 77.18 326 *e*P P 11 01 38.1 +0.1
MORC pmax pmax
comp=Z,29nm,0.8s
MORC **Moravsky Berou** 77.18 326 *e*P P 11 01 38.1 +0.1
comp=Z,29nm,0.8s
A30A **Hoffart Farm,** 77.18 35 P P 11 01 38.2 +0.3
baz=318,SNR=11
BBRC **Big Bear Solar** 77.22 56 P P 11 01 39.0 +0.3
baz=310,SNR=7.0
HEC **Hector,Ludlow** 77.22 55 P P 11 01 39.3 +0.8
baz=310
ULM **Lac du Bonnet** 77.24 33 P P 11 01 38.0 -0.2
comp=Z,5.1nm,0.8s,baz=323,slow=7.8,SNR=13
ULM LR LR 11 38 20.8
comp=Z,250nm,18.8s,baz=316,slow=38
ULM **Lac du Bonnet** 77.24 33 *e*P P 11 01 38.3 +0.1
ULM pmax pmax
comp=Z,50nm,1.8s
ULM **Lac du Bonnet** 77.24 33 *e*P P 11 01 38.3 +0.1
comp=Z,50nm,1.8s
DPC **Dobruska-Polom** 77.26 327 *e*P P 11 01 39.5 +1.1
DPC **Dobruska-Polom** 77.26 327 *e*P P 11 01 39.5 +1.1
UPC **Upice** 77.27 327 *e*P P 11 01 39.3 +0.9
UPC AMS AMS 11 38 50.0
comp=Z,500nm,15.9s
UPC **Upice** 77.27 327 *e*P P 11 01 39.3 +0.9
UPC MLR MLR
comp=Z,500nm,15.9s
MSU **Marysvale** 77.34 50 *e*P P 11 01 41.0 +1.7
MSU **Marysvale** 77.34 50 *e*P P 11 01 41.0 +1.7
TMUT **Trail Mountain** 77.38 49 *e*P P 11 01 40.9 +1.3
comp=Z,5.6nm,0.8s
F26A **Lodgepole** 77.41 40 P P 11 01 39.7 +0.4
baz=316
MDND **Maddock** 77.41 37 P P 11 01 39.2 0.0
baz=318
MURC **Murrieta** 77.47 57 P P 11 01 39.9 +0.1
baz=310
G25A **Newell** 77.51 41 P P 11 01 40.0 +0.1
baz=316
E27A **Carson** 77.52 39 P P 11 01 39.8 -0.1
baz=316,SNR=8.6
PSZ **Piszkesteto** 77.53 324 *e*P P 11 01 41.1 +1.2
PSZ pmax pmax
comp=Z,9.0nm,0.9s
PSZ **Piszkesteto** 77.53 324 *e*P P 11 01 41.1 +1.2
comp=Z,9.3nm,0.9s
P17A **Butcher Ranch,** 77.53 49 *e*P P 11 01 42.1 +1.8
comp=Z,58nm,1.6s
B30A **Myrvik Farm, E** 77.53 36 P P 11 01 40.1 +0.1
baz=318
VYHS **Vyhne** 77.58 324 *e*P P 11 01 41.0 +0.9
VYHS pmax pmax
comp=Z,5.0nm,1.3s
VYHS **Vyhne** 77.58 324 *e*P P 11 01 41.0 +0.9
GMRC **Granite Mounta** 77.68 55 P P 11 01 42.0 +0.9
baz=311,SNR=12
K22A **Casper** 77.70 44 P P 11 01 41.2 0.0
baz=314
K22A **Casper** 77.70 44 *e*P P 11 01 42.1 +1.0
comp=Z,26nm,1.5s
LCMT **Little Creek M** 77.70 52 *e*P P 11 01 42.8 +1.5
comp=Z,16nm,1.2s
F27A **Lemmon** 77.70 39 P P 11 01 41.0 0.0
baz=316
P18A **Preston Nutter** 77.71 48 *e*P P 11 01 42.6 +1.1
comp=Z,20nm,1.2s
H25A **Fruitdale** 77.82 41 P P 11 01 41.6 -0.1
baz=316
LDFC **Landfair** 77.83 54 *e*P P 11 01 43.1 +1.2
comp=Z,63nm,1.6s
BRG **Berggiesshubel** 77.83 329 *e*P P 11 01 41.5 0.0
comp=Z,5.9nm,1.0s
comp=N,218nm,16.4s
comp=E,328nm,15.8s
comp=Z,381nm,15.2s
BRG **Berggiesshubel** 77.83 329 *e*P P 11 01 41.5 0.0
BRG pmax pmax
comp=Z,6.0nm,1.0s
BRG MLR MLR
comp=N,218nm,16.4s
BRG MLR MLR
comp=E,328nm,15.8s
BRG MLR MLR
comp=Z,381nm,15.2s
E28A **Huff** 77.83 38 P P 11 01 41.7 0.0
baz=317
G26A **Maurine** 77.84 40 P P 11 01 41.9 +0.1
baz=316,SNR=6.1
PVCC **Panska Ves** 77.84 328 *e*P P 11 01 42.6 +1.0
PVCC *ex* x 11 01 46.5
PVCC **Panska Ves** 77.84 328 *e*P P 11 01 42.6 +1.0
PVCC *e* 11 01 46.5
B31A **Greenbush Farm** 77.86 35 P P 11 01 42.0 +0.3
baz=319
CLL **Collm** 77.86 329 *i* P P 11 01 41.8 +0.2
comp=Z,9.0nm,1.0s
CLL *e*P(2) 11 01 45.0
comp=Z,8.0nm,0.8s
CLL LmH 11 33 00.0
comp=N,600nm,18.3s
CLL LmH 11 33 00.0
comp=E,700nm,19.0s
CLL **Collm** 77.86 329 *i* P P 11 01 41.8 +0.2
CLL *e* 11 01 45.0
CLL pmax pmax
comp=Z,9.0nm,1.0s
SRU **San Rafael Swe** 77.90 49 *e*P P 11 01 43.7 +1.4
SRU pmax pmax
comp=Z,13nm,0.8s
SRU **San Rafael Swe** 77.90 49 *e*P P 11 01 43.7 +1.4
comp=Z,13nm,0.8s
PFO **Pinyon Flats O** 77.93 56 P P 11 01 43.1 +0.5
baz=311,SNR=10
PFO **Pinyon Flats O** 77.93 56 *e*P P 11 01 43.5 +1.0
PFO pmax pmax
comp=Z,24nm,1.4s
PFO **Pinyon Flats O** 77.93 56 *e*P P 11 01 43.5 +1.0
comp=Z,24nm,1.4s
VRAC **Vranov** 77.94 326⇑*i*P P 11 01 43.3 +1.2
VRAC **Vranov** 77.94 326⇑P P 11 01 43.3 +1.2
KNB **Kanab** 77.95 52 *e*P P 11 01 44.4 +1.7
KNB pmax pmax
comp=Z,33nm,1.5s
KNB **Kanab** 77.95 52 *e*P P 11 01 44.4 +1.7
comp=Z,33nm,1.5s
RSSD **Black Hills** 77.96 42 P P 11 01 42.7 +0.1
baz=315
RSSD **Black Hills** 77.96 42 *e*P P 11 01 43.1 +0.5
RSSD pmax pmax
comp=Z,28nm,1.6s
RSSD **Black Hills** 77.96 42 *e*P P 11 01 43.1 +0.5
comp=Z,28nm,1.6s
BELC **Belle Mtn. Jos** 77.97 56 P P 11 01 42.9 +0.1
baz=311,SNR=5.7
109C **Camp Elliot, M** 77.98 57 P P 11 01 42.9 +0.3
baz=310
A32A **Rocking H Ranc** 77.99 34 P P 11 01 42.1 -0.3
baz=319
C30A **Mose, Pekin** 78.02 36 P P 11 01 42.4 -0.2
baz=318
G27A **Dupree** 78.11 40 P P 11 01 43.1 -0.1
baz=316
I25A **Rochford** 78.18 42 P P 11 01 43.6 -0.3
baz=316
GOPC **GO Pecny, Ondr** 78.23 328 *e*P P 11 01 44.6 +0.8
GOPC *ex* x 11 01 48.0
GOPC AMS AMS 11 40 40.0
comp=Z,400nm,12.3s
GOPC **GO Pecny, Ondr** 78.23 328 *e*P P 11 01 44.6 +0.8
GOPC *e* 11 01 48.0
GOPC MLR MLR
comp=Z,400nm,12.3s
H26A **Fairpoint** 78.24 41 P P 11 01 43.9 -0.1
baz=316
PRU **Pruhonice** 78.27 328 *e*P P 11 01 45.0 +1.0
PRU *ex* x 11 01 48.3
PRU AMS AMS 11 40 40.0
comp=Z,500nm,14.9s
PRU **Pruhonice** 78.27 328 *e*P P 11 01 45.0 +1.0
PRU *e* 11 01 48.3
PRU MLR MLR
comp=Z,500nm,14.9s
C31A **Landman Farms,** 78.29 36 P P 11 01 44.1 0.0
baz=319
F28A **McLaughlin** 78.31 39 P P 11 01 44.4 +0.1
baz=317,SNR=5.5
D30A **Buchanan** 78.34 37 P P 11 01 44.3 -0.1
baz=318
HAY **Hayfield** 78.36 56 *e*P P 11 01 44.8 0.0
HAY **Hayfield** 78.36 56 *e*P P 11 01 44.8 0.0
B32A **Ashes, Strandq** 78.37 35 P P 11 01 43.9 -0.6
baz=319,SNR=6.0
BAR **Barrett** 78.40 57 *e*P P 11 01 46.3 +1.3
comp=Z,24nm,2.0s
IRM **Iron Mountain** 78.40 55 P P 11 01 45.8 +0.8
baz=311,SNR=13
MONP2 **Monument Peak** 78.42 57 P P 11 01 45.7 +0.3
baz=311
A33A **Warroad** 78.45 34 P P 11 01 44.7 -0.2
baz=320,SNR=12
O20A **White River Ci** 78.50 47 P P 11 01 45.9 +0.3
baz=314,SNR=6.5
O20A **White River Ci** 78.50 47 *e*P P 11 01 46.7 +1.1
comp=Z,27nm,1.5s
BC3 **Big Chuckawall** 78.54 56 P P 11 01 46.6 +0.7
baz=311,SNR=6.3
W13A **Hualapai Mount** 78.57 54 *e*P P 11 01 47.1 +1.0
comp=Z,35nm,1.8s
H27A **Howes** 78.57 40 P P 11 01 45.9 +0.1
baz=316,SNR=6.3
I26A **New Underwood** 78.62 41 P P 11 01 46.3 +0.2
baz=316
U15A **North Rim** 78.66 52 *e*P P 11 01 48.4 +1.7
comp=Z,27nm,1.1s
RAYN **Ar Rayn** 78.67 291 *e*P P 11 01 46.6 -0.1
comp=Z,5.8nm,0.6s
E30A **Jud** 78.72 37 P P 11 01 46.4 -0.1
baz=318
AGMN **Agassiz Nation** 78.73 34 P P 11 01 46.2 -0.4
baz=320
AGMN **Agassiz Nation** 78.73 34 *e*P P 11 01 46.5 -0.1
comp=Z,38nm,1.9s
IBP **Imperial Bould** 78.78 57 P P 11 01 47.9 +0.7
baz=311
SWSC **Sam W. Stewart** 78.79 56 P P 11 01 47.8 +0.7
baz=311
G28A **Parade** 78.82 39 P P 11 01 47.3 +0.1
baz=317
B33A **Robert and Kas** 78.87 34 P P 11 01 46.9 -0.4
baz=320
PDMCI **Parker Dam,Lak** 78.94 54 P P 11 01 48.6 +0.7
baz=312
MDVR **Moldovita** 78.97 320⇑*i*P P 11 01 48.5 +0.5
I27A **Quinn** 78.99 41 P P 11 01 48.6 +0.5
baz=316,SNR=13
J26A **Sides Ranch, S** 79.02 42 P P 11 01 48.7 +0.4
baz=316
H28A **Mission Ridge** 79.06 40 P P 11 01 49.0 +0.5
baz=317,SNR=8.1
Y12C **Blythe** 79.06 55 P P 11 01 49.7 +1.1
baz=311
Y12C **Blythe** 79.06 55 *e*P P 11 01 50.0 +1.4
comp=Z,13nm,0.9s
B34A **Aery, Baudette** 79.11 34 P P 11 01 48.1 -0.5
baz=320,SNR=5.2
PV09 **Paradox Valley** 79.11 48 *e*P P 11 01 49.9 +0.7
E31A **Nome** 79.15 37 P P 11 01 48.9 0.0
baz=319
C33A **Trail** 79.18 35 P P 11 01 48.7 -0.4
baz=320,SNR=5.6
N23A **Red Feather La** 79.23 45 P P 11 01 50.9 +1.2
baz=315,SNR=6.5
N23A **Red Feather La** 79.23 45 *e*P P 11 01 51.0 +1.2
comp=Z,35nm,1.4s
GLA **Glamis** 79.33 56 P P 11 01 50.9 +0.8
baz=311
KHC **Kasperske Hory** 79.33 328 *e*P P 11 01 50.4 +0.5
KHC *ex* x 11 01 54.0
KHC **Kasperske Hory** 79.33 328 *e*P P 11 01 50.4 +0.5
KHC *e* 11 01 54.0
KHC **Kasperske Hory** 79.33 328 *e*P P 11 01 50.0 +0.1
comp=Z,2.4nm,0.8s
PV05 **Paradox Valley** 79.42 49 *e*P P 11 01 52.5 +1.7
I28A **Midland** 79.48 40 P P 11 01 50.9 +0.1
baz=317,SNR=7.3
H29A **Onida** 79.49 39 P P 11 01 51.0 +0.3
baz=318
F31A **Hecla** 79.50 37 P P 11 01 50.8 0.0
baz=319
GEC2 **GERESS Array S** 79.51 327 *e*P P 11 01 51.4 +0.5
GEC2 pmax pmax
comp=Z,5.0nm,0.9s
GEC2 **GERESS Array S** 79.51 327 *e*P P 11 01 51.4 +0.5
comp=Z,4.9nm,0.9s
GERES **GERESS Array B** 79.51 327 P P 11 01 51.3 +0.4
comp=Z,2.0nm,0.8s,baz=26,slow=7.4,SNR=8.4
GERES LR LR 11 41 35.6
comp=Z,150nm,19.3s,baz=26,slow=39
GEA0 **GERESS Array S** 79.51 327 *e*P P 11 01 50.9 0.0
B35A **Bob, Littlefor** 79.60 33 P P 11 01 50.9 -0.4
baz=321,SNR=6.2
J27A **Elkhorn Farm,** 79.61 41 P P 11 01 51.9 +0.3
baz=317
D33A **AnnSam, Waubun** 79.62 35 P P 11 01 51.2 -0.3
baz=320
G30A **Faulkton** 79.63 38 P P 11 01 51.9 +0.4
baz=318
C34A **RKJ Ranch, Bem** 79.64 34 P P 11 01 51.5 0.0
baz=320
PV01 **Paradox Valley** 79.69 48 *e*P P 11 01 53.4 +1.1
VTS **Vitosha** 79.81 318⇑*i*P P 11 01 51.0 -1.8
VTS **Vitosha** 79.81 318⇑P P 11 01 51.0 -1.8
VTS **Vitosha** 79.81 318 *e*P P 11 01 53.7 +0.9
comp=Z,11nm,0.7s
WUAZ **Wupatki** 79.82 52 P P 11 01 54.2 +1.2
baz=313,SNR=7.8
WUAZ **Wupatki** 79.82 52 *e*P P 11 01 54.1 +1.2
comp=Z,19nm,1.1s
SMCO **Snowmass** 79.86 47 *e*P P 11 01 54.5 +1.1
comp=Z,19nm,1.4s
J28A **Allard Ranch,** 79.87 41 P P 11 01 53.3 +0.4
baz=317,SNR=8.3
Y14A **Wickenburg** 79.88 54 *e*P P 11 01 54.3 +1.1
comp=Z,192nm,1.9s
I29A **Vivian Onida** 79.89 40 P P 11 01 53.1 +0.1
baz=318,SNR=5.3
D34A **Park Rapids** 79.95 35 P P 11 01 52.7 -0.5
baz=320
C35A **Jirik Farms, M** 80.00 34 P P 11 01 53.1 -0.4
baz=321,SNR=5.2
E33A **Westby DABS, E** 80.04 36 P P 11 01 53.4 -0.3
baz=326,SNR=6.4
ISCO **Idaho Springs** 80.18 46 P P 11 01 55.8 +0.8
baz=315,SNR=6.6
ISCO **Idaho Springs** 80.18 46 *e*P P 11 01 55.4 +0.4
ISCO pmax pmax
comp=Z,37nm,1.9s
ISCO **Idaho Springs** 80.18 46 *e*P P 11 01 55.4 +0.4
comp=Z,37nm,1.9s
113A **Mohawk Valley,** 80.18 55 *e*P P 11 01 55.7 +1.0
comp=Z,8.9nm,1.0s
SUSD **Miller** 80.23 39 P P 11 01 55.3 +0.5
baz=318
G32A **Webster** 80.31 37 P P 11 01 55.3 +0.1
baz=319
K28A **Ten Mile Ranch** 80.32 41 P P 11 01 55.6 +0.2
baz=317
J29A **Okreek** 80.33 40 P P 11 01 55.4 0.0
baz=318
MVCO **Mesa Verde** 80.36 49 P P 11 01 56.5 +0.6
baz=314,SNR=8.2
MVCO **Mesa Verde** 80.36 49 *e*P P 11 01 57.1 +1.1
comp=Z,8.9nm,0.9s
I30A **Oacoma** 80.39 39 P P 11 01 56.0 +0.3
baz=318
F33A **5 Mile Ranch,** 80.42 36 P P 11 01 55.4 -0.4
baz=320
C36A **Pine Crest Far** 80.44 33 P P 11 01 55.7 -0.2
baz=322
D35A **Remer** 80.45 34 P P 11 01 55.8 -0.2
baz=321
X16A **Lo Mia Camp, P** 80.52 53 *e*P P 11 01 58.1 +1.3
comp=Z,15nm,1.2s
E35A **Pequot Lakes** 80.70 35 P P 11 01 56.8 -0.5
baz=321
C37A **Embarrass** 80.73 33 P P 11 01 57.1 -0.3
baz=322,SNR=5.7
D36A **Goodland** 80.76 34 P P 11 01 57.3 -0.3
baz=322
J30A **Dallas** 80.80 40 P P 11 01 57.9 0.0
baz=318,SNR=6.0
K29A **Lazy Trails An** 80.81 41 P P 11 01 58.2 +0.2
baz=318
EYMN **Ely** 80.85 32 P P 11 01 57.6 -0.5
baz=323,SNR=6.1
EYMN **Ely** 80.85 32 *e*P P 11 01 57.5 -0.5
comp=Z,51nm,1.8s
H32A **Carlson Farm,** 80.90 38 P P 11 01 58.4 0.0
baz=319
S22A **4UR Ranch, Cre** 80.94 48 P P 11 02 00.2 +1.1
baz=315,SNR=8.8
S22A **4UR Ranch, Cre** 80.94 48 *e*P P 11 02 01.0 +1.9
comp=Z,51nm,2.0s
Q24A **Divide** 81.02 46 P P 11 01 60.0 +0.5
baz=315
W18A **Petrified Fore** 81.07 51 P P 11 01 59.3 -0.4
baz=314
D37A **Cotton** 81.08 33 P P 11 01 60.0 +0.7
baz=322
H33A **Prehn Over Nor** 81.09 37 P P 11 01 59.6 +0.2
baz=320
C38A **Sawbill Land.** 81.12 32 P P 11 01 59.2 -0.3
baz=323,SNR=8.9
G34A **Benson** 81.17 36 P P 11 01 59.8 0.0
baz=320
F35A **Swanville** 81.17 35 P P 11 01 59.5 -0.3
baz=321
K30A **Basset** 81.22 40 P P 11 02 00.4 +0.2
baz=318,SNR=5.6
E36A **McGregor** 81.23 34 P P 11 01 59.9 -0.2
baz=322
M28A **Bar X Bar Ranc** 81.28 42 P P 11 02 01.0 +0.4
baz=317
214A **Organ Pipe Nat** 81.33 55 P P 11 02 01.3 +0.4
baz=312
X18A **Snowflake** 81.35 52 *e*P P 11 02 03.0 +1.8
comp=Z,11nm,1.2s
C39A **Grand Marais** 81.50 32 P P 11 02 01.1 -0.4
baz=324
J32A **Parkston** 81.56 39 P P 11 02 01.4 -0.5
baz=319
M29A **Burnside Ranch** 81.59 42 P P 11 02 02.2 -0.1
baz=318

F36A	Milaca baz=322	81.63	35	P		P	11 02 01.9	-0.3
K31A	O'Neill baz=319,SNR=5.3	81.68	40	P		P	11 02 02.6	0.0
SDCO	Great Sand Dun baz=315,SNR=9.6	81.69	47	P		P	11 02 04.2	+1.1
SDCO	Great Sand Dun comp=Z,7.3nm,1.0s	81.69	47	*e*P		P	11 02 04.0	+0.9
L30A	Spencer Herefo baz=318	81.71	41	P		P	11 02 02.7	0.0
N28A	Pribbeno Ranch baz=317	81.71	43	P		P	11 02 02.9	+0.1
ECSD	EROS Data Cent baz=320,SNR=6.7	81.87	38	P		P	11 02 03.6	+0.1
ECSD	EROS Data Cent comp=Z,71nm,2.0s	81.87	38	*e*P		P	11 02 03.6	+0.1
H35A	Sunnyside Ranc baz=321,SNR=6.2	81.95	36	P		P	11 02 04.2	+0.2
L31A	Butterfield Fa baz=319,SNR=6.2	81.98	40	P		P	11 02 04.3	+0.1
O28A	Krutsinger Ran baz=317	82.00	43	P		P	11 02 04.7	+0.3
G36A	St. Michael baz=322	82.02	35	P		P	11 02 03.7	-0.5
J33A	Davis baz=320	82.02	38	P		P	11 02 04.6	+0.2
K32A	Verdigre baz=319	82.04	39	P		P	11 02 04.3	-0.1
N29A	Votaw Ranch, W baz=318	82.09	42	P		P	11 02 04.9	+0.1
TUC	Tucson baz=313	82.35	54	P		P	11 02 07.0	+0.6
TUC TUC	Tucson comp=Z,6.0nm,1.0s	82.35	54	*e*P pmax		P pmax	11 02 07.5	+1.2
TUC	Tucson comp=Z,6.2nm,1.0s	82.35	54	*e*P		P	11 02 07.5	+1.2
KSCO	Kaye Shedlock' baz=317	82.36	44	P		P	11 02 07.0	+0.6
P28A	Saint Francis baz=317,SNR=5.2	82.41	44	P		P	11 02 06.9	+0.3
SCHQ	Schefferville comp=Z,6.3nm,0.9s,baz=37,slow=4.7,SNR=4.9	82.43	15	P		P	11 02 06.5	+0.2
SCHQ	comp=Z,104nm,18.8s,baz=23,slow=39			LR		LR	11 42 59.8	
SCHQ	Schefferville comp=Z,11nm,1.1s	82.43	15	*e*P		P	11 02 05.7	-0.6
SPMN	Marine on St. baz=322	82.44	35	P		P	11 02 06.3	-0.2
H36A	Jessenland, He baz=321	82.45	36	P		P	11 02 06.9	+0.3
L32A	Elgin baz=319	82.51	40	P		P	11 02 07.3	+0.3
M31A	Lambtecht Ranc baz=319	82.53	41	P		P	11 02 07.0	0.0
DAVOX	Davos/Dischmat comp=Z,110nm,19.9s,baz=68,slow=39	82.71	328	LR		LR	11 43 37.7	
T25A	Trinidad baz=316,SNR=9.0	82.73	47	P		P	11 02 09.1	+0.7
T25A	Trinidad comp=Z,12nm,0.8s	82.73	47	*e*P		P	11 02 09.6	+1.2
I36A	Fitzsimmons Fa baz=321	82.85	36	P		P	11 02 08.6	0.0
O30A	MW Ranch, Wils baz=318	82.85	42	P		P	11 02 08.9	+0.1
BGNE	Belgrade baz=319	82.89	40	P		P	11 02 09.2	+0.2
ANMO	Albuquerque baz=315	83.12	50	P		P	11 02 11.4	+0.9
ANMO ANMO	Albuquerque comp=Z,10.0nm,1.2s	83.12	50	*e*P pmax		P pmax	11 02 11.7	+1.2
ANMO	Albuquerque comp=Z,19nm,1.3s	83.12	50	*e*P		P	11 02 12.2	+1.8
I37A	Lemond, Waseca baz=322	83.13	36	P		P	11 02 10.5	+0.4
P30A	Selden baz=318	83.22	43	P		P	11 02 10.8	+0.1
M33A	Taylor Creek F baz=320	83.24	40	P		P	11 02 10.9	+0.2
J36A	Seneca 1, Swea baz=321	83.24	37	P		P	11 02 10.9	+0.2
O31A	Woolen Ranch, baz=318	83.24	42	P		P	11 02 10.5	-0.3
COWI	Conover comp=Z,10nm,1.3s	83.29	32	*e*P		P	11 02 11.0	+0.1
L34A	Svendsen Farm, baz=320	83.33	39	P		P	11 02 11.3	+0.1
I38A	Scanlan Farm, baz=322	83.58	35	P		P	11 02 12.4	-0.1
J37A	Redenius Farm, baz=322	83.61	36	P		P	11 02 12.5	-0.1
P31A	Stockton baz=319,SNR=5.6	83.69	42	P		P	11 02 12.9	-0.2
K36A	Gilmore City baz=321	83.72	37	P		P	11 02 13.1	0.0
319A	Douglas comp=Z,14nm,0.9s	83.92	54	*e*P		P	11 02 15.9	+1.4
K37A	Belmond baz=322	84.00	37	P		P	11 02 14.4	-0.2
P32A	Huiting Farm, baz=319,SNR=6.6	84.01	42	P		P	11 02 14.3	-0.4
121A	Cookes Peak, D baz=315,SNR=10	84.03	52	P		P	11 02 16.2	+1.1
CBKS	Cedar Bluff baz=318	84.03	43	P		P	11 02 14.6	-0.3
CBKS CBKS	Cedar Bluff comp=Z,32nm,1.4s	84.03	43	*e*P pmax		P pmax	11 02 15.0	+0.1
CBKS	Cedar Bluff comp=Z,32nm,1.4s	84.03	43	*e*P		P	11 02 15.0	+0.1
M35A	Neola baz=321	84.04	39	P		P	11 02 14.9	+0.1
J38A	Wedel Dairy, R baz=322	84.09	36	P		P	11 02 15.0	-0.1
N34A	Lincoln baz=320	84.14	40	P		P	11 02 14.9	-0.4
O33A	Hebron baz=320	84.18	41	P		P	11 02 15.2	-0.4
L37A	Phoenix Point, baz=322	84.45	37	P		P	11 02 16.6	-0.3
M36A	Felix, Anita baz=321	84.48	38	P		P	11 02 17.5	+0.4
Q32A	Meitler Ranch, baz=319,SNR=5.8	84.51	42	P		P	11 02 16.9	-0.4
N35A	Tabor baz=321	84.53	39	P		P	11 02 17.8	+0.5
O34A	Beatrice baz=320	84.54	40	P		P	11 02 17.2	-0.2
P33A	Williams Farm, baz=320	84.61	41	P		P	11 02 17.7	0.0
L38A	Oak Wood Farm, baz=322	84.80	37	P		P	11 02 18.7	+0.1
M37A	Trindle Farm, baz=322	84.87	38	P		P	11 02 19.2	+0.2
Q33A	Connelly Farm, baz=320,SNR=5.6	84.87	42	P		P	11 02 18.6	-0.5
P34A	Walnut Farm, R baz=320	84.96	41	P		P	11 02 19.4	-0.2
M38A	Pleasantville baz=322	85.26	37	P		P	11 02 20.9	-0.1
S32A	Newby Ranch, P baz=319,SNR=5.2	85.28	43	P		P	11 02 21.2	0.0
N37A	Lee Faris, Mou baz=322,SNR=7.2	85.30	38	P		P	11 02 21.4	+0.2
R33A	Olander Ranch, baz=319	85.32	42	P		P	11 02 21.3	0.0
P35A	Duane Minner, baz=320	85.38	40	P		P	11 02 21.6	0.0
Q34A	Chapman baz=320	85.38	41	P		P	11 02 21.5	-0.1
KSU1	Kansas State U baz=320	85.41	41	P		P	11 02 21.6	-0.1
KSU1	Kansas State U comp=Z,15nm,0.8s	85.41	41	*e*P		P	11 02 22.0	+0.2
O36A	Bolckow baz=321,SNR=6.1	85.43	39	P		P	11 02 21.9	+0.1
T32A	Huddler Ranch, baz=319	85.68	44	P		P	11 02 23.4	+0.2
P36A	Good Intent, A baz=321	85.70	40	P		P	11 02 23.0	-0.2
N38A	Joes South For baz=322	85.73	38	P		P	11 02 23.3	-0.1
O37A	Wolven Farm, M baz=322	85.79	39	P		P	11 02 23.8	+0.2
VLDQ	Val d'Or comp=Z,60nm,1.6s	85.81	24	*e*P		P	11 02 22.8	-0.7
S33A	Kaszmaul Farm, baz=320	85.85	43	P		P	11 02 24.5	+0.5
AMTX	Amarillo baz=318	85.89	47	P		P	11 02 24.9	+0.6
AMTX	Amarillo comp=Z,12nm,0.8s	85.89	47	*e*P		P	11 02 25.3	+1.0
MSTX	Muleshoe baz=317	85.94	48	P		P	11 02 25.0	+0.3
MSTX	Muleshoe comp=Z,11nm,1.2s	85.94	48	*e*P		P	11 02 25.4	+0.7
N39A	Derby Farms, D baz=322	86.01	37	P		P	11 02 24.6	-0.1
MNTX	Cornudas Mount baz=316,SNR=6.5	86.06	51	P		P	11 02 25.7	+0.6
MNTX	Cornudas Mount comp=Z,20nm,1.8s	86.06	51	*e*P		P	11 02 26.3	+1.2
P37A	Lathrop baz=322	86.15	39	P		P	11 02 25.6	+0.2
O38A	Galt baz=322	86.15	38	P		P	11 02 25.7	+0.3
R35A	Emporia Munici baz=320,SNR=6.8	86.21	41	P		P	11 02 26.1	+0.3
S34A	Willow Spring baz=320	86.22	42	P		P	11 02 25.9	+0.1
PMOR	Pomariorio Ree comp=Z,12nm,0.3s	86.24	113	*e*T		T	12 36 02.7	
O39A	Kirksville baz=322	86.48	38	P		P	11 02 27.7	+0.7
P38A	Dawn baz=322,SNR=7.5	86.51	39	P		P	11 02 27.5	+0.3
R36A	Gordon, Harris baz=321,SNR=7.5	86.56	41	P		P	11 02 27.5	+0.1
S35A	Otter Creek Ra baz=320,SNR=15	86.64	42	P		P	11 02 28.2	+0.3
T34A	McClaskey Farm baz=320	86.70	43	P		P	11 02 28.7	+0.5
V32A	Arapaho baz=319	86.71	45	P		P	11 02 29.0	+0.7
PPT	Papeete comp=Z,91nm,21.5s,baz=310,slow=30	86.83	116	LR		LR	11 33 42.7	
PPT2	Papeete2 comp=Z,208nm,24.2s	86.85	116	*e*LR		LR	11 29 25.9	
O40A	La Belle baz=323	86.90	37	P		P	11 02 29.0	-0.1
R37A	Teagarden Farm baz=321	86.90	40	P		P	11 02 29.1	0.0
U34A	Anderson Ranch baz=320	86.97	43	P		P	11 02 30.0	+0.5
U34A	Anderson Ranch comp=Z,133nm,1.9s	86.97	43	*e*P		P	11 02 30.7	+1.2
S36A	Lake Cedric, C baz=321,SNR=6.3	86.98	41	P		P	11 02 29.6	+0.1
P39A	Salisbury baz=322	86.99	38	P		P	11 02 29.6	+0.1
Q38A	Cooks Store, C baz=322	86.99	39	P		P	11 02 29.6	+0.1
V33A	Lossen Ranch, baz=319	87.04	44	P		P	11 02 30.1	+0.2
W32A	Sentinel baz=319,SNR=5.6	87.05	45	P		P	11 02 30.8	+0.9
T35A	Sooner Cattle baz=320,SNR=5.7	87.13	42	P		P	11 02 30.8	+0.5
Q39A	Willow Grove F baz=322,SNR=12	87.23	39	P		P	11 02 31.0	+0.3
P40A	Paris baz=323,SNR=7.5	87.29	38	P		P	11 02 31.1	+0.2
S37A	Fort Scott baz=321,SNR=9.8	87.33	41	P		P	11 02 31.2	0.0
T36A	Boggs Farm, Ca baz=321,SNR=7.3	87.34	42	P		P	11 02 31.4	+0.1
V34A	Guthrie baz=320	87.43	44	P		P	11 02 32.4	+0.6
V34A	Guthrie comp=Z,115nm,1.9s	87.43	44	*e*P		P	11 02 32.9	+1.1
U35A	Pawnee baz=320,SNR=5.3	87.44	43	P		P	11 02 32.0	+0.2
W33A	Caddo, Fort Co baz=319	87.44	45	P		P	11 02 33.2	+1.4
R38A	Fenwick Farm, baz=322	87.46	40	P		P	11 02 31.5	-0.3
X32A	Elmer baz=319,SNR=5.8	87.55	46	P		P	11 02 32.3	-0.1
WMOK WMOK	Wichita Mounta comp=Z,24nm,1.8s	87.59	45	*e*P pmax		P pmax	11 02 33.2	+0.7
WMOK	Wichita Mounta comp=Z,24nm,1.8s	87.59	45	*e*P		P	11 02 33.2	+0.7
Q40A	Laux Farm, Aux baz=323	87.70	38	P		P	11 02 33.3	+0.3
HDIL	Hopedale baz=324	87.72	36	P		P	11 02 33.1	0.0
W34A	Big Creek, baz=320	87.75	44	P		P	11 02 33.4	+0.1
TAOE	Nuku Hiva Isla comp=Z,263nm,33.0s	87.76	103	*e*LR		LR	11 30 02.0	
R39A	Chumby, Stover baz=322,SNR=10	87.78	39	P		P	11 02 33.2	-0.2
T37A	Cheneyville 18 baz=321,SNR=5.7	87.78	41	P		P	11 02 33.2	-0.2
V35A	Meyer Ranch, C baz=320	87.85	43	P		P	11 02 34.0	+0.2
S38A	Stockton baz=322	87.89	40	P		P	11 02 33.8	-0.1
U36A	Oologah baz=321	87.93	42	P		P	11 02 34.4	+0.2
S39A	Bolivar baz=322,SNR=7.2	88.13	40	P		P	11 02 34.6	-0.5
T38A	Diamond baz=322,SNR=8.9	88.16	41	P		P	11 02 35.0	-0.2
R40A	Maddies Statio baz=323,SNR=11	88.17	39	P		P	11 02 35.1	-0.1
X34A	Smith Ranch, M baz=320	88.20	45	P		P	11 02 36.1	+0.6
Y33A	Hilltop Ranch, baz=319	88.22	45	P		P	11 02 35.7	+0.1
U37A	Salina baz=321,SNR=5.0	88.24	42	P		P	11 02 35.4	-0.2
ATD	Arta Tunnel comp=Z,76nm,19.8s,baz=30,slow=38	88.27	284	LR		LR	11 45 40.6	
TUL1	Leonard baz=321	88.28	42	P		P	11 02 35.7	0.0
TUL1	Leonard comp=Z,63nm,1.8s	88.28	42	*e*P		P	11 02 36.6	+0.9
W35A	Tecumseh baz=320	88.29	44	P		P	11 02 36.1	+0.2
V36A	Jenks baz=321	88.29	43	P		P	11 02 36.1	+0.2
U38A	Gravette baz=322,SNR=6.1	88.58	41	P		P	11 02 36.9	-0.3
S40A	Lebanon baz=323,SNR=7.0	88.60	39	P		P	11 02 37.1	-0.2
T39A	Clever baz=322	88.63	40	P		P	11 02 37.3	-0.1
V37A	Hulbert baz=321,SNR=6.9	88.63	42	P		P	11 02 37.5	+0.1
W36A	Wetumka baz=320	88.64	43	P		P	11 02 37.7	+0.2
Z33A	Whitaker Ranch baz=320	88.69	46	P		P	11 02 38.3	+0.5
ABTX	Abilene, Hawle baz=319	88.70	47	P		P	11 02 38.2	+0.4
Y34A	Reagan Ranch, baz=320	88.73	45	P		P	11 02 38.4	+0.5
TX31	Lajitas Ar. Si	88.78	52	*e*P		P	11 02 39.3	+0.9
LTX	Lajitas	88.78	52	*e*P		P	11 02 39.3	+0.9
LTX	Lajitas	88.78	52	*e*P		P	11 02 39.2	+0.9
TXAR	Lajitas Array comp=Z,2.2nm,0.7s,baz=297,slow=3.1,SNR=35	88.78	52	P		P	11 02 39.2	+0.8
X35A	Drake baz=320,SNR=5.1	88.81	44	P		P	11 02 38.3	0.0
SFIN	Lafayette baz=326	88.83	34	P		P	11 02 38.4	+0.1
HHAR	Hobbs comp=Z,37nm,1.8s	88.93	41	*e*P		P	11 02 39.2	+0.3
T40A	Mansfield baz=323	88.95	40	P		P	11 02 38.8	-0.1
X36A	Centrahoma baz=320,SNR=5.5	89.01	44	P		P	11 02 39.6	+0.4
V38A	Canehill baz=322,SNR=11	89.02	42	P		P	11 02 39.3	+0.1
W37B	Quinton baz=321	89.06	43	P		P	11 02 39.4	0.0
U39A	Green Forest baz=322,SNR=8.7	89.08	41	P		P	11 02 39.4	-0.2
Z34A	Collier Ranch, baz=320	89.09	45	P		P	11 02 39.8	+0.1
Y35A	Marietta baz=320	89.16	44	P		P	11 02 40.1	+0.1
HPIG		89.28	55	*e*P		P	11 02 40.7	-0.3
U40A	Yellville baz=322,SNR=13	89.41	40	P		P	11 02 41.1	0.0
V39A	Pettigrew baz=322,SNR=7.5	89.42	41	P		P	11 02 41.1	-0.1
Z35A	Perchaven, San baz=320	89.48	45	P		P	11 02 41.8	+0.4
X37A	Clayton baz=321	89.51	43	P		P	11 02 41.9	+0.3
Y36A	Durant baz=320	89.56	44	P		P	11 02 42.3	+0.5
233A	Rising Star baz=319	89.57	47	P		P	11 02 42.3	+0.3
W38A	Poteau baz=322	89.58	42	P		P	11 02 42.1	+0.2
X38A	Whitesboro baz=321,SNR=6.5	89.73	43	P		P	11 02 43.2	+0.6
Y37A	Hugo baz=321	89.85	44	P		P	11 02 43.4	+0.2
W39A	Magazine baz=322	89.86	42	P		P	11 02 43.0	-0.2
V40A	Witts Springs baz=322	89.86	41	P		P	11 02 42.8	-0.5
Z36A	Blue Ridge baz=320	89.97	44	P		P	11 02 44.0	+0.2
333A	Richland Sprin baz=319,SNR=6.7	90.04	47	P		P	11 02 44.3	+0.1
SIUC	Southern Illin comp=Z,31nm,0.9s	90.06	37	*e*P		P	11 02 45.0	+0.9
ERPA	Erie comp=Z,21nm,0.9s	90.20	29	*e*P		P	11 02 45.9	+1.2
JCT	Junction City baz=319	90.21	48	P		P	11 02 45.5	+0.5
JCT JCT	Junction City comp=Z,26nm,1.5s	90.21	48	*e*P pmax		P pmax	11 02 45.7	+0.7
JCT	Junction City comp=Z,26nm,1.5s	90.21	48	*e*P		P	11 02 45.7	+0.7
W40A	Ferguson Farm, baz=322	90.22	41	P		P	11 02 45.2	+0.3
X39A	Fountain Ranch baz=322,SNR=6.3	90.23	42	P		P	11 02 45.5	+0.5
PBMO	Poplar Bluff comp=Z,20nm,1.1s	90.25	38	*e*P		P	11 02 45.8	+0.8
WHTX	Lake Whitney, baz=320	90.39	46	P		P	11 02 46.1	+0.4
433A	Art baz=319	90.41	48	P		P	11 02 46.1	+0.2
334A	Lometa baz=320,SNR=6.0	90.45	47	P		P	11 02 46.3	+0.2
MIAR	Mount Ida baz=322,SNR=9.5	90.47	42	P		P	11 02 46.3	+0.1
MIAR MIAR	Mount Ida comp=Z,16nm,0.8s	90.47	42	*e*P pmax		P pmax	11 02 46.2	+0.1
MIAR	Mount Ida comp=Z,16nm,0.8s	90.47	42	*e*P		P	11 02 46.2	+0.1
X201	Greenbrier Sit comp=Z,56nm,1.7s	90.50	41	*e*P		P	11 02 46.8	+0.7
X301	Greenbrier Sit comp=Z,52nm,1.7s	90.52	41	*e*P		P	11 02 46.7	+0.4
WHAR	Wooly Hollow comp=Z,12nm,0.9s	90.53	41	*e*P		P	11 02 46.9	+0.5
434A	Burnet baz=319	90.83	47	P		P	11 02 48.3	+0.5
M54A	Oil Creek Stat baz=331	90.85	29	P		P	11 02 48.1	+0.3
X40A	Basin Creek Fa baz=322	90.90	41	P		P	11 02 48.6	+0.6
TBI	Tubuai comp=Z,112nm,21.8s	90.91	120	*e*LR		LR	11 31 25.8	
TBI	Tubuai comp=Z,18nm,0.3s	90.91	120	*e*T		T	12 41 45.2	
533A	Kerrville baz=319	90.95	48	P		P	11 02 48.9	+0.5
N54A	Moraine State baz=330	91.20	29	P		P	11 02 50.0	+0.6
534A	Blanco baz=319	91.30	48	P		P	11 02 50.5	+0.5
633A	Saathoff Ranch baz=319	91.33	49	P		P	11 02 50.8	+0.6
Z40A	Long Farm, Mag baz=322	91.57	43	P		P	11 02 51.6	+0.5
832A	Faith Ranch, C baz=319	91.75	50	P		P	11 02 52.4	+0.3
733A	Divot King Ran baz=319	91.82	49	P		P	11 02 53.0	+0.5
734A	La Parita Cree baz=319	92.15	49	P		P	11 02 55.0	+1.0
636A	Smothers Creek baz=320	92.52	47	P		P	11 02 56.8	+1.1
735A	Kenedy baz=320	92.57	48	P		P	11 02 56.9	+1.0
933A	Laredo baz=319	92.66	50	P		P	11 02 57.9	+1.5
N59A	State Game Lan baz=333	92.75	27	P		P	11 02 56.8	+0.3
736A	Circle Diamond baz=320	92.92	48	P		P	11 02 59.1	+1.6
637A	Eagle Lake baz=320	92.96	47	P		P	11 02 59.6	+2.0
835A	Beeville baz=320	92.99	49	P		P	11 02 59.5	+1.7
934A	Benavides baz=319	93.11	50	P		P	11 03 00.3	+1.9
034A	Hebbronville baz=319	93.41	50	P		P	11 03 01.0	+1.2
RKT	Rikitea comp=Z,221nm,26.8s	100.74	111	*e*LR		LR	11 35 53.6	
TOA1	Torodi Ar. Sit	114.43	315	*e*PKiKP		PKiKP	11 08 23.7	-0.9
TORD	Torodi Ar. Bea comp=Z,0.1nm,0.6s,baz=119,slow=38,SNR=2.9	114.43	315	PKP		PKPdf	11 08 23.7	-0.9
SDV	Santo Domingo	123.31	37	*e*PKPdf		PKPdf	11 08 42.4	+0.5
SNAA	Sanae	143.59	199	PKP		PKPab	11 09 14.9	+0.5
VNA2	Neumayer--Watz baz=106,slow=2.9	145.18	198	PKP		PKPbc	11 09 20.5	+0.3
VNA3	Neumayer Olymp	145.47	197	PKP		PKPdf	11 09 21.2	+0.2
RCBR	Riachuelo	145.52	353	*e*PKPdf		PKPab	11 09 23.5	+0.3
VNA1	Neumayer--Stat	145.58	198	PKP		PKPbc	11 09 22.1	+0.6
LPAZ	La Paz comp=Z,6.0nm,0.7s,baz=1.4,slow=4.4,SNR=25	145.62	54	PKPbc		PKPdf	11 09 24.4	+0.7

IDC ***01*** *10:56:43.2±2.7,37°.41N×143°.58E,h0km,mb3.6/4, mb1 3.7/5,mb1mx3.4/32,mbtmp3.5/5,ML3.2/1,Error ellipse: s-maj=73.1km s-min=26.7km az=59.0*
JMA ***01*** *10:56:43.2±0.3,37°.34N×142°.61E,h10km,M4.0*
ISC 01 10:56:47.7±1.7,37.36N±0.09×142.4E±0.1,h21km,n10,
σ1§62/8,mb3.6/4,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
ONAJ	Iwakimizuishiy	1.26	259	*e*S		Sb	10 57 29.0	+2.4
JMM	Marumori	1.33	293	P		Pn	10 57 10.8	-0.3
JIO	Ouri	1.35	325	P		Pn	10 57 10.4	-0.9
JIO				S		Sb	10 57 29.8	+0.7
JOU	Okura	1.67	308	P		Pn	10 57 15.8	0.0
MJAR	Matsushiro Arr 1.2nm,0.3s,baz=80,slow=16,SNR=3.7	3.41	257	Pn		Pb	10 57 51.1	+3.6
MAT	Matsushiro	3.41	257	P		Pb	10 57 52.7	+5.2
MAT				*e*S		Sb	10 58 26.2	-2.4
SONM	Songino Array 0.7nm,0.8s,baz=97,slow=12,SNR=3.7	28.23	303	P		P	11 02 43.1	+3.9
MKAR	Makanchi Array 0.5nm,0.7s,baz=90,slow=9.3,SNR=3.6	44.58	302	P		P	11 05 04.4	+6.2
WRA	Warramunga Arr 0.6nm,0.3s,baz=13,slow=7.2,SNR=4.6	57.49	189	P		P	11 06 35.1	-0.2
ASAR	Alice Springs 0.4nm,0.8s,baz=4.1,slow=7.0,SNR=4.2	61.22	189	P		P	11 07 01.8	+0.7

IDC ***01*** *11:05:26.1±0.9,36°.98N×144°.21E,h0km,mb3.4/8, mb1 3.7/10,mb1mx3.5/51,mbtmp3.5/10,ML3.8/2,Error ellipse: s-maj=26.3km s-min=18.1km az=119.0*
ISCJB ***01*** *11:05:29.2±0.6,37.13N±0.04×143.83E±0.06,h33km, mb3.5/8,Error ellipse: s-maj=6.6km s-min=6.0km az=40.2*
JMA ***01*** *11:05:29.5±0.3,37.20N×143.84E,h46km,M3.8*
ISC 01 11:05:31.1±0.8,37.17N±0.05×143.84E±0.08,h35km,n31,
σ0§97/30,mb3.5/8,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
JIO	Ouri	2.35	304	P		Pn	11 06 06.7	-0.5
ONAJ	Iwakimizuishiy	2.43	269	P		Pn	11 06 08.1	-0.2
ONAJ				S		Sn	11 06 36.0	-0.9
JMM	Marumori	2.52	287	P		Pn	11 06 09.1	-0.4

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
JMM				S	Sn	11 06 37.9	-1.1
OFUJ	**Ofunato**	**2.56**	**319**	P	**Pn**	**11 06 08.9**	**-1.2**
JMK	**Ichinoseki**	**2.73**	**312**	P	**Pn**	**11 06 11.5**	**-0.9**
JOU	**Okura**	**2.79**	**296**	P	**Pn**	**11 06 13.1**	**-0.1**
CHOJ	**Chosi**	**2.81**	**240**	P	**Pn**	**11 06 13.4**	**-0.1**
JFT	**Otama**	**2.81**	**278**	P	**Pn**	**11 06 14.5**	**+0.9**
JFT				*e*S	**Sn**	**11 06 46.1**	**-0.2**
JOM	**Ohasama**	**3.05**	**320**	P	**Pn**	**11 06 16.9**	**+0.1**
JOM				S	**Sn**	**11 06 50.5**	**-1.6**
JYK	**Kaneyama**	**3.26**	**303**	P	**Pn**	**11 06 19.9**	**+0.3**
BSO1	**Boso 1**	**3.42**	**224**	P	**Pn**	**11 06 21.7**	**+0.3**
JAG	**Ashikaga**	**3.60**	**259**	P	**Pn**	**11 06 24.5**	**+0.2**
JANG	**Nango**	**3.68**	**331**	P	**Pn**	**11 06 24.4**	**-1.1**
JRY	**Ryogami san**	**4.14**	**255**	P	**Pn**	**11 06 31.6**	**-0.2**
JRY				*e*S	**Sn**	**11 07 17.0**	**-1.9**
JOD2	**Odawara 2**	**4.29**	**245**	P	**Pn**	**11 06 33.8**	**0.0**
MJAR	**Matsushiro Arr**	**4.56**	**264**	Pn	**Pn**	**11 06 38.7**	**+1.2**
	3.6nm,0.3s,baz=163,slow=6.7,SNR=25						
JHJ	**Hachijo jima 2**	**5.23**	**221**	Pn	**Pn**	**11 06 45.1**	**-1.7**
	9.8nm,0.3s,baz=68,slow=21,SNR=9.3						
JHJ				Sn	**Sn**	**11 07 44.8**	**-1.1**
	22nm,0.3s,baz=56,slow=21,SNR=6.0						
SEY	**Seymchan**	**26.32**	**9**	P	**P**	**11 11 04.7**	**+1.4**
	1.2nm,0.7s,baz=179,slow=7.4,SNR=9.2						
H11N2	**WAKE ISLAND Hy**	**26.59**	**124**	T	T	11 38 02.8	
	baz=317,slow=76,SNR=7.0						
H11N1	**WAKE ISLAND Hy**	**26.59**	**125**	T	T	11 38 05.1	
	baz=317,slow=76,SNR=7.5						
H11N3	**WAKE ISLAND Hy**	**26.60**	**124**	T	T	11 38 02.8	
	baz=317,slow=76,SNR=6.5						
H11S1	**WAKE ISLAND Hy**	**27.34**	**127**	T	T	11 38 56.5	
H11S3	**WAKE ISLAND Hy**	**27.34**	**127**	T	T	11 38 56.5	
H11S2	**WAKE ISLAND Hy**	**27.36**	**127**	T	T	11 38 56.5	
SONM	**Songino Array**	**29.33**	**303**	P	P	11 11 35.7	+5.2
	0.3nm,0.7s,baz=97,slow=8.1,SNR=2.6						
MKAR	**Makanchi Array**	**45.69**	**302**	P	**P**	**11 13 50.0**	**+1.6**
	0.5nm,0.8s,baz=99,slow=6.5,SNR=4.7						
ILAR	**Eielson Array**	**48.34**	**32**	P	**P**	**11 14 07.7**	**-1.1**
	0.2nm,0.6s,baz=271,slow=7.2,SNR=4.2						
WRA	**Warramunga Arr**	**57.51**	**191**	P	**P**	**11 15 16.4**	**-0.5**
	0.5nm,0.5s,baz=11,slow=7.1,SNR=3.3						
ASAR	**Alice Springs**	**61.23**	**190**	P	**P**	**11 15 42.3**	**-0.2**
	0.4nm,0.7s,baz=6.6,slow=7.0,SNR=5.8						
YKA	**Yellowknife Ar**	**62.71**	**31**	P	**P**	**11 15 52.8**	**+0.8**
	0.1nm,0.6s,baz=271,slow=33,SNR=3.3						
TXAR	**Lajitas Array**	**88.49**	**54**	P	**P**	**11 18 20.4**	**+0.2**
	0.2nm,0.7s,baz=354,slow=1.8,SNR=3.2						

IDC 01 11:05:51.4±9.8**, 21°.52S**×**167°.82E, h0^{km}, mb3.4**/3**, mb1 3.6**/3**, mb1mx3.5**/24**, mbtmp3.4**/3**, Error ellipse: s-maj=283.9km s-min=58.2km az=139.0, Loyalty Islands**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**31.32**	**267**	P	P	11 12 13.5	-0.2
	0.2nm,0.3s,baz=97,slow=6.5,SNR=2.7						
ASAR	**Alice Springs**	**31.34**	**260**	P	P	11 12 13.8	-0.1
	0.2nm,0.3s,baz=88,slow=8.3,SNR=9.6						
SONM	**Songino Array**	**88.25**	**324**	P	P	11 18 44.9	+0.2
	0.3nm,0.7s,baz=134,slow=4.3,SNR=3.9						

*NSSC **01** 11:11:46.8±0.8, 33°.78N×35°.69E, h0^{km}±2km, MD1.6, ML2.2*
*ISCJB **01** 11:11:47.4±0.6, 33°.79N±0°.03×35°.74E±0°.04, h0^{km}±6km, Error ellipse: s-maj=5.3km s-min=4.3km az=169.4*
*CSEM **01** 11:11:47.3±0.2, 33°.79N×35°.73E, h2^{km}, ML3.2, Error ellipse: s-maj=4.7km s-min=2.9km az=87.0*
*GRAL **01** 11:11:47.9±0.3, 33°.79N×35°.77E, h0^{km}±54km, MD3.2*
ISC 01 11:11:47.7±1.2**, 33°.79N**±0°.02×**35°.76E**±0°.03**, h2^{km}**±11km**, n27, σ0^{s}46**/43**, Jordan-Syria region**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
BHL	**Bhannes**	**0.14**	**321**	*e*P	**Pg**	**11 11 50.6**	**+0.2**
BHL	**Bhannes**	**0.14**	**321**	*e*P	**Pg**	**11 11 50.6**	**+0.2**
DQRL	**Deir Qamar**	**0.18**	**241**	*e*P	**Pg**	**11 11 51.2**	**0.0**
DQRL				*e*S	**Sg**	**11 11 53.7**	**+0.1**
DQRL	**Deir Qamar**	**0.18**	**241**	*e*P	**Pg**	**11 11 51.2**	**0.0**
DQRL				*e*S	**Sg**	**11 11 53.7**	**+0.1**
BEYL	**Beirut**	**0.24**	**289**	*e*P	**Pg**	**11 11 52.3**	**+0.1**
RCY	**Rachaya**	**0.30**	**168**	*e*P	**Pg**	**11 11 53.1**	**-0.4**
RCY				*e*S	**Sg**	**11 11 57.1**	**-0.4**
RCY	**Rachaya**	**0.30**	**168**	*e*P	**Pg**	**11 11 53.1**	**-0.4**
RCY				*e*S	**Sg**	**11 11 57.1**	**-0.4**
BRBR	**Barbar**	**0.41**	**157**	*e*P	**Pg**	**11 11 55.2**	**-0.3**
BRBR				*e*S	**Sg**	**11 12 01.9**	**+0.9**
BRBR				AML	AML	11 12 04.9	
	comp=N,298nm,0.6s						
BRBR				AML	AML	11 12 06.8	
	comp=E,119nm,0.5s						
BRBR	**Barbar**	**0.41**	**157**	*e*P	**Pg**	**11 11 55.3**	**-0.3**
BRBR				*e*S	**Sg**	**11 12 01.6**	**+0.6**
	comp=E,119nm,0.5s						
HWQ	**Hawqa**	**0.51**	**18**	*e*P	**Pg**	**11 11 57.1**	**-0.3**
HWQ	**Hawqa**	**0.51**	**18**	*e*P	**Pg**	**11 11 57.1**	**-0.3**
MARH	**Ras Al Marh**	**0.64**	**69**	*e*P	**Pg**	**11 12 00.3**	**+0.3**
MARH				*e*S	**Sb**	**11 12 10.9**	**-0.5**
MARH				AML	AML	11 12 14.6	
	comp=N,184nm,0.5s						
MARH				AML	AML	11 12 17.4	
	comp=E,238nm,0.4s						
MARH	**Ras Al Marh**	**0.64**	**69**	*e*P	**Pg**	**11 12 00.1**	**+0.1**
MARH				*e*S	**Sb**	**11 12 10.8**	**-0.5**
	comp=E,238nm,0.4s						
FKH	**Fakeheh**	**0.70**	**50**	*e*P	**Pg**	**11 12 00.6**	**-0.5**
FKH	**Fakeheh**	**0.70**	**50**	*e*P	**Pg**	**11 12 00.6**	**-0.5**
TOTH	**TOTAH**	**0.70**	**128**	*e*P	**Pg**	**11 12 01.7**	**+0.6**
TOTH				AML	AML	11 12 17.5	
	comp=N,66nm,0.4s						
TOTH				AML	AML	11 12 21.1	
	comp=E,65nm,0.7s						
TOTH	**TOTAH**	**0.70**	**128**	*e*P	**Pg**	**11 12 01.6**	**+0.4**
SALA	**Sala**	**1.35**	**143**	*e*P	**Pg**	**11 12 12.8**	**-0.8**
SALA				*e*S	**Sb**	**11 12 31.9**	**+0.2**
SALA				AML	AML	11 12 36.6	
	comp=E,4.0nm,0.3s						
SALA				AML	AML	11 12 37.4	
	comp=N,66nm,0.3s						
SALA	**Sala**	**1.35**	**143**	*e*P	**Pg**	**11 12 12.7**	**-0.8**
SALA				*e*S	**Sb**	**11 12 32.2**	**+0.5**
	comp=N,66nm,0.3s						
RABH	**Abou Rabah**	**1.36**	**62**	*e*P	**Pg**	**11 12 13.9**	**+0.2**
RABH				*e*S	**Sn**	**11 12 33.0**	**+0.6**
RABH				AML	AML	11 12 41.3	
	comp=E,46nm,0.3s						
RABH				AML	AML	11 12 45.0	
	comp=N,24nm,0.5s						
RABH	**Abou Rabah**	**1.36**	**62**	*e*P	**Pg**	**11 12 13.9**	**+0.2**
RABH				*e*S	**Sn**	**11 12 33.2**	**+0.8**
	comp=N,24nm,0.5s						
ZALF	**Zalf**	**1.58**	**123**	*e*P	**Pn**	**11 12 16.7**	**-0.1**
ZALF				*e*S	**Sn**	**11 12 38.2**	**+0.4**
ZALF				AML	AML	11 12 42.0	
	comp=N,44nm,0.4s						
ZALF				AML	AML	11 12 43.3	
	comp=E,43nm,0.4s						
ZALF	**Zalf**	**1.58**	**123**	*e*P	**Pn**	**11 12 16.6**	**-0.1**
ZALF				*e*S	**Sn**	**11 12 38.3**	**+0.5**
	comp=E,43nm,0.4s						
SLNF	**Slenfeh**	**1.84**	**12**	*e*P	**Pn**	**11 12 20.3**	**-0.2**
SLNF				*e*S	**Sn**	**11 12 44.1**	**-0.2**
SLNF				AML	AML	11 12 49.3	
	comp=N,156nm,0.4s						
SLNF				AML	AML	11 12 54.2	
	comp=E,158nm,0.4s						
SLNF	**Slenfeh**	**1.84**	**12**	*e*P	**Pn**	**11 12 20.9**	**+0.5**
SLNF				*e*S	**Sn**	**11 12 44.0**	**-0.4**
	comp=E,158nm,0.4s						
ARNB	**Al Arnab**	**2.07**	**5**	*e*P	**Pn**	**11 12 23.1**	**-0.5**
ARNB				AML	AML	11 13 01.7	
	comp=N,31nm,0.7s						
ARNB				AML	AML	11 13 11.9	
	comp=E,37nm,0.6s						
ARNB	**Al Arnab**	**2.07**	**5**	*e*P	**Pn**	**11 12 23.0**	**-0.5**

IDC 01 11:16:08.4±2.0**, 39°.03N**×**143°.86E, h0^{km}, mb3.2**/4**, mb1 3.5**/5**, mb1mx3.2**/40**, mbtmp3.2**/5**, ML2.9**/1**, Error ellipse: s-maj=76.7km s-min=33.2km az=138.0, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
MJAR	**Matsushiro Arr**	**5.12**	**243**	Pn	Pn	11 17 26.2	-0.2
	0.4nm,0.3s,baz=62,slow=11,SNR=6.5						
SEY	**Seymchan**	**24.49**	**9**	P	P	11 21 28.9	-0.1
	0.3nm,0.4s,baz=76,slow=22,SNR=3.7						
ILAR	**Eielson Array**	**46.77**	**33**	P	P	11 24 39.1	-0.1
	0.4nm,0.7s,baz=258,slow=6.8,SNR=4.4						
YKA	**Yellowknife Ar**	**61.11**	**31**	P	P	11 26 24.0	0.0
	0.1nm,0.7s,baz=304,slow=6.6,SNR=3.7						
TXAR	**Lajitas Array**	**87.38**	**54**	P	P	11 28 57.7	-0.1
	0.1nm,0.5s,baz=287,slow=3.4,SNR=2.0						

*ISCJB **01** 11:21:56.1±0.6, 31°.36N±0°.05×115°.25W±0°.06, h11^{km}±8km, Error ellipse: s-maj=11.5km s-min=4.6km az=136.7*
*ECX **01** 11:21:56.6±0.6, 31°.39N×115°.24W, h6^{km}, MD2.8, ML3.0*
*MEX **01** 11:21:58.5±0.7, 31°.26N×115°.21W, h10^{km}, MD3.5*
ISC 01 11:21:55.9±1.0**, 31°.35N**±0°.05×**115°.24W**±0°.05**, h14^{km}**±9km**, n19, σ0^{s}87**/30**, 4C-4D, Baja California**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
ECBX	**El Chinero**	**0.20**	**52**	⇑*e*P	**Pg**	**11 21 59.9**	**-0.6**
ECBX				*e*S	**Sg**	**11 22 02.9**	**-0.7**
ECBX				⇓*e*		11 22 03.2	
ECBX				AML	AML	11 22 03.2	
	comp=N,5μm,0.1s						
SPIG	**San Pedro Mart**	**0.36**	**213**	⇑*e*P	**Pg**	**11 22 03.6**	**+0.2**
SPIG				*e*S	**Sg**	**11 22 09.2**	**+0.7**
SPIG	**San Pedro Mart**	**0.36**	**213**	*i* P	**Pg**	**11 22 03.9**	**+0.5**
SPIG				*i* S	**Sg**	**11 22 09.4**	**+0.9**
SPX	**San Pedro Mart**	**0.36**	**213**	⇑*e*P	**Pg**	**11 22 04.0**	**+0.6**
SPX				*e*S	**Sg**	**11 22 09.6**	**+1.1**
SPX				AML	AML	11 22 10.6	
	comp=E,624nm,0.2s						
SPX				*e*		11 22 10.6	
ZAX	**El Zacaton**	**0.90**	**281**	⇑*e*P	**Pb**	**11 22 11.9**	**-1.4**
ZAX				*e*S	**Sb**	**11 22 23.7**	**-1.6**
ZAX				AML	AML	11 22 24.5	
	comp=E,552nm,0.3s						
ZAX				⇓*e*		11 22 24.5	
MBIG	**Mexicali**	**1.05**	**2**	*e*P	**Pb**	**11 22 16.5**	**+0.5**
MBIG				*i* S	**Sn**	**11 22 31.5**	**+0.8**
ECNX	**Esteban Cantu**	**1.20**	**285**	⇓*e*P	**Pn**	**11 22 17.3**	**-1.1**
PBX	**Punta Banda**	**1.33**	**287**	⇓*e*P	**Pn**	**11 22 19.3**	**-0.8**
IBP	**Imperial Bould**	**1.50**	**331**	P	**Pn**	**11 22 22.8**	**+0.4**
	baz=148						
IBP				S	**Sn**	**11 22 41.7**	**-0.1**
	baz=148						
CBX	**Cerro Bola**	**1.55**	**309**	*e*P	**Pn**	**11 22 23.5**	**+0.3**
CBX				*e*S	**Sn**	**11 22 43.4**	**+0.2**
CBX				AML	AML	11 22 45.4	
	comp=N,256nm,0.6s						
CBX	**Cerro Bola**	**1.55**	**309**	*i* P	**Pn**	**11 22 23.9**	**+0.7**
CBX				*i* S	**Sn**	**11 22 42.7**	**-0.4**
TJIG	**Tijuana**	**1.63**	**312**	*e*P	**Pn**	**11 22 24.0**	**-0.2**
TJIG	**Tijuana**	**1.63**	**312**	*e*P	**Pn**	**11 22 24.8**	**+0.6**
TJIG				*e*S	**Sn**	**11 22 45.2**	**+0.2**
SWSC	**Sam W. Stewart**	**1.66**	**343**	P	**Pn**	**11 22 25.8**	**+1.3**
	baz=162						
GLA	**Glamis**	**1.73**	**11**	S	**Sb**	**11 22 49.2**	**0.0**
	baz=194						
MONP2	**Monument Peak**	**1.83**	**327**	P	**Pn**	**11 22 28.8**	**+1.6**
	baz=144						
MONP2				S	**Sb**	**11 22 52.1**	**-0.2**
	baz=144						
214A	**Organ Pipe Nat**	**2.15**	**73**	P	**Pn**	**11 22 30.8**	**-0.7**
	baz=260						
109C	**Camp Elliot, M**	**2.21**	**315**	S	**Sb**	**11 23 01.4**	**-1.3**
	baz=130						
PFO	**Pinyon Flats O**	**2.48**	**336**	Pb	**Pb**	**11 22 40.9**	**+0.6**
	baz=154						

*ISCJB **01** 11:22:43.0±0.4, 40°.29N±0°.02×29°.11E±0°.03, h0^{km}, Error ellipse: s-maj=3.6km s-min=3.1km az=136.7*
*ISK **01** 11:22:42.4, 40°.28N×29°.14E, h12^{km}, MD2.5*
*CSEM **01** 11:22:43.2±0.2, 40°.28N×29°.13E, h2^{km}, MD2.5, Error ellipse: s-maj=3.3km s-min=3.1km az=153.0, Suspected Mining explosion.*
*DDA **01** 11:22:43.1, 40°.30N×29°.13E, h7^{km}, Md2.6, Suspected Mining explosion.*
ISC 01 11:22:43.1±0.8**, 40°.27N**±0°.02×**29°.13E**±0°.02**, h0^{km}, n46, σ0^{s}55**/63**, Turkey**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
ULDT	**Uludag**	**0.13**	**177**	*i* P	**Pg**	**11 22 46.2**	**+0.6**
ULDT	**Uludag**	**0.13**	**177**	P	**Pg**	**11 22 46.2**	**+0.6**
GEMT	**Gemlik**	**0.17**	**16**	*e*PG	**Pg**	**11 22 46.7**	**+0.3**
GEMT				*e*SG	**Sg**	**11 22 49.4**	**+0.9**
GEMT	**Gemlik**	**0.17**	**16**	*e*Pg	**Pg**	**11 22 46.7**	**+0.3**
GEMT				*e*Sg	**Sg**	**11 22 49.4**	**+0.9**
MDNY	**Mudanya-Bursa**	**0.21**	**297**	*e*PG	**Pg**	**11 22 47.4**	**+0.2**
MDNY	**Mudanya-Bursa**	**0.21**	**297**	*e*Pg	**Pg**	**11 22 47.4**	**+0.2**
IZI	**Iznik**	**0.27**	**77**	*e*PG	**Pg**	**11 22 48.2**	**-0.1**
IZI				*e*SG	**Sg**	**11 22 52.7**	**+0.9**
IZI	**Iznik**	**0.27**	**77**	*e*Pg	**Pg**	**11 22 48.2**	**-0.1**
IZI				*e*Sg	**Sg**	**11 22 52.7**	**+0.9**
ORLT	**Orhaneli**	**0.29**	**218**	*e*PG	**Pg**	**11 22 48.9**	**+0.3**
ORLT	**Orhaneli**	**0.29**	**218**	*e*Pg	**Pg**	**11 22 48.9**	**+0.3**
ARMT	**Armutlu**	**0.35**	**325**	*e*PG	**Pg**	**11 22 50.0**	**0.0**
ARMT	**Armutlu**	**0.35**	**325**	*e*Pg	**Pg**	**11 22 50.0**	**0.0**
ADVT	**Abdulvahap**	**0.49**	**71**	*e*PG	**Pg**	**11 22 52.1**	**-0.5**
ADVT	**Abdulvahap**	**0.49**	**71**	*e*Pg	**Pg**	**11 22 52.1**	**-0.5**
CAVI	**Cavuskoy**	**0.55**	**97**	*e*PG	**Pg**	**11 22 53.4**	**-0.3**
CAVI	**Cavuskoy**	**0.55**	**97**	*e*Pg	**Pg**	**11 22 53.4**	**-0.3**
KCTX	**Karacabey (Bur**	**0.59**	**269**	*e*PG	**Pg**	**11 22 54.8**	**+0.4**
KCTX	**Karacabey (Bur**	**0.59**	**269**	*e*Pg	**Pg**	**11 22 54.8**	**+0.4**
DST	**Dursunbey**	**0.78**	**210**	*e*PG	**Pg**	**11 22 57.3**	**-0.7**
DST	**Dursunbey**	**0.78**	**210**	*e*Pg	**Pg**	**11 22 57.3**	**-0.7**
ISK	**Istanbul-Kandi**	**0.79**	**356**	*e*PG	**Pg**	**11 22 57.8**	**-0.5**
ISK	**Istanbul-Kandi**	**0.79**	**356**	*e*Pg	**Pg**	**11 22 57.8**	**-0.5**
DURS	**Dursunbey**	**0.84**	**217**	*i* P	**Pb**	**11 23 00.7**	**+0.1**
DURS				*i* S	**Sb**	**11 23 12.0**	**-0.5**
DURS	**Dursunbey**	**0.84**	**217**	P	**Pb**	**11 23 00.7**	**+0.1**
DURS				S	**Sb**	**11 23 12.0**	**-0.5**
TVSB	**Tavsanli**	**0.86**	**163**	*e*PG	**Pg**	**11 22 59.5**	**-0.2**
TVSB	**Tavsanli**	**0.86**	**163**	*e*Pg	**Pg**	**11 22 59.5**	**-0.2**
EDC	**Edincik**	**0.97**	**275**	*e*PG	**Pg**	**11 23 01.4**	**-0.3**
EDC	**Edincik**	**0.97**	**275**	*e*Pg	**Pg**	**11 23 01.4**	**-0.3**
KLYT	**Kilyos**	**0.98**	**356**	*e*PG	**Pg**	**11 23 01.9**	**+0.1**
KLYT	**Kilyos**	**0.98**	**356**	*e*Pg	**Pg**	**11 23 02.0**	**+0.1**
CTKS	**Kestanelik-??a**	**1.07**	**334**	*e*PG	**Pg**	**11 23 03.1**	**-0.6**
CTKS	**Kestanelik-??a**	**1.07**	**334**	*e*Pg	**Pg**	**11 23 03.1**	**-0.6**
GULT	**Gulveren**	**1.07**	**81**	*e*PG	**Pg**	**11 23 03.5**	**-0.2**
GULT	**Gulveren**	**1.07**	**81**	*e*Pg	**Pg**	**11 23 03.5**	**-0.2**
BORA	**Eskisehir**	**1.09**	**111**	*i* P	**Pg**	**11 23 03.4**	**-0.6**
BORA				*i* S	**Sb**	**11 23 20.3**	**+0.6**
BORA	**Eskisehir**	**1.09**	**111**	P	**Pg**	**11 23 03.4**	**-0.6**
BORA				S	**Sb**	**11 23 20.3**	**+0.6**
KAND	**Kocaeli-Kandir**	**1.15**	**44**	*i* P	**Pg**	**11 23 05.0**	**-0.2**
KAND				*i* S	**Sb**	**11 23 21.5**	**+0.1**
KAND	**Kocaeli-Kandir**	**1.15**	**44**	P	**Pg**	**11 23 05.0**	**-0.2**
KAND				S	**Sb**	**11 23 21.5**	**+0.1**
GDZ	**Gediz**	**1.22**	**167**	*i* P	**Pg**	**11 23 05.9**	**-0.5**
GDZ				*i* S	**Sn**	**11 23 24.8**	**+0.1**
GDZ	**Gediz**	**1.22**	**167**	P	**Pg**	**11 23 05.9**	**-0.5**
GDZ				S	**Sn**	**11 23 24.8**	**+0.1**
SAHE	**Sakarya_HENDEK**	**1.44**	**66**	*i* P	**Pn**	**11 23 09.6**	**-0.9**
SAHE				*i* S	**Sn**	**11 23 29.8**	**-0.2**
SAHE	**Sakarya_HENDEK**	**1.44**	**66**	P	**Pn**	**11 23 09.6**	**-0.9**
SAHE				S	**Sn**	**11 23 29.8**	**-0.2**
ESKT	**Eskisehir**	**1.52**	**119**	*i* P	**Pn**	**11 23 10.8**	**-1.0**
ESKT				*i* S	**Sn**	**11 23 33.0**	**+0.7**
SEYT	**Eskypehyr**	**1.52**	**119**	P	**Pn**	**11 23 10.8**	**-0.9**
SEYT				S	**Sn**	**11 23 33.0**	**+0.7**
AUMIH	**MIHALICIK**	**1.85**	**102**	*i* P	**Pg**	**11 23 18.5**	**-0.1**
AUMIH				*i* S	**Sg**	**11 23 44.5**	**+1.9**
AUMIH	**MIHALICIK**	**1.85**	**102**	P	**Pg**	**11 23 18.5**	**-0.1**

*NIED **01** 11:24:00, 40°.30N×140°.40E, h11^{km}, Mw3.8 Best double couple: $M_0$6.51000×10^{14} NP1:ϕ_s259.00000°, δ54.00000°, λ-178.00000°. NP2:ϕ_s168.00000°, δ88.00000°, λ-36.00000°.*
*ISCJB **01** 11:24:29.0±0.6, 40°.28N±0°.04×140°.39E±0°.04, h12^{km}±4km, mb3.7/10, MS3.1/2, Error ellipse: s-maj=6.3km s-min=4.9km az=28.2*
*IDC **01** 11:24:28.4±0.8, 40°.23N×140°.66E, h0^{km}, mb3.7/10, mb1 3.9/11, mb1mx3.7/38, mbtmp3.7/11, ML3.4/1, MS3.1/2, Ms1 3.2/2, ms1mx2.6/41, Error ellipse: s-maj=23.6km s-min=18.3km az=113.0*
*JMA **01** 11:24:29.0, 40°.26N×140°.36E, h12^{km}±1km, M3.5 Broadband fault plane solution: P waves. NP1: ϕ_s174.00000°, δ58.00000°, λ61.00000°. NP2:ϕ_s41.00000°, δ43.00000°, λ128.00000°. Principal axes: T Plg64.0000°, Azm32.0000°; N Plg25.0000°, Azm191.0000°; P Plg8.0000°, Azm285.0000°;*
JMA Felt II J1.
ISC 01 11:24:29.2±1.2**, 40°.32N**±0°.04×**140°.46E**±0°.04**, h2^{km}**±9km**, n24, σ1^{s}08**/25**, mb3.9**/10**, 1C-4D, Eastern Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
JAH	**Hinai**	**0.19**	**136**	⇓P	**Pg**	**11 24 33.8**	**+1.0**
JAH				*e*S	**Sg**	**11 24 37.3**	**+2.0**
JIW	**Iwasaki**	**0.44**	**308**	⇓P	**Pg**	**11 24 37.5**	**-0.2**
JIW				S	**Sg**	**11 24 43.3**	**-0.1**
JTM	**Tenmabayashi**	**0.65**	**45**	⇑P	**Pb**	**11 24 43.6**	**+0.2**
JTM				*e*S	**Sb**	**11 24 53.1**	**+0.1**
JANG	**Nango**	**0.81**	**86**	⇓P	**Pb**	**11 24 45.5**	**-0.5**
JANG				*e*S	**Sb**	**11 24 57.2**	**-0.1**
JRG	**Rokugo**	**0.94**	**172**	⇓P	**Pg**	**11 24 45.8**	**-1.3**
JRG				*e*S	**Sg**	**11 24 58.1**	**-1.1**
JOM	**Ohasama**	**1.06**	**143**	P	**Pg**	**11 24 48.8**	**-0.8**
USRK	**Ussuriysk Ar.**	**7.38**	**304**	Pn	**Pn**	**11 26 16.4**	**-1.6**
	0.5nm,0.3s,baz=105,slow=14,SNR=7.5						
KSRS	**Korea Array**	**10.19**	**258**	Pn	**Pn**	**11 26 58.0**	**+1.6**
	0.3nm,0.3s,baz=65,slow=13,SNR=17						
KSRS				Sn	**Sn**	**11 28 52.4**	**+1.1**
	0.3nm,0.3s,baz=70,slow=24,SNR=12						
SEY	**Seymchan**	**23.74**	**14**	P	**P**	**11 29 41.4**	**-1.1**
	0.7nm,0.2s,baz=218,slow=9.4,SNR=4.3						
SONM	**Songino Array**	**25.44**	**299**	P	**P**	**11 29 59.2**	**+0.7**
	0.3nm,0.4s,baz=98,slow=9.3,SNR=2.2						
TLY	**Talaya**	**27.69**	**307**	LR	LR	11 41 20.0	
	comp=Z,53nm,18.7s,baz=30,slow=36						
H11N2	**WAKE ISLAND Hy**	**30.55**	**124**	T	T	12 02 36.7	
H11N1	**WAKE ISLAND Hy**	**30.55**	**124**	T	T	12 02 36.7	
H11N3	**WAKE ISLAND Hy**	**30.56**	**124**	T	T	12 02 36.7	
CMAR	**Chiang Mai Arr**	**41.74**	**251**	LR	LR	11 49 57.1	
	comp=Z,19nm,19.8s,baz=245,slow=36						
MKAR	**Makanchi Array**	**41.81**	**299**	P	**P**	**11 32 21.3**	**+1.0**
	0.3nm,0.6s,baz=94,slow=10.0,SNR=3.7						
ILAR	**Eielson Array**	**47.15**	**34**	P	**P**	**11 33 02.0**	**-0.7**
	0.8nm,0.9s,baz=284,slow=5.7,SNR=10						
BVAR	**Borovoye Array**	**47.85**	**310**	P	**P**	**11 33 09.5**	**+1.2**
	0.6nm,0.5s,baz=86,slow=7.4,SNR=5.2						
INK	**Inuvik**	**51.82**	**28**	P	**P**	**11 33 38.5**	**+0.3**
	1.2nm,0.8s,baz=301,slow=5.6,SNR=6.0						
WRA	**Warramunga Arr**	**60.22**	**187**	P	**P**	**11 34 38.3**	**-0.5**
	0.6nm,0.3s,baz=4.7,slow=7.2,SNR=4.4						
YKA	**Yellowknife Ar**	**61.35**	**31**	P	**P**	**11 34 45.4**	**-0.8**
	0.3nm,0.9s,baz=303,slow=7.5,SNR=3.5						
ASAR	**Alice Springs**	**63.95**	**187**	P	**P**	**11 35 02.1**	**-1.7**
	0.9nm,0.8s,baz=3.1,slow=4.1,SNR=8.4						
FINES	**FINESS Array B**	**65.57**	**331**	P	**P**	**11 35 13.9**	**-0.1**
	1.8nm,1.0s,baz=38,slow=13,SNR=3.4						
VNA2	**Neumayer--Watz**	**145.24**	**198**	PKP	**PKPdf**	**11 44 08.0**	**+0.7**
	baz=99,slow=1.5						

*ISCJB **01** 11:36:53.9±0.6, 34°.07N±0°.02×34°.92E±0°.03, h12^{km}±3km, Error ellipse: s-maj=4.8km s-min=2.8km az=168.6*
*NSSC **01** 11:36:55.6±0.5, 34°.10N×34°.96E, h18^{km}±2km, ML2.4*
*GII **01** 11:36:56.4±0.0, 33°.95N×34°.93E, h9^{km}, MD2.4/4*
*CSEM **01** 11:36:56.6±0.3, 34°.07N×34°.98E, h26^{km}±2km, ML3.2, Error ellipse: s-maj=4.4km s-min=2.7km az=86.0*
*GRAL **01** 11:36:59.9±0.3, 34°.02N×35°.27E, h46^{km}±3km, MD3.2*
*DDA **01** 11:37:38.6, 35°.00N×35°.13E, h14^{km}, Md3.4*
ISC 01 11:36:53.9±1.2**, 34°.09N**±0°.02×**34°.99E**±0°.03**, h8^{km}**±9km**, n76, σ0^{s}86**/117**, Cyprus region**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
BEYL	**Beirut**	**0.47**	**117**	*e*P	**Pn**	**11 37 07.5**	**+0.6**
BEYL	**Beirut**	**0.47**	**117**	*e*P	**Pn**	**11 37 07.6**	**+0.6**
BHL	**Bhannes**	**0.59**	**108**	*e*P	**Pn**	**11 37 08.6**	**0.0**
BHL	**Bhannes**	**0.59**	**108**	*e*P	**Pn**	**11 37 08.6**	**0.0**
DQRL	**Deir Qamar**	**0.62**	**128**	*e*P	**Pn**	**11 37 09.2**	**+0.2**
DQRL				*e*S	**Sb**	**11 37 16.1**	**+0.3**
DQRL	**Deir Qamar**	**0.62**	**128**	*e*P	**Pn**	**11 37 09.2**	**+0.2**
DQRL				*e*S	**Sb**	**11 37 16.1**	**+0.3**
HWQ	**Hawqa**	**0.82**	**76**	*e*P	**Pn**	**11 37 11.9**	**+0.1**
HWQ	**Hawqa**	**0.82**	**76**	*e*P	**Pn**	**11 37 11.9**	**+0.1**
RCY	**Rachaya**	**0.92**	**130**	*e*P	**Pn**	**11 37 13.0**	**-0.3**
RCY				*e*S	**Sg**	**11 37 22.7**	**-0.9**
RCY	**Rachaya**	**0.92**	**130**	*e*P	**Pn**	**11 37 13.0**	**-0.3**
RCY				*e*S	**Sg**	**11 37 22.7**	**-0.9**
HNTI	**Hanita**	**1.02**	**171**	Pg	**Pg**	**11 37 13.5**	**+0.1**
HNTI				Sg	**Sg**	**11 37 26.0**	**-0.6**
HNTI	**Hanita**	**1.02**	**171**	Pg	**Pg**	**11 37 13.5**	**+0.1**
HNTI				Sg	**Sg**	**11 37 26.0**	**-0.6**
BRBR	**Barbar**	**1.05**	**130**	*e*P	**Pb**	**11 37 14.9**	**+0.5**
BRBR				*e*S	**Sb**	**11 37 28.6**	**+0.2**
BRBR				AML	AML	11 37 34.3	
	comp=E,75nm,0.4s						
BRBR				AML	AML	11 37 37.3	
	comp=N,149nm,0.5s						
BRBR	**Barbar**	**1.05**	**130**	*e*P	**Pn**	**11 37 15.1**	**0.0**
BRBR				*e*S	**Sg**	**11 37 27.9**	**+0.2**
	comp=N,149nm,0.5s						
KSDI	**Kefar Szold**	**1.06**	**148**	Pg	**Pb**	**11 37 14.8**	**+0.4**
KSDI				Sg	**Sb**	**11 37 28.2**	**-0.2**
MMC7	**Mount Meron ar**	**1.12**	**162**	Pg	**Pg**	**11 37 15.3**	**0.0**
MMC7	**Mount Meron ar**	**1.12**	**162**	Pg	**Pg**	**11 37 15.3**	**0.0**
MMA0B	**Mount Meron ar**	**1.13**	**162**	Pg	**Pg**	**11 37 15.5**	**0.0**
MMA0B				Sg	**Sg**	**11 37 29.4**	**-0.7**
FKH	**Fakeheh**	**1.19**	**82**	*e*P	**Pg**	**11 37 16.7**	**-0.1**
FKH	**Fakeheh**	**1.19**	**82**	*e*P	**Pg**	**11 37 16.7**	**-0.1**
QASN	**Qassioun**	**1.21**	**117**	*e*P	**Pn**	**11 37 18.0**	**+0.8**
QASN				AML	AML	11 37 38.1	
	comp=E,282nm,0.5s						
QASN				AML	AML	11 37 40.2	
	comp=N,243nm,0.5s						
QASN	**Qassioun**	**1.21**	**117**	*e*P	**Pn**	**11 37 18.0**	**+0.8**
MARH	**Ras Al Marh**	**1.24**	**92**	*e*P	**Pn**	**11 37 18.4**	**+0.5**
MARH				*e*S	**Sb**	**11 37 34.4**	**+0.3**
MARH				AML	AML	11 37 41.9	
	comp=E,125nm,0.2s						
MARH				AML	AML	11 37 45.7	
	comp=N,93nm,0.4s						
MARH	**Ras Al Marh**	**1.24**	**92**	*e*P	**Pn**	**11 37 18.3**	**+0.5**
MARH				*e*S	**Sg**	**11 37 34.3**	**+0.4**
	comp=N,93nm,0.4s						
KSHT	**Keshet**	**1.30**	**148**	Pg	**Pg**	**11 37 18.9**	**0.0**
KSHT	**Keshet**	**1.30**	**148**	Pg	**Pg**	**11 37 18.9**	**0.0**
BLGI	**Bet Lehem HaGe**	**1.36**	**173**	Pg	**Pn**	**11 37 19.0**	**-0.2**
BLGI	**Bet Lehem HaGe**	**1.36**	**173**	Pg	**Pn**	**11 37 19.0**	**-0.2**
TOTH	**TOTAH**	**1.41**	**121**	*e*P	**Pg**	**11 37 21.1**	**+0.3**
TOTH				*e*S	**Sb**	**11 37 38.6**	**+0.2**
TOTH				AML	AML	11 37 39.5	
	comp=N,169nm,0.2s						
TOTH				AML	AML	11 37 39.7	
	comp=E,110nm,0.2s						
TOTH	**TOTAH**	**1.41**	**121**	*e*P	**Pg**	**11 37 21.0**	**+0.2**
TOTH				*e*S	**Sb**	**11 37 38.6**	**+0.2**
	comp=E,110nm,0.2s						
OFRI	**'Ofer**	**1.46**	**180**	Pn	**Pn**	**11 37 20.3**	**-0.3**
OFRI	**'Ofer**	**1.46**	**180**	Pn	**Pn**	**11 37 20.3**	**-0.3**
CSS	**Mathiatis**	**1.62**	**303**	Pn	**Pb**	**11 37 24.2**	**+0.2**
CSS	**Mathiatis**	**1.62**	**303**	Pn	**Pb**	**11 37 24.2**	**+0.2**
TCHB	**Talchebab**	**1.64**	**150**	*e*P	**Pb**	**11 37 24.0**	**-0.4**
TCHB				*e*S	**Sn**	**11 37 44.1**	**-0.1**
TCHB				AML	AML	11 37 49.8	
	comp=N,72nm,0.4s						
TCHB				AML	AML	11 37 56.8	
	comp=E,73nm,0.3s						
TCHB	**Talchebab**	**1.64**	**150**	*e*P	**Pb**	**11 37 23.9**	**-0.4**
TCHB				*e*S	**Sn**	**11 37 43.9**	**-0.4**
	comp=E,73nm,0.3s						
MMLI	**Mount Malkishu**	**1.69**	**167**	Pn	**Pn**	**11 37 24.0**	**+0.3**
MMLI				Sn	**Sn**	**11 37 44.8**	**-0.7**
MMLI	**Mount Malkishu**	**1.69**	**167**	Pn	**Pn**	**11 37 24.0**	**+0.3**
MMLI				Sn	**Sn**	**11 37 44.8**	**-0.7**
SLNF	**Slenfeh**	**1.81**	**34**	*e*P	**Pn**	**11 37 26.3**	**+0.7**
SLNF				AML	AML	11 37 60.0	
	comp=N,132nm,0.2s						
SLNF				AML	AML	11 38 03.2	
	comp=E,185nm,0.4s						

Code	Station Name	Δ°	AZ°	Op	ISC	Time	Res
SLNF	Slenfeh	1.81	34	eP	Pn	11 37 26.6	+1.0
SLTI	Sal'it	1.84	179	Pn	Pn	11 37 26.2	+0.4
SLTI				Sn	Sn	11 37 48.9	-0.4
SLTI	Sal'it	1.84	179	Pn	Pn	11 37 26.2	+0.4
SLTI				Sn	Sn	11 37 48.9	-0.4
RABH	Abou Rabah	1.87	79	eP	Pb	11 37 28.0	-0.3
RABH				eS	Sn	11 37 50.1	0.0
RABH				AML	AML	11 37 52.9	
	comp=E,50nm,0.3s						
RABH				AML	AML	11 38 01.3	
	comp=N,17nm,0.3s						
RABH	Abou Rabah	1.87	79	eP	Pb	11 37 28.0	-0.3
RABH				eS	Sn	11 37 50.3	+0.2
HMDT	Nahal Hemdat	1.89	166	Pn	Pn	11 37 27.1	+0.7
HMDT				Sn	Sn	11 37 50.3	0.0
HMDT	Nahal Hemdat	1.89	166	Pn	Pn	11 37 27.1	+0.7
HMDT				Sn	Sn	11 37 50.3	0.0
ROOS	tl_alroos	1.91	87	eP	Pn	11 37 28.3	+1.5
ROOS				eS	Sn	11 37 51.3	+0.1
ROOS				AML	AML	11 37 55.9	
	comp=N,90nm,0.4s						
ROOS				AML	AML	11 38 06.6	
	comp=E,67nm,0.3s						
ROOS	tl_alroos	1.91	87	eP	Pb	11 37 28.6	-0.4
ROOS				eS	Sn	11 37 51.7	+0.6
	comp=E,67nm,0.3s						
ARNB	Al Arnab	1.94	24	eP	Pn	11 37 27.8	+0.5
ARNB				eS	Sn	11 37 50.9	-1.1
ARNB				AML	AML	11 37 53.4	
	comp=E,68nm,0.2s						
ARNB				AML	AML	11 37 56.1	
	comp=N,66nm,0.5s						
SALA	Sala	2.01	133	eP	Pn	11 37 29.5	+1.3
SALA				eS	Sn	11 37 53.8	+0.2
SALA				AML	AML	11 38 05.4	
	comp=N,34nm,0.4s						
SALA				AML	AML	11 38 06.3	
	comp=E,3.3nm,0.4s						
SALA	Sala	2.01	133	eP	Pb	11 37 30.0	-0.7
SALA				eS	Sn	11 37 54.0	+0.4
YAYL	Yayladag	2.15	25	iP	Pn	11 37 30.7	+0.6
YAYL				iS	Sn	11 37 55.5	-1.5
YAYL	Yayladag	2.15	25	P	Pn	11 37 30.7	+0.6
YAYL				S	Sn	11 37 55.5	-1.5
ZALF	Zalf	2.28	120	eP	Pn	11 37 33.2	+1.3
ZALF				eS	Sn	11 37 59.6	-0.5
ZALF				AML	AML	11 38 08.2	
	comp=E,36nm,0.4s						
ZALF				AML	AML	11 38 12.1	
	comp=N,30nm,0.6s						
ZALF	Zalf	2.28	120	eP	Pn	11 37 33.2	+1.3
KIZK	Mersin	2.48	344	iP	Pn	11 37 35.5	+0.9
KIZK				iS	Sn	11 38 03.8	-1.3
KIZK	Mersin	2.48	344	P	Pn	11 37 35.5	+0.9
KIZK				S	Sn	11 38 03.8	-1.3
DSI	Dead Sea	2.53	172	Pn	Pn	11 37 36.1	+0.8
DSI	Dead Sea	2.53	172	Pn	Pn	11 37 36.1	+0.8
MZDA	Masada	2.79	173	Pn	Pn	11 37 39.1	+0.3
MZDA	Masada	2.79	173	Pn	Pn	11 37 39.1	+0.3
DED	Mersin	2.87	357	iP	Pn	11 37 42.0	+2.1
DED				iS	Sn	11 38 12.0	-2.6
GULE	Gulek	3.19	357	iP	Pn	11 37 46.3	+1.8
GULE				iS	Sn	11 38 21.3	-1.5
GULE	Gulek	3.19	357	P	Pn	11 37 46.3	+1.8
GULE				S	Sn	11 38 21.3	-1.5
KZIT	Kziot	3.21	189	Sn	Sn	11 38 22.4	-0.7
KZIT	Kziot	3.21	189	Sn	Sn	11 38 22.4	-0.7
KAMA	Osmaniye	3.38	23	iP	Pn	11 37 47.8	+0.8
KAMA				iS	Sn	11 38 24.2	-3.2
KERG	Konya-Eregli	3.39	348	iP	Pn	11 37 49.2	+2.0
KERG				iS	Sn	11 38 28.0	+0.3
KERG	Konya-Eregli	3.39	348	P	Pn	11 37 49.2	+2.0
KERG				S	Sn	11 38 28.0	+0.3
AYKD	Aykdinkavak	3.63	24	iP	Pn	11 37 51.1	+0.7
AYKD				iS	Sn	11 38 32.1	-1.4
PRNI	Paran	3.73	180	Pn	Pn	11 37 52.9	+1.2
PRNI	Paran	3.73	180	Pn	Pn	11 37 52.9	+1.2
KRMI	Paran Flat	3.97	183	Pn	Pn	11 37 55.8	+0.8
KRMI	Paran Flat	3.97	183	Pn	Pn	11 37 55.8	+0.8
MBRI	Mt Berech	4.28	181	Sn	Sn	11 38 49.0	-0.6
MBRI	Mt Berech	4.28	181	Sn	Sn	11 38 49.0	-0.6

IDC 01 11:44:15.9±4.9**, 21°.81S×179°.22W, h0^{km}, mb4.2**/4**, mb1 4.4**/4**, mb1mx3.8**/33**, mbtmp4.2**/4**, Error ellipse: s-maj=181.1km s-min=52.1km az=141.0, Fiji Islands region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
STKA	Stephens Creek	36.20	246	P	P	11 51 19.8	-0.7
	0.6nm,0.3s,baz=96,slow=13,SNR=4.1						
ASAR	Alice Springs	43.12	258	P	P	11 52 18.1	-0.3
	1.5nm,0.4s,baz=96,slow=7.4,SNR=70						
WRA	Warramunga Arr	43.30	264	P	P	11 52 20.5	+0.6
	1.6nm,0.3s,baz=90,slow=5.9,SNR=31						
CMAR	Chiang Mai Arr	89.48	290	P	P	11 57 14.3	-1.2
	0.6nm,0.3s,baz=72,slow=0.5,SNR=4.0						
BRTR	Keskin Array B	146.84	310	PKPbc	PKPbc	12 04 00.3	-0.2
	0.6nm,0.6s,baz=111,slow=4.8,SNR=3.4						

*JMA **01** 11:50:31.5±0.6, 33°.92N×141°.94E, h12^{km}±4^{km}, M3.4*
*IDC **01** 11:50:35.5±1.1, 34°.13N×141°.75E, h0^{km}, mb3.3/6, mb1 3.5/7, mb1mx3.4/30, mbtmp3.3/7, ML3.4/1, Error ellipse: s-maj=28.7km s-min=20.8km az=89.0*
*ISCJB **01** 11:50:36.9±0.9, 34°.09N±0°.06×141°.74E±0°.09, h24^{km}, mb3.4/6, Error ellipse: s-maj=10.4km s-min=8.4km az=170.9*

ISC 01 11:50:38.2±1.3**, 34°.00N**±0°.06×**141°.6E**±0°.1**, h24^{km}, n19,** σ1s**13**/20**, mb3.3**/6**, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BSO1	Boso 1	0.85	321	P	Pb	11 50 51.8	-2.2
BSO3	Boso 3	1.22	311	P	Pn	11 50 58.2	-1.4
BSO3				eS	Sb	11 51 17.5	+1.7
BSO4	Boso 4	1.46	313	P	Pn	11 51 02.1	-0.8
BSO4				eS	Sb	11 51 24.0	+1.4
JHJ2	Mitsune	1.75	240	P	Pb	11 51 09.3	-0.4
JHJ	Hachijo jima 2	1.77	241	Pn	Pb	11 51 09.3	-0.7
	41nm,0.3s,baz=322,slow=15,SNR=14						
JHJ				Sn	Sb	11 51 31.0	-0.8
	36nm,0.3s,baz=57,slow=23,SNR=7.1						
JIM2	Oshima 3	1.95	292	P	Pn	11 51 08.5	-1.4
JIZS	Izushimoda	2.39	288	P	Pn	11 51 15.4	-0.4
JOD2	Odawara 2	2.44	302	P	Pn	11 51 15.1	-1.6
JHU	Hanno	2.67	314	P	Pn	11 51 19.9	+0.1
JYN	Shimob	2.95	301	P	Pn	11 51 24.0	+0.4
JAG	Ashikaga	3.01	324	P	Pn	11 51 23.3	-1.1
JNY	Yasuok	3.39	295	P	Pn	11 51 30.3	+0.6
MJAR	Matsushiro Arr	3.78	313	Pn	Pn	11 51 35.9	+0.9
	2.7nm,0.3s,baz=121,slow=22,SNR=24						
SONM	Songino Array	29.72	308	P	P	11 56 43.2	+0.6
	0.3nm,0.5s,baz=106,slow=11,SNR=2.8						
MKAR	Makanchi Array	45.93	305	P	P	11 58 59.2	+0.2
	0.2nm,0.6s,baz=94,slow=16,SNR=2.3						
WRA	Warramunga Arr	54.09	188	P	P	12 00 02.9	+1.8
	0.4nm,0.5s,baz=6.0,slow=7.6,SNR=2.3						
ASAR	Alice Springs	57.81	188	P	P	12 00 29.9	+2.1
	0.2nm,0.7s,baz=7.3,slow=6.1,SNR=4.3						
YKA	Yellowknife Ar	66.35	29	P	P	12 01 24.6	0.0
	0.1nm,0.5s,baz=292,slow=6.4,SNR=2.4						
NOA	NORSAR Array B	77.05	338	P	P	12 02 29.9	+0.8
	0.5nm,0.7s,baz=95,slow=17,SNR=2.5						

MEX 01 11:56:49.7±0.5**, 18°.13N×103°.40W, h6^{km}, MD3.6, Near coast of Michoacan**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MMIG	Aquila	0.16	18	iP	Pg	11 56 52.5	-0.5
MMIG				iS	Sg	11 56 55.3	0.0
R15V		1.17	332	iP	Pg	11 57 08.7	-3.6
R15V				iS	Sg	11 57 24.0	-3.5
EZ5V		1.35	352	iP	Pn	11 57 11.8	-3.6
EZ5V				eS	Sg	11 57 28.9	-4.4
ARIG	Puente Sto Nin	2.90	87	eP	Pn	11 57 36.0	-0.5

*NIED **01** 11:57:00, 39°.30N×142°.20E, h50^{km}, Mw5.9 Best double couple: $M_0$8.59000$\times10^{17}$ NP1:ϕ_s186.00000°, δ23.00000°, λ69.00000°. NP2:ϕ_s28.00000°, δ68.00000°, λ99.00000°.*
*BJI **01** 11:57:49.8, 39°.18N×142°.26E, h39^{km}, mb5.7/87, mB5.9/64, Ms5.7/99, Ms7 5.7/90*
*MOS **01** 11:57:52.9±0.8, 39°.49N×141°.96E, h35^{km}, mb6.2/98, MS5.8/60, Error ellipse: s-maj=5.6km s-min=3.5km az=101.7*
*ISCJB **01** 11:57:53.8±0.3, 39°.31N±0°.01×142°.01E±0°.01, h50^{km}±2^{km}, mb5.8/516, MS5.5/376, Error ellipse: s-maj=2.5km s-min=1.7km az=158.8*
*GCMT **01** 11:57:54.4±0.1, 39°.38N×142°.17E, h48^{km}, MW5.9/136, Moment Tensor Solution. s121,c270; s136,c413; Duration: 2s3 Moment tensor: Scale 10^{18}Nm; M_{rr}0.76±.01; $M_{\theta\theta}$-0.03±.01; $M_{\phi\phi}$-0.73±.01; $M_{r\theta}$0.33±.01; $M_{\theta\phi}$-0.16±.01; $M_{\phi r}$0.57±.01; Best double couple: $M_0$1.01100$\times10^{18}$ NP1:ϕ_s24.00000°, δ66.00000°, λ99.00000°. NP2:ϕ_s182.00000°, δ26.00000°, λ70.00000°. Principal axes: T 1.0240, Plg68.0000°, Azm312.0000°; N -0.0250, Plg9.0000°, Azm200.0000°; P -0.9980, Plg20.0000°, Azm106.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface/mantle waves, cutoff=50s.*
*JMA **01** 11:57:54.6±0.1, 39°.34N×142°.17E, h45^{km}±1^{km}, M6.0*
JMA Felt IV J1.
*NEIC **01** 11:57:54.4±0.1, 39°.32N×141°.95E, h41^{km}, mb5.8/299, ME5.9, MS5.4/267, MW5.9, MW6.0, MW5.9, Error ellipse: s-maj=2.5km s-min=1.7km az=147.0 Best double couple: NP1:ϕ_s178.00000°, δ24.00000°, λ63.00000°. NP2: ϕ_s27.00000°, δ69.00000°, λ102.00000°. Principal axes: T 1.1200, Plg65.0000°, Azm317.0000°; N -0.0900, Plg11.0000°, Azm203.0000°; P -1.0300, Plg23.0000°, Azm108.0000°; Broadband fault plane solution: P waves. NP1:ϕ_s264.00000°, δ38.00000°, λ137.00000°. NP2: ϕ_s30.00000°, δ65.00000°, λ60.00000°. Principal axes: T Plg59.0000°, Azm257.0000°; N Plg0.0000°, Azm0.0000°; P Plg15.0000°, Azm141.0000°; Depth from synthetics of broadband displacement seismograms. Energy computed from BB mechanism.*
NEIC Felt [IV] at Misawa. Recorded [4 JMA] in Aomori, Iwate and Miyagi.
*NEIC **01** 11:57:54.0±0.0, 39°.35N×142°.18E, h38^{km}, Moment Tensor Solution. s51 Moment tensor: Scale 10^{17}Nm; M_{rr}5.04; $M_{\theta\theta}$-1.29; $M_{\phi\phi}$-3.75; $M_{r\theta}$2.28; $M_{\theta\phi}$-0.82; $M_{\phi r}$5.98; Best double couple: $M_0$7.90000$\times10^{17}$ NP1:ϕ_s20.00000°, δ72.00000°, λ91.00000°. NP2:ϕ_s195.00000°, δ18.00000°, λ86.00000°. Principal axes: T 8.3600, Plg62.0000°, Azm292.0000°; N -1.0500, Plg1.0000°, Azm199.0000°; P -7.3100, Plg27.0000°, Azm108.0000°;*
*IDC **01** 11:57:55.4±1.2, 39°.32N×142°.06E, h51^{km}±10^{km}, mb5.4/39, mb1 5.5/44, mb1mx5.5/49, mbtmp5.7/44, MS5.4/61, Ms1 5.4/61, ms1mx5.3/75 Error ellipse: s-maj=9.6km s-min=8.0km az=76.0*
*NEIC **01** 11:58:10.6±0.0, 39°.42N×142°.17E, h42^{km} Best double couple: NP1:ϕ_s186.00000°, δ22.00000°, λ77.00000°. NP2:ϕ_s20.00000°, δ69.00000°, λ95.00000°. Principal axes: T 1.0400, Plg66.0000°, Azm298.0000°; N -0.0300, Plg5.0000°, Azm198.0000°; P -1.0100, Plg24.0000°, Azm106.0000°;*

ISC 01 11:57:53.8±0.3**, 39°.38N**±0°.02×**142°.03E**±0°.03**, h40^{km}**±1^{km}**, h40^{km}:pP-P, n2057,** σ1s**46**/2155**, mb5.9**/554**, MS5.5**/398**, 220C-35D, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MIYJ	Miyakonagasawa	0.26	321	⇓P	Pn	11 58 03.8	+2.1
MIYJ				S	Sn	11 58 10.3	+3.2
OFUJ	Ofunato	0.41	224	⇓P	Pn	11 58 04.9	+1.5
JTH	Tanohata	0.58	347	⇓P	Pn	11 58 07.3	+1.7
JTH				S	Sn	11 58 16.4	+2.5
JOM	Ohasama	0.58	280	⇓P	Pn	11 58 08.1	+2.5
JOM				S	Sn	11 58 17.8	+3.8
JMK	Ichinoseki	0.76	236	⇓P	Pn	11 58 09.8	+1.8
JMK				S	Sn	11 58 20.6	+2.3
JKZ	Kuzumaki	0.81	318	⇓P	Pn	11 58 11.6	+2.8
JKZ				S	Sn	11 58 22.8	+3.1
JIO	Ouri	1.06	210	⇓P	Pn	11 58 12.9	+0.7
JIO				S	Sn	11 58 25.9	+0.1
JANG	Nango	1.07	338	⇓P	Pn	11 58 14.3	+2.0
JANG				S	Sn	11 58 28.4	+2.4
JRG	Rokugo	1.08	271	⇓P	Pn	11 58 14.9	+2.4
JRG				eS	Sn	11 58 29.7	+3.4
ERM	Erimo	2.77	18	deP	Pn	11 58 36.7	+1.1
ERM				pmax	pmax		
	comp=Z,2µm,1.0s						
ERM	Erimo	2.77	18	ePn	Pn	11 58 36.3	+0.7
ERM				eSn	Sn	11 59 08.5	+0.7
MJAR	Matsushiro Arr	4.14	228	P	Pn	11 58 57.6	+3.1
	comp=Z,88nm,0.3s,baz=40,slow=12,SNR=1396						
MJAR				LR	LR	12 00 44.2	
	comp=Z,55µm,20.5s,baz=65,slow=41						
MJB9	Matsu-Tunnel	4.14	228	ePn	Pn	11 58 58.6	+4.1
MAJO	Matsushiro	4.14	228	d iP	Pn	11 58 57.5	+3.0
MAJO	Matsushiro	4.14	228	ePn	Pn	11 58 57.7	+3.2
YUK	Yuzh-Kuril'sk	5.46	30	d iP	Pn	11 59 12.2	-0.4
YUK				iS	Sn	12 00 09.7	-4.5
YUK				pmax	pmax		
	comp=Z,2µm,0.8s						
YUK				pmax	pmax		
	comp=N,1µm,0.6s						
YUK				pmax	pmax		
	comp=E,696nm,0.6s						
YUK				MLR	MLR		
	comp=Z,46µm,21.0s						
INU	Inuyama	5.67	226	ePn	Pn	11 59 19.1	+3.7
SHO	Shikotan	5.75	37	d iP	Pn	11 59 14.9	-1.6
SHO				iS	Sn	12 00 15.3	-5.9
SHO				pmax	pmax		
	comp=Z,990nm,0.7s						
SHO				pmax	pmax		
	comp=N,678nm,0.5s						
SHO				pmax	pmax		
	comp=E,502nm,0.4s						
JHJ	Hachijo jima 2	6.50	197	P	Pn	11 59 26.9	-0.1
	comp=E,124nm,0.3s,baz=315,slow=21,SNR=29						
JHJ				S	Sn	12 00 37.2	-2.6
	comp=E,194nm,0.3s,baz=272,slow=23,SNR=6.8						
JHJ2	Mitsune	6.50	197	ePn	Pn	11 59 27.7	+0.8
KUR	Kuril'sk	7.28	35	d iP	Pn	11 59 37.2	-0.2
KUR				iS	Sn	12 00 55.4	-3.3
KUR				pmax	pmax		
	comp=Z,1µm,1.0s						
KUR				pmax	pmax		
	comp=N,232nm,0.4s						
KUR				pmax	pmax		
	comp=E,375nm,0.5s						
KUR				MLR	MLR		
	comp=Z,19µm,13.0s						
KUR				MLR	MLR		
	comp=N,24µm,14.0s						
YSS	Yuzh-Sakhalins	7.59	4	α iP	Pn	11 59 43.6	+1.8
YSS				eS	Sn	12 01 06.8	+0.3
YSS				pmax	pmax		
	comp=N,1µm,1.0s						
YSS				pmax	pmax		
	comp=Z,1µm,1.0s						
YSS				MLR	MLR		
	comp=Z,25µm,14.0s						
YSS				MLR	MLR		
	comp=N,21µm,12.0s						
YSS				MLR	MLR		
	comp=E,11µm,16.0s						
YSS	Yuzh-Sakhalins	7.59	4	ePn	Pn	11 59 43.3	+1.5
USRK	Ussuriysk Ar.	8.91	306	P	Pn	12 00 03.5	+3.6
	comp=E,38nm,0.3s,baz=116,slow=15,SNR=282						
USRK				LR	LR	12 03 25.7	
	comp=E,71µm,19.1s,baz=115,slow=37						
UGL	Uglegorsk	9.70	0	eP	Pn	12 00 11.0	+0.4
UGL				S	Sn	12 01 56.0	-2.2
UGL				pmax	pmax		
	comp=Z,1µm,8.0s						
UGL				pmax	pmax		
	comp=Z,269nm,1.0s						
UGL				smax	smax		
	comp=E,4µm,8.0s						
UGL				smax	smax		
	comp=N,4µm,12.0s						
UGL				MLR	MLR		
	comp=N,24µm,20.0s						
UGL				MLR	MLR		
	comp=Z,16µm,20.0s						
UGL				MLR	MLR		
	comp=E,25µm,18.0s						
HABR	Khabarovsk	10.39	333	ceP	Pn	12 00 18.6	-1.5
HABR				eS	Sn	12 02 15.2	+0.1
HABR				pmax	pmax		
	comp=E,42nm,1.3s						
HABR				pmax	pmax		
	comp=N,52nm,1.3s						
HABR				pmax	pmax		
	comp=Z,118nm,1.3s						
HABR				MLR	MLR		
	comp=N,13µm,14.0s						
HABR				MLR	MLR		
	comp=E,8µm,14.0s						
HABR				MLR	MLR		
	comp=Z,20µm,14.0s						
MDJ	Mudanjiang	10.63	304	P	Pn	12 00 28.6	+5.1
MDJ				S	Sn	12 02 32.6	+11
MDJ				LR	LR		
	comp=Z,27µm,15.5s						
MDJ				LR	LR		
	comp=Z,42µm,19.5s						
MDJ				LR	LR		
	comp=Z,63µm,17.5s						
MDJ	Mudanjiang	10.63	304	ePn	Pn	12 00 28.2	+4.8
JNU	Nakatsue	10.95	239	P	Pn	12 00 30.8	+2.8
	comp=Z,5.5nm,0.3s,baz=51,slow=5.5,SNR=66						
JNU				LR	LR	12 05 00.8	
	comp=Z,25µm,20.7s,baz=42,slow=39						
JNU	Nakatsue	10.95	239	ePn	Pn	12 00 31.1	+3.1
KSRS	Korea Array	11.23	265	P	Pn	12 00 36.9	+5.2
	comp=Z,16nm,0.3s,baz=72,slow=14,SNR=115						
KSRS				S	Sn	12 02 44.6	+8.7
	comp=Z,3.0nm,0.3s,baz=72,slow=24,SNR=4.2						
KSRS				LR	LR	12 04 34.4	
	comp=Z,28µm,20.2s,baz=78,slow=35						
KS01	Wonju Array Si	11.25	265	ePn	Pn	12 00 36.1	+4.1
KS15	Wonju Array Si	11.27	265	ePn	Pn	12 00 36.9	+4.7
KSAR	Wonju Array Be	11.27	265	P	Pn	12 00 36.9	+4.7
KSAR	Wonju Array Be	11.27	265	P	Pn	12 00 36.9	+4.7
TYV	Tymovskoe	11.49	2	eP	Pn	12 00 36.0	+0.8
TYV				eS	Sn	12 02 41.0	-1.1
TYV				pmax	pmax		
	comp=Z,368nm,1.2s						
TYV				pmax	pmax		
	comp=Z,2µm,8.0s						
TYV				smax	smax		
	comp=E,6µm,9.0s						
TYV				MLR	MLR		
	comp=Z,30µm,19.0s						
INCN	Inchon	12.22	266	ePn	Pn	12 00 49.3	+4.0
INCN	Inchon	12.22	266	P	Pn	12 00 50.6	+5.3
	SNR=36						
CBIJ	Chichi jima	12.25	179	ePn	Pn	12 00 45.0	-0.7
JCJ	Chichijima	12.25	179	P	Pn	12 00 43.9	-1.8
	comp=Z,21nm,0.3s,baz=84,slow=20,SNR=6.5						
JCJ				S	Sn	12 03 03.2	+2.4
JCJ				LR	LR	12 06 22.2	
	comp=Z,4µm,21.2s,slow=42						
KLR	Kul'dur	12.29	327	P	Pn	12 00 47.8	+1.8
	comp=Z,1.8nm,0.3s,baz=136,slow=12,SNR=163						
KLR				LR	LR	12 05 35.3	
	comp=Z,44µm,18.8s,baz=138,slow=37						
CN2	Changchun	13.17	295	⇑P	Pn	12 01 00.5	+2.3
CN2				esP	P	12 01 13.5	+6.1
CN2				eS	Sn	12 03 25.5	+2.2
CN2				pmax	pmax		
	comp=Z,30nm,0.6s						
CN2				pmax	pmax		
	comp=Z,2µm,4.0s						
CN2				LR	LR		
	comp=Z,23µm,16.0s						
CN2				LR	LR		
	comp=Z,16µm,16.0s						
CN2				LR	LR		
	comp=Z,14µm,18.0s						
NKL	Nikolayevsk	13.81	357	iP	Pn	12 01 06.0	-0.7
NKL				iS	Sn	12 03 38.0	-0.6
NKL				pmax	pmax		
	comp=N,210nm,1.0s						
NKL				pmax	pmax		
	comp=Z,210nm,1.0s						
NKL				smax	smax		
	comp=E,6µm,8.0s						
NKL				MLR	MLR		
	comp=N,12µm,15.0s						
NKL				MLR	MLR		
	comp=Z,14µm,16.0s						
NKL				MLR	MLR		
	comp=E,20µm,15.0s						
OKH	Okha	14.19	2	eP	Pn	12 01 09.2	-2.7
OKH				eS	Sn	12 03 49.4	+1.5
OKH				pmax	pmax		
	comp=Z,2µm,6.0s						
OKH				smax	smax		
	comp=N,4µm,9.0s						
OKH				smax	smax		
	comp=Z,18µm,16.0s						
SNY	Shenyang	14.23	286	⇑P	Pn	12 01 14.8	+2.2
SNY				S	Sn	12 03 47.8	-1.3
SNY				pmax	pmax		
	comp=Z,93nm,1.6s						
SNY				pmax	pmax		
	comp=Z,2µm,4.5s						
SNY				LR	LR		
	comp=Z,9µm,16.3s						
SNY				LR	LR		
	comp=Z,26µm,18.6s						
SNY				LR	LR		
	comp=Z,43µm,21.0s						
SKR	Severo-Kuril's	15.04	37	eP	Pn	12 01 11.0	-12
SKR				pmax	pmax		
	comp=Z,150nm,0.9s						
SKR				MLR	MLR		
	comp=N,5µm,16.0s						
SKR				MLR	MLR		
	comp=Z,7µm,16.0s						
SKR				MLR	MLR		
	comp=E,7µm,14.0s						
DL2	Dalian	15.84	275	P	P	12 01 35.7	-1.3
DL2				S	Sn	12 04 29.1	+0.9
DL2				pmax	pmax		
	comp=E,530nm,1.0s						
DL2				pmax	pmax		
	comp=E,4µm,6.7s						
DL2				LR	LR		
	comp=E,16µm,20.4s						
DL2				LR	LR		
	comp=E,26µm,26.7s						
JOW	Kunigami	16.98	227	P	Pn	12 01 46.9	-1.4
JOW	Kunigami	16.98	227	ePn	Pn	12 01 46.9	-1.4
	comp=E,234nm,0.9s						
PEA0	Petropavlovsk-	17.44	33	ePn	Pn	12 01 50.8	-3.0
PEA0B	Petropavlovsk-	17.44	33	ePn	P	12 01 54.9	+0.2
	comp=E,364nm,1.2s						
PETK	Petropavlovsk-	17.44	33	P	Pn	12 01 50.5	-3.2
	comp=E,0.3nm,0.3s,baz=198,slow=12,SNR=12						
PETK				LR	LR	12 09 42.0	
	comp=E,8µm,18.6s,baz=218,slow=40						
PEA1	Petropavlovsk-	17.44	33	ePn	Pn	12 01 50.5	-3.3
PET	Petropavlovsk	17.79	34	eP	Pn	12 01 54.2	-3.9
PET				eS	Sn	12 05 09.5	-5.7
PET				pmax	pmax		
	comp=Z,2µm,9.8s						
PET				pmax	pmax		
	comp=Z,2µm,14.7s						
PET				pmax	pmax		
	comp=Z,249nm,1.2s						
PET				MLR	MLR		
	comp=Z,8µm,19.0s						
PET				MLR	MLR		
	comp=Z,8µm,16.0s						
PET	Petropavlovsk	17.79	34	eP	P	12 01 59.6	+1.1
	comp=Z,258nm,1.1s						
HIA	Hailar	18.70	309	eP	P	12 02 07.4	-1.2
HIA				pmax	pmax		
	comp=Z,458nm,1.1s						
HIA	Hailar	18.70	309	eP	P	12 02 07.4	-1.2
	comp=Z,458nm,1.1s						
SSE	Sheshan	18.90	250	P	Pn	12 02 11.9	+0.2
SSE				S	Sn	12 05 42.1	-0.2
SSE				pmax	pmax		

SSE pmax pmax
comp=Z,970nm,1.0s
SSE LR LR
comp=Z,4μm,10.3s
SSE LR LR
comp=Z,11μm,19.1s
SSE LR LR
comp=Z,4μm,19.1s
SSE LR LR
comp=Z,9μm,22.4s
BJI Beijing 19.89 280 P **P** **12 02 20.8 -0.8**
BJI sP **pP** **12 02 33.1 +1.5**
BJI S **S** **12 05 58.4 -4.8**
BJI sS **sS** **12 06 18.3 -0.9**
BJI pmax pmax
comp=Z,590nm,1.1s
BJI pmax pmax
comp=Z,3μm,3.1s
BJI LR LR
comp=Z,4μm,13.7s
BJI LR LR
comp=Z,13μm,17.0s
BJI LR LR
comp=Z,22μm,30.2s
BJT Baijiatuau 19.89 280 *e*P **P** **12 02 20.9 -0.8**
BJT pmax pmax
comp=Z,876nm,1.2s
BJT Baijiatuau 19.89 280 *e*P **P** **12 02 20.9 -0.8**
comp=Z,876nm,1.2s
TIA Tai'an 19.92 269 ⇑P **Pn** **12 02 25.9 +2.0**
TIA sP **sP** **12 02 37.3 +0.2**
TIA S **S** **12 05 57.1 -6.8**
TIA pmax pmax
comp=Z,50nm,1.1s
TIA pmax pmax
comp=Z,3μm,3.6s
TIA LR LR
comp=Z,6μm,15.2s
TIA LR LR
comp=Z,19μm,16.0s
TIA LR LR
comp=Z,23μm,15.2s
NJ2 Nanjing 20.16 256 *e*P **P** **12 02 23.9 -0.7**
NJ2 sP **sP** **12 02 37.8 -1.9**
NJ2 S Sn 12 06 11.0 -1.6
NJ2 sS **sS** **12 06 23.0 -1.7**
NJ2 pmax pmax
comp=Z,620nm,0.6s
NJ2 pmax pmax
comp=Z,930nm,3.9s
NJ2 LR LR
comp=Z,9μm,16.3s
NJ2 LR LR
comp=Z,10μm,17.7s
NJ2 LR LR
comp=Z,18μm,16.3s
CLNS Chul'man 20.78 333 *e*P **P** **12 02 31.2 0.0**
CLNS *e* 12 02 45.8
CLNS *e*S **S** **12 06 18.1 -2.6**
CLNS *e* 12 06 41.5
CLNS *e*SS SnSn 12 06 57.9 +16
CLNS pmax pmax
comp=N,437nm,1.3s
CLNS pmax pmax
comp=Z,409nm,0.9s
CLNS pmax pmax
comp=E,195nm,0.9s
CLNS pmax pmax
comp=E,336nm,0.9s
CLNS pmax pmax
comp=Z,305nm,1.0s
CLNS pmax pmax
comp=N,263nm,0.8s
CLNS smax smax
comp=N,3μm,10.4s
CLNS smax smax
comp=E,3μm,9.3s
CLNS MLR MLR
comp=E,7μm,19.0s
CLNS MLR MLR
comp=Z,16μm,16.0s
CLNS MLR MLR
comp=N,14μm,16.0s
MA2 Magadan 20.96 12 P **P** **12 02 34.2 +1.1**
comp=N,486nm,0.8s,baz=220,slow=9.6,SNR=577
MA2 LR LR 12 10 58.9
comp=N,6μm,19.8s,baz=220,slow=37
YOJ Yonaguni jima 21.88 233 *e*P **P** **12 02 43.5 +0.2**
YOJ pmax pmax
comp=Z,310nm,1.0s
YOJ Yonaguni jima 21.88 233 *e*P **P** **12 02 43.5 +0.2**
comp=Z,314nm,1.0s
YOJ LR LR
comp=Z,13μm,21.0s
TATO Taipei 22.48 236 *e*P **P** **12 02 49.2 -0.5**
comp=Z,542nm,1.0s
TATO LR LR
comp=Z,18μm,18.0s
YHNB Yeheng 22.77 236 *e*P **P** **12 02 49.6 -3.2**
comp=Z,237nm,1.1s
YHNB LR LR
comp=Z,16μm,18.0s
NACB Ninganchiao 22.98 235 *e*P **P** **12 02 52.1 -2.7**
comp=Z,170nm,1.0s
NACB LR LR
comp=Z,17μm,22.0s
TIY Taiyuan 23.16 275 *e*P **P** **12 02 54.0 -2.8**
TIY sP **pP** **12 03 07.5 +0.4**
TIY S **S** **12 07 10.6 +5.1**
TIY sS **sS** **12 07 22.8 -0.9**
TIY pmax pmax
comp=Z,64nm,0.5s
TIY LR LR
comp=Z,8μm,16.5s
TIY LR LR
comp=Z,6μm,13.6s
TIY LR LR
comp=Z,18μm,23.8s
HHC Hu-ho-hao-te 23.29 283 *e*P **P** **12 02 55.8 -2.3**
HHC sP pP 12 03 08.8 +0.3
HHC S **S** **12 07 12.6 +5.0**
HHC sS Sn 12 07 28.0 +0.1
HHC pmax pmax
comp=Z,150nm,1.4s
HHC pmax pmax
comp=Z,1μm,3.4s
HHC LR LR
comp=Z,9μm,16.2s
HHC LR LR
comp=Z,18μm,17.4s
HHC LR LR
comp=Z,23μm,16.2s
CIT Chita 23.39 312 *e*P **P** **12 02 56.8 -2.1**
CIT *e* 12 03 05.1
CIT *e* 12 03 15.2
CIT *e* 12 03 34.9
CIT *e* 12 07 06.7
CIT pmax pmax
comp=Z,3μm,1.2s
SSLB Suanglung 23.66 235 *e*P **P** **12 02 58.6 -3.0**
comp=Z,158nm,0.9s
SSLB LR LR
comp=Z,10μm,19.0s
YULB Yu-li 23.73 234 *e*P **P** **12 02 59.7 -2.5**
comp=Z,142nm,0.9s
YULB LR LR
comp=Z,6μm,21.0s
YAK Yakutsk 23.91 346 P **P** **12 03 03.5 0.0**
comp=Z,75nm,0.6s,baz=340,slow=22,SNR=177
S **S** **12 07 17.8 +1.0**
comp=Z,4.7nm,0.3s,baz=149,slow=24,SNR=8.9
YAK LR LR 12 12 59.4
comp=Z,14μm,18.6s,baz=161,slow=38
YAK Yakutsk 23.91 346*c i*P **P** **12 03 02.2 -1.3**
YAK *e**PP **pP** **12 03 09.9 -4.5**
YAK *e*PPP PPP 12 03 37.9
YAK *e* 12 06 45.5
YAK *e*S **S** **12 07 13.4 -3.4**
YAK *e**SS **sS** **12 07 30.7 -4.4**
YAK *e*SSS SSS 12 08 03.5
YAK *e* 12 14 05.7
YAK pmax pmax
comp=Z,2μm,1.3s
YAK pmax pmax
comp=N,833nm,1.1s
YAK pmax pmax
comp=E,278nm,1.1s
YAK pmax pmax
comp=Z,2μm,2.7s
YAK pmax pmax
comp=N,1μm,3.0s
YAK pmax pmax
comp=E,712nm,1.5s
YAK smax smax
comp=E,5μm,2.6s
YAK smax smax
comp=N,8μm,2.5s
YAK MLR MLR
comp=Z,10μm,14.0s
YAK MLR MLR
comp=E,8μm,18.0s
YAK MLR MLR
comp=N,11μm,16.0s
YAK Yakutsk 23.91 346 *e*P **P** **12 03 02.5 -1.0**
comp=N,1μm,0.8s
YAK *e*S **S** **12 07 15.4 -1.4**
YAK LR LR
comp=Z,13μm,18.0s
TPUB Ta-pu 24.22 235 *e*P **P** **12 03 04.0 -2.8**
comp=Z,185nm,0.9s
TPUB LR LR
comp=Z,11μm,18.0s
WHN Wuhan 24.26 257 P **P** **12 03 06.0 -1.1**
WHN S **S** **12 07 17.1 -6.0**
WHN LR LR
comp=Z,9μm,17.3s
WHN LR LR
comp=Z,33μm,15.4s
WHN LR LR
comp=Z,40μm,21.2s
TWG Pinlang 24.29 233 *e*P **P** **12 03 05.4 -2.0**
comp=Z,1μm,0.8s
TWG LR LR
comp=Z,18μm,20.0s
SEY Seymchan 24.40 11 P **P** **12 03 09.4 +1.3**
comp=Z,376nm,1.1s,baz=201,slow=7.1,SNR=333
QZH Quanzhou 24.42 241⇑*i*P **P** **12 03 05.3 -3.2**
QZH sP **pP** **12 03 20.9 +1.4**
QZH S **S** **12 07 20.7 -5.0**
QZH pmax pmax
comp=Z,340nm,0.9s
QZH pmax pmax
comp=Z,4μm,3.4s
QZH LR LR
comp=Z,11μm,14.5s
QZH LR LR
comp=Z,5μm,12.6s
QZH LR LR
comp=Z,25μm,19.8s
BTO Baotou 24.49 283 *e*P **P** **12 03 07.2 -2.0**
BTO S **S** **12 07 18.5 -8.3**
BTO LR LR
comp=Z,3μm,14.7s
BTO LR LR
comp=Z,6μm,16.7s
SMY Shemya 25.71 48 *e*P **P** **12 03 19.4 -0.6**
SMY pmax pmax
comp=Z,310nm,1.1s
SMY Shemya 25.71 48 *e*P **P** **12 03 19.4 -0.6**
comp=Z,314nm,1.1s
GUMO Guam 25.81 174 LR LR 12 13 25.6
comp=Z,5μm,21.4s,baz=20,slow=36
BOD Bodaibo 25.85 325 *e*P **P** **12 03 21.5 +0.3**
BOD pmax pmax
comp=Z,446nm,1.1s
ULN Ulaanbaatar 26.52 300*c i*P **P** **12 03 27.7 +0.1**
ULN pmax pmax
comp=Z,51nm,0.6s
ULN MLR MLR
comp=Z,21μm,18.0s
ULN Ulaanbaatar 26.52 300 *e*P **P** **12 03 27.9 +0.3**
comp=Z,196nm,1.5s
ULN LR LR
comp=Z,23μm,19.0s
ULN Ulaanbaatar 26.52 300 P **P** **12 03 28.2 +0.6**
SNR=43
ULN Ulaanbaatar 26.52 300 P **P** **12 03 28.2 +0.6**
SNR=43
SONA1 Songino Array 26.95 300 *e*P **P** **12 03 31.1 -0.4**
SONA0 Songino Array 26.96 300 *e*P **P** **12 03 31.8 +0.3**
comp=Z,100nm,1.0s
SONM Songino Array 26.96 300 P **P** **12 03 31.8 +0.3**
comp=Z,38nm,0.7s,baz=96,slow=9.0,SNR=93
SONM LR LR 12 14 47.3
comp=Z,23μm,18.8s,baz=93,slow=38
XAN Xi'an 26.98 269 P **P** **12 03 30.9 -0.8**
XAN pP pP 12 03 40.2 -2.5
XAN PP **PnPn** **12 04 15.8 +0.6**
XAN S **S** **12 08 02.7 -3.7**
XAN pmax pmax
comp=Z,240nm,0.7s
XAN pmax pmax
comp=Z,2μm,12.1s
XAN LR LR
comp=Z,4μm,22.7s
XAN LR LR
comp=Z,10μm,32.6s
XAN LR LR
comp=Z,12μm,25.9s
ENH Enshi 28.09 261 *e*P **P** **12 03 41.7 -0.1**
comp=Z,612nm,0.8s
ENH LR LR
comp=Z,4μm,19.0s
IRK Irkutsk 28.95 309 *e*P **P** **12 03 49.5 +0.4**
IRK *e* 12 04 05.8
IRK pmax pmax
comp=Z,550nm,1.5s
H11N2 WAKE ISLAND Hy 29.02 125 T T 12 34 14.6
baz=318,slow=75,SNR=7933
H11N1 WAKE ISLAND Hy 29.02 125 T T 12 34 15.9
baz=318,slow=75
H11N3 WAKE ISLAND Hy 29.03 125 T T 12 34 20.0
baz=318,slow=75
HKC Hong Kong Obse 29.19 243⇑*i*P **P** **12 03 53.0 +1.6**
WAKE Wake Island 29.19 126 PFAKE 12 04 00.0 +8.5
WAKE LR LR
comp=Z,10μm,22.0s
TLY Talaya 29.23 308 P **P** **12 03 52.8 +1.2**
comp=Z,129nm,0.8s,baz=117,slow=5.4,SNR=198
TLY LR LR 12 16 12.4
comp=Z,25μm,19.1s,baz=110,slow=38
TLY Talaya 29.23 308*c i*P **P** **12 03 52.5 +0.9**
TLY *e*S **S** **12 08 42.8 +1.5**
TLY pmax pmax
comp=Z,297nm,1.2s
TLY MLR MLR
comp=Z,22μm,17.0s
TLY Talaya 29.23 308 *e*P **P** **12 03 52.7 +1.2**
comp=Z,277nm,1.0s
TLY LR LR
comp=Z,26μm,18.0s
TLY Talaya 29.23 308 P **P** **12 03 52.9 +1.3**
SNR=144
TLY Talaya 29.23 308 P **P** **12 03 52.9 +1.3**
SNR=144
GZH Guangzhou 29.25 245 P **P** **12 03 47.9 -4.1**
GZH S S 12 08 32.8 -9.3
GZH pmax pmax
comp=Z,3μm,7.8s
ZAK Zakamensk 29.26 305 *e*P **P** **12 03 52.3 +0.3**
ZAK pmax pmax
comp=Z,195nm,1.2s
BCPH Baguio City Da 29.59 225⇓*e*P **P** **12 03 54.6 -0.6**
H11S1 WAKE ISLAND Hy 29.80 127 T T 12 35 16.4
baz=319,slow=76,SNR=1978
H11S3 WAKE ISLAND Hy 29.81 127 T T 12 35 20.7
baz=319,slow=76,SNR=2027
H11S2 WAKE ISLAND Hy 29.82 127 T T 12 35 21.6
baz=319,slow=76,SNR=2044
LZH Lanzhou 30.23 276 *e*P **P** **12 04 00.8 0.0**
LZH pP pP 12 04 11.9 0.0
LZH sP sP 12 04 15.6 -1.1
LZH PP **PnPn** **12 05 03.6 +4.2**
LZH PcP **PcP** **12 07 02.8 +2.0**
LZH *e*S **S** **12 08 53.3 -4.4**
LZH sS sS 12 09 11.7 -4.4
LZH SS **SnSn** **12 10 36.8 +3.1**
LZH pmax pmax
comp=Z,170nm,1.2s
LZH pmax pmax
comp=Z,530nm,4.1s
LZH LR LR
comp=Z,6μm,13.9s
LZH LR LR
comp=Z,17μm,14.4s
LZH LR LR
comp=Z,16μm,14.8s
MOY Mondy 30.86 307 *e*P **P** **12 04 06.9 +0.8**
MOY pmax pmax
comp=Z,525nm,2.6s
BILL Bilibino 31.65 17*c i*P **P** **12 04 13.1 +0.4**
BILL *e* 12 04 23.8
BILL *i**PP **sP** **12 04 29.2 +0.6**
BILL *e*PPP PPP 12 05 28.9
BILL *i* 12 07 05.7
BILL *i*S **S** **12 09 17.3 -1.6**
BILL pmax pmax
comp=Z,282nm,1.7s
BILL MLR MLR
comp=Z,3μm,15.0s
BILL Bilibino 31.65 17 *e*P **P** **12 04 13.3 +0.6**
comp=Z,393nm,1.5s
BILL LR LR
comp=Z,4μm,22.0s
GYA Guiyang 32.16 257⇑*i*P **P** **12 04 17.6 -0.2**
GYA pP pP 12 04 30.0 +1.1
GYA PP **PnPn** **12 05 26.2 +1.8**
GYA PcP **PcP** **12 07 08.6 +2.5**
GYA S **S** **12 09 23.7 -4.1**
GYA sS sS 12 09 46.4 +0.1
GYA ScP **ScP** **12 10 47.0 +0.6**
GYA SS **SnSn** **12 11 21.2 +0.6**
GYA ScS **ScS** **12 14 44.8 -0.7**
GYA pmax pmax
comp=Z,850nm,0.9s
GYA pmax pmax
comp=Z,1μm,9.9s
GYA LR LR
comp=Z,6μm,18.9s
GYA LR LR
comp=Z,8μm,22.0s
GYA LR LR
comp=Z,11μm,21.1s
CD2 Chengdu 32.22 267⇑*i*P **P** **12 04 17.6 -0.7**
CD2 sP sP 12 04 32.7 -1.5
CD2 PP **PP** **12 05 30.6 -0.8**
CD2 PcP **PcP** **12 07 05.8 -0.3**
CD2 S **S** **12 09 25.0 -3.7**
CD2 sS sS 12 09 46.5 -0.7
CD2 pmax pmax
comp=Z,180nm,0.9s
CD2 pmax pmax
comp=Z,1μm,9.8s
CD2 LR LR
comp=Z,12μm,15.6s
CD2 LR LR
comp=Z,16μm,15.6s
GTA Gaotai 32.41 284⇑P **P** **12 04 20.2 +0.3**
GTA pP pP 12 04 29.9 -1.1
GTA sP sP 12 04 34.2 -1.6
GTA PcP **PcP** **12 07 08.1 +1.5**
GTA S **S** **12 09 31.2 -0.4**
GTA sS sS 12 09 46.7 -3.4
GTA ScP **ScP** **12 10 47.9 +0.9**
GTA PcS **PcS** **12 10 52.5 +0.8**
GTA SS **SnSn** **12 11 27.3 +0.8**
GTA ScS **ScS** **12 14 45.0 -1.4**
GTA pmax pmax
comp=Z,46nm,1.3s
GTA pmax pmax
comp=Z,2μm,4.8s
GTA LR LR
comp=Z,10μm,18.1s
GTA LR LR
comp=Z,22μm,19.0s
GTA LR LR
comp=Z,27μm,18.5s
ATKA Atka Island 32.60 52 *e*P **P** **12 04 22.5 +1.3**
comp=Z,114nm,1.1s
ATKA LR LR
comp=Z,6μm,20.0s
TIXI Tiksi 33.03 352*c i*P **P** **12 04 24.7 -0.1**
TIXI pmax pmax
comp=Z,124nm,1.0s
TIXI MLR MLR
comp=Z,8μm,18.0s
TIXI Tiksi 33.03 352 *e*P **P** **12 04 24.9 +0.1**
comp=Z,94nm,0.9s
TIXI LR LR
comp=Z,8μm,20.0s
QIZ Qiongzhong 34.38 243 P **P** **12 04 36.1 -1.0**
QIZ sP **pP** **12 04 50.5 +2.3**
QIZ PP **PP** **12 05 56.0 +0.6**
QIZ S **S** **12 10 02.9 +0.7**
QIZ sS **sS** **12 10 20.0 -0.7**
QIZ pmax pmax
comp=Z,41nm,1.3s
QIZ pmax pmax
comp=Z,1μm,5.5s
QIZ LR LR
comp=Z,6μm,21.6s
QIZ LR LR
comp=Z,9μm,17.3s
QIZ Qiongzhong 34.38 243 *e*P **P** **12 04 38.6 +1.5**
comp=Z,37nm,0.9s
QIZ LR LR
comp=Z,9μm,18.0s
MIDW Midway 35.26 96 PFAKE 12 05 00.0 +15
MIDW LR LR
comp=Z,8μm,22.0s
DAV Davao City (W) 35.41 209 PFAKE 12 05 00.0 +14
DAV LR LR
comp=Z,3μm,20.0s
PATS Pohnpei 35.56 151 PFAKE 12 05 00.0 +13
PATS LR LR
comp=Z,8μm,21.0s
KMI Kunming 35.85 259 P **P** **12 04 50.6 +0.6**
KMI pP pP 12 05 01.9 +0.8
KMI sP sP 12 05 06.3 +0.4
KMI PP **PP** **12 06 14.1 +2.3**
KMI S **S** **12 10 18.9 -6.3**
KMI sS sS 12 10 43.8 0.0
KMI SS **SnSn** **12 12 45.3 -5.0**
KMI pmax pmax
comp=Z,650nm,1.1s
KMI pmax pmax
comp=Z,3μm,4.2s
KMI LR LR
comp=Z,4μm,18.5s
KMI LR LR
comp=Z,8μm,19.7s
KMI LR LR
comp=Z,10μm,22.1s
NIKH Nikolski High 35.90 51 PFAKE 12 05 00.0 +10
NIKH LR LR
comp=Z,4μm,20.0s
KRAR Krasnoyarsk 36.15 314*c i*P **P** **12 04 50.9 -1.0**
KRAR pmax pmax
comp=Z,751nm,1.1s
KRAR MLR MLR
comp=Z,10μm,18.0s
GAMB Gambell 36.47 33 *e*P **P** **12 04 55.9 +1.3**
comp=Z,51nm,1.3s
GAMB LR LR
comp=Z,3μm,21.0s
UNV Unalaska Valle 37.34 50 PFAKE 12 05 20.0 +18
UNV LR LR
comp=Z,2μm,19.0s
AKUT Akutan 37.77 49 PFAKE 12 05 20.0 +14
AKUT LR LR
comp=Z,3μm,22.0s
FALS False Pass 39.16 48 PFAKE 12 05 30.0 +13
FALS LR LR
comp=Z,4μm,19.0s
PANO Nakornpanom 39.31 246 P **P** **12 05 20.2 +1.2**
comp=Z,114nm,1.3s
NONG Nongkai 39.76 249 P **P** **12 05 23.5 +0.7**
comp=Z,199nm,0.9s,comp=Z,3μm
SKNT Sakolnakorn 39.88 247 P **P** **12 05 24.3 +0.6**
comp=Z,291nm,1.1s,comp=Z,5μm
MYLDM Lahad Datu 40.14 218 *e*P **P** **12 05 28.2 +2.2**
comp=Z,318nm,1.4s
WMQ Urumqi 40.26 295⇑*i*P **P** **12 05 28.5 +1.7**
WMQ pP pP 12 05 39.2 +1.1
WMQ sP sP 12 05 44.1 +1.2
WMQ PcP **PcP** **12 07 31.1 +1.2**
WMQ S **S** **12 11 32.3 +1.0**
WMQ sS sS 12 11 49.7 -0.4

WMQ SS **SS** 12 14 23.8 -6.6
WMQ pmax pmax
comp=Z,610nm,1.0s
WMQ pmax pmax
comp=Z,2µm,4.0s
WMQ LR LR
comp=Z,2µm,11.8s
WMQ LR LR
comp=Z,3µm,18.8s
WMQ LR LR
comp=Z,4µm,31.4s
KKM Kota Kinabalu 40.54 222 PFAKE 12 05 40.0 +11
KKM LR LR
comp=Z,4µm,19.0s
TNTI Ternate 40.69 203 P **P** **12 05 30.6 +0.2**
comp=Z,160nm,1.2s,comp=Z,3µm
TNTI Ternate 40.69 203 *e*P **P** **12 05 30.6 +0.2**
comp=Z,650nm,1.8s
TNTI LR LR
comp=Z,3µm,19.0s
ZAA0 Zalesovo Array 40.73 310 *e*P **P** **12 05 31.2 +0.8**
ZAA1 Zalesovo Array 40.73 310 *e*P **P** **12 05 31.1 +0.7**
ZALV Zalesovo Beam 40.73 310 P **P** **12 05 31.1 +0.7**
comp=Z,227nm,0.7s,baz=91,slow=7.8,SNR=742
ZALV PcP **PcP** **12 07 31.8 +0.7**
comp=Z,72nm,0.9s,baz=58,slow=4.1,SNR=4.7
ZALV ScP **ScP** **12 11 18.4 +1.0**
comp=Z,11nm,0.9s,baz=338,slow=1.6,SNR=4.7
ZALV LR LR 12 23 15.5
comp=Z,23µm,18.3s,baz=84,slow=37
KHON Khomkaen 41.12 247 P **P** **12 05 34.7 +0.7**
comp=Z,181nm,0.9s,comp=Z,1µm
TSM Tawau 41.22 218 ⇓P **P** **12 05 36.0 +1.2**
SWI Sorong 41.25 196 P **P** **12 05 35.7 +0.7**
comp=Z,128nm,1.2s,comp=Z,2µm
NRIK Noril'sk 41.36 334 P **P** **12 05 35.9 +0.5**
comp=Z,97nm,0.9s,baz=108,slow=9.0,SNR=141
NRIK LR LR 12 23 48.5
comp=Z,21µm,20.0s,baz=107,slow=38
LOEI Loei 41.49 250 P **P** **12 05 34.7 -2.3**
comp=Z,126nm,1.3s,comp=Z,8µm
MANU Manus Island 41.51 172 *e*P **P** **12 05 37.4 +0.2**
comp=Z,74nm,1.4s
MANU LR LR
comp=Z,2µm,20.0s
NVS Novosibirsk 41.61 312 ⇑*i*P **P** **12 05 38.8 +1.2**
NVS *e* 12 05 49.8
NVS *e*S **S** **12 11 44.7 -6.1**
NVS pmax pmax
comp=Z,298nm,1.4s
NVS pmax pmax
comp=N,28nm,1.5s
NVS pmax pmax
comp=E,290nm,1.5s
NVS smax smax
comp=N,63nm,2.0s
NVS smax smax
comp=E,204nm,2.0s
PHRA Phrae 41.62 252 P **P** **12 05 38.9 +0.8**
comp=E,2µm,0.9s
CMAI Chiengmai2 41.62 255 P **P** **12 05 39.3 +1.0**
comp=E,290nm,0.7s,comp=E,3µm
JAY Jayapura 41.70 182 P **P** **12 05 39.8 +1.0**
comp=E,5.0nm,1.0s,baz=317,slow=22,SNR=7.3
JAY LR LR 12 23 34.6
comp=E,42nm,18.9s,baz=323,slow=37
JAY Jayapura 41.70 182 P **P** **12 05 39.0 +0.2**
comp=E,60nm,1.4s,comp=E,714nm
ZSN Zaisan 41.78 301 ⇑*i*P **P** **12 05 38.4 -0.8**
comp=E,4µm,1.4s
ZSN *e*S **S** **12 11 50.0 -3.7**
ZSN *i* LRM MLR 12 25 02.7
comp=E,2µm,11.0s
GENI Genyem 41.80 183 P **P** **12 05 40.8 +1.3**
comp=E,161nm,1.2s,comp=E,3µm
UTTA Uttaradit 41.86 251 P **P** **12 05 40.5 +0.5**
comp=E,77nm,0.8s,comp=E,528nm
LBMI Labuha 41.99 202 P **P** **12 05 40.4 -0.7**
comp=E,164nm,1.8s,comp=E,3µm
CHAI Chaiyaphum 42.01 248 P **P** **12 05 41.5 +0.2**
comp=E,142nm,0.9s,comp=E,1µm
LAMP Lampang 42.05 253 P **P** **12 05 42.4 +0.8**
comp=E,112nm,0.9s,comp=E,848nm
PBKT Sadao Pong 42.31 249 P **P** **12 05 44.1 +0.4**
comp=E,158nm,1.4s,comp=E,3µm
PHIT Phitsanulok 42.31 251 P **P** **12 05 44.7 +1.0**
comp=E,123nm,0.9s,comp=E,984nm
CMMT Chiang Mai 42.37 254 P **P** **12 05 44.8 +0.5**
comp=E,312nm,0.9s,comp=E,3µm
CHTO Chiang Mai 42.38 254 P **P** **12 05 44.8 +0.5**
comp=E,1µm,0.9s,comp=E,14µm
CHTO Chiang Mai 42.38 254 *e*P **P** **12 05 45.4 +1.1**
CHTO pmax pmax
comp=Z,300nm,1.0s
CHTO Chiang Mai 42.38 254 *e*P **P** **12 05 45.4 +1.1**
comp=Z,299nm,1.0s
CHTO LR LR
comp=Z,3µm,22.0s
CHTO Chiang Mai 42.38 254 P **P** **12 05 45.6 +1.3**
SNR=101
CHTO Chiang Mai 42.38 254 P **P** **12 05 45.6 +1.3**
SNR=101
LSA Lhasa 42.53 273 P **P** **12 05 47.8 +1.8**
LSA pmax pmax
comp=Z,120nm,1.2s
LSA Lhasa 42.53 273 *e*P **P** **12 05 47.8 +1.8**
LSA pmax pmax
comp=Z,191nm,1.0s
LSA MLR MLR
comp=Z,13µm,21.0s
LSA Lhasa 42.53 273 *e*P **P** **12 05 47.8 +1.8**
comp=Z,191nm,1.0s
LSA LR LR
comp=Z,13µm,21.0s
CM31 Chiang Mai Arr 42.60 253 *e*P **P** **12 05 47.2 +1.1**
CMAR Chiang Mai Arr 42.60 253 P **P** **12 05 47.2 +1.1**
comp=Z,43nm,0.8s,baz=46,slow=6.5,SNR=269
CMAR ScP **ScP** **12 11 25.6 +0.2**
comp=Z,10.0nm,0.9s,baz=14,slow=3.4,SNR=14
CMAR LR LR 12 25 16.0
comp=Z,3µm,18.5s,baz=54,slow=38
CM01 Chiang Mai Arr 42.61 253 *e*P **P** **12 05 46.5 +0.3**
SUKH Sukhothai 42.70 252 P **P** **12 05 47.7 +0.8**
comp=Z,87nm,0.9s,comp=Z,776nm
MRSI Marisa 42.85 210 P **P** **12 05 48.6 +0.5**
comp=Z,262nm,1.1s,comp=Z,5µm
FAKI Fak Fak 43.04 194 P **P** **12 05 49.8 +0.2**
comp=Z,150nm,1.4s,comp=Z,2µm
FAKI Fak Fak 43.04 194 *e*P **P** **12 05 49.8 +0.2**
comp=Z,353nm,1.5s
FAKI LR LR
comp=Z,5µm,22.0s
TT01 Tatalina 43.23 36 *e*P **P** **12 05 52.3 +1.7**
TTA Tatalina 43.23 36 *e*P **P** **12 05 52.5 +1.7**
TTA pmax pmax
comp=Z,103nm,1.5s
TTA Tatalina 43.23 36 *e*P **P** **12 05 52.5 +1.7**
comp=Z,103nm,1.5s
SRAK Srakaew 43.25 246 P **P** **12 05 48.7 -2.6**
comp=Z,1µm,0.9s,comp=Z,9µm
MK01 Makanchi Array 43.32 300 *e*P **P** **12 05 52.1 +0.4**
MK31 Makanchi Array 43.33 300 *e*P **P** **12 05 52.9 +1.2**
MK31 Makanchi Array 43.33 300 *e*P **P** **12 05 52.9 +1.2**
MK32 Makanchi Array 43.33 300 *e*P **P** **12 05 52.8 +1.1**
MKAR Makanchi Array 43.33 300 P **P** **12 05 52.8 +1.0**
comp=Z,160nm,0.8s,baz=84,slow=9.8,SNR=1102
MKAR LR LR 12 24 36.3
comp=Z,13µm,21.2s,baz=72,slow=37
MKAR Makanchi Array 43.33 300 *i* P **P** **12 05 52.7 +1.0**
MKAR pmax pmax
comp=Z,163nm,0.7s
SVW2 Sparrevohn 43.38 39 *e*P **P** **12 05 54.2 +2.3**
comp=Z,64nm,0.9s
MHMT Maesarieng 43.52 254 P **P** **12 05 54.7 +1.1**
comp=Z,181nm,1.2s,comp=Z,2µm
MAKZ Makanchi 43.53 300 *e*P **P** **12 05 54.4 +1.0**
MAKZ pmax pmax
comp=Z,288nm,0.9s
MAKZ MLR MLR
comp=Z,15µm,21.0s
MAKZ Makanchi 43.53 300 *e*P **P** **12 05 54.4 +1.0**
comp=Z,288nm,0.9s
MAKZ LR LR
comp=Z,15µm,21.0s
NAYO Nakonayok 43.55 247 P **P** **12 05 54.6 +0.8**
comp=Z,186nm,1.1s,comp=Z,3µm
SANI Sanana 43.78 204 P **P** **12 05 56.5 +0.9**
comp=Z,241nm,1.1s,comp=Z,3µm
LUWI Luwuk 43.93 208 P **P** **12 05 53.6 -3.2**
LUWI Luwuk 43.93 208 *e*P **P** **12 05 55.4 -1.4**
comp=Z,193nm,0.9s
SEM Semipalatinsk 43.94 306 ⇑*i*P **P** **12 05 57.1 +0.6**
comp=Z,3µm,1.2s
SEM *i* S **S** **12 12 23.8 -1.3**
SEM *i* LR LR 12 24 08.5
comp=Z,9µm,17.5s
SHL Shillong 43.96 267 *e*P **P** **12 05 56.5 -0.7**
SHL *i* S **S** **12 12 25.0 -1.4**
SHL IAMs_20 IAMs_20 12 26 13.9
comp=Z,6µm,13.4s
UTHA Uthaitani 44.07 250 P **P** **12 05 59.0 +1.0**
comp=Z,42nm,1.1s,comp=Z,420nm
UMPA Umpang Tak 44.08 251 P **P** **12 06 00.3 +2.2**
comp=Z,105nm,1.1s,comp=Z,1µm
MSAI Masohi 44.19 199 P **P** **12 06 02.2 +3.3**
comp=Z,43nm,1.5s,comp=Z,1µm
APSI Ampana 44.24 210 P **P** **12 05 59.1 -0.1**
comp=Z,289nm,1.3s,comp=Z,4µm
RABL Rabaul 44.35 165 PFAKE 12 06 10.0 +10
RABL LR LR
comp=Z,2µm,20.0s
BTM Bintulu 44.58 224 ⇓P **P** **12 06 01.7 -0.4**
OHAK Old Harbor 44.72 44 *e*P **P** **12 06 03.6 +1.0**
comp=Z,173nm,1.3s
OHAK LR LR
comp=Z,5µm,20.0s
RSO Redoubt South 44.78 40 *e*P **P** **12 06 05.1 +1.7**
PATY Pattaya 44.82 246 P **P** **12 06 05.1 +1.2**
comp=Z,84nm,0.9s,comp=Z,3µm
KURK Kurchatov 44.90 306 P **P** **12 06 05.7 +1.5**
KURK 12 07 45.7
KURK S **S** **12 12 42.8 +3.6**
KURK pmax pmax
comp=Z,582nm,0.9s
KURK pmax pmax
comp=Z,50nm,0.8s
KURK smax smax
comp=N,4.0nm,1.1s
KURK Kurchatov 44.90 306 *e*P **P** **12 06 05.2 +0.9**
comp=N,783nm,1.0s
KURK *e*PcP **PcP** **12 07 45.6 +0.5**
KURK *e*S **S** **12 12 42.8 +3.6**
KURK LR LR
comp=Z,12µm,18.0s
KURK Kurchatov 44.90 306 P **P** **12 06 05.1 +0.9**
SNR=296
KURK Kurchatov 44.90 306 P **P** **12 06 05.1 +0.9**
SNR=296
KURBB Kurchatov Arra 44.98 306 P **P** **12 06 05.7 +0.9**
comp=Z,582nm,0.9s,baz=81,slow=8.4,SNR=1352
KURBB PcP **PcP** **12 07 45.6 +0.3**
comp=Z,50nm,0.8s,baz=82,slow=3.7,SNR=5.5
KURBB S **S** **12 12 42.8 +2.5**
comp=Z,4.0nm,1.1s,baz=90,slow=18,SNR=4.8
PPLA Purkeypile 44.98 36 *e*P **P** **12 06 07.3 +2.4**
comp=Z,555nm,1.7s
CAST Castle Rocks 45.03 35 *e*P **P** **12 06 07.2 +2.1**
comp=Z,102nm,1.0s
KDAK Kodiak Island 45.05 43 P P 12 06 21.4 +16
comp=Z,85nm,0.7s,baz=290,slow=3.8,SNR=68
KDAK Kodiak Island 45.05 43 *e*P **P** **12 06 06.5 +1.2**
KDAK pmax pmax
comp=Z,94nm,0.8s
KDAK Kodiak Island 45.05 43 *e*P **P** **12 06 06.5 +1.2**
comp=Z,94nm,0.8s
SPU Mount Spurr 45.09 39 *e*P **P** **12 06 07.4 +1.8**
BNDI Bandanaira 45.09 197 P **P** **12 06 06.7 +0.7**
comp=Z,685nm,1.1s
SRDT SRDT 45.10 249 P **P** **12 06 07.1 +0.9**
comp=Z,549nm,1.3s,comp=Z,13µm
KHLT Khaolaem Dam 45.20 250 P **P** **12 06 08.2 +1.3**
comp=Z,94nm,1.1s,comp=Z,1µm
BPAW Bear Paw Mtn. 45.51 35 *e*P **P** **12 06 10.6 +1.7**
comp=Z,86nm,1.2s
KTH Kantishna Hill 45.55 35 *e*P **P** **12 06 11.2 +2.0**
comp=Z,220nm,1.2s
SBUM Sibu 45.67 224 ⇓P **P** **12 06 10.7 0.0**
SBUM Sibu 45.67 224 *e*P **P** **12 06 11.3 +0.6**
comp=Z,64nm,0.9s
SBUM LR LR
comp=Z,5µm,20.0s
PHET Kaeng Krachan 45.71 247 P **P** **12 06 12.3 +1.3**
comp=Z,206nm,0.8s,comp=Z,2µm
BRLK Bradley Lake 45.76 41 *e*P **P** **12 06 12.3 +1.4**
comp=Z,132nm,1.3s
TRF Thorafare Moun 45.83 35 *e*P **P** **12 06 13.0 +1.3**
comp=Z,93nm,1.2s
COLD Coldfoot 45.88 30 *e*P **P** **12 06 13.6 +1.8**
comp=Z,92nm,1.1s
SHLS Shalkode 45.92 296 ⇑*i*P **P** **12 06 13.7 +1.0**
comp=Z,2µm,1.0s
SHLS *i* S **S** **12 12 55.9 +1.3**
SHLS *i* LRM MLR 12 27 22.8
comp=Z,821nm,12.9s
PDGK Podgornoye 46.15 296 P **P** **12 06 13.7 -0.5**
PDGK pmax pmax
comp=Z,399nm,1.2s
RC01 Rabbit Creek A 46.22 39 *e*P **P** **12 06 15.5 +1.1**
comp=Z,114nm,1.0s
TAPN Taplejung 46.30 272 *e*P **P** **12 06 17.3 +1.3**
comp=Z,376nm,0.8s
TDK Taldyqorghan 46.40 299 ⇑*i*P **P** **12 06 17.7 +1.5**
comp=Z,4µm,1.2s
TDK *e*S **S** **12 13 00.7 -0.3**
TDK *i* LR LR 12 25 56.9
comp=Z,4µm,19.5s
MCK McKinley 46.43 35 *e*P **P** **12 06 17.3 +1.2**
MCK pmax pmax
comp=Z,81nm,1.0s
MCK McKinley 46.43 35 *e*P **P** **12 06 17.3 +1.2**
comp=Z,81nm,1.0s
SEW Seward 46.45 40 *e*P **P** **12 06 16.8 +0.5**
comp=Z,160nm,1.3s
SEW LR LR
comp=Z,2µm,18.0s
PMR Palmer 46.47 38 *e*P **P** **12 06 17.3 +0.9**
PMR pmax pmax
comp=Z,80nm,1.0s
PMR Palmer 46.47 38 *e*P **P** **12 06 17.3 +0.9**
comp=Z,80nm,1.0s
RND Reindeer 46.48 35 *e*P **P** **12 06 17.5 +0.9**
RND pmax pmax
comp=Z,120nm,1.0s
RND Reindeer 46.48 35 *e*P **P** **12 06 17.5 +0.9**
comp=Z,117nm,1.1s
BKB Balikpapan 46.55 216 P **P** **12 06 18.5 +0.9**
comp=Z,488nm,1.3s,comp=Z,7µm
KPKS Kokpek 46.66 297 ⇑*i*P **P** **12 06 19.6 +1.2**
comp=Z,4µm,1.5s
KPKS *i* S **S** **12 13 05.1 +0.2**
KPKS *i* LR LR 12 25 59.2
comp=Z,4µm,17.6s
WRH Wood River Hil 46.76 34 *e*P **P** **12 06 19.9 +1.2**
comp=Z,72nm,1.1s
ODAN Odare 46.79 272 *e*P **P** **12 06 21.0 +1.3**
comp=Z,511nm,0.9s
SML Sawmill 46.83 38 *e*P **P** **12 06 20.7 +1.4**
SML pmax pmax
comp=Z,200nm,1.2s
SML Sawmill 46.83 38 *e*P **P** **12 06 20.7 +1.4**
comp=Z,203nm,1.2s
SML LR LR
comp=Z,3µm,22.0s
COLA College 46.85 33 *c i*P **P** **12 06 20.7 +1.4**
COLA pmax pmax
comp=Z,42nm,1.0s
COLA MLR MLR
comp=Z,2µm,19.0s
COLA College 46.85 33 *e*P **P** **12 06 21.1 +1.7**
comp=Z,405nm,1.7s
CCB Clear Creek Bu 46.88 34 *e*P **P** **12 06 20.6 +1.0**
comp=Z,109nm,1.4s
TTSI Tana Toraja 46.91 211 P **P** **12 06 20.0 -0.3**
comp=Z,50nm,1.7s,comp=Z,942nm
DHY Denali Highway 47.17 36 *e*P **P** **12 06 23.0 +0.9**
comp=Z,213nm,1.4s
TARA Tarawa 47.17 136 PFAKE 12 06 30.0 +7.5
TARA LR LR
comp=Z,11µm,20.0s
MTKI Muara Teweh, K 47.21 218 P **P** **12 06 22.9 +0.2**
comp=Z,438nm,1.1s,comp=Z,10µm
HDA Harding Lake 47.26 34 *e*P **P** **12 06 23.2 +0.6**
comp=Z,88nm,1.0s
IL1 Eielson Array 47.27 34 *e*P **P** **12 06 23.6 +0.9**
ILAR Eielson Array 47.27 34 P **P** **12 06 23.4 +0.8**
comp=Z,39nm,0.8s,baz=267,slow=5.9,SNR=338
ILAR LR LR 12 29 18.8
comp=Z,2µm,18.0s,baz=286,slow=40
ILB Eielson Array 47.27 34 *e*P **P** **12 06 23.4 +0.8**
SCM Sheep Creek Mo 47.30 38 PFAKE 12 06 40.0 +17
SCM LR LR
comp=Z,3µm,21.0s
RAMN Ramite 47.36 272 *e*P **P** **12 06 25.3 +1.1**
comp=Z,1µm,0.9s
GUN Gumba 47.45 274 *e*P **P** **12 06 26.2 +1.2**
comp=Z,2µm,0.8s
KSM Kuching 47.53 225 ⇑P **P** **12 06 25.7 +0.4**
KSM Kuching 47.53 225 *e*P **P** **12 06 26.4 +1.2**
comp=Z,283nm,1.2s
JOHN Johnston Islan 47.66 104 PFAKE 12 06 40.0 +14
JOHN LR LR
comp=Z,12µm,22.0s
SPSI Sidrap Palu 47.76 211 P **P** **12 06 25.4 -1.6**
comp=Z,96nm,1.2s,comp=Z,1µm
FYU Fort Yukon 47.85 31 *e*P **P** **12 06 29.5 +2.4**
comp=Z,430nm,1.3s
MDOK Medeo 47.89 297 ⇓*i*P **P** **12 06 29.6 +1.6**
comp=Z,2µm,1.3s
MDOK *i* S **S** **12 13 22.9 +0.4**
MDOK *i* LR LR 12 27 03.6
comp=Z,4µm,19.5s
AAA Alma-Ata 47.93 297 *i* P **P** **12 06 30.4 +2.2**
AAA *i* S S 12 13 33.1 +10
AAA pmax pmax
comp=Z,4µm,1.9s
AAA smax smax
comp=E,3µm,5.2s
AAA MLR MLR
comp=Z,17µm,13.0s
KKN Kakani 47.97 274 *e*P **P** **12 06 30.1 +1.2**
comp=Z,1µm,0.7s
PKIN Phulchoki 47.98 274 *e*P **P** **12 06 29.8 +0.8**
comp=Z,273nm,0.7s
KLU Klutina 48.01 38 *e*P **P** **12 06 30.2 +1.6**
comp=Z,111nm,1.0s
PAX Paxson 48.05 36 *e*P **P** **12 06 30.2 +1.4**
PAX pmax pmax
comp=Z,250nm,1.9s
PAX Paxson 48.05 36 *e*P **P** **12 06 29.8 +1.0**
comp=Z,250nm,2.0s
STKI Sintang 48.07 223 P **P** **12 06 30.5 +1.0**
comp=Z,217nm,1.0s,comp=Z,17µm
DIV Divide 48.13 38 *e*P **P** **12 06 30.6 +1.2**
comp=Z,140nm,1.0s
KUU Kurty 48.15 298 ⇑*i*P **P** **12 06 30.5 +0.7**
comp=Z,4µm,1.0s
KUU *i* S **S** **12 13 26.6 +0.7**
KUU *i* LR LR 12 27 15.5
comp=Z,4µm,16.9s
DMN Daman 48.19 274 *e*P **P** **12 06 31.8 +1.2**
comp=Z,525nm,0.8s
EYAK Cordova Ski Ar 48.22 39 *e*P **P** **12 06 31.8 +1.8**
comp=Z,106nm,1.0s
GKN Gorkha 48.36 275 *e*P **P** **12 06 32.7 +0.9**
comp=Z,561nm,0.6s
DOT Dot Lake 48.60 35 *e*P **P** **12 06 33.7 +0.7**
comp=Z,108nm,1.0s
BMRM Bremner River 48.71 38 *e*P **P** **12 06 35.6 +1.7**
comp=Z,105nm,1.0s
BMRM LR LR
comp=Z,4µm,21.0s
KAPI Kappang 48.73 210 LR LR 12 29 12.3
comp=Z,538nm,19.3s,baz=24,slow=39
KAPI Kappang 48.73 210 *e*P **P** **12 06 35.1 +0.7**
comp=Z,361nm,1.3s
KAPI Kappang 48.73 210 P **P** **12 06 35.4 +0.9**
SNR=21
KAPI Kappang 48.73 210 P **P** **12 06 35.4 +0.9**
SNR=21
PMG Port Moresby 48.77 173 LR LR 12 23 26.7
comp=Z,1µm,22.0s,baz=348,slow=31
PMG Port Moresby 48.77 173 ⇓*e*P **P** **12 06 33.0 -1.7**
PMG pmax pmax
comp=Z,39nm,1.1s
RAGM Ragged Mountai 48.77 39 *e*P **P** **12 06 36.4 +2.1**
comp=Z,125nm,1.1s
BRZS Berezniki 48.78 307 ⇑*i*P **P** **12 06 35.2 +0.7**
comp=Z,516nm,0.8s
BRZS *i* S **S** **12 13 33.8 -0.8**
KTGM Kuala Trenggan 48.78 236 ⇑P **P** **12 06 35.9 +1.0**
MENT Mentasta 48.84 36 *e*P **P** **12 06 36.7 +1.8**
comp=Z,94nm,1.0s
MENT LR LR
comp=Z,3µm,22.0s
TKM2 Tokmak 2 48.98 297 *e*P **P** **12 06 38.4 +2.0**
TKM2 pmax pmax
comp=Z,710nm,1.0s
TKM2 MLR MLR
comp=Z,8µm,20.0s
TKM2 Tokmak 2 48.98 297 *e*P **P** **12 06 38.4 +2.0**
comp=Z,710nm,1.0s
TKM2 LR LR
comp=Z,8µm,20.0s
SURT Suratani 49.03 244 P **P** **12 06 38.1 +1.2**
comp=Z,82nm,1.1s,comp=Z,1µm
SKLT Songkhla 49.07 240 P **P** **12 06 38.8 +1.7**
comp=Z,212nm,1.1s
CHKZ Chkalovo 49.09 312 P **P** **12 06 37.0 +0.2**
CHKZ pmax pmax
comp=Z,371nm,1.1s
VOSK Vostochnaya 49.11 310 *e*P **P** **12 06 37.9 +0.9**
VOSK pmax pmax
comp=Z,364nm,1.1s
VOSK MLR MLR
comp=Z,12µm,19.0s
VOSK Vostochnaya 49.11 310 *e*P **P** **12 06 37.9 +0.9**
comp=Z,364nm,1.1s
VOSK LR LR
comp=Z,12µm,19.0s
TRTT Trang 49.22 242 P **P** **12 06 39.5 +1.2**
comp=Z,136nm,1.5s,comp=Z,3µm
KOLN Koldanda 49.28 275 *e*P **P** **12 06 40.2 +1.3**
comp=Z,940nm,0.9s
KRAB Krabi 49.28 243 P **P** **12 06 40.0 +1.3**
comp=Z,292nm,0.7s,comp=Z,2µm
BVA0 Borovoye Array 49.38 311 *i* P **P** **12 06 39.6 +0.5**
BVA0 pmax pmax
comp=Z,191nm,0.8s
BVAR Borovoye Array 49.38 311 P **P** **12 06 40.1 +1.0**
comp=Z,132nm,0.7s,baz=69,slow=8.1,SNR=732
BVAR PcP **PcP** **12 08 01.9 +0.8**
comp=Z,80nm,0.7s,baz=80,slow=3.2,SNR=10
BVAR S **S** **12 13 43.0 +0.1**
comp=Z,7.3nm,1.1s,baz=55,slow=13,SNR=4.0
BRVK Borovoye 49.44 311 *c i*P **P** **12 06 40.4 +0.9**
BRVK pmax pmax
comp=Z,282nm,1.0s
BRVK MLR MLR
comp=Z,15µm,17.0s
BRVK Borovoye 49.44 311 *e*P **P** **12 06 40.8 +1.3**
comp=Z,258nm,1.0s
BRVK LR LR
comp=Z,15µm,20.0s
BRVK Borovoye 49.44 311 P **P** **12 06 40.8 +1.3**
SNR=127
BRVK Borovoye 49.44 311 P **P** **12 06 40.8 +1.3**
SNR=127
BBKI Banjar Baru 49.44 217 P **P** **12 06 39.8 -0.1**
comp=Z,373nm,1.1s,comp=Z,18µm
OTUK Ortayu 49.48 304 P **P** **12 06 39.3 -0.6**
OTUK pmax pmax
comp=Z,334nm,1.0s
BOK Bokaro 49.53 269 *e*P **P** **12 06 40.9 +0.2**
PYUN Piuthan 49.59 276 *e*P **P** **12 06 42.6 +1.3**
comp=Z,2µm,0.9s
FRU Bishkek 49.68 297 ⇑*i*P **P** **12 06 42.0 +0.4**
FRU *i* S **S** **12 13 46.0 -1.5**
FRU pmax pmax
comp=Z,1µm,2.2s
FRU smax smax
comp=E,4µm,10.0s
EGAK Eagle 49.71 33 *e*P **P** **12 06 42.3 +0.9**
comp=E,163nm,1.4s
BALM Baldy 49.79 38 *e*P **P** **12 06 43.6 +1.4**
BALM pmax pmax
comp=Z,61nm,1.0s
BALM MLR MLR
comp=Z,3µm,22.0s
BALM Baldy 49.79 38 *e*P **P** **12 06 43.6 +1.4**
comp=Z,61nm,1.0s
BALM LR LR

comp=Z,3µm,22.0s
AAK Ala-Archa 49.84 297 P **P** **12 06 44.1 +1.2**
comp=Z,121nm,0.9s,baz=92,slow=5.5,SNR=290
AAK LR LR 12 28 39.5
comp=Z,7µm,19.8s,baz=62,slow=37
AAK Ala-Archa 49.84 297 *e*P **P** **12 06 44.1 +1.2**
AAK pmax pmax
comp=Z,180nm,1.0s
AAK Ala-Archa 49.84 297 *e*P **P** **12 06 44.1 +1.2**
AAK LR LR
comp=Z,7µm,19.0s
AAK Ala-Archa 49.84 297 P **P** **12 06 44.3 +1.4**
SNR=112
AAK Ala-Archa 49.84 297 P **P** **12 06 44.3 +1.4**
SNR=112
KSH Kashi 49.93 293⇑ *i*P P 12 06 48.6 +5.0
KSH *e*pP sP 12 06 58.4 -1.5
KSH *e*sP pP 12 07 02.4 +7.2
KSH PP **PP** **12 08 44.7 +6.2**
KSH *e*ScP **ScP** **12 11 58.8 +3.0**
KSH PcS **PcS** **12 12 02.8 +2.3**
KSH S **S** **12 13 57.0 +5.8**
KSH ScS **ScS** **12 16 34.6 +2.8**
KSH pmax pmax
comp=Z,190nm,1.2s
KSH pmax pmax
comp=Z,2µm,5.4s
KSH LR LR
comp=Z,5µm,16.2s
KSH LR LR
comp=Z,4µm,14.3s
KSH LR LR
comp=Z,8µm,17.3s
PKDT Phuket 50.11 243 P **P** **12 06 46.4 +1.3**
comp=Z,406nm,1.1s,comp=Z,6µm
ZRNK Zerenda 50.21 311 *e*P **P** **12 06 46.7 +1.3**
ZRNK pmax pmax
comp=Z,412nm,0.9s
ZRNK MLR MLR
comp=Z,15µm,18.0s
ZRNK Zerenda 50.21 311 *e*P **P** **12 06 46.7 +1.3**
comp=Z,412nm,0.9s
ZRNK LR LR
comp=Z,15µm,18.0s
EKS2 Erkin-Say 50.32 297 *e*P **P** **12 06 47.8 +1.2**
EKS2 pmax pmax
comp=Z,210nm,0.9s
EKS2 Erkin-Say 50.32 297 *e*P **P** **12 06 47.8 +1.2**
comp=Z,210nm,0.8s
EKS2 LR LR
comp=Z,6µm,20.0s
PBKI Pangkalan Bun 50.33 221 P **P** **12 06 45.9 -0.8**
comp=Z,394nm,1.0s,comp=Z,4µm
DGPR DIGLIPUR 50.40 253 *e*P **P** **12 06 47.0 -0.2**
DGPR IAMs_20 IAMs_20 12 27 12.2
comp=Z,4µm,19.0s
KULM Kulim 50.43 239⇑ P **P** **12 06 48.5 +1.0**
KULM Kulim 50.43 239 *e*P **P** **12 06 48.6 +1.1**
comp=Z,305nm,1.5s
KULM LR LR
comp=Z,2µm,22.0s
DAWY Dawson 50.58 34 *e*P **P** **12 06 49.5 +1.4**
comp=Z,30nm,1.1s
IPM Ipoh 50.79 238⇓ P **P** **12 06 50.8 +0.5**
IPM Ipoh 50.79 238 *e*P **P** **12 06 50.7 +0.5**
comp=Z,305nm,1.4s
IPM LR LR
comp=Z,3µm,20.0s
MYKOM Kota Tinggi 51.05 233⇑ P **P** **12 06 53.0 +0.8**
MYKOM Kota Tinggi 51.05 233 *e*P **P** **12 06 53.4 +1.2**
comp=Z,87nm,1.0s
MYKOM LR LR
comp=Z,3µm,22.0s
MMRI Maumere 51.18 205 P **P** **12 06 53.3 +0.3**
comp=Z,289nm,1.7s,comp=Z,4µm
MMRI Maumere 51.18 205 *e*P **P** **12 06 53.1 +0.1**
comp=Z,207nm,1.0s
KGM Kluang 51.21 233⇓ P **P** **12 06 53.8 +0.4**
MNAS Manas 51.26 297 P **P** **12 06 54.9 +1.2**
MNAS pmax pmax
comp=Z,619nm,0.9s
TPRI Tanjung Pinang 51.33 231 P **P** **12 06 56.4 +2.2**
comp=Z,185nm,1.2s
HNR Honiara 51.33 157 LR LR 12 26 55.1
comp=Z,7µm,21.6s,baz=322,slow=34
HNR Honiara 51.33 157 PFAKE 12 07 10.0 +16
HNR LR LR
comp=Z,7µm,22.0s
FRIM Kepong 51.34 236⇓ P **P** **12 06 54.9 +0.6**
SFK Sufi-Kurgan 51.50 294 P **P** **12 06 56.2 +0.6**
SFK pmax pmax
comp=Z,315nm,0.9s
PBA Port Blair 51.53 252 *e*P P 12 06 55.7 -0.1
SOEI Soe 51.59 203 P **P** **12 06 55.9 -0.4**
comp=Z,249nm,1.0s,comp=Z,3µm
SOEI Soe 51.59 203 *e*P **P** **12 06 55.9 -0.4**
comp=Z,234nm,1.0s
SOEI LR LR
comp=Z,2µm,20.0s
INK Inuvik 52.09 28 P **P** **12 07 00.7 +1.5**
comp=Z,80nm,0.9s,baz=286,slow=7.3,SNR=275
INK PcP **PcP** **12 08 13.2 +2.4**
comp=Z,25nm,0.9s,baz=319,slow=6.9,SNR=3.7
INK Inuvik 52.09 28 *e*P **P** **12 07 00.9 +1.7**
INK pmax pmax
comp=Z,109nm,0.9s
INK MLR MLR
comp=Z,4µm,22.0s
INK Inuvik 52.09 28 *e*P **P** **12 07 00.8 +1.7**
comp=Z,109nm,0.9s
INK LR LR
comp=Z,4µm,22.0s
BATI Baumata 52.20 203 P **P** **12 07 01.3 +0.6**
comp=Z,48nm,0.9s
DDI Dehra Dun 52.30 281 *e*P **P** **12 07 02.0 +0.5**
DDI IAMs_20 IAMs_20 12 30 25.3
comp=Z,7µm,14.6s
KK31 Karatay Array 52.40 299 *i* P **P** **12 07 02.3 +0.3**
KK31 pmax pmax
comp=Z,171nm,0.8s
KKAR Karatay Array 52.40 299 *e*P **P** **12 07 02.9 +0.9**
KKAR Karatay Array 52.40 299 *e*P **P** **12 07 02.9 +0.9**
SDNR Sundarnagar 52.58 283 *e*P **P** **12 07 04.0 +0.5**
SMLA Simla 52.60 282 *e*P **P** **12 07 04.3 +0.8**
DHRM DHARAMSHALA 52.73 284 *e*P **P** **12 07 05.3 +0.4**
DHRM IAMs_20 IAMs_20 12 30 14.2
comp=Z,7µm,26.3s
MTN Manton Dam 52.93 193 *e*P **P** **12 07 06.8 +0.7**
comp=Z,98nm,1.0s
MTN LR LR
comp=Z,1µm,21.0s
LHMI Lhok Sumawe 52.97 242 *e*P **P** **12 07 08.5 +2.0**
comp=Z,141nm,0.7s
PLAI Plampang 52.98 211 P **P** **12 07 05.1 -1.3**
comp=Z,112nm,1.2s,comp=Z,2µm
COEN Coen 53.07 179 *e*P **P** **12 07 06.7 -0.3**
comp=Z,78nm,1.1s
BRLS Borolday 53.08 299⇑ *i*P **P** **12 07 08.0 +1.0**
comp=Z,676nm,1.3s
BRLS *e*S **S** **12 14 34.5 +0.2**
BRLS *i* LR LR 12 30 15.2
comp=Z,611nm,15.2s
IUG Iuzhnay 53.09 298⇑ *i*P **P** **12 07 08.6 +1.4**
comp=Z,5µm,1.4s
IUG *i* S **S** **12 14 36.0 +1.4**
IUG *i* LR LR 12 30 06.7
comp=Z,2µm,15.9s
THN Thein Dam 53.09 284⇑ *i*P **P** **12 07 08.0 +0.8**
TWSI Taliwang, Sumb 53.26 212 P **P** **12 07 08.1 -0.4**
comp=Z,120nm,1.0s,comp=Z,2µm
PSI Prapat 53.42 238 LR LR 12 31 10.8
comp=Z,2µm,19.8s,baz=18,slow=37
PSI Prapat 53.42 238 *e*P **P** **12 07 10.3 +0.4**
PSI pmax pmax
comp=Z,65nm,0.9s
PSI Prapat 53.42 238 *e*P **P** **12 07 10.3 +0.4**
comp=Z,65nm,0.9s
PSI LR LR
comp=Z,2µm,18.0s
SKAG Skagway 53.56 39 *e*P **P** **12 07 12.5 +2.3**
comp=Z,53nm,1.1s
KCSI Kotacane, Aceh 53.66 240 P **P** **12 07 09.2 -2.3**
comp=Z,49nm,1.1s,comp=Z,963nm
SVE Sverdlovsk 53.73 318 *d* *i*P **P** **12 07 13.0 +1.5**
SVE *e* 12 09 12.1
SVE *e*S **S** **12 14 43.5 +0.9**
SVE *e* 12 18 28.6
SVE pmax pmax
comp=Z,1µm,1.1s
SVE pmax pmax
comp=Z,525nm,8.1s
SVE MLR MLR
comp=Z,27µm,18.0s
SVE MLR MLR
comp=E,16µm,16.0s
NDI New Delhi 53.73 280 *ex* **P** **12 07 08.5 -3.5**
NDI *ex* **S** **12 14 36.0 -7.5**
CMBY CAMPBELL BAY 53.82 246 *e*P **P** **12 07 11.9 -0.7**
CHLP Challavanipeta 53.89 265 *e*P **P** **12 07 13.3 +0.2**
CHLP IAmb IAmb 12 07 15.1
comp=Z,169nm,1.0s
CHLP *e*S **S** **12 14 46.0 +0.4**
CHLP IVMs_BB IVMs_BB 12 30 19.4
comp=Z,2µm,24.5s
BKNI Bangkinang 53.94 234 P **P** **12 07 14.1 +0.5**
comp=Z,539nm,1.1s,comp=Z,6µm
BKNI Bangkinang 53.94 234 *e*P **P** **12 07 14.8 +1.3**
comp=Z,458nm,1.0s
BKNI LR LR
comp=Z,4µm,22.0s
TPTI 54.25 240 P **P** **12 07 14.8 -1.0**
comp=Z,27nm,1.6s,comp=Z,832nm
NGJI Ngawi 54.45 218 P **P** **12 07 18.9 +1.7**
comp=Z,212nm,1.3s
MNSI Mandailing Nat 54.51 236 P **P** **12 07 17.0 -0.7**
comp=Z,44nm,1.5s,comp=Z,4µm
SMRI Semarang 54.67 220 P **P** **12 07 17.0 -1.8**
comp=Z,404nm,1.2s
SMRI Semarang 54.67 220 *e*P **P** **12 07 18.9 0.0**
comp=Z,374nm,1.1s
SOKR Solikamsk 54.78 322 *c* *i*P **P** **12 07 17.9 -1.1**
SOKR S **S** **12 14 53.0 -3.6**
SOKR SS **SS** **12 18 44.5 +5.1**
SOKR pmax pmax
comp=Z,367nm,1.2s
SOKR MLR MLR
comp=Z,4µm,15.0s
VIS Vishakhapatnam 54.91 265 *e*P **P** **12 07 21.2 +0.6**
ARU Arti 54.95 318 P **P** **12 07 21.4 +1.0**
comp=Z,454nm,0.7s,baz=76,slow=4.5,SNR=609
ARU S **S** **12 15 01.5 +2.5**
comp=Z,1.1nm,0.3s,baz=294,slow=21,SNR=6.4
ARU Arti 54.95 318 *c* *i*P **P** **12 07 21.3 +1.0**
ARU *e* 12 08 21.9
ARU 12 09 20.8
ARU PPP PPP 12 10 36.2
ARU *e*S **S** **12 15 00.5 +1.5**
ARU 12 17 02.8
ARU SS **SS** **12 18 34.9 -7.4**
ARU pmax pmax
comp=Z,1µm,1.2s
ARU MLR MLR
comp=Z,20µm,17.0s
ARU Arti 54.95 318 *e*P **P** **12 07 21.4 +1.0**
comp=Z,714nm,0.9s
ARU LR LR
comp=Z,21µm,19.0s
DZET Dzherino 55.29 295 P **P** **12 07 23.3 0.0**
DZET pmax pmax
comp=Z,511nm,0.7s
UGM Wanagama 55.38 219 P **P** **12 07 23.5 -0.4**
comp=Z,545nm,1.3s
UGM Wanagama 55.38 219 *e*P **P** **12 07 23.1 -0.8**
comp=Z,723nm,1.2s
GSI Gunungsitoli 55.43 238 *e*P **P** **12 07 24.8 +0.4**
comp=Z,367nm,1.1s
GSI LR LR
comp=Z,4µm,21.0s
LEM Lembang 55.92 223 LR LR 12 30 44.8
comp=Z,722nm,21.9s,baz=27,slow=35
LEM Lembang 55.92 223 P P 12 07 33.2 +5.2
BHPL Bhopal 56.38 274 *e*P **P** **12 07 31.2 0.0**
BHPL IAMs_20 IAMs_20 12 33 05.9
comp=Z,7µm,21.3s
DLBC Dease Lake 56.49 39 P **P** **12 07 34.0 +2.4**
comp=Z,21nm,1.0s,baz=287,slow=8.0,SNR=23
DLBC PcP **PcP** **12 08 29.2 +1.3**
comp=Z,19nm,0.9s,baz=332,slow=7.4,SNR=4.0
DLBC ScP **ScP** **12 12 13.5 -10**
comp=Z,5.5nm,0.7s,baz=132,slow=16,SNR=4.1
DLBC Dease Lake 56.49 39 *e*P **P** **12 07 34.0 +2.4**
comp=Z,65nm,1.3s
PVM Polavaram 56.50 265 *e*P **P** **12 07 32.3 +0.3**
PVM IAmb IAmb 12 07 33.9
comp=Z,102nm,0.8s
PVM *e*S **S** **12 15 19.2 -1.4**
PVM IVMs_BB IVMs_BB 12 31 50.0
comp=Z,1µm,25.0s
AB31 Akbulak array 56.82 309 P **P** **12 07 34.0 +0.1**
AB31 pmax pmax
comp=Z,264nm,0.6s
ABKAR Akbulak array 56.82 309 *e*P **P** **12 07 34.8 +0.9**
KBL Kabul 57.05 290 *e*P **P** **12 07 36.4 +0.4**
KBL pmax pmax
comp=Z,260nm,1.0s
KBL Kabul 57.05 290 *e*P **P** **12 07 36.4 +0.4**
comp=Z,260nm,0.9s
KBL LR LR
comp=Z,6µm,22.0s
RPR Rampur 57.37 268 *e*P **P** **12 07 38.5 +0.3**
RPR IAmb IAmb 12 07 39.3
comp=Z,170nm,0.8s
RPR *e*S **S** **12 15 30.7 -1.5**
RPR IVMs_BB IVMs_BB 12 34 02.5
comp=Z,982nm,20.9s
AKTO Aktyubinsk 57.49 311 P **P** **12 07 39.1 +0.5**
comp=Z,251nm,0.8s,baz=75,slow=7.6,SNR=389
HOPEN Hopen 57.89 346⇑ *i*P **P** **12 07 42.1 +1.1**
HOPEN IAmb IAmb 12 07 42.9
comp=Z,125nm,0.5s
HOPEN IAMs_20 IAMs_20 12 35 36.4
comp=Z,4µm,19.2s
SRSP Sriramsagar 58.06 269 *e*P **P** **12 07 42.8 -0.3**
SRSP IAmb IAmb 12 07 44.5
comp=Z,340nm,1.0s
SRSP *e*S **S** **12 15 39.0 -2.3**
SRSP IVMs_BB IVMs_BB 12 34 52.9
comp=Z,1µm,18.7s
SPA0 Spitsbergen Ar 58.32 349 *e*P **P** **12 07 44.9 +0.9**
SPA0 *e*S **S** **12 15 44.8 +1.6**
SPITS Spitsbergen Ar 58.32 349 P **P** **12 07 45.0 +0.9**
comp=Z,69nm,0.9s,baz=122,slow=19,SNR=30
KBS Kingsbay 58.44 350⇑ *i*P **P** **12 07 46.3 +1.4**
KBS IAmb IAmb 12 07 47.7
comp=Z,214nm,0.7s
KBS *e*S **S** **12 15 47.1 +2.5**
KBS Kingsbay 58.44 350 *e*P **P** **12 07 46.2 +1.4**
KBS pmax pmax
comp=Z,250nm,0.9s
KBS Kingsbay 58.44 350 *e*P **P** **12 07 46.2 +1.4**
comp=Z,254nm,0.9s
KBS LR LR
comp=Z,3µm,20.0s
ADKI Addanki 58.60 265 *e*P **P** **12 07 47.5 +0.6**
ADKI IAmb IAmb 12 07 48.5
comp=Z,191nm,1.2s
ADKI *e* 12 12 33.2
ADKI *e*S **S** **12 15 48.3 0.0**
ADKI IVMs_BB IVMs_BB 12 30 41.0
comp=Z,2µm,29.6s
NJS Nagarjunasagar 58.70 266 *e*P **P** **12 07 47.4 -0.1**
NJS IAmb IAmb 12 07 48.4
comp=Z,114nm,1.0s
NJS *e*S **S** **12 15 48.0 -1.5**
NJS IVMs_BB IVMs_BB 12 33 21.1
comp=Z,1µm,22.7s
HYB Hyderabad 58.77 267⇑ *i*P **P** **12 07 49.0 +0.9**
HYB *e* 12 08 06.0
HYB *e*PP **PP** **12 09 58.0 -0.2**
HYB *e*S **S** **12 15 50.0 -0.6**
HYB *e* 12 16 26.0
HYB *e*ScS **ScS** **12 17 36.0 +1.0**
HYB *e*SS **SS** **12 19 48.0 +3.9**
HYB Hyderabad 58.77 267 *e*P **P** **12 07 48.5 +0.4**
HYB IAMs_20 IAMs_20 12 35 26.6
comp=Z,2µm,15.5s
HYBB Hyderabad (bro 58.77 267 *e*P **P** **12 07 47.8 -0.3**
HYBB IAmb IAmb 12 07 48.9
comp=Z,142nm,0.8s
HYBB *e*S **S** **12 15 49.2 -1.4**
HYBB IVMs_BB IVMs_BB 12 32 54.3
comp=Z,862nm,21.7s
FITZ Fitzroy Crossi 59.20 198 LR LR 12 31 19.4
comp=Z,760nm,21.8s,baz=18,slow=34
FITZ Fitzroy Crossi 59.20 198 *e*P **P** **12 07 51.0 +0.3**
comp=Z,126nm,1.3s
HSPB Hornsund (broa 59.26 348⇑ *i*P **P** **12 07 51.9 +1.4**
HSPB IAmb IAmb 12 07 53.6
comp=Z,955nm,1.5s
HSPB *e*S **S** **12 15 57.4 +2.2**
HSPB IAMs_20 IAMs_20 12 36 06.8
comp=Z,3µm,20.3s
HSPB Hornsund (broa 59.26 348 *e*P **P** **12 07 51.8 +1.3**
HSPB *e**PP **pP** **12 08 00.7 -1.6**
HSPB *e*S **S** **12 15 55.0 -0.3**
HSPB *e*SS **SS** **12 19 50.9 +1.5**
SRLM Srisailam 59.28 266 *e*P **P** **12 07 51.2 -0.4**
SRLM IAmb IAmb 12 07 52.9
comp=Z,127nm,1.0s
SRLM *e*S **S** **12 15 54.5 -2.7**
SRLM IVMs_BB IVMs_BB 12 33 36.4
comp=Z,1µm,22.7s
WRAB Tennant Creek 59.44 188 *c* *i*P **P** **12 07 51.2 -1.2**
WRAB pmax pmax
comp=Z,344nm,1.2s
WRAB Tennant Creek 59.44 188 *e*P **P** **12 07 51.6 -0.8**
comp=Z,112nm,1.0s
WB2 Warramunga Arr 59.44 188 *e*P **P** **12 07 51.7 -0.7**
comp=Z,102nm,1.0s
WR1 Warramunga Arr 59.45 188 *e*P **P** **12 07 51.5 -0.9**
comp=Z,112nm,1.0s
WR1 *e*S **S** **12 15 54.6 -4.3**
WRA Warramunga Arr 59.45 188 P **P** **12 07 51.5 -0.9**
comp=Z,54nm,0.9s,baz=6.2,slow=7.2,SNR=186
WRA ScP ScP 12 12 24.4 -13
comp=Z,0.5nm,0.4s,baz=227,slow=31,SNR=5.8
WRA S **S** **12 15 54.6 -4.3**
comp=Z,2.5nm,1.1s,baz=5.7,slow=12,SNR=7.0
WRA LR LR 12 30 33.0
comp=Z,723nm,20.6s,baz=25,slow=33
WRA PKP2bc 12 37 33.5
comp=Z,0.5nm,0.4s,baz=315,slow=24,SNR=12
WC3 Warramunga Arr 59.46 188 PFAKE 12 08 00.0 +7.5
WC3 LR LR
comp=Z,3µm,22.0s
RCLA Racherla 59.62 265 *e*P **P** **12 07 53.8 -0.1**
RCLA IAmb IAmb 12 07 55.0
comp=Z,168nm,0.8s
RCLA *e*S **S** **12 16 00.7 -0.8**
RCLA IVMs_BB IVMs_BB 12 33 43.2
comp=Z,1µm,26.3s
KLRI Killari 59.91 269 *e*P **P** **12 07 55.8 -0.2**
KLRI IAmb IAmb 12 07 56.5
comp=Z,340nm,0.7s
KLRI *e*S **S** **12 16 02.0 -3.4**
KLRI IVMs_BB IVMs_BB 12 35 07.6
comp=Z,2µm,18.3s
MDRS Chennai 60.06 262 *e*P **P** **12 07 58.1 +1.2**
SKHT Srikalahasti 60.07 263 *e*P **P** **12 07 57.0 +0.1**
SKHT IAmb IAmb 12 07 58.7
comp=Z,205nm,0.9s
SKHT *e*S **S** **12 16 06.5 -0.7**
SKHT IVMs_BB IVMs_BB 12 35 55.6
comp=Z,823nm,16.2s
LVZ Lovozero 60.18 335 *c* *i*P **P** **12 07 56.9 -0.2**
LVZ pmax pmax
comp=Z,111nm,0.8s
LVZ MLR MLR
comp=Z,4µm,23.0s
LVZ Lovozero 60.18 335 *e*P **P** **12 07 57.2 +0.2**
comp=Z,94nm,0.8s
LVZ LR LR
comp=Z,4µm,22.0s
RES Resolute Bay 60.21 15 *e*P **P** **12 07 57.7 +0.6**
RES pmax pmax
comp=Z,140nm,0.9s
RES MLR MLR
comp=Z,2µm,22.0s
RES Resolute Bay 60.21 15 *e*P **P** **12 07 57.7 +0.6**
comp=Z,140nm,0.9s
RES LR LR
comp=Z,2µm,22.0s
BJO Bjornoya 60.29 345 *e*P **P** **12 07 58.3 +0.6**
BJO IAmb IAmb 12 07 59.7
comp=Z,110nm,0.7s
BJO *e*S **S** **12 16 11.0 +2.5**
BJO IAMs_20 IAMs_20 12 37 42.0
comp=Z,5µm,18.9s
APA Apatity 60.76 335⇑ *i*P **P** **12 08 02.0 +1.1**
APA *i* 12 10 21.0
APA *i* S **S** **12 16 14.0 -0.7**
APA *i* PS **PnS** **12 16 26.0 -6.1**
APA *i* SS **SS** **12 20 16.0 +2.9**
APA pmax pmax
comp=Z,91nm,1.0s
APA MLR MLR
comp=Z,5µm,22.0s
TMCR Tamitsa 60.93 331 *e*P **P** **12 08 03.1 +1.0**
TMCR *e*S **S** **12 16 21.5 +4.5**
TMCR pmax pmax
comp=Z,437nm,1.1s
URV Uravakonda 61.23 266 *e*P **P** **12 08 04.7 -0.2**
URV IAmb IAmb 12 08 05.8
comp=Z,115nm,1.0s
URV *e*S **S** **12 16 16.6 -5.6**
URV IVMs_BB IVMs_BB 12 34 45.3
comp=Z,1µm,25.9s
KEV Kevo 61.43 339 *e*P **P** **12 08 06.4 +1.0**
KEV pmax pmax
comp=Z,135nm,0.9s
KEV MLR MLR
comp=Z,4µm,18.0s
KEV Kevo 61.43 339 *e*P **P** **12 08 06.4 +1.0**
comp=Z,135nm,0.9s
KEV LR LR
comp=Z,4µm,18.0s
YKW3 Yellowknife Ar 61.51 31 *e*P **P** **12 08 06.7 +0.6**
comp=Z,53nm,1.1s
YKA Yellowknife Ar 61.55 31 P **P** **12 08 06.8 +0.5**
comp=Z,26nm,1.0s,baz=302,slow=6.7,SNR=240
YKA PcP PcP 12 08 56.0 +8.3
comp=Z,8.8nm,0.8s,baz=300,slow=6.4,SNR=4.4
YKA PKPPKP **P'P'df** **12 37 19.1 -5.3**
comp=Z,0.9nm,0.8s,baz=123,slow=2.4,SNR=9.8
YKB5 Yellowknife Ar 61.55 31 *e*P **P** **12 08 06.1 -0.2**
HAMF Hammerfest 61.77 341 *e*P **P** **12 08 08.3 +0.6**
HAMF IAmb IAmb 12 08 09.5
comp=Z,162nm,1.1s
POO Poona 61.78 271⇑ *i*P **P** **12 08 07.0 -1.6**
comp=Z,43nm,1.0s
POO *e*P **P** **12 08 08.4 -0.2**
POO IAMs_20 IAMs_20 12 36 38.2
comp=Z,6µm,20.8s
ARA0 ARCESS Array S 61.98 339 *e*P **P** **12 08 09.9 +0.8**
ARCES ARCESS Array B 61.98 339 P **P** **12 08 09.9 +0.7**
comp=Z,64nm,0.9s,baz=48,slow=6.5,SNR=98
ARCES PcP **PcP** **12 08 52.5 +3.0**
comp=Z,21nm,1.0s,baz=66,slow=12,SNR=4.4
ARCES LR LR 12 39 36.0
comp=Z,3µm,20.2s,baz=52,slow=40
ARE0 ARCESS Array S 61.98 339 *e*P **P** **12 08 10.2 +1.0**
ARE0 IAmb IAmb 12 08 10.4
comp=Z,154nm,1.2s
ARE0 *e*S **S** **12 16 31.3 +1.1**
ARE0 ARCESS Array S 61.98 339 *e*P **P** **12 08 09.6 +0.4**
comp=Z,116nm,1.0s
ARE0 LR LR
comp=Z,5µm,18.0s
KLMR Klimovskoe 62.05 327 *e*P **P** **12 08 08.1 -1.6**
KLMR *e**PP **pP** **12 08 17.4 -4.2**
KLMR *e**SP **sP** **12 08 24.5 -1.7**
KLMR *e* 12 08 46.9
KLMR *e* 12 10 24.1
KLMR *e*S **S** **12 16 33.8 +2.6**
KLMR pmax pmax
comp=Z,580nm,1.4s
KLMR MLR MLR
comp=Z,7µm,18.0s
BHJ Bhuj 62.36 278 *e*P **P** **12 08 13.0 +0.6**
BHJ IAmb IAmb 12 08 14.0
comp=Z,169nm,2.0s
BHJ IAMs_20 IAMs_20 12 33 42.6
comp=Z,4µm,28.9s
KTK1 Kautokeino 62.94 339⇑ *i*P **P** **12 08 16.1 +0.5**
KTK1 IAmb IAmb 12 08 17.7
comp=Z,130nm,0.9s
GEYT Alibeck 63.14 298 P **P** **12 08 18.4 +0.9**
comp=Z,207nm,0.9s,baz=29,slow=3.4,SNR=196

GEYT LR LR 12 37 35.0
comp=Z,5µm,18.8s,baz=75,slow=38
AS01 Alice Springs 63.17 188 *e*P **P 12 08 17.1 -0.5**
AS31 Alice Springs 63.17 188 *e*P **P 12 08 17.1 -0.5**
comp=Z,14nm,1.0s
ASAR Alice Springs 63.17 188 P **P 12 08 17.1 -0.5**
comp=Z,42nm,0.9s,baz=9.7,slow=5.4,SNR=183
ASAR S **S 12 16 44.8 -1.4**
comp=Z,1.3nm,1.1s,baz=10,slow=7.6,SNR=4.3
ASAR LR LR 12 36 15.3
comp=Z,1µm,21.6s,baz=7.5,slow=36
ASAR PKP2bc 12 37 21.9
comp=Z,5.7nm,0.9s,baz=180,slow=2.7,SNR=21
PALK Pallekele 63.36 257 LR LR 12 38 16.3
comp=Z,2µm,20.8s,baz=116,slow=38
PALK Pallekele 63.36 257 *i* P **P 12 08 19.6 +0.4**
SNR=8.4
PALK Pallekele 63.36 257 *i* P **P 12 08 20.1 +0.9**
PALK Pallekele 63.36 257 *e*P **P 12 08 19.9 +0.7**
comp=Z,110nm,1.0s
PALK LR LR
comp=Z,1µm,20.0s
PALK Pallekele 63.36 257 P **P 12 08 20.3 +1.1**
SNR=11
PALK Pallekele 63.36 257 P **P 12 08 20.3 +1.1**
SNR=11
DAG Danmarks Havn 63.48 355⇑ *i*P **P 12 08 19.6 +0.5**
comp=Z,134nm,0.9s
DAG Danmarks Havn 63.48 355⇑ *i*P **P 12 08 19.6 +0.5**
DAG pmax pmax
comp=Z,110nm,0.9s
GOA Goa 63.57 269 *e*P **P 12 08 20.1 -0.4**
GOA IAmb IAmb 12 08 21.7
GOA IAMs_20 IAMs_20 12 37 51.9
comp=Z,3µm,17.6s
TRO Tromso 63.66 341 *e*P **P 12 08 20.9 +0.7**
TRO IAmb IAmb 12 08 22.3
comp=Z,190nm,1.0s
TRO *e*S **S 12 16 52.4 +1.2**
TRO IAMs_20 IAMs_20 12 37 43.4
comp=Z,4µm,18.1s
MBWA Marble Bar 63.73 203 *e*P **P 12 08 21.0 -0.3**
comp=Z,113nm,1.1s
MBWA Marble Bar 63.73 203 P **P 12 08 21.5 +0.2**
SNR=5.6
MBWA Marble Bar 63.73 203 P **P 12 08 21.5 +0.2**
SNR=5.6
PGC Sidney 64.38 47 *e*P **P 12 08 26.4 +1.1**
comp=Z,62nm,1.4s
A04D Lummi Island 64.76 47 P **P 12 08 29.3 +1.4**
baz=302
NLWA Neilton Lookou 64.79 49 *e*P **P 12 08 30.0 +1.8**
comp=Z,97nm,1.1s
EIDS Eidsvold 64.96 171 PFAKE 12 08 40.0 +11
EIDS LR LR
comp=Z,1µm,22.0s
CMW Cultus Mountai 65.25 47 P **P 12 08 32.7 +1.5**
B05A Bryant 65.35 47 P **P 12 08 33.2 +1.5**
baz=302,SNR=13
E03A Lebam 65.41 49 *e*P **P 12 08 32.7 +0.6**
comp=Z,130nm,1.0s
TRD Trivandrum 65.42 261 *e*P **P 12 08 32.5 -0.1**
TRD IAmb IAmb 12 08 33.4
comp=Z,214nm,1.0s
JCW Jim Creek 65.48 47 *e*P **P 12 08 34.0 +1.4**
B06A Marblemount 65.56 47 *e*P **P 12 08 34.1 +1.0**
comp=Z,47nm,0.9s
KULLO Kullorsuaq 65.60 6⇑ *i*P **P 12 08 33.2 +0.3**
comp=Z,158nm,1.1s
comp=Z,3µm,27.0s
KULLO Kullorsuaq 65.60 6⇑ *i*P **P 12 08 33.2 +0.3**
KULLO pmax pmax
comp=Z,160nm,1.1s
KULLO MLR MLR
comp=Z,3µm,27.0s
MOS Moscow 65.67 323⇑ *i*P **P 12 08 31.9 -1.7**
MOS *e* 12 08 51.1
MOS *e* 12 09 03.8
MOS *e* 12 10 56.9
MOS *i*S **S 12 17 15.2 -1.1**
MOS *e* 12 17 31.0
MOS *e*SS **SS 12 21 29.7 -0.3**
MOS pmax pmax
comp=Z,757nm,1.4s
MOS pmax pmax
comp=Z,2µm,1.7s
MOS pmax pmax
comp=N,700nm,1.8s
MOS pmax pmax
comp=E,500nm,1.7s
MOS smax smax
comp=N,1µm,3.7s
MOS smax smax
comp=E,600nm,2.3s
MOS MLR MLR
comp=Z,11µm,17.0s
MOS MLR MLR
comp=N,6µm,16.0s
MOS MLR MLR
comp=E,7µm,17.0s
STEI Steigen 65.82 341 *e*P **P 12 08 34.7 +0.4**
STEI IAmb IAmb 12 08 36.0
comp=Z,64nm,0.7s
F04D Rainier, OR 65.98 49 P **P 12 08 37.3 +1.5**
baz=302
D05A Enumclaw 65.98 48 *e*P **P 12 08 38.0 +2.2**
comp=Z,114nm,1.1s
LOF Lofoten 66.10 341 *e*P **P 12 08 36.0 -0.2**
LOF IAmb IAmb 12 08 38.2
comp=Z,99nm,0.8s
RVC Mount Rainier- 66.12 48 P **P 12 08 38.6 +1.7**
PNT Penticton 66.16 45 *e*P **P 12 08 37.9 +0.9**
PNT Penticton 66.16 45 *e*P **P 12 08 37.9 +0.9**
VRH Novokhopyorsk 66.18 317 *e*P **P 12 08 36.9 -0.1**
VRH *e* 12 10 59.6
VRH *e*S **S 12 17 18.5 -4.2**
VRH *e*SS **SS 12 21 35.5 -2.7**
VRH pmax pmax
comp=Z,260nm,0.7s
VRH pmax pmax
comp=Z,210nm,0.6s
VRH smax smax
comp=E,320nm,2.3s
VRH MLR MLR
comp=Z,13µm,16.0s
XMAS Kiritimati 66.20 108 PFAKE 12 08 50.0 +12
XMAS LR LR
comp=Z,12µm,21.0s
C06D Leavenworth 66.21 47 P **P 12 08 38.5 +1.2**
baz=303
G03D McMinnville, O 66.30 50 P **P 12 08 38.9 +1.0**
baz=303
LON Longmire 66.32 48 *e*P **P 12 08 39.8 +1.7**
LON pmax pmax
comp=Z,34nm,1.0s
LON Longmire 66.32 48 *e*P **P 12 08 39.8 +1.7**
comp=Z,34nm,1.0s
COCO West Island 66.33 229 *i* P **P 12 08 40.2 +1.9**
COCO West Island 66.33 229 *e*P **P 12 08 39.5 +1.2**
comp=Z,564nm,1.1s
PUL Pulkovo 66.43 329*c i*P **P 12 08 39.1 +0.7**
PUL pmax pmax
comp=Z,557nm,1.2s
PUL MLR MLR
comp=Z,9µm,19.0s
NLW Nelson Butte 66.44 46 P **P 12 08 40.2 +1.2**
MTMW Mount Mitchell 66.48 49 P **P 12 08 40.8 +1.7**
OBN Obninsk 66.52 323 P **P 12 08 39.8 +0.8**
comp=Z,275nm,0.8s,baz=33,slow=1.5,SNR=91
OBN PcP **PcP 12 09 05.3 -3.0**
comp=Z,45nm,0.4s,baz=78,slow=13,SNR=4.3
OBN LR LR 12 41 11.0
comp=Z,6µm,18.9s,baz=0.0,slow=39
OBN Obninsk 66.52 323*c i*P **P 12 08 39.6 +0.5**
OBN *i* 12 08 58.0
OBN *i* 12 11 06.7
OBN *i*S **S 12 17 25.4 -1.2**
OBN *e*SS **SS 12 21 40.5 -2.7**
OBN pmax pmax
comp=Z,838nm,1.7s
OBN MLR MLR
comp=Z,11µm,17.0s
OBN Obninsk 66.52 323 *e*P **P 12 08 39.8 +0.8**
comp=Z,615nm,1.2s
OBN LR LR
comp=Z,7µm,18.0s

COR Corvallis 66.61 51 *e*P **P 12 08 43.1 +3.2**
COR pmax pmax
comp=Z,120nm,1.0s
COR Corvallis 66.61 51 *e*P **P 12 08 43.1 +3.2**
comp=Z,120nm,1.0s
LTY Liberty 66.70 47 *e*P **P 12 08 41.6 +1.1**
comp=Z,185nm,1.9s
ETW Entiat 66.70 47 *e*P **P 12 08 41.8 +1.1**
LPSR Galich'ya Gora 66.82 320 *e*P **P 12 08 41.3 +0.2**
LPSR *e*S **S 12 17 27.5 -2.9**
LPSR pmax pmax
comp=Z,370nm,1.0s
LPSR pmax pmax
comp=Z,500nm,1.0s
LPSR smax smax
comp=N,470nm,2.9s
LPSR MLR MLR
comp=Z,5µm,21.0s
B08A Colville Reser 66.85 46 *e*P **P 12 08 42.5 +1.1**
comp=Z,38nm,1.1s
B08A LR LR
comp=Z,2µm,21.0s
WTV Waterville 66.86 47 *e*P **P 12 08 42.2 +0.6**
EBG Ellensburg 66.95 48 P **P 12 08 43.5 +1.4**
FIA1 FINESS Array S 66.97 332 *e*P **P 12 08 42.5 +0.7**
FIA0 FINESS Array S 66.97 332 *e*P **P 12 08 42.4 +0.5**
FIA0 FINESS Array S 66.97 332 *e*P **P 12 08 42.4 +0.5**
FINES FINESS Array B 66.97 332 P **P 12 08 42.4 +0.5**
comp=Z,197nm,0.7s,baz=46,slow=8.2,SNR=567
FINES LR LR 12 40 15.0
comp=Z,11µm,18.8s,baz=46,slow=38
I03D Drain, OR 67.06 52 P **P 12 08 44.2 +1.4**
baz=303,SNR=9.2
H04A Detroit Lake 67.22 50 *e*P **P 12 08 45.3 +1.5**
comp=Z,64nm,1.0s
MOR8 Moi Rana 67.34 340⇑ *i*P **P 12 08 43.4 -0.7**
MOR8 IAmb IAmb 12 08 44.6
comp=Z,251nm,0.6s
G05D Wamic, OR 67.43 49 P **P 12 08 46.9 +1.7**
baz=304,SNR=9.1
KONS Konsvik 67.44 340 *e*P **P 12 08 44.9 +0.2**
KONS IAmb IAmb 12 08 46.7
comp=Z,81nm,0.9s
VSR Storozhevoye 67.50 318 *e*P **P 12 08 45.7 +0.3**
VSR *e* 12 11 10.9
VSR *e*S **S 12 17 35.7 -2.9**
VSR pmax pmax
comp=Z,290nm,0.8s
VSR pmax pmax
comp=Z,170nm,0.6s
VSR smax smax
comp=E,480nm,4.5s
VSR MLR MLR
comp=Z,16µm,18.0s
I04A Tendick Farm, 67.58 51 P **P 12 08 47.7 +1.6**
baz=304
STOK Stokkvaagen 67.60 340 *e*P **P 12 08 47.6 +1.9**
STOK IAmb IAmb 12 08 50.3
comp=N,10nm,0.9s
C09A Chrisman Ranch 67.75 46 *e*P **P 12 08 48.2 +1.1**
comp=N,55nm,0.9s
L02D Cave Junction, 67.75 53 P **P 12 08 48.8 +1.6**
baz=304
D08A Wollman Farm, 67.80 47 *e*P **P 12 08 48.5 +1.1**
comp=N,40nm,0.9s
HAWA Hanford 67.83 48 *e*P **P 12 08 48.8 +1.2**
comp=N,190nm,2.0s
G06A Carlson Farm, 67.84 49 *e*P **P 12 08 49.2 +1.5**
comp=N,85nm,1.4s
HUMO Hull Mountain 67.90 53 *e*P **P 12 08 49.8 +1.6**
comp=N,42nm,1.4s
I05D Terrebonne, OR 67.92 50 P **P 12 08 49.0 +0.7**
baz=304,SNR=9.9
NEW Newport 68.12 45 LR LR 12 35 15.0
comp=N,1µm,21.8s,baz=318,slow=33
NEW Newport 68.12 45 P **P 12 08 50.0 +0.5**
baz=305,SNR=30
NEW Newport 68.12 45 *e*P **P 12 08 50.4 +1.0**
NEW pmax pmax
comp=Z,40nm,1.0s
NEW Newport 68.12 45 *e*P **P 12 08 50.4 +1.0**
comp=Z,40nm,0.9s
HEL Helsinki 68.23 331 PFAKE 12 09 00.0 +10
HEL LR LR
comp=Z,1µm,22.0s
SUMG Summit 68.34 0⇑ *i*P **P 12 08 52.3 +1.4**
comp=Z,219nm,1.0s
SUMG Summit 68.34 0⇑ *i*P **P 12 08 52.3 +1.4**
SUMG pmax pmax
comp=Z,220nm,1.0s
SUMG Summit 68.34 0 *e*P **P 12 08 52.3 +1.4**
comp=Z,178nm,0.9s
KHMM Horse Mountain 68.38 54 *e*P **P 12 08 53.5 +2.2**
comp=Z,67nm,1.1s
YBH Yreka Blue Hor 68.54 53 LR LR 12 31 32.8
comp=Z,1µm,22.0s,baz=292,slow=29
YBH Yreka Blue Hor 68.54 53 *e*P **P 12 08 54.1 +1.8**
YBH pmax pmax
comp=Z,71nm,1.3s
YBH Yreka Blue Hor 68.54 53 *e*P **P 12 08 54.1 +1.8**
comp=Z,71nm,1.3s
J05D Fort Rock, OR 68.57 51 P **P 12 08 53.8 +1.3**
baz=304,SNR=25
K04D Chiloquin, OR 68.63 52 P **P 12 08 54.2 +1.3**
baz=304,SNR=6.9
M02C Callahan 68.64 54 P **P 12 08 54.4 +1.5**
baz=304,SNR=7.2
VSU Vasula 68.69 329*c i*P **P 12 08 53.4 +0.7**
VSU pmax pmax
comp=Z,1µm,1.2s
VSU MLR MLR
comp=Z,21µm,18.0s
GOF Gofitskoye 68.90 311⇑ *e*P **P 12 08 55.7 +1.4**
GOF *e*S **S 12 17 56.6 +1.0**
GOF pmax pmax
comp=Z,772nm,0.8s
GOF smax smax
comp=N,122nm,2.1s
GOF smax smax
comp=E,147nm,2.0s
N02D Trinity Center 68.97 54 P **P 12 08 56.3 +1.4**
baz=304,SNR=9.2
M04C Macdoel 69.05 53 P **P 12 08 57.2 +1.7**
baz=304,SNR=17
K05A Summer Lake 69.10 52 *e*P **P 12 08 57.7 +1.8**
comp=E,170nm,1.3s
NSS Namsos 69.27 339 *e*P **P 12 08 56.3 +0.1**
NSS IAmb IAmb 12 08 57.9
comp=Z,52nm,0.9s
NSS *e*S **S 12 18 01.4 +2.2**
NSS IAMs_20 IAMs_20 12 43 43.5
comp=Z,5µm,20.1s
WDC Whiskeytown Da 69.29 54 *e*P **P 12 08 58.3 +1.5**
WDC pmax pmax
comp=Z,60nm,1.2s
WDC Whiskeytown Da 69.29 54 *e*P **P 12 08 58.3 +1.5**
comp=Z,60nm,1.3s
F10A Beach Ranch, E 69.38 47 *e*P **P 12 08 58.6 +1.2**
comp=Z,32nm,1.1s
WALA Waterton Lakes 69.39 43 *e*P **P 12 08 58.5 +1.1**
comp=Z,55nm,1.1s
WALA LR LR
comp=Z,1µm,19.0s
NCK Nalchik 69.47 310⇑ *e*P **P 12 08 58.6 +0.7**
NCK pmax pmax
comp=Z,255nm,1.2s
NCK MLR MLR
comp=Z,16µm,20.0s
GUDG Gudauri 69.53 308 P **P 12 09 00.1 +1.5**
DGRG David-gareji 69.56 307 P **P 12 08 59.6 +1.0**
DGRG David-gareji 69.56 307 P **P 12 08 59.6 +1.0**
BSMT Bassoo Peak 69.64 44 *e*P **P 12 09 00.3 +1.2**
ZEI Tsey 69.70 309 *e*P **P 12 08 59.7 +0.2**
ZEI pmax pmax
comp=Z,388nm,0.9s
KIV Kislovodsk 69.75 311 *i* P **P 12 09 01.2 +1.4**
SNR=159
KIV Kislovodsk 69.75 311*c i*P **P 12 09 00.9 +1.2**
KIV *i* 12 09 06.9
KIV *i*S **S 12 17 57.1 -8.7**
KIV *i*SS **SS 12 22 33.7 -0.2**
KIV pmax pmax
comp=Z,1µm,1.2s
KIV MLR MLR
comp=Z,4µm,18.0s
KIV Kislovodsk 69.75 311 *e*P **P 12 09 01.1 +1.4**
comp=Z,893nm,1.0s
KIV LR LR
comp=Z,5µm,20.0s
KIV Kislovodsk 69.75 311 P **P 12 09 01.3 +1.6**
SNR=266
KIV Kislovodsk 69.75 311 P **P 12 09 01.3 +1.6**
SNR=266
KBZ Khabaz 69.75 310 P **P 12 09 00.8 +1.2**
comp=Z,226nm,0.9s,baz=64,slow=5.0,SNR=502
KBZ PcP **sP 12 09 18.1 +1.9**
KBZ comp=Z,82nm,0.8s,baz=336,slow=9.9,SNR=6.7
LR LR 12 44 34.0
comp=Z,4µm,18.3s,baz=44,slow=40
BLMT Blacktail Moun 69.77 44 *e*P **P 12 09 01.4 +1.5**
TBLG Delisi 69.80 308 *e*P **P 12 09 02.7 +2.7**
TBLG Delisi 69.80 308 P **P 12 09 02.5 +2.5**
TBLG Delisi 69.80 308 P **P 12 09 02.4 +2.5**
SCO Scoresbysund 69.83 354⇑ *i*P **P 12 09 00.8 +1.2**
comp=Z,2µm,21.0s
SCO Scoresbysund 69.83 354⇑ *i*P **P 12 09 00.8 +1.2**
SCO MLR MLR
comp=Z,2µm,21.0s
O03D Paynes Creek 69.92 54 P **P 12 09 01.6 +0.8**
baz=305,SNR=15
MOD Modoc Plateau 69.92 52 *e*P **P 12 09 02.2 +1.3**
comp=Z,157nm,1.9s
JTMT Jette 69.97 44 *e*P **P 12 09 02.4 +1.3**
BMO Blue Mountains 69.99 48 *e*P **P 12 09 02.4 +1.2**
comp=Z,112nm,1.7s
BMO LR LR
comp=Z,1µm,19.0s
ARMA Armidale 70.01 171 *e*P **P 12 09 01.0 -0.2**
comp=Z,49nm,1.2s
ARMA LR LR
comp=Z,2µm,21.0s
YBMT Yellow Bay 70.05 44 *e*P **P 12 09 03.0 +1.4**
ONI Oni 70.08 309 P **P 12 09 03.4 +1.6**
ONI Oni 70.08 309 P **P 12 09 03.3 +1.6**
NEY Neytrino 70.14 310*c i*P **P 12 09 03.3 +1.1**
NEY pmax pmax
comp=Z,24nm,0.8s
SWMT Swartz Lake 70.27 44 *e*P **P 12 09 04.0 +1.2**
ORV Oroville 70.53 55 *e*P **P 12 09 05.2 +0.7**
ORV pmax pmax
comp=Z,56nm,1.3s
ORV Oroville 70.53 55 *e*P **P 12 09 05.2 +0.7**
comp=Z,56nm,1.4s
WVOR Wild Horse Val 70.62 51 *e*P **P 12 09 06.3 +1.1**
WVOR pmax pmax
comp=Z,45nm,1.0s
WVOR Wild Horse Val 70.62 51 *e*P **P 12 09 06.3 +1.1**
comp=Z,45nm,1.0s
IZAR Zarasai 70.70 327 *e*P **P 12 09 06.3 +1.2**
IZAR IAmb IAmb 12 09 06.8
comp=Z,102nm,0.8s
GNI Garni 70.70 306 *i* P **P 12 09 07.5 +1.7**
SNR=33
GNI Garni 70.70 306*c i*P **P 12 09 07.0 +1.3**
GNI pmax pmax
comp=Z,1µm,1.3s
GNI Garni 70.70 306 *e*P **P 12 09 07.4 +1.7**
comp=Z,574nm,1.7s
GNI LR LR
comp=Z,8µm,19.0s
GNI Garni 70.70 306 P **P 12 09 07.7 +2.0**
SNR=62
MSO Missoula 70.71 45 P **P 12 09 06.1 +0.6**
baz=307,SNR=25
MSO Missoula 70.71 45 *e*P **P 12 09 06.3 +0.8**
comp=Z,50nm,1.2s
TBLU Trondheim 70.74 339⇑ *i*P **P 12 09 04.7 -0.6**
TBLU IAmb IAmb 12 09 06.1
comp=Z,92nm,0.6s
WSAR Wadi Sarin 70.74 285 LR LR 12 44 20.8
comp=Z,2µm,19.4s,baz=101,slow=39
AKH Akhalkalaki 70.74 308 P **P 12 09 07.6 +1.6**
AKH Akhalkalaki 70.74 308‖ *i*P **P 12 09 07.5 +1.6**
AKH Akhalkalaki 70.74 308 P **P 12 09 07.5 +1.6**
CHVG Ch'k'valeri 70.83 310 P **P 12 09 07.4 +1.2**
CHVG Ch'k'valeri 70.83 310⇑ *i*P **P 12 09 07.5 +1.3**
MICGM Minsk 70.83 326⇑ *i*P **P 12 09 06.0 0.0**
MICGM PM 12 09 07.0
comp=Z,1.1nm,1.0s
MICGM PM 12 09 08.0
comp=N,0.8nm,1.5s
MICGM PM 12 09 08.0
comp=E,0.5nm,1.5s
MICGM *e*PP **PP 12 11 39.0 -3.7**
MICGM *e*PPP PPP 12 13 20.0
MICGM *e*S **S 12 18 18.0 +0.1**
MICGM *e*PS PnS 12 19 08.0 +19
MICGM *e*SS SS 12 23 10.0 +20
MICGM *e*LQ LQ 12 33 55.0
MICGM *e*LR LR 12 36 55.0
MICGM LRM MLR 12 42 56.0
comp=N,7.0nm,16.0s
MICGM LRM MLR 12 42 58.0
comp=E,6.8nm,16.0s
MICGM LRM MLR 12 42 58.0
comp=Z,19nm,16.0s
MNK Minsk 70.83 326⇑ *i*P **P 12 09 06.0 0.0**
MNK *e* 12 11 39.0
MNK *e*PPP PPP 12 13 20.0
MNK *e*S **S 12 18 18.0 +0.1**
MNK *e*PS PnS 12 19 08.0 +19
MNK pmax pmax
comp=Z,1µm,1.0s
MNK pmax pmax
comp=N,800nm,1.5s
MNK pmax pmax
comp=E,460nm,1.5s
MNK MLR MLR
comp=N,7µm,16.0s
MNK MLR MLR
comp=E,7µm,16.0s
MNK MLR MLR
comp=Z,19µm,16.0s
WBK Wadi Bani Khal 70.85 284 P **P 12 09 08.3 +1.6**
SNR=32
WBK Wadi Bani Khal 70.85 284 P **P 12 09 08.3 +1.6**
SNR=32
ISAL Salakas 70.87 327 *e*P **P 12 09 07.3 +1.1**
ISAL IAmb IAmb 12 09 08.9
comp=Z,228nm,0.9s
STKA Stephens Creek 70.89 180 P **P 12 09 06.9 +0.4**
comp=Z,11nm,0.9s,baz=331,slow=8.9,SNR=12
STKA PcP **pP 12 09 17.2 -1.2**
comp=Z,5.1nm,0.8s,baz=6.1,slow=4.5,SNR=5.0
STKA LR LR 12 37 41.3
comp=Z,987nm,21.2s,baz=16,slow=34
STKA Stephens Creek 70.89 180 *e*P **P 12 09 06.9 +0.4**
STKA pmax pmax
comp=Z,6.0nm,1.3s
STKA MLR MLR
comp=Z,300nm,22.0s
STKA Stephens Creek 70.89 180 *e*P **P 12 09 06.9 +0.4**
comp=Z,6.3nm,1.3s
STKA LR LR
comp=Z,300nm,22.0s
BANOM Banah 70.93 288 *i* P **P 12 09 08.0 +0.9**
SNR=64
BANOM Banah 70.93 288 P **P 12 09 08.7 +1.5**
SNR=20
BANOM Banah 70.93 288 P **P 12 09 08.7 +1.5**
SNR=20
BIDO Bidbid 70.96 285 P **P 12 09 09.0 +1.7**
SNR=20
BIDO Bidbid 70.96 285 P **P 12 09 09.0 +1.7**
SNR=20
IIGN Ignalina 70.98 327 *e*P **P 12 09 07.9 +1.1**
IIGN IAmb IAmb 12 09 08.7
comp=Z,136nm,0.8s
CHMT Chamberlain Mo 71.03 45 *e*P **P 12 09 08.2 +0.5**
NACGM Naroch 71.04 326 *e*P **P 12 09 08.0 +0.8**
NACGM *e*P **P 12 09 08.0 +0.8**
NACGM *e*S **S 12 18 20.0 -0.2**
NACGM *e*LQ LQ 12 33 12.0
NACGM *e*LR LR 12 36 23.0
NACGM LRM MLR 12 42 50.0
comp=Z,15nm,17.0s
EAK Akyaka 71.10 307 *i* P **P 12 09 08.4 +0.3**
EPOS Posof 71.15 308 *i* P **P 12 09 10.3 +1.9**
AFDM Forest Hills D 71.22 55 *e*P **P 12 09 09.6 +1.0**
comp=Z,33nm,1.1s
AFDM LR LR
comp=Z,2µm,20.0s

SMDO	**Samad**	**71.28**	**285**	P	**P**	**12 09 10.3**	**+0.9**
	SNR=25						
SMDO	**Samad**	**71.28**	**285**	P	**P**	**12 09 10.3**	**+0.9**
	SNR=25						
ILULI	**Ilulissat**	**71.29**	**5**⇑	*i*P	**P**	**12 09 09.1**	**+0.6**
	comp=Z,129nm,1.0s						
ILULI	**Ilulissat**	**71.29**	**5**⇑	*i*P	**P**	**12 09 09.1**	**+0.6**
ILULI				pmax	pmax		
	comp=Z,130nm,1.0s						
KARS	**Kars**	**71.45**	**308**	*e*P	**P**	**12 09 11.8**	**+1.6**
FFC	**Flin Flon**	**71.48**	**33**	*e*P	**P**	**12 09 10.6**	**+0.7**
FFC				pmax	pmax		
	comp=Z,110nm,1.0s						
FFC	**Flin Flon**	**71.48**	**33**	*e*P	**P**	**12 09 10.6**	**+0.7**
	comp=Z,110nm,0.9s						
HOQ	**Hoqain**	**71.53**	**286**	P	**P**	**12 09 11.8**	**+1.0**
	SNR=39						
HOQ	**Hoqain**	**71.53**	**286**	P	**P**	**12 09 11.8**	**+1.0**
	SNR=39						
UOSS	**Minazif**	**71.56**	**287**	*e*P	**P**	**12 09 11.3**	**+0.3**
	comp=Z,18nm,0.8s						
UOSS				LR	LR		
	comp=Z,2µm,22.0s						
JMDO	**Jabal Madar**	**71.64**	**284**	P	**P**	**12 09 12.4**	**+0.9**
	SNR=29						
JMDO	**Jabal Madar**	**71.64**	**284**	P	**P**	**12 09 12.4**	**+0.9**
	SNR=29						
HATD	**Hatta, Dubai**	**71.69**	**287**	*i* P	**P**	**12 09 12.4**	**+0.7**
	SNR=94						
SOC	**Sochi**	**71.70**	**312***c*	*i*P	**P**	**12 09 12.2**	**+0.8**
SOC				*e**SP	**pP**	**12 09 24.5**	**+1.0**
SOC				*e*		12 09 28.5	
SOC				*e*		12 11 52.8	
SOC				*e*PPP	PPP	12 13 36.2	
SOC				*e*S	**S**	**12 18 28.4**	**+0.1**
SOC				pmax	pmax		
	comp=Z,242nm,0.8s						
SOC				pmax	pmax		
	comp=Z,1µm,2.0s						
SOC				MLR	MLR		
	comp=Z,4µm,17.0s						
MFID	**Camas Ranch**	**71.70**	**49**	*e*P	**P**	**12 09 12.8**	**+1.2**
	comp=Z,68nm,1.4s						
DYDN	**Diyadin**	**71.72**	**306**	*i* P	**P**	**12 09 12.9**	**+1.0**
CLDR	**Caldiran**	**71.81**	**306**	*e*P	**P**	**12 09 14.2**	**+1.8**
ASHO	**Ashiyiah**	**71.82**	**287**	*i* P	**P**	**12 09 13.3**	**+0.7**
	SNR=82						
ASHO	**Ashiyiah**	**71.82**	**287**	P	**P**	**12 09 13.7**	**+1.1**
	SNR=40						
ASHO	**Ashiyiah**	**71.82**	**287**	P	**P**	**12 09 13.7**	**+1.1**
	SNR=40						
ARTV	**Artvin**	**71.83**	**309**	*i* P	**P**	**12 09 12.9**	**+0.3**
DBOC	**Borcka**	**71.89**	**309**	*i* P	**P**	**12 09 13.1**	**+0.4**
DAGI	**Agillar**	**71.90**	**308**	*i* P	**P**	**12 09 14.2**	**+1.4**
HRY	**Holter Researc**	**71.93**	**44**	*e*P	**P**	**12 09 14.2**	**+1.2**
NAZ	**Nazwa, Dubai**	**71.94**	**288**	*i* P	**P**	**12 09 14.0**	**+0.8**
	SNR=19						
NC405	**NORSAR Array S**	**72.01**	**337**	*e*P	**P**	**12 09 13.8**	**+0.8**
NC303	**NORSAR Array S**	**72.02**	**337**	*e*P	**P**	**12 09 13.8**	**+0.7**
MOL	**Molde**	**72.03**	**340**⇑	*i*P	**P**	**12 09 13.7**	**+0.6**
MOL				IAmb	IAmb	12 09 16.7	
	comp=Z,85nm,0.9s						
BBOO	**Buckleboo**	**72.04**	**185**	*e*P	**P**	**12 09 13.2**	**-0.2**
	comp=Z,47nm,1.0s						
BBOO				LR	LR		
	comp=Z,2µm,22.0s						
DBAD	**Bademkaya**	**72.07**	**309**	*i* P	**P**	**12 09 15.3**	**+1.4**
BSY	**Bisya**	**72.10**	**285**	P	**P**	**12 09 15.5**	**+1.3**
	SNR=11						
BSY	**Bisya**	**72.10**	**285**	P	**P**	**12 09 15.5**	**+1.3**
	SNR=11						
DDEM	**Demirkent**	**72.11**	**308**	*i* P	**P**	**12 09 15.1**	**+1.0**
CMB	**Columbia Colle**	**72.12**	**55**	*e*P	**P**	**12 09 15.3**	**+1.1**
CMB				pmax	pmax		
	comp=Z,74nm,1.2s						
CMB	**Columbia Colle**	**72.12**	**55**	*e*P	**P**	**12 09 15.3**	**+1.1**
	comp=Z,74nm,1.3s						
CMB				LR	LR		
	comp=Z,2µm,22.0s						
AGRB	**Hanur-Agry**	**72.13**	**307**	*e*P	**P**	**12 09 16.2**	**+1.9**
FAQ	**Al Faqa, Dubai**	**72.13**	**288**	*i* P	**P**	**12 09 15.0**	**+0.7**
	SNR=24						
FAQ				*i* P	**P**	**12 09 15.1**	**+0.7**
	SNR=18						
LRM	**Limekiln Ridge**	**72.14**	**45**	*e*P	**P**	**12 09 15.5**	**+1.1**
HFS	**Hagfors**	**72.16**	**336**	P	**P**	**12 09 14.3**	**+0.4**
	comp=Z,138nm,0.8s,baz=54,slow=7.5,SNR=156						
HFS				PcP	**sP**	**12 09 30.8**	**+0.3**
	comp=Z,56nm,0.8s,baz=54,slow=3.8,SNR=8.2						
HFS				LR	LR	12 43 57.5	
	comp=Z,6µm,18.3s,baz=36,slow=38						
NC204	**NORSAR Array S**	**72.16**	**338**	*e*P	**P**	**12 09 15.4**	**+1.4**
NB201	**NORSAR Array S**	**72.19**	**337**	*e*P	**P**	**12 09 14.8**	**+0.7**
EGMT	**Eagleton**	**72.20**	**42**	P	**P**	**12 09 14.9**	**+0.5**
	baz=309,SNR=39						
EGMT	**Eagleton**	**72.20**	**42**	*e*P	**P**	**12 09 15.3**	**+0.9**
	comp=Z,95nm,1.2s						
EGMT				LR	LR		
	comp=Z,1µm,22.0s						
NB2	**NORSAR Subarra**	**72.22**	**337**	P	**P**	**12 09 14.6**	**+0.3**
	comp=Z,182nm,0.8s,baz=38,slow=6.2						
NB2	**NORSAR Subarra**	**72.22**	**337**	P	**P**	**12 09 14.6**	**+0.3**
	baz=38,slow=6.2						
NB200	**NORSAR Array S**	**72.22**	**337**	*e*P	**P**	**12 09 14.8**	**+0.5**
NB200				*e*PP	**PP**	**12 11 53.7**	**-0.7**
NOA	**NORSAR Array B**	**72.22**	**337**	P	**P**	**12 09 14.8**	**+0.5**
	comp=Z,114nm,0.8s,baz=38,slow=6.0,SNR=364						
NOA				PP	**PP**	**12 11 53.7**	**-0.7**
	comp=Z,11nm,0.9s,baz=36,slow=8.2,SNR=3.4						
NOA				LR	LR	12 43 41.7	
	comp=Z,6µm,21.9s,baz=35,slow=38						
ARQ	**Araqi**	**72.26**	**286**	P	**P**	**12 09 15.8**	**+0.6**
	SNR=74						
ARQ	**Araqi**	**72.26**	**286**	P	**P**	**12 09 15.8**	**+0.6**
	SNR=74						
ANN	**Anapa**	**72.26**	**314***c*	*i*P	**P**	**12 09 14.9**	**+0.1**
ANN				*e*		12 09 31.2	
ANN				*e*		12 11 52.5	
ANN				*e*S	**S**	**12 18 33.4**	**-1.2**
ANN				pmax	pmax		
	comp=Z,369nm,1.4s						
ANN				MLR	MLR		
	comp=E,5µm,21.0s						
ANN				MLR	MLR		
	comp=N,5µm,21.0s						
ANN				MLR	MLR		
	comp=Z,6µm,21.0s						
EATA	**Eleskirt**	**72.27**	**307**	*i* P	**P**	**12 09 17.2**	**+1.9**
NBO02	**NORSAR Array S**	**72.32**	**337**	*e*P	**P**	**12 09 15.2**	**+0.3**
DLMT	**Dillon**	**72.35**	**46**	*e*P	**P**	**12 09 16.5**	**+1.0**
	comp=Z,97nm,1.3s						
NBO00	**NORSAR Array S**	**72.35**	**337**	*e*P	**P**	**12 09 15.8**	**+0.7**
NC602	**NORSAR Array S**	**72.36**	**337**	*e*P	**P**	**12 09 15.6**	**+0.5**
NC602				IAmb	IAmb	12 09 17.1	
	comp=Z,120nm,1.3s						
NC602				IAMs_20	IAMs_20	12 43 26.0	
	comp=Z,7µm,20.5s						
NC602	**NORSAR Array S**	**72.36**	**337**	*e*P	**P**	**12 09 15.4**	**+0.3**
ASUD	**Al Ashush, Dub**	**72.40**	**288**	*i* P	**P**	**12 09 16.9**	**+0.9**
	SNR=79						
HLID	**Hailey**	**72.43**	**48**	P	**P**	**12 09 17.5**	**+1.5**
	baz=308,SNR=29						
HLID	**Hailey**	**72.43**	**48**	*e*P	**P**	**12 09 17.4**	**+1.3**
	comp=Z,34nm,1.1s						
LCCM	**Lewis and Clar**	**72.44**	**45**	*e*P	**P**	**12 09 17.1**	**+1.1**
WAKR	**Walker**	**72.45**	**54**	*e*P	**P**	**12 09 17.7**	**+1.4**
VANB	**Van**	**72.47**	**306**	*e*P	**P**	**12 09 18.1**	**+1.8**
NAO01	**NORSAR Array S**	**72.47**	**337**	*e*P	**P**	**12 09 16.1**	**+0.3**
TVAN	**Van**	**72.49**	**306**	*i* P	**P**	**12 09 17.7**	**+1.1**
AKN	**Aaknes**	**72.50**	**340**⇑	*i*P	**P**	**12 09 16.9**	**+1.0**
AKN				IAmb	IAmb	12 09 17.4	
	comp=Z,78nm,0.8s						
AKN				IAMs_20	IAMs_20	12 44 43.6	
	comp=Z,5µm,21.4s						
HOMI	**Horasan**	**72.52**	**308**	*i* P	**P**	**12 09 17.9**	**+1.1**
MCMT	**McKenzie Canyo**	**72.54**	**46**	*e*P	**P**	**12 09 17.5**	**+0.7**
BMN	**Battle Mountai**	**72.67**	**52**	*e*P	**P**	**12 09 18.9**	**+1.4**
BMN				pmax	pmax		
	comp=Z,104nm,1.4s						
BMN	**Battle Mountai**	**72.67**	**52**	*e*P	**P**	**12 09 18.9**	**+1.4**
	comp=Z,104nm,1.4s						
BOZ	**Bozeman (W)**	**72.70**	**45**	P	**P**	**12 09 18.7**	**+1.1**
	baz=309,SNR=68						
BOZ	**Bozeman (W)**	**72.70**	**45**	*e*P	**P**	**12 09 18.9**	**+1.3**
BOZ				pmax	pmax		
	comp=Z,45nm,1.0s						
BOZ	**Bozeman (W)**	**72.70**	**45**	*e*P	**P**	**12 09 18.9**	**+1.3**
	comp=Z,45nm,0.9s						
BOZ				LR	LR		
	comp=Z,1µm,19.0s						
AKASG	**Malin Array Be**	**72.75**	**322**	P	**P**	**12 09 18.0**	**+0.5**
	comp=Z,140nm,0.7s,baz=44,slow=6.1,SNR=627						
AKASG				LR	LR	12 45 05.4	
	comp=Z,4µm,18.2s,baz=40,slow=39						
AKBB	**Malin Array Si**	**72.75**	**322**	*e*P	**P**	**12 09 18.1**	**+0.5**
AKBB	**Malin Array Si**	**72.75**	**322**	*e*P	**P**	**12 09 18.0**	**+0.5**
	comp=Z,275nm,0.9s						
AKBB				LR	LR		
	comp=Z,6µm,18.0s						
KIEV	**Kiev**	**72.76**	**322***c*	*i*P	**P**	**12 09 17.9**	**+0.3**
KIEV				pmax	pmax		
	comp=Z,256nm,1.0s						
KIEV				MLR	MLR		
	comp=Z,5µm,17.0s						
KIEV	**Kiev**	**72.76**	**322**	*e*P	**P**	**12 09 18.0**	**+0.3**
	comp=Z,254nm,0.9s						
KIEV				LR	LR		
	comp=Z,6µm,18.0s						
AK11	**Malin Array Si**	**72.79**	**322**	*e*P	**P**	**12 09 17.1**	**-0.7**
GEVA	**Gevas**	**72.84**	**306**	*i* P	**P**	**12 09 19.0**	**+0.4**
ERZM	**Erzurum**	**72.94**	**308**	*i* P	**P**	**12 09 20.1**	**+0.9**
EZM	**Erzurum**	**72.94**	**308**	*e*P	**P**	**12 09 21.1**	**+1.8**
CUKT	**Cukurca**	**73.13**	**304**	*e*P	**P**	**12 09 20.4**	**+0.2**
SUW	**Suwalki**	**73.18**	**327**	*e*P	**P**	**12 09 20.5**	**+0.5**
SUW				LMZ	LR	12 43 28.2	
SUW	**Suwalki**	**73.18**	**327**⇑	*e*P	**P**	**12 09 20.6**	**+0.5**
SUW				MLR	MLR		
	comp=Z,8µm,19.3s						
NV01	**Mina Array Sit**	**73.21**	**54**	*e*P	**P**	**12 09 22.1**	**+1.2**
NVAR	**Mina Array Bea**	**73.21**	**54**	P	**P**	**12 09 22.1**	**+1.2**
	comp=Z,21nm,0.8s,baz=289,slow=5.9,SNR=120						
NVAR				LR	LR	12 34 33.2	
	comp=Z,1µm,21.5s,baz=300,slow=30						
TATV	**Tatvan**	**73.22**	**306**	*i* P	**P**	**12 09 22.2**	**+1.4**
OSL	**Oslo**	**73.24**	**337**	*e*P	**P**	**12 09 21.2**	**+0.9**
KTUT	**Trabzon**	**73.25**	**309**	*e*P	**P**	**12 09 20.7**	**0.0**
NV11	**Mina Array Sit**	**73.30**	**54**	*e*P	**P**	**12 09 22.5**	**+1.2**
	comp=Z,184nm,1.9s						
QLMT	**Earthquake Lak**	**73.32**	**45**	*e*P	**P**	**12 09 22.7**	**+1.3**
VRTB	**Varto-Mus**	**73.33**	**307**	*e*P	**P**	**12 09 23.6**	**+2.2**
MLAC	**Mammoth, Mammo**	**73.35**	**55**	P	**P**	**12 09 23.3**	**+1.6**
	baz=307,SNR=10						
BAYT	**Ayd˜–ntepe-Bay**	**73.39**	**309**	*e*P	**P**	**12 09 23.6**	**+1.8**
KOPT	**Kop Dagi**	**73.40**	**308**	*i* P	**P**	**12 09 23.4**	**+1.4**
FOO	**Floro**	**73.50**	**340**⇑	*i*P	**P**	**12 09 22.6**	**+0.9**
FOO				IAmb	IAmb	12 09 23.1	
	comp=Z,96nm,1.0s						
SFJD	**Kangerlussuaq**	**73.51**	**5**	*i* P	**P**	**12 09 22.4**	**+0.6**
	comp=Z,129nm,1.0s						
	comp=Z,4µm,26.0s						
SFJD	**Kangerlussuaq**	**73.51**	**5**	*i* P	**P**	**12 09 22.4**	**+0.6**
SFJD				pmax	pmax		
	comp=Z,130nm,1.0s						
SFJD				MLR	MLR		
	comp=Z,4µm,26.0s						
SFJD	**Kangerlussuaq**	**73.51**	**5**	*e*P	**P**	**12 09 22.4**	**+0.6**
	comp=Z,126nm,1.0s						
SFJD				LR	LR		
	comp=Z,4µm,22.0s						
HYA	**Hoyanger**	**73.56**	**339**⇑	*i*P	**P**	**12 09 23.0**	**+0.9**
HYA				IAmb	IAmb	12 09 24.4	
	comp=Z,125nm,0.8s						
GCMT	**Greycliff**	**73.67**	**44**	*e*P	**P**	**12 09 22.4**	**-0.9**
ELK	**Elko**	**73.68**	**51**	*e*P	**P**	**12 09 25.1**	**+1.5**
ELK				pmax	pmax		
	comp=Z,120nm,1.9s						
ELK	**Elko**	**73.68**	**51**	*e*P	**P**	**12 09 25.1**	**+1.5**
	comp=Z,124nm,1.9s						
ELK				LR	LR		
	comp=Z,1µm,19.0s						
YMR	**Madison River**	**73.68**	**45**	*e*P	**P**	**12 09 25.1**	**+1.6**
	comp=Z,28nm,0.9s						
YMR				LR	LR		
	comp=Z,1µm,19.0s						
SIRN	**S˜–rnak**	**73.74**	**305**	*i* P	**P**	**12 09 24.3**	**+0.5**
GUMT	**Gumushane**	**73.74**	**309**	*e*P	**P**	**12 09 25.5**	**+1.7**
YNR	**Norris Junctio**	**73.81**	**45**	*e*P	**P**	**12 09 25.6**	**+1.3**
	comp=Z,47nm,1.2s						
KONO	**Kongsberg**	**73.81**	**337**	*e*P	**P**	**12 09 24.2**	**+0.6**
KONO				IAmb	IAmb	12 09 25.0	
	comp=Z,92nm,0.7s						
KONO				*e*S	**S**	**12 18 52.9**	**+1.1**
KONO	**Kongsberg**	**73.81**	**337**	*e*P	**P**	**12 09 24.4**	**+0.7**
KONO				pmax	pmax		
	comp=Z,85nm,0.9s						
KONO	**Kongsberg**	**73.81**	**337**	*e*P	**P**	**12 09 24.4**	**+0.7**
	comp=Z,85nm,0.9s						
KONO				LR	LR		
	comp=Z,7µm,22.0s						
RCTC	**Rector, Farmer**	**73.89**	**56**	P	**P**	**12 09 25.6**	**+1.1**
	baz=307						
YFT	**Old Faithful**	**73.89**	**45**	*e*P	**P**	**12 09 26.8**	**+2.0**
	comp=Z,51nm,1.0s						
ESPY	**Espiye-Giresun**	**73.91**	**310**	*e*P	**P**	**12 09 25.1**	**+0.5**
BNGB	**Bingˆ¶l**	**73.92**	**307**	*e*P	**P**	**12 09 26.6**	**+1.8**
BGOL	**Bingol**	**73.92**	**307**	*i* P	**P**	**12 09 26.5**	**+1.7**
SMMC	**Simmler**	**74.00**	**57**	P	**P**	**12 09 26.6**	**+1.4**
	baz=307						
SIM	**Simferopol'**	**74.00**	**315***c*	*e*P	**P**	**12 09 25.8**	**+0.7**
SIM				*e*S	**S**	**12 18 55.5**	**+1.1**
SIM				*e*PS	PnS	12 19 53.0	+22
SIM				pmax	pmax		
	comp=Z,178nm,0.9s						
SUE	**Sulen**	**74.03**	**340**	*e*P	**P**	**12 09 25.8**	**+0.9**
SUE				IAMs_20	IAMs_20	12 45 29.5	
	comp=Z,4µm,19.1s						
LKWY	**Lake**	**74.06**	**45**	*e*P	**P**	**12 09 28.6**	**+2.8**
LKWY				pmax	pmax		
	comp=Z,56nm,1.1s						
LKWY	**Lake**	**74.06**	**45**	*e*P	**P**	**12 09 28.6**	**+2.8**
	comp=Z,56nm,1.1s						
H17A	**Grant Village**	**74.07**	**45**	P	**P**	**12 09 28.3**	**+2.5**
	baz=310,SNR=47						
H17A	**Grant Village**	**74.07**	**45**	*e*P	**P**	**12 09 28.8**	**+3.0**
	comp=Z,214nm,1.7s						
KELT	**Kelkit**	**74.07**	**309**	*i* P	**P**	**12 09 27.5**	**+1.7**
TIN	**Tinemaha, Big**	**74.08**	**55**	P	**P**	**12 09 27.3**	**+1.5**
	baz=308						
SVAN	**Silvan-Diyarba**	**74.11**	**306**	*e*P	**P**	**12 09 27.0**	**+1.1**
ERZN	**Erzincan**	**74.14**	**308**	*e*P	**P**	**12 09 27.4**	**+1.3**
GRSN	**GIRESUNGRSN**	**74.18**	**310**	*i* P	**P**	**12 09 25.5**	**-0.8**
FLWY	**Flagg Ranch**	**74.20**	**46**	*e*P	**P**	**12 09 28.5**	**+1.9**
	comp=Z,114nm,1.4s						
BTMN	**Batman**	**74.22**	**306**	*i* P	**P**	**12 09 27.5**	**+0.9**
VES	**Vestal, Richgr**	**74.27**	**57**	P	**P**	**12 09 27.1**	**+0.3**
	baz=307,SNR=13						
RLMT	**Red Lodge**	**74.32**	**44**	P	**P**	**12 09 28.2**	**+1.0**
	baz=310,SNR=26						
RLMT	**Red Lodge**	**74.32**	**44**	*e*P	**P**	**12 09 28.5**	**+1.3**
	comp=Z,118nm,1.5s						
PKM	**Mcpherson Peak**	**74.37**	**58**	P	**P**	**12 09 28.6**	**+0.9**
	baz=307						
MOOW	**Moose Ponds**	**74.39**	**46**	*e*P	**P**	**12 09 29.3**	**+1.7**
	comp=Z,84nm,1.5s						
ASK	**Askoy**	**74.39**	**339**⇑	*i*P	**P**	**12 09 28.1**	**+1.1**
ASK				IAmb	IAmb	12 09 28.6	
	comp=Z,111nm,0.9s						
BER	**Bergen**	**74.44**	**339**	*e*P	**P**	**12 09 28.4**	**+1.1**
BER				*e*S	**S**	**12 18 59.3**	**+0.5**
ODD1	**Odda**	**74.47**	**338**⇑	*i*P	**P**	**12 09 28.6**	**+1.0**
ODD1				IAmb	IAmb	12 09 29.6	
	comp=Z,112nm,0.8s						
HVU	**Hansel Valley**	**74.48**	**49**	*e*P	**P**	**12 09 29.7**	**+1.5**
HVU				pmax	pmax		
	comp=Z,67nm,1.4s						
HVU	**Hansel Valley**	**74.48**	**49**	*e*P	**P**	**12 09 29.7**	**+1.5**
	comp=Z,67nm,1.5s						
TNCL	**Tunceli-Merkez**	**74.54**	**308**	*i* P	**P**	**12 09 29.4**	**+1.0**
LOHW	**Long Hollow**	**74.56**	**46**	*e*P	**P**	**12 09 30.2**	**+1.6**
	comp=Z,76nm,1.5s						
SNOW	**Snow King Moun**	**74.57**	**46**	*e*P	**P**	**12 09 30.3**	**+1.6**
	comp=Z,40nm,1.0s						
REDW	**Red Top Meadow**	**74.58**	**46**	*e*P	**P**	**12 09 30.2**	**+1.4**
	comp=Z,80nm,1.4s						
CAN	**Canberra**	**74.61**	**174**	PFAKE		12 09 40.0	+12
CAN				LR	LR		
	comp=Z,2µm,22.0s						
GRAC	**Grapevine Rang**	**74.67**	**55**	P	**P**	**12 09 30.0**	**+0.8**
	baz=308,SNR=28						
SBC	**Santa Barbara**	**74.71**	**58**	P	**P**	**12 09 29.7**	**+0.3**
	baz=307						
DGMT	**Dagmar**	**74.71**	**39**	P	**P**	**12 09 29.8**	**+0.6**
	baz=313,SNR=33						
DGMT	**Dagmar**	**74.71**	**39**	*e*P	**P**	**12 09 30.0**	**+0.8**
	comp=Z,138nm,1.1s						
DGMT				LR	LR		
	comp=Z,2µm,22.0s						
MTUT	**Morton Thiokol**	**74.72**	**48**	*e*P	**P**	**12 09 31.2**	**+1.7**
PTK	**Pertek**	**74.77**	**308**	*e*P	**P**	**12 09 31.6**	**+1.8**
ISA	**Isabella, Lake**	**74.77**	**56**	P	**P**	**12 09 30.9**	**+1.1**
	baz=308,SNR=5.4						
ISA	**Isabella, Lake**	**74.77**	**56**	*e*P	**P**	**12 09 30.3**	**+0.5**
ISA				pmax	pmax		
	comp=Z,51nm,1.5s						
ISA	**Isabella, Lake**	**74.77**	**56**	*e*P	**P**	**12 09 29.9**	**+0.1**
	comp=Z,51nm,1.5s						
ABL	**Mount Abel**	**74.78**	**57**	*e*P	**P**	**12 09 26.7**	**-3.4**
AHID	**Auburn Hatcher**	**74.82**	**47**	*e*P	**P**	**12 09 31.2**	**+1.1**
	comp=Z,51nm,1.4s						
REFA	**Refahiye_ERZ˜**	**74.83**	**309**	*i* P	**P**	**12 09 29.2**	**-1.1**
BEI	**Bear River Ran**	**74.84**	**48**	*e*P	**P**	**12 09 31.8**	**+1.5**
ARVC	**Arvin**	**74.87**	**57**	P	**P**	**12 09 31.1**	**+0.8**
	baz=308,SNR=5.3						
BGU	**Big Grassy Mou**	**74.88**	**49**	*e*P	**P**	**12 09 31.9**	**+1.5**
	comp=Z,115nm,1.7s						
MARD	**Mardin**	**74.88**	**306**	*i* P	**P**	**12 09 29.5**	**-1.0**
DYBB	**Diyarbakir**	**74.89**	**307**	*e*P	**P**	**12 09 31.8**	**+1.4**
LAO	**LASA Array**	**74.89**	**41**	P	**P**	**12 09 31.0**	**+0.7**
	baz=312,SNR=25						
LAO	**LASA Array**	**74.89**	**41**	*e*P	**P**	**12 09 31.6**	**+1.3**
	comp=Z,188nm,1.4s						
LAO				LR	LR		
	comp=Z,2µm,21.0s						
A25A	**Svangstu Ranch**	**74.92**	**38**	P	**P**	**12 09 31.0**	**+0.6**
	baz=313,SNR=10						
ILIC	**ilic-Erzincan**	**74.92**	**309**	*e*P	**P**	**12 09 32.5**	**+1.8**
BLS5	**Blasjo**	**74.92**	**338**	*e*P	**P**	**12 09 31.4**	**+1.2**
BLS5				IAmb	IAmb	12 09 31.8	
	comp=Z,71nm,0.9s						
R11A	**Troy Canyon, C**	**74.95**	**53**	P	**P**	**12 09 31.6**	**+0.6**
	baz=308,SNR=47						
R11A	**Troy Canyon, C**	**74.95**	**53**	*e*P	**P**	**12 09 32.1**	**+1.2**
	comp=Z,253nm,2.0s						
DAC	**Darwin (Calif)**	**74.96**	**55**	*e*P	**P**	**12 09 31.9**	**+0.8**
DAC				pmax	pmax		
	comp=Z,41nm,1.2s						
DAC	**Darwin (Calif)**	**74.96**	**55**	*e*P	**P**	**12 09 31.9**	**+0.8**
	comp=Z,41nm,1.3s						
SPUT	**South Promonto**	**74.97**	**49**	*e*P	**P**	**12 09 32.4**	**+1.4**
	comp=Z,124nm,1.7s						
MAZI	**Mazidag**	**75.00**	**306**	*e*P	**P**	**12 09 31.8**	**+0.7**
SCZ2	**Santa Cruz Isl**	**75.03**	**58**	P	**P**	**12 09 31.7**	**+0.4**
	baz=308						
RSDY	**Resadiye-TOKAT**	**75.07**	**310**	*e*P	**P**	**12 09 32.7**	**+1.3**
KEMA	**Kemaliye**	**75.08**	**309**	*i* P	**P**	**12 09 32.8**	**+1.2**
CUZAR	**Zara_SIVAS**	**75.12**	**310**	*i* P	**P**	**12 09 31.4**	**-0.5**
SAMS	**Samsun-Alacam**	**75.13**	**311**	*i* P	**P**	**12 09 32.8**	**+1.1**
MPMC	**Manual Prospec**	**75.16**	**56**	P	**P**	**12 09 33.1**	**+0.9**
	baz=308,SNR=31						
ERBA	**Erbaa**	**75.23**	**311**	*i* P	**P**	**12 09 30.9**	**-1.4**
OSI	**Osito Audit: C**	**75.25**	**57**	P	**P**	**12 09 33.4**	**+0.9**
	baz=308						
ELZG	**Elazig**	**75.26**	**308**	*i* P	**P**	**12 09 34.0**	**+1.3**
HOMB	**Homborsund**	**75.27**	**337**	*e*P	**P**	**12 09 32.7**	**+0.6**
HOMB				IAmb	IAmb	12 09 34.4	
	comp=Z,294nm,1.6s						
HOMB				IAMs_20	IAMs_20	12 44 05.2	
	comp=Z,6µm,19.0s						
SNOP	**Sinop**	**75.27**	**312**	*e*P	**P**	**12 09 32.5**	**0.0**
HWUT	**Hardware Ranch**	**75.30**	**48**	*e*P	**P**	**12 09 34.3**	**+1.4**
	comp=Z,166nm,1.5s						
HWUT				LR	LR		
	comp=Z,1µm,22.0s						
FURC	**Furnace Creek,**	**75.31**	**55**	P	**P**	**12 09 34.2**	**+1.5**
	baz=308,SNR=37						
BLG	**Laguna Peak, P**	**75.33**	**58**	P	**P**	**12 09 33.6**	**+0.5**
	baz=308						
B25A	**Knox Farm, Ray**	**75.35**	**39**	P	**P**	**12 09 33.9**	**+1.0**
	baz=313,SNR=10						
KVT	**Kavak**	**75.39**	**311**	*e*P	**P**	**12 09 34.8**	**+1.6**
BORG	**Borgarnes**	**75.39**	**353**	*i* P	**P**	**12 09 35.7**	**+3.0**
BORG	**Borgarnes**	**75.39**	**353**	*e*P	**P**	**12 09 35.3**	**+2.6**
	comp=Z,157nm,0.9s						
LRMC	**Laurel Mtn Rad**	**75.39**	**56**	P	**P**	**12 09 33.9**	**+0.4**
	baz=308,SNR=14						
TPNV	**Topopah Spring**	**75.40**	**54**	P	**P**	**12 09 34.7**	**+1.1**
	baz=308,SNR=60						
TPNV	**Topopah Spring**	**75.40**	**54**	*e*P	**P**	**12 09 34.6**	**+1.1**
TPNV				pmax	pmax		
	comp=Z,94nm,1.2s						
TPNV	**Topopah Spring**	**75.40**	**54**	*e*P	**P**	**12 09 34.6**	**+1.1**
	comp=Z,94nm,1.2s						
TPNV				LR	LR		
	comp=Z,2µm,19.0s						
KIS	**Kishinev**	**75.43**	**319**	*i* P	**P**	**12 09 33.0**	**-0.3**
	comp=Z,600nm,2.0s						
KIS	**Kishinev**	**75.43**	**319**	*e*PcP	**PcP**	**12 09 41.0**	**-5.3**
KIS	**Kishinev**	**75.43**	**319**	*i* PP	PP	12 12 40.0	+18
KIS	**Kishinev**	**75.43**	**319**	*e*PPP	PPP	12 14 16.0	
KIS				*e*S	**S**	**12 19 08.0**	**-2.3**
KIS				*e*ScS	SKSac	12 19 22.0	-18
KIS	**Kishinev**	**75.43**	**319**	*e*PS		12 19 33.0	
KIS				*e*SS	SS	12 23 28.0	-32
KIS				*e*SSS	SSS	12 27 28.0	
KIS				*e*L	L	12 34 00.0	
KIS				LRM	MLR	12 45 24.0	
	comp=Z,7µm,16.0s						
KIS	**Kishinev**	**75.43**	**319**α	*i*P	**P**	**12 09 33.0**	**-0.3**
KIS				*i*		12 09 41.0	
KIS				*e*PPP	PPP	12 14 16.0	
KIS				*e*S	**S**	**12 19 08.0**	**-2.3**
KIS				*e*PS	PnS	12 19 33.0	-17
KIS				pmax	pmax		
	comp=Z,630nm,2.0s						
KIS				pmax	pmax		
	comp=Z,2µm,7.0s						
KIS				pmax	pmax		
	comp=Z,2µm,7.0s						
KIS				MLR	MLR		
	comp=Z,10µm,17.0s						
KIS				MLR	MLR		
	comp=N,7µm,16.0s						
KIS				MLR	MLR		
	comp=E,3µm,16.0s						
KIS				MLR	MLR		
	comp=Z,10µm,17.0s						
A26A	**Wade Farm, Ken**	**75.46**	**38**	P	**P**	**12 09 34.3**	**+0.9**
	baz=314,SNR=28						
DUG	**Dugway, Tooele**	**75.46**	**50**	P	**P**	**12 09 34.9**	**+1.0**
	baz=310,SNR=40						
DUG	**Dugway, Tooele**	**75.46**	**50**	*e*P	**P**	**12 09 35.2**	**+1.4**
DUG				pmax	pmax		
	comp=Z,250nm,1.8s						
DUG	**Dugway, Tooele**	**75.46**	**50**	*e*P	**P**	**12 09 35.2**	**+1.4**
	comp=Z,246nm,1.8s						
DIKM	**Dikmen**	**75.48**	**312**	*e*P	**P**	**12 09 35.4**	**+1.7**
NWAO	**Narrogin (SRO)**	**75.53**	**201**	*e*P	**P**	**12 09 32.9**	**-0.9**
NWAO				pmax	pmax		
	comp=Z,140nm,1.2s						
NWAO	**Narrogin (SRO)**	**75.53**	**201**	*e*P	**P**	**12 09 32.9**	**-0.9**
	comp=Z,138nm,1.2s						
NWAO				LR	LR		
	comp=Z,1µm,22.0s						
NWAO	**Narrogin (SRO)**	**75.53**	**201**	P	**P**	**12 09 34.0**	**+0.2**
	SNR=6.1						
NWAO	**Narrogin (SRO)**	**75.53**	**201**	P	**P**	**12 09 34.0**	**+0.2**
	SNR=6.1						
STAV	**Stavanger**	**75.55**	**338**	*e*P	**P**	**12 09 33.8**	**+0.1**
STAV				IAmb	IAmb	12 09 35.1	
	comp=Z,136nm,1.1s						
EDW2	**Edwards Air Fo**	**75.56**	**57**	P	**P**	**12 09 35.3**	**+1.0**
	baz=308,SNR=14						
SVSK	**Karacayir**	**75.57**	**310**	*e*P	**P**	**12 09 36.1**	**+1.9**
TOKT	**Tokat**	**75.58**	**310**	*e*P	**P**	**12 09 36.4**	**+2.0**
HAVZ	**Havza**	**75.58**	**311**	*i* P	**P**	**12 09 34.1**	**-0.3**
BSD	**Bornholm Skovb**	**75.61**	**332**⇑	*i*P	**P**	**12 09 34.7**	**+0.6**
	comp=Z,324nm,1.1s						
BSD				*i*		12 09 51.2	
	comp=Z,8µm,19.0s						
BSD	**Bornholm Skovb**	**75.61**	**332**⇑	*i*P	**P**	**12 09 34.7**	**+0.6**
BSD				*i*		12 09 51.2	
BSD				pmax	pmax		
	comp=Z,320nm,1.1s						
BSD				MLR	MLR		
	comp=Z,8µm,19.0s						
CUKAN	**kangal_SIVAS**	**75.67**	**309**	*i* P	**P**	**12 09 35.8**	**+0.8**
BW06	**Boulder Array**	**75.69**	**46**	P	**P**	**12 09 35.4**	**+0.3**
	baz=311,SNR=25						

BW06 Boulder Array 75.69 46 *e*P **P 12 09 36.0 +0.8**
BW06 LR LR
comp=Z,2µm,21.0s
PD31 Pinedale Array 75.69 46 *e*P **P 12 09 35.9 +0.7**
PDAR Pinedale Array 75.69 46 P **P 12 09 35.9 +0.7**
comp=Z,12nm,0.8s,baz=270,slow=2.6,SNR=94
C25A Freed Ranch, W 75.69 39 P **P 12 09 35.6 +0.7**
baz=314
TCUT Toone Canyon 75.70 48 *e*P **P 12 09 36.7 +1.5**
comp=Z,267nm,1.5s
B26A Jensen Ranch, 75.73 38 P **P 12 09 35.9 +0.8**
baz=314,SNR=27
DECC Green Verdugo 75.73 57 P **P 12 09 36.2 +0.9**
baz=308
BEL Belsk 75.75 327 *i* P **P 12 09 36.6 +1.6**
BEL *e*S **S 12 19 17.2 +3.5**
BEL LMZ LR 12 44 36.6
BEL Belsk 75.75 327⇑ *i*P **P 12 09 36.7 +1.7**
BEL *e*S **S 12 19 17.2 +3.5**
BEL MLR MLR
comp=Z,6µm,22.6s
CTU Camp Tracy 75.77 49 *e*P **P 12 09 36.7 +1.1**
comp=Z,96nm,1.5s
CTU LR LR
comp=Z,1µm,22.0s
LVV L'vov 75.78 324 *d i*P **P 12 09 35.8 +0.6**
LVV *e*S **S 12 19 14.0 0.0**
LVV pmax pmax
comp=Z,800nm,1.3s
A27A Ledoux Ranch, 75.80 37 P **P 12 09 36.3 +0.9**
baz=314,SNR=19
BOYT Boyabat 75.83 312 *i* P **P 12 09 37.2 +1.4**
BYBT Boyabat 75.88 312 *e*P **P 12 09 36.9 +1.0**
PSUT Pine Spring 75.89 52 *e*P **P 12 09 37.6 +1.2**
comp=Z,240nm,2.0s
MWC Mount Wilson 75.92 57 *e*P **P 12 09 37.7 +1.1**
MWC pmax pmax
comp=Z,100nm,1.5s
MWC Mount Wilson 75.92 57 *e*P **P 12 09 37.7 +1.1**
comp=Z,100nm,1.5s
BZK Bozkurt 76.00 313 *e*P **P 12 09 36.5 -0.1**
JLU Jordanelle 76.00 49 *e*P **P 12 09 38.4 +1.3**
comp=Z,102nm,1.4s
JLU LR LR
comp=Z,1µm,21.0s
SHOC Shoshone, Teco 76.03 55 P **P 12 09 37.6 +0.6**
baz=309
AKCD Akcadag 76.04 308 *i* P **P 12 09 38.3 +1.2**
D25A Fairfield 76.04 40 P **P 12 09 38.0 +1.1**
baz=314,SNR=14
NLU North Lily Min 76.05 50 *e*P **P 12 09 38.6 +1.3**
comp=Z,37nm,1.1s
COP Copenhagen 76.06 333⇑ *i*P **P 12 09 37.8 +1.2**
comp=Z,5µm,19.0s
COP Copenhagen 76.06 333⇑ *i*P **P 12 09 37.8 +1.2**
COP MLR MLR
comp=Z,5µm,19.0s
GSC Goldstone, Bar 76.07 56 P **P 12 09 37.6 +0.3**
baz=308,SNR=12
GSC Goldstone, Bar 76.07 56 *e*P **P 12 09 38.2 +0.9**
GSC pmax pmax
comp=Z,56nm,1.4s
GSC Goldstone, Bar 76.07 56 *e*P **P 12 09 38.2 +0.9**
comp=Z,56nm,1.4s
LEOM Leova 76.08 319⇑ *i*P **P 12 09 37.8 +0.9**
SHAO Shalim 76.08 282 P **P 12 09 38.7 +1.2**
SNR=7.2
SHAO Shalim 76.08 282 P **P 12 09 38.7 +1.2**
SNR=7.2
CUALT Altinyayla-SIV 76.12 310 *i* P **P 12 09 39.6 +2.1**
DARE Darende-Malaty 76.13 309 *e*P **P 12 09 39.2 +1.6**
CUGUR Gurin_S`VAS 76.16 309 *i* P **P 12 09 39.4 +1.6**
B27A Peters Farms, 76.17 38 P **P 12 09 38.5 +1.0**
baz=315
BFSC Mount Baldy Ra 76.17 57 P **P 12 09 38.1 +0.1**
baz=308,SNR=10
C26A Wahner Farm, P 76.18 39 P **P 12 09 38.3 +0.7**
baz=314,SNR=20
CIS Catalina Islan 76.20 58 P **P 12 09 38.5 +0.5**
baz=308
RRX Edison Barstow 76.21 56 P **P 12 09 39.0 +1.0**
baz=308
MPU Maple Canyon 76.28 49 *e*P **P 12 09 39.9 +1.4**
comp=Z,116nm,1.4s
A28A Rude Farm, Bot 76.28 37 P **P 12 09 39.0 +0.8**
baz=315,SNR=6.0
WAL1 Walls 76.32 342 *e*P **P 12 09 38.3 +0.2**
ATAB Bozova 76.33 307 *i* P **P 12 09 40.1 +1.4**
CUSAR Sarkisla-SIVAS 76.33 310 *i* P **P 12 09 39.2 +0.5**
FLU Fool Peak 76.37 50 *e*P **P 12 09 40.6 +1.5**
E25A Miller Ranch, 76.45 40 P **P 12 09 39.9 +0.7**
baz=314,SNR=46
SURC SANLIURFA_SURC 76.50 307 *i* P **P 12 09 41.0 +1.4**
KWP Kalwaria Pacla 76.51 324 *i* P **P 12 09 41.0 +1.6**
KWP *e*S **S 12 19 23.5 +1.4**
KWP LMZ LR 12 44 38.2
KWP Kalwaria Pacla 76.51 324⇑ *i*P **P 12 09 41.0 +1.6**
KWP *e*S **S 12 19 23.6 +1.4**
KWP MLR MLR
comp=Z,2µm,21.2s
MUD Monsted U'grnd 76.53 335 *i* P **P 12 09 40.5 +1.2**
comp=Z,183nm,1.1s
comp=Z,5µm,18.0s
MUD Monsted U'grnd 76.53 335 *i* P **P 12 09 40.5 +1.2**
MUD pmax pmax
comp=Z,180nm,1.1s
MUD MLR MLR
comp=Z,6µm,18.0s
COAL Corum-Alaca 76.54 311 *i* P **P 12 09 40.1 +0.2**
C27A Sayler Ranch, 76.54 38 P **P 12 09 40.5 +0.9**
baz=315,SNR=11
TUQ Turquoise Moun 76.55 55 P **P 12 09 40.8 +0.7**
baz=309,SNR=24
D26A Manning 76.56 39 P **P 12 09 40.5 +0.7**
baz=314,SNR=15
B28A Dugan Ranch, T 76.56 37 P **P 12 09 40.3 +0.5**
baz=315,SNR=26
TOS Tosya 76.58 312 *e*P **P 12 09 41.8 +1.6**
RGN Rugen 76.64 332 *e*P **P 12 09 41.2 +1.2**
comp=Z,292nm,1.1s
RGN LR LR
comp=Z,9µm,20.0s
BBRC Big Bear Solar 76.64 57 P **P 12 09 41.1 +0.4**
baz=309
HEC Hector,Ludlow 76.66 56 P **P 12 09 41.3 +0.7**
baz=309,SNR=6.2
MNKR ALMNKUR 76.68 306 *e*P **P 12 09 41.4 +0.7**
ILGA Ilgaz 76.75 312 *i* P **P 12 09 42.6 +1.4**
A29A Manning Farm, 76.75 36 P **P 12 09 41.4 +0.6**
baz=316,SNR=86
BUR08 Bucovina Ar. S 76.77 322 *e*P **P 12 09 42.2 +1.2**
BURAR Bucovina Array 76.78 322⇑ *i*P **P 12 09 42.3 +1.2**
F25A Bowman 76.82 41 P **P 12 09 42.3 +0.9**
baz=314,SNR=13
GZT Gaziantep 76.85 308 *i* P **P 12 09 42.6 +0.9**
MURC Murrieta 76.87 57 P **P 12 09 42.6 +0.8**
baz=309
KSRV Kasrt alli 76.90 306 *e*P **P 12 09 43.4 +1.5**
MSU Marysvale 76.92 51 *e*P **P 12 09 44.0 +1.8**
MSU Marysvale 76.92 51 *e*P **P 12 09 44.0 +1.8**
BNN Bunyan 76.93 310 *e*P **P 12 09 43.5 +1.3**
E26A Carlson Angus 76.94 40 P **P 12 09 42.5 +0.6**
baz=314,SNR=26
D27A Center 76.95 39 P **P 12 09 42.7 +0.7**
baz=315,SNR=9.3
TMUT Trail Mountain 76.99 50 *e*P **P 12 09 44.0 +1.3**
comp=Z,96nm,1.6s
B29A Wagenman Farm, 77.03 37 P **P 12 09 43.0 +0.6**
baz=316,SNR=16
C28A Hausauer Farms 77.07 38 P **P 12 09 43.4 +0.7**
baz=315
PETR Petresti 77.10 319⇑ *i*P **P 12 09 45.3 +2.5**
GMRC Granite Mounta 77.12 56 P **P 12 09 44.3 +1.0**
baz=309,SNR=16
P17A Butcher Ranch, 77.15 49 *e*P **P 12 09 44.9 +1.5**
comp=Z,211nm,1.5s
P17A LR LR
comp=Z,1µm,20.0s
KMRS Kahramanmaras 77.16 308 *e*P **P 12 09 44.5 +1.1**
ODBI Odobesti 77.17 319⇑ *i*P **P 12 09 45.6 +2.5**
A30A Hoffart Farm, 77.17 36 P **P 12 09 43.8 +0.6**
baz=316,SNR=66
GAZ Gaziantep 77.19 308 *e*P **P 12 09 45.5 +2.0**
CRY Cary Ranch 77.19 57 *e*P **P 12 09 44.7 +1.0**
BTIN Bart¯–n 77.20 314 *i* P **P 12 09 43.6 +0.2**
SAFT Safranbolu 77.21 313 *e*P **P 12 09 44.1 +0.5**

KOLS Kolonicke sedl 77.21 324 *i* P **P 12 09 44.5 +1.1**
KOLS pmax pmax
comp=Z,104nm,1.1s
KOLS Kolonicke sedl 77.21 324 *i* P **P 12 09 44.5 +1.1**
KOLS *e*PP **PP 12 12 38.6 +1.6**
KOLS *e*S **S 12 19 26.3 -3.5**
KOLS *e*L L 12 46 45.9
LCMT Little Creek M 77.23 53 *e*P **P 12 09 45.4 +1.5**
comp=Z,129nm,1.5s
LCMT LR LR
comp=Z,1µm,21.0s
VRI Vrincioaia 77.26 320⇑ *i*P **P 12 09 45.0 +1.3**
F26A Lodgepole 77.27 40 P **P 12 09 44.3 +0.5**
baz=314,SNR=14
AYKD Aykdinkavak 77.28 308 *i* P **P 12 09 44.3 +0.3**
ELDT Eldivan 77.28 312 *i* P **P 12 09 45.3 +1.1**
ULM Lac du Bonnet 77.28 34 P **P 12 09 43.9 +0.1**
comp=Z,54nm,0.9s,baz=318,slow=6.9,SNR=85
ULM LR LR 12 47 52.4
comp=Z,684nm,18.1s,baz=323,slow=39
ULM Lac du Bonnet 77.28 34 *e*P **P 12 09 43.9 +0.1**
comp=Z,95nm,1.0s
LDFC Landfair 77.29 55 *e*P **P 12 09 44.9 +0.7**
comp=Z,216nm,1.6s
CDAG Cicekdag 77.30 311 *i* P **P 12 09 44.9 +0.7**
PLOR Plostina 77.31 320⇓ *i*P **P 12 09 44.4 +0.4**
STHS Stebnicka Huta 77.33 325 *i* P **P 12 09 45.6 +1.6**
STHS pmax pmax
comp=Z,104nm,0.9s
STHS Stebnicka Huta 77.33 325 *i* P **P 12 09 45.6 +1.6**
P18A Preston Nutter 77.34 49 *e*P **P 12 09 46.0 +1.4**
comp=Z,68nm,1.1s
PFO Pinyon Flats O 77.34 57 LR LR 12 37 53.0
comp=Z,2µm,20.5s,baz=289,slow=31
PFO Pinyon Flats O 77.34 57 P **P 12 09 45.1 +0.5**
baz=309,SNR=10
PFO Pinyon Flats O 77.34 57 *e*P **P 12 09 45.2 +0.6**
PFO pmax pmax
comp=Z,121nm,1.7s
PFO MLR MLR
comp=Z,2µm,20.0s
PFO Pinyon Flats O 77.34 57 *e*P **P 12 09 45.2 +0.6**
comp=Z,120nm,1.7s
PFO LR LR
comp=Z,2µm,20.0s
G25A Newell 77.34 41 P **P 12 09 44.7 +0.4**
baz=314,SNR=14
MDND Maddock 77.35 37 P **P 12 09 45.1 +0.9**
baz=316,SNR=18
MDND Maddock 77.35 37 *e*P **P 12 09 44.8 +0.6**
comp=Z,273nm,1.1s
MDND LR LR
comp=Z,2µm,21.0s
D28A Regan 77.36 38 P **P 12 09 45.0 +0.7**
baz=315,SNR=6.2
OJC Ojcow 77.37 326 *i* P **P 12 09 45.5 +1.3**
OJC *e*S **S 12 19 30.3 -1.1**
OJC *e*SKS **SKSac 12 19 51.4 -2.5**
OJC LMZ LR 12 45 47.5
OJC Ojcow 77.37 326⇑ *i*P **P 12 09 45.5 +1.3**
OJC *e*S **S 12 19 30.4 -1.0**
OJC *e* 12 19 51.5
OJC MLR MLR
comp=Z,5µm,22.8s
OJC Ojcow 77.37 326 *e*P **P 12 09 45.5 +1.3**
comp=Z,472nm,1.1s
TIRR Tirgusor 77.37 318⇑ *i*P **P 12 09 45.1 +0.8**
TIRR Tirgusor 77.37 318 *e*P **P 12 09 45.2 +0.9**
TIRR pmax pmax
comp=Z,118nm,1.0s
TIRR MLR MLR
comp=Z,14µm,19.0s
TIRR Tirgusor 77.37 318 *e*P **P 12 09 45.2 +0.9**
comp=Z,118nm,1.0s
TIRR LR LR
comp=Z,14µm,19.0s
109C Camp Elliot, M 77.38 58 P **P 12 09 45.1 +0.6**
baz=309
BELC Belle Mtn. Jos 77.40 56 P **P 12 09 45.1 +0.2**
baz=309,SNR=9.0
E27A Carson 77.41 39 P **P 12 09 45.4 +0.8**
baz=315,SNR=22
UZH Uzhgorod 77.42 324⇓ *i*P **P 12 09 45.0 +0.5**
UZH *e* 12 12 36.2
UZH *e*S **S 12 19 28.8 -3.2**
UZH *e*SS **SS 12 24 27.2 -2.9**
UZH MLR MLR
comp=N,2µm,15.0s
UZH MLR MLR
comp=E,4µm,15.0s
UZH MLR MLR
comp=Z,2µm,15.0s
K22A Casper 77.44 45 P **P 12 09 45.6 +0.6**
baz=312,SNR=25
K22A Casper 77.44 45 *e*P **P 12 09 45.6 +0.6**
comp=Z,116nm,1.3s
RBK Rabkut 77.47 282 P **P 12 09 45.0 -0.3**
SNR=30
RBK Rabkut 77.47 282 P **P 12 09 45.0 -0.3**
SNR=30
KNB Kanab 77.49 52 *e*P **P 12 09 47.1 +1.7**
KNB pmax pmax
comp=Z,180nm,1.5s
KNB Kanab 77.49 52 *e*P **P 12 09 47.0 +1.7**
comp=Z,185nm,1.5s
KNB LR LR
comp=Z,1µm,21.0s
B30A Myrvik Farm, E 77.51 36 P **P 12 09 45.8 +0.7**
baz=316,SNR=37
KAMA Osmaniye 77.51 308 *i* P **P 12 09 46.8 +1.4**
SRU San Rafael Swe 77.51 49 *e*P **P 12 09 46.6 +1.1**
SRU pmax pmax
comp=Z,220nm,1.6s
SRU San Rafael Swe 77.51 49 *e*P **P 12 09 46.6 +1.1**
comp=Z,215nm,1.7s
SRU LR LR
comp=Z,2µm,22.0s
PKCU Pink Cliffs 77.52 52 *e*P **P 12 09 47.5 +1.8**
comp=Z,195nm,1.8s
KUZU Kuzuini 77.52 307 *i* P **P 12 09 44.9 -0.5**
BMR Baia Mare 77.56 323⇑ *i*P **P 12 09 46.9 +1.6**
AVNS Nevsehir-Avano 77.56 310 *i* P **P 12 09 47.1 +1.5**
ARCR ARCALIA 77.57 322⇑ *i*P **P 12 09 47.7 +2.3**
F27A Lemmon 77.58 40 P **P 12 09 46.1 +0.6**
baz=315,SNR=15
CRVS Cervenica-Dubn 77.60 324 *e*P **P 12 09 46.9 +1.3**
CRVS *e* 12 12 41.2
CRVS *e*S **S 12 19 33.3 -0.8**
CRVS Cervenica-Dubn 77.60 324 *e*P **P 12 09 46.9 +1.3**
CRVS *e*PP **PP 12 12 41.2 +1.0**
CRVS *e*S **S 12 19 33.3 -0.8**
H25A Fruitdale 77.65 42 P **P 12 09 46.4 +0.4**
baz=314,SNR=14
BR101 Keskin Array S 77.67 311 *e*P **P 12 09 47.1 +0.8**
BR101 *e*PP **PP 12 12 42.7 +1.5**
BR131 Keskin Array S 77.67 311 *e*P **P 12 09 47.1 +0.8**
BRTR Keskin Array B 77.67 311 P **P 12 09 47.1 +0.8**
comp=Z,28nm,0.6s,baz=87,slow=4.3,SNR=214
BRTR PP **PP 12 12 42.7 +1.5**
comp=Z,26nm,1.1s,baz=71,slow=5.7,SNR=6.3
BRTR LR LR 12 48 36.1
comp=Z,3µm,19.4s,baz=54,slow=39
TRPA Tarpa 77.67 323⇑ *e*P **P 12 09 47.4 +1.5**
A31A Linda, St. Vin 77.68 35 P **P 12 09 46.0 0.0**
baz=317
G26A Maurine 77.69 41 P **P 12 09 46.9 +0.7**
baz=314,SNR=42
E28A Huff 77.73 39 P **P 12 09 47.0 +0.6**
baz=315,SNR=10.0
NIE Niedzica 77.74 325 *i* P **P 12 09 48.0 +1.6**
NIE *e*S **S 12 19 36.1 +0.5**
NIE LMZ LR 12 47 05.6
NIE Niedzica 77.74 325⇑ *i*P **P 12 09 48.0 +1.6**
NIE *e*S **S 12 19 36.1 +0.5**
NIE MLR MLR
comp=Z,6µm,17.6s
RSSD Black Hills 77.77 42 P **P 12 09 47.2 +0.4**
baz=314
RSSD Black Hills 77.77 42 *e*P **P 12 09 47.4 +0.6**
RSSD pmax pmax
comp=Z,71nm,1.2s
RSSD Black Hills 77.77 42 *e*P **P 12 09 47.4 +0.6**
comp=Z,71nm,1.3s
BAR Barrett 77.79 58 *e*P **P 12 09 47.9 +0.9**
comp=Z,86nm,1.8s
BAR LR LR

comp=Z,2µm,18.0s
NEE2 Needles Airpor 77.80 55 P **P 12 09 47.4 +0.5**
baz=310
MONP2 Monument Peak 77.82 57 P **P 12 09 47.4 0.0**
baz=309,SNR=7.4
KOZT Kozan 77.83 309 *e*P **P 12 09 48.5 +1.4**
B31A Greenbush Farm 77.84 36 P **P 12 09 47.3 +0.4**
baz=317,SNR=9.5
BCAM Yenicaga 77.84 313 *i* P **P 12 09 48.0 +0.8**
IRM Iron Mountain 77.85 56 P **P 12 09 48.2 +1.0**
baz=310,SNR=17
DOPR Dopca 77.86 320⇑ *i*P **P 12 09 48.9 +1.9**
KAMT Kaman 77.86 311 *e*P **P 12 09 47.4 +0.2**
DRWC Darouich 77.87 307 *e*P **P 12 09 48.7 +1.3**
ISR Istrita 77.87 319⇑ *i*P **P 12 09 49.0 +1.8**
MLR Muntele Rosu 77.91 320 LR LR 12 47 28.5
comp=Z,2µm,19.2s,baz=48,slow=38
MLR Muntele Rosu 77.91 320⇑ *i*P **P 12 09 48.6 +1.1**
MLR Muntele Rosu 77.91 320 *e*P **P 12 09 48.4 +0.9**
MLR Muntele Rosu 77.91 320 *e*P **P 12 09 48.4 +0.9**
comp=Z,198nm,1.2s
MLR LR LR
comp=Z,10µm,20.0s
D29A Pettibone, Tap 77.92 38 P **P 12 09 47.7 +0.4**
baz=316,SNR=5.2
MSAB Monastry St. A 77.93 318⇑ *i*P **P 12 09 49.0 +1.6**
BC3 Big Chuckawall 77.97 56 P **P 12 09 48.5 +0.5**
baz=309,SNR=13
G27A Dupree 77.97 40 P **P 12 09 48.1 +0.3**
baz=315,SNR=27
C30A Mose, Pekin 77.98 37 P **P 12 09 47.9 +0.2**
baz=316,SNR=17
I25A Rochford 77.99 42 P **P 12 09 48.5 +0.4**
baz=314,SNR=25
A32A Rocking H Ranc 78.00 35 P **P 12 09 47.9 +0.1**
baz=318,SNR=34
PSN Preselentsi 78.02 317 *i* P **P 12 09 49.3 +1.3**
W13A Hualapai Mount 78.05 54 *e*P **P 12 09 49.3 +0.8**
comp=Z,97nm,1.8s
ANTO Ankara 78.06 312 *e*P **P 12 09 49.6 +1.2**
ANTO pmax pmax
comp=Z,210nm,0.9s
ANTO Ankara 78.06 312 *e*P **P 12 09 49.6 +1.2**
comp=Z,206nm,0.8s
ANTO LR LR
comp=Z,3µm,19.0s
ANTO Ankara 78.06 312 P **P 12 09 49.9 +1.5**
SNR=39
ANTO Ankara 78.06 312 P **P 12 09 49.9 +1.5**
SNR=39
LOD Lodumlu 78.06 312 *e*P **P 12 09 47.9 -0.5**
H26A Fairpoint 78.07 41 P **P 12 09 48.9 +0.6**
baz=314,SNR=12
BBAL Bala 78.08 312 *i* P **P 12 09 49.4 +0.8**
BR231 Keskin MP Arra 78.09 312 *e*P **P 12 09 50.0 +1.5**
NIG Nigde 78.15 310 *e*P **P 12 09 50.8 +1.7**
RAC Raciborz 78.16 327 *e*P **P 12 09 50.2 +1.6**
RAC *e*S **S 12 19 41.7 +1.8**
RAC MLR MLR
comp=Z,6µm,19.1s
O20A White River Ci 78.16 48 P **P 12 09 49.8 +0.7**
baz=312,SNR=22
O20A White River Ci 78.16 48 *e*P **P 12 09 49.9 +0.7**
comp=Z,104nm,1.3s
AFSR Af`ar-Bala (A 78.18 312 *e*P **P 12 09 50.3 +1.2**
IBP Imperial Bould 78.18 57 P **P 12 09 49.4 +0.2**
baz=309,SNR=6.4
CEYT Ceyhan 78.18 308 *e*P **P 12 09 50.9 +1.9**
U15A North Rim 78.19 52 *e*P **P 12 09 50.9 +1.5**
comp=Z,199nm,1.6s
U15A LR LR
comp=Z,2µm,19.0s
SWSC Sam W. Stewart 78.19 57 P **P 12 09 49.6 +0.5**
baz=309
CJR Cluj-Napoca 78.19 322⇑ *i*P **P 12 09 51.0 +2.0**
F28A McLaughlin 78.20 39 P **P 12 09 49.7 +0.7**
baz=315,SNR=14
GULA Gulagac 78.22 310 *e*P **P 12 09 51.0 +1.6**
ABTO Aybut 78.25 283 P **P 12 09 49.6 -0.1**
SNR=57
ABTO Aybut 78.25 283 P **P 12 09 49.6 -0.1**
SNR=57
E29A Napoleon 78.25 38 P **P 12 09 49.6 +0.3**
baz=316,SNR=7.9
C31A Landman Farms, 78.26 37 P **P 12 09 49.4 +0.1**
baz=317,SNR=13
D30A Buchanan 78.28 38 P **P 12 09 49.7 +0.4**
baz=316,SNR=28
AKSY AKSARAY - Alti 78.30 311 *i* P **P 12 09 49.5 -0.3**
LANS Liptovska Anna 78.31 326 *i* P **P 12 09 51.5 +2.0**
LANS Liptovska Anna 78.31 326 *i* P **P 12 09 51.5 +2.0**
SULR 78.33 319⇑ *i*P **P 12 09 51.0 +1.4**
TAHT Tahtakopru-Hat 78.33 308 *e*P **P 12 09 51.4 +1.6**
KECS Kecovo 78.35 325 *e*P **P 12 09 51.3 +1.5**
KECS pmax pmax
comp=Z,38nm,1.1s
KECS Kecovo 78.35 325 *e*P **P 12 09 51.2 +1.5**
KECS *e*PP **PP 12 12 45.8 -0.7**
OKC Ostrava-Krasne 78.36 327⇑ *i*P **P 12 09 51.1 +1.4**
OKC *e*pP **pP 12 10 00.6 -1.3**
OKC *e*PP **PP 12 12 48.5 +2.0**
OKC *e*S **S 12 19 43.2 +1.1**
OKC *e*XS **sS 12 20 02.4 0.0**
OKC AMS AMS 12 47 00.0
comp=Z,7µm,18.5s
OKC Ostrava-Krasne 78.36 327⇑ *i*P **P 12 09 51.1 +1.4**
OKC *e* 12 10 00.6
OKC *e* 12 12 48.5
OKC *e*S **S 12 19 43.2 +1.1**
OKC *e* 12 20 02.4
OKC MLR MLR
comp=Z,7µm,18.5s
B32A Ashes, Strandq 78.36 35 P **P 12 09 49.8 0.0**
baz=318,SNR=30
KSP Ksiaz 78.37 328 *i* P **P 12 09 51.1 +1.3**
KSP *e*S **S 12 19 43.3 +1.1**
KSP *e*SKS **SKSac 12 20 01.2 +0.1**
KSP LMZ LR 12 47 00.0
KSP Ksiaz 78.37 328⇑ *i*P **P 12 09 51.1 +1.3**
KSP *e*S **S 12 19 43.4 +1.2**
KSP *e* 12 20 01.3
KSP MLR MLR
comp=Z,9µm,20.1s
BTCH Batrach 78.38 307 *e*P **P 12 09 50.9 +0.7**
J25A Sunshine Ranch 78.39 43 P **P 12 09 50.0 -0.2**
baz=314,SNR=5.1
PDMCI Parker Dam,Lak 78.40 55 P **P 12 09 51.0 +0.8**
baz=310,SNR=5.1
VOIR 78.40 320⇑ *i*P **P 12 09 51.3 +1.2**
H27A Howes 78.42 41 P **P 12 09 50.8 +0.6**
baz=315,SNR=36
BIGH Upper Bighouse 78.43 343⇑ *e*P **P 12 09 50.3 +0.4**
BIGH AMB AMB 12 09 51.8
comp=Z,238nm,1.3s
I26A New Underwood 78.44 42 P **P 12 09 51.3 +0.9**
baz=314,SNR=22
KARA Karaisali 78.44 309 *e*P **P 12 09 52.0 +1.6**
KKUL Konya-Kulu 78.45 311 *i* P **P 12 09 51.6 +1.0**
A33A Warroad 78.47 35 P **P 12 09 50.4 0.0**
baz=318,SNR=55
MLA1 Latheron 78.47 342⇑ *e*P **P 12 09 50.9 +0.7**
SAHE Sakarya_HENDEK 78.50 314 *i* P **P 12 09 48.8 -1.9**
Y12C Blythe 78.51 56 P **P 12 09 51.5 +0.7**
baz=310,SNR=8.4
Y12C Blythe 78.51 56 *e*P **P 12 09 51.9 +1.1**
comp=Z,44nm,1.1s
DRGR 78.56 322⇑ *i*P **P 12 09 52.3 +1.3**
MDUB Mudurnu 78.57 313 *e*P **P 12 09 51.5 +0.3**
YAYL Yayladag 78.60 307 *i* P **P 12 09 52.1 +0.6**
BTAS Taskesti 78.61 314 *i* P **P 12 09 51.7 +0.3**
E30A Jud 78.65 38 P **P 12 09 51.9 +0.5**
baz=316,SNR=21
ARR Arges 78.65 320⇑ *i*P **P 12 09 53.6 +2.1**
MORC Moravsky Berou 78.66 327 *e*P **P 12 09 52.8 +1.3**
MORC pmax pmax
comp=Z,940nm,1.0s
MORC Moravsky Berou 78.66 327 *e*P **P 12 09 52.8 +1.3**
comp=Z,942nm,1.1s
MORC LR LR
comp=Z,33µm,19.0s
F29A Eureka 78.69 39 P **P 12 09 51.8 +0.1**
baz=316,SNR=14
G28A Parade 78.69 40 P **P 12 09 52.5 +0.8**
baz=315,SNR=15
KRTS Karatas 78.69 308 *e*P **P 12 09 53.1 +1.3**

KAND Kocaeli-Kandir 78.71 314 *i* P P 12 09 48.8 -3.0
DPC Dobruska-Polom 78.73 328⇑ *i*P P 12 09 53.5 +1.6
DPC *e*S S 12 19 47.2 +1.0
DPC AMS AMS 12 47 10.0
comp=Z,7µm,18.0s
DPC Dobruska-Polom 78.73 328⇑ *i*P P 12 09 53.5 +1.6
DPC *e*S S 12 19 47.2 +1.0
DPC MLR MLR
comp=Z,7µm,18.0s
PV09 Paradox Valley 78.73 49 *e*P P 12 09 53.6 +1.2
AGMN Agassiz Nation 78.74 35 P P 12 09 51.9 0.0
baz=318,SNR=33
AGMN Agassiz Nation 78.74 35 *e*P P 12 09 50.3 -1.5
comp=Z,71nm,1.0s
UPC Upice 78.74 328⇑ *i*P P 12 09 53.2 +1.4
UPC *e*S S 12 19 45.3 -0.9
UPC AMS AMS 12 47 10.0
comp=Z,8µm,18.0s
UPC Upice 78.74 328⇑ *i*P P 12 09 53.2 +1.4
UPC *e*S S 12 19 45.3 -0.9
UPC MLR MLR
comp=Z,8µm,18.0s
SULT Sultanhani-AKS 78.74 310 *e*P P 12 09 53.5 +1.3
GLA Glamis 78.76 56 P P 12 09 53.3 +1.0
baz=310
GLA Glamis 78.76 56 *e*P P 12 09 53.9 +1.6
GLA pmax pmax
comp=Z,97nm,1.5s
GLA Glamis 78.76 56 *e*P P 12 09 53.5 +1.2
comp=Z,97nm,1.5s
PRD Provadia 78.77 317 *i* P P 12 09 53.3 +1.2
C32A Crookston 78.79 36 P P 12 09 52.1 0.0
baz=318
DED Mersin 78.79 309 *i* P P 12 09 52.8 +0.4
ARNB Al Arnab 78.79 307 *e*P P 12 09 50.2 -2.3
SLNF Slenfeh 78.81 307 *e*P P 12 09 53.1 +0.4
AUMIH MIHALICIK 78.81 313 *i* P P 12 09 52.1 -0.5
D31A Mcclaflin, Tow 78.81 37 P P 12 09 52.5 +0.3
baz=317
I27A Quinn 78.83 41 P P 12 09 53.5 +0.9
baz=315,SNR=42
J26A Sides Ranch, S 78.83 42 P P 12 09 53.3 +0.8
baz=314,SNR=16
PV10 Paradox Valley 78.87 49 *e*P P 12 09 54.5 +1.4
B33A Robert and Kas 78.88 35 P P 12 09 52.5 -0.1
baz=318,SNR=8.3
KERG Konya-Eregli 78.90 309 *i* P P 12 09 53.2 +0.1
H28A Mission Ridge 78.92 40 P P 12 09 53.6 +0.6
baz=315,SNR=57
PHWY Pilot Hill 78.94 45 *e*P P 12 09 54.4 +0.9
comp=Z,110nm,1.5s
PV04 Paradox Valley 78.94 49 *e*P P 12 09 54.3 +0.9
N23A Red Feather La 78.95 46 P P 12 09 54.7 +1.2
baz=313,SNR=28
N23A Red Feather La 78.95 46 *e*P P 12 09 54.4 +0.9
comp=Z,135nm,1.3s
MVH1 Achvaich 79.01 342⇑ *e*P P 12 09 53.9 +0.8
MERS Mersin 79.02 309 *e*P P 12 09 54.7 +1.0
LOT Lotru 79.02 321⇑ *i*P P 12 09 54.6 +1.0
PV05 Paradox Valley 79.03 50 *e*P P 12 09 55.2 +1.3
PSZ Piszkesteto 79.03 325⇑ *e*P P 12 09 55.0 +1.4
PSZ Piszkesteto 79.03 325 *e*P P 12 09 54.8 +1.2
PSZ Piszkesteto 79.03 325 *e*P P 12 09 54.8 +1.2
comp=Z,198nm,1.0s
PSZ LR LR
comp=Z,4µm,18.0s
ROOS tl alroos 79.06 305 *e*P P 12 09 54.8 +0.8
SVRH Sivrihisar-ESK 79.07 312 *e*P P 12 09 53.4 -0.6
D32A Dogwood Acres, 79.07 37 P P 12 09 53.6 -0.1
baz=318
F30A Leola 79.07 39 P P 12 09 53.8 0.0
baz=316
VYHS Vyhne 79.07 325 *i* P P 12 09 55.1 +1.4
VYHS pmax pmax
comp=Z,98nm,1.2s
VYHS Vyhne 79.07 325 *i* P P 12 09 55.1 +1.4
VYHS *e*PP PP 12 12 47.0 -5.5
VYHS *e*S S 12 19 48.3 -1.5
VYHS eL L 12 48 04.0
HUMR Humele 79.08 320 ⇓ *i*P P 12 09 54.0 +0.2
E31A Nome 79.09 37 P P 12 09 54.1 +0.2
baz=317,SNR=31
MCD Coleburn Disti 79.09 342 *e*P P 12 09 54.2 +0.6
G29A Hoven 79.10 39 P P 12 09 54.2 +0.2
baz=316,SNR=15
B34A Aery, Baudette 79.14 34 P P 12 09 53.5 -0.5
baz=319,SNR=30
C33A Trail 79.18 36 P P 12 09 54.0 -0.3
baz=318,SNR=12
DGAR Diego Garcia 79.21 251 *c i*P P 12 09 54.3 -0.6
DGAR Diego Garcia 79.21 251 *e*P P 12 09 54.6 -0.3
comp=Z,260nm,1.0s
KIZT Kizilcal 79.25 312 *e*P P 12 09 55.7 +0.7
MME1 Meikle Cairn 79.26 342⇑ *e*P P 12 09 55.2 +0.6
BRG Berggiesshubel 79.28 330 *i* P P 12 09 55.8 +1.0
comp=Z,175nm,1.0s
BRG *i* PP PP 12 12 53.4 -0.8
BRG comp=Z,41nm,1.1s S S 12 20 20.0 +28
comp=N,7µm,17.8s
comp=E,3µm,15.1s
comp=Z,8µm,16.6s
BRG Berggiesshubel 79.28 330 *i* P P 12 09 55.8 +1.0
BRG *i* 12 12 53.4
BRG pmax pmax
comp=Z,175nm,1.0s
BRG pmax pmax
comp=Z,41nm,1.1s
BRG MLR MLR
comp=N,7µm,17.8s
BRG MLR MLR
comp=E,3µm,15.1s
BRG MLR MLR
comp=Z,8µm,16.6s
PV01 Paradox Valley 79.31 49 *e*P P 12 09 56.5 +1.0
PVCC Panska Ves 79.31 329⇑ *i*P P 12 09 56.5 +1.6
PVCC AMS AMS 12 47 40.0
comp=Z,9µm,19.0s
PVCC Panska Ves 79.31 329⇑ *i*P P 12 09 56.5 +1.6
PVCC MLR MLR
comp=Z,9µm,19.0s
CLL Collm 79.31 330⇑ *i*P P 12 09 55.6 +0.7
comp=Z,267nm,0.9s
CLL *e*Pmax 12 09 57.0
CLL *e*Plp 12 09 59.0
comp=Z,600nm,30.6s
CLL *e*PcP PcP 12 10 04.0 +1.0
CLL *e* 12 12 45.0
CLL *e*PP PP 12 12 59.0 +4.7
CLL *e*PPP PPP 12 14 46.0
CLL *e*S S 12 19 53.0 +0.8
CLL *e* 12 20 25.0
CLL *e*(SS) 12 25 48.0
CLL *e*SSS SSS 12 28 30.0
CLL Lm MLR 12 46 00.0
comp=N,3µm,20.4s
CLL Lm MLR 12 46 00.0
comp=E,4µm,20.9s
CLL Lmax 12 47 00.0
CLL Collm 79.31 330⇑ *i*P P 12 09 55.6 +0.7
CLL *e* 12 10 04.0
CLL *e*S S 12 19 53.0 +0.8
CLL pmax pmax
comp=Z,267nm,0.9s
CLL Collm 79.31 330 *e*P P 12 09 55.2 +0.4
comp=Z,293nm,0.9s
CLL LR LR
comp=Z,5µm,19.0s
I28A Midland 79.33 41 P P 12 09 55.9 +0.7
baz=315,SNR=35
WUAZ Wupatki 79.35 53 P P 12 09 57.0 +1.4
baz=311,SNR=19
WUAZ Wupatki 79.35 53 *e*P P 12 09 55.9 +0.2
comp=Z,135nm,1.4s
KDHN Kadinhani 79.35 311 *i* P P 12 09 55.6 +0.1
Y14A Wickenburg 79.35 55 *e*P P 12 09 56.4 +0.8
comp=Z,528nm,1.6s
H29A Onida 79.36 40 P P 12 09 55.5 +0.1
baz=316,SNR=19
BORA Eskisehir 79.39 313 *i* P P 12 09 55.8 +0.1
ESKT Eskisehir 79.41 313 *i* P P 12 09 55.8 0.0
LADK Ladik-KONYA 79.42 311 *e*P P 12 09 55.7 -0.2
VRAC Vranov 79.42 327 LR LR 12 48 10.8
comp=Z,9µm,18.4s,baz=32,slow=38
J27A Elkhorn Farm, 79.43 42 P P 12 09 56.9 +1.0
baz=315,SNR=20
F31A Hecla 79.43 38 P P 12 09 55.8 +0.1
baz=317,SNR=6.5
SIRR Siria 79.44 322⇑ *i*P P 12 09 56.8 +1.0
E32A Braaten, Kindr 79.45 37 P P 12 09 55.9 +0.1
baz=318
SZH Strazhica 79.49 318 *i* P P 12 09 56.8 +0.8
MDO Dochfour 79.49 342⇑ *e*P P 12 09 56.0 +0.2
KIZK Mersin 79.50 309 *i* P P 12 09 56.4 +0.2
G30A Faulkton 79.53 39 P P 12 09 56.7 +0.5
baz=316,SNR=29
SMCO Snowmass 79.53 48 *e*P P 12 09 58.0 +1.1
comp=Z,163nm,1.8s
FKH Fakeheh 79.57 306 *e*P P 12 09 57.8 +1.0
D33A AnnSam, Waubun 79.61 36 P P 12 09 56.6 0.0
baz=318,SNR=9.1
113A Mohawk Valley, 79.62 56 *e*P P 12 09 57.7 +0.8
comp=Z,54nm,1.4s
113A LR LR
comp=Z,2µm,20.0s
NRS Narsarsuaq 79.63 4 *i* P P 12 09 55.2 -1.2
comp=Z,87nm,1.1s
NRS Narsarsuaq 79.63 4 *e*P P 12 09 55.2 -1.2
NRS pmax pmax
comp=Z,87nm,1.1s
B35A Bob, Littlefor 79.63 34 P P 12 09 57.0 +0.2
baz=320,SNR=66
C34A RKJ Ranch, Bem 79.65 35 P P 12 09 56.6 -0.3
baz=319,SNR=7.5
KAC Acinashellach 79.65 343⇑ *e*P P 12 09 57.5 +0.9
MARH Ras Al Marh 79.67 306 *e*P P 12 09 56.6 -1.0
SMOL Smolenice 79.67 326 *e*P P 12 09 59.1 +2.1
SMOL Smolenice 79.67 326 *e*P P 12 09 59.1 +2.1
GOPC GO Pecny, Ondr 79.70 328⇑ *i*P P 12 09 58.4 +1.3
GOPC *e*PP PP 12 12 57.8 +0.2
GOPC *e*S S 12 19 58.6 +2.2
GOPC AMS AMS 12 47 40.0
comp=Z,8µm,20.5s
GOPC GO Pecny, Ondr 79.70 328⇑ *i*P P 12 09 58.4 +1.3
GOPC *e* 12 12 57.8
GOPC *e*S S 12 19 58.6 +2.2
GOPC MLR MLR
comp=Z,8µm,20.5s
J28A Allard Ranch, 79.70 41 P P 12 09 58.2 +0.9
baz=315,SNR=38
KMER Konya-Meram 79.71 311 *i* P P 12 09 57.9 +0.4
PRA Prague 79.72 329⇑ *i*P P 12 09 58.7 +1.6
PRA AMS AMS 12 47 50.0
comp=Z,9µm,20.1s
PRA Prague 79.72 329⇑ *i*P P 12 09 58.7 +1.6
PRA MLR MLR
comp=Z,9µm,20.1s
PRU Pruhonice 79.74 329⇑ *i*P P 12 09 58.5 +1.2
PRU *e*pP pP 12 10 08.1 -1.4
PRU *e*PP PP 12 12 58.1 +0.2
PRU *e*S S 12 19 57.9 +1.1
PRU AMS AMS 12 47 50.0
comp=Z,8µm,18.7s
PRU Pruhonice 79.74 329⇑ *i*P P 12 09 58.5 +1.2
PRU *e* 12 10 08.1
PRU *e* 12 12 58.1
PRU *e*S S 12 19 57.9 +1.1
PRU MLR MLR
comp=Z,8µm,18.7s
I29A Vivian Onida 79.75 40 P P 12 09 58.1 +0.6
baz=316,SNR=34
BUD Budapest 79.75 325⇑ *e*P P 12 09 58.7 +1.3
OUZ Omahuta 79.75 154 PFAKE 12 10 10.0 +13
OUZ LR LR
comp=Z,4µm,21.0s
IGD Bursa 79.82 314 *i* P P 12 09 56.9 -1.0
PVL Pavlikeni 79.83 318 *i* P P 12 09 59.4 +1.5
HWQ Hawqa 79.84 306 *e*P P 12 09 58.8 +0.5
ZALF Zalf 79.84 304 *e*P P 12 09 58.9 +0.7
SRE Strehaia 79.86 321 ⇓ *i*P P 12 09 59.6 +1.5
ISCO Idaho Springs 79.88 46 P P 12 09 59.8 +1.2
baz=313,SNR=22
ISCO Idaho Springs 79.88 46 *e*P P 12 09 59.0 +0.3
ISCO pmax pmax
comp=Z,100nm,1.4s
ISCO Idaho Springs 79.88 46 *e*P P 12 09 59.0 +0.3
comp=Z,102nm,1.4s
KPL Plockton 79.88 343⇑ *e*P P 12 09 59.0 +1.1
KPL AMB AMB 12 09 59.8
comp=Z,351nm,1.2s
BOLV Bolvadin 79.89 312 *i* P P 12 09 58.9 +0.5
TREC Trest 79.89 328⇑ *i*P P 12 09 59.4 +1.2
TREC *e*XS S 12 20 20.8 +22
TREC AMS AMS 12 47 50.0
comp=Z,8µm,19.9s
TREC Trest 79.89 328⇑ *i*P P 12 09 59.4 +1.2
TREC *e*S S 12 20 20.8 +22
TREC MLR MLR
comp=Z,8µm,19.9s
G31A Conde 79.91 39 P P 12 09 58.8 +0.5
baz=317,SNR=12
BZS Buzias 79.94 322 ⇓ *i*P P 12 09 59.2 +0.8
IKL Isikli 79.94 309 *e*P P 12 09 59.3 +0.7
KSB Sheil Bridge 79.94 343⇑ *e*P P 12 09 59.1 +0.9
D34A Park Rapids 79.94 36 P P 12 09 58.4 0.0
baz=319,SNR=27
ULDT Uludag 79.94 314 *i* P P 12 09 59.2 +0.3
F32A Veblen 79.95 38 P P 12 09 58.5 0.0
baz=318
EDU Dundee 79.96 341⇑ *e*P P 12 09 58.8 +0.5
MVCO Mesa Verde 79.97 50 P P 12 09 60.0 +0.9
baz=312,SNR=30
MVCO Mesa Verde 79.97 50 *e*P P 12 10 00.3 +1.2
comp=Z,169nm,1.5s
E33A Westby DABS, E 80.01 37 P P 12 09 58.9 +0.1
baz=318,SNR=15
PKS7 Kunszentmiklos 80.02 324⇑ *e*P P 12 10 00.0 +1.2
X16A Lo Mia Camp, P 80.02 54 *e*P P 12 10 00.9 +1.5
comp=Z,96nm,1.4s
C35A Jirik Farms, M 80.03 35 P P 12 09 58.6 -0.3
baz=319,SNR=33
ZST Bratislava 80.06 326 *e*P P 12 09 59.6 +0.6
ZST *e*S S 12 20 03.0 +2.8
ZST Bratislava 80.06 326 *e*P P 12 09 59.6 +0.6
ZST Bratislava 80.06 326 *e*S S 12 20 03.0 +2.8
PKSG 80.10 325⇑ *e*P P 12 10 00.5 +1.2
EREN Erenkoy 80.11 308 *e*P P 12 09 54.8 -4.7
SUSD Miller 80.12 39 P P 12 09 59.9 +0.5
baz=317
TOTH TOTAH 80.13 305 *e*P P 12 10 00.3 +0.5
K28A Ten Mile Ranch 80.14 42 P P 12 10 00.1 +0.4
baz=315,SNR=23
PKS6 Bocsa 80.17 324⇑ *e*P P 12 10 00.6 +1.0
J29A Okreek 80.18 41 P P 12 10 00.2 +0.3
baz=316,SNR=16
CSKK Cs˙ˇtkako 80.18 325⇑ *e*P P 12 10 00.9 +1.2
RAYN Ar Rayn 80.22 292 *e*P P 12 10 00.9 +0.5
comp=Z,134nm,1.0s
RAYN LR LR
comp=Z,2µm,20.0s
G32A Webster 80.23 38 P P 12 10 00.4 +0.3
baz=317,SNR=12
BHL Bhannes 80.27 306 *e*P P 12 10 01.0 +0.5
I30A Oacoma 80.27 40 P P 12 10 00.6 +0.3
baz=316,SNR=29
H31A Wolsey 80.33 39 P P 12 10 00.4 -0.1
baz=317
BANR Banloc 80.34 322 ⇓ *i*P P 12 10 02.3 +1.7
PKST T˙˙s 80.36 325⇑ *e*P P 12 10 01.5 +0.8
SALA Sala 80.36 304 *e*P P 12 10 01.8 +0.6
F33A 5 Mile Ranch, 80.37 37 P P 12 10 00.8 0.0
baz=318,SNR=6.6
E34A Wadena 80.39 36 P P 12 10 00.6 -0.3
baz=319
RCY Rachaya 80.42 306 *e*P P 12 10 02.3 +0.9
ESY Stoneypath 80.42 341⇑ *e*P P 12 10 01.5 +0.7
D35A Remer 80.46 35 P P 12 10 00.8 -0.4
baz=319,SNR=18
GDZ Gediz 80.47 313 *i* P P 12 10 01.9 +0.3
BAGO Egridir - ISPA 80.48 312 *i* P P 12 10 01.6 0.0
C36A Pine Crest Far 80.48 34 P P 12 10 01.0 -0.3
baz=320,SNR=32
MDVR Moldovita 80.51 321⇑ *i*P P 12 10 02.3 +0.7
L28A Connealy Angus 80.56 43 P P 12 10 02.6 +0.6
baz=315
S22A 4UR Ranch, Cre 80.58 49 P P 12 10 03.6 +1.2
baz=313,SNR=34
S22A 4UR Ranch, Cre 80.58 49 *e*P P 12 10 04.0 +1.6
comp=Z,112nm,1.5s
ASF Jabal al Asfar 80.61 304 LR LR 12 49 26.2
comp=Z,3µm,20.0s,baz=1.0,slow=38
EAB Aberfoyle 80.61 342⇑ *e*P P 12 10 02.7 +0.9
W18A Petrified Fore 80.62 52 P P 12 10 03.4 +0.9
baz=312,SNR=6.1
W18A Petrified Fore 80.62 52 *e*P P 12 10 03.9 +1.3
comp=Z,108nm,1.8s
W18A LR LR
comp=Z,2µm,22.0s
I31A Royce, Wessing 80.62 40 P P 12 10 02.5 +0.4
baz=317
SART Tekirdag 80.64 316 *i* P P 12 10 02.6 +0.3
K29A Lazy Trails An 80.64 41 P P 12 10 03.1 +0.7
baz=316,SNR=8.7
J30A Dallas 80.66 41 P P 12 10 02.9 +0.5
baz=316,SNR=16
SOP Sopron 80.68 326⇑ *e*P P 12 10 04.1 +1.7
DURS Dursunbey 80.69 314 *i* P P 12 10 02.1 -0.6
E35A Pequot Lakes 80.70 36 P P 12 10 02.4 -0.2
baz=319,SNR=15
Q24A Divide 80.71 47 P P 12 10 03.8 +0.6
baz=314,SNR=8.6
Q24A Divide 80.71 47 *e*P P 12 10 04.6 +1.5
comp=Z,57nm,1.4s
ISP Isparta 80.75 312 *e*P P 12 10 03.2 +0.1
ISP Isparta 80.75 312 *e*P P 12 10 03.2 +0.1
comp=Z,56nm,1.0s
ISP LR LR
comp=Z,3µm,21.0s
PKS9 Tamasi 80.76 324⇑ *e*P P 12 10 03.4 +0.6
214A Organ Pipe Nat 80.76 56 P P 12 10 03.5 +0.4
baz=311,SNR=9.8
214A Organ Pipe Nat 80.76 56 *e*P P 12 10 03.9 +0.8
comp=Z,269nm,1.5s
G33A Ortonville 80.78 38 P P 12 10 03.1 +0.1
baz=318,SNR=24
D36A Goodland 80.78 35 P P 12 10 02.5 -0.4
baz=320,SNR=10.0
C37A Embarrass 80.78 34 P P 12 10 02.7 -0.3
baz=320,SNR=28
CONA Conrad Observa 80.79 327 *i* P P 12 10 04.6 +1.5
comp=Z,3µm,2.9s,SNR=91
KHC Kasperske Hory 80.80 329⇑ *i*P P 12 10 04.2 +1.1
KHC *es*P sP 12 10 21.3 +1.4
KHC *ex* x 12 12 53.5
KHC *e*S S 12 20 09.2 +1.1
KHC AMS AMS 12 48 30.0
comp=Z,9µm,18.4s
KHC Kasperske Hory 80.80 329⇑ *i*P P 12 10 04.2 +1.1
KHC *e* 12 10 21.3
KHC *e*S S 12 20 09.2 +1.1
KHC MLR MLR
comp=Z,9µm,18.4s
KHC Kasperske Hory 80.80 329 *e*P P 12 10 04.2 +1.1
comp=Z,68nm,0.9s
KHC LR LR
comp=Z,4µm,20.0s
KESN Edirne-Kesan 80.81 316 *i* P P 12 10 04.2 +0.5
H32A Carlson Farm, 80.81 39 P P 12 10 03.2 0.0
baz=318,SNR=9.0
TCHB Talchebab 80.88 305 *e*P P 12 10 04.8 +1.1
X18A Snowflake 80.88 53 *e*P P 12 10 05.2 +1.2
comp=Z,73nm,1.4s
F34A Alexandria 80.88 37 P P 12 10 03.6 +0.1
baz=319
KDZ Kurdzhali 80.90 317 *i* P P 12 10 05.2 +1.5
EYMN Ely 80.91 33 P P 12 10 03.7 +0.1
baz=321,SNR=47
EYMN Ely 80.91 33 *e*P P 12 10 03.7 +0.1
comp=Z,107nm,1.1s
EYMN LR LR
comp=Z,1µm,19.0s
DEMI Demirci 80.94 314 *i* P P 12 10 03.4 -0.6
KHAL Karahalli 80.96 313 *i* P P 12 10 03.9 -0.3
GEC2 GERESS Array S 80.98 328 *e*P P 12 10 04.8 +0.7
GEC2 GERESS Array S 80.98 328 *e*P P 12 10 04.8 +0.7
comp=Z,82nm,0.9s
GERES GERESS Array B 80.98 328 P P 12 10 04.8 +0.7
comp=Z,47nm,0.8s,baz=35,slow=5.1,SNR=188
GERES LR LR 12 49 07.4
comp=Z,9µm,19.4s,baz=31,slow=38
GEA0 GERESS Array S 80.98 328 *e*P P 12 10 04.0 -0.1
PGBU Glenifferbraes 80.99 342⇑ *e*P P 12 10 04.8 +1.0
PGBU AMB AMB 12 10 05.8
comp=Z,299nm,1.2s
CSS Mathiatis 81.00 308 P P 12 10 04.3 -0.1
CSS Mathiatis 81.00 308 *e*P P 12 10 04.3 -0.1
comp=Z,21nm,0.9s
CSS LR LR
comp=Z,600nm,21.0s
MMAI Mount Meron Ar 81.01 305 LR LR 12 50 15.3
comp=Z,3µm,18.4s,baz=55,slow=39
H33A Prehn Over Nor 81.02 38 P P 12 10 04.7 +0.4
baz=318,SNR=28
WTSB Winterswijk 81.03 334 *i* P P 12 10 04.6 +0.5
OGNE Ogallala 81.04 44 P P 12 10 05.1 +0.5
baz=315,SNR=7.7
OGNE Ogallala 81.04 44 *e*P P 12 10 05.8 +1.2
comp=Z,279nm,1.3s
J31A Geddes 81.06 40 P P 12 10 04.8 +0.2
baz=317,SNR=8.2
L29A Maesberg Ranch 81.06 42 P P 12 10 04.8 +0.2
baz=316,SNR=7.5
K30A Basset 81.07 41 P P 12 10 05.1 +0.4
baz=316,SNR=26
M28A Bar X Bar Ranc 81.07 43 P P 12 10 05.1 +0.4
baz=316
ALN Alexandroupoli 81.10 316 P P 12 10 05.1 +0.4
ALN Alexandroupoli 81.10 316 P P 12 10 05.1 +0.4
ALN Alexandroupoli 81.10 316 P P 12 10 05.1 +0.4
ESK Eskdalemuir 81.11 341⇑ *e*P P 12 10 05.0 +0.4
ESK AMS AMS 12 42 24.2
comp=Z,2µm,28.4s
ESK Eskdalemuir 81.11 341 *i* P P 12 10 05.8 +1.3
ESK Eskdalemuir 81.11 341 *e*P P 12 10 05.4 +0.9
comp=Z,63nm,0.9s
ESK LR LR
comp=Z,3µm,20.0s
D37A Cotton 81.12 34 P P 12 10 04.3 -0.4
baz=320,SNR=9.1
G34A Benson 81.12 37 P P 12 10 05.3 +0.5
baz=319,SNR=6.1
F35A Swanville 81.15 36 P P 12 10 04.8 -0.2
baz=319,SNR=10
I32A Karley and Nic 81.15 39 P P 12 10 04.9 -0.2
baz=318
RAR Rarotonga 81.15 127 LR LR 12 40 55.8
comp=Z,2µm,19.8s,baz=300,slow=32
C38A Sawbill Land. 81.18 33 P P 12 10 05.0 -0.1
baz=321,SNR=44
ECK Cauldkaine Hil 81.21 341⇑ *e*P P 12 10 05.7 +0.6
RZN Rozhen 81.24 318 *i* P P 12 10 07.0 +1.3
E36A McGregor 81.25 35 P P 12 10 05.3 -0.2
baz=320,SNR=33
GRFO Grafenberg 81.28 330 *e*P P 12 10 07.0 +1.4
GRFO Grafenberg 81.28 330 *e*P P 12 10 07.0 +1.4
comp=Z,303nm,0.9s
GRFO LR LR
comp=Z,3µm,18.0s
BHH Howats Hill 81.32 341 *e*P P 12 10 06.7 +1.1
KULA Kula-Manisa 81.33 313 P P 12 10 06.2 0.0
KULA Kula-Manisa 81.33 313 P P 12 10 06.2 0.0
SDCO Great Sand Dun 81.35 48 P P 12 10 07.5 +0.9
baz=314,SNR=29
SDCO Great Sand Dun 81.35 48 *e*P P 12 10 07.7 +1.1
comp=Z,63nm,1.4s
SDCO LR LR
comp=Z,700nm,20.0s
BWH Wardlaw 81.35 341⇑ *e*P P 12 10 06.7 +0.9
VTS Vitosha 81.36 319 ⇓ *i*P P 12 10 07.9 +1.6
VTS Vitosha 81.36 319 P P 12 10 06.8 +0.5
VTS Vitosha 81.36 319 *e*P P 12 10 06.8 +0.5
VTS MLR MLR
comp=Z,4µm,21.0s
VTS Vitosha 81.36 319 *i* P P 12 10 07.3 +1.0
VTS Vitosha 81.36 319 *e*P P 12 10 06.8 +0.5
VTS LR LR
comp=Z,4µm,21.0s
M29A Burnside Ranch 81.40 43 P P 12 10 06.5 0.0
baz=316
KORT Korkueli 81.41 311 *i* P P 12 10 04.9 -1.7
SZAC Souni 81.42 308 P P 12 10 07.6 +1.0
J32A Parkston 81.44 40 P P 12 10 06.4 -0.1
baz=317,SNR=10
I33A Coleman 81.46 39 P P 12 10 07.1 +0.5
baz=318
ARSA Arzberg 81.46 326 *i* P P 12 10 07.8 +1.2

H34A **Spellman Lake,** 81.49 38 P P 12 10 07.0 +0.2
baz=319
N28A **Pribbeno Ranch** 81.49 44 P P 12 10 07.0 0.0
baz=316,SNR=5.4
BEHE **Becsehely** 81.52 325⇑ *eP* P 12 10 07.6 +0.7
MOA **Molln** 81.53 327 *iP* P 12 10 08.0 +1.1
comp=Z,142nm,1.2s,SNR=51
L30A **Spencer Herefo** 81.54 42 P P 12 10 07.3 +0.2
baz=316
K31A **O'Neill** 81.54 41 P P 12 10 07.3 +0.2
baz=317,SNR=19
AKHS **Akhisar** 81.56 314 *i* P P 12 10 06.9 -0.3
AKMC **Akamas** 81.57 309 P P 12 10 07.8 +0.4
C39A **Grand Marais** 81.58 33 P P 12 10 06.7 -0.5
baz=322,SNR=27
E37A **Wrenshall** 81.59 35 P P 12 10 07.2 0.0
baz=320
F36A **Milaca** 81.62 36 P P 12 10 07.1 -0.4
baz=320,SNR=11
BBO1 **Bothel** 81.64 340⇑ *eP* P 12 10 08.4 +1.1
PPCY **Paphos** 81.66 309 P P 12 10 08.2 +0.4
G35A **Watkins** 81.67 37 P P 12 10 08.1 +0.3
baz=319,SNR=9.8
GMK **Mull of Kintyr** 81.68 342⇑ *eP* P 12 10 08.3 +0.8
KESW **Keswick, Cumbr** 81.74 340 *eP* P 12 10 08.7 +0.9
M30A **Dale-Ortello V** 81.76 42 P P 12 10 08.5 +0.2
baz=316
O28A **Krutsinger Ran** 81.76 44 P P 12 10 08.4 0.0
baz=316,SNR=8.2
KOGS **Kog** 81.77 325 *i* P P 12 10 08.5 +0.3
KOGS *ePP* PP 12 13 18.1 +3.2
ECSD **EROS Data Cent** 81.78 39 P P 12 10 08.2 -0.2
baz=318,SNR=38
ECSD **EROS Data Cent** 81.78 39 *eP* P 12 10 08.5 +0.2
comp=Z,108nm,1.3s
ECSD LR LR
comp=Z,2μm,20.0s
L31A **Butterfield Fa** 81.82 41 P P 12 10 08.9 +0.3
baz=317,SNR=26
TUC **Tucson** 81.83 55 P P 12 10 09.9 +1.0
baz=312
TUC **Tucson** 81.83 55 *eP* P 12 10 09.8 +1.0
TUC **Tucson** 81.83 55 *eP* P 12 10 09.8 +0.9
comp=Z,81nm,1.5s
TUC LR LR
comp=Z,2μm,20.0s
MMB **Musomiste** 81.83 318 *i* P P 12 10 09.7 +1.1
KAVA **Kavala** 81.84 317 P P 12 10 09.2 +0.5
KAVA **Kavala** 81.84 317 *eP* P 12 10 09.2 +0.5
AYVA **Ayvalik** 81.88 315 *i* P P 12 10 08.4 -0.5
N29A **Votaw Ranch, W** 81.88 43 P P 12 10 09.0 0.0
baz=316,SNR=7.0
GAL1 **Galloway** 81.90 341⇑ *eP* P 12 10 08.9 +0.3
GAL1 AMB AMB 12 10 10.2
comp=Z,80nm,1.1s
HPK **Haverah Park** 81.91 339⇑ *eP* P 12 10 09.6 +0.9
K32A **Verdigre** 81.91 40 P P 12 10 09.0 0.0
baz=317
H35A **Sunnyside Ranc** 81.91 37 P P 12 10 09.4 +0.5
baz=319,SNR=42
I34A **Hadley** 81.92 38 P P 12 10 09.0 0.0
baz=319
J33A **Davis** 81.92 39 P P 12 10 09.3 +0.2
baz=318
NVR **Nevrokopi** 81.93 318 P P 12 10 09.7 +0.5
NVR **Nevrokopi** 81.93 318 P P 12 10 09.7 +0.5
KKB **Krupnik** 81.96 319 *i* P P 12 10 10.5 +1.2
G36A **St. Michael** 82.00 36 P P 12 10 09.5 +0.1
baz=320,SNR=5.6
GROS **Grobnik** 82.09 326 *i* P P 12 10 10.5 +0.5
comp=Z,754nm,1.6s
GROS *eS* S 12 20 20.4 -1.1
KSCO **Kaye Shedlock'** 82.09 45 P P 12 10 10.8 +0.6
baz=315,SNR=8.0
KSCO **Kaye Shedlock'** 82.09 45 *eP* P 12 10 10.9 +0.7
comp=Z,175nm,1.4s
PERS **Pernice** 82.12 326 *i* P P 12 10 11.0 +0.9
SOKA **Soboth** 82.12 326 *i* P P 12 10 11.1 +1.0
comp=Z,326nm,1.0s,SNR=173
P28A **Saint Francis** 82.17 44 P P 12 10 10.6 0.0
baz=316,SNR=13
N30A **Hueftle Ranch,** 82.17 43 P P 12 10 10.6 +0.1
baz=316,SNR=5.1
SRS **Serrai** 82.24 318 P P 12 10 11.1 +0.3
SRS **Serrai** 82.24 318 *eP* P 12 10 11.1 +0.3
SRS **Serrai** 82.24 318 *eP* P 12 10 11.1 +0.3
O29A **4D Ranch, Culb** 82.29 44 P P 12 10 11.6 +0.4
baz=316
LHO **Holmfirth** 82.34 339⇑ *eP* P 12 10 11.7 +0.6
M31A **Lambtecht Ranc** 82.36 42 P P 12 10 11.4 -0.1
baz=317,SNR=7.3
AKAS **Kas** 82.37 311 *i* P P 12 10 11.0 -0.7
L32A **Elgin** 82.37 41 P P 12 10 11.7 +0.2
baz=318,SNR=7.0
AYDN **Tasoluk** 82.37 313 *i* P P 12 10 11.6 0.0
BEBN **Eben Emael** 82.39 334 P P 12 10 11.6 +0.3
FETY **Fethiye** 82.39 312 P P 12 10 11.8 +0.1
FETY **Fethiye** 82.39 312 *eP* P 12 10 11.8 +0.1
T25A **Trinidad** 82.40 48 P P 12 10 13.0 +1.0
baz=314,SNR=32
T25A **Trinidad** 82.40 48 *eP* P 12 10 12.9 +1.0
comp=Z,124nm,1.4s
H36A **Jessenland, He** 82.42 37 P P 12 10 12.4 +0.7
baz=320,SNR=5.8
K33A **Hardington** 82.43 40 P P 12 10 12.0 +0.2
baz=318,SNR=5.9
J34A **George** 82.44 39 P P 12 10 11.9 +0.1
baz=319
MEM **Membach** 82.44 333 P P 12 10 11.6 0.0
comp=Z,85nm,1.0s
SPMN **Marine on St.** 82.44 36 P P 12 10 11.6 -0.2
baz=320,SNR=12
SPMN **Marine on St.** 82.44 36 *eP* P 12 10 11.8 0.0
comp=Z,65nm,1.3s
SPMN LR LR
comp=Z,1μm,20.0s
OBKA **Obir** 82.46 326 *i* P P 12 10 12.5 +0.6
comp=Z,93nm,0.8s,SNR=57
I35A **Creekview Farm** 82.47 38 P P 12 10 12.0 +0.1
baz=319,SNR=6.7
YER **Yerkesik** 82.51 312 P P 12 10 13.4 +1.1
YER **Yerkesik** 82.51 312 *eP* P 12 10 13.4 +1.1
YER **Yerkesik** 82.51 312 *eP* P 12 10 13.4 +1.1
KBA **Koelnbreinsper** 82.52 327 *iP* P 12 10 13.1 +0.8
comp=Z,212nm,0.9s,SNR=100
KNT **Kendrikon** 82.56 318 P P 12 10 12.4 -0.1
KNT **Kendrikon** 82.56 318 P P 12 10 12.4 -0.1
KNT **Kendrikon** 82.56 318 P P 12 10 12.4 -0.1
P29A **Atwood** 82.59 44 P P 12 10 12.7 -0.1
baz=316,SNR=8.6
URLA **Izmir** 82.60 314 *i* P P 12 10 12.7 -0.1
VAY **Valandovo** 82.62 319 P P 12 10 13.4 +0.7
VAY **Valandovo** 82.62 319⇑ *iP* P 12 10 13.8 +1.1
VAY **Valandovo** 82.62 319 *eP* P 12 10 13.4 +0.7
VAY **Valandovo** 82.62 319 *eP* P 12 10 13.4 +0.7
L33A **Hoskins** 82.62 40 P P 12 10 12.7 0.0
baz=318
O30A **MW Ranch, Wils** 82.64 43 P P 12 10 12.8 -0.2
baz=316,SNR=8.3
PLE **Pljevlja** 82.70 322⇑ *iP* P 12 10 14.8 +1.5
GCAM **G?zelcaml?** 82.71 313 *iP* P 12 10 13.8 +0.5
SKO **Skopje** 82.71 320⇑ *iP* P 12 10 14.7 +1.5
ANMO **Albuquerque** 82.71 50 P P 12 10 14.6 +0.9
baz=314
ANMO **Albuquerque** 82.71 50 *c iP* P 12 10 14.7 +1.1
ANMO pmax pmax
comp=Z,37nm,1.2s
ANMO **Albuquerque** 82.71 50 *eP* P 12 10 15.0 +1.4
comp=Z,97nm,1.4s
J35A **Milford** 82.73 38 P P 12 10 13.5 +0.2
baz=319
BGNE **Belgrade** 82.74 41 P P 12 10 13.4 0.0
baz=317
BGNE **Belgrade** 82.74 41 *eP* P 12 10 13.4 0.0
comp=Z,224nm,1.1s
BGNE LR LR
comp=Z,2μm,21.0s
MYKA **Terra Mystica** 82.75 327 *iP* P 12 10 13.7 +0.3
comp=Z,115nm,0.7s,SNR=60
N31A **Bailey Ranch,** 82.75 42 P P 12 10 13.4 -0.1
baz=317,SNR=6.1
GMM **Mts of Mourne** 82.77 342⇑ *eP* P 12 10 13.9 +0.6
I36A **Fitzsimmons Fa** 82.81 37 P P 12 10 13.9 +0.2
baz=320,SNR=8.9
IVA **Berane** 82.81 321⇑ *iP* P 12 10 14.9 +1.1

STU **Stuttgart** 82.81 331 *eP* P 12 10 14.5 +0.9
STU **Stuttgart** 82.81 331 *eP* P 12 10 14.5 +0.9
comp=Z,220nm,0.8s
STU LR LR
comp=Z,4μm,19.0s
K34A **Le Mars** 82.81 39 P P 12 10 13.6 -0.2
baz=319,SNR=9.6
LJU **Ljubljana** 82.83 326 *i* P P 12 10 14.0 +0.2
LJU *e* 12 10 31.2
LJU *ePP* PP 12 13 27.1 +3.5
LJU *e* 12 13 49.1
LJU *e* 12 15 12.7
STNC **Stoke** 82.84 339 *eP* P 12 10 14.4 +0.8
STNC AMS AMS 12 51 06.8
comp=Z,3μm,20.4s
BCLA **Clavier** 82.84 334 P P 12 10 14.0 +0.3
comp=Z,74nm,1.3s
PLG **Polygyros** 82.85 317 P P 12 10 14.3 +0.3
PLG **Polygyros** 82.85 317 P P 12 10 14.3 +0.3
PLG **Polygyros** 82.85 317 P P 12 10 14.3 +0.3
H37A **Dierke Farm, C** 82.88 36 P P 12 10 14.4 +0.3
baz=320,SNR=9.4
CWF **Charnwood Fore** 82.90 339⇑ *eP* P 12 10 14.2 +0.3
CWF AMB AMB 12 10 15.9
comp=Z,151nm,1.0s
CWF AMS AMS 12 50 05.0
comp=Z,3μm,21.3s
CWF **Charnwood Fore** 82.90 339 *eP* P 12 10 14.7 +0.8
comp=Z,118nm,0.9s
CWF LR LR
comp=Z,4μm,22.0s
BOJS **Bojanci** 82.94 325 *i* P P 12 10 14.8 +0.5
SCHQ **Schefferville** 82.95 16 P P 12 10 14.8 +0.5
comp=Z,58nm,0.9s,baz=350,slow=5.4,SNR=34
SCHQ LR LR 12 52 37.3
comp=Z,960nm,18.1s,baz=342,slow=40
SCHQ **Schefferville** 82.95 16 *eP* P 12 10 14.8 +0.5
comp=Z,69nm,0.9s
SCHQ LR LR
comp=Z,2μm,21.0s
GRG **Griva** 82.97 318 P P 12 10 14.1 -0.5
GRG **Griva** 82.97 318 *eP* P 12 10 14.1 -0.5
GRG **Griva** 82.97 318 *eP* P 12 10 14.1 -0.5
PVY **Plav** 82.98 321⇑ *iP* P 12 10 15.5 +0.7
P30A **Selden** 83.00 44 P P 12 10 14.8 -0.1
baz=316,SNR=18
UPM **Unac-Piva** 83.03 322⇑ *iP* P 12 10 15.3 +0.2
Y22D **IRIS PASSCAL I** 83.03 51 P P 12 10 16.7 +1.5
baz=313
Y22D **IRIS PASSCAL I** 83.03 51 PFAKE
Y22D LR LR 12 10 30.0 +15
comp=Z,2μm,22.0s
BDRM **Kayabasi** 83.03 313 *i* P P 12 10 15.2 +0.1
WATA **Walderalm** 83.04 329 *i* P P 12 10 15.8 +0.8
comp=Z,87nm,0.9s,SNR=27
O31A **Woolen Ranch,** 83.05 43 P P 12 10 14.7 -0.3
baz=317,SNR=8.2
PAIG **Paliouri** 83.06 317 P P 12 10 14.9 -0.1
PAIG **Paliouri** 83.06 317 *eP* P 12 10 14.9 -0.1
PAIG **Paliouri** 83.06 317 *eP* P 12 10 14.9 -0.1
WTTA **Wattenberg** 83.08 328 *i* P P 12 10 16.1 +0.9
comp=Z,111nm,0.9s,SNR=33
I37A **Lemond, Waseca** 83.09 37 P P 12 10 15.7 +0.6
baz=320,SNR=32
M33A **Taylor Creek F** 83.10 40 P P 12 10 15.1 -0.2
baz=318
SNF **Seneffe** 83.11 334 P P 12 10 15.3 +0.3
BODT **Bodrum** 83.11 313 P P 12 10 15.9 +0.5
BODT **Bodrum** 83.11 313 *eP* P 12 10 15.9 +0.5
WME **Myndd Eilian** 83.12 340 *eP* P 12 10 15.1 0.0
ABTA **Abfaltersbach** 83.13 328 *i* P P 12 10 15.2 -0.2
comp=Z,151nm,1.1s,SNR=46
N32A **Stulken Farm,** 83.14 42 P P 12 10 15.1 -0.4
baz=317
WPM1 **Penmaenmawr** 83.14 340⇑ *eP* P 12 10 16.1 +0.8
JAVS **Javornik** 83.15 326 *i* P P 12 10 15.3 -0.3
comp=Z,426nm,1.0s
LANF **Langenberg** 83.15 332⇑ *eP* P 12 10 16.2 +0.8
HIZ **Hauiti** 83.16 155 PFAKE
HIZ LR LR 12 10 30.0 +15
comp=Z,2μm,21.0s
J36A **Seneca 1, Swea** 83.18 38 P P 12 10 15.6 0.0
baz=320,SNR=11
WLF **Walferdange** 83.18 333 P P 12 10 16.3 +0.8
WLF **Walferdange** 83.18 333 *eP* P 12 10 16.4 +0.9
WLF **Walferdange** 83.18 333 *eP* P 12 10 16.4 +0.9
comp=Z,79nm,0.9s
WLF LR LR
comp=Z,7μm,21.0s
K35A **Storm Lake** 83.21 39 P P 12 10 15.8 0.0
baz=319
L34A **Svendsen Farm,** 83.22 40 P P 12 10 15.9 +0.1
baz=318,SNR=6.5
MOTA **Moosalm** 83.22 329 *i* PcP P 12 10 17.8 +1.8
comp=Z,220nm,0.9s,SNR=99
WLF1 **Llynfaes** 83.24 340 *eP* P 12 10 16.3 +0.6
WLF1 AMB AMB 12 10 17.3
comp=Z,196nm,2.2s
WLF1 AMS AMS 12 42 50.5
comp=Z,2μm,33.7s
RETA **Reutte** 83.25 329 *i* P P 12 10 17.0 +1.0
comp=Z,292nm,1.0s,SNR=132
NKY **Niksic** 83.28 322⇑ *iP* P 12 10 16.8 +0.5
FOEL **Foel Wylfa** 83.29 340⇑ *eP* P 12 10 16.8 +0.8
FOEL AMS AMS 12 51 22.3
comp=Z,3μm,19.5s
YLL **Lianberis** 83.32 340⇑ *eP* P 12 10 17.0 +0.9
NKME **Niksic** 83.34 322⇑ *iP* P 12 10 16.9 +0.4
DOU **Dourbes** 83.35 334 P P 12 10 16.7 +0.3
comp=Z,42nm,1.7s
COWI **Conover** 83.36 33 *eP* P 12 10 16.4 -0.1
comp=Z,39nm,1.0s
319A **Douglas** 83.40 55 *eP* P 12 10 18.2 +1.1
comp=Z,69nm,1.0s
319A LR LR
comp=Z,2μm,20.0s
TRI **Trieste** 83.43 326 *eP* P 12 10 16.3 -0.5
TRI **Trieste** 83.43 326 *eP* P 12 10 16.3 -0.5
comp=Z,178nm,0.9s
TRI LR LR
comp=Z,7μm,20.0s
BRY **Bratogost** 83.44 322⇑ *iP* P 12 10 17.2 +0.1
PDG **Podgorica** 83.45 321 P P 12 10 17.6 +0.6
TTG **Podgorica** 83.45 321⇑ *iP* P 12 10 17.8 +0.8
TTG **Podgorica** 83.45 321 P P 12 10 17.6 +0.6
TTG **Podgorica** 83.45 321 P P 12 10 17.6 +0.6
SKDS **Skadanscina** 83.45 326 *iP* P 12 10 16.7 -0.3
comp=Z,554nm,2.1s
SKDS *e* 12 10 33.7
M34A **Aspy Farms, Fr** 83.46 40 P P 12 10 16.8 -0.3
baz=318,SNR=7.8
UDBI **Udbina** 83.47 325 P P 12 10 17.4 +0.2
P31A **Stockton** 83.48 43 P P 12 10 17.1 -0.2
baz=317,SNR=24
BFO **Black Forest** 83.50 331 *eP* P 12 10 17.9 +0.7
BFO pmax pmax
comp=Z,540nm,1.6s
BFO MLR MLR
comp=Z,4μm,20.0s
BFO **Black Forest** 83.50 331 *eP* P 12 10 17.9 +0.7
comp=Z,540nm,1.6s
BFO LR LR
comp=Z,4μm,20.0s
EIL **Elat** 83.51 303 LR LR 12 51 46.5
comp=Z,4μm,18.8s,baz=43,slow=39
NIS1 **Nisyros Isl.** 83.51 313 P P 12 10 17.3 -0.2
NIS1 **Nisyros Isl.** 83.51 313 *eP* P 12 10 17.3 -0.2
MXZ **Matakaoa Point** 83.51 152 PFAKE
MXZ LR LR 12 10 30.0 +13
comp=Z,3μm,20.0s
O32A **Brockman Farm,** 83.51 42 P P 12 10 17.1 -0.3
baz=318
L35A **Bielow Farm, R** 83.52 39 P P 12 10 17.1 -0.3
baz=319
CEME **Cevo** 83.52 321⇑ *iP* P 12 10 17.8 +0.3
YRE **Yr Eifl** 83.53 340⇑ *eP* P 12 10 17.7 +0.5
HLM1 **Long Mynd** 83.53 339⇑ *eP* P 12 10 17.7 +0.4
121A **Cookes Peak, D** 83.55 53 P P 12 10 19.6 +1.6
baz=313,SNR=26
121A **Cookes Peak, D** 83.55 53 *eP* P 12 10 19.2 +1.2
comp=Z,122nm,1.3s
LIT **Litokhoron** 83.55 318 P P 12 10 17.7 +0.1
LIT **Litokhoron** 83.55 318 *eP* P 12 10 17.7 +0.1
LIT **Litokhoron** 83.55 318 *eP* P 12 10 17.7 +0.1
J37A **Redenius Farm,** 83.56 37 P P 12 10 17.7 +0.1

baz=320,SNR=16
I38A **Scanlan Farm,** 83.57 36 P P 12 10 17.6 -0.1
baz=321,SNR=18
FNA **Florina** 83.62 319 P P 12 10 18.1 +0.1
FNA **Florina** 83.62 319 P P 12 10 18.1 +0.1
FNA **Florina** 83.62 319 P P 12 10 18.1 +0.1
FETA **Feichten** 83.64 329 *iP* P 12 10 18.9 +0.8
comp=Z,216nm,1.1s,SNR=78
K36A **Gilmore City** 83.65 38 P P 12 10 17.8 -0.3
baz=320,SNR=8.6
SKP1 **Kophill** 83.66 338 *eP* P 12 10 17.5 -0.4
DRME **Dracevica, Mon** 83.67 321⇑ *iP* P 12 10 18.9 +0.8
OHR **Ohrid** 83.67 319⇑ *iP* P 12 10 18.8 +0.5
URZ **Urewera** 83.70 153 LR LR 12 45 06.0
comp=Z,2μm,20.4s,baz=334,slow=34
URZ **Urewera** 83.70 153 PFAKE 12 10 30.0 +12
URZ LR LR
comp=Z,2μm,22.0s
BUM **Brajici-Budva** 83.72 321⇑ *iP* P 12 10 18.9 +0.4
DAVA **Damuels** 83.76 329 *iP* P 12 10 19.6 +0.9
comp=Z,311nm,1.0s,SNR=86
KZN **Kozani** 83.77 318 P P 12 10 18.7 -0.1
KZN **Kozani** 83.77 318 P P 12 10 18.7 -0.1
KZN **Kozani** 83.77 318 P P 12 10 18.7 -0.1
DSB **Dublin** 83.78 342 *eP* P 12 10 19.3 +0.8
comp=Z,514nm,1.9s
CBKS **Cedar Bluff** 83.80 44 P P 12 10 18.4 -0.6
baz=317,SNR=12
CBKS **Cedar Bluff** 83.80 44 *eP* P 12 10 18.8 -0.1
CBKS **Cedar Bluff** 83.80 44 *eP* P 12 10 18.8 -0.1
comp=Z,107nm,1.2s
HCY **Hercegnovi** 83.80 322⇑ *iP* P 12 10 18.9 +0.1
ULC **Ulcinj** 83.81 321⇑ *iP* P 12 10 19.3 +0.4
P32A **Huiting Farm,** 83.81 43 P P 12 10 18.4 -0.5
baz=317,SNR=21
FYTO **Fytoko, Volos** 83.82 317 P P 12 10 19.0 0.0
FYTO **Fytoko, Volos** 83.82 317 *eP* P 12 10 19.0 0.0
NVLJ **Novalja** 83.85 325 P P 12 10 18.6 -0.4
STON **Ston** 83.86 322 P P 12 10 18.7 -0.4
HSIG 83.90 57 *eP* P 12 10 20.3 +0.8
comp=Z,77nm,1.4s
M35A **Neola** 83.93 40 P P 12 10 19.6 +0.1
baz=319,SNR=15
K37A **Belmond** 83.94 38 P P 12 10 19.5 0.0
baz=320,SNR=15
L36A **Harm Buss Farm** 83.95 39 P P 12 10 19.7 +0.1
baz=320
TIR **Tirane** 83.96 320 *eP* P 12 10 20.5 +0.8
TIR pmax pmax
comp=Z,244nm,0.8s
TIR MLR MLR
comp=Z,9μm,19.0s
TIR **Tirane** 83.96 320 *eP* P 12 10 20.5 +0.8
comp=Z,244nm,0.8s
TIR LR LR
comp=Z,9μm,19.0s
N34A **Lincoln** 84.00 41 P P 12 10 19.3 -0.5
baz=318
STRD **Stroud** 84.00 339⇑ *eP* P 12 10 20.2 +0.6
STRD AMB AMB 12 10 21.3
comp=Z,339nm,1.0s
STRD AMS AMS 12 50 49.2
comp=Z,3μm,20.4s
O33A **Hebron** 84.01 42 P P 12 10 19.3 -0.7
baz=318
ECH **Echery** 84.03 332⇑ *eP* P 12 10 20.4 +0.5
MCH1 **Michaelchurch** 84.03 339⇑ *eP* P 12 10 20.4 +0.6
MCH1 AMB AMB 12 10 21.4
comp=Z,276nm,2.2s
J38A **Wedel Dairy, R** 84.06 37 P P 12 10 19.8 -0.3
baz=321,SNR=8.7
NEST **Nestorio** 84.06 319 P P 12 10 20.7 +0.4
HMNX **Herstmonceux** 84.06 337⇑ *eP* P 12 10 21.1 +1.2
HMNX AMB AMB 12 10 21.9
comp=Z,338nm,1.8s
HMNX AMS AMS 12 50 05.0
comp=Z,4μm,22.8s
SMIA **Simia** 84.07 317 P P 12 10 20.3 0.0
APE **Apeiranthos** 84.11 314 *c iP* P 12 10 19.7 -0.9
APE pmax pmax
comp=Z,113nm,0.9s
MONM **Monmouth** 84.12 339 AMS AMS 12 52 16.0
comp=Z,3μm,18.3s
SWN1 **Swindon** 84.13 338 *eP* P 12 10 21.3 +1.0
SWN1 AMB AMB 12 10 22.1
comp=Z,363nm,1.5s
SWN1 AMS AMS 12 51 24.5
comp=Z,4μm,20.0s
WOL **Wolverton** 84.14 338⇑ *eP* P 12 10 20.8 +0.4
WOL AMS AMS 12 50 28.0
comp=Z,4μm,22.0s
DAVOX **Davos/Dischmat** 84.17 329 LR LR 12 51 59.4
comp=Z,5μm,19.1s,baz=36,slow=38
SRIG **Santa Rosalia** 84.17 59 *eP* P 12 10 21.8 +0.8
comp=Z,136nm,1.7s
SRIG LR LR
comp=Z,2μm,18.0s
THL **Klokotos Trika** 84.19 318 P P 12 10 19.8 -1.1
OLDB **Oldbury-Upon-S** 84.21 339 AMS AMS 12 50 45.2
comp=Z,3μm,19.1s
LPW **Lampeter** 84.22 340 *eP* P 12 10 21.0 +0.3
LPW AMB AMB 12 10 22.4
comp=Z,215nm,1.5s
LPW AMS AMS 12 51 58.6
comp=Z,3μm,23.0s
KARP **Karpathos** 84.27 312 P P 12 10 21.5 +0.1
KARP **Karpathos** 84.27 312 *eP* P 12 10 21.5 +0.1
comp=Z,116nm,1.0s
KARP LR LR
comp=Z,1μm,20.0s
Q32A **Meitler Ranch,** 84.30 43 P P 12 10 21.3 -0.2
baz=317,SNR=18
BKZ **Black Stump Fm** 84.30 154 *eP* P 12 10 22.6 +1.4
BKZ LR LR
comp=Z,4μm,21.0s
BATH **Bath** 84.34 339 AMS AMS 12 51 33.6
comp=Z,3μm,16.7s
MOF **Molkenrain** 84.34 331⇑ *eP* P 12 10 22.1 +0.5
LKR **Lokris** 84.35 317 P P 12 10 21.3 -0.4
LKR **Lokris** 84.35 317 P P 12 10 21.3 -0.4
L37A **Phoenix Point,** 84.37 38 P P 12 10 21.8 +0.1
baz=320,SNR=11
M36A **Felix, Anita** 84.38 39 P P 12 10 22.0 +0.2
baz=319,SNR=11
O34A **Beatrice** 84.39 41 P P 12 10 21.3 -0.5
baz=318,SNR=6.0
N35A **Tabor** 84.41 40 P P 12 10 22.3 +0.3
baz=319,SNR=14
P33A **Williams Farm,** 84.42 42 P P 12 10 21.9 -0.2
baz=318,SNR=7.3
K38A **Parkersburg** 84.44 37 P P 12 10 22.3 +0.2
baz=321
THEF **They Montfort** 84.45 332⇑ *eP* P 12 10 22.6 +0.6
R32A **Long Quarter,** 84.63 43 P P 12 10 23.0 -0.2
baz=317
TUE **Stuetta** 84.64 329 *eP* P 12 10 24.0 +0.7
comp=Z,162nm,1.0s
TUE LR LR
comp=Z,4μm,19.0s
SANT **Santorini** 84.65 314 *eP* P 12 10 21.8 -1.5
comp=Z,418nm,1.4s
SANT LR LR
comp=Z,3μm,20.0s
Q33A **Connelly Farm,** 84.67 43 P P 12 10 22.9 -0.4
baz=318,SNR=18
PMOR **Pomariorio Ree** 84.68 114 *eT* T 13 43 42.9
comp=Z,76nm,0.2s
O35A **Humboldt** 84.72 41 P P 12 10 23.4 -0.2
baz=319
JAN **Janina** 84.73 318 P P 12 10 24.2 +0.6
JAN **Janina** 84.73 318 P P 12 10 24.2 +0.6
JAN **Janina** 84.73 318 P P 12 10 24.2 +0.6
L38A **Oak Wood Farm,** 84.74 38 P P 12 10 23.9 +0.3
baz=320,SNR=9.7
M37A **Trindle Farm,** 84.78 39 P P 12 10 24.5 +0.7
baz=320,SNR=5.3
N36A **Muff Farm, Cla** 84.78 40 P P 12 10 24.5 +0.7
baz=319
P34A **Walnut Farm, R** 84.79 42 P P 12 10 23.6 -0.3
baz=318,SNR=12
SCIA **State Center** 84.80 38 *eP* P 12 10 24.8 +0.9
comp=Z,182nm,1.3s
SCIA LR LR
comp=Z,2μm,22.0s
LOMF **Lomont** 84.88 331⇑ *eP* P 12 10 25.0 +0.7
ANX **Ano Chora** 84.96 317 P P 12 10 24.6 -0.3

DSL	Palaion Diasel	84.99	318	P	P	12 10 24.9	-0.1
DSL	Palaion Diasel	84.99	318	eP	P	12 10 24.9	-0.1
KALE	Kalithea	84.99	317	P	P	12 10 23.2	-1.8
KALE	Kalithea	84.99	317	eP	P	12 10 23.2	-1.8
SERG	Sergoula	85.02	317	P	P	12 10 24.5	-0.6
S32A	Newby Ranch, P	85.04	44	P	P	12 10 25.3	+0.1
	baz=317,SNR=16						
SGD	Sagiada	85.08	319	P	P	12 10 25.5	+0.2
R33A	Olander Ranch,	85.11	43	P	P	12 10 25.4	-0.2
	baz=318,SNR=8.4						
ZKR	Zakros	85.12	312	P	P	12 10 26.2	+0.6
ZKR	Zakros	85.12	312	eP	P	12 10 26.2	+0.6
M38A	Pleasantville	85.18	38	P	P	12 10 25.9	+0.1
	baz=320,SNR=14						
LAKA	Lakka	85.19	317	P	P	12 10 25.6	-0.4
LAKA	Lakka	85.19	317	eP	P	12 10 25.6	-0.4
N37A	Lee Faris, Mou	85.20	39	P	P	12 10 26.5	+0.6
	baz=320,SNR=16						
Q34A	Chapman	85.20	42	P	P	12 10 26.1	+0.1
	baz=318,SNR=8.8						
P35A	Duane Minner,	85.22	41	P	P	12 10 25.9	-0.2
	baz=319						
KEK	Kerkira	85.22	319	P	P	12 10 26.2	+0.1
KEK	Kerkira	85.22	319	P	P	12 10 26.2	+0.1
KSU1	Kansas State U	85.24	42	P	P	12 10 26.0	-0.1
	baz=318,SNR=5.2						
KSU1	Kansas State U	85.24	42	eP	P	12 10 26.2	0.0
KSU1				LR	LR		
	comp=Z,2µm,22.0s						
KLV	Kalavryta, Ach	85.24	317	P	P	12 10 24.7	-1.6
KLV	Kalavryta, Ach	85.24	317	eP	P	12 10 24.7	-1.6
PPT	Papeete	85.26	117	LR	LR	12 41 14.2	
	comp=Z,4µm,21.8s,baz=279,slow=30						
PPT2	Papeete2	85.27	117	eS	S	12 20 54.4	+0.2
	comp=Z,3µm,30.5s						
PPT2	Papeete2	85.27	117	eLR	LR	12 37 03.5	
	comp=Z,8µm,22.2s,baz=316						
PPT2	Papeete2	85.27	117	eT	T	13 44 27.7	
	comp=Z,20nm,0.3s						
O36A	Bolckow	85.30	40	P	P	12 10 26.8	+0.3
	baz=319,SNR=9.4						
PAE	Paea	85.32	117	eT	T	13 44 30.5	
	comp=Z,6.9nm,0.3s						
PDO	Prodromos	85.34	318	P	P	12 10 24.8	-1.9
JFWS	Jewell Farm	85.39	36	eP	P	12 10 26.7	-0.2
JFWS	Jewell Farm	85.39	36	eP	P	12 10 26.7	-0.2
	comp=Z,52nm,1.1s						
JFWS				LR	LR		
	comp=Z,2µm,21.0s						
TIAR	Tiarei	85.41	117	eT	T	13 44 37.2	
	comp=Z,8.5nm,0.3s						
T32A	Huddler Ranch,	85.43	44	P	P	12 10 27.3	+0.1
	baz=317,SNR=17						
LKD2	Lefkada island	85.48	318	P	P	12 10 26.9	-0.5
LKD2	Lefkada island	85.48	318	P	P	12 10 26.9	-0.5
R34A	Isabella, Hill	85.50	43	P	P	12 10 27.7	+0.2
	baz=318						
LAST	Lasithi	85.50	313	P	P	12 10 27.8	+0.1
LAST	Lasithi	85.50	313	eP	P	12 10 27.8	+0.1
	comp=Z,432nm,1.1s						
LAST				LR	LR		
	comp=Z,2µm,20.0s						
AMTX	Amarillo	85.55	48	P	P	12 10 28.8	+0.9
	baz=316						
AMTX	Amarillo	85.55	48	eP	P	12 10 28.9	+0.9
	comp=Z,97nm,1.1s						
AMTX				LR	LR		
	comp=Z,1µm,22.0s						
P36A	Good Intent, A	85.56	41	P	P	12 10 27.9	+0.1
	baz=319,SNR=21						
MSTX	Muleshoe	85.57	49	P	P	12 10 28.3	+0.3
	baz=315,SNR=21						
MSTX	Muleshoe	85.57	49	eP	P	12 10 28.5	+0.5
	comp=Z,116nm,1.3s						
MNTX	Cornudas Mount	85.60	52	P	P	12 10 28.9	+0.8
	baz=314,SNR=19						
MNTX	Cornudas Mount	85.60	52	eP	P	12 10 28.9	+0.8
	comp=Z,86nm,1.4s						
S33A	Kaszmaul Farm,	85.62	44	P	P	12 10 28.5	+0.3
	baz=318,SNR=8.2						
TVO	Taravao	85.63	117	eT	T	13 44 53.6	
	comp=Z,2.8nm,0.4s						
SNZO	South Karori	85.64	156	PFAKE		12 10 40.0	+12
SNZO				LR	LR		
	comp=Z,4µm,20.0s						
N38A	Joes South For	85.64	39	P	P	12 10 28.5	+0.3
	baz=320,SNR=9.3						
O37A	Wolven Farm, M	85.68	40	P	P	12 10 28.7	+0.3
	baz=320,SNR=9.2						
DYA	Yadsworthy	85.70	339	eP	P	12 10 27.8	-0.4
DYA				AMB	AMB	12 10 29.6	
	comp=Z,214nm,1.5s						
DYA				AMS	AMS	12 51 52.8	
	comp=Z,3µm,18.5s						
DYA	Yadsworthy	85.70	339	eP	P	12 10 28.9	+0.7
	comp=Z,340nm,1.4s						
DYA				LR	LR		
	comp=Z,4µm,20.0s						
IDI	Anoyia	85.75	313	LR	LR	12 53 10.8	
	comp=Z,1µm,20.7s,baz=42,slow=39						
IDI	Anoyia	85.75	313	P	P	12 10 27.6	-1.2
IDI	Anoyia	85.75	313	eP	P	12 10 28.1	-0.8
	comp=Z,147nm,1.1s						
IDI				LR	LR		
	comp=Z,2µm,21.0s						
T33A	Patterson Ranc	85.87	44	P	P	12 10 29.6	+0.2
	baz=318,SNR=9.4						
Q36A	Arnold C. Orve	85.93	41	P	P	12 10 29.7	+0.1
	baz=319						
N39A	Derby Farms, D	85.93	38	P	P	12 10 30.0	+0.5
	baz=321,SNR=17						
U32A	Winter Ranch,	85.97	45	P	P	12 10 30.6	+0.7
	baz=317						
ITM	Ithomi	86.00	316	P	P	12 10 29.2	-0.8
ITM	Ithomi	86.00	316	P	P	12 10 29.2	-0.8
S34A	Willow Spring	86.02	43	P	P	12 10 30.2	+0.1
	baz=318,SNR=11						
P37A	Lathrop	86.02	40	P	P	12 10 29.9	-0.2
	baz=320,SNR=15						
R35A	Emporia Munici	86.03	42	P	P	12 10 30.7	+0.6
	baz=319,SNR=14						
O38A	Galt	86.04	39	P	P	12 10 30.3	+0.2
	baz=320,SNR=5.5						
VLDQ	Val d'Or	86.09	25	eP	P	12 10 29.4	-0.8
	comp=Z,147nm,1.1s						
VLDQ				LR	LR		
	comp=Z,2µm,22.0s						
VLC	Villacollemand	86.10	327	PFAKE		12 10 40.0	+10
VLC				LR	LR		
	comp=Z,4µm,22.0s						
GLMI	Grayling	86.26	31	eP	P	12 10 32.0	+0.9
	comp=Z,196nm,0.8s						
TAOE	Nuku Hiva Isla	86.28	105	eS	S	12 21 04.0	-0.3
	comp=Z,2µm,25.0s						
TAOE				eSS	SS	12 26 45.4	+0.9
	comp=Z,922nm,29.5s						
TAOE	Nuku Hiva Isla	86.28	105	eLR	LR	12 37 41.3	
	comp=Z,10µm,32.4s						
TAOE	Nuku Hiva Isla	86.28	105	eT	T	13 45 41.8	
	comp=Z,118nm,0.3s						
CCA1	Carnmenellis	86.28	340⇑	eP	P	12 10 31.4	+0.4
CCA1				AMB	AMB	12 10 32.5	
	comp=Z,180nm,1.4s						
JSA	Saint Aubin	86.31	337⇑	eP	P	12 10 31.9	+0.7
JSA				AMB	AMB	12 10 32.7	
	comp=Z,234nm,1.1s						
PYL	PYLOS	86.31	316	P	P	12 10 30.4	-1.1
PYL	PYLOS	86.31	316	eP	P	12 10 30.4	-1.1
R36A	Gordon, Harris	86.39	42	P	P	12 10 32.1	+0.2
	baz=319,SNR=45						
O39A	Kirksville	86.39	39	P	P	12 10 32.3	+0.4
	baz=321,SNR=5.5						
P38A	Dawn	86.40	40	P	P	12 10 32.3	+0.5
	baz=320,SNR=25						
U33A	Lingo Farm, Me	86.42	44	P	P	12 10 32.4	+0.4
	baz=318						
V32A	Arapaho	86.43	46	P	P	12 10 33.3	+1.1
	baz=317,SNR=9.1						
S35A	Otter Creek Ra	86.45	43	P	P	12 10 32.8	+0.6
	baz=319,SNR=61						
T34A	McClaskey Farm	86.48	44	P	P	12 10 32.8	+0.5
	baz=318,SNR=16						
Q37A	Longview Farm,	86.51	41	P	P	12 10 32.3	-0.2
	baz=320						
MEH	Mehetia	86.51	116	eT	T	13 46 00.1	
	comp=Z,152nm,0.3s						
DAMY	Dhamar	86.66	286	eP	P	12 10 35.4	+1.4
	comp=Z,411nm,1.7s						
DAMY				LR	LR		
	comp=Z,2µm,20.0s						
OXZ	Oxford	86.69	159	eP	P	12 10 33.9	+1.0
	comp=Z,123nm,1.6s						
U34A	Anderson Ranch	86.73	44	P	P	12 10 34.4	+0.8
	baz=318,SNR=10.0						
U34A	Anderson Ranch	86.73	44	eP	P	12 10 34.4	+0.8
	comp=Z,135nm,1.2s						
R37A	Teagarden Farm	86.74	41	P	P	12 10 33.6	0.0
	baz=320,SNR=20						
W32A	Sentinel	86.76	46	P	P	12 10 34.7	+1.0
	baz=317,SNR=19						
RPZ	Rata Peaks	86.77	159	LR	LR	12 46 25.9	
	comp=Z,1µm,18.6s,baz=345,slow=34						
V33A	Lossen Ranch,	86.78	45	P	P	12 10 34.1	+0.2
	baz=318						
S36A	Lake Cedric, C	86.80	42	P	P	12 10 34.1	+0.2
	baz=319,SNR=22						
O40A	La Belle	86.82	38	P	P	12 10 34.4	+0.5
	baz=321,SNR=9.7						
BNI	Bardonecchia	86.86	330	PFAKE		12 10 50.0	+16
BNI				LR	LR		
	comp=Z,7µm,21.0s						
Q38A	Cooks Store, C	86.86	40	P	P	12 10 34.1	0.0
	baz=320,SNR=29						
P39A	Salisbury	86.89	39	P	P	12 10 34.7	+0.5
	baz=321,SNR=15						
T35A	Sooner Cattle	86.92	43	P	P	12 10 35.0	+0.5
	baz=319,SNR=13						
GDM	Grand'Maison	86.94	330⇑	eP	P	12 10 35.2	+0.5
CUC	Castrocucco	86.98	322	eP	P	12 10 33.5	-1.3
	comp=Z,33nm,1.2s						
CUC				LR	LR		
	comp=Z,3µm,18.0s						
GRN	Grenoble	87.05	331⇑	eP	P	12 10 35.9	+0.8
Q39A	Willow Grove F	87.12	40	P	P	12 10 35.7	+0.3
	baz=321,SNR=68						
T36A	Boggs Farm, Ca	87.15	43	P	P	12 10 35.9	+0.4
	baz=319,SNR=18						
TIP	Timpagrande	87.15	321	P	P	12 10 35.0	-0.7
TIP	Timpagrande	87.15	321	eP	P	12 10 36.0	+0.4
TIP				LR	LR		
	comp=Z,7µm,18.0s						
S37A	Fort Scott	87.17	42	P	P	12 10 35.5	-0.2
	baz=320,SNR=39						
W33A	Caddo, Fort Co	87.17	46	P	P	12 10 36.9	+1.1
	baz=318,SNR=12						
V34A	Guthrie	87.19	45	P	P	12 10 36.7	+0.9
	baz=318,SNR=7.7						
V34A	Guthrie	87.19	45	eP	P	12 10 36.5	+0.7
	comp=Z,229nm,1.6s						
P40A	Paris	87.20	39	P	P	12 10 36.1	+0.3
	baz=321,SNR=32						
U35A	Pawnee	87.21	44	P	P	12 10 36.4	+0.5
	baz=319,SNR=9.3						
PLDF	La Plantade	87.22	332⇑	eP	P	12 10 37.8	+1.9
X32A	Elmer	87.25	47	P	P	12 10 36.5	+0.4
	baz=317,SNR=20						
WMOK	Wichita Mounta	87.30	46	eP	P	12 10 36.8	+0.4
WMOK	Wichita Mounta	87.30	46	eP	P	12 10 36.8	+0.4
	comp=Z,66nm,1.2s						
WMOK				LR	LR		
	comp=Z,1µm,21.0s						
R38A	Fenwick Farm,	87.31	41	P	P	12 10 36.0	-0.4
	baz=320,SNR=20						
AUTN	L'Aution	87.44	329⇑	eP	P	12 10 37.1	-0.1
SSB	Saint Sauveur	87.47	331⇑	eP	P	12 10 37.5	+0.4
SSB	Saint Sauveur	87.47	331	eP	P	12 10 37.7	+0.6
SSB				pmax	pmax		
	comp=Z,57nm,1.0s						
SSB				MLR	MLR		
	comp=Z,3µm,21.0s						
SSB	Saint Sauveur	87.47	331	eP	P	12 10 37.7	+0.6
	comp=Z,57nm,1.0s						
SSB				LR	LR		
	comp=Z,3µm,21.0s						
W34A	Bridge Creek,	87.49	45	P	P	12 10 38.0	+0.7
	baz=318						
W34A	Bridge Creek,	87.49	45	eP	P	12 10 38.1	+0.8
	comp=Z,136nm,1.4s						
LUCF	Luceram	87.56	329	eP	P	12 10 37.2	-0.4
Q40A	Laux Farm, Aux	87.60	39	P	P	12 10 37.7	0.0
	baz=321,SNR=22						
X33A	Lawton	87.60	46	P	P	12 10 38.1	+0.2
	baz=318						
T37A	Cheneyville 18	87.60	42	P	P	12 10 37.9	+0.1
	baz=320,SNR=14						
V35A	Meyer Ranch, C	87.61	44	P	P	12 10 38.3	+0.5
	baz=318						
LPIG	La Paz	87.61	61	LR	LR	12 43 28.2	
	comp=Z,953nm,20.5s,baz=316,slow=31						
PYM	Petit Puy Mans	87.63	333⇑	eP	P	12 10 39.9	+2.1
MVIF	Mont Vial	87.64	329⇑	eP	P	12 10 37.7	-0.3
R39A	Chumby, Stover	87.65	40	P	P	12 10 38.1	+0.1
	baz=321,SNR=38						
REVF	Revere	87.68	329⇑	eP	P	12 10 37.8	-0.3
HDIL	Hopedale	87.70	37	P	P	12 10 38.3	+0.2
	baz=323,SNR=8.1						
HDIL	Hopedale	87.70	37	eP	P	12 10 38.8	+0.6
	comp=Z,121nm,1.0s						
HDIL				LR	LR		
	comp=Z,1µm,19.0s						
U36A	Oologah	87.73	43	P	P	12 10 38.7	+0.4
	baz=319,SNR=6.3						
S38A	Stockton	87.73	41	P	P	12 10 38.0	-0.4
	baz=320,SNR=12						
CALN	Calern	87.86	329⇑	eP	P	12 10 38.9	-0.2
Y33A	Hilltop Ranch,	87.92	46	P	P	12 10 39.8	+0.4
	baz=318,SNR=13						
X34A	Smith Ranch, M	87.93	46	P	P	12 10 40.1	+0.7
	baz=318,SNR=12						
S39A	Bolivar	87.99	41	P	P	12 10 39.2	-0.4
	baz=320,SNR=39						
LBL	Lubilhac	87.99	332⇑	eP	P	12 10 41.8	+2.2
T38A	Diamond	87.99	42	P	P	12 10 39.6	0.0
	baz=320,SNR=32						
U37A	Salina	88.04	43	P	P	12 10 40.1	+0.2
	baz=320,SNR=15						
W35A	Tecumseh	88.04	45	P	P	12 10 40.3	+0.4
	baz=318,SNR=5.1						
R40A	Maddies Statio	88.05	40	P	P	12 10 40.0	+0.1
	baz=321,SNR=32						
TUL1	Leonard	88.06	43	P	P	12 10 40.5	+0.5
	baz=319,SNR=5.5						
TUL1	Leonard	88.06	43	eP	P	12 10 40.4	+0.4
	comp=Z,141nm,1.8s						
TUL1				LR	LR		
	comp=Z,2µm,22.0s						
V36A	Jenks	88.07	44	P	P	12 10 40.6	+0.6
	baz=319,SNR=8.0						
FRNF	Fournols	88.10	333⇑	eP	P	12 10 41.3	+1.3
CEL	Celeste	88.29	321	eP	P	12 10 40.8	-0.3
	comp=Z,123nm,1.0s						
CEL				LR	LR		
	comp=Z,6µm,20.0s						
LTX	Lajitas	88.31	53	eP	P	12 10 41.9	+0.5
LTX	Lajitas	88.31	53	eP	P	12 10 41.9	+0.5
TX31	Lajitas Ar. Si	88.31	53	eP	P	12 10 42.0	+0.5
TXAR	Lajitas Array	88.31	53	P	P	12 10 41.9	+0.5
	comp=Z,5.4nm,0.8s,baz=291,slow=3.3,SNR=72						
TXAR				PKKP	PKKPdf	12 28 07.0	-10
	comp=Z,1.0nm,0.8s,baz=306,slow=2.8,SNR=9.3						
TXAR				PKKPbc	PKKPbc	12 28 13.5	-9.4
	comp=Z,1.1nm,0.6s,baz=292,slow=2.5,SNR=7.7						
TXAR				LR	LR	12 46 12.5	
	comp=Z,1µm,20.9s,baz=0.0,slow=33						
ABTX	Abilene, Hawle	88.36	48	P	P	12 10 42.0	+0.5
	baz=317,SNR=7.0						
ABTX	Abilene, Hawle	88.36	48	eP	P	12 10 42.1	+0.6
	comp=Z,109nm,1.3s						
Z33A	Whitaker Ranch	88.37	47	P	P	12 10 41.8	+0.2
	baz=318,SNR=7.2						
U38A	Gravette	88.40	42	P	P	12 10 41.5	-0.1
	baz=320,SNR=16						
SADO	Sadowa	88.40	28	eP	P	12 10 41.2	-0.2
	comp=Z,38nm,1.1s						
SADO				LR	LR		
	comp=Z,1µm,20.0s						
W36A	Wetumka	88.40	44	P	P	12 10 42.0	+0.4
	baz=319,SNR=8.3						
V37A	Hulbert	88.42	43	P	P	12 10 42.1	+0.4
	baz=320,SNR=28						
Y34A	Reagan Ranch,	88.44	46	P	P	12 10 42.3	+0.5
	baz=318,SNR=7.3						
S40A	Lebanon	88.47	40	P	P	12 10 41.7	-0.2
	baz=321,SNR=20						
T39A	Clever	88.47	41	P	P	12 10 42.0	+0.1
	baz=320,SNR=12						
X35A	Drake	88.55	45	P	P	12 10 42.4	+0.1
	baz=318,SNR=11						
MATF	Mathat	88.69	335⇑	eP	P	12 10 43.9	+1.2
HPIG		88.73	56	eP	P	12 10 44.2	+0.6
	comp=Z,82nm,1.5s						
HPIG				LR	LR		
	comp=Z,2µm,21.0s						
AAM	Ann Arbor	88.74	32	eP	P	12 10 44.4	+1.3
AAM	Ann Arbor	88.74	32	eP	P	12 10 44.4	+1.3
	comp=Z,75nm,0.9s						
AAM				LR	LR		
	comp=Z,2µm,22.0s						
HHAR	Hobbs	88.75	42	eP	P	12 10 43.4	+0.1
	comp=Z,40nm,1.0s						
HHAR				LR	LR		
	comp=Z,2µm,22.0s						
X36A	Centrahoma	88.76	45	P	P	12 10 43.9	+0.6
	baz=319,SNR=16						
SLM	Saint Louis	88.77	38	eP	P	12 10 43.8	+0.5
SLM	Saint Louis	88.77	38	eP	P	12 10 43.8	+0.5
	comp=Z,101nm,0.9s						
SLM				LR	LR		
	comp=Z,1µm,20.0s						
LMQ	La Malbaie	88.78	21	eP	P	12 10 43.5	+0.3
	comp=Z,118nm,1.1s						
LMQ				LR	LR		
	comp=Z,2µm,22.0s						
133A	Hamilton Ranch	88.78	48	P	P	12 10 43.7	+0.2
	baz=318,SNR=5.1						
Z34A	Collier Ranch,	88.79	46	P	P	12 10 43.9	+0.4
	baz=318						
T40A	Mansfield	88.81	41	P	P	12 10 43.3	-0.2
	baz=321,SNR=20						
V38A	Canehill	88.83	43	P	P	12 10 43.8	+0.2
	baz=320,SNR=33						
W37B	Quinton	88.83	44	P	P	12 10 44.4	+0.7
	baz=319,SNR=5.5						
SFIN	Lafayette	88.84	35	P	P	12 10 43.8	+0.3
	baz=324,SNR=20						
SFIN	Lafayette	88.84	35	eP	P	12 10 44.1	+0.6
	comp=Z,85nm,1.0s						
SFIN				LR	LR		
	comp=Z,2µm,22.0s						
Y35A	Marietta	88.88	46	P	P	12 10 44.1	+0.2
	baz=318						
U39A	Green Forest	88.91	42	P	P	12 10 44.1	+0.1
	baz=320,SNR=50						
Z35A	Perchaven, San	89.19	46	P	P	12 10 45.4	0.0
	baz=318,SNR=5.1						
233A	Rising Star	89.23	48	P	P	12 10 46.4	+0.8
	baz=318						
V39A	Pettigrew	89.24	42	P	P	12 10 45.6	0.0
	baz=320,SNR=34						
U40A	Yellville	89.25	41	P	P	12 10 45.9	+0.3
	baz=321,SNR=71						
X37A	Clayton	89.28	44	P	P	12 10 45.9	+0.1
	baz=319,SNR=6.4						
134A	White-Moore Ra	89.29	47	P	P	12 10 46.7	+0.9
	baz=318						
Y36A	Durant	89.30	45	P	P	12 10 46.0	+0.1
	baz=319,SNR=10						
TBI	Tubuai	89.31	121	eS	S	12 21 31.4	-1.3
	comp=Z,1µm,25.5s						
TBI	Tubuai	89.31	121	eLR	LR	12 38 45.0	
	comp=Z,6µm,22.5s,baz=313						
TBI	Tubuai	89.31	121	eT	T	13 49 30.4	
	comp=Z,122nm,0.3s						
W38A	Poteau	89.37	43	P	P	12 10 46.6	+0.5
	baz=320,SNR=11						
X38A	Whitesboro	89.51	44	P	P	12 10 47.4	+0.6
	baz=320,SNR=15						
Y37A	Hugo	89.61	45	P	P	12 10 47.6	+0.4
	baz=319						
W39A	Magazine	89.66	43	P	P	12 10 47.9	+0.3
	baz=320,SNR=9.4						
234A	Clairette	89.67	47	P	P	12 10 48.0	+0.4
	baz=318,SNR=9.2						
135A	Vickery Place,	89.68	47	P	P	12 10 48.3	+0.6
	baz=318						
333A	Richland Sprin	89.69	48	P	P	12 10 48.2	+0.5
	baz=317,SNR=25						
Z36A	Blue Ridge	89.69	46	P	P	12 10 47.8	+0.1
	baz=319,SNR=7.5						
V40A	Witts Springs	89.69	42	P	P	12 10 47.9	+0.1
	baz=321,SNR=9.0						
OLIL	Olney	89.70	37	eP	P	12 10 48.5	+0.8
	comp=Z,101nm,0.9s						
OLIL				LR	LR		
	comp=Z,1µm,22.0s						
JCT	Junction City	89.83	50	P	P	12 10 48.5	+0.1
	baz=317,SNR=12						
JCT	Junction City	89.83	50	eP	P	12 10 48.9	+0.4
JCT	Junction City	89.83	50	eP	P	12 10 48.9	+0.4
	comp=Z,64nm,1.4s						
JCT				LR	LR		
	comp=Z,2µm,22.0s						
SIUC	Southern Illin	89.99	38	eP	P	12 10 49.7	+0.7
	comp=Z,148nm,1.0s						
SIUC				LR	LR		
	comp=Z,1µm,21.0s						
X39A	Fountain Ranch	90.01	43	P	P	12 10 49.6	+0.4
	baz=320,SNR=16						
W40A	Ferguson Farm,	90.04	42	P	P	12 10 49.7	+0.5
	baz=321,SNR=12						
433A	Art	90.04	49	P	P	12 10 49.5	+0.1
	baz=317,SNR=14						
DRLN	Deer Lake	90.07	13	eP	P	12 10 49.7	+0.6
	comp=Z,72nm,1.4s						
DRLN				LR	LR		
	comp=Z,3µm,22.0s						
WHTX	Lake Whitney,	90.07	47	P	P	12 10 49.9	+0.4
	baz=318,SNR=9.0						
WHTX	Lake Whitney,	90.07	47	eP	P	12 10 50.2	+0.8
	comp=Z,130nm,1.4s						
BLO	Bloomington	90.07	36	eP	P	12 10 49.9	+0.5
BLO	Bloomington	90.07	36	eP	P	12 10 49.9	+0.5
	comp=Z,208nm,1.8s						
334A	Lometa	90.11	48	P	P	12 10 50.0	+0.2
	baz=318,SNR=38						
LONY	Lake Ozonia	90.11	25	eP	P	12 10 49.4	-0.1
	comp=Z,38nm,1.1s						
LONY				LR	LR		
	comp=Z,2µm,22.0s						
Y38A	Idabel	90.12	44	P	P	12 10 49.9	+0.2
	baz=320						
CLTB	Caltabellotta	90.13	322	PFAKE		12 11 00.0	+10
CLTB				LR	LR		
	comp=Z,6µm,21.0s						
PBMO	Poplar Bluff	90.14	40	eP	P	12 10 50.3	+0.6
	comp=Z,81nm,1.0s						
PBMO				LR	LR		
	comp=Z,5µm,20.0s						
Z37A	Pogue Cattle C	90.19	45	P	P	12 10 50.5	+0.5
	baz=319,SNR=9.2						
LRDF	Laroque-de-Fa	90.22	332⇑	eP	P	12 10 51.0	+1.0
136A	Ennis	90.23	46	P	P	12 10 50.5	+0.3
	baz=319						
MIAR	Mount Ida	90.27	43	P	P	12 10 51.0	+0.6
	baz=320,SNR=26						
MIAR	Mount Ida	90.27	43	eP	P	12 10 51.1	+0.7
MIAR	Mount Ida	90.27	43	eP	P	12 10 51.1	+0.7
	comp=Z,52nm,1.0s						
MIAR				LR	LR		
	comp=Z,2µm,21.0s						
X201	Greenbrier Sit	90.33	42	eP	P	12 10 51.0	+0.3
	comp=Z,147nm,1.4s						
X201				LR	LR		
	comp=Z,900nm,21.0s						
VSL	Villasalto	90.35	325	eP	P	12 10 50.3	-0.4
	comp=Z,54nm,1.2s						
VSL				LR	LR		
	comp=Z,4µm,18.0s						
X301	Greenbrier Sit	90.35	42	eP	P	12 10 50.9	+0.1
	comp=Z,128nm,1.6s						
X301				LR	LR		
	comp=Z,1µm,19.0s						
ERPA	Erie	90.36	30	eP	P	12 10 51.6	+0.9
	comp=Z,124nm,0.9s						
ERPA				LR	LR		
	comp=Z,1µm,21.0s						
WHAR	Wooly Hollow	90.37	42	eP	P	12 10 51.0	+0.2
	comp=Z,86nm,1.0s						
Y39A	Lockesburg	90.46	44	P	P	12 10 51.6	+0.4
	baz=320,SNR=7.2						
434A	Burnet	90.48	48	P	P	12 10 51.7	+0.2
	baz=318,SNR=12						

SJAF Saint Jean de 90.49 331⇑ eP P 12 10 51.2 -0.1
Z38A Mt. Pleasant 90.50 45 P P 12 10 51.7 +0.2
baz=320
USIN University of 90.53 37 PFAKE 12 11 00.0 +8.5
USIN LR LR
comp=Z,1µm,20.0s
FILF Fillols 90.54 331⇑ eP P 12 10 52.3 +0.7
137A Heron Place, G 90.57 46 P P 12 10 52.3 +0.5
baz=319
533A Kerrville 90.57 49 P P 12 10 52.4 +0.5
baz=317,SNR=6.7
CARF Carcanieres 90.57 332⇑ eP P 12 10 52.2 +0.4
236A Katherine and 90.59 46 P P 12 10 52.0 +0.1
baz=319
335A Moody 90.61 48 P P 12 10 52.3 +0.2
baz=318
H06N1 SOCORRO T-PHAS 90.65 65 T T 13 51 44.2
X40A Basin Creek Fa 90.70 42 P P 12 10 52.9 +0.5
baz=321,SNR=13
UALR University of 90.74 42 PFAKE 12 11 00.0 +7.5
UALR LR LR
comp=Z,2µm,20.0s
ACSO Alum Creek Sta 90.74 33 eP P 12 10 53.2 +0.7
comp=Z,93nm,0.9s
H06E1 SOCORRO T-PHAS 90.75 65 T T 13 51 55.1
SNR=23
H06S1 SOCORRO T 90.75 65 T T 13 51 50.8
PVMO Portageville 90.79 39 PFAKE 12 11 00.0 +7.3
PVMO LR LR
comp=Z,1µm,22.0s
NCB Newcomb 90.81 25 eP P 12 10 52.8 0.0
comp=Z,45nm,0.8s
NCB LR LR
comp=Z,2µm,22.0s
Y40A Okolona 90.84 43 P P 12 10 53.3 +0.3
baz=320
WDD Wied Dalam 90.84 320 PFAKE 12 11 00.0 +7.0
WDD LR LR
comp=Z,4µm,21.0s
336A Riesel 90.87 47 P P 12 10 53.6 +0.4
baz=319
SALF Salau 90.87 332 eP P 12 10 53.2 +0.1
VALF Valcebollere 90.88 332⇑ eP P 12 10 54.2 +0.9
138A Matatall Enter 90.89 45 P P 12 10 54.3 +1.0
baz=320
435B Jarrell 90.89 48 P P 12 10 53.7 +0.4
baz=318
MELF Melles 90.92 333 eP P 12 10 53.8 +0.4
534A Blanco 90.94 49 P P 12 10 53.9 +0.3
baz=318,SNR=21
633A Saathoff Ranch 90.94 50 P P 12 10 54.1 +0.5
baz=317
Z39A Irene McRaven, 90.94 44 P P 12 10 54.1 +0.6
baz=320
WCI Wyandotte Cave 90.94 36 eP P 12 10 54.1 +0.6
WCI Wyandotte Cave 90.94 36 eP P 12 10 54.1 +0.6
comp=Z,49nm,0.9s
WCI LR LR
comp=Z,2µm,21.0s
237A Washetta, Mont 90.99 46 P P 12 10 54.3 +0.5
baz=319
M54A Oil Creek Stat 91.00 30 P P 12 10 54.2 +0.5
baz=329,SNR=14
REYF Montagne du Re 91.16 333 eP P 12 10 54.8 +0.3
PKME Peaks-Kenny Pk 91.16 22 eP P 12 10 55.6 +1.3
comp=Z,48nm,1.0s
PKME LR LR
comp=Z,2µm,18.0s
WLAR White Oak Lake 91.17 43 eP P 12 10 55.7 +1.1
comp=Z,99nm,1.2s
WLAR LR LR
comp=Z,2µm,21.0s
VIEF Viey 91.18 333⇑ eP P 12 10 55.7 +1.1
139A Bunkhouse Ranc 91.26 45 P P 12 10 55.6 +0.6
baz=320
LBNH Lisbon 91.31 24 PFAKE 12 11 10.0 +15
LBNH LR LR
comp=Z,2µm,20.0s
832A Faith Ranch, C 91.32 51 P P 12 10 56.0 +0.7
baz=317
N54A Moraine State 91.34 30 P P 12 10 55.8 +0.6
baz=329,SNR=7.3
Z40A Long Farm, Mag 91.35 44 P P 12 10 56.6 +1.2
baz=320
436A Wall Ranch, Ga 91.36 47 P P 12 10 56.6 +1.1
baz=319,SNR=5.2
HALT Halls 91.36 39 PFAKE 12 11 10.0 +15
HALT LR LR
comp=Z,1536µm,22.0s
238A Jacksonville 91.37 46 P P 12 10 56.5 +1.0
baz=320
LARF Larrau 91.39 334 eP P 12 10 57.0 +1.5
733A Divot King Ran 91.41 50 P P 12 10 56.3 +0.5
baz=317
535A Dale 91.46 48 P P 12 10 56.4 +0.4
baz=318
337A Centerville 91.46 47 P P 12 10 56.7 +0.7
baz=319
634A China Grove, S 91.48 49 P P 12 10 56.9 +0.8
baz=318
833A Chaparral WMA, 91.64 51 P P 12 10 57.9 +1.0
baz=317
Z41A Richland Creek 91.67 43 P P 12 10 57.5 +0.6
baz=321
437A Phantom Ranch, 91.69 47 P P 12 10 58.4 +1.4
baz=319
MET Memphis--Engin 91.69 40 PFAKE 12 11 10.0 +13
MET LR LR
comp=Z,1µm,21.0s
CCAR Cane Creek 91.70 42 eP P 12 10 58.1 +1.1
comp=Z,90nm,1.0s
CCAR LR LR
comp=Z,1µm,20.0s
239A Gary 91.72 45 P P 12 10 57.7 +0.6
baz=320
536A Bastrop 91.72 48 P P 12 10 57.8 +0.6
baz=318,SNR=8.3
140A Cam and Jess, 91.73 44 P P 12 10 57.8 +0.6
baz=320
734A La Parita Cree 91.75 50 P P 12 10 58.4 +1.0
baz=318
338A Crockett 91.75 46 P P 12 10 58.5 +1.2
baz=319
BINY Binghamton 91.77 27 eP P 12 10 58.0 +0.8
comp=Z,54nm,1.0s
LMN Caledonia Moun 91.80 18 eP P 12 10 58.0 +0.7
comp=Z,48nm,0.8s
LMN LR LR
comp=Z,2µm,22.0s
NATX Nacogdoches 91.81 45 P P 12 10 58.2 +0.6
baz=320
NATX Nacogdoches 91.81 45 PFAKE 12 11 10.0 +12
NATX LR LR
comp=Z,1µm,21.0s
635A Leesville 91.82 49 P P 12 10 58.5 +0.9
baz=318
WVT Waverly 91.92 38 eP P 12 10 58.6 +0.6
WVT Waverly 91.92 38 eP P 12 10 58.6 +0.6
comp=Z,47nm,1.2s
WVT LR LR
comp=Z,1µm,21.0s
GGN Saint George 91.97 20 PFAKE 12 11 10.0 +12
GGN LR LR
comp=Z,2µm,21.0s
240A Hunter Patters 92.09 45 P P 12 10 59.7 +0.8
baz=320
141A Papa Simpson, 92.12 44 P P 12 10 59.9 +1.0
baz=321
438A Sam Houston St 92.12 47 P P 12 11 00.1 +1.1
baz=319
537A Green Hill Far 92.15 48 P P 12 11 00.4 +1.2
baz=319
636A Smothers Creek 92.17 48 P P 12 11 00.8 +1.5
baz=318,SNR=10
735A Kenedy 92.19 49 P P 12 11 00.8 +1.4
baz=318
933A Laredo 92.23 51 P P 12 11 00.9 +1.3
baz=317,SNR=6.9
834A Tilden 92.29 50 P P 12 11 01.4 +1.5
baz=318
SSPA Standing Stone 92.43 29 PFAKE 12 11 10.0 +10
SSPA LR LR
comp=Z,1µm,22.0s
OXF Oxford 92.44 40 eP P 12 11 00.9 +0.5
OXF Oxford 92.44 40 eP P 12 11 00.9 +0.5
comp=Z,109nm,1.0s
OXF LR LR

comp=Z,1µm,22.0s
O56A Blue Knob Stat 92.49 30 P P 12 11 01.2 +0.6
baz=330
340A Bronson 92.50 45 P P 12 11 01.0 +0.2
baz=320
538A Harpers Horsep 92.51 47 P P 12 11 01.9 +1.1
baz=319
MCWV Mont Chateau 92.51 31 eP P 12 11 02.1 +1.4
comp=Z,15nm,0.9s
HKT Hockley 92.52 47 eP P 12 11 01.5 +0.7
HKT Hockley 92.52 47 eP P 12 11 01.5 +0.7
comp=Z,65nm,1.5s
HKT LR LR
comp=Z,1µm,21.0s
736A Circle Diamond 92.55 49 P P 12 11 02.9 +1.9
baz=318,SNR=6.2
241A Mo Tay, Goldon 92.56 44 P P 12 11 01.8 +0.8
baz=321
835A Beeville 92.60 50 P P 12 11 02.8 +1.5
baz=318
637A Eagle Lake 92.62 48 P P 12 11 02.8 +1.5
baz=319
142A Monroe 92.67 43 P P 12 11 02.3 +0.8
baz=321
934A Benavides 92.69 51 P P 12 11 03.2 +1.5
baz=318
143A Socs Landing, 92.84 43 P P 12 11 03.4 +1.1
baz=322
242A Grayson 92.94 44 P P 12 11 03.5 +0.7
baz=321
N59A State Game Lan 92.97 28 P P 12 11 03.5 +0.7
baz=332
HRV Adam Dziewonsk 92.98 24 PFAKE 12 11 10.0 +7.2
HRV LR LR
comp=Z,2µm,21.0s
034A Hebbronville 92.99 51 P P 12 11 05.0 +1.9
baz=318,SNR=15
737A Port Lavaca 93.06 49 P P 12 11 05.0 +1.6
baz=319
035A Encino 93.43 51 P P 12 11 06.5 +1.4
baz=318
KEST Kesra 93.45 323 P P 12 11 05.2 0.0
comp=Z,22nm,0.9s,baz=307,slow=3.6,SNR=17
KEST PP PP 12 14 51.0 +2.1
comp=Z,19nm,1.1s,baz=238,slow=8.8,SNR=4.6
KEST LR LR 12 56 44.0
comp=Z,2µm,21.2s,baz=356,slow=38
KEST Kesra 93.45 323 eP P 12 11 05.2 0.0
comp=Z,28nm,1.0s
KEST LR LR
comp=Z,5µm,18.0s
SWET Sewanee 93.57 38 eP P 12 11 05.7 0.0
comp=Z,12nm,1.0s
SWET LR LR
comp=Z,400nm,22.0s
TZTN Tazewell 93.57 35 eP P 12 11 06.0 +0.4
comp=Z,52nm,1.1s
TZTN LR LR
comp=Z,2µm,21.0s
ZAIG Zacatecas 93.65 57 eP P 12 11 07.8 +1.2
comp=Z,41nm,1.4s
ZAIG LR LR
comp=Z,2µm,22.0s
VBMS Vicksburg 93.68 42 PFAKE 12 11 20.0 +14
VBMS LR LR
comp=Z,1µm,20.0s
244A Avery, Jackson 93.73 43 P P 12 11 07.3 +0.9
baz=322
035Z Hargill 93.80 51 P P 12 11 08.1 +1.3
baz=318
CPCT Cooper Cave 94.03 36 eP P 12 11 08.4 +0.6
comp=Z,18nm,1.0s
CPCT LR LR
comp=Z,1µm,21.0s
245A Little AP, Sta 94.15 42 P P 12 11 09.0 +0.6
baz=322
TKL Tuckaleechee C 94.20 36 LR LR 12 57 25.8
comp=Z,675nm,18.6s,baz=334,slow=38
TKL Tuckaleechee C 94.20 36 eP P 12 11 09.3 +0.7
TKL Tuckaleechee C 94.20 36 eP P 12 11 09.0 +0.4
comp=Z,38nm,1.0s
TKL LR LR
comp=Z,2µm,21.0s
PBRG Braganca 94.35 337 eP P 12 11 09.6 +0.4
comp=Z,57nm,1.3s
BLA Blacksburg 94.36 33 eP P 12 11 10.2 +0.9
BLA Blacksburg 94.36 33 eP P 12 11 10.2 +0.9
comp=Z,44nm,1.0s
BLA LR LR
comp=Z,2µm,20.0s
FURI Furi 94.58 285 PFAKE 12 11 20.0 +9.0
FURI LR LR
comp=Z,2µm,22.0s
PGAV Gavieira, Arco 94.66 338 eP P 12 11 11.0 +0.4
PGAV Gavieira, Arco 94.66 338 ePP PP 12 15 01.7 +3.7
PGAV Gavieira, Arco 94.66 338 eLR LR 12 43 33.6
comp=Z,2µm,22.0s
CBN Corbin Frederi 94.74 30 PFAKE 12 11 20.0 +9.1
CBN LR LR
comp=Z,2µm,22.0s
LRAL Lakeview Retre 94.82 40 eP P 12 11 11.7 +0.3
comp=Z,61nm,1.8s
LRAL LR LR
comp=Z,1µm,22.0s
MVO Moncorvo 95.03 337 eP P 12 11 12.8 +0.5
comp=Z,52nm,1.7s
MVO Moncorvo 95.03 337 ePP PP 12 14 56.6 -4.3
MVO Moncorvo 95.03 337 eLQ LQ 12 38 43.4
MVO eLR LR 12 43 12.7
comp=Z,4µm,22.0s
POLO Lamas de Olo 95.06 338 eP P 12 11 12.9 +0.4
comp=Z,38nm,1.6s
POLO Lamas de Olo 95.06 338 ePP PP 12 15 05.2 +4.0
PVRL Vila Real 95.13 338 eP P 12 11 13.4 +0.7
comp=Z,54nm,1.8s
ES19 SONSECA Array 95.35 334 eP P 12 11 13.9 +0.1
ESDC Sonseca Array 95.40 334 P P 12 11 14.2 +0.1
comp=Z,11nm,0.8s,baz=21,slow=4.1,SNR=51
ESDC PP PP 12 14 58.7 -5.1
comp=Z,3.1nm,0.7s,baz=23,slow=7.6,SNR=4.1
ESDC LR LR 12 59 36.2
comp=Z,4µm,19.2s,baz=20,slow=39
ESLA Sonseca Array 95.40 334 eP P 12 11 14.0 0.0
comp=Z,20nm,1.0s
ESLA LR LR
comp=Z,5µm,19.0s
PAB San Pablo 95.64 335 eP P 12 11 15.7 +0.5
PAB San Pablo 95.64 335 eP P 12 11 15.7 +0.5
PAB LR LR
comp=Z,6µm,20.0s
KMSC Kings Mountain 95.72 34 P P 12 11 15.5 0.0
baz=328
KMSC Kings Mountain 95.72 34 eP P 12 11 15.9 +0.4
MTE Manteigas 95.88 337 ePP PP 12 15 11.8 +4.3
MTE eSKS SKSac 12 21 56.8 +7.4
MTE Manteigas 95.88 337 eLQ LQ 12 40 03.6
MTE eLR LR 12 44 07.5
comp=Z,3µm,22.0s
MTE Manteigas 95.88 337 eP P 12 11 16.3 +0.1
MTE LR LR
comp=Z,3µm,21.0s
GOGA Godfrey 96.21 37 PFAKE 12 11 30.0 +12
GOGA LR LR
comp=Z,2µm,20.0s
JSC Jenkinsville 96.48 35 PFAKE 12 11 30.0 +11
JSC LR LR
comp=Z,2µm,21.0s
PMRV Marv??o 96.73 337 eP P 12 11 20.7 +0.7
comp=Z,38nm,1.4s
PMRV Marv??o 96.73 337 ePP PP 12 15 18.1 +4.1
PMRV Marv??o 96.73 337 eLQ LQ 12 40 24.4
PMRV eLR LR 12 43 46.1
comp=Z,3µm,22.0s
PESTR Estremoz 97.30 337 eP Pdif 12 11 23.1 +0.4
comp=Z,33nm,1.4s
TIGA Tifton 97.78 38 P Pdif 12 11 25.2 +0.3
baz=326
MESJ Messejana 98.44 337 ePP PP 12 15 29.2 +2.1
MESJ AMS AMS 12 59 00.2
comp=Z,3µm,20.7s
PCVE Castro Verde 98.58 336 ePP PP 12 15 31.5 +3.3
PVAQ Vaqueiros 98.68 336 ePP PP 12 15 34.7 +5.7
PVAQ Vaqueiros 98.68 336 eLR LR 12 44 08.4
comp=Z,8µm,22.0s
PBDV Barranco-do-Ve 98.90 336 ePP PP 12 15 31.5 +0.8
MORF Marmelete 99.06 337 ePP PP 12 15 33.8 +1.8
MORF AMS AMS 12 58 48.8

comp=N,2µm,17.6s
RKT Rikitea 99.19 112 eSKSac SKSac 12 22 06.8 +0.5
comp=N,1µm,27.9s
RKT eSP SP 12 24 24.1 -2.2
comp=N,1µm,31.0s
RKT eSS SS 12 29 48.1 -1.3
comp=N,1µm,29.8s
RKT Rikitea 99.19 112 eLR LR 12 43 23.0
comp=N,6µm,24.2s,baz=308
PFVI Vila Bisbo 99.28 337 PFAKE 12 11 40.0 +8.5
PFVI LR LR
comp=Z,4µm,22.0s
KMBO Kilima Mbogo 102.12 279 Pdiff Pdif 12 11 45.6 +0.8
comp=Z,2.6nm,0.2s,baz=36,slow=7.5,SNR=15
KMBO PP PP 12 15 50.4 -6.5
comp=Z,1.2nm,0.3s,baz=39,slow=12,SNR=4.1
KMBO PKiKP PKiKP 12 16 02.3 -4.8
comp=Z,5.0nm,0.7s,baz=32,slow=12,SNR=5.5
KMBO Kilima Mbogo 102.12 279 eP Pdif 12 11 45.6 +0.8
KMBO MLR MLR
comp=Z,2µm,20.0s
KMBO Kilima Mbogo 102.12 279 ePdif Pdif 12 11 45.6 +0.8
KMBO ePP PP 12 15 50.3 -6.5
KMBO LR LR
comp=Z,2µm,20.0s
KMBO Kilima Mbogo 102.12 279 P Pdif 12 11 45.1 +0.3
SNR=6.5
KMBO Kilima Mbogo 102.12 279 Pdiff Pdif 12 11 45.1 +0.3
SNR=6.5
TEIG Tepich 104.34 48 PFAKE 12 12 10.0 +16
TEIG LR LR
comp=Z,800nm,21.0s
BBSR BB Station 104.42 23 PFAKE 12 12 10.0 +16
BBSR LR LR
comp=Z,1µm,21.0s
CCIG Comitan 105.05 54 PFAKE 12 16 20.0
CCIG LR LR
comp=Z,2µm,22.0s
ABPO Ambohimpanom 105.43 258 PFAKE 12 16 20.0
ABPO LR LR
comp=Z,1µm,21.0s
PMOZ Porto Moniz, M 105.62 342 eLR LR 12 48 42.5
comp=Z,862nm,18.0s
TAM Tamanrasset 105.99 319 PFAKE 12 16 30.0
TAM LR LR
comp=Z,2µm,19.0s
TGUH Tegucigalpa,Un 109.75 51 PFAKE 12 16 30.0
TGUH LR LR
comp=Z,1µm,21.0s
GTBY Guantanamo Bay 111.55 38 PFAKE 12 16 40.0
GTBY LR LR
comp=Z,800nm,22.0s
MTDJ Mount Denham 111.81 41 PFAKE 12 16 40.0
MTDJ LR LR
comp=Z,600nm,18.0s
GRTK Grand Turk 111.95 33 PFAKE 12 16 40.0
GRTK LR LR
comp=Z,1µm,21.0s
PAPH Port-au-Prince 114.07 36 PFAKE 12 16 40.0 +11
PAPH LR LR
comp=Z,1µm,22.0s
JTS JuntasAbangare 114.09 52 PFAKE 12 16 40.0 +11
JTS LR LR
comp=Z,1µm,22.0s
SDDR Presa de Saban 114.12 35 PFAKE 12 16 40.0 +11
SDDR LR LR
comp=Z,1µm,21.0s
TOC1 Torodi Ar. Sit 115.98 316 PFAKE 12 16 40.0 +7.3
TOC1 LR LR
comp=Z,3µm,19.0s
TOC2 Torodi Ar. Sit 115.98 316 PFAKE 12 16 40.0 +7.3
TOC2 LR LR
comp=Z,3µm,19.0s
TOB1 Torodi Ar. Sit 115.99 316 PFAKE 12 16 40.0 +7.2
TOB1 LR LR
comp=Z,3µm,18.0s
TOB2 Torodi Ar. Sit 115.99 316 PFAKE 12 16 40.0 +7.2
TOB2 LR LR
comp=Z,3µm,18.0s
TOC3 Torodi Ar. Sit 116.00 316 PFAKE 12 16 40.0 +7.2
TOC3 LR LR
comp=Z,3µm,19.0s
TOC7 Torodi Ar. Sit 116.00 316 PFAKE 12 16 40.0 +7.2
TOC7 LR LR
comp=Z,2µm,19.0s
TOA1 Torodi Ar. Sit 116.00 316 ePKPdf PKPdf 12 16 32.0 -0.7
TOA1 ePP PP 12 17 29.7 -6.8
TOA1 LR LR
comp=Z,2µm,19.0s
TOA0 Torodi Ar. Sit 116.00 316 ePKPdf PKPdf 12 16 32.2 -0.6
TOA0 LR LR
comp=Z,3µm,19.0s
TORD Torodi Ar. Bea 116.00 316 PKP PKPdf 12 16 32.0 -0.8
comp=Z,12nm,1.0s,baz=8.5,slow=2.1,SNR=30
TORD PP PP 12 17 29.7 -6.8
comp=Z,9.4nm,0.9s,baz=28,slow=6.2,SNR=6.7
TOB5 Torodi Ar. Sit 116.00 316 PFAKE 12 16 40.0 +7.2
TOB5 LR LR
comp=Z,3µm,18.0s
TOB3 Torodi Ar. Sit 116.00 316 PFAKE 12 16 40.0 +7.2
TOB3 LR LR
comp=Z,2µm,19.0s
TOB4 Torodi Ar. Sit 116.02 316 PFAKE 12 16 40.0 +7.2
TOB4 LR LR
comp=Z,3µm,19.0s
TOC4 Torodi Ar. Sit 116.02 316 PFAKE 12 16 40.0 +7.2
TOC4 LR LR
comp=Z,3µm,18.0s
TOC5 Torodi Ar. Sit 116.03 316 PFAKE 12 16 40.0 +7.2
TOC5 LR LR
comp=Z,3µm,18.0s
MPR Mayaguez 116.55 31 PFAKE 12 16 50.0 +16
MPR LR LR
comp=Z,700nm,22.0s
CBYP Canovanas 117.00 30 PFAKE 12 16 50.0 +15
CBYP LR LR
comp=Z,1µm,22.0s
SJG San Juan 117.03 30 PFAKE 12 16 50.0 +15
SJG LR LR
comp=Z,1µm,22.0s
ABVI Anegada Island 117.16 28 PFAKE 12 16 50.0 +15
ABVI LR LR
comp=Z,1µm,21.0s
VNDA Vanda 117.27 175 PKP PKPdf 12 16 31.8 -1.5
comp=Z,2.5nm,0.9s,baz=316,slow=3.0,SNR=10
VNDA PKKPab PKKPbc 12 27 03.5 +4.7
comp=Z,1.6nm,0.9s,baz=216,slow=3.2,SNR=5.0
VNDA SKKP 12 30 59.5
comp=Z,1.0nm,0.3s,baz=339,slow=0.5,SNR=20
LSZ Lusaka 117.89 273 ePKIKP PKPdf 12 16 36.8 +0.3
LSZ MLR MLR
comp=Z,1µm,22.0s
LSZ Lusaka 117.89 273 ePKPdf PKPdf 12 16 36.8 +0.3
LSZ LR LR
comp=Z,1µm,22.0s
BCIP Isla Barro Col 118.03 48 PFAKE 12 16 50.0 +13
BCIP LR LR
comp=Z,800nm,22.0s
ANWB Willy Bob 119.04 26 PFAKE 12 16 50.0 +11
ANWB LR LR
comp=Z,1µm,22.0s
URIC Uribia, Colomb 120.12 39 eP PKPdf 12 16 55.4 +15
GDHS Morne Mazeau, 120.34 27 PFAKE 12 16 50.0 +8.8
GDHS LR LR
comp=Z,800nm,20.0s
MAW Mawson 121.86 206 PKP PKPdf 12 16 42.3 0.0
comp=Z,15nm,0.8s,baz=2.8,slow=1.9,SNR=16
MAW PKKPbc PKKPbc 12 26 41.0 -0.6
comp=Z,4.9nm,0.9s,baz=264,slow=11,SNR=5.4
MAW Mawson 121.86 206 ePKPdf PKPdf 12 16 42.9 +0.6
FDF Fort de France 121.98 27 PFAKE 12 17 00.0 +16
FDF LR LR
comp=Z,600nm,21.0s
SDV Santo Domingo 123.22 40 ePKPdf PKPdf 12 16 46.7 -0.2
SDV LR LR
comp=Z,800nm,19.0s
SDV Santo Domingo 123.22 40 eP PKPdf 12 16 47.0 +0.1
GRGR Grenville 124.21 28 PFAKE 12 17 00.0 +11
GRGR LR LR
comp=Z,600nm,20.0s
ROSC El Rosal 124.69 46 PKP PKPdf 12 16 51.4 +1.4
comp=Z,11nm,0.6s,baz=36,slow=4.0,SNR=8.9
ROSC El Rosal 124.69 46 ePKPdf PKPdf 12 16 51.1 +1.0
ROSC LR LR
comp=Z,100nm,20.0s
DBIC Dimbokro 124.89 319 PKP PKPdf 12 16 49.4 -0.5

Code	Station Name	Δ°	AZ°	Op	ISC	Time	Res
	comp=Z,27nm,0.8s,baz=27,slow=2.4,SNR=33						
DBIC				PP	PP	12 18 36.5	-0.8
	comp=Z,20nm,0.8s,baz=17,slow=7.8,SNR=7.5						
TIC	Toumodi	124.99	319	*e*PKIKP	PKPdf	12 16 49.6	-0.5
KIC	Kosan Boka	125.09	318	*e*PKIKP	PKPdf	12 16 49.8	-0.5
	comp=Z,82nm,0.9s						
CHIC	Chingaza	125.19	45	*e*P	PKPdf	12 16 50.1	-0.9
LIC	Lamto	125.35	318	*e*PKIKP	PKPdf	12 16 50.2	-0.6
	comp=Z,41nm,1.0s						
LBTB	Lobatse	125.36	265	*e*PKIKP	PKPdf	12 16 50.9	+0.4
LBTB	Lobatse	125.36	265	*e*PKPdf	PKPdf	12 16 50.9	+0.4
OTAV	Otavalo	125.94	53	*e*PKPdf	PKPdf	12 16 52.6	+0.2
OTAV				LR	LR		
	comp=Z,600nm,21.0s						
BOSA	Boshof	127.45	261	PKP	PKPdf	12 16 54.4	-0.1
	comp=Z,15nm,0.9s,baz=34,slow=1.9,SNR=17						
BOSA				PP	PP	12 18 54.8	-0.8
	comp=Z,8.0nm,0.9s,baz=64,slow=5.2,SNR=3.9						
TSUM	Tsumeb	128.38	276	*e*PKPdf	PKPdf	12 16 57.2	+0.7
TSUM				LR	LR		
	comp=Z,1μm,20.0s						
QSPA	South Pole Qui	129.12	180	*e*PKPdf	PKPdf	12 16 55.8	-0.6
QSPA				LR	LR		
	comp=Z,800nm,20.0s						
SYO	Syowa Base	130.51	208⇓	*e*P	PKPpre	12 16 54.0	
SYO	Syowa Base	130.51	208⇓	*e*P	PKPdf	12 16 57.0	-1.8
PTGA	Pitinga	136.60	33	*e*PKPdf	PKPdf	12 17 12.7	+0.6
PTGA				LR	LR		
	comp=Z,600nm,21.0s						
NVL	N'lazarevskaya	139.64	203	*e*PKIKP	PKPdf	12 17 15.2	-0.6
NVL				MLR	MLR		
	comp=Z,2μm,29.0s						
SAML	Samuel	142.23	43	*e*PKPdf	PKPdf	12 17 22.6	+0.4
SAML				LR	LR		
	comp=Z,400nm,22.0s						
SNAA	Sanae	143.13	198	PKP	PKPab	12 17 18.5	+0.7
SNAA	Sanae	143.13	198	*e*PKHKP	PKPab	12 17 18.4	+0.6
SNAA				MLR	MLR		
	comp=Z,77μm,20.0s						
SNAA	Sanae	143.13	198	*e*PKPpre	PKPab	12 17 18.4	+0.6
SNAA				LR	LR		
	comp=Z,77μm,20.0s						
VNA2	Neumayer--Watz	144.70	197	PKP	PKPab	12 17 23.5	-0.2
	baz=114,slow=3.5						
VNA3	Neumayer Olymp	144.95	195	PKP	PKPbc	12 17 24.2	-0.5
LPAZ	La Paz	145.06	57	PKPbc	PKPbc	12 17 27.1	-0.3
	comp=Z,5.8nm,0.5s,baz=342,slow=4.4,SNR=25						
VNA1	Neumayer--Stat	145.10	197	PKP	PKPbc	12 17 25.0	-0.1
PB11	IPOC Station P	146.46	64	*e*PKPdf	PKPbc	12 17 31.0	0.0
RCBR	Riachuelo	146.55	356	*e*PKPdf	PKPbc	12 17 31.0	-0.3
RCBR				LR	LR		
	comp=Z,1μm,22.0s						
PB01	IPOC Station P	147.43	65	*e*PKPdf	PKPdf	12 17 31.8	+0.6
PB04	IPOC Station P	147.79	68	*e*PKPdf	PKPdf	12 17 33.2	+1.4
PB10	IPOC Station P	148.23	70	*e*PKPbc	PKPbc	12 17 36.4	+0.8
LCO	Las Campanas	151.16	79	*e*PKPbc	PKPbc	12 17 43.4	+0.3
ROC1	El Roble	152.67	87	*e*PKPbc	PKPbc	12 17 46.2	-0.1
BDFB	Brasilia	154.77	23	PKP	PKPdf	12 17 43.0	+0.5
	comp=Z,10nm,1.0s,baz=35,slow=2.5,SNR=7.8						
BDFB	Brasilia	154.77	23	*e*PKPdf	PKPdf	12 17 43.0	+0.5
BDFB				*e*PKPdf	PKPdf	12 17 43.8	+1.3
PLCA	Paso Flores	155.10	104	PKP	PKPdf	12 17 42.1	-0.1
	comp=Z,3.8nm,1.1s,baz=338,slow=5.0,SNR=2.9						
CPUP	Villa Florida	159.23	57	PKP	PKPdf	12 17 47.6	-0.1
	comp=Z,7.5nm,1.2s,baz=24,slow=6.3,SNR=4.3						

MAN 01 12:03:15,7°.16N×124°.53E,h16km,mb4.0,ML2.8,MS2.5, 1D,Mindanao

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
CTBH	Cotabato--PC H	0.28	283⇓	*i*P	Pb	12 03 22.2	+0.5
CTBH				*i* S	Sb	12 03 27.1	+0.8
BUKP	Musuan	0.89	37	*e*P	Pb	12 03 31.4	-0.8
BUKP				*e*S	Sb	12 03 42.0	-1.9
PAGZ	Pagadian	1.32	301	*e*P	Pn	12 03 38.4	-0.5
PAGZ				*e*S	Sb	12 03 56.4	+0.2

*IDC **01** 12:08:19.2±1.0,32°.44N×142°.74E,h0km,mb3.7/6, mb1 4.0/9,mb1mx3.6/54,mbtmp3.8/9,ML3.5/2,Error ellipse: s-maj=29.2km s-min=20.2km az=67.0*

*ISCJB **01** 12:08:23.8±0.8,32°.50N±0°.08×142°.5E±0°.1,h52km, mb3.7/6,Error ellipse: s-maj=15.6km s-min=7.6km az=139.3*

ISC 01 12:08:25.3±0.9**,32°.36N**±0°.07×**142°.4E**±0°.1**,h52km,n10, σ2s.11**/14**,mb3.7**/6**,Southeast of Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
JHJ	Hachijo jima 2	2.36	289	Pn	Pn	12 09 01.4	-0.1
	19nm,0.3s,baz=272,slow=20,SNR=12						
JHJ				Sn	Sn	12 09 30.1	+0.8
	59nm,0.3s,baz=62,slow=21,SNR=9.0						
JCJ	Chichijima	5.25	182	Pn	Pn	12 09 40.4	-0.9
	baz=342,slow=20						
JCJ				Sn	Sn	12 10 37.0	-3.6
	4.9nm,0.3s,baz=287,slow=19,SNR=3.0						
MJAR	Matsushiro Arr	5.44	321	Pn	Pn	12 09 41.7	-2.1
	2.2nm,0.3s,baz=153,slow=12,SNR=13						
MJAR				Sn	Sn	12 10 42.4	-2.7
	1.7nm,0.3s,baz=130,slow=23,SNR=4.7						
MAT	Matsushiro	5.44	321	P	Pn	12 09 43.0	-0.8
MAT				S	Sn	12 10 42.8	-2.3
MKAR	Makanchi Array	47.43	306	P	P	12 16 57.5	+3.0
	0.6nm,0.7s,baz=94,slow=8.3,SNR=4.0						
KURBB	Kurchatov Arra	49.63	311	P	P	12 17 13.0	+1.6
	0.6nm,0.7s,baz=88,slow=7.3,SNR=3.8						
WRA	Warramunga Arr	52.58	190	P	P	12 17 35.2	+1.4
	1.0nm,0.5s,baz=8.8,slow=7.6,SNR=11						
ASAR	Alice Springs	56.31	189	P	P	12 18 02.6	+1.8
	0.6nm,0.8s,baz=8.6,slow=6.7,SNR=6.8						
NVAR	Mina Array Bea	77.13	53	P	P	12 20 13.4	-0.3
	0.4nm,0.6s,baz=297,slow=6.0,SNR=3.8						
TXAR	Lajitas Array	92.28	53	P	P	12 21 30.6	+0.4
	0.3nm,0.7s,baz=319,slow=2.6,SNR=3.9						

DDA 01 12:11:56.6,37°.18N×27°.90E,h7km,Md2.6,Turkey

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
BDRM	Kayabasi	0.38	252	*i* P	Pg	12 12 03.2	-0.8
BDRM				*i* S	Sg	12 12 10.2	+1.2
AYDN	Tasoluk	0.48	358	*i* P	Pg	12 12 06.1	+0.2
AYDN				*i* S	Sg	12 12 13.3	+1.2
TURN	Turunc	0.65	119	*i* P	Pg	12 12 05.8	-3.2
TURN				*i* S	Sg	12 12 14.3	-3.2

JMA 01 12:13:59.1,37°.72N×139°.97E,h9km±1km,M1.8,Eastern Honshu

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
JFT	Otama	0.35	125	S	Sg	12 14 10.8	0.0
JFY	Yanaizu	0.38	214	P	Pg	12 14 06.6	+0.1
JFY				S	Sg	12 14 11.5	0.0
JYS	Shirataka	0.51	9	*e*S	Sg	12 14 16.1	+0.5
JMM	Marumori	0.67	77	*e*S	Sg	12 14 20.4	-0.3
JHK	Hiroka	0.89	238	P	Pg	12 14 15.9	-0.4

IDC 01 12:14:43.7±5.5**,37°.86N**×**141°.55E,h0km,mb3.7**/4**, mb1 3.8**/5**,mb1mx3.5**/45**,mbtmp3.8**/5**,ML2.3**/1**,Error ellipse: s-maj=132.3km s-min=37.5km az=176.0,Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
USRK	Ussuriysk Ar.	9.60	314	Pn	Pn	12 17 04.0	+0.8
	0.3nm,0.3s,baz=103,slow=13,SNR=7.5						
ZALV	Zalesovo Beam	41.44	312	P	P	12 22 30.8	-1.1
	0.9nm,0.5s,baz=74,slow=6.3,SNR=3.7						
MKAR	Makanchi Array	43.78	301	P	P	12 22 51.6	+0.6
	0.7nm,0.7s,baz=85,slow=7.7,SNR=6.0						
KURBB	Kurchatov Arra	45.59	307	P	P	12 23 04.9	-0.4
	1.4nm,0.5s,baz=80,slow=8.7,SNR=5.8						
ILAR	Eielson Array	48.74	33	P	P	12 23 29.8	0.0
	0.3nm,0.8s,baz=278,slow=7.5,SNR=4.8						

*NIED **01** 12:15:00,36°.70N×142°.10E,h23km,Mw5.1 Best double couple: M0 4.37000×10^16 NP1:φs239.00000°,δ22.00000°, λ130.00000°. NP2:φs17.00000°,δ73.00000°,λ75.00000°.*

*JMA **01** 12:15:02.3±0.3,36°.66N×142°.13E,h23km,M4.9 JMA Felt II J1.*

*ISCJB **01** 12:15:04.7±1.2,36°.65N±0°.03×141°.89E±0°.04,h29km±8km, mb4.9/145,MS4.7/13,Error ellipse: s-maj=5.8km s-min=4.0km az=20.0*

*MOS **01** 12:15:05.2±1.1,36°.67N×141°.82E,h32km,mb5.2/56, MS4.7/5,Error ellipse: s-maj=7.7km s-min=4.5km az=120.9*

*IDC **01** 12:15:05.9±5.1,36°.65N×141°.87E,h28km±35km,mb4.3/31, mb1 4.4/38,mb1mx4.4/52,mbtmp4.5/38,ML3.7/7,MS4.7/5, Ms1 4.7/5,ms1mx3.9/59,Error ellipse: s-maj=13.9km s-min=10.5km az=107.0*

*GCMT **01** 12:15:06.0±0.4,36°.63N×142°.12E,h31km±1km,MW5.1/63, Moment Tensor Solution. s11,c12; s63,c104; Duration: 0 Moment tensor: Scale 10^16Nm; Mrr3.59±.40; Mθθ-0.70±.23; Mφφ-2.89±.23; Mrθ1.53±.26; Mθφ-1.78±.10; Mφr2.86±.22; Best double couple: M0 4.94800×10^16 NP1:φs28.00000°,δ65.00000°,λ89.00000°. NP2: φs210.00000°,δ25.00000°,λ91.00000°. Principal axes: T 4.8020, Plg70.0000°, Azm297.0000°; N 0.2970, Plg1.0000°, Azm29.0000°; P -5.0950, Plg20.0000°, Azm119.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

*NEIC **01** 12:15:06.0±1.9,36°.72N×141°.83E,h24km±13km,mb5.0/53 Error ellipse: s-maj=6.8km s-min=4.9km az=123.0*

ISC 01 12:15:06.2±0.6**,36°.70N**±0°.04×**141°.79E**±0°.04**,h27km**±3km**, h27km:pP-P,n360,σ1s.55**/372**,mb5.0**/145**,MS4.9**/13**, 30C-16D,Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
ONAJ	Iwakimizuishiy	0.89	297	P	Pn	12 15 22.7	-0.2
JHO	Hitachi	0.98	265	P	Pn	12 15 24.3	+0.1
JHO				S	Sn	12 15 41.1	+3.9
JMM	Marumori	1.41	326	P	Pn	12 15 29.8	-0.2
JMM				*e*S	Sb	12 15 49.8	+0.5
JFT	Otama	1.42	306	P	Pn	12 15 31.3	+1.1
JFT				S	Sb	12 15 52.4	+2.8
JIO	Ouri	1.79	349	P	Pn	12 15 34.3	-0.9
JIO				S	Sn	12 15 57.1	+0.1
JFY	Yanaizu	1.81	294	P	Pb	12 15 37.4	-1.2
JOU	Okura	1.89	332	P	Pn	12 15 37.8	+1.2
JOU				*e*S	Sb	12 16 02.7	-0.4
JAG	Ashikaga	1.90	262	P	Pn	12 15 37.9	+1.1
JAG				*e*S	Sb	12 16 04.2	+0.8
JYS	Shirataka	2.04	318	P	Pn	12 15 40.2	+1.4
BSO1	Boso 1	2.15	198	P	Pn	12 15 39.2	-0.5
JNS	Sasagawa	2.26	300	P	Pb	12 15 44.5	-1.8
MJAR	Matsushiro Arr	2.88	268	Pn	Pn	12 15 51.1	+0.8
	76nm,0.3s,baz=96,slow=9.2,SNR=963						
MJAR	Matsushiro Arr	2.88	268	P	Pn	12 15 51.1	+0.8
MAJO	Matsushiro	2.88	268	*e*P	Pn	12 15 53.1	+2.8
MAJO				*e*		12 16 21.7	
MAJO	Matsushiro	2.88	268	*e*Pn	Pn	12 15 53.1	+2.8
MAJO				*e*Sn	Sn	12 16 21.7	-2.4
MAT	Matsushiro	2.88	268	P	Pn	12 15 53.4	+3.1
MAT				S	Sb	12 16 33.5	+1.8
JHJ2	Mitsune	3.93	205	*e*Pn	Pn	12 16 03.7	-0.9
JHJ	Hachijo jima 2	3.93	205	Pn	Pn	12 16 04.0	-0.7
	62nm,0.3s,baz=320,slow=19,SNR=22						
JHJ				Sn	Sn	12 16 48.0	-2.0
	178nm,0.3s,baz=85,slow=24,SNR=8.9						
INU	Inuyama	4.09	252	*e*Pg	Pn	12 16 09.5	+2.6
YUK	Yuzh-Kuril'sk	7.96	22	*e*P	Pn	12 17 02.8	+2.8
YUK				pmax	pmax		
	comp=Z,200nm,0.6s						
YUK				pmax	pmax		
	comp=N,61nm,0.4s						
YUK				pmax	pmax		
	comp=E,82nm,0.4s						
YUK				MLR	MLR		
	comp=Z,3μm,14.0s						
YUK				MLR	MLR		
	comp=E,3μm,13.0s						
SHO	Shikotan	8.13	27	*e*P	Pn	12 17 04.8	+2.4
SHO				pmax	pmax		
	comp=Z,145nm,0.9s						
SHO				pmax	pmax		
	comp=E,90nm,0.4s						
SHO				pmax	pmax		
	comp=N,61nm,0.5s						
CBIJ	Chichi jima	9.58	178	Pn	Pn	12 17 17.1	-5.2
CBIJ				Sn	Sn	12 18 57.8	-11
JCJ	Chichijima	9.58	178	Pn	Pn	12 17 17.1	-5.2
	comp=N,15nm,0.3s,baz=62,slow=22,SNR=11						
JCJ				Sn	Sn	12 18 57.8	-11
	comp=N,19nm,0.3s,baz=280,slow=21,SNR=5.2						
JNU	Nakatsue	9.64	251	Pn	Pn	12 17 24.1	+1.0
	comp=N,1.3nm,0.3s,baz=44,slow=2.7,SNR=17						
JNU	Nakatsue	9.64	251	*e*Pn	Pn	12 17 24.6	+1.5
KUR	Kuril'sk	9.68	26	*e*P	Pn	12 17 30.4	+6.8
KUR				pmax	pmax		
	comp=Z,30nm,0.5s						
KUR				pmax	pmax		
	comp=N,21nm,0.4s						
YSS	Yuzh-Sakhalins	10.27	4⇓	*e*P	Pn	12 17 30.0	-1.7
YSS				*e*S	Sn	12 19 23.0	-2.8
YSS				pmax	pmax		
	comp=Z,40nm,1.2s						
YSS				MLR	MLR		
	comp=Z,3μm,13.0s						
YSS				MLR	MLR		
	comp=N,2μm,14.0s						
YSS				MLR	MLR		
	comp=E,3μm,12.0s						
YSS	Yuzh-Sakhalins	10.27	4	*e*Pn	Pn	12 17 30.2	-1.5
USRK	Ussuriysk Ar.	10.57	318	Pn	Pn	12 17 36.8	+1.0
	comp=E,0.7nm,0.3s,baz=132,slow=13,SNR=15						
USRK				LR	LR	12 21 29.2	
	comp=E,4μm,19.6s,baz=104,slow=36						
KSRS	Korea Array	11.10	278	Pn	Pn	12 17 45.0	+1.9
	comp=E,0.6nm,0.3s,baz=92,slow=13,SNR=47						
KSRS	Korea Array	11.10	278	P	Pn	12 17 45.0	+1.9
KSRS				pmax	pmax		
	comp=Z,1.0nm,0.3s						
KSAR	Wonju Array Be	11.13	278	P	Pn	12 17 45.0	+1.5
KSAR	Wonju Array Be	11.13	278	Pn	Pn	12 17 45.0	+1.5
TYV	Tymovskoe	14.17	2	*e*P	P	12 18 30.0	-2.2
TYV				pmax	pmax		
	comp=Z,44nm,1.0s						
CN2	Changchun	14.34	305	*e*P	Pn	12 18 24.3	-3.0
CN2				pmax	pmax		
	comp=Z,10.0nm,0.6s						
KLR	Kul'dur	14.50	333	Pn	Pn	12 18 29.6	+0.1
	comp=Z,0.2nm,0.3s,baz=202,slow=3.2,SNR=5.8						
KLR	Kul'dur	14.50	333	P	Pn	12 18 29.6	+0.1
SNY	Shenyang	15.00	296	⇑P	Pn	12 18 38.8	+2.6
SNY				pmax	pmax		
	comp=Z,13nm,0.7s						
SNY				pmax	pmax		
	comp=Z,1μm,12.0s						
SNY				LR	LR		
	comp=N,2μm,11.8s						
SNY				LR	LR		
	comp=E,5μm,14.9s						
SNY				LR	LR		
	comp=Z,8μm,14.8s						
JOW	Kunigami	15.11	233	*e*Pn	Pn	12 18 38.4	+0.5
NJ2	Nanjing	19.47	263	*e*P	P	12 19 25.7	-5.2
NJ2				pP	Pn	12 19 31.4	-0.8
NJ2				S	S	12 22 57.7	-12
NJ2				pmax	pmax		
	comp=Z,13nm,0.6s						
NJ2				LR	LR		
	comp=Z,2μm,9.6s						
NJ2				LR	LR		
	comp=Z,3μm,12.0s						
NJ2				LR	LR		
	comp=Z,4μm,14.4s						
PETK	Petropavlovsk-	19.83	29	P	P	12 19 34.5	0.0
	comp=Z,0.2nm,0.3s,baz=193,slow=5.9,SNR=2.7						
PETK	Petropavlovsk-	19.83	29	P	P	12 19 34.6	0.0
TIA	Tai'an	19.83	276	⇑P	P	12 19 35.0	+0.2
TIA				pmax	pmax		
	comp=Z,40nm,0.9s						
BJI	Beijing	20.33	287	P	P	12 19 41.3	+1.1
BJI				pmax	pmax		
	comp=Z,14nm,1.4s						
BJI				pmax	pmax		
	comp=Z,650nm,6.8s						
BJT	Baijiatuau	20.34	287	*e*P	P	12 19 40.0	-0.3
BJT	Baijiatuau	20.34	287	*e*P	P	12 19 40.0	-0.3
HIA	Hailar	20.35	315	*e*P	P	12 19 38.8	-1.6
HIA				pmax	pmax		
	comp=Z,49nm,1.3s						
HIA	Hailar	20.35	315	*e*P	P	12 19 38.8	-1.6
	comp=Z,49nm,1.3s						
SSLB	Suanglung	22.07	240	*e*P	P	12 19 57.6	-1.4
	comp=Z,26nm,1.0s						
TPUB	Ta-pu	22.61	240	*e*P	P	12 20 02.5	-2.3
	comp=Z,38nm,1.0s						
GUMO	Guam	23.18	172	LR	LR	12 28 34.5	
	comp=Z,240nm,21.9s,baz=32,slow=35						
TIY	Taiyuan	23.36	281	*e*P	P	12 20 12.2	-0.3
TIY				pmax	pmax		
	comp=Z,15nm,0.5s						
TIY				LR	LR		
	comp=Z,800nm,12.7s						
TIY				LR	LR		
	comp=Z,4μm,13.5s						
TIY				LR	LR		
	comp=Z,4μm,13.6s						
WHN	Wuhan	23.61	263	⇑P	P	12 20 15.4	+0.5
MA2	Magadan	23.62	11	P	P	12 20 13.2	-1.6
	comp=Z,15nm,0.9s,baz=218,slow=8.9,SNR=17						
MA2	Magadan	23.62	11	*e*P	P	12 20 13.4	-1.3
MA2				pmax	pmax		
	comp=Z,119nm,0.9s						
MA2	Magadan	23.62	11	*e*P	P	12 20 13.4	-1.3
	comp=Z,119nm,0.9s						
HHC	Hu-ho-hao-te	23.86	289	*e*P	P	12 20 13.7	-3.7
HHC				S	S	12 24 19.0	-13
HHC				pmax	pmax		
	comp=Z,16nm,1.1s						
HHC				LR	LR		
	comp=Z,2μm,13.7s						
HHC				LR	LR		
	comp=Z,2μm,12.4s						
HHC				LR	LR		
	comp=Z,1μm,13.7s						
CIT	Chita	25.12	316	*e*P	P	12 20 30.6	+1.9
CIT				*e*		12 20 38.1	
CIT				*e*		12 20 42.6	
CIT				pmax	pmax		
	comp=Z,168nm,1.2s						
YAK	Yakutsk	26.46	347	P	P	12 20 40.2	-0.5
	comp=Z,1.9nm,0.3s,baz=340,slow=22,SNR=14						
YAK	Yakutsk	26.46	347	*e*P	P	12 20 40.3	-0.3
YAK				pmax	pmax		
	comp=Z,117nm,0.9s						
YAK				pmax	pmax		
	comp=N,62nm,1.2s						
YAK				pmax	pmax		
	comp=E,20nm,1.1s						
YAK	Yakutsk	26.46	347	*e*P	P	12 20 40.1	-0.5
	comp=E,121nm,1.0s						
XAN	Xi'an	26.86	274	P	P	12 20 45.3	+0.7
XAN				sP	sP	12 20 58.2	+2.3
XAN				pmax	pmax		
	comp=E,26nm,1.3s						
XAN				pmax	pmax		
	comp=E,940nm,14.5s						
SEY	Seymchan	27.06	11	P	P	12 20 46.6	+0.6
	comp=E,15nm,0.9s,baz=189,slow=7.2,SNR=21						
SEY	Seymchan	27.06	11	*ce*P	P	12 20 46.8	+0.8
ENH	Enshi	27.60	266	*e*P	P	12 20 51.6	+0.3
	comp=E,138nm,1.1s						
H11N2	WAKE ISLAND Hy	27.72	121	T	T	12 50 08.2	
H11N1	WAKE ISLAND Hy	27.73	121	T	T	12 50 10.6	
	baz=313,slow=74,SNR=10						
H11N3	WAKE ISLAND Hy	27.74	121	T	T	12 50 12.5	
	baz=200,slow=74,SNR=10						
ULN	Ulaanbaatar	27.79	305⇑	*i*P	P	12 20 53.0	+0.1
ULN				pmax	pmax		
	comp=Z,67nm,1.2s						
ULN	Ulaanbaatar	27.79	305	*e*P	P	12 20 53.3	+0.4
	comp=Z,57nm,1.1s						
ULN	Ulaanbaatar	27.79	305	P	P	12 20 54.2	+1.3
	SNR=17						
ULN	Ulaanbaatar	27.79	305	P	P	12 20 54.2	+1.3
	SNR=17						
BOD	Bodaibo	27.97	328	*e*P	P	12 20 54.1	-0.1
BOD				pmax	pmax		
	comp=Z,27nm,1.2s						
SONA1	Songino Array	28.22	304	*e*P	P	12 20 57.2	+0.5
SONM	Songino Array	28.22	304	P	P	12 20 56.8	+0.1
	comp=Z,50nm,0.9s,baz=104,slow=7.4,SNR=88						
SONM	Songino Array	28.22	304	P	P	12 20 56.8	+0.1
H11S1	WAKE ISLAND Hy	28.43	123	T	T	12 51 03.2	
H11S3	WAKE ISLAND Hy	28.43	123	T	T	12 51 03.2	
H11S2	WAKE ISLAND Hy	28.44	123	T	T	12 51 03.2	
LZH	Lanzhou	30.42	280	*e*P	P	12 21 17.1	+0.7
LZH				pP	pP	12 21 25.8	+1.4
LZH				sP	sP	12 21 29.8	+2.1
LZH				*e*S	S	12 26 08.2	-7.5
LZH				sS	sS	12 26 21.2	-7.7
LZH				pmax	pmax		
	comp=Z,43nm,1.1s						
LZH				pmax	pmax		
	comp=Z,170nm,4.9s						
LZH				LR	LR		
	comp=Z,2μm,13.8s						
LZH				LR	LR		
	comp=Z,3μm,14.2s						
LZH				LR	LR		
	comp=Z,5μm,16.4s						
ZAK	Zakamensk	30.71	309	*e*P	P	12 21 19.2	+0.5
ZAK				pmax	pmax		
	comp=Z,20nm,1.1s						
TLY	Talaya	30.77	311	P	P	12 21 20.3	+1.1
	comp=Z,8.1nm,0.8s,baz=105,slow=5.2,SNR=16						
TLY				LR	LR	12 34 21.0	
	comp=Z,1μm,20.0s,baz=116,slow=37						
TLY	Talaya	30.77	311	*e*P	P	12 21 20.4	+1.2
TLY				pmax	pmax		
	comp=Z,25nm,1.3s						
TLY				MLR	MLR		
	comp=Z,1μm,12.0s						
TLY	Talaya	30.77	311	*e*P	P	12 21 20.5	+1.2
	comp=Z,18nm,1.0s						
TLY	Talaya	30.77	311	P	P	12 21 20.9	+1.7
	SNR=6.9						
TLY	Talaya	30.77	311	P	P	12 21 20.9	+1.7
	SNR=6.9						
GYA	Guiyang	31.46	261⇑	*i*P	P	12 21 24.8	-0.8
GYA				pP	pP	12 21 32.2	-1.4
GYA				PP	PnPn	12 22 25.0	-3.9
GYA				PcP	PcP	12 24 23.8	+5.3
GYA				S	S	12 26 23.6	-8.5
GYA				SS	ScP	12 28 04.4	+4.7
GYA				ScS	ScS	12 31 58.2	+0.6
GYA				pmax	pmax		
	comp=Z,70nm,1.0s						
GYA				pmax	pmax		
	comp=Z,120nm,5.6s						
GYA				LR	LR		
	comp=Z,560nm,17.8s						
GYA				LR	LR		
	comp=Z,520nm,18.0s						
GYA				LR	LR		
	comp=Z,540nm,18.4s						
CD2	Chengdu	31.97	271	P	P	12 21 27.0	-3.0
CD2				pmax	pmax		
	comp=Z,50nm,0.8s						
MOY	Mondy	32.38	311	*e*P	P	12 21 35.0	+1.5
MOY				pmax	pmax		
	comp=Z,30nm,1.4s						
GTA	Gaotai	32.95	288	P	P	12 21 39.6	+1.0
GTA				pP	pP	12 21 46.8	+0.2
GTA				sP	sP	12 21 50.6	+0.7
GTA				PcP	PcP	12 24 31.8	+9.5
GTA				pmax	pmax		
	comp=Z,13nm,1.1s						
BILL	Bilibino	34.26	16	*ce*P	P	12 21 49.3	-0.2
BILL				*e**PP	sP	12 21 59.8	-1.1
BILL				*e**SP	pP	12 22 06.4	+8.9
BILL				pmax	pmax		
	comp=Z,8.0nm,1.0s						
BILL				MLR	MLR		
	comp=Z,563nm,17.0s						
BILL	Bilibino	34.26	16	*e*P	P	12 21 48.6	-0.9
	comp=Z,8.8nm,1.1s						
KMI	Kunming	35.21	262	P	P	12 21 59.0	+0.6
KMI				pP	sP	12 22 08.7	-1.1
KMI				sP	pP	12 22 14.9	+8.4
KMI				pmax	pmax		

comp=Z,34nm,1.3s
KMI LR LR
comp=Z,670nm,13.5s
KMI LR LR
comp=Z,2µm,15.2s
KMI LR LR
comp=Z,2µm,16.4s
TIXI Tiksi 35.66 353 *ce*P **P 12 22 00.9 -0.5**
TIXI pmax pmax
comp=Z,8.0nm,1.0s
TIXI Tiksi 35.66 353 *e*P **P 12 22 00.8 -0.7**
comp=Z,15nm,1.3s
KRAR Krasnoyarsk 37.91 316⇓*e*P **P 12 22 19.9 -0.9**
KRAR pmax pmax
comp=Z,52nm,0.6s
MYLDM Lahad Datu 37.94 220 *e*P **P 12 22 23.8 +2.3**
comp=Z,53nm,1.1s
PANO Nakornpanom 38.13 249 P **P 12 22 24.9 +1.8**
comp=Z,34nm,1.5s
NONG Nongkai 38.69 252 P **P 12 22 28.9 +1.1**
comp=Z,48nm,1.0s
SKNT Sakolnakorn 38.71 250 P **P 12 22 29.4 +1.4**
comp=Z,96nm,0.9s
CRAI Chiangrai 39.60 257 P P 12 22 28.4 -7.0
KHON Khomkaen 39.97 250 P **P 12 22 41.0 +2.5**
comp=Z,16nm,1.1s,comp=Z,1µm
LOEI Loei 40.45 253 P **P 12 22 40.8 -1.7**
comp=Z,27nm,1.1s,comp=Z,9µm
PHRA Phrae 40.68 255 P **P 12 22 46.4 +2.0**
comp=Z,752nm,1.4s
CMAI Chiengmai2 40.80 258 P **P 12 22 47.2 +1.6**
comp=Z,70nm,0.7s
UTTA Uttaradit 40.86 254 P **P 12 22 49.2 +3.3**
comp=Z,4.9nm,1.2s,comp=Z,86nm
CHAI Chaiyaphum 40.87 250 P **P 12 22 47.2 +1.2**
comp=Z,23nm,1.1s,comp=Z,172nm
LAMP Lampang 41.13 255 P **P 12 22 50.1 +2.0**
comp=Z,4.4nm,1.0s
PBKT Sadao Pong 41.24 252 P **P 12 22 50.6 +1.6**
comp=Z,47nm,0.8s
WMQ Urumqi 41.26 297 P **P 12 22 50.4 +1.4**
WMQ pP pP 12 22 56.5 -0.6
WMQ sP sP 12 22 59.8 -0.6
WMQ PP **PP 12 24 26.5 +2.2**
WMQ PcP **PcP 12 24 54.6 +7.2**
WMQ S **S 12 28 56.1 -5.1**
WMQ pmax pmax
comp=Z,15nm,1.0s
WMQ LR LR
comp=Z,450nm,18.8s
WMQ LR LR
comp=Z,550nm,22.6s
WMQ LR LR
comp=Z,470nm,17.6s
CMMT Chiang Mai 41.50 256 P **P 12 22 52.8 +1.7**
comp=Z,24nm,1.2s
CHTO Chiang Mai 41.50 256 P **P 12 22 52.8 +1.7**
comp=Z,210nm,0.9s
CHTO Chiang Mai 41.50 256 *e*P **P 12 22 52.1 +0.9**
CHTO pmax pmax
comp=Z,10.0nm,0.8s
CHTO Chiang Mai 41.50 256 *e*P **P 12 22 52.1 +0.9**
comp=Z,10nm,0.8s
CMAR Chiang Mai Arr 41.70 256 P **P 12 22 53.9 +1.1**
comp=Z,2.6nm,0.6s,baz=44,slow=7.0,SNR=15
CMAR Chiang Mai Arr 41.70 256 P **P 12 22 53.9 +1.1**
CM01 Chiang Mai Arr 41.71 256 *e*P **P 12 22 53.8 +0.9**
SUKH Sukhothai 41.73 254 P **P 12 22 55.2 +2.2**
comp=Z,4.5nm,1.2s
APSI Ampana 41.83 211 P **P 12 22 52.8 -1.0**
SRAK Srakaew 42.01 248 P **P 12 22 54.3 -1.0**
comp=Z,98nm,1.2s,comp=Z,953nm
ZAA0 Zalesovo Array 42.36 313 *e*P **P 12 22 57.9 +0.1**
ZALV Zalesovo Beam 42.36 313 P **P 12 22 57.6 -0.1**
comp=Z,34nm,0.9s,baz=91,slow=6.5,SNR=54
ZALV PcP **PcP 12 24 50.6 -0.1**
comp=Z,1.9nm,0.6s,baz=126,slow=2.6,SNR=3.6
ZALV Zalesovo Beam 42.36 313 P **P 12 22 57.6 -0.1**
ZALV 12 24 50.7
NAYO Nakonayok 42.36 249 P **P 12 23 00.8 +2.6**
comp=Z,70nm,0.8s
LSA Lhasa 42.54 276 *e*P **P 12 23 02.0 +2.0**
LSA Lhasa 42.54 276 *e*P **P 12 23 02.0 +2.0**
CHBT CHBT 42.61 246 P **P 12 23 03.4 +3.2**
comp=Z,65nm,1.2s
UTHA Uthaitani 43.02 252 P **P 12 23 06.7 +3.2**
comp=Z,5.4nm,0.9s,comp=Z,71nm
UMPA Umpang Tak 43.08 253 P P 12 23 11.0 +7.0
comp=Z,5.6nm,1.0s,comp=Z,727nm
NVS Novosibirsk 43.29 314 *e*P **P 12 23 06.1 +0.9**
NVS pmax pmax
comp=Z,32nm,1.1s
NVS pmax pmax
comp=N,5.0nm,1.0s
NVS pmax pmax
comp=E,27nm,1.1s
NRIK Noril'sk 43.70 335 P **P 12 23 08.5 +0.2**
comp=E,3.3nm,0.5s,baz=180,slow=9.1,SNR=4.8
NRIK Noril'sk 43.70 335 P **P 12 23 08.5 +0.2**
NRIK pmax pmax
comp=Z,3.0nm,0.5s
SRDT SRDT 44.00 251 P **P 12 23 14.8 +3.4**
comp=Z,106nm,1.0s
KHLT Khaolaem Dam 44.13 252 P P 12 23 18.3 +5.8
comp=Z,11nm,1.2s
PHET Kaeng Krachan 44.52 249 P **P 12 23 17.7 +2.1**
comp=Z,23nm,0.9s,comp=Z,168nm
MK01 Makanchi Array 44.55 302 *e*P **P 12 23 15.9 +0.4**
MK31 Makanchi Array 44.55 302 *i*P **P 12 23 16.1 +0.6**
MK31 pmax pmax
comp=Z,24nm,0.9s
MK31 Makanchi Array 44.55 302 *e*P **P 12 23 15.9 +0.4**
MKAR Makanchi Array 44.55 302 P **P 12 23 16.0 +0.4**
comp=Z,17nm,0.9s,baz=87,slow=7.5,SNR=49
MKAR Makanchi Array 44.55 302 *e*P **P 12 23 15.9 +0.4**
MKAR Makanchi Array 44.55 302 *e*P **P 12 23 15.9 +0.4**
MAKZ Makanchi 44.76 303 *e*P **P 12 23 17.7 +0.5**
MAKZ pmax pmax
comp=Z,20nm,0.9s
MAKZ Makanchi 44.76 303 *e*P **P 12 23 17.7 +0.5**
comp=Z,20nm,0.9s
TAPN Taplejung 46.26 275 *e*P **P 12 23 30.6 +0.9**
comp=Z,83nm,1.1s
KAPI Kappang 46.33 211 P **P 12 23 29.3 -0.5**
comp=Z,10nm,0.7s,baz=308,slow=4.7,SNR=5.7
KAPI Kappang 46.33 211 *e*P **P 12 23 31.5 +1.7**
comp=Z,15nm,0.8s
KURK Kurchatov 46.37 308 *e*P **P 12 23 29.9 0.0**
KURK pmax pmax
comp=Z,57nm,1.1s
KURK Kurchatov 46.37 308 *e*P **P 12 23 29.9 0.0**
comp=Z,57nm,1.1s
KURK Kurchatov 46.37 308 P **P 12 23 30.3 +0.5**
SNR=8.7
KURK Kurchatov 46.37 308 P **P 12 23 30.3 +0.5**
SNR=8.7
KURBB Kurchatov Arra 46.44 308 P **P 12 23 30.6 +0.2**
comp=Z,30nm,1.0s,baz=83,slow=8.3,SNR=38
ODAN Odare 46.73 274 *e*P **P 12 23 34.1 +0.8**
comp=Z,52nm,0.7s
PDGK Podgornoye 47.20 298 P **P 12 23 36.7 +0.3**
PDGK pmax pmax
comp=Z,38nm,1.2s
RAMN Ramite 47.33 275 *e*P **P 12 23 38.9 +0.9**
comp=Z,147nm,1.0s
GUN Gumba 47.49 276 *e*P **P 12 23 40.2 +0.9**
comp=Z,109nm,0.9s
KRAB Krabi 47.91 245 P **P 12 23 46.3 +4.0**
comp=Z,51nm,1.0s
PKIN Phulchoki 48.02 276 *e*P **P 12 23 43.7 +0.4**
comp=Z,27nm,0.6s
KKN Kakani 48.02 276 *e*P **P 12 23 43.9 +0.6**
comp=Z,34nm,0.6s
DMN Daman 48.23 276 *e*P **P 12 23 45.6 +0.6**
comp=Z,33nm,0.7s
GKN Gorkha 48.44 277 *e*P **P 12 23 47.3 +0.8**
comp=Z,100nm,0.8s
PMR Palmer 48.72 36 *e*P **P 12 23 48.8 +0.9**
PMR pmax pmax
comp=Z,13nm,1.2s
PMR Palmer 48.72 36 *e*P **P 12 23 48.8 +0.9**
comp=Z,13nm,1.2s
SOEI Soe 49.06 203 *e*P **P 12 23 52.3 +1.2**
comp=Z,112nm,1.0s
COLA College 49.20 32 *e*P **P 12 23 52.3 +0.8**
COLA pmax pmax
comp=Z,6.0nm,0.7s
COLA College 49.20 32 *e*P **P 12 23 52.3 +0.8**
comp=Z,5.7nm,0.7s
KOLN Koldanda 49.37 277 *e*P **P 12 23 54.4 +0.8**
comp=Z,92nm,1.2s
ILAR Eielson Array 49.62 32 P **P 12 23 54.3 -0.5**
comp=Z,1.4nm,0.7s,baz=271,slow=6.1,SNR=35
ILAR Eielson Array 49.62 32 P **P 12 23 54.3 -0.5**
PYUN Piuthan 49.71 278 *e*P **P 12 23 57.2 +0.9**
comp=Z,160nm,0.8s
TKM2 Tokmak 2 50.05 299 *e*P **P 12 23 59.4 +0.7**
TKM2 pmax pmax
comp=Z,53nm,1.4s
TKM2 Tokmak 2 50.05 299 *e*P **P 12 23 59.4 +0.7**
comp=Z,53nm,1.4s
VOSK Vostochnaya 50.73 312 P **P 12 24 02.9 -0.5**
VOSK pmax pmax
comp=Z,22nm,1.1s
CHKZ Chkalovo 50.76 313 P **P 12 24 03.0 -0.5**
CHKZ pmax pmax
comp=Z,26nm,1.7s
FRU Bishkek 50.77 299 *e*P **P 12 24 03.0 -0.9**
KSH Kashi 50.81 294 P **P 12 24 08.5 +4.1**
KSH *e*pP sP 12 24 16.0 +0.1
KSH *e*sP pP 12 24 19.3 +6.6
KSH pmax pmax
comp=Z,14nm,0.9s
AAK Ala-Archa 50.91 299 P **P 12 24 04.6 -0.5**
comp=Z,5.9nm,0.8s,baz=100,slow=5.5,SNR=11
AAK LR LR 12 47 08.8
comp=Z,2µm,18.6s,baz=62,slow=38
AAK Ala-Archa 50.91 299 *e*P **P 12 24 05.0 -0.1**
AAK pmax pmax
comp=Z,9.0nm,0.9s
AAK Ala-Archa 50.91 299 *e*P **P 12 24 05.0 -0.1**
comp=Z,9.2nm,0.9s
DOT Dot Lake 50.92 34 *e*P **P 12 24 05.0 +0.3**
comp=Z,11nm,0.6s
PPBI Pangkal Pinang 50.92 229 P P 12 24 11.8 +6.6
comp=Z,21nm,1.1s,comp=Z,3µm
BVA0 Borovoye Array 51.02 313 *i*P **P 12 24 05.6 +0.1**
BVA0 pmax pmax
comp=Z,12nm,1.0s
BVAR Borovoye Array 51.02 313 LR LR 12 46 56.8
comp=Z,1µm,18.1s,baz=138,slow=37
BRVK Borovoye 51.07 313 *e*P **P 12 24 06.1 +0.2**
BRVK pmax pmax
comp=Z,10.0nm,0.9s
BRVK Borovoye 51.07 313 *e*P **P 12 24 06.1 +0.2**
comp=Z,9.9nm,0.9s
EKS2 Erkin-Say 51.41 299 *e*P **P 12 24 08.8 0.0**
EKS2 pmax pmax
comp=Z,10.0nm,1.0s
EKS2 Erkin-Say 51.41 299 *e*P **P 12 24 08.8 0.0**
comp=Z,10.0nm,1.0s
ZRNK Zerenda 51.85 313 P **P 12 24 11.4 -0.4**
ZRNK pmax pmax
comp=Z,25nm,1.6s
MNAS Manas 52.36 299 P **P 12 24 16.8 +0.9**
MNAS pmax pmax
comp=Z,24nm,0.9s
SFK Sufi-Kurgan 52.45 296 P **P 12 24 17.0 +0.3**
KPJI Karang Pucung 53.54 222 P P 12 24 31.8 +7.2
comp=Z,45nm,1.2s
KK31 Karatay Array 53.55 300 *i*P **P 12 24 25.4 +0.9**
KK31 pmax pmax
comp=Z,21nm,1.1s
KKAR Karatay Array 53.55 300 *e*P **P 12 24 25.3 +0.8**
KKAR Karatay Array 53.55 300 *e*P **P 12 24 25.3 +0.8**
GSI Gunungsitoli 53.89 240 *e*P **P 12 24 27.6 +0.4**
comp=Z,62nm,0.9s
INK Inuvik 54.55 27 P **P 12 24 30.6 -0.8**
comp=Z,1.5nm,0.7s,baz=310,slow=6.3,SNR=9.3
INK Inuvik 54.55 27 *e*P **P 12 24 30.7 -0.6**
INK pmax pmax
comp=Z,4.0nm,0.7s
INK Inuvik 54.55 27 *e*P **P 12 24 30.7 -0.6**
comp=Z,3.8nm,0.7s
SVE Sverdlovsk 55.59 319 *e*P **P 12 24 39.8 +0.7**
SVE pmax pmax
comp=Z,46nm,1.1s
DZET Dzherino 56.26 296 P **P 12 24 44.8 +0.5**
DZET pmax pmax
comp=Z,33nm,0.8s
FITZ Fitzroy Crossi 56.60 198 P **P 12 24 45.8 -0.8**
comp=Z,1.8nm,0.6s,baz=21,slow=9.9,SNR=5.2
FITZ Fitzroy Crossi 56.60 198 *e*P **P 12 24 46.7 +0.1**
WRAB Tennant Creek 56.76 188 *ce*P **P 12 24 47.5 -0.3**
WRAB pmax pmax
comp=Z,44nm,1.7s
WRAB Tennant Creek 56.76 188 *e*P **P 12 24 50.8 +3.0**
comp=Z,26nm,1.1s
WB2 Warramunga Arr 56.77 188 *e*P P 12 24 53.6 +5.7
comp=Z,31nm,1.2s
SOKR Solikamsk 56.77 323⇑*i*P **P 12 24 46.5 -0.9**
SOKR pmax pmax
comp=Z,25nm,1.1s
WRA Warramunga Arr 56.77 188 P **P 12 24 46.2 -1.6**
comp=Z,3.6nm,0.8s,baz=7.7,slow=7.2,SNR=11
WRA Warramunga Arr 56.77 188 P **P 12 24 46.2 -1.6**
ARU Arti 56.81 319 *c i*P **P 12 24 47.8 0.0**
ARU S **S 12 32 41.3 +2.3**
ARU SS **SS 12 36 24.1 -2.6**
ARU pmax pmax
comp=Z,46nm,1.2s
ARU MLR MLR
comp=Z,1µm,19.0s
ARU Arti 56.81 319 *e*P **P 12 24 47.7 0.0**
comp=Z,34nm,1.0s
KBL Kabul 57.81 291 *e*P **P 12 24 55.9 +0.4**
KBL pmax pmax
comp=Z,28nm,1.0s
KBL Kabul 57.81 291 *e*P **P 12 24 55.9 +0.4**
comp=Z,28nm,1.0s
AB31 Akbulak array 58.38 310 *i*P **P 12 24 58.4 -0.6**
AB31 pmax pmax
comp=Z,11nm,0.8s
ABKAR Akbulak array 58.38 310 *e*P **P 12 24 59.0 0.0**
HYB Hyderabad 58.49 269 *i*P **P 12 25 01.0 +0.8**
AKTO Aktyubinsk 59.12 312 P **P 12 25 03.4 -0.7**
AKTO pmax pmax
comp=Z,18nm,1.0s
AS31 Alice Springs 60.50 188 *e*P P 12 25 19.3 +5.6
comp=Z,2.1nm,0.8s
ASAR Alice Springs 60.50 188 P **P 12 25 12.7 -1.1**
comp=Z,2.3nm,0.9s,baz=14,slow=6.2,SNR=14
ASAR Alice Springs 60.50 188 P **P 12 25 12.7 -1.1**
TMCR Tamitsa 63.18 332 *e*P **P 12 25 32.2 +0.9**
TMCR pmax pmax
comp=Z,29nm,1.4s
YKA Yellowknife Ar 63.95 30 P **P 12 25 35.5 -0.9**
comp=Z,1.5nm,1.0s,baz=299,slow=6.1,SNR=11
YKA Yellowknife Ar 63.95 30 P **P 12 25 35.5 -0.9**
KLMR Klimovskoe 64.20 328 *e*P **P 12 25 36.5 -1.6**
KLMR *e* 12 27 57.6
KLMR pmax pmax
comp=Z,19nm,1.1s
GEYT Alibeck 64.26 299 P **P 12 25 37.6 -1.3**
comp=Z,10nm,0.9s,baz=48,slow=2.2,SNR=12
ARCES ARCESS Array B 64.41 340 P **P 12 25 39.0 -0.4**
comp=Z,3.2nm,0.9s,baz=342,slow=19,SNR=3.5
ARCES ARCESS Array B 64.41 340 P **P 12 25 39.0 -0.4**
VRH Novokhopyorsk 68.03 318 *e*P **P 12 26 02.4 -0.4**
VRH pmax pmax
comp=Z,20nm,0.9s
STKA Stephens Creek 68.22 180 P **P 12 26 02.6 -1.5**
comp=Z,0.9nm,0.6s,baz=71,slow=1.6,SNR=3.3
STKA Stephens Creek 68.22 180 P **P 12 26 02.6 -1.5**
OBN Obninsk 68.54 323⇓*e*P **P 12 26 06.1 +0.1**
OBN *i* 12 26 14.1
OBN pmax pmax
comp=Z,29nm,1.2s
FIA1 FINESS Array S 69.25 332 *e*P **P 12 26 10.4 +0.2**
FINES FINESS Array B 69.25 332 P **P 12 26 10.3 0.0**
comp=Z,15nm,1.1s,baz=57,slow=7.0,SNR=14
FINES FINESS Array B 69.25 332 P **P 12 26 10.3 0.0**
VSR Storozhevoye 69.38 319 *e*P **P 12 26 10.8 -0.5**
VSR pmax pmax
comp=Z,20nm,0.9s
GOF Gofitskoye 70.54 312⇑*i*P **P 12 26 20.0 +1.5**
GOF pmax pmax
comp=Z,34nm,0.9s
VSU Vasula 70.89 330 *ce*P **P 12 26 22.2 +1.8**
VSU pmax pmax
comp=Z,28nm,1.2s
SUMG Summit 71.02 0 *e*P **P 12 26 22.7 +1.2**
SUMG pmax pmax
comp=Z,14nm,0.9s
SUMG Summit 71.02 0 *e*P **P 12 26 22.7 +1.2**
comp=Z,14nm,0.9s
ZEI Tsey 71.24 310 *e*P **P 12 26 21.9 -1.2**
ZEI pmax pmax
comp=Z,13nm,0.8s
KBZ Khabaz 71.35 311 P **P 12 26 22.8 -0.6**
comp=Z,17nm,1.0s,baz=183,slow=5.5,SNR=16
KBZ Khabaz 71.35 311 P **P 12 26 22.8 -0.6**
KIV Kislovodsk 71.35 311 *c i*P **P 12 26 23.9 +0.3**
KIV *i* 12 26 33.1
KIV *i* 12 26 43.2
KIV *i* 12 28 59.7
KIV pmax pmax
comp=Z,57nm,1.0s
KIV Kislovodsk 71.35 311 *e*P **P 12 26 24.7 +1.1**
comp=Z,45nm,0.9s
KIV Kislovodsk 71.35 311 P **P 12 26 24.6 +1.1**
SNR=13
KIV P **P 12 26 24.6 +1.1**
SNR=13
KIV Kislovodsk 71.35 311 P **P 12 26 24.6 +1.1**
SNR=13
NEY Neytrino 71.72 311⇓*i*P **P 12 26 27.2 +1.3**
NEY pmax pmax
comp=Z,2.0nm,1.1s
GNI Garni 72.14 307 *e*P **P 12 26 28.8 +0.3**
GNI pmax pmax
comp=Z,65nm,0.9s
GNI Garni 72.14 307 *e*P **P 12 26 28.8 +0.3**
comp=Z,65nm,0.9s
ARQ Araqi 72.82 287 P **P 12 26 33.8 +1.2**
SNR=6.3
ARQ Araqi 72.82 287 P **P 12 26 33.8 +1.2**
SNR=6.3
SOC Sochi 73.34 312 *e*P **P 12 26 34.6 -0.8**
SOC pmax pmax
comp=Z,16nm,0.6s
FFC Flin Flon 73.82 33 *e*P **P 12 26 37.7 -0.3**
FFC pmax pmax
comp=Z,5.0nm,0.9s
FFC Flin Flon 73.82 33 *e*P **P 12 26 37.7 -0.3**
comp=Z,4.7nm,0.9s
DLMT Dillon 74.37 45 *e*P **P 12 26 41.4 -0.2**
comp=Z,2.7nm,0.6s
NC405 NORSAR Array S 74.40 337 *e*P **P 12 26 42.5 +1.2**
NC204 NORSAR Array S 74.56 338 *e*P **P 12 26 43.2 +1.0**
NB2 NORSAR Subarra 74.61 337 P **P 12 26 42.3 -0.2**
comp=Z,11nm,1.0s,baz=38,slow=6.2
NOA NORSAR Array B 74.61 337 P **P 12 26 42.6 +0.2**
comp=Z,8.3nm,1.0s,baz=39,slow=5.7,SNR=11
NOA NORSAR Array B 74.61 337 P **P 12 26 42.7 +0.2**
NBO02 NORSAR Array S 74.71 338 *e*P **P 12 26 43.4 +0.3**
BOZ Bozeman (W) 74.74 44 *e*P **P 12 26 43.5 -0.3**
BOZ pmax pmax
comp=Z,4.0nm,0.8s
BOZ Bozeman (W) 74.74 44 *e*P **P 12 26 43.5 -0.3**
comp=Z,4.0nm,0.8s
AKASG Malin Array Be 74.74 323 P **P 12 26 43.2 -0.1**
comp=Z,6.1nm,0.6s,baz=45,slow=6.1,SNR=25
AKASG Malin Array Be 74.74 323 P **P 12 26 43.3 -0.1**
AKBB Malin Array Si 74.74 323 *e*P **P 12 26 42.9 -0.5**
AKBB pmax pmax
comp=Z,17nm,1.0s
AKBB Malin Array Si 74.74 323 *e*P **P 12 26 42.9 -0.5**
comp=Z,17nm,1.0s
KIEV Kiev 74.76 323⇓*i*P **P 12 26 42.8 -0.7**
KIEV pmax pmax
comp=Z,21nm,1.2s
KIEV Kiev 74.76 323 *e*P **P 12 26 43.2 -0.3**
comp=Z,20nm,1.1s
AK11 Malin Array Si 74.79 323 *e*P **P 12 26 43.4 -0.2**
NVAR Mina Array Bea 74.95 53 P **P 12 26 45.8 +0.6**
comp=Z,2.1nm,0.8s,baz=286,slow=6.2,SNR=7.2
SIM Simferopol' 75.78 316 *e*P **P 12 26 50.8 +1.3**
SIM pmax pmax
comp=Z,19nm,1.0s
SIM MLR MLR
comp=Z,500nm,16.0s
H17A Grant Village 76.10 45 *e*P **P 12 26 54.0 +2.3**
comp=Z,9.0nm,1.0s
R11A Troy Canyon, C 76.73 52 *e*P **P 12 26 56.6 +1.3**
comp=Z,3.5nm,1.0s
HWUT Hardware Ranch 77.24 47 *e*P **P 12 26 59.2 +1.2**
comp=Z,5.5nm,1.1s
DUG Dugway, Tooele 77.35 49 *e*P **P 12 27 00.1 +1.4**
DUG pmax pmax
comp=Z,5.0nm,1.0s
DUG Dugway, Tooele 77.35 49 *e*P **P 12 27 00.1 +1.4**
comp=Z,4.7nm,1.0s
PDAR Pinedale Array 77.69 46 P **P 12 26 59.7 -0.9**
comp=Z,0.7nm,0.7s,baz=248,slow=1.7,SNR=8.1
BURAR Bucovina Array 78.76 322⇑*i*P **P 12 27 06.9 +0.6**
BURAR Bucovina Array 78.76 322⇑*i*P **P 12 27 06.9 +0.6**
TESR Tescani 78.78 320⇓*i*P **P 12 27 06.6 +0.3**
VRI Vrincioaia 79.17 320⇓*i*P **P 12 27 09.0 +0.5**
VRI Vrincioaia 79.17 320⇓P **P 12 27 09.0 +0.5**
PLOR Plostina 79.22 320⇑*i*P **P 12 27 10.6 +1.8**
PLOR Plostina 79.22 320⇑P **P 12 27 10.6 +1.8**
KOLS Kolonicke sedl 79.27 324 *e*P **P 12 27 09.6 +0.7**
KOLS pmax pmax
comp=Z,8.0nm,1.2s
KOLS Kolonicke sedl 79.27 324 *e*P **P 12 27 09.6 +0.7**
BR131 Keskin Array S 79.30 312 *e*P **P 12 27 10.6 +1.2**
BRTR Keskin Array B 79.30 312 P **P 12 27 10.1 +0.7**
comp=Z,11nm,1.1s,baz=103,slow=3.9,SNR=31
BRTR Keskin Array B 79.30 312 P **P 12 27 10.1 +0.7**
STHS Stebnicka Huta 79.40 325 *e*P **P 12 27 11.2 +1.5**
STHS pmax pmax
comp=Z,7.0nm,1.0s
STHS Stebnicka Huta 79.40 325 *e*P **P 12 27 11.2 +1.5**
UZH Uzhgorod 79.47 324 *e*P **P 12 27 09.2 -0.8**
UZH *e* 12 27 17.2
OJC Ojcow 79.48 326 *e*P **P 12 27 10.1 0.0**
OJC *e**PP **sP 12 27 22.1 +0.2**
OJC pmax pmax
comp=Z,25nm,1.1s
OJC Ojcow 79.48 326 *e*P **P 12 27 10.1 0.0**
comp=Z,25nm,1.1s
OJC *e*pP **sP 12 27 22.1 +0.2**
ULM Lac du Bonnet 79.62 33 P **P 12 27 11.5 +0.7**
comp=Z,1.2nm,0.5s,baz=257,slow=5.2,SNR=3.9
ULM Lac du Bonnet 79.62 33 P **P 12 27 11.5 +0.7**
CRVS Cervenica-Dubn 79.67 325 *e*P **P 12 27 11.8 +0.7**
CRVS Cervenica-Dubn 79.67 325 *e*P **P 12 27 11.8 +0.7**
BR231 Keskin MP Arra 79.74 312 *e*P **P 12 27 10.7 -1.1**
ISR Istrita 79.77 319⇓*i*P **P 12 27 14.0 +2.2**
ISR Istrita 79.77 319⇓P **P 12 27 14.0 +2.2**
MSAB Monastry St. A 79.78 318⇓*i*P **P 12 27 13.1 +1.3**
DOPR Dopca 79.79 321⇑*i*P **P 12 27 13.8 +1.9**
CJR Cluj-Napoca 80.18 322⇑*i*P **P 12 27 16.6 +2.6**
CJR Cluj-Napoca 80.18 322⇑P **P 12 27 16.6 +2.6**
VOIR 80.33 320⇑*i*P **P 12 27 14.4 -0.4**
VOIR 80.33 320⇑P **P 12 27 14.4 -0.4**
LANS Liptovska Anna 80.41 326 *e*P **P 12 27 15.9 +0.8**
LANS Liptovska Anna 80.41 326 *e*P **P 12 27 15.9 +0.8**
ARR Arges 80.59 321⇓*i*P **P 12 27 17.7 +1.5**
MORC Moravsky Berou 80.80 327 *e*P **P 12 27 18.1 +0.8**
MORC pmax pmax
comp=Z,68nm,1.2s
MORC Moravsky Berou 80.80 327 *e*P **P 12 27 18.1 +0.8**
comp=Z,68nm,1.2s
DPC Dobruska-Polom 80.90 328 *e*P **P 12 27 18.8 +1.0**
DPC *e*pP **pP 12 27 25.4 -1.1**
DPC Dobruska-Polom 80.90 328 *e*P **P 12 27 18.8 +1.0**
DPC *e* 12 27 25.4
UPC Upice 80.91 328 *e*P **P 12 27 18.7 +0.9**
UPC Upice 80.91 328 *e*P **P 12 27 18.7 +0.9**
RAYN Ar Rayn 81.06 293 *e*P **P 12 27 19.4 +0.3**
comp=Z,14nm,1.3s
PSZ Piszkesteto 81.10 325⇑*e*P **P 12 27 20.5 +1.6**
PSZ Piszkesteto 81.10 325 *e*P **P 12 27 19.6 +0.7**
PSZ pmax pmax
comp=Z,21nm,1.1s
PSZ Piszkesteto 81.10 325 *e*P **P 12 27 19.6 +0.7**
comp=Z,21nm,1.1s
WUAZ Wupatki 81.13 52 *e*P **P 12 27 20.2 +0.8**
comp=Z,6.3nm,1.1s
VYHS Vyhne 81.17 326 *e*P **P 12 27 19.9 +0.7**
VYHS pmax pmax
comp=Z,6.0nm,1.1s
VYHS Vyhne 81.17 326 *e*P **P 12 27 19.9 +0.7**
PV01 Paradox Valley 81.21 49 *e*P **P 12 27 20.8 +0.9**
comp=Z,357nm,0.9s
SIRR Siria 81.45 323⇓*i*P **P 12 27 21.0 +0.3**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
BRG	Berggiesshubel	81.49	330	eP	P	12 27 21.7	+0.9
	comp=Z,14nm,1.2s						
BRG	Berggiesshubel	81.49	330	eP	P	12 27 21.7	+0.9
BRG				pmax	pmax		
	comp=Z,14nm,1.2s						
PVCC	Panska Ves	81.50	329	eP	P	12 27 21.7	+0.8
PVCC	Panska Ves	81.50	329	eP	P	12 27 21.7	+0.8
GZR	Gura Zlata	81.51	321	⇑iP	P	12 27 20.9	-0.2
GZR	Gura Zlata	81.51	321	⇑P	P	12 27 20.9	-0.2
CLL	Collm	81.53	330	iP	P	12 27 20.9	-0.1
	comp=Z,21nm,1.1s						
CLL				esP	sP	12 27 33.0	+0.1
CLL				ePP	PP	12 30 24.0	-2.8
CLL	Collm	81.53	330	iP	P	12 27 20.9	-0.1
CLL				e		12 27 33.0	
CLL				pmax	pmax		
	comp=Z,21nm,1.1s						
CLL	Collm	81.53	330	eP	P	12 27 21.2	+0.2
	comp=Z,24nm,1.1s						
VRAC	Vranov	81.56	327	⇑iP	P	12 27 18.8	-2.5
VRAC	Vranov	81.56	327	⇑P	P	12 27 18.8	-2.5
PRU	Pruhonice	81.92	329	eP	P	12 27 23.8	+0.7
PRU				esP	sP	12 27 35.0	0.0
PRU	Pruhonice	81.92	329	eP	P	12 27 23.8	+0.7
PRU				e		12 27 35.0	
BZS	Buzias	81.93	322	⇑iP	P	12 27 22.8	-0.4
BZS	Buzias	81.93	322	⇑P	P	12 27 22.8	-0.4
MDVR	Moldovita	82.48	322	⇓iP	P	12 27 25.7	-0.5
KHC	Kasperske Hory	82.98	329	eP	P	12 27 29.1	+0.4
KHC	Kasperske Hory	82.98	329	eP	P	12 27 29.1	+0.4
KHC	Kasperske Hory	82.98	329	eP	P	12 27 28.2	-0.5
	comp=Z,7.5nm,1.2s						
GEC2	GERESS Array S	83.15	328	eP	P	12 27 29.4	-0.3
GEC2				pmax	pmax		
	comp=Z,6.0nm,1.0s						
GEC2	GERESS Array S	83.15	328	eP	P	12 27 29.4	-0.3
	comp=Z,6.1nm,1.0s						
GERES	GERESS Array B	83.15	328	P	P	12 27 29.8	+0.1
	comp=Z,4.2nm,0.9s,baz=50,slow=4.4,SNR=15						
GERES	GERESS Array B	83.15	328	P	P	12 27 29.8	+0.1
VTS	Vitosha	83.26	319	⇓iP	P	12 27 30.7	+0.3
VTS	Vitosha	83.26	319	⇓P	P	12 27 30.7	+0.3
GRFO	Grafenberg	83.51	330	eP	P	12 27 33.4	+2.0
GRFO				pmax	pmax		
	comp=Z,20nm,1.0s						
GRFO	Grafenberg	83.51	330	eP	P	12 27 33.4	+2.0
	comp=Z,20nm,1.0s						
BFO	Black Forest	85.74	331	iP	P	12 27 43.4	+0.7
BFO	Black Forest	85.74	331	eP	P	12 27 42.9	+0.2
	comp=Z,17nm,1.0s						
TUE	Stuetta	86.83	329	eP	P	12 27 50.0	+1.6
	comp=Z,18nm,1.5s						
TXAR	Lajitas Array	90.09	53	P	P	12 28 05.1	+1.1
	comp=Z,1.0nm,0.8s,baz=305,slow=3.2,SNR=8.2						
TXAR	Lajitas Array	90.09	53	P	P	12 28 05.1	+1.1
TORD	Torodi Ar. Bea	117.78	315	PP	PP	12 35 03.9	+0.9
	comp=Z,3.7nm,1.2s,baz=41,slow=5.2,SNR=7.3						
LPAZ	La Paz	146.60	60	PKPbc	PKPdf	12 34 45.2	+0.4
	comp=Z,1.3nm,0.6s,baz=233,slow=2.1,SNR=5.4						
LPAZ	La Paz	146.60	60	PKP2	PKPdf	12 34 45.3	+0.4
SIV	San Ignacio	151.07	51	PKPbc	PKPbc	12 34 56.0	-1.2
	comp=Z,3.7nm,0.9s,baz=316,slow=2.1,SNR=5.1						

JMA 01 12:16:08.4±0.1, 38°.86N×142°.08E, h43^{km}±2^{km}, M4.3, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
OFUJ	Ofunato	0.39	305	P	Pn	12 16 17.9	0.0
JMK	Ichinoseki	0.68	278	P	Pn	12 16 21.6	0.0
JMK				S	Sn	12 16 30.7	-0.4
JIO	Ouri	0.70	235	P	Pn	12 16 21.6	-0.3
JIO				S	Sn	12 16 30.6	-1.0
MIYJ	Miyakonagasawa	0.74	344	P	Pn	12 16 22.2	-0.3
MIYJ				S	Sn	12 16 31.8	-0.9
JOM	Ohasama	0.87	315	P	Pn	12 16 24.1	-0.1
JOM				S	Sn	12 16 35.8	+0.1
JKZ	Kuzumaki	1.26	333	P	Pn	12 16 30.3	+0.6
JANG	Nango	1.57	344	P	Pn	12 16 34.3	+0.5

*ISCJB **01** 12:18:31.6±1.3, 36°.79N±0°.08×34°.5E±0°.1, h5^{km}±20^{km}, Error ellipse: s-maj=17.5km s-min=9.0km az=135.7*
*DDA **01** 12:18:31.6, 36°.79N×34°.53E, h7^{km}, Md2.7*
ISC 01 12:18:31.1±1.3, 36°.80N±0°.07×34°.48E±0°.07, h8^{km}±9^{km}, n5, σ0^{s}14/8, Turkey

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
MERS	Mersin	0.07	27	ePG	Pg	12 18 33.2	0.0
MERS				eSG	Sg	12 18 34.8	+0.1
DED	Mersin	0.30	58	iP	Pg	12 18 37.1	0.0
DED				iS	Sg	12 18 41.2	0.0
KIZK	Mersin	0.42	220	iP	Pb	12 18 40.7	-0.1
GULE	Gulek	0.54	26	iP	Pb	12 18 42.7	-0.2
GULE				iS	Sb	12 18 51.0	+0.2
KERG	Konya-Eregli	0.67	335	iP	Pg	12 18 44.2	0.0

*SKHL **01** 12:19:54.7±0.5, 43°.51N×147°.13E, h35^{km}±3^{km}, mb4.1/2*
*JMA **01** 12:19:54.2±0.2, 43°.40N×147°.05E, h53^{km}, M2.6*
ISC 01 12:19:53.1±3.1, 43°.4N±0°.1×147°.2E±0°.1, h30^{km}±13^{km}, n8, σ1^{s}23/14, Kuril Islands

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
SHO	Shikotan	0.51	333	eP	Pb	12 20 03.6	0.0
SHO				AMB	AMB	12 20 04.2	
	30nm,0.2s						
SHO				AMB	AMB	12 20 04.2	
	50nm,0.2s						
SHO				iS	Sb	12 20 10.4	-0.4
SHO				A	A	12 20 10.7	
	1μm,0.3s						
SHO				A	A	12 20 10.7	
	930nm,0.3s						
NEM2	Nemuro 2	1.03	267	P	Pn	12 20 11.6	+0.2
NEM2				eS	Sn	12 20 24.3	-0.5
YUK	Yuzh-Kuril'sk	1.12	304	iP	Pn	12 20 12.4	-0.3
YUK				AMB	AMB	12 20 14.6	
	51nm,0.2s						
YUK				iS	Sn	12 20 25.9	-1.2
YUK				A	A	12 20 28.0	
	380nm,0.2s						
YUK				A	A	12 20 28.0	
	310nm,0.2s						
JRA	Rausu	1.56	290	P	Pn	12 20 19.4	+0.6
JRA				eS	Sn	12 20 36.7	-1.2
JNK	Nakash	1.77	276	P	Pn	12 20 22.0	+0.2
JNK				eS	Sn	12 20 43.1	-0.2
KUR	Kuril'sk	1.89	16	eP	Pn	12 20 23.3	0.0
KUR				iS	Sn	12 20 44.3	-1.7
KUR				A	A	12 20 45.6	
	40nm,0.2s						
KUR				A	A	12 20 45.6	
	80nm,0.2s						
YSS	Yuzh-Sakhalins	4.70	320	eP	Pn	12 21 03.6	+1.6
TYV	Tymovskoe	8.05	339	eP	Pn	12 21 50.3	+2.4

*IDC **01** 12:29:00.4±1.3, 36°.67N×142°.17E, h0^{km}, mb3.6/6, mb1 3.7/8, mb1mx3.4/73, mbtmp3.6/8, ML3.5/2, Error ellipse: s-maj=29.2km s-min=23.9km az=89.0*
*ISCJB **01** 12:29:01.1±1.0, 36°.59N±0°.05×142°.2E±0°.1, h19^{km}, mb3.6/6, Error ellipse: s-maj=14.0km s-min=7.4km az=178.7*
*JMA **01** 12:29:02.7±0.4, 36°.68N×142°.08E, h14^{km}±4^{km}, M3.7*
ISC 01 12:29:03.0±1.1, 36°.71N±0°.06×142°.11E±0°.09, h19^{km}, n14, σ1^{s}25/17, mb3.6/6, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
ONAJ	Iwakimizuishiy	1.12	291	P	Pn	12 29 22.5	-1.2
JHO	Hitachi	1.24	266	P	Pn	12 29 25.0	-0.3
JMM	Marumori	1.56	318	P	Pn	12 29 30.1	+0.4
JFT	Otama	1.63	300	P	Pb	12 29 31.6	-0.8
JOU	Okura	2.01	326	P	Pb	12 29 37.8	-1.1
JOU				eS	Sb	12 30 02.3	-1.3
MJAR	Matsushiro Arr	3.14	268	Pn	Pn	12 29 52.1	+0.7
	5.3nm,0.3s,baz=96,slow=9.3,SNR=58						
MAT	Matsushiro	3.14	268	P	Pn	12 29 53.6	+2.2
MAT				S	Sb	12 30 37.5	+1.4
JHJ	Hachijo jima 2	4.06	209	Pn	Pn	12 30 04.0	0.0
	8.8nm,0.3s,baz=48,slow=18,SNR=3.9						
JHJ				Sn	Sn	12 30 48.3	-2.7
	27nm,0.3s,baz=58,slow=22,SNR=7.8						
SONM	Songino Array	28.43	304	P	P	12 34 57.2	+0.7
	1.3nm,0.8s,baz=103,slow=8.3,SNR=7.0						
ZALV	Zalesovo Beam	42.54	313	P	P	12 36 57.3	+0.2
	0.3nm,0.4s,baz=64,slow=3.4,SNR=3.7						
MKAR	Makanchi Array	44.76	302	P	P	12 37 16.1	+1.0
	0.4nm,0.7s,baz=95,slow=7.2,SNR=3.1						
KURBB	Kurchatov Arra	46.64	308	P	P	12 37 30.4	+0.6
	0.4nm,0.5s,baz=82,slow=8.3,SNR=4.7						
ILAR	Eielson Array	49.47	32	P	P	12 37 52.3	+0.7
	0.4nm,1.0s,baz=261,slow=7.5,SNR=3.2						
WRA	Warramunga Arr	56.82	189	P	P	12 38 46.0	-0.1
	1.3nm,1.2s,baz=5.0,slow=6.9,SNR=2.5						

*ISK **01** 12:30:10.3, 38°.22N×37°.67E, h5^{km}, MD2.8*
*CSEM **01** 12:30:11.3±0.2, 38°.26N×37°.69E, h5^{km}, MD2.7, Error ellipse: s-maj=5.3km s-min=5.0km az=72.0*
*DDA **01** 12:30:12.4, 38°.32N×37°.73E, h7^{km}, Md2.7*
ISC 01 12:30:11.8±1.1, 38°.27N±0°.05×37°.70E±0°.04, h12^{km}±8^{km}, n19, σ0^{s}68/28, Turkey

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
AKCD	Akcadag	0.18	80	iP	Pg	12 30 15.9	0.0
AKCD				iS	Sg	12 30 18.6	-0.2
AKCD	Akcadag	0.18	80	P	Pg	12 30 15.9	0.0
AKCD				S	Sg	12 30 18.6	-0.2
DARE	Darende-Malaty	0.35	331	ePG	Pg	12 30 18.4	-0.5
DARE				eSG	Sg	12 30 24.0	+0.4
DARE	Darende-Malaty	0.35	331	ePg	Pg	12 30 18.4	-0.5
DARE				eSg	Sg	12 30 24.0	+0.4
GZT	Gaziantep	0.91	187	iP	Pn	12 30 34.3	+3.6
ELZG	Elazig	1.04	77	iP	Pg	12 30 31.6	-0.2
ELZG				iS	Sb	12 30 46.3	+0.8
ELZG	Elazig	1.04	77	P	Pg	12 30 31.6	-0.2
ELZG				S	Sb	12 30 46.3	+0.8
CUKAN	kangal_SIVAS	1.07	350	iP	Pb	12 30 32.4	+0.1
CUKAN	kangal_SIVAS	1.07	350	P	Pb	12 30 32.4	+0.1
KEMA	Kemaliye	1.18	32	iP	Pg	12 30 32.8	-1.7
KEMA				iS	Sb	12 30 50.2	+0.7
KEMA	Kemaliye	1.18	32	P	Pg	12 30 32.8	-1.7
KEMA				S	Sb	12 30 50.2	+0.7
PTK	Pertek	1.47	64	ePN	Pn	12 30 37.9	-0.4
PTK				eSN	Sg	12 30 59.5	+0.4
PTK	Pertek	1.47	64	ePn	Pn	12 30 37.9	-0.4
PTK				eSn	Sg	12 30 59.5	+0.4
SURC	SANLIURFA_SURC	1.56	152	iP	Pb	12 30 40.5	-0.2
SURC	SANLIURFA_SURC	1.56	152	P	Pb	12 30 40.5	-0.2
BNN	Bunyan	1.56	293	ePN	Pn	12 30 39.4	-0.2
BNN	Bunyan	1.56	293	ePn	Pn	12 30 39.4	-0.2
SVSK	Karacayir	1.74	342	ePN	Pn	12 30 42.6	+0.8
SVSK	Karacayir	1.74	342	ePn	Pn	12 30 42.6	+0.8

*IDC **01** 12:30:36.8±0.9, 35°.61N×141°.84E, h0^{km}, mb3.7/8, mb1 3.9/11, mb1mx3.6/74, mbtmp3.8/11, ML3.6/2, Error ellipse: s-maj=23.9km s-min=16.4km az=89.0*
*ISCJB **01** 12:30:37.8±0.7, 35°.61N±0°.05×141°.92E±0°.06, h22^{km}, mb3.7/8, Error ellipse: s-maj=8.2km s-min=7.2km az=31.6*
*JMA **01** 12:30:39.4±0.2, 35°.79N×141°.80E, h16^{km}±3^{km}, M3.7*
ISC 01 12:30:40.0±0.9, 35°.72N±0°.06×141°.75E±0°.07, h22^{km}, n22, σ1^{s}48/19, mb3.7/8, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
CHOJ	Chosi	0.72	269	P	Pn	12 30 54.2	-0.8
CHOJ				eS	Sn	12 31 04.6	-0.8
BSO1	Boso 1	1.24	211	S	Sb	12 31 20.8	+3.1
JYT	Yasato	1.36	292	P	Pb	12 31 03.6	-1.2
JYT				eS	Sb	12 31 22.1	+0.4
BSO3	Boso 3	1.37	228	eS	Sb	12 31 23.6	+1.9
MJAR	Matsushiro Arr	2.98	287	Pn	Pn	12 31 26.6	+0.6
	3.5nm,0.3s,baz=99,slow=8.6,SNR=5.5						
MAT	Matsushiro	2.98	287	P	Pn	12 31 27.8	+1.8
MAT				eS	Sb	12 32 07.6	-0.9
JHJ	Hachijo jima 2	3.06	213	Pn	Pn	12 31 26.1	-1.0
	42nm,0.3s,baz=80,slow=22,SNR=5.8						
JHJ				Sn	Sn	12 32 02.1	-0.9
	96nm,0.3s,baz=238,slow=22,SNR=9.3						
JCJ	Chichijima	8.61	177	Pn	Pn	12 32 40.1	-3.2
	baz=351,slow=18						
JCJ				Sn	Sn	12 34 11.6	-8.1
	3.8nm,0.3s,baz=107,slow=19,SNR=2.8						
H11N2	WAKE ISLAND Hy	27.26	119	T	T	13 04 46.6	
	baz=311,slow=75,SNR=7.2						
H11N1	WAKE ISLAND Hy	27.27	119	T	T	13 04 49.9	
	baz=311,slow=75,SNR=7.6						
H11N3	WAKE ISLAND Hy	27.28	119	T	T	13 04 49.9	
	baz=311,slow=75,SNR=7.5						
H11S1	WAKE ISLAND Hy	27.93	121	T	T	13 05 36.0	
	baz=314,slow=75,SNR=8.6						
H11S3	WAKE ISLAND Hy	27.93	121	T	T	13 05 39.3	
	baz=314,slow=75,SNR=10						
H11S2	WAKE ISLAND Hy	27.95	121	T	T	13 05 36.0	
	baz=314,slow=75,SNR=8.4						
SONM	Songino Array	28.76	306	P	P	12 36 36.1	0.0
	0.5nm,0.6s,baz=111,slow=7.9,SNR=3.8						
ZALV	Zalesovo Beam	43.00	313	P	P	12 38 40.1	+2.5
	0.3nm,0.3s,baz=106,slow=9.2,SNR=3.5						
MKAR	Makanchi Array	45.05	303	P	P	12 38 55.5	+1.3
	1.0nm,0.8s,baz=90,slow=9.7,SNR=5.9						
KURBB	Kurchatov Arra	47.03	309	P	P	12 39 10.3	+0.7
	1.4nm,0.6s,baz=85,slow=8.2,SNR=11						
ILAR	Eielson Array	50.46	32	P	P	12 39 36.5	+0.7
	0.6nm,1.0s,baz=264,slow=5.7,SNR=4.2						
WRA	Warramunga Arr	55.80	188	P	P	12 40 15.2	-0.4
	1.8nm,0.7s,baz=7.3,slow=7.4,SNR=8.1						
ASAR	Alice Springs	59.53	188	P	P	12 40 41.5	-0.2
	0.6nm,0.5s,baz=3.2,slow=6.7,SNR=24						
YKA	Yellowknife Ar	64.81	30	P	P	12 41 17.1	+0.4
	0.2nm,0.8s,baz=298,slow=6.9,SNR=3.4						

IDC 01 12:37:33.6±520.0, 48°.76N×45°.37E, h0^{km}, Error ellipse: s-maj=185.7km s-min=155.3km az=44.0, Ukraine-Moldova-Southwestern Russia region

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
I31KZ	AKTYUBINSK INF	8.39	74	i		13 32 00.0	
	baz=262,slow=316,SNR=1.1						
I43RU	DUBNA INFRASON	9.38	331	i		13 34 20.0	
	baz=143,slow=325,SNR=0.3						
I46RU	ZALESOVO INFRA	24.93	63	i		15 10 10.0	
	baz=275,slow=324,SNR=1.3						

IDC 01 12:40:47.7±2.1, 5°.89S×130°.57E, h0^{km}, mb3.4/1, mb1 3.6/4, mb1mx3.4/45, mbtmp3.4/4, ML3.3/3, MS3.7/1, Ms1 3.7/1, ms1mx2.9/22, Error ellipse: s-maj=77.0km s-min=28.0km az=77.0, Banda Sea

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
FITZ	Fitzroy Crossi	13.06	201	Pn	Pn	12 43 53.1	-1.5
	0.1nm,0.3s,baz=12,slow=14,SNR=2.8						
FITZ				Sn	Sn	12 46 02.2	-19
	0.2nm,0.3s,baz=170,slow=18,SNR=3.7						
WRA	Warramunga Arr	14.44	166	Pn	Pn	12 44 15.5	+2.0
	0.2nm,0.3s,baz=346,slow=10,SNR=7.5						
WRA				Sn	Sn	12 46 43.7	-11
	0.3nm,0.3s,baz=340,slow=30,SNR=6.4						
ASAR	Alice Springs	17.96	170	P	Pn	12 44 58.6	-0.5
	0.1nm,0.3s,baz=349,slow=10,SNR=8.1						
PSI	Prapat	32.76	284	LR	LR	13 02 40.4	
	comp=Z,118nm,20.1s,baz=281,slow=40						
MKAR	Makanchi Array	67.61	326	P	P	12 51 46.5	+0.1
	0.2nm,0.5s,baz=121,slow=7.5,SNR=3.0						

*ISCJB **01** 12:45:25.1±1.0, 39°.65N±0°.04×142°.2E±0°.1, h53^{km}±6^{km}, mb3.8/8, Error ellipse: s-maj=14.9km s-min=6.8km az=178.8*
*JMA **01** 12:45:25.6±0.1, 39°.63N×142°.20E, h44^{km}±1^{km}, M3.7*
JMA Felt I J1.
*IDC **01** 12:45:30.2±3.1, 39°.52N×142°.07E, h94^{km}±28^{km}, mb3.6/8, mb1 3.6/11, mb1mx3.3/56, mbtmp3.8/11, Error ellipse: s-maj=27.7km s-min=20.0km az=88.0*
ISC 01 12:45:25.6±1.3, 39°.65N±0°.05×142°.2E±0°.1, h44^{km}±10^{km}, n29, σ0^{s}98/27, mb3.8/8, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
MIYJ	Miyakonagasawa	0.29	256	P	Pn	12 45 34.0	-0.1
MIYJ				S	Sn	12 45 40.3	+0.2
OFUJ	Ofunato	0.69	215	P	Pn	12 45 39.0	-0.1
JOM	Ohasama	0.71	256	P	Pn	12 45 39.4	+0.1
JOM				S	Sn	12 45 49.1	-0.1
JANG	Nango	0.89	325	P	Pn	12 45 41.8	+0.1
JANG				S	Sn	12 45 53.1	-0.3
JMK	Ichinoseki	1.02	227	P	Pn	12 45 43.5	0.0
JMK				S	Sn	12 45 56.2	-0.5
JRG	Rokugo	1.22	259	P	Pn	12 45 46.3	0.0
JAH	Hinai	1.31	295	P	Pn	12 45 47.7	+0.3
JAH				S	Sn	12 46 04.1	+0.5
JIO	Ouri	1.36	209	P	Pn	12 45 48.3	+0.2
JTM	Tenmabayashi	1.42	323	P	Pn	12 45 49.4	+0.4
JTM				S	Sn	12 46 06.8	+0.3
JYK	Kaneyama	1.59	243	P	Pn	12 45 51.5	+0.2
JOU	Okura	1.75	223	P	Pn	12 45 54.0	+0.6
MAT	Matsushiro	4.41	227	P	Pn	12 46 33.0	+2.9
MJAR	Matsushiro Arr	4.41	227	P	Pn	12 46 31.8	+1.8
	1.0nm,0.3s,baz=33,slow=13,SNR=32						
USRK	Ussuriysk Ar.	8.85	304	P	Pn	12 47 34.8	+3.9
	0.2nm,0.3s,baz=120,slow=15,SNR=5.4						
KSRS	Korea Array	11.38	263	P	Pn	12 48 10.4	+4.9
	0.3nm,0.3s,baz=69,slow=14,SNR=5.6						
SEY	Seymchan	24.11	11	P	P	12 50 37.6	+0.8
	0.8nm,0.7s,baz=174,slow=12,SNR=6.0						
SONM	Songino Array	26.92	300	P	P	12 51 03.6	+0.9
	0.5nm,0.3s,baz=77,slow=8.5,SNR=3.9						
H11N2	WAKE ISLAND Hy	29.08	126	T	T	13 21 56.9	
	baz=318,slow=76,SNR=94						
H11N1	WAKE ISLAND Hy	29.09	126	T	T	13 21 57.6	
	baz=318,slow=76,SNR=88						
H11N3	WAKE ISLAND Hy	29.10	126	T	T	13 21 55.8	
	baz=318,slow=76,SNR=95						
H11S1	WAKE ISLAND Hy	29.88	128	T	T	13 22 43.0	
	baz=320,slow=76,SNR=23						
H11S3	WAKE ISLAND Hy	29.88	128	T	T	13 22 57.5	
	baz=320,slow=76,SNR=19						
H11S2	WAKE ISLAND Hy	29.89	128	T	T	13 22 58.3	
	baz=320,slow=76,SNR=21						
ZALV	Zalesovo Beam	40.65	310	P	P	12 53 00.9	-0.3
	0.8nm,0.4s,baz=64,slow=5.1,SNR=5.3						
MKAR	Makanchi Array	43.29	300	P	P	12 53 21.4	-1.5
	0.8nm,0.7s,baz=81,slow=11,SNR=7.8						
KURBB	Kurchatov Arra	44.91	306	P	P	12 53 35.0	-0.8
	1.9nm,0.6s,baz=79,slow=8.3,SNR=5.2						
INK	Inuvik	51.79	28	P	P	12 54 29.6	+1.2
	7.3nm,1.4s,baz=290,slow=6.1,SNR=4.8						
WRA	Warramunga Arr	59.73	189	P	P	12 55 24.1	-1.7
	0.9nm,0.9s,baz=6.8,slow=6.8,SNR=5.3						
FINES	FINESS Array B	66.79	332	P	P	12 56 11.6	-0.5
	1.3nm,0.9s,baz=40,slow=9.7,SNR=3.0						

*ISCJB **01** 12:47:00.2±0.6, 60°.37S±0°.06×160°.4E±0°.3, h10^{km}, mb4.8/9, MS4.3/4, Error ellipse: s-maj=18.0km s-min=8.4km az=4.0*
*IDC **01** 12:47:02.7±1.7, 60°.76S×158°.35E, h0^{km}, mb4.5/5, mb1 4.5/6, mb1mx4.3/22, mbtmp4.3/6, ML2.8/1, MS4.4/5, Ms1 4.4/5, ms1mx4.0/32, Error ellipse: s-maj=82.5km s-min=33.3km az=65.0*
*NEIC **01** 12:47:03.2±0.6, 60°.49S×159°.64E, h10^{km}, mb4.8/7, Error ellipse: s-maj=22.9km s-min=10.3km az=86.0*
ISC 01 12:47:03.0±0.9, 60°.27S±0°.09×160°.4E±0°.2, h10^{km}, n26, σ1^{s}95/18, mb4.6/9, MS4.4/4, Macquarie Island region

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
MCQ	Macquarie Isla	5.83	352	ePn	Pn	12 48 26.6	-2.8
APZ	The Paps	14.19	22	PN	Pn	12 50 24.3	+0.5
PYZ	Puysegur Point	14.61	18	PN	Pn	12 50 30.0	+0.3
SYZ	Scrubby Hill	14.70	25	PN	Pn	12 50 30.0	-0.8
WHZ	Wether Hill Ro	15.09	21	PN	Pn	12 50 36.5	+0.5
WHZ				eSN	Sn	12 53 18.3	-4.8
WHZ	Wether Hill Ro	15.09	21	ePn	Pn	12 50 38.7	+2.6
	102nm,0.8s						
JCZ	Jackson Bay	17.00	21	PN	P	12 51 05.9	+3.3
VNDA	Vanda	17.34	179	Pn	Pn	12 51 00.1	-4.7
	0.0nm,0.3s,baz=351,slow=14,SNR=3.8						
SBA	Scott Base	17.80	176	ePn	Pn	12 51 09.1	-1.2
	78nm,1.8s						
RPZ	Rata Peaks	17.80	26	LR	LR	12 57 26.0	
	comp=Z,1μm,18.2s,baz=292,slow=33						
RPZ	Rata Peaks	17.80	26	eP	P	12 51 16.2	+4.8
	6.5nm,0.6s						
URZ	Urewera	24.45	33	LR	LR	13 00 49.0	
	comp=Z,304nm,20.1s,baz=284,slow=32						
QSPA	South Pole Qui	29.83	180	eP	P	12 53 09.4	-0.6
	351nm,2.5s						
STKA	Stephens Creek	31.00	328	P	P	12 53 20.9	+0.4
	7.6nm,1.2s,baz=159,slow=8.6,SNR=4.3						
STKA				LR	LR	13 04 30.7	
	comp=Z,2μm,18.2s,baz=126,slow=34						
BBOO	Buckleboo	31.77	319	eP	P	12 53 27.5	+0.2
	11nm,1.0s						
H01W1	Cape Leeuwin H	38.99	289	T	T	13 35 11.4	
	baz=145,slow=76,SNR=21						
H01W2	Cape Leeuwin H	38.99	289	T	T	13 35 12.4	
	baz=145,slow=76,SNR=20						
H01W3	Cape Leeuwin H	39.00	289	T	T	13 35 13.6	
	baz=145,slow=76,SNR=22						
ASAR	Alice Springs	40.95	321	P	P	12 54 45.5	-0.2
	12nm,1.0s,baz=161,slow=8.4,SNR=54						
WRA	Warramunga Arr	44.33	324	P	P	12 55 11.6	-1.4
	6.0nm,1.0s,baz=164,slow=6.6,SNR=12						
WRA				LR	LR	13 11 50.9	
	comp=Z,609nm,18.2s,baz=130,slow=34						
WRAB	Tennant Creek	44.33	324	eP	P	12 55 12.1	-1.0
	5.5nm,0.9s						
SNAA	Sanae	47.83	187	eP	P	12 55 37.3	-2.8
	171nm,0.8s						
FITZ	Fitzroy Crossi	48.89	314	P	P	12 55 48.1	-0.8
	9.3nm,1.1s,baz=180,slow=11,SNR=4.7						
FITZ				LR	LR	13 14 54.4	
	comp=Z,313nm,18.9s,slow=34						
FITZ	Fitzroy Crossi	48.89	314	eP	P	12 55 49.3	+0.5
	19nm,1.1s						
CMAR	Chiang Mai Arr	92.66	303	P	P	13 00 14.2	-0.5
	0.4nm,0.4s,baz=194,slow=3.3,SNR=7.4						
RES	Resolute Bay	150.40	31	PKPbc	PKPbc	13 06 55.7	+3.1
	1.4nm,0.8s,baz=279,slow=2.9,SNR=5.2						

*IDC **01** 12:56:27.2±0.5, 43°.01N×110°.39W, h0^{km}, mb3.7/4, mb1 4.0/11, mb1mx3.6/54, mbtmp3.8/11, ML3.4/7, MS3.5/2, Ms1 3.5/2, ms1mx3.0/80, Error ellipse: s-maj=9.2km s-min=4.8km az=16.0*
*NEIC **01** 12:56:28.4±0.2, 43°.01N×110°.27W, h5^{km}, mb4.1/6, MW3.9, Error ellipse: s-maj=3.0km s-min=2.1km az=87.0, Moment Tensor Solution. s14 Moment tensor: Scale 10^{14}Nm; M_{rr}-5.02; $M_{\theta\theta}$-0.21; $M_{\phi\phi}$5.23; $M_{r\theta}$1.17; $M_{\theta\phi}$0.66; $M_{\phi r}$-6.79; Best double couple: $M_0$8.60000×10^{14} NP1:ϕ_s200.00000°, δ20.00000°, λ-65.00000°. NP2:ϕ_s354.00000°, δ72.00000°, λ-99.00000°. Principal axes: T 8.6100, Plg26.0000°, Azm91.0000°; N 0.0000, Plg8.0000°, Azm356.0000°; P -8.6200, Plg62.0000°, Azm250.0000°;*
NEIC Felt [III] at Bondurant, Dubois and Wilson; [II] at Daniel, Freedom, Jackson, Lander and Thayne. Also felt at Alta, Auburn, Cora, Etna, Green River, Kelly, Riverton and Rock Springs. Felt at Victor, Idaho.
ISC 01 12:56:27.4±0.9, 43°.02N±0°.02×110°.29W±0°.02, h0^{km}±7^{km}, n191, σ1^{s}26/210, mb3.8/4, Wyoming

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
REDW	Red Top Meadow	0.54	309	ePg	Pg	12 56 38.1	+0.5
REDW				eSg	Sg	12 56 45.3	+0.7
SNOW	Snow King Moun	0.56	322	ePg	Pg	12 56 38.7	+0.6
SNOW				eSg	Sg	12 56 46.3	+1.0
BW06	Boulder Array	0.59	115	P	Pg	12 56 39.6	+0.8
	baz=300						
BW06	Boulder Array	0.59	115	ePg	Pb	12 56 40.3	-0.5
BW06				eSg	Sb	12 56 49.6	-0.2
PD31	Pinedale Array	0.59	115	ePg	Pg	12 56 39.9	+1.1
PD31				eSg	Sb	12 56 49.8	0.0
PDAR	Pinedale Array	0.59	115	Pg	Pg	12 56 39.2	+0.5
	436nm,0.3s,baz=324,slow=15,SNR=4944						
PDAR				Lg	Lg	12 56 48.9	

Code	Station Name	Δ°	AZ°	Op	ISC	Time	Res
	779nm,0.3s,baz=269,slow=28,SNR=48						
LOHW	**Long Hollow**	**0.63**	**339**	*e*Pg	**Pg**	**12 56 40.0**	**+0.4**
LOHW				*e*Sg	**Sg**	**12 56 48.1**	**+0.3**
AHID	**Auburn Hatcher**	**0.65**	**247**	*e*Pg	**Pg**	**12 56 39.9**	**0.0**
AHID				*e*Sg	**Sg**	**12 56 48.4**	**0.0**
MOOW	**Moose Ponds**	**0.80**	**335**	*e*Pg	**Pg**	**12 56 42.7**	**0.0**
MOOW				*e*Sg	**Sg**	**12 56 53.1**	**0.0**
FLWY	**Flagg Ranch**	**1.10**	**344**	*e*Pg	**Pg**	**12 56 48.3**	**-0.2**
FLWY				*e*Sg	**Sg**	**12 57 02.9**	**+0.2**
BMUT	**Black Mountain**	**1.27**	**214**	*e*Pg	**Pn**	**12 56 51.5**	**-1.2**
YPP	**Pitchstone Pla**	**1.30**	**343**	*e*Pn	**Pn**	**12 56 52.2**	**-0.9**
MCID	**Moose Creek**	**1.34**	**331**	*e*Pn	**Pn**	**12 56 52.6**	**-0.9**
YTP	**The Promontory**	**1.37**	**0**	*e*Pn	**Pn**	**12 56 53.4**	**-0.6**
H17A	**Grant Village**	**1.39**	**351**	Pb	**Pn**	**12 56 53.2**	**-1.1**
	baz=170						
H17A				S	**Sb**	**12 57 11.3**	**-1.4**
	baz=170						
H17A	**Grant Village**	**1.39**	**351**	*e*Pn	**Pn**	**12 56 53.2**	**-1.1**
H17A				*e*Sn	**Sb**	**12 57 12.3**	**-0.4**
BEI	**Bear River Ran**	**1.43**	**231**	*e*Pn	**Pn**	**12 56 53.7**	**-1.0**
YLT	**Little Thumb C**	**1.43**	**351**	*e*Pn	**Pn**	**12 56 54.2**	**-0.6**
YFT	**Old Faithful**	**1.48**	**345**	*e*Pn	**Pn**	**12 56 55.4**	**-0.1**
LKWY	**Lake**	**1.54**	**357**	*e*Pn	**Pn**	**12 56 56.1**	**-0.3**
LKWY				*e*Sn	**Sg**	**12 57 18.1**	**+1.1**
YML	**Mary Lake**	**1.60**	**351**	*e*Pn	**Pn**	**12 56 56.7**	**-0.5**
RSUT	**Red Spur Mount**	**1.62**	**212**	*e*Pn	**Pn**	**12 56 56.7**	**-0.7**
HDU	**Hyde Park**	**1.64**	**222**	*e*Pn	**Pn**	**12 56 56.8**	**-0.8**
MLI	**Malad Range**	**1.69**	**234**	*e*Pn	**Pn**	**12 56 57.5**	**-0.8**
YPM	**Purple Mountai**	**1.69**	**346**	*e*Pn	**Pn**	**12 56 57.9**	**-0.4**
HWUT	**Hardware Ranch**	**1.71**	**214**	*e*Pn	**Pn**	**12 56 58.0**	**-0.5**
HWUT				*e*Sn	**Sb**	**12 57 21.3**	**-0.4**
YNR	**Norris Junctio**	**1.71**	**351**	*e*Pn	**Pn**	**12 56 58.4**	**-0.3**
YNR				*e*Sn	**Sn**	**12 57 16.9**	**-4.6**
YMR	**Madison River**	**1.72**	**344**	*e*Pn	**Pn**	**12 56 58.2**	**-0.6**
YMR				*e*Sn	**Sb**	**12 57 21.8**	**-0.3**
YMP	**Mirror Lake Pl**	**1.72**	**3**	*e*Pn	**Pn**	**12 56 58.6**	**-0.3**
YJC	**Joseph's Coat**	**1.73**	**358**	*e*Pn	**Pn**	**12 56 58.7**	**-0.3**
MCU	**Monte Cristo P**	**1.81**	**211**	*e*Pn	**Pn**	**12 56 59.4**	**-0.6**
YHH	**Holmes Hill**	**1.81**	**347**	*e*Pn	**Pn**	**12 56 59.8**	**-0.3**
YMC	**Maple Creek**	**1.81**	**344**	*e*Pn	**Pn**	**12 56 59.8**	**-0.3**
YHB	**Horse Butte**	**1.85**	**339**	*e*Pn	**Pn**	**12 57 00.3**	**-0.3**
PTU	**Portage**	**1.86**	**235**	*e*Pn	**Pn**	**12 57 00.1**	**-0.6**
NPI	**North Pocatell**	**1.87**	**243**	*e*Pn	**Pn**	**12 57 00.1**	**-0.6**
WVUT	**Wellsville**	**1.88**	**222**	*e*Pn	**Pn**	**12 57 00.4**	**-0.5**
YMV	**Mammoth Vault**	**1.97**	**352**	*e*Pn	**Pn**	**12 57 02.2**	**0.0**
TPMT	**Tepee Creek**	**1.98**	**330**	*e*Pn	**Pn**	**12 57 02.1**	**-0.3**
QLMT	**Earthquake Lak**	**1.99**	**336**	*e*Pn	**Pn**	**12 57 02.2**	**-0.2**
QLMT				*e*Sn	**Sb**	**12 57 30.5**	**+0.6**
GZU	**Grizzly Peak**	**2.03**	**219**	*e*Pn	**Pn**	**12 57 02.7**	**-0.4**
LTU	**Little Mountai**	**2.04**	**226**	*e*Pn	**Pn**	**12 57 02.8**	**-0.3**
MTUT	**Morton Thiokol**	**2.08**	**231**	*e*Pn	**Pn**	**12 57 03.3**	**-0.3**
TCUT	**Toone Canyon**	**2.08**	**204**	*e*Pn	**Pn**	**12 57 03.3**	**-0.4**
TCUT				*e*Sn	**Sb**	**12 57 32.8**	**+0.2**
MOMT	**Monida**	**2.19**	**317**	*e*Pn	**Pn**	**12 57 05.1**	**-0.1**
RLMT	**Red Lodge**	**2.22**	**19**	P	**Pn**	**12 57 05.5**	**-0.2**
	baz=199						
RLMT				Sb	**Sb**	**12 57 36.1**	**-0.6**
	baz=199						
RLMT	**Red Lodge**	**2.22**	**19**	*e*Pn	**Pn**	**12 57 05.7**	**0.0**
HVU	**Hansel Valley**	**2.22**	**237**	*e*Pn	**Pn**	**12 57 04.6**	**-1.0**
HVU				*e*Sn	**Sb**	**12 57 37.2**	**+0.6**
EPU	**East Promontor**	**2.27**	**225**	*e*Pn	**Pn**	**12 57 06.2**	**-0.1**
N16A	**Rees Ranch, Co**	**2.30**	**202**	*e*Pn	**Pn**	**12 57 06.8**	**+0.1**
FPU	**Francis Peak**	**2.31**	**211**	*e*Pn	**Pn**	**12 57 06.8**	**-0.1**
SPUT	**South Promonto**	**2.35**	**224**	*e*Pn	**Pn**	**12 57 07.0**	**-0.4**
SPUT				*e*Sn	**Sb**	**12 57 38.7**	**-1.6**
CRMT	**Chrome Mountai**	**2.43**	**2**	*e*Pn	**Pn**	**12 57 09.2**	**+0.5**
HTU	**Hoyt Peak**	**2.45**	**197**	*e*Pn	**Pn**	**12 57 09.0**	**+0.2**
NAIU	**Northern Antel**	**2.47**	**216**	*e*Pn	**Pn**	**12 57 09.2**	**+0.2**
RBU	**Red Butte Cany**	**2.51**	**207**	*e*Pn	**Pn**	**12 57 09.8**	**+0.2**
RCJ	**Ross Creek**	**2.52**	**200**	*e*Pn	**Pn**	**12 57 09.9**	**+0.2**
KLJ	**Keetly**	**2.53**	**200**	*e*Pn	**Pn**	**12 57 10.2**	**+0.3**
BGMT	**Barton Gulch**	**2.54**	**331**	*e*Pn	**Pn**	**12 57 10.4**	**+0.3**
HLJ	**Hailstone**	**2.55**	**199**	*e*Pn	**Pn**	**12 57 10.4**	**+0.3**
JLU	**Jordanelle**	**2.57**	**200**	*e*Pn	**Pn**	**12 57 09.9**	**-0.6**
JLU				*e*Sn	**Sb**	**12 57 46.0**	**-0.7**
CTU	**Camp Tracy**	**2.57**	**206**	*e*Pn	**Pn**	**12 57 10.0**	**-0.5**
CTU				*e*Sn	**Sb**	**12 57 46.5**	**-0.2**
LDJ	**Lady**	**2.58**	**199**	*e*Pn	**Pn**	**12 57 10.9**	**+0.2**
MCMT	**McKenzie Canyo**	**2.58**	**315**	*e*Pn	**Pn**	**12 57 12.6**	**+1.9**
MCMT				*e*Sn	**Sn**	**12 57 42.5**	**-0.5**
SAIU	**Southern Antel**	**2.59**	**214**	*e*Pn	**Pn**	**12 57 10.9**	**+0.3**
MHD	**Mile High Driv**	**2.62**	**206**	*e*Pn	**Pn**	**12 57 11.3**	**+0.3**
HEB	**Heber**	**2.64**	**198**	*e*Pn	**Pn**	**12 57 11.7**	**+0.3**
GMU	**Granite Mounta**	**2.68**	**205**	*e*Pn	**Pn**	**12 57 12.3**	**+0.3**
SNUT	**Stansbury Nort**	**2.71**	**219**	*e*Pn	**Pn**	**12 57 12.5**	**+0.2**
DAU	**Daniels Canyon**	**2.71**	**196**	*e*Pn	**Pn**	**12 57 12.7**	**+0.3**
NOQ	**North Oquirrh**	**2.74**	**211**	*e*Pn	**Pn**	**12 57 13.0**	**+0.3**
DCU	**Deer Creek Res**	**2.77**	**200**	*e*Pn	**Pn**	**12 57 13.5**	**+0.4**
K22A	**Casper**	**2.79**	**96**	P	**Pn**	**12 57 14.8**	**+1.3**
	baz=280						
K22A				Sb	**Sb**	**12 57 52.9**	**-0.1**
	baz=280						
K22A	**Casper**	**2.79**	**96**	*e*Pn	**Pn**	**12 57 14.9**	**+1.4**
BOZ	**Bozeman (W)**	**2.79**	**340**	P	**Pn**	**12 57 13.6**	**+0.1**
	baz=159						
BOZ				Sb	**Sb**	**12 57 52.7**	**-0.4**
	baz=159						
BOZ	**Bozeman (W)**	**2.79**	**340**	*e*Pn	**Pn**	**12 57 14.0**	**+0.6**
GCMT	**Greycliff**	**2.80**	**9**	*e*Pn	**Pb**	**12 57 17.5**	**-0.9**
GCMT				*e*Sn	**Sb**	**12 57 54.4**	**+1.1**
DLMT	**Dillon**	**2.87**	**325**	*e*Pn	Pn	12 57 17.2	+2.8
CWU	**Camp Williams**	**2.91**	**208**	*e*Pn	**Pn**	**12 57 15.5**	**+0.3**
BGU	**Big Grassy Mou**	**2.93**	**225**	*e*Pn	**Pn**	**12 57 14.9**	**-0.5**
BGU				*e*Sn	**Sn**	**12 57 49.6**	**-1.7**
LCCM	**Lewis and Clar**	**3.04**	**338**	*e*Pn	**Pb**	**12 57 20.3**	**-2.1**
HLID	**Hailey**	**3.06**	**282**	Pb	**Pb**	**12 57 22.1**	**-0.7**
	baz=98						
HLID				Sb	**Sb**	**12 58 02.0**	**+1.2**
	baz=98						
HLID	**Hailey**	**3.06**	**282**	*e*Pn	**Pn**	**12 57 16.8**	**-0.4**
WMUT	**West Mountain**	**3.17**	**202**	*e*Pn	**Pn**	**12 57 19.1**	**+0.4**
MPU	**Maple Canyon**	**3.17**	**199**	*e*Pn	**Pn**	**12 57 17.6**	**-1.1**
MPU				*e*Sg	**Sb**	**12 58 06.6**	**+2.7**
LRM	**Limekiln Ridge**	**3.20**	**332**	*e*Pn	Pn	12 57 21.9	+2.8
LRM				*e*Sg	**Sb**	**12 58 07.2**	**+2.4**
O20A	**White River Ci**	**3.27**	**151**	P	**Pn**	**12 57 20.7**	**+0.7**
	baz=333						
O20A	**White River Ci**	**3.27**	**151**	*e*Pn	**Pn**	**12 57 21.8**	**+1.8**
O20A				*e*Sg	**Sg**	**12 58 10.9**	**-1.5**
DCM	**Dugout Coal Mi**	**3.33**	**184**	*e*Pn	**Pn**	**12 57 21.6**	**+0.6**
NLU	**North Lily Min**	**3.35**	**204**	*e*Pn	**Pn**	**12 57 20.2**	**-0.9**
NLU				*e*Sn	**Sn**	**12 58 00.0**	**-1.7**
P18A	**Preston Nutter**	**3.39**	**179**	*e*Pn	**Pn**	**12 57 22.7**	**+0.9**
DUG	**Dugway, Tooele**	**3.40**	**215**	P	**Pn**	**12 57 20.8**	**-1.1**
	baz=33						
DUG	**Dugway, Tooele**	**3.40**	**215**	*e*Pn	**Pn**	**12 57 20.7**	**-1.1**
P17A	**Butcher Ranch,**	**3.56**	**186**	*e*Pn	**Pn**	**12 57 24.6**	**+0.5**
P17A				*e*Sn	**Sn**	**12 58 05.3**	**-1.6**
LEVU	**Levan**	**3.70**	**199**	*e*Pn	**Pn**	**12 57 26.6**	**+0.6**
TMUT	**Trail Mountain**	**3.79**	**191**	*e*Pn	**Pn**	**12 57 27.0**	**-0.3**
SNO	**Snow College**	**3.83**	**195**	*e*Pn	**Pn**	**12 57 28.3**	**+0.6**
HRY	**Holter Researc**	**3.85**	**344**	*e*Pn	**Pn**	**12 57 30.5**	**+2.6**
N23A	**Red Feather La**	**3.87**	**122**	P	**Pn**	**12 57 28.6**	**+0.2**
	baz=305						
N23A	**Red Feather La**	**3.87**	**122**	*e*Pn	**Pn**	**12 57 29.0**	**+0.6**
FLU	**Fool Peak**	**3.91**	**202**	*e*Pn	**Pn**	**12 57 29.6**	**+0.7**
SRU	**San Rafael Swe**	**3.91**	**183**	*e*Pn	**Pn**	**12 57 28.9**	**+0.1**
SGU	**Sterling**	**3.97**	**195**	*e*Pn	**Pn**	**12 57 30.5**	**+0.7**
PHWY	**Pilot Hill**	**3.98**	**114**	*e*Pn	**Pn**	**12 57 29.8**	**-0.1**
PHWY				*e*Sn	**Sn**	**12 58 16.2**	**-1.2**
FSU	**Fish Springs**	**4.04**	**216**	*e*Pn	**Pn**	**12 57 31.3**	**+0.7**
MFID	**Camas Ranch**	**4.07**	**277**	*e*Pn	Pn	12 57 34.7	+3.7
WCU	**Willow Creek**	**4.28**	**199**	*e*Pn	**Pn**	**12 57 34.8**	**+0.7**
ELK	**Elko**	**4.34**	**240**	Pn	**Pn**	**12 57 34.5**	**-0.3**
	2.1nm,0.3s,baz=35,slow=0.7,SNR=33						
ELK				Lg	Lg	12 58 42.0	
	12nm,0.3s,baz=215,slow=0.1,SNR=9.7						
CHMT	**Chamberlain Mo**	**4.42**	**333**	*e*Pn	Pn	12 57 38.8	+2.8
CHMT				*e*Sn	Sn	12 58 21.4	-6.8
SMCO	**Snowmass**	**4.58**	**146**	*e*Pn	**Pn**	**12 57 39.3**	**+1.0**
PV09	**Paradox Valley**	**4.60**	**169**	*e*Pn	**Pn**	**12 57 38.2**	**-0.3**
MSO	**Missoula**	**4.61**	**327**	*e*Pn	Pn	12 57 41.5	+3.1
LAO	**LASA Array**	**4.67**	**37**	*e*Pn	**Pn**	**12 57 40.1**	**+1.0**
RSSD	**Black Hills**	**4.67**	**74**	*e*Pn	**Pn**	**12 57 39.5**	**+0.2**
RSSD				*e*Sg	**Sb**	**12 58 51.5**	**+4.4**
MSU	**Marysvale**	**4.73**	**198**	*e*Pn	**Pn**	**12 57 39.6**	**-0.5**
PV10	**Paradox Valley**	**4.74**	**168**	*e*Pn	**Pn**	**12 57 41.4**	**+1.2**
PV04	**Paradox Valley**	**4.74**	**167**	*e*Pn	**Pn**	**12 57 40.5**	**+0.2**
PV04				*e*Pg	**Pg**	**12 57 57.9**	**-0.4**
PV04				*e*Sn	**Sn**	**12 58 38.3**	**+2.3**
PV04				*e*Sg	**Sg**	**12 58 55.6**	**-4.2**
ISCO	**Idaho Springs**	**4.76**	**131**	*e*Pn	**Pn**	**12 57 41.3**	**+0.6**
R19A	**Curley Farm, L**	**4.79**	**170**	*e*Pn	**Pn**	**12 57 42.2**	**+1.2**
MMU	**Miners Mountai**	**4.88**	**189**	*e*Pn	**Pn**	**12 57 43.3**	**+1.1**
EGMT	**Eagleton**	**5.01**	**4**	*e*Pn	Pn	12 57 50.1	+6.2
PV05	**Paradox Valley**	**5.02**	**169**	*e*Pn	**Pn**	**12 57 43.7**	**-0.5**
PV05				*e*Sg	**Sg**	**12 59 04.3**	**-4.4**
PV01	**Paradox Valley**	**5.06**	**164**	*e*Pn	**Pn**	**12 57 45.0**	**+0.4**
SWMT	**Swartz Lake**	**5.20**	**331**	*e*Pn	Pn	12 57 49.5	+3.1
SWMT				*e*Sg	Sb	12 59 08.8	+6.7
PSUT	**Pine Spring**	**5.24**	**212**	*e*Pn	**Pn**	**12 57 47.6**	**+0.5**
PSUT				*e*Sg	**Sg**	**12 59 14.5**	**-1.2**
BMO	**Blue Mountains**	**5.39**	**292**	*e*Pn	Pn	12 57 51.9	+2.8
JTMT	**Jette**	**5.50**	**331**	*e*Pn	**Pn**	**12 57 52.3**	**+1.7**
YBMT	**Yellow Bay**	**5.50**	**333**	*e*Pn	**Pn**	**12 57 53.3**	**+2.6**
Q24A	**Divide**	**5.62**	**135**	*e*Pn	**Pn**	**12 57 52.9**	**+0.5**
BSMT	**Bassoo Peak**	**5.77**	**328**	*e*Pn	**Pn**	**12 57 56.4**	**+2.0**
BSMT				*e*Sg	**Sg**	**12 59 30.8**	**-2.0**
F10A	**Beach Ranch, E**	**5.78**	**303**	*e*Pn	Pn	12 57 57.6	+3.2
F10A				*e*Sg	Sg	12 59 27.4	-5.4
PKCU	**Pink Cliffs**	**5.79**	**196**	*e*Pn	**Pn**	**12 57 55.2**	**+0.5**
BMN	**Battle Mountai**	**5.80**	**246**	*e*Pn	**Pn**	**12 57 55.5**	**+0.7**
S22A	**4UR Ranch, Cre**	**5.89**	**152**	*e*Pn	**Pn**	**12 57 57.0**	**+0.8**
MVCO	**Mesa Verde**	**5.97**	**166**	*e*Pn	**Pn**	**12 57 57.2**	**+0.1**
R11A	**Troy Canyon, C**	**6.17**	**223**	*e*Pn	**Pn**	**12 58 01.3**	**+1.4**
WVOR	**Wild Horse Val**	**6.18**	**267**	*e*Pn	**Pn**	**12 58 01.8**	**+1.8**
KNB	**Kanab**	**6.31**	**199**	*e*Pn	**Pn**	**12 58 03.0**	**+1.2**
SDCO	**Great Sand Dun**	**6.41**	**144**	*e*Pn	**Pn**	**12 58 04.9**	**+1.6**
LCMT	**Little Creek M**	**6.42**	**202**	*e*Pn	**Pn**	**12 58 04.6**	**+1.3**
LCMT				*e*Sg	Sg	12 59 48.0	-5.5
OGNE	**Ogallala**	**6.49**	**106**	*e*Pn	**Pn**	**12 58 04.2**	**+0.1**
WALA	**Waterton Lakes**	**6.54**	**339**	*e*Pn	Pn	12 58 12.8	+7.8
WALA				*e*Sg	**Sg**	**12 59 53.3**	**-4.1**
U15A	**North Rim**	**6.77**	**194**	*e*Pn	**Pn**	**12 58 09.1**	**+0.9**
DGMT	**Dagmar**	**6.91**	**36**	*e*Pn	**Pn**	**12 58 11.2**	**+1.3**
KSCO	**Kaye Shedlock'**	**7.04**	**122**	*e*Pn	**Pn**	**12 58 12.9**	**+1.1**
NEW	**Newport**	**7.10**	**320**	Pn	**Pn**	**12 58 14.9**	**+2.5**
	0.8nm,0.3s,baz=126,slow=8.0,SNR=11						
NEW				Lg	Lg	13 00 07.8	
	2.2nm,0.3s,baz=52,slow=21,SNR=5.3						
NEW				LR	LR	13 01 11.9	
	comp=Z,376nm,18.4s,baz=350,slow=40						
C09A	**Chrisman Ranch**	**7.38**	**313**	*e*Pn	Pn	12 58 20.0	+3.7
MOD	**Modoc Plateau**	**7.49**	**265**	*e*Pn	Pn	12 58 21.4	+3.4
NV11	**Mina Array Sit**	**7.53**	**235**	*e*Pn	**Pn**	**12 58 20.1**	**+1.5**
WUAZ	**Wupatki**	**7.54**	**187**	*e*Pn	**Pn**	**12 58 18.6**	**-0.2**
TPNV	**Topopah Spring**	**7.60**	**219**	*e*Pn	**Pn**	**12 58 21.3**	**+1.8**
NV01	**Mina Array Sit**	**7.62**	**236**	*e*Pn	**Pn**	**12 58 20.5**	**+0.6**
NVAR	**Mina Array Bea**	**7.62**	**236**	Pn	**Pn**	**12 58 20.5**	**+0.6**
	1.3nm,0.3s,baz=53,slow=11,SNR=34						
NVAR				LR	LR	13 00 36.2	
	comp=Z,380nm,21.7s,baz=12,slow=33						
B08A	**Colville Reser**	**8.28**	**313**	*e*Pn	**Pn**	**12 58 31.1**	**+2.4**
WAKR	**Walker**	**8.28**	**240**	*e*Pn	**Pn**	**12 58 30.1**	**+1.2**
W13A	**Hualapai Mount**	**8.39**	**201**	*e*Pn	**Pn**	**12 58 32.4**	**+1.9**
LTY	**Liberty**	**8.47**	**304**	*e*Pn	**Pn**	**12 58 33.8**	**+2.4**
X18A	**Snowflake**	**8.49**	**178**	*e*Pn	Pn	12 58 35.0	+3.3
ANMO	**Albuquerque**	**8.60**	**158**	Pn	**Pn**	**12 58 32.6**	**-0.6**
	0.2nm,0.3s,baz=339,slow=13,SNR=16						
ANMO				Lg	Lg	13 00 59.4	
	1.7nm,0.3s,baz=272,slow=21,SNR=5.6						
ANMO	**Albuquerque**	**8.60**	**158**	*e*Pn	**Pn**	**12 58 33.5**	**+0.3**
MDND	**Maddock**	**8.92**	**54**	*e*Pn	**Pn**	**12 58 37.7**	**+0.2**
CBKS	**Cedar Bluff**	**9.02**	**114**	*e*Pn	**Pn**	**12 58 38.7**	**-0.2**
AFDM	**Forest Hills D**	**9.05**	**247**	*e*Pn	Pn	12 58 43.4	+4.2
GSC	**Goldstone, Bar**	**9.22**	**215**	*e*Pn	**Pn**	**12 58 43.8**	**+2.1**
ECSD	**EROS Data Cent**	**9.98**	**81**	*e*Pn	**Pn**	**12 58 50.9**	**-1.1**
PLM	**Palomar**	**10.95**	**210**	*e*Pn	Pn	12 59 09.0	+3.5
DREC	**Desert Rsrch C**	**10.98**	**203**	*e*Pn	**Pn**	**12 59 07.0**	**+1.4**
DREC				*e*Sn	Sn	13 00 57.1	-12
AGMN	**Agassiz Nation**	**11.38**	**57**	*e*Pn	**Pn**	**12 59 08.8**	**-2.4**
WMOK	**Wichita Mounta**	**12.19**	**129**	*e*Pn	Pn	12 59 27.6	+5.4
ULM	**Lac du Bonnet**	**12.25**	**49**	Pn	Pn	12 59 19.4	-3.6
	2.0nm,0.3s,baz=239,slow=12,SNR=25						
ULM	**Lac du Bonnet**	**12.25**	**49**	*e*Pn	Pn	12 59 19.6	-3.3
SPMN	**Marine on St.**	**12.75**	**74**	*e*Pn	**Pn**	**12 59 26.8**	**-3.1**
EYMN	**Ely**	**14.06**	**63**	*e*Pn	**Pn**	**12 59 44.9**	**-2.8**
HHAR	**Hobbs**	**14.27**	**113**	*e*Pn	**Pn**	**12 59 49.8**	**-0.8**
TX31	**Lajitas Ar. Si**	**14.66**	**157**	*e*Pn	Pn	12 59 50.2	-5.9
TXAR	**Lajitas Array**	**14.66**	**157**	Lg	Lg	13 04 13.2	
	0.0nm,0.3s,baz=335,slow=29,SNR=3.8						
COWI	**Conover**	**15.38**	**71**	*e*Pn	**Pn**	**13 00 01.3**	**-4.3**
	8.0nm,0.8s						
HDIL	**Hopedale**	**15.85**	**92**	*e*Pn	**P**	**13 00 14.0**	**-1.6**
	28nm,0.7s						
WHAR	**Wooly Hollow**	**15.93**	**113**	*e*Pn	P	13 00 21.3	+4.7
	9.3nm,0.8s						
HKT	**Hockley**	**17.44**	**134**	*e*P	**P**	**13 00 34.5**	**+1.3**
	12nm,1.3s						
WVT	**Waverly**	**18.60**	**104**	*e*P	**P**	**13 00 44.0**	**-2.0**
	11nm,0.4s						
YKA	**Yellowknife Ar**	**19.67**	**354**	P	**P**	**13 00 56.2**	**-1.3**
	0.1nm,0.3s,baz=167,slow=11,SNR=12						
YKB5	**Yellowknife Ar**	**19.67**	**354**	*e*P	**P**	**13 00 56.5**	**-1.1**
DLBC	**Dease Lake**	**19.73**	**328**	P	**P**	**13 00 57.5**	**-0.9**
	0.1nm,0.3s,baz=154,slow=14,SNR=4.4						
SWET	**Sewanee**	**20.39**	**104**	*e*P	Pn	13 01 06.5	-1.3
	3.3nm,0.7s						
ILAR	**Eielson Array**	**29.94**	**329**	P	**P**	**13 02 36.2**	**-0.5**
	0.6nm,0.7s,baz=126,slow=7.9,SNR=10						
SEY	**Seymchan**	**55.83**	**327**	P	**P**	**13 06 05.3**	**-0.7**
	0.3nm,0.4s,baz=107,slow=11,SNR=3.0						
PEA1	**Petropavlovsk-**	**58.20**	**315**	*e*P	**P**	**13 06 22.4**	**-0.6**
PETK	**Petropavlovsk-**	**58.21**	**315**	P	**P**	**13 06 22.3**	**-0.6**
	2.4nm,0.8s,baz=64,slow=8.2,SNR=2.9						
NB200	**NORSAR Array S**	**65.96**	**27**	*e*P	**P**	**13 07 16.2**	**+1.2**
NOA	**NORSAR Array B**	**65.96**	**27**	P	**P**	**13 07 16.2**	**+1.2**
	0.6nm,0.6s,baz=312,slow=6.7,SNR=2.7						

*IDC **01** 13:02:09.9±0.6, 37°.91N×144°.69E, h28km±3km, mb3.8/19, mb1 4.0/24, mb1mx3.8/48, mbtmp3.9/24, ML3.4/5, Error ellipse: s-maj=13.7km s-min=12.0km az=121.0*
*JMA **01** 13:02:09.9±0.3, 38°.12N×144°.49E, h48km, M4.7*
*ISCJB **01** 13:02:10.4±0.3, 38°.14N±0°.04×144°.46E±0°.03, h33km, mb4.1/32, Error ellipse: s-maj=5.6km s-min=3.5km az=172.4*
*NEIC **01** 13:02:11.3±0.3, 37°.93N×144°.62E, h35km, mb4.4/8, Error ellipse: s-maj=8.9km s-min=5.1km az=164.0*
ISC 01 13:02:11.0±0.6**, 38°.09N**±0°.05×**144°.58E**±0°.06**, h35**km**, n75, σ1s.53**/87**, mb4.2**/32**, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**2.49**	**294**	P	**Pn**	**13 02 48.3**	**-0.6**
JIO	**Ouri**	**2.57**	**279**	P	**Pn**	**13 02 49.1**	**-0.9**
JIO				S	**Sn**	**13 03 18.2**	**-1.8**
JMK	**Ichinoseki**	**2.77**	**289**	*e*S	**Sn**	**13 03 23.7**	**-1.4**
JTH	**Tanohata**	**2.81**	**312**	P	**Pn**	**13 02 52.6**	**-0.8**
JTH				*e*S	**Sn**	**13 03 24.0**	**-2.0**
JOM	**Ohasama**	**2.92**	**299**	*e*S	**Sn**	**13 03 27.8**	**-0.9**
JMM	**Marumori**	**3.00**	**267**	P	**Pn**	**13 02 54.8**	**-1.2**
JMM				S	**Sn**	**13 03 28.3**	**-2.4**
JOU	**Okura**	**3.10**	**276**	P	**Pn**	**13 02 56.8**	**-0.5**
JOU				*e*S	**Sn**	**13 03 31.5**	**-1.6**
JANG	**Nango**	**3.30**	**315**	P	**Pn**	**13 02 59.1**	**-1.0**
JANG				*e*S	**Sn**	**13 03 35.1**	**-3.0**
JRG	**Rokugo**	**3.35**	**294**	P	**Pn**	**13 03 00.5**	**-0.3**
JFT	**Otama**	**3.41**	**262**	P	**Pn**	**13 03 01.1**	**-0.5**
JFT				S	**Sn**	**13 03 39.5**	**-1.3**
JYK	**Kaneyama**	**3.41**	**285**	P	**Pn**	**13 03 01.7**	**0.0**
JYK				*e*S	**Sn**	**13 03 40.1**	**-0.8**
JTM	**Tenmabayashi**	**3.83**	**316**	P	**Pn**	**13 03 06.7**	**-0.7**
JTM				*e*S	**Sn**	**13 03 48.4**	**-2.7**
ERM	**Erimo**	**4.07**	**345**	*e*Pn	**Pn**	**13 03 10.0**	**-0.7**
JOT	**Ohata**	**4.27**	**322**	P	**Pn**	**13 03 14.1**	**+0.7**
JOT				*e*S	**Sn**	**13 03 59.1**	**-2.9**
JNBK	**Urakawa-nobuka**	**4.42**	**342**	P	**Pn**	**13 03 15.1**	**-0.3**
JNBK				*e*S	**Sn**	**13 04 03.0**	**-2.6**
JCH	**Churui**	**4.62**	**349**	P	**Pn**	**13 03 17.1**	**-1.1**
JCH				*e*S	**Sn**	**13 04 07.2**	**-3.3**
JKB	**Kayabe**	**4.67**	**325**	*e*S	**Sn**	**13 04 08.7**	**-3.2**
JRY	**Ryogami san**	**4.99**	**247**	P	**Pn**	**13 03 21.7**	**-1.7**
JRY				S	**Sn**	**13 04 15.5**	**-4.3**
MJAR	**Matsushiro Arr**	**5.31**	**255**	Pn	**Pn**	**13 03 27.7**	**0.0**
	7.4nm,0.3s,baz=84,slow=15,SNR=58						
MAJO	**Matsushiro**	**5.31**	**255**	*e*Pn	**Pn**	**13 03 27.4**	**-0.4**
MAJO				*e*Sn	**Sn**	**13 04 27.5**	**-0.2**
MAT	**Matsushiro**	**5.31**	**255**	P	**Pn**	**13 03 28.1**	**+0.4**
MAT				S	**Sn**	**13 04 28.9**	**+1.2**
JHJ	**Hachijo jima 2**	**6.31**	**220**	Pn	**Pn**	**13 03 39.1**	**-2.4**
	13nm,0.3s,baz=342,slow=21,SNR=9.9						
JHJ				Sn	Sn	13 04 44.2	-8.1
	47nm,0.3s,baz=233,slow=20,SNR=7.5						
INU	**Inuyama**	**6.66**	**248**	*e*Pn	**Pn**	**13 03 47.1**	**+0.8**
CBIJ	**Chichi jima**	**11.14**	**191**	Pn	Pn	13 04 40.7	-7.1
CBIJ				Sn	Sn	13 06 38.0	-13
JCJ	**Chichijima**	**11.14**	**191**	Pn	Pn	13 04 40.7	-7.1
	4.3nm,0.3s,baz=281,slow=18,SNR=4.6						
JCJ				Sn	Sn	13 06 38.0	-13
	5.4nm,0.3s,baz=285,slow=18,SNR=4.1						
USRK	**Ussuriysk Ar.**	**11.28**	**307**	Pn	Pn	13 04 51.3	+1.7
	0.3nm,0.3s,baz=107,slow=12,SNR=4.0						
KSRS	**Korea Array**	**13.20**	**272**	Pn	**Pn**	**13 05 16.9**	**+1.1**
	0.1nm,0.3s,baz=79,slow=14,SNR=3.2						
KSAR	**Wonju Array Be**	**13.23**	**272**	Pn	**Pn**	**13 05 16.9**	**+0.7**
KLR	**Kul'dur**	**14.48**	**324**	Pn	P	13 05 36.1	-3.4
	0.1nm,0.3s,baz=176,slow=12,SNR=2.4						
CN2	**Changchun**	**15.53**	**298**	*e*P	**P**	**13 05 50.0**	**-1.2**
NJ2	**Nanjing**	**21.86**	**262**	*e*P	**P**	**13 07 03.7**	**+3.1**
NJ2				pmax	pmax		
	comp=Z,11nm,0.8s						
MA2	**Magadan**	**21.87**	**8**	P	**P**	**13 07 01.6**	**+1.2**
	comp=Z,1.6nm,0.4s,baz=220,slow=11,SNR=4.5						
SEY	**Seymchan**	**25.33**	**8**	P	**P**	**13 07 35.5**	**+1.4**
	comp=Z,3.8nm,0.7s,baz=184,slow=7.3,SNR=25						
HHC	**Hu-ho-hao-te**	**25.55**	**287**	*e*P	**P**	**13 07 37.9**	**+1.4**
HHC				pmax	pmax		
	comp=Z,21nm,1.2s						
HHC				pmax	pmax		
	comp=Z,130nm,3.5s						
SONM	**Songino Array**	**29.33**	**302**	P	P	13 08 12.2	+1.9
	comp=Z,0.1nm,0.4s,baz=73,slow=20,SNR=2.1						
GYA	**Guiyang**	**33.87**	**261**	P	P	13 08 52.8	+2.3
GYA				pmax	pmax		
	comp=Z,10.0nm,0.8s						
CD2	**Chengdu**	**34.19**	**270**	P	**P**	**13 08 53.3**	**+0.2**
WMQ	**Urumqi**	**42.62**	**296**	*e*P	P	13 10 06.6	+2.8
WMQ				pP	pP	13 10 10.3	-3.8
WMQ				sP	sP	13 10 13.6	-4.7
WMQ				pmax	pmax		
	comp=Z,3.0nm,0.6s						
WMQ				pmax	pmax		
	comp=Z,1.0nm,0.6s						
ZAA0	**Zalesovo Array**	**43.08**	**312**	*e*P	**P**	**13 10 08.6**	**+1.3**
ZALV	**Zalesovo Beam**	**43.08**	**312**	P	**P**	**13 10 07.9**	**+0.6**
	comp=Z,1.3nm,0.5s,baz=88,slow=7.9,SNR=6.4						
ZALV				PcP	**PcP**	**13 11 56.6**	**-0.1**
	comp=Z,1.4nm,0.5s,baz=104,slow=3.6,SNR=4.8						
ZALV				pPcP		13 12 06.8	
	comp=Z,1.3nm,0.5s,baz=89,slow=4.1,SNR=4.5						
CMAR	**Chiang Mai Arr**	**44.19**	**257**	P	**P**	**13 10 17.3**	**+0.6**
	comp=Z,0.4nm,0.4s,baz=46,slow=6.8,SNR=2.8						
CMAR				pP	**pP**	**13 10 24.9**	**-2.0**
	comp=Z,0.4nm,0.3s,baz=48,slow=6.4,SNR=1.9						
MK01	**Makanchi Array**	**45.70**	**302**	*e*P	**P**	**13 10 29.3**	**+1.0**
MK31	**Makanchi Array**	**45.70**	**302**	*e*P	**P**	**13 10 29.8**	**+1.4**
MKAR	**Makanchi Array**	**45.70**	**302**	P	**P**	**13 10 29.7**	**+1.3**
	comp=Z,1.2nm,0.7s,baz=85,slow=8.9,SNR=12						
MKAR				pP	**pP**	**13 10 37.7**	**-1.0**
	comp=Z,2.2nm,0.8s,baz=83,slow=9.3,SNR=11						
MAKZ	**Makanchi**	**45.90**	**302**	*e*P	**P**	**13 10 31.5**	**+1.5**
	comp=Z,6.9nm,1.5s						
ILAR	**Eielson Array**	**47.25**	**33**	P	**P**	**13 10 40.3**	**0.0**
	comp=Z,0.7nm,0.8s,baz=263,slow=6.3,SNR=8.7						
KURK	**Kurchatov**	**47.27**	**308**	P	**P**	**13 10 41.4**	**+0.8**
KURBB	**Kurchatov Arra**	**47.34**	**308**	P	**P**	**13 10 41.4**	**+0.2**
	comp=Z,8.8nm,0.2s,baz=82,slow=8.0,SNR=17						
TKM2	**Tokmak 2**	**51.34**	**299**	*e*P	P	13 11 14.2	+2.1
	comp=Z,5.1nm,0.9s						
BVAR	**Borovoye Array**	**51.73**	**312**	P	**P**	**13 11 16.1**	**+1.6**
	comp=Z,1.2nm,0.5s,baz=63,slow=11,SNR=7.4						
BVAR				pP	**pP**	**13 11 25.2**	**+0.2**
	comp=Z,1.0nm,0.4s,baz=79,slow=7.7,SNR=1.8						
INK	**Inuvik**	**52.30**	**28**	P	**P**	**13 11 19.1**	**+0.6**
	comp=Z,0.8nm,0.7s,baz=261,slow=6.7,SNR=4.2						
ARU	**Arti**	**57.23**	**319**	*e*P	**P**	**13 11 55.9**	**+1.5**
	comp=Z,4.7nm,0.8s						
WRA	**Warramunga Arr**	**58.52**	**191**	P	**P**	**13 12 02.1**	**-1.6**
	comp=Z,2.4nm,0.6s,baz=11,slow=7.0,SNR=22						
WRA				pP	**pP**	**13 12 10.9**	**-3.5**
	comp=Z,6.5nm,0.8s,baz=10,slow=7.0,SNR=16						
ABKAR	**Akbulak array**	**59.18**	**311**	*e*P	**P**	**13 12 09.3**	**+1.2**
YKA	**Yellowknife Ar**	**61.62**	**31**	P	**P**	**13 12 24.3**	**-0.2**
	comp=Z,0.5nm,0.8s,baz=302,slow=6.7,SNR=8.5						
ASAR	**Alice Springs**	**62.24**	**191**	P	**P**	**13 12 27.9**	**-1.2**
	comp=Z,0.9nm,0.8s,baz=13,slow=8.0,SNR=12						
ASAR				pP	**pP**	**13 12 37.4**	**-2.5**
	comp=Z,0.9nm,0.8s,baz=4.3,slow=7.8,SNR=5.3						
FINES	**FINESS Array B**	**69.03**	**333**	P	**P**	**13 13 13.3**	**+0.8**
	comp=Z,1.9nm,0.7s,baz=35,slow=7.7,SNR=6.2						
FINES				pP	**pP**	**13 13 22.4**	**-1.0**
	comp=Z,1.2nm,0.6s,baz=46,slow=8.2,SNR=3.1						
BMN	**Battle Mountai**	**71.88**	**53**	*e*P	P	13 13 34.0	+3.4
	comp=Z,5.7nm,0.8s						
KBZ	**Khabaz**	**72.10**	**312**	P	**P**	**13 13 33.2**	**+1.6**
	comp=Z,1.9nm,0.8s,baz=60,slow=5.8,SNR=7.4						
NVAR	**Mina Array Bea**	**72.33**	**55**	P	**P**	**13 13 34.1**	**+0.7**
	comp=Z,0.8nm,0.7s,baz=286,slow=5.7,SNR=9.1						
NOA	**NORSAR Array B**	**74.16**	**338**	P	**P**	**13 13 44.3**	**+0.7**
	comp=Z,1.3nm,0.8s,baz=44,slow=4.6,SNR=3.8						
TPNV	**Topopah Spring**	**74.52**	**55**	*e*P	**P**	**13 13 47.2**	**+0.9**
	comp=Z,4.9nm,1.3s						
AKASG	**Malin Array Be**	**74.98**	**323**	P	**P**	**13 13 48.6**	**+0.2**
	comp=Z,1.2nm,0.5s,baz=46,slow=6.1,SNR=6.7						
BW06	**Boulder Array**	**75.12**	**47**	*e*P	**P**	**13 13 49.2**	**-0.5**
PD31	**Pinedale Array**	**75.12**	**47**	*e*P	**P**	**13 13 50.3**	**+0.6**
PDAR	**Pinedale Array**	**75.12**	**47**	P	**P**	**13 13 50.1**	**+0.4**
	comp=Z,1.0nm,0.6s,baz=276,slow=2.0,SNR=16						
PDAR				pP	**pP**	**13 13 59.2**	**-1.4**
	comp=Z,0.4nm,0.5s,baz=339,slow=0.6,SNR=3.9						
LCMT	**Little Creek M**	**76.41**	**54**	*e*P	**P**	**13 13 58.6**	**+1.6**
	comp=Z,2.2nm,0.9s						
SRU	**San Rafael Swe**	**76.81**	**51**	*e*P	**P**	**13 14 00.4**	**+1.1**
	comp=Z,4.9nm,1.0s						
U15A	**North Rim**	**77.37**	**54**	*e*P	**P**	**13 14 04.1**	**+1.5**
PV10	**Paradox Valley**	**78.18**	**50**	*e*P	**P**	**13 14 08.8**	**+1.8**
PV05	**Paradox Valley**	**78.33**	**51**	*e*P	**P**	**13 14 09.3**	**+1.5**
WUAZ	**Wupatki**	**78.52**	**54**	*e*P	**P**	**13 14 10.2**	**+1.4**
	comp=Z,2.9nm,0.8s						
BUR08	**Bucovina Ar. S**	**79.00**	**323**	*e*P	P	13 14 13.1	+1.9
TXAR	**Lajitas Array**	**87.47**	**54**	P	**P**	**13 14 55.3**	**+0.1**
	comp=Z,0.3nm,0.6s,baz=311,slow=3.1,SNR=7.1						
VNA2	**Neumayer--Watz**	**144.01**	**195**	PKP	**PKPdf**	**13 21 39.8**	**-1.7**
	baz=75,slow=1.8						

*ISCJB **01** 13:02:44.1±0.6, 37°.67N±0°.03×38°.10E±0°.04, h1km±7km, Error ellipse: s-maj=5.6km s-min=4.6km az=139.1*
*CSEM **01** 13:02:44.3±0.2, 37°.67N×38°.11E, h5km, MD2.9, Error ellipse: s-maj=4.1km s-min=3.6km az=134.0*
*DDA **01** 13:02:44.1, 37°.67N×38°.09E, h7km, Md2.9*
*ISK **01** 13:02:44.2, 37°.66N×38°.12E, h11km, MD2.8*
ISC 01 13:02:44.5±1.0**, 37°.68N**±0°.03×**38°.11E**±0°.03**, h9**km±10km**, n25, σ0s.57**/35**, Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ATAB	**Bozova**	**0.26**	**144**	*i* P	**Pg**	**13 02 49.1**	**-0.5**
ATAB	**Bozova**	**0.26**	**144**	P	**Pg**	**13 02 49.1**	**-0.5**
GZT	**Gaziantep**	**0.54**	**233**	*i* P	**Pg**	**13 02 54.6**	**-0.4**
URFA	**Urfa**	**0.62**	**113**	*e*PG	**Pg**	**13 02 56.3**	**-0.1**
URFA				*e*SG	**Sg**	**13 03 05.3**	**+0.8**
URFA	**Urfa**	**0.62**	**113**	*e*Pg	**Pg**	**13 02 56.3**	**-0.1**
URFA				*e*Sg	**Sg**	**13 03 05.3**	**+0.8**
AKCD	**Akcadag**	**0.63**	**347**	*i* P	**Pg**	**13 02 56.3**	**-0.4**
AKCD				*i* S	**Sg**	**13 03 05.8**	**+0.7**
AKCD	**Akcadag**	**0.63**	**347**	P	**Pg**	**13 02 56.3**	**-0.4**
AKCD				S	**Sg**	**13 03 05.8**	**+0.7**
GAZ	**Gaziantep**	**0.88**	**235**	*e*PG	**Pg**	**13 03 00.7**	**-0.6**
GAZ				*e*SG	**Sb**	**13 03 14.7**	**+1.0**
GAZ	**Gaziantep**	**0.88**	**235**	*e*Pg	**Pg**	**13 03 00.7**	**-0.6**
GAZ				*e*Sg	**Sb**	**13 03 14.7**	**+1.0**
SURC	**SANLIURFA_SURC**	**0.90**	**153**	*i* P	**Pg**	**13 03 01.4**	**-0.3**
SURC	**SANLIURFA_SURC**	**0.90**	**153**	P	**Pg**	**13 03 01.4**	**-0.3**
KMRS	**Kahramanmaras**	**0.97**	**260**	*e*PG	**Pg**	**13 03 02.7**	**-0.5**
KMRS	**Kahramanmaras**	**0.97**	**260**	*e*Pg	**Pg**	**13 03 02.7**	**-0.5**
DARE	**Darende-Malaty**	**1.02**	**331**	*e*PG	**Pn**	**13 03 05.2**	**+0.1**
DARE	**Darende-Malaty**	**1.02**	**331**	*e*Pg	**Pn**	**13 03 05.2**	**+0.1**
AYKD	**Aykdinkavak**	**1.07**	**256**	*i* P	**Pb**	**13 03 04.8**	**-0.4**
ELZG	**Elazig**	**1.07**	**40**	*i* P	**Pb**	**13 03 04.6**	**-0.7**
ELZG				*i* S	**Sn**	**13 03 20.7**	**-0.3**
ELZG	**Elazig**	**1.07**	**40**	P	**Pb**	**13 03 04.6**	**-0.7**
ELZG				S	**Sn**	**13 03 20.7**	**-0.3**
KUZU	**Kuzuini**	**1.22**	**223**	*i* P	**Pn**	**13 03 07.3**	**-0.5**
KUZU				*i* S	**Sb**	**13 03 24.1**	**+0.4**

KUZU	**Kuzuini**	**1.22**	**223**	P	**Pn**	**13 03 07.3**	**-0.5**
KUZU				S	**Sb**	**13 03 24.1**	**+0.4**
KAMA	**Osmaniye**	**1.25**	**247**	*i* P	**Pn**	**13 03 07.8**	**-0.4**
KOZT	**Kozan**	**1.82**	**264**	*e*PN	**Pn**	**13 03 16.6**	**+0.6**
KOZT	**Kozan**	**1.82**	**264**	*e*Pn	**Pn**	**13 03 16.7**	**+0.6**
TAHT	**Tahtakopru-Hat**	**2.02**	**230**	*e*PN	**Pn**	**13 03 19.0**	**+0.3**
TAHT	**Tahtakopru-Hat**	**2.02**	**230**	*e*Pn	**Pn**	**13 03 19.0**	**+0.3**

ISK ***01*** *13:02:58.5, 39.°11N×40.°41E, h6km, MD3.0*
ISCJB ***01*** *13:02:59.2±0.5, 39.°11N±0.°03×40.°39E±0.°03, h7km±5km, Error ellipse: s-maj=6.2km s-min=3.9km az=26.5*
CSEM ***01*** *13:02:59.1±0.2, 39.°10N×40.°39E, h8km, MD3.0, Error ellipse: s-maj=5.3km s-min=5.1km az=22.0*
DDA ***01*** *13:02:59.4, 39.°13N×40.°39E, h7km, Md3.0*
ISC 01 13:02:59.0±1.3**, 39.°11N**±0.°03×**40.°38E**±0.°03**, h0**km±12km**, n29, σ0.s75**/40**, Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BINT	**Bingol**	**0.25**	**160**	*e*Pg	**Pg**	**13 03 03.8**	**0.0**
BINT				*e*Sg	**Sg**	**13 03 08.4**	**+1.4**
BGOL	**Bingol**	**0.26**	**118**	*i* P	**Pg**	**13 03 03.7**	**-0.2**
BGOL				*i* S	**Sg**	**13 03 08.2**	**+0.9**
BGOL	**Bingol**	**0.26**	**118**	P	**Pg**	**13 03 03.7**	**-0.2**
BGOL				S	**Sg**	**13 03 08.2**	**+0.9**
BNGB	**Bingˆ¶l**	**0.26**	**117**	*e*PG	**Pg**	**13 03 03.8**	**-0.2**
BNGB				*e*SG	**Sg**	**13 03 08.4**	**+0.9**
TNCL	**Tunceli-Merkez**	**0.65**	**270**	*i* P	**Pg**	**13 03 11.9**	**+0.5**
TNCL				*i* S	**Sb**	**13 03 21.3**	**-1.6**
TNCL	**Tunceli-Merkez**	**0.65**	**270**	P	**Pg**	**13 03 11.9**	**+0.5**
TNCL				S	**Sb**	**13 03 21.3**	**-1.6**
ERZN	**Erzincan**	**0.69**	**313**	*e*PG	**Pg**	**13 03 11.9**	**-0.4**
ERZN				*e*SG	**Sb**	**13 03 23.4**	**-0.8**
PTK	**Pertek**	**0.80**	**254**	*e*PG	**Pg**	**13 03 14.3**	**0.0**
PTK				*e*SG	**Sb**	**13 03 27.0**	**-0.3**
PTK	**Pertek**	**0.80**	**254**	*e*Pg	**Pg**	**13 03 14.3**	**0.0**
PTK				*e*Sg	**Sb**	**13 03 27.0**	**-0.3**
EZM	**Erzurum**	**1.10**	**44**	*e*PN	**Pg**	**13 03 19.6**	**-0.4**
ERZM	**Erzurum**	**1.10**	**44**	*i* P	**Pb**	**13 03 20.7**	**-0.4**
ERZM	**Erzurum**	**1.10**	**44**	P	**Pb**	**13 03 20.7**	**-0.4**
SVAN	**Silvan-Diyarba**	**1.16**	**146**	*e*PN	**Pg**	**13 03 20.2**	**-0.9**
SVAN	**Silvan-Diyarba**	**1.16**	**146**	*e*Pn	**Pg**	**13 03 20.2**	**-0.9**
DYBB	**Diyarbakir**	**1.17**	**189**	*e*PN	**Pg**	**13 03 21.2**	**-0.2**
DIYA	**Diyarbakir**	**1.20**	**190**	*i* S	**Sn**	**13 03 41.5**	**+1.3**
DIYA	**Diyarbakir**	**1.20**	**190**	*i* P	**Pn**	**13 03 23.1**	**-0.1**
DIYA				*i* S	**Sn**	**13 03 41.2**	**+1.0**
DIYA	**Diyarbakir**	**1.20**	**190**	P	**Pn**	**13 03 23.0**	**-0.1**
DIYA				S	**Sn**	**13 03 41.2**	**+1.0**
DIY	**Diyarbakir**	**1.22**	**186**	*e*Pn	**Pg**	**13 03 21.3**	**-1.1**
BAYT	**Ayd˜–ntepe-Bay**	**1.29**	**352**	*e*PN	**Pb**	**13 03 24.1**	**-0.1**
BAYT	**Ayd˜–ntepe-Bay**	**1.29**	**352**	*e*Pn	**Pb**	**13 03 24.1**	**-0.1**
EKAR	**Karacoban**	**1.32**	**83**	*i* P	**Pn**	**13 03 25.4**	**+0.5**
EKAR	**Karacoban**	**1.32**	**83**	P	**Pn**	**13 03 25.4**	**+0.5**
BTMN	**Batman**	**1.41**	**150**	*i* P	**Pn**	**13 03 25.8**	**-0.1**
BTMN	**Batman**	**1.41**	**150**	P	**Pn**	**13 03 25.8**	**-0.1**
GUMT	**Gumushane**	**1.51**	**333**	*e*PN	**Pn**	**13 03 27.4**	**-0.1**
GUMT	**Gumushane**	**1.51**	**333**	*e*Pn	**Pn**	**13 03 27.4**	**-0.1**
MAZI	**Mazidag**	**1.65**	**178**	*e*PN	**Pn**	**13 03 28.5**	**-0.8**
MAZI	**Mazidag**	**1.65**	**178**	*e*Pn	**Pn**	**13 03 28.5**	**-0.8**

JMA 01 13:04:25.0±0.1**, 39.°14N**×**142.°39E, h33**km±1km**, M3.6, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**0.56**	**264**	P	Pb	13 04 36.4	-0.2
MIYJ	**Miyakonagasawa**	**0.62**	**315**	P	Pn	13 04 36.9	-0.6
MIYJ				S	Sb	13 04 45.0	-1.1
JOM	**Ohasama**	**0.91**	**292**	P	Pn	13 04 41.8	+0.3
JOM				S	Sb	13 04 54.2	-0.1
JMK	**Ichinoseki**	**0.93**	**259**	P	Pn	13 04 42.0	+0.3
JMK				S	Sb	13 04 54.4	-0.3
JIO	**Ouri**	**1.06**	**230**	P	Pn	13 04 43.2	-0.4
JIO				S	Sn	13 04 56.0	-1.2
JKZ	**Kuzumaki**	**1.18**	**316**	P	Pn	13 04 46.0	+0.8
JKZ				S	Sn	13 05 00.3	+0.2
JRG	**Rokugo**	**1.39**	**281**	P	Pb	13 04 49.6	-0.7
JANG	**Nango**	**1.40**	**332**	P	Pn	13 04 49.4	+1.1
JANG				*e*S	Sn	13 05 06.2	+0.5
JOU	**Okura**	**1.56**	**241**	P	Pn	13 04 51.6	+1.2
JOU				*e*S	Sn	13 05 10.9	+1.5
JYK	**Kaneyama**	**1.60**	**263**	P	Pn	13 04 52.1	+1.2

IDC ***01*** *13:10:17.4±1.3, 37.°83N×144.°30E, h0km, mb3.8/4, mb1 3.9/6, mb1mx3.5/51, mbtmp3.9/6, ML3.5/2, Error ellipse: s-maj=33.3km s-min=24.6km az=114.0*
ISCJB ***01*** *13:10:21.1±0.9, 37.°81N±0.°07×144.°06E±0.°07, h33km, mb3.8/3, Error ellipse: s-maj=11.1km s-min=7.3km az=28.5*
JMA ***01*** *13:10:22.4±0.2, 37.°92N×143.°95E, h28km, M3.4*
ISC 01 13:10:22.6±1.2**, 37.°83N**±0.°08×**144.°08E**±0.°09**, h35**km**, n14, σ0.s84**/20**, mb4.0**/3**, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**2.25**	**287**	P	**Pn**	**13 10 57.0**	**-0.3**
JIO				S	**Sn**	**13 11 22.5**	**-1.2**
OFUJ	**Ofunato**	**2.27**	**304**	P	**Pn**	**13 10 57.2**	**-0.4**
JMK	**Ichinoseki**	**2.52**	**297**	P	**Pn**	**13 11 01.0**	**0.0**
JMK				*e*S	**Sn**	**13 11 29.6**	**-0.8**
JMM	**Marumori**	**2.60**	**272**	P	**Pn**	**13 11 02.1**	**-0.1**
JMM				*e*S	**Sn**	**13 11 31.2**	**-1.4**
JOM	**Ohasama**	**2.73**	**308**	*e*S	**Sn**	**13 11 35.4**	**-0.4**
JOU	**Okura**	**2.75**	**282**	P	**Pn**	**13 11 04.7**	**+0.5**
JOU				*e*S	**Sn**	**13 11 35.9**	**-0.4**
JFT	**Otama**	**2.99**	**265**	S	**Sn**	**13 11 42.0**	**-0.1**
JRG	**Rokugo**	**3.12**	**301**	P	**Pn**	**13 11 10.5**	**+1.2**
JRG				*e*S	**Sn**	**13 11 44.4**	**-1.0**
JYK	**Kaneyama**	**3.12**	**292**	P	**Pn**	**13 11 10.0**	**+0.7**
JYK				*e*S	**Sn**	**13 11 45.1**	**-0.3**
MJAR	**Matsushiro Arr**	**4.86**	**257**	Pn	**Pn**	**13 11 34.7**	**+1.4**
	1.5nm,0.3s,baz=72,slow=9.5,SNR=15						
JHJ	**Hachijo jima 2**	**5.86**	**218**	Pn	**Pn**	**13 11 46.4**	**-0.6**
	5.6nm,0.3s,baz=240,slow=20,SNR=3.1						
KURBB	**Kurchatov Arra**	**47.19**	**308**	P	**P**	**13 18 52.6**	**+1.0**
	0.4nm,0.2s,baz=83,slow=6.8,SNR=5.2						
ILAR	**Eielson Array**	**47.68**	**33**	P	**P**	**13 18 54.5**	**-0.8**
	0.3nm,0.8s,baz=262,slow=6.2,SNR=3.7						
WRA	**Warramunga Arr**	**58.19**	**191**	P	**P**	**13 20 13.5**	**+0.4**
	1.5nm,0.7s,baz=12,slow=7.2,SNR=11						

NSSC ***01*** *13:29:06.7±0.6, 35.°66N×26.°65E, h33km±131km, ML5.6*
HLW ***01*** *13:29:08.5, 35.°74N×26.°73E, h33km±13km, Ml5.8*
NIC ***01*** *13:29:08.2±0.2, 35.°54N×26.°63E, h60km Felt I=II at Pafos, Lemesos, Lefkosia.*
NIC Felt II at Pafos, lemesos, lefkosia.
ISK ***01*** *13:29:08.4, 35.°50N×26.°58E, h57km, ML6.2*
PDG ***01*** *13:29:09.3±0.3, 34.°99N×25.°71E, h12km±5km, MD6.1/10, ML6.0/10, Error ellipse: s-maj=11.2km s-min=8.3km az=90.0*
NEIC ***01*** *13:29:10.7, 35.°66N×26.°56E, h60km, mb6.2/52, ME6.2, MW6.1, MW6.1, MW6.0, Moment Tensor Solution. s56 Moment tensor: Scale 10^18Nm; Mrr0.16; Mθθ1.29; Mφφ-1.45; Mrθ0.65; Mθφ-0.31; Mφr0.17; Best double couple: M0 1.60000×10^18 NP1:φs144.00000°, δ67.00000°, λ11.00000°. NP2:φs49.00000°, δ80.00000°, λ156.00000°. Principal axes: T 1.6000, Plg24.0000°, Azm4.0000°; N -0.0800, Plg64.0000°, Azm207.0000°; P -1.5200, Plg9.0000°, Azm98.0000°; Broadband fault plane solution: P waves. NP1:φs50.00000°, δ73.00000°, λ148.00000°. NP2:φs150.00000°, δ60.00000°, λ20.00000°. Principal axes: T Plg34.0000°, Azm6.0000°; N Plg0.0000°, Azm0.0000°; P Plg8.0000°, Azm102.0000°; Depth from synthetics of broadband displacement seismograms. Energy computed from BB mechanism. After ATH.*
NEIC Felt [VI] at Karpathos; [V] at Skhisma and Thira; [IV] at Gazion, Ierapetra, Irakleion, Lardos, Neapolis and Siteia; [III] at Ayios Nikolaos, Chania, Kos, Koutouloufarion, Malia, Neon Karlovasion, Paros, Rodos and Trianta. Felt [IV] at Dalaman and Fethiye; [III] at Alanya, Antalya and Marmaris, Turkey. Felt [IV] at Ismailia and [III] at Alexandria, Al Jizeh, Az Zaqaziq, Cairo and Tanta, Egypt. Felt [III] at Ra'anana, Israel and at Sliema, Malta. Felt widely in Cyprus, northern Egypt, southern Greece, Israel, Malta and southwestern Turkey. Also felt in Lebanon.
CSEM ***01*** *13:29:10.6±0.1, 35.°57N×26.°60E, h80km, mb6.1/81, Ms5.7, Mw6.1 Error ellipse: s-maj=2.8km s-min=1.7km az=5.0*
ATH ***01*** *13:29:10.6, 35.°64N×26.°56E, h63km±2km, ML6.2/16, Error ellipse: s-maj=2.2km s-min=0.4km az=146.0*
BJI ***01*** *13:29:10.2, 35.°70N×26.°50E, h80km, mb5.8/84, mB5.9/56, Ms5.7/91, Ms7 5.4/85*
GCMT ***01*** *13:29:10.7±0.1, 35.°49N×26.°67E, h76km, MW6.1/137, Moment Tensor Solution. s136,c285; s137,c437; Duration: 2.s9 Moment tensor: Scale 10^18Nm; Mrr0.17±.01; Mθθ1.78±.01; Mφφ-1.94±.01; Mrθ0.58±.01; Mθφ-0.41±.01; Mφr0.31±.01; Best double couple: M0 2.01800×10^18 NP1:φs50.00000°, δ85.00000°, λ161.00000°. NP2:φs142.00000°, δ71.00000°, λ5.00000°. Principal axes: T 1.9880, Plg17.0000°, Azm5.0000°; N 0.0680, Plg70.0000°, Azm217.0000°; P -2.0490, Plg10.0000°, Azm98.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface/mantle waves, cutoff=50s.*
ISCJB ***01*** *13:29:10.0±0.1, 35.°66N±0.°01×26.°578E±0.°008, h75km±1km, mb6.0/303 Error ellipse: s-maj=1.7km s-min=1.1km az=4.9*
SFS ***01*** *13:29:11.0, 35.°54N×26.°03E, h60km, ML6.0*
IDC ***01*** *13:29:11.4±0.5, 35.°79N×26.°50E, h74km±4km, mb5.6/71, mb1 5.7/82, mb1mx5.6/88, mbtmp5.9/82, MS5.3/51, Ms1 5.3/51, ms1mx5.2/65, Error ellipse: s-maj=6.2km s-min=4.8km az=146.0*
MOS ***01*** *13:29:11.4±1.0, 35.°74N×26.°51E, h89km, mb6.4/62, MS5.3/35, Error ellipse: s-maj=4.2km s-min=2.4km az=93.0*
PDA ***01*** *13:29:12.1, 35.°72N×26.°55E, h80km, Mw6.1*
THE ***01*** *13:29:12.6, 35.°65N×26.°57E, h44km±2km, ML6.2/6, Error ellipse: s-maj=2.9km s-min=0.5km az=155.0*
NEIC ***01*** *13:29:12.0±0.0, 35.°73N×26.°65E, h77km, Moment Tensor Solution. s23 Moment tensor: Scale 10^18Nm; Mrr0.02; Mθθ1.13; Mφφ-1.15; Mrθ0.36; Mθφ-0.35; Mφr0.55; Best double couple: M0 1.40000×10^18 NP1:φs234.00000°, δ84.00000°, λ-153.00000°. NP2:φs141.00000°, δ64.00000°, λ-6.00000°. Principal axes: T 1.2500, Plg14.0000°, Azm4.0000°; N 0.1900, Plg62.0000°, Azm245.0000°; P -1.4500, Plg22.0000°, Azm100.0000°;*
GII ***01*** *13:29:13.6±0.0, 35.°16N×27.°27E, h5km, mb5.8/3, MD6.1/3*
NEIC ***01*** *13:29:20.3±0.0, 35.°91N×26.°46E, h54km, Moment Tensor Solution. s56 Moment tensor: Scale 10^18Nm; Mrr0.04; Mθθ1.70; Mφφ-1.74; Mrθ0.54; Mθφ-0.33; Mφr0.25; Best double couple: M0 1.90000×10^18 NP1:φs141.00000°, δ72.00000°, λ4.00000°. NP2:φs50.00000°, δ86.00000°, λ162.00000°. Principal axes: T 1.8700, Plg16.0000°, Azm4.0000°; N -0.0600, Plg72.0000°, Azm217.0000°; P -1.8200, Plg10.0000°, Azm97.0000°;*
DDA ***01*** *13:29:43.8, 35.°48N×26.°40E, h9km, Ml6.2*
ISC 01 13:29:11.5±0.2**, 35.°73N**±0.°02×**26.°55E**±0.°02**, h76**km±1km**, h75**km**:pP-P, n2814, σ1.s65**/3210**, mb6.1**/344**, 254C-31D, Crete**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KARP	**Karpathos**	**0.53**	**110**	P	**Pn**	**13 29 23.4**	**-1.8**
KARP				S	**Sn**	**13 29 31.6**	**-3.7**
KARP	**Karpathos**	**0.53**	**110**	P	**Pn**	**13 29 23.4**	**-1.8**
KARP				S	**Sn**	**13 29 31.8**	**-3.5**
KARP	**Karpathos**	**0.53**	**110**	P	**Pn**	**13 29 23.4**	**-1.8**
KARP				S	**Sn**	**13 29 31.8**	**-3.5**
KARP	**Karpathos**	**0.53**	**110**	*e*Pn	**Pn**	**13 29 23.3**	**-1.8**
KARP				S	**Sn**	**13 29 31.6**	**-3.7**
ZKR	**Zakros**	**0.67**	**204**	P	**Pn**	**13 29 25.1**	**-1.5**
ZKR				S	**Sn**	**13 29 33.8**	**-3.9**
ZKR	**Zakros**	**0.67**	**204**	P	**Pn**	**13 29 25.3**	**-1.3**
ZKR				S	**Sn**	**13 29 34.5**	**-3.2**
ZKR	**Zakros**	**0.67**	**204**	P	**Pn**	**13 29 25.3**	**-1.3**
ZKR				S	**Sn**	**13 29 34.5**	**-3.2**
ZKR				AML	AML	13 29 36.0	
ZKR				AML	AML	13 29 39.5	
ZKR	**Zakros**	**0.67**	**204**	P	**Pn**	**13 29 25.1**	**-1.5**
ZKR				S	**Sn**	**13 29 33.8**	**-3.9**
NPS	**Neapolis**	**0.89**	**239**	P	**Pn**	**13 29 27.8**	**-1.3**
NPS				S	**Sn**	**13 29 39.2**	**-2.9**
NPS	**Neapolis**	**0.89**	**239**	P	**Pn**	**13 29 27.8**	**-1.3**
NPS				S	**Sn**	**13 29 39.2**	**-2.9**
NPS	**Neapolis**	**0.89**	**239**	P	**Pn**	**13 29 27.8**	**-1.3**
NPS				S	**Sn**	**13 29 40.3**	**-1.8**
NPS	**Neapolis**	**0.89**	**239**	P	**Pn**	**13 29 27.8**	**-1.3**
NPS				S	**Sn**	**13 29 40.3**	**-1.8**
NPS				AML	AML	13 29 40.7	
NPS				AML	AML	13 29 42.6	
NPS	**Neapolis**	**0.89**	**239**	P	**Pn**	**13 29 27.8**	**-1.3**
NPS				S	**Sn**	**13 29 39.2**	**-2.9**
NISR	**Nisiros**	**1.00**	**28**	P	**Pn**	**13 29 30.5**	**+0.3**
NISR				S	**Sn**	**13 29 44.1**	**-0.1**
NISR	**Nisiros**	**1.00**	**28**	P	**Pn**	**13 29 30.5**	**+0.3**
NISR				S	**Sn**	**13 29 45.5**	**+1.3**
NISR	**Nisiros**	**1.00**	**28**	P	**Pn**	**13 29 30.5**	**+0.3**
NISR				S	**Sn**	**13 29 45.5**	**+1.3**
NISR				AML	AML	13 29 45.8	
NISR				AML	AML	13 29 53.2	
NISR	**Nisiros**	**1.00**	**28**	P	**Pn**	**13 29 30.5**	**+0.3**
NISR				S	**Sn**	**13 29 44.1**	**-0.1**
NIS1	**Nisyros Isl.**	**1.01**	**30**	PN	**Pn**	**13 29 30.9**	**+0.5**
NIS1				*e*SN	**Sn**	**13 29 45.5**	**+1.0**
NIS1	**Nisyros Isl.**	**1.01**	**30**	P	**Pn**	**13 29 30.9**	**+0.5**
NIS1	**Nisyros Isl.**	**1.01**	**30**	*i* Pn	**Pn**	**13 29 30.9**	**+0.5**
NIS1	**Nisyros Isl.**	**1.01**	**30**	P	**Pn**	**13 29 31.2**	**+0.8**
NIS1				*e*Sn	**Sn**	**13 29 45.5**	**+1.0**
NIS1				S	**Sn**	**13 29 46.0**	**+1.5**
NIS1	**Nisyros Isl.**	**1.01**	**30**	P	**Pn**	**13 29 31.2**	**+0.8**
NIS1				S	**Sn**	**13 29 46.0**	**+1.5**
NIS1				AML	AML	13 29 52.8	
NIS1				AML	AML	13 29 54.0	
NIS1	**Nisyros Isl.**	**1.01**	**30**	P	**Pn**	**13 29 30.9**	**+0.5**
LAST	**Lasithi**	**1.04**	**237**	P	**Pn**	**13 29 29.9**	**-1.0**
LAST				S	**Sn**	**13 29 43.5**	**-1.9**
LAST	**Lasithi**	**1.04**	**237**	P	**Pn**	**13 29 30.1**	**-0.8**
LAST				S	**Sn**	**13 29 43.1**	**-2.3**
LAST	**Lasithi**	**1.04**	**237**	P	**Pn**	**13 29 30.1**	**-0.8**
LAST	**Lasithi**	**1.04**	**237**	*e*Pn	**Pn**	**13 29 29.9**	**-1.0**
SANT	**Santorini**	**1.09**	**306**	P	**Pn**	**13 29 31.8**	**+0.4**
SANT				S	**Sn**	**13 29 46.1**	**-0.2**
SANT	**Santorini**	**1.09**	**306**	P	**Pn**	**13 29 32.2**	**+0.8**
SANT				S	**Sn**	**13 29 46.1**	**-0.2**
SANT	**Santorini**	**1.09**	**306**	P	**Pn**	**13 29 32.2**	**+0.8**
SANT				S	**Sn**	**13 29 45.9**	**-0.4**
SANT	**Santorini**	**1.09**	**306**	*e*Pn	**Pn**	**13 29 31.8**	**+0.4**
SANT				S	**Sn**	**13 29 46.1**	**-0.2**
THT1	**Athinios (Pele**	**1.12**	**306**	P	**Pn**	**13 29 32.1**	**+0.4**
THT1				S	**Sn**	**13 29 46.9**	**+0.1**
THT1	**Athinios (Pele**	**1.12**	**306**	P	**Pn**	**13 29 32.1**	**+0.4**
THT1				S	**Sn**	**13 29 46.9**	**+0.1**
THR6	**Thira Island,**	**1.12**	**304**	P	**Pn**	**13 29 32.4**	**+0.6**
THR6	**Thira Island,**	**1.12**	**304**	P	**Pn**	**13 29 32.4**	**+0.6**
THR6	**Thira Island,**	**1.12**	**304**	P	**Pn**	**13 29 32.4**	**+0.6**
THR7	**Fira-Santorini**	**1.14**	**308**	P	**Pn**	**13 29 32.6**	**+0.6**
THR7	**Fira-Santorini**	**1.14**	**308**	P	**Pn**	**13 29 32.6**	**+0.6**
THR3	**Thira Island,**	**1.15**	**306**	P	**Pn**	**13 29 32.8**	**+0.7**
THR3	**Thira Island,**	**1.15**	**306**	P	**Pn**	**13 29 32.8**	**+0.7**
THR3	**Thira Island,**	**1.15**	**306**	P	**Pn**	**13 29 32.8**	**+0.7**
THR2	**Thira island,**	**1.15**	**309**	P	**Pn**	**13 29 32.8**	**+0.7**
THR2	**Thira island,**	**1.15**	**309**	P	**Pn**	**13 29 32.8**	**+0.7**
THR2	**Thira island,**	**1.15**	**309**	P	**Pn**	**13 29 32.8**	**+0.7**
CMBO	**Columbo, Santo**	**1.18**	**309**	P	**Pn**	**13 29 33.2**	**+0.6**
CMBO	**Columbo, Santo**	**1.18**	**309**	P	**Pn**	**13 29 33.6**	**+1.0**
CMBO				S	**Sn**	**13 29 49.6**	**+1.3**
CMBO	**Columbo, Santo**	**1.18**	**309**	P	**Pn**	**13 29 33.6**	**+1.0**
CMBO				S	**Sn**	**13 29 49.6**	**+1.3**
THR5	**Thira Island,**	**1.19**	**306**	PN	**Pn**	**13 29 32.9**	**+0.3**
THR5	**Thira Island,**	**1.19**	**306**	P	**Pn**	**13 29 32.9**	**+0.3**
THR5	**Thira Island,**	**1.19**	**306**	P	**Pn**	**13 29 32.9**	**+0.3**
IACM	**Heraklion**	**1.28**	**251**	P	**Pn**	**13 29 32.8**	**-0.9**
IACM				S	**Sn**	**13 29 49.3**	**-1.2**
IACM	**Heraklion**	**1.28**	**251**	P	**Pn**	**13 29 32.8**	**-0.9**
IACM				S	**Sn**	**13 29 49.2**	**-1.2**
IACM	**Heraklion**	**1.28**	**251**	P	**Pn**	**13 29 32.4**	**-1.4**
IACM				S	**Sn**	**13 29 49.2**	**-1.3**
ARG	**Arkhangelos**	**1.37**	**69**	P	**Pn**	**13 29 35.1**	**+0.1**
ARG				S	**Sn**	**13 29 52.1**	**-0.5**
ARG	**Arkhangelos**	**1.37**	**69**	P	**Pn**	**13 29 35.1**	**+0.1**
ARG				S	**Sn**	**13 29 52.1**	**-0.5**
ARG	**Arkhangelos**	**1.37**	**69**	P	**Pn**	**13 29 35.1**	**+0.1**
ARG				S	**Sn**	**13 29 52.1**	**-0.5**
ARG	**Arkhangelos**	**1.37**	**69**	P	**Pn**	**13 29 35.1**	**+0.1**
ARG				S	**Sn**	**13 29 52.1**	**-0.5**
IDI	**Anoyia**	**1.42**	**252**	P	**Pn**	**13 29 34.5**	**-1.2**
	11μm,0.3s,baz=47,slow=7.7,SNR=8298						
IDI				S	**Sn**	**13 29 52.1**	**-1.8**
	16μm,0.3s,baz=126,slow=11,SNR=15						
IDI	**Anoyia**	**1.42**	**252**	P	**Pn**	**13 29 34.5**	**-1.2**
BODT	**Bodrum**	**1.46**	**25**	PN	**Pn**	**13 29 36.1**	**-0.1**
BODT				*e*SN	**Sn**	**13 29 56.0**	**+1.2**
BODT	**Bodrum**	**1.46**	**25**	P	**Pn**	**13 29 36.8**	**+0.6**
BODT	**Bodrum**	**1.46**	**25**	*i* Pn	**Pn**	**13 29 36.1**	**-0.1**
BODT	**Bodrum**	**1.46**	**25**	P	**Pn**	**13 29 36.8**	**+0.6**
BODT				*e*Sn	**Sn**	**13 29 56.0**	**+1.2**
BODT	**Bodrum**	**1.46**	**25**	P	**Pn**	**13 29 36.8**	**+0.6**
BDRM	**Kayabasi**	**1.52**	**28**	*i* P	**Pn**	**13 29 37.4**	**+0.5**
BDRM				*i* S	**Sn**	**13 29 56.4**	**+0.4**
BDRM	**Kayabasi**	**1.52**	**28**	P	**Pn**	**13 29 37.4**	**+0.5**
BDRM				S	**Sn**	**13 29 56.4**	**+0.4**
APE	**Apeiranthos**	**1.57**	**329**	*e*PN	**Pn**	**13 29 38.2**	**+0.6**
APE				*e*SN	**Sn**	**13 29 58.6**	**+1.4**
APE	**Apeiranthos**	**1.57**	**329**	P	**Pn**	**13 29 38.7**	**+1.1**
APE				S	**Sn**	**13 29 58.9**	**+1.6**
APE	**Apeiranthos**	**1.57**	**329***c*	*i*P	**Pn**	**13 29 38.5**	**+0.9**
APE	**Apeiranthos**	**1.57**	**329**	*e*Pn	**Pn**	**13 29 38.2**	**+0.6**
APE	**Apeiranthos**	**1.57**	**329**	*i* P	**Pn**	**13 29 38.5**	**+0.9**
APE				*e*Sn	**Sn**	**13 29 58.6**	**+1.4**
APE	**Apeiranthos**	**1.57**	**329**	P	**Pn**	**13 29 38.8**	**+1.3**
APE				S	**Sn**	**13 29 58.6**	**+1.4**
APE				AML	AML	13 30 00.0	
APE				AML	AML	13 30 00.4	
APE	**Apeiranthos**	**1.57**	**329**	P	**Pn**	**13 29 38.7**	**+1.1**
APE				S	**Sn**	**13 29 58.9**	**+1.6**
SIVA	**Sivas**	**1.59**	**244**	P	**Pn**	**13 29 37.9**	**+0.1**
SIVA				S	**Sn**	**13 29 57.5**	**-0.2**
SIVA	**Sivas**	**1.59**	**244**	P	**Pn**	**13 29 37.9**	**+0.1**
SIVA				S	**Sn**	**13 29 56.9**	**-0.8**
SIVA	**Sivas**	**1.59**	**244**	P	**Pn**	**13 29 38.6**	**+0.8**
SIVA				S	**Sn**	**13 29 56.9**	**-0.8**
SIVA				AML	AML	13 30 05.9	
SIVA				AML	AML	13 30 05.9	
SIVA	**Sivas**	**1.59**	**244**	P	**Pn**	**13 29 37.9**	**+0.1**
VAM	**Vamos**	**1.94**	**261**	P	**Pn**	**13 29 40.9**	**-1.6**
VAM	**Vamos**	**1.94**	**261**	P	**Pn**	**13 29 40.9**	**-1.6**
VAM	**Vamos**	**1.94**	**261**	P	**Pn**	**13 29 42.0**	**-0.5**
VAM				S	**Sn**	**13 30 05.0**	**-1.1**
VAM	**Vamos**	**1.94**	**261**	P	**Pn**	**13 29 40.9**	**-1.6**
YER	**Yerkesik**	**1.98**	**44**	*e*PN	**Pn**	**13 29 43.0**	**-0.1**
YER	**Yerkesik**	**1.98**	**44**	P	**Pn**	**13 29 44.5**	**+1.4**
YER				S	**Sn**	**13 30 08.0**	**+0.9**
YER	**Yerkesik**	**1.98**	**44**	P	**Pn**	**13 29 44.5**	**+1.4**
YER	**Yerkesik**	**1.98**	**44**	*e*Pn	**Pn**	**13 29 43.0**	**-0.1**
YER	**Yerkesik**	**1.98**	**44**	P	**Pn**	**13 29 44.5**	**+1.4**
YER				S	**Sn**	**13 30 08.0**	**+0.9**
YER	**Yerkesik**	**1.98**	**44**	P	**Pn**	**13 29 44.5**	**+1.4**
MHLO	**Agia Marina, M**	**1.98**	**299**	P	**Pn**	**13 29 44.0**	**+1.0**
MHLO	**Agia Marina, M**	**1.98**	**299**	P	**Pn**	**13 29 44.2**	**+1.2**
MHLO				S	**Sn**	**13 30 08.4**	**+1.4**
MHLO	**Agia Marina, M**	**1.98**	**299**	P	**Pn**	**13 29 44.2**	**+1.2**
MHLO				S	**Sn**	**13 30 08.4**	**+1.4**
MHLO				AML	AML	13 30 14.6	
MHLO				AML	AML	13 30 16.8	
SMG	**Samos**	**1.99**	**7**	P	**Pn**	**13 29 44.1**	**+1.0**
SMG				S	**Sn**	**13 30 09.1**	**+1.9**
SMG	**Samos**	**1.99**	**7**	P	**Pn**	**13 29 44.1**	**+1.0**
SMG				S	**Sn**	**13 30 09.1**	**+1.9**
SMG	**Samos**	**1.99**	**7**	P	**Pn**	**13 29 44.0**	**+0.9**
SMG				S	**Sn**	**13 30 08.8**	**+1.7**
SMG	**Samos**	**1.99**	**7**	P	**Pn**	**13 29 44.1**	**+1.0**
TURN	**Turunc**	**2.01**	**55**	*i* P	**Pn**	**13 29 39.6**	**-3.8**
TURN				*i* S	**Sn**	**13 30 00.4**	**-7.4**
TURN	**Turunc**	**2.01**	**55**	P	**Pn**	**13 29 39.6**	**-3.8**
DALY	**Dalyan (Mu˜la**	**2.02**	**57**	*e*PN	**Pn**	**13 29 43.2**	**-0.3**
DALY	**Dalyan (Mu˜la**	**2.02**	**57**	*e*Pn	**Pn**	**13 29 43.2**	**-0.3**
GCAM	**G?zelcaml?**	**2.04**	**15**	*i* P	**Pn**	**13 29 44.8**	**+1.0**
GCAM				*i* S	**Sn**	**13 30 08.7**	**+0.3**
GCAM	**G?zelcaml?**	**2.04**	**15**	P	**Pn**	**13 29 44.8**	**+1.0**
GCAM				S	**Sn**	**13 30 08.7**	**+0.3**
IMMV	**Iera Moni Meta**	**2.11**	**263**	P	**Pn**	**13 29 43.8**	**-0.9**
IMMV	**Iera Moni Meta**	**2.11**	**263**	P	**Pn**	**13 29 44.5**	**-0.2**
IMMV				S	**Sn**	**13 30 10.7**	**+0.6**
IMMV	**Iera Moni Meta**	**2.11**	**263**	P	**Pn**	**13 29 44.5**	**-0.2**
IMMV				S	**Sn**	**13 30 10.7**	**+0.6**
GVD	**Gavdhos**	**2.20**	**247**	P	**Pn**	**13 29 45.7**	**-0.3**
GVD				S	**Sn**	**13 30 11.8**	**-0.5**
GVD	**Gavdhos**	**2.20**	**247**	P	**Pn**	**13 29 45.7**	**-0.3**
GVD				S	**Sn**	**13 30 11.8**	**-0.5**
GVD	**Gavdhos**	**2.20**	**247**	P	**Pn**	**13 29 46.1**	**+0.2**
GVD				S	**Sn**	**13 30 12.6**	**+0.3**
GVD				AML	AML	13 30 14.7	
GVD				AML	AML	13 30 14.8	
GVD	**Gavdhos**	**2.20**	**247**	P	**Pn**	**13 29 45.7**	**-0.3**
GVD				S	**Sn**	**13 30 11.8**	**-0.5**
AYDN	**Tasoluk**	**2.20**	**29**	*i* P	**Pn**	**13 29 47.5**	**+1.4**
AYDN				*i* S	**Sn**	**13 30 13.3**	**+0.9**
AYDN	**Tasoluk**	**2.20**	**29**	P	**Pn**	**13 29 47.5**	**+1.4**
AYDN				S	**Sn**	**13 30 13.3**	**+0.9**
FETY	**Fethiye**	**2.24**	**66**	*e*PN	**Pn**	**13 29 45.6**	**-0.9**
FETY	**Fethiye**	**2.24**	**66**	P	**Pn**	**13 29 46.7**	**+0.1**
FETY				S	**Sn**	**13 30 12.9**	**-0.4**
FETY	**Fethiye**	**2.24**	**66**	*e*Pn	**Pn**	**13 29 45.6**	**-0.9**
FETY	**Fethiye**	**2.24**	**66**	P	**Pn**	**13 29 46.7**	**+0.1**
FETY				S	**Sn**	**13 30 12.9**	**-0.4**
FETY	**Fethiye**	**2.24**	**66**	P	**Pn**	**13 29 46.7**	**+0.1**
FETY				S	**Sn**	**13 30 12.9**	**-0.4**
AYDB	**Zeytinkoy-Aydi**	**2.46**	**26**	*e*PN	**Pn**	**13 29 50.3**	**+0.7**
AYDB	**Zeytinkoy-Aydi**	**2.46**	**26**	*e*Pn	**Pn**	**13 29 50.3**	**+0.7**
KSL	**Kastellorizon**	**2.50**	**80**	P	**Pn**	**13 29 49.5**	**-0.5**
KSL				S	**Sn**	**13 30 17.5**	**-2.0**
KSL	**Kastellorizon**	**2.50**	**80**	P	**Pn**	**13 29 48.6**	**-1.3**
ZEY	**˜zmir**	**2.50**	**359**	*i* P	**Pn**	**13 29 50.5**	**+0.4**
AKAS	**Kas**	**2.53**	**78**	*i* P	**Pn**	**13 29 50.1**	**-0.5**
AKAS				*i* S	**Sn**	**13 30 17.1**	**-3.4**
AKAS	**Kas**	**2.53**	**78**	P	**Pn**	**13 29 50.1**	**-0.5**
AKAS				S	**Sn**	**13 30 17.1**	**-3.4**
URLA	**Izmir**	**2.62**	**1**	*i* P	**Pn**	**13 29 52.6**	**+0.9**
URLA	**Izmir**	**2.62**	**1**	P	**Pn**	**13 29 52.6**	**+0.9**
ANKY	**Antikythira Is**	**2.64**	**274**	P	**Pn**	**13 29 51.5**	**-0.4**
ANKY				S	**Sn**	**13 30 24.1**	**+1.2**
ANKY	**Antikythira Is**	**2.64**	**274**	P	**Pn**	**13 29 51.7**	**-0.2**
ANKY				S	**Sn**	**13 30 24.1**	**+1.2**
ANKY	**Antikythira Is**	**2.64**	**274**	P	**Pn**	**13 29 51.7**	**-0.2**
ANKY				S	**Sn**	**13 30 23.0**	**+0.1**
ANKY				AML	AML	13 30 26.0	
ANKY				AML	AML	13 30 37.4	
ANKY	**Antikythira Is**	**2.64**	**274**	P	**Pn**	**13 29 51.5**	**-0.4**
ANKY				S	**Sn**	**13 30 24.1**	**+1.2**
BLCB	**Balcova**	**2.68**	**8**	*e*PN	**Pn**	**13 29 53.9**	**+1.5**
BLCB	**Balcova**	**2.68**	**8**	*e*Pn	**Pn**	**13 29 53.9**	**+1.5**
CHOS	**Chios island**	**2.68**	**352**	*e*PN	**Pn**	**13 29 54.0**	**+1.5**
CHOS	**Chios island**	**2.68**	**352**	P	**Pn**	**13 29 53.4**	**+0.9**
CHOS	**Chios island**	**2.68**	**352**	P	**Pn**	**13 29 53.4**	**+0.9**
CHOS	**Chios island**	**2.68**	**352**	*e*Pn	**Pn**	**13 29 54.0**	**+1.5**
CHOS				S	**Sn**	**13 30 25.9**	**+1.9**
CHOS	**Chios island**	**2.68**	**352**	P	**Pn**	**13 29 53.0**	**+0.4**
CHOS				S	**Sn**	**13 30 25.9**	**+1.9**
CHOS	**Chios island**	**2.68**	**352**	P	**Pn**	**13 29 53.4**	**+0.9**
IZM	**Izmir**	**2.72**	**12**	*e*PN	**Pn**	**13 29 54.3**	**+1.2**
IZM	**Izmir**	**2.72**	**12**	*e*Pn	**Pn**	**13 29 54.3**	**+1.2**
GLHS	**Glhisar (BURDU**	**2.77**	**58**	*e*PN	**Pn**	**13 29 53.7**	**-0.1**
GLHS	**Glhisar (BURDU**	**2.77**	**58**	*e*Pn	**Pn**	**13 29 53.7**	**-0.1**
DENT	**Denizli**	**2.84**	**44**	*e*PN	**Pn**	**13 29 55.7**	**+1.0**
DENT	**Denizli**	**2.84**	**44**	*e*Pn	**Pn**	**13 29 55.7**	**+1.0**
KYTH	**Kithira**	**2.89**	**282**	P	**Pn**	**13 29 55.3**	**0.0**
KYTH	**Kithira**	**2.89**	**282**	P	**Pn**	**13 29 55.3**	**0.0**
KYTH				S	**Sn**	**13 30 30.7**	**+1.7**
KYTH	**Kithira**	**2.89**	**282**	P	**Pn**	**13 29 54.9**	**-0.4**
KYTH	**Kithira**	**2.89**	**282**	P	**Pn**	**13 29 55.3**	**0.0**
ELL	**Elmali**	**2.90**	**69**	*e*PN	**Pn**	**13 29 55.5**	**-0.1**
ELL	**Elmali**	**2.90**	**69**	*e*Pn	**Pn**	**13 29 55.5**	**-0.1**
VLY	**Voula,Athens**	**3.06**	**315**	P	**Pn**	**13 29 59.6**	**+2.0**
VLY	**Voula,Athens**	**3.06**	**315**	P	**Pn**	**13 29 59.6**	**+2.0**
VLY				S	**Sn**	**13 30 34.2**	**+1.1**

VLY	Voula,Athens	3.06	315	P	Pn	13 30 00.2	+2.6
VLY				S	Sn	13 30 34.2	+1.1
VLY				AML	AML	13 30 37.5	
VLY				AML	AML	13 30 54.5	
VLY	Voula,Athens	3.06	315	P	Pn	13 29 59.6	+2.0
VLI	Veliai	3.08	290	P	Pn	13 29 58.5	+0.6
VLI				S	Sn	13 30 34.2	+0.6
VLI	Veliai	3.08	290	P	Pn	13 29 58.5	+0.6
VLI				S	Sn	13 30 34.9	+1.3
VLI	Veliai	3.08	290	P	Pn	13 29 57.9	+0.1
VLI				AML	AML	13 30 34.9	
VLI				S	Sn	13 30 34.9	+1.3
VLI				AML	AML	13 30 35.9	
VLI	Veliai	3.08	290	P	Pn	13 29 58.5	+0.6
VLI				S	Sn	13 30 34.2	+0.6
UZP	Denizli	3.12	42	*i* P	Pn	13 29 59.5	+1.0
UZP				*i* S	Sn	13 30 36.0	+1.3
PTL	Penteli	3.16	318	P	Pn	13 30 01.4	+2.5
PTL	Penteli	3.16	318	P	Pn	13 30 01.4	+2.5
PTL				S	Sn	13 30 35.9	+0.4
PTL	Penteli	3.16	318	P	Pn	13 30 01.9	+2.9
PTL				S	Sn	13 30 35.9	+0.4
PTL	Penteli	3.16	318	P	Pn	13 30 01.4	+2.5
ATH	Athens Observa	3.19	315	P	Pn	13 30 01.9	+2.6
ATH	Athens Observa	3.19	315	P	Pn	13 30 01.9	+2.6
ATH	Athens Observa	3.19	315	P	Pn	13 30 01.9	+2.6
ATH				S	Sn	13 30 37.2	+1.0
ATH	Athens Observa	3.19	315	P	Pn	13 30 01.9	+2.6
KRND	KRANIDI	3.19	302	P	Pn	13 30 01.5	+2.1
KRND	KRANIDI	3.19	302	P	Pn	13 30 01.5	+2.1
KRND				S	Sn	13 30 38.5	+2.2
KRND	KRANIDI	3.19	302	P	Pn	13 30 01.9	+2.5
KRND				S	Sn	13 30 38.5	+2.2
DID	Didima	3.20	305	P	Pn	13 30 01.3	+1.8
DID	Didima	3.20	305	P	Pn	13 30 01.3	+1.8
DID				S	Sn	13 30 38.0	+1.5
DID	Didima	3.20	305	P	Pn	13 30 01.8	+2.3
DID				S	Sn	13 30 38.0	+1.5
DID	Didima	3.20	305	P	Pn	13 30 01.3	+1.8
KULA	Kula-Manisa	3.25	31	*e*PN	Pn	13 30 01.6	+1.3
KULA	Kula-Manisa	3.25	31	P	Pn	13 30 02.2	+1.9
KULA	Kula-Manisa	3.25	31	*e*Pn	Pn	13 30 01.6	+1.3
KULA	Kula-Manisa	3.25	31	P	Pn	13 30 02.2	+1.9
KULA	Kula-Manisa	3.25	31	P	Pn	13 30 02.2	+1.9
AKHS	Akhisar	3.30	17	*i* P	Pn	13 30 02.5	+1.6
AKHS	Akhisar	3.30	17	P	Pn	13 30 02.5	+1.6
AKS	Akhisar	3.30	17	*e*PN	Pn	13 30 02.5	+1.6
AKS	Akhisar	3.30	17	*e*Pn	Pn	13 30 02.5	+1.6
KORT	Korkueli	3.32	66	*i* P	Pn	13 30 01.8	+0.5
KORT	Korkueli	3.32	66	P	Pn	13 30 01.8	+0.5
DKL	Dikili	3.35	5	*e*PN	Pn	13 30 03.4	+1.9
DKL	Dikili	3.35	5	*e*Pn	Pn	13 30 03.4	+1.9
EREA	Eretria	3.40	323	P	Pn	13 30 05.0	+2.7
EREA	Eretria	3.40	323	P	Pn	13 30 05.3	+3.0
EREA				S	Sn	13 30 43.6	+2.1
EREA	Eretria	3.40	323	P	Pn	13 30 05.3	+3.0
EREA				S	Sn	13 30 43.6	+2.1
EREA				AML	AML	13 30 44.4	
EREA				AML	AML	13 30 54.3	
PRK	Paraskevi	3.52	357	P	Pn	13 30 05.2	+1.4
PRK	Paraskevi	3.52	357	P	Pn	13 30 05.2	+1.4
PRK	Paraskevi	3.52	357	P	Pn	13 30 05.2	+1.4
PRK	Paraskevi	3.52	357	P	Pn	13 30 04.7	+0.9
PRK	Paraskevi	3.52	357	P	Pn	13 30 05.2	+1.4
ANTB	Antalya	3.52	69	*e*PN	Pn	13 30 03.5	-0.3
ANTB	Antalya	3.52	69	*e*Pn	Pn	13 30 03.5	-0.3
KHL	Karahalli	3.52	42	*e*PN	Pn	13 30 05.3	+1.4
KHL	Karahalli	3.52	42	*e*Pn	Pn	13 30 05.3	+1.4
SIGR	SIGRI	3.52	351	*e*PN	Pn	13 30 05.6	+1.8
SIGR	SIGRI	3.52	351	P	Pn	13 30 05.3	+1.5
SIGR	SIGRI	3.52	351	P	Pn	13 30 05.3	+1.5
SIGR	SIGRI	3.52	351	*e*Pn	Pn	13 30 05.6	+1.8
SIGR	SIGRI	3.52	351	P	Pn	13 30 04.7	+1.0
SIGR	SIGRI	3.52	351	P	Pn	13 30 05.3	+1.5
KHAL	Karahalli	3.53	41	*i* P	Pn	13 30 05.6	+1.5
KHAL				*i* S	Sn	13 30 41.5	-3.3
KHAL	Karahalli	3.53	41	P	Pn	13 30 05.6	+1.5
KHAL				S	Sn	13 30 41.5	-3.3
VILL	Villia	3.55	314	P	Pn	13 30 07.5	+3.2
AYVA	Ayvalik	3.57	2	*i* P	Pn	13 30 05.8	+1.2
AYVA	Ayvalik	3.57	2	P	Pn	13 30 05.8	+1.2
VIL2	Platees	3.61	314	P	Pn	13 30 07.5	+2.5
LTK	Loutraki	3.67	310	P	Pn	13 30 08.4	+2.5
LTK	Loutraki	3.67	310	P	Pn	13 30 08.4	+2.5
LTK	Loutraki	3.67	310	P	Pn	13 30 08.9	+3.0
LTK	Loutraki	3.67	310	P	Pn	13 30 08.4	+2.5
BCK	Bucak	3.68	61	*e*PN	Pn	13 30 07.1	+1.0
BCK	Bucak	3.68	61	*e*Pn	Pn	13 30 07.1	+1.0
DEMI	Demirci	3.73	27	*i* P	Pn	13 30 08.3	+1.5
DEMI				*i* S	Sn	13 30 49.2	-0.3
DEMI	Demirci	3.73	27	P	Pn	13 30 08.3	+1.5
DEMI				S	Sn	13 30 49.2	-0.3
VLX	Vlachokerasia	3.73	297	P	Pn	13 30 08.0	+1.2
VLX	Vlachokerasia	3.73	297	P	Pn	13 30 08.0	+1.2
VLX				S	Sn	13 30 51.2	+1.6
VLX	Vlachokerasia	3.73	297	P	Pn	13 30 08.5	+1.7
VLX				S	Sn	13 30 51.2	+1.6
VLX	Vlachokerasia	3.73	297	P	Pn	13 30 08.0	+1.2
ISP	Isparta	3.81	56	*e*PN	Pn	13 30 08.3	+0.4
ISP	Isparta	3.81	56	P	Pn	13 30 08.1	+0.1
ISP	Isparta	3.81	56	Pn	Pn	13 30 08.1	+0.1
ISP				Sn	Sn	13 30 50.5	-1.1
ISP	Isparta	3.81	56	*e*P	Pn	13 30 08.0	+0.1
ISP	Isparta	3.81	56	*e*P	Pn	13 30 08.0	+0.1
ISP	Isparta	3.81	56	*e*Pn	Pn	13 30 08.3	+0.4
ISP	Isparta	3.81	56	*e*Pn	Pn	13 30 08.0	0.0
PROD	Prodromos	3.86	312	P	Pn	13 30 11.5	+3.1
PROD	Prodromos	3.86	312	P	Pn	13 30 11.5	+3.1
TRIP	Tripoli	3.88	299	P	Pn	13 30 11.1	+2.3
TRIP				S	Sn	13 30 54.4	+1.2
TRIP	Tripoli	3.88	299	P	Pn	13 30 11.1	+2.3
TRIP				S	Sn	13 30 54.4	+1.2
SUTC	Sutluce-Ispart	3.98	63	*e*PN	Pn	13 30 11.3	+1.0
SUTC	Sutluce-Ispart	3.98	63	*e*Pn	Pn	13 30 11.3	+1.0
ITM	Ithomi	4.00	293	P	Pn	13 30 11.7	+1.4
ITM	Ithomi	4.00	293	P	Pn	13 30 11.7	+1.4
ITM				S	Sn	13 30 56.9	+1.0
ITM	Ithomi	4.00	293	P	Pn	13 30 11.9	+1.6
ITM				S	Sn	13 30 56.9	+1.0
ITM				AML	AML	13 31 06.2	
ITM				AML	AML	13 31 06.6	
	comp=E,91165µm,1.3s						
ITM	Ithomi	4.00	293	P	Pn	13 30 11.7	+1.4
GEDZ	Gediz	4.02	34	*e*PN	Pn	13 30 13.1	+2.4
GEDZ	Gediz	4.02	34	*e*Pn	Pn	13 30 13.1	+2.4
AOS	Alonnisos	4.04	329	*e*PN	Pn	13 30 13.3	+2.5
AOS	Alonnisos	4.04	329	P	Pn	13 30 13.2	+2.4
AOS	Alonnisos	4.04	329	P	Pn	13 30 13.2	+2.4
AOS	Alonnisos	4.04	329	P	Pn	13 30 13.2	+2.4
AOS	Alonnisos	4.04	329	P	Pn	13 30 13.2	+2.4
BALB	Balikesir	4.04	15	*e*PN	Pn	13 30 12.9	+2.0
BALB	Balikesir	4.04	15	*e*Pn	Pn	13 30 12.9	+2.0
PYL	PYLOS	4.05	288	P	Pn	13 30 10.9	-0.2
PYL	PYLOS	4.05	288	P	Pn	13 30 11.1	0.0
PYL				S	Sn	13 30 57.6	+0.4
PYL	PYLOS	4.05	288	P	Pn	13 30 11.1	0.0
PYL				S	Sn	13 30 57.6	+0.4
PYL	PYLOS	4.05	288	P	Pn	13 30 10.9	-0.2
LKR	Lokris	4.06	317	P	Pn	13 30 13.8	+2.6
LKR	Lokris	4.06	317	P	Pn	13 30 13.8	+2.6
LKR				S	Sn	13 30 58.7	+1.1
LKR	Lokris	4.06	317	P	Pn	13 30 14.5	+3.3
LKR				S	Sn	13 30 58.7	+1.1
LKR				AML	AML	13 31 28.3	
	comp=E,62546µm,1.3s						
LKR				AML	AML	13 31 29.5	
	comp=N,97444µm,1.3s						
LKR	Lokris	4.06	317	P	Pn	13 30 13.8	+2.6
BAGO	Egridir - ISPA	4.08	55	*i* P	Pn	13 30 11.8	+0.2
GDZ	Gediz	4.08	34	*i* P	Pn	13 30 13.3	+1.6
GDZ				*i* S	Sn	13 30 56.1	-2.1
GDZ	Gediz	4.08	34	P	Pn	13 30 13.3	+1.6
GDZ				S	Sn	13 30 56.2	-2.1
BALY	Balya	4.09	12	*i* P	Pn	13 30 13.1	+1.4
BALY	Balya	4.09	12	P	Pn	13 30 13.1	+1.4
EZN	Ezine	4.09	358	*e*PN	Pn	13 30 13.3	+1.7
EZN	Ezine	4.09	358	P	Pn	13 30 13.1	+1.5
EZN	Ezine	4.09	358	P	Pn	13 30 13.1	+1.5
EZN	Ezine	4.09	358	P	Pn	13 30 13.1	+1.5

EZN	Ezine	4.09	358	P	Pn	13 30 13.1	+1.5
BOZC	Bozcaada	4.12	355	*i* P	Pn	13 30 13.6	+1.6
DURS	Dursunbey	4.15	21	*i* P	Pn	13 30 14.4	+1.8
DURS	Dursunbey	4.15	21	P	Pn	13 30 14.4	+1.8
DSF	Desfina	4.18	311	P	Pn	13 30 15.1	+2.2
DSF	Desfina	4.18	311	P	Pn	13 30 15.1	+2.2
DSF	Desfina	4.18	311	P	Pn	13 30 15.4	+2.5
DSF	Desfina	4.18	311	P	Pn	13 30 15.1	+2.2
DST	Dursunbey	4.20	22	*e*PN	Pn	13 30 15.2	+2.0
DST	Dursunbey	4.20	22	*e*Pn	Pn	13 30 15.2	+2.0
KLV	Kalavryta, Ach	4.21	305	P	Pn	13 30 14.6	+1.3
KLV	Kalavryta, Ach	4.21	305	P	Pn	13 30 14.6	+1.3
KLV				S	Sn	13 31 02.8	+1.5
KLV	Kalavryta, Ach	4.21	305	P	Pn	13 30 15.8	+2.5
KLV				S	Sn	13 31 02.8	+1.5
KLV				AML	AML	13 31 07.2	
KLV				AML	AML	13 31 11.1	
KLV	Kalavryta, Ach	4.21	305	P	Pn	13 30 14.6	+1.3
SKIA	Skiathos	4.21	325	P	Pn	13 30 16.1	+2.8
SKIA	Skiathos	4.21	325	P	Pn	13 30 16.6	+3.3
SKIA	Skiathos	4.21	325	P	Pn	13 30 16.6	+3.3
SHUT	Suhut-Afyon	4.26	47	*e*PN	Pn	13 30 15.7	+1.6
SHUT	Suhut-Afyon	4.26	47	*e*Pn	Pn	13 30 15.7	+1.6
AMT	Artemida-Makis	4.29	296	P	Pn	13 30 15.8	+1.5
AMT	Artemida-Makis	4.29	296	P	Pn	13 30 15.8	+1.5
AMT	Artemida-Makis	4.29	296	P	Pn	13 30 17.5	+3.2
LIA	Limnos Island	4.30	346	P	Pn	13 30 16.1	+1.7
LIA	Limnos Island	4.30	346	P	Pn	13 30 16.1	+1.7
LIA	Limnos Island	4.30	346	P	Pn	13 30 16.1	+1.7
SLUM	Salum	4.37	195	P	Pn	13 30 11.8	-3.7
	baz=198						
SLUM	Salum	4.37	195	P	Pn	13 30 11.8	-3.7
TVSB	Tavsanli	4.37	31	*e*PN	Pn	13 30 17.6	+2.0
TVSB	Tavsanli	4.37	31	*e*Pn	Pn	13 30 17.6	+2.0
KALE	Kalithea	4.41	308	P	Pn	13 30 17.6	+1.5
KALE	Kalithea	4.41	308	P	Pn	13 30 17.2	+1.2
KALE				S	Sn	13 31 08.0	+1.8
KALE	Kalithea	4.41	308	P	Pn	13 30 17.2	+1.2
KALE				S	Sn	13 31 08.0	+1.8
KALE	Kalithea	4.41	308	P	Pn	13 30 17.6	+1.5
MATC	Matruh	4.41	172	P	Pn	13 30 11.5	-4.5
	baz=174						
LAKA	Lakka	4.43	306	P	Pn	13 30 17.4	+1.1
LAKA	Lakka	4.43	306	P	Pn	13 30 17.4	+1.1
LAKA				S	Sn	13 31 08.8	+2.2
LAKA	Lakka	4.43	306	P	Pn	13 30 19.5	+3.2
LAKA				S	Sn	13 31 08.8	+2.2
LAKA	Lakka	4.43	306	P	Pn	13 30 17.4	+1.1
NEO	Neokhori	4.44	324	P	Pn	13 30 19.3	+2.9
NEO	Neokhori	4.44	324	P	Pn	13 30 19.8	+3.4
NEO	Neokhori	4.44	324	P	Pn	13 30 19.8	+3.4
NEO	Neokhori	4.44	324	P	Pn	13 30 19.3	+2.9
DRO	Drossia	4.47	301	P	Pn	13 30 18.5	+1.7
DRO	Drossia	4.47	301	P	Pn	13 30 18.1	+1.3
DRO				S	Sn	13 31 08.9	+1.4
DRO	Drossia	4.47	301	P	Pn	13 30 18.1	+1.3
DRO				S	Sn	13 31 08.9	+1.4
SERG	Sergoula	4.48	308	P	Pn	13 30 18.3	+1.4
SERG	Sergoula	4.48	308	P	Pn	13 30 18.3	+1.4
GADA	Gvkgeada	4.48	354	*e*PN	Pn	13 30 19.0	+2.1
GADA	Gvkgeada	4.48	354	P	Pn	13 30 18.3	+1.4
GADA	Gvkgeada	4.48	354	P	Pn	13 30 18.3	+1.4
GADA	Gvkgeada	4.48	354	*e*Pn	Pn	13 30 19.0	+2.1
GADA	Gvkgeada	4.48	354	P	Pn	13 30 18.3	+1.4
XOR	Xorichti	4.50	325	P	Pn	13 30 19.9	+2.7
XOR	Xorichti	4.50	325	P	Pn	13 30 20.6	+3.3
XOR	Xorichti	4.50	325	P	Pn	13 30 20.6	+3.3
XOR	Xorichti	4.50	325	P	Pn	13 30 19.9	+2.7
RODI	Rodini	4.53	306	P	Pn	13 30 20.8	+3.2
RODI	Rodini	4.53	306	P	Pn	13 30 20.8	+3.2
EFP	Efpalio	4.58	307	P	Pn	13 30 19.9	+1.6
EFP	Efpalio	4.58	307	P	Pn	13 30 19.9	+1.6
KNL	Bal˜–kesir	4.60	9	*i* P	Pn	13 30 19.7	+1.2
BOLV	Bolvadin	4.61	48	*i* P	Pn	13 30 20.3	+1.5
BOLV	Bolvadin	4.61	48	P	Pn	13 30 20.3	+1.5
HMAT	Matruh	4.65	174	P	Pn	13 30 15.4	-3.9
	baz=176						
HMAT				AMP		13 31 00.0	
	comp=N,33000µm,0.7s,logA/T=7.7,baz=176						
HMAT				S	Sn	13 31 03.2	-8.8
	baz=176						
HMAT	Matruh	4.65	174	P	Pn	13 30 15.4	-3.9
FYTO	Fytoko, Volos	4.66	323	P	Pn	13 30 22.1	+2.8
FYTO	Fytoko, Volos	4.66	323	P	Pn	13 30 22.7	+3.4
FYTO	Fytoko, Volos	4.66	323	P	Pn	13 30 22.7	+3.4
FYTO	Fytoko, Volos	4.66	323	P	Pn	13 30 22.1	+2.8
GELI	Tayfur-Gelibol	4.66	359	*e*PN	Pn	13 30 21.5	+2.2
GELI	Tayfur-Gelibol	4.66	359	*e*Pn	Pn	13 30 21.5	+2.2
ANX	Ano Chora	4.67	309	P	Pn	13 30 21.3	+1.7
ANX	Ano Chora	4.67	309	P	Pn	13 30 21.3	+1.7
RLS	Riolos of Patr	4.69	301	P	Pn	13 30 21.7	+2.0
RLS	Riolos of Patr	4.69	301	P	Pn	13 30 21.7	+2.0
RLS				S	Sn	13 31 13.6	+0.8
RLS	Riolos of Patr	4.69	301	S	Sn	13 31 13.6	+0.8
RLS				AML	AML	13 31 26.6	
	comp=N,88140µm,1.9s						
RLS				AML	AML	13 31 29.8	
	comp=E,62052µm,1.8s						
RLS	Riolos of Patr	4.69	301	P	Pn	13 30 21.7	+2.0
KRBG	Karabiga-Canak	4.69	7	*e*PN	Pn	13 30 22.0	+2.2
KRBG	Karabiga-Canak	4.69	7	*e*Pn	Pn	13 30 22.0	+2.2
ORLT	Orhaneli	4.69	23	*e*PN	Pn	13 30 22.0	+2.2
ORLT	Orhaneli	4.69	23	*e*Pn	Pn	13 30 22.0	+2.2
GAZI	Gazipasa	4.71	82	*i* P	Pn	13 30 17.3	-2.7
GAZI				*i* S	Sn	13 31 06.5	-6.8
GAZI	Gazipasa	4.71	82	P	Pn	13 30 17.3	-2.7
EDC	Edincik	4.72	12	*e*PN	Pn	13 30 22.2	+2.0
EDC	Edincik	4.72	12	*e*Pn	Pn	13 30 22.2	+2.0
BNT	Bandirma	4.74	13	*e*PN	Pn	13 30 22.9	+2.4
BNT	Bandirma	4.74	13	*e*Pn	Pn	13 30 22.9	+2.4
KCTX	Karacabey (Bur	4.75	17	*e*PN	Pn	13 30 22.3	+1.7
KCTX	Karacabey (Bur	4.75	17	*e*Pn	Pn	13 30 22.3	+1.7
AUKIR	K˜–rka- Seyitg	4.75	41	*i* P	Pn	13 30 22.4	+1.7
AUKIR	K˜–rka- Seyitg	4.75	41	P	Pn	13 30 22.4	+1.7
PAIG	Paliouri	4.76	332	P	Pn	13 30 23.1	+2.3
PAIG	Paliouri	4.76	332	P	Pn	13 30 23.1	+2.3
PAIG	Paliouri	4.76	332	P	Pn	13 30 23.0	+2.3
PAIG	Paliouri	4.76	332	P	Pn	13 30 23.0	+2.2
PAIG	Paliouri	4.76	332	P	Pn	13 30 23.1	+2.3
AKMC	Akamas	4.78	97	P	Pn	13 30 17.7	-3.3
	baz=277						
AKMC	Akamas	4.78	97	P	Pn	13 30 17.7	-3.3
SMTH	Samothraki Isl	4.80	351	P	Pn	13 30 22.4	+1.1
SMTH	Samothraki Isl	4.80	351	P	Pn	13 30 22.4	+1.1
SMTH	Samothraki Isl	4.80	351	P	Pn	13 30 21.6	+0.3
SMTH	Samothraki Isl	4.80	351	P	Pn	13 30 22.4	+1.1
AXS	Araxos	4.81	302	P	Pn	13 30 23.8	+2.3
AXS	Araxos	4.81	302	P	Pn	13 30 23.8	+2.3
PPCY	Paphos	4.82	98	P	Pn	13 30 18.1	-3.4
	baz=279						
ULDT	Uludag	4.86	24	*i* P	Pn	13 30 24.3	+2.1
ULDT	Uludag	4.86	24	P	Pn	13 30 24.3	+2.1
ERIK	Erikli-Kesan	4.93	360	*e*PN	Pn	13 30 25.2	+2.2
ERIK	Erikli-Kesan	4.93	360	*e*Pn	Pn	13 30 25.2	+2.2
MRMT	Marmara Adasi	4.93	9	*e*PN	Pn	13 30 25.3	+2.2
MRMT	Marmara Adasi	4.93	9	*e*Pn	Pn	13 30 25.3	+2.2
EVR	Evrytania	4.94	312	P	Pn	13 30 25.0	+1.8
EVR	Evrytania	4.94	312	P	Pn	13 30 25.0	+1.8
EVR	Evrytania	4.94	312	P	Pn	13 30 26.4	+3.2
EVR	Evrytania	4.94	312	P	Pn	13 30 25.0	+1.8
PVO	Paravola	4.94	307	P	Pn	13 30 27.4	+4.3
PVO	Paravola	4.94	307	P	Pn	13 30 27.4	+4.3
RKY	Sarkoy-Tekirda	4.97	6	*e*PN	Pn	13 30 26.2	+2.5
RKY	Sarkoy-Tekirda	4.97	6	*e*Pn	Pn	13 30 26.2	+2.5
ALFC	Alefka	4.97	95	P	Pn	13 30 20.5	-3.2
	baz=276						
ALFC	Alefka	4.97	95	P	Pn	13 30 20.5	-3.2
SART	Tekirdag	4.97	6	*i* P	Pn	13 30 26.1	+2.4
SART	Tekirdag	4.97	6	P	Pn	13 30 26.1	+2.4
MDNY	Mudanya-Bursa	4.98	21	*e*PN	Pn	13 30 25.7	+1.9
MDNY	Mudanya-Bursa	4.98	21	*e*Pn	Pn	13 30 25.7	+1.9
IGD	Bursa	4.99	24	*i* P	Pn	13 30 24.6	+0.8
ENEZ	Enez	5.01	357	*e*PN	Pn	13 30 26.3	+2.3
ENEZ	Enez	5.01	357	P	Pn	13 30 26.1	+2.0
ENEZ	Enez	5.01	357	P	Pn	13 30 26.1	+2.0
OUR	Ouranopolis	5.02	337	*e*PN	Pn	13 30 26.7	+2.4
OUR	Ouranopolis	5.02	337	P	Pn	13 30 26.4	+2.1
OUR	Ouranopolis	5.02	337	P	Pn	13 30 26.4	+2.1
OUR	Ouranopolis	5.02	337	P	Pn	13 30 26.4	+2.1
OUR	Ouranopolis	5.02	337	*e*Pn	Pn	13 30 26.7	+2.4

OUR	Ouranopolis	5.02	337	P	Pn	13 30 26.4	+2.1
OUR	Ouranopolis	5.02	337	P	Pn	13 30 26.4	+2.1
AUKUT	KUTAHYA	5.03	32	*i* P	Pn	13 30 19.9	-4.7
AUKUT	KUTAHYA	5.03	32	P	Pn	13 30 19.9	-4.7
KESN	Edirne-Kesan	5.09	1	*i* P	Pn	13 30 27.5	+1.9
KESN	Edirne-Kesan	5.09	1	P	Pn	13 30 27.5	+1.9
ESKT	Eskisehir	5.09	41	*i* P	Pn	13 30 26.2	+0.8
SEYT	Eskypehyr	5.09	41	P	Pn	13 30 26.2	+0.8
KMER	Konya-Meram	5.10	65	*i* P	Pn	13 30 26.1	+0.7
KMER				*i* S	Sn	13 31 20.0	-3.0
KMER	Konya-Meram	5.10	65	P	Pn	13 30 26.1	+0.7
KMER				S	Sn	13 31 20.0	-3.0
GEMT	Gemlik	5.14	23	*e*PN	Pn	13 30 27.8	+1.9
GEMT	Gemlik	5.14	23	*e*Pn	Pn	13 30 27.8	+1.9
IZI	Iznik	5.14	26	*e*PN	Pn	13 30 28.2	+2.1
IZI	Iznik	5.14	26	*e*Pn	Pn	13 30 28.2	+2.1
PDO	Prodromos	5.15	305	P	Pn	13 30 27.6	+1.5
PDO	Prodromos	5.15	305	P	Pn	13 30 27.6	+1.5
PDO	Prodromos	5.15	305	P	Pn	13 30 29.9	+3.8
ARMT	Armutlu	5.16	20	*e*PN	Pn	13 30 27.7	+1.5
ARMT	Armutlu	5.16	20	*e*Pn	Pn	13 30 27.7	+1.5
CAVI	Cavuskoy	5.17	29	*e*PN	Pn	13 30 28.3	+2.0
CAVI	Cavuskoy	5.17	29	*e*Pn	Pn	13 30 28.3	+2.0
BORA	Eskisehir	5.17	36	*i* P	Pn	13 30 28.2	+1.8
BORA	Eskisehir	5.17	36	P	Pn	13 30 28.2	+1.8
ALN	Alexandroupoli	5.17	356	*e*PN	Pn	13 30 27.8	+1.4
ALN	Alexandroupoli	5.17	356	P	Pn	13 30 28.1	+1.8
ALN	Alexandroupoli	5.17	356	P	Pn	13 30 28.1	+1.8
ALN	Alexandroupoli	5.17	356	*e*Pn	Pn	13 30 27.8	+1.4
ALN	Alexandroupoli	5.17	356	P	Pn	13 30 28.1	+1.8
ALN	Alexandroupoli	5.17	356	P	Pn	13 30 27.1	+0.8
ALN	Alexandroupoli	5.17	356	P	Pn	13 30 28.1	+1.8
KFL	Anninata	5.19	299	P	Pn	13 30 27.2	+0.6
KFL	Anninata	5.19	299	P	Pn	13 30 27.2	+0.6
KFL	Anninata	5.19	299	P	Pn	13 30 28.4	+1.8
LEF	Lefka	5.22	95	*e*PN	Pn	13 30 23.0	-4.0
LEF	Lefka	5.22	95	*e*Pn	Pn	13 30 23.0	-4.0
PLG	Polygyros	5.24	333	P	Pn	13 30 29.5	+2.1
PLG	Polygyros	5.24	333	P	Pn	13 30 29.5	+2.1
PLG	Polygyros	5.24	333	P	Pn	13 30 29.4	+2.1
PLG	Polygyros	5.24	333	P	Pn	13 30 29.4	+2.1
PLG	Polygyros	5.24	333	P	Pn	13 30 29.5	+2.1
KDHN	Kadinhani	5.25	56	*i* P	Pn	13 30 27.8	+0.3
KDHN	Kadinhani	5.25	56	P	Pn	13 30 27.8	+0.3
THL	Klokotos Trika	5.25	318	P	Pn	13 30 29.9	+2.5
THL	Klokotos Trika	5.25	318	P	Pn	13 30 29.9	+2.5
AKDN	Akdeniz- K˜–br	5.25	93	*e*PN	Pn	13 30 25.0	-2.5
AKDN	Akdeniz- K˜–br	5.25	93	*e*Pn	Pn	13 30 25.0	-2.5
LADK	Ladik-KONYA	5.27	60	*e*PN	Pn	13 30 28.0	+0.2
LADK	Ladik-KONYA	5.27	60	*e*Pn	Pn	13 30 28.0	+0.2
SZAC	Souni	5.28	99	P	Pn	13 30 24.2	-3.6
	baz=280						
KIZT	Kizilcal	5.29	52	*e*PN	Pn	13 30 29.1	+1.1
KIZT	Kizilcal	5.29	52	*e*Pn	Pn	13 30 29.1	+1.1
TKR	Tekirdag	5.31	8	*e*PN	Pn	13 30 30.5	+2.3
TKR	Tekirdag	5.31	8	*e*Pn	Pn	13 30 30.5	+2.3
ADVT	Abdulvahap	5.33	27	*e*PN	Pn	13 30 30.8	+2.3
ADVT	Abdulvahap	5.33	27	*e*Pn	Pn	13 30 30.8	+2.3
VLS	Valsamata	5.36	299	P	Pn	13 30 28.8	-0.1
VLS	Valsamata	5.36	299	P	Pn	13 30 28.8	-0.1
VLS	Valsamata	5.36	299	P	Pn	13 30 28.8	-0.1
VLS	Valsamata	5.36	299	P	Pn	13 30 28.8	-0.1
LIT	Litokhoron	5.41	325	P	Pn	13 30 32.7	+3.0
LIT	Litokhoron	5.41	325	P	Pn	13 30 32.7	+3.0
LIT	Litokhoron	5.41	325	P	Pn	13 30 33.3	+3.6
LIT	Litokhoron	5.41	325	P	Pn	13 30 33.3	+3.6
LIT	Litokhoron	5.41	325	P	Pn	13 30 32.7	+3.0
SVRH	Sivrihisar-ESK	5.42	45	*e*PN	Pn	13 30 31.1	+1.3
SVRH	Sivrihisar-ESK	5.42	45	*e*Pn	Pn	13 30 31.1	+1.3
GPA	Golpazari	5.43	32	*e*PN	Pn	13 30 31.8	+1.8
GPA	Golpazari	5.43	32	*e*Pn	Pn	13 30 31.8	+1.8
CRLT	Corlu	5.47	9	*e*PN	Pn	13 30 32.7	+2.3
CRLT	Corlu	5.47	9	*e*Pn	Pn	13 30 32.7	+2.3
MAMC	Mammari	5.47	94	P	Pn	13 30 27.2	-3.3
	baz=275						
KAVA	Kavala	5.49	344	P	Pn	13 30 32.4	+1.7
KAVA	Kavala	5.49	344	P	Pn	13 30 32.4	+1.7
KAVA	Kavala	5.49	344	P	Pn	13 30 33.8	+3.1
KAVA	Kavala	5.49	344	P	Pn	13 30 32.4	+1.7
BUY	Buyukada	5.50	21	*i* P	Pn	13 30 31.6	+0.9
DSL	Palaion Diasel	5.51	310	P	Pn	13 30 32.6	+1.6
DSL	Palaion Diasel	5.51	310	P	Pn	13 30 32.5	+1.6
DSL	Palaion Diasel	5.51	310	P	Pn	13 30 32.5	+1.5
DSL	Palaion Diasel	5.51	310	P	Pn	13 30 32.6	+1.6
HORT	Hortiatis	5.56	332	*e*PN	Pn	13 30 34.6	+2.9
HORT	Hortiatis	5.56	332	P	Pn	13 30 34.7	+2.9
HORT	Hortiatis	5.56	332	*e*Pn	Pn	13 30 34.6	+2.9
HORT	Hortiatis	5.56	332	P	Pn	13 30 35.1	+3.3
HORT	Hortiatis	5.56	332	P	Pn	13 30 35.1	+3.3
HORT	Hortiatis	5.56	332	P	Pn	13 30 34.7	+2.9
CSS	Mathiatis	5.60	96	*e*PN	Pn	13 30 28.0	-4.2
CSS	Mathiatis	5.60	96	P	Pn	13 30 28.4	-3.8
CSS				S	Sn	13 31 28.5	-6.7
CSS	Mathiatis	5.60	96	Pn	Pn	13 30 28.4	-3.8
CSS				Sn	Sn	13 31 27.3	-7.9
CSS	Mathiatis	5.60	96	*e*Pn	Pn	13 30 28.0	-4.2
CSS	Mathiatis	5.60	96	*e*Pn	Pn	13 30 28.3	-3.9
LKD2	Lefkada island	5.60	305	P	Pn	13 30 33.2	+1.0
LKD2	Lefkada island	5.60	305	P	Pn	13 30 33.2	+1.0
LKD2	Lefkada island	5.60	305	P	Pn	13 30 34.0	+1.7
LKD2	Lefkada island	5.60	305	P	Pn	13 30 33.2	+1.0
GULT	Gulveren	5.64	33	*e*PN	Pn	13 30 34.9	+2.1
GULT	Gulveren	5.64	33	*e*Pn	Pn	13 30 34.9	+2.1
THE	Thessaloniki	5.65	331	P	Pn	13 30 36.1	+3.3
THE	Thessaloniki	5.65	331	P	Pn	13 30 36.1	+3.3
THE	Thessaloniki	5.65	331	P	Pn	13 30 36.6	+3.8
THE	Thessaloniki	5.65	331	P	Pn	13 30 36.6	+3.8
THE	Thessaloniki	5.65	331	P	Pn	13 30 36.1	+3.3
SOH	Sokhos	5.67	335	P	Pn	13 30 36.3	+3.1
SOH	Sokhos	5.67	335	P	Pn	13 30 36.3	+3.1
SOH	Sokhos	5.67	335	P	Pn	13 30 36.5	+3.3
SOH	Sokhos	5.67	335	P	Pn	13 30 36.5	+3.3
SOH	Sokhos	5.67	335	P	Pn	13 30 36.3	+3.1
ISK	Istanbul-Kandi	5.68	20	*e*PN	Pn	13 30 34.5	+1.2
ISK	Istanbul-Kandi	5.68	20	P	Pn	13 30 34.3	+1.0
ISK	Istanbul-Kandi	5.68	20	P	Pn	13 30 34.3	+1.0
ISK	Istanbul-Kandi	5.68	20	*e*Pn	Pn	13 30 34.5	+1.2
ISK	Istanbul-Kandi	5.68	20	P	Pn	13 30 34.3	+1.0
AUMIH	MIHALICIK	5.69	42	*i* P	Pn	13 30 35.4	+1.9
CTKS	Kestanelik-??a	5.71	15	*e*PN	Pn	13 30 35.1	+1.5
CTKS	Kestanelik-??a	5.71	15	*e*Pn	Pn	13 30 35.1	+1.5
BGKT	Bogazkoy	5.71	17	*e*PN	Pn	13 30 35.2	+1.4
BGKT	Bogazkoy	5.71	17	*e*Pn	Pn	13 30 35.2	+1.4
LFK	Lefkose	5.72	93	*e*PN	Pn	13 30 30.7	-3.2
LFK	Lefkose	5.72	93	*e*Pn	Pn	13 30 30.7	-3.2
SPNC	Sapanca-Adapaz	5.76	30	*e*PN	Pn	13 30 37.0	+2.6
SPNC	Sapanca-Adapaz	5.76	30	*e*Pn	Pn	13 30 37.0	+2.6
CHBY	Cihanbeyli	5.81	59	*e*PN	Pn	13 30 35.9	+0.7
CHBY	Cihanbeyli	5.81	59	*e*Pn	Pn	13 30 35.9	+0.7
IKL	Isikli	5.81	83	*e*PN	Pn	13 30 33.3	-1.8
IKL	Isikli	5.81	83	*e*Pn	Pn	13 30 33.3	-1.8
KLYT	Kilyos	5.85	19	*e*PN	Pn	13 30 37.3	+1.7
KLYT	Kilyos	5.85	19	*e*Pn	Pn	13 30 37.3	+1.7
SRS	Serrai	5.86	338	P	Pn	13 30 37.5	+1.8
SRS	Serrai	5.86	338	P	Pn	13 30 37.5	+1.8
KPRO	Kipourio	5.88	317	P	Pn	13 30 38.3	+2.2
KPRO	Kipourio	5.88	317	P	Pn	13 30 38.3	+2.2
KPRO	Kipourio	5.88	317	P	Pn	13 30 38.8	+2.7
CTYL	Yalikoy Yolu	5.89	13	*e*PN	Pn	13 30 38.3	+2.1
CTYL	Yalikoy Yolu	5.89	13	*e*Pn	Pn	13 30 38.3	+2.1
KZN	Kozani	5.92	322	P	Pn	13 30 39.7	+3.0
KZN	Kozani	5.92	322	P	Pn	13 30 39.7	+3.0
KZN	Kozani	5.92	322	P	Pn	13 30 39.5	+2.8
KZN	Kozani	5.92	322	P	Pn	13 30 39.7	+3.0
SILT	Sile	5.93	23	*e*PN	Pn	13 30 38.7	+2.0
SILT	Sile	5.93	23	*e*Pn	Pn	13 30 38.7	+2.0
PHSR	Pinarhisar	5.94	7	*e*PN	Pn	13 30 38.9	+2.1
PHSR	Pinarhisar	5.94	7	*e*Pn	Pn	13 30 38.9	+2.1
BTAS	Taskesti	5.97	35	*i* P	Pn	13 30 39.6	+2.3
KDZ	Kurdzhali	5.97	352	*i* P	Pn	13 30 39.2	+1.9
JAN	Janina	5.98	313	P	Pn	13 30 38.9	+1.5
JAN	Janina	5.98	313	P	Pn	13 30 38.9	+1.5
JAN	Janina	5.98	313	P	Pn	13 30 38.9	+1.5
JAN	Janina	5.98	313	P	Pn	13 30 38.9	+1.5
MDUB	Mudurnu	5.99	36	*e*PN	Pn	13 30 39.7	+2.2
MDUB	Mudurnu	5.99	36	*e*Pn	Pn	13 30 39.7	+2.2
NVR	Nevrokopi	5.99	340	P	Pn	13 30 39.7	+2.1
KAND	Kocaeli-Kandir	6.07	27	*i* P	Pn	13 30 40.8	+2.2
SULT	Sultanhani-AKS	6.10	64	*e*PN	Pn	13 30 39.6	+0.5

SULT	Sultanhani-AKS	6.10	64	ePn	Pn	13 30 39.6	+0.5
EDRB	Edirne	6.11	1	ePN	Pn	13 30 41.2	+2.1
EDRB	Edirne	6.11	1	ePn	Pn	13 30 41.2	+2.1
RZN	Rozhen	6.12	347	iP	Pn	13 30 42.0	+2.6
KKUL	Konya-Kulu	6.12	54	iP	Pn	13 30 39.9	+0.5
KNT	Kendrikon	6.13	333	ePN	Pn	13 30 42.3	+2.8
KNT	Kendrikon	6.13	333	ePn	Pn	13 30 42.3	+2.8
KNT	Kendrikon	6.13	333	P	Pn	13 30 43.1	+3.7
KNT	Kendrikon	6.13	333	P	Pn	13 30 43.1	+3.7
SAHE	Sakarya_HENDEK	6.13	32	iP	Pn	13 30 40.9	+1.4
GRG	Griva	6.15	329	ePN	Pn	13 30 42.6	+2.9
GRG	Griva	6.15	329	ePn	Pn	13 30 42.6	+2.9
GRG	Griva	6.15	329	P	Pn	13 30 44.2	+4.5
GRG	Griva	6.15	329	P	Pn	13 30 44.2	+4.5
PHNC	Paralimni	6.16	95	P	Pn	13 30 37.1	-2.8
	baz=277						
KIZK	Mersin	6.20	81	iP	Pn	13 30 38.9	-1.4
EREN	Erenkoy	6.21	90	ePN	Pn	13 30 38.3	-2.2
EREN	Erenkoy	6.21	90	ePn	Pn	13 30 38.3	-2.2
IGT	Igoumenitsa	6.22	309	ePN	Pn	13 30 42.0	+1.3
IGT	Igoumenitsa	6.22	309	ePn	Pn	13 30 42.0	+1.3
MMB	Musomiste	6.25	340	iP	Pn	13 30 43.4	+2.3
KERG	Konya-Eregli	6.33	72	iP	Pn	13 30 41.1	-1.1
DIM	Dimitrovgrad	6.36	353	iP	Pn	13 30 44.8	+2.3
AFSR	Af¯ar-Bala (A	6.37	52	ePN	Pn	13 30 43.8	+1.0
AFSR	Af¯ar-Bala (A	6.37	52	ePn	Pn	13 30 43.8	+1.0
VAY	Valandovo	6.39	332	⇑iPn	Pn	13 30 46.2	+3.2
BR231	Keskin MP Arra	6.42	48	ePn	Pn	13 30 44.5	+1.0
LOD	Lodumlu	6.44	48	ePN	Pn	13 30 45.2	+1.5
LOD	Lodumlu	6.44	48	ePn	Pn	13 30 45.2	+1.5
ANTO	Ankara	6.44	48	eP	Pn	13 30 45.2	+1.4
ANTO	Ankara	6.44	48	eP	Pn	13 30 45.2	+1.4
ANTO	Ankara	6.44	48	ePn	Pn	13 30 45.2	+1.4
ANTO	Ankara	6.44	48	P	Pn	13 30 45.4	+1.6
	SNR=1062						
SERE	Sereflikochisa	6.45	58	ePN	Pn	13 30 44.0	+0.2
SERE	Sereflikochisa	6.45	58	ePn	Pn	13 30 44.1	+0.2
AKSY	AKSARAY - Alti	6.45	61	iP	Pn	13 30 44.1	+0.2
BBAL	Bala	6.46	52	iP	Pn	13 30 45.3	+1.2
BSTP	Nigde	6.46	68	iP	Pn	13 30 44.4	+0.4
FNA	Florina	6.48	323	ePN	Pn	13 30 45.8	+1.5
FNA	Florina	6.48	323	ePn	Pn	13 30 45.8	+1.5
FNA	Florina	6.48	323	P	Pn	13 30 49.0	+4.7
FNA	Florina	6.48	323	P	Pn	13 30 49.0	+4.7
PLD	Plovdiv	6.52	348	iP	Pn	13 30 47.9	+3.1
SWA2		6.54	188	P	Pn	13 30 41.2	-3.8
	baz=190						
SWA2		6.54	188	P	Pn	13 30 41.2	-3.8
MERS	Mersin	6.54	78	ePN	Pn	13 30 44.8	-0.3
MERS	Mersin	6.54	78	ePn	Pn	13 30 44.8	-0.3
BCAM	Yenicaga	6.68	39	iP	Pn	13 30 49.5	+2.4
BIA	Bitola	6.69	324	iPn	Pn	13 30 49.6	+2.6
BIA				iSn	Sn	13 32 00.5	-1.2
KKB	Krupnik	6.70	337	iP	Pn	13 30 50.2	+3.0
JMB	Yambol	6.73	0	iP	Pn	13 30 49.7	+2.1
KAMT	Kaman	6.75	55	ePN	Pn	13 30 48.4	+0.4
KAMT	Kaman	6.75	55	ePn	Pn	13 30 48.4	+0.4
DED	Mersin	6.77	77	iP	Pn	13 30 47.2	-1.0
NIG	Nigde	6.88	67	ePN	Pn	13 30 49.7	-0.2
NIG	Nigde	6.88	67	ePn	Pn	13 30 49.7	-0.2
BR131	Keskin Array S	6.89	53	ePn	Pn	13 30 50.0	0.0
BR131				eScP	ScP	13 41 00.6	+1.0
BRTR	Keskin Array B	6.89	53	P	Pn	13 30 50.3	+0.3
	comp=E,56nm,0.3s,baz=229,slow=11,SNR=851						
BRTR				S	Sn	13 31 59.5	-7.4
	baz=215,slow=23,SNR=2.9						
BRTR				ScP	ScP	13 41 00.2	+0.5
	comp=E,0.8nm,0.3s,baz=204,slow=2.6,SNR=6.5						
BRTR	Keskin Array B	6.89	53c	eP	Pn	13 30 50.2	+0.3
BRTR				pmax	pmax		
	comp=Z,1µm,1.0s						
BRTR	Keskin Array B	6.89	53	eP	Pn	13 30 50.2	+0.3
	comp=Z,1µm,1.0s						
OHR	Ohrid	7.01	322	iPn	Pn	13 30 53.0	+1.4
OHR				iSn	Sn	13 32 10.5	+0.7
KARA	Karaisali	7.02	75	ePN	Pn	13 30 51.2	-0.4
KARA	Karaisali	7.02	75	ePn	Pn	13 30 51.2	-0.4
PGB	Panagyurishte	7.05	346	iP	Pn	13 30 54.5	+2.4
HLW	Helwan	7.11	144	P	Pn	13 30 47.6	-5.3
	baz=145						
HLW	Helwan	7.11	144	P	Pn	13 30 47.6	-5.3
KRTS	Karatas	7.19	81	ePN	Pn	13 30 52.3	-1.6
KRTS	Karatas	7.19	81	ePn	Pn	13 30 52.3	-1.6
ELDT	Eldivan	7.21	47	iP	Pn	13 30 56.1	+1.8
AVNS	Nevsehir-Avano	7.29	63	iP	Pn	13 30 56.2	+0.7
SAFT	Safranbolu	7.31	39	ePN	Pn	13 30 56.6	+1.1
SAFT	Safranbolu	7.31	39	ePn	Pn	13 30 56.6	+1.1
CDAG	Cicekdag	7.32	56	iP	Pn	13 30 56.1	+0.4
VTS	Vitosha	7.32	340	⇑iP	Pn	13 30 59.0	+3.1
VTS	Vitosha	7.32	340	eP	Pn	13 30 58.9	+3.1
VTS	Vitosha	7.32	340	eP	Pn	13 30 58.9	+3.1
VTS	Vitosha	7.32	340	iP	Pn	13 30 59.2	+3.3
VTS	Vitosha	7.32	340	ePn	Pn	13 30 58.9	+3.1
ROIA	ROIAK	7.38	5	iP	Pn	13 30 59.4	+2.9
BTIN	Bart˜–n	7.39	35	iP	Pn	13 30 58.6	+1.9
SKO	Skopje	7.39	329	⇑iPn	Pn	13 31 00.0	+3.3
CANT	Cankiri	7.40	47	ePN	Pn	13 30 57.4	+0.6
HSAF	As Saff	7.41	144	P	Pn	13 30 51.9	-5.2
	baz=145						
HSAF	As Saff	7.41	144	P	Pn	13 30 51.9	-5.1
PRD	Provadia	7.49	5	iP	Pn	13 31 00.1	+2.2
GLL	Jalalah	7.52	143	P	Pn	13 30 53.3	-5.3
	baz=144						
GLL	Jalalah	7.52	143	P	Pn	13 30 53.3	-5.2
CEYT	Ceyhan	7.53	78	ePN	Pn	13 30 56.3	-2.3
CEYT	Ceyhan	7.53	78	ePn	Pn	13 30 56.3	-2.3
PVL	Pavlikeni	7.53	353	iP	Pn	13 30 59.9	+1.3
SZH	Strazhica	7.54	357	iP	Pn	13 31 01.0	+2.3
NAQL	Naqoura	7.56	108	eP	Pn	13 30 53.8	-5.3
BEYL	Beirut	7.59	102	eP	Pn	13 30 54.0	-5.4
HNTI	Hanita	7.60	108	Pn	Pn	13 30 53.9	-5.7
HNTI				Sn	Sn	13 32 14.6	-10
OFRI	‘Ofer	7.65	112	Pn	Pn	13 30 54.3	-6.0
ARNB	Al Arnab	7.66	86	eP	Pn	13 30 56.6	-3.8
ARNB				eS	Sn	13 32 15.3	-10
ARNB				AML	AML	13 32 22.4	
	comp=N,7µm,1.0s						
ARNB				AML	AML	13 32 26.8	
	comp=E,5µm,0.4s						
ARNB	Al Arnab	7.66	86	eP	Pn	13 30 57.0	-3.4
ARNB				eS	Sn	13 32 14.9	-11
	comp=E,5µm,0.4s						
KOZT	Kozan	7.67	74	ePN	Pn	13 30 59.0	-1.4
KOZT	Kozan	7.67	74	ePn	Pn	13 30 59.0	-1.4
TIR	Tirane	7.67	319	eP	Pn	13 31 00.8	+0.3
TIR	Tirane	7.67	319	eP	Pn	13 31 00.8	+0.3
TIR	Tirane	7.67	319	ePn	Pn	13 31 00.8	+0.3
DQRL	Deir Qamar	7.70	103	eP	Pn	13 30 55.8	-5.2
BHL	Bhannes	7.71	101	eP	Pn	13 30 55.3	-5.9
ILGA	Ilgaz	7.74	45	iP	Pn	13 31 03.6	+1.9
BLGI	Bet Lehem HaGe	7.76	110	Pn	Pn	13 30 56.1	-5.6
YAYL	Yayladag	7.77	85	iP	Pn	13 30 58.0	-3.9
CORM	Corum	7.78	53	ePN	Pn	13 31 02.4	+0.4
CORM	Corum	7.78	53	ePn	Pn	13 31 02.4	+0.4
MMA0B	Mount Meron ar	7.81	108	Pn	Pn	13 30 57.0	-5.4
MMAI	Mount Meron Ar	7.81	108	P	Pn	13 30 56.9	-5.5
	comp=E,706nm,0.3s,baz=311,slow=12,SNR=870						
MMAI				S	Sn	13 32 22.2	-7.1
	comp=E,2µm,0.3s,baz=304,slow=26,SNR=14						
MMAI				LR	LR	13 35 15.5	
	comp=E,21µm,21.3s,baz=300,slow=46						
TAHT	Tahtakopru-Hat	7.83	82	ePN	Pn	13 31 01.5	-1.2
TAHT	Tahtakopru-Hat	7.83	82	ePn	Pn	13 31 01.5	-1.2
HWQ	Hawqa	7.85	98	eP	Pn	13 30 58.5	-4.5
SLTI	Sal’it	7.87	114	Pn	Pn	13 30 57.4	-5.8
SLTI				Sn	Sn	13 32 19.8	-11
SLNF	Slenfeh	7.88	88	eP	Pn	13 30 58.8	-4.7
SLNF				eS	Sn	13 32 20.5	-11
SLNF				AML	AML	13 32 25.5	
	comp=E,19µm,0.3s						
SLNF				AML	AML	13 32 29.5	
	comp=N,13µm,0.4s						
SLNF	Slenfeh	7.88	88	eP	Pn	13 30 58.6	-4.9
SLNF				eS	Sn	13 32 20.1	-11
	comp=N,13µm,0.4s						
SUZ	Suez	7.91	136	P	Pn	13 30 58.5	-5.2
	baz=137						
SUZ	Suez	7.91	136	P	Pn	13 30 58.5	-5.2
TOS	Tosya	7.91	46	ePN	Pn	13 31 04.4	+0.6
TOS	Tosya	7.91	46	ePn	Pn	13 31 04.4	+0.6
MPEP	Malo Peshtene	7.92	345	iP	Pn	13 31 06.6	+2.8
KSDI	Kefar Szold	7.94	106	Pn	Pn	13 30 59.4	-4.8
KSDI				Sn	Sn	13 32 22.0	-10
YOZ	Yozgat	7.97	58	ePN	Pn	13 31 05.5	+0.7
YOZ	Yozgat	7.97	58	ePn	Pn	13 31 05.5	+0.7
RCY	Rachaya	7.98	104	eP	Pn	13 31 00.1	-4.7
BNN	Bunyan	8.04	64	ePN	Pn	13 31 06.0	+0.4
BNN	Bunyan	8.04	64	ePn	Pn	13 31 06.0	+0.4
PSN	Preselentsi	8.04	9	iP	Pn	13 31 07.3	+1.8
COAL	Corum-Alaca	8.05	53	iP	Pn	13 31 06.6	+0.8
BTCH	Batrach	8.05	85	eP	Pn	13 31 02.0	-3.8
BTCH				eS	Sn	13 32 25.0	-10
BTCH				AML	AML	13 32 35.2	
	comp=E,7µm,0.4s						
BTCH				AML	AML	13 32 43.2	
	comp=N,9µm,0.8s						
BTCH	Batrach	8.05	85	eP	Pn	13 31 02.2	-3.6
BTCH				eS	Sn	13 32 25.1	-10
	comp=N,9µm,0.8s						
MMLI	Mount Malkishu	8.06	112	Pn	Pn	13 31 00.3	-5.6
MMLI				Sn	Sn	13 32 24.1	-11
BRBR	Barbar	8.09	104	eP	Pn	13 31 01.9	-4.6
BRBR				eS	Sn	13 32 25.8	-11
BRBR				AML	AML	13 32 31.1	
	comp=E,5µm,1.0s						
BRBR				AML	AML	13 32 35.3	
	comp=N,13µm,0.7s						
BRBR	Barbar	8.09	104	eP	Pn	13 31 01.9	-4.6
BRBR				eS	Sn	13 32 26.1	-10
	comp=N,13µm,0.7s						
KSHT	Keshet	8.14	107	Pn	Pn	13 31 02.4	-4.5
KZIT	Kziot	8.14	124	ePN	Pn	13 31 01.2	-5.8
KZIT	Kziot	8.14	124	Pn	Pn	13 31 01.1	-5.9
KZIT	Kziot	8.14	124	ePn	Pn	13 31 01.2	-5.8
ZAF	Zafarana	8.19	140	P	Pn	13 31 02.2	-5.4
	baz=141						
ZAF	Zafarana	8.19	140	P	Pn	13 31 02.2	-5.4
HMDT	Nahal Hemdat	8.22	112	Pn	Pn	13 31 02.9	-5.2
MANR	Mangalia	8.23	10	⇑iP	Pn	13 31 10.0	+2.0
FKH	Fakeheh	8.23	98	eP	Pn	13 31 04.2	-4.1
DRWC	Darouich	8.23	81	eP	Pn	13 31 04.6	-3.6
DRWC				eS	Sn	13 32 29.5	-10
DRWC				AML	AML	13 32 39.4	
	comp=E,4µm,0.6s						
DRWC				AML	AML	13 32 41.1	
	comp=N,4µm,0.5s						
DRWC	Darouich	8.23	81	eP	Pn	13 31 04.6	-3.6
DRWC				eS	Sn	13 32 29.5	-10
	comp=N,4µm,0.5s						
REVI	Revivim	8.28	122	Pn	Pn	13 31 02.7	-6.2
REVI				Sn	Sn	13 32 28.6	-12
KAMA	Osmaniye	8.28	77	iP	Pn	13 31 06.4	-2.6
ZNM	Zenema	8.29	138	P	Pn	13 31 03.8	-5.1
	baz=139						
ZNM				S	Sn	13 32 27.9	-13
	baz=139						
ZNM	Zenema	8.29	138	P	Pn	13 31 03.8	-5.1
ZNM				S	Sn	13 32 27.9	-13
MARH	Ras Al Marh	8.34	99	eP	Pn	13 31 05.8	-4.1
MARH				eS	Sn	13 32 31.8	-11
MARH				AML	AML	13 32 40.4	
	comp=E,9µm,0.7s						
MARH				AML	AML	13 32 42.6	
	comp=N,6µm,0.5s						
MARH	Ras Al Marh	8.34	99	eP	Pn	13 31 05.8	-4.1
MARH				eS	Sn	13 32 31.8	-11
	comp=N,6µm,0.5s						
TCHB	Talchebab	8.38	109	eP	Pn	13 31 05.8	-4.4
TCHB				eS	Sn	13 32 32.3	-11
TCHB				AML	AML	13 32 39.7	
	comp=N,14µm,0.6s						
TCHB				AML	AML	13 32 45.4	
	comp=E,17µm,0.5s						
TCHB	Talchebab	8.38	109	eP	Pn	13 31 05.6	-4.6
TCHB				eS	Sn	13 32 32.3	-11
	comp=E,17µm,0.5s						
MSAB	Monastry St. A	8.41	6	⇑iP	Pn	13 31 12.4	+1.9
AYKD	Aykdinkavak	8.42	75	iP	Pn	13 31 08.9	-1.9
ULC	Ulcinj	8.43	320	⇑iPn	Pn	13 31 09.9	-1.0
ULC				eSn	Sn	13 32 41.2	-3.3
ULC	Ulcinj	8.43	320	⇑iPn	Pn	13 31 09.9	-1.0
ULC				eSn	Sn	13 32 41.2	-3.3
DSI	Dead Sea	8.45	117	Pn	Pn	13 31 06.4	-4.8
DSI				Sn	Sn	13 32 33.8	-11
TOTH	TOTAH	8.49	103	eP	Pn	13 31 08.1	-3.7
TOTH				eS	Sn	13 32 35.1	-11
TOTH				AML	AML	13 32 42.8	
	comp=E,4µm,0.8s						
TOTH				AML	AML	13 32 44.2	
	comp=N,7µm,0.6s						
TOTH	TOTAH	8.49	103	eP	Pn	13 31 08.1	-3.7
TOTH				eS	Sn	13 32 35.4	-11
	comp=N,7µm,0.6s						
EFOR	EFORIE	8.49	10	⇑iP	Pn	13 31 15.7	+4.1
TIP	Timpagrande	8.51	297	ePn	Pn	13 31 09.8	-2.2
KMRS	Kahramanmaras	8.51	75	ePN	Pn	13 31 10.3	-1.7
KMRS	Kahramanmaras	8.51	75	ePn	Pn	13 31 10.3	-1.7
BZK	Bozkurt	8.51	41	ePN	Pn	13 31 12.9	+0.9
BZK	Bozkurt	8.51	41	ePn	Pn	13 31 12.9	+0.9
CUSAR	Sarkisla-SIVAS	8.53	62	iP	Pn	13 31 13.7	+1.3
PVY	Plav	8.55	325	⇓iPn	Pn	13 31 13.5	+0.9
PVY				eSn	Sn	13 32 45.8	-1.7
KUZU	Kuzuini	8.57	80	iP	Pn	13 31 09.3	-3.5
MZDA	Masada	8.58	118	Pn	Pn	13 31 08.1	-4.8
RMNI	Mount Ramon	8.58	124	Pn	Pn	13 31 06.5	-6.5
BYBT	Boyabat	8.61	46	ePN	Pn	13 31 14.0	+0.7
BYBT	Boyabat	8.61	46	ePn	Pn	13 31 14.0	+0.7
BUC1	Bucharest	8.62	358	⇑iP	Pn	13 31 15.2	+1.9
DRME	Dracevica, Mon	8.62	321	⇓iPn	Pn	13 31 12.5	-1.0
DRME				eSn	Sn	13 32 45.4	-3.7
DRME	Dracevica, Mon	8.62	321	⇑iPn	Pn	13 31 12.5	-1.0
DRME				eSn	Sn	13 32 45.4	-3.7
BOYT	Boyabat	8.66	47	iP	Pn	13 31 15.5	+1.5
CVDA	Cernavoda	8.67	7	⇓iP	Pn	13 31 16.8	+2.8
BTMR	Bucharest-Geot	8.70	358	⇑iP	Pn	13 31 16.8	+2.3
GAZ	Gaziantep	8.71	77	ePN	Pn	13 31 12.4	-2.3
GAZ	Gaziantep	8.71	77	ePn	Pn	13 31 12.5	-2.3
PDG	Podgorica	8.77	322	⇑iPn	Pn	13 31 14.8	-0.6
PDG				eSn	Sn	13 32 50.1	-2.4
TTG	Podgorica	8.77	322	⇓iPn	Pn	13 31 14.6	-0.8
TTG				eSn	Sn	13 32 50.1	-2.4
BEY	Berane	8.80	326	⇑iPn	Pn	13 31 16.5	+0.6
BEY				eSn	Sn	13 32 51.9	-1.5
IVA	Berane	8.80	326	⇑iPn	Pn	13 31 16.5	+0.6
IVA				eSn	Sn	13 32 51.9	-1.5
TIRR	Tirgusor	8.83	9	⇑iP	Pn	13 31 17.6	+1.3
TIRR	Tirgusor	8.83	9	eP	Pn	13 31 17.6	+1.3
TIRR	Tirgusor	8.83	9	⇑iP	Pn	13 31 17.6	+1.3
TIRR	Tirgusor	8.83	9	ePn	Pn	13 31 17.6	+1.3
CRAR	CRAIOVA	8.84	347	⇑iP	Pn	13 31 18.2	+1.8
CUALT	Altinyayla-SIV	8.85	63	iP	Pn	13 31 18.6	+1.9
BUM	Brajici-Budva	8.86	320	⇑iPn	Pn	13 31 15.2	-1.5
BUM				eSn	Sn	13 32 51.6	-3.3
BUM	Brajici-Budva	8.86	320	⇑iPn	Pn	13 31 15.2	-1.5
BUM				eSn	Sn	13 32 51.6	-3.3
KRMI	Paran Flat	8.86	127	Pn	Pn	13 31 10.6	-6.2
KRMI	Paran Flat	8.86	127	Pn	Pn	13 31 10.6	-6.2
HUMR	Humele	8.87	353	⇑iP	Pn	13 31 18.8	+2.0
CEL	Celeste	8.89	290	ePn	Pn	13 31 14.9	-2.2
ZFRI	Zfri	8.89	123	Pn	Pn	13 31 10.9	-6.2
ZFRI	Zfri	8.89	123	Pn	Pn	13 31 10.9	-6.2
AMRR	Amara	8.89	4	⇓iP	Pn	13 31 19.0	+1.9
PRNI	Paran	8.90	125	Pn	Pn	13 31 10.7	-6.6
PRNI	Paran	8.90	125	Pn	Pn	13 31 10.7	-6.6
SULR		8.94	359	⇑iP	Pn	13 31 20.4	+2.7
ROOS	tl_alroos	8.96	97	eP	Pn	13 31 14.7	-3.4
ROOS				eS	Sn	13 32 46.7	-11
ROOS				AML	AML	13 32 53.5	
	comp=E,9µm,0.5s						
ROOS				AML	AML	13 32 55.6	
	comp=N,8µm,0.5s						
ROOS	tl_alroos	8.96	97	eP	Pn	13 31 14.7	-3.4
ROOS				eS	Sn	13 32 46.7	-11
HAVZ	Havza	8.96	51	iP	Pn	13 31 19.4	+1.3
SALA	Sala	8.96	107	eP	Pn	13 31 14.3	-3.9
SALA				eS	Sn	13 32 46.1	-12
SALA				AML	AML	13 33 06.8	
	comp=E,315nm,0.6s						
SALA				AML	AML	13 33 12.2	
	comp=N,5µm,0.8s						
SALA	Sala	8.96	107	eP	Pn	13 31 14.4	-3.9
SALA				eS	Sn	13 32 45.9	-12
	comp=N,5µm,0.8s						
HARR	Harsova	9.01	6	⇑iP	Pn	13 31 20.0	+1.3
DIKM	Dikmen	9.01	46	ePN	Pn	13 31 19.3	+0.5
DIKM	Dikmen	9.01	46	ePn	Pn	13 31 19.3	+0.5
GZT	Gaziantep	9.01	76	iP	Pn	13 31 16.4	-2.5
CEME	Cevo	9.02	321	⇑iPn	Pn	13 31 17.8	-1.1
CEME				eSn	Sn	13 32 55.2	-3.7
CEME	Cevo	9.02	321	⇑iPn	Pn	13 31 17.8	-1.1
CEME				eSn	Sn	13 32 55.2	-3.7
CUGUR	Gurin_S˜VAS	9.06	68	iP	Pn	13 31 19.6	0.0
TOKA	Tokat	9.08	57	iP	Pn	13 31 21.2	+1.5
HRFI	Mount Harif	9.12	126	Pn	Pn	13 31 14.0	-6.3
TOKT	Tokat	9.12	57	ePN	Pn	13 31 19.8	-0.5
TOKT	Tokat	9.12	57	ePn	Pn	13 31 19.8	-0.5
NKME	Niksic	9.16	322	⇑iPn	Pn	13 31 19.9	-1.0
NKME				eSn	Sn	13 32 59.2	-3.1
NKME	Niksic	9.16	322	⇑iPn	Pn	13 31 19.9	-1.0
NKME				eSn	Sn	13 32 59.2	-3.1
KVT	Kavak	9.17	52	ePN	Pn	13 31 22.0	+1.0
KVT	Kavak	9.17	52	ePn	Pn	13 31 22.0	+1.0
HCY	Herceg Novi	9.17	319	⇓iPn	Pn	13 31 19.4	-1.5
HCY				eSn	Sn	13 32 57.9	-4.5
HCY	Herceg Novi	9.17	319	⇓iPn	Pn	13 31 19.4	-1.5
HCY				eSn	Sn	13 32 57.9	-4.5
PGOR	Pogoanele	9.17	2	⇑iP	Pn	13 31 23.4	+2.5
GOLR		9.18	353	⇑iP	Pn	13 31 23.5	+2.5
NKY	Niksic	9.18	323	⇓iPn	Pn	13 31 20.2	-0.9
NKY				eSn	Sn	13 32 59.4	-3.4
NKY	Niksic	9.18	323	⇓iPn	Pn	13 31 20.2	-0.9
NKY				eSn	Sn	13 32 59.4	-3.4
DARE	Darende-Malaty	9.18	69	ePN	Pn	13 31 20.6	-0.6
DARE	Darende-Malaty	9.18	69	ePn	Pn	13 31 20.6	-0.6
PLAR	PLOIESTI	9.18	358	⇓iP	Pn	13 31 23.5	+2.5
MBRI	Mt Berech	9.20	128	Pn	Pn	13 31 15.7	-5.8
MBRI				Sn	Sn	13 32 51.0	-12
MBH	Mount Berech	9.20	128	Pn	Pn	13 31 15.6	-5.9
MBH	Mount Berech	9.20	128	Pn	Pn	13 31 15.6	-5.9
SNOP	Sinop	9.22	44	ePN	Pn	13 31 21.6	0.0
SNOP	Sinop	9.22	44	ePn	Pn	13 31 21.6	0.0
SVSK	Karacayir	9.26	60	ePN	Pn	13 31 21.9	-0.3
SVSK	Karacayir	9.26	60	ePn	Pn	13 31 21.9	-0.3
SRE	Strehaia	9.28	345	⇑iP	Pn	13 31 24.2	+1.8
ASF	Jabal al Asfar	9.30	109	P	Pn	13 31 18.4	-4.5
	comp=N,106nm,0.3s,baz=235,slow=4.6,SNR=684						
ASF				S	Sn	13 32 56.2	-10
	comp=N,75nm,0.3s,baz=248,slow=19,SNR=2.8						
ASF				LR	LR	13 36 36.3	
	comp=N,11µm,20.8s,baz=233,slow=48						
EIL	Elat	9.31	128	ePN	Pn	13 31 18.7	-4.2
EIL	Elat	9.31	128	P	Pn	13 31 17.9	-5.0
	comp=N,145nm,0.3s,baz=332,slow=7.1,SNR=634						
EIL				S	Sn	13 32 50.3	-16
	comp=N,705nm,0.3s,baz=258,slow=23,SNR=18						
EIL	Elat	9.31	128	Pn	Pn	13 31 16.3	-6.6
EIL	Elat	9.31	128	ePn	Pn	13 31 18.7	-4.2
ISR	Istrita	9.38	360	⇑iP	Pn	13 31 26.6	+2.8
CUKAN	kangal_SIVAS	9.38	64	iP	Pn	13 31 25.6	+1.6
PLE	Pljevlja	9.38	326	⇓iPn	Pn	13 31 24.4	+0.4
PLE				eSn	Sn	13 33 06.9	-0.9
PLE	Pljevlja	9.38	326	⇓iPn	Pn	13 31 24.4	+0.4
PLE				eSn	Sn	13 33 06.9	-0.9
SAMS	Samsun-Alacam	9.41	50	iP	Pn	13 31 26.8	+2.6
ERBA	Erbaa	9.43	55	iP	Pn	13 31 24.1	-0.4
TREB	Trebinje	9.44	320	ePn	Pn	13 31 22.4	-2.1
AKCD	Akcadag	9.45	71	iP	Pn	13 31 23.3	-1.6
BRY	Bratogost	9.47	322	⇓iPn	Pn	13 31 24.0	-1.2
BRY				eSn	Sn	13 33 06.8	-3.2
BRY	Bratogost	9.47	322	⇓iPn	Pn	13 31 24.0	-1.2
BRY				eSn	Sn	13 33 06.8	-3.2
HBST	Basata	9.48	131	P	Pn	13 31 19.6	-5.6
	baz=131						
HBST	Basata	9.48	131	P	Pn	13 31 19.6	-5.7
CUC	Castrocucco	9.49	300	ePn	Pn	13 31 23.3	-2.0
UPM	Unac-Piva	9.51	324	⇑iPn	Pn	13 31 25.7	-0.1
UPM				eSn	Sn	13 33 08.3	-2.8
UPM	Unac-Piva	9.51	324	⇑iPn	Pn	13 31 25.7	-0.1
UPM				eSn	Sn	13 33 08.3	-2.8
MTUR	Matau	9.55	354	⇑iP	Pn	13 31 28.4	+2.2
TLCR		9.60	10	⇓iP	Pn	13 31 28.5	+1.7
ATAB	Bozova	9.61	76	iP	Pn	13 31 24.8	-2.2
HQLS		9.63	129	P	Pn	13 31 21.8	-5.5
GRER		9.64	2	⇓iP	Pn	13 31 30.3	+2.9
RSDY	Resadiye-TOKAT	9.69	58	ePN	Pn	13 31 27.8	-0.3
RSDY	Resadiye-TOKAT	9.69	58	ePn	Pn	13 31 27.8	-0.3
HAQS	Haql	9.72	131	P	Pn	13 31 24.0	-4.5
ARR	Arges	9.73	352	⇑iP	Pn	13 31 30.3	+1.6
MLR	Muntele Rosu	9.76	358	P	Pn	13 31 29.8	+0.8
	comp=N,5.5nm,0.3s,baz=184,slow=6.2,SNR=582						
MLR				LR	LR	13 36 00.3	
	comp=N,10µm,21.5s,baz=177,slow=42						
MLR	Muntele Rosu	9.76	358	⇑iP	Pn	13 31 32.1	+3.0
MLR	Muntele Rosu	9.76	358	eP	Pn	13 31 31.7	+2.6
MLR	Muntele Rosu	9.76	358	eP	Pn	13 31 31.7	+2.6
MLR	Muntele Rosu	9.76	358	ePn	Pn	13 31 31.7	+2.6
MDVR	Moldovita	9.76	339	⇑iP	Pn	13 31 30.6	+1.6
VOIR		9.76	354	⇓iP	Pn	13 31 29.8	+0.7
WDD	Wied Dalam	9.77	274	ePn	Pn	13 31 25.8	-3.3
HDHB	Dhahab	9.77	133	P	Pn	13 31 24.2	-5.0
	baz=134						
HDHB	Dhahab	9.77	133	P	Pn	13 31 24.2	-5.0
CUZAR	Zara_SIVAS	9.80	62	iP	Pn	13 31 32.1	+2.4
BBLS	Lazići	9.80	328	⇑iPn	Pn	13 31 29.7	+0.1
SURC	SANLIURFA_SURC	9.81	80	iP	Pn	13 31 25.5	-4.2
STON	Ston	9.89	319	ePn	Pn	13 31 28.5	-2.2
STON				Sn	Sn	13 33 10.2	-10
STON	Ston	9.89	319	ePn	Pn	13 31 28.4	-2.2
VAE	Valguarnera	9.91	284	P	Pn	13 31 29.6	-1.5
	comp=N,43nm,0.3s,baz=97,slow=5.9,SNR=26						
VAE				S	Sn	13 33 12.7	-8.0
	comp=N,60nm,0.3s,baz=104,slow=6.5,SNR=4.0						
LOT	Lotru	9.93	349	⇑iP	Pn	13 31 32.8	+1.4
PETR	Petresti	9.99	3	⇑iP	Pn	13 31 33.8	+1.7
ODBI	Odobesti	10.03	2	⇑iP	Pn	13 31 34.9	+2.3
GZR	Gura Zlata	10.07	345	⇑iP	Pn	13 31 34.3	+1.1
PLOR	Plostina	10.11	0	⇑iP	Pn	13 31 35.6	+1.8
KEMA	Kemaliye	10.13	66	iP	Pn	13 31 34.0	-0.1
VRI	Vrincioaia	10.13	1	ePN	Pn	13 31 36.0	+2.0
VRI	Vrincioaia	10.13	1	⇓iP	Pn	13 31 35.7	+1.7
VRI	Vrincioaia	10.13	1	ePn	Pn	13 31 36.0	+2.0
HAPS	Han Pijesak,Bl	10.18	327	ePn	Pn	13 31 33.4	-1.4
RSHS		10.19	134	S	Sn	13 33 15.0	-12
RSHS				P	Pn	13 31 29.0	-5.9
SUSE	Susehri	10.23	61	iP	Pn	13 31 36.9	+1.3
DOPR	Dopca	10.26	355	⇑iP	Pn	13 31 37.7	+1.9
BDAS	Al Bad‘	10.27	133	P	Pn	13 31 31.3	-4.8
JLOS		10.29	130	P	Pn	13 31 30.9	-5.6
ELZG	Elazig	10.31	71	iP	Pn	13 31 35.2	-1.5
TEKS	Tekeris	10.31	331	ePn	Pn	13 31 38.0	+1.5
ORDU	Ordu-Boztepe	10.31	56	iP	Pn	13 31 37.4	+0.8
REFA	Refahiye_ERZ˜	10.37	66	iP	Pn	13 31 40.5	+3.1
BANR	Banloc	10.48	339	⇑iP	Pn	13 31 40.6	+1.9
DEV	Deva	10.51	346	⇑iP	Pn	13 31 41.3	+2.1
BZS	Buzias	10.56	341	⇑iP	Pn	13 31 40.9	+1.1
GRSN	GIRESUNGRSN	10.56	57	iP	Pn	13 31 40.9	+1.0
PTK	Pertek	10.71	69	ePN	Pn	13 31 40.7	-1.4
PTK	Pertek	10.71	69	ePn	Pn	13 31 40.7	-1.4
TESR	Tescani	10.77	0	⇑iP	Pn	13 31 43.5	+0.8
TIM	Timisoara	10.78	340	⇑iP	Pn	13 31 45.9	+3.1
LEOM	Leova	10.81	6	ePN	Pn	13 31 44.5	+1.3
LEOM	Leova	10.81	6	⇑iP	Pn	13 31 44.1	+0.9
LEOM	Leova	10.81	6	ePn	Pn	13 31 44.5	+1.3
SIM	Simferopol’	10.86	30c	iP	Pn	13 31 44.9	+0.9
SIM				eS	Sn	13 33 45.0	+1.3
SIM				pmax	pmax		
	comp=Z,5µm,1.0s						
SIM				MLR	MLR		
	comp=Z,10µm,16.0s						
SIM	Simferopol’	10.86	30	iP	Pn	13 31 44.9	+0.9
	comp=Z,5µm,1.0s						
SIM				eS	Sn	13 33 45.0	+1.3
	comp=Z,10µm,16.0s						
CLTB	Caltabellotta	10.87	284	ePn	Pn	13 31 42.2	-2.0
TNCL	Tunceli-Merkez	10.87	68	iP	Pn	13 31 44.1	-0.1
ESPY	Espiye-Giresun	10.88	58	ePN	Pn	13 31 43.7	-0.5
ESPY	Espiye-Giresun	10.88	58	ePn	Pn	13 31 43.7	-0.5
EZC	Erzincan	10.90	65	ePn	Pn	13 31 46.5	+1.8
KELT	Kelkit	10.96	62	iP	Pn	13 31 45.8	+0.3
DOB	Doboj	11.06	327	ePn	Pn	13 31 46.3	-0.4
DIYA	Diyarbakir	11.10	75	iP	Pn	13 31 44.6	-2.8
DYBB	Diyarbakir	11.12	74	ePN	Pn	13 31 45.9	-1.7
ERZN	Erzincan	11.13	66	ePN	Pn	13 31 46.5	-1.3
SIRR	Siria	11.15	342	⇑iP	Pn	13 31 49.1	+1.2

DIY Diyarbakir 11.18 75 ePn Pn 13 31 45.9 -2.5
CJR Cluj-Napoca 11.19 349⇑iP Pn 13 31 50.0 +1.5
MAZI Mazidag 11.31 77 ePN Pn 13 31 48.2 -2.0
MAZI Mazidag 11.31 77 ePn Pn 13 31 48.2 -2.0
TBKS Tabuk 11.31 129 S Sn 13 33 42.0 -13
TBKS P Pn 13 31 44.5 -5.7
KIS Kishinev 11.38 8 iP Pn 13 31 51.0 -0.1
comp=Z,2µm,2.0s
KIS Kishinev 11.38 8 iPP Pn 13 31 57.0 +5.9
KIS iS Sn 13 33 57.0 +0.6
KIS iLi 13 34 39.0
KIS iLg Lg 13 34 55.0
KIS iRg Rg 13 35 52.0
KIS LRM MLR 13 37 52.0
comp=Z,24µm,12.0s
KIS Kishinev 11.38 8⇓iP Pn 13 31 54.7 +3.6
KIS Kishinev 11.38 8αiP Pn 13 31 51.0 -0.1
KIS iS Sn 13 33 57.0 +0.6
KIS pmax pmax
comp=Z,2µm,2.0s
KIS pmax pmax
comp=Z,26µm,3.2s
KIS pmax pmax
comp=Z,13µm,12.0s
KIS MLR MLR
comp=Z,22µm,10.0s
KIS MLR MLR
comp=N,18µm,8.0s
KIS MLR MLR
comp=E,22µm,9.0s
KIS MLR MLR
comp=Z,24µm,12.0s
KIS Kishinev 11.38 8 iP Pn 13 31 51.0 -0.1
comp=Z,2µm,2.0s
KIS iS Sn 13 33 57.0 +0.6
DRGR 11.42 347⇑iP Pn 13 31 52.7 +1.1
ARCR ARCALIA 11.46 352⇑iP Pn 13 31 52.8 +0.7
IAS Iasi 11.48 3⇑iP Pn 13 31 52.6 +0.3
BLY Banja Luka 11.49 324⇑iPn Pn 13 31 50.7 -1.9
BINT Bingol 11.54 70 ePn Pn 13 31 54.0 +0.6
MARD Mardin 11.56 78 iP Pn 13 31 51.9 -1.8
MACK Trabzon 11.61 59 iP Pn 13 31 54.8 +0.6
PRAR RASCA 11.62 359⇑iP Pn 13 31 56.4 +2.1
KTUT Trabzon 11.62 59 ePN Pn 13 31 53.8 -0.6
KTUT Trabzon 11.62 59 ePn Pn 13 31 53.8 -0.6
BAYT Ayd˜–ntepe-Bay 11.68 62 ePN Pn 13 31 54.2 -1.1
BAYT Ayd˜–ntepe-Bay 11.68 62 ePn Pn 13 31 54.2 -1.1
BGOL Bingol 11.70 70 iP Pn 13 31 54.6 -0.9
BNGB Bingˆ¶l 11.71 70 ePN Pn 13 31 54.0 -1.6
KOPT Kop Dagi 11.82 65 iP Pn 13 31 59.1 +1.8
BUR08 Bucovina Ar. S 11.95 356 ePn Pn 13 32 00.4 +1.6
BTMN Batman 12.00 75 iP Pn 13 31 59.2 -0.4
UDBI Udbina 12.04 320 ePn Pn 13 31 59.2 -0.9
BTMT Batman 12.20 74 ePN Pn 13 32 00.3 -2.1
BTMT Batman 12.20 74 ePn Pn 13 32 00.3 -2.1
ANN Anapa 12.28 39c iP Pn 13 32 02.1 -1.2
ANN eS Sn 13 34 17.7 -0.6
ANN pmax pmax
comp=E,204nm,1.0s
ANN pmax pmax
comp=N,281nm,1.0s
ANN pmax pmax
comp=Z,739nm,1.0s
ANN pmax pmax
comp=N,2µm,6.0s
ANN pmax pmax
comp=Z,4µm,6.0s
ANN pmax pmax
comp=E,2µm,6.0s
ANN smax smax
comp=E,8µm,6.3s
ANN MLR MLR
comp=E,3µm,11.0s
ANN MLR MLR
comp=Z,5µm,11.0s
ANN Anapa 12.28 39 iP Pn 13 32 02.1 -1.2
comp=Z,4µm,6.0s
ANN eS Sn 13 34 17.7 -0.6
comp=Z,5µm,11.0s
VRTB Varto-Mus 12.33 69 ePN Pn 13 32 02.4 -1.8
VRTB Varto-Mus 12.33 69 ePn Pn 13 32 02.4 -1.8
EZM Erzurum 12.43 66 ePN Pn 13 32 03.9 -1.8
ERZM Erzurum 12.44 66 iP Pn 13 32 07.4 +1.7
SORM Soroca 12.47 6⇑iP Pn 13 32 04.5 -1.3
NVLJ Novalja 12.54 318 ePn Pn 13 32 04.5 -2.3
NVLJ Sn Sn 13 34 14.5 -10
SOC Sochi 12.81 48c iP Pn 13 32 09.9 -0.6
SOC i 13 34 31.9
SOC pmax pmax
comp=Z,311nm,1.0s
SOC MLR MLR
comp=Z,5µm,11.0s
SOC Sochi 12.81 48 iP Pn 13 32 09.9 -0.6
comp=Z,5µm,11.0s
SOC iS Sn 13 34 31.9 +0.7
EKAR Karacoban 12.81 69 iP Pn 13 32 12.2 +1.4
TATV Tatvan 12.85 73 iP Pn 13 32 10.2 -1.1
ZAG Zagreb 12.86 325 ePn Pn 13 32 08.7 -2.4
SIRN S˜–rnak 12.87 77 iP Pn 13 32 10.2 -1.3
HOMI Horasan 12.87 66 iP Pn 13 32 12.7 +1.1
BOJS Bojanci 12.98 322 ePn Pn 13 32 09.8 -3.0
BOJS eSn Sn 13 34 30.0 -5.3
BOJS eS S 13 35 10.5 +14
comp=Z,38µm,8.6s
DDEM Demirkent 13.00 62 iP Pn 13 32 13.7 +0.5
DBAD Bademkaya 13.00 62 iP Pn 13 32 13.7 +0.5
BEHE Becsehely 13.00 329⇑iPn Pn 13 32 11.8 -1.2
DBOC Borcka 13.09 60 iP Pn 13 32 11.9 -2.5
PSZ Piszkesteto 13.14 340 eP Pn 13 32 15.6 +0.6
PSZ Piszkesteto 13.14 340 eP Pn 13 32 15.6 +0.6
PSZ Piszkesteto 13.14 340 ePn Pn 13 32 15.6 +0.6
DAGI Agillar 13.18 62 iP Pn 13 32 15.7 +0.2
KOGS Kog 13.21 327 ePn Pn 13 32 13.3 -2.5
ARTV Artvin 13.22 61 iP Pn 13 32 16.5 +0.3
EATA Eleskirt 13.27 67 iP Pn 13 32 17.8 +0.9
UZH Uzhgorod 13.27 348⇑iP Pn 13 32 16.8 +0.3
UZH eS Sn 13 34 46.0 +3.9
UZH MLR MLR
comp=N,13µm,14.0s
UZH MLR MLR
comp=E,13µm,14.0s
UZH MLR MLR
comp=Z,11µm,14.0s
UZH Uzhgorod 13.27 348 iP Pn 13 32 16.8 +0.3
UZH eS Sn 13 34 46.0 +3.9
GEVA Gevas 13.45 74 iP Pn 13 32 19.4 +0.3
KECS Kecovo 13.51 342 eP Pn 13 32 21.4 +1.7
KECS Kecovo 13.51 342 eP Pn 13 32 21.4 +1.7
KECS Kecovo 13.51 342 ePN Pn 13 32 21.4 +1.7
KOLS Kolonicke sedl 13.56 348 eP Pn 13 32 21.5 +1.0
KOLS Kolonicke sedl 13.56 348 eP Pn 13 32 21.5 +1.0
KOLS Kolonicke sedl 13.56 348 ePN Pn 13 32 21.5 +1.0
KOLS e 13 34 59.8
AGRB Hanur-Agry 13.58 69 ePN Pn 13 32 19.6 -1.4
AGRB Hanur-Agry 13.58 69 ePn Pn 13 32 19.6 -1.4
SKDS Skadanscina 13.65 320 ePn Pn 13 32 17.7 -3.9
SKDS eP P 13 32 21.4 -6.5
CRVS Cervenica-Dubn 13.68 346 eP Pn 13 32 22.9 +0.8
CRVS Cervenica-Dubn 13.68 346 eP Pn 13 32 22.9 +0.8
CRVS Cervenica-Dubn 13.68 346 ePN Pn 13 32 22.9 +0.8
LJU Ljubljana 13.72 322 ePn Pn 13 32 19.6 -2.9
LJU e(P) P 13 32 21.0 -7.7
LJU eSn Sn 13 34 49.8 -3.5
LJU eS S 13 35 09.0 -2.3
comp=Z,21µm,6.2s
LJU Ljubljana 13.72 322 ePn Pn 13 32 20.2 -2.4
VANB Van 13.73 73 ePN Pn 13 32 21.1 -1.8
VANB Van 13.73 73 ePn Pn 13 32 21.1 -1.8
TVAN Van 13.74 73 iP Pn 13 32 22.8 -0.3
TRI Trieste 13.88 320 eP Pn 13 32 20.5 -4.2
TRI Trieste 13.88 320 eP Pn 13 32 20.5 -4.2
TRI Trieste 13.88 320 ePn Pn 13 32 20.5 -4.2
KARS Kars 13.89 64 ePN Pn 13 32 24.1 -0.8
KARS Kars 13.89 64 ePn Pn 13 32 24.1 -0.8
EPOS Posof 13.89 61 iP Pn 13 32 26.1 +1.0
HAKT HAKKARI 13.90 77 iP Pn 13 32 25.9 +0.6
CHVG Ch'k'valeri 13.91 55 P Pn 13 32 26.5 +1.4
CHVG Ch'k'valeri 13.91 55⇑iP Pn 13 32 26.5 +1.4
VMUR Van-Muradiye 13.93 71 iP Pn 13 32 26.7 +1.2
SOKA Soboth 13.94 325 iPn Pn 13 32 23.0 -2.4
SNR=218
SOKA Soboth 13.94 325 Pn Pn 13 32 23.0 -2.4
SNR=218

VYHS Vyhne 13.97 338 eP Pn 13 32 25.7 -0.1
VYHS e 13 35 03.6
VYHS Vyhne 13.97 338 eP Pn 13 32 25.7 -0.1
VYHS eS Sn 13 35 03.6 +4.4
VYHS Vyhne 13.97 338 ePN Pn 13 32 25.7 -0.1
VYHS Vyhne 13.97 338 eSN Sn 13 35 03.6 +4.4
KEST Kesra 13.98 275 P Pn 13 32 24.3 -1.8
comp=Z,8.6nm,0.3s,baz=40,slow=7.8,SNR=67
OBKA Obir 14.04 324 iPn Pn 13 32 24.8 -2.1
SNR=182
OBKA ⇑iSn Sn 13 34 59.9 -1.3
comp=Z,514nm,0.9s
OBKA Obir 14.04 324 Pn Pn 13 32 24.8 -2.1
SNR=182
OBKA Sn Sn 13 34 59.9 -1.3
comp=Z,514nm,0.9s
DYDN Diyadin 14.11 69 iP Pn 13 32 28.7 +0.8
VSL Villasalto 14.12 291 ePn Pn 13 32 23.1 -4.7
ARSA Arzberg 14.15 328 iPn Pn 13 32 26.4 -1.8
SNR=296
ARSA ⇑iSn Sn 13 35 02.2 -1.4
comp=Z,145nm,0.8s
ARSA Arzberg 14.15 328 Pn Pn 13 32 26.4 -1.8
SNR=296
ARSA Sn Sn 13 35 02.2 -1.4
comp=Z,145nm,0.8s
KWP Kalwaria Pacla 14.17 350 eP Pn 13 32 30.1 +1.7
KWP epP P 13 32 33.3 -0.4
KWP eS S 13 35 15.1 -5.4
KWP LMZ LR 13 37 09.2
KWP Kalwaria Pacla 14.17 350⇑eP Pn 13 32 30.1 +1.7
KWP Kalwaria Pacla 14.17 350 eP Pn 13 32 30.1 +1.7
LVV L'vov 14.20 353d iP Pn 13 32 29.8 +1.0
LVV eS Sn 13 35 04.6 -0.2
LVV MLR MLR
comp=Z,12µm,15.0s
LVV L'vov 14.20 353 iP Pn 13 32 29.8 +1.0
comp=Z,12µm,15.0s
LVV eS Sn 13 35 04.6 -0.2
CLDR Caldiran 14.21 71 ePN Pn 13 32 28.3 -1.0
CLDR Caldiran 14.21 71 ePn Pn 13 32 28.3 -1.0
STHS Stebnicka Huta 14.22 346 eP Pn 13 32 30.2 +1.1
STHS Stebnicka Huta 14.22 346 eP Pn 13 32 30.2 +1.1
STHS Stebnicka Huta 14.22 346 ePN Pn 13 32 30.2 +1.1
ZST Bratislava 14.28 334 eP Pn 13 32 29.3 -0.6
ZST e 13 35 11.1
ZST Bratislava 14.28 334 eP Pn 13 32 29.3 -0.6
ZST eS Sn 13 35 11.1 +4.3
ZST Bratislava 14.28 334 ePN Pn 13 32 29.3 -0.6
ZST Bratislava 14.28 334 eSN Sn 13 35 11.1 +4.3
EAK Akyaka 14.29 65 iP Pn 13 32 30.9 +0.7
LANS Liptovska Anna 14.38 341 eP Pn 13 32 32.8 +1.6
LANS Liptovska Anna 14.38 341 eP Pn 13 32 32.8 +1.6
LANS Liptovska Anna 14.38 341 ePN Pn 13 32 32.8 +1.6
AKH Akhalkalaki 14.41 62 P Pn 13 32 33.3 +1.5
AKH Akhalkalaki 14.41 62⇓iP Pn 13 32 33.0 +1.2
AKH Akhalkalaki 14.41 62 P Pn 13 32 33.3 +1.5
AKH Akhalkalaki 14.41 62 P Pn 13 32 33.3 +1.5
NIE Niedzica 14.42 343 eP Pn 13 32 33.1 +1.4
NIE eS Sn 13 35 14.4 +4.2
NIE LMZ LR 13 37 10.4
NIE Niedzica 14.42 343⇑eP Pn 13 32 33.2 +1.5
NIE eS Sn 13 35 14.5 +4.2
NIE Niedzica 14.42 343 eP Pn 13 32 33.2 +1.5
NIE eS Sn 13 35 14.5 +4.2
SMOL Smolenice 14.44 335 eP Pn 13 32 33.9 +2.0
SMOL Smolenice 14.44 335 eP Pn 13 32 33.9 +2.0
SMOL Smolenice 14.44 335 ePN Pn 13 32 33.9 +2.0
CONA Conrad Observa 14.54 330 iPn Pn 13 32 32.3 -1.0
SNR=211
CONA iSn Sn 13 35 12.4 -0.8
comp=Z,10µm,6.0s
CONA Conrad Observa 14.54 330 Pn Pn 13 32 32.3 -1.0
SNR=211
CONA Sn Sn 13 35 12.4 -0.8
comp=Z,10µm,6.0s
NEY Neytrino 14.56 54ceP Pn 13 32 34.4 +0.7
NEY Neytrino 14.56 54 eP Pn 13 32 34.4 +0.7
MYKA Terra Mystica 14.57 322 iPn Pn 13 32 33.9 +0.2
SNR=99
MYKA Terra Mystica 14.57 322 Pn Pn 13 32 33.9 +0.2
SNR=99
ONI Oni 14.78 57 P Pn 13 32 37.4 +0.9
ONI Oni 14.78 57 P Pn 13 32 37.4 +0.9
ONI Oni 14.78 57 P Pn 13 32 37.4 +0.9
KIV Kislovodsk 14.85 52c iP Pn 13 32 37.2 -0.2
KIV iS Sn 13 35 25.3 +4.4
KIV pmax pmax
comp=Z,33nm,1.3s
KIV MLR MLR
comp=Z,9µm,26.0s
KIV Kislovodsk 14.85 52 iP Pn 13 32 37.2 -0.2
comp=Z,9µm,26.0s
KIV iS Sn 13 35 25.3 +4.4
KIV Kislovodsk 14.85 52 ePn Pn 13 32 37.5 +0.1
KIV eScP ScP 13 41 10.5 +0.4
KIV Kislovodsk 14.85 52 Pn Pn 13 32 38.8 +1.4
SNR=1078
KIV Kislovodsk 14.85 52 P Pn 13 32 38.8 +1.4
SNR=1078
KVAR Kislovodsk Arr 14.86 52 P Pn 13 32 36.5 -1.1
baz=270,slow=2.0,SNR=18
KBZ Khabaz 14.88 53 P Pn 13 32 38.2 +0.6
comp=Z,26nm,0.3s,baz=238,slow=7.3,SNR=107
KBZ LR LR 13 39 03.5
comp=Z,6µm,21.8s,baz=252,slow=40
KBZ ScP ScP 13 41 09.5 -0.4
comp=Z,0.2nm,0.3s,baz=290,slow=7.5,SNR=3.7
VLC Villacollemand 14.96 309 ePn Pn 13 32 37.4 -1.4
GNI Garni 15.02 67 P Pn 13 32 40.7 +1.2
comp=Z,7.3nm,0.3s,baz=256,slow=5.2,SNR=213
GNI LR LR 13 38 46.2
comp=Z,12µm,19.6s,baz=272,slow=38
GNI Garni 15.02 67 iP Pn 13 32 40.8 +1.2
SNR=166
GNI Garni 15.02 67 iP Pn 13 32 40.5 +0.9
GNI pmax pmax
comp=Z,4µm,1.2s
GNI Garni 15.02 67 iP Pn 13 32 40.5 +0.9
comp=Z,4µm,1.2s
GNI Garni 15.02 67 Pn Pn 13 32 40.9 +1.3
SNR=448
GNI Garni 15.02 67 P Pn 13 32 40.9 +1.3
SNR=448
KBA Koelnbreinsper 15.03 323 iPn Pn 13 32 37.5 -2.2
SNR=206
KBA ⇑iSn Sn 13 35 19.6 -5.6
comp=Z,102nm,0.7s
KBA Koelnbreinsper 15.03 323 Pn Pn 13 32 37.5 -2.2
SNR=206
AK11 Malin Array Si 15.06 6 ePn Pn 13 32 39.8 -0.1
KZR Kazreti 15.07 63 P P 13 32 42.0 -1.7
KIEV Kiev 15.08 7c iP Pn 13 32 39.3 -0.8
KIEV pmax pmax
comp=Z,369nm,1.0s
KIEV Kiev 15.08 7 iP Pn 13 32 39.3 -0.8
comp=Z,369nm,1.0s
KIEV Kiev 15.08 7 ePn Pn 13 32 38.6 -1.5
comp=Z,2µm,0.7s
AKASG Malin Array Be 15.09 7 P Pn 13 32 38.2 -2.0
comp=Z,0.7nm,0.3s,baz=196,slow=11,SNR=68
AKASG LR LR 13 38 49.0
comp=Z,16µm,20.4s,baz=190,slow=38
AKASG ScP ScP 13 41 09.8 -0.4
comp=Z,6.7nm,0.3s,baz=174,slow=1.1,SNR=16
AKBB Malin Array Si 15.09 7 eP Pn 13 32 32.8 -7.4
AKBB pmax pmax
comp=Z,2µm,0.8s
AKBB Malin Array Si 15.09 7 eP Pn 13 32 32.8 -7.4
comp=Z,2µm,0.8s
AKBB Malin Array Si 15.09 7 ePn Pn 13 32 32.8 -7.5
comp=Z,2µm,0.8s
MOA Molln 15.16 327 iPn Pn 13 32 41.1 -0.1
SNR=444
MOA ⇑iSn Sn 13 35 28.6 +0.5
comp=Z,198nm,0.6s
MOA Molln 15.16 327 Pn Pn 13 32 41.1 -0.1
SNR=444
MOA Sn Sn 13 35 28.6 +0.5
comp=Z,198nm,0.6s
ZEI Tsey 15.16 57 eP P 13 32 44.2 -0.8
ZEI eS Sn 13 35 32.4 +3.8
ZEI pmax pmax
comp=Z,3µm,0.8s
ZEI Tsey 15.16 57 eP P 13 32 44.2 -0.8

comp=Z,3µm,0.8s
ZEI eS Sn 13 35 32.4 +3.8
ABTA Abfaltersbach 15.22 321 iPn Pn 13 32 40.0 -2.1
SNR=136
ABTA ⇓iSn Sn 13 35 24.4 -5.4
comp=Z,210nm,0.6s
ABTA Abfaltersbach 15.22 321 Pn Pn 13 32 40.0 -2.1
SNR=136
NCK Nalchik 15.24 54⇓eP P 13 32 45.0 -0.6
NCK pmax pmax
comp=Z,1µm,1.2s
NCK Nalchik 15.24 54 eP P 13 32 45.0 -0.6
comp=Z,1µm,1.2s
OJC Ojcow 15.29 343 eP Pn 13 32 42.9 +0.1
OJC eS S 13 35 40.2 -3.0
OJC LMZ LR 13 37 33.3
OJC Ojcow 15.29 343⇑eP Pn 13 32 42.9 +0.1
OJC MLR MLR
comp=Z,19µm,32.5s
OJC Ojcow 15.29 343 eP Pn 13 32 42.9 +0.1
comp=Z,19µm,32.5s
OJC eS S 13 35 40.3 -3.0
OJC Ojcow 15.29 343 ePn Pn 13 32 42.7 -0.2
comp=Z,3µm,1.3s
OKC Ostrava-Krasne 15.37 339⇑iP Pn 13 32 44.6 +0.7
OKC ex x 13 33 06.1
OKC eS S 13 35 41.7 -3.2
OKC eSCP ScP 13 41 11.2 +0.4
OKC eSCS ScS 13 44 48.1 -0.7
OKC Ostrava-Krasne 15.37 339⇑iP Pn 13 32 44.6 +0.7
OKC Ostrava-Krasne 15.37 339 P Pn 13 32 44.6 +0.7
OKC S S 13 35 41.7 -3.2
TBLG Delisi 15.40 62 P P 13 32 47.0 -0.4
TBLG Delisi 15.40 62 P P 13 32 47.0 -0.4
TBLG Delisi 15.40 62 P P 13 32 47.0 -0.4
VRAC Vranov 15.40 335 P Pn 13 32 43.8 -0.5
comp=Z,3.9nm,0.3s,baz=149,slow=13,SNR=149
VRAC LR LR 13 39 15.1
comp=Z,15µm,19.9s,baz=159,slow=39
VRAC ScP ScP 13 41 10.3 -0.6
comp=Z,0.7nm,0.3s,baz=355,slow=3.5,SNR=5.4
VRAC Vranov 15.40 335⇑iP Pn 13 32 44.0 -0.3
ABSA Djebel Ababsia 15.45 278 P Pn 13 32 43.8 -1.3
ABSA Djebel Ababsia 15.45 278 P Pn 13 32 43.8 -1.3
CMAH Djebel Manchou 15.47 279 P Pn 13 32 43.6 -1.8
CMAH Djebel Manchou 15.47 279 P Pn 13 32 43.6 -1.8
DUS Dusheti 15.48 60 P P 13 32 47.0 -1.3
DUS Dusheti 15.48 60 P P 13 32 47.0 -1.3
DUS Dusheti 15.48 60 P P 13 32 47.0 -1.3
MORC Moravsky Berou 15.50 338 eP Pn 13 32 46.0 +0.4
MORC pmax pmax
comp=Z,5µm,0.8s
MORC Moravsky Berou 15.50 338 eP Pn 13 32 46.0 +0.4
comp=Z,5µm,0.8s
MORC Moravsky Berou 15.50 338 ePn Pn 13 32 46.0 +0.4
comp=Z,5µm,0.8s
CHZP Chorzow 15.55 342 P Pn 13 32 46.3 +0.1
RAC Raciborz 15.58 340 eP Pn 13 32 47.5 +1.0
RAC eS S 13 35 44.4 -4.7
RAC MLR MLR
comp=E,40µm,24.2s
RAC MLR MLR
comp=N,30µm,24.3s
RAC MLR MLR
comp=Z,19µm,18.2s
RAC Raciborz 15.58 340 eP Pn 13 32 47.5 +1.0
RAC eS S 13 35 44.4 -4.7
comp=Z,19µm,18.2s
GOF Gofitskoye 15.62 48⇑eP Pn 13 32 46.7 -0.4
GOF pmax pmax
comp=Z,575nm,0.9s
GOF Gofitskoye 15.62 48 eP Pn 13 32 46.7 -0.4
comp=Z,575nm,0.9s
DGRG David-gareji 15.78 63 P P 13 32 51.2 -0.4
DGRG David-gareji 15.78 63 P P 13 32 51.2 -0.4
DGRG David-gareji 15.78 63 P P 13 32 51.2 -0.4
TREC Trest 15.79 333⇑eP Pn 13 32 50.3 +1.0
TREC ex x 13 33 05.9
TREC eSCP ScP 13 41 11.9 +0.3
TREC Trest 15.79 333 eP Pn 13 32 50.3 +1.0
TREC Trest 15.79 333 P Pn 13 32 50.3 +1.0
CAEH 'Ain El Ouahch 15.93 280 P Pn 13 32 50.6 -0.4
CAEH 'Ain El Ouahch 15.93 280 P Pn 13 32 50.6 -0.4
WTTA Wattenberg 16.02 321 iPn Pn 13 32 52.0 -0.2
SNR=387
WTTA ⇑iSn Sn 13 35 43.7 -5.3
comp=Z,582nm,1.6s
WTTA Wattenberg 16.02 321 Pn Pn 13 32 52.0 -0.2
SNR=387
CKFL Kef-Lekhel 16.05 278 P Pn 13 32 52.3 -0.4
CKFL Kef-Lekhel 16.05 278 P Pn 13 32 52.3 -0.4
WATA Walderalm 16.09 321 iPn Pn 13 32 53.1 -0.1
SNR=322
WATA ⇓iSn Sn 13 35 47.0 -3.9
WATA Walderalm 16.09 321 Pn Pn 13 32 53.1 -0.1
SNR=322
GEC2 GERESS Array S 16.16 328 eP Pn 13 32 53.4 -0.5
GEC2 pmax pmax
comp=Z,2µm,1.0s
GEC2 GERESS Array S 16.16 328 eP Pn 13 32 53.4 -0.5
comp=Z,2µm,1.0s
GEC2 GERESS Array S 16.16 328 ePn Pn 13 32 53.4 -0.5
comp=Z,2µm,1.0s
GERES GERESS Array B 16.16 328 P Pn 13 32 54.2 +0.3
comp=Z,23nm,0.3s,baz=146,slow=12,SNR=185
GERES LR LR 13 39 17.1
comp=Z,8µm,21.8s,baz=142,slow=38
GERES ScP ScP 13 41 12.2 -0.3
comp=Z,2.1nm,0.3s,baz=152,slow=2.2,SNR=15
CASM Ain Smara 16.24 278 P Pn 13 32 55.0 -0.1
CASM Ain Smara 16.24 278 P Pn 13 32 55.0 -0.1
FETA Feichten 16.34 318 iPn Pn 13 32 55.0 -1.3
SNR=818
FETA Feichten 16.34 318 Pn Pn 13 32 55.0 -1.3
SNR=818
MOTA Moosalm 16.34 320 iPn P 13 32 57.4 -0.5
SNR=270
MOTA ⇑iSn Sn 13 35 53.1 -3.9
MOTA Moosalm 16.34 320 Pn P 13 32 57.4 -0.5
SNR=270
DPC Dobruska-Polom 16.39 336⇑iP Pn 13 32 57.0 +0.3
DPC eS Sn 13 35 59.4 +1.6
DPC AMS AMS 13 41 00.0
comp=Z,13µm,11.7s
DPC eSCP ScP 13 41 13.4 +0.6
DPC eSCS ScS 13 44 51.5 -0.2
DPC Dobruska-Polom 16.39 336⇑iP Pn 13 32 57.0 +0.3
DPC eS Sn 13 35 59.4 +1.6
DPC MLR MLR
comp=Z,13µm,11.7s
DPC Dobruska-Polom 16.39 336 P Pn 13 32 57.0 +0.3
DPC eS Sn 13 35 59.4 +1.6
comp=Z,13µm,11.7s
KHC Kasperske Hory 16.43 329⇑iP Pn 13 32 57.7 +0.5
KHC ex x 13 33 14.1
KHC eS Sn 13 35 57.5 -1.3
KHC AMS AMS 13 41 10.0
comp=Z,19µm,10.7s
KHC Kasperske Hory 16.43 329⇑iP Pn 13 32 57.7 +0.5
KHC e 13 35 57.5
KHC MLR MLR
comp=Z,19µm,10.7s
KHC Kasperske Hory 16.43 329 P Pn 13 32 57.7 +0.5
KHC eS Sn 13 35 57.5 -1.3
comp=Z,19µm,10.7s
KHC Kasperske Hory 16.43 329 ePn Pn 13 32 57.6 +0.5
comp=Z,3µm,1.7s
GOPC GO Pecny, Ondr 16.56 332⇑iP Pn 13 32 59.0 +0.1
GOPC epP pP 13 33 15.3 +0.1
GOPC eS Sn 13 35 55.8 -6.2
GOPC eSCP ScP 13 41 12.9 -0.2
GOPC GO Pecny, Ondr 16.56 332⇑iP Pn 13 32 59.0 +0.1
GOPC eS Sn 13 35 55.8 -6.2
GOPC GO Pecny, Ondr 16.56 332 P Pn 13 32 59.0 +0.1
GOPC eS Sn 13 35 55.8 -6.2
RETA Reutte 16.61 320 iPn Pn 13 32 59.8 +0.2
SNR=488
RETA ⇑iSn Sn 13 36 03.5 +0.1
comp=Z,983nm,0.9s
RETA Reutte 16.61 320 Pn Pn 13 32 59.8 +0.2
SNR=488
RETA Sn Sn 13 36 03.5 +0.1
comp=Z,983nm,0.9s
BEL Belsk 16.62 347 eP P 13 33 00.3 -0.4

BEL eP Pn 13 33 03.5 +4.0
BEL eS S 13 36 10.0 -0.4
BEL LMZ LR 13 39 38.9
BEL Belsk 16.62 347⇑ eP P 13 33 00.4 -0.3
BEL MLR MLR
comp=Z,21μm,25.5s
BEL Belsk 16.62 347 eP P 13 33 00.4 -0.3
BEL eS S 13 36 10.1 -0.4
UPC Upice 16.62 336⇑ iP Pn 13 33 00.1 +0.5
UPC eS Sn 13 36 03.4 -0.1
UPC eSCP ScP 13 41 13.7 +0.5
UPC Upice 16.62 336⇑ iP Pn 13 33 00.1 +0.5
UPC eS Sn 13 36 03.4 -0.1
UPC Upice 16.62 336 P Pn 13 33 00.1 +0.5
UPC eS Sn 13 36 03.4 -0.1
DAVOX Davos/Dischmat 16.66 317 P Pn 13 32 59.7 -0.6
comp=Z,19nm,0.3s,baz=108,slow=6.8,SNR=108
DAVOX S Sn 13 36 00.8 -3.9
comp=Z,10nm,0.3s,baz=355,slow=14,SNR=5.4
DAVOX LR LR 13 40 01.6
comp=Z,14μm,20.6s,baz=121,slow=39
DAVOX ScP ScP 13 41 12.9 -0.7
comp=Z,2.7nm,0.3s,baz=154,slow=2.5,SNR=11
PRU Pruhonice 16.71 332⇑ iP Pn 13 33 00.8 +0.1
PRU ex x 13 33 19.7
PRU eS Sn 13 36 00.7 -5.0
PRU AMS AMS 13 41 00.0
comp=Z,13μm,12.1s
PRU eSCP ScP 13 41 12.4 -1.0
PRU eSCS ScS 13 44 52.0 -0.6
PRU Pruhonice 16.71 332⇑ iP Pn 13 33 00.8 +0.1
PRU eS Sn 13 36 00.7 -5.0
PRU MLR MLR
comp=Z,13μm,12.1s
PRU Pruhonice 16.71 332 P Pn 13 33 00.8 +0.1
PRU eS Sn 13 36 00.7 -5.0
comp=Z,13μm,12.1s
DFRA Djebel Bou Aff 16.72 279 P Pn 13 33 01.0 0.0
DFRA Djebel Bou Aff 16.72 279 P Pn 13 33 01.0 0.0
REVF Revere 16.76 304 eP Pn 13 33 01.6 +0.3
REVF Revere 16.76 304 eP Pn 13 33 01.6 +0.3
TUE Stuetta 16.79 315 ePn Pn 13 33 02.1 +0.1
comp=Z,799nm,1.1s
AUTN L'Aution 16.81 305 eP Pn 13 33 02.0 -0.2
AUTN L'Aution 16.81 305 eP Pn 13 33 02.0 -0.2
KSP Ksiaz 16.82 337 eP P 13 33 03.1 +0.1
KSP eS S 13 36 12.3 -2.3
KSP LMZ LR 13 38 20.8
KSP Ksiaz 16.82 337⇑ eP P 13 33 03.2 +0.2
KSP eS S 13 36 12.3 -2.3
KSP Ksiaz 16.82 337 eP P 13 33 03.2 +0.2
PRA Prague 16.82 332⇑ iP P 13 33 02.7 -0.3
PRA eS Sn 13 36 04.5 -3.7
PRA Prague 16.82 332⇑ iP P 13 33 02.7 -0.3
PRA eS Sn 13 36 04.5 -3.7
PRA Prague 16.82 332 P P 13 33 02.7 -0.3
PRA eS Sn 13 36 04.5 -3.7
LUCF Luceram 16.83 305 eP Pn 13 33 01.4 -0.9
LUCF Luceram 16.83 305 eP Pn 13 33 01.4 -0.9
MVIF Mont Vial 16.96 305⇑ eP Pn 13 33 03.7 -0.3
MVIF Mont Vial 16.96 305⇑ eP Pn 13 33 03.7 -0.3
DAVA Damuels 16.96 318 i Pn Pn 13 33 04.2 +0.2
SNR=269
DAVA Damuels 16.96 318 Pn Pn 13 33 04.2 +0.2
SNR=269
CKHR Kef el Ahmar 17.05 277 P Pn 13 33 00.0 -5.2
CKHR Kef el Ahmar 17.05 277 P Pn 13 33 00.0 -5.2
CALN Calern 17.08 304 eP Pn 13 33 05.3 -0.2
CALN Calern 17.08 304 eP Pn 13 33 05.3 -0.2
SET Setif 17.13 278 P P 13 33 07.0 +0.4
SET Setif 17.13 278 P P 13 33 07.0 +0.4
PVCC Panska Ves 17.14 333⇑ iP P 13 33 06.4 -0.2
PVCC eS Sn 13 36 15.5 -0.5
PVCC eSCP ScP 13 41 14.4 +0.2
PVCC eSCS ScS 13 44 54.2 +0.4
PVCC Panska Ves 17.14 333⇑ iP P 13 33 06.4 -0.2
PVCC eS Sn 13 36 15.5 -0.5
PVCC Panska Ves 17.14 333 P P 13 33 06.4 -0.2
PVCC eS Sn 13 36 15.5 -0.5
BRG Berggiesshubel 17.66 333 i P P 13 33 11.9 -0.3
comp=Z,925nm,1.0s
BRG i sP sP 13 33 33.9 -3.0
comp=Z,2μm,1.7s
BRG S Sn 13 36 25.0 -3.4
BRG SCP ScP 13 41 15.6 +0.3
comp=Z,60nm,1.0s
comp=N,7μm,17.3s
comp=E,12μm,19.9s
comp=Z,14μm,11.3s
BRG Berggiesshubel 17.66 333 i P P 13 33 11.9 -0.3
BRG S Sn 13 36 25.0 -3.4
BRG pmax pmax
comp=Z,925nm,1.0s
BRG pmax pmax
comp=N,2μm,1.7s
BRG MLR MLR
comp=N,7μm,17.3s
BRG MLR MLR
comp=E,12μm,19.9s
BRG MLR MLR
comp=Z,14μm,11.3s
BRG Berggiesshubel 17.66 333 i P P 13 33 11.9 -0.3
comp=Z,2μm,1.7s
BRG S Sn 13 36 25.0 -3.4
comp=Z,14μm,11.3s
GRFO Grafenberg 17.88 326 eP P 13 33 14.6 -0.1
GRFO pmax pmax
comp=Z,6μm,1.5s
GRFO Grafenberg 17.88 326 eP P 13 33 14.6 -0.1
comp=Z,6μm,1.5s
GRFO Grafenberg 17.88 326 eP P 13 33 14.6 -0.1
comp=Z,6μm,1.5s
VSR Storozhevoye 17.94 26 eP Pn 13 33 15.6 -0.1
VSR eS Sn 13 36 30.5 -4.7
VSR pmax pmax
comp=Z,6μm,1.5s
VSR pmax pmax
comp=Z,3μm,1.1s
VSR smax smax
comp=N,9μm,4.8s
VSR Storozhevoye 17.94 26 eP Pn 13 33 15.6 -0.1
comp=N,3μm,1.1s
SPAK Spaichingen-Ko 18.04 319⇑ eP P 13 33 16.7 +0.1
GDM Grand'Maison 18.16 308⇑ eP P 13 33 18.1 +0.2
GDM Grand'Maison 18.16 308⇑ eP P 13 33 18.1 +0.2
STU Stuttgart 18.24 321 eP P 13 33 18.4 -0.3
STU pmax pmax
comp=Z,500nm,0.8s
STU Stuttgart 18.24 321 eP P 13 33 18.4 -0.3
comp=Z,500nm,0.8s
STU Stuttgart 18.24 321 eP P 13 33 18.4 -0.3
comp=Z,496nm,0.8s
VORR Voronezh 18.33 26 eP P 13 33 20.0 +0.4
VORR eS Sn 13 36 45.0 +0.4
VORR pmax pmax
comp=Z,3μm,1.0s
VORR Voronezh 18.33 26 eP P 13 33 20.0 +0.4
comp=Z,3μm,1.0s
VORR eS Sn 13 36 45.0 +0.4
FELD Feldberg im Sc 18.34 317⇑ eP P 13 33 19.5 -0.4
CLL Collm 18.36 332⇑ iP P 13 33 19.6 -0.3
comp=Z,2μm,1.4s
CLL ePlp 13 33 21.0
comp=Z,4μm,21.4s
CLL iP pP pP 13 33 32.0 -3.1
CLL iS sP sP 13 33 39.5 -5.2
CLL eS S 13 36 42.0 -2.9
comp=N,10μm,22.2s
CLL eS S 13 36 42.0 -2.9
comp=E,22μm,16.6s
CLL esS sS 13 37 06.0 -4.3
CLL e 13 37 48.0
CLL i ScP ScP 13 41 16.2 -0.5
comp=Z,95nm,1.1s
CLL i 13 41 18.9
CLL eScS ScS 13 44 56.0 -1.4
CLL Collm 18.36 332⇑ iP P 13 33 19.6 -0.3
CLL eS S 13 36 42.0 -2.9
CLL pmax pmax
comp=Z,2μm,1.4s
CLL Collm 18.36 332 i P P 13 33 19.6 -0.3
comp=Z,2μm,1.4s
CLL eS S 13 36 42.0 -2.9
CLL Collm 18.36 332 eP P 13 33 19.2 -0.7
comp=Z,4μm,1.5s
BBS Basel-Blauen 18.39 315 eP P 13 33 20.2 -0.1
GRN Grenoble 18.41 307⇑ eP P 13 33 20.4 -0.3
GRN Grenoble 18.41 307⇑ eP P 13 33 20.4 -0.3
BFO Black Forest 18.42 319 eP P 13 33 20.8 +0.1
BFO pmax pmax
comp=Z,1μm,1.4s
BFO Black Forest 18.42 319 eP P 13 33 20.8 +0.1
comp=Z,1μm,1.4s
BFO Black Forest 18.42 319 eP P 13 33 20.8 +0.1
comp=Z,1μm,1.4s
SUW Suwalki 18.43 354 eP P 13 33 20.4 -0.2
SUW epP Pn 13 33 22.7 +1.1
SUW eS S 13 36 45.4 -0.9
SUW LMZ LR 13 39 44.1
SUW Suwalki 18.43 354⇑ eP P 13 33 20.5 -0.2
SUW eS S 13 36 45.4 -0.9
SUW Suwalki 18.43 354 eP P 13 33 20.5 -0.2
LIBD Limburg 18.71 317 eP P 13 33 24.1 +0.3
LOMF Lomont 18.72 314⇑ eP P 13 33 24.1 +0.1
LOMF Lomont 18.72 314⇑ eP P 13 33 24.1 +0.1
MICGM Minsk 18.79 2⇑ iP P 13 33 22.0 -2.6
MICGM PM 13 33 23.0
comp=Z,2.2nm,1.4s
MICGM PM 13 33 23.0
comp=N,44nm,2.0s
MICGM PM 13 33 24.0
comp=Z,42nm,2.0s
MICGM PM 13 33 26.0
comp=E,2.3nm,2.0s
MICGM epP pP 13 33 42.0 +2.2
MICGM eS S 13 36 40.0 -14
MICGM esS Sn 13 36 58.0 +2.4
MICGM eLR LR 13 39 28.0
MICGM LRM MLR 13 41 15.0
comp=Z,21nm,16.0s
MICGM LRM MLR 13 41 16.0
comp=N,14nm,10.0s
MICGM LRM MLR 13 41 20.0
comp=E,16nm,8.0s
MNK Minsk 18.79 2c iP P 13 33 22.0 -2.6
VRH Novokhopyorsk 18.93 31 eP P 13 33 26.6 +0.5
VRH eS S 13 36 48.7 -8.2
VRH pmax pmax
comp=Z,5μm,0.8s
VRH pmax pmax
comp=Z,6μm,1.1s
VRH smax smax
comp=N,27μm,6.7s
VRH Novokhopyorsk 18.93 31 eP P 13 33 26.6 +0.5
comp=N,6μm,1.1s
VRH eS S 13 36 48.7 -8.2
comp=N,27μm,6.7s
TOD Tromm 18.97 322⇑ eP P 13 33 27.1 +0.4
ECH Echery 19.00 317 eP P 13 33 27.1 +0.1
ECH Echery 19.00 317 eP P 13 33 27.1 +0.1
LPSR Galich'ya Gora 19.01 24 eP P 13 33 27.2 +0.2
LPSR eS S 13 36 55.0 -3.7
LPSR pmax pmax
comp=Z,4μm,1.0s
LPSR pmax pmax
comp=Z,5μm,1.1s
LPSR smax smax
comp=N,1μm,1.2s
LPSR Galich'ya Gora 19.01 24 eP P 13 33 27.2 +0.2
comp=N,5μm,1.1s
LPSR eS S 13 36 55.0 -3.7
comp=N,1μm,1.2s
LANF Langenberg 19.09 320⇑ eP P 13 33 28.6 +0.6
LANF Langenberg 19.09 320⇑ eP P 13 33 28.6 +0.6
EMHD Djebel Mahouad 19.10 278 P P 13 33 28.0 -0.3
EMHD Djebel Mahouad 19.10 278 P P 13 33 28.0 -0.3
KTD Kalmit 19.15 321⇑ eP P 13 33 29.1 +0.4
NACGM Naroch 19.17 0 eP P 13 33 28.0 -0.8
NACGM ePP PnPn 13 33 50.0 +4.2
NACGM ePPP PPP 13 34 00.0
NACGM eS S 13 37 01.0 -1.0
NACGM eLQ LQ 13 39 18.0
NACGM eLR LR 13 40 56.0
NACGM LRM MLR 13 42 41.0
comp=Z,23nm,13.0s
NACGM Naroch 19.17 0 eS S 13 37 01.0 -1.0
SSB Saint Sauveur 19.21 306⇑ eP P 13 33 29.3 0.0
SSB Saint Sauveur 19.21 306 eP P 13 33 28.3 -1.0
SSB pmax pmax
comp=Z,680nm,1.0s
SSB Saint Sauveur 19.21 306⇑ eP P 13 33 29.3 0.0
SSB Saint Sauveur 19.21 306 eP P 13 33 28.3 -1.0
comp=Z,678nm,1.0s
KLNR Kaliningrad 19.38 349 i P P 13 33 30.3 -0.7
KLNR pmax pmax
comp=Z,8μm,1.3s
KLNR Kaliningrad 19.38 349 i P P 13 33 30.3 -0.7
comp=Z,8μm,1.3s
SJAF Saint Jean de 19.53 297⇑ eP P 13 33 32.3 -0.5
SJAF Saint Jean de 19.53 297⇑ eP P 13 33 32.3 -0.5
THEF They Montfort 19.66 316⇑ eP P 13 33 34.9 +0.7
THEF They Montfort 19.66 316⇑ eP P 13 33 34.9 +0.7
ABH Alteburg 19.78 322⇑ eP P 13 33 35.6 +0.1
FILF Fillols 19.78 297⇑ eP P 13 33 36.4 +0.8
FILF Fillols 19.78 297⇑ eP P 13 33 36.4 +0.8
LRDF Laroque-de-Fa 19.88 298⇑ eP P 13 33 36.4 -0.2
LRDF Laroque-de-Fa 19.88 298⇑ eP P 13 33 36.4 -0.2
RUP Ruppelstein 19.92 321⇑ eP P 13 33 37.3 +0.3
LBL Lubilhac 20.04 305 eP P 13 33 39.4 +0.9
LBL Lubilhac 20.04 305 eP P 13 33 39.4 +0.9
PLDF La Plantade 20.07 308 eP P 13 33 38.4 -0.3
PLDF La Plantade 20.07 308 eP P 13 33 38.4 -0.3
CARF Carcanieres 20.14 298⇑ eP P 13 33 38.9 -0.6
CARF Carcanieres 20.14 298⇑ eP P 13 33 38.9 -0.6
VALF Valcebollere 20.14 297⇑ eP P 13 33 40.2 +0.6
VALF Valcebollere 20.14 297⇑ eP P 13 33 40.2 +0.6
EBNR Beni Rached 20.23 279 P P 13 33 41.1 +0.5
EBNR Beni Rached 20.23 279 P P 13 33 41.1 +0.5
WLF Walferdange 20.37 319 P P 13 33 42.3 +0.5
comp=Z,980nm,1.6s
WLF Walferdange 20.37 319 eP P 13 33 42.1 +0.3
WLF pmax pmax
comp=Z,1μm,1.0s
WLF Walferdange 20.37 319 P P 13 33 42.3 +0.5
comp=Z,980nm,1.6s
WLF Walferdange 20.37 319 eP P 13 33 42.1 +0.3
comp=Z,998nm,1.0s
WLF LR LR
comp=Z,10μm,22.0s
ECHA Ech Chlef 20.38 279 P P 13 33 42.7 +0.6
ECHA Ech Chlef 20.38 279 P P 13 33 42.7 +0.6
PYM Petit Puy Mans 20.38 307 eP P 13 33 42.2 +0.1
PYM Petit Puy Mans 20.38 307 eP P 13 33 42.2 +0.1
AGO Saint Agoulin 20.41 307 eP P 13 33 42.7 +0.3
AGO Saint Agoulin 20.41 307 eP P 13 33 42.7 +0.3
RAYN Ar Rayn 20.44 121 PFAKE 13 34 00.0 +14
RAYN LR LR
comp=Z,14μm,20.0s
ETRT Tiaret 20.53 276 P P 13 33 43.6 -0.3
ETRT Tiaret 20.53 276 P P 13 33 43.6 -0.3
FRNF Fournols 20.55 305 eP P 13 33 45.2 +1.3
FRNF Fournols 20.55 305 eP P 13 33 45.2 +1.3
OBN Obninsk 20.58 17 P P 13 33 43.1 -0.9
comp=Z,3μm,0.9s,baz=211,slow=1.6,SNR=167
OBN ScP ScP 13 41 20.6 -1.1
comp=Z,117nm,0.7s,baz=221,slow=16,SNR=5.9
OBN LR LR 13 42 16.9
comp=Z,17μm,21.9s,baz=204,slow=38
OBN Obninsk 20.58 17c iP P 13 33 42.8 -1.2
OBN i S S 13 37 27.7 -2.0
OBN pmax pmax
comp=Z,8μm,1.7s
OBN MLR MLR
comp=Z,17μm,22.0s
OBN Obninsk 20.58 17 i P P 13 33 42.8 -1.2
comp=Z,8μm,1.7s
OBN Obninsk 20.58 17 eP P 13 33 43.1 -0.9
comp=Z,4μm,0.9s
OBN ScP ScP 13 41 20.6 -1.1
EANR 'Ain N'Sour 20.62 278 P P 13 33 44.4 -0.3
EANR 'Ain N'Sour 20.62 278 P P 13 33 44.4 -0.3
VERF Verneugheol 20.73 306 eP P 13 33 46.4 +0.6
VERF Verneugheol 20.73 306 eP P 13 33 46.4 +0.6
SALF Salau 20.81 297⇑ eP P 13 33 46.6 -0.1
SALF Salau 20.81 297⇑ eP P 13 33 46.6 -0.1
RGN Rugen 20.93 338 eP P 13 33 46.7 -1.1
comp=Z,1μm,0.8s
OJGS Djebel Guires 20.96 277 P P 13 33 47.0 -1.4
OJGS Djebel Guires 20.96 277 P P 13 33 47.0 -1.4
OKGL Djebel Kef Gue 20.98 278 P P 13 33 49.0 +0.5
OKGL Djebel Kef Gue 20.98 278 P P 13 33 49.0 +0.5
BSD Bornholm Skovb 20.98 341⇑ iP P 13 33 45.4 -2.9
comp=Z,5μm,2.0s
BSD i 13 34 03.6
BSD iS S 13 37 30.5 -7.1
comp=Z,16μm,22.0s
BSD Bornholm Skovb 20.98 341⇑ iP P 13 33 45.4 -2.9
BSD iS S 13 37 30.5 -7.1
BSD pmax pmax
comp=Z,5μm,2.0s
BSD MLR MLR
comp=Z,16μm,22.0s
BSD Bornholm Skovb 20.98 341 i P P 13 33 45.4 -2.9
comp=Z,16μm,22.0s
BSD iS S 13 37 30.5 -7.1
MEM Membach 21.00 321 P P 13 33 49.5 +0.8
comp=Z,1μm,1.5s
HGN Heimansgroeve 21.14 322 i P P 13 33 50.7 +0.7
comp=Z,4μm,1.6s
HGN eS S 13 37 40.2 -0.6
HGN eL L 13 43 21.6
comp=Z,9μm,21.1s
HGN Heimansgroeve 21.14 322 eS S 13 37 40.2 -0.6
MELF Melles 21.14 298 eP P 13 33 51.1 +0.8
MELF Melles 21.14 298 eP P 13 33 51.1 +0.8
BCLA Clavier 21.25 320 P P 13 33 51.7 +0.3
comp=Z,1μm,1.6s
OJBR Djebel Berber 21.27 277 P P 13 33 48.0 -3.8
OJBR Djebel Berber 21.27 277 P P 13 33 48.0 -3.8
BEBN Eben Emael 21.29 321 P P 13 33 52.1 +0.5
comp=Z,445nm,1.7s
MOS Moscow 21.40 17α iP P 13 33 52.1 -0.7
MOS e 13 34 15.5
MOS iS S 13 37 43.4 -2.6
MOS e 13 37 54.3
MOS eSS SnSn 13 38 12.9 -1.8
MOS e 13 45 06.1
MOS pmax pmax
comp=Z,5μm,1.9s
MOS pmax pmax
comp=E,2μm,3.2s
MOS pmax pmax
comp=N,4μm,3.0s
MOS pmax pmax
comp=Z,2μm,1.6s
MOS pmax pmax
comp=N,699nm,1.4s
MOS pmax pmax
comp=E,457nm,1.4s
MOS smax smax
comp=N,3μm,1.9s
MOS smax smax
comp=E,4μm,1.9s
MOS MLR MLR
comp=Z,7μm,12.0s
MOS Moscow 21.40 17 i P P 13 33 52.1 -0.7
comp=Z,2μm,1.6s
MOS Moscow 21.40 17 ePcP PcP 13 37 54.3 +0.8
MOS eScS ScS 13 45 06.1 -1.4
DOU Dourbes 21.44 319 P P 13 33 53.2 -0.1
comp=Z,615nm,1.8s
WTSB Winterswijk 21.48 325 i P P 13 33 53.1 -0.6
comp=Z,2μm,1.6s
WTSB eS S 13 37 48.5 +0.9
WTSB Winterswijk 21.48 325 eS S 13 37 48.5 +0.9
VIEF Viey 21.67 297 eP P 13 33 55.9 -0.1
VIEF Viey 21.67 297 eP P 13 33 55.9 -0.1
SNF Seneffe 21.84 319 P P 13 33 57.6 0.0
UCC Uccle 21.96 320 P P 13 33 59.9 +1.1
comp=Z,980nm,1.3s
USTO Oran 21.98 278 P P 13 34 00.0 +0.9
REYF Montagne du Re 22.01 298 eP P 13 34 00.6 +1.0
REYF Montagne du Re 22.01 298 eP P 13 34 00.6 +1.0
SLIT Slitere, Latvi 22.09 354 ePcP PcP 13 37 55.4 +0.6
SNR=90
CART Cartagena 22.15 283 i S S 13 37 57.6 -2.9
COP Copenhagen 22.17 339⇑ iP P 13 33 59.0 -2.1
comp=Z,509nm,1.1s
COP i S S 13 37 56.9 -3.6
comp=Z,7μm,21.0s
COP Copenhagen 22.17 339⇑ iP P 13 33 59.0 -2.1
COP i S S 13 37 56.9 -3.6
COP pmax pmax
comp=Z,510nm,1.1s
COP MLR MLR
comp=Z,7μm,21.0s
COP Copenhagen 22.17 339 i P P 13 33 59.0 -2.1
comp=Z,510nm,1.1s
ATE Arette 22.23 298 eP P 13 34 01.4 -0.5
ATE Arette 22.23 298 eP P 13 34 01.4 -0.5
TAM Tamanrasset 22.36 240 eP P 13 34 03.6 0.0
TAM pmax pmax
comp=Z,1μm,1.1s
TAM Tamanrasset 22.36 240 eP P 13 34 03.6 0.0
comp=Z,1μm,1.1s
TAM Tamanrasset 22.36 240 eP P 13 34 03.6 0.0
comp=Z,1μm,1.1s
TAM LR LR
comp=Z,8μm,19.0s
LARF Larrau 22.43 297 eP P 13 34 03.7 -0.4
LARF Larrau 22.43 297 eP P 13 34 03.7 -0.4
MATF Mathat 22.59 305 eP P 13 34 07.0 +1.4
MATF Mathat 22.59 305 eP P 13 34 07.0 +1.4
OSSF Osses 22.67 298 eP P 13 34 05.2 -1.3
OSSF Osses 22.67 298 eP P 13 34 05.2 -1.3
VSU Vasula 22.74 0c iP P 13 34 05.9 -1.2
VSU pmax pmax
comp=Z,4μm,1.7s
VSU MLR MLR
comp=Z,17μm,22.0s
VSU Vasula 22.74 0 i P P 13 34 05.9 -1.2
comp=Z,17μm,22.0s
VSU eS S 13 38 10.1 +0.2
SNR=30
MENF Mencas 23.01 318⇑ eP P 13 34 09.3 -0.6
MENF Mencas 23.01 318⇑ eP P 13 34 09.3 -0.6
LCHF La Chataignera 23.14 307 eP P 13 34 14.6 +3.3
LCHF La Chataignera 23.14 307 eP P 13 34 14.6 +3.3
MUD Monsted U'grnd 23.84 336⇑ iP P 13 34 15.6 -1.9
comp=Z,224nm,0.8s
MUD i S S 13 38 28.5 +0.8
MUD Monsted U'grnd 23.84 336⇑ iP P 13 34 15.6 -1.9
MUD i S S 13 38 28.5 +0.8
MUD pmax pmax
comp=Z,220nm,0.8s
MUD Monsted U'grnd 23.84 336 iP P 13 34 15.6 -1.9
SNR=44
MUD i S S 13 38 28.5 +0.8
ELSH Elham, Standar 23.87 318⇑ eP P 13 34 17.7 -0.1
ELSH AMB AMB 13 34 21.0
comp=Z,2μm,1.3s
HMNX Herstmonceux 24.17 317⇑ eP P 13 34 20.0 -0.5
HMNX AMB AMB 13 34 22.4
comp=Z,1μm,1.3s
PUL Pulkovo 24.18 5c iP P 13 34 20.0 -0.4
PUL pmax pmax
comp=Z,2μm,1.2s
PUL MLR MLR
comp=Z,9μm,16.0s
PUL Pulkovo 24.18 5 i P P 13 34 20.0 -0.4
comp=Z,9μm,16.0s
ES19 SONSECA Array 24.35 289 eP P 13 34 22.6 +0.3
ESDC Sonseca Array 24.40 288 P P 13 34 23.2 +0.4
comp=Z,455nm,0.7s,baz=80,slow=9.8,SNR=786
ESDC ScP ScP 13 41 32.5 +0.4
comp=Z,14nm,0.8s,baz=63,slow=2.2,SNR=12
ESDC LR LR 13 45 27.4
comp=Z,3μm,18.1s,baz=85,slow=40
ESLA Sonseca Array 24.40 288 eP P 13 34 23.3 +0.5
comp=Z,528nm,0.8s
PAB San Pablo 24.70 288 eP P 13 34 26.2 +0.7
PAB pmax pmax
comp=Z,840nm,1.1s
PAB San Pablo 24.70 288 eP P 13 34 26.2 +0.7
comp=Z,840nm,1.1s
PAB San Pablo 24.70 288 eP P 13 34 26.2 +0.7
comp=Z,838nm,1.1s
PAB LR LR
comp=Z,6μm,22.0s
JSA Saint Aubin 24.92 312⇑ eP P 13 34 26.3 -1.0
JSA AMB AMB 13 34 29.2
comp=Z,930nm,1.4s
SKP1 Kophill 25.21 318⇑ iP P 13 34 28.6 -1.3

WOL Wolverton 25.25 317⇑ eP P 13 34 29.4 -0.9
WOL AMB AMB 13 34 32.1
comp=Z,1µm,1.5s

GEYT Alibeck 25.30 76 P P 13 34 31.8 +0.7
comp=Z,827nm,0.7s,baz=269,slow=5.9,SNR=218
GEYT LR LR 13 46 41.4
comp=Z,6µm,19.7s,baz=295,slow=42

ASHT Ashkhabad 25.52 76 P P 13 34 34.9 +2.0
ASHT pmax pmax
comp=Z,3µm,0.9s

ASHT Ashkhabad 25.52 76 P P 13 34 34.9 +2.0
comp=Z,3µm,0.9s

HOMB Homborsund 25.52 338 eP P 13 34 31.2 -1.5
HOMB IAmb IAmb 13 34 34.8
comp=Z,140nm,1.1s

SWN1 Swindon 25.66 317⇑ eP P 13 34 33.5 -0.5
SWN1 AMB AMB 13 34 36.5
comp=Z,3µm,1.5s

FINES FINESS Array B 25.73 359 P P 13 34 33.0 -1.5
comp=Z,84nm,0.6s,baz=160,slow=11,SNR=297
FINES ScP **ScP 13 41 35.1 -0.2**
comp=Z,93nm,0.9s,baz=118,slow=2.9,SNR=7.4
FINES LR LR 13 45 39.8
comp=Z,10µm,19.1s,baz=182,slow=38

FINES PKiKP **PKiKP 13 45 42.0 -0.1**
comp=Z,9.8nm,0.9s,baz=129,slow=3.7,SNR=7.1

FIA1 FINESS Array S 25.73 359 eP P 13 34 33.1 -1.5
HFS Hagfors 25.80 345 P P 13 34 33.2 -1.9
comp=Z,122nm,0.6s,baz=142,slow=7.5,SNR=225
HFS LR LR 13 46 15.8
comp=Z,16µm,21.0s,baz=159,slow=40

LMK Market Rasen 25.84 322⇑ eP P 13 34 34.7 -0.9
LMK AMB AMB 13 34 37.1
comp=Z,2µm,1.5s

MDT Midelt 25.86 273 P P 13 34 36.6 +0.4
comp=Z,264nm,0.9s,baz=82,slow=11,SNR=100
MDT ScP **ScP 13 41 36.7 +0.3**
comp=Z,19nm,0.9s,baz=272,slow=3.3,SNR=5.0
MDT LR LR 13 48 11.2
comp=Z,4µm,18.3s,baz=74,slow=44

SSW Stow on the Wo 25.90 318⇑ eP P 13 34 35.4 -0.8
BATH Bath 25.93 316⇑ eP P 13 34 35.5 -0.9
BATH AMB AMB 13 34 38.7
comp=Z,1µm,1.5s

CWF Charnwood Fore 25.98 320⇑ eP P 13 34 35.7 -1.2
CWF AMB AMB 13 34 38.9
comp=Z,914nm,1.3s

CWF Charnwood Fore 25.98 320 eP P 13 34 35.9 -1.0
comp=Z,1µm,1.2s
CWF eScP **ScP 13 41 37.0 +0.9**

STRD Stroud 25.98 317⇑ eP P 13 34 36.1 -0.8
STRD AMB AMB 13 34 39.2
comp=Z,1µm,1.3s

SNART Snartemo 25.99 337 eP P 13 34 36.3 -0.6
SNART IAmb IAmb 13 34 38.9
comp=Z,90nm,0.6s

SNART eS **S 13 39 02.9 +1.0**

SNART Snartemo 25.99 337 *i* P **P 13 34 35.5 -1.4**
SNR=28

OLDB Oldbury-Upon-S 26.15 317⇑ eP P 13 34 37.3 -1.1
OLDB AMB AMB 13 34 40.8
comp=Z,640nm,1.5s

OSL Oslo 26.30 342 eP P 13 34 38.6 -1.2
OSL IAmb IAmb 13 34 51.5
comp=Z,196nm,1.2s

KONO Kongsberg 26.35 341 eP P 13 34 37.8 -2.4
KONO IAmb IAmb 13 34 50.1
comp=Z,104nm,0.8s

KONO Kongsberg 26.35 341 eP P 13 34 38.3 -1.9
KONO pmax pmax
comp=Z,830nm,1.7s

KONO Kongsberg 26.35 341 eP P 13 34 38.3 -1.9
comp=Z,830nm,1.7s

KONO Kongsberg 26.35 341 eP P 13 34 38.3 -1.9
comp=Z,830nm,1.7s
KONO LR LR
comp=Z,10µm,19.0s

MONM Monmouth 26.37 317⇑ eP P 13 34 38.4 -2.1
MONM AMB AMB 13 34 44.0
comp=Z,491nm,1.3s

DYA Yadsworthy 26.44 313 eP P 13 34 40.6 -0.5
comp=Z,508nm,1.1s

DAMY Dhamar 26.46 138 eP P 13 34 43.6 +1.7
comp=Z,852nm,1.2s

KLMR Klimovskoe 26.48 14 eP P 13 34 38.6 -2.7
KLMR *e**PP **pP 13 34 58.2 -0.7**
KLMR *e* 13 35 23.3
KLMR *e* 13 38 03.4
KLMR eS **S 13 39 06.4 -3.1**
KLMR pmax pmax
comp=Z,2µm,1.2s
KLMR MLR MLR
comp=Z,11µm,13.0s

KLMR Klimovskoe 26.48 14 *e*P **P 13 34 38.6 -2.7**
comp=Z,2µm,1.2s

KLMR Klimovskoe 26.48 14 *e*PcP **PcP 13 38 03.4 -0.9**
comp=Z,11µm,13.0s

PBRG Braganca 26.54 293 eP P 13 34 42.3 +0.1
comp=Z,894nm,1.5s
PBRG eS **S 13 39 12.2 +1.1**

MCH1 Michaelchurch 26.55 317⇑ eP P 13 34 40.5 -1.5
MCH1 AMB AMB 13 34 41.6
comp=Z,272nm,1.6s

STNC Stoke 26.62 320⇑ eP P 13 34 42.2 -0.6
STNC AMB AMB 13 34 44.0
comp=Z,1µm,1.4s

LHO Holmfirth 26.67 321⇑ eP P 13 34 41.7 -1.4
MVO Moncorvo 26.74 292 eP P 13 34 44.5 +0.5
comp=Z,1µm,1.4s
MVO eS **S 13 39 12.3 -2.0**

HPK Haverah Park 26.76 322⇑ eP P 13 34 42.4 -1.6
HPK AMB AMB 13 34 43.8
comp=Z,723nm,1.5s

NC602 NORSAR Array S 26.81 344 eP P 13 34 43.1 -1.2
NC602 IAmb IAmb 13 34 53.7
comp=Z,262nm,1.1s

NC602 NORSAR Array S 26.81 344 eP P 13 34 42.2 -2.0
PBAR Barrancos 26.87 285 eP P 13 34 45.3 +0.2
comp=Z,3µm,1.4s
PBAR eS **S 13 39 17.7 +1.5**

STAV Stavanger 26.95 336 eP P 13 34 44.3 -1.2
STAV IAmb IAmb 13 34 55.9
comp=Z,223nm,1.4s
STAV IAMs_20 IAMs_20 13 44 10.3
comp=Z,10µm,19.8s

AKTK Aktyubinsk 27.03 47 P P 13 34 46.8 +0.4
AKTO Aktyubinsk 27.03 47 P P 13 34 46.8 +0.4
comp=Z,739nm,0.9s,baz=249,slow=9.1,SNR=1087
AKTO S **S 13 39 14.8 -3.8**
comp=Z,39nm,1.0s,baz=246,slow=18,SNR=2.2
AKTO ScP **ScP 13 41 39.5 +0.1**
comp=Z,16nm,0.6s,baz=160,slow=2.5,SNR=6.0
AKTO LR LR 13 49 53.0
comp=Z,7µm,18.3s,baz=245,slow=46

PMRV Marv?2o 27.05 288 eP P 13 34 46.9 +0.1
comp=Z,1µm,1.3s
PMRV eS **S 13 39 18.5 -0.7**

NAO01 NORSAR Array S 27.06 343 eP P 13 34 44.8 -1.7
FOEL Foel Wylfa 27.06 319⇑ eP P 13 34 46.1 -0.6
FOEL AMB AMB 13 34 47.6
comp=Z,535nm,1.4s

BLS5 Blasjo 27.09 337 eP P 13 34 45.7 -1.2
BLS5 IAmb IAmb 13 34 48.1
comp=Z,119nm,0.8s

PCBR Castelo Branco 27.10 289 eP P 13 34 47.3 +0.1
comp=Z,798nm,1.3s

LCP Cassop 27.10 323⇑ eP P 13 34 45.7 -1.3
NC405 NORSAR Array S 27.11 344 eP P 13 34 44.9 -2.1
MTE Manteigas 27.14 290 eP P 13 34 48.0 +0.5
comp=Z,497nm,1.4s
MTE eS **S 13 39 20.5 -0.1**

MTE Manteigas 27.14 290 eP P 13 34 48.1 +0.5
comp=Z,1µm,2.0s
MTE LR LR
comp=Z,6µm,22.0s

ASUD Al Ashush, Dub 27.14 106 *i* P **P 13 34 48.2 +0.6**
SNR=130

NB201 NORSAR Array S 27.14 344 eP P 13 34 45.4 -2.0
NB2 NORSAR Subarra 27.15 344 P P 13 34 45.3 -2.1
comp=Z,631nm,1.7s,baz=156,slow=9.3

NB2 NORSAR Subarra 27.15 344 P P 13 34 45.3 -2.1
baz=156,slow=9.3

NB2 NORSAR Subarra 27.15 344 P P 13 34 45.3 -2.1
comp=Z,631nm,1.7s,SNR=69

NOA NORSAR Array B 27.15 344 P P 13 34 46.0 -1.4
comp=Z,6.8nm,0.3s,baz=276,slow=3.8,SNR=197

NOA ScP **ScP 13 41 39.1 -0.5**
comp=Z,83nm,0.9s,baz=136,slow=3.4,SNR=6.5
NOA LR LR 13 47 04.7
comp=Z,8µm,18.8s,baz=150,slow=40

LPW Lampeter 27.19 317⇑ eP P 13 34 46.8 -1.0
LPW AMB AMB 13 34 47.8
comp=Z,272nm,1.6s

NAZ Nazwa, Dubai 27.21 105 *i* P **P 13 34 48.7 +0.4**
SNR=305

PESTR Estremoz 27.24 287 eP P 13 34 48.6 +0.1
comp=Z,960nm,1.5s
PESTR eS **S 13 39 21.8 -0.3**

NBO02 NORSAR Array S 27.25 343 eP P 13 34 45.6 -2.6
NBO00 NORSAR Array S 27.25 343 eP P 13 34 46.5 -1.8
PVRL Vila Real 27.26 292 eP P 13 34 49.2 +0.5
comp=Z,624nm,1.4s

BANOM Banah 27.27 103 *i* P **P 13 34 48.8 0.0**
SNR=37

BANOM Banah 27.27 103 P **P 13 34 49.7 +0.9**
SNR=108

BANOM Banah 27.27 103 P **P 13 34 48.8 0.0**
SNR=37
BANOM P **P 13 34 49.7 +0.9**
SNR=108

FAQ Al Faqa, Dubai 27.28 106 *i* P **P 13 34 49.0 +0.1**
SNR=155

NC303 NORSAR Array S 27.28 344 eP P 13 34 46.5 -2.1
KMY Karmoy 27.31 336 eP P 13 34 47.8 -1.0
KMY IAmb IAmb 13 34 50.0
comp=Z,116nm,0.9s

POLO Lamas de Olo 27.32 292 eP P 13 34 49.5 +0.2
comp=Z,367nm,1.4s
POLO eS **S 13 39 23.6 +0.1**

PVIS Viseu 27.40 291 eP P 13 34 50.4 +0.5
comp=Z,884nm,1.4s

ODD1 Odda 27.42 338 eP P 13 34 49.0 -0.9
NC204 NORSAR Array S 27.47 343 eP P 13 34 48.1 -2.2
PVAQ Vaqueiros 27.48 284 eS S 13 39 24.4 -1.5
PVAQ Vaqueiros 27.48 284 eS S 13 39 24.4 -1.5
PCAB Cabril 27.50 293 eP P 13 34 51.7 +0.9
comp=Z,1µm,1.6s

PBEJ Beja 27.53 285 eP P 13 34 51.3 +0.2
comp=Z,1µm,1.3s

BDHA Al Bayda' 27.60 137 *i* P **P 13 34 53.0 +1.0**
EVO Evora 27.60 286 eP P 13 34 51.7 +0.1
comp=Z,715nm,1.4s

WPM1 Penmaenmawr 27.61 319⇑ eP P 13 34 50.6 -0.9
UOSS Minazif 27.66 105 eP P 13 34 52.0 -0.3
comp=Z,123nm,1.5s

HATD Hatta, Dubai 27.67 105 *i* P **P 13 34 52.4 0.0**
SNR=167

PBDV Barranco-do-Ve 27.67 283 eP P 13 34 52.5 +0.1
comp=Z,1µm,1.5s
PBDV eS **S 13 39 28.6 -0.4**

ASHO Ashiyiah 27.68 105 *i* P **P 13 34 52.7 +0.2**
SNR=55

ASHO Ashiyiah 27.68 105 P **P 13 34 52.7 +0.2**
SNR=55

ASHO Ashiyiah 27.68 105 P **P 13 34 52.7 +0.2**
SNR=55

PGAV Gaveira, Arco 27.69 294 eP P 13 34 53.2 +0.7
comp=Z,584nm,1.5s
PGAV eS **S 13 39 29.2 -0.1**

PCVE Castro Verde 27.71 284 eP P 13 34 52.7 +0.1
comp=Z,982nm,1.6s
PCVE eS **S 13 39 29.6 +0.1**

PMTG Montargil 27.72 287 eP P 13 34 52.7 0.0
comp=Z,574nm,1.4s
PMTG eS **S 13 39 28.3 -1.3**

YRE Yr Eifl 27.76 318⇑ *i* P **P 13 34 51.7 -1.2**
MESJ Messejana 27.83 285 eP P 13 34 53.7 -0.1
MESJ AMb AMB 13 34 55.7
comp=Z,286nm,1.1s
MESJ eS **S 13 39 30.9 -0.5**

MESJ Messejana 27.83 285 eP P 13 34 53.9 +0.2
comp=Z,566nm,1.7s

MESJ Messejana 27.83 285 eP P 13 34 53.6 -0.1
MESJ eS **S 13 39 30.9 -0.5**

MESJ Messejana 27.83 285 eP P 13 34 53.6 -0.1
MESJ eS **S 13 39 30.9 -0.5**

KESW Keswick, Cumbr 27.83 322⇑ eP P 13 34 52.7 -0.9
PTOM Tomar 27.83 289 eP P 13 34 54.0 +0.3
comp=Z,610nm,1.3s

AB31 Akbulak array 27.84 51 P **P 13 34 53.4 -0.2**
AB31 pmax pmax
comp=Z,373nm,0.9s

AB31 Akbulak array 27.84 51 P **P 13 34 53.4 -0.2**
comp=Z,373nm,0.9s

ABKAR Akbulak array 27.84 51 eP P 13 34 53.8 +0.2
WME Myndd Eilian 27.88 319⇑ eP P 13 34 52.7 -1.3
WLF1 Llynfaes 27.88 319 eP P 13 34 52.7 -1.2
PTO Porto 27.93 292 eP P 13 34 55.8 +1.3
comp=Z,1µm,1.4s

BBO1 Bothel 27.98 322⇑ *i* P **P 13 34 53.7 -1.1**
ALMR Almeirim 27.99 288 eP P 13 34 55.0 -0.1
ALMR Almeirim 27.99 288 eP P 13 34 55.0 -0.1
ALMR Almeirim 27.99 288 eP P 13 34 55.0 -0.1
ALMR Almeirim 27.99 288 eP P 13 34 55.0 -0.1
PNCL Nicolau / Gran 28.04 285 eP P 13 34 56.2 +0.6
comp=Z,842nm,1.5s
PNCL eS **S 13 39 35.4 +0.7**

BHH Howats Hill 28.15 323⇑ *i* P **P 13 34 55.6 -0.7**
ECK Cauldkaine Hil 28.15 323⇑ *i* P **P 13 34 55.4 -1.0**
BER Bergen 28.19 338 eP P 13 34 55.2 -1.5
BER IAmb IAmb 13 35 18.9
comp=Z,314nm,1.7s
BER eS **S 13 39 35.4 -1.2**

PACT Alcochete 28.22 287 eP P 13 34 58.4 +1.3
comp=Z,1µm,1.7s

MORF Marmelete 28.23 284 eP P 13 34 57.3 -0.1
MORF eS **S 13 39 37.3 -0.5**

MORF Marmelete 28.23 284 eP P 13 34 57.5 +0.1
comp=Z,477nm,1.7s
MORF eS **S 13 39 39.5 +1.6**

MORF Marmelete 28.23 284 eP P 13 34 57.2 -0.1
MORF eS **S 13 39 37.3 -0.5**

MORF Marmelete 28.23 284 eP P 13 34 57.5 +0.1
comp=Z,477nm,1.7s
MORF eS **S 13 39 39.5 +1.6**

EKA Eskdalemuir Ar 28.24 323 P **P 13 34 56.1 -1.1**
comp=Z,37nm,0.4s,baz=114,slow=9.2,SNR=79
EKA PcP **PcP 13 38 09.7 +1.0**
comp=Z,19nm,0.5s,baz=110,slow=2.6,SNR=8.4
EKA ScP **ScP 13 41 43.1 +0.2**
comp=Z,40nm,0.7s,baz=122,slow=4.6,SNR=22
EKA LR LR 13 47 19.4
comp=Z,5µm,20.8s,baz=120,slow=39

ESK Eskdalemuir 28.26 323⇑ eP P 13 34 55.8 -1.5
ESK AMB AMB 13 34 57.1
comp=Z,387nm,1.5s

ESK Eskdalemuir 28.26 323 *i* P **P 13 34 56.7 -0.6**
ESK Eskdalemuir 28.26 323 *i* P **P 13 34 56.7 -0.6**
ESK Eskdalemuir 28.26 323 eP P 13 34 56.3 -1.0
comp=Z,545nm,1.2s
ESK LR LR
comp=Z,6µm,22.0s

ATD Arta Tunnel 28.26 144 P **P 13 34 58.5 +0.7**
comp=Z,70nm,1.1s,baz=329,slow=6.5,SNR=27
ATD LR LR 13 46 47.9
comp=Z,5µm,19.9s,baz=335,slow=37

PTEO Sao Teotonio 28.26 284 eP P 13 34 57.7 +0.2
comp=Z,1µm,1.4s

ESY Stoneypath 28.30 325⇑ *i* P **P 13 34 56.1 -1.5**
ASK Askoy 28.32 338 eP P 13 34 56.5 -1.2
ASK IAmb IAmb 13 35 55.6
comp=Z,2µm,2.5s

PFVI Vila Bisbo 28.40 283 eP P 13 34 58.8 0.0
comp=Z,620nm,1.5s
PFVI eS **S 13 39 41.1 +0.8**

PFVI Vila Bisbo 28.40 283 eP P 13 34 59.1 +0.4
comp=Z,351nm,1.1s

BWH Wardlaw 28.41 323⇑ *i* P **P 13 34 57.9 -0.7**
WIM Isle of Man 28.42 320⇑ *i* P **P 13 34 58.0 -0.8**
LIS Lisbon 28.47 287 eP P 13 34 59.2 -0.2
LIS AMb AMB 13 35 02.1
comp=Z,477nm,0.9s
LIS eS **S 13 39 41.0 -0.4**

LIS Lisbon 28.47 287 eP P 13 34 59.1 -0.2
LIS eS **S 13 39 41.0 -0.4**

PMST Lisbon--Monsan 28.49 287 eP P 13 34 59.7 +0.1
comp=Z,751nm,1.2s

PMAFR Mafra 28.55 287 eP P 13 35 00.7 +0.6
comp=Z,708nm,1.8s

HYA Hoyanger 28.56 339 eP P 13 34 60.0 +0.1
HYA IAmb IAmb 13 35 13.9
comp=Z,114nm,1.2s

EDI Edinburgh 28.57 324 *e*P **P 13 34 59.5 -0.5**
EDI Edinburgh 28.57 324⇑ eP P 13 34 59.0 -1.0
EDI AMB AMB 13 34 59.8
comp=Z,495nm,1.5s

ARQ Araqi 28.74 107 P **P 13 35 02.3 +0.4**
SNR=336

ARQ Araqi 28.74 107 P **P 13 35 02.3 +0.4**
SNR=336

GAL1 Galloway 28.78 321⇑ eP P 13 35 00.5 -1.4
GAL1 AMB AMB 13 35 02.1
comp=Z,262nm,1.3s

EDU Dundee 28.83 325⇑ *i* P **P 13 35 00.7 -1.7**
SUE Sulen 28.90 338 eP P 13 35 02.1 -0.7
SUE IAmb IAmb 13 35 04.3
comp=Z,132nm,1.2s

FURI Furi 28.92 155 *i* P **P 13 35 06.3 +2.4**
FURI eS **S 13 39 54.5 +5.2**

FURI Furi 28.92 155 eP P 13 35 06.7 +2.9
comp=Z,647nm,1.3s

DSB Dublin 28.94 318 eP P 13 35 03.3 -0.1
comp=Z,188nm,1.1s

GMM Mts of Mourne 29.13 320⇑ *i* P **P 13 35 03.6 -1.4**
PGBU Glenifferbraes 29.14 323⇑ eP P 13 35 04.3 -0.7
PGBU AMB AMB 13 35 05.2
comp=Z,424nm,1.4s

AKN Aaknes 29.17 341 eP P 13 35 02.5 -2.8
HOQ Hoqain 29.23 106 P **P 13 35 05.9 -0.3**
SNR=181

HOQ Hoqain 29.23 106 P **P 13 35 05.9 -0.3**
SNR=181

MUKL Al Mukalla 29.24 131 *i* P **P 13 35 06.4 +0.1**
FOO Floro 29.24 339 eP P 13 35 04.5 -1.4
FOO IAmb IAmb 13 35 21.1
comp=Z,251nm,1.4s

EAB Aberfoyle 29.26 324⇑ *i* P **P 13 35 05.2 -1.0**
TMCR Tamitsa 29.31 10 eP P 13 35 05.0 -1.5
TMCR eS **S 13 39 53.0 -1.0**
TMCR pmax pmax
comp=Z,428nm,1.4s

TMCR Tamitsa 29.31 10 eP P 13 35 05.0 -1.5
comp=Z,428nm,1.4s
TMCR eS **S 13 39 53.0 -1.0**

TBLU Trondheim 29.32 345 eP P 13 35 06.9 +0.2
TBLU IAmb IAmb 13 35 08.7
comp=Z,95nm,0.8s
TBLU eS **S 13 39 58.6 +4.3**

MOL Molde 29.36 342 eP P 13 35 06.5 -0.4
MOL IAmb IAmb 13 35 18.2
comp=Z,215nm,1.5s

MCD Coleburn Disti 29.52 327⇑ eP P 13 35 06.2 -2.3
BSY Bisya 29.58 108 P **P 13 35 09.6 +0.2**
SNR=128

BSY Bisya 29.58 108 P **P 13 35 09.6 +0.2**
SNR=128

BIDO Bidbid 29.90 105 P **P 13 35 12.0 -0.2**
SNR=38

BIDO Bidbid 29.90 105 P **P 13 35 12.0 -0.2**
SNR=38

ARU Arti 29.92 36 P **P 13 35 11.9 -0.2**
comp=Z,184nm,0.3s,baz=244,slow=6.0,SNR=380
ARU LR LR 13 49 41.8
comp=Z,6µm,18.9s,baz=235,slow=41

ARU Arti 29.92 36*c* *i*P **P 13 35 11.8 -0.2**
ARU 13 36 10.4
ARU eS **S 13 40 02.9 -1.0**
ARU SS **SnSn 13 41 40.0 -2.2**
ARU 13 45 37.9
ARU pmax pmax
comp=Z,1µm,1.7s
ARU MLR MLR
comp=Z,6µm,18.0s

ARU Arti 29.92 36 *i* P **P 13 35 11.8 -0.2**
comp=Z,1µm,1.7s
ARU eS **S 13 40 02.9 -1.0**

ARU Arti 29.92 36 *e*P **P 13 35 11.9 -0.2**
comp=Z,498nm,0.9s

MDO Dochfour 29.94 326⇑ eP P 13 35 10.5 -1.7
ABTO Aybut 29.98 121 P **P 13 35 12.8 -0.1**
SNR=293

ABTO Aybut 29.98 121 P **P 13 35 12.8 -0.1**
SNR=293

MLA1 Latheron 29.99 328⇑ eP P 13 35 11.3 -1.3
SMDO Samad 30.08 106 P **P 13 35 13.4 -0.4**
SNR=204

SMDO Samad 30.08 106 P **P 13 35 13.4 -0.4**
SNR=204

MVH1 Achvaich 30.13 327⇑ eP P 13 35 12.0 -1.9
NSS Namsos 30.15 347 eP P 13 35 13.2 -0.7
NSS IAmb IAmb 13 35 15.4
comp=Z,176nm,0.9s

SAN1 Sandwick 30.20 332 eP P 13 35 12.4 -2.0
LRW Lerwick 30.25 332 eP P 13 35 13.4 -1.5
LRW Lerwick 30.25 332⇑ eP P 13 35 12.7 -2.2
LRW AMB AMB 13 35 13.9
comp=Z,428nm,1.3s

KSB Sheil Bridge 30.30 325⇑ eP P 13 35 13.3 -2.1
BIGH Upper Bighouse 30.33 328 eP P 13 35 13.6 -2.1
WSAR Wadi Sarin 30.44 105 P **P 13 35 16.4 -0.5**
comp=Z,178nm,1.1s,baz=289,slow=8.9,SNR=54
WSAR LR LR 13 50 52.9
comp=Z,6µm,19.1s,baz=336,slow=43

KPL Plockton 30.48 325 *e*P **P 13 35 15.8 -1.1**
KPL Plockton 30.48 325⇑ eP P 13 35 14.2 -2.7
KPL AMB AMB 13 35 16.6
comp=Z,208nm,1.4s

JMDO Jabal Madar 30.49 107 P **P 13 35 17.1 -0.3**
SNR=97

JMDO Jabal Madar 30.49 107 P **P 13 35 17.1 -0.3**
SNR=97

YEL1 Yell 30.50 333⇑ eP P 13 35 15.1 -1.9
WAL1 Walls 30.50 332⇑ eP P 13 35 14.8 -2.3
RBK Rabkut 30.52 119 P **P 13 35 17.7 0.0**
SNR=304

RBK Rabkut 30.52 119 P **P 13 35 17.7 0.0**
SNR=304

VAL Valentia 30.69 313 eP P 13 35 18.5 -0.3
RRR Rubha Reidh 30.82 326 eP P 13 35 17.9 -2.0
SOKR Solikamsk 30.90 30*c* *i*P **P 13 35 18.5 -2.0**
SOKR pmax pmax
comp=Z,2µm,1.4s

WBK Wadi Bani Khal 31.03 106 P **P 13 35 22.7 +0.5**
SNR=76

WBK Wadi Bani Khal 31.03 106 P **P 13 35 22.7 +0.5**
SNR=76

WBK Wadi Bani Khal 31.03 106 P **P 13 35 22.7 +0.5**
SNR=76

SVE Sverdlovsk 31.12 37*d* *e*P **P 13 35 23.0 +0.4**
SVE eS **S 13 40 22.2 -0.4**
SVE pmax pmax
comp=Z,980nm,1.0s

SVE Sverdlovsk 31.12 37 eP P 13 35 23.0 +0.4
comp=Z,980nm,1.0s
SVE eS **S 13 40 22.2 -0.4**

SHAO Shalim 31.20 117 P **P 13 35 23.8 +0.1**
SNR=36

SHAO Shalim 31.20 117 P **P 13 35 23.8 +0.1**
SNR=36

SHAO Shalim 31.20 117 P **P 13 35 23.8 +0.1**
SNR=36

RRH Rhenigidale 31.25 326 eP P 13 35 22.2 -1.5
RRH Rhenigidale 31.25 326 eP P 13 35 22.2 -1.5
MOR8 Moi Rana 31.30 351 eP P 13 35 23.1 -1.0
MOR8 IAmb IAmb 13 35 26.8
comp=Z,188nm,0.9s

MOR8 Moi Rana 31.30 351 eP P 13 35 23.1 -1.0
SNR=39

STOK Stokkvaagen 31.65 350 eP P 13 35 26.6 -0.5
STOK IAmb IAmb 13 35 31.8
comp=N,84nm,1.1s

STOK Stokkvaagen 31.65 350 eP P 13 35 26.6 -0.5
SNR=39

TOA0 Torodi Ar. Sit 31.73 231 eP P 13 35 26.5 -1.8
comp=N,679nm,1.1s

TORD Torodi Ar. Bea 31.73 231 P **P 13 35 27.7 -0.7**
comp=N,152nm,0.6s,baz=34,slow=8.5,SNR=746
TORD LR LR 13 50 00.2
comp=N,9µm,21.2s,baz=20,slow=39

TORD P3KPbc 14 07 03.9
comp=N,2.8nm,1.0s,baz=213,slow=3.4,SNR=8.7

KONS Konsvik 31.79 350 eP P 13 35 27.8 -0.5
KONS IAmb IAmb 13 35 29.2
comp=Z,271nm,0.9s

KONS Konsvik 31.79 350 eP P 13 35 27.8 -0.5
SNR=39

APA Apatity 32.12 5⇓ *i*P **P 13 35 31.0 -0.3**

APA *i* 13 38 24.0
APA *i* S **S** **13 40 35.0 -3.0**
APA pmax pmax
comp=Z,273nm,1.0s
APA MLR MLR
comp=Z,10µm,13.0s
APA **Apatity** **32.12 5** *i* P **P** **13 35 31.0 -0.3**
comp=Z,273nm,1.0s
LVZ **Lovozero** **32.54 6** *e*P **P** **13 35 33.9 -1.1**
LVZ pmax pmax
comp=Z,1µm,1.2s
LVZ **Lovozero** **32.54 6** *e*P **P** **13 35 33.9 -1.1**
comp=Z,1µm,1.2s
LVZ **Lovozero** **32.54 6** *e*P **P** **13 35 33.9 -1.1**
comp=Z,1µm,1.2s
LVZ LR LR
comp=Z,7µm,21.0s
HEF **Hetta** **32.77 358** *e*P **P** **13 35 36.9 0.0**
HEF **Hetta** **32.77 358** *e*P **P** **13 35 36.9 0.0**
SNR=39
STEI **Steigen** **32.88 352** *e*P **P** **13 35 37.5 -0.4**
STEI IAmb IAmb 13 35 38.9
comp=Z,579nm,1.0s
STEI **Steigen** **32.88 352** *e*P **P** **13 35 37.5 -0.4**
SNR=39
LOF **Lofoten** **33.27 351** *e*P **P** **13 35 41.2 -0.1**
LOF IAmb IAmb 13 35 44.4
comp=Z,84nm,0.7s
LOF **Lofoten** **33.27 351** *e*P **P** **13 35 41.2 -0.1**
SNR=39
KTK1 **Kautokeino** **33.38 358** *e*P **P** **13 35 41.6 -0.7**
KTK1 IAmb IAmb 13 35 43.0
comp=Z,211nm,1.0s
KTK1 **Kautokeino** **33.38 358** *e*P **P** **13 35 41.6 -0.7**
SNR=39
KIF **Kilpisjarvi** **33.48 356** *e*P **P** **13 35 43.5 +0.5**
KIF **Kilpisjarvi** **33.48 356** *e*P **P** **13 35 43.5 +0.5**
SNR=39
DZET **Dzherino** **33.57 72** P **P** **13 35 45.4 +1.0**
DZET pmax pmax
comp=Z,486nm,1.1s
DZET **Dzherino** **33.57 72** P **P** **13 35 45.4 +1.0**
comp=Z,486nm,1.1s
BRLS **Boroldaу** **33.84 65**⇑ *i*P **P** **13 35 46.7 0.0**
comp=Z,219nm,0.3s
BRLS *i* sP **sP** **13 36 13.6 +0.3**
BRLS *e*PP **PP** **13 37 06.8 +2.5**
BRLS *i* S **S** **13 41 05.2 -0.1**
ARA0 **ARCESS Array S** **33.86 359** *e*P **P** **13 35 44.8 -1.6**
ARCES **ARCESS Array B** **33.86 359** P **P** **13 35 45.0 -1.4**
comp=Z,89nm,0.6s,baz=176,slow=8.4,SNR=268
ARCES ScP **ScP** **13 42 00.6 -0.8**
comp=Z,18nm,0.6s,baz=145,slow=4.4,SNR=3.8
ARCES LR LR 13 50 30.1
comp=Z,7µm,19.3s,baz=175,slow=38
ARE0 **ARCESS Array S** **33.86 359** *e*P **P** **13 35 46.4 -0.1**
ARE0 IAmb IAmb 13 35 47.2
comp=Z,174nm,0.8s
ARE0 **ARCESS Array S** **33.86 359** *e*P **P** **13 35 46.4 -0.1**
SNR=39
ARE0 **ARCESS Array S** **33.86 359** *e*P **P** **13 35 44.5 -1.9**
comp=Z,662nm,1.5s
KEV **Kevo** **34.08 0** *e*P **P** **13 35 48.9 +0.6**
KEV **Kevo** **34.08 0** *e*P **P** **13 35 47.3 -1.0**
KEV pmax pmax
comp=Z,190nm,0.9s
KEV **Kevo** **34.08 0** *e*P **P** **13 35 48.9 +0.6**
SNR=39
KEV **Kevo** **34.08 0** *e*P **P** **13 35 47.3 -1.0**
comp=Z,187nm,0.8s
KEV LR LR
comp=Z,4µm,19.0s
IUG **Iuzhnay** **34.14 66**⇑ *i*P **P** **13 35 50.0 +0.8**
comp=Z,3µm,1.1s
IUG *i* sP **sP** **13 36 18.0 +2.0**
IUG *i* S **S** **13 41 10.4 +0.4**
TRO **Tromso** **34.21 355** *e*P **P** **13 35 48.8 -0.6**
TRO IAmb IAmb 13 35 50.1
comp=Z,340nm,1.1s
TRO IAMs_20 IAMs_20 13 50 28.9
comp=Z,14µm,21.3s
TRO **Tromso** **34.21 355** *e*P **P** **13 35 48.8 -0.6**
SNR=39
ZRNK **Zerenda** **34.30 46** P **P** **13 35 51.2 +0.8**
ZRNK pmax pmax
comp=Z,2µm,1.0s
ZRNK **Zerenda** **34.30 46** P **P** **13 35 51.2 +0.8**
comp=Z,2µm,1.0s
KK31 **Karatay Array** **34.44 64** *i* P **P** **13 35 52.5 +0.8**
KK31 pmax pmax
comp=Z,196nm,0.8s
KK31 **Karatay Array** **34.44 64** *i* P **P** **13 35 52.5 +0.8**
comp=Z,196nm,0.8s
KKAR **Karatay Array** **34.44 64** *e*P **P** **13 35 52.7 +0.9**
KKAR **Karatay Array** **34.44 64** *e*P **P** **13 35 52.7 +0.9**
KKAR **Karatay Array** **34.44 64** *e*P **P** **13 35 52.7 +0.9**
KBL **Kabul** **34.58 79** *e*P **P** **13 35 54.1 +0.8**
KBL pmax pmax
comp=Z,170nm,1.1s
KBL **Kabul** **34.58 79** *e*P **P** **13 35 54.1 +0.8**
comp=Z,170nm,1.1s
KBL **Kabul** **34.58 79** *e*P **P** **13 35 54.1 +0.8**
comp=Z,170nm,1.1s
HAMF **Hammerfest** **35.01 358** *e*P **P** **13 35 55.0 -1.2**
HAMF IAmb IAmb 13 35 58.5
comp=Z,46nm,0.8s
HAMF *e*S **S** **13 41 20.1 -2.4**
HAMF **Hammerfest** **35.01 358** *e*P **P** **13 35 55.0 -1.2**
SNR=39
BRVK **Borovoye** **35.08 47** *c* *i*P **P** **13 35 57.8 +0.7**
BRVK pmax pmax
comp=Z,2µm,1.7s
BRVK MLR MLR
comp=Z,4µm,20.0s
BRVK **Borovoye** **35.08 47** *i* P **P** **13 35 57.8 +0.7**
comp=Z,4µm,20.0s
BRVK **Borovoye** **35.08 47** *e*P **P** **13 35 57.6 +0.5**
comp=Z,1µm,1.2s
BRVK LR LR
comp=Z,6µm,20.0s
BRVK **Borovoye** **35.08 47** P **P** **13 35 58.3 +1.2**
SNR=475
BRVK **Borovoye** **35.08 47** P **P** **13 35 58.3 +1.2**
SNR=475
BVAR **Borovoye Array** **35.13 47** P **P** **13 35 58.3 +0.7**
comp=Z,521nm,1.0s,baz=256,slow=6.0,SNR=921
BVAR ScP **ScP** **13 42 06.8 +0.5**
comp=Z,15nm,0.8s,baz=279,slow=1.9,SNR=5.0
BVAR LR LR 13 52 56.6
comp=Z,4µm,20.0s,baz=264,slow=41
CHKZ **Chkalovo** **35.40 46** P **P** **13 36 00.0 +0.1**
CHKZ pmax pmax
comp=Z,2µm,1.3s
CHKZ **Chkalovo** **35.40 46** P **P** **13 36 00.0 +0.1**
comp=Z,2µm,1.3s
VOSK **Vostochnaya** **35.43 47** P **P** **13 36 00.0 -0.1**
VOSK pmax pmax
comp=Z,2µm,1.1s
VOSK **Vostochnaya** **35.43 47** P **P** **13 36 00.0 -0.1**
comp=Z,2µm,1.1s
OTUK **Ortayu** **35.74 55** P **P** **13 36 03.6 +0.7**
OTUK pmax pmax
comp=Z,892nm,0.8s
OTUK **Ortayu** **35.74 55** P **P** **13 36 03.6 +0.7**
comp=Z,892nm,0.8s
PMAR **Madeira** **35.84 278** *e*P **P** **13 36 05.7 +1.6**
comp=Z,2µm,1.8s
PMAR **Madeira** **35.84 278** *e*P **P** **13 36 05.7 +1.6**
comp=Z,2µm,1.8s
MNAS **Manas** **35.94 65** P **P** **13 36 05.5 +0.7**
MNAS pmax pmax
comp=Z,264nm,1.2s
MNAS **Manas** **35.94 65** P **P** **13 36 05.5 +0.7**
comp=Z,264nm,1.2s
PMOZ **Porto Moniz, M** **36.04 278** *e*P **P** **13 36 02.0 -3.8**
comp=Z,1µm,1.7s
PMOZ *e*S **S** **13 41 41.0 +1.6**
BRZS **Berezniki** **36.10 52**⇑ *i*P **P** **13 36 06.6 +0.7**
comp=Z,524nm,1.1s
BRZS *i* S **S** **13 41 40.1 +0.4**
AML **Almayashu** **36.85 65** P **P** **13 36 14.1 +1.2**
SNR=164
EKS2 **Erkin-Say** **36.86 65** *e*P **P** **13 36 14.4 +1.7**
EKS2 pmax pmax
comp=Z,400nm,1.0s
EKS2 **Erkin-Say** **36.86 65** *e*P **P** **13 36 14.4 +1.7**
comp=Z,400nm,1.0s
EKS2 **Erkin-Say** **36.86 65** *e*P **P** **13 36 14.4 +1.7**
comp=Z,401nm,1.0s
EKS2 LR LR
comp=Z,5µm,21.0s
SFK **Sufi-Kurgan** **36.98 69** P **P** **13 36 15.4 +1.6**
SFK pmax pmax
comp=Z,241nm,0.5s
SFK **Sufi-Kurgan** **36.98 69** P **P** **13 36 15.4 +1.6**
comp=Z,241nm,0.5s
AAK **Ala-Archa** **37.39 64** P **P** **13 36 19.0 +1.8**
comp=Z,401nm,0.9s,baz=226,slow=3.2,SNR=605
AAK ScP **ScP** **13 42 15.4 +0.4**
comp=Z,66nm,1.0s,baz=263,slow=2.5,SNR=7.1
AAK LR LR 13 53 53.1
comp=Z,4µm,18.8s,baz=280,slow=40
AAK **Ala-Archa** **37.39 64** P **P** **13 36 19.0 +1.8**
AAK pmax pmax
comp=Z,401nm,0.9s
AAK pmax pmax
comp=N,66nm,1.0s
AAK MLR MLR
comp=Z,4µm,18.8s
AAK **Ala-Archa** **37.39 64** *e*P **P** **13 36 18.9 +1.7**
comp=Z,301nm,0.6s
AAK ScP **ScP** **13 42 15.4 +0.4**
AAK **Ala-Archa** **37.39 64** P **P** **13 36 19.1 +1.9**
SNR=186
AAK **Ala-Archa** **37.39 64** P **P** **13 36 19.1 +1.9**
SNR=186
FRU **Bishkek** **37.46 64**⇑ *i*P **P** **13 36 18.0 +0.4**
FRU *e* 13 37 47.0
FRU *i* S **S** **13 42 01.0 +0.3**
FRU pmax pmax
comp=Z,2µm,2.2s
FRU smax smax
comp=E,10µm,6.0s
FRU **Bishkek** **37.46 64** *i* P **P** **13 36 18.0 +0.4**
comp=E,2µm,2.2s
FRU *i* S **S** **13 42 01.0 +0.3**
KMBO **Kilima Mbogo** **38.01 162** P **P** **13 36 23.6 +1.0**
comp=E,19nm,1.0s,baz=349,slow=7.9,SNR=31
KMBO ScP **ScP** **13 42 17.4 -0.4**
comp=E,4.3nm,0.9s,baz=3.1,slow=6.4,SNR=3.8
KMBO LR LR 13 53 18.9
comp=E,10µm,18.1s,baz=340,slow=38
KMBO **Kilima Mbogo** **38.01 162** P **P** **13 36 24.0 +1.4**
SNR=14
KMBO **Kilima Mbogo** **38.01 162** P **P** **13 36 24.0 +1.4**
SNR=14
TKM2 **Tokmak 2** **38.17 64** *e*P **P** **13 36 24.5 +0.7**
TKM2 pmax pmax
comp=Z,220nm,0.9s
TKM2 **Tokmak 2** **38.17 64** *e*P **P** **13 36 24.5 +0.7**
comp=Z,220nm,0.9s
TKM2 **Tokmak 2** **38.17 64** *e*P **P** **13 36 24.5 +0.7**
comp=Z,222nm,0.8s
TKM2 LR LR
comp=Z,3µm,21.0s
KUU **Kurty** **38.61 62**⇑ *i*P **P** **13 36 28.9 +1.6**
comp=Z,6µm,1.1s
KUU *i* pP **pP** **13 36 47.5 +2.0**
KUU *i* PP **PP** **13 37 58.0 +1.2**
KUU *i* S **S** **13 42 19.9 +1.9**
JASL **Jaisalmer** **38.62 90** *e*P **P** **13 36 28.2 +0.6**
KSH **Kashi** **38.94 69** P **P** **13 36 29.8 -0.4**
KSH *e*sP sP 13 36 57.1 0.0
KSH *e*PP **PnPn** **13 38 03.0 -0.7**
KSH S **S** **13 42 20.2 -3.1**
KSH PcS **PcS** **13 42 29.3 +0.2**
KSH SS **SS** **13 45 04.1 -13**
KSH ScS **ScS** **13 46 30.7 -1.6**
KSH pmax pmax
comp=Z,170nm,1.0s
KSH pmax pmax
comp=Z,870nm,3.2s
KSH LR LR
comp=Z,3µm,11.1s
KSH LR LR
comp=Z,2µm,9.4s
KSH LR LR
comp=Z,5µm,24.6s
BJO **Bjornoya** **39.02 357** *e*P **P** **13 36 29.5 -0.7**
BJO IAmb IAmb 13 36 32.2
comp=Z,241nm,0.6s
BJO *e*PP **PP** **13 38 01.8 +1.0**
BJO *e*SS SS 13 45 18.5 +0.7
BJO **Bjornoya** **39.02 357** *e*P **P** **13 36 29.5 -0.7**
SNR=37
AAA **Alma-Ata** **39.11 63** *i* P **P** **13 36 33.4 +1.9**
AAA *i* S **S** **13 42 25.6 0.0**
AAA pmax pmax
comp=Z,2µm,1.3s
AAA smax smax
comp=N,13µm,4.2s
AAA **Alma-Ata** **39.11 63** *i* P **P** **13 36 33.4 +1.9**
comp=N,2µm,1.3s
AAA *i* S **S** **13 42 25.6 0.0**
comp=N,13µm,4.2s
MDOK **Medeo** **39.20 63**⇓ *i*P **P** **13 36 33.8 +1.5**
comp=N,2µm,1.4s
MDOK *i* S **S** **13 42 28.7 +1.6**
MDOK *i* SS **SnSn** **13 45 29.1 +2.1**
BHJ **Bhuj** **39.23 96** *e*P **P** **13 36 33.1 +0.5**
BHJ IAmb IAmb 13 36 34.4
comp=Z,413nm,0.9s
JMIC **Jan Mayen** **39.86 343** P **P** **13 36 36.9 -0.4**
comp=Z,161nm,0.9s,baz=113,slow=7.9,SNR=6.5
JMIC LR LR 13 54 24.0
comp=Z,4µm,20.3s,baz=135,slow=38
KURBB **Kurchatov Arra** **39.88 52** P **P** **13 36 38.7 +1.0**
comp=Z,1µm,1.0s,baz=278,slow=8.8,SNR=2265
KURBB PP **PnPn** **13 38 12.6 -1.9**
comp=Z,112nm,1.0s,baz=276,slow=12,SNR=5.2
KURBB ScP **ScP** **13 42 23.8 -0.4**
comp=Z,90nm,1.2s,baz=280,slow=4.8,SNR=10
KURBB S **S** **13 42 36.7 -0.1**
comp=Z,132nm,1.2s,baz=283,slow=16,SNR=17
KURK **Kurchatov** **39.94 51** P **P** **13 36 38.7 +0.5**
KURK 13 38 12.6
KURK S **S** **13 42 36.7 -1.0**
KURK pmax pmax
comp=Z,112nm,1.0s
KURK pmax pmax
comp=N,90nm,1.2s
KURK smax smax
comp=N,132nm,1.2s
KURK **Kurchatov** **39.94 51** P **P** **13 36 38.7 +0.5**
comp=N,112nm,1.0s
KURK S **S** **13 42 36.7 -1.0**
KURK **Kurchatov** **39.94 51** *e*P **P** **13 36 39.2 +1.0**
comp=N,2µm,1.1s
KURK PP **PP** **13 38 12.6 +1.4**
KURK ScP **ScP** **13 42 23.8 -0.6**
KURK S **S** **13 42 36.7 -1.0**
KURK LR LR
comp=Z,11µm,20.0s
KURK **Kurchatov** **39.94 51** P **P** **13 36 39.4 +1.2**
SNR=831
KURK **Kurchatov** **39.94 51** P **P** **13 36 39.4 +1.2**
SNR=831
TDK **Taldyqorghan** **39.98 60**⇑ *i*P **P** **13 36 39.7 +1.1**
comp=Z,3µm,1.0s
TDK *i* PP **PP** **13 38 12.8 +1.1**
TDK *i* S **S** **13 42 39.5 +0.9**
SATY **Saty** **40.20 63**⇑ *i*P **P** **13 36 42.5 +1.9**
comp=Z,10µm,1.1s
SATY *i* pP **pP** **13 37 02.0 +3.2**
SATY *i* sP **sP** **13 37 12.0 +4.4**
SATY *i* S **S** **13 42 44.6 +2.6**
SATY *i* SS **SS** **13 45 44.9 +2.5**
ZHN **Zhinishke** **40.20 63**⇑ *i*P **P** **13 36 42.3 +1.7**
comp=Z,3µm,1.2s
ZHN *i* S **S** **13 42 44.0 +1.9**
KPKS **Kokpek** **40.35 63**⇑ *i*P **P** **13 36 43.0 +1.2**
comp=Z,2µm,1.6s
KPKS *i* pP **pP** **13 37 02.8 +2.7**
KPKS *i* sP **sP** **13 37 11.2 +2.4**
KPKS *i* S **S** **13 42 45.4 +1.2**
BORG **Borgarnes** **40.60 331** P **P** **13 36 43.4 +0.1**
comp=Z,69nm,0.8s,baz=116,slow=6.0,SNR=22
BORG LR LR 13 56 51.5
comp=Z,3µm,18.9s,baz=122,slow=41
BORG **Borgarnes** **40.60 331** *i* P **P** **13 36 45.1 +1.7**
BORG **Borgarnes** **40.60 331** *i* P **P** **13 36 45.1 +1.7**
BORG **Borgarnes** **40.60 331** *e*P **P** **13 36 44.6 +1.2**
comp=Z,454nm,1.3s
DBIC **Dimbokro** **40.81 232** P **P** **13 36 44.9 -0.8**
comp=Z,198nm,0.8s,baz=24,slow=8.8,SNR=139
DBIC LR LR 13 56 39.0
comp=Z,5µm,19.2s,baz=16,slow=40
DBIC **Dimbokro** **40.81 232** *e*P **P** **13 36 45.0 -0.8**
DBIC pmax pmax
comp=Z,650nm,1.3s
DBIC **Dimbokro** **40.81 232** *e*P **P** **13 36 45.0 -0.8**
comp=Z,650nm,1.3s
DBIC **Dimbokro** **40.81 232** *e*P **P** **13 36 45.0 -0.7**
comp=Z,652nm,1.4s
HOPEN **Hopen** **40.88 359** *e*P **P** **13 36 45.4 -0.2**
HOPEN IAmb IAmb 13 36 46.6
comp=Z,334nm,0.6s
HOPEN IAMs_20 IAMs_20 13 55 21.4
comp=Z,7µm,21.9s
HOPEN **Hopen** **40.88 359** *e*P **P** **13 36 45.4 -0.2**
SNR=37
TIC **Toumodi** **40.93 233** *e*P **P** **13 36 45.8 -1.0**
KIC **Kosan Boka** **40.97 232** *e*P **P** **13 36 46.3 -0.8**
comp=Z,504nm,0.8s
SEM **Semipalatinsk** **40.98 52**⇑ *i*P **P** **13 36 48.1 +1.4**
comp=Z,10µm,1.3s
SEM *i* S **S** **13 42 54.4 +1.3**
DHRM **DHARAMSHALA** **41.05 80** *e*P **P** **13 36 48.6 +0.8**
BART **Pico Bartolome** **41.05 289** *e*P **P** **13 36 48.2 +0.6**
comp=Z,505nm,1.1s
BART **Pico Bartolome** **41.05 289** *e*P **P** **13 36 48.2 +0.6**
comp=Z,505nm,1.1s
PSMN **Pico do Norte,** **41.16 288** *e*P **P** **13 36 49.1 +0.7**
comp=Z,357nm,1.4s
PSMN **Pico do Norte,** **41.16 288** *e*P **P** **13 36 49.1 +0.7**
comp=Z,357nm,1.4s
PSMA **Santa Maria** **41.21 288** *e*P **P** **13 36 49.1 +0.3**
comp=Z,486nm,1.1s
SHLS **Shalkode** **41.26 63**⇑ *i*P **P** **13 36 50.8 +1.3**
comp=Z,1µm,0.7s
SHLS *i* S **S** **13 42 59.3 +1.3**
LIC **Lamto** **41.26 232** *e*P **P** **13 36 48.6 -0.8**
comp=Z,677nm,1.4s
CMLA **Cha da Macela** **41.33 289** *i* P **P** **13 36 53.3 +3.5**
CMLA **Cha da Macela** **41.33 289** *e*P **P** **13 36 50.6 +0.8**
comp=Z,906nm,1.4s
CMLA **Cha da Macela** **41.33 289** *e*P **P** **13 36 50.6 +0.8**
comp=Z,906nm,1.4s
CMLA **Cha da Macela** **41.33 289** PFAKE 13 37 00.0 +10
CMLA LR LR
comp=Z,4µm,22.0s
PDA **Ponta Delgada** **41.44 289** *e*P **P** **13 36 52.7 +2.0**
comp=Z,803nm,1.1s
PDA **Ponta Delgada** **41.44 289** *e*P **P** **13 36 52.7 +2.0**
comp=Z,803nm,1.1s
PSET **Sete Cidades** **41.47 289** *e*P **P** **13 36 52.9 +1.9**
comp=Z,590nm,1.2s
PSET **Sete Cidades** **41.47 289** *e*P **P** **13 36 52.9 +1.9**
comp=Z,590nm,1.2s
HSPB **Hornsund (broa** **41.66 356** *e*P **P** **13 36 52.3 +0.3**
HSPB IAmb IAmb 13 36 55.0
comp=Z,412nm,1.1s
HSPB **Hornsund (broa** **41.66 356** *e*P **P** **13 36 51.6 -0.4**
HSPB *e* 13 38 37.8
HSPB *e*S **S** **13 43 07.9 +5.3**
HSPB *e* 13 46 37.9
HSPB MLR MLR
comp=Z,12µm,24.2s
HSPB **Hornsund (broa** **41.66 356** *e*P **P** **13 36 51.6 -0.4**
SDNR **Sundarnagar** **41.83 81** *e*P **P** **13 36 55.0 +1.0**
SDNR *ex* x 13 43 04.0
SMLA **Simla** **42.12 81** *e*P **P** **13 36 57.2 +0.9**
KHET **Khetri** **42.15 86** *e*P **P** **13 36 56.2 -0.5**
MAKZ **Makanchi** **42.30 57** *e*P **P** **13 36 58.7 +1.1**
MAKZ pmax pmax
comp=Z,310nm,0.9s
MAKZ **Makanchi** **42.30 57** *e*P **P** **13 36 58.7 +1.1**
comp=Z,310nm,0.9s
MAKZ **Makanchi** **42.30 57** *e*P **P** **13 36 58.7 +1.1**
comp=Z,310nm,0.9s
MK31 **Makanchi Array** **42.51 57** *i* P **P** **13 37 00.3 +0.9**
MK31 pmax pmax
comp=Z,476nm,0.7s
MK31 **Makanchi Array** **42.51 57** *i* P **P** **13 37 00.3 +0.9**
comp=Z,476nm,0.7s
MK31 **Makanchi Array** **42.51 57** *e*P **P** **13 37 00.7 +1.3**
MKAR **Makanchi Array** **42.51 57** P **P** **13 37 00.6 +1.2**
comp=Z,380nm,0.5s,baz=275,slow=7.6,SNR=3370
MKAR ScP **ScP** **13 42 34.9 +0.1**
comp=Z,34nm,0.8s,baz=274,slow=3.2,SNR=7.9
MKAR S **S** **13 43 13.9 -2.2**
comp=Z,60nm,1.0s,baz=264,slow=12,SNR=9.5
MKAR PKPPKP P'P'df 14 08 54.5 -8.1
comp=Z,0.7nm,0.9s,baz=124,slow=2.6,SNR=4.0
KUDL **Kundal** **42.68 86** *e*P **P** **13 37 00.2 -0.6**
SPA0 **Spitsbergen Ar** **42.77 357** *e*P **P** **13 37 01.0 -0.1**
SPA0 IAmb IAmb 13 37 02.4
comp=Z,1µm,1.2s
SPA0 **Spitsbergen Ar** **42.77 357** *e*P **P** **13 37 01.0 -0.1**
SNR=36
SPA0 **Spitsbergen Ar** **42.77 357** *e*P **P** **13 37 00.5 -0.5**
SPITS **Spitsbergen Ar** **42.77 357** P **P** **13 37 00.4 -0.7**
comp=Z,43nm,0.3s,baz=153,slow=11,SNR=586
SPITS LR LR 13 57 36.1
comp=Z,5µm,19.2s,baz=185,slow=40
NVS **Novosibirsk** **42.88 45**⇑ *i*P **P** **13 37 04.0 +1.8**
NVS *i* S **S** **13 43 21.9 +0.8**
NVS pmax pmax
comp=Z,3µm,1.0s
NVS pmax pmax
comp=N,586nm,1.4s
NVS pmax pmax
comp=E,946nm,0.9s
NVS smax smax
comp=N,2µm,2.0s
NVS smax smax
comp=E,611nm,1.7s
NVS **Novosibirsk** **42.88 45** *i* P **P** **13 37 04.0 +1.8**
comp=E,586nm,1.4s
NVS *i* S **S** **13 43 21.9 +0.8**
comp=E,2µm,2.0s
PGRA **Graciosa** **42.91 291** *e*P **P** **13 37 02.7 0.0**
comp=E,82nm,0.6s
PGRA **Graciosa** **42.91 291** *e*P **P** **13 37 02.7 0.0**
comp=E,82nm,0.6s
NDI **New Delhi** **43.06 85** *ex* **P** **13 37 01.0 -3.0**
NDI *e*S **S** **13 43 21.0 -3.3**
AYAN **Aya Nagar** **43.06 85** *e*P **P** **13 37 03.9 -0.1**
PMAN **Manadas** **43.09 291** *e*P **P** **13 37 05.7 +1.6**
comp=E,842nm,1.3s
PMAN **Manadas** **43.09 291** *e*P **P** **13 37 05.7 +1.6**
comp=E,842nm,1.3s
SONA **Sohna** **43.12 85** *e*P **P** **13 37 04.6 +0.2**
DDI **Dehra Dun** **43.12 82** *e*P **P** **13 37 04.8 +0.3**
DDI IAmb IAmb 13 37 05.6
comp=Z,1µm,1.6s
ROSA **Rosais** **43.18 291** *e*P **P** **13 37 07.5 +2.6**
comp=Z,597nm,1.3s
ROSA **Rosais** **43.18 291** *e*P **P** **13 37 07.5 +2.6**
comp=Z,597nm,1.3s
ROSA **Rosais** **43.18 291** *e*P **P** **13 37 07.8 +2.9**
comp=Z,462nm,1.1s
SCO **Scoresbysund** **43.22 338** *i* P **P** **13 37 04.2 -0.4**
SCO **Scoresbysund** **43.22 338** *i* P **P** **13 37 04.2 -0.4**
SCO **Scoresbysund** **43.22 338** *i* P **P** **13 37 04.2 -0.4**
PCED **Cedros** **43.55 291** *e*P **P** **13 37 07.5 -0.3**
comp=Z,122nm,0.4s
PCED **Cedros** **43.55 291** *e*P **P** **13 37 07.5 -0.3**
comp=Z,122nm,0.4s
KBS **Kingsbay** **43.73 356** *e*P **P** **13 37 08.7 0.0**
KBS IAmb IAmb 13 37 09.8
comp=Z,760nm,1.1s
KBS **Kingsbay** **43.73 356** *e*P **P** **13 37 08.1 -0.6**
KBS pmax pmax
comp=Z,680nm,1.0s
KBS **Kingsbay** **43.73 356** *e*P **P** **13 37 08.1 -0.6**
comp=Z,680nm,1.0s
KBS **Kingsbay** **43.73 356** *e*P **P** **13 37 08.1 -0.6**
comp=Z,680nm,1.0s
KBS LR LR
comp=Z,8µm,20.0s
ZAA0 **Zalesovo Array** **43.79 47** *e*P **P** **13 37 09.9 +0.4**
ZALV **Zalesovo Beam** **43.79 47** P **P** **13 37 09.9 +0.4**
comp=Z,584nm,0.5s,baz=269,slow=8.7,SNR=1734
ZALV S **S** **13 43 34.4 0.0**
comp=Z,52nm,0.8s,baz=253,slow=15,SNR=11
ZALV LR LR 13 57 35.6
comp=Z,2µm,21.3s,baz=278,slow=39

BBTS Babate 43.83 253 P **P** 13 37 11.3 +1.0
comp=Z,238nm,0.8s,baz=48,slow=1.5,SNR=15
ZSN Zaisan 43.88 56⇑ *i*P **P** 13 37 14.2 +3.9
comp=Z,4μm,1.2s
ZSN *i* S **S** 13 43 41.4 +5.5
POO Poona 45.00 100 *e*P **P** 13 37 19.3 -0.3
POO IAmb IAmb 13 37 21.4
comp=Z,163nm,0.7s
LGTI Lohaghat 45.21 82 *e*P **P** 13 37 20.1 -1.0
BHPL Bhopal 45.55 91 *e*P **P** 13 37 24.2 +0.3
DAG Danmarks Havn 45.75 347⇑ *i*P **P** 13 37 23.6 -1.2
comp=Z,976nm,2.1s
DAG *i* pP **pP** 13 37 37.5 -5.8
comp=Z,5μm,20.0s
DAG Danmarks Havn 45.75 347⇑ *i*P **P** 13 37 23.6 -1.2
DAG pmax pmax
comp=Z,6μm,2.1s
DAG MLR MLR
comp=Z,5μm,20.0s
GOA Goa 46.65 103 *e*P **P** 13 37 33.1 +0.5
GOA IAmb IAmb 13 37 34.4
comp=Z,327nm,0.8s
WMQ Urumqi 46.74 61⇑ *i*P **P** 13 37 34.8 +1.7
WMQ pP pP 13 37 52.9 +1.2
WMQ PcP **PcP** 13 39 06.0 +0.6
WMQ PP **PP** 13 39 26.3 +2.6
WMQ S **S** 13 44 19.7 +2.4
WMQ ScS **ScS** 13 47 22.3 +1.8
WMQ SS **SS** 13 47 41.8 -2.4
WMQ pmax pmax
comp=Z,250nm,1.2s
WMQ pmax pmax
comp=Z,1μm,5.0s
WMQ LR LR
comp=Z,4μm,19.2s
WMQ LR LR
comp=Z,2μm,24.0s
WMQ LR LR
comp=Z,4μm,31.6s
NRIK Noril'sk 46.88 25 P **P** 13 37 34.9 +1.1
comp=Z,434nm,0.6s,baz=255,slow=5.9,SNR=464
NRIK LR LR 13 59 53.5
comp=Z,4μm,19.2s,baz=257,slow=39
KLRI Killari 47.45 98 *e*P **P** 13 37 38.0 -0.9
KLRI IAmb IAmb 13 37 40.2
comp=Z,700nm,1.0s
KLRI *e*S **S** 13 44 27.4 -0.6
KLRI IVMs_BB IVMs_BB 14 00 38.3
comp=Z,2μm,19.1s
PYUN Piuthan 47.95 82 *e*P **P** 13 37 43.6 +0.7
comp=Z,1μm,1.0s
PYUN Piuthan 47.95 82 *e*P **S** 13 44 32.7 -2.6
comp=Z,2μm,1.6s
KRAR Krasnoyarsk 48.35 43*c* *i*P **P** 13 37 44.6 -0.7
KRAR pmax pmax
comp=Z,954nm,1.0s
KRAR MLR MLR
comp=Z,3μm,20.0s
KRAR Krasnoyarsk 48.35 43 *i* P **P** 13 37 44.6 -0.7
comp=Z,3μm,20.0s
SRSP Sriramsagar 48.41 96 *e*P **P** 13 37 44.5 -1.8
SRSP *e*S **S** 13 44 40.0 -1.5
SRSP IVMs_BB IVMs_BB 13 58 29.7
comp=Z,845nm,27.1s
KOLN Koldanda 48.58 83 *e*P **P** 13 37 48.1 +0.4
comp=Z,2μm,1.4s
KOLN Koldanda 48.58 83 *e*P **S** 13 44 42.3 -1.8
comp=Z,2μm,1.5s
SUMG Summit 48.85 339⇑ *i*P **P** 13 37 49.2 -0.2
SUMG Summit 48.85 339⇑ *i*P **P** 13 37 49.2 -0.2
SUMG Summit 48.85 339 *i* P **P** 13 37 49.2 -0.2
SUMG Summit 48.85 339 *e*P **P** 13 37 48.6 -0.8
comp=Z,663nm,1.3s
RPR Rampur 49.22 95 *e*P **P** 13 37 52.2 -0.2
RPR IAmb IAmb 13 37 54.0
comp=Z,418nm,1.4s
RPR *e*S **S** 13 44 50.9 -1.9
RPR IVMs_BB IVMs_BB 14 00 43.1
comp=Z,1μm,33.1s
GKN Gorkha 49.32 82 *e*P **P** 13 37 53.6 +0.3
GKN Gorkha 49.32 82 *e*P **S** 13 44 51.6 -2.8
HYBB Hyderabad (bro 49.37 98 *e*P **P** 13 37 52.4 -1.2
HYBB IAmb IAmb 13 37 54.5
comp=Z,405nm,1.2s
HYBB *e*S **S** 13 44 53.1 -1.9
HYBB IVMs_BB IVMs_BB 14 01 57.5
comp=Z,1μm,20.5s
HYB Hyderabad 49.37 98⇓ *i*P **P** 13 37 53.5 -0.2
HYB *e*pP **pP** 13 38 11.0 -1.5
HYB *e*sP **sP** 13 38 18.0 -3.0
HYB *e*PcP **PcP** 13 39 18.5 +3.3
HYB *e*PP **PP** 13 39 52.0 +3.7
HYB *e* 13 40 34.0
HYB *e* 13 43 04.0
HYB *e*S **S** 13 44 54.0 -1.0
HYB *e*SS **SS** 13 48 26.0 -1.6
HYB Hyderabad 49.37 98 *e*P **P** 13 37 52.9 -0.8
HYB IAmb IAmb 13 37 55.0
comp=Z,212nm,0.7s
URV Uravakonda 49.69 101 *e*P **P** 13 37 54.5 -1.5
URV IAmb IAmb 13 37 56.8
comp=Z,330nm,1.2s
URV *e*S **S** 13 44 56.7 -2.7
DMN Daman 49.86 82 *e*P **P** 13 37 57.9 +0.3
comp=Z,2μm,1.2s
KKN Kakani 49.93 82 *e*P **P** 13 37 58.1 +0.1
PKIN Phulchoki 50.11 82 *e*P **P** 13 37 59.7 +0.3
comp=Z,968nm,1.1s
PKIN Phulchoki 50.11 82 *e*P **S** 13 45 03.4 -2.2
comp=Z,2μm,2.0s
SRLM Srisailam 50.35 99 *e*P **P** 13 38 00.6 -0.6
SRLM IAmb IAmb 13 38 02.1
comp=Z,474nm,1.2s
SRLM *e*S **S** 13 45 06.7 -2.0
SRLM IVMs_BB IVMs_BB 14 01 47.5
comp=Z,2μm,18.6s
GUN Gumba 50.36 81 *e*P **P** 13 38 01.8 +0.4
NJS Nagarjunasagar 50.44 98 *e*P **P** 13 38 00.5 -1.2
NJS IAmb IAmb 13 38 02.4
comp=Z,659nm,1.3s
NJS *e*S **S** 13 45 07.4 -2.5
NJS IVMs_BB IVMs_BB 14 02 11.7
comp=Z,1μm,21.7s
LSZ Lusaka 50.75 178 P **P** 13 38 04.3 +0.2
comp=Z,24nm,0.8s,baz=11,slow=8.0,SNR=37
LSZ Lusaka 50.75 178 PFAKE 13 38 20.0 +16
LSZ LR LR
comp=Z,7μm,20.0s
RCLA Racherla 50.76 99 *e*P **P** 13 38 02.4 -1.7
RCLA IAmb IAmb 13 38 05.1
comp=Z,625nm,1.3s
RCLA *e*S **S** 13 45 12.4 -1.9
RCLA IVMs_BB IVMs_BB 14 02 15.7
comp=Z,1μm,18.8s
NRS Narsarsuaq 50.90 324 *i* P **P** 13 38 04.7 +0.1
comp=Z,959nm,1.4s
NRS *i* S **S** 13 45 17.2 +2.1
NRS Narsarsuaq 50.90 324 *i* P **P** 13 38 04.7 +0.1
NRS *i* S **S** 13 45 17.2 +2.1
NRS pmax pmax
comp=Z,960nm,1.4s
NRS Narsarsuaq 50.90 324 *i* P **P** 13 38 04.7 +0.1
comp=Z,960nm,1.4s
NRS *i* S **S** 13 45 17.2 +2.1
RAMN Ramite 51.34 82 *e*P **P** 13 38 08.4 -0.3
comp=Z,941nm,1.0s
ADKI Addanki 51.36 98 *e*P **P** 13 38 07.5 -1.1
ADKI IAmb IAmb 13 38 09.3
comp=Z,152nm,0.8s
ADKI *e*S **S** 13 45 19.9 -2.7
ADKI IVMs_BB IVMs_BB 14 02 26.9
comp=Z,2μm,16.7s
PVM Polavaram 51.94 96 *e*P **P** 13 38 11.8 -1.2
PVM IAmb IAmb 13 38 13.9
comp=Z,141nm,1.1s
PVM *e*S **S** 13 45 27.6 -2.9
PVM IVMs_BB IVMs_BB 14 00 12.2
comp=Z,1μm,28.6s
ODAN Odare 52.02 82 *e*P **P** 13 38 13.5 -0.2
TAPN Taplejung 52.07 81 *e*P **P** 13 38 14.0 -0.2
comp=Z,1μm,1.1s
BOK Bokaro 52.17 86 IAmb IAmb 13 38 14.8
comp=Z,374nm,1.2s
BOK *e*P **P** 13 38 15.1 +0.5
SKHT Srikalahasti 52.32 101 *e*P **P** 13 38 15.1 -0.6
SKHT IAmb IAmb 13 38 16.2
comp=Z,280nm,1.2s
SKHT *e*S **S** 13 45 34.2 -1.6
SKHT IVMs_BB IVMs_BB 14 02 40.0
comp=Z,1μm,18.1s
SFJD Kangerlussuaq 52.73 331 P **P** 13 38 17.2 -0.7
comp=Z,122nm,0.6s,baz=83,slow=8.1,SNR=143
SFJD Kangerlussuaq 52.73 331⇑ *i*P **P** 13 38 17.3 -0.7
comp=Z,1μm,1.6s
SFJD Kangerlussuaq 52.73 331⇑ *i*P **P** 13 38 17.3 -0.7
SFJD pmax pmax
comp=Z,1μm,1.6s
SFJD Kangerlussuaq 52.73 331 *i* P **P** 13 38 17.3 -0.7
comp=Z,1μm,1.6s
SFJD Kangerlussuaq 52.73 331 *e*P **P** 13 38 17.3 -0.7
comp=Z,884nm,1.3s
SFJD LR LR
comp=Z,4μm,22.0s
ILULI Ilulissat 52.76 334⇑ *i*P **P** 13 38 17.1 -1.2
comp=Z,2μm,1.8s
ILULI Ilulissat 52.76 334⇑ *i*P **P** 13 38 17.1 -1.2
ILULI pmax pmax
comp=Z,2μm,1.8s
ILULI Ilulissat 52.76 334 *i* P **P** 13 38 17.0 -1.2
SNR=34
VIS Vishakhapatnam 53.08 94 *e*P **P** 13 38 20.2 -1.1
MDRS Chennai 53.13 101 *e*P **P** 13 38 21.6 -0.2
MDRS IAmb IAmb 13 38 23.0
comp=Z,525nm,1.8s
TRD Trivandrum 53.25 108 *e*P **P** 13 38 22.4 -0.2
CHLP Challavanipeta 53.26 93 *e*P **P** 13 38 21.6 -1.1
CHLP IAmb IAmb 13 38 23.4
comp=Z,529nm,1.5s
CHLP *e*S **S** 13 45 44.5 -4.0
CHLP IVMs_BB IVMs_BB 14 03 23.5
comp=Z,2μm,22.5s
NUUK Nuuk 53.48 328 *i* P **P** 13 38 22.6 -1.0
SNR=34
MOY Mondy 53.79 48 *e*P **P** 13 38 28.0 +1.7
MOY pmax pmax
comp=Z,855nm,3.1s
MOY Mondy 53.79 48 *e*P **P** 13 38 28.0 +1.7
comp=Z,855nm,3.1s
LSA Lhasa 53.83 77 P **P** 13 38 28.1 +0.8
LSA pmax pmax
comp=Z,97nm,1.2s
LSA Lhasa 53.83 77 PFAKE 13 38 40.0 +13
LSA LR LR
comp=Z,2μm,20.0s
KULLO Kullorsuaq 54.28 341⇑ *i*P **P** 13 38 28.6 -0.7
KULLO *i* S **S** 13 45 59.4 -1.4
comp=Z,4μm,17.0s
KULLO Kullorsuaq 54.28 341⇑ *i*P **P** 13 38 28.6 -0.7
KULLO *i* S **S** 13 45 59.4 -1.4
KULLO MLR MLR
comp=Z,4μm,17.0s
TSUM Tsumeb 55.29 190 P **P** 13 38 37.4 +0.1
comp=Z,34nm,0.7s,baz=358,slow=8.9,SNR=48
TSUM Tsumeb 55.29 190 *e*P **P** 13 38 37.5 +0.1
TSUM LR LR
comp=Z,17μm,19.0s
TLY Talaya 55.38 48 P **P** 13 38 38.4 +0.7
comp=Z,142nm,1.0s,baz=259,slow=6.2,SNR=140
TLY ScP **ScP** 13 43 29.7 +0.4
comp=Z,38nm,1.0s,baz=262,slow=3.9,SNR=6.1
TLY LR LR 14 06 53.4
comp=Z,3μm,18.9s,baz=297,slow=41
TLY Talaya 55.38 48*c* *i*P **P** 13 38 39.3 +1.6
TLY *e* 13 40 42.7
TLY *e*S **S** 13 46 15.6 -0.7
TLY *e*SS **SS** 13 49 55.5 -5.8
TLY pmax pmax
comp=Z,709nm,1.8s
TLY MLR MLR
comp=Z,4μm,21.0s
TLY Talaya 55.38 48 *i* P **P** 13 38 39.3 +1.6
comp=Z,709nm,1.8s
TLY *e*S **S** 13 46 15.6 -0.7
comp=Z,4μm,21.0s
TLY Talaya 55.38 48 *e*P **P** 13 38 38.9 +1.2
comp=Z,479nm,1.2s
TLY ScP **ScP** 13 43 29.6 +0.4
TLY Talaya 55.38 48 P **P** 13 38 39.4 +1.6
SNR=238
TLY Talaya 55.38 48 P **P** 13 38 39.4 +1.6
SNR=238
ZAK Zakamensk 55.52 49 *e*P **P** 13 38 39.7 +0.9
ZAK *e* 13 46 21.9
ZAK pmax pmax
comp=Z,416nm,1.1s
ZAK Zakamensk 55.52 49 *e*P **P** 13 38 39.7 +0.9
comp=Z,416nm,1.1s
IRK Irkutsk 55.61 47 *e*P **P** 13 38 39.6 +0.3
IRK *e*S **S** 13 46 19.7 +0.5
IRK pmax pmax
comp=Z,1μm,1.9s
IRK Irkutsk 55.61 47 *e*P **P** 13 38 39.6 +0.3
comp=Z,1μm,1.9s
IRK *e*S **S** 13 46 19.7 +0.5
MATP Matopo 55.88 178 P **P** 13 38 41.7 +0.1
comp=Z,63nm,0.5s,baz=360,slow=8.0,SNR=144
SHL Shillong 56.21 81 *e*P **P** 13 38 43.0 -1.2
SHL *i* P **PcP** 13 39 45.0 +3.9
SHL *i* x x 13 46 20.0
GTA Gaotai 56.70 63 ⇑P **P** 13 38 48.4 +1.0
GTA pP pP 13 39 08.9 +2.3
GTA sP sP 13 39 17.9 +2.9
GTA S **S** 13 46 35.3 +1.0
GTA sS sS 13 47 08.2 +1.2
GTA SS **SS** 13 50 28.3 +5.6
GTA pmax pmax
comp=Z,130nm,1.0s
GTA pmax pmax
comp=Z,1μm,7.1s
GTA LR LR
comp=Z,3μm,24.5s
GTA LR LR
comp=Z,2μm,16.6s
GTA LR LR
comp=Z,2μm,17.1s
TULEG Thule 56.81 344 *i* P **P** 13 38 46.0 -1.4
SNR=32
PALK Pallekele 56.92 106 P **P** 13 38 49.4 +0.3
comp=Z,167nm,1.1s,baz=296,slow=6.4,SNR=53
PALK Pallekele 56.92 106 *i* P **P** 13 38 49.5 +0.3
SNR=54
PALK Pallekele 56.92 106 *e*P **P** 13 38 49.4 +0.3
PALK pmax pmax
comp=Z,390nm,1.2s
PALK Pallekele 56.92 106 *e*P **P** 13 38 49.4 +0.3
comp=Z,390nm,1.2s
PALK Pallekele 56.92 106 *e*P **P** 13 38 49.4 +0.3
comp=Z,388nm,1.3s
PALK Pallekele 56.92 106 P **P** 13 38 50.4 +1.3
SNR=33
PALK Pallekele 56.92 106 P **P** 13 38 50.4 +1.3
SNR=33
OPO Ambohidratompo 57.44 157 P **P** 13 38 54.1 +1.4
comp=Z,50nm,0.8s,baz=326,slow=5.2,SNR=49
ABPO Ambohimpanom 57.87 157 *e*P **P** 13 38 56.5 +0.8
ABPO pmax pmax
comp=Z,68nm,1.0s
ABPO Ambohimpanom 57.87 157 *e*P **P** 13 38 56.5 +0.8
comp=Z,68nm,0.9s
ABPO LR LR
comp=Z,2μm,19.0s
H10N2 ASCENSION HYDR 58.03 230 P **P** 13 38 59.5 +3.1
baz=66,slow=6.1,SNR=4.2
H10N1 ASCENSION HYDR 58.04 230 P **P** 13 38 59.1 +2.6
baz=66,slow=6.1,SNR=3.9
H10N3 ASCENSION HYDR 58.05 230 P **P** 13 38 58.6 +1.9
baz=66,slow=6.1,SNR=8.4
SONM Songino Array 58.25 51 P **P** 13 38 59.1 +1.0
comp=Z,145nm,0.5s,baz=284,slow=9.0,SNR=756
SONM ScP **ScP** 13 43 43.0 +0.8
comp=Z,20nm,1.0s,baz=286,slow=3.9,SNR=4.1
SONM S **S** 13 46 53.9 -0.5
comp=Z,5.5nm,1.1s,baz=275,slow=16,SNR=4.1
SONM PKP2bc 14 08 44.6
comp=Z,3.2nm,1.3s,baz=132,slow=0.8,SNR=5.9
SONM LR LR 14 09 42.8
comp=Z,4μm,20.3s,baz=296,slow=42
SONA1 Songino Array 58.25 51 *e*P **P** 13 38 57.3 -0.9
ULN Ulaanbaatar 58.65 51*c* *i*P **P** 13 39 01.8 +0.8
ULN *i* *PP **pP** 13 39 20.4 +0.1
ULN pmax pmax
comp=Z,373nm,0.8s
ULN MLR MLR
comp=Z,5μm,21.0s
ULN Ulaanbaatar 58.65 51 *i* P **P** 13 39 01.8 +0.8
comp=Z,373nm,0.8s
ULN Ulaanbaatar 58.65 51 P **P** 13 39 02.2 +1.2
SNR=187
ULN Ulaanbaatar 58.65 51 P **P** 13 39 02.2 +1.2
SNR=187
H10S1 ASCENSION HYDR 58.99 229 P **P** 13 39 04.0 +0.8
baz=11,slow=5.9,SNR=7.4
H10S2 ASCENSION HYDR 59.01 229 P **P** 13 39 04.8 +1.5
baz=11,slow=5.9,SNR=12
H10S3 ASCENSION HYDR 59.01 229 P **P** 13 39 05.0 +1.7
baz=11,slow=5.9,SNR=9.6
BOD Bodaibo 59.31 38 *e*P **P** 13 39 05.1 0.0
BOD *e*S **S** 13 47 06.1 -1.4
BOD pmax pmax
comp=Z,385nm,1.0s
BOD Bodaibo 59.31 38 *e*P **P** 13 39 05.1 0.0
comp=Z,385nm,1.0s
BOD *e*S **S** 13 47 06.1 -1.4
TIXI Tiksi 60.23 21*c* *i*P **P** 13 39 11.0 -0.2
TIXI pmax pmax
comp=Z,940nm,1.7s
TIXI MLR MLR
comp=Z,5μm,18.0s
TIXI Tiksi 60.23 21 *i* P **P** 13 39 11.0 -0.2
comp=Z,5μm,18.0s
TIXI Tiksi 60.23 21 *e*P **P** 13 39 10.8 -0.4
comp=Z,593nm,1.1s
TIXI LR LR
comp=Z,5μm,20.0s
DRLN Deer Lake 60.37 311 *e*P **P** 13 39 12.7 +0.2
LBTB Lobatse 60.42 181 P **P** 13 39 14.0 +0.8
comp=Z,59nm,0.8s,baz=4.8,slow=7.7,SNR=34
LBTB Lobatse 60.42 181 *e*P **P** 13 39 14.0 +0.8
LBTB pmax pmax
comp=Z,270nm,1.2s
LBTB Lobatse 60.42 181 *e*P **P** 13 39 14.0 +0.8
comp=Z,266nm,1.2s
FRB Frobisher Bay 60.75 329 P **P** 13 39 14.8 -0.1
comp=Z,659nm,0.7s,baz=72,slow=7.4,SNR=503
DGAR Diego Garcia 60.86 125 PFAKE 13 39 30.0 +14
DGAR LR LR
comp=Z,4μm,20.0s
LZH Lanzhou 60.93 65 ⇑P **P** 13 39 18.1 +1.3
LZH pP pP 13 39 36.5 +0.3
LZH sP sP 13 39 45.8 +1.1
LZH PP **PP** 13 41 33.0 +1.5
LZH ScP **ScP** 13 43 56.8 +2.5
LZH *e*S **S** 13 47 29.4 +0.1
LZH sS sS 13 48 01.5 -0.9
LZH ScS **ScS** 13 49 02.0 +0.8
LZH SS **SS** 13 51 29.0 -0.3
LZH pmax pmax
comp=Z,250nm,1.4s
LZH pmax pmax
comp=Z,830nm,4.6s
LZH LR LR
comp=Z,2μm,15.2s
LZH LR LR
comp=Z,2μm,14.8s
LZH LR LR
comp=Z,6μm,16.0s
CIT Chita 61.09 45 *e*P **P** 13 39 18.1 +0.6
CIT *e* 13 39 57.6
CIT *e* 13 47 32.2
CIT pmax pmax
comp=Z,816nm,1.8s
CIT Chita 61.09 45 *e*P **P** 13 39 18.1 +0.6
comp=Z,816nm,1.8s
CIT Chita 61.09 45 *e*PcP **PcP** 13 39 57.6 -2.2
CIT *e*S **S** 13 47 32.2 +1.5
MRIV Mauritius Mete 62.97 147 *e*P **P** 13 39 30.6 +0.3
RER Riviere de l'E 62.98 149 PFAKE 13 39 40.0 +10
RER LR LR
comp=Z,4μm,20.0s
CD2 Chengdu 63.13 70⇑ *i*P **P** 13 39 31.0 -0.5
CD2 pP pP 13 39 51.0 0.0
CD2 sP sP 13 39 59.9 +0.5
CD2 PcP **PcP** 13 40 07.9 -0.6
CD2 PP **PP** 13 41 50.4 -0.5
CD2 S **S** 13 47 56.2 -0.7
CD2 sS sS 13 48 30.9 +0.8
CD2 SS **SS** 13 52 04.4 +0.7
CD2 pmax pmax
comp=Z,310nm,1.0s
CD2 pmax pmax
comp=Z,770nm,6.3s
CD2 LR LR
comp=Z,3μm,25.2s
CD2 LR LR
comp=Z,3μm,26.4s
DGPR DIGLIPUR 63.31 93 *e*P **P** 13 39 31.6 -1.2
DGPR IAmb IAmb 13 39 34.0
comp=Z,204nm,1.0s
RES Resolute Bay 63.40 345 P **P** 13 39 32.3 -0.2
comp=Z,64nm,0.6s,baz=37,slow=8.5,SNR=236
BTO Baotou 63.43 58 *e*P **P** 13 39 34.3 +0.9
SCHQ Schefferville 63.48 320 P **P** 13 39 33.5 +0.1
comp=Z,476nm,0.6s,baz=61,slow=5.5,SNR=254
SCHQ S **S** 13 47 58.9 -1.6
comp=Z,35nm,1.1s,baz=292,slow=16,SNR=12
SCHQ LR LR 14 06 26.0
comp=Z,2μm,20.5s,baz=67,slow=35
PBA Port Blair 64.00 94 *e*P P 13 39 37.2 -0.1
PBA IAmb IAmb 13 39 38.2
comp=Z,223nm,1.0s
BOSA Boshof 64.01 181 P **P** 13 39 37.5 +0.3
comp=Z,34nm,0.5s,baz=356,slow=7.6,SNR=58
BOSA PKP2bc 14 08 35.5
comp=Z,6.1nm,1.0s,baz=119,slow=2.0,SNR=3.6
BOSA LR LR 14 08 51.1
comp=Z,3μm,18.8s,baz=8.0,slow=37
HHC Hu-ho-hao-te 64.38 57 *e*P **P** 13 39 41.2 +1.6
HHC pP pP 13 40 00.1 +0.9
HHC sP sP 13 40 09.2 +1.6
HHC PP **PP** 13 42 05.4 +3.7
HHC S **S** 13 48 13.5 +1.2
HHC sS sS 13 48 47.2 +1.6
HHC ScS **SKSac** 13 49 25.6 -1.5
HHC SS **SS** 13 52 23.4 +0.6
HHC pmax pmax
comp=Z,600nm,1.0s
HHC pmax pmax
comp=Z,3μm,3.4s
HHC LR LR
comp=Z,2μm,19.9s
HHC LR LR
comp=Z,2μm,18.7s
HHC LR LR
comp=Z,1μm,17.4s
CMAI Chiengmai2 64.71 83 P **P** 13 39 41.8 -0.3
comp=Z,76nm,1.4s,comp=Z,5μm
MHMT Maesarieng 64.71 85 P **P** 13 39 42.1 +0.2
comp=Z,156nm,1.0s,comp=Z,2μm
YAK Yakutsk 64.81 30 P **P** 13 39 41.1 -0.9
comp=Z,18nm,0.6s,baz=113,slow=22,SNR=51
YAK LR LR 14 10 54.5
comp=Z,2μm,20.9s,baz=292,slow=39
YAK Yakutsk 64.81 30*c* *i*P **P** 13 39 41.0 -0.9
YAK *e*PP **pP** 13 40 02.1 +0.6
YAK *e* 13 40 13.6
YAK *e* 13 42 03.0
YAK *e*PPP PPP 13 43 36.0
YAK *e*S **S** 13 48 13.9 -2.7
YAK *e*SS **sS** 13 48 52.1 +2.1
YAK *e* 13 49 25.8
YAK *e*SS **SS** 13 52 24.9 -3.4
YAK *e*SSS SSS 13 55 22.7
YAK pmax pmax
comp=N,124nm,1.4s
YAK pmax pmax
comp=Z,336nm,0.9s
YAK pmax pmax
comp=E,280nm,1.6s
YAK pmax pmax
comp=Z,652nm,2.2s
YAK pmax pmax
comp=N,388nm,2.2s
YAK pmax pmax
comp=E,563nm,1.9s
YAK smax smax
comp=N,789nm,2.0s

YAK smax smax
comp=E,193nm,1.4s
YAK Yakutsk 64.81 30 *i* P **P 13 39 41.0 -0.9**
comp=E,336nm,0.9s
YAK Yakutsk 64.81 30 *e*PcP **PcP 13 40 13.6 -1.1**
KMI Kunming 65.07 76 P **P 13 39 45.4 +0.9**
KMI pP pP 13 40 03.9 -0.2
KMI sP sP 13 40 10.2 -2.3
KMI PP **PP 13 42 08.5 +0.2**
KMI S **S 13 48 19.4 -2.0**
KMI ScS **SKSac 13 49 32.6 -0.4**
KMI SS **SS 13 52 31.3 -3.2**
KMI pmax pmax
comp=E,59nm,1.0s
KMI pmax pmax
comp=E,550nm,5.0s
KMI LR LR
comp=E,2μm,23.5s
KMI LR LR
comp=E,2μm,25.9s
KMI LR LR
comp=E,3μm,24.1s
CLNS Chul'man 65.11 37 *e*P **P 13 39 44.3 +0.3**
CLNS *e* 13 40 13.3
CLNS *e**PP **PcP 13 40 19.7 +3.5**
CLNS *e* 13 42 09.7
CLNS *e*PPP PPP 13 43 44.4
CLNS *e*S **S 13 48 16.1 -4.6**
CLNS pmax pmax
comp=Z,204nm,1.1s
CLNS pmax pmax
comp=E,75nm,1.1s
CLNS pmax pmax
comp=N,41nm,0.9s
CLNS pmax pmax
comp=Z,75nm,0.9s
CLNS pmax pmax
comp=N,72nm,0.9s
CLNS pmax pmax
comp=E,56nm,0.9s
CLNS smax smax
comp=E,770nm,11.5s
CLNS smax smax
comp=N,1μm,12.1s
CLNS Chul'man 65.11 37 *e*P **P 13 39 44.3 +0.3**
comp=N,41nm,0.9s
CHTO Chiang Mai 65.20 84 P **P 13 39 44.7 -0.4**
comp=N,603nm,1.5s,comp=N,11μm
CHTO Chiang Mai 65.20 84 *e*P **P 13 39 44.9 -0.2**
CHTO pmax pmax
comp=Z,150nm,1.1s
CHTO Chiang Mai 65.20 84 *e*P **P 13 39 44.9 -0.2**
comp=Z,150nm,1.1s
CHTO Chiang Mai 65.20 84 *e*P **P 13 39 44.9 -0.2**
comp=Z,151nm,1.1s
CHTO LR LR
comp=Z,1μm,22.0s
CHTO Chiang Mai 65.20 84 P **P 13 39 45.3 +0.2**
SNR=54
CHTO Chiang Mai 65.20 84 P **P 13 39 45.3 +0.2**
SNR=54
CMMT Chiang Mai 65.20 84 P **P 13 39 44.6 -0.6**
comp=Z,131nm,1.5s,comp=Z,2μm
CMAR Chiang Mai Arr 65.39 84 P **P 13 39 46.4 0.0**
comp=Z,82nm,0.9s,baz=299,slow=8.1,SNR=254
CMAR S **S 13 48 22.9 -2.1**
comp=Z,0.9nm,0.7s,baz=312,slow=14,SNR=4.0
CMAR PKP2bc 14 08 27.6
comp=Z,0.3nm,0.3s,baz=65,slow=2.7,SNR=4.1
CMAR LR LR 14 14 16.4
comp=Z,1μm,21.0s,baz=288,slow=41
XAN Xi'an 65.57 65 P **P 13 39 48.0 +0.6**
XAN pP pP 13 40 07.7 +0.7
XAN PcP **PcP 13 40 19.1 +0.6**
XAN PP **PP 13 42 14.5 +2.3**
XAN S **S 13 48 23.6 -3.4**
XAN SS **SS 13 52 39.3 -2.2**
XAN pmax pmax
comp=Z,89nm,0.9s
XAN pmax pmax
comp=Z,850nm,7.6s
XAN LR LR
comp=Z,3μm,36.6s
XAN LR LR
comp=Z,4μm,35.7s
XAN LR LR
comp=Z,2μm,31.0s
HIA Hailar 65.82 46 PFAKE 13 40 00.0 +11
HIA LR LR
comp=Z,2μm,21.0s
LAMP Lampang 65.91 84 P **P 13 39 50.1 +0.4**
comp=Z,84nm,0.9s,comp=Z,747nm
TIY Taiyuan 66.39 60 *e*P **P 13 39 53.6 +1.0**
TIY pP **pP 13 40 13.7 +1.4**
TIY S **S 13 48 33.5 -3.4**
TIY sS **sS 13 49 07.6 -2.8**
TIY pmax pmax
comp=Z,1μm,3.8s
TIY LR LR
comp=Z,1μm,10.5s
TIY LR LR
comp=Z,710nm,8.9s
TIY LR LR
comp=Z,3μm,28.2s
PHRA Phrae 66.40 84 P **P 13 39 52.9 0.0**
comp=Z,766nm,1.5s,comp=Z,44μm
SUKH Sukhothai 66.45 85 P **P 13 39 53.3 +0.1**
comp=Z,72nm,1.0s,comp=Z,593nm
UMPA Umpang Tak 66.50 87 P **P 13 39 54.0 +0.5**
comp=Z,58nm,1.1s,comp=Z,2μm
NANT Nan 66.63 83 P **P 13 39 54.1 -0.2**
comp=Z,42nm,0.7s,comp=Z,438nm
KHLT Khaolaem Dam 67.03 88 P **P 13 39 56.7 -0.2**
comp=Z,65nm,1.9s,comp=Z,1μm
UTTA Uttaradit 67.06 84 P **P 13 39 57.0 0.0**
comp=Z,43nm,0.9s,comp=Z,356nm
PHIT Phitsanulok 67.24 85 P **P 13 39 58.8 +0.6**
comp=Z,143nm,1.0s,comp=Z,2μm
UTHA Uthaitani 67.32 87 P **P 13 39 58.7 0.0**
comp=Z,62nm,1.1s,comp=Z,592nm
GYA Guiyang 67.49 73 ⇑*i*P **P 13 39 59.9 +0.1**
GYA pP pP 13 40 22.0 +2.4
GYA sP sP 13 40 30.4 +2.5
GYA PP **PP 13 42 32.5 +3.3**
GYA ScP 13 44 23.8
GYA S **S 13 48 48.4 -2.1**
GYA sS sS 13 49 24.3 +0.2
GYA SKS **SKiKP 13 49 47.0 -4.0**
GYA SS **SS 13 53 12.2 +0.4**
GYA pmax pmax
comp=Z,120nm,1.1s
GYA pmax pmax
comp=Z,370nm,6.2s
GYA LR LR
comp=Z,2μm,18.0s
GYA LR LR
comp=Z,2μm,17.1s
GYA LR LR
comp=Z,1μm,20.5s
CMBY CAMPBELL BAY 67.60 98 *e*P **P 13 39 59.7 -0.8**
SRDT SRDT 67.71 88 P **P 13 40 00.9 -0.2**
comp=Z,460nm,1.9s,comp=Z,12μm
LOEI Loei 67.76 84 P **P 13 40 02.8 +1.3**
comp=Z,68nm,1.5s,comp=Z,3μm
ENH Enshi 67.78 68 PFAKE 13 40 10.0 +8.5
ENH LR LR
comp=Z,3μm,21.0s
BJI Beijing 67.88 56 P **P 13 40 02.9 +1.0**
BJI pP **pP 13 40 20.7 -0.9**
BJI sP **PcP 13 40 28.6 +0.7**
BJI S **S 13 48 53.8 -0.6**
BJI sS **sS 13 49 25.8 -2.2**
BJI pmax pmax
comp=Z,290nm,1.1s
BJI pmax pmax
comp=Z,2μm,3.2s
BJI LR LR
comp=Z,4μm,24.9s
BJI LR LR
comp=Z,2μm,18.9s
BJI LR LR
comp=Z,3μm,31.9s
BJT Baijiatuau 67.88 56 PFAKE 13 40 10.0 +8.1
BJT LR LR
comp=Z,3μm,21.0s
SUR Sutherland 67.97 185 P **P 13 40 03.4 +0.8**
comp=Z,3.7nm,0.8s,baz=2.1,slow=5.4,SNR=46
SUR Sutherland 67.97 185 *e*P **P 13 40 03.7 +1.1**
SUR LR LR
comp=Z,11μm,20.0s
PBKT Sadao Pong 68.02 85 P **P 13 40 02.8 -0.3**
comp=Z,169nm,1.3s,comp=Z,3μm
LMQ La Malbaie 68.80 314 *e*P **P 13 40 08.3 +0.8**
NONG Nongkai 68.99 82 P **P 13 40 08.7 -0.4**
comp=Z,111nm,1.7s,comp=Z,9μm
CHAI Chaiyaphum 69.20 85 P **P 13 40 10.2 -0.3**
comp=Z,66nm,0.9s,comp=Z,543nm
PKME Peaks-Kenny Pk 69.32 311 *e*P **P 13 40 11.8 +1.1**
PKME LR LR
comp=Z,2μm,19.0s
NAYO Nakonayok 69.51 87 P **P 13 40 12.1 -0.3**
comp=Z,164nm,1.2s,comp=Z,2μm
KHON Khomkaen 69.64 84 P **P 13 40 13.4 +0.2**
comp=Z,102nm,0.8s,comp=Z,838nm
PATY Pattaya 69.90 88 P **P 13 40 14.8 0.0**
comp=Z,28nm,1.1s,comp=Z,6μm
SKNT Sakolnakorn 70.24 83 P **P 13 40 16.7 -0.2**
comp=Z,160nm,1.7s
SRAK Srakaew 70.27 87 P **P 13 40 19.9 +2.9**
comp=Z,509nm,1.3s,comp=Z,6μm
TIA Tai'an 70.41 59 ⇑P **P 13 40 18.2 +0.6**
TIA S **S 13 49 25.5 +1.0**
TIA pmax pmax
comp=Z,30nm,1.2s
TIA LR LR
comp=Z,3μm,18.5s
TIA LR LR
comp=Z,2μm,16.8s
TIA LR LR
comp=Z,3μm,27.8s
SURT Suratani 70.43 93 P **P 13 40 17.3 -0.7**
comp=Z,42nm,1.4s,comp=Z,599nm
PANO Nakornpanom 70.66 82 P **P 13 40 19.5 +0.1**
comp=Z,138nm,1.7s
PKDT Phuket 70.66 94 P **P 13 40 18.9 -0.5**
comp=Z,129nm,1.4s,comp=Z,2μm
KRAB Krabi 71.17 93 P **P 13 40 21.9 -0.6**
comp=Z,87nm,0.9s
CHBT CHBT 71.19 88 P **P 13 40 22.5 -0.1**
comp=Z,163nm,1.8s,comp=Z,5μm
WHN Wuhan 71.28 66 ⇑P **P 13 40 23.2 +0.2**
WHN pP **pP 13 40 45.1 +2.2**
WHN S **S 13 49 34.6 -0.1**
WHN LR LR
comp=Z,3μm,13.4s
WHN LR LR
comp=Z,2μm,12.6s
WHN LR LR
comp=Z,5μm,20.2s
LBNH Lisbon 71.45 311 *e*P **P 13 40 25.7 +1.9**
LBNH Lisbon 71.45 311 *e*P **P 13 40 25.7 +1.9**
LBNH Lisbon 71.45 311 *e*P **P 13 40 25.6 +1.9**
RCBR Riachuelo 71.59 248 P **P 13 40 25.7 +0.6**
comp=Z,59nm,0.8s,baz=17,slow=7.7,SNR=22
RCBR Riachuelo 71.59 248 *e*P **P 13 40 26.1 +1.0**
RCBR LR LR
comp=Z,2μm,19.0s
SNY Shenyang 71.83 51 ⇑P **P 13 40 25.9 -0.2**
SNY pP **pP 13 40 46.6 +0.6**
SNY S **S 13 49 35.9 -4.8**
SNY ScS **ScS 13 50 24.1 -0.9**
SNY pmax pmax
comp=Z,220nm,1.5s
SNY pmax pmax
comp=Z,2μm,4.1s
SNY LR LR
comp=Z,2μm,20.2s
SNY LR LR
comp=Z,3μm,23.7s
SNY LR LR
comp=Z,5μm,24.0s
CN2 Changchun 71.95 49 ⇑P **P 13 40 27.1 +0.3**
CN2 *e*pP pP 13 40 48.0 +1.3
CN2 *e*S **S 13 49 40.2 -1.8**
CN2 pmax pmax
comp=Z,200nm,1.4s
CN2 pmax pmax
comp=Z,2μm,4.0s
CN2 LR LR
comp=Z,2μm,22.0s
CN2 LR LR
comp=Z,3μm,22.0s
CN2 LR LR
comp=Z,1μm,23.0s
DL2 Dalian 72.09 55 P **P 13 40 27.8 +0.1**
DL2 pP **pP 13 40 49.4 +1.8**
DL2 S **S 13 49 41.7 -2.1**
DL2 pmax pmax
comp=Z,280nm,1.0s
DL2 pmax pmax
comp=Z,1μm,4.5s
DL2 LR LR
comp=Z,3μm,23.1s
DL2 LR LR
comp=Z,2μm,21.4s
DL2 LR LR
comp=Z,3μm,20.2s
HRV Adam Dziewonsk 72.15 310 *e*P **P 13 40 29.7 +1.7**
HRV Adam Dziewonsk 72.15 310 *e*P **P 13 40 29.7 +1.7**
HRV Adam Dziewonsk 72.15 310 *e*P **P 13 40 29.7 +1.7**
BILL Bilibino 72.23 15 *c* *i*P **P 13 40 27.6 -0.4**
BILL 13 40 44.0
BILL *e**PP **pP 13 40 50.7 +2.7**
BILL *e**SP **sP 13 41 00.3 +4.0**
BILL *e*PPP PPP 13 44 53.6
BILL *i* S **S 13 49 41.5 -2.9**
BILL *e* 13 50 16.3
BILL *i* *SS **SKSac 13 50 24.1 -1.2**
BILL *e*SS **SS 13 54 20.8 -1.5**
BILL pmax pmax
comp=Z,410nm,1.4s
BILL MLR MLR
comp=Z,3μm,21.0s
BILL Bilibino 72.23 15 *i* P **P 13 40 27.6 -0.4**
comp=Z,410nm,1.4s
BILL Bilibino 72.23 15 PcP **PcP 13 40 44.0 -1.8**
BILL Bilibino 72.23 15 PFAKE 13 40 40.0 +12
BILL LR LR
comp=Z,3μm,19.0s
TPTI 72.41 99 P **P 13 40 30.2 +0.3**
comp=Z,72nm,1.3s,comp=Z,1μm
VLDQ Val d'Or 72.56 317 *e*P **P 13 40 31.9 +1.6**
KLR Kul'dur 72.59 42 P **P 13 40 30.9 +0.4**
comp=Z,166nm,1.1s,baz=308,slow=6.8,SNR=150
KLR LR LR 14 17 46.9
comp=Z,3μm,18.4s,baz=304,slow=40
SEY Seymchan 72.60 23 P **P 13 40 30.2 -0.1**
comp=Z,62nm,0.5s,baz=310,slow=3.7,SNR=238
SEY S **S 13 49 49.6 +0.8**
comp=Z,2.3nm,0.8s,baz=160,slow=18,SNR=7.3
SEY Seymchan 72.60 23 *c* *i*P **P 13 40 31.1 +0.8**
SEY Seymchan 72.60 23 *i* P **P 13 40 31.1 +0.8**
KCSI Kotacane, Aceh 72.73 98 P **P 13 40 30.3 -1.6**
comp=Z,174nm,1.5s,comp=Z,3μm
BBSR BB Station 72.85 298 PFAKE 13 40 50.0 +18
BBSR LR LR
comp=Z,2μm,22.0s
LONY Lake Ozonia 72.85 313 *e*P **P 13 40 33.3 +1.1**
LONY LR LR
comp=Z,2μm,20.0s
SKLT Songkhla 72.92 93 P **P 13 40 32.4 -0.6**
comp=Z,170nm,1.1s,comp=Z,2μm
NCB Newcomb 72.99 312 PFAKE 13 40 50.0 +17
NCB LR LR
comp=Z,2μm,21.0s
TSI Tuntungan 73.38 98 P **P 13 40 34.3 -1.4**
comp=Z,278nm,1.2s
NJ2 Nanjing 73.78 62 *e*P **P 13 40 38.2 +0.4**
NJ2 pP **pP 13 40 56.5 -1.3**
NJ2 sP **sP 13 41 05.3 -0.8**
NJ2 S **S 13 50 03.2 0.0**
NJ2 pmax pmax
comp=Z,120nm,0.6s
NJ2 pmax pmax
comp=Z,850nm,4.3s
NJ2 LR LR
comp=Z,5μm,25.9s
NJ2 LR LR
comp=Z,5μm,25.9s
NJ2 LR LR
comp=Z,2μm,17.3s
QIZ Qiongzhong 73.84 78 P **P 13 40 38.9 +0.5**
QIZ sP **sP 13 41 05.8 -0.8**
QIZ S **SKiKP 13 50 01.3 +1.0**
QIZ sS **SKSac 13 50 37.8 -1.2**
QIZ LR LR
comp=Z,2μm,29.2s
QIZ LR LR
comp=Z,1μm,23.0s
QIZ Qiongzhong 73.84 78 PFAKE 13 40 50.0 +12
QIZ LR LR
comp=Z,1μm,20.0s
GSI Gunungsitoli 73.89 100 P **P 13 40 39.0 +0.4**
comp=Z,134nm,1.5s,comp=Z,2μm
GSI Gunungsitoli 73.89 100 *e*P **P 13 40 39.0 +0.4**
MDJ Mudanjiang 73.99 46 PFAKE 13 40 50.0 +11
MDJ LR LR
comp=Z,2μm,19.0s
KULM Kulim 74.03 95 *e*P **P 13 40 39.1 -0.4**
KULM LR LR
comp=Z,3μm,20.0s
PSI Prapat 74.08 98 P **P 13 40 39.6 -0.4**
comp=Z,83nm,0.8s,baz=272,slow=6.4,SNR=49
GZH Guangzhou 74.42 73 P **P 13 40 42.4 +0.7**
GZH PP **PP 13 43 33.9 +5.3**
GZH S **S 13 50 11.7 +1.1**
GZH SS **SS 13 55 04.2 +6.3**
GZH pmax pmax
comp=Z,1μm,5.8s
MA2 Magadan 74.48 26 P **P 13 40 42.0 +0.7**
comp=Z,180nm,0.7s,baz=344,slow=6.1,SNR=221
MA2 S **S 13 50 10.6 +0.5**
comp=Z,6.7nm,1.0s,baz=195,slow=20,SNR=4.9
MA2 LR LR 14 17 42.3
comp=Z,2μm,18.2s,baz=329,slow=39
NKL Nikolayevsk 74.71 35 *i* P **P 13 40 43.0 +0.2**
NKL *e* 13 41 01.5
NKL *e* 13 43 33.0
NKL *e*S **S 13 50 14.0 +1.2**
NKL pmax pmax
comp=N,65nm,1.0s
NKL pmax pmax
comp=E,86nm,1.0s
NKL pmax pmax
comp=Z,440nm,1.0s
NKL pmax pmax
comp=E,800nm,4.0s
NKL pmax pmax
comp=Z,2μm,7.0s
NKL smax smax
comp=N,2μm,11.0s
NKL smax smax
comp=E,1μm,11.0s
NKL MLR MLR
comp=N,2μm,18.0s
NKL MLR MLR
comp=E,2μm,18.0s
NKL MLR MLR
comp=Z,3μm,18.0s
NKL Nikolayevsk 74.71 35 *i* P **P 13 40 43.0 +0.2**
comp=Z,2μm,7.0s
NKL *e*S **S 13 50 14.0 +1.2**
IPM Ipoh 74.80 95 *e*P **P 13 40 42.8 -1.2**
HABR Khabarovsk 74.80 41 *c* *i*P **P 13 40 42.2 -1.2**
HABR *e* 13 40 55.7
HABR *e**PP **pP 13 41 03.3 -0.2**
HABR *e**SP **sP 13 41 12.3 +0.5**
HABR *e* 13 43 29.9
HABR *e*PPP PPP 13 45 15.8
HABR *e*S **S 13 50 12.8 -1.3**
HABR *e* 13 50 38.7
HABR *e* 13 50 46.5
HABR *e* 13 50 49.2
HABR *e*SS **SS 13 55 02.6 +0.3**
HABR *e*SSS SSS 13 58 25.0
HABR pmax pmax
comp=E,167nm,2.0s
HABR pmax pmax
comp=Z,473nm,2.0s
HABR pmax pmax
comp=Z,2μm,2.7s
HABR pmax pmax
comp=N,88nm,2.0s
HABR MLR MLR
comp=Z,979nm,16.0s
HABR Khabarovsk 74.80 41 *i* P **P 13 40 42.2 -1.2**
comp=Z,88nm,2.0s
HABR Khabarovsk 74.80 41 *e*PcP **PcP 13 40 55.7 -1.5**
HABR *e*S **S 13 50 12.8 -1.3**
HABR *e*ScS **ScS 13 50 49.2 +0.6**
BINY Binghamton 75.05 311 *e*P **P 13 40 46.4 +1.3**
BINY LR LR
comp=Z,2μm,20.0s
INK Inuvik 75.20 352 P **P 13 40 44.5 -0.9**
comp=Z,143nm,1.1s,baz=14,slow=9.0,SNR=134
INK LR LR 14 17 53.0
comp=Z,2μm,18.4s,baz=18,slow=39
SADO Sadowa 75.44 315 P **P 13 40 48.1 +0.9**
comp=Z,114nm,0.5s,baz=55,slow=3.7,SNR=147
SADO Sadowa 75.44 315 *e*P **P 13 40 48.0 +0.8**
USRK Ussuriysk Ar. 75.63 46 P **P 13 40 48.3 0.0**
comp=Z,122nm,0.5s,baz=292,slow=4.6,SNR=348
USRK PP **PP 13 43 40.1 +1.9**
comp=Z,22nm,0.8s,baz=305,slow=6.7,SNR=4.8
USRK S **S 13 50 21.8 -1.6**
comp=Z,1.8nm,0.9s,baz=308,slow=9.4,SNR=5.5
USRK LR LR 14 21 44.3
comp=Z,1μm,18.1s,baz=297,slow=42
N59A State Game Lan 75.65 310 P **P 13 40 50.1 +1.5**
baz=55
N59A S **S 13 50 25.0 +1.1**
baz=55
MNSI Mandailing Nat 75.79 99 P **P 13 40 48.7 -1.0**
comp=Z,79nm,1.8s,comp=Z,1μm
SSE Sheshan 75.97 62 P **P 13 40 51.0 +0.5**
SSE sP **sP 13 41 21.3 +2.5**
SSE S **S 13 50 27.8 +0.2**
SSE SS **SS 13 55 22.4 +1.3**
SSE pmax pmax
comp=Z,84nm,1.0s
SSE pmax pmax
comp=Z,630nm,7.2s
SSE LR LR
comp=Z,3μm,34.7s
SSE LR LR
comp=Z,3μm,34.7s
SSE LR LR
comp=Z,2μm,23.1s
FRIM Kepong 76.01 96 ⇓P **P 13 40 50.0 -0.9**
KTGM Kuala Trenggan 76.02 94 ⇑P **P 13 40 50.9 -0.1**
INCN Inchon 76.17 54 *e*P **P 13 40 52.1 +0.6**
INCN LR LR
comp=Z,3μm,21.0s
INCN Inchon 76.17 54 P **P 13 40 52.4 +0.8**
SNR=36
INCN Inchon 76.17 54 P **P 13 40 52.4 +0.8**
SNR=36
KSAR Wonju Array Be 77.02 53 P **P 13 40 57.0 +0.7**
KSAR S **S 13 50 36.7 -2.1**
KSAR Wonju Array Be 77.02 53 P **P 13 40 57.0 +0.7**
KSAR S **S 13 50 36.7 -2.1**
KSAR Wonju Array Be 77.02 53 P **P 13 40 57.0 +0.7**
KSAR S **S 13 50 36.7 -2.1**
KSRS Korea Array 77.03 53 P **P 13 40 57.0 +0.6**
comp=Z,118nm,0.6s,baz=306,slow=4.5,SNR=377
KSRS S **S 13 50 36.7 -2.3**
comp=Z,14nm,1.3s,baz=285,slow=12,SNR=12
KSRS LR LR 14 21 18.7
comp=Z,1μm,18.6s,baz=300,slow=41
KSRS Korea Array 77.03 53 P **P 13 40 57.0 +0.6**
KSRS S **S 13 50 36.7 -2.3**
KSRS pmax pmax
comp=Z,124nm,0.6s
KSRS smax smax
comp=N,14nm,1.3s
KSRS Korea Array 77.03 53 P **P 13 40 57.0 +0.6**
comp=N,124nm,0.6s
KSRS S **S 13 50 36.7 -2.3**
comp=N,14nm,1.3s
TYV Tymovskoe 77.12 36 *e*P **P 13 40 57.0 +0.4**
TYV pmax pmax
comp=Z,150nm,1.0s
TYV Tymovskoe 77.12 36 *e*P **P 13 40 57.0 +0.4**
comp=Z,150nm,1.0s
SSPA Standing Stone 77.12 311 *e*P **P 13 40 57.8 +1.0**
YKW3 Yellowknife Ar 77.19 343 *e*P **P 13 40 56.2 -0.5**
BKNI Bangkinang 77.24 99 P **P 13 40 57.2 -0.7**

comp=Z,254nm,1.4s,comp=Z,3µm
YKA Yellowknife Ar 77.25 343 P **P 13 40 56.6 -0.4**
comp=Z,161nm,0.9s,baz=35,slow=5.4,SNR=322
YKA S **S 13 50 39.7 -0.8**
comp=Z,1.3nm,0.9s,baz=37,slow=10.0,SNR=4.3
YKA PKP2bc 14 08 08.1
comp=Z,1.1nm,0.9s,baz=197,slow=1.9,SNR=4.9
COLD Coldfoot 77.33 359 *e*P **P 13 40 57.9 +0.4**
QZH Quanzhou 77.44 68⇑ *i*P **P 13 40 55.9 -2.9**
QZH sP **sP 13 41 27.1 -0.1**
QZH S **S 13 50 39.4 -4.3**
QZH ScS **SKSac 13 51 03.8 -1.7**
QZH pmax pmax
comp=Z,1µm,7.8s
QZH LR LR
comp=Z,2µm,15.2s
QZH LR LR
comp=Z,4µm,20.0s
QZH LR LR
comp=Z,5µm,23.5s
ERPA Erie 77.51 313 *e*P **P 13 40 60.0 +1.0**
PDSI Padang 77.51 100 P **P 13 40 58.5 -0.9**
comp=Z,98nm,1.0s,comp=Z,7µm
M54A Oil Creek Stat 77.69 312 P **P 13 41 01.0 +1.0**
baz=53,SNR=55
O56A Blue Knob Stat 77.76 311 P **P 13 41 01.6 +1.1**
baz=53
FYU Fort Yukon 77.83 357 *e*P **P 13 41 01.1 +0.9**
KGM Kluang 78.09 96 ⇓P **P 13 41 02.5 -0.1**
N54A Moraine State 78.21 312 P **P 13 41 03.5 +0.6**
baz=53,SNR=54
CBN Corbin Frederi 78.23 309 PFAKE 13 41 20.0 +17
CBN LR LR
comp=Z,2µm,19.0s
PPSI Pulau Pagai 78.26 102 P P 13 41 12.2 +8.7
SDSI Sungai Dareh 78.30 100 P **P 13 41 04.5 +0.8**
comp=Z,190nm,1.4s,comp=Z,35µm
GLMI Grayling 78.50 317 *e*P **P 13 41 05.5 +1.1**
GLMI LR LR
comp=Z,2µm,19.0s
ANWB Willy Bob 78.58 284 *e*P **P 13 41 05.1 -0.1**
ANWB Willy Bob 78.58 284 *e*P **P 13 41 06.4 +1.2**
ANWB LR LR
comp=Z,736nm,20.0s
MYKOM Kota Tinggi 78.65 96 ⇑P **P 13 41 05.9 +0.3**
MYKOM Kota Tinggi 78.65 96 *e*P **P 13 41 05.2 -0.5**
BBGH Gun Hill 79.33 279 PFAKE 13 41 20.0 +11
BBGH LR LR
comp=Z,2µm,19.0s
EGAK Eagle 79.36 355 *e*P **P 13 41 08.5 -0.2**
EGAK LR LR
comp=Z,1µm,21.0s
LZG Guadaloupe-1 79.42 282 *e*P **P 13 41 10.8 +1.0**
C39A Grand Marais 79.44 322 P **P 13 41 08.8 -0.6**
baz=48,SNR=101
TBG Guadaloupe-3 79.48 282 *e*P **P 13 41 10.4 +0.2**
BBL Barber's Block 79.53 282 *e*P **P 13 41 12.7 +2.2**
MLY Manley 79.55 359 *e*P **P 13 41 10.2 +0.4**
AAM Ann Arbor 79.55 315 *e*P **P 13 41 10.7 +0.5**
AAM Ann Arbor 79.55 315 *e*P **P 13 41 10.7 +0.5**
AAM Ann Arbor 79.55 315 *e*P **P 13 41 10.7 +0.5**
AAM LR LR
comp=Z,4µm,22.0s
MDM Murphy Dome 79.56 358 *e*P **P 13 41 10.1 +0.3**
TATO Taipei 79.60 67 PFAKE 13 41 20.0 +9.3
TATO LR LR
comp=Z,954nm,20.0s
COLA College 79.63 358 *e*P **P 13 41 10.2 +0.1**
COLA College 79.63 358 *e*P **P 13 41 10.2 +0.1**
COLA College 79.63 358 *e*P **P 13 41 10.2 +0.1**
COLA LR LR
comp=Z,2µm,22.0s
FFC Flin Flon 79.65 333 *e*P **P 13 41 10.5 0.0**
FFC Flin Flon 79.65 333 *e*P **P 13 41 10.5 0.0**
FFC Flin Flon 79.65 333 *e*P **P 13 41 10.5 0.0**
FFC LR LR
comp=Z,2µm,19.0s
YHNB Yeheng 79.69 67 *e*P **P 13 41 12.7 +1.4**
IL1 Eielson Array 79.69 357 *e*P **P 13 41 09.0 -1.5**
ILAR Eielson Array 79.69 357 P **P 13 41 09.9 -0.5**
comp=Z,54nm,0.7s,baz=342,slow=3.7,SNR=336
ILAR PKKPbc **PKKPbc 13 59 56.5 -0.8**
comp=Z,1.7nm,0.9s,baz=227,slow=1.9,SNR=7.7
ILAR PKPPKP **P'P'df 14 07 59.5 -4.6**
comp=Z,0.9nm,1.0s,baz=212,slow=2.1,SNR=4.3
ILAR LR LR 14 18 21.6
comp=Z,938nm,20.7s,baz=18,slow=37
ILAR Eielson Array 79.69 357 P **P 13 41 10.0 -0.5**
ILAR Eielson Array 79.69 357 P **P 13 41 10.0 -0.5**
ILB Eielson Array 79.69 357 *e*P **P 13 41 10.0 -0.5**
TPRI Tanjung Pinang 79.71 96 P **P 13 41 13.8 +2.4**
comp=Z,82nm,1.3s,comp=Z,15µm
FDF Fort de France 79.71 281 *e*P **P 13 41 12.6 +1.1**
FDF Fort de France 79.71 281 PFAKE 13 41 20.0 +8.5
FDF LR LR
comp=Z,929nm,20.0s
GAMB Gambell 79.77 8 *e*P **P 13 41 10.3 -0.6**
YSS Yuzh-Sakhalins 79.78 39α *i*P **P 13 41 12.1 +0.8**
YSS *e* 13 44 15.0
YSS *e*S **S 13 51 05.0 -3.0**
YSS pmax pmax
comp=Z,510nm,1.3s
YSS MLR MLR
comp=E,2µm,16.0s
YSS MLR MLR
comp=Z,3µm,16.0s
YSS MLR MLR
comp=N,2µm,22.0s
YSS Yuzh-Sakhalins 79.78 39 *i*P **P 13 41 12.1 +0.8**
comp=N,510nm,1.3s
YSS *e*S **S 13 51 05.0 -3.0**
comp=N,2µm,22.0s
YSS Yuzh-Sakhalins 79.78 39 *e*P **P 13 41 12.1 +0.8**
YSS LR LR
comp=Z,1µm,20.0s
CCB Clear Creek Bu 79.85 358 *e*P **P 13 41 11.1 -0.3**
SSLB Suanglung 79.87 68 *e*P **P 13 41 13.7 +1.4**
TPUB Ta-pu 79.90 69 *e*P **P 13 41 13.8 +1.4**
EYMN Ely 80.02 323 P **P 13 41 12.6 -0.1**
baz=47
EYMN Ely 80.02 323 *e*P **P 13 41 12.5 -0.1**
EYMN LR LR
comp=Z,3µm,21.0s
WRH Wood River Hil 80.04 358 *e*P **P 13 41 12.2 -0.2**
HDA Harding Lake 80.06 357 *e*P **P 13 41 12.2 -0.3**
C38A Sawbill Land. 80.07 323 P **P 13 41 12.0 -0.9**
baz=47,SNR=31
COWI Conover 80.08 320 *e*P **P 13 41 13.3 +0.2**
COWI LR LR
comp=Z,2µm,19.0s
MASI Maura Aman, Be 80.26 101 P **P 13 41 14.7 +0.2**
comp=Z,419nm,1.0s,comp=Z,13µm
YULB Yu-li 80.35 68 *e*P **P 13 41 15.2 +0.3**
ACSO Alum Creek Sta 80.45 313 *e*P **P 13 41 15.6 +0.5**
ACSO LR LR
comp=Z,2µm,20.0s
ULM Lac du Bonnet 80.46 327 P **P 13 41 14.6 -0.4**
comp=Z,113nm,0.5s,baz=50,slow=5.6,SNR=28
ULM LR LR 14 18 00.8
comp=Z,3µm,21.3s,baz=48,slow=36
BPAW Bear Paw Mtn. 80.48 359 *e*P **P 13 41 14.3 -0.6**
TWG Pinlang 80.50 69 *e*P **P 13 41 17.4 +1.8**
C37A Embarrass 80.51 323 P **P 13 41 15.1 -0.1**
baz=46,SNR=75
DSRI Dabo 80.57 97 P **P 13 41 16.4 +0.3**
comp=Z,261nm,1.2s,comp=Z,4µm
SVB Belmont 80.62 280 *e*P **P 13 41 17.4 +1.1**
SVB Belmont 80.62 280 *e*P **P 13 41 18.1 +1.7**
SVB *e*pP **pP 13 41 40.8 +4.2**
DOT Dot Lake 80.67 356 *e*P **P 13 41 16.2 +0.4**
STVI Saint Thomas 80.69 286 *e*P **P 13 41 18.0 +1.3**
BLA Blacksburg 80.76 309 *e*P **P 13 41 17.4 +0.6**
BLA Blacksburg 80.76 309 *e*P **P 13 41 17.4 +0.6**
BLA Blacksburg 80.76 309 *e*P **P 13 41 17.4 +0.6**
BLA LR LR
comp=Z,2µm,20.0s
MCK McKinley 80.81 358 *e*P **P 13 41 15.9 -0.7**
MCK McKinley 80.81 358 *e*P **P 13 41 15.9 -0.7**
MCK McKinley 80.81 358 *e*P **P 13 41 15.9 -0.7**
C36A Pine Crest Far 80.81 323 P **P 13 41 16.8 0.0**
baz=46,SNR=83
B35A Bob, Littlefor 80.81 324 P **P 13 41 16.4 -0.5**
baz=45,SNR=138
CDVI St. Croix 80.88 285 *e*P **P 13 41 19.2 +1.5**
D37A Cotton 81.02 323 P **P 13 41 17.7 -0.3**
baz=46,SNR=33
KTH Kantishna Hill 81.03 359 *e*P **P 13 41 16.8 -1.0**
TRF Thorofare Moun 81.12 359 *e*P **P 13 41 17.2 -1.2**
RND Reindeer 81.13 358 *e*P **P 13 41 17.5 -0.9**
RND Reindeer 81.13 358 *e*P **P 13 41 17.5 -0.9**
RND Reindeer 81.13 358 *e*P **P 13 41 17.5 -0.9**
TOSP Speyside 81.15 278 *e*P **P 13 41 21.4 +2.3**
B34A Aery, Baudette 81.16 325 P **P 13 41 18.4 -0.2**
baz=45,SNR=124
CAST Castle Rocks 81.18 359 *e*P **P 13 41 18.0 -0.6**
A33A Warroad 81.18 326 P **P 13 41 18.3 -0.5**
baz=44,SNR=158
MENT Mentasta 81.36 356 *e*P **P 13 41 20.0 +0.5**
D36A Goodland 81.37 323 P **P 13 41 19.8 0.0**
baz=46,SNR=81
C35A Jirik Farms, M 81.40 324 P **P 13 41 19.5 -0.5**
baz=45,SNR=83
E37A Wrenshall 81.42 322 P **P 13 41 20.2 +0.1**
baz=46,SNR=7.2
PAX Paxson 81.43 356 *e*P **P 13 41 19.6 -0.4**
PAX Paxson 81.43 356 *e*P **P 13 41 19.6 -0.4**
PAX Paxson 81.43 356 *e*P **P 13 41 19.6 -0.4**
CBYP Canovanas 81.44 286 *e*P **P 13 41 20.0 -0.8**
JNU Nakatsue 81.54 55 P **P 13 41 21.1 +0.1**
comp=Z,66nm,1.1s,baz=328,slow=3.4,SNR=33
JNU PP **PP 13 44 28.6 +0.9**
comp=Z,55nm,1.0s,baz=9.9,slow=2.8,SNR=3.8
JNU LR LR 14 23 37.9
comp=Z,1µm,18.7s,baz=314,slow=40
GRGR Grenville 81.58 279 *e*P **P 13 41 22.9 +1.4**
GRGR Grenville 81.58 279 *e*P **P 13 41 23.4 +2.0**
GRGR LR LR
comp=Z,616nm,20.0s
COCO West Island 81.59 111 *i*P **P 13 41 24.7 +3.4**
COCO West Island 81.59 111 *e*P **P 13 41 24.3 +2.9**
COCO LR LR
comp=Z,2µm,20.0s
TTA Tatalina 81.66 1 *e*P **P 13 41 21.2 +0.1**
TTA Tatalina 81.66 1 *e*P **P 13 41 21.2 +0.1**
TTA Tatalina 81.66 1 *e*P **P 13 41 21.2 +0.1**
TT01 Tatalina 81.68 1 *e*P **P 13 41 21.2 0.0**
LHSI Lahat 81.70 101 P **P 13 41 21.0 -1.0**
comp=Z,263nm,1.2s,comp=Z,3µm
A32A Rocking H Ranc 81.70 326 P **P 13 41 21.4 -0.1**
baz=44,SNR=30
PPLA Purkeypile 81.70 359 *e*P **P 13 41 20.7 -0.8**
B33A Robert and Kas 81.75 325 P **P 13 41 21.7 -0.1**
baz=44,SNR=25
SJG San Juan 81.76 286 P **P 13 41 22.3 -0.1**
comp=Z,20nm,0.6s,baz=36,slow=5.2,SNR=12
SJG San Juan 81.76 286 PFAKE 13 41 30.0 +7.6
SJG LR LR
comp=Z,768nm,22.0s
AGMN Agassiz Nation 81.86 325 P **P 13 41 22.1 -0.3**
baz=44
AGMN Agassiz Nation 81.86 325 *e*P **P 13 41 22.0 -0.3**
AGMN LR LR
comp=Z,2µm,20.0s
D35A Remer 81.87 324 P **P 13 41 22.3 -0.1**
baz=45,SNR=61
C34A RKJ Ranch, Bem 81.88 324 P **P 13 41 21.9 -0.6**
baz=44,SNR=43
E36A McGregor 81.88 323 P **P 13 41 22.4 -0.1**
baz=45,SNR=80
PEA0 Petropavlovsk- 81.89 27 *e*P **P 13 41 20.4 -2.0**
PEA0B Petropavlovsk- 81.89 27 *e*P **P 13 41 21.0 -1.4**
PETK Petropavlovsk- 81.89 27 P **P 13 41 20.9 -1.6**
comp=Z,102nm,1.0s,baz=344,slow=1.6,SNR=78
PETK PP **PP 13 44 28.9 -1.1**
comp=Z,166nm,1.3s,baz=353,slow=1.8,SNR=5.7
PETK LR LR 14 23 55.3
comp=Z,3µm,18.1s,baz=311,slow=40
A31A Linda, St. Vin 82.00 326 P **P 13 41 23.1 0.0**
baz=43,SNR=5.3
B32A Ashes, Strandq 82.10 326 P **P 13 41 23.4 -0.2**
baz=43,SNR=175
CELP Cerrillos 82.12 286 *e*P **P 13 41 25.5 +1.3**
C33A Trail 82.21 325 P **P 13 41 24.1 -0.1**
baz=44,SNR=122
PET Petropavlovsk 82.31 27α *i*P **P 13 41 23.0 -1.6**
PET *e* 13 44 34.5
PET *e*S **S 13 51 33.3 -0.8**
PET *e*PS **PnS 13 52 25.5 -6.5**
PET *e*PPS PPS 13 52 40.9
PET pmax pmax
comp=Z,101nm,1.4s
PET pmax pmax
comp=Z,2µm,5.8s
PET pmax pmax
comp=Z,900nm,14.8s
PET pmax pmax
comp=Z,171nm,1.8s
PET pmax pmax
comp=Z,1µm,7.2s
PET pmax pmax
comp=Z,600nm,8.6s
PET Petropavlovsk 82.31 27 *i*P **P 13 41 23.0 -1.6**
comp=Z,900nm,14.8s
PET Petropavlovsk 82.31 27 *e*P **P 13 41 22.9 -1.6**
PET LR LR
comp=Z,2µm,20.0s
AGP Aguadilla 82.37 287 *e*P **P 13 41 26.8 +1.3**
AGP *e*pP **pP 13 41 46.7 +0.8**
E35A Pequot Lakes 82.41 323 P **P 13 41 25.3 0.0**
baz=45,SNR=85
D34A Park Rapids 82.42 324 P **P 13 41 24.9 -0.4**
baz=44,SNR=22
F36A Milaca 82.47 322 P **P 13 41 25.5 -0.1**
baz=45,SNR=156
A30A Hoffart Farm, 82.50 327 P **P 13 41 25.6 -0.1**
baz=42,SNR=35
C32A Crookston 82.51 325 P **P 13 41 25.4 -0.4**
baz=43
SPMN Marine on St. 82.56 322 P **P 13 41 26.2 +0.1**
baz=46
B31A Greenbush Farm 82.58 326 P **P 13 41 25.9 -0.2**
baz=43,SNR=27
MDSI Maura Dua 82.61 101 P **P 13 41 25.3 -1.5**
comp=Z,157nm,1.2s,comp=Z,2µm
KMSC Kings Mountain 82.62 308 P **P 13 41 27.2 +0.6**
baz=51,SNR=22
SCM Sheep Creek Mo 82.65 357 *e*P **P 13 41 26.7 +0.4**
SCM Sheep Creek Mo 82.65 357 *e*P **P 13 41 26.7 +0.4**
SCM Sheep Creek Mo 82.65 357 *e*P **P 13 41 26.7 +0.4**
D33A AnnSam, Waubun 82.69 324 P **P 13 41 26.6 -0.2**
baz=44,SNR=68
SFIN Lafayette 82.77 315 P **P 13 41 27.3 +0.1**
baz=49
PPBI Pangkal Pinang 82.81 98 P **P 13 41 28.6 +0.7**
comp=Z,53nm,1.4s
E34A Wadena 82.81 324 P **P 13 41 27.1 -0.3**
baz=44
JFWS Jewell Farm 82.82 319 *e*P **P 13 41 27.5 0.0**
JFWS Jewell Farm 82.82 319 *e*P **P 13 41 27.5 0.0**
JFWS Jewell Farm 82.82 319 *e*P **P 13 41 27.5 0.0**
JFWS LR LR
comp=Z,3µm,21.0s
LWLI Liwa 82.83 101 P **P 13 41 26.9 -1.2**
comp=Z,264nm,0.9s,comp=Z,5µm
B30A Myrvik Farm, E 82.87 327 P **P 13 41 27.4 -0.3**
baz=42,SNR=51
A29A Manning Farm, 82.92 327 P **P 13 41 27.7 -0.3**
baz=42,SNR=167
KLU Klutina 82.92 356 *e*P **P 13 41 28.0 +0.3**
PMR Palmer 82.96 358 *e*P **P 13 41 27.7 -0.1**
PMR Palmer 82.96 358 *e*P **P 13 41 27.7 -0.1**
PMR Palmer 82.96 358 *e*P **P 13 41 27.7 -0.1**
F35A Swanville 82.99 323 P **P 13 41 28.1 -0.3**
baz=44,SNR=48
G36A St. Michael 83.03 322 P **P 13 41 28.8 +0.2**
baz=45,SNR=77
H37A Dierke Farm, C 83.07 321 P **P 13 41 28.9 +0.2**
baz=46
C31A Landman Farms, 83.09 326 P **P 13 41 28.4 -0.4**
baz=43,SNR=75
JSC Jenkinsville 83.11 307 *e*P **P 13 41 30.0 +0.8**
JSC Jenkinsville 83.11 307 *e*P **P 13 41 30.0 +0.8**
JSC Jenkinsville 83.11 307 *e*P **P 13 41 30.0 +0.8**
TZTN Tazewell 83.13 310 *e*P **P 13 41 30.0 +0.8**
NHSC New Hope 83.13 306 *e*P **P 13 41 31.1 +1.8**
NHSC LR LR
comp=Z,2µm,21.0s
I38A Scanlan Farm, 83.14 321 P **P 13 41 29.3 +0.2**
baz=46
SKR Severo-Kuril's 83.17 30 *e*P **P 13 41 27.5 -1.6**
SKR *e* 13 51 37.0
SKR pmax pmax
comp=E,180nm,1.0s
SKR pmax pmax
comp=Z,220nm,1.0s
SKR pmax pmax
comp=N,2µm,4.0s
SKR pmax pmax
comp=E,2µm,4.0s
SKR pmax pmax
comp=Z,2µm,4.0s
SKR MLR MLR
comp=N,3µm,22.0s
SKR MLR MLR
comp=E,3µm,22.0s
SKR MLR MLR
comp=Z,3µm,22.0s
SKR Severo-Kuril's 83.17 30 *e*P **P 13 41 27.5 -1.6**
E33A Westby DABS, E 83.22 324 P **P 13 41 29.6 +0.1**
baz=44,SNR=96
BLO Bloomington 83.23 314 *e*P **P 13 41 30.1 +0.4**
BLO Bloomington 83.23 314 *e*P **P 13 41 30.1 +0.4**
BLO Bloomington 83.23 314 *e*P **P 13 41 30.1 +0.4**
D32A Dogwood Acres, 83.24 325 P **P 13 41 28.9 -0.7**
baz=43
DIV Divide 83.28 356 *e*P **P 13 41 29.7 +0.1**
B29A Wagenman Farm, 83.32 327 P **P 13 41 29.5 -0.5**
baz=42,SNR=24
ERM Erimo 83.33 42 *d i*P **P 13 41 30.7 +0.6**
ERM pmax pmax
comp=Z,657nm,1.7s
ERM Erimo 83.33 42 *i*P **P 13 41 30.7 +0.6**
comp=Z,657nm,1.7s
ERM Erimo 83.33 42 *e*P **P 13 41 31.4 +1.3**
ERM LR LR
comp=Z,2µm,20.0s
F34A Alexandria 83.37 323 P **P 13 41 29.8 -0.5**
baz=44,SNR=13
YUK Yuzh-Kuril'sk 83.37 39*c i*P **P 13 41 30.5 +0.2**
YUK *i* *PP **sP 13 42 00.0 +1.1**
YUK *i* 13 44 49.9
YUK *i* S **S 13 51 44.5 -0.7**
YUK *i* SSS SSS 14 00 38.7
YUK pmax pmax
comp=Z,3µm,1.5s
YUK pmax pmax
comp=Z,2µm,1.4s
YUK pmax pmax
comp=N,655nm,1.2s
YUK pmax pmax
comp=E,533nm,0.9s
YUK MLR MLR
comp=E,2µm,17.0s
YUK MLR MLR
comp=Z,2µm,17.0s
YUK MLR MLR
comp=N,2µm,21.0s
YUK Yuzh-Kuril'sk 83.37 39 *i*P **P 13 41 30.5 +0.2**
comp=N,655nm,1.2s
BMRM Bremner River 83.37 356 *e*P **P 13 41 30.0 -0.1**
KLI Kotabumi 83.38 101 P **P 13 41 32.3 +1.5**
comp=N,133nm,1.1s
A28A Rude Farm, Bot 83.38 328 P **P 13 41 30.3 -0.1**
baz=41,SNR=52
G35A Watkins 83.40 322 P **P 13 41 30.4 0.0**
baz=44,SNR=16
SPU Mount Spurr 83.42 359 *e*P **P 13 41 29.4 -0.9**
RC01 Rabbit Creek A 83.48 358 *e*P **P 13 41 30.8 +0.2**
KASI Kota Agung 83.48 102 P **P 13 41 31.2 -0.1**
comp=N,190nm,1.1s,comp=N,3µm
C30A Mose, Pekin 83.49 326 P **P 13 41 30.7 -0.2**
baz=42,SNR=70
JOW Kunigami 83.50 62 P **P 13 41 31.4 +0.2**
comp=N,32nm,0.4s,baz=300,slow=6.1,SNR=18
JOW Kunigami 83.50 62 *e*P **P 13 41 31.3 0.0**
SVW2 Sparrevohn 83.50 1 *e*P **P 13 41 31.2 +0.5**
KUR Kuril'sk 83.54 37*c i*P **P 13 41 28.9 -2.2**
KUR *e*S **S 13 51 42.1 -4.7**
KUR pmax pmax
comp=Z,368nm,1.4s
KUR pmax pmax
comp=Z,1µm,4.7s
KUR Kuril'sk 83.54 37 *i*P **P 13 41 28.9 -2.2**
comp=Z,1µm,4.7s
H36A Jessenland, He 83.58 322 P **P 13 41 31.7 +0.4**
baz=45,SNR=50
D31A Mcclaflin, Tow 83.63 325 P **P 13 41 31.0 -0.6**
baz=42
GRTK Grand Turk 83.64 292 PFAKE 13 41 40.0 +7.9
GRTK LR LR
comp=Z,1µm,21.0s
E32A Braaten, Kindr 83.66 325 P **P 13 41 31.6 -0.2**
baz=43
WCI Wyandotte Cave 83.71 313 *e*P **P 13 41 32.7 +0.5**
WCI Wyandotte Cave 83.71 313 *e*P **P 13 41 32.7 +0.5**
WCI Wyandotte Cave 83.71 313 *e*P **P 13 41 32.7 +0.5**
I37A Lemond, Waseca 83.71 321 P **P 13 41 32.4 +0.3**
baz=45,SNR=142
J38A Wedel Dairy, R 83.72 320 P **P 13 41 31.7 -0.4**
baz=46,SNR=88
B28A Dugan Ranch, T 83.77 328 P **P 13 41 32.4 +0.1**
baz=41,SNR=30
TKL Tuckaleechee C 83.84 310 P **P 13 41 33.5 +0.7**
comp=Z,250nm,1.1s,baz=94,slow=5.6,SNR=56
TKL Tuckaleechee C 83.84 310 *e*P **P 13 41 33.7 +0.8**
TKL Tuckaleechee C 83.84 310 *e*P **P 13 41 33.7 +0.8**
TKL Tuckaleechee C 83.84 310 *e*P **P 13 41 33.6 +0.8**
F33A 5 Mile Ranch, 83.84 324 P **P 13 41 32.4 -0.3**
baz=43,SNR=95
EYAK Cordova Ski Ar 83.86 356 *e*P **P 13 41 33.1 +0.7**
MDND Maddock 83.89 327 P **P 13 41 32.5 -0.4**
baz=41,SNR=12
HDIL Hopedale 83.89 316 P **P 13 41 33.4 +0.3**
baz=47
HDIL Hopedale 83.89 316 *e*P **P 13 41 33.6 +0.5**
HDIL LR LR
comp=Z,2µm,19.0s
H35A Sunnyside Ranc 83.95 322 P **P 13 41 33.6 +0.3**
baz=44,SNR=163
G34A Benson 83.96 323 P **P 13 41 33.4 +0.1**
baz=44,SNR=35
RAGM Ragged Mountai 83.96 356 *e*P **P 13 41 33.6 +0.5**
SKAG Skagway 83.97 351 *e*P **P 13 41 33.5 +0.5**
BLSI Bandar Lampung 83.99 101 P **P 13 41 33.9 0.0**
comp=Z,298nm,1.2s,comp=Z,4µm
I36A Fitzsimmons Fa 84.02 321 P **P 13 41 33.9 +0.2**
baz=45,SNR=19
D30A Buchanan 84.06 326 P **P 13 41 33.6 -0.2**
baz=42,SNR=98
E31A Nome 84.07 325 P **P 13 41 33.7 -0.2**
baz=42,SNR=19
KSM Kuching 84.08 92 *e*P **P 13 41 35.1 +0.7**
KSM LR LR
comp=Z,3µm,21.0s
MAJO Matsushiro 84.10 49*c i*P **P 13 41 34.1 -0.1**
MAJO pmax pmax
comp=Z,2µm,1.1s
MAJO Matsushiro 84.10 49 *i*P **P 13 41 34.1 -0.1**
comp=Z,2µm,1.1s
MAJO Matsushiro 84.10 49 *e*P **P 13 41 34.4 +0.2**
MAJO LR LR
comp=Z,1µm,19.0s
MAT Matsushiro 84.10 49 P **P 13 41 34.4 +0.2**
MAT S **S 13 51 51.0 -1.8**
MJAR Matsushiro Arr 84.10 49 P **P 13 41 34.6 +0.4**
comp=Z,199nm,1.0s,baz=308,slow=4.9,SNR=196
MJAR S **S 13 51 52.1 -0.8**
comp=Z,1.2nm,0.6s,baz=316,slow=7.1,SNR=5.0
INU Inuyama 84.13 50 *e*P **P 13 41 34.6 +0.3**
A26A Wade Farm, Ken 84.15 329 P **P 13 41 35.0 +0.8**
baz=40,SNR=99
RSO Redoubt South 84.15 360 *e*P **P 13 41 33.5 -0.8**
DLBC Dease Lake 84.16 348 P **P 13 41 35.4 +1.2**
comp=Z,47nm,0.5s,baz=37,slow=4.0,SNR=86
B27A Peters Farms, 84.19 328 P **P 13 41 35.3 +0.8**
baz=40,SNR=44
F32A Veblen 84.22 324 P **P 13 41 34.5 -0.2**
baz=43,SNR=17
J37A Redenius Farm, 84.29 321 P **P 13 41 34.9 -0.2**
baz=45,SNR=151
C28A Hausauer Farms 84.34 327 P **P 13 41 35.3 +0.1**
baz=41,SNR=21
K38A Parkersburg 84.35 320 P **P 13 41 34.8 -0.5**
baz=45,SNR=17
G33A Ortonville 84.38 323 P **P 13 41 35.3 -0.2**
baz=43,SNR=58
OLIL Olney 84.44 314 *e*P **P 13 41 36.2 +0.4**

CPCT Cooper Cave 84.44 310 eP P 13 41 37.0 +1.1
H34A Spellman Lake, 84.44 323 P P 13 41 35.7 0.0
baz=44,snr=41
SEW Seward 84.46 358 eP P 13 41 35.6 +0.1
D29A Pettibone, Tap 84.48 326 P P 13 41 36.3 +0.3
baz=41,snr=63
A25A Svangstu Ranch 84.56 329 P P 13 41 36.7 +0.3
baz=39,snr=33
E30A Jud 84.58 326 P P 13 41 36.7 +0.2
baz=42,snr=71
I35A Creekview Farm 84.63 322 P P 13 41 36.6 -0.2
baz=44,snr=12
B26A Jensen Ranch, 84.63 329 P P 13 41 37.2 +0.5
baz=40
J36A Seneca 1, Swea 84.68 321 P P 13 41 37.4 +0.5
baz=44,snr=101
USIN University of 84.70 314 eP P 13 41 37.3 +0.2
K37A Belmond 84.72 320 P P 13 41 36.9 -0.3
baz=45,snr=78
F31A Hecla 84.76 325 P P 13 41 37.0 -0.3
baz=42,snr=12
L38A Oak Wood Farm, 84.80 319 P P 13 41 37.2 -0.4
baz=45,snr=74
D28A Regan 84.81 327 P P 13 41 37.8 +0.2
baz=41,snr=8.4
C27A Sayler Ranch, 84.83 328 P P 13 41 38.1 +0.4
baz=40,snr=22
BRLK Bradley Lake 84.83 359 eP P 13 41 37.4 0.0
G32A Webster 84.85 324 P P 13 41 37.9 +0.1
baz=42,snr=70
E29A Napoleon 84.87 326 P P 13 41 38.0 +0.1
baz=41,snr=69
H33A Prehn Over Nor 84.90 323 P P 13 41 38.0 -0.1
baz=43,snr=41
I34A Hadley 84.94 322 P P 13 41 38.2 -0.1
baz=44,snr=7.0
HOM Homer 84.95 359 eP P 13 41 38.3 +0.3
C26A Wahner Farm, P 85.00 328 P P 13 41 39.0 +0.4
baz=40,snr=37
SBUM Sibu 85.07 91 eP P 13 41 40.7 +1.3
GOGA Godfrey 85.08 308 eP P 13 41 40.0 +0.8
GOGA Godfrey 85.08 308 eP P 13 41 40.0 +0.8
GOGA Godfrey 85.08 308 eP P 13 41 40.0 +0.8
GOGA LR LR
comp=Z,1µm,20.0s
CGJI Cibinong 85.08 102 P P 13 41 39.0 -0.4
comp=Z,208nm,1.1s,comp=Z,3µm
J35A Milford 85.09 322 P P 13 41 38.4 -0.7
baz=44,snr=7.4
SCIA State Center 85.10 319 eP P 13 41 39.2 +0.1
SCIA LR LR
comp=Z,2µm,19.0s
B25A Knox Farm, Ray 85.10 329 P P 13 41 39.9 +0.8
baz=39,snr=31
F30A Leola 85.14 325 P P 13 41 39.3 +0.1
baz=42,snr=9.2
SBJI Serang 85.14 101 P P 13 41 41.3 +1.6
comp=Z,282nm,1.3s,comp=Z,5µm
G31A Conde 85.21 324 P P 13 41 39.6 0.0
baz=42,snr=22
K36A Gilmore City 85.23 321 P P 13 41 39.8 +0.1
baz=44,snr=22
L37A Phoenix Point, 85.23 320 P P 13 41 39.4 -0.4
baz=45,snr=69
SDDR Presa de Saban 85.24 290 PFAKE 13 41 50.0 +10
SDDR LR LR
comp=Z,1µm,20.0s
D27A Center 85.30 327 P P 13 41 40.4 +0.3
baz=40,snr=20
E28A Huff 85.34 327 P P 13 41 40.4 +0.2
baz=40,snr=64
H32A Carlson Farm, 85.37 323 P P 13 41 40.4 -0.1
baz=42,snr=20
DGMT Dagmar 85.38 330 P P 13 41 41.2 +0.8
baz=38
DGMT Dagmar 85.38 330 eP P 13 41 40.9 +0.5
DGMT LR LR
comp=Z,3µm,19.0s
I33A Coleman 85.39 323 P P 13 41 40.9 +0.3
baz=43,snr=7.9
M38A Pleasantville 85.44 319 P P 13 41 41.0 +0.2
baz=45,snr=148
N39A Derby Farms, D 85.44 318 P P 13 41 41.1 +0.2
baz=46,snr=58
SWET Sewanee 85.47 311 eP P 13 41 41.4 +0.2
F29A Eureka 85.51 326 P P 13 41 40.9 -0.2
baz=41,snr=42
J34A George 85.53 322 P P 13 41 41.2 -0.1
baz=43,snr=17
ECSD EROS Data Cent 85.53 323 P P 13 41 41.2 -0.1
baz=43
ECSD EROS Data Cent 85.53 323 eP P 13 41 41.1 -0.1
ECSD LR LR
comp=Z,2µm,21.0s
K35A Storm Lake 85.57 321 P P 13 41 41.4 -0.1
baz=44,snr=16
C25A Freed Ranch, W 85.58 329 P P 13 41 42.5 +1.0
baz=39,snr=12
O40A La Belle 85.63 317 P P 13 41 41.6 -0.1
baz=46,snr=94
G30A Faulkton 85.72 325 P P 13 41 42.0 -0.2
baz=41,snr=46
L36A Harm Buss Farm 85.72 320 P P 13 41 42.1 -0.2
baz=44,snr=20
SLM Saint Louis 85.73 315 eP P 13 41 43.0 +0.7
SLM Saint Louis 85.73 315 eP P 13 41 43.0 +0.7
SLM Saint Louis 85.73 315 eP P 13 41 43.0 +0.7
I32A Karley and Nic 85.73 323 P P 13 41 42.3 +0.1
baz=42,snr=12
D26A Manning 85.76 328 P P 13 41 42.8 +0.4
baz=39,snr=79
SIUC Southern Illin 85.77 314 eP P 13 41 42.8 +0.3
E27A Carson 85.84 327 P P 13 41 43.0 +0.3
baz=40,snr=11
STKI Sintang 85.84 93 P P 13 41 45.1 +1.9
comp=Z,255nm,1.4s,comp=Z,7µm
H31A Wolsey 85.89 324 P P 13 41 42.5 -0.5
baz=42
DBJI Dramaga 85.89 101 P P 13 41 43.0 -0.4
comp=Z,246nm,1.4s,comp=Z,14µm
N38A Joes South For 85.90 319 P P 13 41 43.2 +0.1
baz=45,snr=66
O39A Kirksville 85.90 318 P P 13 41 43.3 +0.2
baz=45,snr=49
M37A Trindle Farm, 85.90 320 P P 13 41 43.5 +0.3
baz=44,snr=52
F28A McLaughlin 85.94 326 P P 13 41 43.6 +0.3
baz=40,snr=54
J33A Davis 86.01 322 P P 13 41 43.4 -0.2
baz=43,snr=16
WVT Waverly 86.02 312 eP P 13 41 43.5 -0.3
WVT Waverly 86.02 312 eP P 13 41 43.5 -0.3
WVT Waverly 86.02 312 eP P 13 41 43.5 -0.3
K34A Le Mars 86.03 322 P P 13 41 43.3 -0.4
baz=43,snr=54
G29A Hoven 86.03 325 P P 13 41 43.7 -0.1
baz=41,snr=24
D25A Fairfield 86.05 328 P P 13 41 44.8 +1.0
baz=39,snr=42
P40A Paris 86.14 317 P P 13 41 44.4 +0.1
baz=46,snr=82
SUSD Miller 86.14 324 P P 13 41 44.3 +0.1
baz=42,snr=25
L35A Bielow Farm, R 86.17 321 P P 13 41 44.3 -0.2
baz=44,snr=43
E26A Carlson Angus 86.20 327 P P 13 41 44.8 +0.3
baz=39,snr=21
KKM Kota Kinabalu 86.24 85 eP P 13 41 46.6 +1.3
KKM LR LR
comp=Z,869nm,22.0s
I31A Royce, Wessing 86.25 324 P P 13 41 44.7 -0.1
baz=42
M36A Felix, Anita 86.26 320 P P 13 41 44.5 -0.4
baz=44,snr=25
J32A Parkston 86.41 323 P P 13 41 45.3 -0.3
baz=42,snr=30
TIGA Tifton 86.42 306 P P 13 41 46.6 +0.8
baz=50,snr=13
N37A Lee Faris, Mou 86.44 319 P P 13 41 46.0 +0.2
baz=44,snr=61
F27A Lemmon 86.47 327 P P 13 41 45.8 -0.1
baz=40,snr=158
WRAK Wrangell Islan 86.47 348 eP P 13 41 46.7 +1.1
WRAK LR LR
comp=Z,2µm,20.0s
O38A Galt 86.50 318 P P 13 41 46.3 +0.2
baz=45,snr=36
Q40A Laux Farm, Aux 86.52 317 P P 13 41 46.4 +0.2
baz=46,snr=124
K33A Hardington 86.55 322 P P 13 41 46.2 -0.1
baz=43,snr=16
P39A Salisbury 86.55 317 P P 13 41 46.9 +0.6
baz=45,snr=123
G28A Parade 86.58 326 P P 13 41 46.7 +0.3
baz=40,snr=103
E25A Miller Ranch, 86.59 328 P P 13 41 47.0 +0.5
baz=39,snr=38
H29A Onida 86.60 325 P P 13 41 46.4 -0.1
baz=41,snr=48
CNJI Cibinong 86.64 101 P P 13 41 52.0 +4.9
comp=Z,174nm,1.2s,comp=Z,2µm
L34A Svendsen Farm, 86.70 321 P P 13 41 46.4 -0.7
baz=43,snr=35
M35A Neola 86.71 320 P P 13 41 46.8 -0.3
baz=44,snr=31
LEM Lembang 86.75 101 P P 13 41 54.0 +6.2
comp=Z,867nm,1.5s
I30A Oacoma 86.76 324 P P 13 41 47.4 0.0
baz=41,snr=17
F26A Lodgepole 86.77 327 P P 13 41 47.5 +0.1
baz=39,snr=84
GLAT Glass 86.79 313 eP P 13 41 48.0 +0.5
N36A Muff Farm, Cla 86.80 320 P P 13 41 47.5 -0.1
baz=44,snr=7.6
PARMO Parma 86.80 314 eP P 13 41 48.1 +0.5
G27A Dupree 86.81 326 P P 13 41 47.3 -0.2
baz=40,snr=70
O37A Wolven Farm, M 86.83 319 P P 13 41 47.8 +0.1
baz=44,snr=27
KDAK Kodiak Island 86.84 360 P P 13 42 02.7 +15
comp=Z,184nm,1.0s,baz=76,slow=0.5,snr=68
KDAK Kodiak Island 86.84 360 eP P 13 41 47.8 +0.5
KDAK Kodiak Island 86.84 360 eP P 13 41 47.8 +0.5
KDAK Kodiak Island 86.84 360 eP P 13 41 47.8 +0.5
KDAK LR LR
comp=Z,2µm,19.0s
P38A Dawn 86.88 318 P P 13 41 48.2 +0.2
baz=45,snr=47
J31A Geddes 86.90 323 P P 13 41 47.9 -0.1
baz=42
H28A Mission Ridge 86.94 326 P P 13 41 48.2 0.0
baz=40,snr=51
PVMO Portageville 86.94 314 eP P 13 41 49.8 +1.5
BDFB Brasilia 86.97 248 P P 13 41 50.5 +1.8
comp=Z,77nm,0.8s,baz=45,slow=6.2,snr=37
BDFB LR LR 14 22 55.5
comp=Z,2µm,18.1s,baz=56,slow=37
BDFB Brasilia 86.97 248 eP P 13 41 50.6 +1.9
Q39A Willow Grove F 86.99 317 P P 13 41 49.1 +0.6
baz=45,snr=99
K32A Verdigre 86.99 323 P P 13 41 48.0 -0.5
baz=42
L33A Hoskins 87.01 322 P P 13 41 48.2 -0.3
baz=42,snr=19
F25A Bowman 87.06 328 P P 13 41 49.0 +0.2
baz=38,snr=44
HALT Halls 87.07 313 eP P 13 41 49.0 +0.1
DWPF Disney Wildern 87.10 303 eP P 13 41 50.9 +1.7
I29A Vivian Onida 87.10 325 P P 13 41 49.0 0.0
baz=41,snr=73
R40A Maddies Statio 87.12 316 P P 13 41 50.0 +0.8
baz=46,snr=274
N35A Tabor 87.12 320 P P 13 41 48.9 -0.2
baz=44,snr=27
M34A Aspy Farms, Fr 87.14 321 P P 13 41 48.8 -0.4
baz=43,snr=8.6
G26A Maurine 87.17 327 P P 13 41 49.1 -0.2
baz=39,snr=228
J30A Dallas 87.24 324 P P 13 41 49.6 -0.1
baz=41,snr=19
O36A Bolckow 87.29 319 P P 13 41 49.8 -0.2
baz=44,snr=12
JHJ Hachijo jima 2 87.32 51 P P 13 41 49.9 -0.2
comp=Z,139nm,1.0s,baz=83,slow=3.1,snr=4.2
CISI Cisompet, Garu 87.33 101 P P 13 41 50.1 -0.4
comp=Z,342nm,1.8s,comp=Z,5µm
CISI Cisompet, Garu 87.33 101 eP P 13 41 50.0 -0.6
P37A Lathrop 87.35 318 P P 13 41 50.2 0.0
baz=44,snr=43
Q38A Cooks Store, C 87.40 318 P P 13 41 50.7 +0.2
baz=45,snr=81
OHAK Old Harbor 87.40 360 eP P 13 41 50.5 +0.4
K31A O'Neill 87.41 323 P P 13 41 50.5 0.0
baz=42,snr=34
M33A Taylor Creek F 87.41 321 P P 13 41 50.3 -0.2
baz=43,snr=14
H27A Howes 87.45 326 P P 13 41 50.4 -0.2
baz=40,snr=76
SMY Shemya 87.48 19 eP P 13 41 51.3 +0.8
SMY Shemya 87.48 19 eP P 13 41 51.3 +0.8
SMY Shemya 87.48 19 eP P 13 41 51.3 +0.8
L32A Elgin 87.50 322 P P 13 41 50.8 -0.1
baz=42,snr=6.7
I28A Midland 87.52 325 P P 13 41 50.9 -0.1
baz=40,snr=40
R39A Chumby, Stover 87.54 317 P P 13 41 51.7 +0.6
baz=45,snr=135
LRAL Lakeview Retre 87.57 310 eP P 13 41 52.0 +0.6
GTBY Guantanamo Bay 87.58 293 eP P 13 41 53.8 +2.2
GTBY epP pP 13 42 15.8 +3.7
GTBY LR LR
comp=Z,2µm,22.0s
J29A Okreek 87.58 324 P P 13 41 51.6 +0.3
baz=41,snr=74
PTGA Pitinga 87.59 267 P P 13 41 52.5 +0.8
comp=Z,156nm,1.2s,baz=46,slow=6.0,snr=46
PTGA Pitinga 87.59 267 eP P 13 41 53.3 +1.6
N34A Lincoln 87.59 320 P P 13 41 51.0 -0.3
baz=43,snr=16
PBKI Pangkalan Bun 87.60 95 P P 13 41 53.0 +1.2
comp=Z,347nm,1.4s,comp=Z,5µm
G25A Newell 87.62 327 P P 13 41 51.5 0.0
baz=38,snr=69
LAO LASA Array 87.63 330 P P 13 41 52.3 +0.8
baz=43,snr=96
LAO LASA Array 87.63 330 eP P 13 41 52.4 +0.8
LAO LR LR
comp=Z,3µm,19.0s
O35A Humboldt 87.69 320 P P 13 41 51.4 -0.5
baz=43
S40A Lebanon 87.74 316 P P 13 41 52.5 +0.3
baz=45,snr=126
H26A Fairpoint 87.78 326 P P 13 41 52.0 -0.3
baz=39,snr=9.4
L31A Butterfield Fa 87.78 323 P P 13 41 52.6 +0.3
baz=42,snr=25
K30A Basset 87.79 323 P P 13 41 53.0 +0.6
baz=41,snr=72
P36A Good Intent, A 87.79 319 P P 13 41 52.3 0.0
baz=44,snr=10
I27A Quinn 87.87 326 P P 13 41 52.6 -0.1
baz=40,snr=18
Q37A Longview Farm, 87.92 318 P P 13 41 53.0 +0.1
baz=44,snr=13
EGMT Eagleton 87.93 332 P P 13 41 53.4 +0.4
baz=34
EGMT Eagleton 87.93 332 eP P 13 41 53.3 +0.3
EGMT LR LR
comp=Z,3µm,22.0s
CMJI Cimerak 87.97 101 P P 13 41 55.0 +1.5
comp=Z,178nm,1.5s
J28A Allard Ranch, 87.99 325 P P 13 41 53.9 +0.6
baz=40,snr=58
BGNE Belgrade 88.01 322 P P 13 41 53.4 0.0
baz=42,snr=40
OXF Oxford 88.06 312 eP P 13 41 53.3 -0.4
OXF Oxford 88.06 312 eP P 13 41 53.3 -0.4
OXF Oxford 88.06 312 eP P 13 41 53.3 -0.4
K29A Lazy Trails An 88.06 324 P P 13 41 54.5 +0.9
baz=41,snr=54
T40A Mansfield 88.06 316 P P 13 41 54.1 +0.4
baz=45,snr=103
KPJI Karang Pucung 88.09 100 P P 13 41 53.9 -0.2
comp=Z,131nm,1.3s,comp=Z,2µm
R38A Fenwick Farm, 88.11 317 P P 13 41 54.1 +0.2
baz=44,snr=70
S39A Bolivar 88.14 317 P P 13 41 54.5 +0.4
baz=45,snr=76
H25A Fruitdale 88.14 327 P P 13 41 54.0 0.0
baz=38,snr=33
O34A Beatrice 88.17 320 P P 13 41 54.2 +0.1
baz=43,snr=23
I26A New Underwood 88.27 326 P P 13 41 54.6 0.0
baz=39,snr=48
P35A Duane Minner, 88.29 319 P P 13 41 54.9 +0.2
baz=43,snr=58
L30A Spencer Herefo 88.39 323 P P 13 41 55.4 +0.2
baz=41,snr=6.4
Q36A Arnold C. Orve 88.40 319 P P 13 41 55.2 -0.1
baz=44,snr=13
M31A Lambtecht Ranc 88.47 322 P P 13 41 56.0 +0.4
baz=41,snr=40
J27A Elkhorn Farm, 88.48 325 P P 13 41 56.1 +0.4
baz=40,snr=53
S38A Stockton 88.50 317 P P 13 41 56.1 +0.3
baz=44,snr=72
R37A Teagarden Farm 88.53 318 P P 13 41 55.4 -0.4
baz=44,snr=58
N32A Stulken Farm, 88.56 321 P P 13 41 55.8 -0.2
baz=42,snr=7.3
K28A Ten Mile Ranch 88.60 324 P P 13 41 57.0 +0.8
baz=40,snr=60
T39A Clever 88.64 316 P P 13 41 56.5 +0.1
baz=45,snr=25
L29A Maesberg Ranch 88.67 324 P P 13 41 57.2 +0.7
baz=40,snr=43
I25A Rochford 88.67 327 P P 13 41 57.1 +0.4
baz=38,snr=156
P34A Walnut Farm, R 88.70 320 P P 13 41 57.0 +0.3
baz=43,snr=40
O33A Hebron 88.71 321 P P 13 41 56.2 -0.5
baz=42,snr=27
RSSD Black Hills 88.73 327 P P 13 41 57.2 +0.2
baz=38
RSSD Black Hills 88.73 327 eP P 13 41 57.1 +0.1
RSSD Black Hills 88.73 327 eP P 13 41 57.1 +0.1
RSSD Black Hills 88.73 327 eP P 13 41 57.1 +0.1
M30A Dale-Ortello V 88.77 323 P P 13 41 57.2 +0.2
baz=41,snr=8.8
U40A Yellville 88.81 315 P P 13 41 57.2 -0.1
baz=45,snr=42
BRAL Brewton 88.84 308 PFAKE 13 42 10.0 +13
BRAL LR LR
comp=Z,2µm,21.0s
N31A Bailey Ranch, 88.85 322 P P 13 41 57.5 +0.1
baz=41,snr=12
R36A Gordon, Harris 88.89 318 P P 13 41 57.0 -0.6
baz=44,snr=36
KSU1 Kansas State U 88.91 319 P P 13 41 57.5 -0.1
baz=43
KSU1 Kansas State U 88.91 319 eP P 13 41 57.6 -0.1
KSU1 LR LR
comp=Z,2µm,21.0s
S37A Fort Scott 88.92 317 P P 13 41 57.4 -0.3
baz=44,snr=71
O32A Brockman Farm, 88.93 321 P P 13 41 57.5 -0.2
baz=42,snr=22
J26A Sides Ranch, S 88.93 326 P P 13 41 57.8 +0.1
baz=39,snr=64
146A Union 89.12 310 P P 13 41 59.0 +0.3
baz=47
T38A Diamond 89.14 317 P P 13 41 58.8 +0.1
baz=44,snr=88
U39A Green Forest 89.15 316 P P 13 41 59.0 +0.2
baz=45,snr=94
V40A Witts Springs 89.18 315 P P 13 41 58.8 -0.2
baz=45,snr=40
J25A Sunshine Ranch 89.20 326 P P 13 41 59.5 +0.4
baz=38,snr=75
L28A Connealy Angus 89.21 324 P P 13 41 59.9 +0.8
baz=40,snr=10
Q34A Chapman 89.22 319 P P 13 41 59.1 0.0
baz=43,snr=31
WHAR Wooly Hollow 89.23 314 eP P 13 41 59.3 +0.1
P33A Williams Farm, 89.24 320 P P 13 41 59.0 -0.2
baz=42,snr=29
M29A Burnside Ranch 89.24 323 P P 13 41 59.1 -0.2
baz=40,snr=8.8
R35A Emporia Munici 89.26 319 P P 13 41 59.2 -0.1
baz=43,snr=38
FALS False Pass 89.37 6 eP P 13 41 58.1 -1.3
S36A Lake Cedric, C 89.37 318 P P 13 41 59.2 -0.6
baz=44,snr=67
T37A Cheneyville 18 89.43 317 P P 13 42 00.2 +0.1
baz=44,snr=195
N30A Hueftle Ranch, 89.44 322 P P 13 42 00.0 -0.2
baz=41,snr=10
HHAR Hobbs 89.48 316 eP P 13 42 00.2 -0.2
O31A Woolen Ranch, 89.54 322 P P 13 42 00.1 -0.5
baz=41,snr=14
P32A Huiting Farm, 89.57 321 P P 13 42 00.1 -0.6
baz=42,snr=17
246A Jackson Lee, B 89.58 310 P P 13 42 01.7 +0.9
baz=47,snr=6.2
M28A Bar X Bar Ranc 89.61 324 P P 13 42 01.4 +0.4
baz=40,snr=33
BLMT Blacktail Moun 89.61 335 eP P 13 42 01.3 +0.3
YBMT Yellow Bay 89.61 335 eP P 13 42 01.3 +0.4
U38A Gravette 89.62 316 P P 13 42 01.1 0.0
baz=44,snr=76
UALR University of 89.63 314 eP P 13 42 01.2 +0.2
V39A Pettigrew 89.63 315 P P 13 42 00.8 -0.4
baz=45,snr=32
Q33A Connelly Farm, 89.63 320 P P 13 42 00.9 -0.1
baz=42,snr=33
145A Houston Renfro 89.68 311 P P 13 42 01.7 +0.4
baz=47,snr=5.2
N29A Votaw Ranch, W 89.69 323 P P 13 42 01.3 0.0
baz=40,snr=20
BBB Bella Bella 89.69 345 P P 13 42 00.2 -0.7
comp=Z,33nm,1.0s,baz=346,slow=4.8,snr=4.8
GCMT Greycliff 89.75 331 eP P 13 42 02.1 +0.5
W40A Ferguson Farm, 89.76 315 P P 13 42 02.0 +0.3
baz=45,snr=14
S35A Otter Creek Ra 89.79 318 P P 13 42 01.6 -0.2
baz=43,snr=48
JTMT Jette 89.81 335 eP P 13 42 02.3 +0.5
R34A Isabella, Hill 89.84 319 P P 13 42 01.7 -0.3
baz=42,snr=67
CCAR Cane Creek 89.89 313 eP P 13 42 03.3 +1.1
O30A MW Ranch, Wils 89.89 322 P P 13 42 01.7 -0.5
baz=41,snr=7.5
BSMT Bassoo Peak 89.89 335 P P 13 42 02.5 +0.2
SWMT Swartz Lake 89.91 334 eP P 13 42 02.7 +0.4
144A Alexander Plac 89.96 311 P P 13 42 03.0 +0.3
baz=46
T36A Boggs Farm, Ca 90.00 318 P P 13 42 02.5 -0.3
baz=43,snr=58
Q32A Meitler Ranch, 90.02 320 P P 13 42 02.1 -0.7
baz=42,snr=25
P31A Stockton 90.04 321 P P 13 42 02.3 -0.6
baz=41,snr=28
V38A Canehill 90.05 316 P P 13 42 02.7 -0.3
baz=44,snr=60
245A Little AP, Sta 90.05 310 P P 13 42 03.9 +0.8
baz=47,snr=22
U37A Salina 90.06 317 P P 13 42 02.8 -0.2
baz=44,snr=45
X40A Basin Creek Fa 90.12 314 P P 13 42 03.3 0.0
baz=45,snr=29
RLMT Red Lodge 90.12 330 P P 13 42 04.2 +0.6
baz=34,snr=66
RLMT Red Lodge 90.14 330 eP P 13 42 04.0 +0.5
RLMT LR LR
comp=Z,4µm,22.0s
CHMT Chamberlain Mo 90.16 334 eP P 13 42 03.4 -0.2
W39A Magazine 90.17 315 P P 13 42 03.4 -0.2
baz=44,snr=26
S34A Willow Spring 90.21 319 P P 13 42 03.5 -0.2
baz=42,snr=15
346A Big Creek Wild 90.22 310 P P 13 42 05.1 +1.2
baz=47,snr=6.5
R33A Olander Ranch, 90.22 320 P P 13 42 03.5 -0.4
baz=42,snr=14
N28A Pribbeno Ranch 90.23 323 P P 13 42 04.0 +0.1
baz=40,snr=22
OGNE Ogallala 90.27 324 P P 13 42 03.9 -0.2
baz=39,snr=15
OGNE Ogallala 90.27 324 eP P 13 42 04.5 +0.4
OGNE LR LR
comp=Z,2µm,20.0s
O29A 4D Ranch, Culb 90.30 322 P P 13 42 03.9 -0.3
baz=40,snr=7.1
VBMS Vicksburg 90.30 311 P P 13 42 05.0 +0.7
baz=46,snr=6.1
NEW Newport 90.31 337 P P 13 42 04.3 +0.3
comp=Z,103nm,1.0s,baz=43,slow=5.2,snr=106
NEW Newport 90.31 337 P P 13 42 04.5 +0.5
baz=29
U36A Oologah 90.41 317 P P 13 42 04.7 +0.1
baz=43,snr=30

MTDJ **Mount Denham** 90.42 293 *e*P P 13 42 07.6 +2.4
MTDJ LR LR
comp=Z,994nm,22.0s
V37A **Hulbert** 90.45 316 P P 13 42 04.5 -0.3
baz=44,SNR=55
T35A **Sooner Cattle** 90.46 318 P P 13 42 05.2 +0.3
baz=43,SNR=42
P30A **Selden** 90.47 322 P P 13 42 04.5 -0.4
baz=41,SNR=10
MSO **Missoula** 90.47 334 P P 13 42 05.0 +0.1
baz=31
MSO **Missoula** 90.47 334 *e*P P 13 42 04.9 -0.1
MIAR **Mount Ida** 90.51 314 P P 13 42 05.8 +0.7
baz=45
MIAR **Mount Ida** 90.51 314 *e*P P 13 42 05.9 +0.7
MIAR **Mount Ida** 90.51 314 *e*P P 13 42 05.9 +0.7
MIAR **Mount Ida** 90.51 314 *e*P P 13 42 05.9 +0.7
MIAR LR LR
comp=Z,3µm,22.0s
143A **Socs Landing,** 90.51 312 P P 13 42 05.6 +0.4
baz=46
R32A **Long Quarter,** 90.52 320 P P 13 42 04.7 -0.5
baz=42,SNR=21
244A **Avery, Jackson** 90.53 311 P P 13 42 06.3 +1.0
baz=46,SNR=17
LCCM **Lewis and Clar** 90.56 332 *e*P P 13 42 05.9 +0.5
345A **Thompson Farm,** 90.63 310 P P 13 42 06.8 +1.1
baz=47
BOZ **Bozeman (W)** 90.63 332 P P 13 42 06.3 +0.6
baz=33,SNR=67
BOZ **Bozeman (W)** 90.63 332 *e*P P 13 42 06.0 +0.3
BOZ **Bozeman (W)** 90.63 332 *e*P P 13 42 06.0 +0.3
BOZ **Bozeman (W)** 90.63 332 *e*P P 13 42 06.0 +0.3
BOZ LR LR
comp=Z,3µm,20.0s
SDV **Santo Domingo** 90.64 281 P P 13 42 06.8 +0.5
comp=Z,87nm,1.0s,baz=54,slow=3.3,SNR=54
SDV **Santo Domingo** 90.64 281 *e*P P 13 42 06.8 +0.5
SDV LR LR
comp=Z,572nm,19.0s
SDV **Santo Domingo** 90.64 281 *e*P P 13 42 06.6 +0.2
W38A **Poteau** 90.68 315 P P 13 42 06.3 +0.3
baz=44,SNR=31
Y40A **Okolona** 90.71 314 P P 13 42 06.8 +0.7
baz=45,SNR=34
T34A **McClaskey Farm** 90.75 318 P P 13 42 06.7 +0.4
baz=42,SNR=53
CBKS **Cedar Bluff** 90.76 321 P P 13 42 06.0 -0.3
baz=41,SNR=18
CBKS **Cedar Bluff** 90.76 321 *e*P P 13 42 06.2 -0.1
CBKS **Cedar Bluff** 90.76 321 *e*P P 13 42 06.2 -0.1
CBKS **Cedar Bluff** 90.76 321 *e*P P 13 42 06.2 -0.1
CBKS LR LR
comp=Z,3µm,22.0s
S33A **Kaszmaul Farm,** 90.76 319 P P 13 42 06.1 -0.2
baz=42,SNR=13
P29A **Atwood** 90.76 322 P P 13 42 06.1 -0.3
baz=40,SNR=14
O28A **Krutsinger Ran** 90.78 323 P P 13 42 06.2 -0.2
baz=40,SNR=11
LRM **Limekiln Ridge** 90.79 333 *e*P P 13 42 02.3 -4.3
TUL1 **Leonard** 90.79 317 P P 13 42 06.4 -0.1
baz=43,SNR=45
PWJI **Pagerwojo** 90.80 99 P P 13 42 07.9 +1.2
comp=Z,107nm,1.5s
WLAR **White Oak Lake** 90.84 314 *e*P P 13 42 08.1 +1.4
X39A **Fountain Ranch** 90.84 315 P P 13 42 07.3 +0.5
baz=44,SNR=60
B08A **Colville Reser** 90.92 338 *e*P P 13 42 06.7 -0.2
142A **Monroe** 90.94 312 P P 13 42 07.5 +0.3
baz=46
344A **Westbrook Farm** 90.96 311 P P 13 42 08.4 +1.1
baz=46,SNR=13
Z41A **Richland Creek** 90.96 313 P P 13 42 08.2 +1.0
baz=45,SNR=10
V36A **Jenks** 90.97 317 P P 13 42 07.3 0.0
baz=43,SNR=37
U35A **Pawnee** 90.98 318 P P 13 42 07.7 +0.4
baz=43,SNR=48
K22A **Casper** 91.00 327 P P 13 42 06.7 -0.8
baz=36,SNR=63
LKWY **Lake** 91.05 331 PFAKE 13 42 20.0 +12
LKWY LR LR
comp=Z,4µm,21.0s
C09A **Chrisman Ranch** 91.08 337 P P 13 42 08.1 +0.5
243A **Waterproof** 91.13 311 P P 13 42 08.4 +0.4
baz=46,SNR=9.9
X38A **Whitesboro** 91.14 315 P P 13 42 08.5 +0.4
baz=44,SNR=107
W37B **Quinton** 91.15 316 P P 13 42 08.3 +0.2
baz=44,SNR=49
S32A **Newby Ranch, P** 91.18 320 P P 13 42 08.0 -0.3
baz=41,SNR=8.9
YMR **Madison River** 91.19 331 *e*P P 13 42 09.5 +1.1
P28A **Saint Francis** 91.19 323 P P 13 42 08.4 0.0
baz=40,SNR=11
445A **Amite** 91.21 310 P P 13 42 08.9 +0.4
baz=46
QLMT **Earthquake Lak** 91.23 332 *e*P P 13 42 09.5 +0.8
Y39A **Lockesburg** 91.24 314 P P 13 42 09.0 +0.4
baz=44,SNR=12
H17A **Grant Village** 91.26 331 P P 13 42 10.6 +1.8
baz=34,SNR=57
T33A **Patterson Ranc** 91.27 319 P P 13 42 08.4 -0.3
baz=42
Z40A **Long Farm, Mag** 91.31 313 P P 13 42 09.7 +0.8
baz=45,SNR=12
U34A **Anderson Ranch** 91.37 318 P P 13 42 09.3 +0.1
baz=42,SNR=28
242A **Grayson** 91.41 312 P P 13 42 10.0 +0.7
baz=46
B06A **Marblemount** 91.41 339 *e*P P 13 42 08.2 -0.8
SPB **Sao Paulo** 91.45 242 PFAKE 13 42 20.0 +10
SPB LR LR
comp=Z,2µm,21.0s
NLW **Nelson Butte** 91.47 339 P P 13 42 09.4 -0.2
444A **Pine Grove** 91.48 310 P P 13 42 10.3 +0.6
baz=46
V35A **Meyer Ranch, C** 91.48 317 P P 13 42 09.7 0.0
baz=43,SNR=23
141A **Papa Simpson,** 91.48 313 P P 13 42 10.4 +0.7
baz=45
X37A **Clayton** 91.51 316 P P 13 42 10.4 +0.5
baz=44,SNR=59
SAW **Saint Andrews** 91.52 338 P P 13 42 10.0 +0.3
T32A **Huddler Ranch,** 91.56 319 P P 13 42 09.9 -0.2
baz=41,SNR=17
A04D **Lummi Island** 91.57 340 P P 13 42 08.9 -0.9
baz=24
W36A **Wetumka** 91.59 316 P P 13 42 10.2 0.0
baz=43,SNR=19
Y38A **Idabel** 91.62 315 P P 13 42 10.9 +0.6
baz=44,SNR=11
343A **Vidalia** 91.62 311 P P 13 42 10.9 +0.6
baz=46
U33A **Lingo Farm, Me** 91.68 318 P P 13 42 10.2 -0.4
baz=42,SNR=10
WTV **Waterville** 91.70 338 P P 13 42 10.4 -0.1
C06D **Leavenworth** 91.78 339 P P 13 42 10.1 -0.7
baz=26,SNR=6.0
545A **Edgard** 91.78 309 P P 13 42 12.5 +1.4
baz=46
MCMT **McKenzie Canyo** 91.78 332 *e*P P 13 42 11.6 +0.4
Z39A **Irene McRaven,** 91.79 314 P P 13 42 12.2 +1.1
baz=44,SNR=8.1
V34A **Guthrie** 91.80 318 P P 13 42 11.4 +0.3
baz=42,SNR=21
B05A **Bryant** 91.81 340 P P 13 42 10.0 -0.9
baz=25,SNR=27
140A **Cam and Jess,** 91.86 313 P P 13 42 12.6 +1.2
baz=45
ETW **Entiat** 91.89 338 P P 13 42 11.1 -0.4
241A **Mo Tay, Goldon** 91.90 312 P P 13 42 12.3 +0.7
baz=45
W35A **Tecumseh** 91.95 317 P P 13 42 12.2 +0.4
baz=43,SNR=42
D08A **Wollman Farm,** 91.95 337 *e*P P 13 42 11.8 +0.2
342A **Flagon Creek P** 91.99 311 P P 13 42 12.9 +0.8
baz=45,SNR=7.4
CTBH **Cotabato--PC H** 92.04 80 i/P P 13 42 13.3 +0.8
KSCO **Kaye Shedlock'** 92.06 323 P P 13 42 12.6 +0.2
baz=39
X36A **Centrahoma** 92.08 316 P P 13 42 12.9 +0.4
baz=43,SNR=34
443A **Delano Plantat** 92.09 311 P P 13 42 13.3 +0.8
baz=46
Y37A **Hugo** 92.09 315 P P 13 42 13.1 +0.5
baz=44,SNR=23
N23A **Red Feather La** 92.15 326 P P 13 42 13.2 +0.1
baz=37,SNR=51
544A **White Castle** 92.16 310 P P 13 42 13.9 +1.1
baz=46
BW06 **Boulder Array** 92.20 329 P P 13 42 12.4 -0.8
baz=34,SNR=56
BW06 **Boulder Array** 92.20 329 PFAKE 13 42 30.0 +17
BW06 LR LR
comp=Z,3µm,20.0s
PDAR **Pinedale Array** 92.20 329 P P 13 42 12.2 -1.0
comp=Z,15nm,0.9s,baz=46,slow=4.3,SNR=86
PDAR LR LR 14 25 56.8
comp=Z,2µm,19.4s,baz=40,slow=37
U32A **Winter Ranch,** 92.20 319 P P 13 42 13.2 +0.2
baz=41,SNR=7.6
V33A **Lossen Ranch,** 92.23 318 P P 13 42 13.3 +0.1
baz=42,SNR=17
Z38A **Mt. Pleasant** 92.25 314 P P 13 42 14.3 +1.0
baz=44,SNR=21
139A **Bunkhouse Ranc** 92.31 314 P P 13 42 14.2 +0.6
baz=44
W34A **Bridge Creek,** 92.38 317 P P 13 42 14.2 +0.4
baz=42,SNR=11
240A **Hunter Patters** 92.39 313 P P 13 42 14.5 +0.5
baz=45
442A **Mamou** 92.52 311 P P 13 42 15.7 +1.2
baz=45
Y36A **Durant** 92.53 316 P P 13 42 14.4 -0.1
baz=43,SNR=10
341A **Kurthwood** 92.53 312 P P 13 42 15.0 +0.4
baz=45
X35A **Drake** 92.55 316 P P 13 42 14.5 -0.1
baz=43,SNR=40
543A **St. Martinvill** 92.60 310 P P 13 42 16.2 +1.3
baz=46
Z37A **Pogue Cattle C** 92.66 315 P P 13 42 15.8 +0.7
baz=44,SNR=10
V32A **Arapaho** 92.72 319 P P 13 42 15.6 +0.2
baz=41,SNR=13
HAWA **Hanford** 92.73 337 PFAKE 13 42 30.0 +15
HAWA LR LR
comp=Z,4µm,22.0s
138A **Matatall Enter** 92.73 314 P P 13 42 16.7 +1.2
baz=44,SNR=7.7
W33A **Caddo, Fort Co** 92.83 318 P P 13 42 16.4 +0.4
baz=42
239A **Gary** 92.83 313 P P 13 42 16.6 +0.7
baz=44,SNR=5.2
AHID **Auburn Hatcher** 92.83 330 PFAKE 13 42 30.0 +14
AHID LR LR
comp=Z,3µm,20.0s
ISCO **Idaho Springs** 92.87 325 P P 13 42 16.3 -0.1
baz=37
ISCO **Idaho Springs** 92.87 325 *e*P P 13 42 16.3 -0.1
ISCO **Idaho Springs** 92.87 325 *e*P P 13 42 16.3 -0.1
ISCO **Idaho Springs** 92.87 325 *e*P P 13 42 16.2 -0.1
ISCO LR LR
comp=Z,2µm,20.0s
X34A **Smith Ranch, M** 92.89 317 P P 13 42 16.8 +0.6
baz=42,SNR=21
340A **Bronson** 92.91 312 P P 13 42 16.5 +0.1
baz=44
Y35A **Marietta** 92.95 316 P P 13 42 16.5 0.0
baz=43,SNR=15
441A **DeRidder** 92.96 312 P P 13 42 17.2 +0.6
baz=45
GRMC **Gramalote, San** 93.06 282 *e*P P 13 42 17.9 +0.4
Z36A **Blue Ridge** 93.07 315 P P 13 42 17.3 +0.3
baz=43,SNR=21
NLWA **Neilton Lookou** 93.10 340 *e*P P 13 42 17.4 +0.4
NLWA LR LR
comp=Z,3µm,21.0s
NATX **Nacogdoches** 93.13 313 P P 13 42 18.2 +0.9
baz=44,SNR=7.0
NATX **Nacogdoches** 93.13 313 *e*P P 13 42 18.4 +1.1
NATX LR LR
comp=Z,3µm,22.0s
PAF **Port-aux-Franc** 93.15 153 PFAKE 13 42 30.0 +13
PAF LR LR
comp=Z,3µm,20.0s
137A **Heron Place, G** 93.17 314 P P 13 42 18.8 +1.3
baz=43,SNR=14
DAV **Davao City (W)** 93.19 79 PFAKE 13 42 30.0 +12
DAV LR LR
comp=Z,2µm,19.0s
238A **Jacksonville** 93.22 314 P P 13 42 18.8 +1.0
baz=44,SNR=6.5
W32A **Sentinel** 93.27 318 P P 13 42 18.1 +0.1
baz=41,SNR=24
X33A **Lawton** 93.30 317 P P 13 42 18.2 +0.1
baz=42
WMOK **Wichita Mounta** 93.31 318 *e*P P 13 42 18.3 +0.1
WMOK **Wichita Mounta** 93.31 318 *e*P P 13 42 18.3 +0.1
WMOK **Wichita Mounta** 93.31 318 *e*P P 13 42 18.3 +0.1
WMOK LR LR
comp=Z,2µm,22.0s
Q24A **Divide** 93.31 324 P P 13 42 18.0 -0.4
baz=37,SNR=38
Y34A **Reagan Ranch,** 93.32 317 P P 13 42 17.9 -0.2
baz=42,SNR=8.5
BMO **Blue Mountains** 93.36 335 *e*P P 13 42 17.4 -0.9
BMO LR LR
comp=Z,2µm,19.0s
339A **Huntington** 93.37 313 P P 13 42 18.9 +0.5
baz=44
440A **Kirbyville** 93.43 312 P P 13 42 19.6 +0.9
baz=44
HLID **Hailey** 93.45 333 P P 13 42 18.8 -0.1
baz=31
HLID **Hailey** 93.45 333 *e*P P 13 42 18.5 -0.3
HLID LR LR
comp=Z,3µm,21.0s
Z35A **Perchaven, San** 93.49 316 P P 13 42 19.0 0.0
baz=42,SNR=12
237A **Washetta, Mont** 93.63 314 P P 13 42 20.6 +1.0
baz=43
136A **Ennis** 93.71 315 P P 13 42 20.5 +0.5
baz=43
Y33A **Hilltop Ranch,** 93.76 317 P P 13 42 20.7 +0.5
baz=42,SNR=12
O20A **White River Ci** 93.79 327 P P 13 42 19.8 -0.7
baz=35,SNR=13
338A **Crockett** 93.80 313 P P 13 42 21.3 +0.9
baz=44
X32A **Elmer** 93.82 318 P P 13 42 20.7 +0.2
baz=41,SNR=22
540A **Vidor** 93.82 312 P P 13 42 22.4 +1.9
baz=44
Z34A **Collier Ranch,** 93.84 316 P P 13 42 20.7 +0.1
baz=42
439A **Center Grove,** 93.88 313 P P 13 42 21.8 +1.0
baz=44
HWUT **Hardware Ranch** 93.99 330 *e*P P 13 42 20.8 -0.6
HWUT LR LR
comp=Z,3µm,22.0s
236A **Katherine and** 94.05 314 P P 13 42 22.3 +0.8
baz=43,SNR=6.3
F04D **Rainier, OR** 94.06 339 P P 13 42 22.0 +0.7
baz=24
MFID **Camas Ranch** 94.09 334 *e*P P 13 42 22.0 +0.3
MRSI **Marisa** 94.11 86 P P 13 42 23.0 +0.9
comp=Z,40nm,0.9s
VTHM **Trough** 94.14 337 P P 13 42 22.4 +0.6
135A **Vickery Place,** 94.15 315 P P 13 42 22.4 +0.3
baz=42
337A **Centerville** 94.17 314 P P 13 42 23.4 +1.2
baz=43
VFP **Flag Point** 94.29 338 P P 13 42 23.0 +0.3
G05D **Wamic, OR** 94.32 338 P P 13 42 23.1 +0.5
baz=26
438A **Sam Houston St** 94.34 313 P P 13 42 24.1 +1.2
baz=44
539A **Cross D Ranch,** 94.34 312 P P 13 42 24.2 +1.2
baz=44
Z33A **Whitaker Ranch** 94.38 317 P P 13 42 22.9 -0.2
baz=42,SNR=11
T25A **Trinidad** 94.40 323 P P 13 42 23.2 -0.2
baz=38,SNR=45
SDCO **Great Sand Dun** 94.45 324 P P 13 42 23.3 -0.4
baz=37,SNR=71
SDCO **Great Sand Dun** 94.45 324 *e*P P 13 42 23.0 -0.6
SDCO LR LR
comp=Z,2µm,20.0s
134A **White-Moore Ra** 94.52 316 P P 13 42 23.8 +0.1
baz=42,SNR=14
WHTX **Lake Whitney,** 94.59 315 P P 13 42 23.8 -0.3
baz=42,SNR=7.5
437A **Phantom Ranch,** 94.67 313 P P 13 42 24.8 +0.3
baz=43
336A **Riesel** 94.68 314 P P 13 42 24.4 0.0
baz=43
MOTC **Monteria, Cord** 94.70 284 *e*P P 13 42 24.7 -0.2
538A **Harpers Horsep** 94.72 313 P P 13 42 25.8 +1.1
baz=44
AMTX **Amarillo** 94.75 320 P P 13 42 24.4 -0.5
baz=40
G03D **McMinnville, O** 94.93 339 P P 13 42 26.0 +0.7
baz=24,SNR=9.7
SAML **Samuel** 94.94 263 PFAKE 13 42 40.0 +14
SAML LR LR
comp=Z,2µm,21.0s
133A **Hamilton Ranch** 94.97 316 P P 13 42 25.7 -0.1
baz=42,SNR=23
234A **Clairette** 94.97 315 P P 13 42 25.8 -0.1
baz=42,SNR=18
S22A **4UR Ranch, Cre** 95.08 325 P P 13 42 26.5 -0.1
baz=36,SNR=50
335A **Moody** 95.10 315 P P 13 42 26.4 +0.1
baz=42
436A **Wall Ranch, Ga** 95.10 314 P P 13 42 27.0 +0.6
baz=43
I05D **Terrebonne, OR** 95.14 337 P P 13 42 27.0 +0.6
baz=26
638A **Rosharon** 95.28 312 P P 13 42 28.3 +1.1
baz=44
537A **Green Hill Far** 95.32 313 P P 13 42 28.2 +0.8
baz=43
ABTX **Abilene, Hawle** 95.36 317 P P 13 42 27.9 +0.3
baz=41,SNR=12
233A **Rising Star** 95.40 316 P P 13 42 28.1 +0.3
baz=42,SNR=17
KAPI **Kappang** 95.50 92 P P 13 42 29.0 +0.6
comp=Z,21nm,1.0s,baz=341,slow=6.3,SNR=3.6
KAPI **Kappang** 95.50 92 P P 13 42 29.0 +0.6
KAPI LR LR
comp=Z,1µm,22.0s
334A **Lometa** 95.53 315 P P 13 42 28.4 +0.1
baz=42,SNR=18
435B **Jarrell** 95.56 314 P P 13 42 28.8 +0.3
baz=42
CHIC **Chingaza** 95.63 280 *e*P P 13 42 29.2 -0.4
SRU **San Rafael Swe** 95.64 328 *e*P P 13 42 28.1 -0.8
SRU **San Rafael Swe** 95.64 328 *e*P P 13 42 28.1 -0.8
DUG **Dugway, Tooele** 95.69 330 P P 13 42 29.2 0.0
baz=32
DUG **Dugway, Tooele** 95.69 330 *e*P P 13 42 28.9 -0.2
DUG **Dugway, Tooele** 95.69 330 *e*P P 13 42 28.9 -0.2
536A **Bastrop** 95.77 313 P P 13 42 29.8 +0.3
baz=43
637A **Eagle Lake** 95.80 313 P P 13 42 30.6 +1.1
baz=43
434A **Burnet** 95.93 315 P P 13 42 30.3 0.0
baz=42,SNR=12
WVOR **Wild Horse Val** 95.95 335 *e*P P 13 42 30.4 +0.2
WVOR **Wild Horse Val** 95.95 335 *e*P P 13 42 30.4 +0.2
I04A **Tendick Farm,** 95.96 338 P P 13 42 30.0 -0.2
baz=25,SNR=24
333A **Richland Sprin** 95.96 316 P P 13 42 30.4 0.0
baz=42,SNR=18
ROSC **El Rosal** 95.98 280 LR LR 14 27 44.8
comp=Z,238nm,18.1s,baz=53,slow=37
NORC **Norcasia** 95.99 281 *e*P P 13 42 30.3 -0.4
MSTX **Muleshoe** 96.03 320 P P 13 42 30.0 -0.8
baz=39
J05D **Fort Rock, OR** 96.05 337 P P 13 42 31.4 +0.7
baz=26,SNR=17
535A **Dale** 96.10 314 P P 13 42 31.1 +0.2
baz=42
ELK **Elko** 96.18 332 P P 13 42 32.0 +0.5
comp=Z,14nm,1.1s,baz=224,slow=0.2,SNR=34
ELK **Elko** 96.18 332 P P 13 42 32.0 +0.5
ELK pmax pmax
comp=Z,14nm,1.1s
ELK **Elko** 96.18 332 P P 13 42 32.0 +0.5
comp=Z,14nm,1.1s
DBBC **Dabeiba** 96.19 283 *e*P P 13 42 33.2 +1.4
636A **Smothers Creek** 96.20 313 P P 13 42 32.3 +0.9
baz=43
MVCO **Mesa Verde** 96.29 325 P P 13 42 31.7 -0.3
baz=35
I03D **Drain, OR** 96.33 339 P P 13 42 32.6 +0.9
baz=24,SNR=13
737A **Port Lavaca** 96.35 312 P P 13 42 32.9 +0.8
baz=43
433A **Art** 96.45 315 P P 13 42 32.5 -0.1
baz=42,SNR=26
736A **Circle Diamond** 96.59 313 P P 13 42 34.2 +1.0
baz=43
534A **Blanco** 96.63 314 P P 13 42 33.4 0.0
baz=42
635A **Leesville** 96.69 313 P P 13 42 34.4 +0.8
baz=42
K04D **Chiloquin, OR** 96.81 337 P P 13 42 34.5 +0.3
baz=25,SNR=15
MSU **Marysvale** 96.84 329 *e*P P 13 42 34.5 0.0
MSU **Marysvale** 96.84 329 *e*P P 13 42 34.5 0.0
533A **Kerrville** 96.92 315 P P 13 42 34.7 -0.1
baz=42
TOLC **Tolima** 96.93 281 *e*P P 13 42 36.0 +0.6
634A **China Grove, S** 97.03 314 P Pdif 13 42 35.8 +0.5
baz=42
JCT **Junction City** 97.06 316 P Pdif 13 42 35.4 0.0
baz=41
JCT **Junction City** 97.06 316 *e*P Pdif 13 42 35.5 0.0
JCT **Junction City** 97.06 316 *e*P Pdif 13 42 35.5 0.0
735A **Kenedy** 97.10 313 P Pdif 13 42 36.4 +0.8
baz=42
ANMO **Albuquerque** 97.14 323 P P 13 42 35.8 -0.1
comp=Z,3.8nm,0.7s,baz=84,slow=5.2,SNR=19
ANMO PP PP 13 46 26.6 -5.3
comp=Z,5.0nm,0.8s,baz=60,slow=4.7,SNR=4.4
ANMO **Albuquerque** 97.14 323 P P 13 42 35.7 -0.2
baz=37
ANMO **Albuquerque** 97.14 323 *c i*P P 13 42 35.6 -0.2
ANMO pmax pmax
comp=Z,13nm,1.3s
ANMO **Albuquerque** 97.14 323 *i* P P 13 42 35.6 -0.2
comp=Z,13nm,1.3s
SIV **San Ignacio** 97.28 256 P Pdif 13 42 36.7 +0.2
comp=Z,6.6nm,1.1s,baz=75,slow=7.7,SNR=6.9
633A **Saathoff Ranch** 97.46 314 P Pdif 13 42 37.6 +0.4
baz=42
835A **Beeville** 97.53 313 P Pdif 13 42 38.2 +0.7
baz=42
734A **La Parita Cree** 97.55 314 P Pdif 13 42 38.3 +0.7
baz=42
M04C **Macdoel** 97.60 337 P P 13 42 37.5 -0.2
baz=25,SNR=31
BCIP **Isla Barro Col** 97.73 287 PFAKE 13 42 50.0 +11
BCIP LR LR
comp=Z,502nm,20.0s
L02D **Cave Junction,** 97.81 338 P P 13 42 38.3 -0.2
baz=24,SNR=7.2
YBH **Yreka Blue Hor** 97.92 337 P P 13 42 38.5 -0.6
comp=Z,15nm,1.0s,baz=38,slow=4.1,SNR=14
Y22D **IRIS PASSCAL I** 98.07 323 P Pdif 13 42 40.2 +0.2
baz=36
733A **Divot King Ran** 98.08 314 P Pdif 13 42 40.4 +0.4
baz=42
834A **Tilden** 98.08 313 P Pdif 13 42 40.4 +0.4
baz=42
KVTX **Kingsville** 98.11 312 PFAKE 13 42 50.0 +10
KVTX LR LR
comp=Z,2µm,20.0s
M02C **Callahan** 98.28 337 P P 13 42 40.1 -0.6
baz=25,SNR=13
R11A **Troy Canyon, C** 98.38 331 P P 13 42 41.1 -0.2
baz=30
833A **Chaparral WMA,** 98.43 314 P P 13 42 41.2 -0.3
baz=42
934A **Benavides** 98.45 313 P Pdif 13 42 42.4 +0.8
baz=42
W18A **Petrified Fore** 98.58 325 Pdiff P 13 42 41.8 -0.5
baz=35
N02D **Trinity Center** 98.61 337 Pdiff Pdif 13 42 42.3 +0.1
baz=25
035A **Encino** 98.68 312 Pdiff Pdif 13 42 43.5 +0.8
baz=42
832A **Faith Ranch, C** 98.80 314 Pdiff Pdif 13 42 43.7 +0.5
baz=41
933A **Laredo** 98.89 313 Pdiff Pdif 13 42 44.6 +1.0
baz=42
O03D **Paynes Creek** 98.93 336 Pdiff P 13 42 43.2 -0.4

baz=26
034A Hebbronville 98.94 312 Pdiff Pdif 13 42 44.7 +0.9
baz=42
WUAZ Wupatki 99.00 326 Pdiff Pdif 13 42 44.4 +0.2
baz=33
WUAZ Wupatki 99.00 326 PFAKE 13 43 00.0 +16
WUAZ LR LR
comp=Z,3μm,22.0s
035Z Hargill 99.01 312 Pdiff **Pdif 13 42 45.0 +0.8**
baz=43
MNTX Cornudas Mount 99.17 320 Pdiff **Pdif 13 42 44.7 -0.2**
baz=38
MNTX Cornudas Mount 99.17 320 PFAKE 13 43 00.0 +15
MNTX LR LR
comp=Z,2μm,21.0s
NVAR Mina Array Bea 99.36 333 P **Pdif 13 42 45.2 -0.6**
comp=Z,9.5nm,0.8s,baz=38,slow=5.9,SNR=28
NVAR PP **PP 13 46 42.9 -5.7**
comp=Z,13nm,1.2s,baz=34,slow=4.7,SNR=5.5
NVAR PKKPbc **PKKPbc 13 59 09.6 +1.1**
comp=Z,0.5nm,0.6s,baz=206,slow=5.4,SNR=4.5
NVAR LR LR 14 28 36.6
comp=Z,3μm,21.8s,baz=32,slow=36
121A Cookes Peak, D 99.74 322 Pdiff **Pdif 13 42 47.6 +0.1**
baz=36
TPNV Topopah Spring 99.86 331 Pdiff **Pdif 13 42 47.8 -0.1**
baz=30
TXAR Lajitas Array 100.10 317 P **Pdif 13 42 49.1 +0.1**
comp=Z,8.1nm,1.0s,baz=66,slow=3.1,SNR=50
TXAR PP **PP 13 46 50.2 -4.3**
comp=Z,9.9nm,1.1s,baz=57,slow=4.6,SNR=5.2
TXAR PKKPbc **PKKPdf 13 59 08.9 -0.7**
comp=Z,2.0nm,1.1s,baz=222,slow=1.7,SNR=3.6
GRAC Grapevine Rang 100.25 331 Pdiff **Pdif 13 42 50.2 +0.6**
baz=29
MLAC Mammoth, Mammt 100.26 333 Pdiff **Pdif 13 42 50.4 +0.6**
baz=28
CPUP Villa Florida 100.29 245 P **Pdif 13 42 50.5 +0.8**
comp=Z,3.1nm,0.8s,baz=58,slow=4.4,SNR=3.0
FURC Furnace Creek, 100.52 331 Pdiff **Pdif 13 42 51.2 +0.6**
baz=30
TIN Tinemaha, Big 100.54 332 Pdiff **Pdif 13 42 51.6 +0.6**
baz=28
SHOC Shoshone, Teco 100.77 330 Pdiff **Pdif 13 42 52.7 +0.9**
baz=30
JTS JuntasAbangare 100.97 291 PFAKE 13 43 10.0 +17
JTS LR LR
comp=Z,1μm,22.0s
TUQ Turquoise Moun 101.03 330 Pdiff **Pdif 13 42 53.5 +0.4**
baz=30
NEE2 Needles Airpor 101.05 328 Pdiff **Pdif 13 42 53.5 +0.4**
baz=31
PDMCI Parker Dam,Lak 101.24 328 Pdiff **Pdif 13 42 54.7 +0.8**
baz=32
TUC Tucson 101.38 324 Pdiff **Pdif 13 42 55.4 +0.7**
baz=34
TUC Tucson 101.38 324 PFAKE 13 43 10.0 +15
TUC LR LR
comp=Z,2μm,19.0s
GMRC Granite Mounta 101.48 329 Pdiff **Pdif 13 42 55.4 +0.2**
baz=30
GSC Goldstone, Bar 101.50 330 Pdiff **Pdif 13 42 55.3 0.0**
baz=30
LRMC Laurel Mtn Rad 101.70 331 Pdiff **Pdif 13 42 56.1 0.0**
baz=29
HEC Hector,Ludlow 101.72 330 Pdiff **Pdif 13 42 56.6 +0.4**
baz=30
IRM Iron Mountain 101.80 328 Pdiff **Pdif 13 42 57.0 +0.5**
baz=31
ISA Isabella, Lake 101.85 332 Pdiff **Pdif 13 42 56.8 0.0**
baz=28
Y12C Blythe 101.88 328 Pdiff **Pdif 13 42 57.4 +0.7**
baz=31
VES Vestal, Richgr 101.93 332 Pdiff **Pdif 13 42 57.2 +0.3**
baz=28
OTAV Otavalo 102.01 279 PFAKE 13 43 10.0 +12
OTAV LR LR
comp=Z,875nm,21.0s
BELC Belle Mtn. Jos 102.30 329 Pdiff **Pdif 13 42 58.8 0.0**
baz=30
EDW2 Edwards Air Fo 102.35 331 Pdiff **Pdif 13 42 58.9 -0.1**
baz=29
BC3 Big Chuckawall 102.36 328 Pdiff **Pdif 13 42 59.1 0.0**
baz=31
BBRC Big Bear Solar 102.45 330 Pdiff **Pdif 13 42 59.7 +0.1**
baz=30
GLA Glamis 102.61 328 Pdiff **Pdif 13 43 00.3 +0.2**
baz=31
214A Organ Pipe Nat 102.62 325 Pdiff **Pdif 13 42 59.9 -0.3**
baz=33
SMMC Simmler 102.74 332 Pdiff **Pdif 13 43 01.1 +0.4**
baz=27
PFO Pinyon Flats O 102.82 329 P **Pdif 13 43 02.2 +1.0**
comp=Z,9.9nm,1.0s,baz=23,slow=3.9,SNR=9.3
PFO PP **PP 13 47 10.1 -4.7**
comp=Z,4.1nm,0.8s,baz=50,slow=4.4,SNR=4.1
PFO Pinyon Flats O 102.82 329 Pdiff **Pdif 13 43 01.6 +0.5**
baz=30
OSI Osito Audit: C 102.87 331 Pdiff **Pdif 13 43 01.3 +0.1**
baz=28
DECC Green Verdugo 103.03 331 Pdiff **Pdif 13 43 01.9 0.0**
baz=29
LPAZ La Paz 103.05 259 PP PP 13 47 16.9 -1.6
comp=Z,4.9nm,1.1s,baz=115,slow=1.6,SNR=3.9
PKM Mcpherson Peak 103.05 332 Pdiff **Pdif 13 43 03.1 +0.9**
baz=28
SWSC Sam W. Stewart 103.12 328 Pdiff **Pdif 13 43 03.2 +0.9**
baz=31
MURC Murrieta 103.14 330 Pdiff **Pdif 13 43 03.4 +0.9**
baz=30
SBC Santa Barbara 103.41 332 Pdiff **Pdif 13 43 04.4 +0.9**
baz=28
MONP2 Monument Peak 103.43 329 Pdiff **Pdif 13 43 04.4 +0.5**
baz=30
BLG Laguna Peak, P 103.45 331 Pdiff **Pdif 13 43 03.6 -0.2**
baz=28
IBP Imperial Bould 103.49 328 Pdiff **Pdif 13 43 05.0 +0.9**
baz=30
FMP Fort Macarthur 103.49 330 Pdiff **Pdif 13 43 04.3 +0.4**
baz=29
SCZ2 Santa Cruz Isl 103.77 332 Pdiff **Pdif 13 43 05.9 +0.7**
baz=28
CIS Catalina Islan 103.81 330 Pdiff **Pdif 13 43 05.7 +0.3**
baz=29
SNCC San Nicolas Is 104.39 331 Pdiff **Pdif 13 43 08.4 +0.5**
baz=28
MBWA Marble Bar 104.53 106 PFAKE 13 43 20.0 +11
MBWA LR LR
comp=Z,2μm,22.0s
SYO Syowa Base 104.88 175[1] *e*pPdiff pPdif 13 43 27.4 -2.3
FITZ Fitzroy Crossi 107.57 100 PP PP 13 47 51.0 -0.2
comp=Z,6.9nm,0.9s,baz=227,slow=1.4,SNR=3.6
NNA Nana 107.72 268 PFAKE 13 47 40.0
NNA LR LR
comp=Z,588nm,20.0s
NWAO Narrogin (SRO) 108.83 117 PFAKE 13 47 40.0
NWAO LR LR
comp=Z,2μm,21.0s
VNA2 Neumayer--Watz 109.10 191 PKP PKiKP 13 47 46.1 +15
baz=245,slow=5.7
SNAA Sanae 109.10 189 PKP PKiKP 13 47 51.1 +20
VNA3 Neumayer Olymp 109.74 192 PKP **PKiKP 13 47 35.3 +2.7**
TRQA Tornquist 109.90 237 PFAKE 13 47 50.0
TRQA LR LR
comp=Z,2μm,20.0s
LCO Las Campanas 111.74 249 PFAKE 13 47 50.0
LCO LR LR
comp=Z,2μm,21.0s
PAYG Puerto Ayora 111.96 286 PFAKE 13 47 50.0
PAYG LR LR
comp=Z,481nm,19.0s
WRA Warramunga Arr 115.53 97 PKP **PKPdf 13 47 44.8 -0.4**
comp=Z,2.4nm,0.7s,baz=321,slow=1.5,SNR=13
WRA SKP 13 51 12.3
comp=Z,5.8nm,0.9s,baz=301,slow=2.1,SNR=4.6
WRA PKKPbc **PKKPab 13 58 23.2 0.0**
comp=Z,5.1nm,1.0s,baz=127,slow=4.4,SNR=7.6
WRAB Tennant Creek 115.54 97 PFAKE 13 48 00.0 +15
WRAB LR LR
comp=Z,1μm,21.0s
PLCA Paso Flores 117.02 238 PKP **PKPdf 13 47 48.7 +1.2**
comp=Z,4.9nm,0.6s,baz=49,slow=1.6,SNR=20
PLCA SKP 13 51 20.3
comp=Z,9.6nm,1.2s,baz=195,slow=1.3,SNR=3.4
PLCA PKKPbc **PKKPab 13 58 16.6 +1.5**
comp=Z,1.9nm,0.9s,baz=80,slow=1.8,SNR=3.1
ASAR Alice Springs 117.04 101 PKP **PKPdf 13 47 47.7 -0.3**
comp=Z,3.8nm,0.6s,baz=304,slow=1.7,SNR=38
ASAR SKP 13 51 16.3
comp=Z,7.7nm,0.9s,baz=326,slow=1.7,SNR=4.6
ASAR PKKPbc **PKKPab 13 58 14.2 -2.1**
comp=Z,1.3nm,0.6s,baz=123,slow=3.8,SNR=18
CASY Casey 119.82 152 PFAKE 13 48 00.0 +8.0
CASY LR LR
comp=Z,420nm,22.0s
PMG Port Moresby 120.21 79 PFAKE 13 48 10.0 +16
PMG LR LR
comp=Z,995nm,22.0s
PMSA Palmer Station 121.93 210 PFAKE 13 48 10.0 +14
PMSA LR LR
comp=Z,2μm,19.0s
CTA Charters Tower 125.27 90 PKP **PKPdf 13 48 04.5 +0.6**
comp=Z,10nm,0.9s,baz=292,slow=3.1,SNR=6.4
CTAO Charters Tower 125.27 90 PFAKE 13 48 20.0 +16
CTAO LR LR
comp=Z,1μm,21.0s
QSPA South Pole Qui 125.58 180 PFAKE 13 48 20.0 +17
QSPA LR LR
comp=Z,3μm,20.0s
STKA Stephens Creek 126.77 106 PKP **PKPdf 13 48 06.5 +0.1**
comp=Z,6.5nm,0.7s,baz=326,slow=3.7,SNR=10.0
HNR Honiara 130.26 70 PFAKE 13 48 30.0 +16
HNR LR LR
comp=Z,2μm,22.0s
TARA Tarawa 131.58 48 PFAKE 13 48 30.0 +14
TARA LR LR
comp=Z,157nm,22.0s
CAN Canberra 133.76 107 PFAKE 13 48 30.0 +10
CAN LR LR
comp=Z,1μm,21.0s
VNDA Vanda 133.89 168 PKP **PKPdf 13 48 19.9 +1.4**
comp=Z,3.9nm,1.1s,baz=302,slow=5.7,SNR=6.6
VNDA Vanda 133.89 168 PKIKP **PKPdf 13 48 20.0 +1.4**
SBA Scott Base 134.48 169 PFAKE 13 48 30.0 +10
SBA LR LR
comp=Z,3μm,20.0s
DZM Mont Dzumac 142.61 80 PKP **PKPdf 13 48 37.9 +1.6**
comp=Z,7.6nm,0.7s,baz=293,slow=10,SNR=7.0
FUNA Funafuti 143.17 49 PFAKE 13 48 50.0 +13
FUNA LR LR
comp=Z,8μm,20.0s
MSVF Nonsavu 149.04 62 PFAKE 13 49 00.0 +4.2
MSVF LR LR
comp=Z,2μm,21.0s
TAOE Nuku Hiva Isla 150.62 332 *e*PKIKP **PKPdf 13 48 50.7 +0.7**
comp=Z,947nm,1.3s
TAOE Nuku Hiva Isla 150.62 332 *e*SS SS 14 11 53.8 +9.1
comp=Z,1μm,34.1s
TAOE Nuku Hiva Isla 150.62 332 *e*LR LR 14 38 50.4
comp=Z,3μm,35.0s
RPZ Rata Peaks 151.73 117 PKPbc **PKPbc 13 48 56.3 -0.7**
comp=Z,34nm,0.8s,baz=243,slow=3.7,SNR=17
AFI Afiamalu 152.73 42 PKPbc **PKPbc 13 49 01.7 +1.5**
comp=Z,82nm,0.5s,baz=201,slow=2.1,SNR=13
SNZO South Karori 154.56 112 PFAKE 13 49 10.0 +6.7
SNZO LR LR
comp=Z,2μm,20.0s
URZ Urewera 156.40 105 PKPab **PKPab 13 49 24.5 -1.7**
comp=Z,56nm,1.1s,baz=204,slow=2.4,SNR=9.8
PMOR Pomariorio Ree 158.76 345 *e*PKIKP **PKPdf 13 49 01.4 +0.4**
comp=Z,192nm,1.4s
VAH Vaihoa 158.93 344 *e*PKIKP **PKPdf 13 49 01.5 +0.3**
comp=Z,126nm,1.3s
RKT Rikitea 159.62 303 *e*PKIKP **PKPdf 13 49 02.2 +0.4**
comp=Z,127nm,1.3s
RKT Rikitea 159.62 303 *e*PP PP 13 53 29.9 +7.8
comp=Z,616nm,25.8s
RKT Rikitea 159.62 303 *e*SS SS 14 13 28.1 +4.6
comp=Z,2μm,28.8s
RKT Rikitea 159.62 303 *e*LR LR 14 43 15.9
comp=Z,2μm,31.0s
MEH Mehetia 161.58 344 *e*PKIKP **PKPdf 13 49 04.3 +0.2**
comp=Z,38nm,1.3s
PPT2 Papeete2 161.60 348 *e*PKIKP **PKPdf 13 49 05.2 +1.0**
comp=Z,96nm,1.4s
PPT2 Papeete2 161.60 348 *e*LR LR 14 44 13.9
comp=Z,2μm,24.2s
PAE Paea 161.68 348 *e*PKIKP **PKPdf 13 49 04.8 +0.7**
comp=Z,19nm,1.5s
TVO Taravao 161.74 347 *e*PKIKP **PKPdf 13 49 05.0 +0.7**
comp=Z,46nm,1.3s
TBI Tubuai 167.18 343 *e*PKIKP **PKPdf 13 49 09.5 +0.6**
comp=Z,273nm,1.2s
TBI Tubuai 167.18 343 *e*LR LR 14 46 43.4
comp=Z,3μm,36.8s

*NIED **01** 13:30:00, 38˚.50N×142˚.20E, h20km, Mw4.3 Best double couple: M₀3.57000×10¹⁵ NP1:φ₀138.00000°, δ22.00000°, λ-47.00000°. NP2:φ₀273.00000°, δ74.00000°, λ-105.00000°.*
*IDC **01** 13:30:23.6±0.6, 38˚.33N×142˚.36E, h0km, mb4.0/12, mb1 4.1/19, mb1mx4.0/94, mbtmp4.0/19, ML3.2/6, Error ellipse: s-maj=20.2km s-min=11.9km az=113.0*
*NEIC **01** 13:30:24.9±0.5, 38˚.40N×142˚.36E, h10km, mb4.6/5, Error ellipse: s-maj=11.5km s-min=5.8km az=121.0*
*ISCJB **01** 13:30:26.7±0.5, 38˚.43N±0˚.04×142˚.22E±0˚.05, h41km, mb4.1/16, Error ellipse: s-maj=6.6km s-min=4.5km az=135.9*
*JMA **01** 13:30:26.5±0.2, 38˚.47N×142˚.24E, h33km±3km, M4.3*
JMA Felt II J1.
ISC 01 13:30:28.9±0.6, 38˚.43N±0˚.05×142˚.19E±0˚.07, h41km, n42, σ1s43/41, mb4.2/16, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**0.66**	**272**	P	**Pn**	**13 30 39.8**	**-2.0**
JIO				S	**Sn**	**13 30 48.7**	**-2.3**
OFUJ	**Ofunato**	**0.76**	**328**	P	**Pn**	**13 30 40.7**	**-2.5**
JMK	**Ichinoseki**	**0.92**	**305**	P	**Pn**	**13 30 43.5**	**-1.8**
JMK				S	**Sn**	**13 30 55.6**	**-1.7**
JOU	**Okura**	**1.20**	**267**	P	**Pn**	**13 30 48.4**	**-0.8**
JOU				S	**Sn**	**13 31 04.2**	**-0.1**
JMM	**Marumori**	**1.24**	**243**	P	**Pn**	**13 30 48.0**	**-1.7**
JMM				S	**Sn**	**13 31 04.3**	**-0.9**
JOM	**Ohasama**	**1.25**	**326**	P	**Pn**	**13 30 48.4**	**-1.5**
ERM	**Erimo**	**3.65**	**11**	*e*Sn	**Sn**	**13 32 04.3**	**-0.3**
MAJO	**Matsushiro**	**3.69**	**240**	*e*Pn	**Pn**	**13 31 23.8**	**+0.4**
MAT	**Matsushiro**	**3.69**	**240**	P	**Pn**	**13 31 24.0**	**+0.6**
MJAR	**Matsushiro Arr**	**3.69**	**240**	Pn	**Pn**	**13 31 22.0**	**-1.4**
	1.7nm,0.3s,baz=43,slow=12,SNR=4.8						
JHJ	**Hachijo jima 2**	**5.65**	**201**	Pn	**Pn**	**13 31 47.6**	**-2.7**
	31nm,0.3s,baz=308,slow=23,SNR=12						
JHJ				Sn	**Sn**	**13 32 51.8**	**-2.1**
	57nm,0.3s,baz=68,slow=23,SNR=7.0						
YSS	**Yuzh-Sakhalins**	**8.53**	**3**	*e*Pn	**Pn**	**13 32 28.6**	**-1.0**
	24nm,0.6s						
USRK	**Ussuriysk Ar.**	**9.59**	**310**	Pn	**Pn**	**13 32 44.6**	**+0.4**
	0.3nm,0.3s,baz=120,slow=14,SNR=5.6						
JNU	**Nakatsue**	**10.60**	**243**	Pn	**Pn**	**13 32 59.3**	**+1.0**
	0.4nm,0.3s,baz=56,slow=5.3,SNR=8.6						
KSRS	**Korea Array**	**11.31**	**269**	Pn	**Pn**	**13 33 09.9**	**+2.1**
	0.4nm,0.3s,baz=76,slow=14,SNR=5.7						
KSAR	**Wonju Array Be**	**11.34**	**269**	Pn	**Pn**	**13 33 09.9**	**+1.7**
KLR	**Kul'dur**	**13.15**	**329**	Pn	**Pn**	**13 33 32.4**	**-0.5**
	0.2nm,0.3s,baz=117,slow=14,SNR=5.4						
PETK	**Petropavlovsk-**	**18.17**	**31**	P	**P**	**13 34 35.6**	**-2.2**
	0.1nm,0.3s,baz=174,slow=4.3,SNR=3.1						
MA2	**Magadan**	**21.86**	**12**	P	**P**	**13 35 18.1**	**+0.3**
	15nm,0.9s,baz=212,slow=9.5,SNR=11						
MA2	**Magadan**	**21.86**	**12**	*e*P	**P**	**13 35 16.8**	**-0.9**
	101nm,0.9s						
YAK	**Yakutsk**	**24.85**	**346**	P	**P**	**13 35 46.8**	**-0.3**
	0.6nm,0.3s,baz=335,slow=23,SNR=6.5						
YAK	**Yakutsk**	**24.85**	**346**	P	**P**	**13 35 46.8**	**-0.3**
	1.9nm,0.8s						
SEY	**Seymchan**	**25.30**	**11**	P	**P**	**13 35 53.3**	**+2.1**
	22nm,1s,baz=198,slow=6.7,SNR=70						
SONM	**Songino Array**	**27.55**	**302**	P	**P**	**13 36 14.7**	**+2.9**
	0.7nm,0.7s,baz=106,slow=8.9,SNR=4.3						
ENH	**Enshi**	**28.09**	**263**	*e*P	**P**	**13 36 16.5**	**-0.2**
	4.8nm,0.4s						
H11N2	**WAKE ISLAND Hy**	**28.38**	**124**	T	T	14 06 01.7	
	baz=317,slow=76,SNR=1099						
H11N1	**WAKE ISLAND Hy**	**28.39**	**124**	T	T	14 06 06.7	
	baz=317,slow=76,SNR=1009						
H11N3	**WAKE ISLAND Hy**	**28.39**	**124**	T	T	14 05 59.9	
	baz=317,slow=76,SNR=606						
H11S1	**WAKE ISLAND Hy**	**29.14**	**126**	T	T	14 07 02.1	
	baz=318,slow=76,SNR=577						
H11S3	**WAKE ISLAND Hy**	**29.14**	**126**	T	T	14 07 03.0	
	baz=318,slow=76,SNR=548						
H11S2	**WAKE ISLAND Hy**	**29.16**	**126**	T	T	14 07 04.1	
	baz=318,slow=76,SNR=384						
BILL	**Bilibino**	**32.51**	**17**	*e*P	**P**	**13 36 55.0**	**-0.4**
	5.6nm,1.0s						
TIXI	**Tiksi**	**33.98**	**352**	*e*P	**P**	**13 37 07.5**	**-0.5**
	2.4nm,0.8s						
CMAR	**Chiang Mai Arr**	**42.45**	**254**	P	**P**	**13 38 20.6**	**+0.6**
	0.6nm,0.6s,baz=38,slow=3.2,SNR=5.7						
ILAR	**Eielson Array**	**47.99**	**33**	P	**P**	**13 39 04.0**	**+0.7**
	0.9nm,0.7s,baz=261,slow=6.3,SNR=14						
INK	**Inuvik**	**52.86**	**28**	P	**P**	**13 39 41.1**	**+1.1**
	0.7nm,0.6s,baz=305,slow=5.7,SNR=5.2						
FITZ	**Fitzroy Crossi**	**58.34**	**199**	P	**P**	**13 40 20.6**	**+0.8**
	3.1nm,0.9s,baz=5.5,slow=7.8,SNR=6.7						
WRA	**Warramunga Arr**	**58.53**	**189**	P	**P**	**13 40 20.9**	**-0.3**
	7.8nm,0.7s,baz=6.4,slow=7.2,SNR=47						
ASAR	**Alice Springs**	**62.26**	**189**	P	**P**	**13 40 46.8**	**+0.2**
	4.6nm,0.7s,baz=12,slow=6.5,SNR=43						
YKA	**Yellowknife Ar**	**62.29**	**31**	P	**P**	**13 40 47.1**	**+0.7**
	0.3nm,0.7s,baz=301,slow=6.5,SNR=6.3						
STKA	**Stephens Creek**	**69.95**	**181**	P	**P**	**13 41 34.7**	**-1.1**
	2.6nm,0.8s,baz=315,slow=5.9,SNR=4.9						
NVAR	**Mina Array Bea**	**73.66**	**54**	P	**P**	**13 41 59.8**	**+1.3**
	0.4nm,0.7s,baz=290,slow=6.6,SNR=2.8						

JMA 01 13:30:38.5, 37˚.80N×139˚.99E, h9km±1km, M2.1, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JFT	**Otama**	**0.39**	**136**	P	Pg	13 30 46.2	0.0
JFT				*e*S	Sg	13 30 51.4	0.0
JYS	**Shirataka**	**0.42**	**8**	P	Pg	13 30 47.2	+0.4
JYS				*e*S	Sg	13 30 53.1	+0.7
JFY	**Yanaizu**	**0.45**	**210**	P	Pg	13 30 47.2	-0.1
JFY				*e*S	Sg	13 30 53.1	-0.2
JNS	**Sasagawa**	**0.53**	**272**	*e*S	Sg	13 30 55.5	-0.3
JHK	**Hiroka**	**0.95**	**235**	P	Pg	13 30 56.1	-0.7

*NIED **01** 13:31:00, 36˚.60N×141˚.70E, h8km, Mw4.1 Best double couple: M₀1.75000×10¹⁵ NP1:φ₀65.00000°, δ36.00000°, λ6.00000°. NP2:φ₀331.00000°, δ86.00000°, λ126.00000°.*
JMA 01 13:31:27.4±0.2, 36˚.58N×141˚.73E, h57km±3km, M3.9, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JHO	**Hitachi**	**0.94**	**272**	*e*S	Sn	13 31 56.6	-0.5
JFT	**Otama**	**1.46**	**310**	*e*S	Sn	13 32 11.4	+1.9
MAT	**Matsushiro**	**2.84**	**270**	P	Pn	13 32 12.3	+2.0
MAT				*e*S	Sn	13 32 39.3	-3.9

JMA 01 13:32:41.5±0.1, 38˚.53N×144˚.34E, h44km, M3.7, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**2.35**	**269**	P	Pn	13 33 18.7	+1.1
JIO				S	Sn	13 33 46.3	+1.2
JTH	**Tanohata**	**2.38**	**307**	P	Pn	13 33 19.3	+1.3
JTH				*e*S	Sn	13 33 47.0	+1.0
JMK	**Ichinoseki**	**2.48**	**281**	*e*S	Sn	13 33 50.7	+2.4
JOM	**Ohasama**	**2.55**	**293**	P	Pn	13 33 21.7	+1.3
JOM				*e*S	Sn	13 33 51.8	+1.5
JMM	**Marumori**	**2.87**	**258**	P	Pn	13 33 26.2	+1.4
JMM				*e*S	Sn	13 33 59.1	+1.0
JOU	**Okura**	**2.89**	**268**	*e*S	Sn	13 34 00.7	+2.1
JFT	**Otama**	**3.32**	**254**	*e*S	Sn	13 34 11.4	+2.3
JRY	**Ryogami san**	**5.01**	**242**	P	Pn	13 33 55.7	+1.5
JRY				*e*S	Sn	13 34 50.6	-0.2

JMA 01 13:34:59.9±0.3, 38˚.49N×142˚.25E, h23km±4km, M3.8, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**0.71**	**267**	S	Sb	13 35 22.5	-0.4
JMK	**Ichinoseki**	**0.93**	**300**	*e*S	Sb	13 35 29.5	+0.3
MIYJ	**Miyakonagasawa**	**1.14**	**343**	P	Pn	13 35 20.1	-0.3
MIYJ				S	Sb	13 35 33.9	-1.3
JOM	**Ohasama**	**1.23**	**323**	S	Sb	13 35 37.9	-0.1
JOU	**Okura**	**1.25**	**265**	P	Pb	13 35 22.7	-0.1
JOU				*e*S	Sb	13 35 38.5	0.0
JMM	**Marumori**	**1.31**	**242**	P	Pn	13 35 22.5	-0.2
JMM				*e*S	Sn	13 35 38.0	-1.4
JYK	**Kaneyama**	**1.54**	**287**	P	Pb	13 35 27.2	-0.5
JYK				*e*S	Sb	13 35 46.3	-0.5
JRG	**Rokugo**	**1.55**	**306**	*e*S	Sb	13 35 47.5	+0.4
JKZ	**Kuzumaki**	**1.66**	**335**	P	Pn	13 35 28.5	+0.9
JKZ				*e*S	Sb	13 35 49.4	-0.8
MAT	**Matsushiro**	**3.76**	**240**	*e*S	Sb	13 36 46.3	-4.3

*ISCJB **01** 13:35:11.5±1.6, 37˚.9N±0˚.1×143˚.6E±0˚.2, h19km, mb4.5/2, Error ellipse: s-maj=24.5km s-min=14.5km az=167.3*
*IDC **01** 13:35:11.3±2.5, 37˚.89N×143˚.62E, h0km, mb4.4/2, mb1 4.3/6, mb1mx3.9/92, mbtmp4.1/6, ML4.0/3, MS3.3/1, Ms1 3.3/1, ms1mx2.7/53, Error ellipse: s-maj=54.1km s-min=29.2km az=60.0*
ISC 01 13:35:14.3±2.0, 37˚.9N±0˚.1×143˚.6E±0˚.2, h19km, n8, σ0s94/7, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MJAR	**Matsushiro Arr**	**4.47**	**255**	Pn	**Pn**	**13 36 21.2**	**+0.1**
	7.5nm,0.3s,baz=61,slow=12,SNR=10						
MAT	**Matsushiro**	**4.47**	**255**	P	**Pn**	**13 36 22.2**	**+1.1**
JHJ	**Hachijo jima 2**	**5.64**	**214**	Pn	**Pn**	**13 36 36.5**	**-0.5**
	26nm,0.3s,baz=148,slow=23,SNR=9.7						
JCJ	**Chichijima**	**10.79**	**187**	LR	LR	13 42 43.6	
	comp=Z,142nm,20.1s,baz=308,slow=42						
USRK	**Ussuriysk Ar.**	**10.80**	**310**	Pn	**Pn**	**13 37 46.5**	**-1.2**
	0.2nm,0.3s,baz=116,slow=14,SNR=3.5						
KLR	**Kul'dur**	**14.22**	**327**	Pn	**Pn**	**13 38 34.5**	**0.0**
	0.3nm,0.3s,baz=157,slow=12,SNR=5.3						
WRA	**Warramunga Arr**	**58.14**	**190**	P	**P**	**13 45 06.9**	**+0.2**
	4.3nm,0.5s,baz=8.0,slow=7.0,SNR=34						
ASAR	**Alice Springs**	**61.86**	**190**	P	**P**	**13 45 32.9**	**+0.7**
	1.0nm,0.4s,baz=9.2,slow=7.2,SNR=14						

JMA 01 13:38:26.8±0.2, 37˚.16N×143˚.31E, h41km, M3.7, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**2.01**	**269**	P	Pn	13 38 59.2	+1.0
JIO	**Ouri**	**2.02**	**310**	P	Pn	13 38 59.5	+1.2
JIO				S	Sn	13 39 23.7	+1.3
JMM	**Marumori**	**2.12**	**290**	P	Pn	13 39 01.0	+1.3
JMM				S	Sn	13 39 26.3	+1.4
JHO	**Hitachi**	**2.27**	**257**	P	Pn	13 39 02.6	+0.9
JHO				*e*S	Sn	13 39 28.8	+0.4
OFUJ	**Ofunato**	**2.31**	**326**	P	Pn	13 39 02.9	+0.5
JFT	**Otama**	**2.40**	**279**	P	Pn	13 39 06.2	+2.7
JFT				*e*S	Sn	13 39 34.0	+2.3
JOU	**Okura**	**2.42**	**301**	P	Pn	13 39 05.7	+1.9
JOU				S	Sn	13 39 34.3	+2.1
JMK	**Ichinoseki**	**2.43**	**318**	P	Pn	13 39 05.4	+1.4
JMK				*e*S	Sn	13 39 34.6	+2.1
JOM	**Ohasama**	**2.80**	**326**	P	Pn	13 39 10.6	+1.5
JOM				*e*S	Sn	13 39 42.6	+0.9
JYK	**Kaneyama**	**2.92**	**308**	P	Pn	13 39 12.7	+2.0
JAG	**Ashikaga**	**3.18**	**258**	P	Pn	13 39 16.0	+1.7
JAG				*e*S	Sn	13 39 50.9	-0.1
JANG	**Nango**	**3.50**	**337**	P	Pn	13 39 20.9	+2.2
JANG				S	Sn	13 39 58.1	-0.8
JRY	**Ryogami san**	**3.73**	**253**	P	Pn	13 39 23.3	+1.5
JRY				*e*S	Sn	13 40 03.5	-1.0
JOD2	**Odawara 2**	**3.90**	**242**	P	Pn	13 39 25.3	+1.0
JOD2				*e*S	Sn	13 40 08.8	0.0
MAT	**Matsushiro**	**4.14**	**263**	P	Pn	13 39 30.5	+3.0
MAT				S	Sn	13 40 18.6	+4.0

*NEIC **01** 13:41:34.2, 16˚.65N×99˚.72W, h5km, mb4.2/1, After MEX.*
MEX 01 13:41:34.2±0.6, 16˚.65N×99˚.72W, h5km, MD4.3, Near coast of Guerrero

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC

ACX	Acapulco	0.26	330	*i* P	Pg	13 41 36.5	-2.8
ACX				*i* S	Sg	13 41 40.4	-2.3
ACX	Acapulco	0.26	330	*i* P	Pg	13 41 36.5	-2.8
ACX				*i* S	Sg	13 41 40.4	-2.3
ACP2	Acapulco	0.28	325	*e*P	Pg	13 41 39.0	-0.6
ACP2				*e*S	Sg	13 41 42.7	-0.6
TLIG	Tlapa	1.43	50	*e*P	Pn	13 41 57.2	-3.8
TLIG				*e*S	Sb	13 42 15.8	-4.3
PNIG	Pinotepa	1.55	99	*e*P	Pn	13 41 58.2	-4.3
PNIG				*i* S	Sn	13 42 17.6	-5.4
PNIG	Pinotepa	1.55	99	*e*P	Pn	13 41 58.2	-4.3
PNIG				*i* S	Sn	13 42 17.6	-5.4
ARIG	Puente Sto Nin	1.73	340	*e*P	Pn	13 42 01.5	-3.5
ARIG				*i* S	Sn	13 42 23.1	-4.4
PLIG	Platanillo	1.75	7	*e*P	Pn	13 42 01.9	-3.4
PLIG				*e*S	Sn	13 42 23.3	-4.7
PLIG	Platanillo	1.75	7	*e*P	Pn	13 42 01.9	-3.4
PLIG				*e*S	Sn	13 42 23.3	-4.7
ZIIG	Zihuatanejo	1.92	300	*e*P	Pn	13 42 04.4	-3.2
ZIIG				*i* S	Sn	13 42 27.5	-4.6
ZIIG	Zihuatanejo	1.92	300	*e*P	Pn	13 42 04.4	-3.2
ZIIG				*i* S	Sn	13 42 27.5	-4.6
YAIG	Yautepec	2.29	16	*e*P	Pn	13 42 08.9	-3.9
YAIG				*e*S	Sn	13 42 37.7	-3.8
YAIG	Yautepec	2.29	16	*e*P	Pn	13 42 08.9	-3.9
YAIG				*e*S	Sn	13 42 37.7	-3.8
PPM	Popocatepetl	2.62	23	*e*P	Pn	13 42 15.2	-2.5
PPM				*i* S	Sn	13 42 46.4	-3.8
PPM	Popocatepetl	2.62	23	*e*P	Pn	13 42 15.2	-2.5
PPM				*i* S	Sn	13 42 46.4	-3.8
VHO	Vista Hermosa	2.89	81	*i* P	Pn	13 42 18.3	-2.8
VHO				*i* S	Sn	13 42 53.1	-3.4
VHO	Vista Hermosa	2.89	81	*i* P	Pn	13 42 18.3	-2.8
VHO				*i* S	Sn	13 42 53.1	-3.4
MOIG	Morelia	3.32	335	*i* P	Pn	13 42 23.8	-3.3
MOIG				*i* S	Sn	13 43 03.2	-3.8
MOIG	Morelia	3.32	335	*i* P	Pn	13 42 23.8	-3.3
MOIG				*i* S	Sn	13 43 03.2	-3.8
MMIG	Aquila	3.82	296	*e*P	Pn	13 42 30.8	-3.0
MMIG				*i* S	Sn	13 43 16.4	-2.7
MMIG	Aquila	3.82	296	*e*P	Pn	13 42 30.8	-3.0
MMIG				*i* S	Sn	13 43 16.4	-2.7
ANMO	Albuquerque	19.19	343	*e*P	P	13 45 59.4	+0.2
	19nm,1.4s						

HLW ***01*** *13:45:21.7, 35°.70N×26°.67E, h33km±17km, Ml4.2*
ISCJB ***01*** *13:45:22.2±0.2, 35°.43N±0°.02×26°.66E±0°.01, h77km±2km, mb4.0/21, Error ellipse: s-maj=2.7km s-min=1.8km az=23.0*
CSEM ***01*** *13:45:23.6±0.1, 35°.41N×26°.64E, h80km, ML4.2, Error ellipse: s-maj=3.1km s-min=1.9km az=28.0*
ISK ***01*** *13:45:23.6, 35°.69N×26°.63E, h17km, ML4.1*
NIC ***01*** *13:45:24.7±0.3, 35°.84N×26°.90E, h66km, mb4.4, ML4.0*
DDA ***01*** *13:45:24.8, 35°.90N×26°.61E, h19km, Md4.0*
ATH ***01*** *13:45:24.4, 35°.65N×26°.55E, h58km±3km, ML4.2/28, Error ellipse: s-maj=3.2km s-min=0.6km az=147.0*
NEIC ***01*** *13:45:24.3, 35°.65N×26°.55E, h58km, mb4.3/3, After ATH.*
NEIC Felt at Chania, Lardos, Mouzouras and Paros. Also felt at Fethiye and Marmaris, Turkey.
IDC ***01*** *13:45:25.5±1.1, 35°.69N×26°.43E, h76km±12km, mb4.0/19, mb1 4.1/25, mb1mx3.9/59, mbtmp4.3/25, Error ellipse: s-maj=19.1km s-min=11.2km az=157.0*
THE ***01*** *13:45:26.5, 35°.64N×26°.54E, h34km±5km, ML4.4/14, Error ellipse: s-maj=5.4km s-min=0.5km az=157.0*
GII ***01*** *13:45:29.4±0.0, 35°.00N×27°.42E, h1km±1km, mb4.2/8, MD4.0/8*

ISC 01 13:45:23.6±0.4**, 35°.53N**±0°.02×**26°.63E**±0°.02**, h67**km±4km**, n484, σ1s.54**/604**, mb4.2**/21**, 16C-4D, Crete**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KARP	Karpathos	0.44	87	P	Pn	13 45 37.0	+1.4
KARP				S	Sn	13 45 45.3	+0.9
KARP	Karpathos	0.44	87	P	Pn	13 45 37.0	+1.4
KARP				S	Sn	13 45 45.3	+0.9
KARP	Karpathos	0.44	87	P	Pn	13 45 37.3	+1.7
KARP				S	Sn	13 45 43.7	-0.7
KARP				AML	AML	13 45 49.8	
	comp=E,61469μm,0.8s						
KARP				AML	AML	13 45 51.2	
	comp=N,61210μm,0.5s						
KARP	Karpathos	0.44	87	*e*Pn	Pn	13 45 37.0	+1.4
KARP				S	Sn	13 45 45.3	+0.9
ZKR	Zakros	0.53	219	P	Pn	13 45 38.3	+1.8
ZKR				S	Sn	13 45 46.9	+1.0
ZKR	Zakros	0.53	219	P	Pn	13 45 38.3	+1.8
ZKR				S	Sn	13 45 46.9	+1.0
ZKR	Zakros	0.53	219	P	Pn	13 45 38.9	+2.5
ZKR				AML	AML	13 45 48.9	
	comp=N,65618μm,0.3s						
ZKR				AML	AML	13 45 49.2	
	comp=E,81942μm,0.4s						
ZKR				S	Sn	13 45 49.4	+3.5
ZKR	Zakros	0.53	219	P	Pn	13 45 38.3	+1.8
ZKR				S	Sn	13 45 46.9	+1.0
NPS	Neapolis	0.87	253	P	Pn	13 45 41.1	+0.8
NPS				S	Sn	13 45 52.7	0.0
NPS	Neapolis	0.87	253	P	Pn	13 45 41.1	+0.8
NPS				S	Sn	13 45 52.7	0.0
NPS	Neapolis	0.87	253	P	Pn	13 45 41.1	+0.8
NPS				S	Sn	13 45 51.1	-1.6
NPS				AML	AML	13 45 53.8	
	comp=E,39688μm,0.7s						
NPS				AML	AML	13 45 54.9	
	comp=N,30174μm,0.8s						
NPS	Neapolis	0.87	253	P	Pn	13 45 41.1	+0.8
NPS				S	Sn	13 45 52.7	0.0
LAST	Lasithi	1.01	249	P	Pn	13 45 43.2	+1.1
LAST				S	Sn	13 45 56.0	+0.1
LAST	Lasithi	1.01	249	P	Pn	13 45 43.2	+1.1
LAST				S	Sn	13 45 56.0	+0.1
LAST	Lasithi	1.01	249	P	Pn	13 45 43.4	+1.3
LAST	Lasithi	1.01	249	*e*Pn	Pn	13 45 43.2	+1.1
LAST				S	Sn	13 45 56.0	+0.1
NISR	Nisiros	1.16	20	P	Pn	13 45 44.4	+0.5
NISR				S	Sn	13 45 59.0	-0.1
NISR	Nisiros	1.16	20	P	Pn	13 45 44.7	+0.8
NISR				S	Sn	13 45 59.0	-0.1
NISR	Nisiros	1.16	20	P	Pn	13 45 44.7	+0.8
NISR				S	Sn	13 45 57.8	-1.3
NISR				AML	AML	13 46 01.3	
	comp=N,21376μm,0.7s						
NISR				AML	AML	13 46 02.4	
	comp=E,22081μm,0.4s						
NISR	Nisiros	1.16	20	P	Pn	13 45 44.4	+0.5
NISR				S	Sn	13 45 59.0	-0.1
NIS1	Nisyros Isl.	1.16	22	*e*PG	Pn	13 45 43.6	-0.4
NIS1				*e*SG	Sn	13 45 58.1	-1.2
NIS1	Nisyros Isl.	1.16	22	P	Pn	13 45 44.9	+0.9
NIS1				S	Sn	13 45 58.9	-0.4
NIS1	Nisyros Isl.	1.16	22	*e*Pg	Pn	13 45 43.7	-0.4
NIS1	Nisyros Isl.	1.16	22	P	Pn	13 45 45.4	+1.3
NIS1				*e*Sg	Sn	13 45 58.1	-1.2
NIS1	Nisyros Isl.	1.16	22	P	Pn	13 45 45.4	+1.3
NIS1				S	Sn	13 45 57.1	-2.2
NIS1				AML	AML	13 46 05.9	
	comp=N,18644μm,0.6s						
NIS1				AML	AML	13 46 07.9	
	comp=E,26698μm,0.8s						
NIS1	Nisyros Isl.	1.16	22	P	Pn	13 45 44.9	+0.9
NIS1				S	Sn	13 45 58.9	-0.4
SANT	Santorini	1.27	312	P	Pn	13 45 45.6	+0.2
SANT				S	Sn	13 46 00.0	-1.8
SANT	Santorini	1.27	312	P	Pn	13 45 46.2	+0.8
SANT				S	Sn	13 46 00.0	-1.8
SANT	Santorini	1.27	312	P	Pn	13 45 46.2	+0.8
SANT				AML	AML	13 46 01.2	
	comp=E,79872μm,0.7s						
SANT				S	Sn	13 46 01.3	-0.5
SANT				AML	AML	13 46 02.1	
	comp=N,50378μm,0.6s						
SANT	Santorini	1.27	312	*e*Pn	Pn	13 45 45.6	+0.2
IACM	Heraklion	1.29	261	P	Pn	13 45 46.4	+0.7
IACM				S	Sn	13 46 02.0	-0.2
IACM	Heraklion	1.29	261	P	Pn	13 45 45.9	+0.3
IACM				S	Sn	13 46 02.0	-0.2
IACM	Heraklion	1.29	261	P	Pn	13 45 45.9	+0.3
IACM				S	Sn	13 45 59.8	-2.4
IACM				AML	AML	13 46 10.7	
	comp=E,50610μm,0.9s						
IACM				AML	AML	13 46 15.6	
	comp=N,68647μm,0.7s						
THR6	Thira Island,	1.29	310	P	Pn	13 45 46.1	+0.4
THR6	Thira Island,	1.29	310	P	Pn	13 45 46.1	+0.4
THR6	Thira Island,	1.29	310	P	Pn	13 45 46.1	+0.4
THT1	Athinios (Pele	1.29	312	P	Pn	13 45 45.8	+0.1
THT1				S	Sn	13 46 00.3	-2.0
THT1	Athinios (Pele	1.29	312	P	Pn	13 45 45.8	+0.1
THR7	Fira-Santorini	1.32	313	P	Pn	13 45 46.5	+0.4
THR7	Fira-Santorini	1.32	313	P	Pn	13 45 46.5	+0.4
THR3	Thira Island,	1.33	312	P	Pn	13 45 46.5	+0.3
THR3	Thira Island,	1.33	312	P	Pn	13 45 46.5	+0.3
THR3	Thira Island,	1.33	312	P	Pn	13 45 46.5	+0.3
THR2	Thira island,	1.33	314	P	Pn	13 45 46.6	+0.4
THR2	Thira island,	1.33	314	P	Pn	13 45 46.6	+0.4
THR2	Thira island,	1.33	314	P	Pn	13 45 46.6	+0.4
THR5	Thira Island,	1.36	311	*e*PN	Pn	13 45 48.0	+1.3
THR5	Thira Island,	1.36	311	P	Pn	13 45 46.9	+0.2
THR5	Thira Island,	1.36	311	P	Pn	13 45 46.9	+0.2
THR5	Thira Island,	1.36	311	*e*Pn	Pn	13 45 48.0	+1.3
CMBO	Columbo, Santo	1.37	314	P	Pn	13 45 47.0	+0.3
CMBO				S	Sn	13 46 02.7	-1.3
CMBO	Columbo, Santo	1.37	314	P	Pn	13 45 47.6	+0.9
CMBO				S	Sn	13 46 02.7	-1.3
CMBO	Columbo, Santo	1.37	314	P	Pn	13 45 47.6	+0.9
CMBO				S	Sn	13 46 02.7	-1.3
CMBO				AML	AML	13 46 04.9	
	comp=N,62912μm,0.8s						
CMBO				AML	AML	13 46 05.8	
	comp=E,54708μm,0.6s						
ARG	Arkhangelos	1.40	60	P	Pn	13 45 49.1	+2.0
ARG				S	Sn	13 46 06.7	+1.9
ARG	Arkhangelos	1.40	60	P	Pn	13 45 49.1	+2.0
ARG				S	Sn	13 46 06.9	+2.1
ARG	Arkhangelos	1.40	60	P	Pn	13 45 49.1	+2.0
IDI	Anoyia	1.44	261	P	Pn	13 45 48.0	+0.3
	comp=E,198nm,0.3s,baz=85,slow=6.3,SNR=470						
IDI				S	Sn	13 46 05.4	-0.5
	comp=E,311nm,0.3s,baz=140,slow=20,SNR=13						
IDI	Anoyia	1.44	261	P	Pn	13 45 48.3	+0.6
IDI				S	Sn	13 46 06.5	+0.7
IDI	Anoyia	1.44	261	P	Pn	13 45 48.3	+0.6
IDI				S	Sn	13 46 06.5	+0.7
IDI	Anoyia	1.44	261	P	Pn	13 45 47.2	-0.5
SIVA	Sivas	1.57	252	P	Pn	13 45 51.2	+1.8
SIVA				S	Sn	13 46 10.1	+1.2
SIVA	Sivas	1.57	252	P	Pn	13 45 51.2	+1.8
SIVA				S	Sn	13 46 10.1	+1.2
SIVA	Sivas	1.57	252	P	Pn	13 45 52.2	+2.9
SIVA				S	Sn	13 46 10.7	+1.8
SIVA				AML	AML	13 46 15.0	
	comp=N,11548μm,0.6s						
SIVA				AML	AML	13 46 20.4	
	comp=E,15197μm,0.6s						
SIVA	Sivas	1.57	252	P	Pn	13 45 51.2	+1.8
SIVA				S	Sn	13 46 10.1	+1.2
BODT	Bodrum	1.63	20	*e*PN	Pn	13 45 49.8	-0.4
BODT				*e*SN	Sn	13 46 09.5	-0.8
BODT	Bodrum	1.63	20	P	Pn	13 45 51.0	+0.8
BODT				S	Sn	13 46 09.9	-0.4
BODT	Bodrum	1.63	20	*e*Pn	Pn	13 45 49.8	-0.4
BODT	Bodrum	1.63	20	P	Pn	13 45 51.0	+0.8
BODT				*e*Sn	Sn	13 46 09.5	-0.8
BODT	Bodrum	1.63	20	P	Pn	13 45 51.0	+0.8
APE	Apeiranthos	1.77	330	*e*PN	Pn	13 45 52.4	+0.2
APE				*e*SN	Sn	13 46 13.4	-0.4
APE	Apeiranthos	1.77	330	P	Pn	13 45 52.4	+0.2
APE				S	Sn	13 46 12.6	-1.3
APE	Apeiranthos	1.77	330	*e*Pn	Pn	13 45 52.4	+0.2
APE	Apeiranthos	1.77	330	P	Pn	13 45 52.7	+0.5
APE				S	Sn	13 46 12.6	-1.3
APE				*e*Sn	Sn	13 46 13.5	-0.4
APE	Apeiranthos	1.77	330	P	Pn	13 45 52.6	+0.5
APE				S	Sn	13 46 12.4	-1.5
APE				AML	AML	13 46 14.2	
	comp=N,24130μm,0.2s						
APE				AML	AML	13 46 14.4	
	comp=E,15794μm,0.4s						
VAM	Vamos	1.98	267	P	Pn	13 45 55.2	+0.2
VAM				S	Sn	13 46 18.8	0.0
VAM	Vamos	1.98	267	P	Pn	13 45 55.2	+0.2
VAM				S	Sn	13 46 18.8	0.0
VAM	Vamos	1.98	267	P	Pn	13 45 55.2	+0.2
VAM				S	Sn	13 46 18.8	0.0
DALY	Dalyan (Mu˜la	2.08	51	*e*PN	Pn	13 45 57.4	+1.1
DALY	Dalyan (Mu˜la	2.08	51	*e*Pn	Pn	13 45 57.4	+1.1
TURN	Turunc	2.09	49	*i* P	Pn	13 45 54.0	-2.3
TURN				*i* S	Sn	13 46 15.5	-5.8
TURN	Turunc	2.09	49	P	Pn	13 45 54.0	-2.3
YER	Yerkesik	2.09	39	*e*PN	Pn	13 45 57.2	+0.8
YER				*e*SN	Sn	13 46 21.9	+0.4
YER	Yerkesik	2.09	39	P	Pn	13 45 58.5	+2.1
YER				S	Sn	13 46 22.3	+0.9
YER	Yerkesik	2.09	39	*e*Pn	Pn	13 45 57.2	+0.8
YER	Yerkesik	2.09	39	P	Pn	13 45 58.5	+2.1
YER				*e*Sn	Sn	13 46 21.9	+0.4
YER				S	Sn	13 46 22.3	+0.9
YER	Yerkesik	2.09	39	P	Pn	13 45 58.5	+2.1
YER				S	Sn	13 46 22.3	+0.9
MHLO	Agia Marina, M	2.14	303	P	Pn	13 45 58.1	+1.0
MHLO				S	Sn	13 46 22.3	-0.4
MHLO	Agia Marina, M	2.14	303	P	Pn	13 45 58.1	+1.0
MHLO				S	Sn	13 46 22.3	-0.4
MHLO	Agia Marina, M	2.14	303	P	Pn	13 45 59.2	+2.2
MHLO				S	Sn	13 46 22.5	-0.1
MHLO				AML	AML	13 46 29.8	
	comp=N,19035μm,0.7s						
MHLO				AML	AML	13 46 31.1	
	comp=E,16933μm,0.7s						
IMMV	Iera Moni Meta	2.16	269	P	Pn	13 45 57.9	+0.6
IMMV				S	Sn	13 46 24.2	+1.1
IMMV	Iera Moni Meta	2.16	269	P	Pn	13 45 57.9	+0.6
IMMV				S	Sn	13 46 24.2	+1.1
IMMV	Iera Moni Meta	2.16	269	P	Pn	13 45 57.3	0.0
IMMV				S	Sn	13 46 20.3	-2.8
IMMV				AML	AML	13 46 32.3	
	comp=E,5998μm,0.8s						
IMMV				AML	AML	13 46 35.3	
	comp=N,6698μm,0.6s						
SMG	Samos	2.18	4	P	Pn	13 45 58.0	+0.3
SMG				S	Sn	13 46 23.4	-0.3
SMG	Samos	2.18	4	P	Pn	13 45 58.0	+0.3
SMG				S	Sn	13 46 23.4	-0.3
SMG	Samos	2.18	4	P	Pn	13 45 58.0	+0.3
SMG				S	Sn	13 46 23.2	-0.4
SMG				AML	AML	13 46 26.9	
	comp=N,2916μm,0.6s						
SMG				AML	AML	13 46 30.9	
	comp=E,2916μm,0.8s						
SMG	Samos	2.18	4	P	Pn	13 45 58.0	+0.3
SMG				S	Sn	13 46 23.4	-0.3
GVD	Gavdhos	2.19	252	P	Pn	13 46 00.0	+2.3
GVD	Gavdhos	2.19	252	P	Pn	13 46 00.0	+2.3
GVD	Gavdhos	2.19	252	P	Pn	13 46 00.6	+2.9
GVD	Gavdhos	2.19	252	P	Pn	13 46 00.0	+2.3
GCAM	G?zelcaml?	2.22	13	*i* P	Pn	13 45 59.0	+0.8
GCAM				*i* S	Sn	13 46 23.9	-0.7
GCAM	G?zelcaml?	2.22	13	P	Pn	13 45 59.0	+0.8
GCAM				S	Sn	13 46 23.9	-0.7
FETY	Fethiye	2.28	60	*e*PN	Pn	13 46 00.4	+1.5
FETY	Fethiye	2.28	60	P	Pn	13 46 00.8	+1.9
FETY				S	Sn	13 46 29.4	+3.4
FETY	Fethiye	2.28	60	*e*Pn	Pn	13 46 00.4	+1.5
FETY	Fethiye	2.28	60	P	Pn	13 46 00.8	+1.9
FETY				S	Sn	13 46 29.4	+3.4
FETY	Fethiye	2.28	60	P	Pn	13 46 00.8	+1.9
FETY				S	Sn	13 46 29.4	+3.4
AYDN	Tasoluk	2.36	25	*i* P	Pn	13 46 01.8	+1.7
AYDN				*i* S	Sn	13 46 27.6	-0.4
AYDN	Tasoluk	2.36	25	P	Pn	13 46 01.8	+1.7
AYDN				S	Sn	13 46 27.5	-0.4
SERI	Serifos	2.38	314	P	Pn	13 46 00.8	+0.5
SERI	Serifos	2.38	314	P	Pn	13 46 00.8	+0.5
SERI				S	Sn	13 46 25.8	-2.5
SERI				AML	AML	13 46 26.9	
	comp=E,2387μm,0.6s						
SERI				AML	AML	13 46 27.0	
	comp=N,2822μm,0.7s						
KSL	Kastellorizon	2.48	75	P	Pn	13 46 03.6	+1.9
KSL				S	Sn	13 46 33.6	+2.7
KSL	Kastellorizon	2.48	75	P	Pn	13 46 02.9	+1.2
KSL				S	Sn	13 46 30.3	-0.6
KSL	Kastellorizon	2.48	75	P	Pn	13 46 02.9	+1.2
KSL				S	Sn	13 46 30.3	-0.6
KSL				AML	AML	13 46 35.2	
	comp=E,2933μm,0.8s						
KSL				AML	AML	13 46 56.7	
	comp=N,1579μm,1.3s						
AKAS	Kas	2.52	73	*i* P	Pn	13 46 04.2	+1.9
AKAS				*i* S	Sn	13 46 33.2	+1.2
AKAS	Kas	2.52	73	P	Pn	13 46 04.2	+1.9
AKAS				S	Sn	13 46 33.2	+1.2
AYDB	Zeytinkoy-Aydi	2.62	22	*e*PN	Pn	13 46 04.7	+1.0
AYDB	Zeytinkoy-Aydi	2.62	22	*e*Pn	Pn	13 46 04.7	+1.0
ZEY	˜zmir	2.71	358	*i* P	Pn	13 46 04.9	+0.2
ZEY				*i* S	Sn	13 46 35.0	-1.4
ANKY	Antikythira Is	2.73	278	P	Pn	13 46 04.4	-0.6
ANKY	Antikythira Is	2.73	278	P	Pn	13 46 04.4	-0.6
ANKY				S	Sn	13 46 34.7	-2.2
ANKY				AML	AML	13 46 50.5	
	comp=N,3874μm,0.6s						
ANKY				AML	AML	13 46 58.5	
	comp=E,3152μm,0.7s						
URLA	Izmir	2.83	360	*i* P	Pn	13 46 06.8	+0.4
URLA				*i* S	Sn	13 46 38.8	-0.6
URLA	Izmir	2.83	360	P	Pn	13 46 06.8	+0.4
URLA				S	Sn	13 46 38.8	-0.6
GLHS	Glhisar (BURDU	2.83	54	*e*PN	Pn	13 46 07.5	+0.9
GLHS	Glhisar (BURDU	2.83	54	*e*Pn	Pn	13 46 07.5	+0.9
BLCB	Balcova	2.87	7	*e*PN	Pn	13 46 08.1	+1.1
BLCB	Balcova	2.87	7	*e*Pn	Pn	13 46 08.1	+1.1
CHOS	Chios island	2.89	351	*e*PN	Pn	13 46 08.3	+0.9
CHOS	Chios island	2.89	351	P	Pn	13 46 07.5	+0.2
CHOS				S	Sn	13 46 40.3	-0.7
CHOS	Chios island	2.89	351	P	Pn	13 46 07.5	+0.2
CHOS	Chios island	2.89	351	*e*Pn	Pn	13 46 08.3	+0.9
CHOS				S	Sn	13 46 40.3	-0.7
CHOS	Chios island	2.89	351	P	Pn	13 46 07.0	-0.3
CHOS				S	Sn	13 46 37.2	-3.8
CHOS				AML	AML	13 46 44.0	
	comp=N,1185μm,0.9s						
CHOS				AML	AML	13 46 45.1	
	comp=E,1915μm,0.6s						
CHOS	Chios island	2.89	351	P	Pn	13 46 07.5	+0.2
CHOS				S	Sn	13 46 40.3	-0.7
IZM	Izmir	2.91	10	*e*PN	Pn	13 46 08.8	+1.2
IZM	Izmir	2.91	10	*e*Pn	Pn	13 46 08.8	+1.2
GOLH	Golhisar	2.92	53	*i* P	Pn	13 46 10.5	+2.7
GOLH				*i* S	Sn	13 46 45.9	+4.2
GOLH	Golhisar	2.92	53	P	Pn	13 46 10.5	+2.7
GOLH				S	Sn	13 46 45.9	+4.2
ELL	Elmali	2.92	64	*e*PN	Pn	13 46 09.7	+1.9
ELL	Elmali	2.92	64	*e*Pn	Pn	13 46 09.7	+1.9
DENT	Denizli	2.95	40	*e*PN	Pn	13 46 09.7	+1.6
DENT	Denizli	2.95	40	*e*Pn	Pn	13 46 09.7	+1.6
KYTH	Kithira	3.01	286	P	Pn	13 46 09.8	+0.9
KYTH	Kithira	3.01	286	P	Pn	13 46 09.8	+0.9
VLI	Veliai	3.21	293	P	Pn	13 46 12.4	+0.7
VLI				S	Sn	13 46 47.1	-1.7
VLI	Veliai	3.21	293	P	Pn	13 46 12.4	+0.7
VLI				S	Sn	13 46 47.1	-1.7
VLI	Veliai	3.21	293	P	Pn	13 46 12.2	+0.5
VLI				S	Sn	13 46 45.1	-3.6
VLI				AML	AML	13 46 50.5	
	comp=N,4020μm,0.6s						
VLI				AML	AML	13 46 55.4	
	comp=E,2997μm,0.6s						
VLI	Veliai	3.21	293	P	Pn	13 46 12.4	+0.7
VLI				S	Sn	13 46 47.1	-1.7
VLY	Voula,Athens	3.25	316	P	Pn	13 46 13.4	+1.2
VLY				S	Sn	13 46 48.0	-1.7
VLY	Voula,Athens	3.25	316	P	Pn	13 46 13.4	+1.2
VLY				S	Sn	13 46 48.0	-1.7
VLY	Voula,Athens	3.25	316	P	Pn	13 46 14.2	+2.0
VLY				S	Sn	13 46 47.6	-2.1
VLY				AML	AML	13 46 48.4	
	comp=E,3325μm,0.8s						
VLY				AML	AML	13 46 49.0	
	comp=N,1797μm,0.6s						
VLY	Voula,Athens	3.25	316	P	Pn	13 46 13.4	+1.2
VLY				S	Sn	13 46 48.0	-1.7
KORT	Korkueli	3.35	63	*i* P	Pn	13 46 15.9	+2.3
KORT				*i* S	Sn	13 46 53.1	+0.9
KORT	Korkueli	3.35	63	P	Pn	13 46 15.9	+2.3
KORT				S	Sn	13 46 53.2	+0.9
PTL	Penteli	3.35	319	P	Pn	13 46 15.2	+1.6
PTL	Penteli	3.35	319	P	Pn	13 46 15.2	+1.6
PTL	Penteli	3.35	319	P	Pn	13 46 15.4	+1.8
PTL	Penteli	3.35	319	P	Pn	13 46 15.2	+1.6
KRND	KRANIDI	3.36	304	P	Pn	13 46 15.3	+1.7
KRND				S	Sn	13 46 53.3	+1.0
KRND	KRANIDI	3.36	304	P	Pn	13 46 14.5	+0.9
KRND				S	Sn	13 46 53.3	+1.0
KRND	KRANIDI	3.36	304	P	Pn	13 46 14.5	+0.9
KRND				S	Sn	13 46 52.1	-0.2
KRND				AML	AML	13 46 57.1	
	comp=E,2694μm,0.6s						
KRND				AML	AML	13 46 60.0	
	comp=N,1972μm,0.8s						
DID	Didima	3.37	307	P	Pn	13 46 15.2	+1.4
DID	Didima	3.37	307	P	Pn	13 46 15.2	+1.4
DID	Didima	3.37	307	P	Pn	13 46 15.5	+1.7
DID				S	Sn	13 46 50.3	-2.3
DID				AML	AML	13 46 59.2	
	comp=N,1678μm,0.7s						
DID				AML	AML	13 47 02.6	
	comp=E,1479μm,0.6s						
DID	Didima	3.37	307	P	Pn	13 46 15.2	+1.4
ATH	Athens Observa	3.38	317	P	Pn	13 46 15.7	+1.8
ATH	Athens Observa	3.38	317	P	Pn	13 46 15.7	+1.8
ATH	Athens Observa	3.38	317	P	Pn	13 46 15.7	+1.8
KULA	Kula-Manisa	3.40	28	*e*PN	Pn	13 46 16.2	+2.0
KULA	Kula-Manisa	3.40	28	*e*Pn	Pn	13 46 16.2	+2.0
AKS	Akhisar	3.48	15	*e*PN	Pn	13 46 16.4	+1.1
AKS	Akhisar	3.48	15	*e*Pn	Pn	13 46 16.4	+1.1
ANTB	Antalya	3.53	66	*e*PN	Pn	13 46 18.6	+2.6
ANTB	Antalya	3.53	66	*e*Pn	Pn	13 46 18.6	+2.6
DKL	Dikili	3.54	4	*e*PN	Pn	13 46 16.9	+0.7
DKL	Dikili	3.54	4	*e*Pn	Pn	13 46 16.9	+0.7
EREA	Eretria	3.60	324	P	Pn	13 46 18.7	+1.7
EREA	Eretria	3.60	324	P	Pn	13 46 18.7	+1.7
EREA	Eretria	3.60	324	P	Pn	13 46 19.3	+2.3
KHL	Karahalli	3.63	39	*e*PN	Pn	13 46 19.1	+1.7
KHL	Karahalli	3.63	39	*e*Pn	Pn	13 46 19.1	+1.7
KHAL	Karahalli	3.65	38	*i* P	Pn	13 46 19.4	+1.7
KHAL				*i* S	Sn	13 46 55.5	-4.1
KHAL	Karahalli	3.65	38	P	Pn	13 46 19.4	+1.7
PRK	Paraskevi	3.72	356	P	Pn	13 46 19.4	+0.8
PRK	Paraskevi	3.72	356	P	Pn	13 46 19.4	+0.8
PRK	Paraskevi	3.72	356	P	Pn	13 46 19.0	+0.5
PRK				S	Sn	13 46 60.0	-1.2
PRK				AML	AML	13 47 01.5	
	comp=E,1135μm,0.4s						
PRK				AML	AML	13 47 04.1	
	comp=N,770μm,0.6s						
PRK	Paraskevi	3.72	356	P	Pn	13 46 19.4	+0.8
SIGR	SIGRI	3.73	351	*e*PN	Pn	13 46 19.4	+0.7
SIGR	SIGRI	3.73	351	P	Pn	13 46 19.2	+0.5
SIGR	SIGRI	3.73	351	*e*Pn	Pn	13 46 19.4	+0.7
SIGR	SIGRI	3.73	351	P	Pn	13 46 18.6	0.0
SIGR	SIGRI	3.73	351	P	Pn	13 46 19.2	+0.5
BCK	Bucak	3.73	58	*e*PN	Pn	13 46 20.5	+1.7
BCK	Bucak	3.73	58	*e*Pn	Pn	13 46 20.5	+1.7
VILL	Villia	3.74	316	P	Pn	13 46 21.8	+2.9
VIL2	Platees	3.80	316	P	Pn	13 46 21.8	+2.1
VIL2				S	Sn	13 46 57.7	-5.4
VIL2				AML	AML	13 47 06.7	
	comp=N,2174μm,0.8s						
VIL2				AML	AML	13 47 06.7	
	comp=E,1072μm,1.0s						
LTK	Loutraki	3.85	311	P	Pn	13 46 23.5	+3.1
LTK				S	Sn	13 47 05.7	+1.3
LTK	Loutraki	3.85	311	P	Pn	13 46 23.5	+3.1
LTK				S	Sn	13 47 05.7	+1.3
LTK				AML	AML	13 47 18.3	
	comp=E,1363μm,0.8s						
LTK				AML	AML	13 47 22.3	
	comp=N,1138μm,0.7s						
ISP	Isparta	3.88	53	*e*PN	Pn	13 46 22.9	+2.1
ISP	Isparta	3.88	53	*e*Pn	Pn	13 46 22.9	+2.1

DEMI	**Demirci**	**3.88**	**25**	*i* P	**Pn**	**13 46 22.8**	**+1.9**
DEMI				*i* S	**Sn**	**13 47 01.8**	**-3.5**
DEMI	**Demirci**	**3.88**	**25**	P	**Pn**	**13 46 22.8**	**+1.9**
VLX	**Vlachokerasia**	**3.89**	**299**	P	**Pn**	**13 46 22.3**	**+1.4**
VLX				S	**Sn**	**13 47 05.3**	**-0.1**
VLX	**Vlachokerasia**	**3.89**	**299**	P	**Pn**	**13 46 22.3**	**+1.4**
VLX				S	**Sn**	**13 47 05.3**	**-0.1**
VLX				AML	AML	13 47 10.2	
	comp=E,2510μm,0.7s						
VLX				AML	AML	13 47 10.9	
	comp=N,2796μm,0.7s						
SUTC	**Sutluce-Ispart**	**4.02**	**60**	*e*PN	Pn	13 46 26.0	+3.1
SUTC	**Sutluce-Ispart**	**4.02**	**60**	*e*Pn	Pn	13 46 26.0	+3.1
PROD	**Prodromos**	**4.04**	**313**	P	**Pn**	**13 46 24.7**	**+1.7**
PROD	**Prodromos**	**4.04**	**313**	P	**Pn**	**13 46 24.7**	**+1.7**
THAL	**Thalero**	**4.05**	**309**	P	Pn	13 46 26.5	+3.4
THAL	**Thalero**	**4.05**	**309**	P	Pn	13 46 26.5	+3.4
ITM	**Ithomi**	**4.14**	**295**	P	**Pn**	**13 46 26.7**	**+2.4**
ITM				S	**Sn**	**13 47 11.5**	**+0.1**
ITM	**Ithomi**	**4.14**	**295**	P	**Pn**	**13 46 26.7**	**+2.4**
ITM				S	**Sn**	**13 47 11.5**	**+0.1**
ITM				AML	AML	13 47 20.7	
	comp=N,1049μm,1.1s						
ITM				AML	AML	13 47 24.4	
	comp=E,1022μm,0.7s						
BAGO	**Egridir - ISPA**	**4.15**	**52**	*i* P	**Pn**	**13 46 26.0**	**+1.5**
BAGO				*i* S	**Sn**	**13 47 09.4**	**-2.4**
PYL	**PYLOS**	**4.18**	**290**	P	**Pn**	**13 46 23.7**	**-1.2**
PYL	**PYLOS**	**4.18**	**290**	P	**Pn**	**13 46 23.7**	**-1.2**
SLUM	**Salum**	**4.20**	**197**	AMP		13 47 00.0	
	comp=E,470μm,0.2s,logA/T=6.4,baz=197						
MATC	**Matruh**	**4.20**	**173**	P	**Pn**	**13 46 24.4**	**-0.8**
	baz=173						
GDZ	**Gediz**	**4.22**	**32**	*i* P	**Pn**	**13 46 27.5**	**+2.0**
GDZ				*i* S	**Sn**	**13 47 11.7**	**-1.9**
GDZ	**Gediz**	**4.22**	**32**	P	**Pn**	**13 46 27.5**	**+2.0**
GDZ				S	**Sn**	**13 47 11.7**	**-1.9**
BALB	**Balikesir**	**4.22**	**13**	*e*PN	**Pn**	**13 46 26.8**	**+1.3**
BALB	**Balikesir**	**4.22**	**13**	*e*Pn	**Pn**	**13 46 26.8**	**+1.3**
AOS	**Alonnisos**	**4.24**	**330**	*e*PN	**Pn**	**13 46 27.1**	**+1.4**
AOS	**Alonnisos**	**4.24**	**330**	*e*Pn	**Pn**	**13 46 27.1**	**+1.4**
AOS	**Alonnisos**	**4.24**	**330**	P	**Pn**	**13 46 27.4**	**+1.7**
AOS	**Alonnisos**	**4.24**	**330**	P	**Pn**	**13 46 27.4**	**+1.7**
LKR	**Lokris**	**4.26**	**318**	P	**Pn**	**13 46 27.8**	**+1.9**
LKR	**Lokris**	**4.26**	**318**	P	**Pn**	**13 46 27.8**	**+1.9**
LKR	**Lokris**	**4.26**	**318**	P	**Pn**	**13 46 28.4**	**+2.5**
LKR	**Lokris**	**4.26**	**318**	P	**Pn**	**13 46 27.8**	**+1.9**
EZN	**Ezine**	**4.30**	**357**	*e*PN	**Pn**	**13 46 27.7**	**+1.3**
EZN	**Ezine**	**4.30**	**357**	P	**Pn**	**13 46 27.8**	**+1.3**
EZN	**Ezine**	**4.30**	**357**	P	**Pn**	**13 46 27.8**	**+1.3**
EZN	**Ezine**	**4.30**	**357**	P	**Pn**	**13 46 27.8**	**+1.3**
SMIA	**Simia**	**4.32**	**322**	P	**Pn**	**13 46 28.9**	**+2.2**
SMIA	**Simia**	**4.32**	**322**	P	**Pn**	**13 46 28.9**	**+2.2**
SHUT	**Suhut-Afyon**	**4.36**	**45**	*e*PN	**Pn**	**13 46 29.7**	**+2.3**
SHUT	**Suhut-Afyon**	**4.36**	**45**	*e*Pn	**Pn**	**13 46 29.7**	**+2.3**
DSF	**Desfina**	**4.37**	**312**	P	**Pn**	**13 46 29.8**	**+2.4**
DSF	**Desfina**	**4.37**	**312**	P	**Pn**	**13 46 29.8**	**+2.4**
DST	**Dursunbey**	**4.37**	**21**	*e*PN	**Pn**	**13 46 29.3**	**+1.9**
DST	**Dursunbey**	**4.37**	**21**	*e*Pn	**Pn**	**13 46 29.3**	**+1.9**
KLV	**Kalavryta, Ach**	**4.38**	**306**	P	**Pn**	**13 46 30.7**	**+3.0**
KLV				S	**Sn**	**13 47 18.0**	**+0.5**
KLV	**Kalavryta, Ach**	**4.38**	**306**	P	**Pn**	**13 46 30.7**	**+3.0**
KLV				S	**Sn**	**13 47 18.0**	**+0.5**
KLV				AML	AML	13 47 20.1	
	comp=N,1190μm,0.9s						
KLV				AML	AML	13 47 23.0	
	comp=E,1125μm,1.2s						
SKIA	**Skiathos**	**4.42**	**326**	P	**Pn**	**13 46 30.8**	**+2.7**
SKIA	**Skiathos**	**4.42**	**326**	P	**Pn**	**13 46 30.8**	**+2.7**
AMT	**Artemida-Makis**	**4.44**	**298**	P	**Pn**	**13 46 30.4**	**+2.0**
AMT	**Artemida-Makis**	**4.44**	**298**	P	**Pn**	**13 46 30.4**	**+2.0**
HMAT	**Matruh**	**4.44**	**175**	S	**Sn**	**13 47 15.5**	**-3.3**
	baz=175						
HMAT				AMP		13 47 00.0	
	comp=E,320μm,0.2s,logA/T=6.2,baz=175						
HMAT	**Matruh**	**4.44**	**175**	P	Pn	13 46 24.4	-4.0
LIA	**Limnos Island**	**4.51**	**346**	P	**Pn**	**13 46 30.7**	**+1.4**
TVSB	**Tavsanli**	**4.52**	**29**	*e*PN	**Pn**	**13 46 31.5**	**+1.9**
TVSB	**Tavsanli**	**4.52**	**29**	*e*Pn	**Pn**	**13 46 31.5**	**+1.9**
KALE	**Kalithea**	**4.59**	**310**	P	**Pn**	**13 46 32.2**	**+1.7**
KALE	**Kalithea**	**4.59**	**310**	P	**Pn**	**13 46 32.2**	**+1.7**
KALE	**Kalithea**	**4.59**	**310**	P	**Pn**	**13 46 33.6**	**+3.1**
KALE	**Kalithea**	**4.59**	**310**	P	**Pn**	**13 46 32.2**	**+1.7**
DRO	**Drossia**	**4.63**	**303**	P	Pn	13 46 34.3	+3.3
DRO				S	**Sn**	**13 47 23.6**	**+0.1**
DRO	**Drossia**	**4.63**	**303**	P	Pn	13 46 34.3	+3.3
DRO				S	**Sn**	**13 47 23.6**	**+0.1**
DRO				AML	AML	13 47 26.6	
	comp=N,1700μm,0.9s						
DRO				AML	AML	13 47 29.0	
	comp=E,2132μm,0.7s						
NEO	**Neokhori**	**4.64**	**325**	P	**Pn**	**13 46 34.0**	**+2.8**
NEO	**Neokhori**	**4.64**	**325**	P	**Pn**	**13 46 34.0**	**+2.8**
GAZI	**Gazipasa**	**4.67**	**80**	*i* P	**Pn**	**13 46 31.9**	**+0.3**
GAZI				*i* S	**Sn**	**13 47 21.3**	**-3.3**
GAZI	**Gazipasa**	**4.67**	**80**	P	**Pn**	**13 46 31.9**	**+0.3**
GAZI				S	**Sn**	**13 47 21.3**	**-3.3**
GADA	**Gvkgeada**	**4.69**	**353**	*e*PN	**Pn**	**13 46 32.9**	**+1.1**
GADA	**Gvkgeada**	**4.69**	**353**	*e*Pn	**Pn**	**13 46 32.9**	**+1.1**
AKMC	**Akamas**	**4.69**	**94**	P	**Pn**	**13 46 31.7**	**-0.2**
	baz=281						
AKMC	**Akamas**	**4.69**	**94**	P	**Pn**	**13 46 31.7**	**-0.2**
RODI	**Rodini**	**4.71**	**308**	P	**Pn**	**13 46 34.7**	**+2.7**
RODI	**Rodini**	**4.71**	**308**	P	**Pn**	**13 46 34.7**	**+2.7**
XOR	**Xorichti**	**4.71**	**326**	P	**Pn**	**13 46 34.4**	**+2.4**
XOR	**Xorichti**	**4.71**	**326**	P	**Pn**	**13 46 34.4**	**+2.4**
PPCY	**Paphos**	**4.73**	**96**	P	**Pn**	**13 46 32.2**	**-0.1**
	baz=283						
PPCY	**Paphos**	**4.73**	**96**	P	**Pn**	**13 46 32.2**	**-0.1**
EFP	**Efpalio**	**4.76**	**309**	P	Pn	13 46 36.2	+3.4
EFP	**Efpalio**	**4.76**	**309**	P	Pn	13 46 36.1	+3.4
ANX	**Ano Chora**	**4.85**	**311**	P	**Pn**	**13 46 36.4**	**+2.3**
ANX				S	**Sn**	**13 47 28.9**	**-0.1**
ANX	**Ano Chora**	**4.85**	**311**	P	**Pn**	**13 46 36.4**	**+2.3**
ANX				S	**Sn**	**13 47 28.9**	**-0.1**
ANX	**Ano Chora**	**4.85**	**311**	P	Pn	13 46 38.0	+3.9
FYTO	**Fytoko, Volos**	**4.86**	**324**	P	**Pn**	**13 46 36.8**	**+2.7**
FYTO	**Fytoko, Volos**	**4.86**	**324**	P	**Pn**	**13 46 36.8**	**+2.7**
ALFC	**Alefka**	**4.90**	**93**	S	**Sn**	**13 47 28.0**	**-2.1**
	baz=279						
ALFC	**Alefka**	**4.90**	**93**	S	**Sn**	**13 47 28.0**	**-2.1**
PAIG	**Paliouri**	**4.97**	**333**	P	**Pn**	**13 46 36.3**	**+0.6**
PAIG	**Paliouri**	**4.97**	**333**	P	**Pn**	**13 46 36.3**	**+0.6**
SMTH	**Samothraki Isl**	**5.01**	**350**	P	**Pn**	**13 46 35.7**	**-0.5**
SMTH	**Samothraki Isl**	**5.01**	**350**	P	**Pn**	**13 46 35.7**	**-0.5**
EVR	**Evrytania**	**5.12**	**313**	P	**Pn**	**13 46 40.1**	**+2.3**
EVR				S	**Sn**	**13 47 36.1**	**+0.5**
EVR	**Evrytania**	**5.12**	**313**	P	**Pn**	**13 46 40.1**	**+2.3**
EVR				S	**Sn**	**13 47 36.1**	**+0.5**
EVR	**Evrytania**	**5.12**	**313**	P	Pn	13 46 41.6	+3.8
EVR	**Evrytania**	**5.12**	**313**	P	**Pn**	**13 46 40.1**	**+2.3**
EVR				S	**Sn**	**13 47 36.1**	**+0.5**
SZAC	**Souni**	**5.18**	**97**	P	**Pn**	**13 46 38.3**	**-0.3**
	baz=284						
SZAC				S	**Sn**	**13 47 36.2**	**-0.9**
SZAC	**Souni**	**5.18**	**97**	P	**Pn**	**13 46 38.3**	**-0.3**
SZAC				S	**Sn**	**13 47 36.2**	**-0.9**
PDO	**Prodromos**	**5.32**	**307**	P	**Pn**	**13 46 43.6**	**+3.1**
PDO	**Prodromos**	**5.32**	**307**	P	**Pn**	**13 46 43.6**	**+3.1**
KIZT	**Kizilcal**	**5.36**	**50**	*e*PN	**Pn**	**13 46 43.2**	**+2.1**
KIZT	**Kizilcal**	**5.36**	**50**	*e*Pn	**Pn**	**13 46 43.2**	**+2.1**
ALN	**Alexandroupoli**	**5.38**	**355**	P	**Pn**	**13 46 41.7**	**+0.5**
ALN	**Alexandroupoli**	**5.38**	**355**	P	**Pn**	**13 46 41.7**	**+0.5**
THL	**Klokotos Trika**	**5.45**	**319**	P	**Pn**	**13 46 43.7**	**+1.6**
THL	**Klokotos Trika**	**5.45**	**319**	P	**Pn**	**13 46 43.7**	**+1.6**
CSS	**Mathiatis**	**5.51**	**94**	P	**Pn**	**13 46 43.2**	**0.0**
	baz=281						
CSS				S	**Sn**	**13 47 44.8**	**-0.4**
CSS	**Mathiatis**	**5.51**	**94**	Pn	**Pn**	**13 46 43.0**	**-0.1**
CSS				Sn	**Sn**	**13 47 41.9**	**-3.3**
CSS	**Mathiatis**	**5.51**	**94**	Pn	**Pn**	**13 46 43.0**	**-0.1**
CSS				S	**Sn**	**13 47 44.8**	**-0.4**
CSS	**Mathiatis**	**5.51**	**94**	*e*Pn	**Pn**	**13 46 43.2**	**0.0**
VLS	**Valsamata**	**5.52**	**300**	P	**Pn**	**13 46 42.4**	**-0.7**
DSL	**Palaion Diasel**	**5.69**	**311**	P	**Pn**	**13 46 45.8**	**+0.3**
DSL	**Palaion Diasel**	**5.69**	**311**	P	**Pn**	**13 46 45.8**	**+0.3**
LKD2	**Lefkada island**	**5.77**	**306**	P	**Pn**	**13 46 46.3**	**-0.3**
LKD2	**Lefkada island**	**5.77**	**306**	P	**Pn**	**13 46 46.3**	**-0.3**
HORT	**Hortiatis**	**5.78**	**332**	P	**Pn**	**13 46 49.3**	**+2.5**
HORT	**Hortiatis**	**5.78**	**332**	P	**Pn**	**13 46 49.3**	**+2.5**
SRS	**Serrai**	**6.07**	**338**	P	**Pn**	**13 46 52.4**	**+1.7**
SRS	**Serrai**	**6.07**	**338**	P	**Pn**	**13 46 52.4**	**+1.7**
KPRO	**Kipourio**	**6.08**	**318**	P	Pn	13 46 54.2	+3.4
KPRO	**Kipourio**	**6.08**	**318**	P	Pn	13 46 54.2	+3.4
KNT	**Kendrikon**	**6.34**	**334**	P	**Pn**	**13 46 56.4**	**+2.0**
KNT	**Kendrikon**	**6.34**	**334**	P	**Pn**	**13 46 56.4**	**+2.0**
SWA2		**6.34**	**189**	P	**Pn**	**13 46 53.8**	**-0.7**
	baz=190						
SWA2		**6.34**	**189**	P	**Pn**	**13 46 53.8**	**-0.7**
GRG	**Griva**	**6.36**	**330**	P	Pn	13 46 58.2	+3.5
GRG	**Griva**	**6.36**	**330**	P	Pn	13 46 58.2	+3.6
BR231	**Keskin MP Arra**	**6.50**	**47**	*e*Pn	Pn	13 47 03.1	+6.4
KKB	**Krupnik**	**6.91**	**337**	*e*P	**Pn**	**13 47 05.0**	**+2.8**
AYT	**Al 'Ayyat**	**6.95**	**145**	P	**Pn**	**13 47 01.7**	**-1.1**
	baz=146						
AYT	**Al 'Ayyat**	**6.95**	**145**	P	**Pn**	**13 47 01.7**	**-1.1**
BRTR	**Keskin Array B**	**6.96**	**51**	P	**Pn**	**13 47 04.3**	**+1.2**
	comp=E,0.5nm,0.3s,baz=221,slow=15,SNR=7.7						
KOT	**Kottamia**	**7.10**	**140**	P	**Pn**	**13 47 03.6**	**-1.2**
	baz=141						
KOT	**Kottamia**	**7.10**	**140**	P	**Pn**	**13 47 03.6**	**-1.2**
HSAF	**As Saff**	**7.21**	**143**	P	**Pn**	**13 47 04.8**	**-1.6**
	baz=144						
HSAF	**As Saff**	**7.21**	**143**	P	**Pn**	**13 47 04.8**	**-1.6**
HHAG	**Hagoal**	**7.22**	**139**	P	**Pn**	**13 47 05.0**	**-1.5**
	baz=139						
HHAG				AMP		13 48 00.0	
	comp=E,210μm,0.6s,logA/T=5.5,baz=139						
HHAG				S	Sn	13 48 20.6	-6.4
	baz=139						
HHAG	**Hagoal**	**7.22**	**139**	P	**Pn**	**13 47 05.0**	**-1.5**
HNTI	**Hanita**	**7.48**	**107**	Pn	**Pn**	**13 47 08.9**	**-1.1**
HNTI				Sn	Sn	13 48 27.4	-6.0
HNTI	**Hanita**	**7.48**	**107**	Pn	**Pn**	**13 47 08.9**	**-1.1**
OFRI	**'Ofer**	**7.52**	**110**	Pn	**Pn**	**13 47 09.5**	**-1.0**
OFRI	**'Ofer**	**7.52**	**110**	Pn	**Pn**	**13 47 09.5**	**-1.0**
VTS	**Vitosha**	**7.54**	**340**	⇓*i*P	**Pn**	**13 47 13.7**	**+2.8**
VTS	**Vitosha**	**7.54**	**340**	⇓*i*P	**Pn**	**13 47 13.7**	**+2.8**
VTS				S	**Sn**	**13 48 36.4**	**+1.5**
VTS	**Vitosha**	**7.54**	**340**	*e*P	**Pn**	**13 47 13.5**	**+2.6**
VTS	**Vitosha**	**7.54**	**340**	*e*Pn	**Pn**	**13 47 12.5**	**+1.6**
DQRL	**Deir Qamar**	**7.59**	**101**	*e*P	**Pn**	**13 47 11.6**	**-0.1**
DQRL	**Deir Qamar**	**7.59**	**101**	*e*P	**Pn**	**13 47 11.6**	**-0.1**
MMA0B	**Mount Meron ar**	**7.69**	**107**	Pn	**Pn**	**13 47 11.7**	**-1.2**
MMA0B	**Mount Meron ar**	**7.69**	**107**	Pn	**Pn**	**13 47 11.7**	**-1.2**
MMAI	**Mount Meron Ar**	**7.69**	**107**	P	**Pn**	**13 47 11.8**	**-1.1**
	comp=E,8.4nm,0.3s,baz=304,slow=12,SNR=32						
MMAI				S	**Sn**	**13 48 33.7**	**-4.8**
	comp=E,23nm,0.3s,baz=198,slow=5.2,SNR=14						
SUZ	**Suez**	**7.71**	**136**	P	**Pn**	**13 47 11.6**	**-1.6**
	baz=136						
SUZ	**Suez**	**7.71**	**136**	P	**Pn**	**13 47 11.6**	**-1.6**
SLTI	**Sal'it**	**7.73**	**113**	Pn	**Pn**	**13 47 13.0**	**-0.4**
SLTI	**Sal'it**	**7.73**	**113**	Pn	**Pn**	**13 47 13.0**	**-0.4**
HWQ	**Hawqa**	**7.76**	**97**	*e*P	**Pn**	**13 47 13.3**	**-0.5**
HWQ	**Hawqa**	**7.76**	**97**	*e*P	**Pn**	**13 47 13.4**	**-0.5**
KSDI	**Kefar Szold**	**7.82**	**105**	Pn	**Pn**	**13 47 13.4**	**-1.3**
KSDI				Sn	**Sn**	**13 48 37.6**	**-4.2**
KSDI	**Kefar Szold**	**7.82**	**105**	Pn	**Pn**	**13 47 13.4**	**-1.3**
RCY	**Rachaya**	**7.87**	**102**	*e*P	**Pn**	**13 47 14.4**	**-1.0**
MMLI	**Mount Malkishu**	**7.93**	**110**	Pn	**Pn**	**13 47 14.5**	**-1.7**
MMLI				Sn	Sn	13 48 37.8	-6.6
MMLI	**Mount Malkishu**	**7.93**	**110**	Pn	**Pn**	**13 47 14.5**	**-1.7**
KZIT	**Kziot**	**7.97**	**123**	Pn	**Pn**	**13 47 15.4**	**-1.4**
KZIT				Sn	Sn	13 48 37.5	-8.0
KZIT	**Kziot**	**7.97**	**123**	Pn	**Pn**	**13 47 15.4**	**-1.4**
ZAF	**Zafarana**	**7.99**	**140**	P	**Pn**	**13 47 15.6**	**-1.4**
	baz=140						
ZAF	**Zafarana**	**7.99**	**140**	P	**Pn**	**13 47 15.6**	**-1.4**
KSHT	**Keshet**	**8.02**	**106**	Pn	**Pn**	**13 47 16.8**	**-0.6**
KSHT	**Keshet**	**8.02**	**106**	Pn	**Pn**	**13 47 16.8**	**-0.6**
HMDT	**Nahal Hemdat**	**8.09**	**111**	Pn	**Pn**	**13 47 17.0**	**-1.3**
HMDT				Sn	Sn	13 48 42.6	-5.6
HMDT	**Nahal Hemdat**	**8.09**	**111**	Pn	**Pn**	**13 47 17.0**	**-1.3**
ZNM	**Zenema**	**8.09**	**138**	P	**Pn**	**13 47 17.8**	**-0.6**
	baz=138						
ZNM	**Zenema**	**8.09**	**138**	P	**Pn**	**13 47 17.8**	**-0.6**
REVI	**Revivim**	**8.12**	**121**	Pn	**Pn**	**13 47 17.6**	**-1.2**
REVI				Sn	Sn	13 48 41.8	-7.2
REVI	**Revivim**	**8.12**	**121**	Pn	**Pn**	**13 47 17.6**	**-1.2**
MPEP	**Malo Peshtene**	**8.13**	**345**	*e*P	**Pn**	**13 47 20.3**	**+1.5**
BARS	**Barje**	**8.18**	**334**	*e*Pn	**Pn**	**13 47 21.6**	**+2.1**
YTIR	**Yattir**	**8.22**	**118**	Pn	**Pn**	**13 47 18.1**	**-2.1**
YTIR	**Yattir**	**8.22**	**118**	Pn	**Pn**	**13 47 18.1**	**-2.1**
PSN	**Preselentsi**	**8.23**	**8**	*e*P	**Pn**	**13 47 21.6**	**+1.4**
DSI	**Dead Sea**	**8.30**	**116**	Pn	**Pn**	**13 47 20.2**	**-1.1**
DSI	**Dead Sea**	**8.30**	**116**	Pn	**Pn**	**13 47 20.2**	**-1.1**
HNKL	**Nakhl**	**8.34**	**130**	P	**Pn**	**13 47 19.9**	**-1.8**
	baz=131						
HNKL				S	Sn	13 48 46.6	-7.8
	baz=131						
HNKL	**Nakhl**	**8.34**	**130**	P	**Pn**	**13 47 19.9**	**-1.8**
RMNI	**Mount Ramon**	**8.41**	**123**	Pn	**Pn**	**13 47 21.7**	**-1.1**
RMNI	**Mount Ramon**	**8.41**	**123**	Pn	**Pn**	**13 47 21.7**	**-1.1**
MZDA	**Masada**	**8.43**	**117**	Pn	**Pn**	**13 47 21.9**	**-1.0**
MZDA				Sn	Sn	13 48 50.4	-6.1
MZDA	**Masada**	**8.43**	**117**	Pn	**Pn**	**13 47 21.9**	**-1.0**
MSAB	**Monastry St. A**	**8.60**	**6**	⇑*i*P	**Pn**	**13 47 27.2**	**+1.9**
MSAB	**Monastry St. A**	**8.60**	**6**	S	**Sn**	**13 48 59.6**	**-1.1**
MSAB	**Monastry St. A**	**8.60**	**6**	⇑*i*P	**Pn**	**13 47 27.2**	**+1.9**
KRMI	**Paran Flat**	**8.69**	**126**	Pn	**Pn**	**13 47 24.9**	**-1.7**
KRMI				Sn	Sn	13 48 55.2	-7.8
KRMI	**Paran Flat**	**8.69**	**126**	Pn	**Pn**	**13 47 24.9**	**-1.7**
ZFRI	**Zfri**	**8.72**	**122**	Pn	**Pn**	**13 47 25.3**	**-1.7**
ZFRI				Sn	Sn	13 48 56.0	-7.8
ZFRI	**Zfri**	**8.72**	**122**	Pn	**Pn**	**13 47 25.3**	**-1.7**
PRNI	**Paran**	**8.73**	**124**	Pn	**Pn**	**13 47 25.5**	**-1.6**
PRNI				Sn	Sn	13 48 56.0	-8.0
PRNI	**Paran**	**8.73**	**124**	Pn	**Pn**	**13 47 25.5**	**-1.6**
HRFI	**Mount Harif**	**8.95**	**125**	Pn	**Pn**	**13 47 28.9**	**-1.2**
HRFI				Sn	Sn	13 49 02.0	-7.4
HRFI	**Mount Harif**	**8.95**	**125**	Pn	**Pn**	**13 47 28.9**	**-1.2**
MBRI	**Mt Berech**	**9.02**	**127**	Pn	**Pn**	**13 47 30.6**	**-0.6**
MBRI				Sn	Sn	13 49 04.6	-6.7
MBRI	**Mt Berech**	**9.02**	**127**	Pn	**Pn**	**13 47 30.6**	**-0.6**
TIRR	**Tirgusor**	**9.02**	**8**	⇑*i*P	**Pn**	**13 47 32.9**	**+1.9**
TIRR	**Tirgusor**	**9.02**	**8**	⇑*i*P	**Pn**	**13 47 32.9**	**+1.9**
TIRR	**Tirgusor**	**9.02**	**8**	*e*Pn	**Pn**	**13 47 32.4**	**+1.4**
BOLS	**Boljevac**	**9.04**	**338**	*e*Pn	**Pn**	**13 47 32.2**	**+1.0**
EIL	**Elat**	**9.13**	**127**	P	**Pn**	**13 47 32.4**	**-0.2**
	comp=E,2.1nm,0.3s,baz=355,slow=7.1,SNR=33						
EIL				S	Sn	13 49 06.0	-7.9
	comp=E,12nm,0.3s,baz=14,slow=6.6,SNR=21						
EIL	**Elat**	**9.13**	**127**	Pn	**Pn**	**13 47 32.0**	**-0.6**
EIL	**Elat**	**9.13**	**127**	Pn	**Pn**	**13 47 32.0**	**-0.6**
ASF	**Jabal al Asfar**	**9.17**	**108**	P	**Pn**	**13 47 32.7**	**-0.5**
	comp=E,0.7nm,0.3s,baz=242,slow=3.4,SNR=6.8						
ASF				S	**Sn**	**13 49 12.3**	**-2.6**
	comp=E,0.8nm,0.3s,baz=38,slow=19,SNR=4.1						
HARR	**Harsova**	**9.21**	**6**	⇑*i*P	**Pn**	**13 47 35.1**	**+1.6**
HARR	**Harsova**	**9.21**	**6**	⇑*i*P	**Pn**	**13 47 35.1**	**+1.6**
TR2	**Tor 2**	**9.33**	**138**	P	**Pn**	**13 47 34.3**	**-1.0**
	baz=138						
TR2	**Tor 2**	**9.33**	**138**	P	**Pn**	**13 47 34.3**	**-1.0**
SG1	**Sgolgore (BA)**	**9.46**	**307**	*i* Pn	**Pn**	**13 47 35.6**	**-1.4**
IVAS	**Ivanjica**	**9.46**	**330**	*e*Pn	**Pn**	**13 47 39.7**	**+2.6**
GRUS	**Gruza**	**9.51**	**333**	*e*Pn	**Pn**	**13 47 39.8**	**+2.1**
KUBS	**Kucevo**	**9.65**	**338**	*e*Pn	**Pn**	**13 47 40.5**	**+0.9**
CDT	**Castel del Mon**	**9.84**	**307**	*e*Pn	**Pn**	**13 47 41.4**	**-0.9**
DIVS	**Divibare**	**9.96**	**331**	*e*Pn	**Pn**	**13 47 44.9**	**+1.0**
MLR	**Muntele Rosu**	**9.97**	**357**	P	**Pn**	**13 47 45.3**	**+1.3**
	comp=E,0.1nm,0.3s,baz=229,slow=20,SNR=5.5						
MLR	**Muntele Rosu**	**9.97**	**357**	⇓*i*P	**Pn**	**13 47 46.7**	**+2.7**
MLR	**Muntele Rosu**	**9.97**	**357**	⇓*i*P	**Pn**	**13 47 46.7**	**+2.7**
VOIR		**9.97**	**354**	⇑*i*P	**Pn**	**13 47 45.7**	**+1.6**
VOIR		**9.97**	**354**	⇑*i*P	**Pn**	**13 47 45.7**	**+1.6**
MDVR	**Moldovita**	**9.98**	**339**	⇑*i*P	**Pn**	**13 47 46.6**	**+2.5**
MDVR	**Moldovita**	**9.98**	**339**	⇑*i*P	**Pn**	**13 47 46.6**	**+2.5**
BBLS	**Lazići**	**10.01**	**328**	*e*Pn	**Pn**	**13 47 47.1**	**+2.5**
VAE	**Valguarnera**	**10.03**	**285**	S	**Sn**	**13 49 31.1**	**-4.6**
	comp=E,2.6nm,0.3s,baz=298,slow=12,SNR=4.4						
STON	**Ston**	**10.08**	**319**	*e*Pn	**Pn**	**13 47 44.8**	**-0.7**
STON				Sn	Sn	13 49 26.3	-11
STON	**Ston**	**10.08**	**319**	*e*Pn	**Pn**	**13 47 44.8**	**-0.7**
GZR	**Gura Zlata**	**10.28**	**345**	⇑*i*P	**Pn**	**13 47 49.7**	**+1.4**
GZR	**Gura Zlata**	**10.28**	**345**	⇑*i*P	**Pn**	**13 47 49.7**	**+1.4**
VRI	**Vrincioaia**	**10.33**	**0**	⇑*i*P	**Pn**	**13 47 51.4**	**+2.5**
VRI	**Vrincioaia**	**10.33**	**0**	⇑*i*P	**Pn**	**13 47 51.4**	**+2.5**
TEKS	**Tekeris**	**10.52**	**331**	*e*Pn	**Pn**	**13 47 53.4**	**+1.9**
BZS	**Buzias**	**10.77**	**341**	⇑*i*P	**Pn**	**13 47 56.0**	**+1.1**
BZS	**Buzias**	**10.77**	**341**	⇑*i*P	**Pn**	**13 47 56.0**	**+1.1**
NVLJ	**Novalja**	**12.74**	**319**	*i* Pn	Pn	13 48 17.9	-3.8
NVLJ				Sn	Sn	13 50 30.6	-11
KECS	**Kecovo**	**13.72**	**343**	*e*P	**P**	**13 48 43.5**	**+2.2**
STHS	**Stebnicka Huta**	**14.43**	**346**	*e*P	**P**	**13 48 50.7**	**+1.5**
LANS	**Liptovska Anna**	**14.60**	**341**	*e*P	**P**	**13 48 52.9**	**+1.8**
AKASG	**Malin Array Be**	**15.28**	**6**	P	**Pn**	**13 48 55.9**	**+0.7**
	comp=E,3.4nm,0.3s,baz=194,slow=11,SNR=21						
OKC	**Ostrava-Krasne**	**15.59**	**339**	*e*P	**P**	**13 49 02.0**	**0.0**
OKC	**Ostrava-Krasne**	**15.59**	**339**	P	**P**	**13 49 02.0**	**0.0**
VRAC	**Vranov**	**15.62**	**335**	P	**Pn**	**13 49 00.1**	**+0.6**
	comp=E,0.6nm,0.3s,baz=119,slow=10,SNR=6.4						
MORC	**Moravsky Berou**	**15.71**	**338**	*e*Pn	**Pn**	**13 48 59.7**	**-1.0**
	comp=E,69nm,0.8s						
GEC2	**GERESS Array S**	**16.36**	**328**	*e*Pn	**P**	**13 49 11.0**	**+0.2**
	comp=E,16nm,0.8s						
GERES	**GERESS Array B**	**16.36**	**328**	P	**Pn**	**13 49 08.7**	**-0.3**
	comp=E,1.2nm,0.3s,baz=142,slow=12,SNR=40						
DPC	**Dobruska-Polom**	**16.60**	**336**	*e*P	**P**	**13 49 13.0**	**-0.3**
DPC	**Dobruska-Polom**	**16.60**	**336**	P	**P**	**13 49 13.0**	**-0.3**
KHC	**Kasperske Hory**	**16.64**	**329**	*e*P	**P**	**13 49 14.4**	**+0.7**
KHC	**Kasperske Hory**	**16.64**	**329**	P	**P**	**13 49 14.4**	**+0.7**
KHC	**Kasperske Hory**	**16.64**	**329**	*e*Pn	**Pn**	**13 49 12.5**	**+0.2**
	comp=E,7.2nm,0.7s						
GOPC	**GO Pecny, Ondr**	**16.77**	**333**	*e*P	**P**	**13 49 15.1**	**-0.1**
GOPC	**GO Pecny, Ondr**	**16.77**	**333**	P	**P**	**13 49 15.1**	**-0.1**
DAVOX	**Davos/Dischmat**	**16.86**	**317**	P	**Pn**	**13 49 14.8**	**-0.4**
	comp=E,0.3nm,0.3s,baz=156,slow=18,SNR=4.4						
PRU	**Pruhonice**	**16.93**	**332**	*e*P	**P**	**13 49 17.0**	**+0.1**
PRU	**Pruhonice**	**16.93**	**332**	P	**P**	**13 49 17.0**	**+0.1**
PRA	**Prague**	**17.03**	**332**	*e*P	**P**	**13 49 18.4**	**+0.4**
PRA	**Prague**	**17.03**	**332**	P	**P**	**13 49 18.4**	**+0.4**
BRG	**Berggiesshubel**	**17.87**	**333**	*i* P	**Pn**	**13 49 27.6**	**+0.2**
	comp=E,21nm,1.2s						
BRG	**Berggiesshubel**	**17.87**	**333**	*e*P	**Pn**	**13 49 27.6**	**+0.2**
	comp=E,21nm,1.2s						
CLL	**Collm**	**18.57**	**332**	*i* P	**Pn**	**13 49 36.2**	**+0.3**
	comp=Z,8.0nm,0.6s						
CLL				*e*pP	**pP**	**13 49 46.0**	**-2.9**
MEM	**Membach**	**21.20**	**322**	P	**P**	**13 50 03.9**	**+0.4**
	comp=Z,15nm,1.3s						
MEM	**Membach**	**21.20**	**322**	P	**P**	**13 50 03.9**	**+0.4**
	comp=Z,15nm,1.3s						
BCLA	**Clavier**	**21.45**	**321**	P	**P**	**13 50 06.2**	**0.0**
BCLA	**Clavier**	**21.45**	**321**	P	**P**	**13 50 06.2**	**0.0**
DOU	**Dourbes**	**21.64**	**319**	P	**P**	**13 50 07.5**	**-0.6**
DOU	**Dourbes**	**21.64**	**319**	P	**P**	**13 50 07.5**	**-0.6**
ESDC	**Sonseca Array**	**24.52**	**289**	P	**P**	**13 50 37.4**	**+0.6**
	comp=Z,2.6nm,0.3s,baz=81,slow=9.8,SNR=23						
GEYT	**Alibeck**	**25.29**	**75**	P	**P**	**13 50 45.9**	**+2.1**
	comp=Z,10nm,0.8s,baz=282,slow=7.3,SNR=10						
FINES	**FINESS Array B**	**25.94**	**359**	P	**P**	**13 50 49.5**	**+0.2**
	comp=Z,1.6nm,0.6s,baz=152,slow=12,SNR=6.7						
HFS	**Hagfors**	**26.01**	**345**	P	**P**	**13 50 48.2**	**-1.8**
	comp=Z,4.8nm,0.8s,baz=200,slow=12,SNR=3.6						
NB2	**NORSAR Subarra**	**27.37**	**344**	P	**P**	**13 51 00.2**	**-2.0**
	comp=Z,1.7nm,0.6s,baz=150,slow=11						
TORD	**Torodi Ar. Bea**	**31.65**	**231**	P	**P**	**13 51 41.8**	**+1.2**
	comp=Z,1.7nm,0.7s,baz=34,slow=7.8,SNR=14						
ARCES	**ARCESS Array B**	**34.07**	**359**	P	**P**	**13 51 59.6**	**-1.5**
	comp=Z,2.1nm,0.8s,baz=190,slow=6.2,SNR=5.9						
BVAR	**Borovoye Array**	**35.23**	**46**	P	**P**	**13 52 11.6**	**+0.3**
	comp=Z,1.6nm,0.8s,baz=235,slow=5.2,SNR=3.9						
KURBB	**Kurchatov Arra**	**39.96**	**51**	P	**P**	**13 52 53.2**	**+1.9**
	comp=Z,5.8nm,0.7s,baz=277,slow=8.8,SNR=32						
KURK	**Kurchatov**	**40.02**	**51**	P	**P**	**13 52 53.2**	**+1.5**
MK31	**Makanchi Array**	**42.57**	**57**	*e*P	**P**	**13 53 14.9**	**+2.1**
MKAR	**Makanchi Array**	**42.57**	**57**	P	**P**	**13 53 14.8**	**+2.1**
	comp=Z,2.9nm,0.6s,baz=267,slow=9.1,SNR=20						
SPITS	**Spitsbergen Ar**	**42.98**	**357**	P	**P**	**13 53 14.5**	**-1.1**
	comp=Z,3.5nm,0.9s,baz=157,slow=11,SNR=12						
ZAA0	**Zalesovo Array**	**43.88**	**46**	*e*P	**P**	**13 53 23.9**	**+0.8**
ZALV	**Zalesovo Beam**	**43.88**	**46**	P	**P**	**13 53 24.1**	**+1.0**
	comp=Z,3.3nm,0.4s,baz=268,slow=8.8,SNR=16						
NRIK	**Noril'sk**	**47.04**	**25**	P	**P**	**13 53 48.9**	**+1.0**
	comp=Z,1.0nm,0.3s,baz=232,slow=3.5,SNR=4.3						
SONM	**Songino Array**	**58.32**	**51**	P	**P**	**13 55 12.8**	**+1.1**
	comp=Z,1.5nm,0.6s,baz=287,slow=8.0,SNR=8.3						
SCHQ	**Schefferville**	**63.68**	**320**	P	**P**	**13 55 47.3**	**-0.4**
	comp=Z,10nm,0.6s,baz=69,slow=6.7,SNR=11						
SEY	**Seymchan**	**72.76**	**23**	P	**P**	**13 56 44.6**	**+0.3**
	comp=Z,1.0nm,0.6s,baz=293,slow=7.2,SNR=10						
MA2	**Magadan**	**74.63**	**26**	P	**P**	**13 56 55.6**	**+0.3**
	comp=Z,1.1nm,0.3s,baz=0.3,slow=8.0,SNR=5.3						
KSAR	**Wonju Array Be**	**77.09**	**53**	P	**P**	**13 57 10.8**	**+1.1**
KSRS	**Korea Array**	**77.11**	**53**	P	**P**	**13 57 10.8**	**+1.0**
	comp=Z,0.9nm,0.6s,baz=308,slow=4.7,SNR=4.3						
YKA	**Yellowknife Ar**	**77.46**	**343**	P	**P**	**13 57 11.0**	**-0.3**
	comp=Z,2.2nm,0.9s,baz=33,slow=5.3,SNR=16						
ILAR	**Eielson Array**	**79.90**	**357**	P	**P**	**13 57 23.6**	**-1.1**
	comp=Z,0.6nm,0.7s,baz=338,slow=3.3,SNR=10						

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*ISCJB **01** 13:50:51.5±0.3, 36°.51N±0°.02×70°.95E±0°.03, h175km±3km, mb4.7/109, Error ellipse: s-maj=3.8km s-min=2.3km az=147.3*

*MOS **01** 13:50:52.2±1.0, 36°.51N×71°.01E, h184km, mb4.9/29, Error ellipse: s-maj=7.0km s-min=4.1km az=101.3*

*NEIC **01** 13:50:52.9±0.6, 36°.49N×70°.98E, h180km±5km, mb4.8/24, Error ellipse: s-maj=5.2km s-min=4.4km az=222.0*

NEIC Felt at Charikar, Jalalabad and Kabul. Also felt at Mansehra and Peshawar, Pakistan.

*BJI **01** 13:50:52.4, 36°.58N×70°.84E, h190km, mb4.6/33, mB5.1/16*

*IDC **01** 13:50:54.0±0.4, 36°.48N×70°.98E, h191km±3km, mb4.1/29, mb1 4.3/35, mb1mx4.0/59, mbtmp4.7/35, Error ellipse: s-maj=9.3km s-min=7.0km az=46.0*

*NNC **01** 13:50:57.4±2.0, 36°.94N×70°.75E, h190km±13km, mb4.2, mpv5.0, Error ellipse: s-maj=19.5km s-min=9.3km az=164.0*

ISC 01 13:50:54.0±0.3**, 36°.54N**±0°.03×**70°.97E**±0°.04**, h188**km±2km**, h188km:pP-P, n304,** σ1s.69/372**, mb4.7**/121**, 28C-26D, Hindu Kush region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KBL	**Kabul**	**2.54**	**219**	*e*PN	**Pn**	**13 51 36.8**	**-1.1**
KBL	**Kabul**	**2.54**	**219**	*e*Pn	**Pn**	**13 51 36.8**	**-1.1**
CEP	**Cherat**	**2.82**	**164**	P	**Pn**	**13 51 41.1**	**0.0**
CEP				S	**Sn**	**13 52 16.0**	**-1.8**
DZET	**Dzherino**	**2.83**	**324**	⇑P	**Pn**	**13 51 39.7**	**-1.4**
	1μm,0.4s						
DZET				⇑S	**Sn**	**13 52 13.2**	**-4.7**
	5μm,0.5s						
DZET	**Dzherino**	**2.83**	**324**	PN	**Pn**	**13 51 39.3**	**-1.8**
DZET				pmax	pmax		
	comp=Z,1μm,0.4s						
CHCP	**Chirah Chowk**	**3.44**	**146**	⇓P	**Pn**	**13 51 48.9**	**+0.4**
THW	**Thamme Wali**	**3.79**	**170**	⇓P	**Pn**	**13 51 52.5**	**-0.4**
SFK	**Sufi-Kurgan**	**4.00**	**29**	⇓P	**Pn**	**13 51 55.5**	**-0.1**
	comp=Z,84nm,0.4s						
SFK				⇓S	**Sn**	**13 52 41.8**	**-2.2**
	comp=Z,453nm,0.3s						
SFK	**Sufi-Kurgan**	**4.00**	**29**	PN	**Pn**	**13 51 55.3**	**-0.3**
SFK				S	**Sn**	**13 52 41.9**	**-2.0**
SFK				pmax	pmax		
	comp=Z,43nm,0.3s						
SFK				smax	smax		
	comp=N,884nm,0.6s						
SARP	**Sargodha**	**4.82**	**162**	P	**Pn**	**13 52 04.8**	**-1.1**
KSH	**Kashi**	**4.95**	**52**	P	Pn	13 52 03.3	-4.2
KSH				S	Sn	13 52 56.3	-9.1
KSH				smax	smax		
	comp=N,2μm,0.4s						
KSH				smax	smax		
	comp=N,1μm,0.3s						
THN	**Thein Dam**	**5.67**	**135**	*e*P	**Pn**	**13 52 16.0**	**-0.9**
THN				*e*S	**Sn**	**13 53 19.4**	**-2.7**
MNAS	**Manas**	**6.06**	**11**	⇑P	**Pn**	**13 52 21.3**	**-0.6**
	comp=N,42nm,0.4s						
MNAS				⇑S	**Sn**	**13 53 27.6**	**-3.7**
	comp=N,1μm,0.6s						
MNAS	**Manas**	**6.06**	**11**	PN	**Pn**	**13 52 21.0**	**-0.9**
MNAS				pmax	pmax		
	comp=Z,160nm,0.6s						
DHRM	**DHARAMSHALA**	**6.14**	**133**	*e*P	**Pn**	**13 52 22.8**	**-0.5**
DHRM				*e*S	**Sn**	**13 53 29.3**	**-4.3**
JWA	**Jwalamukhi**	**6.44**	**135**	*e*P	**Pn**	**13 52 25.0**	**-1.9**
JWA				*e*S	**Sn**	**13 53 35.0**	**-5.3**
EKS2	**Erkin-Say**	**6.49**	**19**	*e*PN	**Pn**	**13 52 27.2**	**-0.3**
EKS2	**Erkin-Say**	**6.49**	**19**	*e*Pn	**Pn**	**13 52 27.2**	**-0.3**
KK31	**Karatay Array**	**6.56**	**357**	⇑P	**Pn**	**13 52 27.5**	**-0.9**
	comp=Z,68nm,0.3s,baz=177,slow=12,SNR=1600						
KK31				⇓S	**Sn**	**13 53 37.4**	**-5.7**
	comp=Z,382nm,0.5s,baz=186,slow=21,SNR=7.1						
KK31	**Karatay Array**	**6.56**	**357**	*e*PN	**Pn**	**13 52 27.2**	**-1.2**
KK31				pmax	pmax		

comp=Z,68nm,0.3s
KKAR Karatay Array 6.56 357 *e*PN **Pn** 13 52 27.7 -0.7
KKAR Karatay Array 6.56 357 *e*Pn **Pn** 13 52 27.7 -0.7
AAK Ala-Archa 6.67 23 P **Pn** 13 52 29.4 -0.5
comp=Z,19nm,0.3s,baz=162,slow=5.2,SNR=98
AAK S **Sn** 13 53 41.4 -4.4
comp=Z,31nm,0.3s,baz=334,slow=19,SNR=13
AAK Ala-Archa 6.67 23 ⇑P **Pn** 13 52 29.7 -0.2
comp=Z,28nm,0.3s
AAK ⇑S **Sn** 13 53 42.8 -2.9
comp=Z,412nm,0.8s
AAK Ala-Archa 6.67 23 ⇓*e*PN **Pn** 13 52 29.3 -0.6
AAK Ala-Archa 6.67 23 *e*Pn **Pn** 13 52 29.7 -0.2
AAK S **Sn** 13 53 41.4 -4.4
AAK *e*Sn Sn 13 53 43.4 -2.3
FRU Bishkek 6.89 23 *e*PN **Pn** 13 52 32.0 -0.7
FRU pmax pmax
comp=Z,170nm,1.8s
SDNR Sundarnagar 7.08 134 *e*P **Pn** 13 52 33.0 -2.3
SDNR *e*S **Sn** 13 53 50.0 -5.4
TKM2 Tokmak 2 7.30 28 ⇓P **Pn** 13 52 37.7 -0.5
comp=Z,90nm,0.7s
TKM2 ⇑S **Sn** 13 53 57.6 -3.2
comp=Z,166nm,0.8s
TKM2 Tokmak 2 7.30 28 *e*PN **Pn** 13 52 38.0 -0.3
TKM2 Tokmak 2 7.30 28 *e*Pn **Pn** 13 52 38.0 -0.3
SMLA Simla 7.46 135 *e*P **Pn** 13 52 38.9 -1.4
SMLA *i* P **Pn** 13 52 39.4 -0.9
SMLA *e*S **Sn** 13 53 60.0 -4.5
SMLA *i* S **Sn** 13 54 00.0 -4.5
SMLA *i* S **Sn** 13 54 00.0 -4.5
KKR Kurukshetra 8.19 142 *e*S **Sn** 13 54 16.5 -5.3
DDI Dehra Dun 8.57 134 *e*P **Pn** 13 52 54.0 -0.9
BHGR Bahadurgarh 9.31 146 *ex* Sn 13 54 39.7 -8.8
KHET Khetri 9.38 153 *e*P **Pn** 13 53 02.4 -3.0
KHET *e*P **Pn** 13 53 02.4 -3.0
KHET *e*S Sn 13 54 39.8 -10
KHET IAML 13 54 44.7
comp=E,388nm,0.5s
KHET IAML 13 54 45.7
comp=N,325nm,0.7s
NDI New Delhi 9.44 144 *e*P Pn 13 53 02.0 -4.2
NDI *e*S Sn 13 54 40.0 -12
AYAN Aya Nagar 9.57 145 *e*P **Pn** 13 53 05.8 -2.0
AYAN *e*P **Pn** 13 53 05.8 -2.0
AYAN *e*S Sn 13 54 45.4 -9.2
KUDL Kundal 9.59 149 *e*P **Pn** 13 53 05.6 -2.4
KUDL *e*P **Pn** 13 53 05.6 -2.4
KUDL *e*S Sn 13 54 44.8 -10
KUDL IAML 13 54 46.9
comp=E,404nm,0.4s
KUDL IAML 13 54 49.0
comp=N,397nm,0.8s
SONA Sohna 9.75 146 *e*P **Pn** 13 53 09.1 -1.1
SONA *e*P **Pn** 13 53 09.1 -1.1
SONA *e*S Sn 13 54 49.5 -9.5
SONA IAML 13 54 50.2
comp=N,260nm,0.8s
SONA IAML 13 54 51.8
comp=E,817nm,0.8s
GEYT Alibeck 10.34 282 P Pn 13 53 14.5 -3.3
comp=E,5.2nm,0.3s,baz=113,slow=11,SNR=34
GEYT S Sn 13 55 04.1 -8.9
comp=E,16nm,0.3s,baz=130,slow=18,SNR=7.5
LGTI Lohaghat 10.52 130 *e*P **Pn** 13 53 17.2 -3.0
LGTI *e*S Sn 13 55 06.8 -11
MAKZ Makanchi 13.14 35 *e*P **Pn** 13 53 52.5 -1.0
MAKZ Makanchi 13.14 35 *e*Pn **Pn** 13 53 52.5 -1.0
PYUN Piuthan 13.19 126 *e*P **Pn** 13 53 52.0 -2.5
comp=E,527nm,0.9s
MK01 Makanchi Array 13.26 36 *e*Pn **Pn** 13 53 54.6 -0.5
MK31 Makanchi Array 13.28 36 ⇓P **Pn** 13 53 54.5 -0.8
comp=E,25nm,0.7s,baz=217,slow=10,SNR=39
MKAR Makanchi Array 13.28 36 P **Pn** 13 53 53.8 -1.5
comp=E,0.5nm,0.3s,baz=220,slow=11,SNR=21
MKAR sP sP 13 54 43.4
comp=E,0.7nm,0.3s,baz=223,slow=12,SNR=4.3
BHJ Bhuj 13.29 185 *e*P **Pn** 13 53 53.5 -2.1
KOLN Koldanda 13.81 126 *e*P **Pn** 13 54 00.2 -2.1
GKN Gorkha 14.35 123 *e*P **Pn** 13 54 07.2 -1.7
comp=E,238nm,0.4s
GKN *e*S Sn 13 56 36.8 -12
BHPL Bhopal 14.38 155 *e*P **Pn** 13 54 08.1 -1.2
BHPL *ex* Sn 13 56 37.3 -13
WMQ Urumqi 14.70 55 *e*P **Pn** 13 54 13.3 +0.3
WMQ sP sP 13 54 58.6
WMQ pmax pmax
comp=E,8.0nm,0.8s
WMQ pmax pmax
comp=E,100nm,5.0s
WMQ LR LR
comp=E,1μm,18.8s
WMQ LR LR
comp=E,1μm,20.8s
WMQ LR LR
comp=E,1μm,23.6s
DMN Daman 14.92 123 *e*P **Pn** 13 54 14.9 -1.1
comp=E,472nm,0.8s
KKN Kakani 14.92 122 *e*P **Pn** 13 54 14.5 -1.5
comp=E,736nm,1.0s
AB31 Akbulak array 15.04 331 ⇓P **Pn** 13 54 14.7 -2.3
comp=E,29nm,0.5s,baz=145,slow=12,SNR=1054
AB31 ⇑S S 13 56 54.1 -11
comp=E,33nm,0.5s
AB31 Akbulak array 15.04 331 *i* P **Pn** 13 54 14.7 -2.3
AB31 S S 13 56 54.0 -11
AB31 pmax pmax
comp=Z,29nm,0.5s
AB31 smax smax
comp=N,33nm,0.5s
ABKAR Akbulak array 15.04 331 *e*Pn **Pn** 13 54 15.1 -1.9
KURBB Kurchatov Arra 15.09 19 P **Pn** 13 54 14.8 -2.9
comp=N,0.8nm,0.3s,baz=210,slow=10,SNR=52
KURBB S **Sn** 13 57 07.2 +0.9
baz=191,slow=25,SNR=4.5
KURBB Kurchatov Arra 15.09 19 ⇓P **Pn** 13 54 17.0 -0.6
comp=N,53nm,0.8s
PKIN Phulchoki 15.14 122 *e*P **Pn** 13 54 16.9 -1.8
comp=N,669nm,0.7s
KURK Kurchatov 15.20 19 ⇓P **Pn** 13 54 16.6 -2.4
comp=N,132nm,1.2s
KURK Kurchatov 15.20 19 P **Pn** 13 54 14.8 -4.2
KURK S **S** 13 57 07.2 -1.4
KURK pmax pmax
comp=Z,1.0nm,0.3s
KURK Kurchatov 15.20 19 *e*Pn **Pn** 13 54 14.4 -4.5
comp=Z,58nm,1.1s
KURK S **S** 13 57 07.2 -1.4
GUN Gumba 15.26 120 *e*P **Pn** 13 54 19.1 -1.2
comp=Z,213nm,0.6s
VOSK Vostochnaya 16.18 0 ⇓P **P** 13 54 29.1 -1.4
comp=Z,49nm,0.9s
VOSK Vostochnaya 16.18 0 P **P** 13 54 28.7 -1.8
VOSK pmax pmax
comp=Z,49nm,0.9s
RAMN Ramite 16.36 121 *e*P **P** 13 54 32.7 -0.3
comp=Z,249nm,0.6s
BANOM Banah 16.39 234 *i* P **P** 13 54 32.3 -0.8
SNR=11
ZRNK Zerenda 16.47 356 ⇓P **P** 13 54 32.8 -0.8
comp=Z,56nm,0.6s
ZRNK Zerenda 16.47 356 P **P** 13 54 32.8 -0.8
ZRNK pmax pmax
comp=Z,56nm,0.6s
BVA0 Borovoye Array 16.49 359 P **P** 13 54 33.2 -0.7
comp=Z,56nm,0.9s,baz=168,slow=12,SNR=146
BVA0 S **S** 13 57 34.2 -2.0
comp=Z,42nm,1.1s,baz=171,slow=24,SNR=7.7
BVAR Borovoye Array 16.49 359 P **P** 13 54 33.2 -0.6
comp=Z,4.1nm,0.3s,baz=170,slow=9.0,SNR=114
BVAR S **S** 13 57 32.6 -3.6
comp=Z,2.7nm,0.3s,baz=168,slow=23,SNR=6.5
BRVK Borovoye 16.52 359 ⇓P **P** 13 54 33.6 -0.6
comp=Z,94nm,0.8s
BRVK Borovoye 16.52 359*c* *i*P **P** 13 54 34.2 0.0
BRVK Borovoye 16.52 359 *e*P **P** 13 54 33.3 -0.9
comp=Z,109nm,1.1s
AKTO Aktyubinsk 16.73 330 P **P** 13 54 37.1 +0.5
comp=Z,15nm,0.3s,baz=136,slow=10,SNR=242
AKTO S **S** 13 57 35.7 -5.6
comp=Z,1.5nm,0.3s,baz=260,slow=23,SNR=3.7
AKTO Aktyubinsk 16.73 330 ⇑P **P** 13 54 36.5 0.0
comp=Z,208nm,0.9s
TAPN Taplejung 16.89 118 *e*P **Pn** 13 54 39.3 -0.6
comp=Z,215nm,0.8s

ODAN Odare 16.96 120 *e*P **Pn** 13 54 40.5 -0.2
comp=Z,368nm,0.9s
WSAR Wadi Sarin 17.01 222 P **P** 13 54 39.2 -0.7
comp=Z,0.7nm,0.3s,baz=76,slow=13,SNR=8.8
UOSS Minazif 17.14 232 *e*P **P** 13 54 39.9 -1.3
comp=Z,1.1nm,1.0s
ASHO Ashiyiah 17.42 231 *i* P **P** 13 54 44.3 -0.1
SNR=9.5
ASUD Al Ashush, Dub 17.92 233 P **P** 13 54 49.6 -0.2
BOK Bokaro 18.07 131 *e*P **P** 13 54 51.7 +0.2
POO Poona 18.12 171 ⇓*i*P **P** 13 54 50.0 -2.1
comp=Z,4.0nm,1.2s
POO *i* PP Pn 13 55 08.0 +14
POO *i* PPP PPP 13 55 18.0
POO *i* S **Sn** **13 58 25.0 +6.3**
POO *i* LQ LQ 13 58 30.0
POO *i* SS S 13 58 52.0 +42
POO *i* SSS SSS 13 59 05.0
POO *e*PCP PcP 13 59 10.0 -6.9
POO *i* LR LR 13 59 31.0
POO *i* M M 14 01 03.0
POO *e*PCS PcS 14 02 46.0 -7.8
POO *e*SCS ScS 14 06 27.0 +12
POO Poona 18.12 171 *e*P **P** **13 54 49.9 -2.1**
POO IAmb IAmb 13 54 54.8
comp=Z,24nm,0.7s
LSA Lhasa 18.22 106 *e*P **P** **13 54 54.1 +0.6**
LSA pmax pmax
comp=Z,81nm,0.8s
LSA Lhasa 18.22 106 *e*P **P** **13 54 54.1 +0.6**
comp=Z,81nm,0.8s
ZAA0 Zalesovo Array 19.89 25 *e*P **P** **13 55 10.0 -0.8**
ZALV Zalesovo Beam 19.89 25 P **P** **13 55 10.8 0.0**
comp=Z,6.0nm,0.3s,baz=222,slow=11,SNR=151
ZALV S **S** **13 58 40.8 -3.2**
baz=217,slow=19,SNR=5.1
NVS Novosibirsk 20.15 21 *e*P **P** **13 55 14.2 +0.6**
NVS *e* 13 58 47.8
HYB Hyderabad 20.20 159 *i* P **P** **13 55 15.0 +0.6**
HYB *e*S **S** **13 58 47.0 -3.8**
GNI Garni 20.85 288 P **P** **13 55 21.6 +0.2**
comp=Z,35nm,0.9s,baz=43,slow=2.1,SNR=19
GNI Garni 20.85 288*d* *i*P **P** **13 55 22.8 +1.4**
GNI pmax pmax
comp=Z,270nm,1.0s
GNI Garni 20.85 288 *e*P **P** **13 55 21.1 -0.3**
comp=Z,506nm,1.3s
SHL Shillong 20.95 116 *e*P **P** **13 55 22.4 -0.2**
SHL *ex* **S** **13 59 12.0 +6.7**
GOA Goa 21.12 172 *e*P **P** **13 55 23.8 -0.3**
SVE Sverdlovsk 21.45 344 ⇓*i*P **P** **13 55 27.8 +0.5**
SVE pmax pmax
comp=Z,63nm,0.8s
ARU Arti 21.59 341 P **P** **13 55 29.1 +0.4**
comp=Z,25nm,0.6s,baz=152,slow=5.6,SNR=37
ARU Arti 21.59 341*d* *i*P **P** **13 55 28.6 -0.1**
ARU 13 56 03.0
ARU S **S** **13 59 17.7 +2.6**
ARU pmax pmax
comp=Z,124nm,1.2s
ARU Arti 21.59 341 *e*P **P** **13 55 27.6 -1.1**
comp=Z,115nm,1.2s
ZEI Tsey 21.70 295 *e*P **P** **13 55 30.6 +0.4**
ZEI pmax pmax
comp=Z,27nm,0.8s
VIS Vishakhapatnam 21.70 146 *ex* P 13 55 35.5 +5.2
NCK Nalchik 22.02 297⇑ *e*P **P** **13 55 33.0 -0.3**
NCK pmax pmax
comp=Z,42nm,0.9s
KBZ Khabaz 22.56 297 P **P** **13 55 37.8 -0.4**
comp=Z,7.7nm,0.7s,baz=114,slow=9.2,SNR=22
NEY Neytrino 22.61 296⇑ *e*P **P** **13 55 40.9 +1.9**
NEY pmax pmax
comp=Z,17nm,2.3s
GOF Gofitskoye 22.70 301⇑ *e*P **P** **13 55 41.0 +1.5**
GOF pmax pmax
comp=Z,147nm,1.5s
KIV Kislovodsk 22.74 298 *i* P **P** **13 55 41.0 +1.0**
KIV *i* 13 59 24.4
KIV pmax pmax
comp=Z,14nm,1.5s
KIV Kislovodsk 22.74 298 *e*P **P** **13 55 39.0 -1.0**
comp=Z,29nm,0.7s
GTA Gaotai 22.88 74 *e*P **P** **13 55 43.1 +1.7**
GTA pP pP 13 56 17.4 +1.9
GTA sP sP 13 56 39.0 0.0
GTA pmax pmax
comp=Z,9.0nm,1.1s
KRAR Krasnoyarsk 24.48 30⇑ *e*P **P** **13 55 56.5 +1.0**
KRAR pmax pmax
comp=Z,7.0nm,0.6s
MDRS Chennai 24.82 158 *e*P **P** **13 55 57.7 -1.2**
MDRS IAmb IAmb 13 56 01.0
comp=Z,32nm,0.9s
SOC Sochi 24.83 296 *e*P **P** **13 56 00.1 +1.3**
SOC pmax pmax
comp=Z,27nm,0.9s
VRH Novokhopyorsk 25.46 314 *e*P **P** **13 56 03.7 -0.7**
VRH pmax pmax
comp=Z,20nm,0.6s
LZH Lanzhou 26.43 81 *e*P **P** **13 56 16.3 +2.8**
LZH pP pP 13 56 56.9 +5.2
LZH sP PP 13 57 18.1 +1.1
LZH pmax pmax
comp=Z,29nm,1.2s
LZH pmax pmax
comp=Z,150nm,5.3s
VSR Storozhevoye 26.95 313 *e*P **P** **13 56 17.4 -0.4**
VSR pmax pmax
comp=Z,30nm,1.0s
LPSR Galich'ya Gora 27.60 316 *e*P **P** **13 56 23.7 +0.1**
LPSR pmax pmax
comp=Z,40nm,0.9s
CD2 Chengdu 27.76 92 P **P** **13 56 27.3 +2.0**
CD2 pP pP 13 57 05.7 +2.0
CD2 sP sP 13 57 26.2 +0.7
CD2 S **S** **14 00 57.1 +3.1**
CD2 sS sS 14 02 04.5 +2.0
CD2 pmax pmax
comp=Z,30nm,1.1s
CD2 pmax pmax
comp=Z,770nm,6.3s
SONM Songino Array 28.34 55 P **P** **13 56 30.7 +0.4**
comp=Z,2.3nm,0.8s,baz=255,slow=8.9,SNR=8.3
SONM pP **pP** **13 57 10.8 +2.0**
comp=Z,1.2nm,0.6s,baz=260,slow=9.9,SNR=2.3
ULN Ulaanbaatar 28.78 55⇑ *e*P **P** **13 56 35.1 +0.9**
ULN pmax pmax
comp=Z,2.0nm,0.7s
BR131 Keskin Array S 29.39 288 *e*P **P** **13 56 41.2 +1.4**
BRTR Keskin Array B 29.39 288 P **P** **13 56 40.0 +0.3**
comp=Z,1.9nm,0.7s,baz=105,slow=9.3,SNR=9.4
KMI Kunming 29.43 104 P **P** **13 56 37.5 -2.9**
KMI pmax pmax
comp=Z,9.0nm,0.9s
CMAI Chiengmai2 29.61 116 P **P** **13 56 42.7 +0.8**
comp=Z,104nm,0.9s,comp=Z,11μm
MOS Moscow 29.61 321 *e*P **P** **13 56 40.7 -0.6**
MOS pmax pmax
comp=Z,55nm,0.8s
OBN Obninsk 29.89 319 ⇓*i*P **P** **13 56 44.0 +0.3**
OBN *i* *PP **pP** **13 57 22.9 +0.5**
OBN *i* 13 57 52.2
OBN pmax pmax
comp=Z,39nm,1.2s
MHMT Maesarieng 29.98 120 P **P** **13 56 46.1 +1.2**
comp=Z,14nm,0.7s
BR231 Keskin MP Arra 30.04 288 *e*P P 13 56 40.6 -4.9
CHTO Chiang Mai 30.26 118 P **P** **13 56 49.5 +2.0**
comp=Z,46nm,0.7s
CHTO Chiang Mai 30.26 118 *e*P **P** **13 56 44.5 -3.0**
CHTO pmax pmax
comp=Z,28nm,1.6s
CHTO Chiang Mai 30.26 118 *e*P **P** **13 56 44.5 -3.0**
comp=Z,28nm,1.6s
CMMT Chiang Mai 30.27 118 P **P** **13 56 49.3 +1.8**
comp=Z,19nm,0.8s
PALK Pallekele 30.46 161 P **P** **13 56 49.0 -0.2**
comp=Z,24nm,0.9s,baz=295,slow=7.4,SNR=11
PALK Pallekele 30.46 161 *i* P **P** **13 56 49.9 +0.7**
SNR=6.6
PALK Pallekele 30.46 161 P **P** **13 56 49.0 -0.2**
PALK pmax pmax
comp=Z,25nm,0.9s
PALK Pallekele 30.46 161 *e*P **P** **13 56 48.2 -1.0**

comp=Z,27nm,0.8s
DGPR DIGLIPUR 30.49 134 *e*P **P** **13 56 51.1 +1.7**
CM31 Chiang Mai Arr 30.50 119 *e*P **P** **13 56 51.2 +1.6**
CMAR Chiang Mai Arr 30.50 119 P **P** **13 56 48.6 -0.9**
comp=Z,10.0nm,0.9s,baz=299,slow=8.2,SNR=35
CMAR pP **pP** **13 57 29.0 +0.7**
comp=Z,3.7nm,0.9s,baz=298,slow=10.0,SNR=2.7
CM01 Chiang Mai Arr 30.54 119 *e*P **P** **13 56 50.1 +0.2**
CM01 *e*pP **pP** **13 57 29.3 +0.7**
LAMP Lampang 30.95 118 P **P** **13 56 55.0 +1.6**
comp=Z,4.4nm,1.0s
XAN Xi'an 30.95 83 P **P** **13 56 54.1 +0.7**
XAN pP pP 13 57 30.1 -2.1
XAN pmax pmax
comp=Z,14nm,1.2s
KLMR Klimovskoe 31.43 331 *e*P **P** **13 56 54.7 -2.5**
KLMR *e* 13 58 04.5
KLMR pmax pmax
comp=Z,41nm,1.2s
NANT Nan 31.53 116 P **P** **13 56 58.0 -0.6**
comp=Z,6.5nm,0.8s
SUKH Sukhothai 31.64 119 P **P** **13 57 00.7 +1.2**
comp=Z,15nm,0.8s,comp=Z,233nm
HHC Hu-ho-hao-te 31.77 70⇑ *i*P **P** **13 57 02.3 +1.7**
HHC pmax pmax
comp=Z,24nm,1.2s
GYA Guiyang 31.90 98 P **P** **13 57 02.8 +0.9**
GYA pP pP 13 57 41.0 +0.2
GYA sP sP 13 58 02.4 0.0
GYA PP **PnPn** **13 58 15.6 +0.7**
GYA PcP **PcP** **13 59 48.9 +1.2**
GYA S **S** **14 01 58.5 -0.4**
GYA sS sS 14 03 06.0 -1.8
GYA ScP **ScP** **14 03 14.0 +0.8**
GYA PcS **PcS** **14 03 32.2 -0.7**
GYA ScS **ScS** **14 07 11.6 -0.7**
GYA pmax pmax
comp=Z,10.0nm,1.0s
UMPA Umpang Tak 31.98 122 P **P** **13 57 05.1 +2.6**
comp=Z,7.9nm,0.9s
UTTA Uttaradit 32.12 118 P **P** **13 57 04.6 +0.9**
comp=Z,13nm,0.7s,comp=Z,107nm
PHIT Phitsanulok 32.39 119 P **P** **13 57 07.7 +1.7**
comp=Z,29nm,1.0s
ENH Enshi 32.60 90 *e*P **P** **13 57 07.5 -0.4**
LOEI Loei 32.78 117 P **P** **13 57 11.8 +2.3**
comp=Z,36nm,0.9s,comp=Z,6μm
KHLT Khaolaem Dam 32.79 124 P **P** **13 57 11.4 +1.8**
comp=Z,10nm,1.0s
UTHA Uthaitani 32.83 122 P **P** **13 57 11.4 +1.5**
comp=Z,7.9nm,0.9s,comp=Z,61nm
AKASG Malin Array Be 32.90 309 P **P** **13 57 10.1 0.0**
comp=Z,8.6nm,0.6s,baz=81,slow=7.0,SNR=38
KIEV Kiev 32.91 309⇑ *e*P **P** **13 57 10.3 +0.1**
KIEV pmax pmax
comp=Z,12nm,0.8s
KIEV Kiev 32.91 309 *e*P **P** **13 57 09.0 -1.2**
comp=Z,12nm,0.6s
AK11 Malin Array Si 32.93 309 *e*P **P** **13 57 10.3 -0.1**
PBKT Sadao Pong 33.19 119 P **P** **13 57 14.2 +1.2**
comp=Z,27nm,1.3s
SRDT SRDT 33.47 124 P **P** **13 57 16.9 +1.5**
comp=Z,101nm,1.2s,comp=Z,18μm
NONG Nongkai 33.78 114 P **P** **13 57 18.4 +0.3**
comp=Z,30nm,0.8s,comp=Z,2μm
TMCR Tamitsa 34.00 335 *e*P **P** **13 57 19.9 +0.5**
TMCR pmax pmax
comp=Z,30nm,0.7s
NRIK Noril'sk 34.09 10 P **P** **13 57 20.6 +0.4**
comp=Z,23nm,0.9s,baz=192,slow=6.5,SNR=13
NRIK pP **pP** **13 58 00.4 +1.1**
comp=Z,19nm,0.8s,baz=199,slow=6.4,SNR=5.8
PLOR Plostina 34.24 300 ⇓*i*P **P** **13 57 23.8 +2.0**
TESR Tescani 34.24 301⇑ *i*P **P** **13 57 22.9 +1.1**
CHAI Chaiyaphum 34.36 119 P **P** **13 57 24.3 +1.2**
comp=Z,9.4nm,1.0s,comp=Z,106nm
KHON Khomkaen 34.67 117 P **P** **13 57 26.7 +1.0**
comp=Z,15nm,0.7s,comp=Z,1μm
MLR Muntele Rosu 34.74 299 P **P** **13 57 27.0 +0.8**
comp=Z,4.8nm,0.9s,baz=63,slow=3.3,SNR=27
MLR Muntele Rosu 34.74 299⇑ *i*P **P** **13 57 28.7 +2.5**
MLR Muntele Rosu 34.74 299 *e*P **P** **13 57 28.4 +2.2**
MLR pmax pmax
comp=Z,22nm,0.9s
MLR Muntele Rosu 34.74 299 *e*P **P** **13 57 28.4 +2.2**
comp=Z,22nm,0.9s
PHET Kaeng Krachan 34.85 125 P **P** **13 57 28.8 +1.5**
comp=Z,11nm,0.8s,comp=Z,105nm
NAYO Nakonayok 34.99 121 P **P** **13 57 29.7 +1.2**
comp=Z,16nm,1.2s,comp=Z,802nm
JOSR Joseni 35.02 301 ⇓*i*P **P** **13 57 29.5 +0.9**
SKNT Sakolnakorn 35.09 115 P **P** **13 57 29.7 +0.3**
comp=Z,44nm,1.2s
DOPR Dopca 35.12 300 ⇓*i*P **P** **13 57 30.9 +1.6**
BURAR Bucovina Array 35.24 303⇑ *i*P **P** **13 57 31.3 +0.8**
BUR08 Bucovina Ar. S 35.25 303 *e*P **P** **13 57 30.4 -0.2**
VOIR 35.37 299⇑ *i*P **P** **13 57 32.7 +1.1**
BJI Beijing 35.37 70 P **P** **13 57 28.7 -2.8**
PANO Nakornpanom 35.44 114 P **P** **13 57 33.3 +0.9**
comp=Z,63nm,1.3s
ARR Arges 35.66 299 ⇓*i*P **P** **13 57 35.5 +1.4**
SRAK Srakaew 35.70 121 P P 13 57 40.0 +5.5
comp=Z,40nm,0.9s
LVV L'vov 36.11 307 *i* P **P** **13 57 38.0 +0.3**
VSU Vasula 36.13 322 ⇓*e*P **P** **13 57 37.6 -0.2**
VSU pmax pmax
comp=Z,65nm,0.8s
CHBT CHBT 36.78 122 P **P** **13 57 45.7 +2.0**
comp=Z,30nm,1.5s
KOLS Kolonicke sedl 37.23 305 *e*P **P** **13 57 48.2 +1.0**
KOLS pmax pmax
comp=Z,6.0nm,0.7s
KOLS Kolonicke sedl 37.23 305 *e*P **P** **13 57 48.2 +1.0**
FIA1 FINESS Array S 37.43 326 *e*P **P** **13 57 48.6 -0.1**
FINES FINESS Array B 37.43 326 P **P** **13 57 49.1 +0.4**
comp=Z,15nm,0.7s,baz=109,slow=11,SNR=57
FINES pP **pP** **13 58 28.2 -0.2**
comp=Z,5.6nm,0.8s,baz=120,slow=11,SNR=3.6
APA Apatity 37.59 337 *i* P **P** **13 57 50.6 +0.7**
APA *i* S **S** **14 03 24.0 -0.8**
APA MLR MLR
comp=Z,700nm,12.0s
CRVS Cervenica-Dubn 37.77 305 *e*P **P** **13 57 51.6 -0.1**
CRVS Cervenica-Dubn 37.77 305 *e*P **P** **13 57 51.6 -0.1**
STHS Stebnicka Huta 37.91 306 *e*P **P** **13 57 53.5 +0.6**
STHS pmax pmax
comp=Z,4.0nm,0.7s
STHS Stebnicka Huta 37.91 306 *e*P **P** **13 57 53.5 +0.6**
KRAB Krabi 38.13 131 P **P** **13 57 56.7 +1.6**
comp=Z,18nm,1.0s
KECS Kecovo 38.41 304 *e*P **P** **13 57 55.5 -1.6**
KECS pmax pmax
comp=Z,2.0nm,0.7s
KECS Kecovo 38.41 304 *e*P **P** **13 57 55.5 -1.6**
VYHS Vyhne 39.51 304 *e*P **P** **13 58 07.1 +0.9**
VYHS pmax pmax
comp=Z,6.0nm,1.6s
VYHS Vyhne 39.51 304 *e*P **P** **13 58 07.1 +0.9**
MORC Moravsky Berou 40.32 306 *e*P **P** **13 58 13.4 +0.5**
MORC pmax pmax
comp=Z,37nm,0.8s
MORC Moravsky Berou 40.32 306 *e*P **P** **13 58 13.4 +0.5**
comp=Z,36nm,0.8s
VRAC Vranov 40.95 306 P **P** **13 58 18.4 +0.3**
comp=Z,8.6nm,0.7s,baz=98,slow=7.7,SNR=7.9
VRAC pP **pP** **13 58 58.7 +0.4**
comp=Z,11nm,0.8s,baz=70,slow=9.6,SNR=4.1
TPTI 40.99 138 P **P** **13 58 18.8 +0.1**
comp=Z,20nm,1.0s
DPC Dobruska-Polom 41.09 307 *e*P **P** **13 58 20.5 +1.4**
DPC *e*pP **pP** **13 59 01.3 +1.8**
DPC Dobruska-Polom 41.09 307 *e*P **P** **13 58 20.5 +1.4**
DPC *e* 13 59 01.3
KCSI Kotacane, Aceh 41.09 137 P **P** **13 58 17.9 -1.6**
comp=Z,25nm,1.0s
ARA0 ARCESS Array S 41.10 338 *e*P **P** **13 58 19.0 +0.1**
ARA0 *e*pP **pP** **13 58 59.9 +0.7**
ARCES ARCESS Array B 41.10 338 P **P** **13 58 19.6 +0.7**
comp=Z,26nm,0.7s,baz=110,slow=8.7,SNR=89
ARCES pP **pP** **13 58 59.7 +0.5**
comp=Z,18nm,0.8s,baz=120,slow=8.7,SNR=9.6
ARE0 ARCESS Array S 41.10 338 *e*P **P** **13 58 19.9 +1.0**
ARE0 IAmb IAmb 13 58 20.4
comp=Z,24nm,0.8s
UPC Upice 41.28 308 *e*P **P** **13 58 21.9 +1.2**

UPC	Upice	41.28	308	eP	P	13 58 21.9	+1.2
KTK1	Kautokeino	41.57	336	eP	P	13 58 23.4	+0.6
KTK1				IAmb	IAmb	13 58 23.6	
	comp=Z,22nm,0.7s						
CN2	Changchun	41.61	63	eP	P	13 58 24.0	+0.5
HAMF	Hammerfest	42.18	339	eP	P	13 58 28.9	+1.3
HAMF				IAmb	IAmb	13 58 29.3	
	comp=Z,50nm,0.6s						
IPM	Ipoh	42.19	132	eP	P	13 58 28.5	0.0
	comp=Z,31nm,0.9s						
PRU	Pruhonice	42.25	307	eP	P	13 58 29.7	+1.2
PRU				epP	pP	13 59 10.2	+1.2
PRU	Pruhonice	42.25	307	eP	P	13 58 29.7	+1.2
PRU				e		13 59 10.2	
PSI	Prapat	42.33	136	P	P	13 58 29.2	-0.4
	comp=Z,18nm,0.7s,baz=323,slow=8.5,SNR=13						
PSI				pP	pP	13 59 10.3	+0.1
	comp=Z,8.1nm,0.7s,baz=13,slow=8.7,SNR=2.3						
PSI	Prapat	42.33	136	eP	P	13 58 28.0	-1.7
	comp=Z,24nm,0.8s						
PSI				pP	pP	13 59 10.3	+0.1
BRG	Berggiesshubel	42.58	308	i P	P	13 58 32.2	+1.1
	comp=Z,12nm,0.8s						
BRG				epP	pP	13 59 13.3	+1.6
	comp=Z,15nm,1.1s						
BRG				esP	sP	13 59 34.1	+1.1
	comp=Z,5.8nm,0.8s						
BRG	Berggiesshubel	42.58	308	i P	P	13 58 32.2	+1.1
BRG				e*PP	pP	13 59 13.3	+1.6
BRG				e*SP	sP	13 59 34.1	+1.1
BRG				pmax	pmax		
	comp=Z,12nm,0.8s						
BRG				pmax	pmax		
	comp=Z,15nm,1.1s						
BRG				pmax	pmax		
	comp=N,6.0nm,0.9s						
GSI	Gunungsitoli	42.84	139	P	P	13 58 34.4	+0.7
	comp=N,131nm,0.9s						
GSI	Gunungsitoli	42.84	139	P	P	13 58 30.9	-2.7
	comp=N,85nm,0.8s						
GERES	GERESS Array B	42.88	305	P	P	13 58 34.7	+0.9
	comp=N,1.5nm,0.8s,baz=82,slow=9.8,SNR=7.6						
GERES				PP	PcP	14 00 20.1	-0.9
	comp=N,1.6nm,0.8s,baz=90,slow=6.7,SNR=4.1						
KHC	Kasperske Hory	42.94	306	eP	P	13 58 34.8	+0.7
KHC				epP	pP	13 59 16.5	+1.7
KHC	Kasperske Hory	42.94	306	eP	P	13 58 34.8	+0.7
KHC				e		13 59 16.5	
HFS	Hagfors	43.02	322	P	P	13 58 34.7	+0.1
	comp=N,30nm,0.6s,baz=104,slow=11,SNR=93						
HFS				pP	pP	13 59 14.7	-0.5
	comp=N,16nm,0.7s,baz=106,slow=11,SNR=5.9						
CLL	Collm	43.14	309	i P	P	13 58 35.9	+0.2
	comp=Z,7.0nm,0.8s						
CLL				i pP	pP	13 59 16.9	+0.5
CLL	Collm	43.14	309	eP	P	13 58 36.2	+0.5
CLL				pmax	pmax		
	comp=Z,9.0nm,0.9s						
CLL	Collm	43.14	309	eP	P	13 58 36.1	+0.5
	comp=Z,9.4nm,0.9s						
TRO	Tromso	43.22	336	eP	P	13 58 35.7	-0.3
TRO				IAmb	IAmb	13 58 41.7	
	comp=Z,185nm,2.5s						
MOR8	Moi Rana	43.77	331	⇓iP	P	13 58 40.1	-0.4
MOR8				IAmb	IAmb	13 58 40.8	
	comp=Z,56nm,0.7s						
YAK	Yakutsk	43.95	35	eP	P	13 58 42.6	+0.7
YAK				pmax	pmax		
	comp=Z,9.0nm,0.8s						
NC405	NORSAR Array S	44.10	323	eP	P	13 58 43.3	+0.1
NC303	NORSAR Array S	44.27	323	eP	P	13 58 44.6	0.0
NB201	NORSAR Array S	44.29	323	eP	P	13 58 44.6	-0.1
NB2	NORSAR Subarra	44.33	323	P	P	13 58 44.7	-0.3
	comp=Z,29nm,0.7s,baz=96,slow=7.9						
NB2	NORSAR Subarra	44.33	323	P	P	13 58 44.7	-0.3
	baz=96,slow=7.9						
NOA	NORSAR Array B	44.33	323	P	P	13 58 44.8	-0.3
	comp=Z,26nm,0.7s,baz=96,slow=7.8,SNR=114						
NOA				pP	pP	13 59 25.5	-0.5
	comp=Z,16nm,0.9s,baz=96,slow=8.1,SNR=5.8						
NOA				sP	sP	13 59 49.2	+2.1
	comp=Z,4.3nm,0.7s,baz=96,slow=8.0,SNR=2.3						
MNSI	Mandailing Nat	44.35	137	P	P	13 58 45.6	-0.1
	comp=Z,77nm,0.8s						
KONS	Konsvik	44.36	331	eP	P	13 58 45.8	+0.6
KONS				IAmb	IAmb	13 58 56.4	
	comp=Z,74nm,1.6s						
NAO01	NORSAR Array S	44.47	323	eP	P	13 58 46.5	+0.4
NBO02	NORSAR Array S	44.51	323	eP	P	13 58 46.2	-0.2
NBO00	NORSAR Array S	44.54	323	eP	P	13 58 46.8	+0.1
NC204	NORSAR Array S	44.57	323	eP	P	13 58 46.7	-0.3
LOF	Lofoten	44.59	333	eP	P	13 58 47.3	+0.4
LOF				IAmb	IAmb	13 59 07.7	
	comp=Z,118nm,1.5s						
HOPEN	Hopen	44.95	346	eP	P	13 58 51.8	+2.1
HOPEN				IAmb	IAmb	13 58 53.5	
	comp=Z,44nm,1.4s						
KONO	Kongsberg	45.04	321	eP	P	13 58 50.7	+0.2
KONO				IAmb	IAmb	13 58 51.2	
	comp=Z,22nm,0.8s						
KLR	Kul'dur	45.14	54	⇑eP	P	13 58 52.9	+1.3
BJO	Bjornoya	45.18	343	eP	P	13 58 52.8	+1.3
BJO				IAmb	IAmb	13 58 55.9	
	comp=Z,42nm,0.8s						
BKNI	Bangkinang	45.55	135	P	P	13 58 55.2	+0.1
	comp=Z,125nm,0.8s						
BKNI	Bangkinang	45.55	135	eP	P	13 58 55.3	+0.1
	comp=Z,93nm,0.8s						
DAVOX	Davos/Dischmat	45.71	303	P	P	13 58 55.4	-0.9
	comp=Z,3.6nm,0.7s,baz=74,slow=7.2,SNR=5.8						
TIXI	Tiksi	45.75	22	⇑iP	P	13 58 56.4	+0.5
TIXI				pmax	pmax		
	comp=Z,7.0nm,0.8s						
TIXI	Tiksi	45.75	22	eP	P	13 58 56.5	+0.5
	comp=Z,10nm,0.7s						
SNART	Snartemo	46.25	319	eP	P	13 59 01.2	+1.1
SNART				IAmb	IAmb	13 59 07.6	
	comp=Z,19nm,1.1s						
SPA0	Spitsbergen Ar	47.45	347	eP	P	13 59 10.7	+1.6
SPA0				IAmb	IAmb	13 59 11.3	
	comp=Z,14nm,1.0s						
SPITS	Spitsbergen Ar	47.45	347	P	P	13 59 10.5	+1.3
	comp=Z,6.8nm,0.6s,baz=121,slow=11,SNR=22						
KBS	Kingsbay	48.57	347	eP	P	13 59 19.1	+1.4
KBS				IAmb	IAmb	13 59 20.3	
	comp=Z,12nm,0.8s						
KBS	Kingsbay	48.57	347	eP	P	13 59 19.2	+1.5
KBS				pmax	pmax		
	comp=Z,20nm,0.8s						
KBS	Kingsbay	48.57	347	eP	P	13 59 19.2	+1.5
	comp=Z,20nm,0.8s						
KMBO	Kilima Mbogo	48.84	227	P	P	13 59 21.8	+1.0
	comp=Z,3.5nm,0.6s,baz=32,slow=11,SNR=8.4						
MASI	Maura Aman, Be	49.08	137	P	P	13 59 21.9	-0.5
	comp=Z,178nm,0.7s,comp=Z,11μm						
NKL	Nikolayevsk	50.10	47	eP	P	13 59 29.2	-0.4
MDSI	Maura Dua	51.27	136	P	P	13 59 35.7	-3.1
	comp=Z,13nm,1.0s						
EKA	Eskdalemuir Ar	52.24	316	P	P	13 59 44.2	-1.3
	comp=Z,7.5nm,0.8s,baz=83,slow=6.8,SNR=7.1						
MAJO	Matsushiro	52.96	68	⇑eP	P	13 59 50.6	-0.5
MAJO				pmax	pmax		
	comp=Z,17nm,1.0s						
MJAR	Matsushiro Arr	52.97	68	pP	pP	14 00 34.6	+1.2
	comp=Z,1.9nm,0.9s,baz=291,slow=11,SNR=3.1						
SEY	Seymchan	54.40	34	P	P	14 00 01.6	+0.4
	comp=Z,0.3nm,0.3s,baz=267,slow=10,SNR=4.1						
SEY	Seymchan	54.40	34	⇓eP	P	14 00 02.6	+1.5
DAG	Danmarks Havn	54.68	344	i P	P	14 00 03.4	+0.5
	comp=Z,20nm,1.0s						
DAG				i		14 00 46.1	
DAG	Danmarks Havn	54.68	344	i P	P	14 00 03.4	+0.5
DAG				i		14 00 46.1	
DAG				pmax	pmax		
	comp=Z,20nm,1.0s						
BILL	Bilibino	58.58	26	⇑iP	P	14 00 31.9	+1.4
BILL				e*PP	pP	14 01 15.5	+1.9
BILL				e		14 01 18.9	
BILL				i *SP	sP	14 01 32.6	-1.7
BILL				ePPP	PPP	14 04 04.5	
BILL				S	S	14 08 22.0	+2.8
BILL				pmax	pmax		
	comp=Z,9.0nm,1.8s						
MRSI	Marisa	59.20	115	P	P	14 00 36.5	+0.9
	comp=Z,40nm,1.1s						
PET	Petropavlovsk	60.52	44	eP	P	14 00 45.4	+1.4
PET				pmax	pmax		
	comp=Z,22nm,1.0s						
SUMG	Summit	61.01	341	i P	P	14 00 49.1	+1.6
	comp=Z,15nm,0.9s						
SUMG				i		14 01 32.5	
SUMG	Summit	61.01	341	i P	P	14 00 49.1	+1.6
SUMG				i		14 01 32.5	
SUMG				pmax	pmax		
	comp=Z,15nm,0.9s						
SUMG	Summit	61.01	341	eP	P	14 00 49.1	+1.6
	comp=Z,16nm,0.9s						
SUMG				epP	pP	14 01 33.2	+2.2
TOA0	Torodi Ar. Sit	65.69	269	eP	P	14 01 17.2	-1.4
TORD	Torodi Ar. Bea	65.69	269	P	P	14 01 16.8	-1.8
	comp=Z,1.7nm,0.5s,baz=48,slow=5.7,SNR=14						
INK	Inuvik	73.87	9	P	P	14 02 07.4	-0.2
	comp=Z,5.8nm,0.9s,baz=356,slow=7.2,SNR=13						
INK				pP	pP	14 02 54.5	+1.9
	comp=Z,12nm,1.1s,baz=360,slow=8.5,SNR=5.3						
INK	Inuvik	73.87	9	eP	P	14 02 08.9	+1.3
INK				e*PP	pP	14 02 54.4	+1.8
INK	Inuvik	73.87	9	eP	P	14 02 08.9	+1.3
INK				epP	pP	14 02 54.4	+1.8
BPAW	Bear Paw Mtn.	74.36	18	eP	P	14 02 05.1	-5.5
	comp=Z,0.8nm,0.9s						
COLA	College	74.45	16	⇑eP	P	14 02 11.7	+0.7
COLA				pmax	pmax		
	comp=Z,8.0nm,0.9s						
COLA	College	74.45	16	eP	P	14 02 12.2	+1.2
	comp=Z,9.3nm,0.9s						
CAST	Castle Rocks	74.65	19	eP	P	14 02 13.5	+1.2
	comp=Z,12nm,1.0s						
ILAR	Eielson Array	74.75	16	P	P	14 02 12.9	+0.2
	comp=Z,2.5nm,1.0s,baz=307,slow=4.0,SNR=8.0						
ILAR				pP	pP	14 02 58.0	+0.1
	comp=Z,2.2nm,0.9s,baz=320,slow=5.1,SNR=5.7						
ILAR	Eielson Array	74.75	16	P	P	14 02 13.0	+0.2
ILAR				*PP	pP	14 02 58.0	+0.1
PAX	Paxson	76.63	16	eP	P	14 02 24.3	+0.7
PAX				pmax	pmax		
	comp=Z,10.0nm,1.4s						
PAX	Paxson	76.63	16	eP	P	14 02 24.3	+0.7
	comp=Z,9.8nm,1.4s						
BOSA	Boshof	77.76	220	P	P	14 02 29.6	-0.6
	comp=Z,5.0nm,0.7s,baz=27,slow=5.7,SNR=8.5						
YKA	Yellowknife Ar	81.21	3	P	P	14 02 49.0	+0.7
	comp=Z,0.7nm,0.4s,baz=351,slow=5.4,SNR=18						
YKA				pP	pP	14 03 33.6	-0.5
	comp=Z,7.0nm,0.8s,baz=350,slow=5.7,SNR=14						
YKB5	Yellowknife Ar	81.21	3	eP	P	14 02 48.3	0.0
YKB5				epP	pP	14 03 33.8	-0.4
WRA	Warramunga Arr	82.04	122	P	P	14 02 51.9	-1.4
	comp=Z,10nm,0.8s,baz=323,slow=4.8,SNR=40						
WRA				pP	pP	14 03 40.3	+1.0
	comp=Z,2.1nm,0.8s,baz=323,slow=4.8,SNR=3.2						
WRAB	Tennant Creek	82.04	122c	iP	P	14 02 51.8	-1.5
WRAB				pmax	pmax		
	comp=Z,33nm,0.9s						
WRAB	Tennant Creek	82.04	122	eP	P	14 02 52.4	-0.9
	comp=Z,17nm,0.9s						
WB2	Warramunga Arr	82.04	122	eP	P	14 02 52.1	-1.2
	comp=Z,15nm,0.9s						
AS31	Alice Springs	84.30	125	eP	P	14 03 03.8	-1.1
	comp=Z,3.1nm,0.6s						
ASAR	Alice Springs	84.30	125	P	P	14 03 03.5	-1.4
	comp=Z,9.6nm,0.7s,baz=310,slow=5.0,SNR=100						
ASAR				pP	pP	14 03 52.4	+1.3
	comp=Z,1.5nm,0.5s,baz=313,slow=4.7,SNR=3.4						
TIMB	Timberline	97.70	9	eP	P	14 04 05.6	-2.0
PLCA	Paso Flores	149.81	250	PKPbc	PKPbc	14 10 21.9	+0.3
	comp=Z,4.4nm,1.1s,baz=281,slow=4.0,SNR=4.0						

IDC 01 13:52:12.4±5.6, 60°.36N×30°.57E, h0km, mb1 2.1/1, mb1mx2.1/57, mbtmp2.1/1, ML0.8/1, Error ellipse: s-maj=55.0km s-min=46.1km az=22.0, Baltic States-Belarus-Northwestern Russia

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
FINES	FINESS Array B	2.45	298	Pn	Pn	13 52 55.2	+1.7
	0.1nm,0.3s,baz=113,slow=15,SNR=2.4						
FINES				Sn	Sn	13 53 25.7	+1.6
	0.2nm,0.3s,baz=116,slow=22,SNR=3.6						
I43RU	DUBNA INFRASON	5.04	133	i		14 21 40.0	
	baz=321,slow=326,SNR=0.8						
I31KZ	AKTYUBINSK INF	18.37	111	i		15 42 30.0	
	baz=313,slow=327,SNR=0.3						

ISCJB ***01*** *14:05:07.0±1.2, 37°.10N±0°.06×143°.32E±0°.10, h35km, mb3.7/3, Error ellipse: s-maj=11.6km s-min=7.5km az=155.1*

JMA ***01*** *14:05:07.6±0.2, 37°.14N×143°.28E, h40km, M3.3*

IDC ***01*** *14:05:08.2±3.0, 36°.47N×143°.14E, h0km, mb3.6/3, mb1 3.7/4, mb1mx3.3/45, mbtmp3.5/4, ML3.0/1, Error ellipse: s-maj=83.0km s-min=28.5km az=56.0*

ISC 01 14:05:08.8±1.8, 37°.13N±0°.08×143°.3E±0°.1, h35km, n11, σ0s.49/15, mb3.7/3, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
ONAJ	Iwakimizuishiy	1.99	270	P	Pn	14 05 40.1	0.0
ONAJ				S	Sn	14 06 03.8	-0.1
JIO	Ouri	2.03	311	P	Pn	14 05 40.3	-0.3
JIO				eS	Sn	14 06 04.6	-0.1
JMM	Marumori	2.12	291	P	Pn	14 05 41.5	-0.3
JMM				eS	Sn	14 06 07.3	+0.4
JOU	Okura	2.42	302	P	Pn	14 05 46.4	+0.4
JOU				eS	Sn	14 06 14.7	+0.3
JMK	Ichinoseki	2.45	319	eS	Sn	14 06 14.9	-0.1
JOM	Ohasama	2.82	327	S	Sn	14 06 23.6	-0.6
JRY	Ryogami san	3.70	254	P	Pn	14 06 03.5	-0.1
JRY				eS	Sn	14 06 44.9	-1.1
MJAR	Matsushiro Arr	4.12	263	Pn	Pn	14 06 10.1	+0.8
	1.0nm,0.3s,baz=91,slow=17,SNR=8.5						
MKAR	Makanchi Array	45.34	302	P	P	14 13 29.9	+6.4
	0.6nm,0.9s,baz=91,slow=7.2,SNR=3.4						
WRA	Warramunga Arr	57.38	190	P	P	14 14 53.6	-0.1
	0.4nm,0.3s,baz=8.1,slow=7.0,SNR=10						
ASAR	Alice Springs	61.11	190	P	P	14 15 19.8	+0.3
	0.3nm,0.4s,baz=4.0,slow=7.0,SNR=15						

IDC ***01*** *14:12:04.0±0.7, 35°.70N×140°.77E, h0km, mb3.8/15, mb1 3.9/15, mb1mx3.8/46, mbtmp3.8/15, Error ellipse: s-maj=21.4km s-min=17.6km az=92.0*

ISCJB ***01*** *14:12:07.9±0.5, 35°.84N±0°.04×141°.04E±0°.06, h33km, mb3.7/16, Error ellipse: s-maj=7.2km s-min=5.5km az=174.6*

JMA ***01*** *14:12:09.3±0.1, 35°.86N×140°.91E, h37km±1km, M3.5 Broadband fault plane solution: P waves. NP1: φs353.00000°, δ79.00000°, λ53.00000°. NP2: φs249.00000°, δ39.00000°, λ163.00000°. Principal axes: T Plg43.0000°, Azm227.0000°; N Plg37.0000°, Azm1.0000°; P Plg25.0000°, Azm111.0000°;*

JMA Felt I J1.

NEIC ***01*** *14:12:12.0±1.0, 35°.72N×140°.70E, h60km±9km, mb4.6/1 Error ellipse: s-maj=12.0km s-min=7.5km az=75.0*

ISC 01 14:12:09.7±0.6, 35°.84N±0°.04×140°.84E±0°.07, h33km, n36, σ1s.06/32, mb3.7/16, 3D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
CHOJ	Chosi	0.14	174	⇓P	Pb	14 12 15.7	0.0
CHOJ				S	Sb	14 12 20.6	+0.8
JYT	Yasato	0.65	307	⇓P	Pn	14 12 22.3	-0.3
JYT				eS	Sn	14 12 32.0	+0.3
JHO	Hitachi	0.80	344	⇓P	Pn	14 12 24.1	-0.6
BSO4	Boso 4	0.94	206	P	Pb	14 12 28.1	+0.6
BSO3	Boso 3	1.07	195	P	Pn	14 12 27.9	-0.2
MJAR	Matsushiro Arr	2.24	289	Pn	Pn	14 12 45.8	+1.3
	11nm,0.3s,baz=225,slow=26,SNR=62						
MAJO	Matsushiro	2.24	289	ePn	Pn	14 12 46.1	+1.6
MAT	Matsushiro	2.24	289	P	Pn	14 12 46.1	+1.6
MAT				eS	Sb	14 13 15.0	-1.9
JHJ2	Mitsune	2.85	198	ePn	Pn	14 12 52.8	0.0
JHJ	Hachijo jima 2	2.85	198	Pn	Pn	14 12 53.0	+0.1
	32nm,0.3s,baz=318,slow=23,SNR=13						
JHJ				Sn	Sn	14 13 26.9	+0.8
	70nm,0.3s,baz=68,slow=21,SNR=9.7						
KSRS	Korea Array	10.50	283	Pn	Pn	14 14 46.2	+8.3
	0.1nm,0.3s,baz=93,slow=14,SNR=3.0						
USRK	Ussuriysk Ar.	10.75	324	Pn	Pn	14 14 45.3	+4.0
	0.2nm,0.3s,baz=150,slow=12,SNR=4.0						
H11N2	WAKE ISLAND Hy	27.96	118	T	T	14 47 00.3	
	baz=311,slow=75,SNR=81						
H11N1	WAKE ISLAND Hy	27.97	118	T	T	14 46 52.8	
	baz=311,slow=75,SNR=73						
H11N3	WAKE ISLAND Hy	27.98	118	T	T	14 47 07.2	
	baz=311,slow=75,SNR=79						
SEY	Seymchan	28.05	11	P	P	14 17 59.8	+2.1
	0.2nm,0.4s,baz=220,slow=16,SNR=2.0						
SONM	Songino Array	28.09	306	P	P	14 17 58.3	0.0
	0.5nm,0.5s,baz=100,slow=7.8,SNR=4.0						
H11S1	WAKE ISLAND Hy	28.63	120	T	T	14 47 57.3	
	baz=313,slow=75,SNR=74						
H11S3	WAKE ISLAND Hy	28.63	120	T	T	14 47 55.9	
	baz=313,slow=75,SNR=64						
H11S2	WAKE ISLAND Hy	28.64	120	T	T	14 47 58.5	
	baz=313,slow=75,SNR=45						
ZALV	Zalesovo Beam	42.39	313	P	P	14 19 59.6	-1.1
	0.8nm,0.4s,baz=95,slow=11,SNR=4.6						
NRIK	Noril'sk	44.16	336	P	P	14 20 16.6	+1.8
	2.1nm,0.3s,baz=110,slow=9.8,SNR=3.7						
MKAR	Makanchi Array	44.37	303	P	P	14 20 16.5	-0.4
	1.8nm,0.6s,baz=87,slow=9.8,SNR=20						
KURK	Kurchatov	46.31	309	eP	P	14 20 30.6	-1.5
	2.9nm,0.4s						
ILAR	Eielson Array	50.75	32	P	P	14 21 06.0	-0.1
	0.5nm,0.8s,baz=274,slow=5.4,SNR=5.7						
INK	Inuvik	55.66	27	P	P	14 21 41.8	-0.3
	0.3nm,0.4s,baz=266,slow=2.7,SNR=3.8						
WRAB	Tennant Creek	55.81	187	eP	P	14 21 42.5	-1.2
WRA	Warramunga Arr	55.82	187	P	P	14 21 41.8	-1.9
	4.0nm,0.9s,baz=1.5,slow=7.6,SNR=15						
ASAR	Alice Springs	59.55	187	P	P	14 22 08.7	-1.3
	0.9nm,0.8s,baz=2.0,slow=6.9,SNR=11						
YKA	Yellowknife Ar	65.07	30	P	P	14 22 46.8	+0.3
	0.1nm,0.4s,baz=294,slow=5.2,SNR=3.6						
FINES	FINESS Array B	69.65	332	P	P	14 23 14.5	-1.0
	1.9nm,1.0s,baz=84,slow=7.9,SNR=4.7						
AKASG	Malin Array Be	74.96	322	P	P	14 23 46.6	-0.7
	1.3nm,0.6s,baz=50,slow=4.8,SNR=5.2						
NOA	NORSAR Array B	75.11	337	P	P	14 23 47.9	-0.2
	0.3nm,0.5s,baz=6.7,slow=5.0,SNR=2.3						
NVAR	Mina Array Bea	76.08	53	P	P	14 23 54.0	-0.3
	0.2nm,0.6s,baz=285,slow=7.0,SNR=2.4						
PDAR	Pinedale Array	78.83	45	P	P	14 24 10.3	+0.6
	0.1nm,0.3s,baz=7.6,slow=2.7,SNR=2.9						
LPAZ	La Paz	147.69	60	PKPbc	PKPbc	14 31 52.2	+0.1
	0.7nm,0.6s,baz=340,slow=5.1,SNR=3.4						

ISCJB ***01*** *14:12:56.3±0.3, 49°.86S±0°.05×117°.8E±0°.1, h10km, mb4.7/27, MS5.5/1, Error ellipse: s-maj=13.3km s-min=7.3km az=10.6*

IDC ***01*** *14:12:57.0±0.5, 49°.68S×117°.60E, h0km, mb4.5/13, mb1 4.7/14, mb1mx4.5/30, mbtmp4.6/14, ML3.0/1, Error ellipse: s-maj=20.6km s-min=16.4km az=121.0*

NEIC ***01*** *14:12:58.0±0.4, 49°.77S×117°.84E, h10km, mb4.9/8, Error ellipse: s-maj=16.0km s-min=10.0km az=112.0*

BJI ***01*** *14:12:57.4, 50°.11S×117°.46E, h24km, mb5.0/29, mB5.4/16, Ms5.5/5, Ms7 5.0/5*

ISC 01 14:12:58.0±0.4, 49°.84S±0°.07×117°.8E±0°.1, h10km, n76, σ1s.30/75, mb4.9/26, 1C, Western Indian-Antarctic Ridge

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
H01W2	Cape Leeuwin H	15.16	348	T	T	14 31 52.7	
	baz=170,slow=74,SNR=133						
H01W1	Cape Leeuwin H	15.17	349	T	T	14 31 58.9	
	baz=170,slow=74,SNR=115						
H01W3	Cape Leeuwin H	15.18	348	T	T	14 31 52.4	
	baz=170,slow=74,SNR=98						
NWAO	Narrogin (SRO)	16.90	358	Pn	Pn	14 16 54.1	-0.4
	2.4nm,0.3s,baz=107,slow=0.0,SNR=26						
NWAO	Narrogin (SRO)	16.90	358	ePn	Pn	14 16 49.0	-5.5
CASY	Casey	16.91	190	ePn	Pn	14 16 51.8	-2.5
	178nm,1.5s						
BBOO	Buckleboo	21.76	45	eP	P	14 17 47.0	-2.6
	63nm,1.1s						
STKA	Stephens Creek	25.25	54	P	P	14 18 25.7	+1.6
	11nm,0.9s,baz=208,slow=9.7,SNR=11						
STKA				PcP	PcP	14 21 56.6	-0.5
	2.3nm,0.7s,baz=332,slow=3.7,SNR=4.1						
STKA	Stephens Creek	25.25	54	eP	P	14 18 22.3	-1.7
	6.0nm,1.3s						
STKA				PcP	PcP	14 21 56.6	-0.5
ASAR	Alice Springs	29.01	32	P	P	14 18 58.5	+0.5
	7.4nm,0.8s,baz=198,slow=8.2,SNR=68						
ASAR				PcP	PcP	14 22 05.3	-1.0
	1.4nm,0.8s,baz=233,slow=1.0,SNR=11						
AS31	Alice Springs	29.01	32	eP	P	14 18 58.5	+0.5
	3.8nm,0.8s						
AS01	Alice Springs	29.03	32	eP	P	14 18 56.0	-2.1
AS01				ePcP	PcP	14 22 05.7	-0.7
MAW	Mawson	32.16	216	P	P	14 19 26.3	+1.0
	5.3nm,1.1s,baz=46,slow=6.5,SNR=3.8						
VNDA	Vanda	32.33	164	P	P	14 19 29.3	+2.6
	6.6nm,0.8s,baz=300,slow=8.6,SNR=33						
VNDA	Vanda	32.33	164	eP	P	14 19 26.9	+0.2
	49nm,1.8s						
WRA	Warramunga Arr	32.62	30	P	P	14 19 29.5	-0.3
	9.4nm,0.8s,baz=200,slow=8.6,SNR=24						
WRA				PcP	PcP	14 22 14.8	-1.1
	3.0nm,0.9s,baz=215,slow=2.4,SNR=6.5						
WB2	Warramunga Arr	32.62	30	eP	P	14 19 29.9	0.0
	16nm,0.9s						
SBA	Scott Base	33.41	163	eP	P	14 19 35.1	-1.0
	81nm,1.8s						
QSPA	South Pole Qui	40.29	180	eP	P	14 20 34.6	-0.4
SYO	Syowa Base	40.66	213	⇑eX	P	14 20 35.2	-2.5
URZ	Urewera	43.12	98	P	P	14 21 00.1	+1.8
	8.4nm,0.9s,baz=211,slow=5.9,SNR=2.6						
SNAA	Sanae	51.79	200	P	P	14 22 06.2	+0.9
SNAA	Sanae	51.79	200	eP	P	14 22 05.0	-0.3
VNA2	Neumayer--Watz	53.34	200	P	P	14 22 16.3	-0.4
	baz=139,slow=6.9						
VNA3	Neumayer Olymp	53.58	199	P	P	14 22 18.6	+0.1
VNA1	Neumayer--Stat	53.74	200	P	P	14 22 18.8	-0.8
IPM	Ipoh	56.01	340	eP	P	14 22 36.2	-0.5
	11nm,0.9s						
H08S2	Diego Garcia H	56.48	302	T	T	15 23 20.3	
	baz=147,slow=76,SNR=20						
H08S1	Diego Carcia H	56.48	302	T	T	15 23 13.8	
	baz=147,slow=76,SNR=14						
H08S3	Diego Garcia H	56.49	302	T	T	15 23 17.1	
	baz=147,slow=76,SNR=13						
OPO	Ambohidratompo	63.55	272	P	P	14 23 29.8	+0.9
	5.0nm,0.8s,baz=126,slow=3.9,SNR=6.9						
CM01	Chiang Mai Arr	69.97	341	eP	P	14 24 06.6	-2.8
CMAR	Chiang Mai Arr	70.01	341	P	P	14 24 08.4	-1.2
	3.2nm,0.8s,baz=191,slow=5.5,SNR=20						
KMI	Kunming	75.81	346	P	P	14 24 46.1	+1.9
KMI				pP	PcP	14 24 53.0	-3.7
KMI				pmax	pmax		
	comp=Z,14nm,1.0s						
GYA	Guiyang	76.59	350	P	P	14 24 51.8	+3.3
GYA				pmax	pmax		
	comp=Z,10.0nm,1.0s						
ODAN	Odare	81.00	333	eP	P	14 25 12.3	-0.5
	22nm,0.9s						
RAMN	Ramite	81.32	332	eP	P	14 25 14.4	-0.2
	45nm,1.2s						
CD2	Chengdu	81.35	348	P	P	14 25 15.3	+0.9
CD2				pmax	pmax		
	comp=Z,20nm,0.5s						
TAPN	Taplejung	81.36	333	eP	P	14 25 14.4	-0.5
	63nm,1.1s						
NJ2	Nanjing	81.53	1	eP	P	14 25 16.5	+1.3
NJ2				pmax	pmax		
	comp=Z,18nm,0.7s						
PKIN	Phulchoki	82.27	331	eP	P	14 25 19.0	-0.6
	35nm,1.2s						
DMN	Daman	82.39	331	eP	P	14 25 20.0	-0.2
	35nm,1.1s						
GUN	Gumba	82.43	332	eP	P	14 25 20.1	-0.5
	78nm,1.1s						
KKN	Kakani	82.51	331	eP	P	14 25 20.6	-0.2
	44nm,1.2s						
GKN	Gorkha	82.91	331	eP	P	14 25 22.3	-0.5
	42nm,1.1s						
KOLN	Koldanda	83.02	330	eP	P	14 25 22.7	-0.7
	65nm,1.4s						
KMBO	Kilima Mbogo	83.02	277	P	P	14 25 25.1	+1.2

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
	0.9nm,0.3s,baz=126,slow=4.6,SNR=5.7						
PYUN	Piuthan	83.53	330	*e*P	P	14 25 25.4	-0.6
	81nm,1.1s						
KSAR	Wonju Array Be	87.36	8	P	P	14 25 44.8	+0.2
KSRS	Korea Array	87.38	8	P	P	14 25 44.8	+0.1
	2.6nm,1.0s,baz=187,slow=3.9,SNR=4.7						
MJAR	Matsushiro Arr	87.89	16	P	P	14 25 47.8	+0.6
	1.8nm,0.9s,baz=168,slow=6.2,SNR=2.8						
BJI	Beijing	89.51	359	P	P	14 25 55.4	+0.7
BJI				pmax	pmax		
	comp=Z,10.0nm,1.0s						
BJI				pmax	pmax		
	comp=Z,340nm,9.4s						
PLCA	Paso Flores	89.52	174	P	P	14 25 56.5	+1.2
	4.5nm,0.8s,baz=218,slow=5.2,SNR=13						
GTA	Gaotai	90.27	346	P	P	14 25 58.7	+0.2
GTA				pP	sP	14 26 03.3	+0.3
GTA				pmax	pmax		
	comp=Z,9.0nm,0.9s						
HHC	Hu-ho-hao-te	90.47	355	*e*P	P	14 26 00.2	+0.8
HHC				pmax	pmax		
	comp=Z,21nm,1.0s						
CN2	Changchun	93.50	6	*e*P	P	14 26 15.5	+2.3
CN2				pmax	pmax		
	comp=Z,10.0nm,0.7s						
KSH	Kashi	96.29	329	*e*P	P	14 26 30.0	+3.7
KSH				*e*pP	sP	14 26 34.7	+3.9
KSH				S	S	14 37 48.4	+2.6
KSH				pmax	pmax		
	comp=Z,54nm,6.4s						
WMQ	Urumqi	96.91	339	*e*P	P	14 26 27.6	-1.3
WMQ				pP	sP	14 26 33.6	+0.2
WMQ				PP	PP	14 30 25.4	+0.5
WMQ				SKS	SKSac	14 37 06.8	+1.4
WMQ				S	S	14 37 46.9	-3.8
WMQ				pmax	pmax		
	comp=Z,2.0nm,0.6s						
WMQ				LR	LR		
	comp=N,790nm,14.8s						
WMQ				LR	LR		
	comp=E,1µm,17.4s						
WMQ				LR	LR		
	comp=Z,1µm,16.6s						
SONM	Songino Array	97.78	352	P	Pdif	14 26 32.2	-0.6
	0.6nm,0.8s,baz=116,slow=3.4,SNR=3.4						
BRTR	Keskin Array B	115.73	302	PKP	PKPdf	14 31 39.4	-0.7
	0.5nm,0.7s,baz=183,slow=2.7,SNR=3.4						
TORD	Torodi Ar. Bea	116.72	258	PKP	PKPdf	14 31 42.6	+0.1
	0.9nm,1.0s,baz=117,slow=1.1,SNR=3.6						
NRIK	Noril'sk	120.92	348	PKP	PKPdf	14 31 48.3	-0.6
	1.5nm,0.4s,baz=92,slow=3.8,SNR=3.5						
AKASG	Malin Array Be	125.29	309	PKP	PKPdf	14 31 57.5	-0.4
	2.0nm,0.9s,baz=80,slow=1.9,SNR=5.1						
GERES	GERESS Array B	132.54	300	PKP	PKPdf	14 32 11.6	-0.4
	1.0nm,0.7s,baz=90,slow=1.3,SNR=7.4						
FINES	FINESS Array B	132.65	319	PKP	PKPdf	14 32 11.8	+0.3
	2.4nm,0.8s,baz=111,slow=2.7,SNR=6.3						
ILAR	Eielson Array	135.59	38	PKP	PKPdf	14 32 16.7	-0.3
	0.5nm,0.7s,baz=261,slow=3.7,SNR=6.2						
ESDC	Sonseca Array	138.37	279	PKP	PKPdf	14 32 25.5	+2.4
	0.3nm,0.4s,baz=83,slow=1.8,SNR=5.6						
NVAR	Mina Array Bea	139.07	84	PKP	PKPdf	14 32 26.4	+1.8
	1.4nm,1.0s,baz=222,slow=4.2,SNR=7.6						
NOA	NORSAR Array B	139.07	315	PKP	PKPdf	14 32 25.5	+1.9
	1.2nm,0.8s,baz=103,slow=2.5,SNR=3.7						
TXAR	Lajitas Array	142.68	108	PKP	PKPdf	14 32 29.4	-1.8
	1.3nm,0.9s,baz=198,slow=4.8,SNR=11						
EKA	Eskdalemuir Ar	144.65	302	PKP	PKPbc	14 32 31.9	-0.6
	3.9nm,0.8s,baz=112,slow=6.4,SNR=4.8						
PDAR	Pinedale Array	147.00	84	PKPbc	PKPab	14 32 41.1	-0.9
	3.2nm,0.8s,baz=216,slow=2.6,SNR=28						
DAG	Danmarks Havn	148.17	342	*i* P	PKPbc	14 32 41.3	-1.1
	18nm,1.0s						
YKA	Yellowknife Ar	149.14	46	PKPbc	PKPbc	14 32 45.4	+0.2
	8.8nm,0.8s,baz=278,slow=2.3,SNR=92						
SCO	Scoresbysund	152.10	332	*i* P	PKPbc	14 32 52.5	+0.5
	16nm,1.1s						
ULM	Lac du Bonnet	158.48	76	PKP	PKPdf	14 32 54.2	-0.4
	0.7nm,0.3s,baz=204,slow=3.0,SNR=2.7						
ULM				PKPab	PKPab	14 33 30.2	+0.6
	5.6nm,1.0s,baz=291,slow=1.8,SNR=3.1						

IDC ***01*** *14:19:16.6±1.2, 37°.01N×144°.07E, h0^{km}, mb3.3/4, mb1 3.6/6, mb1mx3.4/47, mbtmp3.5/6, ML3.5/2, Error ellipse: s-maj=32.9km s-min=24.0km az=109.0*

ISCJB ***01*** *14:19:19.8±0.8, 37°.06N±0°.05×143°.88E±0°.06, h33^{km}, mb3.8/5, Error ellipse: s-maj=7.7km s-min=6.6km az=38.2*

JMA ***01*** *14:19:20.9±0.3, 37°.15N×143°.80E, h36^{km}, M4.2*

ISC 01 14:19:21.1±1.2**, 37°.03N**±0°.05×**143°.93E**±0°.09**, h35**^{km}**, n18,** σ**1^s.66**/28**, mb3.5**/5**, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
JIO	Ouri	2.49	306	P	Pn	14 19 58.3	-0.8
JIO				S	Sn	14 20 25.6	-2.6
ONAJ	Iwakimizuishiy	2.50	273	P	Pn	14 19 59.5	+0.1
ONAJ				*e*S	Sn	14 20 27.3	-1.4
JMM	Marumori	2.63	289	P	Pn	14 20 00.5	-0.6
JMM				*e*S	Sn	14 20 30.5	-1.2
JMK	Ichinoseki	2.87	313	P	Pn	14 20 04.1	-0.3
JMK				S	Sn	14 20 35.9	-1.8
JFT	Otama	2.91	281	P	Pn	14 20 05.7	+0.8
JFT				S	Sn	14 20 38.8	+0.2
JOM	Ohasama	3.20	320	P	Pn	14 20 08.2	-0.7
JOM				S	Sn	14 20 42.8	-3.0
JYK	Kaneyama	3.39	305	P	Pn	14 20 11.6	+0.1
JYK				*e*S	Sn	14 20 50.7	+0.2
JAG	Ashikaga	3.65	262	P	Pn	14 20 15.5	+0.5
JAG				S	Sn	14 20 55.9	-0.9
JRY	Ryogami san	4.17	257	P	Pn	14 20 22.5	+0.2
JRY				S	Sn	14 21 08.2	-1.7
JOD2	Odawara 2	4.30	247	*e*S	Sn	14 21 09.4	-3.5
MJAR	Matsushiro Arr	4.62	266	Pn	Pn	14 20 29.6	+1.2
	2.7nm,0.3s,baz=89,slow=15,SNR=13						
MAT	Matsushiro	4.62	266	P	Pn	14 20 30.0	+1.6
MAT				S	Sn	14 21 23.0	+2.2
JHJ	Hachijo jima 2	5.18	222	Pn	Pn	14 20 35.5	-0.6
	3.8nm,0.3s,baz=104,slow=22,SNR=4.2						
JHJ				Sn	Sn	14 21 30.6	-4.0
	30nm,0.3s,baz=282,slow=22,SNR=6.3						
LZH	Lanzhou	32.05	281	*e*P	P	14 25 49.5	+4.8
LZH				pP	pP	14 25 53.6	-1.1
LZH				sP	sP	14 25 57.2	-1.8
LZH				pmax	pmax		
	comp=Z,59nm,1.5s						
LZH				pmax	pmax		
	comp=Z,170nm,4.0s						
MKAR	Makanchi Array	45.82	303	P	P	14 27 40.6	+1.1
	comp=Z,0.1nm,0.3s,baz=98,slow=7.4,SNR=2.0						
ILAR	Eielson Array	48.42	32	P	P	14 27 59.7	+0.3
	comp=Z,0.3nm,0.7s,baz=274,slow=6.0,SNR=4.5						
WRA	Warramunga Arr	57.39	191	P	P	14 29 06.2	+0.2
	comp=Z,0.4nm,0.6s,baz=12,slow=7.5,SNR=3.2						
ASAR	Alice Springs	61.11	191	P	P	14 29 33.0	+1.3
	comp=Z,0.3nm,0.8s,baz=7.8,slow=7.5,SNR=3.9						

IDC 01 14:23:30.5±2.6**, 36°.00N**×**141°.34E, h0**^{km}**, mb3.3**/3**, mb1 3.3**/5**, mb1mx3.2**/56**, mbtmp3.2**/5**, ML2.7**/2**, Error ellipse: s-maj=65.8km s-min=25.7km az=60.0, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
MJAR	Matsushiro Arr	2.59	283	Pn	Pn	14 24 13.8	+0.1
	1.0nm,0.3s,baz=100,slow=8.1,SNR=8.5						
JHJ	Hachijo jima 2	3.15	205	Pn	Pn	14 24 21.0	-0.2
	4.1nm,0.3s,baz=105,slow=22,SNR=5.9						
JHJ				Sn	Sn	14 24 52.4	-7.1
	7.6nm,0.3s,baz=58,slow=22,SNR=3.5						
MKAR	Makanchi Array	44.63	303	P	P	14 31 44.2	-0.4
	0.5nm,0.9s,baz=92,slow=7.6,SNR=4.0						
WRA	Warramunga Arr	56.03	188	P	P	14 33 10.9	-0.2
	0.3nm,0.5s,baz=4.5,slow=7.8,SNR=3.5						
ASAR	Alice Springs	59.75	188	P	P	14 33 37.3	+0.1
	0.2nm,0.6s,baz=2.5,slow=8.3,SNR=3.2						

IDC ***01*** *14:36:43.3±5.6, 36°.09N×142°.78E, h0^{km}, mb3.6/3, mb1 3.5/5, mb1mx3.2/54, mbtmp3.6/5, ML3.2/2, Error ellipse: s-maj=97.7km s-min=42.1km az=103.0*

ISCJB ***01*** *14:36:45.2±1.2, 36°.15N±0°.06×142°.59E±0°.09, h18^{km}, mb3.5/3, Error ellipse: s-maj=11.3km s-min=9.0km az=157.3*

JMA ***01*** *14:36:46.3±0.2, 36°.20N×142°.62E, h69^{km}, M3.1*

ISC 01 14:36:46.2±1.6**, 36°.17N**±0°.06×**142°.6E**±0°.1**, h18**^{km}**, n15,** σ**1^s.31**/19**, mb3.6**/3**, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
CHOJ	Chosi	1.52	253	P	Pn	14 37 11.8	-0.7
JHO	Hitachi	1.73	285	P	Pn	14 37 14.1	-1.2
JHO				S	Sn	14 37 35.1	-1.8
BSO1	Boso 1	2.03	222	P	Pn	14 37 19.5	+0.4
JFT	Otama	2.28	307	S	Sn	14 37 50.5	-0.2
JAG	Ashikaga	2.59	277	P	Pn	14 37 26.7	-0.5
JAG				S	Sn	14 37 56.9	-1.2
JOD2	Odawara 2	3.03	254	P	Pn	14 37 33.0	-0.3
JRY	Ryogami san	3.03	268	P	Pn	14 37 32.7	-0.6
JOM	Ohasama	3.46	342	P	Pn	14 37 37.3	-1.9
MJAR	Matsushiro Arr	3.59	277	Pn	Pn	14 37 41.1	+0.1
	1.6nm,0.3s,baz=119,slow=9.1,SNR=12						
MAT	Matsushiro	3.60	277	P	Pn	14 37 41.6	+0.5
MAT				*e*S	Sn	14 38 23.0	-0.1
MAT	Matsushiro	3.60	277	P	Pn	14 37 41.6	+0.5
JHJ	Hachijo jima 2	3.85	219	Pn	Pn	14 37 43.9	-0.6
	5.7nm,0.3s,baz=1.6,slow=22,SNR=4.8						
JHJ				Sn	Sn	14 38 26.1	-3.2
	15nm,0.3s,baz=284,slow=22,SNR=5.5						
SONM	Songino Array	29.09	305	P	P	14 42 47.9	+2.1
	0.6nm,0.6s,baz=95,slow=10.0,SNR=3.9						
MKAR	Makanchi Array	45.41	303	P	P	14 45 04.2	+0.5
	0.5nm,0.7s,baz=90,slow=9.4,SNR=7.5						
KURBB	Kurchatov Arra	47.31	309	P	P	14 45 18.8	+0.3
	0.4nm,0.5s,baz=84,slow=7.9,SNR=4.4						

IDC 01 14:37:19.3±3.5**, 35°.96N**×**142°.63E, h0**^{km}**, mb3.4**/3**, mb1 3.6**/4**, mb1mx3.2**/54**, mbtmp3.3**/4**, ML3.0**/1**, Error ellipse: s-maj=98.2km s-min=29.2km az=56.0, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
MJAR	Matsushiro Arr	3.62	281	Pn	Pn	14 38 16.3	-0.4
	1.4nm,0.3s,baz=97,slow=8.9,SNR=5.8						
MKAR	Makanchi Array	45.52	303	P	P	14 45 40.5	-0.1
	0.2nm,0.5s,baz=79,slow=9.6,SNR=2.9						
WRA	Warramunga Arr	56.15	189	P	P	14 47 00.7	-0.1
	0.4nm,0.5s,baz=6.8,slow=7.0,SNR=6.2						
ASAR	Alice Springs	59.87	189	P	P	14 47 26.8	-0.1
	0.2nm,0.5s,baz=3.6,slow=7.4,SNR=4.2						

NIED ***01*** *14:44:00, 36°.20N×141°.70E, h23^{km}, Mw5.3 Best double couple: $M_0$8.54000×10^{16} NP1:ϕ_s184.00000°, δ12.00000°, λ82.00000°. NP2:ϕ_s12.00000°, δ78.00000°, λ92.00000°.*

IDC ***01*** *14:44:30.2±0.3, 36°.24N×141°.52E, h0^{km}, mb5.0/39, mb1 5.0/44, mb1mx5.0/51, mbtmp5.0/44, ML4.5/5, MS4.9/37, Ms1 4.9/37, ms1mx4.8/51, Error ellipse: s-maj=10.2km s-min=7.4km az=83.0*

ISCJB ***01*** *14:44:32.5±0.6, 36°.26N±0°.02×141°.57E±0°.02, h23^{km}±3^{km}, mb5.3/282, MS5.0/199, Error ellipse: s-maj=3.3km s-min=2.2km az=170.5*

BJI ***01*** *14:44:32.5, 36°.27N×141°.43E, h21^{km}, mb5.1/73, mB5.3/52, Ms5.2/83, Ms7 5.0/79*

JMA ***01*** *14:44:32.5±0.2, 36°.24N×141°.65E, h63^{km}±4^{km}, M5.2*

JMA Felt II J1.

MOS ***01*** *14:44:33.7±1.1, 36°.26N×141°.49E, h32^{km}, mb5.6/91, MS5.2/34, Error ellipse: s-maj=6.2km s-min=4.1km az=111.0*

NEIC ***01*** *14:44:35.1±0.5, 36°.23N×141°.50E, h31^{km}±3^{km}, mb5.4/150, MS4.9/128, Error ellipse: s-maj=4.0km s-min=2.9km az=146.0*

GCMT ***01*** *14:44:35.1±0.4, 36°.20N×141°.54E, h25^{km}, MW5.3/73, Moment Tensor Solution. s25,c27; s73,c104; Duration: 1^{s}0 Moment tensor: Scale 10^{17}Nm; M_{rr}0.56±.04; $M_{\theta\theta}$-0.08±.03; $M_{\phi\phi}$-0.48±.03; $M_{r\theta}$-0.01±.07; $M_{\theta\phi}$0.04±.02; $M_{\phi r}$1.11±.05; Best double couple: $M_0$1.22900×10^{17} NP1:ϕ_s359.00000°, δ77.00000°, λ91.00000°. NP2: ϕ_s173.00000°, δ13.00000°, λ84.00000°. Principal axes: T 1.2660, Plg58.0000°, Azm271.0000°; N -0.0750, Plg1.0000°, Azm179.0000°; P -1.1910, Plg32.0000°, Azm88.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

ISC 01 14:44:35.3±0.3**, 36°.29N**±0°.03×**141°.62E**±0°.03**, h35**^{km}±1^{km}**, h35**^{km}**:pP-P, n1215,** σ**1^s.37**/1214**, mb5.4**/295**, MS5.0**/201**, 38C-27D, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
CHOJ	Chosi	0.85	227	⇓P	Pn	14 44 48.8	-1.9
CHOJ				*e*S	Sn	14 45 01.0	-0.9
JHO	Hitachi	0.91	291	P	Pn	14 44 49.9	-1.6
ONAJ	Iwakimizuishiy	1.05	321	P	Pn	14 44 52.0	-1.6
JYT	Yasato	1.15	268	P	Pn	14 44 53.0	-1.9
JYT				*e*S	Sn	14 45 08.9	-0.6
JFT	Otama	1.60	321	⇓P	Pn	14 45 01.2	0.0
JFT				S	Sb	14 45 22.6	-1.6
BSO1	Boso 1	1.71	198	P	Pn	14 45 00.8	-1.3
JMM	Marumori	1.71	338	P	Pn	14 45 02.2	-0.4
BSO3	Boso 3	1.73	212	P	Pn	14 45 01.5	-1.2
JAG	Ashikaga	1.75	275	P	Pn	14 45 02.3	-0.9
JFY	Yanaizu	1.90	307	P	Pn	14 45 05.4	+0.2
JKT	Katashina	1.97	285	P	Pn	14 45 06.1	-0.1
MJAR	Matsushiro Arr	2.76	276	Pn	Pn	14 45 16.4	-0.7
	157nm,0.3s,baz=114,slow=8.4,SNR=536						
MJAR				Sn	Sb	14 45 54.7	-2.7
	99nm,0.3s,baz=104,slow=9.6,SNR=6.2						
MJAR				LR	LR	14 46 39.4	
	comp=Z,34µm,18.1s,baz=100,slow=49						
MAJO	Matsushiro	2.76	276	*e*P	Pn	14 45 17.3	+0.2
MAJO				*e*		14 45 47.5	
MAJO	Matsushiro	2.76	276	*e*Pn	Pn	14 45 17.3	+0.2
MAJO				*e*Sn	Sn	14 45 47.5	-1.8
MAT	Matsushiro	2.76	276	P	Pn	14 45 17.4	+0.3
MAT				S	Sn	14 45 49.4	+0.1
JHJ2	Mitsune	3.50	206	*e*Pn	Pn	14 45 26.1	-1.1
JHJ	Hachijo jima 2	3.50	206	Pn	Pn	14 45 26.0	-1.3
	275nm,0.3s,baz=341,slow=18,SNR=79						
JHJ				Sn	Sn	14 46 05.6	-1.8
	336nm,0.3s,baz=87,slow=23,SNR=7.8						
INU	Inuyama	3.85	257	*e*Pn	Pn	14 45 33.3	+1.2
ERM	Erimo	5.85	11	*d i*P	Pn	14 45 57.7	-1.7
ERM				pmax	pmax		
	comp=Z,107nm,1.0s						
ERM	Erimo	5.85	11	*e*Pn	Pn	14 45 57.8	-1.7
ERM				*e*Sn	Sn	14 47 05.2	0.0
YUK	Yuzh-Kuril'sk	8.39	21	*e*P	Pn	14 46 30.8	-3.6
YUK				pmax	pmax		
	comp=Z,332nm,0.6s						
YUK				pmax	pmax		
	comp=N,149nm,0.5s						
YUK				pmax	pmax		
	comp=E,179nm,0.5s						
YUK				MLR	MLR		
	comp=Z,5µm,18.0s						
YUK				MLR	MLR		
	comp=E,5µm,15.0s						
YUK				MLR	MLR		
	comp=N,3µm,16.0s						
SHO	Shikotan	8.56	26	*e*P	Pn	14 46 33.3	-3.4
SHO				pmax	pmax		
	comp=Z,300nm,0.8s						
SHO				pmax	pmax		
	comp=N,126nm,0.5s						
SHO				pmax	pmax		
	comp=E,150nm,0.5s						
CBIJ	Chichi jima	9.17	177	*e*Pn	Pn	14 46 37.2	-7.9
CBIJ				Sn	Sn	14 48 17.2	-10
JCJ	Chichijima	9.17	177	Pn	Pn	14 46 41.6	-3.6
	comp=E,40nm,0.3s,baz=99,slow=23,SNR=34						
JCJ				Sn	Sn	14 48 17.2	-10
	comp=E,47nm,0.3s,baz=314,slow=23,SNR=4.3						
JCJ				LR	LR	14 50 31.5	
	comp=E,4µm,20.2s,slow=40						
JNU	Nakatsue	9.39	253	Pn	Pn	14 46 46.5	-1.6
	comp=E,1.1nm,0.3s,baz=54,slow=8.7,SNR=14						
JNU				Sn	Sn	14 48 46.0	+14
	baz=57,slow=22,SNR=1.3						
JNU				LR	LR	14 50 43.7	
	comp=E,14µm,18.8s,baz=54,slow=40						
JNU	Nakatsue	9.39	253	*e*Pn	Pn	14 46 49.0	+0.9
JNU				Sn	Sn	14 48 46.0	+14
KUR	Kuril'sk	10.11	26	*e*P	Pn	14 46 54.4	-3.5
KUR				pmax	pmax		
	comp=E,24nm,0.9s						
KUR				pmax	pmax		
	comp=Z,51nm,0.9s						
KUR				pmax	pmax		
	comp=Z,363nm,2.5s						
KUR				pmax	pmax		
	comp=N,598nm,3.0s						
KUR				pmax	pmax		
	comp=E,421nm,2.2s						
KUR				MLR	MLR		
	comp=N,1µm,16.0s						
KUR				MLR	MLR		
	comp=E,1µm,16.0s						
KUR				MLR	MLR		
	comp=Z,1µm,16.0s						
YSS	Yuzh-Sakhalins	10.69	4	⇑*e*P	Pn	14 47 04.8	-1.1
YSS				*e*S	Sn	14 49 00.7	-3.6
YSS				pmax	pmax		
	comp=Z,40nm,1.2s						
YSS				MLR	MLR		
	comp=N,2µm,16.0s						
YSS				MLR	MLR		
	comp=E,4µm,16.0s						
YSS				MLR	MLR		
	comp=Z,4µm,16.0s						
YSS	Yuzh-Sakhalins	10.69	4	*e*Pn	Pn	14 47 01.0	-4.9
USRK	Ussuriysk Ar.	10.79	320	Pn	Pn	14 47 09.0	+1.7
	comp=Z,0.9nm,0.3s,baz=132,slow=13,SNR=24						
USRK				Sn	Sn	14 49 10.0	+3.3
	baz=88,slow=10,SNR=1.8						
USRK				LR	LR	14 51 12.3	
	comp=Z,9µm,18.5s,baz=128,slow=37						
KSRS	Korea Array	11.03	280	Pn	Pn	14 47 14.9	+4.4
	comp=Z,1.1nm,0.3s,baz=94,slow=14,SNR=39						
KSRS				LR	LR	14 51 25.0	
	comp=Z,7µm,19.4s,baz=78,slow=38						
KS15	Wonju Array Si	11.06	280	*e*Pn	Pn	14 47 14.1	+3.1
INCN	Inchon	12.06	280	*e*Pn	Pn	14 47 23.0	-1.7
INCN	Inchon	12.06	280	P	Pn	14 47 28.6	+3.9
	SNR=7.3						
INCN	Inchon	12.06	280	Pn	Pn	14 47 28.6	+3.9
	SNR=7.3						
MDJ	Mudanjiang	12.36	316	P	Pn	14 47 34.2	+5.5
MDJ				S	Sn	14 49 47.8	+2.6
MDJ	Mudanjiang	12.36	316	ScS	ScS	15 00 25.4	+11
MDJ	Mudanjiang	12.36	316	*e*Pn	Pn	14 47 30.0	+1.3
	comp=Z,81nm,1.0s						
HABR	Khabarovsk	13.10	340	*e*P	Pn	14 47 34.5	-4.3
HABR				*e*S	Sn	14 49 58.8	-4.4
HABR				pmax	pmax		
	comp=Z,29nm,1.4s						
HABR				MLR	MLR		
	comp=Z,4µm,14.0s						
CN2	Changchun	14.47	306	⇓P	Pn	14 47 56.7	-0.8
CN2				*e*sP	P	14 48 09.0	+5.3
CN2				*e*S	Sn	14 50 37.1	+0.5
CN2				pmax	pmax		
	comp=Z,10.0nm,0.9s						
CN2				pmax	pmax		
	comp=Z,100nm,5.0s						
CN2				LR	LR		
	comp=Z,6µm,14.0s						
CN2				LR	LR		
	comp=Z,5µm,14.0s						
CN2				LR	LR		
	comp=Z,3µm,15.0s						
JOW	Kunigami	14.76	234	*e*Pn	Pn	14 47 58.0	-3.4
JOW				*e*sP	P	14 48 06.4	-0.7
KLR	Kul'dur	14.81	334	Pn	Pn	14 48 01.4	-0.6
	comp=Z,0.6nm,0.3s,baz=132,slow=11,SNR=13						
KLR				Sn	S	14 50 58.0	-4.4
	comp=Z,0.0nm,0.3s,baz=42,slow=7.4,SNR=1.8						
KLR				LR	LR	14 53 50.2	
	comp=Z,5µm,18.2s,baz=132,slow=38						
SNY	Shenyang	15.06	297	⇑P	Pn	14 48 04.7	-0.7
SNY				pmax	pmax		
	comp=Z,41nm,1.4s						
SNY				pmax	pmax		
	comp=Z,470nm,3.6s						
SNY				LR	LR		
	comp=Z,4µm,17.3s						
SNY				LR	LR		
	comp=Z,8µm,17.3s						
SNY				LR	LR		
	comp=Z,12µm,16.9s						
DL2	Dalian	16.06	285	P	Pn	14 48 18.5	+0.1
DL2				S	Sn	14 51 16.1	+0.8
DL2				pmax	pmax		
	comp=Z,61nm,1.3s						
DL2				pmax	pmax		
	comp=Z,610nm,6.7s						
DL2				LR	LR		
	comp=Z,3µm,11.8s						
DL2				LR	LR		
	comp=Z,10µm,14.6s						
DL2				LR	LR		
	comp=Z,12µm,15.3s						
NKL	Nikolayevsk	16.88	358	*e*P	Pn	14 48 24.0	-4.6
NKL				pmax	pmax		
	comp=Z,35nm,1.2s						
NKL				MLR	MLR		
	comp=N,2µm,18.0s						
NKL				MLR	MLR		
	comp=E,3µm,18.0s						
NKL				MLR	MLR		
	comp=Z,4µm,18.0s						
SSE	Sheshan	17.76	259	P	P	14 48 41.0	+0.7
SSE				S	Sn	14 51 58.8	+2.1
SSE				pmax	pmax		
	comp=Z,37nm,1.0s						
SSE				LR	LR		
	comp=Z,3µm,19.8s						
SSE				LR	LR		
	comp=Z,2µm,19.8s						
SSE				LR	LR		
	comp=Z,4µm,14.6s						
SKR	Severo-Kuril's	17.78	31	*e*P	Pn	14 48 39.1	-0.7
SKR				pmax	pmax		
	comp=Z,400nm,1.2s						
SKR				MLR	MLR		
	comp=N,3µm,18.0s						
SKR				MLR	MLR		
	comp=E,3µm,18.0s						
SKR				MLR	MLR		
	comp=Z,4µm,18.0s						
NJ2	Nanjing	19.29	264	*e*P	P	14 48 57.6	+0.5
NJ2				pP	pP	14 49 04.9	-1.3
NJ2				S	S	14 52 35.9	+2.3
NJ2				pmax	pmax		
	comp=Z,16nm,0.5s						
NJ2				LR	LR		
	comp=Z,5µm,12.5s						
NJ2				LR	LR		
	comp=Z,3µm,11.5s						
NJ2				LR	LR		
	comp=Z,4µm,14.4s						
TIA	Tai'an	19.75	277	⇓P	P	14 49 00.1	-2.0
TIA				pmax	pmax		
	comp=Z,50nm,1.4s						
TIA				LR	LR		
	comp=Z,3µm,12.6s						
TIA				LR	LR		
	comp=Z,2µm,15.2s						
TIA				LR	LR		
	comp=Z,3µm,15.2s						
YOJ	Yonaguni jima	19.88	239	*e*P	P	14 49 00.5	-3.0
YOJ				pmax	pmax		
	comp=Z,110nm,1.1s						
YOJ	Yonaguni jima	19.88	239	*e*P	P	14 49 00.5	-3.0
	comp=Z,112nm,1.1s						
PEA0	Petropavlovsk-	20.26	29	*e*P	P	14 49 06.9	-0.6
PEA0B	Petropavlovsk-	20.26	29	*e*P	P	14 49 06.0	-1.5
	comp=Z,145nm,1.1s						
PETK	Petropavlovsk-	20.26	29	P	P	14 49 06.5	-1.0
	comp=Z,52nm,0.9s,baz=207,slow=9.3,SNR=61						
PETK				LR	LR	14 56 47.9	
	comp=Z,1µm,21.7s,baz=212,slow=36						
BJI	Beijing	20.33	288	P	P	14 49 06.1	-2.3
BJI				pP	pP	14 49 16.4	-1.1
BJI				sP	sP	14 49 21.9	0.0
BJI				S	Sn	14 52 56.9	-1.6
BJI				pmax	pmax		
	comp=Z,33nm,1.3s						

BJI LR LR
comp=Z,3μm,15.6s
BJI LR LR
comp=Z,3μm,14.3s
BJI LR LR
comp=Z,3μm,19.4s
BJT Baijiatuau 20.34 288 *e*P **P 14 49 06.7 -1.7**
BJT pmax pmax
comp=Z,74nm,1.0s
BJT MLR MLR
comp=Z,4μm,20.0s
BJT Baijiatuau 20.34 288 *e*P **P 14 49 06.7 -1.7**
comp=Z,74nm,1.0s
BJT LR LR
comp=Z,4μm,20.0s
HIA Hailar 20.55 316 *e*P **P 14 49 05.9 -4.8**
HIA pmax pmax
comp=Z,45nm,1.0s
HIA MLR MLR
comp=Z,5μm,19.0s
HIA Hailar 20.55 316 *e*P **P 14 49 05.9 -4.8**
comp=Z,45nm,1.0s
HIA LR LR
comp=Z,5μm,19.0s
PET Petropavlovsk 20.57 30 *e*P **P 14 49 11.5 +0.6**
PET *e*S **S 14 52 54.7 -4.2**
PET pmax pmax
comp=Z,700nm,11.2s
PET pmax pmax
comp=Z,219nm,1.3s
PET pmax pmax
comp=Z,500nm,12.7s
PET MLR MLR
comp=Z,2μm,18.0s
PET MLR MLR
comp=Z,2μm,16.0s
PET Petropavlovsk 20.57 30 *e*P **P 14 49 07.8 -3.1**
comp=Z,270nm,1.2s
PET LR LR
comp=Z,2μm,20.0s
TATO Taipei 20.62 242 PFAKE 14 49 20.0 +5.9
TATO LR LR
comp=Z,4μm,19.0s
YHNB Yeheng 20.89 242 PFAKE 14 49 30.0 +13
YHNB LR LR
comp=Z,2μm,20.0s
SSLB Suanglung 21.74 241 *e*P **P 14 49 19.1 -4.6**
comp=Z,82nm,1.6s
TPUB Ta-pu 22.28 240 *e*P **P 14 49 25.3 -4.3**
comp=Z,65nm,1.2s
QZH Quanzhou 22.76 247 *e*P **P 14 49 36.6 +2.0**
QZH S **S 14 53 43.0 +1.9**
QZH LR LR
comp=Z,4μm,20.6s
QZH LR LR
comp=Z,8μm,16.5s
QZH LR LR
comp=Z,11μm,19.3s
GUMO Guam 22.79 172 P **P 14 49 33.9 -1.0**
comp=Z,60nm,0.9s,baz=12,slow=19,SNR=1.8
GUMO Guam 22.79 172 P **P 14 49 33.9 -1.0**
GUMO MLR MLR
comp=Z,2μm,19.0s
GUMO Guam 22.79 172 P **P 14 49 33.9 -1.0**
GUMO LR LR
comp=Z,2μm,19.0s
WHN Wuhan 23.43 264 P **P 14 49 37.5 -3.8**
WHN S **S 14 53 44.3 -8.0**
WHN LR LR
comp=Z,5μm,14.6s
WHN LR LR
comp=Z,8μm,14.0s
WHN LR LR
comp=Z,13μm,15.7s
CLNS Chul'man 23.43 337 *e*P **P 14 49 39.9 -1.3**
CLNS *e**PP **pP 14 49 51.2 +0.5**
CLNS *e* 14 53 28.4
CLNS *e*S **S 14 53 49.4 -2.6**
CLNS pmax pmax
comp=Z,80nm,1.1s
CLNS pmax pmax
comp=N,65nm,1.2s
CLNS pmax pmax
comp=E,21nm,1.0s
CLNS pmax pmax
comp=Z,54nm,1.1s
CLNS pmax pmax
comp=N,66nm,1.0s
CLNS pmax pmax
comp=E,18nm,0.8s
CLNS smax smax
comp=E,604nm,11.1s
CLNS smax smax
comp=N,597nm,10.6s
CLNS MLR MLR
comp=Z,3μm,14.0s
CLNS MLR MLR
comp=N,3μm,13.0s
CLNS MLR MLR
comp=E,2μm,13.0s
HHC Hu-ho-hao-te 23.87 290 *e*P **P 14 49 46.2 +0.6**
HHC pP pP 14 49 56.2 +0.8
HHC PP **PnPn 14 50 21.1 +6.7**
HHC S **S 14 53 58.6 -0.9**
HHC SS **SnSn 14 54 48.4 +8.2**
HHC pmax pmax
comp=E,45nm,1.2s
HHC LR LR
comp=E,2μm,13.7s
HHC LR LR
comp=E,4μm,14.9s
HHC LR LR
comp=E,4μm,14.9s
MA2 Magadan 24.05 11 P **P 14 49 47.0 +0.1**
comp=E,21nm,0.7s,baz=214,slow=8.5,SNR=47
MA2 S **S 14 54 05.0 +3.2**
comp=E,1.8nm,0.6s,baz=352,slow=23,SNR=2.4
MA2 LR LR 14 59 59.8
comp=E,1μm,18.5s,baz=216,slow=39
BTO Baotou 25.05 290 *e*P **P 14 49 54.2 -2.1**
CIT Chita 25.33 317 *e*P **P 14 49 56.2 -2.6**
CIT *e* 14 50 07.7
CIT *e* 14 50 36.5
CIT *e* 14 50 52.5
CIT *e* 14 54 24.3
CIT pmax pmax
comp=Z,185nm,1.6s
XAN Xi'an 26.76 275 P **P 14 50 10.0 -1.8**
XAN pP pP 14 50 19.0 -2.7
XAN PP **PnPn 14 50 52.3 -1.5**
XAN S **S 14 54 38.6 -6.8**
XAN pmax pmax
comp=Z,420nm,11.5s
XAN LR LR
comp=Z,730nm,13.1s
XAN LR LR
comp=Z,2μm,15.9s
XAN LR LR
comp=Z,3μm,16.0s
YAK Yakutsk 26.84 348 P **P 14 50 11.7 -0.4**
comp=Z,3.5nm,0.6s,baz=339,slow=23,SNR=51
YAK S **S 14 54 44.0 -1.9**
comp=Z,0.6nm,0.4s,baz=210,slow=22,SNR=1.9
YAK LR LR 15 02 36.2
comp=Z,957nm,19.0s,baz=155,slow=40
YAK Yakutsk 26.84 348 *e*P **P 14 50 11.7 -0.4**
YAK pmax pmax
comp=Z,180nm,1.0s
YAK Yakutsk 26.84 348 *e*P **P 14 50 11.7 -0.4**
comp=Z,178nm,1.0s
YAK S **S 14 54 44.0 -1.9**
ENH Enshi 27.44 267 *e*P **P 14 50 16.2 -1.8**
comp=Z,324nm,1.4s
ENH LR LR
comp=Z,3μm,19.0s
SEY Seymchan 27.49 11 P **P 14 50 19.1 +1.0**
comp=Z,19nm,0.8s,baz=203,slow=7.2,SNR=24
SEY S **S 14 55 01.8 +5.5**
comp=Z,1.1nm,0.8s,baz=35,slow=22,SNR=1.2
SEY Seymchan 27.49 11⇑ *e*P **P 14 50 19.8 +1.8**
H11N2 WAKE ISLAND Hy 27.63 120 T T 15 19 17.6
baz=312,slow=75,SNR=301
H11N1 WAKE ISLAND Hy 27.64 120 T T 15 19 26.4
baz=312,slow=75,SNR=283
H11N3 WAKE ISLAND Hy 27.65 120 T T 15 19 19.0
baz=312,slow=75,SNR=232

WAKE Wake Island 27.76 121 *e*P **P 14 50 17.9 -2.9**
comp=Z,471nm,1.6s
WAKE LR LR
comp=Z,3μm,20.0s
ULN Ulaanbaatar 27.91 305 *e*P **P 14 50 21.5 -0.7**
ULN pmax pmax
comp=Z,49nm,1.0s
ULN MLR MLR
comp=Z,2μm,19.0s
ULN Ulaanbaatar 27.91 305 *e*P **P 14 50 21.5 -0.7**
comp=Z,49nm,1.0s
ULN LR LR
comp=Z,2μm,19.0s
ULN Ulaanbaatar 27.91 305 P **P 14 50 22.6 +0.4**
SNR=29
ULN Ulaanbaatar 27.91 305 P **P 14 50 22.6 +0.4**
SNR=29
BOD Bodaibo 28.25 328 *e*P **P 14 50 24.4 -0.5**
BOD pmax pmax
comp=Z,64nm,1.4s
H11S1 WAKE ISLAND Hy 28.32 122 T T 15 20 40.7
baz=316,slow=74,SNR=169
H11S3 WAKE ISLAND Hy 28.32 122 T T 15 19 57.5
SNR=72
H11S2 WAKE ISLAND Hy 28.34 122 T T 15 20 45.1
baz=13,slow=74,SNR=119
SONA1 Songino Array 28.34 305 *e*P **P 14 50 25.4 -0.6**
SONM Songino Array 28.34 305 P **P 14 50 26.1 +0.1**
comp=Z,18nm,0.7s,baz=106,slow=7.6,SNR=86
SONM LR LR 15 02 01.5
comp=Z,3μm,21.5s,baz=96,slow=37
LZH Lanzhou 30.36 281 *e*P **P 14 50 44.5 +0.5**
LZH pP pP 14 50 55.6 +1.6
LZH sP sP 14 50 59.8 +1.6
LZH PP **PnPn 14 51 46.0 +3.1**
LZH PcP **PcP 14 53 44.4 +1.0**
LZH *e*S **S 14 55 37.0 -5.3**
LZH pmax pmax
comp=Z,36nm,1.1s
LZH pmax pmax
comp=Z,230nm,4.4s
LZH LR LR
comp=Z,3μm,15.4s
LZH LR LR
comp=Z,5μm,14.8s
LZH LR LR
comp=Z,7μm,16.8s
IRK Irkutsk 30.73 313⇓ *i*P **P 14 50 47.2 +0.3**
IRK pmax pmax
comp=Z,81nm,1.4s
ZAK Zakamensk 30.87 309 *e*P **P 14 50 47.7 -0.6**
ZAK pmax pmax
comp=Z,42nm,1.3s
TLY Talaya 30.95 312 P **P 14 50 49.2 +0.3**
comp=Z,27nm,1.0s,baz=117,slow=6.1,SNR=46
TLY S **S 14 55 50.3 -0.6**
comp=Z,1.1nm,0.5s,baz=219,slow=20,SNR=2.4
TLY LR LR 15 04 10.3
comp=Z,4μm,18.2s,baz=106,slow=38
TLY Talaya 30.95 312*c* *i*P **P 14 50 48.2 -0.7**
TLY *e*S **S 14 55 48.7 -2.2**
TLY *e*SS **SnSn 14 57 32.1 -0.3**
TLY pmax pmax
comp=Z,107nm,1.6s
TLY MLR MLR
comp=Z,4μm,15.0s
TLY Talaya 30.95 312 *e*P **P 14 50 48.5 -0.4**
comp=Z,78nm,1.2s
TLY S **S 14 55 50.3 -0.6**
TLY Talaya 30.95 312 P **P 14 50 50.2 +1.4**
SNR=32
TLY P **P 14 50 50.2 +1.4**
SNR=32
TLY Talaya 30.95 312 P **P 14 50 50.2 +1.4**
SNR=32
GYA Guiyang 31.27 262⇑ *i*P **P 14 50 50.4 -1.6**
GYA pP sP 14 51 04.2 -2.0
GYA PP **PnPn 14 51 58.0 +3.3**
GYA PcP **PcP 14 53 47.8 +1.9**
GYA S **S 14 55 53.2 -3.3**
GYA sS sS 14 56 14.0 +1.0
GYA ScP **ScP 14 57 27.2 +1.0**
GYA ScS **ScS 15 01 23.0 -0.9**
GYA pmax pmax
comp=Z,60nm,1.1s
GYA pmax pmax
comp=Z,160nm,6.0s
GYA LR LR
comp=Z,2μm,18.0s
GYA LR LR
comp=Z,1μm,17.8s
GYA LR LR
comp=Z,1μm,17.6s
CD2 Chengdu 31.85 271⇓ *i*P **P 14 50 57.6 +0.6**
CD2 sP sP 14 51 11.6 +0.4
CD2 S **S 14 56 07.8 +2.4**
CD2 sS sS 14 56 23.1 +1.2
CD2 pmax pmax
comp=Z,40nm,1.0s
CD2 pmax pmax
comp=Z,680nm,11.2s
CD2 LR LR
comp=Z,3μm,15.6s
CD2 LR LR
comp=Z,3μm,18.6s
MOY Mondy 32.55 311 *e*P **P 14 51 03.7 +0.6**
MOY pmax pmax
comp=Z,59nm,1.9s
DAV Davao City (W) 32.57 211 PFAKE 14 51 20.0 +17
DAV LR LR
comp=Z,1μm,19.0s
QIZ Qiongzhong 32.78 247 P **P 14 51 06.3 +1.1**
QIZ S **S 14 56 21.6 +1.6**
QIZ LR LR
comp=Z,2μm,16.3s
QIZ LR LR
comp=Z,2μm,16.9s
QIZ Qiongzhong 32.78 247 PFAKE 14 51 20.0 +15
QIZ LR LR
comp=Z,2μm,20.0s
GTA Gaotai 32.95 288⇓ P **P 14 51 07.5 +0.8**
GTA pP pP 14 51 18.0 +1.3
GTA sP sP 14 51 22.1 +1.3
GTA PcP **PcP 14 53 51.5 +1.2**
GTA S **S 14 56 22.9 +0.4**
GTA sS sS 14 56 38.5 -0.5
GTA ScS **ScS 15 01 31.4 -0.6**
GTA pmax pmax
comp=Z,31nm,1.2s
GTA pmax pmax
comp=Z,300nm,6.9s
GTA LR LR
comp=Z,1μm,15.2s
GTA LR LR
comp=Z,3μm,17.6s
GTA LR LR
comp=Z,3μm,18.5s
BILL Bilibino 34.70 16*d* *i*P **P 14 51 21.3 -0.1**
BILL *e**PP **pP 14 51 31.4 0.0**
BILL *e**SP **sP 14 51 34.4 -1.2**
BILL pmax pmax
comp=Z,32nm,1.7s
BILL MLR MLR
comp=Z,1μm,16.0s
BILL Bilibino 34.70 16 *e*P **P 14 51 21.4 -0.1**
comp=Z,34nm,1.1s
BILL LR LR
comp=Z,1μm,21.0s
KMI Kunming 35.02 263 P **P 14 51 24.0 -0.9**
KMI pP pP 14 51 33.2 -1.7
KMI sP sP 14 51 36.6 -2.5
KMI PP **PP 14 52 44.6 0.0**
KMI S **S 14 56 54.1 -0.9**
KMI pmax pmax
comp=Z,47nm,1.7s
KMI pmax pmax
comp=Z,300nm,4.4s
KMI LR LR
comp=Z,2μm,16.4s
KMI LR LR
comp=Z,3μm,16.4s
KMI LR LR
comp=Z,3μm,16.2s
TIXI Tiksi 36.05 353*de*P **P 14 51 33.1 +0.2**
TIXI pmax pmax
comp=Z,31nm,1.7s

TIXI Tiksi 36.05 353 *e*P **P 14 51 32.8 -0.1**
comp=Z,37nm,1.3s
TIXI LR LR
comp=Z,1μm,22.0s
MYLDM Lahad Datu 37.54 220 *e*pP pP 14 51 55.8 -0.5
TNTI Ternate 37.73 204 *e*P **P 14 51 47.0 -0.7**
comp=Z,144nm,1.2s
PANO Nakornpanom 37.85 250 P **P 14 51 51.1 +2.2**
comp=Z,17nm,1.5s,comp=Z,8μm
KKM Kota Kinabalu 38.05 224 PFAKE 14 52 00.0 +9.4
KKM LR LR
comp=Z,314nm,21.0s
KRAR Krasnoyarsk 38.12 317⇓ *e*P **P 14 51 49.4 -1.3**
KRAR pmax pmax
comp=Z,36nm,1.2s
NIKH Nikolski High 38.15 48 *e*P **P 14 51 49.0 -2.0**
comp=Z,56nm,0.8s
NONG Nongkai 38.43 252 P **P 14 51 54.3 +0.6**
comp=Z,36nm,0.9s,comp=Z,8μm
SKNT Sakolnakorn 38.44 250 P **P 14 51 54.5 +0.7**
comp=Z,30nm,1.9s
JAY Jayapura 38.61 181 P **P 14 51 54.9 -0.3**
comp=Z,0.7nm,0.8s,baz=206,slow=24,SNR=2.6
GAMB Gambell 39.27 31 *e*P **P 14 51 57.5 -2.8**
comp=Z,18nm,1.6s
CRAI Chiangrai 39.37 257 P P 14 51 54.6 -7.1
comp=Z,35nm,0.8s,comp=Z,5μm
KHON Khomkaen 39.70 250 P **P** 14 52 09.5 +5.1
MRSI Marisa 40.04 212 P **P 14 52 06.9 -0.2**
LOEI Loei 40.20 253 P **P 14 52 05.3 -3.3**
comp=Z,52nm,1.0s,comp=Z,4μm
PHRA Phrae 40.44 255 P **P 14 52 10.6 +0.1**
comp=Z,621nm,1.1s
CMAI Chiengmai2 40.58 258 P **P 14 52 12.3 +0.4**
comp=Z,34nm,1.0s
CHAI Chaiyaphum 40.61 251 P **P 14 52 12.0 +0.1**
comp=Z,12nm,1.0s,comp=Z,132nm
UTTA Uttaradit 40.62 254 P **P 14 52 12.3 +0.3**
comp=Z,11nm,1.0s,comp=Z,96nm
LAMP Lampang 40.90 256 P **P 14 52 15.1 +0.8**
comp=Z,11nm,1.2s
PBKT Sadao Pong 40.98 252 P **P 14 52 15.3 +0.3**
comp=Z,51nm,1.3s
CMMT Chiang Mai 41.27 257 P **P 14 52 17.2 -0.2**
comp=Z,36nm,1.4s,comp=Z,437nm
CHTO Chiang Mai 41.27 257 P **P 14 52 17.2 -0.2**
comp=Z,120nm,1.6s,comp=Z,2μm
CHTO Chiang Mai 41.27 257 *e*P **P 14 52 16.9 -0.5**
CHTO pmax pmax
comp=Z,32nm,1.1s
CHTO Chiang Mai 41.27 257 *e*P **P 14 52 16.9 -0.5**
comp=Z,32nm,1.1s
CHTO LR LR
comp=Z,1μm,21.0s
CHTO Chiang Mai 41.27 257 P **P 14 52 17.9 +0.5**
SNR=12
CHTO Chiang Mai 41.27 257 P **P 14 52 17.9 +0.5**
SNR=12
WMQ Urumqi 41.33 298 P **P 14 52 19.5 +1.8**
WMQ pP sP 14 52 30.6 -1.3
WMQ S **S 14 58 32.0 +2.3**
WMQ SS **SS 15 01 30.9 -3.0**
WMQ ScS **ScS 15 02 19.8 +0.9**
WMQ pmax pmax
comp=Z,76nm,1.2s
WMQ pmax pmax
comp=Z,390nm,4.0s
WMQ LR LR
comp=Z,810nm,20.4s
WMQ LR LR
comp=Z,1μm,17.6s
WMQ LR LR
comp=Z,890nm,21.8s
CM31 Chiang Mai Arr 41.47 256 *e*P **P 14 52 19.2 +0.2**
CMAR Chiang Mai Arr 41.47 256 P **P 14 52 19.2 +0.2**
comp=Z,4.4nm,0.8s,baz=48,slow=6.5,SNR=39
CMAR LR LR 15 10 39.3
comp=Z,1μm,19.5s,baz=54,slow=38
CM01 Chiang Mai Arr 41.48 256 *e*P **P 14 52 17.0 -2.1**
FALS False Pass 41.50 46 *e*P **P 14 52 16.8 -2.0**
SRAK Srakaew 41.73 248 P **P 14 52 18.8 -2.4**
comp=Z,60nm,1.1s,comp=Z,454nm
NAYO Nakonayok 42.09 249 P **P 14 52 24.7 +0.7**
comp=Z,20nm,2.1s,comp=Z,1μm
CHBT CHBT 42.32 247 P **P 14 52 26.6 +0.6**
comp=Z,32nm,1.0s
MHMT Maesarieng 42.42 257 P **P 14 52 27.6 +0.8**
comp=Z,30nm,1.4s,comp=Z,439nm
LSA Lhasa 42.45 276 P **P 14 52 27.1 -0.3**
LSA pmax pmax
comp=Z,21nm,2.4s
LSA Lhasa 42.45 276 *e*P **P 14 52 26.1 -1.3**
LSA pmax pmax
comp=Z,49nm,1.0s
LSA MLR MLR
comp=Z,1μm,20.0s
LSA Lhasa 42.45 276 *e*P **P 14 52 26.1 -1.3**
comp=Z,49nm,1.0s
LSA LR LR
comp=Z,1μm,20.0s
ZAA0 Zalesovo Array 42.54 313 *e*P **P 14 52 27.1 -0.3**
ZALV Zalesovo Beam 42.54 313 P **P 14 52 27.1 -0.3**
comp=Z,20nm,0.7s,baz=91,slow=6.4,SNR=79
ZALV ScP **ScP 14 58 09.3 +1.9**
comp=Z,3.6nm,0.9s,baz=103,slow=5.0,SNR=5.5
ZALV LR LR 15 11 00.7
comp=Z,2μm,18.6s,baz=71,slow=37
UTHA Uthaitani 42.76 252 P **P 14 52 30.6 +1.1**
comp=Z,6.0nm,1.2s,comp=Z,66nm
UMPA Umpang Tak 42.83 254 P **P 14 52 32.2 +2.1**
comp=Z,11nm,1.3s,comp=Z,293nm
ZSN Zaisan 43.14 303⇑ *i*P **P 14 52 30.7 -1.7**
comp=Z,798nm,1.2s
ZSN *e*S **S 14 58 56.8 +0.5**
ZSN LR LR 15 10 55.8
comp=Z,675nm,14.1s
SDPT Sand Point 43.21 45 *e*P **P 14 52 30.5 -2.2**
comp=Z,60nm,0.7s
SBUM Sibu 43.25 226 *e*P **P 14 52 34.4 +0.9**
comp=Z,23nm,1.3s
PATY Pattaya 43.30 248 P P 14 52 43.3 +9.4
NVS Novosibirsk 43.48 314⇑ *i*P **P 14 52 36.1 +1.2**
NVS *e*S **S 14 59 01.8 +0.9**
NVS *e* 15 02 31.7
NVS pmax pmax
comp=Z,114nm,1.2s
NVS pmax pmax
comp=N,17nm,1.5s
NVS pmax pmax
comp=E,94nm,1.2s
NVS smax smax
comp=E,27nm,1.9s
NVS smax smax
comp=N,22nm,2.7s
SHL Shillong 43.57 270 *e*P **P 14 52 35.0 -1.2**
SRDT SRDT 43.74 251 P **P 14 52 38.0 +0.6**
comp=N,98nm,1.5s
KHLT Khaolaem Dam 43.88 252 P **P 14 52 39.7 +1.2**
comp=N,12nm,1.4s,comp=N,244nm
NRIK Noril'sk 44.02 336 P **P 14 52 39.6 +0.6**
comp=N,3.1nm,0.4s,baz=127,slow=6.3,SNR=18
NRIK LR LR 15 11 08.7
comp=N,597nm,21.4s,baz=104,slow=36
TTSI Tana Toraja 44.10 212 P P 14 52 47.0 +6.7
comp=N,19nm,1.3s,comp=N,2μm
PHET Kaeng Krachan 44.24 249 P **P 14 52 42.8 +1.3**
comp=N,12nm,1.0s,comp=N,136nm
MK01 Makanchi Array 44.66 303 *e*P **P 14 52 43.9 -0.6**
MK31 Makanchi Array 44.66 303 *e*P **P 14 52 44.6 +0.1**
MK31 Makanchi Array 44.66 303 *e*P **P 14 52 44.5 +0.1**
MKAR Makanchi Array 44.66 303 P **P 14 52 44.5 0.0**
comp=N,39nm,1.0s,baz=88,slow=8.3,SNR=130
MKAR LR LR 15 12 08.3
comp=N,2μm,19.7s,baz=82,slow=37
MKAR Makanchi Array 44.66 303 *e*P **P 14 52 44.6 +0.1**
MAKZ Makanchi 44.87 303 *e*P **P 14 52 46.4 +0.2**
MAKZ pmax pmax
comp=Z,82nm,1.2s
MAKZ Makanchi 44.87 303 *e*P **P 14 52 46.4 +0.2**
comp=Z,82nm,1.2s
KSM Kuching 45.16 227 *e*P **P 14 52 47.3 -1.5**
comp=Z,71nm,1.5s
KSM LR LR
comp=Z,324nm,21.0s
TARA Tarawa 45.25 133 PFAKE 14 53 00.0 +11
TARA LR LR
comp=Z,157nm,22.0s

SEM Semipalatinsk 45.53 308 eP P 14 52 50.3 -1.0
comp=Z,395nm,1.4s
SEM eS S 14 59 31.2 +0.3
SEM LR LR 15 12 06.6
comp=Z,2µm,16.0s
STKI Sintang 45.62 225 P P 14 52 53.7 +1.3
comp=Z,56nm,1.1s
PMG Port Moresby 45.74 172 P P 14 52 52.7 -0.6
comp=Z,20nm,0.9s,baz=291,slow=2.9,SNR=4.6
PMG Port Moresby 45.74 172⇓ eP P 14 52 54.1 +0.8
PMG pmax pmax
comp=Z,114nm,1.0s
PMG Port Moresby 45.74 172 P P 14 52 51.4 -1.9
comp=Z,65nm,1.4s
PMG LR LR
comp=Z,438nm,20.0s
KAPI Kappang 45.90 211 eP P 14 52 51.4 -3.2
comp=Z,339nm,1.6s
KAPI LR LR
comp=Z,374nm,20.0s
KAPI Kappang 45.90 211 P P 14 52 55.3 +0.7
SNR=15
KAPI Kappang 45.90 211 P P 14 52 55.3 +0.7
SNR=15
TT01 Tatalina 45.94 34 eP P 14 52 54.3 -0.1
TTA Tatalina 45.94 34 eP P 14 52 53.4 -1.2
TTA pmax pmax
comp=Z,29nm,1.1s
TTA Tatalina 45.94 34 eP P 14 52 53.4 -1.2
comp=Z,29nm,1.1s
SVW2 Sparrevohn 46.02 37 eP P 14 52 53.1 -2.0
comp=Z,56nm,1.0s
TAPN Taplejung 46.16 275 eP P 14 52 57.2 +0.2
comp=Z,106nm,0.9s
KURK Kurchatov 46.52 309 eP P 14 52 57.7 -1.4
KURK pmax pmax
comp=Z,90nm,1.0s
KURK Kurchatov 46.52 309 eP P 14 52 57.7 -1.4
comp=Z,90nm,1.0s
KURK LR LR
comp=Z,6µm,22.0s
KURK Kurchatov 46.52 309 P P 14 52 59.2 +0.1
SNR=46
KURK P P 14 52 59.2 +0.1
SNR=46
KURK Kurchatov 46.52 309 P P 14 52 59.2 +0.1
SNR=46
KURBB Kurchatov Arra 46.59 309 P P 14 52 58.9 -0.8
comp=Z,28nm,0.8s,baz=86,slow=7.8,SNR=136
ODAN Odare 46.63 274 eP P 14 53 00.4 -0.2
comp=Z,275nm,1.3s
BBKI Banjar Baru 46.79 218 P P 14 53 02.0 +0.4
OHAK Old Harbor 47.20 42 eP P 14 53 02.9 -1.4
comp=Z,40nm,0.8s
RAMN Ramite 47.23 275 eP P 14 53 05.2 -0.1
comp=Z,244nm,0.8s
PDGK Podgornoye 47.28 299 P P 14 53 03.9 -1.2
PDGK pmax pmax
comp=Z,139nm,1.2s
RSO Redoubt South 47.39 38 eP P 14 53 07.4 +1.4
GUN Gumba 47.40 276 eP P 14 53 06.9 +0.2
comp=Z,166nm,1.0s
SURT Suratani 47.42 246 P P 14 53 07.7 +1.2
comp=Z,12nm,1.8s,comp=Z,234nm
KDAK Kodiak Island 47.55 41 P P 14 53 22.5 +16
comp=Z,91nm,0.9s,baz=280,slow=3.4,SNR=58
KDAK Kodiak Island 47.55 41 eP P 14 53 07.1 +0.1
KDAK pmax pmax
comp=Z,87nm,0.8s
KDAK Kodiak Island 47.55 41 eP P 14 53 07.1 +0.1
comp=Z,86nm,0.8s
KDAK LR LR
comp=Z,2µm,21.0s
KRAB Krabi 47.62 245 P P 14 53 09.0 +0.9
comp=Z,54nm,0.9s
PPLA Purkeypile 47.69 35 eP P 14 53 06.5 -1.8
comp=Z,97nm,1.2s
SPU Mount Spurr 47.73 37 eP P 14 53 01.2 -7.3
CAST Castle Rocks 47.75 34 eP P 14 53 09.7 +1.0
comp=Z,32nm,0.8s
PKIN Phulchoki 47.92 276 eP P 14 53 10.2 -0.5
comp=Z,123nm,1.2s
KKN Kakani 47.93 277 eP P 14 53 10.6 -0.1
comp=Z,171nm,1.1s
SATY Saty 48.11 298⇑ iP P 14 53 12.2 +0.4
comp=Z,416nm,1.2s
SATY eS S 15 00 10.0 +1.8
SATY LRM MLR 15 15 15.9
comp=Z,2µm,14.2s
DMN Daman 48.15 276 eP P 14 53 12.4 0.0
comp=Z,230nm,1.4s
BPAW Bear Paw Mtn. 48.26 33 eP P 14 53 12.5 0.0
comp=Z,49nm,1.4s
KTH Kantishna Hill 48.28 34 eP P 14 53 12.2 -0.5
comp=Z,64nm,1.0s
BRLK Bradley Lake 48.34 39 eP P 14 53 10.6 -2.6
comp=Z,62nm,1.2s
GKN Gorkha 48.35 277 eP P 14 53 14.0 +0.1
comp=Z,408nm,1.1s
MLY Manley 48.40 32 eP P 14 53 15.1 +1.5
comp=Z,58nm,0.9s
TRF Thorofare Moun 48.56 34 eP P 14 53 13.9 -1.1
comp=Z,28nm,1.0s
KULM Kulim 48.59 241 eP P 14 53 16.4 +0.8
comp=Z,26nm,1.3s
KULM LR LR
comp=Z,269nm,19.0s
SOEI Soe 48.62 203 P sP 14 53 31.2 +0.9
comp=Z,222nm,1.1s
SOEI Soe 48.62 203 eP P 14 53 14.3 -1.6
comp=Z,194nm,1.0s
HNR Honiara 48.64 156 LR LR 15 10 40.5
comp=Z,560nm,21.9s,baz=331,slow=32
COLD Coldfoot 48.73 29 eP P 14 53 18.0 +1.9
comp=Z,65nm,1.9s
RC01 Rabbit Creek A 48.86 37 eP P 14 53 16.0 -1.1
comp=Z,62nm,1.0s
IPM Ipoh 48.90 239 eP P 14 53 17.1 -0.9
comp=Z,19nm,0.9s
MDOK Medeo 49.04 299⇓ iP P 14 53 19.6 +0.6
comp=Z,506nm,1.4s
MDOK eS S 15 00 22.1 +0.7
MDOK LR LR 15 13 41.0
comp=Z,2µm,19.2s
SEW Seward 49.05 38 eP P 14 53 17.2 -1.3
comp=Z,112nm,1.4s
AAA Alma-Ata 49.09 299 i P P 14 53 20.4 +1.2
AAA i S S 15 00 14.8 -7.0
AAA pmax pmax
comp=Z,200nm,1.4s
AAA smax smax
comp=Z,3µm,9.0s
AAA MLR MLR
comp=Z,7µm,9.0s
PMR Palmer 49.13 36 eP P 14 53 19.2 0.0
PMR pmax pmax
comp=Z,53nm,1.0s
PMR Palmer 49.13 36 eP P 14 53 19.2 0.0
comp=Z,53nm,1.0s
MCK McKinley 49.16 33 eP P 14 53 18.4 -1.1
MCK pmax pmax
comp=Z,40nm,1.0s
MCK McKinley 49.16 33 eP P 14 53 18.4 -1.1
comp=Z,40nm,1.0s
RND Reindeer 49.21 34 eP P 14 53 19.1 -0.8
RND pmax pmax
comp=Z,56nm,0.9s
RND Reindeer 49.21 34 eP P 14 53 19.1 -0.8
comp=Z,56nm,0.9s
KOLN Koldanda 49.28 277 eP P 14 53 20.9 -0.2
comp=Z,286nm,1.4s
KUU Kurty 49.35 300⇑ iP P 14 53 21.1 -0.1
comp=Z,750nm,1.4s
KUU eS S 15 00 25.7 +0.2
KUU LR LR 15 14 48.2
comp=Z,1µm,14.3s
MDM Murphy Dome 49.46 32 eP P 14 53 22.2 +0.5
comp=Z,108nm,0.9s
SML Sawmill 49.50 36 eP P 14 53 21.7 -0.3
SML pmax pmax
comp=Z,53nm,0.8s
SML Sawmill 49.50 36 eP P 14 53 21.7 -0.3
comp=Z,53nm,0.8s
WRH Wood River Hil 49.53 32 eP P 14 53 21.3 -0.9
comp=Z,22nm,0.9s
COLA College 49.62 32 d iP P 14 53 23.9 +1.0
COLA pmax pmax
comp=Z,39nm,0.9s
COLA College 49.62 32 eP P 14 53 23.7 +0.9
comp=Z,49nm,0.8s
COLA LR LR
comp=Z,516nm,21.0s
PYUN Piuthan 49.63 278 eP P 14 53 23.7 -0.1
comp=Z,363nm,1.0s
CCB Clear Creek Bu 49.65 32 eP P 14 53 22.2 -0.9
comp=Z,11nm,0.9s
SCM Sheep Creek Mo 49.97 36 eP P 14 53 24.7 -1.0
SCM pmax pmax
comp=Z,74nm,1.0s
SCM Sheep Creek Mo 49.97 36 eP P 14 53 24.7 -1.0
comp=Z,74nm,1.0s
COEN Coen 49.99 178 eP P 14 53 24.4 -1.8
comp=Z,46nm,1.2s
HDA Harding Lake 50.02 32 eP P 14 53 26.7 +0.7
comp=Z,50nm,0.9s
IL1 Eielson Array 50.04 32 eP P 14 53 25.2 -0.9
ILAR Eielson Array 50.04 32 P P 14 53 27.0 +0.9
comp=Z,41nm,0.8s,baz=268,slow=6.4,SNR=372
ILAR LR LR 15 17 05.4
comp=Z,475nm,18.5s,baz=280,slow=39
ILB Eielson Array 50.04 32 eP P 14 53 26.6 +0.5
TKM2 Tokmak 2 50.13 299 eP P 14 53 28.3 +0.9
TKM2 pmax pmax
comp=Z,77nm,1.1s
TKM2 Tokmak 2 50.13 299 eP P 14 53 28.2 +0.9
comp=Z,77nm,1.1s
TKM2 LR LR
comp=Z,2µm,19.0s
PLAI Plampang 50.17 211 P P 14 53 37.3 +10
comp=Z,98nm,1.7s,comp=Z,1µm
BRZS Berezniki 50.40 309 eP P 14 53 28.4 -0.6
comp=Z,92nm,1.3s
BRZS eS S 15 00 41.4 +1.5
PPBI Pangkal Pinang 50.55 229 P P 14 53 31.3 +0.8
comp=Z,42nm,1.4s,comp=Z,2µm
KLU Klutina 50.67 36 eP P 14 53 32.6 +1.6
comp=Z,47nm,0.9s
FYU Fort Yukon 50.68 30 eP P 14 53 33.6 +2.7
comp=Z,104nm,1.1s
PAX Paxson 50.76 34 eP P 14 53 32.9 +1.2
PAX pmax pmax
comp=Z,37nm,1.2s
PAX Paxson 50.76 34 eP P 14 53 32.9 +1.2
comp=Z,37nm,1.2s
DIV Divide 50.77 37 eP P 14 53 33.6 +1.8
comp=Z,103nm,1.0s
ABJI Asem Bagus 50.84 216 P pP 14 53 44.8 +1.8
comp=Z,111nm,1.5s
EYAK Cordova Ski Ar 50.85 37 eP P 14 53 34.2 +2.0
comp=Z,59nm,0.8s
FRU Bishkek 50.85 299 eP P 14 53 32.0 -0.6
FRU eS S 15 00 47.0 +0.6
FRU pmax pmax
comp=Z,125nm,1.9s
FRU smax smax
comp=E,174nm,2.8s
KSH Kashi 50.86 295 eP P 14 53 37.2 +4.4
KSH epP sP 14 53 47.2 -0.1
KSH esP pP 14 53 51.0 +7.8
KSH ePP PP 14 55 33.3 +4.2
KSH S S 15 00 50.8 +4.0
KSH sS sS 15 01 06.7 +2.8
KSH SS SS 15 04 22.1 +0.6
KSH pmax pmax
comp=E,29nm,1.2s
KSH pmax pmax
comp=E,180nm,4.1s
KSH LR LR
comp=E,1µm,14.1s
KSH LR LR
comp=E,2µm,14.1s
KSH LR LR
comp=E,3µm,17.1s
VOSK Vostochnaya 50.90 312 P P 14 53 31.7 -1.1
VOSK pmax pmax
comp=Z,113nm,1.2s
CHKZ Chkalovo 50.94 314 P P 14 53 32.9 -0.1
CHKZ pmax pmax
comp=Z,131nm,1.4s
AAK Ala-Archa 50.99 299 P P 14 53 33.8 0.0
comp=Z,7.2nm,0.5s,baz=98,slow=4.6,SNR=28
AAK LR LR 15 16 37.7
comp=Z,6µm,18.8s,baz=58,slow=38
AAK Ala-Archa 50.99 299 c iP P 14 53 33.9 0.0
AAK pmax pmax
comp=Z,73nm,1.4s
AAK Ala-Archa 50.99 299 eP P 14 53 34.1 +0.3
comp=Z,32nm,1.3s
AAK Ala-Archa 50.99 299 P P 14 53 34.5 +0.7
SNR=15
AAK P P 14 53 34.5 +0.7
SNR=15
AAK Ala-Archa 50.99 299 P P 14 53 34.5 +0.7
SNR=15
OTUK Ortayu 51.00 306 P P 14 53 33.5 -0.1
OTUK pmax pmax
comp=Z,43nm,0.9s
BVA0 Borovoye Array 51.20 313 P P 14 53 34.0 -1.0
BVA0 pmax pmax
comp=Z,87nm,1.4s
BVAR Borovoye Array 51.20 313 P P 14 53 34.6 -0.4
comp=Z,13nm,0.9s,baz=78,slow=7.7,SNR=68
BVAR LR LR 15 16 29.8
comp=Z,3µm,18.5s,baz=75,slow=38
BRVK Borovoye 51.26 313 eP P 14 53 35.6 +0.2
BRVK pmax pmax
comp=Z,73nm,1.1s
BRVK Borovoye 51.26 313 eP P 14 53 35.6 +0.2
comp=Z,73nm,1.1s
BRVK LR LR
comp=Z,2µm,20.0s
BRVK Borovoye 51.26 313 P P 14 53 35.7 +0.3
SNR=42
BRVK P P 14 53 35.7 +0.3
SNR=42
BRVK Borovoye 51.26 313 P P 14 53 35.7 +0.3
SNR=42
DOT Dot Lake 51.34 33 eP P 14 53 36.9 +1.0
comp=Z,66nm,0.8s
BMRM Bremner River 51.36 37 eP P 14 53 38.0 +1.9
comp=Z,70nm,1.0s
RAGM Ragged Mountai 51.39 38 eP P 14 53 38.5 +2.2
comp=Z,108nm,1.2s
JAGI Jajag, Banyuwa 51.47 216 P pP 14 53 49.3 +1.6
comp=Z,58nm,1.6s
JAGI Jajag, Banyuwa 51.47 216 epP pP 14 53 45.5 -2.2
EKS2 Erkin-Say 51.49 299 eP P 14 53 38.4 +0.9
EKS2 pmax pmax
comp=Z,52nm,1.6s
EKS2 Erkin-Say 51.49 299 eP P 14 53 38.4 +0.9
comp=Z,52nm,1.6s
EKS2 LR LR
comp=Z,532nm,20.0s
PSI Prapat 51.55 240 eP P 14 53 38.7 +0.4
PSI pmax pmax
comp=Z,17nm,1.0s
PSI Prapat 51.55 240 eP P 14 53 38.7 +0.4
comp=Z,16nm,1.0s
MENT Mentasta 51.56 34 eP P 14 53 39.1 +1.6
comp=Z,40nm,1.0s
NGJI Ngawi 51.84 219 P P 14 53 49.6 +9.5
comp=Z,102nm,1.8s
ZRNK Zerenda 52.03 313 P P 14 53 39.7 -1.5
ZRNK pmax pmax
comp=Z,147nm,1.4s
MNAS Manas 52.44 299 P P 14 53 44.0 -0.6
MNAS pmax pmax
comp=Z,67nm,1.0s
EGAK Eagle 52.49 32 eP P 14 53 45.5 +1.1
comp=Z,28nm,1.0s
EGAK LR LR
comp=Z,638nm,21.0s
SFK Sufi-Kurgan 52.51 296 P P 14 53 44.6 -0.6
SFK pmax pmax
comp=Z,84nm,1.3s
MNSI Mandailing Nat 52.54 238 P P 14 53 48.3 +2.9
comp=Z,24nm,0.6s
UGM Wanagama 52.78 220 P pP 14 53 59.8 +2.2
DAWY Dawson 53.34 33 eP P 14 52.7 +1.9
comp=Z,51nm,1.6s
LEM Lembang 53.45 224 P P 14 54 01.7 +9.5
LHSI Lahat 53.46 230 P P 14 53 53.0 +0.8
comp=Z,70nm,1.6s,comp=Z,2µm
GSI Gunungsitoli 53.56 240 P P 14 53 53.3 +0.3
comp=Z,101nm,1.1s
GSI Gunungsitoli 53.56 240 eP P 14 53 51.9 -1.1
comp=Z,129nm,1.2s
MDSI Maura Dua 53.57 229 P P 14 53 52.8 -0.2
THN Thein Dam 53.59 286⇓ iP P 14 53 53.0 0.0
KK31 Karatay Array 53.64 301 i P P 14 53 53.1 -0.2
KK31 pmax pmax
comp=Z,67nm,1.2s
KKAR Karatay Array 53.64 301 eP P 14 53 54.0 +0.7
MASI Maura Aman, Be 53.73 232 P P 14 53 57.4 +3.2
comp=Z,253nm,1.1s,comp=Z,9µm
IUG Iuzhnay 54.29 300⇑ iP P 14 53 58.9 +0.7
comp=Z,653nm,1.7s
IUG eS S 15 01 34.2 +0.7
IUG LR LR 15 17 59.4
comp=Z,718nm,15.3s
INK Inuvik 54.98 27 P P 14 54 04.0 +1.4
comp=Z,42nm,0.7s,baz=290,slow=6.6,SNR=161
INK Inuvik 54.98 27 eP P 14 54 03.7 +1.1
INK Inuvik 54.98 27 eP P 14 54 03.6 +1.1
SVE Sverdlovsk 55.82 319⇑ eP P 14 54 09.7 +0.9
SVE pmax pmax
comp=Z,115nm,1.2s
FITZ Fitzroy Crossi 56.16 198 eP P 14 54 12.4 +0.8
comp=Z,111nm,1.6s
SKAG Skagway 56.19 38 eP P 14 54 13.9 +2.6
comp=Z,56nm,1.2s
CTA Charters Tower 56.24 175 P P 14 54 11.3 -0.8
comp=Z,10nm,1.1s,baz=354,slow=10,SNR=3.2
CTAO Charters Tower 56.24 175 PFAKE 14 54 20.0 +7.9
CTAO LR LR
comp=Z,718nm,19.0s
DZET Dzherino 56.32 296 P P 14 54 12.3 -0.5
DZET pmax pmax
comp=Z,57nm,0.9s
WRAB Tennant Creek 56.33 188 eP P 14 54 12.8 0.0
WRAB pmax pmax
comp=Z,67nm,1.4s
WRAB Tennant Creek 56.33 188 eP P 14 54 12.8 0.0
comp=Z,67nm,1.4s
WRAB LR LR
comp=Z,666nm,19.0s
WB2 Warramunga Arr 56.34 188 eP P 14 54 12.6 -0.3
comp=Z,24nm,0.8s
WRA Warramunga Arr 56.34 188 P P 14 54 11.5 -1.4
comp=Z,13nm,0.8s,baz=7.0,slow=7.3,SNR=88
WRA Warramunga Arr 56.34 188 i P P 14 54 12.3 -0.6
WRA pmax pmax
comp=Z,14nm,0.9s
FUNA Funafuti 56.87 134 PFAKE 14 54 30.0 +13
FUNA LR LR
comp=Z,5µm,19.0s
SOKR Solikamsk 57.02 323 d iP P 14 54 16.2 -1.0
SOKR pmax pmax
comp=Z,37nm,1.2s
SOKR MLR MLR
comp=Z,2µm,20.0s
ARU Arti 57.03 319 LR LR 15 21 00.2
comp=Z,2µm,19.2s,baz=68,slow=38
ARU Arti 57.03 319 c iP P 14 54 17.2 -0.2
ARU 14 55 13.3
ARU S S 15 02 11.7 +2.3
ARU 15 04 00.8
ARU pmax pmax
comp=Z,80nm,1.2s
ARU MLR MLR
comp=Z,3µm,18.0s
ARU Arti 57.03 319 eP P 14 54 17.3 -0.2
comp=Z,150nm,1.3s
KBL Kabul 57.84 292 eP P 14 54 23.8 +0.1
KBL pmax pmax
comp=Z,31nm,1.1s
KBL Kabul 57.84 292 eP P 14 54 23.8 +0.1
comp=Z,31nm,1.1s
HYB Hyderabad 58.35 269 i P P 14 54 28.0 +0.7
AB31 Akbulak array 58.55 311 i P P 14 54 27.9 -0.3
AB31 pmax pmax
comp=Z,19nm,0.7s
ABKAR Akbulak array 58.55 311 eP P 14 54 27.8 -0.4
WRAK Wrangell Islan 58.61 40 PFAKE 14 54 40.0 +12
WRAK LR LR
comp=Z,622nm,21.0s
DLBC Dease Lake 59.12 38 eP P 14 54 34.7 +2.6
comp=Z,67nm,1.3s
AKTO Aktyubinsk 59.30 312 LR LR 15 21 09.4
comp=Z,1µm,21.9s,slow=37
AS01 Alice Springs 60.06 188 eP P 14 54 37.9 -0.9
AS31 Alice Springs 60.07 188 eP P 14 54 38.6 -0.3
comp=Z,3.7nm,0.7s
ASAR Alice Springs 60.07 188 P P 14 54 38.4 -0.6
comp=Z,3.4nm,0.8s,baz=8.1,slow=6.0,SNR=34
ASAR LR LR 15 20 41.8
comp=Z,263nm,19.2s,baz=23,slow=36
MBWA Marble Bar 60.77 203 eP P 14 54 44.2 +0.5
comp=Z,72nm,1.5s
MBWA epP sP 14 54 59.3 +1.0
HOPEN Hopen 60.80 346 eP P 14 54 44.0 +0.7
HOPEN IAmb IAmb 14 54 56.6
comp=Z,75nm,1.1s
SPA0 Spitsbergen Ar 61.29 349 eP P 14 54 48.7 +2.1
SPA0 IAmb IAmb 14 54 59.8
comp=Z,36nm,1.1s
KBS Kingsbay 61.42 350 eP P 14 54 49.5 +2.0
KBS pmax pmax
comp=Z,70nm,1.0s
KBS Kingsbay 61.42 350 eP P 14 54 49.5 +2.0
comp=Z,70nm,1.0s
KBS LR LR
comp=Z,461nm,22.0s
HSPB Hornsund (broa 62.21 348 eP P 14 54 54.9 +2.1
HSPB IAmb IAmb 14 55 06.2
comp=Z,106nm,1.2s
HSPB IAMs_20 IAMs_20 15 24 38.6
comp=Z,831nm,18.5s
DZM Mont Dzumac 62.61 154 P P 14 54 56.9 +0.7
comp=Z,39nm,1.2s,baz=36,slow=4.7,SNR=5.6
DZM LR LR 15 19 48.1
comp=Z,1µm,20.0s,baz=6.5,slow=34
LVZ Lovozero 62.86 336 PFAKE 14 55 10.0 +13
LVZ LR LR
comp=Z,2µm,19.0s
APA Apatity 63.44 336⇓ iP P 14 55 02.0 +1.0
APA MLR MLR
comp=Z,2µm,18.0s
TMCR Tamitsa 63.48 332 eP P 14 55 01.6 +0.2
TMCR pmax pmax
comp=Z,63nm,1.1s
MSVF Nonsavu 63.82 141 eP P 14 55 06.5 +2.2
MSVF e*PP pP 14 55 15.7 +0.8
MSVF Nonsavu 63.82 141 eP P 14 55 06.5 +2.2
MSVF epP pP 14 55 15.7 +0.8
MSVF LR LR
comp=Z,2µm,21.0s
KEV Kevo 64.20 339 eP P 14 55 07.4 +1.4
KEV Kevo 64.20 339 eP P 14 55 07.5 +1.5
KEV pmax pmax
comp=Z,81nm,1.2s
KEV Kevo 64.20 339 eP P 14 55 07.5 +1.5
comp=Z,81nm,1.3s
KEV LR LR
comp=Z,1µm,21.0s
YKW3 Yellowknife Ar 64.33 30 eP P 14 55 07.6 +0.6
comp=Z,51nm,1.5s
GEYT Alibeck 64.34 299 P P 14 55 07.5 -0.1
comp=Z,7.7nm,0.8s,baz=26,slow=3.8,SNR=18
GEYT LR LR 15 25 09.4
comp=Z,1µm,19.6s,baz=70,slow=38
YKA Yellowknife Ar 64.37 30 P P 14 55 07.9 +0.6
comp=Z,9.4nm,0.7s,baz=301,slow=6.7,SNR=157
YKB5 Yellowknife Ar 64.37 30 eP P 14 55 06.8 -0.4
KLMR Klimovskoe 64.48 328 eP P 14 55 05.7 -2.3
KLMR e*PP pP 14 55 17.7 -0.9
KLMR e 14 55 38.3
KLMR pmax pmax
comp=Z,66nm,1.4s
KLMR MLR MLR
comp=Z,830nm,20.0s
ARA0 ARCESS Array S 64.75 340 eP P 14 55 10.8 +1.1
ARCES ARCESS Array B 64.75 340 P P 14 55 10.6 +0.9
comp=Z,6.3nm,0.8s,baz=49,slow=8.2,SNR=13
ARCES LR LR 15 26 22.3
comp=Z,1µm,22.0s,baz=36,slow=39
ARE0 ARCESS Array S 64.75 340 eP P 14 55 11.0 +1.3
ARE0 IAmb IAmb 14 55 22.6
comp=Z,48nm,1.3s
XMAS Kiritimati 65.60 106 PFAKE 14 55 30.0 +14

XMAS LR LR
comp=Z,3.0nm,21.0s
KTK1 Kautokeino 65.72 340 *e*P **P 14 55 18.0 +2.1**
KTK1 lAmb lAmb 14 55 28.6
comp=Z,59nm,1.1s
HEF Hetta 65.97 339 *e*P **P 14 55 18.7 +1.1**
KIF Kilpisjarvi 66.39 340 *e*P **P 14 55 21.1 +0.9**
TRO Tromso 66.47 341 *e*P **P 14 55 21.8 +1.1**
TRO lAmb lAmb 14 55 33.2
comp=Z,51nm,1.1s
AFI Afiamalu 66.53 130 P **P 14 55 21.0 -0.9**
comp=Z,40nm,0.4s,baz=266,slow=24,SNR=7.8
AFI LR LR 15 19 45.1
comp=Z,623nm,19.2s,baz=318,slow=32
DAG Danmarks Havn 66.53 355 *i* P **P 14 55 21.9 +0.9**
comp=Z,12nm,0.8s
DAG Danmarks Havn 66.53 355 *i* P **P 14 55 21.9 +0.9**
DAG pmax pmax
comp=Z,9.0nm,0.8s
PGC Sidney 66.74 46 *e*P **P 14 55 24.4 +1.7**
comp=Z,36nm,0.9s
ARMA Armidale 67.02 171 *e*P **P 14 55 26.1 +1.3**
comp=Z,28nm,1.0s
NLWA Neilton Lookou 67.10 47 *e*P **P 14 55 27.6 +2.4**
comp=Z,137nm,1.0s
NLWA LR LR
comp=Z,731nm,19.0s
A04D Lummi Island 67.13 46 P **P 14 55 26.6 +1.3**
baz=299,SNR=6.7
E03A Lebam 67.70 48 *e*P **P 14 55 31.2 +2.3**
comp=Z,82nm,0.9s
B05A Bryant 67.71 46 P **P 14 55 30.4 +1.4**
baz=300,SNR=14
STKA Stephens Creek 67.81 180 P **P 14 55 28.7 -0.9**
comp=Z,8.9nm,0.9s,baz=343,slow=7.3,SNR=12
STKA Stephens Creek 67.81 180 *e*P **P 14 55 29.9 +0.3**
STKA *e**PP **pP 14 55 42.0 +1.7**
STKA Stephens Creek 67.81 180 *e*P **P 14 55 29.9 +0.3**
STKA *e*pP **pP 14 55 42.0 +1.7**
B06A Marblemount 67.94 45 *e*P **P 14 55 32.0 +1.6**
comp=Z,72nm,1.2s
MOS Moscow 67.95 324 *e*P **P 14 55 28.3 -2.0**
MOS *e* 14 55 53.8
MOS *e* 14 57 57.4
MOS *e*S **S 15 04 24.9 -1.6**
MOS *e* 15 04 55.1
MOS pmax pmax
comp=Z,95nm,1.2s
MOS pmax pmax
comp=Z,200nm,1.4s
MOS MLR MLR
comp=Z,2µm,15.0s
F03A Seaside 68.00 49 *e*P **P 14 55 33.6 +2.7**
comp=Z,100nm,1.1s
LCW Lucas Creek 68.15 48 P **P 14 55 34.1 +2.3**
VRH Novokhopyorsk 68.25 318 *e*P **P 14 55 31.6 -0.7**
VRH *e**SP **pP 14 55 42.4 -0.5**
VRH pmax pmax
comp=Z,20nm,1.0s
VRH MLR MLR
comp=Z,2µm,15.0s
F04D Rainier, OR 68.26 48 P **P 14 55 34.0 +1.5**
baz=300
G03D McMinnville, O 68.54 49 P **P 14 55 35.9 +1.6**
baz=300
C06D Leavenworth 68.58 46 P **P 14 55 35.5 +1.0**
baz=301
WRW Wenatchee Ridg 68.62 46 P **P 14 55 36.5 +1.7**
STEI Steigen 68.63 341 *e*P **P 14 55 37.4 +3.1**
STEI lAmb lAmb 14 55 46.8
comp=Z,68nm,1.3s
LON Longmire 68.64 47 *e*P **P 14 55 36.5 +1.5**
LON pmax pmax
comp=Z,28nm,1.2s
LON Longmire 68.64 47 *e*P **P 14 55 36.5 +1.5**
comp=Z,28nm,1.2s
F04A Amboy 68.69 48 *e*P **P 14 55 37.0 +1.8**
comp=Z,92nm,0.8s
OBN Obninsk 68.79 323 P **P 14 55 35.3 -0.3**
comp=Z,29nm,1.0s,baz=78,slow=7.5,SNR=11
OBN Obninsk 68.79 323*c i*P **P 14 55 35.6 0.0**
OBN *i* 14 55 46.6
OBN *e* 14 58 07.2
OBN *e*S **S 15 04 37.6 +1.0**
OBN *e*SS **SS 15 09 05.7 +4.7**
OBN pmax pmax
comp=Z,72nm,1.7s
OBN MLR MLR
comp=Z,2µm,15.0s
OBN Obninsk 68.79 323 P **P 14 55 35.3 -0.3**
OBN LR LR
comp=Z,692nm,19.0s
COR Corvallis 68.83 50 *e*P **P 14 55 39.2 +3.1**
COR pmax pmax
comp=Z,100nm,1.0s
COR Corvallis 68.83 50 *e*P **P 14 55 39.2 +3.1**
comp=Z,105nm,1.0s
BBOO Buckleboo 68.93 185 *e*P **P 14 55 36.9 +0.3**
comp=Z,19nm,0.9s
LPSR Galich'ya Gora 68.98 320 *e*P **P 14 55 36.9 +0.1**
LPSR *e**SP **pP 14 55 47.2 -0.3**
LPSR pmax pmax
comp=Z,40nm,1.0s
LPSR MLR MLR
comp=Z,3µm,17.0s
LTY Liberty 69.05 46 *e*P **P 14 55 38.3 +0.8**
comp=Z,27nm,0.7s
ETW Entiat 69.07 46 P **P 14 55 39.1 +1.4**
B08A Colville Reser 69.25 45 *e*P **P 14 55 39.9 +1.2**
comp=Z,70nm,1.2s
I03D Drain, OR 69.25 51 P **P 14 55 40.4 +1.7**
baz=301,SNR=10
TDH Tom, Dick, Har 69.40 49 P **P 14 55 41.5 +1.7**
H04A Detroit Lake 69.47 49 *e*P **P 14 55 41.2 +1.1**
comp=Z,74nm,1.0s
FIA1 FINESS Array S 69.55 332 *e*P **P 14 55 40.8 +0.6**
FINES FINESS Array B 69.55 332 P **P 14 55 40.7 +0.5**
comp=Z,13nm,0.8s,baz=48,slow=8.5,SNR=36
FINES LR LR 15 28 26.1
comp=Z,1µm,18.4s,baz=38,slow=38
VSR Storozhevoye 69.60 319 *e*P **P 14 55 40.1 -0.6**
VSR *e**SP **pP 14 55 51.4 0.0**
VSR pmax pmax
comp=Z,30nm,1.0s
VSR MLR MLR
comp=Z,3µm,16.0s
G05D Wamic, OR 69.71 48 P **P 14 55 43.0 +1.4**
baz=301,SNR=9.3
I04A Tendick Farm, 69.79 50 P **P 14 55 43.1 +1.0**
baz=301,SNR=13
L02D Cave Junction, 69.88 52 P **P 14 55 44.2 +1.6**
baz=301,SNR=7.1
HUMO Hull Mountain 70.06 51 *e*P **P 14 55 45.8 +2.1**
HUMO *e*pP **sP 14 55 58.1 -0.4**
MOR8 Moi Rana 70.12 340 *e*P **P 14 55 44.0 +0.4**
MOR8 lAmb lAmb 14 55 55.1
comp=Z,94nm,1.0s
G06A Carlson Farm, 70.12 48 *e*P **P 14 55 45.9 +1.8**
comp=Z,61nm,1.1s
C09A Chrisman Ranch 70.15 45 *e*P **P 14 55 45.7 +1.5**
comp=Z,54nm,0.8s
C09A *e*pP **pP 14 55 54.1 -0.7**
I05D Terrebonne, OR 70.17 49 P **P 14 55 45.4 +1.0**
baz=302,SNR=12
HAWA Hanford 70.17 47 *e*P **P 14 55 46.1 +1.8**
comp=Z,38nm,1.0s
HAWA LR LR
comp=Z,434nm,22.0s
D08A Wollman Farm, 70.17 46 *e*P **P 14 55 45.6 +1.3**
comp=Z,46nm,0.8s
KONS Konsvik 70.24 341 *e*P **P 14 55 45.8 +1.4**
KONS lAmb lAmb 14 55 57.0
comp=Z,27nm,0.9s
KHMM Horse Mountain 70.46 53 *e*P **P 14 55 48.9 +2.5**
comp=Z,60nm,1.0s
NEW Newport 70.55 44 P **P 14 55 47.7 +1.1**
baz=303
NEW Newport 70.55 44 *e*P **P 14 55 48.1 +1.4**
NEW pmax pmax
comp=Z,40nm,1.0s
NEW Newport 70.55 44 *e*P **P 14 55 48.1 +1.4**
comp=Z,40nm,1.0s
NEW LR LR
comp=Z,461nm,19.0s
YBH Yreka Blue Hor 70.67 52 *e*P **P 14 55 49.6 +2.0**
YBH pmax pmax
comp=Z,35nm,1.0s
YBH Yreka Blue Hor 70.67 52 *e*P **P 14 55 49.6 +2.0**
comp=Z,35nm,1.0s
GOF Gofitskoye 70.71 312⇓*i*P **P 14 55 48.4 +0.7**
GOF pmax pmax
comp=Z,45nm,1.0s
M02C Callahan 70.76 52 P **P 14 55 49.6 +1.5**
baz=302,SNR=18
J05D Fort Rock, OR 70.78 50 P **P 14 55 50.0 +1.6**
baz=302,SNR=9.6
K04D Chiloquin, OR 70.81 51 P **P 14 55 50.0 +1.5**
baz=302
LHEM Herd Peak 71.04 52 P **P 14 55 51.7 +1.7**
N02D Trinity Center 71.07 53 P **P 14 55 51.6 +1.6**
baz=302,SNR=16
VSU Vasula 71.18 330*c i*P **P 14 55 51.5 +1.3**
VSU pmax pmax
comp=Z,59nm,0.9s
M04C Macdoel 71.20 52 P **P 14 55 52.0 +1.2**
baz=302,SNR=24
NCK Nalchik 71.21 310⇑*i*P **P 14 55 51.8 +1.1**
NCK pmax pmax
comp=Z,13nm,0.8s
K05A Summer Lake 71.29 50 *e*P **P 14 55 53.6 +2.2**
comp=Z,108nm,1.0s
WDC Whiskeytown Da 71.39 53 *e*P **P 14 55 53.5 +1.7**
WDC pmax pmax
comp=Z,39nm,1.0s
WDC Whiskeytown Da 71.39 53 *e*P **P 14 55 53.5 +1.7**
comp=Z,39nm,1.0s
ZEI Tsey 71.40 310 *e*P **P 14 55 50.3 -1.8**
ZEI pmax pmax
comp=Z,51nm,1.3s
SUMG Summit 71.43 0 *i*P **P 14 55 53.9 +1.9**
SUMG Summit 71.43 0 *i*P **P 14 55 53.9 +1.9**
SUMG Summit 71.43 0 *e*P **P 14 55 53.9 +1.9**
comp=Z,54nm,1.2s
KBZ Khabaz 71.52 311 P **P 14 55 53.5 +1.0**
comp=Z,14nm,1.0s,baz=58,slow=5.2,SNR=31
KBZ LR LR 15 32 09.1
comp=Z,913nm,18.4s,baz=47,slow=40
KIV Kislovodsk 71.52 311 *i*P **P 14 55 53.3 +0.6**
SNR=8.9
KIV Kislovodsk 71.52 311*c i*P **P 14 55 52.9 +0.2**
KIV *i* 14 56 03.8
KIV *i* 14 58 30.0
KIV *i*S **S 15 05 08.2 -1.0**
KIV pmax pmax
comp=Z,67nm,1.2s
KIV MLR MLR
comp=Z,824nm,18.0s
KIV Kislovodsk 71.52 311 *e*P **P 14 55 53.9 +1.2**
comp=Z,154nm,1.4s
KIV LR LR
comp=Z,799nm,20.0s
KIV Kislovodsk 71.52 311 P **P 14 55 54.0 +1.4**
SNR=28
KIV P **P 14 55 54.0 +1.4**
SNR=28
KIV Kislovodsk 71.52 311 P **P 14 55 54.0 +1.4**
SNR=28
CAN Canberra 71.57 174 PFAKE 14 56 00.0 +7.2
CAN LR LR
comp=Z,576nm,19.0s
BANOM Banah 71.60 289 P **P 14 55 53.9 +0.5**
F10A Beach Ranch, E 71.74 46 *e*P **P 14 55 55.0 +0.9**
comp=Z,17nm,0.9s
NEY Neytrino 71.88 311⇑*e*P **P 14 55 56.5 +1.5**
NEY pmax pmax
comp=Z,2.0nm,1.3s
WALA Waterton Lakes 71.88 42 *e*P **P 14 55 56.2 +1.4**
O03D Paynes Creek 72.02 53 P **P 14 55 56.4 +0.7**
baz=303,SNR=15
NSS Namsos 72.04 340 *e*P **P 14 55 57.6 +2.3**
NSS lAmb lAmb 14 56 07.9
comp=Z,71nm,1.3s
BSMT Bassoo Peak 72.08 43 *e*P **P 14 55 57.5 +1.3**
MOD Modoc Plateau 72.11 51 *e*P **P 14 55 57.1 +0.8**
comp=Z,34nm,0.9s
UOSS Minazif 72.19 288 *e*P **P 14 55 57.9 +0.9**
comp=Z,3.0nm,1.3s
BLMT Blacktail Moun 72.23 43 *e*P **P 14 55 58.8 +1.8**
GNI Garni 72.28 307 P **P 14 55 58.4 +0.9**
comp=Z,7.0nm,0.5s,baz=188,slow=3.9,SNR=11
GNI Garni 72.28 307 P **P 14 55 58.4 +0.9**
GNI pmax pmax
comp=Z,17nm,1.4s
GNI MLR MLR
comp=Z,1µm,19.0s
GNI Garni 72.28 307 P **P 14 55 58.4 +0.9**
comp=Z,17nm,1.4s
GNI LR LR
comp=Z,1µm,19.0s
HATD Hatta, Dubai 72.31 288 *i*P **P 14 55 58.9 +1.2**
SNR=6.8
BMO Blue Mountains 72.32 47 *e*P **P 14 55 58.5 +1.0**
BMO pmax pmax
comp=Z,36nm,1.0s
BMO Blue Mountains 72.32 47 *e*P **P 14 55 58.5 +1.0**
comp=Z,36nm,0.9s
BMO LR LR
comp=Z,454nm,20.0s
JTMT Jette 72.42 43 *e*P **P 14 55 59.5 +1.4**
ASHO Ashiyiah 72.44 288 *i*P **P 14 55 59.6 +1.1**
SNR=5.5
ASHO Ashiyiah 72.44 288 P **P 14 56 00.7 +2.2**
SNR=5.3
ASHO Ashiyiah 72.44 288 P **P 14 56 00.7 +2.2**
SNR=5.3
YBMT Yellow Bay 72.51 43 *e*P **P 14 56 00.3 +1.7**
NWAO Narrogin (SRO) 72.53 201 P **P 14 55 58.8 +0.2**
comp=Z,14nm,1.0s,baz=20,slow=0.0,SNR=3.7
ORV Oroville 72.61 54 *e*P **P 14 56 00.2 +1.0**
ORV pmax pmax
comp=Z,34nm,1.0s
ORV Oroville 72.61 54 *e*P **P 14 56 00.2 +1.0**
comp=Z,34nm,0.9s
SWMT Swartz Lake 72.72 43 *e*P **P 14 56 00.8 +1.0**
FAQ Al Faqa, Dubai 72.77 288 *i*P **P 14 56 01.0 +0.7**
SNR=6.2
ARQ Araqi 72.81 287 P **P 14 56 01.1 +0.5**
SNR=9.2
ARQ Araqi 72.81 287 P **P 14 56 01.1 +0.5**
SNR=9.2
WVOR Wild Horse Val 72.85 50 *e*P **P 14 56 02.3 +1.6**
WVOR pmax pmax
comp=Z,46nm,1.2s
WVOR Wild Horse Val 72.85 50 *e*P **P 14 56 02.3 +1.6**
comp=Z,46nm,1.3s
WVOR LR LR
comp=Z,668nm,19.0s
SCO Scoresbysund 72.87 354 *i*P **P 14 56 01.5 +1.4**
comp=Z,17nm,1.1s
SCO Scoresbysund 72.87 354 *e*P **P 14 56 01.5 +1.4**
SCO pmax pmax
comp=Z,17nm,1.1s
ASUD Al Ashush, Dub 73.04 288 P **P 14 56 03.1 +1.2**
IZAR Zarasai 73.13 328 *e*P **P 14 56 03.5 +1.6**
IZAR lAmb lAmb 14 56 15.1
comp=Z,32nm,1.0s
MSO Missoula 73.14 44 P **P 14 56 02.8 +0.5**
baz=305
MSO Missoula 73.14 44 *e*P **P 14 56 02.9 +0.5**
comp=Z,41nm,1.2s
MICGM Minsk 73.21 326 *e*P **P 14 56 04.0 +1.6**
MICGM *e*LR LR 15 31 08.0
MNK Minsk 73.21 326 *e*P **P 14 56 04.0 +1.6**
AFDM Forest Hills D 73.28 54 *e*P **P 14 56 04.5 +1.3**
comp=Z,27nm,1.2s
ISAL Salakas 73.30 328 *e*P **P 14 56 04.7 +1.8**
ISAL lAmb lAmb 14 56 16.1
comp=Z,58nm,0.9s
NACGM Naroch 73.44 327 *e* **P 14 56 05.0 +1.2**
NACGM *e*LQ LQ 15 25 48.0
NACGM *e*LR LR 15 31 15.0
CHMT Chamberlain Mo 73.48 44 *e*P **P 14 56 05.3 +0.8**
SOC Sochi 73.52 312 *e*P **P 14 56 03.2 -1.2**
SOC *e**SP **pP 14 56 15.0 -0.2**
SOC *e* 14 58 46.4
SOC *e*S **S 15 05 31.2 -0.6**
SOC *e*SS **SS 15 10 11.9 -2.2**
SOC pmax pmax
comp=Z,16nm,0.9s
SOC MLR MLR
comp=Z,1µm,18.0s
MFID Camas Ranch 74.01 48 *e*P **P 14 56 09.2 +1.7**
comp=Z,41nm,1.1s
ANN Anapa 74.17 314 *e*P **P 14 56 06.7 -1.5**
ANN *e*S **S 15 05 38.6 -0.4**
ANN pmax pmax
comp=Z,61nm,1.3s
ANN MLR MLR
comp=E,1µm,19.0s
ANN MLR MLR
comp=N,1µm,19.0s
ANN MLR MLR
comp=Z,1µm,19.0s
CMB Columbia Colle 74.17 54 *e*P **P 14 56 09.5 +1.0**
CMB pmax pmax
comp=Z,54nm,1.1s
CMB Columbia Colle 74.17 54 *e*P **P 14 56 09.5 +1.0**
comp=Z,54nm,1.1s
FFC Flin Flon 74.25 33 *e*P **P 14 56 08.8 +0.3**
FFC pmax pmax
comp=Z,34nm,0.9s
FFC Flin Flon 74.25 33 *e*P **P 14 56 08.8 +0.3**
comp=Z,34nm,0.9s
FFC LR LR
comp=Z,475nm,19.0s
WAKR Walker 74.53 54 *e*P **P 14 56 12.1 +1.4**
LRM Limekiln Ridge 74.57 44 *e*P **P 14 56 12.1 +1.2**
EGMT Eagleton 74.72 41 P **P 14 56 12.4 +0.9**
baz=308
EGMT Eagleton 74.72 41 *e*P **P 14 56 12.6 +1.1**
comp=Z,65nm,1.1s
EGMT LR LR
comp=Z,367nm,22.0s
NC405 NORSAR Array S 74.73 337 *e*P **P 14 56 12.6 +1.4**
NC303 NORSAR Array S 74.75 337 *e*P **P 14 56 12.2 +0.9**
HLID Hailey 74.76 47 P **P 14 56 13.2 +1.2**
baz=306
HLID Hailey 74.76 47 *e*P **P 14 56 13.2 +1.2**
comp=Z,25nm,1.1s
HLID LR LR
comp=Z,441nm,21.0s
BMN Battle Mountai 74.86 51 *e*P **P 14 56 14.5 +2.0**
BMN pmax pmax
comp=Z,43nm,0.9s
BMN Battle Mountai 74.86 51 *e*P **P 14 56 14.5 +2.0**
comp=Z,43nm,0.8s
NB201 NORSAR Array S 74.91 337 *e*P **P 14 56 13.2 +0.9**
MCMT McKenzie Canyo 74.93 45 *e*P **P 14 56 13.6 +0.6**
NB2 NORSAR Subarra 74.94 337 P **P 14 56 13.3 +0.8**
comp=Z,87nm,1.0s,baz=39,slow=5.9
NB2 NORSAR Subarra 74.94 337 P **P 14 56 13.3 +0.8**
baz=39,slow=5.9
NOA NORSAR Array B 74.94 337 P **P 14 56 13.2 +0.8**
comp=Z,9.7nm,0.8s,baz=39,slow=5.8,SNR=30
NOA LR LR 15 32 32.1
comp=Z,1µm,18.9s,baz=25,slow=38
AKASG Malin Array Be 74.99 323 P **P 14 56 13.3 +0.4**
comp=Z,10nm,0.7s,baz=46,slow=5.9,SNR=62
AKASG LR LR 15 32 13.9
comp=Z,3µm,18.1s,baz=30,slow=38
AKBB Malin Array Si 74.99 323 *e*P **P 14 56 13.3 +0.4**
AKBB Malin Array Si 74.99 323 *e*P **P 14 56 13.3 +0.4**
KIEV Kiev 75.00 323*ce*P **P 14 56 12.8 -0.1**
KIEV pmax pmax
comp=Z,21nm,1.0s
KIEV Kiev 75.00 323 *e*P **P 14 56 12.7 -0.3**
KIEV LR LR
comp=Z,2µm,20.0s
AK11 Malin Array Si 75.03 323 *e*P **P 14 56 13.3 +0.2**
NBO02 NORSAR Array S 75.04 338 *e*P **P 14 56 13.2 +0.2**
NC602 NORSAR Array S 75.07 337 *e*P **P 14 56 14.2 +1.0**
NC602 lAmb lAmb 14 56 25.8
comp=Z,70nm,1.4s
NBO00 NORSAR Array S 75.08 338 *e*P **P 14 56 14.6 +1.3**
BOZ Bozeman (W) 75.13 44 P **P 14 56 15.3 +1.3**
baz=307
BOZ Bozeman (W) 75.13 44 *e*P **P 14 56 15.1 +1.1**
BOZ pmax pmax
comp=Z,39nm,1.0s
BOZ Bozeman (W) 75.13 44 *e*P **P 14 56 15.1 +1.1**
comp=Z,39nm,0.9s
BOZ LR LR
comp=Z,499nm,21.0s
NAO01 NORSAR Array S 75.19 337 *e*P **P 14 56 15.0 +1.1**
NV01 Mina Array Sit 75.31 53 *e*P **P 14 56 15.6 +0.3**
NVAR Mina Array Bea 75.31 53 P **P 14 56 16.9 +1.6**
comp=Z,36nm,0.9s,baz=284,slow=6.1,SNR=163
NV11 Mina Array Sit 75.40 53 *e*P **P 14 56 17.4 +1.7**
MLAC Mammoth, Mammo 75.41 54 P **P 14 56 17.2 +1.3**
baz=305
SUW Suwalki 75.61 328 *e*P **P 14 56 15.9 -0.4**
SUW Suwalki 75.61 328 *e*P **P 14 56 15.9 -0.4**
QLMT Earthquake Lak 75.74 45 *e*P **P 14 56 19.3 +1.7**
ELK Elko 75.91 50 *e*P **P 14 56 20.2 +1.6**
ELK Elko 75.91 50 *e*P **P 14 56 20.2 +1.6**
SMMC Simmler 75.95 57 P **P 14 56 20.7 +1.9**
baz=305
SIM Simferopol' 75.98 316 *e*P **P 14 56 19.6 +0.9**
SIM *e*S **S 15 06 00.0 +0.8**
SIM pmax pmax
comp=Z,49nm,0.9s
SIM MLR MLR
comp=Z,900nm,17.0s
YMR Madison River 76.10 45 *e*P **P 14 56 21.8 +2.1**
comp=Z,29nm,0.9s
TIN Tinemaha, Big 76.14 54 P **P 14 56 21.1 +1.2**
baz=305
GCMT Greycliff 76.14 43 *e*P **P 14 56 21.1 +1.3**
YNR Norris Junctio 76.23 44 *e*P **P 14 56 23.1 +2.6**
comp=Z,28nm,1.1s
VES Vestal, Richgr 76.27 56 P **P 14 56 20.7 +0.2**
baz=305,SNR=15
YFT Old Faithful 76.31 45 *e*P **P 14 56 24.1 +3.3**
comp=Z,51nm,1.2s
PKM Mcpherson Peak 76.32 57 P **P 14 56 22.5 +1.4**
baz=305,SNR=14
LKWY Lake 76.48 44 *e*P **P 14 56 18.9 -3.0**
LKWY pmax pmax
comp=Z,47nm,1.1s
LKWY MLR MLR
comp=Z,669nm,19.0s
LKWY Lake 76.48 44 *e*P **P 14 56 18.9 -3.0**
comp=Z,47nm,1.1s
LKWY LR LR
comp=Z,669nm,19.0s
H17A Grant Village 76.49 45 P **P 14 56 24.7 +2.7**
baz=308
H17A Grant Village 76.49 45 *e*P **P 14 56 24.6 +2.7**
comp=Z,83nm,1.0s
KONO Kongsberg 76.53 337 *e*P **P 14 56 22.9 +1.4**
KONO lAmb lAmb 14 56 34.4
comp=Z,82nm,1.4s
KONO lAMs_20 lAMs_20 15 33 02.7
comp=Z,2µm,18.4s
KONO Kongsberg 76.53 337 *e*P **pP 14 56 33.4 +1.1**
KONO MLR MLR
comp=Z,1µm,22.0s
KONO Kongsberg 76.53 337 *e*pP **pP 14 56 33.4 +1.1**
KONO LR LR
comp=Z,1µm,22.0s
FLWY Flagg Ranch 76.61 45 *e*P **P 14 56 25.1 +2.6**
SFJD Kangerlussuaq 76.62 5 *i*P **P 14 56 22.9 +1.0**
comp=Z,22nm,1.2s
SFJD Kangerlussuaq 76.62 5 *e*P **P 14 56 22.9 +1.0**
SFJD pmax pmax
comp=Z,22nm,1.2s
SBC Santa Barbara 76.64 57 P **P 14 56 23.9 +1.3**
baz=305
GRAC Grapevine Rang 76.74 54 P **P 14 56 23.9 +0.8**
baz=306,SNR=5.9
RLMT Red Lodge 76.77 43 P **P 14 56 24.9 +1.4**
baz=308
RLMT Red Lodge 76.77 43 *e*P **P 14 56 24.7 +1.2**
comp=Z,58nm,1.4s
RLMT LR LR
comp=Z,457nm,20.0s
ISA Isabella, Lake 76.78 55 P **P 14 56 23.4 0.0**
baz=305,SNR=7.8
ISA Isabella, Lake 76.78 55 *e*P **P 14 56 23.9 +0.5**
ISA pmax pmax
comp=Z,22nm,1.1s
ISA Isabella, Lake 76.78 55 *e*P **P 14 56 23.9 +0.5**
comp=Z,22nm,1.1s
MOOW Moose Ponds 76.79 45 *e*P **P 14 56 25.1 +1.5**
comp=Z,38nm,1.3s
HVU Hansel Valley 76.79 48 *e*P **P 14 56 25.0 +1.5**
HVU Hansel Valley 76.79 48 *e*P **P 14 56 25.0 +1.5**
ARVC Arvin 76.84 56 P **P 14 56 24.3 +0.6**

baz=305
LOHW Long Hollow 76.95 45 *e*P **P** **14 56 26.4 +1.9**
SCZ2 Santa Cruz Isl 76.95 57 P **P** **14 56 25.6 +1.2**
baz=305
SNOW Snow King Moun 76.95 45 *e*P **P** **14 56 26.8 +2.2**
comp=Z,25nm,0.9s
REDW Red Top Meadow 76.96 46 *e*P **P** **14 56 26.1 +1.6**
DAC Darwin (Calif) 77.00 55 *e*P **P** **14 56 25.9 +1.0**
DAC pmax pmax
comp=Z,20nm,1.0s
DAC Darwin (Calif) 77.00 55 *e*P **P** **14 56 25.9 +1.0**
comp=Z,20nm,1.0s
R11A Troy Canyon, C 77.09 52 P **P** **14 56 26.4 +1.1**
baz=306
R11A Troy Canyon, C 77.09 52 *e*P **P** **14 56 26.3 +0.9**
comp=Z,47nm,1.1s
BGU Big Grassy Mou 77.15 49 *e*P **P** **14 56 27.4 +1.8**
AHID Auburn Hatcher 77.18 46 *e*P **P** **14 56 26.9 +1.1**
comp=Z,28nm,1.1s
AHID LR LR
comp=Z,671nm,19.0s
MPMC Manual Prospec 77.20 55 P **P** **14 56 26.4 +0.4**
baz=306,SNR=30
OSI Osito Audit: C 77.21 56 P **P** **14 56 26.8 +0.9**
baz=305
OSI Osito Audit: C 77.21 56 *e*P **P** **14 56 27.6 +1.7**
comp=Z,22nm,0.8s
BER Bergen 77.21 339 *e*P **P** **14 56 26.6 +1.2**
BER IAmb IAmb 14 56 38.7
comp=Z,50nm,1.0s
BER IAMs_20 IAMs_20 15 33 44.5
comp=Z,2µm,19.6s
ODD1 Odda 77.22 339 *e*P **P** **14 56 26.7 +1.3**
ODD1 IAmb IAmb 14 56 38.9
comp=Z,63nm,1.1s
SPUT South Promonto 77.27 48 *e*P **P** **14 56 28.1 +1.8**
BLG Laguna Peak, P 77.27 57 P **P** **14 56 27.0 +0.8**
baz=305
DGMT Dagmar 77.32 38 P **P** **14 56 27.0 +0.7**
baz=311
DGMT Dagmar 77.32 38 *e*P **P** **14 56 27.3 +1.0**
comp=Z,42nm,1.0s
DGMT LR LR
comp=Z,769nm,19.0s
FURC Furnace Creek, 77.37 54 P **P** **14 56 27.7 +1.0**
baz=306
LRMC Laurel Mtn Rad 77.41 55 P **P** **14 56 27.2 +0.1**
baz=306,SNR=24
LAO LASA Array 77.43 41 P **P** **14 56 28.0 +1.0**
baz=310
LAO LASA Array 77.43 41 *e*P **P** **14 56 28.6 +1.6**
comp=Z,50nm,0.9s
LAO LR LR
comp=Z,499nm,19.0s
SNCC San Nicolas Is 77.45 58 P **P** **14 56 28.4 +1.2**
baz=305
TPNV Topopah Spring 77.49 53 P **P** **14 56 28.4 +0.9**
baz=306
TPNV Topopah Spring 77.49 53 *e*P **P** **14 56 28.3 +0.7**
TPNV pmax pmax
comp=Z,35nm,1.0s
TPNV Topopah Spring 77.49 53 *e*P **P** **14 56 28.3 +0.7**
comp=Z,35nm,0.9s
EDW2 Edwards Air Fo 77.55 56 P **P** **14 56 28.4 +0.6**
baz=306,SNR=24
A25A Svangstu Ranch 77.55 38 P **P** **14 56 28.7 +1.2**
baz=312
KIS Kishinev 77.57 320 *e*P **P** **14 56 27.0 -0.6**
KIS *e*L L 15 27 20.0
KIS LRM MLR 15 33 40.0
comp=Z,3µm,16.0s
KIS Kishinev 77.57 320 *e*P **P** **14 56 27.0 -0.6**
KIS *e* 14 56 38.0
KIS MLR MLR
comp=N,2µm,16.0s
KIS MLR MLR
comp=E,2µm,16.0s
KIS MLR MLR
comp=Z,3µm,16.0s
KIS MLR MLR
comp=Z,3µm,16.0s
HWUT Hardware Ranch 77.62 47 *e*P **P** **14 56 29.4 +1.1**
HWUT LR LR
comp=Z,345nm,21.0s
DECC Green Verdugo 77.68 57 P **P** **14 56 29.5 +1.0**
baz=306
DUG Dugway, Tooele 77.72 49 P **P** **14 56 30.2 +1.4**
baz=307
DUG Dugway, Tooele 77.72 49 *e*P **P** **14 56 30.0 +1.2**
DUG Dugway, Tooele 77.72 49 *e*P **P** **14 56 30.0 +1.2**
DUG LR LR
comp=Z,562nm,22.0s
RBK Rabkut 77.82 283 P **P** **14 56 29.6 +0.1**
SNR=11
RBK Rabkut 77.82 283 P **P** **14 56 29.6 +0.1**
SNR=11
MWC Mount Wilson 77.89 56 *e*P **P** **14 56 30.9 +1.0**
MWC Mount Wilson 77.89 56 *e*P **P** **14 56 30.9 +1.0**
DGAR Diego Garcia 77.91 251 PFAKE 14 56 40.0 +10
DGAR LR LR
comp=Z,635nm,20.0s
B25A Knox Farm, Ray 77.97 38 P **P** **14 56 30.7 +0.8**
baz=312
TCUT Toone Canyon 78.01 48 *e*P **P** **14 56 32.3 +1.8**
CTU Camp Tracy 78.06 48 *e*P **P** **14 56 32.4 +1.7**
BW06 Boulder Array 78.07 45 P **P** **14 56 31.3 +0.5**
baz=309
BW06 Boulder Array 78.07 45 *e*P **P** **14 56 31.8 +1.0**
BW06 LR LR
comp=Z,421nm,20.0s
PD31 Pinedale Array 78.07 45 *e*P **P** **14 56 31.9 +1.0**
PDAR Pinedale Array 78.07 45 P **P** **14 56 31.7 +0.9**
comp=Z,12nm,0.6s,baz=266,slow=1.9,SNR=124
PSUT Pine Spring 78.08 51 *e*P **P** **14 56 32.0 +1.1**
LVV L'vov 78.08 324 *e*P **P** **14 56 30.6 +0.2**
LVV *e* 14 59 31.8
LVV *e*S **S** **15 06 20.6 -1.3**
LVV MLR MLR
comp=N,700nm,15.0s
LVV MLR MLR
comp=E,2µm,15.0s
LVV MLR MLR
comp=Z,2µm,15.0s
GSC Goldstone, Bar 78.09 55 P **P** **14 56 31.6 +0.7**
baz=306,SNR=9.0
GSC Goldstone, Bar 78.09 55 *e*P **P** **14 56 32.1 +1.2**
GSC *e**PP **PcP** **14 56 40.8 +0.4**
GSC Goldstone, Bar 78.09 55 *e*P **P** **14 56 32.1 +1.2**
GSC *ep*P **PcP** **14 56 40.8 +0.4**
A26A Wade Farm, Ken 78.11 37 P **P** **14 56 30.9 +0.3**
baz=312,SNR=7.8
CIS Catalina Islan 78.12 57 P **P** **14 56 31.9 +0.9**
baz=306
BFSC Mount Baldy Ra 78.14 56 P **P** **14 56 31.5 +0.3**
baz=306,SNR=8.7
BEL Belsk 78.16 327 *e*P pP 14 56 43.0 +1.4
BSD Bornholm Skovb 78.18 332 *i* P pP 14 56 40.8 -0.8
comp=Z,79nm,1.1s
C25A Freed Ranch, W 78.30 39 P **P** **14 56 32.7 +1.1**
baz=312
JLU Jordanelle 78.30 48 *e*P **P** **14 56 33.8 +1.7**
NLU North Lily Min 78.32 49 *e*P **P** **14 56 33.5 +1.4**
B26A Jensen Ranch, 78.36 38 P **P** **14 56 33.1 +1.1**
baz=312,SNR=5.8
MPU Maple Canyon 78.55 49 *e*P **P** **14 56 35.2 +1.7**
TUQ Turquoise Moun 78.59 54 P **P** **14 56 34.2 +0.5**
baz=306,SNR=29
ABTO Aybut 78.62 283 P **P** **14 56 34.2 +0.2**
SNR=9.8
ABTO Aybut 78.62 283 P **P** **14 56 34.2 +0.2**
SNR=9.8
BBRC Big Bear Solar 78.63 56 P **P** **14 56 34.8 +0.8**
baz=306
D25A Fairfield 78.64 39 P **P** **14 56 34.4 +0.8**
baz=312,SNR=5.6
HEC Hector,Ludlow 78.68 55 P **P** **14 56 34.7 +0.6**
baz=306,SNR=10
C26A Wahner Farm, P 78.80 38 P **P** **14 56 35.2 +0.7**
baz=312
MURC Murrieta 78.83 57 P **P** **14 56 35.4 +0.5**
baz=306,SNR=5.6
KWP Kalwaria Pacla 78.83 325 *e*P **P** **14 56 36.1 +1.5**
KWP Kalwaria Pacla 78.83 325 *e*P **P** **14 56 36.1 +1.5**
A28A Rude Farm, Bot 78.95 36 P **P** **14 56 35.7 +0.4**
baz=314,SNR=7.8
BURAR Bucovina Array 79.00 322 ⇑*i*P **P** **14 56 36.4 +0.8**

TESR Tescani 79.01 320 ⇑*i*P **P** **14 56 36.9 +1.3**
E25A Miller Ranch, 79.03 40 P **P** **14 56 36.5 +0.8**
baz=312
MSU Marysvale 79.14 50 *e*P **P** **14 56 38.5 +1.8**
MSU Marysvale 79.14 50 *e*P **P** **14 56 38.5 +1.8**
GMRC Granite Mounta 79.16 55 P **P** **14 56 37.4 +0.6**
baz=307,SNR=17
D26A Manning 79.17 39 P **P** **14 56 37.0 +0.5**
baz=312,SNR=7.1
C27A Sayler Ranch, 79.17 38 P **P** **14 56 37.1 +0.6**
baz=313,SNR=6.2
B28A Dugan Ranch, T 79.23 37 P **P** **14 56 37.6 +0.8**
baz=314,SNR=10.0
TMUT Trail Mountain 79.25 49 *e*P **P** **14 56 39.1 +1.7**
PFO Pinyon Flats O 79.32 56 P **P** **14 56 38.1 +0.4**
baz=307,SNR=19
PFO Pinyon Flats O 79.32 56 *e*P **P** **14 56 36.5 -1.2**
PFO Pinyon Flats O 79.32 56 *e*P **P** **14 56 38.7 +1.0**
PFO LR LR
comp=Z,1µm,20.0s
HWB Hans Werner Br 79.33 57 *e*P **P** **14 56 39.4 +1.8**
LDFC Landfair 79.34 54 *e*P **P** **14 56 39.1 +1.4**
LCMT Little Creek M 79.38 52 *e*P **P** **14 56 39.4 +1.4**
F25A Bowman 79.38 40 P **P** **14 56 38.5 +0.7**
baz=312,SNR=9.5
BELC Belle Mtn. Jos 79.40 56 P **P** **14 56 38.5 +0.4**
baz=307
VRI Vrincioaia 79.40 320 ⇑*i*P **P** **14 56 38.8 +1.0**
P17A Butcher Ranch, 79.42 49 *e*P **P** **14 56 40.0 +1.8**
A29A Manning Farm, 79.44 36 P **P** **14 56 38.4 +0.5**
baz=314,SNR=10
TIRR Tirgusor 79.44 318 ⇑*i*P **P** **14 56 39.3 +1.4**
PLOR Plostina 79.45 320 ⇑*i*P **P** **14 56 39.8 +1.7**
BR131 Keskin Array S 79.47 312 *e*P **P** **14 56 39.1 +0.7**
BRTR Keskin Array B 79.47 312 P **P** **14 56 39.0 +0.6**
comp=Z,7.4nm,1.0s,baz=107,slow=4.1,SNR=36
BRTR LR LR 15 36 29.9
comp=Z,509nm,18.2s,baz=44,slow=39
KOLS Kolonicke sedl 79.52 324 *e*P **P** **14 56 39.7 +1.3**
KOLS *e* 14 56 49.9
KOLS pmax pmax
comp=Z,28nm,1.2s
KOLS MLR MLR
comp=Z,2µm,16.4s
KOLS Kolonicke sedl 79.52 324 *e*P **P** **14 56 39.7 +1.3**
KOLS *ep*P **pP** **14 56 49.9 +0.7**
KOLS *e*L L 15 35 11.3
E26A Carlson Angus 79.53 39 P **P** **14 56 39.3 +0.8**
baz=312
D27A Center 79.57 38 P **P** **14 56 39.5 +0.8**
baz=313,SNR=5.7
P18A Preston Nutter 79.63 48 *e*P **P** **14 56 41.2 +1.7**
KNB Kanab 79.65 52 *e*P **P** **14 56 41.5 +2.0**
KNB Kanab 79.65 52 *e*P **P** **14 56 41.5 +2.0**
STHS Stebnicka Huta 79.67 325 *e*P **P** **14 56 40.9 +1.8**
STHS *e* 14 56 51.0
STHS pmax pmax
comp=Z,29nm,1.1s
STHS Stebnicka Huta 79.67 325 *e*P **P** **14 56 40.9 +1.8**
STHS *ep*P **pP** **14 56 51.0 +1.0**
B29A Wagenman Farm, 79.70 36 P **P** **14 56 40.1 +0.7**
baz=314
PKCU Pink Cliffs 79.71 51 *e*P **P** **14 56 44.5 +4.5**
UZH Uzhgorod 79.72 324 *e*P **P** **14 56 39.2 -0.2**
UZH *e* 14 56 46.4
UZH *i* 14 56 51.4
BAR Barrett 79.73 57 *e*P **P** **14 56 40.8 +1.0**
OJC Ojcow 79.75 326 *e*P **P** **14 56 40.6 +1.0**
OJC Ojcow 79.75 326 *e*P **P** **14 56 40.3 +0.7**
OJC Ojcow 79.75 326 *e*P **P** **14 56 40.3 +0.7**
MONP2 Monument Peak 79.77 57 P **P** **14 56 40.7 +0.4**
baz=307,SNR=13
SRU San Rafael Swe 79.78 49 *e*P **P** **14 56 41.6 +1.4**
SRU San Rafael Swe 79.78 49 *e*P **P** **14 56 41.6 +1.4**
ARCR ARCALIA 79.79 322 ⇑*i*P pP 14 56 51.8 +1.1
F26A Lodgepole 79.84 40 P **P** **14 56 41.0 +0.8**
baz=312,SNR=6.0
NEE2 Needles Airpor 79.85 54 P **P** **14 56 41.1 +0.7**
baz=307
A30A Hoffart Farm, 79.86 35 P **P** **14 56 40.7 +0.5**
baz=315,SNR=18
IRM Iron Mountain 79.87 55 P **P** **14 56 41.3 +0.8**
baz=307,SNR=21
K22A Casper 79.87 44 P **P** **14 56 41.2 +0.6**
baz=310,SNR=6.7
K22A Casper 79.87 44 *e*P **P** **14 56 40.4 -0.2**
comp=Z,108nm,1.7s
ANTO Ankara 79.89 312 *e*P **P** **14 56 39.5 -1.1**
ANTO pmax pmax
comp=Z,125nm,1.1s
ANTO MLR MLR
comp=Z,292nm,22.0s
ANTO Ankara 79.89 312 *e*P **P** **14 56 39.5 -1.1**
comp=Z,125nm,1.1s
ANTO LR LR
comp=Z,292nm,22.0s
G25A Newell 79.89 41 P **P** **14 56 40.5 0.0**
baz=312,SNR=6.2
BR231 Keskin MP Arra 79.92 312 *e*P **P** **14 56 39.7 -1.1**
CRVS Cervenica-Dubn 79.93 325 *e*P **P** **14 56 41.8 +1.2**
CRVS *e* 14 56 52.5
CRVS Cervenica-Dubn 79.93 325 *e*P **P** **14 56 41.8 +1.2**
CRVS *ep*P **pP** **14 56 52.5 +1.1**
TRPA Tarpa 79.96 324 ⇑*e*P pP 14 56 52.9 +1.4
BC3 Big Chuckawall 79.97 56 P **P** **14 56 41.7 +0.5**
baz=307,SNR=21
D28A Regan 79.99 38 P **P** **14 56 41.9 +0.9**
baz=314
MSAB Monastry St. A 80.00 318 ⇑*i*P **P** **14 56 42.6 +1.6**
MDND Maddock 80.01 37 P **P** **14 56 41.4 +0.3**
baz=314
E27A Carson 80.01 39 P **P** **14 56 41.4 +0.3**
baz=313
DOPR Dopca 80.03 321 ‖*i*P **P** **14 56 43.1 +1.9**
ULM Lac du Bonnet 80.04 33 P **P** **14 56 41.6 +0.5**
comp=Z,14nm,0.9s,baz=308,slow=7.1,SNR=26
ULM Lac du Bonnet 80.04 33 *e*P **P** **14 56 41.2 +0.1**
ULM Lac du Bonnet 80.04 33 *e*P **P** **14 56 41.1 +0.1**
MLR Muntele Rosu 80.06 320 ⇑*i*P **P** **14 56 42.8 +1.3**
MLR Muntele Rosu 80.06 320 *e*P **P** **14 56 42.3 +0.8**
MLR Muntele Rosu 80.06 320 *e*P **P** **14 56 42.3 +0.8**
NIE Niedzica 80.10 326 *e*P **P** **14 56 42.8 +1.3**
NIE Niedzica 80.10 326 *e*P **P** **14 56 42.9 +1.4**
IBP Imperial Bould 80.13 57 P **P** **14 56 42.6 +0.6**
baz=307,SNR=12
SWSC Sam W. Stewart 80.16 56 P **P** **14 56 42.4 +0.3**
baz=307
F27A Lemmon 80.16 39 P **P** **14 56 42.3 +0.4**
baz=313,SNR=13
H25A Fruitdale 80.18 41 P **P** **14 56 42.3 +0.2**
baz=312,SNR=8.6
B30A Myrvik Farm, E 80.20 36 P **P** **14 56 42.7 +0.7**
baz=315,SNR=11
G26A Maurine 80.25 40 P **P** **14 56 43.0 +0.5**
baz=313,SNR=23
RSSD Black Hills 80.28 42 P **P** **14 56 43.3 +0.5**
baz=312
RSSD Black Hills 80.28 42 *e*P **P** **14 56 43.5 +0.7**
RSSD Black Hills 80.28 42 *e*P **P** **14 56 43.5 +0.7**
E28A Huff 80.35 38 P **P** **14 56 43.6 +0.7**
baz=314
PDMCI Parker Dam,Lak 80.44 54 P **P** **14 56 44.2 +0.6**
baz=308,SNR=22
O20A White River Ci 80.50 47 P **P** **14 56 44.6 +0.5**
baz=310,SNR=20
I25A Rochford 80.51 42 P **P** **14 56 44.2 +0.2**
baz=312,SNR=12
Y12C Blythe 80.53 55 P **P** **14 56 44.9 +0.8**
baz=308,SNR=6.1
B31A Greenbush Farm 80.54 35 P **P** **14 56 44.3 +0.5**
baz=315
G27A Dupree 80.54 40 P **P** **14 56 44.5 +0.5**
baz=313,SNR=6.0
D29A Pettibone, Tap 80.56 37 P **P** **14 56 44.2 +0.2**
baz=314
VOIR 80.56 320 ‖*i*P **P** **14 56 45.4 +1.3**
H26A Fairpoint 80.62 41 P **P** **14 56 45.0 +0.6**
baz=312
C30A Mose, Pekin 80.65 36 P **P** **14 56 44.8 +0.3**
baz=315,SNR=8.1
LANS Liptovska Anna 80.67 326 *e*P **P** **14 56 47.2 +2.6**
LANS *e* 14 56 57.7
LANS Liptovska Anna 80.67 326 *e*P **P** **14 56 47.2 +2.6**
LANS *e* 14 56 57.7
KECS Kecovo 80.68 325 *e*P **P** **14 56 45.0 +0.4**

KECS *e* 14 56 56.2
KECS pmax pmax
comp=Z,9.0nm,1.0s
KECS Kecovo 80.68 325 *e*P **P** **14 56 45.0 +0.4**
KECS *ep*P **pP** **14 56 56.2 +0.7**
A32A Rocking H Ranc 80.72 35 P **P** **14 56 45.2 +0.4**
baz=316
GLA Glamis 80.75 56 P **P** **14 56 45.8 +0.5**
baz=307,SNR=9.6
GLA Glamis 80.75 56 *e*P **P** **14 56 46.8 +1.5**
GLA Glamis 80.75 56 *e*P **P** **14 56 46.8 +1.5**
OKC Ostrava-Krasne 80.76 327 *e*P **P** **14 56 46.4 +1.4**
OKC *ep*P **pP** **14 56 56.5 +0.6**
OKC AMS AMS 15 35 30.0
comp=Z,1µm,17.5s
OKC Ostrava-Krasne 80.76 327 *e*P **P** **14 56 46.4 +1.4**
OKC *e* 14 56 56.5
OKC MLR MLR
comp=Z,1µm,17.5s
F28A McLaughlin 80.80 39 P **P** **14 56 45.9 +0.5**
baz=314
ARR Arges 80.82 320 ⇑*i*P **P** **14 56 47.9 +2.4**
KSP Ksiaz 80.82 328 *e*P **P** **14 56 46.7 +1.4**
KSP Ksiaz 80.82 328 *e*P **P** **14 56 46.7 +1.4**
E29A Napoleon 80.88 38 P **P** **14 56 45.7 -0.1**
baz=314
J25A Sunshine Ranch 80.89 42 P **P** **14 56 46.3 +0.3**
baz=312
D30A Buchanan 80.94 37 P **P** **14 56 46.2 +0.2**
baz=315,SNR=6.5
C31A Landman Farms, 80.94 36 P **P** **14 56 46.2 +0.2**
baz=315
I26A New Underwood 80.97 41 P **P** **14 56 47.0 +0.7**
baz=313,SNR=7.0
H27A Howes 80.97 40 P **P** **14 56 46.6 +0.3**
baz=313,SNR=16
PV09 Paradox Valley 81.01 49 *e*P **P** **14 56 48.6 +1.7**
B32A Ashes, Strandq 81.08 35 P **P** **14 56 46.6 -0.1**
baz=316,SNR=17
MORC Moravsky Berou 81.08 327 *e*P **P** **14 56 47.9 +1.2**
MORC Moravsky Berou 81.08 327 *e*P **P** **14 56 47.9 +1.2**
RAYN Ar Rayn 81.09 293 *e*P **P** **14 56 46.7 -0.6**
comp=Z,59nm,1.5s
RAYN LR LR
comp=Z,945nm,19.0s
PV10 Paradox Valley 81.14 49 *e*P **P** **14 56 49.5 +1.9**
DPC Dobruska-Polom 81.18 328 *e*P **P** **14 56 48.6 +1.3**
DPC *ep*P **pP** **14 56 58.0 -0.2**
DPC AMS AMS 15 36 00.0
comp=Z,1µm,16.7s
DPC Dobruska-Polom 81.18 328 *e*P **P** **14 56 48.6 +1.3**
DPC *e* 14 56 58.0
DPC MLR MLR
comp=Z,1µm,16.7s
UPC Upice 81.19 328 *e*P **P** **14 56 48.6 +1.3**
UPC AMS AMS 15 36 00.0
comp=Z,1µm,19.6s
UPC Upice 81.19 328 *e*P **P** **14 56 48.6 +1.3**
UPC MLR MLR
comp=Z,1µm,19.6s
A33A Warroad 81.21 34 P **P** **14 56 47.1 -0.3**
baz=317,SNR=19
PV04 Paradox Valley 81.22 49 *e*P **P** **14 56 48.0 +0.1**
G28A Parade 81.27 39 P **P** **14 56 48.1 +0.3**
baz=314,SNR=11
E30A Jud 81.29 37 P **P** **14 56 48.2 +0.3**
baz=315,SNR=7.6
PV05 Paradox Valley 81.30 49 *e*P **P** **14 56 49.8 +1.4**
F29A Eureka 81.30 38 P **P** **14 56 48.5 +0.5**
baz=314
J26A Sides Ranch, S 81.34 42 P **P** **14 56 48.9 +0.6**
baz=312,SNR=7.0
N23A Red Feather La 81.35 45 P **P** **14 56 50.0 +1.3**
baz=311,SNR=32
PHWY Pilot Hill 81.36 45 *e*P **P** **14 56 50.0 +1.2**
PSZ Piszkesteto 81.36 325 ⇑*e*P pP 14 57 00.0 +0.8
PSZ Piszkesteto 81.36 325 *e*P **P** **14 56 49.6 +1.3**
PSZ Piszkesteto 81.36 325 *e*P **P** **14 56 49.6 +1.3**
PSZ LR LR
comp=Z,486nm,20.0s
I27A Quinn 81.37 41 P **P** **14 56 48.9 +0.5**
baz=313,SNR=18
VYHS Vyhne 81.43 326 *e*P **P** **14 56 49.5 +0.9**
VYHS *e* 14 56 59.7
VYHS *e* 14 59 54.9
VYHS pmax pmax
comp=Z,31nm,1.4s
VYHS Vyhne 81.43 326 *e*P **P** **14 56 49.5 +0.9**
VYHS *ep*P **pP** **14 56 59.7 +0.2**
VYHS *ep*P **PP** **14 59 54.9 +0.7**
AGMN Agassiz Nation 81.46 35 P **P** **14 56 48.6 -0.1**
baz=317
AGMN Agassiz Nation 81.46 35 *e*P **P** **14 56 49.0 +0.2**
AGMN LR LR
comp=Z,558nm,21.0s
C32A Crookston 81.49 35 P **P** **14 56 48.8 -0.1**
baz=316
WUAZ Wupatki 81.49 52 P **P** **14 56 50.5 +1.1**
baz=309
WUAZ Wupatki 81.49 52 *e*P **P** **14 56 50.8 +1.4**
WUAZ LR LR
comp=Z,495nm,22.0s
H28A Mission Ridge 81.49 40 P **P** **14 56 49.6 +0.5**
baz=314,SNR=24
SZH Strazhica 81.57 318 *e*P pP 14 57 00.4 +0.1
PV01 Paradox Valley 81.58 49 *e*P **P** **14 56 51.0 +1.1**
B33A Robert and Kas 81.60 35 P **P** **14 56 49.6 +0.1**
baz=317
G29A Hoven 81.70 39 P **P** **14 56 50.5 +0.4**
baz=314
E31A Nome 81.75 37 P **P** **14 56 50.3 -0.1**
baz=315,SNR=9.0
GZR Gura Zlata 81.75 321 ⇑*i*P **P** **14 56 51.4 +1.0**
D32A Dogwood Acres, 81.75 36 P **P** **14 56 50.3 0.0**
baz=316
BRG Berggiesshubel 81.78 330 *e*P **pP** **14 57 00.5 -0.7**
comp=Z,13nm,1.1s
BRG *e* 14 57 02.1
comp=Z,43nm,1.2s
BRG Berggiesshubel 81.78 330 *e*P **pP** **14 57 00.5 -0.7**
BRG pmax pmax
comp=Z,13nm,1.2s
BRG MLR MLR
comp=N,1µm,15.8s
BRG MLR MLR
comp=E,409nm,16.5s
BRG MLR MLR
comp=Z,1µm,16.7s
PVCC Panska Ves 81.78 329 *e*P **P** **14 56 51.8 +1.4**
PVCC *ep*P **pP** **14 57 02.9 +1.6**
PVCC AMS AMS 15 38 40.0
comp=Z,1µm,16.3s
PVCC Panska Ves 81.78 329 *e*P **P** **14 56 51.8 +1.4**
PVCC *e* 14 57 02.9
PVCC MLR MLR
comp=Z,1µm,16.3s
CLL Collm 81.83 330 *e*P **P** **14 56 51.0 +0.4**
comp=Z,11nm,0.8s
CLL *i* PcP **PcP** **14 56 57.0 +0.8**
CLL *i* pP **pP** **14 57 00.2 -1.3**
comp=Z,62nm,1.1s
CLL *i* 14 57 17.3
CLL *ep*PP **PP** **14 59 54.0 -3.3**
CLL Collm 81.83 330 *e*P **P** **14 56 51.0 +0.4**
CLL *i* 14 57 00.2
CLL pmax pmax
comp=Z,11nm,0.8s
CLL Collm 81.83 330 *e*P **P** **14 56 51.0 +0.4**
VRAC Vranov 81.84 327 ⇑*i*P **P** **14 56 52.3 +1.6**
SMCO Snowmass 81.87 47 *e*P **P** **14 56 53.1 +1.6**
B34A Aery, Baudette 81.87 34 P **P** **14 56 50.3 -0.7**
baz=317,SNR=9.9
I28A Midland 81.88 40 P **P** **14 56 51.5 +0.4**
baz=314,SNR=8.2
C33A Trail 81.89 35 P **P** **14 56 51.0 0.0**
baz=317,SNR=5.7
H29A Onida 81.94 39 P **P** **14 56 51.6 +0.2**
baz=314,SNR=16
J27A Elkhorn Farm, 81.95 41 P **P** **14 56 52.1 +0.6**
baz=313,SNR=5.9
F31A Hecla 82.07 38 P **P** **14 56 52.3 +0.3**
baz=315
BUD Budapest 82.08 325 ⇑*e*P pP 14 57 04.0 +1.1
G30A Faulkton 82.14 39 P **P** **14 56 52.6 +0.2**
baz=315,SNR=9.3

GOPC **GO Pecny, Ondr** 82.16 329 *e*P **P** 14 56 53.2 +0.8
GOPC *e*pP **pP** 14 57 02.9 -0.4
GOPC AMS AMS 15 37 50.0
comp=Z,1µm,13.6s
GOPC **GO Pecny, Ondr** 82.16 329 *e*P **P** 14 56 53.2 +0.8
GOPC *e* 14 57 02.9
GOPC MLR MLR
comp=Z,1µm,13.6s
BZS **Buzias** 82.17 322 ⇓ *i*P **P** 14 56 53.0 +0.4
PRA **Prague** 82.19 329 *e*P **P** 14 56 53.7 +1.2
PRA *e*pP **pP** 14 57 04.5 +1.1
PRA AMS AMS 15 37 10.0
comp=Z,2µm,16.3s
PRA **Prague** 82.19 329 *e*P **P** 14 56 53.7 +1.2
PRA *e* 14 57 04.5
PRA MLR MLR
comp=Z,2µm,16.3s
PRU **Pruhonice** 82.21 329 *e*P **P** 14 56 53.8 +1.2
PRU *e*pP **pP** 14 57 03.4 -0.1
PRU AMS AMS 15 38 00.0
comp=Z,1µm,15.5s
PRU **Pruhonice** 82.21 329 *e*P **P** 14 56 53.8 +1.2
PRU *e* 14 57 03.4
PRU MLR MLR
comp=Z,1µm,15.5s
MVCO **Mesa Verde** 82.22 49 P **P** 14 56 54.2 +1.0
baz=310
MVCO **Mesa Verde** 82.22 49 *e*P **P** 14 56 54.8 +1.5
MVCO LR LR
comp=Z,521nm,21.0s
J28A **Allard Ranch,** 82.24 41 P **P** 14 56 53.9 +0.8
baz=314,SNR=5.5
ISCO **Idaho Springs** 82.25 46 P **P** 14 56 54.6 +1.1
baz=311
ISCO **Idaho Springs** 82.25 46 *e*P **P** 14 56 55.1 +1.6
ISCO **Idaho Springs** 82.25 46 *e*P **P** 14 56 55.1 +1.6
ISCO LR LR
comp=Z,557nm,22.0s
D33A **AnnSam, Waubun** 82.31 36 P **P** 14 56 53.2 -0.1
baz=317
I29A **Vivian Onida** 82.32 40 P **P** 14 56 53.9 +0.5
baz=314,SNR=5.2
TREC **Trest** 82.33 328 AMS AMS 15 40 40.0
comp=Z,1µm,15.1s
PKS7 **Kunszentmiklos** 82.33 324 ⇓ *e*P pP 14 57 05.7 +1.5
C34A **RKJ Ranch, Bem** 82.37 35 P **P** 14 56 53.0 -0.6
baz=317
B35A **Bob, Littlefor** 82.38 34 P **P** 14 56 53.7 +0.1
baz=318,SNR=13
PKSG 82.44 325 ⇓ *e*P pP 14 57 06.1 +1.3
CSKK **Cs^‡kako** 82.52 325 ⇓ *e*P pP 14 57 06.8 +1.6
G31A **Conde** 82.54 38 P **P** 14 56 54.5 +0.1
baz=315
ISP **Isparta** 82.56 312 PFAKE 14 57 10.0 +15
ISP LR LR
comp=Z,432nm,19.0s
F32A **Veblen** 82.61 37 P **P** 14 56 54.9 +0.1
baz=316
D34A **Park Rapids** 82.65 35 P **P** 14 56 55.0 -0.1
baz=317
CSS **Mathiatis** 82.65 308 *e*P **P** 14 56 56.0 +0.7
CSS LR LR
comp=Z,244nm,19.0s
K28A **Ten Mile Ranch** 82.66 41 P **P** 14 56 55.7 +0.4
baz=314,SNR=5.2
MPEP **Malo Peshtene** 82.67 319 *e*P pP 14 57 06.0 -0.1
E33A **Westby DABS, E** 82.69 36 P **P** 14 56 55.2 -0.1
baz=317,SNR=7.4
PKST **T"'s** 82.70 325 ⇓ *e*P pP 14 57 07.3 +1.1
PKS2 **Kecel** 82.71 324 ⇓ *e*P pP 14 57 07.3 +1.1
SUSD **Miller** 82.72 39 P **P** 14 56 55.6 +0.2
baz=315
MDVR **Moldovita** 82.72 322 ⇑ *i*P **P** 14 56 56.5 +1.0
J29A **Okreek** 82.73 40 P **P** 14 56 55.7 +0.1
baz=314
C35A **Jirik Farms, M** 82.76 34 P **P** 14 56 55.0 -0.6
baz=318,SNR=17
214A **Organ Pipe Nat** 82.76 56 P **P** 14 56 56.6 +0.6
baz=308
214A **Organ Pipe Nat** 82.76 56 *e*P **P** 14 56 53.7 -2.2
comp=Z,169nm,1.5s
W18A **Petrified Fore** 82.78 52 P **P** 14 56 57.1 +0.9
baz=310
I30A **Oacoma** 82.85 40 P **P** 14 56 56.3 +0.1
baz=315,SNR=6.8
G32A **Webster** 82.87 38 P **P** 14 56 57.0 +0.8
baz=316,SNR=8.6
S22A **4UR Ranch, Cre** 82.88 48 P **P** 14 56 57.9 +1.1
baz=311,SNR=30
H31A **Wolsey** 82.93 39 P **P** 14 56 57.0 +0.4
baz=315
KDZ **Kurdzhali** 82.95 317 *e*P pP 14 57 08.9 +1.3
SNZO **South Karori** 82.96 156 PFAKE 14 57 10.0 +14
SNZO LR LR
comp=Z,1µm,22.0s
PGB **Panagyurishte** 83.01 319 *e*P pP 14 57 08.2 +0.3
F33A **5 Mile Ranch,** 83.04 37 P **P** 14 56 57.2 +0.2
baz=316,SNR=18
L28A **Connealy Angus** 83.06 42 P **P** 14 56 57.9 +0.5
baz=314
SOP **Sopron** 83.06 326 ⇑ *e*P pP 14 57 08.4 +0.4
Q24A **Divide** 83.08 46 P **P** 14 56 58.3 +0.5
baz=312,SNR=12
E34A **Wadena** 83.08 36 P **P** 14 56 57.3 +0.1
baz=317
PKS9 **Tamasi** 83.08 325 ⇓ *e*P pP 14 57 09.0 +0.8
K29A **Lazy Trails An** 83.19 41 P **P** 14 56 58.4 +0.5
baz=314,SNR=8.1
J30A **Dallas** 83.22 40 P **P** 14 56 58.6 +0.5
baz=315
C36A **Pine Crest Far** 83.23 34 P **P** 14 56 58.1 +0.1
baz=319,SNR=9.4
KHC **Kasperske Hory** 83.27 329 *e*P **P** 14 56 58.9 +0.7
KHC *e*pP **pP** 14 57 08.3 -0.8
KHC AMS AMS 15 38 30.0
comp=Z,1µm,15.0s
KHC **Kasperske Hory** 83.27 329 *e*P **P** 14 56 58.9 +0.7
KHC *e* 14 57 08.3
KHC MLR MLR
comp=Z,1µm,15.0s
KHC **Kasperske Hory** 83.27 329 *e*P **P** 14 56 59.1 +0.9
E35A **Pequot Lakes** 83.41 35 P **P** 14 56 59.0 +0.1
baz=318
G33A **Ortonville** 83.43 37 P **P** 14 56 59.0 -0.1
baz=316,SNR=12
GEC2 **GERESS Array S** 83.43 328 *e*P **P** 14 56 59.9 +0.7
GEC2 **GERESS Array S** 83.43 328 *e*P **P** 14 56 59.9 +0.7
GERES **GERESS Array B** 83.43 328 P **P** 14 56 59.6 +0.4
comp=Z,3.1nm,0.7s,baz=35,slow=4.9,SNR=17
GERES PP **PP** 15 00 08.2 -2.4
comp=Z,0.8nm,0.7s,baz=47,slow=7.8,SNR=3.4
GERES PKKPbc **PKKPbc** 15 15 18.0 +0.7
comp=Z,0.1nm,0.3s,baz=256,slow=4.0,SNR=4.0
GERES LR LR 15 38 47.9
comp=Z,1µm,19.3s,baz=20,slow=39
H32A **Carlson Farm,** 83.44 38 P **P** 14 56 59.7 +0.5
baz=316
VTS **Vitosha** 83.49 319 ⇑ *i*P **P** 14 57 01.1 +1.5
VTS **Vitosha** 83.49 319 *e*P **P** 14 57 00.7 +1.1
VTS **Vitosha** 83.49 319 *e*P pP 14 57 10.9 +0.4
VTS **Vitosha** 83.49 319 *e*P **P** 14 57 00.7 +1.1
OGNE **Ogallala** 83.51 43 P **P** 14 57 00.1 +0.4
baz=313
OGNE **Ogallala** 83.51 43 *e*P **P** 14 57 01.2 +1.5
OGNE LR LR
comp=Z,491nm,20.0s
D36A **Goodland** 83.52 34 P **P** 14 56 59.1 -0.4
baz=318
C37A **Embarrass** 83.54 33 P **P** 14 56 59.3 -0.3
baz=319,SNR=7.4
F34A **Alexandria** 83.56 36 P **P** 14 57 00.1 +0.3
baz=317
M28A **Bar X Bar Ranc** 83.57 42 P **P** 14 57 00.2 +0.2
baz=314
L29A **Maesberg Ranch** 83.59 41 P **P** 14 57 00.2 +0.2
baz=314
K30A **Basset** 83.62 41 P **P** 14 57 00.7 +0.5
baz=315
J31A **Geddes** 83.64 40 P **P** 14 57 00.4 +0.1
baz=315
H33A **Prehn Over Nor** 83.65 38 P **P** 14 57 00.8 +0.5
baz=316
SDCO **Great Sand Dun** 83.68 47 P **P** 14 57 01.8 +0.9
baz=312,SNR=24
SDCO **Great Sand Dun** 83.68 47 *e*P **P** 14 57 01.3 +0.4
SDCO LR LR
comp=Z,410nm,19.0s
EYMN **Ely** 83.68 33 P **P** 14 57 00.6 +0.3
baz=320
EYMN **Ely** 83.68 33 *e*P **P** 14 57 00.9 +0.6
PMOR **Pomariorio Ree** 83.73 114 *e*T T 16 28 59.5
comp=Z,5.2nm,0.2s
I32A **Karley and Nic** 83.77 38 P **P** 14 56 59.9 -1.0
baz=316
G34A **Benson** 83.79 37 P **P** 14 57 01.3 +0.4
baz=317
GRFO **Grafenberg** 83.80 330 *e*P **P** 14 57 01.9 +1.0
GRFO **Grafenberg** 83.80 330 *e*P **P** 14 57 01.9 +1.0
F35A **Swanville** 83.84 36 P **P** 14 57 01.1 -0.1
baz=318
D37A **Cotton** 83.86 34 P **P** 14 57 00.7 -0.6
baz=319
BEHE **Becsehely** 83.87 325 ⇑ *e*P pP 14 57 12.6 +0.4
TUC **Tucson** 83.88 54 P **P** 14 57 02.6 +0.8
baz=309
TUC **Tucson** 83.88 54 *e*P **P** 14 57 03.1 +1.3
TUC **Tucson** 83.88 54 *e*P **P** 14 57 03.1 +1.3
TUC LR LR
comp=Z,765nm,20.0s
MMB **Musomiste** 83.91 318 *e*P pP 14 57 12.3 -0.3
C38A **Sawbill Land.** 83.95 33 P **P** 14 57 01.5 -0.2
baz=320
MOA **Molln** 83.95 327 *i*P **P** 14 57 02.3 +0.5
comp=Z,8.4nm,1.3s,SNR=6.9
E36A **McGregor** 83.97 35 P **P** 14 57 02.0 +0.2
baz=316,SNR=7.0
KKB **Krupnik** 84.06 319 *e*P pP 14 57 13.1 -0.2
L30A **Spencer Herefo** 84.07 41 P **P** 14 57 02.5 0.0
baz=315
I33A **Coleman** 84.08 38 P **P** 14 57 02.4 -0.1
baz=316
K31A **O'Neill** 84.10 40 P **P** 14 57 02.9 +0.2
baz=315,SNR=5.0
H34A **Spellman Lake,** 84.14 37 P **P** 14 57 02.6 -0.1
baz=317
PPT **Papeete** 84.15 117 LR LR 15 27 36.1
comp=Z,726nm,19.8s,baz=282,slow=31
PPT2 **Papeete2** 84.17 117 *e*LR LR 15 23 25.2
comp=Z,1µm,21.8s,baz=310
O28A **Krutsinger Ran** 84.22 44 P **P** 14 57 03.4 0.0
baz=314
M30A **Dale-Ortello V** 84.28 42 P **P** 14 57 03.3 -0.3
baz=315
F36A **Milaca** 84.33 35 P **P** 14 57 03.4 -0.3
baz=318
G35A **Watkins** 84.36 36 P **P** 14 57 04.2 +0.4
baz=318,SNR=6.7
C39A **Grand Marais** 84.37 32 P **P** 14 57 03.5 -0.3
baz=320
N29A **Votaw Ranch, W** 84.37 42 P **P** 14 57 03.9 -0.2
baz=314
L31A **Butterfield Fa** 84.38 41 P **P** 14 57 04.3 +0.2
baz=315
ECSD **EROS Data Cent** 84.40 38 P **P** 14 57 04.4 +0.3
baz=316
ECSD **EROS Data Cent** 84.40 38 *e*P **P** 14 57 04.7 +0.5
ECSD LR LR
comp=Z,566nm,22.0s
K32A **Verdigre** 84.48 40 P **P** 14 57 04.8 +0.3
baz=316
PERS **Pernice** 84.50 326 *i*P **P** 14 57 05.4 +0.8
PERS *e* 14 57 15.7
SOKA **Soboth** 84.51 326 *i*sP pP 14 57 15.9 +0.3
comp=Z,74nm,1.3s,SNR=11
J33A **Davis** 84.53 39 P **P** 14 57 04.4 -0.3
baz=316
I34A **Hadley** 84.56 38 P **P** 14 57 05.1 +0.3
baz=317
H35A **Sunnyside Ranc** 84.57 37 P **P** 14 57 05.5 +0.5
baz=318,SNR=34
P28A **Saint Francis** 84.61 44 P **P** 14 57 05.2 -0.1
baz=314
N30A **Hueftle Ranch,** 84.67 42 P **P** 14 57 05.4 -0.2
baz=314
G36A **St. Michael** 84.69 36 P **P** 14 57 05.8 +0.3
baz=318
VAY **Valandovo** 84.72 319 ⇑ *i*P **P** 14 57 07.2 +1.5
VAY *i* PcP **pP** 14 57 15.3 -1.3
T25A **Trinidad** 84.73 47 P **P** 14 57 07.1 +1.0
baz=312,SNR=24
O29A **4D Ranch, Culb** 84.76 43 P **P** 14 57 05.9 -0.2
baz=314
SKO **Skopje** 84.85 320 *i*P **P** 14 57 07.6 +1.2
SKO *i* PcP **pP** 14 57 17.3 0.0
M31A **Lambtecht Ranc** 84.89 41 P **P** 14 57 06.3 -0.4
baz=315
ANMO **Albuquerque** 84.94 50 P **P** 14 57 08.5 +1.3
baz=311
ANMO **Albuquerque** 84.94 50 *e*P **P** 14 57 08.8 +1.6
ANMO **Albuquerque** 84.94 50 *e*P **P** 14 57 08.8 +1.6
ANMO LR LR
comp=Z,539nm,21.0s
KBA **Koelnbreinsper** 84.95 327 *i*P **P** 14 57 06.0 -1.0
comp=Z,3.7nm,0.8s,SNR=5.6
K33A **Hamington** 85.02 39 P **P** 14 57 07.6 +0.4
baz=316
P29A **Atwood** 85.05 43 P **P** 14 57 07.4 -0.1
baz=314
MEM **Membach** 85.05 333 AP pP 14 57 18.4 +0.3
H36A **Jessenland, He** 85.10 36 P **P** 14 57 08.2 +0.7
baz=318,SNR=11
I35A **Creekview Farm** 85.12 37 P **P** 14 57 07.7 0.0
baz=318
O30A **MW Ranch, Wils** 85.13 43 P **P** 14 57 08.1 +0.2
baz=315
SPMN **Marine on St.** 85.14 35 P **P** 14 57 08.0 +0.2
baz=319
SPMN **Marine on St.** 85.14 35 *e*P **P** 14 57 08.2 +0.4
comp=Z,41nm,1.3s
MYKA **Terra Mystica** 85.16 327 *e*pP pP 14 57 18.4 -0.4
comp=Z,18nm,1.0s,SNR=7.0
L33A **Hoskins** 85.20 40 P **P** 14 57 08.3 +0.1
baz=316
N31A **Bailey Ranch,** 85.27 42 P **P** 14 57 08.4 -0.2
baz=315
BGNE **Belgrade** 85.28 41 P **P** 14 57 08.3 -0.3
baz=316
BGNE **Belgrade** 85.28 41 *e*P **P** 14 57 07.0 -1.6
comp=Z,52nm,0.9s
J35A **Milford** 85.37 38 P **P** 14 57 08.5 -0.5
baz=317
K34A **Le Mars** 85.42 39 P **P** 14 57 08.9 -0.4
baz=317
BCLA **Clavier** 85.46 334 P **P** 14 57 09.6 +0.4
comp=Z,27nm,1.4s
BCLA AP **pP** 14 57 19.9 -0.3
P30A **Selden** 85.47 43 P **P** 14 57 09.4 -0.2
baz=314
I36A **Fitzsimmons Fa** 85.47 37 P **P** 14 57 09.5 0.0
baz=318
O31A **Woolen Ranch,** 85.55 42 P **P** 14 57 09.5 -0.4
baz=315
ABTA **Abfaltersbach** 85.56 328 *i*pP pP 14 57 19.9 -1.0
comp=Z,20nm,1.3s,SNR=5.6
H37A **Dierke Farm, C** 85.57 36 P **P** 14 57 10.2 +0.3
baz=319,SNR=8.2
M33A **Taylor Creek F** 85.67 40 P **P** 14 57 10.4 -0.1
baz=316
N32A **Stulken Farm,** 85.67 41 P **P** 14 57 10.1 -0.4
baz=316
121A **Cookes Peak, D** 85.69 52 P **P** 14 57 11.9 +0.9
121A **Cookes Peak, D** 85.69 52 *e*P **P** 14 57 09.5 -1.4
comp=Z,33nm,1.1s
RETA **Reutte** 85.73 329 *e*P **P** 14 57 10.5 -0.2
comp=Z,15nm,1.7s,SNR=5.3
SNF **Seneffe** 85.75 334 AP pP 14 57 22.1 +0.5
I37A **Lemond, Waseca** 85.77 36 P **P** 14 57 11.7 +0.8
baz=319,SNR=21
WLF **Walferdange** 85.78 333 AP pP 14 57 22.9 +1.1
WLF **Walferdange** 85.78 333 PFAKE 14 57 20.0 +9.2
WLF LR LR
comp=Z,1µm,19.0s
L34A **Svendsen Farm,** 85.80 39 P **P** 14 57 11.2 0.0
baz=317
OHR **Ohrid** 85.80 319 *i*P **P** 14 57 11.2 -0.1
OHR *i* PcP **pP** 14 57 20.4 -1.7
J36A **Seneca 1, Swea** 85.83 37 P **P** 14 57 11.5 +0.3
baz=318,SNR=6.7
K35A **Storm Lake** 85.83 38 P **P** 14 57 11.2 -0.1
baz=317
TAOE **Nuku Hiva Isla** 85.83 104 *e*LR LR 15 24 02.7
comp=Z,2µm,24.0s
HSIG 85.85 57 *e*P **P** 14 57 11.8 +0.2
P31A **Stockton** 85.96 43 P **P** 14 57 11.7 -0.3
baz=315
DOU **Dourbes** 85.98 334 P **P** 14 57 12.2 +0.4
comp=Z,16nm,2.0s
DOU AP **pP** 14 57 23.3 +0.5
SCHQ **Schefferville** 86.01 16 P **P** 14 57 13.0 +1.1
comp=Z,7.3nm,0.7s,baz=354,slow=5.1,SNR=6.0
SCHQ LR LR 15 36 12.0
comp=Z,627nm,21.8s,baz=341,slow=36
M34A **Aspy Farms, Fr** 86.03 40 P **P** 14 57 12.1 -0.2
baz=317
SRIG **Santa Rosalia** 86.03 59 *e*P **P** 14 57 13.6 +1.1
BFO **Black Forest** 86.04 331 *e*P **P** 14 57 12.5 +0.3
BFO **Black Forest** 86.04 331 *e*P **P** 14 57 12.5 +0.3
BFO LR LR
comp=Z,742nm,20.0s
TIR **Tirane** 86.12 320 PFAKE 14 57 20.0 +7.3
TIR LR LR
comp=Z,3µm,19.0s
COWI **Conover** 86.13 33 *e*P **P** 14 57 13.2 +0.5
COWI LR LR
comp=Z,401nm,22.0s
J37A **Redenius Farm,** 86.22 37 P **P** 14 57 14.0 +0.8
baz=318,SNR=7.7
I38A **Scanlan Farm,** 86.26 36 P **P** 14 57 13.5 +0.1
baz=319,SNR=12
CBKS **Cedar Bluff** 86.26 43 P **P** 14 57 13.5 -0.1
baz=315
CBKS **Cedar Bluff** 86.26 43 *e*P **P** 14 57 13.8 +0.3
CBKS **Cedar Bluff** 86.26 43 *e*P **P** 14 57 13.8 +0.3
K36A **Gilmore City** 86.28 38 P **P** 14 57 13.9 +0.4
baz=318,SNR=5.0
P32A **Huiting Farm,** 86.31 42 P **P** 14 57 13.2 -0.5
baz=316
M35A **Neola** 86.52 39 P **P** 14 57 15.1 +0.4
baz=317
O33A **Hebron** 86.54 41 P **P** 14 57 14.2 -0.6
baz=316
SANT **Santorini** 86.54 313 PFAKE 14 57 30.0 +15
SANT LR LR
comp=Z,423nm,20.0s
N34A **Lincoln** 86.56 40 P **P** 14 57 14.5 -0.4
baz=317
L36A **Harm Buss Farm** 86.57 38 P **P** 14 57 15.1 +0.1
baz=318
K37A **Belmond** 86.59 37 P **P** 14 57 15.1 +0.1
baz=318,SNR=16
J38A **Wedel Dairy, R** 86.73 36 P **P** 14 57 15.6 -0.1
baz=315,SNR=8.4
Q32A **Meitler Ranch,** 86.78 43 P **P** 14 57 15.9 -0.2
baz=316
O34A **Beatrice** 86.93 41 P **P** 14 57 16.1 -0.6
baz=317,SNR=6.5
P33A **Williams Farm,** 86.94 42 P **P** 14 57 16.6 -0.1
baz=316
M36A **Felix, Anita** 86.98 39 P **P** 14 57 17.1 +0.1
baz=318,SNR=8.4
N35A **Tabor** 86.99 40 P **P** 14 57 17.4 +0.4
baz=317,SNR=5.6
L37A **Phoenix Point,** 87.01 38 P **P** 14 57 17.1 0.0
baz=318,SNR=5.6
R32A **Long Quarter,** 87.11 43 P **P** 14 57 17.1 -0.5
baz=316
TUE **Stuetta** 87.12 329 PFAKE 14 57 30.0 +12
TUE LR LR
comp=Z,1µm,20.0s
Q33A **Connelly Farm,** 87.18 42 P **P** 14 57 17.4 -0.5
baz=316
O35A **Humboldt** 87.28 40 P **P** 14 57 17.8 -0.6
baz=317
P34A **Walnut Farm, R** 87.32 41 P **P** 14 57 18.5 -0.1
baz=317,SNR=11
N36A **Muff Farm, Cla** 87.37 39 P **P** 14 57 18.8 0.0
baz=318
L38A **Oak Wood Farm,** 87.39 37 P **P** 14 57 19.0 +0.1
baz=319
M37A **Trindle Farm,** 87.39 38 P **P** 14 57 19.2 +0.3
baz=318
SCIA **State Center** 87.44 38 *e*P **P** 14 57 19.7 +0.6
SCIA LR LR
comp=Z,696nm,21.0s
S32A **Newby Ranch, P** 87.49 44 P **P** 14 57 19.5 0.0
baz=315
R33A **Olander Ranch,** 87.59 43 P **P** 14 57 20.4 +0.5
baz=316
Q34A **Chapman** 87.71 42 P **P** 14 57 20.6 +0.1
baz=316
KSU1 **Kansas State U** 87.76 41 P **P** 14 57 20.6 -0.1
baz=317
KSU1 **Kansas State U** 87.76 41 *e*P **P** 14 57 21.3 +0.5
KSU1 LR LR
comp=Z,505nm,20.0s
P35A **Duane Minner,** 87.76 41 P **P** 14 57 20.6 -0.1
baz=317,SNR=5.4
MNTX **Cornudas Mount** 87.77 52 *e*P **P** 14 57 21.6 +0.6
MNTX LR LR
comp=Z,526nm,20.0s
N37A **Lee Faris, Mou** 87.80 39 P **P** 14 57 21.3 +0.4
baz=318,SNR=6.9
M38A **Pleasantville** 87.81 38 P **P** 14 57 21.1 +0.1
baz=319,SNR=11
MSTX **Muleshoe** 87.85 49 P **P** 14 57 21.4 0.0
baz=313
T32A **Huddler Ranch,** 87.87 44 P **P** 14 57 21.8 +0.4
baz=315
O36A **Bolckow** 87.87 40 P **P** 14 57 21.3 0.0
baz=318,SNR=6.1
AMTX **Amarillo** 87.88 47 P **P** 14 57 22.3 +0.8
baz=314
AMTX **Amarillo** 87.88 47 *e*P **P** 14 57 22.9 +1.4
R34A **Isabella, Hill** 88.00 42 P **P** 14 57 22.1 +0.2
baz=316
TBI **Tubuai** 88.00 121 *e*LR LR 15 25 19.9
comp=Z,1µm,26.8s,baz=307
S33A **Kaszmaul Farm,** 88.09 43 P **P** 14 57 22.7 +0.3
baz=316
JFWS **Jewell Farm** 88.10 35 *e*P **P** 14 57 22.7 +0.4
JFWS **Jewell Farm** 88.10 35 *e*P **P** 14 57 22.7 +0.4
JFWS LR LR
comp=Z,807nm,19.0s
P36A **Good Intent, A** 88.12 40 P **P** 14 57 22.6 +0.1
baz=318,SNR=9.4
N38A **Joes South For** 88.26 38 P **P** 14 57 23.2 +0.1
baz=319,SNR=6.9
O37A **Wolven Farm, M** 88.27 39 P **P** 14 57 23.1 0.0
baz=318
U32A **Winter Ranch,** 88.39 45 P **P** 14 57 24.2 +0.3
baz=315
Q36A **Arnold C. Orve** 88.47 41 P **P** 14 57 24.0 -0.1
baz=317
S34A **Willow Spring** 88.50 43 P **P** 14 57 24.2 -0.1
baz=316
VLC **Villacollemand** 88.52 327 PFAKE 14 57 40.0 +16
VLC LR LR
comp=Z,464nm,19.0s
R35A **Emporia Munici** 88.55 42 P **P** 14 57 24.8 +0.4
baz=317
N39A **Derby Farms, D** 88.56 38 P **P** 14 57 24.8 +0.3
baz=319,SNR=12
P37A **Lathrop** 88.59 40 P **P** 14 57 24.7 0.0
baz=318
O38A **Galt** 88.64 39 P **P** 14 57 25.3 +0.4
baz=319
V32A **Arapaho** 88.83 45 P **P** 14 57 26.6 +0.7
baz=315
U33A **Lingo Farm, Me** 88.86 44 P **P** 14 57 26.5 +0.5
baz=316
R36A **Gordon, Harris** 88.92 41 P **P** 14 57 26.5 +0.2
baz=317,SNR=6.7
S35A **Otter Creek Ra** 88.95 42 P **P** 14 57 26.7 +0.4
baz=317,SNR=6.9
T34A **McClaskey Farm** 88.95 43 P **P** 14 57 27.0 +0.6
baz=316
P38A **Pawn** 88.99 39 P **P** 14 57 26.8 +0.2
baz=319,SNR=7.1
VLDQ **Val d'Or** 89.03 25 *e*P **P** 14 57 26.4 -0.1
GLMI **Grayling** 89.07 31 PFAKE 14 57 40.0 +13
GLMI LR LR
comp=Z,421nm,19.0s
W32A **Sentinel** 89.14 46 P **P** 14 57 28.3 +0.9
baz=315
U34A **Anderson Ranch** 89.18 44 P **P** 14 57 27.8 +0.3
baz=316,SNR=5.7
U34A **Anderson Ranch** 89.18 44 *e*P **P** 14 57 24.8 -2.7
comp=Z,57nm,1.2s
CUC **Castrocucco** 89.19 321 PFAKE 14 57 40.0 +12

CUC LR LR
comp=Z,1μm,20.0s
V33A Lossen Ranch, 89.20 45 P **P** **14 57 27.8 +0.2**
baz=316
R37A Teagarden Farm 89.28 41 P **P** **14 57 27.8 -0.1**
baz=318
S36A Lake Cedric, C 89.31 42 P **P** **14 57 28.1 0.0**
baz=317,SNR=5.2
TIP Timpagrande 89.33 320 PFAKE 14 57 40.0 +12
TIP LR LR
comp=Z,1μm,20.0s
BNI Bardonecchia 89.36 330 PFAKE 14 57 40.0 +12
BNI LR LR
comp=Z,650nm,19.0s
T35A Sooner Cattle 89.40 43 P **P** **14 57 29.0 +0.5**
baz=317,SNR=7.8
Q38A Cooks Store, C 89.44 40 P **P** **14 57 28.5 -0.1**
baz=319,SNR=6.0
O40A La Belle 89.45 38 P **P** **14 57 28.9 +0.2**
baz=320
P39A Salisbury 89.49 39 P **P** **14 57 28.9 0.0**
baz=319,SNR=5.7
W33A Caddo, Fort Co 89.57 45 P **P** **14 57 30.3 +1.0**
baz=316
X32A Elmer 89.61 46 P **P** **14 57 29.7 +0.1**
baz=315
V34A Guthrie 89.62 44 P **P** **14 57 30.3 +0.7**
baz=316
V34A Guthrie 89.62 44 *e*P **P** **14 57 28.9 -0.7**
comp=Z,6.3nm,0.4s
T36A Boggs Farm, Ca 89.64 42 P **P** **14 57 29.7 +0.1**
baz=317,SNR=6.4
WMOK Wichita Mounta 89.68 46 *e*P **P** **14 57 30.3 +0.4**
WMOK Wichita Mounta 89.68 46 *e*P **P** **14 57 30.3 +0.4**
WMOK LR LR
comp=Z,452nm,19.0s
S37A Fort Scott 89.69 41 P **P** **14 57 29.7 -0.1**
baz=318,SNR=11
Q39A Willow Grove F 89.71 39 P **P** **14 57 30.3 +0.4**
baz=319,SNR=12
P40A Paris 89.81 39 P **P** **14 57 31.0 +0.6**
baz=320,SNR=8.3
R38A Fenwick Farm, 89.87 41 P **P** **14 57 30.2 -0.5**
baz=318,SNR=5.2
W34A Bridge Creek, 89.91 45 P **P** **14 57 31.5 +0.6**
baz=316
SSB Saint Sauveur 90.03 331 PFAKE 14 57 40.0 +8.7
SSB LR LR
comp=Z,941nm,19.0s
V35A Meyer Ranch, C 90.06 44 P **P** **14 57 32.2 +0.6**
baz=317
T37A Cheneyville 18 90.12 42 P **P** **14 57 32.0 +0.1**
baz=318,SNR=7.8
Q40A Laux Farm, Aux 90.20 39 P **P** **14 57 32.6 +0.3**
baz=320,SNR=6.0
U36A Oologah 90.21 43 P **P** **14 57 32.8 +0.5**
baz=317
R39A Chumby, Stover 90.22 40 P **P** **14 57 32.2 -0.2**
baz=319,SNR=12
S38A Stockton 90.28 41 P **P** **14 57 32.3 -0.3**
baz=318,SNR=8.7
Y33A Hilltop Ranch, 90.29 46 P **P** **14 57 33.1 +0.3**
baz=316
X34A Smith Ranch, M 90.33 45 P **P** **14 57 33.4 +0.5**
baz=316
HDIL Hopedale 90.38 36 P **P** **14 57 33.1 +0.1**
baz=321
HDIL Hopedale 90.38 36 PFAKE 14 57 50.0 +17
HDIL LR LR
comp=Z,602nm,20.0s
TX31 Lajitas Ar. Si 90.45 52 *e*P **P** **14 57 34.8 +1.1**
TXAR Lajitas Array 90.45 52 P **P** **14 57 34.6 +0.9**
comp=Z,12nm,0.9s,baz=293,slow=3.2,SNR=116
CEL Celeste 90.46 320 PFAKE 14 57 50.0 +16
CEL LR LR
comp=Z,1μm,21.0s
W35A Tecumseh 90.47 44 P **P** **14 57 33.7 +0.1**
baz=317
T38A Diamond 90.52 42 P **P** **14 57 33.8 +0.1**
baz=318,SNR=19
TUL1 Leonard 90.53 43 P **P** **14 57 34.0 +0.2**
baz=317
TUL1 Leonard 90.53 43 *e*P **P** **14 57 34.4 +0.6**
comp=Z,19nm,1.1s
V36A Jenks 90.54 43 P **P** **14 57 34.4 +0.6**
baz=317,SNR=6.0
U37A Salina 90.54 42 P **P** **14 57 34.3 +0.5**
baz=318,SNR=12
S39A Bolivar 90.54 40 P **P** **14 57 33.7 -0.2**
baz=319,SNR=16
R40A Maddies Statio 90.64 39 P **P** **14 57 34.2 0.0**
baz=319,SNR=13
ABTX Abilene, Hawle 90.67 48 P **P** **14 57 35.0 +0.4**
baz=315
ABTX Abilene, Hawle 90.67 48 *e*P **P** **14 57 33.8 -0.8**
comp=Z,17nm,1.0s
Z33A Whitaker Ranch 90.72 47 P **P** **14 57 35.0 +0.2**
baz=316,SNR=5.7
HPIG 90.75 55 *e*P **P** **14 57 35.8 +0.5**
Y34A Reagan Ranch, 90.83 46 P **P** **14 57 35.5 +0.2**
baz=316
W36A Wetumka 90.85 44 P **P** **14 57 35.6 +0.3**
baz=317
U38A Gravette 90.91 42 P **P** **14 57 35.5 -0.1**
baz=318,SNR=14
V37A Hulbert 90.91 43 P **P** **14 57 36.0 +0.5**
baz=318,SNR=14
X35A Drake 90.96 45 P **P** **14 57 35.8 0.0**
baz=317,SNR=8.5
T39A Clever 91.01 41 P **P** **14 57 36.1 +0.1**
baz=319,SNR=6.4
S40A Lebanon 91.04 40 P **P** **14 57 36.2 +0.1**
baz=319,SNR=9.9
133A Hamilton Ranch 91.11 47 P **P** **14 57 36.9 +0.3**
baz=315
Z34A Collier Ranch, 91.16 46 P **P** **14 57 36.9 +0.1**
baz=316
X36A Centrahoma 91.19 44 P **P** **14 57 37.4 +0.5**
baz=317,SNR=13
HHAR Hobbs 91.27 42 *e*P **P** **14 57 37.7 +0.5**
Y35A Marietta 91.28 45 P **P** **14 57 37.3 0.0**
baz=316
W37B Quinton 91.29 43 P **P** **14 57 37.8 +0.5**
baz=318,SNR=7.6
V38A Canehill 91.32 42 P **P** **14 57 37.5 -0.1**
baz=318,SNR=20
T40A Mansfield 91.37 40 P **P** **14 57 37.6 -0.1**
baz=319,SNR=13
U39A Green Forest 91.44 41 P **P** **14 57 38.1 0.0**
baz=319,SNR=25
AAM Ann Arbor 91.53 32 PFAKE 14 57 50.0 +12
AAM LR LR
comp=Z,538nm,19.0s
233A Rising Star 91.54 48 P **P** **14 57 39.2 +0.5**
baz=315,SNR=6.7
SFIN Lafayette 91.55 35 P **P** **14 57 38.8 +0.3**
baz=323
Z35A Perchaven, San 91.57 46 P **P** **14 57 39.0 +0.3**
baz=316,SNR=6.6
134A White-Moore Ra 91.63 47 P **P** **14 57 39.6 +0.6**
baz=316,SNR=5.2
Y36A Durant 91.72 45 P **P** **14 57 39.4 +0.1**
baz=317,SNR=9.4
X37A Clayton 91.73 44 P **P** **14 57 39.9 +0.5**
baz=318,SNR=5.2
V39A Pettigrew 91.75 42 P **P** **14 57 39.7 +0.1**
baz=318,SNR=13
U40A Yellville 91.79 41 P **P** **14 57 39.5 -0.2**
baz=319,SNR=38
W38A Poteau 91.85 43 P **P** **14 57 39.9 0.0**
baz=318,SNR=6.8
X38A Whitesboro 91.97 43 P **P** **14 57 41.0 +0.4**
baz=318,SNR=12
333A Richland Sprin 91.98 48 P **P** **14 57 41.3 +0.7**
baz=315,SNR=9.4
234A Clairette 92.01 47 P **P** **14 57 41.3 +0.6**
baz=316,SNR=7.2
Y37A Hugo 92.04 44 P **P** **14 57 41.0 +0.2**
baz=317
135A Vickery Place, 92.04 46 P **P** **14 57 41.4 +0.6**
baz=316
JCT Junction City 92.08 49 P **P** **14 57 41.2 0.0**
baz=315
JCT Junction City 92.08 49 *e*P **P** **14 57 41.9 +0.7**
JCT Junction City 92.08 49 *e*P **P** **14 57 41.9 +0.7**
JCT LR LR
comp=Z,346nm,19.0s
Z36A Blue Ridge 92.09 45 P **P** **14 57 41.3 +0.2**
baz=317
W39A Magazine 92.16 42 P **P** **14 57 41.7 +0.3**
baz=318
V40A Witts Springs 92.22 41 P **P** **14 57 41.7 0.0**
baz=319
433A Art 92.32 49 P **P** **14 57 42.3 0.0**
baz=315
CLTB Caltabellotta 92.35 321 PFAKE 14 57 50.0 +7.7
CLTB LR LR
comp=Z,880nm,20.0s
WHTX Lake Whitney, 92.42 47 P **P** **14 57 43.0 +0.3**
baz=316,SNR=8.6
WHTX Lake Whitney, 92.42 47 *e*P **P** **14 57 40.8 -1.9**
comp=Z,26nm,0.9s
334A Lometa 92.42 48 P **P** **14 57 42.7 0.0**
baz=316,SNR=11
X39A Fountain Ranch 92.49 43 P **P** **14 57 43.5 +0.5**
baz=318,SNR=15
W40A Ferguson Farm, 92.55 42 P **P** **14 57 43.4 +0.2**
baz=319,SNR=5.2
Z37A Pogue Cattle C 92.61 45 P **P** **14 57 43.5 +0.1**
baz=317
SIUC Southern Illin 92.62 38 *e*P **P** **14 57 44.9 +1.4**
VSL Villasalto 92.69 325 PFAKE 14 58 00.0 +16
VSL LR LR
comp=Z,700nm,19.0s
PBMO Poplar Bluff 92.73 39 *e*P **P** **14 57 45.2 +1.2**
MIAR Mount Ida 92.76 43 P **P** **14 57 44.0 -0.2**
baz=318
MIAR Mount Ida 92.76 43 *e*P **P** **14 57 45.0 +0.9**
MIAR Mount Ida 92.76 43 *e*P **P** **14 57 45.0 +0.9**
MIAR LR LR
comp=Z,423nm,22.0s
434A Burnet 92.78 48 P **P** **14 57 44.5 +0.2**
baz=316
533A Kerrville 92.84 49 P **P** **14 57 45.2 +0.5**
baz=315
WHAR Wooly Hollow 92.89 41 *e*P **P** **14 57 45.3 +0.5**
Y39A Locksburg 92.92 43 P **P** **14 57 44.9 0.0**
baz=318
Z38A Mt. Pleasant 92.93 44 P **P** **14 57 45.5 +0.6**
baz=318
236A Katherine and 92.95 46 P **P** **14 57 45.0 0.0**
baz=317
WDD Wied Dalam 92.99 320 PFAKE 14 58 00.0 +15
WDD LR LR
comp=Z,937nm,19.0s
LONY Lake Ozonia 93.05 25 PFAKE 14 58 00.0 +15
LONY LR LR
comp=Z,582nm,20.0s
633A Saathoff Ranch 93.18 50 P **P** **14 57 46.5 +0.3**
baz=315
X40A Basin Creek Fa 93.21 42 P **P** **14 57 46.6 +0.4**
baz=319
534A Blanco 93.21 49 P **P** **14 57 46.6 +0.3**
baz=316,SNR=6.9
336A Riesel 93.21 47 P **P** **14 57 46.4 +0.1**
baz=317
Y40A Okolona 93.32 43 P **P** **14 57 47.3 +0.6**
baz=319
ACSO Alum Creek Sta 93.52 33 *e*P **P** **14 57 48.8 +1.2**
ACSO LR LR
comp=Z,600nm,21.0s
M54A Oil Creek Stat 93.84 30 P **P** **14 57 49.2 +0.1**
baz=328
536A Bastrop 94.03 48 P **P** **14 57 50.4 +0.3**
baz=316
PKME Peaks-Kenny Pk 94.15 21 PFAKE 14 58 00.0 +10
PKME LR LR
comp=Z,306nm,22.0s
N54A Moraine State 94.17 30 P **P** **14 57 51.3 +0.7**
baz=328
NATX Nacogdoches 94.21 45 PFAKE 14 58 00.0 +9.1
NATX LR LR
comp=Z,672nm,19.0s
933A Laredo 94.42 51 P **P** **14 57 53.3 +1.4**
baz=315,SNR=5.3
BINY Binghamton 94.67 27 PFAKE 14 58 00.0 +7.2
BINY LR LR
comp=Z,482nm,19.0s
034A Hebbronville 95.18 51 P **P** **14 57 56.9 +1.5**
baz=315,SNR=7.3
KVTX Kingsville 95.33 50 PFAKE 14 58 10.0 +14
KVTX LR LR
comp=Z,420nm,20.0s
ZAIG Zacatecas 95.62 57 *e*P **P** **14 57 59.7 +1.8**
KEST Kesra 95.72 323 LR LR 15 46 19.8
comp=Z,848nm,18.6s,baz=346,slow=39
TKL Tuckaleechee C 96.90 36 LR LR 15 47 34.6
comp=Z,106nm,18.4s,baz=332,slow=39
BLA Blacksburg 97.14 33 PFAKE 14 58 20.0 +16
BLA LR LR
comp=Z,375nm,19.0s
CBN Corbin Frederi 97.58 30 PFAKE 14 58 20.0 +14
CBN LR LR
comp=Z,367nm,20.0s
ESDC Sonseca Array 98.03 334 LR LR 15 46 57.1
comp=Z,655nm,20.4s,baz=105,slow=38
PAB San Pablo 98.28 334 PFAKE 14 58 20.0 +11
PAB LR LR
comp=Z,916nm,21.0s
RKT Rikitea 98.32 112 *e*LR LR 15 29 46.8
comp=Z,1μm,25.5s,baz=306
MTE Manteigas 98.59 337 PFAKE 14 58 20.0 +9.3
MTE LR LR
comp=Z,916nm,20.0s
GOGA Godfrey 98.87 37 PFAKE 14 58 20.0 +8.0
GOGA LR LR
comp=Z,665nm,19.0s
NHSC New Hope 100.68 35 PFAKE 14 58 30.0 +10
NHSC LR LR
comp=Z,721nm,19.0s
KMBO Kilima Mbogo 102.23 278 PP PP 15 02 38.0 -1.9
comp=Z,0.6nm,0.3s,baz=37,slow=10,SNR=3.3
ABPO Ambohimpanom 104.44 257 PFAKE 14 58 50.0 +13
ABPO LR LR
comp=Z,127nm,21.0s
TEIG Tepich 106.64 49 PFAKE 15 03 10.0
TEIG LR LR
comp=Z,11nm,20.0s
TAM Tamanrasset 108.08 318 PFAKE 15 03 10.0
TAM LR LR
comp=Z,370nm,20.0s
GTBY Guantanamo Bay 114.18 38 PFAKE 15 03 20.0 +8.5
GTBY LR LR
comp=Z,342nm,19.0s
MTDJ Mount Denham 114.35 41 PFAKE 15 03 20.0 +8.0
MTDJ LR LR
comp=Z,355nm,20.0s
GRTK Grand Turk 114.71 34 PFAKE 15 03 20.0 +7.6
GRTK LR LR
comp=Z,369nm,20.0s
JTS JuntasAbangare 116.24 53 PFAKE 15 03 30.0 +14
JTS LR LR
comp=Z,323nm,20.0s
SDDR Presa de Saban 116.83 35 PFAKE 15 03 30.0 +13
SDDR LR LR
comp=Z,583nm,20.0s
LSZ Lusaka 117.67 271 PFAKE 15 03 30.0 +12
LSZ LR LR
comp=Z,368nm,20.0s
TORD Torodi Ar. Bea 117.97 315 PP PP 15 04 37.5 +4.9
comp=Z,6.6nm,1.0s,baz=32,slow=6.0,SNR=12
TORD PKKPbc **PKKPbc** **15 13 38.9 +1.3**
comp=Z,0.8nm,0.9s,baz=226,slow=2.6,SNR=4.3
SJG San Juan 119.86 31 PFAKE 15 03 30.0 +7.6
SJG LR LR
comp=Z,325nm,21.0s
BCIP Isla Barro Col 120.31 49 PFAKE 15 03 40.0 +17
BCIP LR LR
comp=Z,263nm,19.0s
FDF Fort de France 124.88 27 PFAKE 15 03 40.0 +7.8
FDF LR LR
comp=Z,264nm,20.0s
GRGR Grenville 127.07 29 PFAKE 15 03 50.0 +14
GRGR LR LR
comp=Z,476nm,20.0s
OTAV Otavalo 128.02 55 PFAKE 15 03 50.0 +11
OTAV LR LR
comp=Z,431nm,22.0s
TSUM Tsumeb 128.32 273 PFAKE 15 03 50.0 +11
TSUM LR LR
comp=Z,363nm,19.0s
NVL N'lazarevskaya 136.66 202 *e*PKIKP **PKPdf** **15 03 58.0 +5.3**
NNA Nana 137.79 65 PFAKE 15 04 10.0 +13
NNA LR LR
comp=Z,326nm,22.0s
PTGA Pitinga 139.35 34 PFAKE 15 04 10.0 +11
PTGA LR LR
comp=Z,38μm,19.0s
SNAA Sanae 140.08 197 PKP **PKPdf** **15 03 59.9 +0.9**
VNA2 Neumayer--Watz 141.65 196 PKP **PKPdf** **15 03 59.2 -2.6**
baz=75,slow=1.9
VNA3 Neumayer Olymp 141.88 195 PKP PKPpre 15 03 52.4
VNA1 Neumayer--Stat 142.04 196 PKP **PKPdf** **15 04 02.4 0.0**
SAML Samuel 144.66 46 *e*PKPdf **PKPab** **15 04 07.4 0.0**
SAML LR LR
comp=Z,296nm,20.0s
LPAZ La Paz 146.92 61 PKPbc **PKPbc** **15 04 15.9 +0.7**
comp=Z,16nm,0.7s,baz=348,slow=1.7,SNR=36
LPAZ La Paz 146.92 61 PKP2 **PKPbc** **15 04 16.0 +0.7**
LCO Las Campanas 151.93 84 *e*PKPbc **PKPbc** **15 04 27.4 +0.2**
PLCA Paso Flores 154.52 110 PKPbc **PKPbc** **15 04 32.4 +0.2**
comp=Z,3.8nm,0.9s,baz=265,slow=2.1,SNR=6.3
PLCA PKPab **PKPab** **15 04 48.3 +1.4**
comp=Z,11nm,1.0s,baz=286,slow=7.2,SNR=11
CPUP Villa Florida 161.04 64 PKPab **PKPab** **15 05 15.8 +0.5**
comp=Z,2.8nm,0.7s,baz=181,slow=12,SNR=4.2
TRQA Tornquist 161.12 102 PFAKE 15 04 40.0 +8.1
TRQA LR LR
comp=Z,451nm,19.0s

NEIC ***01*** *14:50:53.7±0.6,21°.53S×68°.12W,h108km±6km,mb4.8/9, Error ellipse: s-maj=8.3km s-min=7.3km az=60.0*
BJI ***01*** *14:50:54.1,21°.50S×68°.10W,h100km,mB5.2/3*
GUC ***01*** *14:50:54.8±0.7,21°.45S×68°.59W,h138km±6km,ML5.0*
ISCJB ***01*** *14:50:54.1±0.2,21°.45S±0°.03×68°.36W±0°.03,h129km±3km, mb4.5/18, Error ellipse: s-maj=5.4km s-min=3.9km az=157.4*
SJA ***01*** *14:50:55.7±0.4,21°.40S×67°.90W,h209km±26km,ML3.7, MW3.7*
IDC ***01*** *14:50:56.3±0.6,21°.44S×68°.11W,h130km±5km,mb4.1/12, mb1 4.1/17,mb1mx4.0/27,mbtmp4.4/17, Error ellipse: s-maj=15.5km s-min=13.7km az=42.0*
SCB ***01*** *14:50:57.1±0.6,21°.07S×68°.01W,h125km,Ml3.9/1, Error ellipse: s-maj=15.7km s-min=7.4km az=47.0*

ISC 01 14:50:54.8±0.5,21°.43S±0°.03×68°.21W±0°.04,h121km±4km, h121km:pP-P,n86,σ2s49/118,mb4.5/18,16C-1D,
Chile-Bolivia border region

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
PB09	**IPOC Station P**	**1.02**	**249**	⇑*i*P		**Pn**		**14 51 16.9**	**-0.4**
PB09				*i*S		**Sn**		**14 51 33.1**	**-1.3**
PB09				AML		AML		14 51 36.1	
	comp=E,49μm,0.3s								
PB01	**IPOC Station P**	**1.25**	**288**	⇑*i*P		**Pn**		**14 51 18.6**	**-0.9**
PB01				*i*S		**Sn**		**14 51 36.6**	**-1.7**
PB01				AML		AML		14 51 38.3	
	comp=N,38μm,0.4s								
PB01	**IPOC Station P**	**1.25**	**288**	*e*Pn		**Pn**		**14 51 18.7**	**-0.9**
PB08	**IPOC Station P**	**1.55**	**325**	⇑*i*P		**Pn**		**14 51 24.2**	**+0.9**
PB08				*i*S		**Sn**		**14 51 45.6**	**+0.6**
PB08				AML		AML		14 51 47.7	
	comp=E,10μm,0.5s								
PB07	**IPOC Station P**	**1.58**	**259**	⇑*i*P		**Pn**		**14 51 22.0**	**-1.5**
PB07				*i*S		**Sn**		**14 51 42.2**	**-3.0**
PB07				AML		AML		14 51 43.3	
	comp=N,24μm,0.2s								
PB06	**IPOC Station P**	**1.79**	**224**	⇑*i*P		**Pn**		**14 51 24.7**	**-1.2**
PB06				*i*S		**Sn**		**14 51 47.3**	**-2.3**
PB06				AML		AML		14 51 48.3	
	comp=E,9μm,0.4s								
PATCX	**Punta Patache**	**1.91**	**288**	⇑*i*P		**Pn**		**14 51 26.0**	**-1.2**
PATCX				*i*S		**Sn**		**14 51 49.4**	**-2.7**
PATCX				AML		AML		14 51 51.6	
	comp=E,53μm,0.4s								
HMBC	**Humberstone**	**1.94**	**306**	⇑*i*P		**Pn**		**14 51 26.6**	**-1.1**
HMBC				*i*S		**Sn**		**14 51 50.4**	**-2.4**
HMBC				AML		AML		14 51 52.1	
	comp=N,28μm,0.3s								
PB04	**IPOC Station P**	**2.01**	**243**	⇑*i*P		**Pn**		**14 51 26.6**	**-2.0**
PB04				*i*S		**Sn**		**14 51 50.7**	**-3.7**
PB04				AML		AML		14 51 53.8	
	comp=N,5μm,0.4s								
PB11	**IPOC Station P**	**2.14**	**321**	⇑*i*P		**Pn**		**14 51 29.5**	**-0.7**
PB11				*i*S		**Sn**		**14 51 56.0**	**-1.3**
PSGC	**Pisagua**	**2.55**	**315**	⇑*i*P		**Pn**		**14 51 33.7**	**-1.8**
PSGC				*i*S		**Sn**		**14 52 03.4**	**-3.3**
PSGC				AML		AML		14 52 05.9	
	comp=E,8μm,0.4s								
YJA	**Yavi**	**2.62**	**107**	*e*P		**Pn**		**14 51 40.0**	**+3.5**
YJA				*e*S		**Sn**		**14 52 12.9**	**+4.3**
YJA				IAML				14 52 16.2	
	comp=Z,203nm,0.9s								
PB10	**IPOC Station P**	**3.00**	**226**	AML	AML			14 52 19.1	
	comp=N,4μm,0.4s								
PB10	**IPOC Station P**	**3.00**	**226**	*e*Pn		**Pn**		**14 51 39.9**	**-1.2**
ANCH	**Antofagasta**	**3.03**	**222**	*e*P		Pn		14 51 37.1	-4.3
ANCH				*i*S		**Sn**		**14 52 11.4**	**-6.0**
HJA	**Humahuaca**	**3.14**	**125**	*e*P		**Pn**		**14 51 46.8**	**+3.4**
HJA				*e*S		**Sn**		**14 52 24.0**	**+3.2**
PB13	**IPOC Station P**	**3.31**	**338**	⇓*i*P		**Pn**		**14 51 47.0**	**+1.2**
AZAP	**Zapla**	**4.02**	**134**	*e*P		**Pn**		**14 51 56.8**	**+1.9**
AZAP				IAML				14 52 53.6	
	comp=Z,102nm,0.9s								
SLA	**San Lorenzo**	**4.12**	**143**	*e*P		**Pn**		**14 51 58.5**	**+2.5**
SLA				IAML				14 52 50.5	
	comp=Z,60nm,1.7s								
ASTB	**Santa Barbara**	**4.28**	**127**	*e*P		**Pn**		**14 51 59.7**	**+1.5**
BBOJ	**La Paz, Jacaqu**	**4.43**	**0**	⇑*i*Pn		**Pn**		**14 52 03.6**	**+3.0**
BBOJ				*e*Sn		**Sn**		**14 52 51.2**	**-0.4**
BBOE	**La Paz, Chanca**	**4.60**	**3**	⇑*i*Pn		**Pn**		**14 52 05.8**	**+2.9**
BBOD	**La Paz, Gloria**	**4.78**	**356**	⇑*i*Pn		**Pn**		**14 52 08.0**	**+2.7**
BBOD				*e*Sn		**Sn**		**14 52 59.3**	**-0.7**
LPAZ	**La Paz**	**5.11**	**1**	*e*P		**Pn**		**14 52 12.9**	**+3.1**
LPAZ	**La Paz**	**5.11**	**1**	P		**Pn**		**14 52 12.4**	**+2.6**
	comp=Z,4.8nm,0.3s,baz=174,slow=5.1,SNR=56								
LPAZ				S		**Sn**		**14 53 02.6**	**-5.6**
	baz=82,slow=13,SNR=2.5								
LPAZ	**La Paz**	**5.11**	**1**	⇑*i*Pn		**Pn**		**14 52 12.0**	**+2.1**
LPAZ				*e*Sn		**Sn**		**14 53 07.1**	**-1.1**
BBOB	**La Paz, Bander**	**5.26**	**1**	⇑*i*Pn		**Pn**		**14 52 13.9**	**+2.2**
BBOB				*e*Sn		**Sn**		**14 53 09.9**	**-1.7**
	comp=Z,46nm,0.4s								
ARE	**Arequipa**	**5.83**	**327**	*e*P		**Pn**		**14 52 18.0**	**-1.3**
ARE				*e*S		Sn		14 53 17.0	-8.1
AHML	**Horco Molle**	**5.95**	**154**	*e*P		**Pn**		**14 52 21.5**	**+1.0**
SIV	**San Ignacio**	**8.66**	**53**	P		**Pn**		**14 52 56.3**	**-0.9**
	comp=Z,5.5nm,0.3s,baz=245,slow=14,SNR=52								
SIV				S		**Sn**		**14 54 26.4**	**-6.9**
	comp=Z,1.5nm,0.3s,baz=309,slow=24,SNR=11								
SIV	**San Ignacio**	**8.66**	**53**	⇑*i*P		**Pn**		**14 52 55.9**	**-1.4**
CPUP	**Villa Florida**	**11.09**	**118**	P		**Pn**		**14 53 28.3**	**-1.5**
	comp=Z,0.3nm,0.3s,baz=292,slow=11,SNR=3.7								
CPUP				S		**Sn**		**14 55 26.4**	**-5.6**
	comp=Z,0.2nm,0.3s,baz=276,slow=11,SNR=3.2								
CPUP				ScP		**ScP**		**15 02 41.5**	**+3.7**
	comp=Z,0.1nm,0.3s,baz=44,slow=5.9,SNR=3.1								
TRQA	**Tornquist**	**17.43**	**163**	*e*P		**P**		**14 54 48.4**	**-1.4**
	comp=Z,38nm,0.6s								
SPB	**Sao Paulo**	**19.32**	**100**	*e*P		**P**		**14 55 09.6**	**-0.9**
	comp=Z,27nm,0.6s								
PLCA	**Paso Flores**	**19.35**	**185**	P		**P**		**14 55 10.9**	**+0.1**
	comp=Z,0.4nm,0.3s,baz=22,slow=12,SNR=18								
PLCA	**Paso Flores**	**19.35**	**185**	*e*P		**P**		**14 55 07.3**	**-3.5**
	comp=Z,9.8nm,0.9s								
BDFB	**Brasilia**	**19.99**	**77**	P		**P**		**14 55 18.1**	**+0.1**
	comp=Z,2.8nm,0.3s,baz=257,slow=12,SNR=15								
BDFB	**Brasilia**	**19.99**	**77**	*e*P		**P**		**14 55 15.8**	**-2.2**
	comp=Z,64nm,1.3s								
PTGA	**Pitinga**	**22.09**	**22**	P		**P**		**14 55 38.1**	**-2.2**
	comp=Z,4.6nm,0.3s,baz=343,slow=23,SNR=18								
PTGA				S		**S**		**14 59 30.1**	**-5.8**
	comp=Z,1.3nm,0.4s,baz=290,slow=19,SNR=4.0								
PTGA	**Pitinga**	**22.09**	**22**	*e*P		**P**		**14 55 38.8**	**-1.5**
	comp=Z,16nm,1.4s								
PTGA				S		**S**		**14 59 30.1**	**-5.8**
RCBR	**Riachuelo**	**34.91**	**68**	P		**P**		**14 57 35.1**	**0.0**
	comp=Z,21nm,0.6s,baz=246,slow=12,SNR=28								
RCBR	**Riachuelo**	**34.91**	**68**	*e*P		**P**		**14 57 35.3**	**+0.2**
	comp=Z,21nm,0.6s								
ZAIG	**Zacatecas**	**55.24**	**321**	*e*P		**P**		**15 00 17.1**	**+1.3**
	comp=Z,7.8nm,0.7s								
VNA3	**Neumayer Olymp**	**59.94**	**161**	P		**P**		**15 00 45.5**	**-2.3**
VNA2	**Neumayer--Watz**	**60.50**	**161**	P		**P**		**15 00 52.1**	**+0.5**
	baz=276,slow=8.4								
TXAR	**Lajitas Array**	**60.94**	**325**	P		**P**		**15 00 54.9**	**-0.4**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
	comp=Z,0.8nm,0.8s,baz=147,slow=6.5,SNR=3.9						
SNAA	Sanae	62.14	161	P	P	15 01 02.9	+0.2
SNAA	Sanae	62.14	161	P	P	15 01 01.9	-0.8
	comp=Z,512nm,0.8s						
LIC	Lamto	67.75	73	eP	P	15 01 39.4	-0.4
	comp=Z,124nm,1.4s						
TIC	Toumodi	67.94	73	eP	P	15 01 41.3	+0.3
KIC	Kosan Boka	68.06	73	eP	P	15 01 41.6	-0.2
	comp=Z,56nm,0.7s						
DBIC	Dimbokro	68.09	73	P	P	15 01 41.9	0.0
	comp=Z,33nm,0.8s,baz=218,slow=6.6,SNR=55						
DBIC	Dimbokro	68.09	73	eP	P	15 01 42.0	0.0
	comp=Z,32nm,0.7s						
QSPA	South Pole Qui	68.76	180	eP	P	15 01 45.6	+0.1
	comp=Z,18nm,0.8s						
KNB	Kanab	71.75	324	eP	P	15 02 06.2	+2.0
KNB				epP	pP	15 02 38.7	+4.5
DSCC	Desert Studies	72.31	320	eP	P	15 02 10.2	+2.9
EDW2	Edwards Air Fo	73.27	319	eP	P	15 02 16.8	+3.8
PDAR	Pinedale Array	74.37	330	P	P	15 02 20.5	+1.0
	comp=Z,0.2nm,0.4s,baz=106,slow=9.5,SNR=3.4						
PDAR				pP	pP	15 02 52.4	+2.5
	comp=Z,0.6nm,0.6s,baz=139,slow=4.9,SNR=5.7						
ULM	Lac du Bonnet	75.45	342	P	P	15 02 26.2	+1.1
	comp=Z,1.4nm,0.5s,baz=142,slow=5.3,SNR=3.0						
ULM				pP	pP	15 02 57.5	+1.9
	comp=Z,2.4nm,0.6s,baz=162,slow=7.4,SNR=3.6						
NVAR	Mina Array Bea	75.84	322	P	P	15 02 29.0	+1.0
	comp=Z,0.6nm,0.6s,baz=157,slow=6.5,SNR=5.8						
NVAR				pP	pP	15 03 01.4	+3.0
	comp=Z,1.4nm,0.8s,baz=146,slow=7.7,SNR=5.9						
TORD	Torodi Ar. Bea	76.72	70	P	P	15 02 32.9	-0.3
	comp=Z,24nm,0.6s,baz=254,slow=5.2,SNR=174						
VNDA	Vanda	77.03	190	P	P	15 02 35.4	+1.5
	comp=Z,0.6nm,0.7s,baz=90,slow=7.9,SNR=4.5						
HLID	Hailey	77.33	327	eP	P	15 02 37.9	+1.7
HLID				epP	pP	15 03 10.3	+3.6
BOSA	Boshof	82.91	118	P	P	15 03 06.7	+0.1
	comp=Z,10nm,0.7s,baz=250,slow=4.3,SNR=14						
TAM	Tamanrasset	84.21	63	eP	P	15 03 12.9	-0.3
MAW	Mawson	84.21	163	P	P	15 03 12.2	-0.1
	comp=Z,1.9nm,0.5s,baz=163,slow=6.4,SNR=7.4						
LBTB	Lobatse	84.46	115	eP	P	15 03 15.2	+0.7
PAB	San Pablo	85.01	44	eP	P	15 03 17.7	+0.9
ESDC	Sonseca Array	85.33	44	P	P	15 03 18.6	+0.3
	comp=Z,1.5nm,0.7s,baz=236,slow=4.9,SNR=7.7						
ES19	SONSECA Array	85.38	44	eP	P	15 03 19.2	+0.6
YKA	Yellowknife Ar	91.34	340	P	P	15 03 46.8	+0.6
	comp=Z,0.7nm,0.5s,baz=133,slow=4.7,SNR=15						
YKA				pP	pP	15 04 20.2	+2.7
	comp=Z,2.3nm,0.8s,baz=135,slow=4.5,SNR=10						
ASAR	Alice Springs	130.27	207	PKP	PKPdf	15 09 51.1	-0.4
	comp=Z,0.4nm,0.4s,baz=146,slow=2.0,SNR=5.8						
WRA	Warramunga Arr	133.34	210	PKP	PKPdf	15 09 57.0	-0.3
	comp=Z,0.7nm,0.6s,baz=154,slow=1.8,SNR=7.3						
KURK	Kurchatov	140.91	33	PKPpre	PKPpre	15 10 06.5	
KURBB	Kurchatov Arra	140.92	34	PKhKP	PKPpre	15 10 06.5	
	comp=Z,0.7nm,0.8s,baz=300,slow=2.5,SNR=4.4						
ZALV	Zalesovo Beam	141.61	26	PKP	PKPdf	15 10 08.8	-2.7
	comp=Z,1.1nm,0.5s,baz=48,slow=2.2,SNR=6.4						
KSH	Kashi	144.55	51	ePKP	PKPdf	15 10 16.7	-0.6
KSH				esPKP		15 10 54.0	
KSH				SKS	SKSdf	15 17 15.1	-0.6
KSH				SKKS	SKKSac	15 20 11.3	-4.5
KSH				AMB	AMB		
	comp=Z,160nm,7.2s						
KSH				LR	LR		
	comp=Z,220nm,11.0s						
KSH				LR	LR		
	comp=Z,190nm,6.3s						
KSH				LR	LR		
	comp=Z,160nm,6.0s						
MKAR	Makanchi Array	145.19	36	PKPbc	PKPdf	15 10 18.4	+0.4
	comp=Z,7.6nm,0.6s,baz=321,slow=3.7,SNR=77						
MKAR				pPKPbc	pPKPbc	15 10 53.0	+2.7
	comp=Z,3.7nm,0.7s,baz=335,slow=4.2,SNR=6.6						
WMQ	Urumqi	150.03	36	ePKPbc	PKPdf	15 10 25.7	-0.5
WMQ				pPKP	pPKPdf	15 10 52.4	-6.5
SONM	Songino Array	153.30	8	PKPbc	PKPbc	15 10 39.2	+0.5
	comp=Z,0.4nm,0.4s,baz=305,slow=2.0,SNR=4.5						
GTA	Gaotai	159.35	27	ePKP	PKPdf	15 10 40.1	+0.9
GTA				pPKP	pPKPdf	15 11 05.9	-6.2
GTA				sPKP		15 11 18.1	
HHC	Hu-ho-hao-te	160.64	1	ePKP	PKPdf	15 10 42.2	+1.6
CMAR	Chiang Mai Arr	167.57	102	PKPab	PKPab	15 11 53.5	-0.4
	comp=Z,0.6nm,0.3s,baz=247,slow=4.8,SNR=4.2						
NJ2	Nanjing	167.68	331	ePKP	PKPdf	15 10 47.9	+0.9
CD2	Chengdu	168.12	36	PKP	PKPdf	15 10 47.1	-0.3
GYA	Guiyang	173.14	42	ePKP	PKPdf	15 10 49.2	-1.1
GYA				pPKP	pPKPdf	15 11 19.0	-4.3
GYA				sPKP		15 11 31.0	
GYA				PKPab	PKPab	15 12 20.4	+2.0
GYA				PP	PP	15 16 12.0	+2.3
GYA				AMB	AMB		
	comp=Z,120nm,8.3s						

IDC 01 14:51:29.2±2.1, 36.88N×143.83E, h0km, mb3.8/3, mb1 3.9/5, mb1mx3.4/46, mbtmp3.8/5, ML3.5/2, Error ellipse: s-maj=43.6km s-min=28.9km az=64.0, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
MJAR	Matsushiro Arr	4.53	267	Pn	Pn	14 52 39.2	+0.2
	2.5nm,0.3s,baz=90,slow=15,SNR=16						
JHJ	Hachijo jima 2	5.01	223	Pn	Pn	14 52 46.9	+1.3
	4.0nm,0.3s,baz=106,slow=21,SNR=7.6						
JHJ				Sn	Sn	14 53 43.7	-0.5
	42nm,0.3s,baz=84,slow=23,SNR=11						
MKAR	Makanchi Array	45.84	303	P	P	14 59 52.6	-0.3
	1.2nm,1.0s,baz=94,slow=8.4,SNR=2.8						
WRA	Warramunga Arr	57.22	191	P	P	15 01 17.6	-0.6
	1.3nm,0.5s,baz=10,slow=7.1,SNR=19						
ASAR	Alice Springs	60.94	190	P	P	15 01 44.4	+0.3
	0.3nm,0.6s,baz=15,slow=12,SNR=8.7						

JMA 01 14:51:52.2±0.1, 37.66N×141.75E, h42km±2km, M3.5, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
JMM	Marumori	0.79	285	P	Pn	14 52 06.9	+0.1
JMM				S	Sn	14 52 17.4	0.0
JIO	Ouri	0.85	338	P	Pn	14 52 07.8	0.0
JIO				S	Sn	14 52 18.6	-0.5
ONAJ	Iwakimizuishiy	0.94	234	P	Pn	14 52 09.1	+0.1
ONAJ				eS	Sn	14 52 21.4	+0.1
JOU	Okura	1.11	310	P	Pn	14 52 11.8	+0.5
JOU				S	Sn	14 52 25.7	+0.3
JFT	Otama	1.13	263	P	Pn	14 52 12.5	+0.9
JFT				S	Sn	14 52 27.1	+1.2
JHO	Hitachi	1.41	222	P	Pn	14 52 15.4	0.0
JHO				S	Sn	14 52 32.8	0.0

IDC 01 14:56:32.0±1.0, 38.29N×142.39E, h0km, mb3.7/7, mb1 3.8/8, mb1mx3.5/61, mbtmp3.6/8, ML3.1/1, Error ellipse: s-maj=30.5km s-min=17.9km az=103.0
ISCJB 01 14:56:34.6±0.8, 38.47N±0.04×142.24E±0.06, h24km, mb3.6/7, Error ellipse: s-maj=6.7km s-min=6.2km az=33.6
JMA 01 14:56:35.4±0.2, 38.51N×142.20E, h22km±3km, M4.0
ISC 01 14:56:35.6±1.0, 38.51N±0.05×142.18E±0.07, h24km, n25, σ1.49/22, mb3.7/7, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
JIO	Ouri	0.66	265	P	Pb	14 56 48.0	-0.4
JIO				S	Sb	14 56 56.8	-0.3
OFUJ	Ofunato	0.69	325	P	Pn	14 56 48.9	-1.0
JMK	Ichinoseki	0.87	301	P	Pn	14 56 51.9	-0.5
JMK				eS	Sb	14 57 03.1	-0.2
MIYJ	Miyakonagasawa	1.10	345	P	Pb	14 56 55.0	-1.0
MIYJ				S	Sb	14 57 08.4	-1.5
JOM	Ohasama	1.18	324	eS	Sb	14 57 12.3	0.0
JOU	Okura	1.20	263	eS	Sn	14 57 12.5	0.0
JYK	Kaneyama	1.48	286	eS	Sb	14 57 21.3	+0.4
JRG	Rokugo	1.50	307	S	Sb	14 57 22.4	+1.2
JKZ	Kuzumaki	1.61	336	P	Pb	14 57 04.1	-0.6
JKZ				S	Sb	14 57 23.5	-1.2
MJAR	Matsushiro Arr	3.72	239	Pn	Pn	14 57 32.3	+0.7
	1.4nm,0.3s,baz=60,slow=11,SNR=8.1						
MAT	Matsushiro	3.72	239	P	Pn	14 57 33.4	+1.8
MAT				eS	Sb	14 58 21.8	-3.5
USRK	Ussuriysk Ar.	9.54	310	Pn	Pn	14 58 57.4	+6.0
	0.3nm,0.3s,baz=119,slow=12,SNR=4.1						
MA2	Magadan	21.78	12	P	P	15 01 28.8	+3.3
	3.2nm,0.7s,baz=240,slow=8.6,SNR=4.8						
SEY	Seymchan	25.23	11	P	P	15 02 01.1	+1.9
	1.7nm,0.8s,baz=198,slow=7.8,SNR=12						
H11N2	WAKE ISLAND Hy	28.43	124	T	T	15 32 08.7	
	baz=317,slow=75						
H11N1	WAKE ISLAND Hy	28.43	124	T	T	15 32 16.8	
	baz=317,slow=75,SNR=36						
H11N3	WAKE ISLAND Hy	28.44	124	T	T	15 32 10.7	
	baz=317,slow=75						
H11S1	WAKE ISLAND Hy	29.19	126	T	T	15 33 16.6	
	baz=318,slow=76,SNR=8.8						
H11S3	WAKE ISLAND Hy	29.20	126	T	T	15 33 09.7	
	baz=318,slow=76,SNR=11						
H11S2	WAKE ISLAND Hy	29.21	126	T	T	15 33 06.2	
	baz=318,slow=76,SNR=10						
ZALV	Zalesovo Beam	41.39	311	P	P	15 04 22.1	+2.5
	0.5nm,0.5s,baz=111,slow=8.3,SNR=2.6						
MKAR	Makanchi Array	43.87	301	P	P	15 04 40.6	+0.7
	0.5nm,0.9s,baz=87,slow=8.8,SNR=3.5						
ILAR	Eielson Array	47.92	33	P	P	15 05 11.5	-0.2
	0.2nm,0.6s,baz=270,slow=6.4,SNR=4.3						
WRA	Warramunga Arr	58.61	189	P	P	15 06 29.1	-1.5
	1.3nm,0.7s,baz=6.4,slow=7.2,SNR=10						
ASAR	Alice Springs	62.34	189	P	P	15 06 55.2	-0.8
	0.7nm,0.7s,baz=1.5,slow=4.8,SNR=9.9						

ISCJB 01 14:59:16.3±0.7, 36.25N±0.04×140.83E±0.06, h35km±7km, mb3.8/14, Error ellipse: s-maj=8.5km s-min=7.1km az=172.7
JMA 01 14:59:16.9, 36.25N×140.83E, h36km±1km, M3.9
JMA Felt II J1.
IDC 01 14:59:16.7±0.9, 36.87N×140.62E, h0km, mb3.8/13, mb1 3.9/13, mb1mx3.7/64, mbtmp3.8/13, Error ellipse: s-maj=21.8km s-min=19.3km az=107.0
ISC 01 14:59:16.0±1.3, 36.28N±0.04×140.77E±0.05, h16km±8km, n27, σ1.04/26, mb3.8/14, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
JHO	Hitachi	0.36	334	P	Pn	14 59 26.1	-0.5
JHO				S	Sn	14 59 32.1	-1.3
JYT	Yasato	0.47	263	P	Pn	14 59 27.7	-0.3
JYT				S	Sn	14 59 35.0	-0.9
CHOJ	Chosi	0.58	173	P	Pb	14 59 27.9	+0.1
CHOJ				eS	Sg	14 59 35.1	-0.3
ONAJ	Iwakimizuishiy	0.82	2	P	Pn	14 59 32.2	-0.7
ONAJ				S	Sg	14 59 42.7	-0.1
JAG	Ashikaga	1.07	278	P	Pg	14 59 36.8	+0.1
JAG				S	Sg	14 59 50.4	-0.3
MJAR	Matsushiro Arr	2.08	278	Pn	Pn	14 59 49.1	-1.1
	23nm,0.3s,baz=84,slow=23,SNR=46						
MJAR				Sn	Sb	15 00 20.6	+1.7
	36nm,0.3s,baz=51,slow=11,SNR=14						
MAT	Matsushiro	2.08	278	P	Pn	14 59 49.1	-1.1
MAT				S	Sn	15 00 16.1	+0.3
SEY	Seymchan	27.63	11	P	P	15 05 05.8	+3.3
	1.7nm,0.9s,baz=192,slow=6.7,SNR=6.1						
SONM	Songino Array	27.78	305	P	P	15 05 04.0	-0.1
	0.7nm,0.7s,baz=102,slow=8.5,SNR=6.1						
H11N2	WAKE ISLAND Hy	28.23	119	T	T	15 34 32.6	
H11N1	WAKE ISLAND Hy	28.24	119	T	T	15 34 32.5	
H11N3	WAKE ISLAND Hy	28.25	119	T	T	15 34 32.5	
H11S1	WAKE ISLAND Hy	28.91	121	T	T	15 35 21.3	
	baz=314,slow=76,SNR=17						
H11S3	WAKE ISLAND Hy	28.91	121	T	T	15 35 16.7	
	baz=314,slow=76,SNR=15						
H11S2	WAKE ISLAND Hy	28.92	121	T	T	15 35 23.8	
	baz=314,slow=76,SNR=19						
ZALV	Zalesovo Beam	42.04	313	P	P	15 07 06.5	0.0
	2.6nm,0.6s,baz=91,slow=6.6,SNR=8.1						
MKAR	Makanchi Array	44.08	303	P	P	15 07 24.0	+0.8
	1.1nm,0.8s,baz=89,slow=9.8,SNR=9.5						
KURBB	Kurchatov Arra	46.06	308	P	P	15 07 38.6	-0.1
	1.3nm,0.6s,baz=82,slow=7.6,SNR=8.5						
ILAR	Eielson Array	50.41	32	P	P	15 08 12.4	+0.3
	0.7nm,0.8s,baz=267,slow=5.3,SNR=9.5						
INK	Inuvik	55.29	27	P	P	15 08 48.6	+0.5
	1.0nm,0.7s,baz=343,slow=3.8,SNR=5.7						
WRA	Warramunga Arr	56.25	187	P	P	15 09 01.8	+6.2
	1.8nm,0.9s,baz=3.2,slow=7.8,SNR=5.0						
ASAR	Alice Springs	59.98	187	P	P	15 09 30.1	+8.4
	0.4nm,0.7s,baz=19,slow=9.8,SNR=5.4						
ARCES	ARCESS Array B	64.51	339	P	P	15 09 51.2	-0.3
	2.0nm,0.9s,baz=57,slow=6.6,SNR=4.8						
YKA	Yellowknife Ar	64.72	30	P	P	15 09 52.1	-0.8
	0.2nm,0.7s,baz=302,slow=6.8,SNR=4.6						
FINES	FINESS Array B	69.23	332	P	P	15 10 20.4	-1.2
	0.6nm,0.5s,baz=46,slow=6.3,SNR=4.7						
AKASG	Malin Array Be	74.57	322	P	P	15 10 53.8	0.0
	0.2nm,0.3s,baz=47,slow=5.8,SNR=4.4						
NOA	NORSAR Array B	74.67	337	P	P	15 10 53.6	-0.8
	0.7nm,0.7s,baz=40,slow=5.8,SNR=3.0						

IDC 01 15:10:32.5±2.6, 38.49N×141.31E, h0km, mb3.5/4, mb1 3.4/5, mb1mx3.2/44, mbtmp3.3/5, ML2.7/1, Error ellipse: s-maj=67.4km s-min=27.4km az=69.0, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
MJAR	Matsushiro Arr	3.14	233	Pn	Pn	15 11 22.7	-0.6
	0.9nm,0.3s,baz=80,slow=14,SNR=5.4						
SONM	Songino Array	26.93	302	P	P	15 16 17.5	+2.0
	0.2nm,0.2s,baz=93,slow=8.7,SNR=3.8						
MKAR	Makanchi Array	43.29	301	P	P	15 18 35.3	-0.5
	0.2nm,0.4s,baz=84,slow=9.4,SNR=3.4						
KURBB	Kurchatov Arra	45.05	307	P	P	15 18 48.0	-1.9
	0.5nm,0.6s,baz=82,slow=7.7,SNR=5.0						
WRA	Warramunga Arr	58.49	188	P	P	15 20 30.6	+0.1
	0.1nm,0.3s,baz=5.7,slow=7.8,SNR=8.4						

JMA 01 15:10:43.7, 40.26N×140.37E, h11km±1km, M1.4, Eastern Honshu

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
JAH	Hinai	0.22	109	P	Pg	15 10 48.4	+0.2
JAH				S	Sg	15 10 51.6	+0.3
JIW	Iwasaki	0.43	320	P	Pg	15 10 52.2	0.0

ATH 01 15:21:58.3, 39.47N×26.34E, h16km±3km, ML2.2/4, Error ellipse: s-maj=3.2km s-min=1.1km az=137.0
ISK 01 15:21:58.7, 39.49N×26.26E, h4km, MD2.8
DDA 01 15:21:58.8, 39.50N×26.35E, h7km, Md3.0
ISCJB 01 15:21:58.9±0.5, 39.48N±0.02×26.29E±0.03, h2km±5km, Error ellipse: s-maj=4.5km s-min=3.1km az=154.5
THE 01 15:21:58.9, 39.48N×26.31E, h9km±1km, ML2.2/4, Error ellipse: s-maj=1.6km s-min=0.5km az=114.0
CSEM 01 15:21:59.1±0.1, 39.48N×26.28E, h2km, ML2.2, Error ellipse: s-maj=2.4km s-min=2.0km az=79.0
ISC 01 15:21:59.2±1.1, 39.48N±0.02×26.29E±0.02, h2km±12km, n69, σ0.53/96, Turkey

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
PRK	Paraskevi	0.23	183	P	Pg	15 22 03.4	-0.3
PRK				S	Sg	15 22 07.5	+0.7
PRK	Paraskevi	0.23	183	P	Pg	15 22 03.4	-0.3
PRK				S	Sg	15 22 06.3	-0.5
PRK	Paraskevi	0.23	183	P	Pg	15 22 03.4	-0.3
PRK				S	Sg	15 22 06.3	-0.5
PRK				AML	AML	15 22 11.2	
	comp=E,1610μm,0.4s						
PRK				AML	AML	15 22 12.9	
	comp=N,1518μm,0.6s						
EZN	Ezine	0.35	5	ePG	Pg	15 22 06.1	+0.1
EZN				eSG	Sg	15 22 11.4	+1.0
EZN	Ezine	0.35	5	P	Pg	15 22 06.0	+0.1
EZN				S	Sg	15 22 11.1	+0.7
EZN	Ezine	0.35	5	P	Pg	15 22 06.0	+0.1
EZN				S	Sg	15 22 11.1	+0.7
AYVA	Ayvalik	0.36	119	i P	Pg	15 22 05.5	-0.6
AYVA				i S	Sg	15 22 10.4	-0.3
AYVA	Ayvalik	0.36	119	P	Pg	15 22 05.5	-0.6
AYVA				S	Sg	15 22 10.4	-0.3
BOZC	Bozcaada	0.40	333	i P	Pg	15 22 07.0	-0.1
BOZC				i S	Sg	15 22 13.2	+1.0
SIGR	SIGRI	0.43	231	ePG	Pg	15 22 07.5	0.0
SIGR				eSG	Sg	15 22 13.8	+0.7
SIGR	SIGRI	0.43	231	P	Pg	15 22 07.2	-0.3
SIGR				S	Sg	15 22 14.0	+1.0
SIGR	SIGRI	0.43	231	P	Pg	15 22 07.0	-0.5
SIGR	SIGRI	0.43	231	ePg	Pg	15 22 07.5	0.0
SIGR				S	Sg	15 22 12.7	-0.3
SIGR				eSg	Sg	15 22 13.8	+0.7
SIGR	SIGRI	0.43	231	P	Pg	15 22 07.0	-0.5
SIGR				S	Sg	15 22 12.7	-0.3
SIGR				AML	AML	15 22 15.2	
	comp=N,695μm,0.2s						
SIGR				AML	AML	15 22 16.0	
	comp=E,856μm,0.4s						
DKL	Dikili	0.63	130	ePG	Pg	15 22 11.4	+0.1
DKL	Dikili	0.63	130	ePg	Pg	15 22 11.4	+0.1
GADA	Gvkgeada	0.77	337	ePG	Pg	15 22 13.7	-0.3
GADA	Gvkgeada	0.77	337	P	Pg	15 22 13.7	-0.3
GADA				S	Sg	15 22 24.6	+0.6
GADA	Gvkgeada	0.77	337	P	Pg	15 22 13.7	-0.3
GADA				S	Sg	15 22 24.6	+0.6
GELI	Tayfur-Gelibol	0.93	9	ePG	Pg	15 22 17.1	+0.1
GELI	Tayfur-Gelibol	0.93	9	ePg	Pg	15 22 17.1	+0.1
LIA	Limnos Island	0.95	296	P	Pg	15 22 17.2	-0.2
LIA				S	Sb	15 22 31.5	+0.1
LIA	Limnos Island	0.95	296	P	Pg	15 22 17.2	-0.2
LIA				S	Sb	15 22 31.4	+0.1
BALY	Balya	1.06	75	i P	Pg	15 22 19.0	-0.6
BALY				i S	Sg	15 22 33.2	-0.1
BALY	Balya	1.06	75	P	Pg	15 22 19.0	-0.6
BALY				S	Sg	15 22 33.2	-0.1
CHOS	Chios island	1.11	189	P	Pg	15 22 19.9	-0.6
CHOS	Chios island	1.11	189	P	Pg	15 22 19.9	-0.6
SMTH	Samothraki Isl	1.15	330	P	Pg	15 22 20.3	-1.0
SMTH				S	Sb	15 22 36.7	-0.4
SMTH	Samothraki Isl	1.15	330	P	Pg	15 22 21.2	-0.1
SMTH				S	Sg	15 22 36.2	+0.1
SMTH	Samothraki Isl	1.15	330	P	Pg	15 22 21.2	-0.1
SMTH				S	Sg	15 22 36.2	+0.1
SMTH				AML	AML	15 22 38.1	
	comp=N,278μm,0.1s						
SMTH				AML	AML	15 22 38.8	
	comp=E,168μm,0.2s						
ERIK	Erikli-Kesan	1.20	8	ePN	Pg	15 22 21.8	-0.5
ERIK	Erikli-Kesan	1.20	8	ePn	Pg	15 22 21.8	-0.5
BALB	Balikesir	1.24	82	ePN	Pn	15 22 23.6	0.0
BALB	Balikesir	1.24	82	ePn	Pn	15 22 23.6	0.0
BLCB	Balcova	1.24	151	ePN	Pg	15 22 22.9	-0.1
BLCB	Balcova	1.24	151	ePn	Pg	15 22 22.9	-0.1
ENEZ	Enez	1.26	355	ePN	Pg	15 22 23.0	-0.4
ENEZ	Enez	1.26	355	ePn	Pg	15 22 23.0	-0.4
IZM	Izmir	1.32	145	ePN	Pb	15 22 24.8	0.0
IZM	Izmir	1.32	145	ePn	Pb	15 22 24.8	0.0
KESN	Edirne-Kesan	1.38	13	i P	Pg	15 22 24.6	-1.1
KESN				i S	Sg	15 22 43.2	-0.3
KESN	Edirne-Kesan	1.38	13	P	Pg	15 22 24.6	-1.1
KESN				S	Sg	15 22 43.2	-0.3
RKY	Sarkoy-Tekirda	1.39	29	ePN	Pn	15 22 25.5	-0.1
RKY	Sarkoy-Tekirda	1.39	29	ePn	Pn	15 22 25.5	-0.1
ALN	Alexandroupoli	1.43	353	ePN	Pn	15 22 25.7	-0.4
ALN	Alexandroupoli	1.43	353	P	Pn	15 22 24.9	-1.2
ALN	Alexandroupoli	1.43	353	ePn	Pn	15 22 25.7	-0.4
ALN				S	Sg	15 22 45.1	0.0
ALN	Alexandroupoli	1.43	353	P	Pn	15 22 24.9	-1.2
ALN				S	Sg	15 22 45.1	0.0
ALN				AML	AML	15 22 46.3	
	comp=E,153μm,0.3s						
ALN				AML	AML	15 22 46.6	
	comp=N,120μm,0.8s						
EDC	Edincik	1.49	54	ePN	Pn	15 22 27.0	0.0
EDC	Edincik	1.49	54	ePn	Pn	15 22 27.0	0.0
MRMT	Marmara Adasi	1.50	41	ePN	Pn	15 22 27.3	0.0
MRMT	Marmara Adasi	1.50	41	ePn	Pn	15 22 27.3	0.0
KCTX	Karacabey (Bur	1.77	63	ePN	Pn	15 22 31.1	+0.1
KCTX	Karacabey (Bur	1.77	63	ePn	Pn	15 22 31.1	+0.1
OUR	Ouranopolis	1.97	296	ePN	Pn	15 22 33.5	0.0
OUR	Ouranopolis	1.97	296	ePn	Pn	15 22 33.5	0.0
OUR	Ouranopolis	1.97	296	P	Pn	15 22 33.3	-0.2
AYDB	Zeytinkoy-Aydi	1.98	140	ePN	Pn	15 22 34.2	+0.4
AYDB	Zeytinkoy-Aydi	1.98	140	ePn	Pn	15 22 34.3	+0.4
ARMT	Armutlu	2.25	60	ePN	Pn	15 22 38.3	+0.8
ARMT	Armutlu	2.25	60	ePn	Pn	15 22 38.3	+0.8
EDRB	Edirne	2.39	8	ePN	Pn	15 22 39.4	0.0
EDRB	Edirne	2.39	8	ePn	Pn	15 22 39.4	0.0
CTKS	Kestanelik-??a	2.44	43	ePN	Pn	15 22 40.7	+0.7
CTKS	Kestanelik-??a	2.44	43	ePn	Pn	15 22 40.7	+0.7
TVSB	Tavsanli	2.46	90	ePN	Pn	15 22 41.8	+1.4
TVSB	Tavsanli	2.46	90	ePn	Pn	15 22 41.8	+1.4
IZI	Iznik	2.59	70	ePN	Pn	15 22 43.1	+0.9
IZI	Iznik	2.59	70	ePn	Pn	15 22 43.1	+0.9

IDC 01 15:22:40.8±0.8, 36.88N×142.41E, h0km, mb3.6/11, mb1 3.8/13, mb1mx3.7/43, mbtmp3.6/13, ML3.8/2, Error ellipse: s-maj=22.4km s-min=15.8km az=118.0
JMA 01 15:22:40.7±0.4, 36.96N×142.40E, h9km, M4.0
ISCJB 01 15:22:42.1±1.6, 36.92N±0.03×142.42E±0.05, h22km±13km, mb3.7/13, Error ellipse: s-maj=6.1km s-min=5.8km az=20.7
NEIC 01 15:22:45.9±0.7, 36.91N×142.39E, h35km, mb4.5/2, Error ellipse: s-maj=17.2km s-min=10.1km az=154.0
ISC 01 15:22:42.1±2.9, 36.95N±0.05×142.37E±0.06, h9km±17km, n38, σ1.06/41, mb3.6/13, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
ONAJ	Iwakimizuishiy	1.27	277	P	Pn	15 23 03.7	-2.3
ONAJ				S	Sg	15 23 22.6	-0.3
JMM	Marumori	1.55	306	P	Pn	15 23 09.4	-0.5
JMM				S	Sn	15 23 29.3	-0.8
JIO	Ouri	1.71	332	P	Pn	15 23 11.3	-0.6
JIO				S	Sn	15 23 32.8	-1.0
JFT	Otama	1.72	290	P	Pn	15 23 11.1	-1.1
JFT				S	Sn	15 23 34.5	+0.3
JOU	Okura	1.96	317	P	Pn	15 23 16.2	+0.8
JOU				S	Sn	15 23 40.4	+0.3
JFY	Yanaizu	2.18	283	P	Pn	15 23 18.1	-0.4
JFY				S	Sn	15 23 46.4	+0.8
JMK	Ichinoseki	2.19	336	P	Pn	15 23 18.7	0.0
JMK				S	Sn	15 23 44.4	-1.5
JYS	Shirataka	2.23	305	P	Pn	15 23 19.2	+0.1
JYS				S	Sn	15 23 45.7	-1.1
JAG	Ashikaga	2.40	258	P	Pn	15 23 21.9	+0.3
JAG				S	Sn	15 23 50.3	-0.8
JYK	Kaneyama	2.53	322	P	Pn	15 23 23.2	-0.1
JOM	Ohasama	2.66	342	P	Pn	15 23 24.9	-0.1
MJAR	Matsushiro Arr	3.37	264	Pn	Pn	15 23 34.8	-0.1
	11nm,0.3s,baz=86,slow=15,SNR=95						
MAJO	Matsushiro	3.37	264	ePn	Pn	15 23 35.4	+0.5
MAJO				eSn	Sn	15 24 15.6	+0.7
MAT	Matsushiro	3.37	264	P	Pn	15 23 36.0	+1.1
MAT				eS	Sn	15 24 17.2	+2.2
JHJ	Hachijo jima 2	4.37	210	Pn	Pn	15 23 48.2	-0.5
	11nm,0.3s,baz=154,slow=22,SNR=7.4						
JHJ				Sn	Sn	15 24 38.6	-1.1
	21nm,0.3s,baz=36,slow=21,SNR=4.1						
JNU	Nakatsue	10.17	251	Pn	Pn	15 25 10.9	+2.7
	0.4nm,0.3s,baz=147,slow=3.2,SNR=5.6						
USRK	Ussuriysk Ar.	10.71	316	Pn	Pn	15 25 22.5	+7.0
	0.1nm,0.3s,baz=116,slow=15,SNR=5.1						
KSRS	Korea Array	11.54	277	Pn	Pn	15 25 31.3	+4.5
	0.1nm,0.3s,baz=92,slow=14,SNR=5.4						
KSAR	Wonju Array Be	11.57	277	Pn	Pn	15 25 31.3	+4.0
MA2	Magadan	23.28	11	P	P	15 27 50.3	+0.5
	0.9nm,0.3s,baz=273,slow=9.7,SNR=3.7						
SEY	Seymchan	26.73	10	P	P	15 28 22.2	+0.7
	1.1nm,0.5s,baz=210,slow=11,SNR=6.4						
H11N2	WAKE ISLAND Hy	27.45	122	T	T	15 57 20.2	
	baz=314,slow=75,SNR=22						
H11N1	WAKE ISLAND Hy	27.46	122	T	T	15 57 29.2	
	baz=314,slow=75,SNR=21						
H11N3	WAKE ISLAND Hy	27.47	122	T	T	15 57 30.0	
	baz=314,slow=75,SNR=17						
ENH	Enshi	28.09	266	eP	P	15 28 32.2	-1.9
	4.1nm,0.7s						
H11S1	WAKE ISLAND Hy	28.18	124	T	T	15 58 19.4	
	baz=316,slow=76,SNR=8.9						
H11S3	WAKE ISLAND Hy	28.18	124	T	T	15 58 18.8	

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
	baz=316,slow=76,SNR=7.3						
H11S2	WAKE ISLAND Hy	28.19	124	T	T	15 58 18.7	
	baz=316,slow=76,SNR=8.3						
SONM	Songino Array	28.47	304	P	P	15 28 37.4	0.0
	0.6nm,0.6s,baz=100,slow=8.3,SNR=6.3						
ZALV	Zalesovo Beam	42.53	312	P	P	15 30 39.8	+2.0
	0.3nm,0.3s,baz=107,slow=5.0,SNR=3.4						
MKAR	Makanchi Array	44.81	302	P	P	15 30 56.1	-0.1
	0.3nm,0.6s,baz=89,slow=9.5,SNR=4.7						
KURK	Kurchatov	46.59	308	P	P	15 31 09.6	-0.5
	8.2nm,0.8s						
ILAR	Eielson Array	49.15	32	P	P	15 31 30.4	+0.5
	0.4nm,0.7s,baz=262,slow=6.3,SNR=6.8						
WRA	Warramunga Arr	57.09	189	P	P	15 32 28.7	-0.1
	0.5nm,0.8s,baz=9.8,slow=5.4,SNR=4.2						
ASAR	Alice Springs	60.82	189	P	P	15 32 54.2	-0.3
	0.3nm,0.9s,baz=19,slow=12,SNR=5.0						
YKA	Yellowknife Ar	63.49	30	P	P	15 33 12.3	+0.2
	0.3nm,0.7s,baz=300,slow=6.6,SNR=4.0						
NVAR	Mina Array Bea	74.42	54	P	P	15 34 21.9	+1.1
	0.3nm,0.6s,baz=304,slow=5.3,SNR=2.9						
TXAR	Lajitas Array	89.56	53	P	P	15 35 39.4	-0.9
	0.3nm,0.8s,baz=302,slow=2.4,SNR=4.1						

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*IDC **01** 15:36:19.6±0.7, 36°.29N×141°.09E, h0km, mb3.7/12, mb1 3.8/16, mb1mx3.7/41, mbtmp3.8/16, ML3.0/3, Error ellipse: s-maj=21.1km s-min=15.1km az=96.0*
*ISCJB **01** 15:36:22.7±0.5, 36°.32N±0°.04×141°.19E±0°.06, h32km, mb3.7/13, Error ellipse: s-maj=7.2km s-min=5.1km az=9.3*
*JMA **01** 15:36:24.5±0.1, 36°.30N×141°.02E, h47km±1km, M3.8*
JMA Felt I J1.
ISC 01 15:36:24.6±0.6, **36°.31N**±0°.04×**141°.03E**±0°.07, **h32**km, **n30**, σ**1s.03**/28, **mb3.7**/13, **Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
JHO	Hitachi	0.48	308	P	Pn	15 36 35.1	-0.1
CHOJ	Chosi	0.63	193	P	Pb	15 36 37.0	-0.1
CHOJ				S	Sb	15 36 45.6	-0.1
JYT	Yasato	0.69	263	P	Pn	15 36 37.9	-0.1
JYT				S	Sb	15 36 47.1	-0.2
ONAJ	Iwakimizuishiy	0.81	347	P	Pn	15 36 39.4	-0.4
ONAJ				S	Sn	15 36 49.6	-1.1
JAG	Ashikaga	1.28	275	P	Pn	15 36 46.3	+0.1
MJAR	Matsushiro Arr	2.29	277	Pn	Pn	15 37 00.6	+0.5
	22nm,0.3s,baz=115,slow=8.7,SNR=125						
MAT	Matsushiro	2.29	277	P	Pn	15 37 01.8	+1.7
MAT				S	Sb	15 37 31.4	-1.8
JHJ	Hachijo jima 2	3.35	198	Pn	Pn	15 37 14.6	-0.1
	3.9nm,0.3s,baz=105,slow=22,SNR=2.5						
JHJ				Sn	Sn	15 37 54.8	+1.4
	17nm,0.3s,baz=83,slow=23,SNR=5.5						
JCJ	Chichijima	9.24	174	Pn	Pn	15 38 32.8	-2.8
	3.4nm,0.3s,baz=336,slow=21,SNR=3.1						
JCJ				Sn	Sn	15 40 10.2	-8.4
	3.3nm,0.3s,baz=275,slow=22,SNR=2.9						
USRK	Ussuriysk Ar.	10.47	322	Pn	Pn	15 38 52.4	0.0
	0.2nm,0.3s,baz=105,slow=9.1,SNR=2.5						
KSRS	Korea Array	10.56	280	Pn	Pn	15 38 57.3	+3.6
	0.1nm,0.3s,baz=91,slow=15,SNR=2.7						
SEY	Seymchan	27.55	11	P	P	15 42 11.0	+2.8
	1.2nm,0.7s,baz=214,slow=6.2,SNR=9.0						
SONM	Songino Array	27.94	305	P	P	15 42 12.3	+0.3
	0.5nm,0.4s,baz=101,slow=10,SNR=3.5						
H11N2	WAKE ISLAND Hy	28.05	119	T	T	16 11 35.1	
	baz=312,slow=76,SNR=24						
H11N1	WAKE ISLAND Hy	28.06	119	T	T	16 11 24.8	
	baz=312,slow=76,SNR=36						
H11N3	WAKE ISLAND Hy	28.07	119	T	T	16 11 33.0	
	baz=312,slow=76,SNR=27						
H11S1	WAKE ISLAND Hy	28.74	121	T	T	16 12 25.8	
	baz=314,slow=76,SNR=93						
H11S3	WAKE ISLAND Hy	28.74	121	T	T	16 12 19.0	
	baz=314,slow=76,SNR=74						
H11S2	WAKE ISLAND Hy	28.75	121	T	T	16 12 34.9	
	baz=314,slow=76,SNR=63						
ZALV	Zalesovo Beam	42.18	313	P	P	15 44 13.7	-0.3
	2.1nm,0.6s,baz=97,slow=7.1,SNR=8.5						
MKAR	Makanchi Array	44.25	303	P	P	15 44 31.0	+0.1
	0.7nm,0.7s,baz=89,slow=10,SNR=8.5						
ILAR	Eielson Array	50.26	32	P	P	15 45 17.8	+0.3
	0.8nm,0.8s,baz=270,slow=6.0,SNR=10						
INK	Inuvik	55.16	27	P	P	15 45 54.2	+0.7
	0.9nm,0.8s,baz=70,slow=2.7,SNR=5.7						
WRA	Warramunga Arr	56.31	188	P	P	15 46 01.6	-0.6
	0.2nm,0.4s,baz=6.2,slow=7.4,SNR=7.2						
ASAR	Alice Springs	60.03	188	P	P	15 46 28.2	-0.1
	0.4nm,0.9s,baz=10,slow=5.7,SNR=5.3						
RES	Resolute Bay	63.37	14	P	P	15 46 50.3	+0.2
	1.1nm,0.9s,baz=298,slow=9.7,SNR=4.1						
YKA	Yellowknife Ar	64.58	30	P	P	15 46 58.2	-0.1
	0.3nm,0.8s,baz=303,slow=6.5,SNR=3.9						
AKASG	Malin Array Be	74.68	322	P	P	15 48 00.5	-0.2
	0.5nm,0.5s,baz=51,slow=6.7,SNR=4.8						
NOA	NORSAR Array B	74.73	337	P	P	15 48 00.9	0.0
	0.8nm,0.8s,baz=38,slow=5.8,SNR=3.2						
BRTR	Keskin Array B	79.10	311	P	P	15 48 26.1	0.0
	0.5nm,0.7s,baz=103,slow=2.7,SNR=4.1						

IDC 01 15:57:34.8±1.9, **1°.26N**×**125°.86E**, **h0**km, **mb3.8**/3, **mb1 4.1**/3, **mb1mx3.5**/43, **mbtmp3.8**/3, **MS3.9**/2, **Ms1 3.9**/2, **ms1mx2.8**/52, **Error ellipse: s-maj=178.8km s-min=23.8km az=65.0, Northern Molucca Sea**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
WRA	Warramunga Arr	22.66	159	P	P	16 02 37.4	-0.4
	3.0nm,0.5s,baz=337,slow=11,SNR=26						
ASAR	Alice Springs	25.98	163	P	P	16 03 09.7	+0.3
	1.3nm,0.6s,baz=348,slow=13,SNR=45						
CTA	Charters Tower	29.16	138	LR	LR	16 16 02.4	
	comp=Z,227nm,21.6s,baz=194,slow=38						
MKAR	Makanchi Array	59.10	327	P	P	16 07 37.0	0.0
	0.2nm,0.4s,baz=118,slow=8.1,SNR=9.4						
AKTO	Aktyubinsk	75.05	322	LR	LR	16 44 19.1	
	comp=Z,82nm,21.2s,slow=37						

KRSC 01 15:57:39.5±1.9, **50°.86N**×**157°.18E**, **h108**km±27km, **ML3.9**, **Kuril Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
PAU	Pauzhetka	0.65	339	*e*P	Pn	15 57 59.2	+1.9
SKR	Severo-Kuril's	0.70	256	*e*P	Pn	15 57 58.0	+0.4
SKR				*e*S	Sn	15 58 12.0	+0.8
ASAK	Asacha	1.59	16	*e*P	Pn	15 58 09.8	+2.5
ASAK				*e*S	Sn	15 58 31.2	+2.7
RUS	Russkaya	1.78	27	*e*P	Pn	15 58 11.3	+1.7
RUS				*e*S	Sn	15 58 35.5	+3.0
KRMR	Karymshinskiy	2.06	16	*e*P	Pn	15 58 15.8	+2.7
KRMR				*e*S	Sn	15 58 43.2	+4.4
APC	Apacha	2.07	360	*e*P	Pn	15 58 14.4	+1.2
PET	Petropavlovsk	2.35	22	*e*P	Pn	15 58 17.7	+0.9
PET				*e*S	Sn	15 58 48.5	+3.0
UGLR	Uglovaya	2.56	23	*e*P	Pn	15 58 22.3	+2.6
UGLR				*e*S	Sn	15 58 51.3	+0.7
AVH	Avacha	2.59	21	*e*P	Pn	15 58 23.0	+2.9
AVH				*e*S	Sn	15 58 53.9	+2.6
KOK	Koryaka	2.60	20	*e*P	Pn	15 58 23.1	+2.9
KOK				*e*S	Sn	15 58 51.9	+0.5
SMAR	Somma	2.61	22	*e*P	Pn	15 58 22.8	+2.4
SMAR				*e*S	Sn	15 58 52.2	+0.4
SDLR	Sedlovina	2.64	23	*e*P	Pn	15 58 22.8	+2.0
SDLR				*e*S	Sn	15 58 52.5	0.0
KRX	Arik	2.66	19	*e*P	Pn	15 58 23.3	+2.2
KRX				*e*S	Sn	15 58 54.3	+1.3
NLC	Nalytchevo	2.67	29	*e*P	Pn	15 58 21.9	+0.9
NLC				*e*S	Sn	15 58 52.2	-0.8
SPN	Mys Shipunski	2.85	37	*e*P	Pn	15 58 25.1	+1.7
SPN				*e*S	Sn	15 58 58.4	+1.2
GNL	Ganaly	2.88	9	*e*P	Pn	15 58 25.6	+1.7
GNL				*e*S	Sn	15 58 59.3	+1.2

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*IDC **01** 15:58:34.5±1.6, 34°.88S×71°.61W, h0km, mb3.7/2, mb1 4.0/4, mb1mx3.8/25, mbtmp3.8/4, ML4.3/2, Error ellipse: s-maj=63.7km s-min=32.8km az=77.0*
*SJA **01** 15:58:37.0±0.7, 35°.22S×71°.93W, h205km±22km, ML4.0, MW3.7*
*NEIC **01** 15:58:40.0, 35°.13S×71°.89W, h42km, mb4.3/1, After GUC.*
NEIC Felt [IV] at Iloca, Linares, Longavi and Talca; [III] at Chepica, Chimbarongo, Hualane, Lolol, Pencahue, San Fernando and Santa Cruz; [II] at Cauquenes, Chanco, Constitucion, Curico, Molina, Paredones, Pelluhue, Rancagua, Rio Claro and San Clemente.
*GUC **01** 15:58:40.0±0.7, 35°.13S×71°.89W, h42km±2km, ML4.4*
ISC 01 15:58:37.7±2.1, **35°.12S**±0°.05×**72°.12W**±0°.09, **h24**km±15km, **n29**, σ**1s.57**/36, **mb4.1**/3, **4C-2D**, **Near coast of central Chile**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
TALC	Talca	0.49	124⇑	*i*P	Pn	15 58 49.1	-0.1
TALC				*i* S	Sb	15 58 55.7	+1.3
CHPI	Pichilemu	0.74	8⇑	*i*P	Pn	15 58 53.9	+1.2
CHPI				*i* S	Sn	15 59 05.4	+2.3
NICH	Los Niches	0.74	81⇑	*i*P	Pb	15 58 51.5	-0.5
NICH				*i* S	Sb	15 59 00.4	-1.3
CCHI	Chillan	1.48	179	AML	AML	15 59 28.3	
	comp=E,4μm,0.3s						
ANTU	Antumapu	1.98	39⇑	*i*P	Pn	15 59 10.6	+0.8
ANTU				AML	AML	15 59 36.7	
	comp=E,6μm,0.4s						
CLCH	Cerro Calan	2.17	38⇓	*i*P	Pn	15 59 13.0	+0.6
CLCH				*i* S	Sn	15 59 39.0	+0.5
CLCH				AML	AML	15 59 43.2	
	comp=E,3μm,0.3s						
YECH	El Yeso	2.23	50	AML	AML	15 59 47.1	
	comp=N,3μm,0.6s						
PEL	Peldehue	2.31	32⇓	*i*P	Pn	15 59 15.3	+0.9
PEL				*e*S	Sn	15 59 42.1	+0.1
PEL				AML	AML	15 59 51.4	
	comp=N,2μm,0.5s						
ROCH	El Roble	2.34	24	*e*P	Pn	15 59 15.8	+0.9
ROCH				*i* S	Sn	15 59 43.6	+0.6
ROCH				AML	AML	15 59 50.5	
	comp=N,5μm,0.5s						
AAGR	Agrelo	3.41	54	*e*P	Pn	15 59 31.2	+1.7
AAGR				*e*S	Sn	16 00 12.1	+2.9
ARCO	CERRO ARCO	3.49	50	*e*P	Pn	15 59 32.7	+1.9
ARCO				*e*S	Sn	16 00 14.2	+2.7
ARCO				IAML		16 00 30.6	
	comp=Z,93nm,0.5s						
AUSP	Uspallata	3.68	39	*e*P	Pn	15 59 36.0	+2.5
ASAL	Salagasta	3.72	48	*e*P	Pn	15 59 36.4	+2.5
RTLS	Leoncito	4.07	36	*e*P	Pn	15 59 41.1	+2.3
RTCV	Cerro Valdivia	4.42	44	*e*P	Pn	15 59 44.1	+0.7
RTLL	Cerro Villicun	4.87	40	*e*P	Pn	15 59 50.3	+0.7
ACAN	Cantantal	5.00	57	*e*P	Pn	15 59 51.7	+0.4
AMOG	MOGNA	5.17	37	*e*P	Pn	15 59 54.0	+0.3
PLCA	Paso Flores	5.74	168	Pn	Pn	16 00 03.6	+2.1
	comp=Z,3.2nm,0.3s,baz=352,slow=14,SNR=60						
PLCA				Lg	Lg	16 01 34.4	
	comp=Z,0.6nm,0.3s,baz=309,slow=11,SNR=1.9						
AVFE	Valle Fertil	5.94	43	*e*P	Pn	16 00 03.5	-0.8
AVFE				IAML		16 01 19.9	
	comp=Z,64nm,0.9s						
ACHE	Chepes	6.05	51	*e*P	Pn	16 00 04.8	-1.0
LCO	Las Campanas	6.21	12	*e*Pn	Pn	16 00 06.9	-1.3
	comp=Z,31nm,0.5s						
LCO				*e*Sn	Sn	16 01 17.6	-1.1
AGUA	GUANDACOL	6.41	30	*e*P	Pn	16 00 10.7	-0.1
ACLC	CERRO LA CRUZ	7.17	39	*e*P	Pn	16 00 19.4	-1.9
ACLC				IAML		16 01 57.2	
	comp=Z,40nm,0.7s						
TRQA	Tornquist	8.67	113	*e*Pn	Pn	16 00 40.6	-1.0
LPAZ	La Paz	19.09	12	Pn	P	16 02 57.1	-2.3
	comp=Z,0.2nm,0.3s,baz=194,slow=9.0,SNR=6.0						
QSPA	South Pole Qui	55.12	180	*e*P	P	16 08 08.7	+0.9
	comp=Z,1.9nm,0.6s						
TXAR	Lajitas Array	70.68	331	P	P	16 09 52.0	+0.4
	comp=Z,0.2nm,0.5s,baz=151,slow=9.1,SNR=5.4						
TORD	Torodi Ar. Bea	84.66	70	P	P	16 11 07.8	-2.0
	comp=Z,0.7nm,0.6s,baz=240,slow=3.6,SNR=4.6						

IDC 01 16:02:43.3±3.6, **36°.38N**×**144°.62E**, **h0**km, **mb3.3**/3, **mb1 3.5**/4, **mb1mx3.2**/47, **mbtmp3.3**/4, **ML3.6**/1, **MS3.5**/1, **Ms1 3.5**/1, **ms1mx2.8**/20, **Error ellipse: s-maj=93.6km s-min=33.5km az=53.0, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
MJAR	Matsushiro Arr	5.17	274	Pn	Pn	16 04 01.7	-0.1
	2.1nm,0.3s,baz=82,slow=15,SNR=21						
MAT	Matsushiro	5.17	274	P	Pn	16 04 02.4	+0.5
SONM	Songino Array	30.28	304	LR	LR	16 22 01.0	
	comp=Z,81nm,18.5s,baz=52,slow=38						
MKAR	Makanchi Array	46.64	303	P	P	16 11 13.0	-0.3
	0.4nm,0.8s,baz=81,slow=8.9,SNR=3.4						
WRA	Warramunga Arr	56.85	192	P	P	16 12 28.1	-1.6
	0.5nm,0.9s,baz=13,slow=7.7,SNR=4.2						
ASAR	Alice Springs	60.57	191	P	P	16 12 57.2	+1.6
	0.1nm,0.3s,baz=17,slow=6.4,SNR=3.6						

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*NEIC **01** 16:06:43.0±1.2, 23°.75S×179°.78W, h496km±12km, mb4.8/5, Error ellipse: s-maj=16.8km s-min=11.4km az=97.0*
*ISCJB **01** 16:06:44.2±0.6, 23°.78S±0°.05×179°.9W±0°.1, h518km, mb4.3/15, Error ellipse: s-maj=16.3km s-min=6.1km az=175.8*
*IDC **01** 16:06:46.2±4.5, 23°.71S×179°.90W, h524km±47km, mb3.8/13, mb1 3.9/13, mb1mx3.6/36, mbtmp4.7/13, Error ellipse: s-maj=26.9km s-min=14.2km az=66.0*
ISC 01 16:06:45.2±0.7, **23°.90S**±0°.08×**179°.9W**±0°.1, **h518**km, **n46**, σ**1s.50**/49, **mb4.4**/15, **1C-1D**, **South of Fiji Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
MSVF	Nonsavu	6.45	342	*e*P	P	16 08 22.4	-4.4
	21nm,0.6s						
MSVF				*e*S	S	16 09 40.5	-9.2
HAZ	Te Kaha	13.96	188	PN	P	16 09 43.6	-0.4
HAZ				SN	S	16 12 11.7	+0.2
URZ	Urewera	14.54	190	S	S	16 12 21.9	-0.8
	2.7nm,0.3s,baz=74,slow=23,SNR=22						
BKZ	Black Stump Fm	15.53	191	PN	P	16 10 00.5	-0.1
BKZ				SN	S	16 12 37.1	-4.4
VRZ	Vera Road	15.85	196	*e*PN	P	16 10 07.3	+3.5
BHHZ	Black Hill Sta	15.92	192	PN	P	16 10 03.9	-0.7
BHHZ				SN	S	16 12 47.6	-0.9
KRHZ	Kereru	16.02	191	PN	P	16 10 05.0	-0.5
KAHZ	Kahuranaki	16.09	189	PN	P	16 10 07.3	+1.0
PNHZ	Pukenui	16.31	191	PN	P	16 10 09.4	+0.9
PXZ	Pawanui	16.32	189	*e*PN	P	16 10 07.5	-1.0
PXZ				*e*SN	S	16 12 52.8	-2.5
ANWZ	Angora Road	16.80	190	PN	P	16 10 12.9	-0.3
BFZ	Birch Farm	17.05	190	PN	P	16 10 15.2	-0.5
MRZ	Mangatainoka R	17.15	192	PN	P	16 10 14.5	-2.1
MRZ				*e*SN	S	16 13 04.1	-5.2
QRZ	Quartz Range	18.05	199	PN	P	16 10 26.1	+1.2
THZ	Tophouse	18.81	197	PN	P	16 10 32.3	+0.4
KHZ	Kahutara	19.26	195	*e*P	P	16 10 35.6	-0.3
	65nm,0.5s						
LTZ	Lake Taylor	19.93	197	*e*PN	P	16 10 41.4	-0.6
INZ	Inchbonnie	20.11	199	PN	P	16 10 43.4	-0.2
OXZ	Oxford	20.50	197	PN	P	16 10 46.7	-0.5
RPZ	Rata Peaks	21.13	199	P	P	16 10 54.6	+1.7
	14nm,0.4s,baz=26,slow=5.9,SNR=18						
RPZ	Rata Peaks	21.13	199	*e*P	P	16 10 52.0	-1.0
	25nm,0.8s						
CTA	Charters Tower	31.62	270	P	P	16 12 25.9	+0.3
	30nm,0.4s,baz=93,slow=12,SNR=72						
PMG	Port Moresby	34.63	289	P	P	16 12 50.6	-0.5
	15nm,0.9s,baz=147,slow=11,SNR=6.3						
STKA	Stephens Creek	34.85	248	P	P	16 12 53.7	+1.0
	6.1nm,0.5s,baz=94,slow=10,SNR=24						
ASAR	Alice Springs	42.17	261	P	P	16 13 52.5	+0.1
	17nm,0.8s,baz=97,slow=7.4,SNR=375						
WRAB	Tennant Creek	42.54	266	*e*P	P	16 13 54.6	-0.7
	14nm,0.8s						
WRA	Warramunga Arr	42.55	266	P	P	16 13 54.9	-0.4
	21nm,0.6s,baz=92,slow=8.3,SNR=365						
VNDA	Vanda	54.39	185	P	P	16 15 24.9	+2.4
	2.0nm,0.7s,baz=14,slow=7.4,SNR=13						
QSPA	South Pole Qui	66.18	180	*e*P	P	16 16 42.6	+1.6
	38nm,1.0s						
MAW	Mawson	77.80	200	P	P	16 17 49.6	+1.4
	5.7nm,0.6s,baz=127,slow=7.1,SNR=14						
PETK	Petropavlovsk-	79.14	346	P	P	16 17 55.0	-0.5
	1.2nm,0.6s,baz=168,slow=8.1,SNR=3.1						
SYO	Syowa Base	83.04	193⇑	*e*P	P	16 18 14.4	-1.2
MA2	Magadan	86.62	346	P	P	16 18 32.0	-1.0
	1.3nm,0.6s,baz=231,slow=6.5,SNR=3.9						
SEY	Seymchan	89.30	348	P	P	16 18 44.8	-0.6
	1.3nm,0.5s,baz=176,slow=13,SNR=10						
CMAR	Chiang Mai Arr	89.66	290	P	P	16 18 49.5	+1.4
	2.5nm,1.0s,baz=139,slow=3.3,SNR=17						
TXAR	Lajitas Array	90.31	58	P	P	16 18 51.5	+0.5
	0.6nm,0.7s,baz=218,slow=6.2,SNR=7.9						
ARCES	ARCESS Array B	131.92	348	PKP	PKPdf	16 24 57.8	-1.0
	1.0nm,0.6s,baz=5.7,slow=0.9,SNR=10						
FINES	FINESS Array B	138.49	342	PKhKP	PKPpre	16 25 00.6	
	0.9nm,0.8s,baz=64,slow=3.2,SNR=3.6						
FINES				PKP	PKPdf	16 25 10.8	-0.3
	0.5nm,0.4s,baz=27,slow=2.1,SNR=4.3						
NB2	NORSAR Subarra	142.10	351	PKP	PKPpre	16 25 12.9	
	comp=Z,0.7nm,0.6s,baz=15,slow=3.3						
NOA	NORSAR Array B	142.10	351	PKhKP	PKPpre	16 25 10.6	
	comp=Z,0.4nm,0.5s,baz=16,slow=4.1,SNR=5.0						
AKASG	Malin Array Be	145.05	327	PKP	PKPdf	16 25 22.6	-0.5
	comp=Z,5.9nm,0.7s,baz=45,slow=4.2,SNR=27						
BRTR	Keskin Array B	147.69	307	PKPbc	PKPbc	16 25 31.0	-0.7
	comp=Z,1.7nm,0.6s,baz=142,slow=5.2,SNR=11						
CLL	Collm	150.90	343⇓	*i*PKPbc	PKPbc	16 25 38.5	-0.3
	comp=Z,8.0nm,0.7s						
BRG	Berggiesshubel	151.03	342	*i* PKP	PKPbc	16 25 38.7	-0.4
	comp=Z,9.1nm,1.0s						
GERES	GERESS Array B	152.91	340	PKPbc	PKPbc	16 25 42.5	-1.0
	comp=Z,0.4nm,0.5s,baz=11,slow=1.4,SNR=5.4						
TORD	Torodi Ar. Bea	169.20	188	PKP	PKPdf	16 25 52.2	-1.4
	comp=Z,0.6nm,0.8s,baz=134,slow=0.1,SNR=3.7						
TORD				PKPab	PKPab	16 27 09.4	+0.4
	comp=Z,1.3nm,0.8s,baz=165,slow=4.3,SNR=7.5						

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*ISCJB **01** 16:09:11.8±0.6, 33°.75N±0°.04×35°.64E±0°.05, h26km±4km, Error ellipse: s-maj=6.7km s-min=6.5km az=26.5*
*NSSC **01** 16:09:11.1±0.8, 33°.73N×35°.59E, h24km±3km, MD1.3, ML1.5*
*CSEM **01** 16:09:11.5±0.2, 33°.76N×35°.65E, h23km±1km, ML2.8, Error ellipse: s-maj=6.3km s-min=3.7km az=80.0*
*GRAL **01** 16:09:13.0±0.3, 33°.80N×35°.76E, h15km±5km, MD2.8*
ISC 01 16:09:11.3±1.1, **33°.79N**±0°.03×**35°.64E**±0°.05, **h29**km±4km, **n22**, σ**0s.63**/38, **Jordan-Syria region**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
DQRL	Deir Qamar	0.10	218	*e*P	Pn	16 09 17.2	+0.5
DQRL				*e*S	Sb	16 09 20.2	-0.1
DQRL	Deir Qamar	0.10	218	*e*P	Pn	16 09 17.2	+0.5
DQRL				*e*S	Sb	16 09 20.2	-0.1
BHL	Bhannes	0.12	4	*e*P	Pb	16 09 16.5	-0.3
BHL	Bhannes	0.12	4	*e*P	Pb	16 09 16.5	-0.3
BEYL	Beirut	0.15	305	*e*P	Pn	16 09 17.8	+0.1
BEYL	Beirut	0.15	305	*e*P	Pn	16 09 17.8	+0.1
RCY	Rachaya	0.33	151	*e*P	Pb	16 09 19.0	-0.2
RCY				*e*S	Sb	16 09 23.6	-1.0
RCY	Rachaya	0.33	151	*e*P	Pb	16 09 19.0	-0.2
RCY				*e*S	Sb	16 09 23.6	-1.0
BRBR	Barbar	0.45	145	*e*P	Pb	16 09 20.5	-0.6
BRBR				*e*S	Sb	16 09 26.8	-1.0
BRBR				AML	AML	16 09 29.7	
	comp=E,34nm,0.5s						
BRBR				AML	AML	16 09 31.1	
	comp=N,48nm,0.6s						
BRBR	Barbar	0.45	145	*e*P	Pb	16 09 21.2	+0.1
BRBR				*e*S	Sb	16 09 26.7	-1.1
HWQ	Hawqa	0.55	27	*e*P	Pb	16 09 22.3	-0.4
HWQ	Hawqa	0.55	27	*e*P	Pb	16 09 22.3	-0.4
MARH	Ras Al Marh	0.74	71	*e*P	Pn	16 09 26.3	+0.3
MARH				*e*S	Sn	16 09 37.0	+0.6
MARH				AML	AML	16 09 41.2	
	comp=N,37nm,0.8s						
MARH				AML	AML	16 09 42.0	
	comp=E,69nm,0.5s						
MARH	Ras Al Marh	0.74	71	*e*P	Pn	16 09 26.3	+0.3
MARH				*e*S	Sn	16 09 37.0	+0.6
TOTH	TOTAH	0.78	123	*e*P	Pn	16 09 26.5	+0.1
TOTH				*e*S	Sb	16 09 35.9	-0.8
TOTH				AML	AML	16 09 45.8	
	comp=E,16nm,0.6s						
TOTH				AML	AML	16 09 49.2	
	comp=N,17nm,0.5s						
TOTH	TOTAH	0.78	123	*e*P	Pn	16 09 26.5	+0.1
TOTH				*e*S	Sb	16 09 35.8	-0.8
SALA	Sala	1.41	139	*e*P	Pn	16 09 35.5	+0.4
SALA				*e*S	Sn	16 09 52.9	+0.2
SALA				AML	AML	16 09 57.5	
	comp=N,13nm,0.4s						
SALA				AML	AML	16 10 04.3	
	comp=E,0.8nm,0.4s						
SALA	Sala	1.41	139	*e*P	Pn	16 09 35.5	+0.4
SALA				*e*S	Sn	16 09 52.9	+0.2
ROOS	tl_alroos	1.42	74	*e*P	Pb	16 09 36.6	-0.6
ROOS				*e*S	Sb	16 09 54.9	-0.1
ROOS				AML	AML	16 10 04.4	
	comp=E,11nm,0.5s						
ROOS				AML	AML	16 10 05.0	
	comp=N,18nm,0.6s						
ROOS	tl_alroos	1.42	74	*e*P	Pb	16 09 36.4	-0.8
ROOS				*e*S	Sb	16 09 54.9	-0.1
	comp=N,18nm,0.6s						
ZALF	Zalf	1.66	121	*e*P	Pn	16 09 39.3	+0.9
ZALF				*e*S	Sn	16 09 59.9	+1.2
ZALF				AML	AML	16 10 03.8	
	comp=E,5.9nm,0.5s						
ZALF				AML	AML	16 10 11.0	
	comp=N,7.0nm,0.5s						
ZALF	Zalf	1.66	121	*e*P	Pn	16 09 39.1	+0.7
ZALF				*e*S	Sn	16 09 59.9	+1.2

MAN 01 16:11:55, 12°.88N×**120°.90E, h11**km**, mb3.9, ML2.7, MS2.3, 1C, Mindoro**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
SJMP	San Jose	0.47	153	*e*P	Pb	16 12 05.5	+0.2
PGP	Puerto Galera	0.62	5⇑	*e*P	Pg	16 12 00.8	-6.3
PGP				*i* S	Sg	16 12 06.9	-8.4
BOAC	Boac	1.08	58	*e*P	Pn	16 12 16.7	+0.6
BOAC				*e*S	Sn	16 12 31.5	+0.3
BUSP	Coron	1.11	218	*e*P	Pb	16 12 15.5	-0.7
BUSP				*e*S	Sn	16 12 33.0	+1.3

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*JMA **01** 16:13:20.2±0.5, 34°.66N×141°.66E, h45km±3km, M3.4*
*ISCJB **01** 16:13:23.6±0.9, 34°.65N±0°.05×141°.38E±0°.09, h35km±9km, mb3.7/14, Error ellipse: s-maj=12.6km s-min=7.2km az=165.1*
*NEIC **01** 16:13:25.6±0.4, 34°.62N×141°.24E, h35km, mb4.7/1, Error ellipse: s-maj=10.5km s-min=7.6km az=66.0*
*IDC **01** 16:13:27.0±1.9, 34°.65N×141°.22E, h47km±19km, mb3.4/13, mb1 3.7/15, mb1mx3.6/37, mbtmp3.7/15, ML4.0/2, MS3.0/1, Ms1 3.0/1, ms1mx2.6/35, Error ellipse: s-maj=19.2km s-min=12.9km az=98.0*
ISC 01 16:13:25.7±0.8, **34°.67N**±0°.06×**141°.31E**±0°.07, **h37**km±1km, **n35**, σ**1s.33**/30, **mb3.7**/14, **Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
BSO1	Boso 1	0.28	267	P	Pn	16 13 32.0	-1.2
BSO1				X		16 13 39.8	
BSO3	Boso 3	0.68	282	P	Pn	16 13 37.7	-0.9
BSO4	Boso 4	0.86	292	P	Pn	16 13 40.4	-0.8
KTR	Katsuura	0.95	300	P	Pn	16 13 40.7	-1.8
CHOJ	Chosi	1.10	340	P	Pn	16 13 41.5	-3.0
JCN	Nagara	1.18	310	*e*S	Sn	16 14 03.6	+3.1
JIM2	Oshima 3	1.55	272	P	Pn	16 13 50.4	-0.4
JOD2	Odawara 2	1.92	289	P	Pn	16 13 55.0	-0.9
JHJ	Hachijo jima 2	2.00	220	P	Pn	16 13 57.9	+0.9
	29nm,0.3s,baz=104,slow=21,SNR=9.3						
JHJ				S	Sn	16 14 20.7	-0.1
	36nm,0.3s,baz=65,slow=23,SNR=6.1						
MJAR	Matsushiro Arr	3.15	307	P	Pn	16 14 13.1	+0.4
	4.9nm,0.3s,baz=102,slow=12,SNR=23						
MAJO	Matsushiro	3.15	307	*e*Pn	Pn	16 14 12.3	-0.4
MAJO				*e*Sn	Sn	16 14 47.4	-1.7
MAT	Matsushiro	3.15	307	P	Pn	16 14 13.1	+0.4
MAT				*e*S	Sn	16 14 51.1	+2.1
CBIJ	Chichi jima	7.59	174	P	Pn	16 15 12.9	-0.8
JCJ	Chichijima	7.59	174	P	Pn	16 15 12.9	-0.8
	7.5nm,0.3s,baz=88,slow=23,SNR=7.7						
KSRS	Korea Array	11.19	288	LR	LR	16 20 20.7	
	comp=Z,88nm,20.4s,baz=100,slow=37						
MA2	Magadan	25.68	11	P	P	16 18 51.0	-0.9

	2.6nm,0.6s,baz=190,slow=6.3,SNR=4.4						
H11N2	**WAKE ISLAND Hy**	**27.08**	**117**	T	T	16 47 28.4	
	baz=310,slow=76,SNR=14						
H11N1	**WAKE ISLAND Hy**	**27.09**	**117**	T	T	16 47 20.2	
	baz=310,slow=76,SNR=24						
H11N3	**WAKE ISLAND Hy**	**27.10**	**117**	T	T	16 47 19.7	
	baz=310,slow=76,SNR=16						
H11S3	**WAKE ISLAND Hy**	**27.71**	**119**	T	T	16 48 14.9	
	baz=314,slow=76,SNR=19						
H11S1	**WAKE ISLAND Hy**	**27.71**	**119**	T	T	16 48 15.1	
	baz=314,slow=76,SNR=21						
H11S2	**WAKE ISLAND Hy**	**27.73**	**119**	T	T	16 48 17.2	
	baz=314,slow=76,SNR=17						
SONM	**Songino Array**	**29.10**	**308**	P	**P**	**16 19 23.2**	**+0.3**
	0.5nm,0.8s,baz=90,slow=8.9,SNR=3.5						
CMAR	**Chiang Mai Arr**	**40.87**	**258**	P	**P**	**16 21 03.2**	**-1.1**
	0.4nm,0.6s,baz=52,slow=8.6,SNR=4.4						
ZALV	**Zalesovo Beam**	**43.48**	**314**	P	**P**	**16 21 24.7**	**-0.4**
	0.7nm,0.5s,baz=101,slow=7.5,SNR=3.1						
MKAR	**Makanchi Array**	**45.34**	**304**	P	**P**	**16 21 39.8**	**-0.4**
	0.7nm,0.6s,baz=84,slow=9.1,SNR=9.1						
KURK	**Kurchatov**	**47.35**	**310**	eP	**P**	**16 21 52.2**	**-3.6**
	5.7nm,0.6s						
ILAR	**Eielson Array**	**51.54**	**31**	P	**P**	**16 22 29.1**	**+1.5**
	0.3nm,0.8s,baz=280,slow=5.4,SNR=3.8						
WRA	**Warramunga Arr**	**54.71**	**188**	P	**P**	**16 22 50.8**	**-0.6**
	2.8nm,0.7s,baz=1.6,slow=7.5,SNR=27						
ASAR	**Alice Springs**	**58.44**	**188**	P	**P**	**16 23 18.1**	**+0.2**
	0.8nm,0.5s,baz=0.1,slow=6.4,SNR=21						
YKA	**Yellowknife Ar**	**65.89**	**30**	P	**P**	**16 24 08.1**	**+0.7**
	0.2nm,0.7s,baz=297,slow=6.9,SNR=3.4						
FINES	**FINESS Array B**	**70.87**	**333**	P	**P**	**16 24 38.4**	**-0.1**
	1.0nm,0.8s,baz=55,slow=7.5,SNR=3.2						
AKASG	**Malin Array Be**	**76.12**	**323**	P	**P**	**16 25 09.6**	**0.0**
	0.4nm,0.5s,baz=48,slow=6.2,SNR=4.0						
NVAR	**Mina Array Bea**	**76.48**	**53**	P	**P**	**16 25 13.2**	**+1.1**
	0.7nm,0.7s,baz=294,slow=5.8,SNR=6.3						
PDAR	**Pinedale Array**	**79.39**	**45**	P	**P**	**16 25 28.4**	**+0.2**
	0.3nm,0.7s,baz=316,slow=3.8,SNR=2.8						

*ISCJB **01** 16:21:01.9±0.7, 36.°29N±0.°05×142.°53E±0.°08, h15km, mb3.7/8, Error ellipse: s-maj=9.4km s-min=7.5km az=178.4*
*IDC **01** 16:21:01.9±0.9, 36.°41N×142.°51E, h0km, mb3.7/8, mb1 3.9/11, mb1mx3.6/38, mbtmp3.8/11, ML3.8/3, Error ellipse: s-maj=28.3km s-min=17.0km az=81.0*
*JMA **01** 16:21:05.8±0.3, 36.°42N×142.°30E, h69km, M3.3*
ISC 01 16:21:03.1±1.0**, 36.°27N**±0.°06×**142.°5E**±0.°1**, h15km, n25, σ1.ˢ21**/18**, mb3.7**/8**, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**1.63**	**301**	P	**Pn**	**16 21 29.3**	**-1.9**
JFT	**Otama**	**2.16**	**306**	P	**Pn**	**16 21 37.6**	**-0.9**
JAG	**Ashikaga**	**2.50**	**274**	P	**Pn**	**16 21 42.3**	**-0.8**
JOU	**Okura**	**2.57**	**325**	P	**Pn**	**16 21 44.1**	**-0.1**
JRY	**Ryogami san**	**2.96**	**266**	P	**Pn**	**16 21 48.7**	**-0.8**
JOD2	**Odawara 2**	**2.98**	**251**	P	Pb	16 21 51.2	-4.7
JYK	**Kaneyama**	**3.16**	**327**	P	**Pn**	**16 21 51.1**	**-1.1**
MJAR	**Matsushiro Arr**	**3.50**	**276**	Pn	**Pn**	**16 21 56.7**	**-0.4**
	3.8nm,0.3s,baz=156,slow=4.0,SNR=25						
MAT	**Matsushiro**	**3.50**	**276**	P	**Pn**	**16 21 57.4**	**+0.4**
MAT				S	**Sn**	**16 22 39.1**	**+0.9**
JHJ	**Hachijo jima 2**	**3.88**	**217**	Pn	**Pn**	**16 22 03.2**	**+1.0**
	19nm,0.3s,baz=347,slow=21,SNR=7.6						
JHJ				Sn	**Sn**	**16 22 46.7**	**-0.7**
	23nm,0.3s,baz=93,slow=23,SNR=6.0						
JCJ	**Chichijima**	**9.15**	**182**	Pn	Pn	16 23 16.6	+2.0
	2.3nm,0.3s,baz=285,slow=20,SNR=3.3						
JCJ				Sn	**Sn**	**16 24 54.1**	**-3.3**
	3.4nm,0.3s,baz=279,slow=19,SNR=2.9						
H11N2	**WAKE ISLAND Hy**	**26.98**	**121**	T	T	16 55 26.5	
	baz=313,slow=75,SNR=14						
H11N1	**WAKE ISLAND Hy**	**26.99**	**121**	T	T	16 55 22.6	
	baz=313,slow=75,SNR=12						
H11N3	**WAKE ISLAND Hy**	**27.00**	**121**	T	T	16 55 23.1	
	baz=313,slow=75,SNR=12						
H11S1	**WAKE ISLAND Hy**	**27.69**	**123**	T	T	16 56 23.0	
	baz=315,slow=76,SNR=9.0						
H11S3	**WAKE ISLAND Hy**	**27.69**	**123**	T	T	16 56 17.3	
	baz=315,slow=76,SNR=6.1						
H11S2	**WAKE ISLAND Hy**	**27.70**	**123**	T	T	16 56 08.6	
	baz=315,slow=76,SNR=8.3						
SONM	**Songino Array**	**28.96**	**305**	P	**P**	**16 27 02.5**	**+0.6**
	1.1nm,0.7s,baz=108,slow=8.9,SNR=8.4						
ZALV	**Zalesovo Beam**	**43.09**	**313**	P	**P**	**16 29 02.1**	**-0.3**
	0.4nm,0.3s,baz=88,slow=8.1,SNR=2.9						
MKAR	**Makanchi Array**	**45.29**	**303**	P	**P**	**16 29 20.5**	**+0.4**
	0.8nm,0.6s,baz=90,slow=9.6,SNR=14						
WRA	**Warramunga Arr**	**56.44**	**189**	P	P	16 30 46.3	+2.1
	1.2nm,0.9s,baz=6.9,slow=7.4,SNR=12						
ASAR	**Alice Springs**	**60.17**	**189**	P	P	16 31 12.7	+2.5
	0.3nm,0.4s,baz=2.3,slow=6.7,SNR=17						
YKA	**Yellowknife Ar**	**64.01**	**30**	P	**P**	**16 31 35.8**	**+0.3**
	0.1nm,0.3s,baz=301,slow=6.3,SNR=3.2						
FINES	**FINESS Array B**	**69.91**	**333**	P	**P**	**16 32 14.0**	**+0.9**
	1.3nm,0.8s,baz=328,slow=4.9,SNR=3.0						
AKASG	**Malin Array Be**	**75.45**	**323**	P	**P**	**16 32 46.5**	**+0.2**
	0.4nm,0.5s,baz=46,slow=5.8,SNR=3.2						

MEX 01 16:23:23.5±0.7**, 18.°97N**×**104.°07W, h23km**±17km**, MD3.7, Near coast of Jalisco**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
R15V		**0.21**	**22**	eP	Pb	16 23 27.5	-1.7
R15V				eS	Sb	16 23 32.5	-0.6
EZ5V		**0.67**	**41**	i P	Pb	16 23 34.6	-2.2
EZ5V				i S	Sb	16 23 43.4	-2.4
MMIG	**Aquila**	**0.96**	**135**	eP	Pb	16 23 38.8	-2.7
MMIG				eS	Sb	16 23 50.4	-3.5
CJM	**Chamela**	**1.06**	**300**	eP	Pn	16 23 36.0	-7.0
CJM				eS	Sb	16 23 49.1	-7.6
ANIG	**Ahuacatlan**	**2.12**	**348**	eP	Pn	16 23 55.5	-2.2
ANIG				eS	Sn	16 24 19.6	-3.7

*ISCJB **01** 16:27:42.2±0.2, 6.°75N±0.°02×72.°97W±0.°02, h165km±1km, mb4.5/90, Error ellipse: s-maj=3.8km s-min=2.9km az=142.5*
*NEIC **01** 16:27:43.6±0.5, 6.°67N×72.°93W, h167km±5km, mb4.6/77, Error ellipse: s-maj=7.0km s-min=5.0km az=71.0*
NEIC Felt at Los Santos.
*IDC **01** 16:27:43.5±0.4, 6.°73N×72.°95W, h163km±3km, mb4.0/19, mb1 4.2/23, mb1mx4.1/30, mbtmp4.5/23, Error ellipse: s-maj=8.9km s-min=6.6km az=119.0*
*FUNV **01** 16:27:44.7, 6.°85N×73.°07W, h172km, MW3.7*
*BJI **01** 16:27:44.0, 6.°70N×73.°00W, h177km*
*RSNC **01** 16:27:45.1±1.0, 6.°76N×73.°16W, h151km±5km, ML4.6*
ISC 01 16:27:43.4±0.4**, 6.°82N**±0.°03×**72.°96W**±0.°03**, h165km**±3km**, n479, σ1.ˢ40**/529**, mb4.5**/89**, 1C-14D, Northern Colombia**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BARC	**Barichara**	**0.32**	**224**	i P	**Pn**	**16 28 05.0**	**-1.2**
BARC				eS	**Sn**	**16 28 20.4**	**-3.0**
BARC				i		16 28 23.7	
	comp=Z,12μm,0.9s						
BTLC	**Betulia, Santa**	**0.32**	**287**	i P	**Pn**	**16 28 05.5**	**-0.6**
GIRC	**Giron, Santand**	**0.34**	**318**	i P	**Pn**	**16 28 06.1**	**0.0**
GIRC				eS	**Sn**	**16 28 22.1**	**-1.3**
PAMC	**Pamplona, Colo**	**0.58**	**27**	i P	**Pn**	**16 28 08.0**	**+0.5**
PAMC				eS	**Sn**	**16 28 25.4**	**-0.4**
PAMC				i		16 28 28.0	
	comp=Z,5μm,0.5s						
BRRC	**Barranca, Sant**	**0.80**	**291**	i P	**Pn**	**16 28 07.0**	**-1.2**
BRRC				i		16 28 07.5	
	comp=Z,11μm,0.2s						
BRRC				eS	**Sn**	**16 28 24.6**	**-2.5**
GRMC	**Gramalote, San**	**0.90**	**10**	i P	**Pn**	**16 28 11.9**	**+2.8**
GRMC				eS	**Sn**	**16 28 31.9**	**+3.0**
GRMC				i		16 28 33.1	
	comp=Z,6μm,0.4s						
GUEC	**Guerrero, Nort**	**1.00**	**2**	eP	**Pn**	**16 28 10.5**	**+0.5**
CAPV	**Capacho**	**1.22**	**32**	⇓eP	**Pn**	**16 28 13.0**	**+1.2**
CAPV				eS	**Sn**	**16 28 34.1**	**+0.6**
OCAC	**Ocana**	**1.45**	**346**	i P	**Pn**	**16 28 13.4**	**-0.4**
OCAC				eS	**Sn**	**16 28 36.2**	**-1.2**
OCAC				i		16 28 44.9	
	comp=Z,6μm,0.5s						
YOPC	**Yopal, Colombi**	**1.56**	**160**	i P	**Pn**	**16 28 15.4**	**+0.5**
YOPC				eS	**Sn**	**16 28 39.5**	**+0.4**
YOPC				i		16 28 43.6	
	comp=Z,3μm,0.8s						
NORC	**Norcasia**	**2.27**	**237**	eP	**Pn**	**16 28 20.7**	**-2.0**
NORC				eS	**Sn**	**16 28 48.2**	**-4.8**
CHIC	**Chingaza**	**2.31**	**199**	⇓iP	**Pn**	**16 28 22.5**	**-1.0**
CHIC				eS	**Sn**	**16 28 51.3**	**-3.2**
CHIC				i		16 29 00.9	
	comp=Z,2μm,0.4s						
ROSC	**El Rosal**	**2.39**	**214**	P	**Pn**	**16 28 24.2**	**-0.2**
	comp=Z,110nm,0.3s,baz=92,slow=13,SNR=180						
ROSC				S	**Sn**	**16 28 54.6**	**-1.4**
	comp=Z,144nm,0.3s,baz=94,slow=18,SNR=13						
ROSC	**El Rosal**	**2.39**	**214**	ePn	**Pn**	**16 28 24.6**	**+0.2**
SOCV	**Socops**	**2.54**	**55**	⇓eP	**Pn**	**16 28 27.3**	**+1.4**
SOCV				eS	**Sn**	**16 28 58.9**	**+0.2**
VIGV	**El Vigia**	**2.55**	**38**	⇓eP	**Pn**	**16 28 27.5**	**+1.5**
VIGV				eS	**Sn**	**16 28 58.2**	**-0.8**
HELC	**Santa Helena**	**2.63**	**256**	eP	**Pn**	**16 28 25.0**	**-2.2**
HELC				eS	**Sn**	**16 28 57.1**	**-3.9**
HELC				i		16 29 04.3	
	comp=Z,3μm,0.4s						
VILC	**Villavicencio,**	**2.79**	**195**	eP	**Pn**	**16 28 28.0**	**-1.0**
VILC				eS	**Sn**	**16 29 01.9**	**-2.5**
VILC				i		16 29 08.0	
	comp=Z,1μm,0.8s						
GUYC	**Guyana, Colomb**	**2.89**	**237**	eP	**Pn**	**16 28 29.0**	**-1.5**
GUYC				eS	**Sn**	**16 29 02.5**	**-4.4**
GUYC				i		16 29 10.1	
	comp=Z,4μm,0.1s						
SDV	**Santo Domingo**	**3.09**	**48**	P	**Pn**	**16 28 34.3**	**+1.6**
	comp=Z,172nm,0.3s,baz=239,slow=8.5,SNR=794						
SDV				S	**Sn**	**16 29 11.9**	**+1.0**
	comp=Z,250nm,0.3s,baz=38,slow=7.8,SNR=21						
SDV	**Santo Domingo**	**3.09**	**48**	i P	**Pn**	**16 28 34.3**	**+1.6**
DBBC	**Dabeiba**	**3.23**	**274**	i P	**Pn**	**16 28 32.9**	**-1.4**
TOLC	**Tolima**	**3.23**	**227**	eP	**Pn**	**16 28 33.3**	**-1.4**
MOTC	**Monteria, Cord**	**3.31**	**306**	⇓iP	**Pn**	**16 28 32.2**	**-3.1**
ELOV	**Elorza**	**3.46**	**87**	⇓eP	**Pn**	**16 28 38.9**	**+1.7**
ELOV				eS	**Sn**	**16 29 18.6**	**-0.4**
PRAC	**Prado**	**3.63**	**212**	eP	**Pn**	**16 28 38.0**	**-1.5**
VIRV	**Villa del Rosa**	**3.70**	**9**	⇑eP	**Pn**	**16 28 39.9**	**-0.4**
VIRV				eS	**Sn**	**16 29 20.8**	**-3.8**
QARV	**Quebrada Arrib**	**4.14**	**35**	⇓eP	**Pn**	**16 28 47.3**	**+1.4**
QARV				eS	**Sn**	**16 29 32.8**	**-2.0**
SANV	**Sanarito**	**4.31**	**52**	⇓eP	**Pn**	**16 28 49.1**	**+0.8**
SANV				eS	**Sn**	**16 29 37.4**	**-1.4**
CURV	**Curarigua**	**4.34**	**43**	⇓eP	**Pn**	**16 28 49.6**	**+0.9**
CURV				eS	**Sn**	**16 29 36.4**	**-3.2**
SOLC	**Bahia Solano**	**4.46**	**263**	eP	**Pn**	**16 28 49.0**	**-1.1**
DABV	**Dabajuro**	**4.68**	**29**	eP	**Pn**	**16 28 53.7**	**+0.8**
DABV				eS	**Sn**	**16 29 43.4**	**-3.9**
TEPV	**Terepaima**	**4.86**	**50**	⇓eP	**Pn**	**16 28 56.4**	**+1.0**
TEPV				eS	**Sn**	**16 29 48.0**	**-3.6**
SIQV	**Siquisique**	**4.92**	**39**	⇓eP	**Pn**	**16 28 55.9**	**-0.2**
SIQV				eS	**Sn**	**16 29 49.3**	**-3.6**
URIC	**Uribia, Colomb**	**4.94**	**11**	eP	**Pn**	**16 28 55.3**	**-1.1**
URIC				i		16 29 53.0	
	comp=Z,234nm,0.5s						
MALC	**Bahia Malaga**	**5.17**	**238**	eP	**Pn**	**16 28 57.9**	**-1.5**
BAUV	**El Baul**	**5.31**	**66**	⇓iP	**Pn**	**16 29 01.1**	**-0.2**
BAUV				eS	**Sn**	**16 29 58.2**	**-4.0**
MAPV	**Macapo**	**5.37**	**56**	⇓eP	**Pn**	**16 29 02.7**	**+0.7**
MAPV				eS	**Sn**	**16 29 59.2**	**-4.4**
PAYV	**Puerto Ayacuch**	**5.46**	**105**	⇓eP	**Pn**	**16 29 03.4**	**+0.2**
PAYV				eS	**Sn**	**16 30 03.4**	**-2.2**
POPC	**Popayan, Colom**	**5.64**	**221**	eP	**Pn**	**16 29 04.2**	**-1.6**
MONV	**Montecano**	**5.89**	**30**	eP	**Pn**	**16 29 08.7**	**-0.2**
MONV				eS	**Sn**	**16 30 11.5**	**-4.5**
TURV	**Turiamo**	**6.22**	**54**	eP	**Pn**	**16 29 13.7**	**+0.5**
TURV				eS	**Sn**	**16 30 18.8**	**-4.9**
GRGC	**Isla de Gorgon**	**6.42**	**234**	eP	**Pn**	**16 29 13.8**	**-2.2**
MERV	**Las Mercedes**	**7.03**	**69**	eP	**Pn**	**16 29 23.4**	**-0.6**
MERV				eS	**Sn**	**16 30 37.9**	**-5.2**
FUNV	**FUNVISIS**	**7.08**	**59**	eP	**Pn**	**16 29 24.3**	**-0.5**
FUNV				eS	**Sn**	**16 30 39.1**	**-5.3**
BCIP	**Isla Barro Col**	**7.20**	**289**	ePn	**Pn**	**16 29 22.8**	**-3.3**
BCIP	**Isla Barro Col**	**7.20**	**289**	eP	**Pn**	**16 29 22.8**	**-3.3**
BIRV	**Birongo**	**7.55**	**61**	eP	**Pn**	**16 29 30.3**	**-0.6**
BIRV				eS	**Sn**	**16 30 49.6**	**-5.9**
CUPV	**Cœpira**	**7.79**	**65**	eP	**Pn**	**16 29 33.8**	**-0.4**
OTAV	**Otavalo**	**8.53**	**220**	ePn	**Pn**	**16 29 41.5**	**-2.8**
GUNV	**Guanoco**	**10.45**	**71**	eP	**Pn**	**16 30 09.0**	**-0.2**
MTDJ	**Mount Denham**	**12.18**	**339**	ePn	**Pn**	**16 30 32.2**	**+0.5**
MTDJ				eSn	**Sn**	**16 32 41.2**	**-5.6**
SDDR	**Presa de Saban**	**12.20**	**8**	ePn	**Pn**	**16 30 34.4**	**+2.5**
JTS	**JuntasAbangare**	**12.35**	**287**	P	**Pn**	**16 30 35.4**	**+1.5**
	comp=Z,2.7nm,0.3s,baz=103,slow=11,SNR=8.8						
JTS	**JuntasAbangare**	**12.35**	**287**	ePn	**Pn**	**16 30 35.2**	**+1.3**
ATAH	**Atahualpa**	**14.89**	**201**	P	**P**	**16 31 08.9**	**+1.0**
	comp=Z,1.7nm,0.3s,baz=69,slow=7.0,SNR=5.6						
PTGA	**Pitinga**	**14.98**	**120**	P	**Pn**	**16 31 07.4**	**+0.2**
	comp=Z,0.5nm,0.3s,baz=308,slow=18,SNR=3.8						
PTGA	**Pitinga**	**14.98**	**120**	ePn	**P**	**16 31 11.5**	**+2.9**
PTGA				eS	**Sn**	**16 33 51.7**	**-2.4**
TGUH	**Tegucigalpa,Un**	**15.79**	**298**	ePn	**Pn**	**16 31 16.4**	**-0.6**
	comp=Z,59nm,0.8s						
SAML	**Samuel**	**18.45**	**148**	eP	**P**	**16 31 46.1**	**-0.6**
	comp=Z,31nm,0.6s						
PAYG	**Puerto Ayora**	**18.82**	**247**	eP	**P**	**16 31 51.5**	**+0.7**
	comp=Z,30nm,0.8s						
TEIG	**Tepich**	**19.95**	**313**	P	**P**	**16 32 04.4**	**+1.5**
	comp=Z,3.1nm,0.5s,baz=90,slow=20,SNR=22						
TEIG	**Tepich**	**19.95**	**313**	eP	**P**	**16 32 03.2**	**+0.3**
	comp=Z,3.1nm,0.6s						
CCIG	**Comitan**	**20.99**	**298**	eP	**P**	**16 32 13.9**	**-0.3**
	comp=Z,27nm,0.6s						
LPAZ	**La Paz**	**23.45**	**168**	P	**P**	**16 32 38.1**	**-0.7**
	comp=Z,8.0nm,0.7s,baz=344,slow=7.8,SNR=20						
LPAZ	**La Paz**	**23.45**	**168**	eP	**P**	**16 32 37.1**	**-1.7**
	comp=Z,13nm,0.9s						
CMIG	**Matias Romero**	**23.72**	**297**	P	**P**	**16 32 37.4**	**-3.2**
	comp=Z,2.2nm,0.4s,baz=96,slow=5.7,SNR=6.4						
SIV	**San Ignacio**	**25.54**	**153**	P	**P**	**16 32 56.4**	**-0.8**
	comp=Z,7.0nm,0.8s,baz=338,slow=11,SNR=14						
PB01	**IPOC Station P**	**27.90**	**173**	eP	**P**	**16 33 16.6**	**-1.7**
	comp=Z,10.0nm,0.5s						
346A	**Big Creek Wild**	**28.91**	**330**	P	**P**	**16 33 29.5**	**+2.5**
	baz=144						
LRAL	**Lakeview Retre**	**29.16**	**335**	eP	**P**	**16 33 31.2**	**+2.0**
	comp=Z,8.8nm,0.6s						
344A	**Westbrook Farm**	**29.61**	**328**	P	**P**	**16 33 35.2**	**+2.0**
	baz=142						
244A	**Avery, Jackson**	**30.05**	**329**	P	**P**	**16 33 38.8**	**+1.8**
	baz=143						
145A	**Houston Renfro**	**30.12**	**331**	P	**P**	**16 33 40.0**	**+2.3**
	baz=145						
243A	**Waterproof**	**30.34**	**328**	P	**P**	**16 33 41.2**	**+1.6**
	baz=142						
539A	**Cross D Ranch,**	**30.90**	**321**	P	**P**	**16 33 46.0**	**+1.4**
	baz=134						
142A	**Monroe**	**31.10**	**328**	P	**P**	**16 33 47.8**	**+1.5**
	baz=142						
035A	**Encino**	**31.16**	**313**	P	**P**	**16 33 48.0**	**+1.1**
	baz=126						
439A	**Center Grove,**	**31.41**	**322**	P	**P**	**16 33 51.0**	**+2.0**
	baz=135						
034A	**Hebbronville**	**31.66**	**312**	P	**P**	**16 33 51.7**	**+0.4**
	baz=125,SNR=14						
835A	**Beeville**	**31.77**	**315**	P	**P**	**16 33 54.1**	**+1.9**
	baz=128						
438A	**Sam Houston St**	**31.81**	**321**	P	**P**	**16 33 54.5**	**+1.9**
	baz=134						
934A	**Benavides**	**31.85**	**313**	P	**P**	**16 33 53.8**	**+0.8**
	baz=126						
NATX	**Nacogdoches**	**32.03**	**324**	P	**P**	**16 33 56.2**	**+1.7**
	baz=136						
140A	**Cam and Jess,**	**32.05**	**326**	P	**P**	**16 33 56.6**	**+1.9**
	baz=139						
338A	**Crockett**	**32.13**	**322**	P	**P**	**16 33 57.3**	**+1.9**
	baz=135						
WVT	**Waverly**	**32.19**	**337**	eP	**P**	**16 33 56.1**	**+0.2**
	comp=Z,28nm,1.1s						
933A	**Laredo**	**32.40**	**313**	P	**P**	**16 33 57.7**	**-0.1**
	baz=125,SNR=9.3						
Z40A	**Long Farm, Mag**	**32.43**	**327**	P	**P**	**16 33 58.9**	**+1.0**
	baz=140						
238A	**Jacksonville**	**32.48**	**323**	P	**P**	**16 33 60.0**	**+1.6**
	baz=136						
436A	**Wall Ranch, Ga**	**32.66**	**320**	P	**P**	**16 34 01.3**	**+1.3**
	baz=132						
535A	**Dale**	**32.68**	**318**	P	**P**	**16 34 01.2**	**+1.0**
	baz=130						
237A	**Washetta, Mont**	**32.89**	**323**	P	**P**	**16 34 03.3**	**+1.3**
	baz=135						
833A	**Chaparral WMA,**	**32.90**	**314**	P	**P**	**16 34 02.5**	**+0.4**
	baz=126						
138A	**Matatall Enter**	**32.93**	**324**	P	**P**	**16 34 03.8**	**+1.5**
	baz=137						
Y40A	**Okolona**	**32.94**	**328**	P	**P**	**16 34 03.3**	**+0.9**
	baz=141,SNR=5.3						
733A	**Divot King Ran**	**33.06**	**314**	P	**P**	**16 34 04.3**	**+0.8**
	baz=126						
X40A	**Basin Creek Fa**	**33.08**	**329**	P	**P**	**16 34 04.5**	**+0.9**
	baz=142,SNR=5.3						
336A	**Riesel**	**33.10**	**321**	P	**P**	**16 34 05.3**	**+1.5**
	baz=133						
435B	**Jarrell**	**33.17**	**319**	P	**P**	**16 34 05.8**	**+1.3**
	baz=131						
137A	**Heron Place, G**	**33.28**	**323**	P	**P**	**16 34 06.9**	**+1.6**
	baz=136						
534A	**Blanco**	**33.28**	**317**	P	**P**	**16 34 06.1**	**+0.6**
	baz=129						
832A	**Faith Ranch, C**	**33.29**	**313**	P	**P**	**16 34 05.9**	**+0.4**
	baz=125						
BDFB	**Brasilia**	**33.30**	**132**	P	**P**	**16 34 06.3**	**+0.5**
	comp=Z,18nm,0.6s,baz=286,slow=11,SNR=21						
BDFB	**Brasilia**	**33.30**	**132**	eP	**P**	**16 34 04.8**	**-1.1**
	comp=Z,32nm,0.6s						
Y39A	**Lockesburg**	**33.32**	**327**	P	**P**	**16 34 07.3**	**+1.6**
	baz=140						
236A	**Katherine and**	**33.33**	**322**	P	**P**	**16 34 07.0**	**+1.3**
	baz=134						
335A	**Moody**	**33.40**	**320**	P	**P**	**16 34 07.6**	**+1.2**
	baz=132						
WHAR	**Wooly Hollow**	**33.44**	**331**	eP	**P**	**16 34 03.8**	**-2.9**
	comp=Z,15nm,0.7s						
WCI	**Wyandotte Cave**	**33.52**	**341**	eP	**P**	**16 34 09.0**	**+1.6**
	comp=Z,16nm,0.7s						
434A	**Burnet**	**33.64**	**318**	P	**P**	**16 34 08.9**	**+0.3**
	baz=130						
O56A	**Blue Knob Stat**	**33.68**	**352**	P	**P**	**16 34 10.5**	**+1.7**
	baz=170						
533A	**Kerrville**	**33.69**	**317**	P	**P**	**16 34 09.5**	**+0.5**
	baz=128						
W40A	**Ferguson Farm,**	**33.75**	**330**	P	**P**	**16 34 11.1**	**+1.7**
	baz=142						
334A	**Lometa**	**33.96**	**319**	P	**P**	**16 34 12.1**	**+0.8**
	baz=131						
N59A	**State Game Lan**	**34.04**	**356**	P	**P**	**16 34 14.1**	**+2.3**
	baz=175						
V40A	**Witts Springs**	**34.11**	**331**	P	**P**	**16 34 14.4**	**+1.8**
	baz=143						
W39A	**Magazine**	**34.12**	**329**	P	**P**	**16 34 14.1**	**+1.5**
	baz=141						
433A	**Art**	**34.15**	**318**	P	**P**	**16 34 13.1**	**+0.1**
	baz=129,SNR=16						
Y37A	**Hugo**	**34.19**	**325**	P	**P**	**16 34 14.3**	**+1.0**
	baz=137						
135A	**Vickery Place,**	**34.25**	**322**	P	**P**	**16 34 14.8**	**+1.1**
	baz=133						
X38A	**Whitesboro**	**34.27**	**327**	P	**P**	**16 34 15.5**	**+1.6**
	baz=139						
234A	**Clairette**	**34.33**	**320**	P	**P**	**16 34 15.4**	**+0.9**
	baz=132						
333A	**Richland Sprin**	**34.44**	**318**	P	**P**	**16 34 15.6**	**+0.2**
	baz=130,SNR=5.6						
JCT	**Junction City**	**34.46**	**316**	P	**P**	**16 34 16.4**	**+0.7**
	baz=128						
V39A	**Pettigrew**	**34.55**	**330**	P	**P**	**16 34 17.7**	**+1.3**
	baz=142						
U40A	**Yellville**	**34.57**	**331**	P	**P**	**16 34 17.7**	**+1.2**
	baz=144,SNR=5.4						
Z35A	**Perchaven, San**	**34.68**	**323**	P	**P**	**16 34 18.8**	**+1.3**
	baz=134						
233A	**Rising Star**	**34.83**	**319**	P	**P**	**16 34 19.6**	**+0.8**
	baz=131						
V38A	**Canehill**	**34.95**	**329**	P	**P**	**16 34 20.3**	**+0.5**
	baz=141,SNR=8.6						
X36A	**Centrahoma**	**35.04**	**325**	P	**P**	**16 34 20.9**	**+0.4**
	baz=137						
T40A	**Mansfield**	**35.05**	**332**	P	**P**	**16 34 21.9**	**+1.2**
	baz=145						
Z34A	**Collier Ranch,**	**35.11**	**322**	P	**P**	**16 34 22.4**	**+1.2**
	baz=134						
133A	**Hamilton Ranch**	**35.23**	**320**	P	**P**	**16 34 23.3**	**+1.1**
	baz=131						
V37A	**Hulbert**	**35.35**	**328**	P	**P**	**16 34 24.0**	**+0.8**
	baz=140						
T39A	**Clever**	**35.36**	**331**	P	**P**	**16 34 24.0**	**+0.8**
	baz=143						
U38A	**Gravette**	**35.39**	**329**	P	**P**	**16 34 23.8**	**+0.3**
	baz=141						
S40A	**Lebanon**	**35.41**	**333**	P	**P**	**16 34 24.5**	**+0.9**
	baz=145,SNR=10.0						
Y34A	**Reagan Ranch,**	**35.42**	**323**	P	**P**	**16 34 24.9**	**+1.1**
	baz=134						
ABTX	**Abilene, Hawle**	**35.70**	**320**	P	**P**	**16 34 27.3**	**+1.1**
	baz=130						
ABTX	**Abilene, Hawle**	**35.70**	**320**	eP	**P**	**16 34 27.1**	**+0.8**
	comp=Z,17nm,0.8s						
V36A	**Jenks**	**35.71**	**327**	P	**P**	**16 34 26.9**	**+0.7**
	baz=139						
TUL1	**Leonard**	**35.72**	**327**	P	**P**	**16 34 27.0**	**+0.7**
	baz=139						
SFIN	**Lafayette**	**35.73**	**341**	P	**P**	**16 34 27.6**	**+1.3**
	baz=156,SNR=12						
SFIN	**Lafayette**	**35.73**	**341**	eP	**P**	**16 34 27.8**	**+1.5**
	comp=Z,33nm,0.6s						
U37A	**Salina**	**35.74**	**329**	P	**P**	**16 34 26.9**	**+0.5**
	baz=140						
W35A	**Tecumseh**	**35.76**	**325**	P	**P**	**16 34 27.1**	**+0.5**
	baz=137						
T38A	**Diamond**	**35.81**	**330**	P	**P**	**16 34 27.6**	**+0.5**
	baz=142						
S39A	**Bolivar**	**35.87**	**332**	P	**P**	**16 34 28.6**	**+1.1**
	baz=144						
R40A	**Maddies Statio**	**35.88**	**334**	P	**P**	**16 34 28.8**	**+1.2**
	baz=146						
X34A	**Smith Ranch, M**	**35.91**	**324**	P	**P**	**16 34 29.0**	**+1.0**
	baz=135						
Y33A	**Hilltop Ranch,**	**35.98**	**322**	P	**P**	**16 34 29.4**	**+0.8**
	baz=133						
U36A	**Oologah**	**36.05**	**328**	P	**P**	**16 34 29.8**	**+0.7**
	baz=139						
S38A	**Stockton**	**36.09**	**331**	P	**P**	**16 34 30.3**	**+0.8**
	baz=143						
T37A	**Cheneyville 18**	**36.19**	**330**	P	**P**	**16 34 31.1**	**+0.8**
	baz=141,SNR=7.8						
R39A	**Chumby, Stover**	**36.24**	**333**	P	**P**	**16 34 31.7**	**+1.0**
	baz=145						
X33A	**Lawton**	**36.27**	**323**	P	**P**	**16 34 31.1**	**+0.1**
	baz=134,SNR=6.2						
CPUP	**Villa Florida**	**36.28**	**156**	P	**P**	**16 34 27.7**	**-3.4**
	comp=Z,3.2nm,0.8s,baz=337,slow=6.0,SNR=4.0						
W34A	**Bridge Creek,**	**36.33**	**325**	P	**P**	**16 34 32.2**	**+0.7**
	baz=136						
Q40A	**Laux Farm, Aux**	**36.38**	**335**	P	**P**	**16 34 32.5**	**+0.7**
	baz=147,SNR=15						
R38A	**Fenwick Farm,**	**36.54**	**332**	P	**P**	**16 34 33.6**	**+0.3**
	baz=144						
U35A	**Pawnee**	**36.57**	**327**	P	**P**	**16 34 33.9**	**+0.4**
	baz=138						
TX31	**Lajitas Ar. Si**	**36.58**	**312**	eP	**P**	**16 34 34.3**	**+0.5**
TXAR	**Lajitas Array**	**36.58**	**312**	P	**P**	**16 34 34.6**	**+0.8**
	comp=Z,7.7nm,0.6s,baz=127,slow=9.3,SNR=110						
TXAR				PcP	**PcP**	**16 36 55.0**	**+1.3**
	comp=Z,0.3nm,0.5s,baz=142,slow=4.9,SNR=4.0						
V34A	**Guthrie**	**36.61**	**326**	P	**P**	**16 34 34.3**	**+0.5**
	baz=136						
HDIL	**Hopedale**	**36.63**	**339**	P	**P**	**16 34 34.7**	**+0.7**
	baz=152						
S37A	**Fort Scott**	**36.64**	**330**	P	**P**	**16 34 34.5**	**+0.4**
	baz=142						
Q39A	**Willow Grove F**	**36.81**	**334**	P	**P**	**16 34 36.4**	**+0.9**
	baz=146						
P40A	**Paris**	**36.81**	**335**	P	**P**	**16 34 36.0**	**+0.5**
	baz=147,SNR=8.3						
T35A	**Sooner Cattle**	**36.86**	**328**	P	**P**	**16 34 36.4**	**+0.4**
	baz=139						
Q38A	**Cooks Store, C**	**37.03**	**333**	P	**P**	**16 34 38.1**	**+0.7**
	baz=145,SNR=8.2						
V33A	**Lossen Ranch,**	**37.04**	**325**	P	**P**	**16 34 38.2**	**+0.6**
	baz=135						
U34A	**Anderson Ranch**	**37.06**	**326**	P	**P**	**16 34 38.5**	**+0.8**
	baz=137						
U34A	**Anderson Ranch**	**37.06**	**326**	eP	**P**	**16 34 38.2**	**+0.6**
	comp=Z,28nm,0.6s						
R37A	**Teagarden Farm**	**37.08**	**331**	P	**P**	**16 34 38.2**	**+0.4**
	baz=142						
W32A	**Sentinel**	**37.11**	**323**	P	**P**	**16 34 39.0**	**+0.8**
	baz=134						
O40A	**La Belle**	**37.24**	**336**	P	**P**	**16 34 40.3**	**+1.2**

baz=148
T34A McClaskey Farm 37.30 327 P P 16 34 39.8 +0.1
baz=138
Q37A Longview Farm, 37.34 332 P P 16 34 40.6 +0.6
baz=143
P38A Dawn 37.53 334 P P 16 34 42.1 +0.5
baz=145,SNR=6.1
O39A Kirksville 37.63 335 P P 16 34 43.5 +1.1
baz=147
S34A Willow Spring 37.76 328 P P 16 34 44.3 +0.8
baz=139
U32A Winter Ranch, 37.84 325 P P 16 34 44.6 +0.4
baz=135
P37A Lathrop 37.87 333 P P 16 34 45.5 +1.1
baz=144
Q36A Arnold C. Orve 37.89 331 P P 16 34 45.4 +0.8
baz=142
O38A Galt 37.91 334 P P 16 34 45.8 +1.0
baz=146
N39A Derby Farms, D 38.13 336 P P 16 34 48.1 +1.4
baz=148
S33A Kaszmaul Farm, 38.15 327 P P 16 34 47.6 +0.7
baz=137
O37A Wolven Farm, M 38.25 333 P P 16 34 48.7 +1.1
baz=145
R34A Isabella, Hill 38.28 329 P P 16 34 48.6 +0.6
baz=139
P36A Good Intent, A 38.29 332 P P 16 34 48.4 +0.4
baz=143
N38A Joes South For 38.37 335 P P 16 34 49.2 +0.7
baz=146
AMTX Amarillo 38.45 321 P P 16 34 50.3 +0.8
baz=130
AMTX Amarillo 38.45 321 eP P 16 34 50.3 +0.8
comp=Z,28nm,1.0s
KSU1 Kansas State U 38.56 330 P P 16 34 50.6 +0.3
baz=140
MSTX Muleshoe 38.58 319 P P 16 34 50.7 +0.1
baz=128,SNR=6.8
O36A Bolckow 38.59 333 P P 16 34 50.9 +0.4
baz=144
Q34A Chapman 38.59 329 P P 16 34 50.8 +0.3
baz=140
P35A Duane Minner, 38.60 331 P P 16 34 51.0 +0.4
baz=142
S32A Newby Ranch, P 38.74 326 P P 16 34 52.3 +0.5
baz=136
N37A Lee Faris, Mou 38.76 334 P P 16 34 52.1 +0.2
baz=145,SNR=5.2
M38A Pleasantville 38.87 336 P P 16 34 53.6 +0.8
baz=147
P34A Walnut Farm, R 39.01 330 P P 16 34 54.3 +0.3
baz=140
JFWS Jewell Farm 39.05 340 eP P 16 34 54.8 +0.6
comp=Z,29nm,0.6s
MNTX Cornudas Mount 39.08 314 P P 16 34 55.3 +0.6
baz=123,SNR=31
MNTX Cornudas Mount 39.08 314 eP P 16 34 55.5 +0.8
comp=Z,47nm,1.4s
Q33A Connelly Farm, 39.10 329 P P 16 34 55.8 +1.0
baz=139
L38A Oak Wood Farm, 39.38 336 P P 16 34 57.8 +0.8
baz=148
Q32A Meitler Ranch, 39.48 328 P P 16 34 58.5 +0.6
baz=138
N35A Tabor 39.48 333 P P 16 34 58.8 +0.9
baz=143
M36A Felix, Anita 39.58 334 P P 16 34 59.1 +0.5
baz=145,SNR=5.3
L37A Phoenix Point, 39.69 336 P P 16 34 60.0 +0.4
baz=147
M35A Neola 39.99 333 P P 16 35 02.3 +0.3
baz=144,SNR=5.5
K37A Belmond 40.18 336 P P 16 35 04.5 +0.9
baz=147
O32A Brockman Farm, 40.28 330 P P 16 35 04.6 +0.1
baz=139
K36A Gilmore City 40.41 335 P P 16 35 06.3 +0.9
baz=146
M34A Aspy Farms, Fr 40.42 332 P P 16 35 05.6 0.0
baz=142
J37A Redenius Farm, 40.60 337 P P 16 35 08.4 +1.3
baz=148
L34A Svendsen Farm, 40.69 333 P P 16 35 08.3 +0.5
baz=143
O31A Woolen Ranch, 40.73 329 P P 16 35 08.3 +0.1
baz=138
I38A Scanlan Farm, 40.77 339 P P 16 35 09.0 +0.6
baz=150
P30A Selden 40.78 327 P P 16 35 09.1 +0.5
baz=136
K35A Storm Lake 40.80 335 P P 16 35 09.2 +0.5
baz=145
J36A Seneca 1, Swea 40.93 336 P P 16 35 10.1 +0.4
baz=147
N31A Bailey Ranch, 41.04 330 P P 16 35 10.7 0.0
baz=139
I37A Lemond, Waseca 41.14 337 P P 16 35 12.6 +1.2
baz=148
121A Cookes Peak, D 41.26 313 P P 16 35 14.5 +1.7
baz=121,SNR=6.9
H37A Dierke Farm, C 41.45 338 P P 16 35 14.9 +1.0
baz=149
K33A Hardington 41.48 333 P P 16 35 15.1 +0.9
baz=142
O29A 4D Ranch, Culb 41.49 327 P P 16 35 15.0 +0.6
baz=136
J34A George 41.57 335 P P 16 35 15.8 +0.8
baz=144
T25A Trinidad 41.59 321 P P 16 35 17.1 +1.6
baz=129
T25A Trinidad 41.59 321 eP P 16 35 17.4 +1.9
comp=Z,7.1nm,0.6s
ANMO Albuquerque 41.62 317 P P 16 35 17.1 +1.3
baz=125
ANMO Albuquerque 41.62 317 eP P 16 35 17.2 +1.5
comp=Z,18nm,1.7s
P28A Saint Francis 41.62 326 P P 16 35 15.4 -0.1
baz=134
I35A Creekview Farm 41.63 336 P P 16 35 16.4 +1.0
baz=146
H36A Jessenland, He 41.82 337 P P 16 35 18.1 +1.2
baz=148
N29A Votaw Ranch, W 41.90 328 P P 16 35 19.0 +1.2
baz=136
SPMN Marine on St. 41.96 339 P P 16 35 19.0 +1.0
baz=150
K32A Verdigre 41.97 332 P P 16 35 18.3 +0.1
baz=141
O28A Krutsinger Ran 42.02 326 P P 16 35 19.5 +0.8
baz=135
J33A Davis 42.03 334 P P 16 35 19.4 +0.6
baz=143
ECSD EROS Data Cent 42.21 334 P P 16 35 20.0 -0.2
baz=144,SNR=8.7
ECSD EROS Data Cent 42.21 334 eP P 16 35 20.3 +0.1
comp=Z,15nm,1.1s
L30A Spencer Herefo 42.27 330 P P 16 35 21.4 +0.7
baz=138
H35A Sunnyside Ranc 42.27 337 P P 16 35 21.0 +0.4
baz=147
J32A Parkston 42.47 333 P P 16 35 22.1 -0.1
baz=142,SNR=5.3
G35A Watkins 42.58 337 P P 16 35 23.3 +0.3
baz=148,SNR=6.0
SDCO Great Sand Dun 42.65 321 P P 16 35 25.7 +1.6
baz=128,SNR=16
SDCO Great Sand Dun 42.65 321 eP P 16 35 25.8 +1.6
comp=Z,8.8nm,0.7s
K30A Basset 42.76 331 P P 16 35 24.9 +0.2
baz=139,SNR=8.9
F36A Milaca 42.77 339 P P 16 35 25.1 +0.6
baz=149
H33A Prehn Over Nor 43.03 335 P P 16 35 27.2 +0.4
baz=144
H32A Carlson Farm, 43.18 334 P P 16 35 28.0 0.0
baz=143,SNR=5.2
Q24A Divide 43.19 323 P P 16 35 28.7 +0.2
baz=130
L28A Connealy Angus 43.22 329 P P 16 35 28.9 +0.4
baz=136
E36A McGregor 43.24 340 P P 16 35 28.9 +0.6
baz=150,SNR=11
I31A Royce, Wessing 43.29 333 P P 16 35 29.6 +0.7
baz=142
G33A Ortonville 43.32 336 P P 16 35 29.4 +0.3
baz=145
F34A Alexandria 43.35 337 P P 16 35 30.2 +0.9
baz=147
C39A Grand Marais 43.40 343 P P 16 35 30.9 +1.3
baz=155
S22A 4UR Ranch, Cre 43.48 320 P P 16 35 32.7 +1.8
baz=127,SNR=14
S22A 4UR Ranch, Cre 43.48 320 eP P 16 35 32.7 +1.8
comp=Z,20nm,1.4s
D37A Cotton 43.51 341 P P 16 35 31.7 +1.1
baz=151,SNR=7.2
I30A Oacoma 43.61 332 P P 16 35 31.7 +0.3
baz=140
H31A Wolsey 43.62 333 P P 16 35 31.9 +0.5
baz=142
C38A Sawbill Land. 43.64 342 P P 16 35 32.1 +0.5
baz=153
J29A Okreek 43.65 331 P P 16 35 31.6 -0.1
baz=139,SNR=10.0
K28A Ten Mile Ranch 43.65 329 P P 16 35 32.2 +0.4
baz=137
E35A Pequot Lakes 43.68 339 P P 16 35 32.5 +0.7
baz=148
D36A Goodland 43.78 340 P P 16 35 33.2 +0.6
baz=150,SNR=5.4
F33A 5 Mile Ranch, 43.80 336 P P 16 35 32.9 +0.1
baz=146
SUSD Miller 43.80 333 P P 16 35 32.9 -0.1
baz=141,SNR=6.9
X18A Snowflake 43.83 314 eP P 16 35 35.4 +1.9
comp=Z,9.0nm,0.8s
EYMN Ely 43.92 342 P P 16 35 34.3 +0.5
baz=153,SNR=12
EYMN Ely 43.92 342 eP P 16 35 34.4 +0.6
comp=Z,18nm,0.6s
C37A Embarrass 43.94 341 P P 16 35 34.7 +0.7
baz=152
W18A Petrified Fore 43.97 315 P P 16 35 36.1 +1.5
baz=121
W18A Petrified Fore 43.97 315 eP P 16 35 36.8 +2.1
comp=Z,22nm,0.8s
ISCO Idaho Springs 44.00 323 P P 16 35 36.5 +1.6
baz=130,SNR=7.1
ISCO Idaho Springs 44.00 323 eP P 16 35 36.6 +1.6
comp=Z,8.6nm,0.8s
D35A Remer 44.00 339 P P 16 35 35.0 +0.5
baz=149
G31A Ozonde 44.09 334 P P 16 35 35.5 +0.3
baz=143
I29A Vivian Onida 44.10 332 P P 16 35 35.7 +0.4
baz=139
J28A Allard Ranch, 44.11 330 P P 16 35 35.5 0.0
baz=138
C36A Pine Crest Far 44.17 341 P P 16 35 36.7 +0.8
baz=151,SNR=5.4
MVCO Mesa Verde 44.26 318 P P 16 35 38.5 +1.5
baz=124,SNR=5.9
J27A Elkhorn Farm, 44.37 330 P P 16 35 38.1 +0.6
baz=137
D34A Park Rapids 44.41 338 P P 16 35 38.5 +0.7
baz=148
G30A Faulkton 44.42 333 P P 16 35 38.3 +0.4
baz=141
I28A Midland 44.50 331 P P 16 35 38.7 +0.2
baz=138,SNR=5.4
C35A Jirik Farms, M 44.51 340 P P 16 35 39.1 +0.7
baz=150,SNR=6.6
H29A Onida 44.52 332 P P 16 35 38.5 -0.1
baz=140,SNR=6.9
F31A Hecla 44.61 335 P P 16 35 39.4 0.0
baz=143
D33A AnnSam, Waubun 44.70 338 P P 16 35 41.0 +1.0
baz=147
G29A Hoven 44.82 333 P P 16 35 41.9 +0.9
baz=140
PV01 Paradox Valley 44.83 319 eP P 16 35 43.3 +1.8
N23A Red Feather La 44.89 324 P P 16 35 43.6 +1.6
baz=130,SNR=8.9
N23A Red Feather La 44.89 324 eP P 16 35 43.9 +1.9
comp=Z,12nm,0.9s
J26A Sides Ranch, S 44.95 329 P P 16 35 43.7 +1.5
baz=135
I27A Quinn 44.98 330 P P 16 35 42.9 +0.5
baz=137
B35A Bob, Littlefor 44.99 340 P P 16 35 43.0 +0.7
baz=150,SNR=9.0
PV05 Paradox Valley 45.14 319 eP P 16 35 44.9 +1.0
G28A Parade 45.19 332 P P 16 35 44.3 +0.3
baz=139
C33A Trail 45.19 338 P P 16 35 44.7 +0.9
baz=147,SNR=7.3
PV10 Paradox Valley 45.27 319 eP P 16 35 45.9 +0.9
WUAZ Wupatki 45.33 315 P P 16 35 46.9 +1.6
baz=120,SNR=22
WUAZ Wupatki 45.33 315 eP P 16 35 47.3 +1.9
comp=Z,25nm,0.8s
I26A New Underwood 45.36 330 P P 16 35 45.7 +0.3
baz=136
J25A Sunshine Ranch 45.39 328 P P 16 35 46.1 +0.5
baz=134
E30A Jud 45.40 335 P P 16 35 46.0 +0.5
baz=142
H27A Howes 45.41 331 P P 16 35 46.1 +0.4
baz=137
B34A Aery, Baudette 45.41 340 P P 16 35 46.6 +1.0
baz=149,SNR=21
B33A Robert and Kas 45.56 339 P P 16 35 47.4 +0.6
baz=148
AGMN Agassiz Nation 45.68 339 P P 16 35 48.5 +0.9
baz=147,SNR=5.2
Y14A Wickenburg 45.76 312 eP P 16 35 50.0 +1.3
comp=Z,60nm,0.7s
E29A Napoleon 45.77 334 P P 16 35 49.2 +0.8
baz=142
I25A Rochford 45.79 329 P P 16 35 49.9 +1.0
baz=135,SNR=9.2
O20A White River Ci 45.79 322 eP P 16 35 50.8 +1.8
comp=Z,34nm,1.7s
D30A Buchanan 45.82 336 P P 16 35 49.7 +0.9
baz=143
113A Mohawk Valley, 45.82 310 eP P 16 35 50.4 +1.3
comp=Z,6.7nm,0.9s
G27A Dupree 45.89 332 P P 16 35 49.8 +0.3
baz=138,SNR=6.7
C31A Landman Farms, 45.96 337 P P 16 35 50.8 +0.9
baz=145,SNR=7.3
B32A Ashes, Strandq 46.01 338 P P 16 35 51.3 +1.1
baz=147,SNR=5.7
RSSD Black Hills 46.02 329 P P 16 35 52.2 +1.5
baz=135
A33A Warroad 46.05 340 P P 16 35 51.5 +0.9
baz=148
D29A Pettibone, Tap 46.13 335 P P 16 35 52.1 +0.8
baz=142
G26A Maurine 46.15 331 P P 16 35 51.5 0.0
baz=137
H25A Fruitdale 46.15 330 P P 16 35 52.5 +0.9
baz=136
C30A Mose, Pekin 46.18 336 P P 16 35 52.4 +0.8
baz=144,SNR=5.5
E28A Huff 46.23 334 P P 16 35 53.0 +0.9
baz=140
F27A Lemmon 46.30 332 P P 16 35 53.7 +1.1
baz=138,SNR=6.5
K22A Casper 46.36 326 P P 16 35 54.3 +1.0
baz=131
A32A Rocking H Ranc 46.43 339 P P 16 35 54.4 +0.9
baz=147
U15A North Rim 46.43 315 eP P 16 35 55.9 +1.8
comp=Z,17nm,1.0s
B31A Greenbush Farm 46.45 337 P P 16 35 54.4 +0.7
baz=145
G25A Newell 46.47 330 P P 16 35 54.6 +0.6
baz=136
E27A Carson 46.51 333 P P 16 35 55.6 +1.3
baz=139,SNR=5.9
F26A Lodgepole 46.59 332 P P 16 35 55.2 +0.3
baz=138
SRU San Rafael Swe 46.64 319 eP P 16 35 57.1 +1.5
comp=Z,10.0nm,0.8s
B30A Myrvik Farm, E 46.73 337 P P 16 35 57.2 +1.3
baz=144
P18A Preston Nutter 46.75 320 eP P 16 35 58.3 +1.7
comp=Z,6.1nm,0.8s
GLA Glamis 46.75 310 P P 16 35 57.6 +1.2
baz=115
MDND Maddock 46.76 336 P P 16 35 57.1 +1.0
baz=142
PDMCI Parker Dam,Lak 46.77 312 P P 16 35 57.3 +0.9
baz=116
E26A Carlson Angus 46.95 332 P P 16 35 58.5 +0.8
baz=138,SNR=7.4
P17A Butcher Ranch, 46.98 320 eP P 16 35 59.9 +1.6
comp=Z,12nm,0.8s
D27A Center 47.01 333 P P 16 35 59.5 +1.4
baz=140
KNB Kanab 47.09 316 eP P 16 35 60.0 +0.9
comp=Z,19nm,0.9s
A30A Hoffart Farm, 47.12 337 P P 16 35 59.7 +0.8
baz=145,SNR=6.8
B29A Wagenman Farm, 47.15 336 P P 16 36 00.2 +1.1
baz=143,SNR=5.0
TMUT Trail Mountain 47.19 319 eP P 16 36 00.8 +0.8
comp=Z,4.9nm,0.7s
ULM Lac du Bonnet 47.34 340 P P 16 36 00.8 +0.2
comp=Z,9.9nm,0.4s,baz=142,slow=6.8,SNR=31
ULM Lac du Bonnet 47.34 340 eP P 16 36 00.3 -0.2
comp=Z,12nm,0.6s
D26A Manning 47.35 333 P P 16 36 01.6 +0.8
baz=138,SNR=6.2
PLCA Paso Flores 47.37 178 P P 16 35 59.1 -1.9
comp=Z,2.3nm,0.5s,baz=19,slow=9.3,SNR=9.0
PLCA PcP PcP 16 37 29.3 +0.2
comp=Z,0.8nm,0.8s,baz=344,slow=4.7,SNR=3.4
PLCA Paso Flores 47.37 178 eP P 16 35 58.3 -2.7
comp=Z,31nm,2.0s
LCMT Little Creek M 47.38 315 eP P 16 36 02.0 +0.6
comp=Z,5nm,0.9s
MSU Marysvale 47.41 318 eP P 16 36 03.2 +1.5
E25A Miller Ranch, 47.41 332 P P 16 36 02.2 +0.9
baz=137
SWSC Sam W. Stewart 47.46 309 P P 16 36 02.6 +0.9
baz=114
C27A Sayler Ranch, 47.46 334 P P 16 36 02.9 +1.4
baz=140
IRM Iron Mountain 47.46 311 P P 16 36 02.8 +1.0
baz=115,SNR=5.7
A29A Manning Farm, 47.47 337 P P 16 36 02.2 +0.6
baz=144,SNR=5.8
BC3 Big Chuckawall 47.48 310 P P 16 36 02.7 +0.6
baz=115
C26A Wahner Farm, P 47.80 334 P P 16 36 05.3 +1.1
baz=139
MPU Maple Canyon 47.85 320 eP P 16 36 06.1 +1.1
comp=Z,13nm,0.9s
A28A Rude Farm, Bot 47.87 336 P P 16 36 05.9 +1.2
baz=142
MONP2 Monument Peak 47.92 309 P P 16 36 06.9 +1.3
baz=113
BELC Belle Mtn. Jos 48.03 310 P P 16 36 07.6 +1.2
baz=114,SNR=5.5
JLU Jordanelle 48.06 320 eP P 16 36 07.5 +0.9
comp=Z,5.8nm,0.9s
NLU North Lily Min 48.11 319 eP P 16 36 08.4 +1.4
comp=Z,5.5nm,0.7s
GMRC Granite Mounta 48.11 311 P P 16 36 08.2 +1.3
baz=116
SCHQ Schefferville 48.13 5 P P 16 36 07.5 +1.0
comp=Z,9.0nm,0.5s,baz=180,slow=7.4,SNR=10
SCHQ Schefferville 48.13 5 eP P 16 36 08.7 +2.1
comp=Z,9.5nm,0.5s
PD31 Pinedale Array 48.17 324 eP P 16 36 08.1 +0.7
PDAR Pinedale Array 48.17 324 P P 16 36 07.9 +0.5
comp=Z,4.5nm,0.7s,baz=119,slow=8.4,SNR=38
PDAR PcP PcP 16 37 33.5 +1.3
comp=Z,0.9nm,0.4s,baz=112,slow=6.7,SNR=7.2
BW06 Boulder Array 48.17 324 P P 16 36 08.1 +0.7
baz=128,SNR=11
BW06 Boulder Array 48.17 324 eP P 16 36 08.0 +0.6
TCUT Toone Canyon 48.32 321 eP P 16 36 10.3 +1.7
comp=Z,34nm,0.7s
PSUT Pine Spring 48.55 317 eP P 16 36 11.2 +0.9
comp=Z,6.5nm,0.7s
TUQ Turquoise Moun 48.58 312 P P 16 36 11.8 +1.3
baz=116,SNR=13
A26A Wade Farm, Ken 48.59 335 P P 16 36 11.6 +1.4
baz=140
B25A Knox Farm, Ray 48.61 333 P P 16 36 12.3 +1.9
baz=138,SNR=8.5
HEC Hector,Ludlow 48.63 311 P P 16 36 11.8 +0.9
baz=115
HWUT Hardware Ranch 48.70 321 eP P 16 36 11.1 -0.3
comp=Z,7.4nm,0.6s
DUG Dugway, Tooele 48.71 319 P P 16 36 12.8 +1.3
baz=122,SNR=10
DUG Dugway, Tooele 48.71 319 eP P 16 36 10.8 -0.7
comp=Z,6.1nm,0.8s
BBRC Big Bear Solar 48.84 310 P P 16 36 13.9 +1.2
baz=114
AHID Auburn Hatcher 49.08 323 eP P 16 36 14.5 +0.2
comp=Z,7.5nm,0.9s
SPUT South Promonto 49.08 321 eP P 16 36 14.4 +0.1
comp=Z,4.2nm,0.8s
A25A Svangstu Ranch 49.09 334 P P 16 36 15.5 +1.5
baz=139
GSC Goldstone, Bar 49.18 312 P P 16 36 16.6 +1.5
baz=115,SNR=8.1
GSC Goldstone, Bar 49.18 312 eP P 16 36 16.2 +1.1
comp=Z,10nm,0.8s
DGMT Dagmar 49.22 333 P P 16 36 16.7 +1.7
baz=137,SNR=9.3
DGMT Dagmar 49.22 333 eP P 16 36 16.4 +1.3
comp=Z,50nm,0.6s
BGU Big Grassy Mou 49.24 320 eP P 16 36 16.0 +0.4
comp=Z,15nm,0.7s
REDW Red Top Meadow 49.28 324 eP P 16 36 15.8 -0.1
comp=Z,16nm,0.6s
SNOW Snow King Moun 49.29 324 eP P 16 36 17.2 +1.2
comp=Z,13nm,1.0s
LOHW Long Hollow 49.29 324 eP P 16 36 16.5 +0.6
comp=Z,8.1nm,0.6s
MOOW Moose Ponds 49.45 324 eP P 16 36 16.8 -0.3
comp=Z,6.0nm,0.8s
RLMT Red Lodge 49.47 327 P P 16 36 18.3 +1.1
baz=130
RLMT Red Lodge 49.47 327 eP P 16 36 18.3 +1.1
comp=Z,3.6nm,0.5s
TPNV Topopah Spring 49.48 314 P P 16 36 19.2 +1.8
baz=117,SNR=13
TPNV Topopah Spring 49.48 314 eP P 16 36 18.2 +0.8
comp=Z,11nm,1.0s
HVU Hansel Valley 49.55 321 eP P 16 36 18.6 +0.8
comp=Z,6.0nm,0.6s
FXWY Fox Creek 49.55 324 eP P 16 36 18.6 +0.7
comp=Z,4.5nm,0.8s
R11A Troy Canyon, C 49.65 316 P P 16 36 20.1 +1.4
baz=118,SNR=14
R11A Troy Canyon, C 49.65 316 eP P 16 36 20.1 +1.4
comp=Z,4.6nm,0.8s
H17A Grant Village 49.74 325 P P 16 36 21.3 +1.9
baz=128
EDW2 Edwards Air Fo 49.90 310 P P 16 36 21.4 +0.9
baz=114,SNR=6.3
LRMC Laurel Mtn Rad 49.90 311 P P 16 36 21.7 +1.1
baz=114,SNR=6.6
MPMC Manual Prospec 50.00 312 P P 16 36 21.9 +0.6
baz=115
GCMT Greycliff 50.11 327 eP P 16 36 23.4 +1.4
YMR Madison River 50.13 325 eP P 16 36 24.3 +2.0
comp=Z,6.6nm,0.6s
BLG Laguna Peak, P 50.42 309 P P 16 36 25.0 +0.6
baz=112
QLMT Earthquake Lak 50.49 325 eP P 16 36 27.4 +2.4
BOZ Bozeman (W) 51.10 326 P P 16 36 30.2 +0.8
baz=127,SNR=8.8
BOZ Bozeman (W) 51.10 326 eP P 16 36 30.1 +0.8
comp=Z,6.5nm,0.8s
MCMT McKenzie Canyo 51.31 324 eP P 16 36 32.8 +1.7
HLID Hailey 51.53 322 P P 16 36 34.0 +1.3
baz=123,SNR=10
HLID Hailey 51.53 322 eP P 16 36 34.0 +1.3
comp=Z,9.4nm,1.2s
EGMT Eagleton 51.59 329 P P 16 36 33.9 +1.0
baz=131
NV01 Mina Array Sit 51.59 315 eP P 16 36 34.3 +1.0
NVAR Mina Array Bea 51.59 315 P P 16 36 34.1 +0.8
comp=Z,3.3nm,0.6s,baz=121,slow=7.0,SNR=21
LRM Limekiln Ridge 51.66 325 eP P 16 36 34.9 +1.2
BMN Battle Mountai 51.75 317 eP P 16 36 35.4 +1.1
comp=Z,8.1nm,1.2s
MFID Camas Ranch 52.32 321 eP P 16 36 39.7 +1.2
comp=Z,8.6nm,0.6s
MSO Missoula 53.09 326 P P 16 36 44.8 +0.8
baz=126
FFC Flin Flon 53.14 339 eP P 16 36 44.6 +0.6
comp=Z,24nm,1.8s
JTMT Jette 53.81 326 eP P 16 36 50.9 +1.6
BLMT Blacktail Moun 54.01 327 eP P 16 36 52.6 +1.7
BSMT Bassoo Peak 54.15 326 eP P 16 36 53.5 +1.6

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
MOD	Modoc Plateau	54.49	318	eP	P	16 36 54.8	+0.4
	comp=Z,2.9nm,0.6s						
O03D	Paynes Creek	54.84	315	P	P	16 36 57.0	+0.2
	baz=114						
M04C	Macdoel	55.47	317	P	P	16 37 02.0	+0.6
	baz=115,SNR=5.3						
NEW	Newport	55.68	326	P	P	16 37 03.6	+1.0
	baz=123						
J05D	Fort Rock, OR	55.72	319	P	P	16 37 04.0	+0.9
	baz=116						
I04A	Tendick Farm,	56.71	319	P	P	16 37 10.4	+0.4
	baz=116						
H04A	Detroit Lake	56.95	320	eP	P	16 37 12.6	+0.9
	comp=Z,10nm,0.8s						
B08A	Colville Reser	56.98	325	eP	P	16 37 12.4	+0.6
	comp=Z,6.3nm,0.6s						
I03D	Drain, OR	57.28	318	P	P	16 37 14.8	+0.8
	baz=115						
YKA	Yellowknife Ar	63.32	340	P	P	16 37 55.3	+0.8
	comp=Z,6.3nm,0.6s,baz=133,slow=6.7,SNR=150						
YKA				pP	pP	16 38 33.6	+0.2
	comp=Z,1.6nm,0.6s,baz=130,slow=7.0,SNR=3.0						
YKB5	Yellowknife Ar	63.32	340	eP	P	16 37 53.3	-1.2
YKW3	Yellowknife Ar	63.37	340	eP	P	16 37 55.5	+0.6
	comp=Z,8.2nm,0.8s						
TIC	Toumodi	67.42	86	eP	P	16 38 21.7	-0.2
LIC	Lamto	67.44	86	eP	P	16 38 22.0	0.0
	comp=Z,17nm,0.4s						
DBIC	Dimbokro	67.58	86	P	P	16 38 22.7	-0.2
	comp=Z,14nm,0.7s,baz=274,slow=5.2,SNR=34						
KIC	Kosan Boka	67.72	86	eP	P	16 38 23.9	+0.1
	comp=Z,32nm,0.6s						
INK	Inuvik	73.08	340	P	P	16 38 56.0	+0.8
	comp=Z,2.2nm,0.6s,baz=94,slow=6.3,SNR=11						
TOA0	Torodi Ar. Sit	73.58	78	eP	P	16 38 58.1	-1.2
TORD	Torodi Ar. Bea	73.58	78	P	P	16 38 59.0	-0.3
	comp=Z,2.1nm,0.4s,baz=283,slow=6.4,SNR=31						
TORD				pP	pP	16 39 40.9	+1.7
	comp=Z,0.9nm,0.8s,baz=284,slow=5.6,SNR=2.8						
DOT	Dot Lake	75.57	334	eP	P	16 39 10.2	+0.4
	comp=Z,12nm,0.8s						
ILAR	Eielson Array	77.03	335	P	P	16 39 18.3	+0.3
	comp=Z,0.8nm,0.7s,baz=111,slow=4.6,SNR=12						
ILAR				pP	pP	16 39 58.9	+0.6
	comp=Z,0.3nm,0.6s,baz=88,slow=5.5,SNR=3.8						
RND	Reindeer	77.62	333	eP	P	16 39 19.7	-1.7
	comp=Z,7.5nm,1.0s						
MLY	Manley	78.69	335	eP	P	16 39 26.6	-0.5
	comp=Z,5.5nm,1.2s						
CAST	Castle Rocks	79.06	333	eP	P	16 39 30.1	+0.9
	comp=Z,3.2nm,0.8s						
NB2	NORSAR Subarra	81.25	29	P	P	16 39 42.1	+1.1
	comp=Z,1.6nm,0.6s,baz=268,slow=5.6						
NOA	NORSAR Array B	81.25	29	P	P	16 39 42.1	+1.1
	comp=Z,1.8nm,0.6s,baz=267,slow=5.3,SNR=9.3						
GERES	GERESS Array B	82.72	42	P	P	16 39 49.5	+0.5
	comp=Z,0.5nm,0.4s,baz=251,slow=4.1,SNR=6.5						
ARCES	ARCESS Array B	86.61	20	P	P	16 40 08.8	+0.8
	comp=Z,2.7nm,0.6s,baz=274,slow=3.8,SNR=25						
VNA3	Neumayer Olymp	88.13	163	P	P	16 40 14.3	-0.8
FINES	FINESS Array B	88.36	28	P	P	16 40 17.1	+0.7
	comp=Z,0.9nm,0.6s,baz=320,slow=5.0,SNR=4.4						
VNA2	Neumayer--Watz	88.65	163	P	P	16 40 16.8	-0.7
	baz=312,slow=6.3						
ZALV	Zalesovo Beam	116.63	14	PKP	PKPdf	16 46 08.1	+0.2
	comp=Z,2.1nm,0.5s,baz=284,slow=1.8,SNR=10.0						
ZALV				SKP	SKPdf	16 49 28.9	+0.7
	comp=Z,1.0nm,0.6s,baz=252,slow=1.6,SNR=5.8						
KURBB	Kurchatov Arra	117.70	20	PKP	PKPdf	16 46 09.9	-0.2
	comp=Z,0.9nm,0.6s,baz=318,slow=2.2,SNR=7.5						
KURBB				SKP	SKPdf	16 49 31.0	+0.8
	comp=Z,0.6nm,0.8s,baz=315,slow=2.0,SNR=5.5						
MKAR	Makanchi Array	122.27	20	PKP	PKPdf	16 46 19.3	+0.2
	comp=Z,1.3nm,0.4s,baz=301,slow=2.5,SNR=37						
MKAR				SKP	SKPdf	16 49 38.7	-0.5
	comp=Z,0.5nm,0.8s,baz=48,slow=2.1,SNR=4.5						
SONM	Songino Array	125.58	1	PKP	PKPdf	16 46 26.4	+0.9
	comp=Z,2.0nm,0.5s,baz=332,slow=1.9,SNR=19						
WMQ	Urumqi	126.64	17	ePKP	PKPdf	16 46 23.6	-4.0
WMQ				sPKP		16 47 27.8	
KSRS	Korea Array	131.82	338	PKP	PKPdf	16 46 37.9	+0.4
	comp=Z,0.6nm,0.6s,baz=351,slow=1.4,SNR=4.6						
HHC	Hu-ho-hao-te	132.38	355	ePKP	PKPdf	16 46 37.2	-1.5
GTA	Gaotai	133.52	8	ePKP	PKPdf	16 46 42.4	+1.5
GTA				sPKP		16 47 41.8	
NJ2	Nanjing	139.73	344	ePKP	PKPdf	16 46 52.3	-0.1
CD2	Chengdu	142.35	5	PKP	PKPdf	16 46 54.7	-2.5
AS01	Alice Springs	149.20	234	ePKPdf	PKPdf	16 47 09.1	+0.1
ASAR	Alice Springs	149.24	234	PKP	PKPdf	16 47 09.0	-0.1
	comp=Z,3.1nm,0.5s,baz=119,slow=3.4,SNR=27						
ASAR				PKPbc	PKPbc	16 47 13.0	-0.5
	comp=Z,3.8nm,0.5s,baz=120,slow=3.6,SNR=69						
ASAR				pPKPbc	pPKPbc	16 47 55.3	-1.3
	comp=Z,1.3nm,0.5s,baz=113,slow=3.5,SNR=2.1						
WRA	Warramunga Arr	150.47	241	PKP	PKPdf	16 47 10.6	-0.5
	comp=Z,1.2nm,0.6s,baz=108,slow=2.6,SNR=16						
WRA				PKPbc	PKPbc	16 47 16.1	-0.4
	comp=Z,3.0nm,0.4s,baz=108,slow=2.7,SNR=60						
WRA				pPKPbc	pPKPbc	16 47 58.6	-1.1
	comp=Z,1.2nm,0.4s,baz=107,slow=2.6,SNR=2.3						
CMAR	Chiang Mai Arr	153.64	18	PKP	PKPdf	16 47 16.9	+1.1
	comp=Z,1.1nm,0.6s,baz=305,slow=2.2,SNR=12						
CMAR				PKPbc	PKiKP	16 47 24.5	+0.7
	comp=Z,3.2nm,0.6s,baz=319,slow=3.2,SNR=33						
CMAR				pPKPbc	pPKPbc	16 48 07.0	0.0
	comp=Z,0.9nm,0.6s,baz=338,slow=2.8,SNR=2.6						

*NIED **01** 16:34:00, 37°.00N×142°.40E, h8^{km}, Mw3.7 Best double couple: M₀3.80000×10^{14} NP1:φs45.00000°, δ31.00000°, λ-93.00000°. NP2:φs228.00000°, δ59.00000°, λ-88.00000°.*

*ISCJB **01** 16:34:27.5±0.7, 36°.96N±0°.04×142°.46E±0°.05, h9^{km}, mb3.7/6, Error ellipse: s-maj=6.1km s-min=5.6km az=154.5*

*IDC **01** 16:34:27.6±1.1, 36°.95N×142°.59E, h0^{km}, mb3.7/6, mb1 3.8/8, mb1mx3.5/57, mbtmp3.7/8, ML3.5/2, Error ellipse: s-maj=31.1km s-min=21.3km az=88.0*

*JMA **01** 16:34:29.8±0.3, 37°.03N×142°.38E, h19^{km}±4^{km}, M3.7*

ISC 01 16:34:29.1±1.0, 36°.99N±0°.05×142°.43E±0°.07, h9^{km}, n25, σ1^{s}10/30, mb3.8/6, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
ONAJ	Iwakimizuishiy	1.31	276	P	Pn	16 34 52.5	-1.1
ONAJ				eS	Sb	16 35 09.2	-1.6
JHO	Hitachi	1.54	257	P	Pn	16 34 56.3	-0.4
JHO				S	Sn	16 35 15.8	-1.0
JMM	Marumori	1.57	304	P	Pn	16 34 56.2	-0.9
JMM				S	Sn	16 35 15.6	-2.0
JIO	Ouri	1.70	330	P	Pn	16 34 58.2	-0.7
JIO				S	Sn	16 35 18.7	-2.0
JFT	Otama	1.75	288	P	Pn	16 34 59.0	-0.7
JFT				S	Sn	16 35 21.5	-0.6
JOU	Okura	1.96	315	P	Pn	16 35 02.9	+0.3
JOU				eS	Sn	16 35 26.4	-1.0
JFY	Yanaizu	2.22	282	P	Pn	16 35 06.6	+0.6
JFY				eS	Sn	16 35 33.4	-0.2
JYS	Shirataka	2.25	304	P	Pn	16 35 07.0	+0.6
JYS				eS	Sn	16 35 34.3	0.0
JAG	Ashikaga	2.46	258	P	Pn	16 35 09.4	+0.1
JAG				eS	Sn	16 35 38.8	-0.7
JYK	Kaneyama	2.53	320	P	Pn	16 35 10.7	+0.4
MJAR	Matsushiro Arr	3.42	264	Pn	Pn	16 35 23.4	+0.9
	3.1nm,0.3s,baz=87,slow=15,SNR=17						
MAT	Matsushiro	3.42	264	P	Pn	16 35 24.3	+1.7
MAT				eS	Sn	16 36 04.3	+1.1
JHJ	Hachijo jima 2	4.43	210	Pn	Pn	16 35 35.8	-0.6
	12nm,0.3s,baz=51,slow=14,SNR=4.0						
JHJ				Sn	Sn	16 36 26.1	-1.9
	12nm,0.3s,baz=52,slow=17,SNR=3.3						
H11N2	WAKE ISLAND Hy	27.43	122	T	T	17 09 08.1	
	baz=314,slow=75,SNR=15						
H11N1	WAKE ISLAND Hy	27.44	122	T	T	17 09 09.4	
	baz=314,slow=75,SNR=14						
H11N3	WAKE ISLAND Hy	27.45	122	T	T	17 09 11.2	
	baz=314,slow=75,SNR=12						
H11S1	WAKE ISLAND Hy	28.16	124	T	T	17 10 00.5	
	baz=316,slow=76,SNR=13						
H11S3	WAKE ISLAND Hy	28.16	124	T	T	17 10 01.0	
	baz=316,slow=76,SNR=8.5						
H11S2	WAKE ISLAND Hy	28.17	124	T	T	17 10 23.0	
	baz=316,slow=76,SNR=12						
SONM	Songino Array	28.49	304	P	P	16 40 27.1	+2.4
	0.5nm,0.6s,baz=100,slow=8.4,SNR=4.2						
KURBB	Kurchatov Arra	46.67	308	P	P	16 42 57.9	+0.1
	0.6nm,0.4s,baz=81,slow=7.8,SNR=6.7						
ILAR	Eielson Array	49.10	32	P	P	16 43 16.3	-0.1
	0.4nm,0.8s,baz=247,slow=6.7,SNR=4.6						
WRA	Warramunga Arr	57.13	189	P	P	16 44 16.1	0.0
	1.0nm,0.8s,baz=7.0,slow=7.1,SNR=5.4						
ASAR	Alice Springs	60.86	189	P	P	16 44 41.9	0.0
	0.4nm,0.7s,baz=14,slow=8.2,SNR=6.7						
FINES	FINESS Array B	69.23	333	P	P	16 45 35.7	-0.2
	0.6nm,0.6s,baz=62,slow=4.5,SNR=4.7						

*IDC **01** 16:37:35.2±1.8, 39°.36N×73°.64E, h0^{km}, mb3.6/4, mb1 3.7/8, mb1mx3.3/58, mbtmp3.6/8, ML3.2/4, Error ellipse: s-maj=32.1km s-min=16.3km az=133.0*

*KRNET **01** 16:37:36.0±0.1, 39°.50N×73°.62E, mb3.5*

*NNC **01** 16:37:38.3±1.8, 39°.58N×73°.67E, h0^{km}, mb3.9, mpv3.6, Error ellipse: s-maj=17.8km s-min=8.7km az=72.0*

*SOME **01** 16:37:39.4, 39°.70N×73°.68E, h5^{km}*

ISC 01 16:37:39.6±1.5, 39°.62N±0°.06×73°.38E±0°.04, h10^{km}±9^{km}, n47, σ1^{s}90/70, mb3.6/4, 35C-15D, Tajikistan-Xinjiang border region

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
SFK	Sufi-Kurgan	0.41	14	⇓iP	Pg	16 37 46.3	-1.3
	baz=350						
SFK				⇓iS	Sg	16 37 54.0	+0.9
	baz=350						
SFK	Sufi-Kurgan	0.41	14	⇓P	Pg	16 37 46.4	-1.3
	50nm,0.2s						
SFK				⇓S	Sg	16 37 54.0	+0.9
	1μm,0.2s						
BTK	Batken	2.02	283	⇑eP	Pb	16 38 16.6	+0.2
	baz=285						
BTK				⇑iS	Sg	16 38 45.6	+1.1
	baz=285						
TOKL	Toktogul	2.35	351	⇑iP	Pb	16 38 20.8	-1.3
	baz=347						
TOKL				⇑iS	Sb	16 38 52.7	+1.5
	baz=347						
ARLS	Aral	2.35	18	⇓iP	Pn	16 38 19.2	+0.7
	baz=13						
ARLS				⇓eS	Sb	16 38 50.2	-1.1
	baz=13						
ARK	Arkit	2.43	334	⇑eP	Pb	16 38 22.0	-1.4
	baz=332						
ARK				⇑iS	Sb	16 38 55.2	+1.7
	baz=332						
AML	Almayashu	2.52	5	⇑iP	Pn	16 38 22.0	+1.0
	baz=1.0						
AML				⇑iS	Sb	16 38 56.6	+0.2
	baz=1.0						
NRN	Naryn	2.70	47	⇑eP	Pn	16 38 23.0	-0.4
	baz=42						
NRN				⇑eS	Sn	16 38 56.7	+0.4
	baz=42						
UCH	Uchtor	2.74	18	⇑iP	Pn	16 38 25.6	+1.5
	baz=14						
UCH				⇑iS	Sb	16 39 01.3	-1.6
	baz=14						
KZA	Kyzart	2.84	29	⇓iP	Pn	16 38 25.7	+0.3
	baz=25						
KZA				⇓iS	Sb	16 39 04.2	-1.4
	baz=25						
MNAS	Manas	2.94	347	⇑iP	Pn	16 38 29.1	+2.6
	baz=345						
MNAS				⇑iS	Sb	16 39 07.4	-0.8
	baz=345						
MNAS	Manas	2.94	347	⇑Pn	Pn	16 38 29.4	+2.8
	5.6nm,0.4s						
MNAS				⇓Lg	Lg	16 39 15.5	
	32nm,0.3s						
EKS2	Erkin-Say	3.05	6	⇑iP	Pn	16 38 29.7	+1.6
	baz=2.0						
EKS2				⇑iS	Sb	16 39 10.1	-1.4
	baz=2.0						
MRKS	Merke	3.12	358	eS	Sb	16 39 17.8	+4.3
	97nm,0.5s						
MRKS	Merke	3.12	358	eP	Pb	16 38 36.5	+1.2
	28nm,0.3s						
AAK	Ala-Archa	3.13	15	Pn	Pn	16 38 31.3	+2.2
	4.4nm,0.3s,baz=172,slow=8.1,SNR=68						
AAK				Sn	Sb	16 39 14.0	+0.4
	8.3nm,0.3s,baz=150,slow=20,SNR=7.8						
AAK	Ala-Archa	3.13	15	⇓iP	Pn	16 38 30.4	+1.3
	baz=12						
AAK				⇓iS	Sb	16 39 11.4	-2.3
	baz=12						
AAK	Ala-Archa	3.13	15	⇑Pn	Pn	16 38 31.3	+2.2
	14nm,0.5s						
AAK				⇑Lg	Lg	16 39 14.2	
	54nm,0.6s						
ULHL	Ulahol	3.41	39	⇑iP	Pn	16 38 33.4	+0.4
	baz=35						
ULHL				⇑iS	Sb	16 39 20.4	-1.3
	baz=35						
BOOM	Boomskoye usch	3.46	33	⇑eP	Pn	16 38 34.2	+0.5
	baz=30						
BOOM				⇑eS	Sn	16 39 16.6	+1.7
	baz=30						
DZET	Dzherino	3.63	258	⇑Pg	Pg	16 38 49.7	+0.6
	20nm,0.5s						
DZET				⇓Lg	Lg	16 39 44.5	
	81nm,0.6s						
TKM2	Tokmak 2	3.70	26	⇑iP	Pn	16 38 37.6	+0.6
	baz=23						
TKM2				⇑iS	Sb	16 39 30.5	+0.4
	baz=23						
TKM2	Tokmak 2	3.70	26	⇑Pn	Pn	16 38 37.7	+0.7
	3.0nm,0.3s						
TKM2				⇑Lg	Lg	16 39 32.2	
	18nm,0.6s						
KST	Kastek	3.94	29	eP	Pb	16 38 48.3	-0.9
	5.2nm,0.5s						
KST				eS	Sb	16 39 38.0	+1.1
	66nm,1.0s						
DGS	Degeres	4.04	26	eP	Pb	16 38 52.0	+1.0
	7.1nm,0.6s						
DGS				eS	Sb	16 39 43.9	+4.0
	92nm,0.7s						
KK31	Karatay Array	4.09	329	⇑Pn	Pn	16 38 45.6	+3.4
	4.1nm,0.4s,baz=143,slow=14						
KK31				⇓Lg	Lg	16 39 53.0	
	6.1nm,0.3s,baz=145,slow=30						
MTBS	Maitube	4.19	32	eP	Pb	16 38 53.6	+0.1
	14nm,0.6s						
MTBS				eS	Sb	16 39 47.4	+3.1
	34nm,0.9s						
TNSS	Tian-Shan	4.35	37	eP	Pb	16 38 57.2	+0.8
	3.4nm,0.7s						
TNSS				eS	Sb	16 39 53.0	+4.0
	55nm,0.6s						
KNDC	Almaty	4.50	36	⇑Pg	Pg	16 39 03.0	-2.7
	6.3nm,0.3s						
KNDC				⇓Lg	Lg	16 39 57.3	
	76nm,0.8s						
KOTS	Kotyrbulak	4.58	37	eP	Pb	16 39 00.2	+0.2
KOTS				eS	Sb	16 39 58.4	+3.1
KTBS	Karatobe	4.78	30	eP	Pb	16 39 03.6	+0.1
KTBS				eS	Sb	16 40 04.3	+3.2
CHKK	Chushkaly	5.04	31	eP	Pb	16 39 08.8	+1.0
	14nm,0.9s						
CHKK				eS	Sb	16 40 13.2	+4.7
	39nm,0.5s						
SATY	Saty	5.11	46	eP	Pb	16 39 10.4	+1.2
	3.1nm,0.5s						
SATY				⇑iS	Sg	16 40 16.3	-7.5
	16nm,0.9s						
KURS	Kuram	5.28	41	eP	Pb	16 39 12.9	+0.9
KURS				eS	Sb	16 40 19.9	+4.4
ARXS	Arharly	5.66	34	eP	Pb	16 39 19.1	+0.5
	1.9nm,0.8s						
ARXS				eS	Sb	16 40 31.1	+4.6
	45nm,0.5s						
MNBS	Baschi	5.83	38	eP	Pb	16 39 22.4	+1.1
	2.2nm,0.8s						
MNBS				eS	Sb	16 40 36.6	+5.5
	3.2nm,0.7s						
PDGK	Podgornoye	5.90	49	⇓Pg	Pg	16 39 26.2	-6.3
	3.1nm,0.7s						
PDGK				⇑Lg	Lg	16 40 37.7	
	17nm,0.9s						
OTUK	Ortayu	8.65	355	⇑Pn	Pn	16 39 39.8	-5.1
	1.3nm,0.7s						
OTUK				⇑Lg	Lg	16 42 12.5	
	3.1nm,0.6s						
MK31	Makanchi Array	9.68	39	⇑Lg	Lg	16 42 40.0	
	0.6nm,0.6s						
MKAR	Makanchi Array	9.68	39	Pn	Pn	16 39 59.0	+0.1
	baz=224,slow=14,SNR=2.4						
MKAR				Lg	Lg	16 42 45.0	
	0.1nm,0.3s,baz=222,slow=28,SNR=5.1						
KURBB	Kurchatov Arra	11.59	17	Pn	Pn	16 40 26.0	+1.1
	0.0nm,0.3s,baz=205,slow=12,SNR=4.3						
KURBB				Lg	Lg	16 43 45.9	
	0.0nm,0.3s,baz=204,slow=31,SNR=6.3						
BVAR	Borovoye Array	13.56	352	Pn	Pn	16 40 50.8	-1.1
	0.1nm,0.3s,baz=160,slow=15,SNR=7.7						
AKTO	Aktyubinsk	15.29	320	Pn	Pn	16 41 15.1	-0.3
	0.2nm,0.3s,baz=122,slow=15,SNR=3.1						
ZALV	Zalesovo Beam	16.30	25	Pn	Pn	16 41 27.4	-1.0
	0.1nm,0.3s,baz=222,slow=8.5,SNR=4.7						
FINES	FINESS Array B	36.03	323	P	P	16 44 40.5	-0.2
	0.4nm,0.4s,baz=103,slow=8.4,SNR=4.5						
ARCES	ARCESS Array B	39.03	336	P	P	16 45 05.9	-0.2
	0.7nm,0.6s,baz=104,slow=7.6,SNR=6.9						
TORD	Torodi Ar. Bea	67.66	269	P	P	16 48 35.6	-1.6
	0.3nm,0.5s,baz=44,slow=5.1,SNR=3.5						
YKA	Yellowknife Ar	78.03	4	P	P	16 49 35.9	-2.0
	0.1nm,0.4s,baz=351,slow=5.4,SNR=4.1						

*IDC **01** 16:39:07.0±1.2, 37°.33N×144°.69E, h0^{km}, mb3.6/5, mb1 3.8/7, mb1mx3.4/55, mbtmp3.7/7, ML3.5/2, Error ellipse: s-maj=31.1km s-min=23.2km az=101.0*

*ISCJB **01** 16:39:10.3±1.0, 37°.19N±0°.10×144°.5E±0°.1, h33^{km}, mb3.8/5, Error ellipse: s-maj=15.5km s-min=10.5km az=147.4*

ISC 01 16:39:12.3±1.2, 37°.3N±0°.1×144°.5E±0°.1, h35^{km}, n8, σ1^{s}09/10, mb3.6/5, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
MJAR	Matsushiro Arr	5.11	264	Pn	Pn	16 40 26.3	+0.1
	1.2nm,0.3s,baz=89,slow=15,SNR=7.0						
MAT	Matsushiro	5.11	264	P	Pn	16 40 27.3	+1.0
MAT				S	Sn	16 41 23.3	-0.7
JHJ	Hachijo jima 2	5.66	225	Pn	Pn	16 40 34.6	+0.7
	5.7nm,0.3s,baz=72,slow=20,SNR=4.0						
JHJ				Sn	Sn	16 41 35.9	-1.8
	12nm,0.3s,baz=73,slow=19,SNR=4.0						
MKAR	Makanchi Array	46.10	302	P	P	16 47 33.2	+0.4
	0.6nm,0.9s,baz=79,slow=7.5,SNR=3.7						
KURBB	Kurchatov Arra	47.81	308	P	P	16 47 46.6	+0.5
	0.2nm,0.3s,baz=81,slow=8.3,SNR=2.8						
ILAR	Eielson Array	47.98	32	P	P	16 47 46.0	-1.2
	0.4nm,0.8s,baz=266,slow=6.7,SNR=4.4						
WRA	Warramunga Arr	57.70	191	P	P	16 48 59.8	+0.4
	2.1nm,0.7s,baz=10,slow=7.1,SNR=8.5						
ASAR	Alice Springs	61.42	191	P	P	16 49 25.9	+0.9
	0.7nm,0.6s,baz=9.2,slow=7.4,SNR=5.8						

*ISCJB **01** 16:41:08.0±0.8, 17°.95N±0°.09×63°.87W±0°.04, h117^{km}±10^{km}, Error ellipse: s-maj=14.4km s-min=5.8km az=12.4*

*TRN **01** 16:41:08.5, 17°.71N×63°.91W, h28^{km}*

*NEIC **01** 16:41:10.9, 18°.04N×63°.99W, h114^{km}, MD3.7(RSPR), After RSPR.*

*RSPR **01** 16:41:10.9, 18°.04N×63°.99W, h114^{km}±1^{km}, MD3.7/10*

ISC 01 16:41:08.0±1.6, 18°.00N±0°.08×63°.84W±0°.05, h121^{km}±11^{km}, n46, σ0^{s}73/66, 16C-19D, Leeward Islands

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
ABV	Anegada	0.87	327	⇓eP	Pn	16 41 29.2	+0.4
ABV	Anegada	0.87	327	eS	Sn	16 41 44.7	+0.1
ABV	Anegada	0.87	327	⇓eP	Pn	16 41 29.2	+0.4
ABV				eS	Sn	16 41 44.7	+0.1
ABVI	Anegada Island	0.87	327	⇓eP	Pn	16 41 29.2	+0.4
ABVI				eS	Sn	16 41 44.7	+0.1
CDVI	St. Croix	0.92	255	⇑eP	Pn	16 41 29.6	+0.4
CDVI	St. Croix	0.92	255	eS	Sn	16 41 45.2	-0.2
CDVI	St. Croix	0.92	255	⇑eP	Pn	16 41 29.6	+0.4
CDVI				eS	Sn	16 41 45.2	-0.2
CDVI	St. Croix	0.92	255	⇑eP	Pn	16 41 29.6	+0.4
CDVI				eS	Sn	16 41 45.2	-0.2
STVI	Saint Thomas	1.12	288	⇓eP	Pn	16 41 31.6	+0.4
STVI				eS	Sn	16 41 47.9	-1.0
STVI	Saint Thomas	1.12	288	⇓eP	Pn	16 41 31.6	+0.4
STVI	Saint Thomas	1.12	288	⇓eP	Pn	16 41 31.6	+0.4
STVI				eS	Sn	16 41 47.8	-1.1
STVI	Saint Thomas	1.12	288	⇓eP	Pn	16 41 31.6	+0.4
STVI				eS	Sn	16 41 47.8	-1.1
HUMP	Col San Antoni	1.92	275	⇓eP	Pn	16 41 41.5	+1.1
HUMP	Col San Antoni	1.92	275	eS	Sn	16 42 05.3	0.0
HUMP	Col San Antoni	1.92	275	⇓eP	Pn	16 41 41.5	+1.1
HUMP				eS	Sn	16 42 05.3	0.0
HUMP	Col San Antoni	1.92	275	⇓eP	Pn	16 41 41.5	+1.1
HUMP				eS	Sn	16 42 05.3	0.0
CBYP	Canovanas	1.94	278	⇑eP	Pn	16 41 41.4	+0.6
CBYP	Canovanas	1.94	278	eS	Sn	16 42 04.7	-1.2
CBYP	Canovanas	1.94	278	⇑eP	Pn	16 41 41.4	+0.6
CBYP				eS	Sn	16 42 04.7	-1.2
CBYP	Canovanas	1.94	278	⇑eP	Pn	16 41 41.4	+0.6
CBYP				eS	Sn	16 42 04.7	-1.2
SJG	San Juan	2.20	273	⇑eP	Pn	16 41 44.9	+0.8
SJG				eS	Sn	16 42 10.3	-1.4
SJG	San Juan	2.20	273	⇓eP	Pn	16 41 44.8	+0.8
SJG				eS	Sn	16 42 10.2	-1.4
SJG	San Juan	2.20	273	⇓eP	Pn	16 41 44.8	+0.8
SJG				eS	Sn	16 42 10.2	-1.4
SJG	San Juan	2.20	273	⇓eP	Pn	16 41 44.8	+0.8
CELP	Cerrillos	2.61	272	⇓eP	Pn	16 41 50.0	+0.8
CELP				eS	Sn	16 42 20.6	-0.3
CELP	Cerrillos	2.61	272	⇓eP	Pn	16 41 50.0	+0.8
CELP				eS	Sn	16 42 20.6	-0.3
CELP	Cerrillos	2.61	272	⇓eP	Pn	16 41 50.0	+0.8
SEG	Port Louis	2.74	125	eP	Pn	16 41 50.9	0.0
AOPR	Arecibo Observ	2.79	278	⇑eP	Pn	16 41 52.1	+0.4
AOPR	Arecibo Observ	2.79	278	eS	Sn	16 42 25.0	-0.3
AOPR	Arecibo Observ	2.79	278	⇑eP	Pn	16 41 52.1	+0.4
AOPR				eS	Sn	16 42 25.0	-0.3
AOPR	Arecibo Observ	2.79	278	⇑eP	Pn	16 41 52.1	+0.4
AOPR				eS	Sn	16 42 25.0	-0.3
SSG	Sans Toucher	2.81	132	eP	Pn	16 41 53.2	+1.2
FNG	Fond-Bernard	2.82	133	eP	Pn	16 41 52.6	+0.5
GBPR	Guanica, Bosqu	2.90	270	⇓eP	Pn	16 41 53.8	+0.9
GBPR	Guanica, Bosqu	2.90	270	⇓eP	Pn	16 41 53.8	+0.9
GBPR	Guanica, Bosqu	2.90	270	⇓eP	Pn	16 41 53.8	+0.9
CRPR	Cabo Rojo, PR	3.11	271	⇑eP	Pn	16 41 56.3	+0.5
CRPR	Cabo Rojo, PR	3.11	271	⇑eP	Pn	16 41 56.3	+0.5
CRPR	Cabo Rojo, PR	3.11	271	⇑eP	Pn	16 41 56.3	+0.5
DEG	La Desirade	3.14	122	eP	Pn	16 41 55.6	-0.6
MGG	Marie-Galante	3.18	130	eP	Pn	16 41 57.2	+0.6
IDE	Isla Desecheo	3.48	277	⇑eP	Pn	16 42 01.1	+0.5
IDE	Isla Desecheo	3.48	277	eS	Sn	16 42 40.6	-0.7
IDE	Isla Desecheo	3.48	277	⇑eP	Pn	16 42 01.1	+0.5
IDE				eS	Sn	16 42 40.6	-0.7
IDE	Isla Desecheo	3.48	277	⇑eP	Pn	16 42 01.1	+0.5
IDE				eS	Sn	16 42 40.6	-0.7

*IDC **01** 16:45:11.7±0.8, 36°.92N×144°.72E, h0^{km}, mb3.6/9, mb1 3.9/13, mb1mx3.7/47, mbtmp3.7/13, ML3.4/4, Error ellipse: s-maj=25.8km s-min=17.1km az=126.0*

*ISCJB **01** 16:45:13.7±0.6, 36°.97N±0°.10×144°.55E±0°.08, h26^{km}, mb3.6/9, Error ellipse: s-maj=14.6km s-min=8.1km az=160.6*

ISC 01 16:45:15.3±0.8, 36°.9N±0°.1×144°.58E±0°.09, h26^{km}, n20, σ1^{s}38/16, mb3.7/9, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
MJAR	Matsushiro Arr	5.13	268	Pn	Pn	16 46 31.3	+0.9
	7.5nm,0.3s,baz=74,slow=9.5,SNR=36						
MAT	Matsushiro	5.13	268	P	Pn	16 46 31.7	+1.2
MAT				eS	Sn	16 47 27.9	-1.0
JHJ	Hachijo jima 2	5.42	228	Pn	Pn	16 46 36.2	+1.8
	5.9nm,0.3s,baz=60,slow=20,SNR=2.0						
JHJ				Sn	Sn	16 47 33.3	-2.7
	19nm,0.3s,baz=127,slow=23,SNR=6.1						
USRK	Ussuriysk Ar.	12.06	311	Pn	Pn	16 48 03.5	-1.9
	0.3nm,0.3s,baz=127,slow=13,SNR=4.7						
KSRS	Korea Array	13.31	278	Pn	Pn	16 48 24.6	+2.2
	0.2nm,0.3s,baz=92,slow=14,SNR=7.3						
H11N2	WAKE ISLAND Hy	25.92	125	T	T	17 17 51.2	
	baz=317,slow=74,SNR=44						

Code	Station Name	Δ°	AZ°	Op	ISC	Time	Res
H11N1	WAKE ISLAND Hy	25.93	125	T	T	17 17 52.0	
	baz=317,slow=74,SNR=19						
H11N3	WAKE ISLAND Hy	25.94	125	T	T	17 17 53.6	
	baz=317,slow=74,SNR=30						
SEY	Seymchan	26.55	8	P	P	16 50 50.2	-0.4
	2.5nm,0.8s,baz=188,slow=9.9,SNR=13						
H11S1	WAKE ISLAND Hy	26.68	127	T	T	17 18 59.0	
	baz=319,slow=76,SNR=8.6						
H11S3	WAKE ISLAND Hy	26.68	127	T	T	17 18 57.3	
	baz=319,slow=76,SNR=6.7						
H11S2	WAKE ISLAND Hy	26.69	127	T	T	17 18 55.2	
	baz=319,slow=76,SNR=3.0						
MKAR	Makanchi Array	46.36	303	P	P	16 53 39.8	+0.7
	0.4nm,0.9s,baz=88,slow=7.9,SNR=3.8						
ILAR	Eielson Array	48.29	32	P	P	16 53 52.9	-0.9
	0.9nm,0.9s,baz=263,slow=6.0,SNR=8.1						
INK	Inuvik	53.38	27	P	P	16 54 32.0	-0.1
	1.5nm,0.8s,baz=279,slow=7.1,SNR=6.5						
WRA	Warramunga Arr	57.31	191	P	P	16 55 01.6	+0.6
	0.5nm,0.5s,baz=11,slow=7.1,SNR=7.5						
ASAR	Alice Springs	61.03	191	P	P	16 55 27.6	+0.9
	0.3nm,0.5s,baz=6.0,slow=7.2,SNR=3.9						
YKA	Yellowknife Ar	62.67	31	P	P	16 55 36.8	-0.5
	0.4nm,0.8s,baz=298,slow=6.4,SNR=5.8						
PDAR	Pinedale Array	75.96	47	P	P	16 57 00.3	+0.2
	0.2nm,0.6s,baz=286,slow=3.4,SNR=3.6						
TXAR	Lajitas Array	88.19	54	P	P	16 58 04.3	0.0
	0.3nm,0.8s,baz=260,slow=3.5,SNR=3.0						

IDC 01 16:50:26.6±21.0**, 42°.09N**×**144°.66E, h0**km**, mb3.7**/2**, mb1 3.8**/3**, mb1mx3.2**/37**, mbtmp3.6**/3**, ML3.5**/1**, MS3.3**/3**, Ms1 3.3**/3**, ms1mx2.7**/44**, Error ellipse: s-maj=550.6km s-min=76.3km az=158.0, Hokkaido region**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
MJAR	Matsushiro Arr	7.46	224	Pn	Pn	16 52 17.3	+0.5
	0.8nm,0.3s,baz=67,slow=11,SNR=6.5						
KLR	Kul'dur	11.50	313	LR	LR	16 57 55.3	
	comp=Z,70nm,21.6s,baz=292,slow=39						
KDAK	Kodiak Island	41.72	46	LR	LR	17 15 30.8	
	comp=Z,26nm,18.3s,baz=65,slow=36						
WRA	Warramunga Arr	62.46	191	P	P	17 00 51.5	-0.1
	1.1nm,1.0s,baz=11,slow=7.1,SNR=8.4						
ASAR	Alice Springs	66.18	191	P	P	17 01 15.9	0.0
	0.4nm,0.8s,baz=6.1,slow=7.5,SNR=5.0						
MLR	Muntele Rosu	77.10	321	LR	LR	17 37 26.3	
	comp=Z,57nm,19.0s,baz=193,slow=37						

*THE **01** 16:50:48.3, 42°.37N×20°.64E, h26km±14km, ML2.7/2, Error ellipse: s-maj=20.7km s-min=1.3km az=38.0*
*PDG **01** 16:50:49.4±0.2, 41°.95N×20°.36E, h11km, ML2.5/9, Error ellipse: s-maj=0.5km s-min=0.5km az=0.0*
*CSEM **01** 16:50:50.4±0.3, 41°.99N×20°.31E, h10km, ML2.5, Error ellipse: s-maj=5.4km s-min=4.6km az=35.0*
*BEO **01** 16:50:53.0±0.4, 42°.02N×20°.37E, h7km±4km, M2.2/9*
ISC 01 16:50:50.1±1.0**, 41°.96N**±0°.02×**20°.31E**±0°.02**, h10**km±9km**, n58,** σ1ˢ.**18**/104**, 12C-13D, Albania**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
ZATK	Zatriq	0.54	25	P	Pg	16 50 59.9	-0.8
PEJK	Peje	0.69	358	P	Pg	16 51 02.3	-1.1
PVY	Plav	0.69	338	⇓*i*Pg	Pg	16 51 02.2	-1.3
PVY				*e*Sg	Sb	16 51 14.1	+0.1
PVY	Plav	0.69	338	⇓*i*Pg	Pg	16 51 02.2	-1.3
PVY				*e*Sg	Sb	16 51 14.1	+0.1
TIR	Tirane	0.69	209	*e*Pg	Pn	16 51 06.3	+0.3
TIR	Tirane	0.69	209	*e*Pg	Pn	16 51 06.3	+0.3
ULC	Ulcinj	0.80	271	⇑*i*Pg	Pg	16 51 05.1	-0.4
ULC				*e*Sg	Sn	16 51 18.0	-1.4
ULC	Ulcinj	0.80	271	⇑*i*Pg	Pg	16 51 05.1	-0.4
ULC				*e*Sg	Sn	16 51 18.0	-1.4
DRME	Dracevica, Mon	0.87	286	⇓*i*Pg	Pg	16 51 06.0	-0.9
DRME				*e*Sg	Sn	16 51 20.6	-0.6
DRME	Dracevica, Mon	0.87	286	⇓*i*Pg	Pg	16 51 06.0	-0.9
DRME				*e*Sg	Sn	16 51 20.6	-0.6
PDG	Podgorica	0.92	301	P	Pg	16 51 05.4	-2.4
PDG				S	Sb	16 51 20.8	+0.4
PDG	Podgorica	0.92	301	*e*Pg	Pn	16 51 09.3	+0.2
PDG				*e*Sg	Sn	16 51 23.3	+1.0
PDG	Podgorica	0.92	301	P	Pg	16 51 05.4	-2.4
PDG	Podgorica	0.92	301	⇓*i*Pg	Pg	16 51 06.9	-0.9
PDG				S	Sb	16 51 20.8	+0.4
PDG				*e*Sg	Sn	16 51 21.9	-0.4
TTG	Podgorica	0.92	301	⇓*i*Pg	Pg	16 51 06.9	-0.9
TTG				*e*Sg	Sn	16 51 21.9	-0.4
BEY	Berane	0.97	341	P	Pg	16 51 08.0	-0.7
BEY				*e*Sg	Sn	16 51 23.2	-0.5
IVA	Berane	0.97	341	⇓*i*Pg	Pg	16 51 08.0	-0.7
IVA				*e*Sg	Sn	16 51 23.2	-0.5
GJIK	Gjilan	0.97	58	P	Pb	16 51 08.7	-0.5
GJIK				S	Sn	16 51 22.5	-1.4
BUM	Brajici-Budva	1.11	289	⇑*i*Pg	Pb	16 51 10.8	-0.7
BUM				*e*Sg	Sn	16 51 28.3	+1.1
BUM	Brajici-Budva	1.11	289	⇑*i*Pg	Pb	16 51 10.8	-0.7
BUM				*e*Sg	Sn	16 51 28.3	+1.1
CEME	Cevo	1.19	300	⇓*i*Pg	Pb	16 51 11.4	-1.5
CEME				*e*Sg	Sn	16 51 31.4	+2.2
CEME	Cevo	1.19	300	⇓*i*Pg	Pb	16 51 11.4	-1.5
CEME				*e*Sg	Sn	16 51 31.4	+2.2
BIA	Bitola	1.21	141	P	Pg	16 51 12.6	-0.7
BIA				S	Sn	16 51 30.4	+0.8
BIA	Bitola	1.21	141	P	Pg	16 51 12.6	-0.7
BIA				S	Sn	16 51 30.4	+0.8
NKME	Niksic	1.29	309	⇓*i*Pg	Pn	16 51 13.6	-0.7
NKME				*e*Sg	Sg	16 51 34.4	+2.7
NKME	Niksic	1.29	309	⇓*i*Pg	Pn	16 51 13.6	-0.7
NKME				*e*Sg	Sg	16 51 34.4	+2.7
NKY	Niksic	1.30	312	⇑*i*Pg	Pb	16 51 14.2	-0.5
NKY				*e*Sg	Sg	16 51 35.0	+3.0
NKY	Niksic	1.30	312	⇑*i*Pg	Pb	16 51 14.2	-0.5
NKY				*e*Sg	Sg	16 51 35.0	+3.0
SJES	Sjenica	1.33	349	*i* Pg	Pb	16 51 14.7	-0.5
SJES				*e*Sg	Sg	16 51 33.2	+0.3
SJES	Sjenica	1.33	349	*i* Pg	Pb	16 51 14.7	-0.5
SJES				*e*Sg	Sg	16 51 33.2	+0.3
SELS	Selova	1.40	25	*e*Pg	Pg	16 51 16.2	-0.7
SELS				*e*Sg	Sg	16 51 35.7	+0.7
BARS	Barje	1.41	52	*e*Pg	Pb	16 51 16.1	-0.4
BARS				*e*Sg	Sg	16 51 36.3	+0.9
FNA	Florina	1.42	145	P	Pb	16 51 15.8	-0.9
FNA				S	Sg	16 51 36.5	+0.7
FNA	Florina	1.42	145	P	Pb	16 51 15.8	-0.9
FNA				S	Sg	16 51 36.5	+0.7
HCY	Herceg Novi	1.44	291	⇑*i*Pg	Pn	16 51 16.0	-0.3
HCY				*e*Sg	Sg	16 51 39.0	+2.6
HCY	Herceg Novi	1.44	291	⇑*i*Pg	Pn	16 51 16.0	-0.3
HCY				*e*Sg	Sg	16 51 39.0	+2.6
PLE	Pljevlja	1.53	334	⇓*i*Pg	Pn	16 51 17.5	-0.2
PLE				*e*Sg	Sg	16 51 40.8	+1.4
PLE	Pljevlja	1.53	334	⇓*i*Pg	Pn	16 51 17.5	-0.2
PLE				*e*Sg	Sg	16 51 40.8	+1.4
BRY	Bratogost	1.62	306	⇑*i*Pn	Pb	16 51 19.9	-0.3
BRY				*e*Sn	Sg	16 51 43.5	+1.4
BRY	Bratogost	1.62	306	⇑*i*Pn	Pb	16 51 19.9	-0.3
BRY				*e*Sn	Sg	16 51 43.5	+1.4
UPM	Unac-Piva	1.62	321	⇑*i*Pn	Pb	16 51 19.8	-0.5
UPM				*e*Sn	Sg	16 51 43.6	+1.3
UPM	Unac-Piva	1.62	321	⇑*i*Pn	Pb	16 51 19.8	-0.5
UPM				*e*Sn	Sg	16 51 43.6	+1.3
IVAS	Ivanjica	1.62	356	*e*Pg	Pb	16 51 19.9	-0.3
IVAS				*e*Sg	Sg	16 51 43.1	+0.8
IVAS	Ivanjica	1.62	356	*e*Pg	Pb	16 51 19.9	-0.3
IVAS				*e*Sg	Sg	16 51 43.1	+0.8
NEST	Nestorio	1.64	160	P	Pb	16 51 20.2	-0.3
NEST				S	Sg	16 51 44.1	+1.3
NEST	Nestorio	1.64	160	P	Pb	16 51 20.2	-0.3
NEST				S	Sg	16 51 44.1	+1.3
GRG	Griva	1.86	122	P	Pb	16 51 23.2	-1.0
GRG	Griva	1.86	122	P	Pb	16 51 23.2	-1.0
GRUS	Gruza	1.95	9	*e*Pn	Pb	16 51 25.8	0.0
GRUS	Gruza	1.95	9	*e*Pn	Pb	16 51 25.8	0.0
STON	Ston	2.14	296	*e*Pn	Pb	16 51 27.8	-1.1
STON				Sn	Sg	16 51 57.1	-1.7
STON	Ston	2.14	296	*e*Pn	Pb	16 51 27.8	-1.1
STON				Sn	Sg	16 51 57.1	-1.7
DIVS	Divibare	2.15	354	*e*Pn	Pb	16 51 28.3	-1.0
DIVS				*e*Sg	Sg	16 51 59.6	+0.3
DIVS	Divibare	2.15	354	*e*Pn	Pb	16 51 28.3	-1.0
DIVS				*e*Sg	Sg	16 51 59.6	+0.3
TRUS	Trudelj	2.27	2	*e*Pn	Pb	16 51 31.3	+0.2
TRUS	Trudelj	2.27	2	*e*Pn	Pb	16 51 31.3	+0.2
TEKS	Tekeris	2.65	348	*e*Pn	Pn	16 51 34.7	+1.7
TEKS	Tekeris	2.65	348	*e*Pn	Pn	16 51 34.7	+1.7

WEL 01 16:53:47.6±0.4**, 38°.15S**×**176°.21E, h164**km±4km**, ML3.5**/15**, 10C-2D, Error ellipse: s-maj=2.4km s-min=2.3km az=0.0, North Island**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
TLZ	Tolley Road	0.56	251	⇑PN	Pn	16 54 11.5	+0.7
MRHZ	Matea Rd	0.70	166	⇑PN	Pn	16 54 11.6	0.0
MRHZ				SN	Sn	16 54 29.2	-1.1
URZ	Urewera	0.72	99	⇑PN	Pn	16 54 11.4	-0.3
URZ				SN	Sn	16 54 28.8	-1.3
URZ				AML	AML	16 54 29.9	
RITZ	Rihia Road	0.87	198	PN	Pn	16 54 13.0	+0.2
RAGZ	Rawiri	1.01	110	PN	Pn	16 54 14.2	+0.3
RAGZ				SN	Sn	16 54 33.6	-0.4
RAHZ	Arahi	1.03	138	PN	Pn	16 54 14.4	+0.5
BKZ	Black Stump Fm	1.04	168	⇑PN	Pn	16 54 13.9	-0.1
BKZ				AML	AML	16 54 33.6	
MWZ	Matawai	1.06	100	PN	Pn	16 54 14.2	0.0
MWZ				AML	AML	16 54 34.5	
MWZ				AML	AML	16 54 34.9	
TUVZ	Tukino	1.20	201	⇑PN	Pn	16 54 15.6	+0.1
FWVZ	Far West T-bar	1.22	205	⇑PN	Pn	16 54 15.8	0.0
WHHZ	Waihua	1.23	139	PN	Pn	16 54 15.9	+0.3
WNVZ	Wahianoa	1.27	202	⇑PN	Pn	16 54 16.1	-0.1
ARHZ	Aropaoanui	1.27	151	PN	Pn	16 54 16.5	+0.5
ARHZ				SN	Sn	16 54 37.6	-0.4
MOVZ	Moawhango	1.30	196	PN	Pn	16 54 15.9	-0.5
HAZ	Te Kaha	1.31	73	PN	Pn	16 54 15.8	-0.5
PKVZ	Pokaka	1.32	210	PN	Pn	16 54 16.5	-0.1
TKGZ	Te Karaka	1.32	103	PN	Pn	16 54 15.7	-0.8
BHHZ	Black Hill Sta	1.34	185	⇑PN	Pn	16 54 16.4	-0.4
RIGZ	Rimuhau	1.34	115	PN	Pn	16 54 17.1	+0.4
MTVZ	Mangateitei	1.36	205	PN	Pn	16 54 16.9	-0.1
TWGZ	Tauwhareparae	1.40	92	PN	Pn	16 54 17.7	+0.4
KNZ	Kokohu	1.44	128	PN	Pn	16 54 17.7	+0.1
KRHZ	Kereru	1.50	175	PN	Pn	16 54 18.0	-0.2
PRGZ	Paritu Road	1.52	121	PN	Pn	16 54 18.6	+0.1
CNGZ	Carnagh Statio	1.61	103	PN	Pn	16 54 19.7	+0.4
PUZ	Puketiti	1.62	88	PN	Pn	16 54 19.4	0.0
CKHZ	Cape Kidnapper	1.65	156	PN	Pn	16 54 19.9	+0.2
MHGZ	Mahia Peninsul	1.67	127	PN	Pn	16 54 20.3	+0.3
KAHZ	Kahuranaki	1.72	163	⇑PN	Pn	16 54 20.7	+0.1
PNHZ	Pukenui	1.76	180	PN	Pn	16 54 20.3	-0.7
MXZ	Matakaoa Point	1.76	71	PN	Pn	16 54 21.1	+0.1
WMGZ	Waiomatatini S	1.78	80	⇓PN	Pn	16 54 21.1	0.0
WAZ	Wanganui	1.86	210	PN	Pn	16 54 21.8	-0.2
TSZ	Takapari Road	1.92	186	PN	Pn	16 54 21.9	-0.7
WPHZ	Waipukurau	1.92	175	PN	Pn	16 54 22.2	-0.5
PXZ	Pawanui	1.95	165	⇑PN	Pn	16 54 22.5	-0.4
PRHZ	Porangahau	2.14	171	PN	Pn	16 54 24.4	-0.7
POWZ	Post Office Ro	2.27	189	PN	Pn	16 54 25.4	-1.2
ANWZ	Angora Road	2.32	175	PN	Pn	16 54 26.4	-0.8
PRWZ	Pori Road	2.41	184	PN	Pn	16 54 27.3	-1.0
BFZ	Birch Farm	2.53	179	PN	Pn	16 54 28.3	-1.5
MRZ	Mangatainoka R	2.56	191	PN	Pn	16 54 28.3	-1.7
TIWZ	Tintock	2.63	185	⇓PN	Pn	16 54 29.5	-1.6
OGWZ	Otaki Gorge	2.78	196	PN	Pn	16 54 31.1	-1.6
HOWZ	Holdsworth Sta	2.80	191	PN	Pn	16 54 30.9	-2.1
KIW	Kapiti Island	2.89	200	PN	Pn	16 54 31.9	-2.2
TMWZ	Te Maipa	2.96	185	PN	Pn	16 54 33.0	-2.1
MTW	Mount Morrison	3.05	190	PN	Pn	16 54 32.3	-3.8
CAW	Cannon Point	3.08	196	PN	Pn	16 54 34.3	-2.2
PAWZ	Paruwai Farm	3.28	190	PN	Pn	16 54 36.4	-2.6
MSWZ	Moikau Station	3.34	192	PN	Pn	16 54 37.1	-2.7
TCW	Tory Channel	3.40	205	PN	Pn	16 54 38.3	-2.2
PLWZ	Palliser	3.49	192	PN	Pn	16 54 38.8	-2.9
TUWZ	Tuamarina	3.71	207	AML	AML	16 56 02.7	
QRZ	Quartz Range	3.90	226	PN	Pn	16 54 43.5	-3.4
MQZ	McQueen's Vall	6.17	205	PN	Pn	16 55 11.5	-5.1

JMA 01 16:58:43.6±0.5**, 39°.94N**×**143°.39E, h4**km±4km**, M3.5, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
JTH	Tanohata	1.17	270	P	Pg	16 59 05.5	-0.6
MIYJ	Miyakonagasawa	1.26	254	P	Pg	16 59 07.7	-0.1
JANG	Nango	1.50	287	P	Pn	16 59 11.0	-0.3
JKZ	Kuzumaki	1.58	272	P	Pn	16 59 12.7	+0.2
JKZ				S	Sb	16 59 34.1	+0.2
OFUJ	Ofunato	1.58	238	P	Pn	16 59 12.5	+0.1
JOM	Ohasama	1.68	255	P	Pn	16 59 14.3	+0.5
JMK	Ichinoseki	1.95	240	P	Pn	16 59 17.7	+0.3
JTM	Tenmabayashi	1.96	296	P	Pn	16 59 18.8	+1.1
JAH	Hinai	2.13	278	P	Pn	16 59 20.9	+1.0

*ISCJB **01** 16:59:02.0±0.6, 7°.29N±0°.06×81°.35W±0°.03, h10km, mb3.6/4, MS3.5/3, Error ellipse: s-maj=8.1km s-min=4.1km az=12.8*
*CASC **01** 16:59:02.6±1.6, 7°.42N×81°.40W, h0km±14km, MD4.9, ML4.2*
*IDC **01** 16:59:09.0±4.5, 8°.98N×80°.85W, h0km, mb3.6/4, mb1 4.0/7, mb1mx3.6/36, mbtmp3.8/7, ML3.3/3, MS3.5/6, Ms1 3.5/6, ms1mx3.3/31, Error ellipse: s-maj=127.9km s-min=25.7km az=11.0*
ISC 01 16:59:02.5±1.1**, 7°.42N**±0°.08×**81°.28W**±0°.03**, h10**km**, n31,** σ1ˢ.**28**/29**, mb3.7**/4**, MS3.4**/3**, 1C-1D, Panama**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
AZU	Azuero	1.06	70	*i* P	Pb	16 59 22.3	-0.7
AZU				*e*S	Sn	16 59 39.4	+1.1
PNME	Penonome	1.42	42	*e*P	Pg	16 59 28.8	-0.9
PNME				*e*S	Sg	16 59 49.6	+1.4
BRU	Baru	1.87	317	⇑*i*P	Pb	16 59 35.3	-1.8
BRU2	Volcan	1.95	314	*e*P	Pn	16 59 35.8	-0.2
BRU2				*e*S	Sg	17 00 03.3	-2.1
ZANG	Zanguenga, Cho	2.07	42	*e*P	Pb	16 59 39.6	-0.6
ZANG				AML	AML	17 00 14.9	
	comp=E,3μm,0.5s						
PINA	Piqa, Costa Ab	2.18	33	*e*P	Pb	16 59 41.2	-0.9
BCIP	Isla Barro Col	2.24	39	⇓*i*P	Pb	16 59 42.2	-1.0
BCIP				*e*S	Sg	17 00 12.5	-2.2
BCIP	Isla Barro Col	2.24	39	*e*P	Pb	16 59 42.0	-1.2
BCIP				*e*S	Sg	17 00 14.1	-0.6
BUS	Buena Vista	3.24	311	*e*P	Pn	16 59 54.0	+0.1
BUS				*e*S	Sg	17 00 46.4	-0.5
UPD2	Meteti	3.42	71	*e*P	Pb	17 00 02.3	-1.0
URSC	Urasca	3.44	314	*e*P	Pn	16 59 56.9	+0.4
URSC				*e*S	Sg	17 00 52.6	-0.7
QCR	Quepos	3.48	305	*e*P	Pn	16 59 57.4	+0.6
SOLC	Bahia Solano	4.02	107	*e*P	Pn	17 00 03.7	-0.6
CGA2	Cerro Gallo 2	4.07	310	*e*P	Pn	17 00 07.7	+2.6
JCR	Jicaral	4.49	303	*e*P	Pb	17 00 15.6	-6.0
JTS	JuntasAbangare	4.62	308	Pn	Pn	17 00 14.4	+2.0
	comp=E,5.3nm,0.3s,baz=160,slow=9.7,SNR=24						
JTS				Sn	Sn	17 01 08.6	+2.5
	baz=135,slow=20,SNR=2.2						
JTS				LR	LR	17 02 11.0	
	comp=E,606nm,19.4s,baz=126,slow=43						
DBBC	Dabeiba	5.04	94	*e*P	Pn	17 00 20.1	+1.7
MOTC	Monteria, Cord	5.72	76	*e*P	Pn	17 00 30.8	+3.2
HELC	Santa Helena	5.84	102	*e*P	Pn	17 00 32.1	+2.5
GUYC	Guyana, Colomb	6.25	110	*e*P	Pn	17 00 38.4	+3.1
NORC	Norcasia	6.63	106	*e*P	Pn	17 00 44.2	+4.0
CHIC	Chingaza	8.00	110	*e*P	Pn	17 01 04.4	+5.1
SDV	Santo Domingo	10.64	81	Pn	Pn	17 01 36.2	+0.8
	comp=E,0.3nm,0.3s,baz=251,slow=15,SNR=3.3						
SDV				LR	LR	17 07 01.1	
	comp=E,173nm,18.8s,baz=266,slow=47						
CMIG	Matias Romero	16.39	307	Pn	P	17 02 54.1	-1.6
	comp=E,0.3nm,0.3s,baz=118,slow=13,SNR=6.7						
CMIG				LR	LR	17 09 46.9	
	comp=E,123nm,20.3s,baz=137,slow=40						
LPAZ	La Paz	26.91	151	LR	LR	17 18 02.9	
	comp=E,84nm,18.1s,baz=2.0,slow=40						
TKL	Tuckaleechee C	28.20	356	LR	LR	17 15 38.2	
	comp=E,97nm,20.1s,baz=186,slow=37						
BDFB	Brasilia	40.13	125	LR	LR	17 23 30.0	
	comp=E,101nm,21.4s,baz=318,slow=36						
YKA	Yellowknife Ar	60.11	343	P	P	17 09 08.6	-1.2
	comp=E,0.5nm,1.0s,baz=135,slow=7.1,SNR=4.6						
INK	Inuvik	69.82	342	P	P	17 10 12.9	0.0
	comp=E,1.1nm,0.9s,baz=112,slow=5.4,SNR=3.4						
ILAR	Eielson Array	73.05	336	P	P	17 10 33.2	+0.6
	comp=E,0.5nm,0.8s,baz=98,slow=4.1,SNR=4.4						
GERES	GERESS Array B	87.74	41	P	P	17 11 53.0	+1.0
	comp=E,0.2nm,0.5s,baz=290,slow=2.9,SNR=3.7						

*IDC **01** 17:02:25.3±2.3, 38°.57N×142°.55E, h0km, mb3.5/4, mb1 3.7/6, mb1mx3.3/49, mbtmp3.6/6, ML3.2/2, Error ellipse: s-maj=59.2km s-min=25.1km az=70.0*
*ISCJB **01** 17:02:30.9±1.3, 38°.38N±0°.05×142°.3E±0°.1, h47km±12km, mb3.6/4, Error ellipse: s-maj=16.8km s-min=7.6km az=18.5*
*JMA **01** 17:02:31.2±0.1, 38°.40N×142°.24E, h33km±2km, M3.7*
ISC 01 17:02:30.4±2.2**, 38°.40N**±0°.05×**142°.3E**±0°.1**, h28**km±14km**, n16,** σ0ˢ.**98**/22**, mb3.8**/4**, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
JIO	Ouri	0.71	275	P	Pb	17 02 44.5	+0.3
JIO				S	Sb	17 02 53.5	-0.1
OFUJ	Ofunato	0.82	326	P	Pb	17 02 46.2	+0.1
JMK	Ichinoseki	0.98	305	P	Pb	17 02 48.8	+0.1
MIYJ	Miyakonagasawa	1.22	344	P	Pn	17 02 51.9	+0.2
MIYJ				S	Sn	17 03 07.1	-0.2
JOU	Okura	1.25	269	P	Pb	17 02 53.2	-0.1
JOU				S	Sb	17 03 08.5	-0.5
JMM	Marumori	1.27	246	P	Pn	17 02 52.6	+0.4
JMM				*e*S	Sn	17 03 07.5	-0.8
JOM	Ohasama	1.31	325	P	Pb	17 02 53.9	-0.4
JOM				*e*S	Sb	17 03 10.5	-0.2
JYK	Kaneyama	1.57	290	P	Pb	17 02 57.8	-1.0
JRG	Rokugo	1.61	309	P	Pb	17 02 58.8	-0.6
JYS	Shirataka	1.73	265	P	Pn	17 02 59.9	+1.3
MJAR	Matsushiro Arr	3.71	241	Pn	Pn	17 03 27.9	+2.1
	0.8nm,0.3s,baz=65,slow=12,SNR=6.7						
JHJ	Hachijo jima 2	5.64	202	Pn	Pn	17 03 53.0	+0.7
	3.0nm,0.3s,baz=60,slow=22,SNR=2.5						
JHJ				Sn	Sn	17 04 53.5	-2.7
	11nm,0.3s,baz=80,slow=23,SNR=4.3						
MKAR	Makanchi Array	43.97	301	P	P	17 10 35.0	-0.1
	0.1nm,0.4s,baz=66,slow=6.3,SNR=4.3						
KURBB	Kurchatov Arra	45.70	307	P	P	17 10 48.2	-0.5
	0.6nm,0.4s,baz=81,slow=8.1,SNR=9.6						
WRA	Warramunga Arr	58.50	189	P	P	17 12 24.8	+0.7
	0.8nm,0.7s,baz=5.4,slow=6.8,SNR=4.5						
ASAR	Alice Springs	62.23	189	P	P	17 12 50.1	+0.6
	0.4nm,0.7s,baz=8.6,slow=5.5,SNR=7.2						

*NIED **01** 17:03:00, 40°.30N×143°.50E, h20km, Mw5.6 Best double couple: $M_0$2.54000×10^{17} NP1:ϕ_s157.00000°, δ28.00000°, λ35.00000°. NP2:ϕ_s36.00000°, δ75.00000°, λ114.00000°.*
*IDC **01** 17:03:42.6±0.4, 40°.24N×143°.39E, h0km, mb4.9/38, mb1 5.0/46, mb1mx5.0/51, mbtmp4.9/46, ML4.3/7, MS5.1/38, Ms1 5.1/38, ms1mx5.0/45, Error ellipse: s-maj=11.7km s-min=10.0km az=148.0*
*JMA **01** 17:03:43.3±0.4, 40°.30N×143°.37E, h3km±3km, M5.5*
JMA Felt III J1.
*BJI **01** 17:03:44.5, 40°.22N×143°.13E, h19km, mb5.4/84, mB5.6/65, Ms5.6/95, Ms7 5.4/88*
*ISCJB **01** 17:03:45.4±0.6, 40°.33N±0°.02×143°.25E±0°.02, h23km±3km, mb5.3/184, MS5.2/218, Error ellipse: s-maj=3.4km s-min=2.2km az=146.9*
*NEIC **01** 17:03:46.4±0.5, 40°.28N×143°.21E, h20km±3km, mb5.4/2, MS5.2/142, MW5.5, Error ellipse: s-maj=3.6km s-min=2.3km az=146.0, Moment Tensor Solution. s53 Moment tensor: Scale 10^{17}Nm; M_{rr}0.88; $M_{\theta\theta}$0.20; $M_{\phi\phi}$-1.08; $M_{r\theta}$0.93; $M_{\theta\phi}$-0.15; $M_{\phi r}$1.55; Best double couple: $M_0$2.10000×10^{17} NP1:ϕ_s163.00000°, δ18.00000°, λ47.00000°. NP2:ϕ_s28.00000°, δ77.00000°, λ103.00000°. Principal axes: T 2.0500, Plg56.0000°, Azm315.0000°; N 0.0400, Plg12.0000°, Azm205.0000°; P -2.0900, Plg31.0000°, Azm108.0000°;*
NEIC Recorded [3 JMA] in Aomori.
*GCMT **01** 17:03:46.4±0.1, 40°.27N×143°.54E, h22km, MW5.6/129, Moment Tensor Solution. s94,c172; s129,c302; Duration: 1ˢ.5 Moment tensor: Scale 10^{17}Nm; M_{rr}1.95±.04; $M_{\theta\theta}$-0.10±.02; $M_{\phi\phi}$-1.85±.03; $M_{r\theta}$0.88±.05; $M_{\theta\phi}$-0.41±.02; $M_{\phi r}$2.09±.06; Best double couple: $M_0$2.98700×10^{17} NP1:ϕ_s20.00000°, δ70.00000°, λ95.00000°. NP2:ϕ_s185.00000°, δ21.00000°, λ76.00000°. Principal axes: T 3.0090, Plg65.0000°, Azm299.0000°; N -0.0470, Plg5.0000°, Azm198.0000°; P -2.9650, Plg25.0000°, Azm106.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface/mantle waves, cutoff=50s.*
*MOS **01** 17:03:46.7±1.0, 40°.41N×143°.19E, h29km, mb5.6/41, MS5.4/42 Error ellipse: s-maj=5.9km s-min=3.7km az=106.4*
ISC 01 17:03:46.8±0.3**, 40°.34N**±0°.03×**143°.33E**±0°.03**, h27**km±2km**, h26**km**:pP-P, n1064,** σ1ˢ.**77**/1091**, mb5.4**/205**, MS5.2**/222**, 62C-35D, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
JTH	Tanohata	1.19	251	⇑P	Pn	17 04 06.2	-1.5
JTH				*e*S	Sn	17 04 22.8	-0.2
JANG	Nango	1.38	272	⇑P	Pn	17 04 09.7	-0.7
MIYJ	Miyakonagasawa	1.38	237	P	Pn	17 04 09.6	-0.8
MIYJ				*e*S	Sn	17 04 28.0	+0.2
JKZ	Kuzumaki	1.57	258	P	Pn	17 04 12.3	-0.7
ERM	Erimo	1.68	356	*ce*P	Pn	17 04 14.4	-0.1
ERM				pmax	pmax		
	comp=Z,584nm,1.2s						
ERM	Erimo	1.68	356	*e*Pn	Pn	17 04 13.5	-1.0
JEM	Erimo	1.68	356	P	Pn	17 04 14.5	0.0
JTM	Tenmabayashi	1.78	285	P	Pn	17 04 16.1	+0.3
JTM				*e*S	Sb	17 04 40.1	-0.5
JOM	Ohasama	1.79	242	⇑P	Pn	17 04 15.6	-0.3
OFUJ	Ofunato	1.79	226	⇑P	Pn	17 04 14.9	-1.1
JNBK	Urakawa-nobuka	1.99	348	P	Pn	17 04 19.3	+0.6
JOT	Ohata	2.02	302	P	Pn	17 04 20.0	+0.9
JAH	Hinai	2.06	267	P	Pn	17 04 20.3	+0.6
JMK	Ichinoseki	2.13	230	P	Pn	17 04 20.4	-0.3
JRG	Rokugo	2.27	247	P	Pn	17 04 23.6	+0.9
JCH	Churui	2.28	1	P	Pn	17 04 22.0	-0.7
JCH				*e*S	Sn	17 04 50.6	+0.7
JKB	Kayabe	2.33	313	P	Pn	17 04 24.0	+0.7
JSI2	Shiura 2	2.33	289	P	Pn	17 04 24.3	+0.9
JIO	Ouri	2.42	220	P	Pn	17 04 23.7	-1.0
JYW	Yuwa	2.52	253	P	Pn	17 04 27.0	+0.9
JAR	Ashorobuto	2.98	6	P	Pn	17 04 31.4	-0.9
JAR				*e*S	Sn	17 05 05.6	-1.5
YUK	Yuzh-Kuril'sk	4.15	26	*e*P	Pn	17 04 47.0	-1.4
YUK				*e*S	Sn	17 05 33.4	-2.6
YUK				pmax	pmax		
	comp=Z,2μm,0.3s						
YUK				pmax	pmax		
	comp=N,1μm,0.5s						
YUK				pmax	pmax		
	comp=E,696nm,0.3s						
YUK				MLR	MLR		
	comp=Z,19μm,19.0s						
YUK				MLR	MLR		
	comp=N,17μm,7.0s						
YUK				MLR	MLR		
	comp=E,29μm,14.0s						
SHO	Shikotan	4.39	35	*e*P	Pn	17 04 49.1	-2.6
SHO				*e*S	Sn	17 05 37.3	-4.6
SHO				pmax	pmax		
	comp=Z,2μm,0.5s						
SHO				pmax	pmax		
	comp=E,452nm,0.3s						
SHO				pmax	pmax		
	comp=N,665nm,0.6s						
MJAR	Matsushiro Arr	5.52	228	Pn	Pn	17 05 07.2	-0.1
	comp=N,29nm,0.3s,baz=30,slow=12,SNR=170						
MJAR				LR	LR	17 07 29.5	
	comp=N,20μm,19.1s,baz=40,slow=41						
MAJO	Matsushiro	5.52	228	*c i*P	Pn	17 05 08.8	+1.5
MAJO	Matsushiro	5.52	228	*e*Pn	Pn	17 05 08.0	+0.7
MAT	Matsushiro	5.52	228	P	Pn	17 05 07.8	+0.5

MAT S **Sn** **17 06 12.9 +3.0**
KUR Kuril'sk 5.92 33 ⇑*i*P **Pn** **17 05 11.1 -1.7**
KUR *e*S **Sn** **17 06 16.4 -3.3**
KUR pmax pmax
comp=Z,988nm,0.5s
KUR pmax pmax
comp=N,344nm,0.3s
KUR pmax pmax
comp=E,222nm,0.4s
KUR MLR MLR
comp=Z,12μm,16.0s
KUR MLR MLR
comp=N,9μm,13.0s
KUR MLR MLR
comp=E,12μm,16.0s
YSS Yuzh-Sakhalins 6.63 357 *αe*P **Pn** **17 05 23.0 +0.6**
YSS *e*S **Sn** **17 06 38.4 +1.3**
YSS pmax pmax
comp=Z,20nm,0.8s
YSS MLR MLR
comp=N,16μm,14.0s
YSS MLR MLR
comp=Z,22μm,14.0s
YSS MLR MLR
comp=E,4μm,15.0s
YSS Yuzh-Sakhalins 6.63 357 *e*Pn **Pn** **17 05 23.1 +0.7**
YSS *e*Sn **Sn** **17 06 34.3 -2.8**
INU Inuyama 7.05 227 *e*Pn **Pn** **17 05 29.3 +1.0**
JHJ2 Mitsune 7.74 202 *e*Pn **Pn** **17 05 34.5 -3.2**
JHJ2 *e*Sn **Sn** **17 06 56.4 -8.1**
JHJ Hachijo jima 2 7.74 203 Pn **Pn** **17 05 35.4 -2.4**
comp=E,65nm,0.3s,baz=325,slow=18,SNR=28
JHJ Sn **Sn** **17 06 57.0 -7.6**
comp=E,77nm,0.3s,baz=112,slow=24,SNR=5.7
JHJ LR LR 17 08 17.8
comp=E,6μm,20.1s,baz=54,slow=36
UGL Uglegorsk 8.79 355 *e*P Pn 17 06 01.5 +9.5
UGL pmax pmax
comp=Z,92nm,0.7s
UGL MLR MLR
comp=Z,23μm,16.0s
UGL MLR MLR
comp=N,25μm,18.0s
UGL MLR MLR
comp=E,22μm,20.0s
USRK Ussuriysk Ar. 9.25 298 Pn **Pn** **17 06 00.2 +1.8**
comp=E,4.3nm,0.3s,baz=99,slow=12,SNR=109
USRK LR LR 17 09 40.6
comp=E,21μm,18.5s,baz=87,slow=38
HABR Khabarovsk 10.06 327 *ce*P **Pn** **17 06 07.6 -1.8**
HABR *e*S **Sn** **17 07 58.6 -2.7**
HABR pmax pmax
comp=Z,24nm,1.4s
HABR pmax pmax
comp=N,82nm,2.2s
HABR pmax pmax
comp=E,150nm,2.2s
HABR MLR MLR
comp=Z,6μm,15.0s
TYV Tymovskoe 10.54 358 *e*P **Pn** **17 06 17.5 +1.5**
TYV pmax pmax
comp=Z,44nm,0.8s
MDJ Mudanjiang 11.01 297 P **Pn** **17 06 25.8 +3.3**
MDJ S Sn 17 08 34.5 +10
MDJ pmax pmax
comp=Z,220nm,1.0s
MDJ pmax pmax
comp=Z,2μm,8.0s
MDJ LR LR
comp=Z,8μm,15.4s
MDJ LR LR
comp=Z,14μm,19.1s
MDJ LR LR
comp=Z,24μm,17.2s
MDJ Mudanjiang 11.01 297 *e*Pn **Pn** **17 06 24.9 +2.5**
KLR Kul'dur 12.10 321 Pn **Pn** **17 06 38.5 +1.2**
comp=Z,0.7nm,0.3s,baz=135,slow=14,SNR=18
KLR LR LR 17 11 46.5
comp=Z,14μm,18.9s,baz=134,slow=40
JNU Nakatsue 12.30 238 Pn **Pn** **17 06 39.1 -1.2**
comp=Z,1.7nm,0.3s,baz=52,slow=14,SNR=22
JNU LR LR 17 11 44.1
comp=Z,14μm,18.7s,baz=48,slow=39
JNU Nakatsue 12.30 238 *e*Pn **Pn** **17 06 39.6 -0.7**
KSRS Korea Array 12.34 261 Pn **Pn** **17 06 41.5 +0.8**
comp=Z,0.5nm,0.3s,baz=72,slow=12,SNR=19
KSRS LR LR 17 11 11.4
comp=Z,19μm,18.3s,baz=71,slow=36
KS01 Wonju Array Si 12.36 262 *e*Pn **Pn** **17 06 41.0 0.0**
KS15 Wonju Array Si 12.38 261 *e*Pn **Pn** **17 06 41.3 +0.1**
KSAR Wonju Array Be 12.38 261 P **Pn** **17 06 41.5 +0.3**
KSAR Wonju Array Be 12.38 261 Pn **Pn** **17 06 41.5 +0.3**
NKL Nikolayevsk 12.95 353 *i* P **Pn** **17 06 49.0 +0.1**
NKL *e*S **Sn** **17 09 16.0 +4.1**
NKL pmax pmax
comp=N,1μm,8.0s
NKL pmax pmax
comp=Z,1μm,8.0s
NKL pmax pmax
comp=N,22nm,1.0s
NKL pmax pmax
comp=Z,39nm,1.0s
NKL smax smax
comp=E,2μm,16.0s
NKL MLR MLR
comp=N,6μm,17.0s
NKL MLR MLR
comp=E,3μm,17.0s
NKL MLR MLR
comp=Z,10μm,17.0s
OKH Okha 13.22 359 *e*P **Pn** **17 06 52.2 -0.5**
CBIJ Chichi jima 13.24 184 *e*Pn Pn 17 06 47.8 -5.3
CBIJ *e*Sn Sn 17 09 05.8 -14
JCJ Chichijima 13.24 184 Pn Pn 17 06 47.8 -5.3
comp=Z,14nm,0.3s,baz=345,slow=20,SNR=17
JCJ Sn Sn 17 09 06.3 -13
baz=287,slow=19
SKR Severo-Kuril's 13.67 37 *e*P **Pn** **17 06 54.5 -4.3**
SKR pmax pmax
comp=Z,80nm,0.5s
SKR MLR MLR
comp=N,3μm,16.0s
SKR MLR MLR
comp=E,6μm,16.0s
SKR MLR MLR
comp=Z,6μm,16.0s
CN2 Changchun 13.72 290 ⇑P **Pn** **17 07 01.9 +2.3**
CN2 *es*P P 17 07 10.1 +2.1
CN2 *e*S **Sn** **17 09 33.6 +2.5**
CN2 pmax pmax
comp=Z,50nm,1.1s
CN2 pmax pmax
comp=Z,1μm,8.0s
CN2 LR LR
comp=Z,12μm,15.0s
CN2 LR LR
comp=Z,8μm,15.0s
CN2 LR LR
comp=Z,6μm,17.0s
SNY Shenyang 14.97 282 ⇑P **Pn** **17 07 17.2 +0.7**
SNY pmax pmax
comp=Z,58nm,1.3s
PEA0 Petropavlovsk- 16.09 33 *e*Pn **Pn** **17 07 25.2 -5.9**
PEA0B Petropavlovsk- 16.09 33 *e*Pn **Pn** **17 07 28.1 -3.0**
PETK Petropavlovsk- 16.09 33 Pn **Pn** **17 07 27.2 -3.9**
comp=Z,0.4nm,0.3s,baz=199,slow=12,SNR=11
PETK LR LR 17 14 22.1
comp=Z,4μm,18.7s,baz=220,slow=40
PEA1 Petropavlovsk- 16.10 33 *e*Pn **Pn** **17 07 27.2 -3.9**
PET Petropavlovsk 16.44 34 *e*P P 17 07 46.8 +8.8
PET pmax pmax
comp=Z,65nm,1.3s
PET MLR MLR
comp=Z,5μm,19.0s
PET MLR MLR
comp=Z,4μm,19.0s
PET Petropavlovsk 16.44 34 *e*Pn **Pn** **17 07 32.1 -3.3**
DL2 Dalian 16.78 272 P **Pn** **17 07 38.8 -1.0**
DL2 S **Sn** **17 10 42.6 -2.8**
DL2 pmax pmax
comp=Z,260nm,1.3s
DL2 pmax pmax
comp=Z,3μm,9.4s
DL2 LR LR
comp=Z,5μm,21.1s
DL2 LR LR
comp=Z,7μm,21.1s
JOW Kunigami 18.36 227 P **P** **17 07 56.9 -2.6**
comp=Z,2.0nm,0.3s,baz=70,slow=11,SNR=8.8
JOW Kunigami 18.36 227 *e*Pn **P** **17 07 57.1 -2.4**
HIA Hailar 18.91 306 *e*P **P** **17 08 04.2 -1.1**
HIA Hailar 18.91 306 *e*P **P** **17 08 04.2 -1.1**
MA2 Magadan 19.82 11 P **P** **17 08 15.0 -0.2**
comp=Z,2.4nm,0.3s,baz=217,slow=10,SNR=30
MA2 LR LR 17 17 25.7
comp=Z,2μm,18.8s,baz=216,slow=41
MA2 Magadan 19.82 11 *e*P **P** **17 08 15.0 -0.2**
SSE Sheshan 20.16 250 P **P** **17 08 18.0 -1.1**
SSE S **S** **17 12 04.0 -0.1**
SSE pmax pmax
comp=Z,130nm,0.9s
SSE LR LR
comp=Z,7μm,13.8s
SSE LR LR
comp=Z,3μm,13.8s
SSE LR LR
comp=Z,6μm,13.9s
BJI Beijing 20.72 278 P **P** **17 08 24.1 -1.0**
BJI S Sn 17 12 18.8 -1.7
BJI pmax pmax
comp=Z,82nm,1.5s
BJI LR LR
comp=Z,5μm,13.2s
BJI LR LR
comp=Z,9μm,16.6s
BJI LR LR
comp=Z,8μm,19.2s
BJT Baijiatuau 20.73 278 *e*P **P** **17 08 26.0 +0.8**
BJT MLR MLR
comp=Z,12μm,19.0s
BJT Baijiatuau 20.73 278 *e*P **P** **17 08 26.0 +0.8**
BJT LR LR
comp=Z,12μm,19.0s
TIA Tai'an 20.95 267 ⇓P **P** **17 08 26.2 -1.4**
TIA S **S** **17 12 14.3 -5.4**
TIA pmax pmax
comp=Z,120nm,1.0s
TIA pmax pmax
comp=Z,2μm,5.3s
TIA LR LR
comp=Z,5μm,13.5s
TIA LR LR
comp=Z,12μm,15.6s
TIA LR LR
comp=Z,16μm,13.5s
NJ2 Nanjing 21.36 255 *e*P **P** **17 08 28.8 -3.3**
NJ2 sP **pP** **17 08 37.9 -1.4**
NJ2 pmax pmax
comp=Z,100nm,1.0s
NJ2 pmax pmax
comp=Z,850nm,4.1s
NJ2 LR LR
comp=Z,7μm,11.0s
NJ2 LR LR
comp=Z,8μm,13.4s
NJ2 LR LR
comp=Z,10μm,14.9s
YAK Yakutsk 23.25 344 P **P** **17 08 50.1 -1.7**
comp=Z,16nm,0.7s,baz=139,slow=19,SNR=48
YAK LR LR 17 18 54.9
comp=Z,5μm,18.2s,baz=157,slow=39
YAK Yakutsk 23.25 344 *ci*P **P** **17 08 48.7 -3.1**
YAK *e**PP **pP** **17 08 57.8 -1.4**
YAK *e*PPP PPP 17 09 21.2
YAK *e*S **S** **17 12 55.9 -6.1**
YAK *e**SS **sS** **17 13 11.6 -3.3**
YAK *e*SSS SSS 17 13 43.8
YAK pmax pmax
comp=N,42nm,1.0s
YAK pmax pmax
comp=Z,258nm,0.9s
YAK pmax pmax
comp=E,25nm,0.9s
YAK pmax pmax
comp=Z,388nm,2.7s
YAK pmax pmax
comp=N,247nm,1.5s
YAK pmax pmax
comp=E,127nm,1.5s
YAK smax smax
comp=E,378nm,2.5s
YAK smax smax
comp=N,335nm,2.2s
YAK MLR MLR
comp=N,3μm,15.0s
YAK MLR MLR
comp=E,5μm,16.0s
YAK MLR MLR
comp=Z,5μm,16.0s
YAK Yakutsk 23.25 344 *e*P **P** **17 08 50.1 -1.7**
YAK LR LR
comp=Z,5μm,22.0s
SEY Seymchan 23.27 11 P **P** **17 08 50.9 -1.1**
comp=Z,33nm,0.8s,baz=189,slow=8.2,SNR=80
SEY Seymchan 23.27 11 *ce*P **P** **17 08 50.4 -1.6**
CIT Chita 23.52 310 *e*P **P** **17 08 53.8 -0.8**
CIT *e* 17 09 09.0
CIT *e* 17 09 20.5
CIT *e* 17 09 39.0
CIT *e*S **S** **17 13 03.4 -3.4**
CIT pmax pmax
comp=Z,437nm,1.2s
TATO Taipei 23.84 237 *e*P **P** **17 08 57.0 -0.8**
TATO LR LR
comp=Z,8μm,20.0s
HHC Hu-ho-hao-te 24.06 282 *e*P **P** **17 08 58.0 -1.9**
HHC sP sP 17 09 09.5 -1.5
HHC PP **PnPn** **17 09 31.4 +2.2**
HHC S **S** **17 13 10.8 -4.9**
HHC sS sS 17 13 26.3 -2.2
HHC pmax pmax
comp=Z,26nm,1.1s
HHC pmax pmax
comp=Z,350nm,3.9s
HHC LR LR
comp=Z,3μm,16.2s
HHC LR LR
comp=Z,10μm,14.9s
HHC LR LR
comp=Z,11μm,14.9s
TIY Taiyuan 24.08 274 *e*P **P** **17 09 01.3 +1.2**
TIY PP **PnPn** **17 09 32.0 +2.5**
TIY S S 17 13 02.8 -13
TIY pmax pmax
comp=Z,17nm,0.7s
TIY pmax pmax
comp=Z,630nm,7.3s
TIY LR LR
comp=Z,3μm,11.9s
TIY LR LR
comp=Z,1μm,12.5s
TIY LR LR
comp=Z,5μm,19.6s
YHNB Yeheng 24.13 236 *e*P **P** **17 08 57.9 -2.7**
YHNB LR LR
comp=Z,10μm,19.0s
SMY Shemya 24.32 49 *e*P **P** **17 09 01.7 -0.4**
SMY *e**SP **sP** **17 09 12.8 -0.4**
SMY Shemya 24.32 49 *e*P **P** **17 09 01.7 -0.4**
NACB Ninganchiao 24.34 235 *e*P **P** **17 08 59.0 -3.5**
SSLB Suanglung 25.03 236 *e*P **P** **17 09 06.9 -1.8**
YULB Yu-li 25.10 234 *e*P **P** **17 09 07.5 -1.9**
BTO Baotou 25.26 282 *e*P **P** **17 09 09.5 -1.3**
WHN Wuhan 25.45 257 ⇑P **P** **17 09 10.5 -2.0**
WHN S **S** **17 13 32.1 -5.8**
WHN LR LR
comp=Z,15μm,13.2s
WHN LR LR
comp=Z,26μm,14.7s
WHN LR LR
comp=Z,30μm,16.0s
TPUB Ta-pu 25.58 235 *e*P **P** **17 09 11.6 -2.2**
TWG Pinlang 25.66 234 *e*P **P** **17 09 13.3 -1.2**
BOD Bodaibo 25.67 323 *e*P **P** **17 09 14.2 0.0**
BOD pmax pmax
comp=Z,141nm,1.2s
QZH Quanzhou 25.75 241 ⇑*i*P **P** **17 09 12.3 -3.0**
QZH S **S** **17 13 40.2 -2.5**
QZH pmax pmax
comp=Z,2μm,4.8s
QZH LR LR
comp=Z,6μm,14.1s
QZH LR LR
comp=Z,7μm,12.2s
QZH LR LR
comp=Z,11μm,14.5s
GUMO Guam 26.68 177 LR LR 17 18 32.3
comp=Z,2μm,21.5s,baz=8.0,slow=34
GUMO Guam 26.68 177 PFAKE 17 09 40.0 +16
GUMO LR LR
comp=Z,3μm,21.0s
ULN Ulaanbaatar 26.92 298 *ci*P **P** **17 09 26.7 +0.8**
ULN pmax pmax
comp=Z,112nm,1.2s
ULN Ulaanbaatar 26.92 298 *e*P **P** **17 09 25.9 0.0**
ULN LR LR
comp=Z,11μm,20.0s
ULN Ulaanbaatar 26.92 298 P **P** **17 09 27.2 +1.4**
SNR=44
ULN Ulaanbaatar 26.92 298 P **P** **17 09 27.2 +1.4**
SNR=44
SONA1 Songino Array 27.36 298 *e*P **P** **17 09 29.7 -0.1**
SONA0 Songino Array 27.36 298 *e*P **P** **17 09 30.3 +0.5**
SONM Songino Array 27.36 298 P **P** **17 09 30.3 +0.5**
comp=Z,55nm,0.9s,baz=97,slow=7.1,SNR=180
SONM LR LR 17 21 06.9
comp=Z,12μm,18.6s,baz=95,slow=38
XAN Xi'an 28.00 268 P **P** **17 09 34.7 -0.8**
XAN pP pP 17 09 40.4 -2.9
XAN PP **PnPn** **17 10 21.4 -1.6**
XAN S **S** **17 14 11.9 -6.3**
XAN pmax pmax
comp=Z,40nm,1.1s
XAN LR LR
comp=Z,2μm,15.1s
XAN LR LR
comp=Z,6μm,16.4s
XAN LR LR
comp=Z,6μm,16.0s
H11N2 WAKE ISLAND Hy 28.79 129 T T 17 41 01.0
baz=318,slow=75,SNR=356
H11N1 WAKE ISLAND Hy 28.80 129 T T 17 41 00.6
baz=318,slow=75,SNR=328
H11N3 WAKE ISLAND Hy 28.81 129 T T 17 40 50.2
baz=318,slow=75,SNR=378
WAKE Wake Island 28.99 129 *e*P P 17 09 49.4 +5.1
WAKE LR LR
comp=Z,5μm,20.0s
IRK Irkutsk 29.14 307 *e*P **P** **17 09 46.6 +1.2**
IRK pmax pmax
comp=Z,185nm,1.3s
ENH Enshi 29.23 261 *e*P **P** **17 09 45.8 -0.7**
ENH LR LR
comp=Z,5μm,19.0s
TLY Talaya 29.45 306 P **P** **17 09 49.6 +1.4**
comp=Z,8.4nm,0.6s,baz=120,slow=9.2,SNR=16
TLY LR LR 17 22 24.8
comp=Z,4μm,19.9s,baz=86,slow=38
TLY Talaya 29.45 306 *ci*P **P** **17 09 47.4 -0.8**
TLY *e* 17 10 54.6
TLY *e*S **S** **17 14 39.5 -1.1**
TLY pmax pmax
comp=Z,30nm,1.0s
TLY MLR MLR
comp=Z,8μm,18.0s
TLY Talaya 29.45 306 *e*P **P** **17 09 48.6 +0.4**
TLY LR LR
comp=Z,4μm,20.0s
TLY Talaya 29.45 306 P **P** **17 09 49.6 +1.4**
SNR=20
TLY Talaya 29.45 306 P **P** **17 09 49.6 +1.4**
SNR=20
ZAK Zakamensk 29.55 303 *e*P **P** **17 09 49.2 0.0**
ZAK pmax pmax
comp=Z,50nm,1.4s
BILL Bilibino 30.44 17 *ci*P **P** **17 09 57.5 +0.8**
BILL *i* *PP **sP** **17 10 06.6 -1.3**
BILL *e**SP **pP** **17 10 10.2 +5.6**
BILL 17 12 54.0
BILL *i* S **S** **17 14 53.9 -1.9**
BILL *e*SS **SnSn** **17 16 30.0 -2.2**
BILL pmax pmax
comp=Z,20nm,0.8s
BILL MLR MLR
comp=Z,2μm,16.0s
BILL Bilibino 30.44 17 *e*P **P** **17 09 56.5 -0.2**
BILL LR LR
comp=Z,2μm,21.0s
HKC Hong Kong Obse 30.51 243 P **P** **17 10 01.0 +3.2**
GZH Guangzhou 30.56 245 P **P** **17 09 54.3 -3.9**
GZH S **S** **17 14 50.1 -8.3**
GZH pmax pmax
comp=Z,2μm,8.4s
MOY Mondy 31.09 306 *e*P **P** **17 10 03.5 +0.7**
MOY pmax pmax
comp=Z,37nm,1.5s
LZH Lanzhou 31.13 275 *e*P **P** **17 10 04.6 +1.2**
LZH pP pP 17 10 09.8 -1.5
LZH sP sP 17 10 12.7 -1.8
LZH PcP **PcP** **17 13 01.5 +3.3**
LZH *e*S **S** **17 15 01.1 -6.5**
LZH sS sS 17 15 17.6 -3.0
LZH pmax pmax
comp=Z,130nm,1.3s
LZH pmax pmax
comp=Z,560nm,5.2s
LZH LR LR
comp=Z,4μm,14.8s
LZH LR LR
comp=Z,3μm,13.8s
LZH LR LR
comp=Z,6μm,15.9s
ATKA Atka Island 31.23 53 *e*P **P** **17 10 04.1 +0.3**
TIXI Tiksi 32.22 351 *ci*P **P** **17 10 12.0 -0.3**
TIXI pmax pmax
comp=Z,27nm,1.0s
TIXI Tiksi 32.22 351 *e*P **P** **17 10 11.5 -0.8**
TIXI LR LR
comp=Z,3μm,20.0s
GTA Gaotai 33.16 283 P **P** **17 10 21.5 +0.4**
GTA pP pP 17 10 27.3 -1.7
GTA sP sP 17 10 30.2 -2.1
GTA PP **PP** **17 11 34.9 -1.3**
GTA PcP **PcP** **17 13 05.7 +2.1**
GTA S **S** **17 15 38.3 -0.8**
GTA sS sS 17 15 47.6 -4.5
GTA SS **SnSn** **17 17 37.7 -1.4**
GTA ScS **ScS** **17 20 48.3 +1.7**
GTA pmax pmax
comp=Z,39nm,1.0s
GTA pmax pmax
comp=Z,620nm,5.0s
GTA LR LR
comp=Z,4μm,18.1s
GTA LR LR
comp=Z,10μm,18.5s
GTA LR LR
comp=Z,12μm,18.1s
CD2 Chengdu 33.28 266 P **P** **17 10 22.7 +0.6**
CD2 sP pP 17 10 31.6 +1.6
CD2 PP **PP** **17 11 37.8 +0.3**
CD2 PcP **PcP** **17 13 05.6 +1.6**
CD2 S **S** **17 15 37.0 -3.9**
CD2 sS sS 17 15 52.3 -1.6
CD2 pmax pmax
comp=Z,70nm,0.9s
CD2 pmax pmax
comp=Z,830nm,10.3s
CD2 LR LR
comp=Z,8μm,14.4s
CD2 LR LR
comp=Z,8μm,14.4s
GYA Guiyang 33.34 257 ⇑*i*P **P** **17 10 22.5 -0.3**
GYA pP pP 17 10 30.2 -0.5
GYA PP **PnPn** **17 11 35.4 +1.7**
GYA PcP **PcP** **17 13 07.8 +3.5**
GYA S **S** **17 15 39.2 -2.9**
GYA sS sS 17 15 52.0 -3.1
GYA ScP **ScP** **17 16 49.8 +3.0**
GYA SS **SnSn** **17 17 43.6 -0.2**
GYA ScS **ScS** **17 20 48.5 +0.6**
GYA pmax pmax
comp=Z,150nm,1.0s
GYA pmax pmax
comp=Z,650nm,9.9s
GYA LR LR
comp=Z,6μm,18.7s

GYA LR LR
comp=Z,8μm,17.1s
GYA LR LR
comp=Z,10μm,17.4s
GAMB Gambell 35.13 33 *e*P **P 17 10 41.9 +4.2**
QIZ Qiongzhong 35.70 243 P **P 17 10 44.1 +1.0**
QIZ PP **PnPn 17 12 03.9 +0.8**
QIZ S **S 17 16 15.5 -2.8**
QIZ pmax pmax
comp=Z,26nm,1.1s
QIZ pmax pmax
comp=Z,560nm,9.8s
QIZ LR LR
comp=Z,4μm,20.6s
QIZ LR LR
comp=Z,4μm,15.4s
QIZ Qiongzhong 35.70 243 PFAKE 17 10 50.0 +6.9
QIZ LR LR
comp=Z,3μm,21.0s
KRAR Krasnoyarsk 36.22 313⇓ *e*P **P 17 10 46.6 -0.5**
KRAR pmax pmax
comp=Z,124nm,1.4s
DAV Davao City (W) 36.74 210 PFAKE 17 11 00.0 +8.0
DAV LR LR
comp=Z,2μm,21.0s
KMI Kunming 37.02 258 P **P 17 10 55.2 +0.6**
KMI pP pP 17 11 03.1 +0.6
KMI sP sP 17 11 06.2 +0.4
KMI PP **PP 17 12 19.1 0.0**
KMI S **S 17 16 36.8 -2.0**
KMI sS sS 17 16 49.8 -2.1
KMI SS **SnSn 17 19 00.2 -13**
KMI pmax pmax
comp=Z,140nm,1.2s
KMI pmax pmax
comp=Z,850nm,4.5s
KMI LR LR
comp=Z,9μm,15.6s
KMI LR LR
comp=Z,7μm,16.8s
KMI LR LR
comp=Z,11μm,16.3s
CTBH Cotabato--PC H 37.13 212⇓ *i*P **P 17 10 57.1 +1.8**
PANO Nakornpanom 40.61 247 P **P 17 11 26.1 +1.6**
comp=Z,302nm,0.7s,comp=Z,16μm
WMQ Urumqi 40.78 294 P **P 17 11 26.8 +1.0**
WMQ pP pP 17 11 34.7 +0.9
WMQ PP **PnPn 17 13 03.1 -0.9**
WMQ PcP **PcP 17 13 29.0 +2.5**
WMQ PcS **PcS 17 17 18.2 +0.9**
WMQ S **S 17 17 35.2 +0.3**
WMQ SS **SS 17 20 31.1 -4.9**
WMQ pmax pmax
comp=Z,54nm,1.0s
WMQ pmax pmax
comp=Z,460nm,5.0s
WMQ LR LR
comp=Z,2μm,14.2s
WMQ LR LR
comp=Z,2μm,19.4s
WMQ LR LR
comp=Z,2μm,22.0s
ZAA0 Zalesovo Array 40.88 310 *e*P **P 17 11 25.8 -0.5**
ZAA1 Zalesovo Array 40.88 310 *e*P **P 17 11 26.6 +0.3**
ZAA1 ePcP **PcP 17 13 27.2 +0.7**
ZALV Zalesovo Beam 40.88 310 P **P 17 11 26.7 +0.3**
comp=Z,18nm,0.5s,baz=97,slow=7.9,SNR=104
ZALV PcP **PcP 17 13 27.2 +0.7**
comp=Z,23nm,0.7s,baz=91,slow=2.8,SNR=3.9
ZALV LR LR 17 29 26.3
comp=Z,5μm,18.4s,baz=72,slow=38
NRIK Noril'sk 40.94 333 P **P 17 11 27.4 +0.8**
comp=Z,17nm,0.5s,baz=106,slow=9.2,SNR=31
NRIK LR LR 17 30 14.5
comp=Z,4μm,18.6s,baz=102,slow=39
NONG Nongkai 41.04 249 P **P 17 11 28.7 +0.7**
comp=Z,149nm,1.2s,comp=Z,8μm
SKNT Sakolnakorn 41.17 247 P **P 17 11 29.9 +0.8**
comp=Z,54nm,1.1s
MYLDM Lahad Datu 41.51 219 *e*P **P 17 11 32.8 +0.9**
NVS Novosibirsk 41.72 311⇓ *i*P **P 17 11 34.4 +1.2**
NVS *e*S **S 17 17 43.8 -4.5**
NVS pmax pmax
comp=Z,93nm,1.2s
NVS pmax pmax
comp=E,77nm,1.4s
NVS smax smax
comp=E,73nm,2.7s
NVS smax smax
comp=N,20nm,1.3s
TT01 Tatalina 41.87 37 *e*P **P 17 11 35.6 +1.3**
TTA Tatalina 41.87 37 *e*P **P 17 11 37.0 +2.6**
TTA Tatalina 41.87 37 *e*P **P 17 11 37.0 +2.6**
KKM Kota Kinabalu 41.92 223 PFAKE 17 11 50.0 +15
KKM LR LR
comp=Z,3μm,22.0s
TNTI Ternate 41.97 204 P **P 17 11 37.1 +1.5**
comp=Z,103nm,1.4s,comp=Z,2μm
TNTI Ternate 41.97 204 *e*P **P 17 11 36.0 +0.4**
SVW2 Sparrevohn 42.01 39 *e*P **P 17 11 36.7 +1.2**
ZSN Zaisan 42.16 300⇑ *i*P **P 17 11 35.8 -1.1**
comp=Z,614nm,1.3s
ZSN *e*S **S 17 17 53.3 -1.8**
ZSN LR LR 17 29 14.5
comp=Z,4μm,15.6s
KHON Khomkaen 42.41 248 P **P 17 11 40.0 +0.7**
comp=Z,38nm,0.8s
SWI Sorong 42.46 198 P **P 17 11 40.9 +1.3**
comp=Z,40nm,0.9s,comp=Z,930nm
TSM Tawau 42.59 219⇓ P **P 17 11 40.7 +0.1**
JAY Jayapura 42.71 184 P **P 17 11 44.7 +3.0**
comp=Z,55nm,1.0s,comp=Z,3μmcomp=Z,255μm
LOEI Loei 42.75 250 P **P 17 11 39.9 -2.1**
comp=Z,39nm,1.0s
GENI Genyem 42.82 185 P **P 17 11 44.7 +2.2**
comp=Z,75nm,1.1s
CMAI Chiengmai2 42.83 255 P **P 17 11 44.1 +1.2**
comp=Z,96nm,1.4s,comp=Z,13μm
PHRA Phrae 42.86 252 P **P 17 11 43.6 +0.7**
comp=Z,369nm,1.1s
UTTA Uttaradit 43.11 251 P **P 17 11 45.4 +0.5**
comp=Z,17nm,0.9s,comp=Z,122nm
LBMI Labuha 43.26 203 P P 17 11 54.1 +8.0
LAMP Lampang 43.28 253 P **P 17 11 47.5 +1.2**
comp=Z,18nm,1.3s,comp=Z,269nm
CHAI Chaiyaphum 43.30 248 P **P 17 11 46.6 +0.1**
comp=Z,27nm,0.9s,comp=Z,203nm
OHAK Old Harbor 43.34 45 *e*P **P 17 11 47.5 +1.2**
RSO Redoubt South 43.40 40 *e*P P 17 11 52.1 +5.1
LSA Lhasa 43.48 273 P **P 17 11 49.6 +1.2**
LSA pmax pmax
comp=Z,18nm,1.5s
LSA Lhasa 43.48 273 *e*P **P 17 11 49.0 +0.6**
LSA MLR MLR
comp=Z,6μm,19.0s
LSA Lhasa 43.48 273 *e*P **P 17 11 49.0 +0.6**
LSA LR LR
comp=Z,6μm,19.0s
PHIT Phitsanulok 43.57 251 P **P 17 11 50.3 +1.7**
comp=Z,32nm,1.1s
PBKT Sadao Pong 43.58 250 P **P 17 11 49.3 +0.6**
comp=Z,38nm,1.2s,comp=Z,832nm
CMMT Chiang Mai 43.60 254 P **P 17 11 49.2 +0.3**
comp=Z,55nm,1.0s,comp=Z,684nm
CHTO Chiang Mai 43.60 254 P **P 17 11 49.3 +0.4**
comp=Z,247nm,1.0s,comp=Z,3μm
CHTO Chiang Mai 43.60 254 *e*P **P 17 11 48.5 -0.4**
CHTO Chiang Mai 43.60 254 *e*P **P 17 11 48.5 -0.4**
CHTO LR LR
comp=Z,2μm,21.0s
CHTO Chiang Mai 43.60 254 P **P 17 11 50.1 +1.2**
SNR=20
CHTO Chiang Mai 43.60 254 P **P 17 11 50.1 +1.2**
SNR=20
PPLA Purkeypile 43.62 37 *e*P **P 17 11 50.0 +1.3**
CAST Castle Rocks 43.67 36 *e*P **P 17 11 50.1 +1.1**
KDAK Kodiak Island 43.67 44 P P 17 12 03.1 +14
comp=Z,13nm,0.9s,baz=291,slow=8.6,SNR=11
KDAK Kodiak Island 43.67 44 *e*P **P 17 11 50.0 +1.0**
KDAK Kodiak Island 43.67 44 *e*P **P 17 11 50.0 +1.0**
KDAK LR LR
comp=Z,2μm,20.0s
MK01 Makanchi Array 43.71 300 *e*P **P 17 11 48.7 -0.9**
MK31 Makanchi Array 43.71 300 P **P 17 11 48.9 -0.7**
MK31 pmax pmax
comp=Z,102nm,1.1s
MK31 Makanchi Array 43.71 300 *e*P **P 17 11 49.5 -0.1**
MK32 Makanchi Array 43.71 300 *e*P **P 17 11 50.0 +0.4**
MKAR Makanchi Array 43.71 300 P **P 17 11 50.0 +0.4**
comp=Z,45nm,0.9s,baz=81,slow=7.9,SNR=130
MKAR LR LR 17 31 04.6
comp=Z,6μm,18.8s,baz=80,slow=38
MKAR Makanchi Array 43.71 300 *i* P **P 17 11 49.7 +0.1**
MKAR pmax pmax
comp=Z,45nm,0.9s
MKAR Makanchi Array 43.71 300 *e*P **P 17 11 49.5 -0.1**
SPU Mount Spurr 43.72 39 *e*P **P 17 11 50.9 +1.5**
CM31 Chiang Mai Arr 43.83 253 *e*P **P 17 11 51.8 +1.1**
CMAR Chiang Mai Arr 43.83 253 P **P 17 11 50.7 0.0**
comp=Z,12nm,0.8s,baz=47,slow=7.0,SNR=72
CMAR LR LR 17 32 05.8
comp=Z,2μm,18.2s,baz=68,slow=39
CM01 Chiang Mai Arr 43.84 253 *e*P **P 17 11 50.4 -0.4**
MAKZ Makanchi 43.92 300 *e*P **P 17 11 51.5 +0.3**
MAKZ Makanchi 43.92 300 *e*P **P 17 11 51.5 +0.3**
SUKH Sukhothai 43.95 252 P **P 17 11 52.5 +0.8**
comp=Z,18nm,0.9s,comp=Z,264nm
BPAW Bear Paw Mtn. 44.16 35 *e*P **P 17 11 54.0 +1.1**
MRSI Marisa 44.19 212 P **P 17 11 57.6 +4.1**
comp=Z,85nm,1.3s
KTH Kantishna Hill 44.19 36 *e*P **P 17 11 54.9 +1.7**
SEM Semipalatinsk 44.20 305 *i* P **P 17 11 53.1 -0.2**
comp=Z,879nm,1.1s
SEM *e*S **S 17 18 24.2 -0.6**
SEM LRM MLR 17 32 28.3
comp=Z,1μm,13.1s
FAKI Fak Fak 44.23 196 P P 17 12 00.1 +6.2
FAKI Fak Fak 44.23 196 *e*P **P 17 11 53.7 -0.1**
MLY Manley 44.27 34 *e*P **P 17 11 55.0 +1.2**
BRLK Bradley Lake 44.38 41 *e*P **P 17 11 57.5 +2.8**
TRF Thorofare Moun 44.47 36 *e*P **P 17 11 58.1 +2.6**
COLD Coldfoot 44.55 31 *e*P **P 17 11 57.1 +1.2**
KMPI Kaimana, Papua 44.66 194 P P 17 12 07.7 +10
MHMT Maesarieng 44.75 254 P **P 17 11 59.2 +1.1**
comp=Z,38nm,0.8s,comp=Z,605nm
NAYO Nakonayok 44.84 247 P **P 17 12 00.0 +1.1**
comp=Z,52nm,0.7s
RC01 Rabbit Creek A 44.85 39 *e*P **P 17 11 59.9 +1.5**
RABL Rabaul 45.05 167 *e*P **P 17 12 00.3 -0.2**
SANI Sanana 45.06 205 P **P 17 12 02.4 +1.9**
comp=Z,63nm,1.0s,comp=Z,1μm
MCK McKinley 45.07 36 *e*P **P 17 12 01.4 +1.2**
MCK McKinley 45.07 36 *e*P **P 17 12 01.4 +1.2**
SEW Seward 45.07 41 *e*P **P 17 12 00.5 +0.4**
PMR Palmer 45.10 39 *e*P **P 17 12 02.3 +2.0**
PMR Palmer 45.10 39 *e*P **P 17 12 02.3 +2.0**
RND Reindeer 45.12 36 *e*P **P 17 12 00.7 +0.1**
RND Reindeer 45.12 36 *e*P **P 17 12 00.7 +0.1**
KURK Kurchatov 45.15 306 *e*P **P 17 12 00.9 0.0**
KURK Kurchatov 45.15 306 *e*P **P 17 12 00.8 0.0**
KURK LR LR
comp=Z,3μm,22.0s
KURK Kurchatov 45.15 306 P **P 17 12 00.9 0.0**
SNR=79
KURK Kurchatov 45.15 306 P **P 17 12 00.9 0.0**
SNR=79
KURBB Kurchatov Arra 45.22 306 P **P 17 12 01.5 0.0**
comp=Z,121nm,0.6s,baz=79,slow=8.7,SNR=296
CHBT CHBT 45.23 244 P **P 17 12 02.9 +1.0**
comp=Z,92nm,1.2s,comp=Z,1μm
MDM Murphy Dome 45.34 34 *e*P **P 17 12 02.9 +0.7**
UMPA Umpang Tak 45.34 251 P **P 17 12 05.4 +2.6**
comp=Z,16nm,0.9s,comp=Z,328nm
UTHA Uthaitani 45.34 250 P **P 17 12 04.4 +1.6**
comp=Z,11nm,1.0s,comp=Z,106nm
WRH Wood River Hil 45.41 35 *e*P **P 17 12 03.7 +0.9**
SML Sawmill 45.46 38 *e*P **P 17 12 05.4 +2.1**
SML Sawmill 45.46 38 *e*P **P 17 12 05.4 +2.1**
COLA College 45.50 34 *e*P **P 17 12 02.6 -0.8**
COLA pmax pmax
comp=Z,41nm,0.8s
COLA MLR MLR
comp=Z,967nm,21.0s
COLA College 45.50 34 *e*P **P 17 12 02.6 -0.8**
comp=Z,41nm,0.8s
COLA LR LR
comp=Z,967nm,21.0s
CCB Clear Creek Bu 45.53 34 *e*P **P 17 12 05.0 +1.3**
APSI Ampana 45.57 211 P **P 17 12 08.2 +3.7**
comp=Z,139nm,1.4s,comp=Z,2μm
DHY Denali Highway 45.81 36 *e*P **P 17 12 07.2 +1.0**
HDA Harding Lake 45.91 35 *e*P **P 17 12 07.6 +0.9**
IL1 Eielson Array 45.92 34 *e*P **P 17 12 07.1 +0.3**
ILAR Eielson Array 45.92 34 P **P 17 12 07.2 +0.3**
comp=Z,8.3nm,0.8s,baz=262,slow=6.1,SNR=47
ILAR LR LR 17 33 46.6
comp=Z,711nm,19.2s,baz=300,slow=39
ILB Eielson Array 45.92 34 *e*P **P 17 12 07.5 +0.7**
SCM Sheep Creek Mo 45.94 38 *e*P **P 17 12 08.9 +1.8**
SCM Sheep Creek Mo 45.94 38 *e*P **P 17 12 08.9 +1.8**
PATY Pattaya 46.12 246 P **P 17 12 10.4 +1.4**
comp=Z,14nm,1.1s,comp=Z,2μm
SRDT SRDT 46.38 249 P **P 17 12 12.3 +1.3**
comp=Z,76nm,1.2s
SHLS Shalkode 46.41 295⇑ *i*P **P 17 12 11.7 +0.5**
comp=Z,298nm,0.9s
SHLS LRM MLR 17 33 24.6
comp=Z,1μm,14.8s
KHLT Khaolaem Dam 46.46 250 P **P 17 12 13.7 +2.1**
comp=Z,16nm,0.9s,comp=Z,305nm
FYU Fort Yukon 46.51 32 *e*P **P 17 12 13.2 +1.8**
PDGK Podgornoye 46.63 296 P **P 17 12 13.4 +0.8**
KLU Klutina 46.64 39 *e*P **P 17 12 13.8 +1.1**
PAX Paxson 46.68 36 *e*P **P 17 12 15.2 +2.3**
PAX Paxson 46.68 36 *e*P **P 17 12 15.2 +2.3**
DIV Divide 46.76 39 *e*P **P 17 12 15.1 +1.5**
EYAK Cordova Ski Ar 46.85 40 *e*P **P 17 12 14.7 +0.6**
JOHN Johnston Islan 46.95 106 PFAKE 17 12 30.0 +15
JOHN LR LR
comp=Z,278nm,19.0s
PHET Kaeng Krachan 47.00 247 P **P 17 12 17.3 +1.4**
comp=Z,21nm,1.0s,comp=Z,199nm
SBUM Sibu 47.06 225⇑ P **P 17 12 16.3 0.0**
SBUM Sibu 47.06 225 *e*P **P 17 12 15.5 -0.7**
TARA Tarawa 47.19 138 PFAKE 17 12 30.0 +13
TARA LR LR
comp=Z,147nm,22.0s
DOT Dot Lake 47.24 35 *e*P **P 17 12 17.4 +0.2**
TAPN Taplejung 47.27 272 *e*P **P 17 12 19.1 +0.9**
comp=Z,318nm,1.1s
BMRM Bremner River 47.34 39 *e*P **P 17 12 20.3 +2.2**
SATY Saty 47.46 296⇑ *i*P **P 17 12 20.3 +0.9**
comp=Z,518nm,0.7s
SATY *e*S **S 17 19 12.2 -0.1**
SATY LR LR 17 32 46.1
comp=Z,4μm,16.7s
MENT Mentasta 47.48 36 *e*P **P 17 12 20.6 +1.5**
ODAN Odare 47.76 272 *e*P **P 17 12 22.5 +0.5**
comp=Z,190nm,1.0s
RAMN Ramite 48.32 272 *e*P **P 17 12 26.7 +0.4**
comp=Z,403nm,1.0s
MDOK Medeo 48.36 296⇓ *i*P **P 17 12 27.5 +1.1**
comp=Z,344nm,1.3s
MDOK *i* PP **PP 17 14 21.7 +3.0**
MDOK *e*S **S 17 19 25.9 +0.9**
MDOK LQ LQ 17 29 55.9
MDOK LR LR 17 32 24.1
comp=Z,3μm,16.5s
EGAK Eagle 48.36 34 *e*P **P 17 12 26.8 +1.0**
EGAK LR LR
comp=Z,982nm,20.0s
GUN Gumba 48.38 274 *e*P **P 17 12 27.3 +0.4**
comp=Z,626nm,0.8s
AAA Alma-Ata 48.39 296 *i* P **P 17 12 27.4 +0.9**
AAA *i* S S 17 19 40.2 +15
AAA pmax pmax
comp=Z,300nm,1.3s
AAA smax smax
comp=E,800nm,10.0s
AAA MLR MLR
comp=Z,8μm,12.0s
BALM Baldy 48.42 39 *e*P **P 17 12 28.0 +1.5**
BALM Baldy 48.42 39 *e*P **P 17 12 28.0 +1.5**
MTKI Muara Teweh, K 48.58 219 P **P 17 12 26.3 -1.8**
comp=Z,83nm,1.0s
KUU Kurty 48.59 297⇑ *i*P **P 17 12 28.2 +0.3**
comp=Z,874nm,0.9s
KUU *e*S **S 17 19 27.2 -0.7**
KUU LR LR 17 33 15.1
comp=Z,3μm,15.2s
KKN Kakani 48.90 274 *e*P **P 17 12 31.1 +0.4**
comp=Z,287nm,0.8s
KSM Kuching 48.91 226⇓ P **P 17 12 32.2 +1.5**
KSM Kuching 48.91 226 *e*P **P 17 12 30.9 +0.3**
KSM *e*PcP **PcP 17 13 56.6 +1.8**
KSM LR LR
comp=Z,731nm,19.0s
PKIN Phulchoki 48.91 274 *e*P **P 17 12 31.0 +0.1**
comp=Z,214nm,1.4s
BRZS Berezniki 49.01 306 *i* P **P 17 12 31.0 0.0**
comp=Z,404nm,1.0s
SPSI Sidrap Palu 49.10 212 P **P 17 12 29.2 -2.8**
DMN Daman 49.12 274 *e*P **P 17 12 32.8 +0.3**
comp=Z,211nm,1.1s
CHKZ Chkalovo 49.20 311 P **P 17 12 32.7 +0.3**
CHKZ pmax pmax
comp=Z,129nm,1.2s
DAWY Dawson 49.23 34 *e*P **P 17 12 33.9 +1.3**
VOSK Vostochnaya 49.25 310 *e*P **P 17 12 32.5 -0.4**
VOSK Vostochnaya 49.25 310 *e*P **P 17 12 32.5 -0.4**
GKN Gorkha 49.28 275 *e*P **P 17 12 34.1 +0.5**
comp=Z,287nm,1.1s
TKM2 Tokmak 2 49.44 297 *e*P **P 17 12 34.7 0.0**
TKM2 Tokmak 2 49.44 297 *e*P **P 17 12 34.7 0.0**
TKM2 LR LR
comp=Z,6μm,20.0s
STKI Sintang 49.45 224 P **P 17 12 34.5 -0.3**
comp=Z,47nm,1.2s,comp=Z,10μm
BVA0 Borovoye Array 49.51 311 *i* P **P 17 12 34.4 -0.4**
BVA0 pmax pmax
comp=Z,61nm,1.1s
BVAR Borovoye Array 49.51 311 P **P 17 12 35.1 +0.2**
comp=Z,57nm,0.8s,baz=77,slow=8.4,SNR=93
BRVK Borovoye 49.56 311*c i*P **P 17 12 36.1 +0.9**
BRVK pmax pmax
comp=Z,73nm,1.0s
BRVK Borovoye 49.56 311 *e*P **P 17 12 35.4 +0.2**
BRVK LR LR
comp=Z,4μm,19.0s
BRVK Borovoye 49.56 311 P **P 17 12 36.0 +0.7**
SNR=31
BRVK Borovoye 49.56 311 P **P 17 12 36.0 +0.7**
SNR=31
PMG Port Moresby 49.62 175 PFAKE 17 12 50.0 +14
PMG LR LR
comp=Z,687nm,20.0s
OTUK Ortayu 49.76 304 P **P 17 12 36.6 -0.2**
OTUK pmax pmax
comp=Z,91nm,1.2s
KAPI Kappang 50.06 211 *e*P **P 17 12 38.4 -0.9**
KAPI LR LR
comp=Z,621nm,20.0s
FRU Bishkek 50.14 297⇑ *e*P **P 17 12 40.0 +0.2**
FRU pmax pmax
comp=Z,135nm,2.0s
FRU pmax pmax
comp=Z,300nm,3.3s
KTGM Kuala Trenggan 50.14 237 ⇑P **P 17 12 39.6 -0.5**
KOLN Koldanda 50.19 275 *e*P **P 17 12 41.1 +0.5**
comp=Z,204nm,1.0s
AAK Ala-Archa 50.30 297*c i*P **P 17 12 41.8 +0.6**
AAK pmax pmax
comp=Z,96nm,1.2s
AAK Ala-Archa 50.30 297 *e*P **P 17 12 40.8 -0.3**
AAK LR LR
comp=Z,5μm,20.0s
AAK Ala-Archa 50.30 297 P **P 17 12 42.0 +0.8**
SNR=19
AAK Ala-Archa 50.30 297 P **P 17 12 42.0 +0.8**
SNR=19
ZRNK Zerenda 50.33 311 *e*P **P 17 12 41.4 +0.3**
ZRNK Zerenda 50.33 311 *e*P **P 17 12 41.4 +0.3**
SURT Suratani 50.35 244 P **P 17 12 43.4 +1.8**
comp=Z,20nm,1.1s,comp=Z,290nm
PYUN Piuthan 50.48 276 *e*P **P 17 12 43.4 +0.6**
comp=Z,489nm,1.0s
KSH Kashi 50.48 292 P P 17 12 47.4 +4.8
KSH *e*sP sP 17 12 56.1 +2.2
KSH *e*PP **PP 17 14 45.1 +6.9**
KSH PcS **PcS 17 18 01.2 +3.4**
KSH S **S 17 19 59.2 +4.4**
KSH sS sS 17 20 10.3 +2.0
KSH pmax pmax
comp=Z,43nm,1.1s
KSH LR LR
comp=Z,6μm,15.3s
KSH LR LR
comp=Z,4μm,14.4s
KSH LR LR
comp=Z,9μm,16.7s
KRAB Krabi 50.60 243 P **P 17 12 44.9 +1.4**
comp=Z,90nm,1.0s
INK Inuvik 50.77 28 P **P 17 12 44.9 +0.8**
comp=Z,12nm,0.6s,baz=298,slow=6.8,SNR=59
INK Inuvik 50.77 28 *e*P **P 17 12 45.1 +1.0**
EKS2 Erkin-Say 50.78 297 *e*P **P 17 12 44.9 +0.2**
EKS2 Erkin-Say 50.78 297 *e*P **P 17 12 44.9 +0.2**
EKS2 LR LR
comp=Z,3μm,20.0s
BBKI Banjar Baru 50.80 218 P **P 17 12 42.8 -2.2**
comp=Z,67nm,1.2s
PKDT Phuket 51.43 244 P **P 17 12 51.4 +1.7**
comp=Z,95nm,1.1s,comp=Z,1μm
MNAS Manas 51.71 297 P **P 17 12 51.7 -0.1**
MNAS pmax pmax
comp=Z,113nm,0.8s
KULM Kulim 51.78 239 *e*P **P 17 12 53.0 +0.7**
HNR Honiara 51.85 159 PFAKE 17 13 10.0 +17
HNR LR LR
comp=Z,2μm,20.0s
LGTI Lohaghat 51.89 279 *ex* **P 17 12 54.3 +1.3**
SFK Sufi-Kurgan 52.02 294 P **P 17 12 52.9 -1.3**
SFK pmax pmax
comp=Z,77nm,1.1s
IPM Ipoh 52.14 238⇑P **P 17 12 55.6 +0.5**
IPM Ipoh 52.14 238 *e*P **P 17 12 55.1 0.0**
MYKOM Kota Tinggi 52.43 233⇓P **P 17 12 57.2 0.0**
MYKOM Kota Tinggi 52.43 233 *e*P **P 17 12 58.0 +0.9**
MMRI Maumere 52.48 207 *e*P **P 17 12 57.8 +0.3**
TPRI Tanjung Pinang 52.70 232 P **P 17 12 59.0 -0.2**
comp=Z,48nm,1.2s,comp=Z,45μm
KK31 Karatay Array 52.81 299 P **P 17 12 59.1 -0.7**
KK31 pmax pmax
comp=Z,67nm,1.2s
KKAR Karatay Array 52.81 299 *e*P **P 17 12 59.6 -0.2**
KKAR Karatay Array 52.81 299 *e*P **P 17 12 59.6 -0.2**
SOEI Soe 52.87 204 P **P 17 13 04.3 +3.8**
comp=Z,116nm,1.0s
SOEI Soe 52.87 204 *e*P **P 17 13 00.0 -0.5**
SMLA Simla 53.37 282 *ex* **P 17 13 03.7 -0.3**
SMLA AMB AMB 17 13 06.9
comp=Z,752nm,0.5s
IUG Iuzhnay 53.53 298⇑ *i*P **P 17 13 06.1 +0.9**
comp=Z,666nm,1.4s
IUG *e*S **S 17 20 37.2 +0.7**
IUG LR LR 17 36 11.9
comp=Z,2μm,15.9s
SVE Sverdlovsk 53.70 317*d i*P **P 17 13 07.4 +1.4**
SVE pmax pmax
comp=Z,211nm,1.1s
THN Thein Dam 53.82 284 *e*P **P 17 13 06.8 -0.5**
COEN Coen 54.01 180 *e*P **P 17 13 08.7 -0.1**
PPBI Pangkal Pinang 54.24 228 P **P 17 13 09.6 -0.9**
comp=Z,39nm,1.4s,comp=Z,563nm
TWSI Taliwang, Sumb 54.60 213 P **P 17 13 12.6 -0.4**
SOKR Solikamsk 54.65 322*c i*P **P 17 13 12.1 -0.8**
SOKR S S 17 21 07.9 +17
SOKR pmax pmax
comp=Z,92nm,1.1s
SOKR MLR MLR
comp=Z,5μm,17.0s
WRAK Wrangell Islan 54.69 43 PFAKE 17 13 30.0 +17
WRAK LR LR
comp=Z,606nm,19.0s
PSI Prapat 54.78 239 *e*P **P 17 13 14.6 0.0**
PSI Prapat 54.78 239 *e*P **P 17 13 14.6 0.0**
ARU Arti 54.91 317 P **P 17 13 15.7 +0.8**
comp=Z,70nm,1.0s,baz=67,slow=6.0,SNR=93
ARU Arti 54.91 317*d i*P **P 17 13 15.6 +0.8**
ARU 17 14 13.0
ARU 17 15 15.8
ARU PPP PPP 17 16 27.9
ARU S **S 17 20 56.3 +1.8**
ARU 17 23 01.5
ARU SS **SS 17 24 38.3 +0.8**
ARU SSS SSS 17 26 40.2

ARU pmax pmax
comp=Z,176nm,1.2s
ARU MLR MLR
comp=Z,9μm,17.0s
ARU Arti 54.91 317 *e*P **P 17 13 15.3 +0.4**
ARU LR LR
comp=Z,7μm,19.0s
KCSI Kotacane, Aceh 55.00 240 P **P 17 13 15.4 -0.6**
comp=Z,19nm,1.3s
DLBC Dease Lake 55.12 40 P **P 17 13 16.9 +0.5**
comp=Z,2.3nm,0.9s,baz=306,slow=8.7,SNR=2.7
DLBC Dease Lake 55.12 40 *e*P **P 17 13 17.3 +0.9**
BKNI Bangkinang 55.31 235 P **P 17 13 20.4 +2.1**
BKNI Bangkinang 55.31 235 *e*P **P 17 13 19.2 +1.0**
NGJI Ngawi 55.82 219 P P 17 13 36.7 +15
MNSI Mandailing Nat 55.87 237 P **P 17 13 20.7 -1.6**
comp=Z,20nm,1.1s
SDSI Sungai Dareh 56.05 234 P **P 17 13 23.5 0.0**
comp=Z,122nm,1.4s,comp=Z,42μm
GSI Gunungsitoli 56.78 239 P **P 17 13 27.8 -1.0**
comp=Z,107nm,1.3s,comp=Z,2μm
GSI Gunungsitoli 56.78 239 *e*P **P 17 13 28.8 0.0**
AB31 Akbulak array 56.99 309 *i* P **P 17 13 29.8 -0.1**
AB31 pmax pmax
comp=Z,86nm,1.1s
ABKAR Akbulak array 56.99 309 *e*P **P 17 13 29.7 -0.1**
KPJI Karang Pucung 57.05 222 P **P 17 13 28.8 -1.8**
comp=Z,80nm,1.0s
LHSI Lahat 57.10 230 P **P 17 13 29.3 -1.7**
comp=Z,89nm,1.3s,comp=Z,1μm
KLI Kotabumi 57.18 228 P **P 17 13 34.0 +2.5**
HOPEN Hopen 57.21 346 *e*P **P 17 13 32.5 +1.5**
HOPEN IAmb IAmb 17 13 40.6
comp=Z,46nm,1.1s
MDSI Maura Dua 57.25 228 P **P 17 13 31.2 -0.9**
comp=Z,50nm,1.3s,comp=Z,787nm
LEM Lembang 57.30 224 P **P 17 13 36.0 +3.4**
comp=Z,803nm,1.2s
MASI Maura Aman, Be 57.30 231 P **P 17 13 33.1 +0.6**
comp=Z,154nm,1.4s,comp=Z,11μm
SPA0 Spitsbergen Ar 57.58 349 *e*P **P 17 13 34.9 +1.3**
SPA0 IAmb IAmb 17 13 42.7
comp=Z,41nm,1.0s
SPA0 Spitsbergen Ar 57.58 349 *e*P **P 17 13 33.6 0.0**
SPITS Spitsbergen Ar 57.58 349 P **P 17 13 34.4 +0.7**
comp=Z,9.6nm,0.8s,baz=84,slow=8.6,SNR=10
AKTO Aktyubinsk 57.61 311 P **P 17 13 34.7 +0.5**
comp=Z,22nm,0.8s,baz=59,slow=8.4,SNR=47
AKTO Aktyubinsk 57.61 311 P **P 17 13 33.5 -0.8**
AKTO pmax pmax
comp=Z,47nm,1.0s
KBS Kingsbay 57.66 350 *e*P **P 17 13 35.5 +1.3**
KBS IAmb IAmb 17 13 37.4
comp=Z,33nm,0.7s
KBS Kingsbay 57.66 350 *e*P **P 17 13 35.0 +0.8**
KBS MLR MLR
comp=Z,853nm,20.0s
KBS Kingsbay 57.66 350 *e*P **P 17 13 35.0 +0.8**
KBS LR LR
comp=Z,853nm,20.0s
KBL Kabul 57.67 290 *e*P **P 17 13 34.7 -0.5**
KBL Kabul 57.67 290 *e*P **P 17 13 34.7 -0.5**
FUNA Funafuti 58.82 137 PFAKE 17 14 00.0 +17
FUNA LR LR
comp=Z,9μm,22.0s
RES Resolute Bay 59.03 15 P **P 17 13 44.1 +0.3**
comp=Z,14nm,0.8s,baz=308,slow=8.0,SNR=62
RES Resolute Bay 59.03 15 *e*P **P 17 13 43.4 -0.4**
RES Resolute Bay 59.03 15 *e*P **P 17 13 43.9 +0.1**
LVZ Lovozero 59.72 335 ||*e*P **P 17 13 49.3 +0.6**
LVZ pmax pmax
comp=Z,82nm,2.5s
LVZ Lovozero 59.72 335 *e*P **P 17 13 48.7 0.0**
LVZ LR LR
comp=Z,2μm,22.0s
HYB Hyderabad 59.81 268 *i* P **P 17 13 50.0 0.0**
HYB *e* 17 13 58.0
YKW3 Yellowknife Ar 60.17 31 *e*P **P 17 13 52.0 +0.2**
CTAO Charters Tower 60.17 177 PFAKE 17 14 00.0 +7.8
CTAO LR LR
comp=Z,736nm,21.0s
YKA Yellowknife Ar 60.21 32 P **P 17 13 52.5 +0.4**
comp=Z,1.7nm,0.6s,baz=300,slow=6.6,SNR=24
YKB5 Yellowknife Ar 60.21 32 *e*P **P 17 13 52.4 +0.3**
APA Apatity 60.30 335 ||*i*P **P 17 13 54.0 +1.4**
APA *i* 17 14 36.0
APA MLR MLR
comp=Z,3μm,21.0s
FITZ Fitzroy Crossi 60.42 199 *e*P **P 17 13 53.7 -0.3**
WRAB Tennant Creek 60.54 190 *e*P **P 17 13 54.8 +0.1**
WRAB MLR MLR
comp=Z,749nm,19.0s
WRAB Tennant Creek 60.54 190 *e*P **P 17 13 54.8 +0.1**
WRAB LR LR
comp=Z,749nm,19.0s
WB2 Warramunga Arr 60.55 190 *e*P **P 17 13 54.3 -0.5**
WR1 Warramunga Arr 60.55 190 *e*P **P 17 13 53.6 -1.2**
WRA Warramunga Arr 60.55 190 P **P 17 13 53.6 -1.3**
comp=Z,6.8nm,0.7s,baz=8.7,slow=7.1,SNR=26
WRA Warramunga Arr 60.55 190 *i* P **P 17 13 53.2 -1.6**
WRA pmax pmax
comp=Z,6.0nm,0.7s
TMCR Tamitsa 60.58 331 *e*P **P 17 13 54.7 +0.2**
TMCR pmax pmax
comp=Z,73nm,0.9s
KEV Kevo 60.89 339 *e*P **P 17 13 57.0 +0.4**
KEV MLR MLR
comp=Z,2μm,22.0s
KEV Kevo 60.89 339 *e*P **P 17 13 57.0 +0.4**
KEV LR LR
comp=Z,2μm,22.0s
HAMF Hammerfest 61.20 341 *e*P **P 17 13 58.4 -0.3**
HAMF IAmb IAmb 17 14 08.1
comp=Z,159nm,1.8s
ARA0 ARCESS Array S 61.44 339 *e*P **P 17 14 00.9 +0.5**
ARCES ARCESS Array B 61.44 339 P **P 17 14 00.9 +0.5**
comp=Z,12nm,0.8s,baz=51,slow=7.9,SNR=20
ARCES LR LR 17 43 17.8
comp=Z,3μm,21.7s,baz=36,slow=39
ARE0 ARCESS Array S 61.44 339 *e*P **P 17 14 01.2 +0.9**
ARE0 IAmb IAmb 17 14 10.5
comp=Z,35nm,1.3s
ARE0 IAMs_20 IAMs_20 17 42 49.1
comp=Z,2μm,18.5s
KLMR Klimovskoe 61.78 327 *e*P **P 17 14 01.8 -0.9**
KLMR *e**PP **pP 17 14 10.4 -0.6**
KLMR *e**SP **sP 17 14 16.5 +2.3**
KLMR *e* 17 16 17.4
KLMR *e*S **S 17 22 21.6 -2.2**
KLMR pmax pmax
comp=Z,95nm,1.2s
KLMR MLR MLR
comp=Z,2μm,18.0s
KTK1 Kautokeino 62.40 339 *e*P **P 17 14 08.0 +1.3**
KTK1 IAmb IAmb 17 14 09.2
comp=Z,27nm,0.9s
DAG Danmarks Havn 62.61 355 *i* P **P 17 14 08.3 +0.2**
comp=Z,26nm,0.8s
DAG Danmarks Havn 62.61 355 *i* P **P 17 14 08.3 +0.2**
DAG pmax pmax
comp=Z,20nm,0.8s
TRO Tromso 63.08 341 *e*P **P 17 14 11.9 +0.7**
TRO IAmb IAmb 17 14 21.1
comp=Z,36nm,0.8s
TRO IAMs_20 IAMs_20 17 48 25.2
comp=Z,2μm,19.0s
NLWA Neilton Lookou 63.41 49 PFAKE 17 14 30.0 +16
NLWA LR LR
comp=Z,899nm,19.0s
GEYT Alibeck 63.57 298 P **P 17 14 15.7 +0.6**
comp=Z,43nm,0.9s,baz=51,slow=2.7,SNR=68
GEYT LR LR 17 43 58.4
comp=Z,3μm,19.8s,baz=50,slow=38
AS01 Alice Springs 64.27 190 *e*P **P 17 14 19.2 -0.5**
AS31 Alice Springs 64.27 190 *e*P **P 17 14 19.1 -0.6**
ASAR Alice Springs 64.27 190 P **P 17 14 19.4 -0.3**
comp=Z,3.2nm,0.8s,baz=10.0,slow=7.3,SNR=26
ASAR LR LR 17 42 11.7
comp=Z,506nm,20.8s,baz=1.0,slow=36
PALK Pallekele 64.55 257 *e*P **P 17 14 21.4 -0.4**
PALK pmax pmax
comp=Z,33nm,1.4s
PALK Pallekele 64.55 257 *e*P **P 17 14 21.4 -0.4**
comp=Z,34nm,1.4s
MBWA Marble Bar 65.01 204 PFAKE 17 14 40.0 +16
MBWA LR LR
comp=Z,484nm,19.0s
B08A Colville Reser 65.47 47 *e*P **P 17 14 28.7 +1.3**
MOS Moscow 65.50 323 *e*P **P 17 14 27.2 -0.1**
MOS *e* 17 14 41.2
MOS *e* 17 14 57.8
MOS *e* 17 16 49.2
MOS *e* 17 23 05.8
MOS *e* 17 23 43.7
MOS pmax pmax
comp=Z,91nm,1.1s
MOS pmax pmax
comp=Z,200nm,1.3s
MOS MLR MLR
comp=Z,4μm,15.0s
MOS MLR MLR
comp=N,4μm,16.0s
MOS MLR MLR
comp=E,3μm,16.0s
XMAS Kiritimati 65.56 109 PFAKE 17 14 40.0 +12
XMAS LR LR
comp=Z,2.0nm,21.0s
DZM Mont Dzumac 65.72 156 LR LR 17 38 40.3
comp=Z,1μm,21.7s,baz=334,slow=32
H04A Detroit Lake 65.85 51 *e*P **P 17 14 31.4 +1.6**
VRH Novokhopyorsk 66.14 318 *e*P **P 17 14 31.3 -0.3**
VRH *e**SP **pP 17 14 39.8 -0.2**
VRH *e*S **S 17 23 22.5 +4.2**
VRH pmax pmax
comp=Z,60nm,0.9s
VRH smax smax
comp=E,390nm,4.9s
VRH MLR MLR
comp=Z,6μm,16.0s
MSVF Nonsavu 66.20 144 PFAKE 17 14 40.0 +7.7
MSVF LR LR
comp=Z,3μm,20.0s
I04A Tendick Farm, 66.20 52 P **P 17 14 33.4 +1.2**
baz=304
OBN Obninsk 66.35 323*c* *i*P **P 17 14 33.4 +0.6**
OBN *i* 17 14 41.3
OBN *i*S **S 17 23 28.3 +7.6**
OBN pmax pmax
comp=Z,76nm,1.1s
OBN MLR MLR
comp=Z,6μm,16.0s
OBN Obninsk 66.35 323 *e*P **P 17 14 33.0 +0.1**
OBN LR LR
comp=Z,2μm,20.0s
C09A Chrisman Ranch 66.37 47 *e*P **P 17 14 33.6 +0.5**
G06A Carlson Farm, 66.46 50 *e*P **P 17 14 33.9 +0.1**
FIA1 FINESS Array S 66.59 332 *e*P **P 17 14 34.0 -0.3**
FIA0 FINESS Array S 66.59 332 *e*P **P 17 14 34.9 +0.6**
FIA0 FINESS Array S 66.59 332 *e*P **P 17 14 34.9 +0.6**
FINES FINESS Array B 66.59 332 P **P 17 14 34.9 +0.6**
comp=Z,52nm,0.8s,baz=46,slow=8.2,SNR=73
FINES LR LR 17 46 51.4
comp=Z,4μm,19.7s,baz=28,slow=39
LPSR Galich'ya Gora 66.73 320 *e*P **P 17 14 35.4 +0.1**
LPSR *e**SP **pP 17 14 43.8 +0.1**
LPSR pmax pmax
comp=Z,50nm,0.9s
NEW Newport 66.74 46 P **P 17 14 36.5 +1.0**
comp=Z,2.5nm,0.7s,baz=315,slow=7.0,SNR=4.2
NEW Newport 66.74 46 P **P 17 14 37.6 +2.0**
baz=305
NEW Newport 66.74 46 *e*P **P 17 14 36.5 +1.0**
NEW MLR MLR
comp=Z,889nm,19.0s
NEW Newport 66.74 46 *e*P **P 17 14 36.5 +1.0**
NEW LR LR
comp=Z,889nm,19.0s
MOR8 Moi Rana 66.79 340 *e*P **P 17 14 34.9 -0.6**
MOR8 IAmb IAmb 17 14 36.4
comp=Z,52nm,0.9s
STOK Stokkvaagen 67.03 340 *e*P **P 17 14 35.2 -1.8**
STOK IAmb IAmb 17 14 39.3
comp=N,6.1nm,1.2s
YBH Yreka Blue Hor 67.17 54 P **P 17 14 39.0 +0.6**
comp=N,3.9nm,0.9s,baz=352,slow=7.1,SNR=5.0
YBH Yreka Blue Hor 67.17 54 *e*P **P 17 14 39.1 +0.6**
YBH Yreka Blue Hor 67.17 54 *e*P **P 17 14 39.1 +0.6**
SUMG Summit 67.38 1 *i* P **P 17 14 40.0 +0.3**
comp=N,34nm,0.8s
SUMG Summit 67.38 1 *e*P **P 17 14 39.9 +0.3**
SUMG Summit 67.38 1 *e*P **P 17 14 39.9 +0.3**
VSR Storozhevoye 67.44 319 *e*P **P 17 14 40.3 +0.5**
VSR *e**SP **pP 17 14 48.6 +0.4**
VSR *e*S **S 17 23 32.5 -1.4**
VSR pmax pmax
comp=Z,60nm,1.1s
VSR smax smax
comp=E,170nm,6.6s
VSR MLR MLR
comp=Z,5μm,17.0s
M04C Macdoel 67.68 54 P **P 17 14 43.4 +1.7**
baz=305
COCO West Island 67.71 230 *i* P **P 17 14 45.5 +3.6**
K05A Summer Lake 67.72 52 *e*P **P 17 14 43.1 +1.0**
F10A Beach Ranch, E 68.00 48 *e*P **P 17 14 46.3 +2.7**
WALA Waterton Lakes 68.00 44 *e*P **P 17 14 45.4 +1.7**
AFI Afiamalu 68.17 132 LR LR 17 39 45.3
comp=Z,945nm,19.2s,baz=344,slow=32
VSU Vasula 68.37 330*c* *i*P **P 17 14 46.3 +0.8**
VSU pmax pmax
comp=Z,206nm,1.0s
O03D Paynes Creek 68.55 55 P **P 17 14 48.4 +1.2**
baz=305
JTMT Jette 68.59 45 *e*P **P 17 14 48.2 +0.9**
BMO Blue Mountains 68.61 49 *e*P **P 17 14 49.3 +1.8**
BMO Blue Mountains 68.61 49 *e*P **P 17 14 49.3 +1.8**
BMO LR LR
comp=Z,999nm,19.0s
NSS Namsos 68.72 340 *e*P **P 17 14 47.6 0.0**
NSS IAmb IAmb 17 14 55.9
comp=Z,97nm,2.0s
SWMT Swartz Lake 68.88 45 *e*P **P 17 14 50.3 +1.2**
SCO Scoresbysund 68.97 355 *i* P **P 17 14 51.2 +2.1**
SCO Scoresbysund 68.97 355 *e*P **P 17 14 51.2 +2.1**
GOF Gofitskoye 69.02 312 ||*i*P **P 17 14 51.0 +1.2**
GOF pmax pmax
comp=Z,169nm,1.0s
WVOR Wild Horse Val 69.25 52 *e*P **P 17 14 53.9 +2.4**
WVOR Wild Horse Val 69.25 52 *e*P **P 17 14 53.9 +2.4**
WVOR LR LR
comp=Z,763nm,22.0s
MSO Missoula 69.33 46 P **P 17 14 53.3 +1.4**
baz=307
MSO Missoula 69.33 46 *e*P **P 17 14 54.4 +2.5**
NCK Nalchik 69.62 310 ||*i*P **P 17 14 55.0 +1.3**
NCK pmax pmax
comp=Z,78nm,1.1s
GUDG Gudauri 69.72 309 P **P 17 14 56.3 +1.8**
DGRG David-gareji 69.78 307 P **P 17 14 56.6 +1.9**
DGRG David-gareji 69.78 307 P **P 17 14 56.6 +1.9**
AFDM Forest Hills D 69.85 56 *e*P **P 17 14 56.1 +0.9**
ZEI Tsey 69.86 309 *e*P **P 17 14 55.8 +0.4**
ZEI pmax pmax
comp=Z,112nm,1.0s
KIV Kislovodsk 69.88 311 *e*P **P 17 14 57.0 +1.7**
KIV Kislovodsk 69.88 311 *i* P **P 17 14 57.1 +1.7**
SNR=74
KIV Kislovodsk 69.88 311 *i* P **P 17 14 55.8 +0.5**
KIV *i* 17 15 04.2
KIV *i* 17 15 14.6
KIV *e*S **S 17 24 07.8 +4.4**
KIV *i* SS **SS 17 28 27.8 -3.9**
KIV pmax pmax
comp=Z,249nm,1.2s
KIV Kislovodsk 69.88 311 *e*P **P 17 14 56.6 +1.3**
KIV LR LR
comp=Z,4μm,19.0s
KIV Kislovodsk 69.88 311 P **P 17 14 57.0 +1.7**
SNR=76
KIV Kislovodsk 69.88 311 P **P 17 14 57.0 +1.7**
SNR=76
KBZ Khabaz 69.89 311 P **P 17 14 56.4 +1.2**
comp=Z,52nm,0.9s,baz=58,slow=4.6,SNR=76
KBZ LR LR 17 51 07.2
comp=Z,3μm,18.8s,baz=32,slow=41
TBLG Delisi 69.99 308 *e*P **P 17 14 59.1 +3.1**
TBLG Delisi 69.99 308 P **P 17 14 58.6 +2.6**
TBLG Delisi 69.99 308 P **P 17 14 58.6 +2.6**
FFC Flin Flon 70.13 34 *e*P **P 17 14 56.9 +0.4**
FFC Flin Flon 70.13 34 *e*P **P 17 14 57.0 +0.4**
FFC LR LR
comp=Z,1μm,22.0s
NEY Neytrino 70.28 310 ||*i*P **P 17 14 59.5 +1.6**
NEY pmax pmax
comp=Z,13nm,0.9s
MFID Camas Ranch 70.32 49 *e*P **P 17 14 59.4 +1.3**
IZAR Zarasai 70.42 328 *e*P **P 17 14 59.4 +1.1**
IZAR IAmb IAmb 17 15 01.9
comp=Z,27nm,0.7s
HRY Holter Researc 70.54 45 *e*P **P 17 15 01.2 +1.8**
ISAL Salakas 70.60 328 *e*P **P 17 15 00.4 +1.1**
ISAL IAmb IAmb 17 15 10.0
comp=Z,94nm,1.1s
MICGM Minsk 70.60 326 *e*P P 17 15 07.0 +7.6
MICGM *e*LR LR 17 44 25.0
MICGM LRM MLR 17 49 05.0
comp=Z,6.3nm,16.0s
MNK Minsk 70.60 326 *e*P **P 17 15 01.0 +1.6**
MNK MLR MLR
comp=Z,6μm,16.0s
IIGN Ignalina 70.71 327 *e*P **P 17 15 01.1 +1.1**
IIGN IAmb IAmb 17 15 10.6
comp=Z,56nm,0.8s
LRM Limekiln Ridge 70.76 46 *e*P **P 17 15 01.6 +0.7**
CMB Columbia Colle 70.76 56 *e*P **P 17 15 02.8 +2.0**
CMB Columbia Colle 70.76 56 *e*P **P 17 15 02.8 +2.0**
NACGM Naroch 70.79 327 *e* **P 17 15 01.0 +0.5**
NACGM *e*LQ LQ 17 42 50.0
NACGM *e*LR LR 17 47 30.0
EGMT Eagleton 70.82 43 P **P 17 15 02.1 +1.1**
baz=309
EGMT Eagleton 70.82 43 *e*P **P 17 15 01.9 +0.9**
EGMT LR LR
comp=Z,908nm,19.0s
AKH Akhalkalaki 70.94 308 P **P 17 15 03.5 +1.6**
AKH Akhalkalaki 70.94 308 ||*i*P **P 17 15 03.9 +2.0**
AKH Akhalkalaki 70.94 308 P **P 17 15 03.5 +1.6**
GNI Garni 70.94 307 *i* P **P 17 15 03.7 +1.8**
SNR=19
GNI Garni 70.94 307 *e*P **P 17 15 04.0 +2.1**
GNI Garni 70.94 307 *e*P **P 17 15 03.5 +1.6**
GNI LR LR
comp=Z,3μm,19.0s
DLMT Dillon 70.96 46 *e*P **P 17 15 03.6 +1.6**
CHVG Ch'k'valeri 70.97 310 *e*P **P 17 15 03.7 +1.8**
CHVG Ch'k'valeri 70.97 310 P **P 17 15 03.3 +1.4**
CHVG Ch'k'valeri 70.97 310 ||*i*P **P 17 15 03.4 +1.4**
HLID Hailey 71.05 49 P **P 17 15 04.1 +1.5**
baz=308
HLID Hailey 71.05 49 *e*P **P 17 15 05.5 +2.9**
HLID LR LR
comp=Z,911nm,20.0s
WAKR Walker 71.08 55 *e*P **P 17 15 02.8 -0.1**
BMN Battle Mountai 71.30 53 *e*P **P 17 15 05.3 +1.2**
BMN Battle Mountai 71.30 53 *e*P **P 17 15 05.3 +1.2**
BOZ Bozeman (W) 71.32 46 P **P 17 15 05.2 +1.0**
baz=309
BOZ Bozeman (W) 71.32 46 *e*P **P 17 15 04.9 +0.8**
BOZ Bozeman (W) 71.32 46 *e*P **P 17 15 04.9 +0.8**
BOZ LR LR
comp=Z,750nm,19.0s
MOL Molde 71.47 340 *e*P **P 17 15 05.3 +0.8**
MOL IAmb IAmb 17 15 14.8
comp=Z,37nm,1.2s
NC405 NORSAR Array S 71.51 337 *e*P **P 17 15 05.1 +0.3**
NC303 NORSAR Array S 71.52 338 *e*P **P 17 15 05.3 +0.4**
BANOM Banah 71.58 289 *i* P **P 17 15 06.9 +1.1**
SNR=7.0
BANOM Banah 71.58 289 P **P 17 15 07.7 +1.8**
SNR=8.4
BANOM Banah 71.58 289 P **P 17 15 07.7 +1.8**
SNR=8.4
WBK Wadi Bani Khal 71.58 284 P **P 17 15 09.8 +3.8**
SNR=5.8
WBK Wadi Bani Khal 71.58 284 P **P 17 15 09.8 +3.8**
SNR=5.8
NC204 NORSAR Array S 71.66 338 *e*P **P 17 15 05.5 -0.3**
NB201 NORSAR Array S 71.68 338 *e*P **P 17 15 06.3 +0.4**
NB2 NORSAR Subarra 71.72 338 P **P 17 15 06.4 +0.3**
comp=Z,80nm,1.1s,baz=37,slow=6.2
NB2 NORSAR Subarra 71.72 338 P **P 17 15 06.4 +0.3**
baz=37,slow=6.2
NB200 NORSAR Array S 71.72 338 *e*P **P 17 15 06.8 +0.7**
NB200 *e*PP **PP 17 17 38.8 -6.0**
NOA NORSAR Array B 71.72 338 P **P 17 15 06.8 +0.7**
comp=Z,32nm,0.9s,baz=38,slow=6.0,SNR=58
NOA PP **PP 17 17 38.8 -6.0**
comp=Z,5.6nm,0.9s,baz=34,slow=7.9,SNR=4.2
NOA LR LR 17 50 00.4
comp=Z,3μm,21.9s,baz=30,slow=39
SOC Sochi 71.81 312 *e*P **P 17 15 06.9 0.0**
SOC *e* 17 17 42.8
SOC *e*PPP PPP 17 19 29.9
SOC *e*S **S 17 24 24.3 -1.3**
SOC *e*SS **SS 17 29 05.1 +4.1**
SOC pmax pmax
comp=Z,48nm,0.8s
NBO02 NORSAR Array S 71.81 338 *e*P **P 17 15 06.8 +0.1**
NV01 Mina Array Sit 71.84 55 *e*P **P 17 15 07.8 +0.3**
NVAR Mina Array Bea 71.84 55 P **P 17 15 08.0 +0.5**
comp=Z,2.9nm,0.8s,baz=295,slow=7.3,SNR=17
NVAR LR LR 17 42 59.8
comp=Z,572nm,21.9s,baz=302,slow=33
NBO00 NORSAR Array S 71.85 338 *e*P **P 17 15 07.2 +0.3**
NC602 NORSAR Array S 71.86 337 *e*P **P 17 15 07.7 +0.7**
NC602 IAmb IAmb 17 15 16.8
comp=Z,93nm,1.7s
NC602 NORSAR Array S 71.86 337 *e*P **P 17 15 07.5 +0.6**
STKA Stephens Creek 71.87 182 P **P 17 15 06.9 -0.3**
comp=Z,0.8nm,0.4s,baz=355,slow=4.8,SNR=4.7
STKA LR LR 17 45 23.4
comp=Z,485nm,21.5s,baz=11,slow=35
STKA Stephens Creek 71.87 182 *e*P **P 17 15 07.1 -0.1**
STKA Stephens Creek 71.87 182 *e*P **P 17 15 07.1 -0.1**
NV11 Mina Array Sit 71.93 55 *e*P **P 17 15 09.4 +1.4**
NAO01 NORSAR Array S 71.97 338 *e*P **P 17 15 07.9 +0.3**
SMDO Samad 72.00 285 P **P 17 15 11.3 +2.8**
SNR=6.7
SMDO Samad 72.00 285 P **P 17 15 11.3 +2.8**
SNR=6.7
UOSS Minazif 72.23 288 *e*P **P 17 15 10.0 +0.3**
GCMT Greycliff 72.29 45 *e*P **P 17 15 09.9 -0.1**
ELK Elko 72.30 51 P **P 17 15 11.0 +0.7**
comp=Z,1.1nm,0.5s,baz=3.4,slow=7.9,SNR=5.1
ELK Elko 72.30 51 *e*P **P 17 15 11.4 +1.1**
ELK *e* 17 15 18.2
ELK Elko 72.30 51 *e*P **P 17 15 11.3 +1.1**
YMR Madison River 72.30 46 *e*P **P 17 15 11.7 +1.5**
ANN Anapa 72.32 314 *e*P **P 17 15 09.2 -0.7**
ANN *e*S **S 17 24 33.2 +1.9**
ANN pmax pmax
comp=Z,80nm,1.3s
ANN MLR MLR
comp=N,3μm,16.0s
ANN MLR MLR
comp=Z,2μm,16.0s
HATD Hatta, Dubai 72.35 288 *i* P **P 17 15 11.4 +1.0**
SNR=20
AGRB Hanur-Agry 72.35 307 *e*P **P 17 15 12.8 +2.3**
SFJD Kangerlussuaq 72.47 6 *i* P **P 17 15 10.9 +0.5**
comp=Z,29nm,1.0s
SFJD Kangerlussuaq 72.47 6 *e*P **P 17 15 10.8 +0.4**
SFJD MLR MLR
comp=Z,2μm,20.0s
SFJD Kangerlussuaq 72.47 6 *e*P **P 17 15 10.8 +0.4**
SFJD LR LR
comp=Z,2μm,20.0s
ASHO Ashiyiah 72.49 288 *i* P **P 17 15 12.1 +0.8**
SNR=22
ASHO Ashiyiah 72.49 288 P **P 17 15 13.7 +2.3**
SNR=12
ASHO Ashiyiah 72.49 288 P **P 17 15 13.7 +2.3**
SNR=12
YFT Old Faithful 72.51 46 *e*P **P 17 15 13.6 +2.2**
NAZ Nazwa, Dubai 72.59 288 *i* P **P 17 15 12.4 +0.5**
SNR=8.9
AKASG Malin Array Be 72.60 323 P **P 17 15 12.0 +0.5**
comp=Z,47nm,0.9s,baz=43,slow=6.0,SNR=102
AKASG PP **PP 17 17 48.7 -3.8**
comp=Z,7.9nm,0.9s,baz=38,slow=9.3,SNR=4.3
AKASG LR LR 17 51 00.2
comp=Z,2μm,18.5s,baz=50,slow=39
AKBB Malin Array Si 72.60 323 *e*P **P 17 15 11.3 -0.2**
AKBB Malin Array Si 72.60 323 *e*P **P 17 15 11.3 -0.2**

KIEV Kiev 72.61 323 *c* P P 17 15 11.9 +0.3
KIEV pmax pmax
comp=Z,59nm,0.9s
KIEV Kiev 72.61 323 *e* P P 17 15 11.3 -0.3
KIEV LR LR
comp=Z,3μm,20.0s
AK11 Malin Array Si 72.64 323 *e* P P 17 15 11.4 -0.3
LKWY Lake 72.68 46 PFAKE 17 15 30.0 +18
LKWY LR LR
comp=Z,1μm,20.0s
H17A Grant Village 72.69 46 P P 17 15 16.6 +4.1
baz=310
H17A Grant Village 72.69 46 *e* P P 17 15 14.4 +1.9
IMW Indian Meadow 72.81 47 *e* P P 17 15 15.0 +1.7
FLWY Flagg Ranch 72.82 46 *e* P P 17 15 14.8 +1.5
SUW Suwalki 72.91 328 *e* P P 17 15 13.5 +0.3
SUW LMZ LR 17 49 11.0
SUW Suwalki 72.91 328 *e* P P 17 15 13.6 +0.3
SUW MLR MLR
comp=Z,2μm,22.0s
FXWY Fox Creek 72.92 47 *e* P P 17 15 15.7 +1.8
RLMT Red Lodge 72.94 45 *e* P P 17 15 16.9 +3.0
RLMT LR LR
comp=Z,867nm,20.0s
ARQ Araqi 72.95 286 P P P 17 15 15.7 +1.6
SNR=7.7
ARQ Araqi 72.95 286 P P P 17 15 15.7 +1.6
SNR=7.7
HYA Hoyanger 73.00 340 *e* P P 17 15 14.1 +0.4
HYA IAmb IAmb 17 15 16.2
comp=Z,37nm,1.1s
MOOW Moose Ponds 73.01 47 *e* P P 17 15 16.0 +1.6
ASUD Al Ashush, Dub 73.05 288 P P P 17 15 15.4 +0.8
ASUD *i* P P 17 15 15.6 +0.9
SNR=7.9
HVU Hansel Valley 73.11 49 *e* P P 17 15 16.9 +2.0
HVU Hansel Valley 73.11 49 *e* P P 17 15 16.9 +2.0
LOHW Long Hollow 73.17 47 *e* P P 17 15 17.4 +2.1
REDW Red Top Meadow 73.20 47 *e* P P 17 15 18.0 +2.4
GRAC Grapevine Rang 73.30 56 P P P 17 15 17.6 +1.6
baz=308
KONO Kongsberg 73.32 337 *e* P P 17 15 14.1 -1.5
KONO IAmb IAmb 17 15 25.8
comp=Z,77nm,1.6s
KONO IAMs_20 IAMs_20 17 51 27.2
comp=Z,3μm,21.0s
KONO Kongsberg 73.32 337 *e* P P 17 15 16.6 +1.0
KONO MLR MLR
comp=Z,3μm,20.0s
KONO Kongsberg 73.32 337 *e* P P 17 15 16.6 +1.0
KONO LR LR
comp=Z,3μm,20.0s
DGMT Dagmar 73.34 40 *e* P P 17 15 19.3 +3.3
DGMT LR LR
comp=Z,840nm,20.0s
CUKT Cukurca 73.41 305 *e* P P 17 15 17.7 +1.0
AHID Auburn Hatcher 73.44 48 *e* P P 17 15 17.8 +0.9
AHID LR LR
comp=Z,837nm,21.0s
LAO LASA Array 73.51 42 PFAKE 17 15 30.0 +13
LAO LR LR
comp=Z,797nm,19.0s
BAYT Ayd¨ntepe-Bay 73.56 309 *e* P P 17 15 19.8 +2.1
R11A Troy Canyon, C 73.57 54 P P P 17 15 18.9 +1.1
baz=309
R11A Troy Canyon, C 73.57 54 *e* P P 17 15 18.9 +1.1
SPUT South Promonto 73.59 50 *e* P P 17 15 19.4 +1.6
DAC Darwin (Calif) 73.60 56 *e* P P 17 15 19.1 +1.1
DAC Darwin (Calif) 73.60 56 *e* P P 17 15 19.1 +1.1
MPMC Manual Prospec 73.80 56 P P P 17 15 20.4 +1.2
baz=308
ASK Askoy 73.84 340 *e* P P 17 15 20.2 +1.5
ASK IAmb IAmb 17 15 21.4
comp=Z,24nm,0.8s
GUMT Gumushane 73.91 310 *e* P P 17 15 20.4 +0.8
HWUT Hardware Ranch 73.91 49 *e* P P 17 15 21.0 +1.3
HWUT LR LR
comp=Z,577nm,20.0s
ODD1 Odda 73.94 339 *e* P P 17 15 20.4 +1.0
ODD1 IAmb IAmb 17 15 29.9
comp=Z,47nm,1.1s
SIM Simferopol' 74.02 316 *e* P P 17 15 20.7 +0.7
SIM *e* S S 17 24 49.0 -1.7
SIM pmax pmax
comp=Z,38nm,1.0s
SIM MLR MLR
comp=Z,1μm,17.0s
TPNV Topopah Spring 74.03 55 P P P 17 15 21.7 +1.2
baz=309
TPNV Topopah Spring 74.03 55 *e* P P 17 15 23.1 +2.6
TPNV Topopah Spring 74.03 55 *e* P P 17 15 23.1 +2.6
DUG Dugway, Tooele 74.08 51 P P P 17 15 22.3 +1.6
baz=310
DUG Dugway, Tooele 74.08 51 *e* P P 17 15 22.5 +1.8
DUG Dugway, Tooele 74.08 51 *e* P P 17 15 22.5 +1.8
DUG LR LR
comp=Z,634nm,19.0s
EDW2 Edwards Air Fo 74.20 58 P P P 17 15 22.8 +1.4
baz=308
BW06 Boulder Array 74.30 47 P P P 17 15 22.5 +0.4
baz=311
BW06 Boulder Array 74.30 47 *e* P P 17 15 21.5 -0.5
BW06 LR LR
comp=Z,718nm,21.0s
PD31 Pinedale Array 74.30 47 *e* P P 17 15 22.0 0.0
PDAR Pinedale Array 74.30 47 P P P 17 15 22.4 +0.4
comp=Z,1.5nm,0.6s,baz=260,slow=1.9,SNR=16
PSUT Pine Spring 74.52 53 *e* P P 17 15 24.4 +1.1
BORG Borgarnes 74.56 353 *i* P P 17 15 27.0 +4.2
NLU North Lily Min 74.67 50 *e* P P 17 15 26.0 +1.8
GSC Goldstone, Bar 74.71 57 *e* P P 17 15 25.2 +0.9
GSC Goldstone, Bar 74.71 57 *e* P P 17 15 25.2 +0.9
MPU Maple Canyon 74.89 50 *e* P P 17 15 26.8 +1.4
A28A Rude Farm, Bot 74.92 38 P P P 17 15 25.8 +0.6
baz=315
PTK Pertek 74.96 308 *e* P P 17 15 28.1 +2.3
DYBB Diyarbakir 75.11 307 *e* P P 17 15 28.3 +1.8
TUQ Turquoise Moun 75.18 56 P P P 17 15 28.4 +1.3
baz=309
RSDY Resadiye-TOKAT 75.21 311 *e* P P 17 15 28.3 +1.3
MAZI Mazidag 75.23 307 *e* P P 17 15 27.7 +0.3
BSD Bornholm Skovb 75.24 332 *i* P P 17 15 27.5 +0.7
comp=Z,83nm,1.0s
comp=Z,2μm,16.0s
BSD Bornholm Skovb 75.24 332 *e* P P 17 15 27.5 +0.7
BSD pmax pmax
comp=Z,83nm,1.0s
BSD MLR MLR
comp=Z,2μm,16.0s
DSCC Desert Studies 75.25 56 *e* P P 17 15 30.1 +2.7
HEC Hector,Ludlow 75.30 57 P P P 17 15 29.2 +1.4
baz=309
KIS Kishinev 75.34 320 *e* P P 17 15 28.0 +0.4
KIS Kishinev 75.34 320 *e* PP PP 17 18 22.0 +6.1
KIS Kishinev 75.34 320 *e* PS 17 25 28.0
KIS *e* SS SS 17 30 04.0 +9.3
KIS *e* SSS SSS 17 33 05.0
KIS *e* LQ LQ 17 42 22.0
KIS *e* LR LR 17 46 17.0
comp=Z,1μm,15.0s
KIS Kishinev 75.34 320 *e* P P 17 15 28.0 +0.4
KIS *e* 17 15 36.0
KIS *e* 17 15 44.0
KIS *e* 17 18 22.0
KIS *e* PPP PPP 17 20 04.0
KIS *e* S S 17 25 02.0 -3.4
KIS *e* PS PnS 17 25 28.0 -15
KIS *e* SSS SSS 17 33 05.0
KIS MLR MLR
comp=N,1μm,15.0s
KIS MLR MLR
comp=E,1μm,15.0s
KIS MLR MLR
comp=Z,3μm,15.0s
KIS MLR MLR
comp=Z,3μm,16.0s
SNOP Sinop 75.36 313 *e* P P 17 15 27.8 0.0
A29A Manning Farm, 75.39 37 P P P 17 15 30.2 +2.3
baz=316
KBSD Kabsdagh 75.47 306 *e* P P 17 15 31.1 +2.5
CAN Canberra 75.47 175 PFAKE 17 15 40.0 +12
CAN LR LR
comp=Z,656nm,21.0s
BEL Belsk 75.49 327 *e* P P 17 15 30.1 +1.7
BEL LMZ LR 17 50 55.8
BEL Belsk 75.49 327 *e* P P 17 15 30.1 +1.7
BEL MLR MLR
comp=Z,2μm,20.1s
KVT Kavak 75.50 312 *e* P P 17 15 30.2 +1.5
MSU Marysvale 75.54 52 *e* P P 17 15 32.8 +3.6
MSU *e* SP sP 17 15 39.3 -1.6
MSU Marysvale 75.54 52 *e* P P 17 15 30.1 +0.9
DIKM Dikmen 75.57 313 *e* P P 17 15 29.1 +0.1
LVV L'vov 75.59 324 ⇓ *i* P P 17 15 29.5 +0.5
LVV *e* 17 18 18.8
LVV *e* S S 17 25 08.4 +0.4
LVV MLR MLR
comp=N,3μm,15.0s
LVV MLR MLR
comp=E,3μm,15.0s
LVV MLR MLR
comp=Z,4μm,15.0s
TMUT Trail Mountain 75.61 51 *e* P P 17 15 31.4 +1.6
COP Copenhagen 75.64 334 *i* P P 17 15 30.6 +1.5
comp=Z,45nm,0.9s
comp=Z,1μm,18.0s
COP Copenhagen 75.64 334 *e* P P 17 15 30.6 +1.5
COP pmax pmax
comp=Z,45nm,0.9s
COP MLR MLR
comp=Z,1μm,18.0s
SVSK Karacayir 75.71 310 *e* P P 17 15 31.0 +1.2
P17A Butcher Ranch, 75.77 50 *e* P P 17 15 32.0 +1.5
A30A Hoffart Farm, 75.81 37 P P 17 15 30.9 +0.6
baz=316
LCMT Little Creek M 75.86 53 *e* P P 17 15 32.0 +1.0
DNR Dunn Ranch,Anz 75.91 58 *e* pP pP 17 15 37.5 -2.3
ULM Lac du Bonnet 75.93 35 P P P 17 15 30.8 -0.2
comp=Z,4.0nm,0.8s,baz=316,slow=6.9,SNR=8.8
ULM Lac du Bonnet 75.93 35 *e* P P 17 15 32.4 +1.5
P18A Preston Nutter 75.96 50 *e* P P 17 15 33.2 +1.5
G25A Newell 75.97 42 P P P 17 15 32.2 +0.9
baz=314
MDND Maddock 75.98 38 *e* P P 17 15 31.4 +0.1
PFO Pinyon Flats O 75.99 58 LR LR 17 42 14.8
comp=Z,940nm,20.8s,baz=314,slow=30
PFO Pinyon Flats O 75.99 58 *e* P P 17 15 32.3 +0.6
PFO *e* SP sP 17 15 42.1 -1.3
PFO Pinyon Flats O 75.99 58 *e* P P 17 15 32.3 +0.6
PFO LR LR
comp=Z,1μm,19.0s
K22A Casper 76.06 46 *e* P P 17 15 31.2 -0.8
BZK Bozkurt 76.06 314 *e* P P 17 15 33.2 +1.4
SFNV Sufian 76.11 306 *e* P P 17 15 33.7 +1.4
KNB Kanab 76.11 53 *e* P P 17 15 35.4 +2.9
KNB Kanab 76.11 53 *e* P P 17 15 35.4 +2.9
SRU San Rafael Swe 76.13 50 *e* P P 17 15 33.8 +1.2
SRU *e* SP pP 17 15 41.0 -0.1
SRU San Rafael Swe 76.13 50 *e* P P 17 15 33.8 +1.2
MZRK Al-Mazaregh 76.15 305 *e* P P 17 15 35.1 +2.6
DARE Darende-Malaty 76.31 309 *e* P P 17 15 36.1 +2.7
KWP Kalwaria Pacla 76.31 325 *e* P P 17 15 34.8 +1.7
KWP LMZ LR 17 51 16.1
KWP Kalwaria Pacla 76.31 325 *e* P P 17 15 34.8 +1.7
KWP MLR MLR
comp=Z,2μm,20.8s
RSSD Black Hills 76.39 43 P P P 17 15 34.9 +1.0
baz=314
RSSD Black Hills 76.39 43 *e* P P 17 15 35.1 +1.1
RSSD Black Hills 76.39 43 *e* P P 17 15 35.0 +1.1
IRM Iron Mountain 76.49 57 P P P 17 15 36.1 +1.7
baz=310
I25A Rochford 76.61 43 P P P 17 15 33.2 -2.0
baz=314
BUR08 Bucovina Ar. S 76.62 322 *e* P P 17 15 35.9 +0.8
BURAR Bucovina Array 76.64 322 ⇑ *i* P P 17 15 35.5 +0.3
BURAR Bucovina Array 76.64 322 ⇑ P P 17 15 35.5 +0.3
W13A Hualapai Mount 76.69 55 *e* P P 17 15 37.6 +1.8
TESR Tescani 76.75 321 ⇑ *i* P P 17 15 36.7 +1.0
O20A White River Ci 76.78 48 *e* P P 17 15 37.1 +0.9
NWAO Narrogin (SRO) 76.79 202 PFAKE 17 15 50.0 +14
NWAO LR LR
comp=Z,555nm,21.0s
U15A North Rim 76.82 53 *e* P P 17 15 38.2 +1.6
C31A Landman Farms, 76.90 37 P P P 17 15 36.9 +0.4
baz=317
CORM Corum 76.90 312 *e* P P 17 15 37.5 +0.7
D30A Buchanan 76.91 38 P P P 17 15 36.7 +0.1
baz=316
B32A Ashes, Strandq 77.00 36 P P P 17 15 36.8 -0.3
baz=317
KOLS Kolonicke sedl 77.02 325 *e* P P 17 15 37.9 +0.8
KOLS pmax pmax
comp=Z,22nm,0.9s
KOLS Kolonicke sedl 77.02 325 *e* P P 17 15 37.9 +0.8
KOLS *e* PP PP 17 18 33.4 +3.4
KOLS *e* L L 17 53 20.3
PETR Petresti 77.02 320 ⇓ *i* P P 17 15 39.4 +2.2
STHS Stebnicka Huta 77.11 325 *e* P P 17 15 39.2 +1.5
STHS pmax pmax
comp=Z,25nm,1.0s
STHS Stebnicka Huta 77.11 325 *e* P P 17 15 39.2 +1.5
A33A Warroad 77.12 35 P P P 17 15 37.8 +0.1
baz=318
OJC Ojcow 77.12 327 *e* P P 17 15 39.1 +1.4
OJC LMZ LR 17 52 22.2
OJC Ojcow 77.12 327 *e* P P 17 15 38.3 +0.6
OJC Ojcow 77.12 327 *e* P P 17 15 38.3 +0.6
Y12C Blythe 77.14 57 *e* P P 17 15 39.4 +1.3
KSRV Kasrt alli 77.15 306 *e* P P 17 15 40.4 +2.3
VRI Vrincioaia 77.17 320 ⇓ *i* P P 17 15 39.3 +1.2
VRI Vrincioaia 77.17 320 ⇓ P P 17 15 39.3 +1.2
PLOR Plostina 77.22 320 ⇑ *i* P P 17 15 39.4 +1.0
PLOR Plostina 77.22 320 ⇑ P P 17 15 39.4 +1.0
UZH Uzhgorod 77.23 324 ⇓ *i* P P 17 15 38.6 +0.3
UZH *e* 17 15 44.4
UZH *e* 17 15 47.4
UZH *e* S S 17 25 21.2 -4.9
UZH MLR MLR
comp=N,2μm,15.0s
UZH MLR MLR
comp=E,3μm,15.0s
UZH MLR MLR
comp=Z,2μm,15.0s
TIRR Tirgusor 77.33 318 *e* P P 17 15 40.0 +1.2
TIRR Tirgusor 77.33 318 ⇓ *i* P P 17 15 39.8 +0.9
TIRR Tirgusor 77.33 318 ⇓ P P 17 15 39.8 +0.9
TIRR Tirgusor 77.33 318 *e* P P 17 15 39.5 +0.6
KMRS Kahramanmaras 77.35 309 *e* P P 17 15 40.0 +0.7
AGMN Agassiz Nation 77.38 36 *e* P P 17 15 40.0 +0.8
AGMN LR LR
comp=Z,750nm,19.0s
CRVS Cervenica-Dubn 77.40 325 *e* P P 17 15 40.5 +1.2
CRVS Cervenica-Dubn 77.40 325 *e* P P 17 15 40.5 +1.2
PV10 Paradox Valley 77.49 50 *e* P P 17 15 41.3 +1.0
TRPA Tarpa 77.49 324 ⇑ *e* SKKPdf P 17 15 41.3 +1.5
NIE Niedzica 77.52 326 *e* P P 17 15 41.8 +1.8
NIE LMZ LR 17 53 14.3
NIE Niedzica 77.52 326 *e* P P 17 15 41.8 +1.8
NIE MLR MLR
comp=Z,2μm,18.3s
N23A Red Feather La 77.56 47 *e* P P 17 15 43.3 +2.6
PV05 Paradox Valley 77.65 50 *e* P P 17 15 42.2 +1.0
DOPR Dopca 77.75 321 ⇓ *i* P P 17 15 43.0 +1.7
BR101 Keskin Array S 77.77 312 *e* P P 17 15 42.2 +0.5
BR101 *e* PP PP 17 18 33.7 -3.1
BR131 Keskin Array S 77.77 312 *e* P P 17 15 42.3 +0.5
BRTR Keskin Array B 77.77 312 P P P 17 15 42.2 +0.5
comp=Z,11nm,0.9s,baz=72,slow=4.0,SNR=57
BRTR PP PP 17 18 33.7 -3.1
comp=Z,2.8nm,0.9s,baz=66,slow=5.5,SNR=3.7
BRTR LR LR 17 55 36.3
comp=Z,962nm,19.3s,baz=19,slow=40
ISR Istrita 77.79 320 ⇓ *i* P P 17 15 43.4 +1.8
ISR Istrita 77.79 320 ⇓ P P 17 15 43.4 +1.8
C33A Trail 77.82 36 P P P 17 15 40.9 -0.7
baz=318
MLR Muntele Rosu 77.82 320 *e* P P 17 15 42.3 +0.4
MLR Muntele Rosu 77.82 320 *e* P P 17 15 42.3 +0.4
MSAB Monastry St. A 77.88 318 ⇑ *i* P P 17 15 42.8 +0.8
RAC Raciborz 77.89 327 *e* P P 17 15 43.3 +1.3
RAC MLR MLR
comp=Z,3μm,20.3s
I28A Midland 77.95 42 P P P 17 15 43.5 +1.0
baz=315
KAMT Kaman 77.97 312 *e* P P 17 15 42.7 -0.1
WUAZ Wupatki 77.97 54 P P P 17 15 45.1 +2.1
baz=311
WUAZ Wupatki 77.97 54 *e* P P 17 15 46.1 +3.2
WUAZ LR LR
comp=Z,653nm,21.0s
Y14A Wickenburg 77.99 56 *e* P P 17 15 44.1 +1.2
KOZT Kozan 78.01 309 *e* P P 17 15 44.7 +1.8
KSP Ksiaz 78.07 329 *e* P P 17 15 44.3 +1.3
KSP LMZ LR 17 52 51.1
KSP Ksiaz 78.07 329 *e* P P 17 15 44.4 +1.4
KSP MLR MLR
comp=Z,1μm,21.0s
LANS Liptovska Anna 78.07 326 *e* P P 17 15 44.9 +1.8
LANS *e* 17 15 53.4
LANS *e* 17 18 38.6
LANS Liptovska Anna 78.07 326 *e* P P 17 15 44.9 +1.8
LANS *e* 17 15 53.4
LANS *e* PP PP 17 18 38.6 -0.3
DRWC Darouich 78.08 308 *e* P P 17 15 44.7 +1.3
OKC Ostrava-Krasne 78.10 327 *e* P P 17 15 44.5 +1.3
OKC *e* pP PcP 17 15 52.7 0.0
OKC AMS AMS 17 53 20.0
comp=Z,2μm,19.2s
OKC Ostrava-Krasne 78.10 327 *e* P P 17 15 44.5 +1.3
OKC *e* 17 15 52.7
OKC MLR MLR
comp=Z,2μm,19.2s
KECS Kecovo 78.14 325 *e* P P 17 15 44.8 +1.4
KECS pmax pmax
comp=Z,10.0nm,1.1s
KECS Kecovo 78.14 325 *e* P P 17 15 44.8 +1.4
KECS *e* 17 15 52.4
KECS *e* PP PP 17 18 39.9 +0.5
SMCO Snowmass 78.15 48 *e* P P 17 15 44.7 +0.5
ANTO Ankara 78.15 313 *e* P P 17 15 43.9 +0.1
ANTO MLR MLR
comp=Z,1μm,19.0s
ANTO Ankara 78.15 313 *e* P P 17 15 43.9 +0.1
ANTO LR LR
comp=Z,1μm,19.0s
ANTO Ankara 78.15 313 P P P 17 15 45.5 +1.7
SNR=16
ANTO Ankara 78.15 313 P P P 17 15 45.5 +1.7
SNR=16
BR231 Keskin MP Arra 78.18 313 *e* P P 17 15 43.1 -0.9
RBK Rabkut 78.23 283 P P P 17 15 44.7 +0.2
SNR=12
RBK Rabkut 78.23 283 P P P 17 15 44.7 +0.2
SNR=12
113A Mohawk Valley, 78.26 57 *e* P P 17 15 45.1 +0.7
B35A Bob, Littlefor 78.28 35 P P P 17 15 43.7 -0.5
baz=319
AFSR Af ar-Bala (A 78.28 312 *e* P P 17 15 45.4 +0.9
VOIR 78.30 321 ⇓ *i* P P 17 15 45.7 +1.3
VOIR 78.30 321 ⇓ P P 17 15 45.7 +1.3
NIG Nigde 78.30 310 *e* P P 17 15 46.0 +1.1
MORC Moravsky Berou 78.40 328 *e* P P 17 15 45.6 +0.7
MORC Moravsky Berou 78.40 328 *e* P P 17 15 45.5 +0.7
DRGR 78.41 323 ⇑ *i* P P 17 15 46.2 +1.2
DRGR 78.41 323 ⇑ P P 17 15 46.2 +1.2
DPC Dobruska-Polom 78.44 329 *e* P P 17 15 46.5 +1.4
DPC *e* pP PcP 17 15 54.4 +0.1
DPC *e* S S 17 25 40.2 +1.0
DPC AMS AMS 17 55 10.0
comp=Z,2μm,15.5s
DPC Dobruska-Polom 78.44 329 *e* P P 17 15 46.5 +1.4
DPC *e* 17 15 54.4
DPC *e* S S 17 25 40.2 +1.0
DPC MLR MLR
comp=Z,2μm,15.5s
UPC Upice 78.44 329 *e* P P 17 15 46.5 +1.4
UPC *e* pP PcP 17 15 54.5 +0.3
UPC *e* PP PP 17 18 41.4 -0.5
UPC AMS AMS 17 55 30.0
comp=Z,2μm,14.5s
UPC Upice 78.44 329 *e* P P 17 15 46.5 +1.4
UPC *e* 17 15 54.5
UPC *e* 17 18 41.4
UPC MLR MLR
comp=Z,2μm,14.5s
ISCO Idaho Springs 78.50 47 *e* P P 17 15 47.3 +1.4
ISCO *e* 17 15 56.9
ISCO Idaho Springs 78.50 47 *e* P P 17 15 47.3 +1.4
ISCO *e* PcP sP 17 15 56.9 -0.7
ISCO LR LR
comp=Z,617nm,20.0s
TAHT Tahtakopru-Hat 78.53 308 *e* P P 17 15 46.5 +0.8
ARR Arges 78.55 321 ⇓ *i* P P 17 15 47.9 +2.1
BTCH Batrach 78.59 308 *e* P P 17 15 46.1 -0.1
MVCO Mesa Verde 78.59 51 *e* P P 17 15 47.6 +1.2
MVCO *e* PcP pP 17 15 52.8 -2.1
MVCO LR LR
comp=Z,610nm,19.0s
KARA Karaisali 78.61 309 *e* P P 17 15 46.8 +0.6
X16A Lo Mia Camp, P 78.66 54 *e* P P 17 15 47.9 +1.2
C35A Jirik Farms, M 78.67 35 P P P 17 15 46.3 -0.1
baz=319
PRD Provadia 78.73 318 *i* P P 17 15 48.0 +1.3
PSZ Piszkesteto 78.83 325 ⇑ *e* SKKPdf P 17 15 48.9 +1.6
PSZ Piszkesteto 78.83 325 *e* P P 17 15 48.2 +0.9
PSZ MLR MLR
comp=Z,4μm,19.0s
PSZ Piszkesteto 78.83 325 *e* P P 17 15 48.2 +0.9
PSZ LR LR
comp=Z,4μm,19.0s
VYHS Vyhne 78.84 326 *e* P P 17 15 48.7 +1.4
VYHS pmax pmax
comp=Z,21nm,1.2s
VYHS Vyhne 78.84 326 *e* P P 17 15 48.7 +1.4
VYHS *e* 17 15 56.0
VYHS *e* PP PP 17 18 45.6 +0.3
VYHS *e* L L 17 53 17.6
LOT Lotru 78.90 321 ⇓ *i* P P 17 15 49.6 +1.8
BRG Berggiesshubel 78.96 330 *e* P P 17 15 48.9 +1.1
comp=Z,25nm,1.0s
BRG *e* 17 15 56.9
comp=Z,30nm,1.0s
BRG PP PP 17 18 48.0 +1.9
BRG S S 17 25 49.0 +4.4
comp=N,2μm,18.1s
comp=E,1μm,16.3s
comp=Z,2μm,18.6s
BRG Berggiesshubel 78.96 330 *e* P P 17 15 48.9 +1.1
BRG *e* 17 15 56.9
BRG 17 18 48.0
BRG S S 17 25 49.0 +4.4
BRG pmax pmax
comp=Z,25nm,1.0s
BRG MLR MLR
comp=N,2μm,18.1s
BRG MLR MLR
comp=E,1μm,16.3s
BRG MLR MLR
comp=Z,2μm,18.6s
CLL Collm 78.97 331 ⇓ *i* P P 17 15 48.2 +0.3
comp=Z,49nm,0.9s
CLL *e* Pmax 17 15 52.0
CLL *i* pP PcP 17 15 56.4 0.0
comp=Z,69nm,1.1s
CLL *i* 17 16 05.5
CLL *e* 17 18 15.0
CLL *i* PP PP 17 18 48.5 +2.4
CLL *i* sPP 17 18 55.5
CLL *e* PPP PPP 17 20 24.0
CLL *e* S S 17 25 46.0 +1.4
comp=N,200nm,26.8s
CLL *e* S S 17 25 46.0 +1.4
comp=E,500nm,24.2s
CLL *e* PS PnS 17 26 27.0 -1.6
CLL *e* SS SS 17 30 48.0 -0.9
CLL *e* 17 31 36.0
CLL *e* 17 35 24.0
CLL LmH 17 51 00.0
comp=N,1μm,20.0s
CLL LmH 17 51 00.0
comp=E,3μm,19.0s
CLL LmH 17 51 00.0
comp=Z,2μm,21.5s
CLL Lmax 17 56 00.0
CLL Collm 78.97 331 ⇓ *i* P P 17 15 48.2 +0.3
CLL *i* 17 15 56.4
CLL *i* 17 16 05.5
CLL *e* S S 17 25 46.0 +1.4
CLL pmax pmax
comp=Z,49nm,0.9s

CLL Collm 78.97 331 *e*P **P** **17 15 48.0 +0.2**
PVCC Panska Ves 78.99 330 *e*P **P** **17 15 49.6 +1.5**
PVCC AMS AMS 17 57 00.0
comp=Z,2µm,15.7s
PVCC Panska Ves 78.99 330 *e*P **P** **17 15 49.6 +1.5**
PVCC MLR MLR
comp=Z,2µm,15.7s
ARNB Al Arnab 79.00 308 *e*P **P** **17 15 49.9 +1.4**
ABTO Aybut 79.00 283 P **P** **17 15 48.8 +0.1**
SNR=16
ABTO Aybut 79.00 283 P **P** **17 15 48.8 +0.1**
SNR=16
F33A 5 Mile Ranch, 79.00 38 P **P** **17 15 48.4 +0.2**
baz=318
SLNF Slenfeh 79.02 307 *e*P **P** **17 15 49.8 +1.0**
GULT Gulveren 79.03 314 *e*P **P** **17 15 46.5 -2.0**
C36A Pine Crest Far 79.12 35 P **P** **17 15 49.1 +0.2**
baz=320
VRAC Vranov 79.15 328⇓ *i*P **P** **17 15 50.5 +1.5**
VRAC Vranov 79.15 328 ⇓P **P** **17 15 50.5 +1.5**
MERS Mersin 79.19 309 *e*P **P** **17 15 49.7 +0.3**
S22A 4UR Ranch, Cre 79.20 49 *e*P **P** **17 15 51.3 +1.4**
SIRR Siria 79.28 323⇑ *i*P **P** **17 15 51.0 +1.2**
ROOS tl_alroos 79.32 306 *e*P **P** **17 15 52.0 +1.7**
KIZT Kizilcal 79.34 312 *e*P **P** **17 15 49.2 -1.1**
GOPC GO Pecny, Ondr 79.40 329 *e*P **P** **17 15 51.0 +0.7**
GOPC *ep*P **pP** **17 15 59.6 +0.7**
GOPC *ex* x 17 16 10.0
GOPC *e*PP **PP** **17 18 49.6 -0.2**
GOPC *e*S **S** **17 25 49.1 -0.2**
GOPC AMS AMS 17 56 30.0
comp=Z,3µm,14.5s
GOPC GO Pecny, Ondr 79.40 329 *e*P **P** **17 15 51.0 +0.7**
GOPC *e* 17 15 59.6
GOPC *e* 17 18 49.6
GOPC *e*S **S** **17 25 49.1 -0.2**
GOPC MLR MLR
comp=Z,3µm,14.5s
PRA Prague 79.41 329 *e*P **P** **17 15 52.3 +2.0**
PRA *ep*P **pP** **17 16 00.3 +1.4**
PRA AMS AMS 17 56 40.0
comp=Z,3µm,15.9s
PRA Prague 79.41 329 *e*P **P** **17 15 52.3 +2.0**
PRA *e* 17 16 00.3
PRA MLR MLR
comp=Z,3µm,15.9s
GZR Gura Zlata 79.41 322⇓ *i*P **P** **17 15 51.5 +1.0**
GZR Gura Zlata 79.41 322 ⇓P **P** **17 15 51.6 +1.0**
SZH Strazhica 79.43 319 *i*P **P** **17 15 51.1 +0.5**
C37A Embarrass 79.43 34 P **P** **17 15 50.5 -0.1**
baz=320
PRU Pruhonice 79.43 329 *e*P **P** **17 15 51.4 +0.9**
PRU *ep*P **pP** **17 16 00.0 +1.0**
PRU *ex* x 17 16 09.2
PRU *e*S **S** **17 25 49.1 -0.6**
PRU AMS AMS 17 56 30.0
comp=Z,3µm,15.4s
PRU Pruhonice 79.43 329 *e*P **P** **17 15 51.4 +0.9**
PRU *e* 17 16 00.0
PRU *e*S **S** **17 25 49.1 -0.6**
PRU MLR MLR
comp=Z,3µm,15.4s
LADK Ladik-KONYA 79.54 312 *e*P **P** **17 15 51.9 +0.5**
BUD Budapest 79.54 325⇑ *e*SKKPdf **P** **17 15 53.0 +1.9**
CAVI Cavuskoy 79.56 314 *e*P **P** **17 15 49.2 -2.1**
EYMN Ely 79.56 34 *e*P **P** **17 15 52.7 +1.4**
EYMN LR LR
comp=Z,634nm,19.0s
TREC Trest 79.61 328 *e*P **P** **17 15 52.4 +0.9**
TREC AMS AMS 17 55 20.0
comp=Z,2µm,15.4s
TREC Trest 79.61 328 *e*P **P** **17 15 52.4 +0.9**
TREC MLR MLR
comp=Z,2µm,15.4s
OGNE Ogallala 79.66 44 PFAKE 17 16 00.0 +8.0
OGNE LR LR
comp=Z,691nm,21.0s
JMB Yambol 79.68 318 *i*P **P** **17 15 53.3 +1.4**
BZS Buzias 79.79 323⇑ *i*P **P** **17 15 52.7 +0.2**
BZS Buzias 79.79 323 ⇑P **P** **17 15 52.7 +0.2**
ZST Bratislava 79.81 327 *e*P **P** **17 15 53.9 +1.4**
ZST Bratislava 79.81 327 *e*P **P** **17 15 53.9 +1.4**
C38A Sawbill Land. 79.83 34 P **P** **17 15 52.4 -0.4**
baz=321
PKSG 79.88 326 *e*SKKPdf **P** **17 15 54.6 +1.6**
MARH Ras Al Marh 79.91 306 *e*P **P** **17 15 55.3 +1.5**
CSKK Cs˙‡kako 79.96 326⇑ *e*SKKPdf **P** **17 15 54.9 +1.5**
SDO Great Sand Dun 79.97 49 *e*P **P** **17 15 53.9 -0.1**
SDCO *e*PcP **pP** **17 16 02.3 -0.2**
SDCO LR LR
comp=Z,506nm,20.0s
IKL Isikli 80.11 309 *e*P **P** **17 15 55.4 +1.0**
ZALF Zalf 80.12 305 *e*P **P** **17 15 54.3 -0.2**
PKST T"s 80.14 326⇑ *e*SKKPdf **P** **17 15 55.4 +1.0**
MDVR Moldovita 80.37 322⇑ *i*P **P** **17 15 56.2 +0.5**
TOTH TOTAH 80.39 306 *e*P **P** **17 15 55.8 -0.3**
ECSD EROS Data Cent 80.41 40 P **P** **17 15 56.1 +0.2**
baz=318
ECSD EROS Data Cent 80.41 40 *e*P **P** **17 15 57.9 +2.0**
ECSD LR LR
comp=Z,978nm,20.0s
SOP Sopron 80.44 327⇑ *e*SKKPdf **P** **17 15 57.8 +1.9**
DGAR Diego Garcia 80.46 252 PFAKE 17 16 10.0 +14
DGAR LR LR
comp=Z,993nm,21.0s
MPEP Malo Peshtene 80.46 320 *i*P **P** **17 15 57.5 +1.3**
TUC Tucson 80.46 56 *e*P **P** **17 15 56.8 +0.3**
TUC *e* 17 16 03.0
TUC Tucson 80.46 56 *e*P **P** **17 15 56.8 +0.3**
TUC LR LR
comp=Z,704nm,20.0s
KHC Kasperske Hory 80.50 329 *e*P **P** **17 15 56.9 +0.6**
KHC *ep*P **pP** **17 16 05.9 +1.0**
KHC *ex* x 17 16 16.1
KHC *e*PP **PP** **17 19 01.5 +2.5**
KHC *e*S **S** **17 26 00.9 -0.1**
KHC AMS AMS 17 55 50.0
comp=Z,2µm,16.9s
KHC Kasperske Hory 80.50 329 *e*P **P** **17 15 56.6 +0.3**
KHC Kasperske Hory 80.50 329 *e*P **P** **17 15 56.6 +0.3**
ESK Eskdalemuir 80.53 341 PFAKE 17 16 10.0 +14
ESK LR LR
comp=Z,1µm,21.0s
CONA Conrad Observa 80.53 327 *i*P **P** **17 15 58.4 +1.8**
comp=Z,320nm,1.1s,SNR=22
PKS9 Tamasi 80.55 325⇑ *e*SKKPdf **P** **17 15 57.4 +0.8**
WTSB Winterswijk 80.60 334 *e*P **P** **17 15 57.5 +0.8**
GEC2 GERESS Array S 80.68 329 *e*P **P** **17 15 58.0 +0.6**
GEC2 GERESS Array S 80.68 329 *e*P **P** **17 15 58.0 +0.6**
GERES GERESS Array B 80.68 329 P **P** **17 15 57.9 +0.5**
comp=Z,14nm,0.8s,baz=38,slow=5.2,SNR=58
GERES PP PP 17 18 51.5 -9.1
comp=Z,3.0nm,0.9s,baz=34,slow=7.4,SNR=5.5
GERES LR LR 17 54 03.9
comp=Z,2µm,20.7s,baz=12,slow=37
GEA0 GERESS Array S 80.68 329 *e*P **P** **17 15 57.1 -0.3**
RAYN Ar Rayn 80.77 293 *e*P **P** **17 15 58.1 -0.2**
RAYN LR LR
comp=Z,611nm,22.0s
PGB Panagyurishte 80.84 319 *i*P **P** **17 15 59.0 +0.7**
ISP Isparta 80.85 312 PFAKE 17 16 10.0 +12
ISP LR LR
comp=Z,962nm,19.0s
LFK Lefkose 80.86 309 *e*P **P** **17 15 58.2 -0.3**
KDZ Kurdzhali 80.87 318 *i*P **P** **17 15 59.7 +1.3**
GRFO Grafenberg 80.94 331 *e*P **P** **17 15 59.5 +0.9**
GRFO Grafenberg 80.94 331 *e*P **P** **17 15 59.5 +0.9**
T25A Trinidad 81.02 48 *e*P **P** **17 16 01.3 +1.8**
CSS Mathiatis 81.19 309 *e*P **P** **17 16 01.4 +1.1**
CSS Mathiatis 81.19 309 *e*P **P** **17 16 01.0 +0.8**
CSS LR LR
comp=Z,207nm,19.0s
RZN Rozhen 81.20 318 *i*P **P** **17 16 02.0 +1.6**
ARSA Arzberg 81.21 327 *i*P **P** **17 16 01.7 +1.6**
comp=Z,29nm,1.0s,SNR=10
MOA Molln 81.25 328 *i*P **P** **17 16 01.6 +1.3**
comp=Z,16nm,0.9s,SNR=9.4
VTS Vitosha 81.29 320⇑ *i*P **P** **17 16 02.1 +1.3**
VTS Vitosha 81.29 320 ⇑P **P** **17 16 02.1 +1.3**
VTS Vitosha 81.29 320 *i*P **P** **17 16 01.8 +1.0**
VTS Vitosha 81.29 320 *e*P **P** **17 16 01.0 +0.2**
ANMO Albuquerque 81.34 51 *e*P **P** **17 16 02.5 +1.3**
ANMO MLR MLR
comp=Z,522nm,20.0s
ANMO Albuquerque 81.34 51 *e*P **P** **17 16 02.5 +1.3**
ANMO LR LR
comp=Z,522nm,20.0s
SCHQ Schefferville 81.75 17 P **P** **17 16 02.4 -0.5**
comp=Z,4.3nm,0.7s,baz=315,slow=10.0,SNR=4.4
SCHQ PKKP **PKKPdf** **17 34 15.3 -6.5**
comp=Z,4.2nm,0.5s,baz=225,slow=3.3,SNR=4.1
SCHQ LR LR 17 57 30.8
comp=Z,558nm,18.6s,baz=351,slow=40
SCHQ Schefferville 81.75 17 *e*P **P** **17 16 03.2 +0.3**
SCHQ PKKP **PKKPdf** **17 34 15.3 -6.5**
MMB Musomiste 81.77 319 *i*P **P** **17 16 04.8 +1.6**
PERS Pernice 81.87 327 *e*P **P** **17 16 04.0 +0.4**
PERS *i* 17 16 12.7
PERS *e*S **S** **17 26 15.7 +0.3**
SOKA Soboth 81.87 327 *i*P **P** **17 16 04.8 +1.1**
comp=Z,91nm,1.2s,SNR=52
KKB Krupnik 81.89 319 *i*P **P** **17 16 05.2 +1.4**
HGN Heimansgroeve 81.91 334 *e*P **P** **17 16 04.3 +0.7**
COWI Conover 82.01 34 PFAKE 17 16 20.0 +16
COWI LR LR
comp=Z,643nm,20.0s
MEM Membach 82.02 334 P **P** **17 16 05.0 +0.7**
comp=Z,29nm,1.4s
319A Douglas 82.03 56 *e*P **P** **17 16 03.8 -1.1**
OBKA Obir 82.21 327 *i*P **P** **17 16 06.3 +0.8**
comp=Z,19nm,0.6s,SNR=15
KBA Koelnbreinsper 82.24 328 *i*PcP **P** **17 16 07.2 +1.4**
comp=Z,54nm,0.9s,SNR=28
BCLA Clavier 82.41 334 P **P** **17 16 07.1 +0.8**
comp=Z,27nm,1.3s
STU Stuttgart 82.45 331 *e*P **P** **17 16 06.0 -0.6**
STU Stuttgart 82.45 331 *e*P **P** **17 16 06.0 -0.6**
MYKA Terra Mystica 82.48 328 *i*P **P** **17 16 07.4 +0.4**
comp=Z,35nm,0.9s,SNR=13
LJU Ljubljana 82.59 327 *e*P **P** **17 16 07.8 +0.4**
SNF Seneffe 82.67 335 P **P** **17 16 08.0 +0.3**
WATA Walderalm 82.74 329 *i*P **P** **17 16 09.2 +0.9**
comp=Z,4.6nm,0.7s,SNR=11
CADS Cadrg 82.77 327 *e*P **P** **17 16 08.1 -0.3**
WTTA Wattenberg 82.77 329 *i*P **P** **17 16 09.7 +1.1**
comp=Z,26nm,0.9s,SNR=8.7
WLF Walferdange 82.77 334 P **P** **17 16 09.3 +1.0**
comp=Z,28nm,2.1s
WLF Walferdange 82.77 334 *e*P **P** **17 16 09.1 +0.8**
WLF MLR MLR
comp=Z,2µm,20.0s
WLF Walferdange 82.77 334 *e*P **P** **17 16 09.1 +0.8**
WLF LR LR
comp=Z,2µm,20.0s
LANF Langenberg 82.78 332 *e*P **P** **17 16 09.2 +0.9**
ABTA Abfaltersbach 82.85 328 *i*P **P** **17 16 09.0 +0.2**
comp=Z,24nm,1.0s,SNR=13
MOTA Moosalm 82.91 330 *i*PcP **P** **17 16 11.2 +2.0**
comp=Z,74nm,1.1s,SNR=29
DOU Dourbes 82.92 335 P **P** **17 16 09.4 +0.4**
RETA Reutte 82.93 330 *i*P **P** **17 16 10.4 +1.1**
comp=Z,56nm,0.9s,SNR=26
BFO Black Forest 83.14 332 *e*P **P** **17 16 10.8 +0.6**
BFO Black Forest 83.14 332 *e*P **P** **17 16 10.8 +0.6**
BFO LR LR
comp=Z,1µm,21.0s
TRI Trieste 83.17 327 *e*P **P** **17 16 09.2 -1.2**
TRI Trieste 83.17 327 *e*P **P** **17 16 09.2 -1.2**
KZIT Kziot 83.32 305 *e*P **P** **17 16 12.9 +1.5**
FETA Feichten 83.33 330 *i*PcP **P** **17 16 12.4 +1.0**
comp=Z,39nm,1.1s,SNR=17
SCIA State Center 83.43 39 PFAKE 17 16 20.0 +8.2
SCIA LR LR
comp=Z,1µm,22.0s
DAVA Damuels 83.43 330 *i*PcP **P** **17 16 13.0 +1.0**
comp=Z,54nm,1.0s,SNR=12
NVLJ Novalja 83.62 326 P **P** **17 16 12.7 0.0**
ECH Echery 83.66 332 *e*P **P** **17 16 13.7 +0.8**
STON Ston 83.70 323 P **P** **17 16 13.0 -0.1**
KSU1 Kansas State U 83.86 43 PFAKE 17 16 30.0 +16
KSU1 LR LR
comp=Z,636nm,20.0s
TIR Tirane 83.86 321 PFAKE 17 16 30.0 +16
TIR LR LR
comp=Z,2µm,22.0s
MOF Molkenrain 83.97 332 *e*P **P** **17 16 15.2 +0.6**
JFWS Jewell Farm 84.03 36 PFAKE 17 16 30.0 +15
JFWS LR LR
comp=Z,865nm,20.0s
THEF They Montfort 84.06 333⇑ *e*P **P** **17 16 15.9 +1.0**
URZ Itewera 84.11 154 LR LR 17 50 29.0
comp=Z,776nm,19.5s,baz=315,slow=33
PMOR Pomariorio Ree 84.17 115 *e*T T 18 48 52.2
comp=Z,13nm,0.2s
MSTX Muleshoe 84.19 50 *e*P **P** **17 16 17.3 +1.3**
MNTX Cornudas Mount 84.23 53 *e*P **P** **17 16 18.1 +2.0**
MNTX LR LR
comp=Z,572nm,20.0s
TUE Stuetta 84.31 330 *e*P **P** **17 16 16.8 +0.3**
TUE LR LR
comp=Z,2µm,19.0s
LOMF Lomont 84.51 332 *e*P **P** **17 16 17.8 +0.5**
SANT Santorini 84.70 314 PFAKE 17 16 30.0 +12
SANT LR LR
comp=Z,1µm,20.0s
VLDQ Val d'Or 84.80 26 *e*P **P** **17 16 18.9 +0.3**
PPT Papeete 84.82 118 LR LR 17 48 35.2
comp=Z,2µm,19.9s,baz=289,slow=32
PPT2 Papeete2 84.83 118 *e*S **S** **17 26 44.1 -1.8**
comp=Z,2µm,36.5s
PPT2 Papeete2 84.83 118 *e*LR LR 17 42 59.6
comp=Z,4µm,22.5s,baz=317
GLMI Grayling 84.92 32 PFAKE 17 16 30.0 +11
GLMI LR LR
comp=Z,696nm,19.0s
TAOE Nuku Hiva Isla 85.56 105 *e*S **S** **17 26 51.1 -2.3**
comp=Z,392nm,27.4s
TAOE Nuku Hiva Isla 85.56 105 *e*LR LR 17 43 11.9
comp=Z,3µm,20.6s,baz=314
LAST Lasithi 85.58 313 *e*P **P** **17 16 23.6 +0.7**
VLC Villacollemand 85.83 328 PFAKE 17 16 40.0 +16
VLC LR LR
comp=Z,1µm,21.0s
WMOK Wichita Mounta 85.92 47 *e*P **P** **17 16 27.1 +2.6**
WMOK Wichita Mounta 85.92 47 *e*P **P** **17 16 27.1 +2.6**
WMOK LR LR
comp=Z,952nm,22.0s
MEH Mehetia 86.05 117 *e*T T 18 51 12.9
comp=Z,27nm,0.2s
SNZO South Karori 86.12 157 PFAKE 17 16 40.0 +15
SNZO LR LR
comp=Z,1µm,19.0s
HDIL Hopedale 86.33 37 PFAKE 17 16 40.0 +14
HDIL LR LR
comp=Z,865nm,20.0s
BNI Bardonecchia 86.52 331 PFAKE 17 16 40.0 +13
BNI LR LR
comp=Z,2µm,19.0s
GDM Grand'Maison 86.59 331 *e*P **P** **17 16 28.9 +1.1**
GRN Grenoble 86.70 331 *e*P **P** **17 16 29.6 +1.4**
PLDF La Plantade 86.82 333⇑ *e*P **P** **17 16 31.1 +2.3**
CUC Castrocucco 86.84 322 PFAKE 17 16 40.0 +11
CUC LR LR
comp=Z,1µm,19.0s
TX31 Lajitas Ar. Si 86.94 54 *e*P **P** **17 16 30.2 +0.5**
LTX Lajitas 86.94 54 *e*P **P** **17 16 30.3 +0.5**
LTX Lajitas 86.94 54 *e*P **P** **17 16 30.3 +0.5**
TXAR Lajitas Array 86.94 54 P **P** **17 16 30.3 +0.5**
comp=Z,2.5nm,0.9s,baz=295,slow=3.1,SNR=18
TXAR LR LR 17 50 26.0
comp=Z,327nm,21.9s,baz=0.0,slow=32
TIP Timpagrande 87.04 321 PFAKE 17 16 40.0 +10
TIP LR LR
comp=Z,2µm,20.0s
SSB Saint Sauveur 87.10 332 *e*P **P** **17 16 31.3 +1.1**
SSB Saint Sauveur 87.10 332 *e*P **P** **17 16 30.8 +0.6**
SSB MLR MLR
comp=Z,1µm,20.0s
SSB Saint Sauveur 87.10 332 *e*P **P** **17 16 30.8 +0.6**
SSB LR LR
comp=Z,1µm,20.0s
PYM Petit Puy Mans 87.23 333 *e*P **P** **17 16 33.3 +2.5**
RPZ Rata Peaks 87.33 160 LR LR 17 50 39.6
comp=Z,681nm,21.7s,baz=340,slow=32
DAMY Dhamar 87.35 287 *e*P **P** **17 16 33.0 +0.8**
HHAR Hobbs 87.37 43 *e*P **P** **17 16 32.1 +0.5**
AAM Ann Arbor 87.39 33 PFAKE 17 16 40.0 +8.4
AAM LR LR
comp=Z,788nm,19.0s
LBL Lubilhac 87.59 333⇑ *e*P **P** **17 16 35.1 +2.5**
FRNF Fournols 87.69 334 *e*P **P** **17 16 34.7 +1.7**
CEL Celeste 88.18 321 PFAKE 17 16 50.0 +15
CEL LR LR
comp=Z,2µm,20.0s
JCT Junction City 88.45 50 PFAKE 17 16 50.0 +13
JCT LR LR
comp=Z,688nm,20.0s
LONY Lake Ozonia 88.82 26 PFAKE 17 16 50.0 +12
LONY LR LR
comp=Z,1µm,20.0s
MIAR Mount Ida 88.89 44 *e*P **P** **17 16 41.6 +2.8**
MIAR Mount Ida 88.89 44 *e*P **P** **17 16 41.6 +2.8**
MIAR LR LR
comp=Z,786nm,21.0s
X201 Greenbrier Sit 88.95 43 *e*P **P** **17 16 40.4 +1.3**
TBI Tubuai 88.97 122 *e*S **S** **17 27 22.4 -3.2**
comp=Z,666nm,24.2s
TBI Tubuai 88.97 122 *e*LR LR 17 44 41.9
comp=Z,1µm,24.5s,baz=325
WHAR Wooly Hollow 88.99 42 *e*P **P** **17 16 40.5 +1.2**
ACSO Alum Creek Sta 89.40 34 PFAKE 17 16 50.0 +8.9
ACSO LR LR
comp=Z,976nm,20.0s
NCB Newcomb 89.51 26 PFAKE 17 16 50.0 +8.4
NCB LR LR
comp=Z,2µm,22.0s
PKME Peaks-Kenny Pk 89.90 22 PFAKE 17 17 00.0 +17
PKME LR LR
comp=Z,1µm,20.0s
CLTB Caltabellotta 89.98 323 PFAKE 17 17 00.0 +16
CLTB LR LR
comp=Z,1µm,19.0s
VSL Villasalto 90.12 326 *e*P **P** **17 16 44.5 0.0**
VSL LR LR
comp=Z,1µm,20.0s
NATX Nacogdoches 90.43 46 PFAKE 17 17 00.0 +14
NATX LR LR
comp=Z,871nm,21.0s
BINY Binghamton 90.46 28 PFAKE 17 17 00.0 +14
BINY LR LR
comp=Z,1µm,19.0s
WDD Wied Dalam 90.74 321 PFAKE 17 17 00.0 +13
WDD LR LR
comp=Z,1µm,21.0s
KVTX Kingsville 91.73 51 PFAKE 17 17 00.0 +7.9
KVTX LR LR
comp=Z,637nm,20.0s
TKL Tuckaleechee C 92.84 37 P **P** **17 16 57.9 +0.7**
comp=Z,1.3nm,0.3s,baz=337,slow=5.0,SNR=3.6
TKL Tuckaleechee C 92.84 37 *e*P **P** **17 16 58.1 +0.9**
BLA Blacksburg 93.02 34 PFAKE 17 17 10.0 +12
BLA LR LR
comp=Z,735nm,19.0s
KEST Kesra 93.27 324 P **P** **17 17 00.0 +0.8**
comp=Z,6.4nm,1.0s,baz=296,slow=8.9,SNR=4.2
KEST LR LR 18 04 09.9
comp=Z,2µm,18.2s,baz=344,slow=39
KEST Kesra 93.27 324 *e*P **P** **17 16 59.6 +0.4**
CBN Corbin Frederi 93.41 31 PFAKE 17 17 10.0 +10
CBN LR LR
comp=Z,1µm,21.0s
PBRG Braganca 93.85 338 *e*P **P** **17 17 02.3 +0.5**
PGAV Gavieira, Arco 94.12 339 *e*P **P** **17 17 04.6 +1.5**
comp=Z,62nm,2.0s
PGAV Gavieira, Arco 94.12 339 *e*PP PP 17 20 58.1 +9.5
PGAV Gavieira, Arco 94.12 339 *e*LR LR 17 52 51.3
comp=Z,765nm,18.0s
MVO Moncorvo 94.52 338 *e*P **P** **17 17 06.5 +1.6**
comp=Z,38nm,1.9s
MVO Moncorvo 94.52 338 *e*PP PP 17 20 57.5 +5.8
MVO Moncorvo 94.52 338 *e*LR LR 17 53 29.7
comp=Z,814nm,22.0s
POLO Lamas de Olo 94.54 339 *e*P **P** **17 17 06.1 +1.1**
comp=Z,19nm,1.9s
GOGA Godfrey 94.84 38 PFAKE 17 17 20.0 +14
GOGA LR LR
comp=Z,902nm,20.0s
ES19 SONSECA Array 94.91 335 *e*P **P** **17 17 06.8 +0.2**
BRAL Brewton 94.92 42 PFAKE 17 17 20.0 +13
BRAL LR LR
comp=Z,807nm,19.0s
ESDC Sonseca Array 94.96 335 P **P** **17 17 07.3 +0.4**
comp=Z,2.7nm,0.7s,baz=17,slow=4.3,SNR=18
ESDC LR LR 18 05 42.9
comp=Z,1µm,19.7s,baz=25,slow=39
PAB San Pablo 95.20 335 PFAKE 17 17 20.0 +12
PAB LR LR
comp=Z,2µm,22.0s
MTE Manteigas 95.38 338 *e*P **P** **17 17 10.8 +2.0**
comp=Z,35nm,1.6s
MTE Manteigas 95.38 338 *e*PP PP 17 21 04.3 +6.0
MTE Manteigas 95.38 338 *e*LQ LQ 17 51 16.9
MTE *e*LR LR 17 54 25.8
comp=Z,1µm,20.0s
MTE Manteigas 95.38 338 PFAKE 17 17 20.0 +11
MTE LR LR
comp=Z,1µm,19.0s
PMRV Marv??o 96.23 338 *e*PP PP 17 21 09.6 +4.7
PMRV Marv??o 96.23 338 *e*LQ LQ 17 48 54.1
PMRV *e*LR LR 17 53 50.2
comp=Z,1µm,20.0s
NHSC New Hope 96.60 36 PFAKE 17 17 30.0 +16
NHSC LR LR
comp=Z,1µm,20.0s
PVAQ Vaqueiros 98.20 337 *e*PP PP 17 21 28.3 +8.2
PVAQ Vaqueiros 98.20 337 *e*LQ LQ 17 49 58.9
PVAQ *e*LR LR 17 59 01.2
comp=Z,2µm,20.0s
RKT Rikitea 98.64 113 *e*SKSac **SKSac** **17 28 00.1 +0.3**
comp=Z,491nm,25.0s
RKT *e*SP **SP** **17 30 14.0 -2.4**
comp=Z,394nm,27.8s
RKT *e*SS **SS** **17 35 34.7 -2.9**
comp=Z,474nm,27.5s
RKT Rikitea 98.64 113 *e*LR LR 17 49 12.4
comp=Z,1µm,23.0s,baz=308
KMBO Kilima Mbogo 102.96 280 Pdiff **Pdif** **17 17 43.9 +0.5**
comp=Z,0.9nm,0.4s,baz=35,slow=6.2,SNR=7.8
KMBO Kilima Mbogo 102.96 280 *i*P **Pdif** **17 17 39.4 -4.0**
KMBO pmax pmax
comp=Z,1.0nm,0.3s
KMBO Kilima Mbogo 102.96 280 *e*Pdif **Pdif** **17 17 43.9 +0.5**
KMBO LR LR
comp=Z,764nm,19.0s
TEIG Tepich 102.96 49 PFAKE 17 18 00.0 +17
TEIG LR LR
comp=Z,17nm,19.0s
BBSR BB Station 103.15 24 PFAKE 17 18 00.0 +16
BBSR LR LR
comp=Z,827nm,20.0s
PMOZ Porto Moniz, M 105.01 343 *e*PP PP 17 22 16.3 +4.9
TAM Tamanrasset 105.92 320 PFAKE 17 22 20.0
TAM LR LR
comp=Z,629nm,20.0s
ABPO Ambohimpanom 106.60 259 PFAKE 17 22 20.0
ABPO LR LR
comp=Z,355nm,22.0s
GTBY Guantanamo Bay 110.18 39 PFAKE 17 22 30.0
GTBY LR LR
comp=Z,562nm,22.0s
MTDJ Mount Denham 110.43 42 PFAKE 17 22 30.0
MTDJ LR LR
comp=Z,498nm,22.0s
GRTK Grand Turk 110.60 34 PFAKE 17 22 30.0
GRTK LR LR
comp=Z,971nm,20.0s
JTS JuntasAbangare 112.72 53 PFAKE 17 22 30.0
JTS LR LR
comp=Z,376nm,19.0s
SDDR Presa de Saban 112.76 36 PFAKE 17 22 30.0
SDDR LR LR
comp=Z,901nm,20.0s
SJG San Juan 115.70 31 PFAKE 17 22 40.0 +13
SJG LR LR
comp=Z,438nm,20.0s
TOA1 Torodi Ar. Sit 115.98 318 *e*PKPdf **PKPdf** **17 22 27.1 -0.6**
TOA1 *e*PP **PP** **17 23 30.1 -1.0**
TOA0 Torodi Ar. Sit 115.98 318 *e*PKPdf **PKPdf** **17 22 27.9 +0.2**
TOA0 *e*PP **PP** **17 23 29.4 -1.7**
TORD Torodi Ar. Bea 115.98 318 PKP **PKPdf** **17 22 27.1 -0.7**
comp=Z,1.5nm,0.8s,baz=13,slow=1.9,SNR=6.6
TORD PP **PP** **17 23 30.1 -1.0**
comp=Z,6.5nm,1.0s,baz=38,slow=7.8,SNR=12

Code	Station Name	Δ°	AZ°	Op	ISC	Time	Res
BCIP	Isla Barro Col	116.65	49	PFAKE		17 22 40.0	+11
BCIP				LR	LR		
	comp=Z,390nm,20.0s						
VNDA	Vanda	118.14	176	PKP	PKPdf	17 22 29.7	-0.2
	comp=Z,1.1nm,1.0s,baz=301,slow=3.6,SNR=3.3						
LSZ	Lusaka	118.83	274	PFAKE		17 22 50.0	+17
LSZ				LR	LR		
	comp=Z,652nm,19.0s						
FDF	Fort de France	120.68	28	PFAKE		17 22 50.0	+13
FDF				LR	LR		
	comp=Z,652nm,22.0s						
SDV	Santo Domingo	121.84	41	ePKPdf	PKPdf	17 22 38.1	-1.1
SDV				LR	LR		
	comp=Z,596nm,21.0s						
GRGR	Grenville	122.89	29	PFAKE		17 22 50.0	+9.0
GRGR				LR	LR		
	comp=Z,776nm,21.0s						
OTAV	Otavalo	124.57	54	PFAKE		17 23 00.0	+15
OTAV				LR	LR		
	comp=Z,458nm,20.0s						
DBIC	Dimbokro	124.81	320	PKP	PKPdf	17 22 44.3	-0.4
	comp=Z,3.6nm,0.7s,baz=38,slow=1.5,SNR=6.3						
DBIC	Dimbokro	124.81	320	ePKIKP	PKPdf	17 22 42.6	-2.1
DBIC	Dimbokro	124.81	320	ePKPdf	PKPdf	17 22 42.6	-2.1
LBTB	Lobatse	126.43	266	ePKIKP	PKPdf	17 22 48.0	+0.5
LBTB	Lobatse	126.43	266	ePKPdf	PKPdf	17 22 48.6	+1.1
TSUM	Tsumeb	129.25	278	PKP	PKPdf	17 22 53.5	+0.4
	comp=Z,1.8nm,0.7s,baz=45,slow=1.4,SNR=4.0						
TSUM	Tsumeb	129.25	278	ePKPdf	PKPdf	17 22 53.5	+0.4
TSUM				LR	LR		
	comp=Z,468nm,20.0s						
QSPA	South Pole Qui	130.07	180	ePKPdf	PKPdf	17 22 51.7	-1.5
NNA	Nana	134.80	63	PFAKE		17 23 20.0	+16
NNA				LR	LR		
	comp=Z,395nm,21.0s						
PTGA	Pitinga	135.25	34	PFAKE		17 23 20.0	+15
PTGA				LR	LR		
	comp=Z,37µm,21.0s						
SAML	Samuel	140.85	44	ePKPdf	PKPdf	17 23 12.7	-2.0
SAML				LR	LR		
	comp=Z,619nm,21.0s						
NVL	N'lazarevskaya	140.91	203	ePKHKP	PKPpre	17 22 52.9	
LPAZ	La Paz	143.70	58	PKP	PKPbc	17 23 18.2	+0.3
	comp=Z,0.9nm,0.6s,baz=0.0,slow=4.0,SNR=3.9						
LPAZ	La Paz	143.70	58	ePKIKP	PKPbc	17 23 18.0	0.0
LPAZ				e		17 23 23.9	
LPAZ	La Paz	143.70	58	ePKPpre	PKPab	17 23 18.4	+1.2
SNAA	Sanae	144.34	198	PKP	PKPbc	17 23 18.1	+0.4
SNAA	Sanae	144.34	198	ePKIKP	PKPab	17 23 17.0	-0.4
SNAA	Sanae	144.34	198	ePKPdf	PKPab	17 23 17.4	0.0
PB11	IPOC Station P	145.15	64	ePKPbc	PKPbc	17 23 20.9	-1.0
RCBR	Riachuelo	145.64	359	ePKPdf	PKPdf	17 23 23.4	+0.2
RCBR				LR	LR		
	comp=Z,495nm,19.0s						
VNA2	Neumayer--Watz	145.90	197	PKP	PKPbc	17 23 22.7	+0.1
	baz=114,slow=2.1						
PB01	IPOC Station P	146.13	65	ePKPdf	PKPbc	17 23 24.6	-0.2
VNA3	Neumayer Olymp	146.14	195	PKP	PKPdf	17 23 22.8	+0.4
VNA1	Neumayer--Stat	146.30	197	PKP	PKPab	17 23 26.9	+2.3
SIV	San Ignacio	147.79	48	PKPbc	PKPdf	17 23 27.6	+0.8
	comp=Z,5.1nm,0.7s,baz=331,slow=4.5,SNR=8.1						
LCO	Las Campanas	150.00	79	PFAKE		17 23 40.0	-1.0
LCO				LR	LR		
	comp=Z,1µm,19.0s						
BDFB	Brasilia	153.49	25	PKPbc	PKPbc	17 23 43.6	+0.2
	comp=Z,6.5nm,0.9s,baz=255,slow=4.2,SNR=4.7						
PLCA	Paso Flores	154.34	102	PKPbc	PKPbc	17 23 44.5	0.0
	comp=Z,1.9nm,0.9s,baz=11,slow=0.8,SNR=5.5						
PLCA	Paso Flores	154.34	102	ePKIKP	PKPbc	17 23 44.3	-0.1
PLCA	Paso Flores	154.34	102	epPKPdf	PKPbc	17 23 44.3	-0.1
TRQA	Tornquist	160.27	92	PFAKE		17 24 00.0	+16
TRQA				LR	LR		
	comp=Z,799nm,21.0s						
SPB	Sao Paulo	161.00	32	PFAKE		17 24 00.0	+15
SPB				LR	LR		
	comp=Z,763nm,22.0s						

IDC 01 17:29:41.6±3.2, 37°.72N×144°.22E, h0km, mb3.5/2, mb1 3.8/3, mb1mx3.3/46, mbtmp3.5/3, ML3.3/1, Error ellipse: s-maj=75.6km s-min=37.6km az=56.0
ISCJB 01 17:29:45.6±1.3, 37°.75N±0°.09×144°.0E±0°.1, h33km, mb3.6/2, Error ellipse: s-maj=14.8km s-min=9.6km az=41.0
JMA 01 17:29:46.1±0.3, 37°.95N×143°.87E, h14km, M3.4
ISC 01 17:29:47.2±1.7, 37°.81N±0°.10×144°.0E±0°.1, h35km, n11, σ0s.72/14, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Op	ISC	Time	Res
JIO	Ouri	2.21	288	S	Sn	17 30 46.7	-0.7
OFUJ	Ofunato	2.25	305	P	Pn	17 30 21.1	-0.7
JMM	Marumori	2.56	272	S	Sn	17 30 55.1	-1.0
JOM	Ohasama	2.71	309	P	Pn	17 30 28.1	-0.2
JOM				eS	Sn	17 30 59.4	-0.4
JYK	Kaneyama	3.09	292	P	Pn	17 30 33.9	+0.5
JYK				eS	Sn	17 31 09.5	+0.4
JRG	Rokugo	3.10	302	P	Pn	17 30 34.3	+0.8
JRG				eS	Sn	17 31 09.2	-0.1
JANG	Nango	3.22	323	P	Pn	17 30 35.5	+0.2
MJAR	Matsushiro Arr	4.81	257	Pn	Pn	17 30 56.8	-0.4
	1.3nm,0.3s,baz=76,slow=15,SNR=8.1						
MAT	Matsushiro	4.81	257	P	Pn	17 30 58.4	+1.2
MAT				eS	Sn	17 31 34.7	-17
MKAR	Makanchi Array	45.47	302	P	P	17 38 03.6	+0.8
	0.3nm,0.6s,baz=86,slow=9.4,SNR=4.3						
WRA	Warramunga Arr	58.16	191	P	P	17 39 36.9	-0.7
	0.7nm,0.7s,baz=9.4,slow=7.2,SNR=3.7						

ISCJB 01 17:33:42.5±1.1, 2°.81S±0°.10×148°.2E±0°.1, h10km, mb3.8/6, MS4.0/1, Error ellipse: s-maj=20.3km s-min=9.0km az=142.8
NEIC 01 17:33:43.7±1.1, 2°.78S×148°.25E, h10km, mb4.1/2, Error ellipse: s-maj=20.1km s-min=13.7km az=213.0
IDC 01 17:33:46.5±1.4, 3°.30S×148°.16E, h0km, mb3.8/4, mb1 4.2/5, mb1mx3.6/43, mbtmp4.1/5, ML5.1/1, MS4.1/1, Ms1 4.1/1, ms1mx3.3/35, Error ellipse: s-maj=48.9km s-min=25.6km az=132.0
ISC 01 17:33:44.2±1.1, 3°.0S±0°.1×148°.1E±0°.1, h10km, n17, σ2s.98/11, mb3.8/6, Admiralty Islands region

Code	Station Name	Δ°	AZ°	Op	ISC	Time	Res
MANU	Manus Island	1.13	323	ePn	Pb	17 34 05.5	-0.3
MANU				eSn	Sb	17 34 19.7	-0.9
HNR	Honiara	13.46	119	Pn	Pn	17 36 55.8	+0.4
	9.8nm,0.3s,baz=349,slow=23,SNR=21						
HNR	Honiara	13.46	119	ePn	Pn	17 36 53.7	-1.7
WR1	Warramunga Arr	21.55	217	eP	P	17 38 35.3	+1.3
	37nm,1.5s						
WRA	Warramunga Arr	21.55	217	P	P	17 38 35.3	+1.3
	2.9nm,0.9s,baz=45,slow=11,SNR=13						
AS01	Alice Springs	24.70	212	eP	P	17 39 08.9	+3.2
AS01				eS	S	17 43 21.4	-6.3
AS31	Alice Springs	24.73	212	eP	P	17 39 07.5	+1.5
	1.8nm,1.2s						
ASAR	Alice Springs	24.73	212	P	P	17 39 07.5	+1.5
	2.4nm,0.8s,baz=38,slow=6.8,SNR=23						
FITZ	Fitzroy Crossi	26.63	234	P	P	17 39 26.3	+3.0
	4.2nm,0.8s,baz=56,slow=7.3,SNR=4.0						
H11S3	WAKE ISLAND Hy	28.12	40	T	T	18 09 32.8	
	baz=223,slow=76,SNR=67						
H11S2	WAKE ISLAND Hy	28.13	40	T	T	18 09 32.2	
	baz=223,slow=76,SNR=46						
H11S1	WAKE ISLAND Hy	28.14	40	T	T	18 09 36.0	
	baz=223,slow=76,SNR=94						
H11N1	WAKE ISLAND Hy	29.15	39	T	T	18 10 50.2	
	baz=222,slow=76,SNR=18						
H11N3	WAKE ISLAND Hy	29.16	39	T	T	18 10 49.4	
	baz=222,slow=76,SNR=39						
H11N2	WAKE ISLAND Hy	29.17	39	T	T	18 10 51.4	
	baz=222,slow=76,SNR=32						
JCJ	Chichijima	30.40	350	LR	LR	17 51 09.3	
	comp=Z,284nm,18.4s,slow=34						
ILAR	Eielson Array	82.28	23	P	P	17 46 11.1	+5.4
	0.4nm,0.8s,baz=243,slow=4.0,SNR=3.3						

IDC 01 17:35:31.8±8.8, 1°.79S×77°.70W, h220km±107km, mb3.1/3, mb1 3.4/4, mb1mx3.1/27, mbtmp3.7/4, Error ellipse: s-maj=109.3km s-min=39.2km az=34.0, Ecuador

Code	Station Name	Δ°	AZ°	Op	ISC	Time	Res
ATAH	Atahualpa	5.36	187	P	Pn	17 36 52.3	+0.7
	3.0nm,0.3s,baz=16,slow=8.9,SNR=7.2						
ATAH				S	S	17 37 55.0	+0.2
	5.1nm,0.3s,baz=53,slow=20,SNR=10						
YKA	Yellowknife Ar	69.90	343	P	P	17 46 18.1	-0.5
	0.3nm,0.5s,baz=142,slow=5.7,SNR=6.0						
TORD	Torodi Ar. Bea	80.08	76	P	P	17 47 17.9	+0.1
	0.3nm,0.4s,baz=280,slow=5.0,SNR=5.0						
ILAR	Eielson Array	82.86	336	P	P	17 47 31.9	+0.5
	0.5nm,0.8s,baz=125,slow=4.2,SNR=6.0						

ISCJB 01 17:47:08.4±0.5, 35°.65N±0°.03×26°.58E±0°.03, h64km±8km, Error ellipse: s-maj=5.1km s-min=3.2km az=154.2
ATH 01 17:47:08.4, 35°.65N×26°.57E, h57km±4km, ML3.0/13, Error ellipse: s-maj=4.6km s-min=0.8km az=137.0
ISK 01 17:47:08.1, 35°.72N×26°.58E, h84km, MD3.3
THE 01 17:47:09.9, 35°.66N×26°.56E, h43km±5km, ML3.1/5, Error ellipse: s-maj=5.6km s-min=0.7km az=151.0
CSEM 01 17:47:09.4±0.1, 35°.65N×26°.58E, h48km±4km, ML3.0, Error ellipse: s-maj=3.1km s-min=1.7km az=157.0
HLW 01 17:47:10.0, 35°.17N×27°.04E, h30km±9km, Ml2.4
ISC 01 17:47:08.8±1.3, 35°.62N±0°.03×26°.59E±0°.03, h61km±10km, n92, σ0s.70/141, Crete

Code	Station Name	Δ°	AZ°	Op	ISC	Time	Res
KARP	Karpathos	0.47	99	P	Pn	17 47 20.0	-0.6
KARP				S	Sn	17 47 28.2	-0.9
KARP	Karpathos	0.47	99	P	Pn	17 47 20.4	-0.2
KARP				S	Sn	17 47 29.0	-0.2
KARP	Karpathos	0.47	99	P	Pn	17 47 20.4	-0.2
KARP				S	Sn	17 47 28.9	-0.2
KARP				AML	AML	17 47 29.5	
	comp=E,3290µm,0.2s						
KARP				AML	AML	17 47 30.0	
	comp=N,3816µm,0.2s						
ZKR	Zakros	0.59	211	P	Pn	17 47 22.4	+0.5
ZKR				S	Sn	17 47 31.9	+0.5
ZKR	Zakros	0.59	211	P	Pn	17 47 22.4	+0.5
ZKR				S	Sn	17 47 31.9	+0.5
ZKR	Zakros	0.59	211	P	Pn	17 47 22.9	+1.0
ZKR				S	Sn	17 47 33.2	+1.8
ZKR				AML	AML	17 47 33.4	
	comp=E,3906µm,0.3s						
ZKR				AML	AML	17 47 33.7	
	comp=N,1364µm,0.6s						
NPS	Neapolis	0.88	246	P	Pn	17 47 25.1	-0.2
NPS				S	Sn	17 47 36.9	-0.6
NPS	Neapolis	0.88	246	P	Pn	17 47 25.1	-0.2
NPS				S	Sn	17 47 36.9	-0.6
NPS	Neapolis	0.88	246	P	Pn	17 47 25.0	-0.3
NPS				S	Sn	17 47 36.9	-0.6
NPS				AML	AML	17 47 37.8	
	comp=E,2524µm,0.4s						
NPS				AML	AML	17 47 37.9	
	comp=N,1481µm,0.2s						
LAST	Lasithi	1.02	243	P	Pn	17 47 27.3	+0.1
LAST				S	Sn	17 47 40.2	-0.6
LAST	Lasithi	1.02	243	P	Pn	17 47 27.3	+0.1
LAST				S	Sn	17 47 40.2	-0.6
LAST	Lasithi	1.02	243	P	Pn	17 47 27.2	0.0
NISR	Nisiros	1.08	24	P	Pn	17 47 28.0	+0.1
NISR				S	Sn	17 47 41.5	-0.5
NISR	Nisiros	1.08	24	P	Pn	17 47 28.0	+0.1
NISR				S	Sn	17 47 41.5	-0.5
NISR	Nisiros	1.08	24	P	Pn	17 47 28.4	+0.5
NISR				S	Sn	17 47 42.5	+0.4
NISR				AML	AML	17 47 43.9	
	comp=E,1434µm,0.2s						
NISR				AML	AML	17 47 44.0	
	comp=N,806µm,0.2s						
NIS1	Nisyros Isl.	1.09	26	ePG	Pn	17 47 28.0	0.0
NIS1				eSG	Sn	17 47 42.8	+0.5
NIS1	Nisyros Isl.	1.09	26	ePg	Pn	17 47 28.0	0.0
NIS1	Nisyros Isl.	1.09	26	P	Pn	17 47 28.7	+0.7
NIS1				eSg	Sn	17 47 42.8	+0.5
NIS1	Nisyros Isl.	1.09	26	P	Pn	17 47 28.7	+0.7
SANT	Santorini	1.18	309	P	Pn	17 47 28.8	-0.5
SANT				S	Sn	17 47 43.6	-1.0
SANT	Santorini	1.18	309	P	Pn	17 47 28.8	-0.5
SANT				S	Sn	17 47 44.4	-0.2
SANT	Santorini	1.18	309	P	Pn	17 47 29.9	+0.6
SANT				S	Sn	17 47 44.4	-0.2
SANT				AML	AML	17 47 45.1	
	comp=E,2004µm,0.3s						
SANT				AML	AML	17 47 45.8	
	comp=N,1051µm,0.2s						
THT1	Athinios (Pele	1.21	309	P	Pn	17 47 29.6	0.0
THT1				S	Sn	17 47 44.2	-0.9
THT1	Athinios (Pele	1.21	309	P	Pn	17 47 29.6	0.0
THT1				S	Sn	17 47 44.2	-0.9
THR6	Thira Island,	1.21	307	P	Pn	17 47 30.0	+0.4
THR6	Thira Island,	1.21	307	P	Pn	17 47 30.0	+0.4
THR7	Fira-Santorini	1.23	311	P	Pn	17 47 29.1	-0.8
THR7	Fira-Santorini	1.23	311	P	Pn	17 47 29.1	-0.8
THR3	Thira Island,	1.24	309	P	Pn	17 47 30.4	+0.4
THR3	Thira Island,	1.24	309	P	Pn	17 47 30.4	+0.4
THR2	Thira island,	1.25	312	P	Pn	17 47 29.8	-0.3
THR2	Thira island,	1.25	312	P	Pn	17 47 29.8	-0.3
CMBO	Columbo, Santo	1.28	312	P	Pn	17 47 30.5	0.0
CMBO				S	Sn	17 47 46.3	-0.5
CMBO	Columbo, Santo	1.28	312	P	Pn	17 47 30.5	0.0
CMBO				S	Sn	17 47 46.3	-0.5
CMBO	Columbo, Santo	1.28	312	P	Pn	17 47 31.4	+0.9
CMBO				S	Sn	17 47 46.9	+0.1
CMBO				AML	AML	17 47 47.6	
	comp=E,2277µm,0.2s						
CMBO				AML	AML	17 47 47.7	
	comp=N,1730µm,0.3s						
IACM	Heraklion	1.28	256	P	Pn	17 47 30.1	-0.4
IACM	Heraklion	1.28	256	P	Pn	17 47 30.1	-0.4
IACM				S	Sn	17 47 49.4	+2.6
IACM				AML	AML	17 47 52.7	
	comp=N,3420µm,0.4s						
IACM				AML	AML	17 47 54.7	
	comp=E,3398µm,0.3s						
THR5	Thira Island,	1.28	309	ePN	Pn	17 47 31.9	+1.3
THR5				eSN	Sn	17 47 47.2	+0.4
THR5	Thira Island,	1.28	309	P	Pn	17 47 30.6	0.0
THR5	Thira Island,	1.28	309	P	Pn	17 47 30.6	0.0
THR5	Thira Island,	1.28	309	ePn	Pn	17 47 31.9	+1.3
THR5				eSn	Sn	17 47 47.2	+0.4
ARG	Arkhangelos	1.38	64	P	Pn	17 47 32.4	+0.5
ARG				S	Sn	17 47 49.8	+0.6
ARG	Arkhangelos	1.38	64	P	Pn	17 47 32.3	+0.4
ARG				S	Sn	17 47 49.7	+0.6
IDI	Anoyia	1.43	257	P	Pn	17 47 32.5	-0.1
IDI				S	Sn	17 47 49.7	-0.8
IDI	Anoyia	1.43	257	P	Pn	17 47 32.5	-0.1
IDI				S	Sn	17 47 49.7	-0.8
BODT	Bodrum	1.55	22	ePN	Pn	17 47 34.0	-0.1
BODT				eSN	Sn	17 47 53.0	-0.3
BODT	Bodrum	1.55	22	P	Pn	17 47 33.9	-0.3
BODT				S	Sn	17 47 52.8	-0.5
BODT	Bodrum	1.55	22	ePn	Pn	17 47 34.1	-0.1
BODT				eSn	Sn	17 47 53.0	-0.3
SIVA	Sivas	1.58	248	P	Pn	17 47 36.1	+1.6
SIVA				S	Sn	17 47 54.7	+0.8
SIVA	Sivas	1.58	248	P	Pn	17 47 36.1	+1.6
SIVA				S	Sn	17 47 54.6	+0.8
SIVA				AML	AML	17 47 59.2	
	comp=E,556µm,0.4s						
SIVA				AML	AML	17 48 00.4	
	comp=N,490µm,0.4s						
APE	Apeiranthos	1.68	330	ePN	Pn	17 47 35.9	-0.1
APE	Apeiranthos	1.68	330	P	Pn	17 47 35.4	-0.5
APE				S	Sn	17 47 56.6	+0.1
APE	Apeiranthos	1.68	330	P	Pn	17 47 36.0	+0.1
APE				S	Sn	17 47 56.5	+0.1
APE	Apeiranthos	1.68	330	P	Pn	17 47 36.0	+0.1
APE				S	Sn	17 47 56.5	+0.1
APE				AML	AML	17 47 57.7	
	comp=E,847µm,0.2s						
APE				AML	AML	17 47 57.9	
	comp=N,995µm,0.2s						
VAM	Vamos	1.96	264	P	Pn	17 47 40.4	+0.7
VAM				S	Sn	17 48 02.5	-0.8
YER	Yerkesik	2.03	42	ePN	Pn	17 47 41.1	+0.3
YER	Yerkesik	2.03	42	ePn	Pn	17 47 41.1	+0.3
DALY	Dalyan (Mu˜la	2.05	54	ePN	Pn	17 47 41.4	+0.5
DALY	Dalyan (Mu˜la	2.05	54	ePn	Pn	17 47 41.4	+0.5
MHLO	Agia Marina, M	2.07	302	P	Pn	17 47 42.5	+1.4
MHLO				S	Sn	17 48 06.4	+0.6
MHLO	Agia Marina, M	2.07	302	P	Pn	17 47 42.5	+1.4
MHLO				S	Sn	17 48 06.4	+0.6
MHLO				AML	AML	17 48 08.8	
	comp=N,815µm,0.6s						
MHLO				AML	AML	17 48 10.1	
	comp=E,1054µm,0.8s						
SMG	Samos	2.09	5	P	Pn	17 47 41.9	+0.4
SMG				S	Sn	17 48 06.3	-0.1
SMG	Samos	2.09	5	P	Pn	17 47 41.9	+0.4
SMG				S	Sn	17 48 06.3	-0.1
SMG				AML	AML	17 48 07.9	
	comp=N,156µm,0.3s						
SMG				AML	AML	17 48 08.7	
	comp=E,154µm,0.3s						
IMMV	Iera Moni Meta	2.13	266	P	Pn	17 47 42.0	0.0
IMMV				S	Sn	17 48 07.8	+0.3
IMMV	Iera Moni Meta	2.13	266	P	Pn	17 47 42.0	0.0
IMMV				S	Sn	17 48 07.8	+0.3
IMMV				AML	AML	17 48 10.6	
	comp=N,345µm,0.3s						
IMMV				AML	AML	17 48 11.6	
	comp=E,306µm,0.3s						
GVD	Gavdhos	2.19	250	P	Pn	17 47 44.0	+1.1
GVD	Gavdhos	2.19	250	P	Pn	17 47 44.0	+1.1
FETY	Fethiye	2.26	63	ePN	Pn	17 47 44.0	+0.3
FETY	Fethiye	2.26	63	ePn	Pn	17 47 44.0	+0.3
AYDB	Zeytinkoy-Aydi	2.54	24	ePN	Pn	17 47 47.7	0.0
AYDB	Zeytinkoy-Aydi	2.54	24	ePn	Pn	17 47 47.7	0.0
ANKY	Antikythira Is	2.69	276	P	Pn	17 47 50.7	+1.1
ANKY	Antikythira Is	2.69	276	P	Pn	17 47 50.7	+1.1
CHOS	Chios island	2.79	351	P	Pn	17 47 50.8	-0.3
CHOS				S	Sn	17 48 23.5	-0.1
CHOS	Chios island	2.79	351	P	Pn	17 47 50.8	-0.3
CHOS				S	Sn	17 48 23.5	-0.1
GLHS	Glhisar (BURDU	2.80	56	ePN	Pn	17 47 52.2	+1.0
GLHS	Glhisar (BURDU	2.80	56	ePn	Pn	17 47 52.2	+1.0
ELL	Elmali	2.91	66	ePN	Pn	17 47 53.5	+0.8
ELL	Elmali	2.91	66	ePn	Pn	17 47 53.6	+0.8
VLI	Veliai	3.15	291	P	Pn	17 47 56.3	+0.3
VLI				S	Sn	17 48 31.2	-1.1
VLI	Veliai	3.15	291	P	Pn	17 47 56.3	+0.3
VLI				S	Sn	17 48 31.2	-1.1
VLI				AML	AML	17 48 32.5	
	comp=N,290µm,1.3s						
VLI				AML	AML	17 48 33.3	
	comp=E,149µm,0.4s						
VLY	Voula,Athens	3.16	316	P	Pn	17 47 56.7	+0.6
VLY				S	Sn	17 48 31.9	-0.7
VLY	Voula,Athens	3.16	316	P	Pn	17 47 56.7	+0.6
VLY				S	Sn	17 48 31.9	-0.7
KULA	Kula-Manisa	3.33	29	ePN	Pn	17 47 58.1	-0.3
KULA	Kula-Manisa	3.33	29	ePn	Pn	17 47 58.1	-0.3
PYL	PYLOS	4.12	289	P	Pn	17 48 09.5	+0.3
PYL	PYLOS	4.12	289	P	Pn	17 48 09.5	+0.3
SLUM	Salum	4.28	196	P	Pn	17 48 09.3	-2.1
	baz=204						
SLUM				S	Sn	17 48 52.6	-7.4
	baz=204						
SLUM	Salum	4.28	196	P	Pn	17 48 09.3	-2.1
HMAT	Matruh	4.54	175	P	Pn	17 48 10.6	-4.4
	baz=179						
HMAT				AMP		17 49 00.0	
	comp=N,10µm,0.2s,logA/T=4.6,baz=179						
HMAT	Matruh	4.54	175	P	Pn	17 48 10.6	-4.3
SWA2		6.43	189	P	Pn	17 48 38.3	-2.6
	baz=194						

IDC 01 17:51:25.3±8.1, 7°.52S×128°.42E, h158km±86km, mb2.9/1, mb1 3.4/5, mb1mx3.1/34, mbtmp3.8/5, Error ellipse: s-maj=79.8km s-min=24.8km az=37.0, Banda Sea

Code	Station Name	Δ°	AZ°	Op	ISC	Time	Res
BATI	Baumata	5.40	240	P	Pn	17 52 44.6	+0.4
	2.4nm,0.3s,baz=110,slow=24,SNR=6.1						
BATI				S	Sn	17 53 46.6	+0.6
	7.1nm,0.3s,baz=267,slow=23,SNR=5.8						
FITZ	Fitzroy Crossi	10.86	194	P	Pn	17 53 56.0	-0.6
	0.6nm,0.3s,baz=23,slow=13,SNR=12						
WRA	Warramunga Arr	13.62	156	P	Pn	17 54 30.4	-1.7
	0.7nm,0.3s,baz=332,slow=14,SNR=34						
WRA				S	Sn	17 56 54.6	-8.6
	0.9nm,0.3s,baz=335,slow=22,SNR=7.4						
ASAR	Alice Springs	16.89	162	P	Pn	17 55 13.8	+1.2
	0.6nm,0.3s,baz=335,slow=10,SNR=79						
ASAR				S	S	17 58 14.8	-5.3
	0.2nm,0.3s,baz=322,slow=20,SNR=4.6						
MKAR	Makanchi Array	67.81	328	P	P	18 02 06.2	-0.1
	0.1nm,0.3s,baz=131,slow=5.9,SNR=5.1						

JMA 01 17:52:16.4±0.2, 23°.15N×121°.49E, h0km
ISCJB 01 17:52:18.2±0.4, 23°.15N±0°.02×121°.41E±0°.03, h17km±4km, Error ellipse: s-maj=4.1km s-min=3.4km az=14.6
TAP 01 17:52:18.3, 23°.17N×121°.35E, h17km, ML2.9, C
ISC 01 17:52:18.0±1.0, 23°.15N±0°.02×121°.38E±0°.03, h19km±2km, n39, σ0s.59/64, 7C-2D, Taiwan

Code	Station Name	Δ°	AZ°	Op	ISC	Time	Res
CHKT	Chengkung	0.05	198	⇓iP	Pg	17 52 22.0	+0.6
	baz=154						
CHKT				iS	Sg	17 52 24.6	+0.9
	baz=154						
TWF1	Yuli	0.22	339	⇑iP	Pb	17 52 23.4	+0.4
	baz=336						
TWF1				S	Sg	17 52 27.2	+0.3
	baz=336						
ELDTW	Lidau	0.34	277	⇑iP	Pg	17 52 24.9	-0.4
	baz=272						
ELDTW				iS	Sg	17 52 29.2	-1.1
	baz=272						
EHY	Hungye	0.36	351	P	Pg	17 52 25.4	-0.2
	baz=342						
EHY				eS	Sg	17 52 30.4	-0.4
	baz=342						
TWG	Pinlang	0.43	221	⇓iP	Pg	17 52 26.9	0.0
	baz=227						
TWG				S	Sb	17 52 33.4	0.0
	baz=227						
YUS	Yu-Shan	0.52	311	⇑iP	Pb	17 52 28.5	-0.3
	baz=303						
YUS				eS	Sg	17 52 34.5	-1.4
	baz=303						
STYT	Tauyuan	0.58	272	⇑iP	Pb	17 52 29.3	-0.2
	baz=267						
STYT				iS	Sb	17 52 36.5	-0.7
	baz=267						
ALS	Alishan	0.64	304	⇑iP	Pb	17 52 30.8	0.0
	baz=303						
ALS				iS	Sb	17 52 39.0	-0.4
	baz=303						
ESL	Shilin	0.67	4	eP	Pg	17 52 31.2	0.0
	baz=5.0						
ECL	Taimali	0.68	216	eP	Pb	17 52 30.5	-0.7
	baz=215						
WTP	Ta-pu	0.71	278	⇑iP	Pg	17 52 32.2	+0.1
	baz=275						
WTP				iS	Sg	17 52 42.2	+0.6
	baz=275						
SGST	Jiashian	0.74	265	eP	Pb	17 52 32.3	+0.1
	baz=257						
SGST				S	Sg	17 52 42.6	+0.2
	baz=257						
CHN4	Tsaushan	0.75	286	P	Pg	17 52 33.0	+0.1
	baz=287						
CHN4				eS	Sg	17 52 43.2	+0.4
	baz=287						
CHN1	Nanshi	0.79	273	P	Pg	17 52 33.5	+0.1
	baz=266						
CHN1				S	Sn	17 52 45.0	-0.4
	baz=266						
CHN5	Tsauling	0.79	305	⇑iP	Pg	17 52 33.6	+0.2
	baz=303						
CHN5				S	Sg	17 52 44.4	+0.5
	baz=303						
SSD	Sandimen	0.80	240	P	Pb	17 52 33.1	-0.2
	baz=232						
SSD				eS	Sb	17 52 42.7	-1.0

	baz=232						
TWK	Hsinying	0.83	278	eP	Pb	17 52 34.2	+0.3
	baz=275						
TWK				eS	Sg	17 52 46.0	+0.6
	baz=275						
SMLT	Sun Moon Lake	0.85	329	i P	Pb	17 52 34.3	-0.1
	baz=335						
SMLT				eS	Sb	17 52 44.8	-0.7
	baz=335						
TYC	Yuchr	0.89	327	eP	Pn	17 52 35.3	-0.2
	baz=339						
TYC				eS	Sg	17 52 47.2	0.0
	baz=339						
EAST	Anshuo	0.91	213	eP	Pg	17 52 36.5	+0.8
	baz=214						
WGK	Gukeng	0.93	306	eP	Pn	17 52 36.0	0.0
	baz=303						
WGK				eS	Sg	17 52 48.6	+0.4
	baz=303						
CHN3	Shinhua	0.94	266	eP	Pg	17 52 36.6	+0.3
	baz=272						
CHN3				eS	Sn	17 52 50.3	+1.2
	baz=272						
TWM1	Shoushan	0.94	250	eP	Pn	17 52 36.4	+0.1
	baz=250						
CHY	Chiayi	0.95	292	eP	Pn	17 52 36.3	0.0
	baz=291						
TWD	Chiawan	0.95	12	eP	Pb	17 52 34.3	-1.6
	baz=1.0						
TWD				eS	Sb	17 52 48.2	+0.2
	baz=1.0						
WNT	Mingjian	0.97	319	eP	Pg	17 52 37.1	+0.2
	baz=317						
WNT				eS	Sg	17 52 50.7	+1.0
	baz=317						
WHF	Hehuan Shan	1.00	354	eP	Pb	17 52 36.6	-0.3
	baz=3.0						
SCZT	Fangliau	1.04	222	eP	Pn	17 52 38.0	+0.3
	baz=218						
LAY	Lan-yu	1.11	172	eP	Pn	17 52 37.8	-0.9
	baz=163						
LAY				eS	Sb	17 52 52.9	0.0
	baz=163						
NNS	Nan Shan	1.29	360	eP	Pb	17 52 42.0	+0.3
	baz=8.0						
ENA	Nanau	1.32	14	eP	Pn	17 52 41.2	-0.2
	baz=359						
TWQ1	Liyutan	1.32	335	eP	Pb	17 52 42.8	+0.6
	baz=332						
NSY	Sanyi	1.39	336	eP	Pb	17 52 44.0	+0.7
	baz=337						
ENTT	Nioudou	1.50	6	eP	Pb	17 52 45.4	+0.2
	baz=2.0						
NSTT	Nanjuang	1.52	347	eP	Pb	17 52 45.5	0.0
	baz=346						
NSTT				eS	Sb	17 53 05.0	+0.5
	baz=346						
NSK	Sanguang	1.52	359	eP	Pb	17 52 45.1	-0.6
	baz=13						
NSK				eS	Sn	17 53 02.5	-1.2
	baz=13						
TWE	Neicheng	1.59	9	eP	Pn	17 52 45.9	+0.7
	baz=4.0						
JYNG	Yonagunijimaku	1.93	48	P	Pn	17 52 50.3	+0.4
JYNG				eS	Sn	17 53 14.5	+0.9
IRIF	Iriomote-Funau	2.45	61	P	Pn	17 52 57.1	+0.1

MEX 01 17:53:07.7±0.3**, 17°.96N×101°.51W, h5km, MD3.9, Near coast of Guerrero**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
ZIIG	Zihuatanejo	0.35	172	i P	Pg	17 53 14.2	-0.3
ZIIG				eS	Sg	17 53 19.4	+0.2
ARIG	Puente Sto Nin	1.16	74	eP	Pg	17 53 26.9	-3.0
ARIG				eS	Sg	17 53 41.2	-3.6
CAIG	El Cayaco	1.50	127	eP	Pn	17 53 30.0	-5.2
MMIG	Aquila	1.77	281	eP	Pn	17 53 35.7	-3.3
MMIG				eS	Sn	17 53 57.0	-4.9
R15V		2.63	298	eP	Pn	17 53 47.1	-3.8

MAN 01 18:00:39, 15°.27N×119°.92E, h1km, mb4.1, ML2.9, MS2.6, 1C, Luzon

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
BOLP	Bolinao	1.11	360	eP	Pb	18 01 00.9	-0.1
BCPH	Baguio City Da	1.28	30	⇑iP	Pn	18 01 04.6	+0.4
BCPH				i S	Sg	18 01 15.5	-4.7
BALP	Baler	1.67	73	eP	Pn	18 01 09.6	+0.2
CAUP	Cauayan	2.48	47	eP	Pn	18 01 21.4	+0.9
ABRA	Dolores	2.49	18	eP	Pn	18 01 22.1	+1.4
APYP	Conner	2.88	26	eP	Pb	18 01 28.8	-2.3

*IDC **01** 18:00:55.9±0.9, 38°.30N×142°.13E, h0km, mb3.6/10, mb1 3.8/11, mb1mx3.5/38, mbtmp3.7/11, ML3.9/1, Error ellipse: s-maj=30.6km s-min=17.4km az=95.0*
*JMA **01** 18:01:00.3±0.1, 38°.38N×142°.08E, h36km±2km, M4.1*
JMA Felt II J1.
*NEIC **01** 18:01:01.5±0.8, 38°.30N×142°.27E, h45km±8km, mb4.5/3, Error ellipse: s-maj=9.5km s-min=6.9km az=101.0*
ISC 01 18:00:58.1±1.7**, 38°.34N**±0°.04×**142°.19E**±0°.06**, h17**km±10km**, n46, σ1s.22**/49**, mb3.8**/13**, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
JIO	Ouri	0.67	280	P	Pb	18 01 11.9	+0.5
JIO				S	Sg	18 01 19.7	-0.5
OFUJ	Ofunato	0.85	331	P	Pg	18 01 14.6	0.0
JMK	Ichinoseki	0.98	309	P	Pb	18 01 16.5	-0.1
JMK				S	Sb	18 01 27.9	-1.3
JMM	Marumori	1.20	247	P	Pn	18 01 19.7	-0.4
JMM				S	Sb	18 01 33.5	-2.1
JOU	Okura	1.20	272	P	Pn	18 01 20.2	0.0
JOU				S	Sb	18 01 34.3	-1.4
JOM	Ohasama	1.33	329	P	Pn	18 01 22.0	0.0
JOM				S	Sn	18 01 38.1	-1.3
JYK	Kaneyama	1.55	293	P	Pn	18 01 25.1	+0.2
JYK				S	Sn	18 01 43.6	-1.0
JRG	Rokugo	1.61	312	P	Pn	18 01 26.1	+0.3
JRG				eS	Sn	18 01 46.5	+0.3
JYS	Shirataka	1.68	267	P	Pn	18 01 27.1	+0.4
JYS				S	Sn	18 01 47.4	-0.4
MJAR	Matsushiro Arr	3.64	242	Pn	Pn	18 01 55.6	+1.9
	1.3nm,0.3s,baz=58,slow=9.8,SNR=11						
MAJO	Matsushiro	3.64	242	ePn	Pn	18 01 56.4	+2.7
MAT	Matsushiro	3.64	242	P	Pn	18 01 55.0	+1.3
MAT				eS	Sn	18 02 39.5	+3.2
ERM	Erimo	3.75	11	ePn	Pn	18 01 56.4	+1.2
INU	Inuyama	5.11	236	ePn	Pn	18 02 17.6	+3.7
JHJ2	Mitsune	5.56	201	ePn	Pn	18 02 21.6	+1.5
JHJ	Hachijo jima 2	5.56	201	Pn	Pn	18 02 20.8	+0.7
	10nm,0.3s,baz=104,slow=22,SNR=5.5						
JHJ				Sn	Sn	18 03 19.7	-3.9
	10nm,0.3s,baz=75,slow=20,SNR=3.8						
CBIJ	Chichi jima	11.21	180	ePn	Pn	18 03 36.8	-0.8
MA2	Magadan	21.95	12	P	P	18 05 52.3	+1.5
	1.4nm,0.2s,baz=225,slow=5.8,SNR=4.0						
SEY	Seymchan	25.40	11	P	P	18 06 26.4	+2.1
	1.5nm,0.7s,baz=213,slow=6.1,SNR=10						
SONA0	Songino Array	27.60	302	eP	P	18 06 45.8	+1.2
	8.4nm,1.9s						
SONM	Songino Array	27.60	302	P	P	18 06 45.8	+1.2
	0.1nm,0.4s,baz=99,slow=8.9,SNR=2.5						
H11N2	WAKE ISLAND Hy	28.32	124	T	T	18 37 03.1	
	baz=316,slow=76,SNR=410						
H11N1	WAKE ISLAND Hy	28.33	124	T	T	18 37 03.9	
	baz=316,slow=76,SNR=489						
H11N3	WAKE ISLAND Hy	28.34	124	T	T	18 37 14.6	
	baz=316,slow=76,SNR=406						
H11S1	WAKE ISLAND Hy	29.09	126	T	T	18 38 05.2	
	baz=318,slow=76,SNR=98						
H11S3	WAKE ISLAND Hy	29.09	126	T	T	18 38 05.3	
	baz=318,slow=76,SNR=148						
H11S2	WAKE ISLAND Hy	29.10	126	T	T	18 38 08.2	
	baz=318,slow=76,SNR=64						
ZAA0	Zalesovo Array	41.51	311	eP	P	18 08 43.6	-0.6
ZAA1	Zalesovo Array	41.51	311	eP	P	18 08 43.9	-0.2
ZALV	Zalesovo Beam	41.51	311	P	P	18 08 43.9	-0.2
	0.8nm,0.4s,baz=79,slow=8.2,SNR=5.3						
MK01	Makanchi Array	43.96	301	eP	P	18 09 03.9	-0.4
MK31	Makanchi Array	43.96	301	eP	P	18 09 04.4	+0.2
MK32	Makanchi Array	43.96	301	eP	P	18 09 04.1	-0.2
MKAR	Makanchi Array	43.96	301	P	P	18 09 04.1	-0.2
	0.5nm,0.6s,baz=90,slow=7.8,SNR=7.6						
MKAR	Makanchi Array	43.96	301	eP	P	18 09 04.3	0.0
KURK	Kurchatov	45.63	307	eP	P	18 09 17.1	-0.3
	2.6nm,0.6s						
WR1	Warramunga Arr	58.44	189	eP	P	18 10 52.9	-0.1
	70nm,1.9s						
WRA	Warramunga Arr	58.44	189	P	P	18 10 52.9	-0.1
	0.3nm,0.4s,baz=5.8,slow=7.1,SNR=10						
ASAR	Alice Springs	62.16	189	P	P	18 11 18.6	+0.1
	0.3nm,0.5s,baz=13,slow=9.2,SNR=4.7						
YKA	Yellowknife Ar	62.38	31	P	P	18 11 19.6	+0.1
	0.1nm,0.3s,baz=301,slow=4.8,SNR=3.5						
FIA0	FINESS Array S	67.95	332	eP	P	18 11 55.4	-0.2
FINES	FINESS Array B	67.95	332	P	P	18 11 55.4	-0.2
	1.4nm,0.8s,baz=231,slow=6.1,SNR=3.8						
NB200	NORSAR Array S	73.22	337	eP	P	18 12 28.1	+0.1
NOA	NORSAR Array B	73.22	337	P	P	18 12 28.0	+0.1
	0.5nm,0.8s,baz=42,slow=6.1,SNR=3.0						
CARC	Carrizo Plain	74.56	57	eP	P	18 12 35.8	-0.4
DPP	Dos Picos Cty	77.86	58	eP	P	18 12 53.6	-1.4

*KRNET **01** 18:08:09.8±0.1, 39°.80N×73°.65E, mb2.5*
*NNC **01** 18:08:11.4±2.9, 39°.81N×73°.49E, h0km, mb3.1, mpv2.8, Error ellipse: s-maj=50.5km s-min=14.9km az=100.0*
*SOME **01** 18:08:13.2, 39°.88N×73°.60E, h10km*
ISC 01 18:08:07.8±1.6**, 39°.74N**±0°.06×**73°.68E**±0°.04**, h10**km±12km**, n25, σ1s.39**/46**, 27C-10D, Tajikistan-Xinjiang border region**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
SFK	Sufi-Kurgan	0.30	333	⇓iP	Pg	18 08 14.9	+0.8
	baz=332						
SFK				⇓iS	Sg	18 08 17.9	-0.3
	baz=332						
SFK	Sufi-Kurgan	0.30	333	⇑P	Pg	18 08 14.9	+0.8
	47nm,0.4s						
SFK				⇑S	Sg	18 08 18.1	-0.1
	63nm,0.2s						
ARLS	Aral	2.17	13	⇑iP	Pb	18 08 48.3	+1.0
	baz=14						
ARLS				⇑iS	Sg	18 09 16.6	-1.0
	baz=14						
BTK	Batken	2.23	279	⇓iP	Pb	18 08 49.5	+1.4
	baz=278						
BTK				⇓iS	Sg	18 09 18.8	-0.5
	baz=278						
TOKL	Toktogul	2.28	345	⇑eP	Pb	18 08 49.9	+0.8
	baz=345						
TOKL				⇑iS	Sg	18 09 19.6	-1.5
	baz=345						
AML	Almayashu	2.39	0	⇑iP	Pb	18 08 52.5	+1.4
	baz=1.0						
AML				⇑iS	Sb	18 09 22.0	+1.3
	baz=1.0						
ARK	Arkit	2.43	328	⇓iP	Pb	18 08 51.4	-0.3
	baz=328						
ARK				⇓iS	Sb	18 09 22.6	+0.8
	baz=328						
NRN	Naryn	2.44	46	⇑iP	Pb	18 08 52.1	+0.1
	baz=47						
NRN				⇑eS	Sb	18 09 24.8	+2.5
	baz=47						
UCH	Uchtor	2.56	14	⇑iP	Pb	18 08 54.7	+0.6
	baz=15						
UCH				⇑iS	Sb	18 09 27.4	+1.6
	baz=15						
KZA	Kyzart	2.62	26	⇑iP	Pb	18 08 56.5	+1.5
	baz=28						
KZA				⇑iS	Sb	18 09 29.6	+2.2
	baz=28						
MNAS	Manas	2.88	342	⇑eP	Pb	18 08 58.6	-0.8
	baz=343						
MNAS				⇑eS	Sb	18 09 33.9	-0.8
	baz=343						
MNAS	Manas	2.88	342	⇓Pn	Pb	18 09 01.7	+2.3
	2.4nm,0.5s						
MNAS				⇑Lg	Lg	18 09 39.8	
	5.4nm,0.5s						
EKS2	Erkin-Say	2.92	1	⇑iP	Pb	18 09 00.0	0.0
	baz=2.0						
EKS2				⇑iS	Sb	18 09 36.6	+0.9
	baz=2.0						
AAK	Ala-Archa	2.95	12	⇑iP	Pb	18 09 01.2	+0.6
	baz=12						
AAK				⇑iS	Sb	18 09 38.9	+2.1
	baz=12						
AAK	Ala-Archa	2.95	12	⇑Pn	Pb	18 09 01.8	+1.2
	1.1nm,0.3s						
AAK				⇓Lg	Lg	18 09 43.7	
	4.1nm,0.5s						
MRKS	Merke	3.02	354	eP	Pg	18 09 04.8	-0.8
	3.6nm,0.2s						
MRKS				eS	Sg	18 09 42.4	-2.4
	13nm,0.4s						
KBK	Karagaybulak	3.06	18	⇑iP	Pb	18 09 04.2	+1.7
	baz=19						
KBK				⇑iS	Sg	18 09 44.9	-1.3
	baz=19						
BOOM	Boomskoye usch	3.23	31	⇓iP	Pb	18 09 03.9	-1.4
	baz=32						
BOOM				⇓iS	Sb	18 09 43.4	-1.4
	baz=32						
KST	Kastek	3.72	27	eP	Pg	18 09 19.7	+0.7
	1.3nm,0.3s						
KST				eS	Sg	18 10 07.3	+0.1
	8.4nm,0.4s						
DGS	Degeres	3.83	24	eP	Pg	18 09 21.9	+0.7
	1.8nm,0.3s						
DGS				eS	Sg	18 10 11.0	+0.2
	6.9nm,0.6s						
DZET	Dzherino	3.88	258	⇑Pg	Pg	18 09 21.2	-1.0
	1.8nm,0.5s						
DZET				⇑Lg	Lg	18 10 15.9	
	20nm,0.7s						
TNSS	Tian-Shan	4.11	36	eP	Pg	18 09 26.1	-0.5
	2.1nm,0.5s						
TNSS				eS	Sg	18 10 18.7	-1.1
	6.2nm,0.6s						
KK31	Karatay Array	4.12	326	⇑Pg	Pg	18 09 24.4	-2.2
	0.5nm,0.3s,baz=146,slow=17,SNR=5.0						
KK31				Lg	Lg	18 10 18.8	
	1.2nm,0.3s,baz=136,slow=28,SNR=6.5						
MDOK	Medeo	4.25	35	eP	Pg	18 09 28.7	-0.5
	0.8nm,0.2s						
MDOK				eS	Sg	18 10 22.8	-1.6
	4.7nm,0.8s						
CHKK	Chushkaly	4.81	30	eP	Pg	18 09 38.0	-1.9
	0.4nm,0.2s						
CHKK				eS	Sg	18 10 39.5	-2.8
	3.3nm,0.6s						

IDC 01 18:12:04.4±2.5**, 22°.84N×11°.53W, h0**km**, mb3.7**/3**, mb1 3.7**/5**, mb1mx3.4**/36**, mbtmp3.7**/5**, ML3.5**/1**, Error ellipse: s-maj=77.6km s-min=28.8km az=80.0, Mauritania**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
TORD	Torodi Ar. Bea	15.84	125	Pn	Pn	18 15 49.9	+1.0
	baz=311,slow=14,SNR=3.3						
TORD				Sn	Sn	18 18 45.0	-0.3
	0.1nm,0.3s,baz=306,slow=22,SNR=2.6						
DBIC	Dimbokro	17.32	157	P	Pn	18 16 07.0	-0.6
	0.2nm,0.3s,baz=336,slow=12,SNR=4.5						
GERES	GERESS Array B	32.75	31	P	P	18 18 38.7	-0.4
	0.8nm,0.7s,baz=232,slow=9.5,SNR=6.3						
FINES	FINESS Array B	46.40	24	P	P	18 20 32.0	-0.3
	0.5nm,0.5s,baz=235,slow=8.9,SNR=7.1						
MKAR	Makanchi Array	76.22	45	P	P	18 23 55.2	+0.4
	0.4nm,0.7s,baz=276,slow=6.4,SNR=8.0						
WRA	Warramunga Arr	148.13	91	PKPbc	PKPbc	18 31 51.8	-1.1
	0.4nm,0.8s,baz=296,slow=2.0,SNR=3.9						
ASAR	Alice Springs	148.28	98	PKPbc	PKPbc	18 31 53.0	-0.3
	0.4nm,0.7s,baz=278,slow=2.6,SNR=6.6						

*IDC **01** 18:19:58.1±1.0, 37°.63N×144°.32E, h0km, mb3.7/8, mb1 3.9/10, mb1mx3.6/44, mbtmp3.7/10, ML3.7/2, Error ellipse: s-maj=28.1km s-min=19.1km az=102.0*
*ISCJB **01** 18:20:01.2±0.7, 37°.72N±0°.05×144°.01E±0°.05, h33km, mb3.6/8, Error ellipse: s-maj=7.7km s-min=6.2km az=177.6*
*JMA **01** 18:20:02.2±0.4, 37°.81N×143°.90E, h28km, M3.9*
ISC 01 18:20:03.6±1.0**, 37°.78N**±0°.06×**143°.98E**±0°.09**, h35**km**, n20, σ1s.94**/28**, mb3.5**/8**, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
JIO	Ouri	2.18	289	P	Pn	18 20 36.8	-0.6
JIO				eS	Sn	18 21 02.7	-0.5
JMM	Marumori	2.53	273	P	Pn	18 20 41.7	-0.4
JMM				S	Sn	18 21 10.8	-0.9
JOM	Ohasama	2.70	310	eS	Sn	18 21 15.1	-0.9
JFT	Otama	2.91	266	P	Pn	18 20 47.1	-0.3
JFT				eS	Sn	18 21 21.6	+0.5
JYK	Kaneyama	3.06	293	P	Pn	18 20 49.6	0.0
JYK				S	Sn	18 21 25.8	+0.8
JRG	Rokugo	3.08	303	eS	Sn	18 21 26.7	+1.4
JTM	Tenmabayashi	3.76	324	S	Sn	18 21 39.1	-2.9
JRY	Ryogami san	4.44	248	P	Pn	18 21 08.0	-0.4
JRY				eS	Sn	18 21 57.9	-1.0
JNBK	Urakawa-nobuka	4.59	349	P	Pn	18 21 08.6	-1.9
JNBK				eS	Sn	18 21 58.5	-4.1
MJAR	Matsushiro Arr	4.77	257	Pn	Pn	18 21 14.2	+1.1
	2.6nm,0.3s,baz=64,slow=14,SNR=23						
MJAR				Sn	Sn	18 22 09.0	+1.8
	1.0nm,0.3s,baz=92,slow=27,SNR=4.1						
MAT	Matsushiro	4.78	257	P	Pn	18 21 14.4	+1.3
MAT				S	Sn	18 22 05.7	-1.5
JHJ	Hachijo jima 2	5.78	218	Pn	Pn	18 21 24.0	-2.8
	7.9nm,0.3s,baz=60,slow=21,SNR=10						
JHJ				Sn	Sn	18 22 26.2	-5.7
	14nm,0.3s,baz=75,slow=22,SNR=7.9						
SEY	Seymchan	25.70	9	P	P	18 25 31.4	+1.3
	0.5nm,0.7s,baz=137,slow=6.4,SNR=3.9						
SONM	Songino Array	29.09	302	P	P	18 26 05.0	+4.1
	0.4nm,0.7s,baz=97,slow=7.3,SNR=4.1						
CMAR	Chiang Mai Arr	43.66	257	P	P	18 28 07.5	+2.5
	0.6nm,0.9s,baz=49,slow=7.3,SNR=4.9						
MKAR	Makanchi Array	45.46	302	P	P	18 28 19.9	+0.7
	0.6nm,0.7s,baz=85,slow=8.9,SNR=7.6						
ILAR	Eielson Array	47.76	33	P	P	18 28 36.2	-0.7
	0.2nm,0.6s,baz=261,slow=6.0,SNR=4.1						
WRA	Warramunga Arr	58.13	191	P	P	18 29 52.8	-1.0
	3.4nm,0.7s,baz=11,slow=7.3,SNR=24						
ASAR	Alice Springs	61.85	190	P	P	18 30 18.7	-0.6
	0.7nm,0.8s,baz=7.1,slow=8.7,SNR=8.2						
AKASG	Malin Array Be	74.94	323	P	P	18 31 41.0	+0.1
	0.4nm,0.4s,baz=36,slow=6.6,SNR=4.5						

*NIED **01** 18:26:00, 39°.00N×142°.40E, h59km, Mw3.8 Best double couple: M₀5.87000×10¹⁴ NP1:φs150.00000°, δ45.00000°, λ-10.00000°. NP2:φs247.00000°, δ83.00000°, λ-135.00000°.*
*ISCJB **01** 18:26:05.5±1.3, 38°.93N±0°.04×142°.42E±0°.08, h19km±7km, mb3.5/6, Error ellipse: s-maj=10.6km s-min=6.7km az=22.6*
*JMA **01** 18:26:06.9±0.1, 38°.99N×142°.37E, h33km±2km, M4.0*
JMA Felt I J1.
*IDC **01** 18:26:11.9±3.6, 38°.81N×142°.34E, h68km±34km, mb3.3/6, mb1 3.5/8, mb1mx3.2/42, mbtmp3.6/8, ML3.1/2, Error ellipse: s-maj=29.5km s-min=21.8km az=105.0*
ISC 01 18:26:05.2±2.0**, 38°.95N**±0°.05×**142°.40E**±0°.08**, h9**km±10km**, n24, σ1s.05**/24**, mb3.7**/6**, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
OFUJ	Ofunato	0.59	283	P	Pb	18 26 18.1	+0.5
MIYJ	Miyakonagasawa	0.77	324	P	Pg	18 26 20.5	+0.5
MIYJ				S	Sg	18 26 30.0	-0.1
JMK	Ichinoseki	0.92	270	P	Pg	18 26 23.2	+0.3
JMK				S	Sg	18 26 34.7	-0.2
JIO	Ouri	0.96	239	P	Pg	18 26 23.3	-0.3
JIO				S	Sg	18 26 34.8	-1.3
JOM	Ohasama	1.01	302	P	Pg	18 26 24.6	+0.1
JOM				S	Sg	18 26 37.3	-0.3
JTH	Tanohata	1.07	337	P	Pg	18 26 24.9	-0.8
JRG	Rokugo	1.45	289	P	Pn	18 26 31.9	+0.4
JRG				S	Sn	18 26 49.9	-0.7
JOU	Okura	1.48	247	P	Pn	18 26 31.9	-0.1
JOU				S	Sn	18 26 50.2	-1.3
JANG	Nango	1.58	335	P	Pn	18 26 32.7	-0.6
JANG				S	Sn	18 26 53.4	-0.5
JYK	Kaneyama	1.59	269	P	Pn	18 26 33.7	+0.2
MJAR	Matsushiro Arr	4.10	235	P	Pn	18 27 10.2	+2.2
	9.9nm,0.3s,baz=44,slow=11,SNR=64						
USRK	Ussuriysk Ar.	9.40	307	P	Pn	18 28 24.8	+4.1
	0.2nm,0.3s,baz=106,slow=15,SNR=3.1						
SEY	Seymchan	24.76	11	P	P	18 31 28.8	+1.9
	0.7nm,0.5s,baz=197,slow=19,SNR=8.8						
SONM	Songino Array	27.42	301	P	P	18 31 53.1	+1.9
	0.2nm,0.6s,baz=100,slow=9.3,SNR=2.4						
H11N2	WAKE ISLAND Hy	28.53	125	T	T	19 02 22.4	
	baz=318,slow=76,SNR=130						
H11N1	WAKE ISLAND Hy	28.54	125	T	T	19 02 23.1	
	baz=318,slow=76,SNR=81						
H11N3	WAKE ISLAND Hy	28.55	125	T	T	19 02 23.7	
	baz=318,slow=76,SNR=53						
H11S1	WAKE ISLAND Hy	29.32	127	T	T	19 03 33.6	
	baz=320,slow=76,SNR=4.4						
H11S3	WAKE ISLAND Hy	29.32	127	T	T	19 03 40.7	
	baz=320,slow=76,SNR=6.2						
H11S2	WAKE ISLAND Hy	29.33	127	T	T	19 03 37.1	
	baz=320,slow=76,SNR=5.5						
ZALV	Zalesovo Beam	41.23	311	P	P	18 33 49.3	-0.8
	0.8nm,0.5s,baz=88,slow=8.6,SNR=4.4						
MKAR	Makanchi Array	43.79	301	P	P	18 34 10.5	-0.6
	0.7nm,0.5s,baz=87,slow=11,SNR=17						
ILAR	Eielson Array	47.46	33	P	P	18 34 40.1	+0.2
	0.6nm,0.7s,baz=264,slow=6.1,SNR=8.0						
WRA	Warramunga Arr	59.07	189	P	P	18 36 04.0	-1.7
	0.7nm,0.9s,baz=5.7,slow=6.9,SNR=5.8						

*IDC **01** 18:26:13.2±2.3, 6°.79N×81°.51W, h0km, mb3.9/8, mb1 4.2/9, mb1mx3.9/30, mbtmp3.9/9, ML4.2/1, MS3.7/5, Ms1 3.7/5, ms1mx3.2/37, Error ellipse: s-maj=72.8km s-min=30.2km az=27.0*
*NEIC **01** 18:26:15.7±0.7, 6°.97N×81°.41W, h10km, mb4.6/10, Error ellipse: s-maj=19.3km s-min=9.1km az=201.0*
*ISCJB **01** 18:26:19.3±0.6, 7°.23N±0°.08×81°.46W±0°.04, h33km, mb4.1/16, MS3.6/1, Error ellipse: s-maj=11.9km s-min=5.6km az=17.2*
ISC 01 18:26:20.4±1.0**, 7°.2N**±0°.1×**81°.49W**±0°.07**, h35**km**, n50, σ1s.52**/41**, mb4.3**/16**, Panama**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
BCIP	Isla Barro Col	2.58	39	ePn	Pn	18 26 57.4	-2.2
BCIP	Isla Barro Col	2.58	39	eP	Pn	18 26 57.5	-2.1
BCIP				eS	Sn	18 27 30.7	+0.9
HDC	Heredia	3.83	318	ePn	Pn	18 27 17.6	+0.5
SOLC	Bahia Solano	4.16	103	eP	Pn	18 27 18.7	-2.7
JTS	JuntasAbangare	4.62	312	Pn	Pn	18 27 29.7	+1.9
	10nm,0.3s,baz=128,slow=9.8,SNR=36						
JTS				Sn	Sn	18 28 20.0	-0.4
	7.2nm,0.3s,baz=270,slow=20,SNR=2.6						
JTS	JuntasAbangare	4.62	312	ePn	Pn	18 27 27.0	-0.9
JTS				eSn	Sn	18 28 20.0	-0.4
MOTC	Monteria, Cord	5.99	74	eP	Pn	18 27 48.4	+1.8
HELC	Santa Helena	6.00	99	eP	Pn	18 27 46.7	-0.3
GUYC	Guyana, Colomb	6.36	107	eP	Pn	18 27 54.6	+2.5
NORC	Norcasia	6.77	103	eP	Pn	18 27 58.7	+1.4
ROSC	El Rosal	7.49	108	LR	LR	18 30 32.4	
	comp=Z,461nm,18.1s,baz=300,slow=35						
ROSC	El Rosal	7.49	108	ePn	Pn	18 28 04.5	-3.1
SDV	Santo Domingo	10.88	80	Pn	Pn	18 28 55.7	+1.8
	1.2nm,0.3s,baz=242,slow=9.3,SNR=6.4						
SDV				LR	LR	18 34 17.4	
	comp=Z,487nm,18.9s,baz=271,slow=44						
SDV	Santo Domingo	10.88	80	ePn	Pn	18 28 51.8	-2.1
ATAH	Atahualpa	14.54	168	LR	LR	18 34 45.5	
	comp=Z,437nm,22.0s,baz=345,slow=36						
SDDR	Presa de Saban	15.38	39	ePn	Pn	18 29 51.6	-3.3
	27nm,0.9s						
CMIG	Matias Romero	16.39	308	Pn	P	18 30 10.1	-0.2
	0.3nm,0.3s,baz=89,slow=9.2,SNR=19						
SJG	San Juan	18.49	53	LR	LR	18 37 32.4	
	comp=Z,121nm,19.7s,baz=214,slow=36						
WHAR	Wooly Hollow	29.70	342	eP	P	18 32 24.0	+0.9

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
	11nm,1.0s						
LTX	Lajitas	30.38	319	eP	P	18 32 35.0	+5.7
TXAR	Lajitas Array	30.38	319	P	P	18 32 35.0	+5.7
	0.5nm,0.9s,baz=122,slow=8.6,SNR=3.9						
TXAR				LR	LR	18 44 58.3	
	comp=Z,143nm,20.5s,baz=0.0,slow=37						
113A	Mohawk Valley,	39.33	315	eP	P	18 33 46.6	+0.3
	10nm,1.6s						
GLA	Glamis	40.23	314	eP	P	18 33 56.5	+2.6
	4.9nm,0.6s						
DNR	Dunn Ranch,Anz	41.78	314	eP	P	18 34 06.6	-0.2
DEVC	Devers	41.94	314	eP	P	18 34 04.3	-3.6
PD31	Pinedale Array	43.23	330	eP	P	18 34 18.4	-0.2
PDAR	Pinedale Array	43.23	330	P	P	18 34 19.1	+0.6
	0.3nm,0.6s,baz=118,slow=8.6,SNR=4.4						
ULM	Lac du Bonnet	44.60	347	P	P	18 34 29.5	+0.4
	2.9nm,0.6s,baz=154,slow=7.7,SNR=6.9						
ULM	Lac du Bonnet	44.60	347	eP	P	18 34 29.0	-0.1
	28nm,1.9s						
NV01	Mina Array Sit	45.52	319	eP	P	18 34 39.6	+2.7
NVAR	Mina Array Bea	45.52	319	P	P	18 34 38.7	+1.7
	0.7nm,0.8s,baz=123,slow=6.7,SNR=4.5						
YKA	Yellowknife Ar	60.29	343	P	P	18 36 24.3	-0.9
	1.6nm,0.9s,baz=135,slow=6.9,SNR=15						
YKB5	Yellowknife Ar	60.29	343	eP	P	18 36 24.5	-0.7
INK	Inuvik	70.00	342	P	P	18 37 28.4	+0.4
	2.2nm,1.1s,baz=126,slow=5.9,SNR=4.1						
INK	Inuvik	70.00	342	eP	P	18 37 28.3	+0.2
	6.9nm,1.4s						
DOT	Dot Lake	71.65	335	eP	P	18 37 39.4	+1.1
	42nm,1.7s						
HDA	Harding Lake	73.11	336	eP	P	18 37 47.3	+0.4
	5.2nm,1.0s						
IL1	Eielson Array	73.20	336	eP	P	18 37 47.6	+0.1
ILAR	Eielson Array	73.20	336	P	P	18 37 47.2	-0.3
	0.7nm,0.9s,baz=101,slow=4.9,SNR=6.9						
ILB	Eielson Array	73.20	336	eP	P	18 37 47.9	+0.4
RND	Reindeer	73.59	334	eP	P	18 37 51.8	+1.9
	13nm,1.5s						
MLY	Manley	74.85	336	eP	P	18 37 57.9	+0.8
	7.5nm,1.5s						
ESDC	Sonseca Array	75.87	51	P	P	18 38 04.0	+0.5
	1.1nm,0.7s,baz=271,slow=6.0,SNR=8.0						
ES19	SONSECA Array	75.92	51	eP	P	18 38 07.3	+3.5
GERES	GERESS Array B	88.07	41	P	P	18 39 08.3	+0.9
	0.2nm,0.4s,baz=287,slow=5.4,SNR=5.1						
GEA0	GERESS Array S	88.07	41	eP	P	18 39 11.2	+3.7
ASAR	Alice Springs	142.29	240	PKP	PKPdf	18 45 46.9	-3.3
	0.2nm,0.8s,baz=124,slow=2.8,SNR=2.9						
WR1	Warramunga Arr	143.02	246	ePKPpre	PKPbc	18 45 50.3	+2.0
WRA	Warramunga Arr	143.02	246	PKP	PKPbc	18 45 50.3	+1.9
	0.7nm,1.1s,baz=104,slow=2.8,SNR=5.8						
CMAR	Chiang Mai Arr	154.54	359	PKPbc	PKPbc	18 46 16.2	-2.2
	0.3nm,0.3s,baz=3.8,slow=2.7,SNR=3.8						

WEL 01 18:27:45.5±0.8, 34°.97S×178°.03E, h33km, ML4.2/6, Error ellipse: s-maj=12.4km s-min=5.7km az=90.0, South of Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MXZ	Matakaoa Point	2.60	175	PN	Pn	18 28 25.2	0.0
MXZ				SN	Sn	18 28 53.6	-2.0
HAZ	Te Kaha	2.79	184	PN	Pn	18 28 28.2	+0.4
HAZ				SN	Sn	18 28 59.8	-0.5
WMGZ	Waiomatatini S	2.86	174	PN	Pn	18 28 28.5	-0.4
WMGZ				SN	Sn	18 29 00.1	-2.0
PUZ	Puketiti	3.10	177	PN	Pn	18 28 30.6	-1.6
PUZ				SN	Sn	18 29 03.4	-4.7
URZ	Urewera	3.37	192	PN	Pn	18 28 35.4	-0.4
URZ				SN	Sn	18 29 13.9	-0.6
MWZ	Matawai	3.38	187	PN	Pn	18 28 35.3	-0.7
CNGZ	Carnagh Statio	3.51	178	PN	Pn	18 28 34.8	-3.0
RAGZ	Rawiri	3.55	188	PN	Pn	18 28 37.7	-0.7
BKZ	Black Stump Fm	4.36	196	PN	Pn	18 28 47.9	-1.7
BHHZ	Black Hill Sta	4.78	199	PN	Pn	18 28 52.8	-2.4
KAHZ	Kahuranaki	4.90	190	PN	Pn	18 28 53.3	-3.6
ANWZ	Angora Road	5.62	192	PN	Pn	18 29 01.4	-5.3
MRZ	Mangatainoka R	6.00	198	PN	Pn	18 29 06.1	-5.9
OGWZ	Otaki Gorge	6.26	200	PN	Pn	18 29 09.5	-6.0
TMWZ	Te Maipa	6.36	195	PN	Pn	18 29 10.3	-6.5
KIW	Kapiti Island	6.38	202	PN	Pn	18 29 10.9	-6.3
PLWZ	Palliser	6.94	197	PN	Pn	18 29 16.9	-8.1

ISCJB 01 18:29:27.5±0.3, 32°.65N±0°.02×115°.73W±0°.02, h11km±2km, Error ellipse: s-maj=3.1km s-min=2.4km az=13.1
NEIC 01 18:29:29.2, 32°.65N×115°.74W, h4km, ML2.9(PAS), ML3.0(ECX), After ECX.
ECX 01 18:29:29.2±0.5, 32°.65N×115°.74W, h4km, MD2.8, ML3.0
MEX 01 18:29:30.0±0.9, 32°.53N×115°.67W, h16km±20km, MD3.6
ISC 01 18:29:27.2±0.9, 32°.66N±0°.02×115°.73W±0°.02, h12km±7km, n68, σ0s.76/94, 3C-4D, California-Baja California border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ERPC	Ernies Place	0.10	32	⇓iP	Pb	18 29 31.4	+0.2
ERPC	Ernies Place	0.10	32	ePg	Pb	18 29 31.3	+0.2
WESC	Westside Schoo	0.10	358	eP	Pb	18 29 31.2	+0.1
YUH	Yuha Desert	0.17	267	eP	Pb	18 29 31.9	-0.4
YUH	Yuha Desert	0.17	267	ePg	Pg	18 29 31.1	+0.2
COK	Cook Ranch	0.19	360	⇓iP	Pb	18 29 33.1	+0.4
DREC	Desert Rsrch C	0.28	58	eP	Pb	18 29 34.8	+0.6
SWSC	Sam W. Stewart	0.29	348	P	Pb	18 29 34.3	0.0
	baz=172,SNR=89						
SWSC				S	Sb	18 29 38.8	-0.3
	baz=172						
SWSC	Sam W. Stewart	0.29	348	ePg	Pb	18 29 34.5	+0.1
RMX	La Rumorosa	0.30	260	⇑eP	Pg	18 29 33.8	+0.4
RMX				eS	Sg	18 29 38.0	+0.4
IBP	Imperial Bould	0.31	271	eP	Pb	18 29 34.6	-0.2
IBP	Imperial Bould	0.31	271	P	Pb	18 29 34.6	-0.2
	baz=97,SNR=253						
IBP				S	Sb	18 29 39.0	-0.8
	baz=97						
IBP	Imperial Bould	0.31	271	ePg	Pg	18 29 33.9	+0.3
CPBX	Cerro Prieto	0.43	124	eP	Pb	18 29 37.0	+0.3
CPBX				eS	Sb	18 29 43.6	+0.5
CPBX				AML	AML	18 29 53.3	
	comp=E,4µm,0.4s						
CPBX				⇑e		18 29 53.3	
CPBX	Cerro Prieto	0.43	124	eP	Pb	18 29 36.6	-0.1
CPBX				eS	Sg	18 29 42.4	+1.0
ERRC	Elmore Ranch	0.47	350	ePg	Pb	18 29 37.7	+0.3
CBKC	Canebrake	0.51	299	ePg	Pb	18 29 38.0	0.0
MBIG	Mexicali	0.51	119	eP	Pb	18 29 38.2	+0.1
MBIG				eS	Sg	18 29 42.7	-1.3
COA	Coachella	0.55	68	ePg	Pb	18 29 39.2	+0.4
MONP2	Monument Peak	0.63	292	P	Pb	18 29 40.4	+0.2
	baz=115,SNR=57						
MONP2				S	Sb	18 29 48.7	-0.5
	baz=115						
EMSC	East Mesa	0.63	82	ePg	Pb	18 29 40.5	+0.4
FRK	Frink	0.75	6	ePg	Pb	18 29 42.4	+0.2
BAR	Barrett	0.80	272	eP	Pb	18 29 43.2	+0.1
BAR	Barrett	0.80	272	ePn	Pb	18 29 43.2	+0.1
BAR				eSg	Sb	18 29 53.5	-0.3
BATC	Bat Cave Butte	0.81	353	ePg	Pn	18 29 44.0	-0.4
TJIG	Tijuana	0.83	255	eP	Pb	18 29 43.6	0.0
TJIG	Tijuana	0.83	255	i P	Pb	18 29 43.5	0.0
TJIG				eS	Sg	18 29 53.4	-0.8
BORC	Borrego Spring	0.84	317	ePg	Pb	18 29 44.1	+0.3
GLA	Glamis	0.85	62	P	Pg	18 29 43.7	-0.1
	baz=241						
GLA				S	Sg	18 29 54.9	0.0
	baz=241						
GLA	Glamis	0.85	62	ePg	Pg	18 29 43.6	-0.1
GLA				ePn	Pb	18 29 44.6	+0.6
GLA				eSg	Sg	18 29 55.0	+0.1
CBX	Cerro Bola	0.86	247	eP	Pb	18 29 44.4	+0.1
CBX				eS	Sb	18 29 55.7	0.0
CBX				AML	AML	18 29 59.9	
	comp=E,409nm,0.3s						
CBX				⇓e		18 29 59.9	
CBX	Cerro Bola	0.86	247	eP	Pb	18 29 44.2	0.0
CBX				eS	Sg	18 29 54.2	-1.0
CBX	Cerro Bola	0.86	247	eP	Pb	18 29 44.2	0.0
CBX				eS	Sg	18 29 54.2	-1.0
EML	El Monte Cty P	0.97	284	ePn	Pb	18 29 45.9	0.0
LTC	Little Chuckwa	1.00	33	ePg	Pn	18 29 47.2	+0.2
BC3	Big Chuckawall	1.02	13	S	Sg	18 29 59.4	-0.9
	baz=194						
SDRC	San Diego Road	1.03	275	eP	Pg	18 29 47.2	+0.2
DPP	Dos Picos Cty	1.08	289	ePn	Pb	18 29 47.9	0.0
HWB	Hans Werner Br	1.10	290	ePn	Pb	18 29 48.2	0.0
FRD	Ford Ranch, An	1.11	319	ePg	Pn	18 29 48.8	0.0
PFO	Pinyon Flats O	1.13	327	P	Pb	18 29 48.1	-0.7
	baz=149,SNR=18						
PFO				S	Sb	18 30 03.0	-0.6
	baz=149						
PFO	Pinyon Flats O	1.13	327	ePg	Pb	18 29 48.1	-0.7
PFO				eSg	Sb	18 30 02.9	-0.6
SNDA	J Saunders Pla	1.16	320	ePg	Pg	18 29 49.6	0.0
SNDA				eSn	Sn	18 30 06.5	+1.2
PLM	Palomar	1.18	306	ePn	Pg	18 29 50.1	+0.1
DNR	Dunn Ranch,Anz	1.18	320	ePg	Pg	18 29 50.0	0.0
DNR				eSn	Sn	18 30 07.6	+1.8
109C	Camp Elliot, M	1.18	282	Pb	Pb	18 29 49.5	-0.1
	baz=103						
109C				S	Sb	18 30 04.4	-0.5
	baz=103						
ZAX	El Zacaton	1.23	202	eP	Pn	18 29 49.9	-0.4
ZAX				AML	AML	18 30 09.4	
	comp=N,152nm,0.3s						
ZAX				⇓e		18 30 09.4	
ECNX	Esteban Cantu	1.24	217	eP	Pn	18 29 50.6	+0.1
PBX	Punta Banda	1.24	223	eP	Pn	18 29 50.3	-0.2
ECBX	El Chinero	1.31	154	eP	Pb	18 29 51.8	0.0
ECBX				eS	Sn	18 30 09.2	+0.4
ECBX				⇑e		18 30 10.7	
ECBX				AML	AML	18 30 10.7	
	comp=E,342nm,0.4s						
BACC	Bachelor Mtn.	1.46	311	ePn	Pb	18 29 54.5	+0.2
BACC				eSn	Sg	18 30 14.7	+0.5
DGR	Domenigoni Val	1.46	313	eSn	Sg	18 30 14.7	+0.4
Y12C	Blythe	1.49	42	ePn	Pn	18 29 54.5	+0.7
HMTC	Hemet	1.50	315	ePn	Pb	18 29 55.2	+0.2
SPIG	San Pedro Mart	1.62	172	eP	Pn	18 29 56.2	+0.3
SPIG				eS	Sb	18 30 18.1	+0.4
SPIG	San Pedro Mart	1.62	172	eP	Pn	18 29 56.2	+0.3
SPIG				eS	Sb	18 30 18.1	+0.4
113A	Mohawk Valley,	1.66	86	ePn	Pn	18 29 55.3	-0.7
SSK	Sunset Peak	2.26	314	ePn	Pn	18 30 06.0	+1.4
CIS	Catalina Islan	2.37	289	Sb	Sb	18 30 40.1	+1.0
	baz=108						
LDFC	Landfair	2.47	12	ePn	Pb	18 30 10.1	-1.5
MWC	Mount Wilson	2.50	309	ePn	Pn	18 30 07.8	-0.1
PASC	Pasadena Art C	2.55	307	ePn	Pn	18 30 10.1	+1.7
PASC				eSn	Sn	18 30 39.6	+0.1
214A	Organ Pipe Nat	2.56	105	S	Sn	18 30 37.6	-2.2
	baz=286						
Y14A	Wickenburg	2.61	60	ePn	Pb	18 30 12.4	-1.6
W13A	Hualapai Mount	2.88	32	ePn	Pn	18 30 13.6	+0.5
W13A				eSn	Sg	18 30 58.4	-1.3
EDW2	Edwards Air Fo	2.91	320	Sb	Sg	18 30 57.8	-2.9
	baz=140						
FOXC	Fox Airport	2.95	316	eSn	Sn	18 30 49.7	+0.3
U15A	North Rim	4.71	36	ePn	Pn	18 30 40.9	+2.5

NIED 01 18:34:00, 36°.60N×142°.00E, h5km, Mw3.8 Best double couple: M0 5.06000×10^14 NP1:φs133.00000°, δ25.00000°, λ39.00000°. NP2:φs6.00000°, δ75.00000°, λ109.00000°.
ISCJB 01 18:34:10.5±0.4, 36°.48N±0°.04×142°.22E±0°.06, h19km, mb4.1/23, Error ellipse: s-maj=6.9km s-min=5.1km az=33.2
IDC 01 18:34:10.0±0.9, 36°.52N×142°.17E, h0km, mb3.9/12, mb1 4.0/14, mb1mx3.8/35, mbtmp3.9/14, ML3.7/2, Error ellipse: s-maj=23.3km s-min=18.9km az=90.0
JMA 01 18:34:12.9±0.4, 36°.59N×141°.97E, h86km, M3.5
NEIC 01 18:34:12.1±2.3, 36°.48N×142°.17E, h15km±14km, mb4.3/9, Error ellipse: s-maj=7.5km s-min=5.1km az=91.0
ISC 01 18:34:12.6±0.6, 36°.50N±0°.06×142°.16E±0°.07, h19km, n53, σ0s.80/51, mb4.1/23, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	Iwakimizuishiy	1.25	299	P	Pn	18 34 33.2	-1.9
JHO	Hitachi	1.28	276	P	Pn	18 34 33.8	-1.7
CHOJ	Chosi	1.32	233	P	Pn	18 34 35.9	-0.1
CHOJ				S	Sb	18 34 53.3	+0.1
MJAR	Matsushiro Arr	3.18	272	Pn	Pn	18 35 01.5	-0.2
	8.9nm,0.3s,baz=84,slow=9.6,SNR=57						
MJAR				Sn	Sn	18 35 40.2	+1.1
	5.6nm,0.3s,baz=83,slow=28,SNR=6.4						
MAJO	Matsushiro	3.18	272	ePn	Pn	18 35 02.3	+0.6
MAT	Matsushiro	3.18	272	P	Pn	18 35 02.3	+0.6
MAT				eS	Sn	18 35 37.6	-1.5
JHJ2	Mitsune	3.89	210	ePn	Pn	18 35 11.4	+0.1
JHJ	Hachijo jima 2	3.89	211	Pn	Pn	18 35 11.1	-0.3
	15nm,0.3s,baz=309,slow=21,SNR=6.5						
JHJ				Sn	Sn	18 35 56.0	-0.7
	37nm,0.3s,baz=252,slow=20,SNR=4.3						
INU	Inuyama	4.33	256	ePn	Pn	18 35 18.6	+1.2
ERM	Erimo	5.56	8	ePn	Pn	18 35 35.2	+0.9
CBIJ	Chichi jima	9.37	180	ePn	Pn	18 36 25.5	-1.2
YSS	Yuzh-Sakhalins	10.46	2	ePn	Pn	18 36 40.5	-0.9
H11N2	WAKE ISLAND Hy	27.36	121	T	T	19 08 46.9	
	baz=312,slow=75,SNR=38						
H11N1	WAKE ISLAND Hy	27.37	121	T	T	19 08 47.5	
	baz=312,slow=75,SNR=34						
H11N3	WAKE ISLAND Hy	27.38	121	T	T	19 08 48.3	
	baz=312,slow=75,SNR=26						
ENH	Enshi	27.89	267	eP	P	18 40 00.4	-0.9
	6.3nm,0.8s						
H11S1	WAKE ISLAND Hy	28.07	123	T	T	19 09 39.8	
	baz=314,slow=76,SNR=22						
H11S3	WAKE ISLAND Hy	28.07	123	T	T	19 09 41.4	
	baz=314,slow=76,SNR=22						
H11S2	WAKE ISLAND Hy	28.08	123	T	T	19 09 41.0	
	baz=314,slow=76,SNR=20						
ULN	Ulaanbaatar	28.15	305	eP	P	18 40 04.4	+0.8
	2.6nm,1.1s						
SONA1	Songino Array	28.58	305	eP	P	18 40 08.0	+0.5
SONA0	Songino Array	28.58	305	eP	P	18 40 07.8	+0.3
	3.1nm,1.0s						
SONM	Songino Array	28.58	305	P	P	18 40 07.8	+0.3
	2.1nm,0.8s,baz=102,slow=9.2,SNR=16						
TLY	Talaya	31.13	311	eP	P	18 40 29.8	-0.1
	6.1nm,0.7s						
CMAR	Chiang Mai Arr	41.95	256	P	P	18 42 02.3	0.0
	0.3nm,0.5s,baz=50,slow=9.0,SNR=5.1						
ZAA1	Zalesovo Array	42.72	313	eP	P	18 42 08.8	+0.6
ZALV	Zalesovo Beam	42.72	313	P	P	18 42 08.8	+0.6
	1.6nm,0.7s,baz=94,slow=7.7,SNR=7.8						
MK01	Makanchi Array	44.91	303	eP	P	18 42 25.5	-0.5
MK31	Makanchi Array	44.91	303	eP	P	18 42 26.0	0.0
MK32	Makanchi Array	44.91	303	eP	P	18 42 26.0	0.0
MKAR	Makanchi Array	44.91	303	P	P	18 42 26.0	0.0
	0.7nm,0.7s,baz=93,slow=9.2,SNR=10						
MKAR	Makanchi Array	44.91	303	eP	P	18 42 25.9	0.0
SAUI	Saumlaki	45.40	195	eP	P	18 42 29.0	-1.1
	142nm,0.8s						
KURK	Kurchatov	46.73	309	eP	P	18 42 39.8	-0.5
	2.7nm,1.0s						
TKM2	Tokmak 2	50.41	299	eP	P	18 43 09.5	+0.5
	9.2nm,1.9s						
VOSK	Vostochnaya	51.08	312	eP	P	18 43 13.0	-0.7
	1.2nm,0.8s						
BRVK	Borovoye	51.43	313	eP	P	18 43 14.5	-1.7
	4.9nm,1.3s						
WR1	Warramunga Arr	56.62	189	eP	P	18 43 54.8	+0.5
	84nm,2.0s						
WRA	Warramunga Arr	56.62	189	P	P	18 43 54.8	+0.5
	0.8nm,0.5s,baz=7.2,slow=7.3,SNR=5.2						
ABKAR	Akbulak array	58.74	311	eP	P	18 44 08.9	-0.2
AS01	Alice Springs	60.34	189	eP	P	18 44 19.6	-0.7
ASAR	Alice Springs	60.34	189	P	P	18 44 21.3	+1.0
	0.7nm,0.8s,baz=12,slow=7.6,SNR=7.2						
YKA	Yellowknife Ar	63.97	30	P	P	18 44 44.3	+0.1
	0.4nm,0.3s,baz=278,slow=10,SNR=10						
YKB5	Yellowknife Ar	63.97	30	eP	P	18 44 45.0	+0.8
GEYT	Alibeck	64.62	299	P	P	18 44 49.7	+0.7
	1.2nm,0.6s,baz=73,slow=6.3,SNR=3.1						
FIA0	FINESS Array S	69.57	333	eP	P	18 45 20.1	+0.2
FINES	FINESS Array B	69.57	333	P	P	18 45 20.1	+0.2
	1.4nm,0.9s,baz=243,slow=2.1,SNR=2.8						
NB200	NORSAR Array S	74.91	338	eP	P	18 45 52.9	+1.0
NOA	NORSAR Array B	74.91	338	P	P	18 45 52.9	+1.0
	1.7nm,0.9s,baz=28,slow=8.3,SNR=3.9						
AKASG	Malin Array Be	75.09	323	P	P	18 45 52.9	-0.1
	0.6nm,0.4s,baz=42,slow=5.5,SNR=6.5						
AHID	Auburn Hatcher	76.72	46	eP	P	18 46 02.6	-0.2
	6.9nm,0.8s						
BR101	Keskin Array S	79.65	312	eP	P	18 46 20.0	+0.9
BRTR	Keskin Array B	79.66	312	P	P	18 46 20.0	+0.9
	0.5nm,0.7s,baz=66,slow=3.5,SNR=3.2						

MAN 01 18:35:24, 16°.73N×121°.08E, h41km, mb4.3, ML3.2, MS3.0, 1C, Luzon

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BCPH	Baguio City Da	0.59	234	⇑iP	Pn	18 35 37.5	+1.3
BCPH				i S	Sn	18 35 46.5	+1.7
CAUP	Cauayan	0.74	73	eP	Pn	18 35 39.2	+1.2
ABRA	Dolores	0.98	339	eP	Pn	18 35 41.4	0.0
ABRA				eS	Sn	18 35 55.2	+1.1
BALP	Baler	1.09	154	eP	Pn	18 35 43.0	+0.2
APYP	Conner	1.14	8	eP	Pn	18 35 45.4	+1.9

IDC 01 18:41:38.4±0.8, 35°.85N×142°.97E, h0km, mb3.6/9, mb1 3.9/11, mb1mx3.6/38, mbtmp3.6/11, ML3.1/2, Error ellipse: s-maj=23.0km s-min=18.9km az=125.0
ISCJB 01 18:41:41.6±0.7, 35°.78N±0°.09×142°.9E±0°.1, h33km, mb3.6/9, Error ellipse: s-maj=16.8km s-min=9.1km az=42.9
ISC 01 18:41:43.5±0.8, 35°.8N±0°.1×142°.9E±0°.1, h35km, n11, σ0s.56/12, mb3.7/9, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHJ	Hachijo jima 2	3.72	225	Pn	Pn	18 42 38.6	+0.2
	6.6nm,0.3s,baz=66,slow=20,SNR=5.4						
JHJ				Sn	Sn	18 43 20.5	-0.5
	24nm,0.3s,baz=205,slow=24,SNR=4.3						
MJAR	Matsushiro Arr	3.87	282	Pn	Pn	18 42 40.8	+0.3
	1.0nm,0.3s,baz=104,slow=9.8,SNR=7.2						
SONM	Songino Array	29.47	305	P	P	18 47 45.0	+0.9
	0.4nm,0.6s,baz=112,slow=9.6,SNR=3.7						
MKAR	Makanchi Array	45.79	303	P	P	18 50 01.3	-0.4
	0.3nm,0.8s,baz=81,slow=8.9,SNR=3.2						
ILAR	Eielson Array	49.89	32	P	P	18 50 32.7	-0.4
	0.3nm,0.8s,baz=246,slow=6.8,SNR=3.4						
WRA	Warramunga Arr	56.03	190	P	P	18 51 18.8	0.0
	1.1nm,0.9s,baz=9.5,slow=7.2,SNR=4.4						
ASAR	Alice Springs	59.76	190	P	P	18 51 45.3	+0.3
	0.6nm,0.7s,baz=1.5,slow=6.7,SNR=8.9						
FINES	FINESS Array B	70.45	333	P	P	18 52 53.1	-0.8
	0.6nm,0.8s,baz=60,slow=8.2,SNR=2.7						
NVAR	Mina Array Bea	74.75	54	P	P	18 53 21.0	+0.7
	1.0nm,0.7s,baz=290,slow=6.3,SNR=7.3						
PDAR	Pinedale Array	77.66	46	P	P	18 53 36.8	+0.1
	0.6nm,0.7s,baz=287,slow=1.4,SNR=8.2						
TXAR	Lajitas Array	89.90	53	P	P	18 54 39.3	0.0
	0.3nm,0.7s,baz=308,slow=4.2,SNR=5.6						

IDC 01 18:45:20.9±0.9, 37°.02N×141°.53E, h0km, mb3.6/9, mb1 3.8/14, mb1mx3.6/45, mbtmp3.8/14, ML3.5/3, MS4.0/1, Ms1 4.0/1, ms1mx2.7/44, Error ellipse: s-maj=24.0km s-min=17.2km az=90.0
ISCJB 01 18:45:25.5±0.6, 36°.84N±0°.03×141°.40E±0°.06, h51km±5km, mb4.1/20, MS4.1/1, Error ellipse: s-maj=7.6km s-min=5.5km az=11.4
NEIC 01 18:45:27.8±1.0, 36°.89N×141°.43E, h55km±9km, mb4.4/10, Error ellipse: s-maj=10.8km s-min=8.6km az=87.0
JMA 01 18:45:28.7±0.1, 36°.85N×141°.09E, h49km±1km, M4.0
JMA Felt II J1.
ISC 01 18:45:26.5±1.1, 36°.84N±0°.05×141°.36E±0°.06, h43km±10km, n57, σ1s.51/58, mb4.0/20, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	Iwakimizuishiy	0.52	301	P	Pn	18 45 38.0	+0.3
ONAJ				S	Sn	18 45 44.4	-1.2
JHO	Hitachi	0.68	251	P	Pn	18 45 39.6	-0.1
JHO				S	Sn	18 45 47.3	-1.8
JFT	Otama	1.06	310	P	Pn	18 45 45.8	+0.8
JFT				S	Sn	18 45 57.9	-0.7
JMM	Marumori	1.12	336	P	Pn	18 45 46.6	+0.9
JFY	Yanaizu	1.44	294	P	Pn	18 45 50.2	+0.1
JAG	Ashikaga	1.59	256	P	Pn	18 45 52.1	0.0
JAG				S	Sn	18 46 09.0	-2.5
JKT	Katashina	1.70	268	P	Pn	18 45 53.9	+0.2
MJAR	Matsushiro Arr	2.55	264	Pn	Pn	18 46 05.7	+0.4
	10nm,0.3s,baz=22,slow=21,SNR=48						
MJAR				Sn	Sn	18 46 35.3	+0.1
	13nm,0.3s,baz=99,slow=20,SNR=13						
MAJO	Matsushiro	2.55	264	ePn	Pn	18 46 06.3	+0.9
MAJO				eSn	Sn	18 46 36.0	+0.8
MAT	Matsushiro	2.55	264	P	Pn	18 46 06.2	+0.8
MAT				S	Sn	18 46 36.9	+1.7
INU	Inuyama	3.82	248	ePn	Pn	18 46 25.1	+2.3
JHJ2	Mitsune	3.93	199	ePn	Pn	18 46 26.6	+2.4
JHJ2				eSn	Sn	18 47 05.7	-3.3
JHJ	Hachijo jima 2	3.93	200	Pn	Pn	18 46 26.0	+1.8
	47nm,0.3s,baz=325,slow=21,SNR=20						
JHJ				Sn	Sn	18 47 09.7	+0.6
	29nm,0.3s,baz=334,slow=23,SNR=8.6						
ERM	Erimo	5.36	14	ePn	Pn	18 46 46.8	+3.0
ERM				eSn	Sn	18 47 45.2	+1.1
JNU	Nakatsue	9.37	250	Pn	Pn	18 47 41.0	+2.1
	0.2nm,0.3s,baz=270,slow=1.2,SNR=4.5						
JNU	Nakatsue	9.37	250	ePn	Pn	18 47 41.3	+2.4
CBIJ	Chichi jima	9.74	176	ePn	Pn	18 47 43.8	-0.2
JCJ	Chichijima	9.74	176	Pn	Pn	18 47 43.8	-0.2
	10nm,0.3s,baz=263,slow=24,SNR=7.8						
USRK	Ussuriysk Ar.	10.24	319	Pn	Pn	18 47 48.7	-2.1
	0.2nm,0.3s,baz=115,slow=16,SNR=2.4						
KSRS	Korea Array	10.75	277	Pn	Pn	18 48 01.9	+4.2
	baz=95,slow=13,SNR=5.2						
KSAR	Wonju Array Be	10.78	277	Pn	Pn	18 48 01.9	+3.8
SEY	Seymchan	26.99	11	P	P	18 51 07.4	+3.4
	0.8nm,0.6s,baz=204,slow=7.6,SNR=7.0						
SONA1	Songino Array	27.86	304	eP	P	18 51 12.6	+0.6
SONA0	Songino Array	27.86	304	eP	P	18 51 12.7	+0.6
	6.6nm,1.9s						
SONM	Songino Array	27.86	304	P	P	18 51 12.7	+0.6
	0.6nm,0.7s,baz=108,slow=9.5,SNR=5.1						
H11N2	WAKE ISLAND Hy	28.08	120	T	T	19 21 10.0	
	baz=313,slow=76,SNR=17						
H11N1	WAKE ISLAND Hy	28.09	120	T	T	19 21 14.7	
	baz=313,slow=76,SNR=23						
H11N3	WAKE ISLAND Hy	28.10	120	T	T	19 21 10.2	
	baz=313,slow=76,SNR=21						
H11S1	WAKE ISLAND Hy	28.79	123	T	T	19 22 09.5	
	baz=314,slow=76,SNR=70						
H11S3	WAKE ISLAND Hy	28.79	123	T	T	19 22 10.7	
	baz=314,slow=76,SNR=50						
H11S2	WAKE ISLAND Hy	28.80	123	T	T	19 22 08.8	
	baz=314,slow=76,SNR=21						
TIXI	Tiksi	35.48	353	eP	P	18 52 18.4	0.0
	4.9nm,1.7s						
ZAA1	Zalesovo Array	42.02	313	eP	P	18 53 13.5	+0.1
ZAA0	Zalesovo Array	42.02	313	eP	P	18 53 13.6	+0.2
ZALV	Zalesovo Beam	42.02	313	P	P	18 53 13.5	+0.1
	1.0nm,0.6s,baz=93,slow=7.1,SNR=5.2						
MK01	Makanchi Array	44.19	302	eP	P	18 53 30.9	-0.1
MK31	Makanchi Array	44.19	302	eP	P	18 53 29.4	-1.7
MK32	Makanchi Array	44.19	302	eP	P	18 53 30.9	-0.2
MKAR	Makanchi Array	44.19	302	P	P	18 53 30.9	-0.2
	0.4nm,0.6s,baz=88,slow=9.8,SNR=6.1						
MAKZ	Makanchi	44.40	302	eP	P	18 53 32.1	-0.7
	6.3nm,1.8s						
KSM	Kuching	45.39	226	eP	P	18 53 38.2	-2.7
	13nm,1.1s						
KURK	Kurchatov	46.02	308	eP	P	18 53 45.8	+0.3
	2.2nm,1.0s						
ILAR	Eielson Array	49.68	32	P	P	18 54 12.8	-0.9
	0.3nm,0.8s,baz=271,slow=6.1,SNR=2.5						
CISI	Cisompet, Garu	54.20	222	eP	P	18 54 49.5	+1.6
	54nm,1.1s						
MNAI	Manna	54.42	230	eP	P	18 54 51.9	+2.4
	223nm,1.1s						
INK	Inuvik	54.58	27	P	P	18 54 49.2	-0.8
	0.8nm,0.4s,baz=285,slow=7.1,SNR=6.2						
INK	Inuvik	54.58	27	eP	P	18 54 49.5	-0.4
	16nm,2.0s						
ARU	Arti	56.48	319	eP	P	18 55 03.5	-0.3
	14nm,1.9s						
CTA	Charters Tower	56.80	175	LR	LR	19 19 08.9	
	comp=Z,154nm,21.7s,slow=36						
WR1	Warramunga Arr	56.86	188	eP	P	18 55 08.2	+1.4
	72nm,1.9s						

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**56.86**	**188**	P	**P**	**18 55 08.2**	**+1.4**
	0.6nm,0.6s,baz=5.0,slow=7.6,SNR=7.3						
ASAR	**Alice Springs**	**60.59**	**188**	P	**P**	**18 55 35.0**	**+2.3**
	0.4nm,1.0s,baz=12,slow=6.0,SNR=3.7						
FIA0	**FINESS Array S**	**68.97**	**332**	*e*P	**P**	**18 56 26.4**	**-0.5**
FINES	**FINESS Array B**	**68.97**	**332**	P	**P**	**18 56 26.4**	**-0.5**
	0.3nm,0.3s,baz=351,slow=4.4,SNR=3.0						
AKASG	**Malin Array Be**	**74.43**	**322**	P	**P**	**18 56 59.7**	**-0.2**
	0.3nm,0.3s,baz=45,slow=6.3,SNR=4.1						
MOOW	**Moose Ponds**	**76.54**	**45**	*e*P	**P**	**18 57 09.5**	**-2.9**
	2.6nm,0.8s						
FRD	**Ford Ranch, An**	**79.16**	**56**	*e*P	**P**	**18 57 25.4**	**-1.6**

IDC 01 19:07:15.6±1.9**, 1°.91S×139°.65E, h0km, mb3.3**/2**, mb1 3.7**/3**, mb1mx3.3**/28**, mbtmp3.4**/3**, ML3.4**/1**, Error ellipse: s-maj=30.3km s-min=26.7km az=25.0, Near north coast of Irian Jaya**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
JAY	**Jayapura**	**1.22**	**120**	Pn	Pn	19 07 40.4	+0.5
	2.2nm,0.3s,baz=126,slow=21,SNR=85						
JAY				Sn	Sn	19 07 56.8	-0.4
	1.7nm,0.3s,baz=55,slow=24,SNR=8.2						
WRA	**Warramunga Arr**	**18.66**	**196**	P	P	19 11 33.9	-1.4
	0.1nm,0.3s,baz=17,slow=12,SNR=4.6						
ASAR	**Alice Springs**	**22.33**	**194**	P	P	19 12 15.9	+0.7
	0.4nm,0.8s,baz=17,slow=9.7,SNR=5.1						
ILAR	**Eielson Array**	**84.72**	**24**	P	P	19 19 51.1	-0.2
	0.5nm,0.8s,baz=256,slow=4.5,SNR=4.6						

*SJA **01** 19:08:21.7±0.5, 33°.56S×70°.19W, h126km±7km, ML2.6, MW2.5*
*ISCJB **01** 19:08:22.7±1.6, 33°.5S±0°.1×70°.20W±0°.07, h125km±8km, Error ellipse: s-maj=22.0km s-min=9.6km az=174.2*
*GUC **01** 19:08:23.3±0.5, 33°.46S×70°.32W, h120km±4km, ML3.0*
ISC 01 19:08:22.8±3.5**, 33°.5S**±0°.2×**70°.21W**±0°.08**, h124**km±20km**, n14, σ0s.28**/19**, 1C, Chile-Argentina border region**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
CLCH	**Cerro Calan**	**0.31**	**298**	*i* P	**Pn**	**19 08 40.6**	**+0.2**
CLCH				*i* S	**Sn**	**19 08 53.4**	**-0.1**
CLCH				AML	AML	19 08 55.7	
	comp=E,436nm,0.3s						
ANTU	**Antumapu**	**0.35**	**266**	*i* P	**Pn**	**19 08 41.0**	**+0.4**
ANTU				*i* S	**Sn**	**19 08 53.9**	**+0.1**
ANTU				AML	AML	19 08 55.8	
	comp=E,414nm,0.2s						
PEL	**Peldehue**	**0.56**	**315**	*i* P	**Pn**	**19 08 41.4**	**-0.3**
PEL				*i* S	**Sn**	**19 08 55.6**	**-0.3**
PEL				AML	AML	19 08 57.8	
	comp=N,830nm,0.4s						
ROCH	**El Roble**	**0.88**	**310**	⇑*i*P	**Pn**	**19 08 44.3**	**-0.1**
ROCH				*i* S	**Sn**	**19 09 00.4**	**-0.2**
ROCH				AML	AML	19 09 01.6	
	comp=N,1μm,0.3s						
AAGR	**Agrelo**	**1.24**	**69**	*e*P	**Pn**	**19 08 47.5**	**-0.3**
AAGR				*e*S	**Sn**	**19 09 06.5**	**-0.2**
ARCO	**CERRO ARCO**	**1.28**	**57**	*e*P	**Pn**	**19 08 48.0**	**-0.3**
ARCO				*e*S	**Sn**	**19 09 07.7**	**+0.2**
ARCO				IAML		19 09 10.0	
	comp=Z,61nm,0.3s						
AUSP	**Uspallata**	**1.49**	**28**	*e*P	**Pn**	**19 08 51.0**	**+0.4**
ASAL	**Salagasta**	**1.49**	**51**	*e*P	**Pn**	**19 08 50.8**	**+0.3**
RTLS	**Leoncito**	**1.90**	**24**	*e*P	**Pn**	**19 08 56.0**	**+0.5**
RTLL	**Cerro Villicun**	**2.65**	**34**	*e*P	**Pn**	**19 09 04.9**	**+0.1**
ACAN	**Cantantal**	**2.84**	**64**	*e*P	**Pn**	**19 09 07.2**	**+0.1**
AMOG	**MOGNA**	**2.98**	**30**	*e*P	**Pn**	**19 09 08.9**	**-0.1**
AVFE	**Valle Fertil**	**3.70**	**40**	IAML		19 10 02.1	
	comp=Z,9.4nm,1.4s						
AGUA	**GUANDACOL**	**4.30**	**20**	*e*P	**Pn**	**19 09 26.5**	**-0.1**

JMA 01 19:09:37.3±0.3**, 38°.16N×142°.82E, h9km, M3.6, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**1.19**	**285**	P	Pb	19 09 59.8	-0.3
JIO				*e*S	Sb	19 10 15.5	-0.1
OFUJ	**Ofunato**	**1.29**	**316**	P	Pn	19 10 01.0	-0.5
JMK	**Ichinoseki**	**1.48**	**303**	P	Pb	19 10 05.0	0.0
JMM	**Marumori**	**1.63**	**260**	P	Pn	19 10 05.8	-0.3
JOU	**Okura**	**1.71**	**278**	P	Pn	19 10 08.0	+0.7
JOM	**Ohasama**	**1.77**	**318**	P	Pn	19 10 08.9	+0.8
JYK	**Kaneyama**	**2.07**	**292**	P	Pn	19 10 13.3	+1.0

*IDC **01** 19:21:01.4±5.5, 35°.99N×142°.65E, h0km, mb3.6/3, mb1 3.5/5, mb1mx3.2/56, mbtmp3.5/5, ML2.6/2, Error ellipse: s-maj=97.0km s-min=41.2km az=102.0*
*JMA **01** 19:21:25.1±0.2, 35°.78N×141°.03E, h34km±1km, M2.9*
ISC 01 19:21:04.6±2.0**, 35°.96N**±0°.09×**142°.4E**±0°.1**, h10km, n10, σ1s.56**/11**, mb3.6**/3**, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**1.26**	**259**	P	**Pg**	**19 21 31.2**	**+2.4**
CHOJ				S	Sn	19 21 35.9	-9.4
JHO	**Hitachi**	**1.60**	**294**	P	Pg	19 21 41.7	+6.4
JYT	**Yasato**	**1.79**	**279**	P	**Pg**	**19 21 39.9**	**+1.0**
JCN	**Nagara**	**1.85**	**254**	P	**Pg**	**19 21 40.6**	**+0.5**
MJAR	**Matsushiro Arr**	**3.42**	**281**	Pn	**Pn**	**19 21 58.1**	**+0.1**
	0.2nm,0.3s,baz=93,slow=9.9,SNR=2.6						
MAT	**Matsushiro**	**3.42**	**281**	P	**Pn**	**19 21 58.8**	**+0.8**
MAT				*e*S	**Sn**	**19 22 35.9**	**-2.7**
JHJ	**Hachijo jima 2**	**3.55**	**218**	Pn	**Pn**	**19 21 59.9**	**+0.1**
	2.7nm,0.3s,baz=256,slow=17,SNR=2.4						
JHJ				Sn	**Sn**	**19 22 40.3**	**-1.5**
	14nm,0.3s,baz=252,slow=20,SNR=5.2						
SONM	**Songino Array**	**29.03**	**305**	P	**P**	**19 27 05.6**	**+0.7**
	0.4nm,0.7s,baz=105,slow=9.3,SNR=4.2						
MKAR	**Makanchi Array**	**45.35**	**303**	P	**P**	**19 29 22.5**	**-0.4**
	0.5nm,0.7s,baz=84,slow=7.5,SNR=6.3						
KURBB	**Kurchatov Arra**	**47.28**	**309**	P	**P**	**19 29 36.7**	**-1.2**
	0.9nm,0.8s,baz=84,slow=7.6,SNR=7.9						

IDC 01 19:22:51.6±25.0**, 20°.80S×176°.07W, h266**km±146km**, mb3.5**/4**, mb1 3.6**/6**, mb1mx3.1**/43**, mbtmp4.2**/6**, Error ellipse: s-maj=272.7km s-min=36.9km az=52.0, Fiji Islands region**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**16.33**	**262**	P	Pn	19 26 27.1	0.0
	0.6nm,0.3s,baz=77,slow=18,SNR=6.0						
URZ	**Urewera**	**18.37**	**197**	P	P	19 26 45.6	-1.4
	0.6nm,0.3s,baz=355,slow=12,SNR=3.5						
RPZ	**Rata Peaks**	**25.25**	**202**	P	P	19 27 55.3	+1.7
	7.2nm,0.7s,baz=85,slow=12,SNR=4.0						
STKA	**Stephens Creek**	**39.29**	**245**	P	P	19 29 54.1	-1.1
	1.3nm,0.7s,baz=84,slow=10,SNR=2.7						
ASAR	**Alice Springs**	**46.21**	**257**	P	P	19 30 51.0	+0.3
	1.9nm,0.8s,baz=91,slow=8.1,SNR=20						
WRA	**Warramunga Arr**	**46.35**	**262**	P	P	19 30 51.2	-0.5
	1.4nm,0.7s,baz=95,slow=8.1,SNR=12						

*CSEM **01** 19:43:15.8±0.1, 42°.18N×26°.17E, h2km, MD2.9, Error ellipse: s-maj=5.3km s-min=2.1km az=40.0*
*ISK **01** 19:43:17.3, 42°.08N×26°.30E, h5km, MD2.9*
*ISCJB **01** 19:43:19.5±0.5, 42°.02N±0°.03×26°.36E±0°.06, h10km, Error ellipse: s-maj=6.5km s-min=4.4km az=152.3*
ISC 01 19:43:16.4±0.8**, 42°.16N**±0°.02×**26°.22E**±0°.03**, h10km, n57, σ1s.48**/63**, 16C-12D, Bulgaria**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
EDRB	**Edirne**	**0.50**	**129**	*e*PG	**Pg**	**19 43 25.8**	**-0.4**
EDRB				*e*SG	**Sg**	**19 43 32.0**	**-0.8**
EDRB	**Edirne**	**0.50**	**129**	*e*Pg	**Pg**	**19 43 25.8**	**-0.4**
EDRB				*e*Sg	**Sg**	**19 43 32.0**	**-0.8**
PHSR	**Pinarhisar**	**1.11**	**118**	*e*PG	**Pg**	**19 43 37.0**	**-0.7**
PHSR	**Pinarhisar**	**1.11**	**118**	*e*Pg	**Pg**	**19 43 37.0**	**-0.7**
ALN	**Alexandroupoli**	**1.27**	**186**	*e*PN	**Pg**	**19 43 40.9**	**+0.1**
ALN				*e*SN	**Sn**	**19 43 57.8**	**+0.5**
ALN	**Alexandroupoli**	**1.27**	**186**	*e*Pn	**Pg**	**19 43 40.9**	**+0.1**
ALN				*e*Sn	**Sn**	**19 43 57.8**	**+0.5**
ENEZ	**Enez**	**1.42**	**182**	*e*PN	**Pb**	**19 43 43.1**	**+0.1**
ENEZ				*e*SN	**Sg**	**19 44 02.4**	**+0.2**
ENEZ	**Enez**	**1.42**	**182**	*e*Pn	**Pb**	**19 43 43.1**	**+0.1**
ENEZ				*e*Sn	**Sg**	**19 44 02.4**	**+0.2**
ERIK	**Erikli-Kesan**	**1.50**	**171**	*e*PN	**Pb**	**19 43 44.4**	**0.0**
ERIK	**Erikli-Kesan**	**1.50**	**171**	*e*Pn	**Pb**	**19 43 44.4**	**0.0**
CRLT	**Corlu**	**1.53**	**132**	*e*PN	**Pb**	**19 43 45.0**	**0.0**
CRLT	**Corlu**	**1.53**	**132**	*e*Pn	**Pb**	**19 43 45.0**	**0.0**
ZIMR		**1.62**	**338**	⇓*i*P	**Sn**	**19 44 09.1**	**+3.1**
RKY	**Sarkoy-Tekirda**	**1.64**	**154**	*e*PN	**Pn**	**19 43 46.0**	**+0.7**
RKY	**Sarkoy-Tekirda**	**1.64**	**154**	*e*Pn	**Pn**	**19 43 46.0**	**+0.7**
CTYL	**Yalikoy Yolu**	**1.69**	**113**	*e*PN	**Pb**	**19 43 47.6**	**0.0**
CTYL	**Yalikoy Yolu**	**1.69**	**113**	*e*Pn	**Pb**	**19 43 47.6**	**0.0**
GELI	**Tayfur-Gelibol**	**1.77**	**174**	*e*PN	**Pn**	**19 43 47.6**	**+0.5**
GELI	**Tayfur-Gelibol**	**1.77**	**174**	*e*Pn	**Pn**	**19 43 47.6**	**+0.5**
MRMT	**Marmara Adasi**	**1.87**	**146**	*e*PN	**Pn**	**19 43 49.5**	**+1.0**
MRMT	**Marmara Adasi**	**1.87**	**146**	*e*Pn	**Pn**	**19 43 49.5**	**+1.0**
CTKS	**Kestanelik-??a**	**1.94**	**118**	*e*PN	**Pb**	**19 43 51.0**	**-0.9**
CTKS	**Kestanelik-??a**	**1.94**	**118**	*e*Pn	**Pb**	**19 43 51.0**	**-0.9**
BGKT	**Bogazkoy**	**2.15**	**116**	*e*PN	**Pn**	**19 43 53.6**	**+1.3**
BGKT	**Bogazkoy**	**2.15**	**116**	*e*Pn	**Pn**	**19 43 53.6**	**+1.3**
MSAB	**Monastry St. A**	**2.26**	**31**	⇓*i*P	**Sn**	**19 44 21.7**	**-0.1**
VTS	**Vitosha**	**2.27**	**282**	⇓*i*P	**Pg**	**19 44 01.5**	**+1.5**
VTS	**Vitosha**	**2.27**	**282**	⇑*i*Pn	**Pn**	**19 43 54.9**	**+0.7**
ISK	**Istanbul-Kandi**	**2.39**	**116**	*e*PN	**Pn**	**19 43 57.0**	**+1.3**
ISK	**Istanbul-Kandi**	**2.39**	**116**	*e*Pn	**Pn**	**19 43 57.0**	**+1.3**
MANR	**Mangalia**	**2.40**	**46**	⇓*i*P	**Sn**	**19 44 28.5**	**+3.3**
HUMR	**Humele**	**2.53**	**340**	⇓*i*P	**Pb**	**19 44 03.2**	**+1.2**
HUMR	**Humele**	**2.53**	**340**	⇓*i*P	**Pb**	**19 44 03.2**	**+1.2**
EFOR	**EFORIE**	**2.61**	**42**	⇑*i*P	**Sn**	**19 44 29.3**	**-1.0**
TIRR	**Tirgusor**	**2.80**	**34**	⇑*i*P	**Sn**	**19 44 28.2**	**-6.9**
ISR	**Istrita**	**2.97**	**4**	⇑*i*P	**Pb**	**19 44 10.8**	**+1.4**
ISR	**Istrita**	**2.97**	**4**	⇑*i*P	**Pb**	**19 44 10.8**	**+1.4**
MLR	**Muntele Rosu**	**3.34**	**357**	⇓*i*P	**Pb**	**19 44 18.1**	**+2.3**
VOIR		**3.38**	**346**	⇓*i*P	**Pb**	**19 44 15.9**	**-0.6**
VOIR		**3.38**	**346**	⇓*i*P	**Pb**	**19 44 15.9**	**-0.6**
ARR	**Arges**	**3.41**	**341**	⇑*i*P	**Pb**	**19 44 14.9**	**-2.0**
ARR	**Arges**	**3.41**	**341**	⇑*i*P	**Pb**	**19 44 14.9**	**-2.0**
BOLS	**Boljevac**	**3.55**	**299**	*e*Pn	**Pn**	**19 44 11.3**	**-0.2**
PLOR	**Plostina**	**3.70**	**5**	⇓*i*P	**Pb**	**19 44 25.1**	**+3.1**
DOPR	**Dopca**	**3.85**	**351**	⇑*i*P	**Pb**	**19 44 23.1**	**-1.4**
DOPR	**Dopca**	**3.85**	**351**	⇑*i*P	**Pb**	**19 44 23.1**	**-1.4**
SELS	**Selova**	**3.91**	**287**	⇑*i*Pn	**Pb**	**19 44 22.7**	**-2.7**
KUBS	**Kucevo**	**4.01**	**306**	*e*Pn	**Pn**	**19 44 16.8**	**-1.1**
GZR	**Gura Zlata**	**4.08**	**324**	⇑*i*P	**Pn**	**19 44 18.9**	**-0.1**
GZR	**Gura Zlata**	**4.08**	**324**	⇑*i*P	**Pn**	**19 44 18.9**	**-0.1**
MDVR	**Moldovita**	**4.20**	**310**	⇑*i*P	**Pn**	**19 44 20.1**	**-0.4**
MDVR	**Moldovita**	**4.20**	**310**	⇑*i*P	**Pn**	**19 44 20.1**	**-0.4**
GRUS	**Gruza**	**4.39**	**295**	*e*Pn	**Pn**	**19 44 23.2**	**+0.1**
TRUS	**Trudelj**	**4.72**	**298**	⇑*i*Pn	**Pn**	**19 44 27.1**	**-0.6**
BZS	**Buzias**	**4.80**	**318**	⇓*i*P	**Pn**	**19 44 28.4**	**-0.3**
BZS	**Buzias**	**4.80**	**318**	⇓*i*P	**Pn**	**19 44 28.4**	**-0.3**
DIVS	**Divibare**	**4.95**	**295**	⇑*i*Pn	**Pn**	**19 44 31.2**	**+0.3**

*ISCJB **01** 19:44:10.6±0.3, 15°.28S±0°.04×167°.42E±0°.06, h129km, mb4.7/46, Error ellipse: s-maj=9.0km s-min=4.7km az=158.3*
*IDC **01** 19:44:11.1±2.7, 15°.22S×167°.51E, h120km±23km, mb3.9/14, mb1 4.1/16, mb1mx3.8/40, mbtmp4.3/16, MS3.1/1, Ms1 3.1/1, ms1mx2.6/35, Error ellipse: s-maj=22.9km s-min=12.9km az=71.0*
*NEIC **01** 19:44:12.3±1.3, 15°.26S×167°.44E, h131km±11km, mb5.0/36, Error ellipse: s-maj=9.4km s-min=5.1km az=61.0*
ISC 01 19:44:11.8±0.5**, 15°.25S**±0°.06×**167°.47E**±0°.10**, h129km, n75, σ0s.91**/74**, mb4.9**/45**, Vanuatu Islands**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**6.86**	**188**	P	**Pn**	**19 45 49.5**	**-0.4**
	30nm,0.3s,baz=120,slow=22,SNR=169						
DZM				S	**Sn**	**19 47 06.5**	**-0.2**
	43nm,0.3s,baz=100,slow=22,SNR=11						
DZM				LR	LR	19 48 19.3	
	comp=Z,166nm,20.3s,baz=247,slow=36						
HNR	**Honiara**	**9.35**	**307**	P	**Pn**	**19 46 24.5**	**+0.9**
	16nm,0.3s,baz=143,slow=9.6,SNR=6.5						
HNR				S	**Sn**	**19 48 06.8**	**-0.2**
	9.8nm,0.3s,baz=180,slow=20,SNR=4.3						
EIDS	**Eidsvold**	**18.36**	**234**	*e*P	**Pn**	**19 48 17.9**	**-0.3**
	79nm,1.9s						
OUZ	**Omahuta**	**20.63**	**166**	*e*P	**P**	**19 48 42.1**	**+1.0**
	15nm,0.8s						
ARMA	**Armidale**	**20.96**	**221**	*e*P	**P**	**19 48 46.3**	**+1.4**
	20nm,1.4s						
COEN	**Coen**	**23.55**	**270**	*e*P	**P**	**19 49 08.9**	**-1.8**
	24nm,1.5s						
PATS	**Pohnpei**	**23.75**	**337**	*e*P	**P**	**19 49 13.4**	**+0.9**
	98nm,1.5s						
HIZ	**Hauiti**	**24.07**	**166**	*e*P	**P**	**19 49 16.4**	**+1.2**
	154nm,1.3s						
MXZ	**Matakaoa Point**	**24.21**	**159**	*e*P	**P**	**19 49 16.2**	**-0.3**
	64nm,1.1s						
URZ	**Urewera**	**24.45**	**161**	P	**P**	**19 49 19.1**	**+0.5**
	11nm,0.4s,baz=264,slow=3.6,SNR=13						
URZ	**Urewera**	**24.45**	**161**	*e*P	**P**	**19 49 18.1**	**-0.5**
	17nm,0.8s						
BKZ	**Black Stump Fm**	**25.11**	**163**	*e*P	**P**	**19 49 25.4**	**+0.7**
	40nm,0.4s						
BFZ	**Birch Farm**	**26.47**	**165**	*e*P	**P**	**19 49 36.0**	**-0.8**
	45nm,1.1s						
SNZO	**South Karori**	**26.72**	**168**	*e*P	**P**	**19 49 38.5**	**-0.5**
	260nm,1.6s						
THZ	**Tophouse**	**26.84**	**171**	*e*P	**P**	**19 49 40.7**	**+0.5**
	53nm,1.3s						
KHZ	**Kahutara**	**27.57**	**170**	*e*P	**P**	**19 49 47.4**	**+0.7**
	78nm,1.7s						
LTZ	**Lake Taylor**	**27.75**	**172**	*e*P	**P**	**19 49 49.1**	**+0.7**
	18nm,0.7s						
RPZ	**Rata Peaks**	**28.54**	**175**	*e*P	**P**	**19 49 53.8**	**-1.5**
	22nm,1.2s						
MQZ	**McQueen's Vall**	**28.71**	**172**	*e*P	**P**	**19 49 56.4**	**-0.3**
	46nm,1.3s						
STKA	**Stephens Creek**	**28.81**	**230**	P	**P**	**19 49 58.8**	**+0.9**
	0.8nm,0.4s,baz=54,slow=10,SNR=6.6						
STKA	**Stephens Creek**	**28.81**	**230**	*e*P	**P**	**19 49 58.5**	**+0.6**
	5.8nm,1.9s						
LBZ	**Lake Benmore**	**29.13**	**176**	*e*P	**P**	**19 50 01.1**	**+0.6**
	110nm,1.9s						
WB2	**Warramunga Arr**	**31.88**	**257**	*e*P	**P**	**19 50 24.4**	**-0.7**
	54nm,1.9s						
WRAB	**Tennant Creek**	**31.88**	**257**	*e*P	**P**	**19 50 23.9**	**-1.2**
	15nm,0.8s						
WR1	**Warramunga Arr**	**31.89**	**257**	*e*P	**P**	**19 50 24.2**	**-1.0**
	67nm,2.0s						
WRA	**Warramunga Arr**	**31.89**	**257**	P	**P**	**19 50 24.2**	**-1.1**
	1.3nm,0.5s,baz=85,slow=8.9,SNR=9.1						
AS01	**Alice Springs**	**32.63**	**250**	*e*P	**P**	**19 50 32.4**	**+0.8**
AS31	**Alice Springs**	**32.67**	**250**	*e*P	**P**	**19 50 31.7**	**-0.3**
	1.6nm,0.9s						
ASAR	**Alice Springs**	**32.67**	**250**	P	**P**	**19 50 31.6**	**-0.5**
	2.3nm,0.5s,baz=75,slow=9.2,SNR=47						
ASAR				pP	**pP**	**19 50 58.0**	**-2.1**
	1.4nm,0.8s,baz=74,slow=9.1,SNR=3.8						
BBOO	**Buckleboo**	**33.42**	**233**	*e*P	**P**	**19 50 38.6**	**+0.3**
	56nm,1.8s						
FITZ	**Fitzroy Crossi**	**40.11**	**260**	*e*P	**P**	**19 51 35.5**	**+0.3**
MBWA	**Marble Bar**	**45.60**	**255**	*e*P	**P**	**19 52 20.1**	**+0.7**
	58nm,1.6s						
JHJ2	**Mitsune**	**54.87**	**332**	*e*P	**P**	**19 53 30.2**	**+1.2**
	305nm,1.3s						
KKM	**Kota Kinabalu**	**55.01**	**289**	*e*P	**P**	**19 53 30.9**	**+0.4**
	76nm,1.4s						
MJAR	**Matsushiro Arr**	**58.45**	**332**	P	**P**	**19 53 53.5**	**-0.7**
	0.9nm,0.6s,baz=171,slow=8.0,SNR=5.1						
CISI	**Cisompet, Garu**	**58.83**	**270**	*e*P	**P**	**19 53 58.4**	**+1.0**
	49nm,1.1s						
YULB	**Yu-li**	**59.27**	**310**	*e*P	**P**	**19 54 00.6**	**+0.4**
	30nm,1.5s						
JNU	**Nakatsue**	**59.45**	**324**	P	**P**	**19 54 01.7**	**+0.4**
	5.5nm,0.8s,baz=62,slow=13,SNR=3.8						
JNU	**Nakatsue**	**59.45**	**324**	*e*P	**P**	**19 54 01.4**	**+0.1**
	45nm,1.6s						
TPUB	**Ta-pu**	**59.72**	**309**	*e*P	**P**	**19 54 01.7**	**-1.6**
	114nm,2.0s						
SSLB	**Suanglung**	**59.76**	**310**	*e*P	**P**	**19 54 02.6**	**-1.0**
	64nm,2.0s						
YHNB	**Yeheng**	**59.97**	**311**	*e*P	**P**	**19 54 05.0**	**0.0**
	37nm,1.3s						
VNDA	**Vanda**	**62.35**	**181**	P	**P**	**19 54 21.1**	**+0.9**
	0.7nm,0.5s,baz=354,slow=7.5,SNR=6.4						
VNDA	**Vanda**	**62.35**	**181**	*e*P	**P**	**19 54 21.1**	**+0.9**
	8.6nm,1.8s						
SBA	**Scott Base**	**62.62**	**180**	*e*P	**P**	**19 54 23.5**	**+1.6**
	30nm,2.0s						
LHMI	**Lhok Sumawe**	**72.73**	**281**	*e*P	**P**	**19 55 24.8**	**-1.7**
	77nm,1.1s						
QSPA	**South Pole Qui**	**74.78**	**180**	*e*P	**P**	**19 55 38.2**	**+0.5**
QSPA				*e*PcP	**P**	**19 55 38.4**	**+0.7**
CM01	**Chiang Mai Arr**	**75.31**	**294**	*e*P	**P**	**19 55 42.6**	**+1.2**
CM31	**Chiang Mai Arr**	**75.34**	**294**	*e*P	**P**	**19 55 40.8**	**-0.7**
CMAR	**Chiang Mai Arr**	**75.34**	**294**	P	**P**	**19 55 43.4**	**+1.8**
	0.8nm,0.6s,baz=130,slow=5.4,SNR=10						
CMAR				pP	**pP**	**19 56 12.8**	**-0.9**
	0.4nm,0.4s,baz=106,slow=4.8,SNR=3.2						
SEY	**Seymchan**	**78.82**	**353**	P	**P**	**19 56 00.5**	**+0.4**
	0.9nm,0.6s,baz=172,slow=6.1,SNR=8.0						
YAK	**Yakutsk**	**82.58**	**343**	*e*P	**P**	**19 56 20.2**	**+0.2**
	9.5nm,0.5s						
ULN	**Ulaanbaatar**	**82.67**	**324**	*e*P	**P**	**19 56 21.9**	**+0.9**
	5.0nm,0.9s						
SONA0	**Songino Array**	**83.03**	**324**	*e*P	**P**	**19 56 23.4**	**+0.5**
	2.4nm,0.7s						
SONM	**Songino Array**	**83.03**	**324**	P	**P**	**19 56 23.4**	**+0.5**
	1.6nm,0.6s,baz=147,slow=5.9,SNR=17						
SONA1	**Songino Array**	**83.03**	**324**	*e*P	**P**	**19 56 23.1**	**+0.2**
LSA	**Lhasa**	**86.00**	**302**	*e*P	**P**	**19 56 39.7**	**+1.0**
	1.9nm,0.6s						
ILAR	**Eielson Array**	**86.96**	**18**	P	**P**	**19 56 40.6**	**-1.3**
	0.5nm,0.7s,baz=238,slow=5.6,SNR=5.6						
SNAA	**Sanae**	**93.04**	**183**	P	**P**	**19 57 11.2**	**+0.6**
VNA3	**Neumayer Olymp**	**93.70**	**181**	P	**P**	**19 57 11.9**	**-1.6**
VNA2	**Neumayer--Watz**	**93.97**	**182**	P	**P**	**19 57 13.5**	**-1.3**
	baz=252,slow=2.4						
MK01	**Makanchi Array**	**97.70**	**316**	*e*P	Pdif	19 57 32.7	+0.5
MK31	**Makanchi Array**	**97.71**	**316**	*e*P	Pdif	19 57 32.9	+0.7
MK32	**Makanchi Array**	**97.71**	**316**	*e*P	Pdif	19 57 32.6	+0.4
MKAR	**Makanchi Array**	**97.71**	**316**	P	Pdif	19 57 32.6	+0.4
	1.0nm,0.6s,baz=87,slow=6.4,SNR=14						
MKAR	**Makanchi Array**	**97.71**	**316**	*e*P	Pdif	19 57 33.0	+0.8
YKA	**Yellowknife Ar**	**97.92**	**27**	P	**P**	**19 57 32.0**	**-0.7**
	0.1nm,0.3s,baz=256,slow=4.6,SNR=4.6						
YKB5	**Yellowknife Ar**	**97.92**	**27**	*e*P	Pdif	19 57 35.0	+2.3
YKB5				*e*pP	pP	19 58 05.7	-0.2
ZAA0	**Zalesovo Array**	**97.92**	**324**	*e*P	**P**	**19 57 32.4**	**-0.5**
ZALV	**Zalesovo Beam**	**97.92**	**324**	P	**P**	**19 57 32.1**	**-0.8**
	1.5nm,0.7s,baz=124,slow=4.3,SNR=9.3						
ZAA1	**Zalesovo Array**	**97.92**	**324**	*e*P	**P**	**19 57 32.1**	**-0.8**
ARCES	**ARCESS Array B**	**120.80**	**345**	PKP	**PKPdf**	**20 02 47.9**	**-0.2**
	1.5nm,0.6s,baz=64,slow=1.6,SNR=16						
FINES	**FINESS Array B**	**126.28**	**338**	PKP	**PKPdf**	**20 02 59.0**	**+0.2**
	1.3nm,0.9s,baz=59,slow=3.6,SNR=5.4						
NOA	**NORSAR Array B**	**131.17**	**345**	PKP	**PKPdf**	**20 03 08.7**	**+0.5**
	0.9nm,0.9s,baz=30,slow=2.0,SNR=3.0						
TORD	**Torodi Ar. Bea**	**166.05**	**263**	PKP	**PKPdf**	**20 04 02.3**	**-0.2**
	0.5nm,0.7s,baz=84,slow=1.0,SNR=3.4						

*ISCJB **01** 19:44:10.6±0.3, 42°.17N±0°.02×26°.20E±0°.03, h10km, Error ellipse: s-maj=3.8km s-min=3.1km az=150.2*
*SOF **01** 19:44:10.0, 42°.21N×26°.23E, h6km, MD2.7*
*CSEM **01** 19:44:12.2±0.2, 42°.08N×26°.37E, h2km, MD3.2, Error ellipse: s-maj=6.3km s-min=5.1km az=66.0*
*ISK **01** 19:44:12.2, 42°.06N×26°.39E, h6km, MD3.2*
ISC 01 19:44:11.9±0.6**, 42°.13N**±0°.02×**26°.25E**±0°.02**, h10km, n89, σ1s.33**/85**, 5C-10D, Bulgaria**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
JMB	**Yambol**	**0.41**	**36**	P	Pg	19 44 16.8	-3.3
DIM	**Dimitrovgrad**	**0.54**	**262**	P	**Pg**	**19 44 20.7**	**-1.8**
KDZ	**Kurdzhali**	**0.79**	**233**	P	**Pg**	**19 44 26.7**	**-0.4**
PHSR	**Pinarhisar**	**1.07**	**117**	*e*PG	**Pg**	**19 44 30.4**	**-2.1**
PHSR				*e*SG	**Sg**	**19 44 44.3**	**-2.2**
PHSR	**Pinarhisar**	**1.07**	**117**	*e*Pg	**Pg**	**19 44 30.4**	**-2.1**
PHSR				*e*Sg	**Sg**	**19 44 44.3**	**-2.2**
PLD	**Plovdiv**	**1.15**	**269**	P	Pb	19 44 30.7	-3.3
SZH	**Strazhica**	**1.16**	**348**	P	Pb	19 44 30.9	-3.2
RZN	**Rozhen**	**1.23**	**249**	P	**Pn**	**19 44 34.0**	**-1.4**
ALN	**Alexandroupoli**	**1.24**	**187**	*e*PN	**Pn**	**19 44 35.3**	**-0.1**
ALN				*e*SN	**Sn**	**19 44 52.1**	**0.0**
ALN	**Alexandroupoli**	**1.24**	**187**	*e*Pn	**Pn**	**19 44 35.3**	**-0.1**
ALN				*e*Sn	**Sn**	**19 44 52.1**	**0.0**
ROIA	**ROIAK**	**1.27**	**40**	P	**Pn**	**19 44 33.6**	**-2.2**
PVL	**Pavlikeni**	**1.28**	**328**	P	Pn	19 44 33.2	-2.7
PRD	**Provadia**	**1.36**	**38**	P	**Pn**	**19 44 34.0**	**-3.0**
ENEZ	**Enez**	**1.40**	**183**	*e*PN	**Pb**	**19 44 37.9**	**-0.2**
ENEZ				*e*SN	**Sg**	**19 44 56.6**	**-0.2**
ENEZ	**Enez**	**1.40**	**183**	*e*Pn	**Pb**	**19 44 37.9**	**-0.2**
ENEZ				*e*Sn	**Sg**	**19 44 56.7**	**-0.2**
ERIK	**Erikli-Kesan**	**1.47**	**172**	*e*PN	**Pn**	**19 44 38.6**	**+0.1**
ERIK	**Erikli-Kesan**	**1.47**	**172**	*e*Pn	**Pn**	**19 44 38.6**	**+0.1**
CRLT	**Corlu**	**1.50**	**132**	*e*PN	**Pn**	**19 44 38.4**	**-0.5**
CRLT	**Corlu**	**1.50**	**132**	*e*Pn	**Pn**	**19 44 38.4**	**-0.5**
RKY	**Sarkoy-Tekirda**	**1.60**	**154**	*e*PN	**Pn**	**19 44 40.0**	**-0.3**
RKY	**Sarkoy-Tekirda**	**1.60**	**154**	*e*Pn	**Pn**	**19 44 40.0**	**-0.3**
CTYL	**Yalikoy Yolu**	**1.66**	**113**	*e*PN	**Pn**	**19 44 40.7**	**-0.4**
CTYL	**Yalikoy Yolu**	**1.66**	**113**	*e*Pn	**Pn**	**19 44 40.7**	**-0.4**
ZIMR		**1.66**	**337**	⇓*i*P	**Pn**	**19 44 39.8**	**-1.3**
ZIMR		**1.66**	**337**	S	**Sn**	**19 45 03.2**	**+0.8**
GELI	**Tayfur-Gelibol**	**1.74**	**174**	*e*PN	**Pn**	**19 44 42.5**	**+0.4**
GELI	**Tayfur-Gelibol**	**1.74**	**174**	*e*Pn	**Pn**	**19 44 42.6**	**+0.4**
MRMT	**Marmara Adasi**	**1.83**	**146**	*e*PN	**Pn**	**19 44 43.2**	**-0.3**
MRMT	**Marmara Adasi**	**1.83**	**146**	*e*Pn	**Pn**	**19 44 43.2**	**-0.3**
CTKS	**Kestanelik-??a**	**1.91**	**117**	*e*PN	**Pn**	**19 44 44.5**	**0.0**
CTKS	**Kestanelik-??a**	**1.91**	**117**	*e*Pn	**Pn**	**19 44 44.5**	**0.0**
BGKT	**Bogazkoy**	**2.11**	**116**	*e*PN	**Pn**	**19 44 47.5**	**+0.2**
BGKT	**Bogazkoy**	**2.11**	**116**	*e*Pn	**Pn**	**19 44 47.5**	**+0.2**
EDC	**Edincik**	**2.16**	**145**	*e*PN	**Pn**	**19 44 47.8**	**-0.1**
EDC	**Edincik**	**2.16**	**145**	*e*Pn	**Pn**	**19 44 47.8**	**-0.1**
MSAB	**Monastry St. A**	**2.27**	**30**	⇓*i*P	**Pn**	**19 44 47.8**	**-1.7**
MSAB	**Monastry St. A**	**2.27**	**30**	⇓*i*P	**Pn**	**19 44 47.8**	**-1.7**
MSAB				S	**Sn**	**19 45 18.8**	**+1.3**
VTS	**Vitosha**	**2.30**	**283**	S	**Sn**	**19 45 17.1**	**-1.5**
VTS	**Vitosha**	**2.30**	**283**	S	**Sn**	**19 45 17.1**	**-1.5**
ISK	**Istanbul-Kandi**	**2.36**	**116**	*e*PN	**Pn**	**19 44 50.6**	**-0.1**
ISK	**Istanbul-Kandi**	**2.36**	**116**	*e*Pn	**Pn**	**19 44 50.6**	**-0.1**
KKB	**Krupnik**	**2.38**	**265**	P	**Pb**	**19 44 54.0**	**-0.9**
MANR	**Mangalia**	**2.40**	**45**	S	**Sn**	**19 45 22.1**	**+1.3**
MANR	**Mangalia**	**2.40**	**45**	S	**Sn**	**19 45 22.1**	**+1.3**
KCTX	**Karacabey (Bur**	**2.45**	**139**	*e*PN	**Pn**	**19 44 52.0**	**0.0**
KCTX	**Karacabey (Bur**	**2.45**	**139**	*e*Pn	**Pn**	**19 44 52.0**	**0.0**
HUMR	**Humele**	**2.57**	**339**	S	**Sg**	**19 45 37.2**	**+2.7**
EFOR	**EFORIE**	**2.61**	**41**	S	**Sb**	**19 45 30.0**	**-0.9**
EFOR	**EFORIE**	**2.61**	**41**	S	**Sb**	**19 45 30.0**	**-0.9**
SILT	**Sile**	**2.72**	**110**	*e*PN	**Pn**	**19 44 55.9**	**+0.2**
SILT	**Sile**	**2.72**	**110**	*e*Pn	**Pn**	**19 44 55.9**	**+0.2**
BALB	**Balikesir**	**2.78**	**153**	*e*PN	**Pn**	**19 44 56.8**	**+0.4**
BALB	**Balikesir**	**2.78**	**153**	*e*Pn	**Pn**	**19 44 56.8**	**+0.4**
TIRR	**Tirgusor**	**2.81**	**33**	S	**Sb**	**19 45 38.8**	**+2.2**
CRAR	**CRAIOVA**	**2.83**	**322**	S	**Sb**	**19 45 39.4**	**+2.1**
CRAR	**CRAIOVA**	**2.83**	**322**	S	**Sb**	**19 45 39.4**	**+2.1**
VAY	**Valandovo**	**2.87**	**255**	*e*Pn	**Pn**	**19 44 56.6**	**-1.2**
VAY	**Valandovo**	**2.87**	**255**	*e*Pn	**Pn**	**19 44 56.4**	**-1.4**
ISR	**Istrita**	**2.99**	**4**	S	**Sg**	**19 45 47.4**	**-0.7**
ADVT	**Abdulvahap**	**3.13**	**122**	*e*PN	**Pn**	**19 45 01.6**	**+0.4**
ADVT	**Abdulvahap**	**3.13**	**122**	*e*Pn	**Pn**	**19 45 01.6**	**+0.4**
GRER		**3.29**	**9**	S	**Sb**	**19 45 53.8**	**+3.3**
BARS	**Barje**	**3.35**	**283**	*e*Pn	**Pn**	**19 45 03.4**	**-1.0**
MLR	**Muntele Rosu**	**3.37**	**356**	⇓*i*P	**Pn**	**19 45 04.4**	**-0.3**
MLR	**Muntele Rosu**	**3.37**	**356**	S	**Sb**	**19 45 56.5**	**+3.7**
MLR	**Muntele Rosu**	**3.37**	**356**	⇓*i*P	**Pn**	**19 45 04.4**	**-0.3**
VOIR		**3.42**	**346**	⇑*i*P	**Pn**	**19 45 04.3**	**-1.1**
VOIR		**3.42**	**346**	S	**Sb**	**19 45 56.5**	**+2.3**
VOIR		**3.42**	**346**	⇑*i*P	**Pn**	**19 45 04.3**	**-1.1**
ARR	**Arges**	**3.44**	**341**	⇓*i*P	**Pn**	**19 45 04.8**	**-0.9**
ARR	**Arges**	**3.44**	**341**	S	**Sb**	**19 45 57.3**	**+2.4**
ARR	**Arges**	**3.44**	**341**	⇓*i*P	**Pn**	**19 45 04.8**	**-0.9**
BOLS	**Boljevac**	**3.58**	**300**	*e*Pn	Pn	19 45 04.9	-2.6
TVSB	**Tavsanli**	**3.62**	**137**	*e*PN	**Pn**	**19 45 08.7**	**+0.5**
TVSB	**Tavsanli**	**3.62**	**137**	*e*Pn	**Pn**	**19 45 08.7**	**+0.5**
GULT	**Gulveren**	**3.63**	**116**	*e*PN	**Pn**	**19 45 08.8**	**+0.5**
GULT	**Gulveren**	**3.63**	**116**	*e*Pn	**Pn**	**19 45 08.8**	**+0.5**
LOT	**Lotru**	**3.77**	**332**	⇓*i*P	**Pn**	**19 45 08.9**	**-1.4**
LOT	**Lotru**	**3.77**	**332**	S	**Sb**	**19 46 06.0**	**+1.5**
LOT	**Lotru**	**3.77**	**332**	⇓*i*P	**Pn**	**19 45 08.9**	**-1.4**
DOPR	**Dopca**	**3.88**	**351**	S	**Sb**	**19 46 10.1**	**+2.5**
SELS	**Selova**	**3.94**	**288**	⇑*i*Pn	**Pn**	**19 45 10.7**	**-1.8**
MDVR	**Moldovita**	**4.24**	**310**	⇓*i*P	Pn	19 45 11.2	-5.4
GRUS	**Gruza**	**4.42**	**295**	⇑*i*Pn	**Pn**	**19 45 17.3**	**-1.8**
TRUS	**Trudelj**	**4.76**	**298**	⇑*i*Pn	Pn	19 45 21.0	-2.7
BZS	**Buzias**	**4.83**	**318**	*e*Pn	Pn	19 45 22.1	-2.6
BZS				S	Sn	19 46 27.6	+6.9
SIRR	**Siria**	**5.29**	**323**	S	Sb	19 46 54.9	+6.8
DRGR		**5.30**	**333**	S	Sb	19 46 41.9	-6.6
BBLS	**Lazići**	**5.31**	**291**	*e*Pn	Pn	19 45 35.7	+4.3

MOS 01 19:47:27.5±1.8, 47.°74N×155.°72E, h16km, mb4.5/1, Error ellipse: s-maj=45.7km s-min=6.1km az=78.4
SKHL 01 19:47:29.9±1.1, 47.°94N×155.°23E, h54km±4km, mb4.5/2
ISCJB 01 19:47:30.1±0.6, 48.°15N±0.°07×154.°7E±0.°1, h42km, mb3.6/9, Error ellipse: s-maj=15.7km s-min=4.1km az=38.4
KRSC 01 19:47:31.0±1.9, 48.°09N×156.°34E, h16km±30km, ML4.4
IDC 01 19:47:34.3±4.0, 48.°26N×154.°35E, h69km±37km, mb3.3/9, mb1 3.6/11, mb1mx3.3/38, mbtmp3.6/11, ML2.7/2, Error ellipse: s-maj=31.2km s-min=17.1km az=149.0
ISC 01 19:47:31.3±0.8, 48.°1N±0.°1×154.°7E±0.°1, h42km, n57, σ1.s68/57, mb3.7/9, Kuril Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
SKR	Severo-Kuril's	2.71	19	eP	Pn	19 48 12.5	+0.3
SKR				eS	Sn	19 48 43.6	-0.1
SKR	Severo-Kuril's	2.71	19	eP	Pn	19 48 12.3	+0.1
SKR				AMB	AMB	19 48 14.9	
	80nm,0.5s						
SKR				AMB	AMB	19 48 14.9	
	90nm,0.5s						
SKR				eS	Sn	19 48 43.6	-0.1
SKR				A	A	19 48 51.6	
	280nm,0.7s						
SKR	Severo-Kuril's	2.71	19	ePN	Pn	19 48 13.0	+0.8
SKR				pmax	pmax		
	comp=N,80nm,0.5s						
SKR				pmax	pmax		
	comp=Z,90nm,0.5s						
PAU	Pauzhetka	3.60	22	eP	Pn	19 48 26.5	+2.0
PAU				eS	Sn	19 49 08.0	+2.3
PAU	Pauzhetka	3.60	22	eP	Pn	19 48 26.5	+2.0
PAU	Pauzhetka	3.60	22	PN	Pn	19 48 26.5	+2.0
ASAK	Asacha	4.71	25	eP	Pn	19 48 41.5	+1.6
RUS	Russkaya	4.94	28	eP	Pn	19 48 42.6	-0.3
RUS				eS	Sn	19 49 36.6	-2.1
RUS	Russkaya	4.94	28	eP	Pn	19 48 42.6	-0.3
RUS	Russkaya	4.94	28	PN	Pn	19 48 42.6	-0.3
APC	Apacha	5.04	17	eP	Pn	19 48 47.8	+3.6
APC	Apacha	5.04	17	PN	Pn	19 48 47.8	+3.6
KRMR	Karymshinskiy	5.18	24	eP	Pn	19 48 48.3	+2.1
KRMR				eS	Sn	19 49 46.1	+1.5
KRMR	Karymshinskiy	5.18	24	PN	Pn	19 48 48.3	+2.1
PETK	Petropavlovsk-	5.32	20	P	Pn	19 48 50.8	+2.6
	comp=Z,2.0nm,0.3s,baz=181,slow=15,SNR=7.8						
PET	Petropavlovsk	5.50	26	eP	Pn	19 48 51.2	+0.7
PET				eS	Sn	19 49 53.1	+0.7
PET				A	A	19 50 12.4	
	comp=Z,70nm,0.6s						
PET	Petropavlovsk	5.50	26	ePN	Pn	19 48 57.8	+7.3
KUR	Kuril'sk	5.53	241	eP	Pn	19 48 53.6	+2.6
KUR				AMB	AMB	19 48 56.4	
	comp=Z,30nm,0.5s						
KUR				eS	Sn	19 49 55.9	+2.6
KUR				A	A	19 50 00.5	
	comp=Z,10.0nm,0.7s						
KUR				A	A	19 50 00.5	
	comp=Z,30nm,0.7s						
DALK	Dalny	5.53	26	eP	Pn	19 48 52.1	+1.1
DALK				eS	Sn	19 49 52.2	-1.1
UGLR	Uglovaya	5.71	26	eP	Pn	19 48 55.0	+1.4
KOK	Koryaka	5.73	24	eP	Pn	19 48 56.5	+2.7
KOK	Koryaka	5.73	24	eP	Pn	19 48 56.5	+2.7
KOK	Koryaka	5.73	24	PN	Pn	19 48 56.5	+2.7
AVH	Avacha	5.73	25	eP	Pn	19 48 56.2	+2.3
AVH				eS	Sn	19 49 59.3	+0.9
AVH	Avacha	5.73	25	eP	Pn	19 48 56.2	+2.3
AVH	Avacha	5.73	25	PN	Pn	19 48 56.2	+2.3
SMAR	Somma	5.75	25	eP	Pn	19 48 56.5	+2.3
SMAR	Somma	5.75	25	PN	Pn	19 48 56.5	+2.3
SDLR	Sedlovina	5.79	26	eP	Pn	19 48 55.8	+1.1
SDLR	Sedlovina	5.79	26	PN	Pn	19 48 55.8	+1.1
KRX	Arik	5.79	24	eP	Pn	19 48 56.5	+1.8
NLC	Nalytchevo	5.83	29	eS	Sn	19 49 57.5	-3.2
GNL	Ganaly	5.92	19	eP	Pn	19 48 58.8	+2.3
GNL	Ganaly	5.92	19	PN	Pn	19 48 58.8	+2.3
SPN	Mys Shipunski	6.00	32	eP	Pn	19 48 57.5	0.0
SPN	Mys Shipunski	6.00	32	eP	Pn	19 48 57.5	0.0
SPN	Mys Shipunski	6.00	32	PN	Pn	19 48 57.5	0.0
KBTR	Krutoberegovo	9.48	29	eP	Pn	19 49 45.1	-0.1
KBTR	Krutoberegovo	9.48	29	PN	Pn	19 49 45.1	-0.1
USRK	Ussuriysk Ar.	16.20	264	P	Pn	19 51 14.7	-1.1
	comp=Z,0.2nm,0.3s,baz=72,slow=11,SNR=6.1						
KSRS	Korea Array	22.26	251	P	P	19 52 23.7	-0.8
	comp=Z,2.4nm,0.8s,baz=44,slow=10,SNR=6.0						
H11N2	WAKE ISLAND Hy	30.02	157	T	T	20 25 45.6	
	baz=342,slow=76,SNR=15						
H11N1	WAKE ISLAND Hy	30.03	157	T	T	20 25 36.8	
	baz=342,slow=76,SNR=30						
H11N3	WAKE ISLAND Hy	30.03	157	T	T	20 25 13.7	
	baz=342,slow=76,SNR=12						
H11S1	WAKE ISLAND Hy	31.13	158	T	T	20 26 40.4	
	baz=345,slow=76,SNR=199						
H11S3	WAKE ISLAND Hy	31.14	158	T	T	20 26 58.7	
	baz=345,slow=76,SNR=189						
H11S2	WAKE ISLAND Hy	31.15	158	T	T	20 26 42.8	
	baz=345,slow=76,SNR=169						
MKAR	Makanchi Array	47.27	297	P	P	19 55 58.6	-1.6
	comp=Z,0.1nm,0.5s,baz=72,slow=9.3,SNR=4.8						
YKA	Yellowknife Ar	49.16	38	P	P	19 56 15.2	+0.7
	comp=Z,0.3nm,0.6s,baz=297,slow=7.5,SNR=3.5						
BVAR	Borovoye Array	50.81	309	P	P	19 56 24.5	-2.7
	comp=Z,0.4nm,0.4s,baz=67,slow=7.4,SNR=5.6						
CMAR	Chiang Mai Arr	53.74	257	P	P	19 56 48.6	-0.7
	comp=Z,0.4nm,0.3s,baz=40,slow=7.1,SNR=4.2						
NVAR	Mina Array Bea	60.84	64	P	P	19 57 40.8	+1.3
	comp=Z,0.5nm,0.5s,baz=302,slow=8.4,SNR=3.0						
WRA	Warramunga Arr	70.19	200	P	P	19 58 39.1	-0.5
	comp=Z,0.9nm,0.8s,baz=15,slow=6.5,SNR=3.4						
ASAR	Alice Springs	73.88	200	P	P	19 59 02.0	+0.4
	comp=Z,0.3nm,0.6s,baz=13,slow=5.6,SNR=5.3						
ASAR	Alice Springs	73.88	200	eP	P	19 59 02.0	+0.4
ASAR	Alice Springs	73.88	200	P	P	19 59 02.0	+0.4
TXAR	Lajitas Array	75.88	62	P	P	19 59 14.3	+0.8
	comp=Z,0.4nm,0.6s,baz=307,slow=5.7,SNR=5.6						

NIED 01 19:59:00, 38.°90N×142.°00E, h47km, Mw4.7 Best double couple: $M_0$1.36000×10[16] NP1:ϕ_s158.00000°, δ24.00000°, λ52.00000°. NP2:ϕ_s19.00000°, δ72.00000°, λ105.00000°.
MOS 01 19:59:47.0±0.8, 38.°94N×141.°87E, h35km, mb5.3/73, Error ellipse: s-maj=6.7km s-min=4.2km az=102.2
ISCJB 01 19:59:49.4±0.3, 38.°91N±0.°02×141.°89E±0.°03, h56km±2km, mb4.9/237, MS4.0/37, Error ellipse: s-maj=4.5km s-min=2.7km az=141.6
BJI 01 19:59:49.9, 38.°81N×141.°89E, h73km, mb5.0/71, mB5.0/45, Ms4.3/53, Ms7 4.0/57
JMA 01 19:59:49.6±0.1, 38.°88N×142.°00E, h49km±1km, M4.9
JMA Felt IV J1.
NEIC 01 19:59:51.2±0.4, 38.°87N×141.°85E, h61km±3km, mb4.8/138, Error ellipse: s-maj=4.2km s-min=2.6km az=146.0
NEIC Recorded [4 JMA] in Iwate.
IDC 01 19:59:51.3±1.9, 38.°89N×141.°89E, h61km±17km, mb4.5/33, mb1 4.6/39, mb1mx4.6/47, mbtmp4.8/39, MS3.8/28, Ms1 3.8/28, ms1mx3.7/43, Error ellipse: s-maj=12.0km s-min=10.1km az=111.0
ISC 01 19:59:49.2±0.5, 38.°87N±0.°04×142.°03E±0.°04, h48km±3km, h47km:pP-P, n571, σ1.s24/609, mb4.9/250, MS4.0/40, 53C-19D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
JMK	Ichinoseki	0.64	277	P	Pn	20 00 02.3	+0.3
JMK				S	Sn	20 00 11.0	-0.2
JIO	Ouri	0.68	232	P	Pn	20 00 02.7	+0.2
JIO				S	Sn	20 00 11.3	-0.8
MIYJ	Miyakonagasawa	0.72	347	P	Pn	20 00 03.5	+0.3
MIYJ				S	Sn	20 00 12.8	-0.4
JOM	Ohasama	0.83	317	P	Pn	20 00 05.0	+0.4
JOM				i S	Sn	20 00 15.9	+0.1
JOU	Okura	1.18	245	P	Pn	20 00 09.4	0.0
JRG	Rokugo	1.20	296	P	Pn	20 00 09.9	+0.3
JYK	Kaneyama	1.30	272	P	Pn	20 00 11.3	+0.3
JMM	Marumori	1.40	224	P	Pn	20 00 12.1	-0.2
JMM				S	Sn	20 00 29.3	-0.2
ERM	Erimo	3.25	15	deP	Pn	20 00 38.0	+0.3
ERM	Erimo	3.25	15	ePn	Pn	20 00 38.3	+0.6
ERM				eSn	Sn	20 01 09.7	-5.5
MAJO	Matsushiro	3.82	234	d iP	Pn	20 00 47.3	+1.8
MAJO	Matsushiro	3.82	234	ePn	Pn	20 00 46.5	+1.0
MJAR	Matsushiro Arr	3.82	234	P	Pn	20 00 47.8	+2.2
	80nm,0.3s,baz=38,slow=12,SNR=425						
MJAR				LR	LR	20 02 25.8	
	comp=Z,2µm,20.5s,baz=60,slow=41						
INU	Inuyama	5.33	230	ePn	Pn	20 01 08.6	+2.4
YUK	Yuzh-Kuril'sk	5.91	28	eP	Pn	20 01 13.5	-0.6
YUK				eS	Sn	20 02 16.3	-4.1
YUK				pmax	pmax		
	comp=E,215nm,0.4s						
YUK				pmax	pmax		
	comp=Z,385nm,0.4s						
YUK				pmax	pmax		
	comp=N,96nm,0.2s						
JHJ2	Mitsune	6.02	198	ePn	Pn	20 01 16.0	+0.3
JHJ2				eSn	Sn	20 02 19.2	-4.1
JHJ	Hachijo jima 2	6.02	198	P	Pn	20 01 16.1	+0.4
	comp=N,49nm,0.3s,baz=348,slow=23,SNR=12						
JHJ				S	Sn	20 02 20.7	-2.7
	comp=N,42nm,0.3s,baz=323,slow=20,SNR=6.3						
JHJ				LR	LR	20 03 08.2	
	comp=N,230nm,19.1s,baz=88,slow=33						
SHO	Shikotan	6.16	34	eP	Pn	20 01 15.9	-1.7
SHO				eS	Sn	20 02 20.3	-6.4
SHO				pmax	pmax		
	comp=E,53nm,0.4s						
SHO				pmax	pmax		
	comp=Z,124nm,0.4s						
SHO				pmax	pmax		
	comp=N,68nm,0.3s						
KUR	Kuril'sk	7.70	32	eP	Pn	20 01 38.4	-0.2
KUR				i S	Sn	20 02 59.8	-4.5
KUR				pmax	pmax		
	comp=Z,62nm,0.5s						
KUR				pmax	pmax		
	comp=E,38nm,0.5s						
KUR				pmax	pmax		
	comp=N,13nm,0.3s						
KUR				pmax	pmax		
	comp=Z,507nm,3.3s						
KUR				smax	smax		
	comp=N,278nm,0.7s						
KUR				smax	smax		
	comp=E,585nm,0.7s						
YSS	Yuzh-Sakhalins	8.10	4	⇓eP	Pn	20 01 44.5	+0.5
YSS				eS	Sn	20 03 14.0	-0.1
YSS				pmax	pmax		
	comp=Z,90nm,0.7s						
YSS				MLR	MLR		
	comp=Z,500nm,14.0s						
YSS				MLR	MLR		
	comp=N,500nm,11.0s						
YSS				MLR	MLR		
	comp=E,700nm,17.0s						
YSS	Yuzh-Sakhalins	8.10	4	ePn	Pn	20 01 45.2	+1.1
USRK	Ussuriysk Ar.	9.22	308	P	Pn	20 02 00.4	+0.9
	comp=E,8.8nm,0.3s,baz=117,slow=14,SNR=97						
USRK				LR	LR	20 05 14.9	
	comp=E,1µm,21.9s,baz=118,slow=36						
JNU	Nakatsue	10.70	241	P	Pn	20 02 21.6	+1.8
	comp=E,1.3nm,0.3s,baz=67,slow=5.8,SNR=9.7						
JNU				LR	LR	20 06 45.7	
	comp=E,888nm,21.4s,baz=32,slow=39						
MDJ	Mudanjiang	10.91	306	P	Pn	20 02 27.5	+4.8
MDJ				S	Sn	20 04 33.2	+10
MDJ				pmax	pmax		
	comp=E,61nm,0.9s						
MDJ				pmax	pmax		
	comp=E,350nm,4.7s						
MDJ				LR	LR		
	comp=E,360nm,16.8s						
MDJ				LR	LR		
	comp=E,420nm,19.6s						
MDJ				LR	LR		
	comp=E,830nm,18.2s						
MDJ	Mudanjiang	10.91	306	ePn	Pn	20 02 25.2	+2.6
	comp=E,321nm,1.3s						
KSRS	Korea Array	11.20	267	P	Pn	20 02 30.5	+4.0
	comp=E,2.1nm,0.3s,baz=82,slow=14,SNR=48						
KSRS				LR	LR	20 06 23.5	
	comp=E,552nm,20.4s,baz=80,slow=35						
KS01	Wonju Array Si	11.21	267	ePn	Pn	20 02 29.3	+2.5
KS15	Wonju Array Si	11.23	267	ePn	Pn	20 02 30.5	+3.5
KSAR	Wonju Array Be	11.23	267	P	Pn	20 02 30.5	+3.5
KSAR	Wonju Array Be	11.23	267	P	Pn	20 02 30.5	+3.5
INCN	Inchon	12.20	268	ePn	Pn	20 02 41.7	+1.5
KLR	Kul'dur	12.71	328	P	Pn	20 02 47.4	+0.3
	comp=E,0.5nm,0.3s,baz=130,slow=14,SNR=27						
KLR				LR	LR	20 07 47.7	
	comp=E,732nm,18.0s,baz=138,slow=38						
CN2	Changchun	13.39	297	eP	Pn	20 02 58.3	+1.8
NKL	Nikolayevsk	14.31	357	eP	P	20 03 14.0	-0.8
SNY	Shenyang	14.38	288	⇑P	Pn	20 03 12.0	+2.2
SNY				pmax	pmax		
	comp=E,10.0nm,0.7s						
SNY				pmax	pmax		
	comp=E,160nm,4.1s						
SNY				LR	LR		
	comp=E,520nm,19.2s						
SNY				LR	LR		
	comp=E,770nm,26.5s						
JOW	Kunigami	16.64	228	P	Pn	20 03 39.9	+0.8
	comp=E,1.2nm,0.3s,baz=48,slow=6.6,SNR=6.0						
JOW	Kunigami	16.64	228	ePn	Pn	20 03 36.9	-2.1
	comp=E,29nm,1.0s						
PETK	Petropavlovsk-	17.86	32	P	Pn	20 03 53.4	-0.7
	comp=E,0.1nm,0.3s,baz=216,slow=7.1,SNR=3.5						
PETK				LR	LR	20 11 38.9	
	comp=E,133nm,18.4s,baz=217,slow=40						
PEA1	Petropavlovsk-	17.87	32	eP	Pn	20 03 53.4	-0.7
SSE	Sheshan	18.73	252	P	P	20 04 01.1	-2.8
SSE				S	Sn	20 07 29.2	-4.2
SSE				pmax	pmax		
	comp=E,180nm,1.0s						
SSE				LR	LR		
	comp=E,180nm,16.7s						
SSE				LR	LR		
	comp=E,210nm,16.7s						
SSE				LR	LR		
	comp=E,220nm,17.7s						
HIA	Hailar	19.02	310	eP	P	20 04 04.5	-2.5
HIA				pmax	pmax		
	comp=Z,13nm,0.7s						
HIA	Hailar	19.02	310	eP	P	20 04 04.5	-2.5
	comp=Z,13nm,0.7s						
TIA	Tai'an	19.91	270	eP	P	20 04 15.4	-1.4
TIA				pmax	pmax		
	comp=Z,50nm,0.8s						
TIA				LR	LR		
	comp=Z,500nm,12.6s						
TIA				LR	LR		
	comp=Z,470nm,26.1s						
TIA				LR	LR		
	comp=Z,490nm,25.3s						
BJI	Beijing	19.98	282	P	P	20 04 16.3	-1.2
BJI				pP	pP	20 04 31.4	+2.8
BJI				S	S	20 07 58.2	-1.3
BJI				sS	sS	20 08 20.6	+3.2
BJI				pmax	pmax		
	comp=Z,49nm,0.7s						
BJI				pmax	pmax		
	comp=Z,130nm,4.1s						
BJI				LR	LR		
	comp=Z,130nm,14.0s						
BJI				LR	LR		
	comp=Z,410nm,14.9s						
BJI				LR	LR		
	comp=Z,400nm,29.8s						
BJT	Baijiatuau	19.99	281	eP	P	20 04 16.5	-1.1
BJT				pmax	pmax		
	comp=Z,41nm,0.7s						
BJT	Baijiatuau	19.99	281	eP	P	20 04 16.5	-1.1
	comp=Z,41nm,0.7s						
NJ2	Nanjing	20.04	257	eP	P	20 04 17.5	-0.7
NJ2				S	S	20 07 55.4	-5.4
NJ2				pmax	pmax		
	comp=Z,37nm,0.6s						
NJ2				LR	LR		
	comp=Z,480nm,12.5s						
MA2	Magadan	21.46	12	P	P	20 04 33.8	+0.6
	comp=Z,42nm,0.7s,baz=217,slow=9.2,SNR=56						
MA2				LR	LR	20 12 34.8	
	comp=Z,136nm,20.9s,baz=214,slow=36						
YOJ	Yonaguni jima	21.58	234	eP	P	20 04 34.7	-0.1
YOJ				pmax	pmax		
	comp=Z,82nm,1.1s						
YOJ	Yonaguni jima	21.58	234	eP	P	20 04 34.7	-0.1
	comp=Z,82nm,1.1s						
YHNB	Yeheng	22.48	237	eP	P	20 04 42.8	-1.9
	comp=Z,29nm,0.9s						
NACB	Ninganchiao	22.69	236	eP	P	20 04 43.6	-3.2
	comp=Z,20nm,0.9s						
SSLB	Suanglung	23.38	236	eP	P	20 04 50.6	-3.0
	comp=Z,19nm,0.7s						
HHC	Hu-ho-hao-te	23.41	285	eP	P	20 04 51.7	-2.3
HHC				S	S	20 08 55.9	-7.9
HHC				pmax	pmax		
	comp=Z,26nm,1.0s						
HHC				LR	LR		
	comp=Z,280nm,13.7s						
HHC				LR	LR		
	comp=Z,410nm,14.9s						
HHC				LR	LR		
	comp=Z,490nm,16.2s						
YULB	Yu-li	23.43	235	eP	P	20 04 51.5	-2.7
	comp=Z,18nm,0.7s						
CIT	Chita	23.73	313	eP	P	20 04 54.7	-2.1
CIT				e		20 05 12.5	
CIT				e		20 05 28.2	
CIT				pmax	pmax		
	comp=Z,86nm,1.2s						
TPUB	Ta-pu	23.93	236	eP	P	20 04 56.0	-2.8
	comp=Z,47nm,1.1s						
TWG	Pinlang	23.99	234	eP	P	20 04 57.9	-1.5
	comp=Z,199nm,0.7s						
WHN	Wuhan	24.16	258	⇓P	P	20 05 00.6	-0.2
WHN				S	S	20 09 13.9	-1.7
WHN				LR	LR		
	comp=Z,690nm,16.4s						
WHN				LR	LR		
	comp=Z,770nm,15.7s						
WHN				LR	LR		
	comp=Z,860nm,16.7s						
QZH	Quanzhou	24.17	242	eP	P	20 05 01.7	+0.7
QZH				S	S	20 09 12.0	-3.9
QZH				LR	LR		
	comp=Z,540nm,20.6s						
YAK	Yakutsk	24.39	346	P	P	20 05 02.4	-0.3
	comp=Z,7.0nm,0.5s,baz=325,slow=18,SNR=21						
YAK				LR	LR	20 15 06.8	
	comp=Z,176nm,19.0s,baz=162,slow=38						
YAK	Yakutsk	24.39	346	eP	P	20 05 01.1	-1.6
YAK				e*PP	pP	20 05 09.1	-6.0
YAK				ePPP	PPP	20 05 42.9	
YAK				eS	S	20 09 17.7	-1.1
YAK				e*SS	sS	20 09 37.3	-2.2
YAK				eSS	SnSn	20 10 03.2	-2.6
YAK				eSSS	SSS	20 10 29.7	
YAK				pmax	pmax		
	comp=E,13nm,1.1s						
YAK				pmax	pmax		
	comp=N,34nm,0.9s						
YAK				pmax	pmax		
	comp=Z,128nm,1.1s						
YAK				pmax	pmax		
	comp=E,58nm,1.3s						
YAK				pmax	pmax		
	comp=N,105nm,1.9s						
YAK				pmax	pmax		
	comp=Z,106nm,1.9s						
YAK				smax	smax		
	comp=N,96nm,2.5s						
YAK				smax	smax		
	comp=E,75nm,1.3s						
YAK	Yakutsk	24.39	346	eP	P	20 05 00.8	-1.9
	comp=E,122nm,0.9s						
BTO	Baotou	24.61	284	eP	P	20 05 03.0	-2.0
SEY	Seymchan	24.89	11	P	P	20 05 08.7	+1.5
	comp=E,36nm,0.9s,baz=207,slow=6.8,SNR=158						
SEY	Seymchan	24.89	11	ceP	P	20 05 08.9	+1.7
BOD	Bodaibo	26.26	325	⇑iP	P	20 05 19.3	-0.4
BOD				pmax	pmax		
	comp=Z,29nm,1.1s						
ULN	Ulaanbaatar	26.77	301	ceP	P	20 05 25.1	+0.5
ULN				pmax	pmax		
	comp=Z,17nm,1.2s						
ULN	Ulaanbaatar	26.77	301	eP	P	20 05 24.8	+0.1
	comp=Z,8.8nm,0.6s						
ULN	Ulaanbaatar	26.77	301	P	P	20 05 25.5	+0.9
	SNR=5.7						
ULN	Ulaanbaatar	26.77	301	P	P	20 05 25.5	+0.9
	SNR=5.7						
XAN	Xi'an	26.97	270	P	P	20 05 25.5	-0.9
XAN				S	S	20 09 50.7	-10
XAN				pmax	pmax		
	comp=Z,10.0nm,0.6s						
XAN				pmax	pmax		
	comp=Z,48nm,7.8s						
XAN				LR	LR		
	comp=Z,230nm,17.3s						
XAN				LR	LR		
	comp=Z,140nm,21.5s						
XAN				LR	LR		
	comp=Z,200nm,13.5s						
SONA1	Songino Array	27.21	301	eP	P	20 05 28.2	-0.2
SONA0	Songino Array	27.21	301	eP	P	20 05 28.6	0.0
	comp=Z,9.9nm,0.9s						
SONA0				ePcP	PcP	20 08 47.8	+0.3
SONM	Songino Array	27.21	301	P	P	20 05 28.6	0.0
	comp=Z,8.4nm,0.8s,baz=92,slow=8.1,SNR=36						
SONM				PcP	PcP	20 08 47.8	+0.3
	comp=Z,2.6nm,0.9s,baz=116,slow=3.4,SNR=4.2						
SONM				LR	LR	20 16 43.8	
	comp=Z,195nm,19.0s,baz=96,slow=37						
ENH	Enshi	28.02	262	eP	P	20 05 35.1	-0.7
	comp=Z,102nm,0.7s						
H11N2	WAKE ISLAND Hy	28.73	124	T	T	20 36 07.4	
	baz=317,slow=76,SNR=9661						
H11N1	WAKE ISLAND Hy	28.74	125	T	T	20 36 08.2	
	baz=317,slow=76						
H11N3	WAKE ISLAND Hy	28.75	124	T	T	20 36 08.8	
	baz=317,slow=76						
IRK	Irkutsk	29.26	310	eP	P	20 05 46.1	-0.5
IRK				pmax	pmax		
	comp=Z,40nm,2.1s						
H11S1	WAKE ISLAND Hy	29.50	126	T	T	20 37 06.7	
	baz=319,slow=76,SNR=443						
H11S3	WAKE ISLAND Hy	29.51	126	T	T	20 37 04.4	
	baz=319,slow=76,SNR=2583						
H11S2	WAKE ISLAND Hy	29.52	126	T	T	20 37 08.0	
	baz=319,slow=76,SNR=404						
TLY	Talaya	29.53	308	P	P	20 05 48.9	-0.1
	comp=Z,11nm,0.8s,baz=197,slow=0.6,SNR=9.2						
TLY	Talaya	29.53	308	eP	P	20 05 48.2	-0.8
TLY				pmax	pmax		
	comp=Z,15nm,0.9s						
TLY				MLR	MLR		
	comp=Z,228nm,15.0s						
TLY	Talaya	29.53	308	eP	P	20 05 48.5	-0.5
	comp=Z,14nm,0.8s						
TLY	Talaya	29.53	308	P	P	20 05 49.5	+0.5
	SNR=6.7						
TLY	Talaya	29.53	308	P	P	20 05 49.5	+0.5
	SNR=6.7						
ZAK	Zakamensk	29.55	306	eP	P	20 05 49.0	-0.3
ZAK				pmax	pmax		
	comp=Z,21nm,1.1s						
LZH	Lanzhou	30.28	277	eP	P	20 05 59.1	+3.1
LZH				pP	sP	20 06 16.4	+2.3
LZH				sP	pP	20 06 25.5	+17
LZH				eS	S	20 10 52.5	-0.2
LZH				pmax	pmax		
	comp=Z,48nm,1.1s						
LZH				pmax	pmax		
	comp=Z,99nm,4.4s						
LZH				LR	LR		
	comp=Z,2µm,13.0s						
LZH				LR	LR		
	comp=Z,2µm,14.9s						
LZH				LR	LR		
	comp=Z,2µm,15.8s						
MOY	Mondy	31.16	308	eP	P	20 06 03.7	+0.2
MOY				pmax	pmax		
	comp=Z,21nm,1.9s						
GYA	Guiyang	32.04	258	⇑iP	P	20 06 10.5	-1.0
GYA				pP	sP	20 06 30.4	+0.7
GYA				PP	PP	20 07 21.2	-3.3
GYA				PcP	PcP	20 09 02.8	+2.5
GYA				S	S	20 11 19.9	-0.4
GYA				sS	sS	20 11 48.4	+7.1
GYA				ScP	ScP	20 12 38.2	-1.6

GYA SS **SnSn** **20 13 12.9 -0.2**
GYA ScS **ScS** **20 16 35.0 -3.7**
GYA pmax pmax
comp=Z,60nm,0.8s
GYA pmax pmax
comp=Z,130nm,6.1s
GYA LR LR
comp=Z,590nm,18.2s
GYA LR LR
comp=Z,520nm,17.8s
GYA LR LR
comp=Z,550nm,17.9s
BILL Bilibino 32.13 17*c i*P **P** **20 06 12.0 +0.3**
BILL *e* 20 06 18.4
BILL *PP **pP** **20 06 25.0 +0.8**
BILL *e* 20 09 02.1
BILL pmax pmax
comp=Z,17nm,1.0s
BILL MLR MLR
comp=Z,78nm,20.0s
BILL Bilibino 32.13 17 *e*P **P** **20 06 11.7 0.0**
comp=Z,12nm,0.8s
CD2 Chengdu 32.20 268 P **P** **20 06 12.1 -0.6**
CD2 pP sP 20 06 29.2 -1.7
CD2 sP pP 20 06 37.8 +13
CD2 PP **PP** **20 07 25.7 -0.3**
CD2 S **S** **20 11 19.4 -3.0**
CD2 sS sS 20 11 49.3 +5.8
CD2 pmax pmax
comp=Z,70nm,0.8s
CD2 pmax pmax
comp=Z,130nm,4.9s
CD2 LR LR
comp=Z,320nm,7.8s
CD2 LR LR
comp=Z,250nm,14.4s
GTA Gaotai 32.53 285 P **P** **20 06 15.0 -0.7**
GTA pP sP 20 06 33.9 +0.1
GTA sP pP 20 06 42.0 +14
GTA PcP **PcP** **20 09 01.6 +0.2**
GTA S **S** **20 11 23.9 -3.7**
GTA sS sS 20 11 55.2 +6.5
GTA ScP **ScP** **20 12 42.2 +0.9**
GTA PcS **PcS** **20 12 47.2 +0.6**
GTA SS **SnSn** **20 13 25.0 +0.4**
GTA pmax pmax
comp=Z,7.0nm,1.0s
GTA pmax pmax
comp=Z,76nm,4.3s
GTA LR LR
comp=Z,250nm,15.7s
GTA LR LR
comp=Z,380nm,16.6s
GTA LR LR
comp=Z,490nm,18.5s
TIXI Tiksi 33.53 352*c i*P **P** **20 06 23.0 -0.8**
TIXI pmax pmax
comp=Z,7.0nm,0.8s
TIXI Tiksi 33.53 352 *e*P **P** **20 06 22.6 -1.3**
comp=Z,8.6nm,1.0s
QIZ Qiongzhong 34.15 244 P **P** **20 06 30.0 +0.2**
QIZ S **S** **20 11 51.4 -1.4**
QIZ LR LR
comp=Z,240nm,18.9s
QIZ LR LR
comp=Z,300nm,15.6s
KMI Kunming 35.75 259 P **P** **20 06 44.1 +0.3**
KMI pP sP 20 07 00.2 -1.9
KMI sP pP 20 07 08.3 +12
KMI S S 20 12 10.8 -7.0
KMI pmax pmax
comp=Z,41nm,1.0s
KMI LR LR
comp=Z,170nm,18.8s
KMI LR LR
comp=Z,250nm,18.8s
KMI LR LR
comp=Z,310nm,18.3s
KRAR Krasnoyarsk 36.50 314 *e*P **P** **20 06 47.7 -1.9**
KRAR pmax pmax
comp=Z,80nm,1.0s
GAMB Gambell 36.90 32 *e*P **P** **20 06 53.0 +0.2**
comp=Z,5.8nm,1.0s
NONG Nongkai 39.58 250 P **P** **20 07 17.1 +1.1**
comp=Z,68nm,1.6s,comp=Z,4μm
SKNT Sakolnakorn 39.68 247 P **P** **20 07 18.4 +1.6**
comp=Z,18nm,1.7s
CRAI Chiangrai 40.31 255 P P 20 07 14.9 -7.1
WMQ Urumqi 40.47 295 P **P** **20 07 23.9 +0.7**
WMQ pP sP 20 07 41.4 -0.2
WMQ sP pP 20 07 50.3 +14
WMQ PcP **PcP** **20 09 23.3 -1.8**
WMQ S S 20 13 21.5 -7.0
WMQ SS SS 20 16 20.0 -9.0
WMQ ScS ScS 20 17 14.5 -10
WMQ pmax pmax
comp=Z,48nm,0.6s
WMQ pmax pmax
comp=Z,220nm,4.0s
WMQ LR LR
comp=Z,37nm,21.4s
WMQ LR LR
comp=Z,64nm,31.0s
WMQ LR LR
comp=Z,76nm,28.6s
KHON Khomkaen 40.93 248 P **P** **20 07 27.9 +0.8**
comp=Z,8.7nm,0.8s
ZAA0 Zalesovo Array 41.06 311 *e*P **P** **20 07 27.5 -0.2**
ZAA0 *e*PcP **PcP** **20 09 26.8 +0.1**
ZAA0 *e*PcP **PcP** **20 09 27.0 +0.3**
ZAA1 Zalesovo Array 41.06 311 *e*P **P** **20 07 28.0 +0.2**
ZAA1 *e*PcP **PcP** **20 09 26.9 +0.2**
ZALV Zalesovo Beam 41.06 311 P **P** **20 07 28.0 +0.2**
comp=Z,49nm,0.7s,baz=88,slow=7.3,SNR=202
ZALV PcP **PcP** **20 09 26.9 +0.2**
comp=Z,7.3nm,0.5s,baz=97,slow=3.3,SNR=6.2
ZALV LR LR 20 25 14.7
comp=Z,231nm,19.0s,baz=70,slow=37
PHRA Phrae 41.47 253 P **P** **20 07 32.2 +0.7**
comp=Z,202nm,0.8s,comp=Z,18μm
CMAI Chiengmai2 41.49 256 P **P** **20 07 32.9 +1.0**
comp=Z,76nm,1.2s,comp=Z,5μm
UTTA Uttaradit 41.69 252 P **P** **20 07 34.8 +1.4**
comp=Z,3.2nm,1.1s
NRIK Noril'sk 41.81 334 P **P** **20 07 33.5 -0.3**
comp=Z,9.9nm,0.5s,baz=115,slow=9.1,SNR=14
NRIK LR LR 20 25 53.5
comp=Z,355nm,19.9s,baz=113,slow=37
CHAI Chaiyaphum 41.82 248 P **P** **20 07 34.6 +0.1**
comp=Z,7.4nm,0.9s
LAMP Lampang 41.90 253 P **P** **20 07 36.9 +1.8**
comp=Z,7.9nm,0.7s
NVS Novosibirsk 41.94 312⇓*i*P **P** **20 07 35.4 +0.4**
NVS *e**PP **sP** **20 07 51.9 -1.5**
NVS *e*S **S** **20 13 48.1 -1.8**
NVS pmax pmax
comp=E,40nm,1.2s
NVS pmax pmax
comp=Z,51nm,1.2s
NVS smax smax
comp=E,9.0nm,1.8s
PBKT Sadao Pong 42.13 250 P **P** **20 07 37.7 +0.8**
comp=E,12nm,1.1s
CMMT Chiang Mai 42.23 254 P **P** **20 07 38.2 +0.4**
comp=E,26nm,0.7s
CHTO Chiang Mai 42.24 254 P **P** **20 07 38.3 +0.5**
comp=E,115nm,0.8s
CHTO Chiang Mai 42.24 254 *e*P **P** **20 07 37.9 +0.1**
CHTO pmax pmax
comp=Z,17nm,0.8s
CHTO Chiang Mai 42.24 254 *e*P **P** **20 07 37.9 +0.1**
comp=Z,17nm,0.8s
MRSI Marisa 42.42 211 P **P** **20 07 42.0 +2.8**
comp=Z,24nm,1.0s,comp=Z,2μm
CM31 Chiang Mai Arr 42.45 254 *e*P **P** **20 07 39.2 -0.4**
CMAR Chiang Mai Arr 42.45 254 P **P** **20 07 39.8 +0.2**
comp=Z,2.6nm,0.7s,baz=44,slow=8.1,SNR=22
CMAR PcP **PcP** **20 09 32.8 +0.9**
comp=Z,2.5nm,0.9s,baz=39,slow=1.0,SNR=6.5
CMAR LR LR 20 26 28.2
comp=Z,71nm,18.3s,baz=72,slow=38
CM01 Chiang Mai Arr 42.46 254 *e*P **P** **20 07 39.4 -0.2**
CM01 *e*PcP **PcP** **20 09 32.6 +0.7**
SUKH Sukhothai 42.54 252 P **P** **20 07 41.3 +1.0**
comp=Z,5.0nm,0.9s
LSA Lhasa 42.55 274 P **P** **20 07 41.7 +0.8**
LSA pmax pmax
comp=Z,9.0nm,1.0s
LSA Lhasa 42.55 274 *e*P **P** **20 07 40.5 -0.4**
LSA pmax pmax
comp=Z,12nm,0.8s
LSA Lhasa 42.55 274 *e*P **P** **20 07 40.5 -0.4**
comp=Z,12nm,0.8s
SRAK Srakaew 43.04 246 P **P** **20 07 42.7 -1.6**
comp=Z,34nm,1.0s
NAYO Nakonayok 43.35 247 P **P** **20 07 48.3 +1.4**
comp=Z,364nm,0.8s,comp=Z,19μm
MHMT Maesarieng 43.38 254 P **P** **20 07 48.5 +1.4**
comp=Z,14nm,0.8s
MK01 Makanchi Array 43.58 301 *e*P **P** **20 07 48.3 -0.1**
MK31 Makanchi Array 43.58 301 *e*P **P** **20 07 48.6 +0.1**
MK31 Makanchi Array 43.58 301 *e*P **P** **20 07 48.5 +0.1**
MK32 Makanchi Array 43.58 301 *e*P **P** **20 07 48.6 +0.2**
MKAR Makanchi Array 43.58 301 P **P** **20 07 48.6 +0.2**
comp=Z,60nm,0.8s,baz=85,slow=9.6,SNR=517
MKAR LR LR 20 26 32.0
comp=Z,137nm,21.2s,baz=32,slow=37
TT01 Tatalina 43.64 36 *e*P **P** **20 07 49.9 +1.2**
TTA Tatalina 43.64 36 *e*P **P** **20 07 50.2 +1.4**
TTA pmax pmax
comp=Z,6.0nm,1.1s
TTA Tatalina 43.64 36 *e*P **P** **20 07 50.2 +1.4**
comp=Z,6.3nm,1.1s
CHBT CHBT 43.69 244 P **P** **20 07 51.8 +2.2**
comp=Z,18nm,0.9s
SVW2 Sparrevohn 43.77 38 *e*P **P** **20 07 52.2 +2.4**
comp=Z,12nm,0.7s
MAKZ Makanchi 43.79 301 *e*P **P** **20 07 50.1 0.0**
MAKZ pmax pmax
comp=Z,64nm,1.0s
MAKZ Makanchi 43.79 301 *e*P **P** **20 07 50.1 0.0**
comp=Z,64nm,1.0s
UMPA Umpang Tak 43.92 251 P **P** **20 07 53.8 +2.4**
comp=Z,7.7nm,1.0s,comp=Z,772nm
SRDT SRDT 44.92 249 P **P** **20 08 00.5 +1.1**
comp=Z,33nm,0.9s
RSO Redoubt South 45.17 39 *e*P **P** **20 08 03.1 +2.0**
KURK Kurchatov 45.20 307 P **P** **20 08 01.8 +0.5**
KURK pmax pmax
comp=Z,94nm,0.6s
KURK Kurchatov 45.20 307 *e*P **P** **20 08 01.1 -0.1**
comp=Z,109nm,0.8s
KURK Kurchatov 45.20 307 P **P** **20 08 01.5 +0.3**
SNR=40
KURK Kurchatov 45.20 307 P **P** **20 08 01.5 +0.3**
SNR=40
KURBB Kurchatov Arra 45.27 307 P **P** **20 08 01.8 0.0**
comp=Z,94nm,0.6s,baz=81,slow=8.2,SNR=460
PPLA Purkeypile 45.39 36 *e*P **P** **20 08 04.9 +2.1**
comp=Z,23nm,1.3s
KDAK Kodiak Island 45.42 43 P P 20 08 19.1 +16
comp=Z,13nm,0.8s,baz=264,slow=4.2,SNR=12
CAST Castle Rocks 45.44 35 *e*P **P** **20 08 04.9 +1.9**
comp=Z,9.3nm,1.0s
SPU Mount Spurr 45.48 38 *e*P **P** **20 08 05.5 +2.0**
PHET Kaeng Krachan 45.51 247 P **P** **20 08 05.3 +1.2**
comp=Z,11nm,0.9s,comp=Z,110nm
BPAW Bear Paw Mtn. 45.93 34 *e*P **P** **20 08 08.8 +1.9**
comp=Z,20nm,1.6s
KTH Kantishna Hill 45.96 35 *e*P **P** **20 08 09.2 +2.0**
comp=Z,14nm,0.9s
MLY Manley 46.04 33 *e*P **P** **20 08 09.6 +1.8**
comp=Z,7.4nm,0.7s
MLY *e*PcP **PcP** **20 09 45.1 +1.6**
TRF Thorofare Moun 46.25 35 *e*P **P** **20 08 11.0 +1.4**
comp=Z,5.8nm,0.8s
COLD Coldfoot 46.31 30 *e*P **P** **20 08 11.5 +1.7**
comp=Z,6.1nm,0.9s
TAPN Taplejung 46.32 273 *e*P **P** **20 08 11.0 +0.2**
comp=Z,46nm,1.0s
RC01 Rabbit Creek A 46.61 38 *e*P **P** **20 08 13.4 +1.1**
comp=Z,16nm,1.0s
ODAN Odare 46.81 272 *e*P **P** **20 08 14.9 +0.4**
comp=Z,76nm,1.1s
MCK McKinley 46.84 35 *e*P **P** **20 08 15.3 +1.3**
MCK pmax pmax
comp=Z,5.0nm,0.7s
MCK McKinley 46.84 35 *e*P **P** **20 08 15.3 +1.3**
comp=Z,4.7nm,0.7s
PMR Palmer 46.87 38 *e*P **P** **20 08 15.1 +0.9**
PMR pmax pmax
comp=Z,9.0nm,0.6s
PMR Palmer 46.87 38 *e*P **P** **20 08 15.1 +0.9**
comp=Z,9.2nm,0.6s
RND Reindeer 46.89 35 *e*P **P** **20 08 15.0 +0.5**
RND pmax pmax
comp=Z,12nm,1.0s
RND Reindeer 46.89 35 *e*P **P** **20 08 15.0 +0.5**
comp=Z,12nm,1.0s
MDM Murphy Dome 47.11 33 *e*P **P** **20 08 17.8 +1.7**
comp=Z,20nm,1.2s
KSM Kuching 47.18 226 *e*P **P** **20 08 17.8 +0.6**
comp=Z,20nm,1.0s
WRH Wood River Hil 47.18 34 *e*P **P** **20 08 18.0 +1.3**
WRH *e*PcP **PcP** **20 09 48.2 +0.8**
SML Sawmill 47.23 37 *e*P **P** **20 08 18.6 +1.5**
SML pmax pmax
comp=Z,12nm,0.7s
SML Sawmill 47.23 37 *e*P **P** **20 08 18.6 +1.5**
comp=Z,12nm,0.7s
COLA College 47.27 33⇑*e*P **P** **20 08 18.4 +1.1**
COLA pmax pmax
comp=Z,3.0nm,0.8s
CCB Clear Creek Bu 47.30 33 *e*P **P** **20 08 18.9 +1.3**
comp=Z,3.8nm,0.6s
RAMN Ramite 47.38 273 *e*P **P** **20 08 19.2 +0.2**
comp=Z,145nm,0.9s
GUN Gumba 47.48 274 *e*P **P** **20 08 20.3 +0.4**
comp=Z,88nm,0.7s
DHY Denali Highway 47.58 36 *e*P **P** **20 08 21.4 +1.4**
comp=Z,8.7nm,1.1s
HDA Harding Lake 47.68 34 *e*P **P** **20 08 21.6 +1.0**
comp=Z,7.7nm,0.8s
IL1 Eielson Array 47.69 33 *e*P **P** **20 08 21.6 +1.0**
ILAR Eielson Array 47.69 33 P **P** **20 08 21.7 +1.1**
comp=Z,8.2nm,0.6s,baz=268,slow=6.4,SNR=94
ILB Eielson Array 47.69 33 *e*P **P** **20 08 21.6 +1.1**
SCM Sheep Creek Mo 47.70 37 *e*P **P** **20 08 22.5 +1.6**
SCM pmax pmax
comp=Z,12nm,0.8s
SCM Sheep Creek Mo 47.70 37 *e*P **P** **20 08 22.4 +1.6**
comp=Z,12nm,0.8s
KKN Kakani 48.00 275 *e*P **P** **20 08 23.8 0.0**
comp=Z,80nm,0.9s
PKIN Phulchoki 48.01 274 *e*P **P** **20 08 23.7 -0.2**
comp=Z,12nm,0.5s
DMN Daman 48.23 274 *e*P **P** **20 08 25.8 +0.2**
comp=Z,83nm,1.3s
FYU Fort Yukon 48.28 31 *e*P **P** **20 08 27.6 +2.5**
comp=Z,47nm,1.6s
GKN Gorkha 48.40 275 *e*P **P** **20 08 26.9 +0.1**
comp=Z,118nm,1.1s
KLU Klutina 48.41 38 *e*P **P** **20 08 27.9 +1.6**
comp=Z,9.3nm,0.6s
DIV Divide 48.52 38 *e*P **P** **20 08 29.0 +1.8**
comp=Z,12nm,0.7s
DOT Dot Lake 49.01 35 *e*P **P** **20 08 32.0 +1.2**
comp=Z,63nm,1.8s
KRAB Krabi 49.05 243 P **P** **20 08 32.7 +1.1**
comp=Z,30nm,0.8s
BMRM Bremner River 49.11 38 *e*P **P** **20 08 33.4 +1.7**
comp=Z,15nm,1.0s
BMRM *e*PcP **PcP** **20 09 55.9 +1.4**
TKM2 Tokmak 2 49.20 297 *e*P **P** **20 08 33.4 +0.6**
TKM2 pmax pmax
comp=Z,39nm,0.8s
TKM2 Tokmak 2 49.20 297 *e*P **P** **20 08 33.4 +0.6**
comp=Z,39nm,0.8s
MENT Mentasta 49.25 36 *e*P **P** **20 08 34.5 +1.9**
comp=Z,7.2nm,0.8s
KOLN Koldanda 49.32 275 *e*P **P** **20 08 34.2 +0.3**
comp=Z,52nm,0.8s
CHKZ Chkalovo 49.43 312 *i* P **P** **20 08 33.1 -1.0**
CHKZ pmax pmax
comp=Z,28nm,0.5s
VOSK Vostochnaya 49.43 311 *e*P **P** **20 08 33.9 -0.3**
VOSK *e* 20 09 56.0
VOSK pmax pmax
comp=Z,35nm,0.8s
VOSK Vostochnaya 49.43 311 *e*P **P** **20 08 33.9 -0.3**
comp=Z,35nm,0.8s
VOSK *e*PcP **PcP** **20 09 56.0 +0.3**
PYUN Piuthan 49.64 276 *e*P **P** **20 08 36.6 +0.3**
comp=Z,132nm,0.9s
BVAR Borovoye Array 49.71 311 P **P** **20 08 36.4 +0.1**
comp=Z,30nm,0.5s,baz=69,slow=7.7,SNR=206
BVAR PcP **PcP** **20 09 57.3 +0.5**
comp=Z,11nm,0.6s,baz=86,slow=1.9,SNR=6.0
BRVK Borovoye 49.76 311*c i*P **P** **20 08 36.7 0.0**
BRVK pmax pmax
comp=Z,36nm,0.8s
BRVK Borovoye 49.76 311 *e*P **P** **20 08 36.2 -0.4**
comp=Z,32nm,0.7s
BRVK *e*PcP **PcP** **20 09 57.6 +0.6**
BRVK Borovoye 49.76 311 P **P** **20 08 37.2 +0.5**
SNR=11
BRVK Borovoye 49.76 311 P **P** **20 08 37.2 +0.5**
SNR=11
PKDT Phuket 49.88 243 P **P** **20 08 39.9 +1.9**
comp=Z,47nm,1.0s
FRU Bishkek 49.91 297 *e*P **P** **20 08 37.0 -1.0**
AAK Ala-Archa 50.06 297 *e*P **P** **20 08 39.2 -0.1**
AAK pmax pmax
comp=Z,11nm,0.6s
AAK Ala-Archa 50.06 297 *e*P **P** **20 08 39.2 -0.1**
comp=Z,11nm,0.6s
KSH Kashi 50.12 293 P P 20 08 43.7 +4.0
KSH *e*pP sP 20 09 02.1 +3.7
KSH *e*PP PP 20 10 41.1 +6.1
KSH S **S** **20 15 48.1 +0.2**
KSH pmax pmax
comp=Z,14nm,0.8s
KSH pmax pmax
comp=Z,120nm,3.6s
KSH LR LR
comp=Z,210nm,5.9s
KSH LR LR
comp=Z,130nm,6.9s
KSH LR LR
comp=Z,130nm,6.8s
EGAK Eagle 50.13 33 *e*P **P** **20 08 40.2 +0.9**
comp=Z,4.7nm,0.8s
KULM Kulim 50.17 239 *e*P **P** **20 08 40.3 +0.1**
comp=Z,16nm,1.0s
IPM Ipoh 50.52 238 *e*P **P** **20 08 42.7 -0.2**
comp=Z,24nm,1.1s
EKS2 Erkin-Say 50.55 297 *e*P **P** **20 08 42.8 -0.2**
EKS2 pmax pmax
comp=Z,15nm,0.6s
EKS2 Erkin-Say 50.55 297 *e*P **P** **20 08 42.8 -0.2**
comp=Z,15nm,0.6s
DAWY Dawson 51.00 34 *e*P **P** **20 08 45.8 -0.1**
comp=Z,16nm,1.8s
INK Inuvik 52.53 28 P **P** **20 08 58.9 +1.7**
comp=Z,11nm,0.8s,baz=291,slow=6.8,SNR=44
INK Inuvik 52.53 28 *e*P **P** **20 08 58.6 +1.4**
INK pmax pmax
comp=Z,18nm,1.0s
INK Inuvik 52.53 28 *e*P **P** **20 08 58.6 +1.4**
comp=Z,18nm,1.0s
KKAR Karatay Array 52.64 299 *e*P **P** **20 08 58.4 0.0**
KKAR Karatay Array 52.64 299 *e*P **P** **20 08 58.4 0.0**
TWSI Taliwang, Sumb 52.83 212 P P 20 09 08.3 +8.3
comp=Z,26nm,1.0s,comp=Z,474nm
PSI Prapat 53.16 239 *e*P **P** **20 09 02.6 0.0**
PSI pmax pmax
comp=Z,12nm,1.0s
PSI Prapat 53.16 239 *e*P **P** **20 09 02.6 0.0**
comp=Z,12nm,1.0s
BKNI Bangkinang 53.65 235 P **P** **20 09 06.7 +0.6**
comp=Z,131nm,0.9s,comp=Z,2μm
SVE Sverdlovsk 54.10 318*d i*P **P** **20 09 09.5 +0.6**
SVE pmax pmax
comp=Z,118nm,0.8s
SDSI Sungai Dareh 54.37 233 P **P** **20 09 13.0 +1.7**
comp=Z,55nm,0.9s
GSI Gunungsitoli 55.17 239 P **P** **20 09 17.2 +0.1**
comp=Z,45nm,1.2s
GSI Gunungsitoli 55.17 239 *e*P **P** **20 09 17.5 +0.4**
comp=Z,37nm,1.0s
SOKR Solikamsk 55.17 322*c i*P **P** **20 09 15.2 -1.3**
SOKR pmax pmax
comp=Z,34nm,1.0s
ARU Arti 55.32 318*c i*P **P** **20 09 17.7 0.0**
ARU 20 10 16.7
ARU 20 11 18.6
ARU S **S** **20 17 01.4 +3.4**
ARU 20 19 02.5
ARU SS **SS** **20 20 44.0 +1.7**
ARU pmax pmax
comp=Z,111nm,1.0s
ARU MLR MLR
comp=Z,302nm,19.0s
ARU Arti 55.32 318 *e*P **P** **20 09 17.5 -0.2**
comp=Z,82nm,0.8s
KLSI 55.38 227 P P 20 09 24.6 +6.0
comp=Z,2μm,0.9s,comp=Z,36μm
LHSI Lahat 55.38 229 P **P** **20 09 19.2 +0.6**
comp=Z,57nm,0.9s
MDSI Maura Dua 55.53 228 P **P** **20 09 19.9 +0.2**
ABKAR Akbulak array 57.14 309 *e*P **P** **20 09 30.7 -0.1**
KBL Kabul 57.23 290 *e*P **P** **20 09 31.1 -0.8**
KBL pmax pmax
comp=Z,20nm,1.0s
KBL Kabul 57.23 290 *e*P **P** **20 09 31.1 -0.8**
comp=Z,20nm,1.0s
HOPEN Hopen 58.38 346 *e*P **P** **20 09 39.9 +0.8**
HOPEN IAmb IAmb 20 09 40.2
comp=Z,17nm,0.7s
HYB Hyderabad 58.75 268 *i* P **P** **20 09 43.0 +0.5**
SPA0 Spitsbergen Ar 58.82 349 *e*P **P** **20 09 41.8 -0.3**
SPA0 IAmb IAmb 20 09 51.5
comp=Z,55nm,1.5s
KBS Kingsbay 58.93 350 *e*P **P** **20 09 44.0 +1.1**
KBS IAmb IAmb 20 09 45.0
comp=Z,22nm,1.0s
WRAB Tennant Creek 58.94 188⇓*e*P **P** **20 09 43.6 0.0**
WRAB pmax pmax
comp=Z,123nm,2.5s
WB2 Warramunga Arr 58.95 188 *e*P **P** **20 09 43.6 -0.1**
comp=Z,86nm,1.8s
WR1 Warramunga Arr 58.95 188 *e*P **P** **20 09 43.6 0.0**
comp=Z,86nm,1.8s
WRA Warramunga Ar 58.95 188 P **P** **20 09 43.6 0.0**
comp=Z,8.5nm,0.6s,baz=5.6,slow=7.0,SNR=30
RES Resolute Bay 60.70 15 P **P** **20 09 55.5 +0.4**
comp=Z,14nm,0.6s,baz=309,slow=5.9,SNR=111
RES Resolute Bay 60.70 15 *e*P **P** **20 09 55.3 +0.2**
RES pmax pmax
comp=Z,13nm,0.8s
RES Resolute Bay 60.70 15 *e*P **P** **20 09 55.3 +0.2**
comp=Z,14nm,0.8s
TMCR Tamitsa 61.37 331 *e*P **P** **20 09 59.7 0.0**
TMCR pmax pmax
comp=Z,54nm,1.1s
KEV Kevo 61.90 339 *e*P **P** **20 10 03.5 +0.3**
YKW3 Yellowknife Ar 61.94 31 *e*P **P** **20 10 03.6 0.0**
comp=Z,8.8nm,1.2s
YKA Yellowknife Ar 61.98 31 P **P** **20 10 04.7 +0.9**
comp=Z,3.0nm,0.7s,baz=301,slow=6.6,SNR=37
YKB5 Yellowknife Ar 61.98 31 *e*P **P** **20 10 03.0 -0.9**
HAMF Hammerfest 62.24 341 *e*P **P** **20 10 05.0 -0.5**
HAMF IAmb IAmb 20 10 07.5
comp=Z,31nm,1.1s
ARCES ARCESS Array B 62.45 339 P **P** **20 10 07.0 +0.1**
comp=Z,4.0nm,0.6s,baz=50,slow=6.9,SNR=37
ARCES LR LR 20 39 25.4
comp=Z,54nm,20.7s,baz=42,slow=38
ARE0 ARCESS Array S 62.45 339 *e*P **P** **20 10 07.4 +0.4**
ARE0 IAmb IAmb 20 10 08.9
comp=Z,115nm,2.2s
KLMR Klimovskoe 62.47 327 *e*P **P** **20 10 04.6 -2.6**
KLMR *e**PP pP 20 10 13.9 -6.7
KLMR *e*SP sP 20 10 19.1 -7.0
KLMR *e* 20 12 21.7
KLMR pmax pmax
comp=Z,32nm,1.2s
AS01 Alice Springs 62.67 188 *e*P **P** **20 10 08.6 -0.4**
AS31 Alice Springs 62.67 188 *e*P **P** **20 10 09.1 +0.2**
comp=Z,2.5nm,0.9s
ASAR Alice Springs 62.67 188 P **P** **20 10 09.2 +0.2**
comp=Z,3.9nm,0.7s,baz=11,slow=5.3,SNR=64
ASAR LR LR 20 37 10.6
comp=Z,53nm,19.8s,baz=26,slow=36
GEYT Alibeck 63.38 298 P **P** **20 10 13.6 -0.1**
comp=Z,14nm,0.8s,baz=44,slow=4.5,SNR=30
GEYT LR LR 20 39 40.8
comp=Z,116nm,18.4s,baz=50,slow=38
KTK1 Kautokeino 63.41 339 *e*P **P** **20 10 14.0 +0.7**

KTK1 IAmb IAmb 20 10 24.0
comp=Z,264nm,2.6s
HEF Hetta 63.68 339 *e*P **P 20 10 15.6 +0.5**
DAG Danmarks Havn 63.99 355 *i* P **P 20 10 16.7 -0.3**
comp=Z,18nm,0.9s
DAG Danmarks Havn 63.99 355 *i* P **P 20 10 16.7 -0.3**
DAG pmax pmax
comp=Z,16nm,0.9s
KIF Kilpisjarvi 64.08 340 *e*P **P 20 10 17.7 +0.1**
TRO Tromso 64.14 341 *e*P **P 20 10 18.3 +0.3**
TRO IAmb IAmb 20 10 19.1
comp=Z,19nm,0.7s
MOS Moscow 66.07 323 *e*P **P 20 10 30.2 -0.6**
MOS *e* 20 11 02.7
MOS pmax pmax
comp=Z,50nm,1.0s
MOS pmax pmax
comp=Z,100nm,1.1s
MOS MLR MLR
comp=Z,600nm,17.0s
VRH Novokhopyorsk 66.55 318 *e*P **P 20 10 33.3 -0.7**
VRH pmax pmax
comp=Z,30nm,0.7s
OBN Obninsk 66.92 323*c i*P **P 20 10 36.1 -0.1**
OBN *i* 20 10 49.5
OBN *e* 20 13 05.0
OBN *e*S S 20 19 32.8 +7.4
OBN pmax pmax
comp=Z,62nm,1.7s
OBN MLR MLR
comp=Z,88nm,16.0s
OBN Obninsk 66.92 323 *e*P **P 20 10 35.9 -0.3**
comp=Z,28nm,0.8s
LPSR Galich'ya Gora 67.21 320 *e*P **P 20 10 38.2 +0.1**
LPSR pmax pmax
comp=Z,30nm,0.8s
FIA1 FINESS Array S 67.42 332 *e*P **P 20 10 38.9 -0.4**
FIA0 FINESS Array S 67.42 332 *e*P **P 20 10 39.3 0.0**
FIA0 FINESS Array S 67.42 332 *e*P **P 20 10 39.3 0.0**
FINES FINESS Array B 67.42 332 P **P 20 10 39.3 0.0**
comp=Z,28nm,0.7s,baz=38,slow=9.0,SNR=126
FINES LR LR 20 42 19.0
comp=Z,149nm,18.2s,baz=47,slow=38
MOR8 Moi Rana 67.81 340 *e*P **P 20 10 41.0 -0.8**
MOR8 IAmb IAmb 20 10 41.4
comp=Z,23nm,0.6s
VSR Storozhevoye 67.87 319 *e*P **P 20 10 42.3 -0.1**
VSR pmax pmax
comp=Z,10.0nm,0.4s
C09A Chrisman Ranch 68.10 46 *e*P **P 20 10 44.9 +0.9**
comp=Z,30nm,0.3s
YBH Yreka Blue Hor 68.84 53 P **P 20 10 50.3 +1.5**
comp=Z,3.0nm,0.9s,baz=256,slow=4.2,SNR=3.6
SUMG Summit 68.85 0 *i* P **P 20 10 49.7 +1.1**
comp=Z,32nm,1.1s
SUMG Summit 68.85 0 *i* P **P 20 10 49.7 +1.1**
SUMG pmax pmax
comp=Z,32nm,1.1s
VSU Vasula 69.12 329*c i*P **P 20 10 50.1 +0.1**
VSU pmax pmax
comp=Z,84nm,0.8s
GOF Gofitskoye 69.23 312⇑ *i*P **P 20 10 51.4 +0.4**
GOF pmax pmax
comp=Z,69nm,0.8s
K05A Summer Lake 69.41 51 *e*P **P 20 10 54.9 +2.5**
comp=Z,43nm,1.6s
NCK Nalchik 69.79 310⇑ *e*P **P 20 10 54.3 -0.2**
NCK pmax pmax
comp=Z,24nm,1.1s
GUDG Gudauri 69.85 309 P **P 20 10 56.2 +1.1**
ZEI Tsey 70.01 309 *e*P **P 20 10 55.4 -0.7**
ZEI pmax pmax
comp=Z,26nm,0.8s
KIV Kislovodsk 70.07 311 *i* P **P 20 10 57.1 +0.8**
SNR=14
KIV Kislovodsk 70.07 311*c i*P **P 20 10 56.5 +0.2**
KIV *e* 20 11 13.8
KIV *i*S **S 20 20 07.7 +4.1**
KIV pmax pmax
comp=Z,110nm,1.0s
KIV MLR MLR
comp=Z,74nm,18.0s
KIV Kislovodsk 70.07 311 *e*P **P 20 10 57.2 +0.9**
comp=Z,88nm,0.9s
KIV Kislovodsk 70.07 311 P **P 20 10 57.3 +1.0**
SNR=31
KIV Kislovodsk 70.07 311 P **P 20 10 57.3 +1.0**
SNR=31
KBZ Khabaz 70.08 310 P **P 20 10 56.6 +0.5**
comp=Z,29nm,0.9s,baz=58,slow=5.4,SNR=89
KBZ LR LR 20 44 56.6
comp=Z,54nm,19.2s,baz=48,slow=39
SCO Scoresbysund 70.33 354 *i* P **P 20 10 58.1 +0.8**
comp=Z,32nm,1.5s
SCO Scoresbysund 70.33 354 *i* P **P 20 10 58.1 +0.8**
SCO pmax pmax
comp=Z,32nm,1.5s
STKA Stephens Creek 70.39 180 P **P 20 10 59.0 +1.0**
comp=Z,2.1nm,0.7s,baz=358,slow=7.1,SNR=4.4
STKA LR LR 20 42 53.6
comp=Z,30nm,19.6s,baz=25,slow=37
STKA Stephens Creek 70.39 180 P **P 20 10 59.0 +1.0**
STKA pmax pmax
comp=Z,2.0nm,0.7s
STKA MLR MLR
comp=Z,30nm,19.6s
STKA Stephens Creek 70.39 180 *e*P **P 20 10 58.6 +0.6**
comp=Z,4.9nm,1.8s
NEY Neytrino 70.46 310*de*P **P 20 11 00.0 +1.2**
NEY pmax pmax
comp=Z,4.0nm,0.8s
WVOR Wild Horse Val 70.95 51 *e*P **P 20 11 03.0 +1.3**
WVOR pmax pmax
comp=Z,7.0nm,1.3s
WVOR Wild Horse Val 70.95 51 *e*P **P 20 11 03.0 +1.3**
comp=Z,6.5nm,1.3s
GNI Garni 71.00 306 *i* P **P 20 11 02.2 +0.1**
SNR=8.9
GNI Garni 71.00 306*ce*P **P 20 11 02.8 +0.7**
GNI pmax pmax
comp=Z,140nm,1.7s
GNI Garni 71.00 306 *e*P **P 20 11 02.9 +0.8**
comp=Z,17nm,1.1s
GNI Garni 71.00 306 P **P 20 11 03.1 +1.0**
SNR=7.0
GNI Garni 71.00 306 P **P 20 11 03.1 +1.0**
SNR=7.0
AKH Akhalkalaki 71.05 308⇑ *i*P **P 20 11 03.5 +1.1**
CHVG Ch'k'valeri 71.15 310 P **P 20 11 03.2 +0.5**
CHVG Ch'k'valeri 71.15 310⇓ *i*P **P 20 11 03.5 +0.8**
NACGM Naroch 71.46 327 *e* **P 20 11 04.0 -0.4**
UOSS Minazif 71.71 288 *e*P **P 20 11 06.0 -0.5**
comp=Z,1.8nm,1.0s
HATD Hatta, Dubai 71.84 287 *i* P **P 20 11 07.5 +0.3**
SNR=8.9
FFC Flin Flon 71.90 33 *e*P **P 20 11 07.7 +0.7**
FFC pmax pmax
comp=Z,9.0nm,0.8s
FFC Flin Flon 71.90 33 *e*P **P 20 11 07.7 +0.7**
comp=Z,9.3nm,0.8s
ASHO Ashiyiah 71.97 287 *i* P **P 20 11 08.8 +0.7**
SNR=7.0
SOC Sochi 72.03 312 *e*P **P 20 11 08.1 +0.1**
SOC pmax pmax
comp=Z,29nm,0.9s
CMB Columbia Colle 72.41 55 *e*P **P 20 11 11.8 +1.3**
CMB pmax pmax
comp=Z,12nm,1.5s
CMB Columbia Colle 72.41 55 *e*P **P 20 11 11.8 +1.3**
comp=Z,12nm,1.5s
NC405 NORSAR Array S 72.47 337 *e*P **P 20 11 10.7 +0.3**
NC303 NORSAR Array S 72.49 337 *e*P **P 20 11 10.5 +0.1**
LRM Limekiln Ridge 72.50 45 *e*P **P 20 11 12.4 +1.3**
DOMB Dombas 72.51 339 *e*P **P 20 11 11.0 +0.4**
DOMB IAmb IAmb 20 11 12.1
comp=Z,37nm,1.5s
EGMT Eagleton 72.58 42 *e*P **P 20 11 12.1 +0.8**
comp=Z,44nm,1.6s
NC204 NORSAR Array S 72.63 338 *e*P **P 20 11 10.8 -0.5**
NB201 NORSAR Array S 72.65 337 *e*P **P 20 11 11.5 +0.1**
NB2 NORSAR Subarra 72.68 337 P **P 20 11 11.4 -0.2**
comp=Z,36nm,1.2s,baz=38,slow=6.2
NB2 NORSAR Subarra 72.68 337 P **P 20 11 11.4 -0.2**
baz=38,slow=6.2
NB200 NORSAR Array S 72.68 337 *e*P **P 20 11 11.7 0.0**
NOA NORSAR Array B 72.68 337 P **P 20 11 11.7 0.0**
comp=Z,11nm,0.8s,baz=38,slow=5.9,SNR=36
NOA LR LR 20 45 45.8
comp=Z,117nm,21.0s,baz=55,slow=38
HLID Hailey 72.77 48 *e*P **P 20 11 13.8 +1.1**
comp=Z,2.5nm,0.9s
NBO02 NORSAR Array S 72.78 337 *e*P **P 20 11 12.0 -0.2**
NBO00 NORSAR Array S 72.82 337 *e*P **P 20 11 12.5 +0.1**
NAO01 NORSAR Array S 72.93 337 *e*P **P 20 11 13.2 +0.1**
BOZ Bozeman (W) 73.06 45 *e*P **P 20 11 16.1 +1.8**
BOZ pmax pmax
comp=Z,17nm,1.7s
BOZ Bozeman (W) 73.06 45 *e*P **P 20 11 16.1 +1.8**
comp=Z,17nm,1.7s
AKASG Malin Array Be 73.14 322 P **P 20 11 14.1 -0.4**
comp=Z,17nm,0.6s,baz=45,slow=5.9,SNR=96
AKASG LR LR 20 46 19.5
comp=Z,137nm,19.5s,baz=55,slow=38
AKASG Malin Array Be 73.14 322 *i* P **P 20 11 14.3 -0.2**
AKASG pmax pmax
comp=Z,17nm,0.6s
AKBB Malin Array Si 73.14 322 *e*P **P 20 11 13.9 -0.6**
AKBB pmax pmax
comp=Z,29nm,0.9s
AKBB Malin Array Si 73.14 322 *e*P **P 20 11 13.9 -0.6**
comp=Z,29nm,0.9s
KIEV Kiev 73.15 322*c i*P **P 20 11 14.1 -0.5**
KIEV pmax pmax
comp=Z,23nm,0.9s
KIEV Kiev 73.15 322 *e*P **P 20 11 14.0 -0.5**
comp=Z,30nm,1.0s
AK11 Malin Array Si 73.18 322 *e*P **P 20 11 14.3 -0.5**
NV01 Mina Array Sit 73.51 54 *e*P **P 20 11 18.1 +0.9**
NVAR Mina Array Bea 73.51 54 P **P 20 11 19.0 +1.8**
comp=Z,3.5nm,0.9s,baz=286,slow=6.1,SNR=14
SFJD Kangerlussuaq 74.02 5 *i* P **P 20 11 19.2 -0.1**
comp=Z,14nm,1.0s
SFJD Kangerlussuaq 74.02 5 *i* P **P 20 11 19.2 -0.1**
SFJD pmax pmax
comp=Z,14nm,1.0s
GCMT Greycliff 74.04 44 *e*P **P 20 11 21.5 +1.4**
SIM Simferopol' 74.36 315 *e*P **P 20 11 21.8 +0.1**
SIM pmax pmax
comp=Z,25nm,0.9s
H17A Grant Village 74.43 45 *e*P **P 20 11 25.1 +2.7**
comp=Z,12nm,1.1s
FXWY Fox Creek 74.66 46 *e*P **P 20 11 26.1 +2.3**
comp=Z,5.6nm,1.1s
RLMT Red Lodge 74.68 44 *e*P **P 20 11 25.2 +1.3**
comp=Z,20nm,1.5s
MOOW Moose Ponds 74.74 46 *e*P **P 20 11 25.9 +1.6**
comp=Z,5.9nm,1.1s
LOHW Long Hollow 74.91 46 *e*P **P 20 11 26.8 +1.5**
comp=Z,6.8nm,1.4s
REDW Red Top Meadow 74.93 46 *e*P **P 20 11 27.5 +2.2**
comp=Z,15nm,1.5s
R11A Troy Canyon, C 75.25 53 *e*P **P 20 11 28.8 +1.5**
comp=Z,3.7nm,0.5s
LAO LASA Array 75.27 41 *e*P **P 20 11 28.1 +1.1**
comp=Z,8.0nm,0.7s
HWUT Hardware Ranch 75.63 48 *e*P **P 20 11 31.0 +1.6**
comp=Z,8.5nm,1.1s
TPNV Topopah Spring 75.70 54 *e*P **P 20 11 31.4 +1.6**
TPNV pmax pmax
comp=Z,6.0nm,1.0s
TPNV Topopah Spring 75.70 54 *e*P **P 20 11 31.4 +1.6**
comp=Z,6.2nm,1.0s
DUG Dugway, Tooele 75.79 50 *e*P **P 20 11 31.4 +1.1**
DUG pmax pmax
comp=Z,6.0nm,0.9s
DUG Dugway, Tooele 75.79 50 *e*P **P 20 11 31.4 +1.1**
comp=Z,6.2nm,0.9s
BW06 Boulder Array 76.04 46 *e*P **P 20 11 32.6 +0.8**
comp=Z,3.2nm,0.8s
PD31 Pinedale Array 76.04 46 *e*P **P 20 11 32.6 +0.8**
PDAR Pinedale Array 76.04 46 P **P 20 11 32.5 +0.8**
comp=Z,3.3nm,0.8s,baz=258,slow=2.6,SNR=26
PDAR LR LR 20 49 16.3
comp=Z,24nm,18.3s,baz=285,slow=39
PASC Pasadena Art C 76.15 57 *e*P **P 20 11 34.9 +2.7**
LVV L'vov 76.18 324 *i* P **P 20 11 31.4 -0.7**
PSUT Pine Spring 76.20 52 *e*P **P 20 11 34.2 +1.5**
comp=Z,3.8nm,0.7s
JLU Jordanelle 76.34 49 *e*P **P 20 11 34.9 +1.4**
comp=Z,6.1nm,1.2s
NLU North Lily Min 76.38 50 *e*P **P 20 11 35.4 +1.7**
comp=Z,4.8nm,0.9s
LEOM Leova 76.46 319⇓ *i*P **P 20 11 34.0 +0.3**
MPU Maple Canyon 76.61 49 *e*P **P 20 11 35.3 +0.4**
comp=Z,6.8nm,0.9s
KWP Kalaria Pacla 76.92 324 *e*P **P 20 11 37.3 +1.0**
KWP Kalwaria Pacla 76.92 324 *e*P **P 20 11 37.4 +1.1**
TLCR 77.04 318⇑ *i*P **P 20 11 36.5 -0.5**
BUR08 Bucovina Ar. S 77.16 322 *e*P **P 20 11 38.2 +0.3**
BURAR Bucovina Array 77.17 322⇓ *i*P **P 20 11 38.2 +0.3**
TESR Tescani 77.23 320⇑ *i*P **P 20 11 38.5 +0.4**
TMUT Trail Mountain 77.32 50 *e*P **P 20 11 40.7 +1.5**
comp=Z,17nm,1.5s
P17A Butcher Ranch, 77.48 49 *e*P **P 20 11 40.2 +0.4**
comp=Z,12nm,0.9s
PETR Petresti 77.48 319⇑ *i*P **P 20 11 41.0 +1.5**
LCMT Little Creek M 77.54 52 *e*P **P 20 11 41.7 +1.5**
comp=Z,14nm,1.0s
ODBI Odobesti 77.55 319⇑ *i*P **P 20 11 41.4 +1.5**
KOLS Kolonicke sedl 77.62 324 *e*P **P 20 11 40.6 +0.3**
KOLS pmax pmax
comp=Z,10.0nm,1.1s
KOLS Kolonicke sedl 77.62 324 *e*P **P 20 11 40.6 +0.3**
VRI Vrincioaia 77.64 320⇑ *i*P **P 20 11 41.2 +0.8**
P18A Preston Nutter 77.67 49 *e*P **P 20 11 42.9 +1.8**
comp=Z,18nm,1.5s
PLOR Plostina 77.69 320⇑ *i*P **P 20 11 40.9 +0.2**
ULM Lac du Bonnet 77.70 34 P **P 20 11 40.7 0.0**
comp=Z,3.1nm,0.8s,baz=315,slow=6.4,SNR=9.8
ULM Lac du Bonnet 77.70 34 *e*P **P 20 11 40.7 0.0**
ULM pmax pmax
comp=Z,14nm,1.3s
ULM Lac du Bonnet 77.70 34 *e*P **P 20 11 40.7 0.0**
comp=Z,14nm,1.3s
STHS Stebnicka Huta 77.73 325 *e*P **P 20 11 42.0 +1.1**
STHS pmax pmax
comp=Z,8.0nm,0.9s
STHS Stebnicka Huta 77.73 325 *e*P **P 20 11 42.0 +1.1**
TIRR Tirgusor 77.74 318⇑ *i*P **P 20 11 40.7 -0.3**
TIRR Tirgusor 77.74 318 *e*P **P 20 11 41.2 +0.2**
TIRR pmax pmax
comp=Z,12nm,1.1s
TIRR Tirgusor 77.74 318 *e*P **P 20 11 41.2 +0.2**
comp=Z,12nm,1.1s
OJC Ojcow 77.78 326 *e*P **P 20 11 41.9 +0.8**
OJC Ojcow 77.78 326 *e*P **P 20 11 41.9 +0.8**
OJC Ojcow 77.78 326 *e*P **P 20 11 41.6 +0.4**
comp=Z,41nm,1.1s
KNB Kanab 77.80 52 *e*P **P 20 11 43.6 +1.9**
KNB pmax pmax
comp=Z,7.0nm,1.0s
KNB Kanab 77.80 52 *e*P **P 20 11 43.6 +1.9**
comp=Z,6.5nm,1.0s
UZH Uzhgorod 77.83 324 *e*P **P 20 11 40.6 -0.8**
UZH *e* 20 11 48.8
UZH *e* 20 11 51.4
SRU San Rafael Swe 77.84 49 *e*P **P 20 11 43.3 +1.4**
SRU pmax pmax
comp=Z,11nm,0.7s
SRU San Rafael Swe 77.84 49 *e*P **P 20 11 43.3 +1.4**
comp=Z,11nm,0.7s
ARCR ARCALIA 77.96 322⇑ *i*P **P 20 11 43.5 +1.3**
BR101 Keskin Array S 78.00 312 *e*P **P 20 11 43.0 +0.3**
BR101 *e*PP **PP 20 14 39.6 +0.9**
BR131 Keskin Array S 78.00 312 *e*P **P 20 11 42.4 -0.3**
BRTR Keskin Array B 78.00 312 P **P 20 11 43.0 +0.3**
comp=Z,4.3nm,0.6s,baz=104,slow=3.3,SNR=42
BRTR PP **PP 20 14 39.6 +0.9**
comp=Z,3.9nm,0.9s,baz=72,slow=5.3,SNR=8.3
BRTR LR LR 20 51 14.4
comp=Z,35nm,19.0s,baz=53,slow=40
CRVS Cervenica-Dubn 78.01 324 *e*P **P 20 11 43.2 +0.8**
CRVS Cervenica-Dubn 78.01 324 *e*P **P 20 11 43.2 +0.8**
RSSD Black Hills 78.14 42 *e*P **P 20 11 44.0 +0.5**
RSSD pmax pmax
comp=Z,8.0nm,1.1s
RSSD Black Hills 78.14 42 *e*P **P 20 11 44.0 +0.5**
comp=Z,8.1nm,1.1s
NIE Niedzica 78.16 325 *e*P **P 20 11 44.4 +1.2**
NIE Niedzica 78.16 325 *e*P **P 20 11 44.4 +1.2**
DRWC Darouich 78.18 308 *e*P **P 20 11 44.1 +0.4**
DOPR Dopca 78.24 320⇓ *i*P **P 20 11 43.9 +0.1**
ISR Istrita 78.25 319⇑ *i*P **P 20 11 44.9 +1.0**
MLR Muntele Rosu 78.30 320 *e*P **P 20 11 44.5 +0.3**
MLR pmax pmax
comp=Z,26nm,1.5s
MLR Muntele Rosu 78.30 320 *e*P **P 20 11 44.5 +0.3**
comp=Z,26nm,1.5s
MSAB Monastry St. A 78.30 318⇑ *i*P **P 20 11 44.6 +0.5**
ANTO Ankara 78.39 312 *e*P **P 20 11 45.3 +0.5**
ANTO pmax pmax
comp=Z,23nm,0.8s
ANTO Ankara 78.39 312 *e*P **P 20 11 45.3 +0.5**
comp=Z,23nm,0.8s
BR231 Keskin MP Arra 78.42 312 *e*P **P 20 11 43.6 -1.4**
U15A North Rim 78.50 52 *e*P **P 20 11 47.1 +1.4**
comp=Z,5.2nm,0.9s
BTCH Batrach 78.68 307 *e*P **P 20 11 46.7 +0.2**
SULR 78.71 319⇑ *i*P **P 20 11 47.2 +0.9**
LANS Liptovska Anna 78.72 326 *e*P **P 20 11 47.6 +1.2**
LANS Liptovska Anna 78.72 326 *e*P **P 20 11 47.6 +1.2**
KECS Kecovo 78.76 325 *e*P **P 20 11 46.8 +0.3**
KECS pmax pmax
comp=Z,3.0nm,0.8s
KECS Kecovo 78.76 325 *e*P **P 20 11 46.8 +0.3**
OKC Ostrava-Krasne 78.78 327⇑ *i*P **P 20 11 47.4 +0.8**
OKC Ostrava-Krasne 78.78 327⇑ *i*P **P 20 11 47.4 +0.8**
VOIR 78.78 320⇑ *i*P **P 20 11 47.3 +0.5**
KSP Ksiaz 78.80 328 *e*P **P 20 11 47.8 +1.1**
KSP Ksiaz 78.80 328 *e*P **P 20 11 47.9 +1.2**
DRGR 78.96 322⇓ *i*P **P 20 11 48.4 +0.6**
ARR Arges 79.04 320⇓ *i*P **P 20 11 49.0 +0.8**
PV09 Paradox Valley 79.06 49 *e*P **P 20 11 50.4 +1.6**
MORC Moravsky Berou 79.08 327 *e*P **P 20 11 48.8 +0.5**
MORC pmax pmax
comp=Z,72nm,1.0s
MORC Moravsky Berou 79.08 327 *e*P **P 20 11 48.8 +0.5**
comp=Z,72nm,1.0s
ARNB Al Arnab 79.09 307 *e*P **P 20 11 49.2 +0.5**
SLNF Slenfeh 79.11 307 *e*P **P 20 11 49.0 0.0**
DPC Dobruska-Polom 79.16 328⇑ *i*P **P 20 11 49.8 +1.0**
DPC *e*PCP **PcP 20 11 57.7 +0.7**
DPC Dobruska-Polom 79.16 328⇑ *i*P **P 20 11 49.8 +1.0**
DPC *e* 20 11 57.7
UPC Upice 79.17 328⇑ *i*P **P 20 11 49.5 +0.7**
UPC Upice 79.17 328⇑ *i*P **P 20 11 49.5 +0.7**
PV10 Paradox Valley 79.20 49 *e*P **P 20 11 51.6 +2.1**
N23A Red Feather La 79.30 46 *e*P **P 20 11 51.4 +1.4**
comp=Z,12nm,1.1s
ROOS tl_alroos 79.35 305 *e*P **P 20 11 50.9 +0.7**
PV05 Paradox Valley 79.36 49 *e*P **P 20 11 52.2 +1.9**
LOT Lotru 79.41 321⇑ *i*P **P 20 11 48.0 -2.3**
PSZ Piszkesteto 79.44 325 *e*P **P 20 11 50.8 +0.4**
PSZ pmax pmax
comp=Z,23nm,1.1s
PSZ Piszkesteto 79.44 325 *e*P **P 20 11 50.8 +0.4**
comp=Z,23nm,1.1s
HUMR Humele 79.46 320⇓ *i*P **P 20 11 50.7 +0.3**
VYHS Vyhne 79.49 326 *e*P **P 20 11 51.4 +0.8**
VYHS pmax pmax
comp=Z,6.0nm,1.0s
VYHS Vyhne 79.49 326 *e*P **P 20 11 51.4 +0.8**
PV01 Paradox Valley 79.64 49 *e*P **P 20 11 53.2 +1.3**
Y14A Wickenburg 79.65 55 *e*P **P 20 11 51.8 +0.1**
comp=Z,28nm,1.1s
WUAZ Wupatki 79.65 53 *e*P **P 20 11 53.4 +1.5**
comp=Z,6.9nm,1.0s
BRG Berggiesshubel 79.72 330 *i* P **P 20 11 52.1 +0.4**
comp=Z,14nm,0.8s
BRG Berggiesshubel 79.72 330 *i* P **P 20 11 52.1 +0.4**
BRG pmax pmax
comp=Z,14nm,0.8s
PVCC Panska Ves 79.74 329⇑ *i*P **P 20 11 52.7 +0.9**
PVCC *e*PCP **PcP 20 12 00.4 +0.9**
PVCC Panska Ves 79.74 329⇑ *i*P **P 20 11 52.7 +0.9**
PVCC *e* 20 12 00.4
CLL Collm 79.74 330⇑ *i*P **P 20 11 52.0 +0.2**
comp=Z,26nm,0.9s
CLL *i* 20 12 05.4
CLL *i*pP **sP 20 12 10.1 -1.0**
CLL *e*PP **PP 20 14 51.0 -1.6**
CLL Lm MLR 20 50 00.0
comp=Z,100nm,18.3s
CLL Collm 79.74 330⇑ *i*P **P 20 11 52.0 +0.2**
CLL *i* 20 12 05.4
CLL *i* 20 12 10.1
CLL pmax pmax
comp=Z,26nm,0.9s
CLL Collm 79.74 330 *e*P **P 20 11 51.7 -0.2**
comp=Z,30nm,0.9s
SIRR Siria 79.84 323⇑ *i*P **P 20 11 53.0 +0.5**
VRAC Vranov 79.84 327⇓ *i*P **P 20 11 53.8 +1.3**
SMCO Snowmass 79.87 47 *e*P **P 20 11 54.0 +0.7**
comp=Z,14nm,1.5s
GZR Gura Zlata 79.94 321⇓ *i*P **P 20 11 53.2 +0.1**
MARH Ras Al Marh 79.96 306 *e*P **P 20 11 54.2 +0.5**
ZALF Zalf 80.12 304 *e*P **P 20 11 54.4 +0.1**
GOPC GO Pecny, Ondr 80.13 329⇑ *i*P **P 20 11 54.7 +0.7**
GOPC GO Pecny, Ondr 80.13 329⇑ *i*P **P 20 11 54.7 +0.7**
PRA Prague 80.15 329 *e*P **P 20 11 55.1 +1.0**
PRA Prague 80.15 329 *e*P **P 20 11 55.1 +1.0**
PRU Pruhonice 80.17 329⇑ *i*P **P 20 11 54.8 +0.6**
PRU Pruhonice 80.17 329⇑ *i*P **P 20 11 54.8 +0.6**
MVCO Mesa Verde 80.29 50 *e*P **P 20 11 56.9 +1.5**
comp=Z,6.7nm,0.9s
TREC Trest 80.32 328⇑ *e*P **P 20 11 55.9 +0.9**
TREC Trest 80.32 328 *e*P **P 20 11 55.9 +0.9**
X16A Lo Mia Camp, P 80.33 54 *e*P **P 20 11 57.2 +1.6**
comp=Z,5.0nm,1.0s
BZS Buzias 80.33 322⇑ *i*P **P 20 11 55.3 +0.1**
RAYN Ar Rayn 80.41 292 *e*P **P 20 11 55.5 -0.5**
comp=Z,9.6nm,1.1s
MDVR Moldovita 80.90 321⇓ *i*P **P 20 11 58.3 0.0**
S22A 4UR Ranch, Cre 80.92 48 *e*P **P 20 12 00.5 +1.7**
comp=Z,9.5nm,1.4s
CONA Conrad Observa 81.21 327 *i* P **P 20 12 01.0 +1.1**
comp=Z,107nm,1.1s,SNR=9.0
KHC Kasperske Hory 81.23 329⇑ *i*P **P 20 12 00.5 +0.6**
KHC *e*pP **sP 20 12 19.3 +0.1**
KHC Kasperske Hory 81.23 329⇑ *i*P **P 20 12 00.5 +0.6**
KHC *e* 20 12 19.3
KHC Kasperske Hory 81.23 329 *e*P **P 20 12 00.1 +0.1**
comp=Z,7.2nm,0.9s
CSS Mathiatis 81.31 308 *e*P **P 20 12 00.2 -0.4**
comp=Z,2.4nm,0.7s
EYMN Ely 81.33 33 *e*P **P 20 12 00.8 +0.4**
comp=Z,8.0nm,1.0s
GEC2 GERESS Array S 81.40 328 *e*P **P 20 12 00.6 -0.3**
GEC2 pmax pmax
comp=Z,6.0nm,0.7s
GEC2 GERESS Array S 81.40 328 *e*P **P 20 12 00.6 -0.3**
comp=Z,5.5nm,0.7s
GERES GERESS Array B 81.40 328 P **P 20 12 01.1 +0.1**
comp=Z,5.8nm,0.8s,baz=36,slow=5.4,SNR=41
GERES LR LR 20 51 00.7
comp=Z,156nm,18.8s,baz=29,slow=38
GEA0 GERESS Array S 81.41 328 *e*P **P 20 12 00.9 -0.1**
SDCO Great Sand Dun 81.69 48 *e*P **P 20 12 04.4 +1.5**
comp=Z,8.6nm,1.4s
GRFO Grafenberg 81.72 330 *e*P **P 20 12 03.3 +0.8**
GRFO pmax pmax
comp=Z,23nm,0.9s
GRFO Grafenberg 81.72 330 *e*P **P 20 12 03.3 +0.8**
comp=Z,23nm,0.9s
VTS Vitosha 81.74 319⇑ *i*P **P 20 12 03.7 +0.8**
VTS Vitosha 81.74 319 *e*P **P 20 12 03.2 +0.3**
VTS pmax pmax
comp=Z,22nm,0.9s
VTS Vitosha 81.74 319 *e*P **P 20 12 03.2 +0.3**
comp=Z,22nm,0.9s
ARSA Arzberg 81.88 326 *i* P **P 20 12 04.0 +0.6**
comp=Z,5.7nm,0.8s,SNR=5.2
ECSD EROS Data Cent 82.18 39 *e*P **P 20 12 05.5 +0.5**
comp=Z,10.0nm,1.0s
PERS Pernice 82.53 326 *i* P **P 20 12 07.2 +0.3**
SOKA Soboth 82.54 326 *i* P **P 20 12 07.3 +0.4**
comp=Z,29nm,1.0s,SNR=26
T25A Trinidad 82.74 48 *e*P **P 20 12 09.7 +1.4**
comp=Z,8.6nm,0.8s
BEBN Eben Emael 82.84 334 P **P 20 12 08.3 +0.1**
MEM Membach 82.89 334 P **P 20 12 08.4 -0.1**
KBA Koelnbreinsper 82.94 327 *i* PcP **P 20 12 09.9 +0.7**
comp=Z,20nm,0.9s,SNR=11
ANMO Albuquerque 83.04 50*de*P **P 20 12 12.2 +2.3**
ANMO pmax pmax

	comp=Z,7.0nm,1.2s						
ANMO	Albuquerque	83.04	50	eP	P	20 12 11.8	+1.9
	comp=Z,5.5nm,1.0s						
MYKA	Terra Mystica	83.17	327	i P	P	20 12 09.9	-0.3
	comp=Z,10nm,0.6s,SNR=6.2						
LJU	Ljubljana	83.25	326	i P	P	20 12 10.4	-0.1
BCLA	Clavier	83.29	334	P	P	20 12 10.0	-0.6
SCHQ	Schefferville	83.44	16	P	P	20 12 12.1	+0.7
	comp=Z,8.6nm,0.8s,baz=340,slow=7.6,SNR=6.2						
SCHQ	Schefferville	83.44	16	eP	P	20 12 11.8	+0.5
	comp=Z,12nm,0.9s						
ABTA	Abfaltersbach	83.56	328	i P	P	20 12 11.5	-0.7
	comp=Z,14nm,1.1s,SNR=6.2						
SNF	Seneffe	83.56	334	P	P	20 12 12.4	+0.5
JAVS	Javornik	83.57	326	i P	P	20 12 11.6	-0.7
MOTA	Moosalm	83.65	329	i PcP	P	20 12 13.9	+1.2
	comp=Z,24nm,1.0s,SNR=14						
RETA	Reutte	83.68	329	i P	P	20 12 13.3	+0.5
	comp=Z,38nm,1.2s,SNR=13						
TRI	Trieste	83.84	326	eP	P	20 12 12.2	-1.3
TRI				pmax	pmax		
	comp=Z,14nm,0.9s						
TRI	Trieste	83.84	326	eP	P	20 12 12.2	-1.3
	comp=Z,14nm,0.9s						
BFO	Black Forest	83.94	331	i P	P	20 12 14.5	+0.5
BFO	Black Forest	83.94	331	eP	P	20 12 14.4	+0.4
	comp=Z,43nm,1.3s						
FETA	Feichten	84.07	329	i PcP	P	20 12 15.2	+0.3
	comp=Z,20nm,1.1s,SNR=8.6						
DAVA	Damuels	84.19	330	i PcP	P	20 12 15.8	+0.3
	comp=Z,39nm,0.9s,SNR=16						
PMOR	Pomariorio Ree	84.48	114	eT	T	21 45 41.5	
	comp=Z,64nm,0.2s						
PPT2	Papeete2	85.04	117	eLR	LR	20 38 58.5	
	comp=Z,154nm,23.2s						
PPT2	Papeete2	85.04	117	eT	T	21 46 24.5	
	comp=Z,19nm,0.3s						
TUE	Stuetta	85.07	329	eP	P	20 12 19.5	-0.5
	comp=Z,12nm,0.9s						
PAE	Paea	85.09	117	eT	T	21 46 27.3	
	comp=Z,3.6nm,0.3s						
TIAR	Tiarei	85.18	117	eT	T	21 46 34.2	
	comp=Z,5.4nm,0.3s						
LAST	Lasithi	85.84	313	eP	P	20 12 24.3	+0.4
	comp=Z,46nm,1.1s						
MNTX	Cornudas Mount	85.92	52	eP	P	20 12 24.3	+0.1
	comp=Z,12nm,1.8s						
TAOE	Nuku Hiva Isla	86.15	104	eLR	LR	20 39 35.9	
	comp=Z,180nm,25.7s						
TAOE	Nuku Hiva Isla	86.15	104	eT	T	21 47 47.8	
	comp=Z,27nm,0.2s						
MEH	Mehetia	86.29	116	eT	T	21 47 57.4	
	comp=Z,116nm,0.3s						
WMOK	Wichita Mounta	87.65	46	eP	P	20 12 33.4	+0.7
WMOK	Wichita Mounta	87.65	46	eP	P	20 12 33.4	+0.7
LTX	Lajitas	88.62	53	eP	P	20 12 38.9	+1.4
LTX	Lajitas	88.62	53	eP	P	20 12 38.9	+1.4
TX31	Lajitas Ar. Si	88.62	53	eP	P	20 12 38.3	+0.9
TXAR	Lajitas Array	88.62	53	P	P	20 12 38.9	+1.4
	comp=Z,1.7nm,0.6s,baz=292,slow=3.3,SNR=26						
TXAR				LR	LR	20 47 46.0	
	comp=Z,27nm,21.4s,baz=0.0,slow=32						
TBI	Tubuai	89.06	121	eT	T	21 51 23.7	
	comp=Z,43nm,0.3s						
MIAR	Mount Ida	90.64	43	eP	P	20 12 47.6	+0.9
MIAR				pmax	pmax		
	comp=Z,9.0nm,0.8s						
MIAR	Mount Ida	90.64	43	eP	P	20 12 47.6	+0.9
	comp=Z,8.6nm,0.8s						
KEST	Kesra	93.85	323	LR	LR	21 00 05.7	
	comp=Z,148nm,18.5s,baz=296,slow=38						
ES19	SONSECA Array	95.81	334	eP	P	20 13 10.2	-0.3
ESDC	Sonseca Array	95.85	334	P	P	20 13 10.6	0.0
	comp=Z,0.7nm,0.7s,baz=17,slow=4.9,SNR=5.7						
ESDC				LR	LR	21 01 13.2	
	comp=Z,68nm,19.9s,baz=295,slow=38						
TOA1	Torodi Ar. Sit	116.36	316	ePKPdf	PKPdf	20 18 26.6	-1.4
TOA1				ePP	PP	20 19 25.7	-8.0
TORD	Torodi Ar. Bea	116.36	316	PKP	PKPdf	20 18 26.6	-1.4
	comp=Z,0.7nm,0.7s,baz=5.7,slow=2.4,SNR=5.5						
TORD				PP	PP	20 19 25.7	-8.0
	comp=Z,1.0nm,0.8s,baz=27,slow=7.3,SNR=4.9						
VNDA	Vanda	116.77	175	PKP	PKPdf	20 18 25.8	-1.1
	comp=Z,0.5nm,0.6s,baz=96,slow=1.3,SNR=3.1						
SDV	Santo Domingo	123.61	40	eP	PKPdf	20 18 42.6	+0.4
DBIC	Dimbokro	125.26	318	PKP	PKPdf	20 18 45.1	-0.1
	comp=Z,3.0nm,0.7s,baz=297,slow=3.6,SNR=6.0						
DBIC	Dimbokro	125.26	318	ePKIKP	PKPdf	20 18 44.8	-0.4
DBIC	Dimbokro	125.26	318	ePKPdf	PKPdf	20 18 44.8	-0.4
BOSA	Boshof	127.37	261	PKP	PKPdf	20 18 49.4	+0.6
	comp=Z,4.2nm,1.0s,baz=180,slow=1.0,SNR=4.1						
QSPA	South Pole Qui	128.61	180	ePKPdf	PKPdf	20 18 50.0	+0.1
SNAA	Sanae	142.65	197	PKP	PKPdf	20 19 11.3	-4.6
VNA2	Neumayer--Watz	144.22	197	PKP	PKPbc	20 19 17.0	+0.1
	baz=108,slow=2.1						
VNA3	Neumayer Olymp	144.47	195	PKP	PKPab	20 19 17.2	-0.2
LPAZ	La Paz	145.33	58	PKPbc	PKPab	20 19 23.5	+0.6
	comp=Z,6.1nm,0.6s,baz=315,slow=1.4,SNR=15						

JMA 01 20:00:31.0, 36°.59N×137°.70E, h0km, M0.8, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JNG	Nsakai	0.37	119	P	Pg	20 00 38.7	+0.6
JNG				S	Sg	20 00 43.8	+0.9
JGN	Niukaw	0.48	220	P	Pg	20 00 40.7	+0.5
JGN				S	Sg	20 00 47.2	+0.8

*ISCJB **01** 20:12:30.3±1.1, 23°.5N±0°.3×94°.6E±0°.4, h99km, mb3.1/2, Error ellipse: s-maj=66.1km s-min=10.6km az=44.6*
*IDC **01** 20:12:32.9±4.2, 23°.49N×94°.64E, h113km±41km, mb2.9/2, mb1 2.9/3, mb1mx2.6/36, mbtmp3.1/3, Error ellipse: s-maj=99.6km s-min=24.3km az=61.0*
ISC 01 20:12:32.1±1.1**, 23°.6N**±0°.4×**94°.7E**±0°.4**, h99**km**, n4, σ2s.08**/5**, Myanmar-India border region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SHL	Shillong	3.24	309	i PN	Pn	20 13 23.0	+1.8
SHL				i SN	Sn	20 13 57.0	-2.0
CMAR	Chiang Mai Arr	6.45	141	P	Pn	20 14 05.0	+0.3
	0.1nm,0.3s,baz=316,slow=13,SNR=5.3						
MKAR	Makanchi Array	25.23	340	P	P	20 17 48.7	0.0
	0.3nm,0.5s,baz=151,slow=9.2,SNR=7.1						
ASAR	Alice Springs	60.45	138	P	P	20 22 30.6	-1.0
	0.2nm,0.6s,baz=318,slow=6.7,SNR=5.8						

*DDA **01** 20:42:47.9, 37°.91N×27°.44E, h7km, Md2.9*
*ATH **01** 20:42:48.9, 37°.88N×27°.38E, h10km±2km, ML2.5/4, Error ellipse: s-maj=3.7km s-min=1.2km az=249.0*
*CSEM **01** 20:42:48.9±0.1, 37°.89N×27°.44E, h2km, MD2.9, Error ellipse: s-maj=2.6km s-min=2.0km az=74.0*
*THE **01** 20:42:48.9, 37°.82N×27°.40E, h1km±1km, ML2.7/5, Error ellipse: s-maj=1.9km s-min=0.8km az=83.0*
*ISK **01** 20:42:48.2, 37°.91N×27°.47E, h3km, MD3.1*
ISC 01 20:42:48.3±0.9**, 37°.89N**±0°.02×**27°.44E**±0°.02**, h8**km±8km**, n83, σ0s.84**/115**, Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GCAM	G?zelcaml?	0.24	221	i P	Pg	20 42 53.0	-0.2
GCAM				i S	Sg	20 42 56.7	+0.2
GCAM	G?zelcaml?	0.24	221	P	Pg	20 42 53.0	-0.2
GCAM				S	Sg	20 42 56.7	+0.2
AYDB	Zeytinkoy-Aydi	0.36	80	ePG	Pg	20 42 55.6	+0.1
AYDB				eSG	Sg	20 43 00.3	0.0
AYDB	Zeytinkoy-Aydi	0.36	80	ePg	Pg	20 42 55.7	+0.1
AYDB				eSg	Sg	20 43 00.4	0.0
AYDN	Tasoluk	0.42	122	i P	Pg	20 42 56.6	+0.1
AYDN				i S	Sg	20 43 02.3	+0.3
AYDN	Tasoluk	0.42	122	P	Pg	20 42 56.6	+0.1
AYDN				S	Sg	20 43 02.3	+0.3
SMG	Samos	0.51	250	P	Pg	20 42 58.1	0.0
SMG				S	Sg	20 43 05.0	+0.2
SMG	Samos	0.51	250	P	Pg	20 42 58.1	0.0
SMG				S	Sg	20 43 05.0	+0.2
SMG	Samos	0.51	250	P	Pg	20 42 57.7	-0.4
SMG				S	Sg	20 43 05.0	+0.2
SMG				AML	AML	20 43 06.8	
	comp=E,1258µm,0.3s						
SMG				AML	AML	20 43 07.0	
	comp=N,1033µm,0.4s						
IZM	Izmir	0.53	345	ePG	Pg	20 42 58.1	-0.5
BLCB	Balcova	0.59	328	ePG	Pg	20 42 59.7	0.0
BLCB	Balcova	0.59	328	ePg	Pg	20 42 59.7	0.0
ZEY	˜zmir	0.82	296	i P	Pg	20 43 04.4	+0.4
ZEY				i S	Sg	20 43 15.1	+0.5
BODT	Bodrum	0.83	187	ePG	Pb	20 43 05.4	+0.4
BODT				eSG	Sn	20 43 18.2	-0.6
BODT	Bodrum	0.83	187	P	Pg	20 43 03.7	-0.6
BODT				S	Sb	20 43 16.0	-0.3
BODT	Bodrum	0.83	187	P	Pg	20 43 03.7	-0.6
BODT	Bodrum	0.83	187	ePg	Pb	20 43 05.4	+0.4
BODT				S	Sb	20 43 16.0	-0.3
BODT				eSg	Sn	20 43 18.2	-0.6
YER	Yerkesik	1.01	138	ePG	Pb	20 43 08.2	+0.1
YER				eSG	Sn	20 43 22.7	-0.6
YER	Yerkesik	1.01	138	P	Pg	20 43 07.9	+0.2
YER				S	Sb	20 43 21.7	+0.2
YER	Yerkesik	1.01	138	P	Pg	20 43 07.9	+0.2
YER	Yerkesik	1.01	138	ePg	Pb	20 43 08.2	+0.1
YER				S	Sb	20 43 21.7	+0.2
YER				eSg	Sn	20 43 22.7	-0.6
AKHS	Akhisar	1.03	17	i P	Pg	20 43 07.5	-0.7
AKHS				i S	Sg	20 43 21.3	-0.4
AKHS	Akhisar	1.03	17	P	Pg	20 43 07.5	-0.7
AKHS				S	Sg	20 43 21.3	-0.4
AKS	Akhisar	1.03	17	ePG	Pg	20 43 08.1	-0.1
AKS	Akhisar	1.03	17	ePg	Pg	20 43 08.1	-0.1
KULA	Kula-Manisa	1.15	57	ePN	Pb	20 43 10.4	-0.2
KULA	Kula-Manisa	1.15	57	P	Pg	20 43 10.6	+0.2
KULA	Kula-Manisa	1.15	57	P	Pg	20 43 10.6	+0.2
CHOS	Chios island	1.20	295	ePN	Pb	20 43 11.2	-0.1
CHOS	Chios island	1.20	295	P	Pg	20 43 11.5	+0.2
CHOS				S	Sn	20 43 28.1	+0.1
CHOS	Chios island	1.20	295	P	Pg	20 43 11.5	+0.2
CHOS				S	Sn	20 43 28.1	+0.1
CHOS	Chios island	1.20	295	P	Pb	20 43 10.8	-0.5
CHOS				S	Sg	20 43 27.1	+0.2
CHOS				AML	AML	20 43 30.2	
	comp=N,289µm,0.4s						
CHOS				AML	AML	20 43 31.0	
	comp=E,327µm,0.3s						
DKL	Dikili	1.25	341	ePN	Pg	20 43 12.6	+0.2
DKL	Dikili	1.25	341	ePn	Pg	20 43 12.6	+0.2
DENT	Denizli	1.27	95	ePN	Pg	20 43 13.6	+0.9
DENT	Denizli	1.27	95	ePn	Pg	20 43 13.6	+0.9
NIS1	Nisyros Isl.	1.30	189	ePN	Pg	20 43 15.0	+1.8
NIS1	Nisyros Isl.	1.30	189	P	Pn	20 43 12.1	-0.7
NIS1				S	Sb	20 43 28.9	-0.9
NIS1	Nisyros Isl.	1.30	189	P	Pg	20 43 13.3	+0.1
NIS1	Nisyros Isl.	1.30	189	ePn	Pg	20 43 15.0	+1.8
NIS1				S	Sb	20 43 28.9	-0.9
NIS1	Nisyros Isl.	1.30	189	P	Pg	20 43 13.3	+0.1
DALY	Dalyan (Mu˜la	1.44	137	ePN	Pg	20 43 16.7	+0.7
DALY	Dalyan (Mu˜la	1.44	137	ePn	Pg	20 43 16.7	+0.7
DEMI	Demirci	1.53	41	i P	Pb	20 43 16.5	-0.6
DEMI				i S	Sn	20 43 34.9	-1.4
DEMI	Demirci	1.53	41	P	Pb	20 43 16.5	-0.6
PRK	Paraskevi	1.64	326	P	Pn	20 43 17.3	-0.1
PRK				S	Sg	20 43 41.1	+0.2
PRK	Paraskevi	1.64	326	P	Pb	20 43 19.2	+0.5
PRK				S	Sg	20 43 41.1	+0.2
PRK	Paraskevi	1.64	326	P	Pb	20 43 19.2	+0.5
PRK				S	Sg	20 43 41.6	+0.7
PRK				AML	AML	20 43 43.8	
	comp=N,418µm,0.5s						
PRK				AML	AML	20 43 45.2	
	comp=E,501µm,0.8s						
KHL	Karahalli	1.70	75	ePN	Pb	20 43 19.6	-0.4
KHL	Karahalli	1.70	75	ePn	Pb	20 43 19.6	-0.4
APE	Apeiranthos	1.72	242	ePN	Pb	20 43 20.1	-0.1
APE	Apeiranthos	1.72	242	ePn	Pb	20 43 20.2	-0.1
ARG	Arkhangelos	1.76	161	P	Pn	20 43 18.2	-0.9
ARG	Arkhangelos	1.76	161	P	Pg	20 43 21.7	-0.3
BALB	Balikesir	1.79	11	ePN	Pb	20 43 21.0	-0.3
BALB	Balikesir	1.79	11	ePn	Pb	20 43 21.0	-0.3
FETY	Fethiye	1.81	133	ePN	Pb	20 43 21.5	-0.3
FETY	Fethiye	1.81	133	P	Pn	20 43 20.4	+0.5
FETY	Fethiye	1.81	133	P	Pn	20 43 20.4	+0.5
FETY	Fethiye	1.81	133	ePn	Pb	20 43 21.5	-0.3
SIGR	SIGRI	1.81	317	ePN	Pb	20 43 21.2	-0.6
SIGR	SIGRI	1.81	317	P	Pb	20 43 20.9	-0.9
SIGR				S	Sg	20 43 45.6	-1.0
SIGR	SIGRI	1.81	317	P	Pb	20 43 20.9	-0.9
SIGR	SIGRI	1.81	317	ePn	Pb	20 43 21.2	-0.6
SIGR				S	Sg	20 43 45.6	-1.0
SIGR	SIGRI	1.81	317	P	Pb	20 43 22.1	+0.3
SIGR				S	Sg	20 43 45.8	-0.8
SIGR				AML	AML	20 43 50.1	
	comp=E,224µm,0.5s						
SIGR				AML	AML	20 43 51.1	
	comp=N,257µm,0.7s						
DST	Dursunbey	1.95	28	ePN	Pb	20 43 23.2	-1.0
DST	Dursunbey	1.95	28	ePn	Pb	20 43 23.2	-1.0
EZN	Ezine	2.12	336	ePN	Pb	20 43 25.8	-1.2
EZN	Ezine	2.12	336	ePn	Pb	20 43 25.8	-1.2
TVSB	Tavsanli	2.23	45	ePN	Pb	20 43 27.2	-1.7
TVSB	Tavsanli	2.23	45	ePn	Pb	20 43 27.2	-1.7
ELL	Elmali	2.27	119	ePN	Pb	20 43 28.2	-1.5
ELL	Elmali	2.27	119	ePn	Pb	20 43 28.2	-1.5
KCTX	Karacabey (Bur	2.48	16	ePN	Pn	20 43 30.6	+1.5
KCTX	Karacabey (Bur	2.48	16	ePn	Pn	20 43 30.6	+1.5
GELI	Tayfur-Gelibol	2.62	344	ePN	Pn	20 43 32.7	+1.8
GELI	Tayfur-Gelibol	2.62	344	ePn	Pn	20 43 32.7	+1.8
ERIK	Erikli-Kesan	2.87	346	ePN	Pn	20 43 36.6	+2.2
ERIK	Erikli-Kesan	2.87	346	ePn	Pn	20 43 36.6	+2.2
ARMT	Armutlu	2.90	22	ePN	Pn	20 43 36.8	+2.0
ARMT	Armutlu	2.90	22	ePn	Pn	20 43 36.8	+2.0
IZI	Iznik	2.92	32	ePN	Pn	20 43 37.0	+2.0
IZI	Iznik	2.92	32	ePn	Pn	20 43 37.1	+2.0

*CASC **01** 20:43:42.5±2.4, 7°.13N×81°.40W, h1km±28km, MD4.5*
*ISCJB **01** 20:43:44.8±0.9, 7°.31N±0°.07×81°.44W±0°.03, h10km, Error ellipse: s-maj=10.7km s-min=4.4km az=4.8*
ISC 01 20:43:44.6±1.6**, 7°.4N**±0°.1×**81°.41W**±0°.03**, h10**km**, n19, σ1s.45**/25**, 2C-4D, Panama**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AZU	Azuero	1.19	72⇓	iP	Pb	20 44 05.8	-1.5
AZU				i S	Sg	20 44 22.3	-0.7
PNME	Penonome	1.51	45	eP	Pg	20 44 12.6	-1.0
PNME				eS	Sg	20 44 34.1	+0.9
TBS2		1.84	318	i P	Pb	20 44 17.7	-0.7
TBS2				i S	Sn	20 44 40.1	+0.3
BRU2	Volcan	1.86	317⇓	eP	Pb	20 44 18.3	-0.5
BRU2				eS	Sb	20 44 42.4	+0.2
PBNC	Punta Burica N	1.94	299⇑	eP	Pn	20 44 18.0	+0.3
CTCR	Cotoan	1.98	318	eP	Pb	20 44 19.7	-1.2
ZANG	Zanguenga, Cho	2.16	45	i P	Pb	20 44 23.3	-0.5
ZANG				i S	Sg	20 44 53.2	-0.9
PINA	Piqa, Costa Ab	2.26	36	i P	Pb	20 44 25.4	-0.1
BCIP	Isla Barro Col	2.33	42⇓	iP	Pb	20 44 25.7	-1.1
BCIP				i S	Sb	20 44 56.4	+0.7
BCIP	Isla Barro Col	2.33	42	eP	Pb	20 44 24.7	-2.1
BCIP				eS	Sg	20 44 58.0	-1.6
BCIP				i		20 45 13.0	
	comp=Z,408nm,0.3s						
BUS	Buena Vista	3.14	313⇑	eP	Pn	20 44 36.2	+1.6
BUS				eS	Sg	20 45 25.7	0.0
URSC	Urasca	3.35	316⇓	eP	Pn	20 44 40.2	+3.0
URSC				eS	Sb	20 45 25.7	+0.6
QCR	Quepos	3.37	306	eP	Pn	20 44 40.4	+3.1
CGA2	Cerro Gallo 2	3.97	311	eP	Pn	20 44 48.2	+2.5
JCR	Jicaral	4.38	304	eP	Pb	20 44 58.8	-2.9
JTS	JuntasAbangare	4.51	309	eP	Pn	20 44 54.5	+1.5
DBBC	Dabeiba	5.18	94	eP	Pn	20 45 04.5	+2.2
MOTC	Monteria, Cord	5.85	76	eP	Pn	20 45 13.6	+2.2
MOTC				eP	Pn	20 45 18.1	+6.6
MOTC				i		20 45 34.0	
	comp=Z,10nm,0.3s						
HELC	Santa Helena	5.97	101	eP	Pn	20 45 17.4	+3.9
HELC				i		20 45 39.4	
	comp=Z,5.3nm,0.5s						

*IDC **01** 21:00:24.7±2.4, 35°.95N×143°.45E, h0km, mb3.4/4, mb1 3.6/6, mb1mx3.4/32, mbtmp3.5/6, ML3.5/2, MS2.4/2, Ms1 2.4/2, ms1mx2.1/38, Error ellipse: s-maj=58.1km s-min=25.2km az=62.0*
*ISCJB **01** 21:00:26.2±0.9, 36°.21N±0°.05×143°.34E±0°.07, h33km, mb3.5/4, Error ellipse: s-maj=7.9km s-min=7.7km az=8.4*
*JMA **01** 21:00:27.9±0.2, 36°.33N×143°.25E, h79km, M3.5*
ISC 01 21:00:26.3±1.5**, 36°.23N**±0°.05×**143°.47E**±0°.10**, h35**km**, n26, σ1s.50**/27**, mb3.5**/4**, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	Chosi	2.18	257	P	Pn	21 01 01.0	+0.9
ONAJ	Iwakimizuishiy	2.31	293	P	Pn	21 01 02.1	+0.1
ONAJ				S	Sn	21 01 28.6	-0.6
JHO	Hitachi	2.37	280	P	Pn	21 01 02.7	0.0
JFT	Otama	2.82	298	P	Pn	21 01 09.2	+0.3
JAG	Ashikaga	3.25	275	P	Pn	21 01 15.5	+0.7
JAG				S	Sn	21 01 50.6	-1.6
JMK	Ichinoseki	3.25	327	P	Pn	21 01 14.7	0.0
JMK				S	Sn	21 01 50.2	-2.0
JYK	Kaneyama	3.64	318	P	Pn	21 01 20.8	+0.6
JOM	Ohasama	3.66	333	P	Pn	21 01 20.1	-0.4
JOM				S	Sn	21 02 00.1	-2.3
JOD2	Odawara 2	3.69	256	P	Pn	21 01 21.4	+0.5
JOD2				S	Sn	21 02 02.4	-0.8
JRY	Ryogami san	3.70	268	P	Pn	21 01 21.6	+0.5
JRY				S	Sn	21 02 01.8	-1.7
JYN	Shimob	4.07	261	P	Pn	21 01 27.6	+1.5
JYN				S	Sn	21 02 11.5	-1.0
MJAR	Matsushiro Arr	4.25	276	Pn	Pn	21 01 29.7	+1.1
	3.0nm,0.3s,baz=116,slow=9.4,SNR=22						
MAT	Matsushiro	4.25	276	P	Pn	21 01 30.2	+1.6
MAT				eS	Sn	21 02 16.9	-0.2
JHJ2	Mitsune	4.33	225	P	Pn	21 01 29.5	-0.1
JHJ2				S	Sn	21 02 15.1	-3.8
JHJ	Hachijo jima 2	4.34	225	Pn	Pn	21 01 29.9	+0.1
	8.3nm,0.3s,baz=120,slow=22,SNR=10						
JHJ				Sn	Sn	21 02 16.0	-3.2
	52nm,0.3s,baz=41,slow=22,SNR=12						
JNU	Nakatsue	10.82	257	LR	LR	21 06 29.0	
	comp=Z,10nm,20.3s,baz=82,slow=34						
KLR	Kul'dur	15.56	330	LR	LR	21 09 36.4	
	comp=Z,25nm,21.9s,baz=320,slow=35						
H11N2	WAKE ISLAND Hy	26.32	122	T	T	21 33 18.6	
	baz=314,slow=75,SNR=5.2						
H11N1	WAKE ISLAND Hy	26.33	122	T	T	21 33 18.0	
	baz=314,slow=75,SNR=6.6						
H11N3	WAKE ISLAND Hy	26.34	122	T	T	21 33 21.3	
	baz=314,slow=75,SNR=6.0						
H11S1	WAKE ISLAND Hy	27.04	125	T	T	21 34 14.7	
	baz=129,slow=74,SNR=4.9						
H11S3	WAKE ISLAND Hy	27.04	125	T	T	21 34 11.9	
	baz=316,slow=74,SNR=4.2						
SONM	Songino Array	29.60	305	P	P	21 06 31.7	+3.6
	0.4nm,0.5s,baz=98,slow=8.7,SNR=4.9						
MKAR	Makanchi Array	45.94	303	P	P	21 08 51.5	+5.8
	0.2nm,0.6s,baz=90,slow=9.2,SNR=2.6						
WRA	Warramunga Arr	56.53	190	P	P	21 10 06.5	+1.2
	0.8nm,0.6s,baz=11,slow=7.2,SNR=4.9						
ASAR	Alice Springs	60.26	190	P	P	21 10 32.8	+1.6
	0.3nm,0.6s,baz=6.3,slow=7.5,SNR=5.9						

*ISCJB **01** 21:08:04.9±1.7, 51°.43N±0°.07×16°.15E±0°.07, h0km, Error ellipse: s-maj=10.3km s-min=4.7km az=23.5*
*CSEM **01** 21:08:06.6±0.8, 51°.41N×16°.15E, h1km, ML2.6/5, Error ellipse: s-maj=11.2km s-min=5.9km az=12.0*
*PRU **01** 21:08:07.7, 51°.37N×16°.16E, h0km*
ISC 01 21:08:05.7±2.5**, 51°.47N**±0°.10×**16°.19E**±0°.06**, h0**km**, n18, σ0s.62**/28**, Poland**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KSP	Ksiaz	0.63	174	ePg	Pg	21 08 18.0	+0.3
KSP				eSg	Sg	21 08 25.8	0.0
KSP	Ksiaz	0.63	174	ePg	Pg	21 08 18.0	+0.3
KSP				eSg	Sg	21 08 25.8	0.0
UPC	Upice	0.97	187	ePG	Pg	21 08 24.3	+0.1
UPC				eSG	Sg	21 08 36.8	+0.1
	comp=Z,13nm,0.3s						
UPC	Upice	0.97	187	Pg	Pg	21 08 24.3	+0.1
UPC				Sg	Sg	21 08 36.8	+0.1
	13nm,0.3s						
DPC	Dobruska-Polom	1.12	176	ePG	Pg	21 08 26.8	-0.4
DPC				eSG	Sg	21 08 40.8	-0.9
	comp=Z,4.3nm,0.4s						
DPC	Dobruska-Polom	1.12	176	Pg	Pg	21 08 26.8	-0.4
DPC				Sg	Sg	21 08 40.8	-0.9
	4.3nm,0.4s						
PVCC	Panska Ves	1.39	228	ePG	Pb	21 08 32.7	+0.2
PVCC				eSG	Sb	21 08 50.7	-0.1
	comp=Z,20nm,0.3s						
PVCC	Panska Ves	1.39	228	Pg	Pb	21 08 32.7	+0.2
PVCC				Sg	Sb	21 08 50.7	-0.1
	20nm,0.3s						
BRG	Berggiesshubel	1.53	248	SG	Sb	21 08 55.4	+0.4
	5.9nm,0.4s						
GOPC	GO Pecny, Ondr	1.79	210	eSG	Sb	21 09 02.5	+0.1
GOPC	GO Pecny, Ondr	1.79	210	Sg	Sb	21 09 02.5	+0.1
PRU	Pruhonice	1.81	216	eSG	Sb	21 09 02.6	-0.4
	comp=Z,3.9nm,0.4s						
PRU	Pruhonice	1.81	216	Sg	Sb	21 09 02.6	-0.4
	3.9nm,0.4s						
CLL	Collm	2.00	267	eSg	Sg	21 09 10.0	0.0
OKC	Ostrava-Krasne	2.05	142	eSG	Sg	21 09 11.3	-0.3
	comp=Z,3.8nm,0.4s						
OKC	Ostrava-Krasne	2.05	142	Sg	Sg	21 09 11.3	-0.3
	3.8nm,0.4s						
KHC	Kasperske Hory	2.88	217	ePG	Pg	21 09 00.0	-0.8
KHC				eSG	Sb	21 09 35.3	+1.7
KHC	Kasperske Hory	2.88	217	Pg	Pg	21 09 00.0	-0.8
KHC				Sg	Sb	21 09 35.3	+1.7

*IDC **01** 21:17:45.5±0.3, 56°.42S×24°.18W, h0km, mb5.0/21, mb1 5.0/21, mb1mx4.9/25, mbtmp4.9/21, MS4.4/18, Ms1 4.4/18, ms1mx4.4/19, Error ellipse: s-maj=16.4km s-min=11.8km az=28.0*
*ISCJB **01** 21:17:48.7±0.2, 56°.40S±0°.05×24°.27W±0°.08, h33km, mb5.2/40, MS4.7/91, Error ellipse: s-maj=7.3km s-min=5.3km az=41.9*
*NEIC **01** 21:17:49.7±1.9, 56°.40S×24°.21W, h26km±13km, mb5.3/29, Error ellipse: s-maj=6.2km s-min=4.9km az=210.0*
*MOS **01** 21:17:49.5±1.0, 56°.43S×24°.29W, h33km, mb5.4/22, MS4.7/10, Error ellipse: s-maj=21.2km s-min=11.3km az=100.3*
*GCMT **01** 21:17:49.7±0.2, 56°.53S×23°.82W, h12km, MW5.1/89, Moment Tensor Solution. s45,c63; s89,c134; Duration: 0 Moment tensor: Scale 10^{16}Nm; M_{rr}-4.60±.12; $M_{\theta\theta}$0.99±.13; $M_{\phi\phi}$3.61±.11; $M_{r\theta}$-0.57±.37; $M_{\theta\phi}$-2.53±.09; $M_{\phi r}$0.16±.35; Best double couple: $M_0$4.91400×10^{16} NP1:ϕ_s143.00000°, δ48.00000°, λ-98.00000°. NP2: ϕ_s334.00000°, δ43.00000°, λ-82.00000°. Principal axes: T 5.1690, Plg3.0000°, Azm238.0000°; N -0.5080, Plg6.0000°, Azm148.0000°; P -4.6590, Plg84.0000°, Azm353.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
ISC 01 21:17:50.5±0.2**, 56°.43S**±0°.06×**24°.38W**±0°.05**, h33**km**, n342, σ1s.24**/299**, mb5.2**/42**, MS4.6**/93**, 10C-7D, South Sandwich Islands region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HOPE	Hope Point	7.23	282	ePn	Pn	21 19 34.0	+0.3
HOPE				eSn	Sn	21 20 50.5	-4.0
VNA1	Neumayer--Stat	15.88	160	P	Pn	21 21 31.7	+0.6
VNA3	Neumayer Olymp	16.14	163	P	Pn	21 21 33.7	-0.8
VNA3				S	Sn	21 24 16.8	-15
VNA2	Neumayer--Watz	16.28	160	P	Pn	21 21 34.9	-1.3
	baz=327,slow=15						
VNA2				S	Sn	21 24 19.8	-16
SNAA	Sanae	17.78	158	P	P	21 21 57.0	+1.4
SNAA	Sanae	17.78	158	ceP	P	21 21 54.2	-1.4
SNAA				pmax	pmax		
	comp=Z,3µm,1.1s						
SNAA	Sanae	17.78	158	ePn	P	21 21 55.2	-0.3
	comp=Z,13µm,1.7s						
EFI	East Falkland	20.20	269⇑	eP	P	21 22 22.0	-0.1
EFI				pmax	pmax		
	comp=Z,85nm,1.0s						
EFI	East Falkland	20.20	269	eP	Pn	21 22 22.6	-1.6
	comp=Z,186nm,0.9s						

PMSA Palmer Station 20.85 230 LR LR 21 30 21.1
comp=Z,2µm,18.6s,baz=84,slow=36
PMSA Palmer Station 20.85 230 *e*P **P** **21 22 29.3 +0.2**
comp=Z,171nm,1.3s
TRIS Tristan da Cun 21.00 28 *e*P **P** **21 22 29.5 -1.3**
comp=Z,288nm,1.5s
NVL N'lazarevskaya 21.09 147 *e*P **P** **21 22 30.2 -1.4**
NVL MLR MLR
comp=Z,1µm,19.0s
USHA Ushuaia 24.61 255 P **P** **21 23 06.8 -0.5**
comp=Z,123nm,0.8s,baz=91,slow=8.5,SNR=7.9
USHA LR LR 21 30 53.9
comp=Z,4µm,20.1s,baz=90,slow=32
SYO Syowa Base 30.30 140⇑ *e*P **P** **21 23 55.4 -2.7**
SYO Syowa Base 30.30 140‖ *es*P P 21 24 05.0 +6.9
TRQA Tornquist 30.92 290 *e*P **P** **21 24 04.4 +0.5**
comp=Z,19nm,0.8s
TRQA LR LR
comp=Z,540nm,19.0s
PLCA Paso Flores 33.61 278 P **P** **21 24 27.5 -0.1**
comp=Z,1.5nm,0.7s,baz=171,slow=7.3,SNR=5.9
PLCA PcP **PcP** **21 27 08.0 +0.8**
comp=Z,5.1nm,0.8s,baz=144,slow=4.9,SNR=5.9
PLCA LR LR 21 37 12.6
comp=Z,342nm,20.7s,baz=156,slow=35
PLCA Paso Flores 33.61 278 *e*P **P** **21 24 27.1 -0.4**
PLCA *e* 21 27 08.7
PLCA pmax pmax
comp=Z,57nm,1.9s
PLCA Paso Flores 33.61 278 *e*P **P** **21 24 27.1 -0.4**
comp=Z,57nm,1.9s
PLCA *e*PcP **PcP** **21 27 08.7 +1.5**
QSPA South Pole Qui 33.82 180 *e*P **P** **21 24 30.2 +0.9**
QSPA LR LR
comp=Z,515nm,19.0s
SPB Sao Paulo 36.88 323 *e*P **P** **21 24 57.1 +1.4**
comp=Z,141nm,1.6s
SPB LR LR
comp=Z,495nm,19.0s
CPUP Villa Florida 38.26 308 P **P** **21 25 07.8 +0.4**
comp=Z,34nm,1.0s,baz=150,slow=7.7,SNR=26
CPUP LR LR 21 39 52.3
comp=Z,210nm,20.4s,baz=154,slow=35
CPUP Villa Florida 38.26 308 *e*P **P** **21 25 07.9 +0.6**
ASAL Salagasta 38.69 289 *e*P **P** **21 25 10.9 -0.2**
ACHE Chepes 38.69 293 *e*P **P** **21 25 09.1 -2.1**
MAW Mawson 38.91 142 P **P** **21 25 12.6 +0.3**
comp=Z,10nm,0.9s,baz=240,slow=8.5,SNR=10
MAW PcP **PcP** **21 27 22.8 +0.5**
comp=Z,7.8nm,0.8s,baz=189,slow=3.2,SNR=5.0
MAW LR LR 21 40 33.4
comp=Z,419nm,18.1s,baz=244,slow=35
SUR Sutherland 39.25 72 P **P** **21 25 15.8 0.0**
comp=Z,1.6nm,1.1s,baz=207,slow=8.3,SNR=9.9
SUR Sutherland 39.25 72 *e*P **P** **21 25 15.5 -0.3**
comp=Z,130nm,1.7s
SUR LR LR
comp=Z,2µm,20.0s
AUSP Uspallata 39.27 289‖ *e*P **P** **21 25 17.2 +1.0**
AVFE Valle Fertil 39.50 292 *e*P **P** **21 25 18.1 +0.3**
AVFE lAmb lAmb 21 25 19.0
comp=Z,55nm,0.7s
AMOG MOGNA 39.81 291 *e*P **P** **21 25 21.2 +0.8**
ACLC CERRO LA CRUZ 40.24 294 *e*P **P** **21 25 24.3 +0.2**
ACLC lAmb lAmb 21 25 25.1
comp=Z,61nm,0.9s
CYA Choya 40.46 296 *e*P **P** **21 25 24.9 -0.9**
CYA lAmb lAmb 21 25 26.0
comp=Z,27nm,1.1s
AGUA GUANDACOL 40.98 292 *e*P **P** **21 25 31.5 +1.4**
AHML Horco Molle 41.60 298 lAmb lAmb 21 25 39.3
comp=Z,31nm,1.0s
FSA Cafayete 42.48 298 *e*P **P** **21 25 42.2 -0.3**
LCO Las Campanas 42.50 290 *e*P **P** **21 25 42.8 0.0**
comp=Z,61nm,1.0s
AZAP Zapla 43.62 300 *e*P **P** **21 25 51.0 -0.9**
BDFB Brasilia 44.51 327 P **P** **21 26 00.4 +1.6**
comp=Z,12nm,0.8s,baz=125,slow=4.1,SNR=13
BDFB LR LR 21 43 36.7
comp=Z,480nm,18.3s,baz=172,slow=35
BDFB Brasilia 44.51 327 *e*P **P** **21 25 59.4 +0.6**
BDFB pmax pmax
comp=Z,64nm,1.3s
BDFB Brasilia 44.51 327 *e*P **P** **21 25 59.4 +0.6**
comp=Z,64nm,1.3s
BOSA Boshof 44.56 73 P **P** **21 25 58.1 -1.1**
comp=Z,15nm,0.8s,baz=210,slow=6.7,SNR=24
BOSA PcP **PP** **21 27 42.2 -1.1**
comp=Z,8.3nm,0.8s,baz=258,slow=2.7,SNR=4.8
BOSA LR LR 21 41 15.6
comp=Z,1µm,18.0s,baz=210,slow=32
BOSA Boshof 44.56 73 *e*P **P** **21 25 58.2 -1.0**
comp=Z,44nm,1.3s
BOSA PcP **PP** **21 27 42.2 -1.1**
SBA Scott Base 45.80 183 *e*P **P** **21 26 09.8 +1.5**
SBA pmax pmax
comp=Z,51nm,1.3s
SBA Scott Base 45.80 183 *e*P **P** **21 26 09.8 +1.5**
comp=Z,51nm,1.3s
VNDA Vanda 46.26 182 P **P** **21 26 13.4 +1.5**
comp=Z,12nm,0.8s,baz=186,slow=6.8,SNR=50
VNDA LR LR 21 44 27.0
comp=Z,250nm,20.8s,baz=166,slow=35
VNDA Vanda 46.26 182 *e*P **P** **21 26 13.8 +1.9**
comp=Z,26nm,0.9s
PB10 IPOC Station P 46.92 295 *e*P **P** **21 26 18.8 +1.0**
comp=Z,64nm,0.9s
LBTB Lobatse 47.64 70 *e*P **P** **21 26 22.5 -0.9**
LBTB pmax pmax
comp=Z,166nm,1.8s
LBTB Lobatse 47.64 70 *e*P **P** **21 26 22.5 -0.9**
comp=Z,166nm,1.8s
PB04 IPOC Station P 47.70 296 *e*P **P** **21 26 24.8 +0.8**
comp=Z,186nm,1.0s
H10S2 ASCENSION HYDR 47.96 13 T T 22 19 42.2
baz=189,slow=74,SNR=5.5
H10S3 ASCENSION HYDR 47.96 13 T T 22 19 43.9
baz=189,slow=74,SNR=7.5
H10S1 ASCENSION HYDR 47.98 13 T T 22 19 44.2
baz=189,slow=74,SNR=10
PB01 IPOC Station P 48.46 298 *e*P **P** **21 26 30.5 +0.7**
comp=Z,128nm,1.0s
TSUM Tsumeb 48.53 57 *e*P **P** **21 26 29.9 -0.4**
comp=Z,101nm,1.4s
TSUM LR LR
comp=Z,462nm,22.0s
SIV San Ignacio 48.99 310 LR LR 21 46 09.9
comp=Z,222nm,21.3s,baz=186,slow=35
H10N1 ASCENSION HYDR 49.08 13 T T 22 20 54.7
H10N3 ASCENSION HYDR 49.08 13 T T 22 21 00.3
baz=264,slow=74,SNR=5.2
H10N2 ASCENSION HYDR 49.09 13 T T 22 21 08.0
baz=190,slow=74,SNR=7.9
RCBR Riachuelo 51.28 345 *e*P **P** **21 26 50.3 -0.8**
comp=Z,28nm,1.3s
RCBR LR LR
comp=Z,394nm,19.0s
LPAZ La Paz 51.89 302 P **P** **21 26 57.7 +1.3**
comp=Z,23nm,0.8s,baz=144,slow=5.9,SNR=53
LPAZ LR LR 21 51 48.9
comp=Z,116nm,18.2s,baz=152,slow=39
LPAZ La Paz 51.89 302 *e*P **P** **21 26 57.5 +1.1**
LPAZ pmax pmax
comp=Z,32nm,0.8s
LPAZ La Paz 51.89 302 *e*P **P** **21 26 57.5 +1.1**
comp=Z,32nm,0.8s
CASY Casey 53.01 159 *e*P **P** **21 27 03.8 +0.4**
comp=Z,25nm,0.9s
SAML Samuel 56.20 312 *e*P **P** **21 27 27.4 +0.3**
comp=Z,20nm,0.8s
SAML LR LR
comp=Z,342nm,19.0s
LSZ Lusaka 57.07 66 *e*P **P** **21 27 32.3 -1.2**
LSZ pmax pmax
comp=Z,23nm,1.1s
LSZ MLR MLR
comp=Z,414nm,19.0s
LSZ Lusaka 57.07 66 *e*P **P** **21 27 32.2 -1.2**
comp=Z,23nm,1.1s
LSZ LR LR
comp=Z,414nm,19.0s
NNA Nana 59.81 296 *e*P **P** **21 27 53.3 +0.8**
NNA Nana 59.81 296 *e*P **P** **21 27 53.4 +0.8**
comp=Z,142nm,1.0s
PTGA Pitinga 62.46 319 P **P** **21 28 10.4 0.0**
comp=Z,5.4nm,0.6s,baz=152,slow=11
PTGA Pitinga 62.46 319 *e*P **P** **21 28 10.7 +0.3**
comp=Z,38nm,1.6s
PTGA LR LR
comp=Z,35µm,22.0s
ABPO Ambohimpanom 64.20 86 PFAKE 21 28 30.0 +7.9
ABPO LR LR
comp=Z,219nm,20.0s
LIC Lamto 64.43 21 *e*P **P** **21 28 22.7 -0.6**
comp=Z,54nm,0.7s
KIC Kosan Boka 64.62 22 *e*P **P** **21 28 23.8 -0.8**
comp=Z,259nm,1.2s
ATAH Atahualpa 64.75 297 P **P** **21 28 28.2 +2.2**
comp=Z,10nm,0.8s,baz=180,slow=7.8,SNR=8.9
TIC Toumodi 64.84 21 *e*P **P** **21 28 25.2 -0.8**
DBIC Dimbokro 64.90 22 P **P** **21 28 25.7 -0.7**
comp=Z,36nm,0.6s,baz=166,slow=7.6,SNR=84
DBIC LR LR 21 50 45.0
comp=Z,337nm,18.4s,baz=173,slow=30
DBIC Dimbokro 64.90 22 *e*P **P** **21 28 25.6 -0.7**
DBIC pmax pmax
comp=Z,42nm,0.8s
DBIC Dimbokro 64.90 22 *e*P **P** **21 28 25.6 -0.7**
comp=Z,42nm,0.8s
FLOC Florencia 71.06 304 *e*P **P** **21 29 06.0 +0.8**
OTAV Otavalo 71.18 301 *e*P **P** **21 29 08.4 +2.0**
comp=Z,39nm,1.4s
OTAV LR LR
comp=Z,246nm,20.0s
OTAV Otavalo 71.18 301 *e*P **P** **21 29 08.4 +2.0**
TORD Torodi Ar. Bea 72.65 27 P **P** **21 29 13.9 -0.7**
comp=Z,70nm,0.6s,baz=201,slow=6.6,SNR=574
TORD LR LR 21 54 53.8
comp=Z,174nm,20.3s,baz=165,slow=31
CHIC Chingaza 72.90 308 *e*P **P** **21 29 17.9 +1.3**
ROSC El Rosal 73.34 307 P **P** **21 29 20.6 +1.3**
comp=Z,17nm,0.7s,baz=48,slow=22,SNR=7.7
ROSC El Rosal 73.34 307 *e*P **P** **21 29 20.8 +1.6**
comp=Z,13nm,0.6s
GRGC Isla de Gorgon 73.47 303 *e*P **P** **21 29 17.1 -2.4**
TOLC Tolima 73.56 306 *e*P **P** **21 29 19.1 -1.3**
KMBO Kilima Mbogo 73.73 66 P **P** **21 29 24.2 +2.9**
comp=Z,1.7nm,0.7s,baz=176,slow=4.9,SNR=9.4
KMBO LR LR 22 00 06.9
comp=Z,332nm,18.2s,baz=80,slow=34
KMBO Kilima Mbogo 73.73 66 *e*P **P** **21 29 21.8 +0.4**
KMBO pmax pmax
comp=Z,18nm,1.5s
KMBO Kilima Mbogo 73.73 66 *e*P **P** **21 29 21.8 +0.4**
comp=Z,18nm,1.5s
MALC Bahia Malaga 73.97 304 *e*P **P** **21 29 21.8 -0.6**
NORC Norcasia 74.23 307 *e*P **P** **21 29 22.4 -1.6**
BARC Barichara 74.41 309 *e*P **P** **21 29 24.1 -1.2**
HELC Santa Helena 75.08 307 *e*P **P** **21 29 27.8 -1.6**
SDV Santo Domingo 75.40 312 P **P** **21 29 31.7 +0.8**
comp=Z,27nm,0.7s,baz=158,slow=4.6,SNR=44
SDV Santo Domingo 75.40 312 *e*P **P** **21 29 31.8 +0.8**
comp=Z,30nm,0.8s
SDV LR LR
comp=Z,358nm,19.0s
SDV Santo Domingo 75.40 312 *e*P **P** **21 29 31.1 +0.1**
MOTC Monteria, Cord 77.44 308 *e*P **P** **21 29 41.3 -0.9**
BCIP Isla Barro Col 79.66 304 PFAKE 21 30 10.0 +16
BCIP LR LR
comp=Z,103nm,19.0s
ANWB Willy Bob 80.21 324 PFAKE 21 30 10.0 +13
ANWB LR LR
comp=Z,1130µm,19.0s
SJG San Juan 82.11 320 PFAKE 21 30 20.0 +13
SJG LR LR
comp=Z,120nm,22.0s
TAM Tamanrasset 82.86 28 *e*P **P** **21 30 12.1 +0.7**
TAM MLR MLR
comp=Z,217nm,21.0s
TAM Tamanrasset 82.86 28 *e*P **P** **21 30 12.1 +0.7**
TAM LR LR
comp=Z,217nm,21.0s
JTS JuntasAbangare 83.05 300 P **P** **21 30 13.6 +1.2**
comp=Z,12nm,0.8s,baz=46,slow=3.3,SNR=8.2
JTS JuntasAbangare 83.05 300 *e*P **P** **21 30 14.3 +1.9**
JTS JuntasAbangare 83.05 300 *e*P **P** **21 30 14.3 +1.9**
GTBY Guantanamo Bay 87.18 313 PFAKE 21 30 40.0 +7.0
GTBY LR LR
comp=Z,244nm,19.0s
TBI Tubuai 88.04 229 *e*LR LR 21 58 40.0
comp=Z,631nm,30.5s,baz=155
STKA Stephens Creek 91.24 168 P **P** **21 30 52.0 -0.1**
comp=Z,6.4nm,0.9s,baz=120,slow=5.5,SNR=6.2
STKA LR LR 22 11 07.5
comp=Z,341nm,18.1s,baz=202,slow=35
STKA Stephens Creek 91.24 168 *e*P **P** **21 30 52.8 +0.6**
STKA Stephens Creek 91.24 168 *e*P **P** **21 30 52.8 +0.6**
RTC Rabat Centre 91.28 14 PFAKE 21 31 00.0 +8.1
RTC LR LR
comp=Z,2µm,19.0s
PPT2 Papeete2 93.19 231 *e*LR LR 22 01 00.6
comp=Z,1µm,28.5s
PPT Papeete 93.21 231 LR LR 22 03 34.4
comp=Z,248nm,21.6s,baz=189,slow=30
TEIG Tepich 93.22 302 P **P** **21 31 02.5 +1.3**
comp=Z,0.4nm,0.5s,baz=90,slow=24,SNR=5.4
CMIG Matias Romero 93.76 295 P **P** **21 31 04.3 +0.6**
comp=Z,1.4nm,0.3s,baz=167,slow=2.8,SNR=5.3
BBSR BB Station 94.85 327 PFAKE 21 31 20.0 +12
BBSR LR LR
comp=Z,372nm,21.0s
KEST Kesra 96.17 27 P **P** **21 31 14.9 +0.4**
comp=Z,4.5nm,0.8s,baz=241,slow=9.6,SNR=4.8
KEST LR LR 22 11 05.7
comp=Z,234nm,18.2s,baz=224,slow=33
ESDC Sonseca Array 97.29 16 P Pdif 21 31 20.0 +0.5
comp=Z,0.8nm,0.8s,baz=185,slow=5.5,SNR=6.2
ESDC LR LR 22 11 14.0
comp=Z,60nm,18.2s,baz=160,slow=33
ES19 SONSECA Array 97.32 16 *e*P Pdif 21 31 20.6 +0.9
ASAR Alice Springs 98.13 160 P Pdif 21 31 23.0 -0.9
comp=Z,1.1nm,0.5s,baz=185,slow=4.4,SNR=18
ASAR PP **PP** **21 35 21.2 -1.0**
comp=Z,1.2nm,0.9s,baz=193,slow=6.8,SNR=5.5
ASAR PKKPbc **PKKPdf** **21 47 55.0 +0.3**
comp=Z,0.8nm,0.6s,baz=9.9,slow=2.5,SNR=10
ASAR LR LR 22 13 50.8
comp=Z,85nm,19.1s,baz=188,slow=34
AS01 Alice Springs 98.14 160 *e*P **P** **21 31 21.9 -2.0**
RAYN Ar Rayn 98.89 61 PFAKE 21 31 40.0 +13
RAYN LR LR
comp=Z,150nm,20.0s
CLTB Caltabellotta 98.93 29 PFAKE 21 31 40.0 +13
CLTB LR LR
comp=Z,87nm,19.0s
VSL Villasalto 99.75 26 PFAKE 21 31 40.0 +10
VSL LR LR
comp=Z,262nm,20.0s
CEL Celeste 100.31 31 PFAKE 21 31 40.0 +7.0
CEL LR LR
comp=Z,104nm,21.0s
TIP Timpagrande 101.41 31 PFAKE 21 31 50.0 +12
TIP LR LR
comp=Z,162nm,19.0s
WRA Warramunga Arr 101.84 160 P **Pdif** **21 31 41.0 +0.6**
comp=Z,0.5nm,0.5s,baz=194,slow=4.2,SNR=6.0
WRA Warramunga Arr 101.84 160 P **Pdif** **21 31 41.0 +0.6**
CUC Castrocucco 101.90 30 PFAKE 21 31 50.0 +10
CUC LR LR
comp=Z,77nm,19.0s
CSS Mathiatis 103.33 46 PFAKE 21 32 00.0 +14
CSS LR LR
comp=Z,44nm,21.0s
CTAO Charters Tower 103.38 171 PFAKE 21 32 00.0 +13
CTAO LR LR
comp=Z,223nm,19.0s
CBN Corbin Frederi 104.39 319 PFAKE 21 32 00.0 +8.9
CBN LR LR
comp=Z,291nm,20.0s
VLC Villacollemand 104.40 25 PFAKE 21 32 00.0 +9.0
VLC LR LR
comp=Z,307nm,22.0s
BNI Bardonecchia 104.42 22 PFAKE 21 32 00.0 +8.8
BNI LR LR
comp=Z,147nm,19.0s
ISP Isparta 104.76 42 PFAKE 21 32 00.0 +7.2
ISP LR LR
comp=Z,119nm,20.0s
JCT Junction City 107.39 299 PFAKE 21 36 30.0
JCT LR LR
comp=Z,389nm,19.0s
ANTO Ankara 107.40 43 PFAKE 21 36 20.0
ANTO LR LR
comp=Z,96nm,19.0s
TXAR Lajitas Array 108.36 295 PKKP **PKKPdf** **21 47 41.7 +3.3**
comp=Z,0.5nm,0.9s,baz=318,slow=1.7,SNR=3.4
NCB Newcomb 108.45 324 PFAKE 21 36 30.0
NCB LR LR
comp=Z,650nm,20.0s
VYHS Vyhne 110.58 29 *e*P **Pdif** **21 32 18.6 +0.3**
VYHS Vyhne 110.58 29 *e*PDIFF **Pdif** **21 32 18.6 +0.3**
CLL Collm 111.72 24 *e*SKSac **SKSac** **21 43 06.0 +7.2**
CLL *e*PS PS 21 46 36.0 +0.4
CLL *e*PPS PPS 21 47 48.0
CLL *e*SS **SS** **21 52 42.0 +4.6**
CLL Lm MLR 22 17 00.0
comp=Z,100nm,19.3s
FUNA Funafuti 112.41 205 PFAKE 21 36 30.0
FUNA LR LR
comp=Z,6µm,20.0s
GNI Garni 112.47 51 PFAKE 21 36 30.0
GNI LR LR
comp=Z,209nm,20.0s
KULM Kulim 113.19 117 PFAKE 21 36 40.0
KULM LR LR
comp=Z,243nm,20.0s
SCIA State Center 113.80 310 PFAKE 21 36 40.0
SCIA LR LR
comp=Z,627nm,20.0s
PMG Port Moresby 114.03 171 PFAKE 21 36 40.0 +14
PMG LR LR
comp=Z,208nm,19.0s
XMAS Kiritimati 114.12 233 PFAKE 21 36 40.0 +14
XMAS LR LR
comp=Z,3.0nm,22.0s
CBKS Cedar Bluff 114.16 304 PFAKE 21 36 40.0 +14
CBKS LR LR
comp=Z,230nm,21.0s
ANMO Albuquerque 114.28 297⇑ *i*PKIKP PKPdf 21 36 26.2 +0.1
HNR Honiara 114.28 185 PFAKE 21 36 40.0 +13
HNR LR LR
comp=Z,610nm,20.0s
KSM Kuching 114.32 129 PFAKE 21 36 40.0 +13
KSM LR LR
comp=Z,159nm,21.0s
KBZ Khabaz 114.65 47 PKP PKPdf 21 36 25.5 -0.7
comp=Z,1.1nm,0.8s,baz=168,slow=3.6,SNR=3.8
KIV Kislovodsk 114.75 47 *i*PKIKP PKPdf 21 36 26.9 +0.3
KIV pmax pmax
comp=Z,3.0nm,0.9s
KIV Kislovodsk 114.75 47 PFAKE 21 36 40.0 +13
KIV LR LR
comp=Z,157nm,19.0s
KIEV Kiev 115.59 35⇑ *i*PKIKP **PKPdf** **21 36 27.2 -0.6**
KIEV Kiev 115.59 35 PFAKE 21 36 40.0 +12
KIEV LR LR
comp=Z,106nm,19.0s
AKASG Malin Array Be 115.60 35 PKP **PKPdf** **21 36 27.4 -0.5**
comp=Z,2.5nm,0.8s,baz=235,slow=2.1,SNR=9.5
ECSD EROS Data Cent 116.73 309 PFAKE 21 36 40.0 +10
ECSD LR LR
comp=Z,214nm,19.0s
OGNE Ogallala 116.92 304 PFAKE 21 36 40.0 +9.1
OGNE LR LR
comp=Z,263nm,20.0s
MVCO Mesa Verde 117.08 297 PFAKE 21 36 40.0 +8.5
MVCO LR LR
comp=Z,319nm,20.0s
WUAZ Wupatki 117.20 294 P **PKPdf** **21 36 32.4 +0.7**
baz=141
E36A McGregor 117.59 313 P **PKPdf** **21 36 31.2 -0.7**
baz=144
PDMCI Parker Dam,Lak 117.68 291 P **PKPdf** **21 36 32.9 +0.5**
baz=141
ISCO Idaho Springs 117.70 301 P **PKPdf** **21 36 33.2 +0.5**
baz=142
D37A Cotton 117.77 314 P **PKPdf** **21 36 31.6 -0.6**
baz=144
BC3 Big Chuckawall 117.86 289 P **PKPdf** **21 36 33.3 +0.3**
baz=141
IRM Iron Mountain 118.09 290 P **PKPdf** **21 36 34.0 +0.7**
baz=141
PFO Pinyon Flats O 118.36 289 P **PKPdf** **21 36 35.3 +1.4**
baz=141
D35A Remer 118.36 313 P **PKPdf** **21 36 32.5 -0.8**
baz=144
BELC Belle Mtn. Jos 118.41 289 P **PKPdf** **21 36 34.8 +0.8**
baz=141
GMRC Granite Mounta 118.84 290 P **PKPdf** **21 36 35.6 +0.8**
baz=141
B35A Bob, Littlefor 119.26 314 P **PKPdf** **21 36 34.2 -0.8**
baz=143
H28A Mission Ridge 119.41 307 P **PKPdf** **21 36 35.9 +0.4**
baz=142
BFSC Mount Baldy Ra 119.47 288 P **PKPdf** **21 36 36.3 +0.2**
baz=140
B34A Aery, Baudette 119.73 314 P **PKPdf** **21 36 35.0 -0.9**
baz=143
GSC Goldstone, Bar 119.84 290 P **PKPdf** **21 36 37.4 +0.8**
baz=140
EDW2 Edwards Air Fo 120.14 288 P **PKPdf** **21 36 37.8 +0.6**
baz=140
A33A Warroad 120.39 314 P **PKPdf** **21 36 36.6 -0.5**
baz=142
NB2 NORSAR Subarra 120.43 19 PKPdf **PKPdf** **21 36 36.6 -0.3**
comp=Z,8.6nm,1.4s,baz=202,slow=1.9
NB2 NORSAR Subarra 120.43 19 PKPdf **PKPdf** **21 36 36.6 -0.3**
baz=202,slow=1.9
NOA NORSAR Array B 120.43 19 PKP **PKPdf** **21 36 36.7 -0.3**
comp=Z,2.4nm,0.8s,baz=197,slow=1.8,SNR=7.9
LPSR Galich'ya Gora 120.44 39 *e*PKIKP **PKPdf** **21 36 36.2 -0.9**
LPSR pmax pmax
comp=Z,10.0nm,1.4s
MPMC Manual Prospec 120.77 290 P **PKPdf** **21 36 39.4 +0.8**
baz=140
TPNV Topopah Spring 120.81 291 P **PKPdf** **21 36 39.5 +0.9**
baz=140
A32A Rocking H Ranc 120.82 313 P **PKPdf** **21 36 37.4 -0.6**
baz=142
ISA Isabella, Lake 120.99 289 P **PKPdf** **21 36 39.9 +1.1**
baz=140
CWC Cottonwood Cre 121.37 290 P **PKPdf** **21 36 39.5 -0.2**
baz=140
DUG Dugway, Tooele 121.52 296 P **PKPdf** **21 36 40.5 +0.7**
baz=139
DUG Dugway, Tooele 121.52 296 *e*PKIKP **PKPdf** **21 36 40.3 +0.5**
DUG MLR MLR
comp=Z,336nm,19.0s
DUG Dugway, Tooele 121.52 296 *e*PKPdf **PKPdf** **21 36 40.3 +0.5**
DUG LR LR
comp=Z,336nm,19.0s
R11A Troy Canyon, C 121.53 293 P **PKPdf** **21 36 40.7 +0.7**
baz=139
A30A Hoffart Farm, 121.58 312 P **PKPdf** **21 36 39.1 -0.4**
baz=141
VSU Vasula 121.60 29‖ *i*PKIKP **PKPdf** **21 36 38.6 -0.5**
ULM Lac du Bonnet 121.62 314 PKP **PKPdf** **21 36 37.9 -1.6**
comp=Z,6.3nm,0.8s,baz=100,slow=0.8,SNR=15
B29A Wagenman Farm, 121.64 311 P **PKPdf** **21 36 39.4 -0.2**
baz=141
OBN Obninsk 121.70 36⇑ *i*PKIKP **PKPdf** **21 36 39.3 -0.1**
OBN *e*SS SS 21 54 55.7 +8.3
OBN pmax pmax
comp=Z,21nm,1.3s
BW06 Boulder Array 121.88 300 P **PKPdf** **21 36 39.7 -0.9**
baz=139
PDAR Pinedale Array 121.88 300 PKP **PKPdf** **21 36 39.7 -0.9**
comp=Z,1.9nm,0.7s,baz=135,slow=4.9,SNR=22
HWUT Hardware Ranch 121.97 298 *e*PKPdf **PKPdf** **21 36 40.9 +0.2**
PYUN Piuthan 122.42 87 *e*P **PKPdf** **21 36 41.2 -0.8**
comp=Z,54nm,1.0s
KOLN Koldanda 122.50 88 *e*P **PKPdf** **21 36 41.4 -0.8**
comp=Z,53nm,0.9s
AHID Auburn Hatcher 122.62 299 PFAKE 21 36 50.0 +8.0
AHID LR LR
comp=Z,403nm,19.0s
NVAR Mina Array Bea 122.99 291 PKP **PKPdf** **21 36 44.2 +1.4**
comp=Z,3.0nm,0.7s,baz=142,slow=3.2,SNR=20
SUKH Sukhothai 123.02 109 P **PKPdf** **21 36 43.5 +0.3**
comp=Z,4.5nm,0.9s
LOHW Long Hollow 123.02 300 *e*PKPdf **PKPdf** **21 36 43.0 +0.3**
MOOW Moose Ponds 123.19 300 *e*PKPdf **PKPdf** **21 36 43.3 +0.3**
DMN Daman 123.21 89 *e*P **PKPdf** **21 36 43.1 -0.5**
comp=Z,38nm,0.9s
GKN Gorkha 123.26 89 *e*P **PKPdf** **21 36 42.6 -1.0**
LAO LASA Array 123.28 305 P **PKPdf** **21 36 43.0 +0.1**
baz=139
PKIN Phulchoki 123.35 90 *e*P **PKPdf** **21 36 43.1 -0.8**
comp=Z,39nm,1.2s

KKN Kakani 123.45 89 *e*P **PKPdf 21 36 43.4 -0.6**
comp=Z,25nm,0.8s
CMAR Chiang Mai Arr 123.46 108 PKP **PKPdf 21 36 44.0 -0.1**
comp=Z,6.2nm,0.8s,baz=234,slow=3.7,SNR=49
CMAR PKKPbc **PKKPab 21 46 34.6 +1.6**
comp=Z,0.2nm,0.3s,baz=19,slow=3.5,SNR=4.9
CMAR Chiang Mai Arr 123.46 108 PKIKP **PKPdf 21 36 44.0 -0.1**
RLMT Red Lodge 123.51 302 P **PKPdf 21 36 43.6 0.0**
baz=138
RAMN Ramite 123.53 91 *e*P **PKPdf 21 36 44.1 -0.2**
LKWY Lake 123.63 301 PFAKE 21 37 00.0 +16
LKWY LR LR
comp=Z,426nm,21.0s
CHTO Chiang Mai 123.76 108 P **PKPdf 21 36 44.5 -0.1**
comp=Z,40nm,1.6s
CHTO Chiang Mai 123.76 108 *e*PKIKP **PKPdf 21 36 44.3 -0.3**
CHTO MLR MLR
comp=Z,117nm,20.0s
CHTO Chiang Mai 123.76 108 *e*PKPdf **PKPdf 21 36 44.3 -0.3**
CHTO LR LR
comp=Z,117nm,20.0s
CMMT Chiang Mai 123.76 108 P **PKPdf 21 36 44.5 -0.1**
comp=Z,8.9nm,1.6s
GUN Gumba 123.88 90 *e*P **PKPdf 21 36 44.3 -0.7**
comp=Z,67nm,1.1s
ODAN Odare 123.90 92 *e*P **PKPdf 21 36 44.7 -0.3**
comp=Z,71nm,1.2s
FINES FINESS Array B 124.00 27 PKP **PKPdf 21 36 43.4 -0.3**
comp=Z,8.7nm,0.8s,baz=118,slow=2.8,SNR=32
PHRA Phrae 124.17 109 P **PKPdf 21 36 45.2 -0.2**
comp=Z,895nm,0.9s
TAPN Taplejung 124.46 92 *e*P **PKPdf 21 36 45.7 -0.4**
comp=Z,36nm,1.2s
FRB Frobisher Bay 124.57 338 PKP **PKPdf 21 36 44.3 -0.4**
comp=Z,8.0nm,0.8s,baz=75,slow=3.2,SNR=11
HLID Hailey 124.83 298 P **PKPdf 21 36 46.7 +0.6**
baz=137
BOZ Bozeman (W) 125.02 301 P **PKPdf 21 36 46.7 +0.3**
baz=137
DAV Davao City (W) 125.38 142 PFAKE 21 37 00.0 +12
DAV LR LR
comp=Z,774nm,20.0s
EGMT Eagleton 125.89 304 P **PKPdf 21 36 48.1 +0.3**
baz=137
EGMT Eagleton 125.89 304 *e*PKPdf **PKPdf 21 36 48.5 +0.6**
WVOR Wild Horse Val 126.12 294 *e*PKIKP **PKPdf 21 36 49.5 +0.9**
WVOR Wild Horse Val 126.12 294 *e*PKPdf **PKPdf 21 36 49.5 +0.9**
O03D Paynes Creek 126.19 290 P **PKPdf 21 36 48.9 +0.2**
baz=137
AKTO Aktyubinsk 126.31 52 PKP **PKPdf 21 36 48.3 -0.2**
comp=Z,6.4nm,1.0s,baz=189,slow=3.1,SNR=13
MOD Modoc Plateau 126.58 292 *e*PKPdf **PKPdf 21 36 50.7 +1.2**
MSO Missoula 126.98 301 P **PKPdf 21 36 50.5 +0.5**
baz=136
N02D Trinity Center 127.16 290 P **PKPdf 21 36 51.4 +0.9**
baz=136
KSH Kashi 127.17 73 PKP **PKPdf 21 36 50.1 -0.6**
KSH PP **PP 21 38 53.3 +2.6**
KSH PKS **PKSdf 21 40 24.8 -2.5**
KSH SKS **SKSdf 21 43 56.9 -2.7**
KSH SS **SS 21 55 56.2 -0.9**
KSH AMB AMB
comp=Z,89nm,4.5s
KSH LR LR
comp=Z,270nm,10.1s
KSH LR LR
comp=Z,200nm,7.3s
KSH LR LR
comp=Z,230nm,5.6s
BMO Blue Mountains 127.20 297 *e*PKIKP **PKPdf 21 36 50.9 +0.4**
BMO MLR MLR
comp=Z,359nm,22.0s
BMO Blue Mountains 127.20 297 *e*PKPdf **PKPdf 21 36 50.9 +0.4**
BMO LR LR
comp=Z,359nm,22.0s
KLMR Klimovskoe 127.25 34 *e*PKIKP **PKPdf 21 36 47.7 -2.2**
KLMR *e* 21 36 58.9
KLMR *e* 21 38 48.4
KLMR pmax pmax
comp=Z,42nm,1.2s
M04C Macdoel 127.29 291 P **PKPdf 21 36 51.8 +1.0**
baz=136
M02C Callahan 127.54 290 P **PKPdf 21 36 52.5 +1.2**
baz=136
YBH Yreka Blue Hor 127.71 291 PKP **PKPdf 21 36 51.8 +0.2**
comp=Z,4.8nm,1.0s,baz=103,slow=5.2,SNR=5.3
J05D Fort Rock, OR 128.06 293 P **PKPdf 21 36 53.5 +1.2**
baz=136
LSA Lhasa 128.19 93 *e*PKIKP **PKPdf 21 36 53.9 +0.5**
LSA MLR MLR
comp=Z,139nm,20.0s
LSA Lhasa 128.19 93 *e*PKPdf **PKPdf 21 36 53.9 +0.5**
LSA LR LR
comp=Z,139nm,20.0s
EKS2 Erkin-Say 128.28 68 PFAKE 21 37 00.0 +7.3
EKS2 LR LR
comp=Z,145nm,20.0s
AAK Ala-Archa 128.63 69 PKP **PKPdf 21 36 53.2 -0.2**
comp=Z,9.3nm,1.0s,baz=200,slow=2.8,SNR=24
AAK Ala-Archa 128.63 69 *d i* PKIKP **PKPdf 21 36 53.4 0.0**
AAK pmax pmax
comp=Z,20nm,1.2s
AAK Ala-Archa 128.63 69 PKP **PKPdf 21 36 53.2 -0.2**
AAK LR LR
comp=Z,148nm,21.0s
FRU Bishkek 128.84 69 *e*PKIKP **PKPdf 21 36 53.0 -0.6**
FRU pmax pmax
comp=Z,58nm,2.0s
I04A Tendick Farm, 129.02 293 P **PKPdf 21 36 55.3 +1.3**
baz=135
TMCR Tamitsa 129.39 30 *e*PKIKP **PKPdf 21 36 53.1 -0.8**
TMCR pmax pmax
comp=Z,70nm,1.3s
TKM2 Tokmak 2 129.41 69 PFAKE 21 37 10.0 +15
TKM2 LR LR
comp=Z,152nm,21.0s
QIZ Qiongzhong 129.50 119 PKP **PKPdf 21 36 54.8 -0.8**
QIZ PP **PP 21 39 07.6 +2.1**
QIZ SS SS 21 56 27.7 +2.5
QIZ LR LR
comp=Z,68nm,18.4s
QIZ LR LR
comp=Z,220nm,19.4s
QIZ Qiongzhong 129.50 119 PFAKE 21 37 10.0 +14
QIZ LR LR
comp=Z,289nm,20.0s
NEW Newport 129.52 300 PKP **PKPdf 21 36 54.2 -0.5**
comp=Z,1.9nm,0.8s,baz=149,slow=6.0,SNR=4.2
ARCES ARCESS Array B 130.72 21 PKP **PKPdf 21 36 55.9 -0.5**
comp=Z,8.0nm,0.8s,baz=200,slow=2.2,SNR=22
ARCES PP **PP 21 39 11.1 -2.1**
comp=Z,12nm,1.0s,baz=210,slow=6.8,SNR=11
ARU Arti 130.80 47 PKP **PKPdf 21 36 56.5 -0.4**
comp=Z,6.5nm,0.9s,baz=244,slow=1.3,SNR=24
ARU Arti 130.80 47 *i* PKIKP **PKPdf 21 36 56.7 -0.1**
ARU 21 44 04.6
ARU Arti 130.80 47 PKP **PKPdf 21 36 56.5 -0.4**
ARU *e*PKPdf **PKiKP 21 36 57.0 -0.7**
ARU LR LR
comp=Z,126nm,20.0s
KMI Kunming 130.92 107 PKP **PKPdf 21 37 01.5 +3.1**
KMI SS SS 21 56 50.7 +7.3
KMI LR LR
comp=Z,61nm,22.2s
LVZ Lovozero 131.41 26 PFAKE 21 37 10.0 +12
LVZ LR LR
comp=Z,121nm,19.0s
SVE Sverdlovsk 131.91 47 ⇓ *i* PKIKP **PKPdf 21 36 59.5 +0.6**
SVE pmax pmax
comp=Z,42nm,1.5s
B05A Bryant 131.95 297 P **PKPdf 21 37 00.4 +1.1**
baz=132
SOKR Solikamsk 132.26 43 *c i* PKIKP **PKPdf 21 36 58.6 -0.8**
SOKR pmax pmax
comp=Z,13nm,0.8s
BRVK Borovoye 133.64 56 *d i* PKIKP **PKPdf 21 37 02.0 -0.3**
BRVK pmax pmax
comp=Z,17nm,1.7s
BRVK Borovoye 133.64 56 *e*PKPdf **PKPdf 21 37 02.4 +0.1**
BRVK LR LR
comp=Z,194nm,21.0s
BVAR Borovoye Array 133.67 56 PKP **PKPdf 21 37 02.3 -0.1**
comp=Z,7.7nm,0.9s,baz=258,slow=1.4,SNR=24
GYA Guiyang 134.07 110 Pdif **Pdif 21 34 04.2 +0.7**
GYA PKP **PKiKP 21 37 05.0 -0.5**
GYA PP **PP 21 39 40.4 +5.2**
GYA AMB AMB
comp=Z,150nm,8.0s
MKAR Makanchi Array 135.53 70 PKhKP PKPpre 21 36 53.5
comp=Z,0.9nm,0.9s,baz=250,slow=6.3,SNR=4.5
MKAR PP PP 21 39 57.1 +13
comp=Z,1.0nm,0.9s,baz=249,slow=6.4,SNR=5.0
CD2 Chengdu 136.05 103 PKP **PKPdf 21 37 07.7 +0.1**
CD2 sPKP 21 37 15.9
CD2 PP **PP 21 39 47.6 -0.1**
CD2 SKS **SKSdf 21 44 17.6 +1.7**
CD2 SKKS **SKKSac 21 46 40.6 +1.0**
CD2 SS **SS 21 57 48.2 +3.1**
CD2 AMB AMB
comp=Z,90nm,4.8s
CD2 LR LR
comp=Z,170nm,5.4s
CD2 LR LR
comp=Z,170nm,7.2s
KURK Kurchatov 136.16 63 *e*PKIKP **PKPdf 21 37 07.5 +0.4**
KURK MLR MLR
comp=Z,358nm,22.0s
KURK Kurchatov 136.16 63 *e*PKPdf **PKPdf 21 37 07.5 +0.4**
KURK LR LR
comp=Z,358nm,22.0s
WMQ Urumqi 136.46 77 *e*PKP **PKPdf 21 37 08.2 +0.2**
WMQ PP **PP 21 39 53.7 +3.4**
WMQ PKS **PKSdf 21 40 41.7 -2.4**
SPITS Spitsbergen Ar 136.62 11 PKP **PKPdf 21 37 07.3 +0.1**
comp=Z,5.1nm,0.7s,baz=156,slow=4.6,SNR=13
YKA Yellowknife Ar 137.51 317 PKhKP PKPpre 21 36 58.0
comp=Z,0.7nm,0.9s,baz=111,slow=3.7,SNR=6.6
YKA PKP **PKiKP 21 37 09.0 -2.1**
comp=Z,3.0nm,0.5s,baz=125,slow=2.1,SNR=40
YKA PP **PP 21 39 53.7 -2.7**
comp=Z,1.5nm,0.9s,baz=124,slow=6.8,SNR=9.1
ENH Enshi 138.60 109 PFAKE 21 37 20.0 +7.7
ENH LR LR
comp=Z,94nm,19.0s
RES Resolute Bay 138.79 338 PKhKP PKPpre 21 37 01.9
comp=Z,1.6nm,0.8s,baz=157,slow=7.5,SNR=8.1
RES PKP **PKPdf 21 37 10.6 -0.7**
comp=Z,12nm,1.0s,baz=121,slow=2.1,SNR=16
YHNB Yeheng 139.73 128 PFAKE 21 37 30.0 +15
YHNB LR LR
comp=Z,178nm,21.0s
LZH Lanzhou 140.00 98 *e*PKP **PKPdf 21 37 17.5 +2.6**
NVS Novosibirsk 140.85 61 *e*PKHKP PKPpre 21 37 09.2
NVS *e* 21 37 16.1
NVS *e* 21 40 17.0
NVS pmax pmax
comp=Z,8.0nm,1.0s
NVS pmax pmax
comp=Z,3.0nm,0.9s
ZALV Zalesovo Beam 141.14 63 PKhKP PKPpre 21 37 08.4
comp=Z,2.5nm,0.5s,baz=220,slow=4.2,SNR=14
XAN Xi'an 141.23 105 PKP **PKPdf 21 37 15.3 -1.7**
DLBC Dease Lake 141.81 305 PKhKP PKPpre 21 37 12.9
comp=E,1.6nm,0.7s,baz=286,slow=14,SNR=3.1
SKAG Skagway 144.72 304 *e*PKPdf **PKPdf 21 37 22.6 +0.4**
NJ2 Nanjing 144.79 118 *e*PKP **PKPdf 21 37 22.4 -0.9**
TIY Taiyuan 145.87 105 *e*PKPbc **PKPab 21 37 25.7 -0.5**
KRAR Krasnoyarsk 146.18 64 ⇑ *e*PKIKP **PKPbc 21 37 24.1 -1.9**
BTO Baotou 146.62 99 *e*PKPbc **PKPab 21 37 27.2 -1.9**
INK Inuvik 147.09 320 PKPbc **PKPab 21 37 28.2 -1.7**
comp=E,24nm,0.7s,baz=86,slow=3.1,SNR=104
INK Inuvik 147.09 320 *e*PKIKP **PKPdf 21 37 25.6 -0.4**
INK 21 37 28.3
INK Inuvik 147.09 320 *e*PKPdf **PKPdf 21 37 25.6 -0.4**
INK PKPbc **PKPab 21 37 28.2 -1.7**
INK *e*PKPbc **PKPab 21 37 28.3 -1.7**
TIA Tai'an 147.22 112 PKPbc **PKPab 21 37 29.4 -2.0**
HHC Hu-ho-hao-te 147.63 100 *e*PKPbc **PKPbc 21 37 30.4 -0.4**
HHC PP PP 21 41 05.0 +6.9
HHC SS SS 22 00 05.7 +5.9
HHC AMB AMB
comp=E,40nm,5.0s
HHC LR LR
comp=E,150nm,16.2s
HHC LR LR
comp=E,160nm,14.9s
HHC LR LR
comp=E,120nm,14.9s
DAWY Dawson 148.22 311 *e*PKPbc **PKPbc 21 37 31.9 +0.4**
MOY Mondy 148.30 75 *e*PKIKP **PKPdf 21 37 28.4 -0.3**
MOY pmax pmax
comp=Z,94nm,2.1s
NRIK Noril'sk 148.32 39 PKPbc **PKPbc 21 37 31.8 +0.2**
comp=Z,27nm,0.9s,baz=244,slow=0.2,SNR=42
ZAK Zakamensk 148.88 79 *e*PKIKP **PKPdf 21 37 28.7 -1.0**
ZAK pmax pmax
comp=Z,37nm,1.5s
EGAK Eagle 149.15 312 *e*PKPbc **PKPbc 21 37 33.8 0.0**
SONM Songino Array 149.19 85 PKPbc **PKPbc 21 37 34.1 -0.5**
comp=Z,22nm,0.8s,baz=213,slow=2.1,SNR=94
BJT Baijiatuan 149.54 106 *e*PKP2 **PKPbc 21 37 35.6 +0.1**
BJT MLR MLR
comp=Z,170nm,20.0s
BJT Baijiatuan 149.54 106 *e*PKPbc **PKPbc 21 37 35.6 +0.1**
BJT LR LR
comp=Z,170nm,20.0s
BJI Beijing 149.56 106 PKPbc **PKPdf 21 37 30.7 -0.3**
BMRM Bremner River 149.57 304 *e*PKPbc **PKPbc 21 37 35.9 +0.9**
ULN Ulaanbaatar 149.57 85 *d i* PKP2 **PKPbc 21 37 34.5 -1.1**
ULN Ulaanbaatar 149.57 85 *e*PKPbc **PKPbc 21 37 35.2 -0.3**
ULN LR LR
comp=E,84nm,19.0s
TLY Talaya 149.74 77 *e*PKHKP PKPpre 21 37 30.8
TLY pmax pmax
comp=Z,37nm,0.9s
TLY Talaya 149.74 77 *e*PKPdf **PKPdf 21 37 31.6 +0.7**
TLY *e*PKPbc **PKiKP 21 37 35.6 -1.0**
TLY LR LR
comp=Z,99nm,20.0s
DIV Divide 150.16 304 *e*PKPbc **PKPbc 21 37 37.6 +1.1**
IRK Irkutsk 150.35 76 *e*PKIKP **PKPbc 21 37 36.0 -1.1**
IRK pmax pmax
comp=Z,94nm,1.1s
JNU Nakatsue 151.12 133 PKPbc **PKPbc 21 37 39.3 -0.3**
comp=Z,16nm,0.7s,baz=340,slow=1.5,SNR=12
ILAR Eielson Array 151.54 311 PKPbc **PKPbc 21 37 40.1 +0.6**
comp=Z,33nm,0.9s,baz=119,slow=1.6,SNR=119
ILAR SKPbc 21 41 17.9
comp=Z,0.5nm,0.8s,baz=129,slow=2.9,SNR=4.0
COLA College 151.97 311 *d i* PKIKP **PKPbc 21 37 40.0 -0.4**
COLA College 151.97 311 *e*PKPbc **PKPbc 21 37 40.5 0.0**
KDAK Kodiak Island 152.39 295 *i* PKIKP **PKPbc 21 37 42.0 +0.4**
OHAK Old Harbor 152.56 293 *e*PKPdf **PKPdf 21 37 37.2 +2.2**
OHAK *e*PKPbc **PKiKP 21 37 42.5 +0.3**
OHAK *e*PKPab **PKPab 21 37 53.9 +1.3**
TRF Thorofare Moun 152.77 307 *e*PKPbc **PKPbc 21 37 42.8 +0.3**
COLD Coldfoot 153.18 316 *e*P **PKPdf 21 37 34.0 -1.6**
KSAR Wonju Array Be 153.48 124 PKIKP **PKPbc 21 37 44.6 -0.1**
KSAR Wonju Array Be 153.48 124 PKPbc **PKPbc 21 37 44.5 -0.1**
KSRS Korea Array 153.51 124 PKPbc **PKPbc 21 37 44.5 -0.2**
comp=Z,3.9nm,0.9s,baz=224,slow=1.3,SNR=7.3
MJAR Matsushiro Arr 156.91 142 PKPab **PKPab 21 38 11.4 -0.4**
comp=Z,3.4nm,0.7s,baz=177,slow=4.7,SNR=6.4
CN2 Changchun 157.11 111 *e*PKP **PKPdf 21 37 40.1 -1.6**
CN2 *ep*PKP pPKPdf 21 37 50.0 -2.6
CN2 *e*PP **PP 21 41 52.0 +0.2**
CN2 *e*SS SS 22 01 40.3 -3.3
CN2 LR LR
comp=Z,300nm,20.0s
CN2 LR LR
comp=Z,600nm,20.0s
CN2 LR LR
comp=Z,800nm,22.0s
HIA Hailar 157.39 93 PFAKE 21 37 50.0 +8.1
HIA LR LR
comp=Z,104nm,19.0s
BOD Bodaibo 157.62 69 *e*PKIKP **PKPdf 21 37 39.6 -2.3**
BOD pmax pmax
comp=Z,7.0nm,1.7s
USRK Ussuriysk Ar. 160.69 119 PKPab **PKPab 21 38 27.2 -0.8**
comp=Z,2.5nm,0.6s,baz=216,slow=7.8,SNR=9.8
TIXI Tiksi 161.05 26 PFAKE 21 38 00.0 +15
TIXI LR LR
comp=Z,152nm,20.0s
ERM Erimo 163.48 146 PFAKE 21 38 00.0 +11
ERM LR LR
comp=Z,134nm,19.0s
KLR Kul'dur 163.94 107 PKPab **PKPab 21 38 40.7 -1.5**
comp=Z,1.2nm,0.7s,baz=279,slow=4.9,SNR=4.4
BILL Bilibino 167.36 341 ⇑ PKIKP **PKPdf 21 37 50.0 -1.2**
BILL *i* 21 38 57.5
BILL pmax pmax
comp=Z,4.0nm,1.6s
BILL pmax pmax
comp=Z,17nm,1.8s
BILL Bilibino 167.36 341 PFAKE 21 38 00.0 +8.8
BILL LR LR
comp=Z,215nm,21.0s
SEY Seymchan 173.27 13 PKPab **PKPab 21 39 23.7 +0.7**
comp=Z,0.9nm,0.3s,baz=351,slow=3.2,SNR=10
MA2 Magadan 175.92 37 PKPab **PKPab 21 39 35.4 +0.5**
comp=Z,4.3nm,0.2s,baz=337,slow=3.4,SNR=8.5
MA2 Magadan 175.92 37 PFAKE 21 38 10.0 +14
MA2 LR LR
comp=Z,150nm,21.0s

JMA 01 21:19:42.4±0.2, 38.41N×144.24E, h29km, M3.5, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
OFUJ	**Ofunato**	**2.12**	**289**	P	Pn	21 20 17.2	+1.3
JIO	**Ouri**	**2.27**	**272**	P	Pn	21 20 19.1	+1.2
JIO				*e*S	Sn	21 20 45.9	+1.0
JTH	**Tanohata**	**2.40**	**310**	P	Pn	21 20 20.8	+1.1
JTH				*e*S	Sn	21 20 49.3	+1.2
JMK	**Ichinoseki**	**2.42**	**284**	P	Pn	21 20 21.6	+1.6
JMK				S	Sn	21 20 50.8	+2.1
JOM	**Ohasama**	**2.53**	**296**	P	Pn	21 20 23.5	+2.0
JOM				*e*S	Sn	21 20 53.5	+2.1
JMM	**Marumori**	**2.77**	**260**	P	Pn	21 20 25.8	+1.0
JMM				S	Sn	21 20 58.1	+0.8
JOU	**Okura**	**2.81**	**270**	P	Pn	21 20 27.1	+1.7
JOU				*e*S	Sn	21 21 00.2	+1.9
JANG	**Nango**	**2.88**	**314**	P	Pn	21 20 27.5	+1.1
JRG	**Rokugo**	**2.98**	**290**	P	Pn	21 20 30.0	+2.3
JRG				S	Sn	21 21 06.5	+4.0
JYK	**Kaneyama**	**3.08**	**281**	P	Pn	21 20 31.4	+2.3
JYK				*e*S	Sn	21 21 08.0	+3.1
JFT	**Otama**	**3.21**	**255**	P	Pn	21 20 33.0	+2.1
JFT				S	Sn	21 21 10.3	+2.1

IDC 01 21:37:52.4±3.6, 4.36S×151.79E, h0km, mb3.1/2, mb1 3.4/2, mb1mx3.1/40, mbtmp3.1/2, Error ellipse: s-maj=153.7km s-min=50.2km az=121.0, New Britain region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
WRA	**Warramunga Arr**	**23.00**	**226**	P	P	21 42 58.8	-0.4
	0.4nm,0.5s,baz=53,slow=10.0,SNR=2.6						
ASAR	**Alice Springs**	**25.81**	**220**	P	P	21 43 25.8	+0.2
	0.2nm,0.7s,baz=49,slow=9.9,SNR=1.3						
TORD	**Torodi Ar. Bea**	**149.21**	**288**	PKPbc	PKPbc	21 57 43.7	-0.5
	0.3nm,0.7s,baz=57,slow=4.0,SNR=3.1						

*IDC **01** 21:40:22.0±3.6, 36.56N×142.23E, h0km, mb3.2/2, mb1 3.4/3, mb1mx3.1/36, mbtmp3.1/3, ML2.9/1, Error ellipse: s-maj=88.7km s-min=40.0km az=50.0*
*ISCJB **01** 21:40:27.4±1.6, 36.03N±0.08×141.4E±0.1, h26km, mb3.3/2, Error ellipse: s-maj=13.7km s-min=10.2km az=154.2*
*JMA **01** 21:40:30.2±0.2, 36.01N×141.26E, h28km±2km, M3.0*

ISC 01 21:40:29.7±1.9, 36.06N±0.08×141.3E±0.1, h26km, n6, σ0s72/8, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CHOJ	**Chosi**	**0.48**	**223**	P	**Pb**	**21 40 39.5**	**-0.2**
CHOJ				S	**Sb**	**21 40 46.4**	**0.0**
JHO	**Hitachi**	**0.79**	**315**	S	**Sn**	**21 40 57.1**	**+1.0**
JYT	**Yasato**	**0.88**	**281**	P	**Pb**	**21 40 46.2**	**-0.2**
JYT				S	**Sn**	**21 40 58.9**	**+0.5**
MJAR	**Matsushiro Arr**	**2.52**	**282**	Pn	**Pb**	**21 41 13.9**	**-0.3**
	1.3nm,0.3s,baz=94,slow=9.1,SNR=6.4						
MKAR	**Makanchi Array**	**44.54**	**303**	P	**P**	**21 48 38.3**	**-0.9**
	0.1nm,0.4s,baz=88,slow=7.4,SNR=1.6						
WRA	**Warramunga Arr**	**56.08**	**188**	P	**P**	**21 50 07.3**	**+0.7**
	0.2nm,0.4s,baz=5.8,slow=7.6,SNR=1.5						

MAN 01 21:51:00, 18.20N×120.69E, h22km, mb4.2, ML3.1, MS2.8, 2C-1D, Luzon

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PIP	**Pasuquin**	**0.14**	**331**	⇑ *i* P	Pb	21 51 07.0	+1.6
PIP				*e*S	Sb	21 51 13.5	+4.5
SIPP	**Brgy, Tapao**	**0.35**	**219**	⇓ *i* P	Pn	21 51 13.5	+3.7
ABRA	**Dolores**	**0.55**	**178**	*e*P	Pb	21 51 11.2	+0.3
APYP	**Conner**	**0.62**	**122**	*e*P	Pn	21 51 13.8	+0.3
APYP				*e*S	Sn	21 51 23.8	+1.0
CAUP	**Cauayan**	**1.65**	**139**	*e*P	Pb	21 51 30.1	+0.4
BCPH	**Baguio City Da**	**1.81**	**183**	⇑ *i* P	Pb	21 51 31.5	-1.1
BCPH				*i* S	Sn	21 51 53.0	+0.6
BOLP	**Bolinao**	**1.95**	**203**	*e*P	Pn	21 51 32.5	+0.7
BALP	**Baler**	**2.58**	**161**	*e*P	Pn	21 51 40.6	+0.1

*IDC **01** 21:58:55.0±2.0, 38.96N×142.04E, h0km, mb3.9/11, mb1 4.1/12, mb1mx3.8/43, mbtmp3.9/12, ML3.5/1, MS2.9/10, Ms1 2.9/10, ms1mx2.8/48, Error ellipse: s-maj=51.4km s-min=24.1km az=157.0*
*ISCJB **01** 21:58:57.7±0.6, 38.61N±0.05×142.16E±0.07, h41km, mb4.0/17, MS2.9/3, Error ellipse: s-maj=9.4km s-min=5.0km az=136.8*
*JMA **01** 21:59:00.9±0.1, 38.64N×141.90E, h50km±1km, M3.9*
JMA Felt II J1.
*NEIC **01** 21:59:00.1±2.9, 38.92N×141.90E, h31km±21km, mb4.1/3, Error ellipse: s-maj=20.8km s-min=9.3km az=131.0*
*NIED **01** 21:59:00, 38.60N×141.90E, h50km, Mw4.2 Best double couple: M0 2.01000×10^15 NP1:φ=177.00000°, δ=36.00000°, λ=47.00000°. NP2:φ=46.00000°, δ=65.00000°, λ=116.00000°.*

ISC 01 21:58:59.6±0.8, 38.61N±0.06×142.02E±0.09, h41km, n52, σ0s94/42, mb4.0/17, MS2.8/3, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
OFUJ	**Ofunato**	**0.54**	**330**	P	**Pn**	**21 59 11.9**	**+0.9**
JIO	**Ouri**	**0.55**	**254**	P	**Pn**	**21 59 11.8**	**+0.7**
JIO				S	**Sn**	**21 59 19.2**	**0.0**
JMK	**Ichinoseki**	**0.71**	**299**	P	**Pn**	**21 59 13.8**	**+0.5**
JMK				S	**Sn**	**21 59 22.8**	**-0.3**
JOM	**Ohasama**	**1.03**	**327**	P	**Pn**	**21 59 18.3**	**+0.7**
JOU	**Okura**	**1.09**	**257**	P	**Pn**	**21 59 18.9**	**+0.4**
JOU				S	**Sn**	**21 59 32.2**	**-0.2**
JMM	**Marumori**	**1.22**	**233**	P	**Pn**	**21 59 20.5**	**+0.3**
JMM				S	**Sn**	**21 59 35.0**	**-0.5**
JRG	**Rokugo**	**1.33**	**306**	P	**Pn**	**21 59 22.1**	**+0.3**
JYK	**Kaneyama**	**1.33**	**284**	P	**Pn**	**21 59 22.4**	**+0.6**
JYS	**Shirataka**	**1.58**	**256**	P	**Pn**	**21 59 25.9**	**+0.7**
ERM	**Erimo**	**3.51**	**14**	*e*Pn	Pn	21 59 48.4	-3.3
MJAR	**Matsushiro Arr**	**3.67**	**237**	Pn	**Pn**	**21 59 56.4**	**+2.5**
	3.5nm,0.3s,baz=40,slow=12,SNR=41						
MJAR				LR	LR	22 01 41.9	
	comp=Z,159nm,20.2s,baz=50,slow=43						
MAJO	**Matsushiro**	**3.67**	**237**	*e*Pn	**Pn**	**21 59 56.4**	**+2.5**
MAT	**Matsushiro**	**3.67**	**237**	P	**Pn**	**21 59 55.9**	**+2.0**
MAT				*e*S	**Sn**	**22 00 35.0**	**-0.8**
JHJ	**Hachijo jima 2**	**5.77**	**199**	Sn	**Sn**	**22 01 26.6**	**-1.1**
	8.0nm,0.3s,baz=247,slow=23,SNR=4.0						
JHJ				LR	LR	22 03 14.4	
	comp=Z,36nm,20.2s,baz=122,slow=42						
USRK	**Ussuriysk Ar.**	**9.38**	**310**	Pn	**Pn**	**22 01 12.5**	**+0.4**
	0.4nm,0.3s,baz=118,slow=14,SNR=4.6						
USRK				LR	LR	22 04 39.9	
	comp=Z,107nm,19.6s,baz=144,slow=38						
JNU	**Nakatsue**	**10.57**	**242**	LR	LR	22 05 16.3	
	comp=Z,94nm,20.0s,baz=101,slow=36						
MDJ	**Mudanjiang**	**11.06**	**307**	*e*Pn	Pn	22 01 31.7	-3.5
KSRS	**Korea Array**	**11.18**	**268**	Pn	Pn	22 01 41.0	+4.1
	0.2nm,0.3s,baz=77,slow=14,SNR=3.8						
KSRS				LR	LR	22 05 34.3	
	comp=Z,68nm,20.6s,baz=70,slow=36						
KSAR	**Wonju Array Be**	**11.21**	**268**	Pn	Pn	22 01 41.0	+3.7
KLR	**Kul'dur**	**12.93**	**329**	LR	LR	22 07 04.5	
	comp=Z,95nm,18.6s,baz=190,slow=39						
PETK	**Petropavlovsk-**	**18.09**	**32**	LR	LR	22 10 00.2	
	comp=Z,34nm,22.0s,baz=335,slow=37						

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
MA2	Magadan	21.71	12	P	P	22 03 47.6	+0.6
	2.7nm,0.5s,baz=209,slow=8.4,SNR=6.2						
MA2	Magadan	21.71	12	eP	P	22 03 45.5	-1.4
	2.5nm,0.4s						
YAK	Yakutsk	24.65	346	eP	P	22 04 14.9	-1.2
	3.0nm,0.4s						
GUMO	Guam	25.05	173	LR	LR	22 19 45.7	
	comp=Z,10nm,18.1s,baz=135,slow=49						
SEY	Seymchan	25.15	11	P	P	22 04 21.9	+1.2
	3.2nm,0.6s,baz=198,slow=7.1,SNR=23						
SONM	Songino Array	27.34	301	P	P	22 04 41.0	+0.3
	0.5nm,0.5s,baz=96,slow=9.5,SNR=4.8						
SONM				LR	LR	22 15 24.8	
	comp=Z,24nm,19.1s,baz=58,slow=36						
ENH	Enshi	27.98	263	eP	P	22 04 46.0	-0.5
	4.5nm,0.9s						
H11N2	WAKE ISLAND Hy	28.59	124	T	T	22 35 20.7	
	baz=317,slow=76,SNR=733						
H11N1	WAKE ISLAND Hy	28.60	124	T	T	22 35 13.8	
	baz=317,slow=76,SNR=1051						
H11N3	WAKE ISLAND Hy	28.61	124	T	T	22 35 22.0	
	baz=317,slow=76,SNR=700						
H11S1	WAKE ISLAND Hy	29.36	126	T	T	22 36 08.2	
	baz=318,slow=76,SNR=357						
H11S3	WAKE ISLAND Hy	29.36	126	T	T	22 36 08.4	
	baz=318,slow=76,SNR=371						
H11S2	WAKE ISLAND Hy	29.37	126	T	T	22 36 10.3	
	baz=318,slow=76,SNR=257						
ZALV	Zalesovo Beam	41.23	311	P	P	22 06 40.2	-0.1
	2.2nm,0.5s,baz=84,slow=7.6,SNR=14						
ZALV				PcP	PcP	22 08 38.4	-0.1
	0.6nm,0.3s,baz=86,slow=3.3,SNR=3.6						
MKAR	Makanchi Array	43.71	301	P	P	22 07 00.3	-0.3
	1.9nm,0.8s,baz=86,slow=9.5,SNR=25						
KURK	Kurchatov	45.35	307	eP	P	22 07 13.2	-0.4
	11nm,0.2s						
TAPN	Taplejung	46.33	273	eP	P	22 07 22.8	+0.8
	2.5nm,0.4s						
ODAN	Odare	46.81	272	eP	P	22 07 26.0	+0.3
RAMN	Ramite	47.39	273	eP	P	22 07 29.9	-0.3
	8.1nm,0.5s						
GUN	Gumba	47.49	275	eP	P	22 07 31.9	+0.8
	6.3nm,0.4s						
ILAR	Eielson Array	47.91	33	P	P	22 07 31.3	-2.1
	0.7nm,0.7s,baz=274,slow=6.7,SNR=6.2						
GKN	Gorkha	48.42	275	eP	P	22 07 38.7	+0.6
YKA	Yellowknife Ar	62.21	31	P	P	22 09 17.5	+0.9
	0.2nm,0.4s,baz=301,slow=7.2,SNR=3.1						
ASAR	Alice Springs	62.41	188	P	P	22 09 30.9	+12
	1.3nm,0.7s,baz=15,slow=7.3,SNR=12						
FINES	FINESS Array B	67.64	332	P	P	22 09 50.4	-1.5
	1.8nm,0.7s,baz=22,slow=12,SNR=6.6						
KBZ	Khabaz	70.24	310	P	P	22 10 08.8	+0.4
	2.0nm,0.8s,baz=89,slow=2.4,SNR=7.3						
NB2	NORSAR Subarra	72.92	337	P	P	22 10 24.4	+0.1
	comp=Z,0.9nm,0.7s,baz=40,slow=6.2						
NOA	NORSAR Array B	72.92	337	P	P	22 10 24.2	0.0
	comp=Z,2.4nm,1.0s,baz=39,slow=5.9,SNR=5.0						
NOA				LR	LR	22 45 02.1	
	comp=Z,21nm,20.9s,baz=180,slow=38						
AKASG	Malin Array Be	73.35	322	P	P	22 10 26.6	-0.3
	comp=Z,0.6nm,0.5s,baz=44,slow=5.7,SNR=6.5						
BRTR	Keskin Array B	78.17	312	P	P	22 10 55.5	+0.7
	comp=Z,0.4nm,0.4s,baz=131,slow=2.8,SNR=4.4						
GERES	GERESS Array B	81.62	328	P	P	22 11 12.7	-0.6
	comp=Z,0.2nm,0.3s,baz=32,slow=6.3,SNR=3.7						

MEX 01 21:59:06.7±0.7, 18°.00N×102°.14W, h20km±13km, MD3.9, Near coast of Michoacan

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
ZIIG	Zihuatanejo	0.75	121	i P	Pb	21 59 18.5	-2.5
ZIIG				eS	Sb	21 59 28.5	-2.3
MMIG	Aquila	1.19	284	eP	Pn	21 59 24.5	-3.6
MMIG				eS	Sb	21 59 39.8	-3.7
ARIG	Puente Sto Nin	1.73	80	eP	Pn	21 59 32.5	-3.1
ARIG				eS	Sn	21 59 53.1	-4.1
MOIG	Morelia	1.90	28	eP	Pn	21 59 32.2	-6.0
CAIG	El Cayaco	2.02	118	eP	Pn	21 59 37.4	-2.3
CAIG				eS	Sn	22 00 00.4	-3.9
EZ5V		2.03	317	eP	Pn	21 59 37.8	-2.2
EZ5V				eS	Sn	22 00 01.6	-3.2
R15V		2.10	304	eP	Pn	21 59 38.3	-2.5
R15V				eS	Sn	22 00 02.8	-3.7
PLIG	Platanillo	2.54	81	eP	Pn	21 59 44.9	-1.9
PLIG				eS	Sn	22 00 13.9	-3.3
YAIG	Yautepec	3.04	73	eP	Pn	21 59 53.8	0.0
YAIG				eS	Sn	22 00 28.5	-1.2

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*ISCJB **01** 22:09:36.0±1.6, 17°.7S±0°.2×178°.3W±0°.3, h500km, mb4.0/6, Error ellipse: s-maj=40.1km s-min=21.4km az=7.6*
*IDC **01** 22:09:36.6±6.4, 17°.74S×178°.24W, h495km±68km, mb3.6/7, mb1 3.7/7, mb1mx3.2/42, mbtmp4.4/7, Error ellipse: s-maj=38.3km s-min=28.8km az=47.0*
ISC 01 22:09:36.8±1.3, 17°.7S±0°.2×178°.2W±0°.3, h500km, n13, σ0.s94/13, mb3.9/6, Fiji Islands region

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
URZ	Urewera	20.85	190	P	P	22 13 42.7	-0.3
	4.9nm,0.5s,baz=21,slow=8.6,SNR=5.5						
STKA	Stephens Creek	38.88	241	P	P	22 16 19.6	+0.9
	2.6nm,0.5s,baz=89,slow=11,SNR=12						
WRA	Warramunga Arr	44.85	259	P	P	22 17 05.3	-0.9
	2.3nm,0.5s,baz=92,slow=6.9,SNR=64						
ASAR	Alice Springs	45.02	254	P	P	22 17 07.4	-0.1
	17nm,0.4s,baz=89,slow=8.1,SNR=212						
ASAR				PcP	PcP	22 18 37.8	-0.3
	1.0nm,0.5s,baz=90,slow=3.6,SNR=4.9						
MJAR	Matsushiro Arr	67.89	323	P	P	22 19 44.5	-0.5
	1.1nm,0.5s,baz=148,slow=6.4,SNR=4.0						
SEY	Seymchan	83.66	347	P	P	22 21 12.3	+0.5
	1.7nm,0.5s,baz=99,slow=19,SNR=7.4						
CMAR	Chiang Mai Arr	89.01	290	P	P	22 21 39.0	+0.5
	0.7nm,0.8s,baz=127,slow=3.0,SNR=5.8						
MKAR	Makanchi Array	109.16	314	PKiKP	PKiKP	22 27 08.3	-1.1
	0.2nm,0.5s,baz=86,slow=0.9,SNR=6.9						
KURBB	Kurchatov Arra	111.88	318	PKiKP	PKiKP	22 27 13.2	-1.3
	0.3nm,0.3s,baz=85,slow=3.2,SNR=3.5						
BVAR	Borovoye Array	116.84	321	PKP	PKPdf	22 27 23.0	-0.9
	0.4nm,0.4s,baz=125,slow=2.3,SNR=4.6						
FINES	FINESS Array B	133.08	344	PKP	PKPdf	22 27 56.2	+1.5
	1.1nm,0.9s,baz=343,slow=2.0,SNR=4.1						
BRTR	Keskin Array B	144.80	315	PKP	PKPbc	22 28 17.1	0.0
	1.7nm,0.8s,baz=138,slow=3.9,SNR=14						
GERES	GERESS Array B	147.50	345	PKPbc	PKPbc	22 28 25.0	+0.6
	1.1nm,0.5s,baz=35,slow=3.2,SNR=14						

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*IDC **01** 22:10:42.0±1.2, 36°.93N×142°.33E, h0km, mb3.7/6, mb1 3.8/8, mb1mx3.5/39, mbtmp3.7/8, ML3.8/2, MS2.9/3, Ms1 2.9/3, ms1mx2.5/44, Error ellipse: s-maj=31.0km s-min=21.7km az=82.0*
*ISCJB **01** 22:10:43.3±0.8, 36°.88N±0°.04×142°.17E±0°.08, h19km, mb3.6/7, Error ellipse: s-maj=9.8km s-min=6.3km az=169.9*
*JMA **01** 22:10:46.5±0.3, 36°.98N×142°.04E, h32km±5km, M4.0*
ISC 01 22:10:45.2±1.0, 36°.91N±0°.05×141°.95E±0°.07, h19km, n23, σ1.s29/18, mb3.7/7, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
ONAJ	Iwakimizuishiy	0.94	282	P	Pg	22 11 04.0	+0.5
ONAJ				S	Sn	22 11 16.7	+0.4
JMM	Marumori	1.32	316	P	Pb	22 11 09.1	-0.3
JFT	Otama	1.42	296	P	Pg	22 11 11.5	-1.1
JIO	Ouri	1.61	343	P	Pb	22 11 13.1	-1.2
JIO				S	Sn	22 11 32.7	-0.1
JOU	Okura	1.77	325	P	Pb	22 11 16.2	-0.8
JOU				S	Sb	22 11 38.2	-0.7
MJAR	Matsushiro Arr	3.02	264	Pn	Pb	22 11 35.8	-2.6
	12nm,0.3s,baz=90,slow=15,SNR=43						
MJAR				LR	LR	22 13 05.4	
	comp=Z,156nm,19.4s,baz=85,slow=43						
MAT	Matsushiro	3.03	264	P	Pb	22 11 36.2	-2.2
MAT				S	Sb	22 12 16.7	+1.7
JHJ	Hachijo jima 2	4.18	206	Pn	Pn	22 11 48.4	+0.5
	12nm,0.3s,baz=337,slow=22,SNR=14						
JHJ				Sn	Sn	22 12 36.0	-0.3
	9.7nm,0.3s,baz=51,slow=23,SNR=5.8						
USRK	Ussuriysk Ar.	10.50	317	Pn	Pn	22 13 21.8	+7.2
	0.4nm,0.3s,baz=125,slow=14,SNR=5.4						
USRK				LR	LR	22 17 14.4	
	comp=Z,54nm,18.4s,baz=197,slow=37						
KSRS	Korea Array	11.20	277	Pn	Pn	22 13 33.1	+8.9
	0.2nm,0.3s,baz=88,slow=14,SNR=4.0						
KSRS				LR	LR	22 17 43.0	
	comp=Z,57nm,19.1s,baz=80,slow=36						
H11N2	WAKE ISLAND Hy	27.72	121	T	T	22 45 50.9	
	baz=314,slow=75,SNR=12						
H11N1	WAKE ISLAND Hy	27.73	121	T	T	22 45 56.6	
	baz=314,slow=75,SNR=14						
H11N3	WAKE ISLAND Hy	27.74	121	T	T	22 45 56.6	
	baz=314,slow=75,SNR=9.3						
SONM	Songino Array	28.21	304	P	P	22 16 38.1	+1.4
	0.4nm,0.4s,baz=99,slow=9.6,SNR=3.1						
H11S1	WAKE ISLAND Hy	28.44	123	T	T	22 46 32.4	
	baz=316,slow=75,SNR=16						
H11S3	WAKE ISLAND Hy	28.44	123	T	T	22 46 48.2	
	baz=316,slow=75,SNR=16						
H11S2	WAKE ISLAND Hy	28.45	123	T	T	22 46 50.3	
	baz=316,slow=75,SNR=13						
ZALV	Zalesovo Beam	42.31	312	P	P	22 18 40.0	+2.6
	0.3nm,0.4s,baz=89,slow=6.2,SNR=3.5						
MKAR	Makanchi Array	44.54	302	P	P	22 18 56.8	+1.2
	0.6nm,0.7s,baz=84,slow=10,SNR=7.7						
INK	Inuvik	54.30	27	P	P	22 20 08.3	-1.4
	0.5nm,0.6s,baz=285,slow=6.6,SNR=5.1						
WRA	Warramunga Arr	57.00	189	P	P	22 20 30.0	+0.3
	1.1nm,0.8s,baz=6.0,slow=7.2,SNR=6.2						
ASAR	Alice Springs	60.73	188	P	P	22 20 55.9	+0.3
	0.5nm,0.8s,baz=10,slow=8.9,SNR=4.2						
FINES	FINESS Array B	69.12	332	P	P	22 21 55.3	+5.6
	0.9nm,1.0s,baz=39,slow=11,SNR=2.8						

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*CASC **01** 22:18:54.2±3.0, 7°.12N×80°.57W, h39km, MD4.9, mb4.5(NEIC)*
*IDC **01** 22:18:56.2±0.8, 7°.70N×80°.40W, h0km, mb3.9/13, mb1 4.1/16, mb1mx4.1/30, mbtmp3.9/16, ML3.8/3, MS3.6/13, Ms1 3.6/13, ms1mx3.3/40, Error ellipse: s-maj=32.6km s-min=13.9km az=47.0*
*ISCJB **01** 22:18:57.5±0.8, 7°.51N±0°.03×80°.78W±0°.03, h21km±6km, mb3.9/16, MS3.6/9, Error ellipse: s-maj=5.0km s-min=4.2km az=29.8*
*NEIC **01** 22:19:01.9±0.8, 7°.60N×80°.62W, h39km±8km, mb4.5/3, Error ellipse: s-maj=10.2km s-min=6.9km az=58.0*
ISC 01 22:18:56.2±1.6, 7°.53N±0°.05×80°.78W±0°.03, h3km±10km, n68, σ1.s62/73, mb4.0/16, MS3.5/9, 4C-7D, Panama

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
AZU	Azuero	0.56	63	⇓iP	Pg	22 19 07.0	0.0
AZU				eS	Sb	22 19 17.2	0.0
PNME	Penonome	1.05	25	⇓iP	Pg	22 19 15.6	-0.7
PNME				eS	Sg	22 19 29.5	-0.5
ZANG	Zanguenga, Cho	1.68	32	⇓eP	Pn	22 19 26.1	-0.4
ZANG				eS	Sb	22 19 48.7	-0.6
PINA	Piqa, Costa Ab	1.85	22	eP	Pn	22 19 28.7	-0.1
PINA				eS	Sb	22 19 53.7	-0.6
BCIP	Isla Barro Col	1.87	30	⇓iP	Pn	22 19 28.9	-0.3
BCIP				eS	Sb	22 19 54.0	-0.9
BCIP	Isla Barro Col	1.87	30	ePn	Pn	22 19 29.0	-0.1
BCIP				eSn	Sb	22 19 54.1	-0.7
BCIP	Isla Barro Col	1.87	30	eP	Pn	22 19 28.9	-0.3
BCIP				i		22 19 58.7	
	comp=Z,6μm,0.4s						
UPA	Univ. de Panam	1.90	40	⇓iP	Pn	22 19 29.5	0.0
UPA				eS	Sn	22 19 53.5	-0.3
BRU	Baru	2.17	306	⇑eP	Pn	22 19 32.9	-0.7
TBS2		2.24	304	⇑eP	Pn	22 19 33.3	-1.1
BRU2	Volcan	2.27	304	⇓eP	Pn	22 19 34.3	-0.4
CTCR	Cotoan	2.38	305	⇑eP	Pn	22 19 35.1	-1.2
PBNC	Punta Burica N	2.47	290	⇑eP	Pn	22 19 36.1	-1.3
UPD2	Meteti	2.92	70	⇓eP	Pn	22 19 44.7	+1.1
UPD2				eS	Sb	22 20 24.3	-0.7
BUS	Buena Vista	3.57	305	eP	Pn	22 19 53.5	+0.6
BUS				eS	Sb	22 20 42.0	-2.1
SOLC	Bahia Solano	3.59	111	eP	Pn	22 19 51.7	-1.1
SOLC				i		22 19 55.8	
	comp=Z,140nm,0.4s						
URSC	Urasca	3.75	308	eP	Pn	22 19 56.8	+1.7
URSC				eS	Sb	22 20 47.0	-2.0
QCR	Quepos	3.84	300	eP	Pn	22 19 57.0	+0.8
QCR				eS	Sg	22 20 57.9	-1.8
HDC	Heredia	4.11	307	i P	Pn	22 20 04.4	+4.3
HDC				eS	Sb	22 21 01.0	+1.5
CGA2	Cerro Gallo 2	4.40	304	eP	Pn	22 20 06.8	+2.8
DBBC	Dabeiba	4.56	96	eP	Pn	22 20 07.6	+1.4
DBBC				i		22 20 10.8	
	comp=Z,9.3nm,0.4s						
MALC	Bahia Malaga	4.89	135	eP	Pn	22 20 10.7	-0.1
JTS	JuntasAbangare	4.95	304	Pn	Pn	22 20 14.5	+3.0
	comp=Z,3.6nm,0.3s,baz=105,slow=6.0,SNR=19						
JTS				Sn	Sb	22 21 20.1	-3.5
	baz=278,slow=21,SNR=1.1						
JTS				LR	LR	22 22 11.1	
	comp=Z,849nm,18.4s,baz=129,slow=38						
JTS	JuntasAbangare	4.95	304	i P	Pn	22 20 14.5	+3.0
MOTC	Monteria, Cord	5.21	76	eP	Pn	22 20 17.3	+2.2
MOTC				i		22 20 25.5	
	comp=Z,106nm,0.6s						
MOTC				eS	Sn	22 21 15.7	-0.1
HELC	Santa Helena	5.38	104	eP	Pn	22 20 18.7	+1.0
HELC				i		22 21 27.6	
	comp=Z,55nm,0.5s						
GUYC	Guyana, Colomb	5.83	113	eP	Pn	22 20 22.5	-1.5
TOLC	Tolima	6.17	118	eP	Pn	22 20 31.1	+2.6
NORC	Norcasia	6.19	108	eP	Pn	22 20 29.9	+1.3
POPC	Popayan, Colom	6.42	140	eP	Pn	22 20 32.7	+0.7
ROSC	El Rosal	6.96	112	Pn	Pn	22 20 43.6	+4.2
	comp=Z,1.7nm,0.3s,baz=106,slow=20,SNR=3.9						
ROSC				LR	LR	22 22 59.6	
	comp=Z,292nm,20.8s,baz=338,slow=36						
CRUC	La Cruz	7.05	147	eP	Pn	22 20 42.2	+1.6
CHIC	Chingaza	7.58	112	eP	Pn	22 20 52.1	+4.1
OTAV	Otavalo	7.61	162	ePn	Pn	22 20 50.0	+1.5
	comp=Z,20nm,1.0s						
OTAV	Otavalo	7.61	162	eP	Pn	22 20 49.1	+0.7
VILC	Villavicencio,	7.82	115	eP	Pn	22 20 55.4	+4.2
GRMC	Gramalote, San	7.91	88	eP	Pn	22 20 55.3	+3.1
PAMC	Pamplona, Colo	8.02	91	eP	Pn	22 20 57.6	+3.6
YOPC	Yopal, Colombi	8.58	104	eP	Pn	22 21 01.6	+0.1
SDV	Santo Domingo	10.13	82	Pn	Pn	22 21 24.6	+1.7
	comp=Z,6.0nm,0.3s,baz=263,slow=6.6,SNR=81						
SDV				Sn	Sn	22 23 12.7	-4.5
	comp=Z,1.7nm,0.3s,baz=309,slow=23,SNR=1.4						
SDV	Santo Domingo	10.13	82	ePn	Pn	22 21 24.2	+1.3
	comp=Z,46nm,0.6s						
SDV				eSn	Sn	22 23 14.3	-2.9
SDDR	Presa de Saban	14.65	38	ePn	Pn	22 22 24.7	+0.2
	comp=Z,81nm,0.7s						
ATAH	Atahualpa	14.76	171	Pn	Pn	22 22 28.7	+2.3
	comp=Z,0.5nm,0.3s,baz=340,slow=7.9,SNR=4.1						
ATAH				LR	LR	22 28 11.8	
	comp=Z,130nm,18.4s,baz=351,slow=37						
CMIG	Matias Romero	16.73	306	Pn	P	22 22 54.1	+0.1
	comp=Z,0.3nm,0.3s,baz=20,slow=4.2,SNR=4.5						
SJG	San Juan	17.71	52	LR	LR	22 29 36.2	
	comp=Z,88nm,18.8s,baz=226,slow=37						
PTGA	Pitinga	22.32	111	P	P	22 23 51.3	-3.9
	comp=Z,1.8nm,0.6s,baz=319,slow=19,SNR=2.3						
PTGA				LR	LR	22 32 44.5	
	comp=Z,154nm,20.2s,baz=292,slow=38						
SAML	Samuel	23.99	133	eP	P	22 24 11.7	-0.6
	comp=Z,46nm,1.5s						
LPAZ	La Paz	26.77	152	P	P	22 24 38.7	+0.5
	comp=Z,5.2nm,1.1s,baz=318,slow=5.8,SNR=9.3						
LPAZ				LR	LR	22 36 20.4	
	comp=Z,76nm,18.3s,baz=328,slow=39						
TKL	Tuckaleechee C	28.13	355	LR	LR	22 35 36.3	
	comp=Z,126nm,19.4s,baz=152,slow=36						
TXAR	Lajitas Array	30.57	318	P	P	22 25 14.1	+2.7
	comp=Z,0.3nm,0.7s,baz=110,slow=7.8,SNR=3.1						
ANMO	Albuquerque	36.07	323	LR	LR	22 43 17.7	
	comp=Z,70nm,18.1s,baz=168,slow=40						
BDFB	Brasilia	39.79	125	P	P	22 26 30.1	-0.9
	comp=Z,5.2nm,0.9s,baz=279,slow=8.3,SNR=7.7						
BDFB				LR	LR	22 43 55.9	
	comp=Z,115nm,19.8s,baz=282,slow=38						
CPUP	Villa Florida	40.64	147	LR	LR	22 44 06.3	
	comp=Z,51nm,18.3s,baz=314,slow=37						
PDAR	Pinedale Array	43.28	329	P	P	22 27 01.2	+1.8
	comp=Z,0.6nm,0.8s,baz=112,slow=9.8,SNR=4.7						
PDAR				LR	LR	22 47 18.3	
	comp=Z,55nm,18.9s,baz=134,slow=39						
ULM	Lac du Bonnet	44.41	346	P	P	22 27 08.1	0.0
	comp=Z,1.6nm,0.6s,baz=162,slow=6.4,SNR=4.6						
NVAR	Mina Array Bea	45.72	318	P	P	22 27 21.2	+2.2
	comp=Z,1.0nm,0.9s,baz=137,slow=5.5,SNR=5.0						
NVAR				LR	LR	22 47 58.0	
	comp=Z,103nm,19.4s,baz=124,slow=38						
SCHQ	Schefferville	48.48	11	P	P	22 27 40.1	+0.1
	comp=Z,3.8nm,0.8s,baz=202,slow=3.9,SNR=4.8						
YKA	Yellowknife Ar	60.15	343	P	P	22 29 04.7	-0.1
	comp=Z,1.4nm,1.0s,baz=132,slow=6.6,SNR=12						
RES	Resolute Bay	67.60	356	LR	LR	23 00 59.7	
	comp=Z,96nm,18.4s,baz=4.0,slow=37						
INK	Inuvik	69.88	342	P	P	22 30 06.8	-1.2
	comp=Z,2.9nm,1.1s,baz=102,slow=10,SNR=3.0						
DOT	Dot Lake	71.61	335	eP	P	22 30 19.3	+0.5
	comp=Z,5.4nm,0.7s						
ILAR	Eielson Array	73.16	336	P	P	22 30 26.7	-1.3
	comp=Z,0.6nm,0.7s,baz=106,slow=5.1,SNR=3.5						
ESDC	Sonseca Array	75.09	51	P	P	22 30 38.1	-1.7
	comp=Z,0.2nm,0.3s,baz=272,slow=5.9,SNR=5.4						
TORD	Torodi Ar. Bea	81.03	78	P	P	22 31 11.8	-1.4
	comp=Z,0.4nm,0.5s,baz=289,slow=5.7,SNR=8.8						
TAM	Tamanrasset	83.73	68	eP	P	22 31 27.5	+0.1
	comp=Z,0.4nm,0.5s						
ASAR	Alice Springs	143.08	240	PKhKP	PKPpre	22 38 27.4	
	comp=Z,0.3nm,0.6s,baz=113,slow=2.9,SNR=3.1						
WRA	Warramunga Arr	143.81	246	PKP	PKPdf	22 38 34.6	+0.7
	comp=Z,0.9nm,0.8s,baz=104,slow=3.7,SNR=5.2						
CMAR	Chiang Mai Arr	154.18	1	PKPbc	PKPbc	22 38 59.7	+1.0
	comp=Z,0.5nm,0.3s,baz=335,slow=2.7,SNR=4.8						

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*NEIC **01** 22:21:04.1, 43°.59S×172°.65E, h3km, ML4.0(WEL), After WEL.*
NEIC Felt at Christchurch.
WEL 01 22:21:03.9±0.1, 43°.59S×172°.65E, h5km, ML3.8/10, 5C-6D, Error ellipse: s-maj=0.8km s-min=0.6km az=90.0, South Island

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
CRLZ	Canterbury Las	0.02	315	⇓PG	Pg	22 21 04.7	-0.2
CRLZ				SG	Sg	22 21 05.3	-0.3
CRLZ				AML	AML	22 21 05.6	
CRLZ	Canterbury Las	0.02	315	⇓Pg	Pg	22 21 04.7	-0.2
CRLZ				Sg	Sg	22 21 05.3	-0.3
CRLZ				Sg	Sg	22 21 05.5	-0.1
MQZ	McQueen's Vall	0.12	177	⇑PG	Pg	22 21 06.6	+0.3
MQZ				AML	AML	22 21 08.9	
MQZ				AML	AML	22 21 10.7	
MQZ	McQueen's Vall	0.12	177	⇑Pg	Pg	22 21 06.6	+0.3
OXZ	Oxford	0.52	301	⇓PG	Pg	22 21 14.0	+0.2
OXZ	Oxford	0.52	301	⇓Pg	Pg	22 21 14.0	+0.2
LTZ	Lake Taylor	0.85	341	⇑P*	Pb	22 21 20.8	-0.4
LTZ				AML	AML	22 21 33.7	
LTZ				AML	AML	22 21 34.0	
LTZ	Lake Taylor	0.85	341	⇑P*	Pb	22 21 20.8	-0.4
RPZ	Rata Peaks	1.16	263	P*	Pg	22 21 25.4	-0.8
RPZ				AML	AML	22 21 46.9	
RPZ				AML	AML	22 21 54.1	
RPZ	Rata Peaks	1.16	263	⇓P*	Pg	22 21 25.4	-0.8
INZ	Inchbonnie	1.23	314	P*	Pg	22 21 26.5	-1.1
KHZ	Kahutara	1.34	29	⇑PN	Pn	22 21 27.6	-1.8
KHZ	Kahutara	1.34	29	P*	Pn	22 21 27.6	-1.8
WVZ	Waitaha Valley	1.48	290	PN	Pn	22 21 30.4	-0.9
WVZ				AML	AML	22 21 53.9	
WVZ				AML	AML	22 21 57.9	
WVZ	Waitaha Valley	1.48	290	Pn	Pn	22 21 30.4	-0.9
THZ	Tophouse	1.84	6	PN	Pn	22 21 34.5	-1.7
THZ				AML	AML	22 22 11.1	
THZ				AML	AML	22 22 14.2	
THZ	Tophouse	1.84	6	Pn	Pn	22 21 34.5	-1.7
DSZ	Denniston Nort	1.95	341	PN	Pn	22 21 36.7	-1.0
DSZ				AML	AML	22 22 05.2	
DSZ				AML	AML	22 22 10.2	
DSZ	Denniston Nort	1.95	341	Pn	Pn	22 21 36.7	-1.0
LBZ	Lake Benmore	1.95	245	PN	Pn	22 21 36.7	-1.0
LBZ				AML	AML	22 22 14.3	
LBZ				AML	AML	22 22 19.0	
LBZ	Lake Benmore	1.95	245	Pn	Pn	22 21 36.7	-1.0
ODZ	Otahua Downs	2.04	224	⇓PN	Pn	22 21 37.6	-1.3
ODZ				AML	AML	22 22 09.8	
ODZ				AML	AML	22 22 17.8	
ODZ	Otahua Downs	2.04	224	Pn	Pn	22 21 37.6	-1.3
FOZ	Fox Glacier	2.06	271	PN	Pn	22 21 39.4	+0.3
FOZ				AML	AML	22 22 15.3	
FOZ				AML	AML	22 22 20.8	
FOZ	Fox Glacier	2.06	271	Pn	Pn	22 21 39.4	+0.3
BSWZ	Blackbirch Sta	2.08	26	Pn	Pn	22 21 38.1	-1.4
TUWZ	Tuamarina	2.36	24	Pn	Pn	22 21 41.5	-1.8
NNZ	Nelson	2.43	13	Pn	Pn	22 21 43.2	-1.1
HHSZ	Highcliff Hill	2.72	212	Pn	Pn	22 21 47.1	-1.1
QRZ	Quartz Range	2.77	358	Pn	Pn	22 21 49.6	+0.7
PLWZ	Palliser	2.79	45	Pn	Pn	22 21 46.8	-2.5
JCZ	Jackson Bay	2.83	259	Pn	Pn	22 21 49.2	-0.7
WKZ	Wanaka	2.89	243	Pn	Pn	22 21 50.0	-0.6
EAZ	Earnscleugh	2.90	234	Pn	Pn	22 21 49.6	-1.1
CAW	Cannon Point	3.06	37	Pn	Pn	22 21 50.5	-2.5
TUZ	Tuapeka	3.19	221	Pn	Pn	22 21 53.5	-1.3
KIW	Kapiti Island	3.20	32	Pn	Pn	22 21 53.3	-1.6
OGWZ	Otaki Gorge	3.35	35	Pn	Pn	22 21 55.1	-1.8
SYZ	Scrubby Hill	3.85	219	Pn	Pn	22 22 03.3	-0.6
WHZ	Wether Hill Ro	4.06	234	Pn	Pn	22 22 04.6	-2.1
PKE	Pukeiti	4.51	13	Pn	Pn	22 22 12.7	-0.2
WNVZ	Wahianoa	4.80	28	Pn	Pn	22 22 16.4	-0.7

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*IDC **01** 22:27:47.9±1.8, 35°.08N×27°.99E, h0km, mb3.3/2, mb1 3.1/3, mb1mx3.0/32, mbtmp3.1/3, ML2.6/1, Error ellipse: s-maj=166.0km s-min=23.9km az=139.0*
*ISCJB **01** 22:27:50.8±0.8, 35°.45N±0°.03×27°.65E±0°.03, h11km±5km, mb3.3/2, Error ellipse: s-maj=5.9km s-min=3.1km az=158.6*
*ISK **01** 22:27:50.0, 35°.26N×27°.55E, h52km, MD3.7*
*CSEM **01** 22:27:51.7±0.2, 35°.51N×27°.59E, h10km, ML3.1, Error ellipse: s-maj=6.0km s-min=3.0km az=157.0*
*ATH **01** 22:27:52.5, 35°.62N×27°.56E, h31km±1km, ML3.1/6, Error ellipse: s-maj=2.3km s-min=1.0km az=146.0*
*THE **01** 22:27:52.2, 35°.57N×27°.58E, h0km, ML3.2/7, Error ellipse: s-maj=1.6km s-min=0.6km az=146.0*
*DDA **01** 22:27:54.2, 35°.77N×27°.89E, h9km, Md3.2*
ISC 01 22:27:50.3±1.3, 35°.50N±0°.03×27°.63E±0°.02, h7km±9km, n101, σ1.s15/141, Dodecanese Islands

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
KARP	Karpathos	0.38	277	P	Pb	22 28 00.6	+1.2
KARP				S	Sb	22 28 05.4	-0.2
KARP	Karpathos	0.38	277	P	Pb	22 28 00.6	+1.2
KARP				S	Sb	22 28 05.4	-0.2
KARP	Karpathos	0.38	277	P	Pb	22 28 00.9	+1.5
KARP				S	Sb	22 28 07.3	+1.8
KARP				AML	AML	22 28 08.0	
	comp=E,12846μm,0.4s						
KARP				AML	AML	22 28 08.2	
	comp=N,18317μm,0.4s						
ARG	Arkhangelos	0.82	30	P	Pb	22 28 07.3	+0.4
ARG				S	Sn	22 28 20.6	-0.1
ARG	Arkhangelos	0.82	30	P	Pb	22 28 07.3	+0.4
ARG				S	Sb	22 28 18.8	+0.6
NIS1	Nisyros Isl.	1.15	342	ePN	Pn	22 28 13.6	+0.7
NIS1				eSN	Sn	22 28 31.2	+2.2
NIS1	Nisyros Isl.	1.15	342	P	Pg	22 28 12.1	-0.4
NIS1				S	Sn	22 28 28.7	-0.3
NIS1	Nisyros Isl.	1.15	342	P	Pg	22 28 12.1	-0.4
NIS1	Nisyros Isl.	1.15	342	ePn	Pn	22 28 13.6	+0.7
NIS1				S	Sn	22 28 28.7	-0.3
NIS1				eSn	Sn	22 28 31.2	+2.2
NIS1	Nisyros Isl.	1.15	342	P	Pg	22 28 11.9	-0.5
NISR	Nisiros	1.18	340	P	Pn	22 28 13.9	+0.7
NISR				S	Sn	22 28 30.0	+0.5
NISR	Nisiros	1.18	340	P	Pn	22 28 13.9	+0.7
NISR				S	Sn	22 28 30.0	+0.5
NISR	Nisiros	1.18	340	P	Pn	22 28 13.9	+0.7
ZKR	Zakros	1.22	252	P	Pb	22 28 14.1	+0.5
ZKR				S	Sn	22 28 32.8	+2.3
ZKR	Zakros	1.22	252	P	Pb	22 28 14.1	+0.5
ZKR				S	Sb	22 28 30.2	+0.6
ZKR	Zakros	1.22	252	P	Pn	22 28 14.6	+0.9
ZKR				S	Sb	22 28 30.2	+0.6

Code	Station Name	Δ°	AZ°	Op	ISC	Time	Res
ZKR				AML	AML	22 28 36.2	
	comp=N,3146μm,0.6s						
ZKR				AML	AML	22 28 36.4	
	comp=E,3474μm,0.6s						
DALY	Dalyan (Mu˜la	1.55	32	ePN	Pb	22 28 19.6	+0.2
DALY				eSN	Sg	22 28 41.2	+1.1
DALY	Dalyan (Mu˜la	1.55	32	ePn	Pb	22 28 19.6	+0.2
DALY				eSn	Sg	22 28 41.3	+1.1
BDRM	Kayabasi	1.56	355	i P	Pn	22 28 18.8	+0.2
BDRM				i S	Sg	22 28 39.9	-0.7
BDRM	Kayabasi	1.56	355	P	Pn	22 28 18.8	+0.2
BDRM				S	Sg	22 28 39.9	-0.7
BODT	Bodrum	1.57	351	ePN	Pn	22 28 19.1	+0.4
BODT	Bodrum	1.57	351	ePn	Pn	22 28 19.1	+0.4
FETY	Fethiye	1.63	46	ePN	Pn	22 28 20.6	+1.0
FETY	Fethiye	1.63	46	P	Pn	22 28 20.8	+1.3
FETY				S	Sb	22 28 42.7	+1.0
FETY	Fethiye	1.63	46	P	Pn	22 28 20.8	+1.3
FETY				S	Sb	22 28 42.7	+1.0
NPS	Neapolis	1.66	262	P	Pb	22 28 21.4	+0.1
NPS				S	Sg	22 28 43.3	-0.4
NPS	Neapolis	1.66	262	P	Pb	22 28 21.4	+0.1
NPS				S	Sg	22 28 43.1	-0.6
NPS	Neapolis	1.66	262	P	Pb	22 28 21.8	+0.5
NPS				S	Sg	22 28 43.1	-0.6
NPS				AML	AML	22 28 49.2	
	comp=N,1238μm,0.5s						
NPS				AML	AML	22 28 49.6	
	comp=E,1748μm,0.8s						
YER	Yerkesik	1.71	18	ePN	Pb	22 28 22.1	-0.1
YER	Yerkesik	1.71	18	P	Pb	22 28 21.9	-0.3
YER				S	Sn	22 28 43.5	+0.7
YER	Yerkesik	1.71	18	P	Pb	22 28 21.9	-0.3
YER				S	Sn	22 28 43.5	+0.7
KSL	Kastellorizon	1.72	67	P	Pn	22 28 21.9	+1.3
KSL				S	Sb	22 28 45.2	+1.2
KSL	Kastellorizon	1.72	67	P	Pn	22 28 21.1	+0.5
KSL				S	Sb	22 28 45.2	+1.2
KSL	Kastellorizon	1.72	67	P	Pn	22 28 21.1	+0.5
KSL				S	Sg	22 28 46.3	+0.8
KSL				AML	AML	22 28 46.6	
	comp=E,485μm,0.4s						
KSL				AML	AML	22 28 47.9	
	comp=N,324μm,0.6s						
AKAS	Kas	1.77	65	i P	Pn	22 28 19.8	-1.6
AKAS				i S	Sn	22 28 44.8	+0.6
AKAS	Kas	1.77	65	P	Pn	22 28 19.8	-1.6
AKAS				S	Sn	22 28 44.8	+0.6
LAST	Lasithi	1.79	260	P	Pn	22 28 21.0	-0.7
LAST				S	Sb	22 28 46.4	+0.3
LAST	Lasithi	1.79	260	P	Pn	22 28 22.2	+0.5
LAST				S	Sb	22 28 46.4	+0.3
LAST	Lasithi	1.79	260	P	Pn	22 28 22.2	+0.5
SANT	Santorini	1.96	297	P	Pn	22 28 23.7	-0.3
SANT				S	Sn	22 28 48.7	-0.2
SANT	Santorini	1.96	297	P	Pn	22 28 23.7	-0.3
SANT				S	Sn	22 28 48.7	-0.2
SANT				AML	AML	22 28 57.8	
	comp=E,1112μm,0.7s						
SANT				AML	AML	22 29 00.6	
	comp=N,621μm,0.9s						
THR6	Thira Island,	2.00	296	P	Pn	22 28 24.0	-0.5
THR6	Thira Island,	2.00	296	P	Pn	22 28 24.0	-0.5
THR2	Thira island,	2.01	299	P	Pn	22 28 24.7	0.0
THR2	Thira island,	2.01	299	P	Pn	22 28 24.7	0.0
THR3	Thira Island,	2.02	297	P	Pn	22 28 24.1	-0.7
THR3	Thira Island,	2.02	297	P	Pn	22 28 24.1	-0.7
CMBO	Columbo, Santo	2.04	299	P	Pn	22 28 25.2	+0.1
CMBO	Columbo, Santo	2.04	299	P	Pn	22 28 25.2	+0.1
CMBO	Columbo, Santo	2.04	299	P	Pn	22 28 25.1	0.0
THR5	Thira Island,	2.06	297	ePN	Pn	22 28 24.6	-0.8
THR5	Thira Island,	2.06	297	P	Pn	22 28 25.6	+0.2
THR5	Thira Island,	2.06	297	ePn	Pn	22 28 24.6	-0.8
THR5	Thira Island,	2.06	297	P	Pn	22 28 25.6	+0.2
ELL	Elmali	2.23	55	ePN	Pn	22 28 28.5	+0.7
ELL	Elmali	2.23	55	ePn	Pn	22 28 28.5	+0.7
GLHS	Glhisar (BURDU	2.24	42	ePN	Pn	22 28 29.2	+1.3
GLHS	Glhisar (BURDU	2.24	42	ePn	Pn	22 28 29.2	+1.3
IDI	Anoyia	2.25	265	P	Pn	22 28 28.9	+0.9
IDI	Anoyia	2.25	265	P	Pn	22 28 28.9	+0.9
IDI	Anoyia	2.25	265	P	Pn	22 28 28.2	+0.2
SMG	Samos	2.29	344	P	Pn	22 28 30.0	+1.5
SMG	Samos	2.29	344	P	Pn	22 28 30.0	+1.5
APE	Apeiranthos	2.30	313	ePN	Pn	22 28 28.9	+0.1
APE	Apeiranthos	2.30	313	P	Pn	22 28 27.8	-0.9
APE	Apeiranthos	2.30	313	ePn	Pn	22 28 28.9	+0.1
APE	Apeiranthos	2.30	313	P	Pn	22 28 27.8	-0.9
APE				S	Sn	22 28 54.4	-3.0
APE				AML	AML	22 28 56.5	
	comp=N,152μm,0.4s						
APE				AML	AML	22 28 57.8	
	comp=E,144μm,0.2s						
GOLH	Golhisar	2.33	42	i P	Pb	22 28 31.7	-1.0
GOLH				i S	Sn	22 28 55.8	-2.4
GOLH	Golhisar	2.33	42	P	Pb	22 28 31.7	-1.0
GOLH				S	Sn	22 28 55.8	-2.4
SIVA	Sivas	2.35	259	P	Pn	22 28 31.5	+2.1
SIVA				S	Sn	22 29 00.4	+1.8
SIVA	Sivas	2.35	259	P	Pn	22 28 31.5	+2.1
SIVA				S	Sn	22 29 00.4	+1.8
SIVA	Sivas	2.35	259	P	Pb	22 28 32.1	-1.0
AYDB	Zeytinkoy-Aydi	2.45	5	ePN	Pn	22 28 32.6	+1.8
AYDB	Zeytinkoy-Aydi	2.45	5	ePn	Pn	22 28 32.6	+1.8
DENT	Denizli	2.52	26	ePN	Pn	22 28 33.4	+1.7
DENT	Denizli	2.52	26	ePn	Pn	22 28 33.4	+1.7
VAM	Vamos	2.80	269	P	Pn	22 28 36.9	+1.4
GVD	Gavdhos	2.97	258	P	Pn	22 28 39.3	+1.4
GVD	Gavdhos	2.97	258	P	Pn	22 28 39.3	+1.4
GVD	Gavdhos	2.97	258	P	Pn	22 28 39.6	+1.7
IMMV	Iera Moni Meta	2.97	270	P	Pn	22 28 38.4	+0.4
IMMV	Iera Moni Meta	2.97	270	P	Pn	22 28 38.4	+0.4
KULA	Kula-Manisa	3.12	15	ePN	Pn	22 28 42.0	+2.0
KULA	Kula-Manisa	3.12	15	ePn	Pn	22 28 42.0	+2.0
CHOS	Chios island	3.14	337	P	Pn	22 28 39.9	-0.4
CHOS	Chios island	3.14	337	P	Pn	22 28 39.9	-0.4
SHUT	Suhut-Afyon	3.84	37	ePN	Pn	22 28 52.1	+2.2
SHUT	Suhut-Afyon	3.84	37	ePn	Pn	22 28 52.1	+2.2
VLI	Veliai	3.98	289	P	Pn	22 28 52.8	+1.0
VLI	Veliai	3.98	289	P	Pn	22 28 52.8	+1.0
TVSB	Tavsanli	4.20	20	ePN	Pn	22 28 57.4	+2.5
TVSB	Tavsanli	4.20	20	ePn	Pn	22 28 57.4	+2.5
LEF	Lefka	4.32	94	ePN	Pn	22 28 55.9	-0.5
LEF	Lefka	4.32	94	ePn	Pn	22 28 55.9	-0.5
KIZT	Kizilcal	4.78	44	ePN	Pn	22 29 05.0	+2.1
KIZT	Kizilcal	4.78	44	ePn	Pn	22 29 05.0	+2.1
IKL	Isikli	4.98	80	ePN	Pn	22 29 06.5	+1.1
IKL	Isikli	4.98	80	ePn	Pn	22 29 06.5	+1.1
BRTR	Keskin Array B	6.37	47	Pn	Pn	22 29 26.6	+1.9
	comp=E,0.1nm,0.3s,baz=221,slow=15,SNR=3.5						
BRTR				Sn	Sn	22 30 38.3	+0.6
	comp=E,0.1nm,0.3s,baz=214,slow=26,SNR=3.6						
TORD	Torodi Ar. Bea	32.28	233	P	P	22 34 18.1	-1.7
	comp=E,0.5nm,0.5s,baz=34,slow=8.9,SNR=4.5						
MKAR	Makanchi Array	41.90	57	P	P	22 35 40.1	-1.2
	comp=E,0.1nm,0.3s,baz=272,slow=6.1,SNR=1.8						

*NNC **01** 22:41:19.4±3.8, 39.°65N×71.°82E, h0km, mb2.7, mpv2.1, Error ellipse: s-maj=75.3km s-min=21.3km az=168.0*
*KRNET **01** 22:41:19.3±0.1, 39.°87N×71.°79E, h26km, mb1.8*
ISC 01 22:41:19.1±1.9**, 39.°83N**±0.°08×**71.°81E**±0.°05**, h1**km±18km**, n7, σ1.s39**/12**, 5C-9D, Tajikistan**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
BTK	Batken	0.80	287	⇓iP	Pg	22 41 34.0	-0.3
	baz=285						
BTK				⇓iS	Sg	22 41 45.0	+0.3
	baz=285						
SFK	Sufi-Kurgan	1.31	82	⇑iP	Pb	22 41 44.3	-0.4
	baz=83						
SFK				⇑iS	Sb	22 42 01.3	-0.9
	baz=83						
SFK	Sufi-Kurgan	1.31	82	⇑P	Pn	22 41 46.6	+1.8
	0.1nm,0.1s						
SFK				⇓S	Sn	22 42 02.8	-0.4
	1.9nm,0.4s						
ARK	Arkit	1.97	3	⇓eP	Pn	22 41 52.8	-0.9
	baz=4.0						
ARK				⇓iS	Sn	22 42 18.1	-1.0
	baz=4.0						
DZET	Dzherino	2.53	247	⇓Pg	Pn	22 42 01.7	+0.2
	1.5nm,0.4s						
DZET				⇓Lg	Lg	22 42 38.7	
	3.5nm,0.5s						
ARLS	Aral	2.78	42	⇑iP	Pn	22 42 05.6	+0.6
	baz=43						
ARLS				⇑eS	Sn	22 42 39.1	-0.2
	baz=43						
KK31	Karatay Array	3.41	344	⇓Pn	Pn	22 42 16.4	+2.9
	0.2nm,0.5s,baz=160,slow=12						
KK31				⇓Lg	Lg	22 43 12.6	
	0.2nm,0.3s,baz=152,slow=24						

*IDC **01** 22:43:50.5±3.9, 35.°73N×141.°69E, h0km, mb3.3/3, mb1 3.4/4, mb1mx3.2/43, mbtmp3.2/4, ML2.7/1, Error ellipse: s-maj=115.9km s-min=33.7km az=57.0*
*JMA **01** 22:43:54.3±0.3, 35.°88N×141.°49E, h20km±3km, M3.1*
ISC 01 22:43:55.2±1.6**, 35.°8N**±0.°1×**141.°4E**±0.°1**, h26**km**, n8, σ1.s23**/10**, mb3.2**/3**, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
CHOJ	Chosi	0.49	254	P	Pb	22 44 04.8	-0.4
CHOJ				S	Sb	22 44 12.4	+0.4
JHO	Hitachi	1.04	318	P	Pn	22 44 13.4	-0.7
JRY	Ryogami san	2.06	276	P	Pn	22 44 28.2	0.0
MJAR	Matsushiro Arr	2.70	286	Pn	Pn	22 44 37.8	+0.8
	1.0nm,0.3s,baz=96,slow=8.9,SNR=4.3						
MAT	Matsushiro	2.70	286	P	Pn	22 44 37.9	+0.9
MAT				eS	Sb	22 45 13.8	-1.8
SONM	Songino Array	28.48	306	P	P	22 49 50.0	+1.7
	0.2nm,0.5s,baz=104,slow=11,SNR=1.1						
MKAR	Makanchi Array	44.78	303	P	P	22 52 06.9	+0.4
	0.2nm,0.7s,baz=92,slow=9.6,SNR=3.0						
WRA	Warramunga Arr	55.88	188	P	P	22 53 29.4	-1.3
	0.4nm,0.7s,baz=5.6,slow=6.8,SNR=1.3						

IDC 01 22:51:14.1±3.3**, 38.°66N**×**141.°30E, h0**km**, mb3.2**/2**, mb1 3.3**/3**, mb1mx3.1**/45**, mbtmp3.1**/3**, ML3.1**/1**, Error ellipse: s-maj=72.0km s-min=42.4km az=72.0, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
MJAR	Matsushiro Arr	3.24	230	Pn	Pn	22 52 06.5	+0.2
	2.1nm,0.3s,baz=82,slow=16,SNR=8.9						
MAT	Matsushiro	3.24	230	P	Pn	22 52 06.1	-0.1
MAT				eS	Sb	22 52 52.1	-0.4
MKAR	Makanchi Array	43.19	301	P	P	22 59 16.6	-0.1
	0.1nm,0.6s,baz=85,slow=10.0,SNR=2.2						
WRA	Warramunga Arr	58.66	188	P	P	23 01 13.0	-0.2
	0.2nm,0.3s,baz=2.6,slow=7.2,SNR=1.6						

KRSC 01 23:06:59.5±1.1**, 49.°86N**×**157.°16E, h19**km±34km**, ML3.7, East of Kuril Islands**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
SKR	Severo-Kuril's	1.06	321	eP	Pb	23 07 18.7	-0.4
SKR				eS	Sb	23 07 31.7	-0.9
PAU	Pauzhetka	1.62	352	eP	Pb	23 07 28.6	-0.1
PAU				eS	Sb	23 07 49.4	+0.6
ASAK	Asacha	2.57	10	P	Pb	23 07 43.2	-1.7
RUS	Russkaya	2.71	18	eP	Pn	23 07 44.5	+2.6
RUS				eS	Sb	23 08 17.6	-2.5
UGLR	Uglovaya	3.51	17	P	Pn	23 07 56.4	+3.4
AVH	Avacha	3.55	16	P	Pn	23 07 57.1	+3.6
SMAR	Somma	3.56	16	P	Pn	23 07 56.9	+3.2
KRX	Arik	3.62	14	P	Pn	23 07 58.6	+4.0
SPN	Mys Shipunski	3.70	28	eP	Pn	23 07 59.0	+3.5
SPN				eS	Sn	23 08 42.8	+4.2

JMA 01 23:25:11.1±0.2**, 38.°04N**×**144.°27E, h32**km**, M3.5, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
OFUJ	Ofunato	2.29	298	P	Pn	23 25 48.1	+1.5
JIO	Ouri	2.34	281	P	Pn	23 25 48.5	+1.2
JIO				S	Sn	23 26 16.7	+1.8
JMK	Ichinoseki	2.56	292	P	Pn	23 25 52.3	+2.0
JOM	Ohasama	2.73	302	P	Pn	23 25 54.9	+2.2
JOM				S	Sn	23 26 27.0	+2.3
JMM	Marumori	2.75	267	P	Pn	23 25 54.2	+1.2
JMM				S	Sn	23 26 25.7	+0.5
JOU	Okura	2.86	278	P	Pn	23 25 56.5	+2.0
JOU				eS	Sn	23 26 30.1	+2.3
JRG	Rokugo	3.15	297	P	Pn	23 26 01.0	+2.5
JRG				S	Sn	23 26 38.3	+3.3
JFT	Otama	3.16	262	S	Sn	23 26 36.8	+1.6
JYK	Kaneyama	3.19	287	P	Pn	23 26 01.2	+2.2

CASC 01 23:27:01.8±2.2**, 7.°42N**×**80.°75W, h13**km±26km**, MD4.0, 1C-1D, Panama**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
AZU	Azuero	0.60	52	⇓iP	Pg	23 27 12.3	-1.2
AZU				eS	Sg	23 27 20.3	-1.2
PNME	Penonome	1.14	22	eP	Pb	23 27 21.0	-2.3
PNME				eS	Sb	23 27 34.1	-3.9
ZANG	Zanguenga, Cho	1.76	30	eP	Pn	23 27 31.4	-0.5
ZANG				eS	Sb	23 27 55.2	-0.6
ZANG				eS	Sn	23 27 55.8	+1.7
BCIP	Isla Barro Col	1.95	28	eP	Pn	23 27 34.2	-0.4
BCIP				⇑iP	Pb	23 27 34.8	-2.4
BCIP				eS	Sn	23 27 59.4	+0.3
BCIP				eS	Sb	23 27 59.5	-2.0

*NIED **01** 23:28:00, 33.°60N×140.°10E, h104km, Mw3.9 Best double couple: M0 6.77000×10^14 NP1: φs 77.00000°, δ61.00000°, λ174.00000°. NP2: φs 170.00000°, δ85.00000°, λ29.00000°.*
*ISCJB **01** 23:28:23.7±0.7, 33.°55N±0.°05×140.°1E±0.°1, h110km±4km, mb3.8/6, Error ellipse: s-maj=16.6km s-min=6.8km az=165.3*
*IDC **01** 23:28:24.4±1.0, 33.°47N×140.°05E, h104km±5km, mb3.5/6, mb1 3.6/8, mb1mx3.3/39, mbtmp3.8/8, Error ellipse: s-maj=30.7km s-min=10.6km az=75.0*
*JMA **01** 23:28:25.3±0.1, 33.°60N×140.°07E, h99km±1km, M3.8*
ISC 01 23:28:24.2±0.9**, 33.°53N**±0.°05×**140.°15E**±0.°10**, h104**km±7km**, n21, σ1.s22**/30**, mb3.8**/6**, Southeast of Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
JHJ2	Mitsune	0.50	213	P	Pn	23 28 41.3	+0.9
JHJ2				S	Sn	23 28 53.4	+0.9
JHJ	Hachijo jima 2	0.51	216	P	Pn	23 28 41.3	+0.8
	561nm,0.3s,baz=345,slow=20,SNR=62						
JHJ				S	Sn	23 28 53.3	+0.7
	954nm,0.3s,baz=117,slow=24,SNR=112						
JMY	Miyakejima3	0.75	316	S	Sn	23 28 55.6	-0.6
JKO	Kozu shima	1.06	308	P	Pn	23 28 45.4	-0.2
JKO				S	Sn	23 29 00.5	-1.2
JNIO	Niijimaoohara	1.10	319	P	Pn	23 28 45.9	0.0
JNIO				S	Sn	23 29 01.7	-0.6
BSO3	Boso 3	1.30	13	P	Pn	23 28 49.0	+1.0
JIM2	Oshima 3	1.32	334	P	Pn	23 28 48.6	0.0
JIM2				S	Sn	23 29 05.7	-1.3
JIZS	Izushimoda	1.58	319	P	Pn	23 28 51.7	0.0
JOD2	Odawara 2	1.94	333	P	Pn	23 28 56.3	+0.2
JOD2				S	Sn	23 29 19.6	-0.9
SHZ3	Shizuoka 3	2.21	314	P	Pn	23 29 00.5	+0.7
SHZ3				S	Sn	23 29 27.4	+0.4
JYN	Shimob	2.37	326	P	Pn	23 29 02.5	+0.8
MJAR	Matsushiro Arr	3.40	333	P	Pn	23 29 15.8	+0.4
	6.6nm,0.3s,baz=169,slow=14,SNR=24						
MJAR				S	Sn	23 29 55.2	+0.3
	4.5nm,0.3s,baz=169,slow=20,SNR=9.9						
MAT	Matsushiro	3.40	333	P	Pn	23 29 15.7	+0.3
MAT				S	Sn	23 29 54.9	0.0
JCJ	Chichijima	6.65	164	S	Sn	23 31 08.7	-5.1
	5.5nm,0.3s,baz=294,slow=20,SNR=1.3						
JNU	Nakatsue	7.77	270	P	Pn	23 30 15.6	+1.0
	0.4nm,0.3s,baz=198,slow=8.9,SNR=4.1						
ZALV	Zalesovo Beam	43.58	315	P	P	23 36 17.4	-0.4
	1.6nm,0.3s,baz=99,slow=7.7,SNR=9.2						
MKAR	Makanchi Array	45.18	305	P	P	23 36 30.1	-0.6
	0.8nm,0.5s,baz=89,slow=10,SNR=20						
ILAR	Eielson Array	53.02	31	P	P	23 37 30.7	+0.7
	0.4nm,0.9s,baz=266,slow=6.7,SNR=4.2						
WRA	Warramunga Arr	53.46	187	P	P	23 37 33.2	-0.6
	0.4nm,0.3s,baz=2.9,slow=7.8,SNR=3.2						
FINES	FINESS Array B	71.43	332	P	P	23 39 33.6	+0.7
	0.7nm,0.5s,baz=94,slow=8.9,SNR=7.6						
AKASG	Malin Array Be	76.43	322	P	P	23 40 02.4	+0.1
	0.8nm,0.5s,baz=50,slow=5.8,SNR=6.2						

*IDC **01** 23:31:37.4±0.9, 7.°15N×78.°00W, h0km, mb3.5/6, mb1 3.9/7, mb1mx3.7/25, mbtmp3.6/7, ML3.2/1, MS3.1/6, Ms1 3.1/6, ms1mx2.8/29, Error ellipse: s-maj=32.5km s-min=23.6km az=39.0*
*ISCJB **01** 23:31:38.5±0.6, 7.°01N±0.°05×78.°09W±0.°04, h23km, mb3.6/6, MS3.4/2, Error ellipse: s-maj=8.6km s-min=4.8km az=33.8*
*RSNC **01** 23:31:39.0±0.7, 7.°00N×78.°10W, h12km±9km, ML3.5*
ISC 01 23:31:39.9±0.7**, 6.°97N**±0.°06×**78.°07W**±0.°05**, h23**km**, n24, σ0.s79**/22**, mb3.6**/6**, South of Panama**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
SOLC	Bahia Solano	0.99	139	eP	Pb	23 31 57.0	-1.3
SOLC				i		23 32 13.9	
	comp=Z,1μm,0.2s						
DBBC	Dabeiba	1.84	89	eP	Pn	23 32 09.7	-0.5
DBBC				eS	Sb	23 32 34.5	-1.1
HELC	Santa Helena	2.64	107	eP	Pn	23 32 20.9	-0.5
HELC				eS	Sn	23 32 53.9	+1.1
HELC				i		23 33 03.0	
	comp=Z,197nm,0.7s						
BCIP	Isla Barro Col	2.80	321	eP	Pn	23 32 22.0	-1.3
BCIP				eS	Sn	23 32 55.2	-1.1
BCIP				i		23 33 18.1	
	comp=Z,168nm,0.8s						
MOTC	Monteria, Cord	2.98	53	eP	Pn	23 32 25.7	0.0
MOTC				eS	Sn	23 33 00.1	-0.7
MOTC				i		23 33 08.9	
	comp=Z,103nm,0.4s						
MALC	Bahia Malaga	3.03	166	eP	Pn	23 32 25.8	-0.6
GUYC	Guyana, Colomb	3.18	123	eP	Pn	23 32 29.2	+0.3
GUYC				i		23 33 18.7	
	comp=Z,241nm,0.6s						
NORC	Norcasia	3.47	114	eP	Pn	23 32 31.8	-0.7
NORC				eS	Sn	23 33 13.6	+0.5
TOLC	Tolima	3.62	131	eP	Pn	23 32 34.7	-0.1
ROSC	El Rosal	4.29	119	Pn	Pn	23 32 48.5	+4.5
	comp=Z,4.1nm,0.3s,baz=195,slow=22,SNR=4.2						
JTS	JuntasAbangare	7.57	296	LR	LR	23 37 04.1	
	comp=Z,97nm,19.5s,baz=112,slow=43						
SDV	Santo Domingo	7.60	75	Pn	Pn	23 33 29.8	+0.3
	comp=Z,3.8nm,0.3s,baz=289,slow=11,SNR=34						
SDV				LR	LR	23 36 38.3	
	comp=Z,83nm,21.3s,baz=26,slow=40						
SJG	San Juan	16.04	45	LR	LR	23 42 15.6	
	comp=Z,31nm,21.9s,baz=254,slow=40						
CMIG	Matias Romero	19.26	303	LR	LR	23 43 23.0	
	comp=Z,55nm,20.6s,baz=164,slow=37						
SIV	San Ignacio	28.35	144	LR	LR	23 49 22.1	
	comp=Z,84nm,20.1s,baz=196,slow=37						
TXAR	Lajitas Array	32.81	316	P	P	23 38 12.4	+0.6
	comp=Z,0.2nm,0.6s,baz=154,slow=6.5,SNR=3.8						
BDFB	Brasilia	37.29	127	LR	LR	23 56 25.2	
	comp=Z,76nm,18.9s,baz=247,slow=40						
NVAR	Mina Array Bea	47.95	317	P	P	23 40 18.2	+1.2
	comp=Z,1.4nm,1.0s,baz=103,slow=6.5,SNR=3.9						
PLCA	Paso Flores	47.97	172	P	P	23 40 20.6	+3.6
	comp=Z,1.6nm,1.0s,baz=274,slow=4.3,SNR=2.8						
YKA	Yellowknife Ar	61.50	342	P	P	23 41 54.4	-0.2
	comp=Z,0.2nm,0.5s,baz=129,slow=6.3,SNR=4.8						
ILAR	Eielson Array	74.77	336	P	P	23 43 18.7	+0.8
	comp=Z,0.3nm,0.7s,baz=104,slow=4.6,SNR=4.1						
TORD	Torodi Ar. Bea	78.51	78	P	P	23 43 40.1	+0.1
	comp=Z,0.5nm,0.5s,baz=283,slow=6.6,SNR=15						
ASAR	Alice Springs	145.11	238	PKPbc	PKPbc	23 51 15.9	0.0
	comp=Z,0.5nm,0.6s,baz=117,slow=4.5,SNR=4.3						
WRA	Warramunga Arr	146.03	244	PKPbc	PKPbc	23 51 19.0	+0.2
	comp=Z,0.3nm,0.7s,baz=102,slow=3.1,SNR=3.5						

JMA 01 23:34:57.1, 36.°77N×**140.°57E, h8**km±1km**, M2.7, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
JHO	Hitachi	0.16	180	P	Pg	23 35 00.4	0.0
JHO				S	Sg	23 35 02.8	+0.1
ONAJ	Iwakimizuishiy	0.38	29	P	Pg	23 35 04.5	0.0
ONAJ				S	Sg	23 35 10.0	+0.5
MAT	Matsushiro	1.91	264	P	Pn	23 35 30.4	+0.4
MAT				S	Sb	23 35 55.6	-0.7

*IDC **01** 23:53:14.8±3.4, 30.°69S×178.°36W, h0km, mb4.1/2, mb1 4.3/3, mb1mx3.8/43, mbtmp4.1/3, ML2.9/1, Error ellipse: s-maj=75.2km s-min=49.7km az=111.0*
ISC 01 23:53:20.4±2.7**, 30.°8S**±0.°1×**178.°5W**±0.°4**, h35**km**, n9, σ1.s15**/11**, Kermadec Islands**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
WMGZ	Waiomatatini S	7.42	199	PN	Pn	23 55 09.6	+3.4
HAZ	Te Kaha	7.56	203	PN	Pn	23 55 10.0	+1.9
PKGZ	Pakihiroa	7.59	201	PN	Pn	23 55 09.7	+1.2
PKGZ				SN	Sn	23 56 32.6	-0.7
MWZ	Matawai	8.17	203	PN	Pn	23 55 16.0	-0.5
URZ	Urewera	8.25	205	Pn	Pn	23 55 18.1	+0.5
	0.2nm,0.3s,baz=350,slow=22,SNR=1.6						
URZ				Sn	Sn	23 56 48.3	-1.2
	0.7nm,0.3s,baz=235,slow=20,SNR=1.8						
URZ	Urewera	8.25	205	PN	Pn	23 55 18.7	+1.2
URZ				SN	Sn	23 56 49.0	-0.6
ASAR	Alice Springs	42.69	268	P	P	00 01 14.3	+0.2
	1.0nm,0.4s,baz=105,slow=7.2,SNR=6.9						
WRA	Warramunga Arr	43.72	273	P	P	00 01 22.6	+0.2
	1.5nm,0.3s,baz=111,slow=8.2,SNR=6.2						
FINES	FINESS Array B	145.42	339	PKPbc	PKPbc	00 12 52.8	-1.1
	0.7nm,0.4s,baz=55,slow=4.0,SNR=2.9						

*ISCJB **01** 23:57:21.6±0.2, 17.°20S±0.°04×174.°51W±0.°05, h172km, mb4.5/121, Error ellipse: s-maj=7.4km s-min=4.3km az=38.3*
*IDC **01** 23:57:23.3±3.2, 17.°11S×174.°42W, h170km±29km, mb4.2/24, mb1 4.3/25, mb1mx4.1/50, mbtmp4.6/25, Error ellipse: s-maj=18.4km s-min=10.3km az=146.0*
*BJI **01** 23:57:24.8, 17.°15S×174.°46W, h196km, mb4.8/15, mB5.4/9*
*NEIC **01** 23:57:25.6±0.9, 17.°19S×174.°49W, h196km±8km, mb4.5/93, Error ellipse: s-maj=5.7km s-min=3.7km az=149.0*
ISC 01 23:57:23.0±0.3**, 17.°22S**±0.°08×**174.°47W**±0.°07**, h172**km**, n243, σ0.s95**/246**, mb4.5**/121**, 12C-15D, Tonga Islands**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
AFI	Afiamalu	4.19	39	P	Pn	23 58 15.1	-11
	140nm,0.3s,baz=196,slow=2.7,SNR=97						
AFI				S	Sn	23 58 57.0	-19
	345nm,0.3s,baz=246,slow=17,SNR=9.9						
MSVF	Nonsavu	7.16	265	ePn	Pn	23 59 08.8	+3.6
RAR	Rarotonga	14.44	108	P	Pn	00 00 37.9	-1.6
	3.7nm,0.3s,baz=304,slow=4.4,SNR=3.4						
RAR				S	Sn	00 03 05.4	-15
	1.3nm,0.3s,baz=131,slow=22,SNR=1.1						
RAR	Rarotonga	14.44	108	ePn	P	00 00 42.6	+1.2
RAR				S	Sn	00 03 05.4	-15
MXZ	Matakaoa Point	21.24	196	eP	P	00 01 57.0	+1.6
	30nm,0.8s						
WMGZ	Waiomatatini S	21.45	196	PN	P	00 01 56.9	-0.8
PKGZ	Pakihiroa	21.61	196	PN	P	00 01 58.1	-1.3
TWGZ	Tauwhareparae	21.90	196	PN	P	00 02 01.6	-0.8
TWGZ				SN	S	00 05 51.3	-1.0
URZ	Urewera	22.22	198	P	P	00 02 02.9	-2.6
	26nm,0.4s,baz=11,slow=2.2,SNR=29						
URZ	Urewera	22.22	198	ePN	P	00 02 02.8	-2.7
URZ	Urewera	22.22	198	eP	P	00 02 05.1	-0.4
	56nm,1.2s						
TOZ	Tahuroa Road	22.25	201	PN	P	00 02 04.2	-1.6
RIGZ	Rimuhau	22.46	196	PN	P	00 02 08.2	+0.4
BKZ	Black Stump Fm	23.24	198	eP	P	00 02 14.5	-0.4
	52nm,1.5s						

Code	Station Name	Δ°	AZ°	Op	ISC	Time	Res
PPT	**Papeete**	**23.76**	**95**	*e*P	**P**	**00 02 20.2**	**+0.4**
BFZ	**Birch Farm**	**24.72**	**197**	*e*P	**P**	**00 02 28.9**	**+0.6**
	82nm,1.5s						
XMAS	**Kiritimati**	**25.47**	**43**	*e*P	**P**	**00 02 34.8**	**-0.5**
	124nm,1.1s						
DUWZ	**D'Urville Isla**	**25.55**	**201**	*e*PN	**P**	**00 02 34.9**	**-0.9**
QRZ	**Quartz Range**	**26.06**	**203**	PN	**P**	**00 02 40.9**	**+0.5**
LTZ	**Lake Taylor**	**27.87**	**201**	*e*P	**P**	**00 02 56.9**	**+0.4**
	16nm,0.9s						
INZ	**Inchbonnie**	**28.11**	**202**	PN	**P**	**00 02 57.7**	**-1.0**
OXZ	**Oxford**	**28.43**	**201**	*e*P	**P**	**00 03 00.6**	**-0.9**
	121nm,2.0s						
CTAO	**Charters Tower**	**37.26**	**259**	*e*P	**P**	**00 04 18.6**	**+0.1**
	38nm,1.4s						
PMG	**Port Moresby**	**38.08**	**277**	*e*P	**P**	**00 04 24.7**	**-0.6**
	90nm,1.9s						
H11S2	**WAKE ISLAND Hy**	**40.03**	**332**	T	T	00 47 49.6	
	baz=145,slow=75,SNR=24						
H11S3	**WAKE ISLAND Hy**	**40.04**	**332**	T	T	00 47 35.2	
	baz=145,slow=75,SNR=20						
H11S1	**WAKE ISLAND Hy**	**40.05**	**332**	T	T	00 47 35.6	
	baz=145,slow=75,SNR=17						
MANU	**Manus Island**	**40.41**	**288**	*e*P	**P**	**00 04 43.7**	**-1.0**
	21nm,0.7s						
HPO	**Honuapo**	**40.59**	**28**	*e*P	**P**	**00 04 45.8**	**-0.2**
WAKE	**Wake Island**	**40.74**	**332**	*e*P	**P**	**00 04 47.0**	**-0.1**
	84nm,1.0s						
HPAH	**Hawaii Prepara**	**41.36**	**27**	*e*P	**P**	**00 04 52.7**	**+0.4**
	65nm,0.6s						
KEKH	**Kekaha**	**41.56**	**21**	*e*P	**P**	**00 04 54.3**	**+0.5**
	308nm,1.5s						
KIP	**Kipapa**	**41.66**	**23**	*e*P	**P**	**00 04 54.5**	**-0.1**
	415nm,2.0s						
OPA	**Opana**	**41.90**	**23**	*e*P	**P**	**00 04 56.9**	**+0.3**
	119nm,1.2s						
STKA	**Stephens Creek**	**42.25**	**241**	P	**P**	**00 05 00.8**	**+1.3**
	7.1nm,0.8s,baz=98,slow=9.5,SNR=12						
STKA	**Stephens Creek**	**42.25**	**241**	*e*P	**P**	**00 04 59.1**	**-0.4**
	1.4nm,0.7s						
BBOO	**Buckleboo**	**47.02**	**241**	*e*P	**P**	**00 05 37.1**	**-0.1**
	65nm,2.0s						
WRAB	**Tennant Creek**	**48.44**	**258**	*e*P	**P**	**00 05 48.2**	**-0.1**
	25nm,0.8s						
WRA	**Warramunga Arr**	**48.45**	**258**	P	**P**	**00 05 48.5**	**+0.2**
	3.7nm,0.7s,baz=94,slow=7.9,SNR=17						
AS01	**Alice Springs**	**48.55**	**253**	*e*P	**P**	**00 05 48.6**	**-0.4**
AS31	**Alice Springs**	**48.59**	**253**	*e*P	**P**	**00 05 49.6**	**+0.2**
	6.9nm,0.8s						
ASAR	**Alice Springs**	**48.59**	**253**	P	**P**	**00 05 49.8**	**+0.3**
	24nm,0.8s,baz=85,slow=8.6,SNR=167						
ASAR				PcP	**PcP**	**00 07 13.7**	**+1.2**
	1.8nm,0.5s,baz=98,slow=4.4,SNR=5.0						
ASAR				S	**S**	**00 12 38.8**	**+0.5**
	0.5nm,0.7s,baz=94,slow=15,SNR=4.5						
SOEI	**Soe**	**59.83**	**269**	*e*P	**P**	**00 07 10.7**	**-0.2**
	84nm,1.4s						
TNTI	**Ternate**	**59.99**	**281**	*e*P	**P**	**00 07 10.8**	**-1.0**
	114nm,1.1s						
VNDA	**Vanda**	**61.47**	**186**	P	**P**	**00 07 23.1**	**+2.3**
	1.3nm,0.7s,baz=0.7,slow=7.1,SNR=9.7						
MJAR	**Matsushiro Arr**	**69.68**	**321**	P	**P**	**00 08 14.0**	**0.0**
	3.9nm,0.6s,baz=153,slow=4.7,SNR=4.4						
JNU	**Nakatsue**	**72.30**	**314**	P	**P**	**00 08 30.7**	**+0.8**
	11nm,0.7s,baz=16,slow=2.9,SNR=5.8						
PEA0	**Petropavlovsk-**	**74.05**	**343**	*e*P	**P**	**00 08 39.5**	**-0.2**
PEA0B	**Petropavlovsk-**	**74.05**	**343**	*e*P	**P**	**00 08 40.1**	**+0.4**
	21nm,0.7s						
PETK	**Petropavlovsk-**	**74.05**	**343**	P	**P**	**00 08 39.6**	**-0.1**
	17nm,0.6s,baz=140,slow=9.2,SNR=34						
HWB	**Hans Werner Br**	**74.24**	**47**	*e*P	**P**	**00 08 44.0**	**+2.7**
BORC	**Borrego Spring**	**74.75**	**47**	*e*P	**P**	**00 08 41.9**	**-2.3**
CMB	**Columbia Colle**	**74.80**	**42**	*e*P	**P**	**00 08 44.5**	**0.0**
	6.8nm,1.2s						
AFDM	**Forest Hills D**	**74.98**	**40**	*e*P	**P**	**00 08 45.5**	**0.0**
	4.5nm,0.9s						
GSC	**Goldstone, Bar**	**75.59**	**46**	*e*P	**P**	**00 08 49.1**	**0.0**
	5.0nm,1.1s						
YBH	**Yreka Blue Hor**	**75.66**	**37**	P	**P**	**00 08 49.6**	**+0.2**
	12nm,0.8s,baz=171,slow=1.3,SNR=24						
YBH	**Yreka Blue Hor**	**75.66**	**37**	*e*P	**P**	**00 08 49.4**	**+0.1**
	10.0nm,0.8s						
WAKR	**Walker**	**75.68**	**42**	*e*P	**P**	**00 08 50.0**	**+0.3**
NV01	**Mina Array Sit**	**76.36**	**42**	*e*P	**P**	**00 08 53.2**	**-0.3**
NVAR	**Mina Array Bea**	**76.36**	**42**	P	**P**	**00 08 53.3**	**-0.2**
	4.2nm,0.7s,baz=226,slow=9.4,SNR=29						
NV11	**Mina Array Sit**	**76.46**	**42**	*e*P	**P**	**00 08 53.8**	**-0.2**
	14nm,1.3s						
KSRS	**Korea Array**	**76.74**	**316**	P	**P**	**00 08 57.8**	**+2.4**
	2.5nm,0.6s,baz=125,slow=6.3,SNR=6.3						
KSAR	**Wonju Array Be**	**76.76**	**316**	P	**P**	**00 08 57.8**	**+2.3**
KS01	**Wonju Array Si**	**76.78**	**316**	*e*P	**P**	**00 08 56.0**	**+0.4**
TPNV	**Topopah Spring**	**76.88**	**44**	*e*P	**P**	**00 08 56.6**	**+0.2**
	7.1nm,1.1s						
MOD	**Modoc Plateau**	**77.18**	**38**	*e*P	**P**	**00 08 58.1**	**+0.1**
	17nm,1.3s						
K05A	**Summer Lake**	**77.34**	**37**	*e*P	**P**	**00 08 59.1**	**+0.3**
	12nm,0.8s						
W13A	**Hualapai Mount**	**77.50**	**47**	*e*P	**P**	**00 09 00.4**	**+0.5**
	4.7nm,1.2s						
R11A	**Troy Canyon, C**	**78.08**	**43**	*e*P	**P**	**00 09 02.9**	**-0.2**
	3.3nm,1.0s						
BMN	**Battle Mountai**	**78.20**	**41**	*e*P	**P**	**00 09 03.8**	**+0.2**
	15nm,1.3s						
USRK	**Ussuriysk Ar.**	**78.22**	**324**	P	**P**	**00 09 04.5**	**+1.1**
	1.8nm,0.6s,baz=135,slow=4.9,SNR=4.8						
TUC	**Tucson**	**78.33**	**51**	*e*P	**P**	**00 09 05.0**	**+0.6**
	20nm,1.8s						
WVOR	**Wild Horse Val**	**78.49**	**39**	*e*P	**P**	**00 09 05.3**	**+0.2**
	9.3nm,1.0s						
LCMT	**Little Creek M**	**78.94**	**46**	*e*P	**P**	**00 09 08.4**	**+0.7**
	3.0nm,0.8s						
BRLK	**Bradley Lake**	**79.08**	**12**	*e*P	**P**	**00 09 08.2**	**+0.4**
	22nm,1.0s						
KNB	**Kanab**	**79.23**	**46**	*e*P	**P**	**00 09 10.1**	**+0.8**
	4.7nm,0.9s						
U15A	**North Rim**	**79.30**	**47**	*e*P	**P**	**00 09 10.6**	**+0.8**
	10.0nm,1.1s						
WUAZ	**Wupatki**	**79.48**	**48**	*e*P	**P**	**00 09 11.6**	**+0.9**
	5.2nm,1.0s						
SVW2	**Sparrevohn**	**79.51**	**9**	*e*P	**P**	**00 09 09.6**	**-0.4**
	4.7nm,0.8s						
ELK	**Elko**	**79.62**	**42**	*e*P	**P**	**00 09 10.8**	**-0.7**
	6.6nm,1.1s						
SPU	**Mount Spurr**	**80.17**	**11**	*e*P	**P**	**00 09 12.9**	**-0.8**
MSU	**Marysvale**	**80.44**	**45**	*e*P	**P**	**00 09 16.1**	**+0.2**
NJ2	**Nanjing**	**80.45**	**308**	*e*P	**P**	**00 09 15.1**	**-0.7**
NJ2				pmax	pmax		
	comp=Z,9.0nm,0.8s						
BMO	**Blue Mountains**	**80.69**	**37**	*e*P	**P**	**00 09 16.4**	**-0.5**
	5.0nm,0.8s						
MFID	**Camas Ranch**	**80.74**	**39**	*e*P	**P**	**00 09 17.3**	**0.0**
	7.6nm,1.1s						
GAMB	**Gambell**	**80.77**	**1**	*e*P	**P**	**00 09 16.6**	**0.0**
	11nm,1.0s						
DUG	**Dugway, Tooele**	**80.89**	**43**	*e*P	**P**	**00 09 18.0**	**-0.1**
	4.9nm,1.2s						
PMR	**Palmer**	**81.10**	**12**	*e*P	**P**	**00 09 17.4**	**-1.2**
	24nm,1.4s						
TT01	**Tatalina**	**81.17**	**8**	*e*P	**P**	**00 09 18.6**	**-0.3**
TTA	**Tatalina**	**81.19**	**8**	*e*P	**P**	**00 09 18.9**	**-0.2**
	5.5nm,0.9s						
F10A	**Beach Ranch, E**	**81.39**	**36**	*e*P	**P**	**00 09 19.3**	**-1.3**
	9.9nm,0.8s						
KLR	**Kul'dur**	**81.49**	**328**	P	**P**	**00 09 21.4**	**+0.5**
	1.5nm,0.6s,baz=108,slow=5.1,SNR=7.4						
TMUT	**Trail Mountain**	**81.49**	**44**	*e*P	**P**	**00 09 20.6**	**-0.9**
	5.7nm,1.0s						
MA2	**Magadan**	**81.59**	**343**	P	**P**	**00 09 20.8**	**-0.3**
	5.1nm,0.5s,baz=172,slow=8.2,SNR=7.7						
B08A	**Colville Reser**	**81.66**	**34**	*e*P	**P**	**00 09 21.2**	**-0.6**
	6.0nm,0.8s						
HLID	**Hailey**	**81.68**	**40**	*e*P	**P**	**00 09 21.4**	**-0.9**
	5.2nm,0.9s						
KLU	**Klutina**	**81.69**	**13**	*e*P	**P**	**00 09 21.5**	**-0.3**
	6.5nm,0.9s						
SCM	**Sheep Creek Mo**	**81.69**	**13**	*e*P	**P**	**00 09 21.4**	**-0.4**
	21nm,0.7s						
SPUT	**South Promonto**	**81.70**	**42**	*e*P	**P**	**00 09 21.6**	**-0.9**
	9.9nm,1.6s						
PPLA	**Purkeypile**	**81.75**	**10**	*e*P	**P**	**00 09 22.1**	**-0.1**
	1.2nm,1.1s						
MNTX	**Cornudas Mount**	**82.13**	**53**	*e*P	**P**	**00 09 24.5**	**-0.2**
	2.5nm,0.8s						
CAST	**Castle Rocks**	**82.26**	**10**	*e*P	**P**	**00 09 23.1**	**-1.5**
	9.2nm,1.1s						
P18A	**Preston Nutter**	**82.30**	**45**	*e*P	**P**	**00 09 25.6**	**-0.2**
	8.9nm,1.3s						
PV05	**Paradox Valley**	**82.32**	**46**	*e*P	**P**	**00 09 25.7**	**-0.1**
HWUT	**Hardware Ranch**	**82.43**	**42**	*e*P	**P**	**00 09 26.0**	**-0.2**
	6.2nm,1.1s						
TX31	**Lajitas Ar. Si**	**82.47**	**56**	*e*P	**P**	**00 09 26.9**	**+0.3**
TXAR	**Lajitas Array**	**82.47**	**56**	P	**P**	**00 09 27.0**	**+0.4**
	1.3nm,0.8s,baz=222,slow=6.4,SNR=14						
PV09	**Paradox Valley**	**82.50**	**46**	*e*P	**P**	**00 09 27.3**	**+0.5**
PV10	**Paradox Valley**	**82.51**	**46**	*e*P	**P**	**00 09 26.8**	**0.0**
KTH	**Kantishna Hill**	**82.58**	**10**	*e*P	**P**	**00 09 25.2**	**-1.1**
	8.6nm,0.9s						
PV01	**Paradox Valley**	**82.72**	**47**	*e*P	**P**	**00 09 28.1**	**+0.2**
ANMO	**Albuquerque**	**82.75**	**50**	P	**P**	**00 09 28.1**	**0.0**
	4.1nm,1.1s,baz=201,slow=5.9,SNR=6.6						
ANMO	**Albuquerque**	**82.75**	**50**	*e*P	**P**	**00 09 27.9**	**-0.2**
	9.3nm,1.3s						
NEW	**Newport**	**82.78**	**35**	P	**P**	**00 09 26.8**	**-1.0**
	2.7nm,0.8s,baz=236,slow=3.3,SNR=6.2						
DHY	**Denali Highway**	**82.80**	**12**	*e*P	**P**	**00 09 27.3**	**-0.3**
	8.3nm,1.1s						
RND	**Reindeer**	**82.81**	**11**	*e*P	**P**	**00 09 27.3**	**-0.3**
	21nm,0.7s						
BPAW	**Bear Paw Mtn.**	**83.07**	**10**	*e*P	**P**	**00 09 27.4**	**-1.4**
	4.3nm,1.0s						
MCK	**McKinley**	**83.10**	**11**	*e*P	**P**	**00 09 28.4**	**-0.6**
	27nm,0.8s						
PAX	**Paxson**	**83.10**	**13**	*e*P	**P**	**00 09 28.2**	**-0.9**
	6.3nm,0.9s						
MCMT	**McKenzie Canyo**	**83.31**	**39**	*e*P	**P**	**00 09 31.1**	**+0.3**
AHID	**Auburn Hatcher**	**83.32**	**42**	*e*P	**P**	**00 09 31.0**	**+0.2**
	4.7nm,0.3s						
MENT	**Mentasta**	**83.45**	**14**	*e*P	**P**	**00 09 30.4**	**-0.4**
	107nm,0.2s						
MSO	**Missoula**	**83.75**	**37**	*e*P	**P**	**00 09 32.1**	**-0.7**
	5.2nm,1.1s						
S22A	**4UR Ranch, Cre**	**83.75**	**48**	*e*P	**P**	**00 09 34.0**	**+0.8**
	9.3nm,0.9s						
DLBC	**Dease Lake**	**83.76**	**22**	P	**P**	**00 09 31.9**	**-0.6**
	4.2nm,0.9s,baz=152,slow=6.4,SNR=5.7						
REDW	**Red Top Meadow**	**83.78**	**41**	*e*P	**P**	**00 09 33.3**	**+0.2**
	15nm,1.2s						
FXWY	**Fox Creek**	**83.81**	**41**	*e*P	**P**	**00 09 33.5**	**+0.2**
	8.7nm,1.1s						
BSMT	**Bassoo Peak**	**83.83**	**36**	*e*P	**P**	**00 09 32.8**	**-0.5**
SNOW	**Snow King Moun**	**83.89**	**41**	*e*P	**P**	**00 09 33.4**	**-0.4**
	15nm,1.0s						
WRH	**Wood River Hil**	**83.93**	**11**	*e*P	**P**	**00 09 32.5**	**-0.6**
	35nm,1.0s						
MLY	**Manley**	**83.98**	**10**	*e*P	**P**	**00 09 32.4**	**-1.1**
	9.8nm,0.9s						
IMW	**Indian Meadow**	**84.00**	**41**	*e*P	**P**	**00 09 34.4**	**0.0**
	7.6nm,0.8s						
SEY	**Seymchan**	**84.01**	**345**	P	**P**	**00 09 33.4**	**-0.2**
	16nm,0.8s,baz=146,slow=5.8,SNR=48						
MOOW	**Moose Ponds**	**84.04**	**41**	*e*P	**P**	**00 09 34.5**	**0.0**
	5.0nm,1.2s						
LOHW	**Long Hollow**	**84.06**	**41**	*e*P	**P**	**00 09 34.4**	**-0.2**
	4.1nm,0.9s						
HDA	**Harding Lake**	**84.08**	**12**	*e*P	**P**	**00 09 33.7**	**-0.2**
	23nm,0.8s						
CCB	**Clear Creek Bu**	**84.14**	**11**	*e*P	**P**	**00 09 33.4**	**-0.8**
	24nm,0.6s						
QLMT	**Earthquake Lak**	**84.17**	**40**	*e*P	**P**	**00 09 36.0**	**+0.9**
CHMT	**Chamberlain Mo**	**84.19**	**37**	*e*P	**P**	**00 09 34.6**	**-0.6**
FLWY	**Flagg Ranch**	**84.24**	**41**	*e*P	**P**	**00 09 36.1**	**+0.6**
	10nm,0.9s						
BW06	**Boulder Array**	**84.30**	**42**	*e*P	**P**	**00 09 35.0**	**-0.8**
PD31	**Pinedale Array**	**84.30**	**42**	*e*P	**P**	**00 09 34.7**	**-1.2**
PDAR	**Pinedale Array**	**84.30**	**42**	P	**P**	**00 09 35.0**	**-0.8**
	6.0nm,0.8s,baz=214,slow=3.3,SNR=46						
SMCO	**Snowmass**	**84.31**	**46**	*e*P	**P**	**00 09 36.2**	**0.0**
	16nm,1.5s						
COLA	**College**	**84.33**	**11**	*e*P	**P**	**00 09 34.6**	**-0.5**
	45nm,0.8s						
YFT	**Old Faithful**	**84.34**	**40**	*e*P	**P**	**00 09 37.7**	**+1.7**
	18nm,1.5s						
MDM	**Murphy Dome**	**84.34**	**11**	*e*P	**P**	**00 09 34.4**	**-0.9**
	32nm,1.2s						
YMR	**Madison River**	**84.37**	**40**	*e*P	**P**	**00 09 37.1**	**+0.9**
	7.4nm,0.8s						
ILAR	**Eielson Array**	**84.42**	**12**	P	**P**	**00 09 34.8**	**-0.9**
	6.5nm,0.8s,baz=235,slow=6.2,SNR=71						
ILB	**Eielson Array**	**84.42**	**12**	*e*P	**P**	**00 09 34.9**	**-0.8**
IL1	**Eielson Array**	**84.42**	**12**	*e*P	**P**	**00 09 33.8**	**-1.9**
H17A	**Grant Village**	**84.47**	**40**	*e*P	**P**	**00 09 36.5**	**-0.2**
	6.3nm,0.9s						
BOZ	**Bozeman (W)**	**84.47**	**39**	*e*P	**P**	**00 09 36.1**	**-0.4**
	9.1nm,1.1s						
MSTX	**Muleshoe**	**85.08**	**52**	*e*P	**P**	**00 09 39.9**	**+0.1**
	8.9nm,0.8s						
DAWY	**Dawson**	**85.43**	**15**	*e*P	**P**	**00 09 41.5**	**+0.7**
	27nm,1.1s						
EGAK	**Eagle**	**85.62**	**14**	*e*P	**P**	**00 09 41.6**	**0.0**
	17nm,0.9s						
RLMT	**Red Lodge**	**85.64**	**40**	*e*P	**P**	**00 09 42.8**	**+0.3**
	22nm,2.0s						
COLD	**Coldfoot**	**86.09**	**9**	*e*P	**P**	**00 09 44.6**	**+0.8**
	11nm,1.1s						
BILL	**Bilibino**	**86.17**	**353**	*e*P	**P**	**00 09 44.1**	**-0.1**
ABTX	**Abilene, Hawle**	**86.95**	**55**	*e*P	**P**	**00 09 49.2**	**+0.3**
	16nm,0.8s						
GYA	**Guiyang**	**87.99**	**298**	*e*P	**P**	**00 09 55.0**	**+0.9**
GYA				pP	pP	00 10 43.6	+6.6
GYA				sP	sP	00 11 05.2	+10
GYA				PP	**PP**	**00 13 26.6**	**+3.3**
GYA				SKS	**SKSac**	**00 20 01.4**	**-5.3**
GYA				S	**S**	**00 20 20.8**	**-2.6**
GYA				sS	sS	00 21 45.0	+7.0
GYA				pmax	pmax		
	comp=Z,10.0nm,1.0s						
RSSD	**Black Hills**	**88.49**	**43**	*e*P	**P**	**00 09 55.2**	**-1.0**
	3.9nm,0.9s						
INK	**Inuvik**	**90.28**	**14**	P	**P**	**00 10 03.5**	**-0.1**
	5.3nm,1.0s,baz=234,slow=5.2,SNR=14						
CD2	**Chengdu**	**91.88**	**302**	P	**P**	**00 10 11.2**	**-0.8**
CD2				pmax	pmax		
	comp=Z,1.0nm,0.6s						
YKA	**Yellowknife Ar**	**92.17**	**24**	P	**P**	**00 10 11.9**	**-0.6**
	0.7nm,0.8s,baz=236,slow=4.5,SNR=13						
CM01	**Chiang Mai Arr**	**92.19**	**288**	*e*P	**P**	**00 10 16.3**	**+2.6**
CMAR	**Chiang Mai Arr**	**92.21**	**289**	P	**P**	**00 10 15.3**	**+1.6**
	1.2nm,0.3s,baz=105,slow=2.9,SNR=5.2						
SONM	**Songino Array**	**95.51**	**318**	P	**P**	**00 10 29.2**	**+0.8**
	0.5nm,0.7s,baz=138,slow=3.7,SNR=4.8						
TIXI	**Tiksi**	**96.47**	**345**	*e*P	**P**	**00 10 31.9**	**-0.1**
	3.6nm,1.1s						
AAK	**Ala-Archa**	**116.85**	**309**	PKP	**PKPdf**	**00 15 47.7**	**+0.4**
	0.6nm,0.5s,baz=175,slow=10,SNR=3.8						
ARCES	**ARCESS Array B**	**126.25**	**351**	PKP	**PKPdf**	**00 16 04.9**	**+0.4**
	2.2nm,0.6s,baz=318,slow=1.6,SNR=11						
FINES	**FINESS Array B**	**133.48**	**347**	PKP	**PKPdf**	**00 16 17.9**	**-0.4**
	1.6nm,0.7s,baz=304,slow=0.7,SNR=7.3						
RAYN	**Ar Rayn**	**142.09**	**286**	*e*PKPdf	**PKPdf**	**00 16 31.5**	**-3.9**
KMBO	**Kilima Mbogo**	**143.81**	**243**	PKP	**PKPdf**	**00 16 39.0**	**0.0**
	2.3nm,0.8s,baz=77,slow=4.9,SNR=10						
KMBO	**Kilima Mbogo**	**143.81**	**243**	*e*PKPdf	**PKPdf**	**00 16 38.8**	**-0.2**
KMBO				PKP	PKPbc	00 16 39.0	+1.9
SFNV	**Sufian**	**143.96**	**309**	*e*P	PKPbc	00 16 37.2	+0.6
KWP	**Kalwaria Pacla**	**144.81**	**341**	*e*PKP	**PKPdf**	**00 16 39.4**	**+0.1**
KSRV	**Kasrt alli**	**145.00**	**309**	*e*P	**PKPdf**	**00 16 41.2**	**+1.1**
OJC	**Ojcow**	**145.14**	**344**	*e*PKP	**PKPab**	**00 16 40.3**	**+0.4**
KSP	**Ksiaz**	**145.37**	**348**	*e*PKP	**PKPab**	**00 16 41.4**	**+0.6**
PRAR	**RASCA**	**145.44**	**335**	⇓*i*P	**PKPdf**	**00 16 39.3**	**-1.2**
CLL	**Collm**	**145.47**	**352**	⇓*i*PKPbc	**PKPbc**	**00 16 41.0**	**+0.3**
	comp=Z,30nm,0.9s						
BURAR	**Bucovina Array**	**145.64**	**336**	⇓*i*P	**PKPab**	**00 16 42.5**	**+0.4**
NIE	**Niedzica**	**145.73**	**343**	*e*PKP	**PKPab**	**00 16 42.7**	**+0.5**
UPC	**Upice**	**145.74**	**348**	*i* PKP	**PKPab**	**00 16 42.5**	**+0.3**
BRG	**Berggiesshubel**	**145.76**	**351**	*i* PKP	**PKPab**	**00 16 42.3**	**0.0**
	comp=Z,22nm,1.1s						
DPC	**Dobruska-Polom**	**145.83**	**348**	*e*PKP	**PKPab**	**00 16 43.0**	**+0.4**
DPC				*e*x	x	00 17 21.5	
OKC	**Ostrava-Krasne**	**145.91**	**345**	*i* PKP	**PKPab**	**00 16 42.8**	**0.0**
TESR	**Tescani**	**145.95**	**334**	⇓*i*P	**PKPbc**	**00 16 42.8**	**+0.4**
TLCR		**145.98**	**330**	⇓*i*P	**PKPab**	**00 16 43.8**	**+0.5**
PVCC	**Panska Ves**	**145.99**	**350**	*e*PKP	**PKPab**	**00 16 43.0**	**-0.1**
ODBI	**Odobesti**	**146.36**	**332**	⇑*i*P	**PKPab**	**00 16 45.9**	**+1.2**
DRWC	**Darouich**	**146.40**	**311**	*e*P	**PKPbc**	**00 16 44.0**	**-0.1**
VRI	**Vrincioaia**	**146.42**	**333**	⇑*i*P	**PKPab**	**00 16 44.6**	**-0.4**
PRA	**Prague**	**146.45**	**350**	*e*PKP	**PKPab**	**00 16 44.8**	**-0.1**
PLOR	**Plostina**	**146.47**	**333**	⇑*i*P	**PKPbc**	**00 16 44.5**	**+0.5**
PRU	**Pruhonice**	**146.51**	**349**	*i* PKP	**PKPab**	**00 16 44.7**	**-0.5**
GOPC	**GO Pecny, Ondr**	**146.54**	**349**	*e*PKP	**PKPab**	**00 16 45.1**	**-0.2**
TIRR	**Tirgusor**	**146.71**	**330**	⇑*i*P	**PKPbc**	**00 16 45.0**	**+0.4**
VRAC	**Vranov**	**146.76**	**347**	⇓*i*P	**PKPbc**	**00 16 45.4**	**+0.8**
HARR	**Harsova**	**146.77**	**330**	⇑*i*P	**PKPab**	**00 16 46.0**	**-0.4**
BTCH	**Batrach**	**146.81**	**310**	*e*P	**PKPdf**	**00 16 42.8**	**-0.5**
BRTR	**Keskin Array B**	**146.87**	**318**	PKPbc	**PKPbc**	**00 16 46.1**	**+0.6**
	comp=Z,8.0nm,0.8s,baz=137,slow=2.7,SNR=43						
DOPR	**Dopca**	**146.91**	**334**	⇑*i*P	**PKPab**	**00 16 46.5**	**-0.4**
RABH	**Abou Rabah**	**146.92**	**307**	*e*P	**PKPdf**	**00 16 42.3**	**-1.1**
TREC	**Trest**	**147.00**	**348**	*e*PKP	**PKPbc**	**00 16 45.8**	**+0.5**
MLR	**Muntele Rosu**	**147.06**	**333**	⇓*i*P	**PKPab**	**00 16 47.0**	**-0.7**
ISR	**Istrita**	**147.08**	**332**	⇓*i*P	**PKPbc**	**00 16 46.6**	**+0.9**
PSZ	**Piszkesteto**	**147.19**	**342**	*e*PKPab	**PKPbc**	**00 16 47.0**	**+1.0**
ARNB	**Al Arnab**	**147.24**	**310**	*e*P	**PKPdf**	**00 16 43.4**	**-0.6**
DRGR		**147.26**	**338**	⇓*i*P	**PKPbc**	**00 16 46.8**	**+0.6**
MSAB	**Monastry St. A**	**147.27**	**330**	⇓*i*P	**PKPbc**	**00 16 47.1**	**+0.9**
GRFO	**Grafenberg**	**147.29**	**353**	*e*PKPdf	**PKPdf**	**00 16 43.2**	**-0.3**
GRFO				*e*PKPbc	**PKPbc**	**00 16 45.9**	**-0.2**
GRFO				*e*PKPab	**PKPab**	**00 16 48.8**	**+0.5**
ZALF	**Zalf**	**147.38**	**305**	*e*P	**PKPdf**	**00 16 43.1**	**-1.1**
KHC	**Kasperske Hory**	**147.51**	**350**	*e*PKP	**PKPdf**	**00 16 45.3**	**+1.4**
KHC				*e*x	x	00 16 47.6	
KHC	**Kasperske Hory**	**147.51**	**350**	*e*PKPbc	**PKPbc**	**00 16 47.9**	**+1.1**
SULR		**147.55**	**332**	⇑*i*P	**PKPab**	**00 16 49.9**	**+0.5**
ARR	**Arges**	**147.71**	**334**	⇑*i*P	**PKPab**	**00 16 49.0**	**-1.2**
GERES	**GERESS Array B**	**147.76**	**350**	PKPbc	**PKPbc**	**00 16 47.7**	**+0.2**
	comp=Z,4.7nm,0.9s,baz=22,slow=2.6,SNR=31						
SALA	**Sala**	**147.93**	**305**	*e*P	**PKPdf**	**00 16 44.0**	**-1.3**
SIRR	**Siria**	**148.09**	**339**	⇑*i*P	**PKPbc**	**00 16 49.3**	**+1.0**
PKSG		**148.10**	**343**	⇑*e*PKPdf	**PKPbc**	**00 16 48.9**	**+0.6**
CSKK	**Csˆ‡kako**	**148.16**	**343**	*e*PKPdf	**PKPbc**	**00 16 49.2**	**+0.7**
PKS7	**Kunszentmiklos**	**148.19**	**342**	⇓*e*PKPdf	**PKPbc**	**00 16 49.6**	**+1.1**
CONA	**Conrad Observa**	**148.22**	**347**	*i* PKiKP	**PKiKP**	**00 16 49.8**	**-0.5**
	comp=Z,106nm,0.8s,SNR=7.9						
GZR	**Gura Zlata**	**148.42**	**336**	⇑*i*P	**PKPbc**	**00 16 49.7**	**+0.4**
PKS6	**Bocsa**	**148.48**	**341**	⇑*e*PKPdf	**PKPbc**	**00 16 50.7**	**+1.4**
MOA	**Molln**	**148.62**	**349**	*i* PKiKP	**PKPbc**	**00 16 50.4**	**+0.7**
	comp=Z,12nm,1.4s,SNR=5.1						
BZS	**Buzias**	**148.66**	**338**	⇓*i*P	**PKPbc**	**00 16 49.7**	**-0.1**
PKS9	**Tamasi**	**148.87**	**343**	⇓*e*PKPdf	**PKPbc**	**00 16 50.6**	**+0.3**
BFO	**Black Forest**	**148.89**	**356**	*e*PKPbc	**PKPbc**	**00 16 50.5**	**+0.2**
MDVR	**Moldovita**	**149.34**	**337**	⇓*i*P	**PKPbc**	**00 16 52.2**	**+0.6**
BEHE	**Becsehely**	**149.38**	**345**	*e*PKPdf	**PKPab**	**00 16 58.6**	**+1.8**
SOKA	**Soboth**	**149.59**	**347**	*i* PKiKP	**PKPbc**	**00 16 52.4**	**+0.2**
	comp=Z,9.2nm,1.0s,SNR=6.4						
MOTA	**Moosalm**	**149.61**	**352**	*i* PKiKP	**PKiKP**	**00 16 53.5**	**+0.2**
	comp=Z,15nm,1.1s,SNR=9.9						
DAVA	**Damuels**	**149.80**	**354**	*i* PKiKP	**PKiKP**	**00 16 53.5**	**-0.2**
	comp=Z,26nm,1.1s,SNR=6.2						
FETA	**Feichten**	**149.97**	**353**	*i* PKiKP	**PKiKP**	**00 16 54.0**	**-0.1**
	comp=Z,16nm,1.0s,SNR=6.4						
ABTA	**Abfaltersbach**	**149.99**	**350**	*i* PKiKP	**PKPbc**	**00 16 53.3**	**+0.1**
	comp=Z,14nm,0.6s,SNR=10						
VTS	**Vitosha**	**150.56**	**333**	⇓*i*P	**PKPbc**	**00 16 55.7**	**+0.9**
TUE	**Stuetta**	**150.66**	**355**	*e*PKPbc	**PKPbc**	**00 16 55.6**	**+0.7**
TRI	**Trieste**	**150.78**	**348**	*e*PKPbc	**PKPbc**	**00 16 54.9**	**-0.1**
BNI	**Bardonecchia**	**152.24**	**358**	*e*PKPdf	**PKPdf**	**00 16 50.9**	**-0.8**
BNI				*e*PKPbc	**PKPbc**	**00 16 58.5**	**0.0**
ESDC	**Sonseca Array**	**156.15**	**18**	PKPab	**PKPab**	**00 17 26.1**	**+0.5**
	comp=Z,0.5nm,0.5s,baz=340,slow=4.5,SNR=5.5						

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*NIED **02** 00:03:00, 38°.10N×143°.30E, h5km, Mw3.9 Best double couple: $M_0$7.29000×10^{14} NP1:ϕ_s32.00000°, δ24.00000°, λ-108.00000°. NP2:ϕ_s231.00000°, δ67.00000°, λ-82.00000°.*

*IDC **02** 00:03:17.0±1.1, 37°.89N×143°.68E, h0km, mb3.8/7, mb1 4.0/8, mb1mx3.6/53, mbtmp3.8/8, ML3.2/1, MS2.8/6, Ms1 2.8/6, ms1mx2.6/35, Error ellipse: s-maj=29.1km s-min=20.3km az=92.0*

*ISCJB **02** 00:03:18.7±0.7, 37°.98N±0°.07×143°.53E±0°.06, h19km, mb3.8/9, MS2.9/2, Error ellipse: s-maj=9.9km s-min=6.6km az=6.5*

*JMA **02** 00:03:19.5±0.3, 38°.11N×143°.34E, h3km, M3.6*

*NEIC **02** 00:03:22.2±2.6, 37°.89N×143°.62E, h35km±24km, mb4.0/2, Error ellipse: s-maj=20.0km s-min=14.6km az=104.0*

ISC 02 00:03:20.4±0.9**, 38°.00N**±0°.08×**143°.49E**±0°.08**, h19**km**, n27, σ1ˢ26**/25**, mb3.8**/9**, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**1.74**	**286**	P	**Pn**	**00 03 49.0**	**-0.6**
JIO				S	**Sn**	**00 04 10.0**	**-1.3**
OFUJ	**Ofunato**	**1.79**	**308**	P	**Pn**	**00 03 49.2**	**-1.0**
JMK	**Ichinoseki**	**2.02**	**299**	P	**Pn**	**00 03 52.9**	**-0.5**
JMM	**Marumori**	**2.13**	**267**	P	**Pn**	**00 03 54.6**	**-0.4**
JOU	**Okura**	**2.25**	**280**	P	**Pn**	**00 03 57.4**	**+0.8**
JOM	**Ohasama**	**2.26**	**311**	P	**Pn**	**00 03 56.2**	**-0.5**
JOM				S	**Sn**	**00 04 23.6**	**-0.5**
JFT	**Otama**	**2.54**	**260**	P	**Pn**	**00 04 01.0**	**+0.4**
JFT				*e*S	**Sn**	**00 04 31.0**	**0.0**
JYK	**Kaneyama**	**2.62**	**291**	P	**Pn**	**00 04 01.8**	**+0.1**
JYK				*e*S	**Sn**	**00 04 33.2**	**+0.2**
JRG	**Rokugo**	**2.63**	**303**	P	**Pn**	**00 04 02.3**	**+0.5**
MJAR	**Matsushiro Arr**	**4.45**	**253**	Pn	**Pn**	**00 04 28.2**	**+1.3**
	1.1nm,0.3s,baz=74,slow=12,SNR=5.6						
MJAR				LR	LR	00 06 22.1	
	comp=Z,75nm,18.1s,baz=80,slow=41						
MAT	**Matsushiro**	**4.46**	**253**	P	**Pn**	**00 04 28.6**	**+1.7**
MAT				*e*S	**Sn**	**00 05 14.3**	**-3.9**
USRK	**Ussuriysk Ar.**	**10.65**	**309**	LR	LR	00 10 24.5	
	comp=Z,44nm,19.1s,baz=5.4,slow=39						
KSRS	**Korea Array**	**12.34**	**272**	LR	LR	00 10 18.1	
	comp=Z,22nm,21.4s,baz=55,slow=34						
KLR	**Kul'dur**	**14.06**	**327**	LR	LR	00 12 00.9	
	comp=Z,41nm,19.3s,baz=295,slow=37						
SEY	**Seymchan**	**25.55**	**9**	P	**P**	**00 08 48.5**	**+0.8**
	0.9nm,0.2s,baz=185,slow=9.9,SNR=6.2						
H11N2	**WAKE ISLAND Hy**	**27.29**	**125**	T	T	00 37 15.3	
	baz=314,slow=75,SNR=6.2						
H11N1	**WAKE ISLAND Hy**	**27.30**	**125**	T	T	00 37 20.3	
	baz=314,slow=75,SNR=7.6						
H11N3	**WAKE ISLAND Hy**	**27.31**	**125**	T	T	00 37 13.5	
	baz=314,slow=75,SNR=7.8						
SONM	**Songino Array**	**28.64**	**302**	P	**P**	**00 09 18.4**	**+2.6**
	0.6nm,0.7s,baz=94,slow=9.0,SNR=4.5						
SONM				LR	LR	00 20 31.3	
	comp=Z,23nm,20.1s,baz=100,slow=36						
ZALV	**Zalesovo Beam**	**42.49**	**312**	P	**P**	**00 11 14.2**	**0.0**
	0.6nm,0.3s,baz=75,slow=10,SNR=3.0						
NRIK	**Noril'sk**	**43.09**	**335**	LR	LR	00 29 33.9	
	comp=Z,24nm,19.6s,baz=100,slow=36						
MKAR	**Makanchi Array**	**45.01**	**302**	P	**P**	**00 11 34.6**	**+0.1**
	0.7nm,0.8s,baz=86,slow=8.6,SNR=5.7						
ILAR	**Eielson Array**	**47.79**	**33**	P	**P**	**00 11 55.6**	**-0.5**
	0.7nm,0.7s,baz=260,slow=6.5,SNR=5.1						
WRA	**Warramunga Arr**	**58.27**	**190**	P	**P**	**00 13 12.8**	**-0.9**
	2.6nm,0.8s,baz=7.8,slow=7.0,SNR=10						
ASAR	**Alice Springs**	**62.00**	**190**	P	**P**	**00 13 38.3**	**-0.9**
	0.8nm,0.8s,baz=7.6,slow=7.3,SNR=7.5						
FLWY	**Flagg Ranch**	**74.34**	**46**	*e*P	**P**	**00 14 56.7**	**-0.2**
	2.8nm,0.6s						
SDCO	**Great Sand Dun**	**81.42**	**48**	*e*P	**P**	**00 15 35.9**	**-0.6**
	0.4nm,0.5s						

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*IDC **02** 00:03:42.5±0.6, 34°.03S×71°.90W, h0km, mb4.3/18, mb1 4.4/21, mb1mx4.3/39, mbtmp4.3/21, ML4.2/3, MS4.2/14, Ms1 4.2/14, ms1mx4.1/22, Error ellipse: s-maj=21.8km s-min=13.0km az=84.0*

*ISCJB **02** 00:03:43.5±0.8, 34°.11S±0°.02×72°.31W±0°.04, h17km±5km, mb4.7/50, MS4.3/12, Error ellipse: s-maj=5.9km s-min=4.1km az=9.2*

*NEIC **02** 00:03:44.0, 34°.08S×72°.21W, h15km, mb4.8/36, ML4.4(GUC), After GUC.*

NEIC Felt [III] at Litueche, Longavi, Navidad, Pichilemu, Santo Domingo and Talca; [II] at Parral, Rancagua, Rio Claro, San Antonio and Tiltil.

*GUC **02** 00:03:44.3±0.4, 34°.09S×72°.21W, h15km±2km, ML4.4*

*BJI **02** 00:03:49.7, 34°.10S×71°.80W, h44km, mB5.3/3, Ms4.8/2, Ms7 4.7/2*

ISC 02 00:03:45.5±0.3**, 34°.06S**±0°.03×**72°.04W**±0°.05**, h21**km±2km**, n125, σ1ˢ31**/130**, mb4.7**/50**, MS4.3**/12**, 4C-4D, Near coast of central Chile**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHPI	**Pichilemu**	**0.33**	**175**	*e*P	**Pb**	**00 03 51.3**	**-1.3**
CHPI				*e*S	**Sb**	**00 03 57.0**	**-0.5**
NICH	**Los Niches**	**1.15**	**145**	*e*P	**Pb**	**00 04 06.4**	**-0.3**
NICH				*e*S	**Sn**	**00 04 22.8**	**+1.3**
ANTU	**Antumapu**	**1.27**	**68**	*e*P	**Pb**	**00 04 09.3**	**+0.6**
ANTU				*e*S	**Sb**	**00 04 28.4**	**+3.7**
ANTU				AML	AML	00 04 34.4	

	comp=E,16µm,0.6s						
ROC1	**El Roble**	**1.38**	**39⇓**	*e*P	**Pb**	**00 04 11.1**	**+0.3**
ROC1				*e*S	Sb	00 04 33.9	+5.9
ROCH	**El Roble**	**1.39**	**39**	*e*P	**Pb**	**00 04 10.9**	**+0.1**
ROCH				*e*S	**Sb**	**00 04 31.7**	**+3.6**
ROCH				AML	AML	00 04 40.2	
	comp=E,11µm,0.4s						
CLCH	**Cerro Calan**	**1.42**	**62⇑**	*e*P	**Pb**	**00 04 11.7**	**+0.5**
CLCH				*e*S	**Sb**	**00 04 32.4**	**+3.5**
CLCH				AML	AML	00 04 41.4	
	comp=E,9µm,0.5s						
PEL	**Peldehue**	**1.46**	**51⇑**	*e*P	**Pb**	**00 04 12.1**	**+0.2**
PEL				*e*S	**Sb**	**00 04 33.3**	**+3.3**
PEL				AML	AML	00 04 42.6	
	comp=N,7µm,0.5s						
AAGR	**Agrelo**	**2.85**	**71**	*e*P	**Pb**	**00 04 34.3**	**-1.5**
ARCO	**CERRO ARCO**	**2.87**	**66**	*e*P	**Pb**	**00 04 34.9**	**-1.2**
ARCO				*e*S	Sb	00 05 17.5	+6.7
ARCO				IAML		00 05 28.4	
	comp=Z,518nm,0.6s						
AUSP	**Uspallata**	**2.88**	**51⇓**	*e*P	**Pb**	**00 04 34.7**	**-1.7**
ASAL	**Salagasta**	**3.06**	**62**	*e*P	**Pb**	**00 04 38.0**	**-1.3**
RTLS	**Leoncito**	**3.23**	**46**	*e*P	**Pb**	**00 04 39.7**	**-2.6**
RTCV	**Cerro Valdivia**	**3.67**	**54**	*e*P	Pn	00 04 44.7	+3.6
RTLL	**Cerro Villicun**	**4.06**	**49**	*e*P	Pn	00 04 50.3	+3.9
RTLL			⇑	*e*S	**Sb**	**00 05 44.6**	**-0.3**
AMOG	**MOGNA**	**4.32**	**45**	*e*P	Pn	00 04 52.9	+2.8
ACAN	**Cantantal**	**4.44**	**68**	*e*P	Pn	00 04 55.1	+3.4
AMAR	**Marayes**	**4.74**	**58**	*e*P	Pn	00 04 59.7	+3.8
AMAR			⇓	*e*S	**Sb**	**00 06 01.4**	**-3.3**
AVFE	**Valle Fertil**	**5.15**	**50**	*e*P	Pn	00 05 04.9	+3.4
AVFE				*e*S	Sb	00 06 08.5	-7.9
LCO	**Las Campanas**	**5.16**	**13**	*e*Pn	**Pn**	**00 05 01.6**	**-0.2**
LCO				*e*Pb	**Pb**	**00 05 14.6**	**-0.7**
LCO				*e*Sn	**Sn**	**00 05 59.8**	**-1.1**
LCO				*e*Sb	**Sb**	**00 06 17.7**	**+0.8**
ACHE	**Chepes**	**5.38**	**59**	*e*P	Pn	00 05 07.4	+2.7
AGUA	**GUANDACOL**	**5.47**	**34**	*e*P	**Pn**	**00 05 08.5**	**+2.6**
SUCO	**SUCO**	**6.01**	**85**	IAML		00 07 01.5	
	comp=Z,64nm,0.5s						
VCA	**Vinchina**	**6.24**	**33**	*e*P	**Pn**	**00 05 17.6**	**+1.1**
VCA				IAML		00 06 58.6	
	comp=Z,186nm,0.6s						
ACLC	**CERRO LA CRUZ**	**6.33**	**45**	*e*P	**Pn**	**00 05 18.6**	**+0.7**
ACLC				IAML		00 07 12.8	
	comp=Z,140nm,0.6s						
PLCA	**Paso Flores**	**6.76**	**170**	Pn	**Pn**	**00 05 23.2**	**-0.4**
	comp=Z,3.0nm,0.3s,baz=357,slow=11,SNR=43						
PLCA				Sn	**Sn**	**00 06 42.3**	**+2.3**
	baz=353,slow=16,SNR=1.2						
PLCA				Lg	Lg	00 07 14.9	
	comp=Z,1.0nm,0.3s,baz=300,slow=21,SNR=3.0						
PLCA				LR	LR	00 08 23.9	
	comp=Z,2µm,19.7s,baz=12,slow=42						
PLCA	**Paso Flores**	**6.76**	**170**	*e*Pn	**Pn**	**00 05 24.3**	**+0.7**
PLCA				Sn	**Sn**	**00 06 42.2**	**+2.3**
CYA	**Choya**	**7.74**	**45**	IAML		00 07 31.6	
	comp=Z,29nm,0.7s						
TRQA	**Tornquist**	**9.07**	**119**	*e*Pn	**Pn**	**00 05 54.6**	**-0.5**
FSA	**Cafayete**	**9.50**	**35**	IAML		00 08 58.1	
	comp=Z,10nm,0.7s						
PB10	**IPOC Station P**	**10.59**	**7**	*e*Pn	**Pn**	**00 06 16.6**	**+0.5**
PB01	**IPOC Station P**	**13.16**	**11**	*e*Pn	**Pn**	**00 06 52.6**	**+1.3**
CPUP	**Villa Florida**	**14.86**	**63**	Pn	**Pn**	**00 07 11.7**	**-2.7**
	comp=Z,0.1nm,0.3s,baz=238,slow=13,SNR=1.9						
CPUP				Sn	**Sn**	**00 09 57.1**	**-1.3**
	comp=Z,0.1nm,0.3s,baz=197,slow=19,SNR=1.6						
CPUP				LR	LR	00 13 51.5	
	comp=Z,1µm,18.2s,baz=240,slow=41						
LPAZ	**La Paz**	**18.05**	**12**	P	**Pn**	**00 07 55.5**	**-0.1**
	comp=Z,0.3nm,0.3s,baz=193,slow=10,SNR=29						
LPAZ	**La Paz**	**18.05**	**12**	*e*Pn	**P**	**00 07 56.4**	**+0.4**
	comp=Z,21nm,0.9s						
SIV	**San Ignacio**	**20.53**	**31**	P	**P**	**00 08 20.5**	**-2.0**
	comp=Z,14nm,1.0s,baz=227,slow=13,SNR=16						
SIV				LR	LR	00 17 44.7	
	comp=Z,1µm,19.1s,baz=222,slow=41						
USHA	**Ushuaia**	**20.92**	**174**	P	**P**	**00 08 27.4**	**+1.0**
	comp=Z,48nm,1.0s,baz=350,slow=12,SNR=2.7						
NNA	**Nana**	**22.41**	**348**	*e*P	**P**	**00 08 42.0**	**-0.8**
	comp=Z,6.1nm,0.4s						
SPB	**Sao Paulo**	**23.89**	**71**	*e*P	**P**	**00 08 56.4**	**-1.4**
	comp=Z,45nm,1.0s						
SAML	**Samuel**	**26.29**	**20**	*e*P	**P**	**00 09 19.6**	**-0.1**
	comp=Z,7.0nm,0.7s						
BDFB	**Brasilia**	**28.37**	**56**	P	**P**	**00 09 37.4**	**-1.1**
	comp=Z,6.7nm,0.8s,baz=183,slow=8.4,SNR=9.4						
BDFB				LR	LR	00 22 03.0	
	comp=Z,975nm,18.4s,baz=215,slow=39						
BDFB	**Brasilia**	**28.37**	**56**	*e*P	**P**	**00 09 37.8**	**-0.6**
	comp=Z,31nm,1.3s						
PTGA	**Pitinga**	**35.03**	**21**	P	**P**	**00 10 36.6**	**-0.2**
	comp=Z,7.7nm,1.0s,baz=213,slow=14,SNR=5.2						
PTGA	**Pitinga**	**35.03**	**21**	*e*P	**P**	**00 10 37.0**	**+0.2**
	comp=Z,20nm,1.3s						
ROSC	**El Rosal**	**38.75**	**356**	LR	LR	00 27 28.4	
	comp=Z,157nm,18.2s,baz=200,slow=37						
SDV	**Santo Domingo**	**42.73**	**2**	P	**P**	**00 11 40.9**	**-0.7**
	comp=Z,2.8nm,0.7s,baz=228,slow=14,SNR=3.4						
SDV	**Santo Domingo**	**42.73**	**2**	*e*P	**P**	**00 11 41.4**	**-0.1**
BCIP	**Isla Barro Col**	**43.62**	**349**	*e*P	**P**	**00 11 49.4**	**+1.0**
	comp=Z,89nm,1.9s						
RCBR	**Riachuelo**	**43.68**	**58**	*e*P	**P**	**00 11 48.1**	**-0.9**
	comp=Z,34nm,1.3s						
VNA3	**Neumayer Olymp**	**49.30**	**158**	P	**P**	**00 12 30.4**	**-2.1**
VNA1	**Neumayer--Stat**	**49.62**	**157**	P	**P**	**00 12 31.9**	**-3.0**
VNA2	**Neumayer--Watz**	**49.95**	**157**	P	**P**	**00 12 38.1**	**+0.7**
	baz=294,slow=9.2						
TGUH	**Tegucigalpa,Un**	**50.00**	**341**	*e*P	**P**	**00 12 39.4**	**+1.0**
	comp=Z,46nm,1.6s						
SNAA	**Sanae**	**51.53**	**158**	P	**P**	**00 12 49.8**	**+0.4**
SNAA	**Sanae**	**51.53**	**158**	*e*P	**P**	**00 12 48.8**	**-0.6**
	comp=Z,2µm,1.2s						
CDVI	**St. Croix**	**51.99**	**9**	*e*P	**P**	**00 12 53.0**	**-0.2**
	comp=Z,45nm,0.8s						
CELP	**Cerrillos**	**52.11**	**7**	*e*P	**P**	**00 12 53.9**	**-0.3**
BANI	**BANI**	**52.19**	**2**	*e*P	**P**	**00 12 55.0**	**+0.1**
CCIG	**Comitan**	**53.60**	**336**	*e*P	**P**	**00 13 06.1**	**+0.7**
	comp=Z,16nm,1.2s						
TEIG	**Tepich**	**56.16**	**342**	*e*P	**P**	**00 13 25.0**	**+1.4**
	comp=Z,2.2nm,1.8s						
QSPA	**South Pole Qui**	**56.17**	**180**	*e*P	**P**	**00 13 23.2**	**-0.3**
	comp=Z,54nm,1.0s						
TLIG	**Tlapa**	**57.22**	**330**	*e*P	**P**	**00 13 32.8**	**+1.3**
	comp=Z,26nm,1.7s						
ASCN	**Ascension**	**58.93**	**78**	*e*P	**P**	**00 13 42.5**	**-1.0**
	comp=Z,126nm,1.1s						
VNDA	**Vanda**	**64.04**	**191**	P	**P**	**00 14 18.7**	**+1.6**
	comp=Z,0.8nm,0.8s,baz=116,slow=4.9,SNR=3.2						
VNDA				LR	LR	00 40 02.5	
	comp=Z,75nm,18.6s,baz=124,slow=34						
SYO	**Syowa Base**	**65.81**	**158⇑**	*e*P	**P**	**00 14 26.8**	**-1.9**
SYO	**Syowa Base**	**65.81**	**158⇓**	*e*pP	pP	00 14 33.8	-1.7
TAOE	**Nuku Hiva Isla**	**66.97**	**275**	*e*S	S	00 23 50.2	+20
	comp=Z,90nm,23.3s						
TAOE	**Nuku Hiva Isla**	**66.97**	**275**	*e*LR	LR	00 35 09.2	
	comp=Z,178nm,21.1s						
JCT	**Junction City**	**69.34**	**335**	*e*P	**P**	**00 14 53.0**	**+1.5**
	comp=Z,15nm,1.2s						
TXAR	**Lajitas Array**	**69.79**	**331**	P	**P**	**00 14 54.6**	**+0.3**
	comp=Z,0.7nm,0.6s,baz=149,slow=7.4,SNR=9.1						
TXAR				LR	LR	00 41 12.2	
	comp=Z,241nm,18.1s,baz=0.0,slow=32						
TX31	**Lajitas Ar. Si**	**69.79**	**331**	*e*P	**P**	**00 14 55.4**	**+1.0**
OXF	**Oxford**	**70.13**	**345**	*e*P	**P**	**00 14 55.9**	**-0.3**
	comp=Z,6.2nm,0.7s						
PPT2	**Papeete2**	**70.22**	**262**	*e*LR	LR	00 36 23.8	
	comp=Z,259nm,27.5s						
WVT	**Waverly**	**71.37**	**347**	*e*P	**P**	**00 15 03.2**	**-0.5**
	comp=Z,22nm,1.0s						
PVMO	**Portageville**	**72.03**	**345**	*e*P	**P**	**00 15 05.9**	**-1.7**
	comp=Z,314nm,0.4s						
MNTX	**Cornudas Mount**	**72.56**	**331**	*e*P	**P**	**00 15 10.6**	**-0.4**
	comp=Z,3.6nm,1.1s						
MAW	**Mawson**	**73.12**	**164**	P	**P**	**00 15 14.1**	**+0.3**
	comp=Z,6.3nm,0.9s,baz=252,slow=7.1,SNR=6.6						
MAW				LR	LR	00 50 02.6	
	comp=Z,297nm,18.2s,baz=238,slow=38						
MAW	**Mawson**	**73.12**	**164**	*e*P	**P**	**00 15 13.7**	**-0.2**
	comp=Z,2.2nm,1.0s						
ACSO	**Alum Creek Sta**	**74.61**	**351**	*e*P	**P**	**00 15 22.3**	**-0.5**
	comp=Z,5.2nm,0.3s						
SUR	**Sutherland**	**74.80**	**119**	P	**P**	**00 15 25.9**	**+1.3**
	comp=Z,0.9nm,1.0s,baz=270,slow=8.1,SNR=3.1						
DBIC	**Dimbokro**	**75.20**	**71**	P	**P**	**00 15 27.3**	**+0.5**
	comp=Z,3.3nm,0.9s,baz=213,slow=5.4,SNR=3.6						
DBIC				LR	LR	00 47 04.0	
	comp=Z,176nm,18.8s,baz=216,slow=35						
ANMO	**Albuquerque**	**75.84**	**331**	P	**P**	**00 15 32.1**	**+1.9**
	comp=Z,1.5nm,0.9s,baz=151,slow=6.2,SNR=3.8						
ANMO	**Albuquerque**	**75.84**	**331**	*e*P	**P**	**00 15 30.4**	**+0.1**
	comp=Z,2.1nm,1.0s						
T25A	**Trinidad**	**76.99**	**334**	*e*P	**P**	**00 15 37.7**	**+1.0**
	comp=Z,12nm,1.3s						
YUH	**Yuha Desert**	**78.14**	**323**	*e*P	**P**	**00 15 45.1**	**+2.1**
SMCO	**Snowmass**	**79.73**	**333**	*e*P	**P**	**00 15 52.9**	**+0.8**
	comp=Z,20nm,1.6s						
BOSA	**Boshof**	**80.04**	**118**	P	**P**	**00 15 53.8**	**-0.2**
	comp=Z,10nm,1.2s,baz=242,slow=5.9,SNR=4.6						
BOSA				LR	LR	00 48 14.3	
	comp=Z,76nm,18.3s,baz=216,slow=33						
KNB	**Kanab**	**80.28**	**328**	*e*P	**P**	**00 15 55.7**	**+0.9**
	comp=Z,5.8nm,1.0s						
KNB				*e*pP	**sP**	**00 16 04.8**	**+0.5**
ECSD	**EROS Data Cent**	**80.61**	**342**	*e*P	**P**	**00 15 55.7**	**-0.5**
	comp=Z,8.4nm,1.1s						
P18A	**Preston Nutter**	**81.39**	**331**	*e*P	**P**	**00 16 01.6**	**+0.7**
	comp=Z,18nm,1.7s						
LBTB	**Lobatse**	**82.28**	**115**	P	**P**	**00 16 06.0**	**+0.2**
	comp=Z,6.3nm,1.0s,baz=256,slow=8.3,SNR=5.0						
R11A	**Troy Canyon, C**	**82.61**	**327**	*e*P	**P**	**00 16 08.0**	**+0.9**
	comp=Z,11nm,1.7s						
DUG	**Dugway, Tooele**	**82.93**	**330**	*e*P	**P**	**00 16 09.8**	**+1.1**
	comp=Z,4.7nm,1.1s						
RSSD	**Black Hills**	**83.09**	**337**	*e*P	**P**	**00 16 09.1**	**-0.5**
	comp=Z,1.6nm,0.7s						
HWUT	**Hardware Ranch**	**83.61**	**331**	*e*P	**P**	**00 16 11.6**	**-0.6**
	comp=Z,0.5nm,0.4s						
BGU	**Big Grassy Mou**	**83.63**	**330**	*e*P	**P**	**00 16 13.8**	**+1.4**
	comp=Z,6.1nm,1.4s						
SPUT	**South Promonto**	**83.71**	**331**	*e*P	**P**	**00 16 13.7**	**+0.9**
	comp=Z,6.5nm,1.3s						
BW06	**Boulder Array**	**83.82**	**333**	*e*P	**P**	**00 16 13.7**	**+0.4**
PDAR	**Pinedale Array**	**83.82**	**333**	P	**P**	**00 16 13.9**	**+0.5**
	comp=Z,0.6nm,0.7s,baz=156,slow=4.6,SNR=4.6						
PDAR				LR	LR	00 49 42.0	
	comp=Z,165nm,19.5s,baz=181,slow=33						
NVAR	**Mina Array Bea**	**83.94**	**325**	P	**P**	**00 16 16.0**	**+2.0**
	comp=Z,0.5nm,0.6s,baz=140,slow=7.1,SNR=4.1						
NVAR				LR	LR	00 46 03.1	
	comp=Z,134nm,19.8s,baz=116,slow=30						
TORD	**Torodi Ar. Bea**	**84.23**	**70**	P	**P**	**00 16 15.5**	**-0.3**
	comp=Z,6.5nm,0.9s,baz=241,slow=4.7,SNR=28						
TORD				LR	LR	00 52 57.1	
	comp=Z,161nm,18.7s,baz=275,slow=35						
CMB	**Columbia Colle**	**84.63**	**324**	*e*P	**P**	**00 16 17.5**	**+0.1**
	comp=Z,5.6nm,0.8s						
IMW	**Indian Meadow**	**85.31**	**333**	*e*P	**P**	**00 16 20.9**	**0.0**
	comp=Z,20nm,0.1s						
YMR	**Madison River**	**85.97**	**333**	*e*P	**P**	**00 16 24.6**	**+0.5**
	comp=Z,10nm,0.7s						
HLID	**Hailey**	**86.39**	**331**	*e*P	**P**	**00 16 25.4**	**-0.7**
	comp=Z,1.2nm,0.9s						
ULM	**Lac du Bonnet**	**86.56**	**345**	P	**P**	**00 16 26.2**	**-0.3**
	comp=Z,2.4nm,0.9s,baz=169,slow=5.2,SNR=3.7						
SCHQ	**Schefferville**	**88.65**	**3**	LR	LR	00 57 14.7	
	comp=Z,64nm,20.3s,baz=31,slow=36						
LSZ	**Lusaka**	**89.79**	**108**	P	**P**	**00 16 44.7**	**+1.7**
	comp=Z,2.3nm,0.9s,baz=144,slow=6.0,SNR=3.9						
LSZ	**Lusaka**	**89.79**	**108**	*e*P	**P**	**00 16 43.2**	**+0.2**
	comp=Z,2.7nm,0.9s						
WRA	**Warramunga Arr**	**120.71**	**209**	PKP	**PKPdf**	**00 22 34.9**	**-1.5**
	comp=Z,0.3nm,0.5s,baz=152,slow=1.7,SNR=3.2						
BRTR	**Keskin Array B**	**121.86**	**61**	PKP	**PKPdf**	**00 22 37.9**	**-0.3**
	comp=Z,0.5nm,0.7s,baz=100,slow=1.6,SNR=3.5						
SEY	**Seymchan**	**140.09**	**330**	PKP	**PKPdf**	**00 23 11.9**	**+0.4**
	comp=Z,1.1nm,0.6s,baz=60,slow=4.1,SNR=4.1						
BRVK	**Borovoye**	**147.25**	**43**	*e*PKPdf	**PKPdf**	**00 23 24.7**	**+0.3**
BRVK				*e*PKPbc	**PKPbc**	**00 23 26.9**	**+0.2**
HYB	**Hyderabad**	**148.90**	**115**	*i* PKP	**PKPbc**	**00 23 33.0**	**+0.8**
AAK	**Ala-Archa**	**152.53**	**62**	*e*PKPbc	**PKPbc**	**00 23 40.5**	**+0.2**
KURK	**Kurchatov**	**152.93**	**43**	*e*PKPbc	**PKPbc**	**00 23 40.4**	**-0.3**
KSH	**Kashi**	**153.89**	**69**	*e*PKPbc	**PKPdf**	**00 23 37.8**	**+2.5**
KSH				*e*sPKP		00 23 52.3	
KSH				AMB	AMB		
	comp=Z,85nm,5.6s						
ZALV	**Zalesovo Beam**	**154.28**	**32**	PKP	**PKPdf**	**00 23 34.1**	**-1.1**
	comp=Z,1.0nm,0.8s,baz=288,slow=1.4,SNR=5.0						
ZALV				PKPbc	**PKPbc**	**00 23 43.1**	**-0.3**
	comp=Z,3.9nm,0.8s,baz=290,slow=3.0,SNR=17						
ZALV				PKPab	**PKPab**	**00 23 57.7**	**+0.2**
	comp=Z,2.9nm,0.7s,baz=287,slow=5.9,SNR=6.5						
MKAR	**Makanchi Array**	**156.81**	**49**	PKP	**PKPdf**	**00 23 38.1**	**-0.8**
	comp=Z,0.6nm,0.9s,baz=188,slow=2.5,SNR=5.0						
MKAR				PKPab	**PKPab**	**00 24 08.2**	**-0.4**
	comp=Z,1.7nm,1.0s,baz=301,slow=4.3,SNR=8.7						
MKAR				PP	**PP**	**00 27 49.0**	**+1.8**
	comp=Z,0.3nm,0.8s,baz=280,slow=3.6,SNR=3.6						
WMQ	**Urumqi**	**161.51**	**52**	*e*PKP	**PKPdf**	**00 23 41.7**	**-2.9**
WMQ				PP	**PP**	**00 28 11.4**	**-1.5**
WMQ				LR	LR		
	comp=Z,18nm,20.4s						
WMQ				LR	LR		
	comp=Z,38nm,25.6s						
WMQ				LR	LR		
	comp=Z,40nm,20.4s						
SONM	**Songino Array**	**166.19**	**4**	PKPab	**PKPab**	**00 24 50.2**	**+0.6**
	comp=Z,0.3nm,0.6s,baz=336,slow=3.2,SNR=3.1						
NJ2	**Nanjing**	**170.64**	**261**	*e*PKP	**PKPdf**	**00 23 51.8**	**-0.3**
GTA	**Gaotai**	**171.56**	**48**	*e*PKP	**PKPdf**	**00 23 52.7**	**+0.2**
GTA				pPKP	pPKPdf	00 24 06.8	+7.0
GTA				sPKP		00 24 12.4	
GTA				PKPab	**PKPab**	**00 25 14.5**	**+0.7**
HHC	**Hu-ho-hao-te**	**172.65**	**338**	*e*PKP	**PKPdf**	**00 23 53.5**	**+0.6**
CD2	**Chengdu**	**175.26**	**130**	PKP	**PKPdf**	**00 23 52.5**	**-1.6**
LZH	**Lanzhou**	**176.07**	**58**	*e*PKP	PKPdf	00 23 59.8	+5.5
LZH				pPKP	pPKPdf	00 24 09.3	+7.8
LZH				sPKP		00 24 13.3	

*IDC **02** 00:07:46.7±5.0, 2°.54N×95°.85E, h48km±44km, mb3.6/9, mb1 3.7/11, mb1mx3.4/50, mbtmp3.8/11, ML3.8/2, MS2.6/1, Ms1 2.8/1, ms1mx2.4/31, Error ellipse: s-maj=45.1km s-min=19.0km az=51.0*
*DJA **02** 00:07:46.9±1.0, 3°N±5°×9°6E±°, h10km, M3.9/10, mb4.3/2, MLv3.7/10*
ISC 02 00:07:43.7±0.9**, 2°.59N**±0°.07×**95°.97E**±0°.07**, h25km, n23, σ1s65**/18**, mb4.0**/9**, Off west coast of northern Sumatera**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TPTI		**1.38**	**61**	P	**Pb**	**00 08 08.6**	**-0.2**
TPTI				S	**Sb**	**00 08 25.0**	**-1.0**
KCSI	**Kotacane, Aceh**	**2.02**	**63**	P	**Pb**	**00 08 18.7**	**-1.1**
KCSI				S	**Sb**	**00 08 48.4**	**+3.9**
GSI	**Gunungsitoli**	**2.05**	**128**	P	**Pb**	**00 08 18.4**	**-1.8**
TSI	**Tuntungan**	**2.74**	**71**	P	**Pb**	**00 08 30.3**	**-1.7**
LHMI	**Lhok Sumawe**	**2.80**	**20**	P	**Pb**	**00 08 30.1**	**-2.9**
PSI	**Prapat**	**2.95**	**86**	P	Pb	00 08 32.2	-3.5
	3.4nm,0.3s,baz=226,slow=15,SNR=11						
PSI				S	**Sb**	**00 09 09.3**	**-2.2**
	2.0nm,0.3s,baz=287,slow=20,SNR=4.7						
MNSI	**Mandailing Nat**	**4.02**	**116**	P	Pn	00 08 46.8	+3.1
CMAR	**Chiang Mai Arr**	**16.04**	**10**	P	**P**	**00 11 29.8**	**-1.2**
	0.3nm,0.3s,baz=195,slow=10,SNR=4.5						
CMAR				LR	LR	00 17 55.1	
	comp=Z,22nm,19.5s,baz=216,slow=38						
H08S2	**Diego Garcia H**	**25.54**	**246**	T	T	00 39 24.9	
	baz=66						
H08S3	**Diego Garcia H**	**25.54**	**246**	T	T	00 39 25.0	
	baz=66,slow=74						
H08S1	**Diego Carcia H**	**25.55**	**246**	T	T	00 39 26.2	
	baz=66,slow=74						
H01W3	**Cape Leeuwin H**	**40.99**	**157**	T	T	00 59 01.1	
	baz=332,slow=76,SNR=20						
H01W2	**Cape Leeuwin H**	**41.00**	**157**	T	T	00 59 03.8	
	baz=332,slow=76,SNR=21						
H01W1	**Cape Leeuwin H**	**41.00**	**157**	T	T	00 58 58.2	
	baz=332,slow=76,SNR=14						
WRA	**Warramunga Arr**	**43.81**	**122**	P	**P**	**00 15 48.9**	**+1.0**
	0.8nm,0.5s,baz=300,slow=9.4,SNR=4.8						
ASAR	**Alice Springs**	**45.20**	**127**	P	**P**	**00 15 59.6**	**+0.5**
	0.1nm,0.3s,baz=302,slow=8.0,SNR=4.3						
MKAR	**Makanchi Array**	**45.62**	**347**	P	**P**	**00 16 02.3**	**+0.3**
	1.2nm,0.4s,baz=160,slow=8.8,SNR=47						
SONM	**Songino Array**	**45.97**	**10**	P	**P**	**00 16 05.2**	**+0.4**
	1.2nm,0.6s,baz=189,slow=9.3,SNR=12						
GEYT	**Alibeck**	**49.37**	**320**	P	**P**	**00 16 31.7**	**+0.4**
	1.0nm,0.6s,baz=134,slow=6.2,SNR=3.0						
ZALV	**Zalesovo Beam**	**52.01**	**352**	P	**P**	**00 16 51.0**	**+0.2**
	1.6nm,0.5s,baz=178,slow=6.1,SNR=7.1						
KLR	**Kul'dur**	**55.59**	**28**	P	**P**	**00 17 18.3**	**+1.1**
	0.5nm,0.4s,baz=231,slow=6.5,SNR=3.7						
FINES	**FINESS Array B**	**78.21**	**333**	P	**P**	**00 19 40.7**	**-0.2**
	0.7nm,0.7s,baz=120,slow=8.2,SNR=3.4						
ARCES	**ARCESS Array B**	**80.83**	**340**	P	**P**	**00 19 55.2**	**+0.2**
	1.6nm,0.8s,baz=101,slow=6.3,SNR=6.3						

*BEO **02** 00:07:45.8±0.8, 43°.37N×26°.06E, h0km, M2.8/7*
*SOF **02** 00:07:46.5, 43°.26N×26°.03E, h3km, MD2.7*
*CSEM **02** 00:07:48.5±0.4, 43°.22N×25°.93E, h10km, ML2.8, Error ellipse: s-maj=10.8km s-min=4.4km az=156.0*
ISC 02 00:07:46.8±1.2**, 43°.21N**±0°.02×**25°.99E**±0°.02**, h0km**±11km**, n80, σ0s96**/89**, 10C-21D, Bulgaria**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SZH	**Strazhica**	**0.07**	**325**	P	**Pg**	**00 07 47.5**	**-0.6**
ZIMR		**0.63**	**315⇓**	*i*P	**Pg**	**00 07 59.6**	**+0.7**
ZIMR		**0.63**	**315**	S	**Sb**	**00 08 09.6**	**-0.5**
JMB	**Yambol**	**0.87**	**149**	P	**Pg**	**00 08 03.7**	**+0.3**
PRD	**Provadia**	**1.03**	**90**	P	**Pg**	**00 08 06.3**	**-0.3**
BUC1	**Bucharest**	**1.14**	**2⇓**	*i*P	**Pg**	**00 08 08.4**	**-0.2**
BUC1	**Bucharest**	**1.14**	**2**	S	**Sb**	**00 08 25.0**	**+0.4**
BUC1	**Bucharest**	**1.14**	**2**	S	**Sn**	**00 08 26.7**	**+0.5**
BUC1	**Bucharest**	**1.14**	**2⇓**	*i*P	**Pg**	**00 08 08.4**	**-0.2**
BAPR	**Bucharest-Chil**	**1.20**	**5**	S	**Sn**	**00 08 27.3**	**-0.4**
DIM	**Dimitrovgrad**	**1.21**	**196**	P	**Pn**	**00 08 10.7**	**-0.2**
BTMR	**Bucharest-Geot**	**1.23**	**4**	S	**Sn**	**00 08 28.9**	**+0.4**
PLD	**Plovdiv**	**1.46**	**221**	P	**Pg**	**00 08 14.3**	**-0.4**
SULR		**1.48**	**7⇓**	*i*P	**Pn**	**00 08 14.6**	**0.0**
SULR		**1.48**	**7**	S	**Sn**	**00 08 36.2**	**+1.6**
SULR		**1.48**	**7⇓**	*i*P	**Pn**	**00 08 14.6**	**0.0**
PGB	**Panagyurishte**	**1.49**	**244**	P	**Pg**	**00 08 15.0**	**-0.4**
HUMR	**Humele**	**1.50**	**331**	S	**Sn**	**00 08 38.2**	**+2.9**
MSAB	**Monastry St. A**	**1.60**	**56⇓**	*i*P	**Pn**	**00 08 16.4**	**+0.1**
MSAB	**Monastry St. A**	**1.60**	**56⇓**	*i*P	**Pn**	**00 08 16.4**	**+0.1**
MSAB				S	**Sn**	**00 08 36.9**	**-0.7**
KDZ	**Kurdzhali**	**1.62**	**195**	P	**Pb**	**00 08 17.2**	**-0.3**
PSN	**Preselentsi**	**1.67**	**73**	P	**Pn**	**00 08 16.0**	**-1.2**
AMRR	**Amara**	**1.70**	**34**	S	**Sn**	**00 08 40.5**	**+0.3**
AMRR	**Amara**	**1.70**	**34**	S	**Sn**	**00 08 40.5**	**+0.3**
GOLR		**1.79**	**336⇑**	*i*P	**Pg**	**00 08 20.9**	**-0.1**
GOLR		**1.79**	**336**	S	**Sg**	**00 08 46.2**	**+2.0**
GOLR		**1.79**	**336⇑**	*i*P	**Pg**	**00 08 20.9**	**-0.1**
RZN	**Rozhen**	**1.79**	**212**	P	**Pb**	**00 08 20.3**	**-0.2**
CVDA	**Cernavoda**	**1.86**	**52**	S	**Sn**	**00 08 44.2**	**+0.1**
CVDA	**Cernavoda**	**1.86**	**52**	S	**Sn**	**00 08 44.2**	**+0.1**
ISR	**Istrita**	**1.95**	**12⇑**	*i*P	**Pn**	**00 08 21.8**	**+0.6**
ISR	**Istrita**	**1.95**	**12**	S	**Sg**	**00 08 49.8**	**+0.4**
ISR	**Istrita**	**1.95**	**12⇑**	*i*P	**Pn**	**00 08 21.8**	**+0.6**
MANR	**Mangalia**	**1.99**	**71⇓**	*i*P	**Pb**	**00 08 23.5**	**-0.3**
MANR	**Mangalia**	**1.99**	**71⇓**	*i*P	**Pb**	**00 08 23.5**	**-0.3**
MANR				S	**Sb**	**00 08 48.4**	**-0.7**
HARR	**Harsova**	**2.04**	**43⇓**	*i*P	**Pn**	**00 08 22.6**	**+0.3**
HARR	**Harsova**	**2.04**	**43⇓**	*i*P	**Pn**	**00 08 22.6**	**+0.3**
EFOR	**EFORIE**	**2.11**	**65**	S	**Sn**	**00 08 50.4**	**+0.3**
EFOR	**EFORIE**	**2.11**	**65**	S	**Sn**	**00 08 50.4**	**+0.3**
MTUR	**Matau**	**2.12**	**342⇓**	*i*P	**Pb**	**00 08 26.2**	**+0.1**
VTS	**Vitosha**	**2.13**	**254⇓**	*i*P	**Pb**	**00 08 26.1**	**-0.3**
VTS	**Vitosha**	**2.13**	**254**	*e*Pn	**Pn**	**00 08 23.9**	**+0.1**
VTS				*e*Sg	**Sg**	**00 08 56.1**	**+0.8**
VTS	**Vitosha**	**2.13**	**254**	*e*Pn	**Pn**	**00 08 23.9**	**+0.1**
VTS	**Vitosha**	**2.13**	**254⇓**	*i*P	**Pb**	**00 08 26.1**	**-0.3**
VTS				S	**Sg**	**00 08 54.8**	**-0.5**
VTS				*e*Sg	**Sg**	**00 08 56.1**	**+0.8**
TIRR	**Tirgusor**	**2.15**	**54⇓**	*i*P	**Pn**	**00 08 24.2**	**+0.3**
TIRR	**Tirgusor**	**2.15**	**54⇓**	*i*P	**Pn**	**00 08 24.2**	**+0.3**
TIRR				S	**Sn**	**00 08 51.8**	**+0.5**
MLR	**Muntele Rosu**	**2.28**	**359⇓**	*i*P	**Pn**	**00 08 27.0**	**+1.2**
MLR	**Muntele Rosu**	**2.28**	**359**	S	**Sg**	**00 08 59.9**	**-0.1**
MLR	**Muntele Rosu**	**2.28**	**359⇓**	*i*P	**Pn**	**00 08 27.0**	**+1.2**
GRER		**2.28**	**18**	S	**Sg**	**00 09 01.1**	**+1.0**
VOIR		**2.32**	**344⇓**	*i*P	**Pb**	**00 08 28.1**	**-1.5**
VOIR		**2.32**	**344**	S	**Sg**	**00 09 01.2**	**-0.2**
VOIR		**2.32**	**344⇓**	*i*P	**Pb**	**00 08 28.1**	**-1.5**
ARR	**Arges**	**2.36**	**336**	S	**Sg**	**00 09 01.9**	**-0.8**
ZAPS	**Zavoj**	**2.45**	**273**	*e*Pn	**Pn**	**00 08 27.4**	**-0.6**
ZAPS				*e*Sg	**Sg**	**00 09 05.1**	**-0.4**
VRI	**Vrincioaia**	**2.71**	**11⇑**	*i*P	**Pn**	**00 08 33.1**	**+1.6**
VRI	**Vrincioaia**	**2.71**	**11⇑**	*i*P	**Pn**	**00 08 33.1**	**+1.6**
LOT	**Lotru**	**2.74**	**325⇓**	*i*P	**Pb**	**00 08 35.7**	**-1.1**
DOPR	**Dopca**	**2.79**	**351⇑**	*i*P	**Pn**	**00 08 33.8**	**+1.1**
DOPR	**Dopca**	**2.79**	**351**	S	**Sb**	**00 09 10.3**	**-1.8**
DOPR	**Dopca**	**2.79**	**351⇑**	*i*P	**Pn**	**00 08 33.8**	**+1.1**
TLCR		**2.83**	**45**	S	**Sb**	**00 09 13.2**	**-0.2**
BOLS	**Boljevac**	**3.00**	**283**	*e*Pn	**Pn**	**00 08 34.6**	**-0.9**
BOLS	**Boljevac**	**3.00**	**283**	*e*Pn	**Pn**	**00 08 34.6**	**-0.9**
BARS	**Barje**	**3.08**	**264**	*e*Pn	**Pn**	**00 08 37.2**	**+0.5**
BARS				*e*Sg	**Sg**	**00 09 26.5**	**+0.7**
BARS	**Barje**	**3.08**	**264**	*e*Pn	**Pn**	**00 08 37.2**	**+0.5**
BARS				*e*Sg	**Sg**	**00 09 26.5**	**+0.7**
VAY	**Valandovo**	**3.16**	**234**	*e*Sg	**Sg**	**00 09 30.4**	**+2.1**
VAY	**Valandovo**	**3.16**	**234**	*e*Sg	**Sg**	**00 09 30.4**	**+2.1**
KUBS	**Kucevo**	**3.34**	**293**	*e*Pn	**Pn**	**00 08 38.7**	**-1.6**
KUBS	**Kucevo**	**3.34**	**293**	*e*Pn	**Pn**	**00 08 38.7**	**-1.6**
GRUS	**Gruza**	**3.89**	**282**	*e*Pn	**Pn**	**00 08 46.8**	**-1.0**
GRUS	**Gruza**	**3.89**	**282**	*e*Pn	**Pn**	**00 08 46.8**	**-1.0**
BZS	**Buzias**	**3.95**	**309⇑**	*i*P	**Pn**	**00 08 50.0**	**+1.4**
BZS	**Buzias**	**3.95**	**309⇑**	*i*P	**Pn**	**00 08 50.0**	**+1.4**
TRUS	**Trudelj**	**4.17**	**286**	*e*Pn	**Pn**	**00 08 49.7**	**-1.9**
TRUS	**Trudelj**	**4.17**	**286**	*e*Pn	**Pn**	**00 08 49.7**	**-1.9**
IVAS	**Ivanjica**	**4.27**	**277**	*e*Pn	**Pn**	**00 08 52.8**	**-0.2**
IVAS	**Ivanjica**	**4.27**	**277**	*e*Pn	**Pn**	**00 08 52.8**	**-0.2**
DIVS	**Divibare**	**4.44**	**284**	*e*Pn	**Pn**	**00 08 54.5**	**-0.9**
DIVS	**Divibare**	**4.44**	**284**	*e*Pn	**Pn**	**00 08 54.5**	**-0.9**

*NIED **02** 00:08:00, 37°.90N×143°.40E, h8km, Mw3.5 Best double couple: $M_0$2.00000×10^{14} NP1:ϕ_s348.00000°, δ46.00000°, λ-117.00000°. NP2:ϕ_s204.00000°, δ50.00000°, λ-65.00000°.*
*IDC **02** 00:08:43.8±3.1, 36°.97N×143°.79E, h0km, mb3.6/3, mb1 3.7/4, mb1mx3.4/41, mbtmp3.5/4, ML3.3/1, Error ellipse: s-maj=78.5km s-min=35.4km az=61.0*
*ISCJB **02** 00:08:46.8±1.6, 37°.85N±0°.06×143°.4E±0°.1, h82km±22km, mb3.5/3, Error ellipse: s-maj=17.8km s-min=9.9km az=12.2*
*JMA **02** 00:08:47.0±0.2, 37°.85N×143°.39E, h37km, M3.7*
ISC 02 00:08:46.9±3.9**, 37°.8N**±0°.1×**143°.5E**±0°.2**, h60km**±44km**, n16, σ0s93**/22**, mb3.4**/3**, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**1.81**	**291**	P	**Pn**	**00 09 15.6**	**-0.3**
JIO				S	**Sn**	**00 09 36.6**	**-1.2**
OFUJ	**Ofunato**	**1.91**	**311**	P	**Pn**	**00 09 16.8**	**-0.4**
JMK	**Ichinoseki**	**2.12**	**303**	P	**Pn**	**00 09 20.0**	**0.0**
JMK				S	**Sn**	**00 09 44.4**	**-0.8**
JMM	**Marumori**	**2.15**	**272**	P	**Pn**	**00 09 20.3**	**-0.1**
JMM				S	**Sn**	**00 09 44.7**	**-1.3**
JOU	**Okura**	**2.31**	**284**	P	**Pn**	**00 09 23.3**	**+0.7**
JOU				S	**Sn**	**00 09 49.4**	**-0.5**
JOM	**Ohasama**	**2.39**	**314**	P	**Pn**	**00 09 24.1**	**+0.4**
JOM				S	**Sn**	**00 09 51.5**	**-0.4**
JFT	**Otama**	**2.54**	**264**	P	**Pn**	**00 09 26.1**	**+0.4**
JFT				S	**Sn**	**00 09 55.3**	**-0.2**
JYK	**Kaneyama**	**2.71**	**295**	P	**Pn**	**00 09 28.9**	**+0.9**
JYK				*e*S	**Sn**	**00 10 00.4**	**+0.8**
JRG	**Rokugo**	**2.74**	**306**	P	**Pn**	**00 09 29.7**	**+1.2**
JRG				S	**Sn**	**00 10 01.5**	**+1.0**
JANG	**Nango**	**2.98**	**329**	*e*S	**Sn**	**00 10 07.4**	**+1.1**
JTM	**Tenmabayashi**	**3.51**	**328**	*e*S	**Sn**	**00 10 18.4**	**-0.8**
MJAR	**Matsushiro Arr**	**4.42**	**255**	Pn	**Pn**	**00 09 53.2**	**+1.6**
	1.6nm,0.3s,baz=90,slow=15,SNR=6.3						
MAT	**Matsushiro**	**4.42**	**255**	P	**Pn**	**00 09 52.7**	**+1.2**
MAT				S	Sn	00 10 36.5	-5.3
SONM	**Songino Array**	**28.75**	**302**	P	P	00 14 48.0	+9.2
	0.4nm,0.7s,baz=96,slow=8.8,SNR=3.1						
MKAR	**Makanchi Array**	**45.12**	**302**	P	P	00 17 07.3	+10
	0.4nm,0.6s,baz=95,slow=7.2,SNR=2.7						
WRA	**Warramunga Arr**	**58.10**	**190**	P	**P**	**00 18 33.5**	**-0.7**
	1.0nm,0.7s,baz=9.5,slow=7.1,SNR=2.4						

*MOS **02** 00:12:00.6±1.5, 48°.72N×156°.25E, h16km, mb4.1/4, Error ellipse: s-maj=24.9km s-min=6.4km az=79.7*
*KRSC **02** 00:12:02.2±1.7, 48°.82N×157°.21E, h17km±29km, ML4.1*
*SKHL **02** 00:12:02.0±0.8, 48°.64N×156°.46E, h22km±6km, mb4.5/1*
*ISCJB **02** 00:12:04.1±0.9, 48°.82N±0°.08×156°.3E±0°.1, h34km,*

mb3.5/9, MS3.1/2, Error ellipse: s-maj=15.4km s-min=6.6km az=40.1

*IDC **02** 00:12:21.7±3.0, 50°17N×155°30E, h106^{km}±21^{km}, mb3.3/8, mb1 3.5/10, mb1mx3.3/38, mbtmp3.6/10, MS3.0/4, Ms1 3.0/4, ms1mx2.6/22, Error ellipse: s-maj=31.9km s-min=17.2km az=153.0*

ISC 02 00:12:06.1±1.1**, 48°89N**±0°09×**156°2E**±0°1**, h34**^{km}**, n48,** σ1^{s}**66**/52**, mb3.5**/9**, East of Kuril Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
SKR	Severo-Kuril's	1.79	359	eP	Pn	00 12 34.8	+0.3
SKR				eS	Sb	00 12 59.7	-0.6
SKR	Severo-Kuril's	1.79	359	eP	Pn	00 12 34.5	0.0
SKR				AMB	AMB	00 12 38.0	
	90nm,0.5s						
SKR				eS	Sb	00 12 59.5	-0.8
SKR				A	A	00 13 05.4	
	310nm,0.5s						
SKR				A	A	00 13 05.4	
	460nm,0.5s						
SKR	Severo-Kuril's	1.79	359	ePN	Pn	00 12 34.5	0.0
SKR				eS	Sn	00 12 58.5	+2.4
SKR				pmax	pmax		
	comp=Z,90nm,0.5s						
SKR				smax	smax		
	comp=N,480nm,0.5s						
SKR				smax	smax		
	comp=E,320nm,0.5s						
ASAK	Asacha	3.66	17	eP	Pn	00 13 01.0	+0.7
RUS	Russkaya	3.85	22	eP	Pn	00 13 02.1	-0.6
RUS				eS	Sn	00 13 46.3	-0.4
RUS	Russkaya	3.85	22	eP	Pn	00 13 02.1	-0.6
RUS	Russkaya	3.85	22	PN	Pn	00 13 02.1	-0.6
KRMR	Karymshinskiy	4.13	17	eP	Pn	00 13 07.9	+1.2
KRMR				eS	Sn	00 13 55.7	+1.9
PETK	Petropavlovsk-	4.33	12	P	Pn	00 13 11.0	+1.6
	comp=E,1.6nm,0.3s,baz=174,slow=15,SNR=29						
PETK				S	Sn	00 13 50.9	-7.7
	comp=E,1.5nm,0.3s,baz=172,slow=23,SNR=4.2						
PET	Petropavlovsk	4.42	20	eP	Pn	00 13 11.2	+0.5
PET				eS	Sn	00 14 02.5	+1.6
PET				A	A	00 14 15.8	
	comp=E,80nm,0.6s						
PET	Petropavlovsk	4.42	20	ePN	Pn	00 13 11.2	+0.5
PET				MLR	MLR		
	comp=Z,100nm,16.0s						
DALK	Dalny	4.45	21	eP	Pn	00 13 11.3	+0.2
DALK				eS	Sn	00 14 03.1	+1.4
UGLR	Uglovaya	4.63	20	eP	Pn	00 13 14.6	+0.9
AVH	Avacha	4.67	19	eP	Pn	00 13 15.5	+1.4
AVH	Avacha	4.67	19	eP	Pn	00 13 15.5	+1.4
AVH	Avacha	4.67	19	PN	Pn	00 13 15.5	+1.4
KOK	Koryaka	4.67	19	eP	Pn	00 13 15.3	+1.1
KOK	Koryaka	4.67	19	PN	Pn	00 13 15.3	+1.1
SMAR	Somma	4.68	20	eP	Pn	00 13 15.5	+1.1
SMAR	Somma	4.68	20	PN	Pn	00 13 15.5	+1.1
SDLR	Sedlovina	4.71	20	eP	Pn	00 13 15.1	+0.3
SDLR	Sedlovina	4.71	20	PN	Pn	00 13 15.1	+0.3
NLC	Nalytchevo	4.73	24	eP	Pn	00 13 13.2	-1.7
NLC	Nalytchevo	4.73	24	PN	Pn	00 13 13.2	-1.7
KRX	Arik	4.74	18	eP	Pn	00 13 16.6	+1.5
SPN	Mys Shipunski	4.86	29	eP	Pn	00 13 16.5	-0.2
SPN	Mys Shipunski	4.86	29	eP	Pn	00 13 16.5	-0.2
SPN	Mys Shipunski	4.86	29	PN	Pn	00 13 16.5	-0.2
GNL	Ganaly	4.94	12	eP	Pn	00 13 19.5	+1.7
GNL	Ganaly	4.94	12	PN	Pn	00 13 19.5	+1.7
KBTR	Krutoberegovo	8.37	26	eP	Pn	00 14 04.2	-0.6
KBTR	Krutoberegovo	8.37	26	PN	Pn	00 14 04.2	-0.6
TYV	Tymovskoe	8.95	288	eP	Pn	00 14 14.6	+1.9
MA2	Magadan	11.15	346	LR	LR	00 18 51.1	
	comp=Z,30nm,18.5s,baz=153,slow=40						
KLR	Kul'dur	15.99	280	P	P	00 15 50.4	-1.1
	comp=Z,0.1nm,0.3s,baz=90,slow=9.1,SNR=2.5						
KLR				LR	LR	00 22 42.8	
	comp=Z,70nm,18.1s,baz=282,slow=41						
MJAR	Matsushiro Arr	18.01	233	P	P	00 16 28.8	+15
	comp=Z,0.3nm,0.3s,baz=33,slow=12,SNR=4.2						
ILAR	Eielson Array	33.58	40	P	P	00 18 42.9	+0.4
	comp=Z,0.2nm,0.6s,baz=277,slow=7.2,SNR=2.8						
INK	Inuvik	38.73	34	P	P	00 19 27.6	+1.2
	comp=Z,0.6nm,0.8s,baz=263,slow=3.6,SNR=3.6						
MKAR	Makanchi Array	47.79	297	P	P	00 20 38.5	-1.4
	comp=Z,0.2nm,0.5s,baz=73,slow=9.7,SNR=4.0						
MKAR				LR	LR	00 42 04.9	
	comp=Z,28nm,19.2s,baz=14,slow=38						
YKA	Yellowknife Ar	47.97	39	P	P	00 20 43.0	+2.1
	comp=Z,0.2nm,0.7s,baz=296,slow=7.2,SNR=3.4						
YKA	Yellowknife Ar	47.97	39	eP	P	00 20 43.0	+2.1
YKA	Yellowknife Ar	47.97	39	P	P	00 20 43.0	+2.1
CMAR	Chiang Mai Arr	54.86	257	LR	LR	00 49 04.1	
	comp=Z,13nm,19.4s,baz=105,slow=40						
ARCES	ARCESS Array B	56.49	341	P	P	00 21 42.0	-2.1
	comp=Z,4.4nm,1.0s,baz=36,slow=8.1,SNR=3.8						
FINES	FINESS Array B	62.96	336	P	P	00 22 27.5	-1.2
	comp=Z,0.6nm,0.6s,baz=46,slow=8.2,SNR=6.7						
KBZ	Khabaz	70.82	315	P	P	00 23 19.7	+0.8
	comp=Z,1.4nm,1.0s,baz=27,slow=2.3,SNR=3.1						
TXAR	Lajitas Array	74.66	63	P	P	00 23 49.9	+7.7
	comp=Z,0.1nm,0.4s,baz=316,slow=5.0,SNR=2.7						
GERES	GERESS Array B	77.39	336	P	P	00 23 57.0	-0.3
	comp=Z,0.2nm,0.4s,baz=26,slow=6.5,SNR=4.1						

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*ISCJB **02** 00:28:52.7±0.8, 34°09S±0°03×72°30W±0°04, h21^{km}±6^{km}, mb4.7/46, MS4.2/15, Error ellipse: s-maj=5.8km s-min=4.2km az=11.0*

*NEIC **02** 00:28:52.0, 34°08S×72°25W, h17^{km}, mb4.8/31, ML4.9(GUC), After GUC.*

NEIC Felt [III] at Navidad and San Antonio; [II] at Rancagua, Santiago and Talca. Also felt at Quilpue.

*GUC **02** 00:28:52.9±0.3, 34°08S×72°25W, h17^{km}±1^{km}, ML4.9*

*BJI **02** 00:28:53.6, 34°81S×71°29W, h27^{km}, mB5.0/5, Ms5.6/4, Ms7 5.4/4*

*IDC **02** 00:28:55.7±4.5, 34°06S×72°10W, h30^{km}±32^{km}, mb4.2/15, mb1 4.3/18, mb1mx4.2/29, mbtmp4.4/18, ML4.3/3, MS4.2/16, Ms1 4.2/16, ms1mx4.1/27, Error ellipse: s-maj=21.9km s-min=13.6km az=82.0*

ISC 02 00:28:53.7±1.0**, 34°07S**±0°03×**72°23W**±0°05**, h20**^{km}±4^{km}**, n197,** σ1^{s}**37**/212**, mb4.7**/46**, MS4.3**/15**, 1C-6D, Near coast of central Chile**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
CHPI	Pichilemu	0.37	149	eP	Pg	00 29 00.4	-1.2
CHPI				eS	Sg	00 29 06.3	-0.7
NICH	Los Niches	1.25	139	eP	Pn	00 29 15.1	-1.0
NICH				eS	Sn	00 29 31.9	-0.5
ANTU	Antumapu	1.42	70	eP	Pn	00 29 18.3	-0.2
ANTU				eS	Sn	00 29 37.5	+0.8
ANTU				AML	AML	00 29 44.2	
	comp=E,31µm,0.4s						
ROC1	El Roble	1.49	43⇓	eP	Pn	00 29 20.4	+0.7
ROCH	El Roble	1.50	43	eP	Pn	00 29 19.8	0.0
ROCH				eS	Sb	00 29 40.5	+0.8
ROCH				AML	AML	00 29 53.3	
	comp=N,24µm,0.6s						
CLCH	Cerro Calan	1.57	65	eP	Pn	00 29 20.7	+0.1
CLCH				eS	Sn	00 29 41.7	+1.4
PEL	Peldehue	1.59	55⇑	eP	Pn	00 29 21.0	+0.2
PEL				eS	Sn	00 29 42.1	+1.3
PEL				AML	AML	00 29 52.5	
	comp=N,24µm,0.6s						
AAGR	Agrelo	3.01	72	eP	Pb	00 29 45.7	-1.0
AUSP	Uspallata	3.02	53	eP	Pn	00 29 43.7	+3.0
AUSP				eS	Sb	00 30 26.1	+2.6
ARCO	CERRO ARCO	3.02	67	eP	Pb	00 29 46.8	-0.1
RTLS	Leoncito	3.35	48	eP	Pn	00 29 48.8	+3.4
RTCV	Cerro Valdivia	3.81	56	eP	Pn	00 29 54.3	+3.0
RTCV			⇓	eS	Sg	00 30 53.6	-2.5
RTLL	Cerro Villicun	4.18	50	eP	Pn	00 29 59.9	+3.3
RTLL				eS	Sb	00 30 54.1	-2.8
AMOG	MOGNA	4.44	46⇓	eP	Pn	00 30 02.2	+2.1
ACAN	Cantantal	4.59	68	eP	Pn	00 30 04.6	+2.4
AMAR	Marayes	4.89	59⇓	eP	Pn	00 30 10.7	+4.5
AMAR				eS	Sn	00 31 09.8	+7.6
LCO	Las Campanas	5.21	15	ePn	Pn	00 30 09.9	-0.9
LCO				ePb	Pb	00 30 24.1	-0.3
LCO				ePg	Pg	00 30 33.5	-0.1
LCO				eSn	Sn	00 31 09.1	-1.5
LCO				eSb	Sb	00 31 23.8	-2.9
LCO				eSg	Sg	00 31 40.2	-0.9
AGUA	GUANDACOL	5.57	36	eP	Pn	00 30 17.4	+1.8
VCA	Vinchina	6.33	34	eP	Pn	00 30 28.3	+2.1
VCA				eS	Sn	00 31 41.2	+3.1
VCA				IAML		00 32 08.3	
	comp=Z,484nm,0.5s						
ACLC	CERRO LA CRUZ	6.46	46	eP	Pn	00 30 29.6	+1.7
PLCA	Paso Flores	6.78	169	Pn	Pn	00 30 33.3	+1.0
	comp=Z,1.1nm,0.3s,baz=0.1,slow=14,SNR=25						
PLCA				Sn	Sn	00 31 50.3	+1.3
	baz=282,slow=20,SNR=1.4						
PLCA				Lg	Lg	00 32 30.8	
	comp=Z,0.3nm,0.3s,baz=282,slow=19,SNR=3.2						
PLCA				LR	LR	00 33 31.9	
	comp=Z,1µm,18.9s,baz=11,slow=41						
CYA	Choya	7.86	46	eP	Pn	00 30 44.8	-2.2
TRQA	Tornquist	9.21	119	ePn	Pn	00 31 04.8	-0.6
PB01	IPOC Station P	13.20	11	ePn	Pn	00 32 00.7	+0.4
CPUP	Villa Florida	15.01	63	Pn	Pn	00 32 23.3	-1.5
	comp=Z,0.2nm,0.3s,baz=229,slow=20,SNR=5.6						
CPUP				LR	LR	00 38 34.5	
	comp=Z,984nm,21.3s,baz=240,slow=39						
LPAZ	La Paz	18.09	13	P	P	00 33 05.6	+0.7
	comp=Z,0.7nm,0.3s,baz=196,slow=9.4,SNR=32						
SIV	San Ignacio	20.62	32	P	P	00 33 31.6	-0.4
	comp=Z,17nm,0.6s,baz=221,slow=9.5,SNR=40						
SIV				LR	LR	00 42 54.1	
	comp=Z,960nm,19.2s,baz=221,slow=41						
USHA	Ushuaia	20.93	174	P	P	00 33 35.3	+0.4
	comp=Z,19nm,0.8s,baz=356,slow=14,SNR=2.3						
USHA				LR	LR	00 42 31.0	
	comp=Z,2µm,18.2s,baz=239,slow=39						
NNA	Nana	22.38	348	eP	P	00 33 49.6	-1.4
	comp=Z,8.2nm,0.3s						
SPB	Sao Paulo	24.05	71	eP	P	00 34 07.8	+0.1
	comp=Z,94nm,1.3s						
SAML	Samuel	26.35	20	eP	P	00 34 27.1	-1.5
	comp=Z,17nm,0.8s						
ATAH	Atahualpa	27.40	347	P	P	00 34 40.5	+1.9
	comp=Z,1.7nm,0.3s,baz=180,slow=11,SNR=2.2						
BDFB	Brasilia	28.51	56	P	P	00 34 47.2	-0.9
	comp=Z,10nm,0.8s,baz=217,slow=7.4,SNR=14						
BDFB				LR	LR	00 47 21.3	
	comp=Z,856nm,18.4s,baz=223,slow=39						
HOPE	Hope Point	32.14	140	eP	P	00 35 21.0	+1.3
	comp=Z,153nm,1.1s						
OTAV	Otavalo	34.62	349	eP	P	00 35 41.8	-0.4
	comp=Z,6.9nm,1.3s						
PTGA	Pitinga	35.10	22	eP	P	00 35 45.7	-0.2
	comp=Z,21nm,1.3s						
ROSC	El Rosal	38.75	357	eP	P	00 36 17.9	+0.6
	comp=Z,4.7nm,0.8s						
SDV	Santo Domingo	42.75	2	P	P	00 36 50.0	-0.1
	comp=Z,4.5nm,0.9s,baz=214,slow=7.3,SNR=6.7						
SDV	Santo Domingo	42.75	2	eP	P	00 36 48.3	-1.7
	comp=Z,7.5nm,1.0s						
BCIP	Isla Barro Col	43.60	349	eP	P	00 36 56.9	+0.1
	comp=Z,14nm,0.7s						
RCBR	Riachuelo	43.82	58	P	P	00 36 58.4	-0.2
	comp=Z,7.3nm,0.7s,baz=221,slow=11,SNR=7.2						
RCBR	Riachuelo	43.82	58	eP	P	00 36 57.9	-0.8
	comp=Z,38nm,1.4s						
VNA3	Neumayer Olymp	49.35	158	P	P	00 37 41.8	+0.5
FDF	Fort de France	49.67	14	eP	P	00 37 44.5	+0.2
	comp=Z,111nm,1.2s						
VNA1	Neumayer--Stat	49.67	157	P	P	00 37 45.6	+1.9
TGUH	Tegucigalpa,Un	49.96	341	eP	P	00 37 47.2	+0.8
	comp=Z,12nm,0.6s						
VNA2	Neumayer--Watz	50.01	157	P	P	00 37 47.2	+0.9
	baz=282,slow=8.7						
GDHS	Morne Mazeau,	51.05	13	eP	P	00 37 54.1	-0.6
	comp=Z,73nm,0.9s						
SNAA	Sanae	51.58	158	P	P	00 37 59.1	+0.9
SNAA	Sanae	51.58	158	eP	P	00 37 59.7	+1.4
	comp=Z,2µm,1.3s						
CELP	Cerrillos	52.13	7	eP	P	00 38 02.9	+0.1
SJG	San Juan	52.21	7	eP	P	00 38 02.0	-1.3
	comp=Z,4.8nm,0.5s						
HUMP	Col San Antoni	52.28	8	eP	P	00 38 04.7	+0.9
	comp=Z,37nm,1.5s						
SDD	Santo Domingo	52.28	3	eP	P	00 38 03.7	-0.2
	comp=Z,306nm,1.2s						
STVI	Saint Thomas	52.59	9	eP	P	00 38 06.9	+0.7
	comp=Z,30nm,1.1s						
CCIG	Comitan	53.54	336	eP	P	00 38 13.3	-0.1
	comp=Z,9.3nm,0.6s						
GTBY	Guantanamo Bay	53.77	357	eP	P	00 38 14.8	0.0
	comp=Z,34nm,1.1s						
TEIG	Tepich	56.12	342	eP	P	00 38 31.8	0.0
	comp=Z,0.6nm,0.8s						
QSPA	South Pole Qui	56.17	180	eP	P	00 38 33.2	+1.2
	comp=Z,46nm,1.0s						
ASCN	Ascension	59.09	78	eP	P	00 38 52.6	-0.5
	comp=Z,111nm,1.0s						
SYO	Syowa Base	65.86	158⇓	esP	P	00 39 44.0	+6.6
SYO	Syowa Base	65.86	158⇓	ePcP	PcP	00 40 06.0	-2.3
TAOE	Nuku Hiva Isla	66.81	275	eLR	LR	01 00 04.2	
	comp=Z,254nm,25.7s						
TBI	Tubuai	67.14	257	eLR	LR	01 00 10.3	
	comp=Z,318nm,25.8s						
434A	Burnet	69.06	336	P	P	00 39 59.6	+1.5
	baz=157						
JCT	Junction City	69.28	335	eP	P	00 40 01.3	+1.8
433A	Art	69.28	335	P	P	00 40 00.7	+1.2
	baz=156						
TXAR	Lajitas Array	69.72	331	P	P	00 40 03.4	+1.0
	comp=Z,0.7nm,0.5s,baz=155,slow=8.4,SNR=13						
TXAR				LR	LR	01 06 20.7	
	comp=Z,169nm,18.2s,baz=0.0,slow=32						
TX31	Lajitas Ar. Si	69.72	331	eP	P	00 40 03.2	+0.9
333A	Richland Sprin	69.77	336	P	P	00 40 03.3	+0.9
	baz=157						
PPT2	Papeete2	70.06	262	eLR	LR	01 01 31.7	
	comp=Z,175nm,29.2s						
PPT	Papeete	70.07	262	LR	LR	01 03 57.6	
	comp=Z,91nm,21.1s,baz=347,slow=30						
OXF	Oxford	70.10	345	eP	P	00 40 03.6	-0.8
	comp=Z,22nm,1.1s						
SWET	Sewanee	70.11	348	eP	P	00 40 05.2	+0.7
Z35A	Perchaven, San	71.05	338	P	P	00 40 11.8	+1.5
	baz=158						
MIAR	Mount Ida	71.13	341	P	P	00 40 11.7	+1.0
	baz=162						
MIAR	Mount Ida	71.13	341	eP	P	00 40 09.6	-1.1
	comp=Z,8.5nm,1.2s						
X39A	Fountain Ranch	71.24	341	P	P	00 40 13.1	+1.7
	baz=161						
WVT	Waverly	71.34	347	eP	P	00 40 12.5	+0.5
W39A	Magazine	71.80	342	P	P	00 40 16.0	+1.3
	baz=161						
W37B	Quinton	72.19	340	P	P	00 40 18.3	+1.2
	baz=160						
V39A	Pettigrew	72.37	342	P	P	00 40 19.4	+1.1
	baz=162						
X34A	Smith Ranch, M	72.40	338	P	P	00 40 19.6	+1.2
	baz=158						
MNTX	Cornudas Mount	72.49	331	P	P	00 40 19.4	+0.4
	baz=152						
MNTX	Cornudas Mount	72.49	331	eP	P	00 40 19.5	+0.4
U40A	Yellville	72.66	343	P	P	00 40 20.3	+0.4
	baz=162						
MAW	Mawson	73.16	164	P	P	00 40 23.3	+0.8
	comp=Z,5.5nm,0.9s,baz=238,slow=8.2,SNR=5.5						
MAW				LR	LR	01 15 38.9	
	comp=Z,194nm,18.7s,baz=237,slow=38						
W32A	Sentinel	73.33	337	P	P	00 40 25.1	+1.2
	baz=157						
T40A	Mansfield	73.33	343	P	P	00 40 24.2	+0.3
	baz=163						
S39A	Bolivar	74.04	343	P	P	00 40 28.4	+0.4
	baz=162						
S38A	Stockton	74.13	342	P	P	00 40 28.8	+0.3
	baz=162						
ACSO	Alum Creek Sta	74.60	351	eP	P	00 40 29.6	-1.6
	comp=Z,10nm,0.9s						
SUR	Sutherland	74.94	119	P	P	00 40 34.4	+0.5
	comp=Z,1.0nm,0.9s,baz=248,slow=11,SNR=4.1						
SUR				LR	LR	01 09 15.6	
	comp=Z,6.7nm,19.0s,baz=329,slow=32						
DBIC	Dimbokro	75.36	71	P	P	00 40 36.3	+0.1
	comp=Z,4.3nm,0.8s,baz=214,slow=6.0,SNR=5.8						
DBIC				LR	LR	01 12 13.4	
	comp=Z,133nm,19.0s,baz=226,slow=34						
P40A	Paris	75.49	344	P	P	00 40 36.8	+0.5
	baz=163						
ANMO	Albuquerque	75.77	332	P	P	00 40 40.2	+1.9
	baz=151						
ANMO	Albuquerque	75.77	332	eP	P	00 40 37.9	-0.4
	comp=Z,1.5nm,0.9s						
KSU1	Kansas State U	76.23	341	eP	P	00 40 39.3	-1.2
	comp=Z,2.8nm,0.3s						
N39A	Derby Farms, D	76.88	344	P	P	00 40 44.6	+0.3
	baz=163						
T25A	Trinidad	76.92	334	eP	P	00 40 46.9	+2.0
M38A	Pleasantville	77.56	344	P	P	00 40 48.4	+0.4
	baz=162						
M37A	Trindle Farm,	77.74	343	P	P	00 40 49.7	+0.7
	baz=162						
SDCO	Great Sand Dun	77.86	334	eP	P	00 40 48.8	-1.3
	comp=Z,1.0nm,0.8s						
WUAZ	Wupatki	78.30	328	eP	P	00 40 54.8	+2.3
TSUM	Tsumeb	79.35	106	LR	LR	01 11 46.2	
	comp=Z,182nm,18.9s,baz=195,slow=32						
BBSC	Beaumont Base	79.60	323	eP	P	00 40 56.8	-2.8
SMCO	Snowmass	79.67	333	eP	P	00 41 02.1	+1.9
ISCO	Idaho Springs	79.72	334	eP	P	00 41 03.3	+2.9
I37A	Lemond, Waseca	80.07	345	P	P	00 41 02.0	+0.3
	baz=162						
K31A	O'Neill	80.10	340	P	P	00 41 03.1	+1.1
	baz=158						
BOSA	Boshof	80.18	118	P	P	00 41 03.3	+0.2
	comp=Z,7.8nm,1.0s,baz=234,slow=3.2,SNR=9.7						
BOSA				LR	LR	01 13 13.9	
	comp=Z,76nm,18.1s,baz=219,slow=33						
KNB	Kanab	80.20	328	eP	P	00 41 05.4	+2.6
VTV	Victorville	80.29	324	eP	P	00 41 03.6	+0.3
LCMT	Little Creek M	80.38	328	eP	P	00 41 06.1	+2.3
ECSD	EROS Data Cent	80.57	342	P	P	00 41 04.8	+0.4
	baz=160						
ECSD	EROS Data Cent	80.57	342	eP	P	00 41 04.8	+0.4
SRU	San Rafael Swe	80.99	331	eP	P	00 41 08.8	+1.7
H35A	Sunnyside Ranc	81.05	344	P	P	00 41 07.2	+0.3
	baz=161						
P18A	Preston Nutter	81.32	331	eP	P	00 41 11.0	+2.0
I30A	Oacoma	81.48	340	P	P	00 41 10.3	+1.0
	baz=158						
H33A	Prehn Over Nor	81.49	343	P	P	00 41 09.7	+0.4
	baz=160						
J27A	Elkhorn Farm,	81.62	338	P	P	00 41 12.4	+2.3
	baz=156						
FIGC	Figueroa Mtn.	81.75	322	eP	P	00 41 11.9	+0.8
DAC	Darwin (Calif)	81.79	324	eP	P	00 41 15.0	+3.6
F36A	Milaca	81.86	345	P	P	00 41 11.4	+0.1
	baz=162						
PSUT	Pine Spring	81.91	328	eP	P	00 41 14.3	+2.3
NLU	North Lily Min	82.34	330	eP	P	00 41 16.6	+2.4
LBTB	Lobatse	82.42	115	LR	LR	01 15 50.5	
	comp=Z,136nm,18.2s,baz=250,slow=34						
E36A	McGregor	82.43	346	P	P	00 41 14.5	+0.3
	baz=163						
R11A	Troy Canyon, C	82.53	327	P	P	00 41 17.2	+2.0
	baz=145						
R11A	Troy Canyon, C	82.53	327	eP	P	00 41 17.2	+2.0
H28A	Mission Ridge	82.63	340	P	P	00 41 16.5	+1.2
	baz=156						
DUG	Dugway, Tooele	82.85	330	eP	P	00 41 18.4	+1.6
D37A	Cotton	82.87	346	P	P	00 41 16.9	+0.4
	baz=163						
RSSD	Black Hills	83.04	338	eP	P	00 41 16.6	-1.1
	comp=Z,1.5nm,0.8s						
C39A	Grand Marais	83.08	348	P	P	00 41 17.7	+0.1
	baz=165						
D35A	Remer	83.13	345	P	P	00 41 18.2	+0.4
	baz=162						
HWUT	Hardware Ranch	83.53	331	eP	P	00 41 21.5	+1.1
BGU	Big Grassy Mou	83.55	330	eP	P	00 41 22.2	+1.8
SPUT	South Promonto	83.64	331	eP	P	00 41 22.0	+1.1
C35A	Jirik Farms, M	83.71	345	P	P	00 41 21.0	+0.1
	baz=162						
BW06	Boulder Array	83.75	333	eP	P	00 41 21.4	0.0
PD31	Pinedale Array	83.75	333	eP	P	00 41 22.4	+0.9
PDAR	Pinedale Array	83.75	333	P	P	00 41 21.7	+0.2
	comp=Z,0.7nm,0.8s,baz=134,slow=4.3,SNR=6.8						
G25A	Newell	83.81	338	P	P	00 41 22.4	+1.0
	baz=154						
NVAR	Mina Array Bea	83.85	325	P	P	00 41 22.8	+0.7
	comp=Z,1.0nm,0.8s,baz=146,slow=6.6,SNR=6.2						
F27A	Lemmon	84.01	340	P	P	00 41 23.1	+0.6
	baz=156						
B35A	Bob, Littlefor	84.28	346	P	P	00 41 23.8	0.0
	baz=162						
TORD	Torodi Ar. Bea	84.39	70	P	P	00 41 24.8	-0.3
	comp=Z,8.3nm,0.9s,baz=256,slow=4.1,SNR=42						
TORD				LR	LR	01 18 06.5	
	comp=Z,138nm,18.7s,baz=230,slow=35						
CMB	Columbia Colle	84.54	324	eP	P	00 41 24.1	-1.2
	comp=Z,3.0nm,0.5s						
B34A	Aery, Baudette	84.59	345	P	P	00 41 25.4	+0.1
	baz=162						
C31A	Landman Farms,	84.64	343	P	P	00 41 25.9	+0.4
	baz=159						
AGMN	Agassiz Nation	84.68	344	P	P	00 41 26.3	+0.6
	baz=161						
AGMN	Agassiz Nation	84.68	344	eP	P	00 41 26.1	+0.4
C30A	Mose, Pekin	84.74	343	P	P	00 41 27.2	+1.1
	baz=158						
A33A	Warroad	85.18	345	P	P	00 41 28.9	+0.6
	baz=161						
B30A	Myrvik Farm, E	85.40	343	P	P	00 41 29.8	+0.4
	baz=159						
RLMT	Red Lodge	85.68	335	P	P	00 41 32.0	+0.9
	baz=150						
RLMT	Red Lodge	85.68	335	eP	P	00 41 32.1	+0.9
A30A	Hoffart Farm,	85.85	343	P	P	00 41 31.5	-0.1
	baz=159						
B28A	Dugan Ranch, T	85.91	342	P	P	00 41 32.5	+0.6
	baz=157						
A29A	Manning Farm,	86.06	343	P	P	00 41 32.7	+0.1
	baz=158						
HLID	Hailey	86.32	331	P	P	00 41 35.8	+1.5
	baz=146						
HLID	Hailey	86.32	331	eP	P	00 41 32.8	-1.5
	comp=Z,2.3nm,0.8s						
ULM	Lac du Bonnet	86.52	345	P	P	00 41 34.7	-0.1
	comp=Z,1.5nm,0.7s,baz=170,slow=3.6,SNR=6.3						
MCMT	McKenzie Canyo	86.75	332	eP	P	00 41 38.5	+2.0
DGMT	Dagmar	86.99	339	P	P	00 41 38.2	+1.0
	baz=154						
DGMT	Dagmar	86.99	339	eP	P	00 41 38.4	+1.1
MATP	Matopo	87.22	113	LR	LR	01 19 21.6	
	comp=Z,140nm,18.3s,slow=35						
SCHQ	Schefferville	88.67	3	LR	LR	01 25 25.3	
	comp=Z,34nm,18.1s,baz=40,slow=38						
LSZ	Lusaka	89.94	108	eP	P	00 41 51.2	-1.0
	comp=Z,2.4nm,0.8s						
AFI	Afiamalu	90.03	253	LR	LR	01 12 33.1	
	comp=Z,130nm,21.1s,baz=214,slow=29						
WALA	Waterton Lakes	90.70	334	eP	P	00 41 53.6	-1.3
	comp=Z,5.8nm,1.3s						
FCC	Fort Churchill	94.27	349	eP	P	00 42 09.9	-1.0
	comp=Z,3.0nm,0.7s						
YKA	Yellowknife Ar	102.07	341	P	Pdif	00 42 45.6	-0.3
	comp=Z,0.3nm,0.7s,baz=148,slow=4.0,SNR=5.5						
SUMG	Summit	108.90	10	ePKP	PKiKP	00 47 20.3	-0.9
WRA	Warramunga Arr	120.62	209	PKP	PKPdf	00 47 44.0	-0.7
	comp=Z,0.6nm,0.6s,baz=155,slow=1.6,SNR=3.6						
BRTR	Keskin Array B	122.01	61	PKP	PKPdf	00 47 46.6	-0.3
	comp=Z,0.9nm,0.8s,baz=219,slow=0.9,SNR=5.5						
AKASG	Malin Array Be	122.36	48	PKP	PKPdf	00 47 46.3	-0.6
	comp=Z,0.2nm,0.3s,baz=260,slow=3.3,SNR=3.6						
FINES	FINESS Array B	123.14	35	PKP	PKPdf	00 47 48.2	+0.1
	comp=Z,1.5nm,0.9s,baz=263,slow=5.6,SNR=2.9						
ARCES	ARCESS Array B	124.15	25	PKP	PKPdf	00 47 49.3	-0.5
	comp=Z,1.0nm,0.6s,baz=278,slow=3.6,SNR=4.7						
TIXI	Tiksi	140.73	350	ePKPdf	PKPdf	00 48 22.2	+1.3
POO	Poona	146.07	108	eP	PKPdf	00 48 28.0	-4.0
BRVK	Borovoye	147.37	43	ePKPab	PKPbc	00 48 36.5	+1.0
HYB	Hyderabad	149.05	115	i PKP	PKPbc	00 48 42.0	+0.9
KURK	Kurchatov	153.04	43	ePKPbc	PKPbc	00 48 48.7	-0.7
KSH	Kashi	154.05	69	ePKPbc	PKPdf	00 48 43.0	-1.0
KSH				epPKP	PKiKP	00 48 52.7	+0.5
KSH				ePP	PP	00 52 42.7	+1.8
KSH				SKKS		00 59 25.2	
KSH				AMB	AMB		
	comp=Z,58nm,7.9s						
KSH				LR	LR		
	comp=Z,240nm,6.5s						
KSH				LR	LR		
	comp=Z,110nm,7.8s						
KSH				LR	LR		
	comp=Z,170nm,6.6s						
ZALV	Zalesovo Beam	154.37	32	PKP	PKPdf	00 48 43.6	-0.2
	comp=Z,1.3nm,0.7s,baz=295,slow=2.6,SNR=7.7						

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
ZALV				PKPbc	PKiKP	00 48 52.4	+0.2
	comp=Z,7.0nm,0.7s,baz=300,slow=3.2,SNR=29						
ZALV				PKPab	PKPab	00 49 06.7	+0.4
	comp=Z,6.2nm,0.6s,baz=295,slow=4.7,SNR=11						
MKAR	Makanchi Array	156.93	49	PKP	PKPdf	00 48 47.5	0.0
	comp=Z,0.5nm,0.8s,baz=315,slow=1.4,SNR=6.4						
MKAR				PKPab	PKPab	00 49 17.6	-0.1
	comp=Z,2.1nm,0.7s,baz=304,slow=4.4,SNR=16						
MKAR				PP	PP	00 52 56.2	-0.2
	comp=Z,0.9nm,1.1s,baz=300,slow=5.1,SNR=4.3						
WMQ	Urumqi	161.64	52	ePKP	PKPdf	00 48 53.6	+0.4
WMQ				pPKP	pPKPdf	00 49 01.8	+1.9
WMQ				sPKP		00 49 06.9	
WMQ				PP	PP	00 53 23.5	+1.4
WMQ				SKS	SKSdf	00 55 51.9	-5.1
SONM	Songino Array	166.21	4	PKPab	PKPab	00 49 58.9	+0.8
	comp=Z,1.1nm,0.8s,baz=336,slow=4.2,SNR=8.0						
NJ2	Nanjing	170.48	261	ePKP	PKPdf	00 49 02.2	+1.8
GTA	Gaotai	171.69	48	ePKP	PKPdf	00 49 01.5	+0.5
GTA				pPKP	pPKPdf	00 49 09.6	+1.8
GTA				sPKP		00 49 12.9	
GTA				PKPab	PKPab	00 50 23.3	+0.5
GTA				PP	PP	00 54 17.7	+3.9
GTA				SKS	SKSdf	00 55 59.5	-3.9
GTA				SKKS	SKKSac	01 00 59.2	-0.4
GTA				SS	SS	01 15 19.9	-0.6
GTA				AMB	AMB		
	comp=Z,50nm,5.2s						
GTA				LR	LR		
	comp=Z,110nm,18.1s						
GTA				LR	LR		
	comp=Z,190nm,19.0s						
GTA				LR	LR		
	comp=Z,93nm,17.1s						
GYA	Guiyang	172.35	173	PKP	PKPdf	00 49 01.2	-0.5
GYA				PKPab	PKPab	00 50 27.0	+1.2
GYA				PKS	PKSdf	00 52 32.5	-1.7
GYA				PP	PP	00 54 19.4	+3.3
GYA				AMB	AMB		
	comp=Z,130nm,8.4s						
HHC	Hu-ho-hao-te	172.59	337	ePKP	PKPdf	00 49 00.6	-0.8
CD2	Chengdu	175.38	132	PKP	PKPdf	00 49 02.2	-0.4
LZH	Lanzhou	176.21	57	ePKP	PKPdf	00 49 01.7	-1.1
LZH				pPKP	pPKPdf	00 49 11.5	+2.0
LZH				sPKP		00 49 16.4	

IDC 02 00:53:33.7±1.5, 21°.10S×176°.53W, h0km, mb3.6/5, mb1 4.0/6, mb1mx3.8/30, mbtmp3.7/6, ML4.4/1, Error ellipse: s-maj=58.8km s-min=27.8km az=145.0, Fiji Islands region

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
URZ	Urewera	17.96	196	P	Pn	00 57 43.5	-1.3
	1.2nm,0.3s,baz=18,slow=7.5,SNR=3.7						
STKA	Stephens Creek	38.77	245	P	P	01 01 01.2	+1.0
	0.9nm,0.5s,baz=99,slow=6.5,SNR=3.0						
ASAR	Alice Springs	45.72	257	P	P	01 01 56.6	-0.4
	0.7nm,0.6s,baz=84,slow=8.3,SNR=8.5						
WRA	Warramunga Arr	45.88	262	P	P	01 01 57.8	-0.4
	0.3nm,0.7s,baz=96,slow=8.2,SNR=5.2						
TXAR	Lajitas Array	86.23	57	P	P	01 06 17.9	+0.3
	0.4nm,1.0s,baz=211,slow=5.1,SNR=3.6						
ILAR	Eielson Array	88.60	12	P	P	01 06 27.8	-0.3
	0.2nm,0.4s,baz=216,slow=6.2,SNR=3.8						

ISCJB 02 00:57:26.7±0.9, 5°.4N±0°.1×94°.5E±0°.1, h46km, mb4.0/10, Error ellipse: s-maj=25.7km s-min=8.3km az=44.4
IDC 02 00:57:30.3±4.3, 5°.48N×94°.69E, h62km±37km, mb3.7/10, mb1 3.8/12, mb1mx3.5/48, mbtmp3.9/12, ML3.9/2, Error ellipse: s-maj=51.6km s-min=16.8km az=56.0
ISC 02 00:57:28.5±1.0, 5°.4N±0°.2×94°.5E±0°.2, h46km, n15, σ0s82/14, mb4.0/9, Northern Sumatera

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
PSI	Prapat	5.13	120	P	Pn	00 58 44.3	+1.3
	1.3nm,0.3s,baz=276,slow=9.2,SNR=4.6						
PSI				S	Sn	00 59 40.6	-0.5
	1.9nm,0.3s,baz=322,slow=17,SNR=2.9						
CMAR	Chiang Mai Arr	13.68	18	P	Pn	01 00 40.7	+0.7
	0.5nm,0.3s,baz=199,slow=16,SNR=2.9						
H08S2	Diego Garcia H	25.49	240	T	T	01 30 02.9	
	baz=62,slow=74						
H08S3	Diego Garcia H	25.49	240	T	T	01 29 56.4	
	baz=62						
H08S1	Diego Carcia H	25.50	240	T	T	01 30 03.7	
	baz=62,slow=74						
MKAR	Makanchi Array	42.55	348	P	P	01 05 19.7	-0.1
	2.0nm,0.6s,baz=172,slow=8.4,SNR=26						
SONM	Songino Array	43.49	12	P	P	01 05 26.4	-1.1
	0.9nm,0.7s,baz=190,slow=8.5,SNR=9.7						
SONM				PcP	PcP	01 07 15.0	+0.1
	0.2nm,0.4s,baz=185,slow=3.2,SNR=3.6						
GEYT	Alibeck	46.27	320	P	P	01 05 50.9	+1.2
	0.8nm,0.4s,baz=138,slow=6.7,SNR=3.6						
WRA	Warramunga Arr	46.59	124	P	P	01 05 51.7	-0.6
	1.1nm,0.5s,baz=304,slow=9.5,SNR=3.7						
ASAR	Alice Springs	48.10	129	P	P	01 06 03.3	-0.9
	0.5nm,0.5s,baz=302,slow=7.9,SNR=3.9						
ZALV	Zalesovo Beam	49.03	352	P	P	01 06 10.2	-0.5
	1.0nm,0.3s,baz=176,slow=8.0,SNR=9.3						
FINES	FINESS Array B	75.04	332	P	P	01 09 04.5	-0.6
	0.3nm,0.4s,baz=94,slow=5.7,SNR=4.6						
ARCES	ARCESS Array B	77.69	340	P	P	01 09 19.3	-0.7
	2.8nm,1.0s,baz=96,slow=6.5,SNR=4.4						
GERES	GERESS Array B	79.88	319	P	P	01 09 33.1	+0.5
	0.4nm,0.5s,baz=108,slow=4.3,SNR=5.1						
INK	Inuvik	99.25	16	P	Pdif	01 11 04.9	-0.2
	0.8nm,1.1s,baz=286,slow=3.7,SNR=2.2						

IDC 02 01:10:35.2±4.8, 56°.18S×142°.86W, h0km, mb3.7/2, mb1 4.0/2, mb1mx3.7/18, mbtmp3.7/2, MS3.4/1, Ms1 3.4/1, ms1mx2.9/24, Error ellipse: s-maj=442.3km s-min=56.8km az=158.0, Pacific-Antarctic Ridge

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
RPZ	Rata Peaks	31.55	274	LR	LR	01 26 31.0	
	comp=Z,79nm,21.4s,baz=114,slow=30						
VNA2	Neumayer--Watz	49.31	162	P	P	01 19 20.1	-5.1
	baz=228,slow=6.8						
ASAR	Alice Springs	66.96	262	P	P	01 21 29.6	0.0
	0.7nm,0.8s,baz=148,slow=6.7,SNR=6.1						
H01W1	Cape Leeuwin H	68.35	240	T	T	02 37 04.8	
	baz=143						
H01W2	Cape Leeuwin H	68.36	239	T	T	02 37 07.1	
	baz=143						
H01W3	Cape Leeuwin H	68.37	240	T	T	02 37 06.0	
	baz=143						
WRA	Warramunga Arr	69.69	264	P	P	01 21 47.1	+0.4
	0.8nm,1.0s,baz=136,slow=5.9,SNR=3.2						
ILAR	Eielson Array	120.67	358	PKP	PKPdf	01 29 27.2	-0.1
	1.5nm,1.0s,baz=224,slow=2.5,SNR=12						
SONM	Songino Array	138.25	289	PKP	PKPdf	01 30 01.1	-0.3
	0.1nm,0.4s,baz=142,slow=3.1,SNR=3.3						
MKAR	Makanchi Array	150.85	271	PKPbc	PKPbc	01 30 28.2	-0.4
	1.2nm,0.9s,baz=110,slow=3.2,SNR=9.9						
MKAR				PKPab	PKPab	01 30 35.0	-0.9
	1.1nm,0.8s,baz=108,slow=4.0,SNR=9.1						

IDC 02 01:17:01.6±7.7, 38°.00N×144°.69E, h0km, mb3.4/3, mb1 3.5/5, mb1mx3.3/43, mbtmp3.5/5, ML2.7/2, Error ellipse: s-maj=124.9km s-min=62.9km az=124.0
JMA 02 01:17:17.5±0.2, 38°.39N×142°.64E, h11km±2km, M3.5
ISC 02 01:17:15.9±1.9, 38°.24N±0°.09×142°.7E±0°.1, h24km, n17, σ1s25/19, mb3.3/3, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
JIO	Ouri	1.10	282	P	Pb	01 17 36.5	+0.2
JIO				S	Sn	01 17 50.1	-0.2
OFUJ	Ofunato	1.18	316	P	Pn	01 17 36.8	-0.2
JMK	Ichinoseki	1.38	302	P	Pb	01 17 40.2	-0.8
MIYJ	Miyakonagasawa	1.51	332	P	Pn	01 17 41.8	+0.3
JMM	Marumori	1.57	257	eS	Sb	01 18 04.2	+0.5
JOM	Ohasama	1.67	318	P	Pb	01 17 44.9	-1.0
JYK	Kaneyama	1.98	291	P	Pb	01 17 50.1	-1.1
JYK				eS	Sb	01 18 14.8	-0.6
JRG	Rokugo	2.00	306	P	Pb	01 17 51.0	-0.7
JFT	Otama	2.02	250	eS	Sb	01 18 17.2	+0.5
JKZ	Kuzumaki	2.06	329	P	Pn	01 17 50.4	+1.4
JYS	Shirataka	2.09	270	P	Pb	01 17 52.5	-0.7
JYS				S	Sb	01 18 17.7	-1.1
JANG	Nango	2.33	337	P	Pb	01 17 54.9	-2.4
MJAR	Matsushiro Arr	3.97	246	Pn	Pb	01 18 22.7	-2.6
	0.7nm,0.3s,baz=70,slow=12,SNR=3.9						
MJAR				Sn	Sb	01 19 21.4	+8.4
	0.7nm,0.3s,baz=297,slow=21,SNR=3.3						
USRK	Ussuriysk Ar.	10.04	310	Pn	Pn	01 19 46.0	+7.5
	0.2nm,0.3s,baz=115,slow=15,SNR=5.6						
SONM	Songino Array	28.01	302	P	P	01 23 06.8	+1.8
	0.2nm,0.5s,baz=96,slow=8.9,SNR=2.7						
ZALV	Zalesovo Beam	41.89	311	P	P	01 25 03.9	-0.2
	0.4nm,0.4s,baz=100,slow=7.5,SNR=3.4						
MKAR	Makanchi Array	44.37	301	P	P	01 25 25.4	+1.0
	0.3nm,0.6s,baz=85,slow=9.5,SNR=4.1						

IDC 02 01:18:45.9±1.2, 56°.77S×141°.91W, h0km, mb4.0/3, mb1 4.1/3, mb1mx3.8/24, mbtmp4.0/3, MS3.6/1, Ms1 3.6/1, ms1mx3.0/23, Error ellipse: s-maj=81.9km s-min=37.1km az=178.0
ISC 02 01:18:47.3±1.4, 56°.8S±0°.3×141°.9W±0°.3, h10km, n13, σ1s12/10, mb4.0/3, 1C, Pacific-Antarctic Ridge

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
URZ	Urewera	32.67	287	LR	LR	01 35 07.1	
	comp=Z,118nm,21.2s,baz=161,slow=30						
VNA2	Neumayer--Watz	48.56	162	P	P	01 27 31.5	+1.5
	baz=219,slow=6.8						
SYO	Syowa Base	54.49	181⇑	eP	P	01 28 12.8	-1.6
STKA	Stephens Creek	56.77	262	P	P	01 28 32.0	+0.7
	2.9nm,1.1s,baz=164,slow=7.4,SNR=2.6						
ASAR	Alice Springs	67.41	261	P	P	01 29 43.0	+0.1
	0.8nm,0.8s,baz=140,slow=6.0,SNR=6.7						
H01W1	Cape Leeuwin H	68.50	239	T	T	02 45 19.9	
	baz=145						
H01W2	Cape Leeuwin H	68.51	239	T	T	02 45 20.3	
	baz=145						
H01W3	Cape Leeuwin H	68.52	239	T	T	02 45 20.8	
	baz=145						
WRA	Warramunga Arr	70.17	264	P	P	01 30 00.6	+0.6
	1.2nm,1.0s,baz=144,slow=5.6,SNR=3.1						
ILAR	Eielson Array	121.31	357	PKP	PKPdf	01 37 39.2	+0.3
	1.6nm,0.8s,baz=236,slow=1.5,SNR=17						
ESDC	Sonseca Array	147.80	104	PKPbc	PKPbc	01 38 31.4	-0.3
	0.7nm,0.7s,baz=264,slow=4.1,SNR=4.8						
MKAR	Makanchi Array	151.38	269	PKPbc	PKPbc	01 38 40.3	+0.1
	1.8nm,0.8s,baz=103,slow=3.9,SNR=10						
MKAR				PKPab	PKPab	01 38 46.9	-1.7
	1.9nm,0.8s,baz=126,slow=3.1,SNR=8.3						
BRTR	Keskin Array B	162.66	168	PKPab	PKPab	01 39 37.3	0.0
	0.5nm,0.8s,baz=205,slow=3.0,SNR=2.9						

CSEM 02 01:20:01.3, 34°.14N×25°.30E, h10km, ML2.7/7
ATH 02 01:20:01.3, 34°.14N×25°.30E, h10km±3km, ML2.7/5, Error ellipse: s-maj=3.9km s-min=1.5km az=18.0
IDC 02 01:20:02.1±1.5, 34°.63N×24°.90E, h0km, mb3.5/4, mb1 3.5/4, mb1mx3.2/46, mbtmp3.5/4, MS3.3/1, Ms1 3.3/1, ms1mx2.5/35, Error ellipse: s-maj=350.0km s-min=26.9km az=141.0
ISC 02 01:20:01.9±2.2, 34°.18N±0°.08×25°.31E±0°.04, h1km±13km, n19, σ0s68/33, mb3.6/4, Crete

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
SIVA	Sivas	0.93	334	P	Pb	01 20 20.3	-0.5
SIVA				S	Sb	01 20 34.0	+0.3
SIVA	Sivas	0.93	334	P	Pb	01 20 20.3	-0.5
SIVA				S	Sb	01 20 34.0	+0.3
SIVA				AML	AML	01 20 35.7	
	comp=E,7861µm,0.5s						
SIVA				AML	AML	01 20 36.3	
	comp=N,6917µm,0.5s						
LAST	Lasithi	0.98	8	P	Pg	01 20 20.6	-0.1
LAST				S	Sb	01 20 35.0	-0.4
LAST	Lasithi	0.98	8	P	Pg	01 20 20.6	-0.1
NPS	Neapolis	1.10	13	P	Pg	01 20 22.9	-0.2
NPS				S	Sb	01 20 39.0	+0.3
NPS	Neapolis	1.10	13	P	Pg	01 20 22.9	-0.2
NPS				S	Sb	01 20 39.0	+0.3
NPS				AML	AML	01 20 42.3	
	comp=N,346µm,0.4s						
NPS				AML	AML	01 20 43.6	
	comp=E,419µm,0.6s						
IDI	Anoyia	1.16	343	P	Pg	01 20 23.3	-0.7
IDI				S	Sb	01 20 40.3	0.0
IDI	Anoyia	1.16	343	P	Pg	01 20 23.3	-0.7
IDI				S	Sb	01 20 40.3	0.0
IDI				AML	AML	01 20 41.0	
	comp=E,416µm,0.4s						
IDI				AML	AML	01 20 42.0	
	comp=N,262µm,0.5s						
ZKR	Zakros	1.19	39	P	Pn	01 20 25.6	-0.1
ZKR				S	Sg	01 20 40.5	+0.3
ZKR	Zakros	1.19	39	P	Pn	01 20 25.6	-0.1
ZKR				S	Sg	01 20 40.5	+0.3
ZKR				AML	AML	01 20 46.6	
	comp=N,350µm,0.4s						
ZKR				AML	AML	01 20 47.1	
	comp=E,472µm,0.5s						
GVD	Gavdhos	1.20	303	P	Pg	01 20 24.6	-0.3
GVD				S	Sb	01 20 41.7	+0.1
GVD	Gavdhos	1.20	303	P	Pg	01 20 24.6	-0.3
GVD				S	Sb	01 20 41.7	+0.1
GVD				AML	AML	01 20 44.5	
	comp=E,1139µm,0.5s						
GVD				AML	AML	01 20 45.0	
	comp=N,919µm,0.5s						
VAM	Vamos	1.52	323	P	Pn	01 20 29.9	-0.4
VAM				S	Sg	01 20 51.0	+0.1
IMMV	Iera Moni Meta	1.68	320	P	Pn	01 20 31.4	-1.0
IMMV				S	Sg	01 20 57.8	+2.0
IMMV	Iera Moni Meta	1.68	320	P	Pn	01 20 31.4	-1.0
IMMV				S	Sg	01 20 57.8	+2.0
TORD	Torodi Ar. Bea	29.97	231	P	P	01 26 12.5	+0.5
	comp=N,0.4nm,0.6s,baz=30,slow=8.4,SNR=4.5						
TORD				LR	LR	01 38 31.5	
	comp=N,56nm,19.4s,baz=135,slow=37						
MKAR	Makanchi Array	44.21	56	P	P	01 28 13.1	+0.5
	comp=N,0.6nm,0.7s,baz=279,slow=7.1,SNR=9.2						
ZALV	Zalesovo Beam	45.59	45	P	P	01 28 23.3	-0.2
	comp=N,0.5nm,0.5s,baz=270,slow=10,SNR=3.2						
SONM	Songino Array	60.01	50	P	P	01 30 10.4	+0.1
	comp=N,0.3nm,0.5s,baz=282,slow=7.2,SNR=2.9						

IDC 02 01:28:45.5±2.8, 3°.77S×127°.95E, h0km, mb3.6/2, mb1 3.9/3, mb1mx3.4/35, mbtmp3.6/3, ML3.4/1, Error ellipse: s-maj=145.3km s-min=28.2km az=58.0, Seram

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
WRA	Warramunga Arr	17.24	159	P	Pn	01 32 48.3	+0.4
	0.1nm,0.3s,baz=338,slow=13,SNR=2.5						
ASAR	Alice Springs	20.60	164	P	P	01 33 26.2	-0.2
	0.6nm,0.6s,baz=346,slow=10,SNR=6.4						
CMAR	Chiang Mai Arr	36.12	309	P	P	01 35 49.4	-0.2
	1.0nm,0.3s,baz=134,slow=7.8,SNR=5.5						
TORD	Torodi Ar. Bea	126.13	283	PKP	PKPdf	01 47 50.9	-0.1
	0.2nm,0.7s,baz=65,slow=1.6,SNR=2.8						

JMA 02 01:32:35.2±0.5, 37°.00N×142°.37E, h16km, M3.5, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
ONAJ	Iwakimizuishiy	1.26	275	P	Pn	01 32 57.3	-0.9
ONAJ				S	Sb	01 33 14.4	-0.3
JMM	Marumori	1.52	305	P	Pn	01 33 01.9	+0.1
JOU	Okura	1.92	316	P	Pb	01 33 08.6	-1.3
MAT	Matsushiro	3.37	263	P	Pn	01 33 29.9	+2.7
MAT				S	Sn	01 34 06.4	-0.6

IDC 02 01:33:00.3±1.9, 37°.65N×139°.71E, h0km, mb3.2/2, mb1 3.2/2, mb1mx3.0/31, mbtmp3.2/2, Error ellipse: s-maj=42.9km s-min=35.0km az=131.0, Eastern Honshu

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
MJAR	Matsushiro Arr	1.63	228	Pn	Pn	01 33 30.2	-0.1
	1.8nm,0.3s,baz=58,slow=14,SNR=6.9						
SONM	Songino Array	26.32	303	P	P	01 38 37.8	+0.1
	0.2nm,0.7s,baz=101,slow=7.8,SNR=2.5						
MKAR	Makanchi Array	42.64	301	P	P	01 40 58.1	-0.2
	0.3nm,0.6s,baz=90,slow=7.2,SNR=2.4						
LPAZ	La Paz	147.52	57	PKPbc	PKPbc	01 52 46.8	-0.8
	0.6nm,0.5s,baz=342,slow=3.2,SNR=3.4						

JMA 02 01:36:56.6±0.2, 36°.86N×142°.93E, h113km, M3.2
IDC 02 01:36:56.3±1.1, 37°.50N×143°.09E, h0km, mb3.6/7, mb1 3.8/9, mb1mx3.6/33, mbtmp3.5/9, ML3.4/1, MS3.1/2, Ms1 3.1/2, ms1mx2.5/48, Error ellipse: s-maj=31.6km s-min=23.2km az=168.0
ISC 02 01:36:59.9±1.0, 37°.4N±0°.1×142°.87E±0°.08, h24km, n13, σ1s25/14, mb3.5/7, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
ONAJ	Iwakimizuishiy	1.68	260	P	Pn	01 37 26.8	-1.0
ONAJ				S	Sb	01 37 50.1	-0.8
JMK	Ichinoseki	2.02	320	P	Pb	01 37 36.5	+0.7
JMK				S	Sb	01 38 06.5	+6.0
MJAR	Matsushiro Arr	3.83	258	Pn	Pn	01 37 56.9	-0.4
	2.2nm,0.3s,baz=96,slow=12,SNR=9.9						
MAT	Matsushiro	3.83	258	P	Pn	01 37 56.3	-1.1
MAT				S	Sn	01 38 41.4	-0.3
USRK	Ussuriysk Ar.	10.67	313	Pn	Pn	01 39 30.5	-0.6
	baz=121,slow=17,SNR=2.5						
USRK				LR	LR	01 43 49.6	
	comp=Z,85nm,20.4s,baz=103,slow=38						
KLR	Kul'dur	14.30	329	LR	LR	01 44 51.0	
	comp=Z,112nm,20.1s,baz=288,slow=33						
MKAR	Makanchi Array	44.91	302	P	P	01 45 15.0	+2.5
	0.2nm,0.6s,baz=79,slow=9.0,SNR=3.4						
ILAR	Eielson Array	48.55	33	P	P	01 45 40.1	-0.6
	0.4nm,0.8s,baz=264,slow=6.4,SNR=4.5						
YKA	Yellowknife Ar	62.90	31	P	P	01 47 23.3	-0.3
	0.2nm,0.7s,baz=304,slow=6.8,SNR=5.1						
STKA	Stephens Creek	68.94	181	P	P	01 48 04.3	+1.6
	2.3nm,0.9s,baz=321,slow=6.5,SNR=3.5						
KBZ	Khabaz	71.54	311	P	P	01 48 19.3	+0.6
	1.2nm,0.9s,baz=62,slow=8.6,SNR=3.8						
NVAR	Mina Array Bea	73.83	54	P	P	01 48 30.9	-1.8
	0.4nm,0.8s,baz=294,slow=6.8,SNR=2.1						
BRTR	Keskin Array B	79.47	312	P	P	01 49 04.6	+0.1
	0.3nm,0.7s,baz=49,slow=9.7,SNR=2.8						

IDC 02 01:40:25.8±2.4, 36°.10N×141°.54E, h0km, mb3.6/6, mb1 3.6/7, mb1mx3.4/34, mbtmp3.5/7, ML3.2/1, Error ellipse: s-maj=75.6km s-min=20.9km az=62.0
ISCJB 02 01:40:27.8±1.1, 36°.1N±0°.1×141°.5E±0°.1, h26km, mb3.5/6, Error ellipse: s-maj=17.7km s-min=12.0km az=30.7
JMA 02 01:40:34.2±0.1, 35°.90N×140°.85E, h41km±1km, M2.9
ISC 02 01:40:30.3±1.6, 36°.0N±0°.1×141°.4E±0°.2, h26km, n11, σ0s97/12, mb3.5/6, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
CHOJ	Chosi	0.52	234	P	Pn	01 40 41.4	-0.6
JHO	Hitachi	0.89	313	P	Pb	01 40 48.3	+1.2
JYT	Yasato	0.98	283	P	Pn	01 40 46.5	-1.9
MJAR	Matsushiro Arr	2.61	283	Pn	Pn	01 41 10.2	-0.7
	4.4nm,0.3s,baz=94,slow=8.6,SNR=13						
MAT	Matsushiro	2.61	283	P	Pn	01 41 10.0	-0.9
MAT				eS	Sn	01 41 42.4	+0.6
SONM	Songino Array	28.34	306	P	P	01 46 22.7	+0.5
	0.2nm,0.4s,baz=107,slow=9.7,SNR=3.3						
ZALV	Zalesovo Beam	42.59	313	P	P	01 48 23.3	-0.6
	0.2nm,0.3s,baz=98,slow=6.0,SNR=2.1						
MKAR	Makanchi Array	44.64	303	P	P	01 48 40.3	-0.3
	0.6nm,0.7s,baz=89,slow=10.0,SNR=7.7						
KURBB	Kurchatov Arra	46.61	309	P	P	01 48 55.3	-0.7
	0.7nm,0.4s,baz=82,slow=7.6,SNR=5.1						
WRA	Warramunga Arr	56.04	188	P	P	01 50 07.3	+0.4
	0.4nm,0.7s,baz=3.8,slow=7.5,SNR=2.4						
ASAR	Alice Springs	59.77	188	P	P	01 50 33.2	+0.1
	0.3nm,0.8s,baz=12,slow=9.8,SNR=2.7						

ATH 02 01:43:07.1, 37°.18N×28°.61E, h23km±2km, ML2.8/1, Error ellipse: s-maj=3.6km s-min=1.6km az=180.0
DDA 02 01:43:08.9, 37°.14N×28°.43E, h7km, Md2.9
ISK 02 01:43:08.5, 37°.13N×28°.47E, h4km, MD2.9
ISCJB 02 01:43:09.2±0.4, 37°.15N±0°.02×28°.46E±0°.03, h5km±4km, Error ellipse: s-maj=3.8km s-min=3.5km az=13.9
CSEM 02 01:43:09.2±0.1, 37°.13N×28°.46E, h5km, MD2.9, Error ellipse: s-maj=2.7km s-min=2.5km az=164.0
ISC 02 01:43:09.3±0.9, 37°.14N±0°.02×28°.47E±0°.02, h7km±7km, n59, σ0s82/85, Turkey

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
YER	Yerkesik	0.15	267	ePG	Pg	01 43 12.1	-0.4
YER				eSG	Sg	01 43 15.3	+0.6
YER	Yerkesik	0.15	267	ePg	Pg	01 43 12.1	-0.4
YER				eSg	Sg	01 43 15.3	+0.6
TURN	Turunc	0.29	159	i P	Pb	01 43 16.2	-0.6
TURN				i S	Sb	01 43 22.6	+0.8
TURN	Turunc	0.29	159	P	Pb	01 43 16.2	-0.6
TURN				S	Sb	01 43 22.6	+0.8
DALY	Dalyan (Mu˜la	0.36	156	ePG	Pg	01 43 16.1	-0.1
DALY				eSG	Sg	01 43 21.5	+0.6
DALY	Dalyan (Mu˜la	0.36	156	ePg	Pg	01 43 16.1	-0.1
DALY				eSg	Sg	01 43 21.5	+0.6
AYDN	Tasoluk	0.70	318	i P	Pg	01 43 22.6	-0.2
AYDN				i S	Sg	01 43 31.7	-0.2
AYDN	Tasoluk	0.70	318	P	Pg	01 43 22.6	-0.2
AYDN				S	Sg	01 43 31.7	-0.2
DENT	Denizli	0.76	36	ePG	Pg	01 43 23.7	-0.2
DENT	Denizli	0.76	36	ePg	Pg	01 43 23.7	-0.2
GLHS	Glhisar (BURDU	0.82	89	ePG	Pg	01 43 24.9	-0.2
GLHS				eSG	Sb	01 43 37.0	-0.2
GLHS	Glhisar (BURDU	0.82	89	ePg	Pg	01 43 24.9	-0.2
GLHS				eSg	Sb	01 43 37.0	-0.2
BDRM	Kayabasi	0.82	265	i P	Pg	01 43 24.4	-0.8
BDRM				i S	Sn	01 43 39.2	-0.6
BDRM	Kayabasi	0.82	265	P	Pg	01 43 24.4	-0.8
BDRM				S	Sn	01 43 39.2	-0.6
GOLH	Golhisar	0.88	84	i P	Pb	01 43 26.5	-0.4
GOLH				i S	Sn	01 43 41.0	-0.2
GOLH	Golhisar	0.88	84	P	Pb	01 43 26.5	-0.4
GOLH				S	Sn	01 43 41.0	-0.2
AYDB	Zeytinkoy-Aydi	0.93	330	ePG	Pg	01 43 27.0	-0.1
AYDB	Zeytinkoy-Aydi	0.93	330	ePg	Pg	01 43 27.0	-0.1
BODT	Bodrum	0.93	265	ePG	Pg	01 43 26.5	-0.7
BODT	Bodrum	0.93	265	ePg	Pg	01 43 26.5	-0.7
ARG	Arkhangelos	0.97	197	P	Pg	01 43 26.3	-1.5
ARG				S	Sb	01 43 41.3	0.0
GCAM	G?zelcaml?	1.13	300	i P	Pb	01 43 31.2	0.0
GCAM				i S	Sb	01 43 46.8	+0.7
GCAM	G?zelcaml?	1.13	300	P	Pb	01 43 31.2	0.0
GCAM				S	Sb	01 43 46.8	+0.7
NIS1	Nisyros Isl.	1.17	243	ePN	Pb	01 43 31.8	-0.1
NIS1	Nisyros Isl.	1.17	243	P	Pg	01 43 31.4	-0.3
NIS1	Nisyros Isl.	1.17	243	ePn	Pb	01 43 31.8	-0.1
NIS1				S	Sn	01 43 50.5	+2.3
NIS1	Nisyros Isl.	1.17	243	P	Pg	01 43 31.4	-0.3
NIS1				S	Sn	01 43 50.5	+2.3
NIS1				AML	AML	01 43 57.5	
	comp=E,1156µm,0.7s						
NIS1				AML	AML	01 43 57.8	
	comp=N,1088µm,0.4s						
NISR	Nisiros	1.20	244	P	Pg	01 43 31.7	-0.6
NISR				S	Sn	01 43 50.5	+1.5
NISR	Nisiros	1.20	244	P	Pg	01 43 31.7	-0.6
NISR				S	Sn	01 43 50.5	+1.5
ELL	Elmali	1.22	108	ePN	Pg	01 43 32.0	-0.7
ELL	Elmali	1.22	108	ePn	Pg	01 43 32.0	-0.7
KULA	Kula-Manisa	1.38	6	ePN	Pn	01 43 34.7	-0.3
KULA	Kula-Manisa	1.38	6	ePn	Pn	01 43 34.7	-0.3
SMG	Samos	1.42	294	S	Sg	01 43 52.8	-2.1
SMG	Samos	1.42	294	P	Pn	01 43 34.9	-0.7
SMG				S	Sg	01 43 52.8	-2.1
KHL	Karahalli	1.44	35	ePN	Pn	01 43 36.2	+0.3
KHL	Karahalli	1.44	35	ePn	Pn	01 43 36.2	+0.3
IZM	Izmir	1.58	323	ePN	Pb	01 43 38.6	-0.2
IZM	Izmir	1.58	323	ePn	Pb	01 43 38.6	-0.2
BLCB	Balcova	1.68	318	ePN	Pn	01 43 39.6	+0.5
BLCB	Balcova	1.68	318	ePn	Pn	01 43 39.6	+0.5

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
AKS	**Akhisar**	**1.81**	**343**	*e*PN	**Pn**	**01 43 41.3**	**+0.4**
AKS	**Akhisar**	**1.81**	**343**	*e*Pn	**Pn**	**01 43 41.3**	**+0.4**
DEMI	**Demirci**	**1.91**	**6**	*i* P	**Pn**	**01 43 42.4**	**+0.1**
DEMI				*i* S	**Sn**	**01 44 06.1**	**-0.5**
DEMI	**Demirci**	**1.91**	**6**	P	**Pn**	**01 43 42.4**	**+0.1**
DEMI				S	**Sn**	**01 44 06.1**	**-0.5**
KARP	**Karpathos**	**1.91**	**214**	P	**Pn**	**01 43 42.4**	**+0.1**
KARP				S	**Sn**	**01 44 05.2**	**-1.4**
KARP	**Karpathos**	**1.91**	**214**	P	**Pn**	**01 43 42.4**	**+0.1**
KARP				S	**Sn**	**01 44 05.2**	**-1.4**
SHUT	**Suhut-Afyon**	**2.17**	**49**	*e*PN	**Pn**	**01 43 47.1**	**+1.2**
SHUT	**Suhut-Afyon**	**2.17**	**49**	*e*Pn	**Pn**	**01 43 47.1**	**+1.2**
CHOS	**Chios island**	**2.28**	**304**	P	**Pn**	**01 43 48.2**	**+0.8**
CHOS	**Chios island**	**2.28**	**304**	P	**Pn**	**01 43 48.2**	**+0.8**
DKL	**Dikili**	**2.29**	**328**	*e*PN	**Pn**	**01 43 48.5**	**+1.1**
DKL	**Dikili**	**2.29**	**328**	*e*Pn	**Pn**	**01 43 48.5**	**+1.1**
TVSB	**Tavsanli**	**2.43**	**18**	*e*PN	**Pn**	**01 43 50.3**	**+0.8**
TVSB	**Tavsanli**	**2.43**	**18**	*e*Pn	**Pn**	**01 43 50.3**	**+0.8**
NPS	**Neapolis**	**2.98**	**232**	P	**Pn**	**01 43 57.2**	**+0.3**
NPS	**Neapolis**	**2.98**	**232**	P	**Pn**	**01 43 57.2**	**+0.3**
LAST	**Lasithi**	**3.13**	**232**	P	**Pn**	**01 44 00.3**	**+1.2**
LAST	**Lasithi**	**3.13**	**232**	P	**Pn**	**01 44 00.3**	**+1.2**

*IDC **02** 01:43:30.6±1.1, 37.°38N×143.°71E, h0km, mb3.7/7, mb1 3.8/9, mb1mx3.5/41, mbtmp3.7/9, ML2.9/2, Error ellipse: s-maj=26.7km s-min=20.7km az=68.0*
*ISCJB **02** 01:43:33.5±0.9, 37.°4N±0.°1×143.°62E±0.°10, h33km, mb3.6/7, Error ellipse: s-maj=16.8km s-min=10.4km az=164.2*
ISC 02 01:43:35.7±1.2**, 37.°4N**±0.°1×**143.°7E**±0.°1**, h35**km**, n10, σ1.s37**/12**, mb3.5**/7**, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
MJAR	**Matsushiro Arr**	**4.43**	**261**	Pn	**Pn**	**01 44 39.8**	**-0.7**
	3.6nm,0.3s,baz=75,slow=10,SNR=8.9						
MJAR				Sn	**Sn**	**01 45 33.7**	**+2.8**
	0.5nm,0.3s,baz=79,slow=12,SNR=4.1						
MAT	**Matsushiro**	**4.43**	**261**	P	**Pn**	**01 44 39.7**	**-0.8**
MAT				S	**Sn**	**01 45 29.0**	**-1.9**
USRK	**Ussuriysk Ar.**	**11.17**	**311**	Pn	**Pn**	**01 46 13.0**	**+0.2**
	0.1nm,0.3s,baz=133,slow=12,SNR=3.6						
SONM	**Songino Array**	**29.10**	**303**	P	**P**	**01 49 33.7**	**+0.6**
	0.3nm,0.7s,baz=101,slow=7.8,SNR=2.3						
ZALV	**Zalesovo Beam**	**43.02**	**312**	P	**P**	**01 51 32.6**	**+1.0**
	0.5nm,0.5s,baz=88,slow=10,SNR=3.2						
MKAR	**Makanchi Array**	**45.46**	**302**	P	**P**	**01 51 50.5**	**-0.8**
	0.4nm,0.6s,baz=81,slow=8.7,SNR=4.1						
KURBB	**Kurchatov Arra**	**47.21**	**308**	P	**P**	**01 52 03.7**	**-1.2**
	0.9nm,0.6s,baz=80,slow=8.3,SNR=4.8						
ILAR	**Eielson Array**	**48.26**	**33**	P	**P**	**01 52 12.6**	**-0.3**
	0.2nm,0.6s,baz=257,slow=7.9,SNR=3.9						
WRA	**Warramunga Arr**	**57.66**	**190**	P	**P**	**01 53 22.6**	**0.0**
	1.0nm,0.5s,baz=11,slow=7.8,SNR=4.4						
ASAR	**Alice Springs**	**61.39**	**190**	P	**P**	**01 53 49.0**	**+0.8**
	0.3nm,0.6s,baz=10,slow=6.6,SNR=3.7						

*ISCJB **02** 01:47:21.6±1.2, 39.°39N±0.°04×142.°67E±0.°07, h18km±8km, mb3.7/12, MS3.2/2, Error ellipse: s-maj=9.0km s-min=7.2km az=178.8*
*JMA **02** 01:47:21.9±0.1, 39.°39N×142.°64E, h26km±1km, M4.0*
*IDC **02** 01:47:28.2±2.8, 39.°36N×142.°59E, h63km±25km, mb3.5/13, mb1 3.6/17, mb1mx3.5/50, mbtmp3.8/17, ML2.7/4, MS2.9/6, Ms1 2.9/6, ms1mx2.6/48, Error ellipse: s-maj=20.5km s-min=16.9km az=139.0*
ISC 02 01:47:21.1±2.0**, 39.°42N**±0.°04×**142.°56E**±0.°06**, h5**km±12km**, n40, σ1.s02**/33**, mb3.9**/12**, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
MIYJ	**Miyakonagasawa**	**0.59**	**285**	P	**Pn**	**01 47 34.6**	**-1.5**
MIYJ				S	**Sb**	**01 47 43.8**	**+1.3**
JTH	**Tanohata**	**0.74**	**314**	P	**Pn**	**01 47 37.0**	**-1.2**
OFUJ	**Ofunato**	**0.77**	**244**	P	**Pn**	**01 47 37.2**	**-1.4**
JOM	**Ohasama**	**0.98**	**273**	P	**Pn**	**01 47 40.9**	**-0.6**
JOM				S	**Sn**	**01 47 54.8**	**-0.9**
JKZ	**Kuzumaki**	**1.10**	**301**	P	**Pn**	**01 47 43.1**	**0.0**
JKZ				S	**Sn**	**01 47 58.6**	**-0.1**
JMK	**Ichinoseki**	**1.14**	**246**	P	**Pg**	**01 47 43.3**	**+0.4**
JMK				S	**Sn**	**01 47 58.7**	**-0.9**
JANG	**Nango**	**1.24**	**320**	P	**Pb**	**01 47 44.6**	**-0.4**
JANG				S	**Sn**	**01 48 01.4**	**-0.8**
JIO	**Ouri**	**1.35**	**225**	P	**Pb**	**01 47 45.7**	**-1.1**
JRG	**Rokugo**	**1.49**	**270**	P	**Pb**	**01 47 48.7**	**-0.5**
JAH	**Hinai**	**1.67**	**298**	P	**Pb**	**01 47 51.8**	**-0.4**
JAH				S	**Sg**	**01 48 14.5**	**-0.1**
JTM	**Tenmabayashi**	**1.78**	**320**	P	**Pb**	**01 47 53.4**	**-0.7**
JTM				S	**Sb**	**01 48 15.9**	**-0.8**
JYK	**Kaneyama**	**1.78**	**254**	P	**Pb**	**01 47 53.6**	**-0.6**
MJAR	**Matsushiro Arr**	**4.48**	**231**	P	Pn	01 48 33.5	+3.9
	1.3nm,0.3s,baz=37,slow=12,SNR=36						
MJAR				LR	LR	01 50 00.6	
	comp=Z,41nm,21.3s,baz=55,slow=34						
MAT	**Matsushiro**	**4.48**	**231**	P	Pn	01 48 33.1	+3.5
MAT				S	**Sb**	**01 49 37.3**	**+2.8**
USRK	**Ussuriysk Ar.**	**9.22**	**305**	P	Pn	01 49 40.2	+5.7
	0.2nm,0.3s,baz=114,slow=14,SNR=4.2						
USRK				LR	LR	01 53 03.2	
	comp=Z,60nm,19.1s,baz=344,slow=36						
JNU	**Nakatsue**	**11.33**	**240**	LR	LR	01 54 31.0	
	comp=Z,61nm,19.6s,baz=302,slow=37						
KSRS	**Korea Array**	**11.64**	**265**	LR	LR	01 54 32.5	
	comp=Z,77nm,18.0s,baz=34,slow=36						
KLR	**Kul'dur**	**12.47**	**325**	P	Pn	01 50 23.8	+4.6
	0.1nm,0.3s,baz=166,slow=19,SNR=2.5						
PETK	**Petropavlovsk-**	**17.18**	**32**	P	**P**	**01 51 23.8**	**+0.5**
	0.1nm,0.3s,baz=245,slow=6.4,SNR=4.2						
MA2	**Magadan**	**20.83**	**12**	P	Pn	01 52 03.4	-2.3
	3.0nm,0.5s,baz=239,slow=10,SNR=5.3						
SEY	**Seymchan**	**24.28**	**11**	P	**P**	**01 52 39.7**	**+0.8**
	4.3nm,1.0s,baz=204,slow=8.1,SNR=15						
SONM	**Songino Array**	**27.29**	**300**	P	**P**	**01 53 07.4**	**+0.9**
	0.3nm,0.5s,baz=92,slow=9.9,SNR=3.3						
H11N2	**WAKE ISLAND Hy**	**28.71**	**126**	T	T	02 23 18.1	
	baz=319,slow=75,SNR=165						
H11N1	**WAKE ISLAND Hy**	**28.72**	**126**	T	T	02 23 50.0	
	baz=319,slow=75,SNR=198						
H11N3	**WAKE ISLAND Hy**	**28.73**	**126**	T	T	02 23 48.8	
	baz=319,slow=75,SNR=195						
H11S1	**WAKE ISLAND Hy**	**29.51**	**128**	T	T	02 24 26.3	
	baz=321,slow=76,SNR=22						
H11S3	**WAKE ISLAND Hy**	**29.51**	**128**	T	T	02 24 45.8	
	baz=321,slow=76,SNR=20						
TLY	**Talaya**	**29.52**	**307**	P	**P**	**01 53 27.4**	**+1.2**
	2.5nm,0.5s,baz=45,slow=5.7,SNR=4.0						
H11S2	**WAKE ISLAND Hy**	**29.53**	**128**	T	T	02 24 31.2	
	baz=321,slow=76,SNR=22						
ZALV	**Zalesovo Beam**	**41.01**	**310**	P	**P**	**01 55 04.4**	**-0.4**
	1.3nm,0.5s,baz=94,slow=7.1,SNR=7.4						
MKAR	**Makanchi Array**	**43.65**	**300**	P	**P**	**01 55 28.2**	**+1.7**
	0.6nm,0.8s,baz=75,slow=11,SNR=3.3						
KURBB	**Kurchatov Arra**	**45.28**	**306**	P	**P**	**01 55 39.4**	**0.0**
	0.8nm,0.3s,baz=82,slow=8.6,SNR=5.9						
ILAR	**Eielson Array**	**47.00**	**34**	P	**P**	**01 55 53.3**	**+0.5**
	0.6nm,0.7s,baz=269,slow=6.7,SNR=8.4						
ARU	**Arti**	**55.18**	**318**	LR	LR	02 20 16.9	
	comp=Z,6.0nm,20.1s,baz=86,slow=36						
WRA	**Warramunga Arr**	**59.55**	**189**	P	**P**	**01 57 24.1**	**-1.5**
	1.1nm,0.8s,baz=4.7,slow=7.0,SNR=3.4						
YKA	**Yellowknife Ar**	**61.30**	**31**	P	**P**	**01 57 36.6**	**-0.4**
	0.1nm,0.3s,baz=299,slow=5.5,SNR=4.7						
FINES	**FINESS Array B**	**67.12**	**332**	P	**P**	**01 58 14.8**	**-0.5**
	1.3nm,1.0s,baz=185,slow=34,SNR=3.8						
NVAR	**Mina Array Bea**	**72.85**	**54**	P	**P**	**01 58 51.8**	**+0.7**
	0.4nm,0.7s,baz=313,slow=4.5,SNR=3.1						
AKASG	**Malin Array Be**	**72.96**	**322**	P	**P**	**01 58 51.1**	**-0.2**
	0.3nm,0.4s,baz=44,slow=6.6,SNR=4.3						
ESDC	**Sonseca Array**	**95.53**	**335**	LR	LR	02 52 35.4	
	comp=Z,25nm,18.8s,baz=280,slow=41						

*ISCJB **02** 01:49:49.7±0.5, 39.°66N±0.°04×27.°89E±0.°05, h7km±4km, Error ellipse: s-maj=6.7km s-min=5.3km az=39.2*
*CSEM **02** 01:49:49.8±0.1, 39.°66N×27.°91E, h6km±1km, MD2.7, Error ellipse: s-maj=2.8km s-min=2.2km az=141.0*
*DDA **02** 01:49:49.5, 39.°64N×27.°91E, h7km, Md2.7*
*ISK **02** 01:49:49.6, 39.°65N×27.°93E, h6km, MD2.7*
ISC 02 01:49:49.8±0.9**, 39.°67N**±0.°03×**27.°90E**±0.°03**, h8**km±5km**, n31, σ0.s30**/42**, Turkey**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
BALB	**Balikesir**	**0.03**	**209**	*e*PG	**Pg**	**01 49 51.3**	**0.0**
BALB				*e*SG	**Sg**	**01 49 52.4**	**-0.1**
BALB	**Balikesir**	**0.03**	**209**	*e*Pg	**Pg**	**01 49 51.3**	**0.0**
BALB				*e*Sg	**Sg**	**01 49 52.4**	**-0.1**
BALY	**Balya**	**0.23**	**289**	*i* P	**Pg**	**01 49 54.4**	**0.0**
BALY	**Balya**	**0.23**	**289**	P	**Pg**	**01 49 54.4**	**0.0**
DURS	**Dursunbey**	**0.45**	**98**	*i* P	**Pg**	**01 49 58.5**	**0.0**
DURS				*i* S	**Sg**	**01 50 05.1**	**+0.7**
DURS	**Dursunbey**	**0.45**	**98**	P	**Pg**	**01 49 58.5**	**0.0**
DURS				S	**Sg**	**01 50 05.1**	**+0.7**
DST	**Dursunbey**	**0.56**	**96**	*e*PG	**Pg**	**01 50 00.6**	**0.0**
DST	**Dursunbey**	**0.56**	**96**	*e*Pg	**Pg**	**01 50 00.6**	**0.0**
KCTX	**Karacabey (Bur**	**0.69**	**30**	*e*PG	**Pg**	**01 50 03.3**	**+0.2**
KCTX				*e*SG	**Sb**	**01 50 13.3**	**-0.5**
KCTX	**Karacabey (Bur**	**0.69**	**30**	*e*Pg	**Pg**	**01 50 03.3**	**+0.2**
KCTX				*e*Sg	**Sb**	**01 50 13.3**	**-0.5**
DEMI	**Demirci**	**0.89**	**134**	*i* P	**Pg**	**01 50 06.4**	**-0.4**
DEMI				*i* S	**Sg**	**01 50 18.5**	**+0.1**
DEMI	**Demirci**	**0.89**	**134**	P	**Pg**	**01 50 06.4**	**-0.4**
DEMI				S	**Sg**	**01 50 18.5**	**+0.1**
DKL	**Dikili**	**0.97**	**233**	*e*PG	**Pb**	**01 50 08.8**	**-0.1**
DKL	**Dikili**	**0.97**	**233**	*e*Pg	**Pb**	**01 50 08.8**	**-0.1**
MDNY	**Mudanya-Bursa**	**1.03**	**47**	*e*PG	**Pb**	**01 50 09.9**	**+0.1**
MDNY	**Mudanya-Bursa**	**1.03**	**47**	*e*Pg	**Pb**	**01 50 09.9**	**+0.1**
ARMT	**Armutlu**	**1.16**	**39**	*e*PN	**Pn**	**01 50 12.3**	**0.0**
ARMT	**Armutlu**	**1.16**	**39**	*e*Pn	**Pn**	**01 50 12.3**	**0.0**
IGD	**Bursa**	**1.16**	**59**	*i* P	**Pg**	**01 50 11.2**	**-1.0**
IGD				*i* S	**Sn**	**01 50 28.5**	**+0.1**
TVSB	**Tavsanli**	**1.23**	**100**	*e*PN	**Pb**	**01 50 12.9**	**-0.3**
TVSB	**Tavsanli**	**1.23**	**100**	*e*Pn	**Pb**	**01 50 12.9**	**-0.3**
KULA	**Kula-Manisa**	**1.29**	**153**	*e*PN	**Pb**	**01 50 14.4**	**0.0**
KULA	**Kula-Manisa**	**1.29**	**153**	*e*Pn	**Pb**	**01 50 14.4**	**0.0**
GDZ	**Gediz**	**1.35**	**115**	*i* P	**Pb**	**01 50 15.6**	**+0.1**
GDZ				*i* S	**Sb**	**01 50 33.0**	**0.0**
GDZ	**Gediz**	**1.35**	**115**	P	**Pb**	**01 50 15.6**	**+0.1**
GDZ				S	**Sb**	**01 50 33.0**	**0.0**
IZI	**Iznik**	**1.38**	**61**	*e*PN	**Pb**	**01 50 16.0**	**+0.1**
IZI	**Iznik**	**1.38**	**61**	*e*Pn	**Pb**	**01 50 16.0**	**+0.1**
BLCB	**Balcova**	**1.45**	**208**	*e*PN	**Pb**	**01 50 16.9**	**0.0**
BLCB	**Balcova**	**1.45**	**208**	*e*Pn	**Pb**	**01 50 16.9**	**0.0**
AYDB	**Zeytinkoy-Aydi**	**1.72**	**180**	*e*PN	**Pn**	**01 50 20.3**	**+0.2**
AYDB	**Zeytinkoy-Aydi**	**1.72**	**180**	*e*Pn	**Pn**	**01 50 20.3**	**+0.2**

*JMA **02** 01:51:21.4±0.1, 23.°81N×121.°52E, h40km±2km, M3.2*
*ISCJB **02** 01:51:22.7±0.2, 23.°84N±0.°02×121.°58E±0.°02, h38km±5km, Error ellipse: s-maj=3.2km s-min=2.0km az=44.2*
*TAP **02** 01:51:22.1, 23.°85N×121.°57E, h38km, ML3.5, C*
ISC 02 01:51:23.0±1.1**, 23.°84N**±0.°02×**121.°55E**±0.°02**, h34**km±2km**, n54, σ0.s70**/103**, 4C-3D, Taiwan**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
ESL	**Shilin**	**0.11**	**258**	⇓*i*P	**Pb**	**01 51 29.3**	**+0.3**
	baz=253						
ESL				*i* S	**Sb**	**01 51 33.7**	**+0.6**
	baz=253						
HWA	**Hwalien**	**0.15**	**20**	*e*P	**Pb**	**01 51 29.9**	**+0.7**
	baz=18						
HWA				*e*S	**Sb**	**01 51 34.1**	**+0.6**
	baz=18						
TWD	**Chiawan**	**0.24**	**10**	P	**Pb**	**01 51 30.5**	**+0.3**
	baz=8.0						
TWD				S	**Sb**	**01 51 35.9**	**+0.8**
	baz=8.0						
EHY	**Hungye**	**0.39**	**212**	P	**Pb**	**01 51 31.1**	**-0.9**
	baz=212						
EHY				S	**Sb**	**01 51 37.5**	**-0.7**
	baz=212						
WDT	**Danda**	**0.39**	**258**	⇑*i*P	**Pb**	**01 51 32.1**	**-0.2**
	baz=256						
WDT				S	**Sn**	**01 51 38.9**	**+0.4**
	baz=256						
TWF1	**Yuli**	**0.54**	**206**	⇓*i*P	**Pn**	**01 51 32.9**	**-1.3**
	baz=205						
TWF1				S	**Sb**	**01 51 40.9**	**-1.1**
	baz=205						
TWT	**Tachien**	**0.54**	**321**	P	**Pn**	**01 51 34.1**	**-0.2**
	baz=317						
TWT				S	**Sb**	**01 51 41.8**	**-0.4**
	baz=317						
SMLT	**Sun Moon Lake**	**0.60**	**274**	⇑*i*P	**Pn**	**01 51 34.6**	**-0.5**
	baz=273						
SMLT				*i* S	**Sn**	**01 51 43.5**	**-0.2**
	baz=273						
ENA	**Nanau**	**0.61**	**17**	P	**Pn**	**01 51 34.6**	**-0.6**
	baz=16						
ENA				S	**Sn**	**01 51 42.6**	**-1.3**
	baz=16						
NNS	**Nan Shan**	**0.62**	**345**	P	**Pn**	**01 51 35.1**	**-0.3**
	baz=344						
NNS				S	**Sn**	**01 51 43.9**	**-0.5**
	baz=344						
TYC	**Yuchr**	**0.64**	**276**	⇑*i*P	**Pn**	**01 51 35.0**	**-0.6**
	baz=275						
TYC				S	**Sn**	**01 51 44.4**	**-0.1**
	baz=275						
YUS	**Yu-Shan**	**0.65**	**238**	P	**Pn**	**01 51 36.0**	**-0.1**
	baz=237						
YUS				S	**Sb**	**01 51 44.7**	**-0.8**
	baz=237						
CHKT	**Chengkung**	**0.75**	**193**	*e*P	**Pn**	**01 51 36.8**	**-0.4**
	baz=193						
CHKT				S	**Sb**	**01 51 48.2**	**+0.4**
	baz=193						
ALS	**Alishan**	**0.76**	**245**	P	**Pn**	**01 51 37.6**	**+0.1**
	baz=244						
ALS				S	**Sn**	**01 51 47.9**	**0.0**
	baz=244						
WNT	**Mingjian**	**0.79**	**273**	P	**Pn**	**01 51 37.9**	**+0.2**
	baz=272						
WNT				S	**Sb**	**01 51 49.0**	**+0.1**
	baz=272						
ENTT	**Nioudou**	**0.80**	**1**	*e*P	**Pn**	**01 51 36.7**	**-1.1**
ENTT				S	**Sn**	**01 51 47.9**	**-0.7**
ELDTW	**Lidau**	**0.81**	**217**	P	**Pn**	**01 51 36.8**	**-1.2**
	baz=217						
ELDTW				S	**Sn**	**01 51 48.1**	**-0.8**
	baz=217						
TWC	**Suao**	**0.82**	**20**	P	**Pn**	**01 51 37.6**	**-0.5**
	baz=19						
TWC				S	**Sn**	**01 51 48.2**	**-0.7**
	baz=19						
CHN5	**Tsauling**	**0.83**	**253**	*e*P	**Pn**	**01 51 38.2**	**-0.1**
	baz=253						
CHN5				*e*S	**Sb**	**01 51 50.2**	**+0.1**
	baz=253						
NSK	**Sanguang**	**0.85**	**348**	⇓*i*P	**Pn**	**01 51 38.5**	**-0.1**
	baz=347						
NSK				S	**Sn**	**01 51 49.3**	**-0.7**
	baz=347						
TCU	**Taichung**	**0.86**	**291**	P	**Pn**	**01 51 39.2**	**+0.6**
	baz=290						
TCU				S	**Sn**	**01 51 50.2**	**+0.3**
	baz=290						
TWQ1	**Liyutan**	**0.87**	**306**	⇑*i*P	**Pn**	**01 51 38.9**	**0.0**
	baz=304						
TWQ1				S	**Sn**	**01 51 50.6**	**+0.2**
	baz=304						
TWE	**Neicheng**	**0.89**	**7**	P	**Pn**	**01 51 38.5**	**-0.5**
	baz=7.0						
TWE				S	**Sn**	**01 51 49.8**	**-0.9**
	baz=7.0						
WGK	**Gukeng**	**0.92**	**261**	P	**Pn**	**01 51 39.7**	**+0.3**
	baz=259						
WGK				*e*S	**Sb**	**01 51 52.6**	**+0.2**
	baz=259						
NSY	**Sanyi**	**0.92**	**309**	*e*P	**Pn**	**01 51 39.9**	**+0.4**
	baz=307						
NSY				*e*S	**Sn**	**01 51 52.2**	**+0.6**
	baz=307						
NSTT	**Nanjuang**	**0.94**	**328**	P	**Pn**	**01 51 39.9**	**+0.2**
	baz=326						
NSTT				S	**Sn**	**01 51 52.4**	**+0.5**
	baz=326						
STYT	**Tauyuan**	**0.99**	**227**	*e*P	**Pn**	**01 51 40.6**	**+0.1**
	baz=227						
STYT				S	**Sn**	**01 51 53.7**	**+0.4**
	baz=227						
CHN4	**Tsaushan**	**1.00**	**241**	P	**Pn**	**01 51 41.5**	**+0.9**
	baz=241						
CHN4				S	**Sb**	**01 51 54.8**	**-0.1**
	baz=241						
WTP	**Ta-pu**	**1.04**	**236**	P	**Pn**	**01 51 41.6**	**+0.4**
	baz=235						
WTP				S	**Sb**	**01 51 55.8**	**-0.2**
	baz=235						
CHY	**Chiayi**	**1.09**	**252**	*e*P	**Pn**	**01 51 42.6**	**+0.8**
	baz=251						
CHY				*e*S	**Sb**	**01 51 56.9**	**-0.3**
	baz=251						
TWG	**Pinlang**	**1.10**	**204**	*e*P	**Pn**	**01 51 40.0**	**-2.0**
	baz=203						
TWK	**Hsinying**	**1.13**	**240**	P	**Pn**	**01 51 42.9**	**+0.5**
	baz=239						
TWK				S	**Sn**	**01 51 57.9**	**+1.2**
	baz=239						
TWA	**Mucha**	**1.14**	**2**	*e*P	**Pn**	**01 51 42.8**	**+0.2**
	baz=1.0						
TWA				*e*S	**Sn**	**01 51 57.1**	**+0.1**
	baz=1.0						
CHN1	**Nanshi**	**1.14**	**235**	*e*P	**Pn**	**01 51 43.2**	**+0.6**
	baz=235						
CHN1				*e*S	**Sn**	**01 51 57.5**	**+0.5**
	baz=235						
WTCT	**Ta-ch'eng**	**1.16**	**272**	*e*P	**Pn**	**01 51 43.0**	**+0.2**
	baz=270						
WTCT				*e*S	**Sb**	**01 51 58.8**	**-0.5**
	baz=270						
SGST	**Jiashian**	**1.16**	**230**	*e*P	**Pn**	**01 51 43.7**	**+0.8**
	baz=229						
SGST				S	**Sb**	**01 51 59.1**	**-0.3**
	baz=229						
TWB1	**Santiao Chiao**	**1.23**	**19**	*e*P	**Pn**	**01 51 43.9**	**+0.1**
	baz=18						
TWB1				*e*S	**Sb**	**01 52 00.6**	**-0.8**
	baz=18						
NWF	**Wu-fen Shan**	**1.25**	**10**	P	**Pn**	**01 51 44.0**	**-0.1**
	baz=9.0						
NWF				S	**Sn**	**01 51 59.8**	**0.0**
	baz=9.0						
TWS1	**Kuangyinshan**	**1.26**	**355**	*e*P	**Pn**	**01 51 44.1**	**-0.1**
	baz=354						
TWS1				*e*S	**Sn**	**01 52 00.3**	**+0.3**
	baz=354						
CHN8	**Yiju**	**1.32**	**249**	*e*S	**Sn**	**01 52 01.6**	**+0.2**
	baz=248						
CHN3	**Shinhua**	**1.33**	**235**	*e*S	**Sb**	**01 52 03.8**	**-0.2**
	baz=235						
SSD	**Sandimen**	**1.38**	**218**	*e*P	**Pn**	**01 51 46.6**	**+0.9**
	baz=217						
SSD				*e*S	**Sb**	**01 52 05.0**	**-0.5**
	baz=217						
SCLT	**Jiali**	**1.41**	**242**	*e*S	**Sn**	**01 52 05.0**	**+1.5**
	baz=241						
TWM1	**Shoushan**	**1.45**	**226**	*e*S	**Sb**	**01 52 08.7**	**+1.2**
	baz=225						
YOJ	**Yonaguni jima**	**1.47**	**65**	P	**Pn**	**01 51 47.4**	**+0.3**
YOJ				*e*S	**Sn**	**01 52 05.8**	**+0.6**
SCZT	**Fangliau**	**1.69**	**211**	*e*P	**Pn**	**01 51 51.5**	**+1.4**
	baz=210						
SCZT				S	**Sn**	**01 52 12.5**	**+1.9**
	baz=210						
LAY	**Lan-yu**	**1.79**	**180**	P	**Pn**	**01 51 50.4**	**-1.1**
	baz=180						
LAY				S	**Sn**	**01 52 13.5**	**+0.5**
	baz=180						
WDGT	**Dungji**	**1.83**	**252**	*e*P	**Pn**	**01 51 51.1**	**-0.8**
	baz=251						
WDGT				*e*S	**Sn**	**01 52 12.4**	**-1.5**
	baz=251						
PNG	**Penghu**	**1.85**	**262**	*e*P	**Pn**	**01 51 51.5**	**-0.7**
	baz=261						
PNG				*e*S	**Sn**	**01 52 13.7**	**-0.8**
	baz=261						
IRIF	**Iriomote-Funau**	**2.05**	**76**	P	**Pn**	**01 51 55.5**	**+0.4**
IRIF				*e*S	**Sn**	**01 52 19.6**	**+0.1**
JKRS	**Kuro-shima**	**2.28**	**79**	P	**Pn**	**01 51 59.1**	**+0.9**
JKRS				S	**Sn**	**01 52 26.4**	**+1.2**
JIJ	**Ishigaki jima**	**2.43**	**77**	P	**Pn**	**01 52 00.4**	**+0.2**
JIJ				S	**Sn**	**01 52 28.2**	**-0.6**
JISG	**Ishigakijimahi**	**2.63**	**73**	P	**Pn**	**01 52 03.2**	**+0.2**
JISG				S	**Sn**	**01 52 33.4**	**-0.3**
JTJ	**Tarama**	**2.99**	**74**	P	**Pn**	**01 52 08.3**	**+0.4**
JTJ				*e*S	**Sn**	**01 52 42.0**	**-0.6**

*ISCJB **02** 01:54:32.7±0.4, 34.°13S±0.°03×72.°39W±0.°04, h10km, mb4.4/17, MS3.8/7, Error ellipse: s-maj=4.9km s-min=3.6km az=25.4*
*IDC **02** 01:54:32.9±0.6, 34.°13S×72.°01W, h0km, mb4.2/11, mb1 4.4/14, mb1mx4.2/25, mbtmp4.2/14, ML4.1/3, MS3.8/9, Ms1 3.7/9, ms1mx3.5/27, Error ellipse: s-maj=26.5km s-min=14.6km az=86.0*
*NEIC **02** 01:54:35.0, 34.°11S×72.°20W, h14km, mb4.6/8, ML4.4(GUC), After GUC.*
NEIC Felt [IV] at Pichilemu; [III] at Paredones, San Antonio and Santo Domingo; [II] at Chepica, Lolol, Rancagua, Santa Cruz and Talca.
*GUC **02** 01:54:35.2±0.3, 34.°11S×72.°20W, h14km±4km, ML4.4*
ISC 02 01:54:33.6±1.6**, 34.°06S**±0.°03×**72.°20W**±0.°06**, h7**km±9km**, n76, σ1.s79**/97**, mb4.5**/17**, MS3.9**/7**, 1C-3D, Near coast of central Chile**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
NICH	**Los Niches**	**1.24**	**140**	*e*P	**Pg**	**01 54 57.1**	**-0.2**
NICH				*e*S	**Sg**	**01 55 13.4**	**+0.1**
RCDM	**Rinconada Maip**	**1.30**	**64**	*e*P	**Pg**	**01 54 58.7**	**+0.2**
RCDM				*e*S	**Sn**	**01 55 16.6**	**+0.9**
ANTU	**Antumapu**	**1.40**	**70**	*e*P	**Pb**	**01 55 00.3**	**+0.3**
ANTU				*e*S	**Sn**	**01 55 19.6**	**+1.3**
ANTU				AML	AML	01 55 26.0	
	comp=N,10μm,0.3s						
TALC	**Talca**	**1.41**	**161**	*e*P	**Pn**	**01 54 59.8**	**+0.1**
TALC				*e*S	**Sb**	**01 55 18.1**	**-0.4**
ROC1	**El Roble**	**1.47**	**43**	*e*P	**Pg**	**01 55 02.4**	**+0.6**
ROCH	**El Roble**	**1.48**	**43**	*e*P	**Pg**	**01 55 02.3**	**+0.5**
ROCH				*e*S	**Sg**	**01 55 23.0**	**+2.0**
ROCH				AML	AML	01 55 31.6	
	comp=E,11μm,0.5s						
CLCH	**Cerro Calan**	**1.54**	**65**	*e*P	**Pb**	**01 55 02.7**	**+0.2**
CLCH				*e*S	**Sg**	**01 55 23.7**	**+0.6**
CLCH				AML	AML	01 55 36.3	
	comp=E,10μm,0.6s						
PEL	**Peldehue**	**1.56**	**55**	*e*P	**Pb**	**01 55 03.2**	**+0.4**
PEL				*e*S	**Sg**	**01 55 24.7**	**+0.8**
PEL				AML	AML	01 55 36.2	
	comp=N,6μm,0.7s						
YECH	**El Yeso**	**1.81**	**78**	⇑*e*P	**Pb**	**01 55 07.5**	**+0.3**
YECH				*e*S	**Sg**	**01 55 31.9**	**+0.2**
YECH				AML	AML	01 55 41.5	
	comp=N,5μm,0.7s						
AAGR	**Agrelo**	**2.98**	**72**	*e*P	**Pb**	**01 55 27.5**	**+0.5**
AUSP	**Uspallata**	**2.99**	**53**	*e*P	**Pb**	**01 55 25.8**	**-1.6**
AUSP				*e*S	**Sg**	**01 56 09.1**	**-0.5**
ARCO	**CERRO ARCO**	**2.99**	**67**	*e*P	**Pb**	**01 55 27.6**	**+0.3**
ARCO				*e*S	**Sg**	**01 56 10.0**	**+0.2**
ASAL	**Salagasta**	**3.18**	**63**	*e*P	**Pb**	**01 55 29.2**	**-1.2**
ASAL				⇓*e*S	**Sg**	**01 56 15.4**	**-0.3**
RTLS	**Leoncito**	**3.33**	**48**	*e*P	**Pb**	**01 55 30.9**	**-2.2**
RTCV	**Cerro Valdivia**	**3.78**	**56**	*e*P	**Pn**	**01 55 36.2**	**+3.9**
AMOG	**MOGNA**	**4.42**	**46**	*e*P	**Pn**	**01 55 44.4**	**+3.2**
AMOG				*e*S	**Sb**	**01 56 42.7**	**-2.4**
ACAN	**Cantantal**	**4.57**	**68**	*e*P	**Pn**	**01 55 47.3**	**+4.2**
AMAR	**Marayes**	**4.86**	**59**	*e*P	Pn	01 55 52.5	+5.4
AMAR				*e*S	**Sb**	**01 56 53.3**	**-4.5**
LCO	**Las Campanas**	**5.20**	**15**	*e*Pn	**Pn**	**01 55 52.5**	**+0.5**
LCO				*e*Sn	**Sn**	**01 56 51.0**	**-1.3**
LCO				*e*Lg	Lg	01 57 15.6	
AVFE	**Valle Fertil**	**5.26**	**51**	*e*P	**Pn**	**01 55 54.8**	**+2.2**
AVFE				*e*S	**Sb**	**01 57 03.2**	**-6.0**
ACHE	**Chepes**	**5.50**	**60**	*e*P	Pn	01 56 01.1	+5.1
ACHE				⇓*e*S	**Sb**	**01 57 08.7**	**-7.5**
AGUA	**GUANDACOL**	**5.55**	**36**	*e*P	**Pn**	**01 55 59.6**	**+2.9**
MRA	**San Martin**	**5.68**	**75**	*e*P	**Pn**	**01 56 02.0**	**+3.6**
VCA	**Vinchina**	**6.31**	**34**	*e*P	**Pn**	**01 56 10.0**	**+2.7**
ACLC	**CERRO LA CRUZ**	**6.43**	**45**	*e*P	**Pn**	**01 56 11.7**	**+2.8**
ACLC				IAML		01 58 03.3	
	comp=Z,183nm,0.6s						
PLCA	**Paso Flores**	**6.79**	**169**	Pn	**Pn**	**01 56 14.5**	**+0.8**
	comp=Z,1.5nm,0.3s,baz=7.3,slow=13,SNR=49						
PLCA				Sn	**Sn**	**01 57 31.1**	**-0.1**
	comp=Z,0.6nm,0.3s,baz=18,slow=20,SNR=1.6						
PLCA				Lg	Lg	01 58 02.7	
	comp=Z,0.4nm,0.3s,baz=282,slow=19,SNR=2.7						

PLCA				LR	LR	01 58 55.9	
	comp=Z,656nm,18.1s,baz=7.0,slow=39						
PLCA	**Paso Flores**	**6.79**	**169**	*e*Pn	**Pn**	**01 56 14.8**	**+1.1**
PLCA				Sn	**Sn**	**01 57 31.1**	**-0.1**
PLCA				Lg	Lg	01 58 02.7	
TRQA	**Tornquist**	**9.19**	**119**	*e*Pn	**Pn**	**01 56 49.1**	**+2.6**
TRQA				*e*Lg	Lg	01 59 21.1	
CPUP	**Villa Florida**	**14.98**	**63**	Pn	**Pn**	**01 58 02.8**	**-2.9**
	comp=Z,0.1nm,0.3s,baz=222,slow=15,SNR=2.7						
CPUP				Sn	**Sn**	**02 00 55.7**	**+3.6**
	comp=Z,0.1nm,0.3s,baz=200,slow=17,SNR=2.2						
CPUP				LR	LR	02 04 16.2	
	comp=Z,388nm,20.3s,baz=237,slow=39						
LPAZ	**La Paz**	**18.07**	**13**	P	**P**	**01 58 47.8**	**+1.5**
	comp=Z,0.2nm,0.3s,baz=190,slow=12,SNR=24						
LPAZ	**La Paz**	**18.07**	**13**	*e*Pn	**P**	**01 58 47.8**	**+1.5**
	comp=Z,14nm,0.9s						
USHA	**Ushuaia**	**20.93**	**174**	P	**P**	**01 59 15.0**	**-1.7**
	comp=Z,45nm,1.1s,baz=355,slow=11,SNR=2.3						
SPB	**Sao Paulo**	**24.02**	**71**	*e*P	**P**	**01 59 49.4**	**+0.2**
	comp=Z,21nm,0.9s						
SAML	**Samuel**	**26.34**	**20**	*e*P	**P**	**02 00 10.8**	**+0.6**
	comp=Z,6.8nm,0.8s						
ATAH	**Atahualpa**	**27.40**	**347**	LR	LR	02 08 54.7	
	comp=Z,63nm,19.1s,baz=268,slow=31						
BDFB	**Brasilia**	**28.48**	**56**	P	**P**	**02 00 28.8**	**-0.8**
	comp=Z,6.4nm,0.9s,baz=228,slow=10,SNR=6.6						
BDFB				LR	LR	02 13 03.7	
	comp=Z,254nm,19.7s,baz=231,slow=39						
BDFB	**Brasilia**	**28.48**	**56**	*e*P	**P**	**02 00 29.3**	**-0.4**
	comp=Z,73nm,2.0s						
SDV	**Santo Domingo**	**42.74**	**2**	P	**P**	**02 02 32.5**	**+0.7**
	comp=Z,3.5nm,0.7s,baz=198,slow=16,SNR=4.1						
SDV	**Santo Domingo**	**42.74**	**2**	*e*P	**P**	**02 02 32.1**	**+0.3**
	comp=Z,6.4nm,1.0s						
VNA3	**Neumayer Olymp**	**49.35**	**158**	P	**P**	**02 03 22.6**	**-0.5**
VNA1	**Neumayer--Stat**	**49.67**	**157**	P	**P**	**02 03 25.2**	**-0.3**
VNA2	**Neumayer--Watz**	**50.01**	**157**	P	**P**	**02 03 28.6**	**+0.5**
	baz=288,slow=7.7						
SNAA	**Sanae**	**51.58**	**158**	P	**P**	**02 03 40.2**	**+0.2**
SNAA	**Sanae**	**51.58**	**158**	*e*P	**P**	**02 03 40.0**	**-0.1**
QSPA	**South Pole Qui**	**56.17**	**180**	*e*P	**P**	**02 04 14.3**	**+0.5**
	comp=Z,24nm,0.9s						
VNDA	**Vanda**	**64.01**	**191**	P	**P**	**02 05 08.1**	**+0.9**
	comp=Z,0.6nm,0.7s,baz=99,slow=5.4,SNR=2.7						
SYO	**Syowa Base**	**65.86**	**158**	⇓*e*P	**P**	**02 05 17.0**	**-2.3**
TXAR	**Lajitas Array**	**69.72**	**331**	P	**P**	**02 05 45.4**	**+1.1**
	comp=Z,0.5nm,0.7s,baz=149,slow=7.5,SNR=6.9						
TXAR				LR	LR	02 31 35.7	
	comp=Z,74nm,18.2s,baz=0.0,slow=32						
WVT	**Waverly**	**71.34**	**347**	*e*P	**P**	**02 05 54.3**	**+0.5**
	comp=Z,12nm,0.8s						
MAW	**Mawson**	**73.16**	**164**	P	**P**	**02 06 04.7**	**+0.3**
	comp=Z,4.2nm,0.8s,baz=236,slow=11,SNR=4.6						
MAW				LR	LR	02 41 05.5	
	comp=Z,68nm,18.8s,baz=244,slow=38						
SUR	**Sutherland**	**74.92**	**119**	*e*P	**P**	**02 06 16.4**	**+0.8**
	comp=Z,26nm,1.0s						
DBIC	**Dimbokro**	**75.33**	**71**	P	**P**	**02 06 17.7**	**-0.2**
	comp=Z,4.6nm,1.0s,baz=225,slow=1.4,SNR=4.7						
DBIC				LR	LR	02 37 54.0	
	comp=Z,32nm,19.3s,baz=192,slow=35						
CRY	**Cary Ranch**	**79.20**	**323**	*e*P	**P**	**02 06 40.1**	**+0.8**
BOSA	**Boshof**	**80.16**	**118**	P	**P**	**02 06 45.0**	**0.0**
	comp=Z,2.5nm,0.6s,baz=231,slow=3.3,SNR=7.3						
DWU	**Dry Willow Pea**	**81.19**	**329**	*e*P	**P**	**02 06 49.3**	**-0.8**
HWUT	**Hardware Ranch**	**83.54**	**331**	*e*P	**P**	**02 07 02.8**	**+0.5**
	comp=Z,1.7nm,0.8s						
PDAR	**Pinedale Array**	**83.76**	**333**	P	**P**	**02 07 04.6**	**+1.2**
	comp=Z,0.3nm,0.5s,baz=142,slow=4.6,SNR=3.6						
PDAR				LR	LR	02 40 51.3	
	comp=Z,59nm,19.3s,baz=198,slow=33						
NVAR	**Mina Array Bea**	**83.86**	**325**	P	**P**	**02 07 05.9**	**+1.9**
	comp=Z,0.5nm,0.7s,baz=153,slow=6.1,SNR=3.3						
TOA0	**Torodi Ar. Sit**	**84.36**	**70**	*e*P	**P**	**02 07 06.9**	**0.0**
TORD	**Torodi Ar. Bea**	**84.36**	**70**	P	**P**	**02 07 06.8**	**0.0**
	comp=Z,4.6nm,0.9s,baz=246,slow=4.5,SNR=20						
TORD				LR	LR	02 43 47.7	
	comp=Z,46nm,18.5s,baz=245,slow=35						
DLMT	**Dillon**	**87.11**	**333**	*e*P	**P**	**02 07 16.8**	**-3.1**
	comp=Z,9.2nm,0.6s						
YKA	**Yellowknife Ar**	**102.07**	**341**	P	**Pdif**	**02 08 27.8**	**0.0**
	comp=Z,0.1nm,0.3s,baz=125,slow=7.6,SNR=3.6						
WRA	**Warramunga Arr**	**120.64**	**209**	PKP	**PKPdf**	**02 13 25.9**	**-0.8**
	comp=Z,0.4nm,0.5s,baz=156,slow=1.7,SNR=2.8						
AKASG	**Malin Array Be**	**122.33**	**48**	PKP	**PKPdf**	**02 13 27.7**	**-1.2**
	comp=Z,0.1nm,0.3s,baz=266,slow=2.8,SNR=3.5						
ARCES	**ARCESS Array B**	**124.13**	**25**	PKP	**PKPdf**	**02 13 31.6**	**-0.2**
	comp=Z,3.5nm,1.0s,baz=262,slow=4.1,SNR=3.3						
KAPI	**Kappang**	**139.53**	**199**	*e*PKPdf	**PKPdf**	**02 14 01.2**	**-1.3**
BRVK	**Borovoye**	**147.35**	**43**	*e*PKPbc	**PKPdf**	**02 14 16.2**	**+1.2**
BVAR	**Borovoye Array**	**147.42**	**43**	PKPbc	**PKPbc**	**02 14 18.2**	**+0.5**
	comp=Z,2.3nm,0.5s,baz=300,slow=3.3,SNR=12						
AAK	**Ala-Archa**	**152.66**	**62**	PKPbc	**PKPbc**	**02 14 30.2**	**-0.7**
	comp=Z,2.9nm,1.0s,baz=243,slow=2.3,SNR=6.0						
AAK	**Ala-Archa**	**152.66**	**62**	*e*PKPbc	**PKPbc**	**02 14 31.6**	**+0.6**
AAK				*e*PKPab	**PKPab**	**02 14 41.5**	**-0.2**
KURBB	**Kurchatov Arra**	**153.01**	**43**	PKPbc	**PKPbc**	**02 14 31.3**	**+0.1**
	comp=Z,0.8nm,0.2s,baz=303,slow=3.0,SNR=6.3						
KURBB				PKPab	**PKPab**	**02 14 42.9**	**+0.3**
	comp=Z,0.8nm,0.3s,baz=302,slow=3.9,SNR=4.1						
KURK	**Kurchatov**	**153.02**	**43**	PKPbc	**PKPbc**	**02 14 31.3**	**0.0**
KURK				PKPab	**PKPab**	**02 14 42.9**	**+0.3**
ZALV	**Zalesovo Beam**	**154.35**	**32**	PKPbc	**PKPbc**	**02 14 34.1**	**+0.1**
	comp=Z,2.6nm,0.6s,baz=287,slow=3.4,SNR=13						
ZALV				PKPab	**PKPab**	**02 14 48.6**	**+0.5**
	comp=Z,3.0nm,0.6s,baz=299,slow=4.6,SNR=8.6						
MKAR	**Makanchi Array**	**156.91**	**49**	PKP	**PKPdf**	**02 14 29.7**	**+0.3**
	comp=Z,0.4nm,0.9s,baz=298,slow=3.1,SNR=3.3						
MKAR				PKPab	**PKPab**	**02 14 59.5**	**0.0**
	comp=Z,0.7nm,0.6s,baz=292,slow=4.5,SNR=7.6						
ULN	**Ulaanbaatar**	**166.20**	**2**	*e*PKPab	**PKPab**	**02 15 40.6**	**+0.5**
CD2	**Chengdu**	**175.36**	**132**	PKP	**PKPdf**	**02 14 43.0**	**-1.5**

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*ISCJB **02** 01:55:01.7±0.6, 6.°85S±0.°05×127.°1E±0.°1, h407km, mb3.5/7, Error ellipse: s-maj=13.7km s-min=7.4km az=179.1*
*IDC **02** 01:55:04.2±1.6, 6.°96S×126.°83E, h421km±24km, mb3.2/7, mb1 3.3/11, mb1mx3.1/40, mbtmp4.1/11, Error ellipse: s-maj=33.7km s-min=10.4km az=70.0*
ISC 02 01:55:03.3±0.7, **6.°91S**±0.°07×**127.°0E**±0.°1, **h407**km, **n11**, σ**1.°02**/15, **mb3.5**/7, **Banda Sea**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
BATI	**Baumata**	**4.67**	**225**	P	**P**	**01 56 23.3**	**+1.1**
	35nm,0.3s,baz=73,slow=19,SNR=38						
BATI				S	**S**	**01 57 25.8**	**-0.8**
	24nm,0.3s,baz=90,slow=20,SNR=7.1						
FITZ	**Fitzroy Crossi**	**11.21**	**187**	P	**P**	**01 57 34.6**	**+0.5**
	0.3nm,0.3s,baz=3.9,slow=11,SNR=8.8						
FITZ				S	**S**	**01 59 37.5**	**-1.1**
	0.2nm,0.3s,baz=351,slow=19,SNR=2.5						
WRA	**Warramunga Arr**	**14.77**	**152**	P	**P**	**01 58 13.7**	**+0.5**
	1.0nm,0.3s,baz=330,slow=9.9,SNR=18						
WRA				S	**S**	**02 00 48.5**	**-1.8**
	0.2nm,0.3s,baz=328,slow=21,SNR=4.0						
ASAR	**Alice Springs**	**17.93**	**159**	P	**P**	**01 58 47.3**	**+0.5**
	2.0nm,0.3s,baz=338,slow=9.4,SNR=43						
ASAR				S	**S**	**02 01 52.9**	**+1.2**
	0.1nm,0.3s,baz=335,slow=21,SNR=4.2						
STKA	**Stephens Creek**	**28.32**	**153**	P	**P**	**02 00 21.6**	**-0.2**
	2.3nm,0.5s,baz=335,slow=8.5,SNR=9.7						
MJAR	**Matsushiro Arr**	**44.47**	**13**	P	**P**	**02 02 35.7**	**-0.6**
	0.7nm,0.3s,baz=196,slow=10,SNR=4.2						
USRK	**Ussuriysk Ar.**	**51.06**	**5**	P	**P**	**02 03 26.2**	**+0.2**
	1.2nm,0.6s,baz=208,slow=9.5,SNR=3.5						
SONM	**Songino Array**	**57.47**	**344**	P	**P**	**02 04 11.5**	**-0.2**
	0.3nm,0.5s,baz=166,slow=7.9,SNR=4.2						
PETK	**Petropavlovsk-**	**65.19**	**20**	P	**P**	**02 05 03.7**	**+1.3**
	1.5nm,0.5s,baz=176,slow=8.7,SNR=3.9						
MKAR	**Makanchi Array**	**66.56**	**328**	P	**P**	**02 05 10.6**	**-0.7**
	0.3nm,0.5s,baz=127,slow=8.4,SNR=6.1						
ZALV	**Zalesovo Beam**	**70.22**	**335**	P	**P**	**02 05 32.3**	**-1.2**
	1.1nm,0.6s,baz=123,slow=5.1,SNR=4.9						

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*NIED **02** 02:02:00, 36.°50N×142.°30E, h11km, Mw3.8 Best double couple: $M_0$6.03000×10^14 NP1:ϕ_s141.00000°, δ48.00000°, λ31.00000°. NP2:ϕ_s29.00000°, δ67.00000°, λ133.00000°.*
*ISCJB **02** 02:02:02.6±0.6, 36.°40N±0.°06×142.°43E±0.°07, h15km, mb4.0/21, Error ellipse: s-maj=8.6km s-min=7.8km az=160.0*
*IDC **02** 02:02:02.3±0.8, 36.°38N×142.°37E, h0km, mb3.9/15, mb1 4.0/17, mb1mx3.8/41, mbtmp3.9/17, ML2.9/2, MS2.8/1, Ms1 2.8/1, ms1mx2.2/52, Error ellipse: s-maj=22.8km s-min=18.8km az=85.0*
*NEIC **02** 02:02:05.9±3.9, 36.°40N×142.°31E, h23km±26km, mb4.4/6, Error ellipse: s-maj=13.0km s-min=10.5km az=110.0*
*JMA **02** 02:02:05.0±0.4, 36.°45N×142.°32E, h31km, M3.8*
ISC 02 02:02:04.9±0.9, **36.°54N**±0.°07×**142.°32E**±0.°08, **h15**km, **n40**, σ**1.°08**/31, **mb4.0**/21, **Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**1.34**	**295**	P	**Pb**	**02 02 28.6**	**-1.2**
JHO	**Hitachi**	**1.41**	**273**	P	**Pb**	**02 02 29.2**	**-1.7**
JMM	**Marumori**	**1.80**	**318**	P	**Pb**	**02 02 35.5**	**-2.0**
JFT	**Otama**	**1.86**	**302**	P	**Pb**	**02 02 37.3**	**-1.4**
JIO	**Ouri**	**2.06**	**338**	P	**Pn**	**02 02 39.1**	**+0.1**
JIO				*e*S	**Sb**	**02 03 06.5**	**-0.9**
JOU	**Okura**	**2.25**	**325**	P	**Pb**	**02 02 43.7**	**-1.5**
MJAR	**Matsushiro Arr**	**3.31**	**271**	Pn	**Pn**	**02 02 56.4**	**+0.2**
	6.9nm,0.3s,baz=102,slow=9.5,SNR=38						
MAJO	**Matsushiro**	**3.31**	**271**	*e*Pn	**Pn**	**02 02 56.7**	**+0.4**
MAT	**Matsushiro**	**3.31**	**271**	P	**Pn**	**02 02 56.9**	**+0.7**
MAT				S	**Sn**	**02 03 37.7**	**+2.4**
ERM	**Erimo**	**5.50**	**7**	*e*Pn	**Pn**	**02 03 26.5**	**+0.2**
JNU	**Nakatsue**	**10.00**	**253**	LR	LR	02 08 11.6	
	comp=Z,56nm,19.3s,baz=110,slow=37						
USRK	**Ussuriysk Ar.**	**10.98**	**317**	Pn	Pn	02 04 43.7	+2.3
	0.2nm,0.3s,baz=124,slow=12,SNR=3.3						
MA2	**Magadan**	**23.69**	**11**	P	**P**	**02 07 16.3**	**+0.5**
	2.0nm,0.3s,baz=233,slow=12,SNR=3.5						
SEY	**Seymchan**	**27.14**	**10**	P	**P**	**02 07 48.6**	**+1.4**
	1.3nm,0.4s,baz=228,slow=7.3,SNR=4.8						
H11N2	**WAKE ISLAND Hy**	**27.27**	**121**	T	T	02 36 11.3	
	baz=313,slow=75,SNR=22						
H11N1	**WAKE ISLAND Hy**	**27.28**	**121**	T	T	02 36 20.2	
	baz=313,slow=75,SNR=25						
H11N3	**WAKE ISLAND Hy**	**27.29**	**121**	T	T	02 36 20.8	
	baz=313,slow=75,SNR=15						
H11S1	**WAKE ISLAND Hy**	**27.98**	**123**	T	T	02 37 09.0	
	baz=315,slow=76,SNR=18						
H11S3	**WAKE ISLAND Hy**	**27.98**	**123**	T	T	02 37 20.3	
	baz=315,slow=76,SNR=18						
H11S2	**WAKE ISLAND Hy**	**28.00**	**123**	T	T	02 37 18.7	
	baz=315,slow=76,SNR=12						
ENH	**Enshi**	**28.02**	**267**	*e*P	**P**	**02 07 54.9**	**-0.6**
	6.4nm,0.4s						
ULN	**Ulaanbaatar**	**28.23**	**305**	*e*P	**P**	**02 07 58.0**	**+0.7**
	5.1nm,1.1s						
SONM	**Songino Array**	**28.66**	**304**	P	**P**	**02 08 01.6**	**+0.5**
	5.0nm,0.7s,baz=105,slow=9.0,SNR=45						
ZALV	**Zalesovo Beam**	**42.78**	**313**	P	**P**	**02 10 01.8**	**+0.1**
	1.7nm,0.6s,baz=93,slow=6.3,SNR=9.8						
MKAR	**Makanchi Array**	**45.00**	**303**	P	**P**	**02 10 20.1**	**+0.5**
	2.9nm,0.6s,baz=88,slow=10,SNR=30						
KURK	**Kurchatov**	**46.81**	**309**	*e*P	**P**	**02 10 33.5**	**-0.2**
	4.3nm,0.5s						
AAK	**Ala-Archa**	**51.37**	**299**	*e*P	**P**	**02 11 07.6**	**-1.4**
	2.0nm,1.0s						
BRVK	**Borovoye**	**51.50**	**313**	*e*P	**P**	**02 11 09.6**	**0.0**
	1.9nm,0.8s						
INK	**Inuvik**	**54.49**	**27**	P	**P**	**02 11 32.0**	**+0.5**
	0.3nm,0.5s,baz=274,slow=5.7,SNR=3.3						
WRA	**Warramunga Arr**	**56.68**	**189**	P	**P**	**02 11 46.1**	**-1.7**
	0.8nm,0.7s,baz=7.2,slow=7.3,SNR=3.4						
ARU	**Arti**	**57.21**	**319**	*e*P	**P**	**02 11 51.1**	**-0.1**
	3.0nm,0.6s						
ASAR	**Alice Springs**	**60.41**	**189**	P	**P**	**02 12 12.6**	**-1.1**
	0.3nm,0.4s,baz=1.0,slow=6.2,SNR=5.4						
FINES	**FINESS Array B**	**69.59**	**333**	P	**P**	**02 13 13.9**	**+0.9**
	1.1nm,0.6s,baz=72,slow=6.2,SNR=6.5						
KBZ	**Khabaz**	**71.77**	**311**	P	P	02 13 27.8	+1.2
	1.0nm,0.9s,baz=218,slow=11,SNR=4.1						
NB2	**NORSAR Subarra**	**74.92**	**338**	P	**P**	**02 13 45.9**	**+1.0**
	comp=Z,0.5nm,0.6s,baz=40,slow=6.2						
NOA	**NORSAR Array B**	**74.92**	**338**	P	**P**	**02 13 45.7**	**+0.8**
	comp=Z,1.2nm,0.9s,baz=25,slow=17,SNR=3.7						
AKASG	**Malin Array Be**	**75.13**	**323**	P	**P**	**02 13 46.7**	**+0.5**
	comp=Z,1.2nm,0.5s,baz=47,slow=6.1,SNR=10						
BRTR	**Keskin Array B**	**79.72**	**312**	P	P	02 14 14.1	+1.7
	comp=Z,0.5nm,0.8s,baz=152,slow=5.6,SNR=3.7						
GERES	**GERESS Array B**	**83.51**	**329**	P	**P**	**02 14 32.1**	**0.0**
	comp=Z,0.2nm,0.6s,baz=25,slow=3.5,SNR=3.8						
TXAR	**Lajitas Array**	**89.84**	**53**	P	P	02 15 04.0	+0.5
	comp=Z,0.1nm,0.7s,baz=339,slow=3.9,SNR=2.5						

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*SJA **02** 02:06:48.8±0.7, 24.°29S×66.°90W, h216km±24km, ML2.3, MW2.9*
*ISCJB **02** 02:06:49.3±0.5, 24.°22S±0.°06×67.°23W±0.°04, h181km, mb3.1/1, Error ellipse: s-maj=9.1km s-min=4.4km az=22.9*
*GUC **02** 02:06:52.3±0.3, 23.°97S×67.°71W, h224km±10km, ML4.0*
*IDC **02** 02:06:55.4±2.9, 23.°80S×66.°90W, h214km±43km, mb3.0/1, mb1 3.3/4, mb1mx3.0/20, mbtmp3.8/4, MS3.1/1, Ms1 3.1/1, ms1mx2.9/3, Error ellipse: s-maj=44.3km s-min=21.5km az=109.0*
ISC 02 02:06:49.4±1.1, **24.°22S**±0.°07×**67.°21W**±0.°05, **h181**km, **n15**, σ**1.°12**/23, **1C-1D, Chile-Argentina border region**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
SLA	**San Lorenzo**	**1.63**	**108**	*e*P	**Pn**	**02 07 23.7**	**+0.8**
SLA				*e*S	**Sn**	**02 07 48.9**	**+0.1**
SLA				IAML		02 07 52.0	
	comp=Z,16nm,0.7s						
HJA	**Humahuaca**	**1.93**	**59**	*e*P	**Pn**	**02 07 27.1**	**+0.9**
AZAP	**Zapla**	**1.95**	**91**	*e*P	**Pn**	**02 07 26.6**	**+0.3**
AZAP				*e*S	**Sn**	**02 07 53.9**	**-1.0**
FSA	**Cafayete**	**2.19**	**150**	*e*P	**Pn**	**02 07 29.0**	**+0.2**
YJA	**Yavi**	**2.56**	**38**	*e*P	**Pn**	**02 07 34.8**	**+1.5**
PB06	**IPOC Station P**	**2.64**	**304**	⇑*e*P	**Pn**	**02 07 35.5**	**+1.5**
PB06				*e*S	**Sn**	**02 08 08.5**	**-0.2**
PB06				AML	AML	02 08 10.7	
	comp=N,356nm,0.5s						
ANCH	**Antofagasta**	**2.98**	**280**	*e*P	**Pn**	**02 07 39.0**	**+1.1**
ANCH				*e*S	**Sn**	**02 08 14.5**	**-1.1**
PB10	**IPOC Station P**	**3.15**	**282**	*e*P	**Pn**	**02 07 41.1**	**+1.2**
PB10				*e*S	**Sn**	**02 08 18.0**	**-1.2**
PB10				AML	AML	02 08 22.6	
	comp=E,304nm,0.6s						
PB04	**IPOC Station P**	**3.29**	**304**	*e*P	**Pn**	**02 07 43.0**	**+1.1**
PB04				*e*S	**Sn**	**02 08 21.2**	**-1.6**
PB04				AML	AML	02 08 23.7	
	comp=N,208nm,0.4s						
PB07	**IPOC Station P**	**3.50**	**315**	⇓*e*P	**Pn**	**02 07 45.6**	**+1.1**
PB07				*e*S	**Sn**	**02 08 25.9**	**-1.5**
PB07				AML	AML	02 08 28.0	
	comp=N,272nm,0.6s						
PB01	**IPOC Station P**	**3.80**	**326**	*e*P	**Pn**	**02 07 49.3**	**+1.2**
PB01				*e*S	**Sn**	**02 08 32.9**	**-1.2**
PB01				AML	AML	02 08 36.9	
	comp=E,92nm,0.4s						
LPAZ	**La Paz**	**7.94**	**354**	P	**Pn**	**02 08 43.5**	**+0.9**
	comp=E,0.6nm,0.3s,baz=163,slow=8.1,SNR=15						
LPAZ				S	**Sn**	**02 10 10.8**	**-1.2**
	comp=E,0.1nm,0.3s,baz=331,slow=19,SNR=3.6						
PLCA	**Paso Flores**	**16.71**	**189**	P	Pn	02 10 41.1	+8.0
	comp=E,0.1nm,0.3s,baz=18,slow=12,SNR=5.5						
PLCA				LR	LR	02 17 24.6	
	comp=E,64nm,21.2s,baz=212,slow=37						
BDFB	**Brasilia**	**19.94**	**68**	P	**P**	**02 11 07.1**	**-0.7**
	comp=E,0.3nm,0.3s,baz=236,slow=11,SNR=5.0						
TORD	**Torodi Ar. Bea**	**76.82**	**69**	P	**P**	**02 18 21.8**	**+0.1**
	comp=E,0.4nm,0.8s,baz=242,slow=4.7,SNR=5.7						

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*IDC **02** 02:09:23.2±2.2, 38.°21N×143.°82E, h0km, mb3.8/6, mb1 3.9/7, mb1mx3.5/58, mbtmp3.8/7, ML3.1/1, MS1.9/1, Ms1 1.9/1, ms1mx1.8/49, Error ellipse: s-maj=65.4km s-min=21.8km az=65.0*
*ISCJB **02** 02:09:27.0±1.2, 38.°1N±0.°1×143.°6E±0.°2, h33km, mb3.9/7, Error ellipse: s-maj=19.7km s-min=18.2km az=37.5*
ISC 02 02:09:29.8±1.6, **38.°1N**±0.°2×**143.°5E**±0.°2, **h35**km, **n9**, σ**1.°17**/9, **mb3.6**/7, **Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
MJAR	**Matsushiro Arr**	**4.47**	**251**	Pn	**Pn**	**02 10 36.1**	**+1.0**
	0.8nm,0.3s,baz=67,slow=11,SNR=3.7						
MJAR				LR	LR	02 12 01.9	
	comp=Z,13nm,19.5s,baz=110,slow=33						
MAT	**Matsushiro**	**4.47**	**251**	P	**Pn**	**02 10 37.0**	**+1.9**
MAT				*e*S	**Sn**	**02 11 24.4**	**-1.5**
HHC	**Hu-ho-hao-te**	**24.71**	**286**	*e*P	P	02 14 42.5	-5.2
HHC				pmax	pmax		
	comp=Z,26nm,1.3s						
HHC				pmax	pmax		
	comp=Z,96nm,4.6s						
SONM	**Songino Array**	**28.57**	**302**	P	**P**	**02 15 22.6**	**+0.1**
	comp=Z,0.5nm,0.5s,baz=102,slow=9.2,SNR=3.6						
ZALV	**Zalesovo Beam**	**42.41**	**312**	P	**P**	**02 17 20.2**	**-0.6**
	comp=Z,0.4nm,0.4s,baz=79,slow=12,SNR=3.1						
MKAR	**Makanchi Array**	**44.94**	**302**	P	**P**	**02 17 40.5**	**-0.7**
	comp=Z,0.4nm,0.6s,baz=89,slow=11,SNR=4.9						
KURBB	**Kurchatov Arra**	**46.64**	**307**	P	**P**	**02 17 54.6**	**+0.1**
	comp=Z,1.4nm,0.2s,baz=83,slow=8.2,SNR=3.9						
WRA	**Warramunga Arr**	**58.37**	**190**	P	**P**	**02 19 21.0**	**-0.6**
	comp=Z,1.9nm,1.0s,baz=11,slow=7.3,SNR=7.7						
ASAR	**Alice Springs**	**62.10**	**190**	P	**P**	**02 19 47.0**	**-0.1**
	comp=Z,0.3nm,0.6s,baz=8.5,slow=6.9,SNR=4.2						

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*IDC **02** 02:14:54.0±5.8, 35.°99N×71.°08E, h107km±41km, mb3.5/7, mb1 3.6/10, mb1mx3.2/58, mbtmp3.9/10, Error ellipse: s-maj=54.4km s-min=28.9km az=150.0*
*NNC **02** 02:15:01.6±1.8, 36.°61N×70.°87E, h133km±17km, mb3.3, mpv4.1, Error ellipse: s-maj=15.3km s-min=7.9km az=169.0*
ISC 02 02:14:55.0±1.4, **36.°2N**±0.°1×**71.°01E**±0.°09, **h100**km, **n18**, σ**1.°52**/24, **mb3.8**/6, **8C-5D, Afghanistan-Tajikistan border region**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
DZET	**Dzherino**	**3.14**	**327**	⇓P	**Pn**	**02 15 45.1**	**+2.4**
	6.3nm,0.2s						
DZET				⇑S	**Sn**	**02 16 18.7**	**-0.8**
	88nm,0.4s						
SFK	**Sufi-Kurgan**	**4.30**	**26**	⇑P	**Pn**	**02 16 01.5**	**+3.1**
	31nm,0.5s						
SFK				⇓S	**Sn**	**02 16 48.0**	**+0.3**
	46nm,0.4s						
MNAS	**Manas**	**6.41**	**10**	⇓P	**Pn**	**02 16 27.7**	**+0.9**
	10nm,0.6s						
MNAS				⇑S	**Sn**	**02 17 38.5**	**0.0**
	34nm,0.8s						
KK31	**Karatay Array**	**6.93**	**357**	⇓P	**Pn**	**02 16 34.6**	**+0.8**
	12nm,0.4s,baz=182,slow=13,SNR=248						
KK31				⇑S	**Sn**	**02 17 49.0**	**-2.1**
	3.8nm,0.4s,baz=181,slow=22,SNR=8.0						
AAK	**Ala-Archa**	**6.99**	**22**	P	**Pn**	**02 16 36.3**	**+1.5**
	6.1nm,0.3s,baz=152,slow=5.4,SNR=65						
AAK				S	**Sn**	**02 17 49.9**	**-2.9**
	1.1nm,0.3s,baz=316,slow=22,SNR=7.9						
AAK	**Ala-Archa**	**6.99**	**22**	⇑P	**Pn**	**02 16 36.2**	**+1.5**
	4.0nm,0.3s						
AAK				⇑S	**Sn**	**02 17 50.5**	**-2.2**
	18nm,0.6s						
AB31	**Akbulak array**	**15.37**	**332**	⇓P	**Pn**	**02 18 26.4**	**+0.3**
	0.6nm,0.3s,baz=142,slow=13,SNR=27						
AB31				S	Sn	02 21 08.3	-7.4
	1.4nm,0.6s,baz=157,slow=22,SNR=5.5						
BVAR	**Borovoye Array**	**16.85**	**359**	P	**Pn**	**02 18 45.6**	**+1.1**
	0.2nm,0.3s,baz=165,slow=11,SNR=6.0						
AKTO	**Aktyubinsk**	**17.06**	**331**	P	**P**	**02 18 48.1**	**+0.8**
	0.7nm,0.3s,baz=122,slow=10,SNR=15						
AKTO	**Aktyubinsk**	**17.06**	**331**	⇑P	**Pn**	**02 18 48.5**	**+1.4**
	6.0nm,0.9s						
AKTO				⇑S	Sn	02 21 50.0	-6.6
	2.2nm,0.9s						
ZALV	**Zalesovo Beam**	**20.20**	**24**	P	**P**	**02 19 20.9**	**-0.7**
	1.4nm,0.3s,baz=218,slow=10,SNR=7.9						
FINES	**FINESS Array B**	**37.75**	**326**	P	**P**	**02 21 59.6**	**-1.2**
	2.0nm,1.0s,baz=115,slow=9.0,SNR=5.7						
ARCES	**ARCESS Array B**	**41.44**	**338**	P	**P**	**02 22 31.8**	**+0.4**
	2.0nm,0.9s,baz=115,slow=8.7,SNR=7.6						
NB2	**NORSAR Subarra**	**44.64**	**323**	P	**P**	**02 22 56.9**	**-0.3**
	comp=Z,0.8nm,0.5s,baz=96,slow=7.9						
NOA	**NORSAR Array B**	**44.64**	**323**	P	**P**	**02 22 57.2**	**0.0**
	comp=Z,1.1nm,0.6s,baz=97,slow=7.8,SNR=4.8						
TORD	**Torodi Ar. Bea**	**65.72**	**269**	P	**P**	**02 25 27.9**	**-1.4**
	comp=Z,0.6nm,0.6s,baz=48,slow=5.7,SNR=8.8						
INK	**Inuvik**	**74.22**	**9**	P	**P**	**02 26 20.4**	**0.0**
	comp=Z,1.0nm,1.0s,baz=329,slow=4.3,SNR=3.2						
YKA	**Yellowknife Ar**	**81.56**	**3**	P	**P**	**02 26 59.8**	**-1.4**
	comp=Z,0.2nm,0.3s,baz=348,slow=5.5,SNR=7.3						

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*ISK **02** 02:22:51.4, 38.°48N×31.°37E, h5km, MD2.9*
*CSEM **02** 02:22:52.5±0.2, 38.°52N×31.°38E, h2km, MD3.1, Error ellipse: s-maj=5.7km s-min=3.3km az=14.0*
*DDA **02** 02:22:52.0, 38.°59N×31.°41E, h7km, Md3.1*
ISC 02 02:22:52.1±1.1, **38.°54N**±0.°03×**31.°40E**±0.°02, **h8**km±12km, **n37**, σ**0.°60**/51, **Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
BOLV	**Bolvadin**	**0.39**	**296**	*i* P	**Pb**	**02 23 00.5**	**-0.9**
BOLV				*i* S	**Sg**	**02 23 05.7**	**+0.6**
BOLV	**Bolvadin**	**0.39**	**296**	P	**Pb**	**02 23 00.5**	**-0.9**
BOLV				S	**Sg**	**02 23 05.7**	**+0.6**
KIZT	**Kizilcal**	**0.50**	**48**	*e*PG	**Pb**	**02 23 03.2**	**-0.1**
KIZT	**Kizilcal**	**0.50**	**48**	*e*Pg	**Pb**	**02 23 03.2**	**-0.1**
KDHN	**Kadinhani**	**0.56**	**92**	*i* P	**Pg**	**02 23 02.9**	**-0.1**
KDHN				*i* S	**Sb**	**02 23 11.4**	**-1.1**
KDHN	**Kadinhani**	**0.56**	**92**	P	**Pg**	**02 23 02.9**	**-0.1**
KDHN				S	**Sb**	**02 23 11.4**	**-1.1**
SHUT	**Suhut-Afyon**	**0.67**	**271**	*e*PG	**Pb**	**02 23 05.2**	**-0.9**
SHUT				*e*SG	**Sb**	**02 23 15.1**	**-0.4**
BAGO	**Egridir - ISPA**	**0.73**	**221**	*i* P	**Pb**	**02 23 06.9**	**-0.3**
BAGO				*i* S	**Sb**	**02 23 18.4**	**+1.0**
LADK	**Ladik-KONYA**	**0.83**	**114**	*e*PG	**Pb**	**02 23 08.3**	**-0.6**
LADK	**Ladik-KONYA**	**0.83**	**114**	*e*Pg	**Pb**	**02 23 08.3**	**-0.6**
SVRH	**Sivrihisar-ESK**	**0.91**	**6**	*e*PG	**Pn**	**02 23 11.5**	**+0.3**
AUKIR	**K˜–rka- Seyitg**	**1.00**	**317**	*i* P	**Pg**	**02 23 10.8**	**-0.5**
AUKIR				*i* S	**Sb**	**02 23 25.5**	**+0.4**
AUKIR	**K˜–rka- Seyitg**	**1.00**	**317**	P	**Pg**	**02 23 10.9**	**-0.5**
AUKIR				S	**Sb**	**02 23 25.5**	**+0.4**
ISP	**Isparta**	**1.00**	**224**	*e*PG	**Pg**	**02 23 10.7**	**-0.6**
ISP	**Isparta**	**1.00**	**224**	*e*Pg	**Pg**	**02 23 10.7**	**-0.6**
ESKT	**Eskisehir**	**1.06**	**336**	*i* P	**Pg**	**02 23 12.1**	**-0.5**
ESKT				*i* S	**Sb**	**02 23 27.2**	**+0.2**
SEYT	**Eskypehyr**	**1.06**	**336**	P	**Pg**	**02 23 12.1**	**-0.5**
SEYT				S	**Sb**	**02 23 27.2**	**+0.2**
CHBY	**Cihanbeyli**	**1.17**	**88**	*e*PN	**Pn**	**02 23 15.8**	**+0.9**
CHBY	**Cihanbeyli**	**1.17**	**88**	*e*Pn	**Pn**	**02 23 15.8**	**+0.9**
KHAL	**Karahalli**	**1.51**	**264**	*i* P	**Pb**	**02 23 20.1**	**-0.3**
KHAL				*i* S	**Sg**	**02 23 42.0**	**+1.3**
KHAL	**Karahalli**	**1.51**	**264**	P	**Pb**	**02 23 20.1**	**-0.3**
KHAL				S	**Sg**	**02 23 42.0**	**+1.3**
BORA	**Eskisehir**	**1.52**	**331**	*i* P	**Pn**	**02 23 19.7**	**0.0**
BORA				*i* S	**Sg**	**02 23 41.0**	**-0.1**
BORA	**Eskisehir**	**1.52**	**331**	P	**Pn**	**02 23 19.7**	**0.0**
BORA				S	**Sg**	**02 23 41.0**	**-0.1**
AFSR	**Af¯ar-Bala (A**	**1.58**	**55**	*e*PN	**Pg**	**02 23 22.3**	**-0.2**
AFSR	**Af¯ar-Bala (A**	**1.58**	**55**	*e*Pn	**Pg**	**02 23 22.3**	**-0.2**
SULT	**Sultanhani-AKS**	**1.70**	**101**	*e*PN	**Pg**	**02 23 24.1**	**-0.6**
SULT	**Sultanhani-AKS**	**1.70**	**101**	*e*Pn	**Pg**	**02 23 24.1**	**-0.6**
SERE	**Sereflikochisa**	**1.74**	**76**	*e*PN	**Pg**	**02 23 24.9**	**-0.6**
SERE	**Sereflikochisa**	**1.74**	**76**	*e*Pn	**Pg**	**02 23 24.9**	**-0.6**
TVSB	**Tavsanli**	**1.76**	**301**	*e*PN	**Pb**	**02 23 24.5**	**-0.2**
TVSB	**Tavsanli**	**1.76**	**301**	*e*Pn	**Pb**	**02 23 24.5**	**-0.2**
MDUB	**Mudurnu**	**1.93**	**355**	*e*PN	**Pb**	**02 23 27.3**	**-0.3**
MDUB	**Mudurnu**	**1.93**	**355**	*e*Pn	**Pb**	**02 23 27.3**	**-0.3**
KAMT	**Kaman**	**1.98**	**65**	*e*PN	**Pb**	**02 23 28.4**	**-0.1**
KAMT	**Kaman**	**1.98**	**65**	*e*Pn	**Pb**	**02 23 28.4**	**-0.1**
GULT	**Gulveren**	**2.01**	**340**	*e*PN	**Pb**	**02 23 28.9**	**0.0**
GULT	**Gulveren**	**2.01**	**340**	*e*Pn	**Pb**	**02 23 28.9**	**0.0**

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*NEIC **02** 02:32:51.9, 33.°20N×115.°61W, h4km, ML2.5(PAS), After PAS.*
NEIC Felt at Calipatria.
ISC 02 02:32:51.9±0.9, **33.°21N**±0.°02×**115.°63W**±0.°03, **h9**km±10km, **n21**, σ**0.°80**/34, **1C-3D, Southern California**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
CLIC	**Calipatria**	**0.11**	**129**	⇑*i*P	**Pg**	**02 32 54.0**	**-0.6**
ERRC	**Elmore Ranch**	**0.19**	**240**	⇓*i*P	**Pg**	**02 32 56.4**	**+0.6**
FRK	**Frink**	**0.19**	**358**	⇓*i*P	**Pg**	**02 32 56.0**	**+0.1**
SWSC	**Sam W. Stewart**	**0.30**	**208**	P	**Pg**	**02 32 57.6**	**-0.4**
	baz=33,SNR=106						
SWSC				S	**Sg**	**02 33 00.3**	**-1.6**
	baz=33						
SWSC	**Sam W. Stewart**	**0.30**	**208**	⇓*i*P	**Pg**	**02 32 57.5**	**-0.4**
COK	**Cook Ranch**	**0.37**	**193**	*e*P	**Pg**	**02 32 59.3**	**+0.1**
COK				*e*S	**Sg**	**02 33 03.9**	**-0.2**

Code	Station Name	Δ°	AZ°	Phase Op	Phase ISC	Time h m s	Res ISC
BC3	Big Chuckawall	0.47	18	P	Pg	02 33 01.0	-0.1
	baz=195,SNR=107						
BC3				S	Sg	02 33 07.3	0.0
	baz=195						
IBP	Imperial Bould	0.67	215	P	Pg	02 33 04.3	-0.7
	baz=37,SNR=5.6						
IBP				S	Sg	02 33 13.8	0.0
	baz=37						
GLA	Glamis	0.69	103	P	Pg	02 33 04.3	-1.0
	baz=283,SNR=99						
GLA				S	Sg	02 33 13.6	-0.8
	baz=283						
MONP2	Monument Peak	0.74	245	P	Pg	02 33 05.5	-0.7
	baz=66,SNR=14						
MONP2				S	Sg	02 33 15.9	0.0
	baz=66						
PFO	Pinyon Flats O	0.80	300	P	Pg	02 33 06.8	-0.6
	baz=120,SNR=38						
PFO				S	Sg	02 33 18.4	+0.6
	baz=120						
PFO	Pinyon Flats O	0.80	300	*e*Pg	Pg	02 33 06.4	-1.0
PFO				*e*Sg	Sg	02 33 16.9	-1.0
BELC	Belle Mtn. Jos	0.84	339	P	Pg	02 33 07.7	-0.5
	baz=157,SNR=26						
BELC				S	Sg	02 33 20.2	+0.9
	baz=157						
IRM	Iron Mountain	1.03	23	P	Pg	02 33 10.9	-0.8
	baz=202,SNR=198						
IRM				S	Sb	02 33 25.6	0.0
	baz=202						
Y12C	Blythe	1.07	60	P	Pg	02 33 11.7	-0.8
	baz=239,SNR=18						
Y12C				S	Sb	02 33 26.4	-0.4
	baz=239						
MURC	Murrieta	1.37	287	P	Pn	02 33 17.0	-0.3
	baz=106,SNR=14						
GMRC	Granite Mounta	1.57	359	Pb	Pb	02 33 21.1	-0.1
	baz=178,SNR=18						
GMRC				S	Sg	02 33 42.3	-0.2
	baz=178						
HEC	Hector,Ludlow	1.72	340	Pg	Pg	02 33 24.8	-0.1
	baz=159,SNR=19						
TUQ	Turquoise Moun	2.23	354	Pg	Pg	02 33 33.9	-0.9
	baz=173,SNR=14						
TUQ				Sb	Sg	02 34 03.6	-0.1
	baz=173						
TPNV	Topopah Spring	3.76	352	Pg	Pg	02 34 03.7	-0.4
	baz=172						
TUC	Tucson	4.18	101	*e*Pg	Pb	02 34 08.3	+2.6

*GCMT **02** 02:48:24.0±0.4, 49°.63S×125°.92E, h26^{km}±1^{km}, MW4.9/58, Moment Tensor Solution. s21,c24; s58,c78; Duration: 0 Moment tensor: Scale 10^{16}Nm; M_{rr}-0.90±.20; $M_{\theta\theta}$1.49±.17; $M_{\phi\phi}$-0.59±.14; $M_{r\theta}$1.04±.27; $M_{\theta\phi}$2.25±.09; $M_{\phi r}$-1.37±.27; Best double couple: $M_0$3.10300×10^{16} NP1:ϕ_s277.00000°,δ67.00000°,λ-29.00000°. NP2: ϕ_s19.00000°,δ64.00000°,λ-155.00000°. Principal axes: T 2.9350, Plg2.0000°, Azm328.0000°; N 0.3360, Plg54.0000°, Azm62.0000°; P -3.2700, Plg36.0000°, Azm236.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

*ISCJB **02** 02:48:27.0±0.6, 49°.60S±0°.08×126°.1E±0°.3, h10^{km}, mb4.0/4, MS3.7/8 Error ellipse: s-maj=27.5km s-min=10.5km az=9.5*

*IDC **02** 02:48:29.3±1.1, 49°.49S×126°.46E, h0^{km}, mb4.1/4, mb1 4.4/5, mb1mx4.0/30, mbtmp4.2/5, ML2.4/1, MS3.7/8, Ms1 3.7/8, ms1mx3.4/30, Error ellipse: s-maj=53.9km s-min=21.4km az=93.0*

*NEIC **02** 02:48:30.2±0.7, 49°.55S×126°.21E, h10^{km}, Error ellipse: s-maj=31.7km s-min=13.8km az=94.0*

ISC 02 02:48:29.6±0.7, 49°.6S±0°.1×126°.0E±0°.2, h10^{km}, n29, σ1^{s}52/18, mb4.1/4, MS3.7/8, 1D, Western Indian-Antarctic Ridge

Code	Station Name	Δ°	AZ°	Phase Op	Phase ISC	Time h m s	Res ISC
H01W1	Cape Leeuwin H	17.05	325	T	T	03 10 04.3	
	baz=151,slow=74,SNR=106						
H01W2	Cape Leeuwin H	17.05	325	T	T	03 10 11.1	
	baz=151,slow=74,SNR=115						
H01W3	Cape Leeuwin H	17.07	325	T	T	03 09 51.1	
	baz=151,slow=74,SNR=93						
NWAO	Narrogin (SRO)	17.86	335	P	P	02 52 38.8	0.0
	0.6nm,0.3s,baz=58,slow=0.1,SNR=4.6						
STKA	Stephens Creek	21.22	39	P	P	02 53 14.8	-0.6
	4.3nm,1.0s,baz=188,slow=11,SNR=5.3						
STKA				LR	LR	02 59 49.2	
	comp=Z,194nm,22.0s,baz=206,slow=32						
ASAR	Alice Springs	26.61	16	P	P	02 54 07.2	-0.9
	4.9nm,0.6s,baz=186,slow=10.0,SNR=26						
ASAR				LR	LR	03 03 40.7	
	comp=Z,111nm,21.5s,baz=195,slow=34						
WRA	Warramunga Arr	30.33	16	P	P	02 54 39.6	-1.6
	0.7nm,0.5s,baz=196,slow=9.1,SNR=3.4						
VNDA	Vanda	31.16	166	P	P	02 54 48.4	+0.3
	6.3nm,0.8s,baz=308,slow=8.6,SNR=27						
VNDA				LR	LR	03 06 29.4	
	comp=Z,397nm,18.4s,baz=324,slow=35						
MAW	Mawson	35.49	216	LR	LR	03 07 17.4	
	comp=Z,97nm,19.2s,baz=62,slow=32						
QSPA	South Pole Qui	40.54	180	*e*P	P	02 56 08.7	0.0
SYO	Syowa Base	43.69	211	⇓*e*P	P	02 56 32.8	-1.3
SNAA	Sanae	53.76	198	P	P	02 57 52.2	+0.7
SNAA	Sanae	53.76	198	*e*P	P	02 57 51.8	+0.3
VNA2	Neumayer--Watz	55.24	197	P	P	02 58 01.7	-0.5
	baz=158,slow=6.8						
VNA3	Neumayer Olymp	55.40	196	P	P	02 58 01.8	-1.6
VNA1	Neumayer--Stat	55.63	197	P	P	02 58 02.7	-2.3
DAV	Davao City (W)	56.42	360	LR	LR	03 21 42.9	
	comp=Z,38nm,21.9s,baz=142,slow=35						
H08S2	Diego Garcia H	61.02	294	T	T	04 04 51.3	
	baz=143,slow=76,SNR=13						
H08S1	Diego Carcia H	61.03	294	T	T	04 04 41.4	
	baz=143,slow=76,SNR=11						
H08S3	Diego Garcia H	61.04	294	T	T	04 04 52.3	
	baz=143,slow=76,SNR=13						
OPO	Ambohidratompo	68.86	266	LR	LR	03 24 20.6	
	comp=Z,47nm,18.4s,baz=179,slow=31						
CMAR	Chiang Mai Arr	71.85	333	LR	LR	03 30 29.1	
	comp=Z,46nm,20.3s,baz=175,slow=35						
BOSA	Boshof	75.20	243	LR	LR	03 26 10.0	
	comp=Z,60nm,18.4s,baz=167,slow=30						
TORD	Torodi Ar. Bea	121.90	252	PKP	PKPdf	03 07 26.9	+2.7
	0.2nm,0.8s,baz=167,slow=2.5,SNR=3.0						
NVAR	Mina Array Bea	133.79	79	PKP	PKPdf	03 07 48.3	+1.9
	0.2nm,0.5s,baz=220,slow=3.5,SNR=2.4						
TXAR	Lajitas Array	137.58	100	PKP	PKPdf	03 07 52.2	-1.4
	0.3nm,0.7s,baz=208,slow=5.1,SNR=3.7						
YKA	Yellowknife Ar	145.18	45	PKP	PKPdf	03 08 06.6	+0.6
	2.0nm,0.7s,baz=267,slow=3.3,SNR=38						
RES	Resolute Bay	149.63	20	PKPbc	PKPbc	03 08 19.2	+1.5
	1.1nm,0.7s,baz=288,slow=2.1,SNR=8.3						
RES	Resolute Bay	149.63	20	*e*PKPbc	PKPbc	03 08 20.0	+2.3

JMA 02 03:10:48.7±0.3, 38°.13N×143°.68E, h0^{km}, M3.7, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase Op	Phase ISC	Time h m s	Res ISC
OFUJ	Ofunato	1.84	302	P	Pn	03 11 22.1	+0.6
JIO	Ouri	1.86	281	P	Pn	03 11 21.9	+0.1
JIO				S	Sn	03 11 46.3	+0.2
JMK	Ichinoseki	2.10	294	P	Pn	03 11 26.2	+1.1
JMK				*e*S	Sb	03 11 53.8	-0.4
JMM	Marumori	2.30	264	P	Pn	03 11 28.5	+0.7
JMM				S	Sn	03 11 56.5	-0.3
JOU	Okura	2.39	277	P	Pb	03 11 30.9	-1.6
JOU				S	Sb	03 12 01.1	-1.4
JRG	Rokugo	2.70	299	P	Pn	03 11 35.3	+2.0
JRG				*e*S	Sn	03 12 09.0	+2.3
JFT	Otama	2.72	258	S	Sn	03 12 07.7	+0.5
JYK	Kaneyama	2.72	288	P	Pn	03 11 34.9	+1.2
JTM	Tenmabayashi	3.34	324	S	Sn	03 12 21.9	-0.5
JRY	Ryogami san	4.36	243	P	Pn	03 11 55.9	-0.4

*IDC **02** 03:11:49.1±1.0, 37°.36N×144°.46E, h0^{km}, mb3.6/5, mb1 3.9/7, mb1mx3.5/51, mbtmp3.7/7, ML3.5/2, Error ellipse: s-maj=48.3km s-min=19.2km az=126.0*

*ISCJB **02** 03:11:51.7±0.8, 37°.3N±0°.1×144°.26E±0°.10, h33^{km}, mb3.7/5, Error ellipse: s-maj=16.8km s-min=8.5km az=149.8*

ISC 02 03:11:53.9±0.9, 37°.3N±0°.1×144°.3E±0°.1, h35^{km}, n8, σ0^{s}81/10, mb3.6/5, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase Op	Phase ISC	Time h m s	Res ISC
MJAR	Matsushiro Arr	4.93	263	Pn	Pn	03 13 06.5	+1.0
	2.0nm,0.3s,baz=88,slow=15,SNR=9.7						
MAT	Matsushiro	4.94	263	P	Pn	03 13 05.6	0.0
MAT				S	Sn	03 14 00.8	-0.6
JHJ	Hachijo jima 2	5.58	223	Pn	Pn	03 13 14.3	-0.2
	4.6nm,0.3s,baz=78,slow=23,SNR=6.1						
JHJ				Sn	Sn	03 14 16.5	-0.9
	18nm,0.3s,baz=191,slow=18,SNR=5.3						
ILAR	Eielson Array	48.02	33	P	P	03 20 28.4	-0.8
	0.5nm,0.7s,baz=268,slow=6.8,SNR=6.6						
WRA	Warramunga Arr	57.73	191	P	P	03 21 41.9	+0.6
	1.2nm,0.5s,baz=12,slow=7.5,SNR=5.1						
ASAR	Alice Springs	61.45	191	P	P	03 22 08.0	+1.1
	0.3nm,0.3s,baz=4.6,slow=6.6,SNR=5.4						
YKA	Yellowknife Ar	62.39	31	P	P	03 22 12.5	-0.2
	0.1nm,0.3s,baz=296,slow=6.6,SNR=2.6						
NVAR	Mina Array Bea	72.96	55	P	P	03 23 20.3	+0.1
	0.4nm,0.6s,baz=272,slow=6.8,SNR=3.3						

*IDC **02** 03:12:47.5±0.8, 38°.23N×144°.03E, h0^{km}, mb3.7/13, mb1 3.9/15, mb1mx3.7/54, mbtmp3.7/15, ML3.0/2, MS2.9/5, Ms1 2.9/5, ms1mx2.6/55, Error ellipse: s-maj=20.9km s-min=18.7km az=113.0*

*ISCJB **02** 03:12:48.4±0.6, 38°.31N±0°.06×143°.91E±0°.04, h14^{km}, mb3.7/13, MS3.4/2, Error ellipse: s-maj=9.0km s-min=4.9km az=172.6*

*JMA **02** 03:12:51.7±0.2, 38°.44N×143°.80E, h28^{km}, M4.2*

ISC 02 03:12:50.1±0.8, 38°.34N±0°.08×143°.91E±0°.07, h14^{km}, n30, σ1^{s}23/31, mb3.7/13, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase Op	Phase ISC	Time h m s	Res ISC
OFUJ	Ofunato	1.91	294	P	Pn	03 13 21.7	-0.5
JIO	Ouri	2.02	274	P	Pn	03 13 23.4	-0.3
JIO				S	Sn	03 13 46.3	-2.4
JMK	Ichinoseki	2.20	287	P	Pn	03 13 25.9	-0.3
JMK				S	Sn	03 13 51.9	-1.2
JOM	Ohasama	2.34	300	*e*S	Sn	03 13 54.6	-2.0
JMM	Marumori	2.51	260	P	Pn	03 13 30.4	0.0
JMM				*e*S	Sn	03 13 58.4	-2.4
JOU	Okura	2.56	272	P	Pn	03 13 31.7	+0.6
JOU				S	Sn	03 14 00.8	-1.2
JRG	Rokugo	2.77	293	S	Sn	03 14 07.4	+0.1
JYK	Kaneyama	2.84	283	S	Sn	03 14 09.0	-0.1
JFT	Otama	2.94	255	S	Sn	03 14 10.9	-0.8
JNBK	Urakawa-nobuka	4.04	348	S	Sn	03 14 35.9	-2.6
MJAR	Matsushiro Arr	4.88	250	Pn	Pn	03 14 01.2	-1.9
	3.6nm,0.3s,baz=52,slow=10.0,SNR=11						
MJAR				LR	LR	03 16 16.7	
	comp=Z,87nm,19.3s,baz=85,slow=43						
MAT	Matsushiro	4.88	250	P	Pb	03 14 15.5	+0.1
MAT				S	Sn	03 15 00.6	+1.1
USRK	Ussuriysk Ar.	10.71	307	Pn	Pn	03 15 24.6	+1.6
	0.2nm,0.3s,baz=95,slow=18,SNR=2.6						
JNU	Nakatsue	11.80	248	LR	LR	03 20 30.9	
	comp=Z,31nm,21.1s,baz=122,slow=39						
KSRS	Korea Array	12.66	271	LR	LR	03 19 58.2	
	comp=Z,40nm,19.2s,baz=22,slow=34						
SEY	Seymchan	25.16	9	P	P	03 18 15.1	+0.5
	0.9nm,0.3s,baz=185,slow=5.3,SNR=9.6						
SONM	Songino Array	28.75	301	P	P	03 18 49.1	+1.8
	0.3nm,0.5s,baz=100,slow=6.9,SNR=2.9						
ZALV	Zalesovo Beam	42.52	311	P	P	03 20 45.6	+0.7
	0.4nm,0.3s,baz=103,slow=5.9,SNR=2.3						
MKAR	Makanchi Array	45.12	301	P	P	03 21 06.6	+0.7
	0.7nm,0.6s,baz=88,slow=9.1,SNR=6.6						
INK	Inuvik	52.32	28	P	P	03 22 01.4	+0.6
	0.5nm,0.6s,baz=301,slow=3.3,SNR=4.3						
WRA	Warramunga Arr	58.67	191	P	P	03 22 46.0	-1.1
	2.3nm,0.7s,baz=9.8,slow=7.3,SNR=9.4						
YKA	Yellowknife Ar	61.68	31	P	P	03 23 06.2	-1.0
	0.1nm,0.3s,baz=309,slow=7.1,SNR=3.2						
ASAR	Alice Springs	62.39	190	P	P	03 23 11.6	-0.9
	0.4nm,0.6s,baz=14,slow=5.7,SNR=4.3						
FINES	FINESS Array B	68.57	333	P	P	03 23 52.2	+0.2
	1.4nm,0.7s,baz=41,slow=11,SNR=5.9						
NOA	NORSAR Array B	73.73	338	P	P	03 24 23.4	0.0
	0.9nm,0.8s,baz=53,slow=6.7,SNR=2.9						
AKASG	Malin Array Be	74.46	323	P	P	03 24 27.8	+0.1
	0.4nm,0.4s,baz=39,slow=6.0,SNR=5.7						
PDAR	Pinedale Array	75.33	47	P	P	03 24 33.5	+0.3
	0.4nm,0.5s,baz=299,slow=3.1,SNR=4.7						
MLR	Muntele Rosu	79.65	321	LR	LR	04 01 12.9	
	comp=Z,8.2nm,18.9s,baz=68,slow=36						
EIL	Elat	85.31	304	LR	LR	04 07 12.2	
	comp=Z,29nm,18.0s,baz=218,slow=38						
TXAR	Lajitas Array	87.75	54	P	P	03 25 38.8	-0.2
	0.2nm,0.6s,baz=308,slow=3.3,SNR=2.8						

IDC 02 03:20:51.7±5.8, 6°.10S×149°.13E, h68^{km}±57^{km}, mb3.1/2, mb1 3.6/4, mb1mx3.2/39, mbtmp3.6/4, ML3.1/2, Error ellipse: s-maj=114.9km s-min=34.5km az=129.0, New Britain region

Code	Station Name	Δ°	AZ°	Phase Op	Phase ISC	Time h m s	Res ISC
PMG	Port Moresby	3.82	211	P	Pn	03 21 49.2	+1.1
	12nm,0.3s,baz=11,slow=8.4,SNR=18						
PMG				S	Sn	03 22 32.1	+0.3
	11nm,0.3s,baz=167,slow=18,SNR=7.7						
WRA	Warramunga Arr	19.89	225	P	P	03 25 18.2	+0.3
	0.3nm,0.3s,baz=51,slow=11,SNR=7.8						
ASAR	Alice Springs	22.79	218	P	P	03 25 49.2	+0.2
	0.7nm,0.5s,baz=51,slow=9.4,SNR=11						
ILAR	Eielson Array	84.75	23	P	P	03 33 17.9	-0.3
	0.2nm,0.7s,baz=249,slow=4.7,SNR=3.1						
TORD	Torodi Ar. Bea	147.17	285	PKPbc	PKPbc	03 40 27.6	-0.7
	0.2nm,0.9s,baz=50,slow=4.4,SNR=2.9						

IDC 02 03:21:44.9±2.9, 37°.47N×142°.62E, h0^{km}, mb3.4/3, mb1 3.5/4, mb1mx3.2/57, mbtmp3.3/4, ML2.9/1, Error ellipse: s-maj=70.5km s-min=33.5km az=61.0, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase Op	Phase ISC	Time h m s	Res ISC
MJAR	Matsushiro Arr	3.65	257	Pn	Pn	03 22 42.5	-0.2
	0.9nm,0.3s,baz=81,slow=13,SNR=8.8						
MAT	Matsushiro	3.65	257	P	Pn	03 22 43.9	+1.2
MAT				S	Sb	03 23 35.6	+0.4
SONM	Songino Array	28.34	303	P	P	03 27 39.6	-1.0
	0.2nm,0.5s,baz=88,slow=7.3,SNR=3.5						
MKAR	Makanchi Array	44.70	302	P	P	03 30 00.2	+0.6
	0.2nm,0.6s,baz=77,slow=8.4,SNR=2.6						
WRA	Warramunga Arr	57.64	189	P	P	03 31 36.8	-0.1
	0.5nm,0.6s,baz=12,slow=7.6,SNR=4.8						

*IDC **02** 03:25:41.1±0.7, 35°.48N×142°.97E, h0^{km}, mb4.1/21, mb1 4.3/24, mb1mx4.1/46, mbtmp4.1/24, ML3.7/2, MS3.3/1, Ms1 3.3/1, ms1mx2.5/42, Error ellipse: s-maj=17.6km s-min=15.2km az=136.0*

*JMA **02** 03:25:43.2±0.4, 35°.54N×143°.02E, h67^{km}, M3.9*

*NEIC **02** 03:25:45.9±0.3, 35°.41N×142°.95E, h35^{km}, mb4.5/10, Error ellipse: s-maj=7.9km s-min=7.0km az=163.0*

*ISCJB **02** 03:25:46.8±0.4, 35°.39N±0°.05×142°.78E±0°.05, h59^{km}, mb4.2/33, MS3.4/1, Error ellipse: s-maj=8.1km s-min=4.3km az=151.3*

ISC 02 03:25:47.7±0.5, 35°.27N±0°.05×142°.93E±0°.05, h59^{km}, n57, σ1^{s}67/60, mb4.2/33, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase Op	Phase ISC	Time h m s	Res ISC
BSO1	Boso 1	1.71	250	P	Pn	03 26 13.2	-1.5
BSO1				*e*S	Sn	03 26 37.0	+1.7
CHOJ	Chosi	1.74	285	P	Pn	03 26 12.5	-3.1
CHOJ				*e*S	Sn	03 26 34.0	-2.8
BSO3	Boso 3	2.04	258	P	Pn	03 26 18.0	-1.4
BSO4	Boso 4	2.14	263	P	Pn	03 26 20.0	-0.9
KTR	Katsuura	2.14	268	*e*S	Sn	03 26 46.3	-0.2
JAG	Ashikaga	3.05	293	P	Pn	03 26 29.6	-3.9
JFT	Otama	3.07	318	P	Pn	03 26 28.0	-5.8
JFT				*e*S	Sn	03 26 57.4	-12
JOD2	Odawara 2	3.14	271	P	Pn	03 26 32.3	-2.4
JOD2				S	Sn	03 27 08.7	-2.3
JHJ2	Mitsune	3.35	231	P	Pn	03 26 37.1	-0.6
JHJ2				*e*S	Sn	03 27 16.9	+0.7
JRY	Ryogami san	3.36	284	P	Pn	03 26 35.3	-2.5
JHJ	Hachijo jima 2	3.37	231	Pn	Pn	03 26 36.8	-1.1
	18nm,0.3s,baz=333,slow=19,SNR=17						
JHJ				Sn	Sn	03 27 15.4	-1.2
	79nm,0.3s,baz=59,slow=21,SNR=12						
JYN	Shimob	3.59	275	P	Pn	03 26 38.8	-2.1
MJAR	Matsushiro Arr	4.04	290	Pn	Pn	03 26 44.0	-3.0
	4.0nm,0.3s,baz=91,slow=10,SNR=48						
MAJO	Matsushiro	4.04	290	*e*Pn	Pn	03 26 45.1	-1.9
MAT	Matsushiro	4.04	290	P	Pn	03 26 44.8	-2.2
MAT				*e*S	Sn	03 27 25.2	-7.8
MAT	Matsushiro	4.04	290	P	Pn	03 26 45.0	-2.0
ERM	Erimo	6.74	1	*e*Pn	Pn	03 27 17.7	-6.3
CBIJ	Chichi jima	8.17	185	Pn	Pn	03 27 41.0	-2.6
CBIJ				Sn	Sn	03 29 10.4	-4.1
JCJ	Chichijima	8.17	185	Pn	Pn	03 27 41.0	-2.6
	5.4nm,0.3s,baz=270,slow=20,SNR=5.3						
JCJ				Sn	Sn	03 29 10.4	-4.1
	6.0nm,0.3s,baz=131,slow=20,SNR=2.6						
KSRS	Korea Array	12.29	285	Pn	Pn	03 28 38.5	-1.4
	baz=95,slow=13,SNR=4.2						
KSAR	Wonju Array Be	12.32	285	Pn	Pn	03 28 38.5	-1.9
MA2	Magadan	24.86	10	P	P	03 31 03.3	-1.2
	1.7nm,0.4s,baz=209,slow=16,SNR=3.9						
SEY	Seymchan	28.31	9	P	P	03 31 33.2	-2.2
	2.2nm,0.6s,baz=192,slow=6.8,SNR=13						
ULN	Ulaanbaatar	29.37	306	*e*P	P	03 31 44.9	-0.4
	5.6nm,1.1s						
SONM	Songino Array	29.80	306	P	P	03 31 48.6	-0.4
	1.6nm,0.7s,baz=110,slow=8.3,SNR=10						
TIXI	Tiksi	37.19	353	*e*P	P	03 32 51.4	-1.3
	2.0nm,0.6s						
ZALV	Zalesovo Beam	44.02	314	P	P	03 33 49.4	+0.3
	1.9nm,0.5s,baz=90,slow=7.4,SNR=9.1						
MKAR	Makanchi Array	46.11	304	P	P	03 34 05.9	-0.1
	1.3nm,0.7s,baz=89,slow=9.8,SNR=12						
KURK	Kurchatov	47.99	310	*e*P	P	03 34 20.6	+0.1
	5.5nm,0.6s						
ILAR	Eielson Array	50.34	32	P	P	03 34 38.1	-0.2
	3.7nm,0.8s,baz=266,slow=6.5,SNR=24						
DIV	Divide	50.96	36	*e*P	P	03 34 43.5	+0.4
	4.6nm,0.8s						
DOT	Dot Lake	51.61	33	*e*P	P	03 34 47.4	-0.4
	8.3nm,0.8s						
AAK	Ala-Archa	52.42	300	*e*P	P	03 34 55.0	+0.6
	3.2nm,1.0s						
BRVK	Borovoye	52.73	314	*e*P	P	03 34 56.4	+0.2
	3.0nm,0.9s						
INK	Inuvik	55.41	27	P	P	03 35 16.2	+0.7
	4.0nm,0.8s,baz=303,slow=6.5,SNR=20						
WRA	Warramunga Arr	55.51	190	P	P	03 35 19.8	+3.1
	3.1nm,0.9s,baz=9.4,slow=7.4,SNR=10						
ARU	Arti	58.50	320	*e*P	P	03 35 37.9	+0.4
	3.2nm,0.6s						
ASAR	Alice Springs	59.23	190	P	P	03 35 45.3	+2.3
	1.0nm,0.8s,baz=13,slow=6.3,SNR=9.1						
DLBC	Dease Lake	59.27	38	LR	LR	04 00 24.2	
	comp=Z,26nm,18.4s,baz=190,slow=35						
AKTO	Aktyubinsk	60.77	313	P	P	03 35 53.5	+0.2
	1.4nm,0.7s,baz=68,slow=12,SNR=4.9						
RES	Resolute Bay	64.00	14	*e*P	P	03 36 14.3	-0.2
	7.2nm,0.9s						
YKA	Yellowknife Ar	64.72	30	P	P	03 36 19.1	-0.2
	1.6nm,0.8s,baz=299,slow=6.6,SNR=25						
FINES	FINESS Array B	70.94	333	P	P	03 36 58.9	+0.4
	3.4nm,0.8s,baz=81,slow=6.0,SNR=10						
KBZ	Khabaz	72.99	312	P	P	03 37 12.4	+1.5
	2.7nm,0.8s,baz=37,slow=6.8,SNR=6.8						
FFC	Flin Flon	74.52	33	*e*P	P	03 37 20.2	+0.4
	3.7nm,0.8s						
HFS	Hagfors	76.20	336	P	P	03 37 29.5	+0.2
	2.0nm,0.8s,baz=94,slow=4.5,SNR=6.3						
NOA	NORSAR Array B	76.28	338	P	P	03 37 30.4	+0.6
	1.7nm,0.8s,baz=40,slow=5.7,SNR=5.3						
AKASG	Malin Array Be	76.44	323	P	P	03 37 31.2	+0.4
	1.6nm,0.5s,baz=45,slow=5.8,SNR=8.9						
R11A	Troy Canyon, C	76.88	52	*e*P	P	03 37 34.0	+0.2
	4.4nm,1.5s						
PDAR	Pinedale Array	78.02	46	P	P	03 37 41.0	+0.7
	0.8nm,0.6s,baz=292,slow=2.0,SNR=10						
ULM	Lac du Bonnet	80.30	34	P	P	03 37 52.0	-0.1
	1.8nm,0.9s,baz=322,slow=5.8,SNR=4.1						
BRTR	Keskin Array B	80.94	313	P	P	03 37 57.3	+1.3
	1.1nm,0.7s,baz=89,slow=3.0,SNR=8.3						
RAYN	Ar Rayn	82.47	293	*e*P	P	03 38 05.5	+1.3
	3.1nm,0.9s						
CLL	Collm	83.23	331	*e*P	P	03 38 08.0	+0.4
CLL				LmV		04 20 00.0	
	comp=Z,100nm,18.0s						
GERES	GERESS Array B	84.86	329	P	P	03 38 16.0	0.0
	comp=Z,0.7nm,0.6s,baz=35,slow=5.4,SNR=6.6						
TXAR	Lajitas Array	90.21	53	P	P	03 38 43.2	+1.1
	comp=Z,0.4nm,0.6s,baz=306,slow=4.0,SNR=5.2						
LPAZ	La Paz	146.45	64	PKPbc	PKPbc	03 45 24.3	+0.8
	comp=Z,0.7nm,0.7s,baz=8.5,slow=7.3,SNR=5.3						

*IDC **02** 03:25:41.0±0.8, 36°.93N×142°.91E, h0^{km}, mb3.8/8, mb1 4.0/10, mb1mx3.8/43, mbtmp3.7/10, ML2.8/2, MS3.4/2, Ms1 3.4/2, ms1mx2.7/41, Error ellipse: s-maj=33.7km s-min=18.1km az=101.0*

*ISCJB **02** 03:25:48.4±0.8, 37°.44N±0°.06×143°.42E±0°.06, h35^{km}, mb3.8/9, MS3.3/2, Error ellipse: s-maj=9.1km s-min=6.8km az=3.1*

*JMA **02** 03:25:48.4±0.3, 37°.44N×143°.42E, h45^{km}, M3.9*

ISC 02 03:25:50.2±1.1, 37°.48N±0°.09×143°.35E±0°.08, h35^{km}, n20, σ1^{s}24/20, mb3.9/9, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase Op	Phase ISC	Time h m s	Res ISC
JIO	Ouri	1.86	302	P	Pn	03 26 19.8	+0.3
JIO				S	Sn	03 26 42.7	+0.9
JMM	Marumori	2.07	282	P	Pn	03 26 22.3	-0.1
JMM				*e*S	Sn	03 26 47.9	+1.0
JMK	Ichinoseki	2.23	312	P	Pn	03 26 24.9	+0.3
JMK				*e*S	Sn	03 26 52.5	+1.5
JOM	Ohasama	2.57	322	P	Pn	03 26 29.3	+0.1
JOM				*e*S	Sn	03 27 00.3	+1.1
JYK	Kaneyama	2.76	302	P	Pn	03 26 32.9	+1.0
JANG	Nango	3.23	334	*e*S	Sn	03 27 16.6	+1.1
JAG	Ashikaga	3.30	253	P	Pn	03 26 39.2	-0.1
JAG				*e*S	Sn	03 27 18.3	+1.1
USRK	Ussuriysk Ar.	10.91	312	Pn	Pn	03 28 21.0	-2.7
	0.3nm,0.3s,baz=123,slow=16,SNR=4.2						
KLR	Kul'dur	14.44	328	Pn	Pn	03 29 10.0	-1.9
	0.1nm,0.3s,baz=132,slow=14,SNR=4.8						
YAK	Yakutsk	26.00	345	LR	LR	03 44 01.1	
	comp=Z,45nm,18.1s,baz=167,slow=42						
SEY	Seymchan	26.08	9	P	P	03 31 21.4	+1.3
	0.4nm,0.3s,baz=209,slow=12,SNR=4.1						
ZALV	Zalesovo Beam	42.76	312	LR	LR	03 52 38.6	
	comp=Z,60nm,18.5s,baz=76,slow=38						
ILAR	Eielson Array	48.29	33	P	P	03 34 27.8	+0.3
	1.1nm,0.7s,baz=264,slow=6.2,SNR=14						
INK	Inuvik	53.28	27	P	P	03 35 05.9	+0.9
	0.6nm,1.0s,baz=180,slow=12,SNR=13						
WRA	Warramunga Arr	57.74	190	P	P	03 35 29.3	-8.2
	2.4nm,0.9s,baz=6.8,slow=7.4,SNR=10						
ASAR	Alice Springs	61.47	190	P	P	03 35 55.2	-8.0
	1.2nm,0.8s,baz=14,slow=7.9,SNR=9.3						
YKA	Yellowknife Ar	62.64	31	P	P	03 36 11.0	+0.4
	0.2nm,0.6s,baz=301,slow=7.6,SNR=4.3						
FINES	FINESS Array B	69.14	333	P	P	03 36 50.5	-1.9
	1.0nm,0.7s,baz=64,slow=9.4,SNR=3.3						
NVAR	Mina Array Bea	73.48	54	P	P	03 37 19.9	+0.5
	0.3nm,0.5s,baz=297,slow=5.0,SNR=1.9						
NB2	NORSAR Subarra	74.37	338	P	P	03 37 30.5	+6.6
	comp=Z,0.9nm,0.7s,baz=40,slow=5.9						

*ISCJB **02** 03:27:42.7±1.0, 34°.09N±0°.04×25°.32E±0°.04, h15^{km}±6^{km}, mb3.7/7, Error ellipse: s-maj=7.6km s-min=4.6km az=26.4*

*IDC **02** 03:27:42.9±1.0, 34°.26N×25°.21E, h0^{km}, mb3.8/7, mb1 3.8/13, mb1mx3.6/52, mbtmp3.7/13, ML3.6/6, MS2.4/1, Ms1 2.4/1, ms1mx2.1/54, Error ellipse: s-maj=18.7km s-min=16.5km az=8.0*

*ATH **02** 03:27:43.1, 34°.18N×25°.26E, h19^{km}±1^{km}, ML3.2/4, Error ellipse: s-maj=3.1km s-min=1.4km az=2.0*

*THE **02** 03:27:43.8, 34°.24N×25°.32E, h0^{km}±1^{km}, ML3.3/4, Error ellipse: s-maj=2.8km s-min=0.8km az=168.0*

*CSEM **02** 03:27:43.8±0.5, 34°.22N×25°.23E, h2km, ML3.3, Error ellipse: s-maj=8.3km s-min=4.8km az=12.0*
*ISK **02** 03:27:52.7, 34°.68N×25°.99E, h5km, MD3.8*
ISC 02 03:27:42.7±1.6**, 34°.16N**±0°.05×**25°.29E**±0°.03**, h2**km±9km**, n53, σ0ˢ.99**/81**, mb4.1**/7**, Crete**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
SIVA	**Sivas**	**0.94**	**335**	P	**Pg**	**03 28 00.7**	**0.0**
SIVA				S	**Sb**	**03 28 14.2**	**-0.4**
SIVA	**Sivas**	**0.94**	**335**	P	**Pg**	**03 28 00.7**	**0.0**
SIVA				S	**Sg**	**03 28 12.8**	**-0.1**
SIVA	**Sivas**	**0.94**	**335**	P	**Pg**	**03 28 00.9**	**+0.2**
SIVA				S	**Sg**	**03 28 12.8**	**-0.1**
LAST	**Lasithi**	**1.01**	**9**	P	**Pg**	**03 28 01.8**	**-0.2**
LAST				S	**Sb**	**03 28 16.3**	**-0.4**
LAST	**Lasithi**	**1.01**	**9**	P	**Pg**	**03 28 01.8**	**-0.2**
LAST				S	**Sb**	**03 28 16.3**	**-0.4**
LAST	**Lasithi**	**1.01**	**9**	P	**Pg**	**03 28 01.4**	**-0.6**
NPS	**Neapolis**	**1.13**	**14**	P	**Pg**	**03 28 04.0**	**-0.3**
NPS				S	**Sg**	**03 28 19.4**	**+0.5**
NPS	**Neapolis**	**1.13**	**14**	P	**Pg**	**03 28 04.0**	**-0.3**
NPS				S	**Sg**	**03 28 19.4**	**+0.5**
NPS	**Neapolis**	**1.13**	**14**	P	**Pg**	**03 28 03.6**	**-0.7**
NPS				S	**Sb**	**03 28 20.8**	**+0.7**
NPS				AML	AML	03 28 23.4	
	comp=N,1514µm,0.7s						
NPS				AML	AML	03 28 24.8	
	comp=E,1783µm,0.5s						
IDI	**Anoyia**	**1.17**	**344**	Pn	**Pg**	**03 28 04.8**	**-0.4**
	comp=E,8.2nm,0.3s,baz=157,slow=11,SNR=55						
IDI				LR	LR	03 28 05.1	
	comp=E,20nm,20.4s,baz=248,slow=21						
IDI				Sn	**Sg**	**03 28 19.9**	**-0.4**
	comp=E,100nm,0.3s,baz=240,slow=16,SNR=31						
IDI	**Anoyia**	**1.17**	**344**	P	**Pg**	**03 28 04.5**	**-0.6**
IDI				S	**Sg**	**03 28 20.4**	**+0.1**
IDI	**Anoyia**	**1.17**	**344**	P	**Pg**	**03 28 03.6**	**-1.5**
IDI				S	**Sg**	**03 28 19.9**	**-0.4**
GVD	**Gavdhos**	**1.20**	**304**	P	**Pg**	**03 28 05.3**	**-0.4**
GVD				S	**Sn**	**03 28 23.2**	**-0.2**
GVD	**Gavdhos**	**1.20**	**304**	P	**Pg**	**03 28 05.3**	**-0.4**
GVD				S	**Sn**	**03 28 23.4**	**0.0**
GVD	**Gavdhos**	**1.20**	**304**	P	**Pg**	**03 28 05.2**	**-0.4**
GVD				S	**Sn**	**03 28 23.4**	**0.0**
GVD				AML	AML	03 28 25.5	
	comp=E,4976µm,0.5s						
GVD				AML	AML	03 28 27.8	
	comp=N,4418µm,0.4s						
ZKR	**Zakros**	**1.22**	**39**	P	**Pg**	**03 28 05.3**	**-0.7**
ZKR				S	**Sb**	**03 28 22.6**	**-0.1**
ZKR	**Zakros**	**1.22**	**39**	P	**Pg**	**03 28 05.8**	**-0.2**
ZKR				S	**Sn**	**03 28 23.6**	**-0.3**
ZKR	**Zakros**	**1.22**	**39**	P	**Pg**	**03 28 05.8**	**-0.2**
ZKR				S	**Sn**	**03 28 23.6**	**-0.3**
ZKR				AML	AML	03 28 30.4	
	comp=E,1516µm,0.6s						
ZKR				AML	AML	03 28 31.8	
	comp=N,1711µm,0.8s						
VAM	**Vamos**	**1.53**	**324**	P	**Pn**	**03 28 10.9**	**-0.2**
VAM				S	**Sn**	**03 28 31.3**	**-0.3**
VAM	**Vamos**	**1.53**	**324**	P	**Pn**	**03 28 10.9**	**-0.2**
VAM				S	**Sn**	**03 28 31.0**	**-0.6**
IMMV	**Iera Moni Meta**	**1.68**	**321**	P	**Pn**	**03 28 12.8**	**-0.4**
IMMV				S	**Sn**	**03 28 35.2**	**-0.1**
IMMV	**Iera Moni Meta**	**1.68**	**321**	P	**Pn**	**03 28 13.3**	**+0.1**
IMMV				S	**Sn**	**03 28 35.2**	**-0.1**
IMMV	**Iera Moni Meta**	**1.68**	**321**	P	**Pn**	**03 28 13.3**	**+0.1**
IMMV				S	**Sb**	**03 28 36.1**	**0.0**
IMMV				AML	AML	03 28 42.9	
	comp=E,1653µm,0.5s						
IMMV				AML	AML	03 28 51.9	
	comp=N,1349µm,0.7s						
KARP	**Karpathos**	**2.07**	**48**	P	**Pb**	**03 28 21.0**	**0.0**
KARP	**Karpathos**	**2.07**	**48**	P	**Pb**	**03 28 21.0**	**0.0**
THR5	**Thira Island,**	**2.25**	**1**	*e*PN	**Pg**	**03 28 26.0**	**+0.2**
THR5	**Thira Island,**	**2.25**	**1**	*e*Pn	**Pg**	**03 28 26.0**	**+0.2**
APE	**Apeiranthos**	**2.91**	**4**	*e*PN	**Pb**	**03 28 35.0**	**-0.3**
APE				*e*SN	**Sn**	**03 29 05.5**	**-0.1**
APE	**Apeiranthos**	**2.91**	**4**	*e*Pn	**Pb**	**03 28 35.0**	**-0.3**
APE				*e*Sn	**Sn**	**03 29 05.5**	**-0.1**
YER	**Yerkesik**	**3.84**	**39**	*e*PN	**Pn**	**03 28 44.3**	**+1.5**
YER	**Yerkesik**	**3.84**	**39**	*e*Pn	**Pn**	**03 28 44.3**	**+1.5**
AKAS	**Kas**	**4.09**	**58**	*i* P	**Pn**	**03 28 47.6**	**+1.2**
AKAS				*i* S	**Sn**	**03 29 31.6**	**-3.4**
AKAS	**Kas**	**4.09**	**58**	P	**Pn**	**03 28 47.6**	**+1.2**
AKAS				S	**Sn**	**03 29 31.6**	**-3.4**
AYDB	**Zeytinkoy-Aydi**	**4.32**	**28**	*e*PN	**Pn**	**03 28 51.9**	**+2.3**
AYDB	**Zeytinkoy-Aydi**	**4.32**	**28**	*e*Pn	**Pn**	**03 28 51.9**	**+2.3**
ELL	**Elmali**	**4.57**	**54**	*e*PN	**Pn**	**03 28 54.4**	**+1.5**
ELL	**Elmali**	**4.57**	**54**	*e*Pn	**Pn**	**03 28 54.4**	**+1.5**
GOLH	**Golhisar**	**4.63**	**47**	*i* P	**Pn**	**03 28 54.7**	**+0.8**
GOLH				*i* S	Sn	03 29 28.7	-20
GOLH	**Golhisar**	**4.63**	**47**	P	**Pn**	**03 28 54.7**	**+0.8**
MMAI	**Mount Meron Ar**	**8.52**	**95**	Pn	**Pn**	**03 29 48.3**	**+1.2**
	comp=N,0.8nm,0.3s,baz=279,slow=12,SNR=7.1						
MMAI				Sn	**Sn**	**03 31 22.1**	**-1.7**
	comp=N,0.7nm,0.3s,baz=284,slow=21,SNR=3.2						
BRTR	**Keskin Array B**	**8.68**	**48**	Pn	**Pn**	**03 29 52.5**	**+3.1**
	comp=N,0.1nm,0.3s,baz=223,slow=12,SNR=7.9						
EIL	**Elat**	**9.35**	**116**	Pn	**Pn**	**03 29 58.7**	**+0.2**
	comp=N,0.7nm,0.3s,baz=316,slow=7.8,SNR=13						
EIL				Sn	**Sn**	**03 31 43.0**	**-1.3**
	comp=N,0.3nm,0.3s,baz=3.4,slow=17,SNR=2.3						
EIL				LR	LR	03 34 25.6	
	comp=N,24nm,19.9s,baz=233,slow=43						
ASF	**Jabal al Asfar**	**9.93**	**98**	Pn	**Pn**	**03 30 05.0**	**-1.6**
	comp=N,0.1nm,0.3s,baz=333,slow=6.8,SNR=3.5						
KBZ	**Khabaz**	**16.67**	**50**	Pn	**P**	**03 31 39.9**	**+0.1**
	comp=N,0.1nm,0.3s,baz=260,slow=3.8,SNR=8.4						
AKASG	**Malin Array Be**	**16.77**	**9**	Pn	**Pn**	**03 31 38.8**	**+0.1**
	comp=N,0.3nm,0.3s,baz=197,slow=10,SNR=3.8						
GERES	**GERESS Array B**	**17.01**	**333**	Pn	**P**	**03 31 43.1**	**-0.7**
	comp=N,0.2nm,0.3s,baz=144,slow=12,SNR=7.9						
ESDC	**Sonseca Array**	**23.97**	**292**	P	**P**	**03 32 57.5**	**-1.0**
	comp=N,0.2nm,0.4s,baz=84,slow=10,SNR=5.5						
TORD	**Torodi Ar. Bea**	**29.94**	**231**	P	**P**	**03 33 53.1**	**+0.7**
	comp=N,1.2nm,0.6s,baz=36,slow=8.9,SNR=21						
MKAR	**Makanchi Array**	**44.24**	**56**	P	**P**	**03 35 54.1**	**+0.7**
	comp=N,1.9nm,0.6s,baz=278,slow=6.9,SNR=17						
ZALV	**Zalesovo Beam**	**45.62**	**45**	P	**P**	**03 36 04.1**	**-0.2**
	comp=N,1.2nm,0.5s,baz=272,slow=8.8,SNR=6.5						
SONM	**Songino Array**	**60.04**	**50**	P	**P**	**03 37 51.8**	**+0.7**
	comp=N,0.7nm,0.5s,baz=286,slow=7.6,SNR=11						
SCHQ	**Schefferville**	**64.01**	**320**	P	**P**	**03 38 17.6**	**0.0**
	comp=N,0.7nm,0.4s,baz=66,slow=5.0,SNR=5.1						
YKA	**Yellowknife Ar**	**78.43**	**342**	P	**P**	**03 39 44.4**	**-0.2**
	comp=N,0.1nm,0.4s,baz=34,slow=5.3,SNR=3.1						

IDC 02 03:30:36.9±3.9**, 38°.12S**×**93°.19W, h0**km**, mb3.8**/4**, mb1 4.2**/5**, mb1mx3.9**/22**, mbtmp3.8**/5**, MS3.9**/7**, Ms1 3.8**/7**, ms1mx3.6**/20**, Error ellipse: s-maj=106.9km s-min=36.9km az=20.0, West Chile Rise**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
PLCA	**Paso Flores**	**17.68**	**106**	P	Pn	03 34 44.1	-0.5
	baz=270,slow=11,SNR=2.8						
USHA	**Ushuaia**	**23.68**	**143**	LR	LR	03 43 08.6	
	comp=Z,2µm,18.6s,baz=33,slow=32						
LPAZ	**La Paz**	**30.96**	**52**	P	P	03 36 56.9	+0.4
	2.2nm,0.9s,baz=204,slow=6.7,SNR=5.5						
LPAZ				LR	LR	03 46 36.8	
	comp=Z,162nm,21.9s,baz=214,slow=31						
CPUP	**Villa Florida**	**32.34**	**79**	LR	LR	03 47 54.9	
	comp=Z,85nm,21.5s,baz=248,slow=32						
BDFB	**Brasilia**	**45.54**	**73**	LR	LR	03 56 50.4	
	comp=Z,82nm,21.5s,baz=228,slow=35						
ROSC	**El Rosal**	**46.20**	**27**	LR	LR	03 56 42.7	
	comp=Z,90nm,18.3s,baz=98,slow=34						
VNDA	**Vanda**	**56.24**	**195**	LR	LR	04 00 22.9	
	comp=Z,111nm,18.2s,baz=311,slow=32						
TXAR	**Lajitas Array**	**67.82**	**350**	P	P	03 41 35.9	-0.9
	0.4nm,0.8s,baz=167,slow=8.3,SNR=3.6						
MAW	**Mawson**	**73.05**	**171**	LR	LR	04 13 21.6	
	comp=Z,48nm,18.1s,baz=58,slow=35						
NVAR	**Mina Array Bea**	**79.61**	**340**	P	P	03 42 46.9	+0.9
	0.8nm,0.7s,baz=165,slow=5.8,SNR=4.1						
PDAR	**Pinedale Array**	**81.88**	**348**	P	P	03 42 58.2	+0.2
	0.5nm,0.7s,baz=150,slow=7.3,SNR=6.6						

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*IDC **02** 03:34:27.4±0.8, 37°.22N×144°.42E, h0km, mb3.8/11, mb1 4.0/16, mb1mx3.9/38, mbtmp3.8/16, ML3.3/5, MS2.7/2, Ms1 2.7/2, ms1mx2.4/43, Error ellipse: s-maj=19.1km s-min=15.7km az=129.0*
*ISCJB **02** 03:34:31.2±0.6, 37°.36N±0°.05×144°.12E±0°.05, h33km, mb3.9/14, Error ellipse: s-maj=7.9km s-min=5.3km az=156.9*
*JMA **02** 03:34:32.9±0.4, 37°.47N×143°.99E, h41km, M4.0*
*NEIC **02** 03:34:32.8±0.7, 37°.30N×144°.31E, h35km, mb4.4/3, Error ellipse: s-maj=13.4km s-min=10.2km az=148.0*
ISC 02 03:34:33.0±0.8**, 37°.37N**±0°.06×**144°.22E**±0°.07**, h35**km**, n37, σ1ˢ.88**/43**, mb3.9**/14**, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**2.51**	**296**	P	**Pn**	**03 35 09.8**	**-1.5**
JIO				*e*S	**Sn**	**03 35 37.0**	**-3.7**
OFUJ	**Ofunato**	**2.63**	**311**	P	**Pn**	**03 35 10.9**	**-2.1**
ONAJ	**Iwakimizuishiy**	**2.74**	**265**	P	**Pn**	**03 35 13.7**	**-0.8**
ONAJ				*e*S	**Sn**	**03 35 42.7**	**-3.8**
JMM	**Marumori**	**2.76**	**281**	P	**Pn**	**03 35 13.4**	**-1.4**
JMK	**Ichinoseki**	**2.84**	**305**	P	**Pn**	**03 35 14.3**	**-1.5**
JOU	**Okura**	**2.98**	**291**	P	**Pn**	**03 35 17.0**	**-0.8**
JHO	**Hitachi**	**3.02**	**257**	P	**Pn**	**03 35 17.2**	**-1.1**
JHO				*e*S	**Sn**	**03 35 50.6**	**-2.6**
JFT	**Otama**	**3.09**	**274**	P	**Pn**	**03 35 19.2**	**-0.1**
JOM	**Ohasama**	**3.11**	**313**	P	**Pn**	**03 35 18.0**	**-1.6**
JOM				*e*S	**Sn**	**03 35 52.5**	**-3.0**
JYK	**Kaneyama**	**3.41**	**298**	P	**Pn**	**03 35 23.1**	**-0.6**
JAG	**Ashikaga**	**3.93**	**258**	P	**Pn**	**03 35 30.3**	**-0.6**
JAG				S	**Sn**	**03 36 13.9**	**-1.9**
ERM	**Erimo**	**4.71**	**350**	*e*Pn	**Pn**	**03 35 40.3**	**-1.2**
ERM				*e*Sn	**Sn**	**03 36 31.6**	**-3.2**
MJAR	**Matsushiro Arr**	**4.88**	**262**	Pn	**Pn**	**03 35 44.6**	**+0.6**
	5.5nm,0.3s,baz=90,slow=15,SNR=41						
MJAR				Sn	**Sn**	**03 36 42.8**	**+3.5**
	2.3nm,0.3s,baz=98,slow=25,SNR=8.6						
MJAR				LR	LR	03 38 13.5	
	comp=Z,64nm,18.7s,baz=180,slow=45						
MAJO	**Matsushiro**	**4.88**	**262**	*e*Pn	**Pn**	**03 35 44.1**	**+0.2**
MAT	**Matsushiro**	**4.88**	**262**	P	**Pn**	**03 35 44.3**	**+0.3**
MAT				S	**Sn**	**03 36 38.0**	**-1.3**
JHJ	**Hachijo jima 2**	**5.58**	**222**	Pn	**Pn**	**03 35 51.2**	**-2.3**
	10nm,0.3s,baz=78,slow=22,SNR=5.3						
JHJ				Sn	**Sn**	**03 36 52.1**	**-4.4**
	25nm,0.3s,baz=62,slow=23,SNR=5.6						
USRK	**Ussuriysk Ar.**	**11.50**	**310**	Pn	**Pn**	**03 37 14.2**	**-0.4**
	0.4nm,0.3s,baz=115,slow=15,SNR=5.0						
KSRS	**Korea Array**	**12.96**	**275**	Pn	**Pn**	**03 37 34.9**	**+0.3**
	0.1nm,0.3s,baz=92,slow=14,SNR=2.6						
KSRS				LR	LR	03 42 55.7	
	comp=Z,45nm,18.5s,baz=118,slow=39						
KSAR	**Wonju Array Be**	**12.99**	**275**	Pn	**Pn**	**03 37 34.9**	**-0.1**
KLR	**Kul'dur**	**14.90**	**327**	Pn	**Pn**	**03 38 00.9**	**-0.1**
	0.1nm,0.3s,baz=169,slow=19,SNR=2.5						
SEY	**Seymchan**	**26.08**	**8**	P	**P**	**03 40 03.8**	**+0.9**
	1.3nm,0.7s,baz=189,slow=6.5,SNR=5.6						
H11N2	**WAKE ISLAND Hy**	**26.46**	**125**	T	T	04 07 31.7	
	baz=317,slow=75,SNR=39						
H11N1	**WAKE ISLAND Hy**	**26.46**	**125**	T	T	04 07 22.1	
	baz=317,slow=75,SNR=20						
H11N3	**WAKE ISLAND Hy**	**26.47**	**125**	T	T	04 07 29.5	
	baz=317,slow=75,SNR=24						
SONM	**Songino Array**	**29.47**	**303**	P	**P**	**03 40 35.4**	**+1.8**
	0.6nm,0.6s,baz=100,slow=8.4,SNR=3.5						
ZALV	**Zalesovo Beam**	**43.34**	**312**	P	**P**	**03 42 33.3**	**+1.8**
	0.3nm,0.4s,baz=91,slow=8.0,SNR=3.0						
MKAR	**Makanchi Array**	**45.83**	**302**	P	**P**	**03 42 51.8**	**+0.3**
	0.8nm,0.7s,baz=85,slow=9.7,SNR=8.7						
KURK	**Kurchatov**	**47.48**	**308**	*e*P	**P**	**03 43 05.6**	**+1.4**
	5.5nm,0.8s						
ILAR	**Eielson Array**	**48.01**	**33**	P	**P**	**03 43 08.0**	**-0.2**
	1.4nm,0.8s,baz=266,slow=6.5,SNR=15						
BRVK	**Borovoye**	**52.05**	**313**	*e*P	**P**	**03 43 41.1**	**+2.1**
	2.0nm,0.8s						
INK	**Inuvik**	**53.06**	**27**	P	**P**	**03 43 46.5**	**+0.3**
	0.7nm,0.5s,baz=310,slow=7.2,SNR=11						
ARU	**Arti**	**57.58**	**319**	*e*P	**P**	**03 44 21.0**	**+2.1**
	1.8nm,0.5s						
WRA	**Warramunga Arr**	**57.76**	**191**	P	**P**	**03 44 19.0**	**-1.6**
	0.8nm,0.6s,baz=9.6,slow=7.0,SNR=13						
ASAR	**Alice Springs**	**61.48**	**191**	P	**P**	**03 44 45.4**	**-0.8**
	1.2nm,0.8s,baz=14,slow=7.4,SNR=11						
YKA	**Yellowknife Ar**	**62.38**	**31**	P	**P**	**03 44 51.9**	**+0.1**
	0.3nm,0.8s,baz=303,slow=6.8,SNR=4.3						
KBZ	**Khabaz**	**72.36**	**312**	P	**P**	**03 45 57.0**	**+1.8**
	1.3nm,0.8s,baz=309,slow=0.5,SNR=4.0						
NVAR	**Mina Array Bea**	**72.98**	**55**	P	**P**	**03 45 58.0**	**-1.3**
	0.9nm,0.6s,baz=283,slow=8.8,SNR=4.7						

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*NIED **02** 03:48:00, 40°.30N×140°.40E, h11km, Mw3.6 Best double couple: M₀3.24000×10[14] NP1:φₛ31.00000°, δ77.00000°, λ-177.00000°. NP2:φₛ300.00000°, δ87.00000°, λ-13.00000°.*
*IDC **02** 03:48:41.8±1.0, 40°.28N×140°.24E, h0km, mb3.4/7, mb1 3.6/9, mb1mx3.3/67, mbtmp3.4/9, ML2.8/2, MS2.6/2, Ms1 2.6/2, ms1mx2.3/24, Error ellipse: s-maj=26.0km s-min=18.8km az=94.0*
*ISCJB **02** 03:48:42.8±0.7, 40°.27N±0°.04×140°.39E±0°.05, h21km±8km, mb3.4/7, Error ellipse: s-maj=6.6km s-min=5.4km az=141.6*
*JMA **02** 03:48:42.8, 40°.26N×140°.37E, h12km±1km, M3.9 Broadband fault plane solution: P waves. NP1: φₛ320.00000°, δ74.00000°, λ18.00000°. NP2: φₛ224.00000°, δ73.00000°, λ163.00000°. Principal axes: T Plg24.0000°, Azm182.0000°; N Plg66.0000°, Azm360.0000°; P Plg1.0000°, Azm92.0000°;*
JMA Felt III J1.
ISC 02 03:48:43.1±1.0**, 40°.27N**±0°.04×**140°.41E**±0°.04**, h11**km±7km**, n18, σ1ˢ.28**/23**, mb3.5**/7**, 1C-4D, Eastern Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
JAH	**Hinai**	**0.19**	**116**	⇓P	**Pg**	**03 48 47.6**	**+0.3**
JAH				S	**Sg**	**03 48 50.8**	**+0.7**
JIW	**Iwasaki**	**0.44**	**316**	⇑P	**Pg**	**03 48 51.4**	**-0.4**
JIW				S	**Sg**	**03 48 57.3**	**-0.4**
JTM	**Tenmabayashi**	**0.72**	**44**	⇓P	**Pg**	**03 48 57.3**	**+0.3**
JKZ	**Kuzumaki**	**0.76**	**112**	⇓P	**Pg**	**03 48 57.5**	**-0.4**
JKZ				S	**Sg**	**03 49 07.5**	**-0.4**
JANG	**Nango**	**0.85**	**83**	⇓P	**Pg**	**03 48 59.2**	**-0.4**
JANG				*e*S	**Sg**	**03 49 10.6**	**-0.1**
JRG	**Rokugo**	**0.89**	**169**	*e*S	**Sg**	**03 49 11.8**	**-0.2**
MAT	**Matsushiro**	**4.11**	**206**	P	**Pn**	**03 49 46.3**	**+0.5**
MAT				S	**Sn**	**03 50 32.1**	**-1.8**
MJAR	**Matsushiro Arr**	**4.11**	**206**	Pn	**Pn**	**03 49 45.3**	**-0.5**
	1.1nm,0.3s,baz=9.5,slow=16,SNR=6.6						
MJAR				Sn	**Sn**	**03 50 34.0**	**+0.1**
	2.0nm,0.3s,baz=38,slow=26,SNR=6.9						
USRK	**Ussuriysk Ar.**	**7.38**	**305**	Pn	**Pn**	**03 50 30.2**	**-0.4**
	1.0nm,0.3s,baz=106,slow=14,SNR=14						
KSRS	**Korea Array**	**10.13**	**258**	Pn	Pn	03 51 11.6	+3.1
	0.5nm,0.3s,baz=66,slow=14,SNR=5.8						
KSRS				Sn	**Sn**	**03 53 06.2**	**+4.1**
	0.5nm,0.3s,baz=73,slow=24,SNR=6.2						
KSRS				LR	LR	03 54 47.5	
	comp=Z,26nm,18.2s,baz=40,slow=36						
JNU	**Nakatsue**	**10.46**	**230**	LR	LR	03 54 58.6	
	comp=Z,36nm,19.7s,baz=238,slow=36						
MKAR	**Makanchi Array**	**41.80**	**299**	P	**P**	**03 56 33.6**	**+1.0**
	0.1nm,0.4s,baz=81,slow=8.9,SNR=2.1						
KURBB	**Kurchatov Arra**	**43.44**	**305**	P	**P**	**03 56 44.4**	**-1.4**
	0.2nm,0.4s,baz=78,slow=8.2,SNR=3.4						
ILAR	**Eielson Array**	**47.22**	**34**	P	**P**	**03 57 16.5**	**+0.9**
	0.3nm,0.7s,baz=259,slow=6.4,SNR=3.7						
BVAR	**Borovoye Array**	**47.85**	**310**	P	**P**	**03 57 18.8**	**-1.9**
	0.4nm,0.6s,baz=62,slow=9.9,SNR=3.2						
INK	**Inuvik**	**51.88**	**28**	P	**P**	**03 57 52.0**	**+0.9**
	0.5nm,0.6s,baz=273,slow=6.1,SNR=3.0						
WRA	**Warramunga Arr**	**60.17**	**187**	P	**P**	**03 58 52.0**	**+1.2**
	0.3nm,0.7s,baz=4.2,slow=7.3,SNR=4.5						
ASAR	**Alice Springs**	**63.90**	**187**	P	**P**	**03 59 15.6**	**-0.2**
	0.4nm,0.8s,baz=5.0,slow=15,SNR=4.0						

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*ISCJB **02** 03:50:24.1±0.3, 52°.78N±0°.04×177°.19W±0°.07, h250km, mb3.6/22, Error ellipse: s-maj=6.3km s-min=5.4km az=159.8*
*NEIC **02** 03:50:24.6, 52°.23N×176°.99W, h269km, mb4.1/11, After AEIC.*
*IDC **02** 03:50:28.1±3.1, 52°.81N×177°.11W, h282km±28km, mb3.3/20, mb1 3.4/24, mb1mx3.2/73, mbtmp3.9/24, Error ellipse: s-maj=19.2km s-min=9.7km az=3.0*
ISC 02 03:50:24.6±0.6**, 52°.66N**±0°.10×**177°.14W**±0°.06**, h250**km**, n64, σ0ˢ.97**/68**, mb3.7**/22**, Andreanof Islands**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
KINC	**Kanaga Island**	**0.73**	**179**	P	**Pn**	**03 50 58.5**	**+0.1**
ADAG	**Mount Adagdak**	**0.76**	**154**	P	**Pn**	**03 50 58.9**	**+0.4**
KIRH	**Kanaga Island**	**0.77**	**178**	P	**Pn**	**03 50 58.7**	**+0.1**
KIKV	**Kanaga Island**	**0.79**	**181**	P	**Pn**	**03 50 58.7**	**+0.1**
GSTD	**Great Sitkin T**	**0.86**	**134**	P	**Pn**	**03 50 58.8**	**-0.2**
GSTD				S	**S**	**03 51 26.4**	**+0.3**
GSCK	**Great Sitkin C**	**0.89**	**137**	P	**Pn**	**03 50 59.1**	**0.0**
GSCK				S	**S**	**03 51 26.3**	**+0.1**
GSMY	**Great Sitkin M**	**0.91**	**132**	P	**Pn**	**03 50 59.0**	**-0.2**
GSMY				S	**S**	**03 51 26.6**	**+0.2**
ETKA	**Kagalaska Isla**	**0.92**	**150**	P	**Pn**	**03 50 59.1**	**-0.1**
TAFP	**Tanaga Falls P**	**0.92**	**214**	P	**Pn**	**03 50 59.5**	**+0.2**
TAPA	**Tanaga Point A**	**0.94**	**206**	P	**Pn**	**03 50 59.6**	**+0.1**
TAFL	**Tanaga Flats**	**1.02**	**207**	P	**Pn**	**03 50 59.9**	**+0.2**
GAEA	**Gareloi East**	**1.32**	**229**	P	**Pn**	**03 51 02.1**	**+0.4**
GAEA				S	**S**	**03 51 31.4**	**+0.6**
GALAA	**Gareloi Lava P**	**1.35**	**229**	P	**Pn**	**03 51 02.2**	**+0.4**
KOWE	**Korovin West**	**1.79**	**98**	P	**Pn**	**03 51 05.8**	**+0.6**
KOKL	**Mount Kliuchef**	**1.83**	**100**	P	**Pn**	**03 51 06.7**	**+1.0**
ATKA	**Atka Island**	**1.86**	**103**	P	**Pn**	**03 51 05.5**	**-0.3**
KOFP	**Korovin Flat P**	**1.90**	**101**	P	**Pn**	**03 51 07.0**	**+0.7**
NIKH	**Nikolski High**	**5.04**	**83**	P	**Pn**	**03 51 41.1**	**+0.3**
SMY	**Shemya**	**5.33**	**274**	P	**Pn**	**03 51 45.7**	**+1.4**
UNV	**Unalaska Valle**	**6.50**	**75**	P	**Pn**	**03 51 59.3**	**+0.5**
AKGG	**Akutan Green G**	**6.84**	**73**	P	**Pn**	**03 52 04.3**	**+1.2**
AKUT	**Akutan**	**6.96**	**73**	*e*Pn	**Pn**	**03 52 05.1**	**+0.5**
KDAK	**Kodiak Island**	**14.88**	**60**	P	Pn	03 53 57.6	+15
	3.0nm,0.3s,baz=278,slow=6.3,SNR=36						
KDAK				S	S	03 56 31.6	+4.4
	0.4nm,0.3s,baz=162,slow=20,SNR=9.2						
PETK	**Petropavlovsk-**	**15.17**	**282**	P	**P**	**03 53 48.4**	**+2.3**
	1.0nm,0.3s,baz=101,slow=13,SNR=16						
PPLA	**Purkeypile**	**16.68**	**42**	*e*P	**P**	**03 54 05.2**	**+2.6**
	3.3nm,0.6s						
SEW	**Seward**	**16.95**	**53**	*e*P	**P**	**03 54 05.6**	**+0.2**
BILL	**Bilibino**	**17.36**	**339**	*e*P	**P**	**03 54 10.8**	**+0.9**
	16nm,0.9s						
KTH	**Kantishna Hill**	**17.48**	**41**	*e*P	**P**	**03 54 12.6**	**+1.3**
	13nm,0.8s						
BPAW	**Bear Paw Mtn.**	**17.71**	**40**	*e*P	**P**	**03 54 15.1**	**+1.4**
	1.8nm,0.6s						
SML	**Sawmill**	**17.93**	**48**	*e*P	**P**	**03 54 17.1**	**+0.9**
SEY	**Seymchan**	**19.02**	**315**	P	**P**	**03 54 28.6**	**+0.7**
	0.4nm,0.3s,baz=126,slow=8.5,SNR=11						
MA2	**Magadan**	**19.03**	**304**	P	**P**	**03 54 29.8**	**+1.8**
	0.3nm,0.3s,baz=343,slow=19,SNR=2.7						
BMRM	**Bremner River**	**19.47**	**52**	*e*P	**P**	**03 54 34.8**	**+2.1**
	7.0nm,0.7s						
PAX	**Paxson**	**19.56**	**46**	*e*P	**P**	**03 54 33.4**	**-0.2**
	2.9nm,0.6s						
ILAR	**Eielson Array**	**19.60**	**40**	P	**P**	**03 54 32.4**	**-1.6**
	0.3nm,0.3s,baz=234,slow=7.4,SNR=17						
COLD	**Coldfoot**	**19.62**	**32**	*e*P	**P**	**03 54 36.8**	**+2.6**
	8.8nm,0.8s						
DOT	**Dot Lake**	**20.36**	**44**	*e*P	**P**	**03 54 41.6**	**-0.6**
	14nm,0.8s						
EGAK	**Eagle**	**21.91**	**42**	*e*P	**P**	**03 54 57.4**	**+0.1**
	7.1nm,0.6s						
DAWY	**Dawson**	**22.47**	**45**	*e*P	**P**	**03 55 02.9**	**+0.3**
	1.8nm,0.4s						
INK	**Inuvik**	**25.82**	**36**	P	**P**	**03 55 32.7**	**+0.1**
	1.5nm,0.5s,baz=259,slow=4.8,SNR=14						
INK	**Inuvik**	**25.82**	**36**	*e*P	**P**	**03 55 32.7**	**+0.1**
	2.6nm,0.8s						
YKA	**Yellowknife Ar**	**33.61**	**48**	P	**P**	**03 56 41.3**	**+0.2**
	1.9nm,0.5s,baz=282,slow=8.3,SNR=35						
YKA				PcP	**PcP**	**03 59 14.4**	**-0.4**
	0.3nm,0.3s,baz=285,slow=3.0,SNR=9.8						
RES	**Resolute Bay**	**38.15**	**25**	P	**P**	**03 57 19.3**	**0.0**
	0.6nm,0.6s,baz=318,slow=6.9,SNR=8.6						
NVAR	**Mina Array Bea**	**42.40**	**85**	P	**P**	**03 57 56.1**	**+1.2**
	0.6nm,0.6s,baz=297,slow=7.4,SNR=4.1						
PDAR	**Pinedale Array**	**44.96**	**74**	P	**P**	**03 58 14.8**	**-0.4**
	1.3nm,0.5s,baz=303,slow=3.7,SNR=19						
SONM	**Songino Array**	**46.99**	**296**	P	**P**	**03 58 30.3**	**-0.4**
	0.3nm,0.8s,baz=56,slow=5.4,SNR=2.3						
SPITS	**Spitsbergen Ar**	**49.16**	**356**	P	**P**	**03 58 46.5**	**-0.2**
	7.5nm,0.6s,baz=56,slow=8.1,SNR=25						
ARCES	**ARCESS Array B**	**56.99**	**351**	P	**P**	**03 59 43.0**	**-0.7**
	3.3nm,0.9s,baz=6.4,slow=6.2,SNR=4.9						
TXAR	**Lajitas Array**	**57.47**	**83**	P	**P**	**03 59 48.0**	**+0.3**
	0.7nm,0.7s,baz=308,slow=5.2,SNR=8.9						
SCHQ	**Schefferville**	**58.36**	**40**	P	**P**	**03 59 52.6**	**-0.8**
	2.7nm,1.0s,baz=339,slow=10,SNR=3.5						
KURBB	**Kurchatov Arra**	**58.98**	**314**	P	**P**	**03 59 57.2**	**-0.4**
	0.7nm,0.4s,baz=44,slow=6.4,SNR=12						
MKAR	**Makanchi Array**	**60.03**	**309**	P	**P**	**04 00 03.9**	**-1.1**
	0.2nm,0.4s,baz=45,slow=5.7,SNR=7.1						
BVAR	**Borovoye Array**	**60.56**	**320**	P	**P**	**04 00 08.3**	**-0.1**
	1.0nm,0.5s,baz=52,slow=7.0,SNR=10.0						
FINES	**FINESS Array B**	**64.75**	**348**	P	**P**	**04 00 35.6**	**-0.1**
	0.5nm,0.6s,baz=337,slow=6.8,SNR=3.4						
NOA	**NORSAR Array B**	**66.45**	**356**	P	**P**	**04 00 46.2**	**-0.5**
	0.9nm,0.9s,baz=6.6,slow=6.6,SNR=3.0						
AKTO	**Aktyubinsk**	**67.22**	**325**	P	**P**	**04 00 51.0**	**-0.6**
	0.6nm,0.5s,baz=56,slow=8.2,SNR=4.1						
HFS	**Hagfors**	**67.22**	**354**	P	**P**	**04 00 50.5**	**-1.0**
	1.8nm,0.8s,baz=318,slow=2.0,SNR=4.5						
AKASG	**Malin Array Be**	**74.63**	**343**	P	**P**	**04 01 34.9**	**-1.2**
	0.4nm,0.3s,baz=22,slow=6.5,SNR=2.9						
BRTR	**Keskin Array B**	**84.19**	**337**	P	**P**	**04 02 27.6**	**-0.2**
	0.8nm,0.6s,baz=27,slow=2.5,SNR=5.1						
ASAR	**Alice Springs**	**87.12**	**224**	P	**P**	**04 02 43.2**	**+1.1**
	1.0nm,0.6s,baz=20,slow=4.5,SNR=9.1						
TSUM	**Tsumeb**	**144.69**	**335**	PKP	**PKPdf**	**04 09 30.0**	**-1.5**
	1.6nm,0.6s,baz=0.0,slow=6.1,SNR=3.1						
LBTB	**Lobatse**	**147.48**	**319**	PKPbc	**PKPdf**	**04 09 38.0**	**+1.9**
	1.0nm,0.3s,baz=131,slow=4.1,SNR=4.6						
MAW	**Mawson**	**148.13**	**219**	PKPbc	**PKPbc**	**04 09 37.9**	**-1.3**
	3.7nm,0.6s,baz=39,slow=0.7,SNR=7.1						
BOSA	**Boshof**	**150.81**	**317**	PKPbc	**PKPbc**	**04 09 45.7**	**-1.5**
	1.2nm,0.5s,baz=38,slow=2.6,SNR=5.1						

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*ISCJB **02** 03:57:12.3±1.1, 24°.28S±0°.04×67°.2W±0°.1, h178km, mb3.4/1, Error ellipse: s-maj=16.4km s-min=5.9km az=175.1*
*SJA **02** 03:57:12.9±0.8, 24°.30S×66°.95W, h193km±17km, ML2.8, MW3.0*
*IDC **02** 03:57:18.9±2.1, 23°.77S×66°.88W, h248km±24km, mb3.2/1, mb1 3.2/5, mb1mx2.9/29, mbtmp3.7/5, Error ellipse: s-maj=29.7km s-min=19.5km az=86.0*
ISC 02 03:57:10.8±1.5**, 24°.28S**±0°.06×**67°.3W**±0°.2**, h178**km**, n12, σ2ˢ.06**/15**, 1D, Chile-Argentina border region**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
SLA	**San Lorenzo**	**1.66**	**106**	*e*P	**Pn**	**03 57 46.2**	**+1.9**
SLA				IAML		03 58 12.7	
	comp=Z,101nm,0.9s						
AZAP	**Zapla**	**2.01**	**89**	*e*P	**Pn**	**03 57 48.8**	**+0.8**
HJA	**Humahuaca**	**2.01**	**58**	*e*P	**Pn**	**03 57 49.8**	**+1.5**
HJA				*e*S	**Sn**	**03 58 18.0**	**+0.8**
HJA				IAML		03 58 20.3	
FSA	**Cafayete**	**2.16**	**148**	*e*P	**Pn**	**03 57 52.0**	**+2.3**
FSA				*e*S	**Sn**	**03 58 20.5**	**+0.5**
YJA	**Yavi**	**2.64**	**38**	*e*P	**Pn**	**03 57 58.2**	**+2.7**
YJA				*e*S	**Sn**	**03 58 31.1**	**+0.9**
YJA				IAML		03 58 32.4	
	comp=E,16nm,0.6s						
AHML	**Horco Molle**	**3.04**	**145**	⇓*e*P	**Pn**	**03 58 01.3**	**+1.4**
AHML				*e*P	**Pn**	**03 58 01.3**	**+1.4**
CYA	**Choya**	**4.35**	**163**	*e*S	**Sn**	**03 59 09.2**	**+1.5**
LPAZ	**La Paz**	**7.99**	**354**	P	**Pn**	**03 59 07.7**	**+3.0**
	comp=E,0.3nm,0.3s,baz=156,slow=11,SNR=8.5						
LPAZ				S	**Sn**	**04 00 33.5**	**-1.1**
	comp=E,0.1nm,0.3s,baz=43,slow=19,SNR=2.8						
CPUP	**Villa Florida**	**9.22**	**105**	P	Pn	03 59 26.3	+6.2
	comp=E,0.4nm,0.3s,baz=292,slow=11,SNR=6.8						
PLCA	**Paso Flores**	**16.64**	**189**	P	Pn	04 01 02.3	+8.5
	comp=E,0.2nm,0.3s,baz=20,slow=10.0,SNR=4.7						
BDFB	**Brasilia**	**20.01**	**68**	P	**P**	**04 01 27.0**	**-3.1**
	comp=E,0.2nm,0.3s,baz=230,slow=9.4,SNR=4.1						
TORD	**Torodi Ar. Bea**	**76.89**	**69**	P	**P**	**04 08 41.8**	**-2.0**
	comp=E,0.3nm,0.3s,baz=252,slow=4.9,SNR=15						

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*ISCJB **02** 04:03:12.8±0.4, 23°.81N±0°.03×122°.07E±0°.02, h27km±3km,*

Error ellipse: s-maj=4.7km s-min=2.5km az=159.8
JMA ***02*** *04:03:12.5±0.1,23.80N×122.04E,h22km±4km,M2.6*
TAP ***02*** *04:03:13.7,23.83N×122.03E,h33km,ML3.0,C*
ISC 02 04:03:12.9±1.0,23.81N±0.03×122.04E±0.03,h29km±11km, n41,σ0.46/70,8C,Taiwan region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
HWA	**Hwalien**	**0.43**	**293**	*e*P	**Pn**	**04 03 22.6**	**-0.5**
	baz=285						
TEGC	**Jichi Village**	**0.46**	**258**	*e*P	**Pn**	**04 03 24.0**	**+0.4**
	baz=255						
TWD	**Chiawan**	**0.48**	**304**	⇑*i*P	**Pb**	**04 03 23.3**	**+0.2**
	baz=295						
TWD				*i* S	**Sb**	**04 03 30.2**	**+0.2**
	baz=295						
ESF	**Shoufeng Towns**	**0.49**	**278**	*e*P	**Pn**	**04 03 23.9**	**0.0**
	baz=278						
ESL	**Shilin**	**0.55**	**271**	*i* P	**Pb**	**04 03 24.1**	**-0.1**
	baz=263						
ESL				*e*S	**Sb**	**04 03 32.0**	**+0.1**
	baz=263						
ENA	**Nanau**	**0.67**	**337**	⇑*i*P	**Pb**	**04 03 26.2**	**0.0**
	baz=330						
ENA				*e*S	**Sb**	**04 03 35.4**	**+0.1**
	baz=330						
EHY	**Hungye**	**0.72**	**245**	*e*P	**Pb**	**04 03 26.4**	**-0.6**
	baz=258						
EHY				*e*S	**Sb**	**04 03 36.4**	**-0.1**
	baz=258						
WHF	**Hehuan Shan**	**0.78**	**296**	⇑P	**Pb**	**04 03 27.9**	**-0.4**
	baz=285						
WHF				*e*S	**Sb**	**04 03 38.3**	**-0.4**
	baz=285						
TWF1	**Yuli**	**0.81**	**236**	⇑P	**Pb**	**04 03 28.6**	**0.0**
	baz=226						
TWF1				*e*S	**Sb**	**04 03 39.2**	**-0.1**
	baz=226						
TWC	**Suao**	**0.82**	**348**	*e*P	**Pb**	**04 03 28.7**	**+0.1**
	baz=359						
TWC				S	**Sn**	**04 03 39.5**	**0.0**
	baz=359						
WDT	**Danda**	**0.83**	**267**	⇑*i*P	**Pb**	**04 03 28.9**	**0.0**
	baz=265						
WDT				S	**Sb**	**04 03 39.5**	**-0.5**
	baz=265						
NNS	**Nan Shan**	**0.87**	**316**	*e*P	**Pb**	**04 03 29.4**	**-0.2**
	baz=315						
NNS				*e*S	**Sn**	**04 03 41.1**	**-0.1**
	baz=315						
TWT	**Tachien**	**0.90**	**300**	⇑*i*P	**Pb**	**04 03 30.3**	**+0.1**
	baz=298						
TWT				*e*S	**Sn**	**04 03 42.4**	**+0.5**
	baz=298						
TWE	**Neicheng**	**0.97**	**340**	*e*P	**Pn**	**04 03 30.8**	**+0.2**
	baz=340						
TWE				*e*S	**Sb**	**04 03 43.5**	**-0.1**
	baz=340						
SMLT	**Sun Moon Lake**	**1.04**	**274**	⇑*i*P	**Pb**	**04 03 32.3**	**-0.1**
	baz=273						
SMLT				S	**Sb**	**04 03 45.5**	**-0.3**
	baz=273						
YUS	**Yu-Shan**	**1.04**	**253**	*e*P	**Pb**	**04 03 32.6**	**-0.1**
	baz=251						
YUS				*e*S	**Sn**	**04 03 45.6**	**-0.2**
	baz=251						
JYNG	**Yonagunijimaku**	**1.05**	**52**	P	**Pn**	**04 03 32.0**	**+0.4**
JYNG				*e*S	**Sn**	**04 03 45.3**	**0.0**
NSK	**Sanguang**	**1.06**	**325**	*e*P	**Pn**	**04 03 32.3**	**+0.4**
	baz=312						
NSK				*e*S	**Sn**	**04 03 45.4**	**-0.3**
	baz=312						
TYC	**Yuchr**	**1.08**	**275**	*e*P	**Pn**	**04 03 32.4**	**+0.3**
	baz=274						
TYC				*e*S	**Sb**	**04 03 46.5**	**-0.3**
	baz=274						
YOJ	**Yonaguni jima**	**1.10**	**54**	P	**Pn**	**04 03 32.8**	**+0.4**
YOJ				S	**Sn**	**04 03 46.6**	**0.0**
YOJ	**Yonaguni jima**	**1.10**	**54**	P	**Pn**	**04 03 32.8**	**+0.4**
	baz=54						
ELDTW	**Lidau**	**1.12**	**237**	*e*P	**Pn**	**04 03 32.6**	**-0.1**
	baz=235						
ALS	**Alishan**	**1.17**	**256**	⇑P	**Pb**	**04 03 34.6**	**0.0**
	baz=254						
ALS				*e*S	**Sb**	**04 03 49.2**	**-0.3**
	baz=254						
NSTT	**Nanjuang**	**1.25**	**311**	*e*P	**Pb**	**04 03 35.8**	**-0.1**
	baz=310						
NSTT				*e*S	**Sb**	**04 03 50.9**	**-0.7**
	baz=310						
CHN5	**Tsauling**	**1.26**	**261**	*e*P	**Pb**	**04 03 36.3**	**+0.2**
	baz=259						
CHN5				*e*S	**Sb**	**04 03 52.2**	**+0.2**
	baz=259						
TWQ1	**Liyutan**	**1.27**	**295**	*e*P	**Pb**	**04 03 36.4**	**+0.1**
	baz=294						
TWQ1				*e*S	**Sb**	**04 03 52.7**	**+0.4**
	baz=294						
NWF	**Wu-fen Shan**	**1.28**	**350**	*e*P	**Pn**	**04 03 34.4**	**-0.5**
	baz=350						
TCU	**Taichung**	**1.29**	**285**	*e*P	**Pb**	**04 03 37.0**	**+0.5**
	baz=284						
TWG	**Pinlang**	**1.32**	**222**	*e*P	**Pn**	**04 03 35.7**	**+0.2**
	baz=231						
STYT	**Tauyuan**	**1.34**	**242**	*e*P	**Pb**	**04 03 36.8**	**-0.7**
	baz=231						
STYT				*e*S	**Sn**	**04 03 53.1**	**+0.6**
	baz=231						
CHN4	**Tsaushan**	**1.40**	**251**	*e*P	**Pb**	**04 03 38.3**	**-0.2**
	baz=250						
WTP	**Ta-pu**	**1.42**	**247**	*e*P	**Pb**	**04 03 38.0**	**-0.8**
	baz=236						
CHN1	**Nanshi**	**1.52**	**246**	*e*P	**Pb**	**04 03 39.6**	**-0.8**
	baz=245						
CHN1				*e*S	**Sb**	**04 04 00.1**	**+0.8**
	baz=245						
SGST	**Jiashian**	**1.52**	**242**	*e*P	**Pb**	**04 03 40.1**	**-0.3**
	baz=232						
TWK	**Hsinying**	**1.52**	**250**	*e*P	**Pn**	**04 03 39.1**	**+1.0**
	baz=248						
IRIF	**Iriomote-Funau**	**1.64**	**71**	P	**Pn**	**04 03 40.3**	**+0.6**
IRIF				*e*S	**Sn**	**04 04 00.2**	**+0.4**
HATJ	**Hateruma jima**	**1.64**	**81**	P	**Pn**	**04 03 39.9**	**+0.2**
HATJ				*e*S	**Sn**	**04 04 00.2**	**+0.4**
JKRS	**Kuro-shima**	**1.85**	**76**	P	**Pn**	**04 03 43.7**	**+1.0**
JKRS				*e*S	**Sn**	**04 04 06.0**	**+0.8**
JIJ	**Ishigaki jima**	**2.00**	**74**	P	**Pn**	**04 03 44.6**	**-0.2**
JIJ				*e*S	**Sn**	**04 04 07.8**	**-1.1**
JISG	**Ishigakijimahi**	**2.22**	**69**	P	**Pn**	**04 03 47.2**	**-0.5**
JISG				*e*S	**Sn**	**04 04 12.7**	**-1.5**
JTJ	**Tarama**	**2.57**	**71**	P	**Pn**	**04 03 52.9**	**+0.3**
JTJ				*e*S	**Sn**	**04 04 22.9**	**0.0**

NIED ***02*** *04:08:00,38.80N×142.10E,h44km,Mw5.2 Best double couple: M0 6.76000×10^16 NP1:φs13.00000°,δ42.00000°, λ-103.00000°. NP2:φs210.00000°,δ49.00000°, λ-79.00000°.*
MOS ***02*** *04:08:06.4±0.8,38.93N×141.97E,h35km,mb5.3/103, MS4.8/41,Error ellipse: s-maj=5.8km s-min=3.8km az=97.4*
NEIC ***02*** *04:08:06.8±1.1,38.74N×141.92E,h32km±7km,mb5.2/255, Error ellipse: s-maj=3.1km s-min=2.0km az=134.0*
NEIC Recorded [4 JMA] in Iwate and Miyagi.
GCMT ***02*** *04:08:06.8±0.2,38.87N×142.10E,h42km,MW5.2/92, Moment Tensor Solution. s81,c130; s92,c147; Duration: 0 Moment tensor: Scale 10^17Nm; Mrr=0.73±.02; Mθθ0.05±.01; Mφφ0.67±.01; Mrθ-0.01±.01; Mrφ0.17±.01; Mθφ-0.01±.01; Best double couple: M0.72300×10^17 NP1:φs14.00000°,δ46.00000°,λ-90.00000°. NP2: φs194.00000°,δ44.00000°,λ-90.00000°. Principal axes: T 0.7180, Plg1.0000°, Azm104.0000°; N 0.0110, Plg0.0000°, Azm194.0000°; P -0.7280, Plg89.0000°, Azm308.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
ISCJB ***02*** *04:08:07.2±0.3,38.79N±0.02×141.98E±0.02,h47km±3km, mb5.1/367,MS4.7/138 Error ellipse: s-maj=3.3km s-min=2.2km az=153.7*
BJI ***02*** *04:08:07.2,38.70N×141.98E,h59km,mb5.0/85,mB5.1/49, Ms4.8/85,Ms7 4.7/80*
JMA ***02*** *04:08:07.3±0.1,38.77N×142.10E,h42km±2km,M5.2*
JMA Felt IV J1.

IDC ***02*** *04:08:09.2±1.9,38.80N×142.00E,h53km±16km,mb4.7/28, mb1 5.0/34,mb1mx4.9/37,mbtmp5.0/34,ML4.5/6,MS4.5/31, Ms1 4.5/31,ms1mx4.4/38,Error ellipse: s-maj=12.6km s-min=9.9km az=92.0*
ISC 02 04:08:07.4±0.2,38.80N±0.03×142.04E±0.03,h39km±2km, h39km:pP-P,n1235,σ1.14/1258,mb5.2/380,MS4.7/142, 34C-56D,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**0.64**	**237**	⇑P	**Pn**	**04 08 20.1**	**+0.1**
JIO				S	**Sn**	**04 08 28.7**	**-0.3**
JMK	**Ichinoseki**	**0.66**	**283**	⇑P	**Pn**	**04 08 21.0**	**+0.8**
JMK				S	**Sn**	**04 08 30.5**	**+1.2**
JOM	**Ohasama**	**0.88**	**319**	⇑P	**Pn**	**04 08 24.4**	**+1.1**
JOM				S	**Sn**	**04 08 36.4**	**+1.4**
JOU	**Okura**	**1.16**	**248**	⇑P	**Pn**	**04 08 27.7**	**+0.6**
JRG	**Rokugo**	**1.24**	**299**	⇑P	**Pn**	**04 08 29.4**	**+1.2**
JRG				*e*S	**Sn**	**04 08 46.7**	**+3.0**
JYK	**Kaneyama**	**1.31**	**275**	⇑P	**Pn**	**04 08 30.3**	**+1.1**
JMM	**Marumori**	**1.35**	**227**	⇑P	**Pn**	**04 08 29.7**	**0.0**
JMM				S	**Sn**	**04 08 46.2**	**-0.2**
ERM	**Erimo**	**3.32**	**15**	*de*P	**Pn**	**04 08 57.5**	**+0.8**
ERM				pmax	pmax		
	comp=Z,195nm,1.0s						
ERM	**Erimo**	**3.32**	**15**	*e*Pn	**Pn**	**04 08 57.6**	**+0.8**
ERM				*e*Sn	**Sn**	**04 09 36.2**	**+1.4**
MJAR	**Matsushiro Arr**	**3.79**	**235**	P	**Pn**	**04 09 05.4**	**+2.2**
	comp=Z,132nm,0.3s,baz=38,slow=13,SNR=415						
MJAR				S	**Sn**	**04 09 49.8**	**+3.3**
	comp=Z,56nm,0.3s,baz=85,slow=15,SNR=4.6						
MJAR				LR	LR	04 10 51.2	
	comp=Z,10μm,18.3s,baz=55,slow=43						
MAJO	**Matsushiro**	**3.79**	**235**	*c i*P	**Pn**	**04 09 05.2**	**+2.0**
MAJO	**Matsushiro**	**3.79**	**235**	*e*Pn	**Pn**	**04 09 05.4**	**+2.2**
MAT	**Matsushiro**	**3.79**	**235**	P	**Pn**	**04 09 05.2**	**+2.0**
MAT				S	Sn	04 09 53.0	+6.5
INU	**Inuyama**	**5.29**	**231**	*e*Pn	**Pn**	**04 09 26.4**	**+2.6**
JHJ2	**Mitsune**	**5.96**	**198**	*e*Pn	**Pn**	**04 09 33.0**	**0.0**
JHJ	**Hachijo jima 2**	**5.96**	**199**	P	**Pn**	**04 09 33.1**	**+0.1**
	comp=Z,193nm,0.3s,baz=258,slow=23,SNR=16						
JHJ				S	**Sn**	**04 10 37.5**	**-2.6**
	comp=Z,793nm,0.3s,baz=269,slow=23,SNR=8.2						
JHJ				LR	LR	04 12 17.7	
	comp=Z,2μm,21.9s,baz=64,slow=42						
YUK	**Yuzh-Kuril'sk**	**5.96**	**28**	*e*P	**Pn**	**04 09 32.0**	**-1.0**
YUK				*e*S	**Sn**	**04 10 35.6**	**-4.4**
YUK				pmax	pmax		
	comp=E,284nm,0.4s						
YUK				pmax	pmax		
	comp=Z,673nm,0.4s						
YUK				pmax	pmax		
	comp=N,445nm,0.3s						
YUK				MLR	MLR		
	comp=Z,3μm,12.0s						
YUK				MLR	MLR		
	comp=N,3μm,17.0s						
YUK				MLR	MLR		
	comp=E,2μm,20.0s						
SHO	**Shikotan**	**6.21**	**34**	*e*P	**Pn**	**04 09 34.3**	**-2.1**
SHO				*e*S	Sn	04 10 39.6	-6.6
SHO				pmax	pmax		
	comp=Z,353nm,0.6s						
SHO				pmax	pmax		
	comp=E,235nm,0.5s						
SHO				pmax	pmax		
	comp=N,119nm,0.4s						
KUR	**Kuril'sk**	**7.75**	**32**	⇑*i*P	**Pn**	**04 09 56.9**	**-0.6**
KUR				*i* S	**Sn**	**04 11 19.3**	**-4.6**
KUR				pmax	pmax		
	comp=Z,168nm,0.9s						
KUR				pmax	pmax		
	comp=Z,807nm,3.2s						
KUR				smax	smax		
	comp=N,337nm,0.7s						
KUR				smax	smax		
	comp=E,293nm,0.5s						
KUR				smax	smax		
	comp=N,951nm,3.5s						
YSS	**Yuzh-Sakhalins**	**8.16**	**3**	⇑*e*P	**Pn**	**04 10 04.5**	**+1.3**
YSS				*e*S	**Sn**	**04 11 34.4**	**+0.3**
YSS				pmax	pmax		
	comp=Z,130nm,0.9s						
YSS				MLR	MLR		
	comp=Z,2μm,15.0s						
YSS				MLR	MLR		
	comp=N,2μm,14.0s						
YSS				MLR	MLR		
	comp=E,2μm,16.0s						
YSS	**Yuzh-Sakhalins**	**8.16**	**3**	*e*Pn	**Pn**	**04 10 04.5**	**+1.3**
USRK	**Ussuriysk Ar.**	**9.27**	**309**	P	**Pn**	**04 10 20.3**	**+2.0**
	comp=E,6.5nm,0.3s,baz=116,slow=16,SNR=80						
USRK				LR	LR	04 13 53.4	
	comp=E,4μm,18.5s,baz=123,slow=37						
JNU	**Nakatsue**	**10.67**	**241**	P	**Pn**	**04 10 40.1**	**+2.4**
	comp=E,4.4nm,0.3s,baz=50,slow=3.6,SNR=47						
JNU				LR	LR	04 15 11.7	
	comp=E,4μm,19.0s,baz=42,slow=40						
HABR	**Khabarovsk**	**10.90**	**335**	*e*P	**Pn**	**04 10 38.7**	**-2.0**
HABR				*e*S	**Sn**	**04 12 40.7**	**-0.6**
HABR				pmax	pmax		
	comp=Z,85nm,2.7s						
HABR				pmax	pmax		
	comp=Z,75nm,2.3s						
HABR				pmax	pmax		
	comp=E,265nm,2.5s						
HABR				MLR	MLR		
	comp=Z,2μm,13.0s						
MDJ	**Mudanjiang**	**10.96**	**306**	P	Pn	04 10 46.9	+5.4
MDJ				S	**Sn**	**04 12 45.1**	**+2.3**
MDJ				PcP	**PcP**	**04 16 38.8**	**+0.4**
MDJ				ScP	**ScP**	**04 20 06.9**	**-0.8**
MDJ				PcS	**PcS**	**04 20 13.3**	**+1.3**
MDJ				ScS	**ScS**	**04 23 40.2**	**-2.6**
MDJ				pmax	pmax		
	comp=Z,80nm,1.1s						
MDJ				pmax	pmax		
	comp=Z,620nm,7.6s						
MDJ				LR	LR		
	comp=Z,1μm,19.3s						
MDJ				LR	LR		
	comp=Z,2μm,16.8s						
MDJ				LR	LR		
	comp=Z,4μm,17.3s						
MDJ	**Mudanjiang**	**10.96**	**306**	*e*Pn	**Pn**	**04 10 40.5**	**-1.1**
	comp=Z,136nm,1.3s						
KSRS	**Korea Array**	**11.20**	**267**	P	**Pn**	**04 10 47.8**	**+3.0**
	comp=Z,5.9nm,0.3s,baz=82,slow=14,SNR=103						
KSRS				LR	LR	04 14 51.2	
	comp=Z,3μm,19.3s,baz=72,slow=36						
KS01	**Wonju Array Si**	**11.22**	**268**	*e*Pn	**Pn**	**04 10 48.3**	**+3.2**
KS15	**Wonju Array Si**	**11.23**	**267**	*e*Pn	Pn	04 10 49.9	+4.6
KSAR	**Wonju Array Be**	**11.23**	**267**	P	**Pn**	**04 10 47.8**	**+2.5**
KSAR	**Wonju Array Be**	**11.23**	**267**	P	**Pn**	**04 10 47.8**	**+2.5**
CBIJ	**Chichi jima**	**11.68**	**179**	*e*Pn	**Pn**	**04 10 49.3**	**-2.1**
CBIJ				*e*Sn	Sn	04 12 51.6	-8.8
JCJ	**Chichijima**	**11.68**	**179**	P	**Pn**	**04 10 49.0**	**-2.4**
	comp=Z,32nm,0.3s,baz=293,slow=21,SNR=15						
JCJ				S	Sn	04 12 50.3	-10
	comp=Z,78nm,0.3s,baz=289,slow=21,SNR=9.1						
TYV	**Tymovskoe**	**12.07**	**2**	*e*P	**Pn**	**04 10 57.5**	**+0.9**
TYV				pmax	pmax		
	comp=Z,24nm,0.8s						
INCN	**Inchon**	**12.20**	**269**	*e*Pn	**Pn**	**04 10 56.3**	**-2.2**
KLR	**Kul'dur**	**12.77**	**328**	P	**Pn**	**04 11 07.9**	**+1.7**
	comp=Z,0.4nm,0.3s,baz=126,slow=13,SNR=33						
KLR				LR	LR	04 15 58.3	
	comp=Z,4μm,20.4s,baz=140,slow=37						
CN2	**Changchun**	**13.43**	**297**	*e*P	**Pn**	**04 11 18.0**	**+2.8**
CN2				*e*S	Sn	04 13 50.2	+7.1
CN2				pmax	pmax		
	comp=Z,20nm,1.3s						
CN2				pmax	pmax		
	comp=Z,140nm,4.0s						
CN2				LR	LR		
	comp=Z,2μm,20.0s						
CN2				LR	LR		
	comp=Z,2μm,20.0s						
CN2				LR	LR		
	comp=Z,2μm,21.0s						
NKL	**Nikolayevsk**	**14.38**	**357**	*e*P	**Pn**	**04 11 27.8**	**-0.3**
NKL				pmax	pmax		
	comp=Z,55nm,1.1s						
NKL				MLR	MLR		
	comp=Z,2μm,16.0s						

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SNY	**Shenyang**	**14.40**	**288**	⇑P	**Pn**	**04 11 31.3**	**+2.8**
SNY				pmax	pmax		
	comp=Z,14nm,0.8s						
SNY				pmax	pmax		
	comp=Z,310nm,3.5s						
SNY				LR	LR		
	comp=Z,2μm,16.7s						
SNY				LR	LR		
	comp=Z,3μm,22.6s						
SNY				LR	LR		
	comp=Z,4μm,19.4s						
SKR	**Severo-Kuril's**	**15.49**	**35**	*e*P	Pn	04 11 37.5	-5.4
SKR				pmax	pmax		
	comp=N,130nm,0.9s						
SKR				pmax	pmax		
	comp=Z,130nm,0.9s						
SKR				MLR	MLR		
	comp=E,2μm,14.0s						
SKR				MLR	MLR		
	comp=Z,2μm,14.0s						
SKR				pmax	pmax		
	comp=Z,80nm,0.5s						
DL2	**Dalian**	**15.90**	**277**	P	**P**	**04 11 51.4**	**0.0**
DL2				*e*S	**Sn**	**04 14 44.3**	**+1.0**
DL2				pmax	pmax		
	comp=Z,180nm,1.0s						
DL2				pmax	pmax		
	comp=Z,870nm,9.2s						
DL2				LR	LR		
	comp=Z,2μm,13.7s						
DL2				LR	LR		
	comp=Z,2μm,14.3s						
DL2				LR	LR		
	comp=Z,3μm,17.5s						
JOW	**Kunigami**	**16.60**	**228**	P	**Pn**	**04 11 54.8**	**-2.4**
	comp=Z,1.1nm,0.3s,baz=46,slow=13,SNR=6.7						
JOW	**Kunigami**	**16.60**	**228**	*e*Pn	**Pn**	**04 11 55.6**	**-1.6**
	comp=Z,69nm,1.0s						
PEA0	**Petropavlovsk-**	**17.92**	**32**	*e*P	**Pn**	**04 12 10.9**	**-2.4**
PETK	**Petropavlovsk-**	**17.92**	**32**	P	**Pn**	**04 12 10.8**	**-2.6**
	comp=Z,0.3nm,0.3s,baz=204,slow=11,SNR=5.8						
PETK				LR	LR	04 20 08.5	
	comp=Z,972nm,18.5s,baz=217,slow=40						
PET	**Petropavlovsk**	**18.26**	**33**	*e*P	**Pn**	**04 12 18.3**	**+0.8**
PET				*e*S	**Sn**	**04 15 34.4**	**-5.8**
PET				pmax	pmax		
	comp=Z,36nm,1.4s						
PET				MLR	MLR		
	comp=Z,900nm,15.0s						
PET	**Petropavlovsk**	**18.26**	**33**	*e*P	**P**	**04 12 16.3**	**-1.1**
	comp=Z,23nm,0.8s						
SSE	**Sheshan**	**18.72**	**252**	P	**Pn**	**04 12 23.1**	**-0.1**
SSE				S	**S**	**04 15 53.3**	**-0.3**
SSE				pmax	pmax		
	comp=Z,190nm,2.3s						
SSE				LR	LR		
	comp=Z,750nm,18.0s						
SSE				LR	LR		
	comp=Z,1μm,18.0s						
SSE				LR	LR		
	comp=Z,1μm,17.2s						
HIA	**Hailar**	**19.07**	**310**	*e*P	**P**	**04 12 24.9**	**-1.5**
HIA				pmax	pmax		
	comp=Z,13nm,0.6s						
HIA	**Hailar**	**19.07**	**310**	*e*P	**P**	**04 12 24.9**	**-1.5**
	comp=Z,13nm,0.6s						
TIA	**Tai'an**	**19.92**	**270**	*e*P	**P**	**04 12 34.3**	**-1.4**
TIA				S	**S**	**04 16 12.6**	**-5.1**
TIA				pmax	pmax		
	comp=Z,10.0nm,1.4s						
TIA				LR	LR		
	comp=Z,730nm,13.5s						
TIA				LR	LR		
	comp=Z,1μm,16.0s						
TIA				LR	LR		
	comp=Z,2μm,16.0s						
BJI	**Beijing**	**20.00**	**282**	P	**P**	**04 12 35.3**	**-1.2**
BJI				S	**S**	**04 16 12.9**	**-6.3**
BJI				pmax	pmax		
	comp=Z,13nm,0.9s						
BJI				LR	LR		
	comp=Z,570nm,11.7s						
BJI				LR	LR		
	comp=Z,3μm,13.4s						
BJI				LR	LR		
	comp=Z,1μm,27.8s						
BJT	**Baijiatuan**	**20.01**	**282**	*e*P	**P**	**04 12 34.7**	**-1.9**
BJT				pmax	pmax		
	comp=Z,86nm,1.3s						
BJT	**Baijiatuan**	**20.01**	**282**	*e*P	**P**	**04 12 34.6**	**-1.9**
	comp=Z,86nm,1.3s						
NJ2	**Nanjing**	**20.03**	**257**	*e*P	**P**	**04 12 37.2**	**+0.3**
NJ2				pP	**sP**	**04 12 51.2**	**-0.4**
NJ2				pmax	pmax		
	comp=Z,20nm,0.5s						
NJ2				pmax	pmax		
	comp=Z,260nm,4.1s						
NJ2				LR	LR		
	comp=Z,1μm,14.9s						
NJ2				LR	LR		
	comp=Z,2μm,13.0s						
NJ2				LR	LR		
	comp=Z,2μm,16.3s						
CLNS	**Chul'man**	**21.29**	**334**	*e*P	**P**	**04 12 50.5**	**+0.1**
CLNS				*e**PP	**pP**	**04 12 59.2**	**-1.1**
CLNS				*e*		04 13 07.6	
CLNS				*e*S	**S**	**04 16 40.7**	**-4.0**
CLNS				*e*		04 16 56.7	
CLNS				*e*SS	**SnSn**	**04 17 16.9**	**+8.4**
CLNS				pmax	pmax		
	comp=Z,30nm,0.8s						
CLNS				pmax	pmax		
	comp=N,20nm,0.8s						
CLNS				pmax	pmax		
	comp=E,12nm,0.9s						
CLNS				pmax	pmax		
	comp=E,12nm,0.7s						
CLNS				pmax	pmax		
	comp=Z,21nm,1.1s						
CLNS				pmax	pmax		
	comp=N,22nm,0.7s						
CLNS				smax	smax		
	comp=N,412nm,9.7s						
CLNS				smax	smax		
	comp=E,251nm,9.8s						
CLNS				MLR	MLR		
	comp=N,1μm,15.0s						
CLNS				MLR	MLR		
	comp=Z,2μm,15.0s						
CLNS				MLR	MLR		
	comp=E,642nm,15.0s						
MA2	**Magadan**	**21.52**	**12**	P	**P**	**04 12 52.5**	**-0.3**
	comp=E,53nm,0.8s,baz=224,slow=9.1,SNR=67						
MA2	**Magadan**	**21.52**	**12**	*e*P	**P**	**04 12 52.7**	**-0.1**
MA2				pmax	pmax		
	comp=Z,261nm,0.9s						
MA2				MLR	MLR		
	comp=Z,829nm,20.0s						
MA2	**Magadan**	**21.52**	**12**	*e*P	**P**	**04 12 52.7**	**-0.1**
	comp=Z,261nm,0.9s						
MA2				LR	LR		
	comp=Z,829nm,20.0s						
YOJ	**Yonaguni jima**	**21.55**	**234**	*e*P	**P**	**04 12 52.1**	**-1.2**
YOJ				pmax	pmax		
	comp=Z,12nm,0.6s						
YOJ	**Yonaguni jima**	**21.55**	**234**	*e*P	**P**	**04 12 52.1**	**-1.2**
	comp=Z,12nm,0.6s						
TATO	**Taipei**	**22.17**	**238**	*e*P	**P**	**04 12 59.3**	**-0.7**
TATO				LR	LR		
	comp=Z,2μm,22.0s						
YHNB	**Yeheng**	**22.45**	**237**	*e*P	**P**	**04 13 01.6**	**-1.6**
	comp=Z,44nm,0.8s						
YHNB				LR	LR		
	comp=Z,1μm,19.0s						
NACB	**Ninganchiao**	**22.66**	**236**	*e*P	**P**	**04 13 02.8**	**-2.4**
	comp=Z,62nm,0.9s						
TIY	**Taiyuan**	**23.23**	**277**	*e*P	**P**	**04 13 14.0**	**+2.9**
TIY				pmax	pmax		
	comp=Z,49nm,1.0s						
TIY				LR	LR		
	comp=Z,1μm,14.4s						
TIY				LR	LR		
	comp=Z,1μm,13.9s						
TIY				LR	LR		
	comp=Z,2μm,16.1s						
SSLB	**Suanglung**	**23.34**	**236**	*e*P	**P**	**04 13 09.6**	**-2.7**
	comp=Z,58nm,1.0s						

SSLB eS S 04 17 20.6 -1.7
YULB Yu-li 23.40 235 eP P 04 13 10.3 -2.5
comp=Z,41nm,0.7s
YULB eS S 04 17 32.8 +10
HHC Hu-ho-hao-te 23.44 285 eP P 04 13 13.3 +0.1
HHC pP pP 04 13 26.1 +2.7
HHC sP sP 04 13 34.9 +6.7
HHC PP PnPn 04 13 41.8 +1.4
HHC S S 04 17 23.4 -0.4
HHC pmax pmax
comp=Z,41nm,1.0s
HHC pmax pmax
comp=Z,140nm,7.6s
HHC LR LR
comp=Z,670nm,15.1s
HHC LR LR
comp=Z,3μm,14.9s
HHC LR LR
comp=Z,3μm,13.2s
TPUB Ta-pu 23.90 236 eP P 04 13 14.5 -3.0
comp=Z,109nm,0.9s
TPUB eS S 04 17 38.9 +7.7
TWG Pinlang 23.96 234 eP P 04 13 18.1 +0.1
comp=Z,445nm,0.9s
QZH Quanzhou 24.15 242⇓ iP P 04 13 17.3 -2.5
QZH S S 04 17 26.1 -9.0
QZH pmax pmax
comp=Z,340nm,1.7s
QZH LR LR
comp=Z,2μm,16.2s
QZH LR LR
comp=Z,890nm,12.7s
QZH LR LR
comp=Z,3μm,15.1s
WHN Wuhan 24.15 258 P P 04 13 18.2 -1.5
WHN S S 04 17 31.7 -3.4
WHN pmax pmax
comp=Z,100nm,0.8s
WHN pmax pmax
comp=Z,770nm,4.2s
WHN LR LR
comp=Z,1μm,12.7s
WHN LR LR
comp=Z,4μm,18.1s
WHN LR LR
comp=Z,5μm,18.9s
YAK Yakutsk 24.46 346 P P 04 13 21.6 -0.7
comp=Z,3.6nm,0.3s,baz=331,slow=20,SNR=12
YAK Yakutsk 24.46 346 eP P 04 13 21.7 -0.6
YAK e*PP sP 04 13 36.7 -1.1
YAK e 04 13 53.6
YAK eS S 04 17 37.3 -2.3
YAK eSS SnSn 04 18 24.5 -1.4
YAK pmax pmax
comp=E,13nm,0.9s
YAK pmax pmax
comp=Z,113nm,0.9s
YAK pmax pmax
comp=N,45nm,1.1s
YAK pmax pmax
comp=Z,63nm,0.8s
YAK smax smax
comp=N,442nm,2.3s
YAK smax smax
comp=E,354nm,1.9s
YAK MLR MLR
comp=E,548nm,21.0s
YAK MLR MLR
comp=Z,871nm,18.0s
YAK MLR MLR
comp=N,600nm,17.0s
YAK Yakutsk 24.46 346 eP P 04 13 21.6 -0.7
comp=N,110nm,0.8s
YAK LR LR
comp=Z,913nm,19.0s
SEY Seymchan 24.96 11 P P 04 13 27.9 +1.0
comp=Z,60nm,0.8s,baz=203,slow=6.6,SNR=252
SEY Seymchan 24.96 11 d iP P 04 13 28.3 +1.5
BOD Bodaibo 26.32 325⇑ iP P 04 13 38.9 -0.3
BOD e 04 17 03.6
BOD pmax pmax
comp=Z,29nm,1.1s
ULN Ulaanbaatar 26.82 301 d iP P 04 13 44.1 +0.1
ULN pmax pmax
comp=Z,32nm,1.7s
ULN Ulaanbaatar 26.82 301 eP P 04 13 43.4 -0.5
comp=Z,38nm,1.5s
ULN ePcP PcP 04 17 06.0 +0.2
ULN LR LR
comp=Z,937nm,20.0s
ULN Ulaanbaatar 26.82 301 P P 04 13 45.5 +1.6
SNR=11
ULN Ulaanbaatar 26.82 301 P P 04 13 45.5 +1.6
SNR=11
XAN Xi'an 26.98 270 P P 04 13 44.5 -1.0
XAN pP pP 04 13 58.3 +2.1
XAN PP PnPn 04 14 29.4 +0.6
XAN S S 04 18 11.3 -8.9
XAN pmax pmax
comp=Z,25nm,0.7s
XAN pmax pmax
comp=Z,69nm,8.8s
XAN LR LR
comp=Z,590nm,18.5s
XAN LR LR
comp=Z,1μm,19.8s
XAN LR LR
comp=Z,900nm,18.9s
SONA1 Songino Array 27.25 301 eP P 04 13 48.7 +0.9
SONM Songino Array 27.25 301 P P 04 13 48.1 +0.2
comp=Z,9.1nm,0.8s,baz=99,slow=8.2,SNR=36
SONM PcP PcP 04 17 07.4 +0.5
comp=Z,2.2nm,0.5s,baz=134,slow=2.1,SNR=7.8
SONM LR LR 04 25 02.7
comp=Z,1μm,19.3s,baz=116,slow=37
ENH Enshi 28.02 262 eP P 04 13 54.2 -0.5
comp=Z,228nm,1.2s
ENH ePcP PcP 04 17 08.9 -0.1
ENH LR LR
comp=Z,883nm,21.0s
H11N2 WAKE ISLAND Hy 28.68 124 T T 04 44 19.8
baz=317,slow=75,SNR=1180
H11N1 WAKE ISLAND Hy 28.69 124 T T 04 44 18.9
baz=317,slow=75,SNR=1974
H11N3 WAKE ISLAND Hy 28.70 124 T T 04 44 20.8
baz=317,slow=75,SNR=1515
IRK Irkutsk 29.31 310 eP P 04 14 06.0 0.0
IRK pmax pmax
comp=Z,40nm,2.2s
H11S1 WAKE ISLAND Hy 29.46 126 T T 04 45 18.6
baz=318,slow=76,SNR=1251
H11S3 WAKE ISLAND Hy 29.46 126 T T 04 45 18.7
baz=318,slow=76,SNR=2080
H11S2 WAKE ISLAND Hy 29.47 126 T T 04 45 19.8
baz=318,slow=76,SNR=1218
TLY Talaya 29.58 308 P P 04 14 09.3 +0.9
comp=Z,9.0nm,0.8s,baz=130,slow=6.2,SNR=7.5
TLY Talaya 29.58 308 eP P 04 14 09.5 +1.1
TLY eS S 04 18 58.9 -1.9
TLY pmax pmax
comp=Z,20nm,1.2s
TLY MLR MLR
comp=Z,1μm,15.0s
TLY Talaya 29.58 308 eP P 04 14 06.8 -1.7
comp=Z,16nm,1.0s
TLY LR LR
comp=Z,2μm,20.0s
TLY Talaya 29.58 308 P P 04 14 10.0 +1.6
SNR=5.0
TLY Talaya 29.58 308 P P 04 14 10.0 +1.6
SNR=5.0
ZAK Zakamensk 29.60 306 eP P 04 14 08.8 +0.1
ZAK pmax pmax
comp=Z,14nm,1.1s
ZAK pmax pmax
comp=Z,3.0nm,2.0s
LZH Lanzhou 30.30 277 eP P 04 14 19.6 +4.5
LZH PP PnPn 04 15 14.2 +0.3
LZH PcP PcP 04 17 18.9 +4.1
LZH SS SS 04 20 50.5 -32
LZH pmax pmax
comp=Z,110nm,1.0s
LZH pmax pmax
comp=Z,360nm,4.7s
LZH LR LR
comp=Z,3μm,14.0s
LZH LR LR
comp=Z,2μm,13.1s
LZH LR LR
comp=Z,3μm,16.2s
MOY Mondy 31.21 308 eP P 04 14 23.5 +0.6
MOY pmax pmax
comp=Z,26nm,2.3s
GSTR Great Sitkin T 31.79 51 eP P 04 14 29.7 +1.7
GYA Guiyang 32.04 258⇓ iP P 04 14 29.2 -1.2
GYA pP sP 04 14 48.0 +2.1
GYA PP PP 04 15 41.5 -1.7
GYA PcP PcP 04 17 21.8 +2.3
GYA S S 04 19 37.1 -2.7
GYA sS sS 04 20 05.0 +7.2
GYA ScP ScP 04 20 58.4 -1.5
GYA SS SnSn 04 21 32.8 +1.4
GYA ScS ScS 04 24 55.9 -2.9
GYA pmax pmax
comp=Z,80nm,0.8s
GYA pmax pmax
comp=Z,120nm,6.5s
GYA LR LR
comp=Z,470nm,18.7s
GYA LR LR
comp=Z,720nm,20.0s
GYA LR LR
comp=Z,1μm,20.0s
BILL Bilibino 32.19 17 d iP P 04 14 31.3 +0.1
BILL e 04 14 40.6
BILL e 04 15 33.7
BILL eS S 04 19 42.9 +1.7
BILL pmax pmax
comp=Z,29nm,1.0s
BILL MLR MLR
comp=Z,583nm,22.0s
BILL Bilibino 32.19 17 eP P 04 14 31.5 +0.3
comp=Z,22nm,0.9s
BILL LR LR
comp=Z,527nm,22.0s
CD2 Chengdu 32.20 268 P P 04 14 31.2 -0.6
CD2 pP sP 04 14 46.3 -1.0
CD2 S S 04 19 39.9 -2.3
CD2 sS sS 04 20 06.3 +6.1
CD2 pmax pmax
comp=Z,90nm,1.1s
GTA Gaotai 32.55 285 eP P 04 14 34.8 -0.1
GTA pP sP 04 14 50.7 +0.3
GTA sP pP 04 14 58.0 +12
GTA PcP PcP 04 17 21.7 +1.0
GTA S S 04 19 44.0 -3.7
GTA sS sS 04 20 10.9 +5.2
GTA ScP ScP 04 21 01.5 0.0
GTA PcS PcS 04 21 06.3 +0.3
GTA SS SnSn 04 21 45.5 +1.9
GTA pmax pmax
comp=Z,6.0nm,0.9s
GTA pmax pmax
comp=Z,99nm,5.1s
GTA LR LR
comp=Z,580nm,19.0s
GTA LR LR
comp=Z,2μm,16.5s
GTA LR LR
comp=Z,2μm,17.6s
TIXI Tiksi 33.60 353 d iP P 04 14 42.9 -0.5
TIXI pmax pmax
comp=Z,13nm,0.7s
TIXI Tiksi 33.60 353 eP P 04 14 42.8 -0.7
comp=Z,12nm,0.7s
TIXI LR LR
comp=Z,541nm,22.0s
QIZ Qiongzhong 34.13 244 P P 04 14 49.9 +1.3
QIZ sP sP 04 15 12.2 +8.1
QIZ S S 04 20 12.2 +0.1
QIZ pmax pmax
comp=Z,10.0nm,1.3s
QIZ pmax pmax
comp=Z,92nm,4.3s
QIZ LR LR
comp=Z,630nm,17.3s
QIZ LR LR
comp=Z,1μm,15.3s
QIZ Qiongzhong 34.13 244 PFAKE 04 15 00.0 +11
QIZ LR LR
comp=Z,482nm,19.0s
KMI Kunming 35.74 259 P P 04 15 03.7 +0.9
KMI PP PnPn 04 16 22.5 -0.7
KMI S S 04 20 35.4 -2.0
KMI pmax pmax
comp=Z,52nm,1.5s
KMI LR LR
comp=Z,770nm,18.1s
KMI LR LR
comp=Z,1μm,17.1s
KMI LR LR
comp=Z,1μm,20.0s
GAMB Gambell 36.95 32 eP P 04 15 13.7 +1.3
comp=Z,40nm,1.8s
PANO Nakornpanom 39.09 247 P P 04 15 40.0 +9.1
NONG Nongkai 39.57 250 P P 04 15 36.0 +1.1
comp=Z,36nm,0.9s,comp=Z,28μm
MYLDM Lahad Datu 39.70 219 eP P 04 15 38.5 +2.6
comp=Z,84nm,1.0s
KKM Kota Kinabalu 40.12 222 PFAKE 04 15 50.0 +10
KKM LR LR
comp=Z,244nm,21.0s
WMQ Urumqi 40.51 295 P P 04 15 43.6 +1.1
WMQ pP sP 04 16 00.0 +1.8
WMQ sP pP 04 16 09.0 +15
WMQ PcP PcP 04 17 46.5 +2.0
WMQ S S 04 21 50.5 +1.7
WMQ SS SS 04 24 42.0 -7.0
WMQ ScS ScS 04 25 42.2 -2.8
WMQ pmax pmax
comp=Z,30nm,1.0s
WMQ pmax pmax
comp=Z,93nm,4.0s
WMQ LR LR
comp=Z,170nm,17.6s
WMQ LR LR
comp=Z,250nm,26.6s
WMQ LR LR
comp=Z,340nm,28.6s
SWI Sorong 40.70 197 P P 04 15 44.7 +0.5
comp=Z,60nm,1.1s
TSM Tawau 40.77 219⇑ P P 04 15 46.5 +1.7
KHON Khomkaen 40.91 248 P P 04 15 49.0 +3.0
comp=Z,13nm,0.9s
ZAA0 Zalesovo Array 41.11 311 eP P 04 15 47.5 +0.3
ZALV Zalesovo Beam 41.11 311 P P 04 15 47.5 +0.2
comp=Z,36nm,0.5s,baz=89,slow=8.0,SNR=107
ZALV PcP PcP 04 17 46.2 +0.1
comp=Z,6.0nm,0.3s,baz=106,slow=2.8,SNR=7.9
ZALV LR LR 04 33 34.6
comp=Z,1μm,18.7s,baz=72,slow=37
LOEI Loei 41.30 251 P P 04 15 47.0 -2.2
comp=Z,15nm,1.0s
PHRA Phrae 41.45 253 P P 04 15 51.3 +0.9
comp=Z,157nm,1.4s,comp=Z,29μm
UTTA Uttaradit 41.68 252 P P 04 15 53.6 +1.3
comp=Z,42nm,0.8s
CHAI Chaiyaphum 41.80 248 P P 04 15 53.7 +0.4
comp=Z,10nm,1.1s
NRIK Noril'sk 41.88 334 P P 04 15 52.6 -0.7
comp=Z,15nm,0.8s,baz=114,slow=11,SNR=13
NRIK LR LR 04 34 12.7
comp=Z,2μm,19.7s,baz=108,slow=37
LAMP Lampang 41.88 253 P P 04 15 57.2 +3.2
comp=Z,7.1nm,1.0s
NVS Novosibirsk 41.99 312 eP P 04 15 54.8 +0.3
NVS e 04 16 05.3
NVS eS S 04 22 10.0 -0.4
NVS pmax pmax
comp=Z,30nm,1.0s
NVS pmax pmax
comp=E,18nm,0.9s
NVS smax smax
comp=E,26nm,1.7s
PBKT Sadao Pong 42.11 250 P P 04 15 56.5 +0.7
comp=E,19nm,1.4s
CMMT Chiang Mai 42.22 254 P P 04 15 57.4 +0.6
comp=E,26nm,0.8s,comp=E,437nm
CHTO Chiang Mai 42.23 254 P P 04 15 57.4 +0.6
comp=E,114nm,0.8s
CHTO Chiang Mai 42.23 254 eP P 04 15 56.0 -0.8
CHTO pmax pmax
comp=Z,17nm,0.7s
CHTO MLR MLR
comp=Z,319nm,22.0s
CHTO Chiang Mai 42.23 254 eP P 04 15 56.0 -0.8
comp=Z,17nm,0.7s
CHTO LR LR
comp=Z,319nm,22.0s
CHTO Chiang Mai 42.23 254 P P 04 15 57.6 +0.8
SNR=8.3
CHTO Chiang Mai 42.23 254 P P 04 15 57.6 +0.8
SNR=8.3
MRSI Marisa 42.36 211 P P 04 15 58.9 +1.1
comp=Z,145nm,1.3s,comp=Z,3μm
CMAR Chiang Mai Arr 42.44 254 P P 04 15 59.1 +0.6
comp=Z,2.9nm,0.6s,baz=46,slow=7.2,SNR=14
CMAR PcP PcP 04 17 51.3 +0.2
comp=Z,3.2nm,0.6s,baz=19,slow=2.5,SNR=6.3
CMAR LR LR 04 34 56.8
comp=Z,230nm,20.2s,baz=45,slow=38
CM01 Chiang Mai Arr 42.45 254 eP P 04 15 59.1 +0.5
FAKI Fak Fak 42.49 195 P P 04 15 59.0 +0.1
comp=Z,64nm,1.7s,comp=Z,1μm
FAKI Fak Fak 42.49 195 eP P 04 15 57.3 -1.6
comp=Z,154nm,1.5s
SUKH Sukhothai 42.53 252 P P 04 16 00.8 +1.6
comp=Z,5.2nm,0.8s
LSA Lhasa 42.56 274 P P 04 16 01.7 +1.7
LSA pmax pmax
comp=Z,7.0nm,0.7s
LSA Lhasa 42.56 274 eP P 04 16 00.3 +0.3
LSA pmax pmax
comp=Z,26nm,0.7s
LSA MLR MLR
comp=Z,1μm,21.0s
LSA Lhasa 42.56 274 eP P 04 16 00.3 +0.3
comp=Z,26nm,0.7s
LSA LR LR
comp=Z,1μm,21.0s
SRAK Srakaew 43.02 246 P P 04 16 00.9 -2.3
comp=Z,100nm,0.9s,comp=Z,708nm
SANI Sanana 43.26 204 P P 04 16 06.8 +1.7
comp=Z,110nm,1.1s,comp=Z,1μm
NAYO Nakonayok 43.33 247 P P 04 16 06.9 +1.2
comp=Z,16nm,1.2s
MHMT Maesariang 43.37 254 P P 04 16 07.7 +1.6
comp=Z,14nm,0.9s,comp=Z,665nm
LUWI Luwuk 43.43 209 P P 04 16 04.3 -2.2
comp=Z,120nm,1.2s,comp=Z,2μm
LUWI Luwuk 43.43 209 eP P 04 16 04.0 -2.5
comp=Z,102nm,1.0s
MK01 Makanchi Array 43.62 301 eP P 04 16 08.3 +0.5
MK31 Makanchi Array 43.62 301 eP P 04 16 08.4 +0.6
MK31 Makanchi Array 43.62 301 eP P 04 16 08.4 +0.6
MKAR Makanchi Array 43.62 301 P P 04 16 08.4 +0.6
comp=Z,22nm,0.7s,baz=85,slow=10.0,SNR=236
MKAR LR LR 04 35 01.0
comp=Z,578nm,20.7s,baz=72,slow=37
CHBT CHBT 43.67 245 P P 04 16 11.7 +3.3
comp=Z,32nm,0.9s
TT01 Tatalina 43.69 36 eP P 04 16 08.4 +0.3
TTA Tatalina 43.69 36 eP P 04 16 09.2 +1.0
TTA pmax pmax
comp=Z,9.0nm,0.9s
TTA Tatalina 43.69 36 eP P 04 16 09.2 +1.0
comp=Z,9.2nm,0.9s
APSI Ampana 43.74 210 P P 04 16 09.3 +0.3
comp=Z,194nm,1.2s,comp=Z,2μm
SVW2 Sparrevohn 43.82 38 eP P 04 16 10.9 +1.7
comp=Z,34nm,0.7s
MAKZ Makanchi 43.83 301 eP P 04 16 10.1 +0.6
MAKZ pmax pmax
comp=Z,34nm,0.9s
MAKZ Makanchi 43.83 301 eP P 04 16 10.1 +0.6
comp=Z,34nm,0.9s
UTHA Uthaitani 43.88 250 P P 04 16 11.5 +1.3
comp=Z,5.1nm,0.9s
UMPA Umpang Tak 43.90 251 P P 04 16 12.7 +2.3
comp=Z,9.1nm,1.0s
SHL Shillong 43.94 268 eP P 04 16 12.5 +1.7
SHL eS S 04 22 41.0 +1.0
PATY Pattaya 44.59 246 P P 04 16 17.6 +1.8
comp=Z,8.8nm,1.0s,comp=Z,1μm
SRDT SRDT 44.90 249 P P 04 16 19.3 +1.0
comp=Z,71nm,1.2s
OHAK Old Harbor 45.13 44 eP P 04 16 19.3 -0.3
comp=Z,17nm,0.7s
RSO Redoubt South 45.22 39 eP P 04 16 21.9 +1.3
KURK Kurchatov 45.25 307 eP P 04 16 20.9 +0.2
KURK pmax pmax
comp=Z,83nm,0.8s
KURK MLR MLR
comp=Z,1μm,21.0s
KURK Kurchatov 45.25 307 eP P 04 16 20.9 +0.2
comp=Z,83nm,0.8s
KURK LR LR
comp=Z,1μm,21.0s
KURK Kurchatov 45.25 307 P P 04 16 21.3 +0.6
SNR=28
KURK Kurchatov 45.25 307 P P 04 16 21.3 +0.6
SNR=28
SBUM Sibu 45.27 224⇓ P P 04 16 22.4 +1.2
SBUM Sibu 45.27 224 eP P 04 16 22.1 +0.9
comp=Z,25nm,1.1s
PPLA Purkeypile 45.44 36 eP P 04 16 24.4 +2.1
comp=Z,20nm,0.8s
PPLA ePcP PcP 04 18 01.1 +0.4
KDAK Kodiak Island 45.46 43 i P P 04 16 22.5 +0.2
KDAK Kodiak Island 45.46 43 eP P 04 16 22.0 -0.3
comp=Z,34nm,0.8s
KDAK LR LR
comp=Z,616nm,20.0s
PHET Kaeng Krachan 45.49 247 P P 04 16 24.1 +1.1
comp=Z,16nm,1.0s,comp=Z,220nm
CAST Castle Rocks 45.49 35 eP P 04 16 24.4 +1.9
comp=Z,18nm,0.8s
SPU Mount Spurr 45.53 38 eP P 04 16 24.5 +1.6
BPAW Bear Paw Mtn. 45.98 34 eP P 04 16 28.0 +1.7
comp=Z,11nm,0.8s
BPAW ePcP PcP 04 18 02.9 +0.4
KTH Kantishna Hill 46.01 35 eP P 04 16 28.3 +1.7
comp=Z,39nm,0.9s
MLY Manley 46.09 33 eP P 04 16 29.1 +1.9
comp=Z,23nm,0.7s
BRLK Bradley Lake 46.19 40 eP P 04 16 30.3 +2.2
comp=Z,20nm,0.8s
TRF Thorofare Moun 46.30 35 eP P 04 16 30.0 +0.9
comp=Z,24nm,0.8s
TAPN Taplejung 46.33 273 eP P 04 16 30.5 +0.6
COLD Coldfoot 46.37 30 eP P 04 16 31.0 +1.7
comp=Z,14nm,1.2s
COLD ePcP PcP 04 18 04.7 +1.0
RC01 Rabbit Creek A 46.66 38 eP P 04 16 32.4 +0.7
comp=Z,34nm,0.8s
ODAN Odare 46.82 272 eP P 04 16 34.3 +0.6
comp=Z,126nm,0.9s
SEW Seward 46.88 40 eP P 04 16 32.9 -0.5
comp=Z,18nm,0.8s
MCK McKinley 46.89 35 eP P 04 16 34.4 +0.9
MCK e 04 18 05.9
MCK pmax pmax
comp=Z,23nm,0.9s
MCK McKinley 46.89 35 eP P 04 16 34.4 +0.9
comp=Z,23nm,0.9s
MCK ePcP PcP 04 18 05.9 +0.2
PMR Palmer 46.92 38 eP P 04 16 33.8 +0.1
PMR pmax pmax
comp=Z,22nm,0.8s
PMR Palmer 46.92 38 eP P 04 16 33.8 +0.1
comp=Z,22nm,0.8s
RND Reindeer 46.94 35 eP P 04 16 34.7 +0.7
RND pmax pmax
comp=Z,27nm,0.8s
RND Reindeer 46.94 35 eP P 04 16 34.7 +0.7
comp=Z,27nm,0.8s
KSM Kuching 47.13 226 eP P 04 16 37.1 +1.2
comp=Z,63nm,1.1s
MDM Murphy Dome 47.16 33 eP P 04 16 37.3 +1.7
comp=Z,27nm,0.8s
WRH Wood River Hil 47.24 34 eP P 04 16 37.1 +0.9
comp=Z,17nm,0.8s
SPSI Sidrap Palu 47.27 211 P P 04 16 36.6 -0.3
comp=Z,38nm,1.2s,comp=Z,534nm
SML Sawmill 47.28 37 eP P 04 16 37.6 +1.0
SML pmax pmax
comp=Z,30nm,0.7s
SML Sawmill 47.28 37 eP P 04 16 37.6 +1.0

comp=Z,30nm,0.7s
COLA College 47.32 33 *de* P **P 04 16 38.3 +1.5**
COLA pmax pmax
comp=Z,11nm,0.7s
COLA College 47.32 33 *e* P **P 04 16 38.4 +1.7**
comp=Z,19nm,0.6s
COLA LR LR
comp=Z,279nm,20.0s
CCB Clear Creek Bu 47.35 33 *e* P **P 04 16 37.9 +0.9**
comp=Z,11nm,0.7s
RAMN Ramite 47.39 273 *e* P **P 04 16 38.6 +0.5**
comp=Z,174nm,0.9s
GUN Gumba 47.49 274 *e* P **P 04 16 39.6 +0.6**
comp=Z,190nm,0.9s
DHY Denali Highway 47.63 36 *e* P **P 04 16 40.6 +1.2**
comp=Z,13nm,1.0s
IL1 Eielson Array 47.74 33 *e* P **P 04 16 39.8 -0.2**
ILAR Eielson Array 47.74 33 P **P 04 16 40.7 +0.6**
comp=Z,26nm,0.6s,baz=268,slow=6.4,SNR=251
ILAR LR LR 04 39 33.3
comp=Z,177nm,18.2s,baz=280,slow=40
ILB Eielson Array 47.74 33 *e* P **P 04 16 40.7 +0.6**
SCM Sheep Creek Mo 47.76 37 *e* P **P 04 16 41.6 +1.3**
SCM pmax pmax
comp=Z,36nm,0.8s
SCM Sheep Creek Mo 47.76 37 *e* P **P 04 16 41.6 +1.3**
comp=Z,36nm,0.8s
KKN Kakani 48.02 275 *e* P **P 04 16 43.5 +0.5**
comp=Z,111nm,0.8s
PKIN Phulchoki 48.03 274 *e* P **P 04 16 43.3 +0.2**
comp=Z,26nm,0.5s
PMG Port Moresby 48.20 173 *e* P **P 04 16 43.0 -1.0**
PMG pmax pmax
comp=Z,12nm,0.7s
PMG MLR MLR
comp=Z,284nm,20.0s
PMG Port Moresby 48.20 173 *e* P **P 04 16 43.0 -1.0**
comp=Z,12nm,0.7s
PMG LR LR
comp=Z,284nm,20.0s
KAPI Kappang 48.24 210 *e* P **P 04 16 45.7 +1.3**
comp=Z,125nm,1.2s
KAPI LR LR
comp=Z,156nm,21.0s
KAPI Kappang 48.24 210 P **P 04 16 46.0 +1.6**
SNR=6.9
KAPI Kappang 48.24 210 P **P 04 16 46.0 +1.6**
SNR=6.9
DMN Daman 48.24 274 *e* P **P 04 16 45.2 +0.5**
FYU Fort Yukon 48.33 31 *e* P **P 04 16 42.1 -2.5**
comp=Z,25nm,0.8s
GKN Gorkha 48.42 275 *e* P **P 04 16 46.3 +0.3**
comp=Z,114nm,0.9s
KLU Klutina 48.46 38 *e* P **P 04 16 47.2 +1.5**
comp=Z,24nm,0.7s
PAX Paxson 48.51 36 *e* P **P 04 16 46.3 +0.2**
PAX *e* 04 18 12.5
PAX pmax pmax
comp=Z,13nm,0.8s
PAX Paxson 48.51 36 *e* P **P 04 16 46.3 +0.2**
comp=Z,13nm,0.8s
PAX *e* PcP **PcP 04 18 12.5 +0.9**
DIV Divide 48.57 38 *e* P **P 04 16 48.1 +1.5**
comp=Z,34nm,0.8s
EYAK Cordova Ski Ar 48.66 39 *e* P **P 04 16 48.8 +1.6**
comp=Z,21nm,0.8s
SURT Suratani 48.79 244 P **P 04 16 50.0 +1.3**
comp=Z,16nm,1.6s,comp=Z,226nm
SKLT Songkhla 48.79 241 P **P 04 16 50.6 +1.9**
comp=Z,47nm,1.6s,comp=Z,628nm
TRTT Trang 48.95 242 P **P 04 16 51.6 +1.6**
comp=Z,29nm,1.1s
KRAB Krabi 49.02 243 P **P 04 16 51.5 +1.0**
comp=Z,81nm,0.8s,comp=Z,4μm
DOT Dot Lake 49.06 35 *e* P **P 04 16 51.0 +0.6**
comp=Z,28nm,0.7s
BMRM Bremner River 49.16 38 *e* P **P 04 16 52.6 +1.5**
comp=Z,36nm,0.9s
BMRM *e* PcP **PcP 04 18 14.6 +0.7**
RAGM Ragged Mountai 49.21 39 *e* P **P 04 16 53.6 +2.1**
comp=Z,24nm,1.0s
TKM2 Tokmak 2 49.24 297 *e* P **P 04 16 53.3 +1.1**
TKM2 pmax pmax
comp=Z,23nm,0.8s
TKM2 MLR MLR
comp=Z,686nm,19.0s
TKM2 Tokmak 2 49.24 297 *e* P **P 04 16 53.3 +1.1**
comp=Z,23nm,0.8s
TKM2 LR LR
comp=Z,686nm,19.0s
MENT Mentasta 49.30 35 *e* P **P 04 16 52.6 +0.4**
comp=Z,18nm,0.7s
KOLN Koldanda 49.33 275 *e* P **P 04 16 53.7 +0.6**
comp=Z,40nm,0.6s
VOSK Vostochnaya 49.48 311 *e* P **P 04 16 53.9 +0.3**
VOSK pmax pmax
comp=Z,24nm,0.8s
VOSK Vostochnaya 49.48 311 *e* P **P 04 16 53.9 +0.3**
comp=Z,24nm,0.8s
PYUN Piuthan 49.65 276 *e* P **P 04 16 56.1 +0.6**
comp=Z,107nm,0.6s
BVA0 Borovoye Array 49.76 311 *i* P **P 04 16 56.1 +0.4**
BVA0 pmax pmax
comp=Z,20nm,0.8s
BRVK Borovoye 49.82 311 *d i* P **P 04 16 56.5 +0.4**
BRVK pmax pmax
comp=Z,25nm,0.8s
BRVK Borovoye 49.82 311 *e* P **P 04 16 56.8 +0.7**
comp=Z,23nm,0.7s
BRVK *e* PcP **PcP 04 18 16.4 +0.1**
BRVK LR LR
comp=Z,1μm,20.0s
BRVK Borovoye 49.82 311 P **P 04 16 56.1 0.0**
SNR=12
BRVK Borovoye 49.82 311 P **P 04 16 56.1 0.0**
SNR=12
PKDT Phuket 49.86 244 P **P 04 16 58.3 +1.4**
comp=Z,88nm,1.2s,comp=Z,4μm
FRU Bishkek 49.95 297 ⇓ *e* P **P 04 16 58.0 +0.6**
FRU *e* 04 17 13.0
FRU *e* S **S 04 24 06.0 +0.9**
FRU pmax pmax
comp=Z,68nm,2.0s
FRU smax smax
comp=N,174nm,2.8s
AAK Ala-Archa 50.10 297 *de* P **P 04 16 59.2 +0.5**
AAK pmax pmax
comp=Z,13nm,0.8s
AAK Ala-Archa 50.10 297 *e* P **P 04 16 58.0 -0.7**
comp=Z,7.1nm,0.8s
AAK LR LR
comp=Z,580nm,19.0s
AAK Ala-Archa 50.10 297 P **P 04 16 59.6 +0.9**
SNR=6.0
AAK Ala-Archa 50.10 297 P **P 04 16 59.6 +0.9**
SNR=6.0
KULM Kulim 50.14 239 *e* P **P 04 16 59.9 +0.8**
comp=Z,52nm,1.2s
KULM LR LR
comp=Z,400nm,20.0s
KSH Kashi 50.15 293 P P 04 17 03.4 +4.3
KSH *e* sP sP 04 17 26.1 +11
KSH *e* PP PP 04 19 00.4 +6.1
KSH PcS **PcS 04 22 16.8 +1.6**
KSH S **S 04 24 10.4 +2.2**
KSH sS sS 04 24 36.7 +10
KSH pmax pmax
comp=Z,13nm,0.7s
KSH pmax pmax
comp=Z,94nm,4.8s
KSH LR LR
comp=Z,690nm,14.2s
KSH LR LR
comp=Z,190nm,6.1s
KSH LR LR
comp=Z,470nm,15.0s
EGAK Eagle 50.18 33 *e* P **P 04 16 59.4 +0.7**
comp=Z,9.9nm,0.8s
EGAK LR LR
comp=Z,329nm,20.0s
IPM Ipoh 50.49 238 *e* P **P 04 17 00.7 -1.0**
comp=Z,30nm,0.5s
EKS2 Erkin-Say 50.59 298 *e* P **P 04 17 02.9 +0.6**
EKS2 pmax pmax
comp=Z,7.0nm,0.9s
EKS2 MLR MLR
comp=Z,555nm,19.0s
EKS2 Erkin-Say 50.59 298 *e* P **P 04 17 02.9 +0.6**
comp=Z,7.1nm,0.9s
EKS2 LR LR
comp=Z,555nm,19.0s
MMRI Maumere 50.67 206 *e* P **P 04 17 03.0 +0.1**
MYKOM Kota Tinggi 50.71 233 *e* P **P 04 17 04.8 +1.5**
comp=Z,100nm,1.6s
HNR Honiara 50.80 157 PFAKE 04 17 20.0 +16
HNR LR LR
comp=Z,950nm,20.0s
DAWY Dawson 51.05 34 *e* P **P 04 17 07.1 +1.7**
comp=Z,4.7nm,0.7s
SOEI Soe 51.07 203 *e* P **P 04 17 05.2 -0.9**
comp=Z,150nm,1.1s
MTN Manton Dam 52.38 193 *e* P **P 04 17 15.6 0.0**
comp=Z,51nm,0.6s
PLAI Plampang 52.49 211 P **P 04 17 15.1 -1.5**
comp=Z,52nm,1.5s
COEN Coen 52.49 179 *e* P **P 04 17 16.2 -0.3**
comp=Z,98nm,1.4s
INK Inuvik 52.59 28 *e* P **P 04 17 17.9 +1.2**
INK pmax pmax
comp=Z,23nm,0.8s
INK Inuvik 52.59 28 *e* P **P 04 17 17.9 +1.2**
comp=Z,22nm,0.8s
KK31 Karatay Array 52.68 299 *i* P **P 04 17 17.8 0.0**
KK31 pmax pmax
comp=Z,9.0nm,0.8s
KKAR Karatay Array 52.68 299 *e* P **P 04 17 18.2 +0.4**
KKAR Karatay Array 52.68 299 *e* P **P 04 17 18.1 +0.4**
TWSI Taliwang, Sumb 52.77 212 P **P 04 17 17.9 -0.7**
comp=Z,54nm,1.0s
PSI Prapat 53.13 239 *e* P **P 04 17 22.1 +0.6**
PSI pmax pmax
comp=Z,28nm,1.0s
PSI Prapat 53.13 239 *e* P **P 04 17 22.1 +0.6**
comp=Z,28nm,1.0s
JAGI Jajag, Banyuwa 53.71 215 *e* P **P 04 17 24.5 -1.1**
comp=Z,30nm,1.1s
GMJI Gumukmas 53.86 216 P **P 04 17 25.2 -1.4**
comp=Z,33nm,1.1s
SVE Sverdlovsk 54.16 318 ⇑ *i* P **P 04 17 29.2 +0.8**
SVE pmax pmax
comp=Z,77nm,0.8s
SVE MLR MLR
comp=Z,1μm,17.0s
SMRI Semarang 54.23 220 *e* P **P 04 17 31.9 +2.5**
comp=Z,112nm,1.0s
GSI Gunungsitoli 55.14 239 P **P 04 17 36.8 +0.8**
GSI Gunungsitoli 55.14 239 *e* P **P 04 17 36.7 +0.8**
comp=Z,163nm,1.2s
SOKR Solikamsk 55.23 322 *d i* P **P 04 17 34.6 -1.4**
SOKR pmax pmax
comp=Z,27nm,0.8s
SOKR MLR MLR
comp=Z,600nm,22.0s
ARU Arti 55.37 318 *d i* P **P 04 17 37.5 +0.4**
ARU 04 18 35.6
ARU 04 19 39.5
ARU PPP PPP 04 20 53.5
ARU S **S 04 25 18.6 0.0**
ARU 04 27 23.4
ARU SS **SS 04 29 01.8 -1.0**
ARU pmax pmax
comp=Z,103nm,1.7s
ARU MLR MLR
comp=Z,2μm,19.0s
ARU Arti 55.37 318 *e* P **P 04 17 37.6 +0.4**
comp=Z,49nm,0.8s
ARU LR LR
comp=Z,2μm,19.0s
DLBC Dease Lake 56.93 39 *e* P **P 04 17 49.5 +1.2**
comp=Z,10nm,0.9s
AB31 Akbulak array 57.19 309 *i* P **P 04 17 50.4 +0.2**
AB31 pmax pmax
comp=Z,13nm,0.6s
ABKAR Akbulak array 57.19 309 *e* P **P 04 17 50.3 +0.1**
KBL Kabul 57.26 290 *e* P **P 04 17 51.6 +0.4**
KBL pmax pmax
comp=Z,36nm,1.1s
KBL Kabul 57.26 290 *e* P **P 04 17 51.6 +0.4**
comp=Z,36nm,1.1s
AKTO Aktyubinsk 57.87 311 P **P 04 17 54.5 -0.5**
AKTO pmax pmax
comp=Z,27nm,0.9s
FUNA Funafuti 58.40 135 PFAKE 04 18 10.0 +11
FUNA LR LR
comp=Z,7μm,20.0s
HOPEN Hopen 58.45 346 *e* P **P 04 17 59.3 +0.7**
HOPEN IAmb IAmb 04 18 00.3
comp=Z,60nm,1.4s
FITZ Fitzroy Crossi 58.66 198 *e* P **P 04 18 00.6 -0.1**
comp=Z,74nm,1.2s
CTAO Charters Tower 58.71 175 *e* P **P 04 18 01.0 -0.1**
CTAO pmax pmax
comp=Z,14nm,0.6s
CTAO Charters Tower 58.71 175 *e* P **P 04 18 01.0 -0.1**
comp=Z,14nm,0.6s
WRAB Tennant Creek 58.87 188 *c i* P **P 04 18 01.0 -1.2**
WRAB pmax pmax
comp=Z,256nm,1.2s
WRAB Tennant Creek 58.87 188 *e* P **P 04 18 01.6 -0.6**
comp=Z,125nm,1.3s
WB2 Warramunga Arr 58.88 188 *e* P **P 04 18 01.8 -0.5**
comp=Z,149nm,1.3s
WRA Warramunga Arr 58.88 188 P **P 04 18 01.7 -0.6**
comp=Z,38nm,0.5s,baz=6.7,slow=7.0,SNR=246
WRA LR LR 04 42 52.5
comp=Z,199nm,21.5s,baz=345,slow=35
SPA0 Spitsbergen Ar 58.89 349 *e* P **P 04 18 02.2 +0.5**
SPA0 IAmb IAmb 04 18 05.2
comp=Z,122nm,1.9s
KBS Kingsbay 59.00 350 *e* P **P 04 18 03.3 +0.8**
KBS IAmb IAmb 04 18 04.3
comp=Z,22nm,0.6s
KBS Kingsbay 59.00 350 *e* P **P 04 18 03.8 +1.4**
KBS pmax pmax
comp=Z,23nm,0.8s
KBS MLR MLR
comp=Z,135nm,19.0s
KBS Kingsbay 59.00 350 *e* P **P 04 18 03.8 +1.4**
comp=Z,23nm,0.8s
KBS LR LR
comp=Z,135nm,19.0s
HSPB Hornsund (broa 59.82 348 *e* P **P 04 18 09.5 +1.4**
HSPB IAmb IAmb 04 18 11.7
comp=Z,49nm,1.3s
LVZ Lovozero 60.70 336 PFAKE 04 18 30.0 +16
LVZ LR LR
comp=Z,558nm,20.0s
RES Resolute Bay 60.77 15 *e* P **P 04 18 14.9 +0.3**
RES pmax pmax
comp=Z,17nm,0.7s
RES Resolute Bay 60.77 15 *e* P **P 04 18 14.9 +0.3**
comp=Z,17nm,0.7s
BJO Bjornoya 60.84 345 *e* P **P 04 18 15.4 +0.3**
BJO IAmb IAmb 04 18 17.8
comp=Z,116nm,1.5s
TMCR Tamitsa 61.44 331 *e* P **P 04 18 19.5 +0.2**
TMCR pmax pmax
comp=Z,42nm,1.0s
KEV Kevo 61.97 339 PFAKE 04 18 40.0 +17
KEV LR LR
comp=Z,437nm,22.0s
YKW3 Yellowknife Ar 61.99 31 *e* P **P 04 18 23.7 +0.6**
comp=Z,11nm,0.8s
YKA Yellowknife Ar 62.03 31 P **P 04 18 23.8 +0.4**
comp=Z,7.3nm,0.6s,baz=302,slow=6.5,SNR=172
YKB5 Yellowknife Ar 62.03 31 *e* P **P 04 18 22.1 -1.3**
ARCES ARCESS Array B 62.52 339 P **P 04 18 26.8 +0.3**
comp=Z,5.3nm,0.7s,baz=46,slow=6.6,SNR=20
ARCES LR LR 04 47 54.5
comp=Z,320nm,21.9s,baz=46,slow=38
ARE0 ARCESS Array S 62.52 339 *e* P **P 04 18 27.1 +0.6**
ARE0 IAmb IAmb 04 18 27.6
comp=Z,70nm,1.9s
KLMR Klimovskoe 62.53 327 *e* P **P 04 18 24.3 -2.4**
KLMR *e* *SP **pP 04 18 37.9 -0.3**
KLMR *e* 04 20 42.3
KLMR *e* S **S 04 26 50.4 -0.8**
KLMR pmax pmax
comp=Z,25nm,0.9s
KLMR MLR MLR
comp=Z,1μm,18.0s
AS01 Alice Springs 62.60 188 *e* P **P 04 18 26.2 -1.3**
AS31 Alice Springs 62.61 188 *e* P **P 04 18 27.4 -0.2**
comp=Z,8.7nm,0.9s
ASAR Alice Springs 62.61 188 P **P 04 18 27.4 -0.2**
comp=Z,25nm,0.8s,baz=11,slow=8.2,SNR=198
ASAR LR LR 04 45 30.6
comp=Z,165nm,22.0s,baz=4.0,slow=36
MBWA Marble Bar 63.21 203 *e* P **P 04 18 30.6 -1.0**
comp=Z,22nm,0.8s
GEYT Alibeck 63.42 298 P **P 04 18 32.8 -0.2**
comp=Z,6.6nm,0.7s,baz=27,slow=3.6,SNR=10
GEYT LR LR 04 48 00.2
comp=Z,487nm,19.4s,baz=65,slow=38
KTK1 Kautokeino 63.48 339 *e* P **P 04 18 33.7 +0.8**
KTK1 IAmb IAmb 04 18 34.0
comp=Z,16nm,0.5s
DAG Danmarks Havn 64.06 355 ⇓ *i* P **P 04 18 36.7 +0.1**
comp=Z,22nm,0.7s
DAG Danmarks Havn 64.06 355 ⇓ *i* P **P 04 18 36.7 +0.1**
DAG pmax pmax
comp=Z,15nm,0.7s
TRO Tromso 64.20 341 *e* P **P 04 18 38.0 +0.4**
TRO IAmb IAmb 04 18 38.5
comp=Z,19nm,0.7s
EIDS Eidsvold 64.40 171 *e* P **P 04 18 39.1 -0.3**
comp=Z,18nm,0.6s
A04D Lummi Island 65.15 47 P **P 04 18 45.7 +1.6**
baz=301
MBW Mount Baker 65.57 46 P **P 04 18 48.1 +0.9**
MSVF Nonsavu 65.58 142 *e* P **P 04 18 49.1 +1.8**
MSVF pmax pmax
comp=Z,58nm,1.5s
MSVF Nonsavu 65.58 142 *e* P **P 04 18 49.1 +1.8**
comp=Z,58nm,1.5s
B05A Bryant 65.73 47 P **P 04 18 49.0 +1.0**
baz=302
JCW Jim Creek 65.87 47 P **P 04 18 50.1 +1.2**
B06A Marblemount 65.95 46 *e* P **P 04 18 50.8 +1.5**
comp=Z,27nm,1.3s
COCO West Island 65.96 229 *i* P **P 04 18 52.6 +2.9**
MOS Moscow 66.13 323 *e* P **P 04 18 50.1 -0.2**
MOS *e* 04 19 02.1
MOS *e* 04 19 27.5
MOS *e* S **S 04 27 34.1 -1.7**
MOS pmax pmax
comp=Z,22nm,0.6s
MOS MLR MLR
comp=Z,1μm,17.0s
VRH Novokhopyorsk 66.60 318 *e* P **P 04 18 52.7 -0.7**
VRH pmax pmax
comp=Z,20nm,0.8s
VRH MLR MLR
comp=Z,1μm,16.0s
G03D McMinnville, O 66.66 50 P **P 04 18 55.7 +1.8**
baz=302
TDL Tradedollar La 66.67 49 P **P 04 18 55.9 +1.7**
NLW Nelson Butte 66.83 46 P **P 04 18 56.5 +1.4**
OBN Obninsk 66.98 323 *d i* P **P 04 18 55.6 -0.1**
OBN *i* 04 19 09.7
OBN *i* S **S 04 27 49.2 +3.2**
OBN *i* SS **SS 04 32 00.8 -3.4**
OBN pmax pmax
comp=Z,81nm,2.5s
OBN MLR MLR
comp=Z,524nm,15.0s
OBN Obninsk 66.98 323 PFAKE 04 19 10.0 +14
OBN LR LR
comp=Z,635nm,19.0s
LTY Liberty 67.08 47 *e* P **P 04 18 57.6 +0.9**
comp=Z,9.5nm,0.8s
ETW Entiat 67.09 47 P **P 04 18 58.0 +1.2**
B08A Colville Reser 67.24 46 *e* P **P 04 18 58.5 +0.9**
comp=Z,12nm,1.1s
LPSR Galich'ya Gora 67.26 320 *e* P **P 04 18 57.3 -0.3**
LPSR pmax pmax
comp=Z,10.0nm,0.8s
LPSR MLR MLR
comp=Z,680nm,17.0s
NAC Naches 67.28 48 P **P 04 18 59.4 +1.5**
EBG Ellensburg 67.33 47 P **P 04 18 59.9 +1.6**
I03D Drain, OR 67.42 52 P **P 04 19 00.4 +1.7**
baz=303
FIA1 FINESS Array S 67.48 332 *e* P **P 04 18 59.0 +0.2**
comp=Z,36nm,0.8s
FINES FINESS Array B 67.48 332 P **P 04 18 59.0 +0.1**
comp=Z,29nm,0.7s,baz=46,slow=8.2,SNR=108
FINES LR LR 04 50 27.9
comp=Z,732nm,20.2s,baz=46,slow=38
FINES FINESS Array B 67.48 332 P **P 04 18 59.0 +0.1**
H04A Detroit Lake 67.59 50 *e* P **P 04 19 01.2 +1.4**
comp=Z,18nm,0.9s
G05D Wamic, OR 67.80 49 P **P 04 19 02.9 +1.7**
baz=303
MOR8 Moi Rana 67.88 340 *e* P **P 04 19 00.6 -0.7**
MOR8 IAmb IAmb 04 19 00.9
comp=Z,20nm,0.6s
VSR Storozhevoye 67.93 319 *e* P **P 04 19 01.5 -0.3**
VSR pmax pmax
comp=Z,20nm,0.7s
VSR MLR MLR
comp=Z,1μm,17.0s
I04A Tendick Farm, 67.93 51 P **P 04 19 03.3 +1.2**
baz=303
L02D Cave Junction, 68.09 53 P **P 04 19 04.4 +1.4**
baz=303
C09A Chrisman Ranch 68.14 46 *e* P **P 04 19 04.5 +1.2**
comp=Z,15nm,0.8s
I05D Terrebonne, OR 68.28 50 P **P 04 19 05.5 +1.2**
baz=303
NEW Newport 68.52 45 P **P 04 19 06.6 +0.9**
baz=305,SNR=6.8
NEW Newport 68.52 45 *e* P **P 04 19 05.6 -0.1**
NEW pmax pmax
comp=Z,10.0nm,0.9s
NEW Newport 68.52 45 *e* P **P 04 19 05.6 -0.1**
comp=Z,10nm,0.9s
YBH Yreka Blue Hor 68.88 53 *e* P **P 04 19 08.3 +0.2**
YBH pmax pmax
comp=Z,9.0nm,0.8s
YBH Yreka Blue Hor 68.88 53 *e* P **P 04 19 08.3 +0.2**
comp=Z,9.4nm,0.8s
SUMG Summit 68.92 0 *i* P **P 04 19 09.2 +1.0**
comp=Z,32nm,0.7s
SUMG Summit 68.92 0 *i* P **P 04 19 09.2 +1.0**
SUMG pmax pmax
comp=Z,32nm,0.7s
SUMG Summit 68.92 0 *e* P **P 04 19 08.4 +0.3**
comp=Z,30nm,0.7s
J05D Fort Rock, OR 68.93 51 P **P 04 19 09.8 +1.3**
baz=304,SNR=6.4
M02C Callahan 68.98 53 P **P 04 19 10.6 +1.9**
baz=304,SNR=5.9
K04D Chiloquin, OR 68.98 52 P **P 04 19 10.5 +1.7**
baz=304
VSU Vasula 69.18 329 *d i* P **P 04 19 09.7 +0.2**
VSU pmax pmax
comp=Z,271nm,2.5s
LHEM Herd Peak 69.24 53 P **P 04 19 12.0 +1.5**
GOF Gofitskoye 69.29 312 ⇓ *i* P **P 04 19 11.1 +0.7**
GOF *e* S S 04 28 06.7 -7.3
GOF pmax pmax
comp=Z,73nm,0.9s
GOF smax smax
comp=N,21nm,0.9s
N02D Trinity Center 69.30 54 P **P 04 19 12.3 +1.5**
baz=304,SNR=5.8
M04C Macdoel 69.39 53 P **P 04 19 12.4 +1.1**
baz=304,SNR=9.7
ARMA Armidale 69.44 171 *e* P **P 04 19 11.2 -0.3**
comp=N,45nm,1.6s
K05A Summer Lake 69.45 51 *e* P **P 04 19 13.5 +1.7**
comp=N,31nm,1.0s
WALA Waterton Lakes 69.80 43 *e* P **P 04 19 13.0 -0.7**
comp=N,49nm,1.8s
NSS Namsos 69.80 339 *e* P **P 04 19 12.4 -0.8**
NSS IAmb IAmb 04 19 16.8
comp=Z,402nm,2.9s
BSMT Bassoo Peak 70.04 44 P **P 04 19 16.5 +1.2**
ZEI Tsey 70.06 309 *e* P **P 04 19 14.8 -0.7**
ZEI pmax pmax
comp=Z,30nm,0.9s
KIV Kislovodsk 70.12 311 *d i* P **P 04 19 16.1 +0.4**
KIV *i* 04 19 33.6
KIV pmax pmax
comp=Z,86nm,1.0s
KIV Kislovodsk 70.12 311 *e* P **P 04 19 15.2 -0.5**
comp=Z,63nm,0.9s
KIV LR LR

comp=Z,334nm,22.0s
KIV Kislovodsk 70.12 311 P P 04 19 16.7 +1.0
SNR=23
KIV Kislovodsk 70.12 311 P P 04 19 16.7 +1.0
SNR=23
KBZ Khabaz 70.13 310 P P 04 19 15.8 +0.2
comp=Z,19nm,0.8s,baz=58,slow=5.9,SNR=50
KBZ LR LR 04 55 06.8
comp=Z,377nm,18.4s,baz=42,slow=40
O03D Paynes Creek 70.25 54 P P 04 19 17.4 +0.8
baz=304,SNR=7.8
MOD Modoc Plateau 70.27 52 *eP* **P 04 19 18.0 +1.2**
comp=Z,9.0nm,0.8s
STKA Stephens Creek 70.32 180 P P 04 19 16.9 +0.2
comp=Z,8.4nm,0.5s,baz=354,slow=6.2,SNR=34
STKA LR LR 04 48 46.1
comp=Z,116nm,21.7s,baz=23,slow=35
STKA Stephens Creek 70.32 180 *eP* **P 04 19 16.9 +0.2**
STKA pmax pmax
comp=Z,3.0nm,0.6s
STKA Stephens Creek 70.32 180 *eP* **P 04 19 16.9 +0.2**
comp=Z,2.8nm,0.6s
BMO Blue Mountains 70.37 48 *eP* **P 04 19 18.4 +1.1**
BMO pmax pmax
comp=Z,9.0nm,0.9s
BMO MLR MLR
comp=Z,418nm,21.0s
BMO Blue Mountains 70.37 48 *eP* **P 04 19 18.4 +1.1**
comp=Z,9.0nm,0.9s
BMO LR LR
comp=Z,418nm,21.0s
JTMT Jette 70.38 44 *eP* **P 04 19 18.6 +1.3**
SCO Scoresbysund 70.40 354 *i* P **P 04 19 16.7 -0.1**
comp=Z,8.1nm,0.8s
SCO Scoresbysund 70.40 354 *i* P **P 04 19 16.7 -0.1**
SCO pmax pmax
comp=Z,8.0nm,0.8s
YBMT Yellow Bay 70.45 44 *eP* **P 04 19 19.2 +1.5**
NEY Neytrino 70.51 310↓ *eP* **P 04 19 20.2 +2.0**
NEY pmax pmax
comp=Z,3.0nm,0.9s
SWMT Swartz Lake 70.67 44 *eP* **P 04 19 20.2 +1.1**
WVOR Wild Horse Val 70.98 51 *eP* **P 04 19 22.3 +1.3**
WVOR pmax pmax
comp=Z,10.0nm,0.9s
WVOR Wild Horse Val 70.98 51 *eP* **P 04 19 22.3 +1.3**
comp=Z,9.6nm,0.9s
GNI Garni 71.05 306 *d i* P **P 04 19 22.5 +1.0**
GNI pmax pmax
comp=Z,190nm,1.7s
GNI Garni 71.05 306 *eP* **P 04 19 21.6 +0.1**
comp=Z,18nm,1.0s
GNI LR LR
comp=Z,741nm,19.0s
GNI Garni 71.05 306 P P 04 19 23.2 +1.6
SNR=7.4
GNI Garni 71.05 306 P P 04 19 23.2 +1.6
SNR=7.4
MSO Missoula 71.11 45 P P 04 19 22.4 +0.7
baz=307,SNR=7.0
MSO Missoula 71.11 45 *eP* **P 04 19 22.4 +0.7**
comp=Z,10nm,1.0s
BBOO Buckleboo 71.47 185 *eP* **P 04 19 22.9 -0.8**
comp=Z,31nm,0.7s
NACGM Naroch 71.52 327 *e* **P 04 19 24.0 +0.1**
NACGM *e*LQ LQ 04 51 20.0
NACGM *e*LR LR 04 53 04.0
AFDM Forest Hills D 71.54 55 *eP* **P 04 19 25.7 +1.3**
comp=Z,10.0nm,1.2s
UOSS Minazif 71.74 288 *eP* **P 04 19 26.1 +0.4**
comp=Z,1.5nm,1.0s
FFC Flin Flon 71.95 33 *eP* **P 04 19 27.0 +0.5**
FFC pmax pmax
comp=Z,20nm,0.9s
FFC MLR MLR
comp=Z,249nm,19.0s
FFC Flin Flon 71.95 33 *eP* **P 04 19 27.0 +0.5**
comp=Z,20nm,0.9s
FFC LR LR
comp=Z,249nm,19.0s
MFID Camas Ranch 72.08 48 *eP* **P 04 19 27.9 +0.3**
comp=Z,44nm,1.8s
SOC Sochi 72.09 312 *eP* **P 04 19 26.6 -0.9**
SOC *e* 04 22 06.5
SOC *e*PPP PPP 04 23 49.7
SOC *e*S **S 04 28 46.9 +0.3**
SOC *e*SSS SSS 04 36 33.7
SOC pmax pmax
comp=Z,31nm,0.9s
SOC MLR MLR
comp=Z,506nm,18.0s
FCC Fort Churchill 72.20 27 *eP* **P 04 19 28.2 +0.3**
FCC pmax pmax
comp=Z,41nm,1.2s
FCC Fort Churchill 72.20 27 *eP* **P 04 19 28.1 +0.3**
comp=Z,41nm,1.2s
BSY Bisya 72.25 285 P P 04 19 31.0 +2.1
SNR=6.2
BSY Bisya 72.25 285 P P 04 19 31.0 +2.1
SNR=6.2
ARQ Araqi 72.42 286 P P 04 19 31.0 +1.1
SNR=6.9
ARQ Araqi 72.42 286 P P 04 19 31.0 +1.1
SNR=6.9
CMB Columbia Colle 72.45 55 *eP* **P 04 19 30.9 +1.1**
CMB pmax pmax
comp=Z,11nm,0.9s
CMB Columbia Colle 72.45 55 *eP* **P 04 19 30.9 +1.1**
comp=Z,11nm,0.9s
NC405 NORSAR Array S 72.54 337 *eP* **P 04 19 30.2 +0.3**
LRM Limekiln Ridge 72.54 45 *eP* **P 04 19 31.5 +1.0**
EGMT Eagleton 72.62 42 P P 04 19 31.3 +0.6
baz=309,SNR=11
EGMT Eagleton 72.62 42 *eP* **P 04 19 31.6 +0.9**
comp=Z,18nm,0.8s
ANN Anapa 72.66 314 *eP* **P 04 19 29.2 -1.7**
ANN *e**PP **pP 04 19 39.5 -3.1**
ANN *e* 04 22 10.7
ANN *e*PPP PPP 04 23 55.2
ANN *e*S **S 04 28 52.0 -1.1**
ANN pmax pmax
comp=Z,52nm,0.9s
ANN MLR MLR
comp=N,509nm,20.0s
ANN MLR MLR
comp=Z,417nm,20.0s
ANN MLR MLR
comp=E,434nm,20.0s
NC204 NORSAR Array S 72.69 338 *eP* **P 04 19 31.0 +0.1**
NB201 NORSAR Array S 72.72 337 *eP* **P 04 19 31.6 +0.6**
DLMT Dillon 72.74 45 *eP* **P 04 19 32.4 +0.8**
comp=E,17nm,0.9s
NB2 NORSAR Subarra 72.75 337 P P 04 19 31.1 -0.1
comp=Z,20nm,0.8s,baz=39,slow=6.2
NB2 NORSAR Subarra 72.75 337 P P 04 19 31.1 -0.1
baz=39,slow=6.2
NOA NORSAR Array B 72.75 337 P P 04 19 31.3 +0.1
comp=Z,17nm,0.8s,baz=38,slow=5.9,SNR=37
NOA LR LR 04 54 14.3
comp=Z,531nm,20.9s,baz=40,slow=38
WAKR Walker 72.78 54 *eP* **P 04 19 33.4 +1.4**
HLID Hailey 72.81 48 P P 04 19 33.4 +1.4
baz=307,SNR=14
HLID Hailey 72.81 48 *eP* **P 04 19 32.3 +0.2**
comp=Z,7.7nm,1.0s
NBO02 NORSAR Array S 72.85 337 *eP* **P 04 19 32.1 +0.4**
NBO00 NORSAR Array S 72.89 337 *eP* **P 04 19 32.7 +0.7**
NC602 NORSAR Array S 72.89 337 *eP* **P 04 19 33.4 +1.5**
NC602 IAmb IAmb 04 19 44.1
comp=Z,31nm,1.4s
NAO01 NORSAR Array S 73.00 337 *eP* **P 04 19 33.0 +0.3**
BMN Battle Mountai 73.02 52 *eP* **P 04 19 34.4 +1.0**
BMN pmax pmax
comp=Z,13nm,0.8s
BMN Battle Mountai 73.02 52 *eP* **P 04 19 34.4 +1.0**
comp=Z,13nm,0.8s
BOZ Bozeman (W) 73.10 45 P P 04 19 34.8 +1.1
baz=308,SNR=22
BOZ Bozeman (W) 73.10 45 *eP* **P 04 19 34.0 +0.3**
BOZ pmax pmax
comp=Z,12nm,0.8s
BOZ MLR MLR
comp=Z,173nm,19.0s
BOZ Bozeman (W) 73.10 45 *eP* **P 04 19 34.0 +0.3**
comp=Z,12nm,0.8s
BOZ LR LR
comp=Z,173nm,19.0s
AKASG Malin Array Be 73.20 322 P P 04 19 34.0 0.0
comp=Z,11nm,0.6s,baz=44,slow=6.0,SNR=97
AKASG LR LR 04 54 38.6
comp=Z,937nm,18.6s,baz=45,slow=38
AKASG Malin Array Be 73.20 322 P P 04 19 34.0 0.0
AKBB Malin Array Si 73.20 322 *eP* **P 04 19 33.5 -0.5**
AKBB pmax pmax
comp=Z,42nm,1.2s
AKBB Malin Array Si 73.20 322 *eP* **P 04 19 33.5 -0.5**
comp=Z,42nm,1.2s
KIEV Kiev 73.21 322 *d i* P **P 04 19 33.8 -0.2**
KIEV pmax pmax
comp=Z,25nm,1.0s
KIEV Kiev 73.21 322 *eP* **P 04 19 33.3 -0.7**
comp=Z,41nm,1.2s
KIEV LR LR
comp=Z,737nm,19.0s
AK11 Malin Array Si 73.24 322 *eP* **P 04 19 34.0 -0.2**
NV01 Mina Array Sit 73.54 54 *eP* **P 04 19 37.6 +1.1**
NVAR Mina Array Bea 73.54 54 P P 04 19 37.9 +1.4
comp=Z,9.4nm,0.8s,baz=288,slow=6.3,SNR=49
NVAR LR LR 04 46 13.9
comp=Z,179nm,21.5s,baz=274,slow=31
NV11 Mina Array Sit 73.63 54 *eP* **P 04 19 38.1 +1.2**
comp=Z,8.4nm,0.9s
SUW Suwalki 73.67 327 *eP* **P 04 19 36.6 0.0**
SUW Suwalki 73.67 327 *eP* **P 04 19 36.6 0.0**
QLMT Earthquake Lak 73.72 45 *eP* **P 04 19 39.1 +1.6**
ELK Elko 74.04 50 *eP* **P 04 19 39.8 +0.4**
ELK pmax pmax
comp=Z,5.0nm,0.8s
ELK Elko 74.04 50 *eP* **P 04 19 39.8 +0.4**
comp=Z,5.2nm,0.8s
GCMT Greycliff 74.08 44 *eP* **P 04 19 40.8 +1.3**
YMR Madison River 74.08 45 *eP* **P 04 19 41.5 +1.9**
comp=Z,8.7nm,0.8s
SFJD Kangerlussuaq 74.08 5 *i* P **P 04 19 38.6 -0.2**
comp=Z,20nm,0.9s
SFJD Kangerlussuaq 74.08 5 *eP* **P 04 19 39.5 +0.7**
SFJD pmax pmax
comp=Z,23nm,0.9s
SFJD Kangerlussuaq 74.08 5 *eP* **P 04 19 39.5 +0.7**
comp=Z,23nm,0.9s
YFT Old Faithful 74.29 45 *eP* **P 04 19 43.9 +3.1**
comp=Z,13nm,1.0s
SMMC Simmler 74.30 57 P P 04 19 41.9 +1.1
baz=307
KONO Kongsberg 74.34 337 PFAKE 04 19 50.0 +9.5
KONO LR LR
comp=Z,476nm,20.0s
SIM Simferopol' 74.41 315 P P 04 19 41.4 +0.2
SIM S **S 04 29 10.2 -2.7**
SIM pmax pmax
comp=Z,17nm,0.8s
LKWY Lake 74.46 45 *eP* **P 04 19 43.2 +1.4**
LKWY pmax pmax
comp=Z,24nm,1.4s
LKWY MLR MLR
comp=Z,413nm,22.0s
LKWY Lake 74.46 45 *eP* **P 04 19 43.2 +1.4**
comp=Z,24nm,1.4s
LKWY LR LR
comp=Z,413nm,22.0s
H17A Grant Village 74.47 45 P P 04 19 44.9 +3.0
baz=309,SNR=17
H17A Grant Village 74.47 45 *eP* **P 04 19 44.8 +2.9**
comp=Z,22nm,1.0s
IMW Indian Meadow 74.58 46 *eP* **P 04 19 44.5 +1.9**
comp=Z,14nm,0.9s
VES Vestal, Richgr 74.58 56 P P 04 19 42.3 -0.1
baz=307,SNR=7.7
FLWY Flagg Ranch 74.60 46 *eP* **P 04 19 44.7 +2.1**
comp=Z,53nm,1.6s
PKM Mcpherson Peak 74.67 58 P P 04 19 44.6 +1.4
baz=307
FXWY Fox Creek 74.70 46 *eP* **P 04 19 44.9 +1.7**
comp=Z,11nm,1.0s
RLMT Red Lodge 74.72 44 P P 04 19 44.6 +1.3
baz=310,SNR=7.5
RLMT Red Lodge 74.72 44 *eP* **P 04 19 44.6 +1.3**
comp=Z,9.0nm,0.9s
MOOW Moose Ponds 74.78 46 *eP* **P 04 19 44.2 +0.6**
comp=Z,13nm,1.0s
HVU Hansel Valley 74.86 48 *eP* **P 04 19 45.7 +1.6**
HVU pmax pmax
comp=Z,14nm,0.8s
HVU Hansel Valley 74.86 48 *eP* **P 04 19 45.7 +1.6**
comp=Z,14nm,0.8s
CWC Cottonwood Cre 74.87 55 P P 04 19 44.9 +0.7
baz=307
LOHW Long Hollow 74.95 46 *eP* **P 04 19 46.1 +1.5**
comp=Z,8.0nm,1.0s
SNOW Snow King Moun 74.96 46 *eP* **P 04 19 47.0 +2.2**
comp=Z,11nm,1.0s
REDW Red Top Meadow 74.97 46 *eP* **P 04 19 45.6 +0.8**
comp=Z,12nm,1.0s
GRAC Grayevine Rang 74.99 55 P P 04 19 45.7 +1.0
baz=307
NWAO Narrogin (SRO) 75.00 201 *eP* **P 04 19 44.8 +0.3**
NWAO pmax pmax
comp=Z,103nm,1.3s
NWAO Narrogin (SRO) 75.00 201 *eP* **P 04 19 44.8 +0.3**
comp=Z,103nm,1.3s
ODD1 Odda 75.00 339 *eP* **P 04 19 45.1 +0.7**
ODD1 IAmb IAmb 04 19 47.6
comp=Z,24nm,0.9s
ISA Isabella, Lake 75.09 56 P P 04 19 45.3 -0.1
baz=307
DGMT Dagmar 75.15 39 P P 04 19 45.9 +0.5
baz=312,SNR=6.3
DGMT Dagmar 75.15 39 *eP* **P 04 19 44.9 -0.6**
comp=Z,17nm,0.8s
ARVC Arvin 75.18 57 P P 04 19 46.1 +0.3
baz=307
AHID Auburn Hatcher 75.21 47 *eP* **P 04 19 46.9 +0.8**
comp=Z,12nm,0.9s
AHID LR LR
comp=Z,102nm,19.0s
BGU Big Grassy Mou 75.24 49 *eP* **P 04 19 48.0 +1.7**
comp=Z,7.6nm,0.9s
DAC Darwin (Calif) 75.28 55 *eP* **P 04 19 46.9 +0.2**
DAC pmax pmax
comp=Z,7.0nm,0.9s
DAC Darwin (Calif) 75.28 55 *eP* **P 04 19 46.9 +0.2**
comp=Z,7.1nm,0.9s
R11A Troy Canyon, C 75.29 53 P P 04 19 47.9 +1.2
baz=308,SNR=30
R11A Troy Canyon, C 75.29 53 *eP* **P 04 19 47.8 +1.2**
comp=Z,11nm,0.8s
LAO LASA Array 75.32 41 P P 04 19 47.6 +1.1
baz=312,SNR=17
LAO LASA Array 75.32 41 *eP* **P 04 19 47.0 +0.5**
comp=Z,27nm,0.9s
SPUT South Promonto 75.35 49 *eP* **P 04 19 48.4 +1.5**
comp=Z,26nm,1.6s
A25A Svangstu Ranch 75.36 38 P P 04 19 47.4 +0.7
baz=313
MPMC Manual Prospec 75.48 55 P P 04 19 48.5 +0.6
baz=308,SNR=10
OSI Osito Audit: C 75.56 57 P P 04 19 49.5 +1.5
baz=307
BLG Laguna Peak, P 75.64 58 P P 04 19 49.6 +1.2
baz=307
FURC Furnace Creek, 75.64 55 P P 04 19 49.4 +1.1
baz=308,SNR=9.2
HWUT Hardware Ranch 75.67 48 *eP* **P 04 19 50.1 +1.3**
comp=Z,17nm,1.0s
LRMC Laurel Mtn Rad 75.71 56 P P 04 19 50.0 +1.0
baz=308
TPNV Topopah Spring 75.73 54 P P 04 19 50.1 +0.9
baz=308,SNR=22
TPNV Topopah Spring 75.73 54 *eP* **P 04 19 50.3 +1.1**
TPNV pmax pmax
comp=Z,28nm,1.2s
TPNV Topopah Spring 75.73 54 *eP* **P 04 19 50.3 +1.1**
comp=Z,28nm,1.2s
RSUT Red Spur Mount 75.74 48 *eP* **P 04 19 50.4 +1.1**
B25A Knox Farm, Ray 75.79 39 P P 04 19 49.4 +0.2
baz=313
DUG Dugway, Tooele 75.83 50 P P 04 19 51.1 +1.4
baz=309,SNR=24
DUG Dugway, Tooele 75.83 50 *eP* **P 04 19 51.1 +1.4**
DUG pmax pmax
comp=Z,16nm,0.7s
DUG MLR MLR
comp=Z,298nm,19.0s
DUG Dugway, Tooele 75.83 50 *eP* **P 04 19 51.1 +1.4**
comp=Z,16nm,0.7s
DUG LR LR
comp=Z,298nm,19.0s
KIS Kishinev 75.87 320 *eP* **P 04 19 49.0 -0.5**
KIS *e*L L 04 48 28.0
KIS LRM MLR 04 55 54.0
comp=Z,1μm,16.0s
KIS Kishinev 75.87 320 *eP* **P 04 19 49.0 -0.5**
KIS MLR MLR
comp=N,600nm,16.0s
KIS MLR MLR
comp=E,300nm,16.0s
KIS MLR MLR
comp=Z,1μm,16.0s
KIS MLR MLR
comp=Z,1μm,16.0s
EDW2 Edwards Air Fo 75.87 57 P P 04 19 51.0 +1.1
baz=308,SNR=13
A26A Wade Farm, Ken 75.91 38 P P 04 19 50.5 +0.7
baz=314,SNR=11
TCUT Toone Canyon 76.08 48 *eP* **P 04 19 52.7 +1.6**
comp=Z,29nm,0.7s
BW06 Boulder Array 76.08 46 P P 04 19 51.7 +0.5
baz=310,SNR=23
BW06 Boulder Array 76.08 46 *eP* **P 04 19 51.8 +0.7**
comp=Z,12nm,0.8s
PD31 Pinedale Array 76.08 46 *eP* **P 04 19 51.9 +0.7**
PDAR Pinedale Array 76.08 46 P P 04 19 51.8 +0.6
comp=Z,11nm,0.7s,baz=261,slow=2.4,SNR=120
BSD Bornholm Skovb 76.12 332 *i* P **P 04 19 50.7 -0.1**
comp=Z,570nm,18.0s
BSD Bornholm Skovb 76.12 332 *i* P **P 04 19 50.7 -0.1**
BSD MLR MLR
comp=Z,570nm,18.0s
C25A Freed Ranch, W 76.13 39 P P 04 19 52.0 +1.0
baz=313
SNART Snartemo 76.13 337 *eP* **P 04 19 48.6 -2.2**
SNART IAmb IAmb 04 19 52.3
comp=Z,13nm,0.9s
CTU Camp Tracy 76.14 49 *eP* **P 04 19 53.0 +1.5**
comp=Z,11nm,0.9s
B26A Jensen Ranch, 76.17 38 P P 04 19 52.3 +1.0
baz=314
BEL Belsk 76.24 327 *eP* **P 04 19 52.8 +1.3**
BEL Belsk 76.24 327 *eP* **P 04 19 52.8 +1.3**
LVV L'vov 76.24 324 *eP* **P 04 19 51.7 +0.1**
LVV MLR MLR
comp=Z,700nm,15.0s
LVV MLR MLR
comp=N,400nm,14.0s
LVV MLR MLR
comp=E,500nm,15.0s
PSUT Pine Spring 76.24 52 *eP* **P 04 19 53.3 +1.2**
comp=E,12nm,0.9s
A27A Ledoux Ranch, 76.25 37 P P 04 19 52.6 +0.9
baz=314
SHOC Shoshone, Teco 76.36 55 P P 04 19 53.3 +0.7
baz=308
JLU Jordanelle 76.38 49 *eP* **P 04 19 54.2 +1.4**
comp=E,10.0nm,1.0s
GSC Goldstone, Bar 76.39 56 P P 04 19 53.6 +0.8
baz=308,SNR=8.5
GSC Goldstone, Bar 76.39 56 *eP* **P 04 19 53.6 +0.8**
GSC pmax pmax
comp=Z,8.0nm,0.8s
GSC Goldstone, Bar 76.39 56 *eP* **P 04 19 53.6 +0.8**
comp=Z,8.2nm,0.8s
NLU North Lily Min 76.42 50 *eP* **P 04 19 54.3 +1.2**
comp=Z,11nm,0.9s
D25A Fairfield 76.48 40 P P 04 19 53.8 +0.7
baz=313,SNR=6.1
BFSC Mount Baldy Ra 76.48 57 P P 04 19 53.8 +0.4
baz=308,SNR=5.6
COP Copenhagen 76.57 333 *i* P **P 04 19 53.9 +0.6**
comp=Z,28nm,0.7s
comp=Z,420nm,16.0s
COP Copenhagen 76.57 333 *i* P **P 04 19 53.9 +0.6**
COP pmax pmax
comp=Z,28nm,0.7s
COP MLR MLR
comp=Z,420nm,16.0s
C26A Wahner Farm, P 76.62 39 P P 04 19 54.8 +1.0
baz=314,SNR=10
B27A Peters Farms, 76.62 38 P P 04 19 54.2 +0.4
baz=314
MPU Maple Canyon 76.64 49 *eP* **P 04 19 55.9 +1.5**
comp=Z,18nm,0.8s
A28A Rude Farm, Bot 76.74 37 P P 04 19 55.4 +0.9
baz=315,SNR=7.8
TUQ Turquoise Moun 76.87 55 P P 04 19 56.6 +1.0
baz=308,SNR=15
E25A Miller Ranch, 76.88 40 P P 04 19 56.3 +0.9
baz=313,SNR=16
BBRC Big Bear Solar 76.95 57 P P 04 19 56.6 +0.4
baz=308
HEC Hector,Ludlow 76.98 56 P P 04 19 56.9 +0.7
baz=308
KWP Kalwaria Pacla 76.98 324 *eP* **P 04 19 56.9 +1.1**
KWP Kalwaria Pacla 76.98 324 *eP* **P 04 19 56.9 +1.1**
C27A Sayler Ranch, 76.98 38 P P 04 19 56.8 +0.8
baz=314,SNR=5.2
D26A Manning 77.00 39 P P 04 19 56.6 +0.6
baz=314,SNR=8.2
B28A Dugan Ranch, T 77.02 37 P P 04 19 56.7 +0.6
baz=315,SNR=8.1
MURC Murrieta 77.18 57 P P 04 19 57.9 +0.6
baz=308
A29A Manning Farm, 77.21 36 P P 04 19 57.7 +0.6
baz=316,SNR=17
BUR08 Bucovina Ar. S 77.22 322 *eP* **P 04 19 57.9 +0.6**
BURAR Bucovina Array 77.23 322↓ *i* P **P 04 19 57.9 +0.5**
BURAR Bucovina Array 77.23 322↓ **P P 04 19 57.9 +0.5**
F25A Bowman 77.25 41 P P 04 19 58.2 +0.7
baz=313,SNR=6.8
MSU Marysvale 77.28 51 *eP* **P 04 19 59.0 +1.0**
MSU Marysvale 77.28 51 *eP* **P 04 19 59.0 +1.0**
TESR Tescani 77.29 320↑ *i* P **P 04 19 58.0 +0.4**
TMUT Trail Mountain 77.36 50 *eP* **P 04 19 59.8 +1.3**
comp=Z,9.4nm,0.8s
E26A Carlson Angus 77.38 40 P P 04 19 58.6 +0.4
baz=314,SNR=7.5
D27A Center 77.40 39 P P 04 19 58.8 +0.6
baz=314
GMRC Granite Mounta 77.44 55 P P 04 19 59.8 +1.0
baz=309,SNR=15
B29A Wagenman Farm, 77.48 37 P P 04 19 59.4 +0.7
baz=316,SNR=5.6
P17A Butcher Ranch, 77.52 49 *eP* **P 04 20 00.7 +1.4**
comp=Z,28nm,0.7s
C28A Hausauer Farms 77.52 38 P P 04 19 59.3 +0.4
baz=315
LCMT Little Creek M 77.57 52 *eP* **P 04 20 01.0 +1.5**
comp=Z,14nm,0.9s
A30A Hoffart Farm, 77.63 36 P P 04 19 59.9 +0.5
baz=316,SNR=16
PFO Pinyon Flats O 77.65 57 P P 04 20 00.5 +0.5
baz=308
PFO Pinyon Flats O 77.65 57 *eP* **P 04 20 00.7 +0.7**
PFO pmax pmax
comp=Z,9.0nm,1.0s
PFO Pinyon Flats O 77.65 57 *eP* **P 04 20 00.7 +0.7**
comp=Z,9.3nm,1.0s
KOLS Kolonicke sedl 77.68 324 *eP* **P 04 20 00.3 +0.6**
KOLS pmax pmax
comp=Z,9.0nm,1.0s
KOLS Kolonicke sedl 77.68 324 *eP* **P 04 20 00.3 +0.6**
VRI Vrincioaia 77.70 320↑ *i* P **P 04 20 00.6 +0.7**
VRI Vrincioaia 77.70 320↑ **P P 04 20 00.6 +0.7**
F26A Lodgepole 77.70 40 P P 04 20 00.4 +0.4
baz=314,SNR=14
BELC Belle Mtn. Jos 77.71 56 P P 04 20 00.7 +0.4
baz=309
P18A Preston Nutter 77.71 49 *eP* **P 04 20 01.7 +1.2**
comp=Z,15nm,0.9s
ULM Lac du Bonnet 77.76 34 P P 04 20 00.1 0.0
comp=Z,8.2nm,0.7s,baz=315,slow=7.3,SNR=24
ULM LR LR 04 58 27.1
comp=Z,111nm,18.2s,baz=318,slow=39
ULM Lac du Bonnet 77.76 34 *eP* **P 04 20 00.1 0.0**
ULM pmax pmax
comp=Z,12nm,0.8s
ULM Lac du Bonnet 77.76 34 *eP* **P 04 20 00.1 0.0**
comp=Z,12nm,0.8s
G25A Newell 77.77 41 P P 04 20 00.7 +0.3
baz=314,SNR=7.5
STHS Stebnicka Huta 77.80 325 *eP* **P 04 20 01.6 +1.2**

STHS pmax pmax
comp=Z,9.0nm,0.8s
STHS Stebnicka Huta 77.80 325 *e*P **P** 04 20 01.6 +1.2
MDND Maddock 77.80 37 P **P** 04 20 01.3 +0.8
baz=315
MDND Maddock 77.80 37 *e*P **P** 04 20 01.6 +1.2
comp=Z,46nm,1.0s
KNB Kanab 77.83 52 *e*P **P** 04 20 02.7 +1.7
KNB pmax pmax
comp=Z,16nm,1.0s
KNB Kanab 77.83 52 *e*P **P** 04 20 02.7 +1.7
comp=Z,16nm,1.0s
K22A Casper 77.84 45 P **P** 04 20 01.5 +0.6
baz=312,SNR=8.6
K22A Casper 77.84 45 *e*P **P** 04 20 01.6 +0.6
comp=Z,17nm,0.9s
OJC Ojcow 77.85 326 *e*P **P** 04 20 01.6 +0.9
OJC Ojcow 77.85 326 *e*P **P** 04 20 01.7 +1.1
OJC Ojcow 77.85 326 *e*P **P** 04 20 01.5 +0.9
comp=Z,26nm,0.8s
E27A Carson 77.85 39 P **P** 04 20 01.5 +0.7
baz=314,SNR=6.2
SRU San Rafael Swe 77.88 49 *e*P **P** 04 20 02.4 +1.1
SRU pmax pmax
comp=Z,34nm,0.7s
SRU San Rafael Swe 77.88 49 *e*P **P** 04 20 02.4 +1.1
comp=Z,34nm,0.7s
UZH Uzhgorod 77.89 324 *e*P **P** 04 20 01.8 +0.9
UZH *e* 04 20 12.6
B30A Myrvik Farm, E 77.97 36 P **P** 04 20 01.8 +0.5
baz=316,SNR=12
F27A Lemmon 78.01 40 P **P** 04 20 02.1 +0.4
baz=314
BR131 Keskin Array S 78.05 312 *e*P **P** 04 20 02.6 +0.4
BRTR Keskin Array B 78.05 312 P **P** 04 20 02.5 +0.4
comp=Z,4.3nm,0.5s,baz=113,slow=3.7,SNR=44
BRTR PP **PP** 04 23 00.9 +2.8
comp=Z,1.5nm,1.0s,baz=51,slow=6.7,SNR=3.8
BRTR LR LR 04 59 43.9
comp=Z,156nm,19.7s,baz=56,slow=40
H25A Fruitdale 78.07 42 P **P** 04 20 02.3 +0.2
baz=313,SNR=7.0
CRVS Cervenica-Dubn 78.07 325 *e*P **P** 04 20 02.6 +0.7
CRVS Cervenica-Dubn 78.07 325 *e*P **P** 04 20 02.6 +0.7
BAR Barrett 78.09 58 *e*P **P** 04 20 03.3 +1.0
comp=Z,13nm,1.2s
G26A Maurine 78.12 41 P **P** 04 20 02.9 +0.6
baz=314,SNR=31
MONP2 Monument Peak 78.12 57 P **P** 04 20 02.9 +0.2
baz=309
TRPA Tarpa 78.14 323⇓*e*P **P** 04 20 03.5 +1.3
IRM Iron Mountain 78.17 56 P **P** 04 20 03.7 +1.0
baz=309,SNR=11
E28A Huff 78.18 39 P **P** 04 20 03.2 +0.6
baz=315,SNR=6.2
RSSD Black Hills 78.19 42 P **P** 04 20 03.0 +0.1
baz=313
RSSD Black Hills 78.19 42 *e*P **P** 04 20 03.3 +0.4
RSSD pmax pmax
comp=Z,14nm,0.8s
RSSD Black Hills 78.19 42 *e*P **P** 04 20 03.3 +0.4
comp=Z,14nm,0.8s
NIE Niedzica 78.22 325 *e*P **P** 04 20 04.0 +1.3
NIE Niedzica 78.22 325 *e*P **P** 04 20 04.1 +1.3
BC3 Big Chuckawall 78.28 56 P **P** 04 20 04.1 +0.6
baz=309,SNR=7.7
B31A Greenbush Farm 78.30 36 P **P** 04 20 03.7 +0.5
baz=317
DOPR Dopca 78.30 320⇑*i*P P 04 20 11.7 +8.4
ISR Istrita 78.31 319⇑*i*P **P** 04 20 04.5 +1.1
ISR Istrita 78.31 319 ⇑P **P** 04 20 04.5 +1.1
MLR Muntele Rosu 78.35 320⇓*i*P **P** 04 20 04.2 +0.5
MLR Muntele Rosu 78.35 320 *e*P **P** 04 20 04.1 +0.4
MLR *e* 04 20 11.5
MLR Muntele Rosu 78.35 320 *e*P **P** 04 20 04.1 +0.4
MLR *e*PcP **PcP** 04 20 11.5 -1.4
MSAB Monastry St. A 78.36 318⇓*i*P **P** 04 20 04.4 +0.9
D29A Pettibone, Tap 78.37 38 P **P** 04 20 03.8 +0.2
baz=316
W13A Hualapai Mount 78.38 54 *e*P **P** 04 20 05.1 +1.0
comp=Z,6.3nm,0.9s
G27A Dupree 78.40 40 P **P** 04 20 04.3 +0.4
baz=314,SNR=15
I25A Rochford 78.41 42 P **P** 04 20 04.7 +0.5
baz=314,SNR=9.5
C30A Mose, Pekin 78.44 37 P **P** 04 20 04.1 +0.1
baz=316
ANTO Ankara 78.45 312 *e*P **P** 04 20 05.1 +0.9
ANTO pmax pmax
comp=Z,22nm,0.7s
ANTO MLR MLR
comp=Z,184nm,20.0s
ANTO Ankara 78.45 312 *e*P **P** 04 20 05.1 +0.9
comp=Z,22nm,0.7s
ANTO LR LR
comp=Z,184nm,20.0s
A32A Rocking H Ranc 78.46 35 P **P** 04 20 03.7 -0.4
baz=317,SNR=12
BR231 Keskin MP Arra 78.47 312 *e*P **P** 04 20 05.7 +1.2
SWSC Sam W. Stewart 78.50 57 P **P** 04 20 04.9 +0.3
baz=309
H26A Fairpoint 78.50 41 P **P** 04 20 04.9 +0.4
baz=314
U15A North Rim 78.53 52 *e*P **P** 04 20 06.7 +1.6
comp=Z,14nm,0.8s
O20A White River Ci 78.55 47 P **P** 04 20 05.3 +0.3
baz=312,SNR=8.7
O20A White River Ci 78.55 47 *e*P **P** 04 20 05.7 +0.7
comp=Z,16nm,0.9s
F28A McLaughlin 78.64 39 P **P** 04 20 05.6 +0.5
baz=315,SNR=8.1
CJR Cluj-Napoca 78.65 322⇑*i*P **P** 04 20 06.5 +1.3
CJR Cluj-Napoca 78.65 322 ⇑P **P** 04 20 06.5 +1.3
E29A Napoleon 78.69 38 P **P** 04 20 05.4 0.0
baz=316
C31A Landman Farms, 78.72 36 P **P** 04 20 05.6 +0.1
baz=317,SNR=7.1
PDMCI Parker Dam,Lak 78.72 55 P **P** 04 20 06.4 +0.7
baz=309,SNR=17
D30A Buchanan 78.73 37 P **P** 04 20 05.8 +0.2
baz=316,SNR=11
LANS Liptovska Anna 78.78 326 *e*P **P** 04 20 07.4 +1.5
LANS Liptovska Anna 78.78 326 *e*P **P** 04 20 07.4 +1.5
J25A Sunshine Ranch 78.81 43 P **P** 04 20 06.2 0.0
baz=314
KECS Kecovo 78.82 325 *e*P **P** 04 20 06.5 +0.5
KECS pmax pmax
comp=Z,5.0nm,1.2s
KECS Kecovo 78.82 325 *e*P **P** 04 20 06.5 +0.5
Y12C Blythe 78.82 56 P **P** 04 20 07.4 +1.0
baz=309,SNR=7.0
Y12C Blythe 78.82 56 *e*P **P** 04 20 07.6 +1.2
comp=Z,15nm,0.7s
B32A Ashes, Strandq 78.83 35 P **P** 04 20 05.9 -0.1
baz=317,SNR=12
VOIR 78.84 320⇓*i*P **P** 04 20 06.9 +0.6
VOIR 78.84 320 ⇓P **P** 04 20 06.9 +0.6
OKC Ostrava-Krasne 78.84 327⇓*i*P **P** 04 20 07.0 +0.9
OKC AMS AMS 04 57 50.0
comp=Z,700nm,18.5s
OKC Ostrava-Krasne 78.84 327⇓*i*P **P** 04 20 07.0 +0.9
OKC MLR MLR
comp=Z,700nm,18.5s
H27A Howes 78.85 41 P **P** 04 20 06.8 +0.4
baz=314,SNR=14
KSP Ksiaz 78.86 328 *e*P **P** 04 20 07.0 +0.8
KSP Ksiaz 78.86 328 *e*P **P** 04 20 07.0 +0.8
I26A New Underwood 78.86 42 P **P** 04 20 07.0 +0.5
baz=314,SNR=9.2
A33A Warroad 78.94 34 P **P** 04 20 06.8 +0.1
baz=318,SNR=17
GLA Glamis 79.07 56 P **P** 04 20 08.7 +1.0
baz=309
GLA Glamis 79.07 56 *e*P **P** 04 20 09.2 +1.5
GLA pmax pmax
comp=Z,13nm,0.8s
GLA Glamis 79.07 56 *e*P **P** 04 20 09.2 +1.5
comp=Z,13nm,0.8s
E30A Jud 79.09 38 P **P** 04 20 08.1 +0.5
baz=316
ARR Arges 79.10 320⇑*i*P **P** 04 20 09.0 +1.3
PV09 Paradox Valley 79.10 49 *e*P **P** 04 20 09.4 +1.2
G28A Parade 79.12 40 P **P** 04 20 08.3 +0.4
baz=315,SNR=14
F29A Eureka 79.13 39 P **P** 04 20 08.0 +0.2
baz=316

MORC Moravsky Berou 79.15 327 *e*P **P** 04 20 08.8 +0.9
MORC pmax pmax
comp=Z,68nm,0.8s
MORC Moravsky Berou 79.15 327 *e*P **P** 04 20 08.8 +0.9
comp=Z,68nm,0.8s
AGMN Agassiz Nation 79.20 35 P **P** 04 20 07.9 -0.3
baz=318,SNR=6.9
AGMN Agassiz Nation 79.20 35 *e*P **P** 04 20 07.8 -0.3
comp=Z,10nm,0.8s
DPC Dobruska-Polom 79.22 328⇓*i*P **P** 04 20 09.4 +1.1
DPC Dobruska-Polom 79.22 328⇓*i*P **P** 04 20 09.4 +1.1
UPC Upice 79.23 328⇓*e*P **P** 04 20 09.2 +0.9
UPC AMS AMS 04 57 50.0
comp=Z,800nm,16.6s
UPC Upice 79.23 328 *e*P **P** 04 20 09.2 +0.9
UPC MLR MLR
comp=Z,800nm,16.6s
PV10 Paradox Valley 79.24 49 *e*P **P** 04 20 10.4 +1.5
J26A Sides Ranch, S 79.25 42 P **P** 04 20 09.2 +0.7
baz=314,SNR=5.9
I27A Quinn 79.25 41 P **P** 04 20 09.4 +0.8
baz=314,SNR=16
PV04 Paradox Valley 79.31 49 *e*P **P** 04 20 10.0 +0.9
PHWY Pilot Hill 79.34 45 *e*P **P** 04 20 10.4 +1.0
comp=Z,7.2nm,0.9s
N23A Red Feather La 79.34 46 P **P** 04 20 10.5 +1.1
baz=313,SNR=10
N23A Red Feather La 79.34 46 *e*P **P** 04 20 10.8 +1.3
comp=Z,20nm,0.9s
B33A Rcart and Kas 79.35 35 P **P** 04 20 08.5 -0.4
baz=318
H28A Mission Ridge 79.36 40 P **P** 04 20 09.8 +0.7
baz=315,SNR=32
PV05 Paradox Valley 79.40 49 *e*P **P** 04 20 11.1 +1.4
PSZ Piszkesteto 79.50 325⇓*e*P **P** 04 20 11.0 +1.1
PSZ Piszkesteto 79.50 325 *e*P **P** 04 20 10.5 +0.6
PSZ pmax pmax
comp=Z,123nm,2.0s
PSZ MLR MLR
comp=Z,512nm,20.0s
PSZ Piszkesteto 79.50 325 *e*P **P** 04 20 10.5 +0.6
comp=Z,123nm,2.0s
PSZ LR LR
comp=Z,512nm,20.0s
D32A Dogwood Acres, 79.53 37 P **P** 04 20 10.2 +0.2
baz=317
G29A Hoven 79.54 39 P **P** 04 20 10.4 +0.3
baz=316
E31A Nome 79.54 37 P **P** 04 20 09.9 -0.2
baz=317,SNR=11
VYHS Vyhne 79.55 326 *e*P **P** 04 20 10.7 +0.7
VYHS pmax pmax
comp=Z,7.0nm,1.0s
VYHS Vyhne 79.55 326 *e*P **P** 04 20 10.7 +0.7
B34A Aery, Baudette 79.60 34 P **P** 04 20 09.8 -0.5
baz=318,SNR=7.3
C33A Trail 79.64 35 P **P** 04 20 10.5 0.0
baz=318,SNR=11
PV01 Paradox Valley 79.68 49 *e*P **P** 04 20 12.2 +1.0
Y14A Wickenburg 79.68 55 *e*P **P** 04 20 12.2 +1.1
comp=Z,50nm,0.8s
WUAZ Wupatki 79.69 53 P **P** 04 20 12.5 +1.3
baz=311,SNR=12
WUAZ Wupatki 79.69 53 *e*P **P** 04 20 12.6 +1.3
comp=Z,14nm,0.9s
WUAZ LR LR
comp=Z,293nm,20.0s
I28A Midland 79.76 41 P **P** 04 20 11.7 +0.5
baz=315,SNR=25
BRG Berggiesshubel 79.78 330 *i* P **P** 04 20 11.8 +0.6
comp=Z,20nm,0.8s
comp=N,876nm,17.5s
comp=E,469nm,17.6s
comp=Z,1μm,16.8s
BRG Berggiesshubel 79.78 330 *i* P **P** 04 20 11.8 +0.6
BRG pmax pmax
comp=Z,20nm,0.8s
BRG MLR MLR
comp=N,876nm,17.5s
BRG MLR MLR
comp=E,469nm,17.6s
BRG MLR MLR
comp=Z,1μm,16.8s
H29A Onida 79.80 40 P **P** 04 20 12.1 +0.6
baz=316,SNR=15
PVCC Panska Ves 79.80 329⇓*e*P **P** 04 20 12.2 +0.9
PVCC AMS AMS 04 58 10.0
comp=Z,1μm,18.8s
PVCC Panska Ves 79.80 329 *e*P **P** 04 20 12.2 +0.9
PVCC MLR MLR
comp=Z,1μm,18.8s
CLL Collm 79.81 330⇓*i*P **P** 04 20 11.7 +0.3
comp=Z,35nm,0.8s
CLL *i* 04 20 29.5
CLL *e* 04 20 52.0
CLL *e*S **S** 04 30 08.0 -3.3
CLL *e*SS SS 04 35 48.0 +28
CLL *e*SSS SSS 04 38 48.0
CLL Lm MLR 04 58 00.0
comp=Z,600nm,18.1s
CLL Collm 79.81 330⇓*i*P **P** 04 20 11.7 +0.3
CLL *i* 04 20 29.5
CLL *e*S **S** 04 30 08.0 -3.3
CLL pmax pmax
comp=Z,35nm,0.8s
CLL MLR MLR
comp=Z,600nm,18.1s
CLL Collm 79.81 330 *e*P **P** 04 20 11.7 +0.3
comp=Z,37nm,0.7s
J27A Elkhorn Farm, 79.85 42 P **P** 04 20 13.0 +1.1
baz=315,SNR=9.3
F31A Hecla 79.88 38 P **P** 04 20 12.2 +0.3
baz=317
SIRR Siria 79.90 323⇑*i*P **P** 04 20 13.4 +1.4
SMCO Snowmass 79.91 47 *e*P **P** 04 20 13.8 +1.2
comp=Z,9.1nm,0.8s
113A Mohawk Valley, 79.94 56 *e*P **P** 04 20 13.1 +0.7
comp=Z,11nm,0.9s
G30A Faulkton 79.97 39 P **P** 04 20 12.5 +0.1
baz=316,SNR=12
GZR Gura Zlata 79.99 321⇑*i*P **P** 04 20 12.9 +0.3
GZR Gura Zlata 79.99 321 ⇑P **P** 04 20 12.9 +0.3
D33A AnnSam, Waubun 80.07 36 P **P** 04 20 12.6 -0.3
baz=318,SNR=6.4
B35A Bob, Littlefor 80.11 34 P **P** 04 20 13.0 0.0
baz=319,SNR=9.8
C34A RKJ Ranch, Bem 80.11 35 P **P** 04 20 12.2 -0.9
baz=318
J28A Allard Ranch, 80.13 41 P **P** 04 20 13.9 +0.5
baz=315,SNR=13
SMOL Smolenice 80.15 326 *e*P **P** 04 20 14.7 +1.4
SMOL Smolenice 80.15 326 *e*P **P** 04 20 14.7 +1.4
I29A Vivian Onida 80.18 40 P **P** 04 20 13.8 +0.2
baz=316,SNR=7.8
GOPC GO Pecny, Ondr 80.19 329⇓*e*P **P** 04 20 14.3 +0.8
GOPC AMS AMS 04 58 10.0
comp=Z,800nm,19.2s
GOPC GO Pecny, Ondr 80.19 329 *e*P **P** 04 20 14.3 +0.8
GOPC MLR MLR
comp=Z,800nm,19.2s
PRA Prague 80.21 329⇓*e*P **P** 04 20 14.8 +1.2
PRA AMS AMS 04 58 30.0
comp=Z,1μm,16.3s
PRA Prague 80.21 329 *e*P **P** 04 20 14.8 +1.2
PRA MLR MLR
comp=Z,1μm,16.3s
BUD Budapest 80.22 325⇓*e*P **P** 04 20 14.8 +1.1
PRU Pruhonice 80.23 329⇓*i*P **P** 04 20 14.5 +0.8
PRU AMS AMS 04 58 00.0
comp=Z,800nm,18.5s
PRU Pruhonice 80.23 329⇓*i*P **P** 04 20 14.5 +0.8
PRU MLR MLR
comp=Z,800nm,18.5s
ISCO Idaho Springs 80.27 46 P **P** 04 20 15.4 +0.9
baz=313,SNR=14
ISCO Idaho Springs 80.27 46 *e*P **P** 04 20 15.7 +1.2
ISCO pmax pmax
comp=Z,10.0nm,0.8s
ISCO Idaho Springs 80.27 46 *e*P **P** 04 20 15.7 +1.2
comp=Z,9.7nm,0.8s
MVCO Mesa Verde 80.33 50 P **P** 04 20 15.7 +0.9
baz=312,SNR=14
MVCO Mesa Verde 80.33 50 *e*P **P** 04 20 15.9 +1.1
comp=Z,13nm,0.8s
G31A Conde 80.36 38 P **P** 04 20 14.9 +0.5
baz=317

X16A Lo Mia Camp, P 80.36 54 *e*P **P** 04 20 16.4 +1.5
comp=Z,10nm,0.8s
TREC Trest 80.38 328⇓*e*P **P** 04 20 15.4 +0.9
TREC AMS AMS 04 58 20.0
comp=Z,700nm,15.9s
TREC Trest 80.38 328 *e*P **P** 04 20 15.4 +0.9
TREC MLR MLR
comp=Z,700nm,15.9s
BZS Buzias 80.39 322⇑*i*P **P** 04 20 15.2 +0.6
BZS Buzias 80.39 322 ⇑P **P** 04 20 15.2 +0.6
D34A Park Rapids 80.41 36 P **P** 04 20 14.5 -0.2
baz=318,SNR=13
F32A Veblen 80.41 37 P **P** 04 20 14.7 0.0
baz=317
RAYN Ar Rayn 80.44 292 *e*P **P** 04 20 14.8 -0.6
comp=Z,20nm,1.3s
E33A Westby DABS, E 80.47 36 P **P** 04 20 15.2 +0.2
baz=318,SNR=17
PKS7 Kunszentmiklos 80.48 324⇑*e*P **P** 04 20 16.4 +1.3
C35A Jirik Farms, M 80.49 35 P **P** 04 20 14.8 -0.3
baz=319,SNR=9.4
SUSD Miller 80.56 39 P **P** 04 20 15.8 +0.2
baz=316,SNR=8.2
K28A Ten Mile Ranch 80.56 42 P **P** 04 20 16.4 +0.6
baz=315,SNR=15
PKSG 80.57 325⇓*e*P **P** 04 20 16.4 +0.8
J29A Okreek 80.61 41 P **P** 04 20 16.2 +0.3
baz=316,SNR=10
PKS6 Bocsa 80.63 324⇑*e*P **P** 04 20 16.9 +1.0
CSKK Cs˘ákako 80.65 325⇓*e*P **P** 04 20 16.9 +0.9
G32A Webster 80.68 38 P **P** 04 20 16.4 +0.2
baz=317,SNR=11
I30A Oacoma 80.70 40 P **P** 04 20 16.6 +0.2
baz=316,SNR=41
H31A Wolsey 80.77 39 P **P** 04 20 16.9 +0.2
baz=317
F33A 5 Mile Ranch, 80.82 37 P **P** 04 20 17.0 +0.1
baz=318,SNR=9.6
PKST T˙s 80.83 325⇓*e*P **P** 04 20 17.6 +0.6
E34A Wadena 80.84 36 P **P** 04 20 17.3 +0.2
baz=318
D35A Remer 80.93 35 P **P** 04 20 17.0 -0.4
baz=319
C36A Pine Crest Far 80.95 34 P **P** 04 20 17.4 -0.2
baz=320,SNR=8.4
MDVR Moldovita 80.96 322⇓*i*P **P** 04 20 17.8 +0.1
S22A 4UR Ranch, Cre 80.96 48 P **P** 04 20 19.4 +1.2
baz=313,SNR=19
S22A 4UR Ranch, Cre 80.96 48 *e*P **P** 04 20 19.8 +1.5
comp=Z,12nm,0.9s
W18A Petrified Fore 80.96 52 P **P** 04 20 19.7 +1.6
baz=311
K29A Lazy Trails An 81.07 41 P **P** 04 20 19.2 +0.8
baz=316,SNR=8.7
214A Organ Pipe Nat 81.08 56 P **P** 04 20 19.7 +1.1
baz=310,SNR=7.6
J30A Dallas 81.09 40 P **P** 04 20 18.8 +0.3
baz=316,SNR=14
Q24A Divide 81.10 47 P **P** 04 20 19.5 +0.5
baz=313,SNR=9.3
Q24A Divide 81.10 47 *e*P **P** 04 20 19.8 +0.8
comp=Z,9.7nm,0.8s
ISP Isparta 81.13 312 PFAKE 04 20 30.0 +11
ISP LR LR
comp=Z,237nm,20.0s
E35A Pequot Lakes 81.16 36 P **P** 04 20 18.4 -0.3
baz=319,SNR=5.5
SOP Sopron 81.16 326⇓*e*P **P** 04 20 19.9 +1.2
X18A Snowflake 81.22 53 *e*P **P** 04 20 20.8 +1.3
PKS9 Tamasi 81.23 325⇑*e*P **P** 04 20 19.7 +0.6
G33A Ortonville 81.23 38 P **P** 04 20 19.3 +0.2
baz=318
D36A Goodland 81.25 35 P **P** 04 20 18.8 -0.4
baz=320
C37A Embarrass 81.26 34 P **P** 04 20 18.8 -0.5
baz=320,SNR=8.5
H32A Carlson Farm, 81.26 39 P **P** 04 20 19.4 +0.1
baz=317,SNR=5.8
CONA Conrad Observa 81.28 327 *i* P **P** 04 20 20.6 +1.2
comp=Z,151nm,0.9s,SNR=10
KHC Kasperske Hory 81.29 329⇓*i*P **P** 04 20 20.1 +0.7
KHC *e*sP **sP** 04 20 35.5 -0.3
KHC AMS AMS 04 58 50.0
comp=Z,900nm,15.6s
KHC Kasperske Hory 81.29 329⇓*i*P **P** 04 20 20.1 +0.7
KHC *e* 04 20 35.5
KHC MLR MLR
comp=Z,900nm,15.6s
KHC Kasperske Hory 81.29 329 *e*P **P** 04 20 20.1 +0.7
comp=Z,8.2nm,0.8s
F34A Alexandria 81.34 37 P **P** 04 20 19.8 +0.1
baz=318
EYMN Ely 81.39 33 P **P** 04 20 19.8 -0.1
baz=321,SNR=9.0
EYMN Ely 81.39 33 *e*P **P** 04 20 19.9 -0.1
comp=Z,15nm,0.8s
OGNE Ogallala 81.45 44 P **P** 04 20 20.6 +0.1
baz=315
OGNE Ogallala 81.45 44 PFAKE 04 20 30.0 +9.5
OGNE LR LR
comp=Z,278nm,20.0s
H33A Prehn Over Nor 81.46 38 P **P** 04 20 20.7 +0.3
baz=318,SNR=25
GEC2 GERESS Array S 81.47 328 *e*P **P** 04 20 20.8 +0.3
GEC2 pmax pmax
comp=Z,11nm,0.8s
GEC2 GERESS Array S 81.47 328 *e*P **P** 04 20 20.8 +0.3
comp=Z,10nm,0.8s
GERES GERESS Array B 81.47 328 P **P** 04 20 20.8 +0.3
comp=Z,6.5nm,0.7s,baz=35,slow=5.3,SNR=59
GERES LR LR 04 59 30.7
comp=Z,782nm,19.4s,baz=28,slow=38
L29A Maesberg Ranch 81.48 42 P **P** 04 20 20.7 0.0
baz=316
M28A Bar X Bar Ranc 81.49 43 P **P** 04 20 21.1 +0.4
baz=315
J31A Geddes 81.50 40 P **P** 04 20 20.9 +0.3
baz=316
K30A Basset 81.50 41 P **P** 04 20 20.9 +0.3
baz=316,SNR=11
WTSB Winterswijk 81.54 334 *e*P **P** 04 20 20.4 -0.2
G34A Benson 81.58 37 P **P** 04 20 21.2 +0.2
baz=318,SNR=7.5
D37A Cotton 81.59 34 P **P** 04 20 20.5 -0.4
baz=320
I32A Karley and Nic 81.59 39 P **P** 04 20 21.3 +0.2
baz=317
F35A Swanville 81.61 36 P **P** 04 20 21.2 +0.1
baz=319
C38A Sawbill Land. 81.66 33 P **P** 04 20 21.0 -0.3
baz=321,SNR=14
E36A McGregor 81.71 35 P **P** 04 20 21.5 -0.2
baz=320,SNR=8.9
SDCO Great Sand Dun 81.73 48 P **P** 04 20 23.3 +1.1
baz=313,SNR=12
SDCO Great Sand Dun 81.73 48 *e*P **P** 04 20 23.4 +1.1
comp=Z,7.8nm,0.9s
SDCO LR LR
comp=Z,224nm,21.0s
GRFO Grafenberg 81.78 330 *e*P **P** 04 20 22.9 +0.9
GRFO pmax pmax
comp=Z,33nm,0.9s
GRFO Grafenberg 81.78 330 *e*P **P** 04 20 22.9 +0.9
comp=Z,33nm,0.9s
VTS Vitosha 81.80 319⇓*i*P **P** 04 20 23.2 +0.8
VTS Vitosha 81.80 319 ⇓P **P** 04 20 23.2 +0.8
VTS Vitosha 81.80 319 *e*P **P** 04 20 22.9 +0.5
comp=Z,28nm,0.8s
M29A Burnside Ranch 81.82 42 P **P** 04 20 21.9 -0.5
baz=316
J32A Parkston 81.88 40 P **P** 04 20 22.7 +0.1
baz=317,SNR=6.6
N28A Pribbeno Ranch 81.90 43 P **P** 04 20 23.0 +0.1
baz=315,SNR=5.1
I33A Coleman 81.90 39 P **P** 04 20 23.0 +0.3
baz=318
H34A Spellman Lake, 81.94 38 P **P** 04 20 23.1 +0.2
baz=318,SNR=5.3
ARSA Arzberg 81.94 326 *i* P **P** 04 20 23.6 +0.7
comp=Z,16nm,1.3s,SNR=5.8
L30A Spencer Herefo 81.96 42 P **P** 04 20 22.9 -0.2
baz=316
K31A O'Neill 81.97 41 P **P** 04 20 23.6 +0.4
baz=317,SNR=15
C39A Grand Marais 82.06 33 P **P** 04 20 23.3 -0.2
baz=322
F36A Milaca 82.09 36 P **P** 04 20 23.2 -0.4

baz=320
G35A Watkins 82.13 37 P P 04 20 23.8 -0.1
baz=319
TUC Tucson 82.15 55 P P 04 20 24.8 +0.5
baz=311
TUC Tucson 82.15 55 eP P 04 20 25.3 +1.0
TUC pmax pmax
comp=Z,7.0nm,0.9s
TUC Tucson 82.15 55 eP P 04 20 25.3 +1.0
comp=Z,6.6nm,0.9s
O28A Krutsinger Ran 82.17 44 P P 04 20 24.1 -0.2
baz=315
M30A Dale-Ortello V 82.18 42 P P 04 20 24.3 0.0
baz=316
ECSD EROS Data Cent 82.22 39 P P 04 20 24.6 +0.2
baz=318,SNR=19
ECSD EROS Data Cent 82.22 39 eP P 04 20 24.4 0.0
comp=Z,20nm,0.8s
ECSD LR LR
comp=Z,450nm,19.0s
L31A Butterfield Fa 82.25 41 P P 04 20 25.0 +0.4
baz=317,SNR=23
N29A Votaw Ranch, W 82.30 43 P P 04 20 25.2 +0.3
baz=316,SNR=6.9
K32A Verdigre 82.34 40 P P 04 20 25.0 -0.1
baz=317
J33A Davis 82.36 39 P P 04 20 25.3 +0.2
baz=318
H35A Sunnyside Ranc 82.36 37 P P 04 20 25.5 +0.4
baz=319,SNR=18
I34A Hadley 82.36 38 P P 04 20 25.4 +0.3
baz=318
G36A St. Michael 82.46 36 P P 04 20 25.4 -0.2
baz=320
KSCO Kaye Shedlock' 82.49 45 P P 04 20 26.2 +0.2
baz=315
KSCO Kaye Shedlock' 82.49 45 eP P 04 20 26.6 +0.6
comp=Z,68nm,1.8s
P28A Saint Francis 82.57 44 P P 04 20 26.5 +0.1
baz=315
N30A Hueftle Ranch, 82.59 43 P P 04 20 26.2 -0.2
baz=316
PERS Pernice 82.60 326 eP P 04 20 26.6 +0.3
SOKA Soboth 82.60 326 i P P 04 20 26.9 +0.5
comp=Z,34nm,0.9s,SNR=30
O29A 4D Ranch, Culb 82.70 43 P P 04 20 27.3 +0.3
baz=316,SNR=9.1
T25A Trinidad 82.78 48 P P 04 20 28.4 +0.7
baz=314,SNR=20
T25A Trinidad 82.78 48 eP P 04 20 28.6 +0.9
comp=Z,18nm,0.8s
M31A Lambtecht Ranc 82.78 42 P P 04 20 27.5 0.0
baz=317,SNR=6.9
L32A Elgin 82.80 41 P P 04 20 27.8 +0.3
baz=317,SNR=7.8
HGN Heimansgroeve 82.85 334 eP P 04 20 26.9 -0.6
K33A Hardington 82.87 40 P P 04 20 28.0 +0.2
baz=318,SNR=6.3
H36A Jessenland, He 82.88 37 P P 04 20 28.3 +0.6
baz=319,SNR=6.6
SPMN Marine on St. 82.90 36 P P 04 20 27.9 0.0
baz=320
SPMN Marine on St. 82.90 36 eP P 04 20 27.9 0.0
comp=Z,13nm,0.9s
BEBN Eben Emael 82.91 334 P P 04 20 28.2 +0.5
comp=Z,8.2nm,0.9s
I35A Creekview Farm 82.92 38 P P 04 20 28.2 +0.2
baz=319
OBKA Obir 82.94 326 i P P 04 20 28.3 +0.1
comp=Z,14nm,0.8s,SNR=8.4
MEM Membach 82.95 334 P P 04 20 28.1 +0.1
comp=Z,11nm,1.1s
P29A Atwood 83.00 44 P P 04 20 28.7 +0.1
baz=316
KBA Koelnbreinsper 83.01 327 i P P 04 20 28.8 +0.2
comp=Z,26nm,0.8s,SNR=16
VAY Valandovo 83.05 319 i P P 04 20 29.3 +0.6
L33A Hoskins 83.06 40 P P 04 20 28.7 -0.1
baz=318
O30A MW Ranch, Wils 83.06 43 P P 04 20 28.9 0.0
baz=316,SNR=5.8
ANMO Albuquerque 83.08 50 P P 04 20 30.7 +1.4
baz=313
ANMO Albuquerque 83.08 50 c iP P 04 20 31.0 +1.8
ANMO pmax pmax
comp=Z,23nm,1.7s
ANMO Albuquerque 83.08 50 eP P 04 20 30.5 +1.3
comp=Z,14nm,1.0s
SKO Skopje 83.15 320 ⇓ i P P 04 20 30.3 +1.0
BGNE Belgrade 83.16 41 P P 04 20 29.3 -0.1
baz=317,SNR=5.7
BGNE Belgrade 83.16 41 eP P 04 20 29.8 +0.5
comp=Z,57nm,0.8s
N31A Bailey Ranch, 83.17 42 P P 04 20 29.9 +0.4
baz=317
J35A Milford 83.18 38 P P 04 20 29.4 0.0
baz=319
MYKA Terra Mystica 83.23 327 i P P 04 20 29.5 -0.2
comp=Z,18nm,0.8s,SNR=9.3
K34A Le Mars 83.26 39 P P 04 20 29.7 -0.1
baz=316,SNR=11
I36A Fitzsimmons Fa 83.26 37 P P 04 20 29.9 +0.2
baz=319,SNR=5.5
STU Stuttgart 83.31 331 eP P 04 20 30.5 +0.6
STU pmax pmax
comp=Z,22nm,0.7s
STU Stuttgart 83.31 331 eP P 04 20 30.5 +0.6
comp=Z,22nm,0.7s
H37A Dierke Farm, C 83.34 36 P P 04 20 30.3 +0.2
baz=320,SNR=7.1
BCLA Clavier 83.35 334 P P 04 20 30.2 +0.1
VISS Visnje 83.36 326 i P P 04 20 30.1 -0.2
Y22D IRIS PASSCAL I 83.39 51 P P 04 20 32.3 +1.5
baz=313
P30A Selden 83.41 44 P P 04 20 30.6 -0.1
baz=316
BOJS Bojanci 83.42 325 eP P 04 20 30.5 0.0
BOJS i 04 20 39.8
CWF Charnwood Fore 83.43 339 eP P 04 20 31.3 +0.8
comp=Z,11nm,0.7s
O31A Woolen Ranch, 83.46 43 P P 04 20 30.6 -0.3
baz=316
SCHQ Schefferville 83.50 16 P P 04 20 30.9 +0.1
comp=Z,13nm,0.7s,baz=349,slow=6.0,SNR=21
SCHQ LR LR 04 59 57.3
comp=Z,120nm,20.8s,baz=342,slow=37
SCHQ Schefferville 83.50 16 eP P 04 20 31.0 +0.2
comp=Z,14nm,0.8s
M33A Taylor Creek F 83.53 40 P P 04 20 31.3 +0.1
baz=318,SNR=7.8
WATA Walderalm 83.53 329 i P P 04 20 31.6 +0.3
comp=Z,8.5nm,0.7s
I37A Lemond, Waseca 83.55 37 P P 04 20 31.9 +0.7
baz=320,SNR=18
ABTA Abfaltersbach 83.62 328 i P P 04 20 31.1 -0.5
comp=Z,12nm,0.9s,SNR=7.0
J36A Seneca 1, Swea 83.63 38 P P 04 20 31.8 +0.2
baz=319
SNF Seneffe 83.63 334 P P 04 20 32.0 +0.5
JAVS Javornik 83.63 326 i P P 04 20 31.1 -0.6
L34A Svendsen Farm, 83.65 40 P P 04 20 31.6 -0.2
baz=318,SNR=5.6
K35A Storm Lake 83.65 39 P P 04 20 31.8 -0.1
baz=319
LANF Langenberg 83.66 332 eP P 04 20 32.5 +0.8
WLF Walferdange 83.69 333 PFAKE 04 20 40.0 +8.1
WLF LR LR
comp=Z,688nm,21.0s
MOTA Moosalm 83.72 329 i PcP P 04 20 33.5 +1.3
comp=Z,29nm,1.1s,SNR=20
319A Douglas 83.73 55 eP P 04 20 33.6 +1.1
comp=Z,26nm,0.8s
RETA Reutte 83.74 329 i P P 04 20 32.9 +0.6
comp=Z,35nm,0.9s,SNR=13
COWI Conover 83.83 33 eP P 04 20 32.6 -0.1
comp=Z,11nm,0.8s
DOU Dourbes 83.87 334 P P 04 20 32.8 0.0
P31A Stockton 83.89 43 P P 04 20 33.1 -0.1
baz=316,SNR=10
M34A Aspy Farms, Fr 83.89 40 P P 04 20 33.1 +0.1
baz=318
121A Cookes Peak, D 83.89 53 P P 04 20 34.7 +1.2
baz=313,SNR=13
TRI Trieste 83.91 326 eP P 04 20 31.7 -1.3
TRI pmax pmax
comp=Z,18nm,0.8s
TRI Trieste 83.91 326 eP P 04 20 31.7 -1.3
comp=Z,18nm,0.8s
L35A Bielow Farm, R 83.96 39 P P 04 20 32.9 -0.4
baz=319
BFO Black Forest 84.00 331 i P P 04 20 34.1 +0.6
BFO Black Forest 84.00 331 eP P 04 20 33.8 +0.3
comp=Z,27nm,0.9s
BFO LR LR
comp=Z,420nm,19.0s
J37A Redenius Farm, 84.02 37 P P 04 20 33.7 0.0
baz=320,SNR=5.5
I38A Scanlan Farm, 84.03 36 P P 04 20 33.5 -0.2
baz=320,SNR=8.6
K36A Gilmore City 84.09 38 P P 04 20 34.3 +0.2
baz=319,SNR=6.0
OHR Ohrid 84.11 319 i P P 04 20 33.9 -0.4
FETA Feichten 84.13 329 i P P 04 20 34.7 +0.3
comp=Z,20nm,0.8s,SNR=12
CBKS Cedar Bluff 84.21 44 P P 04 20 34.5 -0.3
baz=316
P32A Huiting Farm, 84.23 43 P P 04 20 34.4 -0.4
baz=317,SNR=12
DAVA Damuels 84.25 330 i P P 04 20 35.4 +0.4
comp=Z,42nm,0.9s,SNR=16
M35A Neola 84.36 40 P P 04 20 35.7 +0.2
baz=318,SNR=11
K37A Belmond 84.39 38 P P 04 20 35.7 +0.2
baz=320,SNR=10
L36A Harm Buss Farm 84.39 39 P P 04 20 35.4 -0.2
baz=319
TIR Tirane 84.41 320 PFAKE 04 20 50.0 +14
TIR LR LR
comp=Z,965nm,20.0s
N34A Lincoln 84.43 41 P P 04 20 35.5 -0.3
baz=318
PMOR Pomariorio Ree 84.44 114 eT T 05 53 56.0
comp=Z,71nm,0.2s
J38A Wedel Dairy, R 84.51 37 P P 04 20 36.1 -0.1
baz=320
ECH Echery 84.53 332 eP P 04 20 36.4 +0.2
Q32A Meitler Ranch, 84.71 43 P P 04 20 37.1 -0.2
baz=317,SNR=11
O34A Beatrice 84.81 41 P P 04 20 37.3 -0.4
baz=318
M36A Felix, Anita 84.82 39 P P 04 20 37.9 +0.2
baz=319,SNR=5.5
L37A Phoenix Point, 84.82 38 P P 04 20 37.9 +0.2
baz=320,SNR=6.5
N35A Tabor 84.84 40 P P 04 20 38.2 +0.3
baz=319,SNR=8.2
P33A Williams Farm, 84.84 42 P P 04 20 37.6 -0.3
baz=318
MOF Molkenrain 84.85 331 eP P 04 20 37.7 -0.2
K38A Parkersburg 84.89 37 P P 04 20 38.1 0.0
baz=320
THEF They Montfort 84.96 332 eP P 04 20 38.6 +0.3
PPT Papeete 84.99 117 LR LR 04 52 38.1
comp=Z,139nm,19.7s,baz=300,slow=31
PPT2 Papeete2 85.00 117 eLR LR 04 47 33.3
comp=Z,781nm,24.2s,baz=317
PPT2 Papeete2 85.00 117 eT T 05 54 37.9
comp=Z,17nm,0.3s
R32A Long Quarter, 85.05 43 P P 04 20 38.9 -0.1
baz=317
PAE Paea 85.05 117 eT T 05 54 41.0
comp=Z,4.6nm,0.3s
Q33A Connelly Farm, 85.09 43 P P 04 20 39.1 -0.1
baz=317,SNR=10.0
SNZO South Karori 85.12 156 PFAKE 04 20 50.0 +11
SNZO LR LR
comp=Z,595nm,21.0s
TUE Stuetta 85.13 329 eP P 04 20 39.6 +0.1
comp=Z,16nm,0.9s
TUE LR LR
comp=Z,539nm,21.0s
TIAR Tiarei 85.14 117 eT T 05 54 47.8
comp=Z,7.2nm,0.3s
O35A Humboldt 85.15 41 P P 04 20 39.8 +0.3
baz=318
L38A Oak Wood Farm, 85.19 38 P P 04 20 39.8 +0.2
baz=320
P34A Walnut Farm, R 85.22 42 P P 04 20 39.5 -0.3
baz=318,SNR=8.7
N36A Muff Farm, Cla 85.22 40 P P 04 20 40.5 +0.7
baz=319
M37A Trindle Farm, 85.22 39 P P 04 20 40.2 +0.4
baz=320
SCIA State Center 85.25 38 eP P 04 20 41.0 +1.1
comp=Z,30nm,0.7s
LOMF Lomont 85.38 331 eP P 04 20 40.7 +0.1
S32A Newby Ranch, P 85.45 44 P P 04 20 40.8 -0.2
baz=317
R33A Olander Ranch, 85.52 43 P P 04 20 41.4 +0.1
baz=317
Q34A Chapman 85.62 42 P P 04 20 41.9 +0.1
baz=318,SNR=6.4
M38A Plesantville 85.63 38 P P 04 20 42.2 +0.4
baz=320,SNR=12
N37A Lee Faris, Mou 85.64 39 P P 04 20 42.4 +0.5
baz=320,SNR=8.6
P35A Duane Minner, 85.65 41 P P 04 20 41.9 -0.1
baz=318
KSU1 Kansas State U 85.66 42 P P 04 20 42.2 +0.2
baz=318
O36A Bolckow 85.73 40 P P 04 20 42.6 +0.3
baz=319,SNR=9.3
T32A Huddler Ranch, 85.83 44 P P 04 20 43.4 +0.4
baz=317
JFWS Jewell Farm 85.86 36 eP P 04 20 42.7 -0.2
JFWS pmax pmax
comp=Z,16nm,0.8s
JFWS Jewell Farm 85.86 36 eP P 04 20 42.7 -0.2
comp=Z,16nm,0.8s
LAST Lasithi 85.90 313 eP P 04 20 44.0 +0.6
comp=Z,54nm,1.0s
R34A Isabella, Hill 85.92 43 P P 04 20 43.4 +0.1
baz=318
AMTX Amarillo 85.94 48 P P 04 20 44.4 +0.9
baz=316
AMTX Amarillo 85.94 48 eP P 04 20 44.6 +1.0
comp=Z,21nm,0.8s
MSTX Muleshoe 85.94 49 P P 04 20 43.9 +0.2
baz=315,SNR=5.7
MSTX Muleshoe 85.94 49 eP P 04 20 44.4 +0.7
comp=Z,14nm,0.9s
MNTX Cornudas Mount 85.95 52 P P 04 20 44.1 +0.5
baz=314,SNR=13
MNTX Cornudas Mount 85.95 52 eP P 04 20 44.2 +0.6
comp=Z,7.7nm,0.8s
P36A Good Intent, A 85.99 41 P P 04 20 43.6 -0.1
baz=319,SNR=14
S33A Kaszmaul Farm, 86.03 44 P P 04 20 44.0 +0.1
baz=317
N38A Joe South For 86.09 39 P P 04 20 44.3 +0.2
baz=320,SNR=9.6
O37A Wolven Farm, M 86.11 40 P P 04 20 44.5 +0.3
baz=320,SNR=7.9
TAOE Nuku Hiva Isla 86.13 104 eLR LR 04 48 02.4
comp=Z,660nm,21.7s,baz=315
TAOE Nuku Hiva Isla 86.13 104 eT T 05 56 05.2
comp=Z,25nm,0.2s
Q35A Mercer Eighty, 86.14 42 P P 04 20 44.2 -0.2
baz=318,SNR=11
OXZ Oxford 86.15 159 eP P 04 20 44.4 +0.4
comp=Z,48nm,1.2s
MEH Mehetia 86.25 116 eT T 05 56 11.0
comp=Z,104nm,0.3s
Q36A Arnold C. Orve 86.36 41 P P 04 20 45.3 -0.2
baz=319
N39A Derby Farms, D 86.38 38 P P 04 20 45.6 0.0
baz=320,SNR=8.3
S34A Willow Spring 86.43 43 P P 04 20 46.0 +0.2
baz=318,SNR=5.1
P37A Lathrop 86.45 40 P P 04 20 46.1 +0.2
baz=319,SNR=13
R35A Emporia Munici 86.45 42 P P 04 20 46.6 +0.7
baz=318,SNR=12
O38A Galt 86.48 39 P P 04 20 46.5 +0.4
baz=320
VLC Villacollemand 86.59 327 PFAKE 04 21 00.0 +13
VLC LR LR
comp=Z,242nm,19.0s
VLDQ Val d'Or 86.61 25 eP P 04 20 45.5 -0.9
comp=Z,19nm,0.8s
GLMI Grayling 86.74 31 eP P 04 20 48.0 +0.8
comp=Z,63nm,0.8s
R36A Gordon, Harris 86.81 42 P P 04 20 47.9 +0.2
baz=319,SNR=11
U33A Lingo Farm, Me 86.82 44 P P 04 20 48.2 +0.4
baz=317
V32A Arapaho 86.83 46 P P 04 20 48.9 +1.1
baz=317,SNR=6.7
P38A Dawn 86.83 40 P P 04 20 48.2 +0.4
baz=320,SNR=14
O39A Kirksville 86.84 39 P P 04 20 48.2 +0.4
baz=320
S35A Otter Creek Ra 86.87 43 P P 04 20 48.4 +0.4
baz=318,SNR=30
T34A McClaskey Farm 86.89 44 P P 04 20 48.8 +0.7
baz=318
Q37A Longview Farm, 86.94 41 P P 04 20 48.4 +0.1
baz=319
U34A Anderson Ranch 87.14 44 P P 04 20 49.9 +0.6
baz=318
U34A Anderson Ranch 87.14 44 eP P 04 20 50.4 +1.1
comp=Z,110nm,1.8s
W32A Sentinel 87.15 46 P P 04 20 50.1 +0.7
baz=317
R37A Teagarden Farm 87.17 41 P P 04 20 49.2 -0.2
baz=319,SNR=12
V33A Lossen Ranch, 87.18 45 P P 04 20 50.0 +0.4
baz=317
S36A Lake Cedric, C 87.22 42 P P 04 20 49.7 +0.1
baz=319,SNR=9.5
O40A La Belle 87.27 38 P P 04 20 50.3 +0.4
baz=321,SNR=8.1
Q38A Cooks Store, C 87.30 40 P P 04 20 50.3 +0.3
baz=320,SNR=14
P39A Salisbury 87.32 39 P P 04 20 50.4 +0.3
baz=320,SNR=5.6
T35A Sooner Cattle 87.33 43 P P 04 20 50.7 +0.4
baz=318
BNI Bardonecchia 87.36 330 PFAKE 04 21 00.0 +10
BNI LR LR
comp=Z,579nm,19.0s
CUC Castrocucco 87.43 322 PFAKE 04 21 00.0 +9.3
CUC LR LR
comp=Z,218nm,20.0s
Q39A Willow Grove F 87.55 40 P P 04 20 51.6 +0.3
baz=320,SNR=16
T36A Boggs Farm, Ca 87.56 43 P P 04 20 51.8 +0.5
baz=319,SNR=12
W33A Caddo, Fort Co 87.56 46 P P 04 20 52.6 +1.2
baz=317
S37A Fort Scott 87.59 42 P P 04 20 51.4 -0.1
baz=319,SNR=20
V34A Guthrie 87.59 45 P P 04 20 52.1 +0.6
baz=318,SNR=6.8
V34A Guthrie 87.59 45 eP P 04 20 52.1 +0.6
comp=Z,21nm,0.9s
TIP Timpagrande 87.60 321 PFAKE 04 21 00.0 +8.4
TIP LR LR
comp=Z,510nm,19.0s
U35A Pawnee 87.62 44 P P 04 20 52.2 +0.6
baz=318
X32A Elmer 87.64 47 P P 04 20 52.1 +0.3
baz=317,SNR=6.1
P40A Paris 87.64 39 P P 04 20 52.1 +0.4
baz=321,SNR=17
WMOK Wichita Mounta 87.69 46 eP P 04 20 52.8 +0.7
WMOK pmax pmax
comp=Z,10.0nm,1.0s
WMOK MLR MLR
comp=Z,255nm,19.0s
WMOK Wichita Mounta 87.69 46 eP P 04 20 52.8 +0.7
comp=Z,10nm,1.0s
WMOK LR LR
comp=Z,255nm,19.0s
PLDF La Plantade 87.73 332 ⇑ eP P 04 20 53.9 +1.8
R38A Fenwick Farm, 87.74 41 P P 04 20 51.9 -0.3
baz=320,SNR=8.4
W34A Bridge Creek, 87.89 45 P P 04 20 53.4 +0.4
baz=318
W34A Bridge Creek, 87.89 45 eP P 04 20 54.2 +1.2
comp=Z,16nm,0.9s
SSB Saint Sauveur 87.98 331 eP P 04 20 54.1 +0.9
SSB pmax pmax
comp=Z,34nm,1.7s
SSB MLR MLR
comp=Z,310nm,20.0s
SSB Saint Sauveur 87.98 331 eP P 04 20 54.1 +0.9
comp=Z,34nm,1.7s
SSB LR LR
comp=Z,310nm,20.0s
X33A Lawton 87.99 46 P P 04 20 53.9 +0.5
baz=317
V35A Meyer Ranch, C 88.01 44 P P 04 20 54.1 +0.6
baz=318
T37A Cheneyville 18 88.02 42 P P 04 20 53.7 +0.2
baz=319,SNR=6.2
Q40A Laux Farm, Aux 88.04 39 P P 04 20 54.2 +0.7
baz=321,SNR=10
R39A Chumby, Stover 88.08 40 P P 04 20 53.7 -0.1
baz=320,SNR=18
U36A Oologah 88.14 43 P P 04 20 54.6 +0.5
baz=319
HDIL Hopedale 88.15 37 P P 04 20 54.0 -0.1
baz=322,SNR=8.2
HDIL Hopedale 88.15 37 eP P 04 20 54.5 +0.4
comp=Z,39nm,0.8s
S38A Stockton 88.16 41 P P 04 20 53.6 -0.6
baz=320,SNR=5.7
Y33A Hilltop Ranch, 88.31 46 P P 04 20 54.8 -0.2
baz=317,SNR=6.1
X34A Smith Ranch, M 88.32 46 P P 04 20 55.8 +0.8
baz=318
T38A Diamond 88.42 42 P P 04 20 55.5 0.0
baz=320,SNR=18
S39A Bolivar 88.42 41 P P 04 20 54.8 -0.6
baz=320,SNR=14
W35A Tecumseh 88.45 45 P P 04 20 55.9 +0.3
baz=318
U37A Salina 88.46 43 P P 04 20 55.9 +0.3
baz=319,SNR=7.7
TUL1 Leonard 88.47 43 P P 04 20 56.1 +0.4
baz=319
TUL1 Leonard 88.47 43 eP P 04 20 56.5 +0.8
comp=Z,19nm,1.1s
V36A Jenks 88.48 44 P P 04 20 56.3 +0.6
baz=319
R40A Maddies Statio 88.49 40 P P 04 20 55.6 -0.1
baz=321,SNR=16
TX31 Lajitas Ar. Si 88.65 53 eP P 04 20 57.2 +0.5
TXAR Lajitas Array 88.66 53 P P 04 20 57.4 +0.6
comp=Z,7.6nm,0.6s,baz=300,slow=3.4,SNR=111
ABTX Abilene, Hawle 88.73 48 P P 04 20 57.5 +0.4
baz=317
ABTX Abilene, Hawle 88.73 48 eP P 04 20 58.0 +0.9
comp=Z,18nm,1.1s
CEL Celeste 88.74 321 PFAKE 04 21 10.0 +13
CEL LR LR
comp=Z,502nm,21.0s
Z33A Whitaker Ranch 88.76 47 P P 04 20 57.3 +0.2
baz=317
W36A Wetumka 88.81 44 P P 04 20 57.5 +0.2
baz=318
U38A Gravette 88.82 42 P P 04 20 57.5 +0.2
baz=320,SNR=8.3
V37A Hulbert 88.84 43 P P 04 20 57.5 +0.1
baz=319,SNR=10
Y34A Reagan Ranch, 88.84 46 P P 04 20 57.8 +0.3
baz=318
T39A Clever 88.90 41 P P 04 20 57.8 +0.1
baz=320
S40A Lebanon 88.90 40 P P 04 20 57.7 0.0
baz=321,SNR=9.8
X35A Drake 88.95 45 P P 04 20 58.3 +0.3
baz=318
TBI Tubuai 89.01 121 eLR LR 04 48 57.7
comp=Z,387nm,22.5s,baz=312
HPIG 89.05 56 eP P 04 20 59.6 +0.7
comp=Z,6.1nm,0.8s
X36A Centrahoma 89.17 45 P P 04 20 59.5 +0.6
baz=318,SNR=6.5
133A Hamilton Ranch 89.17 48 P P 04 20 59.4 +0.3
baz=317
HHAR Hobbs 89.17 42 eP P 04 20 59.3 +0.3
comp=Z,10nm,0.8s
Z34A Collier Ranch, 89.18 46 P P 04 20 59.4 +0.3
baz=318
SLM Saint Louis 89.22 38 eP P 04 20 59.9 +0.8
SLM pmax pmax
comp=Z,41nm,0.7s
SLM Saint Louis 89.22 38 eP P 04 20 59.9 +0.8
comp=Z,41nm,0.7s
AAM Ann Arbor 89.22 32 eP P 04 20 59.8 +0.7
AAM pmax pmax
comp=Z,21nm,0.7s

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AAM	Ann Arbor	89.22	32	eP	P	04 20 59.8	+0.7
	comp=Z,21nm,0.7s						
T40A	Mansfield	89.24	41	P	P	04 20 59.2	-0.1
	baz=321,SNR=7.6						
W37B	Quinton	89.24	44	P	P	04 20 59.6	+0.3
	baz=319						
V38A	Canehill	89.24	43	P	P	04 20 59.6	+0.3
	baz=320,SNR=12						
Y35A	Marietta	89.28	46	P	P	04 21 00.1	+0.6
	baz=318						
SFIN	Lafayette	89.30	35	P	P	04 20 59.9	+0.4
	baz=324,SNR=6.6						
SFIN	Lafayette	89.30	35	eP	P	04 21 00.0	+0.5
	comp=Z,22nm,0.8s						
U39A	Green Forest	89.33	42	P	P	04 20 59.5	-0.2
	baz=320,SNR=14						
Z35A	Perchaven, San	89.58	46	P	P	04 21 01.3	+0.3
	baz=318,SNR=10						
233A	Rising Star	89.61	48	P	P	04 21 01.7	+0.6
	baz=317,SNR=9.1						
V39A	Pettigrew	89.66	42	P	P	04 21 01.4	+0.1
	baz=320,SNR=9.2						
134A	White-Moore Ra	89.67	47	P	P	04 21 02.0	+0.6
	baz=318						
U40A	Yellville	89.68	41	P	P	04 21 01.3	-0.1
	baz=320,SNR=22						
X37A	Clayton	89.69	44	P	P	04 21 02.0	+0.6
	baz=319						
Y36A	Durant	89.70	45	P	P	04 21 02.3	+0.8
	baz=318						
W38A	Poteau	89.78	43	P	P	04 21 02.4	+0.6
	baz=320						
X38A	Whitesboro	89.92	44	P	P	04 21 03.3	+0.8
	baz=319,SNR=5.4						
Y37A	Hugo	90.01	45	P	P	04 21 03.2	+0.3
	baz=319						
234A	Clairette	90.06	47	P	P	04 21 03.9	+0.7
	baz=318,SNR=10						
333A	Richland Sprin	90.06	48	P	P	04 21 03.8	+0.6
	baz=317,SNR=18						
135A	Vickery Place,	90.07	47	P	P	04 21 04.2	+0.9
	baz=318						
VAE	Valguarnera	90.08	321	LR	LR	05 06 41.5	
	comp=Z,364nm,18.8s,baz=86,slow=39						
W39A	Magazine	90.08	43	P	P	04 21 03.3	+0.1
	baz=320						
Z36A	Blue Ridge	90.09	46	P	P	04 21 03.6	+0.3
	baz=318,SNR=7.8						
V40A	Witts Springs	90.12	42	P	P	04 21 03.4	0.0
	baz=320						
OLIL	Olney	90.16	37	eP	P	04 21 04.5	+1.0
	comp=Z,29nm,0.8s						
JCT	Junction City	90.19	50	P	P	04 21 04.1	+0.2
	baz=317,SNR=8.6						
JCT	Junction City	90.19	50	eP	P	04 21 04.3	+0.4
JCT				pmax	pmax		
	comp=Z,12nm,0.7s						
JCT				MLR	MLR		
	comp=Z,250nm,22.0s						
JCT	Junction City	90.19	50	eP	P	04 21 04.3	+0.4
	comp=Z,12nm,0.7s						
JCT				LR	LR		
	comp=Z,250nm,22.0s						
433A	Art	90.41	49	P	P	04 21 04.9	-0.1
	baz=317,SNR=6.7						
X39A	Fountain Ranch	90.42	43	P	P	04 21 05.4	+0.5
	baz=320,SNR=9.4						
SIUC	Southern Illin	90.44	38	eP	P	04 21 05.4	+0.6
	comp=Z,37nm,0.7s						
WHTX	Lake Whitney,	90.46	47	P	P	04 21 05.5	+0.5
	baz=318						
WHTX	Lake Whitney,	90.46	47	eP	P	04 21 06.1	+1.1
	comp=Z,20nm,0.8s						
W40A	Ferguson Farm,	90.46	42	P	P	04 21 05.2	+0.2
	baz=320,SNR=5.3						
334A	Lometa	90.49	48	P	P	04 21 05.4	+0.2
	baz=317,SNR=22						
Y38A	Idabel	90.53	44	P	P	04 21 05.3	-0.1
	baz=319,SNR=6.1						
CLTB	Caltabellotta	90.58	322	PFAKE		04 21 20.0	+14
CLTB				LR	LR		
	comp=Z,253nm,21.0s						
Z37A	Pogue Cattle C	90.59	45	P	P	04 21 06.1	+0.5
	baz=319,SNR=5.8						
136A	Ennis	90.63	46	P	P	04 21 06.3	+0.5
	baz=318						
MIAR	Mount Ida	90.69	43	P	P	04 21 06.7	+0.7
	baz=320,SNR=12						
MIAR	Mount Ida	90.69	43	eP	P	04 21 06.8	+0.7
MIAR				pmax	pmax		
	comp=Z,22nm,0.8s						
MIAR	Mount Ida	90.69	43	eP	P	04 21 06.8	+0.7
	comp=Z,22nm,0.8s						
WHAR	Wooly Hollow	90.79	42	eP	P	04 21 03.5	-3.0
	comp=Z,21nm,0.8s						
VSL	Villasalto	90.82	325	PFAKE		04 21 20.0	+13
VSL				LR	LR		
	comp=Z,419nm,20.0s						
ERPA	Erie	90.85	30	eP	P	04 21 07.4	+0.7
	comp=Z,28nm,0.7s						
434A	Burnet	90.85	48	P	P	04 21 06.9	-0.1
	baz=317,SNR=7.3						
Y39A	Lockesburg	90.87	44	P	P	04 21 07.5	+0.6
	baz=320,SNR=12						
533A	Kerrville	90.94	49	P	P	04 21 07.8	+0.4
	baz=317						
335A	Moody	91.00	48	P	P	04 21 08.0	+0.5
	baz=318						
X40A	Basin Creek Fa	91.12	43	P	P	04 21 08.8	+0.7
	baz=320						
ACSO	Alum Creek Sta	91.22	33	eP	P	04 21 09.2	+0.8
	comp=Z,21nm,0.9s						
Y40A	Okolona	91.25	43	P	P	04 21 09.1	+0.4
	baz=320						
336A	Riesel	91.25	47	P	P	04 21 09.2	+0.5
	baz=318						
435B	Jarrell	91.27	48	P	P	04 21 09.5	+0.6
	baz=318						
WDD	Wied Dalam	91.28	320	PFAKE		04 21 20.0	+11
WDD				LR	LR		
	comp=Z,412nm,20.0s						
633A	Saathoff Ranch	91.30	50	P	P	04 21 09.8	+0.7
	baz=317,SNR=5.8						
534A	Blanco	91.31	49	P	P	04 21 09.5	+0.4
	baz=317,SNR=14						
NCB	Newcomb	91.32	25	PFAKE		04 21 20.0	+11
NCB				LR	LR		
	comp=Z,938nm,20.0s						
Z39A	Irene McRaven,	91.35	44	P	P	04 21 09.7	+0.6
	baz=320						
237A	Washetta, Mont	91.38	46	P	P	04 21 10.3	+0.9
	baz=319						
WCI	Wyandotte Cave	91.40	36	eP	P	04 21 10.2	+0.8
WCI				pmax	pmax		
	comp=Z,14nm,0.9s						
WCI	Wyandotte Cave	91.40	36	eP	P	04 21 10.2	+0.8
	comp=Z,14nm,0.9s						
M54A	Oil Creek Stat	91.50	30	P	P	04 21 10.0	+0.2
	baz=329						
WLAR	White Oak Lake	91.59	43	eP	P	04 21 11.5	+1.3
	comp=Z,26nm,0.8s						
832A	Faith Ranch, C	91.67	51	P	P	04 21 11.1	+0.4
	baz=316						
436A	Wall Ranch, Ga	91.74	47	P	P	04 21 11.8	+0.8
	baz=318						
Z40A	Long Farm, Mag	91.76	44	P	P	04 21 12.5	+1.4
	baz=320						
733A	Divot King Ran	91.77	50	P	P	04 21 11.6	+0.4
	baz=317						
N54A	Moraine State	91.83	30	P	P	04 21 11.7	+0.4
	baz=329						
535A	Dale	91.84	48	P	P	04 21 11.9	+0.5
	baz=318						
833A	Chaparral WMA,	92.00	51	P	P	04 21 13.0	+0.7
	baz=317						
536A	Bastrop	92.10	48	P	P	04 21 13.4	+0.7
	baz=318						
734A	La Parita Cree	92.12	50	P	P	04 21 13.9	+1.1
	baz=317						
CCAR	Cane Creek	92.12	42	eP	P	04 21 14.2	+1.4
	comp=Z,31nm,0.8s						
635A	Leesville	92.19	49	P	P	04 21 14.1	+1.0
	baz=318						
NATX	Nacogdoches	92.21	45	PFAKE		04 21 30.0	+17
NATX				LR	LR		
	comp=Z,239nm,20.0s						
WVT	Waverly	92.37	38	eP	P	04 21 14.2	+0.4
WVT				pmax	pmax		
	comp=Z,6.0nm,0.8s						
WVT	Waverly	92.37	38	eP	P	04 21 14.2	+0.4
	comp=Z,6.0nm,0.8s						
537A	Green Hill Far	92.53	48	P	P	04 21 16.1	+1.5
	baz=318						
636A	Smothers Creek	92.54	48	P	P	04 21 15.9	+1.2
	baz=318						
933A	Laredo	92.58	51	P	P	04 21 16.5	+1.5
	baz=317,SNR=6.2						
OXF	Oxford	92.87	40	eP	P	04 21 16.0	-0.2
OXF				pmax	pmax		
	comp=Z,19nm,0.8s						
OXF	Oxford	92.87	40	eP	P	04 21 16.0	-0.2
	comp=Z,19nm,0.8s						
736A	Circle Diamond	92.92	49	P	P	04 21 18.7	+2.2
	baz=318						
835A	Beeville	92.96	50	P	P	04 21 16.9	+0.2
	baz=318						
O56A	Blue Knob Stat	92.99	30	P	P	04 21 17.0	+0.3
	baz=330						
637A	Eagle Lake	93.00	48	P	P	04 21 18.5	+1.7
	baz=318						
034A	Hebbronville	93.34	51	P	P	04 21 20.3	+1.8
	baz=317,SNR=5.0						
341A	Kurthwood	93.36	45	P	P	04 21 19.4	+0.9
	baz=320						
N59A	State Game Lan	93.48	28	P	P	04 21 19.3	+0.4
	baz=332						
KEST	Kesra	93.91	323	LR	LR	05 08 35.7	
	comp=Z,734nm,18.2s,baz=278,slow=39						
SWET	Sewanee	94.02	38	eP	P	04 21 21.6	+0.1
	comp=Z,3.7nm,0.8s						
145A	Houston Renfro	94.11	42	P	P	04 21 22.4	+0.5
	baz=322						
244A	Avery, Jackson	94.15	43	P	P	04 21 23.1	+1.0
	baz=322						
CPCT	Cooper Cave	94.49	36	eP	P	04 21 24.0	+0.4
	comp=Z,31nm,1.8s						
245A	Little AP, Sta	94.58	42	P	P	04 21 25.0	+1.0
	baz=322						
TKL	Tuckaleechee C	94.66	36	P	P	04 21 24.4	-0.1
	comp=Z,8.1nm,0.6s,baz=130,slow=2.3,SNR=11						
CBN	Corbin Frederi	95.23	30	PFAKE		04 21 40.0	+13
CBN				LR	LR		
	comp=Z,314nm,22.0s						
ES19	SONSECA Array	95.87	334	eP	P	04 21 30.1	+0.2
ESDC	Sonseca Array	95.92	334	P	P	04 21 29.3	-0.8
	comp=Z,1.4nm,0.7s,baz=17,slow=4.1,SNR=13						
ESDC				LR	LR	05 09 50.2	
	comp=Z,346nm,18.8s,baz=25,slow=39						
PAB	San Pablo	96.16	334	PFAKE		04 21 40.0	+8.7
PAB				LR	LR		
	comp=Z,530nm,20.0s						
MTE	Manteigas	96.41	337	PFAKE		04 21 40.0	+7.6
MTE				LR	LR		
	comp=Z,494nm,20.0s						
RKT	Rikitea	98.97	112	eLR	LR	04 54 04.5	
	comp=Z,616nm,25.0s,baz=312						
RTC	Rabat Centre	102.04	334	PFAKE		04 22 10.0	+12
RTC				LR	LR		
	comp=Z,1μm,19.0s						
KMBO	Kilima Mbogo	102.21	278	PFAKE		04 22 10.0	+11
KMBO				LR	LR		
	comp=Z,184nm,21.0s						
ABPO	Ambohimpanom	105.32	258	PFAKE		04 26 40.0	
ABPO				LR	LR		
	comp=Z,61nm,21.0s						
TAM	Tamanrasset	106.43	319	PFAKE		04 26 40.0	
TAM				LR	LR		
	comp=Z,262nm,21.0s						
GTBY	Guantanamo Bay	111.99	38	PFAKE		04 26 50.0	
GTBY				LR	LR		
	comp=Z,250nm,19.0s						
GRTK	Grand Turk	112.43	33	PFAKE		04 26 50.0	
GRTK				LR	LR		
	comp=Z,336nm,20.0s						
JTS	JuntasAbangare	114.44	52	PFAKE		04 27 00.0	+16
JTS				LR	LR		
	comp=Z,152nm,20.0s						
TORD	Torodi Ar. Bea	116.42	316	PKP	PKPdf	04 26 46.4	-1.0
	comp=Z,1.4nm,0.6s,baz=34,slow=2.5,SNR=24						
VNDA	Vanda	116.70	175	PKP	PKPdf	04 26 45.0	-1.0
	comp=Z,1.1nm,0.8s,baz=331,slow=5.5,SNR=5.7						
SJG	San Juan	117.53	30	PFAKE		04 27 00.0	+11
SJG				LR	LR		
	comp=Z,139nm,21.0s						
BCIP	Isla Barro Col	118.40	49	PFAKE		04 27 00.0	+8.8
BCIP				LR	LR		
	comp=Z,161nm,19.0s						
MAW	Mawson	121.34	206	PKP	PKPdf	04 26 55.1	0.0
	comp=Z,1.8nm,0.6s,baz=72,slow=5.3,SNR=6.0						
GRMC	Gramalote, San	123.52	43	eP	PKPdf	04 26 59.6	-1.6
BRRC	Barranca, Sant	123.55	44	eP	PKPdf	04 27 00.7	-0.4
SDV	Santo Domingo	123.65	40	PKP	PKPdf	04 27 01.5	0.0
	comp=Z,20nm,0.7s,baz=181,slow=0.7,SNR=35						
SDV	Santo Domingo	123.65	40	ePKPdf	PKPdf	04 27 01.5	0.0
SDV				LR	LR		
	comp=Z,131nm,21.0s						
SDV	Santo Domingo	123.65	40	eP	PKPdf	04 27 00.2	-1.4
ROSC	El Rosal	125.08	46	PKP	PKPdf	04 27 04.8	+0.2
	comp=Z,4.4nm,0.6s,baz=139,slow=20,SNR=4.1						
LBTB	Lobatse	125.32	265	ePKIKP	PKPdf	04 27 04.8	+0.6
LBTB	Lobatse	125.32	265	ePKPdf	PKPdf	04 27 04.8	+0.6
DBIC	Dimbokro	125.32	318	PKP	PKPdf	04 27 04.2	-0.3
	comp=Z,4.4nm,0.7s,baz=15,slow=1.2,SNR=16						
CHIC	Chingaza	125.58	46	eP	PKPdf	04 27 04.7	-0.8
VILC	Villavicencio,	126.03	46	eP	PKPdf	04 27 05.8	-0.2
OTAV	Otavalo	126.28	54	PFAKE		04 27 20.0	+13
OTAV				LR	LR		
	comp=Z,103nm,19.0s						
BOSA	Boshof	127.36	261	PKP	PKPdf	04 27 08.4	+0.4
	comp=Z,4.2nm,0.7s,baz=63,slow=2.0,SNR=11						
QSPA	South Pole Qui	128.54	180	ePKPdf	PKPdf	04 27 08.3	-0.7
SYO	Syowa Base	130.00	207	⇓eX	PKPdf	04 27 10.6	-1.0
PTGA	Pitinga	137.08	33	PKP	PKPdf	04 27 26.0	-0.7
	comp=Z,6.5nm,0.7s,baz=128,slow=1.5,SNR=8.8						
PTGA	Pitinga	137.08	33	ePKPdf	PKPdf	04 27 27.5	+0.8
SNAA	Sanae	142.58	197	PKP	PKPpre	04 27 30.1	
SNAA	Sanae	142.58	197	ePKHKP	PKPpre	04 27 30.0	
SNAA	Sanae	142.58	197	ePKPpre	PKPpre	04 27 30.0	
SAML	Samuel	142.64	44	ePKPdf	PKPdf	04 27 34.6	-2.1
SAML				LR	LR		
	comp=Z,186nm,19.0s						
VNA2	Neumayer--Watz	144.15	197	PKP	PKPbc	04 27 35.7	-0.2
	baz=104,slow=2.2						
VNA3	Neumayer Olymp	144.40	195	PKP	PKPab	04 27 36.2	-0.2
VNA1	Neumayer--Stat	144.55	197	PKP	PKPdf	04 27 38.5	+0.2
LPAZ	La Paz	145.36	58	PKPbc	PKPbc	04 27 42.0	-0.1
	comp=Z,11nm,0.6s,baz=314,slow=2.2,SNR=63						
LPAZ	La Paz	145.36	58	ePKIKP	PKPbc	04 27 42.0	-0.1
LPAZ	La Paz	145.36	58	ePKPbc	PKPbc	04 27 42.0	-0.1
RCBR	Riachuelo	147.12	356	PKPbc	PKPdf	04 27 45.6	+1.0
	comp=Z,11nm,0.8s,baz=6.6,slow=6.1,SNR=5.3						
PB01	IPOC Station P	147.66	66	ePKPdf	PKPdf	04 27 46.4	+1.1
SIV	San Ignacio	149.55	48	PKPbc	PKPbc	04 27 53.4	+0.4
	comp=Z,14nm,0.6s,baz=288,slow=1.8,SNR=30						
LCO	Las Campanas	151.26	80	ePKPbc	PKPbc	04 27 57.3	+0.3
USHA	Ushuaia	153.98	138	PKPbc	PKPbc	04 28 02.4	+0.6
	baz=139,slow=2.5						
USHA				PKPab	PKPab	04 28 15.4	0.0
	comp=Z,66nm,0.9s,baz=24,slow=19,SNR=3.8						
PLCA	Paso Flores	154.95	105	PKPbc	PKPbc	04 28 04.6	0.0
	comp=Z,5.2nm,1.0s,baz=269,slow=2.7,SNR=7.1						
PLCA				PKPab	PKPab	04 28 20.4	+0.2
	comp=Z,3.8nm,0.7s,baz=294,slow=4.0,SNR=7.0						
BDFB	Brasilia	155.29	24	PKP	PKPdf	04 27 57.3	+0.3
	comp=Z,1.5nm,0.7s,baz=190,slow=6.1,SNR=3.0						
BDFB				PKPbc	PKPbc	04 28 06.8	
	comp=Z,4.1nm,0.8s,baz=235,slow=4.8,SNR=7.5						
CPUP	Villa Florida	159.53	58	PKPab	PKPab	04 28 40.1	0.0
	comp=Z,3.8nm,1.0s,baz=340,slow=4.8,SNR=5.3						
TRQA	Tornquist	161.18	95	PFAKE		04 28 10.0	+6.6
TRQA				LR	LR		
	comp=Z,337nm,20.0s						

*DDA **02** 04:20:55.3, 37°.90N×27°.42E, h7km, Md2.4*
*ISCJB **02** 04:20:56.2±0.6, 37°.88N±0°.03×27°.43E±0°.04, h7km±8km, Error ellipse: s-maj=5.7km s-min=5.4km az=154.8*
*ISK **02** 04:20:56.4, 37°.91N×27°.46E, h8km, MD2.6*
*CSEM **02** 04:20:56.4±0.2, 37°.89N×27°.43E, h8km, MD2.4, Error ellipse: s-maj=5.0km s-min=3.7km az=69.0*
ISC 02 04:20:55.8±1.2, **37°.92N**±0°.03×**27°.40E**±0°.03, **h3**km±17km, **n18,** σ**0s.29**/28, **Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GCAM	G?zelcaml?	0.25	211	i P	Pg	04 21 00.5	-0.1
GCAM				i S	Sg	04 21 04.1	+0.2
GCAM	G?zelcaml?	0.25	211	P	Pg	04 21 00.5	-0.1
GCAM				S	Sg	04 21 04.1	+0.2
AYDB	Zeytinkoy-Aydi	0.39	85	ePG	Pg	04 21 03.6	+0.2
AYDB				eSG	Sg	04 21 08.8	+0.3
AYDB	Zeytinkoy-Aydi	0.39	85	ePg	Pg	04 21 03.6	+0.2
AYDB				eSg	Sg	04 21 08.8	+0.3
AYDN	Tasoluk	0.46	123	i P	Pg	04 21 04.7	+0.1
AYDN				i S	Sg	04 21 09.9	-0.7
AYDN	Tasoluk	0.46	123	P	Pg	04 21 04.7	+0.1
AYDN				S	Sg	04 21 09.9	-0.7
IZM	Izmir	0.49	348	ePG	Pb	04 21 06.8	-0.4
IZM	Izmir	0.49	348	ePg	Pb	04 21 06.8	-0.4
BLCB	Balcova	0.55	329	ePG	Pb	04 21 07.9	-0.1
BLCB				eSG	Sb	04 21 16.5	+0.2
BLCB	Balcova	0.55	329	ePg	Pb	04 21 07.9	-0.1
BLCB				eSg	Sb	04 21 16.5	+0.2
BDRM	Kayabasi	0.85	177	i P	Pg	04 21 12.3	+0.2
BDRM				i S	Sg	04 21 23.2	+0.1
BDRM	Kayabasi	0.85	177	P	Pg	04 21 12.3	+0.2
BDRM				S	Sg	04 21 23.2	+0.1
BODT	Bodrum	0.85	185	ePG	Pb	04 21 13.2	-0.1
BODT	Bodrum	0.85	185	ePg	Pb	04 21 13.2	-0.1
YER	Yerkesik	1.05	138	ePG	Pb	04 21 16.6	-0.1
YER	Yerkesik	1.05	138	ePg	Pb	04 21 16.6	-0.1
KULA	Kula-Manisa	1.16	59	ePN	Pg	04 21 18.2	+0.1
KULA	Kula-Manisa	1.16	59	ePn	Pg	04 21 18.2	+0.1

*CSEM **02** 04:24:18.4±0.6, 24°.93N×56°.38E, h2km, ML2.6, Error ellipse: s-maj=15.8km s-min=5.1km az=118.0*
*OMAN **02** 04:24:19.3±0.9, 24°.89N×56°.36E, h3km, Error ellipse: s-maj=8.6km s-min=2.1km az=112.0*
DSN 02 04:24:20.0±0.8, **24°.94N**×**56°.28E, h3**km, **ML2.6, Error ellipse: s-maj=9.6km s-min=2.7km az=114.0, Eastern Arabian Peninsula**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HATD	Hatta, Dubai	0.17	229	eP	Pg	04 24 23.1	-0.4
	SNR=1385						
HATD				S	Sg	04 24 25.6	-0.1
HATD	Hatta, Dubai	0.17	229	P	Pg	04 24 23.1	-0.3
	SNR=1000						
HATD				S	Sg	04 24 25.6	-0.1
ASHO	Ashiyiah	0.33	218	eP	Pg	04 24 25.9	-0.4
	SNR=432						
ASHO	Ashiyiah	0.33	218	P	Pg	04 24 25.9	-0.4
	SNR=432						
ASHO				S	Sg	04 24 30.8	+0.3
ASHO	Ashiyiah	0.33	218	P	Pg	04 24 25.9	-0.4
	SNR=432						
ASHO				S	Sg	04 24 30.8	+0.3
ASHO	Ashiyiah	0.33	218	P	Pg	04 24 25.9	-0.4
	SNR=432						
NAZ	Nazwa, Dubai	0.56	275	eP	Pg	04 24 30.8	+0.1
	SNR=13						
NAZ	Nazwa, Dubai	0.56	275	P	Pg	04 24 30.8	0.0
	SNR=13						
FAQ	Al Faqa, Dubai	0.65	253	eP	Pg	04 24 32.6	+0.1
	SNR=17						
FAQ	Al Faqa, Dubai	0.65	253	P	Pg	04 24 32.6	+0.1
	SNR=17						
ASUD	Al Ashush, Dub	0.92	250	eP	Pb	04 24 38.4	-0.2
	SNR=7.5						
ASUD	Al Ashush, Dub	0.92	250	P	Pb	04 24 38.4	-0.2
	SNR=7.5						
BANOM	Banah	0.98	1	eP	Pg	04 24 37.7	-1.1
	SNR=17						
BANOM	Banah	0.98	1	P	Pg	04 24 37.7	-1.1
	SNR=17						
BANOM	Banah	0.98	1	P	Pg	04 24 37.7	-1.1
	SNR=17						

*ISCJB **02** 04:24:46.3±0.3, 36°.57N±0°.02×76°.74E±0°.03, h71km±3km, mb4.5/79, Error ellipse: s-maj=3.8km s-min=2.6km az=162.1*
*MOS **02** 04:24:47.6±1.1, 36°.57N×76°.69E, h82km, mb4.4/26, Error ellipse: s-maj=7.2km s-min=4.3km az=104.1*
*BJI **02** 04:24:49.3, 36°.79N×76°.84E, h93km, mb4.6/35, mB4.9/10*
*NEIC **02** 04:24:49.5±0.6, 36°.61N×76°.71E, h87km±5km, mb4.6/33, Error ellipse: s-maj=5.4km s-min=4.4km az=179.0*
*IDC **02** 04:24:50.7±2.4, 36°.61N×76°.69E, h100km±21km, mb4.1/25, mb1 4.2/30, mb1mx4.1/41, mbtmp4.4/30, MS3.5/5, Ms1 3.5/5, ms1mx3.2/43, Error ellipse: s-maj=13.2km s-min=9.8km az=11.0*
*NNC **02** 04:24:51.8±2.0, 36°.74N×76°.67E, h113km±20km, mb3.7, mpv4.2, Error ellipse: s-maj=15.5km s-min=11.3km az=169.0*
ISC 02 04:24:47.2±0.4, **36°.52N**±0°.03×**76°.69E**±0°.04, **h67**km±4km, **h66**km**:pP-P, n276,** σ**2s.05**/313, **mb4.5**/79, **31C-27D, Kashmir-Xinjiang border region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KSH	Kashi	3.04	350	P	Pn	04 25 32.3	-0.8
KSH				S	Sn	04 26 02.5	-5.9
KSH				smax	smax		
	comp=N,2μm,1.1s						
KSH				smax	smax		
	comp=E,2μm,1.2s						
CHCP	Chirah Chowk	4.00	226	P	Pn	04 25 51.2	+5.1
THN	Thein Dam	4.16	191	⇓iPN	Pn	04 25 52.0	+3.9
THN				eSN	Sn	04 26 39.6	+4.2
DHRM	DHARAMSHALA	4.27	184	eP	Pn	04 25 55.0	+5.0
DHRM				eS	Sn	04 26 41.4	+2.7
DHRM				IAML		04 26 45.6	
	comp=N,1μm,0.6s						
DHRM				IAML		04 26 48.2	
	comp=E,2μm,0.4s						
SFK	Sufi-Kurgan	4.29	325	⇑P	Pn	04 25 52.3	+2.1
	comp=E,11nm,0.2s						
SFK				⇓S	Sn	04 26 41.7	+2.5
	comp=E,132nm,0.4s						
JWA	Jwalamukhi	4.65	184	eP	Pn	04 25 59.0	+4.1
JWA				eS	Sn	04 26 49.0	+1.4
CEP	Cherat	4.75	237	P	Pn	04 25 59.7	+3.3
CEP				S	Sn	04 26 52.0	+1.8
SDNR	Sundarnagar	5.01	177	ePN	Pn	04 26 04.0	+4.1
SDNR				eSN	Sn	04 26 39.0	-18
SMLA	Simla	5.39	176	eP	Pn	04 26 07.8	+2.8
SMLA				eS	Sn	04 27 06.3	+0.5
SMLA				IAML		04 27 08.9	
	comp=N,998nm,0.4s						
SMLA				IAML		04 27 08.9	
	comp=E,1μm,0.6s						
DDI	Dehra Dun	6.29	169	eP	Pn	04 26 22.0	+4.6
DDI				eS	Sn	04 27 27.0	-0.8
DDI				IAML		04 27 29.5	
	comp=N,930nm,0.4s						
DDI				IAML		04 27 30.6	
	comp=E,870nm,0.4s						
AAK	Ala-Archa	6.34	345	P	Pn	04 26 21.7	+3.6
	comp=E,3.1nm,0.3s,baz=150,slow=7.7,SNR=19						
AAK				S	Sn	04 27 30.0	+0.9
	comp=E,5.9nm,0.3s,baz=13,slow=18,SNR=8.1						
AAK				LR	LR	04 28 40.2	
	comp=E,156nm,20.9s,baz=198,slow=37						
AAK	Ala-Archa	6.34	345	⇓P	Pn	04 26 21.3	+3.2
	comp=E,16nm,0.8s						
AAK				⇓S	Sn	04 27 28.5	-0.6
	comp=E,122nm,1.1s						
AAK	Ala-Archa	6.34	345	Pn	Pn	04 26 22.4	+4.3
	SNR=5.9						
AAK	Ala-Archa	6.34	345	P	Pn	04 26 22.4	+4.3
	SNR=5.9						
TKM2	Tokmak 2	6.45	353	⇓P	Pn	04 26 22.0	+2.3
	comp=E,9.8nm,0.7s						
TKM2				⇓S	Sn	04 27 31.9	0.0
	comp=E,44nm,0.8s						
TKM2	Tokmak 2	6.45	353	eP	Pn	04 26 22.4	+2.7
TKM2	Tokmak 2	6.45	353	ePn	Pn	04 26 22.4	+2.7
FRU	Bishkek	6.50	346	eP	Pn	04 26 22.0	+1.7
FRU				eS	Sn	04 27 37.0	+4.0
FRU				pmax	pmax		
	comp=Z,230nm,2.0s						
FRU				pmax	pmax		
	comp=E,750nm,2.3s						

EKS2 Erkin-Say 6.53 341 *e*P **Pn** 04 26 25.0 +4.2
EKS2 Erkin-Say 6.53 341 *e*Pn **Pn** 04 26 24.9 +4.2
KBL Kabul 6.54 255 *e*P **Pn** 04 26 22.6 +1.7
KBL Kabul 6.54 255 *e*Pn **Pn** 04 26 22.6 +1.7
KKR Kurukshetra 6.54 179 *ex* **Sn** 04 27 28.2 -5.8
KNDC Almaty 6.69 2 ⇑S **Sn** 04 27 38.7 +1.0
MNAS Manas 6.78 333 ⇓P **Pn** 04 26 24.9 +0.8
comp=E,10nm,0.6s
MNAS ⇓S **Sn** 04 27 39.0 -1.0
comp=E,52nm,0.7s
MNAS Manas 6.78 333 P **Pn** 04 26 24.9 +0.8
MNAS 04 27 40.4
MNAS pmax pmax
comp=Z,21nm,0.7s
MNAS smax smax
comp=N,52nm,0.7s
PDGK Podgornoye 7.13 17 ⇓P **Pn** 04 26 30.6 +1.8
comp=N,53nm,0.7s
PDGK ⇑S **Sn** 04 27 48.2 -0.1
comp=N,233nm,1.1s
RTK Rohtak 7.47 182 *e*S **Sn** 04 27 53.1 -3.6
LGTI Lohaghat 7.66 156 *e*P **Pn** 04 26 38.7 +2.7
LGTI *e*S **Sn** 04 27 58.2 -3.1
BHGR Bahadurgarh 7.81 178 *e*S **Sn** 04 28 02.5 -2.6
NDI New Delhi 7.83 177 *e*P **Pn** 04 26 39.1 +0.7
NDI *e*S **Sn** 04 27 59.5 -6.0
AYAN Aya Nagar 8.02 177 *e*P **Pn** 04 26 43.3 +2.3
AYAN *e*P **Pn** 04 26 43.3 +2.3
AYAN *e*S **Sn** 04 28 06.4 -3.9
KK31 Karatay Array 8.11 326 ⇓P **Pn** 04 26 42.2 0.0
comp=N,2.2nm,0.2s,baz=135,slow=13,SNR=67
KK31 ⇓S **Sn** 04 28 11.3 -1.0
comp=N,20nm,0.7s,baz=138,slow=24,SNR=8.3
KK31 Karatay Array 8.11 326 P **Pn** 04 26 42.0 -0.2
KK31 04 28 09.5
KK31 pmax pmax
comp=Z,2.0nm,0.3s
KK31 smax smax
comp=Z,4.0nm,0.3s
KKAR Karatay Array 8.11 326 *e*P **Pn** 04 26 42.4 +0.2
KKAR Karatay Array 8.11 326 *e*Pn **Pn** 04 26 42.4 +0.2
KUDL Kundal 8.35 181 *e*P **Pn** 04 26 47.9 +2.3
KUDL *e*P **Pn** 04 26 48.1 +2.6
KUDL *e*S **Sn** 04 28 13.4 -4.9
KHET Khetri 8.45 185 *e*P **Pn** 04 26 48.8 +1.8
KHET *e*P **Pn** 04 26 48.9 +1.8
KHET *e*S **Sn** 04 28 15.9 -5.0
PYUN Piuthan 9.94 146 *e*P **Pn** 04 27 08.0 +0.5
comp=Z,200nm,0.3s
KOLN Koldanda 10.50 144 *e*P **Pn** 04 27 15.7 +0.5
comp=Z,155nm,0.6s
GKN Gorkha 10.83 139 *e*P **Pn** 04 27 19.3 -0.2
comp=Z,70nm,0.3s
MAKZ Makanchi 11.01 19 *e*P **Pn** 04 27 22.2 +0.4
MAKZ Makanchi 11.01 19 *e*Pn **Pn** 04 27 22.2 +0.4
MK01 Makanchi Array 11.06 21 *e*Pn **Pn** 04 27 22.4 -0.2
MK31 Makanchi Array 11.08 20 P **Pn** 04 27 23.3 +0.5
comp=Z,5.9nm,0.6s,baz=200,slow=12,SNR=120
MK31 Makanchi Array 11.08 20 *e*P **Pn** 04 27 23.3 +0.5
MK31 04 29 19.8
MK31 pmax pmax
comp=Z,6.0nm,0.6s
MK31 smax smax
comp=N,9.0nm,0.6s
MK31 Makanchi Array 11.08 20 *e*Pn **Pn** 04 27 23.2 +0.5
MKAR Makanchi Array 11.08 20 P **Pn** 04 27 23.4 +0.6
comp=N,3.9nm,0.3s,baz=203,slow=13,SNR=143
MKAR S **Sn** 04 29 21.0 -4.0
comp=N,2.8nm,0.3s,baz=189,slow=22,SNR=7.1
WMQ Urumqi 11.13 46 P **Pn** 04 27 23.2 -0.3
WMQ PP **PnPn** 04 27 34.0 +2.4
WMQ sP 04 27 50.3
WMQ S **Sn** 04 29 23.6 -2.7
WMQ SS **SnSn** 04 29 41.0 +2.1
WMQ pmax pmax
comp=N,13nm,0.8s
WMQ LR LR
comp=N,56nm,14.6s
WMQ LR LR
comp=N,290nm,27.6s
WMQ LR LR
comp=N,320nm,26.6s
KKN Kakani 11.34 138 *e*P **Pn** 04 27 26.0 -0.6
comp=N,36nm,0.2s
DMN Daman 11.39 139 *e*P **Pn** 04 27 26.6 -0.7
comp=N,27nm,0.2s
PKIN Phulchoki 11.57 138 *e*P **Pn** 04 27 28.6 -1.2
GUN Gumba 11.58 135 *e*P **Pn** 04 27 29.3 -0.7
comp=N,21nm,0.2s
OTUK Ortayu 12.15 346 ⇑P **Pn** 04 27 36.9 -0.4
comp=N,0.2nm,0.2s
OTUK Ortayu 12.15 346 P **Pn** 04 27 36.9 -0.4
OTUK pmax pmax
comp=N,17nm,0.9s
RAMN Ramite 12.73 136 *e*P **Pn** 04 27 43.0 -2.5
comp=N,31nm,0.2s
TAPN Taplejung 13.07 131 *e*P **Pn** 04 27 47.7 -2.6
comp=N,75nm,0.5s
ODAN Odare 13.25 134 *e*P **Pn** 04 27 50.0 -2.6
LSA Lhasa 13.89 115 P **Pn** 04 28 02.5 +1.1
LSA pmax pmax
comp=N,12nm,0.8s
LSA Lhasa 13.89 115 *e*P **Pn** 04 28 02.4 +1.1
LSA pmax pmax
comp=Z,38nm,0.8s
LSA Lhasa 13.89 115 *e*Pn **Pn** 04 28 02.4 +1.0
comp=Z,38nm,0.8s
KURBB Kurchatov Arra 14.16 5 P **Pn** 04 28 02.3 -2.0
comp=Z,0.1nm,0.3s,baz=194,slow=12,SNR=37
KURK Kurchatov 14.26 5 ⇑P **Pn** 04 28 05.9 +0.4
comp=Z,27nm,0.7s
KURK Kurchatov 14.26 5 *e*P **Pn** 04 28 03.8 -1.8
KURK Kurchatov 14.26 5 *e*Pn **Pn** 04 28 03.8 -1.8
GEYT Alibeck 14.87 281 P **Pn** 04 28 09.9 -3.7
comp=Z,1.6nm,0.3s,baz=128,slow=9.6,SNR=9.6
GEYT S Sn 04 30 44.9 -12
comp=Z,1.0nm,0.3s,baz=82,slow=20,SNR=2.3
GEYT LR LR 04 35 18.4
comp=Z,293nm,20.6s,baz=75,slow=42
VOSK Vostochnaya 16.69 348 *e*P **Pn** 04 28 36.9 +0.3
VOSK pmax pmax
comp=Z,10.0nm,1.1s
VOSK Vostochnaya 16.69 348 *e*Pn **Pn** 04 28 36.9 +0.3
comp=Z,9.9nm,1.1s
BVA0 Borovoye Array 17.09 347 ⇓P **P** 04 28 42.3 +0.1
comp=Z,2.4nm,0.5s,baz=146,slow=13,SNR=17
BVA0 Borovoye Array 17.09 347 P **P** 04 28 43.3 +1.0
BVA0 pmax pmax
comp=Z,10.0nm,0.9s
BVAR Borovoye Array 17.09 347 P **P** 04 28 41.9 -0.3
comp=Z,1.2nm,0.3s,baz=152,slow=13,SNR=18
BRVK Borovoye 17.14 347 *de*P **P** 04 28 42.9 +0.1
BRVK pmax pmax
comp=Z,5.0nm,0.4s
BRVK Borovoye 17.14 347 *e*Pn **Pn** 04 28 41.8 -0.3
comp=Z,27nm,1.2s
AB31 Akbulak array 17.63 321 ⇑P **Pn** 04 28 46.3 -1.8
comp=Z,6.8nm,0.7s,baz=128,slow=12,SNR=77
AB31 Akbulak array 17.63 321 *i* P **Pn** 04 28 45.6 -2.5
AB31 pmax pmax
comp=Z,6.0nm,0.7s
ABKAR Akbulak array 17.63 321 *e*P **Pn** 04 28 45.6 -2.5
CHKZ Chkalovo 17.67 348 ⇑P **P** 04 28 48.7 +0.1
comp=Z,4.3nm,0.7s
POO Poona 18.10 189 *e*P **P** 04 28 52.0 -1.6
comp=Z,2.0nm,1.0s
POO *e*PPP PPP 04 29 15.0
POO *i* S **Sn** 04 32 06.0 -9.5
POO *e*LQ LQ 04 32 10.5
POO *i* SS **SnSn** 04 32 27.5 -2.8
POO *i* SSS SSS 04 32 40.5
POO *e*LR LR 04 32 55.0
POO *i* PCP **PcP** 04 33 26.5 +1.6
ZAA0 Zalesovo Array 18.32 15 *e*P **P** 04 28 54.8 -1.1
ZALV Zalesovo Beam 18.32 15 P **P** 04 28 54.6 -1.2
comp=Z,0.8nm,0.3s,baz=208,slow=11,SNR=24
GTA Gaotai 18.45 74 P **Pn** 04 28 59.0 +0.6
GTA pP sP 04 29 19.0 -0.9
GTA pmax pmax
comp=Z,9.0nm,1.3s
NVS Novosibirsk 18.87 12 *e*P **P** 04 29 01.7 -0.1
NVS *e* 04 32 25.3
HYB Hyderabad 19.10 175 *i* P **Pn** 04 29 08.0 +1.9
HYB *e* 04 32 22.0
HYB *e*S **Sn** 04 32 40.0 +0.4

AKTO Aktyubinsk 19.34 322 P **P** 04 29 07.0 0.0
comp=Z,2.8nm,0.3s,baz=96,slow=6.6,SNR=65
AKTO Aktyubinsk 19.34 322 ⇓P **P** 04 29 06.8 -0.3
comp=Z,7.4nm,0.4s
WSAR Wadi Sarin 20.46 235 P Pn 04 29 21.9 -0.1
comp=Z,40nm,0.9s,baz=79,slow=8.1,SNR=24
SMDO Samad 20.96 235 P Pn 04 29 30.6 +2.4
SNR=9.1
SMDO Samad 20.96 235 P Pn 04 29 30.6 +2.4
SNR=9.1
UOSS Minazif 21.00 242 *e*P **P** 04 29 27.1 +1.9
comp=Z,3.2nm,1.4s
ASHO Ashiyiah 21.27 242 P **P** 04 29 32.7 +4.6
SNR=10
ASHO Ashiyiah 21.27 242 P **P** 04 29 32.7 +4.6
SNR=10
JMDO Jabal Madar 21.41 234 P **P** 04 29 33.5 +3.9
SNR=7.2
JMDO Jabal Madar 21.41 234 P **P** 04 29 33.5 +3.9
SNR=7.2
ARQ Araqi 21.81 239 P **P** 04 29 40.9 +7.0
SNR=5.7
LZH Lanzhou 21.87 83 *e*P **P** 04 29 36.3 +1.7
LZH pP sP 04 29 55.1 -2.1
LZH PP **PnPn** 04 30 01.1 +2.5
LZH sP pP 04 30 07.6 +19
LZH *e*S **S** 04 33 26.3 -6.3
LZH sS sS 04 33 58.9 +2.9
LZH SS **SnSn** 04 34 11.8 +10
LZH pmax pmax
comp=Z,61nm,1.0s
LZH pmax pmax
comp=Z,210nm,5.6s
LZH LR LR
comp=Z,2μm,14.4s
LZH LR LR
comp=Z,2μm,14.9s
LZH LR LR
comp=Z,2μm,15.8s
MOY Mondy 22.95 41 *e*P **P** 04 29 47.2 +1.3
CD2 Chengdu 23.16 96 P **P** 04 29 47.3 -0.8
ARU Arti 23.37 334 P **P** 04 29 49.8 +0.1
comp=Z,4.0nm,0.4s,baz=122,slow=5.4,SNR=12
ARU Arti 23.37 334 *d i*P **P** 04 29 49.7 0.0
ARU 04 30 22.2
ARU SS Sn 04 34 40.7 +20
ARU pmax pmax
comp=Z,9.0nm,1.2s
ARU Arti 23.37 334 *e*P **P** 04 29 48.7 -0.9
comp=Z,43nm,1.2s
ZAK Zakamensk 23.60 46 *e*P **P** 04 29 51.6 -0.4
ZAK pmax pmax
comp=Z,7.0nm,0.8s
TLY Talaya 24.39 43 P **P** 04 29 59.9 +0.8
comp=Z,1.2nm,0.2s,baz=260,slow=10.0,SNR=4.0
TLY Talaya 24.39 43 *e*P **P** 04 30 00.7 +1.6
TLY pmax pmax
comp=Z,4.0nm,1.0s
SONM Songino Array 24.60 53 P **P** 04 30 02.4 +1.3
comp=Z,29nm,0.9s,baz=252,slow=8.7,SNR=72
SONM LR LR 04 40 56.2
comp=Z,111nm,20.7s,baz=184,slow=39
SONA1 Songino Array 24.61 53 *e*P **P** 04 30 02.3 +1.1
KMI Kunming 25.01 110 P **P** 04 30 06.1 +0.9
KMI pP sP 04 30 27.4 -1.6
KMI pmax pmax
comp=Z,17nm,0.7s
KMI LR LR
comp=Z,76nm,4.6s
KMI LR LR
comp=Z,100nm,5.3s
KMI LR LR
comp=Z,78nm,5.9s
ULN Ulaanbaatar 25.03 54 *d i*P **P** 04 30 06.3 +1.2
ULN pmax pmax
comp=Z,24nm,1.0s
ULN Ulaanbaatar 25.03 54 *e*P **P** 04 30 05.2 +0.2
comp=Z,19nm,0.9s
ULN Ulaanbaatar 25.03 54 P **P** 04 30 06.7 +1.7
SNR=8.4
ULN Ulaanbaatar 25.03 54 P **P** 04 30 06.7 +1.7
SNR=8.4
GNI Garni 25.25 288 P **P** 04 30 08.0 +0.8
comp=Z,21nm,0.8s,baz=171,slow=2.4,SNR=20
GNI Garni 25.25 288 *ce*P **P** 04 30 09.7 +2.6
GNI pmax pmax
comp=Z,242nm,1.2s
GNI Garni 25.25 288 *e*P **P** 04 30 09.9 +2.8
comp=Z,48nm,1.0s
GNI Garni 25.25 288 P **P** 04 30 10.5 +3.3
SNR=13
GNI Garni 25.25 288 P **P** 04 30 10.5 +3.3
SNR=13
CMAI Chiengmai2 25.61 124 P **P** 04 30 10.2 -0.4
comp=Z,12nm,0.8s,comp=Z,1μm
ZEI Tsey 25.90 294 *e*P **P** 04 30 14.8 +1.7
ZEI pmax pmax
comp=Z,18nm,0.9s
MHMT Maesarieng 26.16 129 P **P** 04 30 19.5 +4.1
comp=Z,1.1nm,1.0s,comp=Z,354nm
CHTO Chiang Mai 26.34 126 P **P** 04 30 20.8 +3.8
comp=Z,56nm,1.0s
CHTO Chiang Mai 26.34 126 *e*P **P** 04 30 18.2 +1.1
CHTO pmax pmax
comp=Z,10.0nm,0.8s
CHTO Chiang Mai 26.34 126 *e*P **P** 04 30 18.1 +1.1
comp=Z,9.7nm,0.8s
CMMT Chiang Mai 26.35 126 P **P** 04 30 20.7 +3.6
comp=Z,13nm,1.0s
CMAR Chiang Mai Arr 26.60 127 P **P** 04 30 19.0 -0.4
comp=Z,6.0nm,0.7s,baz=310,slow=9.0,SNR=13
CMAR Chiang Mai Arr 26.60 127 P **P** 04 30 19.0 -0.4
CM01 Chiang Mai Arr 26.64 127 *e*P **P** 04 30 23.6 +4.0
KBZ Khabaz 26.69 296 P **P** 04 30 19.1 -0.8
comp=Z,1.8nm,0.9s,baz=142,slow=5.4,SNR=6.2
KIV Kislovodsk 26.86 297 *e*P **P** 04 30 18.3 -3.3
KIV *i* 04 31 10.7
KIV *i* SS SS 04 36 27.1 -21
KIV pmax pmax
comp=Z,5.0nm,0.9s
KIV MLR MLR
comp=Z,69nm,18.0s
GYA Guiyang 27.36 103 P **P** 04 30 27.6 +1.3
GYA pP sP 04 30 48.2 -1.9
GYA sP pP 04 30 59.8 +18
GYA PP **PnPn** 04 31 17.4 +3.7
GYA PcP **PcP** 04 33 45.0 +1.0
GYA S **S** 04 34 59.5 -2.1
GYA sS sS 04 35 35.0 +5.9
GYA ScS **ScS** 04 41 06.0 -4.4
GYA pmax pmax
comp=Z,10.0nm,0.9s
PHRA Phrae 27.41 125 P **P** 04 30 26.5 -0.1
comp=Z,599nm,1.1s,comp=Z,29μm
HHC Hu-ho-hao-te 27.45 70 *e*P **P** 04 30 27.5 +0.6
HHC pmax pmax
comp=Z,16nm,1.1s
HHC pmax pmax
comp=Z,210nm,6.3s
NANT Nan 27.52 123 P **P** 04 30 27.0 -0.6
comp=Z,4.4nm,1.0s,comp=Z,71nm
ENH Enshi 27.99 93 *e*P **P** 04 30 32.4 +0.7
comp=Z,5.1nm,0.4s
LOEI Loei 28.81 125 P **P** 04 30 42.0 +2.9
comp=Z,6.0nm,0.9s
PBKT Sadao Pong 29.29 126 P **P** 04 30 44.4 +1.1
comp=Z,9.2nm,1.0s
NONG Nongkai 29.69 121 P **P** 04 30 47.5 +0.6
comp=Z,44nm,1.2s
RAYN Ar Rayn 29.81 253 *e*P **P** 04 30 48.2 +0.2
comp=Z,11nm,1.3s
CHAI Chaiyaphum 30.44 126 P **P** 04 30 54.5 +1.0
comp=Z,6.0nm,0.9s
KHON Khomkaen 30.68 124 P **P** 04 30 56.8 +1.2
comp=Z,18nm,0.8s
PANO Nakornpanom 31.33 121 P **P** 04 31 02.4 +1.0
comp=Z,57nm,1.0s
OBN Obninsk 32.98 317 ⇓*e*P **P** 04 31 15.8 +0.4
OBN *e* 04 32 31.0
OBN pmax pmax
comp=Z,28nm,2.5s
OBN MLR MLR
comp=Z,127nm,16.0s
BR131 Keskin Array S 33.78 289 *e*P **P** 04 31 23.9 +1.1
BRTR Keskin Array B 33.78 289 P **P** 04 31 22.6 -0.2
comp=Z,1.9nm,0.8s,baz=108,slow=8.0,SNR=11
BRTR Keskin Array B 33.78 289 *ce*P **P** 04 31 23.3 +0.5
BRTR pmax pmax
comp=Z,2.0nm,0.8s
KLMR Klimovskoe 33.81 328 *e*P **P** 04 31 20.2 -2.3
KLMR *e* 04 32 33.2
KLMR pmax pmax
comp=Z,15nm,1.3s
QIZ Qiongzhong 33.90 112 P **P** 04 31 24.7 +0.9
SURT Suratani 34.00 138 P **P** 04 31 26.1 +1.4
comp=Z,8.1nm,1.0s
KRAB Krabi 34.83 138 P **P** 04 31 33.7 +1.8
NJ2 Nanjing 34.92 85 *e*P **P** 04 31 33.5 +1.0
NJ2 pmax pmax
comp=Z,11nm,0.5s
AKASG Malin Array Be 36.52 308 P **P** 04 31 45.3 -0.7
comp=Z,1.4nm,0.5s,baz=78,slow=7.2,SNR=13
AKASG Malin Array Be 36.52 308 *ce*P **P** 04 31 45.7 -0.3
AKASG pmax pmax
comp=Z,1.0nm,0.4s
KIEV Kiev 36.53 308 ⇑*e*P **P** 04 31 45.8 -0.3
KIEV pmax pmax
comp=Z,4.0nm,1.0s
KIEV Kiev 36.53 308 *e*P **P** 04 31 44.9 -1.2
comp=Z,3.0nm,0.6s
VRI Vrincioaia 38.19 300 ⇑*i*P **P** 04 32 01.6 +1.4
VRI Vrincioaia 38.19 300 ⇑P **P** 04 32 01.6 +1.4
TESR Tescani 38.20 301 ⇑*i*P **P** 04 32 00.3 0.0
PLOR Plostina 38.24 300 ⇓*i*P **P** 04 32 01.8 +1.1
PLOR Plostina 38.24 300 ⇓P **P** 04 32 01.8 +1.1
PRAR RASCA 38.45 303 ⇓*i*P **P** 04 32 03.6 +1.2
MLR Muntele Rosu 38.77 300 ⇑*i*P **P** 04 32 07.3 +2.1
MLR Muntele Rosu 38.77 300 ⇑P **P** 04 32 07.3 +2.1
MLR Muntele Rosu 38.77 300 *e*P **P** 04 32 06.4 +1.2
comp=Z,14nm,1.0s
IPM Ipoh 38.95 139 *e*P **P** 04 32 06.2 -0.6
comp=Z,7.4nm,0.8s
DOPR Dopca 39.11 300 ⇓*i*P **P** 04 32 08.9 +0.9
BURAR Bucovina Array 39.12 303 ⇑*i*P **P** 04 31 59.8 -8.3
BURAR Bucovina Array 39.12 303 ⇑P **P** 04 31 59.8 -8.3
VOIR 39.40 300 ⇑*i*P **P** 04 32 11.1 +0.7
VOIR 39.40 300 ⇑P **P** 04 32 11.1 +0.7
ARR Arges 39.70 299 ⇑*i*P P 04 32 04.6 -8.3
KARP Karpathos 39.71 284 *e*P **P** 04 32 13.4 +0.4
comp=Z,37nm,0.9s
GSI Gunungsitoli 40.02 146 P **P** 04 32 17.0 +1.3
comp=Z,31nm,0.8s
GSI Gunungsitoli 40.02 146 *e*P **P** 04 32 16.9 +1.1
comp=Z,20nm,0.7s
FIA1 FINESS Array S 40.07 325 *e*P **P** 04 32 14.9 -0.7
comp=Z,16nm,0.5s
FINES FINESS Array B 40.07 325 P **P** 04 32 15.6 0.0
comp=Z,19nm,0.5s,baz=112,slow=9.1,SNR=241
LOT Lotru 40.29 300 ⇓*i*P **P** 04 32 18.8 +0.9
KSAR Wonju Array Be 40.49 73 P **P** 04 32 20.5 +1.1
KSAR Wonju Array Be 40.49 73 P **P** 04 32 20.5 +1.1
KSRS Korea Array 40.52 73 P **P** 04 32 20.5 +0.9
comp=Z,2.7nm,0.7s,baz=273,slow=7.8,SNR=5.8
KSRS Korea Array 40.52 73 P **P** 04 32 20.5 +0.9
KSRS pmax pmax
comp=Z,2.0nm,0.5s
GZR Gura Zlata 40.99 300 ⇑*i*P **P** 04 32 24.1 +0.5
GZR Gura Zlata 40.99 300 ⇑P **P** 04 32 24.1 +0.5
KOLS Kolonicke sedl 41.01 305 *e*P **P** 04 32 23.7 +0.1
KOLS Kolonicke sedl 41.01 305 *e*P **P** 04 32 23.7 +0.1
UZH Uzhgorod 41.02 305 *e*P **P** 04 32 21.8 -1.8
UZH *e* 04 32 44.4
VTS Vitosha 41.10 295 ⇑*i*P **P** 04 32 25.5 +0.9
VTS Vitosha 41.10 295 ⇑P **P** 04 32 25.6 +0.9
LAST Lasithi 41.13 284 *e*P **P** 04 32 25.9 +1.0
comp=Z,57nm,1.1s
YAK Yakutsk 41.31 35 *e*P **P** 04 32 25.2 -0.6
YAK pmax pmax
comp=Z,9.0nm,0.7s
KLR Kul'dur 41.42 54 ⇓*e*P **P** 04 32 27.3 +0.4
STHS Stebnicka Huta 41.66 306 *e*P **P** 04 32 29.7 +0.8
STHS Stebnicka Huta 41.66 306 *e*P **P** 04 32 29.6 +0.7
BZS Buzias 41.77 300 ⇑*i*P **P** 04 32 30.9 +1.0
BZS Buzias 41.77 300 ⇑P **P** 04 32 30.9 +1.0
MDVR Moldovita 41.82 299 ⇓*i*P **P** 04 32 31.3 +0.9
KECS Kecovo 42.23 305 *e*P **P** 04 32 32.6 -0.9
KECS Kecovo 42.23 305 *e*P **P** 04 32 32.6 -0.9
ARCES ARCESS Array B 42.92 336 P **P** 04 32 38.7 -0.2
comp=Z,3.7nm,0.6s,baz=108,slow=8.8,SNR=57
VYHS Vyhne 43.32 305 *e*P **P** 04 32 43.2 +0.8
VYHS pmax pmax
comp=Z,9.0nm,2.2s
VYHS Vyhne 43.32 305 *e*P **P** 04 32 43.2 +0.8
MORC Moravsky Berou 44.03 307 *e*P **P** 04 32 49.4 +1.3
MORC *e**PP **sP** 04 33 12.4 -0.2
MORC Moravsky Berou 44.03 307 *e*P **P** 04 32 49.4 +1.3
MORC *ep*P **sP** 04 33 12.4 -0.2
TIXI Tiksi 44.07 21 ⇑*e*P **P** 04 32 47.2 -0.8
TIXI pmax pmax
comp=Z,4.0nm,0.8s
TIXI Tiksi 44.07 21 *e*P **P** 04 32 47.4 -0.6
comp=Z,6.3nm,1.1s
JNU Nakatsue 44.13 78 LR LR 04 54 28.6
comp=Z,115nm,18.4s,baz=114,slow=40
DPC Dobruska-Polom 44.75 308 *e*P **P** 04 32 54.5 +0.6
DPC *ep*P **sP** 04 33 17.7 -0.7
DPC Dobruska-Polom 44.75 308 *e*P **P** 04 32 54.5 +0.6
DPC *e* 04 33 17.7
UPC Upice 44.94 308 *e*P **P** 04 32 56.2 +0.9
UPC *ep*P **sP** 04 33 19.1 -0.7
UPC *es*P pP 04 33 28.7 +17
UPC Upice 44.94 308 *e*P **P** 04 32 56.2 +0.9
UPC *e* 04 33 19.1
UPC *e* 04 33 28.7
PRU Pruhonice 45.93 307 *e*P **P** 04 33 04.0 +0.8
PRU *ep*P **sP** 04 33 26.9 -0.8
PRU Pruhonice 45.93 307 *e*P **P** 04 33 04.0 +0.8
PRU *e* 04 33 26.9
BRG Berggiesshubel 46.20 309 *e*P **sP** 04 33 28.7 -1.1
comp=Z,7.5nm,0.8s
BRG *e* 04 33 39.1
comp=Z,7.7nm,1.1s
GERES GERESS Array B 46.64 306 P **P** 04 33 09.4 +0.6
comp=Z,1.0nm,0.7s,baz=86,slow=6.8,SNR=11
TIP Timpagrande 46.64 292 *e*P **P** 04 33 08.9 -0.1
comp=Z,11nm,1.0s
KHC Kasperske Hory 46.68 306 *e*P **P** 04 33 09.2 +0.1
KHC *ep*P **sP** 04 33 32.8 -0.8
KHC Kasperske Hory 46.68 306 *e*P **P** 04 33 09.2 +0.1
KHC *e* 04 33 32.8
CLL Collm 46.73 309 *e*P **P** 04 33 09.0 -0.4
comp=Z,3.0nm,0.6s
CLL *i* pP **sP** 04 33 32.7 -1.2
CLL *es*P pP 04 33 42.0 +16
CLL Collm 46.73 309 *e*P **P** 04 33 09.0 -0.4
CLL *i* 04 33 32.7
CLL pmax pmax
comp=Z,3.0nm,0.6s
NC303 NORSAR Array S 47.05 323 *e*P **P** 04 33 11.8 0.0
CUC Castrocucco 47.12 294 *e*P **P** 04 33 13.5 +0.9
comp=Z,10nm,0.9s
NB2 NORSAR Subarra 47.13 323 P **P** 04 33 11.4 -0.9
comp=Z,11nm,1.0s,baz=90,slow=7.9
NOA NORSAR Array B 47.13 323 P **P** 04 33 11.5 -0.9
comp=Z,3.9nm,0.6s,baz=91,slow=7.6,SNR=16
MAJO Matsushiro 48.65 71 *de*P **P** 04 33 24.3 -0.2
MAJO pmax pmax
comp=Z,46nm,0.9s
MAJO Matsushiro 48.65 71 *e*P **P** 04 33 23.9 -0.6
comp=Z,5.9nm,0.7s
MJAR Matsushiro Arr 48.65 71 P **P** 04 33 23.3 -1.2
comp=Z,6.1nm,0.9s,baz=288,slow=9.3,SNR=9.8
MA2 Magadan 51.50 39 *e*P **P** 04 33 45.5 -0.2
MA2 pmax pmax
comp=Z,47nm,0.8s
MA2 Magadan 51.50 39 *e*P **P** 04 33 45.5 -0.2
comp=Z,47nm,0.8s
SEY Seymchan 51.83 34 ⇑*e*P **P** 04 33 48.3 +0.2
KMBO Kilima Mbogo 52.38 233 P **P** 04 33 54.5 +1.5
comp=Z,4.0nm,0.7s,baz=34,slow=11,SNR=13
KMBO Kilima Mbogo 52.38 233 *ce*P **P** 04 33 53.9 +0.9
KMBO pmax pmax
comp=Z,4.0nm,0.7s
KMBO Kilima Mbogo 52.38 233 *e*P **P** 04 33 54.0 +0.9
comp=Z,5.2nm,0.8s
KEST Kesra 53.35 291 *e*P **P** 04 34 00.8 +1.0
comp=Z,19nm,1.4s
BILL Bilibino 56.55 27 ⇓*e*P **P** 04 34 23.0 +0.7
BILL *e* 04 35 17.8
BILL *e* 04 36 29.6

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
BILL				pmax	pmax		
	comp=Z,12nm,2.5s						
BILL				MLR	MLR		
	comp=Z,70nm,17.0s						
BILL	**Bilibino**	**56.55**	**27**	*e*P	**P**	**04 34 22.4**	**+0.1**
	comp=Z,5.7nm,1.0s						
ESDC	**Sonseca Array**	**61.46**	**300**	P	**P**	**04 34 55.9**	**-0.9**
	comp=Z,0.3nm,0.3s,baz=56,slow=7.0,SNR=9.5						
TAM	**Tamanrasset**	**62.08**	**279**	*e*P	**P**	**04 35 01.0**	**-0.3**
TAM				pmax	pmax		
	comp=Z,1.0nm,0.5s						
TAM	**Tamanrasset**	**62.08**	**279**	*e*P	**P**	**04 35 01.0**	**-0.3**
	comp=Z,1.0nm,0.5s						
FAKI	**Fak Fak**	**64.85**	**115**	*e*P	**P**	**04 35 20.0**	**+0.5**
RES	**Resolute Bay**	**68.93**	**358**	*e*P	**P**	**04 35 43.9**	**-0.6**
RES				pmax	pmax		
	comp=Z,2.0nm,0.7s						
RES	**Resolute Bay**	**68.93**	**358**	*e*P	**P**	**04 35 43.9**	**-0.6**
	comp=Z,1.5nm,0.7s						
TORD	**Torodi Ar. Bea**	**70.30**	**272**	P	**P**	**04 35 52.6**	**-1.3**
	comp=Z,2.2nm,0.5s,baz=46,slow=5.7,SNR=74						
COLD	**Coldfoot**	**70.64**	**18**	*e*P	**P**	**04 35 54.4**	**-0.7**
MLY	**Manley**	**72.23**	**19**	*e*P	**P**	**04 36 05.1**	**+0.3**
TTA	**Tatalina**	**72.33**	**22**	*e*P	**P**	**04 36 06.1**	**+0.6**
TTA	**Tatalina**	**72.33**	**22**	*e*P	**P**	**04 36 06.1**	**+0.6**
BPAW	**Bear Paw Mtn.**	**72.90**	**20**	*e*P	**P**	**04 36 08.4**	**-0.4**
	comp=Z,2.3nm,1.1s						
MDM	**Murphy Dome**	**72.94**	**18**	*e*P	**P**	**04 36 09.1**	**+0.1**
INK	**Inuvik**	**73.07**	**11**	*e*P	**P**	**04 36 08.6**	**-1.0**
INK				pmax	pmax		
	comp=Z,8.0nm,1.1s						
INK	**Inuvik**	**73.07**	**11**	*e*P	**P**	**04 36 08.6**	**-1.0**
	comp=Z,7.5nm,1.1s						
COLA	**College**	**73.10**	**18***d*	*i*P	**P**	**04 36 09.9**	**0.0**
COLA				*i* *PP	**sP**	**04 36 32.4**	**-2.9**
COLA				pmax	pmax		
	comp=Z,8.0nm,1.0s						
COLA	**College**	**73.10**	**18**	*e*P	**P**	**04 36 09.7**	**-0.2**
	comp=Z,7.1nm,1.0s						
CAST	**Castle Rocks**	**73.12**	**21**	*e*P	**P**	**04 36 10.6**	**+0.5**
KTH	**Kantishna Hill**	**73.34**	**20**	*e*P	**P**	**04 36 10.9**	**-0.5**
	comp=Z,11nm,1.1s						
IL1	**Eielson Array**	**73.43**	**18**	*e*P	**P**	**04 36 10.6**	**-1.2**
ILAR	**Eielson Array**	**73.43**	**18**	P	**P**	**04 36 10.7**	**-1.1**
	comp=Z,2.9nm,0.8s,baz=316,slow=5.1,SNR=26						
ILAR				LR	LR	05 10 51.1	
	comp=Z,28nm,18.1s,baz=274,slow=38						
ILB	**Eielson Array**	**73.43**	**18**	*e*P	**P**	**04 36 11.2**	**-0.6**
MCK	**McKinley**	**73.74**	**19**	*e*P	**P**	**04 36 12.8**	**-0.9**
MCK				pmax	pmax		
	comp=Z,3.0nm,0.7s						
MCK	**McKinley**	**73.74**	**19**	*e*P	**P**	**04 36 12.8**	**-0.9**
	comp=Z,2.5nm,0.7s						
DHY	**Denali Highway**	**74.69**	**19**	*e*P	**P**	**04 36 19.3**	**-0.1**
DOT	**Dot Lake**	**75.05**	**18**	*e*P	**P**	**04 36 20.9**	**-0.4**
SML	**Sawmill**	**75.46**	**20**	*e*P	**P**	**04 36 22.8**	**-0.9**
SML				pmax	pmax		
	comp=Z,4.0nm,1.0s						
SML	**Sawmill**	**75.46**	**20**	*e*P	**P**	**04 36 22.8**	**-0.9**
	comp=Z,3.6nm,1.0s						
KDAK	**Kodiak Island**	**77.36**	**25**	*i* P	**P**	**04 36 35.0**	**+0.6**
WRA	**Warramunga Arr**	**78.19**	**126**	P	**P**	**04 36 39.7**	**+0.1**
	comp=Z,2.7nm,0.7s,baz=325,slow=4.7,SNR=14						
WRA	**Warramunga Arr**	**78.19**	**126**	*i* P	**P**	**04 36 40.0**	**+0.4**
WRA				pmax	pmax		
	comp=Z,3.0nm,0.8s						
DBIC	**Dimbokro**	**79.28**	**270**	P	**P**	**04 36 44.8**	**-1.0**
	comp=Z,5.0nm,0.9s,baz=21,slow=5.7,SNR=4.9						
COEN	**Coen**	**80.21**	**115**	*e*P	**P**	**04 36 50.8**	**+0.1**
	comp=Z,11nm,1.2s						
PMG	**Port Moresby**	**80.24**	**109**⇑	*e*P	**P**	**04 36 52.2**	**+1.3**
PMG				pmax	pmax		
	comp=Z,86nm,1.7s						
ASAR	**Alice Springs**	**80.59**	**129**	P	**P**	**04 36 52.6**	**0.0**
	comp=Z,2.7nm,0.8s,baz=324,slow=5.8,SNR=25						
YKA	**Yellowknife Ar**	**80.91**	**5**	P	**P**	**04 36 53.1**	**-0.6**
	comp=Z,3.8nm,0.6s,baz=345,slow=5.3,SNR=87						
SCHQ	**Schefferville**	**83.77**	**340**	P	**P**	**04 37 08.3**	**-0.5**
	comp=Z,1.1nm,0.6s,baz=143,slow=20,SNR=3.3						
FCC	**Fort Churchill**	**84.76**	**355**	*e*P	**P**	**04 37 13.1**	**-0.6**
FCC	**Fort Churchill**	**84.76**	**355**	*e*P	**P**	**04 37 13.1**	**-0.6**
CTAO	**Charters Tower**	**86.44**	**118**	*e*P	**P**	**04 37 22.5**	**-0.2**
CTAO				pmax	pmax		
	comp=Z,7.0nm,0.6s						
CTAO	**Charters Tower**	**86.44**	**118**	*e*P	**P**	**04 37 22.5**	**-0.2**
	comp=Z,6.6nm,0.6s						
FFC	**Flin Flon**	**89.11**	**359**	*e*P	**P**	**04 37 34.1**	**-0.9**
FFC				pmax	pmax		
	comp=Z,3.0nm,0.8s						
FFC	**Flin Flon**	**89.11**	**359**	*e*P	**P**	**04 37 34.1**	**-0.9**
	comp=Z,3.1nm,0.8s						
ULM	**Lac du Bonnet**	**93.35**	**355**	P	**P**	**04 37 53.5**	**-1.2**
	comp=Z,1.8nm,0.8s,baz=2.0,slow=7.7,SNR=4.8						

CSEM ***02*** *04:27:51.6±0.7, 37°.02N×37°.55E, h2km, MD2.7, Error ellipse: s-maj=17.8km s-min=11.7km az=160.0*
ISCJB ***02*** *04:27:52.5±1.2, 37°.06N±0°.07×37°.44E±0°.06, h10km, Error ellipse: s-maj=9.9km s-min=7.0km az=162.3*
DDA ***02*** *04:27:52.8, 37°.15N×37°.42E, h7km, Md2.7*
ISC 02 04:27:52.5±1.5**, 37°.07N**±0°.09×**37°.49E**±0°.05**, h10**km**, n11, σ1s.89**/17**, Turkey**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
GAZ	**Gaziantep**	**0.25**	**295**	*e*PG	**Pg**	**04 27 58.3**	**+0.6**
GAZ				*e*SG	**Sg**	**04 28 03.8**	**+2.7**
GAZ	**Gaziantep**	**0.25**	**295**	*e*Pg	**Pg**	**04 27 58.3**	**+0.6**
GAZ				*e*Sg	**Sg**	**04 28 03.8**	**+2.7**
GZT	**Gaziantep**	**0.29**	**11**	*i* P	**Pg**	**04 27 57.5**	**-1.0**
GZT				*i* S	**Sg**	**04 28 06.7**	**+4.2**
GZT	**Gaziantep**	**0.29**	**11**	P	**Pg**	**04 27 57.5**	**-1.0**
AYKD	**Aykdinkavak**	**0.65**	**302**	*i* P	**Pg**	**04 28 03.5**	**-1.6**
AYKD				*i* S	**Sb**	**04 28 12.1**	**-3.0**
URFA	**Urfa**	**1.12**	**70**	*e*PN	**Pn**	**04 28 15.1**	**+0.7**
URFA	**Urfa**	**1.12**	**70**	*e*Pn	**Pn**	**04 28 15.1**	**+0.7**
TAHT	**Tahtakopru-Hat**	**1.26**	**237**	*e*PN	**Pn**	**04 28 16.2**	**0.0**
TAHT	**Tahtakopru-Hat**	**1.26**	**237**	*e*Pn	**Pn**	**04 28 16.2**	**0.0**
AKCD	**Akcadag**	**1.27**	**15**	*i* P	**Pb**	**04 28 15.7**	**-1.0**
AKCD				*i* S	**Sn**	**04 28 33.5**	**-0.2**
AKCD	**Akcadag**	**1.27**	**15**	P	**Pb**	**04 28 15.7**	**-1.0**
AKCD				S	**Sn**	**04 28 33.5**	**-0.2**

ISCJB ***02*** *04:37:16.3±0.5, 32°.07N±0°.03×116°.14W±0°.04, h24km±13km, Error ellipse: s-maj=6.2km s-min=5.2km az=1.8*
ECX ***02*** *04:37:17.2±0.5, 32°.06N×116°.11W, h6km, MD2.4, ML2.6*
MEX ***02*** *04:37:18.1±0.4, 32°.11N×116°.15W, h9km, MD3.3*
ISC 02 04:37:15.9±1.0**, 32°.06N**±0°.03×**116°.12W**±0°.03**, h16**km±10km**, n14, σ0s.23**/21**, 3C-1D, California-Baja California border region**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
CBX	**Cerro Bola**	**0.53**	**298**⇑	*i*P	**Pb**	**04 37 27.1**	**+0.3**
CBX				*e*S	**Sb**	**04 37 34.5**	**+0.2**
CBX				AML	AML	04 37 35.3	
	comp=N,682nm,0.4s						
CBX	**Cerro Bola**	**0.53**	**298**	*e*P	**Pb**	**04 37 27.0**	**+0.2**
CBX				*e*S	**Sb**	**04 37 34.1**	**-0.1**
RMX	**La Rumorosa**	**0.54**	**4**	*e*P	**Pg**	**04 37 26.5**	**-0.1**
RMX				*e*S	**Sg**	**04 37 33.6**	**-0.3**
ZAX	**El Zacaton**	**0.56**	**194**	*e*P	**Pg**	**04 37 27.0**	**-0.1**
ZAX				*i* S	**Sg**	**04 37 34.8**	**+0.2**
ZAX				AML	AML	04 37 35.4	
	comp=E,344nm,0.2s						
ECNX	**Esteban Cantu**	**0.57**	**225**	*e*P	**Pb**	**04 37 27.6**	**0.0**
TJIG	**Tijuana**	**0.60**	**308**	*e*P	**Pg**	**04 37 27.8**	**+0.1**
TJIG				*e*S	**Sg**	**04 37 35.7**	**0.0**
YUH	**Yuha Desert**	**0.60**	**16**⇓	*i*P	**Pb**	**04 37 28.0**	**-0.1**
PBX	**Punta Banda**	**0.61**	**238**	*e*P	**Pb**	**04 37 28.1**	**-0.1**
SGL	**Mount Signal**	**0.67**	**30**	*e*P	**Pb**	**04 37 29.5**	**+0.3**
BAR	**Barrett**	**0.77**	**323**⇑	*e*P	**Pb**	**04 37 30.7**	**-0.3**
MBIG	**Mexicali**	**0.85**	**66**	*e*P	**Pg**	**04 37 32.5**	**0.0**
MBIG				*e*S	**Sg**	**04 37 44.0**	**+0.4**
SDRC	**San Diego Road**	**0.97**	**314**	*e*P	**Pb**	**04 37 33.9**	**-0.4**
ECBX	**El Chinero**	**1.08**	**123**	*e*P	**Pb**	**04 37 36.0**	**-0.3**
ECBX			⇑	*e*		04 37 51.3	
SPIG	**San Pedro Mart**	**1.16**	**151**	*e*P	**Pn**	**04 37 37.8**	**+0.1**
SPIG				*e*S	**Sn**	**04 37 53.3**	**-0.1**

IDC ***02*** *04:41:47.3±7.6, 16°.11S×71°.49W, h153km±42km, mb3.7/3, mb1 3.6/6, mb1mx3.2/33, mbtmp4.1/6, Error ellipse: s-maj=77.7km s-min=47.3km az=59.0*
ISC 02 04:41:43.8±2.6**, 16°.2S**±0°.4×**71°.7W**±0°.2**, h133**km**, n6, σ0s.95**/7**, mb3.9**/3**, Southern Peru**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
LPAZ	**La Paz**	**3.46**	**93**	P	**Pn**	**04 42 38.5**	**+1.4**
	8.7nm,0.3s,baz=283,slow=9.1,SNR=312						
LPAZ				S	**Sn**	**04 43 18.5**	**+0.1**
	1.0nm,0.3s,baz=149,slow=12,SNR=3.0						
SIV	**San Ignacio**	**10.25**	**91**	P	**Pn**	**04 44 06.3**	**-1.3**
	0.4nm,0.3s,baz=278,slow=14,SNR=7.3						
PTGA	**Pitinga**	**19.22**	**38**	P	**P**	**04 45 57.9**	**+0.2**
	1.1nm,0.3s,baz=212,slow=14,SNR=6.3						
BDFB	**Brasilia**	**22.82**	**92**	P	**P**	**04 46 35.3**	**-0.4**
	1.1nm,0.4s,baz=260,slow=12,SNR=3.3						
DBIC	**Dimbokro**	**69.94**	**77**	P	**P**	**04 52 41.3**	**0.0**
	3.4nm,1.0s,baz=237,slow=9.3,SNR=5.4						
TORD	**Torodi Ar. Bea**	**78.20**	**73**	P	**P**	**04 53 29.2**	**0.0**
	1.7nm,0.7s,baz=268,slow=6.0,SNR=17						

IDC ***02*** *04:47:02.3±0.7, 36°.01N×143°.44E, h0km, mb4.0/20, mb1 4.2/23, mb1mx4.1/50, mbtmp4.0/23, ML3.6/3, MS2.8/2, Ms1 2.8/2, ms1mx2.5/59, Error ellipse: s-maj=18.2km s-min=14.9km az=145.0*
NEIC ***02*** *04:47:04.8±2.9, 36°.06N×143°.40E, h14km±18km, mb4.5/11, Error ellipse: s-maj=7.4km s-min=6.6km az=123.0*
ISCJB ***02*** *04:47:06.0±0.4, 36°.10N±0°.04×143°.27E±0°.03, h33km, mb4.1/30, MS2.6/1, Error ellipse: s-maj=5.3km s-min=3.9km az=168.7*
JMA ***02*** *04:47:06.9±0.3, 36°.10N×143°.23E, h64km, M4.0*
ISC 02 04:47:07.7±0.6**, 36°.07N**±0°.05×**143°.30E**±0°.06**, h35**km**, n63, σ1s.20**/61**, mb4.1**/30**, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**2.02**	**260**	P	**Pn**	**04 47 38.9**	**-0.3**
CHOJ				S	**Sn**	**04 48 01.8**	**-1.4**
ONAJ	**Iwakimizuishiy**	**2.26**	**298**	S	**Sn**	**04 48 08.1**	**-1.2**
JHO	**Hitachi**	**2.27**	**285**	S	**Sn**	**04 48 08.1**	**-1.4**
BSO1	**Boso 1**	**2.37**	**234**	*e*S	**Sn**	**04 48 10.8**	**-0.3**
JFT	**Otama**	**2.78**	**302**	P	**Pn**	**04 47 50.7**	**+0.9**
JFT				S	**Sn**	**04 48 21.7**	**-0.4**
JAG	**Ashikaga**	**3.13**	**278**	S	**Sn**	**04 48 29.5**	**-1.2**
JMK	**Ichinoseki**	**3.32**	**331**	S	**Sn**	**04 48 32.6**	**-2.7**
JOD2	**Odawara 2**	**3.52**	**258**	P	**Pn**	**04 47 59.6**	**-0.4**
JOD2				S	**Sn**	**04 48 40.0**	**-0.4**
JYK	**Kaneyama**	**3.68**	**321**	*e*S	**Sn**	**04 48 42.8**	**-1.4**
JOM	**Ohasama**	**3.75**	**335**	S	**Sn**	**04 48 43.5**	**-2.5**
JYN	**Shimob**	**3.91**	**263**	P	**Pn**	**04 48 06.2**	**+0.9**
JYN				*e*S	**Sn**	**04 48 50.7**	**+0.7**
JHJ	**Hachijo jima 2**	**4.13**	**226**	Pn	**Pn**	**04 48 06.7**	**-1.6**
	25nm,0.3s,baz=257,slow=16,SNR=2.0						
JHJ				Sn	**Sn**	**04 48 51.4**	**-4.1**
	119nm,0.3s,baz=35,slow=22,SNR=9.2						
MJAR	**Matsushiro Arr**	**4.14**	**278**	Pn	**Pn**	**04 48 08.0**	**-0.4**
	12nm,0.3s,baz=90,slow=13,SNR=28						
MAJO	**Matsushiro**	**4.14**	**278**	*e*Pn	**Pn**	**04 48 08.6**	**+0.1**
MAT	**Matsushiro**	**4.14**	**278**	P	**Pn**	**04 48 07.9**	**-0.5**
MAT				S	**Sn**	**04 48 55.8**	**+0.2**
MAT	**Matsushiro**	**4.14**	**278**	P	**Pn**	**04 48 09.0**	**+0.6**
JANG	**Nango**	**4.52**	**342**	P	**Pn**	**04 48 13.7**	**+0.1**
ERM	**Erimo**	**5.94**	**359**	*e*Pn	**Pn**	**04 48 32.1**	**-0.9**
CBIJ	**Chichi jima**	**9.00**	**186**	*e*Pn	**Pn**	**04 49 15.1**	**0.0**
USRK	**Ussuriysk Ar.**	**11.86**	**317**	Pn	**Pn**	**04 49 54.8**	**+0.6**
	0.4nm,0.3s,baz=121,slow=13,SNR=6.1						
KSRS	**Korea Array**	**12.41**	**281**	LR	LR	04 55 09.7	
	comp=Z,47nm,18.2s,baz=134,slow=39						
KLR	**Kul'dur**	**15.63**	**331**	Pn	**Pn**	**04 50 41.1**	**-4.1**
	0.2nm,0.3s,baz=138,slow=12,SNR=4.3						
GUMO	**Guam**	**22.43**	**176**	LR	LR	05 00 43.3	
	comp=Z,23nm,19.1s,baz=138,slow=37						
MA2	**Magadan**	**24.02**	**9**	P	**P**	**04 52 18.4**	**-0.5**
	3.2nm,0.7s,baz=230,slow=5.8,SNR=5.0						
MA2	**Magadan**	**24.02**	**9**	*e*P	**P**	**04 52 18.9**	**-0.1**
	31nm,1.1s						
H11N2	**WAKE ISLAND Hy**	**26.35**	**122**	T	T	05 19 55.8	
	baz=314,slow=75,SNR=30						
H11N1	**WAKE ISLAND Hy**	**26.36**	**122**	T	T	05 19 56.5	
	baz=314,slow=75,SNR=27						
H11N3	**WAKE ISLAND Hy**	**26.37**	**122**	T	T	05 19 54.7	
	baz=314,slow=75,SNR=25						
H11S1	**WAKE ISLAND Hy**	**27.06**	**124**	T	T	05 20 48.8	
	baz=316,slow=76,SNR=8.7						
H11S3	**WAKE ISLAND Hy**	**27.06**	**124**	T	T	05 20 46.2	
	baz=316,slow=76,SNR=12						
H11S2	**WAKE ISLAND Hy**	**27.08**	**124**	T	T	05 20 50.8	
	baz=316,slow=76,SNR=17						
SEY	**Seymchan**	**27.47**	**9**	P	**P**	**04 52 50.5**	**+0.3**
	0.9nm,0.2s,baz=194,slow=8.1,SNR=7.5						
ENH	**Enshi**	**28.80**	**268**	*e*P	**P**	**04 53 03.1**	**+0.7**
	4.2nm,0.4s						
ULN	**Ulaanbaatar**	**29.15**	**305**	*e*P	**P**	**04 53 06.7**	**+1.2**
	1.7nm,0.4s						
SONM	**Songino Array**	**29.58**	**305**	P	**P**	**04 53 10.7**	**+1.4**
	2.0nm,0.8s,baz=104,slow=8.7,SNR=12						
CMAR	**Chiang Mai Arr**	**42.75**	**258**	P	**P**	**04 55 02.7**	**+0.9**
	1.0nm,0.3s,baz=38,slow=6.6,SNR=4.8						
ZALV	**Zalesovo Beam**	**43.68**	**313**	P	**P**	**04 55 10.0**	**+1.1**
	0.7nm,0.5s,baz=111,slow=8.1,SNR=5.1						
MKAR	**Makanchi Array**	**45.92**	**303**	P	**P**	**04 55 27.1**	**+0.2**
	0.7nm,0.7s,baz=91,slow=9.1,SNR=8.1						
KURK	**Kurchatov**	**47.72**	**309**	*e*P	**P**	**04 55 41.2**	**+0.4**
	4.2nm,0.6s						
ILAR	**Eielson Array**	**49.50**	**32**	P	**P**	**04 55 52.5**	**-1.9**
	0.9nm,0.6s,baz=251,slow=7.1,SNR=13						
DOT	**Dot Lake**	**50.77**	**33**	*e*P	**P**	**04 56 03.8**	**-0.2**
	2.4nm,0.4s						
BRVK	**Borovoye**	**52.40**	**313**	*e*P	**P**	**04 56 17.2**	**+1.0**
	2.1nm,0.9s						
INK	**Inuvik**	**54.55**	**27**	P	**P**	**04 56 32.4**	**+0.6**
	1.4nm,0.8s,baz=291,slow=6.3,SNR=5.7						
WRA	**Warramunga Arr**	**56.35**	**190**	P	**P**	**04 56 44.6**	**-0.6**
	1.0nm,0.6s,baz=11,slow=7.4,SNR=5.7						
ARU	**Arti**	**58.08**	**319**	*e*P	**P**	**04 56 57.3**	**+0.2**
	5.2nm,0.6s						
ASAR	**Alice Springs**	**60.08**	**190**	P	**P**	**04 57 10.8**	**-0.4**
	0.3nm,0.5s,baz=5.8,slow=5.9,SNR=5.2						
YKA	**Yellowknife Ar**	**63.87**	**30**	P	**P**	**04 57 35.9**	**-0.5**
	0.5nm,0.8s,baz=298,slow=6.5,SNR=7.7						
FINES	**FINESS Array B**	**70.37**	**333**	P	**P**	**04 58 18.5**	**+0.9**
	1.4nm,0.6s,baz=51,slow=10.0,SNR=7.6						
KBZ	**Khabaz**	**72.68**	**312**	P	**P**	**04 58 33.1**	**+1.3**
	2.8nm,0.8s,baz=100,slow=2.2,SNR=7.2						
FFC	**Flin Flon**	**73.68**	**33**	*e*P	**P**	**04 58 37.8**	**+0.2**
	3.0nm,0.8s						
NVAR	**Mina Array Bea**	**74.34**	**54**	P	**P**	**04 58 42.9**	**+0.9**
	2.3nm,0.8s,baz=278,slow=5.2,SNR=12						
HFS	**Hagfors**	**75.58**	**337**	P	**P**	**04 58 50.2**	**+1.8**
	0.9nm,0.5s,baz=98,slow=2.1,SNR=7.5						
NB2	**NORSAR Subarra**	**75.65**	**338**	P	**P**	**04 58 49.3**	**+0.4**
	comp=Z,2.8nm,0.7s,baz=39,slow=5.9						
NOA	**NORSAR Array B**	**75.65**	**338**	P	**P**	**04 58 49.9**	**+1.0**
	comp=Z,2.3nm,0.7s,baz=39,slow=5.7,SNR=6.7						
AKASG	**Malin Array Be**	**75.98**	**323**	P	**P**	**04 58 50.6**	**-0.3**
	comp=Z,0.6nm,0.4s,baz=45,slow=6.2,SNR=8.7						
R11A	**Troy Canyon, C**	**76.15**	**53**	*e*P	**P**	**04 58 52.0**	**-0.3**
	comp=Z,5.2nm,1.5s						
PDAR	**Pinedale Array**	**77.25**	**46**	P	**P**	**04 58 58.6**	**+0.1**
	comp=Z,0.7nm,0.7s,baz=270,slow=1.5,SNR=7.8						
BRTR	**Keskin Array B**	**80.62**	**313**	P	**P**	**04 59 16.4**	**-0.7**
	comp=Z,0.8nm,0.9s,baz=188,slow=1.9,SNR=4.1						
PV01	**Paradox Valley**	**80.69**	**49**	*e*P	**P**	**04 59 17.6**	**+0.1**
ISCO	**Idaho Springs**	**81.42**	**47**	*e*P	**P**	**04 59 22.1**	**+0.6**
	comp=Z,6.3nm,1.4s						
SDCO	**Great Sand Dun**	**82.81**	**48**	*e*P	**P**	**04 59 29.1**	**+0.3**
	comp=Z,3.8nm,1.3s						
TXAR	**Lajitas Array**	**89.49**	**53**	P	**P**	**05 00 01.7**	**+0.2**
	comp=Z,1.1nm,0.6s,baz=305,slow=3.4,SNR=18						
LPAZ	**La Paz**	**145.82**	**63**	PKPbc	**PKPdf**	**05 06 43.4**	**-0.5**
	comp=Z,1.9nm,0.8s,baz=310,slow=2.5,SNR=6.1						

IDC ***02*** *04:55:18.4±1.6, 37°.47N×144°.05E, h0km, mb3.9/7, mb1 4.0/8, mb1mx3.6/55, mbtmp3.9/8, ML3.9/1, Error ellipse: s-maj=48.4km s-min=19.9km az=72.0*
ISCJB ***02*** *04:55:22.5±1.1, 37°.4N±0°.1×143°.7E±0°.1, h33km, mb3.9/7, Error ellipse: s-maj=19.7km s-min=13.4km az=164.1*
ISC 02 04:55:25.6±1.6**, 37°.5N**±0°.2×**143°.6E**±0°.1**, h35**km**, n9, σ1s.33**/9**, mb3.8**/7**, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
MJAR	**Matsushiro Arr**	**4.44**	**259**	Pn	**Pn**	**04 56 29.4**	**-1.0**
	5.2nm,0.3s,baz=82,slow=12,SNR=22						
MAT	**Matsushiro**	**4.44**	**259**	P	**Pn**	**04 56 30.7**	**+0.3**
MAT				S	**Sn**	**04 57 20.7**	**-0.2**
YAK	**Yakutsk**	**26.01**	**345**	P	**P**	**05 00 52.8**	**-2.0**
	7.1nm,0.4s,baz=16,slow=9.6,SNR=7.4						
SONM	**Songino Array**	**28.98**	**303**	P	**P**	**05 01 22.4**	**+0.5**
	0.5nm,0.6s,baz=87,slow=7.3,SNR=3.0						
ZALV	**Zalesovo Beam**	**42.89**	**312**	P	**P**	**05 03 22.4**	**+2.1**
	0.4nm,0.4s,baz=91,slow=7.6,SNR=2.6						
MKAR	**Makanchi Array**	**45.35**	**302**	P	**P**	**05 03 41.0**	**+0.7**
	0.5nm,0.7s,baz=86,slow=11,SNR=5.3						
KURBB	**Kurchatov Arra**	**47.09**	**308**	P	**P**	**05 03 53.7**	**-0.1**
	0.9nm,0.6s,baz=81,slow=8.0,SNR=8.4						
WRA	**Warramunga Arr**	**57.83**	**190**	P	**P**	**05 05 13.6**	**+0.1**
	1.5nm,0.5s,baz=8.9,slow=7.2,SNR=11						
ASAR	**Alice Springs**	**61.55**	**190**	P	P	05 05 35.5	-3.7
	0.5nm,0.7s,baz=13,slow=8.6,SNR=3.0						

IDC ***02*** *04:57:55.4±1.2, 37°.78N×144°.84E, h0km, mb3.6/5, mb1 3.9/6, mb1mx3.5/53, mbtmp3.6/6, ML3.5/1, Error ellipse: s-maj=31.3km s-min=26.8km az=141.0*
ISCJB ***02*** *04:57:57.3±1.1, 37°.7N±0°.2×144°.8E±0°.2, h26km, mb3.6/5, Error ellipse: s-maj=29.3km s-min=15.4km az=156.2*
ISC 02 04:57:59.3±1.1**, 37°.8N**±0°.2×**144°.8E**±0°.2**, h26**km**, n7, σ0s.49**/7**, mb3.5**/5**, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
MJAR	**Matsushiro Arr**	**5.38**	**259**	Pn	**Pn**	**04 59 17.8**	**-0.1**
	1.6nm,0.3s,baz=76,slow=15,SNR=5.3						
MAT	**Matsushiro**	**5.38**	**259**	P	**Pn**	**04 59 17.6**	**-0.3**
MKAR	**Makanchi Array**	**45.98**	**302**	P	**P**	**05 06 20.6**	**+0.5**
	0.4nm,0.7s,baz=85,slow=8.8,SNR=3.6						
ILAR	**Eielson Array**	**47.43**	**33**	P	**P**	**05 06 30.6**	**-0.6**
	0.4nm,0.9s,baz=261,slow=6.9,SNR=4.3						
KURBB	**Kurchatov Arra**	**47.65**	**308**	P	**P**	**05 06 33.1**	**+0.1**
	0.9nm,0.5s,baz=82,slow=7.8,SNR=6.7						
WRA	**Warramunga Arr**	**58.25**	**192**	P	**P**	**05 07 51.5**	**0.0**
	0.3nm,0.4s,baz=11,slow=7.2,SNR=3.4						
PDAR	**Pinedale Array**	**75.22**	**47**	P	**P**	**05 09 40.4**	**+0.5**
	0.4nm,0.7s,baz=238,slow=1.4,SNR=3.6						

ISCJB ***02*** *04:59:06.6±0.4, 51°.49N±0°.02×16°.12E±0°.02, h0km, mb3.3/1, Error ellipse: s-maj=3.1km s-min=2.0km az=9.6*
IDC ***02*** *04:59:09.8±0.7, 51°.45N×16°.01E, h0km, mb3.2/1, mb1 3.4/8, mb1mx3.2/54, mbtmp3.3/8, ML3.0/7, Error ellipse: s-maj=12.5km s-min=6.2km az=106.0*
CSEM ***02*** *04:59:09.3±0.2, 51°.45N×16°.09E, h2km, ML3.4/8, Error ellipse: s-maj=4.6km s-min=2.6km az=16.0*
PRU ***02*** *04:59:10.2, 51°.45N×16°.04E, h0km*
BGR ***02*** *04:59:10.4±0.4, 51°.44N×16°.11E, h1km, ML3.0/17, Error ellipse: s-maj=4.4km s-min=2.2km az=17.0*
VIE ***02*** *04:59:12.4±0.7, 51°.22N×16°.23E, h0km, Error ellipse: s-maj=5.5km s-min=4.1km az=40.0, Suspected Mining induced.*
ISC 02 04:59:08.1±0.7**, 51°.52N**±0°.03×**16°.11E**±0°.02**, h0**km**, n73, σ0s.92**/138**, Poland**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
KSP	**Ksiaz**	**0.69**	**171**	*i* Pg	**Pg**	**04 59 21.8**	**+0.5**
KSP				*e*Sg	**Sg**	**04 59 30.5**	**+0.3**
KSP	**Ksiaz**	**0.69**	**171**	Pg	**Pg**	**04 59 21.8**	**+0.5**
KSP				Sg	**Sg**	**04 59 30.3**	**+0.1**
KSP	**Ksiaz**	**0.69**	**171**	*e*Pg	**Pg**	**04 59 21.8**	**+0.5**
KSP				*e*Sg	**Sg**	**04 59 30.3**	**+0.1**
UPC	**Upice**	**1.02**	**184**	*e*PG	**Pg**	**04 59 27.8**	**+0.2**
UPC				*e*SG	**Sg**	**04 59 40.7**	**0.0**
	comp=Z,113nm,0.4s						
UPC	**Upice**	**1.02**	**184**	Pg	**Pg**	**04 59 27.8**	**+0.2**
	2.9nm,0.4s						
UPC				Sg	**Sg**	**04 59 40.7**	**0.0**
	113nm,0.4s						
DPC	**Dobruska-Polom**	**1.18**	**174**	*e*PG	**Pg**	**04 59 30.6**	**-0.1**
DPC				*e*SG	**Sg**	**04 59 45.0**	**-1.0**
	comp=Z,48nm,0.6s						
DPC	**Dobruska-Polom**	**1.18**	**174**	Pg	**Pg**	**04 59 30.8**	**+0.1**
DPC				Sg	**Sg**	**04 59 45.0**	**-1.0**
	48nm,0.6s						
DPC	**Dobruska-Polom**	**1.18**	**174**	*e*Pg	**Pg**	**04 59 30.8**	**+0.1**
DPC				*e*Sg	**Sg**	**04 59 46.4**	**+0.5**
PVCC	**Panska Ves**	**1.39**	**225**	*e*PG	**Pn**	**04 59 34.8**	**0.0**
PVCC				*e*SG	**Sn**	**04 59 53.7**	**-0.2**
	comp=Z,296nm,0.2s						
PVCC	**Panska Ves**	**1.39**	**225**	Pg	**Pn**	**04 59 34.8**	**0.0**
PVCC				Sg	**Sn**	**04 59 53.7**	**-0.2**
	296nm,0.2s						
BRG	**Berggiesshubel**	**1.51**	**245**	PN	**Pn**	**04 59 35.7**	**-0.7**
BRG				PG	**Pg**	**04 59 37.9**	**+0.8**
BRG				SG	**Sn**	**04 59 57.9**	**+1.1**
	125nm,0.3s						
PRA	**Prague**	**1.80**	**217**	*e*SG	**Sg**	**05 00 06.1**	**+0.1**
	comp=Z,29nm,0.5s						
PRA	**Prague**	**1.80**	**217**	Sg	**Sg**	**05 00 06.1**	**+0.1**
	29nm,0.5s						
GOPC	**GO Pecny, Ondr**	**1.82**	**208**	*e*PN	**Pn**	**04 59 40.9**	**+0.2**
GOPC				*e*PG	**Pb**	**04 59 42.3**	**+0.1**
GOPC				*e*SG	**Sb**	**05 00 05.9**	**+0.4**
	comp=Z,43nm,0.8s						
GOPC	**GO Pecny, Ondr**	**1.82**	**208**	Pn	**Pn**	**04 59 40.9**	**+0.2**
PRU	**Pruhonice**	**1.83**	**214**	*e*PN	**Pn**	**04 59 40.5**	**-0.3**
PRU				*e*PG	**Pb**	**04 59 42.3**	**-0.2**
PRU				*e*SG	**Sn**	**05 00 04.9**	**+0.2**
	comp=Z,43nm,0.6s						
PRU	**Pruhonice**	**1.83**	**214**	Pn	**Pn**	**04 59 40.5**	**-0.3**
PRU	**Pruhonice**	**1.83**	**214**	Pg	**Pb**	**04 59 42.3**	**-0.2**
PRU				Sg	**Sn**	**05 00 04.9**	**+0.2**
	43nm,0.6s						
FBE	**Freiberg**	**1.84**	**252**	Pg	**Pg**	**04 59 43.4**	**+0.1**
FBE				Sg	**Sg**	**05 00 07.7**	**+0.6**
FBE	**Freiberg**	**1.84**	**252**	*e*Pg	**Pg**	**04 59 43.4**	**+0.1**
FBE				*e*Sg	**Sg**	**05 00 07.7**	**+0.6**
CLL	**Collm**	**1.96**	**265**	*e*Pn	**Pn**	**04 59 42.0**	**-0.6**
CLL				*e*Pg	**Pb**	**04 59 45.0**	**+0.3**
CLL				*i*		04 59 48.5	
CLL				*i*		04 59 49.7	
CLL				*e*Sg	**Sg**	**05 00 11.0**	**-0.1**
	comp=Z,39nm,0.4s						
CLL	**Collm**	**1.96**	**265**	Pn	**Pn**	**04 59 42.6**	**0.0**
CLL				Sg	**Sg**	**05 00 11.9**	**+0.8**
CLL	**Collm**	**1.96**	**265**	*e*Pn	**Pn**	**04 59 42.6**	**0.0**
CLL				*e*Sg	**Sg**	**05 00 11.9**	**+0.8**
MORC	**Moravsky Berou**	**1.97**	**152**	Pn	**Pn**	**04 59 42.7**	**-0.1**
MORC	**Moravsky Berou**	**1.97**	**152**	*e*Pn	**Pn**	**04 59 42.7**	**-0.1**
MORC				*e*Sg	**Sb**	**05 00 09.8**	**-0.1**
OKC	**Ostrava-Krasne**	**2.12**	**142**	*e*PG	**Pb**	**04 59 48.1**	**+0.6**
OKC				*e*SG	**Sb**	**05 00 14.3**	**0.0**
	comp=Z,73nm,1.0s						
OKC	**Ostrava-Krasne**	**2.12**	**142**	Pg	**Pg**	**04 59 49.1**	**+0.3**
OKC				Sg	**Sb**	**05 00 14.3**	**0.0**
	comp=Z,73nm,1.0s						
OKC	**Ostrava-Krasne**	**2.12**	**142**	*e*Pg	**Pg**	**04 59 49.1**	**+0.3**
OKC				*e*Sg	**Sb**	**05 00 14.6**	**+0.3**
VRAC	**Vranov**	**2.24**	**172**	Pn	**Pn**	**04 59 46.9**	**+0.5**
	comp=Z,3.7nm,0.3s,baz=346,slow=18,SNR=9.6						
VRAC				Lg	Lg	05 00 18.7	
	comp=Z,5.3nm,0.3s,baz=90,slow=20,SNR=8.2						
TREC	**Trest**	**2.26**	**190**	*e*PN	**Pn**	**04 59 48.1**	**+1.3**
TREC				*e*PG	**Pg**	**04 59 50.8**	**-0.7**
TREC	**Trest**	**2.26**	**190**	Pn	**Pn**	**04 59 48.1**	**+1.3**
TANN	**Tannenbergstha**	**2.56**	**246**	Pn	**Pn**	**04 59 51.7**	**+0.8**
TANN	**Tannenbergstha**	**2.56**	**246**	Pg	**Pg**	**04 59 57.2**	**0.0**
TANN	**Tannenbergstha**	**2.56**	**246**	*e*Pn	**Pn**	**04 59 51.7**	**+0.8**
TANN				*e*Pg	**Pg**	**04 59 57.2**	**0.0**
TANN				*e*Sg	**Sg**	**05 00 29.2**	**-1.2**
WERD	**Werda**	**2.64**	**247**	Pn	**Pn**	**04 59 52.4**	**+0.5**
WERD	**Werda**	**2.64**	**247**	Pg	**Pg**	**04 59 59.0**	**+0.4**
WERD				Sg	**Sg**	**05 00 32.6**	**-0.2**
WERD	**Werda**	**2.64**	**247**	*e*Pn	**Pn**	**04 59 52.4**	**+0.5**
WERD				*e*Pg	**Pg**	**04 59 59.0**	**+0.4**
WERD				*e*Sg	**Sg**	**05 00 32.6**	**-0.2**
OJC	**Ojcow**	**2.67**	**118**	*e*Pn	**Pn**	**04 59 49.8**	**-2.6**
OJC				*e*Pg	**Pg**	**04 59 59.6**	**+0.3**
OJC				*e*Sg	**Sg**	**05 00 35.1**	**+1.2**
OJC	**Ojcow**	**2.67**	**118**	*e*Pn	**Pn**	**04 59 49.8**	**-2.6**
KHC	**Kasperske Hory**	**2.89**	**215**	*e*PN	**Pn**	**04 59 55.8**	**+0.3**
KHC				*e*PG	**Pb**	**05 00 01.6**	**+1.0**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
KHC				eSN	Sn	05 00 30.2	-0.7
KHC				eSG	Sg	05 00 40.1	-0.9
	comp=Z,26nm,0.7s						
KHC	Kasperske Hory	2.89	215	Pn	Pn	04 59 55.8	+0.3
MOX	Moxa	2.97	255	Pn	Pn	04 59 57.9	+1.4
MOX	Moxa	2.97	255	Pg	Pg	05 00 05.2	+0.2
MOX				Sg	Sg	05 00 43.1	-0.4
MOX	Moxa	2.97	255	ePn	Pn	04 59 57.9	+1.4
MOX				ePg	Pg	05 00 05.2	+0.2
MOX				eSg	Sg	05 00 43.1	-0.4
MANZ	Manzenberg	2.97	240	Pn	Pn	04 59 57.2	+0.7
MANZ	Manzenberg	2.97	240	Pg	Pg	05 00 06.0	+0.9
MANZ				Sg	Sg	05 00 44.7	+1.2
MANZ	Manzenberg	2.97	240	ePn	Pn	04 59 57.2	+0.7
MANZ				ePg	Pg	05 00 06.0	+0.9
MANZ				eSg	Sg	05 00 44.7	+1.2
ROTZ	Rotzenmuhle	3.04	236	Pn	Pn	04 59 58.4	+0.9
ROTZ				Sg	Sg	05 00 45.5	-0.4
ROTZ	Rotzenmuhle	3.04	236	ePn	Pn	04 59 58.4	+0.9
ROTZ				eSg	Sg	05 00 45.5	-0.4
GEC2	GERESS Array S	3.10	211	Pn	Pn	04 59 59.2	+0.9
GEC2	GERESS Array S	3.10	211	Pg	Pg	05 00 06.4	-1.0
GEC2				Sg	Sg	05 00 47.1	-0.4
GEC2	GERESS Array S	3.10	211	ePn	Pn	04 59 59.2	+0.9
GEC2				ePg	Pg	05 00 06.4	-1.0
GEC2				eSg	Sg	05 00 47.1	-0.4
GERES	GERESS Array B	3.10	211	Pn	Pn	04 59 58.8	+0.5
	comp=Z,1.5nm,0.3s,baz=29,slow=12,SNR=41						
GERES				Pg	Pb	05 00 04.8	+0.7
	comp=Z,4.2nm,0.3s,baz=33,slow=15,SNR=38						
GERES				Sn	Sn	05 00 35.0	-1.0
	comp=Z,2.2nm,0.3s,baz=40,slow=23,SNR=5.7						
GERES				Lg	Lg	05 00 44.5	
	comp=Z,5.6nm,0.3s,baz=34,slow=28,SNR=10						
SMOL	Smolenice	3.13	164	ePG	Pg	05 00 07.8	-0.2
SMOL				eSG	Sg	05 00 46.9	-1.6
WET	Wettzell	3.16	222	Pn	Pn	04 59 59.5	+0.4
WET	Wettzell	3.16	222	ePn	Pn	04 59 59.5	+0.4
WET				eSg	Sg	05 00 48.1	-1.4
LANS	Liptovska Anna	3.20	137	ePG	Pg	05 00 11.7	+2.3
LANS				eSG	Sg	05 00 51.6	+0.7
NIE	Niedzica	3.40	127	eP	Pg	05 00 12.9	-0.4
NIE				eS	Sg	05 00 59.2	+1.8
VYHS	Vyhne	3.50	149	ePN	Pn	05 00 04.2	+0.4
VYHS				ePG	Pg	05 00 14.6	-0.6
VYHS				eSG	Sg	05 01 02.6	+2.0
CLZ	Clausthal	3.59	277	ePn	Pn	05 00 06.9	+1.9
CLZ				eSg	Sg	05 01 05.3	+2.0
GRA1	Grafenberg Arr	3.61	241	Pn	Pn	05 00 06.1	+0.7
GRA1				Sg	Sg	05 01 04.4	+0.2
GRF	Grafenberg Arr	3.61	241	ePn	Pn	05 00 06.1	+0.7
GRF				eSg	Sg	05 01 04.4	+0.2
BSD	Bornholm Skovb	3.67	349	iP	Pn	05 00 05.9	-0.2
BSD				iS	Sn	05 00 47.4	-2.6
STHS	Stebnicka Huta	3.90	121	ePN	Pn	05 00 10.5	+1.3
STHS				ePG	Pg	05 00 23.5	+0.8
STHS				eLG	Lg	05 01 24.0	
KECS	Kecovo	4.15	135	ePG	Pg	05 00 27.7	+0.2
KECS				eSG	Sg	05 01 21.1	-0.1
KECS				eLG	Lg	05 01 28.8	
CRVS	Cervenica-Dubn	4.32	125	ePG	Pg	05 00 33.5	+2.6
CRVS				eSG	Sg	05 01 28.1	+1.3
KOLS	Kolonicke sedl	4.73	121	ePG	Pg	05 00 40.5	+1.9
DAVOX	Davos/Dischmat	6.26	223	Pn	Pn	05 00 41.4	-0.5
	comp=Z,0.2nm,0.3s,baz=343,slow=17,SNR=3.3						
DAVOX				Lg	Lg	05 02 25.2	
	comp=Z,0.4nm,0.3s,baz=239,slow=18,SNR=2.6						
AKASG	Malin Array Be	8.29	91	Pn	Pn	05 01 08.8	-0.8
	comp=Z,0.8nm,0.3s,baz=281,slow=12,SNR=6.3						
HFS	Hagfors	8.74	352	Pn	Pn	05 01 15.7	+0.1
	comp=Z,0.1nm,0.3s,baz=158,slow=12,SNR=4.0						
HFS				Sn	Sn	05 02 52.7	-2.1
	comp=Z,0.2nm,0.3s,baz=172,slow=30,SNR=2.9						
FINES	FINESS Array B	11.35	25	Pn	Pn	05 01 50.0	-1.4
	comp=Z,0.1nm,0.3s,baz=207,slow=10,SNR=5.5						
FINES				Sn	Sn	05 03 51.1	-7.7
	comp=Z,0.2nm,0.3s,baz=209,slow=20,SNR=5.0						
ARCES	ARCESS Array B	18.61	10	Pn	P	05 03 24.3	-2.4
	comp=Z,0.2nm,0.3s,baz=192,slow=11,SNR=8.8						
YKA	Yellowknife Ar	59.85	336	P	P	05 09 15.9	+1.1
	comp=Z,0.2nm,0.7s,baz=30,slow=6.6,SNR=3.7						

*NIED **02** 05:00:00, 36°10N×143°40E, h5km, Mw3.9 Best double couple: $M_0$8.07000×10^14 NP1:ϕ_s57.00000°, δ36.00000°, λ-87.00000°. NP2:ϕ_s233.00000°, δ54.00000°, λ-93.00000°.*
*IDC **02** 05:00:49.7±0.6, 36°02N×143°45E, h0km, mb4.1/24, mb1 4.3/27, mb1mx4.2/49, mbtmp4.1/27, ML3.8/3, Error ellipse: s-maj=16.3km s-min=14.1km az=154.0*
*NEIC **02** 05:00:52.0±2.0, 36°07N×143°40E, h11km±12km, mb4.5/19, Error ellipse: s-maj=5.5km s-min=4.0km az=159.0*
*ISCJB **02** 05:00:52.3±1.3, 36°12N±0°04×143°29E±0°03, h15km±8km, mb4.2/46, MS4.0/1, Error ellipse: s-maj=6.3km s-min=3.6km az=170.8*
*JMA **02** 05:00:52.1±0.2, 36°10N×143°37E, h63km, M4.1*
ISC 02 05:00:54.6±3.2**, 36°09N**±0°06×**143°30E**±0°05**, h28**km±23km**, n110, σ0^{s}95**/99**, mb4.3**/46**, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
CHOJ	Chosi	2.02	260	P	Pn	05 01 25.8	-0.9
CHOJ				S	Sn	05 01 51.1	+0.1
ONAJ	Iwakimizuishiy	2.25	297	S	Sn	05 01 55.3	-1.5
JHO	Hitachi	2.26	284	P	Pn	05 01 28.8	-1.3
JHO				S	Sn	05 01 55.4	-1.7
BSO1	Boso 1	2.38	234	P	Pn	05 01 29.5	-1.7
BSO1				S	Sn	05 01 58.1	-1.0
JYT	Yasato	2.51	274	eS	Sn	05 02 01.6	-1.7
JMM	Marumori	2.67	312	P	Pn	05 01 34.3	-1.5
JMM				eS	Sn	05 02 05.8	-1.5
JFT	Otama	2.77	302	P	Pn	05 01 36.6	-0.5
JFT				S	Sn	05 02 09.4	-0.2
JAG	Ashikaga	3.12	277	P	Pn	05 01 41.1	-0.9
JAG				S	Sn	05 02 16.9	-1.5
JMK	Ichinoseki	3.30	331	P	Pn	05 01 42.8	-1.6
JMK				S	Sn	05 02 19.9	-2.7
JOD2	Odawara 2	3.52	258	P	Pn	05 01 46.7	-0.8
JOD2				S	Sn	05 02 27.1	-1.2
JRY	Ryogami san	3.56	270	P	Pn	05 01 47.3	-0.7
JRY				S	Sn	05 02 28.4	-0.8
JYK	Kaneyama	3.66	321	P	Pn	05 01 48.4	-1.0
JYK				S	Sn	05 02 30.0	-1.6
JYN	Shimob	3.91	263	P	Pn	05 01 53.0	+0.2
JYN				S	Sn	05 02 38.5	+0.7
JHJ2	Mitsune	4.13	225	P	Pn	05 01 52.5	-3.3
JHJ2				S	Sn	05 02 37.6	-5.6
JHJ2	Mitsune	4.13	225	ePn	Pn	05 01 55.7	-0.1
MJAR	Matsushiro Arr	4.13	278	Pn	Pn	05 01 55.9	0.0
	18nm,0.3s,baz=87,slow=9.8,SNR=37						
MAJO	Matsushiro	4.13	278	ePn	Pn	05 01 56.4	+0.5
MAT	Matsushiro	4.13	278	P	Pn	05 01 55.9	0.0
MAT				S	Sn	05 02 46.6	+3.3
MAT	Matsushiro	4.13	278	P	Pn	05 01 56.2	+0.3
JHJ	Hachijo jima 2	4.14	225	Pn	Pn	05 01 52.7	-3.4
	37nm,0.3s,baz=94,slow=24,SNR=7.4						
JHJ				Sn	Sn	05 02 37.9	-5.7
	197nm,0.3s,baz=61,slow=20,SNR=15						
INU	Inuyama	5.16	264	ePn	Pn	05 02 11.1	+1.1
ERM	Erimo	5.92	359	ePn	Pn	05 02 18.6	-1.7
CBIJ	Chichi jima	9.02	186	Pn	Pn	05 02 55.8	-7.2
CBIJ				Sn	Sn	05 04 29.2	-14
JCJ	Chichijima	9.02	186	Pn	Pn	05 02 55.8	-7.2
	7.0nm,0.3s,baz=295,slow=23,SNR=4.2						
JCJ				Sn	Sn	05 04 29.2	-14
	baz=276,slow=17						
USRK	Ussuriysk Ar.	11.84	317	Pn	Pn	05 03 41.4	-0.2
	0.5nm,0.3s,baz=124,slow=13,SNR=5.7						
KLR	Kul'dur	15.61	331	Pn	Pn	05 04 28.9	-3.6
	0.3nm,0.3s,baz=137,slow=8.0,SNR=5.3						
NJ2	Nanjing	20.63	266	eP	P	05 05 34.2	+2.4
NJ2				pmax	pmax		
	comp=Z,14nm,0.5s						
BJI	Beijing	21.68	289	P	P	05 05 43.3	+0.3
BJI				pmax	pmax		
	comp=Z,5.0nm,0.6s						
MA2	Magadan	24.00	9	P	P	05 06 06.5	-0.1
	comp=Z,4.4nm,0.7s,baz=224,slow=8.9,SNR=6.1						
HHC	Hu-ho-hao-te	25.21	291	eP	P	05 06 19.1	+1.1
HHC				pmax	pmax		
	comp=Z,26nm,1.0s						
HHC				pmax	pmax		
	comp=Z,85nm,6.0s						
H11N2	WAKE ISLAND Hy	26.36	122	T	T	05 33 43.0	
	baz=313,slow=75,SNR=59						
H11N1	WAKE ISLAND Hy	26.37	122	T	T	05 33 41.1	
	baz=313,slow=75,SNR=49						
H11N3	WAKE ISLAND Hy	26.38	122	T	T	05 33 43.2	
	baz=313,slow=75,SNR=60						
H11S1	WAKE ISLAND Hy	27.08	124	T	T	05 34 35.7	
	baz=316,slow=76,SNR=37						
H11S3	WAKE ISLAND Hy	27.08	124	T	T	05 34 33.3	
	baz=316,slow=76,SNR=28						
H11S2	WAKE ISLAND Hy	27.09	124	T	T	05 34 38.0	
	baz=316,slow=76,SNR=25						
SEY	Seymchan	27.45	9	P	P	05 06 38.1	+0.3
	comp=Z,1.2nm,0.2s,baz=218,slow=5.3,SNR=8.8						
ENH	Enshi	28.79	268	eP	P	05 06 50.7	+0.5
	comp=Z,9.6nm,0.7s						
SONA1	Songino Array	29.56	305	eP	P	05 06 58.2	+1.2
SONM	Songino Array	29.57	305	P	P	05 06 58.6	+1.6
	comp=Z,2.0nm,0.6s,baz=103,slow=8.4,SNR=11						
LZH	Lanzhou	31.73	282	eP	P	05 07 18.7	+2.4
LZH				pP	pP	05 07 25.2	+0.6
LZH				sP	sP	05 07 29.5	+1.5
LZH				pmax	pmax		
	comp=Z,18nm,1.0s						
CD2	Chengdu	33.21	273	P	P	05 07 28.5	-0.7
CD2				pmax	pmax		
	comp=Z,20nm,0.5s						
CD2				LR	LR		
	comp=E,200nm,8.4s						
CD2				LR	LR		
	comp=Z,250nm,16.8s						
GTA	Gaotai	34.30	289	eP	P	05 07 41.1	+2.5
GTA				pP	pP	05 07 47.0	+0.1
GTA				sP	sP	05 07 50.0	-0.4
GTA				pmax	pmax		
	comp=Z,5.0nm,0.9s						
WMQ	Urumqi	42.62	298	eP	P	05 08 50.5	+2.1
WMQ				pP	pP	05 09 00.8	+4.0
WMQ				sP	sP	05 09 03.1	+2.8
WMQ				pmax	pmax		
	comp=Z,1.0nm,0.6s						
CMAR	Chiang Mai Arr	42.75	258	P	P	05 08 50.3	+0.6
	comp=Z,0.8nm,0.4s,baz=53,slow=6.1,SNR=7.3						
ZAA0	Zalesovo Array	43.67	313	eP	P	05 08 57.0	+0.3
ZALV	Zalesovo Beam	43.67	313	P	P	05 08 57.2	+0.6
	comp=Z,0.9nm,0.6s,baz=87,slow=6.6,SNR=5.4						
NRIK	Noril'sk	44.75	335	P	P	05 09 04.8	-0.3
	comp=Z,1.8nm,0.4s,baz=92,slow=2.1,SNR=3.5						
MK01	Makanchi Array	45.90	303	eP	P	05 09 15.1	+0.5
MK31	Makanchi Array	45.90	303	eP	P	05 09 15.0	+0.4
MKAR	Makanchi Array	45.90	303	P	P	05 09 15.0	+0.4
	comp=Z,0.6nm,0.7s,baz=89,slow=9.6,SNR=8.5						
MKAR	Makanchi Array	45.90	303	eP	P	05 09 15.0	+0.4
KDAK	Kodiak Island	46.79	41	eP	P	05 09 21.4	0.0
	comp=Z,38nm,1.5s						
KURK	Kurchatov	47.70	309	eP	P	05 09 28.8	+0.2
	comp=Z,5.2nm,0.8s						
MLY	Manley	47.85	32	eP	P	05 09 29.9	+0.3
	comp=Z,1.6nm,0.7s						
MDM	Murphy Dome	48.91	32	eP	P	05 09 37.8	+0.1
	comp=Z,16nm,1.7s						
IL1	Eielson Array	49.48	32	eP	P	05 09 41.3	-0.8
ILAR	Eielson Array	49.48	32	P	P	05 09 41.1	-1.0
	comp=Z,0.9nm,0.7s,baz=262,slow=6.2,SNR=12						
ILAR				PcP	PcP	05 11 01.1	-2.6
	comp=Z,0.2nm,0.6s,baz=278,slow=3.8,SNR=4.1						
TKM2	Tokmak 2	51.41	300	eP	P	05 09 57.8	+0.6
	comp=Z,4.5nm,0.9s						
VOSK	Vostochnaya	52.03	313	eP	P	05 10 01.9	+0.4
	comp=Z,2.9nm,0.8s						
BRVK	Borovoye	52.38	313	eP	P	05 10 04.8	+0.8
	comp=Z,2.1nm,0.8s						
INK	Inuvik	54.54	27	P	P	05 10 19.2	-0.3
	comp=Z,1.1nm,0.8s,baz=278,slow=13,SNR=5.4						
INK	Inuvik	54.54	27	eP	P	05 10 19.3	-0.3
	comp=Z,10.0nm,1.7s						
KKAR	Karatay Array	54.91	301	eP	P	05 10 23.5	+0.7
WRA	Warramunga Arr	56.37	190	P	P	05 10 32.7	-0.6
	comp=Z,1.4nm,0.8s,baz=14,slow=7.4,SNR=7.5						
ARU	Arti	58.06	319	P	P	05 10 45.4	+0.5
	comp=Z,3.7nm,0.4s,baz=78,slow=5.0,SNR=10.0						
ARU	Arti	58.06	319	eP	P	05 10 45.7	+0.8
	comp=Z,14nm,1.3s						
ABKAR	Akbulak array	59.70	311	eP	P	05 10 56.3	-0.1
ASAR	Alice Springs	60.09	190	P	P	05 10 58.5	-0.8
	comp=Z,0.4nm,0.4s,baz=16,slow=13,SNR=9.0						
AKTO	Aktyubinsk	60.43	313	P	P	05 11 01.1	-0.3
	comp=Z,2.0nm,0.8s,baz=80,slow=13,SNR=6.0						
RES	Resolute Bay	63.13	15	eP	P	05 11 18.8	-0.4
	comp=Z,3.7nm,1.0s						
YKA	Yellowknife Ar	63.86	30	P	P	05 11 23.2	-0.9
	comp=Z,0.6nm,0.9s,baz=300,slow=6.5,SNR=8.5						
FIA1	FINESS Array S	70.34	333	eP	P	05 12 05.5	+0.1
FINES	FINESS Array B	70.35	333	P	P	05 12 05.7	+0.3
	comp=Z,2.6nm,0.7s,baz=47,slow=8.4,SNR=9.3						
K05A	Summer Lake	70.36	51	eP	P	05 12 06.6	+0.5
	comp=Z,41nm,1.8s						
KBZ	Khabaz	72.66	312	P	P	05 12 20.6	+1.0
	comp=Z,3.6nm,0.8s,baz=25,slow=2.5,SNR=10						
HRY	Holter Researc	73.59	44	eP	P	05 12 25.3	0.0
LRM	Limekiln Ridge	73.75	45	eP	P	05 12 25.5	-0.9
NV01	Mina Array Sit	74.33	54	eP	P	05 12 29.7	-0.1
NVAR	Mina Array Bea	74.33	54	P	P	05 12 29.9	0.0
	comp=Z,2.0nm,0.8s,baz=286,slow=6.2,SNR=13						
NC405	NORSAR Array S	75.42	338	eP	P	05 12 36.2	+0.8
NC204	NORSAR Array S	75.58	338	eP	P	05 12 36.4	0.0
NB201	NORSAR Array S	75.60	338	eP	P	05 12 37.3	+0.7
NB2	NORSAR Subarra	75.63	338	P	P	05 12 36.8	+0.1
	comp=Z,1.6nm,0.6s,baz=38,slow=5.9						
NOA	NORSAR Array B	75.63	338	P	P	05 12 37.0	+0.3
	comp=Z,2.7nm,0.7s,baz=38,slow=5.7,SNR=8.6						
NBO02	NORSAR Array S	75.73	338	eP	P	05 12 38.1	+0.8
NBO00	NORSAR Array S	75.77	338	eP	P	05 12 38.5	+1.0
AKASG	Malin Array Be	75.96	323	P	P	05 12 38.5	-0.2
	comp=Z,0.8nm,0.4s,baz=46,slow=6.0,SNR=10						
AK11	Malin Array Si	76.00	323	eP	P	05 12 38.9	-0.1
R11A	Troy Canyon, C	76.14	53	eP	P	05 12 40.4	+0.2
	comp=Z,1.4nm,0.9s						
BW06	Boulder Array	77.23	46	eP	P	05 12 45.8	-0.6
PDAR	Pinedale Array	77.23	46	P	P	05 12 45.5	-1.0
	comp=Z,0.6nm,0.7s,baz=270,slow=1.5,SNR=7.4						
MSU	Marysvale	78.21	51	eP	P	05 12 52.2	+0.3
P17A	Butcher Ranch,	78.53	49	eP	P	05 12 53.6	+0.1
	comp=Z,4.7nm,0.9s						
KNB	Kanab	78.69	52	eP	P	05 12 54.8	+0.2
	comp=Z,3.3nm,0.9s						
SRU	San Rafael Swe	78.88	50	eP	P	05 12 55.1	-0.4
	comp=Z,4.1nm,0.8s						
U15A	North Rim	79.39	53	eP	P	05 12 58.6	+0.1
	comp=Z,2.3nm,0.8s						
BUR08	Bucovina Ar. S	79.97	323	eP	P	05 13 02.1	+0.9
PV10	Paradox Valley	80.25	49	eP	P	05 13 03.7	+0.7
BRTR	Keskin Array B	80.61	313	P	P	05 13 04.8	0.0
	comp=Z,0.7nm,0.6s,baz=108,slow=4.2,SNR=4.2						
PV01	Paradox Valley	80.69	49	eP	P	05 13 05.5	+0.1
X16A	Lo Mia Camp, P	81.16	54	eP	P	05 13 07.7	-0.2
	comp=Z,6.0nm,1.6s						
CLL	Collm	82.66	331	eP	P	05 13 15.0	-0.2
ANMO	Albuquerque	84.02	51	P	P	05 13 22.2	-0.7
	comp=Z,2.4nm,1.0s,baz=284,slow=3.7,SNR=6.4						
ANMO	Albuquerque	84.02	51	eP	P	05 13 23.2	+0.3
	comp=Z,3.0nm,1.0s						
GERES	GERESS Array B	84.30	329	P	P	05 13 23.6	-0.3
	comp=Z,0.4nm,0.5s,baz=0.0,slow=6.8,SNR=4.0						
TX31	Lajitas Ar. Si	89.48	53	eP	P	05 13 49.1	-0.4
TXAR	Lajitas Array	89.48	53	P	P	05 13 48.9	-0.5
	comp=Z,1.1nm,0.6s,baz=306,slow=3.3,SNR=16						
SDV	Santo Domingo	125.03	42	PKP	PKPdf	05 19 52.3	-0.7
	comp=Z,1.1nm,0.6s,baz=206,slow=3.9,SNR=4.2						
LPAZ	La Paz	145.81	63	PKPbc	PKPdf	05 20 31.3	-0.6
	comp=Z,1.7nm,0.7s,baz=273,slow=2.6,SNR=7.8						

*DDA **02** 05:01:07.7, 36°55N×28°77E, h7km, Md2.5*
*ISCJB **02** 05:01:08.8±0.6, 36°74N±0°08×28°96E±0°06, h25km±6km, Error ellipse: s-maj=14.0km s-min=5.9km az=26.8*
*CSEM **02** 05:01:08.4±0.3, 36°71N×28°98E, h26km±3km, MD2.4, Error ellipse: s-maj=14.4km s-min=6.7km az=23.0*
*ISK **02** 05:01:08.3, 36°79N×28°98E, h20km, MD2.4*
ISC 02 05:01:08.7±1.0**, 36°69N**±0°06×**28°95E**±0°04**, h25**km±6km**, n21, σ0^{s}99**/31**, Dodecanese Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
FETY	Fethiye	0.12	115	ePG	Pb	05 01 13.1	-0.4
FETY				eSG	Sb	05 01 17.2	+0.5
FETY	Fethiye	0.12	115	ePg	Pb	05 01 13.1	-0.4
FETY				eSg	Sb	05 01 17.2	+0.5
DALY	Dalyan (Mu˜la	0.27	299	ePG	Pb	05 01 14.6	-0.7
DALY				eSG	Sb	05 01 19.6	-0.2
DALY	Dalyan (Mu˜la	0.27	299	ePg	Pb	05 01 14.6	-0.7
DALY				eSg	Sb	05 01 19.6	-0.2
TURN	Turunc	0.34	304	iP	Pn	05 01 18.5	+0.5
TURN				iS	Sn	05 01 27.7	+3.6
TURN	Turunc	0.34	304	P	Pn	05 01 18.5	+0.5
GLHS	Glhisar (BURDU	0.64	43	ePG	Pb	05 01 20.0	-1.4
GLHS	Glhisar (BURDU	0.64	43	ePg	Pb	05 01 20.0	-1.4
AKAS	Kas	0.69	130	iP	Pb	05 01 21.2	-1.1
AKAS				iS	Sn	05 01 33.9	+0.8
AKAS	Kas	0.69	130	P	Pb	05 01 21.2	-1.1
AKAS				S	Sn	05 01 33.9	+0.8
YER	Yerkesik	0.70	310	ePG	Pb	05 01 21.5	-0.8
YER	Yerkesik	0.70	310	ePg	Pb	05 01 21.5	-0.8
ELL	Elmali	0.77	85	ePG	Pb	05 01 23.6	0.0
ELL	Elmali	0.77	85	ePg	Pb	05 01 23.6	0.0
KORT	Korkueli	1.17	74	iP	Pb	05 01 39.4	+9.1
BDRM	Kayabasi	1.27	288	iP	Pn	05 01 29.9	-1.0
BDRM				iS	Sb	05 01 47.4	-0.4
BDRM	Kayabasi	1.27	288	P	Pn	05 01 29.9	-1.0
BDRM				S	Sb	05 01 47.4	-0.4
AYDN	Tasoluk	1.30	319	iP	Pn	05 01 31.2	-0.1
AYDN				iS	Sb	05 01 48.5	-0.2
AYDN	Tasoluk	1.30	319	P	Pn	05 01 31.2	-0.1
AYDN				S	Sb	05 01 48.5	-0.2
AYDB	Zeytinkoy-Aydi	1.52	326	ePN	Pn	05 01 34.0	-0.4
AYDB	Zeytinkoy-Aydi	1.52	326	ePn	Pn	05 01 34.0	-0.4

*NIED **02** 05:08:00, 36°40N×141°10E, h35km, Mw4.6 Best double couple: $M_0$8.33000×10^15 NP1:ϕ_s137.00000°, δ5.00000°, λ5.00000°. NP2:ϕ_s42.00000°, δ90.00000°, λ95.00000°.*
*JMA **02** 05:08:01.1±0.1, 36°42N×141°10E, h45km±2km, M4.6*
JMA Felt III J1.
*MOS **02** 05:08:01.0±1.0, 36°41N×141°01E, h39km, mb4.9/53, Error ellipse: s-maj=7.9km s-min=5.3km az=89.8*
*ISCJB **02** 05:08:01.8±0.5, 36°40N±0°03×141°04E±0°03, h45km±3km, mb4.7/163, MS3.8/22, Error ellipse: s-maj=4.9km s-min=3.4km az=146.8*
*IDC **02** 05:08:02.9±1.6, 36°37N×141°08E, h46km±16km, mb4.1/28, mb1 4.3/32, mb1mx4.2/45, mbtmp4.3/32, ML4.4/4, MS3.8/25, Ms1 3.9/25, ms1mx3.6/55, Error ellipse: s-maj=13.2km s-min=9.9km az=86.0*
*NEIC **02** 05:08:03.2±0.5, 36°40N×141°04E, h43km±4km, mb4.7/131, Error ellipse: s-maj=4.1km s-min=2.9km az=140.0*
NEIC Recorded [3 JMA] in Ibaraki.
ISC 02 05:08:02.2±0.4**, 36°38N**±0°04×**141°16E**±0°04**, h38**km±2km**, n603, σ0^{s}95**/605**, mb4.7**/163**, MS3.8**/22**, 13C-5D, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
JHO	Hitachi	0.53	296	P	Pn	05 08 11.5	-1.8
JHO				S	Sn	05 08 18.7	-2.3
ONAJ	Iwakimizuishiy	0.77	338	P	Pn	05 08 14.6	-2.1
ONAJ				S	Sn	05 08 23.9	-3.3
JYT	Yasato	0.79	259	P	Pn	05 08 15.5	-1.4
JYT				S	Sn	05 08 25.3	-2.2
JFT	Otama	1.31	330	P	Pn	05 08 23.4	-0.6
JFT				S	Sn	05 08 39.2	-1.1
JAG	Ashikaga	1.38	272	P	Pn	05 08 23.7	-1.2
JAG				S	Sn	05 08 40.3	-1.5
MJAR	Matsushiro Arr	2.38	275	P	Pn	05 08 38.6	-0.1
	105nm,0.3s,baz=100,slow=9.2,SNR=587						
MJAR				LR	LR	05 09 56.7	
	comp=Z,2μm,19.4s,baz=110,slow=50						
MAJO	Matsushiro	2.38	275c	iP	Pn	05 08 39.1	+0.4
MAJO	Matsushiro	2.38	275	ePn	Pn	05 08 39.2	+0.4
MAT	Matsushiro	2.38	275	P	Pn	05 08 38.8	0.0
MAT				S	Sn	05 09 07.0	+0.3
JHJ2	Mitsune	3.44	199	ePn	Pn	05 08 54.7	+1.4
JHJ	Hachijo jima 2	3.44	200	P	Pn	05 08 54.5	+1.1
	71nm,0.3s,baz=122,slow=23,SNR=22						
JHJ				S	Sn	05 09 33.2	+0.3
	248nm,0.3s,baz=289,slow=22,SNR=11						
INU	Inuyama	3.52	254	ePn	Pn	05 08 55.6	+1.3
ERM	Erimo	5.84	15d	iP	Pn	05 09 27.3	+1.1
ERM	Erimo	5.84	15	ePn	Pn	05 09 25.2	-1.0
YUK	Yuzh-Kuril'sk	8.45	24	eP	Pn	05 10 00.5	-1.5
YUK				eS	Sn	05 11 29.3	-6.7
YUK				pmax	pmax		
	comp=Z,109nm,0.8s						
YUK				pmax	pmax		
	comp=E,70nm,0.4s						
YUK				pmax	pmax		
	comp=N,102nm,0.5s						
SHO	Shikotan	8.65	28	eP	Pn	05 10 00.9	-3.8
SHO				pmax	pmax		
	comp=Z,88nm,0.5s						
JNU	Nakatsue	9.06	252	P	Pn	05 10 13.8	+3.3
	comp=Z,0.9nm,0.3s,baz=74,slow=8.9,SNR=11						
JNU				LR	LR	05 14 01.1	
	comp=Z,772nm,18.5s,baz=113,slow=40						
JNU	Nakatsue	9.06	252	ePn	Pn	05 10 12.2	+1.7
CBIJ	Chichi jima	9.30	174	ePn	Pn	05 10 12.6	-1.2
CBIJ				S	Sn	05 11 47.5	-10
JCJ	Chichijima	9.30	174	P	Pn	05 10 12.5	-1.2
	comp=Z,27nm,0.3s,baz=284,slow=21,SNR=12						
JCJ				S	Sn	05 11 47.5	-10
	comp=Z,29nm,0.3s,baz=214,slow=22,SNR=7.1						
KUR	Kuril'sk	10.20	28	P	Pn	05 10 24.9	-1.0
KUR				eS	Sn	05 12 12.8	-6.1
KUR				pmax	pmax		
	comp=Z,34nm,0.6s						
USRK	Ussuriysk Ar.	10.48	321	P	Pn	05 10 34.0	+4.2
	comp=Z,1.4nm,0.3s,baz=135,slow=13,SNR=48						
USRK				LR	LR	05 14 19.3	
	comp=Z,709nm,19.3s,baz=129,slow=36						
YSS	Yuzh-Sakhalins	10.63	6	eP	Pn	05 10 31.9	0.0
YSS				pmax	pmax		
	comp=Z,30nm,0.6s						
YSS	Yuzh-Sakhalins	10.63	6	ePn	Pn	05 10 31.4	-0.4
KSRS	Korea Array	10.65	280	P	Pn	05 10 36.1	+3.9
	comp=Z,0.6nm,0.3s,baz=95,slow=14,SNR=22						
KSRS				LR	LR	05 14 40.2	
	comp=Z,568nm,18.3s,baz=91,slow=37						
KS01	Wonju Array Si	10.67	280	ePn	Pn	05 10 34.2	+1.7
KS15	Wonju Array Si	10.68	280	ePn	Pn	05 10 33.6	+1.0
KSAR	Wonju Array Be	10.68	280	P	Pn	05 10 36.1	+3.5
KSAR	Wonju Array Be	10.68	280	P	Pn	05 10 36.1	+3.5
CN2	Changchun	14.11	306	eP	Pn	05 11 21.2	+1.8
CN2				eS	Sn	05 14 00.1	+5.5
TYV	Tymovskoe	14.52	4	eP	Pn	05 11 18.5	-6.3
TYV				pmax	pmax		
	comp=Z,20nm,0.8s						
KLR	Kul'dur	14.56	335	P	Pn	05 11 24.7	-0.8
	comp=Z,0.2nm,0.3s,baz=150,slow=11,SNR=4.5						
KLR				LR	LR	05 16 58.8	
	comp=Z,419nm,19.1s,baz=119,slow=37						
SKR	Severo-Kuril's	17.89	32⇓	eP	P	05 12 10.3	+2.1
NJ2	Nanjing	18.93	263	eP	Pn	05 12 20.1	-0.6
TIA	Tai'an	19.36	277	eP	Pn	05 12 28.4	+2.5
BJI	Beijing	19.95	288	P	P	05 12 28.9	-1.9
PEA0	Petropavlovsk-	20.36	30	eP	P	05 12 35.7	+0.5
PETK	Petropavlovsk-	20.36	30	P	P	05 12 34.9	-0.3
	comp=Z,3.2nm,0.8s,baz=233,slow=7.2,SNR=3.9						
PETK				LR	LR	05 20 02.0	
	comp=Z,168nm,21.9s,baz=217,slow=35						
NACB	Ninganchiao	20.77	240	eP	P	05 12 38.6	-1.3
	comp=Z,18nm,0.9s						
SSLB	Suanglung	21.47	240	eP	P	05 12 46.3	-1.2
	comp=Z,44nm,1.7s						
HHC	Hu-ho-hao-te	23.49	290	eP	P	05 13 08.9	+0.3
HHC				pP	pP	05 13 18.2	-0.7
HHC				S	S	05 17 18.0	-1.6
MA2	Magadan	24.03	12	P	P	05 13 13.3	-0.1
	comp=Z,5.6nm,0.6s,baz=218,slow=9.6,SNR=14						
MA2				LR	LR	05 22 33.3	
	comp=Z,177nm,21.9s,baz=235,slow=36						
YAK	Yakutsk	26.66	348	LR	LR	05 24 03.6	
	comp=Z,215nm,21.3s,baz=140,slow=36						
YAK	Yakutsk	26.66	348	eP	P	05 13 36.9	-0.2
YAK				pmax	pmax		
	comp=Z,27nm,0.6s						
YAK	Yakutsk	26.66	348	eP	P	05 13 36.9	-0.2
	comp=Z,27nm,0.6s						

ENH Enshi 27.08 266 eP P 05 13 41.9 +0.6
comp=Z,14nm,0.9s
SEY Seymchan 27.47 11 P P 05 13 44.8 +0.4
comp=Z,5.8nm,0.8s,baz=197,slow=7.4,SNR=17
SEY Seymchan 27.47 11⇑eP P 05 13 46.1 +1.7
ULN Ulaanbaatar 27.56 305⇑eP P 05 13 47.9 +2.4
ULN pmax pmax
comp=Z,17nm,1.2s
ULN Ulaanbaatar 27.56 305 eP P 05 13 45.6 +0.1
comp=Z,9.7nm,0.8s
BOD Bodaibo 27.97 329 eP P 05 13 47.2 -1.8
BOD pmax pmax
comp=Z,4.0nm,0.9s
SONA1 Songino Array 27.98 305 eP P 05 13 48.3 -1.0
SONM Songino Array 27.98 305 P P 05 13 48.8 -0.5
comp=Z,8.3nm,0.7s,baz=103,slow=8.9,SNR=35
SONM LR LR 05 25 16.7
comp=Z,176nm,19.0s,baz=156,slow=37
H11N2 WAKE ISLAND Hy 28.00 119 T T 05 43 09.3
SNR=86
LZH Lanzhou 29.98 281 eP P 05 14 06.2 -1.0
LZH pP pP 05 14 20.9 +2.9
LZH sP sP 05 14 25.0 +2.4
TLY Talaya 30.61 312 eP P 05 14 12.9 +0.5
TLY pmax pmax
comp=Z,4.0nm,0.9s
TLY MLR MLR
comp=Z,161nm,14.0s
TLY Talaya 30.61 312 eP P 05 14 13.2 +0.8
comp=Z,3.3nm,0.7s
GYA Guiyang 30.91 261 P P 05 14 14.8 -0.7
CD2 Chengdu 31.47 271 P P 05 14 19.2 -1.1
CD2 pP pP 05 14 32.4 +1.3
CD2 PP PP 05 15 30.6 -1.1
CD2 S S 05 19 23.3 -2.5
CD2 sS sS 05 19 46.1 +2.4
CD2 SS SS 05 21 39.4 -1.9
QIZ Qiongzhong 32.48 246 P P 05 14 28.9 -0.2
QIZ S S 05 19 39.6 -1.9
GTA Gaotai 32.56 288 eP P 05 14 30.8 +0.9
GTA pP pP 05 14 41.0 +0.3
GTA sP sP 05 14 45.2 -0.1
GTA PcP PcP 05 17 15.7 0.0
GTA S S 05 19 43.4 +0.6
GTA sS sS 05 20 00.0 -0.7
GTA SS SnSn 05 21 42.0 +3.2
GSTR Great Sitkin T 33.88 49 eP P 05 14 39.1 -2.0
BILL Bilibino 34.71 16⇑eP P 05 14 47.6 -0.4
BILL e 05 14 57.9
BILL e 05 16 01.7
BILL e 05 17 20.5
BILL pmax pmax
comp=Z,3.0nm,1.2s
BILL MLR MLR
comp=Z,135nm,23.0s
BILL Bilibino 34.71 16 eP P 05 14 47.3 -0.7
comp=Z,7.7nm,1.0s
TIXI Tiksi 35.91 353ceP P 05 14 58.8 +0.5
TIXI pmax pmax
comp=Z,8.0nm,1.7s
TIXI Tiksi 35.91 353 eP P 05 14 57.4 -1.0
comp=Z,3.8nm,0.7s
FAKI Fak Fak 39.97 194 eP P 05 15 33.1 0.0
comp=Z,9.3nm,0.5s
WMQ Urumqi 40.95 297 eP P 05 15 42.3 +1.2
WMQ sP sP 05 16 01.4 +4.7
WMQ PcP PcP 05 17 42.3 +1.4
WMQ S S 05 21 47.3 -3.1
WMQ sS sS 05 22 10.2 +1.6
CMAR Chiang Mai Arr 41.13 256 P P 05 15 41.6 -1.2
comp=Z,0.6nm,0.4s,baz=40,slow=7.2,SNR=4.3
CMAR LR LR 05 34 22.6
comp=Z,90nm,18.4s,baz=75,slow=38
CM01 Chiang Mai Arr 41.14 256 eP P 05 15 42.6 -0.2
ZAA0 Zalesovo Array 42.20 313 eP P 05 15 50.6 -0.5
ZALV Zalesovo Beam 42.20 313 P P 05 15 50.6 -0.5
comp=Z,4.8nm,0.6s,baz=94,slow=7.1,SNR=19
ZALV PcP PcP 05 17 44.1 -0.6
comp=Z,0.6nm,0.4s,baz=46,slow=4.2,SNR=2.8
ZALV LR LR 05 34 16.7
comp=Z,150nm,18.1s,baz=70,slow=37
SBUM Sibu 43.06 225 eP P 05 15 59.8 +1.4
comp=Z,31nm,0.2s
NVS Novosibirsk 43.14 314 eP P 05 15 58.3 -0.4
NVS e 05 16 14.8
NVS pmax pmax
comp=E,10.0nm,1.1s
NVS pmax pmax
comp=Z,13nm,1.1s
NRIK Noril'sk 43.77 336 P P 05 16 03.4 -0.2
comp=Z,2.5nm,0.5s,baz=128,slow=7.7,SNR=3.9
NRIK LR LR 05 35 14.3
comp=Z,188nm,18.6s,baz=112,slow=37
NRIK Noril'sk 43.77 336 P P 05 16 03.4 -0.2
NRIK pmax pmax
comp=Z,2.0nm,0.4s
NRIK MLR MLR
comp=Z,188nm,18.6s
MK01 Makanchi Array 44.29 303 eP P 05 16 07.8 -0.3
MK31 Makanchi Array 44.29 303 eP P 05 16 08.4 +0.3
MK31 Makanchi Array 44.29 303 eP P 05 16 08.4 +0.3
MKAR Makanchi Array 44.29 303 P P 05 16 08.1 -0.1
comp=Z,1.6nm,0.6s,baz=86,slow=10,SNR=15
MKAR LR LR 05 35 14.1
comp=Z,121nm,21.1s,baz=82,slow=37
MKAR Makanchi Array 44.29 303 eP P 05 16 08.4 +0.3
MKAR Makanchi Array 44.29 303 eP P 05 16 08.4 +0.3
MAKZ Makanchi 44.50 303 eP P 05 16 09.6 -0.2
MAKZ pmax pmax
comp=Z,21nm,1.8s
MAKZ Makanchi 44.50 303 eP P 05 16 09.6 -0.2
comp=Z,21nm,1.8s
TAPN Taplejung 45.78 274 eP P 05 16 21.0 +0.5
comp=Z,11nm,0.5s
TT01 Tatalina 46.07 34 eP P 05 16 22.3 +0.4
TTA Tatalina 46.08 34 eP P 05 16 23.2 +1.1
TTA pmax pmax
comp=Z,6.0nm,1.1s
TTA Tatalina 46.08 34 eP P 05 16 23.2 +1.1
comp=Z,6.0nm,1.1s
SVW2 Sparrevohn 46.16 37 eP P 05 16 24.3 +1.5
comp=Z,14nm,1.0s
KURK Kurchatov 46.17 309 eP P 05 16 21.4 -1.5
KURK pmax pmax
comp=Z,12nm,0.7s
KURK Kurchatov 46.17 309 eP P 05 16 21.4 -1.5
comp=Z,12nm,0.7s
ODAN Odare 46.25 274 eP P 05 16 24.3 +0.1
RAMN Ramite 46.85 275 eP P 05 16 29.0 +0.2
comp=Z,44nm,0.8s
GUN Gumba 47.02 276 eP P 05 16 30.7 +0.4
OHAK Old Harbor 47.38 42 eP P 05 16 32.5 +0.3
comp=Z,27nm,1.3s
RSO Redoubt South 47.54 38 eP P 05 16 34.7 +1.0
KDAK Kodiak Island 47.72 42 eP P 05 16 35.0 +0.1
KDAK pmax pmax
comp=Z,21nm,0.8s
KDAK Kodiak Island 47.72 42 eP P 05 16 35.0 +0.1
comp=Z,21nm,0.8s
DMN Daman 47.77 276 eP P 05 16 36.5 +0.5
PPLA Purkeypile 47.82 35 eP P 05 16 37.7 +1.9
comp=Z,36nm,1.6s
SPU Mount Spurr 47.88 37 eP P 05 16 37.3 +1.1
CAST Castle Rocks 47.88 34 eP P 05 16 37.4 +1.3
comp=Z,6.6nm,0.9s
GKN Gorkha 47.97 277 eP P 05 16 38.2 +0.7
comp=Z,44nm,0.8s
BPAW Bear Paw Mtn. 48.38 33 eP P 05 16 41.4 +1.4
comp=Z,19nm,1.8s
KTH Kantishna Hill 48.40 34 eP P 05 16 41.6 +1.4
comp=Z,12nm,1.0s
BRLK Bradley Lake 48.50 39 eP P 05 16 42.3 +1.3
comp=Z,11nm,0.9s
MLY Manley 48.51 32 eP P 05 16 42.3 +1.3
comp=Z,10nm,1.0s
TRF Thorofare Moun 48.69 34 eP P 05 16 43.9 +1.4
comp=Z,6.6nm,0.8s
KOLN Koldanda 48.90 277 eP P 05 16 44.6 -0.1
comp=Z,11nm,0.6s
RC01 Rabbit Creek A 49.00 37 eP P 05 16 44.6 -0.2
comp=Z,10nm,0.9s
SEW Seward 49.20 38 eP P 05 16 46.4 +0.2
comp=Z,26nm,1.4s
PYUN Piuthan 49.25 278 eP P 05 16 47.6 +0.2
comp=Z,48nm,1.0s

PMR Palmer 49.27 36 eP P 05 16 46.4 -0.3
PMR pmax pmax
comp=Z,14nm,1.0s
PMR Palmer 49.27 36 eP P 05 16 46.4 -0.3
comp=Z,14nm,1.0s
MCK McKinley 49.29 33 eP P 05 16 47.7 +0.8
MCK pmax pmax
comp=Z,8.0nm,0.8s
MCK McKinley 49.29 33 eP P 05 16 47.7 +0.8
comp=Z,7.7nm,0.8s
RND Reindeer 49.33 34 eP P 05 16 47.9 +0.5
RND pmax pmax
comp=Z,13nm,1.0s
RND Reindeer 49.33 34 eP P 05 16 47.9 +0.5
comp=Z,12nm,1.0s
MDM Murphy Dome 49.58 32 eP P 05 16 50.4 +1.2
comp=Z,25nm,1.0s
SML Sawmill 49.64 36 eP P 05 16 50.5 +0.9
SML pmax pmax
comp=Z,15nm,0.9s
SML Sawmill 49.64 36 eP P 05 16 50.5 +0.9
comp=Z,16nm,0.9s
WRH Wood River Hil 49.65 32 eP P 05 16 50.4 +0.8
comp=Z,5.5nm,0.8s
COLA College 49.74 32 eP P 05 16 51.5 +1.2
COLA pmax pmax
comp=Z,10.0nm,0.8s
COLA College 49.74 32 eP P 05 16 51.5 +1.2
comp=Z,10nm,0.8s
TKM2 Tokmak 2 49.76 299 eP P 05 16 51.7 +0.6
TKM2 pmax pmax
comp=Z,8.0nm,0.6s
TKM2 Tokmak 2 49.76 299 eP P 05 16 51.7 +0.6
comp=Z,7.7nm,0.6s
CCB Clear Creek Bu 49.77 32 eP P 05 16 51.1 +0.6
comp=Z,9.5nm,1.4s
MTN Manton Dam 49.87 193 eP P 05 16 51.8 +0.1
comp=Z,235nm,1.9s
DHY Denali Highway 50.02 34 eP P 05 16 53.2 +0.5
comp=Z,8.3nm,1.3s
SCM Sheep Creek Mo 50.11 36 eP P 05 16 54.4 +1.1
SCM pmax pmax
comp=Z,19nm,1.0s
SCM Sheep Creek Mo 50.11 36 eP P 05 16 54.4 +1.1
comp=Z,19nm,1.0s
HDA Harding Lake 50.14 33 eP P 05 16 53.7 +0.3
comp=Z,16nm,1.0s
ILAR Eielson Array 50.16 32 P P 05 16 53.5 0.0
comp=Z,8.8nm,0.8s,baz=270,slow=6.4,SNR=89
ILB Eielson Array 50.16 32 eP P 05 16 53.8 +0.3
IL1 Eielson Array 50.16 32 eP P 05 16 53.1 -0.3
KSH Kashi 50.48 294 eP P 05 17 00.7 +4.2
KSH esP sP 05 17 18.3 +6.0
KSH ePP PP 05 18 57.0 +4.8
KSH S S 05 24 10.8 +3.0
VOSK Vostochnaya 50.56 312 eP P 05 16 55.9 -0.9
VOSK pmax pmax
comp=Z,6.0nm,0.9s
VOSK Vostochnaya 50.56 312 eP P 05 16 55.9 -0.9
comp=Z,6.3nm,0.9s
AAK Ala-Archa 50.62 299 LR LR 05 39 33.7
comp=Z,313nm,19.7s,baz=50,slow=37
AAK Ala-Archa 50.62 299⇑eP P 05 16 57.3 -0.2
AAK pmax pmax
comp=Z,5.0nm,0.9s
AAK Ala-Archa 50.62 299 eP P 05 16 57.4 -0.1
FYU Fort Yukon 50.78 30 eP P 05 17 00.2 +2.1
comp=Z,69nm,2.0s
KLU Klutina 50.81 36 eP P 05 16 59.5 +0.9
comp=Z,12nm,1.0s
PAX Paxson 50.89 34 eP P 05 17 00.6 +1.4
PAX pmax pmax
comp=Z,6.0nm,1.1s
PAX Paxson 50.89 34 eP P 05 17 00.6 +1.4
comp=Z,5.8nm,1.1s
BRVK Borovoye 50.92 313⇑eP P 05 16 59.1 -0.3
BRVK pmax pmax
comp=Z,5.0nm,1.2s
BRVK Borovoye 50.92 313 eP P 05 16 58.7 -0.6
comp=Z,5.7nm,1.0s
DIV Divide 50.92 37 eP P 05 17 00.7 +1.3
comp=Z,16nm,1.0s
EYAK Cordova Ski Ar 51.00 37 eP P 05 17 01.2 +1.4
comp=Z,13nm,0.9s
EKS2 Erkin-Say 51.12 299 eP P 05 17 02.5 +1.2
EKS2 pmax pmax
comp=Z,4.0nm,0.7s
EKS2 Erkin-Say 51.12 299 eP P 05 17 02.5 +1.2
comp=Z,3.6nm,0.7s
PSI Prapat 51.28 239 eP P 05 17 02.3 -0.4
PSI pmax pmax
comp=Z,9.0nm,0.7s
PSI Prapat 51.28 239 eP P 05 17 02.3 -0.4
comp=Z,9.1nm,0.7s
DOT Dot Lake 51.46 33 eP P 05 17 03.5 +0.1
comp=Z,19nm,0.8s
BMRM Bremner River 51.50 37 eP P 05 17 05.1 +1.4
comp=Z,13nm,0.9s
RAGM Ragged Mountai 51.54 38 eP P 05 17 05.7 +1.6
comp=Z,17nm,1.0s
BKNI Bangkinang 51.65 235 eP P 05 17 06.1 +0.7
comp=Z,70nm,0.5s
MENT Mentasta 51.69 34 eP P 05 17 06.6 +1.5
comp=Z,9.0nm,0.7s
EGAK Eagle 52.60 32 eP P 05 17 12.1 +0.3
comp=Z,5.3nm,0.8s
SMLA Simla 52.61 284 eP P 05 17 09.6 -2.7
UGM Wanagama 52.62 219 eP P 05 17 11.5 -1.0
comp=Z,330nm,1.5s
KKAR Karatay Array 53.27 300 eP P 05 17 16.9 -0.2
KKAR Karatay Array 53.27 300 eP P 05 17 16.9 -0.2
GSI Gunungsitoli 53.29 239 eP P 05 17 17.9 +0.4
comp=Z,39nm,0.8s
DAWY Dawson 53.46 33 eP P 05 17 19.9 +1.7
comp=Z,12nm,1.4s
INK Inuvik 55.06 27 LR LR 05 44 28.6
comp=Z,176nm,18.0s,baz=240,slow=40
INK Inuvik 55.06 27 eP P 05 17 30.3 +0.7
INK pmax pmax
comp=Z,7.0nm,0.9s
INK Inuvik 55.06 27 eP P 05 17 30.3 +0.7
comp=Z,7.3nm,0.9s
WRAB Tennant Creek 56.38 188⇑eP P 05 17 39.5 -0.1
WRAB pmax pmax
comp=Z,70nm,2.5s
WB2 Warramunga Arr 56.39 188 eP P 05 17 39.4 -0.4
comp=Z,15nm,0.9s
WRA Warramunga Arr 56.39 188 P P 05 17 39.5 -0.3
comp=Z,7.5nm,0.8s,baz=4.5,slow=7.4,SNR=34
ARU Arti 56.71 319 P P 05 17 40.9 -0.7
baz=91,slow=4.0
ARU LR LR 05 44 06.2
comp=Z,78nm,19.0s,baz=49,slow=38
ARU Arti 56.71 319c iP P 05 17 41.0 -0.7
ARU 05 18 32.8
ARU 05 19 47.8
ARU S S 05 25 38.7 +7.3
ARU SS SS 05 29 22.2 +3.2
ARU pmax pmax
comp=Z,16nm,1.7s
ARU Arti 56.71 319 eP P 05 17 41.0 -0.7
comp=Z,12nm,0.8s
ABKAR Akbulak array 58.20 310 eP P 05 17 51.6 -0.7
AKTO Aktyubinsk 58.96 312 P P 05 17 58.0 +0.4
comp=Z,0.9nm,0.5s,baz=81,slow=10.0,SNR=4.3
AKTO LR LR 05 44 34.8
comp=Z,99nm,19.3s,slow=37
AKTO Aktyubinsk 58.96 312 P P 05 17 58.0 +0.4
DLBC Dease Lake 59.27 38 eP P 05 18 01.9 +2.2
comp=Z,12nm,1.3s
AS01 Alice Springs 60.11 188 eP P 05 18 05.2 -0.5
AS31 Alice Springs 60.11 188 eP P 05 18 05.6 -0.1
comp=Z,11nm,1.9s
ASAR Alice Springs 60.12 188 P P 05 18 05.2 -0.5
comp=Z,3.5nm,0.8s,baz=8.8,slow=5.7,SNR=35
SPITS Spitsbergen Ar 61.12 349 LR LR 05 46 04.2
comp=Z,72nm,21.0s,baz=85,slow=37
PALK Pallekele 62.03 258 LR LR 05 47 46.1
comp=Z,85nm,18.1s,baz=116,slow=38
RES Resolute Bay 63.28 14 eP P 05 18 26.4 0.0
RES pmax pmax
comp=Z,7.0nm,0.9s
RES Resolute Bay 63.28 14 eP P 05 18 26.4 0.0
comp=Z,6.5nm,0.9s
GEYT Alibeck 63.97 299 LR LR 05 47 51.9
comp=Z,47nm,20.3s,baz=15,slow=37

YKW3 Yellowknife Ar 64.44 30 eP P 05 18 34.5 +0.3
comp=Z,5.9nm,1.0s
YKA Yellowknife Ar 64.47 30 P P 05 18 34.4 -0.1
comp=Z,2.6nm,0.8s,baz=302,slow=6.8,SNR=45
YKB5 Yellowknife Ar 64.47 30 eP P 05 18 33.8 -0.6
ARCES ARCESS Array B 64.53 339 P P 05 18 34.3 -0.5
comp=Z,1.8nm,0.7s,baz=58,slow=8.1,SNR=11
ARCES LR LR 05 49 58.7
comp=Z,53nm,18.3s,baz=58,slow=39
STKA Stephens Creek 67.90 180 P P 05 18 56.4 -0.3
comp=Z,6.1nm,0.8s,baz=353,slow=9.1,SNR=11
STKA Stephens Creek 67.90 180 eP P 05 18 57.1 +0.4
STKA pmax pmax
comp=Z,1.0nm,0.8s
STKA Stephens Creek 67.90 180 eP P 05 18 57.1 +0.4
comp=Z,1.4nm,0.8s
OBN Obninsk 68.49 323 LR LR 05 50 08.1
comp=Z,69nm,19.8s,baz=88,slow=37
OBN Obninsk 68.49 323⇓eP P 05 18 59.1 -1.1
OBN pmax pmax
comp=Z,10.0nm,0.4s
LPSR Galich'ya Gora 68.67 320 eP P 05 19 00.5 -0.9
LPSR pmax pmax
comp=Z,5.0nm,1.0s
BBOO Buckleboo 69.00 185 eP P 05 19 04.0 +0.4
comp=Z,16nm,1.0s
VSR Storozhevoye 69.29 319 eP P 05 19 04.4 -0.9
VSR pmax pmax
comp=Z,3.0nm,0.4s
FIA1 FINESS Array S 69.29 332 eP P 05 19 04.7 -0.4
FINES FINESS Array B 69.29 332 P P 05 19 04.5 -0.7
comp=Z,2.8nm,0.8s,baz=50,slow=10,SNR=9.5
G05D Wamic, OR 69.92 48 P P 05 19 10.8 +1.5
baz=302
I05D Terrebonne, OR 70.39 49 P P 05 19 13.2 +0.9
baz=302
NEW Newport 70.74 44 P P 05 19 15.1 +0.8
baz=303
WSAR Wadi Sarin 70.84 285 LR LR 05 53 04.8
comp=Z,54nm,18.3s,slow=38
YBH Yreka Blue Hor 70.91 52 P P 05 19 16.5 +1.0
comp=Z,3.7nm,1.0s,baz=103,slow=2.2,SNR=4.4
YBH Yreka Blue Hor 70.91 52 eP P 05 19 17.0 +1.5
YBH pmax pmax
comp=Z,24nm,1.8s
YBH Yreka Blue Hor 70.91 52 eP P 05 19 17.0 +1.5
comp=Z,24nm,1.8s
M02C Callahan 71.00 52 P P 05 19 17.4 +1.3
baz=302
J05D Fort Rock, OR 71.01 50 P P 05 19 17.5 +1.3
baz=302
KBZ Khabaz 71.17 311 P P 05 19 16.9 0.0
comp=Z,1.8nm,0.9s,baz=5.7,slow=10,SNR=3.1
KIV Kislovodsk 71.18 311⇓eP P 05 19 17.6 +0.5
KIV pmax pmax
comp=Z,6.0nm,1.2s
N02D Trinity Center 71.31 53 P P 05 19 19.3 +1.3
baz=302
M04C Macdoel 71.43 52 P P 05 19 20.0 +1.2
baz=302
K05A Summer Lake 71.52 50 eP P 05 19 21.1 +1.8
comp=Z,18nm,1.1s
GNI Garni 71.93 307 LR LR 05 53 32.0
comp=Z,36nm,19.4s,baz=48,slow=38
GNI Garni 71.93 307⇓eP P 05 19 23.1 +1.3
GNI pmax pmax
comp=Z,38nm,1.4s
MOD Modoc Plateau 72.33 51 eP P 05 19 24.6 +0.4
comp=Z,6.1nm,1.1s
BMO Blue Mountains 72.52 47 eP P 05 19 26.3 +1.1
comp=Z,8.0nm,1.0s
JTMT Jette 72.61 43 eP P 05 19 26.8 +1.1
YBMT Yellow Bay 72.69 43 eP P 05 19 27.2 +1.0
SWMT Swartz Lake 72.90 43 eP P 05 19 27.9 +0.5
WVOR Wild Horse Val 73.07 50 eP P 05 19 29.1 +0.6
WVOR pmax pmax
comp=Z,13nm,1.5s
WVOR Wild Horse Val 73.07 50 eP P 05 19 29.1 +0.6
comp=Z,12nm,1.5s
MSO Missoula 73.33 44 P P 05 19 30.5 +0.5
baz=306
CHMT Chamberlain Mo 73.66 43 eP P 05 19 32.1 +0.1
FFC Flin Flon 74.36 33 eP P 05 19 35.8 +0.1
FFC pmax pmax
comp=Z,15nm,1.0s
FFC Flin Flon 74.36 33 eP P 05 19 35.8 +0.1
comp=Z,15nm,1.0s
CMB Columbia Colle 74.42 54 eP P 05 19 37.0 +0.6
CMB pmax pmax
comp=Z,9.0nm,1.0s
CMB Columbia Colle 74.42 54 eP P 05 19 37.0 +0.6
comp=Z,9.1nm,1.0s
NC405 NORSAR Array S 74.49 337 eP P 05 19 36.2 -0.1
HRY Holter Researc 74.57 43 eP P 05 19 38.2 +1.0
NC204 NORSAR Array S 74.67 338 eP P 05 19 36.4 -1.0
NB201 NORSAR Array S 74.67 337 eP P 05 19 37.6 +0.1
FCC Fort Churchill 74.68 26 eP P 05 19 37.1 -0.3
FCC pmax pmax
comp=Z,17nm,1.1s
FCC Fort Churchill 74.68 26 eP P 05 19 37.1 -0.3
comp=Z,17nm,1.1s
AKASG Malin Array Be 74.69 322 P P 05 19 36.7 -0.9
comp=Z,1.2nm,0.4s,baz=47,slow=6.0,SNR=7.5
AKASG Malin Array Be 74.69 322ceP P 05 19 39.5 +1.9
AKASG pmax pmax
comp=Z,1.0nm,0.4s
KIEV Kiev 74.70 322⇑eP P 05 19 37.2 -0.5
KIEV pmax pmax
comp=Z,3.0nm,0.9s
KIEV Kiev 74.70 322 eP P 05 19 36.6 -1.1
comp=Z,6.3nm,0.8s
NB2 NORSAR Subarra 74.71 337 P P 05 19 37.2 -0.4
comp=Z,4.8nm,0.7s,baz=40,slow=6.2
NOA NORSAR Array B 74.71 337 P P 05 19 37.0 -0.6
comp=Z,2.7nm,0.8s,baz=39,slow=5.8,SNR=8.6
NOA LR LR 05 55 31.5
comp=Z,152nm,19.9s,baz=20,slow=38
LRM Limekiln Ridge 74.76 44 eP P 05 19 39.2 +0.7
WAKR Walker 74.77 53 eP P 05 19 39.6 +0.9
EGMT Eagleton 74.90 41 P P 05 19 39.7 +0.7
baz=308
EGMT Eagleton 74.90 41 eP P 05 19 39.5 +0.5
comp=Z,9.1nm,0.9s
DLMT Dillon 74.95 44 eP P 05 19 40.5 +1.1
comp=Z,10.0nm,0.9s
HLID Hailey 74.97 47 P P 05 19 39.9 +0.2
baz=306
HLID Hailey 74.97 47 eP P 05 19 40.8 +1.2
comp=Z,4.4nm,1.2s
BMN Battle Mountai 75.08 51 eP P 05 19 41.8 +1.5
BMN pmax pmax
comp=Z,6.0nm,0.8s
BMN Battle Mountai 75.08 51 eP P 05 19 41.8 +1.5
comp=Z,6.3nm,0.8s
BOZ Bozeman (W) 75.32 44 P P 05 19 42.1 +0.5
baz=307
BOZ Bozeman (W) 75.32 44 eP P 05 19 42.5 +0.9
BOZ pmax pmax
comp=Z,7.0nm,0.9s
BOZ Bozeman (W) 75.32 44 eP P 05 19 42.5 +0.9
comp=Z,6.8nm,0.9s
NV01 Mina Array Sit 75.55 53 eP P 05 19 43.8 +0.7
NVAR Mina Array Bea 75.55 53 P P 05 19 44.0 +0.9
comp=Z,5.3nm,0.8s,baz=285,slow=6.3,SNR=37
NV11 Mina Array Sit 75.64 53 eP P 05 19 44.7 +1.1
comp=Z,12nm,1.4s
QLMT Earthquake Lak 75.93 44 eP P 05 19 46.3 +1.1
ELK Elko 76.13 50 eP P 05 19 47.8 +1.4
ELK pmax pmax
comp=Z,4.0nm,0.9s
ELK Elko 76.13 50 eP P 05 19 47.8 +1.4
comp=Z,3.7nm,0.9s
GCMT Greycliff 76.32 43 eP P 05 19 48.4 +1.1
YFT Old Faithful 76.50 44 eP P 05 19 50.5 +2.1
comp=Z,4.3nm,0.8s
LKWY Lake 76.67 44 eP P 05 19 52.0 +2.6
LKWY pmax pmax
comp=Z,12nm,1.3s
LKWY Lake 76.67 44 eP P 05 19 52.0 +2.6
comp=Z,12nm,1.3s
H17A Grant Village 76.68 44 P P 05 19 51.9 +2.5
baz=308
H17A Grant Village 76.68 44 eP P 05 19 52.0 +2.5
comp=Z,14nm,1.0s
IMW Indian Meadow 76.78 45 eP P 05 19 51.9 +1.8
comp=Z,7.1nm,0.9s
FLWY Flagg Ranch 76.80 45 eP P 05 19 52.2 +2.0

comp=Z,6.8nm,1.0s
CWC Cottonwood Cre 76.84 54 P P 05 19 50.7 +0.3
baz=306
FXWY Fox Creek 76.89 45 eP P 05 19 51.9 +1.2
comp=Z,8.3nm,1.3s
RLMT Red Lodge 76.96 43 P P 05 19 52.0 +1.0
baz=309
RLMT Red Lodge 76.96 43 eP P 05 19 52.2 +1.2
comp=Z,16nm,1.5s
GRAC Grapevine Rang 76.97 54 P P 05 19 52.3 +1.2
baz=306
MOOW Moose Ponds 76.98 45 eP P 05 19 52.7 +1.5
comp=Z,12nm,1.5s
HVU Hansel Valley 77.00 48 eP P 05 19 52.6 +1.4
HVU pmax pmax
comp=Z,5.0nm,0.9s
HVU Hansel Valley 77.00 48 eP P 05 19 52.6 +1.4
comp=Z,5.3nm,0.9s
ARVC Arvin 77.10 56 P P 05 19 52.3 +0.6
baz=306
LOHW Long Hollow 77.15 45 eP P 05 19 53.5 +1.4
comp=Z,4.4nm,1.1s
REDW Red Top Meadow 77.16 45 eP P 05 19 53.6 +1.4
comp=Z,11nm,1.3s
DAC Darwin (Calif) 77.25 54 eP P 05 19 53.0 +0.2
DAC pmax pmax
comp=Z,4.0nm,0.9s
DAC Darwin (Calif) 77.25 54 eP P 05 19 53.0 +0.2
comp=Z,3.9nm,0.9s
R11A Troy Canyon, C 77.33 52 P P 05 19 53.4 +0.2
baz=307,SNR=14
R11A Troy Canyon, C 77.33 52 eP P 05 19 54.0 +0.8
comp=Z,7.1nm,1.0s
BGU Big Grassy Mou 77.36 48 eP P 05 19 54.3 +1.0
comp=Z,2.5nm,0.8s
MPMC Manual Prospec 77.44 54 P P 05 19 54.3 +0.5
baz=306,SNR=7.0
DGMT Dagmar 77.48 38 P P 05 19 53.5 -0.1
baz=312
DGMT Dagmar 77.48 38 eP P 05 19 54.1 +0.5
LAO LASA Array 77.60 41 P P 05 19 55.0 +0.7
baz=310
LAO LASA Array 77.60 41 eP P 05 19 55.1 +0.7
comp=Z,12nm,1.0s
FURC Furnace Creek, 77.62 54 P P 05 19 55.0 +0.5
baz=306,SNR=6.2
SNCC San Nicolas Is 77.72 58 P P 05 19 56.4 +1.2
baz=306
SNCC San Nicolas Is 77.72 58 eP P 05 19 57.4 +2.2
comp=Z,49nm,0.8s
TPNV Topopah Spring 77.73 53 P P 05 19 55.2 -0.2
baz=306,SNR=7.2
TPNV Topopah Spring 77.73 53 eP P 05 19 56.1 +0.7
TPNV pmax pmax
comp=Z,9.0nm,0.9s
TPNV Topopah Spring 77.73 53 eP P 05 19 56.1 +0.7
comp=Z,8.7nm,0.9s
EDW2 Edwards Air Fo 77.80 56 P P 05 19 56.2 +0.5
baz=306
HWUT Hardware Ranch 77.82 47 eP P 05 19 57.1 +1.3
comp=Z,10.0nm,1.1s
DUG Dugway, Tooele 77.94 49 P P 05 19 57.2 +0.7
baz=308,SNR=10
DUG Dugway, Tooele 77.94 49 eP P 05 19 57.2 +0.7
DUG pmax pmax
comp=Z,8.0nm,0.9s
DUG Dugway, Tooele 77.94 49 eP P 05 19 57.2 +0.7
comp=Z,7.9nm,0.9s
A26A Wade Farm, Ken 78.25 37 P P 05 19 58.5 +0.5
baz=313
BW06 Boulder Array 78.27 45 P P 05 19 58.6 +0.2
baz=309
BW06 Boulder Array 78.27 45 eP P 05 19 58.3 -0.1
PD31 Pinedale Array 78.27 45 eP P 05 19 58.8 +0.3
PDAR Pinedale Array 78.27 45 P P 05 19 58.7 +0.3
comp=Z,2.1nm,0.7s,baz=261,slow=2.6,SNR=22
CTU Camp Tracy 78.28 48 eP P 05 19 58.6 +0.2
comp=Z,4.3nm,0.8s
PSUT Pine Spring 78.30 51 eP P 05 20 00.2 +1.5
comp=Z,6.9nm,1.0s
SHOC Shoshone, Teco 78.33 54 P P 05 19 59.0 +0.4
baz=307
GSC Goldstone, Bar 78.34 55 P P 05 19 59.0 +0.3
baz=306
BFSC Mount Baldy Ra 78.40 56 P P 05 19 59.5 +0.4
baz=306
JLU Jordanelle 78.51 48 eP P 05 20 00.9 +1.1
comp=Z,8.6nm,1.1s
B26A Jensen Ranch, 78.51 37 P P 05 20 00.0 +0.6
baz=313
NLU North Lily Min 78.53 49 eP P 05 20 01.1 +1.2
comp=Z,5.2nm,0.9s
MPU Maple Canyon 78.76 48 eP P 05 20 02.4 +1.2
comp=Z,10nm,1.1s
TUQ Turquoise Moun 78.84 54 P P 05 20 02.3 +0.7
baz=307
HEC Hector,Ludlow 78.93 55 P P 05 20 02.7 +0.7
baz=307
MURC Murrieta 79.08 56 P P 05 20 02.9 +0.1
baz=307
A28A Rude Farm, Bot 79.10 36 P P 05 20 02.8 +0.2
baz=314
BRTR Keskin Array B 79.13 312 P P 05 20 03.6 +0.6
comp=Z,1.3nm,1.0s,baz=96,slow=7.6,SNR=4.8
BRTR Keskin Array B 79.13 312 eP P 05 20 03.0 -0.1
BRTR pmax pmax
comp=Z,1.0nm,1.0s
E25A Miller Ranch, 79.19 39 P P 05 20 03.4 +0.2
baz=312
KOLS Kolonicke sedl 79.23 324 eP P 05 20 03.1 -0.1
KOLS Kolonicke sedl 79.23 324 eP P 05 20 03.1 -0.1
C27A Sayler Ranch, 79.32 38 P P 05 20 04.2 +0.4
baz=313
D26A Manning 79.32 39 P P 05 20 04.2 +0.4
baz=313
MSU Marysvale 79.36 50 eP P 05 20 06.1 +1.6
MSU Marysvale 79.36 50 eP P 05 20 06.1 +1.6
B28A Dugan Ranch, T 79.37 37 P P 05 20 04.4 +0.4
baz=314
STHS Stebnicka Huta 79.37 325 eP P 05 20 02.7 -1.3
STHS Stebnicka Huta 79.37 325 eP P 05 20 02.6 -1.4
GMRC Granite Mounta 79.41 55 P P 05 20 05.0 +0.3
baz=307
OJC Ojcow 79.47 326 eP P 05 20 04.1 -0.4
OJC Ojcow 79.47 326 eP P 05 20 04.1 -0.4
TMUT Trail Mountain 79.47 49 eP P 05 20 06.3 +1.2
comp=Z,22nm,1.7s
F25A Bowman 79.55 40 P P 05 20 05.4 +0.2
baz=312
BR231 Keskin MP Arra 79.58 312 eP P 05 20 04.1 -1.4
A29A Manning Farm, 79.58 36 P P 05 20 05.6 +0.4
baz=315
PFO Pinyon Flats O 79.58 56 P P 05 20 06.0 +0.4
comp=Z,4.0nm,0.9s,baz=231,slow=8.0,SNR=4.8
PFO Pinyon Flats O 79.58 56 P P 05 20 06.1 +0.4
baz=307
PFO Pinyon Flats O 79.58 56 eP P 05 20 05.5 -0.1
comp=Z,8.5nm,1.1s
LCMT Little Creek M 79.61 52 eP P 05 20 06.9 +1.2
comp=Z,8.4nm,1.0s
CRVS Cervenica-Dubn 79.63 324 eP P 05 20 04.0 -1.4
CRVS Cervenica-Dubn 79.63 324 eP P 05 20 04.0 -1.4
P17A Butcher Ranch, 79.64 48 eP P 05 20 06.9 +1.0
comp=Z,14nm,1.0s
BELC Belle Mtn. Jos 79.65 55 P P 05 20 06.5 +0.5
baz=307
E26A Carlson Angus 79.69 39 P P 05 20 06.0 +0.1
baz=313
P18A Preston Nutter 79.84 48 eP P 05 20 08.3 +1.2
comp=Z,6.7nm,0.9s
B29A Wagenman Farm, 79.84 36 P P 05 20 07.0 +0.4
baz=315
KNB Kanab 79.88 51 eP P 05 20 08.9 +1.7
KNB pmax pmax
comp=Z,11nm,1.1s
KNB Kanab 79.88 51 eP P 05 20 08.9 +1.7
comp=Z,11nm,1.1s
SRU San Rafael Swe 80.00 49 eP P 05 20 08.6 +0.7
SRU pmax pmax
comp=Z,12nm,0.9s
SRU San Rafael Swe 80.00 49 eP P 05 20 08.6 +0.7
comp=Z,12nm,0.9s
A30A Hoffart Farm, 80.00 35 P P 05 20 07.7 +0.3
baz=315
F26A Lodgepole 80.00 40 P P 05 20 08.0 +0.4
baz=313
MONP2 Monument Peak 80.03 57 P P 05 20 08.3 +0.1
baz=307
G25A Newell 80.06 40 P P 05 20 07.9 0.0
baz=312
K22A Casper 80.06 44 P P 05 20 08.1 0.0
baz=311
IRM Iron Mountain 80.11 55 P P 05 20 09.0 +0.6
baz=308
ULM Lac du Bonnet 80.16 33 P P 05 20 07.2 -1.1
comp=Z,2.6nm,0.8s,baz=327,slow=3.9,SNR=6.4
ULM Lac du Bonnet 80.16 33 eP P 05 20 08.0 -0.2
ULM pmax pmax
comp=Z,30nm,2.0s
ULM Lac du Bonnet 80.16 33 eP P 05 20 08.0 -0.2
comp=Z,30nm,2.0s
E27A Carson 80.17 39 P P 05 20 09.0 +0.5
baz=314
BC3 Big Chuckawall 80.22 55 P P 05 20 09.7 +0.6
baz=307
F27A Lemmon 80.32 39 P P 05 20 09.7 +0.4
baz=313
B30A Myrvik Farm, E 80.34 36 P P 05 20 09.4 +0.1
baz=315
H25A Fruitdale 80.35 41 P P 05 20 10.0 +0.5
baz=312,SNR=5.5
W13A Hualapai Mount 80.37 53 eP P 05 20 10.7 +0.7
comp=Z,3.0nm,0.9s
G26A Murine 80.42 40 P P 05 20 10.1 +0.2
baz=312
RSSD Black Hills 80.45 42 P P 05 20 10.3 0.0
baz=312
RSSD Black Hills 80.45 42 eP P 05 20 11.0 +0.8
RSSD pmax pmax
comp=Z,4.0nm,0.8s
RSSD Black Hills 80.45 42 eP P 05 20 11.0 +0.8
comp=Z,4.2nm,0.8s
E28A Huff 80.51 38 P P 05 20 10.3 0.0
baz=314
A31A Linda, St. Vin 80.52 35 P P 05 20 10.9 +0.7
baz=316
U15A North Rim 80.58 52 eP P 05 20 12.2 +1.1
comp=Z,6.9nm,0.9s
I25A Rochford 80.68 41 P P 05 20 11.5 +0.1
baz=312
PDMCI Parker Dam,Lak 80.69 54 P P 05 20 11.8 +0.4
baz=308
G27A Dupree 80.70 40 P P 05 20 11.5 +0.1
baz=313
O20A White River Ci 80.71 47 P P 05 20 11.8 +0.1
baz=310
O20A White River Ci 80.71 47 eP P 05 20 12.3 +0.7
comp=Z,7.6nm,0.9s
Y12C Blythe 80.78 55 P P 05 20 12.5 +0.6
baz=308
H26A Fairpoint 80.79 41 P P 05 20 11.7 -0.1
baz=313
C30A Mose, Pekin 80.80 36 P P 05 20 11.9 +0.1
baz=315
A32A Rocking H Ranc 80.85 34 P P 05 20 11.9 -0.1
baz=316
DPC Dobruska-Polom 80.90 328 eP P 05 20 12.6 +0.3
DPC epP pP 05 20 25.1 +1.0
DPC Dobruska-Polom 80.90 328 eP P 05 20 12.6 +0.3
DPC e 05 20 25.1
F28A McLaughlin 80.96 39 P P 05 20 12.9 +0.2
baz=314
GLA Glamis 81.00 56 P P 05 20 13.6 +0.5
baz=308
C31A Landman Farms, 81.08 36 P P 05 20 13.2 -0.1
baz=316
I26A New Underwood 81.14 41 P P 05 20 13.4 -0.3
baz=313
H27A Howes 81.14 40 P P 05 20 13.4 -0.3
baz=313,SNR=8.4
VYHS Vyhne 81.14 325 eP P 05 20 13.6 0.0
VYHS Vyhne 81.14 325 eP P 05 20 13.6 0.0
B32A Ashes, Strandq 81.21 35 P P 05 20 13.3 -0.6
baz=316
PV09 Paradox Valley 81.22 48 eP P 05 20 15.7 +1.1
PV10 Paradox Valley 81.36 48 eP P 05 20 16.6 +1.4
G28A Parade 81.44 39 P P 05 20 15.2 0.0
baz=314
E30A Jud 81.44 37 P P 05 20 15.1 -0.1
baz=315
F29A Eureka 81.46 38 P P 05 20 14.9 -0.4
baz=315
J26A Sims Ranch, S 81.51 42 P P 05 20 15.8 +0.1
baz=313
PV05 Paradox Valley 81.51 49 eP P 05 20 17.0 +1.0
I27A Quinn 81.54 41 P P 05 20 15.7 -0.2
baz=313,SNR=5.5
N23A Red Feather La 81.54 45 P P 05 20 16.9 +0.8
baz=312
N23A Red Feather La 81.54 45 eP P 05 20 17.4 +1.2
comp=Z,8.2nm,0.9s
PHWY Pilot Hill 81.55 44 eP P 05 20 16.3 +0.1
comp=Z,5.6nm,0.9s
CLL Collm 81.56 330 eP P 05 20 15.0 -0.7
CLL i 05 20 28.0
comp=Z,9.0nm,1.0s
CLL LmV 06 03 00.0
comp=Z,100nm,18.6s
CLL Collm 81.56 330 eP P 05 20 13.0 -2.7
CLL i 05 20 28.0
AGMN Agassiz Nation 81.59 34 P P 05 20 15.4 -0.5
baz=317
H28A Mission Ridge 81.66 40 P P 05 20 16.7 +0.3
baz=314,SNR=9.9
Y14A Wickenburg 81.66 54 eP P 05 20 16.9 +0.2
comp=Z,15nm,0.9s
WUAZ Wupatki 81.72 52 P P 05 20 18.1 +1.0
baz=309
WUAZ Wupatki 81.72 52 eP P 05 20 18.3 +1.2
PV01 Paradox Valley 81.80 48 eP P 05 20 18.5 +0.9
E31A Nome 81.89 37 P P 05 20 17.5 -0.1
baz=316
PRU Pruhonice 81.93 328 eP P 05 20 18.2 +0.5
PRU Pruhonice 81.93 328 eP P 05 20 18.2 +0.5
B34A Aery, Baudette 82.00 34 P P 05 20 17.7 -0.4
baz=318
C33A Trail 82.02 35 P P 05 20 17.8 -0.4
baz=317
I28A Midland 82.05 40 P P 05 20 18.6 +0.1
baz=314
SMCO Snowmass 82.07 47 eP P 05 20 20.1 +0.9
comp=Z,22nm,1.8s
H29A Onida 82.11 39 P P 05 20 18.9 +0.1
baz=314
J27A Elkhorn Farm, 82.12 41 P P 05 20 18.8 -0.2
baz=314
G30A Faulkton 82.29 38 P P 05 20 19.6 -0.1
baz=315
X16A Lo Mia Camp, P 82.37 53 eP P 05 20 21.5 +1.0
comp=Z,4.1nm,1.0s
J28A Allard Ranch, 82.41 41 P P 05 20 20.5 +0.1
baz=314
MVCO Mesa Verde 82.44 49 P P 05 20 21.4 +0.5
baz=310
MVCO Mesa Verde 82.44 49 eP P 05 20 21.5 +0.6
comp=Z,6.0nm,0.9s
ISCO Idaho Springs 82.45 46 P P 05 20 21.9 +0.8
baz=312
ISCO Idaho Springs 82.45 46 eP P 05 20 22.1 +1.1
ISCO pmax pmax
comp=Z,4.0nm,0.9s
ISCO Idaho Springs 82.45 46 eP P 05 20 22.1 +1.1
comp=Z,3.7nm,0.9s
I29A Vivian Onida 82.48 40 P P 05 20 20.5 -0.3
baz=314
B35A Bob, Littlefor 82.50 33 P P 05 20 20.2 -0.5
baz=318
D34A Park Rapids 82.78 35 P P 05 20 21.9 -0.3
baz=318
K28A Ten Mile Ranch 82.83 41 P P 05 20 22.9 +0.2
baz=314
J29A Okreek 82.90 40 P P 05 20 22.8 -0.1
baz=315
KHC Kasperske Hory 82.99 328 eP P 05 20 23.4 +0.1
KHC epP pP 05 20 35.5 +0.4
KHC Kasperske Hory 82.99 328 eP P 05 20 23.4 +0.1
KHC e 05 20 35.5
KHC Kasperske Hory 82.99 328 eP P 05 20 23.1 -0.2
comp=Z,2.5nm,1.1s
I30A Oacoma 83.01 39 P P 05 20 23.6 +0.1
baz=315
214A Organ Pipe Nat 83.02 55 P P 05 20 24.3 +0.6
baz=309
G32A Webster 83.02 37 P P 05 20 23.8 +0.3
baz=316
S22A 4UR Ranch, Cre 83.09 48 P P 05 20 25.4 +1.0
baz=311
S22A 4UR Ranch, Cre 83.09 48 eP P 05 20 25.9 +1.5
comp=Z,6.6nm,1.2s
GERES GERESS Array B 83.16 328 P P 05 20 23.6 -0.6
comp=Z,0.4nm,0.4s,baz=23,slow=7.2,SNR=6.3
F33A 5 Mile Ranch, 83.18 36 P P 05 20 24.9 +0.6
baz=317
X18A Snowflake 83.25 52 eP P 05 20 26.3 +1.2
comp=Z,5.8nm,1.2s
Q24A Divide 83.28 46 P P 05 20 25.6 +0.3
baz=312
C36A Pine Crest Far 83.35 33 P P 05 20 24.8 -0.3
baz=319
K29A Lazy Trails An 83.36 41 P P 05 20 25.0 -0.3
baz=315
J30A Dallas 83.39 40 P P 05 20 25.3 -0.1
baz=315
G33A Ortonville 83.58 37 P P 05 20 26.2 -0.1
baz=317
H32A Carlson Farm, 83.59 38 P P 05 20 26.5 +0.1
baz=316
C37A Embarrass 83.66 33 P P 05 20 26.4 -0.3
baz=320
K30A Basset 83.79 40 P P 05 20 28.4 +0.8
baz=315
EYMN Ely 83.80 33 P P 05 20 26.7 -0.7
baz=320
H33A Prehn Over Nor 83.80 37 P P 05 20 26.6 -1.0
baz=317,SNR=5.3
SDCO Great Sand Dun 83.89 47 P P 05 20 29.0 +0.6
baz=312
SDCO Great Sand Dun 83.89 47 eP P 05 20 29.5 +1.1
comp=Z,5.2nm,1.1s
C38A Sawbill Land. 84.07 33 P P 05 20 28.5 -0.3
baz=320
E36A McGregor 84.10 34 P P 05 20 28.9 -0.1
baz=319
PMOR Pomariorio Ree 84.11 113 eT T 06 52 55.6
comp=Z,5.3nm,0.2s
TUC Tucson 84.13 54 P P 05 20 29.8 +0.3
baz=310
TUC Tucson 84.13 54 eP P 05 20 30.4 +0.9
TUC pmax pmax
comp=Z,4.0nm,1.0s
TUC Tucson 84.13 54 eP P 05 20 30.4 +0.9
comp=Z,3.9nm,1.0s
N28A Pribbeno Ranch 84.14 43 P P 05 20 29.5 +0.1
baz=314
K31A O'Neill 84.27 40 P P 05 20 30.3 +0.3
baz=316
O28A Krutsinger Ran 84.40 43 P P 05 20 30.8 +0.1
baz=314
C39A Grand Marais 84.48 32 P P 05 20 30.1 -0.8
baz=321
G35A Watkins 84.50 36 P P 05 20 31.6 +0.6
baz=318
PPT2 Papeete2 84.54 116 eLR LR 05 46 49.9
comp=Z,119nm,22.5s
L31A Butterfield Fa 84.54 40 P P 05 20 31.6 +0.2
baz=316
ECSD EROS Data Cent 84.56 38 P P 05 20 31.5 +0.1
baz=317
ECSD EROS Data Cent 84.56 38 eP P 05 20 31.0 -0.3
comp=Z,11nm,1.3s
H35A Sunnyside Ranc 84.72 36 P P 05 20 31.4 -0.7
baz=318,SNR=5.1
P28A Saint Francis 84.80 44 P P 05 20 33.1 +0.3
baz=314
T25A Trinidad 84.93 47 P P 05 20 33.6 -0.1
baz=313
T25A Trinidad 84.93 47 eP P 05 20 34.5 +0.9
comp=Z,8.3nm,0.8s
M31A Lambtecht Ranc 85.06 41 P P 05 20 33.6 -0.4
baz=316
L32A Elgin 85.10 40 P P 05 20 33.9 -0.3
baz=316
ANMO Albuquerque 85.17 50 P P 05 20 35.5 +0.7
comp=Z,3.9nm,0.9s,baz=221,slow=5.0,SNR=15
ANMO Albuquerque 85.17 50 P P 05 20 35.7 +0.9
baz=312
ANMO Albuquerque 85.17 50 eP P 05 20 35.9 +1.1
ANMO pmax pmax
comp=Z,7.0nm,1.2s
ANMO Albuquerque 85.17 50 eP P 05 20 36.0 +1.1
comp=Z,7.4nm,1.1s
H36A Jessenland, He 85.24 36 P P 05 20 35.0 +0.2
baz=319
SPMN Marine on St. 85.28 35 P P 05 20 35.0 +0.1
baz=319
O30A MW Ranch, Wils 85.31 42 P P 05 20 35.2 0.0
baz=315
L33A Hoskins 85.36 39 P P 05 20 35.5 +0.1
baz=317
BGNE Belgrade 85.45 40 P P 05 20 35.5 -0.4
baz=316
K34A Le Mars 85.58 38 P P 05 20 36.2 -0.3
baz=317
P30A Selden 85.65 43 P P 05 20 36.9 -0.1
baz=315
H37A Dierke Farm, C 85.71 35 P P 05 20 37.6 +0.4
baz=319
O31A Woolen Ranch, 85.72 42 P P 05 20 37.0 -0.3
baz=315
M33A Taylor Creek F 85.83 40 P P 05 20 37.5 -0.3
baz=317
I37A Lemond, Waseca 85.91 36 P P 05 20 38.4 +0.3
baz=319
121A Cookes Peak, D 85.92 52 P P 05 20 39.7 +1.0
baz=311
P31A Stockton 86.14 42 P P 05 20 39.4 0.0
baz=315
TAOE Nuku Hiva Isla 86.22 104 eLR LR 05 47 58.5
comp=Z,146nm,24.2s
I38A Scanlan Farm, 86.40 36 P P 05 20 40.6 0.0
baz=320
CBKS Cedar Bluff 86.45 43 P P 05 20 40.9 0.0
baz=315
P32A Huiting Farm, 86.49 42 P P 05 20 40.6 -0.5
baz=316
M35A Neola 86.68 39 P P 05 20 42.3 +0.3
baz=318
O33A Hebron 86.71 41 P P 05 20 41.6 -0.5
baz=316
N34A Lincoln 86.72 40 P P 05 20 41.7 -0.5
baz=317
K37A Belmond 86.73 37 P P 05 20 42.0 -0.2
baz=319
P33A Williams Farm, 87.11 42 P P 05 20 43.8 -0.3
baz=316
M36A Felix, Anita 87.14 39 P P 05 20 44.4 +0.2
baz=318
N35A Tabor 87.15 39 P P 05 20 44.5 +0.2
baz=318
L37A Phoenix Point, 87.16 38 P P 05 20 44.2 -0.1
baz=319
Q33A Connelly Farm, 87.35 42 P P 05 20 45.5 +0.2
baz=316
O35A Humboldt 87.45 40 P P 05 20 45.7 0.0
baz=318
P34A Walnut Farm, R 87.49 41 P P 05 20 45.4 -0.5
baz=317
M37A Trindle Farm, 87.55 38 P P 05 20 46.5 +0.3
baz=319
Q34A Chapman 87.89 42 P P 05 20 47.9 +0.1
baz=317
KSU1 Kansas State U 87.94 41 P P 05 20 47.7 -0.4
baz=317
KSU1 Kansas State U 87.94 41 eP P 05 20 47.6 -0.4
N37A Lee Faris, Mou 87.95 39 P P 05 20 48.2 +0.1
baz=319
M38A Pleasantville 87.97 38 P P 05 20 48.5 +0.3
baz=319
MNTX Cornudas Mount 88.00 51 P P 05 20 48.4 -0.2
baz=312
O36A Bolckow 88.04 40 P P 05 20 48.6 +0.1
baz=318
T32A Huddler Ranch, 88.06 44 P P 05 20 48.9 +0.2
baz=316
AMTX Amarillo 88.09 47 P P 05 20 49.0 +0.1
baz=314
AMTX Amarillo 88.09 47 eP P 05 20 49.9 +0.9
comp=Z,9.0nm,0.9s
P36A Good Intent, A 88.29 40 P P 05 20 49.8 +0.1
baz=318
TBI Tubuai 88.37 121 eLR LR 05 48 55.7
comp=Z,153nm,25.0s

Q35A	Mercer Eighty, baz=318	88.42	41	P		P	05 20 50.4	+0.1
O37A	Wolven Farm, M baz=319	88.43	39	P		P	05 20 50.4	+0.1
T33A	Patterson Ranc baz=316	88.51	44	P		P	05 20 51.0	+0.2
N39A	Derby Farms, D baz=320	88.72	38	P		P	05 20 51.8	+0.1
R35A	Emporia Munici baz=317	88.72	41	P		P	05 20 52.0	+0.2
P37A	Lathrop baz=318	88.76	40	P		P	05 20 51.8	-0.2
V32A	Arapaho baz=316	89.03	45	P		P	05 20 53.7	+0.3
U33A	Lingo Farm, Me baz=316	89.05	44	P		P	05 20 53.7	+0.4
S35A	Otter Creek Ra baz=317	89.13	42	P		P	05 20 53.5	-0.2
T34A	McClaskey Farm baz=317	89.13	43	P		P	05 20 53.7	0.0
P38A	Dawn baz=319	89.15	39	P		P	05 20 53.7	-0.1
W32A	Sentinel baz=316	89.34	45	P		P	05 20 55.3	+0.5
V33A	Lossen Ranch, baz=316	89.39	44	P		P	05 20 54.6	-0.4
S36A	Lake Cedric, C baz=318	89.49	42	P		P	05 20 55.6	+0.2
T35A	Sooner Cattle baz=317	89.58	43	P		P	05 20 55.6	-0.3
P39A	Salisbury baz=320	89.64	39	P		P	05 20 55.5	-0.6
V34A	Guthrie baz=317	89.81	44	P		P	05 20 57.2	+0.2
X32A	Elmer baz=316	89.81	46	P		P	05 20 56.9	-0.1
T36A	Boggs Farm, Ca baz=318	89.82	42	P		P	05 20 57.0	+0.1
U35A	Pawnee baz=317	89.86	43	P		P	05 20 57.0	-0.2
Q39A	Willow Grove F baz=319	89.87	39	P		P	05 20 57.2	+0.1
S37A	Fort Scott baz=318	89.87	41	P		P	05 20 56.6	-0.5
P40A	Paris baz=320	89.97	38	P		P	05 20 56.9	-0.7
R38A	Fenwick Farm, baz=319	90.03	40	P		P	05 20 56.9	-1.1
W34A	Bridge Creek, baz=316	90.10	45	P		P	05 20 58.4	+0.1
X33A	Lawton baz=316	90.18	45	P		P	05 20 58.5	-0.3
V35A	Meyer Ranch, C baz=317	90.24	44	P		P	05 20 58.6	-0.4
T37A	Cheneyville 18 baz=318	90.29	42	P		P	05 20 58.7	-0.4
Q40A	Laux Farm, Aux baz=320	90.36	39	P		P	05 20 58.9	-0.6
R39A	Chumby, Stover baz=319	90.39	40	P		P	05 20 58.6	-0.9
U36A	Oologah baz=318	90.39	43	P		P	05 20 59.3	-0.3
S38A	Stockton baz=319	90.45	41	P		P	05 20 59.2	-0.7
Y33A	Hilltop Ranch, baz=316	90.49	46	P		P	05 21 00.0	-0.1
W35A	Tecumseh baz=317	90.67	44	P		P	05 21 00.4	-0.5
TX31	Lajitas Ar. Si	90.68	52	*eP*		P	05 21 01.4	+0.1
TXAR	Lajitas Array comp=Z,3.0nm,0.9s,baz=294,slow=4.3,SNR=27	90.68	52	P		P	05 21 01.8	+0.5
T38A	Diamond baz=318	90.69	41	P		P	05 21 00.7	-0.3
S39A	Bolivar baz=319	90.71	40	P		P	05 21 00.6	-0.5
TUL1	Leonard baz=318	90.71	43	P		P	05 21 01.1	0.0
U37A	Salina baz=318	90.72	42	P		P	05 21 01.2	+0.1
V36A	Jenks baz=318	90.72	43	P		P	05 21 01.0	-0.2
ABTX	Abilene, Hawle baz=315	90.88	47	P		P	05 21 02.1	+0.1
ABTX	Abilene, Hawle comp=Z,14nm,1.3s	90.88	47	*eP*		P	05 21 01.9	-0.1
Z33A	Whitaker Ranch baz=316	90.93	46	P		P	05 21 02.6	+0.4
U38A	Gravette baz=318	91.08	42	P		P	05 21 02.8	-0.1
V37A	Hulbert baz=318	91.09	43	P		P	05 21 03.0	+0.1
X35A	Drake baz=317	91.16	45	P		P	05 21 03.6	+0.3
T39A	Clever baz=319	91.18	41	P		P	05 21 02.7	-0.6
S40A	Lebanon baz=320	91.20	40	P		P	05 21 03.2	-0.2
X36A	Centrahoma baz=317	91.38	44	P		P	05 21 04.7	+0.5
W37B	Quinton baz=318	91.48	43	P		P	05 21 04.7	-0.1
V38A	Canehill baz=318	91.50	42	P		P	05 21 04.9	0.0
U39A	Green Forest baz=319	91.61	41	P		P	05 21 05.1	-0.2
233A	Rising Star baz=316	91.75	47	P		P	05 21 06.5	+0.5
Z35A	Perchaven, San baz=317	91.77	46	P		P	05 21 06.3	+0.2
134A	White-Moore Ra baz=316	91.84	47	P		P	05 21 06.7	+0.2
Y36A	Durant baz=317	91.91	45	P		P	05 21 06.8	+0.1
X37A	Clayton baz=318	91.92	44	P		P	05 21 06.5	-0.3
V39A	Pettigrew baz=319	91.93	42	P		P	05 21 06.7	-0.2
U40A	Yellville baz=319	91.96	41	P		P	05 21 07.0	0.0
W38A	Poteau baz=318	92.03	43	P		P	05 21 07.5	+0.2
X38A	Whitesboro baz=318	92.16	43	P		P	05 21 08.4	+0.6
333A	Richland Sprin baz=316	92.19	48	P		P	05 21 08.8	+0.7
Z36A	Blue Ridge baz=317	92.29	45	P		P	05 21 08.6	+0.1
V40A	Witts Springs baz=319	92.39	41	P		P	05 21 08.1	-0.9
X39A	Fountain Ranch baz=319	92.67	43	P		P	05 21 10.5	+0.3
W40A	Ferguson Farm, baz=319	92.73	42	P		P	05 21 10.9	+0.4
MIAR	Mount Ida baz=319	92.94	42	P		P	05 21 11.6	+0.2
MIAR	Mount Ida	92.94	42	*eP*		P	05 21 11.5	0.0
MIAR	Mount Ida	92.94	42	*eP*		P	05 21 11.5	0.0
434A	Burnet baz=316	92.99	48	P		P	05 21 12.0	+0.2
Y39A	Lockesburg baz=319	93.11	43	P		P	05 21 12.6	+0.3
534A	Blanco baz=316	93.43	49	P		P	05 21 13.8	0.0
933A	Laredo baz=316	94.65	51	P		P	05 21 20.0	+0.5
034A	Hebbronville baz=316	95.41	51	P		P	05 21 23.8	+0.9
LPAZ	La Paz comp=Z,4.8nm,0.8s,baz=337,slow=5.6,SNR=12	147.20	60	PKPbc		PKPdf	05 27 40.6	+0.3
LPAZ	La Paz	147.20	60	*e*PKIKP		PKPdf	05 27 39.8	-0.5
LPAZ	La Paz	147.20	60	*e*PKPdf		PKPdf	05 27 39.8	-0.5
PB01	IPOC Station P	149.25	69	*e*PKPbc		PKPbc	05 27 47.7	+0.5
SIV	San Ignacio comp=Z,3.4nm,0.7s,baz=247,slow=2.9,SNR=4.2	151.66	50	PKPbc		PKPbc	05 27 51.3	-1.7
LCO	Las Campanas	152.29	84	*e*PKPbc		PKPbc	05 27 54.9	+0.5

*ISCJB **02** 05:24:12.2±0.9, 8.9S±0.2×74.4W±0.2, h145km, mb3.1/3, Error ellipse: s-maj=42.5km s-min=12.4km az=37.3*
*IDC **02** 05:24:13.3±3.2, 9.09S×74.51W, h148km±64km, mb3.0/3, mb1 3.3/6, mb1mx3.1/44, mbtmp3.5/6, Error ellipse: s-maj=173.1km s-min=19.2km az=36.0*
ISC 02 05:24:12.9±1.0, 9.1S±0.3×74.5W±0.2, h145km, n6, σ0s80/6, mb3.2/3, Central Peru

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ATAH	Atahualpa 5.1nm,0.3s,baz=81,slow=2.5,SNR=31	4.35	296	P	Pn	05 25 17.6	-0.3
ATAH	1.5nm,0.3s,baz=107,slow=17,SNR=2.3			S	Sn	05 26 01.9	-6.6
LPAZ	La Paz 0.1nm,0.3s,baz=315,slow=8.6,SNR=2.2	9.46	140	P	Pn	05 26 26.9	+0.5
SIV	San Ignacio 0.3nm,0.3s,baz=310,slow=15,SNR=8.4	14.76	119	P	P	05 27 36.1	-0.8
TXAR	Lajitas Array 0.3nm,0.5s,baz=151,slow=8.5,SNR=5.0	47.43	325	P	P	05 32 33.8	+0.7
YKA	Yellowknife Ar 0.2nm,0.4s,baz=139,slow=5.7,SNR=4.8	77.77	342	P	P	05 35 53.1	-0.4
TORD	Torodi Ar. Bea 0.3nm,0.6s,baz=270,slow=4.5,SNR=2.8	78.75	75	P	P	05 36 00.4	+0.4

NEIC 02 05:24:30.3, 51.39N×172.78W, h30km, ML3.5(AEIC), After AEIC., Andreanof Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ATKA	Atka Island	1.20	313	P	Pn	05 24 48.6	-2.4
KOFP	Korovin Flat P	1.21	318	P	Pn	05 24 50.2	-1.0
KOWE	Korovin West	1.33	317	P	Pn	05 24 52.1	-0.8
GSMY	Great Sitkin M	2.14	289	P	Pn	05 25 04.2	+0.2
GSCK	Great Sitkin C	2.19	288	P	Pn	05 25 03.6	-1.1
GSTD	Great Sitkin T	2.20	289	P	Pn	05 25 04.0	-0.8
ADAG	Mount Adagdak	2.45	285	P	Pn	05 25 07.8	-0.5
SDPT	Sand Point	8.35	57	Pn	Pn	05 26 29.0	-0.2

*NEIC **02** 05:25:08.3, 51.39N×172.78W, h28km, mb4.2/54, ML4.0(AEIC), After AEIC.*
*MOS **02** 05:25:08.1±1.3, 51.72N×173.09W, h33km, mb4.7/20, Error ellipse: s-maj=10.2km s-min=6.4km az=83.9*
*ISCJB **02** 05:25:09.1±0.3, 51.74N±0.05×173.04W±0.04, h37km, mb4.4/73, MS4.1/3, Error ellipse: s-maj=7.5km s-min=3.0km az=169.1*
*IDC **02** 05:25:11.7±4.3, 51.66N×172.96W, h55km±38km, mb3.9/34, mb1 4.0/36, mb1mx3.9/74, mbtmp4.2/36, ML4.1/2, MS3.8/2, Ms1 3.7/2, ms1mx2.9/50, Error ellipse: s-maj=20.2km s-min=10.1km az=2.0*
ISC 02 05:25:10.1±0.5, 51.64N±0.08×172.97W±0.04, h37km, n195, σ1s19/187, mb4.3/74, MS4.0/3, 3C-2D, Andreanof Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KOFP	Korovin Flat P	0.94	313	P	Pn	05 25 28.0	+1.2
ATKA	Atka Island	0.94	307	P	Pn	05 25 26.3	-0.5
KOKL	Mount Kliuchef	1.02	312	P	Pn	05 25 29.2	+1.3
KOWE	Korovin West	1.07	313	P	Pn	05 25 30.4	+1.8
GSMY	Great Sitkin M	1.96	283	P	Pn	05 25 40.2	-0.5
GSTD	Great Sitkin T	2.01	283	P	Pn	05 25 41.5	0.0
GSCK	Great Sitkin C	2.01	282	P	Pn	05 25 41.8	+0.3
GSCK				S	Sn	05 26 08.1	+2.7
ADAG	Mount Adagdak	2.28	280	P	Pn	05 25 46.4	+1.3
KIRH	Kanaga Island	2.57	277	P	Pn	05 25 49.4	+0.3
KIKV	Kanaga Island	2.62	277	P	Pn	05 25 50.1	+0.3
NIKH	Nikolski High	2.86	61	*e*Pn	Pn	05 25 54.7	+1.7
NIKH				S	Sn	05 26 23.9	-2.3
TAFP	Tanaga Falls P	3.12	277	P	Pn	05 25 57.1	+0.4
TASE	Tanaga Southea	3.15	276	P	Pn	05 25 57.6	+0.5
OKTU	Okmok Mt. Tuli	3.48	58	P	Pn	05 26 02.4	+0.8
UNV	Unalaska Valle	4.51	58	*e*Pn	Pn	05 26 20.3	+4.6
AKUT	Akutan	5.03	57	*e*Pn	Pn	05 26 27.8	+5.0
FALS	False Pass	6.58	57	*e*Pn	Pn	05 26 46.8	+2.7
GAMB	Gambell	12.19	3	*e*Pn	Pn	05 28 02.9	+2.0
KDAK	Kodiak Island 0.2nm,0.3s,baz=108,slow=20,SNR=3.7	13.27	54	P	P	05 28 27.5	+2.7
KDAK	Kodiak Island	13.27	54	*e*P	Pn	05 28 18.5	+3.0
KDAK	Kodiak Island	13.27	54	*e*Pn	Pn	05 28 18.5	+2.9
SVW2	Sparrevohn	13.47	39	*e*Pn	P	05 28 22.5	-4.6
RSO	Redoubt South	14.28	44	*e*P	P	05 28 36.1	-0.2
TT01	Tatalina	14.48	32	*e*Pn	P	05 28 39.3	+1.1
BRLK	Bradley Lake	14.81	48	*e*Pn	P	05 28 40.4	-1.6
SEW	Seward 20nm,1.2s	15.61	48	*e*Pn	P	05 28 48.7	-2.1
PPLA	Purkeypile 30nm,1.3s	15.83	37	*e*Pn	P	05 28 53.4	0.0
RC01	Rabbit Creek A 16nm,1.3s	15.89	44	*e*Pn	Pn	05 28 51.6	+1.0
CAST	Castle Rocks 8.8nm,1.0s	16.18	35	*e*Pn	P	05 28 56.5	-0.6
PMR	Palmer	16.37	43	*e*P	P	05 28 58.7	-0.5
PMR	comp=Z,28nm,1.8s			pmax	pmax		
PMR	Palmer comp=Z,28nm,1.8s	16.37	43	*e*Pn	P	05 28 58.7	-0.5
KTH	Kantishna Hill comp=Z,16nm,1.1s	16.68	36	*e*Pn	P	05 29 02.8	+0.1
SML	Sawmill	16.81	43	*e*P	Pn	05 29 02.1	-0.2
SML	comp=Z,36nm,1.8s			pmax	pmax		
SML	Sawmill comp=Z,36nm,1.8s	16.81	43	*e*Pn	Pn	05 29 02.1	-0.2
TRF	Thorofare Moun comp=Z,11nm,1.1s	16.85	37	*e*Pn	P	05 29 04.9	+0.2
BPAW	Bear Paw Mtn. comp=Z,9.1nm,0.8s	16.98	34	*e*Pn	P	05 29 06.1	+0.1
SCM	Sheep Creek Mo comp=Z,12nm,0.8s	17.25	44	*e*P	Pn	05 29 07.3	-0.6
SCM				pmax	pmax		
SCM	Sheep Creek Mo comp=Z,12nm,0.8s	17.25	44	*e*Pn	Pn	05 29 07.3	-0.6
RND	Reindeer	17.37	38	*e*P	Pn	05 29 09.2	-0.1
RND	comp=Z,14nm,1.3s			pmax	pmax		
RND	Reindeer comp=Z,14nm,1.3s	17.37	38	*e*Pn	Pn	05 29 09.2	-0.1
MCK	McKinley	17.52	37	*e*P	Pn	05 29 10.8	-0.3
MCK	comp=Z,8.0nm,1.0s			pmax	pmax		
MCK	McKinley comp=Z,8.5nm,1.0s	17.52	37	*e*Pn	Pn	05 29 10.8	-0.3
MLY	Manley comp=Z,7.7nm,0.9s	17.64	32	*e*Pn	P	05 29 14.3	+1.0
KLU	Klutina comp=Z,9.2nm,1.1s	17.74	46	*e*Pn	P	05 29 13.9	-0.5
DHY	Denali Highway comp=Z,29nm,1.8s	17.79	40	*e*Pn	P	05 29 15.0	0.0
PEA0B	Petropavlovsk- comp=Z,89nm,1.9s	17.91	286	*e*Pn	P	05 29 16.7	+0.4
PETK	Petropavlovsk- comp=Z,0.7nm,0.3s,baz=100,slow=15,SNR=7.0	17.91	286	P	P	05 29 16.8	+0.4
RAGM	Ragged Mountai comp=Z,15nm,1.0s	17.95	50	*e*Pn	Pn	05 29 15.7	-0.8
BMRM	Bremner River comp=Z,11nm,1.0s	18.16	48	*e*Pn	P	05 29 19.2	+0.1
WRH	Wood River Hil comp=Z,5.5nm,0.9s	18.23	36	*e*P	P	05 29 17.9	-1.8
CCB	Clear Creek Bu comp=Z,7.1nm,1.0s	18.43	35	*e*P	P	05 29 19.6	-2.3
MDM	Murphy Dome comp=Z,11nm,1.3s	18.45	34	*e*P	Pn	05 29 22.3	-0.2
PAX	Paxson	18.52	42	*e*P	Pn	05 29 24.6	+1.2
PAX	comp=Z,7.0nm,1.1s			pmax	pmax		
PAX	Paxson comp=Z,6.6nm,1.1s	18.52	42	*e*P	Pn	05 29 24.6	+1.2
COLA	College	18.54	35	*e*P	Pn	05 29 24.6	+1.1
COLA	comp=Z,7.0nm,0.8s			pmax	pmax		
COLA	College comp=Z,6.9nm,0.8s	18.54	35	*e*Pn	Pn	05 29 24.6	+1.1
HDA	Harding Lake comp=Z,20nm,1.1s	18.61	37	*e*Pn	Pn	05 29 25.1	+0.6
IL1	Eielson Array	18.83	36	*e*P	P	05 29 25.3	-1.0
ILAR	Eielson Array comp=Z,0.8nm,0.3s,baz=237,slow=9.1,SNR=33	18.83	36	P	P	05 29 24.6	-1.7
ILB	Eielson Array	18.83	36	*e*P	P	05 29 24.6	-1.7
MENT	Mentasta comp=Z,4.1nm,0.6s	19.24	43	*e*P	Pn	05 29 32.6	+0.6
COLD	Coldfoot comp=Z,16nm,1.0s	19.25	27	*e*P	Pn	05 29 32.1	0.0
BILL	Bilibino	19.29	336	*i*P	Pn	05 29 32.1	-0.5
BILL	comp=Z,10.0nm,0.9s			pmax	pmax		
BILL	Bilibino comp=Z,36nm,1.2s	19.29	336	*e*P	P	05 29 30.1	-1.2
DOT	Dot Lake comp=Z,24nm,0.9s	19.38	41	*e*P	P	05 29 31.5	-0.8
FYU	Fort Yukon comp=Z,33nm,1.1s	20.38	32	*e*P	P	05 29 42.7	-0.5
EGAK	Eagle comp=Z,18nm,0.6s	21.00	39	*e*P	P	05 29 48.8	-1.2
DAWY	Dawson comp=Z,6.5nm,0.9s	21.45	42	*e*P	P	05 29 54.2	-0.7
SEY	Seymchan comp=Z,4.9nm,0.9s,baz=113,slow=9.8,SNR=23	21.57	315	P	P	05 29 57.0	+1.0
SEY	Seymchan	21.57	315	*i*P	P	05 29 57.5	+1.5
MA2	Magadan comp=Z,5.3nm,0.7s,baz=94,slow=11,SNR=7.0	21.73	306	P	P	05 29 59.1	+1.4
MA2	Magadan	21.73	306	*e*P	P	05 29 58.3	+0.6
MA2	Magadan	21.73	306	*e*P	P	05 29 58.3	+0.6
SKAG	Skagway comp=Z,17nm,0.9s	22.42	55	*e*P	P	05 30 05.1	0.0
DLBC	Dease Lake comp=Z,5.1nm,0.8s,baz=269,slow=11,SNR=13	25.16	57	P	P	05 30 32.5	+1.0
DLBC	Dease Lake comp=Z,7.2nm,0.8s	25.16	57	*e*P	P	05 30 34.0	+2.4
INK	Inuvik comp=Z,7.7nm,0.5s,baz=237,slow=10,SNR=43	25.19	34	P	P	05 30 31.0	-0.6
INK	Inuvik	25.19	34	P	P	05 30 31.0	-0.6
YSS	Yuzh-Sakhalins comp=Z,20nm,1.0s	28.91	278	*e*P	P	05 31 05.9	+0.7
YSS				pmax	pmax		
ERM	Erimo comp=Z,53nm,0.6s	31.10	269	*ce*P	P	05 31 25.6	+1.0
ERM				pmax	pmax		
TIXI	Tiksi	32.23	330	*i*P	P	05 31 35.0	+0.8
YKA	Yellowknife Ar comp=Z,0.5nm,0.5s,baz=271,slow=8.3,SNR=12	32.39	48	P	P	05 31 35.1	-0.6
YKA				PcP	PcP	05 34 22.8	+0.5
KLR	Kul'dur comp=Z,0.5nm,0.7s,baz=289,slow=2.9,SNR=5.6	34.58	288	P	P	05 31 53.8	-1.2
NEW	Newport comp=Z,2.3nm,0.5s,baz=76,slow=8.5,SNR=12	35.35	73	P	P	05 32 01.2	-0.4
MOD	Modoc Plateau comp=Z,20nm,1.6s	36.63	84	*e*P	P	05 32 16.2	+3.3
USRK	Ussuriysk Ar. comp=Z,2.4nm,0.7s,baz=59,slow=9.9,SNR=4.7	36.85	281	P	P	05 32 17.8	+3.4
WALA	Waterton Lakes comp=Z,7.4nm,1.3s	36.89	70	*e*P	P	05 32 17.6	+2.7
DLMT	Dillon comp=Z,44nm,0.6s	39.48	75	*e*P	P	05 32 39.0	+2.2
MCMT	McKenzie Canyo	39.61	75	*e*P	P	05 32 38.8	+0.8
EGMT	Eagleton comp=Z,8.5nm,0.8s	39.81	69	*e*P	P	05 32 39.6	+0.1
NV01	Mina Array Sit	39.90	87	*e*P	P	05 32 42.3	+1.9
NVAR	Mina Array Bea comp=Z,0.6nm,0.6s,baz=289,slow=8.5,SNR=2.1	39.90	87	P	P	05 32 40.9	+0.4
NVAR				LR	LR	05 46 11.0	
LKWY	Lake comp=Z,90nm,19.0s,baz=282,slow=32	41.23	74	*e*P	P	05 32 53.4	+2.0
LKWY	comp=Z,8.0nm,1.2s			pmax	pmax		
LKWY	Lake comp=Z,7.7nm,1.2s	41.23	74	*e*P	P	05 32 53.4	+2.0
R11A	Troy Canyon, C comp=Z,3.9nm,1.1s	41.64	85	*e*P	P	05 32 58.5	+3.7
TPNV	Topopah Spring comp=Z,5.0nm,0.9s	42.10	88	*e*P	P	05 33 01.5	+3.0
TPNV				pmax	pmax		
TPNV	Topopah Spring comp=Z,5.2nm,0.9s	42.10	88	*e*P	P	05 33 01.5	+3.0
BW06	Boulder Array comp=Z,3.7nm,1.0s	42.73	76	*e*P	P	05 33 03.8	+0.1
PD31	Pinedale Array	42.73	76	*e*P	P	05 33 04.2	+0.5
PDAR	Pinedale Array comp=Z,0.9nm,0.5s,baz=294,slow=4.6,SNR=13	42.73	76	P	P	05 33 03.8	+0.1
GSC	Goldstone, Bar	42.80	90	*e*P	P	05 33 04.8	+0.7
GSC	comp=Z,8.0nm,0.8s			pmax	pmax		
GSC	Goldstone, Bar comp=Z,8.2nm,0.8s	42.80	90	*e*P	P	05 33 04.8	+0.7
FCC	Fort Churchill	43.11	48	*e*P	P	05 33 06.5	+0.4
FCC	comp=Z,8.0nm,1.2s			pmax	pmax		
FCC	Fort Churchill comp=Z,7.8nm,1.2s	43.11	48	*e*P	P	05 33 06.5	+0.4
KSRS	Korea Array comp=Z,3.5nm,0.9s,baz=48,slow=8.2,SNR=5.2	43.26	275	P	P	05 33 11.8	+4.1
KSAR	Wonju Array Be	43.29	275	P	P	05 33 11.8	+3.9
KSAR	Wonju Array Be	43.29	275	P	P	05 33 11.8	+3.8
P18A	Preston Nutter comp=Z,4.7nm,0.8s	44.16	80	*e*P	P	05 33 17.4	+2.0
SRU	San Rafael Swe	44.31	81	*e*P	P	05 33 18.3	+2.0
SRU	comp=Z,4.0nm,0.8s			pmax	pmax		
SRU	San Rafael Swe comp=Z,4.4nm,0.8s	44.31	81	*e*P	P	05 33 18.3	+2.0
U15A	North Rim comp=Z,3.8nm,0.8s	44.89	85	*e*P	P	05 33 24.0	+2.9
PV04	Paradox Valley	45.74	81	*e*P	P	05 33 28.1	+0.3
WUAZ	Wupatki comp=Z,7.9nm,1.2s	46.04	85	*e*P	P	05 33 32.6	+2.5
PV01	Paradox Valley	46.11	81	*e*P	P	05 33 31.2	+0.5
ULM	Lac du Bonnet comp=Z,1.7nm,0.9s,baz=285,slow=6.8,SNR=3.3	46.45	60	P	P	05 33 32.2	-0.7
TLY	Talaya comp=Z,2.4nm,0.7s,baz=32,slow=11,SNR=4.5	48.95	305	P	P	05 33 52.7	+0.4
TLY				pmax	pmax		
TLY	Talaya comp=Z,4.0nm,0.8s	48.95	305	*e*P	P	05 33 52.5	+0.2
TLY	Talaya comp=Z,4.4nm,0.8s	48.95	305	*e*P	P	05 33 52.5	+0.2
ULN	Ulaanbaatar comp=Z,5.0nm,1.0s	49.36	299	*ce*P	P	05 33 54.0	-1.7
ULN				pmax	pmax		
ULN	Ulaanbaatar comp=Z,4.7nm,0.9s	49.36	299	*e*P	P	05 33 54.7	-1.0
SONA1	Songino Array	49.73	299	*e*P	P	05 33 58.2	-0.2
SONM	Songino Array comp=Z,1.4nm,0.5s,baz=49,slow=9.3,SNR=16	49.74	299	P	P	05 33 58.6	+0.1
ZAK	Zakamensk	49.89	304	*e*P	P	05 33 56.7	-2.9
ZAK	comp=Z,4.0nm,1.2s			pmax	pmax		
SPITS	Spitsbergen Ar comp=Z,4.8nm,1.0s,baz=0.6,slow=14,SNR=5.3	50.32	358	P	P	05 34 01.3	-1.1
FRB	Frobisher Bay comp=Z,1.5nm,0.7s,baz=318,slow=12,SNR=6.1	50.84	34	P	P	05 34 05.0	-1.4
HHC	Hu-ho-hao-te	51.08	289	*e*P	P	05 34 09.4	+0.7
HHC				sP	pP	05 34 20.6	+1.0
HHC				PP	PP	05 36 08.6	+3.4
HHC				S	S	05 41 19.3	-4.3
HHC				sS	sS	05 41 34.8	-6.9
HHC	comp=Z,14nm,1.0s			pmax	pmax		
HHC	comp=Z,67nm,6.3s			pmax	pmax		
HHC	comp=N,290nm,15.1s			LR	LR		
HHC	comp=E,460nm,16.0s			LR	LR		
HHC	comp=Z,530nm,17.1s			LR	LR		
TX31	Lajitas Ar. Si	55.01	86	*e*P	P	05 34 38.7	+1.0
TXAR	Lajitas Array comp=Z,0.7nm,0.7s,baz=300,slow=4.7,SNR=8.5	55.01	86	P	P	05 34 36.9	-0.8
ZALV	Zalesovo Beam comp=Z,0.6nm,0.6s,baz=67,slow=8.0,SNR=4.5	56.43	316	P	P	05 34 49.6	+2.1
XAN	Xi'an	57.15	285	P	P	05 34 52.6	-0.4
XAN				sP	pP	05 35 03.3	-0.7
XAN	comp=Z,9.0nm,1.2s			pmax	pmax		
XAN	comp=Z,58nm,5.1s			pmax	pmax		
SCHQ	Schefferville comp=Z,2.0nm,0.7s,baz=310,slow=7.9,SNR=3.8	57.47	41	P	P	05 34 54.8	-0.1
MIAR	Mount Ida	57.58	74	*e*P	P	05 34 58.2	+2.3
MIAR	comp=Z,9.0nm,1.1s			pmax	pmax		
MIAR	Mount Ida comp=Z,9.5nm,1.1s	57.58	74	*e*P	P	05 34 58.2	+2.3
ARCES	ARCESS Array B comp=Z,2.9nm,0.9s,baz=13,slow=7.0,SNR=6.1	58.38	352	P	P	05 34 60.0	-1.0
ARCES	ARCESS Array B	58.38	352	P	P	05 35 00.0	-1.0
LZH	Lanzhou	58.77	290	*e*P	P	05 35 05.1	+0.7
LZH				pP	pP	05 35 17.4	+1.9
LZH				sP	sP	05 35 22.3	+2.5
LZH	comp=Z,35nm,1.2s			pmax	pmax		
LZH	comp=Z,150nm,5.0s			pmax	pmax		
GTA	Gaotai	58.80	295	P	P	05 35 04.4	-0.1
GTA				pP	pP	05 35 10.4	-5.2
GTA				sP	sP	05 35 13.3	-6.7
GTA				pmax	pmax		

Code	Station Name	Δ°	AZ°	Op	ISC	Time	Res
	comp=Z,7.0nm,1.1s						
KURK	Kurchatov	61.41	317	P	P	05 35 22.2	+0.2
KURK				pmax	pmax		
	comp=Z,7.0nm,0.9s						
KURK	Kurchatov	61.41	317	eP	P	05 35 21.3	-0.7
	comp=Z,15nm,0.9s						
KURBB	Kurchatov Arra	61.51	317	P	P	05 35 22.2	-0.5
	comp=Z,6.1nm,0.9s,baz=40,slow=7.1,SNR=54						
WMQ	Urumqi	62.19	306	eP	P	05 35 29.3	+1.8
WMQ				pP	pP	05 35 37.0	-1.7
WMQ				pmax	pmax		
	comp=Z,4.0nm,0.6s						
CD2	Chengdu	62.45	286	P	P	05 35 27.5	-1.9
CD2				pmax	pmax		
	comp=Z,20nm,0.5s						
MK31	Makanchi Array	62.66	312	eP	P	05 35 29.6	-0.9
MK31	Makanchi Array	62.66	312	eP	P	05 35 29.6	-0.9
MKAR	Makanchi Array	62.66	312	P	P	05 35 29.7	-0.8
	comp=Z,1.4nm,0.5s,baz=52,slow=5.5,SNR=25						
MKAR	Makanchi Array	62.66	312	eP	P	05 35 29.6	-1.0
BVAR	Borovoye Array	62.97	323	P	P	05 35 32.0	-0.4
	comp=Z,3.4nm,0.5s,baz=52,slow=6.6						
VOSK	Vostochnaya	62.98	322	eP	P	05 35 32.1	-0.4
VOSK				pmax	pmax		
	comp=Z,5.0nm,1.0s						
VOSK	Vostochnaya	62.98	322	eP	P	05 35 32.1	-0.4
	comp=Z,4.6nm,1.0s						
BRVK	Borovoye	62.98	323	eP	P	05 35 32.4	-0.1
BRVK				pmax	pmax		
	comp=Z,11nm,1.2s						
BRVK	Borovoye	62.98	323	eP	P	05 35 32.4	-0.1
	comp=Z,11nm,1.2s						
ARU	Arti	64.22	331	P	P	05 35 40.1	-0.6
	comp=Z,1.9nm,0.5s,baz=79,slow=19,SNR=4.8						
ARU	Arti	64.22	331	P	P	05 35 39.8	-0.8
ARU						05 37 59.7	
ARU				S	S	05 44 11.5	-3.5
ARU				SS	SS	05 48 26.1	+2.4
FINES	FINESS Array B	66.24	350	P	P	05 35 52.5	-1.1
	comp=Z,1.8nm,0.8s,baz=356,slow=7.2,SNR=7.1						
NOA	NORSAR Array B	67.62	358	P	P	05 36 01.5	-1.0
	comp=Z,1.5nm,0.9s,baz=3.5,slow=6.3,SNR=3.4						
HFS	Hagfors	68.45	356	P	P	05 36 06.5	-1.2
	comp=Z,1.6nm,0.6s,baz=34,slow=3.7,SNR=7.6						
AAK	Ala-Archa	69.42	313	P	P	05 36 14.8	+0.6
	comp=Z,10nm,0.9s,baz=118,slow=3.2,SNR=24						
AAK	Ala-Archa	69.42	313	eP	P	05 36 14.6	+0.4
	comp=Z,8.8nm,0.8s						
AKTO	Aktyubinsk	69.49	328	P	P	05 36 14.1	-0.2
	comp=Z,6.6nm,0.7s,baz=49,slow=7.4,SNR=20						
EKS2	Erkin-Say	69.72	314	eP	P	05 36 16.4	+0.4
EKS2				pmax	pmax		
	comp=Z,8.0nm,0.7s						
EKS2	Erkin-Say	69.72	314	eP	P	05 36 16.4	+0.4
	comp=Z,8.4nm,0.7s						
ABKAR	Akbulak array	69.84	326	eP	P	05 36 16.5	0.0
LSA	Lhasa	70.73	294	eP	P	05 36 24.6	+1.8
LSA				pmax	pmax		
	comp=Z,18nm,0.7s						
LSA	Lhasa	70.73	294	eP	P	05 36 24.6	+1.8
	comp=Z,18nm,0.7s						
KKAR	Karatay Array	70.81	316	eP	P	05 36 22.5	0.0
KKAR	Karatay Array	70.81	316	eP	P	05 36 22.4	0.0
VRH	Novokhopyorsk	73.41	338	eP	P	05 36 34.9	-2.9
VRH				pmax	pmax		
	comp=Z,4.0nm,0.6s						
VSR	Storozhevoye	73.97	340	eP	P	05 36 40.5	-0.6
VSR				pmax	pmax		
	comp=Z,10.0nm,1.3s						
TAPN	Taplejung	74.47	294	eP	P	05 36 45.2	+0.3
	comp=Z,35nm,0.8s						
CMAR	Chiang Mai Arr	74.58	280	P	P	05 36 44.7	-0.5
	comp=Z,1.1nm,0.3s,baz=21,slow=7.7,SNR=6.9						
ODAN	Odare	75.03	294	eP	P	05 36 48.6	+0.6
	comp=Z,18nm,0.8s						
GUN	Gumba	75.08	296	eP	P	05 36 48.5	+0.1
	comp=Z,49nm,0.8s						
RAMN	Ramite	75.41	295	eP	P	05 36 50.4	+0.2
	comp=Z,63nm,1.0s						
AKASG	Malin Array Be	76.31	346	P	P	05 36 53.2	-1.4
	comp=Z,0.6nm,0.3s,baz=17,slow=6.2,SNR=7.0						
KIEV	Kiev	76.32	346	ceP	P	05 36 54.5	-0.2
KIEV				pmax	pmax		
	comp=Z,4.0nm,1.7s						
KOLN	Koldanda	76.45	298	eP	P	05 36 55.4	-0.7
	comp=Z,28nm,1.1s						
PYUN	Piuthan	76.53	298	eP	P	05 36 56.5	-0.1
	comp=Z,36nm,0.7s						
CLL	Collm	77.30	356	eP	P	05 37 01.0	+0.8
CLL	Collm	77.30	356	eP	P	05 36 58.0	-2.2
DPC	Dobruska-Polom	78.08	354	eP	P	05 37 04.8	+0.1
DPC				epP	pP	05 37 17.1	+1.0
DPC	Dobruska-Polom	78.08	354	eP	P	05 37 04.8	+0.1
DPC				e		05 37 17.1	
KHC	Kasperske Hory	79.45	356	eP	P	05 37 12.4	+0.2
KHC				epP	pP	05 37 24.7	+1.0
KHC	Kasperske Hory	79.45	356	eP	P	05 37 12.4	+0.2
KHC				e		05 37 24.7	
GERES	GERESS Array B	79.73	356	P	P	05 37 13.8	0.0
	comp=Z,0.6nm,0.6s,baz=6.5,slow=4.7,SNR=7.1						
BUR08	Bucovina Ar. S	79.87	348	eP	P	05 37 14.7	0.0
KIV	Kislovodsk	79.90	335	i P	P	05 37 14.2	-0.6
KIV				pmax	pmax		
	comp=Z,4.0nm,0.8s						
KBZ	Khabaz	80.06	334	P	P	05 37 14.6	-0.9
	comp=Z,2.9nm,0.9s,baz=25,slow=2.7,SNR=5.8						
KBZ				LR	LR	06 20 19.3	
	comp=Z,60nm,18.1s,baz=42,slow=41						
WRA	Warramunga Arr	84.83	229	P	P	05 37 38.9	-1.7
	comp=Z,0.6nm,0.8s,baz=38,slow=7.1,SNR=2.7						
BR131	Keskin Array S	86.09	340	eP	P	05 37 48.0	+1.1
BRTR	Keskin Array B	86.09	340	P	P	05 37 47.1	+0.2
	comp=Z,1.7nm,0.9s,baz=29,slow=2.8,SNR=6.9						
AS01	Alice Springs	88.22	227	eP	P	05 37 56.3	-0.8
ASAR	Alice Springs	88.24	227	P	P	05 37 56.5	-0.7
	comp=Z,1.2nm,0.8s,baz=32,slow=4.4,SNR=11						
ES19	SONSECA Array	88.54	8	eP	P	05 37 58.2	-0.4
ESDC	Sonseca Array	88.56	8	P	P	05 37 57.9	-0.8
	comp=Z,1.0nm,0.8s,baz=352,slow=3.9,SNR=5.1						
TSUM	Tsumeb	146.58	342	ePKPdf	PKPbc	05 44 46.5	-1.1

MAN 02 05:25:42, 15°.45N×119°.93E, h39km, mb4.3, ML3.2, MS3.0, 1C, Luzon

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SCZP	Santa Cruz	0.32	358	eP	Pn	05 25 52.8	+2.4
SCZP				eS	Sn	05 25 57.2	+0.4
BOLP	Bolinao	0.92	359	eP	Pn	05 25 59.8	+1.3
BOLP				eS	Sn	05 26 13.2	+2.6
BCPH	Baguio City Da	1.12	34⇑	iP	Pn	05 26 03.0	+1.7
BCPH				i S	Sn	05 26 10.6	-4.9
BALP	Baler	1.62	80	eP	Pn	05 26 09.5	+1.5

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*JMA **02** 05:29:52.2±0.3, 39°.59N×143°.80E, h18km, M4.2*
*ISCJB **02** 05:29:53.6±0.7, 39°.59N±0°.08×143°.65E±0°.08, h11km, mb3.9/14, Error ellipse: s-maj=13.4km s-min=5.6km az=143.2*
*IDC **02** 05:29:53.8±2.2, 39°.62N×143°.54E, h0km, mb3.9/13, mb1 4.0/14, mb1mx3.7/65, mbtmp3.9/14, ML3.7/1, Error ellipse: s-maj=51.1km s-min=20.0km az=156.0*
*NEIC **02** 05:29:56.6±4.6, 39°.73N×143°.40E, h14km±28km, mb4.3/4, Error ellipse: s-maj=18.3km s-min=9.8km az=126.0*
ISC 02 05:29:55.7±0.9**, 39°.63N**±0°.08×**143°.54E**±0°.09**, h11km, n32, σ0s92**/33**, mb4.0**/14**, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JTH	Tanohata	1.33	284	P	Pn	05 30 19.0	-1.2
MIYJ	Miyakonagasawa	1.33	268	P	Pn	05 30 19.2	-1.0
OFUJ	Ofunato	1.55	250	P	Pn	05 30 21.9	-1.3
JOM	Ohasama	1.75	266	P	Pn	05 30 25.5	-0.4
JOM				eS	Sn	05 30 48.5	+0.4
JMK	Ichinoseki	1.92	250	P	Pn	05 30 27.4	-0.9
JTM	Tenmabayashi	2.22	302	P	Pn	05 30 32.4	0.0
JRG	Rokugo	2.26	265	P	Pn	05 30 32.8	-0.2
JAH	Hinai	2.31	285	P	Pn	05 30 33.8	+0.2
ERM	Erimo	2.41	353	ePn	Pn	05 30 35.6	+0.7
JYK	Kaneyama	2.57	255	P	Pn	05 30 37.0	-0.2
JOU	Okura	2.57	242	P	Pn	05 30 36.4	-0.9
MJAR	Matsushiro Arr	5.21	235	Pn	Pn	05 31 13.7	+0.1
	2.8nm,0.3s,baz=41,slow=12,SNR=38						
MAJO	Matsushiro	5.21	235	ePn	Pn	05 31 13.9	+0.3
	40nm,0.6s						
MAT	Matsushiro	5.21	235	P	Pn	05 31 13.7	+0.1
MAT				eS	Sn	05 32 17.6	+3.9
KLR	Kul'dur	12.76	323	Pn	Pn	05 32 52.9	-4.1
	0.3nm,0.3s,baz=324,slow=19,SNR=3.9						
MA2	Magadan	20.49	11	P	P	05 34 33.9	+0.6
	3.5nm,0.5s,baz=217,slow=11,SNR=7.3						
MA2	Magadan	20.49	11	eP	P	05 34 33.7	+0.4
	14nm,0.6s						
SEY	Seymchan	23.94	10	P	P	05 35 09.7	+0.2
	2.2nm,0.6s,baz=193,slow=7.6,SNR=7.7						
SONM	Songino Array	27.85	299	P	P	05 35 45.6	+0.4
	0.6nm,0.5s,baz=97,slow=9.5,SNR=3.2						
ZALV	Zalesovo Beam	41.46	310	P	P	05 37 41.6	-0.6
	1.2nm,0.5s,baz=96,slow=9.0,SNR=4.4						
MKAR	Makanchi Array	44.21	300	P	P	05 38 04.3	-0.4
	1.1nm,0.7s,baz=88,slow=9.6,SNR=6.5						
KURK	Kurchatov	45.70	306	eP	P	05 38 15.7	-0.6
	10nm,1.0s						
KURBB	Kurchatov Arra	45.77	306	P	P	05 38 16.5	-0.5
	2.8nm,0.7s,baz=80,slow=8.7,SNR=14						
ILAR	Eielson Array	46.41	34	P	P	05 38 21.9	0.0
	0.4nm,0.8s,baz=268,slow=7.0,SNR=4.1						
BVAR	Borovoye Array	50.10	311	P	P	05 38 50.5	+0.1
	1.1nm,0.5s,baz=72,slow=9.5,SNR=6.1						
INK	Inuvik	51.32	28	P	P	05 38 59.8	+0.4
	0.4nm,0.5s,baz=270,slow=2.0,SNR=4.2						
INK	Inuvik	51.32	28	eP	P	05 38 59.6	+0.3
	3.2nm,1.3s						
YKA	Yellowknife Ar	60.73	31	P	P	05 40 06.5	-0.3
	0.2nm,0.6s,baz=299,slow=6.3,SNR=4.1						
FINES	FINESS Array B	67.30	332	P	P	05 40 49.3	-0.7
	1.5nm,0.8s,baz=35,slow=7.0,SNR=5.6						
HFS	Hagfors	72.41	336	P	P	05 41 21.1	-0.4
	1.9nm,0.9s,baz=42,slow=9.0,SNR=4.9						
FRB	Frobisher Bay	73.86	14	P	P	05 41 29.2	-0.8
	3.7nm,1.0s,baz=339,slow=5.4,SNR=4.8						
ECSD	EROS Data Cent	80.85	40	eP	P	05 42 09.7	+0.2
	2.9nm,1.1s						

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*NIED **02** 05:32:00, 39°.10N×142°.40E, h41km, Mw4.7 Best double couple: Mo1.16000×10^16 NP1:φs305.00000°, δ19.00000°, λ-152.00000°. NP2:φs188.00000°, δ81.00000°, λ-73.00000°.*
*JMA **02** 05:32:53.0±0.1, 39°.09N×142°.39E, h36km±1km, M4.7*
JMA Felt III J1.
*ISCJB **02** 05:32:54.6±0.5, 39°.12N±0°.03×142°.26E±0°.05, h51km±3km, mb4.5/71, MS4.1/13, Error ellipse: s-maj=6.9km s-min=4.6km az=34.6*
*IDC **02** 05:32:56.3±2.6, 39°.06N×142°.29E, h56km±22km, mb4.0/35, mb1 4.1/38, mb1mx4.0/68, mbtmp4.3/38, ML3.3/3, MS4.0/9, Ms1 4.0/9, ms1mx3.6/36, Error ellipse: s-maj=14.6km s-min=12.3km az=130.0*
*BJI **02** 05:32:56.8, 39°.09N×141°.84E, h54km, mb4.8/44, mB4.9/26, Ms4.4/27, Ms7 4.2/26*
*NEIC **02** 05:32:57.2±0.5, 39°.12N×142°.25E, h61km±5km, mb4.7/36, Error ellipse: s-maj=6.0km s-min=4.1km az=139.0*
NEIC Recorded [3 JMA] in Iwate.
ISC 02 05:32:55.8±1.0**, 39°.14N**±0°.05×**142°.22E**±0°.06**, h47**km±7km**, n145, σ1s28**/143**, mb4.6**/71**, MS4.2**/14**, 1D, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	Ofunato	0.43	262	P	Pn	05 33 04.3	-1.8
MIYJ	Miyakonagasawa	0.54	324	P	Pn	05 33 05.7	-1.6
MIYJ				S	Sn	05 33 14.4	-1.2
JOM	Ohasama	0.79	295	P	Pn	05 33 10.0	-0.7
JOM				S	Sn	05 33 22.6	+1.1
JMK	Ichinoseki	0.80	257	P	Pn	05 33 09.6	-1.2
JMK				S	Sn	05 33 21.7	0.0
JTH	Tanohata	0.84	341	P	Pn	05 33 09.7	-1.7
JTH				S	Sn	05 33 22.2	-0.5
JIO	Ouri	0.97	225	P	Pn	05 33 10.5	-2.5
JKZ	Kuzumaki	1.09	321	P	Pn	05 33 14.4	-0.3
JKZ				S	Sn	05 33 29.8	+1.1
JRG	Rokugo	1.26	282	P	Pn	05 33 17.1	+0.1
JANG	Nango	1.35	336	P	Pn	05 33 17.4	-0.8
JANG				S	Sn	05 33 36.0	+1.1
JOU	Okura	1.44	238	P	Pn	05 33 18.7	-0.9
ERM	Erimo	2.96	14	ePn	Pn	05 33 41.6	+1.3
MJAR	Matsushiro Arr	4.10	232	P	Pn	05 33 56.7	+0.7
	9.0nm,0.3s,baz=40,slow=11,SNR=51						
MAJO	Matsushiro	4.10	232	ePn	Pn	05 33 57.5	+1.5
MAT	Matsushiro	4.10	232	P	Pn	05 33 56.8	+0.8
INU	Inuyama	5.62	229	ePn	Pn	05 34 18.5	+1.7
JHJ2	Mitsune	6.32	199	ePn	Pn	05 34 28.1	+1.6
YSS	Yuzh-Sakhalins	7.82	3	ePn	Pn	05 34 48.1	+1.2
USRK	Ussuriysk Ar.	9.17	307	P	Pn	05 35 08.2	+2.7
	1.0nm,0.3s,baz=121,slow=14,SNR=23						
USRK				LR	LR	05 38 35.1	
	comp=Z,1μm,18.0s,baz=115,slow=37						
MDJ	Mudanjiang	10.89	304	P	Pn	05 35 33.3	+4.4
MDJ				pmax	pmax		
	comp=Z,34nm,1.2s						
MDJ				pmax	pmax		
	comp=Z,210nm,4.9s						
MDJ	Mudanjiang	10.89	304	ePn	Pn	05 35 33.9	+5.0
KSRS	Korea Array	11.36	266	P	Pn	05 35 40.2	+4.8
	0.5nm,0.3s,baz=67,slow=13,SNR=5.0						
KSRS				LR	LR	05 39 40.4	
	comp=Z,659nm,19.5s,baz=86,slow=35						
KSAR	Wonju Array Be	11.40	266	P	Pn	05 35 40.2	+4.3
KLR	Kul'dur	12.56	327	P	Pn	05 35 52.3	+0.5
	0.1nm,0.3s,baz=130,slow=12,SNR=7.4						
KLR				LR	LR	05 40 45.5	
	comp=Z,589nm,19.4s,baz=118,slow=37						
PETK	Petropavlovsk-	17.56	32	LR	LR	05 44 26.4	
	comp=Z,219nm,18.5s,baz=206,slow=39						
HIA	Hailar	18.96	310	eP	P	05 37 11.1	-2.0
	11nm,0.9s						
BJI	Beijing	20.08	281	P	P	05 37 20.5	-4.7
BJI				S	S	05 40 52.0	-16
BJT	Baijiatuau	20.08	281	eP	P	05 37 22.1	-3.3
	23nm,1.1s						
NJ2	Nanjing	20.25	257	eP	P	05 37 26.8	-0.3
NJ2				pmax	pmax		
	comp=Z,24nm,0.5s						
MA2	Magadan	21.16	12	P	P	05 37 36.8	0.0
	21nm,0.8s,baz=218,slow=9.6,SNR=35						
MA2				LR	LR	05 44 55.3	
	comp=Z,210nm,20.7s,baz=184,slow=34						
MA2	Magadan	21.16	12	eP	P	05 37 36.5	-0.3
	61nm,0.6s						
HHC	Hu-ho-hao-te	23.50	284	eP	P	05 37 58.7	-2.8
HHC				sP	pP	05 38 14.1	+0.9
HHC				S	S	05 41 56.4	-15
HHC				pmax	pmax		
	comp=Z,15nm,1.1s						
HHC				pmax	pmax		
	comp=Z,140nm,4.6s						
HHC				LR	LR		
	comp=N,280nm,15.2s						
HHC				LR	LR		
	comp=E,530nm,16.4s						
HHC				LR	LR		
	comp=Z,490nm,14.5s						
YAK	Yakutsk	24.17	346	P	P	05 38 06.7	-0.7
	4.1nm,0.5s,baz=333,slow=22,SNR=8.2						
YAK	Yakutsk	24.17	346	eP	P	05 38 06.6	-0.8
	57nm,0.7s						
TWG	Pinlang	24.27	234	eP	P	05 38 08.7	+0.1
	94nm,0.9s						
SEY	Seymchan	24.60	11	P	P	05 38 12.2	+0.9
	10nm,0.7s,baz=194,slow=7.1,SNR=28						
ULN	Ulaanbaatar	26.77	301	eP	P	05 38 31.8	+0.5
	12nm,1.4s						
SONA1	Songino Array	27.20	300	eP	P	05 38 35.7	+0.5
SONM	Songino Array	27.20	300	P	P	05 38 35.2	0.0
	2.1nm,0.6s,baz=96,slow=8.9,SNR=11						
SONM				LR	LR	05 49 56.7	
	comp=Z,337nm,18.6s,baz=93,slow=37						
ENH	Enshi	28.21	262	eP	P	05 38 43.0	-1.2
	77nm,1.7s						
H11N1	WAKE ISLAND Hy	28.77	125	T	T	06 08 52.2	
	baz=318,slow=74,SNR=207						
H11N3	WAKE ISLAND Hy	28.78	125	T	T	06 08 54.9	
	baz=195,slow=74,SNR=205						
TLY	Talaya	29.49	308	P	P	05 38 55.0	-0.3
	4.4nm,0.7s,baz=117,slow=5.9,SNR=10						
TLY				LR	LR	05 51 22.0	
	comp=Z,387nm,19.0s,baz=82,slow=37						
TLY	Talaya	29.49	308	eP	P	05 38 56.2	+0.9
	12nm,1.0s						
H11S1	WAKE ISLAND Hy	29.54	127	T	T	06 10 13.0	
	baz=319,slow=76,SNR=96						
H11S3	WAKE ISLAND Hy	29.55	127	T	T	06 10 13.0	
	baz=319,slow=76,SNR=106						
H11S2	WAKE ISLAND Hy	29.56	127	T	T	06 10 14.4	
	baz=319,slow=76,SNR=105						
LZH	Lanzhou	30.40	276	eP	P	05 39 04.3	+0.5
LZH				pP	pP	05 39 16.0	-0.1
LZH				sP	sP	05 39 20.7	-0.9
LZH				pmax	pmax		
	comp=Z,45nm,1.2s						
LZH				pmax	pmax		
	comp=Z,180nm,5.5s						
LZH				LR	LR		
	comp=N,280nm,15.5s						
LZH				LR	LR		
	comp=E,450nm,13.6s						
LZH				LR	LR		
	comp=Z,410nm,17.4s						
BILL	Bilibino	31.83	17	eP	P	05 39 16.3	+0.6
	1.8nm,0.4s						
GYA	Guiyang	32.25	258⇓	iP	P	05 39 21.0	+0.9
GYA				pP	sP	05 39 35.4	-2.5
GYA				PP	PnPn	05 40 26.2	-1.2
GYA				PcP	PcP	05 42 14.0	+6.4
GYA				S	S	05 44 23.8	-6.5
GYA				sS	sS	05 44 47.6	-3.4
GYA				ScP	ScP	05 45 51.2	+3.9
GYA				ScS	ScS	05 49 47.5	+0.9
GYA				pmax	pmax		
	comp=Z,80nm,0.8s						
GYA				pmax	pmax		
	comp=Z,120nm,6.2s						
GYA				LR	LR		
	comp=N,550nm,18.0s						
GYA				LR	LR		
	comp=E,520nm,17.8s						
GYA				LR	LR		
	comp=Z,2μm,17.0s						
CD2	Chengdu	32.36	267	P	P	05 39 19.5	-1.4
CD2				pP	pP	05 39 32.9	-0.3
CD2				PP	PnPn	05 40 31.0	+2.3
CD2				PcP	PcP	05 42 12.0	+4.2
CD2				S	S	05 44 23.8	-8.0
CD2				sS	sS	05 44 47.1	-5.4
CD2				pmax	pmax		
	comp=Z,20nm,0.5s						
CD2				pmax	pmax		
	comp=Z,80nm,3.5s						
CD2				LR	LR		
	comp=E,430nm,10.2s						
CD2				LR	LR		
	comp=Z,450nm,13.8s						
GTA	Gaotai	32.61	284	eP	P	05 39 23.7	+0.6
GTA				pP	pP	05 39 37.7	+2.3
GTA				sP	sP	05 39 43.8	+2.8
GTA				S	S	05 44 30.6	-5.1
GTA				sS	sS	05 44 51.0	-5.4
GTA				pmax	pmax		
	comp=Z,7.0nm,1.1s						
GTA				pmax	pmax		
	comp=Z,79nm,5.6s						
GTA				LR	LR		
	comp=N,180nm,18.5s						
GTA				LR	LR		
	comp=E,550nm,19.5s						
GTA				LR	LR		
	comp=Z,600nm,19.0s						
TIXI	Tiksi	33.28	352	eP	P	05 39 33.8	+5.4
	3.3nm,0.8s						
QIZ	Qiongzhong	34.41	244	P	P	05 39 39.9	+1.2
QIZ				S	S	05 45 02.0	-1.6
QIZ				LR	LR		
	comp=E,260nm,15.7s						
QIZ				LR	LR		
	comp=Z,370nm,15.7s						
KMI	Kunming	35.95	259	P	P	05 39 52.5	+0.2
KMI				pP	pP	05 40 05.5	+0.8
KMI				sP	sP	05 40 14.1	+3.9
KMI				PP	PP	05 41 15.0	+0.5
KMI				S	S	05 45 17.6	-10
KMI				sS	sS	05 45 42.9	-5.6
KMI				pmax	pmax		
	comp=Z,27nm,1.2s						
KMI				pmax	pmax		
	comp=Z,64nm,4.3s						
KMI				LR	LR		
	comp=N,140nm,18.5s						
KMI				LR	LR		
	comp=E,340nm,16.0s						
KMI				LR	LR		
	comp=Z,290nm,15.3s						
WMQ	Urumqi	40.50	295	P	P	05 40 31.2	+1.1
WMQ				pP	pP	05 40 42.8	+0.1
WMQ				sP	sP	05 40 49.6	+1.4
WMQ				PcP	PcP	05 42 38.2	+6.2
WMQ				S	S	05 46 33.6	-2.1
WMQ				pmax	pmax		
	comp=Z,25nm,0.8s						
WMQ				pmax	pmax		
	comp=Z,68nm,4.0s						
WMQ				LR	LR		
	comp=N,42nm,18.0s						
WMQ				LR	LR		
	comp=E,54nm,20.8s						
WMQ				LR	LR		
	comp=Z,49nm,28.4s						
ZAA0	Zalesovo Array	41.00	311	eP	P	05 40 34.4	+0.4
ZALV	Zalesovo Beam	41.00	311	P	P	05 40 34.5	+0.4
	7.6nm,0.5s,baz=90,slow=8.0,SNR=29						
NRIK	Noril'sk	41.64	334	LR	LR	05 58 48.9	
	comp=Z,327nm,19.9s,baz=108,slow=37						
CMAR	Chiang Mai Arr	42.67	254	P	P	05 40 49.0	+0.8
	1.7nm,0.6s,baz=49,slow=7.6,SNR=9.2						
MK01	Makanchi Array	43.57	300	eP	P	05 40 55.4	+0.3
MK31	Makanchi Array	43.57	300	eP	P	05 40 55.6	+0.5
MKAR	Makanchi Array	43.57	300	P	P	05 40 55.5	+0.3
	11nm,0.8s,baz=84,slow=9.6,SNR=69						
MKAR	Makanchi Array	43.57	300	eP	P	05 40 55.6	+0.5
PPLA	Purkeypile	45.09	36	eP	P	05 41 07.6	+0.5
	27nm,1.5s						
KURK	Kurchatov	45.16	307	eP	P	05 41 07.8	+0.1
	30nm,0.7s						
KURBB	Kurchatov Arra	45.24	306	P	P	05 41 08.2	0.0
	26nm,0.7s,baz=80,slow=8.5,SNR=195						
BPAW	Bear Paw Mtn.	45.62	34	eP	P	05 41 12.9	+1.7
	1.1nm,1.2s						
KTH	Kantishna Hill	45.65	35	eP	P	05 41 11.9	+0.4
	20nm,1.3s						
COLD	Coldfoot	46.01	30	eP	P	05 41 14.5	+0.3
	4.0nm,1.0s						
RC01	Rabbit Creek A	46.31	39	eP	P	05 41 16.1	-0.5
	8.8nm,1.0s						
TAPN	Taplejung	46.46	272	eP	P	05 41 19.0	+0.4
MCK	McKinley	46.53	35	eP	P	05 41 18.6	+0.2
	7.2nm,1.3s						
ODAN	Odare	46.95	272	eP	P	05 41 22.6	+0.2
	8.3nm,0.5s						
ILAR	Eielson Array	47.38	33	P	P	05 41 24.6	-0.3
	1.7nm,0.5s,baz=264,slow=6.0,SNR=38						
ILAR				LR	LR	06 02 13.1	
	comp=Z,89nm,19.5s,baz=286,slow=37						
RAMN	Ramite	47.52	273	eP	P	05 41 26.9	+0.1
	15nm,0.5s						
GUN	Gumba	47.61	274	eP	P	05 41 27.8	+0.2
	17nm,0.4s						
KKN	Kakani	48.13	274	eP	P	05 41 31.9	+0.4
	27nm,0.7s						
PAX	Paxson	48.15	36	eP	P	05 41 31.8	+0.8
	4.9nm,1.4s						
GKN	Gorkha	48.53	275	eP	P	05 41 35.3	+0.8
	31nm,0.7s						
BMRM	Bremner River	48.80	38	eP	P	05 41 36.1	0.0
	13nm,1.2s						
TKM2	Tokmak 2	49.22	297	eP	P	05 41 40.8	+1.1
	18nm,0.8s						
VOSK	Vostochnaya	49.37	311	eP	P	05 41 40.4	-0.1
	13nm,0.9s						
KOLN	Koldanda	49.45	275	eP	P	05 41 41.9	+0.3
	33nm,0.9s						
BVAR	Borovoye Array	49.65	311	P	P	05 41 42.8	+0.3
	7.4nm,0.5s,baz=69,slow=7.6,SNR=50						
BRVK	Borovoye	49.70	311	eP	P	05 41 43.4	+0.5

14nm,1.0s
PYUN Piuthan 49.76 276 eP P 05 41 44.4 +0.4
81nm,1.0s
EGAK Eagle 49.82 33 eP P 05 41 43.1 -0.5
19nm,1.7s
AAK Ala-Archa 50.08 297 P P 05 41 46.6 +0.4
3.6nm,0.6s,baz=98,slow=3.9,SNR=12
AAK Ala-Archa 50.08 297 eP P 05 41 46.6 +0.4
4.9nm,0.8s
KSH Kashi 50.16 293 eP P 05 41 51.2 +4.5
KSH esP sP 05 42 09.4 +4.4
KSH ePP PP 05 43 46.1 +4.1
KSH S S 05 48 53.1 -2.1
KSH pmax pmax
comp=Z,150nm,5.7s
KSH LR LR
comp=N,320nm,10.5s
KSH LR LR
comp=E,120nm,6.6s
EKS2 Erkin-Say 50.56 297 eP P 05 41 50.5 +0.7
7.0nm,0.7s
INK Inuvik 52.23 28 P P 05 42 02.0 +0.4
1.2nm,0.6s,baz=307,slow=5.4,SNR=10
INK Inuvik 52.23 28 eP P 05 42 01.9 +0.3
8.7nm,1.1s
KKAR Karatay Array 52.64 299 eP P 05 42 05.4 +0.2
ARU Arti 55.22 318 P P 05 42 24.0 +0.3
13nm,0.6s,baz=78,slow=3.3,SNR=28
ARU Arti 55.22 318 eP P 05 42 23.5 -0.2
21nm,0.8s
ABKAR Akbulak array 57.09 309 eP P 05 42 37.1 -0.1
AKTO Aktyubinsk 57.76 311 P P 05 42 41.4 -0.5
5.6nm,0.9s,baz=71,slow=13,SNR=11
SPITS Spitsbergen Ar 58.58 349 P P 05 42 47.4 +0.1
6.3nm,1.0s,baz=71,slow=11,SNR=6.0
WRA Warramunga Arr 59.23 189 P P 05 42 50.6 -1.8
2.1nm,0.5s,baz=7.7,slow=7.1,SNR=12
RES Resolute Bay 60.40 15 P P 05 42 59.8 +0.1
1.7nm,0.8s,baz=305,slow=6.6,SNR=6.6
RES Resolute Bay 60.40 15 eP P 05 42 59.5 -0.3
3.9nm,0.8s
YKA Yellowknife Ar 61.67 31 P P 05 43 08.4 -0.2
0.2nm,0.6s,baz=292,slow=7.0,SNR=4.6
ARCES ARCESS Array B 62.25 339 P P 05 43 12.2 -0.2
1.5nm,0.7s,baz=34,slow=7.3,SNR=5.0
ASAR Alice Springs 62.96 189 P P 05 43 16.4 -1.3
1.2nm,0.8s,baz=16,slow=9.2,SNR=11
GEYT Alibeck 63.38 298 P P 05 43 20.6 +0.1
3.0nm,0.5s,baz=49,slow=4.5,SNR=4.3
FINES FINESS Array B 67.25 332 P P 05 43 45.0 0.0
4.8nm,0.8s,baz=33,slow=7.3,SNR=15
KIV Kislovodsk 70.01 311 eP P 05 44 04.5 +1.8
51nm,1.4s
KBZ Khabaz 70.02 310 P P 05 44 03.5 +1.0
6.1nm,1.0s,baz=68,slow=2.5,SNR=9.0
HFS Hagfors 72.43 336 P P 05 44 16.9 +0.1
3.0nm,0.8s,baz=41,slow=7.9,SNR=11
NB2 NORSAR Subarra 72.49 337 P P 05 44 16.2 -1.1
comp=Z,1.2nm,0.6s,baz=37,slow=6.2
NOA NORSAR Array B 72.49 337 P P 05 44 17.0 -0.2
comp=Z,1.4nm,0.6s,baz=38,slow=6.0,SNR=6.4
BMN Battle Mountai 72.70 52 eP P 05 44 19.4 +0.4
comp=Z,1.4nm,0.5s
AKASG Malin Array Be 73.02 322 P P 05 44 20.3 -0.2
comp=Z,3.8nm,0.4s,baz=44,slow=6.3,SNR=28
KIEV Kiev 73.03 322 eP P 05 44 20.4 -0.2
comp=Z,6.9nm,0.6s
AK11 Malin Array Si 73.06 322 eP P 05 44 20.3 -0.5
NVAR Mina Array Bea 73.22 54 P P 05 44 22.6 +0.3
comp=Z,0.8nm,0.8s,baz=289,slow=9.2,SNR=4.3
FRB Frobisher Bay 74.58 14 P P 05 44 29.0 -0.3
comp=Z,4.1nm,0.8s,baz=337,slow=4.4,SNR=5.4
DUG Dugway, Tooele 75.50 50 eP P 05 44 35.5 +0.1
comp=Z,7.5nm,1.5s
PDAR Pinedale Array 75.74 46 P P 05 44 36.4 -0.5
comp=Z,0.4nm,0.5s,baz=261,slow=2.2,SNR=6.1
KOLS Kolonicke sedl 77.49 324 eP P 05 44 47.2 +0.9
STHS Stebnicka Huta 77.60 325 eP P 05 44 48.0 +1.1
OJC Ojcow 77.64 326 eP P 05 44 47.9 +0.8
comp=Z,24nm,1.4s
BRTR Keskin Array B 77.93 312 P P 05 44 49.4 +0.3
comp=Z,1.5nm,0.9s,baz=49,slow=3.8,SNR=7.0
MLR Muntele Rosu 78.19 320 P P 05 44 50.7 +0.3
comp=Z,0.3nm,0.5s,baz=153,slow=12,SNR=3.3
BR231 Keskin MP Arra 78.36 312 eP P 05 44 50.0 -1.3
LANS Liptovska Anna 78.58 326 eP P 05 44 54.0 +1.6
PV01 Paradox Valley 79.35 49 eP P 05 44 56.3 -0.7
comp=Z,358nm,1.4s
VYHS Vyhne 79.35 326 eP P 05 44 57.2 +0.6
CLL Collm 79.59 330 eP P 05 44 57.0 -0.7
CLL ePcP PcP 05 45 06.0 +0.5
KHC Kasperske Hory 81.08 329 eP P 05 45 06.2 +0.3
comp=Z,1.8nm,1.0s
GERES GERESS Array B 81.25 328 P P 05 45 06.8 -0.1
comp=Z,0.7nm,0.6s,baz=38,slow=6.8,SNR=7.2
MMAI Mount Meron Ar 81.27 306 P P 05 45 06.5 -0.7
comp=Z,1.6nm,0.7s,baz=77,slow=6.5,SNR=2.8
ECSD EROS Data Cent 81.87 39 eP P 05 45 10.0 -0.1
comp=Z,3.2nm,1.0s
ANMO Albuquerque 82.75 50 eP P 05 45 15.5 +0.3
comp=Z,21nm,2.2s
PMOR Pomariorio Ree 84.45 114 eT T 07 18 43.0
comp=Z,14nm,0.2s
PPT2 Papeete2 85.03 117 eLR LR 06 12 47.9
comp=Z,237nm,23.8s
PPT2 Papeete2 85.03 117 eT T 07 19 26.0
comp=Z,4.4nm,0.3s
TIAR Tiarei 85.17 117 eT T 07 19 35.7
comp=Z,2.7nm,0.3s
TAOE Nuku Hiva Isla 86.07 105 eLR LR 06 13 17.3
comp=Z,209nm,23.2s
MEH Mehetia 86.27 116 eT T 07 20 58.7
comp=Z,39nm,0.2s
TXAR Lajitas Array 88.34 53 P P 05 45 42.5 -0.4
comp=Z,0.2nm,0.5s,baz=303,slow=3.2,SNR=5.3
MIAR Mount Ida 90.34 43 eP P 05 45 50.5 -1.5
comp=Z,6.2nm,1.3s
TORD Torodi Ar. Bea 116.27 316 PKP PKPdf 05 51 33.5 -1.1
comp=Z,0.3nm,0.8s,baz=2.6,slow=3.1,SNR=3.2
LPAZ La Paz 145.06 58 ePKPdf PKPdf 05 52 35.7 +6.5

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*NIED **02** 05:34:00, 36.°30N×140.°00E, h47^{km}, Mw4.4 Best double couple: M₀4.61000×10^{15} NP1:ϕ_s261.00000°, δ40.00000°, λ-160.00000°. NP2:ϕ_s155.00000°, δ77.00000°, λ-52.00000°.*
*IDC **02** 05:34:13.1±2.5, 36.°61N×141.°19E, h0^{km}, mb3.9/4, mb1 4.0/5, mb1mx3.6/67, mbtmp3.9/5, ML3.9/1, Error ellipse: s-maj=69.5km s-min=24.1km az=56.0*
*ISCJB **02** 05:34:26.8±0.6, 36.°17N±0.°04×140.°03E±0.°07, h92^{km}±4^{km}, mb3.8/4, Error ellipse: s-maj=10.0km s-min=6.2km az=1.1*
*JMA **02** 05:34:28.2±0.1, 36.°21N×139.°98E, h79^{km}±1^{km}, M3.5*
JMA Felt I J1.
ISC 02 05:34:27.8±1.0**, 36.°18N**±0.°04×**140.°00E**±0.°06**, h84**^{km}±7^{km}**, n15, σ0.ˢ60**/24**, mb3.9**/4**, 1C-3D, Near east coast of eastern Honshu**

Code Station Name Δ° AZ° Phase ID Op ISC Time h m s Res ISC
JYT Yasato 0.16 71 ⇓P Pn 05 34 40.0 +0.1
JYT S Sn 05 34 48.8 0.0
JAG Ashikaga 0.51 300 ⇓P Pn 05 34 41.8 -0.2
JAG S Sn 05 34 51.9 -0.6
JKT Katashina 0.85 314 P Pn 05 34 45.3 -0.1
JKT S Sn 05 34 58.7 +0.1
JRY Ryogami san 0.91 260 ⇓P Pn 05 34 46.3 +0.3
JRY S Sn 05 35 00.0 +0.4
JOD2 Odawara 2 1.18 220 ⇑P Pn 05 34 49.5 +0.3
JOD2 S Sn 05 35 06.0 +0.7
JFY Yanaizu 1.25 349 S Sn 05 35 08.0 +1.0
JHK Hiroka 1.33 324 P Pn 05 34 51.2 +0.1
JHK S Sn 05 35 09.8 +1.1
JFT Otama 1.37 11 P Pn 05 34 52.3 +0.7
JFT S Sn 05 35 09.9 +0.4
MJAR Matsushiro Arr 1.49 285 Pn Pn 05 34 53.4 +0.2
28nm,0.3s,baz=111,slow=9.7,SNR=26
MAT Matsushiro 1.50 285 P Pn 05 34 53.7 +0.5
MAT S Sn 05 35 13.2 +0.8
JHJ Hachijo jima 2 3.05 183 Pn Pn 05 35 14.4 +0.4
156nm,0.3s,baz=257,slow=6.6,SNR=6.2
JHJ Sn Sn 05 35 50.2 +0.7
79nm,0.3s,baz=59,slow=21,SNR=5.0
SONM Songino Array 27.34 306 P P 05 40 05.1 +0.1
0.9nm,0.5s,baz=95,slow=7.4,SNR=2.8
MKAR Makanchi Array 43.62 303 P P 05 42 23.2 -0.6
1.6nm,0.8s,baz=88,slow=8.3,SNR=2.1
WRA Warramunga Arr 56.07 186 P P 05 43 57.2 -1.0
1.0nm,0.6s,baz=3.5,slow=7.3,SNR=2.5
ASAR Alice Springs 59.80 186 P P 05 44 24.4 +0.1
0.6nm,0.7s,baz=16,slow=7.1,SNR=2.8

MEX 02 05:46:21.2±0.3**, 16.°50N**×**94.°41W, h47**^{km}±95^{km}**, MD3.7, Oaxaca**

Code Station Name Δ° AZ° Phase ID Op ISC Time h m s Res ISC
PCIG 1.39 124 eP Pn 05 46 42.6 -1.6
PCIG eS Sn 05 46 59.3 -2.1
CCIG Comitan 2.19 95 eP Pn 05 46 53.9 -1.4

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*JMA **02** 05:51:21.9±0.3, 40.°62N×143.°89E, h7^{km}, M4.4*
*ISCJB **02** 05:51:22.9±0.9, 40.°67N±0.°03×143.°87E±0.°04, h16^{km}±6^{km}, mb4.5/73, MS4.1/17, Error ellipse: s-maj=6.8km s-min=3.9km az=44.8*
*IDC **02** 05:51:22.1±0.6, 40.°72N×143.°82E, h0^{km}, mb4.1/23, mb1 4.3/25, mb1mx4.2/34, mbtmp4.1/25, ML3.4/2, MS3.7/12, Ms1 3.7/12, ms1mx3.4/56, Error ellipse: s-maj=16.2km s-min=14.4km az=130.0*
*MOS **02** 05:51:25.3±0.9, 40.°69N×143.°88E, h34^{km}, mb4.9/33, Error ellipse: s-maj=8.3km s-min=5.4km az=105.8*
*NEIC **02** 05:51:27.3±1.5, 40.°69N×143.°79E, h33^{km}±10^{km}, mb4.6/29, Error ellipse: s-maj=5.7km s-min=4.0km az=135.0*
ISC 02 05:51:25.0±0.6**, 40.°68N**±0.°04×**143.°92E**±0.°05**, h20**^{km}±2^{km}**, h19**^{km}**:pP-P, n189, σ1.ˢ37**/210**, mb4.6**/74**, MS4.1**/17**, 5C-8D, Off east coast of Honshu**

Code Station Name Δ° AZ° Phase ID Op ISC Time h m s Res ISC
ERM Erimo 1.46 337c iP Pn 05 51 49.0 -1.2
ERM pmax pmax
comp=Z,304nm,1.2s
ERM Erimo 1.46 337 ePn Pn 05 51 49.4 -0.8
JTH Tanohata 1.74 246 P Pn 05 51 52.0 -2.0
JNBK Urakawa-nobuka 1.83 332 P Pn 05 51 55.0 -0.3
JANG Nango 1.86 261 P Pn 05 51 54.1 -1.6
MIYJ Miyakonagasawa 1.95 236 P Pn 05 51 55.3 -1.7
JCH Churui 1.98 348 P Pn 05 51 56.6 -0.8
JTM Tenmabayashi 2.17 274 P Pn 05 51 59.4 -0.6
JOT Ohata 2.29 289 P Pn 05 52 01.1 -0.5
JOM Ohasama 2.35 240 P Pn 05 52 01.4 -1.0
JKB Kayabe 2.49 300 P Pn 05 52 04.2 -0.2
JAH Hinai 2.56 260 P Pn 05 52 05.0 -0.3
JAH eS Sn 05 52 35.4 -0.4
JAR Ashorobuto 2.62 358 S Sn 05 52 35.6 -1.9
JMK Ichinoseki 2.70 231 P Pn 05 52 06.0 -1.3
JRG Rokugo 2.83 244 P Pn 05 52 08.7 -0.4
YUK Yuzh-Kuril'sk 3.65 23 eP Pn 05 52 19.8 -0.5
YUK iS Sn 05 53 00.1 -2.7
YUK pmax pmax
comp=Z,250nm,0.4s
YUK pmax pmax
comp=N,63nm,0.3s
YUK pmax pmax
comp=E,88nm,0.4s
YUK MLR MLR
comp=Z,2μm,9.0s
SHO Shikotan 3.85 33 eP Pn 05 52 21.2 -1.9
SHO eS Sn 05 53 02.0 -5.8
SHO pmax pmax
comp=Z,122nm,0.5s
SHO pmax pmax
comp=E,53nm,0.6s
SHO pmax pmax
comp=N,59nm,0.4s
KUR Kuril'sk 5.40 31 eP Pn 05 52 44.1 -0.2
KUR iS Sn 05 53 42.3 -3.5
KUR pmax pmax
comp=Z,97nm,0.6s
KUR smax smax
comp=N,125nm,0.6s
KUR smax smax
comp=E,71nm,0.6s
MAJO Matsushiro 6.09 229⇑iP Pn 05 52 53.4 -0.5
MAJO Matsushiro 6.09 229 ePn Pn 05 52 53.6 -0.2
MAT Matsushiro 6.09 229 P Pn 05 52 53.0 -0.9
MAT eS Sn 05 54 06.8 +3.9
MJAR Matsushiro Arr 6.09 229 Pn Pn 05 52 53.5 -0.4
comp=E,1.9nm,0.3s,baz=33,slow=12,SNR=26
YSS Yuzh-Sakhalins 6.33 353⇑eP Pn 05 53 00.0 +2.8
YSS eS Sn 05 54 11.5 +2.6
YSS smax smax
comp=E,20nm,0.4s
YSS MLR MLR
comp=Z,2μm,13.0s
YSS MLR MLR
comp=N,2μm,15.0s
YSS MLR MLR
comp=E,2μm,18.0s
YSS Yuzh-Sakhalins 6.33 353 ePn Pn 05 52 59.4 +2.3
INU Inuyama 7.61 228 ePn Pn 05 53 14.8 0.0
USRK Ussuriysk Ar. 9.50 296 Pn Pn 05 53 42.1 +1.5
comp=E,0.6nm,0.3s,baz=106,slow=16,SNR=13
USRK LR LR 05 56 50.2
comp=E,157nm,21.6s,baz=73,slow=35
KLR Kul'dur 12.13 319 Pn Pn 05 54 17.0 +0.4
comp=E,0.1nm,0.3s,baz=131,slow=13,SNR=12
KLR LR LR 05 59 29.0
comp=E,95nm,20.5s,baz=106,slow=40
KLR Kul'dur 12.13 319 P Pn 05 54 17.0 +0.4
NKL Nikolayevsk 12.67 351 eP P 05 54 32.0 -3.1
NKL MLR MLR
comp=E,1μm,16.0s
NKL MLR MLR
comp=Z,2μm,16.0s
KSRS Korea Array 12.84 261 Pn Pn 05 54 28.6 +2.3
comp=Z,0.4nm,0.3s,baz=66,slow=13,SNR=4.1
KSRS LR LR 05 58 44.5
comp=Z,204nm,20.2s,baz=68,slow=34
JNU Nakatsue 12.87 238 LR LR 05 59 47.5
comp=Z,654nm,18.2s,baz=64,slow=39
KSAR Wonju Array Be 12.88 261 P Pn 05 54 28.7 +1.8
KSAR Wonju Array Be 12.88 261 Pn Pn 05 54 28.6 +1.8
PETK Petropavlovsk- 15.56 32 LR LR 06 00 53.3
comp=Z,205nm,18.4s,baz=226,slow=37
HIA Hailar 19.08 305 eP P 05 55 45.1 -1.1
HIA pmax pmax
comp=Z,13nm,0.9s
HIA Hailar 19.08 305 eP P 05 55 45.1 -1.1
comp=Z,13nm,0.9s
MA2 Magadan 19.40 11 LR LR 06 04 33.6
comp=Z,172nm,18.1s,baz=222,slow=41
BJI Beijing 21.12 277 P P 05 56 05.8 -2.6
BJI pmax pmax
comp=Z,12nm,1.2s
BJT Baijiatuau 21.13 277 eP P 05 56 06.4 -2.1
BJT pmax pmax
comp=Z,79nm,1.9s
BJT Baijiatuau 21.13 277 eP P 05 56 06.4 -2.1
comp=Z,79nm,1.9s
TIA Tai'an 21.42 267 ⇓P P 05 56 08.9 -2.8
TIA pmax pmax
comp=Z,20nm,0.9s
NJ2 Nanjing 21.89 255 eP P 05 56 15.0 -1.7
NJ2 pmax pmax
comp=Z,22nm,0.5s
SEY Seymchan 22.86 10 P P 05 56 24.8 -2.0
comp=Z,5.5nm,0.7s,baz=188,slow=8.5,SNR=31
SEY Seymchan 22.86 10d iP P 05 56 26.3 -0.4
YAK Yakutsk 23.06 343 LR LR 06 06 50.3
comp=Z,258nm,18.2s,baz=146,slow=40
YAK Yakutsk 23.06 343 eP P 05 56 28.1 -0.7
YAK pmax pmax
comp=Z,27nm,0.7s
YAK Yakutsk 23.06 343 eP P 05 56 28.1 -0.7
comp=Z,27nm,0.7s
HHC Hu-ho-hao-te 24.44 281 eP P 05 56 40.6 -1.9
HHC sP sP 05 56 51.7 +0.8
HHC S S 06 00 57.9 -3.5
HHC sS sS 06 01 12.0 +0.8
HHC pmax pmax
comp=Z,11nm,1.1s
HHC pmax pmax
comp=Z,95nm,6.4s
HHC LR LR
comp=N,290nm,12.8s
HHC LR LR
comp=E,270nm,12.8s
HHC LR LR
comp=Z,280nm,13.9s
BOD Bodaibo 25.68 322 eP P 05 56 52.9 -0.5
BOD pmax pmax
comp=Z,27nm,1.1s
WHN Wuhan 25.97 256 P P 05 56 56.2 -0.1
WHN pmax pmax
comp=Z,38nm,0.6s
ULN Ulaanbaatar 27.16 298 eP P 05 57 07.1 0.0
ULN pmax pmax
comp=Z,9.0nm,1.1s
ULN Ulaanbaatar 27.16 298 eP P 05 57 07.1 0.0
comp=Z,9.2nm,1.1s
SONA1 Songino Array 27.60 298 eP P 05 57 10.9 -0.1
SONM Songino Array 27.61 298 P P 05 57 11.1 +0.1
comp=Z,6.6nm,0.9s,baz=89,slow=8.1,SNR=18
H11N2 WAKE ISLAND Hy 28.66 130 T T 06 27 23.5
baz=322,slow=74,SNR=12
H11N1 WAKE ISLAND Hy 28.67 130 T T 06 27 12.2
baz=322,slow=74,SNR=12
H11N3 WAKE ISLAND Hy 28.67 130 T T 06 27 18.2
baz=322,slow=74,SNR=9.6
H11S1 WAKE ISLAND Hy 29.51 132 T T 06 28 18.8
baz=324,slow=76,SNR=6.7
H11S3 WAKE ISLAND Hy 29.51 132 T T 06 28 27.2
baz=324,slow=76,SNR=5.4
H11S2 WAKE ISLAND Hy 29.52 132 T T 06 28 23.1
baz=324,slow=76,SNR=5.2
TLY Talaya 29.62 305 P P 05 57 27.8 -1.0
comp=Z,1.8nm,0.4s,baz=112,slow=7.3,SNR=12
TLY LR LR 06 09 57.5
comp=Z,99nm,19.5s,baz=128,slow=38
TLY Talaya 29.62 305 eP P 05 57 29.3 +0.5
TLY pmax pmax
comp=Z,19nm,1.4s
TLY MLR MLR
comp=Z,102nm,9.0s
TLY Talaya 29.62 305 eP P 05 57 28.7 -0.1
comp=Z,11nm,1.0s
ENH Enshi 29.73 261 eP P 05 57 28.9 -1.1
comp=Z,20nm,1.3s
ZAK Zakamensk 29.75 303 eP P 05 57 29.2 -0.8
ZAK pmax pmax
comp=Z,8.0nm,1.3s
BILL Bilibino 29.98 17⇓iP P 05 57 32.3 +0.5
BILL e 05 58 28.6
BILL ePPP PPP 05 58 38.5
BILL pmax pmax
comp=Z,10.0nm,1.1s
BILL MLR MLR
comp=Z,163nm,20.0s
BILL Bilibino 29.98 17 eP P 05 57 32.1 +0.3
comp=Z,8.0nm,1.0s
MOY Mondy 31.26 305 eP P 05 57 45.6 +2.2
LZH Lanzhou 31.56 275 eP P 05 57 46.8 +0.6
LZH pP pP 05 57 52.3 +0.1
LZH sP sP 05 57 55.9 +1.2
LZH PP PnPn 05 58 46.4 -3.2
LZH eS S 06 02 50.1 -3.8
LZH sS sS 06 03 01.6 -2.2
LZH SS SnSn 06 04 45.3 +5.9
LZH pmax pmax
comp=Z,20nm,1.0s
LZH pmax pmax
comp=Z,94nm,4.0s
LZH LR LR
comp=N,2μm,14.4s
LZH LR LR
comp=E,2μm,13.5s
LZH LR LR
comp=Z,2μm,15.7s
TIXI Tiksi 31.95 351⇓eP P 05 57 48.3 -0.8
TIXI pmax pmax
comp=Z,9.0nm,3.0s
GTA Gaotai 33.53 283 eP P 05 58 03.4 0.0
GTA pP pP 05 58 09.2 -0.2
GTA sP sP 05 58 12.2 +0.3
GTA S S 06 03 23.4 -1.1
GTA sS sS 06 03 32.4 -2.0
GTA SS SnSn 06 05 27.4 +0.2
GTA pmax pmax
comp=Z,15nm,1.2s
GTA pmax pmax
comp=Z,99nm,5.8s
GTA LR LR
comp=N,210nm,14.7s
GTA LR LR
comp=E,220nm,16.2s
GTA LR LR
comp=Z,220nm,14.7s
CD2 Chengdu 33.75 266 P P 05 58 04.4 -0.9
CD2 sP sP 05 58 12.9 -0.9
CD2 PP PP 05 59 20.8 -1.0
CD2 PcP PcP 06 00 44.3 -0.2
CD2 S S 06 03 26.7 -1.2
CD2 sS sS 06 03 36.9 -1.0
CD2 SS SS 06 05 52.1 -1.7
CD2 pmax pmax
comp=Z,30nm,0.6s
CD2 pmax pmax
comp=Z,160nm,5.5s
CD2 LR LR
comp=N,500nm,14.4s
CD2 LR LR
comp=Z,300nm,12.6s
GYA Guiyang 33.86 257⇑iP P 05 58 05.4 -1.0
GYA PP PnPn 05 59 20.2 +1.1
GYA PcP PcP 06 00 46.8 +1.8
GYA S S 06 03 28.0 -1.8
GYA ScP ScP 06 04 29.6 +1.0
GYA SS SnSn 06 05 33.2 -2.4
GYA Guiyang 33.86 257 ScS ScS 06 08 29.5 -1.0
GYA pmax pmax
comp=Z,20nm,0.8s
GYA pmax pmax
comp=Z,120nm,6.2s
GYA LR LR
comp=N,480nm,18.0s
GYA LR LR
comp=E,490nm,17.8s
GYA LR LR
comp=Z,460nm,17.0s
QIZ Qiongzhong 36.26 244 P P 05 58 26.5 -0.4
QIZ S S 06 04 07.4 +0.9
QIZ LR LR
comp=E,220nm,18.9s
QIZ LR LR
comp=Z,190nm,18.4s
KRAR Krasnoyarsk 36.32 312 P P 05 58 26.0 -1.1
KRAR pmax pmax
comp=Z,12nm,0.4s
KMI Kunming 37.53 258 P P 05 58 37.8 -0.2
KMI pP pP 05 58 43.8 -0.3
KMI sP sP 05 58 46.1 -0.4
KMI PP PnPn 06 00 04.0 -0.6
KMI S S 06 04 25.4 -0.9
KMI SS SnSn 06 06 59.4 -5.2
KMI pmax pmax
comp=Z,22nm,0.9s
KMI pmax pmax
comp=Z,120nm,5.0s
KMI LR LR
comp=N,250nm,15.8s
KMI LR LR
comp=E,170nm,6.1s
KMI LR LR
comp=Z,260nm,13.6s
NRIK Noril'sk 40.84 333 P P 05 59 05.1 +0.2
comp=Z,1.9nm,0.6s,baz=101,slow=17,SNR=6.5
ZAA0 Zalesovo Array 41.02 309 eP P 05 59 06.1 -0.4
ZALV Zalesovo Beam 41.02 309 P P 05 59 06.7 +0.2
comp=Z,10.0nm,0.8s,baz=87,slow=7.6,SNR=40
WMQ Urumqi 41.06 294 eP P 05 59 08.0 +0.9
WMQ pP pP 05 59 14.3 +1.0
WMQ sP sP 05 59 16.8 +1.1
WMQ S S 06 05 23.0 +4.3
WMQ pmax pmax
comp=Z,5.0nm,1.2s
WMQ pmax pmax
comp=Z,72nm,5.4s
WMQ LR LR
comp=N,81nm,15.8s
WMQ LR LR
comp=E,70nm,17.2s
WMQ LR LR

comp=Z,24nm,15.8s
NVS Novosibirsk 41.84 311 *e*P **P 05 59 13.4 +0.1**
NVS pmax pmax
comp=Z,18nm,1.3s
NVS pmax pmax
comp=E,18nm,1.5s
CAST Castle Rocks 43.13 36 *e*P **P 05 59 24.9 +1.2**
comp=E,5.5nm,1.2s
KTH Kantishna Hill 43.65 36 *e*P **P 05 59 29.9 +1.9**
comp=E,8.7nm,0.8s
MK01 Makanchi Array 43.94 299 *e*P **P 05 59 30.1 -0.4**
MK31 Makanchi Array 43.94 299 *e*P **P 05 59 30.4 -0.1**
MK31 Makanchi Array 43.94 299 *e*P **P 05 59 30.4 -0.1**
MKAR Makanchi Array 43.94 299 P **P 05 59 30.2 -0.3**
comp=E,10nm,0.9s,baz=82,slow=8.9,SNR=76
MKAR LR LR 06 20 47.8
comp=E,56nm,18.0s,baz=97,slow=40
MKAR Makanchi Array 43.94 299 *e*P **P 05 59 30.4 -0.1**
MKAR Makanchi Array 43.94 299 *e*P **P 05 59 30.4 -0.1**
COLD Coldfoot 44.02 31 *e*P **P 05 59 31.5 +0.7**
comp=E,4.4nm,1.0s
CHTO Chiang Mai 44.13 254 *e*P **P 05 59 32.0 -0.3**
CHTO pmax pmax
comp=Z,7.0nm,0.9s
CHTO Chiang Mai 44.13 254 *e*P **P 05 59 32.0 -0.3**
comp=Z,6.9nm,0.9s
MAKZ Makanchi 44.15 300 *e*P **P 05 59 31.2 -0.9**
MAKZ pmax pmax
comp=Z,13nm,0.9s
MAKZ Makanchi 44.15 300 *e*P **P 05 59 31.2 -0.9**
comp=Z,13nm,0.9s
CMAR Chiang Mai Arr 44.36 254 P **P 05 59 33.9 -0.2**
comp=Z,1.7nm,0.6s,baz=43,slow=7.3,SNR=7.5
MDM Murphy Dome 44.80 34 *e*P **P 05 59 38.5 +1.4**
comp=Z,15nm,1.5s
COLA College 44.96 34 *e*P **P 05 59 39.2 +0.9**
COLA pmax pmax
comp=Z,8.0nm,0.9s
COLA College 44.96 34 *e*P **P 05 59 39.2 +0.9**
comp=Z,7.6nm,0.9s
KURK Kurchatov 45.32 306 *e*P **P 05 59 41.0 -0.3**
KURK pmax pmax
comp=Z,41nm,1.1s
KURK Kurchatov 45.32 306 *e*P **P 05 59 41.0 -0.3**
comp=Z,42nm,1.1s
IL1 Eielson Array 45.38 34 *e*P **P 05 59 42.0 +0.4**
ILAR Eielson Array 45.38 34 P **P 05 59 42.2 +0.5**
comp=Z,1.8nm,0.8s,baz=264,slow=6.4,SNR=20
ILB Eielson Array 45.38 34 *e*P **P 05 59 42.5 +0.9**
KLU Klutina 46.09 39 *e*P **P 05 59 48.8 +1.4**
comp=Z,6.8nm,1.0s
DOT Dot Lake 46.70 36 *e*P **P 05 59 52.7 +0.6**
comp=Z,46nm,1.8s
MENT Mentasta 46.94 37 *e*P **P 05 59 55.3 +1.4**
comp=Z,16nm,1.6s
VOSK Vostochnaya 49.38 310 *e*P **P 06 00 12.8 -0.2**
VOSK pmax pmax
comp=Z,15nm,0.9s
VOSK Vostochnaya 49.38 310 *e*P **P 06 00 12.8 -0.2**
comp=Z,15nm,0.9s
BRVK Borovoye 49.69 311 *c i*P **P 06 00 15.2 -0.1**
BRVK pmax pmax
comp=Z,7.0nm,0.8s
BRVK Borovoye 49.69 311 *e*P **P 06 00 15.4 +0.2**
comp=Z,27nm,1.2s
TKM2 Tokmak 2 49.69 296 *e*P **P 06 00 15.9 +0.2**
TKM2 pmax pmax
comp=Z,18nm,0.9s
TKM2 Tokmak 2 49.69 296 *e*P **P 06 00 15.9 +0.2**
comp=Z,18nm,0.9s
INK Inuvik 50.26 29 P **P 06 00 20.4 +1.1**
comp=Z,1.4nm,0.5s,baz=298,slow=6.2,SNR=16
INK Inuvik 50.26 29 *e*P **P 06 00 20.7 +1.3**
INK pmax pmax
comp=Z,3.0nm,0.9s
INK Inuvik 50.26 29 *e*P **P 06 00 20.7 +1.3**
comp=Z,3.1nm,0.9s
FRU Bishkek 50.39 297 *e*P **P 06 00 20.0 -0.8**
FRU *e* 06 00 28.0
AAK Ala-Archa 50.55 297 *d i*P **P 06 00 22.2 0.0**
AAK pmax pmax
comp=Z,14nm,1.2s
AAK Ala-Archa 50.55 297 *e*P **P 06 00 22.3 +0.1**
comp=Z,4.4nm,0.8s
KSH Kashi 50.78 292 *e*P P 06 00 27.5 +3.6
KSH *es*P sP 06 00 36.7 +4.2
KSH *e*PP PP 06 02 25.4 +5.5
KSH S **S 06 07 42.2 +3.6**
KSH ScS **ScS 06 10 14.2 +0.5**
KSH pmax pmax
comp=Z,90nm,5.0s
KSH LR LR
comp=N,210nm,12.4s
KSH LR LR
comp=E,190nm,7.7s
KSH LR LR
comp=Z,400nm,14.0s
EKS2 Erkin-Say 51.03 297 *e*P **P 06 00 25.9 +0.1**
EKS2 pmax pmax
comp=Z,5.0nm,0.8s
EKS2 Erkin-Say 51.03 297 *e*P **P 06 00 25.9 +0.1**
comp=Z,4.5nm,0.8s
KKAR Karatay Array 53.05 299 *e*P **P 06 00 40.4 -0.3**
KKAR Karatay Array 53.05 299 *e*P **P 06 00 40.4 -0.3**
ARU Arti 54.97 317 *d i*P **P 06 00 54.4 0.0**
ARU 06 02 58.7
ARU S **S 06 08 36.4 +1.4**
ARU SS **SS 06 12 19.9 +1.8**
ARU pmax pmax
comp=Z,8.0nm,1.2s
ARU MLR MLR
comp=Z,254nm,17.0s
ARU Arti 54.97 317 *e*P **P 06 00 54.4 0.0**
comp=Z,16nm,1.3s
ABKAR Akbulak array 57.13 309 *e*P **P 06 01 09.6 -0.4**
RES Resolute Bay 58.58 15 *e*P **P 06 01 20.2 +0.4**
RES pmax pmax
comp=Z,13nm,1.4s
RES Resolute Bay 58.58 15 *e*P **P 06 01 20.2 +0.4**
comp=Z,13nm,1.4s
YKA Yellowknife Ar 59.68 32 P **P 06 01 27.9 +0.4**
comp=Z,0.5nm,0.8s,baz=300,slow=6.1,SNR=7.8
WRA Warramunga Arr 60.96 190 P **P 06 01 36.9 +0.2**
comp=Z,1.5nm,0.6s,baz=4.9,slow=6.9,SNR=4.6
ARCES ARCESS Array B 61.28 339 LR LR 06 33 23.8
comp=Z,144nm,19.0s,baz=48,slow=41
KLMR Klimovskoe 61.74 327 *e*P **P 06 01 44.2 +2.6**
KLMR *e* 06 04 03.2
KLMR pmax pmax
comp=Z,18nm,1.4s
GEYT Alibeck 63.81 298 P **P 06 01 53.8 -2.0**
comp=Z,2.3nm,0.5s,baz=86,slow=7.7,SNR=2.4
AS01 Alice Springs 64.68 190 *e*P **P 06 02 01.3 -0.1**
ASAR Alice Springs 64.69 190 P **P 06 02 01.7 +0.2**
comp=Z,1.7nm,1.0s,baz=6.6,slow=4.0,SNR=5.5
VRH Novokhopyorsk 66.20 318 *e*P **P 06 02 10.5 -0.6**
VRH *e**SP **sP 06 02 19.8 0.0**
VRH pmax pmax
comp=Z,5.0nm,0.5s
OBN Obninsk 66.36 323 ‖ *e*P **P 06 02 12.4 +0.4**
OBN pmax pmax
comp=Z,7.0nm,1.1s
FINES FINESS Array B 66.50 332 P **P 06 02 12.7 -0.1**
comp=Z,4.5nm,0.8s,baz=45,slow=7.9,SNR=15
FINES LR LR 06 35 26.7
comp=Z,177nm,18.0s,baz=24,slow=40
FINES FINESS Array B 66.50 332 *i*P **P 06 02 12.6 -0.2**
FINES pmax pmax
comp=Z,5.0nm,0.7s
LPSR Galich'ya Gora 66.77 320 *e*P **P 06 02 13.7 -1.0**
LPSR *e**SP **sP 06 02 23.5 +0.1**
LPSR pmax pmax
comp=Z,7.0nm,0.8s
VSR Storozhevoye 67.48 319 *e*P **P 06 02 18.5 -0.8**
VSR *e**SP **sP 06 02 28.0 0.0**
VSR pmax pmax
comp=Z,6.0nm,0.8s
KIV Kislovodsk 70.00 311 *i*P **P 06 02 36.4 +1.2**
KIV *e* 06 02 44.3
KIV pmax pmax
comp=Z,18nm,1.1s
KIV Kislovodsk 70.00 311 *e*P **P 06 02 35.8 +0.6**
comp=Z,33nm,1.1s
ZEI Tsey 70.00 310 *e*P **P 06 02 34.2 -1.2**
ZEI pmax pmax
comp=Z,5.0nm,0.6s
KBZ Khabaz 70.02 311 P **P 06 02 36.2 +1.1**
comp=Z,4.9nm,0.9s,baz=50,slow=4.9,SNR=9.9
NEY Neytrino 70.41 310 P **P 06 02 40.0 +2.2**
NEY pmax pmax
comp=Z,1.0nm,1.1s
BOZ Bozeman (W) 70.76 46 *e*P **P 06 02 40.5 +0.6**
BOZ pmax pmax
comp=Z,8.0nm,1.5s
BOZ Bozeman (W) 70.76 46 *e*P **P 06 02 40.5 +0.6**
comp=Z,7.9nm,1.5s
GNI Garni 71.10 307 P **P 06 02 44.0 +1.9**
GNI pmax pmax
comp=Z,15nm,0.4s
NVAR Mina Array Bea 71.27 55 P **P 06 02 44.2 +0.9**
comp=Z,0.5nm,0.7s,baz=268,slow=4.4,SNR=4.5
HFS Hagfors 71.56 336 LR LR 06 36 52.9
comp=Z,97nm,18.3s,baz=58,slow=38
NB2 NORSAR Subarra 71.57 338 P **P 06 02 43.8 -0.6**
comp=Z,5.6nm,0.9s,baz=36,slow=8.2
NOA NORSAR Array B 71.57 338 P **P 06 02 43.9 -0.5**
comp=Z,2.4nm,0.8s,baz=37,slow=6.0,SNR=7.2
STKA Stephens Creek 72.22 182 P **P 06 02 49.8 +1.3**
comp=Z,1.4nm,0.7s,baz=6.0,slow=11,SNR=2.9
AKASG Malin Array Be 72.60 323 P **P 06 02 50.2 -0.5**
comp=Z,1.5nm,0.6s,baz=41,slow=6.2,SNR=13
KIEV Kiev 72.62 323 *d i*P **P 06 02 50.6 -0.1**
KIEV pmax pmax
comp=Z,7.0nm,0.9s
KIEV Kiev 72.62 323 *e*P **P 06 02 50.4 -0.3**
comp=Z,6.3nm,0.9s
AK11 Malin Array Si 72.64 323 *e*P **P 06 02 50.7 -0.3**
PDAR Pinedale Array 73.74 47 P **P 06 02 58.0 +0.2**
comp=Z,0.2nm,0.6s,baz=267,slow=3.0,SNR=3.9
EML El Monte Cty P 75.63 59 *e*P **P 06 03 09.8 +1.1**
BUR08 Bucovina Ar. S 76.64 322 *e*P **P 06 03 14.8 +0.6**
KOLS Kolonicke sedl 77.00 325 *e*P **P 06 03 15.0 -1.2**
KOLS Kolonicke sedl 77.00 325 *e*P **P 06 03 15.0 -1.2**
STHS Stebnicka Huta 77.09 326 *e*P **P 06 03 16.9 +0.2**
STHS Stebnicka Huta 77.09 326 *e*P **P 06 03 16.9 +0.2**
BRTR Keskin Array B 77.88 312 P **P 06 03 19.9 -1.6**
comp=Z,0.4nm,0.3s,baz=23,slow=6.7,SNR=4.8
BRTR Keskin Array B 77.88 312 *i*P **P 06 03 20.7 -0.8**
LANS Liptovska Anna 78.04 326 *e*P **P 06 03 22.8 +0.7**
LANS Liptovska Anna 78.04 326 *e*P **P 06 03 22.8 +0.7**
BR231 Keskin MP Arra 78.28 313 *e*P **P 06 03 22.9 -0.8**
MORC Moravsky Berou 78.35 328 *e*P **P 06 03 24.0 +0.2**
MORC Moravsky Berou 78.35 328 *e*P **P 06 03 24.0 +0.2**
DPC Dobruska-Polom 78.39 329 *e*P **P 06 03 24.4 +0.4**
DPC *ep*P **PcP 06 03 35.3 +2.1**
DPC *ex* x 06 03 45.1
DPC Dobruska-Polom 78.39 329 *e*P **P 06 03 24.4 +0.4**
DPC *e* 06 03 35.3
VYHS Vyhne 78.82 326 *e*P **P 06 03 26.3 0.0**
VYHS Vyhne 78.82 326 *e*P **P 06 03 26.3 0.0**
CLL Collm 78.89 331 *i*P **P 06 03 26.4 -0.2**
comp=Z,8.0nm,1.2s
CLL *i* pP **sP 06 03 36.0 +0.5**
comp=Z,7.0nm,0.9s
CLL LmV 06 42 00.0
comp=Z,100nm,20.9s
CLL Collm 78.89 331 *i*P **P 06 03 26.4 -0.2**
CLL *i* 06 03 36.0
CLL pmax pmax
comp=Z,8.0nm,1.2s
BRG Berggiesshubel 78.89 330 *e*(P) **P 06 03 26.6 0.0**
comp=Z,2.2nm,0.9s
BRG Berggiesshubel 78.89 330 *e*P **P 06 03 26.6 0.0**
BRG pmax pmax
comp=Z,2.0nm,0.9s
KHC Kasperske Hory 80.44 329 *e*P **P 06 03 35.5 +0.4**
KHC *ep*P **sP 06 03 45.1 +1.1**
KHC Kasperske Hory 80.44 329 *e*P **P 06 03 35.5 +0.4**
KHC *e* 06 03 45.1
GERES GERESS Array B 80.62 329 P **P 06 03 36.2 0.0**
comp=Z,0.3nm,0.4s,baz=32,slow=3.5,SNR=5.0
TX31 Lajitas Ar. Si 86.37 54 *e*P **P 06 04 06.6 +0.5**
TXAR Lajitas Array 86.37 54 P **P 06 04 06.8 +0.6**
comp=Z,0.4nm,0.7s,baz=290,slow=3.4,SNR=4.4
SAML Samuel 140.29 45 *e*PKPdf **PKPdf 06 10 52.8 -0.1**
SNAA Sanae 144.80 198 PKP **PKPab 06 10 57.2 -1.1**
VNA2 Neumayer--Watz 146.36 197 PKP **PKPdf 06 11 01.2 -0.6**
baz=72,slow=2.8

JMA 02 06:02:35.5±0.2, 38°22N×144°11E, h46km, M3.6, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**2.10**	**295**	P		Pn	06 03 09.2	+1.1
OFUJ				*e*S		Sn	06 03 34.5	+1.5
JIO	**Ouri**	**2.18**	**277**	P		Pn	06 03 10.2	+0.9
JIO				*e*S		Sn	06 03 35.7	+0.6
MIYJ	**Miyakonagasawa**	**2.24**	**308**	P		Pn	06 03 10.9	+0.8
MIYJ				*e*S		Sn	06 03 37.5	+0.9
JMK	**Ichinoseki**	**2.38**	**289**	P		Pn	06 03 13.5	+1.5
JMK				*e*S		Sn	06 03 41.6	+1.7
JOM	**Ohasama**	**2.53**	**300**	P		Pn	06 03 15.8	+1.7
JOM				*e*S		Sn	06 03 45.6	+1.9
JANG	**Nango**	**2.95**	**318**	P		Pn	06 03 21.3	+1.5
JANG				*e*S		Sn	06 03 54.9	+1.0
JYK	**Kaneyama**	**3.02**	**284**	P		Pn	06 03 22.7	+1.9
JYK				*e*S		Sn	06 03 58.4	+2.6
JFT	**Otama**	**3.07**	**258**	P		Pn	06 03 23.1	+1.6
JFT				*e*S		Sn	06 03 57.5	+0.6
JOT	**Ohata**	**3.94**	**324**	*e*S		Sn	06 04 20.0	+1.6
JAG	**Ashikaga**	**4.12**	**246**	P		Pn	06 03 37.1	+1.2
JAG				*e*S		Sn	06 04 22.8	-0.1
JCH	**Churui**	**4.43**	**353**	P		Pn	06 03 40.9	+0.8
JCH				*e*S		Sn	06 04 29.3	-1.0
JRY	**Ryogami san**	**4.71**	**244**	P		Pn	06 03 44.7	+0.7
JRY				*e*S		Sn	06 04 35.2	-2.1
MAT	**Matsushiro**	**4.99**	**252**	P		Pn	06 03 50.2	+2.3
MAT				*e*S		Sn	06 04 41.4	-2.9
JOD2	**Odawara 2**	**5.00**	**235**	*e*S		Sn	06 04 42.0	-2.4

MOS ***02*** *06:04:57.2±1.0, 5°.47S×153°.88E, h33km, mb5.6/50, MS4.5/11, Error ellipse: s-maj=7.7km s-min=5.6km az=97.5*

ISCJB ***02*** *06:04:58.6±0.7, 5°.57S±0°.02×153°.93E±0°.02, h49km±6km, mb5.4/236, MS4.8/154, Error ellipse: s-maj=4.2km s-min=3.4km az=38.1*

IDC ***02*** *06:04:60.0±1.5, 5°.54S×154°.04E, h48km±13km, mb4.9/30, mb1 5.0/33, mb1mx4.9/39, mbtmp5.1/33, ML3.7/4, MS4.4/27, Ms1 4.4/27, ms1mx4.3/37, Error ellipse: s-maj=12.7km s-min=8.8km az=89.0*

GCMT ***02*** *06:05:00.7±0.1, 5°.82S×153°.70E, h41km, MW5.3/110, Moment Tensor Solution. s110,c168; s94,c127; Duration: 1s1 Moment tensor: Scale 10^17Nm; Mrr 1.14±.02; Mθθ-0.57±.02; Mφφ-0.57±.02; Mrθ 0.32±.02; Mθφ 0.64±.01; Mφr-0.14±.02; Best double couple: M0 1.23000×10^17 NP1:φs129.00000°, δ53.00000°, λ82.00000°. NP2:φs322.00000°, δ38.00000°, λ100.00000°. Principal axes: T 1.1990, Plg80.0000°, Azm5.0000°; N 0.0570, Plg6.0000°, Azm133.0000°; P -1.2610, Plg8.0000°, Azm224.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

NEIC ***02*** *06:05:00.7±0.1, 5°.57S×153°.96E, h55km, mb5.4/138, MW5.5 Error ellipse: s-maj=3.7km s-min=3.2km az=96.0, Moment Tensor Solution. s10 Moment tensor: Scale 10^17Nm; Mrr 1.40; Mθθ 0.00; Mφφ-1.40; Mrθ-0.03; Mθφ 1.94; Mφr 0.09; Best double couple: M0 2.40000×10^17 NP1: φs120.00000°, δ50.00000°, λ53.00000°. NP2: φs349.00000°, δ52.00000°, λ126.00000°. Principal axes: T 1.4200, Plg62.0000°, Azm323.0000°; N 1.3500, Plg28.0000°, Azm146.0000°; P -2.7700, Plg1.0000°, Azm55.0000°;*

BJI ***02*** *06:05:01.8, 5°.09S×154°.24E, h70km, mb5.5/76, mB5.4/42, Ms5.0/53, Ms7 4.6/49*

DJA ***02*** *06:05:02.5±0.7, 6°.3S×155°.4E±°, h60km±7km, M5.3/69, mb5.4/69, mB5.8/35, MLv5.6/1, Mw(mB)5.3/35*

ISC 02 06:05:01.9±0.5, 5°.58S±0°.04×153°.93E±0°.04, h66km±4km, n621, σ1°63/582, mb5.5/236, **32C-10D, New Ireland region**

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
RABL	**Rabaul**	**2.23**	**308**	*e*Pn		**Pn**	**06 05 37.6**	**+0.9**
HNR	**Honiara**	**7.09**	**123**	P		**Pn**	**06 06 40.0**	**-3.1**
	8.1nm,0.3s,baz=263,slow=8.1,SNR=2.2							
HNR					S	**Sn**	**06 08 02.5**	**+0.3**
	40nm,0.3s,baz=219,slow=14,SNR=2.7							
HNR					LR	LR	06 09 20.3	
	comp=Z,6μm,20.4s,baz=286,slow=37							
HNR	**Honiara**	**7.09**	**123**	*e*P		**Pn**	**06 06 45.4**	**+2.3**
HNR					S	**Sn**	**06 08 02.5**	**+0.3**
HNR	**Honiara**	**7.09**	**123**	*e*Pn		**Pn**	**06 06 45.4**	**+2.3**
HNR					S	**Sn**	**06 08 02.5**	**+0.3**
MANU	**Manus Island**	**7.43**	**298**	*e*Pn		**Pn**	**06 06 49.8**	**+2.0**
PMG	**Port Moresby**	**7.71**	**240**	P		**Pn**	**06 06 50.3**	**-1.3**
	22nm,0.3s,baz=62,slow=5.6,SNR=51							
PMG					S	**Sn**	**06 08 14.9**	**-2.5**
	baz=127,slow=20,SNR=1.7							
PMG					LR	LR	06 09 44.2	
	comp=Z,6μm,21.5s,baz=50,slow=36							
PMG	**Port Moresby**	**7.71**	**240**	*d i*P		**Pn**	**06 06 50.2**	**-1.4**
PMG					pmax	pmax		
	comp=Z,1μm,0.8s							
PATS	**Pohnpei**	**13.09**	**20**	*e*Pn		**Pn**	**06 08 03.0**	**-2.1**
COEN	**Coen**	**13.47**	**231**	*e*Pn		**Pn**	**06 08 08.7**	**-1.5**
JAY	**Jayapura**	**13.54**	**282**	P		**Pn**	**06 08 10.2**	**-0.9**
	comp=Z,0.0nm,0.3s,baz=53,slow=20,SNR=2.0							
JAY	**Jayapura**	**13.54**	**282**	P		**P**	**06 08 22.0**	**+4.0**
GENI	**Genyem**	**14.04**	**282**	P		P	06 08 29.3	+5.7
CTA	**Charters Tower**	**16.23**	**207**	P		**Pn**	**06 08 44.7**	**-1.3**
	comp=Z,0.6nm,0.3s,baz=29,slow=15,SNR=11							
CTA					LR	LR	06 14 33.2	
	comp=Z,2μm,19.9s,baz=26,slow=35							
CTAO	**Charters Tower**	**16.23**	**207**	*e*P		**Pn**	**06 08 45.0**	**-0.9**
CTAO					pmax	pmax		
	comp=Z,110nm,1.3s							
CTAO	**Charters Tower**	**16.23**	**207**	*e*Pn		**Pn**	**06 08 45.0**	**-0.9**
	comp=Z,108nm,1.3s							
KWAJ	**Kwajalein Atol**	**19.76**	**44**	*e*P		**Pn**	**06 09 30.0**	**+1.3**
KWAJ					pmax	pmax		
	comp=Z,470nm,0.8s							
KWAJ	**Kwajalein Atol**	**19.76**	**44**	*e*P		**Pn**	**06 09 30.0**	**+1.3**
	comp=Z,465nm,0.8s							
EIDS	**Eidsvold**	**19.86**	**188**	*e*P		**P**	**06 09 28.2**	**+0.4**
	comp=Z,80nm,1.3s							
TARA	**Tarawa**	**20.18**	**71**	*e*P		Pn	06 09 33.4	-0.4
	comp=Z,888nm,1.1s							
TARA					LR	LR		
	comp=Z,244nm,19.0s							
KMPI	**Kaimana, Papua**	**20.25**	**275**	P		Pn	06 09 37.6	+3.1
DZM	**Mont Dzumac**	**20.38**	**145**	P		**P**	**06 09 33.3**	**-0.2**
	comp=Z,237nm,0.6s,baz=325,slow=8.4,SNR=173							
GUMO	**Guam**	**21.06**	**335**	P		**P**	**06 09 40.9**	**+0.1**
	comp=Z,144nm,0.7s,baz=179,slow=13,SNR=5.1							
GUMO					LR	LR	06 18 48.9	
	comp=Z,293nm,18.7s,baz=152,slow=39							
GUMO	**Guam**	**21.06**	**335**	*e*P		**P**	**06 09 41.6**	**+0.8**
GUMO					pmax	pmax		
	comp=Z,1μm,1.4s							
GUMO	**Guam**	**21.06**	**335**	*e*P		**P**	**06 09 41.6**	**+0.8**
	comp=Z,1μm,1.4s							
FAKI	**Fak Fak**	**21.78**	**276**	P		**P**	**06 09 48.2**	**-0.3**
	comp=Z,63nm,1.3s,comp=Z,1μm							
FAKI	**Fak Fak**	**21.78**	**276**	*e*P		**P**	**06 09 48.2**	**-0.3**
	comp=Z,73nm,1.1s							
SAUI	**Saumlaki**	**22.59**	**263**	*e*P		**P**	**06 09 58.9**	**+1.6**
	comp=Z,677nm,1.1s							
SWI	**Sorong**	**23.11**	**281**	P		**P**	**06 10 02.2**	**-0.3**
	comp=Z,142nm,1.1s,comp=Z,2μm							
MTN	**Manton Dam**	**23.61**	**251**	*e*P		**P**	**06 10 07.9**	**+0.7**
	comp=Z,534nm,2.0s							
WRAB	**Tennant Creek**	**23.79**	**231**	*c e*P		**P**	**06 10 09.0**	**+0.2**
WRAB					pmax	pmax		
	comp=Z,197nm,1.7s							
WRAB	**Tennant Creek**	**23.79**	**231**	*e*P		**P**	**06 10 08.7**	**-0.1**
	comp=Z,50nm,0.6s							
WRAB					LR	LR		
	comp=Z,2μm,19.0s							
WB2	**Warramunga Arr**	**23.79**	**231**	*e*P		**P**	**06 10 08.6**	**-0.2**
	comp=Z,220nm,1.6s							
WRA	**Warramunga Arr**	**23.80**	**231**	P		**P**	**06 10 08.9**	**0.0**
	comp=Z,22nm,0.8s,baz=55,slow=9.6,SNR=58							
WRA					PcP	**PcP**	**06 13 51.8**	**+0.8**
	comp=Z,36nm,0.8s,baz=54,slow=2.2,SNR=19							
WRA					S	**S**	**06 14 24.8**	**+4.7**
	comp=Z,3.5nm,0.8s,baz=60,slow=16,SNR=4.8							
WRA					LR	LR	06 19 27.0	
	comp=Z,2μm,20.1s,baz=55,slow=36							
ARMA	**Armidale**	**24.80**	**185**	*e*P		**P**	**06 10 19.0**	**+1.0**
	comp=Z,104nm,1.0s							
FUNA	**Funafuti**	**25.25**	**98**	PFAKE			06 10 30.0	+7.9
FUNA					LR	LR		
	comp=Z,6μm,20.0s							
LHI	**Lord Howe Isla**	**26.25**	**170**	*e*P		**P**	**06 10 30.7**	**-0.2**
	comp=Z,322nm,1.5s							
AS01	**Alice Springs**	**26.33**	**225**	*e*P		**P**	**06 10 30.4**	**-1.4**
AS31	**Alice Springs**	**26.36**	**225**	*e*P		**P**	**06 10 32.1**	**0.0**
	comp=Z,9.5nm,0.8s							
ASAR	**Alice Springs**	**26.36**	**225**	P		**P**	**06 10 31.8**	**-0.4**
	comp=Z,21nm,0.9s,baz=61,slow=8.3,SNR=67							
ASAR					PcP	**PcP**	**06 13 57.7**	**+1.0**
	comp=Z,42nm,0.7s,baz=62,slow=2.6,SNR=32							
ASAR					LR	LR	06 20 54.5	
	comp=Z,2μm,19.8s,baz=106,slow=36							
MSVF	**Nonsavu**	**26.49**	**119**	*e*P		**P**	**06 10 35.4**	**+2.0**
MSVF					pmax	pmax		
	comp=Z,36nm,1.1s							
MSVF	**Nonsavu**	**26.49**	**119**	*e*P		**P**	**06 10 35.4**	**+2.0**
	comp=Z,36nm,1.1s							
MSVF					LR	LR		
	comp=Z,2μm,20.0s							
H11S3	**WAKE ISLAND Hy**	**27.03**	**27**	T		T	06 38 50.6	
	baz=208,slow=76,SNR=77							
H11S2	**WAKE ISLAND Hy**	**27.04**	**28**	T		T	06 38 54.9	
	baz=208,slow=76,SNR=32							
H11S1	**WAKE ISLAND Hy**	**27.05**	**27**	T		T	06 38 59.5	
	baz=208,slow=76,SNR=16							
WAKE	**Wake Island**	**27.71**	**27**	PFAKE			06 11 00.0	+16
WAKE					LR	LR		
	comp=Z,3μm,21.0s							
SANI	**Sanana**	**28.09**	**276**	P		**P**	**06 10 48.8**	**+1.1**
	comp=Z,48nm,0.8s							
STKA	**Stephens Creek**	**28.59**	**202**	P		**P**	**06 10 51.6**	**-0.3**
	comp=Z,11nm,0.8s,baz=24,slow=12,SNR=18							
STKA					PcP	**PcP**	**06 14 02.0**	**+0.1**
	comp=Z,26nm,0.8s,baz=12,slow=2.8,SNR=9.5							
STKA	**Stephens Creek**	**28.59**	**202**	*e*P		**P**	**06 10 51.3**	**-0.7**
STKA					pmax	pmax		
	comp=Z,4.0nm,0.8s							
STKA	**Stephens Creek**	**28.59**	**202**	*e*P		**P**	**06 10 51.2**	**-0.7**
	comp=Z,4.3nm,0.8s							
STKA					PcP	**PcP**	**06 14 02.0**	**+0.1**
SOEI	**Soe**	**29.68**	**260**	P		**P**	**06 11 00.5**	**-1.4**
	comp=Z,77nm,1.2s							
SOEI	**Soe**	**29.68**	**260**	*e*P		**P**	**06 11 02.0**	**+0.1**
	comp=Z,67nm,0.9s							
CAN	**Canberra**	**29.94**	**188**	*e*P		**P**	**06 11 05.1**	**+1.2**
CAN					pmax	pmax		
	comp=Z,46nm,1.2s							
CAN	**Canberra**	**29.94**	**188**	*e*P		**P**	**06 11 05.1**	**+1.2**
	comp=Z,46nm,1.2s							
CAN					LR	LR		
	comp=Z,2μm,22.0s							
FITZ	**Fitzroy Crossi**	**30.29**	**243**	*e*P		**P**	**06 11 06.9**	**-0.3**
	comp=Z,48nm,0.8s							
BATI	**Baumata**	**30.32**	**259**	LR		LR	06 24 37.4	
	comp=Z,725nm,21.9s,slow=39							
DAV	**Davao City (W)**	**30.95**	**294**	LR		LR	06 23 40.7	
	comp=Z,532nm,18.3s,baz=136,slow=36							
LUWI	**Luwuk**	**31.42**	**277**	P		**P**	**06 11 17.4**	**+0.2**
	comp=Z,97nm,1.1s,comp=Z,5μm							
LUWI	**Luwuk**	**31.42**	**277**	*e*P		**P**	**06 11 17.7**	**+0.5**
	comp=Z,95nm,1.0s							
BBOO	**Buckleboo**	**31.80**	**209**	*e*P		**P**	**06 11 19.7**	**-0.6**
	comp=Z,20nm,0.9s							
BSSI	**Bau Bau, Buton**	**33.26**	**267**	P		**P**	**06 11 34.0**	**+0.6**
	comp=Z,150nm,1.5s							
BASI	**Baing, Sumba**	**33.34**	**260**	P		**P**	**06 11 34.8**	**+0.8**
	comp=Z,372nm,1.3s							
KAPI	**Kappang**	**34.03**	**269**	*e*P		**P**	**06 11 40.4**	**+0.4**
	comp=Z,84nm,0.9s							
KAPI					LR	LR		
	comp=Z,481nm,21.0s							
SPSI	**Sidrap Palu**	**34.07**	**271**	P		**P**	**06 11 40.7**	**+0.3**
	comp=Z,80nm,0.9s,comp=Z,713nm							
TTSI	**Tana Toraja**	**34.10**	**273**	P		**P**	**06 11 42.6**	**+2.0**
JCJ	**Chichijima**	**34.41**	**341**	LR		LR	06 23 47.5	
	comp=Z,461nm,21.2s,baz=152,slow=33							
OUZ	**Omahuta**	**34.63**	**151**	*e*P		**P**	**06 11 46.3**	**+1.4**
	comp=Z,79nm,0.9s							
PLAI	**Plampang**	**36.00**	**263**	P		**P**	**06 11 54.9**	**-2.1**

comp=Z,78nm,0.9s
MBWA Marble Bar 36.57 242 PFAKE 06 12 10.0 +8.2
MBWA LR LR
comp=Z,1μm,20.0s
TWSI Taliwang, Sumb 36.88 263 P **P** **06 12 04.7 +0.2**
comp=Z,48nm,0.8s
MKAZ Moumakai 36.89 151 PN **P** **06 12 04.9 +0.6**
MYLDM Lahad Datu 36.95 286 ⇑P **P** **06 12 04.4 -0.7**
MYLDM Lahad Datu 36.95 286 *e*P **P** **06 12 06.3 +1.2**
comp=Z,66nm,1.2s
TSM Tawau 37.32 285 ⇑P **P** **06 12 06.1 -2.1**
TAU Tasmania Unive 37.63 188 *e*P **P** **06 12 11.8 +1.4**
TAU pmax pmax
comp=Z,110nm,1.1s
TAU Tasmania Unive 37.63 188 *e*P **P** **06 12 11.8 +1.4**
comp=Z,114nm,1.1s
TAU LR LR
comp=Z,1μm,20.0s
KBKI Kotabaru 37.71 272 P **P** **06 12 11.8 +0.3**
comp=Z,46nm,0.9s,comp=Z,2μm
HIZ Hauiti 37.89 153 *e*P **P** **06 12 13.7 +1.1**
comp=Z,72nm,0.8s
URZ Urewera 38.75 150 P **P** **06 12 20.0 +0.1**
comp=Z,57nm,0.6s,baz=328,slow=3.2,SNR=38
URZ Urewera 38.75 150 *e*P **P** **06 12 20.0 +0.1**
comp=Z,302nm,1.6s
MXZ Matakaoa Point 38.83 148 *e*P **P** **06 12 21.1 +0.6**
comp=Z,125nm,0.7s
WNVZ Wahianoa 38.88 153 PN **P** **06 12 22.3 +1.1**
BBKI Banjar Baru 39.02 271 P **P** **06 12 23.4 +0.9**
comp=Z,199nm,1.1s,comp=Z,13μm
MWZ Matawai 39.02 150 PN **P** **06 12 23.3 +1.1**
MWZ SN **S** **06 18 17.9 +1.3**
WMGZ Waiomatatini S 39.08 149 PN **P** **06 12 22.8 +0.2**
RAGZ Rawiri 39.09 150 PN **P** **06 12 22.7 -0.1**
TWGZ Tauwhareparae 39.12 149 PN **P** **06 12 23.7 +0.6**
TWGZ SN **S** **06 18 18.0 -0.3**
BKZ Black Stump Fm 39.17 152 *e*PN **P** **06 12 22.9 -0.5**
BKZ SN **S** **06 18 20.6 +1.7**
BKZ Black Stump Fm 39.17 152 *e*P **P** **06 12 23.2 -0.2**
comp=Z,54nm,0.6s
PUZ Puketiti 39.18 149 PN **P** **06 12 23.3 -0.2**
KKM Kota Kinabalu 39.38 286 PFAKE 06 12 40.0 +14
KKM LR LR
comp=Z,324nm,20.0s
RIGZ Rimuhau 39.42 150 PN **P** **06 12 25.6 0.0**
KRHZ Kereru 39.49 152 PN **P** **06 12 25.9 -0.2**
JAGI Jajag, Banyuwa 39.57 263 P **P** **06 12 25.2 -1.9**
comp=Z,65nm,1.0s
JAGI Jajag, Banyuwa 39.57 263 *e*P **P** **06 12 24.8 -2.3**
comp=Z,60nm,1.0s
THZ Tophouse 39.80 158 *e*P **P** **06 12 28.6 -0.1**
comp=Z,76nm,0.7s
KAHZ Kahuranaki 39.85 152 PN **P** **06 12 28.8 -0.3**
MRZ Mangatainoka R 39.96 154 *e*PN **P** **06 12 29.1 -0.9**
INZ Inchbonnie 40.12 160 PN **P** **06 12 30.6 -0.6**
SNZO South Karori 40.13 156 *e*P **P** **06 12 30.8 -0.5**
comp=Z,54nm,0.7s
SNZO LR LR
comp=Z,976nm,20.0s
ANWZ Angora Road 40.20 153 PN **P** **06 12 31.2 -0.7**
BFZ Birch Farm 40.27 153 *e*P **P** **06 12 32.0 -0.5**
comp=Z,73nm,0.9s
LTZ Lake Taylor 40.45 159 *e*P **P** **06 12 34.2 +0.1**
comp=Z,244nm,0.9s
KHZ Kahutara 40.60 158 *e*PN **P** **06 12 34.1 -1.1**
KHZ Kahutara 40.60 158 *e*P **P** **06 12 34.5 -0.7**
comp=Z,68nm,0.7s
JOW Kunigami 40.68 324 *e*P **P** **06 12 37.3 +1.2**
comp=Z,76nm,1.0s
JHJ Hachijo jima 2 40.76 342 LR LR 06 26 52.4
comp=Z,236nm,22.0s,baz=82,slow=32
OXZ Oxford 40.85 160 *e*P **P** **06 12 36.5 -0.8**
comp=Z,43nm,0.8s
RPZ Rata Peaks 40.87 161 P **P** **06 12 37.6 +0.2**
comp=Z,64nm,0.8s,baz=312,slow=1.7,SNR=18
RPZ Rata Peaks 40.87 161 PN **P** **06 12 37.1 -0.3**
RPZ Rata Peaks 40.87 161 *e*P **P** **06 12 37.6 +0.2**
comp=Z,72nm,0.8s
LBZ Lake Benmore 41.20 162 *e*P **P** **06 12 39.4 -0.7**
comp=Z,31nm,0.9s
CRLZ Canterbury Las 41.27 159 *e*P **P** **06 12 40.7 0.0**
comp=Z,115nm,0.9s
MQZ McQueen's Vall 41.40 159 *e*P **P** **06 12 42.6 +0.9**
comp=Z,153nm,1.6s
MLZ Mavora Lakes 41.52 165 *e*P **P** **06 12 42.8 +0.1**
comp=Z,96nm,1.0s
PWJI Pagerwojo 41.88 264 P **P** **06 12 45.3 -0.9**
comp=Z,50nm,0.9s
PBKI Pangkalan Bun 42.23 272 P **P** **06 12 50.9 +1.8**
comp=Z,427nm,1.0s,comp=Z,11μm
YOJ Yonaguni jima 42.41 316 *e*P **P** **06 12 51.5 +1.3**
YOJ pmax pmax
comp=Z,150nm,0.9s
YOJ Yonaguni jima 42.41 316 *e*P **P** **06 12 51.5 +1.3**
comp=Z,146nm,0.9s
SBUM Sibu 42.41 280 *e*P **P** **06 12 51.7 +1.2**
comp=Z,27nm,1.0s
PCJI Pacitan 42.51 264 P **P** **06 12 50.2 -1.0**
comp=Z,104nm,1.3s
STKI Sintang 42.75 276 P **P** **06 12 54.5 +1.3**
comp=Z,53nm,1.4s
YULB Yu-li 42.95 313 *e*P **P** **06 12 55.4 +0.7**
comp=Z,44nm,0.9s
NACB Ninganchiao 43.22 314 *e*P **P** **06 12 57.6 +0.8**
comp=Z,57nm,0.8s
TPUB Ta-pu 43.38 313 *e*P **P** **06 12 58.0 -0.2**
comp=Z,31nm,0.7s
SSLB Suanglung 43.44 314 *e*P **P** **06 12 59.0 +0.3**
comp=Z,33nm,0.9s
NWAO Narrogin (SRO) 43.66 227 PFAKE 06 13 10.0 +10
NWAO LR LR
comp=Z,2μm,19.0s
YHNB Yeheng 43.68 315 *e*P **P** **06 13 01.5 +0.8**
comp=Z,65nm,0.9s
TATO Taipei 43.80 315 PFAKE 06 13 10.0 +8.5
TATO LR LR
comp=Z,754nm,21.0s
KSM Kuching 44.12 278 ⇑P **P** **06 13 04.3 0.0**
KSM Kuching 44.12 278 *e*P **P** **06 13 05.2 +0.9**
comp=Z,23nm,0.7s
JNU Nakatsue 44.27 332 P **P** **06 13 05.0 -0.2**
comp=Z,61nm,0.7s,baz=115,slow=3.6,SNR=35
JNU Nakatsue 44.27 332 *e*P **P** **06 13 05.5 +0.3**
comp=Z,85nm,0.9s
MJAR Matsushiro Arr 44.41 342 P **P** **06 13 04.0 -2.2**
comp=Z,11nm,0.9s,baz=163,slow=9.8,SNR=8.8
MJAR LR LR 06 30 41.6
comp=Z,88nm,21.0s,baz=165,slow=35
MAJO Matsushiro 44.41 342 *e*P **P** **06 13 07.1 +0.9**
MAJO pmax pmax
comp=Z,13nm,0.6s
MAJO Matsushiro 44.41 342 *e*P **P** **06 13 07.1 +0.9**
comp=Z,13nm,0.6s
MAJO LR LR
comp=Z,177nm,22.0s
KPJI Karang Pucung 44.73 265 P **P** **06 13 10.2 +1.1**
comp=Z,69nm,0.9s,comp=Z,2μm
CISI Cisompet, Garu 45.84 265 P **P** **06 13 17.1 -0.9**
comp=Z,126nm,1.2s
CISI Cisompet, Garu 45.84 265 *e*P **P** **06 13 17.1 -0.9**
comp=Z,319nm,1.5s
QZH Quanzhou 45.85 313⇑*i*P **P** **06 13 16.5 -1.3**
QZH S **S** **06 19 58.0 +0.7**
QZH pmax pmax
comp=Z,250nm,1.2s
QZH LR LR
comp=Z,1μm,31.4s
CTZ Chatham Island 45.99 150 *e*PN P 06 13 26.3 +7.7
CNJI Cibinong 46.52 265 P **P** **06 13 21.9 -1.3**
comp=Z,161nm,1.4s
PPBI Pangkal Pinang 47.79 272 P **P** **06 13 33.7 +0.5**
comp=Z,37nm,1.0s
ERM Erimo 48.38 349 PFAKE 06 13 50.0 +13
ERM LR LR
comp=Z,717nm,20.0s
MCQ Macquarie Isla 48.94 176 *e*P **P** **06 13 42.3 +1.0**
MCQ pmax pmax
comp=Z,120nm,1.0s
MCQ Macquarie Isla 48.94 176 *e*P **P** **06 13 42.3 +1.0**
comp=Z,124nm,0.9s
KASI Kota Agung 49.19 268 P **P** **06 13 41.5 -2.4**
comp=Z,64nm,1.2s
KSRS Korea Array 49.20 333 P **P** **06 13 43.7 +0.1**
comp=Z,25nm,0.9s,baz=149,slow=8.8,SNR=37
KSRS LR LR 06 33 03.9
comp=Z,91nm,19.3s,baz=148,slow=34

KS15 Wonju Array Si 49.21 333 *e*P **P** **06 13 44.0 +0.3**
KSAR Wonju Array Be 49.21 333 P **P** **06 13 43.7 +0.1**
KSAR Wonju Array Be 49.21 333 P **P** **06 13 43.7 +0.1**
KS01 Wonju Array Si 49.23 333 *e*P **P** **06 13 43.5 -0.4**
INCN Inchon 49.83 331 *e*P **P** **06 13 48.8 +0.4**
comp=Z,129nm,0.9s
INCN LR LR
comp=Z,426nm,20.0s
INCN Inchon 49.83 331 P **P** **06 13 48.9 +0.5**
SNR=5.8
INCN Inchon 49.83 331 P **P** **06 13 48.9 +0.5**
SNR=5.8
QIZ Qiongzhong 49.83 301 P **P** **06 13 50.1 +1.4**
QIZ pP **pP** **06 14 06.4 +0.8**
QIZ S **S** **06 20 54.3 +0.4**
QIZ pmax pmax
comp=Z,35nm,0.9s
QIZ LR LR
comp=Z,430nm,21.4s
QIZ LR LR
comp=Z,700nm,21.4s
QIZ Qiongzhong 49.83 301 *e*P **P** **06 13 49.7 +1.0**
comp=Z,36nm,1.0s
QIZ LR LR
comp=Z,714nm,20.0s
NJ2 Nanjing 50.16 321 *e*P **P** **06 13 52.6 +1.7**
NJ2 pmax pmax
comp=Z,47nm,0.9s
LHSI Lahat 50.25 270 P **P** **06 13 51.2 -0.8**
comp=Z,28nm,0.8s
MYKOM Kota Tinggi 50.55 277 ⇑P **P** **06 13 53.7 -0.5**
MYKOM Kota Tinggi 50.55 277 *e*P **P** **06 13 55.1 +0.8**
comp=Z,24nm,1.0s
KUR Kuril'sk 50.88 354 P **P** **06 13 57.3 +1.2**
KGM Kluang 51.10 277 ⇑P **P** **06 13 58.5 0.0**
KTGM Kuala Trenggan 51.86 281 ⇑P **P** **06 14 04.0 -0.1**
WHN Wuhan 52.19 316 P **P** **06 14 07.8 +1.6**
WHN pmax pmax
comp=Z,200nm,1.1s
UBPT Khong Chiam 52.28 294 P **P** **06 14 08.5 +1.3**
comp=Z,76nm,1.2s
BKNI Bangkinang 53.13 275 P **P** **06 14 14.4 +0.9**
BKNI Bangkinang 53.13 275 *e*P **P** **06 14 13.5 0.0**
comp=Z,140nm,0.8s
YSS Yuzh-Sakhalins 53.24 350⇑*e*P **P** **06 14 14.4 +0.8**
YSS pmax pmax
comp=Z,50nm,0.8s
YSS Yuzh-Sakhalins 53.24 350 *e*P **P** **06 14 13.5 -0.1**
comp=Z,40nm,0.7s
USRK Ussuriysk Ar. 53.35 340 P **P** **06 14 14.6 +0.1**
comp=Z,13nm,0.8s,baz=163,slow=7.5,SNR=17
USRK LR LR 06 33 19.6
comp=Z,253nm,21.2s,baz=151,slow=32
DL2 Dalian 53.42 329 P **P** **06 14 15.7 +0.6**
DL2 pmax pmax
comp=Z,71nm,1.0s
PDSI Padang 53.56 273 P **P** **06 14 15.4 -1.3**
comp=Z,43nm,0.8s
PANO Nakornpanom 53.70 296 P **P** **06 14 19.0 +1.5**
comp=Z,134nm,1.2s
IPM Ipoh 53.77 280 *e*P **P** **06 14 18.1 -0.1**
comp=Z,55nm,0.8s
TIA Tai'an 54.01 323 ⇑P **P** **06 14 19.6 +0.1**
TIA pmax pmax
comp=Z,70nm,0.8s
SKNT Sakolnakorn 54.20 295 P **P** **06 14 22.3 +1.0**
comp=Z,203nm,1.4s,comp=Z,2μm
KULM Kulim 54.28 281 *e*P **P** **06 14 20.6 -1.3**
comp=Z,79nm,0.8s
MDJ Mudanjiang 54.55 339 P **P** **06 14 23.5 +0.3**
MDJ pP pP 06 14 41.5 +1.1
MDJ sP sP 06 14 49.4 +1.6
MDJ PP **PP** **06 16 25.1 -1.2**
MDJ ScP **ScP** **06 19 17.6 -1.0**
MDJ PcS **PcS** **06 19 25.5 +0.2**
MDJ S **S** **06 22 01.2 +3.5**
MDJ ScS **ScS** **06 24 05.1 -1.4**
MDJ pmax pmax
comp=Z,15nm,1.0s
MDJ pmax pmax
comp=Z,250nm,4.2s
MDJ LR LR
comp=Z,140nm,5.1s
MDJ LR LR
comp=Z,290nm,5.1s
MDJ LR LR
comp=Z,340nm,4.8s
MDJ Mudanjiang 54.55 339 PFAKE 06 14 40.0 +17
MDJ LR LR
comp=Z,193nm,19.0s
MNSI Mandailing Nat 54.64 275 P **P** **06 14 24.1 -0.4**
comp=Z,73nm,0.8s
SKLT Songkhla 54.68 283 P **P** **06 14 25.7 +0.9**
comp=Z,82nm,1.0s
SRAK Srakaew 55.03 291 P **P** **06 14 24.5 -2.8**
comp=Z,42nm,1.2s,comp=Z,1μm
KHON Khomkaen 55.04 294 P **P** **06 14 28.8 +1.5**
comp=Z,61nm,0.9s
CN2 Changchun 55.47 335 *e*P **P** **06 14 29.2 -0.7**
CN2 pmax pmax
comp=Z,20nm,1.0s
ENH Enshi 55.51 313 *e*P **P** **06 14 31.3 +0.8**
comp=Z,230nm,1.0s
ENH LR LR
comp=Z,439nm,21.0s
PSI Prapat 55.56 277 *e*P **P** **06 14 29.8 -1.5**
PSI Prapat 55.56 277 *e*P **P** **06 14 29.8 -1.5**
comp=Z,31nm,1.0s
CHAI Chaiyaphum 55.66 293 P **P** **06 14 32.5 +0.7**
comp=Z,21nm,1.0s,comp=Z,604nm
TRTT Trang 55.72 283 P **P** **06 14 32.7 +0.4**
comp=Z,82nm,0.9s,comp=Z,854nm
GYA Guiyang 55.76 307⇑*i*P **P** **06 14 33.8 +1.3**
GYA pP sP 06 14 53.2 -3.9
GYA sP pP 06 15 01.6 +12
GYA PP **PP** **06 16 41.0 +3.4**
GYA S **S** **06 22 14.8 0.0**
GYA sS sS 06 22 46.6 +2.8
GYA SS **SS** **06 26 01.6 +0.3**
GYA pmax pmax
comp=Z,20nm,1.0s
GYA pmax pmax
comp=Z,150nm,6.2s
GYA LR LR
comp=Z,4μm,18.0s
GYA LR LR
comp=Z,3μm,17.8s
GYA LR LR
comp=Z,3μm,17.0s
NAYO Nakonayok 55.79 291 P **P** **06 14 34.2 +1.5**
comp=Z,80nm,1.1s,comp=Z,938nm
PATY Pattaya 55.82 290 P **P** **06 14 34.5 +1.5**
comp=Z,30nm,0.8s,comp=Z,4μm
SKR Severo-Kuril's 56.07 2 P **P** **06 14 34.7 +0.7**
KRAB Krabi 56.28 284 P **P** **06 14 36.7 +0.4**
comp=Z,47nm,0.8s
HABR Khabarovsk 56.32 345 *e*P **P** **06 14 33.3 -2.5**
HABR *e**PP **pP** **06 14 49.5 -3.6**
HABR *e* 06 15 30.4
HABR *e*S **S** **06 22 19.3 -1.8**
HABR *e* 06 22 46.7
HABR *e* 06 24 16.4
HABR pmax pmax
comp=Z,87nm,2.0s
HABR pmax pmax
comp=Z,247nm,2.6s
HABR pmax pmax
comp=E,62nm,1.5s
HABR MLR MLR
comp=Z,65nm,19.0s
PPT2 Papeete2 56.42 107 *e*S **S** **06 22 30.1 +6.3**
comp=Z,229nm,26.8s
PPT2 *e*LR LR 06 31 09.9
comp=Z,474nm,28.8s
GSI Gunungsitoli 56.69 275 P **P** **06 14 38.4 -0.8**
comp=Z,76nm,1.7s
GSI Gunungsitoli 56.69 275 *e*P **P** **06 14 38.3 -0.9**
comp=Z,49nm,0.7s
PBKT Sadao Pong 56.80 294 P **P** **06 14 41.2 +1.4**
comp=Z,76nm,0.9s,comp=Z,950nm
KCSI Kotacane, Aceh 56.81 278 P **P** **06 14 38.7 -1.4**
comp=Z,68nm,0.9s,comp=Z,709nm
SURT Suratani 56.82 284 P **P** **06 14 40.6 +0.5**
comp=Z,31nm,1.0s,comp=Z,283nm
LOEI Loei 56.83 295 P **P** **06 14 38.7 -1.4**
comp=Z,173nm,0.9s,comp=Z,1μm

PHET Kaeng Krachan 56.98 289 P **P** **06 14 42.7 +1.5**
comp=Z,47nm,0.9s,comp=Z,361nm
PKDT Phuket 57.04 283 P **P** **06 14 42.0 +0.3**
comp=Z,129nm,0.9s
TYV Tymovskoe 57.05 352 *e*P **P** **06 14 40.8 -0.2**
TYV pmax pmax
comp=Z,46nm,0.8s
BJT Baijiatuau 57.15 326 *e*P **P** **06 14 42.1 +0.1**
BJT pmax pmax
comp=Z,21nm,0.7s
BJT MLR MLR
comp=Z,424nm,20.0s
BJT Baijiatuau 57.15 326 *e*P **P** **06 14 42.1 +0.1**
comp=Z,21nm,0.7s
BJT LR LR
comp=Z,424nm,20.0s
BJI Beijing 57.16 326 P **P** **06 14 42.0 0.0**
BJI S **S** **06 22 35.1 +2.5**
BJI pmax pmax
comp=Z,14nm,0.7s
BJI LR LR
comp=Z,230nm,18.1s
BJI LR LR
comp=Z,350nm,17.6s
BJI LR LR
comp=Z,400nm,25.3s
TBI Tubuai 57.22 114 *e*S S 06 22 43.4 +9.5
comp=Z,246nm,29.2s
TBI *e*LR LR 06 31 38.7
comp=Z,1μm,29.5s,baz=284
TPTI 57.35 277 P **P** **06 14 42.9 -1.0**
comp=Z,60nm,1.2s,comp=Z,1μm
PHIT Phitsanulok 57.49 294 P **P** **06 14 46.4 +1.6**
comp=Z,148nm,0.9s,comp=Z,1μm
UTTA Uttaradit 57.54 295 P **P** **06 14 46.5 +1.4**
comp=Z,76nm,0.8s,comp=Z,538nm
NANT Nan 57.76 296 P **P** **06 14 47.9 +1.3**
comp=Z,79nm,0.9s,comp=Z,662nm
SRDT SRDT 57.85 291 P **P** **06 14 48.8 +1.5**
comp=Z,437nm,1.0s,comp=Z,5μm
UTHA Uthaitani 57.89 292 P **P** **06 14 48.9 +1.3**
comp=Z,40nm,0.8s,comp=Z,349nm
LHMI Lhok Sumawe 57.90 280 P **P** **06 14 48.5 +0.8**
comp=Z,245nm,1.1s,comp=Z,2μm
LHMI Lhok Sumawe 57.90 280 *e*P **P** **06 14 48.0 +0.3**
comp=Z,211nm,1.0s
KLR Kul'dur 57.91 343 P **P** **06 14 47.2 0.0**
comp=Z,18nm,0.9s,baz=171,slow=3.2,SNR=18
KLR LR LR 06 37 45.2
comp=Z,220nm,21.8s,baz=129,slow=34
XAN Xi'an 57.96 316 P **P** **06 14 48.2 +0.4**
XAN pP pP 06 15 07.2 +2.1
XAN PP **PP** **06 16 57.6 +0.6**
XAN S **S** **06 22 41.5 -1.9**
XAN SS **SS** **06 26 32.1 -3.5**
XAN pmax pmax
comp=Z,110nm,1.0s
XAN pmax pmax
comp=Z,180nm,8.3s
XAN LR LR
comp=Z,160nm,22.9s
XAN LR LR
comp=Z,350nm,20.8s
XAN LR LR
comp=Z,440nm,19.6s
PHRA Phrae 58.08 296 P **P** **06 14 50.4 +1.5**
comp=Z,905nm,1.0s,comp=Z,36μm
SUKH Sukhothai 58.30 294 P **P** **06 14 52.1 +1.7**
comp=Z,61nm,0.8s,comp=Z,456nm
KMI Kunming 58.35 304 P **P** **06 14 52.9 +1.9**
KMI pP sP 06 15 12.0 -3.7
KMI sP pP 06 15 20.0 +12
KMI S **S** **06 22 47.4 -1.8**
KMI pmax pmax
comp=Z,58nm,1.2s
KMI LR LR
comp=Z,240nm,18.2s
KMI LR LR
comp=Z,290nm,20.0s
KMI LR LR
comp=Z,500nm,24.2s
PET Petropavlovsk 58.52 3 *e*P **P** **06 14 51.8 +0.5**
PET *e*S **S** **06 22 44.7 -5.1**
PET pmax pmax
comp=Z,35nm,1.0s
PET Petropavlovsk 58.52 3 PFAKE 06 15 00.0 +8.7
PET LR LR
comp=Z,463nm,20.0s
CRAI Chiangrai 58.53 298 P **P** **06 14 52.8 +0.8**
comp=Z,80nm,1.1s,comp=Z,1μm
PEA0 Petropavlovsk- 58.56 3 *e*P **P** **06 14 51.7 +0.2**
PEA0B Petropavlovsk- 58.56 3 *e*P **P** **06 14 52.3 +0.7**
comp=Z,89nm,1.3s
PETK Petropavlovsk- 58.56 3 P **P** **06 14 52.1 +0.5**
comp=Z,29nm,0.8s,baz=176,slow=8.8,SNR=34
PETK LR LR 06 36 22.0
comp=Z,351nm,21.5s,baz=179,slow=32
UMPA Umpang Tak 58.62 293 P **P** **06 14 54.0 +1.3**
comp=Z,26nm,1.0s,comp=Z,535nm
LAMP Lampang 58.62 296 P **P** **06 14 54.4 +1.7**
comp=Z,85nm,0.8s,comp=Z,579nm
CM01 Chiang Mai Arr 59.20 295 *e*P **P** **06 14 57.2 +0.5**
CMAR Chiang Mai Arr 59.22 295 P **P** **06 14 58.8 +1.9**
comp=Z,90nm,0.8s,baz=112,slow=5.1,SNR=274
CMAR LR LR 06 39 22.8
comp=Z,143nm,19.8s,baz=108,slow=35
CMMT Chiang Mai 59.33 296 P **P** **06 14 58.7 +1.1**
comp=Z,108nm,1.1s,comp=Z,2μm
CHTO Chiang Mai 59.33 296 P **P** **06 14 58.7 +1.1**
comp=Z,445nm,1.0s,comp=Z,4μm
CHTO Chiang Mai 59.33 296 *e*P **P** **06 14 59.1 +1.4**
CHTO Chiang Mai 59.33 296 *e*P **P** **06 14 59.1 +1.4**
comp=Z,127nm,1.2s
CHTO LR LR
comp=Z,277nm,20.0s
CHTO Chiang Mai 59.33 296 P **P** **06 14 59.9 +2.2**
SNR=32
CHTO Chiang Mai 59.33 296 P **P** **06 14 59.9 +2.2**
SNR=32
NKL Nikolayevsk 59.58 351 *e*P **P** **06 14 58.6 0.0**
NKL pmax pmax
comp=N,30nm,0.9s
NKL pmax pmax
comp=Z,60nm,0.9s
CMAI Chiengmai2 59.60 297 P **P** **06 15 00.9 +1.2**
comp=Z,55nm,1.2s,comp=Z,761nm
MHMT Maesarieng 60.05 295 P **P** **06 15 04.0 +1.5**
comp=Z,47nm,0.9s,comp=Z,565nm
CD2 Chengdu 60.09 310⇑*i*P **P** **06 15 03.9 +1.2**
CD2 pP pP 06 15 21.6 +1.5
CD2 PcP **PcP** **06 15 47.8 -0.2**
CD2 PP **PP** **06 17 16.3 +0.3**
CD2 S **S** **06 23 11.5 +0.3**
CD2 sS sS 06 23 43.7 +3.1
CD2 SS **SS** **06 27 10.9 +1.6**
CD2 pmax pmax
comp=Z,300nm,0.8s
CD2 pmax pmax
comp=Z,260nm,5.1s
HHC Hu-ho-hao-te 60.33 324 *e*P **P** **06 15 06.0 +1.8**
HHC PP **PP** **06 17 24.1 +6.1**
HHC S **S** **06 23 17.7 +3.7**
HHC sS sS 06 23 45.9 +2.5
HHC pmax pmax
comp=Z,23nm,1.0s
HHC pmax pmax
comp=Z,160nm,6.7s
HHC LR LR
comp=Z,260nm,16.3s
HHC LR LR
comp=Z,280nm,16.5s
HHC LR LR
comp=Z,320nm,18.4s
HIA Hailar 62.20 335 *e*P **P** **06 15 17.2 +0.6**
HIA pmax pmax
comp=Z,26nm,0.8s
HIA MLR MLR
comp=Z,274nm,20.0s
HIA Hailar 62.20 335 *e*P **P** **06 15 17.2 +0.6**
comp=Z,26nm,0.8s
HIA LR LR
comp=Z,274nm,20.0s
LZH Lanzhou 62.57 316 *e*P **P** **06 15 21.5 +2.0**
LZH pP pP 06 15 39.3 +2.4
LZH sP sP 06 15 48.4 +4.1
LZH PcP **PcP** **06 16 02.8 +4.8**

LZH eS S 06 23 42.5 -0.1
LZH sS sS 06 24 16.5 +4.3
LZH SS SS 06 27 49.1 +1.0
LZH pmax pmax
comp=Z,54nm,1.0s
LZH pmax pmax
comp=Z,280nm,4.2s
LZH LR LR
comp=Z,2µm,17.5s
LZH LR LR
comp=Z,2µm,15.7s
LZH LR LR
comp=Z,2µm,19.2s
MA2 Magadan 65.00 358 P **P** **06 15 34.4 -0.3**
comp=Z,41nm,0.7s,baz=180,slow=6.1,SNR=65
MA2 Magadan 65.00 358 *e*P **P** **06 15 34.0 -0.7**
MA2 pmax pmax
comp=Z,160nm,0.8s
MA2 MLR MLR
comp=Z,337nm,21.0s
MA2 Magadan 65.00 358 *e*P **P** **06 15 34.0 -0.7**
comp=Z,160nm,0.8s
MA2 LR LR
comp=Z,337nm,21.0s
TAOE Nuku Hiva Isla 65.42 97 *e*LR LR 06 35 20.1
comp=Z,413nm,22.6s
GTA Gaotai 66.99 317 ⇑P **P** **06 15 49.9 +1.8**
GTA pP sP 06 16 08.9 -4.2
GTA sP PcP 06 16 17.3 +1.2
GTA S **S** **06 24 38.8 +2.0**
GTA sS sS 06 25 12.7 +6.0
GTA pmax pmax
comp=Z,160nm,1.0s
GTA pmax pmax
comp=Z,570nm,6.2s
GTA LR LR
comp=Z,190nm,19.5s
GTA LR LR
comp=Z,300nm,19.0s
GTA LR LR
comp=Z,320nm,20.4s
ULN Ulaanbaatar 67.25 328*c i*P **P** **06 15 50.3 +0.7**
ULN pmax pmax
comp=Z,24nm,0.8s
ULN Ulaanbaatar 67.25 328 *e*P **P** **06 15 50.6 +1.0**
comp=Z,24nm,0.9s
ULN LR LR
comp=Z,342nm,20.0s
ULN Ulaanbaatar 67.25 328 P **P** **06 15 51.0 +1.4**
SNR=10
ULN Ulaanbaatar 67.25 328 P **P** **06 15 51.0 +1.4**
SNR=10
SONM Songino Array 67.58 327 P **P** **06 15 52.5 +0.8**
comp=Z,12nm,0.5s,baz=142,slow=5.8,SNR=82
SONA1 Songino Array 67.58 327 *e*P **P** **06 15 51.9 +0.1**
CASY Casey 67.61 197 *e*P **P** **06 15 50.8 -0.5**
comp=Z,5.0nm,1.1s
CASY LR LR
comp=Z,241nm,20.0s
UNV Unalaska Valle 67.87 24 *e*P **P** **06 15 52.9 -0.3**
comp=Z,34nm,0.9s
SEY Seymchan 68.33 359 P **P** **06 15 55.6 -0.3**
comp=Z,8.8nm,0.8s,baz=163,slow=5.5,SNR=40
SEY Seymchan 68.33 359⇓ *i*P **P** **06 15 55.7 -0.2**
LSA Lhasa 69.60 304 P **P** **06 16 06.7 +1.7**
LSA pmax pmax
comp=Z,75nm,1.0s
LSA Lhasa 69.60 304 *e*P **P** **06 16 06.8 +1.7**
LSA pmax pmax
comp=Z,66nm,0.8s
LSA MLR MLR
comp=Z,357nm,22.0s
LSA Lhasa 69.60 304 *e*P **P** **06 16 06.8 +1.7**
comp=Z,66nm,0.8s
LSA LR LR
comp=Z,357nm,22.0s
FALS False Pass 69.86 25 *e*P **P** **06 16 05.3 -0.2**
comp=Z,64nm,0.8s
YAK Yakutsk 69.96 348 LR LR 06 48 46.7
comp=Z,97nm,18.2s,baz=152,slow=38
YAK Yakutsk 69.96 348 *e*P **P** **06 16 05.9 -0.1**
YAK pmax pmax
comp=E,10.0nm,1.5s
YAK pmax pmax
comp=N,14nm,1.6s
YAK pmax pmax
comp=Z,37nm,1.1s
YAK Yakutsk 69.96 348 PFAKE 06 16 20.0 +14
YAK LR LR
comp=Z,3µm,21.0s
RKT Rikitea 70.46 112 *e*LR LR 06 37 47.9
comp=Z,600nm,33.0s
ZAK Zakamensk 70.74 328 *e*P **P** **06 16 11.1 -0.1**
ZAK pmax pmax
comp=Z,43nm,0.8s
BOD Bodaibo 70.92 339⇓ *i*P **P** **06 16 11.4 -0.5**
BOD pmax pmax
comp=Z,22nm,1.0s
TLY Talaya 71.31 330 *e*P **P** **06 16 15.4 +0.9**
TLY pmax pmax
comp=Z,19nm,0.9s
TLY Talaya 71.31 330 *e*P **P** **06 16 15.2 +0.6**
comp=Z,16nm,0.9s
TLY LR LR
comp=Z,185nm,19.0s
TLY Talaya 71.31 330 P **P** **06 16 15.6 +1.1**
SNR=6.3
TLY Talaya 71.31 330 P **P** **06 16 15.6 +1.1**
SNR=6.3
IRK Irkutsk 71.34 330 *e*P **P** **06 16 13.9 -0.7**
IRK pmax pmax
comp=Z,45nm,1.0s
TAPN Taplejung 71.77 301 *e*P **P** **06 16 19.1 +1.0**
comp=Z,114nm,0.9s
ODAN Odare 71.90 300 *e*P **P** **06 16 19.8 +1.0**
comp=Z,213nm,0.9s
VNDA Vanda 72.02 178 P **P** **06 16 18.8 +0.5**
comp=Z,19nm,1.0s,baz=329,slow=6.5,SNR=7.3
SBA Scott Base 72.54 177 *e*P **P** **06 16 23.0 +1.6**
SBA pmax pmax
comp=Z,33nm,1.1s
SBA Scott Base 72.54 177 *e*P **P** **06 16 23.0 +1.6**
comp=Z,33nm,1.1s
RAMN Ramite 72.61 300 *e*P **P** **06 16 23.9 +0.8**
comp=Z,54nm,0.9s
MOY Mondy 72.66 329 *e*P **P** **06 16 23.4 +0.7**
MOY pmax pmax
comp=Z,31nm,1.2s
GUN Gumba 73.48 301 *e*P **P** **06 16 29.4 +1.1**
comp=Z,174nm,0.8s
PKIN Phulchoki 73.81 301 *e*P **P** **06 16 30.5 +0.4**
comp=Z,205nm,1.4s
GAMB Gambell 73.83 15 *e*P **P** **06 16 29.6 +0.5**
comp=Z,42nm,1.0s
KKN Kakani 73.96 301 *e*P **P** **06 16 31.8 +0.8**
comp=Z,68nm,0.7s
BILL Bilibino 73.97 5 *e*P **P** **06 16 29.8 -0.1**
BILL pmax pmax
comp=Z,28nm,0.8s
BILL MLR MLR
comp=Z,319nm,21.0s
BILL Bilibino 73.97 5 *e*P **P** **06 16 29.8 -0.1**
comp=Z,28nm,0.8s
BILL LR LR
comp=Z,319nm,21.0s
DMN Daman 74.06 301 *e*P **P** **06 16 32.6 +1.0**
comp=Z,136nm,0.8s
PALK Pallekele 74.17 279 *i*P **P** **06 16 33.5 +1.3**
PALK Pallekele 74.17 279 *e*P **P** **06 16 33.4 +1.2**
comp=Z,46nm,1.2s
GKN Gorkha 74.57 301 *e*P **P** **06 16 35.2 +0.8**
comp=Z,423nm,1.3s
KOLN Koldanda 75.40 300 *e*P **P** **06 16 39.8 +0.5**
comp=Z,223nm,1.1s
OHAK Old Harbor 75.74 27 *e*P **P** **06 16 40.1 -0.2**
comp=Z,54nm,1.0s
PYUN Piuthan 76.00 301 *e*P **P** **06 16 43.1 +0.4**
comp=Z,353nm,1.0s
KDAK Kodiak Island 76.37 26 P P 06 16 59.1 +15
comp=Z,16nm,0.8s,baz=218,slow=3.3,SNR=12
KDAK LR LR 06 45 20.1
comp=Z,406nm,21.9s,baz=243,slow=32
KDAK Kodiak Island 76.37 26 *e*P **P** **06 16 44.4 +0.5**
KDAK pmax pmax
comp=Z,54nm,1.0s
KDAK Kodiak Island 76.37 26 *e*P **P** **06 16 44.4 +0.5**
comp=Z,54nm,1.0s

WMQ Urumqi 77.07 317 P **P** **06 16 49.4 +1.1**
WMQ PcP **PcP** **06 16 59.8 +0.9**
WMQ pP sP 06 17 09.5 -4.1
WMQ sP pP 06 17 18.5 +12
WMQ S **S** **06 26 26.3 -5.8**
WMQ SKS **SKSac** **06 26 46.5 -8.8**
WMQ pmax pmax
comp=Z,25nm,1.0s
WMQ pmax pmax
comp=Z,310nm,4.8s
WMQ LR LR
comp=Z,70nm,26.6s
WMQ LR LR
comp=Z,67nm,29.4s
WMQ LR LR
comp=Z,91nm,26.6s
SVW2 Sparrevohn 77.11 23 *e*P **P** **06 16 48.8 +0.8**
comp=Z,39nm,0.8s
HYB Hyderabad 77.81 289 *i*P **P** **06 16 52.0 -0.8**
TT01 Tatalina 78.07 21 *e*P **P** **06 16 53.2 -0.1**
TTA Tatalina 78.09 21 *e*P **P** **06 16 53.8 +0.3**
TTA pmax pmax
comp=Z,49nm,1.0s
TTA Tatalina 78.09 21 *e*P **P** **06 16 53.8 +0.3**
comp=Z,49nm,1.0s
BRLK Bradley Lake 78.22 25 *e*P **P** **06 16 54.5 +0.2**
comp=Z,98nm,1.1s
SPU Mount Spurr 78.53 24 *e*P **P** **06 16 56.1 +0.1**
TIXI Tiksi 78.82 352*c i*P **P** **06 16 56.0 -1.2**
TIXI pmax pmax
comp=Z,13nm,1.7s
TIXI Tiksi 78.82 352 *e*P **P** **06 16 56.5 -0.7**
comp=Z,11nm,1.0s
TIXI LR LR
comp=Z,246nm,20.0s
SEW Seward 79.01 25 *e*P **P** **06 16 59.0 +0.5**
comp=Z,87nm,1.0s
RC01 Rabbit Creek A 79.42 24 *e*P **P** **06 17 00.3 -0.4**
comp=Z,86nm,1.0s
PPLA Purkeypile 79.47 22 *e*P **P** **06 17 01.2 +0.1**
comp=Z,68nm,1.5s
CAST Castle Rocks 79.81 22 *e*P **P** **06 17 02.1 -0.8**
comp=Z,54nm,0.8s
PMR Palmer 79.93 24 *e*P **P** **06 17 02.6 -0.9**
PMR pmax pmax
comp=Z,51nm,0.9s
PMR Palmer 79.93 24 *e*P **P** **06 17 02.6 -0.9**
comp=Z,51nm,0.9s
KTH Kantishna Hill 80.31 22 *e*P **P** **06 17 04.5 -1.2**
comp=Z,50nm,0.9s
SML Sawmill 80.37 24 *e*P **P** **06 17 05.8 -0.1**
SML pmax pmax
comp=Z,137nm,1.0s
SML Sawmill 80.37 24 *e*P **P** **06 17 05.8 -0.1**
comp=Z,137nm,1.0s
TRF Thorofare Moun 80.49 22 *e*P **P** **06 17 05.7 -1.0**
comp=Z,40nm,0.8s
BPAW Bear Paw Mtn. 80.60 21 *e*P **P** **06 17 06.2 -0.9**
comp=Z,19nm,0.9s
SCM Sheep Creek Mo 80.79 24 *e*P **P** **06 17 08.9 +0.6**
SCM pmax pmax
comp=Z,79nm,1.0s
SCM Sheep Creek Mo 80.79 24 *e*P **P** **06 17 08.9 +0.6**
comp=Z,79nm,1.0s
EYAK Cordova Ski Ar 80.82 26 *e*P **P** **06 17 08.8 +0.5**
comp=Z,37nm,0.9s
RND Reindeer 81.01 23 *e*P **P** **06 17 08.1 -1.3**
RND pmax pmax
comp=Z,62nm,0.8s
RND Reindeer 81.01 23 *e*P **P** **06 17 08.1 -1.3**
comp=Z,62nm,0.8s
DIV Divide 81.09 25 *e*P **P** **06 17 10.4 +0.6**
comp=Z,62nm,0.8s
MCK McKinley 81.15 22 *e*P **P** **06 17 09.1 -1.0**
MCK pmax pmax
comp=Z,136nm,1.0s
MCK McKinley 81.15 22 *e*P **P** **06 17 09.1 -1.0**
comp=Z,136nm,1.0s
KLU Klutina 81.21 25 *e*P **P** **06 17 10.6 +0.1**
comp=Z,131nm,1.2s
MLY Manley 81.21 21 *e*P **P** **06 17 09.7 -0.7**
comp=Z,40nm,0.8s
RAGM Ragged Mountai 81.21 26 *e*P **P** **06 17 11.1 +0.6**
comp=Z,131nm,1.3s
DHY Denali Highway 81.41 23 *e*P **P** **06 17 11.3 -0.3**
comp=Z,35nm,0.9s
BMRM Bremner River 81.52 26 *e*P **P** **06 17 12.8 +0.7**
comp=Z,161nm,1.6s
MK01 Makanchi Array 81.64 319 *e*P **P** **06 17 13.6 +0.6**
MK31 Makanchi Array 81.65 319 *e*P **P** **06 17 13.8 +0.7**
MK31 Makanchi Array 81.65 319 *e*P **P** **06 17 13.8 +0.7**
MKAR Makanchi Array 81.65 319 P **P** **06 17 13.7 +0.6**
comp=Z,38nm,0.8s,baz=107,slow=5.8,SNR=263
MKAR PKKP **PKKPbc** **06 35 43.1 -4.2**
comp=Z,0.4nm,0.6s,baz=270,slow=1.2,SNR=4.4
MKAR Makanchi Array 81.65 319 *e*P **P** **06 17 13.8 +0.7**
MAKZ Makanchi 81.86 319 *e*P **P** **06 17 14.8 +0.6**
MAKZ pmax pmax
comp=Z,64nm,0.8s
MAKZ Makanchi 81.86 319 *e*P **P** **06 17 14.8 +0.6**
comp=Z,64nm,0.8s
WRH Wood River Hil 81.86 22 *e*P **P** **06 17 12.6 -1.1**
comp=Z,53nm,1.1s
CCB Clear Creek Bu 82.06 22 *e*P **P** **06 17 13.3 -1.4**
comp=Z,34nm,1.0s
MDM Murphy Dome 82.07 21 *e*P **P** **06 17 13.5 -1.3**
comp=Z,43nm,1.2s
PAX Paxson 82.11 24 *e*P **P** **06 17 14.8 -0.4**
PAX pmax pmax
comp=Z,24nm,1.0s
PAX Paxson 82.11 24 *e*P **P** **06 17 14.8 -0.4**
comp=Z,24nm,1.0s
COLA College 82.16 21*c i*P **P** **06 17 13.3 -2.0**
COLA pmax pmax
comp=Z,24nm,0.7s
COLA College 82.16 21 *e*P **P** **06 17 14.1 -1.1**
comp=Z,71nm,0.8s
COLA LR LR
comp=Z,606nm,22.0s
HDA Harding Lake 82.25 22 *e*P **P** **06 17 15.2 -0.6**
comp=Z,16nm,0.9s
ZAA0 Zalesovo Array 82.42 326 *e*P **P** **06 17 16.1 -0.8**
ZALV Zalesovo Beam 82.42 326 P **P** **06 17 16.3 -0.6**
comp=Z,13nm,0.5s,baz=111,slow=5.9,SNR=52
ZALV LR LR 06 51 57.2
comp=Z,117nm,22.0s,baz=68,slow=34
IL1 Eielson Array 82.46 22 *e*P **P** **06 17 14.2 -2.6**
ILAR Eielson Array 82.46 22 P **P** **06 17 15.2 -1.7**
comp=Z,13nm,0.6s,baz=244,slow=5.6,SNR=126
ILAR PKKP **PKKPbc** **06 35 42.2 -3.9**
comp=Z,0.6nm,0.7s,baz=334,slow=0.6,SNR=7.7
ILAR LR LR 06 50 57.9
comp=Z,730nm,20.4s,baz=246,slow=34
ILB Eielson Array 82.46 22 *e*P **P** **06 17 15.3 -1.7**
COLD Coldfoot 82.62 19 *e*P **P** **06 17 18.1 +0.5**
comp=Z,60nm,1.5s
MENT Mentasta 82.80 24 *e*P **P** **06 17 18.3 -0.5**
comp=Z,22nm,0.7s
DOT Dot Lake 82.99 23 *e*P **P** **06 17 19.0 -0.7**
comp=Z,188nm,0.9s
NVS Novosibirsk 83.59 327 *e*P **P** **06 17 22.6 -0.3**
NVS *e**PP **pP** **06 17 41.2 +0.1**
NVS *e*S **S** **06 27 42.3 +2.5**
NVS pmax pmax
comp=Z,51nm,1.6s
NVS pmax pmax
comp=N,9.0nm,0.7s
NVS pmax pmax
comp=E,24nm,1.1s
NVS smax smax
comp=E,14nm,1.7s
FYU Fort Yukon 83.95 21 *e*P **P** **06 17 24.8 +0.3**
comp=E,28nm,1.2s
KSH Kashi 84.29 311 P **P** **06 17 29.7 +2.7**
KSH *e*pP sP 06 17 50.1 -2.4
KSH *e*sP pP 06 17 58.4 +13
KSH *e*PP **PP** **06 20 49.0 +6.4**
KSH S **S** **06 27 49.5 +1.7**
KSH sS sS 06 28 25.6 +6.9
KSH pmax pmax
comp=E,90nm,0.9s
KSH LR LR
comp=E,170nm,7.3s
KSH LR LR
comp=E,160nm,5.6s
KSH LR LR
comp=E,140nm,6.0s
EGAK Eagle 84.64 23 *e*P **P** **06 17 27.6 -0.4**
comp=E,40nm,0.9s
EGAK LR LR
comp=Z,855nm,20.0s
KURK Kurchatov 85.07 322 *e*P **P** **06 17 29.4 -1.1**
KURK pmax pmax
comp=Z,72nm,1.4s
KURK MLR MLR
comp=Z,339nm,22.0s
KURK Kurchatov 85.07 322 *e*P **P** **06 17 29.4 -1.1**
comp=Z,72nm,1.4s
KURK PKKPbc **PKKPbc** **06 35 37.9 -1.4**
KURK LR LR
comp=Z,339nm,22.0s
KURK Kurchatov 85.07 322 P **P** **06 17 30.6 +0.1**
SNR=16
KURK Kurchatov 85.07 322 P **P** **06 17 30.6 +0.1**
SNR=16
KURBB Kurchatov Arra 85.10 322 PKKPbc PKKPbc 06 35 37.9 -1.4
comp=Z,0.6nm,0.5s,baz=290,slow=2.8,SNR=6.7
SKAG Skagway 85.15 29 *e*P **P** **06 17 31.9 +1.2**
comp=Z,102nm,1.7s
TKM2 Tokmak 2 85.28 314 *e*P **P** **06 17 32.8 +0.8**
TKM2 pmax pmax
comp=Z,55nm,0.8s
TKM2 MLR MLR
comp=Z,161nm,19.0s
TKM2 Tokmak 2 85.28 314 *e*P **P** **06 17 32.8 +0.8**
comp=Z,55nm,0.8s
TKM2 LR LR
comp=Z,161nm,19.0s
MAW Mawson 85.28 203 P **P** **06 17 31.6 +0.4**
comp=Z,24nm,0.6s,baz=100,slow=6.1,SNR=77
MAW LR LR 06 51 36.2
comp=Z,302nm,21.9s,baz=66,slow=33
MAW Mawson 85.28 203 *e*P **P** **06 17 31.6 +0.4**
MAW pmax pmax
comp=Z,30nm,1.6s
MAW Mawson 85.28 203 *e*P **P** **06 17 31.6 +0.4**
comp=Z,30nm,1.6s
WRAK Wrangell Islan 85.72 32 PFAKE 06 17 50.0 +16
WRAK LR LR
comp=Z,445nm,20.0s
FRU Bishkek 85.97 314⇑ *i*P **P** **06 17 36.0 +0.8**
FRU *i* 06 17 45.0
FRU pmax pmax
comp=Z,110nm,2.0s
AAK Ala-Archa 86.01 313*c i*P **P** **06 17 36.2 +0.6**
AAK pmax pmax
comp=Z,97nm,1.0s
AAK Ala-Archa 86.01 313 *e*P **P** **06 17 36.5 +0.8**
comp=Z,44nm,1.1s
AAK LR LR
comp=Z,220nm,21.0s
AAK Ala-Archa 86.01 313 P **P** **06 17 36.8 +1.2**
SNR=18
AAK Ala-Archa 86.01 313 P **P** **06 17 36.8 +1.2**
SNR=18
EKS2 Erkin-Say 86.54 313 *e*P **P** **06 17 39.0 +0.8**
EKS2 pmax pmax
comp=Z,21nm,0.8s
EKS2 MLR MLR
comp=Z,202nm,20.0s
EKS2 Erkin-Say 86.54 313 *e*P **P** **06 17 39.0 +0.8**
comp=Z,21nm,0.8s
EKS2 LR LR
comp=Z,202nm,20.0s
NRIK Noril'sk 87.06 341 P **P** **06 17 38.8 -1.1**
comp=Z,11nm,0.7s,baz=118,slow=5.1,SNR=9.4
DLBC Dease Lake 87.47 31 P **P** **06 17 42.6 +0.3**
comp=Z,2.3nm,0.5s,baz=240,slow=6.8,SNR=16
M02C Callahan 88.58 48 P **P** **06 17 50.4 +2.5**
baz=261
YBH Yreka Blue Hor 88.74 48 P **P** **06 17 50.9 +2.3**
comp=Z,2.4nm,0.7s,baz=204,slow=1.9,SNR=5.0
YBH LR LR 06 50 34.9
comp=Z,1µm,20.9s,baz=267,slow=31
INK Inuvik 88.78 21 P **P** **06 17 47.3 -0.9**
comp=Z,4.0nm,0.5s,baz=245,slow=4.6,SNR=30
INK PKKP **PKKPdf** **06 35 25.4 -0.2**
comp=Z,3.0nm,0.9s,baz=14,slow=3.9,SNR=11
INK Inuvik 88.78 21 *e*P **P** **06 17 47.2 -0.9**
INK pmax pmax
comp=Z,23nm,1.1s
INK Inuvik 88.78 21 *e*P **P** **06 17 47.2 -0.9**
comp=Z,23nm,1.1s
INK PKKP **PKKPdf** **06 35 25.4 -0.2**
NLWA Neilton Lookou 88.81 42 PFAKE 06 18 00.0 +11
NLWA LR LR
comp=Z,1µm,21.0s
KBL Kabul 88.93 305 *e*P **P** **06 17 49.6 -0.3**
KBL pmax pmax
comp=Z,24nm,0.8s
KBL Kabul 88.93 305 *e*P **P** **06 17 49.6 -0.3**
comp=Z,24nm,0.8s
KKAR Karatay Array 88.98 313 *e*P **P** **06 17 49.9 +0.2**
KKAR Karatay Array 88.98 313 *e*P **P** **06 17 49.9 +0.2**
VOSK Vostochnaya 90.14 323 *e*P **P** **06 17 53.3 -1.5**
VOSK pmax pmax
comp=Z,10.0nm,0.8s
VOSK Vostochnaya 90.14 323 *e*P **P** **06 17 53.3 -1.5**
comp=Z,10nm,0.8s
BVAR Borovoye Array 90.53 323 LR LR 06 57 00.2
comp=Z,178nm,22.0s,baz=74,slow=34
MOD Modoc Plateau 90.54 48 *e*P **P** **06 17 56.6 -0.6**
comp=Z,6.0nm,1.1s
BRVK Borovoye 90.60 323*c i*P **P** **06 17 55.7 -1.3**
BRVK pmax pmax
comp=Z,15nm,1.1s
BRVK Borovoye 90.60 323 *e*P **P** **06 17 55.9 -1.1**
comp=Z,9.7nm,0.8s
BRVK LR LR
comp=Z,287nm,22.0s
BRVK Borovoye 90.60 323 P **P** **06 17 56.4 -0.6**
SNR=7.7
BRVK Borovoye 90.60 323 P **P** **06 17 56.4 -0.6**
SNR=7.7
MWC Mount Wilson 91.46 56 *e*P **P** **06 18 02.9 +1.2**
MWC pmax pmax
comp=Z,13nm,0.9s
MWC Mount Wilson 91.46 56 *e*P **P** **06 18 02.9 +1.2**
comp=Z,12nm,0.9s
EDW2 Edwards Air Fo 91.58 55 P **P** **06 18 02.2 +0.2**
baz=264
HAWA Hanford 91.61 44 PFAKE 06 18 10.0 +8.2
HAWA LR LR
comp=Z,1µm,20.0s
CWC Cottonwood Cre 91.66 54 P **P** **06 18 02.5 -0.1**
baz=264
NV01 Mina Array Sit 91.69 52 *e*P **P** **06 18 02.3 -0.3**
NVAR Mina Array Bea 91.69 52 P **P** **06 18 02.8 +0.1**
comp=Z,5.3nm,0.9s,baz=256,slow=7.0,SNR=20
NVAR PKKPbc **PKKPbc** **06 35 23.1 +0.2**
comp=Z,0.9nm,0.7s,baz=83,slow=3.0,SNR=6.6
NVAR LR LR 06 56 37.1
comp=Z,350nm,18.1s,baz=278,slow=34
BFSC Mount Baldy Ra 91.79 56 P **P** **06 18 03.3 +0.1**
baz=264
NV11 Mina Array Sit 91.80 52 *e*P **P** **06 18 03.3 +0.2**
comp=Z,9.9nm,0.9s
WVOR Wild Horse Val 91.83 48 PFAKE 06 18 10.0 +6.9
WVOR LR LR
comp=Z,2µm,19.0s
DAC Darwin (Calif) 92.04 54 *e*P **P** **06 18 04.5 +0.2**
DAC pmax pmax
comp=Z,6.0nm,0.9s
DAC Darwin (Calif) 92.04 54 *e*P **P** **06 18 04.5 +0.2**
comp=Z,6.0nm,0.9s
MPMC Manual Prospec 92.10 54 P **P** **06 18 03.9 -0.7**
baz=265
BAR Barrett 92.47 58 *e*P **P** **06 18 05.9 -0.2**
comp=Z,14nm,1.1s
GSC Goldstone, Bar 92.59 55 P **P** **06 18 06.5 -0.2**
baz=265
FURC Furnace Creek, 92.64 54 P **P** **06 18 06.8 +0.1**
baz=265
MONP2 Monument Peak 92.70 57 P **P** **06 18 07.9 +0.5**
baz=265
PFO Pinyon Flats O 92.73 57 PFAKE 06 18 20.0 +13
PFO LR LR
comp=Z,610nm,19.0s
BMO Blue Mountains 93.02 45 PFAKE 06 18 20.0 +11
BMO LR LR
comp=Z,459nm,20.0s
TPNV Topopah Spring 93.17 53 P **P** **06 18 09.3 -0.2**
baz=265

TPNV Topopah Spring 93.17 53 *e*P **P 06 18 09.7 +0.2**
TPNV pmax pmax
comp=Z,13nm,1.4s
TPNV Topopah Spring 93.17 53 *e*P **P 06 18 09.7 +0.2**
comp=Z,13nm,1.4s
SYO Syowa Base 93.31 199‖ *e*P **P 06 18 07.4 -1.8**
SYO Syowa Base 93.31 199‖ *e*pP pP 06 18 23.6 -4.0
NEW Newport 93.42 42 P **P 06 18 11.3 +1.1**
comp=Z,1.8nm,0.6s,baz=220,slow=1.8,SNR=5.3
NEW LR LR 06 54 18.3
comp=Z,719nm,20.2s,baz=294,slow=32
NEW Newport 93.42 42 P **P 06 18 11.0 +0.8**
baz=266
NEW Newport 93.42 42 *e*P **P 06 18 11.0 +0.8**
NEW pmax pmax
comp=Z,14nm,1.4s
NEW Newport 93.42 42 *e*P **P 06 18 11.0 +0.8**
comp=Z,14nm,1.4s
GMRC Granite Mounta 93.48 56 P **P 06 18 11.3 +0.3**
baz=266
BC3 Big Chuckawall 93.57 57 P **P 06 18 11.7 +0.4**
baz=266
R11A Troy Canyon, C 93.81 52 P **P 06 18 12.3 -0.1**
baz=266
R11A Troy Canyon, C 93.81 52 *e*P **P 06 18 12.3 -0.1**
comp=Z,9.9nm,1.4s
IRM Iron Mountain 93.86 56 P **P 06 18 12.6 0.0**
baz=266
PDMCI Parker Dam,Lak 94.70 56 P **P 06 18 16.8 +0.5**
baz=266
W13A Hualapai Mount 94.96 55 *e*P **P 06 18 18.9 +1.1**
comp=Z,4.7nm,1.0s
HLID Hailey 95.01 47 *e*P **P 06 18 22.0 +4.2**
comp=Z,7.7nm,1.4s
HLID LR LR
comp=Z,1μm,20.0s
LCMT Little Creek M 95.58 53 *e*P **P 06 18 21.6 +1.1**
comp=Z,7.7nm,1.2s
YKW3 Yellowknife Ar 95.59 28 *e*P **P 06 18 18.9 -0.8**
YKA Yellowknife Ar 95.59 28 P **P 06 18 19.0 -0.7**
comp=Z,1.7nm,0.6s,baz=270,slow=4.6,SNR=22
YKA PKKP **PKKPbc 06 35 09.8 -3.4**
comp=Z,3.8nm,0.8s,baz=87,slow=2.9,SNR=47
YKA Yellowknife Ar 95.59 28 P **P 06 18 19.0 -0.7**
YKB5 Yellowknife Ar 95.59 28 *e*P **P 06 18 19.2 -0.5**
WALA Waterton Lakes 95.59 41 *e*P **P 06 18 21.4 +1.1**
comp=Z,48nm,2.0s
KNB Kanab 95.92 53 *e*P **P 06 18 22.7 +0.6**
KNB Kanab 95.92 53 *e*P **P 06 18 22.7 +0.6**
DUG Dugway, Tooele 96.06 50 PFAKE 06 18 30.0 +7.4
DUG LR LR
comp=Z,592nm,20.0s
PTU Portage 96.48 49 *e*P **P 06 18 27.7 +3.1**
WBK Wadi Bani Khal 96.68 292 P **P 06 18 26.0 +0.3**
SNR=7.3
WBK Wadi Bani Khal 96.68 292 P **P 06 18 26.0 +0.3**
SNR=7.3
ABKAR Akbulak array 96.79 319 *e*P **P 06 18 23.5 -2.0**
WSAR Wadi Sarin 97.03 293 LR LR 07 03 06.9
comp=Z,70nm,20.7s,baz=98,slow=36
WUAZ Wupatki 97.03 55 PFAKE 06 18 40.0 +13
WUAZ LR LR
comp=Z,610nm,19.0s
HWUT Hardware Ranch 97.04 49 PFAKE 06 18 40.0 +13
HWUT LR LR
comp=Z,318nm,20.0s
BOZ Bozeman (W) 97.06 45 PFAKE 06 18 40.0 +13
BOZ LR LR
comp=Z,657nm,22.0s
AHID Auburn Hatcher 97.41 48 PFAKE 06 18 40.0 +11
AHID LR LR
comp=Z,1μm,20.0s
TUC Tucson 97.42 58 *e*P Pdif 06 18 30.3 +1.4
TUC pmax pmax
comp=Z,5.0nm,1.4s
TUC MLR MLR
comp=Z,528nm,20.0s
TUC Tucson 97.42 58 *e*P Pdif 06 18 30.3 +1.4
comp=Z,4.9nm,1.4s
TUC LR LR
comp=Z,528nm,20.0s
ARU Arti 97.59 326 *d* iP **P 06 18 27.2 -1.7**
ARU 06 22 25.4
ARU S **SKSac 06 28 59.0 -1.5**
ARU SS **SS 06 36 27.4 -1.9**
ARU pmax pmax
comp=Z,14nm,1.7s
ARU Arti 97.59 326 *e*P **P 06 18 26.8 -2.1**
comp=Z,6.9nm,0.9s
ARU LR LR
comp=Z,215nm,19.0s
LKWY Lake 97.93 46 PFAKE 06 18 40.0 +8.9
LKWY LR LR
comp=Z,933nm,21.0s
GEYT Alibeck 97.98 307 P **P 06 18 30.8 -0.4**
comp=Z,4.0nm,0.6s,baz=158,slow=1.6,SNR=4.9
HOQ Hoqain 98.26 293 P **P 06 18 32.6 -0.1**
SNR=5.9
HOQ Hoqain 98.26 293 P **P 06 18 32.6 -0.1**
SNR=5.9
EGMT Eagleton 98.35 42 PFAKE 06 18 40.0 +7.3
EGMT LR LR
comp=Z,808nm,21.0s
BW06 Boulder Array 98.54 48 *e*P **P 06 18 32.2 -1.7**
BW06 LR LR
comp=Z,1μm,19.0s
PDAR Pinedale Array 98.54 48 P **P 06 18 32.3 -1.6**
comp=Z,0.8nm,0.8s,baz=263,slow=1.2,SNR=3.6
PDAR PP **PP 06 22 33.1 -2.0**
comp=Z,2.6nm,1.1s,baz=256,slow=6.0,SNR=4.7
PDAR PKKPbc **PKKPbc 06 35 03.0 -1.8**
comp=Z,0.6nm,0.6s,baz=111,slow=5.6,SNR=6.9
PDAR LR LR 06 58 14.8
comp=Z,568nm,20.0s,baz=259,slow=32
RLMT Red Lodge 98.73 45 PFAKE 06 18 50.0 +15
RLMT LR LR
comp=Z,675nm,20.0s
ARQ Araqi 98.97 293 P **P 06 18 35.9 0.0**
SNR=5.2
ARQ Araqi 98.97 293 Pdiff **P 06 18 35.9 0.0**
SNR=5.2
MVCO Mesa Verde 99.38 53 PFAKE 06 18 50.0 +12
MVCO LR LR
comp=Z,562nm,20.0s
SMCO Snowmass 100.55 51 *e*Pdif **Pdif 06 18 43.6 +0.5**
LAO LASA Array 100.80 44 PFAKE 06 18 50.0 +6.4
LAO LR LR
comp=Z,834nm,20.0s
RES Resolute Bay 100.88 15 P **Pdif 06 18 42.3 -0.9**
comp=Z,2.0nm,0.8s,baz=302,slow=4.8,SNR=11
RES Resolute Bay 100.88 15 *e*P **Pdif 06 18 42.5 -0.7**
RES Resolute Bay 100.88 15 *e*Pdif **Pdif 06 18 42.5 -0.7**
ANMO Albuquerque 101.05 56 PFAKE 06 19 00.0 +15
ANMO LR LR
comp=Z,242nm,21.0s
SNAA Sanae 101.40 187 *e*P **Pdif 06 18 45.6 -0.2**
SNAA Sanae 101.40 187 *e*Pdif **Pdif 06 18 45.6 -0.2**
ISCO Idaho Springs 101.58 51 PFAKE 06 19 00.0 +12
ISCO LR LR
comp=Z,548nm,19.0s
SDCO Great Sand Dun 101.75 53 PFAKE 06 19 00.0 +12
SDCO LR LR
comp=Z,466nm,19.0s
MNTX Cornudas Mount 102.00 59 PFAKE 06 19 00.0 +11
MNTX LR LR
comp=Z,792nm,21.0s
DGMT Dagmar 102.03 42 PFAKE 06 19 00.0 +11
DGMT LR LR
comp=Z,817nm,19.0s
VNA3 Neumayer Olymp 102.56 185 P **Pdif 06 18 50.0 -0.9**
VNA2 Neumayer--Watz 102.64 186 P **Pdif 06 18 53.3 +2.1**
baz=166,slow=4.8
FFC Flin Flon 102.67 35 PFAKE 06 19 00.0 +8.4
FFC LR LR
comp=Z,436nm,19.0s
TXAR Lajitas Array 103.52 61 Pdiff **Pdif 06 18 57.9 +1.7**
comp=Z,0.2nm,0.6s,baz=302,slow=8.4,SNR=3.6
TXAR PKKPbc **PKKPbc 06 34 45.8 -3.9**
comp=Z,1.5nm,0.7s,baz=104,slow=4.1,SNR=9.2
ABPO Ambohimpanom 103.84 249 PFAKE 06 19 10.0 +12
ABPO LR LR
comp=Z,101nm,19.0s
OGNE Ogallala 104.24 49 PFAKE 06 19 10.0 +11
OGNE LR LR
comp=Z,551nm,20.0s
LVZ Lovozero 105.88 340 PFAKE 06 23 30.0
LVZ LR LR
comp=Z,228nm,19.0s
CBKS Cedar Bluff 106.20 51 PFAKE 06 23 30.0
CBKS LR LR
comp=Z,712nm,19.0s
KLMR Klimovskoe 106.59 332 *e*P **Pdif 06 19 01.0 -7.9**
KLMR pmax pmax
comp=Z,18nm,1.6s
JCT Junction City 106.83 60 PFAKE 06 23 30.0
JCT LR LR
comp=Z,1μm,19.0s
WMOK Wichita Mounta 107.37 55 PFAKE 06 23 30.0
WMOK LR LR
comp=Z,284nm,19.0s
KEV Kevo 107.38 343 PFAKE 06 23 30.0
KEV LR LR
comp=Z,300nm,20.0s
AGMN Agassiz Nation 107.55 41 PFAKE 06 23 30.0
AGMN LR LR
comp=Z,678nm,19.0s
ECSD EROS Data Cent 107.87 46 PFAKE 06 23 30.0
ECSD LR LR
comp=Z,941nm,20.0s
GNI Garni 108.23 310 PFAKE 06 23 30.0
GNI LR LR
comp=Z,210nm,22.0s
KSU1 Kansas State U 108.59 51 PFAKE 06 23 40.0
KSU1 LR LR
comp=Z,675nm,19.0s
KVTX Kingsville 108.67 63 PFAKE 06 23 40.0
KVTX LR LR
comp=Z,529nm,19.0s
RAYN Ar Rayn 109.09 293 PFAKE 06 23 40.0
RAYN LR LR
comp=Z,188nm,22.0s
KIV Kislovodsk 109.10 315 PFAKE 06 23 40.0
KIV LR LR
comp=Z,161nm,22.0s
OBN Obninsk 109.99 327 PFAKE 06 23 40.0
OBN LR LR
comp=Z,253nm,21.0s
EYMN Ely 110.48 41 PFAKE 06 23 40.0
EYMN LR LR
comp=Z,830nm,20.0s
SCIA State Center 110.67 47 PFAKE 06 23 40.0
SCIA LR LR
comp=Z,961nm,20.0s
NATX Nacogdoches 111.11 58 PFAKE 06 23 40.0
NATX LR LR
comp=Z,631nm,19.0s
MIAR Mount Ida 111.65 55 PFAKE 06 23 40.0
MIAR LR LR
comp=Z,620nm,19.0s
FINES FINESS Array B 112.22 336 Pdiff **Pdif 06 19 32.9 -1.0**
comp=Z,0.7nm,0.7s,baz=92,slow=5.7,SNR=5.1
FINES PKiKP **PKiKP 06 23 31.0 +1.2**
comp=Z,0.9nm,0.6s,baz=119,slow=2.4,SNR=5.1
FINES PKKPbc **PKKPbc 06 34 19.9 -3.4**
comp=Z,1.0nm,0.6s,baz=215,slow=1.7,SNR=9.3
COWI Conover 112.53 42 PFAKE 06 23 40.0
COWI LR LR
comp=Z,880nm,20.0s
JFWS Jewell Farm 112.59 46 PFAKE 06 23 40.0
JFWS LR LR
comp=Z,749nm,21.0s
HDIL Hopedale 113.84 48 PFAKE 06 23 50.0
HDIL LR LR
comp=Z,688nm,20.0s
AKASG Malin Array Be 115.78 325 PKP **PKPdf 06 23 38.5 +1.6**
comp=Z,1.8nm,0.6s,baz=67,slow=1.9,SNR=12
KIEV Kiev 115.79 325 *i* PKiKP **PKPdf 06 23 39.0 +2.0**
KIEV Kiev 115.79 325 PFAKE 06 23 50.0 +13
KIEV LR LR
comp=Z,285nm,19.0s
AK11 Malin Array Si 115.82 325 *e*PKPdf **PKPdf 06 23 37.0 -0.1**
GLMI Grayling 115.94 42 PFAKE 06 23 50.0 +13
GLMI LR LR
comp=Z,1μm,20.0s
KMBO Kilima Mbogo 116.41 266 PKP **PKPdf 06 23 39.8 +0.2**
comp=Z,2.8nm,0.7s,baz=41,slow=3.7,SNR=6.9
KMBO Kilima Mbogo 116.41 266 *e*PKiKP **PKPdf 06 23 40.0 +0.4**
KMBO MLR MLR
comp=Z,130nm,19.0s
KMBO Kilima Mbogo 116.41 266 *e*PKPdf **PKPdf 06 23 40.0 +0.4**
KMBO LR LR
comp=Z,130nm,19.0s
BRTR Keskin Array B 116.66 312 PKP **PKPdf 06 23 39.7 +0.5**
comp=Z,0.3nm,0.4s,baz=66,slow=1.7,SNR=3.0
BRTR PP **PP 06 24 45.7 -1.8**
comp=Z,2.7nm,0.9s,baz=103,slow=5.6,SNR=8.9
ANTO Ankara 117.24 312 PFAKE 06 23 50.0 +10
ANTO LR LR
comp=Z,89nm,19.0s
HFS Hagfors 117.81 339 PKP **PKPdf 06 23 40.0 -0.6**
comp=Z,1.2nm,0.5s,baz=116,slow=3.4,SNR=6.6
HFS Hagfors 117.81 339 PKiKP **PKPdf 06 23 40.0 -0.6**
TEIG Tepich 117.98 70 PFAKE 06 23 50.0 +8.0
TEIG LR LR
comp=Z,12nm,22.0s
NB2 NORSAR Subarra 118.02 340 PKPdf **PKPdf 06 23 43.8 +2.7**
comp=Z,0.9nm,0.6s,baz=39,slow=1.8
NOA NORSAR Array B 118.02 340 PKP **PKPdf 06 23 40.9 -0.1**
comp=Z,0.7nm,0.8s,baz=38,slow=1.3,SNR=6.0
CSS Mathiatis 118.11 307 PFAKE 06 23 50.0 +8.0
CSS LR LR
comp=Z,45nm,21.0s
PLCA Paso Flores 118.48 143 PKP **PKPdf 06 23 41.3 -1.3**
comp=Z,1.0nm,0.5s,baz=250,slow=3.1,SNR=13
PLCA PKKPab **PKKPab 06 34 03.5 -0.2**
comp=Z,1.3nm,0.7s,baz=15,slow=5.2,SNR=3.8
ACSO Alum Creek Sta 118.57 47 PFAKE 06 23 50.0 +7.3
ACSO LR LR
comp=Z,1μm,21.0s
CFR Carcaliu 118.69 319⇑ *i*P **PKPdf 06 23 46.5 +3.8**
CFR Carcaliu 118.69 319⇑⇑PKiKP **PKPdf 06 23 46.5 +3.8**
VRI Vrincioaia 119.31 320⇑ *i*P **PKPdf 06 23 46.8 +2.8**
VRI Vrincioaia 119.31 320⇑⇑PKiKP **PKPdf 06 23 46.9 +2.9**
BURAR Bucovina Array 119.49 323⇑ *i*P **PKPdf 06 23 48.5 +4.1**
BURAR Bucovina Array 119.49 323⇑⇑PKiKP **PKPdf 06 23 48.5 +4.1**
ISP Isparta 119.53 311 PFAKE 06 24 00.0 +15
ISP LR LR
comp=Z,88nm,22.0s
MLR Muntele Rosu 119.97 320‖ *i*P **PKPdf 06 23 52.6 +7.2**
MLR Muntele Rosu 119.97 320‖‖PKiKP **PKPdf 06 23 52.6 +7.2**
BOSA Boshof 120.05 232 PKP **PKPdf 06 23 46.2 +0.1**
comp=Z,12nm,0.8s,baz=120,slow=1.4,SNR=20
BOSA Boshof 120.05 232 *e*PKiKP **PKPdf 06 23 46.6 +0.5**
BOSA Boshof 120.05 232 *e*PKPdf **PKPdf 06 23 46.6 +0.5**
GOGA Godfrey 120.11 55 PFAKE 06 24 00.0 +14
GOGA LR LR
comp=Z,481nm,22.0s
VOIR 120.56 320⇑ *i*P **PKPdf 06 23 52.0 +5.5**
VOIR 120.56 320⇑⇑PKiKP **PKPdf 06 23 52.0 +5.5**
KOLS Kolonicke sedl 120.59 325 *e*PKiKP **PKPdf 06 23 49.3 +3.0**
KOLS Kolonicke sedl 120.59 325 *e*PKP **PKPdf 06 23 49.3 +3.0**
ARR Arges 120.86 321‖ *i*P **PKPdf 06 23 47.0 0.0**
LOT Lotru 121.36 321‖ *i*P **PKPdf 06 23 44.2 -3.8**
BLA Blacksburg 121.42 49 PFAKE 06 24 00.0 +12
BLA LR LR
comp=Z,708nm,20.0s
JTS JuntasAbangare 121.56 81 PFAKE 06 24 00.0 +11
JTS LR LR
comp=Z,602nm,19.0s
GZR Gura Zlata 122.01 321⇑ *i*P **PKPdf 06 23 49.7 +0.5**
GZR Gura Zlata 122.01 321⇑⇑PKiKP **PKPdf 06 23 49.7 +0.5**
LSZ Lusaka 122.40 248 PFAKE 06 24 00.0 +9.1
LSZ LR LR
comp=Z,233nm,19.0s
PSZ Piszkesteto 122.47 325 PFAKE 06 24 00.0 +10
PSZ LR LR
comp=Z,341nm,22.0s
BZS Buzias 122.62 322⇑ *i*P **PKPdf 06 23 49.0 -1.2**
BZS Buzias 122.62 322⇑⇑PKiKP **PKPdf 06 23 49.1 -1.2**
BINY Binghamton 122.75 43 PFAKE 06 24 00.0 +9.3
BINY LR LR
comp=Z,1μm,19.0s
VYHS Vyhne 122.75 326 *e*PKiKP **PKPdf 06 23 49.7 -0.8**
VYHS Vyhne 122.75 326 *e*PKP **PKPdf 06 23 49.7 -0.8**
NHSC New Hope 122.84 54 PFAKE 06 24 00.0 +8.9
NHSC LR LR
comp=Z,553nm,19.0s
MDVR Moldovita 122.96 321⇑ *i*P **PKPdf 06 23 53.1 +2.0**
DPC Dobruska-Polom 123.03 329 *e*PKPdf **PKPdf 06 23 53.1 +2.1**
DPC Dobruska-Polom 123.03 329 *e*PKiKP **PKPdf 06 23 53.1 +2.1**
NCB Newcomb 123.11 40 PFAKE 06 24 00.0 +8.7
NCB LR LR
comp=Z,971nm,20.0s
CBN Corbin Frederi 123.35 47 PFAKE 06 24 00.0 +8.1
CBN LR LR
comp=Z,1μm,22.0s
BRG Berggiesshubel 123.90 331 *e*PKP **PKPdf 06 23 56.3 +3.7**
comp=Z,5.6nm,0.8s
BRG Berggiesshubel 123.90 331 *e*PKIKP **PKPdf 06 23 56.3 +3.7**
BRG pmax pmax
comp=Z,6.0nm,0.8s
CLL Collm 124.07 331 *e*PKPdf **PKPdf 06 23 53.0 +0.1**
comp=Z,5.0nm,0.7s
CLL *i* 06 24 06.3
CLL LmV 07 23 00.0
comp=Z,200nm,18.8s
CLL Collm 124.07 331 *e*PKIKP **PKPdf 06 23 51.0 -1.9**
CLL *i* 06 23 55.6
CLL *i* 06 24 06.3
KHC Kasperske Hory 125.19 329 *e*PKPdf **PKPdf 06 23 54.9 -0.3**
KHC *ex* x 06 23 59.2
KHC Kasperske Hory 125.19 329 *e*PKIKP **PKPdf 06 23 54.9 -0.3**
KHC *e* 06 23 59.2
KHC Kasperske Hory 125.19 329 *e*PKPdf **PKPdf 06 23 55.2 0.0**
GERES GERESS Array B 125.30 329 PKP **PKPdf 06 23 55.0 -0.5**
comp=Z,2.6nm,0.7s,baz=78,slow=1.8,SNR=12
TIR Tirane 125.78 318 PFAKE 06 24 10.0 +14
TIR LR LR
comp=Z,223nm,21.0s
BCIP Isla Barro Col 126.60 83 PFAKE 06 24 10.0 +11
BCIP LR LR
comp=Z,330nm,20.0s
OTAV Otavalo 127.44 94 PFAKE 06 24 10.0 +9.0
OTAV LR LR
comp=Z,230nm,19.0s
MTDJ Mount Denham 128.28 71 PFAKE 06 24 10.0 +8.0
MTDJ LR LR
comp=Z,302nm,19.0s
DAVOX Davos/Dischmat 128.60 329 PKP **PKPdf 06 24 03.0 +1.0**
comp=Z,4.3nm,0.7s,baz=261,slow=4.2,SNR=8.3
TIP Timpagrande 128.91 317 PFAKE 06 24 10.0 +7.4
TIP LR LR
comp=Z,158nm,20.0s
TUE Stuetta 129.08 329 PFAKE 06 24 10.0 +7.1
TUE LR LR
comp=Z,294nm,19.0s
CUC Castrocucco 129.13 319 PFAKE 06 24 10.0 +7.0
CUC LR LR
comp=Z,125nm,22.0s
CEL Celeste 129.95 317 PFAKE 06 24 20.0 +15
CEL LR LR
comp=Z,214nm,20.0s
VLC Villacollemand 130.03 326 PFAKE 06 24 20.0 +15
VLC LR LR
comp=Z,128nm,19.0s
TSUM Tsumeb 130.46 239 *e*PKPdf **PKPdf 06 24 06.5 +0.3**
TSUM LR LR
comp=Z,420nm,20.0s
MOTC Monteria, Cord 130.72 83 *e*P **PKPdf 06 24 03.9 -2.7**
HELC Santa Helena 130.82 87 *e*P **PKPdf 06 24 05.5 -1.8**
PRAC Prado 131.32 90 *e*P **PKPdf 06 24 03.9 -3.9**
ROSC El Rosal 131.96 89 PKP **PKPdf 06 24 08.5 -1.0**
comp=Z,4.9nm,0.7s,baz=105,slow=12,SNR=5.7
CLTB Caltabellotta 132.12 317 PFAKE 06 24 20.0 +11
CLTB LR LR
comp=Z,95nm,19.0s
CHIC Chingaza 132.53 89 *e*P **PKPdf 06 24 08.1 -2.6**
LPAZ La Paz 133.06 118 PKP **PKPdf 06 24 09.5 -2.3**
comp=Z,1.6nm,0.5s,baz=252,slow=2.7,SNR=9.9
LPAZ SKPbc **SKPbc 06 27 33.2 -0.9**
comp=Z,0.9nm,0.8s,baz=208,slow=7.7,SNR=2.4
LPAZ La Paz 133.06 118 *e*PKIKP **PKPdf 06 24 12.2 +0.4**
LPAZ La Paz 133.06 118 *e*PKPdf **PKPdf 06 24 12.2 +0.4**
LPAZ SKPbc **SKPbc 06 27 33.2 -0.9**
VSL Villasalto 133.52 322 PFAKE 06 24 20.0 +8.7
VSL LR LR
comp=Z,197nm,22.0s
SDDR Presa de Saban 134.01 69 PFAKE 06 24 20.0 +7.2
SDDR LR LR
comp=Z,435nm,19.0s
SDV Santo Domingo 135.69 83 *e*PKPdf **PKPdf 06 24 15.3 -1.0**
SDV LR LR
comp=Z,199nm,19.0s
SDV Santo Domingo 135.69 83 *e*P **PKPdf 06 24 13.7 -2.5**
CPUP Villa Florida 136.13 138 PKP **PKPdf 06 24 15.2 -1.3**
comp=Z,2.4nm,0.8s,baz=202,slow=11,SNR=3.8
SJG San Juan 138.96 69 PFAKE 06 24 30.0 +8.1
SJG LR LR
comp=Z,343nm,21.0s
SIV San Ignacio 139.26 122 PKP **PKPdf 06 24 20.9 -1.7**
comp=Z,2.8nm,0.7s,baz=248,slow=2.5,SNR=3.8
SAML Samuel 140.29 111 *e*PKPdf **PKPdf 06 24 23.4 -1.1**
ES19 SONSECA Array 140.59 333 *e*PKPpre PKPpre 06 24 20.1
ESDC Sonseca Array 140.63 333 PKhKP PKPpre 06 24 20.0
comp=Z,0.3nm,0.4s,baz=14,slow=3.9,SNR=5.3
ESDC PP **PP 06 27 16.9 -6.6**
comp=Z,0.4nm,0.5s,baz=20,slow=5.5,SNR=4.1
MVO Moncorvo 140.69 337 *e*PKPdf **PKPdf 06 24 29.5 +5.0**
PMRV Marv??o 142.31 336 *e*PKPdf **PKPdf 06 24 25.1 -2.4**
ANWB Willy Bob 143.10 68 PFAKE 06 24 40.0 +11
ANWB LR LR
comp=Z,314nm,20.0s
EVO Evora 143.33 336 *e*PKPdf PKPbc 06 24 27.0 +0.6
PNCL Nicolau / Gran 143.90 336 *e*PKPdf PKPbc 06 24 28.2 +0.1
GRGR Grenville 144.28 77 PFAKE 06 24 40.0 +8.5
GRGR LR LR
comp=Z,202nm,22.0s
TAM Tamanrasset 145.04 302 *e*PKIKP **PKPdf 06 24 33.0 +0.1**
TAM MLR MLR
comp=Z,169nm,20.0s
TAM Tamanrasset 145.04 302 *e*PKPbc **PKPdf 06 24 33.0 +0.1**
TAM LR LR
comp=Z,169nm,20.0s
PTGA Pitinga 145.58 99 PKPbc **PKPdf 06 24 32.9 -1.0**
baz=252,slow=4.0
PTGA Pitinga 145.58 99 *e*PKPdf **PKPdf 06 24 32.8 -1.1**
MDT Midelt 146.32 326 PKPbc **PKPbc 06 24 35.9 -0.1**
comp=Z,11nm,0.8s,baz=51,slow=4.3,SNR=29
BDFB Brasilia 149.72 134 PKP **PKPdf 06 24 40.9 +0.2**
comp=Z,23nm,0.6s,baz=268,slow=1.3,SNR=10
BDFB PKPbc **PKPbc 06 24 45.8 +0.4**
comp=Z,23nm,0.6s,baz=261,slow=1.3,SNR=39
BDFB Brasilia 149.72 134 *e*PKPdf **PKPdf 06 24 41.0 +0.2**
BDFB *e*PKPbc **PKPbc 06 24 45.4 -0.1**
TOA0 Torodi Ar. Sit 151.61 287 *e*PKPdf **PKPdf 06 24 43.8 +0.3**
TORD Torodi Ar. Bea 151.61 287 PKP **PKPdf 06 24 43.8 +0.3**
comp=Z,2.3nm,1.0s,baz=54,slow=1.5,SNR=11
TORD PKPbc **PKPbc 06 24 49.5 -0.3**
comp=Z,27nm,0.8s,baz=40,slow=2.3,SNR=68
TORD PKPab **PKPab 06 24 58.8 +0.1**
comp=Z,50nm,0.8s,baz=74,slow=4.2,SNR=36
TORD PP **PP 06 28 27.6 -2.5**
comp=Z,3.7nm,0.9s,baz=62,slow=6.7,SNR=4.2
KIC Kosan Boka 158.77 273 *e*P **PKPab 06 25 29.2 -0.1**
comp=Z,94nm,1.3s
DBIC Dimbokro 158.88 274 PKPab **PKPab 06 25 29.7 -0.1**
comp=Z,8.1nm,0.5s,baz=51,slow=4.3,SNR=9.2
DBIC Dimbokro 158.88 274 *e*PKP2 **PKPab 06 25 30.1 +0.3**
DBIC Dimbokro 158.88 274 *e*PKPab **PKPab 06 25 30.1 +0.3**
TIC Toumodi 159.04 274 *e*P **PKPab 06 25 30.7 +0.2**
LIC Lamto 159.06 273 *e*P **PKPab 06 25 30.9 +0.4**
comp=Z,109nm,2.1s

IDC ***02*** *06:04:55.1±44.0, 10.99S×113.37E, h0km, mb3.7/3, mb1 3.7/3, mb1mx3.4/40, mbtmp3.7/3, Error ellipse: s-maj=1004.0km s-min=212.9km az=154.0*
DJA ***02*** *06:05:31.1±2.1, 9.5S±21.1×11.3E±1, h130km±23km, M3.3/9, MLv3.3/9*
ISC 02 06:05:29.8±2.1, 8.55S±0.03×112.74E±0.08, h150km, n10, s0§64/9, mb3.6/3, Jawa

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
GMJI	**Gumukmas**	**0.75**	**69**	P		**Pn**	**06 05 52.2**	**-0.4**
PWJI	**Pagerwojo**	**1.06**	**299**	P		**Pn**	**06 05 54.9**	**-0.1**
JAGI	**Jajag, Banyuwa**	**1.40**	**87**	P		**Pn**	**06 05 58.7**	**+0.4**
PCJI	**Pacitan**	**1.58**	**282**	P		**Pn**	**06 06 00.9**	**+0.7**
ABJI	**Asem Bagus**	**1.66**	**64**	P		**Pn**	**06 06 01.0**	**+0.9**
SRBI	**Singaraja**	**2.49**	**80**	P		**Pn**	**06 06 10.9**	**+0.1**
PBKI	**Pangkalan Bun**	**5.89**	**350**	P		Pn	06 07 08.2	+13
SONM	**Songino Array**	**56.41**	**355**	P		**P**	**06 14 55.9**	**+0.3**
	0.4nm,0.5s,baz=173,slow=7.9,SNR=4.9							
MKAR	**Makanchi Array**	**61.40**	**337**	P		**P**	**06 15 29.7**	**-0.3**
	0.3nm,0.4s,baz=156,slow=7.5,SNR=6.0							

Code	Station Name	Δ°	AZ°	Op	ISC	Time	Res
ZALV	Zalesovo Beam	66.57	342	P	P	06 16 02.7	-0.8
	0.7nm,0.4s,baz=134,slow=4.3,SNR=3.6						

IDC 02 06:15:59.1±5.1, 36°.04N×142°.33E, h0km, mb3.6/3, mb1 3.6/5, mb1mx3.3/58, mbtmp3.6/5, ML3.7/2, MS3.9/2, Ms1 3.9/2, ms1mx2.9/54, Error ellipse: s-maj=91.3km s-min=39.7km az=98.0
NIED 02 06:16:00, 36°.10N×142°.20E, h5km, Mw3.8 Best double couple: $M_0$6.09000×10^14 NP1:ϕ_s205.00000°, δ17.00000°, λ54.00000°. NP2:ϕ_s62.00000°, δ76.00000°, λ100.00000°.
JMA 02 06:16:01.4±0.2, 36°.14N×142°.18E, h73km, M3.5
ISC 02 06:16:03.2±1.5, 36°.11N±0°.05×142°.00E±0°.09, h18km, n17, σ1s.35/20, mb3.6/3, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
CHOJ	Chosi	1.01	247	P	Pb	06 16 22.3	+0.2
CHOJ				eS	Sn	06 16 38.1	+1.9
JHO	Hitachi	1.26	294	P	Pn	06 16 24.6	-1.3
JHO				eS	Sg	06 16 42.9	-1.1
BSO1	Boso 1	1.67	210	P	Pn	06 16 30.5	-0.6
BSO1				eS	Sn	06 16 52.9	+1.1
BSO3	Boso 3	1.78	223	P	Pn	06 16 32.3	-0.5
JFT	Otama	1.94	317	P	Pn	06 16 34.6	-0.7
JMM	Marumori	2.00	332	P	Pn	06 16 35.2	-0.9
JAG	Ashikaga	2.08	279	P	Pn	06 16 37.2	0.0
JRY	Ryogami san	2.51	269	P	Pn	06 16 43.0	-0.1
JOD2	Odawara 2	2.52	251	P	Pn	06 16 43.4	+0.2
MJAR	Matsushiro Arr	3.09	279	Pn	Pn	06 16 52.4	+1.3
	6.5nm,0.3s,baz=101,slow=8.5,SNR=31						
MAT	Matsushiro	3.09	279	P	Pn	06 16 52.2	+1.1
MAT				S	Sb	06 17 32.9	-2.2
JHJ	Hachijo jima 2	3.50	212	Pn	Pn	06 16 55.8	-0.9
	19nm,0.3s,baz=112,slow=16,SNR=6.2						
JHJ				Sn	Sn	06 17 35.3	-2.3
	28nm,0.3s,baz=255,slow=20,SNR=3.6						
SONM	Songino Array	28.70	305	P	P	06 21 59.8	+0.5
	0.8nm,0.9s,baz=111,slow=7.9,SNR=3.5						
MKAR	Makanchi Array	45.01	303	P	P	06 24 20.2	+2.6
	0.4nm,0.5s,baz=76,slow=11,SNR=4.5						
KURBB	Kurchatov Arra	46.95	309	P	P	06 24 32.0	-0.6
	0.3nm,0.5s,baz=84,slow=8.0,SNR=2.6						
FITZ	Fitzroy Crossi	56.09	199	LR	LR	06 47 16.7	
	comp=Z,43nm,19.2s,slow=34						
ULM	Lac du Bonnet	80.01	34	LR	LR	07 06 32.5	
	comp=Z,142nm,19.5s,baz=295,slow=38						

IDC 02 06:23:49.6±1.5, 36°.06N×141°.01E, h0km, mb3.9/8, mb1 4.0/12, mb1mx3.7/61, mbtmp4.0/12, ML4.0/4, MS4.0/4, Ms1 4.0/4, ms1mx3.2/49, Error ellipse: s-maj=45.9km s-min=16.8km az=67.0
NEIC 02 06:23:55.3±0.8, 35°.95N×140°.81E, h35km, mb4.3/2, Error ellipse: s-maj=20.4km s-min=7.8km az=55.0
ISCJB 02 06:23:58.7±0.6, 35°.76N±0°.04×140°.29E±0°.08, h70km±4km, mb3.8/10, Error ellipse: s-maj=11.4km s-min=5.6km az=162.0
JMA 02 06:23:59.6±0.1, 35°.80N×140°.22E, h63km±1km, M3.2 Broadband fault plane solution: P waves. NP1: ϕ_s351.00000°, δ78.00000°, λ100.00000°. NP2: ϕ_s132.00000°, δ15.00000°, λ52.00000°. Principal axes: T Plg56.0000°, Azm273.0000°; N Plg9.0000°, Azm169.0000°; P Plg32.0000°, Azm73.0000°;
JMA Felt I J1.
ISC 02 06:23:59.7±0.9, 35°.74N±0°.05×140°.24E±0°.08, h61km±8km, n31, σ1s.14/31, mb3.9/10, 1C-3D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
JYT	Yasato	0.49	355	⇑P	Pn	06 24 11.1	-0.5
JYT				S	Sn	06 24 19.7	-0.5
JAG	Ashikaga	0.94	317	⇓P	Pn	06 24 16.7	-0.3
BSO3	Boso 3	0.96	167	P	Pn	06 24 18.0	+1.0
BSO3				eS	Sn	06 24 31.7	+1.9
JOD2	Odawara 2	1.06	244	⇓P	Pn	06 24 18.5	0.0
JOD2				S	Sn	06 24 32.0	-0.5
JRY	Ryogami san	1.12	285	P	Pn	06 24 19.9	+0.5
JIM2	Oshima 3	1.22	213	P	Pn	06 24 20.3	-0.4
JKT	Katashina	1.30	322	⇓P	Pn	06 24 21.7	-0.2
JKT				S	Sn	06 24 38.0	-0.4
MJAR	Matsushiro Arr	1.83	296	Pn	Pn	06 24 29.2	+0.3
	28nm,0.3s,baz=100,slow=14,SNR=71						
MAJO	Matsushiro	1.83	296	ePn	Pn	06 24 29.6	+0.6
MAT	Matsushiro	1.83	296	P	Pn	06 24 29.6	+0.7
MAT				S	Sn	06 24 53.0	+1.9
JHJ	Hachijo jima 2	2.64	188	Pn	Pn	06 24 40.5	+0.5
	57nm,0.3s,baz=60,slow=20,SNR=3.6						
JHJ				Sn	Sn	06 25 11.3	+0.5
	94nm,0.3s,baz=48,slow=22,SNR=7.2						
CBIJ	Chichi jima	8.78	169	Pn	Pn	06 26 01.1	-2.9
CBIJ				Sn	Sn	06 27 31.5	-10
JCJ	Chichijima	8.78	169	Pn	Pn	06 26 01.1	-2.9
	7.4nm,0.3s,baz=307,slow=20,SNR=3.8						
JCJ				Sn	Sn	06 27 31.5	-10
	baz=180,slow=20						
KSRS	Korea Array	10.05	283	Pn	Pn	06 26 22.9	+1.7
	0.2nm,0.3s,baz=101,slow=14,SNR=6.7						
KSAR	Wonju Array Be	10.08	283	Pn	Pn	06 26 22.9	+1.2
SONM	Songino Array	27.76	306	P	P	06 29 41.9	-0.8
	0.4nm,0.6s,baz=92,slow=10,SNR=3.2						
H11N2	WAKE ISLAND Hy	28.35	117	T	T	06 59 19.8	
	baz=309,slow=75,SNR=15						
H11N1	WAKE ISLAND Hy	28.36	117	T	T	06 59 35.4	
	baz=309,slow=75,SNR=19						
H11N3	WAKE ISLAND Hy	28.37	117	T	T	06 59 24.3	
	baz=309,slow=75,SNR=14						
ZALV	Zalesovo Beam	42.10	313	P	P	06 31 45.6	+0.1
	0.9nm,0.5s,baz=103,slow=7.9,SNR=4.3						
MKAR	Makanchi Array	44.02	303	P	P	06 32 01.2	0.0
	0.7nm,0.7s,baz=87,slow=9.8,SNR=9.0						
KURK	Kurchatov	46.00	309	eP	P	06 32 16.2	-0.6
	2.7nm,0.5s						
KURBB	Kurchatov Arra	46.06	309	P	P	06 32 16.9	-0.4
	1.2nm,0.6s,baz=87,slow=7.8,SNR=11						
AAK	Ala-Archa	50.28	299	LR	LR	06 56 27.3	
	comp=Z,165nm,19.4s,baz=76,slow=39						
WRAB	Tennant Creek	55.65	187	eP	P	06 33 30.2	+0.7
	1.2nm,0.6s						
WRA	Warramunga Arr	55.66	187	P	P	06 33 29.1	-0.5
	1.5nm,0.5s,baz=1.7,slow=7.5,SNR=7.6						
ASAR	Alice Springs	59.39	187	P	P	06 33 57.0	+1.2
	0.4nm,0.6s,baz=12,slow=10,SNR=7.2						
GEYT	Alibeck	63.63	299	LR	LR	07 05 32.1	
	comp=Z,160nm,18.7s,baz=115,slow=39						
KBZ	Khabaz	71.03	311	P	P	06 35 11.2	+0.2
	0.4nm,0.4s,baz=284,slow=4.6,SNR=4.0						
AKASG	Malin Array Be	74.74	322	P	P	06 35 32.5	-0.4
	1.0nm,0.5s,baz=47,slow=5.9,SNR=6.6						
AKASG				LR	LR	07 12 33.3	
	comp=Z,141nm,21.9s,baz=85,slow=39						
BRTR	Keskin Array B	79.00	311	LR	LR	07 14 48.7	
	comp=Z,36nm,20.5s,baz=51,slow=39						

JMA 02 06:25:40.4±0.2, 43°.65N×147°.31E, h57km±4km, M2.8
SKHL 02 06:25:40.0±0.6, 43°.74N×147°.42E, h43km±1km
ISC 02 06:25:39.2±2.5, 43°.7N±0°.1×147°.5E±0°.1, h41km±29km, n8, σ0s.82/14, Kuril Islands

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
SHO	Shikotan	0.48	290	eP	Pn	06 25 50.1	+0.3
SHO				eS	Sn	06 25 57.2	0.0
SHO				A	A	06 25 58.0	
	330nm,0.2s						
SHO				A	A	06 25 58.0	
	610nm,0.2s						
YUK	Yuzh-Kuril'sk	1.20	287	eP	Pn	06 25 58.8	-0.7
YUK				i S	Sn	06 26 13.2	-1.4
YUK				A	A	06 26 16.2	
	160nm,0.2s						
YUK				A	A	06 26 16.2	
	220nm,0.2s						
NEM2	Nemuro 2	1.29	255	P	Pn	06 26 00.9	+0.1
NEM2				eS	Sn	06 26 15.9	-0.9
KUR	Kuril'sk	1.56	11	eP	Pn	06 26 04.3	-0.1
KUR				eS	Sn	06 26 22.8	-0.5
KUR				A	A	06 26 25.2	
	20nm,0.1s						
KUR				A	A	06 26 25.2	
	80nm,0.1s						
JRA	Rausu	1.71	279	P	Pn	06 26 07.0	+0.6
JRA				eS	Sn	06 26 26.7	-0.3
JNK	Nakash	1.99	268	P	Pn	06 26 10.8	+0.4
JNK				eS	Sn	06 26 33.9	-0.2
JAK	Akkeshi	2.13	252	P	Pn	06 26 12.9	+0.6
YSS	Yuzh-Sakhalins	4.64	316	eP	Pn	06 26 48.2	+1.4

MAN 02 06:30:36, 17°.80N×120°.29E, h31km, mb3.8, ML2.5, MS2.1, 2C, Luzon

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
SIPP	Brgy, Tapao	0.20	52	⇑eP	Pn	06 30 44.6	+1.6
SIPP				i S	Sn	06 30 50.2	+3.0
ABRA	Dolores	0.43	110	eP	Pn	06 30 45.8	-0.3
ABRA				eS	Sb	06 30 51.5	-0.3
PIP	Pasuquin	0.61	31	⇑iP	Pn	06 30 49.5	+0.9
PIP				eS	Sn	06 30 58.9	+1.5
APYP	Conner	0.91	86	eP	Pb	06 30 54.3	+1.0
APYP				eS	Sb	06 31 05.0	-0.1

IDC 02 06:34:22.9±0.9, 36°.79N×143°.44E, h0km, mb3.8/8, mb1 4.0/11, mb1mx3.7/68, mbtmp3.8/11, ML3.1/2, Error ellipse: s-maj=22.1km s-min=20.3km az=106.0
ISCJB 02 06:34:25.5±0.8, 36°.8N±0°.1×143°.3E±0°.1, h33km, mb3.8/8, Error ellipse: s-maj=16.9km s-min=12.2km az=167.3
ISC 02 06:34:28.0±1.1, 36°.9N±0°.1×143°.3E±0°.1, h35km, n18, σ1s.08/11, mb3.8/8, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
MJAR	Matsushiro Arr	4.07	267	Pn	Pn	06 35 26.6	-1.2
	7.1nm,0.3s,baz=88,slow=15,SNR=40						
MAT	Matsushiro	4.07	267	P	Pn	06 35 27.3	-0.5
MAT				S	Sn	06 35 59.8	-14
USRK	Ussuriysk Ar.	11.26	314	Pn	Pn	06 37 05.5	-0.8
	0.2nm,0.3s,baz=119,slow=15,SNR=3.9						
KSRS	Korea Array	12.25	277	Pn	Pn	06 37 21.4	+1.5
	baz=81,slow=13,SNR=4.3						
H11N2	WAKE ISLAND Hy	26.82	123	T	T	07 08 25.7	
	baz=314,slow=75,SNR=6.3						
H11N1	WAKE ISLAND Hy	26.82	123	T	T	07 08 20.5	
	baz=314,slow=75,SNR=6.3						
H11N3	WAKE ISLAND Hy	26.84	123	T	T	07 08 21.3	
	baz=314,slow=75,SNR=5.1						
H11S1	WAKE ISLAND Hy	27.55	125	T	T	07 09 12.9	
	baz=316,slow=76,SNR=4.1						
H11S3	WAKE ISLAND Hy	27.55	125	T	T	07 09 13.2	
	baz=316,slow=76,SNR=6.2						
H11S2	WAKE ISLAND Hy	27.57	125	T	T	07 09 15.5	
	baz=316,slow=76,SNR=4.9						
SONM	Songino Array	29.09	304	P	P	06 40 27.0	+1.7
	1.3nm,0.8s,baz=106,slow=8.9,SNR=8.3						
ZALV	Zalesovo Beam	43.10	313	P	P	06 42 24.9	+0.4
	1.2nm,0.8s,baz=81,slow=9.5,SNR=3.5						
KURBB	Kurchatov Arra	47.25	308	P	P	06 43 00.5	+3.0
	0.9nm,0.5s,baz=81,slow=7.7,SNR=2.8						
ILAR	Eielson Array	48.83	32	P	P	06 43 08.6	-0.9
	0.9nm,0.9s,baz=253,slow=6.2,SNR=7.0						
INK	Inuvik	53.84	27	P	P	06 43 47.8	+0.9
	1.0nm,0.9s,baz=311,slow=5.3,SNR=5.2						
WRA	Warramunga Arr	57.15	190	P	P	06 44 10.7	-0.5
	0.4nm,0.3s,baz=13,slow=7.5,SNR=5.3						
ASAR	Alice Springs	60.87	190	P	P	06 44 36.7	-0.3
	1.0nm,0.8s,baz=3.9,slow=6.5,SNR=8.8						
YKA	Yellowknife Ar	63.19	31	P	P	06 44 52.3	+0.2
	0.4nm,0.9s,baz=61,slow=10,SNR=5.3						

ISCJB 02 06:38:55.0±0.1, 37°.94N±0°.02×72°.95E±0°.03, h127km, mb4.5/93, Error ellipse: s-maj=3.0km s-min=2.3km az=154.9
MOS 02 06:38:57.7±1.0, 38°.12N×72°.95E, h143km, mb4.6/34, Error ellipse: s-maj=6.5km s-min=4.0km az=107.7
IDC 02 06:38:57.1±2.3, 38°.00N×72°.91E, h131km±19km, mb4.0/26, mb1 4.1/32, mb1mx3.9/77, mbtmp4.4/32, Error ellipse: s-maj=17.0km s-min=10.0km az=165.0
NEIC 02 06:38:57.3±0.6, 38°.02N×72°.90E, h131km±4km, mb4.6/46, Error ellipse: s-maj=6.0km s-min=3.8km az=157.0
BJI 02 06:38:59.3, 37°.97N×73°.19E, h164km, mb4.4/25, mB4.7/13
NNC 02 06:39:01.5±1.4, 38°.43N×72°.86E, h172km±7km, mb3.9, mpv4.7, Error ellipse: s-maj=12.7km s-min=9.9km az=25.0
ISC 02 06:38:56.3±0.3, 38°.01N±0°.03×72°.92E±0°.04, h127km, n304, σ1s.90/348, mb4.5/93, 38C-29D, Tajikistan

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
SFK	Sufi-Kurgan	2.06	13	⇑P	Pn	06 39 33.9	+2.9
	789nm,0.3s						
SFK				⇑S	Sn	06 40 00.6	+3.0
	2µm,0.3s						
KSH	Kashi	2.83	57	⇑iP	Pn	06 39 38.7	-2.0
KSH				S	Sn	06 40 09.2	-5.6
KSH				smax	smax		
	comp=N,3µm,0.6s						
KSH				smax	smax		
	comp=E,3µm,0.4s						
CEP	Cherat	4.25	191	P	Pn	06 40 01.4	+1.9
CEP				S	Sn	06 40 48.0	-0.5
CHCP	Chirah Chowk	4.35	176	P	Pn	06 40 03.5	+2.8
MNAS	Manas	4.49	356	⇑P	Pn	06 40 04.3	+1.7
	50nm,0.6s						
MNAS				⇑S	Sn	06 40 53.1	-1.0
	498nm,0.6s						
KBL	Kabul	4.66	223	ePN	Pn	06 40 07.3	+2.3
KBL	Kabul	4.66	223	ePn	Pn	06 40 07.3	+2.3
EKS2	Erkin-Say	4.70	8	ePN	Pn	06 40 07.5	+2.1
EKS2	Erkin-Say	4.70	8	ePn	Pn	06 40 07.5	+2.1
AAK	Ala-Archa	4.78	14	P	Pn	06 40 08.8	+2.4
	48nm,0.3s,baz=157,slow=5.9,SNR=254						
AAK				S	Sn	06 41 01.7	+0.7
	28nm,0.3s,baz=335,slow=20,SNR=36						
AAK	Ala-Archa	4.78	14	⇑P	Pn	06 40 08.2	+1.7
	56nm,0.4s						
AAK				⇑S	Sn	06 40 58.4	-2.6
	386nm,1.1s						
FRU	Bishkek	5.00	15	i PN	Pn	06 40 11.0	+1.8
FRU				i S	Sn	06 41 08.0	+2.0
FRU				pmax	pmax		
	comp=Z,240nm,1.8s						
FRU				smax	smax		
	comp=N,1µm,2.0s						
TKM2	Tokmak 2	5.32	22	⇑P	Pn	06 40 15.6	+1.9
	comp=N,21nm,0.5s						
TKM2	Tokmak 2	5.32	22	ePN	Pn	06 40 15.7	+1.9
TKM2	Tokmak 2	5.32	22	ePn	Pn	06 40 15.7	+1.9
KK31	Karatay Array	5.41	341	⇓P	Pn	06 40 16.0	+1.2
	comp=N,13nm,0.2s,baz=148,slow=11,SNR=1407						
KK31				⇓S	Sn	06 41 13.4	-2.6
	comp=N,139nm,0.3s,baz=161,slow=24,SNR=5.6						
KK31	Karatay Array	5.41	341	PN	Pn	06 40 15.7	+0.9
KK31				pmax	pmax		
	comp=Z,25nm,0.3s						
KKAR	Karatay Array	5.41	341	ePN	Pn	06 40 16.0	+1.2
KKAR	Karatay Array	5.41	341	ePn	Pn	06 40 16.0	+1.2
THN	Thein Dam	6.01	157	eP	Pn	06 40 23.6	+0.7
THN				eS	Sn	06 41 28.0	-2.5
KNDC	Almaty	6.05	29	⇓P	Pn	06 40 24.1	+0.6
KNDC				⇑S	Sn	06 41 28.6	-2.9
AAA	Alma-Ata	6.09	29	ePN	Pn	06 40 25.5	+1.5
AAA				eS	Sn	06 41 32.3	-0.1
AAA				pmax	pmax		
	comp=Z,600nm,1.8s						
AAA				smax	smax		
	comp=E,400nm,1.4s						
AAA				MLR	MLR		
	comp=Z,1µm,5.0s						
DHRM	DHARAMSHALA	6.38	153	eP	Pn	06 40 27.6	-0.4
DHRM				eS	Sn	06 41 36.3	-3.3
DHRM				IAML		06 41 41.8	
	comp=E,2µm,0.3s						
DHRM				IAML		06 41 42.2	
	comp=N,2µm,0.4s						
JWA	Jwalamukhi	6.74	154	eP	Pn	06 40 32.0	-0.7
JWA				ex	Sn	06 41 45.0	-3.0
PDGK	Podgornoye	7.29	41	⇑P	Pn	06 40 41.2	+1.1
	comp=N,140nm,1.0s						
PDGK				⇓S	Sn	06 42 03.9	+2.6
	comp=N,127nm,1.5s						
SMLA	Simla	7.70	152	eP	Pn	06 40 45.8	0.0
SMLA				eS	Sn	06 42 04.4	-7.0
SMLA				IAML		06 42 11.3	
	comp=N,1µm,0.6s						
SMLA				IAML		06 42 12.2	
	comp=E,1µm,0.4s						
DDI	Dehra Dun	8.77	149	eP	Pn	06 41 00.1	0.0
DDI				eS	Sn	06 42 29.9	-7.3
DDI				IAML		06 42 35.8	
	comp=E,617nm,1.2s						
DDI				IAML		06 42 36.5	
	comp=N,705nm,1.2s						
NDI	New Delhi	9.97	158	eP	Pn	06 41 13.7	-2.5
NDI				eS	Sn	06 42 55.2	-11
AYAN	Aya Nagar	10.13	158	eP	Pn	06 41 17.6	-0.7
AYAN				eP	Pn	06 41 17.6	-0.7
KHET	Khetri	10.20	165	eP	Pn	06 41 16.2	-3.2
KHET				eP	Pn	06 41 16.2	-3.2
KHET				eS	Sn	06 43 00.4	-11
KHET				IAML		06 43 06.6	
	comp=E,101nm,0.7s						
KHET				IAML		06 43 11.0	
	comp=N,66nm,0.7s						
OTUK	Ortayu	10.24	358	⇑P	Pn	06 41 18.9	-0.9
	comp=N,5.8nm,0.8s						
OTUK				⇑S	Sn	06 43 05.5	-7.3
	comp=N,45nm,1.6s						
KUDL	Kundal	10.28	162	eP	Pn	06 41 18.1	-2.3
KUDL				eS	Sn	06 43 02.6	-11
KUDL				IAML		06 43 13.3	
	comp=N,47nm,0.2s						
KUDL				IAML		06 43 13.4	
	comp=E,78nm,0.2s						
SONA	Sohna	10.34	159	eP	Pn	06 41 19.1	-2.1
SONA				eP	Pn	06 41 19.1	-2.1
SONA				eS	Sn	06 43 05.2	-10
SONA				IAML		06 43 10.5	
	comp=E,235nm,0.7s						
SONA				IAML		06 43 12.1	
	comp=N,73nm,0.6s						
LGTI	Lohaghat	10.49	142	eP	Pn	06 41 21.2	-2.0
LGTI				ex	x	06 43 12.3	
MAKZ	Makanchi	11.05	34	⇑P	Pn	06 41 30.7	+0.1
	comp=N,65nm,1.0s						
MAKZ	Makanchi	11.05	34	eP	Pn	06 41 31.5	+0.9
MAKZ	Makanchi	11.05	34	ePn	Pn	06 41 31.5	+0.9
MK01	Makanchi Array	11.17	35	ePn	Pn	06 41 32.9	+0.7
MK31	Makanchi Array	11.18	35	⇓P	Pn	06 41 32.1	-0.3
	comp=N,12nm,0.9s,baz=221,slow=8.0,SNR=59						
MK31	Makanchi Array	11.18	35	eP	Pn	06 41 33.3	+0.9
MK31	Makanchi Array	11.18	35	ePn	Pn	06 41 33.3	+0.9
MKAR	Makanchi Array	11.18	35	P	Pn	06 41 32.1	-0.2
	comp=N,0.5nm,0.3s,baz=229,slow=12,SNR=51						
MKAR	Makanchi Array	11.18	35	i P	Pn	06 41 32.7	+0.3
MKAR				pmax	pmax		
	comp=Z,6.0nm,0.7s						
MKAR	Makanchi Array	11.18	35	ePn	Pn	06 41 33.3	+1.0
GEYT	Alibeck	11.68	274	P	Pn	06 41 35.9	-3.2
	comp=Z,5.2nm,0.3s,baz=106,slow=11,SNR=13						
GEYT				S	Sn	06 43 38.1	-10
	comp=Z,5.7nm,0.3s,baz=130,slow=18,SNR=8.1						
WMQ	Urumqi	12.59	58	P	Pn	06 41 50.6	-0.4
WMQ				sP	sP	06 42 30.0	
WMQ				S	Sn	06 44 10.8	+1.1
WMQ				pmax	pmax		
	comp=Z,9.0nm,0.8s						
WMQ				pmax	pmax		
	comp=Z,44nm,3.6s						
WMQ				LR	LR		
	comp=Z,67nm,25.6s						
WMQ				LR	LR		
	comp=Z,110nm,24.4s						
WMQ				LR	LR		
	comp=Z,91nm,26.6s						
PYUN	Piuthan	12.99	137	eP	Pn	06 41 53.2	-3.1
	comp=Z,439nm,0.4s						
KURBB	Kurchatov Arra	13.23	16	P	Pn	06 41 57.0	-2.1
	comp=Z,0.1nm,0.3s,baz=206,slow=12,SNR=32						
KURBB				S	S	06 44 35.5	-4.7
	baz=202,slow=19,SNR=5.8						
KURK	Kurchatov	13.34	16	⇑P	Pn	06 41 57.9	-2.6
	comp=Z,28nm,0.9s						
KURK	Kurchatov	13.34	16	eP	Pn	06 41 58.8	-1.7
KURK	Kurchatov	13.34	16	ePn	Pn	06 41 58.8	-1.7
KURK				S	S	06 44 35.5	-6.9
KOLN	Koldanda	13.58	136	eP	Pn	06 42 01.2	-2.8
	comp=Z,67nm,0.3s						
GKN	Gorkha	13.99	132	eP	Pn	06 42 06.5	-2.7
	comp=Z,117nm,0.3s						
KKN	Kakani	14.53	131	eP	Pn	06 42 13.7	-2.4
	comp=Z,140nm,0.6s						
AB31	Akbulak array	14.63	324	P	Pn	06 42 14.6	-2.4
	comp=Z,21nm,0.6s,baz=139,slow=12,SNR=269						
AB31				⇑S	Sn	06 44 51.2	-7.4
	comp=Z,15nm,0.6s,baz=145,slow=20,SNR=13						
AB31	Akbulak array	14.63	324	i P	Pn	06 42 14.5	-2.4
AB31				pmax	pmax		
	comp=Z,21nm,0.6s						
ABKAR	Akbulak array	14.63	324	ePn	Pn	06 42 15.0	-1.9
PKIN	Phulchoki	14.76	131	eP	Pn	06 42 16.7	-2.3
VOSK	Vostochnaya	14.78	355	⇓P	Pn	06 42 17.0	-1.8
	comp=Z,12nm,1.2s						
VOSK	Vostochnaya	14.78	355	eP	Pn	06 42 17.5	-1.3
VOSK	Vostochnaya	14.78	355	ePn	Pn	06 42 17.5	-1.3
GUN	Gumba	14.81	129	eP	Pn	06 42 17.4	-2.3
BHJ	Bhuj	14.97	192	ex	Pn	06 42 21.7	+0.4
BHJ				IAmb	IAmb	06 42 22.9	
	comp=Z,34nm,0.6s						
BVA0	Borovoye Array	15.12	354	P	Pn	06 42 22.3	-0.9
	comp=Z,26nm,1.4s,baz=158,slow=13,SNR=40						
BVA0				S	Sn	06 45 02.5	-8.0
	comp=Z,0.1nm,0.5s,baz=195,slow=18,SNR=6.9						
BVA0	Borovoye Array	15.12	354	i P	Pn	06 42 22.2	-0.9
BVA0				pmax	pmax		
	comp=Z,18nm,1.5s						
BVAR	Borovoye Array	15.12	354	P	Pn	06 42 22.0	-1.1
	comp=Z,0.4nm,0.3s,baz=158,slow=12,SNR=19						
BVAR				S	Sn	06 45 04.9	-5.5
	comp=Z,0.5nm,0.3s,baz=169,slow=23,SNR=5.8						
BRVK	Borovoye	15.17	354	deP	Pn	06 42 23.0	-0.6
BRVK				pmax	pmax		
	comp=Z,38nm,1.7s						
BRVK	Borovoye	15.17	354	ePn	Pn	06 42 23.1	-0.5
	comp=Z,23nm,1.1s						
ZRNK	Zerenda	15.19	351	⇑P	Pn	06 42 23.5	-0.5
	comp=Z,38nm,0.9s						
BHPL	Bhopal	15.21	164	eP	Pn	06 42 24.1	-0.4
BHPL				ex	x	06 44 58.4	
BHPL				IAML		06 45 09.5	
	comp=E,638nm,0.5s						
BHPL				IAML		06 45 10.0	
	comp=N,337nm,0.4s						
CHKZ	Chkalovo	15.75	355	⇑P	Pn	06 42 27.9	-3.0
	comp=N,9.4nm,0.9s						
CHKZ	Chkalovo	15.75	355	P	Pn	06 42 31.0	+0.1
CHKZ				pmax	pmax		
	comp=Z,9.0nm,0.9s						
RAMN	Ramite	15.94	130	eP	Pn	06 42 31.1	-2.6
	comp=Z,289nm,0.7s						
AKTO	Aktyubinsk	16.34	324	P	Pn	06 42 37.4	-0.8
	comp=Z,2.4nm,0.3s,baz=131,slow=11,SNR=82						
AKTO				S	Sn	06 45 29.0	-11
	comp=Z,1.1nm,0.3s,baz=5.1,slow=20,SNR=5.5						
AKTO	Aktyubinsk	16.34	324	⇑P	Pn	06 42 37.1	-1.1
	comp=Z,87nm,1.1s						
AKTO				⇑S	Sn	06 45 34.6	-5.2
	comp=Z,17nm,0.7s						
TAPN	Taplejung	16.35	126	eP	Pn	06 42 37.0	-1.8
	comp=Z,230nm,0.9s						
ODAN	Odare	16.50	128	eP	Pn	06 42 38.5	-2.0
	comp=Z,84nm,0.4s						
LSA	Lhasa	17.24	113	P	Pn	06 42 51.0	+1.2
LSA				pmax	pmax		
	comp=Z,25nm,1.2s						
ZAA0	Zalesovo Array	17.92	23	eP	P	06 42 56.2	+0.2
ZALV	Zalesovo Beam	17.92	23	P	P	06 42 56.3	+0.2
	comp=Z,2.7nm,0.3s,baz=212,slow=10,SNR=53						
ZALV				S	S	06 46 13.7	-1.6
	baz=216,slow=14,SNR=5.5						
BOK	Bokaro	17.99	138	eP	P	06 42 55.5	-1.6
BOK				IAmb	IAmb	06 42 57.4	
	comp=Z,23nm,0.9s						
BOK				ex	x	06 46 04.4	
WSAR	Wadi Sarin	19.14	224	P	P	06 43 09.9	+0.3
	comp=Z,0.5nm,0.3s,baz=77,slow=9.1,SNR=6.6						
UOSS	Minazif	19.26	232	eP	P	06 43 10.7	-0.3
	comp=Z,1.4nm,0.9s						

POO Poona 19.42 177 *e*P P 06 43 12.4 -0.3
SHL Shillong 20.29 122 *e*P P 06 43 23.2 +0.9
SVE Sverdlovsk 20.52 341⇓ *i*P P 06 43 24.8 +0.6
SVE pmax pmax
comp=Z,41nm,1.1s
ARU Arti 20.77 337 P P 06 43 27.4 +0.4
comp=Z,27nm,0.8s,baz=147,slow=4.8,SNR=52
ARU Arti 20.77 337 *d i*P P 06 43 27.2 +0.3
ARU 06 43 58.1
ARU S S 06 47 12.7 +1.1
ARU pmax pmax
comp=Z,68nm,1.2s
ARU Arti 20.77 337 *e*P P 06 43 27.3 +0.4
comp=Z,39nm,0.8s
GTA Gaotai 21.02 78 *e*P P 06 43 31.8 +1.9
GTA pP pP 06 44 03.0 +10
GTA sP sP 06 44 26.0 +17
GTA S S 06 47 16.4 -0.4
GTA pmax pmax
comp=Z,6.0nm,1.0s
GTA LR LR
comp=Z,150nm,16.6s
GTA LR LR
comp=Z,230nm,16.2s
GTA LR LR
comp=Z,140nm,16.2s
HYB Hyderabad 21.10 165 *i* P P 06 43 33.0 +2.2
HYB *e*S S 06 47 18.0 -0.5
HYB Hyderabad 21.10 165 *e*P P 06 43 30.6 -0.2
DGRG David-gareji 21.42 288 P P 06 43 35.0 +0.8
DGRG David-gareji 21.42 288 P P 06 43 34.9 +0.8
TBLG Delisi 21.90 289 P P 06 43 43.0 +3.8
TBLG Delisi 21.90 289 P P 06 43 42.9 +3.8
GNI Garni 21.94 284 P P 06 43 42.2 +2.4
comp=Z,8.1nm,0.4s,baz=118,slow=6.1,SNR=7.2
GNI Garni 21.94 284⇑ *e*P P 06 43 42.6 +2.8
GNI pmax pmax
comp=Z,226nm,1.4s
GNI Garni 21.94 284 *e*P P 06 43 40.7 +0.9
comp=Z,77nm,1.1s
KRAR Krasnoyarsk 22.43 30 P P 06 43 47.0 +2.7
KRAR pmax pmax
comp=Z,52nm,0.6s
ZEI Tsey 22.55 291 *e*P P 06 43 46.7 +0.8
ZEI pmax pmax
comp=Z,10.0nm,0.6s
NCK Nalchik 22.81 293⇓ *e*P P 06 43 50.1 +1.9
NCK pmax pmax
comp=Z,26nm,0.3s
AKH Akhalkalaki 22.84 288 P P 06 43 50.9 +2.2
AKH Akhalkalaki 22.84 288 P P 06 43 50.8 +2.2
KBZ Khabaz 23.33 294 P P 06 43 53.4 +0.4
comp=Z,5.3nm,0.8s,baz=143,slow=8.8,SNR=11
NEY Neytrino 23.43 292 *de*P P 06 43 56.1 +1.9
NEY pmax pmax
comp=Z,5.0nm,0.7s
KIV Kislovodsk 23.50 294 *i* P P 06 43 55.3 +0.6
KIV pmax pmax
comp=Z,13nm,1.1s
KIV Kislovodsk 23.50 294 *e*P P 06 43 54.4 -0.3
comp=Z,17nm,0.8s
SOKR Solikamsk 23.95 340 *c i*P P 06 43 58.0 -0.4
SOKR pmax pmax
comp=Z,17nm,0.8s
MOY Mondy 23.96 46 *e*P P 06 44 02.4 +3.6
LZH Lanzhou 24.71 85 *e*P P 06 44 09.5 +3.7
LZH pP pP 06 44 39.5 +6.9
LZH sP sP 06 44 55.1 +7.5
LZH pmax pmax
comp=Z,47nm,1.5s
LZH pmax pmax
comp=Z,170nm,5.0s
ZAK Zakamensk 24.85 50 *e*P P 06 44 07.0 +0.1
ZAK pmax pmax
comp=Z,6.0nm,1.0s
TLY Talaya 25.50 48 P P 06 44 14.5 +1.9
comp=Z,0.9nm,0.4s,baz=185,slow=11,SNR=2.7
TLY Talaya 25.50 48 *e*P P 06 44 15.0 +2.4
TLY pmax pmax
comp=Z,3.0nm,1.0s
VRH Novokhopyorsk 25.61 311 *e*P P 06 44 13.1 -0.5
VRH pmax pmax
comp=Z,10.0nm,0.8s
SONM Songino Array 26.23 57 P P 06 44 20.8 +1.4
comp=Z,2.5nm,0.8s,baz=271,slow=8.7,SNR=3.7
SONA1 Songino Array 26.24 57 *e*P P 06 44 20.2 +0.7
CD2 Chengdu 26.32 96 P P 06 44 20.2 0.0
CD2 pmax pmax
comp=Z,1.0nm,0.5s
ULN Ulaanbaatar 26.67 57⇑ *i*P P 06 44 24.6 +1.2
ULN pmax pmax
comp=Z,4.0nm,1.6s
VSR Storozhevoye 27.15 310 *e*P P 06 44 27.4 0.0
VSR pmax pmax
comp=Z,20nm,1.1s
ANN Anapa 27.31 296 *e*P P 06 44 28.4 -0.5
ANN *e**PP pP 06 44 58.3 +2.2
ANN *e* 06 47 44.9
ANN *e*S S 06 48 57.9 -1.1
ANN pmax pmax
comp=Z,69nm,1.4s
LPSR Galich'ya Gora 27.70 313 *e*P P 06 44 33.0 +0.7
LPSR pmax pmax
comp=Z,10.0nm,0.8s
MOS Moscow 29.50 318 *e*P P 06 44 45.7 -2.5
SIM Simferopol' 29.67 296 P P 06 44 51.3 +1.5
SIM pmax pmax
comp=Z,22nm,0.8s
HHC Hu-ho-hao-te 29.83 72 *e*P P 06 44 54.3 +2.9
HHC pmax pmax
comp=Z,25nm,0.9s
HHC pmax pmax
comp=Z,140nm,7.2s
OBN Obninsk 29.84 317⇓ *e*P P 06 44 51.8 +0.6
OBN *i* 06 45 50.2
OBN *e*S S 06 49 37.6 -0.9
OBN *e*SS SnSn 06 51 26.2 +2.3
OBN pmax pmax
comp=Z,30nm,1.0s
OBN Obninsk 29.84 317 *e*P P 06 44 51.7 +0.6
comp=Z,33nm,1.0s
BR131 Keskin Array S 30.47 286 *e*P P 06 44 58.5 +1.4
BRTR Keskin Array B 30.47 286 P P 06 44 58.2 +1.1
comp=Z,4.6nm,0.9s,baz=86,slow=6.7,SNR=20
BRTR Keskin Array B 30.47 286 *i*P P 06 44 58.5 +1.4
BRTR pmax pmax
comp=Z,5.0nm,0.9s
GYA Guiyang 30.62 102 P P 06 45 00.2 +1.6
GYA pP pP 06 45 31.0 +4.9
GYA sP sP 06 45 48.6 +7.9
GYA PP PnPn 06 46 06.3 +2.7
GYA PcP PcP 06 47 55.4 +1.5
GYA S S 06 49 50.0 -1.6
GYA sS sS 06 50 45.6 +5.9
GYA ScP ScP 06 51 22.8 -1.8
GYA ScS ScS 06 55 18.4 -3.1
GYA pmax pmax
comp=Z,10.0nm,0.8s
KLMR Klimovskoe 30.96 328 *e*P P 06 44 57.1 -3.9
KLMR pmax pmax
comp=Z,25nm,1.2s
BR231 Keskin MP Arra 31.10 286 *e*P P 06 44 58.7 -4.0
NRIK Noril'sk 32.38 10 P P 06 45 12.5 -0.9
comp=Z,1.8nm,0.5s,baz=193,slow=7.5,SNR=4.8
AKASG Malin Array Be 33.23 307 P P 06 45 21.1 +0.2
comp=Z,2.7nm,0.6s,baz=86,slow=6.9,SNR=33
AKBB Malin Array Si 33.23 307 *e*P P 06 45 21.2 +0.2
AKBB pmax pmax
comp=Z,11nm,0.8s
AKBB Malin Array Si 33.23 307 *e*P P 06 45 21.2 +0.2
comp=Z,11nm,0.8s
KIEV Kiev 33.24 307 *d i*P P 06 45 21.1 +0.1
KIEV pmax pmax
comp=Z,12nm,0.9s
KIEV Kiev 33.24 307 *e*P P 06 45 21.1 +0.1
comp=Z,10nm,0.8s
AK11 Malin Array Si 33.27 307 *e*P P 06 45 21.3 0.0
TMCR Tamitsa 33.37 333 *e*P P 06 45 20.3 -1.7
TMCR pmax pmax
comp=Z,9.0nm,0.4s
SORM Soroca 33.67 302⇑ *i*P P 06 45 25.8 +1.0
SORM Soroca 33.67 302⇑ *e*P P 06 45 25.8 +1.0
TIRR Tirgusor 33.75 295⇓ *i*P P 06 45 37.0 +11
TIRR Tirgusor 33.75 295⇓ *e*P P 06 45 37.0 +11

CFR Carcaliu 33.90 297⇑ *i*P P 06 45 28.1 +1.3
CFR Carcaliu 33.90 297⇑ *e*P P 06 45 28.1 +1.3
MSAB Monastry St. A 34.20 295⇑ *i*P P 06 45 31.5 +2.0
VRI Vrincioaia 34.84 298⇓ *i*P P 06 45 37.5 +2.5
VRI Vrincioaia 34.84 298⇓ *e*P P 06 45 37.5 +2.5
TESR Tescani 34.85 299⇑ *i*P P 06 45 36.5 +1.4
PLOR Plostina 34.89 298⇑ *i*P P 06 45 37.8 +2.3
PLOR Plostina 34.89 298⇑ *e*P P 06 45 37.8 +2.3
ISR Istrita 35.02 297⇑ *i*P P 06 45 39.7 +3.1
ISR Istrita 35.02 297⇑ *e*P P 06 45 39.7 +3.1
NACGM Naroch 35.24 314 *e* P 06 45 38.0 -0.3
MLR Muntele Rosu 35.41 297 P P 06 45 42.7 +2.6
comp=Z,5.0nm,0.9s,baz=106,slow=1.2,SNR=22
MLR Muntele Rosu 35.41 297⇑ *i*P P 06 45 42.6 +2.6
MLR Muntele Rosu 35.41 297 *e*P P 06 45 42.5 +2.4
comp=Z,30nm,1.0s
DOPR Dopca 35.76 298⇓ *i*P P 06 45 44.8 +1.9
BURAR Bucovina Array 35.78 301⇑ *i*P P 06 45 44.5 +1.4
BURAR Bucovina Array 35.78 301⇑ *e*P P 06 45 44.5 +1.4
BUR08 Bucovina Ar. S 35.79 301 *e*P P 06 45 44.2 +1.0
VSU Vasula 35.99 320⇓ *e*P P 06 45 44.9 +0.3
VSU pmax pmax
comp=Z,41nm,0.7s
VOIR 36.05 297⇓ *i*P P 06 45 46.8 +1.4
VOIR 36.05 297⇓ *e*P P 06 45 46.8 +1.4
ARR Arges 36.34 297⇑ *i*P P 06 45 49.5 +1.6
ARCR ARCALIA 36.40 300⇑ *i*P P 06 45 50.1 +1.9
LVV L'vov 36.52 305 *e*P P 06 45 49.9 +0.6
LVZ Lovozero 36.65 337 P P 06 45 51.0 +0.8
LVZ pmax pmax
comp=Z,20nm,0.9s
LVZ Lovozero 36.65 337 *e*P P 06 45 51.1 +1.0
comp=Z,173nm,2.0s
FIA1 FINESS Array S 37.12 324 *e*P P 06 45 54.5 +0.4
FINES FINESS Array B 37.12 324 P P 06 45 54.7 +0.6
comp=Z,4.3nm,0.4s,baz=114,slow=9.6,SNR=45
GZR Gura Zlata 37.64 298⇓ *i*P P 06 46 00.0 +1.1
GZR Gura Zlata 37.64 298⇓ *e*P P 06 46 00.0 +1.1
KOLS Kolonicke sedl 37.69 303 *e*P P 06 46 00.3 +1.1
KOLS pmax pmax
comp=Z,7.0nm,1.1s
KOLS Kolonicke sedl 37.69 303 *e*P P 06 46 00.3 +1.1
KOLS *e*PP PnPn 06 47 29.6 -0.6
UZH Uzhgorod 37.69 303⇓ *i*P P 06 45 59.6 +0.4
VTS Vitosha 37.75 293⇓ *i*P P 06 46 01.8 +1.9
VTS Vitosha 37.75 293⇓ *e*P P 06 46 01.8 +1.9
NJ2 Nanjing 37.78 85 *e*P P 06 46 01.0 +0.9
NJ2 pmax pmax
comp=Z,13nm,0.5s
SIRR Siria 38.32 299⇑ *i*P P 06 46 06.7 +2.2
STHS Stebnicka Huta 38.34 304 *e*P P 06 46 05.3 +0.6
STHS pmax pmax
comp=Z,3.0nm,0.7s
STHS Stebnicka Huta 38.34 304 *e*P P 06 46 05.3 +0.6
STHS *e*PP PnPn 06 47 39.0 +1.1
BZS Buzias 38.42 298⇓ *i*P P 06 46 07.2 +1.9
BZS Buzias 38.42 298⇓ *e*P P 06 46 07.2 +1.9
MDVR Moldovita 38.47 297⇑ *i*P P 06 46 07.5 +1.7
KECS Kecovo 38.90 303 *e*P P 06 46 10.1 +0.8
KECS pmax pmax
comp=Z,2.0nm,0.6s
KECS Kecovo 38.90 303 *e*P P 06 46 10.1 +0.8
KECS *e*PP PnPn 06 47 43.9 -0.6
NIE Niedzica 38.96 304 *e*P P 06 46 11.3 +1.5
NIE Niedzica 38.96 304 *e*P P 06 46 11.4 +1.6
OJC Ojcow 39.24 306 *e*P P 06 46 12.8 +0.7
OJC Ojcow 39.24 306 *e*P P 06 46 12.8 +0.7
OJC Ojcow 39.24 306 *e*P P 06 46 12.4 +0.3
comp=Z,15nm,0.8s
LANS Liptovska Anna 39.52 304 *e*P P 06 46 15.9 +1.4
LANS Liptovska Anna 39.52 304 *e*P P 06 46 15.9 +1.4
VYHS Vyhne 39.99 303 *e*P P 06 46 19.5 +1.1
VYHS Vyhne 39.99 303 *e*P P 06 46 19.5 +1.1
ARA0 ARCESS Array S 40.36 336 *e*P P 06 46 22.1 +1.0
ARCES ARCESS Array B 40.36 336 P P 06 46 21.8 +0.7
comp=Z,8.5nm,0.7s,baz=110,slow=8.8,SNR=28
ARE0 ARCESS Array S 40.36 336 *e*P P 06 46 22.1 +1.1
comp=Z,145nm,1.9s
MORC Moravsky Berou 40.72 305 *e*P P 06 46 25.8 +1.4
MORC pmax pmax
comp=Z,19nm,0.8s
MORC Moravsky Berou 40.72 305 *e*P P 06 46 25.8 +1.4
comp=Z,18nm,0.8s
VRAC Vranov 41.38 305 P P 06 46 30.1 +0.3
comp=Z,9.6nm,0.8s,baz=79,slow=7.0,SNR=8.4
DPC Dobruska-Polom 41.46 306 *e*P P 06 46 31.8 +1.4
DPC *e*PP PP 06 48 08.0 -0.5
DPC Dobruska-Polom 41.46 306 *e*P P 06 46 31.8 +1.4
DPC *e* 06 48 08.0
UPC Upice 41.64 306 *e*P P 06 46 33.0 +1.2
UPC Upice 41.64 306 *e*P P 06 46 33.0 +1.2
PRU Pruhonice 42.63 306 *e*P P 06 46 41.7 +1.8
PRU Pruhonice 42.63 306 *e*P P 06 46 41.7 +1.8
HFS Hagfors 42.85 321 P P 06 46 41.7 +0.3
comp=Z,15nm,0.8s,baz=98,slow=11,SNR=25
BRG Berggiesshubel 42.91 307 *i*P P 06 46 43.3 +1.2
comp=Z,11nm,1.0s
BRG Berggiesshubel 42.91 307 *i*P P 06 46 43.3 +1.2
BRG pmax pmax
comp=Z,11nm,1.0s
RGN Rugen 43.01 313 *e*P P 06 46 43.9 +1.2
comp=Z,47nm,0.9s
KLR Kul'dur 43.03 55 P P 06 46 44.0 +1.0
comp=Z,1.3nm,0.5s,baz=257,slow=5.5,SNR=8.4
GEC2 GERESS Array S 43.33 304 *e*P P 06 46 46.6 +1.0
GEC2 pmax pmax
comp=Z,4.0nm,1.0s
GEC2 GERESS Array S 43.33 304 *e*P P 06 46 46.6 +1.0
comp=Z,4.1nm,1.0s
GERES GERESS Array B 43.33 304 P P 06 46 46.7 +1.1
comp=Z,1.2nm,0.7s,baz=90,slow=4.0,SNR=14
GERES PP PP 06 48 26.6 -2.0
comp=Z,0.3nm,0.7s,baz=92,slow=9.8,SNR=2.8
KHC Kasperske Hory 43.37 305 *e*P P 06 46 46.9 +1.1
KHC Kasperske Hory 43.37 305 *e*P P 06 46 47.0 +1.1
KHC pmax pmax
comp=Z,3.0nm,0.9s
KHC Kasperske Hory 43.37 305 *e*P P 06 46 47.0 +1.1
comp=Z,2.8nm,0.9s
CLL Collm 43.46 308 *i*P P 06 46 46.6 +0.2
comp=Z,11nm,1.2s
CLL Collm 43.46 308 *e*P P 06 46 46.9 +0.4
CLL pmax pmax
comp=Z,9.0nm,0.8s
CLL Collm 43.46 308 *e*P P 06 46 46.9 +0.4
comp=Z,8.8nm,0.8s
CUC Castrocucco 43.77 291 *e*P P 06 46 50.4 +1.3
comp=Z,13nm,0.8s
TIXI Tiksi 43.81 22 *e*P P 06 46 49.7 +0.7
TIXI pmax pmax
comp=Z,4.0nm,1.1s
TIXI Tiksi 43.81 22 *e*P P 06 46 49.7 +0.7
comp=Z,4.5nm,1.1s
TRI Trieste 43.84 300 *e*P P 06 46 49.8 +0.2
TRI pmax pmax
comp=Z,25nm,1.5s
TRI Trieste 43.84 300 *e*P P 06 46 49.8 +0.2
comp=Z,25nm,1.5s
NC405 NORSAR Array S 43.88 322 *e*P P 06 46 50.2 +0.5
NC602 NORSAR Array S 43.95 322 *e*P P 06 46 50.1 -0.1
NC303 NORSAR Array S 44.05 322 *e*P P 06 46 51.6 +0.6
NB201 NORSAR Array S 44.08 322 *e*P P 06 46 51.5 +0.2
NB2 NORSAR Subarra 44.12 322 P P 06 46 51.5 -0.2
comp=Z,10nm,0.8s,baz=92,slow=7.9
NOA NORSAR Array B 44.12 322 P P 06 46 51.5 -0.2
comp=Z,8.6nm,0.7s,baz=93,slow=7.8,SNR=31
NAO01 NORSAR Array S 44.27 322 *e*P P 06 46 53.1 +0.2
NBO02 NORSAR Array S 44.29 322 *e*P P 06 46 53.4 +0.4
NBO00 NORSAR Array S 44.33 322 *e*P P 06 46 53.3 0.0
NC204 NORSAR Array S 44.35 322 *e*P P 06 46 54.5 +1.0
YOJ Yonaguni jima 44.41 93 *e*P P 06 46 53.6 -0.8
YOJ pmax pmax
comp=Z,102nm,1.3s
YOJ Yonaguni jima 44.41 93 *e*P P 06 46 53.6 -0.8
comp=Z,102nm,1.3s
KONO Kongsberg 44.90 320 *e*P P 06 46 58.1 +0.3
KONO pmax pmax
comp=Z,68nm,1.8s
KONO Kongsberg 44.90 320 *e*P P 06 46 58.1 +0.3
comp=Z,68nm,1.8s
DAVOX Davos/Dischmat 46.24 302 P P 06 47 09.2 +0.3
comp=Z,7.7nm,0.7s,baz=93,slow=9.7,SNR=17
SPA0 Spitsbergen Ar 46.39 346 *e*P P 06 47 11.1 +1.8
KBS Kingsbay 47.49 347 *e*P P 06 47 19.4 +1.5
KBS pmax pmax
comp=Z,36nm,1.3s
KBS Kingsbay 47.49 347 *e*P P 06 47 19.4 +1.5
comp=Z,36nm,1.3s
WLF Walferdange 48.04 307 *e*P P 06 47 24.4 +1.9
WLF pmax pmax
comp=Z,13nm,0.9s
WLF Walferdange 48.04 307 *e*P P 06 47 24.4 +1.9
comp=Z,13nm,0.9s
VSL Villasalto 48.64 293 *e*P P 06 47 27.4 +0.2
comp=Z,16nm,1.3s
INU Inuyama 50.56 72 *e*P P 06 47 41.3 -0.6
comp=Z,48nm,0.4s
DAG Danmarks Havn 53.72 343 *i*P P 06 48 05.4 +0.8
comp=Z,11nm,0.9s
DAG Danmarks Havn 53.72 343 *i*P P 06 48 05.4 +0.8
DAG pmax pmax
comp=Z,10.0nm,0.9s
BILL Bilibino 56.58 27 P P 06 48 26.0 +0.8
BILL *e**PP pP 06 49 01.0 +5.7
BILL *e* 06 49 27.2
BILL *e* 06 50 37.3
BILL pmax pmax
comp=Z,6.0nm,2.1s
ES19 SONSECA Array 58.05 298 *e*P P 06 48 36.7 +0.6
ESDC Sonseca Array 58.11 298 P P 06 48 36.8 +0.3
comp=Z,2.7nm,0.7s,baz=59,slow=6.9,SNR=20
SUMG Summit 60.13 341 *i*P P 06 48 51.4 +1.1
comp=Z,9.5nm,0.7s
SUMG Summit 60.13 341 *e*P P 06 48 51.0 +0.7
SUMG pmax pmax
comp=Z,10.0nm,0.8s
SUMG Summit 60.13 341 *e*P P 06 48 51.0 +0.7
comp=Z,10nm,0.8s
MDT Midelt 61.68 291 P P 06 49 01.8 +0.7
comp=Z,2.4nm,0.8s,baz=75,slow=7.9,SNR=7.7
TOA0 Torodi Ar. Sit 67.27 269 *e*P P 06 49 36.4 -1.1
TORD Torodi Ar. Bea 67.27 269 P P 06 49 36.5 -1.0
comp=Z,5.1nm,0.7s,baz=43,slow=5.6,SNR=42
RES Resolute Bay 67.30 357 *e*P P 06 49 36.8 +0.1
RES pmax pmax
comp=Z,9.0nm,1.5s
RES Resolute Bay 67.30 357 *e*P P 06 49 36.8 +0.1
comp=Z,9.2nm,1.5s
COLD Coldfoot 70.11 16 *e*P P 06 49 55.3 +1.0
comp=Z,3.1nm,0.9s
FYU Fort Yukon 71.73 15 *e*P P 06 50 05.7 +1.7
comp=Z,34nm,1.9s
MLY Manley 71.79 18 *e*P P 06 50 05.3 +0.8
comp=Z,12nm,1.8s
TTA Tatalina 72.08 21 *e*P P 06 50 07.7 +1.4
TTA pmax pmax
comp=Z,15nm,1.8s
TTA Tatalina 72.08 21 *e*P P 06 50 07.7 +1.4
comp=Z,15nm,1.8s
TT01 Tatalina 72.09 21 *e*P P 06 50 07.5 +1.2
INK Inuvik 72.17 10 P P 06 50 07.5 +0.9
comp=Z,5.1nm,0.9s,baz=349,slow=6.2,SNR=19
INK Inuvik 72.17 10 *e*P P 06 50 07.5 +0.9
INK pmax pmax
comp=Z,7.0nm,1.0s
INK Inuvik 72.17 10 *e*P P 06 50 07.5 +0.9
comp=Z,7.4nm,1.0s
MDM Murphy Dome 72.44 17 *e*P P 06 50 09.4 +1.0
comp=Z,13nm,1.7s
BPAW Bear Paw Mtn. 72.49 19 *e*P P 06 50 09.2 +0.5
comp=Z,4.9nm,1.2s
CAST Castle Rocks 72.76 19 *e*P P 06 50 11.4 +1.1
comp=Z,19nm,1.9s
IL1 Eielson Array 72.91 17 *e*P P 06 50 10.7 -0.4
ILAR Eielson Array 72.91 17 P P 06 50 11.1 0.0
comp=Z,1.6nm,0.9s,baz=317,slow=4.8,SNR=16
KTH Kantishna Hill 72.96 19 *e*P P 06 50 12.0 +0.5
comp=Z,16nm,1.7s
PPLA Purkeypile 73.16 20 *e*P P 06 50 13.4 +0.6
comp=Z,33nm,1.8s
MCK McKinley 73.31 18 *e*P P 06 50 14.2 +0.7
MCK pmax pmax
comp=Z,11nm,1.5s
MCK McKinley 73.31 18 *e*P P 06 50 14.2 +0.7
comp=Z,11nm,1.5s
RND Reindeer 73.60 18 *e*P P 06 50 14.7 -0.6
RND pmax pmax
comp=Z,16nm,1.7s
RND Reindeer 73.60 18 *e*P P 06 50 14.7 -0.6
comp=Z,16nm,1.7s
DHY Denali Highway 74.24 18 *e*P P 06 50 19.8 +0.7
comp=Z,24nm,1.9s
DOT Dot Lake 74.51 16 *e*P P 06 50 21.0 +0.5
comp=Z,17nm,1.6s
PAX Paxson 74.78 17 *e*P P 06 50 22.7 +0.5
PAX pmax pmax
comp=Z,13nm,1.8s
PAX Paxson 74.78 17 *e*P P 06 50 22.6 +0.5
comp=Z,13nm,1.8s
DAWY Dawson 75.10 14 *e*P P 06 50 24.6 +0.7
comp=Z,3.8nm,0.9s
DBIC Dimbokro 76.29 268 P P 06 50 31.4 0.0
comp=Z,4.8nm,0.9s,baz=22,slow=6.4,SNR=4.2
YKW3 Yellowknife Ar 79.59 4 *e*P P 06 50 49.5 +0.7
comp=Z,12nm,1.6s
YKA Yellowknife Ar 79.66 4 P P 06 50 49.7 +0.5
comp=Z,2.9nm,0.7s,baz=349,slow=5.5,SNR=60
YKB5 Yellowknife Ar 79.66 4 *e*P P 06 50 49.5 +0.3
SCHQ Schefferville 81.30 338 P P 06 50 58.3 +0.2
comp=Z,5.5nm,0.8s,baz=357,slow=5.3,SNR=4.2
SCHQ Schefferville 81.30 338 *e*P P 06 50 58.7 +0.5
comp=Z,30nm,1.5s
WRA Warramunga Arr 81.51 123 P P 06 50 59.5 -0.2
comp=Z,1.1nm,0.8s,baz=323,slow=5.4,SNR=2.5
DLBC Dease Lake 82.02 12 P P 06 51 02.1 +0.2
comp=Z,1.7nm,0.8s,baz=18,slow=13,SNR=3.3
FCC Fort Churchill 82.98 353 *e*P P 06 51 07.6 +0.8
FCC pmax pmax
comp=Z,18nm,1.6s
FCC Fort Churchill 82.98 353 *e*P P 06 51 07.6 +0.8
comp=Z,18nm,1.6s
WRAK Wrangell Islan 83.53 14 *e*P P 06 51 11.2 +1.6
comp=Z,34nm,1.4s
TRQA Tornquist 144.74 256 *e*PKPbc PKPab 06 58 16.9 -0.2
LCO Las Campanas 148.53 276 *e*PKPbc PKPbc 06 58 27.6 -0.9
PLCA Paso Flores 151.75 253 PKPbc PKPbc 06 58 35.2 -0.6
comp=Z,2.9nm,1.0s,baz=50,slow=5.8,SNR=3.7
PLCA Paso Flores 151.75 253 *e*PKPbc PKPbc 06 58 36.2 +0.5

NIED ***02*** *06:39:00.36˚70N×143˚90E,h5km,Mw4.0 Best double couple: M0 1.22000×10^15 NP1:φs25.00000°,δ22.00000°, λ-77.00000°. NP2:φs191.00000°,δ68.00000°, λ-95.00000°.*
IDC ***02*** *06:39:20.5±0.6,36˚57N×144˚09E,h0km,mb3.9/15, mb1 4.1/19,mb1mx3.9/67,mbtmp4.0/19,ML3.9/3,MS3.1/2, Ms1 3.1/2,ms1mx2.6/46,Error ellipse: s-maj=18.6km s-min=15.1km az=116.0*
NEIC ***02*** *06:39:23.9±2.8,36˚54N×144˚07E,h22km±20km,mb4.4/7, Error ellipse: s-maj=11.1km s-min=7.1km az=86.0*
ISCJB ***02*** *06:39:24.0±0.4,36˚60N±0˚04×143˚89E±0˚04, h33km, mb4.1/21,Error ellipse: s-maj=5.6km s-min=3.9km az=158.2*
JMA ***02*** *06:39:24.9±0.3,36˚71N×143˚85E,h54km,M4.5*
ISC 02 06:39:25.7±0.6,36˚66N±0˚04×143˚95E±0˚06,h35km,n57, σ1s74/66,mb4.1/21,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**2.56**	**281**	P	**Pn**	**06 40 04.2**	**-0.6**
ONAJ				S	**Sn**	**06 40 33.2**	**-1.6**
CHOJ	**Chosi**	**2.68**	**250**	P	**Pn**	**06 40 06.1**	**-0.2**
CHOJ				*e*S	**Sn**	**06 40 37.6**	**+0.1**
JHO	**Hitachi**	**2.72**	**270**	P	**Pn**	**06 40 06.2**	**-0.6**
JFT	**Otama**	**3.01**	**288**	P	**Pn**	**06 40 10.8**	**-0.1**
JFT				*e*S	**Sn**	**06 40 45.0**	**-0.8**
JYT	**Yasato**	**3.06**	**263**	P	**Pn**	**06 40 10.7**	**-0.8**
JYT				S	**Sn**	**06 40 44.0**	**-2.9**
BSO1	**Boso 1**	**3.14**	**231**	P	**Pn**	**06 40 11.8**	**-0.4**
BSO1				*e*S	**Sn**	**06 40 48.8**	**+0.6**
JMK	**Ichinoseki**	**3.15**	**317**	P	**Pn**	**06 40 11.5**	**-1.2**
JMK				*e*S	**Sn**	**06 40 45.4**	**-3.6**
BSO3	**Boso 3**	**3.36**	**237**	P	**Pn**	**06 40 15.8**	**+0.4**
JOM	**Ohasama**	**3.50**	**324**	P	**Pn**	**06 40 16.8**	**-0.8**
JOM				*e*S	**Sn**	**06 40 54.2**	**-3.6**
JYK	**Kaneyama**	**3.63**	**309**	P	**Pn**	**06 40 19.1**	**-0.2**
JYK				*e*S	**Sn**	**06 41 00.4**	**-0.5**
JAG	**Ashikaga**	**3.63**	**268**	P	**Pn**	**06 40 19.2**	**-0.1**

Code	Station Name	Δ°	AZ°	Op	ISC	Time	Res
JAG				eS	Sn	06 40 58.4	-2.6
JRY	Ryogami san	4.13	263	P	Pn	06 40 25.8	-0.4
JRY				eS	Sn	06 41 09.7	-3.6
JOD2	Odawara 2	4.18	252	P	Pn	06 40 26.5	-0.5
JOD2				S	Sn	06 41 12.7	-2.0
MJAR	Matsushiro Arr	4.62	270	Pn	Pn	06 40 33.5	+0.4
	9.9nm,0.3s,baz=90,slow=16,SNR=23						
MJAR				Sn	Sn	06 41 28.3	+2.9
	4.6nm,0.3s,baz=352,slow=32,SNR=8.3						
MJAR				LR	LR	06 42 20.3	
	comp=Z,165nm,21.3s,baz=180,slow=38						
MAJO	Matsushiro	4.62	270	ePn	Pn	06 40 34.0	+1.0
MAT	Matsushiro	4.62	270	P	Pn	06 40 34.0	+1.0
MAT				S	Sn	06 41 22.3	-3.2
JHJ2	Mitsune	4.91	225	eS	Sn	06 41 29.3	-3.2
JHJ2	Mitsune	4.91	225	ePn	Pn	06 40 37.0	+0.1
JHJ	Hachijo jima 2	4.92	225	Pn	Pn	06 40 35.9	-1.2
	37nm,0.3s,baz=65,slow=19,SNR=6.0						
JHJ				Sn	Sn	06 41 28.5	-4.3
	74nm,0.3s,baz=114,slow=23,SNR=6.0						
JKB	Kayabe	5.69	337	P	Pn	06 40 47.4	-0.2
JKB				eS	Sn	06 41 46.3	-5.3
CBIJ	Chichi jima	9.66	189	Pn	Pn	06 41 39.1	-3.0
CBIJ				Sn	Sn	06 43 19.6	-10
JCJ	Chichijima	9.66	189	Pn	Pn	06 41 39.1	-3.0
	baz=287,slow=19						
JCJ				Sn	Sn	06 43 19.6	-10
	5.6nm,0.3s,baz=287,slow=19,SNR=3.4						
KSRS	Korea Array	12.83	278	LR	LR	06 47 14.7	
	comp=Z,99nm,18.1s,baz=142,slow=36						
KLR	Kul'dur	15.39	329	Pn	Pn	06 43 01.9	+1.9
	0.1nm,0.3s,baz=115,slow=17,SNR=3.6						
H11N2	WAKE ISLAND Hy	26.23	124	T	T	07 11 57.5	
	baz=316,slow=75,SNR=20						
H11N1	WAKE ISLAND Hy	26.24	124	T	T	07 11 56.6	
	baz=316,slow=75,SNR=11						
H11N3	WAKE ISLAND Hy	26.25	124	T	T	07 11 56.8	
	baz=316,slow=75,SNR=17						
H11S1	WAKE ISLAND Hy	26.97	126	T	T	07 12 58.5	
	baz=318,slow=76,SNR=7.5						
H11S3	WAKE ISLAND Hy	26.97	126	T	T	07 12 57.3	
	baz=318,slow=76,SNR=6.3						
H11S2	WAKE ISLAND Hy	26.99	126	T	T	07 12 55.4	
	baz=318,slow=76,SNR=7.1						
ZALV	Zalesovo Beam	43.66	313	P	P	06 47 28.9	+2.2
	0.4nm,0.4s,baz=110,slow=8.4,SNR=2.2						
ZALV				PcP	PcP	06 49 14.1	+0.7
	1.7nm,0.6s,baz=106,slow=3.1,SNR=4.4						
KURK	Kurchatov	47.76	309	eP	P	06 48 00.0	+1.0
	20nm,1.0s						
KURBB	Kurchatov Arra	47.83	309	P	P	06 47 59.8	+0.1
	0.8nm,0.5s,baz=81,slow=8.1,SNR=2.8						
ILAR	Eielson Array	48.72	32	P	P	06 48 06.5	+0.1
	0.8nm,0.7s,baz=257,slow=6.0,SNR=11						
INK	Inuvik	53.79	27	P	P	06 48 43.5	-0.7
	0.5nm,0.5s,baz=302,slow=6.3,SNR=7.9						
INK	Inuvik	53.79	27	eP	P	06 48 44.2	0.0
	2.5nm,1.2s						
WRAB	Tennant Creek	57.02	191	eP	P	06 49 07.4	-0.6
	4.2nm,1.0s						
WRA	Warramunga Arr	57.03	191	P	P	06 49 08.0	-0.1
	0.6nm,0.4s,baz=11,slow=7.3,SNR=4.8						
ASAR	Alice Springs	60.75	191	P	P	06 49 33.9	0.0
	1.0nm,0.9s,baz=12,slow=7.2,SNR=6.9						
RES	Resolute Bay	62.44	15	eP	P	06 49 44.8	+0.1
	1.3nm,0.8s						
YKA	Yellowknife Ar	63.10	31	P	P	06 49 48.3	-0.8
	0.2nm,0.7s,baz=298,slow=6.5,SNR=4.4						
STKA	Stephens Creek	68.22	182	P	P	06 50 21.6	-0.8
	1.8nm,0.6s,baz=355,slow=12,SNR=3.6						
FINES	FINESS Array B	70.08	333	P	P	06 50 34.9	+1.2
	3.0nm,0.9s,baz=20,slow=6.1,SNR=4.6						
NVAR	Mina Array Bea	73.57	54	P	P	06 50 56.9	+1.4
	1.7nm,0.7s,baz=281,slow=6.4,SNR=13						
HFS	Hagfors	75.25	337	P	P	06 51 05.9	+1.4
	4.5nm,0.9s,baz=2.9,slow=3.0,SNR=4.3						
NB2	NORSAR Subarra	75.30	338	P	P	06 51 05.7	+0.9
	comp=Z,4.5nm,1.1s,baz=38,slow=6.2						
NOA	NORSAR Array B	75.30	338	P	P	06 51 06.4	+1.5
	comp=Z,1.4nm,0.8s,baz=38,slow=5.9,SNR=4.4						
R11A	Troy Canyon, C	75.37	53	eP	P	06 51 06.8	+0.9
	comp=Z,5.1nm,1.4s						
AKASG	Malin Array Be	75.82	323	P	P	06 51 08.6	+0.7
	comp=Z,0.8nm,0.5s,baz=44,slow=5.6,SNR=8.3						
KIEV	Kiev	75.83	323	eP	P	06 51 08.9	+0.9
	comp=Z,3.5nm,0.8s						
DUG	Dugway, Tooele	76.04	50	eP	P	06 51 10.8	+1.1
	comp=Z,4.6nm,1.2s						
PDAR	Pinedale Array	76.46	47	P	P	06 51 12.3	+0.3
	comp=Z,0.3nm,0.7s,baz=289,slow=2.8,SNR=3.3						
PV04	Paradox Valley	79.55	50	eP	P	06 51 30.6	+1.4
TXAR	Lajitas Array	88.72	54	P	P	06 52 16.6	+0.7
	comp=Z,0.3nm,0.6s,baz=296,slow=3.7,SNR=3.5						
TORD	Torodi Ar. Bea	119.01	317	PKP	PKPdf	06 58 10.9	-0.3
	comp=Z,0.4nm,0.7s,baz=8.7,slow=1.3,SNR=3.2						
QSPA	South Pole Qui	126.41	180	ePKPdf	PKPdf	06 58 23.4	-0.4
LPAZ	La Paz	145.09	63	PKPbc	PKPbc	06 58 58.7	-1.3
	comp=Z,0.9nm,0.6s,baz=274,slow=3.9,SNR=3.7						

*MAN **02** 06:43:27, 7.°47N×127.°67E, h33^{km}, mb5.0, ML3.9, MS4.2*
*IDC **02** 06:43:28.0±4.1, 7.°53N×127.°56E, h19^{km}±25^{km}, mb4.3/33, mb1 4.4/34, mb1mx4.2/59, mbtmp4.4/34, ML4.7/1, MS3.4/6, Ms1 3.4/6, ms1mx3.1/39, Error ellipse: s-maj=18.2km s-min=10.6km az=85.0*
*ISCJB **02** 06:43:29.4±0.7, 7.°51N±0.°03×127.°51E±0.°04, h39^{km}±6^{km}, mb4.6/87, MS3.5/8, Error ellipse: s-maj=7.6km s-min=4.1km az=159.6*
*BJI **02** 06:43:31.1, 7.°46N×127.°44E, h55^{km}, mb4.8/28, mB5.0/20, Ms4.6/10, Ms7 4.4/10*
*NEIC **02** 06:43:33.9±0.9, 7.°50N×127.°44E, h64^{km}±8^{km}, mb4.7/57, Error ellipse: s-maj=8.1km s-min=4.4km az=74.0*
NEIC Felt at Valencia, Mindanao.
ISC 02 06:43:30.5±1.1, **7.°53N**±0.°04×**127.°54E**±0.°05, **h33**^{km}±4^{km}, **n160,** σ1^{s}**27**/175, **mb4.7**/87, **MS3.5**/8, **3C-1D, Philippine Islands region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BIPH	Bislig	1.33	299⇑	eP	Pn	06 43 49.7	-3.1
BIPH				eS	Sn	06 44 05.8	-3.6
MATI	Mati	1.40	245	eP	Pn	06 43 52.4	-1.3
MATI				eS	Sn	06 44 10.1	-0.9
DAV	Davao City (W)	2.00	257	Pn	Pn	06 44 02.9	+1.0
	253nm,0.3s,baz=82,slow=6.0,SNR=24						
DAV				Sn	Sb	06 44 31.1	+0.4
	196nm,0.3s,baz=261,slow=23,SNR=16						
DAV	Davao City (W)	2.00	257	ePn	Pn	06 44 03.7	+1.7
DAV				Sn	Sb	06 44 31.1	+0.4
DMPH	Davao City--Mi	2.06	258⇑	eP	Pb	06 44 06.0	-1.3
DMPH				eS	Sb	06 44 33.3	+0.7
BUTP	Butuan	2.37	307	eP	Pn	06 44 06.1	-1.0
BUTP				eS	Sn	06 44 36.5	+1.5
BUKP	Musuan	2.48	278	eP	Pn	06 44 08.7	+0.1
KCP	Kidapawan	2.48	258⇑	eP	Pn	06 44 07.1	-1.6
KCP				eS	Sn	06 44 38.1	+0.2
SCPH	Surigao	3.02	318	eP	Pn	06 44 15.4	-0.5
SCPH				eS	Sn	06 44 51.2	+0.3
CTBH	Cotabato--PC H	3.28	265⇓	iP	Pn	06 44 19.9	+0.3
MSLP	Maasin	3.70	314	eP	Pn	06 44 29.9	+4.6
PAGZ	Pagadian	4.13	275	eP	Pn	06 44 31.3	0.0
TNTI	Ternate	6.72	181	ePn	Pn	06 45 09.6	+2.7
MYLDM	Lahad Datu	9.28	256	ePn	Pn	06 45 45.0	+2.9
LUWI	Luwuk	9.76	209	ePn	Pn	06 45 51.8	+3.2
FAKI	Fak Fak	11.40	155	ePn	Pn	06 46 09.8	-1.3
SBUM	Sibu	16.07	252	ePn	P	06 47 17.4	+0.2
	30nm,1.1s						
SOEI	Soe	17.48	191	ePn	P	06 47 34.9	+2.0
	89nm,1.3s						
NACB	Ninganchiao	17.50	342	ePn	Pn	06 47 32.4	+0.4
	11nm,0.7s						
GUMO	Guam	18.06	69	LR	LR	06 53 59.0	
	comp=Z,112nm,18.8s,baz=256,slow=35						
MTN	Manton Dam	20.56	170	P	P	06 48 06.0	-0.5
	baz=20,SNR=22						
MTN	Manton Dam	20.56	170	eP	P	06 48 06.4	-0.1
	280nm,2.0s						
QIZ	Qiongzhong	20.64	305	P	P	06 48 07.5	+0.1
QIZ				pmax	pmax		
	comp=Z,18nm,1.6s						
QIZ				LR	LR		
	comp=E,260nm,19.2s						
QIZ				LR	LR		
	comp=Z,330nm,18.1s						
KDU	Kakadu	20.68	166	P	P	06 48 07.2	-0.6
	baz=21,SNR=11						
FITZ	Fitzroy Crossi	25.54	184	P	P	06 48 55.9	-0.3
	3.0nm,0.4s,baz=7.8,slow=6.6,SNR=17						
FITZ	Fitzroy Crossi	25.54	184	P	P	06 48 56.0	-0.3
	baz=26,SNR=8.7						
FITZ	Fitzroy Crossi	25.54	184	eP	P	06 48 56.1	-0.2
	64nm,1.7s						
JNU	Nakatsue	25.65	6	P	P	06 48 55.3	-1.9
	16nm,1.0s,baz=175,slow=8.1,SNR=4.9						
JNU	Nakatsue	25.65	6	eP	P	06 48 56.8	-0.5
	29nm,1.1s						
NJ2	Nanjing	25.70	343	eP	P	06 48 57.5	-0.2
NJ2				pmax	pmax		
	comp=Z,15nm,0.6s						
COEN	Coen	26.40	144	P	P	06 49 02.6	-1.5
	baz=26,SNR=7.6						
COEN	Coen	26.40	144	eP	P	06 49 02.9	-1.2
	23nm,1.4s						
GYA	Guiyang	27.35	316	P	P	06 49 13.8	+1.0
GYA				pP	sP	06 49 26.0	-0.5
GYA				PP	PnPn	06 50 02.8	+5.1
GYA				PcP	PcP	06 52 33.3	+1.6
GYA				S	S	06 53 49.7	-1.1
GYA				sS	sS	06 54 10.0	+3.3
GYA				SS	SnSn	06 55 07.5	+6.1
GYA				ScP	ScP	06 56 08.4	-1.5
GYA				ScS	ScS	06 59 59.2	-2.4
GYA				pmax	pmax		
	comp=Z,20nm,0.8s						
GYA				pmax	pmax		
	comp=Z,120nm,6.2s						
GYA				LR	LR		
	comp=N,480nm,18.0s						
GYA				LR	LR		
	comp=E,490nm,17.8s						
GYA				LR	LR		
	comp=Z,460nm,17.0s						
WRA	Warramunga Arr	28.11	166	P	P	06 49 17.3	-2.2
	2.7nm,0.5s,baz=349,slow=9.5,SNR=7.1						
WRA				LR	LR	07 02 36.6	
	comp=Z,70nm,21.1s,baz=275,slow=41						
WB2	Warramunga Arr	28.11	166	eP	P	06 49 18.5	-1.1
	59nm,1.7s						
KMI	Kunming	29.44	309	P	P	06 49 33.5	+1.9
KMI				pmax	pmax		
	comp=Z,9.0nm,0.5s						
KMI				pmax	pmax		
	comp=Z,89nm,6.5s						
MBWA	Marble Bar	29.53	195	eP	P	06 49 30.9	-1.1
	50nm,1.5s						
KSAR	Wonju Array Be	29.77	1	P	P	06 49 32.1	-1.9
KSRS	Korea Array	29.79	1	P	P	06 49 32.1	-2.0
	3.0nm,0.8s,baz=175,slow=12,SNR=6.1						
KSRS				LR	LR	07 04 07.4	
	comp=Z,51nm,18.1s,baz=164,slow=42						
CMAR	Chiang Mai Arr	29.85	294	P	P	06 49 35.6	+0.6
	1.0nm,0.4s,baz=111,slow=5.9,SNR=6.1						
CMAR				LR	LR	07 01 05.4	
	comp=Z,45nm,20.9s,baz=80,slow=35						
QIS	Mount Isa	30.33	157	P	P	06 49 39.2	0.0
	baz=30,SNR=26						
MTSU	Mount Surprise	30.41	147	P	P	06 49 40.2	+0.3
	baz=30,SNR=11						
MJAR	Matsushiro Arr	30.47	17	P	P	06 49 39.5	-0.8
	1.5nm,0.7s,baz=187,slow=9.4,SNR=3.7						
MJAR				LR	LR	07 02 44.3	
	comp=Z,46nm,18.7s,baz=80,slow=38						
AS31	Alice Springs	31.63	169	eP	P	06 49 50.4	-0.2
	1.6nm,0.9s						
ASAR	Alice Springs	31.63	169	P	P	06 49 50.1	-0.5
	1.4nm,0.4s,baz=355,slow=8.0,SNR=35						
ASAR				PcP	PcP	06 52 42.5	+0.1
	1.8nm,0.4s,baz=344,slow=2.4,SNR=12						
ASAR				ScP	ScP	06 56 24.5	+1.1
	1.5nm,1.1s,baz=3.7,slow=2.1,SNR=6.7						
AS01	Alice Springs	31.64	169	eP	P	06 49 49.5	-1.2
CD2	Chengdu	32.18	319	P	P	06 49 55.4	-0.1
CD2				pmax	pmax		
	comp=Z,1.0nm,0.6s						
WRKA	Warakurna	32.38	179	P	P	06 49 56.2	-1.0
	baz=32,SNR=5.6						
CTAO	Charters Tower	33.05	146	eP	P	06 50 04.0	+0.8
	46nm,1.4s						
BJI	Beijing	33.93	344	P	P	06 50 11.5	+1.0
BJI				pmax	pmax		
	comp=Z,7.0nm,0.7s						
HHC	Hu-ho-hao-te	36.10	339	eP	P	06 50 32.9	+3.5
HHC				sP	sP	06 50 52.6	+9.4
HHC				S	S	06 56 10.8	+4.0
HHC				pmax	pmax		
	comp=Z,21nm,1.0s						
HHC				pmax	pmax		
	comp=Z,89nm,6.0s						
HHC				LR	LR		
	comp=N,140nm,12.4s						
HHC				LR	LR		
	comp=E,230nm,12.5s						
HHC				LR	LR		
	comp=Z,100nm,11.7s						
USRK	Ussuriysk Ar.	36.73	5	P	P	06 50 34.6	0.0
	8.3nm,1.0s,baz=190,slow=8.7,SNR=7.4						
QLP	Quilpie	37.58	155	P	P	06 50 41.6	-0.5
	baz=38,SNR=3.7						
KMBL	Kambalda	39.06	188	P	P	06 50 53.8	-0.6
	baz=39,SNR=6.2						
BLDU	Ballidu	39.33	195	P	P	06 50 55.9	-0.8
	baz=39,SNR=8.5						
EIDS	Eidsvold	39.93	146	P	P	06 51 01.7	-0.1
	baz=40						
EIDS	Eidsvold	39.93	146	eP	P	06 51 01.6	-0.1
	83nm,1.9s						
KLBR	Kellerberrin	40.01	193	P	P	06 51 01.7	-0.7
	baz=40,SNR=21						
BBOO	Buckleboo	40.93	169	P	P	06 51 09.5	-0.5
	baz=41,SNR=12						
BBOO	Buckleboo	40.93	169	eP	P	06 51 09.5	-0.5
	28nm,1.4s						
NWAO	Narrogin (SRO)	41.41	193	P	P	06 51 13.8	-0.1
	baz=42,SNR=7.5						
NWAO	Narrogin (SRO)	41.41	193	eP	P	06 51 13.8	-0.1
	24nm,1.2s						
STKA	Stephens Creek	41.43	162	P	P	06 51 13.5	-0.5
	5.7nm,0.5s,baz=338,slow=7.9,SNR=12						
STKA	Stephens Creek	41.43	162	P	P	06 51 13.7	-0.3
	baz=42,SNR=8.5						
STKA	Stephens Creek	41.43	162	eP	P	06 51 13.8	-0.3
	3.9nm,1.2s						
KLR	Kul'dur	41.71	4	P	P	06 51 15.8	-0.3
	2.3nm,0.6s,baz=193,slow=4.7,SNR=7.2						
HTT	Hallett	42.15	166	P	P	06 51 20.2	+0.2
	baz=42,SNR=3.2						
CMSA	Cobar Meteorol	42.55	157	P	P	06 51 23.3	+0.1
	baz=43,SNR=7.8						
ULN	Ulaanbaatar	43.80	340	eP	P	06 51 33.6	+0.3
	5.2nm,1.0s						
SONM	Songino Array	44.00	340	P	P	06 51 35.3	+0.4
	1.8nm,0.8s,baz=155,slow=8.7,SNR=9.9						
SONM				PcP	PcP	06 53 21.6	+1.4
	0.8nm,0.9s,baz=166,slow=5.2,SNR=4.1						
SONA1	Songino Array	44.01	340	eP	P	06 51 35.2	+0.2
ARMA	Armidale	44.25	150	eP	P	06 51 38.6	+1.5
	24nm,1.3s						
YNG	Young	46.05	156	P	P	06 51 52.1	+0.9
	baz=46,SNR=11						
CAN	Canberra	47.19	156	eP	P	06 52 01.5	+1.3
	57nm,1.3s						
WMQ	Urumqi	50.14	323	P	P	06 52 24.0	+1.2
WMQ				pP	sP	06 52 36.1	-0.7
WMQ				sP	pP	06 52 42.4	+10
WMQ				PP	PP	06 54 17.4	-0.8
WMQ				S	S	06 59 29.8	-2.6
WMQ				pmax	pmax		
	comp=Z,4.0nm,1.6s						
WMQ				pmax	pmax		
	comp=Z,35nm,5.0s						
PEA0	Petropavlovsk-	51.63	23	eP	P	06 52 34.7	+1.0
PETK	Petropavlovsk-	51.63	23	P	P	06 52 33.2	-0.6
	3.4nm,0.7s,baz=181,slow=7.4,SNR=5.1						
YAK	Yakutsk	54.41	1	eP	P	06 52 54.4	+0.4
	17nm,0.6s						
MA2	Magadan	54.84	14	P	P	06 52 56.3	-1.0
	1.5nm,0.3s,baz=206,slow=8.7,SNR=5.6						
MK01	Makanchi Array	54.94	323	eP	P	06 52 57.7	-0.6
MK31	Makanchi Array	54.95	323	eP	P	06 52 57.3	-1.1
MKAR	Makanchi Array	54.95	323	P	P	06 52 57.9	-0.5
	4.1nm,0.7s,baz=125,slow=7.5,SNR=32						
MAKZ	Makanchi	55.15	323	eP	P	06 53 00.1	+0.3
	8.2nm,0.9s						
KSH	Kashi	55.99	313	eP	P	06 53 07.8	+1.7
KSH				esP	sP	06 53 26.2	+6.0
KSH				eScP	ScP	06 57 58.9	-2.2
KSH				S	S	07 00 51.1	-1.3
KSH				pmax	pmax		
	comp=Z,110nm,5.1s						
KSH				LR	LR		
	comp=N,92nm,5.8s						
KSH				LR	LR		
	comp=E,86nm,5.1s						
KSH				LR	LR		
	comp=Z,130nm,6.2s						
ZAA0	Zalesovo Array	57.61	332	eP	P	06 53 16.4	-0.7
ZALV	Zalesovo Beam	57.61	332	P	P	06 53 16.7	-0.4
	1.2nm,0.4s,baz=115,slow=7.0,SNR=9.5						
SEY	Seymchan	58.17	13	P	P	06 53 22.3	+1.4
	2.7nm,0.8s,baz=220,slow=5.5,SNR=12						
KURK	Kurchatov	59.02	326	eP	P	06 53 27.1	+0.1
	12nm,1.0s						
KURBB	Kurchatov Arra	59.02	326	P	P	06 53 26.4	-0.7
	3.4nm,0.7s,baz=126,slow=5.9,SNR=34						
KBL	Kabul	59.92	306	eP	P	06 53 33.5	-0.4
	8.1nm,1.0s						
KKAR	Karatay Array	61.06	315	eP	P	06 53 40.6	-0.6
TIXI	Tiksi	64.06	0	eP	P	06 54 00.5	-0.1
	11nm,1.1s						
VOSK	Vostochnaya	64.17	326	eP	P	06 54 01.8	0.0
	4.0nm,1.3s						
BVAR	Borovoye Array	64.62	326	P	P	06 54 03.9	-0.8
	2.2nm,0.8s,baz=106,slow=7.9,SNR=9.0						
BRVK	Borovoye	64.69	326	eP	P	06 54 05.2	+0.1
	5.9nm,1.0s						
URZ	Urewera	64.80	139	LR	LR	07 23 12.5	
	comp=Z,45nm,18.6s,baz=300,slow=37						
BKZ	Black Stump Fm	64.90	140	eP	P	06 54 08.1	+1.3
	32nm,1.5s						
NRIK	Noril'sk	66.96	346	P	P	06 54 19.6	+0.1
	3.9nm,0.9s,baz=122,slow=7.8,SNR=7.8						
ABKAR	Akbulak array	69.76	320	eP	P	06 54 37.0	-0.4
GAMB	Gambell	70.62	24	eP	P	06 54 43.9	+1.6
	6.8nm,1.0s						
AKTO	Aktyubinsk	71.22	321	P	P	06 54 44.9	-1.3
	1.8nm,0.7s,baz=92,slow=5.1,SNR=4.5						
ARU	Arti	72.19	327	P	P	06 54 50.9	-1.1
	4.3nm,0.5s,baz=153,slow=2.4,SNR=8.9						
ARU	Arti	72.19	327	eP	P	06 54 50.7	-1.2
	7.3nm,0.9s						
SVW2	Sparrevohn	77.10	29	eP	P	06 55 21.6	+1.2
	13nm,1.4s						
TT01	Tatalina	77.16	27	eP	P	06 55 22.2	+1.6
TTA	Tatalina	77.17	27	eP	P	06 55 20.7	-0.1
	6.6nm,1.2s						
KDAK	Kodiak Island	78.27	33	eP	P	06 55 27.9	+1.0
	13nm,0.9s						
PPLA	Purkeypile	78.90	27	eP	P	06 55 31.9	+1.4
	23nm,1.4s						
CAST	Castle Rocks	79.00	27	eP	P	06 55 31.8	+1.0
	8.2nm,1.1s						
BRLK	Bradley Lake	79.29	31	eP	P	06 55 32.7	+0.1
	19nm,1.4s						
KTH	Kantishna Hill	79.53	27	eP	P	06 55 34.3	+0.5
	11nm,1.2s						
BPAW	Bear Paw Mtn.	79.54	26	eP	P	06 55 35.2	+1.3
	12nm,1.0s						
MLY	Manley	79.72	25	eP	P	06 55 36.3	+1.5
	5.5nm,0.9s						
TRF	Thorofare Moun	79.80	27	eP	P	06 55 36.1	+0.7
	8.7nm,1.0s						
RC01	Rabbit Creek A	79.93	29	eP	P	06 55 36.6	+0.6
	35nm,2.0s						
COLD	Coldfoot	80.10	23	eP	P	06 55 38.7	+1.9
	7.4nm,1.1s						
PMR	Palmer	80.24	29	eP	P	06 55 37.7	+0.1
	9.4nm,1.0s						
MCK	McKinley	80.42	27	eP	P	06 55 39.0	+0.4
	14nm,1.0s						
RND	Reindeer	80.45	27	eP	P	06 55 39.2	+0.4
	14nm,1.2s						
SML	Sawmill	80.63	29	eP	P	06 55 40.7	+0.9
	13nm,1.0s						
MDM	Murphy Dome	80.78	25	eP	P	06 55 41.5	+1.0
	6.9nm,1.0s						
WRH	Wood River Hil	80.82	26	eP	P	06 55 41.7	+1.0
	12nm,1.3s						
CCB	Clear Creek Bu	80.95	26	eP	P	06 55 41.6	+0.3
	11nm,1.4s						
KBZ	Khabaz	80.98	313	P	P	06 55 42.4	+0.5
	3.5nm,1.0s,baz=261,slow=7.6,SNR=4.1						
SCM	Sheep Creek Mo	81.11	29	eP	P	06 55 43.6	+1.2
	12nm,1.0s						
IL1	Eielson Array	81.35	26	eP	P	06 55 42.6	-0.9
ILAR	Eielson Array	81.35	26	P	P	06 55 43.5	0.0
	4.4nm,1.1s,baz=255,slow=4.8,SNR=15						
ILB	Eielson Array	81.35	26	eP	P	06 55 43.8	+0.3
DIV	Divide	81.86	29	eP	P	06 55 47.9	+1.5
	14nm,1.1s						
PAX	Paxson	81.97	27	eP	P	06 55 48.7	+1.8
	11nm,1.4s						
FYU	Fort Yukon	82.04	24	eP	P	06 55 48.1	+1.0
	8.2nm,1.0s						
DOT	Dot Lake	82.59	27	eP	P	06 55 51.0	+0.9
	8.9nm,1.0s						
MENT	Mentasta	82.77	27	eP	P	06 55 52.6	+1.5
	2.8nm,0.7s						
EGAK	Eagle	83.80	26	eP	P	06 55 57.3	+1.0
	7.6nm,1.3s						
DAWY	Dawson	84.63	26	eP	P	06 56 02.2	+1.7
	8.4nm,1.0s						
INK	Inuvik	86.35	22	P	P	06 56 08.4	-0.5
	3.1nm,1.1s,baz=291,slow=8.7,SNR=5.9						
INK	Inuvik	86.35	22	eP	P	06 56 09.6	+0.6
	13nm,1.5s						
ASF	Jabal al Asfar	86.58	302	P	P	06 56 11.2	+0.2
	7.4nm,1.1s,baz=26,slow=3.1,SNR=5.7						
VNDA	Vanda	87.08	173	P	P	06 56 12.2	-0.1
	2.2nm,1.0s,baz=327,slow=6.2,SNR=6.3						
ARCES	ARCESS Array B	87.18	340	P	P	06 56 12.8	-0.2
	1.9nm,0.8s,baz=92,slow=6.5,SNR=5.9						
BRTR	Keskin Array B	88.23	310	P	P	06 56 17.0	-1.9
	1.0nm,0.7s,baz=99,slow=5.6,SNR=4.7						
FIA1	FINESS Array S	88.88	332	eP	P	06 56 19.8	-1.4
FINES	FINESS Array B	88.88	332	P	P	06 56 20.1	-1.2
	2.0nm,0.8s,baz=75,slow=4.7,SNR=12						
AKASG	Malin Array Be	89.46	321	P	P	06 56 22.7	-1.5
	1.4nm,0.8s,baz=70,slow=4.1,SNR=5.3						
AK11	Malin Array Si	89.50	321	eP	P	06 56 23.4	-1.0
KMBO	Kilima Mbogo	90.43	269	P	P	06 56 29.4	-0.4
	0.7nm,0.3s,baz=37,slow=20,SNR=3.2						
RES	Resolute Bay	93.95	10	P	P	06 56 43.9	-0.6
	3.8nm,1.2s,baz=294,slow=4.8,SNR=5.2						
RES	Resolute Bay	93.95	10	eP	P	06 56 45.5	+0.9
	8.0nm,1.4s						
YKA	Yellowknife Ar	95.72	24	P	P	06 56 53.3	+0.4
	1.2nm,0.9s,baz=298,slow=4.7,SNR=14						
JCT	Junction City	120.95	48	ePKPdf	PKPdf	07 02 21.2	+0.9
TOA0	Torodi Ar. Sit	122.42	291	ePKPdf	PKPdf	07 02 22.6	-0.8
TORD	Torodi Ar. Bea	122.42	291	PKP	PKPdf	07 02 22.4	-0.9
	0.3nm,0.4s,baz=67,slow=2.3,SNR=8.7						
MIAR	Mount Ida	122.89	40	ePKPdf	PKPdf	07 02 25.0	+1.1
PLCA	Paso Flores	143.21	157	PKP	PKPbc	07 02 59.9	+1.2
	2.6nm,0.9s,baz=295,slow=1.6,SNR=5.1						
TRQA	Tornquist	148.41	166	ePKPbc	PKPbc	07 03 14.3	+0.2
LRS	Lares	150.67	29	ePKPbc	PKPbc	07 03 20.5	+0.3
HUMP	Col San Antoni	151.27	27	ePKPbc	PKPbc	07 03 21.8	+0.3
STVI	Saint Thomas	151.48	25	ePKPbc	PKPbc	07 03 22.0	0.0
LCO	Las Campanas	152.58	143	ePKPbc	PKPbc	07 03 25.6	+1.0
SDV	Santo Domingo	155.63	48	ePKPdf	PKPdf	07 03 21.9	-0.3

*IDC **02** 07:01:12.5±1.4, 31.°27N×59.°78E, h0^{km}, mb3.6/9, mb1 3.7/12, mb1mx3.5/46, mbtmp3.6/12, ML3.6/3, Error ellipse: s-maj=30.6km s-min=19.3km az=139.0*
*THR **02** 07:01:13.6±0.7, 31.°52N×59.°93E, h14^{km}±13^{km}, ML4.2*
*ISCJB **02** 07:01:15.2±0.5, 31.°51N±0.°04×59.°80E±0.°06, h15^{km}, mb3.5/9, Error ellipse: s-maj=7.9km s-min=4.8km az=17.0*
*CSEM **02** 07:01:15.0±0.2, 31.°51N×59.°83E, h2^{km}, ML4.1, Error ellipse: s-maj=4.8km s-min=2.7km az=101.0*
*TEH **02** 07:01:17.3, 31.°53N×59.°72E, h4^{km}, ML4.1*
ISC 02 07:01:16.1±0.8, **31.°52N**±0.°04×**59.°87E**±0.°05, **h15**^{km}, **n56,** σ1^{s}**05**/56, **mb3.5**/9, **Northern and central Iran**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
IKOO	Kooshah	1.17	321	ePg	Pb	07 01 36.3	-1.8

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
IKOO				eAMB	AMB	07 02 02.8	
	comp=Z,40μm,0.2s						
IKOO	Kooshah	1.17	321	ePg	Pb	07 01 36.3	-1.8
IDAH	Dahanechah	1.22	360	ePg	Pn	07 01 38.9	0.0
IDAH				eAMB	AMB	07 01 43.7	
	comp=Z,30μm,0.2s						
IDAH				eSg	Sg	07 01 55.8	+0.2
IDAH	Dahanechah	1.22	360	ePg	Pn	07 01 38.9	0.0
IDAH				eSg	Sg	07 01 55.8	+0.2
ITEG	Tejag	1.67	326	ePn	Pn	07 01 45.2	+0.2
ITEG				eAMB	AMB	07 01 50.1	
	comp=Z,22μm,0.3s						
ITEG	Tejag	1.67	326	ePn	Pn	07 01 45.2	+0.2
IMON	Monand	1.68	354	ePn	Pn	07 01 45.4	+0.2
IMON				eAMB	AMB	07 01 50.5	
	comp=Z,11μm,0.1s						
IMON	Monand	1.68	354	ePn	Pn	07 01 45.4	+0.2
ZHSF	Zahedan	2.05	157	ePg	Pn	07 01 50.9	+0.7
ZHSF	Zahedan	2.05	157	ePn	Pn	07 01 51.0	+0.7
SHRT	Shahrakht	2.15	9	ePg	Pn	07 01 52.3	+0.7
SHRT	Shahrakht	2.15	9	ePn	Pn	07 01 51.8	+0.3
KRBR	Kerman	3.08	241	ePn	Pn	07 02 04.7	+0.2
KRBR				AML	AML	07 02 52.6	
	comp=N,1μm,0.6s						
KRBR				AML	AML	07 03 02.5	
	comp=E,922nm,0.3s						
KRBR	Kerman	3.08	241	ePn	Pn	07 02 04.7	+0.2
TABS	Tabas	3.15	313	ePn	Pn	07 02 05.7	+0.5
TABS				AML	AML	07 02 59.1	
	comp=N,389nm,0.7s						
TABS	Tabas	3.15	313	ePn	Pn	07 02 05.8	+0.5
IBAF	Bafgh	3.67	272	ePn	Pn	07 02 12.8	+0.3
IBAF				eAMB	AMB	07 03 14.0	
	comp=Z,8μm,0.3s						
IBAF	Bafgh	3.67	272	ePn	Pn	07 02 12.8	+0.3
IMEH	Mehriz	4.49	270	ePn	Pn	07 02 24.2	+0.3
IMEH				eAMB	AMB	07 03 42.5	
	comp=Z,3μm,0.2s						
IMEH	Mehriz	4.49	270	ePn	Pn	07 02 24.2	+0.3
IMOG	Moghan	4.60	355	ePn	Pn	07 02 25.8	+0.4
IMOG				eAMB	AMB	07 02 56.5	
	comp=Z,500nm,0.4s						
IMOG	Moghan	4.60	355	ePn	Pn	07 02 25.8	+0.4
ICHK	Chekchek	4.70	280	ePn	Pn	07 02 27.1	+0.4
ICHK				eSg	Sb	07 03 39.6	+4.7
ICHK				eAMB	AMB	07 03 52.6	
	comp=Z,4μm,0.4s						
ICHK	Chekchek	4.70	280	ePn	Pn	07 02 27.1	+0.4
IMYA	Miami	4.82	2	ePn	Pn	07 02 29.5	+1.3
IMYA				eAMB	AMB	07 04 10.5	
	comp=Z,3μm,0.9s						
IMYA	Miami	4.82	2	ePn	Pn	07 02 29.5	+1.3
IPAY	Payeh	4.97	352	ePn	Pn	07 02 31.0	+0.5
IPAY				eAMB	AMB	07 02 37.2	
	comp=Z,503nm,0.2s						
IPAY	Payeh	4.97	352	ePn	Pn	07 02 31.0	+0.5
IAKL	Akhelmad	5.16	350	ePn	Pn	07 02 34.2	+1.2
IAKL				eAMB	AMB	07 03 03.1	
	comp=E,420nm,0.4s						
BNDS	Bandar-Abbas	5.22	219	ePn	Pn	07 02 33.7	-0.1
BNDS				AML	AML	07 04 20.9	
	comp=E,78nm,0.5s						
BNDS	Bandar-Abbas	5.22	219	ePn	Pn	07 02 33.7	-0.1
ISFR	Sfrayin	5.74	345	ePn	Pn	07 02 41.3	+0.3
ISFR				eAMB	AMB	07 03 50.0	
	comp=Z,336nm,0.3s						
ISFR	Sfrayin	5.74	345	ePn	Pn	07 02 41.3	+0.3
CHBR	Chabahar	5.92	175	ePn	Pn	07 02 43.3	0.0
CHBR	Chabahar	5.92	175	ePn	Pn	07 02 43.3	0.0
IEMG	Emamgholi	5.97	351	ePn	Pn	07 02 45.6	+1.4
IEMG				eAMB	AMB	07 03 27.0	
	comp=Z,243nm,0.4s						
IEMG	Emamgholi	5.97	351	ePn	Pn	07 02 45.6	+1.4
NASN	Na'in	6.12	284	ePn	Pn	07 02 46.9	+0.5
NASN	Na'in	6.12	284	ePn	Pn	07 02 46.4	0.0
IANJ	Anjilo	6.34	310	ePn	Pn	07 02 49.7	+0.4
IANJ				eAMB	AMB	07 03 39.8	
	comp=Z,513nm,0.3s						
IANJ	Anjilo	6.34	310	ePn	Pn	07 02 49.7	+0.4
GEYT	Alibeck	6.56	348	Pn	Pn	07 02 55.4	+3.3
	comp=Z,1.8nm,0.3s,baz=88,slow=18,SNR=4.9						
GHIR	Ghir-Karzin	6.79	243	ePn	Pn	07 02 55.8	+0.5
GHIR	Ghir-Karzin	6.79	243	ePn	Pn	07 02 55.4	+0.1
IKLH	Kolahrood	7.24	287	eAMB	AMB	07 05 17.2	
	comp=Z,593nm,0.3s						
WSAR	Wadi Sarin	8.32	188	Pn	Pn	07 03 11.9	-4.3
	comp=Z,0.6nm,0.3s,baz=46,slow=15,SNR=5.1						
AKTO	Aktyubinsk	18.95	356	P	Pn	07 05 37.6	+0.4
	comp=Z,0.1nm,0.3s,baz=171,slow=16,SNR=2.6						
BRTR	Keskin Array B	22.78	298	P	P	07 06 16.6	-1.7
	comp=Z,0.9nm,0.8s,baz=121,slow=8.8,SNR=4.7						
BVAR	Borovoye Array	22.81	17	P	P	07 06 19.3	+1.1
	comp=Z,2.2nm,0.7s,baz=187,slow=8.6,SNR=10						
MKAR	Makanchi Array	23.02	42	P	P	07 06 19.9	-0.5
	comp=Z,0.5nm,0.9s,baz=255,slow=15,SNR=3.2						
KURBB	Kurchatov Arra	23.59	31	P	P	07 06 26.6	+0.4
	comp=Z,1.1nm,0.8s,baz=229,slow=8.9,SNR=12						
ZALV	Zalesovo Beam	28.68	31	P	P	07 07 14.9	+2.6
	comp=Z,1.0nm,0.3s,baz=249,slow=12,SNR=6.5						
FINES	FINESS Array B	37.13	334	P	P	07 08 26.3	+0.4
	comp=Z,1.1nm,0.8s,baz=139,slow=18,SNR=4.6						
GERES	GERESS Array B	38.62	310	P	P	07 08 38.3	-0.5
	comp=Z,0.4nm,0.4s,baz=95,slow=11,SNR=4.4						
TORD	Torodi Ar. Bea	56.20	265	P	P	07 10 53.7	-2.1
	comp=Z,0.8nm,0.5s,baz=64,slow=6.7,SNR=9.8						
YKA	Yellowknife Ar	86.21	357	P	P	07 13 56.7	+0.1
	comp=Z,0.1nm,0.5s,baz=1.9,slow=5.5,SNR=4.7						

*IDC **02** 07:03:00.8±8.4, 21°.44S×67°.85W, h135km±55km, mb3.4/2, mb1 3.4/4, mb1mx3.2/25, mbtmp3.7/4, Error ellipse: s-maj=85.8km s-min=33.1km az=36.0*
*ISCJB **02** 07:03:03.0±0.9, 21°.31S±0°.05×68°.2W±0°.1, h170km±11km, mb3.4/2, Error ellipse: s-maj=22.0km s-min=7.6km az=8.5*
*GUC **02** 07:03:03.5±0.4, 21°.35S×68°.23W, h158km±5km, ML3.3*
ISC 02 07:03:02.6±1.2**, 21°.31S**±0°.06×**68°.1W**±0°.1**, h154**km±12km**, n15, σ0s.94**/25**, 7C-2D, Chile-Bolivia border region**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
PB01	IPOC Station P	1.37	281	⇑eP	Pn	07 03 31.7	+0.4
PB01				eS	Sn	07 03 53.1	-0.1
PB01				AML	AML	07 03 55.4	
	comp=E,395nm,0.2s						
PB01	IPOC Station P	1.37	281	ePKPdf	Pn	07 03 31.4	+0.1
PB08	IPOC Station P	1.56	318	⇑eP	Pn	07 03 34.8	+1.3
PB08				eS	Sn	07 03 58.8	+1.5
PB08				AML	AML	07 03 59.6	
	comp=N,235nm,0.4s						
PB07	IPOC Station P	1.76	256	⇑eP	Pn	07 03 35.7	+0.2
PB07				eS	Sn	07 04 00.0	-0.6
PB07				AML	AML	07 04 01.8	
	comp=E,281nm,0.4s						
PB06	IPOC Station P	1.98	225	⇑eP	Pn	07 03 38.4	+0.5
PB06				eS	Sn	07 04 05.0	-0.2
PB06				AML	AML	07 04 05.7	
	comp=E,224nm,0.5s						
HMBC	Humberstone	2.00	301	⇑eP	Pn	07 03 38.2	0.0
HMBC				eS	Sn	07 04 05.2	-0.4
PATCX	Punta Patache	2.02	284	⇓eP	Pn	07 03 38.9	+0.5
PATCX				eS	Sn	07 04 05.4	-0.5
PATCX				AML	AML	07 04 07.8	
	comp=E,284nm,0.3s						
PB11	IPOC Station P	2.16	315	⇑eP	Pn	07 03 40.1	+0.1
PB11				eS	Sn	07 04 08.6	-0.2
PB04	IPOC Station P	2.20	242	⇓eP	Pn	07 03 40.6	+0.1
PB04				eS	Sn	07 04 08.9	-0.8
PSGC	Pisagua	2.59	311	⇑eP	Pn	07 03 44.5	-0.6
PSGC				eS	Sn	07 04 16.8	-1.1
LPAZ	La Paz	5.00	359	P	Pn	07 04 18.1	+1.4
	comp=E,0.9nm,0.3s,baz=158,slow=6.5,SNR=21						
LPAZ				S	Sn	07 05 14.5	0.0
	comp=E,0.1nm,0.3s,baz=270,slow=20,SNR=1.8						
SIV	San Ignacio	8.47	52	P	Pn	07 04 59.5	-2.8
	comp=E,0.6nm,0.3s,baz=260,slow=9.1,SNR=6.6						
TORD	Torodi Ar. Bea	76.54	70	P	P	07 14 35.9	-0.4
	comp=E,0.3nm,0.5s,baz=242,slow=5.3,SNR=6.6						
YKA	Yellowknife Ar	91.28	340	P	P	07 15 50.8	+0.8
	comp=E,0.3nm,0.5s,baz=132,slow=4.6,SNR=11						
MKAR	Makanchi Array	145.01	36	PKPbc	PKPdf	07 22 21.6	+0.1
	comp=E,0.4nm,0.8s,baz=309,slow=4.6,SNR=4.0						

*IDC **02** 07:07:20.9±11.0, 36°.91N×143°.06E, h0km, mb3.4/3, mb1 3.4/4, mb1mx3.1/49, mbtmp3.3/4, ML3.3/1, MS3.3/1, Ms1 3.3/1, ms1mx2.4/24, Error ellipse: s-maj=194.7km s-min=70.6km az=136.0*
*JMA **02** 07:07:24.3±0.4, 36°.98N×142°.82E, h38km, M3.2*
ISC 02 07:07:24.6±2.0**, 37°.04N**±0°.08×**142°.7E**±0°.1**, h9**km**, n14, σ0s.84**/20**, mb3.5**/3**, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
ONAJ	Iwakimizuishiy	1.53	273	P	Pn	07 07 51.2	-0.9
JMM	Marumori	1.73	299	P	Pn	07 07 54.2	-0.7
JMM				S	Sn	07 08 16.6	-0.5
JIO	Ouri	1.78	323	P	Pn	07 07 55.0	-0.5
JIO				S	Sn	07 08 17.6	-0.6
JFT	Otama	1.95	285	P	Pn	07 07 58.1	+0.2
JFT				S	Sb	07 08 24.8	0.0
JMK	Ichinoseki	2.24	329	P	Pn	07 08 01.8	-0.1
JYK	Kaneyama	2.64	316	P	Pn	07 08 08.9	+1.5
JYK				S	Sn	07 08 40.2	+0.7
JAG	Ashikaga	2.69	258	P	Pn	07 08 07.7	-0.3
JAG				S	Sn	07 08 39.3	-1.3
JRY	Ryogami san	3.23	253	P	Pn	07 08 15.1	-0.4
MJAR	Matsushiro Arr	3.65	264	Pn	Pn	07 08 22.1	+0.9
	2.0nm,0.3s,baz=86,slow=15,SNR=7.9						
MAT	Matsushiro	3.65	264	P	Pn	07 08 22.2	+1.0
MAT				eS	Sn	07 09 05.9	+1.5
JYN	Shimob	3.70	247	P	Pn	07 08 22.5	+0.5
SONM	Songino Array	28.64	304	P	P	07 13 21.1	-0.5
	0.4nm,0.5s,baz=112,slow=7.0,SNR=3.4						
SONM				LR	LR	07 26 48.4	
	comp=Z,58nm,18.3s,baz=136,slow=40						
MKAR	Makanchi Array	44.99	302	P	P	07 15 40.8	+0.6
	0.2nm,0.7s,baz=79,slow=11,SNR=2.4						
KURBB	Kurchatov Arra	46.81	308	P	P	07 15 54.4	-0.1
	0.3nm,0.4s,baz=83,slow=8.0,SNR=4.0						

NNC 02 07:16:13.0±2.9**, 36°.52N**×**69°.86E, h156**km±72km**, mb2.7, mpv3.5, 5C-3D, Error ellipse: s-maj=34.9km s-min=21.1km az=66.0, Hindu Kush region**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
SFK	Sufi-Kurgan	4.51	38	⇑P	Pn	07 17 20.1	-0.2
	1.7nm,0.4s						
SFK				⇓S	Sn	07 18 13.7	+0.9
	5.1nm,0.3s						
MNAS	Manas	6.30	18	⇑P	Pn	07 17 44.0	+0.2
	2.0nm,0.7s						
MNAS				⇑S	Sn	07 18 55.5	+0.6
	6.2nm,1.3s						
KK31	Karatay Array	6.59	4	⇓P	Pn	07 17 48.0	+0.5
	5.7nm,0.5s,baz=181,slow=12,SNR=77						
KK31				S	Sn	07 19 02.1	+0.4
	0.6nm,0.3s,baz=196,slow=21,SNR=5.8						
AAK	Ala-Archa	7.07	29	⇑P	Pn	07 17 52.2	-2.0
	2.5nm,0.7s						
AAK				⇓S	Sn	07 19 13.7	+0.2
	2.5nm,0.6s						
TKM2	Tokmak 2	7.77	33	⇑P	Pn	07 18 05.0	+1.6
	1.9nm,0.7s						
AB31	Akbulak array	14.63	333	P	Pn	07 19 32.8	+0.4
	0.7nm,0.5s,baz=152,slow=12,SNR=24						

*YARS **02** 07:18:24.1±0.2, 56°.67N±0°.01×121°.53E±0°.02, h10km*
*BYKL **02** 07:18:24.9±0.5, 56°.63N×121°.61E, h14km±5km*
ISC 02 07:18:24.1±0.8**, 56°.63N**±0°.03×**121°.50E**±0°.02**, h9**km±6km**, n42, σ2s.03**/69**, 1C-1D, Southeastern Siberia**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
YKLR	Yuktali	0.09	111	⇑iPg	Pg	07 18 26.7	+0.2
YKLR				eSg	Sg	07 18 27.7	-0.5
YKLR				e		07 18 29.6	
YKLR	Yuktali	0.09	111	eP	Pg	07 18 26.6	+0.1
YKLR				Pmax		07 18 26.6	
	comp=Z,9μm,0.2s						
YKLR				eS	Sg	07 18 27.4	-0.8
YKLR				Smax		07 18 27.4	
	comp=N,1μm,0.1s						
YKLR				Smax		07 18 27.4	
	comp=E,540nm,0.1s						
KHNR	Khani	0.89	290	⇓iPg	Pg	07 18 41.9	+0.7
KHNR				eSg	Sg	07 18 54.3	+1.6
KHNR				e		07 19 00.2	
KHN	Khani	0.99	288	eP	Pg	07 18 40.9	-2.2
KHN				Pmax		07 18 40.9	
	comp=Z,91nm,0.3s						
KHN				eS	Sg	07 18 51.6	-4.3
KHN				Smax		07 18 51.6	
	comp=N,700nm,0.3s						
CRS	Chara	1.80	280	ePg	Pb	07 18 58.6	+1.4
CRS				Pmax		07 19 01.2	
	comp=N,413nm,0.6s						
CRS				eSg	Sg	07 19 22.7	+0.8
CRS				Smax		07 19 26.8	
	comp=N,815nm,1.1s						
CLNS	Chul'man	1.88	82	ePg	Pb	07 18 58.7	0.0
CLNS				e		07 19 03.6	
CLNS				eSg	Sb	07 19 23.0	+0.7
CLNS	Chul'man	1.88	82	eP	Pn	07 18 56.8	+0.3
CLNS				Pmax		07 18 56.8	
	comp=Z,41nm,0.5s						
CLNS				eS	Sb	07 19 22.1	-0.2
CLNS				Smax		07 19 22.1	
	comp=E,157nm,0.4s						
IENR	Iengra	1.91	101	ePg	Pb	07 18 58.7	-0.4
IENR				eSg	Sb	07 19 23.5	+0.4
IENR				e		07 19 27.2	
IENR	Iengra	1.91	101	eP	Pb	07 18 59.0	-0.1
IENR				Pmax		07 18 59.0	
	comp=Z,46nm,0.4s						
IENR				eS	Sb	07 19 23.1	0.0
IENR				Smax		07 19 23.1	
	comp=N,279nm,0.3s						
TNDR	Tynda	2.34	128	ePg	Pb	07 19 05.8	-0.7
TNDR				eSg	Sb	07 19 36.1	+0.6
TNDR				e		07 19 39.8	
TNDR	Tynda	2.34	128	eP	Pn	07 19 03.9	+1.1
TNDR				eP	Pb	07 19 06.9	+0.4
TNDR				Pmax		07 19 06.9	
	comp=Z,45nm,0.3s						
TNDR				eS	Sn	07 19 33.3	+1.6
TNDR				eS	Sb	07 19 36.4	+0.9
TNDR				Smax		07 19 36.4	
	comp=E,173nm,0.2s						
TUP	Tupik	2.37	202	ePn	Pn	07 19 04.4	+1.2
TUP				ePg	Pb	07 19 07.1	+0.1
TUP				Pmax		07 19 10.7	
	comp=E,72nm,0.3s						
TUP				eSg	Sb	07 19 38.8	+2.4
TUP				Smax		07 19 41.9	
	comp=E,1μm,0.5s						
TUP	Tupik	2.37	202	eP	Pn	07 19 03.8	+0.6
TUP				eP	Pb	07 19 07.2	+0.2
TUP				Pmax		07 19 07.2	
	comp=Z,72nm,0.3s						
TUP				eS	Sn	07 19 33.6	+1.1
TUP				eS	Sb	07 19 38.5	+2.1
TUP				Smax		07 19 38.5	
	comp=E,1μm,0.5s						
ALDR	Aldan	2.90	45	eP	Pb	07 19 15.5	-0.4
ALDR				Pmax		07 19 15.5	
	comp=Z,29nm,0.1s						
ALDR				eS	Sb	07 19 52.7	+1.3
ALDR				Smax		07 19 52.7	
	comp=N,135nm,0.3s						
OLMR	Olekminsk	3.80	352	eP	Pn	07 19 24.2	+1.4
OLMR				eP	Pb	07 19 31.5	+0.2
OLMR				Pmax		07 19 31.5	
	comp=Z,49nm,0.6s						
OLMR				eS	Sn	07 20 06.3	-1.2
OLMR				eS	Sb	07 20 20.6	+3.2
OLMR				Smax		07 20 20.6	
	comp=E,121nm,0.6s						
KROS	Kirovskiy	3.81	123	eS	Sn	07 20 04.5	-3.3
BOD	Bodaibo	4.25	289	ePg	Pb	07 19 40.5	+1.6
BOD				Pmax		07 19 51.6	
	comp=E,10.0nm,0.7s						
BOD				eSg	Sg	07 20 37.3	-3.0
BOD				Smax		07 20 56.1	
	comp=E,123nm,0.9s						
SVKR	Severomuysk	4.44	267	ePg	Pb	07 19 44.7	+2.4
SVKR				eSg	Sg	07 20 45.2	-1.5
SVKR				Smax		07 21 02.7	
	comp=E,242nm,0.7s						
UKT	Uakit	4.56	259	ePn	Pn	07 19 35.4	+2.1
UKT				ePg	Pb	07 19 46.4	+2.1
UKT				Pmax		07 19 50.3	
	comp=E,16nm,0.8s						
UKT				eSg	Sg	07 20 47.3	-3.0
UKT				Smax		07 20 56.7	
	comp=E,93nm,1.0s						
BMKR	Bomnak	4.58	112	eP	Pb	07 19 47.4	+2.8
BMKR				Pmax		07 19 47.4	
	comp=Z,22nm,0.4s						
BMKR				eS	Sg	07 20 47.5	-3.5
BMKR				Smax		07 20 47.5	
	comp=E,94nm,0.4s						
CGD	Chagda	5.33	63	eP	Pn	07 19 45.7	+1.9
CGD				eP	Pb	07 19 58.8	+1.4
CGD				Pmax		07 19 58.8	
	comp=Z,7.0nm,0.5s						
CGD				eS	Sn	07 20 44.4	-0.9
CGD				eS	Sb	07 21 08.4	+6.9
CGD				Smax		07 21 08.4	
	comp=N,80nm,0.7s						
YOA	Uoyan	5.46	269	eSg	Sg	07 21 16.7	-2.4
YOA				Smax		07 21 35.2	
	comp=N,492nm,1.7s						
VTMR	Vitim	5.53	304	eS	Sn	07 20 49.2	-0.9
VTMR				eS	Sg	07 21 15.5	-5.9
VTMR				Smax		07 21 15.5	
	comp=N,172nm,0.7s						
KMO	Kumora	5.79	267	ePn	Pn	07 19 49.7	-0.4
KMO				e		07 20 08.5	
KMO				max		07 20 44.4	
	comp=N,11nm,0.6s						
KMO				eSg	Sg	07 21 26.9	-2.9
KMO				Smax		07 21 35.9	
	comp=N,135nm,1.0s						
YLYR	Ulyunkhan	6.09	258	ePn	Pn	07 19 56.6	+2.3
YLYR				e		07 20 05.9	
YLYR				ePg	Pb	07 20 14.3	+3.9
YLYR				Pmax		07 20 23.7	
	comp=N,3.0nm,0.7s						
YLYR				eSg	Sg	07 21 35.6	-4.0
YLYR				e		07 21 42.3	
YLYR				max		07 21 50.3	
	comp=N,102nm,1.3s						
CIT	Chita	6.55	229	e		07 21 34.4	
CIT				eSg	Sg	07 21 48.9	-5.2
CIT				Smax		07 21 58.4	
	comp=N,164nm,0.3s						
TBGR	Tabaga	6.67	35	eP	Pn	07 20 03.1	+0.9
TBGR				eP	Pb	07 20 22.9	+2.7
TBGR				Pmax		07 20 22.9	
	comp=Z,9.0nm,0.5s						
TBGR				eS	Sn	07 21 15.7	-2.6
TBGR				eS	Sb	07 21 48.6	+8.7
TBGR				Smax		07 21 48.6	
	comp=N,71nm,0.8s						
NIZ	Nizh Angarsk	6.73	268	e	Pb	07 20 21.6	+0.5
NIZ				e		07 20 29.8	
NIZ				max		07 20 30.9	
	comp=N,4.0nm,0.8s						
NIZ				eSg	Sg	07 21 56.2	-3.7
NIZ				Smax		07 22 06.7	
	comp=N,41nm,2.2s						
NBS	Nizhniy Bestya	6.84	35	eS	Sb	07 21 53.2	+8.6
YAK	Yakutsk	6.85	34	eP	Pb	07 20 25.7	+2.6
YAK				Pmax		07 20 25.7	
	comp=Z,14nm,0.4s						
YAK				eS	Sn	07 21 20.7	-1.8
YAK				eS	Sb	07 21 53.3	+8.5
YAK				Smax		07 21 53.3	
	comp=N,43nm,0.5s						
SYVR	Suvo	7.23	251	e	Pn	07 20 11.1	+1.2
SYVR				e		07 20 22.5	
SYVR				max		07 20 41.5	
	comp=N,1.0nm,0.1s						
SYVR				eSg	Sg	07 22 11.6	-4.4
SYVR				e		07 22 16.4	
SYVR				max		07 22 22.9	
	comp=N,89nm,1.2s						
USMR	Ust'-Maya	7.81	55	eS	Sn	07 21 44.1	-2.1
USMR				eS	Sb	07 22 23.5	+11
USMR				Smax		07 22 23.5	
	comp=E,33nm,0.9s						
OGRR	Ongureny	8.51	255	ePn	Pn	07 20 27.3	-0.1
OGRR				e		07 21 00.3	
OGRR				max		07 21 07.2	
	comp=E,1.0nm,0.6s						
OGRR				eSg	Sg	07 22 48.8	-8.1
OGRR				Smax		07 22 56.9	
	comp=E,33nm,1.9s						
KPC	Khapcheranga	8.83	222	ePn	Pn	07 20 32.5	+0.6
KPC				ePg	Pg	07 21 04.0	-9.0
KPC				eSg	Sg	07 23 00.1	-7.1
KPC				Smax		07 23 09.3	
	comp=E,116nm,1.4s						
ZRHB	Zarechye	9.27	250	eSg	Sn	07 23 14.0	+52
ZRHB				Smax		07 23 30.4	
	comp=E,202nm,1.6s						
TRG	Tyrgan	9.58	253	e	Pn	07 20 54.5	+12
TRG				e		07 23 21.1	
TRG				eSg	Sn	07 23 25.0	+55
TRG				Smax		07 23 59.5	
	comp=E,31nm,2.0s						
KAB	Kabansk	9.80	248	eSg	Sn	07 23 30.1	+55
KAB				Smax		07 24 04.7	
	comp=E,227nm,1.3s						
HRMR	Khuramsha	9.89	246	e	Pn	07 21 25.6	+39
HRMR				max		07 21 29.0	
	comp=E,3.0nm,0.5s						
HRMR				e		07 22 31.9	
HRMR				eSg	Sn	07 23 32.3	+55
HRMR				e		07 23 43.2	
HRMR				max		07 23 45.7	
	comp=E,241nm,1.0s						
ARS	Arshan	12.09	255	eSg		07 24 42.4	
ARS				Smax		07 25 06.6	
	comp=E,42nm,1.6s						
ZAK	Zakamensk	12.50	248	eSg		07 24 53.9	
ZAK				Smax		07 25 24.3	
	comp=E,40nm,1.9s						
MOY	Mondy	12.98	256	eSg		07 25 08.2	
MOY				e		07 25 23.7	
ORL	Orlik	13.21	261	e		07 24 59.4	
ORL				eSg	S	07 25 16.1	+53

JMA 02 07:18:37.1±0.1**, 37°.80N**×**141°.78E, h30**km±3km**, M3.7, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
JIO	Ouri	0.74	333	P	Pb	07 18 50.7	-0.7
JIO				S	Sb	07 18 59.7	-1.5
JMM	Marumori	0.78	275	P	Pn	07 18 51.8	-0.3
JMM				S	Sb	07 19 01.5	-1.0
JOU	Okura	1.05	303	S	Sn	07 19 08.9	-0.5
ONAJ	Iwakimizuishiy	1.05	229	P	Pn	07 18 55.6	-0.2
ONAJ				S	Sn	07 19 08.9	-0.5
JFT	Otama	1.18	257	P	Pb	07 18 58.5	-0.4
JHO	Hitachi	1.53	220	P	Pn	07 19 02.6	+0.2
MAT	Matsushiro	3.12	247	P	Pn	07 19 26.7	+2.5

NNC 02 07:19:54.6±6.7**, 36°.98N**×**70°.80E, h3**km±199km**, mb3.6, mpv3.3, 5C-3D, Error ellipse: s-maj=214.8km s-min=27.7km az=12.0, Hindu Kush region**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
SFK	Sufi-Kurgan	3.70	34	⇑P	Pn	07 20 53.4	+0.4
	1.2nm,0.3s						
SFK				⇓S	Sn	07 21 39.1	+1.9
	6.8nm,0.4s						
MNAS	Manas	5.66	13	⇓P	Pn	07 21 20.0	+0.3
	1.3nm,0.5s						
MNAS				⇑S	Sn	07 22 25.8	+0.5
	5.0nm,0.8s						
KK31	Karatay Array	6.12	358	⇓P	Pn	07 21 27.1	+1.1
	2.6nm,0.2s,baz=177,slow=12,SNR=130						
KK31				S	Sn	07 22 38.9	+2.3

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
	0.7nm,0.3s,baz=183,slow=25,SNR=6.5						
AAK	Ala-Archa	6.33	26	⇑P	Pn	07 21 27.4	-1.5
	0.8nm,0.4s						
AAK				⇑S	Sn	07 22 40.7	-1.0
	2.6nm,0.7s						
AB31	Akbulak array	14.59	331	⇑P	Pn	07 23 19.9	-1.9
	0.2nm,0.3s,baz=163,slow=11,SNR=13						

WEL 02 07:30:05.8±0.5, 37.03S×176.92E, h244km±4km, ML3.5/12, 2C-1D, Error ellipse: s-maj=5.4km s-min=4.0km az=0.0, North Island

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
HAZ	Te Kaha	1.00	137	PN	Pn	07 30 40.0	-0.1
HAZ				SN	S	07 31 06.7	-0.4
MXZ	Matakaoa Point	1.23	116	PN	Pn	07 30 41.4	-0.1
MXZ				SN	S	07 31 09.8	+0.3
URZ	Urewera	1.24	173	PN	Pn	07 30 41.2	-0.3
URZ				SN	S	07 31 09.6	-0.2
TOZ	Tahuroa Road	1.33	238	PN	Pn	07 30 42.8	+0.6
MWZ	Matawai	1.39	160	PN	Pn	07 30 42.7	0.0
TWGZ	Tauwhareparae	1.42	144	PN	Pn	07 30 43.5	+0.5
TWGZ				SN	S	07 31 13.7	+1.5
WMGZ	Waiomatatini S	1.43	124	⇑PN	Pn	07 30 43.1	+0.2
PUZ	Puketiti	1.49	135	⇑PN	Pn	07 30 43.3	-0.1
RAGZ	Rawiri	1.51	165	PN	Pn	07 30 43.9	+0.2
WPRZ	Whakapapatarin	1.60	202	PN	Pn	07 30 44.7	+0.4
CNGZ	Carnagh Statio	1.77	145	PN	Pn	07 30 46.0	+0.3
SNGZ	Shannon Statio	1.78	169	PN	Pn	07 30 45.8	0.0
RIGZ	Rimuhau	1.80	159	PN	Pn	07 30 46.2	+0.2
MRHZ	Matea Rd	1.84	192	PN	Pn	07 30 45.9	-0.4
KNZ	Kokohu	2.08	164	PN	Pn	07 30 47.9	-0.5
BKZ	Black Stump Fm	2.16	189	⇓PN	Pn	07 30 48.3	-0.9
ARHZ	Aropaoanui	2.23	179	PN	Pn	07 30 49.6	-0.2
WNVZ	Wahianoa	2.52	204	PN	Pn	07 30 51.9	-1.0
BHHZ	Black Hill Sta	2.55	195	PN	Pn	07 30 51.8	-1.2
KRHZ	Kereru	2.65	189	PN	Pn	07 30 52.7	-1.3
KAHZ	Kahuranaki	2.76	181	PN	Pn	07 30 54.4	-0.9
PNHZ	Pukenui	2.93	191	PN	Pn	07 30 55.3	-1.8
TSZ	Takapari Road	3.12	194	PN	Pn	07 30 57.0	-2.1
ANWZ	Angora Road	3.44	186	PN	Pn	07 31 00.9	-1.8
POWZ	Post Office Ro	3.48	195	PN	Pn	07 31 01.4	-1.7
MRZ	Mangatainoka R	3.77	196	PN	Pn	07 31 03.3	-3.2
TIWZ	Tintock	3.83	192	PN	Pn	07 31 04.7	-2.5
HOWZ	Holdsworth Sta	4.01	195	PN	Pn	07 31 06.0	-3.4
OGWZ	Otaki Gorge	4.02	199	PN	Pn	07 31 06.3	-3.1
KIW	Kapiti Island	4.13	202	PN	Pn	07 31 07.3	-3.5
CAW	Cannon Point	4.32	199	PN	Pn	07 31 09.3	-3.7
TCW	Tory Channel	4.65	205	PN	Pn	07 31 13.5	-3.5
TUWZ	Tuamarina	4.96	207	PN	Pn	07 31 17.0	-3.8
NNZ	Nelson	5.01	212	PN	Pn	07 31 17.4	-3.9
QRZ	Quartz Range	5.11	221	PN	Pn	07 31 17.7	-4.8
THZ	Tophouse	5.66	212	PN	Pn	07 31 25.3	-4.1
DSZ	Denniston Nort	6.15	219	PN	Pn	07 31 31.1	-4.5
INZ	Inchbonnie	7.08	215	PN	Pn	07 31 41.8	-5.4
OXZ	Oxford	7.31	209	PN	Pn	07 31 44.6	-5.6

*IDC **02** 07:30:33.5±1.4, 39.03N×142.28E, h0km, mb3.5/4, mb1 3.7/5, mb1mx3.4/36, mbtmp3.5/5, ML2.6/1, Error ellipse: s-maj=38.8km s-min=27.4km az=106.0*
*ISCJB **02** 07:30:35.7±1.5, 39.06N±0.04×142.45E±0.09, h26km±8km, mb3.5/4, Error ellipse: s-maj=12.1km s-min=7.3km az=0.7*
*JMA **02** 07:30:37.7±0.1, 39.11N×142.36E, h35km±1km, M3.7*
JMA Felt I J1.
ISC 02 07:30:36.9±2.1, 39.06N±0.05×142.33E±0.09, h23km±14km, n15, σ0.62/22, mb3.5/4, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
OFUJ	Ofunato	0.52	272	P	Pn	07 30 48.7	-0.2
MIYJ	Miyakonagasawa	0.65	323	P	Pb	07 30 49.7	+0.1
MIYJ				S	Sb	07 30 58.1	-0.1
JMK	Ichinoseki	0.87	263	P	Pn	07 30 54.1	+0.3
JMK				S	Sn	07 31 06.0	+0.2
JOM	Ohasama	0.91	297	P	Pn	07 30 54.3	+0.1
JOM				S	Sn	07 31 06.4	-0.2
JIO	Ouri	0.98	232	P	Pn	07 30 55.2	0.0
JIO				S	Sb	07 31 07.7	+0.1
JKZ	Kuzumaki	1.21	320	P	Pb	07 30 58.7	-0.3
JKZ				S	Sb	07 31 13.4	-0.8
JRG	Rokugo	1.36	285	P	Pb	07 31 01.6	0.0
JRG				S	Sb	07 31 20.4	+1.8
JANG	Nango	1.46	335	P	Pn	07 31 02.1	+0.3
JANG				S	Sn	07 31 19.7	-0.5
JOU	Okura	1.48	243	P	Pb	07 31 03.3	-0.3
JYK	Kaneyama	1.54	265	P	Pb	07 31 04.1	-0.7
MJAR	Matsushiro Arr	4.12	234	Pn	Pn	07 31 38.8	+0.4
	0.3nm,0.3s,baz=50,slow=11,SNR=2.4						
MKAR	Makanchi Array	43.69	300	P	P	07 38 39.8	-0.2
	0.6nm,0.8s,baz=82,slow=9.9,SNR=7.1						
ILAR	Eielson Array	47.40	33	P	P	07 39 10.2	+1.1
	0.3nm,0.7s,baz=271,slow=5.7,SNR=4.3						
WRA	Warramunga Arr	59.17	189	P	P	07 40 35.4	-0.5
	0.2nm,0.4s,baz=6.4,slow=7.2,SNR=2.2						
AKASG	Malin Array Be	73.14	322	P	P	07 42 04.9	-0.4
	0.4nm,0.4s,baz=44,slow=6.5,SNR=4.0						

*IDC **02** 07:48:00.0±1.4, 38.52N×143.24E, h0km, mb3.5/6, mb1 3.6/7, mb1mx3.3/51, mbtmp3.4/7, ML2.9/1, Error ellipse: s-maj=32.4km s-min=26.8km az=83.0*
*ISCJB **02** 07:48:02.8±0.9, 38.57N±0.07×142.89E±0.08, h23km, mb3.4/6, Error ellipse: s-maj=10.5km s-min=8.5km az=18.3*
*JMA **02** 07:48:02.5±0.2, 38.56N×142.85E, h16km±3km, M3.6*
ISC 02 07:48:03.8±1.2, 38.58N±0.08×142.80E±0.08, h23km, n14, σ1.15/16, mb3.5/6, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
OFUJ	Ofunato	1.02	300	P	Pb	07 48 22.2	-0.6
OFUJ				eS	Sn	07 48 36.2	-0.1
JIO	Ouri	1.15	264	P	Pb	07 48 24.0	-0.9
JIO				S	Sn	07 48 39.2	-0.2
MIYJ	Miyakonagasawa	1.26	323	P	Pn	07 48 25.3	-0.7
MIYJ				S	Sb	07 48 42.6	0.0
JMK	Ichinoseki	1.29	287	P	Pb	07 48 26.5	-0.9
JMK				S	Sb	07 48 43.7	+0.1
JOM	Ohasama	1.48	308	P	Pb	07 48 29.9	-0.7
JOU	Okura	1.69	263	P	Pb	07 48 32.9	-1.3
JKZ	Kuzumaki	1.81	321	P	Pb	07 48 34.9	-1.4
MJAR	Matsushiro Arr	4.17	242	Pn	Pn	07 49 10.0	+3.9
	0.6nm,0.3s,baz=63,slow=9.8,SNR=4.4						
SONM	Songino Array	27.88	301	P	P	07 53 53.9	+2.0
	0.3nm,0.7s,baz=91,slow=10,SNR=2.7						
ZALV	Zalesovo Beam	41.71	311	P	P	07 55 53.5	+2.9
	0.3nm,0.3s,baz=107,slow=8.0,SNR=2.5						
MKAR	Makanchi Array	44.25	301	P	P	07 56 13.1	+1.8
	0.2nm,0.5s,baz=91,slow=7.4,SNR=4.9						
KURBB	Kurchatov Arra	45.94	307	P	P	07 56 26.2	+1.5
	0.5nm,0.6s,baz=81,slow=8.1,SNR=5.4						
INK	Inuvik	52.51	28	P	P	07 57 13.8	-0.9
	0.7nm,0.9s,baz=328,slow=9.5,SNR=5.8						
WRA	Warramunga Arr	58.75	189	P	P	07 57 59.6	-0.4
	0.5nm,0.6s,baz=6.8,slow=6.8,SNR=2.9						

*IDC **02** 07:54:55.3±0.7, 37.20N×144.07E, h0km, mb3.8/17, mb1 4.0/21, mb1mx3.9/56, mbtmp3.8/21, ML3.4/4, MS3.4/2, Ms1 3.4/2, ms1mx2.9/21, Error ellipse: s-maj=18.0km s-min=15.4km az=125.0*
*NEIC **02** 07:54:57.4±3.8, 37.22N×144.06E, h14km±23km, mb4.2/7, Error ellipse: s-maj=11.5km s-min=7.2km az=103.0*
*ISCJB **02** 07:54:58.7±0.4, 37.29N±0.04×143.87E±0.05, h33km, mb3.9/23, MS3.9/1, Error ellipse: s-maj=6.5km s-min=5.5km az=28.9*
*JMA **02** 07:55:00.3±0.3, 37.38N×143.75E, h47km, M4.4*
ISC 02 07:55:01.0±0.6, 37.34N±0.06×143.90E±0.07, h35km, n50, σ1.55/51, mb3.9/23, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
JIO	Ouri	2.30	300	P	Pn	07 55 35.4	-1.0
JIO				eS	Sn	07 56 01.0	-2.5
OFUJ	Ofunato	2.47	315	P	Pn	07 55 37.6	-1.1
JMM	Marumori	2.52	283	P	Pn	07 55 38.2	-1.2
JMM				S	Sn	07 56 07.0	-1.9
JMK	Ichinoseki	2.66	308	eS	Sn	07 56 10.0	-2.2
JOU	Okura	2.76	293	P	Pn	07 55 42.2	-0.5
JHO	Hitachi	2.76	256	P	Pn	07 55 41.4	-1.3
JFT	Otama	2.84	275	P	Pn	07 55 44.2	+0.4
JOM	Ohasama	2.95	317	P	Pn	07 55 44.7	-0.7
JOM				S	Sn	07 56 17.2	-2.4
JTH	Tanohata	3.04	329	S	Sn	07 56 18.3	-3.5
JYK	Kaneyama	3.21	301	P	Pn	07 55 48.7	-0.1
JTM	Tenmabayashi	4.09	328	eS	Sn	07 56 43.5	-4.0
JRY	Ryogami san	4.23	253	P	Pn	07 56 01.9	-1.0
JOT	Ohata	4.60	332	P	Pn	07 56 07.7	-0.3
MJAR	Matsushiro Arr	4.63	262	Pn	Pn	07 56 07.8	-0.5
	7.0nm,0.3s,baz=89,slow=15,SNR=41						
MAJO	Matsushiro	4.63	262	ePn	Pn	07 56 09.1	+0.7
MAT	Matsushiro	4.63	262	P	Pn	07 56 09.3	+0.9
ERM	Erimo	4.70	353	ePn	Pn	07 56 08.0	-1.4
JCH	Churui	5.29	356	P	Pn	07 56 14.5	-2.9
JCH				eS	Sn	07 57 09.9	-7.1
JHJ2	Mitsune	5.38	220	ePn	Pn	07 56 17.3	-1.5
JHJ	Hachijo jima 2	5.39	220	Pn	Pn	07 56 16.6	-2.3
	8.2nm,0.3s,baz=320,slow=22,SNR=6.8						
JHJ				LR	LR	07 58 58.1	
	comp=Z,156nm,19.0s,baz=56,slow=45						
USRK	Ussuriysk Ar.	11.33	311	Pn	Pn	07 57 43.2	+3.0
	0.3nm,0.3s,baz=104,slow=16,SNR=3.7						
KLR	Kul'dur	14.79	327	Pn	Pn	07 58 30.0	+2.6
	0.1nm,0.3s,baz=129,slow=11,SNR=4.8						
SEY	Seymchan	26.15	9	P	P	08 00 32.1	+0.6
	5.0nm,0.8s,baz=181,slow=6.8,SNR=21						
SONM	Songino Array	29.27	303	P	P	08 01 02.7	+2.8
	0.3nm,0.4s,baz=95,slow=4.8,SNR=4.6						
ZALV	Zalesovo Beam	43.18	312	P	P	08 02 58.2	+0.1
	0.3nm,0.3s,baz=102,slow=6.2,SNR=2.7						
MKAR	Makanchi Array	45.63	302	P	P	08 03 18.7	+0.8
	0.7nm,0.8s,baz=88,slow=7.9,SNR=6.9						
KURK	Kurchatov	47.30	308	eP	P	08 03 31.0	+0.1
	5.3nm,0.9s						
KURBB	Kurchatov Arra	47.38	308	P	P	08 03 31.9	+0.5
	0.8nm,0.5s,baz=81,slow=7.8,SNR=7.5						
ILAR	Eielson Array	48.17	33	P	P	08 03 37.3	-0.1
	1.3nm,0.8s,baz=271,slow=6.5,SNR=13						
BRVK	Borovoye	51.88	313	eP	P	08 04 06.5	+0.7
	0.9nm,0.6s						
AAK	Ala-Archa	52.09	299	eP	P	08 04 12.0	+4.4
	1.5nm,1.1s						
INK	Inuvik	53.21	27	P	P	08 04 15.8	+0.6
	1.6nm,0.5s,baz=305,slow=7.0,SNR=20						
INK	Inuvik	53.21	27	eP	P	08 04 15.7	+0.4
	1.6nm,0.5s						
CTAO	Charters Tower	57.16	177	eP	P	08 04 42.4	-1.9
	28nm,1.4s						
ARU	Arti	57.44	319	eP	P	08 04 46.6	+0.7
WRAB	Tennant Creek	57.67	191	eP	P	08 04 46.4	-1.5
	4.6nm,0.8s						
WRA	Warramunga Arr	57.68	191	P	P	08 04 46.5	-1.4
	3.5nm,0.7s,baz=11,slow=7.4,SNR=10						
ABKAR	Akbulak array	59.25	311	eP	P	08 04 58.5	-0.2
	0.8nm,0.7s						
ASAR	Alice Springs	61.41	190	P	P	08 05 12.7	-0.9
	0.7nm,0.5s,baz=6.5,slow=7.1,SNR=14						
YKA	Yellowknife Ar	62.54	31	P	P	08 05 20.0	-0.7
	0.2nm,0.6s,baz=297,slow=6.7,SNR=3.6						
STKA	Stephens Creek	68.89	182	LR	LR	08 37 21.9	
	comp=Z,72nm,20.1s,baz=23,slow=37						
FINES	FINESS Array B	69.46	333	P	P	08 06 04.3	-0.9
	0.9nm,0.7s,baz=49,slow=13,SNR=3.4						
NVAR	Mina Array Bea	73.21	54	P	P	08 06 28.4	-0.2
	0.6nm,0.7s,baz=291,slow=7.6,SNR=2.6						
NOA	NORSAR Array B	74.66	338	P	P	08 06 37.9	+1.4
	1.1nm,0.9s,baz=13,slow=7.4,SNR=3.3						
AKASG	Malin Array Be	75.25	323	P	P	08 06 40.5	+0.6
	0.5nm,0.4s,baz=42,slow=6.4,SNR=4.5						
PDAR	Pinedale Array	76.03	47	P	P	08 06 44.5	-0.4
	0.3nm,0.8s,baz=243,slow=0.7,SNR=3.8						
CLL	Collm	81.80	331	eP	P	08 07 17.0	+0.9
GERES	GERESS Array B	83.48	329	P	P	08 07 25.4	+0.5
	0.4nm,0.4s,baz=57,slow=4.9,SNR=4.9						
TXAR	Lajitas Array	88.35	54	P	P	08 07 49.7	+0.2
	0.3nm,0.7s,baz=309,slow=5.7,SNR=2.6						
QSPA	South Pole Qui	127.08	180	ePKPdf	PKPdf	08 14 00.2	-0.2

*ISCJB **02** 07:55:15.8±0.8, 35.64N±0.04×26.57E±0.04, h52km±13km, Error ellipse: s-maj=7.0km s-min=4.6km az=153.9*
*ATH **02** 07:55:15.3, 35.69N×26.51E, h37km±3km, ML2.5/3, Error ellipse: s-maj=4.2km s-min=1.3km az=164.0*
*THE **02** 07:55:16.8, 35.64N×26.55E, h44km±6km, ML2.8/7, Error ellipse: s-maj=6.2km s-min=0.8km az=142.0*
*CSEM **02** 07:55:16.4±0.1, 35.64N×26.57E, h40km, ML2.8, Error ellipse: s-maj=3.3km s-min=2.6km az=159.0*
ISC 02 07:55:15.5±1.4, 35.61N±0.04×26.61E±0.03, h60km±12km, n47, σ0.80/73, Crete

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
KARP	Karpathos	0.46	98	P	Pn	07 55 27.2	+0.1
KARP				S	Sn	07 55 35.5	0.0
KARP	Karpathos	0.46	98	P	Pn	07 55 27.4	+0.3
KARP				S	Sn	07 55 35.1	-0.4
KARP	Karpathos	0.46	98	P	Pn	07 55 27.4	+0.3
KARP				S	Sn	07 55 35.1	-0.4
ZKR	Zakros	0.59	213	P	Pn	07 55 29.0	+0.6
ZKR				S	Sn	07 55 37.7	-0.1
ZKR	Zakros	0.59	213	P	Pn	07 55 29.0	+0.6
ZKR				S	Sn	07 55 37.7	-0.1
ZKR	Zakros	0.59	213	P	Pn	07 55 29.6	+1.2
ZKR				S	Sn	07 55 38.0	+0.2
ZKR				AML	AML	07 55 39.9	
	comp=E,1952μm,0.5s						
ZKR				AML	AML	07 55 41.9	
	comp=N,1141μm,0.4s						
NPS	Neapolis	0.88	247	P	Pn	07 55 31.7	-0.3
NPS				S	Sn	07 55 43.4	-0.8
NPS	Neapolis	0.88	247	P	Pn	07 55 31.8	-0.3
NPS				S	Sn	07 55 43.4	-0.8
NPS	Neapolis	0.88	247	P	Pn	07 55 31.8	-0.3
NPS				S	Sn	07 55 42.8	-1.4
NPS				AML	AML	07 55 44.2	
	comp=E,812μm,0.4s						
NPS				AML	AML	07 55 47.1	
	comp=N,546μm,0.2s						
LAST	Lasithi	1.02	244	P	Pn	07 55 33.9	0.0
LAST				S	Sn	07 55 46.7	-0.9
LAST	Lasithi	1.02	244	P	Pn	07 55 33.9	0.0
LAST				S	Sn	07 55 46.9	-0.7
LAST	Lasithi	1.02	244	P	Pn	07 55 33.4	-0.5
NISR	Nisiros	1.09	23	P	Pn	07 55 35.0	+0.4
NISR				S	Sn	07 55 49.0	+0.1
NISR	Nisiros	1.09	23	P	Pn	07 55 35.0	+0.4
NISR				S	Sn	07 55 49.0	+0.1
SANT	Santorini	1.20	310	P	Pn	07 55 36.2	0.0
SANT				S	Sn	07 55 51.1	-0.6
SANT	Santorini	1.20	310	P	Pn	07 55 36.2	0.0
SANT				S	Sn	07 55 50.8	-0.9
SANT	Santorini	1.20	310	P	Pn	07 55 36.8	+0.6
SANT				S	Sn	07 55 50.8	-0.9
THT1	Athinios (Pele	1.23	309	P	Pn	07 55 36.3	-0.2
THT1				S	Sn	07 55 51.5	-0.7
THT1	Athinios (Pele	1.23	309	P	Pn	07 55 36.3	-0.2
THT1				S	Sn	07 55 51.5	-0.7
THR6	Thira Island,	1.23	308	P	Pn	07 55 36.6	0.0
THR6	Thira Island,	1.23	308	P	Pn	07 55 36.6	0.0
THR3	Thira Island,	1.26	310	P	Pn	07 55 36.9	-0.1
THR3	Thira Island,	1.26	310	P	Pn	07 55 36.9	-0.1
THR2	Thira island,	1.27	312	P	Pn	07 55 36.6	-0.4
THR2	Thira island,	1.27	312	P	Pn	07 55 36.6	-0.4
CMBO	Columbo, Santo	1.30	312	P	Pn	07 55 37.4	-0.1
CMBO				S	Sn	07 55 53.7	-0.2
CMBO	Columbo, Santo	1.30	312	P	Pn	07 55 37.4	-0.1
CMBO				S	Sn	07 55 53.7	-0.2
THR5	Thira Island,	1.30	309	P	Pn	07 55 37.4	-0.1
THR5	Thira Island,	1.30	309	P	Pn	07 55 37.4	-0.1
ARG	Arkhangelos	1.38	63	P	Pn	07 55 38.9	+0.4
IDI	Anoyia	1.44	258	P	Pn	07 55 39.0	-0.4
IDI				S	Sn	07 55 57.8	+0.5
IDI	Anoyia	1.44	258	P	Pn	07 55 39.0	-0.4
IDI				S	Sn	07 55 57.8	+0.5
IDI	Anoyia	1.44	258	P	Pn	07 55 40.7	+1.4
SIVA	Sivas	1.58	249	P	Pn	07 55 43.1	+1.8
SIVA	Sivas	1.58	249	P	Pn	07 55 43.1	+1.8
BDRM	Kayabasi	1.60	25	*i* P	Pn	07 55 45.7	+4.2
BDRM	Kayabasi	1.60	25	P	Pn	07 55 45.7	+4.1
APE	Apeiranthos	1.70	330	P	Pn	07 55 42.8	-0.1
APE				S	Sn	07 56 03.3	-0.3
APE	Apeiranthos	1.70	330	P	Pn	07 55 42.8	-0.1
APE				S	Sn	07 56 03.3	-0.3
APE	Apeiranthos	1.70	330	P	Pn	07 55 43.3	+0.4
APE				S	Sn	07 56 02.7	-0.8
APE				AML	AML	07 56 04.3	
	comp=E,309μm,0.2s						
APE				AML	AML	07 56 04.3	
	comp=N,383μm,0.4s						
TURN	Turunc	2.05	51	*i* P	Pn	07 55 39.6	-8.0
TURN				*i* S	Sn	07 56 05.3	-6.7
AYDN	Tasoluk	2.29	26	*i* P	Pn	07 55 52.4	+1.5
AYDN				*i* S	Sn	07 56 18.9	+0.9
AYDN	Tasoluk	2.29	26	P	Pn	07 55 52.4	+1.5
AYDN				S	Sn	07 56 18.9	+0.9
AKAS	Kas	2.51	75	*i* P	Pn	07 55 54.3	+0.3
AKAS				*i* S	Sn	07 56 20.8	-2.8
AKAS	Kas	2.51	75	P	Pn	07 55 54.3	+0.3
AKAS				S	Sn	07 56 20.8	-2.8
VLI	Veliai	3.17	292	P	Pn	07 56 03.4	+0.5
VLI	Veliai	3.17	292	P	Pn	07 56 03.4	+0.5

*NIED **02** 07:55:00, 36.20N×140.00E, h56km, Mw4.8 Best double couple: M0 1.73000×10^16 NP1: φs249.00000°, δ20.00000°, λ105.00000°. NP2: φs53.00000°, δ71.00000°, λ85.00000°.*
*BJI **02** 07:55:47.8, 36.00N×140.18E, h48km, mb4.9/64, mB5.0/38, Ms4.2/42, Ms7 4.1/40*
*MOS **02** 07:55:50.3±0.8, 36.26N×139.77E, h39km, mb5.1/68, Error ellipse: s-maj=7.6km s-min=4.5km az=101.8*
*IDC **02** 07:55:52.5±1.1, 36.19N×139.86E, h48km±10km, mb4.6/39, mb1 4.7/40, mb1mx4.6/51, mbtmp4.8/40, ML4.7/2, MS3.7/9, Ms1 3.7/9, ms1mx3.4/21, Error ellipse: s-maj=10.5km s-min=6.9km az=59.0*
*JMA **02** 07:55:53.6±0.1, 36.21N×139.96E, h54km±1km, M5.0 Broadband fault plane solution: P waves. NP1: φs53.00000°, δ56.00000°, λ90.00000°. NP2: φs233.00000°, δ34.00000°, λ90.00000°. Principal axes: T Plg79.0000°, Azm323.0000°; N Plg0.0000°, Azm53.0000°; P Plg11.0000°, Azm143.0000°;*
*ISCJB **02** 07:55:53.3±0.3, 36.18N±0.02×139.79E±0.02, h67km±2km, mb4.8/223 Error ellipse: s-maj=3.9km s-min=2.9km az=150.5*
*NEIC **02** 07:55:55.1±0.4, 36.21N×139.77E, h69km±3km, mb4.8/156, Error ellipse: s-maj=3.2km s-min=2.4km az=140.0*
NEIC Felt [IV] at Narita, [III] at Yokohama and [II] at Tokyo and Yokosuka. Also felt at Abiko, Atsugi, Fujisawa, Kawagoe, Kawaguchi, Mito, Numata, Otawara, Sagamihara, Tsukuba and Yamatoma. Recorded [5L JMA] in Ibaraki.
ISC 02 07:55:52.8±0.5, 36.19N±0.03×139.90E±0.03, h53km±4km, n735, σ1.27/759, mb4.8/225, MS3.8/19, 20C-28D, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
JYT	Yasato	0.24	81	⇑P	Pn	07 56 02.3	+0.6
JYT				S	Sn	07 56 08.6	+0.5
JAG	Ashikaga	0.43	303	⇓P	Pn	07 56 04.9	+1.4
JAG				S	Sn	07 56 12.7	+1.6
JSB	Shiboa	0.78	1	⇓P	Pn	07 56 08.5	+0.8
JKT	Katashina	0.78	318	⇓P	Pn	07 56 08.8	+1.0
JKT				eS	Sn	07 56 20.4	+1.7
JRY	Ryogami san	0.82	258	⇓P	Pn	07 56 09.9	+1.6
JRY				S	Sn	07 56 21.8	+2.1
JOD2	Odawara 2	1.14	216	⇓P	Pn	07 56 14.1	+1.6
JOD2				S	Sn	07 56 29.6	+2.6
JFY	Yanaizu	1.22	353	⇓P	Pn	07 56 14.6	+0.9
JFY				eS	Sn	07 56 30.3	+1.1
JHK	Hiroka	1.27	326	⇓P	Pn	07 56 15.3	+1.0
JYN	Shimob	1.30	238	P	Pn	07 56 17.3	+2.6
JFT	Otama	1.37	15	P	Pn	07 56 16.6	+1.0
MJAR	Matsushiro Arr	1.41	285	P	Pn	07 56 16.4	+0.2
	533nm,0.3s,baz=96,slow=8.7,SNR=1728						
MJAR				S	Sn	07 56 31.7	-1.9
	552nm,0.3s,baz=89,slow=17,SNR=25						
MJAR				LR	LR	07 57 04.9	
	comp=Z,3μm,20.7s,baz=115,slow=54						
MAJO	Matsushiro	1.41	285	eP	Pn	07 56 18.4	+2.2
MAJO	Matsushiro	1.41	285	ePn	Pn	07 56 18.4	+2.2
JIZZ	Izumozaki	1.64	325	P	Pn	07 56 21.6	+2.3
JSD	Sado	2.26	325	P	Pn	07 56 28.8	+1.1
INU	Inuyama	2.49	251	ePn	Pn	07 56 34.1	+3.2
JHJ	Hachijo jima 2	3.07	182	P	Pn	07 56 39.4	+0.6
	2μm,0.3s,baz=26,slow=2.8,SNR=166						
JHJ				S	Sn	07 57 13.6	-0.7
	916nm,0.3s,baz=237,slow=22,SNR=6.3						
JHJ2	Mitsune	3.07	181	ePn	Pn	07 56 39.3	+0.4
ERM	Erimo	6.34	23	eP	Pn	07 57 27.6	+3.9
ERM	Erimo	6.34	23	ePn	Pn	07 57 27.6	+3.9
JNU	Nakatsue	8.04	250	P	Pn	07 57 48.8	+1.8
	2.0nm,0.3s,baz=53,slow=7.9,SNR=14						
JNU				LR	LR	08 01 17.8	
	comp=Z,666nm,19.2s,baz=86,slow=41						
JNU	Nakatsue	8.04	250	ePn	Pn	07 57 50.3	+3.3
YUK	Yuzh-Kuril'sk	9.07	28	P	Pn	07 58 15.0	+14
YUK				eS	Sn	07 59 35.5	-6.0
YUK				pmax	pmax		
	comp=N,77nm,0.7s						
YUK				pmax	pmax		
	comp=Z,185nm,0.7s						
YUK				pmax	pmax		
	comp=E,136nm,0.5s						
CBIJ	Chichi jima	9.27	167	ePn	Pn	07 58 00.8	-3.1
CBIJ				S	Sn	07 59 37.3	-9.5
JCJ	Chichijima	9.28	167	P	Pn	07 58 00.2	-3.7
	baz=63,slow=6.8						
JCJ				S	Sn	07 59 37.3	-9.5
	comp=E,27nm,0.3s,baz=288,slow=20,SNR=2.8						
SHO	Shikotan	9.33	33	P	Pn	07 58 17.1	+13
SHO				pmax	pmax		
	comp=Z,113nm,0.6s						
SHO				pmax	pmax		
	comp=E,73nm,0.4s						
SHO				pmax	pmax		
	comp=N,58nm,0.7s						
KSRS	Korea Array	9.69	281	P	Pn	07 58 14.6	+5.1
	comp=N,2.3nm,0.3s,baz=97,slow=14,SNR=29						
KSRS				LR	LR	08 01 51.1	
	comp=N,756nm,19.5s,baz=84,slow=37						
KS01	Wonju Array Si	9.71	281	ePn	Pn	07 58 14.4	+4.6
KS15	Wonju Array Si	9.71	281	ePn	Pn	07 58 14.8	+5.0
KSAR	Wonju Array Be	9.71	281	P	Pn	07 58 14.6	+4.7
KSAR	Wonju Array Be	9.71	281	P	Pn	07 58 14.6	+4.7
USRK	Ussuriysk Ar.	10.02	325	P	Pn	07 58 17.5	+3.4
	comp=N,1.3nm,0.3s,baz=141,slow=13,SNR=33						
YSS	Yuzh-Sakhalins	10.96	10	eP	Pn	07 58 26.0	-0.9
YSS				pmax	pmax		
	comp=Z,30nm,0.6s						
YSS	Yuzh-Sakhalins	10.96	10	ePn	Pn	07 58 25.9	-1.0
MDJ	Mudanjiang	11.50	320	P	Pn	07 58 39.8	+5.5
MDJ				pmax	pmax		
	comp=Z,55nm,1.1s						
MDJ				pmax	pmax		
	comp=Z,250nm,4.2s						
MDJ	Mudanjiang	11.50	320	ePn	Pn	07 58 38.8	+4.6
	comp=Z,71nm,1.0s						
HABR	Khabarovsk	12.78	345	eP	Pn	07 58 55.1	+3.4
HABR				eSS	Sn	08 01 21.3	+9.0
HABR				pmax	pmax		
	comp=Z,70nm,2.2s						
HABR				pmax	pmax		
	comp=N,57nm,1.5s						
HABR				MLR	MLR		
	comp=Z,114nm,16.0s						
CN2	Changchun	13.42	309	eP	P	07 59 07.5	-0.8
CN2				eS	S	08 01 44.8	-4.5
CN2				pmax	pmax		
	comp=Z,20nm,1.0s						
CN2				pmax	pmax		
	comp=Z,270nm,4.0s						
CN2				LR	LR		
	comp=N,400nm,16.0s						
CN2				LR	LR		
	comp=E,540nm,16.0s						
CN2				LR	LR		
	comp=Z,480nm,16.0s						
JOW	Kunigami	13.60	230	ePn	P	07 59 11.9	+1.4
SNY	Shenyang	13.88	299	⇓P	Pn	07 59 09.2	+2.6
SNY				pmax	pmax		

SNY comp=Z,9.0nm,0.5s pmax pmax
SNY comp=Z,230nm,4.1s LR LR
SNY comp=Z,460nm,12.7s LR LR
SNY comp=Z,620nm,13.7s LR LR
SNY comp=Z,1μm,14.9s LR LR
KLR Kul'dur 14.33 338 P **Pn 07 59 12.6 0.0**
comp=Z,0.5nm,0.3s,baz=136,slow=11,SNR=8.0
TYV Tymovskoe 14.80 7 *eP* **Pn 07 59 17.8 -1.0**
TYV pmax pmax
comp=Z,44nm,0.8s
NKL Nikolayevsk 16.97 2 *eP* **Pn 07 59 46.0 -0.3**
NKL pmax pmax
comp=Z,40nm,0.9s
NJ2 Nanjing 17.90 263 *eP* **Pn 07 59 55.8 -2.2**
NJ2 pmax pmax
comp=Z,19nm,0.5s
TIA Tai'an 18.38 277 *eP* **P 08 00 03.3 0.0**
TIA pmax pmax
comp=Z,20nm,1.0s
TIA LR LR
comp=Z,350nm,16.8s
TIA LR LR
comp=Z,360nm,16.8s
TIA LR LR
comp=Z,470nm,18.5s
SKR Severo-Kuril's 18.61 34 *eP* P 07 59 53.1 -13
SKR pmax pmax
comp=Z,180nm,1.0s
BJI Beijing 19.04 289 P **P 08 00 10.1 -0.4**
BJI S **S 08 03 41.2 -2.6**
BJI pmax pmax
comp=Z,8.0nm,0.6s
BJI LR LR
comp=Z,260nm,16.9s
BJI LR LR
comp=Z,210nm,23.4s
BJI LR LR
comp=Z,370nm,35.1s
BJT Baijiatuau 19.05 289 *eP* **P 08 00 10.1 -0.5**
BJT pmax pmax
comp=Z,48nm,0.8s
BJT Baijiatuau 19.05 289 *eP* **P 08 00 10.1 -0.5**
comp=Z,48nm,0.8s
YHNB Yeheng 19.63 239 *eP* **Pn 08 00 18.9 0.0**
comp=Z,28nm,1.0s
NACB Ninganchiao 19.80 238 *eP* **P 08 00 19.8 +0.9**
comp=Z,15nm,0.7s
SSLB Suanglung 20.50 238 *eP* **P 08 00 26.2 -0.3**
comp=Z,46nm,1.6s
YULB Yu-li 20.53 237 *eP* **P 08 00 27.1 +0.3**
comp=Z,15nm,0.6s
PEA0 Petropavlovsk- 21.03 31 *eP* **P 08 00 32.9 +0.8**
PETK Petropavlovsk- 21.03 31 P **P 08 00 32.0 0.0**
comp=Z,9.8nm,0.9s,baz=236,slow=6.4,SNR=5.5
PETK LR LR 08 08 25.6
comp=Z,143nm,20.2s,baz=228,slow=36
TPUB Ta-pu 21.04 238 *eP* **P 08 00 31.2 -1.2**
comp=Z,26nm,0.6s
TWG Pinlang 21.07 236 *eP* **P 08 00 32.3 -0.4**
comp=Z,112nm,0.7s
PET Petropavlovsk 21.38 32 *eP* **P 08 00 40.2 +4.6**
PET *eS* Sn 08 04 35.5 -4.5
PET pmax pmax
comp=Z,100nm,11.0s
PET MLR MLR
comp=Z,100nm,15.0s
HHC Hu-ho-hao-te 22.60 290 *eP* **P 08 00 49.9 +0.8**
HHC pP pP 08 00 59.8 -1.3
HHC S **S 08 04 51.6 -1.6**
HHC sS sS 08 05 13.2 -0.9
HHC pmax pmax
comp=Z,31nm,1.0s
HHC pmax pmax
comp=Z,130nm,4.4s
HHC LR LR
comp=Z,260nm,12.6s
HHC LR LR
comp=Z,360nm,14.0s
HHC LR LR
comp=Z,290nm,14.2s
GUMO Guam 22.95 168 P **P 08 00 52.1 -0.6**
comp=Z,126nm,0.8s,baz=225,slow=20,SNR=5.7
GUMO LR LR 08 09 35.6
comp=Z,126nm,18.0s,baz=26,slow=36
GUMO Guam 22.95 168 *eP* **P 08 00 52.2 -0.5**
GUMO pmax pmax
comp=Z,1μm,1.8s
GUMO Guam 22.95 168 *eP* **P 08 00 52.2 -0.5**
comp=Z,1μm,1.8s
MA2 Magadan 24.44 13 P **P 08 01 06.2 -0.2**
comp=Z,65nm,0.7s,baz=222,slow=8.5,SNR=73
MA2 LR LR 08 11 16.9
comp=Z,139nm,19.4s,baz=216,slow=38
MA2 Magadan 24.44 13 *eP* **P 08 01 05.9 -0.5**
comp=Z,250nm,0.8s
XAN Xi'an 25.38 274 P **P 08 01 14.1 -1.1**
XAN pP pP 08 01 19.5 -8.9
XAN pmax pmax
comp=Z,12nm,0.5s
XAN Xi'an 25.38 274 P **P 08 01 13.9 -1.3**
XAN pP pP 08 01 25.6 -2.8
XAN S **S 08 05 32.7 -5.4**
XAN pmax pmax
comp=Z,12nm,0.5s
XAN LR LR
comp=Z,170nm,15.2s
XAN LR LR
comp=Z,200nm,20.5s
XAN LR LR
comp=Z,220nm,16.8s
ENH Enshi 26.05 266 *eP* **P 08 01 20.2 -1.1**
comp=Z,46nm,0.6s
YAK Yakutsk 26.65 349 P **P 08 01 25.6 -0.6**
comp=Z,3.3nm,0.4s,baz=350,slow=22,SNR=5.9
YAK Yakutsk 26.65 349 *eP* **P 08 01 23.8 -2.5**
YAK *e* 08 05 56.7
YAK pmax pmax
comp=N,17nm,1.1s
YAK pmax pmax
comp=E,4.0nm,0.8s
YAK pmax pmax
comp=Z,51nm,0.9s
YAK Yakutsk 26.65 349 *eP* **P 08 01 25.6 -0.6**
comp=Z,48nm,0.6s
ULN Ulaanbaatar 26.84 306 *eP* **P 08 01 27.7 -0.7**
ULN pmax pmax
comp=Z,31nm,1.5s
ULN Ulaanbaatar 26.84 306 *eP* **P 08 01 27.7 -0.7**
comp=Z,31nm,1.5s
SONA1 Songino Array 27.26 306 *eP* **P 08 01 32.0 -0.1**
SONM Songino Array 27.27 306 P **P 08 01 30.9 -1.3**
comp=Z,7.9nm,0.6s,baz=106,slow=8.6,SNR=26
BOD Bodaibo 27.62 330 *eP* **P 08 01 33.8 -1.2**
BOD pmax pmax
comp=Z,19nm,0.9s
SEY Seymchan 27.86 12 P **P 08 01 36.2 -1.0**
comp=Z,11nm,0.9s,baz=203,slow=6.5,SNR=23
SEY Seymchan 27.86 12 ⇑*iP* **P 08 01 37.1 -0.1**
LZH Lanzhou 29.02 281 *eP* **P 08 01 48.2 +0.3**
LZH pP pP 08 02 01.0 -0.3
LZH sP sP 08 02 07.5 -0.1
LZH PP **PnPn 08 02 44.0 +2.1**
LZH PcP **PcP 08 04 49.6 -5.7**
LZH *eS* **S 08 06 32.0 -3.6**
LZH pmax pmax
comp=Z,22nm,1.0s
LZH pmax pmax
comp=Z,110nm,5.1s
LZH LR LR
comp=Z,2μm,14.4s
LZH LR LR
comp=Z,2μm,13.5s
LZH LR LR
comp=Z,2μm,16.6s
ZAK Zakamensk 29.85 310 *eP* **P 08 01 53.6 -1.5**
ZAK pmax pmax
comp=Z,5.0nm,1.3s
GYA Guiyang 29.88 260 ⇑*iP* **P 08 01 54.2 -1.4**
GYA pP pP 08 02 09.8 +0.8
GYA PP **PnPn 08 02 55.4 +2.0**
GYA S **S 08 06 49.6 +0.4**
GYA sS sS 08 07 12.2 +0.3
GYA SS **SnSn 08 08 27.5 +3.6**
GYA ScP **ScP 08 08 36.0 +0.8**
GYA ScS **ScS 08 12 30.8 0.0**
GYA pmax pmax
comp=Z,30nm,0.8s
GYA pmax pmax
comp=Z,120nm,6.0s
GYA LR LR
comp=Z,520nm,18.2s
GYA LR LR
comp=Z,490nm,17.9s
GYA LR LR
comp=Z,480nm,17.6s
TLY Talaya 29.98 313 P **P 08 01 56.2 0.0**
comp=Z,4.2nm,0.7s,baz=114,slow=4.5,SNR=6.4
TLY Talaya 29.98 313 *eP* **P 08 01 55.9 -0.3**
TLY *e*SS SS 08 08 52.2 -6.9
TLY pmax pmax
comp=Z,3.0nm,0.6s
TLY MLR MLR
comp=Z,178nm,17.0s
TLY Talaya 29.98 313 *eP* **P 08 01 56.1 0.0**
comp=Z,4.5nm,0.7s
CD2 Chengdu 30.46 271 P **P 08 02 00.3 -0.3**
CD2 pmax pmax
comp=Z,16nm,0.5s
QIZ Qiongzhong 31.47 245 P **P 08 02 10.0 +0.4**
QIZ S **S 08 07 16.2 +2.2**
QIZ pmax pmax
comp=Z,12nm,2.0s
GTA Gaotai 31.66 288 *eP* **P 08 02 10.3 -0.9**
GTA pP pP 08 02 25.0 +0.4
GTA sP sP 08 02 32.0 +1.2
GTA PcP **PcP 08 05 03.2 +1.1**
GTA S **S 08 07 13.7 -3.2**
GTA sS sS 08 07 38.9 -0.7
GTA pmax pmax
comp=Z,6.0nm,0.9s
GTA pmax pmax
comp=Z,92nm,5.4s
GTA LR LR
comp=Z,130nm,14.7s
GTA LR LR
comp=Z,190nm,17.2s
GTA LR LR
comp=Z,210nm,13.3s
KMI Kunming 33.63 261 P **P 08 02 28.1 -0.6**
KMI pP pP 08 02 41.5 -0.7
KMI sP sP 08 02 47.6 -0.8
KMI PP **PnPn 08 03 37.0 -4.8**
KMI pmax pmax
comp=Z,23nm,0.8s
KMI LR LR
comp=Z,60nm,4.7s
KMI LR LR
comp=Z,97nm,4.5s
KMI LR LR
comp=Z,55nm,5.7s
BILL Bilibino 35.18 17 ||*eP* **P 08 02 41.4 +0.1**
BILL *e* 08 02 51.9
BILL *e*PPP PPP 08 04 06.4
BILL *e*S **S 08 08 18.2 +7.7**
BILL pmax pmax
comp=Z,12nm,1.0s
BILL MLR MLR
comp=Z,95nm,17.0s
BILL Bilibino 35.18 17 *eP* **P 08 02 41.7 +0.4**
comp=Z,9.3nm,0.9s
TIXI Tiksi 35.99 354 *eP* **P 08 02 47.4 -0.8**
TIXI pmax pmax
comp=Z,18nm,0.6s
TIXI Tiksi 35.99 354 *eP* **P 08 02 47.4 -0.8**
comp=Z,18nm,0.6s
SKNT Sakolnakorn 37.10 249 P **P 08 02 59.3 +1.0**
comp=Z,20nm,1.1s,comp=Z,1μm
SWI Sorong 37.73 194 P **P 08 03 02.1 -1.5**
comp=Z,31nm,0.7s
CMAI Chiengmai2 39.20 257 P **P 08 03 17.0 +0.8**
comp=Z,7.6nm,0.9s,comp=Z,979nm
UTTA Uttaradit 39.26 253 P P 08 03 23.2 +6.8
comp=Z,3.3nm,0.7s
FAKI Fak Fak 39.56 192 P **P 08 03 18.9 0.0**
comp=Z,47nm,0.9s
FAKI Fak Fak 39.56 192 *eP* **P 08 03 19.0 +0.1**
comp=Z,31nm,0.8s
PBKT Sadao Pong 39.63 251 P **P 08 03 20.5 +0.9**
comp=Z,10nm,0.8s,comp=Z,4μm
CHTO Chiang Mai 39.90 255 P **P 08 03 24.7 +2.9**
comp=Z,24nm,0.7s
CHTO Chiang Mai 39.90 255 *eP* **P 08 03 22.4 +0.6**
CHTO pmax pmax
comp=Z,4.0nm,0.8s
CHTO Chiang Mai 39.90 255 *eP* **P 08 03 22.4 +0.6**
comp=Z,4.1nm,0.8s
CMAR Chiang Mai Arr 40.10 255 P **P 08 03 23.3 -0.2**
comp=Z,2.0nm,0.4s,baz=45,slow=8.0,SNR=6.4
CMAR PcP **PcP 08 05 26.9 -0.4**
comp=Z,1.6nm,0.5s,baz=34,slow=2.4,SNR=7.4
WMQ Urumqi 40.14 297 P **P 08 03 24.4 +0.8**
WMQ pP pP 08 03 37.9 +0.6
WMQ PcP **PcP 08 05 27.9 +0.8**
WMQ S **S 08 09 22.4 -4.0**
WMQ SS **SS 08 12 22.9 -2.5**
WMQ pmax pmax
comp=Z,29nm,0.6s
WMQ pmax pmax
comp=Z,91nm,4.2s
WMQ LR LR
comp=Z,49nm,24.0s
WMQ LR LR
comp=Z,43nm,32.2s
WMQ LR LR
comp=Z,54nm,26.2s
SANI Sanana 40.20 202 P **P 08 03 24.4 +0.2**
comp=Z,55nm,0.6s
CHBT CHBT 41.02 245 P **P 08 03 34.4 +3.4**
comp=Z,20nm,0.8s,comp=Z,3μm
LSA Lhasa 41.07 275 P **P 08 03 32.8 +0.9**
LSA pmax pmax
comp=Z,22nm,1.0s
LSA Lhasa 41.07 275 *eP* **P 08 03 33.1 +1.2**
LSA pmax pmax
comp=Z,29nm,0.8s
LSA Lhasa 41.07 275 *eP* **P 08 03 33.1 +1.2**
comp=Z,29nm,0.8s
ZAA0 Zalesovo Array 41.59 313 *eP* **P 08 03 35.3 0.0**
ZALV Zalesovo Beam 41.59 313 P **P 08 03 35.2 -0.1**
comp=Z,23nm,0.8s,baz=94,slow=6.8,SNR=62
ZALV PcP **PcP 08 05 31.0 -0.5**
comp=Z,5.3nm,0.6s,baz=97,slow=3.0,SNR=3.9
SHL Shillong 42.18 269 *eP* **P 08 03 40.0 -0.7**
NVS Novosibirsk 42.55 314 ||*iP* **P 08 03 43.3 +0.2**
NVS pmax pmax
comp=Z,27nm,0.9s
NVS pmax pmax
comp=N,5.0nm,0.7s
NVS pmax pmax
comp=E,21nm,0.9s
NRIK Noril'sk 43.53 336 P **P 08 03 50.0 -0.8**
comp=E,21nm,0.8s,baz=110,slow=9.6,SNR=30
MK01 Makanchi Array 43.53 303 *eP* **P 08 03 51.8 +0.6**
MK31 Makanchi Array 43.54 303 *eP* **P 08 03 51.7 +0.4**
MK31 Makanchi Array 43.54 303 *eP* **P 08 03 51.7 +0.4**
MKAR Makanchi Array 43.54 303 P **P 08 03 51.5 +0.2**
comp=E,27nm,0.7s,baz=91,slow=9.9,SNR=166
MKAR Makanchi Array 43.54 303 *eP* **P 08 03 51.7 +0.4**
MKAR Makanchi Array 43.54 303 *eP* **P 08 03 51.7 +0.4**
MAKZ Makanchi 43.75 303 *eP* **P 08 03 53.4 +0.4**
MAKZ pmax pmax
comp=Z,36nm,0.8s
MAKZ Makanchi 43.75 303 *eP* **P 08 03 53.4 +0.4**
comp=Z,36nm,0.8s
TAPN Taplejung 44.78 274 *eP* **P 08 04 01.9 +0.1**
comp=Z,35nm,0.6s
ODAN Odare 45.25 274 *eP* **P 08 04 05.4 0.0**
comp=Z,24nm,0.5s
KURK Kurchatov 45.50 309 *eP* **P 08 04 05.9 -0.9**
KURK pmax pmax
comp=Z,151nm,1.3s
KURK Kurchatov 45.50 309 *eP* **P 08 04 05.9 -0.9**
comp=Z,151nm,1.3s
KURBB Kurchatov Arra 45.56 308 P **P 08 04 07.0 -0.3**
comp=Z,42nm,0.7s,baz=85,slow=8.4,SNR=107
RAMN Ramite 45.85 274 *eP* **P 08 04 10.3 +0.1**
comp=Z,76nm,0.6s
PMG Port Moresby 45.87 170 LR LR 08 21 48.9
comp=Z,76nm,20.7s,baz=5.0,slow=34
GUN Gumba 46.02 276 *eP* **P 08 04 12.2 +0.5**
comp=Z,119nm,1.1s
PKIN Phulchoki 46.55 275 *eP* **P 08 04 15.6 -0.1**
KKN Kakani 46.56 276 *eP* **P 08 04 15.9 +0.2**
comp=Z,82nm,0.9s
TT01 Tatalina 46.80 34 *eP* **P 08 04 17.8 +1.0**
TTA Tatalina 46.81 34 *eP* **P 08 04 18.1 +1.1**
TTA pmax pmax
comp=Z,5.0nm,0.9s
TTA Tatalina 46.81 34 *eP* **P 08 04 18.1 +1.1**
comp=Z,4.7nm,0.9s
SVW2 Sparrevohn 46.93 37 *eP* **P 08 04 19.5 +1.6**
comp=Z,11nm,0.8s
GKN Gorkha 46.99 276 *eP* **P 08 04 19.3 +0.3**
comp=Z,353nm,0.9s
KOLN Koldanda 47.92 277 *eP* **P 08 04 26.7 +0.4**
comp=Z,199nm,1.1s
PYUN Piuthan 48.27 277 *eP* **P 08 04 29.5 +0.5**
comp=Z,524nm,1.0s
RSO Redoubt South 48.32 38 *eP* **P 08 04 30.6 +1.7**
KDAK Kodiak Island 48.54 41 P P 08 04 45.3 +15
comp=Z,19nm,0.8s,baz=266,slow=6.9,SNR=9.9
KDAK Kodiak Island 48.54 41 *eP* **P 08 04 30.9 +0.5**
KDAK pmax pmax
comp=Z,32nm,0.7s
KDAK Kodiak Island 48.54 41 *eP* **P 08 04 30.9 +0.5**
comp=Z,32nm,0.7s
PPLA Purkeypile 48.55 34 *eP* **P 08 04 32.6 +2.0**
comp=Z,23nm,1.0s
CAST Castle Rocks 48.60 34 *eP* **P 08 04 32.2 +1.3**
comp=Z,6.3nm,0.7s
SPU Mount Spurr 48.64 37 *eP* **P 08 04 32.7 +1.5**
BPAW Bear Paw Mtn. 49.09 33 *eP* **P 08 04 35.6 +1.0**
comp=Z,27nm,1.7s
KTH Kantishna Hill 49.12 34 *eP* **P 08 04 36.5 +1.6**
comp=Z,15nm,1.0s
HNR Honiara 49.15 153 LR LR 08 22 59.0
comp=Z,122nm,21.8s,baz=2.5,slow=33
MLY Manley 49.21 32 *eP* **P 08 04 36.8 +1.3**
comp=Z,10.0nm,0.8s
TRF Thorofare Moun 49.41 34 *eP* **P 08 04 38.1 +0.9**
comp=Z,8.2nm,0.8s
MTN Manton Dam 49.47 191 *eP* **P 08 04 38.1 +0.3**
comp=Z,54nm,0.7s
COLD Coldfoot 49.48 29 *eP* **P 08 04 38.8 +1.4**
comp=Z,5.4nm,0.9s
KSH Kashi 49.64 294 P **P 08 04 43.7 +4.5**
KSH *e*pP pP 08 04 56.0 +2.7
KSH *es*P sP 08 05 01.3 +1.9
KSH *e*PP **PP 08 06 39.1 +5.3**
KSH PcS **PcS 08 09 57.3 +0.4**
KSH S **S 08 11 48.5 +4.5**
KSH pmax pmax
comp=Z,20nm,1.0s
KSH LR LR
comp=Z,130nm,5.5s
KSH LR LR
comp=Z,110nm,4.1s
KSH LR LR
comp=Z,220nm,5.6s
FRU Bishkek 49.68 299 ⇑*iP* **P 08 04 39.0 -0.4**
FRU *i* 08 04 53.0
FRU pmax pmax
comp=Z,100nm,2.0s
RC01 Rabbit Creek A 49.77 37 *eP* **P 08 04 40.6 +0.9**
comp=Z,18nm,1.1s
AAK Ala-Archa 49.82 299 P **P 08 04 41.1 +0.4**
comp=Z,9.8nm,0.8s,baz=104,slow=4.5,SNR=27
AAK Ala-Archa 49.82 299 *ci P* **P 08 04 41.0 +0.4**
AAK pmax pmax
comp=Z,32nm,0.8s
AAK Ala-Archa 49.82 299 *eP* **P 08 04 41.1 +0.4**
comp=Z,12nm,0.8s
VOSK Vostochnaya 49.94 312 *eP* **P 08 04 40.7 -0.4**
VOSK pmax pmax
comp=Z,23nm,0.8s
VOSK Vostochnaya 49.94 312 *eP* **P 08 04 40.7 -0.4**
comp=Z,23nm,0.8s
COEN Coen 49.97 176 *eP* **P 08 04 42.8 +1.0**
comp=Z,105nm,1.6s
MCK McKinley 50.01 33 *eP* **P 08 04 42.4 +0.8**
MCK pmax pmax
comp=Z,10.0nm,0.8s
MCK McKinley 50.01 33 *eP* **P 08 04 42.4 +0.8**
comp=Z,9.8nm,0.8s
PMR Palmer 50.03 36 *eP* **P 08 04 41.7 +0.1**
PMR pmax pmax
comp=Z,13nm,1.0s
PMR Palmer 50.03 36 *eP* **P 08 04 41.7 +0.1**
comp=Z,14nm,1.0s
RND Reindeer 50.06 34 *eP* **P 08 04 42.3 +0.3**
RND pmax pmax
comp=Z,12nm,0.8s
RND Reindeer 50.06 34 *eP* **P 08 04 42.3 +0.3**
comp=Z,12nm,0.8s
BVAR Borovoye Array 50.24 313 P **P 08 04 43.6 +0.2**
comp=Z,7.8nm,0.6s,baz=73,slow=7.7,SNR=23
BVAR PcP **PcP 08 06 01.4 -0.4**
comp=Z,2.8nm,0.7s,baz=116,slow=3.4,SNR=3.5
MDM Murphy Dome 50.27 32 *eP* **P 08 04 44.7 +1.1**
comp=Z,22nm,0.8s
BRVK Borovoye 50.30 313 *di P* **P 08 04 44.3 +0.4**
BRVK pmax pmax
comp=Z,13nm,1.2s
BRVK Borovoye 50.30 313 *eP* **P 08 04 44.1 +0.2**
comp=Z,8.4nm,0.6s
WRH Wood River Hil 50.35 32 *eP* **P 08 04 44.9 +0.8**
comp=Z,8.8nm,0.8s
SML Sawmill 50.39 36 *eP* **P 08 04 45.4 +0.9**
SML pmax pmax
comp=Z,21nm,0.8s
SML Sawmill 50.39 36 *eP* **P 08 04 45.4 +0.9**
comp=Z,21nm,0.8s
COLA College 50.44 32 *di P* **P 08 04 45.9 +1.2**
COLA pmax pmax
comp=Z,12nm,0.8s
COLA College 50.44 32 *eP* **P 08 04 46.1 +1.4**
comp=Z,13nm,0.6s
CCB Clear Creek Bu 50.47 32 *eP* **P 08 04 45.7 +0.7**
comp=Z,12nm,1.4s
DHY Denali Highway 50.74 34 *eP* **P 08 04 47.8 +0.6**
comp=Z,14nm,1.3s
HDA Harding Lake 50.85 32 *eP* **P 08 04 48.2 +0.3**
comp=Z,35nm,1.0s
IL1 Eielson Array 50.85 32 *eP* **P 08 04 47.8 -0.1**
ILAR Eielson Array 50.85 32 P **P 08 04 48.0 +0.1**
comp=Z,11nm,0.7s,baz=270,slow=5.9,SNR=82
ILB Eielson Array 50.85 32 *eP* **P 08 04 48.0 +0.1**
SCM Sheep Creek Mo 50.86 36 *eP* **P 08 04 49.2 +1.1**
SCM pmax pmax
comp=Z,25nm,1.2s
SCM Sheep Creek Mo 50.86 36 *eP* **P 08 04 49.2 +1.1**
comp=Z,25nm,1.2s
PWJI Pagerwojo 51.30 217 P **P 08 04 50.0 -1.8**
comp=Z,49nm,0.7s
FYU Fort Yukon 51.44 30 *eP* **P 08 04 54.0 +1.7**
comp=Z,32nm,1.4s
KLU Klutina 51.57 36 *eP* **P 08 04 54.3 +1.0**
comp=Z,14nm,1.0s
PAX Paxson 51.62 34 *eP* **P 08 04 54.8 +1.0**
PAX pmax pmax
comp=Z,7.0nm,0.8s
PAX Paxson 51.62 34 *eP* **P 08 04 54.8 +1.0**
comp=Z,7.2nm,0.8s
DIV Divide 51.68 37 *eP* **P 08 04 55.6 +1.4**
comp=Z,18nm,1.0s
EYAK Cordova Ski Ar 51.76 37 *eP* **P 08 04 56.2 +1.5**
comp=Z,15nm,0.9s
KPJI Karang Pucung 52.16 220 P **P 08 04 57.1 -1.1**
comp=Z,36nm,0.7s
DOT Dot Lake 52.18 33 *eP* **P 08 04 58.0 +0.1**
comp=Z,30nm,0.7s
BMRM Bremner River 52.27 37 *eP* **P 08 04 60.0 +1.4**
comp=Z,21nm,0.9s
RAGM Ragged Mountai 52.31 37 *eP* **P 08 04 59.0 +0.1**
comp=Z,28nm,1.1s
MENT Mentasta 52.42 34 *eP* **P 08 05 01.4 +1.8**
comp=Z,16nm,0.8s
MDSI Maura Dua 52.48 227 P **P 08 04 58.7 -1.9**
comp=Z,22nm,0.8s
KKAR Karatay Array 52.49 300 *eP* **P 08 05 00.8 +0.3**
KKAR Karatay Array 52.49 300 *eP* **P 08 05 00.8 +0.3**
EGAK Eagle 53.30 32 *eP* **P 08 05 06.6 +0.6**
comp=Z,12nm,0.9s
DAWY Dawson 54.17 32 *eP* **P 08 05 13.5 +1.0**
comp=Z,4.4nm,0.9s

SVE **Sverdlovsk** 54.97 319⇑ eP P 08 05 18.9 +0.6
SVE pmax pmax
comp=Z,24nm,0.9s
FITZ **Fitzroy Crossi** 55.66 196 LR LR 08 28 50.4
comp=Z,35nm,19.8s,slow=36
FITZ **Fitzroy Crossi** 55.66 196 eP P 08 05 24.5 +0.9
comp=Z,38nm,0.8s
INK **Inuvik** 55.69 27 P P 08 05 23.8 +0.5
comp=Z,8.0nm,0.7s,baz=304,slow=6.9,SNR=39
INK **Inuvik** 55.69 27 eP P 08 05 23.8 +0.5
INK pmax pmax
comp=Z,9.0nm,0.7s
INK **Inuvik** 55.69 27 eP P 08 05 23.8 +0.5
comp=Z,8.8nm,0.7s
WRAB **Tennant Creek** 56.06 186 c iP P 08 05 26.3 -0.2
WRAB pmax pmax
comp=Z,87nm,0.7s
WRAB **Tennant Creek** 56.06 186 eP P 08 05 26.6 +0.1
comp=Z,69nm,0.8s
WB2 **Warramunga Arr** 56.07 186 eP P 08 05 26.5 -0.1
comp=Z,32nm,0.6s
WRA **Warramunga Arr** 56.08 186 P P 08 05 26.4 -0.2
comp=Z,29nm,0.4s,baz=2.6,slow=7.5,SNR=50
ARU **Arti** 56.18 319 c iP P 08 05 26.6 -0.4
ARU 08 06 24.3
ARU 08 07 27.1
ARU S S 08 13 16.5 +4.2
ARU SS SS 08 16 58.0 -0.9
ARU pmax pmax
comp=Z,18nm,0.7s
ARU **Arti** 56.18 319 eP P 08 05 26.6 -0.4
comp=Z,26nm,1.0s
SOKR **Solikamsk** 56.25 323⇑ iP P 08 05 25.8 -1.6
SOKR pmax pmax
comp=Z,14nm,1.1s
KBL **Kabul** 56.58 291 eP P 08 05 30.5 0.0
KBL pmax pmax
comp=Z,15nm,0.9s
KBL **Kabul** 56.58 291 eP P 08 05 30.5 0.0
comp=Z,15nm,0.9s
HYB **Hyderabad** 56.96 268 i P P 08 05 33.0 -0.1
ABKAR **Akbulak array** 57.55 310 eP P 08 05 36.8 0.0
AS01 **Alice Springs** 59.80 186 eP P 08 05 52.8 +0.1
AS31 **Alice Springs** 59.80 186 eP P 08 05 52.9 +0.2
comp=Z,6.6nm,0.4s
ASAR **Alice Springs** 59.80 186 P P 08 05 52.6 0.0
comp=Z,7.2nm,0.5s,baz=18,slow=9.9,SNR=84
DLBC **Dease Lake** 60.04 37 P P 08 05 55.7 +1.6
comp=Z,8.2nm,0.8s,baz=296,slow=7.9,SNR=19
DLBC **Dease Lake** 60.04 37 eP P 08 05 55.9 +1.9
comp=Z,8.2nm,0.8s
MBWA **Marble Bar** 60.15 202 eP P 08 05 55.6 +0.6
comp=Z,26nm,0.7s
POO **Poona** 60.18 272 eP P 08 05 54.0 -1.6
PALK **Pallekele** 60.99 257 i P P 08 06 02.4 +1.3
SPITS **Spitsbergen Ar** 61.11 349 P P 08 06 00.9 0.0
comp=Z,7.3nm,0.7s,baz=83,slow=9.3,SNR=8.7
SPITS **Spitsbergen Ar** 61.11 349 P P 08 06 01.0 0.0
EIDS **Eidsvold** 62.13 169 eP P 08 06 09.0 +0.6
comp=Z,18nm,1.0s
LVZ **Lovozero** 62.38 336⇓ eP P 08 06 07.1 -2.6
LVZ pmax pmax
comp=Z,60nm,1.5s
TMCR **Tamitsa** 62.90 331 eP P 08 06 13.0 -0.1
TMCR pmax pmax
comp=Z,30nm,0.4s
GEYT **Alibeck** 63.17 299 P P 08 06 15.7 +0.2
comp=Z,7.4nm,0.7s,baz=37,slow=3.7,SNR=11
RES **Resolute Bay** 63.72 14 eP P 08 06 18.2 -0.2
RES pmax pmax
comp=Z,9.0nm,0.8s
RES **Resolute Bay** 63.72 14 eP P 08 06 18.2 -0.2
comp=Z,9.4nm,0.8s
KLMR **Klimovskoe** 63.81 328 eP P 08 06 16.1 -3.1
KLMR e 08 06 54.2
KLMR pmax pmax
comp=Z,20nm,0.9s
ARCES **ARCESS Array B** 64.35 339 P P 08 06 22.6 0.0
comp=Z,5.4nm,0.7s,baz=66,slow=6.2,SNR=11
YKW3 **Yellowknife Ar** 65.11 29 eP P 08 06 27.8 +0.2
comp=Z,4.9nm,0.9s
YKA **Yellowknife Ar** 65.14 30 P P 08 06 27.6 -0.2
comp=Z,5.1nm,0.8s,baz=301,slow=6.6,SNR=80
YKB5 **Yellowknife Ar** 65.14 30 eP P 08 06 27.6 -0.3
DAG **Danmarks Havn** 66.50 355 i P P 08 06 36.0 -0.4
comp=Z,9.2nm,0.8s
DAG **Danmarks Havn** 66.50 355 i P P 08 06 36.0 -0.4
DAG pmax pmax
comp=Z,7.0nm,0.8s
MOS **Moscow** 67.19 323 eP pP 08 06 58.4 +2.6
VRH **Novokhopyorsk** 67.38 318 eP P 08 06 41.1 -1.3
VRH pmax pmax
comp=Z,20nm,0.7s
STKA **Stephens Creek** 67.73 178 P P 08 06 45.0 +0.4
comp=Z,10nm,0.8s,baz=344,slow=6.7,SNR=31
STKA **Stephens Creek** 67.73 178 eP P 08 06 45.2 +0.5
STKA pmax pmax
comp=Z,3.0nm,0.9s
STKA **Stephens Creek** 67.73 178 eP P 08 06 45.1 +0.5
comp=Z,3.0nm,0.9s
OBN **Obninsk** 68.03 323⇓ iP P 08 06 46.3 -0.1
OBN e 08 09 14.5
OBN eS PnS 08 16 16.7 +5.9
OBN pmax pmax
comp=Z,58nm,2.0s
OBN MLR MLR
comp=Z,170nm,22.0s
LPSR **Galich'ya Gora** 68.16 320 eP P 08 06 46.7 -0.6
LPSR pmax pmax
comp=Z,20nm,0.8s
BBOO **Buckleboo** 68.74 183 eP P 08 06 51.6 +0.7
comp=Z,20nm,0.8s
VSR **Storozhevoye** 68.76 318 eP P 08 06 50.2 -0.8
VSR pmax pmax
comp=Z,10.0nm,0.6s
FIA1 **FINESS Array S** 68.98 332 eP P 08 06 52.1 -0.1
comp=Z,29nm,1.1s
FINES **FINESS Array B** 68.99 332 P P 08 06 52.0 -0.2
comp=Z,17nm,0.9s,baz=70,slow=8.3,SNR=30
B08A **Colville Reser** 70.29 44 eP P 08 07 01.1 +0.5
comp=Z,16nm,1.4s
ZEI **Tsey** 70.39 309 eP P 08 06 59.9 -1.6
ZEI pmax pmax
comp=Z,10.0nm,0.8s
KBZ **Khabaz** 70.52 310 P P 08 07 02.5 +0.6
comp=Z,11nm,0.8s,baz=55,slow=2.9,SNR=24
KIV **Kislovodsk** 70.53 311 d iP P 08 07 03.0 +0.8
KIV i 08 07 18.2
KIV pmax pmax
comp=Z,30nm,0.9s
KIV MLR MLR
comp=Z,73nm,16.0s
KIV **Kislovodsk** 70.53 311 eP P 08 07 03.5 +1.3
comp=Z,32nm,0.9s
VSU **Vasula** 70.56 329⇓ eP P 08 07 01.8 -0.1
VSU pmax pmax
comp=Z,59nm,1.2s
G05D **Wamic, OR** 70.81 48 P P 08 07 05.0 +1.2
baz=302
NEY **Neytrino** 70.88 310⇓ eP P 08 07 04.8 +0.3
NEY pmax pmax
comp=Z,2.0nm,0.8s
I04A **Tendick Farm,** 70.91 49 P P 08 07 05.7 +1.2
baz=302
C09A **Chrisman Ranch** 71.19 44 eP P 08 07 07.1 +1.0
comp=Z,8.0nm,0.8s
GNI **Garni** 71.22 306⇑ eP P 08 07 07.5 +0.9
GNI pmax pmax
comp=Z,31nm,0.6s
D08A **Wollman Farm,** 71.23 45 eP P 08 07 07.2 +0.9
comp=Z,7.4nm,0.9s
AKH **Akhalkalaki** 71.37 308⇑ iP P 08 07 08.8 +1.4
SUMG **Summit** 71.52 359 i P P 08 07 08.8 +0.7
comp=Z,28nm,1.0s
SUMG **Summit** 71.52 359 i P P 08 07 08.8 +0.7
SUMG pmax pmax
comp=Z,28nm,1.0s
SUMG **Summit** 71.52 359 eP P 08 07 08.5 +0.4
comp=Z,29nm,1.0s
NEW **Newport** 71.58 43 P P 08 07 08.8 +0.4
baz=304
NEW **Newport** 71.58 43 eP P 08 07 09.3 +0.8
NEW pmax pmax
comp=Z,7.0nm,1.1s
NEW **Newport** 71.58 43 eP P 08 07 09.3 +0.8
comp=Z,7.4nm,1.1s

J05D **Fort Rock, OR** 71.91 49 P P 08 07 11.7 +1.1
baz=303
M02C **Callahan** 71.91 52 P P 08 07 11.7 +1.1
baz=303
N02D **Trinity Center** 72.23 52 P P 08 07 13.5 +0.9
baz=303
M04C **Macdoel** 72.34 51 P P 08 07 14.1 +0.9
baz=303
NACGM **Naroch** 72.75 326 e P 08 07 15.0 -0.2
F10A **Beach Ranch, E** 72.81 45 eP P 08 07 16.4 +0.5
comp=Z,9.3nm,1.0s
WALA **Waterton Lakes** 72.88 41 eP P 08 07 17.0 +0.8
comp=Z,7.1nm,1.0s
O03D **Paynes Creek** 73.18 52 P P 08 07 18.3 +0.2
baz=303
ANN **Anapa** 73.23 313 eP P 08 07 15.8 -2.4
ANN e*PP pP 08 07 26.5 -6.5
ANN ePPP PPP 08 11 40.5
ANN eS S 08 16 40.5 -1.9
ANN pmax pmax
comp=Z,73nm,1.2s
BMO **Blue Mountains** 73.39 46 eP P 08 07 20.5 +1.1
comp=Z,5.9nm,0.8s
JTMT **Jette** 73.44 43 eP P 08 07 20.8 +1.2
YBMT **Yellow Bay** 73.52 42 eP P 08 07 21.1 +1.0
SWMT **Swartz Lake** 73.74 43 eP P 08 07 21.9 +0.6
MSO **Missoula** 74.17 43 P P 08 07 23.9 0.0
baz=306
MSO **Missoula** 74.17 43 eP P 08 07 24.4 +0.5
comp=Z,4.4nm,0.8s
AKASG **Malin Array Be** 74.21 322 P P 08 07 23.1 -0.7
comp=Z,11nm,0.8s,baz=47,slow=6.0,SNR=46
KIEV **Kiev** 74.22 322 eP P 08 07 23.2 -0.8
KIEV pmax pmax
comp=Z,19nm,0.9s
KIEV **Kiev** 74.22 322 eP P 08 07 23.1 -0.8
comp=Z,19nm,0.9s
NC405 **NORSAR Array S** 74.27 337 eP P 08 07 23.9 -0.2
NC204 **NORSAR Array S** 74.45 337 eP P 08 07 24.9 -0.2
NB201 **NORSAR Array S** 74.45 337 eP P 08 07 25.1 0.0
NB2 **NORSAR Subarra** 74.48 337 P P 08 07 24.4 -1.0
comp=Z,10nm,0.7s,baz=41,slow=6.2
NOA **NORSAR Array B** 74.48 337 P P 08 07 24.9 -0.5
comp=Z,14nm,0.9s,baz=40,slow=5.9,SNR=32
NOA PP PP 08 10 09.4 -2.3
comp=Z,3.6nm,0.8s,baz=41,slow=8.7,SNR=5.9
NBO02 **NORSAR Array S** 74.59 337 eP P 08 07 25.6 -0.4
NBO00 **NORSAR Array S** 74.63 337 eP P 08 07 26.1 -0.1
FFC **Flin Flon** 75.07 32 eP P 08 07 28.8 0.0
FFC pmax pmax
comp=Z,10.0nm,0.8s
FFC **Flin Flon** 75.07 32 eP P 08 07 28.8 0.0
comp=Z,9.8nm,0.8s
MFID **Camas Ranch** 75.09 47 eP P 08 07 30.1 +0.8
comp=Z,6.4nm,1.0s
FCC **Fort Churchill** 75.29 26 eP P 08 07 29.8 -0.1
FCC pmax pmax
comp=Z,11nm,1.0s
FCC **Fort Churchill** 75.29 26 eP P 08 07 29.8 -0.1
comp=Z,11nm,1.0s
CMB **Columbia Colle** 75.35 54 eP P 08 07 31.9 +1.1
CMB pmax pmax
comp=Z,6.0nm,0.9s
CMB **Columbia Colle** 75.35 54 eP P 08 07 31.9 +1.1
comp=Z,6.1nm,0.9s
LRM **Limekiln Ridge** 75.60 43 eP P 08 07 32.9 +0.5
EGMT **Eagleton** 75.70 41 P P 08 07 32.8 +0.1
baz=309
EGMT **Eagleton** 75.70 41 eP P 08 07 33.5 +0.8
comp=Z,12nm,0.8s
DLMT **Dillon** 75.80 44 eP P 08 07 34.4 +1.0
comp=Z,9.2nm,0.8s
HLID **Hailey** 75.83 46 P P 08 07 34.1 +0.4
baz=307
HLID **Hailey** 75.83 46 eP P 08 07 34.9 +1.3
comp=Z,7.2nm,1.3s
BMN **Battle Mountai** 75.99 50 eP P 08 07 36.1 +1.5
BMN pmax pmax
comp=Z,17nm,0.8s
BMN **Battle Mountai** 75.99 50 eP P 08 07 36.0 +1.5
comp=Z,17nm,0.8s
BOZ **Bozeman (W)** 76.16 43 P P 08 07 35.5 +0.1
baz=308,SNR=7.7
BOZ **Bozeman (W)** 76.16 43 eP P 08 07 36.6 +1.2
BOZ pmax pmax
comp=Z,12nm,1.1s
BOZ **Bozeman (W)** 76.16 43 eP P 08 07 36.6 +1.2
comp=Z,12nm,1.1s
NV01 **Mina Array Sit** 76.47 52 eP P 08 07 38.2 +0.8
NVAR **Mina Array Bea** 76.47 52 P P 08 07 38.4 +1.0
comp=Z,6.2nm,0.8s,baz=283,slow=6.0,SNR=22
MLAC **Mammoth, Mammo** 76.59 53 P P 08 07 38.9 +0.8
baz=306
ELK **Elko** 77.02 49 eP P 08 07 42.0 +1.5
ELK pmax pmax
comp=Z,19nm,1.9s
ELK **Elko** 77.02 49 eP P 08 07 42.0 +1.5
comp=Z,19nm,1.9s
YMR **Madison River** 77.14 44 eP P 08 07 43.0 +1.9
GCMT **Greycliff** 77.15 42 eP P 08 07 42.1 +1.1
LVV **L'vov** 77.33 323⇓ iP P 08 07 41.5 -0.2
YFT **Old Faithful** 77.34 44 eP P 08 07 44.0 +1.8
comp=Z,9.4nm,1.1s
VES **Vestal, Richgr** 77.46 55 P P 08 07 42.6 -0.1
baz=306
LKWY **Lake** 77.52 44 eP P 08 07 45.1 +1.9
LKWY pmax pmax
comp=Z,6.0nm,0.8s
LKWY **Lake** 77.52 44 eP P 08 07 45.1 +1.9
comp=Z,5.8nm,0.8s
H17A **Grant Village** 77.52 44 P P 08 07 46.2 +3.0
baz=309,SNR=8.6
H17A **Grant Village** 77.52 44 eP P 08 07 45.9 +2.6
comp=Z,11nm,1.0s
PKM **Mcpherson Peak** 77.53 56 P P 08 07 44.1 +0.8
baz=306
BSD **Bornholm Skovb** 77.60 331 i P P 08 07 42.3 -0.8
comp=Z,17nm,0.9s
BSD **Bornholm Skovb** 77.60 331 i P P 08 07 42.3 -0.8
BSD pmax pmax
comp=Z,17nm,0.9s
IMW **Indian Meadow** 77.63 44 eP P 08 07 45.4 +1.5
comp=Z,6.0nm,0.8s
FLWY **Flagg Ranch** 77.65 44 eP P 08 07 45.9 +2.0
comp=Z,6.0nm,0.9s
FXWY **Fox Creek** 77.74 45 eP P 08 07 45.7 +1.3
comp=Z,3.0nm,0.8s
RLMT **Red Lodge** 77.79 43 P P 08 07 45.3 +0.6
baz=310,SNR=7.9
RLMT **Red Lodge** 77.79 43 eP P 08 07 45.8 +1.1
comp=Z,5.4nm,0.7s
MOOW **Moose Ponds** 77.83 44 eP P 08 07 45.8 +0.9
comp=Z,4.1nm,1.0s
HVU **Hansel Valley** 77.88 47 eP P 08 07 46.6 +1.5
HVU pmax pmax
comp=Z,6.0nm,0.7s
HVU **Hansel Valley** 77.88 47 eP P 08 07 46.6 +1.5
comp=Z,6.1nm,0.7s
GRAC **Grapevine Rang** 77.91 53 P P 08 07 46.5 +1.3
baz=306
SNOW **Snow King Moun** 78.00 45 eP P 08 07 47.5 +1.5
comp=Z,5.2nm,0.9s
KWP **Kalwaria Pacla** 78.09 324 eP P 08 07 46.4 +0.4
KWP **Kalwaria Pacla** 78.09 324 eP P 08 07 46.4 +0.4
DAC **Darwin (Calif)** 78.19 54 eP P 08 07 47.8 +0.8
DAC pmax pmax
comp=Z,18nm,1.9s
DAC **Darwin (Calif)** 78.19 54 eP P 08 07 47.8 +0.8
comp=Z,18nm,1.9s
TESR **Tescani** 78.19 320⇓ iP P 08 07 46.7 +0.1
BUR08 **Bucovina Ar. S** 78.20 321 eP P 08 07 47.1 +0.4
BURAR **Bucovina Array** 78.21 321⇑ iP P 08 07 47.0 +0.2
R11A **Troy Canyon, C** 78.24 51 P P 08 07 48.0 +0.7
baz=307
R11A **Troy Canyon, C** 78.24 51 eP P 08 07 48.1 +0.9
comp=Z,4.1nm,0.8s
BGU **Big Grassy Mou** 78.25 48 eP P 08 07 48.6 +1.4
comp=Z,20nm,1.9s
CFR **Carcaliu** 78.26 318⇓ iP P 08 07 46.8 -0.1
SPUT **South Promonto** 78.36 47 eP P 08 07 51.5 +3.7
comp=Z,3.3nm,0.9s
MPMC **Manual Prospec** 78.38 54 P P 08 07 48.7 +0.6
baz=306
LAO **LASA Array** 78.41 40 P P 08 07 48.6 +0.7
baz=311
LAO **LASA Array** 78.41 40 eP P 08 07 48.8 +0.9

comp=Z,17nm,1.3s
A25A **Svangstu Ranch** 78.47 37 P P 08 07 48.3 +0.3
baz=313
BR131 **Keskin Array S** 78.49 311 eP P 08 07 49.3 +0.8
BRTR **Keskin Array B** 78.49 311 P P 08 07 48.8 +0.2
comp=Z,5.3nm,0.8s,baz=101,slow=6.4,SNR=15
BRTR PP PP 08 10 45.6 -0.4
comp=Z,2.3nm,0.9s,baz=76,slow=5.2,SNR=4.9
FURC **Furnace Creek,** 78.55 53 P P 08 07 50.0 +1.3
baz=307
VRI **Vrincioaia** 78.57 319⇑ iP P 08 07 50.1 +1.4
PLOR **Plostina** 78.62 319⇑ iP P 08 07 58.6 +10
TPNV **Topopah Spring** 78.66 52 P P 08 07 50.3 +0.8
baz=307
TPNV **Topopah Spring** 78.66 52 eP P 08 07 50.6 +1.1
TPNV pmax pmax
comp=Z,8.0nm,0.8s
TPNV **Topopah Spring** 78.66 52 eP P 08 07 50.6 +1.1
comp=Z,7.7nm,0.8s
HWUT **Hardware Ranch** 78.69 46 eP P 08 07 51.0 +1.3
comp=Z,20nm,1.6s
EDW2 **Edwards Air Fo** 78.75 55 P P 08 07 50.5 +0.6
baz=306
KOLS **Kolonicke sedl** 78.78 323 eP P 08 07 49.8 0.0
KOLS pmax pmax
comp=Z,11nm,1.3s
KOLS **Kolonicke sedl** 78.78 323 eP P 08 07 49.8 0.0
DUG **Dugway, Tooele** 78.83 48 P P 08 07 51.2 +0.8
baz=308
DUG **Dugway, Tooele** 78.83 48 eP P 08 07 51.8 +1.4
DUG pmax pmax
comp=Z,6.0nm,0.8s
DUG **Dugway, Tooele** 78.83 48 eP P 08 07 51.8 +1.4
comp=Z,5.7nm,0.8s
STHS **Stebnicka Huta** 78.94 324 eP P 08 07 51.7 +1.0
STHS pmax pmax
comp=Z,10.0nm,0.9s
STHS **Stebnicka Huta** 78.94 324 eP P 08 07 51.7 +1.0
BR231 **Keskin MP Arra** 78.94 311 eP P 08 07 49.5 -1.5
UZH **Uzhgorod** 78.97 323 eP P 08 07 54.8 +4.0
UZH e 08 07 57.6
UZH i 08 08 10.0
A26A **Wade Farm, Ken** 79.01 36 P P 08 07 50.6 -0.5
baz=314
OJC **Ojcow** 79.05 326 eP P 08 07 51.4 +0.2
OJC **Ojcow** 79.05 326 eP P 08 07 51.5 +0.2
OJC **Ojcow** 79.05 326 eP P 08 07 51.5 +0.2
comp=Z,32nm,1.2s
BW06 **Boulder Array** 79.12 45 P P 08 07 52.1 0.0
baz=310
BW06 **Boulder Array** 79.12 45 eP P 08 07 52.5 +0.4
comp=Z,4.3nm,1.0s
PD31 **Pinedale Array** 79.12 45 eP P 08 07 52.5 +0.4
PDAR **Pinedale Array** 79.12 45 P P 08 07 52.1 0.0
comp=Z,2.1nm,0.7s,baz=260,slow=2.3,SNR=23
MSAB **Monastry St. A** 79.13 317⇓ iP P 08 07 52.5 +0.8
CTU **Camp Tracy** 79.15 47 eP P 08 07 53.4 +1.2
comp=Z,4.6nm,0.9s
DOPR **Dopca** 79.21 320⇑ iP P 08 07 53.1 +0.9
PSUT **Pine Spring** 79.21 50 eP P 08 07 53.7 +1.1
comp=Z,7.7nm,0.9s
MLR **Muntele Rosu** 79.23 319⇓ iP P 08 07 58.8 +6.3
B26A **Jensen Ranch,** 79.28 37 P P 08 07 53.2 +0.6
baz=314
GSC **Goldstone, Bar** 79.28 54 P P 08 07 53.5 +0.6
baz=307
GSC **Goldstone, Bar** 79.28 54 eP P 08 07 53.4 +0.6
GSC pmax pmax
comp=Z,4.0nm,0.8s
GSC **Goldstone, Bar** 79.28 54 eP P 08 07 53.4 +0.5
comp=Z,3.9nm,0.8s
CIS **Catalina Islan** 79.34 56 P P 08 07 53.9 +0.7
baz=306
NIE **Niedzica** 79.38 325 eP P 08 07 53.7 +0.6
NIE **Niedzica** 79.38 325 eP P 08 07 53.7 +0.6
JLU **Jordanelle** 79.39 47 eP P 08 07 55.1 +1.5
comp=Z,4.4nm,1.0s
NLU **North Lily Min** 79.42 48 eP P 08 07 55.0 +1.2
comp=Z,5.0nm,0.8s
D25A **Fairfield** 79.58 38 P P 08 07 54.3 +0.1
baz=313
CJR **Cluj-Napoca** 79.63 321⇑ iP P 08 07 55.5 +1.0
MPU **Maple Canyon** 79.65 48 eP P 08 07 55.9 +0.9
comp=Z,7.7nm,0.7s
VOIR 79.74 320⇓ iP P 08 07 55.6 +0.4
TUQ **Turquoise Moun** 79.77 54 P P 08 07 56.2 +0.5
baz=307
BBRC **Big Bear Solar** 79.82 55 P P 08 07 55.9 -0.2
baz=307
RAYN **Ar Rayn** 79.84 292 eP P 08 07 56.0 -0.1
comp=Z,6.0nm,0.6s
A28A **Rude Farm, Bot** 79.85 36 P P 08 07 56.2 +0.6
baz=315
HEC **Hector,Ludlow** 79.87 54 P P 08 07 56.6 +0.5
baz=307
KECS **Kecovo** 79.95 324 eP P 08 07 55.7 -0.4
KECS pmax pmax
comp=Z,3.0nm,1.1s
KECS **Kecovo** 79.95 324 eP P 08 07 55.7 -0.4
LANS **Liptovska Anna** 79.96 325 eP P 08 07 56.6 +0.3
LANS **Liptovska Anna** 79.96 325 eP P 08 07 56.5 +0.3
ARR **Arges** 80.00 320⇑ iP P 08 07 57.6 +1.0
MURC **Murrieta** 80.04 56 P P 08 07 57.8 +0.8
baz=307
OKC **Ostrava-Krasne** 80.07 326 eP P 08 07 57.4 +0.6
OKC **Ostrava-Krasne** 80.07 326 eP P 08 07 57.4 +0.6
B28A **Dugan Ranch, T** 80.13 36 P P 08 07 57.7 +0.6
baz=315
KSP **Ksiaz** 80.17 328 eP P 08 07 57.3 0.0
KSP **Ksiaz** 80.17 328 eP P 08 07 57.3 0.0
MSU **Marysvale** 80.26 49 eP P 08 07 59.7 +1.4
MSU **Marysvale** 80.26 49 eP P 08 07 59.7 +1.4
A29A **Manning Farm,** 80.32 35 P P 08 07 58.5 +0.3
baz=315
GMRC **Granite Mounta** 80.34 54 P P 08 07 59.2 +0.5
baz=308
F25A **Bowman** 80.34 39 P P 08 07 58.7 +0.3
baz=313
TMUT **Trail Mountain** 80.35 48 eP P 08 08 00.4 +1.5
comp=Z,9.2nm,0.7s
CRY **Cary Ranch** 80.36 55 eP P 08 07 60.0 +1.2
MORC **Moravsky Berou** 80.39 326 eP P 08 07 58.8 +0.3
MORC pmax pmax
comp=Z,49nm,1.0s
MORC **Moravsky Berou** 80.39 326 eP P 08 07 58.8 +0.3
comp=Z,49nm,1.0s
E26A **Carlson Angus** 80.47 38 P P 08 07 58.9 -0.2
baz=314
D27A **Center** 80.50 37 P P 08 07 59.1 0.0
baz=314
DPC **Dobruska-Polom** 80.51 327 eP P 08 07 59.6 +0.4
DPC epP pP 08 08 14.1 -0.1
DPC **Dobruska-Polom** 80.51 327 eP P 08 07 59.6 +0.4
DPC e 08 08 14.1
PFO **Pinyon Flats O** 80.52 55 P P 08 08 00.9 +1.2
baz=307
PFO **Pinyon Flats O** 80.52 55 eP P 08 08 01.1 +1.4
PFO pmax pmax
comp=Z,4.0nm,0.8s
PFO **Pinyon Flats O** 80.52 55 eP P 08 08 01.1 +1.4
comp=Z,4.0nm,0.8s
P17A **Butcher Ranch,** 80.52 48 eP P 08 08 01.0 +1.3
comp=Z,11nm,0.7s
LCMT **Little Creek M** 80.53 51 eP P 08 08 01.1 +1.4
comp=Z,5.1nm,0.9s
B29A **Wagenman Farm,** 80.59 35 P P 08 07 59.6 0.0
baz=315
BELC **Belle Mtn. Jos** 80.59 55 P P 08 08 01.3 +1.3
baz=308
PSZ **Piszkesteto** 80.62 324 eP P 08 08 00.6 +0.7
PSZ pmax pmax
comp=Z,19nm,1.1s
PSZ **Piszkesteto** 80.62 324 eP P 08 08 00.6 +0.7
comp=Z,19nm,1.1s
VYHS **Vyhne** 80.72 325 eP P 08 08 00.3 0.0
VYHS pmax pmax
comp=Z,5.0nm,1.1s
VYHS **Vyhne** 80.72 325 eP P 08 08 00.3 0.0
P18A **Preston Nutter** 80.72 47 eP P 08 08 02.1 +1.3
comp=Z,6.3nm,0.7s
A30A **Hoffart Farm,** 80.74 35 P P 08 08 00.7 +0.3
baz=316
KNB **Kanab** 80.79 51 eP P 08 08 02.8 +1.7
KNB pmax pmax
comp=Z,6.0nm,0.9s
KNB **Kanab** 80.79 51 eP P 08 08 02.8 +1.7

comp=Z,5.5nm,0.9s
F26A **Lodgepole** 80.79 39 P P 08 08 01.0 +0.2
baz=314
G25A **Newell** 80.86 40 P P 08 08 01.4 +0.2
baz=313
ULM **Lac du Bonnet** 80.87 33 P P 08 08 00.2 -0.8
comp=Z,4.8nm,0.8s,baz=306,slow=4.5,SNR=12
ULM **Lac du Bonnet** 80.87 33 *e*P P 08 08 00.8 -0.2
ULM pmax pmax
comp=Z,8.0nm,0.9s
ULM **Lac du Bonnet** 80.87 33 *e*P P 08 08 00.8 -0.2
comp=Z,7.8nm,0.9s
SRU **San Rafael Swe** 80.88 48 *e*P P 08 08 02.6 +1.0
SRU pmax pmax
comp=Z,9.0nm,0.8s
SRU **San Rafael Swe** 80.88 48 *e*P P 08 08 02.6 +1.0
comp=Z,8.8nm,0.8s
K22A **Casper** 80.90 43 P P 08 08 01.9 +0.4
baz=312
K22A **Casper** 80.90 43 *e*P P 08 08 02.0 +0.4
comp=Z,35nm,2.0s
BAR **Barrett** 80.94 56 *e*P P 08 08 02.5 +0.7
comp=Z,11nm,1.1s
GZR **Gura Zlata** 80.95 321⇑ *i*P P 08 08 01.8 +0.1
E27A **Carson** 80.95 38 P P 08 08 01.7 +0.1
baz=314
ASF **Jabal al Asfar** 80.96 303 P P 08 08 02.1 +0.1
comp=Z,2.8nm,0.8s,baz=316,slow=5.9,SNR=4.6
MONP2 **Monument Peak** 80.98 56 P P 08 08 03.0 +0.7
baz=308
IRM **Iron Mountain** 81.06 54 P P 08 08 02.8 +0.4
baz=308
B30A **Myrvik Farm, E** 81.08 35 P P 08 08 02.5 +0.3
baz=316
PVCC **Panska Ves** 81.14 328 *e*P P 08 08 03.0 +0.5
PVCC **Panska Ves** 81.14 328 *e*P P 08 08 03.0 +0.5
BRG **Berggiesshubel** 81.15 329 *i* P P 08 08 02.4 -0.1
comp=Z,3.9nm,1.0s
BRG **Berggiesshubel** 81.15 329 *i* P P 08 08 02.4 -0.1
BRG pmax pmax
comp=Z,10.0nm,1.0s
VRAC **Vranov** 81.16 326⇑ *i*P P 08 08 03.2 +0.6
BC3 **Big Chuckawall** 81.16 55 P P 08 08 03.6 +0.6
baz=308
CLL **Collm** 81.21 329⇓ *i*P P 08 08 02.0 -0.8
comp=Z,22nm,1.1s
CLL *e*PP PP 08 11 08.0 0.0
CLL **Collm** 81.21 329⇓ *i*P P 08 08 02.0 -0.8
CLL pmax pmax
comp=Z,22nm,1.1s
CLL **Collm** 81.21 329 *e*P P 08 08 01.9 -0.8
comp=Z,26nm,1.1s
G26A **Maurine** 81.21 39 P P 08 08 03.1 0.0
baz=314,SNR=5.7
E28A **Huff** 81.28 37 P P 08 08 03.7 +0.3
baz=315
W13A **Hualapai Mount** 81.30 53 *e*P P 08 08 04.6 +0.7
SMOL **Smolenice** 81.35 325 *e*P P 08 08 04.7 +1.0
SMOL **Smolenice** 81.35 325 *e*P P 08 08 04.7 +1.0
SWSC **Sam W. Stewart** 81.36 56 P P 08 08 05.2 +1.2
baz=308
BZS **Buzias** 81.39 321⇓ *i*P P 08 08 04.1 +0.2
B31A **Greenbush Farm** 81.41 35 P P 08 08 04.5 +0.6
baz=316
MMAI **Mount Meron Ar** 81.45 305 P P 08 08 05.2 +0.7
comp=Z,5.6nm,0.8s,baz=45,slow=6.0,SNR=6.1
G27A **Dupree** 81.50 39 P P 08 08 04.5 -0.1
baz=314,SNR=5.2
I25A **Rochford** 81.50 41 P P 08 08 04.6 -0.1
baz=313
GOPC **GO Pecny, Ondr** 81.50 328 *e*P P 08 08 04.6 +0.1
GOPC **GO Pecny, Ondr** 81.50 328 *e*P P 08 08 04.6 +0.1
C30A **Mose, Pekin** 81.55 36 P P 08 08 04.8 +0.1
baz=316
PRU **Pruhonice** 81.55 328 *e*P P 08 08 05.1 +0.4
PRU **Pruhonice** 81.55 328 *e*P P 08 08 05.1 +0.4
O20A **White River Ci** 81.57 46 P P 08 08 05.7 +0.4
baz=311
O20A **White River Ci** 81.57 46 *e*P P 08 08 05.9 +0.7
comp=Z,5.9nm,0.9s
A32A **Rocking H Ranc** 81.58 34 P P 08 08 04.4 -0.4
baz=317
H26A **Fairpoint** 81.59 40 P P 08 08 05.4 +0.3
baz=314
PDMCI **Parker Dam,Lak** 81.62 54 P P 08 08 06.0 +0.7
baz=308
TREC **Trest** 81.66 327 *e*P P 08 08 05.8 +0.5
TREC **Trest** 81.66 327 *e*P P 08 08 05.8 +0.5
TREC MLR MLR
comp=Z,400nm,21.2s
Y12C **Blythe** 81.72 54 P P 08 08 06.5 +0.7
baz=308
Y12C **Blythe** 81.72 54 *e*P P 08 08 07.1 +1.2
comp=Z,7.8nm,0.9s
F28A **McLaughlin** 81.74 38 P P 08 08 06.0 +0.2
baz=315
C31A **Landman Farms,** 81.83 35 P P 08 08 06.1 -0.1
baz=316
D30A **Buchanan** 81.84 36 P P 08 08 06.3 +0.1
baz=316
MDVR **Moldovita** 81.92 321⇑ *i*P P 08 08 06.6 -0.2
H27A **Howes** 81.94 40 P P 08 08 07.4 +0.5
baz=314,SNR=7.1
B32A **Ashes, Strandq** 81.94 34 P P 08 08 06.0 -0.8
baz=317,SNR=7.3
GLA **Glamis** 81.94 55 P P 08 08 08.1 +1.0
baz=308
GLA **Glamis** 81.94 55 *e*P P 08 08 08.4 +1.3
GLA pmax pmax
comp=Z,13nm,0.9s
GLA **Glamis** 81.94 55 *e*P P 08 08 08.4 +1.3
comp=Z,13nm,0.9s
I26A **New Underwood** 81.95 40 P P 08 08 07.0 0.0
baz=314
A33A **Warroad** 82.05 33 P P 08 08 07.1 -0.2
baz=318
PV09 **Paradox Valley** 82.11 48 *e*P P 08 08 09.5 +1.3
E30A **Jud** 82.20 37 P P 08 08 08.9 +0.7
baz=316
G28A **Parade** 82.22 39 P P 08 08 08.5 +0.2
baz=315
F29A **Eureka** 82.23 38 P P 08 08 08.7 +0.3
baz=315
PV10 **Paradox Valley** 82.24 48 *e*P P 08 08 10.3 +1.4
PV04 **Paradox Valley** 82.31 48 *e*P P 08 08 09.4 +0.3
AGMN **Agassiz Nation** 82.32 34 P P 08 08 08.2 -0.6
baz=318
J26A **Sides Ranch, S** 82.33 41 P P 08 08 09.5 +0.5
baz=314
I27A **Quinn** 82.34 40 P P 08 08 09.3 +0.3
baz=314
N23A **Red Feather La** 82.39 44 P P 08 08 10.4 +0.8
baz=312
N23A **Red Feather La** 82.39 44 *e*P P 08 08 10.8 +1.2
comp=Z,8.2nm,1.0s
PV05 **Paradox Valley** 82.40 48 *e*P P 08 08 11.0 +1.3
H28A **Mission Ridge** 82.45 39 P P 08 08 09.1 -0.4
baz=315,SNR=7.4
Y14A **Wickenburg** 82.59 53 *e*P P 08 08 11.5 +1.0
KHC **Kasperske Hory** 82.61 328 *e*P P 08 08 09.8 -0.5
KHC **Kasperske Hory** 82.61 328 *e*P P 08 08 09.8 -0.5
KHC **Kasperske Hory** 82.61 328 *e*P P 08 08 09.8 -0.5
comp=Z,6.7nm,1.2s
G29A **Hoven** 82.64 38 P P 08 08 10.4 -0.1
baz=315
WUAZ **Wupatki** 82.64 51 P P 08 08 11.9 +1.0
baz=310
WUAZ **Wupatki** 82.64 51 *e*P P 08 08 12.2 +1.3
comp=Z,5.8nm,0.8s
VTS **Vitosha** 82.64 318⇓ *i*P P 08 08 11.7 +1.0
VTS **Vitosha** 82.64 318 *e*P P 08 08 11.5 +0.8
VTS pmax pmax
comp=Z,11nm,1.3s
VTS **Vitosha** 82.64 318 *e*P P 08 08 11.4 +0.8
comp=Z,11nm,1.3s
E31A **Nome** 82.65 36 P P 08 08 10.6 +0.1
baz=317
PV01 **Paradox Valley** 82.68 48 *e*P P 08 08 12.2 +1.1
B34A **Aery, Baudette** 82.72 33 P P 08 08 10.5 -0.3
baz=319
C33A **Trail** 82.76 34 P P 08 08 10.8 -0.2
baz=318
GEC2 **GERESS Array S** 82.78 327 *e*P P 08 08 11.2 -0.1
GEC2 pmax pmax
comp=Z,8.0nm,1.2s
GEC2 **GERESS Array S** 82.78 327 *e*P P 08 08 11.2 -0.1
comp=Z,8.3nm,1.2s
GERES **GERESS Array B** 82.78 327 P P 08 08 11.1 -0.2
comp=Z,2.8nm,0.8s,baz=38,slow=5.0,SNR=18
GERES PP PP 08 11 21.1 +0.1
comp=Z,0.4nm,0.5s,baz=51,slow=8.7,SNR=3.8
I28A **Midland** 82.85 40 P P 08 08 11.8 +0.2
baz=315,SNR=6.2
H29A **Onida** 82.89 39 P P 08 08 12.1 +0.3
baz=315
J27A **Elkhorn Farm,** 82.93 41 P P 08 08 12.5 +0.4
baz=314
SMCO **Snowmass** 82.94 46 *e*P P 08 08 13.4 +0.7
comp=Z,7.5nm,0.9s
F31A **Hecla** 82.98 37 P P 08 08 12.0 -0.2
baz=316
G30A **Faulkton** 83.07 38 P P 08 08 12.7 -0.1
baz=316
GRFO **Grafenberg** 83.18 329 *e*P P 08 08 13.7 +0.5
GRFO pmax pmax
comp=Z,22nm,1.1s
GRFO **Grafenberg** 83.18 329 *e*P P 08 08 13.7 +0.5
comp=Z,22nm,1.1s
J28A **Allard Ranch,** 83.22 40 P P 08 08 13.7 +0.1
baz=315
B35A **Bob, Littlefor** 83.22 33 P P 08 08 13.1 -0.3
baz=319
C34A **RKJ Ranch, Bem** 83.23 34 P P 08 08 12.6 -0.8
baz=318
ISCO **Idaho Springs** 83.31 45 P P 08 08 15.6 +1.1
baz=312
ISCO **Idaho Springs** 83.31 45 *e*P P 08 08 15.5 +1.1
ISCO pmax pmax
comp=Z,3.0nm,0.8s
ISCO **Idaho Springs** 83.31 45 *e*P P 08 08 15.5 +1.0
comp=Z,3.0nm,0.8s
MVCO **Mesa Verde** 83.33 48 P P 08 08 15.1 +0.6
baz=311
MVCO **Mesa Verde** 83.33 48 *e*P P 08 08 15.6 +1.1
comp=Z,34nm,1.9s
D34A **Park Rapids** 83.52 34 P P 08 08 14.5 -0.5
baz=318
E33A **Westby DABS, E** 83.58 35 P P 08 08 15.4 +0.1
baz=318
C35A **Jirik Farms, M** 83.61 33 P P 08 08 14.1 -1.4
baz=319,SNR=6.0
K28A **Ten Mile Ranch** 83.64 41 P P 08 08 16.4 +0.6
baz=315
J29A **Okreek** 83.70 40 P P 08 08 16.3 +0.3
baz=315
G32A **Webster** 83.78 37 P P 08 08 16.9 +0.5
baz=317
I30A **Oacoma** 83.80 39 P P 08 08 16.3 -0.2
baz=316,SNR=8.1
EIL **Elat** 83.80 302 P P 08 08 16.7 0.0
comp=Z,13nm,0.8s,baz=8.9,slow=5.4,SNR=10
F33A **5 Mile Ranch,** 83.93 36 P P 08 08 17.0 -0.1
baz=318
214A **Organ Pipe Nat** 83.96 55 P P 08 08 18.7 +1.1
baz=309
S22A **4UR Ranch, Cre** 83.97 47 P P 08 08 19.4 +1.5
baz=312
S22A **4UR Ranch, Cre** 83.97 47 *e*P P 08 08 19.3 +1.5
comp=Z,11nm,1.4s
C36A **Pine Crest Far** 84.06 33 P P 08 08 17.6 -0.1
baz=320
Q24A **Divide** 84.14 45 P P 08 08 19.3 +0.6
baz=313
K29A **Lazy Trails An** 84.16 40 P P 08 08 18.8 +0.4
baz=315
X18A **Snowflake** 84.17 51 *e*P P 08 08 19.9 +1.2
J30A **Dallas** 84.18 39 P P 08 08 18.6 +0.1
baz=316
G33A **Ortonville** 84.34 36 P P 08 08 19.3 +0.2
baz=318
H32A **Carlson Farm,** 84.36 37 P P 08 08 19.2 -0.1
baz=317
D36A **Goodland** 84.36 33 P P 08 08 18.7 -0.6
baz=320
C37A **Embarrass** 84.37 32 P P 08 08 19.0 -0.3
baz=320
EYMN **Ely** 84.50 32 P P 08 08 19.6 -0.4
baz=321
EYMN **Ely** 84.50 32 *e*P P 08 08 19.0 -1.0
comp=Z,6.9nm,0.8s
L29A **Maesberg Ranch** 84.57 41 P P 08 08 20.5 0.0
baz=315
H33A **Prehn Over Nor** 84.57 37 P P 08 08 20.3 -0.1
baz=317,SNR=10
K30A **Basset** 84.59 40 P P 08 08 20.8 +0.3
baz=316
G34A **Benson** 84.68 36 P P 08 08 21.0 0.0
baz=318
SDCO **Great Sand Dun** 84.75 46 P P 08 08 22.5 +0.6
baz=313
SDCO **Great Sand Dun** 84.75 46 *e*P P 08 08 22.9 +1.1
comp=Z,5.5nm,1.0s
C38A **Sawbill Land.** 84.77 32 P P 08 08 20.8 -0.6
baz=321,SNR=5.5
E36A **McGregor** 84.82 34 P P 08 08 21.1 -0.5
baz=320
N28A **Pribbeno Ranch** 84.97 42 P P 08 08 22.9 +0.3
baz=315
PMOR **Ponariorio Ree** 84.97 113 *e*T T 09 41 01.5
comp=Z,8.3nm,0.2s
J32A **Parkston** 84.98 38 P P 08 08 22.4 -0.1
baz=317
TUC **Tucson** 85.06 53 P P 08 08 24.3 +1.1
baz=310
TUC **Tucson** 85.06 53 *e*P P 08 08 24.2 +1.0
TUC pmax pmax
comp=Z,8.0nm,0.9s
TUC **Tucson** 85.06 53 *e*P P 08 08 24.2 +1.0
comp=Z,7.7nm,0.9s
K31A **O'Neill** 85.06 39 P P 08 08 22.8 -0.1
baz=316
ECSD **EROS Data Cent** 85.33 37 P P 08 08 24.2 0.0
baz=318
ECSD **EROS Data Cent** 85.33 37 *e*P P 08 08 23.5 -0.7
comp=Z,6.8nm,0.8s
L31A **Butterfield Fa** 85.34 40 P P 08 08 24.5 +0.1
baz=316
PPT2 **Papeete2** 85.37 116 *e*LR LR 08 35 22.3
comp=Z,262nm,28.0s
BFO **Black Forest** 85.43 330 *i* P P 08 08 24.9 +0.2
BFO **Black Forest** 85.43 330 *e*P P 08 08 23.4 -1.2
comp=Z,14nm,1.1s
H35A **Sunnyside Ranc** 85.47 36 P P 08 08 25.6 +0.7
baz=319,SNR=6.1
G36A **St. Michael** 85.57 35 P P 08 08 25.4 0.0
baz=319
P28A **Saint Francis** 85.63 43 P P 08 08 26.0 +0.1
baz=315
T25A **Trinidad** 85.80 46 P P 08 08 27.1 +0.1
baz=313
T25A **Trinidad** 85.80 46 *e*P P 08 08 27.9 +1.0
comp=Z,10.0nm,0.8s
M31A **Lambtecht Ranc** 85.87 40 P P 08 08 26.5 -0.5
baz=316
L32A **Elgin** 85.89 39 P P 08 08 26.7 -0.4
baz=317
K33A **Hardington** 85.97 38 P P 08 08 27.5 +0.1
baz=317
H36A **Jessenland, He** 85.99 35 P P 08 08 27.9 +0.5
baz=319
DAVOX **Davos/Dischmat** 86.01 328 P P 08 08 28.9 +1.1
comp=Z,1.5nm,0.4s,baz=102,slow=7.1,SNR=3.7
SPMN **Marine on St.** 86.01 34 P P 08 08 27.3 -0.3
baz=320
ANMO **Albuquerque** 86.06 49 P P 08 08 29.0 +0.8
baz=312
ANMO **Albuquerque** 86.06 49⇓ *i*P P 08 08 29.5 +1.2
ANMO pmax pmax
comp=Z,5.0nm,1.1s
ANMO **Albuquerque** 86.06 49 *e*P P 08 08 29.4 +1.1
comp=Z,3.7nm,1.0s
BGNE **Belgrade** 86.25 40 P P 08 08 28.7 -0.1
baz=317
H37A **Dierke Farm, C** 86.45 35 P P 08 08 30.2 +0.5
baz=320
SCHQ **Schefferville** 86.47 15 P P 08 08 29.9 +0.2
comp=Z,7.8nm,0.7s,baz=340,slow=6.3,SNR=11
SCHQ **Schefferville** 86.47 15 *e*P P 08 08 30.2 +0.5
P30A **Selden** 86.48 42 P P 08 08 29.9 -0.1
baz=316
M33A **Taylor Creek F** 86.62 39 P P 08 08 30.3 -0.4
baz=317
I37A **Lemond, Waseca** 86.66 35 P P 08 08 31.1 +0.3
baz=320
L34A **Svendsen Farm,** 86.75 38 P P 08 08 32.0 +0.7
baz=318
121A **Cookes Peak, D** 86.84 52 P P 08 08 33.2 +1.1
baz=312
P31A **Stockton** 86.97 42 P P 08 08 32.3 -0.1
baz=316
I38A **Scanlan Farm,** 87.14 35 P P 08 08 32.6 -0.5
baz=320
TAOE **Nuku Hiva Isla** 87.16 103 *e*LR LR 08 36 18.8
comp=Z,212nm,30.1s
K36A **Gilmore City** 87.20 37 P P 08 08 33.5 +0.1
baz=319
CBKS **Cedar Bluff** 87.28 42 P P 08 08 33.5 -0.4
baz=316
P32A **Huiting Farm,** 87.31 41 P P 08 08 33.5 -0.5
baz=316
M35A **Neola** 87.46 38 P P 08 08 35.0 +0.2
baz=318
K37A **Belmond** 87.49 36 P P 08 08 34.7 -0.2
baz=320
N34A **Lincoln** 87.52 39 P P 08 08 34.4 -0.6
baz=318
M36A **Felix, Anita** 87.92 38 P P 08 08 37.0 +0.1
baz=319
L37A **Phoenix Point,** 87.92 37 P P 08 08 37.0 +0.1
baz=320
P33A **Williams Farm,** 87.92 41 P P 08 08 36.5 -0.5
baz=317
N35A **Tabor** 87.94 39 P P 08 08 37.6 +0.6
baz=318
Q33A **Connelly Farm,** 88.17 41 P P 08 08 37.5 -0.6
baz=317
L38A **Oak Wood Farm,** 88.30 36 P P 08 08 38.4 -0.3
baz=320
P34A **Walnut Farm, R** 88.30 40 P P 08 08 38.1 -0.6
baz=318
N36A **Muff Farm, Cla** 88.32 38 P P 08 08 39.3 +0.5
baz=319
M37A **Trindle Farm,** 88.32 37 P P 08 08 39.0 +0.2
baz=319
R33A **Olander Ranch,** 88.59 42 P P 08 08 40.4 +0.2
baz=317
Q34A **Chapman** 88.70 41 P P 08 08 40.4 -0.3
baz=318
M38A **Pleasantville** 88.73 37 P P 08 08 40.8 +0.1
baz=320
N37A **Lee Faris, Mou** 88.73 38 P P 08 08 41.0 +0.2
baz=319
P35A **Duane Minner,** 88.73 40 P P 08 08 40.6 -0.2
baz=318
KSU1 **Kansas State U** 88.74 40 P P 08 08 40.6 -0.3
baz=318
O36A **Bolckow** 88.83 39 P P 08 08 41.1 -0.1
baz=319
T32A **Huddler Ranch,** 88.89 43 P P 08 08 41.5 -0.1
baz=316
MNTX **Cornudas Mount** 88.91 51 P P 08 08 41.8 0.0
baz=313
AMTX **Amarillo** 88.96 46 P P 08 08 42.2 +0.2
baz=315
AMTX **Amarillo** 88.96 46 *e*P P 08 08 43.0 +1.0
comp=Z,9.3nm,1.0s
P36A **Good Intent, A** 89.09 39 P P 08 08 42.0 -0.4
baz=319
TBI **Tubuai** 89.15 120 *e*LR LR 08 37 01.0
comp=Z,182nm,29.2s
Q35A **Mercer Eighty,** 89.22 40 P P 08 08 43.4 +0.3
baz=318
N39A **Derby Farms, D** 89.48 37 P P 08 08 44.3 +0.1
baz=320
S34A **Willow Spring** 89.51 42 P P 08 08 44.3 -0.1
baz=318
GLMI **Grayling** 89.85 30 *e*P P 08 08 46.9 +1.0
comp=Z,34nm,0.9s
V32A **Arapaho** 89.88 44 P P 08 08 46.7 +0.5
baz=316
P38A **Dawn** 89.93 38 P P 08 08 46.5 +0.1
baz=320
S35A **Otter Creek Ra** 89.94 41 P P 08 08 46.5 0.0
baz=318
T34A **McClaskey Farm** 89.96 42 P P 08 08 46.8 +0.2
baz=317
W32A **Sentinel** 90.19 45 P P 08 08 47.8 +0.1
baz=316
U34A **Anderson Ranch** 90.20 43 P P 08 08 48.0 +0.2
baz=317
V33A **Lossen Ranch,** 90.23 44 P P 08 08 48.0 +0.1
baz=317
S36A **Lake Cedric, C** 90.30 41 P P 08 08 47.9 -0.3
baz=318
T35A **Sooner Cattle** 90.41 42 P P 08 08 49.0 +0.3
baz=318
T36A **Boggs Farm, Ca** 90.64 41 P P 08 08 49.7 0.0
baz=318
S37A **Fort Scott** 90.67 40 P P 08 08 49.8 0.0
baz=319
X32A **Elmer** 90.67 45 P P 08 08 50.2 +0.3
baz=316
U35A **Pawnee** 90.69 42 P P 08 08 50.3 +0.4
baz=318
P40A **Paris** 90.74 38 P P 08 08 50.1 -0.1
baz=321
R38A **Fenwick Farm,** 90.83 39 P P 08 08 49.6 -1.0
baz=319
W34A **Bridge Creek,** 90.94 44 P P 08 08 51.9 +0.7
baz=317
X33A **Lawton** 91.04 45 P P 08 08 51.8 +0.1
baz=317
V35A **Meyer Ranch, C** 91.08 43 P P 08 08 51.9 +0.1
baz=318
T37A **Cheneyville 18** 91.10 41 P P 08 08 52.0 +0.1
baz=319
Q40A **Laux Farm, Aux** 91.14 38 P P 08 08 52.3 +0.3
baz=321
R39A **Chumby, Stover** 91.18 39 P P 08 08 52.0 -0.2
baz=320
U36A **Oologah** 91.21 42 P P 08 08 52.9 +0.5
baz=318
S38A **Stockton** 91.25 40 P P 08 08 51.8 -0.8
baz=319
HDIL **Hopedale** 91.26 35 P P 08 08 52.2 -0.4
baz=322
Y33A **Hilltop Ranch,** 91.35 45 P P 08 08 53.0 -0.1
baz=317
X34A **Smith Ranch, M** 91.37 44 P P 08 08 53.8 +0.6
baz=317
T38A **Diamond** 91.50 40 P P 08 08 53.4 -0.3
baz=319
W35A **Tecumseh** 91.50 43 P P 08 08 53.8 0.0
baz=318
S39A **Bolivar** 91.51 39 P P 08 08 53.2 -0.6
baz=320
U37A **Salina** 91.53 41 P P 08 08 53.9 0.0
baz=319
TUL1 **Leonard** 91.54 42 P P 08 08 53.5 -0.4
baz=318
R40A **Maddies Statio** 91.58 38 P P 08 08 53.5 -0.6
baz=320
TX31 **Lajitas Ar. Si** 91.60 51 *e*P P 08 08 54.8 +0.3
TXAR **Lajitas Array** 91.60 51 P P 08 08 54.9 +0.4
comp=Z,2.6nm,0.7s,baz=293,slow=3.0,SNR=17
TXAR LR LR 08 48 39.9
comp=Z,29nm,19.3s,baz=0.0,slow=35
ABTX **Abilene, Hawle** 91.75 47 P P 08 08 55.0 0.0
baz=316
Z33A **Whitaker Ranch** 91.79 46 P P 08 08 54.9 -0.2
baz=316
W36A **Wetumka** 91.87 43 P P 08 08 55.2 -0.3
baz=318
U38A **Gravette** 91.90 41 P P 08 08 55.3 -0.3
baz=319
V37A **Hulbert** 91.91 42 P P 08 08 55.9 +0.2
baz=319
HPIG 91.94 54 *e*P P 08 08 57.2 +1.0
T39A **Clever** 91.98 40 P P 08 08 55.9 -0.1
baz=320
S40A **Lebanon** 92.00 39 P P 08 08 55.8 -0.2
baz=320
X35A **Drake** 92.00 44 P P 08 08 56.0 -0.1
baz=318
133A **Hamilton Ranch** 92.19 46 P P 08 08 57.3 +0.2
baz=316
Z34A **Collier Ranch,** 92.22 45 P P 08 08 57.0 -0.1
baz=317
HHAR **Hobbs** 92.25 41 *e*P P 08 08 57.4 +0.1
comp=Z,22nm,1.8s
V38A **Canehill** 92.32 41 P P 08 08 57.6 0.0
baz=319
Y35A **Marietta** 92.33 44 P P 08 08 57.5 -0.1

Code	Station Name	Δ°	AZ°	Op	ISC	Time	Res
	baz=318						
T40A	Mansfield	92.33	39	P	P	08 08 57.1	-0.5
	baz=320						
SFIN	Lafayette	92.41	34	P	P	08 08 57.5	-0.4
	baz=324						
U39A	Green Forest	92.42	40	P	P	08 08 57.5	-0.5
	baz=320						
233A	Rising Star	92.63	47	P	P	08 08 59.3	+0.2
	baz=316						
Z35A	Perchaven, San	92.63	45	P	P	08 08 59.2	+0.2
	baz=317						
V39A	Pettigrew	92.74	41	P	P	08 08 59.5	0.0
	baz=320						
Y36A	Durant	92.76	44	P	P	08 08 59.8	+0.2
	baz=318						
U40A	Yellville	92.77	40	P	P	08 08 59.5	-0.1
	baz=320						
X38A	Whitesboro	92.99	42	P	P	08 09 00.8	+0.2
	baz=319						
333A	Richland Sprin	93.07	47	P	P	08 09 01.0	-0.1
	baz=316						
234A	Clairette	93.08	46	P	P	08 09 01.0	-0.1
	baz=317						
Z36A	Blue Ridge	93.14	44	P	P	08 09 01.3	0.0
	baz=318						
W39A	Magazine	93.16	41	P	P	08 09 01.1	-0.3
	baz=320						
JCT	Junction City	93.19	48	P	P	08 09 01.9	+0.2
	baz=316						
WHTX	Lake Whitney,	93.49	46	P	P	08 09 03.1	+0.1
	baz=317						
W40A	Ferguson Farm,	93.54	41	P	P	08 09 03.5	+0.3
	baz=320						
MIAR	Mount Ida	93.76	42	P	P	08 09 04.0	-0.2
	baz=320						
633A	Saathoff Ranch	94.30	49	P	P	08 09 07.3	+0.5
	baz=316						
ACSO	Alum Creek Sta	94.33	31	eP	P	08 09 06.9	+0.2
832A	Faith Ranch, C	94.64	50	P	P	08 09 08.6	+0.3
	baz=316						
Z40A	Long Farm, Mag	94.83	42	P	P	08 09 10.6	+1.5
	baz=320						
636A	Smothers Creek	95.55	47	P	P	08 09 13.3	+0.8
	baz=317						
ESDC	Sonseca Array	97.49	333	PP	PP	08 13 17.4	-0.4
	comp=Z,0.2nm,0.4s,baz=45,slow=8.5,SNR=4.7						
VNDA	Vanda	114.24	175	PKP	PKPdf	08 14 25.6	+0.5
	comp=Z,0.7nm,0.7s,baz=45,slow=0.1,SNR=3.2						
TORD	Torodi Ar. Bea	117.04	313	PKP	PKPdf	08 14 31.6	-0.8
	comp=Z,0.8nm,0.6s,baz=28,slow=1.2,SNR=10						
TORD				PP	PP	08 15 38.3	-3.4
	comp=Z,1.4nm,1.0s,baz=32,slow=4.6,SNR=2.7						
TORD				PKKPab	PKKPab	08 25 01.9	-1.4
	comp=Z,0.3nm,0.5s,baz=199,slow=4.0,SNR=4.6						
MAW	Mawson	118.26	205	PKP	PKPdf	08 14 32.5	-0.5
	comp=Z,1.7nm,0.6s,baz=65,slow=8.4,SNR=5.2						
DBIC	Dimbokro	126.04	315	PKP	PKPdf	08 14 49.0	-0.7
	comp=Z,3.6nm,0.6s,baz=14,slow=3.1,SNR=5.8						
SNAA	Sanae	139.59	197	PKP	PKPpre	08 15 05.2	
VNA2	Neumayer--Watz	141.17	196	PKP	PKPpre	08 15 10.2	
	baz=126,slow=2.8						
VNA3	Neumayer Olymp	141.44	195	PKP	PKPpre	08 15 10.3	
LPAZ	La Paz	148.17	59	PKPbc	PKPbc	08 15 34.4	+0.3
	comp=Z,6.1nm,0.7s,baz=272,slow=1.4,SNR=24						
PLCA	Paso Flores	155.80	110	PKPab	PKPab	08 16 08.7	+1.0
	comp=Z,1.4nm,0.9s,baz=288,slow=6.4,SNR=3.2						

JMA 02 08:07:25.6±0.1, 35°.97N×141°.11E, h21km±2km, M3.0, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	Chosi	0.34	218	P	Pb	08 07 32.6	-0.2
CHOJ				eS	Sb	08 07 38.1	+0.4
JHO	Hitachi	0.78	326	P	Pb	08 07 40.2	-0.2
JHO				S	Sb	08 07 51.1	+0.6
MAT	Matsushiro	2.42	285	P	Pn	08 08 04.2	+0.3
MAT				S	Sn	08 08 34.1	+1.3

*IDC **02** 08:25:11.2±0.9, 37°.14N×144°.13E, h0km, mb3.9/5, mb1 4.1/9, mb1mx3.7/42, mbtmp4.1/9, ML4.0/3, MS2.6/2, Ms1 2.6/2, ms1mx2.3/40, Error ellipse: s-maj=34.1km s-min=16.5km az=111.0*
*NEIC **02** 08:25:12.4±0.8, 37°.28N×144°.06E, h10km, mb4.4/4, Error ellipse: s-maj=18.3km s-min=13.0km az=120.0*
*ISCJB **02** 08:25:13.8±0.6, 37°.33N±0°.05×143°.92E±0°.05, h33km, mb4.1/8, Error ellipse: s-maj=7.3km s-min=5.9km az=176.4*
*JMA **02** 08:25:14.6±0.3, 37°.35N×143°.86E, h48km, M4.1*
ISC 02 08:25:15.8±0.9, 37°.34N±0°.06×143°.97E±0°.08, h35km, n34, σ2s00/33, mb4.2/8, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	Ouri	2.35	299	P	Pn	08 25 50.8	-1.1
JIO				eS	Sn	08 26 17.1	-2.4
OFUJ	Ofunato	2.51	314	P	Pn	08 25 52.6	-1.5
ONAJ	Iwakimizuishiy	2.54	266	eS	Sn	08 26 21.6	-2.7
JMM	Marumori	2.58	283	P	Pn	08 25 53.9	-1.1
JMM				S	Sn	08 26 22.8	-2.3
JMK	Ichinoseki	2.70	307	P	Pn	08 25 55.9	-0.8
JOU	Okura	2.81	292	P	Pn	08 25 57.8	-0.4
JFT	Otama	2.90	275	P	Pn	08 25 59.4	0.0
JFT				eS	Sn	08 26 31.9	-1.1
CHOJ	Chosi	2.99	238	P	Pn	08 26 00.1	-0.6
JOM	Ohasama	2.99	316	P	Pn	08 25 59.7	-1.0
JOM				S	Sn	08 26 33.0	-2.4
MJAR	Matsushiro Arr	4.68	262	Pn	Pn	08 26 24.6	+0.6
	7.5nm,0.3s,baz=88,slow=16,SNR=50						
MJAR				Sn	Sn	08 27 16.5	-0.6
	2.2nm,0.3s,baz=92,slow=26,SNR=7.7						
MJAR				LR	LR	08 28 24.0	
	comp=Z,63nm,20.1s,baz=90,slow=40						
MAJO	Matsushiro	4.68	262	ePn	Pn	08 26 24.5	+0.5
MAT	Matsushiro	4.68	262	P	Pn	08 26 25.0	+1.0
MAT				S	Sn	08 27 19.0	+1.9
ERM	Erimo	4.71	353	ePn	Pn	08 26 23.0	-1.3
ERM				eSn	Sn	08 27 13.4	-4.3
JHJ	Hachijo jima 2	5.43	220	Pn	Pn	08 26 32.3	-1.9
	5.4nm,0.3s,baz=86,slow=15,SNR=4.7						
JHJ				Sn	Sn	08 27 29.6	-5.8
	26nm,0.3s,baz=308,slow=22,SNR=6.1						
CBIJ	Chichi jima	10.32	189	Pn	Pn	08 27 36.6	-4.8
CBIJ				Sn	Sn	08 29 24.5	-11
JCJ	Chichijima	10.33	189	Pn	Pn	08 27 36.6	-4.8
	2.9nm,0.3s,baz=251,slow=18,SNR=3.7						
JCJ				Sn	Sn	08 29 24.5	-11
	2.8nm,0.3s,baz=120,slow=20,SNR=3.4						
USRK	Ussuriysk Ar.	11.37	311	Pn	Pn	08 27 57.4	+1.7
	0.3nm,0.3s,baz=121,slow=14,SNR=4.1						
KSRS	Korea Array	12.77	275	LR	LR	08 32 44.9	
	comp=Z,22nm,18.9s,baz=229,slow=35						
SEY	Seymchan	26.14	9	P	P	08 30 48.2	+1.9
	0.4nm,0.3s,baz=192,slow=6.6,SNR=14						
H11N2	WAKE ISLAND Hy	26.60	125	T	T	08 58 56.9	
	baz=316,slow=75,SNR=24						
H11N1	WAKE ISLAND Hy	26.61	125	T	T	08 58 57.6	
	baz=316,slow=75,SNR=36						
H11N3	WAKE ISLAND Hy	26.62	125	T	T	08 58 57.4	
	baz=316,slow=75,SNR=22						
H11S1	WAKE ISLAND Hy	27.36	127	T	T	08 59 55.9	
	baz=318,slow=76,SNR=30						
H11S3	WAKE ISLAND Hy	27.36	127	T	T	08 59 56.0	
	baz=318,slow=76,SNR=40						
H11S2	WAKE ISLAND Hy	27.38	127	T	T	08 59 57.2	
	baz=318,slow=76,SNR=32						
ZALV	Zalesovo Beam	43.22	312	PcP	PcP	08 35 02.9	+0.8
	1.1nm,0.5s,baz=123,slow=2.1,SNR=4.9						
KURK	Kurchatov	47.35	308	eP	P	08 33 49.0	+3.0
	4.1nm,0.8s						
ILAR	Eielson Array	48.14	33	P	P	08 33 52.9	+0.9
	0.9nm,0.8s,baz=264,slow=6.8,SNR=10						
INK	Inuvik	53.18	27	P	P	08 34 31.5	+1.7
	0.9nm,0.5s,baz=306,slow=6.0,SNR=13						
INK	Inuvik	53.18	27	eP	P	08 34 31.2	+1.4
	0.9nm,0.4s						
ARU	Arti	57.48	319	eP	P	08 34 59.3	-1.7
	1.8nm,0.6s						
WRAB	Tennant Creek	57.68	191	eP	P	08 35 02.4	-0.4
	12nm,2.0s						
WRA	Warramunga Arr	57.69	191	P	P	08 35 02.4	-0.4
	1.5nm,0.5s,baz=10,slow=7.2,SNR=7.3						
ASAR	Alice Springs	61.42	191	P	P	08 35 28.3	-0.2
	0.4nm,0.5s,baz=9.7,slow=8.1,SNR=7.1						

IDC 02 08:27:31.0±3.5, 22°.69S×173°.01E, h0km, mb3.6/3, mb1 3.7/4, mb1mx3.6/38, mbtmp3.6/4, ML3.6/1, MS4.0/1, Ms1 4.0/1, ms1mx2.9/23, Error ellipse: s-maj=133.3km s-min=42.4km az=157.0, Southeast of Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	Mont Dzumac	6.11	275	Pn	Pn	08 29 04.7	+2.0
	1.4nm,0.3s,baz=77,slow=15,SNR=14						
ASAR	Alice Springs	35.89	261	P	P	08 34 33.2	+0.1
	0.3nm,0.8s,baz=79,slow=9.7,SNR=3.8						
WRA	Warramunga Arr	36.06	267	P	P	08 34 32.9	-1.7
	0.4nm,0.8s,baz=94,slow=8.5,SNR=4.9						
VNDA	Vanda	55.15	183	LR	LR	08 59 41.5	
	comp=Z,113nm,18.1s,baz=318,slow=35						
SONM	Songino Array	92.09	322	P	P	08 40 43.2	+0.9
	0.4nm,0.5s,baz=140,slow=5.8,SNR=4.1						
GERES	GERESS Array B	149.17	333	PKPbc	PKPbc	08 47 20.6	-0.8
	0.5nm,0.8s,baz=54,slow=5.0,SNR=4.5						

JMA 02 08:42:44.1±0.3, 37°.32N×144°.03E, h66km, M3.5, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	Ouri	2.41	299	P	Pn	08 43 22.3	+1.2
ONAJ	Iwakimizuishiy	2.59	266	eS	Sn	08 43 55.0	+0.9
JMM	Marumori	2.63	283	P	Pn	08 43 25.4	+1.2
JMM				eS	Sn	08 43 55.5	+0.6
JAG	Ashikaga	3.78	258	P	Pn	08 43 41.0	+1.2
JRY	Ryogami san	4.32	254	P	Pn	08 43 48.2	+0.9

JMA 02 08:50:10.0±0.4, 37°.71N×142°.76E, h0km, M3.8, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	Ouri	1.34	304	P	Pg	08 50 35.3	-0.4
JIO				eS	Sb	08 50 54.0	+0.3
JMM	Marumori	1.57	276	P	Pn	08 50 38.7	-0.4
JMM				eS	Sn	08 51 00.0	-0.1
JOU	Okura	1.78	292	P	Pn	08 50 42.1	+0.1
JFT	Otama	1.93	265	P	Pn	08 50 44.7	+0.5
JFT				eS	Sb	08 51 10.4	-0.4
JYS	Shirataka	2.19	284	P	Pn	08 50 48.7	+1.0
JYS				eS	Sb	08 51 17.6	-0.6
JYK	Kaneyama	2.24	303	P	Pn	08 50 48.6	+0.2
MAT	Matsushiro	3.82	254	P	Pb	08 51 14.3	-4.0
MAT				S	Sn	08 52 00.0	+4.3

*IDC **02** 08:57:46.0±3.0, 31°.55S×178°.00W, h0km, mb4.1/3, mb1 4.2/4, mb1mx3.9/32, mbtmp4.0/4, ML3.5/1, Error ellipse: s-maj=70.1km s-min=43.4km az=125.0*
*ISCJB **02** 08:57:48.5±2.1, 31°.74S±0°.08×177°.9W±0°.3, h35km, mb4.0/3, Error ellipse: s-maj=42.6km s-min=10.0km az=9.7*
ISC 02 08:57:50.5±2.6, 31°.7S±0°.1×177°.9W±0°.4, h35km, n11, σ0s67/15, mb4.0/3, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WMGZ	Waiomatatini S	6.86	205	PN	Pn	08 59 28.5	0.0
HAZ	Te Kaha	7.05	209	PN	Pn	08 59 31.4	+0.3
PUZ	Puketiti	7.14	205	PN	Pn	08 59 32.0	-0.4
PUZ				SN	Sn	09 00 53.2	+0.9
TWGZ	Tauwhareparae	7.33	206	PN	Pn	08 59 34.5	-0.6
TWGZ				SN	Sn	09 00 58.4	+1.4
MWZ	Matawai	7.64	208	PN	Pn	08 59 39.0	-0.4
MWZ				SN	Sn	09 01 03.5	-1.2
URZ	Urewera	7.75	210	Pn	Pn	08 59 40.4	-0.4
	0.7nm,0.3s,baz=288,slow=5.2,SNR=7.1						
URZ				Sn	Sn	09 01 07.1	-0.2
	0.8nm,0.3s,baz=307,slow=21,SNR=9.8						
URZ	Urewera	7.75	210	SN	Sn	09 01 07.2	-0.2
STKA	Stephens Creek	34.29	259	P	P	09 04 33.6	+0.2
	0.5nm,0.5s,baz=110,slow=15,SNR=3.8						
ASAR	Alice Springs	43.13	268	P	P	09 05 47.9	+0.2
	1.3nm,0.5s,baz=108,slow=7.5,SNR=34						
WRA	Warramunga Arr	44.23	273	P	P	09 05 56.5	-0.1
	2.2nm,0.3s,baz=113,slow=7.9,SNR=6.9						
FINES	FINESS Array B	146.34	339	PKPbc	PKPbc	09 17 26.8	0.0
	2.2nm,0.9s,baz=28,slow=3.9,SNR=2.9						

*LDG **02** 08:59:39.5±0.1, 45°.62N×7°.76E, h2km, Md2.5/3, Ml2.6/13, Error ellipse: s-maj=1.4km s-min=0.8km az=98.0*
*ROM **02** 08:59:39.0±0.1, 45°.64N×7°.72E, h9km±1km, Md2.4/14, Ml2.0/10, Error ellipse: s-maj=2.0km s-min=1.3km az=132.0*
*ZUR **02** 08:59:39.8, 45°.64N×7°.74E, h2km±2km, ML2.3/10*
*GEN **02** 08:59:39.4, 45°.64N×7°.71E, h10km, ML1.9*
*CSEM **02** 08:59:39.3±0.1, 45°.61N×7°.72E, h2km, ML2.5/20, Error ellipse: s-maj=3.5km s-min=2.3km az=116.0*
ISC 02 08:59:39.8±0.8, 45°.62N±0°.01×7°.74E±0°.02, h12km±4km, n92, σ1s27/143, 1C-3D, Northern Italy

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TRAV	Traversella	0.10	177	Pg	Pg	08 59 42.6	-0.2
TRAV				Sg	Sg	08 59 44.2	-0.6
	594nm,0.1s						
TRAV	Traversella	0.10	177	P	Pg	08 59 42.5	-0.2
TRAV				i Sg	Sg	08 59 44.1	-0.7
	6μm,0.1s						
TRAV				S	Sg	08 59 44.7	-0.1
TRAV	Traversella	0.10	177⇑	iPg	Pg	08 59 42.6	-0.2
	6μm,0.1s						
TRAV				i Sg	Sg	08 59 44.1	-0.7
	6μm,0.1s						
CIRO	Champorcher	0.12	264	Pg	Pg	08 59 42.6	-0.5
CIRO				Sg	Sg	08 59 44.4	-1.1
	647nm,0.5s						
CIRO	Champorcher	0.12	264	P	Pg	08 59 42.4	-0.7
CIRO				S	Sg	08 59 44.5	-1.1
CIRO	Champorcher	0.12	264⇓	iPg	Pg	08 59 42.6	-0.5
	7μm,0.2s						
CIRO				eSg	Sg	08 59 44.4	-1.1
	7μm,0.2s						
SATI	Passo dei Sala	0.28	19	Pg	Pg	08 59 45.1	-0.6
SATI				Sg	Sg	08 59 48.8	-0.8
	130nm,0.5s						
SATI	Passo dei Sala	0.28	19	ePg	Pg	08 59 45.1	-0.6
	1μm,0.2s						
SATI				Sg	Sg	08 59 48.8	-0.8
	130nm,0.5s						
SATI				S	Sb	08 59 49.1	-2.7
SATI	Passo dei Sala	0.28	19	ePg	Pg	08 59 45.1	-0.6
	1μm,0.2s						
LSD	Lago del Serru	0.45	250	Pg	Pg	08 59 48.6	-0.2
LSD				Sg	Sg	08 59 54.5	-0.3
	74nm,0.4s						
MMK	Mattmark	0.46	20	Pg	Pg	08 59 48.7	-0.3
MMK				Sg	Sg	08 59 54.2	-1.0
MMK	Mattmark	0.46	20	ePg	Pg	08 59 48.6	-0.4
	272nm,0.2s						
MMK				Sg	Sg	08 59 54.2	-1.0
MMK	Mattmark	0.46	20	ePg	Pg	08 59 48.6	-0.4
	272nm,0.2s						
MRGE	Morge	0.50	288	Pg	Pg	08 59 49.3	-0.4
	123nm,0.9s						
MRGE	Morge	0.50	288	ePg	Pg	08 59 49.2	-0.4
	232nm,0.5s						
MRGE	Morge	0.50	288	ePg	Pg	08 59 49.2	-0.4
	232nm,0.5s						
DIX	Grande Dixence	0.52	334	Pg	Pg	08 59 49.3	-0.8
DIX				Sg	Sg	08 59 55.7	-1.3
DIX	Grande Dixence	0.52	334	Pg	Pg	08 59 49.3	-0.8
DIX				Sg	Sg	08 59 55.7	-1.3
DIX	Grande Dixence	0.52	334	ePg	Pg	08 59 49.2	-0.8
	254nm,0.2s						
RSP	Reno Superiore	0.57	216	Pg	Pg	08 59 50.8	-0.2
RSP				Sg	Sb	08 59 59.7	-0.4
	70nm,0.4s						
RSP	Reno Superiore	0.57	216	P	Pg	08 59 50.6	-0.4
RSP	Reno Superiore	0.57	216⇓	iPg	Pb	08 59 51.2	-0.7
	233nm,0.2s						
RSP				S	Sg	08 59 58.0	-0.6
RSP				Sg	Sb	08 59 59.7	-0.4
	70nm,0.4s						
RSP	Reno Superiore	0.57	216⇓	iPg	Pb	08 59 51.2	-0.7
	233nm,0.2s						
VANNI	Vissoie, Val d	0.60	351	ePg	Pg	08 59 50.7	-0.9
	201nm,0.4s						
VANNI	Vissoie, Val d	0.60	351	ePg	Pg	08 59 50.7	-0.9
	201nm,0.4s						
EMBD	Embd, Matterta	0.60	6	ePg	Pg	08 59 50.8	-0.8
	145nm,0.2s						
EMBD	Embd, Matterta	0.60	6	ePg	Pg	08 59 50.8	-0.8
	145nm,0.2s						
SIMPL	Simplonpass	0.66	17	ePg	Pg	08 59 52.0	-0.6
	238nm,0.3s						
SIMPL	Simplonpass	0.66	17	ePg	Pg	08 59 52.0	-0.6
	238nm,0.3s						
LPG	La Plagne	0.70	261	ePg	Pg	08 59 52.9	-0.6
LPG				eSg	Sg	09 00 02.9	+0.1
	30nm,0.2s						
LPG	La Plagne	0.70	261	ePg	Pg	08 59 52.9	-0.6
LPG				eSg	Sg	09 00 02.9	+0.1
	15nm,0.2s						
LPL	La Plagne	0.71	262	ePg	Pg	08 59 53.0	-0.7
LPL				eSg	Sg	09 00 03.0	-0.1
	38nm,0.3s						
LPL	La Plagne	0.71	262	ePg	Pg	08 59 53.0	-0.7
LPL				eSg	Sg	09 00 03.0	-0.1
	19nm,0.3s						
VARE	Varese	0.77	70	Pg	Pg	08 59 54.4	-0.2
VARE				Sg	Sg	09 00 04.4	-0.3
	212nm,0.4s						
VARE	Varese	0.77	70	Pg	Pg	08 59 54.4	-0.2
VARE				Sg	Sg	09 00 04.4	-0.3
	212nm,0.4s						
BHB	Bricherasio	0.84	204	Pg	Pg	08 59 55.5	-0.6
	24nm,0.4s						
BHB	Bricherasio	0.84	204	Pg	Pg	08 59 55.5	-0.6
	24nm,0.4s						
MUGIO	Muggio	0.96	71	Pg	Pg	08 59 58.0	-0.4
MUGIO				Sg	Sg	09 00 10.7	-0.2
MUGIO	Muggio	0.96	71	Pg	Pg	08 59 58.0	-0.4
MUGIO				Sg	Sg	09 00 10.7	-0.2
RRL	Rocca Remolon	0.96	224	Pg	Pb	08 59 58.2	-0.4
	21nm,0.4s						
RRL	Rocca Remolon	0.96	224	Pg	Pb	08 59 58.2	-0.4
	21nm,0.4s						
FUSIO	Fusio	1.06	37	Pg	Pg	08 59 58.7	-1.5
FUSIO	Fusio	1.06	37	Pg	Pg	08 59 58.7	-1.5
MBDF	Montbardon	1.12	218	ePg	Pg	09 00 00.9	-0.5
MBDF				eSg	Sb	09 00 15.7	-0.2
	17nm,0.2s						
MBDF	Montbardon	1.12	218	ePg	Pg	09 00 00.9	-0.5
MBDF				eSg	Sb	09 00 15.7	-0.2
	8.6nm,0.2s						
PZZ	Stroppo	1.19	202	Pg	Pg	09 00 00.5	-2.3
	24nm,0.3s						
ORIF	Oris-en-Rattie	1.49	243	ePg	Pg	09 00 07.8	-0.5
ORIF				eSg	Sn	09 00 27.1	+1.2
	20nm,0.3s						
ORIF	Oris-en-Rattie	1.49	243	ePg	Pg	09 00 07.8	-0.5
ORIF				eSg	Sn	09 00 27.1	+1.2
	9.8nm,0.3s						
CABF	La Chapelle	1.52	312	ePg	Pg	09 00 08.8	-0.2
CABF				eSg	Sg	09 00 28.3	-0.4
	8.6nm,0.3s						
CABF	La Chapelle	1.52	312	ePg	Pg	09 00 08.8	-0.2
CABF				eSg	Sg	09 00 28.3	-0.4
	4.3nm,0.3s						
SBF	Sospel	1.77	187	ePn	Pn	09 00 09.6	-0.7
SBF	Sospel	1.77	187	ePg	Pg	09 00 12.9	-0.8
SBF				eSg	Sb	09 00 34.7	+0.4
	20nm,0.3s						
SBF	Sospel	1.77	187	ePn	Pn	09 00 09.6	-0.7
SBF	Sospel	1.77	187	ePg	Pg	09 00 12.9	-0.8
SBF				eSg	Sb	09 00 34.7	+0.4
	10.0nm,0.3s						
FRF	La Foret Royal	2.20	201	eP	Pn	09 00 17.6	+1.4
FRF	La Foret Royal	2.20	201	ePg	Pg	09 00 20.6	-1.3
FRF				eSg	Sg	09 00 48.6	-1.8
	5.0nm,0.2s						
FRF	La Foret Royal	2.20	201	eP	Pn	09 00 17.6	+1.4
FRF	La Foret Royal	2.20	201	ePg	Pg	09 00 20.6	-1.3
FRF				eSg	Sg	09 00 48.6	-1.8
	2.5nm,0.2s						
DAVA	Damuels	2.23	41	Pn	Pb	09 00 19.4	-0.8
	1.7nm,0.1s						
SMRF	Simiane la Rot	2.25	224	ePg	Pb	09 00 21.1	+0.7
SMRF				eSg	Sg	09 00 50.6	-1.5
	5.4nm,0.4s						
SMRF	Simiane la Rot	2.25	224	ePg	Pb	09 00 21.1	+0.7
SMRF				eSg	Sg	09 00 50.6	-1.5
	2.7nm,0.4s						
HINF	Hinteralfeld	2.29	345	ePg	Pb	09 00 21.9	+0.9
HINF				eSg	Sg	09 00 51.9	-1.3
	6.8nm,0.3s						
HINF	Hinteralfeld	2.29	345	ePg	Pb	09 00 21.9	+0.9
HINF				eSg	Sg	09 00 51.9	-1.3
	3.4nm,0.3s						
VIVF	Saint-Julien-l	2.29	252	ePg	Pg	09 00 22.6	-1.2
VIVF				eSg	Sg	09 00 52.3	-1.2
	2.1nm,0.3s						
VIVF	Saint-Julien-l	2.29	252	ePg	Pg	09 00 22.6	-1.2
VIVF				eSg	Sg	09 00 52.3	-1.2
	1.0nm,0.3s						
LMR	La Mourre	2.44	202	ePn	Pn	09 00 18.4	-1.2
LMR	La Mourre	2.44	202	ePg	Pg	09 00 25.0	-1.7
LMR				eSg	Sb	09 00 55.8	+2.0
	3.3nm,0.3s						
LMR	La Mourre	2.44	202	ePn	Pn	09 00 18.4	-1.2
LMR	La Mourre	2.44	202	ePg	Pg	09 00 25.0	-1.7
LMR				eSg	Sb	09 00 55.8	+2.0
	1.6nm,0.3s						
FETA	Feichten	2.50	55	Pn	Pb	09 00 25.4	+0.6
	0.3nm,0.1s						
FETA				Sn	Sb	09 00 55.2	-0.5
	0.3nm,0.1s						
HAU	Haudompre	2.58	339	eP	Pn	09 00 23.5	+2.1
HAU	Haudompre	2.58	339	ePg	Pg	09 00 28.0	-1.1
HAU				eSg	Sg	09 01 00.7	-1.8
	5.1nm,0.3s						
HAU	Haudompre	2.58	339	eP	Pn	09 00 23.5	+2.1
HAU	Haudompre	2.58	339	ePg	Pg	09 00 28.0	-1.1
HAU				eSg	Sg	09 01 00.7	-1.8
	2.5nm,0.3s						
CDF	Champ du Feu	2.82	354	eP	Pn	09 00 26.4	+1.6
CDF	Champ du Feu	2.82	354	eP	Pn	09 00 26.4	+1.6
SMF	Signal de Mont	2.90	292	ePg	Pg	09 00 33.6	-1.7
SMF				eSg	Sg	09 01 11.2	-1.7
	4.0nm,0.3s						
SMF	Signal de Mont	2.90	292	ePg	Pg	09 00 33.6	-1.7
SMF				eSg	Sg	09 01 11.2	-1.7
	2.0nm,0.3s						
LOR	Lormes	3.15	303	eP	Pn	09 00 31.1	+1.8
LOR	Lormes	3.15	303	ePg	Pg	09 00 37.9	-2.3
LOR				eSg	Sg	09 01 18.9	-2.1
	1.9nm,0.2s						
LOR	Lormes	3.15	303	eP	Pn	09 00 31.1	+1.8
LOR	Lormes	3.15	303	ePg	Pg	09 00 37.9	-2.3
LOR				eSg	Sg	09 01 18.9	-2.1
	0.9nm,0.2s						
SFTF	Sexfontaines	3.18	325	eSg	Sg	09 01 19.7	-2.3
	7.4nm,0.3s						
SFTF	Sexfontaines	3.18	325	eSg	Sg	09 01 19.7	-2.3
	3.7nm,0.3s						
AVF	Avril sur Loir	3.26	293	eP	Pn	09 00 33.2	+2.4
AVF	Avril sur Loir	3.26	293	eP	Pn	09 00 33.2	+2.4
HYF	Humbligny	3.89	297	eP	Pn	09 00 42.4	+2.9
HYF	Humbligny	3.89	297	eP	Pn	09 00 42.4	+2.9
CAF	Calviac	4.07	262	eP	Pn	09 00 44.4	+2.5
CAF	Calviac	4.07	262	eP	Pn	09 00 44.4	+2.5
BAIF	Baives	5.04	333	eP	Pn	09 00 58.0	+2.8
BAIF	Baives	5.04	333	eP	Pn	09 00 58.0	+2.8

*NIED **02** 08:59:00, 36°.80N×143°.00E, h5km, Mw3.8 Best double couple: M0 4.78000×10^14 NP1: φs44.00000°, δ28.00000°, λ-96.00000°. NP2: φs230.00000°, δ62.00000°, λ-87.00000°.*
*IDC **02** 08:59:48.3±1.2, 36°.67N×143°.24E, h0km, mb3.6/6, mb1 3.8/7, mb1mx3.6/39, mbtmp3.5/7, ML3.2/1, MS2.9/1, Ms1 2.9/1, ms1mx2.2/46, Error ellipse: s-maj=33.5km s-min=24.2km az=72.0*
*ISCJB **02** 08:59:51.1±0.8, 36°.79N±0°.04×143°.14E±0°.06, h29km, mb3.5/6, Error ellipse: s-maj=7.6km s-min=6.2km*

az=161.9
*JMA **02** 08:59:53.0±0.2, 36°.78N×143°.04E, h50km, M3.5*
ISC 02 08:59:52.9±1.1**, 36°.79N**±0°.07×**143°.12E**±0°.09**, h29km, n20, σ1ˢ01**/22**, mb3.5**/6**, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
JHO	Hitachi	2.06	266	eS	Sn	09 00 48.7	-1.4
JMM	Marumori	2.14	301	P	Pn	09 00 26.6	0.0
JMM				S	Sn	09 00 51.3	-1.0
JIO	Ouri	2.18	320	S	Sn	09 00 51.9	-1.2
JFT	Otama	2.34	289	S	Sn	09 00 57.2	+0.1
JOU	Okura	2.50	310	eS	Sn	09 01 01.3	0.0
OFUJ	Ofunato	2.56	334	S	Sn	09 01 00.6	-1.9
JMK	Ichinoseki	2.63	326	P	Pn	09 00 33.9	+0.6
JMK				S	Sn	09 01 03.5	-0.8
JAG	Ashikaga	2.97	264	P	Pn	09 00 38.2	+0.1
JAG				eS	Sn	09 01 11.6	-1.1
JOM	Ohasama	3.04	332	S	Sn	09 01 14.5	0.0
JYK	Kaneyama	3.05	315	eS	Sn	09 01 15.0	+0.4
JRY	Ryogami san	3.49	258	P	Pn	09 00 44.7	-0.5
MJAR	Matsushiro Arr	3.95	268	Pn	Pn	09 00 52.6	+1.0
	1.7nm,0.3s,baz=100,slow=12,SNR=15						
MAT	Matsushiro	3.96	268	P	Pn	09 00 53.1	+1.5
MAT				S	Sn	09 01 38.6	+1.6
JCJ	Chichijima	9.70	185	LR	LR	09 08 08.2	
	comp=Z,66nm,20.0s,baz=47,slow=52						
SONM	Songino Array	29.05	304	P	P	09 05 53.6	+3.0
	1.0nm,0.9s,baz=106,slow=9.4,SNR=4.6						
MKAR	Makanchi Array	45.40	303	P	P	09 08 09.3	+0.5
	0.3nm,0.7s,baz=81,slow=8.9,SNR=3.4						
WRA	Warramunga Arr	57.03	190	P	P	09 09 35.5	-0.7
	0.4nm,0.6s,baz=14,slow=6.8,SNR=2.5						
ASAR	Alice Springs	60.76	190	P	P	09 10 01.1	-0.9
	0.2nm,0.5s,baz=7.3,slow=7.7,SNR=4.2						
YKA	Yellowknife Ar	63.33	31	P	P	09 10 19.9	+1.2
	0.2nm,0.8s,baz=300,slow=6.4,SNR=4.3						
KBZ	Khabaz	72.09	311	P	P	09 11 13.7	-0.6
	1.8nm,0.8s,baz=203,slow=7.7,SNR=4.0						

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*ISCJB **02** 09:02:03.9±0.5, 38°.44N±0°.04×12°.27E±0°.05, h13km, Error ellipse: s-maj=7.1km s-min=3.7km az=37.2*
*ROM **02** 09:02:06.6±0.4, 38°.44N×12°.34E, h23km±5km, Ml3.4/11, Error ellipse: s-maj=5.8km s-min=3.7km az=86.0*
*CSEM **02** 09:02:07.5±0.2, 38°.45N×12°.40E, h20km, ML3.4, Error ellipse: s-maj=9.6km s-min=4.6km az=37.0*
*LDG **02** 09:02:10.3±1.4, 38°.40N×12°.39E, h25km, Ml3.2/4, Error ellipse: s-maj=86.2km s-min=14.5km az=39.0*
ISC 02 09:02:05.8±0.9**, 38°.46N**±0°.04×**12°.35E**±0°.03**, h13km, n52, σ1ˢ34**/62**, Sicily**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
MTGR	Montagna Grand	0.65	150	Pg	Pg	09 02 17.9	-0.5
	464nm,0.3s						
MTGR	Montagna Grand	0.65	150	Pg	Pg	09 02 17.9	-0.5
	464nm,0.3s						
USI	Ustica	0.69	69	Pg	Pb	09 02 20.5	+0.8
USI				Sg	Sb	09 02 30.6	+1.4
	7μm,0.3s						
USI	Ustica	0.69	69	Pg	Pb	09 02 20.5	+0.8
USI				Sg	Sb	09 02 30.6	+1.4
	7μm,0.3s						
CAVT	Castelvetrano	0.84	158	Pg	Pg	09 02 20.3	-1.7
	2.0nm,0.4s						
MPG	Monte Pellegri	0.84	110	Pg	Pb	09 02 22.4	+0.1
MPG				Sg	Sb	09 02 34.1	+0.5
	430nm,0.4s						
MPG	Monte Pellegri	0.84	110	Pg	Pb	09 02 22.4	+0.1
MPG				Sg	Sb	09 02 34.1	+0.5
	430nm,0.4s						
MMGO	Monte Magaggia	0.93	148	Pg	Pb	09 02 24.4	+0.6
	491nm,0.2s						
MMGO	Monte Magaggia	0.93	148	Pg	Pb	09 02 24.4	+0.6
	491nm,0.2s						
CORL	Corleone	0.94	127	Pg	Pn	09 02 24.5	-0.2
CORL				Sg	Sn	09 02 37.3	-0.7
	642nm,0.5s						
CORL	Corleone	0.94	127	Pg	Pn	09 02 24.5	-0.2
CORL				Sg	Sn	09 02 37.3	-0.7
	642nm,0.5s						
SOLUN	Solunto	1.00	111	Pg	Pg	09 02 25.1	+0.1
SOLUN				Sg	Sn	09 02 39.0	-0.4
	400nm,0.5s						
SOLUN	Solunto	1.00	111	Pg	Pg	09 02 25.1	+0.1
SOLUN				Sg	Sn	09 02 39.0	-0.4
	400nm,0.5s						
CLTB	Caltabellotta	1.11	142	Pg	Pn	09 02 27.9	+0.8
	2μm,0.5s						
CLTB	Caltabellotta	1.11	142	Pg	Pn	09 02 27.9	+0.8
	2μm,0.5s						
GIB	Gibilmanna	1.40	109	Pg	Pn	09 02 30.8	-0.3
	796nm,0.7s						
GIB	Gibilmanna	1.40	109	Pg	Pn	09 02 30.8	-0.3
	796nm,0.7s						
PLLN	Pollina	1.48	108	Pg	Pn	09 02 31.3	-0.9
	342nm,0.8s						
PLLN	Pollina	1.48	108	Pg	Pn	09 02 31.3	-0.9
	342nm,0.8s						
RESU	Resuttano	1.57	120	Pg	Pg	09 02 35.6	-0.3
	325nm,0.6s						
RESU	Resuttano	1.57	120	Pg	Pg	09 02 35.6	-0.3
	325nm,0.6s						
IACL	Alicudi	1.57	87	Pg	Pn	09 02 32.5	-0.9
	250nm,0.7s						
IACL	Alicudi	1.57	87	Pg	Pn	09 02 32.5	-0.9
	250nm,0.7s						
PTMD	Pantelleria Cu	1.69	190	Pg	Pb	09 02 37.0	+0.2
PTMD	Pantelleria Cu	1.69	190	Pg	Pb	09 02 37.0	+0.2
IFIL	Filicudi I Eol	1.74	86	Pg	Pn	09 02 34.8	-0.9
IFIL	Filicudi I Eol	1.74	86	Pg	Pn	09 02 34.8	-0.9
GALF	Gagliano Caste	1.90	112	Pg	Pb	09 02 39.9	-0.4
	167nm,0.6s						
GALF	Gagliano Caste	1.90	112	Pg	Pb	09 02 39.9	-0.4
	167nm,0.6s						
HVZN	Vizzini	2.26	124	Pg	Pn	09 02 44.9	+1.9
	371nm,0.7s						
HVZN	Vizzini	2.26	124	Pg	Pn	09 02 44.9	+1.9
	371nm,0.7s						
MMME	Mongiuffi-Meli	2.34	102	Pg	Pn	09 02 44.9	+0.8
	136nm,1.4s						
MMME	Mongiuffi-Meli	2.34	102	Pg	Pn	09 02 44.9	+0.8
	136nm,1.4s						
MPNC	Port Mandanici	2.38	97	Pg	Pn	09 02 44.5	0.0
	237nm,1.1s						
MPNC	Port Mandanici	2.38	97	Pg	Pn	09 02 44.5	0.0
	237nm,1.1s						
SSY	Sortino	2.52	120	Pg	Pn	09 02 47.6	+1.2
SSY	Sortino	2.52	120	Pg	Pn	09 02 47.6	+1.2
VSL	Villasalto	2.54	295	Pg	Pn	09 02 47.1	+0.4
VSL	Villasalto	2.54	295	Pg	Pn	09 02 47.1	+0.4
PGF	Pioggiola	4.82	329	ePn	Pn	09 03 20.8	+2.7
PGF				eSn	Sn	09 04 10.4	-3.5
	16nm,0.6s						
PGF	Pioggiola	4.82	329	ePn	Pn	09 03 20.8	+2.7
PGF				eSn	Sn	09 04 10.4	-3.5
	7.8nm,0.6s						
SBF	Sospel	6.55	327	ePn	Pn	09 03 43.5	+1.6
SBF				eSn	Sn	09 04 49.7	-6.8
	20nm,0.7s						
SBF	Sospel	6.55	327	ePn	Pn	09 03 43.5	+1.6
LMR	La Mourre	6.58	320	ePn	Pn	09 03 42.7	+0.5
LMR	La Mourre	6.58	320	ePn	Pn	09 03 42.7	+0.5
FRF	La Foret Royal	6.68	322	ePn	Pn	09 03 44.5	+0.9
FRF				eSn	Sn	09 04 53.2	-6.3
	2.0nm,0.4s						
FRF	La Foret Royal	6.68	322	ePn	Pn	09 03 44.5	+0.9
SMRF	Simiane la Rot	7.51	319	ePn	Pn	09 03 55.9	+0.8
SMRF	Simiane la Rot	7.51	319	ePn	Pn	09 03 55.9	+0.8
MBDF	Montbardon	7.53	328	ePn	Pn	09 03 58.9	+3.5
MBDF				eSn	Sn	09 05 17.1	-3.6
	0.6nm,0.2s						
ORIF	Oris-en-Rattie	8.07	325	ePn	Pn	09 04 05.5	+2.8
ORIF	Oris-en-Rattie	8.07	325	ePn	Pn	09 04 05.5	+2.8

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*NIED **02** 09:05:00, 36°.90N×140°.60E, h5km, Mw4.2 Best double couple: M₀2.10000×10¹⁵ NP1:φs325.00000°, δ27.00000°, λ-94.00000°. NP2:φs150.00000°, δ63.00000°, λ-88.00000°.*
*IDC **02** 09:05:07.5±0.5, 36°.90N×140°.51E, h0km, mb4.1/21, mb1 4.3/24, mb1mx4.2/35, mbtmp4.1/24, ML3.1/3, MS3.2/8, Ms1 3.2/8, ms1mx2.9/46, Error ellipse: s-maj=16.1km s-min=12.4km az=109.0*
*ISCJB **02** 09:05:08.6±0.6, 36°.93N±0°.02×140°.54E±0°.04, h12km±3km, mb4.3/51, MS3.1/7, Error ellipse: s-maj=5.4km s-min=3.5km az=33.2*
*JMA **02** 09:05:09.0, 36°.90N×140°.60E, h7km±1km, M4.4 Broadband fault plane solution: P waves. NP1: φs146.00000°, δ52.00000°, λ-77.00000°. NP2: φs306.00000°, δ40.00000°, λ-106.00000°. Principal axes: T Plg6.0000°, Azm227.0000°; N Plg10.0000°, Azm318.0000°; P Plg78.0000°, Azm106.0000°;*
JMA Felt II J1.
*MOS **02** 09:05:11.3±1.3, 37°.01N×140°.53E, h32km, mb4.7/18 Error ellipse: s-maj=9.2km s-min=6.2km az=90.0*
*NEIC **02** 09:05:13.6±0.2, 36°.96N×140°.44E, h35km, mb4.5/19, Error ellipse: s-maj=6.0km s-min=4.5km az=145.0*
ISC 02 09:05:09.5±1.0**, 36°.94N**±0°.03×**140°.51E**±0°.04**, h9km**±6km**, n127, σ1ˢ19**/126**, mb4.5**/51**, MS3.1**/7**, 12C-2D, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
ONAJ	Iwakimizuishiy	0.28	56	⇑P	Pg	09 05 14.1	-1.0
ONAJ				S	Sg	09 05 18.0	-0.9
JHO	Hitachi	0.34	172	⇑P	Pg	09 05 14.7	-1.4
JHO				S	Sg	09 05 19.3	-1.3
JSB	Shiboa	0.47	273	⇑P	Pb	09 05 20.4	+0.4
JSB				S	Sb	09 05 28.2	+1.1
JFT	Otama	0.59	347	⇑P	Pb	09 05 21.8	-0.2
JYT	Yasato	0.76	200	⇑P	Pg	09 05 23.1	-1.0
JYT				S	Sg	09 05 33.3	-0.7
MJAR	Matsushiro Arr	1.89	258	Pn	Pn	09 05 42.8	+0.8
	96nm,0.3s,baz=93,slow=16,SNR=588						
MJAR				Sn	Sb	09 06 08.7	+0.8
	193nm,0.3s,baz=79,slow=30,SNR=21						
MJAR				LR	LR	09 06 45.6	
	comp=Z,531nm,21.5s,baz=80,slow=53						
MAJO	Matsushiro	1.89	258	d iP	Pn	09 05 42.8	+0.8
MAJO	Matsushiro	1.89	258	ePn	Pb	09 05 43.6	-0.6
MAT	Matsushiro	1.89	258	P	Pn	09 05 43.2	+1.2
MAT				S	Sg	09 06 10.2	-0.1
INU	Inuyama	3.24	242	ePn	Pn	09 06 03.1	+2.6
INU				eSn	Sn	09 06 37.8	-1.5
JHJ	Hachijo jima 2	3.86	189	Pn	Pn	09 06 07.3	-1.7
	9.6nm,0.3s,baz=94,slow=19,SNR=3.1						
JHJ				Sn	Sn	09 06 54.2	-0.4
	37nm,0.3s,baz=59,slow=23,SNR=5.5						
JHJ2	Mitsune	3.87	189	ePn	Pn	09 06 11.2	+2.2
ERM	Erimo	5.46	21	P	Pn	09 06 32.0	+1.0
ERM	Erimo	5.46	21	ePn	Pn	09 06 32.4	+1.4
ERM				eSn	Sn	09 07 33.0	-0.9
ASAJ	Asahikawa	7.34	12	ePn	Pn	09 07 00.3	+3.5
YUK	Yuzh-Kuril'sk	8.17	28	P	Pn	09 07 09.3	+1.1
SHO	Shikotan	8.43	33	P	Pn	09 07 10.9	-0.8
SHO				eS	Sn	09 08 39.6	-7.4
SHO				pmax	pmax		
	comp=Z,43nm,0.9s						
JNU	Nakatsue	8.77	247	Pn	Pn	09 07 16.4	-0.1
	comp=Z,0.1nm,0.3s,baz=239,slow=18,SNR=2.0						
JNU				LR	LR	09 10 57.4	
	comp=Z,170nm,21.6s,baz=124,slow=40						
USRK	Ussuriysk Ar.	9.72	321	Pn	Pn	09 07 35.5	+6.1
	comp=Z,0.2nm,0.3s,baz=132,slow=13,SNR=10						
CBIJ	Chichi jima	9.92	171	ePn	Pn	09 07 35.0	+2.8
JCJ	Chichijima	9.92	171	Pn	Pn	09 07 28.4	-3.9
	comp=Z,11nm,0.3s,baz=100,slow=20,SNR=11						
KSRS	Korea Array	10.05	277	Pn	Pn	09 07 37.4	+3.3
	comp=Z,0.2nm,0.3s,baz=97,slow=14,SNR=3.5						
KSRS				LR	LR	09 11 15.4	
	comp=Z,131nm,20.0s,baz=94,slow=36						
KS15	Wonju Array Si	10.09	277	ePn	Pn	09 07 36.1	+1.7
KSAR	Wonju Array Be	10.09	277	P	Pn	09 07 37.4	+2.9
KSAR	Wonju Array Be	10.09	277	Pn	Pn	09 07 37.4	+2.9
YSS	Yuzh-Sakhalins	10.14	9	eP	Pn	09 07 38.0	+2.8
YSS				pmax	pmax		
	comp=Z,30nm,1.0s						
KLR	Kul'dur	13.83	335	Pn	Pn	09 08 25.7	+0.1
	comp=Z,0.1nm,0.3s,baz=104,slow=4.2,SNR=2.2						
KLR				LR	LR	09 13 56.5	
	comp=Z,73nm,18.2s,baz=112,slow=38						
TYV	Tymovskoe	14.00	6	eP	Pn	09 08 26.5	-1.4
NJ2	Nanjing	18.49	261	eP	P	09 09 25.0	-0.8
NJ2				pmax	pmax		
	comp=Z,22nm,0.5s						
PETK	Petropavlovsk-	20.13	31	P	P	09 09 43.9	+0.2
	comp=Z,2.6nm,0.7s,baz=215,slow=8.8,SNR=4.0						
PETK				LR	LR	09 17 36.9	
	comp=Z,54nm,19.0s,baz=217,slow=37						
HHC	Hu-ho-hao-te	22.81	289	eP	P	09 10 13.0	+0.3
HHC				pP	sP	09 10 20.0	+3.6
HHC				sP	pP	09 10 24.0	+8.7
HHC				S	S	09 14 15.2	-6.9
HHC				pmax	pmax		
	comp=Z,15nm,0.7s						
HHC				pmax	pmax		
	comp=Z,110nm,7.5s						
HHC				LR	LR		
	comp=N,120nm,13.6s						
HHC				LR	LR		
	comp=E,280nm,13.9s						
HHC				LR	LR		
	comp=Z,75nm,14.1s						
MA2	Magadan	23.60	13	P	P	09 10 19.8	-0.6
	comp=Z,6.4nm,0.8s,baz=224,slow=8.2,SNR=5.6						
MA2				LR	LR	09 19 56.8	
	comp=Z,46nm,18.4s,baz=184,slow=38						
YAK	Yakutsk	26.00	348	LR	LR	09 21 39.9	
	comp=Z,46nm,19.8s,baz=126,slow=38						
YAK	Yakutsk	26.00	348	i P	P	09 10 43.3	+0.9
YAK				pmax	pmax		
	comp=Z,19nm,1.0s						
ULN	Ulaanbaatar	26.81	305	P	P	09 10 51.0	+1.0
ULN				pmax	pmax		
	comp=Z,5.0nm,1.2s						
SEY	Seymchan	27.02	12	P	P	09 10 52.0	+0.5
	comp=Z,6.1nm,0.9s,baz=204,slow=7.4,SNR=11						
SEY	Seymchan	27.02	12	⇓iP	P	09 10 53.2	+1.6
SONA1	Songino Array	27.23	304	eP	P	09 10 53.5	-0.3
SONM	Songino Array	27.23	304	P	P	09 10 53.2	-0.6
	comp=Z,2.3nm,0.7s,baz=108,slow=9.3,SNR=15						
H11N2	WAKE ISLAND Hy	28.73	119	T	T	09 40 52.3	
	baz=313,slow=75,SNR=848						
H11N1	WAKE ISLAND Hy	28.74	119	T	T	09 40 53.1	
	baz=313,slow=75,SNR=814						
H11N3	WAKE ISLAND Hy	28.75	119	T	T	09 40 53.7	
	baz=313,slow=75,SNR=485						
H11S1	WAKE ISLAND Hy	29.43	122	T	T	09 41 46.5	
	baz=314,slow=76,SNR=744						
H11S3	WAKE ISLAND Hy	29.43	122	T	T	09 41 45.0	
	baz=314,slow=76,SNR=423						
H11S2	WAKE ISLAND Hy	29.44	122	T	T	09 41 47.1	
	baz=314,slow=76,SNR=429						
CD2	Chengdu	30.95	270	P	P	09 11 25.5	-1.4
CD2				pmax	pmax		
	comp=Z,10.0nm,0.5s						
BILL	Bilibino	34.32	17	P	P	09 11 55.5	-0.4
BILL				e		09 13 10.4	
BILL				ePPP	PPP	09 13 23.8	
BILL				pmax	pmax		
	comp=Z,5.0nm,1.0s						
BILL				MLR	MLR		
	comp=Z,38nm,17.0s						
BILL	Bilibino	34.32	17	eP	P	09 11 56.0	+0.1
	comp=Z,3.8nm,0.7s						
TIXI	Tiksi	35.30	354	⇑eP	P	09 12 03.2	-1.1
TIXI				pmax	pmax		
	comp=Z,5.0nm,2.5s						
WMQ	Urumqi	40.23	297	eP	P	09 12 46.9	+0.4
WMQ				pP	sP	09 12 54.4	+4.0
WMQ				pmax	pmax		
	comp=Z,3.0nm,0.6s						
CMAR	Chiang Mai Arr	40.77	255	LR	LR	09 30 47.4	
	comp=Z,27nm,19.8s,baz=175,slow=38						
ZALV	Zalesovo Beam	41.44	312	P	P	09 12 55.9	-0.3
	comp=Z,1.6nm,0.3s,baz=93,slow=7.4,SNR=5.2						
ZALV				PcP	PcP	09 14 53.8	-0.1
	comp=Z,1.0nm,0.3s,baz=85,slow=1.6,SNR=3.1						
NRIK	Noril'sk	43.05	335	LR	LR	09 31 10.6	
	comp=Z,24nm,18.1s,baz=114,slow=36						
MK01	Makanchi Array	43.55	302	eP	P	09 13 13.8	+0.3
MK31	Makanchi Array	43.55	302	eP	P	09 13 13.5	0.0
MK31	Makanchi Array	43.55	302	eP	P	09 13 13.5	0.0
MKAR	Makanchi Array	43.55	302	P	P	09 13 13.9	+0.4
	comp=Z,1.3nm,0.8s,baz=87,slow=8.7,SNR=11						
MKAR				PcP	PcP	09 15 00.9	-0.3
	comp=Z,0.5nm,0.7s,baz=61,slow=4.5,SNR=3.3						
MKAR	Makanchi Array	43.55	302	ceP	P	09 13 13.8	+0.3
MKAR				pmax	pmax		
	comp=Z,1.0nm,0.8s						
KURK	Kurchatov	45.42	308	eP	P	09 13 28.1	-0.2
KURK				pmax	pmax		
	comp=Z,11nm,1.2s						
KURK	Kurchatov	45.42	308	eP	P	09 13 28.1	-0.2
	comp=Z,11nm,1.2s						
PMG	Port Moresby	46.52	171	ceP	P	09 13 40.2	+2.9
PMG				pmax	pmax		
	comp=Z,143nm,1.7s						
MDM	Murphy Dome	49.38	32	eP	P	09 14 00.5	+1.6
	comp=Z,4.4nm,1.0s						
KSH	Kashi	49.78	294	eP	P	09 14 08.2	+5.6
KSH				esP	sP	09 14 19.1	+13
KSH				pmax	pmax		
	comp=Z,64nm,3.8s						
VOSK	Vostochnaya	49.80	312	eP	P	09 14 01.8	-0.6
VOSK				pmax	pmax		
	comp=Z,4.0nm,0.8s						
VOSK	Vostochnaya	49.80	312	eP	P	09 14 01.8	-0.6
	comp=Z,4.1nm,0.8s						
ILAR	Eielson Array	49.96	32	P	P	09 14 03.0	-0.4
	comp=Z,1.3nm,0.7s,baz=274,slow=6.4,SNR=12						
BRVK	Borovoye	50.15	312	P	P	09 14 06.0	+1.0
BRVK				pmax	pmax		
	comp=Z,10.0nm,2.5s						
KKAR	Karatay Array	52.54	300	eP	P	09 14 22.7	-0.4
KKAR	Karatay Array	52.54	300	eP	P	09 14 22.7	-0.4
ARU	Arti	55.95	318	c iP	P	09 14 47.1	-0.6
ARU						09 15 40.3	
ARU						09 16 48.1	
ARU				S	S	09 22 34.0	-1.5
ARU				SS	SS	09 26 16.7	-4.1
ARU				pmax	pmax		
	comp=Z,8.0nm,1.2s						
ARU	Arti	55.95	318	eP	P	09 14 47.6	-0.1
	comp=Z,4.7nm,0.9s						
WRA	Warramunga Arr	56.88	187	P	P	09 14 53.4	-1.3
	comp=Z,3.5nm,0.5s,baz=4.1,slow=7.2,SNR=18						
WRA	Warramunga Arr	56.88	187	i P	P	09 14 53.7	-1.0
WRA				pmax	pmax		
	comp=Z,3.0nm,0.5s						
ABKAR	Akbulak array	57.44	310	eP	P	09 14 57.9	-0.6
AS01	Alice Springs	60.60	187	eP	P	09 15 19.6	-0.9
ASAR	Alice Springs	60.61	187	P	P	09 15 19.6	-0.9
	comp=Z,2.5nm,0.8s,baz=12,slow=5.9,SNR=18						
KLMR	Klimovskoe	63.44	328	eP	P	09 15 36.2	-3.0
KLMR				pmax	pmax		
	comp=Z,16nm,1.8s						
ARCES	ARCESS Array B	63.82	339	P	P	09 15 41.3	-0.3
	comp=Z,3.9nm,0.9s,baz=46,slow=7.7,SNR=3.9						
YKA	Yellowknife Ar	64.25	30	P	P	09 15 43.9	-0.5
	comp=Z,0.6nm,0.8s,baz=303,slow=6.7,SNR=9.6						
YKA	Yellowknife Ar	64.25	30	P	P	09 15 44.0	-0.5
YKB5	Yellowknife Ar	64.25	30	eP	P	09 15 47.1	+2.6
OBN	Obninsk	67.73	323	⇑eP	P	09 16 07.8	+0.8
OBN				pmax	pmax		
	comp=Z,4.0nm,0.8s						
STKA	Stephens Creek	68.47	179	P	P	09 16 10.5	-1.3
	comp=Z,1.4nm,0.5s,baz=340,slow=4.5,SNR=5.8						
FINES	FINESS Array B	68.55	332	P	P	09 16 11.2	-0.9
	comp=Z,2.9nm,0.8s,baz=54,slow=9.7,SNR=6.8						
FINES	FINESS Array B	68.55	332	i P	P	09 16 11.1	-1.0
FINES				pmax	pmax		
	comp=Z,3.0nm,0.8s						
KIV	Kislovodsk	70.42	311	i P	P	09 16 24.6	+0.6
KIV				pmax	pmax		
	comp=Z,9.0nm,1.1s						
AKASG	Malin Array Be	73.92	322	P	P	09 16 43.4	-1.4
	comp=Z,0.4nm,0.4s,baz=51,slow=6.1,SNR=4.3						
AKASG	Malin Array Be	73.92	322	ceP	P	09 16 46.2	+1.4
KIEV	Kiev	73.93	322	P	P	09 16 46.0	+1.2
KIEV				pmax	pmax		
	comp=Z,7.0nm,1.4s						
NOA	NORSAR Array B	73.99	337	P	P	09 16 44.5	-0.5
	comp=Z,1.7nm,0.9s,baz=38,slow=5.8,SNR=3.6						
EGMT	Eagleton	74.81	41	eP	P	09 16 50.7	+0.5
	comp=Z,5.5nm,0.8s						
NV01	Mina Array Sit	75.62	53	eP	P	09 16 56.0	+0.9
NVAR	Mina Array Bea	75.62	53	P	P	09 16 56.1	+1.0
	comp=Z,2.9nm,0.8s,baz=289,slow=5.3,SNR=20						
IMW	Indian Meadow	76.75	45	eP	P	09 17 02.5	+1.0
	comp=Z,29nm,0.1s						
R11A	Troy Canyon, C	77.39	51	eP	P	09 17 06.0	+0.9
	comp=Z,3.1nm,0.9s						
TPNV	Topopah Spring	77.81	53	eP	P	09 17 08.3	+0.8
TPNV				pmax	pmax		
	comp=Z,5.0nm,0.8s						
TPNV	Topopah Spring	77.81	53	eP	P	09 17 08.3	+0.8
	comp=Z,4.9nm,0.8s						
DUG	Dugway, Tooele	77.96	49	eP	P	09 17 08.9	+0.7
DUG				pmax	pmax		
	comp=Z,4.0nm,1.0s						
DUG	Dugway, Tooele	77.96	49	eP	P	09 17 08.9	+0.7
	comp=Z,4.1nm,1.0s						
BW06	Boulder Array	78.24	45	eP	P	09 17 09.9	0.0
PDAR	Pinedale Array	78.24	45	P	P	09 17 09.8	0.0
	comp=Z,0.9nm,0.8s,baz=277,slow=1.5,SNR=7.7						
BRTR	Keskin Array B	78.37	311	P	P	09 17 10.0	-0.5
	comp=Z,0.7nm,0.9s,baz=38,slow=7.3,SNR=3.0						
NLU	North Lily Min	78.55	48	eP	P	09 17 12.3	+0.8
	comp=Z,1.8nm,1.0s						
STHS	Stebnicka Huta	78.61	324	eP	P	09 17 12.2	+0.7
STHS	Stebnicka Huta	78.61	324	eP	P	09 17 12.2	+0.7
P17A	Butcher Ranch,	79.66	48	eP	P	09 17 18.4	+0.8
	comp=Z,5.2nm,0.9s						
LCMT	Little Creek M	79.67	51	eP	P	09 17 18.6	+0.9
	comp=Z,3.3nm,0.8s						
KNB	Kanab	79.93	51	eP	P	09 17 20.6	+1.4
KNB				pmax	pmax		
	comp=Z,6.0nm,1.0s						
KNB	Kanab	79.93	51	eP	P	09 17 20.6	+1.4
	comp=Z,6.0nm,1.0s						
ULM	Lac du Bonnet	79.97	33	P	P	09 17 17.5	-1.3
	comp=Z,1.2nm,0.7s,baz=317,slow=6.9,SNR=3.6						
SRU	San Rafael Swe	80.01	48	eP	P	09 17 19.9	+0.3
SRU				pmax	pmax		
	comp=Z,7.0nm,1.1s						
SRU	San Rafael Swe	80.01	48	eP	P	09 17 19.9	+0.3
	comp=Z,6.6nm,1.1s						
CLL	Collm	80.81	330	eP	P	09 17 23.0	-0.3
CLL	Collm	80.81	330	eP	P	09 17 23.0	-0.3
Y14A	Wickenburg	81.75	54	eP	P	09 17 28.9	+0.1
WUAZ	Wupatki	81.78	52	eP	P	09 17 29.7	+0.7
	comp=Z,6.2nm,0.9s						
KHC	Kasperske Hory	82.24	328	eP	P	09 17 32.8	+1.8
KHC	Kasperske Hory	82.24	328	eP	P	09 17 32.8	+1.8
GERES	GERESS Array B	82.40	328	P	P	09 17 30.3	-1.7
	comp=Z,0.3nm,0.4s,baz=29,slow=3.0,SNR=3.4						
X16A	Lo Mia Camp, P	82.44	52	eP	P	09 17 33.7	+1.1
	comp=Z,3.8nm,1.0s						
T25A	Trinidad	84.93	47	eP	P	09 17 45.3	0.0
	comp=Z,8.1nm,1.3s						
ANMO	Albuquerque	85.20	49	⇑eP	P	09 17 47.4	+0.7
ANMO				pmax	pmax		
	comp=Z,5.0nm,1.2s						
ANMO	Albuquerque	85.20	49	eP	P	09 17 47.2	+0.5
	comp=Z,4.4nm,1.1s						
TX31	Lajitas Ar. Si	90.75	52	eP	P	09 18 13.3	0.0
TXAR	Lajitas Array	90.75	52	P	P	09 18 13.4	+0.2
	comp=Z,2.2nm,0.8s,baz=298,slow=3.5,SNR=12						
HPIG		91.11	55	eP	P	09 18 15.6	+0.5
	comp=Z,2.3nm,0.8s						
LPAZ	La Paz	147.36	59	PKPbc	PKPbc	09 24 54.6	-0.2
	comp=Z,4.3nm,0.8s,baz=16,slow=3.2,SNR=13						

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*NNC **02** 09:06:50.5±7.9, 44°.81N×77°.48E, h0km, mb3.1, mpv2.7, Error ellipse: s-maj=75.0km s-min=21.5km az=177.0*
*SOME **02** 09:06:50.2, 41°.65N×78°.25E*
*KRNET **02** 09:06:54.8±0.1, 42°.03N×78°.47E, h35km, mb1.9*
*ISCJB **02** 09:06:55.0±1.4, 41°.96N±0°.07×78°.15E±0°.08, h0km, Error ellipse: s-maj=11.5km s-min=5.8km az=139.6*
ISC 02 09:06:53.1±2.1**, 42°.03N**±0°.10×**78°.20E**±0°.09**, h0km, n7, σ1ˢ50**/10**, 13C-1D, Lake Issyk-Kul region**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
PRZ	Przheval'sk	0.47	18	⇑iP	Pn	09 07 05.9	-1.4
	baz=353						
PRZ				⇑eS	Sb	09 07 14.0	+2.0

Code	Station Name	Δ°	AZ°	Op	ISC	Time	Res
	baz=353						
ANVS	**Anan'yevo**	**0.85**	**332**	⇑*e*P	**Pn**	**09 07 13.1**	**+0.6**
	baz=322						
ANVS				⇑*i*S	**Sn**	**09 07 26.2**	**+0.5**
	baz=322						
PDGK	**Podgornoye**	**1.60**	**36**	⇑Pg	Pg	09 07 28.3	+4.5
	2.5nm,0.3s						
PDGK				⇓Lg	Lg	09 07 55.8	
	16nm,0.9s						
BOOM	**Boomskoye usch**	**1.74**	**286**	⇑*e*P	**Pg**	**09 07 25.6**	**-0.8**
	baz=285						
BOOM				⇑*e*S	**Sg**	**09 07 48.1**	**-0.9**
	baz=285						
NRN	**Naryn**	**1.75**	**251**	⇑*e*P	**Pg**	**09 07 26.9**	**+0.2**
	baz=253						
NRN				⇑*e*S	**Sg**	**09 07 50.6**	**+1.2**
	baz=253						
TKM2	**Tokmak 2**	**2.12**	**296**	⇑Pg	**Pg**	**09 07 34.4**	**+0.7**
	4.9nm,0.8s						
TKM2				⇑Lg	Lg	09 08 04.9	
	10nm,0.6s						
AAK	**Ala-Archa**	**2.81**	**284**	⇑Pg	**Pg**	**09 07 44.6**	**-2.4**
	1.6nm,0.6s						
AAK				⇑Lg	Lg	09 08 27.0	
	10nm,0.9s						

JMA 02 09:13:40.5±0.4**, 37°.12N×142°.50E, h12**km**, M3.6, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JMM	**Marumori**	**1.55**	**299**	P	Pn	09 14 07.7	-0.2
JFT	**Otama**	**1.77**	**284**	P	Pn	09 14 11.6	+0.6
MAT	**Matsushiro**	**3.49**	**262**	P	Pn	09 14 37.6	+3.0
MAT				S	Sn	09 15 17.9	+2.0

IDC 02 09:30:38.2±1.9**, 56°.34S×27°.89W, h0**km**, mb4.3**/1**, mb1 4.3**/1**, mb1mx3.6**/25**, mbtmp4.3**/1**, Error ellipse: s-maj=107.7km s-min=70.0km az=138.0, South Sandwich Islands region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TORD	**Torodi Ar. Bea**	**73.50**	**30**	P	P	09 42 12.5	0.0
	1.4nm,0.5s,baz=197,slow=6.5,SNR=8.5						
YKA	**Yellowknife Ar**	**136.12**	**318**	PKP	PKPdf	09 49 59.4	-0.4
	0.1nm,0.5s,baz=136,slow=2.0,SNR=4.0						
ILAR	**Eielson Array**	**150.01**	**311**	PKPbc	PKPbc	09 50 28.6	-0.4
	0.6nm,0.6s,baz=126,slow=2.5,SNR=6.0						
SONM	**Songino Array**	**151.13**	**88**	PKPbc	PKPbc	09 50 32.1	-0.3
	0.6nm,0.4s,baz=224,slow=4.9,SNR=5.5						

WEL 02 09:41:58.2±0.2**, 40°.03S×172°.92E, h33**km**, ML3.7**/30**, 4C-5D, Error ellipse: s-maj=2.8km s-min=1.1km az=90.0, Off west coast of South Island**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
QRZ	**Quartz Range**	**0.85**	**200**	PN	Pn	09 42 13.3	-0.5
QRZ				SN	Sb	09 42 25.4	-0.2
QRZ				AML	AML	09 42 27.4	
QRZ				AML	AML	09 42 27.4	
QRZ				AML	AML	09 42 27.5	
NMEZ	**Namu Road**	**0.96**	**51**	PN	Pn	09 42 14.4	-1.0
NMEZ				SN	Sn	09 42 28.1	+0.2
NWEZ	**Newall Road**	**1.05**	**45**	PN	Pn	09 42 15.8	-0.8
NWEZ				SN	Sb	09 42 30.9	-0.5
DUWZ	**D'Urville Isla**	**1.09**	**135**	PN	Pn	09 42 15.3	-1.8
KHEZ	**Kahui Hut**	**1.12**	**49**	PN	Pn	09 42 16.9	-0.7
KHEZ				SN	Sn	09 42 32.4	+0.5
PKE	**Pukeiti**	**1.18**	**45**	PN	Pn	09 42 17.6	-0.7
PKE				SN	Sn	09 42 34.0	+0.8
PKE				AML	AML	09 42 34.7	
PREZ	**Palmer Road**	**1.18**	**55**	PN	Pn	09 42 18.0	-0.4
NEZ	**North Egmont**	**1.19**	**51**	PN	Pn	09 42 17.6	-0.9
NNZ	**Nelson**	**1.24**	**164**	⇑PN	Pn	09 42 18.3	-0.8
NNZ				SN	Sn	09 42 34.0	-0.6
NNZ				AML	AML	09 42 36.2	
LREZ	**Lake Rotokare**	**1.28**	**64**	PN	Pn	09 42 19.3	-0.4
DREZ	**Durham Road**	**1.30**	**50**	PN	Pn	09 42 19.5	-0.5
DREZ				SN	Sb	09 42 37.5	-0.9
MHEZ	**Mangahewa**	**1.45**	**49**	⇑PN	Pn	09 42 21.8	-0.2
TCW	**Tory Channel**	**1.57**	**139**	PN	Pn	09 42 23.2	-0.5
TCW				AML	AML	09 42 45.9	
TCW				AML	AML	09 42 48.1	
TUWZ	**Tuamarina**	**1.60**	**151**	PN	Pn	09 42 23.6	-0.5
TUWZ				AML	AML	09 42 45.2	
TUWZ				AML	AML	09 42 45.6	
WAZ	**Wanganui**	**1.62**	**81**	⇓PN	Pn	09 42 23.6	-0.8
WAZ				AML	AML	09 42 47.3	
WAZ				AML	AML	09 42 48.3	
VRZ	**Vera Road**	**1.69**	**58**	⇓PN	Pn	09 42 24.6	-0.7
VRZ				AML	AML	09 42 53.3	
VRZ				AML	AML	09 42 55.1	
THZ	**Tophouse**	**1.73**	**180**	PN	Pn	09 42 26.3	+0.3
THZ				AML	AML	09 42 52.7	
THZ				AML	AML	09 42 53.9	
KIW	**Kapiti Island**	**1.73**	**119**	PN	Pn	09 42 25.2	-0.8
KIW				AML	AML	09 42 49.9	
KIW				AML	AML	09 42 50.0	
BSWZ	**Blackbirch Sta**	**1.83**	**157**	PN	Pn	09 42 28.1	+0.7
WEL	**Wellington**	**1.89**	**132**	PN	Pn	09 42 29.6	+1.6
DSZ	**Denniston Nort**	**1.91**	**206**	AML	AML	09 43 00.2	
DSZ				AML	AML	09 43 02.5	
CAW	**Cannon Point**	**1.96**	**124**	PN	Pn	09 42 31.0	+2.0
CAW				AML	AML	09 42 56.4	
CAW				AML	AML	09 42 57.7	
BHW	**Baring Head**	**2.02**	**133**	PN	Pn	09 42 30.2	+0.2
BHW				AML	AML	09 42 59.6	
BHW				AML	AML	09 43 02.7	
MTVZ	**Mangateitei**	**2.07**	**73**	PN	Pn	09 42 30.4	-0.3
MTVZ				AML	AML	09 42 59.8	
MTVZ				AML	AML	09 43 02.0	
MRZ	**Mangatainoka R**	**2.13**	**108**	PN	Pn	09 42 31.3	-0.1
MRZ				AML	AML	09 43 01.0	
MRZ				AML	AML	09 43 03.2	
HIZ	**Hauiti**	**2.14**	**45**	⇓PN	Pn	09 42 30.6	-0.9
HIZ				AML	AML	09 43 03.2	
HOWZ	**Holdsworth Sta**	**2.16**	**114**	PN	Pn	09 42 33.7	+1.8
TWVZ	**Taurewa**	**2.17**	**65**	PN	Pn	09 42 31.4	-0.7
TWVZ				AML	AML	09 43 02.7	
TWVZ				AML	AML	09 43 04.7	
FWVZ	**Far West T-bar**	**2.18**	**70**	⇓PN	Pn	09 42 31.7	-0.6
FWVZ				AML	AML	09 43 03.0	
FWVZ				AML	AML	09 43 03.2	
WNVZ	**Wahianoa**	**2.19**	**72**	⇑PN	Pn	09 42 32.0	-0.3
POWZ	**Post Office Ro**	**2.21**	**100**	PN	Pn	09 42 34.4	+1.8
WTVZ	**West Tongariro**	**2.26**	**67**	PN	Pn	09 42 32.8	-0.6
WTVZ				AML	AML	09 43 05.2	
WTVZ				AML	AML	09 43 08.2	
MTW	**Mount Morrison**	**2.27**	**121**	PN	Pn	09 42 35.8	+2.4
MTW				AML	AML	09 43 06.9	
MTW				AML	AML	09 43 07.6	
MOVZ	**Moawhango**	**2.27**	**75**	PN	Pn	09 42 33.1	-0.4
MOVZ				AML	AML	09 43 04.7	
MOVZ				AML	AML	09 43 05.2	
OTVZ	**Oturere**	**2.29**	**69**	PN	Pn	09 42 33.3	-0.5
OTVZ				AML	AML	09 43 06.3	
OTVZ				AML	AML	09 43 13.0	
KRVZ	**Karewarewa**	**2.30**	**67**	PN	Pn	09 42 33.3	-0.7
KRVZ				AML	AML	09 43 07.5	
KRVZ				AML	AML	09 43 09.3	
PAWZ	**Paruwai Farm**	**2.34**	**126**	PN	Pb	09 42 37.5	-2.1
PAWZ				AML	AML	09 43 09.1	
PAWZ				AML	AML	09 43 10.7	
TSZ	**Takapari Road**	**2.34**	**92**	PN	Pn	09 42 36.1	+1.8
TSZ				AML	AML	09 43 09.0	
TSZ				AML	AML	09 43 16.2	
PLWZ	**Palliser**	**2.35**	**132**	PN	Pb	09 42 38.3	-1.6
TIWZ	**Tintock**	**2.39**	**109**	PN	Pn	09 42 35.8	+0.8
TIWZ				AML	AML	09 43 11.4	
TIWZ				AML	AML	09 43 11.5	
PRWZ	**Pori Road**	**2.39**	**104**	PN	Pn	09 42 37.4	+2.3
KHZ	**Kahutara**	**2.43**	**169**	PN	Pn	09 42 36.8	+1.2
BHHZ	**Black Hill Sta**	**2.48**	**78**	PN	Pn	09 42 36.4	0.0
RATZ	**Rangitukua**	**2.50**	**63**	PN	Pn	09 42 36.6	+0.1
RATZ				AML	AML	09 42 47.1	
RATZ				AML	AML	09 43 18.3	
DVHZ	**Dannevirke**	**2.50**	**97**	PN	Pb	09 42 40.5	-1.9
TRWZ	**Traveller**	**2.51**	**124**	PN	Pb	09 42 42.4	-0.2
TRWZ				AML	AML	09 43 16.1	
PNHZ	**Pukenui**	**2.53**	**88**	PN	Pb	09 42 40.4	-2.5
BFZ	**Birch Farm**	**2.63**	**105**	PN	Pn	09 42 40.3	+2.1
BFZ				AML	AML	09 43 23.9	
TLZ	**Tolley Road**	**2.65**	**51**	⇓PN	Pn	09 42 37.9	-0.8
KRHZ	**Kereru**	**2.69**	**83**	PN	Pn	09 42 40.2	+1.1
ANWZ	**Angora Road**	**2.76**	**100**	PN	Pn	09 42 43.0	+3.0
LTZ	**Lake Taylor**	**2.79**	**190**	PN	Pn	09 42 42.7	+2.1
LTZ				AML	AML	09 43 28.1	
LTZ				AML	AML	09 43 28.1	
BKZ	**Black Stump Fm**	**2.90**	**74**	PN	Pn	09 42 41.7	-0.3
BKZ				AML	AML	09 43 31.2	
INZ	**Inchbonnie**	**2.91**	**202**	PN	Pn	09 42 42.9	+0.7
TOZ	**Tahuroa Road**	**3.06**	**42**	⇑PN	Pn	09 42 43.5	-0.7
AWAZ	**Awhitu Peninsu**	**3.26**	**25**	PN	Pn	09 42 46.8	-0.1
KBAZ	**Karaka Road Bo**	**3.31**	**28**	PN	Pn	09 42 48.0	+0.3
WTAZ	**Waiatarua**	**3.35**	**23**	PN	Pn	09 42 48.7	+0.4
MKAZ	**Moumakai**	**3.41**	**32**	PN	Pn	09 42 48.9	-0.1
WVZ	**Waitaha Valley**	**3.45**	**208**	PN	Pn	09 42 51.4	+1.8
WIAZ	**Waiheke Island**	**3.67**	**29**	PN	Pn	09 42 52.8	+0.2
ABAZ	**Army Bay**	**3.74**	**24**	PN	Pn	09 42 53.6	0.0
WCZ	**Waipu Caves**	**4.24**	**16**	PN	Pn	09 43 00.5	+0.1
GRZ	**Great Barrier**	**4.27**	**29**	PN	Pn	09 43 00.5	-0.3
OUZ	**Omahuta**	**4.83**	**7**	PN	Pn	09 43 09.2	+0.6

*NIED **02** 09:49:00, 37°.20N×144°.00E, h5km, Mw4.3 Best double couple: M₀3.27000×10¹⁵ NP1:φs61.00000°, δ32.00000°, λ-90.00000°. NP2:φs241.00000°, δ58.00000°, λ-90.00000°.*

*IDC **02** 09:49:23.6±0.6, 37°.03N×144°.36E, h0km, mb4.2/24, mb1 4.4/31, mb1mx4.2/64, mbtmp4.2/31, ML3.6/6, MS3.3/19, Ms1 3.4/19, ms1mx3.2/46, Error ellipse: s-maj=15.0km s-min=13.1km az=128.0*

*ISCJB **02** 09:49:28.2±0.2, 37°.18N±0°.03×144°.04E±0°.03, h33km, mb4.5/69, MS3.5/16, Error ellipse: s-maj=4.5km s-min=2.9km az=162.7*

*JMA **02** 09:49:28.3±0.3, 37°.24N×144°.03E, h57km, M4.5*

*NEIC **02** 09:49:30.0±0.7, 37°.12N×144°.19E, h37km±6km, mb4.7/38, Error ellipse: s-maj=6.9km s-min=4.6km az=146.0*

ISC 02 09:49:29.6±0.5**, 37°.22N**±0°.04×**144°.16E**±0°.06**, h35**km**, n155, σ1.56**/160**, mb4.6**/69**, MS3.5**/16**, 1D, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**2.55**	**300**	P	**Pn**	**09 50 06.8**	**-1.6**
JIO				*e*S	**Sn**	**09 50 35.4**	**-2.8**
ONAJ	**Iwakimizuishiy**	**2.69**	**269**	P	**Pn**	**09 50 09.2**	**-1.3**
ONAJ				*e*S	**Sn**	**09 50 38.8**	**-3.0**
OFUJ	**Ofunato**	**2.71**	**314**	*e*S	**Sn**	**09 50 38.6**	**-3.6**
JMK	**Ichinoseki**	**2.90**	**308**	P	**Pn**	**09 50 11.7**	**-1.5**
JMK				*e*S	**Sn**	**09 50 44.3**	**-2.6**
JFT	**Otama**	**3.06**	**277**	P	**Pn**	**09 50 15.5**	**-0.1**
JFT				*e*S	**Sn**	**09 50 49.2**	**-1.8**
JOM	**Ohasama**	**3.19**	**316**	P	**Pn**	**09 50 15.8**	**-1.5**
JOM				S	**Sn**	**09 50 51.7**	**-2.4**
JYK	**Kaneyama**	**3.45**	**301**	P	**Pn**	**09 50 20.4**	**-0.5**
JYK				*e*S	**Sn**	**09 50 59.0**	**-1.5**
BSO1	**Boso 1**	**3.63**	**226**	P	**Pn**	**09 50 20.6**	**-2.3**
BSO1				*e*S	**Sn**	**09 51 01.7**	**-2.6**
JRY	**Ryogami san**	**4.40**	**256**	P	**Pn**	**09 50 32.3**	**-1.6**
JRY				*e*S	**Sn**	**09 51 20.0**	**-3.9**
JOD2	**Odawara 2**	**4.54**	**246**	P	**Pn**	**09 50 34.0**	**-1.9**
JOD2				*e*S	**Sn**	**09 51 23.0**	**-4.4**
JOT	**Ohata**	**4.81**	**331**	P	**Pn**	**09 50 39.1**	**-0.4**
JOT				*e*S	**Sn**	**09 51 29.1**	**-4.9**
MJAR	**Matsushiro Arr**	**4.82**	**264**	Pn	**Pn**	**09 50 39.5**	**-0.2**
	7.3nm,0.3s,baz=73,slow=9.3,SNR=59						
MJAR				Sn	**Sn**	**09 51 32.5**	**-1.8**
	4.6nm,0.3s,baz=94,slow=18,SNR=5.2						
MJAR				LR	LR	09 53 26.1	
	comp=Z,145nm,19.0s,baz=105,slow=49						
MAJO	**Matsushiro**	**4.82**	**264**	*e*Pn	**Pn**	**09 50 40.2**	**+0.4**
MAT	**Matsushiro**	**4.82**	**264**	P	**Pn**	**09 50 40.0**	**+0.3**
MAT				S	**Sn**	**09 51 33.8**	**-0.6**
MJB9	**Matsu-Tunnel**	**4.82**	**264**	*e*Pn	**Pn**	**09 50 40.4**	**+0.7**
ERM	**Erimo**	**4.86**	**351**	*e*Pn	**Pn**	**09 50 39.4**	**-0.7**
ERM				*e*Sn	**Sn**	**09 51 30.7**	**-4.4**
JKB	**Kayabe**	**5.26**	**334**	P	**Pn**	**09 50 44.5**	**-1.1**
JKB				*e*S	**Sn**	**09 51 39.7**	**-5.3**
JHJ2	**Mitsune**	**5.42**	**222**	P	**Pn**	**09 50 45.5**	**-2.5**
JHJ2				*e*S	Sn	09 51 42.1	-7.1
JHJ2	**Mitsune**	**5.42**	**222**	*e*Pn	**Pn**	**09 50 48.3**	**+0.3**
JHJ2				*e*Sn	**Sn**	**09 51 45.1**	**-4.0**
JHJ2				*e*Sg	**Sn**	**09 51 46.7**	**-2.4**
JCH	**Churui**	**5.43**	**354**	P	**Pn**	**09 50 45.4**	**-2.6**
JCH				*e*S	Sn	09 51 41.8	-7.4
JHJ	**Hachijo jima 2**	**5.44**	**223**	Pn	**Pn**	**09 50 45.7**	**-2.5**
	53nm,0.3s,baz=283,slow=21,SNR=16						
JHJ				Sn	Sn	09 51 41.4	-8.1
	195nm,0.3s,baz=208,slow=22,SNR=10						
INU	**Inuyama**	**6.07**	**254**	*e*Pn	**Pn**	**09 50 58.5**	**+1.7**
NEM2	**Nemuro 2**	**6.26**	**11**	P	Pn	09 50 54.8	-4.6
NEM2				*e*S	Sn	09 52 00.4	-9.3
JTKR	**Abashiri--Toko**	**6.75**	**358**	P	**Pn**	**09 51 03.3**	**-2.9**
JTKR				*e*S	Sn	09 52 14.1	-7.7
JHR	**Hokuryu**	**6.78**	**345**	P	**Pn**	**09 51 05.8**	**-0.8**
JHR				*e*S	**Sn**	**09 52 19.5**	**-3.0**
CBIJ	**Chichi jima**	**10.23**	**190**	Pn	Pn	09 51 47.6	-6.3
CBIJ				Sn	Sn	09 53 34.8	-13
JCJ	**Chichijima**	**10.23**	**190**	Pn	Pn	09 51 47.6	-6.3
	8.6nm,0.3s,baz=90,slow=22,SNR=12						
JCJ				Sn	Sn	09 53 34.8	-13
	baz=90,slow=20						
USRK	**Ussuriysk Ar.**	**11.57**	**311**	Pn	**Pn**	**09 52 12.3**	**+0.1**
	0.5nm,0.3s,baz=124,slow=14,SNR=9.3						
USRK				LR	LR	09 56 21.2	
	comp=Z,136nm,19.1s,baz=125,slow=35						
JNU	**Nakatsue**	**11.61**	**253**	LR	LR	09 57 16.0	
	comp=Z,89nm,18.3s,baz=122,slow=40						
KSRS	**Korea Array**	**12.93**	**276**	Pn	**Pn**	**09 52 31.6**	**+0.8**
	0.3nm,0.3s,baz=90,slow=14,SNR=4.6						
KSRS				LR	LR	09 56 50.8	
	comp=Z,58nm,20.4s,baz=70,slow=34						
KSAR	**Wonju Array Be**	**12.96**	**276**	Pn	**Pn**	**09 52 31.6**	**+0.4**
KLR	**Kul'dur**	**15.01**	**327**	Pn	**P**	**09 53 01.8**	**-2.3**
	0.3nm,0.3s,baz=123,slow=11,SNR=7.8						
KLR				LR	LR	09 58 43.7	
	comp=Z,192nm,20.4s,baz=120,slow=37						
PETK	**Petropavlovsk-**	**18.48**	**26**	P	**Pn**	**09 53 43.2**	**+0.5**
	0.1nm,0.3s,baz=219,slow=12,SNR=4.3						
PETK				LR	LR	10 02 09.8	
	comp=Z,66nm,18.9s,baz=214,slow=41						
NJ2	**Nanjing**	**21.43**	**264**	*e*P	**P**	**09 54 14.4**	**-0.2**
NJ2				pmax	pmax		
	comp=Z,12nm,0.5s						
MA2	**Magadan**	**22.78**	**9**	P	**P**	**09 54 29.7**	**+0.9**
	comp=Z,2.9nm,0.5s,baz=219,slow=9.8,SNR=5.4						
MA2				LR	LR	10 03 56.4	
	comp=Z,31nm,20.9s,baz=197,slow=38						
GUMO	**Guam**	**23.54**	**178**	LR	LR	10 02 12.0	
	comp=Z,94nm,21.5s,baz=2.5,slow=33						
HHC	**Hu-ho-hao-te**	**25.50**	**288**	*e*P	**P**	**09 54 55.7**	**+1.0**
HHC				sP	sP	09 55 07.9	-1.1
HHC				S	**S**	**09 59 22.4**	**+2.6**
HHC				sS	sS	09 59 31.1	-5.2
HHC				pmax	pmax		
	comp=Z,23nm,0.9s						
HHC				pmax	pmax		
	comp=Z,110nm,5.1s						
HHC				LR	LR		
	comp=N,170nm,13.0s						
HHC				LR	LR		
	comp=E,190nm,10.8s						
HHC				LR	LR		
	comp=Z,160nm,10.6s						
SEY	**Seymchan**	**26.24**	**9**	P	**P**	**09 55 02.1**	**+1.1**
	comp=Z,9.3nm,0.6s,baz=184,slow=6.6,SNR=56						
H11N2	**WAKE ISLAND Hy**	**26.40**	**125**	T	T	10 22 02.2	
	baz=316,slow=75,SNR=86						
H11N1	**WAKE ISLAND Hy**	**26.41**	**125**	T	T	10 22 03.1	
	baz=316,slow=75,SNR=50						
H11N3	**WAKE ISLAND Hy**	**26.42**	**125**	T	T	10 21 57.9	
	baz=316,slow=75,SNR=63						
YAK	**Yakutsk**	**26.43**	**345**	LR	LR	10 05 58.4	
	comp=Z,87nm,21.4s,baz=152,slow=37						
H11S1	**WAKE ISLAND Hy**	**27.16**	**127**	T	T	10 22 55.2	
	baz=318,slow=76,SNR=46						
H11S3	**WAKE ISLAND Hy**	**27.16**	**127**	T	T	10 22 55.5	
	baz=318,slow=76,SNR=27						
H11S2	**WAKE ISLAND Hy**	**27.18**	**127**	T	T	10 22 58.0	
	baz=318,slow=76,SNR=23						
SONM	**Songino Array**	**29.52**	**303**	P	**P**	**09 55 33.6**	**+2.9**
	comp=Z,0.5nm,0.4s,baz=108,slow=8.1,SNR=4.8						
SONM				LR	LR	10 07 46.9	
	comp=Z,49nm,18.4s,baz=88,slow=37						
LZH	**Lanzhou**	**32.20**	**280**	*e*P	P	09 55 46.5	-8.0
LZH				pP	pP	09 55 54.0	-11
LZH				sP	sP	09 55 58.6	-10
LZH				pmax	pmax		
	comp=Z,31nm,1.4s						
BILL	**Bilibino**	**33.26**	**15**	*e*P	**P**	**09 56 02.8**	**-0.3**
	comp=Z,9.6nm,0.9s						
GYA	**Guiyang**	**33.42**	**262**	P	**P**	**09 56 05.8**	**+0.6**
GYA				pmax	pmax		
	comp=Z,10.0nm,0.8s						
CD2	**Chengdu**	**33.87**	**271**	P	**P**	**09 56 07.7**	**-1.3**
CD2				pmax	pmax		
	comp=Z,1.0nm,0.5s						
GTA	**Gaotai**	**34.61**	**288**	*e*P	**P**	**09 56 15.0**	**-0.4**
GTA				pP	pP	09 56 22.3	-3.2
GTA				sP	sP	09 56 25.6	-4.2
GTA				S	**S**	**10 01 42.9**	**+0.4**
GTA				sS	sS	10 01 54.3	-4.9
GTA				SS	SnSn	10 03 35.1	-21
GTA				pmax	pmax		
	comp=Z,5.0nm,0.9s						
GTA				pmax	pmax		
	comp=Z,40nm,5.9s						
GTA				LR	LR		
	comp=N,200nm,13.3s						
GTA				LR	LR		
	comp=E,130nm,16.2s						
GTA				LR	LR		
	comp=Z,140nm,14.7s						
KMI	**Kunming**	**37.16**	**263**	P	**P**	**09 56 37.8**	**+0.3**
KMI				pP	pP	09 56 44.3	-3.4
KMI				sP	sP	09 56 48.0	-3.9
KMI				S	**S**	**10 02 21.0**	**-1.1**
KMI				sS	sS	10 02 32.7	-6.1
KMI				pmax	pmax		
	comp=Z,9.0nm,0.6s						
KMI				pmax	pmax		
	comp=Z,19nm,3.1s						
KMI				LR	LR		
	comp=N,81nm,3.8s						
KMI				LR	LR		
	comp=E,84nm,4.2s						
KMI				LR	LR		
	comp=Z,74nm,4.7s						
GAMB	**Gambell**	**37.43**	**31**	*e*P	P	09 56 44.9	+5.9
	comp=Z,6.1nm,0.4s						
WMQ	**Urumqi**	**42.72**	**297**	*e*P	**P**	**09 57 24.8**	**+1.5**
WMQ				pP	pP	09 57 31.7	-1.9
WMQ				sP	sP	09 57 36.5	-1.2
WMQ				S	**S**	**10 03 44.6**	**+0.1**
WMQ				pmax	pmax		
	comp=Z,3.0nm,0.6s						
WMQ				pmax	pmax		
	comp=Z,57nm,4.2s						
WMQ				LR	LR		
	comp=N,34nm,24.0s						
WMQ				LR	LR		
	comp=E,22nm,28.8s						
WMQ				LR	LR		
	comp=Z,24nm,27.2s						
ZAA0	**Zalesovo Array**	**43.42**	**312**	*e*P	**P**	**09 57 29.3**	**+0.6**
ZALV	**Zalesovo Beam**	**43.42**	**312**	P	**P**	**09 57 28.8**	**+0.1**
	comp=Z,1.6nm,0.8s,baz=77,slow=6.7,SNR=5.9						
CMAR	**Chiang Mai Arr**	**43.67**	**257**	P	**P**	**09 57 32.6**	**+1.4**
	comp=Z,1.4nm,0.6s,baz=55,slow=7.0,SNR=5.5						
CMAR				LR	LR	10 16 55.1	
	comp=Z,20nm,19.3s,baz=55,slow=38						
SVW2	**Sparrevohn**	**44.04**	**37**	*e*P	**P**	**09 57 34.6**	**+1.0**
	comp=Z,13nm,1.2s						
RSO	**Redoubt South**	**45.40**	**38**	*e*P	**P**	**09 57 46.5**	**+1.8**
KDAK	**Kodiak Island**	**45.49**	**42**	*e*P	**P**	**09 57 45.1**	**-0.1**
	comp=Z,18nm,0.6s						
SPU	**Mount Spurr**	**45.76**	**37**	*e*P	**P**	**09 57 48.4**	**+1.1**
CAST	**Castle Rocks**	**45.84**	**34**	*e*P	**P**	**09 57 49.2**	**+1.2**
	comp=Z,30nm,1.8s						
MK01	**Makanchi Array**	**45.88**	**302**	*e*P	**P**	**09 57 48.8**	**+0.3**
MK31	**Makanchi Array**	**45.88**	**302**	*e*P	**P**	**09 57 48.8**	**+0.3**
MKAR	**Makanchi Array**	**45.88**	**302**	P	**P**	**09 57 49.1**	**+0.6**
	comp=Z,1.9nm,0.8s,baz=87,slow=9.4,SNR=17						
MKAR	**Makanchi Array**	**45.88**	**302**	*e*P	**P**	**09 57 48.8**	**+0.3**
KTH	**Kantishna Hill**	**46.37**	**34**	*e*P	**P**	**09 57 53.4**	**+1.3**
	comp=Z,18nm,1.4s						
MLY	**Manley**	**46.53**	**32**	*e*P	**P**	**09 57 54.6**	**+1.3**
	comp=Z,9.4nm,1.0s						
RC01	**Rabbit Creek A**	**46.88**	**37**	*e*P	**P**	**09 57 56.8**	**+0.7**
	comp=Z,13nm,1.2s						
PMR	**Palmer**	**47.17**	**37**	*e*P	**P**	**09 57 58.0**	**-0.3**
	comp=Z,9.7nm,1.2s						
MCK	**McKinley**	**47.26**	**34**	*e*P	**P**	**09 57 59.4**	**+0.3**
	comp=Z,5.2nm,1.0s						
RND	**Reindeer**	**47.29**	**34**	*e*P	**P**	**09 57 59.7**	**+0.4**
	comp=Z,14nm,1.3s						
KURK	**Kurchatov**	**47.55**	**308**	*e*P	**P**	**09 58 01.9**	**+0.5**
	comp=Z,5.2nm,0.7s						
MDM	**Murphy Dome**	**47.59**	**32**	*e*P	**P**	**09 58 02.9**	**+1.3**
	comp=Z,15nm,1.1s						
KURBB	**Kurchatov Arra**	**47.62**	**308**	P	**P**	**09 58 02.5**	**+0.6**
	comp=Z,2.5nm,0.6s,baz=82,slow=7.8,SNR=15						
IL1	**Eielson Array**	**48.16**	**32**	*e*P	**P**	**09 58 06.1**	**+0.1**
ILAR	**Eielson Array**	**48.16**	**32**	P	**P**	**09 58 06.0**	**-0.1**
	comp=Z,4.1nm,0.9s,baz=268,slow=6.3,SNR=32						
ILB	**Eielson Array**	**48.16**	**32**	*e*P	**P**	**09 58 06.2**	**+0.2**
HNR	**Honiara**	**48.71**	**159**	LR	LR	10 19 10.5	
	comp=Z,61nm,18.8s,baz=312,slow=37						
KLU	**Klutina**	**48.71**	**37**	*e*P	**P**	**09 58 11.4**	**+1.1**
	comp=Z,9.3nm,0.9s						
DIV	**Divide**	**48.80**	**37**	*e*P	**P**	**09 58 12.2**	**+1.1**
	comp=Z,22nm,1.2s						
PAX	**Paxson**	**48.83**	**35**	*e*P	**P**	**09 58 11.8**	**+0.5**
	comp=Z,19nm,1.8s						
FYU	**Fort Yukon**	**48.85**	**30**	*e*P	**P**	**09 58 13.2**	**+2.0**
	comp=Z,24nm,1.4s						
MENT	**Mentasta**	**49.63**	**35**	*e*P	**P**	**09 58 18.7**	**+1.3**
	comp=Z,9.3nm,1.3s						
VOSK	**Vostochnaya**	**51.79**	**312**	*e*P	**P**	**09 58 34.0**	**+0.2**
	comp=Z,3.0nm,0.9s						
BVAR	**Borovoye Array**	**52.07**	**313**	P	**P**	**09 58 36.7**	**+0.9**
	comp=Z,0.8nm,0.4s,baz=60,slow=9.5,SNR=7.0						
BVAR				PcP	**PcP**	**09 59 48.1**	**+0.6**
	comp=Z,2.2nm,0.7s,baz=67,slow=3.9,SNR=7.1						
KSH	**Kashi**	**52.33**	**295**	*e*P	P	09 58 42.9	+4.8
KSH				*e*pP	sP	09 58 50.5	-2.2
KSH				*e*sP	pP	09 58 53.7	+5.1
KSH				S	S	10 06 07.4	+6.1
KSH				sS	sS	10 06 21.1	+2.5
KSH				ScS	**ScS**	**10 08 26.9**	**+1.5**
KSH				pmax	pmax		
	comp=Z,68nm,4.0s						
KSH				LR	LR		
	comp=N,120nm,4.8s						
KSH				LR	LR		
	comp=E,84nm,4.6s						
KSH				LR	LR		
	comp=Z,180nm,5.6s						
INK	**Inuvik**	**53.22**	**27**	*e*P	**P**	**09 58 44.6**	**+0.6**
	comp=Z,4.4nm,0.6s						
WRA	**Warramunga Arr**	**57.60**	**191**	P	**P**	**09 59 14.4**	**-1.6**
	comp=Z,4.7nm,0.5s,baz=12,slow=7.3,SNR=27						
ARU	**Arti**	**57.67**	**319**	P	**P**	**09 59 17.1**	**+0.9**
	comp=Z,4.5nm,0.5s,baz=79,slow=5.0,SNR=8.3						
ARU	**Arti**	**57.67**	**319**	*e*P	**P**	**09 59 16.8**	**+0.6**
	comp=Z,26nm,1.6s						
ABKAR	**Akbulak array**	**59.49**	**311**	*e*P	**P**	**09 59 29.6**	**+0.5**
AKTO	**Aktyubinsk**	**60.18**	**313**	P	**P**	**09 59 34.4**	**+0.6**
	comp=Z,3.6nm,0.8s,baz=69,slow=11,SNR=7.7						
AKTO				PcP	**PcP**	**10 00 17.9**	**-1.2**
	comp=Z,2.4nm,0.7s,baz=52,slow=12,SNR=4.6						
AS01	**Alice Springs**	**61.31**	**191**	*e*P	**P**	**09 59 40.7**	**-1.0**
AS31	**Alice Springs**	**61.32**	**191**	*e*P	**P**	**09 59 40.7**	**-1.0**
	comp=Z,1.0nm,0.6s						
ASAR	**Alice Springs**	**61.32**	**191**	P	**P**	**09 59 40.5**	**-1.3**
	comp=Z,1.4nm,0.5s,baz=8.9,slow=8.2,SNR=29						
RES	**Resolute Bay**	**61.87**	**15**	*e*P	**P**	**09 59 45.0**	**+0.3**
	comp=Z,3.3nm,0.7s						
YKA	**Yellowknife Ar**	**62.54**	**31**	P	**P**	**09 59 49.4**	**0.0**
	comp=Z,0.7nm,0.7s,baz=298,slow=6.6,SNR=11						
YKA				PcP	**PcP**	**10 00 26.0**	**-2.3**
	comp=Z,0.2nm,0.5s,baz=300,slow=4.0,SNR=7.6						
ARCES	**ARCESS Array B**	**64.59**	**340**	LR	LR	10 33 48.8	
	comp=Z,26nm,19.4s,baz=54,slow=41						

STKA Stephens Creek 68.78 182 LR LR 10 29 56.0
comp=Z,28nm,21.7s,baz=25,slow=36
K05A Summer Lake 69.12 52 eP P 10 00 32.6 +0.2
comp=Z,16nm,1.0s
FINES FINESS Array B 69.66 333 P P 10 00 35.6 +0.4
comp=Z,1.9nm,0.7s,baz=38,slow=9.6,SNR=9.2
FINES LR LR 10 33 15.3
comp=Z,76nm,18.7s,baz=63,slow=38
KVAR Kislovodsk Arr 72.43 312 LR LR 10 35 25.0
comp=Z,31nm,18.8s,baz=97,slow=38
KBZ Khabaz 72.44 312 P P 10 00 53.9 +1.6
comp=Z,4.4nm,0.8s,baz=253,slow=1.2,SNR=10
NVAR Mina Array Bea 73.11 54 P P 10 00 57.6 +0.9
comp=Z,2.6nm,0.8s,baz=285,slow=6.7,SNR=16
NV01 Mina Array Sit 73.11 54 eP P 10 00 57.1 +0.4
H17A Grant Village 74.38 46 eP P 10 01 06.4 +2.3
NB2 NORSAR Subarra 74.85 338 P P 10 01 06.2 0.0
comp=Z,1.0nm,0.5s,baz=37,slow=5.9
NOA NORSAR Array B 74.85 338 P P 10 01 06.8 +0.6
comp=Z,1.5nm,0.6s,baz=45,slow=4.6,SNR=7.5
NOA LR LR 10 37 55.9
comp=Z,39nm,21.6s,baz=20,slow=39
R11A Troy Canyon, C 74.91 53 eP P 10 01 08.0 +0.8
TPNV Topopah Spring 75.29 55 eP P 10 01 09.7 +0.3
comp=Z,4.8nm,1.1s
AKASG Malin Array Be 75.48 323 P P 10 01 10.7 +0.7
comp=Z,4.9nm,0.6s,baz=44,slow=6.1,SNR=17
AKBB Malin Array Si 75.48 323 eP P 10 01 10.8 +0.9
comp=Z,9.5nm,0.9s
KIEV Kiev 75.49 323 eP P 10 01 10.3 +0.3
comp=Z,7.2nm,0.8s
AK11 Malin Array Si 75.52 323 eP P 10 01 10.8 +0.7
PDAR Pinedale Array 75.96 47 P P 10 01 12.6 -0.6
comp=Z,0.3nm,0.5s,baz=45,slow=1.3,SNR=5.0
LCMT Little Creek M 77.19 53 eP P 10 01 21.3 +1.2
comp=Z,3.8nm,1.3s
P17A Butcher Ranch, 77.27 50 eP P 10 01 22.0 +1.5
comp=Z,7.3nm,1.3s
KNB Kanab 77.46 53 eP P 10 01 22.9 +1.2
comp=Z,8.0nm,1.3s
SRU San Rafael Swe 77.62 50 eP P 10 01 23.3 +0.7
comp=Z,3.3nm,0.9s
PV10 Paradox Valley 78.99 50 eP P 10 01 31.7 +1.5
KWP Kalwaria Pacla 79.24 326 eP P 10 01 32.9 +1.8
KOLS Kolonicke sedl 79.94 325 eP P 10 01 36.0 +1.1
STHS Stebnicka Huta 80.05 326 eP P 10 01 37.5 +2.0
OJC Ojcow 80.09 327 eP P 10 01 37.1 +1.4
OJC Ojcow 80.09 327 eP P 10 01 36.8 +1.1
comp=Z,11nm,1.0s
BRTR Keskin Array B 80.36 313 P P 10 01 38.9 +1.4
comp=Z,1.7nm,0.9s,baz=112,slow=5.5,SNR=8.4
BR231 Keskin MP Arra 80.78 313 eP P 10 01 39.1 -0.6
LANS Liptovska Anna 81.03 327 eP P 10 01 42.5 +1.7
KECS Kecovo 81.08 326 eP P 10 01 40.1 -0.9
OKC Ostrava-Krasne 81.08 328 eP P 10 01 42.1 +1.1
MORC Moravsky Berou 81.38 328 eP P 10 01 43.2 +0.5
comp=Z,31nm,1.1s
DPC Dobruska-Polom 81.45 329 eP P 10 01 44.3 +1.3
UPC Upice 81.45 329 eP P 10 01 44.1 +1.1
PSZ Piszkesteto 81.76 326 eP P 10 01 45.4 +0.7
comp=Z,7.1nm,1.0s
VYHS Vyhne 81.80 327 eP P 10 01 46.2 +1.4
BRG Berggiesshubel 81.99 331 i PKP P 10 01 46.5 +0.7
comp=Z,5.8nm,0.9s
CLL Collm 82.01 331 ⇓iP P 10 01 46.4 +0.6
comp=Z,11nm,0.8s
CLL i pP pP 10 01 56.4 -0.5
CLL Collm 82.01 331 eP P 10 01 46.2 +0.4
comp=Z,12nm,0.7s
PVCC Panska Ves 82.02 330 eP P 10 01 47.2 +1.3
SMOL Smolenice 82.40 327 eP P 10 01 48.7 +0.8
GOPC GO Pecny, Ondr 82.41 330 eP P 10 01 49.3 +1.3
PRU Pruhonice 82.45 330 eP P 10 01 49.8 +1.6
KHC Kasperske Hory 83.51 330 eP P 10 01 54.6 +0.8
KHC epP pP 10 02 05.4 +0.6
KHC Kasperske Hory 83.51 330 eP P 10 01 54.0 +0.3
comp=Z,2.2nm,0.8s
MMAI Mount Meron Ar 83.64 307 P P 10 01 56.4 +1.7
comp=Z,2.9nm,0.6s,baz=56,slow=6.1,SNR=5.9
GEC2 GERESS Array S 83.69 330 eP P 10 01 55.2 +0.4
comp=Z,2.9nm,0.7s
GERES GERESS Array B 83.69 330 P P 10 01 55.4 +0.6
comp=Z,1.6nm,0.6s,baz=33,slow=6.3,SNR=15
GERES LR LR 10 41 23.7
comp=Z,56nm,21.9s,baz=31,slow=37
SCHQ Schefferville 84.53 17 LR LR 10 40 22.6
comp=Z,21nm,21.9s,baz=34,slow=36
BFO Black Forest 86.19 332 eP P 10 02 07.0 -0.3
comp=Z,12nm,1.2s
TXAR Lajitas Array 88.25 54 P P 10 02 15.9 -1.7
comp=Z,0.6nm,0.6s,baz=294,slow=3.5,SNR=7.6
TORD Torodi Ar. Bea 118.72 317 PKP PKPdf 10 08 13.7 -0.9
comp=Z,0.6nm,1.0s,baz=17,slow=2.5,SNR=2.7
VNA2 Neumayer--Watz 143.09 195 PKP PKPbc 10 08 54.8 -0.8
baz=134,slow=1.0
VNA3 Neumayer Olymp 143.29 194 PKP PKPbc 10 08 55.5 -0.7
LPAZ La Paz 144.68 63 PKP PKPab 10 09 01.8 -0.7
comp=Z,1.0nm,0.7s,baz=35,slow=7.7,SNR=3.7

MEX 02 09:52:31.9±1.0, 16°.82N×100°.11W, h5km, MD3.9, Near coast of Guerrero

Code Station Name Δ° AZ° Phase ID Op ISC Time h m s Res ISC
ACP2 Acapulco 0.22 74 i P Pg 09 52 35.9 -0.3
ACP2 eS Sg 09 52 39.2 +0.1
ACX Acapulco 0.24 77 i P Pg 09 52 32.2 -4.5
ACX eS Sg 09 52 35.8 -4.2
CAIG El Cayaco 0.28 326 i P Pg 09 52 36.7 -0.6
CAIG eS Sg 09 52 40.8 -0.2
ARIG Puente Sto Nin 1.48 351 eP Pn 09 52 56.2 -3.0
ARIG eS Sn 09 53 14.0 -4.9
ZIIG Zihuatanejo 1.52 301 eP Pn 09 52 57.0 -2.7
ZIIG eS Sn 09 53 14.9 -4.9
TLIG Tlapa 1.65 63 eP Pn 09 52 58.4 -3.2
TLIG eS Sn 09 53 18.6 -4.7
PLIG Platanillo 1.67 20 i P Pn 09 52 59.1 -2.8
PLIG eS Sn 09 53 19.2 -4.6
PNIG Pinotepa 1.94 102 eP Pn 09 53 01.4 -4.2
PNIG eS Sn 09 53 25.7 -4.8
YAIG Yautepec 2.26 26 eP Pn 09 53 06.5 -3.6
YAIG eS Sn 09 53 34.4 -4.2
VHO Vista Hermosa 3.24 85 eP Pn 09 53 20.8 -2.8
VHO eS Sn 09 53 59.6 -3.1

MAN 02 09:55:23, 7°.19N×123°.77E, h7km, mb3.9, ML2.6, MS2.2, 1D, Mindanao

Code Station Name Δ° AZ° Phase ID Op ISC Time h m s Res ISC
CTBH Cotabato--PC H 0.48 87 ⇓i P Pg 09 55 32.9 +0.7
CTBH i S Sb 09 55 41.4 +0.4
PAGZ Pagadian 0.75 330 eP Pb 09 55 38.1 -0.4
PAGZ eS Sn 09 55 51.0 -0.8
BUKP Musuan 1.46 62 eP Pn 09 55 49.5 -0.3
BUKP eS Sn 09 56 01.1 -8.1

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*IDC **02** 09:56:15.8±0.9, 14°.60N×52°.29E, h0km, mb3.8/13, mb1 3.9/13, mb1mx3.6/71, mbtmp3.8/13, MS3.4/13, Ms1 3.4/13, ms1mx3.1/51, Error ellipse: s-maj=24.9km s-min=21.3km az=77.0*
*ISCJB **02** 09:56:16.2±0.6, 14°.7N±0°.1×52°.13E±0°.06, h15km, mb3.7/13, MS3.3/13, Error ellipse: s-maj=16.2km s-min=6.7km az=164.4*
ISC 02 09:56:18.0±0.8**, 14°.6N**±0°.1×**52°.15E**±0°.08**, h15km, n29, σ1s12**/19**, mb3.9**/13**, MS3.3**/13**, Eastern Gulf of Aden**

Code Station Name Δ° AZ° Phase ID Op ISC Time h m s Res ISC
MUKL Al Mukalla 3.02 268 i P Pn 09 57 04.9 -0.4
MUKL e 09 57 05.2
baz=74,slow=10
MUKL AML AML 09 57 05.7
comp=Z,379nm,0.2s
MUKL i S Sn 09 57 39.1 -2.2
BDHA Al Bayda’ 6.42 265 i P Pn 09 57 54.3 +2.0
BDHA i S Sn 09 59 04.1 -1.3
ATD Arta Tunnel 9.57 252 Pn Pn 09 58 42.0 +6.7
comp=Z,2.9nm,0.3s,baz=116,slow=20,SNR=5.3
WSAR Wadi Sarin 10.55 35 Pn Pn 09 58 44.3 -4.4
comp=Z,0.3nm,0.3s,baz=240,slow=15,SNR=4.6
WSAR Sn Sn 10 00 31.2 -16

comp=Z,0.1nm,0.3s,baz=270,slow=4.0,SNR=2.6
KMBO Kilima Mbogo 21.49 225 P P 10 01 07.8 +1.1
comp=Z,1.0nm,0.5s,baz=34,slow=17,SNR=4.2
KMBO LR LR 10 09 04.7
comp=Z,126nm,19.5s,baz=88,slow=36
GEYT Alibeck 23.83 12 LR LR 10 12 35.9
comp=Z,236nm,19.1s,baz=195,slow=41
MMAI Mount Meron Ar 23.83 323 LR LR 10 11 52.7
comp=Z,36nm,21.8s,baz=85,slow=39
GNI Garni 26.27 347 LR LR 10 13 10.0
comp=Z,78nm,19.2s,baz=70,slow=39
PALK Pallekele 28.94 102 LR LR 10 11 08.3
comp=Z,43nm,21.4s,baz=296,slow=31
BRTR Keskin Array B 29.83 331 LR LR 10 15 37.9
comp=Z,50nm,18.9s,baz=123,slow=39
KBZ Khabaz 30.09 347 P P 10 02 27.4 +0.6
comp=Z,1.5nm,0.7s,baz=115,slow=14,SNR=2.7
KBZ LR LR 10 17 19.2
comp=Z,128nm,19.4s,baz=161,slow=42
IDI Anoyia 32.00 315 LR LR 10 16 53.2
comp=Z,25nm,18.5s,baz=43,slow=39
AKTO Aktyubinsk 36.05 6 LR LR 10 21 22.5
comp=Z,136nm,18.1s,baz=152,slow=42
AKASG Malin Array Be 40.51 338 P P 10 03 56.9 +0.7
comp=Z,0.1nm,0.3s,baz=137,slow=6.9,SNR=4.0
AKASG LR LR 10 24 31.3
comp=Z,34nm,18.3s,baz=265,slow=42
MKAR Makanchi Array 40.77 32 P P 10 03 58.2 -0.4
comp=Z,0.5nm,0.6s,baz=224,slow=7.3,SNR=4.9
BVAR Borovoye Array 40.97 17 P P 10 04 00.2 +0.1
comp=Z,0.9nm,0.6s,baz=212,slow=5.3,SNR=5.4
KURBB Kurchatov Arra 41.79 25 P P 10 04 05.2 -1.6
comp=Z,0.3nm,0.6s,baz=224,slow=7.9,SNR=3.3
CMAR Chiang Mai Arr 44.93 78 P P 10 04 32.0 -0.7
comp=Z,1.7nm,0.3s,baz=278,slow=8.9,SNR=5.1
ZALV Zalesovo Beam 46.86 26 P P 10 04 46.4 -0.9
comp=Z,0.8nm,0.7s,baz=251,slow=9.6,SNR=3.6
TORD Torodi Ar. Bea 48.93 275 LR LR 10 26 23.7
comp=Z,47nm,18.3s,baz=150,slow=37
FINES FINESS Array B 50.39 344 P P 10 05 15.1 +0.7
comp=Z,2.1nm,0.7s,baz=129,slow=8.1,SNR=6.8
HFS Hagfors 53.39 337 P P 10 05 36.5 -0.3
comp=Z,1.4nm,0.5s,baz=124,slow=8.0,SNR=6.3
TLY Talaya 55.16 36 LR LR 10 31 14.1
comp=Z,42nm,20.8s,baz=244,slow=38
SONM Songino Array 55.51 42 P P 10 05 53.2 +0.6
comp=Z,0.2nm,0.4s,baz=245,slow=7.7,SNR=2.9
NRIK Noril’sk 59.05 14 LR LR 10 34 16.9
comp=Z,51nm,18.7s,baz=206,slow=39
WRA Warramunga Arr 87.77 111 P P 10 09 06.0 -1.1
comp=Z,0.6nm,1.0s,baz=304,slow=3.9,SNR=3.2
ASAR Alice Springs 88.43 115 P P 10 09 09.9 -0.3
comp=Z,0.4nm,0.6s,baz=289,slow=4.8,SNR=12
PDAR Pinedale Array 120.49 344 PKP PKPdf 10 15 09.6 0.0
comp=Z,0.2nm,0.6s,baz=104,slow=3.8,SNR=3.0
NVAR Mina Array Bea 126.50 351 PKP PKPdf 10 15 22.2 +1.0
comp=Z,0.3nm,0.7s,baz=191,slow=0.9,SNR=3.4

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*IDC **02** 09:57:41.4±2.5, 54°.19N×87°.23E, h0km, mb1 3.4/3, mb1mx3.1/69, mbtmp3.4/3, ML3.3/3, Error ellipse: s-maj=21.9km s-min=13.9km az=57.0*
*NNC **02** 09:57:47.4±1.8, 54°.10N×86°.49E, h1km±10km, mb3.9, mpv3.5, Error ellipse: s-maj=12.6km s-min=7.9km az=58.0*
ISC 02 09:57:45.2±4.1**, 54°.3N**±0°.1×**87°.1E**±0°.2**, h35km, n12, σ0s96**/18**, 8C-6D, Southwestern Siberia**

Code Station Name Δ° AZ° Phase ID Op ISC Time h m s Res ISC
I46RU ZALESOVO INFRA 1.39 255 i 10 08 20.0
baz=78,slow=334,SNR=13
ZALV Zalesovo Beam 1.39 255 Pg Pn 09 58 07.1 -1.0
12nm,0.3s,baz=79,slow=17,SNR=65
ZALV Lg Lg 09 58 27.3
6.3nm,0.3s,baz=71,slow=28,SNR=8.1
KURK Kurchatov 6.31 238 ⇑Pn Pn 09 59 15.6 -0.1
7.2nm,0.8s
KURK ⇑Lg Lg 10 00 54.2
5.3nm,0.8s
KURBB Kurchatov Arra 6.41 238 Pn Pn 09 59 17.9 +0.8
0.5nm,0.3s,baz=54,slow=13,SNR=17
KURBB Sn Sn 10 00 30.4 +1.5
0.2nm,0.3s,baz=74,slow=37,SNR=5.6
KURBB Lg Lg 10 01 08.2
0.1nm,0.3s,baz=135,slow=17,SNR=5.8
KURBB Kurchatov Arra 6.41 238 ⇓Pn Pn 09 59 17.8 +0.8
2.8nm,0.3s
KURBB ⇓Sn Sn 10 00 27.9 -1.0
2.7nm,0.3s
KURBB ⇑Lg Lg 10 00 57.1
12nm,0.9s
MK31 Makanchi Array 8.13 204 ⇑Pn Pn 09 59 41.5 +0.7
0.7nm,0.7s,baz=29,slow=14,SNR=20
MK31 ⇓Sn Sn 10 01 11.9 +0.5
0.4nm,0.5s,baz=22,slow=24,SNR=5.7
MK31 ⇓Lg Lg 10 01 55.4
1.4nm,0.6s,baz=36,slow=32,SNR=3.8
MKAR Makanchi Array 8.13 204 Pn Pn 09 59 40.5 -0.3
0.4nm,0.3s,baz=27,slow=14,SNR=14
MKAR Sn Sn 10 01 10.4 -1.0
0.3nm,0.3s,baz=20,slow=25,SNR=5.8
MKAR Lg Lg 10 01 55.1
0.1nm,0.3s,baz=27,slow=26,SNR=4.0
CHKZ Chkalovo 9.73 273 ⇑Sn Sn 10 01 51.0 +0.7
0.6nm,0.4s
VOSK Vostochnaya 9.73 267 ⇓Pn Pn 10 00 03.0 +0.5
1.5nm,0.6s
VOSK ⇑Sn Sn 10 01 50.9 +0.3
4.5nm,1.1s
BVA0 Borovoye Array 10.00 269 ⇑Pn Pn 10 00 08.1 +1.9
2.5nm,0.9s,baz=82,slow=13,SNR=4.3
BVA0 ⇑Sn Sn 10 01 56.8 -0.3
1.6nm,0.7s,baz=70,slow=23,SNR=4.1
BVAR Borovoye Array 10.00 269 Pn Pn 10 00 06.5 +0.2
0.3nm,0.3s,baz=77,slow=14,SNR=5.1
BVAR Sn Sn 10 01 55.7 -1.4
0.5nm,0.3s,baz=74,slow=25,SNR=6.4
ZRNK Zerenda 10.83 270 ⇓Sn Sn 10 02 17.1 -0.3
1.2nm,0.7s

IDC 02 10:00:14.3±50.0**, 15°.97S**×**176°.93W, h0km, mb4.0**/3**, mb1 4.2**/3**, mb1mx3.6**/43**, mbtmp4.0**/3**, Error ellipse: s-maj=930.3km s-min=176.8km az=77.0, Fiji Islands region**

Code Station Name Δ° AZ° Phase ID Op ISC Time h m s Res ISC
STKA Stephens Creek 40.82 240 P P 10 07 57.9 0.0
1.8nm,0.4s,baz=97,slow=8.1,SNR=2.9
WRA Warramunga Arr 46.41 258 P P 10 08 42.9 -0.1
0.2nm,0.4s,baz=92,slow=7.7,SNR=2.5
ASAR Alice Springs 46.71 252 P P 10 08 45.1 -0.2
2.3nm,0.5s,baz=88,slow=8.2,SNR=53

JMA 02 10:03:40.7±0.4**, 37°.52N**×**142°.53E, h0km, M3.5, Off east coast of Honshu**

Code Station Name Δ° AZ° Phase ID Op ISC Time h m s Res ISC
JIO Ouri 1.32 315 P Pg 10 04 06.1 +0.1
JIO S Sb 10 04 23.9 +0.1
JMM Marumori 1.42 285 P Pn 10 04 07.1 -0.7
JMM eS Sg 10 04 25.7 -0.6
JOU Okura 1.70 300 P Pn 10 04 12.1 +0.5
JOU eS Sg 10 04 35.7 +0.4
JFT Otama 1.74 271 eS Sb 10 04 36.1 +0.1
JMK Ichinoseki 1.76 325 P Pn 10 04 12.7 +0.2
JYK Kaneyama 2.21 310 P Pn 10 04 19.5 +0.9

IDC 02 10:07:23.5±5.4**, 6°.73S**×**147°.44E, h80km**±57km**, mb3.1**/3**, mb1 3.3**/5**, mb1mx3.1**/40**, mbtmp3.4**/5**, ML3.5**/1**, MS3.5**/1**, Ms1 3.5**/1**, ms1mx2.6**/14**, Error ellipse: s-maj=65.4km s-min=35.2km az=125.0, Eastern New Guinea region**

Code Station Name Δ° AZ° Phase ID Op ISC Time h m s Res ISC
PMG Port Moresby 2.67 186 P Pn 10 08 05.7 +1.3
3.2nm,0.3s,baz=337,slow=7.7,SNR=10
PMG S Sn 10 08 36.4 +0.5
8.5nm,0.3s,baz=194,slow=21,SNR=5.6
WRA Warramunga Arr 18.28 223 P P 10 11 30.0 -1.1
0.2nm,0.3s,baz=47,slow=11,SNR=2.9
ASAR Alice Springs 21.28 216 P P 10 12 03.2 -0.5
0.4nm,0.4s,baz=49,slow=8.9,SNR=12

JNU Nakatsue 42.64 339 LR LR 10 29 17.7
comp=Z,57nm,21.0s,baz=125,slow=31
MKAR Makanchi Array 78.33 320 P P 10 19 15.0 -0.1
0.3nm,0.7s,baz=122,slow=5.4,SNR=2.7
ILAR Eielson Array 85.98 23 P P 10 19 54.0 -0.7
0.5nm,0.7s,baz=252,slow=5.1,SNR=5.1
TORD Torodi Ar. Bea 145.68 283 PKPbc PKPab 10 26 54.6 -0.1
2.0nm,0.6s,baz=70,slow=4.1,SNR=27

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*DDA **02** 10:19:45.9, 40°.26N×36°.57E, h7km, Md2.1*
*ISK **02** 10:19:45.6, 40°.26N×36°.55E, h7km, MD2.5*
*CSEM **02** 10:19:45.7±0.2, 40°.22N×36°.49E, h0km±2km, MD2.5, Error ellipse: s-maj=3.6km s-min=2.6km az=81.0*
*ISCJB **02** 10:19:46.2±0.6, 40°.25N±0°.03×36°.54E±0°.05, h8km±8km, Error ellipse: s-maj=7.0km s-min=5.7km az=165.2*
ISC 02 10:19:45.3±0.9**, 40°.23N**±0°.03×**36°.57E**±0°.04**, h8km**±7km**, n16, σ0s31**/28**, Turkey**

Code Station Name Δ° AZ° Phase ID Op ISC Time h m s Res ISC
TOKT Tokat 0.09 349 ePG Pg 10 19 47.8 +0.2
TOKT eSG Sg 10 19 49.0 -0.2
TOKT Tokat 0.09 349 ePg Pg 10 19 47.8 +0.2
TOKT eSg Sg 10 19 49.0 -0.2
TOKA Tokat 0.11 323 i P Pg 10 19 48.0 0.0
TOKA Tokat 0.11 323 P Pg 10 19 48.0 0.0
SVSK Karacayir 0.46 134 ePG Pb 10 19 55.5 -0.1
SVSK eSG Sb 10 20 02.4 -0.1
SVSK Karacayir 0.46 134 ePg Pb 10 19 55.5 -0.1
SVSK eSg Sb 10 20 02.4 -0.1
ERBA Erbaa 0.47 18 i P Pb 10 19 55.5 -0.4
ERBA i S Sb 10 20 02.9 -0.2
ERBA Erbaa 0.47 18 P Pb 10 19 55.5 -0.4
ERBA S Sb 10 20 02.9 -0.2
RSDY Resadiye-TOKAT 0.60 74 ePG Pb 10 19 57.8 -0.4
RSDY eSG Sb 10 20 06.8 -0.1
RSDY Resadiye-TOKAT 0.60 74 ePg Pb 10 19 57.8 -0.4
RSDY eSg Sb 10 20 06.8 -0.1
CUSAR Sarkisla-SIVAS 0.85 197 i P Pg 10 20 01.3 -0.4
CUSAR i S Sn 10 20 16.5 0.0
CUSAR Sarkisla-SIVAS 0.85 197 P Pg 10 20 01.3 -0.4
CUSAR S Sn 10 20 16.5 0.0
CUKAN kangal_SIVAS 1.15 143 i P Pn 10 20 08.5 +0.6
CUKAN i S Sn 10 20 24.2 +0.3
CUKAN kangal_SIVAS 1.15 143 P Pn 10 20 08.5 +0.6
CUKAN S Sn 10 20 24.2 +0.3
CORM Corum 1.48 269 ePN Pb 10 20 13.2 -0.1
CORM Corum 1.48 269 ePn Pb 10 20 13.2 -0.1

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*NIED **02** 10:22:00, 36°.80N×140°.60E, h5km, Mw4.1 Best double couple: $M_0$1.86000×10^15 NP1:ϕ_s344.00000°, δ23.00000°, λ-104.00000°. NP2:ϕ_s179.00000°, δ67.00000°, λ-84.00000°.*
*ISCJB **02** 10:22:54.3±0.5, 36°.81N±0°.03×140°.55E±0°.03, h12km±3km, mb4.3/57, MS3.2/3, Error ellipse: s-maj=5.0km s-min=3.7km az=142.3*
*JMA **02** 10:22:54.5, 36°.82N×140°.57E, h6km±1km, M4.4 Broadband fault plane solution: P waves. NP1: ϕ_s201.00000°, δ84.00000°, λ-80.00000°. NP2: ϕ_s323.00000°, δ11.00000°, λ-147.00000°. Principal axes: T Plg38.0000°, Azm282.0000°; N Plg9.0000°, Azm20.0000°; P Plg50.0000°, Azm121.0000°;*
JMA Felt III J1.
*IDC **02** 10:22:57.3±3.8, 36°.79N×140°.43E, h26km±25km, mb4.0/26, mb1 4.2/28, mb1mx4.0/53, mbtmp4.2/28, ML3.7/2, MS3.2/4, Ms1 3.2/4, ms1mx2.7/51 Error ellipse: s-maj=15.1km s-min=12.7km az=97.0*
*NEIC **02** 10:22:59.1±0.2, 36°.83N×140°.45E, h35km, mb4.6/28, Error ellipse: s-maj=6.7km s-min=4.1km az=167.0*
NEIC Recorded [3 JMA] in Fukushima.
ISC 02 10:22:54.5±1.1**, 36°.80N**±0°.03×**140°.50E**±0°.04**, h7km**±7km**, n103, σ0s91**/95**, mb4.5**/57**, MS3.0**/3**, 4C-1D, Near east coast of eastern Honshu**

Code Station Name Δ° AZ° Phase ID Op ISC Time h m s Res ISC
JHO Hitachi 0.20 163 ⇓P Pg 10 22 58.7 +0.2
JHO S Sg 10 23 01.5 +0.3
ONAJ Iwakimizuishiy 0.38 39 ⇑P Pg 10 23 01.1 -0.9
ONAJ S Sg 10 23 05.8 -1.2
JSB Shiboa 0.49 290 ⇑P Pb 10 23 05.6 +0.1
JSB S Sb 10 23 13.1 +0.2
JYT Yasato 0.62 203 ⇑P Pb 10 23 07.1 -0.6
JFT Otama 0.72 350 ⇑P Pg 10 23 08.4 0.0
JAG Ashikaga 0.92 246 S Sn 10 23 25.5 -1.9
MJAR Matsushiro Arr 1.86 263 Pn Pb 10 23 28.1 -0.7
312nm,0.3s,baz=87,slow=15,SNR=1454
MJAR Lg Lg 10 23 53.6
183nm,0.3s,baz=91,slow=28,SNR=11
MJAR LR LR 10 24 29.6
comp=Z,557nm,20.2s,baz=90,slow=52
MAJO Matsushiro 1.86 263 ePn Pb 10 23 28.1 -0.7
MAJO eSn Sb 10 23 50.8 -1.5
MAT Matsushiro 1.86 263 P Pb 10 23 27.9 -0.9
MAT S Sg 10 23 53.9 -0.3
JHJ Hachijo jima 2 3.72 189 Pn Pn 10 23 52.4 0.0
31nm,0.3s,baz=94,slow=24,SNR=11
JHJ Sn Sn 10 24 36.9 +0.4
42nm,0.3s,baz=72,slow=19,SNR=5.3
ERM Erimo 5.60 21 ePn Pn 10 24 19.0 +0.9
ERM eSn Sn 10 25 22.8 +0.1
JNU Nakatsue 8.71 248 Pn Pn 10 25 03.6 +2.7
0.2nm,0.3s,baz=332,slow=17,SNR=3.8
CBIJ Chichi jima 9.79 171 Pn Pn 10 25 12.0 -3.6
JCJ Chichijima 9.79 171 Pn Pn 10 25 12.0 -3.6
23nm,0.3s,baz=107,slow=23,SNR=19
USRK Ussuriysk Ar. 9.82 321 Pn Pn 10 25 20.5 +4.4
0.4nm,0.3s,baz=151,slow=15,SNR=10
KSRS Korea Array 10.06 277 Pn Pn 10 25 23.0 +3.6
0.6nm,0.3s,baz=95,slow=13,SNR=14
KSRS LR LR 10 28 60.0
comp=Z,144nm,20.6s,baz=104,slow=36
KS01 Wonju Array Si 10.08 278 ePn Pn 10 25 23.1 +3.4
KS15 Wonju Array Si 10.09 277 ePn Pn 10 25 26.2 +6.4
KSAR Wonju Array Be 10.09 277 Pn Pn 10 25 23.0 +3.2
KLR Kul’dur 13.96 336 Pn Pn 10 26 14.2 +1.6
0.1nm,0.3s,baz=294,slow=20,SNR=3.0
NJ2 Nanjing 18.46 261 eP P 10 27 15.0 +4.2
NJ2 pmax pmax
comp=Z,16nm,0.8s
PETK Petropavlovsk- 20.26 31 P P 10 27 31.8 +1.5
comp=Z,8.7nm,1.1s,baz=190,slow=16,SNR=4.2
PETK LR LR 10 34 40.9
comp=Z,41nm,19.3s,baz=206,slow=35
HHC Hu-ho-hao-te 22.85 289 eP P 10 27 59.4 +1.0
HHC pmax pmax
comp=Z,12nm,1.0s
HHC pmax pmax
comp=Z,84nm,4.9s
MA2 Magadan 23.74 13 P P 10 28 06.5 -0.6
comp=Z,7.6nm,0.7s,baz=216,slow=8.9,SNR=5.3
SEY Seymchan 27.16 12 P P 10 28 39.0 +0.8
comp=Z,8.0nm,1.0s,baz=207,slow=7.4,SNR=20
SONA1 Songino Array 27.30 305 eP P 10 28 39.1 -0.7
SONM Songino Array 27.31 305 P P 10 28 38.5 -1.3
comp=Z,2.7nm,0.8s,baz=108,slow=8.2,SNR=18
H11N2 WAKE ISLAND Hy 28.67 119 T T 10 58 36.7
baz=313,slow=75,SNR=1482
H11N1 WAKE ISLAND Hy 28.68 119 T T 10 58 37.3
baz=313,slow=75,SNR=1690
H11N3 WAKE ISLAND Hy 28.69 119 T T 10 58 38.2
baz=313,slow=75,SNR=1680
H11S1 WAKE ISLAND Hy 29.36 121 T T 10 59 29.5
baz=314,slow=76,SNR=4938
H11S3 WAKE ISLAND Hy 29.36 121 T T 10 59 30.0
baz=314,slow=76,SNR=3451
H11S2 WAKE ISLAND Hy 29.38 121 T T 10 59 30.3
baz=314,slow=76,SNR=2347
LZH Lanzhou 29.38 280 eP P 10 28 53.7 -4.8
LZH pP sP 10 29 00.8 -0.6
LZH sP pP 10 29 03.8 +3.3
LZH pmax pmax
comp=Z,17nm,1.0s
CD2 Chengdu 30.94 270 P P 10 29 11.8 -0.4
CD2 pmax pmax
comp=Z,1.0nm,0.6s
BILL Bilibino 34.46 17 eP P 10 29 42.1 -0.4
comp=Z,7.4nm,1.0s
WMQ Urumqi 40.29 297 eP P 10 30 34.9 +2.6

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
WMQ				pP	sP	10 30 41.9	+6.7
WMQ				sP	pP	10 30 45.8	+11
WMQ				pmax	pmax		
	comp=Z,4.0nm,0.6s						
WMQ				pmax	pmax		
	comp=Z,26nm,4.6s						
ZAA0	Zalesovo Array	41.53	313	eP	P	10 30 42.1	-0.2
ZALV	Zalesovo Beam	41.53	313	P	P	10 30 41.4	-0.9
	comp=Z,1.1nm,0.5s,baz=87,slow=6.3,SNR=6.0						
ZALV				PcP	PcP	10 32 38.9	-0.7
	comp=Z,1.3nm,0.5s,baz=109,slow=4.1,SNR=4.2						
MK01	Makanchi Array	43.61	302	eP	P	10 30 59.3	-0.1
MK31	Makanchi Array	43.62	302	eP	P	10 30 59.3	-0.1
MKAR	Makanchi Array	43.62	302	P	P	10 30 58.9	-0.5
	comp=Z,1.0nm,0.5s,baz=89,slow=10,SNR=15						
MKAR				LR	LR	10 47 57.3	
	comp=Z,19nm,21.2s,baz=70,slow=34						
MAKZ	Makanchi	43.83	302	eP	P	10 31 01.4	+0.3
	comp=Z,1.8nm,0.9s						
KURK	Kurchatov	45.49	308	eP	P	10 31 13.7	-0.7
	comp=Z,18nm,1.4s						
KURBB	Kurchatov Arra	45.56	308	P	P	10 31 14.2	-0.7
	comp=Z,3.7nm,0.7s,baz=83,slow=8.1,SNR=26						
AAK	Ala-Archa	49.95	298	LR	LR	10 54 10.3	
	comp=Z,74nm,19.4s,baz=48,slow=38						
ILAR	Eielson Array	50.08	32	P	P	10 31 49.3	-0.4
	comp=Z,1.2nm,0.7s,baz=268,slow=4.9,SNR=18						
ILB	Eielson Array	50.08	32	eP	P	10 31 49.4	-0.4
BVAR	Borovoye Array	50.18	312	P	P	10 31 49.4	-1.3
	comp=Z,1.2nm,0.6s,baz=56,slow=11,SNR=6.2						
INK	Inuvik	54.93	27	P	P	10 32 25.5	0.0
	comp=Z,1.5nm,0.6s,baz=279,slow=7.1,SNR=8.6						
ARU	Arti	56.04	318	P	P	10 32 34.2	+0.4
	comp=Z,2.6nm,0.6s,baz=44,slow=3.5,SNR=7.2						
ARU	Arti	56.04	318	eP	P	10 32 34.2	+0.4
	comp=Z,8.5nm,1.0s						
WRA	Warramunga Arr	56.74	187	P	P	10 32 38.0	-1.0
	comp=Z,4.2nm,0.7s,baz=3.6,slow=7.4,SNR=26						
AKTO	Aktyubinsk	58.28	312	P	P	10 32 50.6	+0.9
	comp=Z,1.0nm,0.6s,baz=75,slow=12,SNR=4.4						
AS01	Alice Springs	60.46	187	eP	P	10 33 04.2	-0.7
ASAR	Alice Springs	60.47	187	P	P	10 33 04.7	-0.3
	comp=Z,2.0nm,0.9s,baz=7.6,slow=6.1,SNR=18						
ARCES	ARCESS Array B	63.95	339	P	P	10 33 28.0	+0.1
	comp=Z,3.0nm,0.9s,baz=46,slow=9.0,SNR=4.9						
YKA	Yellowknife Ar	64.37	30	P	P	10 33 30.3	-0.5
	comp=Z,0.7nm,0.7s,baz=301,slow=6.4,SNR=13						
STKA	Stephens Creek	68.33	179	P	P	10 33 55.9	-0.4
	comp=Z,1.9nm,0.8s,baz=32,slow=7.4,SNR=3.7						
FINES	FINESS Array B	68.67	332	P	P	10 33 57.9	-0.4
	comp=Z,4.1nm,1.0s,baz=65,slow=6.6,SNR=5.9						
HFS	Hagfors	73.99	335	P	P	10 34 30.0	-0.4
	comp=Z,1.8nm,0.8s,baz=74,slow=6.3,SNR=5.4						
AKASG	Malin Array Be	74.03	322	P	P	10 34 30.6	-0.2
	comp=Z,0.2nm,0.3s,baz=49,slow=6.4,SNR=7.0						
NB2	NORSAR Subarra	74.11	337	P	P	10 34 30.3	-0.9
	comp=Z,5.7nm,1.2s,baz=41,slow=6.2						
NOA	NORSAR Array B	74.11	337	P	P	10 34 30.2	-0.9
	comp=Z,2.0nm,0.9s,baz=41,slow=5.9,SNR=3.7						
FCC	Fort Churchill	74.53	26	eP	P	10 34 33.7	+0.2
	comp=Z,24nm,2.0s						
CMB	Columbia Colle	74.60	54	eP	P	10 34 35.1	+0.7
	comp=Z,4.4nm,0.8s						
LRM	Limekiln Ridge	74.82	44	eP	P	10 34 36.4	+0.6
DLMT	Dillon	75.02	44	eP	P	10 34 37.6	+0.7
	comp=Z,10nm,1.3s						
HLID	Hailey	75.06	47	eP	P	10 34 38.1	+0.9
	comp=Z,2.3nm,1.0s						
BOZ	Bozeman (W)	75.39	44	eP	P	10 34 39.7	+0.7
	comp=Z,5.7nm,1.1s						
NV01	Mina Array Sit	75.71	53	eP	P	10 34 41.6	+0.5
NVAR	Mina Array Bea	75.71	53	P	P	10 34 41.8	+0.7
	comp=Z,4.3nm,0.7s,baz=293,slow=5.3,SNR=21						
IMW	Indian Meadow	76.86	45	eP	P	10 34 49.1	+1.5
	comp=Z,4.3nm,0.9s						
MOOW	Moose Ponds	77.06	45	eP	P	10 34 49.6	+1.0
	comp=Z,14nm,1.9s						
HVU	Hansel Valley	77.11	47	eP	P	10 34 49.9	+1.0
	comp=Z,3.3nm,0.8s						
TPNV	Topopah Spring	77.90	53	eP	P	10 34 53.9	+0.5
	comp=Z,6.9nm,0.9s						
HWUT	Hardware Ranch	77.92	47	eP	P	10 34 53.8	+0.3
	comp=Z,7.3nm,1.2s						
DUG	Dugway, Tooele	78.06	49	eP	P	10 34 54.6	+0.5
	comp=Z,4.1nm,0.8s						
BW06	Boulder Array	78.35	45	eP	P	10 34 55.7	-0.2
PDAR	Pinedale Array	78.35	45	P	P	10 34 55.8	-0.1
	comp=Z,1.4nm,0.7s,baz=262,slow=2.5,SNR=16						
PSUT	Pine Spring	78.45	50	eP	P	10 34 56.9	+0.5
	comp=Z,10nm,1.0s						
NLU	North Lily Min	78.65	48	eP	P	10 34 57.8	+0.2
	comp=Z,3.6nm,1.0s						
MPU	Maple Canyon	78.88	48	eP	P	10 34 59.1	+0.4
	comp=Z,3.6nm,0.7s						
MSU	Marysvale	79.49	50	eP	P	10 35 03.2	+1.0
P17A	Butcher Ranch,	79.76	48	eP	P	10 35 04.3	+0.8
	comp=Z,6.3nm,0.7s						
LCMT	Little Creek M	79.77	51	eP	P	10 35 04.4	+0.8
	comp=Z,4.7nm,0.9s						
P18A	Preston Nutter	79.95	48	eP	P	10 35 05.7	+0.9
	comp=Z,14nm,1.5s						
KNB	Kanab	80.03	51	eP	P	10 35 06.4	+1.3
	comp=Z,5.5nm,0.9s						
ULM	Lac du Bonnet	80.10	33	P	P	10 35 04.1	-0.9
	comp=Z,1.3nm,0.9s,baz=322,slow=19,SNR=2.1						
SRU	San Rafael Swe	80.11	48	eP	P	10 35 06.0	+0.5
	comp=Z,7.2nm,0.7s						
CLL	Collm	80.93	330	eP	P	10 35 10.0	+0.6
	comp=Z,7.0nm,1.3s						
PV09	Paradox Valley	81.34	48	eP	P	10 35 12.9	+0.7
PV05	Paradox Valley	81.63	48	eP	P	10 35 14.6	+0.9
WUAZ	Wupatki	81.88	52	eP	P	10 35 16.0	+1.0
	comp=Z,5.4nm,0.9s						
PV01	Paradox Valley	81.91	48	eP	P	10 35 15.9	+0.7
GERES	GERESS Array B	82.52	328	P	P	10 35 16.3	-1.6
	comp=Z,0.3nm,0.4s,baz=36,slow=5.1,SNR=4.2						
MVCO	Mesa Verde	82.56	49	eP	P	10 35 18.9	+0.3
	comp=Z,4.3nm,0.8s						
SDCO	Great Sand Dun	83.98	47	eP	P	10 35 26.7	+0.7
	comp=Z,2.8nm,1.1s						
TUC	Tucson	84.31	54	eP	P	10 35 28.1	+0.6
	comp=Z,2.1nm,0.8s						
ANMO	Albuquerque	85.30	49	eP	P	10 35 32.5	0.0
	comp=Z,3.3nm,0.9s						
TX31	Lajitas Ar. Si	90.84	52	eP	P	10 35 59.2	+0.1
TXAR	Lajitas Array	90.84	52	P	P	10 35 59.3	+0.2
	comp=Z,2.4nm,0.8s,baz=304,slow=2.9,SNR=19						
LPAZ	La Paz	147.44	59	PKPbc	PKPbc	10 42 40.1	-0.3
	comp=Z,2.5nm,0.6s,baz=286,slow=2.4,SNR=9.7						

*IDC **02** 10:29:11.5±1.0, 39.43N×74.53E, h0km, mb3.7/10, mb1 3.8/11, mb1mx3.6/49, mbtmp3.7/11, ML3.6/1, MS3.4/4, Ms1 3.4/4, ms1mx2.7/56, Error ellipse: s-maj=28.1km s-min=16.0km az=83.0*
*KRNET **02** 10:29:13.1±0.1, 39.60N×74.52E, mb3.7*
*SOME **02** 10:29:13.3, 39.77N×74.50E, h0km*
*NNC **02** 10:29:14.8±0.5, 39.67N×74.53E, h0km, mb4.1, mpv3.7, Error ellipse: s-maj=4.7km s-min=1.7km az=175.0*

ISC 02 10:29:13.3±1.7**, 39.40N**±0.06×**74.44E**±0.03**, h7km**±10km**, n66, σ1.70**/102**, mb3.6**/10**, MS3.7**/3**, 41C-28D, Southern Xinjiang**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SFK	Sufi-Kurgan	0.95	310	⇓eP	Pg	10 29 30.6	-0.9
	baz=299						
SFK				⇓eS	Sg	10 29 43.6	-0.3
	baz=299						
SFK	Sufi-Kurgan	0.95	310	⇑P	Pg	10 29 31.4	-0.2
	50nm,0.4s						
SFK				⇑S	Sg	10 29 43.8	-0.1
	220nm,0.4s						
NRN	Naryn	2.35	30	⇑eP	Pn	10 29 52.6	0.0
	baz=31						
NRN				⇑iS	Sn	10 30 20.3	-1.6
	baz=31						
ARLS	Aral	2.46	358	⇓eP	Pn	10 29 54.6	+0.6
	baz=356						
ARLS				⇓eS	Sn	10 30 25.0	+0.7
	baz=356						
KZA	Kyzart	2.74	13	⇑iP	Pn	10 29 59.0	+0.9
	baz=12						
KZA				⇑iS	Sn	10 30 31.7	0.0
	baz=12						
AML	Almayashu	2.79	348	⇑iP	Pn	10 30 00.3	+1.6
	baz=346						
AML				⇑iS	Sn	10 30 33.6	+0.9
	baz=346						
TOKL	Toktogul	2.80	335	⇓eP	Pn	10 30 00.6	+2.0
	baz=332						
TOKL				⇓eS	Sn	10 30 33.2	+0.5
	baz=332						
UCH	Uchtor	2.82	1	⇓iP	Pn	10 30 00.3	+1.1
	baz=360						
UCH				⇓iS	Sn	10 30 33.7	0.0
	baz=360						
BTK	Batken	2.87	284	⇑iP	Pb	10 30 05.9	+1.0
	baz=280						
BTK				⇑iS	Sb	10 30 42.4	+2.2
	baz=280						
ARK	Arkit	3.05	323	⇑eP	Pn	10 30 04.2	+2.2
	baz=319						
ARK				⇑eS	Sn	10 30 38.8	0.0
	baz=319						
ULHL	Ulahol	3.15	25	⇓iP	Pn	10 30 04.9	+1.4
	baz=26						
ULHL				⇓iS	Sn	10 30 40.6	-0.9
	baz=26						
AAK	Ala-Archa	3.23	1	Pn	Pn	10 30 06.6	+2.1
	6.1nm,0.3s,baz=171,slow=10,SNR=23						
AAK				Sn	Sb	10 30 47.5	-3.1
	15nm,0.3s,baz=86,slow=23,SNR=10.0						
AAK	Ala-Archa	3.23	1	⇑iP	Pn	10 30 06.3	+1.8
	baz=360						
AAK				⇑iS	Sn	10 30 43.9	+0.6
	baz=360						
AAK	Ala-Archa	3.23	1	⇑Pg	Pb	10 30 08.9	-2.2
	31nm,0.5s						
AAK				⇓Lg	Lg	10 30 48.7	
	109nm,0.7s						
KBK	Karagaybulak	3.27	7	⇑iP	Pn	10 30 06.8	+1.6
	baz=6.0						
KBK				⇑iS	Sn	10 30 44.5	0.0
	baz=6.0						
BOOM	Boomskoye usch	3.29	20	⇓eP	Pn	10 30 06.3	+0.9
	baz=20						
BOOM				⇓eS	Sn	10 30 42.3	-2.5
	baz=20						
EKS2	Erkin-Say	3.29	351	⇑iP	Pn	10 30 07.4	+2.0
	baz=350						
EKS2				⇑iS	Sn	10 30 45.3	+0.4
	baz=350						
MNAS	Manas	3.41	335	⇑iP	Pn	10 30 08.9	+1.8
	baz=333						
MNAS				⇑iS	Sn	10 30 50.4	+2.5
	baz=333						
MNAS	Manas	3.41	335	⇑Pn	Pn	10 30 07.3	+0.2
	11nm,0.4s						
MNAS				⇑Lg	Lg	10 30 56.0	
	61nm,0.5s						
KDJ	Kajisay	3.43	36	⇓eP	Pn	10 30 08.1	+0.8
	baz=38						
KDJ				⇓iS	Sn	10 30 47.6	-0.7
	baz=38						
MRKS	Merke	3.46	345	⇓iP	Pn	10 30 09.9	+2.2
	43nm,0.5s						
MRKS				eS	Sn	10 30 53.0	+4.0
	38nm,0.6s						
CHMS	Chumysh	3.60	4	⇑iP	Pn	10 30 10.8	+1.3
	baz=3.0						
CHMS				⇑iS	Sn	10 30 51.5	-0.8
	baz=3.0						
TKM2	Tokmak 2	3.62	14	⇑iP	Pn	10 30 11.3	+1.3
	baz=13						
TKM2				⇑iS	Sn	10 30 52.8	-0.3
	baz=13						
TKM2	Tokmak 2	3.62	14	⇑Pn	Pn	10 30 08.4	-1.6
	36nm,0.7s						
TKM2				⇓Lg	Lg	10 31 00.7	
	80nm,0.7s						
KST	Kastek	3.81	17	⇓iP	Pn	10 30 14.4	+1.9
	19nm,0.7s						
KST				⇑iS	Sn	10 31 01.3	+3.6
	121nm,0.6s						
DGS	Degeres	3.96	14	eP	Pb	10 30 23.4	-0.2
	36nm,0.7s						
DGS				eS	Sb	10 31 12.3	+0.5
	185nm,0.4s						
IZV	Izvestkoviy	3.98	24	eP	Pb	10 30 23.8	-0.1
	15nm,0.3s						
IZV				eS	Sb	10 31 12.6	+0.2
	148nm,0.4s						
TNSS	Tian-Shan	4.10	27	eP	Pb	10 30 24.6	-1.4
	29nm,0.4s						
TNSS				⇑iS	Sb	10 31 16.6	+0.8
	49nm,0.7s						
ANVS	Anan'yevo	4.17	35	⇑eP	Pn	10 30 18.4	+1.0
	baz=36						
ANVS				⇑eS	Sn	10 31 03.8	-2.6
	baz=36						
MDOK	Medeo	4.24	27	eP	Pb	10 30 27.5	-0.8
	18nm,0.5s						
MDOK				eS	Sb	10 31 19.2	-0.5
	37nm,0.6s						
KNDC	Almaty	4.26	26	⇓Pg	Pb	10 30 27.5	-1.1
KNDC				⇑Lg	Lg	10 31 22.0	
KOTS	Kotyrbulak	4.32	27	eP	Pb	10 30 29.1	-0.6
KOTS				eS	Sb	10 31 22.4	+0.3
KTBS	Karatobe	4.62	21	eP	Pb	10 30 34.2	-0.5
KTBS				eS	Sb	10 31 31.0	+0.4
KUU	Kurty	4.71	17	⇑iP	Pb	10 30 37.1	+1.0
	34nm,0.4s						
KUU				⇓iS	Sb	10 31 34.7	+1.7
	120nm,0.7s						
SATY	Saty	4.72	38	⇓iP	Pb	10 30 37.6	+1.2
	27nm,0.7s						
SATY				⇑iS	Sb	10 31 34.7	+1.2
	37nm,0.8s						
KK31	Karatay Array	4.74	323	Pn	Pn	10 30 26.2	+1.1
	1.5nm,0.3s,baz=126,slow=12,SNR=19						
KK31				⇓Pg	Pb	10 30 37.8	+1.1
	3.4nm,0.4s,baz=131,slow=16,SNR=6.3						
KK31				⇑Sn	Sn	10 31 20.3	-0.1
	3.9nm,0.3s,baz=0.0,slow=0.1,SNR=4.5						
KK31				⇓Lg	Lg	10 31 38.9	
	21nm,0.6s,baz=140,slow=28,SNR=5.9						
ZHN	Zhinishke	4.82	37	eP	Pb	10 30 39.2	+1.2
	20nm,0.9s						
ZHN				eS	Sb	10 31 38.0	+1.8
	25nm,0.3s						
CHKK	Chushkaly	4.86	22	eP	Pb	10 30 39.0	+0.3
	4.7nm,0.5s						
CHKK				eS	Sb	10 31 39.2	+1.9
	52nm,0.9s						
KURS	Kuram	4.95	33	eP	Pn	10 30 31.4	+3.3
	17nm,0.8s						
KURS				eS	Sn	10 31 30.3	+4.7
	14nm,1.1s						
UZB	Uzynbulak	5.09	41	eP	Pb	10 30 41.7	-1.0
	7.6nm,0.4s						
UZB				⇑iS	Sb	10 31 46.5	+2.3
	10.0nm,1.0s						
KPKS	Kokpek	5.16	37	eP	Pb	10 30 43.6	-0.3
	29nm,1.1s						
KPKS				eS	Sb	10 31 48.1	+1.9
	61nm,0.6s						
ARXS	Arharly	5.43	27	eP	Pb	10 30 49.0	+0.5
	6.4nm,0.5s						
ARXS				eS	Sb	10 31 56.8	+2.9
	59nm,0.6s						
PDGK	Podgornoye	5.46	42	⇑Pn	Pn	10 30 34.5	-0.4
	2.8nm,0.4s						
PDGK				⇓Pg	Pb	10 30 50.5	+1.7
	16nm,0.7s						
PDGK				⇓Lg	Lg	10 32 00.9	
	48nm,1.0s						
MNBS	Baschi	5.53	31	eP	Pb	10 30 49.6	-0.6
	9.2nm,0.6s						
MNBS				eS	Sb	10 31 58.0	+1.2
	5.1nm,0.8s						
KTMS	Ketmen	6.00	46	eP	Pb	10 31 00.0	+1.7
	4.1nm,0.2s						
KTMS				eS	Sb	10 32 15.3	+4.9
	53nm,0.6s						
DJR	Jarkent	6.34	37	eP	Pb	10 31 01.3	-2.7
	4.8nm,0.6s						
DJR				⇓iS	Sb	10 32 20.6	+0.6
	10nm,0.8s						
KAPS	Kapalarasan	6.91	30	eP	Pb	10 31 14.1	+0.4
	3.5nm,0.8s						
KAPS				⇑iS	Sb	10 32 42.4	+5.9
	6.7nm,0.5s						
OTUK	Ortayu	8.97	351	⇑Pg	Pg	10 31 54.2	-11
	5.7nm,1.3s						
OTUK				⇓Lg	Lg	10 33 51.2	
	7.4nm,0.9s						
MK31	Makanchi Array	9.35	35	⇓Lg	Lg	10 34 01.7	
	2.5nm,0.9s,baz=90,slow=10,SNR=5.3						
WMQ	Urumqi	10.86	62	eP	Pn	10 31 48.4	-0.7
WMQ				S	Sn	10 33 54.1	+3.2
WMQ				smax	smax		
	comp=N,2.0nm,0.4s						
WMQ				smax	smax		
	comp=E,3.0nm,0.2s						
KURBB	Kurchatov Arra	11.58	13	Lg	Lg	10 35 09.2	
	comp=E,0.1nm,0.3s,baz=202,slow=30,SNR=8.2						
KURBB	Kurchatov Arra	11.58	13	⇑Lg	Lg	10 35 14.9	
	comp=E,14nm,0.8s						
AKTO	Aktyubinsk	15.99	319	LR	LR	10 39 29.3	
	comp=E,24nm,20.9s,baz=90,slow=39						
FINES	FINESS Array B	36.70	323	P	P	10 36 20.0	-0.6
	comp=E,0.5nm,0.4s,baz=115,slow=11,SNR=6.7						
ARCES	ARCESS Array B	39.57	335	P	P	10 36 44.1	-0.5
	comp=E,2.8nm,0.7s,baz=110,slow=6.9,SNR=10						
KSRS	Korea Array	41.43	75	LR	LR	10 55 19.2	
	comp=E,23nm,19.5s,baz=179,slow=38						
HFS	Hagfors	42.54	320	P	P	10 37 08.6	-0.5
	comp=E,1.5nm,0.5s,baz=108,slow=14,SNR=3.8						
GERES	GERESS Array B	43.55	303	P	P	10 37 18.1	+0.5
	comp=E,0.3nm,0.5s,baz=78,slow=5.1,SNR=3.1						
NOA	NORSAR Array B	43.77	321	P	P	10 37 18.4	-0.8
	comp=E,0.5nm,0.5s,baz=90,slow=8.0,SNR=3.0						
TORD	Torodi Ar. Bea	68.49	270	P	P	10 40 15.8	-0.6
	comp=E,0.4nm,0.7s,baz=46,slow=5.8,SNR=3.6						
INK	Inuvik	70.58	11	P	P	10 40 27.1	-1.4
	comp=E,0.3nm,0.4s,baz=309,slow=2.4,SNR=3.9						
YKA	Yellowknife Ar	78.19	4	P	P	10 41 11.4	-1.6
	comp=E,0.3nm,0.7s,baz=351,slow=5.8,SNR=5.5						
WRA	Warramunga Arr	81.30	125	P	P	10 41 30.5	0.0
	comp=E,0.3nm,0.6s,baz=324,slow=5.4,SNR=4.1						
PMG	Port Moresby	82.85	108	LR	LR	11 23 03.0	
	comp=E,116nm,19.9s,baz=206,slow=39						
ASAR	Alice Springs	83.76	127	P	P	10 41 42.7	-0.5
	comp=E,0.3nm,0.7s,baz=300,slow=4.4,SNR=3.6						
SUR	Sutherland	87.03	223	LR	LR	11 22 10.9	
	comp=E,34nm,20.4s,baz=198,slow=36						

*IDC **02** 10:30:06.8±1.8, 10.46N×91.45E, h0km, mb3.8/6, mb1 4.0/7, mb1mx3.6/51, mbtmp3.8/7, ML4.3/1, MS3.0/1, Ms1 3.0/1, ms1mx2.4/58, Error ellipse: s-maj=63.7km s-min=19.6km az=64.0*
*ISCJB **02** 10:30:07.8±1.3, 10.5N±0.1×91.6E±0.2, h17km, mb3.8/6, Error ellipse: s-maj=31.7km s-min=17.8km az=157.8*

ISC 02 10:30:09.4±1.7**, 10.5N**±0.2×**91.5E**±0.3**, h17km, n11, σ1.09**/7**, mb3.8**/6**, Andaman Islands region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CMAR	Chiang Mai Arr	10.74	41	Pn	Pn	10 32 42.6	+0.1
	0.6nm,0.3s,baz=237,slow=14,SNR=4.4						
PALK	Pallekele	11.11	254	LR	LR	10 36 43.1	
	comp=Z,81nm,19.7s,baz=116,slow=36						
H08S3	Diego Garcia H	26.09	227	T	T	11 03 16.4	
	baz=47,slow=76,SNR=148						
H08S2	Diego Garcia H	26.10	227	T	T	11 03 17.8	
	baz=47,slow=76,SNR=134						
H08S1	Diego Carcia H	26.11	227	T	T	11 03 11.6	
	baz=47,slow=76,SNR=176						
MKAR	Makanchi Array	37.03	350	P	P	10 37 18.4	+0.1
	0.8nm,0.6s,baz=167,slow=8.3,SNR=7.3						
SONM	Songino Array	39.31	16	P	P	10 37 37.7	0.0
	0.7nm,0.4s,baz=206,slow=8.9,SNR=8.2						
KURBB	Kurchatov Arra	41.43	348	P	P	10 37 54.7	-0.4
	0.6nm,0.9s,baz=173,slow=7.4,SNR=4.7						
ZALV	Zalesovo Beam	43.69	354	P	P	10 38 13.4	+0.1
	0.6nm,0.4s,baz=155,slow=5.0,SNR=3.6						
WRA	Warramunga Arr	51.90	126	P	P	10 39 16.0	-1.6
	1.4nm,0.7s,baz=306,slow=8.4,SNR=11						
ASAR	Alice Springs	53.59	130	P	P	10 39 31.5	+1.5
	1.2nm,0.6s,baz=304,slow=6.9,SNR=14						

MAN 02 10:30:29, 7.91N×124.98E, h1km, mb4.5, ML3.3, MS3.2, 4C, Mindanao

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BUKP	Musuan	0.09	111	eP	Pg	10 30 31.7	+0.9
BUKP				eS	Sg	10 30 33.8	+1.9
KCP	Kidapawan	0.90	173	⇑iP	Pn	10 31 01.0	+12
DMPH	Davao City--Mi	0.98	147	⇑eP	Pg	10 30 48.0	+0.2
DMPH				eS	Sn	10 31 06.5	+2.2
CTBH	Cotabato--PC H	1.00	227	⇑iP	Pn	10 30 49.8	-0.4
BUTP	Butuan	1.23	31	eP	Pn	10 30 53.9	+0.5
PAGZ	Pagadian	1.58	268	eP	Pg	10 31 00.6	+1.2
MATI	Mati	1.59	127	eP	Pg	10 30 59.4	-0.1
LLP	Lapu-Lapu	2.59	337	eP	Pn	10 31 12.1	0.0
LLP				eS	Sb	10 31 46.9	-1.8
RCP	Roxas	4.24	329	⇑eP	Pn	10 31 36.3	+1.5

MAN 02 10:37:49, 7.29N×126.09E, h53km, mb3.9, ML2.7, MS2.3, 2C, Mindanao

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MATI	Mati	0.38	154	eP	Pn	10 38 00.7	+1.5
MATI				eS	Sn	10 38 10.4	+3.9
DMPH	Davao City--Mi	0.61	250	⇑eP	Pn	10 38 01.4	-0.4
DMPH				eS	Sn	10 38 14.1	+3.1
BUKP	Musuan	1.17	300	eP	Pn	10 38 09.8	+0.7
BUKP				eS	Sn	10 38 25.7	+1.6
CTBH	Cotabato--PC H	1.83	268	⇑iP	Pn	10 38 19.3	+1.3

JMA 02 10:41:10.2±0.3**, 37.50N×144.04E, h40km, M3.5, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	Ouri	2.33	295	P	Pn	10 41 47.6	+1.6
JIO				eS	Sn	10 42 15.5	+2.1
OFUJ	Ofunato	2.44	311	P	Pn	10 41 48.8	+1.2
JMK	Ichinoseki	2.65	304	P	Pn	10 41 52.2	+1.8
JOM	Ohasama	2.92	313	P	Pn	10 41 55.9	+1.8
JOM				eS	Sn	10 42 29.9	+1.9

*IDC **02** 10:48:10.6±1.1, 6.93S×154.20E, h0km, mb4.2/14, mb1 4.4/15, mb1mx4.2/34, mbtmp4.2/15, ML3.1/1, MS3.3/5, Ms1 3.3/5, ms1mx3.0/45, Error ellipse: s-maj=35.7km s-min=15.6km az=121.0*
*NEIC **02** 10:48:12.2±0.8, 6.93S×154.15E, h10km, mb4.2/1, Error ellipse: s-maj=23.7km s-min=8.8km az=124.0*
*ISCJB **02** 10:48:14.1±0.8, 7.0S±0.1×154.1E±0.1, h33km, mb4.1/15, MS3.3/3, Error ellipse: s-maj=21.0km s-min=8.5km az=44.2*

ISC 02 10:48:15.7±1.0**, 7.0S**±0.2×**154.2E**±0.1**, h35km, n22, σ1.05**/24**, mb4.1**/15**, MS3.3**/3**, Bougainville-Solomon Islands region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HNR	Honiara	6.19	114	LR	LR	10 51 57.5	
	comp=Z,129nm,19.9s,baz=9.5,slow=36						
PMG	Port Moresby	7.38	250	Pn	Pn	10 49 59.7	-1.3
	19nm,0.3s,baz=59,slow=6.1,SNR=32						
PMG				Sn	Sn	10 51 25.3	+1.7
	2.5nm,0.3s,baz=90,slow=20,SNR=1.7						
PMG				LR	LR	10 52 36.4	
	comp=Z,254nm,20.3s,baz=11,slow=36						
PMG	Port Moresby	7.38	250	Pn	Pn	10 49 59.7	-1.3
PMG				eSn	Sn	10 51 23.7	+0.2
PMG				Sn	Sn	10 51 25.3	+1.7
COEN	Coen	12.87	236	ePn	Pn	10 51 14.9	-1.4
WRAB	Tennant Creek	23.17	234	eP	P	10 53 18.6	-0.8
	6.6nm,0.9s						
WRA	Warramunga Arr	23.18	234	P	P	10 53 18.3	-1.3
	6.5nm,0.8s,baz=57,slow=10,SNR=24						
ASAR	Alice Springs	25.60	227	P	P	10 53 41.7	-0.3
	6.2nm,0.7s,baz=59,slow=9.3,SNR=75						
ASAR				LR	LR	11 03 22.4	
	comp=Z,66nm,18.6s,baz=76,slow=36						
STKA	Stephens Creek	27.43	204	P	P	10 54 00.3	+2.0
	3.1nm,0.9s,baz=12,slow=13,SNR=5.7						
STKA				LR	LR	11 04 04.1	
	comp=Z,73nm,19.5s,baz=17,slow=35						

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
FITZ	Fitzroy Crossi	29.94	246	P	P	10 54 19.6	-1.3
	9.6nm,0.6s,baz=70,slow=6.9,SNR=20						
FITZ				LR	LR	11 06 22.0	
	comp=Z,100nm,18.2s,baz=88,slow=36						
KSRS	Korea Array	50.56	333	P	P	10 57 11.2	+0.3
	0.8nm,0.4s,baz=142,slow=10,SNR=4.7						
KSAR	Wonju Array Be	50.56	333	P	P	10 57 11.2	+0.2
KLR	Kul'dur	59.31	343	P	P	10 58 14.2	+0.2
	3.7nm,0.8s,baz=168,slow=4.0,SNR=12						
PETK	Petropavlovsk-	59.92	2	P	P	10 58 16.4	-1.7
	2.0nm,0.8s,baz=168,slow=8.0,SNR=4.0						
CMAR	Chiang Mai Arr	60.06	296	P	P	10 58 20.7	+1.0
	0.6nm,0.5s,baz=115,slow=5.0,SNR=7.5						
SONM	Songino Array	68.89	328	P	P	10 59 17.9	+0.7
	1.4nm,0.4s,baz=130,slow=5.1,SNR=7.0						
MKAR	Makanchi Array	82.87	319	P	P	11 00 37.8	+1.0
	1.1nm,0.6s,baz=99,slow=6.6,SNR=14						
ILAR	Eielson Array	83.64	22	P	P	11 00 40.0	-0.3
	0.7nm,0.5s,baz=242,slow=5.1,SNR=23						
ZALV	Zalesovo Beam	83.72	326	P	P	11 00 40.6	-0.3
	1.8nm,0.7s,baz=123,slow=5.8,SNR=6.5						
KURK	Kurchatov	86.33	322	P	P	11 00 54.1	0.0
KURBB	Kurchatov Arra	86.36	322	P	P	11 00 54.1	-0.2
	0.7nm,0.7s,baz=101,slow=4.0,SNR=7.1						
YKA	Yellowknife Ar	96.69	28	P	P	11 01 42.3	+0.2
	0.1nm,0.5s,baz=266,slow=4.9,SNR=4.2						
TORD	Torodi Ar. Bea	152.26	285	PKPbc	PKPbc	11 08 09.5	+0.6
	1.9nm,0.7s,baz=67,slow=2.5,SNR=14						
TORD				PKPab	PKPab	11 08 19.5	+0.7
	0.9nm,0.6s,baz=59,slow=3.0,SNR=5.3						

IDC 02 10:53:05.9±2.3, 1°.28N×127°.52E, h0km, mb3.8/4, mb1 4.0/4, mb1mx3.5/40, mbtmp3.8/4, Error ellipse: s-maj=230.8km s-min=21.2km az=67.0, Halmahera

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
WRA	Warramunga Arr	22.12	163	P	P	10 58 02.2	-1.0
	3.4nm,1.1s,baz=342,slow=10,SNR=4.0						
ASAR	Alice Springs	25.56	166	P	P	10 58 37.4	+0.7
	2.2nm,1.0s,baz=340,slow=9.8,SNR=12						
MKAR	Makanchi Array	60.01	326	P	P	11 03 15.3	+0.8
	0.3nm,0.5s,baz=116,slow=7.7,SNR=4.6						
KURBB	Kurchatov Arra	64.22	328	P	P	11 03 42.1	-0.6
	1.6nm,0.9s,baz=124,slow=6.3,SNR=11						

JMA 02 10:57:21.6±0.1, 36°.98N×138°.63E, h3km±2km, M1.8, Eastern Honshu

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
JJN	Nakama	0.39	288	P	Pg	10 57 29.4	+0.2
JJN				S	Sg	10 57 35.5	+1.2
JHK	Hiroka	0.41	49	P	Pg	10 57 29.4	-0.1
JHK				S	Sg	10 57 35.4	+0.6
JKT	Katashina	0.54	113	P	Pg	10 57 32.6	+0.6
JKT				S	Sg	10 57 40.0	+1.0
MAT	Matsushiro	0.55	218	P	Pg	10 57 32.0	-0.2
MAT				S	Sg	10 57 39.4	0.0
MAT	Matsushiro	0.55	218	P	Pg	10 57 32.0	-0.2
MAT				S	Sg	10 57 39.5	+0.1
JIZZ	Izumozaki	0.55	7	P	Pg	10 57 33.0	+0.7
JNG	Nsakai	0.71	217	P	Pg	10 57 35.1	-0.2
JNG				S	Sg	10 57 44.6	+0.1
JAG	Ashikaga	0.86	130	S	Sb	10 57 50.5	-0.7
JFY	Yanaizu	0.96	63	P	Pg	10 57 39.5	-0.5
JFY				S	Sg	10 57 52.6	+0.2

*ISCJB **02** 10:59:36.4±0.3, 19°.50S±0°.02×69°.13W±0°.03, h89km±2km, mb5.8/159, Error ellipse: s-maj=4.5km s-min=2.9km az=144.5*

*GCMT **02** 10:59:37.4±0.1, 19°.75S×69°.51W, h118km, MW5.9/134, Moment Tensor Solution. s131,c281; s134,c345; Duration: 2s1 Moment tensor: Scale 10^17Nm; Mrr-3.32±.06; Mθθ-0.59±.07; Mφφ3.91±.08; Mrθ1.59±.04; Mθφ2.04±.07; Mφr-6.27±.06; Best double couple: Mo7.70200×10^17 NP1:φs352.00000°,δ76.00000°, λ-110.00000°. NP2:φs230.00000°,δ24.00000°, λ-35.00000°. Principal axes: T 7.6530, Plg29.0000°, Azm98.0000°; N 0.0950, Plg20.0000°, Azm357.0000°; P -7.7520, Plg54.0000°, Azm237.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface/mantle waves, cutoff=50s.*

*NEIC **02** 10:59:37.0±0.0, 19°.56S×69°.07W, h83km, Moment Tensor Solution. s14 Moment tensor: Scale 10^17Nm; Mrr-3.85; Mθθ-0.91; Mφφ4.76; Mrθ1.40; Mθφ0.39; Mφr-6.33; Best double couple: Mo7.80000×10^17 NP1:φs350.00000°, δ74.00000°,λ-100.00000°. NP2:φs202.00000°, δ19.00000°,λ-58.00000°. Principal axes: T 8.1200, Plg28.0000°, Azm87.0000°; N -0.6100, Plg9.0000°, Azm352.0000°; P -7.5100, Plg59.0000°, Azm245.0000°;*

*GUC **02** 10:59:38.7±0.5, 19°.68S×69°.36W, h100km±3km, ML5.6*

*BJI **02** 10:59:39.7, 19°.60S×69°.20W, h90km, mB5.8/27, Ms5.6/40, Ms7 5.3/42*

*MOS **02** 10:59:39.5±1.3, 19°.40S×69°.21W, h105km, mb6.0/20, Error ellipse: s-maj=10.9km s-min=5.2km az=110.5*

*NEIC **02** 10:59:40.4±0.1, 19°.54S×69°.01W, h110km, mb5.9/93, ME5.3, MW5.9, MW5.9, MW5.9, Error ellipse: s-maj=4.8km s-min=3.1km az=58.0, Moment Tensor Solution. s12 Moment tensor: Scale 10^17Nm; Mrr-2.80; Mθθ-1.45; Mφφ4.25; Mrθ0.02; Mθφ2.44; Mφr-8.23; Best double couple: Mo9.40000×10^17 NP1:φs359.00000°,δ79.00000°, λ-10.00000°. NP2:φs234.00000°,δ19.00000°, λ-37.00000°. Principal axes: T 10.0000, Plg32.0000°, Azm102.0000°; N -1.5000, Plg15.0000°, Azm2.0000°; P -8.5000, Plg54.0000°, Azm251.0000°; Moment Tensor Solution. s49 Moment tensor: Scale 10^17 Nm; Mrr-1.86; Mθθ-0.11; Mφφ1.97; Mrθ-1.43; Mθφ1.87; Mφr-7.43; Best double couple: Mo8.00000×10^17 NP1:φs11.00000°, δ82.00000°,λ-100.00000°. NP2:φs241.00000°, δ13.00000°,λ-41.00000°. Principal axes: T 8.3800, Plg36.0000°, Azm109.0000°; N -0.7600, Plg10.0000°, Azm12.0000°; P -7.6200, Plg52.0000°, Azm270.0000°; Broadband fault plane solution: P waves. NP1: φs190.00000°,δ10.00000°,λ-90.00000°. NP2:φs10.00000°, δ80.00000°,λ-90.00000°. Principal axes: T Plg35.0000°, Azm100.0000°; N Plg0.0000°, Azm0.0000°; P Plg55.0000°, Azm280.0000°; Depth from synthetics of broadband displacement seismograms. Energy computed from BB mechanism.*

NEIC Felt [VI] at Mamina, Pica and Pozo Almonte; [V] at Alto Hospicio, Codpa, Cuya, Huara and Iquique; [IV] at La Tirana, Pisagua and Poconchile; [III] at Arica and Putre. Also felt at Calama. Felt [III] at Moquegua and Tacna and [II] at Arequipa, Peru.

*IDC **02** 10:59:40.1±0.3, 19°.58S×69°.13W, h105km±2km, mb5.2/31, mb1 5.3/34, mb1mx5.3/35, mbtmp5.5/34, MS4.9/19, Ms1 4.9/19, ms1mx4.8/25 Error ellipse: s-maj=9.4km s-min=7.5km az=56.0*

*SCB **02** 10:59:42.2±0.6, 19°.41S×68°.76W, h100km, Ml4.8/1, Error ellipse: s-maj=19.3km s-min=4.6km az=63.0*

ISC 02 10:59:39.1±0.2, 19°.67S±0°.03×69°.22W±0°.03, h102km±1km, h102km:pP-P, n1352, σ1s61/1602, mb5.8/157, 20C-34D, Northern Chile

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
PB08	IPOC Station P	0.47	172	⇓eP	Pn	10 59 55.6	+0.2
PB08				eS	Sn	11 00 08.2	+0.7
PB08				AML	AML	11 00 09.9	
	comp=E,273µm,0.3s						
PSGC	Pisagua	0.85	275	⇓eP	Pn	10 59 56.9	-1.4
PSGC				eS	Sn	11 00 10.7	-2.0
PSGC				AML	AML	11 00 13.2	
	comp=E,180µm,0.4s						
HMBC	Humberstone	0.87	226	⇓eP	Pn	10 59 57.4	-1.1
HMBC				eS	Sn	11 00 11.5	-1.6
PB13	IPOC Station P	1.35	349	⇓eP	Pn	11 00 05.1	+0.7
PB13				eS	Sn	11 00 24.5	+1.1
PB01	IPOC Station P	1.39	190	⇓eP	Pn	11 00 03.9	-0.3
PB01				eS	Sn	11 00 23.0	-0.2
PB01				AML	AML	11 00 25.6	
	comp=E,163µm,0.7s						
PB01	IPOC Station P	1.39	190	ePn	Pn	11 00 04.3	+0.1
PB01				eSn	Sn	11 00 23.3	+0.1
PATCX	Punta Patache	1.44	217	⇑eP	Pn	11 00 03.5	-1.3
PATCX				eS	Sn	11 00 22.9	-1.4
PATCX				AML	AML	11 00 29.7	
	comp=E,140µm,0.8s						
PB12	IPOC Station P	1.48	315	⇑eP	Pn	11 00 04.3	-1.1
PB12				eS	Sn	11 00 23.2	-2.1
PB07	IPOC Station P	2.14	197	⇓eP	Pn	11 00 12.7	-1.0
PB07				eS	Sn	11 00 37.6	-2.6
PB07				AML	AML	11 00 46.8	
	comp=E,72µm,0.7s						
PB04	IPOC Station P	2.79	198	ePn	Pn	11 00 22.6	+0.3
BBOJ	La Paz, Jacaqu	2.85	20	⇓iPn	Pn	11 00 26.3	+2.8
BBOD	La Paz, Gloria	3.08	11	⇓iPn	Pn	11 00 29.0	+2.5
BBOE	La Paz, Chanca	3.08	23	⇓iPn	Pn	11 00 29.4	+2.9
I08BO	LAS PENAS INFR	3.51	12	P	Pn	11 00 30.0	-2.3
	baz=206,slow=23,SNR=1.5						
I08BO				i		11 19 20.0	
	baz=203,slow=322,SNR=1.4						
LPAZ	La Paz	3.52	17	P	Pn	11 00 35.1	+2.6
	comp=E,158nm,0.3s,baz=196,slow=7.8,SNR=1327						
LPAZ				S	Sn	11 01 13.9	+0.3
	comp=E,111nm,0.3s,baz=183,slow=25,SNR=5.0						
LPAZ	La Paz	3.52	17	⇓iPn	Pn	11 00 34.9	+2.4
LPAZ				eSn	Sn	11 01 13.8	+0.2
LPAZ	La Paz	3.52	17	ePn	Pn	11 00 35.3	+2.8
LPAZ				S	Sn	11 01 13.9	+0.3
BBOB	La Paz, Bander	3.66	17	⇓iPn	Pn	11 00 36.5	+2.2
MOCB	Mochara	3.71	116	ePn	Pn	11 00 39.0	+4.2
MOCB				eSn	Sn	11 01 19.4	+1.6
	comp=E,2µm,0.7s						
ARE	Arequipa	3.85	326	⇑iP	Pn	11 00 35.0	-1.7
ARE				eS	Sn	11 01 18.0	-3.2
ARE	Arequipa	3.85	326	⇑iP	Pn	11 00 35.0	-1.7
ARE				eS	Sn	11 01 18.0	-3.2
PB10	IPOC Station P	4.02	198	ePn	Pn	11 00 37.1	-1.5
YJA	Yavi	4.27	126	eP	Pn	11 00 45.5	+3.1
YJA				IAML		11 01 15.7	
	comp=Z,316nm,0.7s						
YJA				eS	Sn	11 01 30.9	-0.5
AZAP	Zapla	5.95	140	eP	Pn	11 01 05.2	+0.2
SLA	San Lorenzo	6.09	146	eP	Pn	11 01 08.1	+1.3
ASTB	Santa Barbara	6.14	135	eP	Pn	11 01 07.5	0.0
FSA	Cafayete	7.07	156	eP	Pn	11 01 19.8	-0.3
AHML	Horco Molle	7.93	154	eP	Pn	11 01 30.4	-1.3
AHML				eP	Pn	11 01 30.8	-0.9
AHML				eS	Sn	11 02 55.6	-4.1
SIV	San Ignacio	8.58	66	P	Pn	11 01 38.8	-1.8
	comp=Z,97nm,0.3s,baz=262,slow=13,SNR=495						
SIV	San Ignacio	8.58	66	⇑iP	Pn	11 01 38.4	-2.2
SIV	San Ignacio	8.58	66	P	Pn	11 01 38.8	-1.8
VCA	Vinchina	9.07	174	eP	Pn	11 01 44.7	-2.6
CYA	Choya	9.27	161	eP	Pn	11 01 48.5	-1.4
LCO	Las Campanas	9.39	188	ePn	Pn	11 01 48.6	-3.2
LCO				eSn	Sn	11 03 31.2	-4.6
NNA	Nana	10.59	315	i P	Pn	11 02 05.6	-2.3
NNA	Nana	10.59	315	ePn	Pn	11 02 04.7	-3.2
NNA				eSn	Sn	11 03 55.0	-10
RTLS	Leoncito	12.08	180	eP	Pn	11 02 24.9	-3.2
RTCV	Cerro Valdivia	12.15	177	eP	Pn	11 02 24.9	-3.9
SAML	Samuel	12.15	30	ePn	Pn	11 02 25.6	-3.3
CPUP	Villa Florida	12.79	123	P	Pn	11 02 36.0	-1.3
	comp=Z,12nm,0.3s,baz=303,slow=12,SNR=86						
CPUP	Villa Florida	12.79	123	P	Pn	11 02 36.0	-1.3
CPUP				pmax	pmax		
	comp=Z,12nm,0.3s						
CPUP	Villa Florida	12.79	123	ePn	Pn	11 02 35.3	-1.9
MRA	San Martin	13.08	167	eP	Pn	11 02 38.4	-2.6
ROC1	El Roble	13.35	187	eP	Pn	11 02 43.8	-0.9
ATAH	Atahualpa	15.32	323	P	Pn	11 03 10.2	0.0
	comp=Z,0.8nm,0.3s,baz=141,slow=11,SNR=18						
ATAH	Atahualpa	15.32	323	P	Pn	11 03 10.2	0.0
LPA	La Plata	18.17	149	ceP	P	11 03 44.0	+0.4
LPA				PP	sP	11 04 24.0	+8.4
LPA				S	S	11 07 02.0	-4.4
TRQA	Tornquist	19.37	163	eP	P	11 03 57.8	+1.0
	comp=Z,577nm,1.3s						
BDFB	Brasilia	20.60	82	P	P	11 04 08.6	-1.7
	comp=Z,146nm,0.5s,baz=255,slow=12,SNR=76						
BDFB				LR	LR	11 13 09.0	
	comp=Z,10µm,18.2s,baz=234,slow=40						
BDFB	Brasilia	20.60	82	eP	P	11 04 09.0	-1.3
BDFB				pmax	pmax		
	comp=Z,1µm,0.6s						
BDFB	Brasilia	20.60	82	eP	P	11 04 09.0	-1.3
	comp=Z,1000nm,0.6s						
PTGA	Pitinga	20.89	27	P	P	11 04 10.9	-2.4
	comp=Z,361nm,0.5s,baz=201,slow=13,SNR=348						
PTGA				S	S	11 07 52.2	-8.6
	comp=Z,57nm,0.7s,baz=347,slow=19,SNR=3.7						
PTGA				LR	LR	11 13 12.9	
	comp=Z,8µm,19.2s,baz=216,slow=39						
PTGA	Pitinga	20.89	27	eP	P	11 04 10.8	-2.5
	comp=Z,1µm,1.3s						
PTGA				S	S	11 07 52.2	-8.6
PLCA	Paso Flores	21.02	183	P	P	11 04 14.5	-0.1
	comp=Z,173nm,0.8s,baz=26,slow=12,SNR=89						
PLCA	Paso Flores	21.02	183	eP	P	11 04 14.6	-0.1
PLCA				pmax	pmax		
	comp=Z,180nm,0.8s						
PLCA	Paso Flores	21.02	183	eP	P	11 04 14.6	-0.1
	comp=Z,178nm,0.8s						
OTAV	Otavalo	21.76	334	eP	P	11 04 23.5	+0.4
	comp=Z,314nm,1.2s						
OTAV				eS	S	11 08 17.7	-0.6
OTAV	Otavalo	21.76	334	eP	P	11 04 24.8	+1.7
FLOC	Florencia	22.05	343	eP	P	11 04 25.8	+0.1
CRUC	La Cruz	22.43	339	eP	P	11 04 32.4	+2.3
POPC	Popayan, Colom	23.26	341	eP	P	11 04 38.0	0.0
GRGC	Isla de Gorgon	24.19	338	eP	P	11 04 47.2	+1.0
CHIC	Chingaza	24.55	349	eP	P	11 04 49.3	-0.7
TOLC	Tolima	24.84	345	eP	P	11 04 52.8	+0.3
MALC	Bahia Malaga	24.85	340	eP	P	11 04 54.6	+2.3
ROSC	El Rosal	24.87	348	P	P	11 04 52.7	-0.1
	comp=Z,39nm,0.7s,baz=189,slow=6.8,SNR=12						
ROSC				LR	LR	11 15 54.5	
	comp=Z,4µm,20.8s,baz=202,slow=39						
ROSC	El Rosal	24.87	348	eP	P	11 04 53.7	+0.9
	comp=Z,62nm,1.0s						
NORC	Norcasia	25.69	347	eP	P	11 04 57.9	-2.0
BARC	Barichara	26.39	351	eP	P	11 05 05.5	-0.9
HELC	Santa Helena	26.44	346	eP	P	11 05 05.5	-1.5
SOLC	Bahia Solano	26.97	342	eP	P	11 05 12.5	+1.1
PAMC	Pamplona, Colo	27.06	352	eP	P	11 05 12.1	-0.6
DBBC	Dabeiba	27.40	345	eP	P	11 05 15.6	+0.3
GRMC	Gramalote, San	27.45	352	eP	P	11 05 15.2	-0.6
PAYG	Puerto Ayora	27.97	310	eP	P	11 05 21.9	+1.6
	comp=Z,105nm,0.9s						
PAYG				ePcP	PcP	11 08 35.5	+2.2
SDV	Santo Domingo	28.41	357	P	P	11 05 23.8	-0.6
	comp=Z,78nm,0.9s,baz=186,slow=7.2,SNR=60						
SDV				LR	LR	11 17 54.9	
	comp=Z,4µm,19.6s,baz=183,slow=39						
SDV	Santo Domingo	28.41	357	eP	P	11 05 22.9	-1.5
	comp=Z,113nm,1.1s						
SDV				eS	S	11 09 53.0	-11
SDV	Santo Domingo	28.41	357	eP	P	11 05 23.0	-1.5
MOTC	Monteria, Cord	28.98	347	eP	P	11 05 28.6	-0.6
BCIP	Isla Barro Col	30.51	339	eP	P	11 05 43.1	+0.4
	comp=Z,131nm,0.8s						
BCIP				eS	S	11 10 40.1	+3.2
GRGR	Grenville	32.47	14	eP	P	11 05 58.4	-1.6
	comp=Z,381nm,0.8s						
GRGR				eS	S	11 11 01.3	-6.2
EFI	East Falkland	33.12	167	⇓iP	P	11 06 06.8	+1.5
EFI				pmax	pmax		
	comp=Z,153nm,1.4s						
EFI	East Falkland	33.12	167	eP	P	11 06 05.5	+0.2
	comp=Z,173nm,1.2s						
JTS	JuntasAbangare	33.57	331	P	P	11 06 11.0	+1.4
	comp=Z,66nm,0.8s,baz=145,slow=2.9,SNR=57						
JTS	JuntasAbangare	33.57	331	eP	P	11 06 11.4	+1.8
JTS				pmax	pmax		
	comp=Z,130nm,1.0s						
JTS	JuntasAbangare	33.57	331	eP	P	11 06 11.4	+1.8
	comp=Z,130nm,1.0s						
SVB	Belmont	33.66	14	eP	P	11 06 08.5	-1.9
	comp=Z,234nm,0.7s						
TRMF	Trois Ilets	34.93	14	eP	P	11 06 18.8	-2.4
ZAM	Aeronautique	34.97	14	eP	P	11 06 19.5	-2.1
MVM	Montagne Vaucl	34.98	14	eP	P	11 06 19.9	-1.9
LPMF	Morne Lapointe	34.99	14	eP	P	11 06 19.9	-1.9
FDF	Fort de France	35.10	14	eP	P	11 06 21.3	-1.5
FDF	Fort de France	35.10	14	eP	P	11 06 20.4	-2.4
FDF				pmax	pmax		
	comp=Z,100nm,0.5s						
FDF	Fort de France	35.10	14	eP	P	11 06 20.4	-2.4
	comp=Z,100nm,0.5s						
USHA	Ushuaia	35.11	179	P	P	11 06 22.6	+0.2
	comp=Z,201nm,0.8s,baz=360,slow=6.9,SNR=16						
USHA	Ushuaia	35.11	179	P	P	11 06 22.6	+0.2
PML	Morne Lenard	35.14	14	eP	P	11 06 21.8	-1.3
GBMF	Grand Be	35.16	14	eP	P	11 06 21.4	-1.9
PCM	Pelee Case Pet	35.16	14	eP	P	11 06 20.8	-2.5
BAMF	Morne Balai	35.18	14	eP	P	11 06 22.0	-1.5
RCBR	Riachuelo	35.20	71	P	P	11 06 23.0	-0.7
	comp=Z,629nm,0.7s,baz=236,slow=8.5,SNR=152						
RCBR				LR	LR	11 21 50.3	
	comp=Z,4µm,21.4s,baz=230,slow=38						
RCBR	Riachuelo	35.20	71	eP	P	11 06 24.4	+0.6
	comp=Z,668nm,0.8s						
GDHS	Morne Mazeau,	36.46	12	eP	P	11 06 32.1	-2.3
	comp=Z,98nm,0.9s						
CELP	Cerrillos	37.60	4	eP	P	11 06 43.1	-0.9
SJG	San Juan	37.67	5	P	P	11 06 43.2	-1.3
	comp=Z,76nm,0.8s,baz=211,slow=3.9,SNR=19						
SJG				pP	pP	11 07 07.5	-0.4
	comp=Z,159nm,0.9s,baz=206,slow=3.6,SNR=8.0						
SJG				LR	LR	11 23 57.8	
	comp=Z,901nm,20.5s,baz=195,slow=39						
SJG	San Juan	37.67	5	eP	P	11 06 42.8	-1.7
	comp=Z,174nm,1.0s						
SJG				pP	pP	11 07 07.5	-0.4
HUMP	Col San Antoni	37.72	5	eP	P	11 06 42.8	-2.2
	comp=Z,240nm,1.4s						
ANWB	Willy Bob	37.82	12	eP	P	11 06 42.1	-3.7
	comp=Z,132nm,0.6s						
BANI	BANI	37.84	358	eP	P	11 06 46.1	-0.1
BANI				esP	sP	11 07 23.5	+2.3
CBYP	Canovanas	37.85	5	eP	P	11 06 43.8	-2.4
	comp=Z,252nm,1.0s						
TGUH	Tegucigalpa,Un	37.94	331	eP	P	11 06 47.5	+0.6
	comp=Z,228nm,0.9s						
STVI	Saint Thomas	38.02	7	eP	P	11 06 45.5	-2.0
	comp=Z,309nm,1.9s						
SDDR	Presa de Saban	38.47	357	eP	P	11 06 50.2	-1.1
	comp=Z,72nm,0.8s						
MTDJ	Mount Denham	38.54	347	eP	P	11 06 51.8	-0.2
	comp=Z,218nm,0.9s						
GTBY	Guantanamo Bay	39.77	351	eP	P	11 07 01.1	-1.1
	comp=Z,120nm,0.8s						
GTBY				epP	pP	11 07 18.3	-7.3
CCIG	Comitan	42.24	326	eP	P	11 07 22.7	+0.1
	comp=Z,216nm,1.2s						
HOPE	Hope Point	42.62	152	eP	P	11 07 24.7	-0.3
	comp=Z,426nm,1.2s						
TEIG	Tepich	43.83	334	P	P	11 07 35.2	0.0
	comp=Z,6.7nm,0.7s,baz=356,slow=24,SNR=72						
TEIG				pP	pP	11 08 00.3	+1.2
	comp=Z,3.0nm,0.7s,baz=279,slow=23,SNR=4.2						
TEIG	Tepich	43.83	334	eP	P	11 07 35.0	-0.1
	comp=Z,8.4nm,0.8s						
TEIG				pP	pP	11 08 00.2	+1.2
CMIG	Matias Romero	44.39	324	P	P	11 07 40.1	+0.3
	comp=Z,84nm,0.8s,baz=128,slow=5.7,SNR=127						
CMIG	Matias Romero	44.39	324	P	P	11 07 40.1	+0.3
PMSA	Palmer Station	45.21	177	P	P	11 07 45.5	-0.1
	comp=Z,31nm,0.8s,baz=6.7,slow=4.9,SNR=9.4						
PMSA	Palmer Station	45.21	177	eP	P	11 07 47.1	+1.5
TLIG	Tlapa	46.90	320	eP	P	11 08 00.3	+0.6
	comp=Z,183nm,1.1s						
DWPF	Disney Wildern	48.95	346	eP	P	11 08 14.8	-0.3
	comp=Z,356nm,0.7s						
MOIG	Morelia	50.11	319	eP	P	11 08 25.5	+1.1
	comp=Z,262nm,1.0s						
BBSR	BB Station	51.93	5	eP	P	11 08 36.9	-0.5
	comp=Z,362nm,1.5s						
TRIS	Tristan da Cun	52.23	122	eP	P	11 08 37.7	-2.2
	comp=Z,318nm,1.1s						
TIGA	Tifton	52.66	345	P	P	11 08 42.8	-0.1
	baz=163,SNR=24						
TIGA				S	S	11 16 01.4	-1.3
	baz=163						
TIGA	Tifton	52.66	345	eP	P	11 08 42.4	-0.5
	comp=Z,2µm,1.7s						
645A	Chauvin	53.02	337	P	P	11 08 46.9	+1.3
	baz=154						
ZAIG	Zacatecas	53.29	321	eP	P	11 08 49.0	+0.9
	comp=Z,191nm,1.0s						
RGRS	Roger Stewart	53.33	348	eP	P	11 08 48.0	+0.3
BRAL	Brewton	53.37	341	eP	P	11 08 47.8	-0.4
	comp=Z,545nm,0.8s						
CSU	Charleston Sou	53.38	349	eP	P	11 08 49.0	+0.8
546A	Slidell	53.40	338	P	P	11 08 48.5	+0.2
	baz=156						
545A	Edgard	53.51	337	P	P	11 08 50.0	+0.8
	baz=155						
NHSC	New Hope	53.52	349	eP	P	11 08 49.3	+0.1
	comp=Z,568nm,0.9s						
H10S3	ASCENSION HYDR	53.73	87	P	P	11 08 51.8	+0.9
	baz=262,slow=11,SNR=7.2						
035Z	Hargill	53.73	328	P	P	11 08 51.1	+0.3
	baz=146,SNR=14						
H10S2	ASCENSION HYDR	53.74	87	P	P	11 08 51.2	+0.3
	baz=262,slow=11,SNR=4.9						
H10S1	ASCENSION HYDR	53.74	87	P	P	11 08 52.3	+1.4
	baz=262,slow=11,SNR=6.2						
544A	White Castle	53.82	336	P	P	11 08 52.5	+1.1
	baz=154,SNR=6.5						
543A	St. Martinvill	54.06	336	P	P	11 08 54.3	+1.1
	baz=153,SNR=6.3						
445A	Amite	54.07	337	P	P	11 08 53.6	+0.3
	baz=155,SNR=13						
035A	Encino	54.14	328	P	P	11 08 54.1	+0.3
	baz=146,SNR=15						
444A	Pine Grove	54.20	337	P	P	11 08 54.4	+0.2
	baz=155,SNR=15						
H10N3	ASCENSION HYDR	54.22	85	P	P	11 08 55.3	+0.8
	baz=249,slow=6.0,SNR=5.9						
H10N2	ASCENSION HYDR	54.24	85	P	P	11 08 55.6	+1.0
	baz=249,slow=6.0,SNR=9.0						
H10N1	ASCENSION HYDR	54.24	86	P	P	11 08 55.6	+1.0
	baz=249,slow=6.0,SNR=7.8						
ASCN	Ascension	54.33	86	eP	P	11 08 55.4	-0.2
	comp=Z,445nm,0.8s						
346A	Big Creek Wild	54.36	339	P	P	11 08 55.3	0.0
	baz=156,SNR=21						
542A	Morse	54.37	335	P	P	11 08 57.0	+1.6
	baz=153,SNR=10.0						
345A	Thompson Farm,	54.48	338	P	P	11 08 56.0	-0.3
	baz=156,SNR=7.8						
GOGA	Godfrey	54.51	345	eP	P	11 08 55.4	-1.0
GOGA				pmax	pmax		
	comp=Z,210nm,1.2s						
GOGA	Godfrey	54.51	345	eP	P	11 08 55.4	-1.0
	comp=Z,211nm,1.2s						
034A	Hebbronville	54.54	327	P	P	11 08 57.0	+0.3
	baz=145,SNR=35						
KVTX	Kingsville	54.54	328	eP	P	11 08 58.1	+1.4
	comp=Z,868nm,1.5s						
KVTX				esP	pP	11 09 25.3	+3.9
738A	Farr-Stevens R	54.57	331	P	P	11 08 57.6	+0.7
	baz=149						
541A	Lake Charles	54.57	334	P	P	11 08 58.1	+1.2
	baz=152,SNR=5.8						
443A	Delano Plantat	54.64	336	P	P	11 08 57.6	+0.2
	baz=154,SNR=9.0						
246A	Jackson Lee, B	54.82	339	P	P	11 08 57.8	-0.9
	baz=157,SNR=6.0						
442A	Mamou	54.84	335	P	P	11 08 59.6	+0.7
	baz=153,SNR=17						
737A	Port Lavaca	54.86	331	P	P	11 08 59.6	+0.6
	baz=148						
JSC	Jenkinsville	54.87	348	eP	P	11 08 58.9	0.0
JSC				pmax	pmax		
	comp=Z,150nm,0.9s						
JSC	Jenkinsville	54.87	348	eP	P	11 08 58.9	0.0
	comp=Z,147nm,0.9s						
344A	Westbrook Farm	54.87	337	P	P	11 08 58.6	-0.4
	baz=155,SNR=34						
934A	Benavides	54.89	328	P	P	11 08 59.9	+0.6
	baz=146,SNR=25						
638A	Rosharon	54.97	332	P	P	11 09 00.9	+1.1
	baz=149,SNR=7.0						
540A	Vidor	55.02	334	P	P	11 09 01.9	+1.7
	baz=151						
343A	Vidalia	55.04	337	P	P	11 08 59.7	-0.5
	baz=154						
LRAL	Lakeview Retre	55.09	342	eP	P	11 08 59.4	-1.2
	comp=Z,102nm,0.9s						

245A **Little AP, Sta** 55.10 339 P P 11 08 59.9 -0.8
baz=156,SNR=65
835A **Beeville** 55.12 329 P P 11 09 01.5 +0.5
baz=147,SNR=24
441A **DeRidder** 55.18 335 P P 11 09 01.8 +0.6
baz=152,SNR=27
CNNC **Cliffs of the** 55.23 351 eP P 11 09 01.6 +0.1
comp=Z,59nm,0.8s
539A **Cross D Ranch,** 55.25 333 P P 11 09 02.6 +0.8
baz=150
933A **Laredo** 55.28 327 P P 11 09 02.0 -0.1
baz=145,SNR=27
736A **Circle Diamond** 55.32 330 P P 11 09 03.1 +0.8
baz=148,SNR=12
834A **Tilden** 55.34 328 P P 11 09 03.0 +0.5
baz=146,SNR=57
146A **Union** 55.37 340 P P 11 09 01.8 -0.8
baz=157,SNR=31
244A **Avery, Jackson** 55.38 338 P P 11 09 02.6 -0.1
baz=155,SNR=40
637A **Eagle Lake** 55.39 331 P P 11 09 03.6 +0.8
baz=148,SNR=36
342A **Flagon Creek P** 55.39 336 P P 11 09 03.1 +0.4
baz=153,SNR=28
VBMS **Vicksburg** 55.48 338 P P 11 09 02.8 -0.6
baz=155,SNR=14
440A **Kirbyville** 55.48 334 P P 11 09 04.1 +0.6
baz=151,SNR=5.9
243A **Waterproof** 55.52 337 P P 11 09 03.2 -0.5
baz=154,SNR=11
735A **Kenedy** 55.59 329 P P 11 09 04.3 +0.1
baz=147,SNR=22
HKT **Hockley** 55.60 332 eP P 11 09 04.4 +0.2
HKT pmax pmax
comp=Z,290nm,1.3s
HKT **Hockley** 55.60 332 eP P 11 09 04.4 +0.2
comp=Z,290nm,1.3s
145A **Houston Renfro** 55.63 339 P P 11 09 04.1 -0.4
baz=156,SNR=46
538A **Harpers Horsep** 55.68 332 P P 11 09 05.8 +1.0
baz=150,SNR=7.8
341A **Kurthwood** 55.68 335 P P 11 09 05.2 +0.4
baz=152,SNR=48
KMSC **Kings Mountain** 55.71 348 P P 11 09 05.0 0.0
baz=166,SNR=43
KMSC **Kings Mountain** 55.71 348 eP P 11 09 04.6 -0.4
comp=Z,146nm,0.8s
636A **Smothers Creek** 55.76 330 P P 11 09 06.0 +0.6
baz=148,SNR=84
144A **Alexander Plac** 55.82 338 P P 11 09 04.6 -1.2
baz=156
439A **Center Grove,** 55.86 333 P P 11 09 06.8 +0.6
baz=150,SNR=39
537A **Green Hill Far** 55.92 332 P P 11 09 07.1 +0.5
baz=149,SNR=56
833A **Chaparral WMA,** 55.93 328 P P 11 09 06.3 -0.3
baz=145,SNR=102
242A **Grayson** 55.94 336 P P 11 09 06.6 -0.1
baz=154,SNR=24
734A **La Parita Cree** 55.94 329 P P 11 09 06.5 -0.3
baz=146,SNR=48
635A **Leesville** 56.01 330 P P 11 09 07.1 -0.2
baz=147,SNR=23
340A **Bronson** 56.05 335 P P 11 09 07.7 +0.2
baz=152,SNR=66
438A **Sam Houston St** 56.13 333 P P 11 09 08.8 +0.7
baz=150,SNR=24
832A **Faith Ranch, C** 56.19 327 P P 11 09 08.6 0.0
baz=144,SNR=83
241A **Mo Tay, Goldon** 56.20 336 P P 11 09 08.6 +0.1
baz=153,SNR=44
733A **Divot King Ran** 56.20 328 P P 11 09 08.2 -0.4
baz=145,SNR=55
143A **Socs Landing,** 56.24 337 P P 11 09 08.1 -0.7
baz=155,SNR=9.0
339A **Huntington** 56.24 334 P P 11 09 09.4 +0.5
baz=151,SNR=32
536A **Bastrop** 56.26 331 P P 11 09 08.9 -0.2
baz=148,SNR=12
634A **China Grove, S** 56.28 329 P P 11 09 08.9 -0.3
baz=146,SNR=6.7
142A **Monroe** 56.30 337 P P 11 09 08.6 -0.6
baz=154,SNR=12
535A **Dale** 56.46 330 P P 11 09 10.3 -0.2
baz=147,SNR=36
437A **Phantom Ranch,** 56.49 332 P P 11 09 11.2 +0.6
baz=149,SNR=8.0
240A **Hunter Patters** 56.54 335 P P 11 09 11.3 +0.4
baz=152,SNR=11
338A **Crockett** 56.58 333 P P 11 09 12.0 +0.7
baz=150,SNR=76
NATX **Nacogdoches** 56.66 334 P P 11 09 12.2 +0.4
baz=151,SNR=25
NATX **Nacogdoches** 56.66 334 eP P 11 09 12.5 +0.7
comp=Z,396nm,0.9s
141A **Papa Simpson,** 56.71 336 P P 11 09 12.4 +0.3
baz=153,SNR=9.2
CPCT **Cooper Cave** 56.71 345 eP P 11 09 10.4 -1.7
comp=Z,168nm,1.3s
436A **Wall Ranch, Ga** 56.73 332 P P 11 09 12.4 +0.1
baz=148,SNR=26
TKL **Tuckaleechee C** 56.73 346 eP P 11 09 11.2 -1.1
TKL pmax pmax
comp=Z,280nm,1.1s
TKL **Tuckaleechee C** 56.73 346 eP P 11 09 11.2 -1.1
comp=Z,281nm,1.1s
633A **Saathoff Ranch** 56.75 329 P P 11 09 12.0 -0.6
baz=146,SNR=120
337A **Centerville** 56.79 333 P P 11 09 13.4 +0.6
baz=150,SNR=12
239A **Gary** 56.81 334 P P 11 09 13.5 +0.6
baz=151,SNR=20
SWET **Sewanee** 56.85 344 eP P 11 09 11.9 -1.2
comp=Z,68nm,0.8s
534A **Blanco** 56.88 330 P P 11 09 12.6 -0.8
baz=147,SNR=28
140A **Cam and Jess,** 57.00 335 P P 11 09 14.8 +0.7
baz=152,SNR=71
238A **Jacksonville** 57.06 334 P P 11 09 15.4 +0.8
baz=150,SNR=32
435B **Jarrell** 57.10 331 P P 11 09 14.7 -0.3
baz=148,SNR=12
533A **Kerrville** 57.19 329 P P 11 09 15.4 -0.2
baz=146,SNR=33
OXF **Oxford** 57.20 340 eP P 11 09 14.2 -1.4
OXF pmax pmax
comp=Z,390nm,1.0s
OXF **Oxford** 57.20 340 eP P 11 09 14.2 -1.4
comp=Z,393nm,0.9s
Z41A **Richland Creek** 57.25 337 P P 11 09 16.2 +0.3
baz=153,SNR=34
336A **Riesel** 57.27 332 P P 11 09 15.9 -0.3
baz=149,SNR=59
237A **Washetta, Mont** 57.35 333 P P 11 09 17.2 +0.5
baz=150,SNR=71
139A **Bunkhouse Ranc** 57.35 335 P P 11 09 17.4 +0.7
baz=152
434A **Burnet** 57.44 330 P P 11 09 16.7 -0.7
baz=147,SNR=65
335A **Moody** 57.45 331 P P 11 09 17.3 -0.1
baz=148,SNR=58
CCAR **Cane Creek** 57.46 338 eP P 11 09 17.6 +0.2
comp=Z,269nm,0.9s
Z40A **Long Farm, Mag** 57.48 336 P P 11 09 18.1 +0.5
baz=153,SNR=80
VWCC **Virginia Weste** 57.51 350 eP P 11 09 18.1 +0.3
BLA **Blacksburg** 57.55 349 eP P 11 09 18.4 +0.3
BLA pmax pmax
comp=Z,930nm,1.9s
BLA **Blacksburg** 57.55 349 eP P 11 09 18.4 +0.3
comp=Z,931nm,1.9s
138A **Matatall Enter** 57.62 334 P P 11 09 18.6 0.0
baz=151
236A **Katherine and** 57.66 333 P P 11 09 18.8 -0.1
baz=149,SNR=67
WLAR **White Oak Lake** 57.75 336 eP P 11 09 19.8 +0.3
comp=Z,631nm,0.9s
Z39A **Irene McRaven,** 57.77 335 P P 11 09 20.1 +0.5
baz=152,SNR=14
433A **Art** 57.78 330 P P 11 09 19.3 -0.4
baz=146,SNR=118
137A **Heron Place, G** 57.84 334 P P 11 09 20.9 +0.8
baz=150,SNR=71
334A **Lometa** 57.86 331 P P 11 09 19.9 -0.4
baz=147,SNR=58
JCT **Junction City** 57.90 329 P P 11 09 20.0 -0.6
baz=146,SNR=48
JCT **Junction City** 57.90 329 eP P 11 09 19.9 -0.7
JCT pmax pmax
comp=Z,110nm,1.0s
JCT **Junction City** 57.90 329 eP P 11 09 19.9 -0.7
comp=Z,108nm,1.0s
MET **Memphis--Engin** 57.93 340 eP P 11 09 20.2 -0.5
comp=Z,435nm,0.8s
WHTX **Lake Whitney,** 58.06 332 P P 11 09 21.6 -0.1
baz=148,SNR=41
WHTX **Lake Whitney,** 58.06 332 eP P 11 09 21.4 -0.3
comp=Z,749nm,1.6s
136A **Ennis** 58.07 333 P P 11 09 21.9 +0.2
baz=149,SNR=22
CBN **Corbin Frederi** 58.08 352 eP P 11 09 22.2 +0.6
Z38A **Mt. Pleasant** 58.09 335 P P 11 09 22.0 +0.2
baz=151,SNR=23
Y40A **Okolona** 58.10 336 P P 11 09 21.7 -0.2
baz=153,SNR=74
333A **Richland Sprin** 58.20 330 P P 11 09 22.0 -0.7
baz=146,SNR=80
WVT **Waverly** 58.23 342 eP P 11 09 21.0 -1.7
WVT pmax pmax
comp=Z,260nm,0.8s
WVT **Waverly** 58.23 342 eP P 11 09 21.0 -1.7
comp=Z,256nm,0.8s
HPIG 58.27 321 eP P 11 09 23.4 -0.1
Z37A **Pogue Cattle C** 58.31 334 P P 11 09 23.4 0.0
baz=150,SNR=11
Y39A **Locksburg** 58.34 336 P P 11 09 23.5 -0.1
baz=152,SNR=100
X40A **Basin Creek Fa** 58.36 337 P P 11 09 23.0 -0.7
baz=154,SNR=14
234A **Clairette** 58.38 331 P P 11 09 23.5 -0.4
baz=148,SNR=121
UALR **University of** 58.44 338 eP P 11 09 23.7 -0.6
comp=Z,200nm,1.1s
135A **Vickery Place,** 58.52 332 P P 11 09 24.4 -0.5
baz=148,SNR=26
Y38A **Idabel** 58.59 335 P P 11 09 24.8 -0.4
baz=152,SNR=35
MIAR **Mount Ida** 58.69 337 P P 11 09 25.3 -0.7
baz=153,SNR=111
MIAR **Mount Ida** 58.69 337 eP P 11 09 25.3 -0.7
MIAR **Mount Ida** 58.69 337 eP P 11 09 25.3 -0.7
Z36A **Blue Ridge** 58.71 333 P P 11 09 26.2 0.0
baz=150,SNR=107
233A **Rising Star** 58.74 331 P P 11 09 26.2 -0.3
baz=147,SNR=80
134A **White-Moore Ra** 58.83 332 P P 11 09 26.8 -0.2
baz=148,SNR=52
X39A **Fountain Ranch** 58.86 336 P P 11 09 27.1 -0.1
baz=152,SNR=127
WHAR **Wooly Hollow** 58.88 338 eP P 11 09 26.3 -1.0
TXAR **Lajitas Array** 58.97 325 P P 11 09 27.6 -0.6
comp=Z,20nm,0.8s,baz=147,slow=7.5,SNR=129
TXAR pP pP 11 09 55.4 +2.2
comp=Z,6.8nm,0.7s,baz=154,slow=7.5,SNR=4.0
TXAR PKP2bc 11 39 10.3
comp=Z,0.5nm,0.9s,baz=0.0,slow=1.1,SNR=3.6
TXAR **Lajitas Array** 58.97 325 P P 11 09 27.6 -0.6
TXAR pP pP 11 09 55.4 +2.2
TXAR ⇑*e* 11 39 10.2
TX31 **Lajitas Ar. Si** 58.97 325 eP P 11 09 27.8 -0.4
Y37A **Hugo** 58.99 334 P P 11 09 28.9 +0.8
baz=151,SNR=199
PVMO **Portageville** 59.05 341 eP P 11 09 28.6 +0.1
comp=Z,1µm,1.0s
W40A **Ferguson Farm,** 59.08 337 P P 11 09 28.5 -0.2
baz=154,SNR=79
Z35A **Perchaven, San** 59.11 333 P P 11 09 29.0 0.0
baz=149,SNR=37
LPIG **La Paz** 59.13 316 P P 11 09 29.7 +0.5
comp=Z,64nm,0.9s,baz=304,slow=0.3,SNR=14
LPIG **La Paz** 59.13 316 P P 11 09 29.8 +0.5
Y36A **Durant** 59.19 334 P P 11 09 29.5 +0.1
baz=150
133A **Hamilton Ranch** 59.24 331 P P 11 09 29.5 -0.4
baz=147,SNR=66
X38A **Whitesboro** 59.27 336 P P 11 09 30.2 +0.2
baz=152,SNR=167
PARMO **Parma** 59.29 341 eP P 11 09 29.8 -0.3
W39A **Magazine** 59.34 337 P P 11 09 30.3 -0.2
baz=153,SNR=112
X37A **Clayton** 59.42 335 P P 11 09 31.0 -0.1
baz=151,SNR=117
Z34A **Collier Ranch,** 59.44 332 P P 11 09 31.1 -0.1
baz=148,SNR=49
W38A **Poteau** 59.51 336 P P 11 09 31.7 +0.1
baz=152,SNR=118
Y35A **Marietta** 59.51 333 P P 11 09 31.5 -0.2
baz=149,SNR=70
V40A **Witts Springs** 59.53 338 P P 11 09 30.8 -1.1
baz=154,SNR=82
ABTX **Abilene, Hawle** 59.59 330 P P 11 09 31.7 -0.6
baz=146,SNR=33
ABTX **Abilene, Hawle** 59.59 330 eP P 11 09 31.9 -0.4
comp=Z,307nm,1.3s
Z33A **Whitaker Ranch** 59.74 331 P P 11 09 33.2 -0.1
baz=147,SNR=96
WCI **Wyandotte Cave** 59.79 344 eP P 11 09 32.0 -1.5
WCI **Wyandotte Cave** 59.79 344 eP P 11 09 32.0 -1.5
X36A **Centrahoma** 59.80 334 P P 11 09 32.8 -0.8
baz=150,SNR=34
MCWV **Mont Chateau** 59.85 351 eP P 11 09 34.0 +0.2
V39A **Pettigrew** 59.86 337 P P 11 09 33.5 -0.6
baz=153,SNR=202
Y34A **Reagan Ranch,** 59.87 333 P P 11 09 33.4 -0.7
baz=149,SNR=108
USIN **University of** 59.90 343 eP P 11 09 33.1 -1.2
X35A **Drake** 59.91 334 P P 11 09 33.7 -0.7
baz=149,SNR=74
W37B **Quinton** 59.92 335 P P 11 09 34.1 -0.4
baz=151,SNR=112
U40A **Yellville** 60.04 338 P P 11 09 34.2 -1.1
baz=154,SNR=147
SIUC **Southern Illin** 60.10 342 eP P 11 09 32.1 -3.5
V38A **Canehill** 60.17 337 P P 11 09 35.3 -0.8
baz=152,SNR=198
W36A **Wetumka** 60.24 335 P P 11 09 35.6 -1.0
baz=150,SNR=80
O56A **Blue Knob Stat** 60.26 352 P P 11 09 36.2 -0.5
baz=170,SNR=25
U39A **Green Forest** 60.29 338 P P 11 09 36.0 -0.9
baz=153,SNR=126
Y33A **Hilltop Ranch,** 60.29 332 P P 11 09 36.6 -0.5
baz=148,SNR=62
HHAR **Hobbs** 60.36 337 eP P 11 09 36.5 -1.0
X34A **Smith Ranch, M** 60.45 333 P P 11 09 37.8 -0.3
baz=149,SNR=69
V37A **Hulbert** 60.46 336 P P 11 09 37.7 -0.4
baz=152,SNR=159
W35A **Tecumseh** 60.52 334 P P 11 09 37.5 -1.1
baz=150,SNR=39
SSPA **Standing Stone** 60.54 352 eP P 11 09 38.9 +0.3
N59A **State Game Lan** 60.58 354 P P 11 09 37.5 -1.4
baz=173
T40A **Mansfield** 60.64 339 P P 11 09 38.3 -1.0
baz=155,SNR=59
U38A **Gravette** 60.67 337 P P 11 09 38.8 -0.8
baz=152,SNR=43
X33A **Lawton** 60.68 332 P P 11 09 38.6 -1.1
baz=148,SNR=29
V36A **Jenks** 60.69 335 P P 11 09 39.0 -0.7
baz=151,SNR=180
BLO **Bloomington** 60.73 345 eP P 11 09 38.6 -1.3
BLO **Bloomington** 60.73 345 eP P 11 09 38.6 -1.3
OLIL **Olney** 60.73 343 eP P 11 09 38.5 -1.4
TUL1 **Leonard** 60.74 335 P P 11 09 39.3 -0.8
baz=151,SNR=84
TUL1 **Leonard** 60.74 335 eP P 11 09 39.3 -0.8
comp=Z,652nm,1.4s
T39A **Clever** 60.82 338 P P 11 09 39.3 -1.3
baz=154,SNR=79
RKT **Rikitea** 60.86 254 eS S 11 17 54.1 +2.8
comp=Z,2µm,25.2s
RKT eLR LR 11 27 54.1
comp=Z,5µm,35.2s,baz=110
RKT **Rikitea** 60.86 254 eT T 12 14 48.4
comp=Z,3.2nm,0.2s
U37A **Salina** 60.91 336 P P 11 09 40.9 -0.3
baz=152,SNR=149
X32A **Elmer** 60.93 332 P P 11 09 40.3 -1.1
baz=147,SNR=18
ACSO **Alum Creek Sta** 60.96 348 eP P 11 09 40.6 -0.9
W34A **Bridge Creek,** 60.96 333 P P 11 09 40.5 -1.0
baz=149,SNR=16
W34A **Bridge Creek,** 60.96 333 eP P 11 09 40.6 -1.0
comp=Z,142nm,1.2s
WMOK **Wichita Mounta** 60.97 332 eP P 11 09 40.4 -1.3
V35A **Meyer Ranch, C** 61.03 334 P P 11 09 41.1 -0.9
baz=150,SNR=42
S40A **Lebanon** 61.04 339 P P 11 09 40.9 -1.1
baz=155,SNR=86
U36A **Oologah** 61.14 336 P P 11 09 42.2 -0.5
baz=151,SNR=42
N54A **Moraine State** 61.15 351 P P 11 09 42.6 -0.1
baz=168,SNR=48
T38A **Diamond** 61.16 337 P P 11 09 42.4 -0.5
baz=153,SNR=219
W33A **Caddo, Fort Co** 61.19 333 P P 11 09 42.8 -0.3
baz=148
SLM **Saint Louis** 61.26 341 eP P 11 09 42.7 -0.8
SLM **Saint Louis** 61.26 341 eP P 11 09 42.7 -0.8
V34A **Guthrie** 61.37 334 P P 11 09 43.5 -0.8
baz=149,SNR=38
V34A **Guthrie** 61.37 334 eP P 11 09 43.2 -1.1
comp=Z,162nm,0.9s
S39A **Bolivar** 61.40 338 P P 11 09 43.6 -0.9
baz=154,SNR=174
T37A **Cheneyville 18** 61.47 337 P P 11 09 44.2 -0.8
baz=152,SNR=283
W32A **Sentinel** 61.50 332 P P 11 09 44.7 -0.6
baz=148,SNR=128
U35A **Pawnee** 61.51 335 P P 11 09 44.6 -0.7
baz=150,SNR=87
S38A **Stockton** 61.55 338 P P 11 09 44.3 -1.2
baz=153,SNR=81
R40A **Maddies Statio** 61.59 339 P P 11 09 44.2 -1.5
baz=155,SNR=94
M54A **Oil Creek Stat** 61.63 351 P P 11 09 45.9 -0.1
baz=169,SNR=48
V33A **Lossen Ranch,** 61.68 333 P P 11 09 45.4 -1.1
baz=149,SNR=49
MNTX **Cornudas Mount** 61.74 325 P P 11 09 46.0 -0.9
baz=148,SNR=121
MNTX **Cornudas Mount** 61.74 325 eP P 11 09 45.8 -1.1
T36A **Boggs Farm, Ca** 61.78 336 P P 11 09 46.3 -0.8
baz=151,SNR=172
R39A **Chumby, Stover** 61.87 339 P P 11 09 47.0 -0.6
baz=154,SNR=88
BINY **Binghamton** 61.88 354 eP P 11 09 47.5 -0.1
VNA3 **Neumayer Olymp** 61.89 162 P P 11 09 49.0 +1.6
U34A **Anderson Ranch** 61.89 334 P P 11 09 47.2 -0.7
baz=150,SNR=35
U34A **Anderson Ranch** 61.89 334 eP P 11 09 47.0 -0.8
comp=Z,496nm,1.4s
T35A **Sooner Cattle** 61.90 335 P P 11 09 47.3 -0.5
baz=151,SNR=90
HRV **Adam Dziewonsk** 61.90 358 eP P 11 09 48.3 +0.6
HRV **Adam Dziewonsk** 61.90 358 eP P 11 09 48.3 +0.6
V32A **Arapaho** 61.92 333 P P 11 09 47.6 -0.5
baz=148,SNR=27
S37A **Fort Scott** 62.00 337 P P 11 09 48.0 -0.5
baz=152,SNR=272
SFIN **Lafayette** 62.02 345 P P 11 09 47.2 -1.3
baz=161,SNR=79
SFIN **Lafayette** 62.02 345 eP P 11 09 46.6 -2.0
comp=Z,225nm,0.8s
BBTS **Babate** 62.05 61 P P 11 09 49.0 -0.2
comp=Z,901nm,0.9s,baz=263,slow=2.1,SNR=78
BBTS **Babate** 62.05 61 P P 11 09 49.0 -0.2
R38A **Fenwick Farm,** 62.05 338 P P 11 09 48.0 -0.9
baz=153,SNR=209
VNA1 **Neumayer--Stat** 62.10 161 P P 11 09 50.0 +1.3
U33A **Lingo Farm, Me** 62.13 334 P P 11 09 48.7 -0.7
baz=149,SNR=28
Q40A **Laux Farm, Aux** 62.16 340 P P 11 09 48.5 -1.1
baz=155,SNR=56
MSTX **Muleshoe** 62.19 329 P P 11 09 49.3 -0.7
baz=144,SNR=123
MSTX **Muleshoe** 62.19 329 eP P 11 09 48.9 -1.1
comp=Z,290nm,1.1s
S36A **Lake Cedric, C** 62.25 337 P P 11 09 49.7 -0.5
baz=152,SNR=196
T34A **McClaskey Farm** 62.26 335 P P 11 09 50.0 -0.3
baz=150,SNR=70
ERPA **Erie** 62.28 351 eP P 11 09 50.0 -0.2
AMTX **Amarillo** 62.41 330 P P 11 09 50.4 -1.1
baz=145
AMTX **Amarillo** 62.41 330 eP P 11 09 50.3 -1.1
U32A **Winter Ranch,** 62.46 333 P P 11 09 50.9 -0.7
baz=148,SNR=10
VNA2 **Neumayer--Watz** 62.46 161 P P 11 09 52.6 +1.4
baz=291,slow=7.6
S35A **Otter Creek Ra** 62.49 336 P P 11 09 51.5 -0.3
baz=151,SNR=108
R37A **Teagarden Farm** 62.49 337 P P 11 09 51.0 -0.7
baz=153,SNR=102
Q39A **Willow Grove F** 62.50 339 P P 11 09 51.1 -0.7
baz=155,SNR=144
SRIG **Santa Rosalia** 62.60 317 eP P 11 09 52.8 +0.1
P40A **Paris** 62.64 340 P P 11 09 51.4 -1.3
baz=156,SNR=133
Q38A **Cooks Store, C** 62.64 339 P P 11 09 52.0 -0.7
baz=154,SNR=205
T33A **Patterson Ranc** 62.74 334 P P 11 09 52.9 -0.5
baz=149,SNR=18
R36A **Gordon, Harris** 62.75 337 P P 11 09 52.5 -1.0
baz=152,SNR=54
HDIL **Hopedale** 62.77 343 P P 11 09 51.8 -1.7
baz=159,SNR=53
HDIL **Hopedale** 62.77 343 eP P 11 09 51.9 -1.7
S34A **Willow Spring** 62.82 335 P P 11 09 52.9 -1.0
baz=150,SNR=24
P39A **Salisbury** 62.83 340 P P 11 09 53.1 -0.8
baz=155,SNR=88
Q37A **Longview Farm,** 62.86 338 P P 11 09 53.5 -0.7
baz=153,SNR=53
HSIG 62.97 319 eP P 11 09 55.6 +0.5
R35A **Emporia Munici** 63.01 336 P P 11 09 54.8 -0.4
baz=151,SNR=43
S33A **Kaszmaul Farm,** 63.08 335 P P 11 09 55.3 -0.4
baz=149,SNR=15
AAM **Ann Arbor** 63.09 348 eP P 11 09 55.3 -0.3
AAM *e**PP pP 11 10 22.7 +1.8
AAM **Ann Arbor** 63.09 348 eP P 11 09 55.2 -0.3
AAM *ep*P pP 11 10 14.6 -6.3
T32A **Huddler Ranch,** 63.10 334 P P 11 09 55.7 -0.2
baz=148,SNR=31
O40A **La Belle** 63.12 341 P P 11 09 54.7 -1.2
baz=156,SNR=56
P38A **Dawn** 63.21 339 P P 11 09 55.6 -1.0
baz=154,SNR=102
Q36A **Arnold C. Orve** 63.29 337 P P 11 09 56.1 -1.0
baz=152,SNR=19
R34A **Isabella, Hil** 63.39 336 P P 11 09 57.5 -0.3
baz=150,SNR=52
Q35A **Mercer Eighty,** 63.42 337 P P 11 09 56.9 -1.0
baz=152,SNR=59
O39A **Kirksville** 63.46 340 P P 11 09 56.9 -1.2
baz=155,SNR=61
P37A **Lathrop** 63.46 338 P P 11 09 57.1 -1.1
baz=153,SNR=160
NCB **Newcomb** 63.49 356 eP P 11 09 58.0 -0.3
comp=Z,168nm,1.4s
NCB *ep*P pP 11 10 18.0 -5.7
S32A **Newby Ranch, P** 63.55 334 P P 11 09 58.6 -0.3
baz=148,SNR=24
O38A **Galt** 63.64 339 P P 11 09 58.2 -1.1
baz=154,SNR=91
LBNH **Lisbon** 63.65 358 eP P 11 10 00.6 +1.3
LBNH *e**SP pP 11 10 27.6 +3.0
LBNH **Lisbon** 63.65 358 eP P 11 10 00.6 +1.3
LBNH *es*P pP 11 10 27.6 +3.0
121A **Cookes Peak, D** 63.69 324 P P 11 10 00.7 +0.7
baz=139,SNR=75
121A **Cookes Peak, D** 63.69 324 eP P 11 10 00.7 +0.7
comp=Z,184nm,1.2s
R33A **Olander Ranch,** 63.69 335 P P 11 09 59.2 -0.5
baz=150,SNR=14
P36A **Good Intent, A** 63.79 338 P P 11 09 59.3 -1.0
baz=152,SNR=48
Q34A **Chapman** 63.81 336 P P 11 09 59.4 -1.1
baz=151,SNR=18
KSU1 **Kansas State U** 63.84 336 P P 11 09 59.5 -1.2
baz=151,SNR=30
KSU1 **Kansas State U** 63.84 336 eP P 11 09 59.8 -0.9
O37A **Wolven Farm, M** 63.91 339 P P 11 09 59.9 -1.2
baz=154,SNR=110
P35A **Duane Minner,** 64.00 337 P P 11 10 00.4 -1.4
baz=152,SNR=44
N39A **Derby Farms, D** 64.01 341 P P 11 10 00.3 -1.4
baz=155,SNR=92
R32A **Long Quarter,** 64.08 335 P P 11 10 01.7 -0.5
baz=149,SNR=64

SNAA	Sanae	64.09	161	P	P	11 10 02.7	+0.6
SNAA	Sanae	64.09	161	*d i*P	P	11 10 02.2	+0.2
SNAA	Sanae	64.09	161	*e*P	P	11 10 02.7	+0.6
O36A	Bolckow	64.16	338	P	P	11 10 01.4	-1.3
	baz=153,SNR=98						
LONY	Lake Ozonia	64.17	356	*e*P	P	11 10 02.9	+0.2
N38A	Joes South For	64.17	340	P	P	11 10 01.8	-0.9
	baz=155,SNR=60						
Q33A	Connelly Farm,	64.22	336	P	P	11 10 02.7	-0.5
	baz=150,SNR=24						
P34A	Walnut Farm, R	64.31	337	P	P	11 10 03.3	-0.5
	baz=151,SNR=80						
Y22D	IRIS PASSCAL I	64.39	326	P	P	11 10 05.0	+0.5
	baz=140,SNR=13						
N37A	Lee Faris, Mou	64.46	339	P	P	11 10 03.6	-1.1
	baz=154,SNR=201						
Q32A	Meitler Ranch,	64.50	335	P	P	11 10 04.3	-0.8
	baz=149,SNR=79						
P33A	Williams Farm,	64.55	336	P	P	11 10 04.6	-0.7
	baz=150,SNR=21						
O35A	Humboldt	64.61	338	P	P	11 10 04.0	-1.7
	baz=152,SNR=30						
M38A	Pleasantville	64.72	340	P	P	11 10 05.0	-1.3
	baz=155,SNR=125						
N36A	Muff Farm, Cla	64.76	339	P	P	11 10 05.8	-0.8
	baz=153,SNR=77						
SADO	Sadowa	64.77	352	*e*P	P	11 10 05.7	-0.8
ANMO	Albuquerque	64.82	327	P	P	11 10 07.6	+0.2
	baz=141						
ANMO	Albuquerque	64.82	327	*e*P	P	11 10 07.3	-0.1
ANMO	Albuquerque	64.82	327	*e*P	P	11 10 07.3	-0.1
O34A	Beatrice	64.82	337	P	P	11 10 06.2	-0.8
	baz=151,SNR=16						
CBKS	Cedar Bluff	64.83	334	P	P	11 10 06.8	-0.4
	baz=148,SNR=73						
CBKS	Cedar Bluff	64.83	334	*e*P	P	11 10 06.8	-0.4
M37A	Trindle Farm,	64.98	340	P	P	11 10 07.3	-0.8
	baz=154,SNR=110						
N35A	Tabor	65.04	338	P	P	11 10 07.6	-0.8
	baz=152,SNR=86						
O33A	Hebron	65.06	336	P	P	11 10 07.9	-0.7
	baz=150,SNR=37						
P32A	Huiting Farm,	65.06	335	P	P	11 10 07.9	-0.7
	baz=149,SNR=22						
SCIA	State Center	65.17	340	*e*P	P	11 10 08.4	-0.9
JFWS	Jewell Farm	65.22	343	*e*P	P	11 10 08.4	-1.1
JFWS	Jewell Farm	65.22	343	*e*P	P	11 10 08.4	-1.1
TUC	Tucson	65.23	322	P	P	11 10 10.5	+0.5
	baz=136						
TUC	Tucson	65.23	322	*e*P	P	11 10 10.3	+0.3
M36A	Felix, Anita	65.28	339	P	P	11 10 09.0	-0.9
	baz=153,SNR=104						
P31A	Stockton	65.28	335	P	P	11 10 09.6	-0.5
	baz=148,SNR=77						
L38A	Oak Wood Farm,	65.30	341	P	P	11 10 08.9	-1.2
	baz=155,SNR=60						
N34A	Lincoln	65.32	337	P	P	11 10 09.1	-1.2
	baz=152,SNR=97						
O32A	Brockman Farm,	65.48	336	P	P	11 10 10.8	-0.6
	baz=150,SNR=44						
T25A	Trinidad	65.53	330	P	P	11 10 12.0	+0.1
	baz=143,SNR=55						
L37A	Phoenix Point,	65.54	340	P	P	11 10 11.1	-0.5
	baz=154,SNR=28						
N33A	J Bar K, Exete	65.58	337	P	P	11 10 11.0	-1.0
	baz=151						
M35A	Neola	65.59	338	P	P	11 10 11.2	-0.8
	baz=152,SNR=39						
P30A	Selden	65.66	334	P	P	11 10 12.4	-0.2
	baz=148,SNR=24						
K38A	Parkersburg	65.70	341	P	P	11 10 11.4	-1.3
	baz=156,SNR=34						
GLMI	Grayling	65.70	348	*e*P	P	11 10 11.5	-1.2
O31A	Woolen Ranch,	65.80	335	P	P	11 10 12.7	-0.8
	baz=149,SNR=30						
L36A	Harm Buss Farm	65.81	339	P	P	11 10 12.8	-0.6
	baz=154,SNR=42						
N32A	Stulken Farm,	65.93	336	P	P	11 10 13.5	-0.7
	baz=150						
M34A	Aspy Farms, Fr	65.94	338	P	P	11 10 13.5	-0.7
	baz=152,SNR=24						
P29A	Atwood	65.99	334	P	P	11 10 14.0	-0.7
	baz=147,SNR=27						
K37A	Belmond	66.08	341	P	P	11 10 13.8	-1.3
	baz=155,SNR=62						
L35A	Bielow Farm, R	66.12	339	P	P	11 10 14.4	-0.9
	baz=153,SNR=117						
O30A	MW Ranch, Wils	66.12	335	P	P	11 10 14.7	-0.8
	baz=148,SNR=37						
214A	Organ Pipe Nat	66.18	320	P	P	11 10 16.7	+0.7
	baz=135,SNR=179						
214A	Organ Pipe Nat	66.18	320	*e*P	P	11 10 16.9	+0.9
	comp=Z,668nm,0.9s						
M33A	Taylor Creek F	66.22	337	P	P	11 10 15.0	-1.1
	baz=151,SNR=11						
K36A	Gilmore City	66.22	340	P	P	11 10 15.0	-1.0
	baz=154,SNR=70						
J38A	Wedel Dairy, R	66.23	342	P	P	11 10 14.9	-1.2
	baz=156,SNR=29						
KSCO	Kaye Shedlock'	66.23	332	P	P	11 10 15.9	-0.4
	baz=145,SNR=43						
KSCO	Kaye Shedlock'	66.23	332	*e*P	P	11 10 16.3	0.0
	comp=Z,453nm,1.4s						
N31A	Bailey Ranch,	66.23	336	P	P	11 10 15.7	-0.5
	baz=149						
L34A	Svendsen Farm,	66.27	338	P	P	11 10 15.6	-0.8
	baz=152,SNR=87						
P28A	Saint Francis	66.31	333	P	P	11 10 16.3	-0.5
	baz=146,SNR=18						
O29A	4D Ranch, Culb	66.38	334	P	P	11 10 17.1	0.0
	baz=147,SNR=15						
BGNE	Belgrade	66.43	337	P	P	11 10 16.9	-0.4
	baz=150,SNR=100						
BGNE	Belgrade	66.43	337	*e*P	P	11 10 17.0	-0.4
	comp=Z,919nm,0.9s						
SDCO	Great Sand Dun	66.53	329	P	P	11 10 19.0	+0.5
	baz=142,SNR=165						
SDCO	Great Sand Dun	66.53	329	*e*P	P	11 10 18.6	+0.1
J37A	Redenius Farm,	66.55	341	P	P	11 10 17.0	-1.0
	baz=155,SNR=39						
K35A	Storm Lake	66.55	339	P	P	11 10 17.3	-0.8
	baz=153,SNR=31						
N30A	Hueftle Ranch,	66.66	335	P	P	11 10 18.6	-0.3
	baz=148,SNR=8.4						
M31A	Lambtecht Ranc	66.69	336	P	P	11 10 19.1	0.0
	baz=149,SNR=19						
W18A	Petrified Fore	66.69	325	P	P	11 10 20.0	+0.6
	baz=138,SNR=13						
W18A	Petrified Fore	66.69	325	*e*P	P	11 10 20.0	+0.6
	comp=Z,201nm,1.3s						
L33A	Hoskins	66.77	338	P	P	11 10 18.6	-1.0
	baz=151,SNR=21						
O28A	Krutsinger Ran	66.78	333	P	P	11 10 19.3	-0.5
	baz=146,SNR=7.7						
J36A	Seneca 1, Swea	66.81	340	P	P	11 10 18.7	-1.0
	baz=154,SNR=43						
K34A	Le Mars	66.81	339	P	P	11 10 18.7	-1.1
	baz=152,SNR=32						
I38A	Scanlan Farm,	66.84	342	P	P	11 10 18.9	-1.0
	baz=156,SNR=165						
N29A	Votaw Ranch, W	66.89	335	P	P	11 10 20.1	-0.3
	baz=148,SNR=34						
L32A	Elgin	66.89	337	P	P	11 10 19.6	-0.7
	baz=150,SNR=31						
LMQ	La Malbaie	66.91	359	*e*P	P	11 10 20.9	+0.6
K33A	Hardington	67.06	338	P	P	11 10 20.5	-0.8
	baz=151,SNR=48						
J35A	Milford	67.12	340	P	P	11 10 20.4	-1.3
	baz=153,SNR=17						
I37A	Lemond, Waseca	67.14	341	P	P	11 10 20.8	-1.0
	baz=155,SNR=75						
N28A	Pribbeno Ranch	67.15	334	P	P	11 10 21.3	-0.8
	baz=147,SNR=37						
S22A	4UR Ranch, Cre	67.18	328	P	P	11 10 22.7	+0.1
	baz=141,SNR=52						
M30A	Dale-Ortello V	67.20	335	P	P	11 10 21.9	-0.4
	baz=148,SNR=11						
J34A	George	67.30	339	P	P	11 10 22.0	-0.8
	baz=152,SNR=9.9						
I36A	Fitzsimmons Fa	67.33	341	P	P	11 10 21.9	-1.1
	baz=154,SNR=24						
Q24A	Divide	67.34	330	P	P	11 10 23.3	-0.3
	baz=143,SNR=54						
L31A	Butterfield Fa	67.35	337	P	P	11 10 23.0	-0.2
	baz=150,SNR=136						
M29A	Burnside Ranch	67.44	335	P	P	11 10 23.7	-0.2
	baz=148,SNR=22						
K32A	Verdigre	67.45	337	P	P	11 10 22.6	-1.2

	baz=150,SNR=29						
I35A	Creekview Farm	67.49	340	P	P	11 10 23.0	-1.0
	baz=154,SNR=27						
L30A	Spencer Herefo	67.49	336	P	P	11 10 24.0	-0.1
	baz=149,SNR=27						
H37A	Dierke Farm, C	67.51	342	P	P	11 10 23.1	-1.0
	baz=156,SNR=29						
OGNE	Ogallala	67.57	334	P	P	11 10 24.6	-0.2
	baz=146,SNR=19						
MVCO	Mesa Verde	67.61	327	P	P	11 10 25.9	+0.7
	baz=140,SNR=60						
MVCO	Mesa Verde	67.61	327	*e*P	P	11 10 25.6	+0.3
J33A	Davis	67.67	338	P	P	11 10 24.3	-0.9
	baz=152,SNR=89						
M28A	Bar X Bar Ranc	67.68	334	P	P	11 10 25.1	-0.3
	baz=147,SNR=17						
K31A	O'Neill	67.70	337	P	P	11 10 25.1	-0.3
	baz=150,SNR=78						
H36A	Jessenland, He	67.81	341	P	P	11 10 25.5	-0.5
	baz=155,SNR=90						
VLDQ	Val d'Or	67.87	354	*e*P	P	11 10 26.4	+0.1
L29A	Maesberg Ranch	67.88	335	P	P	11 10 26.4	-0.3
	baz=148,SNR=8.6						
WUAZ	Wupatki	67.89	324	P	P	11 10 27.5	+0.6
	baz=137,SNR=116						
ECSD	EROS Data Cent	67.92	339	P	P	11 10 26.1	-0.7
	baz=152,SNR=67						
ECSD	EROS Data Cent	67.92	339	*e*P	P	11 10 25.8	-1.0
I34A	Hadley	67.94	340	P	P	11 10 25.7	-1.2
	baz=153,SNR=8.8						
J32A	Parkston	68.03	338	P	P	11 10 26.5	-0.9
	baz=151,SNR=114						
SPMN	Marine on St.	68.06	342	P	P	11 10 26.6	-1.0
	baz=156,SNR=51						
SPMN	Marine on St.	68.06	342	*e*P	P	11 10 26.4	-1.1
	comp=Z,151nm,1.0s						
K30A	Basset	68.07	336	P	P	11 10 27.5	-0.2
	baz=149,SNR=123						
GLA	Glamis	68.16	320	P	P	11 10 29.3	+0.8
	baz=133,SNR=25						
GLA	Glamis	68.16	320	*e*P	P	11 10 29.5	+1.0
GLA	Glamis	68.16	320	*e*P	P	11 10 29.5	+1.0
LIC	Lamto	68.17	75	*e*P	P	11 10 27.6	-1.4
	comp=Z,430nm,1.4s						
H35A	Sunnyside Ranc	68.19	341	P	P	11 10 27.5	-0.9
	baz=154,SNR=62						
ISCO	Idaho Springs	68.22	331	P	P	11 10 29.2	+0.2
	baz=143,SNR=68						
ISCO	Idaho Springs	68.22	331	*e*P	P	11 10 29.3	+0.2
ISCO	Idaho Springs	68.22	331	*e*P	P	11 10 29.3	+0.2
L28A	Connealy Angus	68.25	335	P	P	11 10 29.2	+0.2
	baz=147,SNR=15						
I33A	Coleman	68.26	339	P	P	11 10 28.3	-0.6
	baz=152,SNR=10						
J31A	Geddes	68.28	337	P	P	11 10 28.1	-0.9
	baz=150,SNR=70						
TIC	Toumodi	68.35	74	*e*P	P	11 10 28.8	-1.3
G36A	St. Michael	68.35	342	P	P	11 10 29.0	-0.4
	baz=155,SNR=17						
PV01	Paradox Valley	68.36	327	*e*P	P	11 10 30.3	+0.4
SMCO	Snowmass	68.37	329	*e*P	P	11 10 30.6	+0.4
K29A	Lazy Trails An	68.42	336	P	P	11 10 29.8	-0.1
	baz=148,SNR=121						
Y12C	Blythe	68.46	320	P	P	11 10 31.6	+1.2
	baz=134,SNR=25						
I32A	Karley and Nic	68.47	338	P	P	11 10 29.7	-0.4
	baz=151,SNR=35						
H34A	Spellman Lake,	68.47	340	P	P	11 10 29.1	-1.0
	baz=153,SNR=57						
KIC	Kosan Boka	68.49	75	*e*P	P	11 10 29.8	-1.1
	comp=Z,1µm,1.1s						
DBIC	Dimbokro	68.51	74	P	P	11 10 30.0	-1.1
	comp=Z,454nm,1.1s,baz=222,slow=6.1,SNR=94						
DBIC				pP	pP	11 10 57.8	+1.1
	comp=Z,79nm,0.8s,baz=232,slow=5.7,SNR=2.7						
DBIC				LR	LR	11 38 34.2	
	comp=Z,2µm,22.0s,baz=224,slow=34						
DBIC	Dimbokro	68.51	74	*e*P	P	11 10 29.9	-1.1
DBIC				pP	pP	11 10 57.8	+1.1
G35A	Watkins	68.56	341	P	P	11 10 30.2	-0.5
	baz=154,SNR=38						
PV05	Paradox Valley	68.58	327	*e*P	P	11 10 31.5	+0.2
J30A	Dallas	68.58	337	P	P	11 10 30.6	-0.3
	baz=149,SNR=147						
LTC	Little Chuckwa	68.61	320	*e*P	P	11 10 32.3	+1.0
PDMCI	Parker Dam,Lak	68.61	321	P	P	11 10 32.3	+1.0
	baz=134,SNR=19						
NVL	N'lazarevskaya	68.64	159	*e*P	P	11 10 31.6	+0.7
NVL				*e**PP	PcP	11 10 53.5	-1.6
NVL				*e**SP	sP	11 11 03.1	-4.6
NVL				*e*S	S	11 19 27.6	+2.3
NVL				*e*		11 19 47.9	
NVL				*e**SS	sS	11 20 08.4	-0.8
IBP	Imperial Bould	68.67	319	P	P	11 10 33.3	+1.5
	baz=132						
SWSC	Sam W. Stewart	68.69	319	P	P	11 10 32.7	+1.0
	baz=133,SNR=18						
PV04	Paradox Valley	68.72	327	*e*P	P	11 10 32.2	+0.1
PV04				*e*pP	PcP	11 10 51.4	-4.8
K28A	Ten Mile Ranch	68.78	335	P	P	11 10 32.5	+0.2
	baz=147,SNR=71						
H33A	Prehn Over Nor	68.80	339	P	P	11 10 31.7	-0.6
	baz=152,SNR=127						
I31A	Royce, Wessing	68.84	338	P	P	11 10 32.1	-0.4
	baz=150,SNR=67						
F36A	Milaca	68.85	342	P	P	11 10 31.2	-1.3
	baz=155,SNR=68						
H32A	Carlson Farm,	68.88	339	P	P	11 10 32.2	-0.6
	baz=151,SNR=90						
PV09	Paradox Valley	68.92	327	*e*P	P	11 10 34.3	+0.8
G34A	Benson	68.94	340	P	P	11 10 32.1	-0.9
	baz=153,SNR=14						
BC3	Big Chuckawall	68.95	320	P	P	11 10 34.6	+1.1
	baz=133,SNR=100						
J29A	Okreek	68.97	336	P	P	11 10 33.1	-0.2
	baz=148,SNR=166						
MONP2	Monument Peak	69.04	319	P	P	11 10 35.4	+1.2
	baz=132,SNR=38						
BAR	Barrett	69.05	318	*e*P	P	11 10 35.1	+1.0
I30A	Oacoma	69.07	337	P	P	11 10 33.0	-0.9
	baz=149,SNR=87						
IRM	Iron Mountain	69.11	320	P	P	11 10 35.5	+1.1
	baz=134,SNR=177						
G33A	Ortonville	69.15	340	P	P	11 10 33.4	-1.0
	baz=152,SNR=34						
F35A	Swanville	69.16	341	P	P	11 10 33.6	-0.8
	baz=154,SNR=49						
E37A	Wrenshall	69.18	343	P	P	11 10 33.4	-1.1
	baz=156,SNR=8.1						
TAOE	Nuku Hiva Isla	69.18	268	*e*S	S	11 19 37.6	+3.9
	comp=Z,673nm,28.4s						
TAOE	Nuku Hiva Isla	69.18	268	*e*LR	LR	11 31 22.7	
	comp=Z,2µm,38.4s						
TAOE	Nuku Hiva Isla	69.18	268	*e*T	T	12 25 07.7	
	comp=Z,77nm,0.2s						
H31A	Wolsey	69.22	338	P	P	11 10 33.6	-1.2
	baz=150,SNR=23						
NEE2	Needles Airpor	69.22	321	P	P	11 10 35.8	+0.8
	baz=134,SNR=11						
N23A	Red Feather La	69.25	331	P	P	11 10 35.7	+0.3
	baz=143,SNR=52						
F34A	Alexandria	69.31	341	P	P	11 10 34.7	-0.6
	baz=154,SNR=35						
J28A	Allard Ranch,	69.33	336	P	P	11 10 35.7	+0.1
	baz=148,SNR=162						
PHWY	Pilot Hill	69.35	332	*e*P	P	11 10 36.2	+0.1
SUSD	Miller	69.35	338	P	P	11 10 35.0	-0.7
	baz=150,SNR=30						
DRLN	Deer Lake	69.41	8	*e*P	P	11 10 35.4	-0.4
109C	Camp Elliot, M	69.46	318	P	P	11 10 37.1	+0.6
	baz=132						
I29A	Vivian Onida	69.48	337	P	P	11 10 35.8	-0.7
	baz=149,SNR=53						
J27A	Elkhorn Farm,	69.49	335	P	P	11 10 37.1	+0.5
	baz=147,SNR=232						
BELC	Belle Mtn. Jos	69.52	320	P	P	11 10 38.0	+0.9
	baz=133,SNR=45						
PFO	Pinyon Flats O	69.54	319	P	P	11 10 38.4	+1.1
	baz=132,SNR=46						
PFO	Pinyon Flats O	69.54	319	*e*P	P	11 10 38.3	+1.1
PFO	Pinyon Flats O	69.54	319	*e*P	P	11 10 38.3	+1.1
G32A	Webster	69.56	339	P	P	11 10 36.2	-0.7
	baz=151,SNR=5.2						
EKU	East Kanab	69.64	324	*e*P	P	11 10 39.3	+1.4
F33A	5 Mile Ranch,	69.68	340	P	P	11 10 36.7	-0.9
	baz=153,SNR=53						
LDFC	Landfair	69.73	321	*e*P	P	11 10 40.0	+1.7

D37A	Cotton	69.73	343	P	P	11 10 37.1	-0.8
	baz=157,SNR=38						
O20A	White River Ci	69.73	329	P	P	11 10 38.6	+0.2
	baz=141,SNR=50						
O20A	White River Ci	69.73	329	*e*P	P	11 10 38.8	+0.4
	comp=Z,239nm,1.4s						
E35A	Pequot Lakes	69.74	342	P	P	11 10 36.7	-1.3
	baz=155,SNR=82						
C39A	Grand Marais	69.75	345	P	P	11 10 36.5	-1.5
	baz=159,SNR=27						
G31A	Conde	69.77	339	P	P	11 10 37.2	-1.0
	baz=151,SNR=25						
KNB	Kanab	69.78	324	*e*P	P	11 10 39.8	+1.1
KNB	Kanab	69.78	324	*e*P	P	11 10 39.8	+1.1
I28A	Midland	69.79	336	P	P	11 10 38.1	-0.3
	baz=148,SNR=52						
PKCU	Pink Cliffs	69.81	325	*e*P	P	11 10 41.3	+2.2
MMU	Miners Mountai	69.82	326	*e*P	P	11 10 39.7	+0.7
GMRC	Granite Mounta	69.85	321	P	P	11 10 40.0	+0.9
	baz=133,SNR=177						
E34A	Wadena	69.93	341	P	P	11 10 38.4	-0.8
	baz=154,SNR=35						
C38A	Sawbill Land.	69.94	344	P	P	11 10 37.9	-1.3
	baz=158,SNR=50						
D36A	Goodland	69.95	343	P	P	11 10 38.6	-0.6
	baz=156,SNR=16						
H29A	Onida	69.97	337	P	P	11 10 38.5	-0.9
	baz=149,SNR=81						
J26A	Sides Ranch, S	69.97	334	P	P	11 10 39.8	+0.2
	baz=146,SNR=68						
F32A	Veblen	69.97	340	P	P	11 10 38.7	-0.8
	baz=152,SNR=13						
MURC	Murrieta	69.99	319	P	P	11 10 40.9	+1.0
	baz=132,SNR=27						
LCMT	Little Creek M	70.01	324	*e*P	P	11 10 41.1	+1.1
G30A	Faulkton	70.02	338	P	P	11 10 39.2	-0.5
	baz=150,SNR=37						
SRU	San Rafael Swe	70.09	327	*e*P	P	11 10 40.9	+0.4
SRU	San Rafael Swe	70.09	327	*e*P	P	11 10 40.9	+0.4
D35A	Remer	70.11	342	P	P	11 10 39.0	-1.3
	baz=155,SNR=21						
E33A	Westby DABS, E	70.18	341	P	P	11 10 39.4	-1.3
	baz=153,SNR=20						
C37A	Embarrass	70.19	344	P	P	11 10 39.4	-1.3
	baz=157,SNR=58						
I27A	Quinn	70.19	335	P	P	11 10 40.6	-0.2
	baz=147,SNR=87						
EYMN	Ely	70.21	344	P	P	11 10 39.8	-1.0
	baz=158,SNR=40						
EYMN	Ely	70.21	344	*e*P	P	11 10 39.7	-1.2
BBRC	Big Bear Solar	70.26	319	P	P	11 10 42.9	+1.2
	baz=132,SNR=23						
HEC	Hector,Ludlow	70.29	320	P	P	11 10 43.1	+1.4
	baz=133,SNR=18						
H28A	Mission Ridge	70.31	336	P	P	11 10 41.3	-0.2
	baz=148,SNR=206						
J25A	Sunshine Ranch	70.33	334	P	P	11 10 42.4	+0.5
	baz=145,SNR=46						
P18A	Preston Nutter	70.34	327	*e*P	P	11 10 42.8	+0.6
F31A	Hecla	70.34	339	P	P	11 10 41.0	-0.6
	baz=151,SNR=97						
G29A	Hoven	70.35	337	P	P	11 10 41.3	-0.4
	baz=149,SNR=60						
C36A	Pine Crest Far	70.39	343	P	P	11 10 40.9	-1.0
	baz=156,SNR=72						
SCI2	San Clemente I	70.43	317	P	P	11 10 43.7	+1.2
	baz=131,SNR=9.1						
D34A	Park Rapids	70.45	341	P	P	11 10 41.8	-0.5
	baz=154,SNR=43						
TUQ	Turquoise Moun	70.45	321	P	P	11 10 43.8	+1.1
	baz=133,SNR=22						
P17A	Butcher Ranch,	70.47	327	*e*P	P	11 10 43.4	+0.6
I26A	New Underwood	70.48	335	P	P	11 10 42.9	+0.2
	baz=146,SNR=53						
QSPA	South Pole Qui	70.51	180	*e*P	P	11 10 43.7	+1.0
	comp=Z,68nm,0.9s						
MSU	Marysvale	70.52	325	*e*P	P	11 10 44.1	+0.9
MSU	Marysvale	70.52	325	*e*P	P	11 10 44.1	+0.9
BART	Pico Bartolome	70.58	36	*e*P	P	11 10 44.4	+1.0
	comp=Z,308nm,1.0s						
TMUT	Trail Mountain	70.58	327	*e*P	P	11 10 44.2	+0.5
F30A	Leola	70.58	338	P	P	11 10 42.8	-0.4
	baz=150,SNR=8.2						
E32A	Braaten, Kindr	70.59	340	P	P	11 10 42.5	-0.6
	baz=152,SNR=9.3						
G28A	Parade	70.61	337	P	P	11 10 43.0	-0.3
	baz=148,SNR=101						
CIS	Catalina Islan	70.62	318	P	P	11 10 44.6	+0.9
	baz=131,SNR=10						
C35A	Jirik Farms, M	70.65	343	P	P	11 10 42.3	-1.3
	baz=155,SNR=77						
DWU	Dry Willow Pea	70.66	325	*e*P	P	11 10 45.2	+1.1
H27A	Howes	70.68	336	P	P	11 10 43.3	-0.5
	baz=147,SNR=111						
D33A	AnnSam, Waubun	70.70	341	P	P	11 10 42.9	-0.9
	baz=153,SNR=37						
BFSC	Mount Baldy Ra	70.70	319	P	P	11 10 45.2	+0.9
	baz=132,SNR=48						
RRX	Edison Barstow	70.72	320	P	P	11 10 45.3	+1.1
	baz=132,SNR=14						
FMP	Fort Macarthur	70.75	318	P	P	11 10 45.2	+0.8
	baz=131,SNR=5.6						
SNO	Snow College	70.77	326	*e*P	P	11 10 45.9	+1.1
I25A	Rochford	70.83	334	P	P	11 10 45.5	+0.6
	baz=146,SNR=213						
E31A	Nome	70.83	339	P	P	11 10 43.7	-0.9
	baz=151,SNR=27						
F29A	Eureka	70.86	338	P	P	11 10 44.3	-0.6
	baz=149,SNR=88						
C34A	RKJ Ranch, Bem	70.88	342	P	P	11 10 43.9	-1.0
	baz=154,SNR=95						
GSC	Goldstone, Bar	70.89	320	P	P	11 10 46.5	+1.2
	baz=132,SNR=75						
GSC	Goldstone, Bar	70.89	320	*e*P	P	11 10 46.6	+1.2
GSC	Goldstone, Bar	70.89	320	*e*P	P	11 10 46.6	+1.2
K22A	Casper	70.91	332	P	P	11 10 45.3	0.0
	baz=143,SNR=50						
K22A	Casper	70.91	332	*e*P	P	11 10 45.6	+0.2
	comp=Z,90nm,0.9s						
H26A	Fairpoint	70.94	335	P	P	11 10 45.5	+0.1
	baz=146,SNR=35						
MWC	Mount Wilson	70.94	319	*e*P	P	11 10 46.9	+1.1
MWC	Mount Wilson	70.94	319	*e*P	P	11 10 46.9	+1.1
SHOC	Shoshone, Teco	70.98	321	P	P	11 10 46.6	+0.9
	baz=133,SNR=37						
PASC	Pasadena Art C	70.98	319	*e*P	P	11 10 46.8	+0.9
	comp=Z,294nm,1.3s						
BLKC	Black Mountain	71.00	320	*e*P	P	11 10 47.5	+1.6
RSSD	Black Hills	71.03	334	P	P	11 10 46.2	0.0
	baz=145						
RSSD	Black Hills	71.03	334	*e*P	P	11 10 46.2	0.0
RSSD	Black Hills	71.03	334	*e*P	P	11 10 46.2	0.0
D32A	Dogwood Acres,	71.06	340	P	P	11 10 45.3	-0.6
	baz=152,SNR=9.1						
E30A	Jud	71.12	339	P	P	11 10 45.9	-0.5
	baz=150,SNR=25						
DECC	Green Verdugo	71.13	319	P	P	11 10 47.8	+1.0
	baz=131,SNR=25						
B35A	Bob, Littlefor	71.18	343	P	P	11 10 45.8	-0.9
	baz=156,SNR=95						
D31A	Mcclaflin, Tow	71.21	340	P	P	11 10 46.3	-0.6
	baz=152,SNR=5.9						
F28A	McLaughlin	71.23	337	P	P	11 10 47.1	+0.1
	baz=148						
C33A	Trail	71.23	341	P	P	11 10 46.2	-0.8
	baz=154,SNR=66						
SNCC	San Nicolas Is	71.23	317	P	P	11 10 47.6	+0.3
	baz=130,SNR=5.4						
SNCC	San Nicolas Is	71.23	317	*e*P	P	11 10 49.3	+2.0
G27A	Dupree	71.25	336	P	P	11 10 46.8	-0.5
	baz=147,SNR=132						
H25A	Fruitdale	71.27	335	P	P	11 10 47.4	0.0
	baz=146,SNR=91						
EDW2	Edwards Air Fo	71.33	319	P	P	11 10 48.8	+0.8
	baz=132,SNR=67						
MPU	Maple Canyon	71.34	327	*e*P	P	11 10 48.8	+0.7
E29A	Napoleon	71.43	338	P	P	11 10 47.9	-0.4
	baz=150,SNR=40						
G26A	Maurine	71.43	336	P	P	11 10 48.0	-0.4
	baz=147,SNR=155						
PSUT	Pine Spring	71.44	324	*e*P	P	11 10 50.0	+1.2
BLG	Laguna Peak, P	71.49	318	P	P	11 10 49.7	+0.8
	baz=130,SNR=10						
C32A	Crookston	71.52	341	P	P	11 10 48.1	-0.6
	baz=153						
NLU	North Lily Min	71.52	327	*e*P	P	11 10 50.1	+0.8
LRMC	Laurel Mtn Rad	71.54	320	P	P	11 10 50.1	+0.8

baz=132,SNR=8.8
B34A Aery, Baudette 71.56 342 P P 11 10 48.0 -1.0
baz=155,SNR=72
D30A Buchanan 71.60 339 P P 11 10 48.9 -0.4
baz=151,SNR=93
OSI Osito Audit: C 71.61 319 P P 11 10 50.5 +0.9
baz=131,SNR=8.6
OSI Osito Audit: C 71.61 319 eP P 11 10 50.5 +0.9
HTU Hoyt Peak 71.62 328 eP P 11 10 50.6 +0.7
B33A Robert and Kas 71.64 342 P P 11 10 48.8 -0.6
baz=154,SNR=51
G25A Newell 71.67 335 P P 11 10 49.9 +0.1
baz=146,SNR=91
KLJ Keetly 71.68 327 eP P 11 10 50.9 +0.8
JLU Jordanelle 71.68 327 eP P 11 10 50.9 +0.7
TPNV Topopah Spring 71.68 322 P P 11 10 51.7 +1.5
baz=133,SNR=117
TPNV Topopah Spring 71.68 322 eP P 11 10 51.7 +1.5
TPNV Topopah Spring 71.68 322 eP P 11 10 51.7 +1.5
F27A Lemmon 71.70 337 P P 11 10 50.0 0.0
baz=147,SNR=127
FURC Furnace Creek, 71.71 321 P P 11 10 51.4 +1.3
baz=133,SNR=159
AGMN Agassiz Nation 71.74 342 P P 11 10 49.1 -1.0
baz=154,SNR=110
AGMN Agassiz Nation 71.74 342 eP P 11 10 49.2 -0.9
SCZ2 Santa Cruz Isl 71.78 318 P P 11 10 51.4 +0.8
baz=130,SNR=10
E28A Huff 71.81 338 P P 11 10 50.6 +0.1
baz=149,SNR=97
MPMC Manual Prospec 71.81 320 P P 11 10 51.6 +0.6
baz=132,SNR=67
GMU Granite Mounta 71.82 327 eP P 11 10 51.5 +0.5
RCWM Renegade Canyo 71.83 320 eP P 11 10 51.9 +0.9
D29A Pettibone, Tap 71.84 339 P P 11 10 50.7 0.0
baz=150,SNR=20
C31A Landman Farms, 71.87 340 P P 11 10 50.0 -0.9
baz=152,SNR=63
CTU Camp Tracy 71.90 327 eP P 11 10 51.8 +0.4
F26A Lodgepole 71.93 336 P P 11 10 51.6 +0.3
baz=147,SNR=260
RBU Red Butte Cany 71.99 327 eP P 11 10 52.4 +0.4
E27A Carson 72.00 337 P P 11 10 51.6 -0.1
baz=148,SNR=72
ARVC Arvin 72.01 319 P P 11 10 52.7 +0.7
baz=131,SNR=20
DAC Darwin (Calif) 72.02 321 eP P 11 10 53.1 +0.8
DAC Darwin (Calif) 72.02 321 eP P 11 10 53.0 +0.8
B32A Ashes, Strandq 72.03 341 P P 11 10 51.0 -0.7
baz=153,SNR=152
C30A Mose, Pekin 72.03 340 P P 11 10 51.8 0.0
baz=151,SNR=77
TCUT Toone Canyon 72.04 328 eP P 11 10 53.3 +0.9
FSU Fish Springs 72.04 326 eP P 11 10 53.6 +1.4
PMOZ Porto Moniz, M 72.08 44 eP P 11 10 53.9 +1.3
comp=Z,276nm,1.2s
PMOZ i P pP 11 11 20.2 +1.8
PMOZ eS S 11 20 09.1 +2.5
DUG Dugway, Tooele 72.08 326 P P 11 10 53.5 +1.0
baz=137,SNR=137
DUG Dugway, Tooele 72.08 326 eP P 11 10 53.2 +0.7
DUG Dugway, Tooele 72.08 326 eP P 11 10 53.2 +0.7
WHFM Hanning Flat 72.09 320 eP P 11 10 54.1 +1.5
SBC Santa Barbara 72.12 318 P P 11 10 53.2 +0.6
baz=130
ISA Isabella, Lake 72.14 320 P P 11 10 54.4 +1.5
baz=131,SNR=26
ISA Isabella, Lake 72.14 320 eP P 11 10 54.1 +1.3
ISA Isabella, Lake 72.14 320 eP P 11 10 54.1 +1.3
A33A Warroad 72.18 342 P P 11 10 52.0 -0.6
baz=154,SNR=101
R11A Troy Canyon, C 72.27 323 P P 11 10 55.0 +1.3
baz=134,SNR=134
R11A Troy Canyon, C 72.27 323 eP P 11 10 55.0 +1.3
comp=Z,113nm,1.1s
F25A Bowman 72.29 336 P P 11 10 53.5 0.0
baz=146,SNR=82
D28A Regan 72.30 338 P P 11 10 53.4 -0.1
baz=149,SNR=46
MCU Monte Cristo P 72.35 328 eP P 11 10 54.5 +0.2
GRAC Grapevine Rang 72.37 321 P P 11 10 55.7 +1.6
baz=132,SNR=16
E26A Carlson Anaus 72.37 337 P P 11 10 53.6 -0.3
baz=147,SNR=34
NAIU Northern Antel 72.38 327 eP P 11 10 54.5 +0.3
PD31 Pinedale Array 72.39 330 eP P 11 10 54.0 -0.5
PDAR Pinedale Array 72.39 330 P P 11 10 53.9 -0.5
comp=Z,16nm,0.8s,baz=126,slow=5.8,SNR=81
PDAR Pinedale Array 72.39 330 P P 11 10 53.9 -0.5
BW06 Boulder Array 72.39 330 P P 11 10 54.2 -0.2
baz=140,SNR=52
BW06 Boulder Array 72.39 330 eP P 11 10 53.9 -0.5
B31A Greenbush Farm 72.40 341 P P 11 10 53.2 -0.7
baz=152,SNR=10
CWC Cottonwood Cre 72.42 320 P P 11 10 55.8 +1.2
baz=132
RSUT Red Spur Mount 72.43 328 eP P 11 10 54.8 +0.1
PKM Mcpherson Peak 72.47 318 P P 11 10 55.9 +1.0
baz=130,SNR=42
A32A Rocking H Ranc 72.48 342 P P 11 10 53.5 -1.0
baz=153,SNR=33
HWUT Hardware Ranch 72.49 328 eP P 11 10 55.0 +0.1
MDND Maddock 72.53 339 P P 11 10 55.0 +0.2
baz=150,SNR=103
MDND Maddock 72.53 339 eP P 11 10 55.0 +0.2
comp=Z,672nm,0.8s
GZU Grizzly Peak 72.56 328 eP P 11 10 55.6 +0.2
D27A Center 72.56 338 P P 11 10 54.7 -0.3
baz=148,SNR=26
VES Vestal, Richgr 72.64 319 P P 11 10 56.7 +1.0
baz=131,SNR=84
B30A Myrvik Farm, E 72.64 340 P P 11 10 55.0 -0.4
baz=151,SNR=62
C28A Hausauer Farms 72.68 339 P P 11 10 55.4 -0.3
baz=149,SNR=19
WVUT Wellsville 72.69 328 eP P 11 10 55.9 -0.1
A31A Linda, St. Vin 72.70 341 P P 11 10 55.2 -0.6
baz=152,SNR=9.0
SPUT South Promonto 72.71 327 eP P 11 10 56.6 +0.4
BGU Big Grassy Mou 72.73 327 eP P 11 10 56.6 +0.3
E25A Miller Ranch, 72.75 336 P P 11 10 56.3 +0.1
baz=146,SNR=78
EPU East Promontor 72.75 327 eP P 11 10 56.8 +0.3
LTU Little Mountai 72.82 328 eP P 11 10 56.8 -0.1
D26A Manning 72.83 337 P P 11 10 56.4 -0.2
baz=147,SNR=16
SMMC Simmler 72.86 318 P P 11 10 58.3 +1.3
baz=130,SNR=67
TIN Tinemaha, Big 72.92 321 P P 11 10 58.8 +1.3
baz=132,SNR=9.1
BEI Bear River Ran 72.97 328 eP P 11 10 57.8 +0.1
B29A Wagenman Farm, 72.98 340 P P 11 10 57.3 -0.1
baz=150,SNR=108
MTUT Morton Thiokol 73.01 328 eP P 11 10 58.0 +0.1
RCTC Rector, Farmer 73.04 320 P P 11 10 57.9 -0.1
baz=131,SNR=39
A30A Hoffart Farm, 73.06 340 P P 11 10 57.2 -0.6
baz=151,SNR=72
C27A Sayler Ranch, 73.07 338 P P 11 10 58.0 -0.1
baz=148,SNR=35
MLI Malad Range 73.08 328 eP P 11 10 58.8 +0.4
AHID Auburn Hatcher 73.12 329 eP P 11 10 58.7 0.0
HVU Hansel Valley 73.22 327 eP P 11 10 59.4 +0.2
HVU Hansel Valley 73.22 327 eP P 11 10 59.4 +0.2
D25A Fairfield 73.26 336 P P 11 10 59.6 +0.4
baz=146,SNR=104
B28A Dugan Ranch, T 73.30 339 P P 11 10 59.2 -0.1
baz=149,SNR=75
A29A Manning Farm, 73.34 340 P P 11 10 59.2 -0.4
baz=150,SNR=307
NPI North Pocatell 73.36 328 eP P 11 11 00.3 +0.3
C26A Wahner Farm, P 73.38 338 P P 11 10 59.8 -0.1
baz=148,SNR=59
REDW Red Top Meadow 73.46 330 eP P 11 11 01.0 +0.4
SNOW Snow King Moun 73.49 330 eP P 11 11 01.2 +0.4
ULM Lac du Bonnet 73.50 343 P P 11 10 59.3 -1.1
comp=Z,110nm,0.7s,baz=154,slow=5.9,SNR=212
ULM LR LR 11 45 34.0
comp=Z,464nm,20.2s,baz=149,slow=38
ULM Lac du Bonnet 73.50 343 P P 11 10 59.3 -1.1
LOHW Long Hollow 73.53 330 eP P 11 11 01.3 +0.2
B27A Peters Farms, 73.57 338 P P 11 11 00.7 -0.3
baz=148,SNR=32
MLAC Mammoth, Mammo 73.66 321 P P 11 11 02.9 +0.9
baz=132,SNR=12
A28A Rude Farm, Bot 73.67 339 P P 11 11 01.3 -0.2
baz=150,SNR=45
MOOW Moose Ponds 73.70 330 eP P 11 11 02.1 +0.1
C25A Freed Ranch, W 73.71 337 P P 11 11 02.2 +0.4
baz=147,SNR=34
ELK Elko 73.76 325 eP P 11 11 03.0 +0.5
ELK Elko 73.76 325 eP P 11 11 03.0 +0.5
TBI Tubuai 73.82 251 eP P 11 11 05.5 +2.5
comp=Z,468nm,1.6s
TBI eS S 11 20 29.0 +2.4
comp=Z,679nm,33.0s
TBI Tubuai 73.82 251 eLR LR 11 34 01.2
comp=Z,4μm,33.5s,baz=106
NVAR Mina Array Bea 73.88 322 P P 11 11 04.1 +0.9
comp=Z,57nm,0.8s,baz=146,slow=5.4,SNR=179
NVAR LR LR 11 43 43.9
comp=Z,327nm,19.9s,baz=132,slow=36
NVAR Mina Array Bea 73.88 322 P P 11 11 04.1 +0.9
B26A Jensen Ranch, 73.89 338 P P 11 11 03.0 +0.2
baz=148,SNR=26
IMW Indian Meadow 73.90 330 eP P 11 11 03.9 +0.6
FLWY Flagg Ranch 73.93 330 eP P 11 11 04.3 +0.9
YTP The Promontory 73.97 331 eP P 11 11 04.6 +0.9
MEH Mehetia 74.00 256 eP P 11 11 06.7 +2.5
comp=Z,55nm,1.2s
LAO LASA Array 74.02 334 P P 11 11 03.6 0.0
baz=144,SNR=39
LAO LASA Array 74.02 334 eP P 11 11 03.7 0.0
A27A Ledoux Ranch, 74.04 339 P P 11 11 03.7 +0.1
baz=149
RLMT Red Lodge 74.08 332 P P 11 11 04.7 +0.5
baz=141,SNR=78
RLMT Red Lodge 74.08 332 eP P 11 11 04.6 +0.4
H17A Grant Village 74.11 330 P P 11 11 05.8 +1.3
baz=140,SNR=49
H17A Grant Village 74.11 330 eP P 11 11 05.2 +0.7
comp=Z,38nm,0.7s
B25A Knox Farm, Ray 74.14 337 P P 11 11 04.7 +0.4
baz=147,SNR=31
YLT Little Thumb C 74.15 331 eP P 11 11 06.6 +1.9
LKWY Lake 74.16 331 eP P 11 11 06.3 +1.5
LKWY Lake 74.16 331 eP P 11 11 06.0 +1.2
SCHQ Schefferville 74.23 1 P P 11 11 04.6 0.0
comp=Z,64nm,1.1s,baz=182,slow=5.3,SNR=19
SCHQ pP pP 11 11 31.1 +0.5
comp=Z,50nm,0.9s,baz=177,slow=7.4,SNR=4.4
SCHQ LR LR 11 43 04.6
comp=Z,200nm,20.9s,baz=184,slow=35
SCHQ Schefferville 74.23 1 P P 11 11 04.6 0.0
SCHQ pP pP 11 11 31.1 +0.5
MCID Moose Creek 74.24 330 eP P 11 11 06.1 +0.9
A26A Wade Farm, Ken 74.27 338 P P 11 11 04.9 0.0
baz=148,SNR=30
YFT Old Faithful 74.28 330 eP P 11 11 07.4 +2.0
YJC Joseph's Coat 74.28 331 eP P 11 11 07.4 +1.9
VAH Vaihoa 74.33 259 eP P 11 11 08.5 +2.5
comp=Z,199nm,1.3s
YNR Norris Junctio 74.40 331 eP P 11 11 07.8 +1.6
YPM Purple Mountai 74.45 331 eP P 11 11 07.9 +1.4
YMR Madison River 74.50 330 eP P 11 11 08.0 +1.3
YHH Holmes Hill 74.54 331 eP P 11 11 08.1 +1.1
YMC Maple Creek 74.59 330 eP P 11 11 08.3 +1.2
WAKR Walker 74.60 321 eP P 11 11 08.7 +1.3
YMV Mammoth Vault 74.60 331 eP P 11 11 08.8 +1.5
BMN Battle Mountai 74.63 324 eP P 11 11 08.3 +0.8
BMN pmax pmax
comp=Z,17nm,1.1s
BMN Battle Mountai 74.63 324 eP P 11 11 08.2 +0.8
comp=Z,17nm,1.1s
PMOR Pomariorio Ree 74.64 259 eP P 11 11 10.5 +2.6
comp=Z,249nm,1.3s
YHB Horse Butte 74.67 330 eP P 11 11 08.9 +1.2
A25A Svangstu Ranch 74.68 338 P P 11 11 07.6 +0.2
baz=147,SNR=42
DGMT Dagmar 74.69 337 P P 11 11 08.1 +0.7
baz=146,SNR=66
DGMT Dagmar 74.69 337 eP P 11 11 07.6 +0.2
SAO San Andreas Ge 74.69 319 eP P 11 11 09.5 +1.8
SAO San Andreas Ge 74.69 319 eP P 11 11 09.5 +1.8
CRMT Chrome Mountai 74.72 331 eP P 11 11 08.4 +0.3
GCMT Greycliff 74.77 332 eP P 11 11 08.4 +0.3
QLMT Earthquake Lak 74.84 330 eP P 11 11 09.9 +1.2
CMB Columbia Colle 74.85 320 eP P 11 11 09.2 +0.5
CMB Columbia Colle 74.85 320 eP P 11 11 09.2 +0.5
TIAR Tiarei 75.26 256 eT T 12 32 53.7
comp=Z,3.8nm,0.2s
HLID Hailey 75.35 328 P P 11 11 12.6 +1.0
baz=136,SNR=215
HLID Hailey 75.35 328 eP P 11 11 12.5 +1.0
PAE Paea 75.44 256 eP P 11 11 14.8 +2.3
comp=Z,39nm,1.3s
PPT2 Papeete2 75.46 256 eP P 11 11 15.4 +2.7
comp=Z,127nm,1.2s
PPT2 eS S 11 20 47.6 +2.4
comp=Z,1μm,27.8s
PPT2 Papeete2 75.46 256 eLR LR 11 34 42.1
comp=Z,3μm,28.5s
PPT Papeete 75.47 256 P P 11 11 14.8 +2.2
comp=Z,100nm,1.0s,baz=108,slow=8.4,SNR=6.6
PPT Papeete 75.47 256 P P 11 11 14.8 +2.2
MCMT McKenzie Canyo 75.51 330 P P 11 11 13.5 +1.0
BOZ Bozeman (W) 75.55 331 P P 11 11 12.8 +0.2
baz=139,SNR=96
BOZ Bozeman (W) 75.55 331 eP P 11 11 12.8 +0.2
BOZ Bozeman (W) 75.55 331 eP P 11 11 12.8 +0.2
AFDM Forest Hills D 75.80 321 eP P 11 11 14.6 +0.6
MFID Camas Ranch 75.96 327 eP P 11 11 15.8 +0.9
comp=Z,257nm,1.3s
LRM Limekiln Ridge 76.06 330 eP P 11 11 16.1 +0.5
MCCM Marconi Confer 76.44 319 eP P 11 11 19.5 +1.9
ORV Oroville 76.50 321 eP P 11 11 19.0 +1.0
ORV Oroville 76.50 321 eP P 11 11 19.0 +1.0
EGMT Eagleton 76.54 333 P P 11 11 18.2 +0.1
baz=141,SNR=82
EGMT Eagleton 76.54 333 eP P 11 11 18.1 0.0
WVOR Wild Horse Val 76.77 325 eP P 11 11 19.8 +0.2
WVOR Wild Horse Val 76.77 325 eP P 11 11 19.8 +0.2
TORD Torodi Ar. Bea 77.03 71 P P 11 11 20.1 -1.4
comp=Z,72nm,0.4s,baz=250,slow=5.6,SNR=391
TORD pP pP 11 11 49.4 +1.8
comp=Z,139nm,0.9s,baz=247,slow=5.8,SNR=4.9
TORD PP PP 11 14 02.8 -14
comp=Z,46nm,0.8s,baz=246,slow=8.5,SNR=5.2
TORD LR LR 11 44 34.4
comp=Z,3μm,19.6s,baz=245,slow=35
TORD Torodi Ar. Bea 77.03 71 P P 11 11 20.1 -1.4
TORD pP pP 11 11 49.4 +1.8
TORD PP PP 11 14 02.8 -14
O03D Paynes Creek 77.15 321 P P 11 11 21.4 -0.3
baz=130,SNR=21
CHMT Chamberlain Mo 77.24 331 eP P 11 11 22.7 +0.5
MSO Missoula 77.50 330 P P 11 11 24.5 +1.0
baz=137,SNR=59
MSO Missoula 77.50 330 eP P 11 11 24.4 +0.9
SBA Scott Base 77.56 190 eP P 11 11 25.6 +2.2
SBA Scott Base 77.56 190 eP P 11 11 25.6 +2.2
BMO Blue Mountains 77.73 327 eP P 11 11 24.7 -0.2
BMO Blue Mountains 77.73 327 eP P 11 11 24.7 -0.2
WDC Whiskeytown Da 77.77 321 eP P 11 11 24.2 -0.8
WDC Whiskeytown Da 77.77 321 eP P 11 11 24.2 -0.8
SWMT Swartz Lake 78.03 331 eP P 11 11 26.5 +0.1
N02D Trinity Center 78.11 322 P P 11 11 27.2 +0.2
baz=129,SNR=12
M04C Macdoel 78.13 323 P P 11 11 27.6 +0.5
baz=130,SNR=21
KMRM Mail Ridge 78.24 320 eP P 11 11 29.9 +2.2
YBMT Yellow Bay 78.29 331 eP P 11 11 28.6 +0.7
SYO Syowa Base 78.31 160 eP P 11 11 27.0 -0.6
JTMT Jette 78.33 331 eP P 11 11 28.8 +0.7
M02C Callahan 78.46 322 P P 11 11 29.6 +0.6
baz=129,SNR=9.1
BLMT Blacktail Moun 78.56 331 eP P 11 11 30.2 +0.7
VNDA Vanda 78.59 190 P P 11 11 30.6 +1.6
comp=Z,10nm,1.1s,baz=129,slow=5.7,SNR=18
VNDA Vanda 78.59 190 P P 11 11 30.6 +1.6
K04D Chiloquin, OR 78.62 323 P P 11 11 30.5 +0.6
baz=130,SNR=7.9
BSMT Bassoo Peak 78.64 331 P P 11 11 30.6 +0.6
KHMM Horse Mountain 78.66 321 eP P 11 11 31.5 +1.4
J05D Fort Rock, OR 78.76 324 P P 11 11 31.2 +0.6
baz=131,SNR=15
JCC Jacoby Creek, 78.80 321 eP P 11 11 32.8 +2.1
WALA Waterton Lakes 79.13 332 eP P 11 11 32.8 +0.3
comp=Z,107nm,0.9s
WALA ePcP PcP 11 11 40.4 -0.1
FFC Flin Flon 79.22 341 eP P 11 11 32.1 -0.5
FFC Flin Flon 79.22 341 eP P 11 11 32.1 -0.5
HUMO Hull Mountain 79.29 323 eP P 11 11 33.4 0.0
L02D Cave Junction, 79.38 322 P P 11 11 34.7 +0.8
baz=129,SNR=13
I05D Terrebonne, OR 79.51 325 P P 11 11 35.5 +1.0
baz=131,SNR=27
CROR Criterion Ridg 79.74 325 P P 11 11 36.8 +1.0
I04A Tendick Farm, 79.74 324 P P 11 11 35.9 +0.1
baz=130,SNR=14
SUR Sutherland 79.75 121 P P 11 11 37.8 +1.3
comp=Z,1.6nm,0.6s,baz=221,slow=6.4,SNR=25
SUR Sutherland 79.75 121 eP P 11 11 38.3 +1.8
RTC Rabat Centre 79.80 48 eP P 11 11 38.1 +1.8
HAWA Hanford 79.92 327 eP P 11 11 37.6 +0.9
NEW Newport 80.03 330 LR LR 11 51 06.1
comp=Z,434nm,19.9s,baz=119,slow=39
NEW Newport 80.03 330 P P 11 11 37.3 0.0
baz=135,SNR=27
NEW Newport 80.03 330 eP P 11 11 37.0 -0.3
NEW Newport 80.03 330 eP P 11 11 37.0 -0.3
D08A Wollman Farm, 80.07 328 eP P 11 11 38.2 +0.8
G05D Wamic, OR 80.09 326 P P 11 11 38.9 +1.2
baz=131,SNR=17
H04A Detroit Lake 80.19 325 eP P 11 11 38.5 +0.3
I03D Drain, OR 80.20 323 P P 11 11 39.3 +1.0
baz=129,SNR=10
MORF Marmelete 80.37 45 eP P 11 11 39.1 -0.2
MORF AMb AMB 11 11 46.1
comp=Z,222nm,1.0s
MORF eS S 11 21 38.2 +1.1
MORF Marmelete 80.37 45 eP P 11 11 40.5 +1.1
comp=Z,242nm,1.3s
MORF i P pP 11 12 08.8 +3.1
MORF eS S 11 21 41.5 +4.4
MORF Marmelete 80.37 45 eP P 11 11 39.1 -0.2
MORF eS S 11 21 38.2 +1.1
PTEO Sao Teotonio 80.45 45 eP P 11 11 42.4 +2.7
comp=Z,386nm,1.3s
PTEO i P pP 11 12 09.5 +3.4
COR Corvallis 80.74 324 eP P 11 11 42.6 +1.5
COR pmax pmax
comp=Z,305nm,1.3s
COR Corvallis 80.74 324 eP P 11 11 42.6 +1.5
comp=Z,305nm,1.3s
FCC Fort Churchill 80.80 347 eP P 11 11 40.8 -0.2
FCC pmax pmax
comp=Z,103nm,0.9s
FCC Fort Churchill 80.80 347 eP P 11 11 40.8 -0.2
comp=Z,103nm,0.9s
FCC ePcP PcP 11 11 47.5 +0.2
MDT Midelt 80.80 50 P P 11 11 42.2 +0.3
comp=Z,46nm,1.1s,baz=242,slow=4.9,SNR=30
MDT pP pP 11 12 09.3 +1.1
comp=Z,63nm,1.2s,baz=232,slow=6.1,SNR=3.2
MDT Midelt 80.80 50 P P 11 11 42.2 +0.3
MDT pP pP 11 12 09.3 +1.1
NAC Naches 80.81 327 P P 11 11 42.4 +0.9
PBDV Barranco-do-Ve 80.81 45 eP P 11 11 45.7 +4.0
comp=Z,213nm,1.3s
PBDV i P pP 11 12 12.9 +4.8
PBDV eS S 11 21 44.7 +3.0
LIS Lisbon 80.83 43 eP P 11 11 41.8 0.0
LIS AMb AMB 11 11 47.9
comp=Z,156nm,1.0s
LIS eS S 11 21 42.6 +0.9
LIS Lisbon 80.83 43 eP P 11 11 41.7 0.0
LIS eS S 11 21 42.6 +0.9
TSUM Tsumeb 80.85 107 P P 11 11 42.7 +0.2
comp=Z,93nm,1.1s,baz=240,slow=5.9,SNR=38
TSUM Tsumeb 80.85 107 eP P 11 11 42.6 +0.1
comp=Z,57nm,0.6s
PMAFR Mafra 80.88 43 eS S 11 21 44.8 +2.5
PNCL Nicolau / Gran 80.90 44 eP P 11 11 44.7 +2.6
comp=Z,128nm,1.3s
PNCL i P pP 11 12 13.2 +4.8
PNCL eS S 11 21 45.2 +2.8
MESJ Messejana 80.95 45 eP P 11 11 42.3 -0.1
MESJ AMb AMB 11 11 48.6
comp=Z,90nm,1.2s
MESJ eS S 11 21 44.3 +1.2
MESJ Messejana 80.95 45 eP P 11 11 42.2 -0.1
MESJ eS S 11 21 44.2 +1.2
PCVE Castro Verde 80.96 45 eP P 11 11 43.4 +1.0
comp=Z,71nm,1.4s
PCVE Castro Verde 80.96 45 eS S 11 21 46.4 +3.3
PVAQ Vaqueiros 81.05 45 eP P 11 11 43.5 +0.6
comp=Z,99nm,1.6s
PVAQ Vaqueiros 81.05 45 eS S 11 21 48.2 +4.2
PACT Alcochete 81.06 43 eP P 11 11 48.1 +5.2
comp=Z,209nm,1.5s
G03D McMinnville, O 81.12 325 P P 11 11 44.1 +1.0
baz=129
PBEJ Beja 81.29 45 eP P 11 11 45.0 +0.8
comp=Z,67nm,1.2s
PBEJ i P pP 11 12 13.6 +3.0
EVO Evora 81.47 44 eP P 11 11 46.1 +1.0
comp=Z,84nm,1.4s
EVO i P pP 11 12 14.4 +2.9
F04D Rainier, OR 81.54 325 P P 11 11 46.2 +0.9
baz=130,SNR=5.6
PMTG Montargil 81.62 43 eP P 11 11 46.6 +0.7
comp=Z,148nm,1.3s
PMTG i P pP 11 12 15.2 +2.9
PMTG eS S 11 21 53.6 +3.7
C06D Leavenworth 81.64 328 P P 11 11 46.1 +0.3
baz=132
PTOM Tomar 81.81 43 eP P 11 11 48.8 +1.9
comp=Z,165nm,1.2s
PTOM i P pP 11 12 15.9 +2.6
PBAR Barrancos 81.92 45 eP P 11 11 48.1 +0.6
comp=Z,122nm,1.3s
PBAR i P pP 11 12 16.1 +2.2
PBAR eS S 11 21 56.6 +3.6
PESTR Estremoz 81.93 44 eP P 11 11 50.1 +2.6
comp=Z,109nm,1.2s
PESTR i P pP 11 12 16.2 +2.2
PESTR eS S 11 21 56.8 +3.7
PMRV Marv??o 82.36 44 eP P 11 11 51.5 +1.7
comp=Z,35nm,1.5s
PMRV i P pP 11 12 17.3 +1.0
PMRV eS S 11 22 00.7 +3.1
B05A Bryant 82.47 327 P P 11 11 50.2 +0.1
baz=131,SNR=32
PCBR Castelo Branco 82.53 43 eP P 11 11 52.6 +2.0
comp=Z,52nm,1.3s
PCBR i P pP 11 12 20.3 +3.2
PVIS Viseu 82.75 42 eP P 11 11 53.0 +1.2
comp=Z,66nm,1.5s
PVIS i P pP 11 12 20.8 +2.5
MTE Manteigas 82.80 43 eP P 11 11 53.4 +1.3
comp=Z,80nm,1.1s
MTE i P pP 11 12 21.2 +2.6
MTE eS S 11 22 04.2 +2.2
MTE Manteigas 82.80 43 eP P 11 11 52.5 +0.4
comp=Z,63nm,1.0s
NRS Narsarsuaq 82.80 11 iP P 11 11 52.3 +0.8
NRS Narsarsuaq 82.80 11 iP P 11 11 52.3 +0.8
NLWA Neilton Lookou 82.82 326 eP P 11 11 53.6 +1.6
comp=Z,492nm,1.9s
NLWA epP pP 11 12 13.0 -5.5
NLWA esP sP 11 12 21.0 -8.4
A04D Lummi Island 83.07 328 P P 11 11 53.9 +0.7
baz=130,SNR=7.6
PVRL Vila Real 83.17 42 eP P 11 11 56.5 +2.5
comp=Z,96nm,1.6s
PVRL i P pP 11 12 23.9 +3.4
POLO Lamas de Olo 83.17 42 eP P 11 11 56.7 +2.7
comp=Z,35nm,1.2s
POLO i P pP 11 12 22.9 +2.4
POLO eS S 11 22 06.1 +0.2
PGAV Gavieira, Arco 83.20 41 eP P 11 11 56.0 +1.8
comp=Z,95nm,1.7s
PGAV Gavieira, Arco 83.20 41 eS S 11 22 07.7 +1.5
PCAB Cabril 83.21 41 eP P 11 11 56.1 +1.9
comp=Z,65nm,1.6s
PCAB i P pP 11 12 23.3 +2.6
PGC Sidney 83.41 327 eP P 11 11 55.5 +0.6
comp=Z,127nm,0.9s
MVO Moncorvo 83.54 42 eP P 11 11 56.8 +0.9
comp=Z,94nm,1.1s
MVO i P pP 11 12 25.0 +2.6
MVO eS S 11 22 11.1 +1.6
PBRG Braganca 84.07 42 eP P 11 11 59.0 +0.4
comp=Z,123nm,1.5s

PBRG *i* P **pP** **11 12 27.1 +2.0**
PBRG *e*S **S** **11 22 13.7 -1.1**
TAM Tamanrasset 84.26 63 *e*P **P** **11 12 00.1 0.0**
TAM pmax pmax
comp=Z,186nm,1.4s
TAM Tamanrasset 84.26 63 *e*P **P** **11 12 00.1 0.0**
comp=Z,186nm,1.4s
PAB San Pablo 84.42 45 *e*P **P** **11 12 00.5 0.0**
PAB pmax pmax
comp=Z,67nm,0.9s
PAB San Pablo 84.42 45 *e*P **P** **11 12 00.5 0.0**
comp=Z,67nm,0.9s
BOSA Boshof 84.56 118 P **P** **11 12 01.3 -0.3**
comp=Z,32nm,1.0s,baz=259,slow=4.2,SNR=28
BOSA LR LR 11 47 58.7
comp=Z,882nm,19.3s,baz=250,slow=34
BOSA Boshof 84.56 118 P **P** **11 12 01.3 -0.3**
ESDC Sonseca Array 84.74 45 P **P** **11 12 02.7 +0.7**
comp=Z,17nm,0.8s,baz=247,slow=4.6,SNR=43
ESDC pP **pP** **11 12 29.1 +0.5**
comp=Z,54nm,1.2s,baz=260,slow=4.3,SNR=2.4
ESDC LR LR 11 46 50.1
comp=Z,580nm,21.4s,baz=230,slow=33
ESDC Sonseca Array 84.74 45 P **P** **11 12 02.8 +0.7**
ESDC pP **pP** **11 12 29.1 +0.5**
MAW Mawson 86.16 163 P **P** **11 12 09.1 +0.6**
comp=Z,18nm,1.0s,baz=208,slow=6.1,SNR=15
MAW LR LR 11 49 40.7
comp=Z,460nm,21.1s,baz=236,slow=35
MAW Mawson 86.16 163 P **P** **11 12 09.1 +0.6**
ETRT Tiaret 86.34 51 P **P** **11 12 12.5 +2.4**
EANR 'Ain N'Sour 86.45 50 P **P** **11 12 13.0 +2.4**
SFJD Kangerlussuaq 87.52 7 *i* P **P** **11 12 14.4 -0.5**
SFJD Kangerlussuaq 87.52 7 *e*P **P** **11 12 14.6 -0.3**
SFJD pmax pmax
comp=Z,46nm,1.1s
SFJD Kangerlussuaq 87.52 7 *e*P **P** **11 12 14.6 -0.3**
comp=Z,46nm,1.1s
EMHD Djebel Mahouad 87.90 50 P **P** **11 12 20.5 +2.8**
BBB Bella Bella 87.93 328 LR LR 11 55 14.5
comp=Z,243nm,18.5s,baz=94,slow=38
REYF Montagne du Re 88.75 43 *e*P **P** **11 12 21.6 +0.1**
YKA Yellowknife Ar 89.38 341 P **P** **11 12 23.5 -0.2**
comp=Z,266nm,0.8s,baz=134,slow=4.7,SNR=1546
YKA pP **pP** **11 12 51.3 +0.8**
comp=Z,36nm,0.7s,baz=132,slow=4.9,SNR=2.8
YKA PKKP **PKKPdf** **11 29 58.8 +1.4**
comp=Z,0.5nm,0.8s,baz=319,slow=3.4,SNR=6.4
YKA Yellowknife Ar 89.38 341 P **P** **11 12 23.6 -0.2**
YKA pP **pP** **11 12 51.4 +0.8**
YKA PKKP **PKKPdf** **11 29 58.9 +1.4**
MELF Melles 89.41 44 *e*P **P** **11 12 24.3 -0.2**
SALF Salau 89.64 44 *e*P **P** **11 12 25.8 +0.2**
MATP Matopo 90.15 112 P **P** **11 12 29.8 +1.1**
comp=Z,13nm,0.6s,baz=255,slow=4.0,SNR=45
MATP PP **PP** **11 15 59.9 -3.4**
comp=Z,55nm,1.1s,baz=249,slow=9.0,SNR=14
MATP Matopo 90.15 112 P **P** **11 12 29.8 +1.1**
MATP PP **PP** **11 15 59.9 -3.4**
CARF Carcanieres 90.22 44 *e*P **P** **11 12 29.4 +1.1**
LSZ Lusaka 91.70 107 P **P** **11 12 38.1 +2.2**
comp=Z,4.7nm,1.0s,baz=262,slow=5.7,SNR=8.5
LSZ PP **PP** **11 16 14.1 -1.6**
comp=Z,15nm,1.1s,baz=252,slow=12,SNR=6.5
LSZ Lusaka 91.70 107 P **P** **11 12 38.1 +2.2**
LSZ PP **PP** **11 16 14.1 -1.6**
LBL Lubilhac 92.07 42⇑ *e*P **P** **11 12 39.5 +2.6**
PYM Petit Puy Mans 92.15 42 *e*P **P** **11 12 39.7 +2.5**
WRAK Wrangell Islan 92.38 330 *e*P **P** **11 12 37.8 0.0**
comp=Z,57nm,1.0s
KEST Kesra 92.44 53 P **P** **11 12 39.5 +0.7**
comp=Z,24nm,1.0s,baz=293,slow=5.7,SNR=4.5
KEST LR LR 11 54 35.1
comp=Z,1μm,20.1s,baz=206,slow=36
KEST Kesra 92.44 53 P **P** **11 12 39.5 +0.7**
DLBC Dease Lake 92.46 333 PP PP 11 16 21.2 +0.3
baz=117,slow=4.6
DLBC Dease Lake 92.46 333 PP PP 11 16 21.2 +0.3
PLDF La Plantade 92.63 42 *e*P **P** **11 12 41.8 +2.4**
SSB Saint Sauveur 92.92 43 *e*P **P** **11 12 40.6 -0.1**
SSB pmax pmax
comp=Z,20nm,1.1s
SSB Saint Sauveur 92.92 43 *e*P **P** **11 12 40.6 -0.1**
comp=Z,20nm,1.1s
EKA Eskdalemuir Ar 93.22 32 P **P** **11 12 40.8 -0.9**
comp=Z,16nm,1.1s,baz=231,slow=4.0,SNR=6.0
EKA pP **pP** **11 13 11.0 +2.4**
comp=Z,3.6nm,0.7s,baz=230,slow=6.4,SNR=1.7
EKA Eskdalemuir Ar 93.22 32 P **P** **11 12 40.8 -0.9**
EKA pP **pP** **11 13 11.0 +2.4**
BNI Bardonecchia 94.20 44 *e*P P 11 12 37.6 -9.1
BNI pmax pmax
comp=Z,10.0nm,1.0s
BNI Bardonecchia 94.20 44 *e*P P 11 12 37.6 -9.2
comp=Z,10nm,1.0s
SUMG Summit 94.31 9 *i* P **P** **11 12 47.9 +1.0**
SUMG *i* 11 13 17.5
SUMG Summit 94.31 9 *i* P **P** **11 12 47.9 +1.0**
SUMG *i* 11 13 17.5
SUMG Summit 94.31 9 *e*P **P** **11 12 47.5 +0.5**
comp=Z,84nm,1.0s
CASY Casey 94.31 180 *e*P **P** **11 12 47.0 +0.2**
comp=Z,13nm,1.4s
DOU Dourbes 94.98 38 E 11 12 56.7
THEF They Montfort 95.04 40 *e*P **P** **11 12 51.2 +0.8**
SKAG Skagway 95.33 332 *e*P **P** **11 12 50.1 -1.2**
comp=Z,54nm,1.7s
SKAG *e*pP **pP** **11 13 11.4 -6.8**
RES Resolute Bay 95.56 353 PKKPbc PKKPbc 11 29 43.1 -3.2
comp=Z,1.1nm,0.8s,baz=3.3,slow=2.1,SNR=4.5
RES Resolute Bay 95.56 353 PKKPbc PKKPbc 11 29 43.1 -3.2
WLF Walferdange 95.72 39 *e*P **P** **11 12 54.5 +1.1**
WLF pmax pmax
comp=Z,76nm,1.2s
WLF Walferdange 95.72 39 *e*P **P** **11 12 54.5 +1.1**
comp=Z,76nm,1.2s
ECH Echery 95.76 41 *e*P **P** **11 12 54.7 +1.1**
MEM Membach 96.02 38 P **P** **11 12 54.5 -0.1**
TUE Stuetta 96.47 43 *e*P **P** **11 12 56.3 -0.9**
comp=Z,8.0nm,0.8s
VAE Valguarnera 96.87 53 P P 11 13 09.8 +11
comp=Z,15nm,0.5s,baz=69,slow=6.1,SNR=4.3
VAE Valguarnera 96.87 53 P P 11 13 09.8 +11
DAVOX Davos/Dischmat 96.93 43 P **P** **11 13 00.2 +1.0**
comp=Z,3.5nm,0.7s,baz=152,slow=18,SNR=5.0
DAVOX PP **PP** **11 16 51.7 -4.5**
comp=Z,8.6nm,1.0s,baz=241,slow=6.9,SNR=6.0
DAVOX PKKPbc **PKKPbc** **11 29 40.8 -1.0**
comp=Z,1.2nm,0.5s,baz=157,slow=20,SNR=4.6
DAVOX Davos/Dischmat 96.93 43 P **P** **11 13 00.2 +1.0**
DAVOX PP **PP** **11 16 51.7 -4.5**
DAVOX PKKPbc **PKKPbc** **11 29 40.8 -1.0**
INK Inuvik 99.13 340 P **Pdif** **11 13 08.1 -0.2**
comp=Z,14nm,0.8s,baz=96,slow=4.9,SNR=63
INK pP **pP** **11 13 36.7 +1.5**
comp=Z,12nm,1.2s,baz=116,slow=6.2,SNR=3.3
INK PP **PP** **11 17 12.9 +0.7**
comp=Z,8.6nm,1.2s,baz=98,slow=10,SNR=3.1
INK LR LR 12 01 40.8
comp=Z,258nm,21.9s,baz=108,slow=38
INK Inuvik 99.13 340 P **Pdif** **11 13 08.1 -0.2**
INK pP **pP** **11 13 36.7 +1.5**
INK PP **PP** **11 17 12.9 +0.7**
GERES GERESS Array B 100.05 42 P **Pdif** **11 13 13.2 +0.2**
comp=Z,2.1nm,0.9s,baz=224,slow=4.1,SNR=8.3
GERES PP **PP** **11 17 20.7 +0.9**
comp=Z,4.0nm,1.1s,baz=223,slow=6.5,SNR=4.1
GERES PKKPbc **PKKPbc** **11 29 28.3 -4.7**
comp=Z,0.4nm,0.5s,baz=66,slow=2.5,SNR=4.1
GERES LR LR 11 55 29.3
comp=Z,338nm,21.8s,baz=242,slow=34
GERES GERESS Array B 100.05 42 P **Pdif** **11 13 13.2 +0.2**
GERES PP **PP** **11 17 20.7 +0.9**
GERES PKKPbc **PKKPbc** **11 29 28.3 -4.7**
KHC Kasperske Hory 100.06 41 *e*PDIFF **Pdif** **11 13 16.6 +3.6**
KHC *e*PP **PP** **11 17 16.8 -3.1**
KHC *e*SKS **SKSac** **11 23 44.4 +2.1**
KHC *e*SDIF **Sdif** **11 24 32.5 -6.6**
KHC *e*SP **SP** **11 26 05.3 -2.8**
KHC AMS AMS 11 54 40.0
comp=Z,500nm,19.0s
KHC Kasperske Hory 100.06 41 *e*P **Pdif** **11 13 16.6 +3.6**
KHC *e* 11 17 16.8
KHC *e* 11 23 44.4
KHC *e*S **Sdif** **11 24 32.5 -6.6**
KHC *e*SP **SP** **11 26 05.3 -2.8**
KHC MLR MLR
comp=Z,500nm,19.0s
EGAK Eagle 100.20 336 *e*Pdif **Pdif** **11 13 12.3 -0.8**
comp=Z,6.9nm,0.9s
CLL Collm 100.40 39 *e*Pdif **Pdif** **11 13 14.0 -0.3**
comp=Z,11nm,1.4s
CLL *i* 11 13 21.8
CLL *e* 11 13 41.0
CLL *i* PP **PP** **11 17 17.6 -4.6**
comp=Z,28nm,1.3s
CLL *e*sPP 11 17 55.0
CLL *e*SKSac **SKSac** **11 23 44.0 +0.3**
CLL *e*SKKSac **SKKSac** **11 24 27.0 +8.7**
CLL *e*Sdif **Sdif** **11 24 40.0 -1.7**
CLL *e* 11 25 30.0
CLL *e*SP **SP** **11 26 14.0 +2.5**
CLL *e*PPS PPS 11 26 48.0
CLL *e* 11 31 16.0
CLL *e*SS **SS** **11 31 44.0 +4.3**
CLL *e*sSS 11 32 20.0
CLL *e* 11 33 00.0
CLL *e*SSS SSS 11 35 36.0
CLL *e* 11 41 06.0
CLL Collm 100.40 39 *e*P **Pdif** **11 13 14.0 -0.3**
CLL *i* 11 17 17.6
CLL *e*S **Sdif** **11 24 40.0 -1.7**
CLL pmax pmax
comp=Z,11nm,1.4s
CLL pmax pmax
comp=Z,28nm,1.3s
BRG Berggiesshubel 100.83 40 *e*P **Pdif** **11 13 18.0 +1.7**
comp=Z,4.5nm,1.2s
BRG *e* 11 13 24.3
comp=Z,8.0nm,1.3s
BRG pP pP 11 13 45.0 +1.7
BRG PP **PP** **11 17 21.3 -4.2**
comp=Z,17nm,1.4s
BRG SKS **SKSac** **11 23 47.0 +1.2**
BRG S **Sdif** **11 24 40.0 -5.3**
BRG SS SS 11 31 29.0 -17
BRG Berggiesshubel 100.83 40 *e*P **Pdif** **11 13 18.0 +1.7**
BRG 11 17 21.3
BRG 11 23 47.0
BRG S **Sdif** **11 24 40.0 -5.3**
BRG pmax pmax
comp=Z,5.0nm,1.2s
BRG pmax pmax
comp=Z,17nm,1.4s
PRA Prague 100.88 41 *e*SKS **SKSac** **11 23 47.2 +1.1**
PRA *e*SDIF **Sdif** **11 24 39.7 -6.1**
PRU Pruhonice 100.92 41 *e*PP PP 11 17 22.1 -4.2
PRU *e*SKS **SKSac** **11 23 43.2 -3.1**
PRU *e*SDIF **Sdif** **11 24 39.2 -7.0**
PRU *e*SP **SP** **11 26 14.7 -2.5**
PRU *ex* x 11 31 25.7
PRU AMS AMS 11 55 20.0
comp=Z,600nm,29.0s
GOPC GO Pecny, Ondr 101.05 41 *e*PP PP 11 17 24.1 -3.2
GOPC *e*SKS 11 23 49.6
GOPC *e*SDIF **Sdif** **11 24 40.8 -6.5**
GOPC *e*SP **SP** **11 26 18.0 -0.6**
GOPC AMS AMS 11 55 20.0
comp=Z,500nm,19.4s
PVCC Panska Ves 101.10 40 *e*SKS **SKSac** **11 23 48.1 +1.0**
PVCC *ex* x 11 24 38.6
PVCC *e*SP **SP** **11 26 18.7 -0.4**
PVCC AMS AMS 11 52 30.0
comp=Z,600nm,18.8s
TREC Trest 101.31 42 *e*SKS **SKSac** **11 23 50.2 +1.9**
TREC *ex* x 11 24 39.4
TREC *e*SP **SP** **11 26 18.0 -3.3**
TREC AMS AMS 11 55 20.0
comp=Z,400nm,21.2s
UPC Upice 101.98 41 *e*PP PP 11 17 29.4 -4.8
UPC *e*SKS **SKSac** **11 23 53.1 +1.7**
UPC *ex* x 11 24 42.7
UPC *e*SP **SP** **11 26 27.5 -0.9**
UPC AMS AMS 11 52 40.0
comp=Z,500nm,19.1s
DPC Dobruska-Polom 102.12 41 *e*PDIFF **Pdif** **11 13 24.5 +2.4**
DPC *e*PP **PP** **11 17 32.6 -2.8**
DPC *e*SKS **SKSac** **11 23 54.2 +2.0**
DPC *ex* x 11 24 42.9
DPC *e*SP **SP** **11 26 28.7 -1.3**
DPC AMS AMS 11 55 50.0
comp=Z,500nm,19.1s
DPC Dobruska-Polom 102.12 41 *e*P **Pdif** **11 13 24.5 +2.4**
DPC *e* 11 17 32.6
DPC *e* 11 23 54.2
DPC *e*S **Sdif** **11 24 42.9 -13**
DPC *e*SP **SP** **11 26 28.7 -1.3**
DPC MLR MLR
comp=Z,500nm,19.1s
ILAR Eielson Array 102.48 335 P **Pdif** **11 13 22.8 -0.5**
comp=Z,1.5nm,0.8s,baz=147,slow=3.3,SNR=16
ILAR PP PP 11 17 29.0 -8.6
comp=Z,1.8nm,0.8s,baz=95,slow=7.0,SNR=6.9
ILAR Eielson Array 102.48 335 P **Pdif** **11 13 22.8 -0.5**
ILAR PP PP 11 17 29.0 -8.6
NB2 NORSAR Subarra102.48 29 P **Pdif** **11 13 25.5 +2.1**
comp=Z,14nm,1.1s,baz=248,slow=4.6
NB2 NORSAR Subarra102.48 29 P **Pdif** **11 13 25.5 +2.1**
baz=248,slow=4.6
NOA NORSAR Array B102.48 29 P **Pdif** **11 13 24.4 +0.9**
comp=Z,2.2nm,1.0s,baz=250,slow=4.4,SNR=2.8
NOA PP **PP** **11 17 36.9 -0.8**
comp=Z,9.0nm,1.1s,baz=248,slow=7.4,SNR=4.5
NOA NORSAR Array B102.48 29 P **Pdif** **11 13 24.4 +0.9**
NOA PP **PP** **11 17 36.9 -0.8**
COLA College 102.90 335*d* *i*P **Pdif** **11 13 24.9 -0.2**
COLA pmax pmax
comp=Z,13nm,1.1s
COLA College 102.90 335 *e*Pdif **Pdif** **11 13 24.6 -0.5**
comp=Z,18nm,1.3s
OKC Ostrava-Krasne 103.12 42 *e*SKS **SKSac** **11 23 59.0 +2.3**
OKC *ex* x 11 24 48.6
OKC AMS AMS 11 56 00.0
comp=Z,400nm,18.1s
VYHS Vyhne 103.21 43 *e*P **Pdif** **11 13 29.3 +2.3**
VYHS *e* 11 17 45.6
VYHS Vyhne 103.21 43 *e*PDIFF **Pdif** **11 13 29.2 +2.3**
VYHS *e* 11 13 37.1
VYHS *e*PP **PKiKP** **11 17 45.6 -0.3**
HFS Hagfors 103.39 31 Pdiff **Pdif** **11 13 30.1 +2.7**
comp=Z,3.2nm,0.9s,baz=260,slow=4.1,SNR=3.0
HFS PP **PP** **11 17 41.7 -2.7**
comp=Z,16nm,1.1s,baz=263,slow=3.7,SNR=7.5
HFS Hagfors 103.39 31 Pdif **Pdif** **11 13 30.1 +2.7**
HFS PP **PP** **11 17 41.7 -2.7**
MDVR Moldovita 104.23 47⇑ *i*P **PP** **11 17 50.0 -1.3**
SIRR Siria 104.54 46⇑ *i*P **PP** **11 17 54.4 +0.9**
GZR Gura Zlata 105.10 47⇑ *i*P **PP** **11 17 54.3 -3.4**
KMBO Kilima Mbogo 105.11 97 PP PP 11 17 56.9 -1.6
comp=Z,1.0nm,0.3s,baz=263,slow=8.4,SNR=5.4
KMBO Kilima Mbogo 105.11 97 PP PP 11 17 56.9 -1.6
DRGR 105.36 45⇑ *i*P **PP** **11 17 56.8 -2.8**
CJR Cluj-Napoca 105.94 46⇓ *i*P **PP** **11 18 02.7 -1.2**
VOIR 106.68 47⇓ *i*P **PP** **11 18 10.2 +0.8**
BURAR Bucovina Array 107.20 45⇑ *i*P **PP** **11 18 11.0 -2.1**
MLR Muntele Rosu 107.31 47 PP PP 11 18 12.8 -1.2
comp=Z,20nm,1.2s,baz=283,slow=3.8,SNR=20
MLR Muntele Rosu 107.31 47⇑ *i*P **PP** **11 18 12.6 -1.4**
MLR Muntele Rosu 107.31 47 PP PP 11 18 12.8 -1.2
ISR Istrita 107.66 48⇓ *i*P **PP** **11 18 15.4 -1.1**
PLOR Plostina 107.86 47⇓ *i*P **PP** **11 18 16.4 -1.5**
VRI Vrincioaia 107.92 47⇑ *i*P **PP** **11 18 16.4 -1.9**
FINES FINESS Array B 109.59 31 PP PP 11 18 27.1 -2.8
comp=Z,7.1nm,1.0s,baz=166,slow=0.8,SNR=6.8
FINES PKKPbc **PKKPbc** **11 29 02.1 -2.1**
comp=Z,0.9nm,0.7s,baz=62,slow=3.8,SNR=6.0
FINES FINESS Array B 109.59 31 PP PP 11 18 27.1 -2.8
FINES PKKPbc **PKKPbc** **11 29 02.1 -2.1**
MICGM Minsk 109.86 38 *e* PP 11 18 21.0 -11
ARCES ARCESS Array B 109.91 22 PKKPbc PKKPbc 11 29 01.0 -2.5
comp=Z,3.1nm,0.9s,baz=70,slow=3.0,SNR=8.6
ARCES ARCESS Array B 109.91 22 PKKPbc PKKPbc 11 29 01.0 -2.5
AKASG Malin Array Be 110.26 42 PP PP 11 18 22.2 -13
comp=Z,1.3nm,0.7s,baz=251,slow=8.4,SNR=4.3
AKASG Malin Array Be 110.26 42 PP PP 11 18 22.2 -13
EIL Elat 111.44 65 PP PP 11 18 35.4 -8.8
comp=Z,4.2nm,0.7s,baz=144,slow=0.8,SNR=5.5
EIL Elat 111.44 65 PP PP 11 18 35.4 -8.8
BRTR Keskin Array B 112.01 54 PKiKP **PKiKP** **11 18 03.5 +0.7**
comp=Z,0.9nm,0.7s,baz=233,slow=3.4,SNR=4.0
BRTR PP **PP** **11 18 41.1 -7.1**
comp=Z,6.4nm,1.0s,baz=239,slow=6.4,SNR=5.8
BRTR PKKPab **PKKPab** **11 29 04.0 +1.0**
comp=Z,1.6nm,0.8s,baz=114,slow=4.2,SNR=6.1
BRTR Keskin Array B 112.01 54 PKiKP **PKiKP** **11 18 03.5 +0.7**
BRTR PP **PP** **11 18 41.1 -7.1**
BRTR PKKPab **PKKPab** **11 29 04.0 +1.0**
MMAI Mount Meron Ar 112.42 62 PP PP 11 18 43.7 -7.5
comp=Z,9.8nm,0.9s,baz=248,slow=4.4,SNR=5.0
MMAI Mount Meron Ar 112.42 62 PP PP 11 18 43.7 -7.5
APA Apatity 112.83 24 *i* PKiKP **PKiKP** **11 18 09.0 +5.7**
LVZ Lovozero 113.28 24⇑ *i*PKiKP **PKiKP** **11 18 04.3 +0.1**
OBN Obninsk 114.91 38⇓ *i*PKiKP PKPdf 11 18 07.7 +0.1
OBN *i* 11 19 07.0
OBN *i* 11 21 34.7
OBN *e*PS **PKKPbc** **11 28 45.6 -0.6**
OBN *i* SS SS 11 34 56.6 +1.1
OBN pmax pmax
comp=Z,20nm,1.3s
OBN MLR MLR
comp=Z,408nm,18.0s
ANN Anapa 115.29 49 *i* PKiKP **PKPdf** **11 18 06.9 -1.8**
ANN *e* 11 19 07.6
ANN *e*PPP PPP 11 21 35.3
ANN pmax pmax
comp=Z,30nm,0.9s
KLMR Klimovskoe 116.10 31 *e*PKiKP **PKPdf** **11 18 08.8 -1.0**
KLMR *e* 11 28 39.8
KLMR *e*SS SS 11 35 07.2 -3.6
KLMR pmax pmax
comp=Z,22nm,1.5s
LPSR Galich'ya Gora 116.37 40 *e*PKiKP **PKPdf** **11 18 09.8 -0.7**
LPSR *e* 11 19 14.5
LPSR pmax pmax
comp=Z,10.0nm,0.9s
VSR Storozhevoye 116.56 42 *e*PKiKP **PKPdf** **11 18 10.8 -0.1**
VSR *e* 11 19 16.0
VSR pmax pmax
comp=Z,4.0nm,0.5s
SOC Sochi 116.88 50 *i* PKiKP **PKPdf** **11 18 14.1 +2.3**
SOC *e* 11 19 19.3
SOC *e*PS PKKPdf 11 28 54.6 -11
VRH Novokhopyorsk 118.16 42 *e*PKiKP **PKPdf** **11 18 13.9 -0.1**
VRH pmax pmax
comp=Z,10.0nm,0.4s
KIV Kislovodsk 119.04 50 *i* PKiKP **PKPdf** **11 18 16.2 +0.1**
KIV *i* 11 25 03.2
KIV pmax pmax
comp=Z,6.0nm,0.9s
KIV MLR MLR
comp=Z,213nm,22.0s
KVAR Kislovodsk Arr 119.04 50 PP PP 11 19 36.4 -0.9
comp=Z,6.7nm,0.9s,baz=180,slow=10,SNR=7.6
KVAR Kislovodsk Arr 119.04 50 PP PP 11 19 36.4 -0.9
KBZ Khabaz 119.19 50 PKP **PKPdf** **11 18 17.0 +0.8**
comp=Z,7.9nm,0.9s,baz=195,slow=2.2,SNR=13
KBZ PP **PP** **11 19 37.0 -1.2**
comp=Z,10nm,1.0s,baz=331,slow=4.0,SNR=4.2
KBZ Khabaz 119.19 50 PKP **PKPdf** **11 18 17.0 +0.8**
KBZ PP **PP** **11 19 37.0 -1.2**
AKH Akhalkalaki 119.62 53 P **PP** **11 19 39.1 -2.4**
RAYN Ar Rayn 119.64 74 *e*PKPdf **PKPdf** **11 18 18.1 +0.3**
ZEI Tsey 119.93 51 *i* PKiKP **PKPdf** **11 18 17.8 -0.2**
ZEI pmax pmax
comp=Z,7.0nm,0.8s
GUDG Gudauri 120.35 52 P **PP** **11 19 44.4 -2.1**
GNI Garni 120.55 54 PKP **PKPdf** **11 18 19.8 +0.6**
comp=Z,5.7nm,0.5s,baz=174,slow=23,SNR=4.1
GNI PP **PP** **11 19 47.7 -0.2**
comp=Z,5.4nm,0.3s,baz=301,slow=7.4,SNR=7.0
GNI Garni 120.55 54 PKP **PKPdf** **11 18 19.8 +0.6**
GNI PP **PP** **11 19 47.7 -0.2**
TBLG Delisi 120.55 53 P **PP** **11 19 46.0 -1.7**
BILL Bilibino 120.72 339⇑ *i*PKiKP **PKPdf** **11 18 18.1 -0.4**
BILL *e* 11 19 43.4
BILL pmax pmax
comp=Z,5.0nm,0.9s
BILL MLR MLR
comp=Z,464nm,22.0s
BILL Bilibino 120.72 339 *e*PKPdf **PKPdf** **11 18 18.6 +0.1**
STKA Stephens Creek 120.84 211 PKP **PKPdf** **11 18 19.1 -0.8**
comp=Z,5.5nm,0.8s,baz=110,slow=4.8,SNR=10
STKA pPKP **pPKPdf** **11 18 49.1 +1.2**
comp=Z,4.5nm,0.9s,baz=96,slow=4.9,SNR=2.8
STKA Stephens Creek 120.84 211 PKP **PKPdf** **11 18 19.1 -0.8**
STKA pPKP **pPKPdf** **11 18 49.1 +1.2**
DGRG David-gareji 121.03 53 P **PP** **11 19 45.3 -5.7**
SOKR Solikamsk 124.74 30⇑ *i*PKiKP **PKPdf** **11 18 25.4 -1.0**
SOKR pmax pmax
comp=Z,13nm,0.9s
ARU Arti 126.80 33 PKP **PKPdf** **11 18 30.5 +0.1**
comp=Z,6.7nm,0.7s,baz=279,slow=1.3,SNR=16
ARU pPKP **pPKPdf** **11 19 00.3 +1.9**
comp=Z,7.7nm,0.6s,baz=230,slow=1.9,SNR=4.2
ARU Arti 126.80 33 *i* PKiKP **PKPdf** **11 18 30.5 +0.1**
ARU *i* 11 20 27.4
ARU *i* 11 25 33.2
ARU Arti 126.80 33 *e*PKPdf **PKPdf** **11 18 30.7 +0.2**
ARU *ep*PKPdf **pPKPdf** **11 18 49.9 -8.5**
ARU pPKP pPKP 11 19 00.3
TIXI Tiksi 126.95 353*d* *i*PKiKP **PKPdf** **11 18 30.3 0.0**
TIXI Tiksi 126.95 353 *e*PKPdf **PKPdf** **11 18 30.1 -0.2**
NWAO Narrogin (SRO) 127.34 187 PKP **PKPdf** **11 18 31.8 -0.6**
comp=Z,23nm,1.0s,baz=283,slow=0.2,SNR=6.5
NWAO Narrogin (SRO) 127.34 187 PKP **PKPdf** **11 18 31.8 -0.6**
H11S2 WAKE ISLAND Hy127.34 279 T T 13 38 04.0
baz=101,slow=75,SNR=2636
H11S1 WAKE ISLAND Hy127.35 279 T T 13 38 08.7
baz=101,slow=75,SNR=2426
H11S3 WAKE ISLAND Hy127.36 279 T T 13 38 10.3
baz=101,slow=75,SNR=2560
H11N3 WAKE ISLAND Hy127.37 280 T T 13 38 11.1
baz=100,slow=75,SNR=424
CTA Charters Tower 127.38 223 PKP **PKPdf** **11 18 32.6 -0.2**
comp=Z,20nm,1.0s,baz=246,slow=2.1,SNR=5.6
CTA Charters Tower 127.38 223 PKP **PKPdf** **11 18 32.6 -0.2**
H11N2 WAKE ISLAND Hy127.39 280 T T 13 38 12.2
baz=100,slow=75,SNR=358
H11N1 WAKE ISLAND Hy127.39 280 T T 13 38 12.1
baz=100,slow=75,SNR=210
SEY Seymchan 128.31 337 PKP **PKPdf** **11 18 34.7 +1.5**
comp=Z,35nm,0.9s,baz=104,slow=2.0,SNR=89
SEY pPKP **pPKPdf** **11 19 01.2 +0.1**
comp=Z,17nm,1.0s,baz=133,slow=1.9,SNR=4.5
SEY PP **PP** **11 20 36.5 -2.0**
comp=Z,10.0nm,0.9s,baz=81,slow=3.9,SNR=7.3
SEY Seymchan 128.31 337⇓ *e*PKiKP **PKPdf** **11 18 33.6 +0.5**
SEY Seymchan 128.31 337 PKP **PKPdf** **11 18 34.7 +1.5**
SEY pPKP **pPKPdf** **11 19 01.2 +0.1**
SEY PP **PP** **11 20 36.5 -2.0**
NRIK Noril'sk 128.33 10 PKP **PKPdf** **11 18 33.8 +0.7**
comp=Z,10nm,0.9s,baz=34,slow=1.3,SNR=9.6
AKTO Aktyubinsk 128.46 41 PKP **PKPdf** **11 18 34.4 +0.6**
comp=Z,7.0nm,1.1s,baz=255,slow=1.8,SNR=12
AKTO PP **PP** **11 20 34.7 -5.3**
comp=Z,7.5nm,1.0s,baz=254,slow=7.4,SNR=3.1
AKTO Aktyubinsk 128.46 41 PKP **PKPdf** **11 18 34.4 +0.6**
AKTO PP **PP** **11 20 34.7 -5.3**
ABKAR Akbulak array 130.00 42 *e*PKPdf **PKPdf** **11 18 37.5 +0.8**
PET Petropavlovsk 130.43 324 *e*PKiKP **PKPdf** **11 18 37.5 +0.1**
PET *e* 11 19 07.3
PET *e* 11 20 53.4
PET *e*PPP PPP 11 23 48.9
PET *e*SS SS 11 38 12.3 +0.2
PET pmax pmax
comp=Z,200nm,13.9s
PET MLR MLR
comp=Z,200nm,21.0s
PET Petropavlovsk 130.43 324 *e*PKPdf **PKPdf** **11 18 36.9 -0.5**
PET *e*SKPbc **SKPbc** **11 21 52.6 +0.9**
PETK Petropavlovsk- 130.92 324 PKP **PKPdf** **11 18 38.9 +0.4**
comp=Z,27nm,0.9s,baz=111,slow=5.4,SNR=25
PETK pPKP **pPKPdf** **11 19 07.5 +1.1**
comp=Z,12nm,0.8s,baz=130,slow=8.0,SNR=4.1
PETK SKPbc **SKPab** **11 21 55.1 +1.2**
comp=Z,7.1nm,0.8s,baz=112,slow=6.6,SNR=4.4
PETK Petropavlovsk- 130.92 324 PKP **PKPdf** **11 18 38.9 +0.4**
PETK pPKP **pPKPdf** **11 19 07.5 +1.1**
PETK SKPbc **SKPab** **11 21 55.1 +1.2**
MA2 Magadan 130.96 334 PKP **PKPdf** **11 18 39.3 +1.0**
comp=Z,13nm,1.0s,baz=136,slow=3.4,SNR=7.7
MA2 PP **PP** **11 20 55.3 -0.6**

	comp=Z,9.9nm,1.1s,baz=82,slow=11,SNR=4.4						
MA2				SKPbc	SKPab	11 21 53.9	+0.2
	comp=Z,10nm,0.9s,baz=103,slow=6.3,SNR=5.3						
MA2	Magadan	130.96	334	ePKIKP	PKPdf	11 18 39.3	+1.0
MA2				e		11 20 52.6	
MA2	Magadan	130.96	334	ePKPdf	PKPdf	11 18 39.3	+1.0
MA2				ePP	PP	11 20 52.6	-3.2
MA2				SKPbc	SKPab	11 21 53.9	+0.2
GEYT	Alibeck	131.06	56	PP	PP	11 20 57.5	-0.1
	comp=Z,9.6nm,0.6s,baz=272,slow=8.3,SNR=12						
ASAR	Alice Springs	131.38	209	PKhKP	PKPpre	11 18 20.6	
	comp=Z,0.5nm,0.6s,baz=126,slow=2.4,SNR=9.3						
ASAR				PKP	PKPdf	11 18 39.6	-0.7
	comp=Z,18nm,1.0s,baz=121,slow=1.7,SNR=45						
ASAR				pPKP	pPKPdf	11 19 08.8	+0.5
	comp=Z,4.0nm,0.6s,baz=158,slow=2.6,SNR=3.0						
ASAR				SKPbc	SKPab	11 21 56.6	-0.2
	comp=Z,12nm,1.0s,baz=148,slow=4.4,SNR=11						
ASAR	Alice Springs	131.38	209	PKPpre	PKPpre	11 18 20.6	
ASAR				PKP	PKPdf	11 18 39.6	-0.7
ASAR				pPKP	pPKPdf	11 19 08.8	+0.5
ASAR				SKPbc	SKPab	11 21 56.6	-0.2
WSAR	Wadi Sarin	131.54	76	PKP	PKPdf	11 18 40.8	+0.3
	comp=Z,15nm,1.0s,baz=257,slow=5.0,SNR=8.5						
WSAR				PP	PP	11 20 58.1	-3.0
	comp=Z,16nm,1.0s,baz=272,slow=6.8,SNR=4.7						
WSAR	Wadi Sarin	131.54	76	PKP	PKPdf	11 18 40.8	+0.3
WSAR				PP	PP	11 20 58.1	-3.0
PMG	Port Moresby	133.97	234	PKP	PKPdf	11 18 43.9	-1.4
	comp=Z,24nm,1.1s,baz=284,slow=4.2,SNR=3.3						
PMG	Port Moresby	133.97	234	⇓iPKIKP	PKPdf	11 18 47.7	+2.3
PMG	Port Moresby	133.97	234	PKP	PKPdf	11 18 43.9	-1.4
WRA	Warramunga Arr	134.36	212	PKhKP	PKPpre	11 18 29.6	
	comp=Z,1.3nm,0.9s,baz=146,slow=2.9,SNR=5.3						
WRA				PKP	PKPdf	11 18 45.8	-0.2
	comp=Z,12nm,0.7s,baz=153,slow=1.6,SNR=40						
WRA				pPKP	pPKPdf	11 19 15.3	+1.3
	comp=Z,5.9nm,0.7s,baz=158,slow=1.7,SNR=3.0						
WRA				PP	PP	11 21 15.5	-2.1
	comp=Z,2.1nm,0.6s,baz=162,slow=4.0,SNR=6.1						
WRA				SKPbc	SKPbc	11 22 07.7	+1.1
	comp=Z,12nm,1.0s,baz=152,slow=2.4,SNR=9.2						
WRA	Warramunga Arr	134.36	212	PKPpre	PKPpre	11 18 29.6	
WRA				PKP	PKPdf	11 18 45.8	-0.2
WRA				pPKP	pPKPdf	11 19 15.3	+1.3
WRA				PP	PP	11 21 15.5	-2.1
WRA				SKPbc	SKPbc	11 22 07.7	+1.1
WRAB	Tennant Creek	134.36	212	⇓iPKIKP	PKPdf	11 18 45.8	-0.2
WRAB	Tennant Creek	134.36	212	ePKPdf	PKPdf	11 18 45.4	-0.6
WRAB				ePP	PP	11 21 16.3	-1.3
BRVK	Borovoye	134.37	33	d iPKIKP	PKPdf	11 18 46.2	+1.3
BRVK	Borovoye	134.37	33	ePKPdf	PKPdf	11 18 45.9	+1.0
BVAR	Borovoye Array	134.44	33	PKP	PKPdf	11 18 46.9	+1.8
	comp=Z,3.5nm,0.7s,baz=287,slow=2.5,SNR=18						
BVAR				pPKP	pPKPdf	11 19 15.0	+1.9
	comp=Z,4.8nm,0.7s,baz=270,slow=1.5,SNR=4.8						
BVAR				SKPab	SKPab	11 22 07.6	-1.4
	comp=Z,2.8nm,0.8s,baz=320,slow=3.8,SNR=3.8						
BVAR	Borovoye Array	134.44	33	PKP	PKPdf	11 18 46.9	+1.8
BVAR				pPKP	pPKPdf	11 19 14.9	+1.9
BVAR				SKPab	SKPab	11 22 07.6	-1.4
YAK	Yakutsk	135.68	347	PKhKP	PKPpre	11 18 36.6	
	comp=Z,1.4nm,0.4s,baz=235,slow=19,SNR=4.6						
YAK				PKP	PKPdf	11 18 46.9	-0.1
	comp=Z,1.1nm,0.3s,baz=206,slow=16,SNR=5.4						
YAK	Yakutsk	135.68	347	ePKHKP	PKPpre	11 18 36.2	
YAK				e		11 18 47.2	
YAK				pmax	pmax		
	comp=Z,16nm,0.8s						
YAK	Yakutsk	135.68	347	PKPpre	PKPpre	11 18 36.5	
YAK				PKP	PKPdf	11 18 46.9	-0.1
MBWA	Marble Bar	138.49	193	ePKPdf	PKPdf	11 18 53.5	-0.1
IUG	Iuzhnay	138.99	48	ePKP	PKPdf	11 18 55.6	+1.7
	comp=Z,74nm,0.6s						
IUG				i PP	PP	11 21 49.0	+1.6
IUG				i SKP		11 22 21.8	
NVS	Novosibirsk	139.14	24	ePKIKP	PKPdf	11 18 51.6	-2.1
NVS				e		11 21 45.0	
NVS				pmax	pmax		
	comp=N,11nm,1.3s						
NVS				pmax	pmax		
	comp=E,19nm,1.3s						
NVS				pmax	pmax		
	comp=Z,53nm,1.3s						
NKL	Nikolayevsk	139.39	333	ePKHKP	PKPpre	11 18 46.8	
NKL				pmax	pmax		
	comp=Z,40nm,1.0s						
FITZ	Fitzroy Crossi	139.73	202	PKhKP	PKPpre	11 18 46.4	
	comp=Z,4.1nm,0.7s,baz=180,slow=9.8,SNR=6.7						
FITZ				PKP	PKPdf	11 18 56.1	+0.2
	comp=Z,8.8nm,0.8s,baz=320,slow=4.0,SNR=6.8						
FITZ				pPKP	pPKPdf	11 19 24.1	+0.2
	comp=Z,12nm,0.8s,baz=216,slow=10,SNR=2.9						
FITZ	Fitzroy Crossi	139.73	202	PKPpre	PKPpre	11 18 46.4	
FITZ				PKP	PKPdf	11 18 56.1	+0.2
FITZ				pPKP	pPKPdf	11 19 24.1	+0.2
KURK	Kurchatov	139.95	32	PKHKP	PKPpre	11 18 47.0	
KURK				e		11 18 55.9	
KURK						11 21 54.1	
KURK	Kurchatov	139.95	32	PKPpre	PKPpre	11 18 47.0	
KURK				ePKPdf	PKPdf	11 18 55.9	+0.6
KURK				epPKPdf	pPKPdf	11 19 15.4	-7.9
KURK				PP	PP	11 21 54.1	+1.6
KURBB	Kurchatov Arra	139.96	32	PKhKP	PKPpre	11 18 47.0	
	comp=Z,1.2nm,0.8s,baz=305,slow=3.5,SNR=9.0						
KURBB				PKP	PKiKP	11 18 56.7	-1.1
	comp=Z,8.6nm,1.0s,baz=304,slow=2.1,SNR=21						
KURBB				PP	PP	11 21 54.1	+1.5
	comp=Z,3.8nm,0.9s,baz=305,slow=6.4,SNR=5.2						
TYV	Tymovskoe	140.00	329	ePKIKP	PKPdf	11 18 55.5	+0.1
TYV				pmax	pmax		
	comp=Z,13nm,0.8s						
ZALV	Zalesovo Beam	140.42	24	PKhKP	PKPpre	11 18 49.0	
	comp=Z,5.9nm,0.6s,baz=307,slow=3.3,SNR=20						
ZALV				SKPbc	SKPbc	11 22 24.3	+1.1
	comp=Z,19nm,0.9s,baz=294,slow=4.7,SNR=6.2						
ZALV	Zalesovo Beam	140.42	24	PKPpre	PKPpre	11 18 49.0	
ZALV				SKPbc	SKPbc	11 22 24.3	+1.1
KRAR	Krasnoyarsk	141.30	16	⇑ePKIKP	PKPdf	11 18 56.9	-0.6
EKS2	Erkin-Say	141.36	45	ePKIKP	PKPdf	11 18 55.5	-2.8
EKS2	Erkin-Say	141.36	45	ePKPdf	PKPdf	11 18 55.5	-2.8
BOD	Bodaibo	141.83	357	ePKHKP	PKPpre	11 18 51.7	
BOD				pmax	pmax		
	comp=Z,30nm,0.8s						
FRU	Bishkek	141.84	45	ePKIKP	PKPpre	11 18 55.0	
FRU				e		11 19 31.0	
FRU				i		11 22 09.0	
AAK	Ala-Archa	141.85	45	PKhKP	PKPpre	11 18 56.8	
	comp=Z,8.5nm,1.0s,baz=200,slow=0.2,SNR=6.4						
AAK				PP	PP	11 22 08.0	+3.1
	comp=Z,23nm,1.1s,baz=256,slow=3.8,SNR=8.3						
AAK	Ala-Archa	141.85	45	d iPKIKP	PKPdf	11 18 57.0	-2.2
AAK	Ala-Archa	141.85	45	ePKPdf	PKPdf	11 18 57.4	-1.8
AAK				ePP	PP	11 22 07.0	+2.2
YSS	Yuzh-Sakhalins	142.31	324	⇓ePKIKP	PKPdf	11 19 01.6	+2.0
TKM2	Tokmak 2	142.45	44	ePKIKP	PKPdf	11 18 58.5	-1.9
TKM2	Tokmak 2	142.45	44	ePKPdf	PKPdf	11 18 58.5	-1.9
KUU	Kurty	142.47	42	ePKP	PKPdf	11 18 57.0	-3.1
	comp=Z,52nm,0.9s						
KUU				i PKiKP	PKiKP	11 19 00.6	-2.6
KUU				i pPKiKP	pPKiKP	11 19 32.4	+1.2
KUU				i PP	PP	11 22 06.1	-2.3
JASL	Jaisalmer	142.79	71	eP	PKPdf	11 18 59.1	-2.0
JAY	Jayapura	143.26	236	PKhKP	PKPpre	11 19 00.1	
	comp=Z,6.4nm,1.0s,baz=71,slow=23,SNR=5.2						
JAY	Jayapura	143.26	236	PKPpre	PKPpre	11 19 00.1	
MDOK	Medeo	143.28	43	i PKP	PKPbc	11 19 00.1	+1.0
	comp=Z,57nm,1.1s						
MDOK				i PKiKP	PKiKP	11 19 04.0	-1.1
MDOK				i PP	PP	11 22 12.3	-1.1
KSH	Kashi	144.15	49	PKP	PKPdf	11 19 02.6	-0.7
KSH				epPKP	pPKPdf	11 19 28.4	-3.0
KSH				sPKP		11 19 39.1	
KSH				ePP	PP	11 22 21.8	+3.0
KSH				PKS	PKSdf	11 22 36.4	-2.6
KSH				SKS	SKSdf	11 26 00.3	-3.4
KSH				SKKS	SKKSac	11 29 00.6	-1.4
KSH				SS	SS	11 40 55.9	-0.1
KSH				AMB	AMB		
	comp=Z,430nm,5.0s						
KSH				LR	LR		
	comp=Z,140nm,6.6s						
KSH				LR	LR		
	comp=Z,120nm,6.1s						
KSH				LR	LR		
	comp=Z,390nm,21.4s						
KPKS	Kokpek	144.16	41	⇓iPKP	PKPdf	11 19 02.8	-0.4
	comp=Z,1μm,1.2s						
KPKS				epPKP	pPKPdf	11 19 31.6	+0.4
KPKS				ePP	PP	11 22 20.5	+2.0
SATY	Saty	144.19	42	⇓iPKP	PKPdf	11 19 02.7	-0.6
	comp=Z,403nm,1.1s						
SATY				ePP	PP	11 22 14.2	-4.6
MKAR	Makanchi Array	144.31	34	PKP	PKPbc	11 19 02.1	+0.3
	comp=Z,9.9nm,0.6s,baz=316,slow=2.6,SNR=76						
MKAR				SKP		11 22 29.6	
	comp=Z,9.5nm,0.9s,baz=278,slow=4.2,SNR=3.8						
MKAR	Makanchi Array	144.31	34	PKP	PKPbc	11 19 02.1	+0.3
MKAR				SKP		11 22 29.6	
UZB	Uzynbulak	144.53	42	⇓iPKP	PKPdf	11 19 04.1	+0.1
	comp=Z,392nm,1.1s						
UZB				ePP	PP	11 22 21.6	+0.7
GOA	Goa	144.57	91	eP	PKPab	11 18 59.3	-4.0
ERM	Erimo	144.71	316	ePKIKP	PKPdf	11 19 04.2	+0.2
ERM	Erimo	144.71	316	ePKPdf	PKPdf	11 19 04.2	+0.2
ZSN	Zaisan	144.96	32	⇓iPKP	PKPdf	11 19 05.6	+1.2
	comp=Z,323nm,1.0s						
ZSN				i PKiKP	PKiKP	11 19 10.0	+1.8
POO	Poona	145.12	86	⇓iP	PKPbc	11 19 04.0	-1.2
	comp=Z,8.0nm,1.5s						
POO				eP	PKPdf	11 19 05.4	0.0
HABR	Khabarovsk	145.23	331	ePKP2	PKPbc	11 19 03.8	-0.8
HABR				ePPP	PPP	11 25 36.3	
HABR				e		11 26 04.6	
HABR				eSSS	SSS	11 46 34.7	
HABR				pmax	pmax		
	comp=N,30nm,0.9s						
HABR				pmax	pmax		
	comp=E,17nm,0.9s						
HABR				pmax	pmax		
	comp=Z,385nm,0.9s						
TRD	Trivandrum	145.44	104	eP	PKPbc	11 19 06.4	+0.1
KLR	Kul'dur	146.05	335	PKPbc	PKPbc	11 19 06.7	-0.4
	comp=Z,50nm,0.8s,baz=47,slow=3.7,SNR=89						
KLR				pPKPbc	pPKPbc	11 19 36.9	+2.2
	comp=Z,26nm,0.7s,baz=47,slow=2.8,SNR=3.9						
KLR	Kul'dur	146.05	335	PKPbc	PKPbc	11 19 06.7	-0.4
KLR				pPKPbc	pPKPbc	11 19 36.9	+2.2
THN	Thein Dam	146.19	61	ex	PKPdf	11 19 08.8	+2.0
THN				ex	x	11 22 30.8	
DHRM	DHARAMSHALA	146.71	61	eP	PKPdf	11 19 07.6	-0.4
GUMO	Guam	146.82	265	PKPbc	PKPdf	11 19 09.2	+0.8
	comp=Z,575nm,1.0s,baz=150,slow=3.7,SNR=13						
GUMO				pPKPbc	pPKPbc	11 19 39.1	+1.1
	comp=Z,146nm,0.8s,baz=191,slow=9.2,SNR=2.4						
GUMO	Guam	146.82	265	PKPbc	PKPdf	11 19 09.2	+0.8
GUMO				pPKPbc	pPKPbc	11 19 39.1	+1.1
KHET	Khetri	147.03	69	eP	PKPdf	11 19 08.9	+0.5
KHET				eP	PKPdf	11 19 08.9	+0.5
IRK	Irkutsk	147.10	7	ePKP2	PKPbc	11 19 09.2	-0.9
IRK				pmax	pmax		
	comp=Z,226nm,1.4s						
MOY	Mondy	147.16	11	ePKP2	PKPbc	11 19 10.4	0.0
MOY				pmax	pmax		
	comp=Z,168nm,1.5s						
RTK	Rohtak	147.43	67	eP	PKPdf	11 19 09.9	+0.9
SDNR	Sundarnagar	147.44	62	eP	PKPdf	11 19 09.0	-0.1
TLY	Talaya	147.57	8	PKPbc	PKPbc	11 19 11.6	+0.2
	comp=Z,19nm,0.5s,baz=202,slow=1.4,SNR=17						
TLY	Talaya	147.57	8	ePKP2	PKPbc	11 19 10.8	-0.6
TLY				pmax	pmax		
	comp=Z,116nm,1.5s						
TLY	Talaya	147.57	8	ePKPdf	PKPbc	11 19 10.7	-0.7
KUDL	Kundal	147.62	68	eP	PKPdf	11 19 10.3	+0.9
KUDL				eP	PKPdf	11 19 10.3	+0.9
KKR	Kurukshetra	147.62	65	eP	PKPdf	11 19 09.0	-0.4
CIT	Chita	147.64	357	ePKP2	PKPbc	11 19 10.9	-0.7
CIT				pmax	pmax		
	comp=Z,219nm,1.7s						
KLRI	Killari	147.65	87	ePKPbc	PKPdf	11 19 10.9	+1.1
SMLA	Simla	147.68	63	eP	PKPdf	11 19 10.2	+0.8
URV	Uravakonda	147.69	93	ePKPbc	PKPdf	11 19 09.9	0.0
URV				ePKiKP	PKiKP	11 19 14.0	-0.7
BATI	Baumata	147.71	204	PKPbc	PKPbc	11 19 13.7	+0.8
	comp=Z,36nm,0.8s,baz=118,slow=24,SNR=3.6						
BATI	Baumata	147.71	204	PKPbc	PKPbc	11 19 13.7	+0.8
SOEI	Soe	147.88	206	ePKPdf	PKPdf	11 19 11.8	+1.4
SOEI				ePKPbc	PKiKP	11 19 14.9	-0.4
BHGR	Bahadurgarh	147.94	67	eP	PKPdf	11 19 09.8	-0.1
SONA	Sohna	148.13	68	eP	PKPdf	11 19 10.7	+0.5
SONA				eP	PKPdf	11 19 10.7	+0.5
AYAN	Aya Nagar	148.13	68	eP	PKPdf	11 19 10.7	+0.5
AYAN				eP	PKPdf	11 19 10.7	+0.5
NDI	New Delhi	148.18	67	eP	PKPdf	11 19 08.0	-2.3
NDI				ex	x	11 19 26.0	
PALK	Pallekele	148.33	109	PKPbc	PKPbc	11 19 15.1	+0.5
	comp=Z,12nm,0.8s,baz=258,slow=0.9,SNR=6.4						
PALK	Pallekele	148.33	109	ePKIKP	PKPdf	11 19 11.6	+0.5
PALK				e		11 19 17.9	
PALK	Pallekele	148.33	109	ePKPdf	PKPdf	11 19 11.6	+0.5
PALK				ePKPbc	PKPbc	11 19 15.2	+0.7
PALK				ePKPab	PKPab	11 19 17.9	0.0
BISR	Bishrakh	148.39	67	eP	PKPdf	11 19 11.0	+0.4
DDI	Dehra Dun	148.60	64	eP	PKPdf	11 19 10.8	-0.3
ZAK	Zakamensk	148.78	9	ePKIKP	PKPdf	11 19 11.1	+0.3
ZAK				pmax	pmax		
	comp=Z,42nm,1.0s						
ZAK				pmax	pmax		
	comp=Z,13nm,1.6s						
BHPL	Bhopal	148.79	77	eP	PKPdf	11 19 10.1	-1.4
WMQ	Urumqi	149.13	34	PKPbc	PKPdf	11 19 12.4	+0.9
WMQ				PKPab	PKPab	11 19 21.7	+1.3
WMQ				pPKP	pPKPdf	11 19 33.4	-6.1
WMQ				SKS	SKSdf	11 26 08.3	-2.2
WMQ				SKKS	SKKSac	11 29 29.0	-0.6
WMQ				SS	SS	11 41 52.0	+0.8
WMQ				LR	LR		
	comp=Z,210nm,32.4s						
WMQ				LR	LR		
	comp=Z,240nm,27.0s						
WMQ				LR	LR		
	comp=Z,230nm,29.6s						
FAKI	Fak Fak	149.19	226	ePKPdf	PKPdf	11 19 12.9	+0.5
FAKI				ePKPbc	PKPbc	11 19 17.3	+0.6
HYBB	Hyderabad (bro	149.39	89	ePKPdf	PKPdf	11 19 10.3	-2.3
HYBB				ePKiKP	PKPbc	11 19 16.7	-0.4
HYBB				eSKSdf	SKSdf	11 26 10.4	-1.4
HYB	Hyderabad	149.39	89	i PKP	PKPdf	11 19 14.0	+1.4
HYB				epPKP	pPKPdf	11 19 47.0	+6.4
HYB	Hyderabad	149.39	89	eP	PKPdf	11 19 11.7	-0.9
RCLA	Racherla	149.40	93	ePKPbc	PKPdf	11 19 13.6	+1.0
RCLA				ePKiKP	PKPbc	11 19 17.4	+0.2
SRSP	Sriramsagar	149.40	86	ePKPdf	PKPdf	11 19 12.9	+0.4
SRSP				ePKiKP	PKPbc	11 19 17.2	+0.1
SRLM	Srisailam	149.47	92	ePKPdf	PKPdf	11 19 12.4	-0.4
SRLM				ePKiKP	PKPbc	11 19 17.6	+0.2
HIA	Hailar	149.61	348	ePKPdf	PKPdf	11 19 12.0	0.0
HIA				ePKPbc	PKPbc	11 19 16.8	+0.1
HIA				ePKPab	PKPab	11 19 23.1	+1.1
MMRI	Maumere	149.69	203	ePKPdf	PKPdf	11 19 13.3	+0.1
MMRI				ePKPbc	PKiKP	11 19 18.8	-0.1
SKHT	Srikalahasti	149.69	96	ePKiKP	PKPbc	11 19 17.7	-0.1
USRK	Ussuriysk Ar.	149.81	329	PKPbc	PKPbc	11 19 17.6	+0.3
	comp=Z,120nm,0.9s,baz=17,slow=0.9,SNR=69						
USRK				pPKPbc	pPKPbc	11 19 45.5	+0.3
	comp=Z,54nm,0.9s,baz=1.7,slow=2.0,SNR=4.4						
MDRS	Chennai	150.01	98	eP	PKPdf	11 19 12.7	-0.9
RPR	Rampur	150.28	86	ePKiKP	PKPbc	11 19 19.3	+0.1
RPR				ePKPab	PKPab	11 19 24.4	-1.3
JCJ	Chichijima	150.30	290	PKPbc	PKPbc	11 19 18.3	-0.7
	comp=Z,181nm,0.9s,baz=283,slow=7.6,SNR=6.3						
CBIJ	Chichi jima	150.30	290	PKPbc	PKPbc	11 19 18.3	-0.7
ADKI	Addanki	150.43	92	ePKPdf	PKPdf	11 19 13.7	-0.5
ADKI				ePKPbc	PKPbc	11 19 18.3	-1.3
ADKI				ePKPab	PKPab	11 19 24.9	-1.5
MDJ	Mudanjiang	150.61	332	PKPbc	PKPdf	11 19 14.4	+0.7
MDJ				pPKP	pPKPdf	11 19 36.4	-5.3
MDJ				sPKP		11 19 45.9	
MDJ				PKS	PKSdf	11 22 48.2	-0.1
MDJ				PP	PP	11 22 57.2	+1.5
MDJ				SKS	SKSdf	11 26 14.9	+2.7
MDJ				LR	LR		
	comp=Z,210nm,6.4s						
MDJ				LR	LR		
	comp=Z,380nm,16.6s						
MDJ				LR	LR		
	comp=Z,220nm,6.4s						
MDJ	Mudanjiang	150.61	332	ePKPdf	PKPdf	11 19 14.6	+0.9
MDJ				ePKPbc	PKiKP	11 19 20.1	+0.3
MDJ				ePKPab	PKPab	11 19 27.4	+1.1
LGTI	Lohaghat	150.65	65	ex	PKPbc	11 19 18.9	-0.9
MJAR	Matsushiro Arr	150.69	311	PKPbc	PKPbc	11 19 19.7	0.0
	comp=Z,82nm,0.9s,baz=81,slow=1.5,SNR=70						
MJAR				pPKPbc	pPKPbc	11 19 49.0	+1.4
	comp=Z,47nm,0.7s,baz=102,slow=1.7,SNR=6.6						
MJAR	Matsushiro Arr	150.69	311	PKPbc	PKPbc	11 19 19.7	0.0
MJAR				pPKPbc	pPKPbc	11 19 49.0	+1.4
MAJO	Matsushiro	150.69	311	d iPKIKP	PKPbc	11 19 19.6	-0.1
MAJO	Matsushiro	150.69	311	ePKPbc	PKPbc	11 19 19.4	-0.3
MAT	Matsushiro	150.69	311	PKP	PKPdf	11 19 15.0	+0.9
JHJ	Hachijo jima 2	150.88	303	PKPbc	PKPbc	11 19 20.9	+0.7
	comp=Z,284nm,0.8s,baz=238,slow=5.9,SNR=7.8						
SONM	Songino Array	151.68	6	PKP	PKPdf	11 19 16.2	+0.8
	comp=Z,11nm,0.9s,baz=331,slow=0.6,SNR=46						
SONM				PKPbc	PKiKP	11 19 22.3	+0.1
	comp=Z,94nm,0.9s,baz=329,slow=1.6,SNR=91						
SONM				pPKP	pPKPdf	11 19 42.4	-1.1
	comp=Z,51nm,0.8s,baz=338,slow=2.0,SNR=7.5						
SONM	Songino Array	151.68	6	PKP	PKPdf	11 19 16.2	+0.8
SONM				PKPbc	PKiKP	11 19 22.3	+0.1
SONM				pPKP	pPKPdf	11 19 42.4	-1.1
ULN	Ulaanbaatar	151.71	5	d iPKIKP	PKPdf	11 19 16.7	+1.2
ULN	Ulaanbaatar	151.71	5	ePKPdf	PKPdf	11 19 15.9	+0.4
ULN				ePKPbc	PKiKP	11 19 22.4	+0.1
ULN				ePP	PP	11 23 02.0	+0.2
JAGI	Jajag, Banyuwa	151.84	187	ePKPbc	PKPbc	11 19 23.2	+0.2
JAGI				ePKPab	PKPab	11 19 32.8	+0.7
PVM	Polavaram	152.25	90	ePKPdf	PKPdf	11 19 17.6	+0.7
PVM				ePKiKP	PKPbc	11 19 23.5	-0.2
CISI	Cisompet, Garu	152.79	174	ePKPdf	PKPdf	11 19 18.8	+0.8
CISI				ePKPbc	PKPbc	11 19 24.4	-0.8
PYUN	Piuthan	153.29	66	eP	PKPdf	11 19 19.4	+0.9
	comp=Z,88nm,1.0s						
SMRI	Semarang	153.44	179	ePKPbc	PKPbc	11 19 26.5	-0.1
KOLN	Koldanda	153.88	67	eP	PKPdf	11 19 19.3	-0.1
	comp=Z,28nm,1.1s						
KAPI	Kappang	153.93	201	PKPbc	PKPbc	11 19 28.1	+0.5
	comp=Z,14nm,0.5s,baz=106,slow=1.7,SNR=7.4						
KAPI				PKPab	PKPab	11 19 41.7	+0.8
	comp=Z,87nm,1.0s,baz=197,slow=4.7,SNR=12						
KAPI	Kappang	153.93	201	ePKPdf	PKPdf	11 19 19.8	+0.2
KAPI				ePKPbc	PKiKP	11 19 29.0	+1.4
KAPI				ePKPab	PKPab	11 19 41.8	+0.8
VIS	Vishakhapatnam	153.93	90	eP	PKPdf	11 19 18.9	-0.4
CHLP	Challavanipeta	154.73	88	ePKPdf	PKPdf	11 19 19.8	-0.6
CHLP				ePKPab	PKPab	11 19 43.5	-0.9
CHLP				eSKSdf	SKSdf	11 26 21.0	+2.9
GKN	Gorkha	154.73	66	eP	PKPdf	11 19 21.2	+0.7
DMN	Daman	155.22	67	eP	PKPdf	11 19 21.9	+0.6
KKN	Kakani	155.33	66	eP	PKPdf	11 19 21.8	+0.4
PKIN	Phulchoki	155.48	66	eP	PKPdf	11 19 22.1	+0.5
	comp=Z,17nm,1.0s						
GUN	Gumba	155.82	65	eP	PKPdf	11 19 22.8	+0.6
	comp=Z,23nm,0.8s						
BOK	Bokaro	156.53	75	eP	PKPdf	11 19 22.5	-0.3
RAMN	Ramite	156.67	67	eP	PKPdf	11 19 22.9	-0.3
KSRS	Korea Array	156.82	323	PKP	PKPdf	11 19 24.0	+1.3
	comp=Z,9.1nm,0.9s,baz=54,slow=1.2,SNR=22						
KSRS				PKPab	PKPab	11 19 53.1	+0.3
	comp=Z,22nm,0.8s,baz=61,slow=4.0,SNR=19						
KSAR	Wonju Array Be	156.85	323	PKIKP	PKPdf	11 19 24.0	+1.2
KSAR						11 19 53.1	
KSAR	Wonju Array Be	156.85	323	PKP	PKPdf	11 19 24.0	+1.2
KSAR				PKPab	PKPab	11 19 53.1	+0.2
ODAN	Odare	157.37	67	eP	PKPdf	11 19 23.8	-0.3
TAPN	Taplejung	157.53	66	eP	PKPdf	11 19 24.7	+0.3
JNU	Nakatsue	157.61	311	PKPab	PKPab	11 19 56.0	-0.5
	comp=Z,19nm,0.9s,baz=50,slow=5.8,SNR=6.6						
JNU	Nakatsue	157.61	311	PKPab	PKPab	11 19 56.0	-0.5
GTA	Gaotai	158.17	23	PKP	PKPdf	11 19 24.9	+0.3
GTA				pPKP	pPKPdf	11 19 52.0	-0.7
GTA				sPKP		11 20 02.8	
GTA				PP	PP	11 23 45.2	+7.1
GTA				SKS	SKSdf	11 26 19.3	-2.0
GTA				SKKS	SKKSac	11 30 22.4	+3.9
GTA				LR	LR		
	comp=Z,250nm,19.5s						
GTA				LR	LR		
	comp=Z,330nm,20.9s						
GTA				LR	LR		
	comp=Z,260nm,18.1s						
DL2	Dalian	158.66	336	PKP	PKPdf	11 19 27.2	+2.3
DL2				sPKP		11 19 59.8	
DL2				PKPab	PKPab	11 20 06.3	+5.7
DL2				PP	PP	11 23 49.2	+8.6
DL2				AMB	AMB		
	comp=Z,380nm,7.5s						
DL2				LR	LR		
	comp=Z,250nm,14.8s						
DL2				LR	LR		
	comp=Z,390nm,14.1s						
DL2				LR	LR		
	comp=Z,640nm,28.0s						
HHC	Hu-ho-hao-te	158.88	358	ePKP	PKPdf	11 19 24.2	-1.1
HHC				pPKP	pPKPdf	11 19 53.5	+0.1
HHC				sPKP		11 20 04.3	
HHC				PP	PP	11 23 44.4	+2.8
HHC				SKKS		11 30 19.1	
HHC				LR	LR		
	comp=Z,220nm,19.1s						
HHC				LR	LR		
	comp=Z,300nm,21.8s						
HHC				LR	LR		
	comp=Z,300nm,18.6s						
BJI	Beijing	159.18	348	PKP	PKPdf	11 19 26.9	+1.4
BJI				SKS	SKSdf	11 26 22.5	+0.7
BJI				AMB	AMB		
	comp=Z,280nm,6.4s						
BJI				LR	LR		
	comp=Z,380nm,22.2s						
BJI				LR	LR		
	comp=Z,240nm,21.0s						
BJI				LR	LR		
	comp=Z,530nm,28.0s						
LSA	Lhasa	159.59	57	ePKIKP	PKPdf	11 19 27.9	+0.9
LSA	Lhasa	159.59	57	ePKPdf	PKPdf	11 19 27.9	+0.9
PSI	Prapat	159.62	144	PKP	PKPdf	11 19 26.3	-0.7
	comp=Z,8.2nm,0.8s,baz=188,slow=9.0,SNR=6.0						
PSI				PKPab	PKPab	11 20 06.4	+0.8
	comp=Z,25nm,1.1s,baz=186,slow=6.4,SNR=5.7						
PSI	Prapat	159.62	144	PKP	PKPdf	11 19 26.3	-0.7
PSI				PKPab	PKPab	11 20 06.4	+0.8
SHL	Shillong	161.60	68	eP	PKPdf	11 19 28.0	-0.9
DGPR	DIGLIPUR	161.71	108	eP	PKPdf	11 19 28.4	-0.6
IPM	Ipoh	162.15	147	ePKPdf	PKPdf	11 19 29.4	-0.2
JOW	Kunigami	162.43	297	PKP	PKPdf	11 19 31.0	+1.5
	comp=Z,37nm,1.0s,baz=295,slow=5.4,SNR=6.7						
JOW				PKPab	PKPab	11 20 18.3	+0.6
	comp=Z,14nm,0.8s,baz=120,slow=4.0,SNR=4.2						
JOW	Kunigami	162.43	297	PKP	PKPdf	11 19 31.0	+1.5
JOW				PKPab	PKPab	11 20 18.3	+0.6
LZH	Lanzhou	162.54	19	ePKP	PKPdf	11 19 31.9	+2.4
LZH				pPKP	pPKPdf	11 19 52.2	-5.5
LZH				sPKP		11 20 02.1	
LZH				PP	PP	11 24 07.2	+5.6
LZH				SKS	SKSdf	11 26 19.6	-5.7
LZH				SKKS	SKKSac	11 30 39.5	-1.8
LZH				SS	SS	11 44 19.7	+4.8
LZH				AMB	AMB		
	comp=Z,130nm,4.2s						
LZH				LR	LR		
	comp=Z,370nm,15.6s						
LZH				LR	LR		
	comp=Z,220nm,14.8s						
LZH				LR	LR		
	comp=Z,860nm,16.3s						
TIA	Tai'an	162.60	343	⇓PKP	PKPdf	11 19 29.3	-0.1
PKDT	Phuket	163.19	132	PKP	PKPdf	11 19 32.6	+2.1
PKDT	Phuket	163.19	132	P	PKPab	11 20 26.2	+5.1
SKLT	Songkhla	164.13	140	PKP	PKPdf	11 19 32.5	+1.1
XAN	Xi'an	165.59	6	PKP	PKPdf	11 19 32.3	+0.1
XAN				pPKP	pPKPdf	11 19 59.3	-1.1
XAN				PP	PP	11 24 26.6	+9.4
XAN				SKKS		11 30 56.2	
XAN				SS	SS	11 44 43.8	-1.8
XAN				LR	LR		
	comp=Z,440nm,34.4s						
XAN				LR	LR		
	comp=Z,240nm,37.7s						
XAN				LR	LR		
	comp=Z,430nm,33.1s						

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
NJ2	Nanjing	165.70	331	ePKP	PKPdf	11 19 33.6	+1.4
CD2	Chengdu	167.14	28	PKP	PKPdf	11 19 32.3	-1.2
CD2				sPKP		11 20 04.8	
CD2				PP	PP	11 24 24.9	-0.7
CD2				SKS	SKSdf	11 26 28.7	+0.3
CD2				SKKS	SKKSac	11 31 03.9	-0.6
CD2				SS	SS	11 45 03.2	+1.1
CD2				AMB	AMB		
	comp=Z,420nm,8.4s						
CD2				LR	LR		
	comp=Z,190nm,4.8s						
CD2				LR	LR		
	comp=Z,130nm,6.6s						
WHN	Wuhan	168.70	344	PKP	PKPdf	11 19 36.0	+1.5
WHN				LR	LR		
	comp=Z,2μm,27.4s						
CMAR	Chiang Mai Arr	168.74	94	PKP	PKPdf	11 19 35.2	+0.4
	comp=Z,6.9nm,1.0s,baz=274,slow=1.7,SNR=34						
CMAR				PKPab	PKPab	11 20 45.9	+0.1
	comp=Z,7.9nm,0.8s,baz=260,slow=5.3,SNR=11						
CMAR				pPKPab	pPKPab	11 21 15.1	+2.3
	comp=Z,7.2nm,0.9s,baz=264,slow=5.6,SNR=3.1						
CMAR	Chiang Mai Arr	168.74	94	PKP	PKPdf	11 19 35.2	+0.4
CMAR				PKPab	PKPab	11 20 45.9	+0.1
CMAR				pPKPab	pPKPab	11 21 15.1	+2.3
CHTO	Chiang Mai	168.79	92	PKP	PKPdf	11 19 35.5	+0.6
CHTO	Chiang Mai	168.79	92	ePKIKP	PKPdf	11 19 33.7	-1.2
CHTO				e		11 20 44.5	
CHTO	Chiang Mai	168.79	92	ePKPdf	PKPdf	11 19 33.7	-1.2
CHTO				ePKPab	PKPab	11 20 44.5	-1.5
CHBT	CHBT	169.36	129	P	PKPdf	11 19 37.2	+1.9
	comp=Z,50nm,0.9s,comp=Z,3μm						
ENH	Enshi	169.38	6	ePKPdf	PKPdf	11 19 34.6	-0.4
SSLB	Suanglung	169.70	295	ePKPdf	PKPdf	11 19 36.1	+0.8
UTTA	Uttaradit	170.12	100	P	PKPdf	11 19 36.6	+0.9
	comp=Z,4.6nm,1.2s						
TPUB	Ta-pu	170.15	293	ePKPdf	PKPdf	11 19 36.0	+0.3
TPUB				ePKPab	PKPab	11 20 51.9	+0.1
CRAI	Chiangrai	170.19	85	P	PKPdf	11 19 36.0	+0.3
	comp=Z,10nm,1.2s						
LOEI	Loei	170.72	102	P	PKPdf	11 19 36.5	+0.5
	comp=Z,17nm,1.0s						
KMI	Kunming	170.79	52	PKP	PKPdf	11 19 36.7	+0.5
KMI				PP	PP	11 24 46.3	+1.0
KMI				SKKS		11 31 22.1	
KMI				SS	SS	11 45 42.2	+1.5
KMI				LR	LR		
	comp=Z,150nm,24.3s						
KMI				LR	LR		
	comp=Z,300nm,30.6s						
KMI				LR	LR		
	comp=Z,810nm,36.0s						
QZH	Quanzhou	171.07	307	i PKP	PKPdf	11 19 34.4	-1.6
QZH				pPKP	pPKPdf	11 20 03.4	-0.8
QZH				SS	SS	11 45 42.0	-0.9
QZH				AMB	AMB		
	comp=Z,1μm,6.4s						
QZH				LR	LR		
	comp=Z,820nm,24.2s						
GYA	Guiyang	172.25	29	PKP	PKPdf	11 19 36.2	-0.5
GYA				sPKP		11 20 10.4	
GYA				PKPab	PKPab	11 21 01.0	0.0
GYA				PKS	PKSdf	11 23 07.5	-1.8
GYA				PP	PP	11 24 54.2	+2.8
GYA				SKKS		11 31 30.0	
GYA				SS	SS	11 45 53.2	+0.2
GYA				LR	LR		
	comp=Z,620nm,23.2s						
GYA				LR	LR		
	comp=Z,490nm,25.0s						
GYA				LR	LR		
	comp=Z,580nm,25.2s						
SKNT	Sakolnakorn	173.01	111	PKP	PKPdf	11 19 38.5	+1.4
GZH	Guangzhou	175.85	325	PKP	PKPdf	11 19 36.5	-1.4
GZH				SKS	SKSdf	11 26 27.3	-4.6
QIZ	Qiongzhong	178.91	126	PKP	PKPdf	11 19 38.5	+0.1
QIZ				PKPab		11 21 32.7	
QIZ				PP	PP	11 25 24.4	+0.3
QIZ				SKKS		11 32 03.4	
QIZ				SS	SS	11 46 57.4	-0.7
QIZ				AMB	AMB		
	comp=Z,730nm,10.2s						

*IDC **02** 11:08:13.5±1.7, 30°.30N×141°.35E, h0km, mb3.7/5, mb1 3.7/8, mb1mx3.5/77, mbtmp3.7/8, ML3.4/2, MS4.2/2, Ms1 4.2/2, ms1mx2.9/64, Error ellipse: s-maj=60.1km s-min=16.1km az=72.0*

*ISCJB **02** 11:08:14.9±0.9, 30°.29N±0°.07×141°.3E±0°.2, h28km, mb3.8/5, MS4.1/2, Error ellipse: s-maj=25.7km s-min=5.7km az=162.8*

ISC 02 11:08:17.2±1.1**, 30°.30N**±0°.08×**141°.3E**±0°.2**, h28km, n11, σ1s.41**/12**, mb3.6**/5**, Southeast of Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
JHJ	Hachijo jima 2	3.10	336	Pn	Pn	11 09 02.4	-1.9
	6.6nm,0.3s,baz=229,slow=19,SNR=2.1						
JHJ				Sn	Sn	11 09 38.4	-1.9
	8.2nm,0.3s,baz=73,slow=19,SNR=2.9						
JCJ	Chichijima	3.28	166	Pn	Pn	11 09 06.0	-0.8
	baz=308,slow=18						
JCJ				Sn	Sn	11 09 42.9	-2.0
	baz=287,slow=19						
MJAR	Matsushiro Arr	6.74	338	Pn	Pn	11 09 53.8	-0.6
	1.6nm,0.3s,baz=160,slow=11,SNR=18						
MJAR				Sn	Sn	11 11 11.4	+1.2
	0.3nm,0.3s,baz=67,slow=33,SNR=2.8						
JOW	Kunigami	11.97	256	Pn	Pn	11 11 05.6	-0.4
	baz=192,slow=19						
KLR	Kul'dur	20.25	342	LR	LR	11 20 06.5	
	comp=Z,482nm,18.5s,baz=289,slow=35						
MKAR	Makanchi Array	47.88	307	P	P	11 16 54.4	+1.6
	0.3nm,0.4s,baz=89,slow=9.5,SNR=5.3						
KURBB	Kurchatov Arra	50.28	313	P	P	11 17 11.8	+0.8
	0.3nm,0.5s,baz=94,slow=9.9,SNR=5.4						
WRA	Warramunga Arr	50.40	189	P	P	11 17 12.7	+0.5
	1.3nm,0.4s,baz=6.8,slow=7.8,SNR=20						
ASAR	Alice Springs	54.13	188	P	P	11 17 40.2	+0.4
	0.4nm,0.5s,baz=357,slow=5.6,SNR=15						
BVAR	Borovoye Array	55.19	316	P	P	11 17 47.9	+0.6
	0.3nm,0.5s,baz=84,slow=13,SNR=2.6						
YBH	Yreka Blue Hor	74.61	51	LR	LR	11 47 43.7	
	comp=Z,160nm,20.6s,baz=110,slow=32						

MEX 02 11:19:22.5±0.6**, 14°.93N×92°.83W, h90km**±9km**, MD3.6, Near coast of Chiapas**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
THIG		0.55	92	eP	Pn	11 19 36.9	-0.8
PCIG		0.86	334	eP	Pn	11 19 39.6	-1.1
PCIG				eS	Sn	11 19 51.8	-2.4
CCIG	Comitan	1.50	26	eP	Pn	11 19 47.3	-1.2
CCIG				eS	Sn	11 20 06.6	-1.5

IDC 02 11:21:21.5±3.9**, 36°.58N×140°.57E, h0km, mb3.9**/2**, mb1 4.2**/2**, mb1mx3.3**/68**, mbtmp3.9**/2**, Error ellipse: s-maj=77.3km s-min=29.3km az=25.0, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
MJAR	Matsushiro Arr	1.90	270	Pn	Pn	11 21 54.6	-0.6
	1.0nm,0.3s,baz=88,slow=16,SNR=4.6						
MJAR				Sn	Sn	11 22 20.1	+0.2
	0.9nm,0.3s,baz=78,slow=9.7,SNR=4.0						
MAT	Matsushiro	1.90	270	P	Pn	11 21 54.7	-0.5
WRA	Warramunga Arr	56.52	187	P	P	11 31 05.4	-0.2
	1.4nm,0.7s,baz=13,slow=7.4,SNR=5.7						
ASAR	Alice Springs	60.25	187	P	P	11 31 31.7	+0.1
	1.2nm,1.0s,baz=2.4,slow=7.1,SNR=6.3						

*IDC **02** 11:24:03.7±0.6, 37°.06N×144°.32E, h0km, mb4.0/22, mb1 4.1/27, mb1mx4.0/60, mbtmp4.0/27, ML3.9/4, MS3.9/3, Ms1 3.9/3, ms1mx3.0/61, Error ellipse: s-maj=16.4km s-min=13.6km az=135.0*

*ISCJB **02** 11:24:05.3±0.4, 36°.97N±0°.05×144°.25E±0°.05, h26km, mb4.1/26, MS4.0/2, Error ellipse: s-maj=7.5km s-min=5.3km az=140.5*

*NEIC **02** 11:24:08.7±0.4, 37°.05N×144°.25E, h35km, mb4.6/1, Error ellipse: s-maj=8.9km s-min=6.7km az=127.0*

ISC 02 11:24:07.3±0.6**, 36°.96N**±0°.07×**144°.29E**±0°.07**, h26km, n44, σ1s.21**/47**, mb4.1**/26**, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
MJAR	Matsushiro Arr	4.90	267	Pn	Pn	11 25 19.0	-0.3
	4.8nm,0.3s,baz=351,slow=33,SNR=19						
MJAR				Sn	Sn	11 26 13.6	-1.6
	0.9nm,0.3s,baz=93,slow=28,SNR=4.1						
MAJO	Matsushiro	4.90	267	ePn	Pn	11 25 19.3	-0.1
MAJO				eSn	Sn	11 26 18.3	+3.0
MAT	Matsushiro	4.90	267	P	Pn	11 25 19.7	+0.3
MAT				S	Sn	11 26 12.4	-2.9
ERM	Erimo	5.13	350	ePn	Pn	11 25 19.0	-3.3
JHJ2	Mitsune	5.31	225	ePn	Pn	11 25 27.2	+2.3
JHJ2				eSn	Sn	11 26 26.2	+0.9
JHJ	Hachijo jima 2	5.32	225	Pn	Pn	11 25 25.7	+0.6
	11nm,0.3s,baz=72,slow=20,SNR=5.1						
JHJ				Sn	Sn	11 26 22.1	-3.5
	10nm,0.3s,baz=66,slow=19,SNR=2.8						
CBIJ	Chichi jima	9.99	191	Pn	Pn	11 26 28.2	-1.1
CBIJ				Sn	Sn	11 28 14.0	-6.5
JCJ	Chichijima	9.99	191	Pn	Pn	11 26 28.2	-1.1
	2.4nm,0.3s,baz=61,slow=19,SNR=5.4						
JCJ				Sn	Sn	11 28 14.0	-6.5
	baz=264,slow=19						
JNU	Nakatsue	11.64	255	ePn	Pn	11 26 51.0	-0.8
USRK	Ussuriysk Ar.	11.82	312	Pn	Pn	11 26 53.3	-0.8
	0.2nm,0.3s,baz=101,slow=15,SNR=4.7						
KSRS	Korea Array	13.06	277	Pn	Pn	11 27 11.8	+0.6
	0.2nm,0.3s,baz=86,slow=15,SNR=3.2						
KSAR	Wonju Array Be	13.09	277	Pn	Pn	11 27 11.8	+0.2
MDJ	Mudanjiang	13.50	309	ePn	Pn	11 27 16.3	-0.8
KLR	Kul'dur	15.28	327	Pn	Pn	11 27 42.7	+1.5
	0.2nm,0.3s,baz=127,slow=9.6,SNR=4.9						
PETK	Petropavlovsk-	18.67	26	LR	LR	11 34 13.1	
	comp=Z,150nm,20.1s,baz=67,slow=33						
GUMO	Guam	23.28	179	LR	LR	11 36 14.8	
	comp=Z,269nm,20.3s,baz=166,slow=31						
SEY	Seymchan	26.48	8	P	P	11 29 41.6	-0.4
	3.8nm,0.8s,baz=184,slow=6.6,SNR=11						
YAK	Yakutsk	26.70	345	eP	P	11 29 41.8	-2.2
	5.9nm,0.3s						
SONM	Songino Array	29.74	303	P	P	11 30 12.7	+1.1
	0.3nm,0.4s,baz=159,slow=4.3,SNR=2.9						
ZALV	Zalesovo Beam	43.67	312	P	P	11 32 10.1	+0.5
	1.0nm,0.8s,baz=47,slow=6.3,SNR=2.5						
ZALV				PcP	PcP	11 33 56.4	-0.1
	1.2nm,0.6s,baz=92,slow=2.7,SNR=4.5						
CMAR	Chiang Mai Arr	43.72	258	P	P	11 32 11.8	+1.3
	1.3nm,0.3s,baz=44,slow=6.8,SNR=6.5						
KDAK	Kodiak Island	45.62	42	P	P	11 32 39.1	+14
	9.3nm,0.9s,baz=312,slow=8.0,SNR=4.3						
MKAR	Makanchi Array	46.10	303	P	P	11 32 29.1	-0.1
	0.9nm,0.9s,baz=93,slow=8.3,SNR=3.4						
KURK	Kurchatov	47.79	309	P	P	11 32 42.0	-0.3
KURBB	Kurchatov Arra	47.86	308	P	P	11 32 42.0	-0.8
	1.0nm,0.7s,baz=82,slow=7.8,SNR=7.4						
ILAR	Eielson Array	48.33	32	P	P	11 32 45.9	-0.3
	1.3nm,0.8s,baz=272,slow=6.7,SNR=9.2						
BVAR	Borovoye Array	52.32	313	P	P	11 33 16.7	+0.1
	0.6nm,0.7s,baz=77,slow=6.5,SNR=3.5						
INK	Inuvik	53.40	27	P	P	11 33 24.2	-0.1
	1.4nm,0.6s,baz=290,slow=6.5,SNR=10						
DLBC	Dease Lake	57.26	39	P	P	11 33 52.2	-0.1
	baz=358,slow=2.2						
WRAB	Tennant Creek	57.36	191	eP	P	11 33 53.9	+0.6
	44nm,2.0s						
WRA	Warramunga Arr	57.37	191	P	P	11 33 54.4	+1.0
	1.5nm,0.5s,baz=12,slow=7.3,SNR=12						
ARU	Arti	57.93	319	P	P	11 33 56.5	-0.5
	1.5nm,0.5s,baz=90,slow=20,SNR=3.3						
AKTO	Aktyubinsk	60.43	313	P	P	11 34 14.3	-0.1
	1.7nm,0.8s,baz=80,slow=12,SNR=4.9						
ASAR	Alice Springs	61.09	191	P	P	11 34 20.4	+1.2
	1.1nm,0.8s,baz=8.0,slow=6.2,SNR=7.2						
RES	Resolute Bay	62.09	15	P	P	11 34 24.6	-0.6
	1.9nm,0.9s,baz=318,slow=6.4,SNR=5.7						
YKA	Yellowknife Ar	62.70	31	P	P	11 34 29.1	-0.4
	0.3nm,0.7s,baz=303,slow=6.5,SNR=4.1						
FINES	FINESS Array B	69.94	333	P	P	11 35 15.4	-0.5
	1.6nm,0.8s,baz=44,slow=10,SNR=3.1						
KBZ	Khabaz	72.68	312	P	P	11 35 33.2	+0.4
	2.3nm,0.9s,baz=40,slow=3.2,SNR=4.9						
KBZ				LR	LR	12 10 56.0	
	comp=Z,215nm,20.4s,baz=280,slow=39						
NVAR	Mina Array Bea	73.17	54	P	P	11 35 37.0	+0.9
	1.7nm,0.9s,baz=283,slow=6.1,SNR=6.7						
NOA	NORSAR Array B	75.12	338	P	P	11 35 45.3	-1.5
	0.8nm,0.7s,baz=19,slow=2.6,SNR=2.6						
AKASG	Malin Array Be	75.75	324	P	P	11 35 50.3	-0.2
	1.6nm,0.6s,baz=44,slow=6.1,SNR=11						
CLL	Collm	82.28	332	i P	P	11 36 26.1	-0.2
	comp=Z,5.0nm,0.9s						
CLL				i pP	pP	11 36 36.1	+1.4
GERES	GERESS Array B	83.96	330	P	P	11 36 35.0	-0.2
	comp=Z,1.0nm,0.8s,baz=36,slow=7.1,SNR=5.6						
TXAR	Lajitas Array	88.32	54	P	P	11 36 57.3	+0.3
	comp=Z,0.3nm,0.7s,baz=335,slow=4.0,SNR=3.2						

IDC 02 11:27:39.5±3.5**, 54°.26N×87°.38E, h0km, mb1 2.7**/2**, mb1mx2.7**/57**, mbtmp2.7**/2**, ML2.3**/2**, Error ellipse: s-maj=32.7km s-min=19.3km az=41.0, Southwestern Siberia**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
I46RU	ZALESOVO INFRA	1.54	259	i		11 38 18.7	
	baz=78,slow=335,SNR=9.1						
ZALV	Zalesovo Beam	1.54	259	Pg	Pn	11 28 06.8	-1.4
	1.7nm,0.3s,baz=77,slow=16,SNR=14						
ZALV				Lg	Lg	11 28 28.2	
	1.8nm,0.3s,baz=72,slow=21,SNR=6.3						
KURBB	Kurchatov Arra	6.52	240	Pn	Pn	11 29 17.8	+1.1
	0.0nm,0.3s,baz=54,slow=13,SNR=6.0						
MKAR	Makanchi Array	8.15	205	Pn	Pn	11 29 39.9	+0.9
	0.1nm,0.3s,baz=26,slow=14,SNR=4.4						

*IDC **02** 11:31:31.4±2.7, 12°.45N×142°.41E, h145km±27km, mb3.1/5, mb1 3.3/6, mb1mx3.1/46, mbtmp3.5/6, Error ellipse: s-maj=37.6km s-min=20.7km az=105.0*

ISC 02 11:31:19.6±1.1**, 12°.5N**±0°.2×**142°.0E**±0°.1**, h27km, n6, σ2s.16**/7**, mb3.5**/5**, South of Mariana Islands**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
GUMO	Guam	3.00	69	P	Pb	11 32 14.3	+2.0
	2.8nm,0.3s,baz=73,slow=20,SNR=1.9						
GUMO				S	Sb	11 32 47.6	-0.8
	7.4nm,0.3s,baz=130,slow=21,SNR=7.1						
WRA	Warramunga Arr	33.14	193	P	P	11 37 54.1	+0.3
	0.4nm,0.6s,baz=15,slow=9.5,SNR=2.8						
KLR	Kul'dur	37.55	349	P	P	11 38 32.9	+1.4
	1.3nm,0.6s,baz=245,slow=4.1,SNR=7.3						
MKAR	Makanchi Array	60.32	317	P	P	11 41 27.4	+1.3
	0.4nm,0.6s,baz=102,slow=7.8,SNR=5.6						
ILAR	Eielson Array	70.72	25	P	P	11 42 30.4	-2.6
	0.2nm,0.6s,baz=255,slow=6.4,SNR=3.9						
YKA	Yellowknife Ar	85.07	27	P	P	11 43 50.8	-2.0
	0.1nm,0.4s,baz=292,slow=5.2,SNR=4.1						

IDC 02 11:50:25.1±2.8**, 17°.69S×178°.13W, h0km, mb3.9**/4**, mb1 4.3**/4**, mb1mx3.8**/32**, mbtmp3.9**/4**, Error ellipse: s-maj=274.8km s-min=27.2km az=157.0, Fiji Islands region**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
WRA	Warramunga Arr	44.94	259	P	P	11 58 41.6	-0.5
	0.6nm,0.6s,baz=96,slow=7.5,SNR=4.6						
ASAR	Alice Springs	45.11	254	P	P	11 58 43.6	+0.1
	3.5nm,0.5s,baz=90,slow=8.0,SNR=87						
TXAR	Lajitas Array	85.65	58	P	P	12 03 06.8	+0.7
	0.5nm,0.7s,baz=229,slow=5.5,SNR=6.6						
PDAR	Pinedale Array	87.01	43	P	P	12 03 11.9	-0.8
	0.2nm,0.4s,baz=225,slow=2.4,SNR=4.3						

JMA 02 12:11:17.0±0.3**, 37°.09N×142°.28E, h26km**±5km**, M3.7, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
ONAJ	Iwakimizuishiy	1.19	271	P	Pn	12 11 38.3	+0.4
JMM	Marumori	1.41	304	P	Pn	12 11 41.2	+0.2
JFT	Otama	1.61	286	P	Pn	12 11 44.8	+1.1
JFT				eS	Sn	12 12 04.3	+0.7
JOU	Okura	1.81	315	P	Pn	12 11 47.7	+1.2
JOU				S	Sn	12 12 09.9	+1.4
MAT	Matsushiro	3.31	262	P	Pn	12 12 10.3	+3.1
MAT				S	Sb	12 12 51.9	-3.1

*ISCJB **02** 12:13:24.8±1.0, 85°.8N±0°.1×7°9E±°, h10km, mb3.2/4, Error ellipse: s-maj=22.9km s-min=11.7km az=155.5*

*IDC **02** 12:13:24.9±1.2, 85°.59N×83°.34E, h0km, mb3.4/4, mb1 3.6/6, mb1mx3.3/41, mbtmp3.5/6, ML3.1/2, Error ellipse: s-maj=39.1km s-min=21.0km az=128.0*

ISC 02 12:13:28.0±1.5**, 85°.9N**±0°.3×**78°.9E**±0°.2**, h10km, n6, σ0s.71**/7**, mb3.2**/4**, North of Severnaya Zemlya**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
SPITS	Spitsbergen Ar	10.64	262	Pn	Pn	12 16 00.3	+0.2
	baz=47,slow=13,SNR=15						
SPITS				Sn	Sn	12 17 58.7	-0.3
	baz=50,slow=13,SNR=2.2						
ARCES	ARCESS Array B	18.43	243	P	P	12 17 42.5	-0.4
	0.1nm,0.3s,baz=18,slow=12,SNR=2.9						
INK	Inuvik	25.38	28	P	P	12 18 53.8	-0.9
	0.7nm,0.8s,baz=346,slow=9.6,SNR=3.6						
YKA	Yellowknife Ar	31.67	12	P	P	12 19 51.5	+0.7
	0.2nm,0.8s,baz=355,slow=8.2,SNR=7.1						
YKA				PcP	PcP	12 22 41.6	-0.5
	0.3nm,0.7s,baz=339,slow=3.3,SNR=9.4						
AKASG	Malin Array Be	36.94	234	P	P	12 20 37.0	+0.4
	0.1nm,0.3s,baz=4.0,slow=8.9,SNR=3.4						
MKAR	Makanchi Array	39.30	176	P	P	12 20 51.5	-5.0
	0.4nm,0.7s,baz=12,slow=7.4,SNR=5.3						

*NIED **02** 12:25:00, 36°.50N×141°.80E, h23km, Mw4.5 Best double couple: M0 5.46000×10^15 NP1:φs201.00000°, δ47.00000°, λ-52.00000°. NP2:φs333.00000°, δ55.00000°, λ-123.00000°.*

*IDC **02** 12:25:14.3±0.5, 36°.17N×141°.62E, h0km, mb4.2/30, mb1 4.3/34, mb1mx4.2/65, mbtmp4.2/34, ML3.3/3, MS3.8/10, Ms1 3.8/10, ms1mx3.4/48, Error ellipse: s-maj=13.5km s-min=12.2km az=83.0*

*BJI **02** 12:25:14.5, 36°.01N×141°.75E, h10km, mb4.7/24, mB5.0/11, Ms4.4/8, Ms7 4.2/9*

*MOS **02** 12:25:18.5±1.0, 36°.38N×141°.63E, h31km, mb4.8/18, Error ellipse: s-maj=12.3km s-min=6.4km az=114.4*

*JMA **02** 12:25:19.9±0.3, 36°.55N×141°.82E, h38km, M4.5*

JMA Felt II J1.

*NEIC **02** 12:25:19.4±0.4, 36°.23N×141°.67E, h35km, mb4.6/10, Error ellipse: s-maj=10.3km s-min=8.1km az=115.0*

ISC 02 12:25:19.5±0.7**, 36°.23N**±0°.04×**141°.68E**±0°.05**, h34km**±2km**, n157, σ1s.52**/148**, mb4.3**/64**, MS3.9**/9**, 10C-5D, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
JHO	Hitachi	0.98	293	P	Pb	12 25 37.3	-0.7
JHO				S	Sb	12 25 51.2	+0.6
ONAJ	Iwakimizuishiy	1.13	321	P	Pn	12 25 37.3	-1.6
ONAJ				S	Sn	12 25 50.3	-2.9
JFT	Otama	1.68	320	P	Pn	12 25 46.5	0.0
JFT				S	Sn	12 26 05.4	-1.4
JAG	Ashikaga	1.81	277	P	Pb	12 25 51.4	-0.6
JFY	Yanaizu	1.98	307	P	Pn	12 25 52.0	+1.5
JFY				S	Sn	12 26 14.9	+0.8
JOU	Okura	2.29	339	P	Pn	12 25 53.3	-1.5
JOU				eS	Sn	12 26 17.2	-4.5
MJAR	Matsushiro Arr	2.82	277	Pn	Pn	12 25 58.3	-3.8
	30nm,0.3s,baz=319,slow=15,SNR=102						
MJAR				Sn	Sn	12 26 34.9	0.0
	25nm,0.3s,baz=314,slow=38,SNR=6.3						
MJAR				LR	LR	12 27 24.9	
	comp=Z,1μm,18.3s,baz=105,slow=48						
MAJO	Matsushiro	2.82	277	c iP	Pn	12 25 59.9	-2.2
MAJO	Matsushiro	2.82	277	ePn	Pn	12 26 00.1	-2.0
MAJO				eSg	Sb	12 26 43.5	+0.2
MAT	Matsushiro	2.82	277	P	Pn	12 26 00.1	-2.0
MAT				S	Sb	12 26 39.9	-3.4
JHJ2	Mitsune	3.47	207	ePn	Pn	12 26 10.5	-0.5
JHJ2				eSg	Sb	12 27 02.5	+0.6
JHJ	Hachijo jima 2	3.47	207	Pn	Pn	12 26 11.3	+0.2
	38nm,0.3s,baz=95,slow=21,SNR=20						
JHJ				Sn	Sb	12 26 56.7	-5.2
	84nm,0.3s,baz=270,slow=20,SNR=4.0						
ERM	Erimo	5.89	11	P	Pn	12 26 38.4	-5.9
ERM	Erimo	5.89	11	Pn	Pn	12 26 38.4	-5.9
ERM				eSn	Sn	12 27 38.0	-13
YUK	Yuzh-Kuril'sk	8.43	21	eP	Pn	12 27 08.8	-10
YUK				pmax	pmax		
	comp=Z,64nm,0.4s						
SHO	Shikotan	8.59	26	eP	Pn	12 27 10.1	-11
SHO				pmax	pmax		
	comp=Z,41nm,0.7s						
CBIJ	Chichi jima	9.11	177	Pn	Pn	12 27 26.1	-2.5
CBIJ				Sn	Sn	12 29 10.0	+0.1
JCJ	Chichijima	9.11	177	Pn	Pn	12 27 26.1	-2.5
	comp=Z,8.3nm,0.3s,baz=269,slow=23,SNR=12						
JCJ				Sn	Sn	12 29 10.0	0.0
	baz=127,slow=20						
JNU	Nakatsue	9.42	254	Pn	Pn	12 27 34.8	+2.0
	comp=Z,0.2nm,0.3s,baz=218,slow=12,SNR=2.8						
KUR	Kuril'sk	10.14	26	P	Pn	12 27 35.3	-7.3
KUR				pmax	pmax		
	comp=Z,19nm,0.7s						
YSS	Yuzh-Sakhalins	10.75	4	eP	Pn	12 27 51.1	+0.3
YSS	Yuzh-Sakhalins	10.75	4	ePn	Pn	12 27 51.1	+0.3
USRK	Ussuriysk Ar.	10.87	320	Pn	Pn	12 27 53.3	+0.7
	comp=Z,0.3nm,0.3s,baz=127,slow=13,SNR=11						
KSRS	Korea Array	11.10	280	Pn	Pn	12 28 01.9	+6.2
	comp=Z,0.2nm,0.3s,baz=96,slow=13,SNR=9.0						
KSAR	Wonju Array Be	11.13	280	P	Pn	12 28 01.9	+5.8
KSAR	Wonju Array Be	11.13	280	Pn	Pn	12 28 01.9	+5.8
TYV	Tymovskoe	14.65	2	eP	P	12 28 49.5	-0.4
TYV				pmax	pmax		
	comp=Z,16nm,0.8s						
KLR	Kul'dur	14.89	334	Pn	Pn	12 28 46.6	-0.7
	comp=Z,0.2nm,0.3s,baz=129,slow=14,SNR=5.3						
NKL	Nikolayevsk	16.94	358	eP	P	12 29 23.9	+8.7
TIA	Tai'an	19.80	277	eP	Pn	12 29 49.2	+0.5
TIA				pmax	pmax		
	comp=Z,10.0nm,1.0s						
BJT	Baijiatuau	20.40	288	P	P	12 29 54.4	+1.0
BJT				pmax	pmax		
	comp=Z,28nm,0.9s						
BJT	Baijiatuau	20.40	288	P	P	12 29 54.4	+1.0
	comp=Z,28nm,0.9s						
MA2	Magadan	24.10	11	P	P	12 30 30.8	-0.8
	comp=Z,2.0nm,0.6s,baz=200,slow=6.5,SNR=3.5						
YAK	Yakutsk	26.90	347	P	P	12 30 56.8	-0.1
	comp=Z,1.3nm,0.4s,baz=343,slow=22,SNR=5.5						
YAK	Yakutsk	26.90	347	eP	P	12 30 55.4	-1.6
YAK				pmax	pmax		
	comp=Z,21nm,1.0s						
YAK				pmax	pmax		
	comp=N,14nm,1.3s						
YAK	Yakutsk	26.90	347	P	P	12 30 56.8	-0.1
	comp=N,2.2nm,0.8s						
ENH	Enshi	27.49	267	eP	P	12 31 01.7	-0.9
	comp=N,11nm,0.6s						
SEY	Seymchan	27.54	11	P	P	12 31 03.0	+0.3
	comp=N,0.6nm,0.3s,baz=180,slow=14,SNR=5.5						
SEY	Seymchan	27.54	11	P	P	12 31 04.0	+1.3
H11N2	WAKE ISLAND Hy	27.55	120	T	T	13 00 28.0	
	baz=313,slow=75,SNR=92						
H11N1	WAKE ISLAND Hy	27.56	120	T	T	13 00 24.9	
	baz=313,slow=75,SNR=67						
H11N3	WAKE ISLAND Hy	27.57	120	T	T	13 00 29.9	
	baz=313,slow=75,SNR=78						
ULN	Ulaanbaatar	27.99	305	⇑iP	P	12 31 08.7	+1.6
ULN				pmax	pmax		
	comp=Z,17nm,1.3s						
ULN	Ulaanbaatar	27.99	305	eP	P	12 31 08.0	+0.9
	comp=Z,12nm,0.8s						
H11S1	WAKE ISLAND Hy	28.25	122	T	T	13 01 20.1	
	baz=314,slow=76,SNR=74						
H11S3	WAKE ISLAND Hy	28.25	122	T	T	13 01 31.2	

baz=314,slow=76,SNR=46
H11S2 WAKE ISLAND Hy 28.26 122 T T 13 01 32.5
baz=314,slow=76,SNR=43
BOD Bodaibo 28.33 328 *e*P P 12 31 05.8 -4.0
BOD pmax pmax
comp=Z,10.0nm,0.9s
SONM Songino Array 28.42 305 P **P** **12 31 10.2 -0.7**
comp=Z,7.0nm,1.1s,baz=102,slow=7.1,SNR=8.6
ZAK Zakamensk 30.94 309 *e*P **P** **12 31 33.2 0.0**
ZAK pmax pmax
comp=Z,4.0nm,1.2s
TLY Talaya 31.03 312 *e*P **P** **12 31 35.0 +1.2**
TLY pmax pmax
comp=Z,3.0nm,0.8s
GTA Gaotai 33.01 288 *e*P **P** **12 31 53.5 +2.0**
GTA pP pP 12 31 58.8 -2.7
GTA sP sP 12 32 02.0 -3.6
GTA pmax pmax
comp=Z,3.0nm,1.0s
BILL Bilibino 34.74 16⇑*e*P **P** **12 32 05.2 -0.8**
BILL *e* 12 33 19.2
BILL *e*PPP PPP 12 33 37.3
BILL pmax pmax
comp=Z,4.0nm,1.4s
BILL Bilibino 34.74 16 *e*P **P** **12 32 05.0 -1.0**
comp=Z,3.8nm,0.4s
TIXI Tiksi 36.12 353⇑*i*P **P** **12 32 16.4 -1.3**
TIXI pmax pmax
comp=Z,7.0nm,2.5s
TIXI Tiksi 36.12 353 *e*P **P** **12 32 15.9 -1.8**
comp=Z,1.0nm,0.3s
KRAR Krasnoyarsk 38.20 317 P **P** **12 32 38.0 +2.4**
KRAR pmax pmax
comp=Z,18nm,0.4s
UBPT Khong Chiam 38.40 247 P P 12 32 43.6 +5.9
comp=Z,32nm,1.1s
SKNT Sakolnakorn 38.47 250 P P 12 32 43.0 +4.7
comp=Z,18nm,1.3s
CRAI Chiangrai 39.41 258 P **P** **12 32 49.2 +3.0**
comp=Z,6.2nm,0.9s
LOEI Loei 40.24 253 P **P** **12 32 53.9 +0.8**
comp=Z,41nm,0.7s
CMAI Chiengmai2 40.62 258 P P 12 33 00.9 +4.5
comp=Z,9.1nm,1.5s
UTTA Uttaradit 40.65 254 P P 12 33 01.7 +5.2
comp=Z,2.3nm,0.9s
PBKT Sadao Pong 41.02 252 P P 12 33 03.4 +3.9
comp=Z,18nm,1.1s
CMMT Chiang Mai 41.31 257 P P 12 33 06.1 +4.2
comp=Z,6.0nm,2.0s
CHTO Chiang Mai 41.31 257 P P 12 33 06.2 +4.3
comp=Z,54nm,1.2s
CMAR Chiang Mai Arr 41.51 256 P **P** **12 33 04.1 +0.6**
comp=Z,0.9nm,0.5s,baz=46,slow=6.9,SNR=7.0
SRAK Srakaew 41.76 248 P **P** **12 33 07.9 +2.3**
comp=Z,33nm,1.6s
ZALV Zalesovo Beam 42.62 313 P **P** **12 33 12.1 0.0**
comp=Z,3.8nm,0.7s,baz=98,slow=7.1,SNR=13
ZALV PcP **PcP** **12 35 04.7 +0.8**
comp=Z,2.5nm,0.7s,baz=85,slow=3.0,SNR=4.2
NVS Novosibirsk 43.55 314 *e*P **P** **12 33 20.2 +0.5**
SRDT SRDT 43.77 251 P P 12 33 27.6 +5.7
comp=Z,34nm,1.1s,comp=Z,4µm
MKAR Makanchi Array 44.73 303 P **P** **12 33 28.0 -1.4**
comp=Z,1.8nm,0.6s,baz=90,slow=10,SNR=16
MKAR Makanchi Array 44.73 303 P **P** **12 33 28.0 -1.4**
TAPN Taplejung 46.22 275 *e*P **P** **12 33 44.3 +2.6**
KURK Kurchatov 46.60 309 P **P** **12 33 43.8 -0.2**
KURK pmax pmax
comp=Z,2.0nm,0.8s
KURK Kurchatov 46.60 309 P **P** **12 33 43.8 -0.2**
comp=Z,1.8nm,0.8s
KURBB Kurchatov Arra 46.67 309 P **P** **12 33 43.8 -0.7**
comp=Z,5.6nm,0.7s,baz=85,slow=7.8,SNR=23
ODAN Odare 46.69 274 *e*P **P** **12 33 47.3 +2.0**
comp=Z,24nm,0.8s
RAMN Ramite 47.28 275 *e*P **P** **12 33 51.7 +1.8**
GUN Gumba 47.45 277 *e*P **P** **12 33 53.7 +2.3**
comp=Z,26nm,0.7s
KRAB Krabi 47.64 245 P P 12 33 58.5 +6.0
GKN Gorkha 48.41 277 *e*P **P** **12 34 00.8 +2.2**
comp=Z,34nm,0.7s
KOLN Koldanda 49.34 278 *e*P **P** **12 34 07.9 +2.1**
comp=Z,29nm,1.0s
PYUN Piuthan 49.69 278 *e*P **P** **12 34 10.8 +2.4**
comp=Z,87nm,1.0s
ILAR Eielson Array 50.06 32 P **P** **12 34 10.8 +0.3**
comp=Z,0.8nm,0.8s,baz=267,slow=5.5,SNR=6.8
TKM2 Tokmak 2 50.21 299 *e*P **P** **12 34 13.9 +1.8**
TKM2 pmax pmax
comp=Z,26nm,0.6s
TKM2 Tokmak 2 50.21 299 *e*P **P** **12 34 13.9 +1.8**
comp=Z,26nm,0.6s
FRU Bishkek 50.92 299 *e*P **P** **12 34 18.0 +0.6**
FRU *e* 12 34 29.0
AAK Ala-Archa 51.07 299 P **P** **12 34 18.8 +0.2**
comp=Z,1.0nm,0.5s,baz=111,slow=7.0,SNR=2.8
AAK Ala-Archa 51.07 299 P **P** **12 34 20.0 +1.4**
AAK pmax pmax
comp=Z,8.0nm,1.2s
BVAR Borovoye Array 51.28 313 P **P** **12 34 20.3 +0.5**
comp=Z,1.4nm,0.8s,baz=90,slow=5.9,SNR=6.2
BVAR PcP **PcP** **12 35 35.9 +1.4**
comp=Z,2.1nm,0.6s,baz=82,slow=3.1,SNR=5.4
BRVK Borovoye 51.33 313 P **P** **12 34 21.0 +0.8**
BRVK pmax pmax
comp=Z,3.0nm,0.8s
INK Inuvik 55.01 27 P **P** **12 34 47.4 +0.5**
comp=Z,1.2nm,0.6s,baz=314,slow=7.5,SNR=9.4
WRAB Tennant Creek 56.28 188⇓*e*P P 12 35 00.1 +3.4
WRAB pmax pmax
comp=Z,95nm,1.7s
WRAB Tennant Creek 56.28 188 *e*P **P** **12 34 56.2 -0.4**
comp=Z,23nm,1.1s
WRA Warramunga Arr 56.29 188 P **P** **12 34 54.5 -2.3**
comp=Z,0.7nm,0.4s,baz=6.3,slow=7.1,SNR=15
ARU Arti 57.11 319 P **P** **12 35 02.3 +0.1**
comp=Z,3.2nm,0.4s,baz=84,slow=7.3,SNR=5.1
ARU Arti 57.11 319*d*iP **P** **12 35 02.1 -0.1**
ARU 12 37 05.8
ARU S **S** **12 42 55.3 +0.6**
ARU SS **SS** **12 46 41.5 -1.7**
ARU pmax pmax
comp=Z,8.0nm,1.2s
ABKAR Akbulak array 58.63 311 *e*P **P** **12 35 13.1 +0.2**
comp=Z,2.5nm,0.5s
AKTO Aktyubinsk 59.38 312 P **P** **12 35 18.5 +0.3**
comp=Z,2.1nm,0.7s,baz=66,slow=12,SNR=5.4
AKTO LR LR 13 02 12.1
comp=Z,71nm,18.1s,slow=37
ASAR Alice Springs 60.02 188 P **P** **12 35 21.4 -1.4**
comp=Z,0.8nm,0.6s,baz=15,slow=7.0,SNR=17
YKA Yellowknife Ar 64.40 30 P **P** **12 35 51.5 -0.1**
comp=Z,1.1nm,0.8s,baz=302,slow=6.7,SNR=23
KLMR Klimovskoe 64.55 328 *e*P P 12 35 49.2 -3.5
KLMR *e* 12 38 12.7
KLMR pmax pmax
comp=Z,27nm,1.9s
ARCES ARCESS Array B 64.83 340 P **P** **12 35 54.7 +0.3**
comp=Z,1.8nm,0.7s,baz=57,slow=8.7,SNR=3.6
ARCES LR LR 13 06 27.5
comp=Z,71nm,21.4s,baz=78,slow=38
STKA Stephens Creek 67.75 180 P **P** **12 36 14.8 +1.4**
comp=Z,3.8nm,0.8s,baz=330,slow=8.5,SNR=7.8
OBN Obninsk 68.87 324 LR LR 13 10 18.8
comp=Z,61nm,19.1s,baz=89,slow=39
OBN Obninsk 68.87 324⇑*e*P **P** **12 36 20.9 +0.6**
OBN *e* 12 36 51.1
OBN pmax pmax
comp=Z,31nm,2.6s
OBN MLR MLR
comp=Z,106nm,18.0s
FINES FINESS Array B 69.63 332 P **P** **12 36 24.7 -0.2**
comp=Z,4.3nm,0.8s,baz=53,slow=9.8,SNR=12
FINES FINESS Array B 69.63 332 *i* P **P** **12 36 23.7 -1.2**
FINES pmax pmax
comp=Z,4.0nm,0.8s
KVAR Kislovodsk Arr 71.59 311 LR LR 13 11 38.1
comp=Z,58nm,18.5s,baz=33,slow=39
KIV Kislovodsk 71.60 311 *i* P **P** **12 36 38.4 +1.0**
KIV *i* 12 36 53.5
KIV pmax pmax
comp=Z,9.0nm,1.0s
GNI Garni 72.36 307 P **P** **12 36 42.0 -0.1**
GNI pmax pmax
comp=Z,34nm,0.8s

ANN Anapa 74.25 314 *e*P **P** **12 36 51.3 -1.6**
ANN *e**PP **pP** **12 37 00.3 -3.3**
ANN *e* 12 37 05.6
ANN *e*PPP PPP 12 41 22.3
ANN *e*S **S** **12 46 21.7 -2.4**
ANN *e*SS **SS** **12 51 04.2 -5.0**
ANN pmax pmax
comp=Z,49nm,1.5s
HFS Hagfors 74.91 336 P **P** **12 36 56.6 +0.1**
comp=Z,2.0nm,0.8s,baz=53,slow=7.6,SNR=8.4
HFS LR LR 13 12 47.0
comp=Z,92nm,18.6s,baz=56,slow=38
NB2 NORSAR Subarra 75.01 337 P **P** **12 36 57.0 -0.1**
comp=Z,2.5nm,0.6s,baz=39,slow=6.2
NOA NORSAR Array B 75.01 337 P **P** **12 36 57.5 +0.4**
comp=Z,3.8nm,0.7s,baz=39,slow=5.8,SNR=15
NOA LR LR 13 14 47.8
comp=Z,58nm,18.7s,baz=75,slow=40
AKASG Malin Array Be 75.07 323 P **P** **12 36 57.8 +0.2**
comp=Z,3.7nm,0.5s,baz=47,slow=6.1,SNR=23
AKASG LR LR 13 12 56.1
comp=Z,67nm,19.6s,baz=60,slow=38
KIEV Kiev 75.08 323⇑*i*P **P** **12 36 57.5 -0.1**
KIEV pmax pmax
comp=Z,18nm,1.7s
KIEV Kiev 75.08 323 *e*P **P** **12 36 57.7 +0.1**
comp=Z,6.9nm,0.9s
NVAR Mina Array Bea 75.30 53 P **P** **12 37 01.1 +1.7**
comp=Z,1.8nm,0.8s,baz=284,slow=4.5,SNR=7.3
FRB Frobisher Bay 77.51 13 P **P** **12 37 11.1 -0.1**
comp=Z,4.3nm,0.5s,baz=334,slow=5.3,SNR=5.0
PDAR Pinedale Array 78.08 45 P **P** **12 37 15.8 +0.7**
comp=Z,0.5nm,0.7s,baz=190,slow=0.9,SNR=6.2
LVV L'vov 78.16 324 *e*P **P** **12 37 15.9 +0.8**
BURAR Bucovina Array 79.08 322⇑*i*P **P** **12 37 21.5 +1.2**
BURAR Bucovina Array 79.08 322⇑P **P** **12 37 21.5 +1.2**
BRTR Keskin Array B 79.55 312 P **P** **12 37 23.5 +0.4**
comp=Z,1.4nm,0.8s,baz=91,slow=6.2,SNR=6.9
KOLS Kolonicke sedl 79.60 324 *e*P **P** **12 37 24.1 +1.1**
KOLS Kolonicke sedl 79.60 324 *e*P **P** **12 37 24.1 +1.1**
ULM Lac du Bonnet 80.06 33 P **P** **12 37 24.9 -0.6**
comp=Z,0.8nm,0.4s,baz=350,slow=6.8,SNR=4.1
DOPR Dopca 80.11 321⇑*i*P **P** **12 37 28.1 +2.3**
ARR Arges 80.90 321⇑*i*P **P** **12 37 32.4 +2.2**
DPC Dobruska-Polom 81.26 328 *e*P **P** **12 37 33.2 +1.3**
DPC *e*pP **pP** **12 37 42.6 -0.2**
DPC Dobruska-Polom 81.26 328 *e*P **P** **12 37 33.2 +1.3**
DPC *e* 12 37 42.6
UPC Upice 81.27 328 *e*P **P** **12 37 33.1 +1.2**
UPC Upice 81.27 328 *e*P **P** **12 37 33.1 +1.2**
VYHS Vyhne 81.51 326 *e*P **P** **12 37 34.5 +1.2**
VYHS Vyhne 81.51 326 *e*P **P** **12 37 34.5 +1.2**
PV01 Paradox Valley 81.58 49 *e*P **P** **12 37 33.8 -0.3**
comp=Z,362nm,1.1s
GZR Gura Zlata 81.83 321⇓*i*P **P** **12 37 34.1 -1.0**
GZR Gura Zlata 81.83 321⇓P **P** **12 37 34.1 -1.0**
BRG Berggiesshubel 81.86 330 *e*(P) **P** **12 37 35.9 +0.9**
comp=Z,2.0nm,0.6s
BRG Berggiesshubel 81.86 330 *e*P **P** **12 37 35.9 +0.9**
BRG pmax pmax
comp=Z,2.0nm,0.6s
CLL Collm 81.90 330 *e*P **P** **12 37 35.0 -0.2**
comp=Z,14nm,1.5s
CLL Collm 81.90 330 *e*P **P** **12 37 35.0 -0.2**
CLL pmax pmax
comp=Z,14nm,1.5s
VRAC Vranov 81.92 327 LR LR 13 15 31.0
comp=Z,46nm,18.4s,baz=50,slow=37
PRU Pruhonice 82.28 329 *e*P **P** **12 37 38.2 +0.9**
PRU Pruhonice 82.28 329 *e*P **P** **12 37 38.2 +0.9**
KHC Kasperske Hory 83.34 329 *e*P **P** **12 37 43.4 +0.6**
KHC *e*PCP **PcP** **12 37 48.3 +1.1**
KHC *e*pP **sP** **12 37 58.9 +1.2**
KHC Kasperske Hory 83.34 329 *e*P **P** **12 37 43.4 +0.6**
KHC *e* 12 37 48.3
KHC *e* 12 37 58.9
KHC Kasperske Hory 83.34 329 *e*P **P** **12 37 43.4 +0.6**
comp=Z,2.1nm,1.4s
GERES GERESS Array B 83.51 328 P **P** **12 37 44.2 +0.4**
comp=Z,1.6nm,0.7s,baz=27,slow=6.3,SNR=9.4
GERES LR LR 13 17 27.0
comp=Z,54nm,18.6s,baz=76,slow=38
ANMO Albuquerque 84.94 50⇓*e*P **P** **12 37 53.7 +2.2**
ANMO pmax pmax
comp=Z,2.0nm,1.2s
BFO Black Forest 86.11 331 *i* P **P** **12 37 57.8 +1.0**
TXAR Lajitas Array 90.44 53 P **P** **12 38 18.8 +1.0**
comp=Z,0.6nm,0.7s,baz=316,slow=4.0,SNR=8.2
VNA2 Neumayer--Watz 141.60 196 PKP **PKPdf** **12 44 45.3 -0.7**
baz=80,slow=1.2
VNA3 Neumayer Olymp 141.84 195 P **PKPdf** **12 44 42.2 -4.2**
LPAZ La Paz 146.91 61 PKPbc **PKPab** **12 45 00.7 -0.2**
comp=Z,4.6nm,0.6s,baz=337,slow=3.4,SNR=21

IDC 02 12:35:32.3±10.0, 3°.20N×95°.97E, h0km, mb3.6/4, mb1 3.6/5, mb1mx3.4/47, mbtmp3.6/5, ML4.0/1, Error ellipse: s-maj=198.5km s-min=102.8km az=152.0, Off west coast of northern Sumatera

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CMAR	**Chiang Mai Arr**	**15.44**	**11**	Pn	Pn	12 39 11.7	+0.1
	0.2nm,0.3s,baz=204,slow=12,SNR=3.1						
H08S2	**Diego Garcia H**	**25.79**	**245**	T	T	13 07 09.0	
	baz=67,slow=76,SNR=41						
H08S3	**Diego Garcia H**	**25.79**	**245**	T	T	13 07 08.7	
	baz=67,slow=76,SNR=20						
H08S1	**Diego Carcia H**	**25.80**	**245**	T	T	13 07 10.3	
	baz=67,slow=76,SNR=30						
H01W3	**Cape Leeuwin H**	**41.55**	**157**	T	T	13 26 48.0	
	baz=331						
H01W2	**Cape Leeuwin H**	**41.56**	**157**	T	T	13 26 49.0	
	baz=331						
H01W1	**Cape Leeuwin H**	**41.56**	**157**	T	T	13 26 45.8	
	baz=331						
MKAR	**Makanchi Array**	**45.02**	**347**	P	P	12 43 49.7	0.0
	0.3nm,0.4s,baz=160,slow=8.3,SNR=13						
SONM	**Songino Array**	**45.37**	**10**	P	P	12 43 52.4	-0.2
	0.4nm,0.5s,baz=192,slow=8.4,SNR=3.1						
KURBB	**Kurchatov Arra**	**49.50**	**345**	P	P	12 44 24.7	+0.2
	0.4nm,0.3s,baz=156,slow=6.9,SNR=5.0						
ZALV	**Zalesovo Beam**	**51.41**	**352**	P	P	12 44 38.4	-0.5
	0.4nm,0.3s,baz=161,slow=6.1,SNR=3.0						

*KRNET **02** 12:36:43.7±0.1, 41°.61N×76°.09E, h15km, mb3.0*
*SOME **02** 12:36:44.2, 41°.57N×76°.13E, h10km*
*NNC **02** 12:36:45.7±0.7, 41°.66N×76°.03E, h0km, mb3.2, mpv3.0, Error ellipse: s-maj=4.5km s-min=3.6km az=152.0*

ISC 02 12:36:43.8±1.0, 41°.61N±0°.03×76°.09E±0°.02, h7km±10km, n49, σ1°17/86, 38C-24D, Kyrgyzstan-Xinjiang border region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
NRN	**Naryn**	**0.19**	**202**⇑*i*P		**Pg**	**12 36 48.1**	**+0.3**
	baz=203						
NRN			⇑*i*S		**Sg**	**12 36 51.0**	**+0.5**
	baz=203						
ULHL	**Ulahol**	**0.64**	**10**⇓*i*P		**Pg**	**12 36 56.5**	**+0.2**
	baz=9.0						
ULHL			⇓*i*S		**Sg**	**12 37 04.9**	**+0.2**
	baz=9.0						
KZA	**Kyzart**	**0.78**	**307**⇓*i*P		**Pg**	**12 36 59.0**	**0.0**
	baz=307						
KZA			⇓*i*S		**Sg**	**12 37 09.1**	**-0.1**
	baz=307						
BOOM	**Boomskoye usch**	**0.88**	**353**⇑*e*P		**Pb**	**12 37 00.9**	**-0.8**
	baz=353						
BOOM			⇑*i*S		**Sb**	**12 37 12.8**	**-0.9**
	baz=353						
KDJ	**Kajisay**	**0.96**	**57**⇓*e*P		**Pb**	**12 37 02.2**	**-0.8**
	baz=57						
KDJ			⇓*i*S		**Sg**	**12 37 15.3**	**+0.5**
	baz=57						
UCH	**Uchtor**	**1.33**	**298**⇓*i*P		**Pg**	**12 37 09.0**	**-0.4**
	baz=298						
UCH			⇓*i*S		**Sg**	**12 37 26.8**	**+0.1**
	baz=298						
KBK	**Karagaybulak**	**1.35**	**321**⇑*i*P		**Pg**	**12 37 09.3**	**-0.4**
	baz=321						
KBK			⇑*i*S		**Sg**	**12 37 27.7**	**+0.5**
	baz=321						
ARLS	**Aral**	**1.35**	**281**⇑*e*P		**Pb**	**12 37 09.0**	**-0.5**
	baz=282						
ARLS			⇑*e*S		**Sn**	**12 37 26.0**	**-1.5**
	baz=282						
TKM2	**Tokmak 2**	**1.36**	**344**⇑*i*P		**Pg**	**12 37 09.7**	**-0.2**
	baz=345						
TKM2			⇑*i*S		**Sg**	**12 37 27.5**	**-0.1**
	baz=345						
TKM2	**Tokmak 2**	**1.36**	**344** ⇑P		**Pg**	**12 37 09.7**	**-0.2**
	11nm,0.2s						
TKM2			⇑S		**Sg**	**12 37 27.8**	**+0.2**
	15nm,0.3s						
KST	**Kastek**	**1.43**	**356**⇓*i*P		**Pg**	**12 37 11.1**	**-0.3**
	8.3nm,0.2s						
KST			⇑*i*S		**Sg**	**12 37 30.5**	**+0.6**
	41nm,0.4s						
IZV	**Izvestkoviy**	**1.47**	**15**	*e*P	**Pg**	**12 37 12.2**	**0.0**
	8.6nm,0.2s						
IZV			*e*S		**Sg**	**12 37 32.9**	**+1.7**
	292nm,0.1s						
MTBS	**Maitube**	**1.54**	**9**⇓*i*P		**Pg**	**12 37 12.9**	**-0.4**
	24nm,0.3s						
MTBS			⇓*i*S		**Sg**	**12 37 33.8**	**+0.6**
	62nm,0.3s						
TNSS	**Tian-Shan**	**1.56**	**24**⇑*i*P		**Pg**	**12 37 13.5**	**-0.3**
	17nm,0.4s						
TNSS			*e*S		**Sg**	**12 37 35.5**	**+1.4**
	19nm,0.6s						
AAK	**Ala-Archa**	**1.57**	**311**⇓*i*P		**Pb**	**12 37 12.9**	**-0.4**
	baz=311						
AAK			⇓*i*S		**Sg**	**12 37 33.8**	**-0.4**
	baz=311						
AAK	**Ala-Archa**	**1.57**	**311** ⇓P		**Pg**	**12 37 13.2**	**-0.8**
	19nm,0.5s						
AAK			⇑S		**Sg**	**12 37 34.6**	**+0.4**
	16nm,0.3s						
DGS	**Degeres**	**1.65**	**352**	*e*P	**Pg**	**12 37 14.9**	**-0.5**
	5.4nm,0.2s						
DGS			*e*S		**Sg**	**12 37 37.7**	**+0.9**
	48nm,0.2s						
ANVS	**Anan'yevo**	**1.65**	**44**⇑*e*P		**Pg**	**12 37 15.1**	**-0.5**
	baz=45						
ANVS			⇑*e*S		**Sg**	**12 37 36.9**	**-0.1**
	baz=45						
MDOK	**Medeo**	**1.70**	**24**	*e*P	**Pg**	**12 37 16.2**	**-0.3**
	21nm,0.2s						
MDOK			*e*S		**Sg**	**12 37 39.4**	**+0.8**
	38nm,0.4s						
CHMS	**Chumysh**	**1.71**	**325**⇑*i*P		**Pb**	**12 37 15.5**	**-0.1**
	baz=325						
CHMS			⇑*i*S		**Sg**	**12 37 38.3**	**-0.4**
	baz=325						
KNDC	**Almaty**	**1.73**	**22** ⇑P		**Pg**	**12 37 16.9**	**-0.1**
KNDC			⇓S		**Sg**	**12 37 39.7**	**+0.3**
AAA	**Alma-Ata**	**1.77**	**21**	*e*P	**Pb**	**12 37 16.3**	**-0.5**
	86nm,0.1s						
AAA			*e*S		**Sg**	**12 37 40.0**	**-0.8**
	124nm,0.1s						
KOTS	**Kotyrbulak**	**1.79**	**25**	*e*P	**Pg**	**12 37 17.5**	**-0.6**
KOTS			*e*S		**Sg**	**12 37 42.5**	**+1.2**
AML	**Almayashu**	**1.87**	**287**⇑*i*P		**Pg**	**12 37 18.8**	**-0.8**
	baz=287						
AML			⇑*i*S		**Sg**	**12 37 42.9**	**-0.9**
	baz=287						
EKS2	**Erkin-Say**	**2.02**	**302**⇑*i*P		**Pb**	**12 37 20.4**	**-0.5**
	baz=303						
EKS2			⇑*i*S		**Sb**	**12 37 46.2**	**-0.1**
	baz=303						
USP	**Ospenovka**	**2.03**	**325**⇑*i*P		**Pb**	**12 37 20.8**	**-0.3**
	baz=325						
USP			⇑*i*S		**Sb**	**12 37 46.8**	**+0.2**
	baz=325						
KTBS	**Karatobe**	**2.14**	**11**	*e*P	**Pg**	**12 37 24.2**	**-0.8**
KTBS			*e*S		**Sg**	**12 37 53.9**	**+1.2**
SATY	**Saty**	**2.24**	**49**⇑*i*P		**Pb**	**12 37 25.4**	**+0.7**
	47nm,0.2s						
SATY			⇑*i*S		**Sg**	**12 37 55.0**	**-0.9**
	174nm,0.2s						
KUU	**Kurty**	**2.29**	**4**⇑*i*P		**Pg**	**12 37 26.6**	**-1.1**
	50nm,0.3s						
KUU			*e*S		**Sg**	**12 37 56.9**	**-0.4**
	140nm,0.6s						
ZHN	**Zhinishke**	**2.33**	**47**	*e*P	**Pb**	**12 37 26.8**	**+0.5**
	18nm,0.2s						
ZHN			*e*S		**Sg**	**12 37 57.5**	**-1.1**
	233nm,0.3s						
CHKK	**Chushkaly**	**2.35**	**16**	*e*P	**Pg**	**12 37 27.6**	**-1.4**
	24nm,0.2s						
CHKK			*e*S		**Sg**	**12 37 59.7**	**+0.3**
	82nm,0.3s						
MRKS	**Merke**	**2.41**	**299**	*e*P	**Pg**	**12 37 29.1**	**-1.0**
	16nm,0.4s						
MRKS			*e*S		**Sg**	**12 38 01.2**	**-0.1**
	36nm,0.4s						
KURS	**Kuram**	**2.42**	**39**⇓*i*P		**Pb**	**12 37 28.6**	**+0.8**
	7.9nm,0.4s						
KURS			⇓*i*S		**Sg**	**12 38 00.9**	**-0.8**
	24nm,0.4s						
SFK	**Sufi-Kurgan**	**2.53**	**232** ⇓Pg		**Pg**	**12 37 31.4**	**-1.0**
	5.0nm,0.6s						
SFK			⇑Lg		Lg	12 38 05.2	
	35nm,0.8s						
UZB	**Uzynbulak**	**2.66**	**54**⇑*i*P		**Pb**	**12 37 31.8**	**-0.1**
	6.8nm,0.4s						
UZB			⇑*i*S		**Sg**	**12 38 07.5**	**-1.7**
	47nm,0.4s						
KPKS	**Kokpek**	**2.66**	**45**	*e*P	**Pb**	**12 37 31.7**	**-0.2**
	18nm,0.3s						
KPKS			*e*S		**Sg**	**12 38 07.5**	**-1.9**
	100nm,0.7s						
MNAS	**Manas**	**2.81**	**289** ⇑Pg		**Pb**	**12 37 35.5**	**+1.0**
	5.5nm,0.7s						
MNAS			⇓Lg		Lg	12 38 12.7	
	12nm,0.5s						
ARXS	**Arharly**	**2.89**	**26**	*e*P	**Pb**	**12 37 35.5**	**-0.3**
	5.8nm,0.3s						
ARXS			*e*S		**Sb**	**12 38 12.9**	**+1.4**
	57nm,0.3s						
MNBS	**Baschi**	**2.99**	**34**	*e*P	**Pb**	**12 37 37.5**	**-0.1**
	2.3nm,0.2s						
MNBS			*e*S		**Sg**	**12 38 16.7**	**-3.3**
	8.6nm,0.3s						
PDGK	**Podgornoye**	**3.04**	**55**⇑*e*P		**Pn**	**12 37 33.6**	**+1.3**
	baz=55						
PDGK			⇑*e*S		**Sn**	**12 38 10.4**	**+1.5**
	baz=55						
PDGK	**Podgornoye**	**3.04**	**55** ⇓Pn		**Pb**	**12 37 36.5**	**-1.7**
	4.0nm,0.7s						
PDGK			⇑Lg		Lg	12 38 19.5	
	38nm,0.5s						
SHLS	**Shalkode**	**3.20**	**60**	*e*P	**Pb**	**12 37 42.3**	**+1.1**
	8.5nm,0.3s						
SHLS			*e*S		**Sg**	**12 38 24.1**	**-2.6**
	37nm,0.3s						
KTMS	**Ketmen**	**3.64**	**58**	*e*P	**Pb**	**12 37 48.6**	**0.0**
	1.8nm,0.2s						
KTMS			*e*S		**Sb**	**12 38 35.7**	**+2.7**
	53nm,0.4s						
DJR	**Jarkent**	**3.84**	**44**	*e*P	**Pb**	**12 37 52.7**	**+0.8**
	5.2nm,0.4s						
DJR			⇓*i*S		**Sg**	**12 38 43.0**	**-4.2**
	15nm,0.4s						
KAPS	**Kapalarasan**	**4.37**	**32**	*e*P	Pg	12 38 04.3	-3.3
	3.6nm,0.4s						
KAPS			*e*S		**Sg**	**12 38 59.7**	**-4.5**
	8.8nm,0.5s						
KK31	**Karatay Array**	**4.40**	**292** ⇓Pg		Pb	12 38 04.0	+2.6
	0.4nm,0.3s,baz=102,slow=14,SNR=5.7						
KK31			⇑Lg		Lg	12 39 03.3	
	4.3nm,0.6s,baz=98,slow=30,SNR=5.7						
MK31	**Makanchi Array**	**6.83**	**39**	Pn	Pn	12 38 26.7	+2.3
	0.1nm,0.3s,baz=222,slow=15,SNR=4.2						
MK31			⇓Lg		Lg	12 40 22.3	
	1.0nm,0.7s,baz=217,slow=26,SNR=3.5						
OTUK	**Ortayu**	**7.15**	**339** ⇑Lg		Lg	12 40 30.7	
	3.3nm,0.7s						
KURBB	**Kurchatov Arra**	**9.17**	**10** ⇓Lg		Lg	12 41 34.9	
	4.8nm,0.8s						

MAN 02 12:47:32, 17°.93N×121°.57E, h31km, mb3.8, ML2.6, MS2.1, 1C-1D, Luzon

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
APYP	**Conner**	**0.32**	**258**	*e*P	Pb	12 47 39.9	+0.2
APYP				*e*S	Sb	12 47 44.6	-0.5
CVP	**Callao Caves**	**0.33**	**132**⇓*i*P		Pn	12 47 42.0	+1.3
CVP				*i* S	Sn	12 47 48.4	+2.0

Code	Station Name	Δ°	AZ°	Op	ISC	Time	Res
SGCP	**Mt. Cagua**	**0.55**	**55**	*e*P	Pn	12 47 44.9	+1.2
SGCP				*e*S	Sn	12 47 52.4	+0.5
ABRA	**Dolores**	**0.86**	**251**	*e*P	Pb	12 47 48.9	+0.5
ABRA				*e*S	Sb	12 47 59.9	+0.2
PIP	**Pasuquin**	**0.98**	**294**	⇑*i*P	Pb	12 47 51.3	+0.7
PIP				*e*S	Sb	12 48 04.6	+1.4
CAUP	**Cauayan**	**1.01**	**166**	*e*P	Pb	12 47 55.0	+4.0

JMA 02 12:47:47.2±0.3, 39°.55N×144°.70E, h25^{km}, M3.6, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MIYJ	**Miyakonagasawa**	**2.23**	**272**	P	Pn	12 48 23.9	+1.4
MIYJ				*e*S	Sn	12 48 50.1	+0.9
OFUJ	**Ofunato**	**2.40**	**260**	P	Pn	12 48 26.5	+1.7
JOM	**Ohasama**	**2.64**	**269**	P	Pn	12 48 29.7	+1.6
JOM				*e*S	Sn	12 49 00.9	+1.6
JRG	**Rokugo**	**3.15**	**268**	*e*S	Sn	12 49 14.3	+2.3
JYK	**Kaneyama**	**3.43**	**261**	S	Sn	12 49 21.5	+2.6
JAR	**Ashorobuto**	**3.81**	**350**	P	Pn	12 48 45.2	+1.0
NEM2	**Nemuro 2**	**3.89**	**11**	P	Pn	12 48 47.6	+2.2
JTKR	**Abashiri--Toko**	**4.46**	**353**	P	Pn	12 48 55.4	+2.3
MAT	**Matsushiro**	**5.94**	**242**	P	Pb	12 49 30.3	+0.3

*IDC **02** 12:49:38.0±1.8, 3°.10S×130°.06E, h0^{km}, mb3.7/4, mb1 3.9/5, mb1mx3.5/35, mbtmp3.7/5, ML3.6/1, Error ellipse: s-maj=149.7km s-min=21.4km az=68.0*
*ISCJB **02** 12:49:41.0±0.6, 3°.05S±0°.07×130°.12E±0°.05, h25^{km}, mb3.6/3, Error ellipse: s-maj=10.8km s-min=7.4km az=9.1*
*DJA **02** 12:49:43.1±1.5, 3°S±4°×13°0E±°, h28^{km}±19^{km}, M3.6/7, MLv3.6/7*
ISC 02 12:49:42.0±0.9**, 3°.01S**±0°.06×**130°.15E**±0°.05**, h25^{km}, n12, σ2^{s}33**/15**, mb3.8**/3**, Seram**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MSAI	**Masohi**	**1.26**	**255**	P	**Pb**	**12 50 05.9**	**+0.8**
BNDI	**Bandanaira**	**1.52**	**189**	P	**Pb**	**12 50 10.2**	**+0.7**
BNDI				S	**Sb**	**12 50 32.6**	**+4.2**
FAKI	**Fak Fak**	**2.10**	**88**	P	**Pn**	**12 50 16.9**	**+1.3**
FAKI				S	**Sn**	**12 50 42.1**	**+1.2**
SWI	**Sorong**	**2.41**	**28**	P	**Pn**	**12 50 20.5**	**+0.7**
LBMI	**Labuha**	**3.54**	**312**	P	**Pn**	**12 50 35.7**	**+0.2**
KMPI	**Kaimana, Papua**	**3.61**	**100**	P	**Pn**	**12 50 37.7**	**+1.4**
SANI	**Sanana**	**4.26**	**283**	P	**Pn**	**12 50 46.6**	**+1.2**
WRA	**Warramunga Arr**	**17.32**	**167**	P	**Pn**	**12 53 38.6**	**-3.6**
	0.2nm,0.3s,baz=350,slow=13,SNR=14						
ASAR	**Alice Springs**	**20.85**	**170**	P	**P**	**12 54 21.6**	**-0.6**
	2.7nm,0.4s,baz=349,slow=11,SNR=67						
ASAR				S	**S**	**12 58 08.7**	**-5.1**
	0.7nm,0.8s,baz=352,slow=21,SNR=4.1						
STKA	**Stephens Creek**	**30.67**	**161**	P	**P**	**12 55 54.1**	**-0.6**
	1.5nm,0.8s,baz=347,slow=8.3,SNR=5.2						
MKAR	**Makanchi Array**	**65.01**	**326**	P	**P**	**13 00 20.1**	**+0.1**
	0.1nm,0.3s,baz=116,slow=8.3,SNR=4.5						
KURBB	**Kurchatov Arra**	**69.22**	**328**	P	**P**	**13 00 46.9**	**+0.2**
	0.4nm,0.5s,baz=129,slow=5.9,SNR=6.8						

MAN 02 12:57:37, 15°.92N×121°.80E, h26^{km}, mb4.2, ML3.0, MS2.8, 1C, Luzon

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BALP	**Baler**	**0.28**	**230**	*e*P	Pn	12 57 45.5	0.0
BALP				*e*S	Sn	12 57 52.9	+2.0
CAUP	**Cauayan**	**1.02**	**1**	*e*P	Pn	12 57 54.6	-1.0
CAUP				*e*S	Sb	12 58 07.9	-1.0
BCPH	**Baguio City Da**	**1.26**	**291**	⇑*i*P	Pb	12 58 06.5	+6.3
BCPH				*i* S	Sb	12 58 27.2	+11
BOLP	**Bolinao**	**1.87**	**284**	*e*P	Pb	12 58 13.3	+2.8
APYP	**Conner**	**2.00**	**345**	*e*P	Pn	12 58 10.4	+1.3
ABRA	**Dolores**	**2.01**	**329**	*e*P	Pb	12 58 13.7	+0.8

*IDC **02** 12:58:59.6±1.9, 34°.78N×138°.19E, h0^{km}, mb3.3/3, mb1 3.4/3, mb1mx3.1/56, mbtmp3.3/3, Error ellipse: s-maj=56.6km s-min=14.4km az=94.0*
*ISCJB **02** 12:59:01.3±0.7, 35°.56N±0°.04×140°.03E±0°.07, h79^{km}±5^{km}, mb3.1/3, Error ellipse: s-maj=9.1km s-min=6.5km az=161.2*
*JMA **02** 12:59:01.9±0.2, 35°.61N×140°.05E, h70^{km}±2^{km}, M2.9*
ISC 02 12:59:02.2±1.0**, 35°.57N**±0°.05×**140°.04E**±0°.06**, h75^{km}**±7^{km}**, n16, σ0^{s}72**/25**, mb3.3**/3**, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JCN	**Nagara**	**0.20**	**138**	P	**Pn**	**12 59 13.4**	**0.0**
JCN				S	**Sn**	**12 59 22.0**	**+0.3**
TOK	**Tokyo**	**0.26**	**298**	P	**Pn**	**12 59 13.9**	**+0.3**
TOK				*e*S	**Sn**	**12 59 22.9**	**+0.8**
JOD2	**Odawara 2**	**0.83**	**249**	P	**Pn**	**12 59 18.7**	**-0.3**
JOD2				S	**Sn**	**12 59 30.5**	**-1.0**
BSO3	**Boso 3**	**0.86**	**153**	P	**Pn**	**12 59 18.7**	**-0.3**
BSO3				*e*X		12 59 32.0	
JAG	**Ashikaga**	**0.98**	**331**	P	**Pn**	**12 59 20.1**	**-0.6**
JAG				S	**Sn**	**12 59 32.9**	**-1.6**
JIM2	**Oshima 3**	**0.98**	**211**	P	**Pn**	**12 59 20.4**	**-0.4**
JIM2				S	**Sn**	**12 59 33.4**	**-1.3**
JRY	**Ryogami san**	**1.03**	**296**	P	**Pn**	**12 59 21.5**	**+0.2**
BSO1	**Boso 1**	**1.19**	**140**	P	**Pn**	**12 59 22.3**	**-0.5**
JYN	**Shimob**	**1.22**	**267**	P	**Pn**	**12 59 23.8**	**0.0**
JYN				*e*S	**Sn**	**12 59 39.4**	**-0.6**
JIZS	**Izushimoda**	**1.27**	**229**	P	**Pn**	**12 59 24.3**	**-0.1**
JIZS				S	**Sn**	**12 59 40.6**	**-0.5**
JKT	**Katashina**	**1.36**	**332**	P	**Pn**	**12 59 24.9**	**-0.6**
JKT				S	**Sn**	**12 59 42.1**	**-1.0**
MJAR	**Matsushiro Arr**	**1.77**	**304**	Pg	**Pn**	**12 59 30.4**	**-0.5**
	6.1nm,0.3s,baz=250,slow=11,SNR=55						
MJAR				Lg	Lg	12 59 55.7	
	4.0nm,0.3s,baz=1.1,slow=35,SNR=5.8						
MAT	**Matsushiro**	**1.77**	**304**	P	**Pn**	**12 59 31.5**	**+0.5**
MAT				S	**Sn**	**12 59 52.9**	**+0.1**
MKAR	**Makanchi Array**	**43.97**	**303**	P	**P**	**13 07 02.9**	**+1.1**
	0.2nm,0.6s,baz=82,slow=10,SNR=3.7						
KURBB	**Kurchatov Arra**	**46.04**	**309**	P	**P**	**13 07 18.3**	**+0.2**
	0.3nm,0.8s,baz=83,slow=7.6,SNR=4.2						
WRA	**Warramunga Arr**	**55.47**	**187**	P	**P**	**13 08 29.4**	**+0.2**
	0.1nm,0.3s,baz=0.7,slow=7.7,SNR=4.8						

*IDC **02** 13:04:30.8±0.8, 47°.35N×144°.10E, h0^{km}, mb3.7/13, mb1 3.9/13, mb1mx3.7/49, mbtmp3.7/13, MS3.0/1, Ms1 3.0/1, ms1mx2.4/41, Error ellipse: s-maj=21.3km s-min=19.5km az=134.0*
*ISCJB **02** 13:04:33.5±0.4, 47°.12N±0°.04×144°.23E±0°.07, h33^{km}, mb3.6/15, Error ellipse: s-maj=7.5km s-min=4.5km az=142.3*
*MOS **02** 13:04:34.7±1.9, 47°.09N×144°.18E, h49^{km}, mb4.2/7, Error ellipse: s-maj=19.6km s-min=9.2km az=107.3*
*SKHL **02** 13:04:34.3±0.4, 47°.18N×144°.26E, h44^{km}±4^{km}, mb4.2/4*
ISC 02 13:04:35.0±0.6**, 47°.07N**±0°.05×**144°.19E**±0°.05**, h35^{km}, n42, σ1^{s}08**/47**, mb3.7**/15**, 1C-3D, Sea of Okhotsk**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
YSS	**Yuzh-Sakhalins**	**0.99**	**264**	⇓*e*P	**Pn**	**13 04 51.8**	**-0.5**
YSS				AMB	AMB	13 04 52.6	
	80nm,0.4s						
YSS				*i* S	**Sn**	**13 05 04.9**	**-0.1**
YSS				A	A	13 05 06.5	
	3µm,0.4s						
YSS				A	A	13 05 06.5	
	3µm,0.4s						
YSS	**Yuzh-Sakhalins**	**0.99**	**264**	⇓*e*PN	**Pn**	**13 04 51.8**	**-0.5**
YSS				*e*S	**Sn**	**13 05 05.3**	**+0.3**
YSS				pmax	pmax		
	comp=Z,960nm,0.2s						
YSS				smax	smax		
	comp=N,3µm,0.4s						
YSS				smax	smax		
	comp=E,4µm,0.4s						
UGL	**Uglegorsk**	**2.46**	**325**	*e*P	**Pn**	**13 05 12.9**	**+0.4**
UGL				AMB	AMB	13 05 19.5	
	comp=E,100nm,0.6s						
UGL				*e*S	**Sn**	**13 05 40.4**	**-0.9**
UGL				A	A	13 05 48.3	
	comp=E,180nm,0.6s						
UGL				A	A	13 05 48.3	
	comp=E,630nm,0.6s						
UGL	**Uglegorsk**	**2.46**	**325**	PN	Pn	13 05 17.0	+4.5
UGL				S	**Sn**	**13 05 44.6**	**+3.3**
UGL				pmax	pmax		
	comp=Z,87nm,0.6s						
UGL				smax	smax		
	comp=N,320nm,0.5s						
UGL				smax	smax		
	comp=E,600nm,0.5s						
UGL				smax	smax		
	comp=Z,260nm,0.5s						
KUR	**Kuril'sk**	**3.15**	**124**	*e*P	**Pn**	**13 05 22.2**	**+0.1**
KUR				*e*S	**Sn**	**13 05 58.4**	**0.0**
KUR				A	A	13 06 01.7	
	comp=Z,40nm,0.2s						
KUR				A	A	13 06 01.7	
	comp=Z,50nm,0.2s						
KUR	**Kuril'sk**	**3.15**	**124**	PN	**Pn**	**13 05 22.2**	**+0.1**
KUR				*i* S	**Sn**	**13 05 58.4**	**0.0**
KUR				smax	smax		
	comp=N,72nm,0.2s						
KUR				smax	smax		
	comp=E,92nm,0.3s						
SHO	**Shikotan**	**3.71**	**149**	*e*P	**Pn**	**13 05 30.1**	**+0.4**
SHO				AMB	AMB	13 05 31.2	
	comp=E,70nm,1.0s						
SHO				*e*S	**Sn**	**13 06 11.7**	**-0.4**
SHO				A	A	13 06 14.9	
	comp=E,180nm,0.7s						
SHO				A	A	13 06 14.9	
	comp=E,260nm,0.7s						
SHO	**Shikotan**	**3.71**	**149***c*	*i*PN	**Pn**	**13 05 30.1**	**+0.4**
SHO				*i* S	**Sn**	**13 06 13.2**	**+1.1**
SHO				pmax	pmax		
	comp=N,37nm,0.4s						
SHO				pmax	pmax		
	comp=Z,39nm,0.4s						
SHO				pmax	pmax		
	comp=E,32nm,0.5s						
SHO				smax	smax		
	comp=N,182nm,0.7s						
SHO				smax	smax		
	comp=E,258nm,0.6s						
TYV	**Tymovskoe**	**3.92**	**346**	*e*P	**Pn**	**13 05 32.0**	**-0.7**
TYV				AMB	AMB	13 05 38.0	
	comp=E,50nm,0.8s						
TYV				*e*S	**Sn**	**13 06 15.8**	**-1.7**
TYV				A	A	13 06 36.7	
	comp=E,640nm,0.8s						
TYV				A	A	13 06 36.7	
	comp=E,240nm,0.8s						
TYV	**Tymovskoe**	**3.92**	**346**	*e*PN	**Pn**	**13 05 33.2**	**+0.5**
TYV				pmax	pmax		
	comp=Z,31nm,0.8s						
NKL	**Nikolayevsk**	**6.49**	**341**	*e*P	**Pn**	**13 06 09.8**	**+2.0**
OKH	**Okha**	**6.53**	**353**	*e*P	**Pn**	**13 06 10.9**	**+2.4**
KLR	**Kul'dur**	**8.59**	**289**	LR	LR	13 10 04.7	
	comp=Z,90nm,18.9s,baz=116,slow=40						
SEY	**Seymchan**	**16.55**	**13**	Pn	**P**	**13 08 25.4**	**-0.9**
	comp=Z,0.1nm,0.3s,baz=205,slow=11,SNR=5.6						
SEY	**Seymchan**	**16.55**	**13**	*e*P	**P**	**13 08 26.0**	**-0.3**
SEY	**Seymchan**	**16.55**	**13**	P	**P**	**13 08 26.0**	**-0.3**
SONM	**Songino Array**	**25.40**	**286**	P	**P**	**13 09 59.3**	**+0.2**
	comp=Z,1.0nm,0.8s,baz=82,slow=8.7,SNR=8.7						
SONM	**Songino Array**	**25.40**	**286**	*e*P	**P**	**13 09 59.8**	**+0.7**
TIXI	**Tiksi**	**25.69**	**349**	*e*P	**P**	**13 10 00.7**	**-0.6**
TIXI	**Tiksi**	**25.69**	**349**	⇓*e*P	**P**	**13 10 00.7**	**-0.6**
TIXI				pmax	pmax		
	comp=Z,2.0nm,0.8s						
ZAK	**Zakamensk**	**26.94**	**292**	*e*P	**P**	**13 10 10.5**	**-2.5**
ZAK				pmax	pmax		
	comp=Z,2.0nm,1.0s						
ZALV	**Zalesovo Beam**	**37.38**	**303**	PcP	**PcP**	**13 14 02.7**	**+0.5**
	comp=Z,0.8nm,0.6s,baz=98,slow=2.9,SNR=3.8						
ILAR	**Eielson Array**	**40.11**	**38**	P	**P**	**13 12 06.7**	**-0.1**
	comp=Z,0.5nm,0.8s,baz=275,slow=8.8,SNR=6.6						
MKAR	**Makanchi Array**	**41.27**	**293**	P	**P**	**13 12 16.9**	**+0.2**
	comp=Z,0.5nm,0.7s,baz=72,slow=8.8,SNR=7.0						
MKAR				PcP	**PcP**	**13 14 14.1**	**-0.7**
	comp=Z,0.2nm,0.5s,baz=68,slow=3.9,SNR=3.4						
KURK	**Kurchatov**	**41.99**	**300**	*e*P	**P**	**13 12 22.7**	**+0.3**
KURK	**Kurchatov**	**41.99**	**300**	P	**P**	**13 12 22.7**	**+0.3**
KURBB	**Kurchatov Arra**	**42.08**	**300**	P	**P**	**13 12 22.7**	**-0.5**
	comp=Z,0.3nm,0.4s,baz=69,slow=8.9,SNR=4.1						
YKA	**Yellowknife Ar**	**54.21**	**34**	P	**P**	**13 13 55.8**	**-0.7**
	comp=Z,0.5nm,0.7s,baz=305,slow=7.0,SNR=13						
FINES	**FINESS Array B**	**60.96**	**331**	P	**P**	**13 14 43.2**	**-0.8**
	comp=Z,0.9nm,0.5s,baz=54,slow=7.9,SNR=11						
FINES	**FINESS Array B**	**60.96**	**331**	*e*P	**P**	**13 14 43.5**	**-0.6**
FINES	**FINESS Array B**	**60.96**	**331**	*i* P	**P**	**13 14 43.5**	**-0.6**
FINES				pmax	pmax		
	comp=Z,1.0nm,0.5s						
NOA	**NORSAR Array B**	**65.74**	**337**	P	**P**	**13 15 15.0**	**-0.7**
	comp=Z,1.3nm,0.8s,baz=34,slow=6.3,SNR=3.1						
HFS	**Hagfors**	**65.81**	**335**	P	**P**	**13 15 14.9**	**-1.2**
	comp=Z,1.5nm,0.5s,baz=79,slow=7.5,SNR=8.0						
WRA	**Warramunga Arr**	**67.29**	**190**	P	**P**	**13 15 28.2**	**+2.2**
	comp=Z,0.4nm,0.8s,baz=3.6,slow=6.8,SNR=5.2						
WRA	**Warramunga Arr**	**67.29**	**190**	*e*P	P	13 15 29.1	+3.1
WRA	**Warramunga Arr**	**67.29**	**190**	*i* P	P	13 15 29.1	+3.1
PDAR	**Pinedale Array**	**69.33**	**49**	P	**P**	**13 15 39.7**	**+0.7**
	comp=Z,0.4nm,0.5s,baz=354,slow=1.5,SNR=4.7						
ASAR	**Alice Springs**	**71.02**	**190**	P	P	13 15 52.3	+3.2
	comp=Z,1.3nm,0.8s,baz=3.3,slow=4.8,SNR=12						
GERES	**GERESS Array B**	**75.23**	**329**	P	**P**	**13 16 13.0**	**-0.9**
	comp=Z,0.2nm,0.4s,baz=32,slow=5.8,SNR=3.2						
TXAR	**Lajitas Array**	**82.48**	**55**	P	**P**	**13 16 55.2**	**+1.2**
	comp=Z,0.4nm,0.7s,baz=310,slow=3.2,SNR=5.0						
VNA2	**Neumayer--Watz**	**152.50**	**200**	PKP	**PKPbc**	**13 24 27.1**	**+1.1**
	baz=122,slow=1.8						
VNA3	**Neumayer Olymp**	**152.77**	**198**	PKP	**PKPbc**	**13 24 25.1**	**-1.5**

*ISCJB **02** 13:06:51.9±1.4, 36°.43N±0°.04×142°.6E±0°.1, h15^{km}, mb3.5/2, Error ellipse: s-maj=15.7km s-min=5.4km az=6.5*
*IDC **02** 13:06:52.4±5.8, 36°.39N×142°.47E, h0^{km}, mb3.7/2, mb1 3.6/4, mb1mx3.3/47, mbtmp3.7/4, ML3.1/2, Error ellipse: s-maj=98.4km s-min=42.2km az=97.0*
*JMA **02** 13:06:52.6±0.3, 36°.42N×142°.66E, h39^{km}, M3.5*
ISC 02 13:06:53.4±1.6**, 36°.40N**±0°.04×**142°.5E**±0°.1**, h15^{km}, n15, σ1^{s}15**/19**, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**1.51**	**243**	S	**Sn**	**13 07 39.7**	**+0.3**
JMM	**Marumori**	**2.01**	**317**	P	**Pn**	**13 07 26.4**	**-0.4**
JFT	**Otama**	**2.07**	**303**	P	**Pn**	**13 07 28.0**	**+0.3**
JFT				*e*S	**Sn**	**13 07 52.4**	**-0.8**
BSO1	**Boso 1**	**2.15**	**216**	P	**Pn**	**13 07 27.7**	**-0.5**
BSO1				*e*S	**Sn**	**13 07 54.5**	**+0.2**
JIO	**Ouri**	**2.25**	**336**	*e*S	**Sn**	**13 07 55.9**	**-1.7**
JAG	**Ashikaga**	**2.47**	**271**	P	**Pn**	**13 07 33.4**	**+0.3**
JMK	**Ichinoseki**	**2.75**	**338**	S	**Sn**	**13 08 08.5**	**-1.3**
JRY	**Ryogami san**	**2.95**	**264**	P	**Pn**	**13 07 39.8**	**+0.1**
JYK	**Kaneyama**	**3.04**	**326**	P	**Pn**	**13 07 41.1**	**+0.1**
JOM	**Ohasama**	**3.21**	**343**	*e*S	**Sn**	**13 08 20.2**	**-1.2**
MJAR	**Matsushiro Arr**	**3.47**	**274**	Pn	**Pn**	**13 07 46.9**	**-0.1**
	1.8nm,0.3s,baz=88,slow=8.9,SNR=11						
MAT	**Matsushiro**	**3.47**	**274**	P	**Pn**	**13 07 48.1**	**+1.1**
MAT				S	**Sb**	**13 08 35.7**	**-1.0**
JHJ	**Hachijo jima 2**	**3.97**	**215**	Pn	**Pn**	**13 07 53.8**	**0.0**
	3.6nm,0.3s,baz=233,slow=20,SNR=4.8						
JHJ				Sn	**Sn**	**13 08 37.0**	**-3.1**
	11nm,0.3s,baz=54,slow=18,SNR=1.6						
SONM	**Songino Array**	**28.87**	**305**	P	**P**	**13 12 52.3**	**+0.8**
	0.8nm,0.8s,baz=104,slow=7.1,SNR=6.2						
MKAR	**Makanchi Array**	**45.20**	**303**	P	**P**	**13 15 11.0**	**+1.2**
	0.5nm,0.6s,baz=77,slow=9.6,SNR=6.6						

*CSEM **02** 13:15:20.3±0.2, 43°.11N×13°.42E, h20^{km}, ML2.7/12, Error ellipse: s-maj=4.0km s-min=2.8km az=79.0*
ROM 02 13:15:20.0±0.2**, 43°.13N**×**13°.46E, h20^{km}**±3^{km}**, Md2.3**/16**, Ml2.1**/16**, Error ellipse: s-maj=2.5km s-min=1.7km az=80.0, Central Italy**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFFI	**Offida**	**0.26**	**139**	Pg	Pb	13 15 27.2	+1.2
	348nm,0.6s						
OFFI	**Offida**	**0.26**	**139**	Pg	Pb	13 15 27.2	+1.2
	348nm,0.6s						
FDMO	**Fiordimonte**	**0.29**	**252**	Pg	Pb	13 15 25.9	-0.6
FDMO				Sg	Sb	13 15 31.5	+0.6
	124nm,0.1s						
FDMO	**Fiordimonte**	**0.29**	**252**	Pg	Pb	13 15 25.9	-0.6
FDMO				Sg	Sb	13 15 31.5	+0.6
	124nm,0.1s						
CING	**Cingoli**	**0.31**	**323**	Pg	Pb	13 15 27.1	+0.1
CING				Sg	Sb	13 15 32.1	+0.4
	46nm,0.1s						
CING	**Cingoli**	**0.31**	**323**	Pg	Pb	13 15 27.1	+0.1
CING				Sg	Sb	13 15 32.1	+0.4
	46nm,0.1s						
GUMA	**Gualdo di Mace**	**0.36**	**100**	Pg	Pb	13 15 23.7	-3.9
GUMA				Sg	Sb	13 15 27.2	-5.6
	1µm,0.2s						
NRCA	**Norcia**	**0.39**	**221**	Pg	Pb	13 15 27.6	-0.6
NRCA				Sg	Sb	13 15 34.6	+0.9
	522nm,0.1s						
NRCA	**Norcia**	**0.39**	**221**	Pg	Pb	13 15 27.6	-0.6
NRCA				Sg	Sb	13 15 34.6	+0.9
	522nm,0.1s						
SNTG	**Esanatoglia**	**0.40**	**289**	Pg	Pb	13 15 27.9	-0.5
SNTG				Sg	Sb	13 15 34.8	+0.7
	132nm,0.2s						
SNTG	**Esanatoglia**	**0.40**	**289**	Pg	Pb	13 15 27.9	-0.5
SNTG				Sg	Sb	13 15 34.8	+0.7
	132nm,0.2s						
CESI	**CESI - Serrava**	**0.42**	**253**	Pg	Pb	13 15 28.3	-0.5
CESI				Sg	Sb	13 15 35.8	+1.0
	43nm,0.3s						
CESI	**CESI - Serrava**	**0.42**	**253**	Pg	Pb	13 15 28.3	-0.5
CESI				Sg	Sb	13 15 35.8	+1.0
	43nm,0.3s						
AOI	**Ancona**	**0.44**	**14**	Pg	Pb	13 15 28.6	-0.4
AOI				Sg	Sb	13 15 36.5	+1.3
	78nm,0.3s						
AOI	**Ancona**	**0.44**	**14**	Pg	Pb	13 15 28.6	-0.4
AOI				Sg	Sb	13 15 36.5	+1.3
	78nm,0.3s						
SMA1	**SAN MARTINO**	**0.50**	**190**	Pg	Pb	13 15 29.5	-0.7
SMA1				Sg	Sb	13 15 38.1	+0.9
	163nm,0.3s						
SMA1	**SAN MARTINO**	**0.50**	**190**	Pg	Pb	13 15 29.5	-0.7
SMA1				Sg	Sb	13 15 38.1	+0.9
	163nm,0.3s						
TERO	**Teramo**	**0.52**	**168**	Pg	Pb	13 15 30.2	-0.2
TERO				Sg	Sb	13 15 38.8	+1.3
TERO	**Teramo**	**0.52**	**168**	Pg	Pb	13 15 30.2	-0.2
TERO				Sg	Sb	13 15 38.8	+1.3
ARVD	**Arcevia**	**0.53**	**315**	Pg	Pb	13 15 31.0	+0.4
ARVD				Sg	Sn	13 15 39.4	-1.4
	18nm,0.2s						
ARVD	**Arcevia**	**0.53**	**315**	Pg	Pb	13 15 31.0	+0.4
ARVD				Sg	Sn	13 15 39.4	-1.4
	18nm,0.2s						
RM32	**Poggio Cancell**	**0.57**	**192**	Pg	Pb	13 15 31.1	-0.3
RM32				Sg	Sb	13 15 40.5	+1.4
	110nm,0.2s						
RM32	**Poggio Cancell**	**0.57**	**192**	Pg	Pb	13 15 31.1	-0.3
RM32				Sg	Sb	13 15 40.5	+1.4
	110nm,0.2s						
SSFR	**Montelago di S**	**0.58**	**302**	Pg	Pb	13 15 31.6	0.0
SSFR				Sg	Sb	13 15 40.8	+1.4
	131nm,0.2s						
SSFR	**Montelago di S**	**0.58**	**302**	Pg	Pb	13 15 31.6	0.0
SSFR				Sg	Sb	13 15 40.8	+1.4
	131nm,0.2s						
LNSS	**Leonessa**	**0.61**	**210**	Pg	Pb	13 15 31.4	-0.6
LNSS				Sg	Sn	13 15 41.6	-1.2
	109nm,0.2s						
LNSS	**Leonessa**	**0.61**	**210**	Pg	Pb	13 15 31.4	-0.6
LNSS				Sg	Sn	13 15 41.6	-1.2
	109nm,0.2s						
RM33	**Pellescritta (**	**0.64**	**196**	Pg	Pb	13 15 32.1	-0.5
RM33				Sg	Sn	13 15 42.6	-1.1
	77nm,0.8s						
RM33	**Pellescritta (**	**0.64**	**196**	Pg	Pb	13 15 32.1	-0.5
RM33				Sg	Sn	13 15 42.6	-1.1
	77nm,0.8s						
FRON	**Frontone**	**0.66**	**306**	Pg	Pb	13 15 33.3	+0.4
	26nm,0.3s						
FRON	**Frontone**	**0.66**	**306**	Pg	Pb	13 15 33.3	+0.4
	26nm,0.3s						
MURB	**Monte Urbino**	**0.69**	**282**	Pg	Pb	13 15 33.5	0.0
	239nm,0.2s						
MURB	**Monte Urbino**	**0.69**	**282**	Pg	Pb	13 15 33.5	0.0
	239nm,0.2s						
UDBI	**Udbina**	**2.18**	**49**	*e*Pn	Pn	13 15 56.9	+1.8
UDBI				Sn	Sb	13 16 23.9	-1.4
UDBI	**Udbina**	**2.18**	**49**	*e*Pn	Pn	13 15 56.9	+1.7
UDBI				Sn	Sb	13 16 23.9	-1.5

JMA 02 13:18:52.0±0.1**, 36°.86N**×**141°.14E, h47^{km}**±1^{km}**, M2.9, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.36**	**312**	P	Pn	13 19 01.3	-0.3
ONAJ				S	Sn	13 19 07.9	-0.5
JHO	**Hitachi**	**0.52**	**242**	P	Pn	13 19 03.1	-0.2
JHO				S	Sn	13 19 11.1	-0.3
JFT	**Otama**	**0.92**	**316**	P	Pn	13 19 09.4	+0.8
JFT				*e*S	Sn	13 19 20.9	+0.2
JMM	**Marumori**	**1.04**	**345**	P	Pn	13 19 09.9	-0.3
JMM				S	Sn	13 19 23.6	0.0
JOU	**Okura**	**1.55**	**346**	P	Pn	13 19 18.1	+0.9
JOU				*e*S	Sn	13 19 37.1	+1.0
MAT	**Matsushiro**	**2.38**	**263**	P	Pn	13 19 30.4	+1.9
MAT				S	Sn	13 20 00.2	+3.7

GUC 02 13:20:56.0±0.4**, 23°.94S**×**67°.58W, h239^{km}**±15^{km}**, ML4.1, 6C-1D, Chile-Argentina border region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PB06	**IPOC Station P**	**2.21**	**303**	⇑*i*P	Pn	13 21 41.4	+1.6
PB06				*i* S	S	13 22 15.9	+1.7
ANCH	**Antofagasta**	**2.61**	**275**	⇑*i*P	Pn	13 21 45.5	+1.9
ANCH				*i* S	S	13 22 22.9	+1.8
PB09	**IPOC Station P**	**2.63**	**324**	⇑*i*P	Pn	13 21 46.2	+2.0
PB09				*i* S	S	13 22 24.3	+2.4
PB09				AML	AML	13 22 25.7	
	comp=N,386nm,0.5s						
PB10	**IPOC Station P**	**2.76**	**278**	⇑*i*P	Pn	13 21 47.4	+2.2
PB10				*i* S	S	13 22 25.9	+1.9
PB04	**IPOC Station P**	**2.86**	**304**	⇑*i*P	Pn	13 21 48.7	+2.1
PB04				AML	AML	13 22 32.0	
	comp=E,154nm,0.5s						
PB07	**IPOC Station P**	**3.07**	**316**	⇑*i*P	Pn	13 21 50.8	+1.9
PB07				*e*S	S	13 22 32.7	+2.3
PB07				AML	AML	13 22 36.6	
	comp=E,169nm,0.3s						
PB01	**IPOC Station P**	**3.38**	**328**	⇓*i*P	Pn	13 21 53.8	+1.5
PB01				*i* S	S	13 22 38.9	+2.2
PB01				AML	AML	13 22 41.2	
	comp=E,98nm,0.5s						
PATCX	**Punta Patache**	**3.92**	**322**	*e*P	Pn	13 22 00.8	+2.2
PATCX				*i* S	S	13 22 50.5	+2.5
PATCX				AML	AML	13 22 55.2	
	comp=E,84nm,0.5s						

*ISCJB **02** 13:29:12.9±0.6, 37°.09N±0°.04×2°.75E±0°.06, h12^{km}, Error ellipse: s-maj=7.6km s-min=5.0km az=144.7*
*CSEM **02** 13:29:13.6±0.3, 37°.01N×2°.78E, h10^{km}, mb3.7, Error ellipse: s-maj=11.6km s-min=6.0km az=56.0*
*MDD **02** 13:29:13.8±0.5, 37°.06N×2°.82E, h0^{km}, mb3.7/4, Error ellipse: s-maj=12.3km s-min=4.6km az=60.0, PRXIMO*
*CRAAG **02** 13:29:14.0, 36°.92N×2°.82E, Ml3.0*
ISC 02 13:29:13.1±0.9**, 37°.07N**±0°.05×**2°.82E**±0°.05**, h12^{km}, n25, σ1^{s}40**/39**, Western Mediterranean Sea**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ABA	**Alger-Bouzarea**	**0.32**	**147**	P	**Pg**	**13 29 19.4**	**-0.2**
ABA	**Alger-Bouzarea**	**0.32**	**147**	P	**Pg**	**13 29 19.4**	**-0.2**
ABA	**Alger-Bouzarea**	**0.32**	**147**	P	**Pg**	**13 29 19.4**	**-0.2**
EMHD	**Djebel Mahouad**	**0.88**	**173**	P	**Pg**	**13 29 29.1**	**-0.9**
EMHD	**Djebel Mahouad**	**0.88**	**173**	P	**Pg**	**13 29 29.1**	**-0.9**
EMHD	**Djebel Mahouad**	**0.88**	**173**	P	**Pg**	**13 29 29.1**	**-0.9**
ADJB	**Djebel Djouab**	**1.04**	**151**	P	**Pb**	**13 29 32.8**	**-0.3**
ADJB	**Djebel Djouab**	**1.04**	**151**	P	**Pb**	**13 29 32.8**	**-0.3**
ADJB	**Djebel Djouab**	**1.04**	**151**	P	**Pb**	**13 29 32.8**	**-0.3**

EIBI	Ibiza	2.27 330	P	Pn	13 29 51.3	+0.8
	1.1nm,0.2s,SNR=7.9					
EIBI			S	Sn	13 30 17.4	-1.0
	4.1nm,0.2s,SNR=7.9					
EIBI	Ibiza	2.27 330	P	Pn	13 29 51.3	+0.8
	1.1nm,0.2s,SNR=7.9					
EIBI			S	Sn	13 30 17.4	-1.0
	4.1nm,0.2s,SNR=7.9					
ETOS	Mallorca	2.69 360	P	Pn	13 29 57.7	+1.4
	5.5nm,0.3s,SNR=24					
ETOS			S	Sn	13 30 27.7	-1.1
	1.5nm,0.2s,SNR=6.6					
ETOS	Mallorca	2.69 360	P	Pn	13 29 57.7	+1.4
	5.5nm,0.3s,SNR=24					
ETOS			S	Sn	13 30 27.7	-1.1
	1.5nm,0.2s,SNR=6.6					
EMUR	La Murta	3.32 285	P	Pn	13 30 06.4	+1.5
	0.9nm,0.3s,SNR=7.9					
EMUR			S	Sn	13 30 44.7	+0.4
	2.1nm,0.3s,SNR=7.9					
EMUR	La Murta	3.32 285	P	Pn	13 30 06.4	+1.5
	0.9nm,0.3s,SNR=7.9					
EMUR			S	Sn	13 30 44.7	+0.4
	2.1nm,0.3s,SNR=7.9					
ETOB	Tobarra	3.80 296	P	Pn	13 30 12.9	+1.4
	1.1nm,0.2s,SNR=6.3					
ETOB			S	Sn	13 30 54.3	-1.8
	3.2nm,0.3s,SNR=4.6					
ETOB	Tobarra	3.80 296	P	Pn	13 30 12.9	+1.4
	1.1nm,0.2s,SNR=6.3					
ETOB			S	Sn	13 30 54.3	-1.8
	3.2nm,0.3s,SNR=4.6					
EMOS	Mosqueruela	4.17 323	P	Pn	13 30 17.6	+0.8
	0.4nm,0.2s,SNR=7.9					
EMOS			S	Sn	13 31 04.4	-1.2
	1.4nm,0.4s,SNR=7.9					
EMOS	Mosqueruela	4.17 323	P	Pn	13 30 17.6	+0.8
	0.4nm,0.2s,SNR=7.9					
EMOS			S	Sn	13 31 04.4	-1.2
	1.4nm,0.4s,SNR=7.9					
CFON	Fontmartina	4.69 356	P	Pn	13 30 26.0	+2.2
	1.8nm,0.2s,SNR=5.6					
CFON	Fontmartina	4.69 356	P	Pn	13 30 26.0	+2.2
	1.8nm,0.2s,SNR=5.6					
EQES	Quesada	4.75 281	P	Pn	13 30 26.3	+1.8
	0.3nm,0.2s,SNR=7.9					
EQES			S	Sn	13 31 18.9	-0.6
	2.7nm,0.4s,SNR=7.9					
EQES	Quesada	4.75 281	P	Pn	13 30 26.3	+1.8
	0.3nm,0.2s,SNR=7.9					
EQES			S	Sn	13 31 19.0	-0.6
	2.7nm,0.4s,SNR=7.9					
EMIR	Miracle	4.94 349	P	Pn	13 30 29.8	+2.6
	2.5nm,0.2s,SNR=7.9					
EMIR			S	Sn	13 31 22.2	-2.1
	1.2nm,0.3s,SNR=7.9					
EMIR	Miracle	4.94 349	P	Pn	13 30 29.8	+2.6
	2.5nm,0.2s,SNR=7.9					
EMIR			S	Sn	13 31 22.2	-2.1
	1.2nm,0.3s,SNR=7.9					

*ISK **02** 13:37:01.9, 39°.69N×34°.70E, h10km, MD2.7*
*CSEM **02** 13:37:02.4±0.2, 39°.67N×34°.72E, h2km, MD2.6, Error ellipse: s-maj=5.1km s-min=4.8km az=144.0*
*DDA **02** 13:37:02.5, 39°.70N×34°.73E, h7km, Md2.6*
ISC 02 13:37:02.5±1.1**, 39°.70N**±0°.02×**34°.72E**±0°.02**, h19**km±2km**, n24, σ0^{s}55**/38**, Turkey**

Code	Station Name	Δ° AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CDAG	Cicekdag	0.28 255	*i* P	Pg	13 37 08.2	-0.5
CDAG			*i* S	Sb	13 37 13.1	+0.1
CDAG	Cicekdag	0.28 255	P	Pg	13 37 08.2	-0.5
CDAG			S	Sb	13 37 13.1	+0.1
YOZ	Yozgat	0.47 97	*e*PG	Pg	13 37 11.6	-0.5
YOZ			*e*SG	Sb	13 37 18.8	-0.2
YOZ	Yozgat	0.47 97	*e*Pg	Pg	13 37 11.6	-0.5
YOZ			*e*Sg	Sb	13 37 18.8	-0.2
CORM	Corum	0.48 352	*e*PG	Pg	13 37 11.9	-0.5
CORM			*e*SG	Sb	13 37 19.5	+0.1
CORM	Corum	0.48 352	*e*Pg	Pg	13 37 11.9	-0.5
CORM			*e*Sg	Sb	13 37 19.5	+0.1
COAL	Corum-Alaca	0.59 20	*i* P	Pg	13 37 13.7	-0.7
COAL			*i* S	Sb	13 37 22.7	+0.4
COAL	Corum-Alaca	0.59 20	P	Pg	13 37 13.7	-0.7
COAL			S	Sb	13 37 22.7	+0.4
KAMT	Kaman	0.84 247	*e*PG	Pb	13 37 18.3	-0.3
KAMT	Kaman	0.84 247	*e*Pg	Pb	13 37 18.3	-0.3
AVNS	Nevsehir-Avano	0.90 173	*i* P	Pg	13 37 19.4	-0.6
AVNS			*i* S	Sn	13 37 32.9	+0.2
AVNS	Nevsehir-Avano	0.90 173	P	Pg	13 37 19.4	-0.6
AVNS			S	Sn	13 37 32.9	+0.2
SERE	Sereflikochisa	1.17 230	*e*PN	Pg	13 37 24.4	-0.7
SERE	Sereflikochisa	1.17 230	*e*Pn	Pg	13 37 24.4	-0.7
CUSAR	Sarkisla-SIVAS	1.21 103	*i* P	Pb	13 37 24.7	-0.2
CUSAR			*i* S	Sg	13 37 42.9	+0.9
CUSAR	Sarkisla-SIVAS	1.21 103	P	Pb	13 37 24.7	-0.2
CUSAR			S	Sg	13 37 42.9	+0.9
BNN	Bunyan	1.22 134	*e*PN	Pg	13 37 25.6	-0.5
BNN	Bunyan	1.22 134	*e*Pn	Pg	13 37 25.6	-0.5
AFSR	Af¯ar-Bala (A	1.29 259	*e*PN	Pg	13 37 27.1	-0.4
AFSR	Af¯ar-Bala (A	1.29 259	*e*Pn	Pg	13 37 27.1	-0.4
KKUL	Konya-Kulu	1.49 250	*i* P	Pg	13 37 31.0	-0.2
KKUL	Konya-Kulu	1.49 250	P	Pg	13 37 31.0	-0.2
BOYT	Boyabat	1.73 5	*i* P	Pg	13 37 34.9	-0.8
BOYT			*i* S	Sg	13 37 59.1	+0.9
BOYT	Boyabat	1.73 5	P	Pg	13 37 34.9	-0.8
BOYT			S	Sg	13 37 59.1	+0.9

*NIED **02** 13:42:00, 35°.90N×140°.80E, h17km, Mw3.4 Best double couple: M0 1.39000×10^14 NP1:φs163.00000°, δ35.00000°, λ-55.00000°. NP2:φs302.00000°, δ62.00000°, λ-112.00000°.*
JMA 02 13:42:34.2, 35°.89N×140°.85E, h18km±1km**, M3.7, 1D, Near east coast of eastern Honshu**

Code	Station Name	Δ° AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	Chosi	0.19 178	⇓P	Pg	13 42 38.9	0.0
CHOJ			S	Sg	13 42 42.2	+0.1
JYT	Yasato	0.63 303	P	Pb	13 42 45.9	-0.7
JYT			S	Sb	13 42 54.9	-0.2
JHO	Hitachi	0.75 343	P	Pb	13 42 48.2	-0.6
JHO			S	Sb	13 42 58.4	-0.4
MAT	Matsushiro	2.23 288	P	Pn	13 43 09.7	-0.6
MAT			S	Sn	13 43 37.1	-0.4

*NIED **02** 13:49:00, 39°.20N×143°.10E, h14km, Mw4.0 Best double couple: M0 9.75000×10^14 NP1:φs181.00000°, δ53.00000°, λ-176.00000°. NP2:φs89.00000°, δ87.00000°, λ-37.00000°.*
*IDC **02** 13:49:19.8±0.6, 39°.14N×143°.08E, h0km, mb3.9/16, mb1 4.2/20, mb1mx4.0/38, mbtmp4.0/20, ML2.8/2, MS3.1/7, Ms1 3.1/7, ms1mx2.8/46, Error ellipse: s-maj=19.6km s-min=14.1km az=107.0*
*JMA **02** 13:49:22.1±0.2, 39°.23N×143°.11E, h12km±3km, M4.3*
*NEIC **02** 13:49:24.7±0.5, 39°.11N×143°.22E, h35km, mb4.3/5, Error ellipse: s-maj=12.0km s-min=7.8km az=114.0*
ISC 02 13:49:19.9±1.8**, 39°.10N**±0°.04×**143°.14E**±0°.06**, h3**km±11km**, n54, σ1^{s}03**/50**, mb4.2**/21**, MS3.3**/3**, Off east coast of Honshu**

Code	Station Name	Δ° AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MIYJ	Miyakonagasawa	1.13 295	P	Pb	13 49 41.9	-0.2
MIYJ			S	Sg	13 49 55.8	-0.4
OFUJ	Ofunato	1.15 270	P	Pn	13 49 42.8	-0.1
JTH	Tanohata	1.30 311	P	Pg	13 49 44.0	-0.8
JTH			*e*S	Sg	13 50 01.0	-0.6
JOM	Ohasama	1.48 285	P	Pb	13 49 47.8	-0.3
JOM			S	Sb	13 50 06.0	-1.4
JMK	Ichinoseki	1.50 265	P	Pg	13 49 48.7	0.0
JIO	Ouri	1.54 246	P	Pg	13 49 49.6	+0.1
JIO			S	Sg	13 50 09.8	+0.4
JANG	Nango	1.79 316	P	Pn	13 49 51.2	-0.5
JANG			*e*S	Sn	13 50 13.3	-1.7
JRG	Rokugo	1.97 279	P	Pb	13 49 56.5	+0.1
JOU	Okura	2.07 250	P	Pb	13 49 58.4	+0.2
JYK	Kaneyama	2.18 266	P	Pb	13 49 59.9	0.0
JAH	Hinai	2.22 300	P	Pn	13 49 58.7	+1.0
JAH			*e*S	Sn	13 50 26.5	+0.9
MAJO	Matsushiro	4.67 238	*e*Pn	Pn	13 50 35.7	+4.4
MAJO			*e*Sn	Sn	13 51 26.8	+0.7
MAT	Matsushiro	4.67 238	P	Pn	13 50 35.8	+4.5
MAT			*e*S	Sg	13 51 50.4	+0.6
MJAR	Matsushiro Arr	4.67 238	Pn	Pn	13 50 35.9	+4.5
	6.8nm,0.3s,baz=36,slow=13,SNR=64					
MJAR			LR	LR	13 52 24.5	
	comp=Z,117nm,18.8s,baz=45,slow=40					
JHJ2	Mitsune	6.55 205	*e*Pn	Pn	13 50 59.0	+1.8
JHJ2			*e*Sn	Sn	13 52 11.9	-0.5
JHJ	Hachijo jima 2	6.56 206	Pn	Pn	13 50 59.0	+1.8
	29nm,0.3s,baz=75,slow=20,SNR=6.5					
JHJ			Sn	Sn	13 52 09.3	-3.3
	9.5nm,0.3s,baz=73,slow=19,SNR=2.0					
USRK	Ussuriysk Ar.	9.78 305	Pn	Pn	13 51 43.9	+2.5
	0.3nm,0.3s,baz=108,slow=14,SNR=5.5					
USRK			LR	LR	13 55 06.9	
	comp=Z,65nm,19.6s,baz=54,slow=36					
CBIJ	Chichi jima	12.00 184	Pn	Pn	13 52 10.5	-1.4
CBIJ			Sn	Sn	13 54 16.1	-10
JCJ	Chichijima	12.00 184	Pn	Pn	13 52 10.5	-1.4
	6.5nm,0.3s,baz=277,slow=21,SNR=8.9					
JCJ			Sn	Sn	13 54 16.1	-10
	baz=294,slow=20					
KSRS	Korea Array	12.07 267	Pn	Pn	13 52 19.1	+6.2
	0.1nm,0.3s,baz=76,slow=13,SNR=2.9					
KSAR	Wonju Array Be	12.11 267	Pn	Pn	13 52 19.1	+5.7
KLR	Kul'dur	13.00 325	Pn	Pn	13 52 26.8	+1.3
	0.1nm,0.3s,baz=147,slow=17,SNR=2.5					
KLR			LR	LR	13 57 38.7	
	comp=Z,87nm,18.5s,baz=115,slow=38					
PETK	Petropavlovsk-	17.22 31	Pn	Pn	13 53 21.0	-0.3
	0.1nm,0.3s,baz=215,slow=9.6,SNR=3.0					
PETK			LR	LR	14 00 28.7	
	comp=Z,23nm,18.4s,baz=219,slow=39					
MA2	Magadan	21.06 11	P	P	13 54 04.6	-0.3
	11nm,0.6s,baz=218,slow=9.9,SNR=20					
YAK	Yakutsk	24.40 345	LR	LR	14 03 51.0	
	comp=Z,39nm,20.7s,baz=171,slow=36					
SEY	Seymchan	24.51 10	P	P	13 54 40.6	+0.3
	9.2nm,0.7s,baz=193,slow=6.8,SNR=59					
ULN	Ulaanbaatar	27.40 300	*e*P	P	13 55 06.3	-0.5
	0.4nm,0.3s					
SONM	Songino Array	27.84 300	P	P	13 55 09.6	-1.1
	1.0nm,0.6s,baz=92,slow=7.8,SNR=4.8					
H11N2	WAKE ISLAND Hy	28.15 126	T	T	14 24 41.7	
	baz=319,slow=74,SNR=204					
H11N1	WAKE ISLAND Hy	28.16 126	T	T	14 24 47.4	
	baz=319,slow=74,SNR=133					
H11N3	WAKE ISLAND Hy	28.17 126	T	T	14 24 47.9	
	baz=319,slow=74,SNR=165					
H11S3	WAKE ISLAND Hy	28.95 128	T	T	14 27 02.8	
	baz=318,slow=74,SNR=19					
H11S2	WAKE ISLAND Hy	28.97 128	T	T	14 27 06.8	
	baz=250,slow=74,SNR=15					
ZALV	Zalesovo Beam	41.57 311	P	P	13 57 08.2	-0.5
	2.0nm,0.4s,baz=93,slow=7.7,SNR=10					
NRIK	Noril'sk	41.99 334	LR	LR	14 16 17.1	
	comp=Z,39nm,18.8s,baz=114,slow=39					
MKAR	Makanchi Array	44.21 301	P	P	13 57 30.4	+0.1
	1.3nm,0.6s,baz=85,slow=9.6,SNR=22					
KURK	Kurchatov	45.76 307	*e*P	P	13 57 42.4	0.0
	8.9nm,0.7s					
ILAR	Eielson Array	47.02 33	P	P	13 57 52.7	+0.5
	2.1nm,0.6s,baz=262,slow=6.4,SNR=35					
TKM2	Tokmak 2	49.87 297	*e*P	P	13 58 14.9	+0.2
	4.4nm,1.0s					
INK	Inuvik	51.93 28	P	P	13 58 30.5	+0.9
	1.2nm,0.4s,baz=278,slow=5.9,SNR=15					
ABKAR	Akbulak array	57.66 310	*e*P	P	13 59 11.4	0.0
	1.2nm,0.4s					
CTAO	Charters Tower	58.95 177	P	P	13 59 16.9	-3.7
WRAB	Tennant Creek	59.30 190	P	P	13 59 20.8	-2.2
	1.9nm,0.8s					
WRA	Warramunga Arr	59.31 190	P	P	13 59 23.9	+0.7
	0.7nm,0.4s,baz=7.2,slow=6.9,SNR=27					
YKA	Yellowknife Ar	61.34 31	P	P	13 59 36.8	+0.2
	0.5nm,0.6s,baz=302,slow=6.3,SNR=16					
ASAR	Alice Springs	63.03 190	P	P	13 59 49.0	+0.6
	0.5nm,0.9s,baz=357,slow=5.4,SNR=8.3					
FINES	FINESS Array B	67.62 332	P	P	14 00 17.0	-0.7
	1.3nm,0.7s,baz=55,slow=7.2,SNR=5.4					
NVAR	Mina Array Bea	72.67 54	P	P	14 00 49.5	+0.1
	0.2nm,0.3s,baz=298,slow=6.1,SNR=2.3					
HFS	Hagfors	72.76 336	LR	LR	14 39 45.9	
	comp=Z,25nm,18.8s,baz=360,slow=42					
NB2	NORSAR Subarra	72.80 338	P	P	14 00 49.2	-0.3
	comp=Z,1.9nm,0.7s,baz=36,slow=6.2					
NOA	NORSAR Array B	72.80 338	P	P	14 00 49.4	-0.1
	comp=Z,1.7nm,0.7s,baz=37,slow=6.1,SNR=4.9					
PDAR	Pinedale Array	75.25 47	P	P	14 01 04.5	0.0
	comp=Z,0.4nm,0.7s,baz=54,slow=2.6,SNR=3.5					
GERES	GERESS Array B	81.66 329	P	P	14 01 40.0	+0.5
	comp=Z,0.2nm,0.4s,baz=79,slow=6.5,SNR=3.1					
TXAR	Lajitas Array	87.79 53	P	P	14 02 10.9	+0.1
	comp=Z,0.2nm,0.5s,baz=298,slow=4.0,SNR=3.8					

*IDC **02** 13:59:43.1±8.8, 40°.61N×141°.96E, h0km, mb3.5/2, mb1 3.6/3, mb1mx3.1/45, mbtmp3.3/3, MS3.2/1, Ms1 3.2/1, ms1mx2.2/40, Error ellipse: s-maj=217.0km s-min=81.7km az=153.0*
*ISCJB **02** 14:00:01.9±1.0, 38°.39N±0°.05×142°.30E±0°.09, h35km, mb3.6/2, MS3.3/1, Error ellipse: s-maj=9.8km s-min=6.7km az=6.1*
*JMA **02** 14:00:02.7±0.1, 38°.43N×142°.23E, h35km±2km, M3.5*
ISC 02 14:00:03.1±1.5**, 38°.43N**±0°.06×**142°.24E**±0°.10**, h35**km**, n22, σ0^{s}79**/20**, Near east coast of eastern Honshu**

Code	Station Name	Δ° AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	Ouri	0.70 272	P	Pn	14 00 15.8	-0.7
JIO			S	Sn	14 00 24.8	-1.3
OFUJ	Ofunato	0.79 326	P	Pn	14 00 17.2	-0.6
JMK	Ichinoseki	0.95 304	P	Pn	14 00 19.8	-0.2
JMK			S	Sn	14 00 31.9	-0.5
MIYJ	Miyakonagasawa	1.19 344	P	Pn	14 00 23.1	-0.2
MIYJ			S	Sn	14 00 38.6	+0.3
JOU	Okura	1.24 268	P	Pn	14 00 24.4	+0.4
JMM	Marumori	1.27 244	P	Pn	14 00 23.7	-0.7
JOM	Ohasama	1.28 325	P	Pn	14 00 24.8	+0.3
JOM			S	Sn	14 00 40.8	+0.4
JYK	Kaneyama	1.55 289	P	Pn	14 00 28.9	+0.7
JRG	Rokugo	1.58 308	P	Pn	14 00 29.6	+0.9
JKZ	Kuzumaki	1.71 336	P	Pn	14 00 31.4	+0.9
JYS	Shirataka	1.72 264	P	Pn	14 00 30.8	+0.2
JYS			S	Sn	14 00 52.3	+0.9
JFT	Otama	1.76 239	P	Pn	14 00 31.5	+0.4
MJAR	Matsushiro Arr	3.72 241	Pn	Pn	14 00 59.6	+1.6
	baz=31,slow=14,SNR=1.2					
H11N2	WAKE ISLAND Hy	28.34 124	T	T	14 36 18.6	
	baz=318					
H11N1	WAKE ISLAND Hy	28.35 124	T	T	14 36 19.6	
	baz=318					
H11N3	WAKE ISLAND Hy	28.36 124	T	T	14 36 20.2	
	baz=318					
H11S1	WAKE ISLAND Hy	29.11 126	T	T	14 37 10.7	
	baz=318,slow=76,SNR=4.5					
H11S3	WAKE ISLAND Hy	29.11 126	T	T	14 37 10.8	
	baz=318,slow=76,SNR=5.9					
H11S2	WAKE ISLAND Hy	29.12 126	T	T	14 37 11.9	
	baz=318,slow=76,SNR=4.7					
WRA	Warramunga Arr	58.53 189	P	P	14 09 56.1	+0.1
	0.4nm,0.5s,baz=6.3,slow=7.4,SNR=6.1					
SPITS	Spitsbergen Ar	59.28 349	LR	LR	14 34 34.1	
	comp=Z,21nm,18.2s,baz=155,slow=37					
ASAR	Alice Springs	62.26 189	P	P	14 10 20.6	-0.9
	0.3nm,0.7s,baz=9.9,slow=6.3,SNR=6.5					

IDC 02 14:09:42.3±9.6**, 36°.34N**×**144°.12E, h0**km**, mb3.4**/2**, mb1 3.5**/3**, mb1mx3.1**/36**, mbtmp3.3**/3**, ML2.7**/1**, Error ellipse: s-maj=211.1km s-min=47.3km az=33.0, Off east coast of Honshu**

Code	Station Name	Δ° AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MJAR	Matsushiro Arr	4.77 274	Pn	Pn	14 10 55.3	-0.1
	0.3nm,0.3s,baz=90,slow=15,SNR=4.1					
WRA	Warramunga Arr	56.73 191	P	P	14 19 27.7	-0.2
	0.3nm,0.5s,baz=12,slow=7.1,SNR=6.4					
ASAR	Alice Springs	60.45 191	P	P	14 19 53.9	0.0
	0.2nm,0.9s,baz=8.1,slow=6.8,SNR=4.5					

*IDC **02** 14:10:12.6±1.3, 36°.84N×144°.00E, h0km, mb3.5/6, mb1 3.7/9, mb1mx3.5/38, mbtmp3.6/9, ML3.2/3, Error ellipse: s-maj=34.5km s-min=21.0km az=89.0*
*ISCJB **02** 14:10:16.1±0.9, 36°.74N±0°.07×143°.68E±0°.08, h33km, mb3.5/6, Error ellipse: s-maj=11.3km s-min=8.9km az=147.6*
ISC 02 14:10:18.3±1.2**, 36°.76N**±0°.09×**143°.7E**±0°.1**, h35**km**, n17, σ1^{s}15**/13**, mb3.5**/6**, Off east coast of Honshu**

Code	Station Name	Δ° AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MJAR	Matsushiro Arr	4.44 269	Pn	Pn	14 11 24.2	+1.0
	2.0nm,0.3s,baz=88,slow=15,SNR=13					
MJAR			Sn	Sn	14 12 13.2	-0.4
	1.5nm,0.3s,baz=117,slow=17,SNR=6.0					
MAT	Matsushiro	4.44 269	P	Pn	14 11 24.0	+0.9
MAT			*e*S	Sn	14 12 12.5	-1.1
JHJ	Hachijo jima 2	4.86 223	Pn	Pn	14 11 29.8	+0.9
	8.6nm,0.3s,baz=197,slow=19,SNR=3.7					
JHJ			Sn	Sn	14 12 22.1	-1.9
	10nm,0.3s,baz=68,slow=19,SNR=3.3					
JCJ	Chichijima	9.72 188	Sn	Sn	14 14 14.4	-9.2
	baz=270,slow=20					
USRK	Ussuriysk Ar.	11.61 313	Pn	Pn	14 13 00.9	-0.5
	0.2nm,0.3s,baz=92,slow=17,SNR=4.1					
H11N2	WAKE ISLAND Hy	26.44 124	T	T	14 41 57.0	
	baz=318,slow=76,SNR=15					
H11N1	WAKE ISLAND Hy	26.45 124	T	T	14 41 57.8	
	baz=318,slow=76,SNR=18					
H11N3	WAKE ISLAND Hy	26.45 124	T	T	14 41 58.4	
	baz=318,slow=76,SNR=13					
SEY	Seymchan	26.74 9	P	P	14 15 52.9	-1.4
	0.9nm,0.6s,baz=160,slow=3.9,SNR=6.7					
H11S1	WAKE ISLAND Hy	27.18 126	T	T	14 43 23.9	
	baz=319,slow=74					
H11S3	WAKE ISLAND Hy	27.18 126	T	T	14 43 23.1	
	baz=319,slow=74					
H11S2	WAKE ISLAND Hy	27.19 126	T	T	14 43 21.0	
	baz=319					
SONM	Songino Array	29.47 304	P	P	14 16 20.7	+1.7
	0.2nm,0.5s,baz=91,slow=5.8,SNR=2.0					
MKAR	Makanchi Array	45.83 303	P	P	14 18 36.3	-0.5
	0.3nm,0.8s,baz=90,slow=7.3,SNR=3.6					
WRA	Warramunga Arr	57.09 191	P	P	14 20 01.4	+0.3
	0.3nm,0.5s,baz=9.4,slow=7.1,SNR=5.5					
ASAR	Alice Springs	60.81 190	P	P	14 20 27.3	+0.4
	0.3nm,0.9s,baz=1.4,slow=7.4,SNR=3.2					
FINES	FINESS Array B	69.91 333	P	P	14 21 25.0	-0.3
	1.8nm,1.1s,baz=36,slow=7.3,SNR=3.2					

IDC 02 14:10:39.7±1.5**, 23°.66S**×**115°.60W, h0**km**, mb3.7**/4**, mb1 4.1**/4**, mb1mx3.8**/25**, mbtmp3.7**/4**, MS3.8**/2**, Ms1 3.7**/2**, ms1mx3.1**/23**, Error ellipse: s-maj=56.4km s-min=39.6km az=28.0, Southern East Pacific Rise**

Code	Station Name	Δ° AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PLCA	Paso Flores	41.26 125	LR	LR	14 30 57.1	
	comp=Z,122nm,19.2s,baz=310,slow=30					
LPAZ	La Paz	45.05 90	P	P	14 18 57.9	-0.4
	1.9nm,0.8s,baz=248,slow=6.3,SNR=5.2					
CPUP	Villa Florida	52.50 106	LR	LR	14 38 17.0	
	comp=Z,66nm,18.1s,baz=223,slow=32					
NVAR	Mina Array Bea	61.81 358	P	P	14 21 01.2	+0.6
	0.3nm,0.4s,baz=204,slow=6.5,SNR=3.3					
PDAR	Pinedale Array	66.33 5	P	P	14 21 30.6	+0.3
	0.3nm,0.7s,baz=189,slow=11,SNR=3.5					
YKA	Yellowknife Ar	85.86 0	P	P	14 23 20.2	-0.4
	0.5nm,0.8s,baz=177,slow=5.3,SNR=8.9					
H11S2	WAKE ISLAND Hy	86.58 292	T	T	15 59 27.4	
	baz=117,slow=75,SNR=14					
H11S1	WAKE ISLAND Hy	86.59 292	T	T	15 59 26.4	
	baz=117,slow=75,SNR=18					
H11S3	WAKE ISLAND Hy	86.60 292	T	T	15 59 28.9	
	baz=117,slow=75,SNR=16					
ZALV	Zalesovo Beam	146.08 338	PKPbc	PKPdf	14 30 18.7	-1.7
	1.4nm,0.8s,baz=42,slow=4.6,SNR=5.3					
CMAR	Chiang Mai Arr	147.41 268	PKPbc	PKPbc	14 30 26.2	0.0
	0.7nm,0.6s,baz=76,slow=2.1,SNR=4.1					
BRTR	Keskin Array B	149.50 51	PKPbc	PKPbc	14 30 31.8	+0.5
	1.8nm,0.9s,baz=283,slow=1.9,SNR=5.2					
BVAR	Borovoye Array	150.33 353	PKPbc	PKPbc	14 30 32.0	-0.7
	0.5nm,0.7s,baz=42,slow=4.5,SNR=2.3					
KURBB	Kurchatov Arra	150.93 341	PKPbc	PKPbc	14 30 33.8	-0.3
	0.5nm,0.8s,baz=15,slow=1.8,SNR=4.6					

JMA 02 14:17:50.5±0.3**, 39°.69N**×**143°.84E, h3**km±4km**, M3.7, Off east coast of Honshu**

Code	Station Name	Δ° AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JTH	Tanohata	1.54 280	P	Pn	14 18 18.5	-0.4
MIYJ	Miyakonagasawa	1.56 266	P	Pn	14 18 19.3	+0.1
OFUJ	Ofunato	1.79 251	P	Pn	14 18 22.3	0.0
JANG	Nango	1.91 292	P	Pn	14 18 24.0	0.0
JOM	Ohasama	1.98 265	P	Pn	14 18 25.6	+0.7
JMK	Ichinoseki	2.16 251	P	Pn	14 18 28.0	+0.6
JTM	Tenmabayashi	2.39 298	*e*S	Sn	14 19 01.3	+1.0
JRG	Rokugo	2.50 264	P	Pn	14 18 32.8	+0.8
JAH	Hinai	2.51 282	P	Pn	14 18 33.5	+1.3
JNBK	Urakawa-nobuka	2.71 343	*e*S	Sn	14 19 10.5	+2.1
JOU	Okura	2.81 243	P	Pn	14 18 37.2	+0.9
JCH	Churui	2.94 353	*e*S	Sn	14 19 15.7	+1.7
JAR	Ashorobuto	3.60 359	P	Pn	14 18 49.4	+2.2

*IDC **02** 14:18:00.8±0.8, 37°.97N×143°.56E, h0km, mb3.7/10, mb1 3.9/13, mb1mx3.7/51, mbtmp3.9/13, ML4.1/2, MS2.6/2, Ms1 2.6/2, ms1mx2.2/48, Error ellipse: s-maj=24.4km s-min=16.6km az=88.0*
*ISCJB **02** 14:18:01.4±0.5, 37°.97N±0°.04×143°.62E±0°.05, h19km, mb3.8/13, Error ellipse: s-maj=6.3km s-min=5.8km az=176.2*
*JMA **02** 14:18:04.4±0.2, 38°.18N×143°.49E, h30km, M3.9*
*NEIC **02** 14:18:05.8±0.5, 37°.99N×143°.59E, h35km, mb4.2/3, Error ellipse: s-maj=12.0km s-min=8.6km az=102.0*
ISC 02 14:18:03.2±0.7**, 37°.97N**±0°.06×**143°.54E**±0°.08**, h19**km**, n37, σ2^{s}06**/42**, mb3.8**/13**, Off east coast of Honshu**

Code	Station Name	Δ° AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	Ouri	1.80 286	P	Pn	14 18 33.1	0.0
JIO			*e*S	Sn	14 18 53.8	-1.6
JMK	Ichinoseki	2.07 299	P	Pn	14 18 36.4	-0.5
JMM	Marumori	2.18 268	P	Pn	14 18 39.0	+0.6
JMM			*e*S	Sn	14 19 05.0	+0.2
JOU	Okura	2.31 281	P	Pn	14 18 41.3	+1.1
JOU			*e*S	Sn	14 19 07.7	-0.3
JFT	Otama	2.58 261	P	Pn	14 18 46.1	+2.2
JFT			*e*S	Sn	14 19 16.2	+1.4
JYK	Kaneyama	2.68 292	P	Pn	14 18 45.8	+0.6
JRY	Ryogami san	4.20 244	P	Pn	14 19 09.3	+3.2
MJAR	Matsushiro Arr	4.49 253	Pn	Pn	14 19 13.8	+3.6
	2.5nm,0.3s,baz=53,slow=10,SNR=26					
MJAR			LR	LR	14 20 51.4	
	comp=Z,60nm,20.4s,baz=70,slow=38					
MAJO	Matsushiro	4.49 253	*e*Pn	Pn	14 19 11.8	+1.6
MAJO			*e*Sn	Sn	14 20 03.4	+1.6
MAT	Matsushiro	4.49 253	P	Pn	14 19 13.9	+3.7
JHJ2	Mitsune	5.72 213	*e*Pn	Pn	14 19 28.2	+1.2
JHJ2			*e*Sn	Sn	14 20 35.1	+3.0
JHJ	Hachijo jima 2	5.72 213	Pn	Pn	14 19 26.8	-0.4
	8.3nm,0.3s,baz=93,slow=18,SNR=2.8					
JHJ			Sn	Sn	14 20 29.0	-3.3
	6.0nm,0.3s,baz=66,slow=20,SNR=2.1					
USRK	Ussuriysk Ar.	10.71 309	Pn	Pn	14 20 37.1	+1.7
	0.3nm,0.3s,baz=114,slow=16,SNR=3.7					
CBIJ	Chichi jima	10.90 186	Pn	Pn	14 20 38.3	+0.2
CBIJ			Sn	Sn	14 22 34.4	-5.2
JCJ	Chichijima	10.90 186	Pn	Pn	14 20 38.3	+0.2
	2.2nm,0.3s,baz=242,slow=18,SNR=3.7					
JCJ			Sn	Sn	14 22 34.4	-5.2
	baz=360,slow=19					
KSRS	Korea Array	12.38 272	LR	LR	14 25 22.8	
	comp=Z,31nm,18.9s,baz=65,slow=36					
KLR	Kul'dur	14.12 327	Pn	Pn	14 21 18.5	-3.5
	0.1nm,0.3s,baz=120,slow=20,SNR=2.5					
JOW	Kunigami	16.99 234	*e*Pn	Pn	14 21 57.3	-2.5
SEY	Seymchan	25.57 9	P	P	14 23 30.9	+0.2
	1.3nm,0.8s,baz=216,slow=12,SNR=6.2					
H11N2	WAKE ISLAND Hy	27.23 125	T	T	14 52 24.3	

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
	baz=317,slow=75						
H11N1	WAKE ISLAND Hy	27.24	125	T	T	14 52 23.0	
	baz=317						
H11N3	WAKE ISLAND Hy	27.25	125	T	T	14 52 24.9	
	baz=317,slow=75						
ULN	Ulaanbaatar	28.26	302	eP	P	14 23 55.4	+0.2
SONM	Songino Array	28.70	302	P	P	14 24 00.2	+1.1
	0.7nm,0.5s,baz=97,slow=9.4,SNR=5.1						
ENH	Enshi	29.10	265	P	P	14 24 03.5	+0.8
ZALV	Zalesovo Beam	42.55	312	P	P	14 25 58.0	+0.6
	0.7nm,0.6s,baz=84,slow=7.2,SNR=3.6						
MKAR	Makanchi Array	45.07	302	P	P	14 26 18.3	+0.5
	0.7nm,0.6s,baz=85,slow=12,SNR=8.5						
KURK	Kurchatov	46.70	308	eP	P	14 26 29.1	-1.4
	5.5nm,0.8s						
WRAB	Tennant Creek	58.23	190	eP	P	14 27 57.7	+1.4
	1.6nm,0.8s						
WRA	Warramunga Arr	58.25	190	P	P	14 27 56.2	-0.2
	3.0nm,0.7s,baz=9.1,slow=7.1,SNR=16						
ABKAR	Akbulak array	58.63	310	eP	P	14 27 59.1	+0.3
	0.6nm,0.3s						
AKTO	Aktyubinsk	59.31	312	P	P	14 28 04.3	+0.8
	0.5nm,0.8s,baz=70,slow=18,SNR=2.4						
ASAR	Alice Springs	61.97	190	P	P	14 28 23.4	+1.6
	0.7nm,0.7s,baz=5.9,slow=6.8,SNR=12						
YKA	Yellowknife Ar	62.15	31	P	P	14 28 22.4	-0.2
	0.2nm,0.8s,baz=300,slow=6.1,SNR=3.6						
FINES	FINESS Array B	68.77	333	P	P	14 29 05.6	+0.2
	1.6nm,0.9s,baz=41,slow=11,SNR=3.2						
NVAR	Mina Array Bea	73.07	54	P	P	14 29 34.0	+1.7
	0.4nm,0.7s,baz=293,slow=5.8,SNR=2.6						
NVAR	Mina Array Bea	73.07	54	P	P	14 29 34.0	+1.7

*NIED **02** 14:22:00, 38.°40N×142.°30E, h35km, Mw3.8 Best double couple: M0 4.99000×10^14 NP1:φs45.00000°, δ34.00000°, λ-115.00000°. NP2:φs255.00000°, δ60.00000°, λ-74.00000°.*

*JMA **02** 14:22:24.7±0.1, 38.°39N×142.°26E, h34km±2km, M3.8*

*IDC **02** 14:22:31.4±3.3, 38.°25N×142.°10E, h77km±29km, mb3.3/8, mb1 3.5/10, mb1mx3.2/53, mbtmp3.7/10, Error ellipse: s-maj=29.7km s-min=17.7km az=76.0*

ISC 02 14:22:23.7±3.6**, 38.°36N**±0.°05×**142.°26E**±0.°07**, h16**km±22km**, n31, σ1.°02**/29**, mb3.7**/8**, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	Ouri	0.72	278	P	Pb	14 22 38.3	+0.5
JIO				S	Sb	14 22 47.7	+0.2
OFUJ	Ofunato	0.86	328	P	Pb	14 22 40.1	-0.1
JMK	Ichinoseki	1.01	306	P	Pb	14 22 42.6	-0.1
JMK				S	Sb	14 22 55.2	-0.5
JOU	Okura	1.25	271	P	Pb	14 22 46.9	0.0
JOU				S	Sb	14 23 02.4	-0.5
JMM	Marumori	1.25	247	P	Pn	14 22 46.2	-0.4
MIYJ	Miyakonagasawa	1.27	344	P	Pn	14 22 45.7	-1.0
MIYJ				S	Sb	14 23 00.9	-2.3
JOM	Ohasama	1.34	326	P	Pn	14 22 47.7	-0.1
JYK	Kaneyama	1.59	291	eS	Sn	14 23 10.7	-0.7
JRG	Rokugo	1.64	310	P	Pb	14 22 52.7	-0.8
JYS	Shirataka	1.73	266	P	Pn	14 22 53.7	+0.6
JYS				eS	Sn	14 23 14.8	-0.1
JFT	Otama	1.73	242	P	Pn	14 22 54.1	+0.9
JFT				S	Sn	14 23 14.3	-0.7
JKZ	Kuzumaki	1.78	336	P	Pn	14 22 54.3	+0.5
JANG	Nango	2.09	344	P	Pn	14 22 58.8	+0.7
MJAR	Matsushiro Arr	3.70	242	P	Pn	14 23 24.2	+4.0
	0.7nm,0.3s,baz=60,slow=10,SNR=9.7						
MAT	Matsushiro	3.70	242	P	Pn	14 23 24.4	+4.2
MAT				eS	Sb	14 24 12.1	-1.1
JHJ	Hachijo jima 2	5.60	202	P	Pn	14 23 49.9	+3.6
	5.3nm,0.3s,baz=255,slow=20,SNR=3.6						
JHJ				S	Sn	14 24 47.6	-2.7
	9.6nm,0.3s,baz=106,slow=20,SNR=3.2						
JCJ	Chichijima	11.23	180	S	Sn	14 26 54.7	-14
	0.8nm,0.3s,baz=294,slow=20,SNR=1.8						
SEY	Seymchan	25.37	11	P	P	14 27 51.9	+2.2
	0.9nm,0.7s,baz=160,slow=5.6,SNR=6.0						
H11N2	WAKE ISLAND Hy	28.29	124	T	T	14 58 02.8	
	baz=317,slow=75,SNR=16						
H11N1	WAKE ISLAND Hy	28.30	124	T	T	14 58 05.2	
	baz=317,slow=75,SNR=24						
H11N3	WAKE ISLAND Hy	28.31	124	T	T	14 58 09.3	
	baz=317,slow=75,SNR=20						
H11S1	WAKE ISLAND Hy	29.05	126	T	T	14 59 05.2	
	baz=316,slow=74						
H11S3	WAKE ISLAND Hy	29.06	126	T	T	14 59 01.7	
	baz=316,slow=74						
H11S2	WAKE ISLAND Hy	29.07	126	T	T	14 59 03.7	
	baz=316						
ZALV	Zalesovo Beam	41.53	311	P	P	14 30 10.4	+0.3
	0.4nm,0.3s,baz=105,slow=9.0,SNR=2.5						
MKAR	Makanchi Array	44.00	301	P	P	14 30 30.7	+0.4
	0.2nm,0.6s,baz=83,slow=4.5,SNR=3.2						
KURBB	Kurchatov Arra	45.73	307	P	P	14 30 44.0	+0.1
	0.6nm,0.5s,baz=80,slow=8.2,SNR=5.6						
WRA	Warramunga Arr	58.47	189	P	P	14 32 18.1	-0.8
	1.3nm,0.8s,baz=4.8,slow=7.2,SNR=6.9						
ASAR	Alice Springs	62.19	189	P	P	14 32 44.1	-0.3
	0.6nm,0.7s,baz=9.3,slow=5.8,SNR=8.7						
GEYT	Alibeck	63.78	299	P	P	14 32 55.2	+0.2
	1.0nm,0.5s,baz=90,slow=13,SNR=2.7						
TXAR	Lajitas Array	88.79	53	P	P	14 35 18.1	+0.9
	0.2nm,0.6s,baz=264,slow=5.3,SNR=2.7						

JSN 02 14:23:09.0±0.7**, 18.°24N**×**77.°32W, h6**km±4km**, MD3.7, 1C-2D, Jamaica region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BBJ	Bamboo Saint A	0.15	21	i P	Pg	14 23 12.5	+0.4
CVJ	Coleyville	0.20	265	i P	Pg	14 23 13.4	+0.3
CVJ				eS	Sg	14 23 15.7	-0.1
BNJ	Bonny Gate	0.36	78	i P	Pg	14 23 15.7	-0.4
MCJ	Malvern	0.47	228	⇓iP	Pg	14 23 17.9	-0.2
STH	Stony Hill	0.52	109	i P	Pg	14 23 18.1	-0.8
STH				i S	Sg	14 23 25.8	+0.1
PCJ	Portland Cotta	0.52	163	i P	Pg	14 23 18.8	-0.3
MBJ	Montego Bay	0.54	287	i P	Pg	14 23 18.7	-0.7
MBJ				i S	Sg	14 23 26.4	0.0
GWJ	Greenwich	0.59	106	⇓iP	Pg	14 23 19.5	-0.8
YHJ	Yallahs	0.86	114	⇑iP	Pg	14 23 24.4	-1.2

*NIED **02** 14:38:00, 37.°10N×140.°90E, h5km, Mw4.6 Best double couple: M0 7.79000×10^15 NP1:φs66.00000°, δ28.00000°, λ-90.00000°. NP2:φs246.00000°, δ62.00000°, λ-90.00000°.*

*BJI **02** 14:38:06.5, 36.°90N×140.°84E, h14km, mb4.6/50, mB4.9/31, Ms4.3/32, Ms7 4.2/21*

*IDC **02** 14:38:06.7±0.4, 37.°07N×140.°84E, h0km, mb4.5/39, mb1 4.6/44, mb1mx4.6/56, mbtmp4.5/44, ML2.6/3, MS3.8/24, Ms1 3.8/24, ms1mx3.6/48, Error ellipse: s-maj=11.8km s-min=10.1km az=108.0*

*ISCJB **02** 14:38:08.3±0.5, 37.°09N±0.°02×140.°80E±0.°03, h16km±3km, mb4.7/140, MS3.9/31, Error ellipse: s-maj=4.1km s-min=3.2km az=35.0*

*JMA **02** 14:38:08.0, 37.°10N×140.°83E, h6km±1km, M4.8 Broadband fault plane solution: P waves. NP1: φs235.00000°, δ61.00000°, λ-102.00000°. NP2: φs80.00000°, δ31.00000°, λ-69.00000°. Principal axes: T Plg15.0000°, Azm334.0000°; N Plg11.0000°, Azm241.0000°; P Plg71.0000°, Azm117.0000°;*

JMA Felt IV J1.

*NEIC **02** 14:38:09.4±2.3, 37.°09N×140.°70E, h14km±14km, mb4.8/70 Error ellipse: s-maj=6.1km s-min=4.2km az=131.0*

NEIC Recorded [4 JMA] in Fukushima.

*MOS **02** 14:38:10.7±1.1, 37.°10N×140.°79E, h33km, mb4.9/56, Error ellipse: s-maj=7.3km s-min=4.6km az=105.0*

ISC 02 14:38:09.5±0.5**, 37.°10N**±0.°03×**140.°82E**±0.°03**, h17**km±2km**, n347, σ1.°70**/398**, mb4.8**/140**, MS3.9**/32**, 21C-15D, Eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	Iwakimizuishiy	0.02	272	⇓P	Pg	14 38 09.2	-3.3
JHO	Hitachi	0.53	202	⇑P	Pg	14 38 18.2	-1.8
JHO				eS	Sg	14 38 25.6	-1.5
JFT	Otama	0.57	317	⇑P	Pg	14 38 19.4	-1.3
JFT				S	Sg	14 38 27.8	-0.6
JSB	Shiboa	0.73	260	⇑P	Pg	14 38 22.9	-0.9
JSB				S	Sg	14 38 33.2	-0.3
JMM	Marumori	0.76	358	⇑P	Pg	14 38 22.5	-1.9
JMM				S	Sg	14 38 33.4	-1.1
JFY	Yanaizu	0.94	289	⇑P	Pg	14 38 26.1	-1.6
JFY				S	Sg	14 38 38.8	-1.3
JYT	Yasato	1.01	210	⇑P	Pb	14 38 26.7	-1.7
JYT				S	Sb	14 38 39.9	-1.5
I30JP	ISUMI INFRASON	1.84	193	i		14 49 10.0	
	baz=17,slow=321,SNR=1.6						
MJAR	Matsushiro Arr	2.17	256	Pn	Pn	14 38 45.5	+0.7
	81nm,0.3s,baz=79,slow=16,SNR=307						
MJAR				Sn	Sb	14 39 13.9	-1.0
	166nm,0.3s,baz=87,slow=24,SNR=23						
MJAR				LR	LR	14 39 40.3	
	comp=Z,495nm,18.3s,baz=75,slow=44						
MAJO	Matsushiro	2.17	256	d iP	Pn	14 38 45.8	+1.0
MAJO	Matsushiro	2.17	256	ePn	Pn	14 38 45.6	+0.8
MAJO				eSn	Sn	14 39 08.4	-2.9
MAT	Matsushiro	2.17	256	P	Pn	14 38 45.7	+0.9
MAT				S	Sb	14 39 15.0	+0.1
INU	Inuyama	3.54	242	ePn	Pn	14 39 04.8	+1.2
JHJ	Hachijo jima 2	4.06	192	Pn	Pn	14 39 10.4	-0.5
	26nm,0.3s,baz=353,slow=24,SNR=16						
JHJ				Sn	Sn	14 39 58.6	+0.6
	84nm,0.3s,baz=288,slow=23,SNR=11						
JHJ2	Mitsune	4.06	192	ePn	Pn	14 39 11.6	+0.8
ERM	Erimo	5.23	19	P	Pn	14 39 28.0	+1.2
ERM	Erimo	5.23	19	ePn	Pn	14 39 28.4	+1.5
YUK	Yuzh-Kuril'sk	7.92	27	P	Pn	14 40 02.5	-1.2
YUK				eS	Sn	14 41 28.4	-4.4
YUK				pmax	pmax		
	comp=E,69nm,0.6s						
YUK				pmax	pmax		
	comp=Z,91nm,0.6s						
YUK				pmax	pmax		
	comp=N,33nm,0.4s						
YUK				MLR	MLR		
	comp=Z,710nm,15.0s						
SHO	Shikotan	8.16	32	eP	Pn	14 40 03.8	-3.3
SHO				pmax	pmax		
	comp=Z,24nm,0.6s						
JNU	Nakatsue	9.06	247	Pn	Pn	14 40 22.0	+2.5
	comp=Z,0.3nm,0.3s,baz=355,slow=12,SNR=4.9						
JNU				LR	LR	14 44 23.9	
	comp=Z,300nm,19.0s,baz=109,slow=42						
JNU	Nakatsue	9.06	247	ePn	Pn	14 40 17.3	-2.2
KUR	Kuril'sk	9.70	31	P	Pn	14 40 26.2	-2.0
KUR				eS	Sn	14 42 11.4	-5.3
KUR				pmax	pmax		
	comp=Z,24nm,0.6s						
KUR				smax	smax		
	comp=N,31nm,0.7s						
KUR				smax	smax		
	comp=E,21nm,0.8s						
USRK	Ussuriysk Ar.	9.76	319	Pn	Pn	14 40 30.4	+1.4
	comp=E,0.2nm,0.3s,baz=117,slow=13,SNR=3.3						
USRK				LR	LR	14 43 58.7	
	comp=E,694nm,19.9s,baz=123,slow=36						
YSS	Yuzh-Sakhalins	9.95	8	eP	Pn	14 40 32.6	+1.0
YSS				pmax	pmax		
	comp=Z,40nm,1.2s						
YSS	Yuzh-Sakhalins	9.95	8	ePn	Pn	14 40 30.8	-0.7
CBIJ	Chichi jima	10.04	173	ePn	Pn	14 40 29.6	-3.4
CBIJ				Sn	Sn	14 42 13.2	-12
JCJ	Chichijima	10.04	173	Pn	Pn	14 40 29.2	-3.7
	baz=286,slow=20						
JCJ				Sn	Sn	14 42 13.2	-12
	comp=Z,5.3nm,0.3s,baz=308,slow=19,SNR=3.6						
KSRS	Korea Array	10.29	276	Pn	Pn	14 40 39.4	+3.2
	comp=Z,0.6nm,0.3s,baz=107,slow=17,SNR=29						
KSRS				LR	LR	14 44 15.4	
	comp=Z,311nm,19.6s,baz=84,slow=36						
KS01	Wonju Array Si	10.31	276	ePn	Pn	14 40 33.7	-2.9
KS15	Wonju Array Si	10.32	276	ePn	Pn	14 40 40.5	+3.8
KSAR	Wonju Array Be	10.32	276	P	Pn	14 40 39.4	+2.7
KSAR	Wonju Array Be	10.32	276	Pn	Pn	14 40 39.4	+2.7
MDJ	Mudanjiang	11.33	315	P	Pn	14 40 55.8	+5.2
MDJ				S	Sn	14 42 58.1	+1.3
MDJ				PcP	PcP	14 46 46.1	+1.9
MDJ				ScP	ScP	14 50 18.0	+2.0
MDJ				PcS	PcS	14 50 20.2	+2.3
MDJ				ScS	ScS	14 53 54.3	+3.0
MDJ				pmax	pmax		
	comp=Z,34nm,1.0s						
MDJ				pmax	pmax		
	comp=Z,140nm,5.3s						
MDJ				LR	LR		
	comp=Z,250nm,5.3s						
MDJ				LR	LR		
	comp=Z,330nm,10.7s						
MDJ	Mudanjiang	11.33	315	Pn	Pn	14 40 45.6	-4.9
CN2	Changchun	13.47	305	eP	Pn	14 41 12.3	-7.5
CN2				eS	Sn	14 43 42.2	-6.9
CN2				pmax	pmax		
	comp=Z,10.0nm,0.6s						
CN2				pmax	pmax		
	comp=Z,130nm,4.0s						
CN2				LR	LR		
	comp=N,530nm,13.0s						
CN2				LR	LR		
	comp=E,570nm,13.0s						
CN2				LR	LR		
	comp=Z,520nm,13.0s						
KLR	Kul'dur	13.80	334	Pn	Pn	14 41 25.9	+1.8
	comp=Z,0.1nm,0.3s,baz=142,slow=19,SNR=2.7						
KLR				LR	LR	14 46 36.2	
	comp=Z,514nm,18.7s,baz=118,slow=37						
KLR	Kul'dur	13.80	334	P	Pn	14 41 26.0	+1.8
TYV	Tymovskoe	13.82	5	eP	Pn	14 41 24.5	0.0
TYV				pmax	pmax		
	comp=Z,48nm,1.0s						
NKL	Nikolayevsk	16.05	360	eP	Pn	14 41 44.8	-9.4
NKL				MLR	MLR		
	comp=E,500nm,15.0s						
NKL				MLR	MLR		
	comp=Z,700nm,15.0s						
NJ2	Nanjing	18.76	261	eP	P	14 42 26.9	-0.8
NJ2				pmax	pmax		
	comp=Z,12nm,0.5s						
TIA	Tai'an	19.03	274	eP	Pn	14 42 33.2	+1.9
TIA				pmax	pmax		
	comp=Z,10.0nm,1.2s						
BJI	Beijing	19.48	286	P	P	14 42 34.9	-0.5
BJI				S	Sn	14 46 10.0	-4.8
BJI				pmax	pmax		
	comp=Z,9.0nm,0.5s						
PETK	Petropavlovsk-	19.87	31	P	P	14 42 39.4	-0.2
	comp=Z,0.1nm,0.3s,baz=210,slow=13,SNR=3.2						
PETK				LR	LR	14 51 23.7	
	comp=Z,147nm,18.4s,baz=223,slow=40						
PET	Petropavlovsk	20.21	32	eP	Pn	14 42 52.0	+6.7
PET				MLR	MLR		
	comp=Z,100nm,15.0s						
HHC	Hu-ho-hao-te	23.00	288	eP	P	14 43 11.9	-1.6
HHC				pP	pP	14 43 16.1	-2.2
HHC				sP	sP	14 43 19.1	-1.4
HHC				S	S	14 47 16.8	-6.6
HHC				pmax	pmax		
	comp=Z,23nm,0.9s						
HHC				pmax	pmax		
	comp=Z,150nm,9.6s						
HHC				LR	LR		
	comp=Z,170nm,11.4s						
HHC				LR	LR		
	comp=Z,170nm,12.7s						
MA2	Magadan	23.39	13	P	P	14 43 17.5	+0.4
	comp=Z,16nm,0.9s,baz=221,slow=5.8,SNR=20						
MA2				LR	LR	14 52 56.0	
	comp=Z,198nm,21.0s,baz=219,slow=38						
GUMO	Guam	23.69	170	LR	LR	14 55 05.9	
	comp=Z,58nm,18.0s,baz=17,slow=43						
YAK	Yakutsk	25.90	348	P	P	14 43 39.2	-1.0
	comp=Z,0.9nm,0.3s,baz=336,slow=22,SNR=7.7						
YAK				LR	LR	14 54 03.3	
	comp=Z,289nm,18.1s,baz=142,slow=37						
YAK	Yakutsk	25.90	348	eP	P	14 43 41.5	+1.3
YAK				e*PP	sP	14 43 52.5	+5.0
YAK				ePPP	PPP	14 44 26.9	
YAK				e		14 47 08.4	
YAK				eS	S	14 48 05.4	-3.9
YAK				e*SS	sS	14 48 17.8	0.0
YAK				eSSS	SSS	14 49 10.4	
YAK				e		14 54 34.3	
YAK				pmax	pmax		
	comp=Z,40nm,0.9s						
YAK				pmax	pmax		
	comp=N,11nm,1.0s						
YAK				pmax	pmax		
	comp=E,5.0nm,1.0s						
YAK				pmax	pmax		
	comp=Z,18nm,1.0s						
YAK				pmax	pmax		
	comp=N,24nm,1.4s						
YAK				pmax	pmax		
	comp=E,9.0nm,1.0s						
YAK				smax	smax		
	comp=E,247nm,3.6s						
YAK				smax	smax		
	comp=N,37nm,1.8s						
YAK				MLR	MLR		
	comp=Z,235nm,17.0s						
YAK				MLR	MLR		
	comp=N,217nm,18.0s						
YAK				MLR	MLR		
	comp=E,209nm,20.0s						
YAK	Yakutsk	25.90	348	eP	P	14 43 38.0	-2.2
	comp=E,49nm,1.0s						
XAN	Xi'an	26.06	273	P	P	14 43 44.5	+2.4
XAN				pmax	pmax		
	comp=E,6.0nm,0.7s						
XAN				LR	LR		
	comp=E,250nm,15.0s						
XAN				LR	LR		
	comp=E,130nm,15.4s						
SEY	Seymchan	26.82	12	P	P	14 43 49.2	+0.7
	comp=E,11nm,1.0s,baz=198,slow=6.7,SNR=26						
SEY	Seymchan	26.82	12	⇓eP	P	14 43 49.6	+1.1
ENH	Enshi	26.87	265	eP	P	14 43 46.2	-3.2
	comp=E,11nm,0.6s						
ENH				ePcP	PcP	14 47 12.2	+0.6
ULN	Ulaanbaatar	26.92	304	⇓eP	P	14 43 49.2	-0.7
ULN				pmax	pmax		
	comp=Z,18nm,1.2s						
ULN	Ulaanbaatar	26.92	304	eP	P	14 43 48.5	-1.3
	comp=Z,13nm,1.0s						
ULN				ePcP	PcP	14 47 12.0	+0.4
BOD	Bodaibo	27.22	328	eP	P	14 43 52.3	+0.1
BOD				pmax	pmax		
	comp=Z,7.0nm,0.9s						
SONA1	Songino Array	27.35	304	eP	P	14 43 51.8	-1.8
SONA1				ePcP	PcP	14 47 13.2	+0.7
SONM	Songino Array	27.35	304	P	P	14 43 52.9	-0.8
	comp=Z,6.7nm,0.8s,baz=103,slow=8.3,SNR=24						
SONM				PcP	PcP	14 47 13.2	+0.6
	comp=Z,1.9nm,0.5s,baz=119,slow=2.8,SNR=12						
SONM				LR	LR	14 54 45.0	
	comp=Z,155nm,19.4s,baz=104,slow=36						
H11N2	WAKE ISLAND Hy	28.59	120	T	T	15 13 48.1	
	baz=313,slow=75,SNR=1101						
H11N1	WAKE ISLAND Hy	28.60	120	T	T	15 13 49.2	
	baz=313,slow=75,SNR=424						
H11N3	WAKE ISLAND Hy	28.61	120	T	T	15 13 50.0	
	baz=313,slow=75,SNR=1047						
H11S1	WAKE ISLAND Hy	29.30	122	T	T	15 14 46.5	
	baz=314,slow=76,SNR=758						
H11S3	WAKE ISLAND Hy	29.30	122	T	T	15 14 41.9	
	baz=314,slow=76,SNR=544						
H11S2	WAKE ISLAND Hy	29.31	122	T	T	15 14 41.8	
	baz=314,slow=76,SNR=388						
LZH	Lanzhou	29.59	279	eP	P	14 44 14.9	+1.1
LZH				pP	sP	14 44 18.8	-2.2
LZH				sP	pP	14 44 22.6	+3.7
LZH				pmax	pmax		
	comp=Z,20nm,1.1s						
LZH				pmax	pmax		
	comp=Z,85nm,4.2s						
LZH				LR	LR		
	comp=Z,430nm,13.3s						
LZH				LR	LR		
	comp=Z,340nm,14.5s						
LZH				LR	LR		
	comp=Z,430nm,15.2s						
ZAK	Zakamensk	29.86	308	eP	P	14 44 15.0	-0.9
ZAK				pmax	pmax		
	comp=Z,3.0nm,1.4s						
TLY	Talaya	29.93	311	P	P	14 44 17.3	+0.8
	comp=Z,1.5nm,0.5s,baz=114,slow=5.4,SNR=4.9						
TLY	Talaya	29.93	311	eP	P	14 44 18.5	+2.1
TLY				pmax	pmax		
	comp=Z,4.0nm,0.9s						
TLY				MLR	MLR		
	comp=Z,261nm,18.0s						
GYA	Guiyang	30.77	260	P	P	14 44 24.8	+0.6
GYA				PP	PnPn	14 45 26.2	+2.0
GYA				PcP	PcP	14 47 23.8	+2.3
GYA				S	S	14 49 26.0	-0.8
GYA				ScP	ScP	14 51 04.7	+1.3
GYA				pmax	pmax		
	comp=Z,30nm,0.8s						
GYA				pmax	pmax		
	comp=Z,120nm,6.0s						
GYA				LR	LR		
	comp=Z,500nm,18.0s						
GYA				LR	LR		
	comp=Z,470nm,17.6s						
GYA				LR	LR		
	comp=Z,490nm,17.8s						
CD2	Chengdu	31.20	270	P	P	14 44 26.3	-1.6
CD2				sP	sP	14 44 32.7	-2.5
CD2				PcP	PcP	14 47 21.5	-1.0
CD2				S	S	14 49 31.8	-1.6
CD2				sS	sS	14 49 39.5	-2.4
CD2				pmax	pmax		
	comp=Z,10.0nm,0.5s						
CD2				pmax	pmax		
	comp=Z,70nm,5.9s						
CD2				LR	LR		
	comp=Z,400nm,14.4s						
CD2				LR	LR		
	comp=Z,220nm,19.2s						
GTA	Gaotai	32.09	287	eP	P	14 44 36.6	+0.8
GTA				pP	sP	14 44 41.0	-2.0
GTA				sP	pP	14 44 43.7	+2.8
GTA				PcP	PcP	14 47 26.4	+1.5
GTA				S	S	14 49 49.2	+1.9
GTA				sS	sS	14 49 56.1	+0.2
GTA				SS	SnSn	14 51 45.6	+8.3
GTA				ScS	ScS	14 55 01.8	-4.6
GTA				pmax	pmax		
	comp=Z,5.0nm,1.0s						
GTA				pmax	pmax		
	comp=Z,48nm,5.1s						
GTA				LR	LR		
	comp=Z,210nm,14.7s						
GTA				LR	LR		
	comp=Z,290nm,13.3s						
QIZ	Qiongzhong	32.53	245	P	P	14 44 39.4	-0.2
QIZ				S	S	14 49 53.8	-0.4
QIZ				pmax	pmax		
	comp=Z,11nm,1.5s						
QIZ				LR	LR		
	comp=Z,200nm,16.2s						
BILL	Bilibino	34.10	17	⇑eP	P	14 44 52.2	-0.6
BILL				e		14 46 06.1	
BILL				pmax	pmax		
	comp=Z,8.0nm,1.7s						
BILL				MLR	MLR		
	comp=Z,88nm,23.0s						
BILL	Bilibino	34.10	17	eP	P	14 44 51.0	-1.7
	comp=Z,5.4nm,1.1s						
BILL				ePcP	PcP	14 47 31.5	+1.7
KMI	Kunming	34.50	261	P	P	14 44 57.7	+0.7
KMI				pP	pP	14 45 01.7	-0.5
KMI				sP	sP	14 45 04.3	0.0
KMI				PP	PnPn	14 46 09.7	-2.5
KMI				S	S	14 50 26.9	+1.7
KMI				pmax	pmax		
	comp=Z,27nm,0.5s						
KMI				pmax	pmax		
	comp=Z,61nm,4.2s						
KMI				LR	LR		
	comp=Z,220nm,12.5s						
KMI				LR	LR		
	comp=Z,150nm,11.2s						
KMI				LR	LR		
	comp=Z,67nm,5.1s						
TIXI	Tiksi	35.17	353	c iP	P	14 45 02.4	+0.5
TIXI				pmax	pmax		
	comp=Z,12nm,1.0s						

TIXI **Tiksi** 35.17 353 *e*P P 14 45 01.4 -0.5
comp=Z,8.2nm,0.7s
MYLDM **Lahad Datu** 37.77 218 *e*P P 14 45 26.7 +1.9
comp=Z,62nm,1.4s
WMQ **Urumqi** 40.39 297 P P 14 45 47.5 +1.0
WMQ pP pP 14 45 50.4 -1.4
WMQ sP sP 14 45 54.0 +0.1
WMQ PcP PcP 14 47 51.4 +1.9
WMQ S S 14 51 54.0 +0.1
WMQ sS sS 14 52 02.7 +0.1
WMQ SS SS 14 54 50.0 -2.8
WMQ pmax pmax
comp=Z,3.0nm,0.8s
WMQ pmax pmax
comp=Z,100nm,4.4s
FAKI **Fak Fak** 40.61 193 *e*P P 14 45 48.8 +0.4
comp=Z,24nm,1.2s
CMAR **Chiang Mai Arr** 41.06 255 P P 14 45 51.7 -0.5
comp=Z,1.5nm,0.9s,baz=50,slow=5.4,SNR=8.9
CMAR PcP PcP 14 47 52.5 +0.6
comp=Z,2.2nm,0.9s,baz=28,slow=2.5,SNR=11
CMAR LR LR 15 03 38.1
comp=Z,74nm,18.7s,baz=82,slow=37
CM01 **Chiang Mai Arr** 41.06 255 *e*P P 14 45 53.2 +1.0
ZAA0 **Zalesovo Array** 41.52 312 *e*P P 14 45 55.8 +0.2
ZAA0 *e*PcP PcP 14 47 53.2 +0.3
ZALV **Zalesovo Beam** 41.52 312 P P 14 45 55.4 -0.2
comp=Z,10nm,0.9s,baz=91,slow=5.6,SNR=19
ZALV PcP PcP 14 47 52.7 -0.1
comp=Z,3.0nm,0.4s,baz=106,slow=2.8,SNR=8.2
ZALV ScP ScP 14 51 44.5 +2.3
comp=Z,0.4nm,0.5s,baz=103,slow=4.6,SNR=3.9
ZALV LR LR 15 03 25.8
comp=Z,119nm,18.7s,baz=70,slow=37
LSA **Lhasa** 41.73 275 *e*P P 14 46 01.8 +3.6
LSA pmax pmax
comp=Z,6.0nm,1.2s
LSA **Lhasa** 41.73 275 *e*P P 14 46 01.8 +3.6
comp=Z,6.3nm,1.2s
NVS **Novosibirsk** 42.45 314 *e*P P 14 46 03.8 +0.6
NVS *e* 14 47 55.9
NVS pmax pmax
comp=E,10.0nm,1.1s
NVS pmax pmax
comp=Z,6.0nm,1.1s
NRIK **Noril'sk** 43.01 335 P P 14 46 07.6 +0.1
comp=Z,1.7nm,0.4s,baz=113,slow=13,SNR=6.4
NRIK PcP PcP 14 47 56.5 -0.9
comp=Z,2.5nm,0.7s,baz=141,slow=3.0,SNR=3.6
SBUM **Sibu** 43.38 224 *e*P P 14 46 09.4 -1.7
comp=Z,8.8nm,1.0s
MK01 **Makanchi Array** 43.68 302 *e*P P 14 46 12.3 -1.0
MK31 **Makanchi Array** 43.68 302 *e*P P 14 46 13.3 0.0
MK31 **Makanchi Array** 43.68 302 *e*P P 14 46 13.3 0.0
MKAR **Makanchi Array** 43.68 302 P P 14 46 13.5 +0.2
comp=Z,4.8nm,0.7s,baz=86,slow=10.0,SNR=34
MKAR PcP PcP 14 48 00.4 +0.2
comp=Z,2.3nm,0.9s,baz=64,slow=5.6,SNR=5.3
MKAR ScP ScP 14 51 52.5 +1.5
comp=Z,0.4nm,0.8s,baz=81,slow=7.5,SNR=3.9
MKAR LR LR 15 04 32.4
comp=Z,113nm,19.9s,baz=86,slow=36
MAKZ **Makanchi** 43.89 302 *e*P P 14 46 10.7 -4.3
MAKZ pmax pmax
comp=Z,6.0nm,0.8s
MAKZ **Makanchi** 43.89 302 *e*P P 14 46 10.7 -4.3
comp=Z,6.0nm,0.8s
KSM **Kuching** 45.26 226 *e*P P 14 46 23.8 -2.4
comp=Z,21nm,0.9s
TAPN **Taplejung** 45.46 274 *e*P P 14 46 28.3 +0.2
KURK **Kurchatov** 45.52 308 *e*P P 14 46 26.5 -1.4
KURK 14 48 05.8
KURK pmax pmax
comp=Z,41nm,1.0s
KURK **Kurchatov** 45.52 308 *e*P P 14 46 26.5 -1.4
comp=Z,41nm,1.0s
KURK PcP PcP 14 48 05.8 -0.6
KURBB **Kurchatov Arra** 45.59 308 P P 14 46 28.2 -0.2
comp=Z,20nm,0.8s,baz=84,slow=8.1,SNR=108
KURBB PcP PcP 14 48 05.8 -0.9
comp=Z,1.5nm,0.8s,baz=96,slow=3.0,SNR=4.8
TTA **Tatalina** 45.64 35 *e*P P 14 46 29.1 +0.3
TTA pmax pmax
comp=Z,28nm,1.9s
TTA **Tatalina** 45.64 35 *e*P P 14 46 29.1 +0.3
comp=Z,28nm,1.9s
SVW2 **Sparrevohn** 45.76 37 *e*P P 14 46 30.6 +0.9
comp=Z,12nm,0.9s
ODAN **Odare** 45.94 273 *e*P P 14 46 31.4 -0.4
comp=Z,9.2nm,0.5s
KAPI **Kappang** 46.28 210 *e*P P 14 46 34.5 +0.3
comp=Z,117nm,1.4s
RAMN **Ramite** 46.53 274 *e*P P 14 46 36.5 +0.1
comp=Z,48nm,0.9s
GUN **Gumba** 46.68 275 *e*P P 14 46 37.7 0.0
comp=Z,23nm,0.7s
RSO **Redoubt South** 47.14 38 *e*P P 14 46 39.6 -1.1
KKN **Kakani** 47.21 275 *e*P P 14 46 41.9 +0.2
KDAK **Kodiak Island** 47.37 42 *i*P P 14 46 43.0 +0.8
CAST **Castle Rocks** 47.44 34 *e*P P 14 46 43.9 +1.1
comp=Z,6.3nm,0.9s
SPU **Mount Spurr** 47.47 37 *e*P P 14 46 45.2 +2.1
GKN **Gorkha** 47.62 276 *e*P P 14 46 45.1 +0.2
comp=Z,29nm,0.7s
KTH **Kantishna Hill** 47.96 34 *e*P P 14 46 46.8 -0.1
comp=Z,12nm,1.0s
MLY **Manley** 48.04 32 *e*P P 14 46 49.5 +2.0
comp=Z,6.3nm,0.8s
TRF **Thorofare Moun** 48.24 34 *e*P P 14 46 48.5 -0.8
comp=Z,6.5nm,0.9s
KOLN **Koldanda** 48.55 276 *e*P P 14 46 52.3 +0.2
comp=Z,15nm,0.8s
IPM **Ipoh** 48.77 238 *e*P P 14 46 52.2 -1.5
comp=Z,9.1nm,0.7s
MCK **McKinley** 48.84 34 *e*P P 14 46 53.4 -0.2
MCK pmax pmax
comp=Z,6.0nm,0.9s
MCK **McKinley** 48.84 34 *e*P P 14 46 53.4 -0.2
comp=Z,6.1nm,0.9s
PMR **Palmer** 48.85 37 *e*P P 14 46 54.0 +0.3
PMR pmax pmax
comp=Z,9.0nm,1.0s
PMR **Palmer** 48.85 37 *e*P P 14 46 54.0 +0.3
comp=Z,8.8nm,1.0s
PYUN **Piuthan** 48.89 277 *e*P P 14 46 55.1 +0.4
comp=Z,84nm,1.0s
MDM **Murphy Dome** 49.11 32 *e*P P 14 46 56.2 +0.5
comp=Z,9.4nm,1.0s
TKM2 **Tokmak 2** 49.18 298 *e*P P 14 46 57.8 +1.0
TKM2 pmax pmax
comp=Z,23nm,1.1s
TKM2 **Tokmak 2** 49.18 298 *e*P P 14 46 57.8 +1.0
comp=Z,23nm,1.1s
WRH **Wood River Hil** 49.19 33 *e*PcP PcP 14 48 20.2 +1.0
SML **Sawmill** 49.22 36 *e*P P 14 46 58.5 +1.9
SML pmax pmax
comp=Z,10.0nm,0.8s
SML **Sawmill** 49.22 36 *e*P P 14 46 58.5 +1.9
comp=Z,9.9nm,0.8s
COLA **College** 49.27 32⇑ *i*P P 14 46 58.7 +1.8
COLA pmax pmax
comp=Z,12nm,2.1s
ILAR **Eielson Array** 49.69 32 P P 14 47 00.3 +0.2
comp=Z,4.0nm,0.8s,baz=272,slow=6.3,SNR=36
ILB **Eielson Array** 49.69 32 *e*P P 14 47 00.8 +0.7
IL1 **Eielson Array** 49.69 32 *e*P P 14 47 00.7 +0.6
SCM **Sheep Creek Mo** 49.69 36 *e*P P 14 47 02.2 +2.0
SCM pmax pmax
comp=Z,16nm,0.9s
SCM **Sheep Creek Mo** 49.69 36 *e*P P 14 47 02.2 +2.0
comp=Z,16nm,0.9s
VOSK **Vostochnaya** 49.88 312 *e*P P 14 47 01.6 -0.1
VOSK pmax pmax
comp=Z,19nm,0.9s
VOSK **Vostochnaya** 49.88 312 *e*P P 14 47 01.6 -0.1
comp=Z,19nm,0.9s
FRU **Bishkek** 49.90 298⇓ *e*P P 14 47 04.0 +2.0
FRU pmax pmax
comp=Z,20nm,2.0s
KSH **Kashi** 49.95 294 P P 14 47 06.7 +4.1
KSH *e*pP sP 14 47 11.2 +1.2
KSH S S 14 54 16.7 +4.4
KSH SS SS 14 57 48.1 +3.2
KSH pmax pmax
comp=Z,11nm,1.3s
KSH pmax pmax
comp=Z,140nm,5.2s
KSH LR LR
comp=Z,98nm,8.7s
KSH LR LR
comp=Z,130nm,7.8s
KSH LR LR
comp=Z,140nm,7.5s
AAK **Ala-Archa** 50.04 298 P P 14 47 03.6 +0.2
comp=Z,2.9nm,0.8s,baz=100,slow=6.0,SNR=5.5
AAK LR LR 15 09 25.7
comp=Z,212nm,19.2s,baz=74,slow=38
AAK **Ala-Archa** 50.04 298⇑ *i*P P 14 47 03.5 +0.2
AAK pmax pmax
comp=Z,10.0nm,0.9s
AAK **Ala-Archa** 50.04 298 *e*P P 14 47 03.7 +0.4
comp=Z,4.8nm,1.0s
AAK *e*P P 14 47 05.5 +2.2
BVAR **Borovoye Array** 50.18 312 P P 14 47 03.7 -0.3
comp=Z,5.7nm,0.7s,baz=76,slow=7.8,SNR=25
BVAR PcP PcP 14 48 23.3 +0.3
comp=Z,3.6nm,0.6s,baz=100,slow=2.9,SNR=8.3
BRVK **Borovoye** 50.23 312 *de*P P 14 47 05.1 +0.7
BRVK pmax pmax
comp=Z,16nm,1.2s
BRVK **Borovoye** 50.23 312 *e*P P 14 47 04.7 +0.3
comp=Z,10nm,0.9s
EKS2 **Erkin-Say** 50.54 298 *e*P P 14 47 08.2 +1.2
EKS2 pmax pmax
comp=Z,3.0nm,0.8s
EKS2 **Erkin-Say** 50.54 298 *e*P P 14 47 08.2 +1.2
comp=Z,3.1nm,0.8s
BMRM **Bremner River** 51.09 37 *e*P P 14 47 12.8 +2.0
comp=Z,10nm,1.0s
MENT **Mentasta** 51.25 35 *e*P P 14 47 14.1 +2.2
comp=Z,8.8nm,1.0s
PSI **Prapat** 51.42 239 P P 14 47 13.8 -0.2
comp=Z,9.2nm,0.8s,baz=52,slow=6.3,SNR=5.2
PSI **Prapat** 51.42 239 *e*P P 14 47 13.9 0.0
PSI pmax pmax
comp=Z,12nm,0.9s
PSI **Prapat** 51.42 239 *e*P P 14 47 13.9 0.0
comp=Z,12nm,0.9s
KKAR **Karatay Array** 52.68 300 *e*P P 14 47 23.9 +1.0
KKAR **Karatay Array** 52.68 300 *e*P P 14 47 23.9 +1.0
GSI **Gunungsitoli** 53.43 239 *e*P P 14 47 27.6 -1.0
comp=Z,73nm,1.1s
INK **Inuvik** 54.54 27 P P 14 47 36.2 +0.1
comp=Z,3.5nm,0.9s,baz=278,slow=9.9,SNR=10
INK **Inuvik** 54.54 27 *e*P P 14 47 37.3 +1.2
INK pmax pmax
comp=Z,5.0nm,1.0s
INK **Inuvik** 54.54 27 *e*P P 14 47 37.3 +1.2
comp=Z,5.2nm,1.0s
SVE **Sverdlovsk** 54.78 318 *e*P P 14 47 38.9 +0.9
SVE pmax pmax
comp=Z,16nm,1.1s
ARU **Arti** 56.00 318 P P 14 47 47.0 +0.2
comp=Z,3.2nm,0.4s,baz=64,slow=3.4,SNR=9.4
ARU **Arti** 56.00 318 *c i*P P 14 47 47.2 +0.4
ARU 14 49 48.6
ARU S S 14 55 34.1 +0.1
ARU SS SS 14 59 15.6 -3.9
ARU pmax pmax
comp=Z,20nm,1.2s
ARU **Arti** 56.00 318 *e*P P 14 47 46.5 -0.3
comp=Z,23nm,1.3s
KBL **Kabul** 56.95 291 *e*P P 14 47 54.1 -0.1
KBL pmax pmax
comp=Z,13nm,1.2s
KBL **Kabul** 56.95 291 *e*P P 14 47 54.1 -0.1
comp=Z,13nm,1.2s
WRAB **Tennant Creek** 57.05 187 *ce*P P 14 47 55.6 +1.0
WRAB pmax pmax
comp=Z,114nm,2.5s
WRAB **Tennant Creek** 57.05 187 *e*P P 14 47 54.2 -0.4
comp=Z,14nm,0.9s
WB2 **Warramunga Arr** 57.06 187 *e*P P 14 47 54.2 -0.4
comp=Z,16nm,0.9s
WRA **Warramunga Arr** 57.06 187 P P 14 47 53.7 -1.0
comp=Z,6.7nm,0.5s,baz=3.5,slow=7.2,SNR=193
WRA PcP PcP 14 48 50.5 +1.0
comp=Z,1.9nm,0.6s,baz=0.4,slow=4.4,SNR=5.4
CTA **Charters Tower** 57.11 174 P P 14 47 55.0 0.0
comp=Z,10.0nm,1.1s,baz=353,slow=8.1,SNR=3.2
ABKAR **Akbulak array** 57.53 310 *e*P P 14 47 57.9 +0.1
AKTO **Aktyubinsk** 58.28 312 P P 14 48 03.2 +0.2
comp=Z,3.4nm,0.8s,baz=61,slow=13,SNR=7.8
AS01 **Alice Springs** 60.79 187 *e*P P 14 48 19.7 -0.8
AS31 **Alice Springs** 60.79 187 *e*P P 14 48 20.8 +0.2
comp=Z,1.9nm,0.6s
ASAR **Alice Springs** 60.79 187 P P 14 48 20.3 -0.3
comp=Z,3.9nm,0.8s,baz=11,slow=6.4,SNR=42
ASAR LR LR 15 13 50.9
comp=Z,41nm,19.2s,baz=5.0,slow=35
RES **Resolute Bay** 62.65 14 *e*P P 14 48 32.5 0.0
RES pmax pmax
comp=Z,10.0nm,1.1s
RES **Resolute Bay** 62.65 14 *e*P P 14 48 32.5 0.0
comp=Z,9.9nm,1.1s
GEYT **Alibeck** 63.39 299 P P 14 48 38.7 +0.7
comp=Z,6.4nm,0.9s,baz=95,slow=1.6,SNR=11
GEYT LR LR 15 18 06.3
comp=Z,64nm,18.5s,baz=105,slow=38
KLMR **Klimovskoe** 63.45 328 *e*P P 14 48 38.4 +0.5
KLMR pmax pmax
comp=Z,20nm,1.3s
ARCES **ARCESS Array B** 63.77 339 P P 14 48 40.0 +0.1
comp=Z,6.4nm,0.8s,baz=53,slow=9.1,SNR=6.9
ARCES PcP PcP 14 49 16.3 +0.5
comp=Z,1.5nm,0.7s,baz=23,slow=3.2,SNR=3.2
ARCES LR LR 15 20 53.3
comp=Z,69nm,18.0s,baz=58,slow=40
YKA **Yellowknife Ar** 63.99 30 P P 14 48 42.1 +0.7
comp=Z,1.3nm,0.7s,baz=300,slow=6.5,SNR=22
YKA PcP PcP 14 49 16.8 -0.1
comp=Z,0.8nm,0.6s,baz=299,slow=3.8,SNR=8.7
YKB5 **Yellowknife Ar** 63.99 30 *e*P P 14 48 41.4 -0.1
DAG **Danmarks Havn** 65.67 355 *i*P P 14 48 52.3 +0.1
comp=Z,2.1nm,0.9s
DAG **Danmarks Havn** 65.67 355 *i*P P 14 48 52.3 +0.1
DAG pmax pmax
comp=Z,17nm,0.9s
VRH **Novokhopyorsk** 67.21 318 *e*P P 14 49 01.9 -0.6
VRH pmax pmax
comp=Z,10.0nm,0.6s
OBN **Obninsk** 67.76 323 P P 14 49 07.9 +2.0
OBN pmax pmax
comp=Z,34nm,2.5s
OBN MLR MLR
comp=Z,149nm,16.0s
LPSR **Galich'ya Gora** 67.94 320 *e*P P 14 49 07.1 0.0
LPSR pmax pmax
comp=Z,10.0nm,0.7s
FIA1 **FINESS Array S** 68.53 332 *e*P P 14 49 10.7 +0.1
comp=Z,26nm,0.9s
FINES **FINESS Array B** 68.53 332 P P 14 49 10.6 0.0
comp=Z,16nm,0.8s,baz=60,slow=7.5,SNR=36
FINES LR LR 15 21 37.3
comp=Z,130nm,18.1s,baz=56,slow=38
FINES **FINESS Array B** 68.53 332 *i*P P 14 49 11.3 +0.7
FINES pmax pmax
comp=Z,16nm,0.8s
VSR **Storozhevoye** 68.57 319 *e*P P 14 49 10.4 -0.6
VSR pmax pmax
comp=Z,6.0nm,0.6s
STKA **Stephens Creek** 68.62 179 P P 14 49 10.6 -0.9
comp=Z,3.1nm,0.9s,baz=358,slow=6.5,SNR=8.9
VSU **Vasula** 70.16 329 *ce*P P 14 49 22.1 +1.4
VSU pmax pmax
comp=Z,68nm,1.2s
NCK **Nalchik** 70.20 310⇓ *e*P P 14 49 21.7 +0.4
NCK pmax pmax
comp=Z,12nm,0.4s
KBZ **Khabaz** 70.50 310 P P 14 49 23.4 +0.3
comp=Z,5.7nm,1.0s,baz=6.4,slow=2.6,SNR=6.7
KBZ LR LR 15 21 18.2
comp=Z,82nm,19.9s,baz=41,slow=37
KVAR **Kislovodsk Arr** 70.50 311 P P 14 49 24.9 +1.6
comp=Z,12nm,1.0s,baz=303,slow=1.7,SNR=6.8
KIV **Kislovodsk** 70.50 311 *i*P P 14 49 23.4 +0.1
KIV *i* 14 49 48.2
KIV *i* 14 52 03.6
KIV pmax pmax
comp=Z,21nm,1.1s
KIV MLR MLR
comp=Z,70nm,18.0s
KIV **Kislovodsk** 70.50 311 *e*P P 14 49 23.9 +0.7
comp=Z,23nm,1.1s
SUMG **Summit** 70.62 360 *i*P P 14 49 24.9 +1.1
comp=Z,37nm,1.0s
SUMG **Summit** 70.62 360 *e*P P 14 49 22.7 -1.2
SUMG pmax pmax
comp=Z,32nm,0.9s
SUMG **Summit** 70.62 360 *e*P P 14 49 22.7 -1.2
comp=Z,32nm,0.9s
NEY **Neytrino** 70.87 310 P P 14 49 27.0 +1.4
NEY pmax pmax
comp=Z,1.0nm,0.9s
SCO **Scoresbysund** 72.00 354 *i*P P 14 49 32.9 +1.2
comp=Z,14nm,1.1s
SCO **Scoresbysund** 72.00 354 *i*P P 14 49 32.9 +1.2
SCO pmax pmax
comp=Z,14nm,1.1s
ANN **Anapa** 73.14 314 *e*P P 14 49 37.4 -1.6
ANN *e*PP sP 14 49 46.9 +0.4
ANN *e* 14 49 53.9
ANN pmax pmax
comp=Z,47nm,1.2s
HFS **Hagfors** 73.83 335 P P 14 49 43.3 +0.6
comp=Z,8.5nm,0.8s,baz=39,slow=9.6,SNR=9.5
NC204 **NORSAR Array S** 73.90 337 *e*P P 14 49 43.9 +0.7
FFC **Flin Flon** 73.90 32 *e*P P 14 49 44.0 +0.7
FFC pmax pmax
comp=Z,6.0nm,0.9s
FFC **Flin Flon** 73.90 32 *e*P P 14 49 44.0 +0.7
comp=Z,5.7nm,0.9s
NB201 **NORSAR Array S** 73.91 337 *e*P P 14 49 44.5 +1.3
NB2 **NORSAR Subarra** 73.94 337 P P 14 49 43.7 +0.3
comp=Z,16nm,1.0s,baz=40,slow=5.9
NB2 **NORSAR Subarra** 73.94 337 P P 14 49 43.7 +0.3
baz=40,slow=5.9
NOA **NORSAR Array B** 73.94 337 P P 14 49 43.7 +0.3
comp=Z,12nm,0.9s,baz=39,slow=5.8,SNR=20
NOA LR LR 15 25 17.7
comp=Z,85nm,18.1s,baz=35,slow=38
AKASG **Malin Array Be** 73.95 322 P P 14 49 43.4 -0.2
comp=Z,3.1nm,0.5s,baz=46,slow=5.9,SNR=31
AKASG LR LR 15 24 37.3
comp=Z,107nm,20.0s,baz=40,slow=38
AKASG **Malin Array Be** 73.95 322 *i*P P 14 49 44.0 +0.4
AKASG pmax pmax
comp=Z,3.0nm,0.5s
KIEV **Kiev** 73.97 322⇓ *i*P P 14 49 43.9 +0.2
KIEV pmax pmax
comp=Z,12nm,1.0s
KIEV **Kiev** 73.97 322 *e*P P 14 49 43.8 +0.1
comp=Z,9.9nm,0.9s
AK11 **Malin Array Si** 74.00 322 *e*P P 14 49 44.5 +0.7
NBO02 **NORSAR Array S** 74.04 337 *e*P P 14 49 45.1 +1.0
NBO00 **NORSAR Array S** 74.08 337 *e*P P 14 49 45.5 +1.3
FCC **Fort Churchill** 74.15 26 *e*P P 14 49 45.4 +0.8
FCC pmax pmax
comp=Z,38nm,1.8s
FCC **Fort Churchill** 74.15 26 *e*P P 14 49 45.4 +0.8
comp=Z,38nm,1.8s
LRM **Limekiln Ridge** 74.43 44 *e*P P 14 49 48.6 +1.7
NV01 **Mina Array Sit** 75.33 53 *e*P P 14 49 53.4 +1.3
NVAR **Mina Array Bea** 75.33 53 P P 14 49 52.9 +0.8
comp=Z,3.1nm,0.9s,baz=302,slow=5.2,SNR=10
SFJD **Kangerlussuaq** 75.86 5 P P 14 49 54.6 +0.3
comp=Z,11nm,1.0s,baz=10,slow=5.3
SFJD **Kangerlussuaq** 75.86 5 *i*P P 14 49 54.8 +0.5
comp=Z,12nm,1.0s
SFJD **Kangerlussuaq** 75.86 5 *e*P P 14 49 54.8 +0.5
SFJD pmax pmax
comp=Z,12nm,1.0s
FRB **Frobisher Bay** 76.81 13 P P 14 49 59.8 0.0
comp=Z,6.0nm,0.7s,baz=354,slow=7.8,SNR=4.1
WCHM **Chimney Peak** 76.97 55 *e*P P 14 50 06.1 +4.5
BSD **Bornholm Skovb** 77.16 331 *i*P P 14 50 02.2 +0.3
comp=Z,24nm,1.0s
BSD **Bornholm Skovb** 77.16 331 *i*P P 14 50 02.2 +0.3
BSD pmax pmax
comp=Z,24nm,1.0s
TPNV **Topopah Spring** 77.52 53 *e*P P 14 50 06.2 +1.7
TPNV pmax pmax
comp=Z,9.0nm,1.3s
TPNV **Topopah Spring** 77.52 53 *e*P P 14 50 06.2 +1.7
comp=Z,9.0nm,1.3s
HWUT **Hardware Ranch** 77.53 47 *e*P P 14 50 06.6 +2.1
comp=Z,6.5nm,1.1s
DUG **Dugway, Tooele** 77.67 49 *e*P P 14 50 07.1 +1.8
DUG pmax pmax
comp=Z,4.0nm,0.8s
DUG **Dugway, Tooele** 77.67 49 *e*P P 14 50 07.1 +1.8
comp=Z,3.8nm,0.8s
KWP **Kalwaria Pacla** 77.80 324 *e*P P 14 50 07.2 +1.6
KWP **Kalwaria Pacla** 77.80 324 *e*P P 14 50 07.3 +1.6
BUR08 **Bucovina Ar. S** 77.95 321 *e*P P 14 50 08.2 +1.5
BW06 **Boulder Array** 77.96 45 *e*P P 14 50 07.9 +0.9
PDAR **Pinedale Array** 77.96 45 P P 14 50 07.1 +0.2
comp=Z,1.7nm,0.8s,baz=264,slow=1.6,SNR=18
BURAR **Bucovina Array** 77.96 321⇑ *i*P P 14 50 08.3 +1.6
TESR **Tescani** 77.98 320⇑ *i*P P 14 50 08.0 +1.3
PSUT **Pine Spring** 78.06 51 *e*P P 14 50 09.6 +2.0
comp=Z,3.4nm,0.9s
VRI **Vrincioaia** 78.37 319⇑ *i*P P 14 50 11.1 +2.2
PLOR **Plostina** 78.42 319⇓ *i*P P 14 50 11.6 +2.4
BRTR **Keskin Array B** 78.45 311 P P 14 50 08.3 -1.3
comp=Z,1.9nm,0.8s,baz=70,slow=4.1,SNR=8.1
BRTR LR LR 15 28 22.2
comp=Z,29nm,19.0s,baz=52,slow=38
BRTR **Keskin Array B** 78.45 311 *i*P P 14 50 09.6 0.0
BRTR pmax pmax
comp=Z,2.0nm,0.8s
KOLS **Kolonicke sedl** 78.49 324 *e*P P 14 50 10.1 +0.6
KOLS pmax pmax
comp=Z,6.0nm,1.1s
KOLS **Kolonicke sedl** 78.49 324 *e*P P 14 50 10.1 +0.6
MPU **Maple Canyon** 78.49 48 *e*P P 14 50 12.3 +2.4
comp=Z,7.1nm,1.3s
STHS **Stebnicka Huta** 78.63 325 *e*P P 14 50 12.1 +1.8
STHS pmax pmax
comp=Z,7.0nm,1.0s
STHS **Stebnicka Huta** 78.63 325 *e*P P 14 50 12.1 +1.8
OJC **Ojcow** 78.72 326 *e*P P 14 50 11.6 +0.9
OJC **Ojcow** 78.72 326 *e*P P 14 50 11.6 +0.9
OJC **Ojcow** 78.72 326 *e*P P 14 50 11.6 +0.9
comp=Z,21nm,1.0s
BR231 **Keskin MP Arra** 78.89 312 *e*P P 14 50 10.1 -1.9
MSAB **Monastry St. A** 78.96 317⇑ *i*P P 14 50 14.7 +2.5
DOPR **Dopca** 78.99 320⇑ *i*P P 14 50 14.6 +2.3
NIE **Niedzica** 79.06 325 *e*P P 14 50 13.8 +1.1
NIE **Niedzica** 79.06 325 *e*P P 14 50 13.9 +1.2
P17A **Butcher Ranch,** 79.36 48 *e*P P 14 50 16.8 +2.1
comp=Z,5.0nm,0.9s
LCMT **Little Creek M** 79.38 52 *e*P P 14 50 17.0 +2.2
comp=Z,4.2nm,1.0s
VOIR 79.53 320⇑ *i*P P 14 50 16.9 +1.6
P18A **Preston Nutter** 79.56 48 *e*P P 14 50 18.6 +2.7
comp=Z,3.9nm,0.9s
LANS **Liptovska Anna** 79.64 325 *e*P P 14 50 17.4 +1.6
LANS **Liptovska Anna** 79.64 325 *e*P P 14 50 17.4 +1.6
KNB **Kanab** 79.64 51 *e*P P 14 50 19.0 +2.7
KNB pmax pmax
comp=Z,10.0nm,1.3s
KNB **Kanab** 79.64 51 *e*P P 14 50 19.0 +2.7
comp=Z,10.0nm,1.3s
KECS **Kecovo** 79.64 324 *e*P P 14 50 16.5 +0.7
KECS pmax pmax
comp=Z,4.0nm,1.4s
KECS **Kecovo** 79.64 324 *e*P P 14 50 16.5 +0.7
ULM **Lac du Bonnet** 79.71 33 P P 14 50 15.2 -0.9
comp=Z,3.5nm,0.9s,baz=299,slow=5.9,SNR=6.1
SRU **San Rafael Swe** 79.72 49 *e*P P 14 50 18.4 +1.7
SRU pmax pmax
comp=Z,5.0nm,0.7s
SRU **San Rafael Swe** 79.72 49 *e*P P 14 50 18.4 +1.7
comp=Z,5.4nm,0.7s
ARR **Arges** 79.79 320⇑ *i*P P 14 50 18.9 +2.2
KSP **Ksiaz** 79.79 328 *e*P P 14 50 17.9 +1.3
KSP **Ksiaz** 79.79 328 *e*P P 14 50 17.9 +1.3
MORC **Moravsky Berou** 80.04 327 *e*P P 14 50 19.4 +1.4
MORC pmax pmax
comp=Z,48nm,1.0s
MORC **Moravsky Berou** 80.04 327 *e*P P 14 50 19.4 +1.4
comp=Z,48nm,1.0s
DPC **Dobruska-Polom** 80.15 328 *e*P P 14 50 20.2 +1.6
DPC **Dobruska-Polom** 80.15 328 *e*P P 14 50 20.2 +1.6
UPC **Upice** 80.16 328 *e*P P 14 50 20.1 +1.5
UPC **Upice** 80.16 328 *e*P P 14 50 20.1 +1.5
LOT **Lotru** 80.17 320⇓ *i*P P 14 50 21.0 +2.1

PSZ	**Piszkesteto**	**80.33**	**324**	*e*P	**P**	**14 50 21.2**	**+1.6**
PSZ				pmax	pmax		
	comp=Z,9.0nm,0.9s						
PSZ	**Piszkesteto**	**80.33**	**324**	*e*P	**P**	**14 50 21.2**	**+1.6**
	comp=Z,8.8nm,0.9s						
VYHS	**Vyhne**	**80.40**	**325**	*e*P	**P**	**14 50 20.9**	**+1.0**
VYHS				pmax	pmax		
	comp=Z,5.0nm,1.4s						
VYHS	**Vyhne**	**80.40**	**325**	*e*P	**P**	**14 50 20.9**	**+1.0**
GZR	**Gura Zlata**	**80.72**	**321**	⇓*i*P	**P**	**14 50 22.9**	**+1.2**
BRG	**Berggiesshubel**	**80.75**	**329**	*e*P	**P**	**14 50 22.7**	**+0.9**
	comp=Z,14nm,1.0s						
BRG	**Berggiesshubel**	**80.75**	**329**	*e*P	**P**	**14 50 22.7**	**+0.9**
BRG				pmax	pmax		
	comp=Z,14nm,1.0s						
PVCC	**Panska Ves**	**80.75**	**329**	*e*P	**P**	**14 50 23.4**	**+1.6**
PVCC	**Panska Ves**	**80.75**	**329**	*e*P	**P**	**14 50 23.4**	**+1.6**
CLL	**Collm**	**80.80**	**330**	*i* P	**P**	**14 50 22.6**	**+0.6**
	comp=Z,23nm,0.9s						
CLL				*e*sP	**PcP**	**14 50 29.0**	**+0.4**
CLL	**Collm**	**80.80**	**330**	*i* P	**P**	**14 50 22.6**	**+0.6**
CLL				*e*		14 50 29.0	
CLL				pmax	pmax		
	comp=Z,23nm,0.9s						
CLL	**Collm**	**80.80**	**330**	*e*P	**P**	**14 50 21.9**	**-0.1**
	comp=Z,25nm,0.9s						
VRAC	**Vranov**	**80.81**	**327**	⇑*i*P	**P**	**14 50 24.0**	**+1.9**
PV10	**Paradox Valley**	**81.08**	**48**	*e*P	**P**	**14 50 26.2**	**+2.2**
GOPC	**GO Pecny, Ondr**	**81.13**	**328**	*e*P	**P**	**14 50 25.2**	**+1.4**
GOPC	**GO Pecny, Ondr**	**81.13**	**328**	*e*P	**P**	**14 50 25.2**	**+1.4**
BZS	**Buzias**	**81.14**	**322**	⇓*i*P	**P**	**14 50 24.6**	**+0.7**
AGMN	**Agassiz Nation**	**81.15**	**34**	*e*P	**P**	**14 50 23.7**	**-0.2**
	comp=Z,29nm,1.9s						
PRA	**Prague**	**81.16**	**328**	*e*P	**P**	**14 50 26.4**	**+2.5**
PRA	**Prague**	**81.16**	**328**	*e*P	**P**	**14 50 26.4**	**+2.5**
PRU	**Pruhonice**	**81.18**	**328**	*e*P	**P**	**14 50 25.4**	**+1.4**
PRU	**Pruhonice**	**81.18**	**328**	*e*P	**P**	**14 50 25.4**	**+1.4**
TREC	**Trest**	**81.30**	**327**	*e*P	**P**	**14 50 26.1**	**+1.4**
TREC	**Trest**	**81.30**	**327**	*e*P	**P**	**14 50 26.1**	**+1.4**
WUAZ	**Wupatki**	**81.49**	**52**	*e*P	**P**	**14 50 28.4**	**+2.2**
	comp=Z,4.4nm,0.8s						
MDVR	**Moldovita**	**81.68**	**321**	⇓*i*P	**P**	**14 50 28.6**	**+1.7**
KHC	**Kasperske Hory**	**82.24**	**328**	*e*P	**P**	**14 50 30.9**	**+1.2**
KHC				AMS	AMS	15 30 00.0	
	comp=Z,200nm,15.1s						
KHC	**Kasperske Hory**	**82.24**	**328**	*e*P	**P**	**14 50 30.9**	**+1.2**
KHC				MLR	MLR		
	comp=Z,200nm,15.1s						
KHC	**Kasperske Hory**	**82.24**	**328**	*e*P	**P**	**14 50 30.5**	**+0.8**
	comp=Z,5.3nm,1.0s						
GEC2	**GERESS Array S**	**82.40**	**328**	*e*P	**P**	**14 50 31.6**	**+0.9**
GEC2				pmax	pmax		
	comp=Z,8.0nm,1.0s						
GEC2	**GERESS Array S**	**82.40**	**328**	*e*P	**P**	**14 50 31.6**	**+0.9**
	comp=Z,8.3nm,1.0s						
GERES	**GERESS Array B**	**82.40**	**328**	P	**P**	**14 50 30.6**	**0.0**
	comp=Z,3.7nm,0.8s,baz=40,slow=4.4,SNR=22						
GERES				LR	LR	15 30 54.9	
	comp=Z,100nm,18.8s,baz=50,slow=38						
VTS	**Vitosha**	**82.45**	**319**	⇓*i*P	**P**	**14 50 32.7**	**+1.6**
VTS	**Vitosha**	**82.45**	**319**	*e*P	**P**	**14 50 32.6**	**+1.5**
VTS				pmax	pmax		
	comp=Z,9.0nm,1.2s						
VTS	**Vitosha**	**82.45**	**319**	*e*P	**P**	**14 50 32.5**	**+1.5**
	comp=Z,8.9nm,1.2s						
GRFO	**Grafenberg**	**82.78**	**330**	*e*P	**P**	**14 50 33.7**	**+1.2**
GRFO				pmax	pmax		
	comp=Z,24nm,1.0s						
GRFO	**Grafenberg**	**82.78**	**330**	*e*P	**P**	**14 50 33.6**	**+1.2**
	comp=Z,24nm,1.0s						
PERS	**Pernice**	**83.47**	**326**	*e*P	**P**	**14 50 36.7**	**+0.5**
SOKA	**Soboth**	**83.47**	**326**	*i* P	**P**	**14 50 36.8**	**+0.6**
	comp=Z,14nm,1.1s,SNR=8.7						
ECSD	**EROS Data Cent**	**84.16**	**38**	*e*P	**P**	**14 50 40.4**	**+0.7**
	comp=Z,5.9nm,0.8s						
VISS	**Visnje**	**84.22**	**325**	*e*P	**P**	**14 50 40.1**	**+0.1**
BOJS	**Bojanci**	**84.26**	**325**	*i* P	**P**	**14 50 41.3**	**+1.2**
JAVS	**Javornik**	**84.51**	**326**	*e*P	**P**	**14 50 41.0**	**-0.5**
RETA	**Reutte**	**84.70**	**329**	*i* P	**P**	**14 50 44.5**	**+2.1**
	comp=Z,14nm,0.7s,SNR=6.2						
ANMO	**Albuquerque**	**84.91**	**50**	*d* *i*P	**P**	**14 50 46.0**	**+2.1**
ANMO				pmax	pmax		
	comp=Z,3.0nm,1.1s						
BFO	**Black Forest**	**85.01**	**330**	*e*P	**P**	**14 50 44.1**	**+0.2**
BFO				pmax	pmax		
	comp=Z,14nm,1.0s						
BFO	**Black Forest**	**85.01**	**330**	*e*P	**P**	**14 50 44.1**	**+0.2**
	comp=Z,14nm,1.0s						
DAVA	**Damuels**	**85.22**	**329**	*i* P	**P**	**14 50 46.0**	**+0.8**
	comp=Z,20nm,1.0s,SNR=7.8						
SCHQ	**Schefferville**	**85.40**	**16**	P	**P**	**14 50 44.5**	**-1.2**
	comp=Z,6.2nm,0.9s,baz=333,slow=11,SNR=3.3						
TUE	**Stuetta**	**86.09**	**329**	*e*P	**P**	**14 50 49.9**	**+0.3**
	comp=Z,8.7nm,1.2s						
ATD	**Arta Tunnel**	**89.39**	**284**	LR	LR	15 34 20.2	
	comp=Z,18nm,18.6s,baz=80,slow=38						
TX31	**Lajitas Ar. Si**	**90.45**	**52**	*e*P	**P**	**14 51 11.2**	**+0.7**
TXAR	**Lajitas Array**	**90.45**	**52**	P	**P**	**14 51 10.2**	**-0.4**
	comp=Z,1.4nm,0.6s,baz=292,slow=2.8,SNR=22						
ESDC	**Sonseca Array**	**97.02**	**333**	P	**P**	**14 51 40.4**	**-0.1**
	comp=Z,0.1nm,0.3s,baz=11,slow=4.7,SNR=4.5						
TORD	**Torodi Ar. Bea**	**116.95**	**314**	PKP	**PKPdf**	**14 56 53.3**	**-0.6**
	comp=Z,0.5nm,0.5s,baz=13,slow=1.4,SNR=3.8						
TORD				PP	**PP**	**14 58 00.6**	**-1.4**
	comp=Z,1.1nm,1.0s,baz=1.4,slow=5.8,SNR=3.9						
DBIC	**Dimbokro**	**125.92**	**316**	PKP	**PKPdf**	**14 57 10.8**	**-0.3**
	comp=Z,1.8nm,0.6s,baz=342,slow=4.6,SNR=5.9						
BOSA	**Boshof**	**126.12**	**259**	PKP	**PKPdf**	**14 57 10.4**	**-0.8**
	comp=Z,2.5nm,0.8s,baz=180,slow=5.1,SNR=2.8						
VNA2	**Neumayer--Watz**	**142.25**	**196**	PKP	**PKPdf**	**14 57 35.4**	**-4.4**
	baz=80,slow=2.9						
VNA3	**Neumayer Olymp**	**142.51**	**195**	PKP	**PKPdf**	**14 57 36.6**	**-3.7**
LPAZ	**La Paz**	**147.07**	**59**	PKPbc	**PKPbc**	**14 57 53.2**	**+0.6**
	comp=Z,4.5nm,0.6s,baz=328,slow=2.3,SNR=17						
LPAZ	**La Paz**	**147.07**	**59**	*e*PKP2	**PKPbc**	**14 57 52.7**	**+0.1**
LPAZ	**La Paz**	**147.07**	**59**	*e*PKPdf	**PKPbc**	**14 57 52.7**	**+0.1**

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*IDC **02** 14:38:06.7±1.1, 0°.02N×125°.28E, h0km, mb3.9/5, mb1 4.1/7, mb1mx3.6/48, mbtmp3.9/7, ML3.7/2, MS2.6/1, Ms1 2.6/1, ms1mx2.4/42, Error ellipse: s-maj=48.8km s-min=18.0km az=86.0*

*ISCJB **02** 14:38:12.0±0.6, 0°.04S±0°.06×124°.95E±0°.04, h53km, mb3.8/5, Error ellipse: s-maj=8.3km s-min=4.9km az=167.1*

*DJA **02** 14:38:14.1±0.5, 0°S±4°×12°5E±°, h65km±24km, M4.2/7, mB4.8/1, mb4.5/2, MLv4.0/7, Mw(mB)4.0/1*

ISC 02 14:38:13.6±0.8**, 0°.06S**±0°.08×**125°.00E**±0°.05**, h53km, n15, σ1ˢ.09**/20**, mb3.7**/5**, Southern Molucca Sea**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SANI	**Sanana**	**2.20**	**154**	P	**Pn**	**14 38 48.2**	**+0.4**
SANI				S	**Sn**	**14 39 14.2**	**+0.3**
TNTI	**Ternate**	**2.50**	**71**	P	**Pn**	**14 38 52.4**	**+0.5**
TNTI				S	**Sn**	**14 39 23.4**	**+2.1**
LBMI	**Labuha**	**2.56**	**103**	P	**Pn**	**14 38 52.7**	**0.0**
LBMI				S	**Sn**	**14 39 24.0**	**+1.3**
MRSI	**Marisa**	**3.11**	**280**	P	Pn	14 38 55.9	-4.3
APSI	**Ampana**	**3.46**	**256**	P	**Pn**	**14 39 05.0**	**0.0**
APSI				S	**Sn**	**14 39 46.0**	**+1.2**
TTSI	**Tana Toraja**	**5.97**	**240**	P	**Pn**	**14 39 39.8**	**+0.4**
	39nm,0.6s,747nm0.3nm						
SPSI	**Sidrap Palu**	**6.51**	**233**	P	**Pn**	**14 39 47.9**	**+1.0**
KAPI	**Kappang**	**7.19**	**227**	Pn	**Pn**	**14 39 57.1**	**+0.9**
	1.7nm,0.3s,baz=355,slow=1.8,SNR=8.8						
KAPI				Sn	**Sn**	**14 41 17.2**	**+0.6**
	0.8nm,0.3s,baz=218,slow=19,SNR=2.6						
KAPI				LR	LR	14 42 42.5	
	comp=Z,46nm,18.5s,baz=106,slow=37						
FITZ	**Fitzroy Crossi**	**17.94**	**178**	P	**P**	**14 42 17.4**	**-1.9**
	0.1nm,0.3s,baz=0.0,slow=9.1,SNR=1.9						
WRA	**Warramunga Arr**	**21.77**	**156**	P	**P**	**14 42 59.3**	**-1.8**
	1.1nm,0.4s,baz=337,slow=10,SNR=23						
ASAR	**Alice Springs**	**25.00**	**160**	P	**P**	**14 43 32.5**	**-0.2**
	2.1nm,0.8s,baz=345,slow=11,SNR=36						
ASAR				PcP	**PcP**	**14 47 07.2**	**+0.3**
	0.1nm,0.4s,baz=353,slow=1.9,SNR=5.5						
STKA	**Stephens Creek**	**35.32**	**155**	P	**P**	**14 45 04.1**	**+0.2**
	3.7nm,0.8s,baz=331,slow=8.2,SNR=7.9						
KSRS	**Korea Array**	**37.43**	**4**	P	**P**	**14 45 20.5**	**-1.2**
	1.4nm,0.8s,baz=177,slow=8.8,SNR=4.1						
USRK	**Ussuriysk Ar.**	**44.51**	**7**	P	**P**	**14 46 19.0**	**-0.8**
	0.6nm,0.5s,baz=192,slow=9.1,SNR=3.0						

TXAR	**Lajitas Array**	**125.25**	**53**	PKP	**PKPdf**	**14 57 09.7**	**+0.4**
	0.7nm,1.1s,baz=289,slow=2.8,SNR=3.5						

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*IDC **02** 14:39:22.4±0.8, 33°.89N×72°.51E, h0km, mb3.9/13, mb1 4.0/18, mb1mx3.7/59, mbtmp3.9/18, ML3.8/5, Error ellipse: s-maj=23.2km s-min=15.4km az=51.0*

*NDI **02** 14:39:23.1±2.3, 33°.74N×72°.07E, h10km, ML3.5*

*ISCJB **02** 14:39:24.8±0.4, 33°.81N±0°.03×72°.70E±0°.07, h34km, mb3.8/13, Error ellipse: s-maj=8.6km s-min=2.9km az=157.1*

*NNC **02** 14:39:31.2±1.2, 33°.93N×72°.64E, h77km±11km, mb3.7, mpv4.4, Error ellipse: s-maj=14.1km s-min=9.0km az=92.0*

ISC 02 14:39:27.0±0.6**, 33°.79N**±0°.05×**72°.55E**±0°.07**, h34km, n50, σ1ˢ.57**/60**, mb3.8**/13**, 11C-6D, Pakistan**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
THN	**Thein Dam**	**2.98**	**116**	*e*PN	Pn	14 40 15.4	+3.5
THN				*e*SN	**Sb**	**14 40 55.0**	**-0.5**
SMLA	**Simla**	**4.72**	**123**	*i* P	**Pn**	**14 40 38.3**	**+2.5**
SMLA				*i* S	**Sn**	**14 41 32.9**	**+3.5**
SMLA				IAML		14 42 01.6	
	comp=E,238nm,0.4s						
SMLA				IAML		14 42 03.2	
	comp=N,196nm,0.2s						
SFK	**Sufi-Kurgan**	**6.26**	**7**	⇑P	**Pn**	**14 40 59.8**	**+2.6**
	comp=N,20nm,0.7s						
SFK				⇑S	**Sn**	**14 42 08.1**	**+0.4**
	comp=N,22nm,0.5s						
BHGR	**Bahadurgarh**	**6.32**	**142**	*e*x	Sn	14 42 01.3	-7.5
KHET	**Khetri**	**6.34**	**153**	*e*P	**Pn**	**14 40 58.8**	**+0.6**
KHET				*e*P	**Pn**	**14 40 58.8**	**+0.6**
KHET				*e*S	**Sn**	**14 42 09.3**	**-0.2**
KHET				IAML		14 42 58.0	
	comp=N,25nm,0.4s						
KHET				IAML		14 43 00.3	
	comp=E,40nm,0.8s						
NDI	**New Delhi**	**6.47**	**141**	*e*P	**Pn**	**14 40 59.0**	**-0.9**
NDI				*e*x	x	14 42 48.0	
KUDL	**Kundal**	**6.56**	**148**	*e*P	**Pn**	**14 41 02.3**	**+1.1**
KUDL				*e*P	**Pn**	**14 41 02.3**	**+1.1**
KUDL				*e*S	**Sn**	**14 42 12.2**	**-2.6**
KUDL				IAML		14 43 09.6	
	comp=N,27nm,0.5s						
KUDL				IAML		14 43 14.3	
	comp=E,35nm,0.5s						
AYAN	**Aya Nagar**	**6.58**	**142**	*e*P	**Pn**	**14 41 03.4**	**+2.0**
AYAN				*e*S	**Sn**	**14 42 15.1**	**-0.2**
BISR	**Bishrakh**	**6.68**	**140**	*e*S	**Sn**	**14 42 16.7**	**-0.9**
SONA	**Sohna**	**6.75**	**144**	*e*P	**Pn**	**14 41 05.1**	**+1.3**
SONA				*e*S	**Sn**	**14 42 19.4**	**-0.1**
SONA				IAML		14 43 14.4	
	comp=N,22nm,0.1s						
SONA				IAML		14 43 14.8	
	comp=E,58nm,0.6s						
MNAS	**Manas**	**8.69**	**360**	⇑P	**Pn**	**14 41 31.3**	**+0.9**
	comp=E,8.1nm,0.6s						
MNAS				⇑S	**Sn**	**14 43 08.7**	**+1.5**
	comp=E,14nm,1.0s						
AAK	**Ala-Archa**	**8.96**	**9**	Pn	**Pn**	**14 41 35.6**	**+1.4**
	comp=E,3.5nm,0.3s,baz=174,slow=4.6,SNR=72						
AAK				Sn	**Sn**	**14 43 10.0**	**-4.1**
	baz=3.2,slow=18,SNR=2.6						
AAK	**Ala-Archa**	**8.96**	**9**	⇑P	**Pn**	**14 41 35.3**	**+1.1**
	comp=E,11nm,0.6s						
AAK				⇓S	**Sn**	**14 43 14.2**	**+0.2**
	comp=E,20nm,1.1s						
TKM2	**Tokmak 2**	**9.43**	**14**	⇓P	**Pn**	**14 41 42.4**	**+1.8**
	comp=E,5.5nm,0.9s						
TKM2				⇑S	**Sn**	**14 43 24.9**	**-0.6**
	comp=E,6.9nm,0.9s						
KK31	**Karatay Array**	**9.44**	**351**	⇓P	**Pn**	**14 41 42.9**	**+2.4**
	comp=E,18nm,0.7s,baz=177,slow=12,SNR=140						
KK31				⇓S	**Sn**	**14 43 26.6**	**+1.2**
	comp=E,3.4nm,0.6s,baz=170,slow=23,SNR=3.7						
PYUN	**Piuthan**	**10.61**	**120**	*e*P	**Pn**	**14 41 56.2**	**-0.6**
	comp=E,20nm,0.3s						
PDGK	**Podgornoye**	**10.96**	**28**	⇑P	**Pn**	**14 42 02.6**	**+1.2**
	comp=E,5.2nm,0.9s						
KOLN	**Koldanda**	**11.23**	**119**	*e*P	**Pn**	**14 42 04.2**	**-1.2**
	comp=E,9.7nm,0.3s						
GKN	**Gorkha**	**11.87**	**116**	*e*P	**Pn**	**14 42 13.1**	**-1.0**
	comp=E,14nm,0.3s						
DMN	**Daman**	**12.43**	**116**	*e*P	**Pn**	**14 42 20.1**	**-1.8**
	comp=E,28nm,0.7s						
KKN	**Kakani**	**12.47**	**115**	*e*P	**Pn**	**14 42 20.1**	**-2.2**
	comp=E,24nm,0.5s						
PKIN	**Phulchoki**	**12.67**	**116**	*e*P	**Pn**	**14 42 22.9**	**-2.2**
	comp=E,14nm,0.5s						
GUN	**Gumba**	**12.86**	**114**	*e*P	**Pn**	**14 42 25.5**	**-2.3**
	comp=E,14nm,0.4s						
RAMN	**Ramite**	**13.91**	**116**	*e*P	Pn	14 42 38.7	-3.3
TAPN	**Taplejung**	**14.55**	**112**	*e*P	**Pn**	**14 42 47.6**	**-3.1**
MK31	**Makanchi Array**	**14.95**	**27**	⇓P	**Pn**	**14 42 57.3**	**+1.5**
	comp=E,1.1nm,0.7s,baz=210,slow=11,SNR=9.9						
MKAR	**Makanchi Array**	**14.95**	**27**	Pn	Pn	14 42 52.4	-3.5
	comp=E,0.1nm,0.3s,baz=214,slow=14,SNR=8.6						
KURBB	**Kurchatov Arra**	**17.39**	**13**	Pn	**Pn**	**14 43 22.6**	**-4.2**
	comp=E,0.1nm,0.3s,baz=203,slow=11,SNR=14						
KURBB	**Kurchatov Arra**	**17.39**	**13**	⇑P	**Pn**	**14 43 27.1**	**+0.3**
	comp=E,1.8nm,0.6s						
AB31	**Akbulak array**	**18.07**	**333**	⇑P	**P**	**14 43 35.6**	**+0.2**
	comp=E,1.5nm,0.5s,baz=149,slow=12,SNR=28						
VOSK	**Vostochnaya**	**18.96**	**357**	⇓P	**P**	**14 43 44.4**	**-0.8**
	comp=E,1.1nm,0.7s						
BVA0	**Borovoye Array**	**19.29**	**356**	P	**P**	**14 43 48.4**	**-0.5**
	comp=E,1.6nm,0.6s,baz=168,slow=11,SNR=13						
BVAR	**Borovoye Array**	**19.29**	**356**	P	**P**	**14 43 47.5**	**-1.3**
	comp=E,0.5nm,0.3s,baz=163,slow=11,SNR=17						
ZRNK	**Zerenda**	**19.32**	**354**	⇑P	**P**	**14 43 48.5**	**-0.7**
	comp=E,1.6nm,0.5s						
AKTO	**Aktyubinsk**	**19.76**	**332**	P	**P**	**14 43 53.6**	**-0.4**
	comp=E,0.9nm,0.3s,baz=138,slow=10,SNR=17						
AKTO	**Aktyubinsk**	**19.76**	**332**	⇑P	**P**	**14 43 53.5**	**-0.5**
	comp=E,3.6nm,0.7s						
ZALV	**Zalesovo Beam**	**21.95**	**20**	P	**P**	**14 44 16.5**	**-1.1**
	comp=E,2.2nm,0.4s,baz=212,slow=11,SNR=12						
ARU	**Arti**	**24.60**	**341**	P	**P**	**14 44 43.7**	**-0.2**
	comp=E,1.9nm,0.5s,baz=121,slow=10,SNR=4.8						
CMAR	**Chiang Mai Arr**	**28.08**	**116**	P	**P**	**14 45 17.6**	**+2.0**
	comp=E,0.6nm,0.6s,baz=308,slow=9.1,SNR=6.1						
AKASG	**Malin Array Be**	**35.66**	**312**	P	**P**	**14 46 21.1**	**-0.6**
	comp=E,0.1nm,0.3s,baz=82,slow=6.9,SNR=4.1						
FINES	**FINESS Array B**	**40.44**	**328**	P	**P**	**14 47 01.5**	**-0.4**
	comp=E,1.3nm,0.7s,baz=104,slow=12,SNR=2.4						
ARCES	**ARCESS Array B**	**44.13**	**338**	P	**P**	**14 47 31.4**	**-0.4**
	comp=E,2.6nm,0.8s,baz=120,slow=8.8,SNR=5.7						
HFS	**Hagfors**	**45.99**	**323**	P	**P**	**14 47 46.3**	**-0.4**
	comp=E,2.6nm,0.5s,baz=107,slow=9.9,SNR=14						
NB2	**NORSAR Subarra**	**47.31**	**324**	P	**P**	**14 47 56.1**	**-1.0**
	comp=Z,1.3nm,0.5s,baz=97,slow=7.9						
NOA	**NORSAR Array B**	**47.31**	**324**	P	**P**	**14 47 56.6**	**-0.5**
	comp=Z,1.7nm,0.8s,baz=103,slow=7.3,SNR=7.5						
ESDC	**Sonseca Array**	**59.87**	**300**	P	**P**	**14 49 29.5**	**0.0**
	comp=Z,0.4nm,0.5s,baz=62,slow=8.5,SNR=6.0						
TORD	**Torodi Ar. Bea**	**66.97**	**271**	P	**P**	**14 50 16.8**	**+0.1**
	comp=Z,0.3nm,0.5s,baz=65,slow=6.7,SNR=5.7						
WRA	**Warramunga Arr**	**79.48**	**123**	P	**P**	**14 51 31.4**	**+1.1**
	comp=Z,0.4nm,0.4s,baz=322,slow=5.1,SNR=12						
ASAR	**Alice Springs**	**81.66**	**126**	P	**P**	**14 51 42.5**	**+0.6**
	comp=Z,0.6nm,0.6s,baz=310,slow=5.2,SNR=5.8						
YKA	**Yellowknife Ar**	**83.88**	**3**	P	**P**	**14 51 52.2**	**-0.7**
	comp=Z,0.3nm,0.6s,baz=348,slow=5.0,SNR=5.0						

DJA 02 14:43:10.1±0.9**, 9°S**±6°×**11°1E**±°**, h15km**±6km**, M3.5**/9**, MLv3.5**/9**, Jawa**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PCJI	**Pacitan**	**0.84**	**39**	P	Pb	14 43 24.2	-2.2
UGM	**Wanagama**	**0.94**	**353**	P	Pb	14 43 27.3	-0.8
WOJI	**Wonogiri, Jawa**	**1.04**	**16**	P	Pb	14 43 28.7	-1.2
WOJI				S	Sb	14 43 42.9	-0.5
PWJI	**Pagerwojo**	**1.42**	**55**	P	Pn	14 43 33.2	-2.1
PWJI				S	Sn	14 43 51.2	-2.5
NGJI	**Ngawi**	**1.68**	**29**	P	Pb	14 43 41.2	+0.4
KPJI	**Karang Pucung**	**2.27**	**312**	P	Pn	14 43 48.0	+1.0
CMJI	**Cimerak**	**2.41**	**296**	P	Pn	14 43 48.2	-0.9
CISI	**Cisompet, Garu**	**3.08**	**294**	P	Pn	14 43 57.6	-0.7

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*IDC **02** 14:43:07.0±2.0, 22°.94S×70°.72W, h0km, mb4.1/3, mb1 4.1/5, mb1mx3.7/35, mbtmp4.0/5, ML4.0/2, MS3.0/5, Ms1 3.0/5, ms1mx2.8/26, Error ellipse: s-maj=55.1km s-min=47.9km az=170.0*

*ISCJB **02** 14:43:11.8±1.1, 22°.66S±0°.04×70°.62W±0°.07, h32km±7km, mb4.4/5, MS3.0/2, Error ellipse: s-maj=10.6km s-min=6.4km az=21.1*

*NEIC **02** 14:43:13.0, 22°.51S×70°.51W, h37km, mb4.4/1, After GUC. NEIC Felt [II] at Tocopilla.*

*GUC **02** 14:43:13.9±0.7, 22°.51S×70°.51W, h37km±2km, ML4.1*

ISC 02 14:43:12.3±1.5**, 22°.54S**±0°.04×**70°.63W**±0°.08**, h27km**±10km**, n29, σ1ˢ.39**/27**, mb4.4**/5**, 2C-5D, Near coast of northern Chile**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PB04	**IPOC Station P**	**0.49**	**65**	⇓*i*P	**Pb**	**14 43 22.9**	**+0.4**
PB04				*i* S	**Sb**	**14 43 29.4**	**-0.2**
PB04				AML	AML	14 43 30.0	
	comp=N,13μm,0.5s						
PB10	**IPOC Station P**	**0.97**	**176**	⇓*i*P	**Pb**	**14 43 31.5**	**+1.1**
PB10				*i* S	**Sn**	**14 43 45.2**	**+2.2**
PB10				AML	AML	14 43 49.9	
	comp=E,12μm,0.6s						
PB06	**IPOC Station P**	**0.99**	**100**	⇓*i*P	**Pb**	**14 43 30.8**	**-0.1**
PB06				*i* S	**Sb**	**14 43 42.7**	**-0.9**
PB06				AML	AML	14 43 43.1	
	comp=N,14μm,0.2s						
PB07	**IPOC Station P**	**1.07**	**40**	⇓*i*P	**Pb**	**14 43 32.0**	**-0.2**
PB07				*i* S	**Sn**	**14 43 45.0**	**-0.7**
PB07				AML	AML	14 43 47.0	
	comp=N,7μm,0.1s						
PB09	**IPOC Station P**	**1.49**	**60**	⇓*i*P	**Pb**	**14 43 39.0**	**-0.4**
PB09				*i* S	**Sb**	**14 43 57.4**	**-0.5**
PB09				AML	AML	14 44 03.9	
	comp=E,18μm,0.6s						
PATCX	**Punta Patache**	**1.77**	**15**	⇑*i*P	**Pn**	**14 43 41.9**	**+0.7**
PATCX				*i* S	**Sb**	**14 44 06.6**	**+0.6**
PB01	**IPOC Station P**	**1.83**	**36**	⇑*i*P	**Pn**	**14 43 43.6**	**+1.4**
PB01				*i* S	**Sn**	**14 44 05.8**	**+1.3**
PB01				AML	AML	14 44 12.1	
	comp=E,3μm,0.3s						
HMBC	**Humberstone**	**2.36**	**17**	*e*P	**Pn**	**14 43 50.1**	**+0.8**
PB08	**IPOC Station P**	**2.76**	**30**	*e*P	**Pn**	**14 43 57.4**	**+2.2**
PB08				AML	AML	14 44 39.9	
	comp=N,808nm,0.2s						
LCO	**Las Campanas**	**6.44**	**181**	*e*Pn	**Pn**	**14 44 45.6**	**0.0**
LPAZ	**La Paz**	**6.66**	**21**	Pn	Pn	14 44 53.3	+4.4
	comp=N,1.6nm,0.3s,baz=205,slow=4.3,SNR=26						
LPAZ				LR	LR	14 47 52.0	
	comp=N,108nm,20.2s,baz=198,slow=40						
SIV	**San Ignacio**	**11.13**	**56**	Pn	**Pn**	**14 45 49.7**	**-0.1**
	comp=N,0.7nm,0.3s,baz=257,slow=15,SNR=4.7						
SIV				Sn	**Sn**	**14 47 56.6**	**+3.1**
	comp=N,0.1nm,0.3s,baz=150,slow=20,SNR=2.8						
SIV				LR	LR	14 50 55.8	
	comp=N,118nm,20.0s,baz=176,slow=41						
CPUP	**Villa Florida**	**12.69**	**110**	LR	LR	14 50 42.5	
	comp=N,27nm,19.9s,baz=252,slow=36						
SAML	**Samuel**	**15.29**	**29**	Pn	**Pn**	**14 46 42.9**	**-3.6**
TRQA	**Tornquist**	**17.16**	**156**	*e*Pn	**Pn**	**14 47 09.0**	**-1.1**
	comp=N,1.0nm,0.4s						
BDFB	**Brasilia**	**22.43**	**76**	LR	LR	14 57 15.0	
	comp=N,61nm,18.0s,baz=114,slow=38						
PTGA	**Pitinga**	**24.04**	**27**	LR	LR	14 57 47.8	
	comp=N,42nm,18.0s,baz=208,slow=36						
SNAA	**Sanae**	**61.83**	**161**	*e*P	**P**	**14 53 27.5**	**-1.1**
	comp=N,34nm,0.6s						
QSPA	**South Pole Qui**	**67.65**	**180**	*e*P	**P**	**14 54 05.8**	**-0.9**
	comp=N,2.5nm,0.7s						
DBIC	**Dimbokro**	**70.56**	**74**	P	**P**	**14 54 25.8**	**+0.3**
	comp=N,3.3nm,1.0s,baz=239,slow=5.9,SNR=1.9						
TORD	**Torodi Ar. Bea**	**79.21**	**71**	P	**P**	**14 55 16.0**	**+0.6**
	comp=N,1.7nm,0.8s,baz=252,slow=5.3,SNR=9.2						
YKA	**Yellowknife Ar**	**91.64**	**341**	P	**P**	**14 56 16.8**	**+0.3**
	comp=N,0.2nm,0.7s,baz=141,slow=4.1,SNR=7.8						
H11S2	**WAKE ISLAND Hy**	**126.42**	**277**	T	T	17 21 53.3	
	baz=104,slow=75,SNR=3.1						
H11S1	**WAKE ISLAND Hy**	**126.43**	**277**	T	T	17 21 36.1	
	baz=104						
H11S3	**WAKE ISLAND Hy**	**126.44**	**277**	T	T	17 21 55.1	
	baz=104,slow=75,SNR=3.8						
H11N3	**WAKE ISLAND Hy**	**126.53**	**278**	T	T	17 21 44.6	
	baz=113,slow=74,SNR=16						
H11N2	**WAKE ISLAND Hy**	**126.55**	**278**	T	T	17 21 46.2	
	baz=113,slow=74,SNR=14						
H11N1	**WAKE ISLAND Hy**	**126.55**	**278**	T	T	17 21 47.2	
	baz=113						
MKAR	**Makanchi Array**	**147.41**	**35**	PKPbc	**PKPbc**	**15 02 53.0**	**-0.7**
	comp=N,0.9nm,0.7s,baz=338,slow=2.9,SNR=12						

IDC 02 14:48:05.9±4.2**, 36°.84N**×**143°.46E, h0km, mb3.5**/2**, mb1 3.7**/5**, mb1mx3.3**/57**, mbtmp3.8**/5**, ML3.1**/2**, Error ellipse: s-maj=74.9km s-min=44.5km az=29.0, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MJAR	**Matsushiro Arr**	**4.23**	**268**	Pn	Pn	14 49 11.3	-0.4
	0.5nm,0.3s,baz=86,slow=15,SNR=5.9						
JHJ	**Hachijo jima 2**	**4.79**	**220**	Pn	Pn	14 49 19.1	-0.1
	4.8nm,0.3s,baz=68,slow=19,SNR=1.6						
JHJ				Sn	Sn	14 50 12.8	-2.7
	4.0nm,0.3s,baz=233,slow=20,SNR=1.6						
JCJ	**Chichijima**	**9.78**	**187**	Pn	Pn	14 50 27.7	-0.1
	baz=282,slow=20						
WRA	**Warramunga Arr**	**57.13**	**190**	P	P	14 57 54.3	0.0
	0.4nm,0.4s,baz=7.8,slow=7.0,SNR=13						
ASAR	**Alice Springs**	**60.85**	**190**	P	P	14 58 20.0	-0.1
	0.2nm,0.5s,baz=1.5,slow=6.0,SNR=4.5						

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*IDC **02** 14:55:18.0±5.1, 17°.97N×103°.91W, h0km, mb3.1/3, mb1 3.6/5, mb1mx3.5/48, mbtmp3.3/5, ML3.5/2, Error ellipse: s-maj=105.6km s-min=36.3km az=32.0*

*ISCJB **02** 14:55:38.6±0.5, 19°.16N±0°.05×102°.25W±0°.03, h111km±6km, mb2.9/3, Error ellipse: s-maj=8.3km s-min=4.6km az=14.1*

*MEX **02** 14:55:40.2±1.0, 19°.19N×102°.26W, h114km±8km, MD4.2*

*NEIC **02** 14:55:40.2, 19°.19N×102°.26W, h114km, MD4.2(MEX), After MEX.*

ISC 02 14:55:39.0±0.9**, 19°.19N**±0°.05×**102°.25W**±0°.03**, h110km**±8km**, n28, σ0ˢ.82**/42**, mb3.0**/3**, Michoacan**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
URUA	**Uruapan**	**0.29**	**36**	*i* P	**Pn**	**14 55 54.2**	**-0.8**
URUA				*i* S	**Sn**	**14 56 06.9**	**0.0**
MOIG	**Morelia**	**1.12**	**64**	*i* P	**Pn**	**14 56 01.8**	**+0.1**
MOIG				*i* S	**Sn**	**14 56 18.7**	**0.0**
MOIG	**Morelia**	**1.12**	**64**	*i* P	**Pn**	**14 56 01.8**	**+0.1**
MOIG				*i* S	**Sn**	**14 56 18.7**	**0.0**
EZ5V		**1.31**	**283**	*e*P	**Pn**	**14 56 04.7**	**+0.9**
EZ5V				*e*S	**Sn**	**14 56 23.4**	**+0.9**
MMIG	**Aquila**	**1.37**	**229**	*i* P	**Pn**	**14 56 04.0**	**-0.2**
MMIG				*e*S	**Sn**	**14 56 23.2**	**-0.1**
MMIG	**Aquila**	**1.37**	**229**	*i* P	**Pn**	**14 56 04.0**	**-0.2**
MMIG				*e*S	**Sn**	**14 56 23.2**	**-0.1**
R15V		**1.63**	**270**	*e*P	**Pn**	**14 56 07.7**	**+0.2**
R15V				*e*S	**Sn**	**14 56 29.1**	**-0.1**
ZIIG	**Zihuatanejo**	**1.74**	**154**	*i* P	**Pn**	**14 56 08.9**	**+0.1**
ZIIG				*e*S	**Sn**	**14 56 30.9**	**-0.5**
ZIIG	**Zihuatanejo**	**1.74**	**154**	*i* P	**Pn**	**14 56 08.9**	**+0.1**
ZIIG				*e*S	**Sn**	**14 56 30.9**	**-0.5**
ARIG	**Puente Sto Nin**	**2.02**	**116**	*e*P	**Pn**	**14 56 13.0**	**+0.8**
ARIG				*e*S	**Sn**	**14 56 37.1**	**-0.6**
TOVM	**TOLUCA**	**2.44**	**87**	*e*P	Pn	14 56 21.2	+3.4
MAVM	**Malinalco, Edo**	**2.62**	**95**	*e*P	**Pn**	**14 56 21.0**	**+0.8**
CJM	**Chamela**	**2.65**	**277**	*e*P	**Pn**	**14 56 20.4**	**0.0**
CJM	**Chamela**	**2.65**	**277**	*e*P	**Pn**	**14 56 20.4**	**0.0**
PLIG	**Platanillo**	**2.72**	**106**	*e*P	**Pn**	**14 56 22.8**	**+1.4**
PLIG				*e*S	**Sn**	**14 56 53.2**	**-0.8**
PLIG	**Platanillo**	**2.72**	**106**	*e*P	**Pn**	**14 56 22.8**	**+1.4**
PLIG				*e*S	**Sn**	**14 56 53.2**	**-0.8**
CAIG	**El Cayaco**	**2.84**	**138**	*e*P	**Pn**	**14 56 23.7**	**+0.7**
CAIG				*e*S	**Sn**	**14 56 56.6**	**-0.2**
CAIG	**El Cayaco**	**2.84**	**138**	*e*P	**Pn**	**14 56 23.7**	**+0.7**
CAIG				*e*S	**Sn**	**14 56 56.6**	**-0.2**
MZVM		**2.86**	**89**	*e*P	Pn	14 56 28.7	+5.6
YAIG	**Yautepec**	**3.03**	**96**	*e*P	**Pn**	**14 56 25.5**	**-0.1**
YAIG				*e*S	**Sn**	**14 57 00.5**	**-0.9**
YAIG	**Yautepec**	**3.03**	**96**	*e*P	**Pn**	**14 56 25.5**	**-0.1**
YAIG				*e*S	**Sn**	**14 57 00.5**	**-0.9**
PPM	**Popocatepetl**	**3.43**	**91**	*e*P	**Pn**	**14 56 31.0**	**-0.2**

PPM	**Popocatepetl**	**3.43**	**91**	*e*P	**Pn**	**14 56 31.0**	**-0.2**
CMIG	**Matias Romero**	**7.31**	**105**	Pn	**Pn**	**14 57 25.0**	**+1.8**
	1.0nm,0.3s,baz=284,slow=12,SNR=13						
CMIG				Sn	**Sn**	**14 58 46.6**	**+2.0**
	5.2nm,0.3s,baz=148,slow=18,SNR=22						
TXAR	**Lajitas Array**	**10.18**	**353**	Pn	**Pn**	**14 58 03.5**	**+1.3**
	0.1nm,0.3s,baz=182,slow=14,SNR=6.6						
NVAR	**Mina Array Bea**	**23.71**	**327**	P	P	15 00 34.5	-6.7
	0.2nm,0.4s,baz=131,slow=13,SNR=1.7						
PDAR	**Pinedale Array**	**24.30**	**347**	P	**P**	**15 00 46.8**	**+0.2**
	0.4nm,0.7s,baz=144,slow=11,SNR=4.0						
YKA	**Yellowknife Ar**	**44.11**	**352**	P	**P**	**15 03 34.1**	**-2.0**
	0.3nm,0.7s,baz=162,slow=7.5,SNR=4.4						

IDC ***02*** *14:57:28.3±2.3, 36.°22N×142.°08E, h0km, mb3.5/6, mb1 3.5/7, mb1mx3.3/57, mbtmp3.4/7, ML2.9/1, Error ellipse: s-maj=64.4km s-min=32.3km az=63.0*

ISCJB ***02*** *14:57:31.1±0.9, 36.°21N±0.°06×141.°94E±0.°08, h26km, mb3.4/6, Error ellipse: s-maj=10.2km s-min=8.5km az=35.4*

JMA ***02*** *14:57:31.1±0.2, 36.°32N×141.°96E, h52km, M3.1*

ISC 02 14:57:33.7±1.2**, 36.°17N**±0.°08×**141.°74E**±0.°09**, h26**km**, n15, σ1ˢ30**/17**, mb3.5**/6**, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.85**	**237**	P	**Pn**	**14 57 50.4**	**+0.4**
CHOJ				S	**Sn**	**14 58 04.0**	**+2.3**
BSO1	**Boso 1**	**1.64**	**202**	P	**Pn**	**14 58 01.6**	**+1.3**
BSO3	**Boso 3**	**1.69**	**217**	P	**Pn**	**14 58 02.1**	**+0.7**
JRY	**Ryogami san**	**2.30**	**267**	P	**Pn**	**14 58 10.3**	**+0.3**
JRY				*e*S	**Sb**	**14 58 39.7**	**-2.9**
JOD2	**Odawara 2**	**2.34**	**248**	P	**Pn**	**14 58 11.4**	**+0.9**
MJAR	**Matsushiro Arr**	**2.87**	**278**	Pn	**Pn**	**14 58 18.5**	**+0.7**
	1.5nm,0.3s,baz=104,slow=9.0,SNR=14						
MAT	**Matsushiro**	**2.87**	**278**	P	**Pn**	**14 58 19.3**	**+1.5**
MAT				*e*S	**Sn**	**14 58 53.2**	**+1.6**
JHJ	**Hachijo jima 2**	**3.45**	**208**	Sn	**Sn**	**14 59 05.3**	**-0.4**
	16nm,0.3s,baz=107,slow=19,SNR=1.6						
JCJ	**Chichijima**	**9.06**	**177**	Sn	Sn	15 01 15.8	-8.1
	2.7nm,0.3s,baz=287,slow=20,SNR=2.1						
SONM	**Songino Array**	**28.49**	**305**	P	**P**	**15 03 27.3**	**+0.5**
	0.4nm,0.6s,baz=104,slow=8.9,SNR=3.4						
ZALV	**Zalesovo Beam**	**42.69**	**313**	P	**P**	**15 05 27.6**	**-0.5**
	0.2nm,0.4s,baz=55,slow=7.6,SNR=1.8						
MKAR	**Makanchi Array**	**44.80**	**303**	P	**P**	**15 05 45.4**	**+0.2**
	0.2nm,0.6s,baz=97,slow=8.7,SNR=4.0						
KURBB	**Kurchatov Arra**	**46.74**	**309**	P	**P**	**15 06 00.4**	**0.0**
	0.6nm,0.6s,baz=83,slow=7.9,SNR=3.8						
WRA	**Warramunga Arr**	**56.25**	**188**	P	**P**	**15 07 11.0**	**-0.9**
	0.6nm,0.8s,baz=5.6,slow=7.5,SNR=2.0						
AKASG	**Malin Array Be**	**75.14**	**323**	P	**P**	**15 09 12.9**	**-0.5**
	0.3nm,0.4s,baz=47,slow=6.2,SNR=1.3						

NIED ***02*** *15:02:00, 39.°10N×143.°20E, h14km, Mw4.5 Best double couple: $M_0$7.32000×10¹⁵ NP1:ϕ_s49.00000°, δ46.00000°, λ-151.00000°. NP2:ϕ_s298.00000°, δ69.00000°, λ-48.00000°.*

JMA ***02*** *15:02:46.5±0.2, 39.°08N×143.°25E, h14km±3km, M4.8*

JMA Felt I J1.

ISCJB ***02*** *15:02:47.4±0.9, 39.°06N±0.°03×143.°21E±0.°03, h28km±6km, mb4.7/131, MS4.1/23, Error ellipse: s-maj=4.7km s-min=3.2km az=147.6*

BJI ***02*** *15:02:48.6, 39.°08N×143.°01E, h35km, mb4.9/71, mB4.9/47, Ms4.5/56, Ms7 4.3/30*

MOS ***02*** *15:02:49.0±1.0, 39.°16N×143.°09E, h34km, mb4.9/41, MS4.2/5, Error ellipse: s-maj=8.1km s-min=4.9km az=105.2*

NEIC ***02*** *15:02:50.1±0.8, 39.°14N×143.°07E, h35km±5km, mb4.7/63, Error ellipse: s-maj=6.4km s-min=3.9km az=145.0*

IDC ***02*** *15:02:50.8±2.1, 39.°06N×143.°15E, h41km±18km, mb4.2/32, mb1 4.4/38, mb1mx4.3/52, mbtmp4.5/38, ML4.2/5, MS3.8/14, Ms1 3.8/14, ms1mx3.5/53, Error ellipse: s-maj=12.4km s-min=10.3km az=106.0*

ISC 02 15:02:49.4±0.6**, 39.°13N**±0.°04×**143.°14E**±0.°04**, h29**km±3km**, n343, σ1ˢ29**/364**, mb4.7**/131**, MS4.1**/26**, 19C-33D, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MIYJ	**Miyakonagasawa**	**1.11**	**294**	P	**Pn**	**15 03 08.4**	**-0.6**
MIYJ				*e*S	**Sb**	**15 03 23.9**	**-0.3**
OFUJ	**Ofunato**	**1.14**	**268**	P	**Pn**	**15 03 09.1**	**-0.3**
JTH	**Tanohata**	**1.27**	**310**	P	**Pn**	**15 03 11.0**	**-0.2**
JTH				*e*S	**Sb**	**15 03 30.9**	**+2.2**
JOM	**Ohasama**	**1.47**	**284**	P	**Pn**	**15 03 14.4**	**+0.4**
JOM				S	**Sb**	**15 03 34.7**	**+0.3**
JMK	**Ichinoseki**	**1.50**	**264**	P	**Pn**	**15 03 14.7**	**+0.3**
JMK				*e*S	**Sb**	**15 03 35.6**	**+0.3**
JIO	**Ouri**	**1.55**	**245**	P	**Pn**	**15 03 14.6**	**-0.5**
JANG	**Nango**	**1.76**	**315**	P	**Pn**	**15 03 18.6**	**+0.7**
JRG	**Rokugo**	**1.96**	**278**	P	**Pn**	**15 03 21.4**	**+0.7**
JOU	**Okura**	**2.08**	**249**	P	**Pn**	**15 03 22.8**	**+0.4**
JOU				S	**Sn**	**15 03 48.4**	**+1.1**
JYK	**Kaneyama**	**2.17**	**265**	P	**Pn**	**15 03 24.5**	**+0.9**
JAH	**Hinai**	**2.20**	**299**	P	**Pn**	**15 03 24.6**	**+0.6**
JAH				*e*S	**Sb**	**15 03 54.5**	**-0.8**
JMM	**Marumori**	**2.23**	**236**	P	**Pn**	**15 03 24.4**	**0.0**
JTM	**Tenmabayashi**	**2.29**	**317**	P	**Pn**	**15 03 25.3**	**+0.1**
JTM				*e*S	**Sb**	**15 03 56.7**	**-1.3**
ERM	**Erimo**	**2.88**	**0**	⇓*i*P	**Pn**	**15 03 32.5**	**-0.8**
ERM	**Erimo**	**2.88**	**0**	*e*Pn	**Pn**	**15 03 31.5**	**-1.8**
ERM				*e*Sn	**Sn**	**15 04 09.0**	**+2.1**
MJAR	**Matsushiro Arr**	**4.68**	**238**	P	**Pn**	**15 03 59.7**	**+1.6**
	43nm,0.3s,baz=46,slow=12,SNR=641						
MJAR				LR	LR	15 05 55.9	
	comp=Z,1μm,20.4s,baz=55,slow=40						
MAJO	**Matsushiro**	**4.68**	**238**	*d i*P	**Pn**	**15 04 00.2**	**+2.1**
MAJO	**Matsushiro**	**4.68**	**238**	*e*Pn	**Pn**	**15 03 59.9**	**+1.7**
YUK	**Yuzh-Kuril'sk**	**5.31**	**22**	*e*P	Pn	15 04 03.5	-3.1
YUK				*e*S	Sn	15 04 59.6	-7.2
YUK				pmax	pmax		
	comp=Z,513nm,0.4s						
YUK				pmax	pmax		
	comp=E,192nm,0.5s						
YUK				pmax	pmax		
	comp=N,519nm,0.6s						
YUK				MLR	MLR		
	comp=Z,1μm,20.0s						
SHO	**Shikotan**	**5.49**	**29**	⇑*i*P	Pn	15 04 04.9	-4.2
SHO				pmax	pmax		
	comp=Z,278nm,0.5s						
SHO				pmax	pmax		
	comp=N,161nm,0.7s						
SHO				pmax	pmax		
	comp=E,223nm,0.4s						
INU	**Inuyama**	**6.17**	**234**	*e*Pn	**Pn**	**15 04 17.5**	**-1.1**
JHJ	**Hachijo jima 2**	**6.58**	**205**	P	**Pn**	**15 04 22.4**	**-1.9**
	comp=E,48nm,0.3s,baz=320,slow=17,SNR=27						
JHJ				S	Sn	15 05 32.2	-6.2
	comp=E,98nm,0.3s,baz=53,slow=22,SNR=7.3						
KUR	**Kuril'sk**	**7.03**	**28**	⇑*e*P	**Pn**	**15 04 28.6**	**-1.8**
KUR				*i* S	Sn	15 05 43.0	-6.3
KUR				pmax	pmax		
	comp=N,51nm,0.7s						
KUR				pmax	pmax		
	comp=E,16nm,0.7s						
KUR				pmax	pmax		
	comp=Z,86nm,0.7s						
KUR				smax	smax		
	comp=E,228nm,0.5s						
KUR				smax	smax		
	comp=N,117nm,0.3s						
KUR				smax	smax		
	comp=N,336nm,2.6s						
KUR				smax	smax		
	comp=E,714nm,2.6s						
YSS	**Yuzh-Sakhalins**	**7.82**	**358**	⇑*e*P	**Pn**	**15 04 42.7**	**+1.5**
YSS				*e*S	**Sn**	**15 06 09.3**	**+0.6**
YSS				pmax	pmax		
	comp=Z,30nm,1.1s						
YSS				smax	smax		
	comp=N,60nm,1.3s						
YSS				smax	smax		
	comp=E,40nm,0.8s						
YSS	**Yuzh-Sakhalins**	**7.82**	**358**	*e*Pn	**Pn**	**15 04 40.2**	**-1.0**
YSS				*e*Sn	**Sn**	**15 06 06.3**	**-2.4**
USRK	**Ussuriysk Ar.**	**9.75**	**305**	P	**Pn**	**15 05 10.6**	**+2.9**
	comp=E,1.3nm,0.3s,baz=93,slow=14,SNR=21						
MDJ	**Mudanjiang**	**11.48**	**303**	P	**Pn**	**15 05 33.1**	**+1.8**
MDJ				S	**Sn**	**15 07 38.3**	**-0.2**
MDJ				PcP	**PcP**	**15 11 21.7**	**-0.6**
MDJ				ScP	**ScP**	**15 14 53.3**	**+0.4**
MDJ				PcS	**PcS**	**15 14 56.4**	**+0.3**
MDJ				ScS	**ScS**	**15 18 27.3**	**-1.0**
MDJ				pmax	pmax		
	comp=E,9.0nm,0.8s						
MDJ				pmax	pmax		
	comp=E,180nm,5.0s						
MDJ	**Mudanjiang**	**11.48**	**303**	*e*Pn	**Pn**	**15 05 29.8**	**-1.5**
	comp=E,36nm,1.0s						
JNU	**Nakatsue**	**11.58**	**243**	P	**Pn**	**15 05 33.2**	**+0.4**
	comp=E,1.0nm,0.3s,baz=49,slow=3.5,SNR=15						
JNU				S	Sn	15 07 27.8	-13
	comp=E,0.3nm,0.3s,baz=60,slow=8.1,SNR=2.9						
TYV	**Tymovskoe**	**11.73**	**359**	*e*P	**Pn**	**15 05 35.2**	**+0.5**
TYV				pmax	pmax		
	comp=Z,9.0nm,0.6s						
TYV				MLR	MLR		
	comp=N,2μm,16.0s						
TYV				MLR	MLR		
	comp=Z,2μm,13.0s						
CBIJ	**Chichi jima**	**12.03**	**184**	P	Pn	15 05 34.4	-4.5
CBIJ				S	Sn	15 07 39.3	-13
JCJ	**Chichijima**	**12.03**	**184**	P	Pn	15 05 34.4	-4.5
	comp=Z,4.2nm,0.3s,baz=281,slow=20,SNR=10						
JCJ				S	Sn	15 07 39.3	-13
	comp=Z,5.3nm,0.3s,baz=107,slow=19,SNR=2.2						
KSRS	**Korea Array**	**12.07**	**267**	P	**Pn**	**15 05 40.0**	**+0.6**
	comp=Z,0.7nm,0.3s,baz=81,slow=13,SNR=14						
KSRS	**Korea Array**	**12.07**	**267**	P	**Pn**	**15 05 40.0**	**+0.6**
KSRS				pmax	pmax		
	comp=Z,1.0nm,0.3s						
KS15	**Wonju Array Si**	**12.11**	**267**	*e*Pn	**Pn**	**15 05 41.7**	**+1.8**
KSAR	**Wonju Array Be**	**12.11**	**267**	P	**Pn**	**15 05 40.0**	**+0.1**
KSAR	**Wonju Array Be**	**12.11**	**267**	P	**Pn**	**15 05 40.0**	**+0.1**
KLR	**Kul'dur**	**12.97**	**325**	P	**Pn**	**15 05 52.9**	**+1.2**
	comp=Z,0.4nm,0.3s,baz=127,slow=9.6,SNR=12						
KLR				LR	LR	15 10 47.6	
	comp=Z,188nm,20.1s,baz=120,slow=36						
CN2	**Changchun**	**14.05**	**295**	*e*P	P	15 06 18.1	+4.2
CN2				*e*S	**S**	**15 09 03.9**	**+1.8**
NKL	**Nikolayevsk**	**14.12**	**354**	*e*P	**Pn**	**15 06 08.0**	**+0.7**
NKL				pmax	pmax		
	comp=Z,43nm,1.0s						
NKL				MLR	MLR		
	comp=N,700nm,15.0s						
NKL				MLR	MLR		
	comp=Z,1μm,15.0s						
PEA0	**Petropavlovsk-**	**17.19**	**31**	*e*Pn	Pn	15 06 41.4	-5.9
PETK	**Petropavlovsk-**	**17.19**	**31**	P	Pn	15 06 42.9	-4.4
	comp=Z,0.1nm,0.3s,baz=270,slow=0.7,SNR=3.5						
PETK				LR	LR	15 14 37.6	
	comp=Z,162nm,18.4s,baz=218,slow=41						
PET	**Petropavlovsk**	**17.52**	**32**	*e*P	P	15 07 07.2	+15
PET				pmax	pmax		
	comp=Z,25nm,0.9s						
PET				pmax	pmax		
	comp=Z,100nm,12.8s						
PET				MLR	MLR		
	comp=Z,200nm,15.0s						
PET	**Petropavlovsk**	**17.52**	**32**	*e*Pn	**Pn**	**15 06 51.2**	**-0.1**
	comp=Z,34nm,0.9s						
HIA	**Hailar**	**19.52**	**309**	*e*P	**P**	**15 07 11.6**	**-2.7**
HIA				pmax	pmax		
	comp=Z,21nm,0.8s						
HIA	**Hailar**	**19.52**	**309**	*e*P	**P**	**15 07 11.6**	**-2.7**
	comp=Z,21nm,0.8s						
TIA	**Tai'an**	**20.77**	**270**	⇑P	**P**	**15 07 26.4**	**-1.6**
TIA				S	**S**	**15 11 17.1**	**-1.2**
TIA				pmax	pmax		
	comp=Z,20nm,0.9s						
TIA				LR	LR		
	comp=Z,830nm,12.6s						
TIA				LR	LR		
	comp=Z,460nm,17.7s						
BJI	**Beijing**	**20.77**	**281**	P	**P**	**15 07 26.3**	**-1.7**
BJI				S	**S**	**15 11 14.2**	**-4.1**
BJI				pmax	pmax		
	comp=Z,26nm,0.7s						
BJI				pmax	pmax		
	comp=Z,150nm,3.9s						
BJI				LR	LR		
	comp=Z,690nm,15.9s						
BJI				LR	LR		
	comp=Z,100nm,10.6s						
BJT	**Baijiatuau**	**20.78**	**281**	*e*P	P	15 07 22.4	-5.7
BJT				pmax	pmax		
	comp=Z,12nm,0.5s						
BJT	**Baijiatuau**	**20.78**	**281**	*e*P	P	15 07 22.4	-5.7
	comp=Z,12nm,0.5s						
NJ2	**Nanjing**	**20.94**	**258**	*e*P	**P**	**15 07 30.4**	**+0.6**
NJ2				pmax	pmax		
	comp=Z,26nm,0.7s						
MA2	**Magadan**	**21.03**	**11**	P	**P**	**15 07 30.8**	**+0.3**
	comp=Z,22nm,0.8s,baz=210,slow=9.5,SNR=48						
MA2				LR	LR	15 14 58.0	
	comp=Z,163nm,22.0s,baz=218,slow=34						
YHNB	**Yeheng**	**23.35**	**238**	*e*P	P	15 07 49.4	-6.1
	comp=Z,22nm,0.5s						
HHC	**Hu-ho-hao-te**	**24.19**	**284**	*e*P	**P**	**15 08 04.4**	**+1.0**
HHC				sP	sP	15 08 19.9	+4.4
HHC				PP	PnPn	15 08 41.0	+7.7
HHC				S	**S**	**15 12 21.6**	**+1.8**
HHC				sS	sS	15 12 35.9	+2.2
HHC				pmax	pmax		
	comp=Z,31nm,1.1s						
HHC				pmax	pmax		
	comp=Z,77nm,7.3s						
HHC				LR	LR		
	comp=Z,280nm,13.1s						
HHC				LR	LR		
	comp=Z,370nm,14.1s						
SSLB	**Suanglung**	**24.24**	**237**	*e*P	**P**	**15 08 00.1**	**-3.8**
	comp=Z,21nm,0.8s						
YULB	**Yu-li**	**24.29**	**236**	*e*P	**P**	**15 08 01.0**	**-3.4**
	comp=Z,16nm,0.9s						
YAK	**Yakutsk**	**24.36**	**345**	P	**P**	**15 08 03.4**	**-1.2**
	comp=Z,1.4nm,0.3s,baz=324,slow=22,SNR=13						
YAK	**Yakutsk**	**24.36**	**345**	*e*P	**P**	**15 08 03.4**	**-1.2**
YAK				*e**PP	**sP**	**15 08 15.8**	**-0.9**
YAK				*e*		15 08 38.3	
YAK				*e*S	**S**	**15 12 18.6**	**-3.3**
YAK				*e**SS	**sS**	**15 12 36.1**	**+0.2**
YAK				*e*SS	SnSn	15 13 23.4	+17
YAK				pmax	pmax		
	comp=E,2.0nm,0.7s						
YAK				pmax	pmax		
	comp=N,5.0nm,0.8s						
YAK				pmax	pmax		
	comp=Z,19nm,0.8s						
YAK				pmax	pmax		
	comp=Z,19nm,0.7s						
YAK				smax	smax		
	comp=E,91nm,2.3s						
YAK				smax	smax		
	comp=N,127nm,2.7s						
YAK	**Yakutsk**	**24.36**	**345**	*e*P	**P**	**15 08 02.4**	**-2.2**
	comp=N,56nm,0.8s						
SEY	**Seymchan**	**24.48**	**10**	P	**P**	**15 08 06.8**	**+1.1**
	comp=N,9.9nm,0.6s,baz=194,slow=8.1,SNR=67						
TPUB	**Ta-pu**	**24.79**	**237**	*e*P	**P**	**15 08 06.4**	**-2.5**
	comp=N,33nm,1.1s						
TWG	**Pinlang**	**24.85**	**236**	*e*P	**P**	**15 08 09.8**	**+0.5**
	comp=N,106nm,0.8s						
WHN	**Wuhan**	**25.05**	**259**	P	**P**	**15 08 11.5**	**+0.4**
WHN				pmax	pmax		
	comp=N,100nm,0.8s						
QZH	**Quanzhou**	**25.06**	**243**	⇑P	**P**	**15 08 09.7**	**-1.5**
QZH				*e*S	**S**	**15 12 30.0**	**-3.8**
QZH				LR	LR		
	comp=N,2μm,18.8s						
QZH				LR	LR		
	comp=N,490nm,11.6s						
QZH				LR	LR		
	comp=N,1μm,12.5s						
BOD	**Bodaibo**	**26.55**	**324**	*e*P	**P**	**15 08 24.3**	**-0.1**
BOD				pmax	pmax		
	comp=Z,13nm,0.9s						
ULN	**Ulaanbaatar**	**27.38**	**300**	*d i*P	**P**	**15 08 32.7**	**+0.4**
ULN				pmax	pmax		
	comp=Z,15nm,1.2s						
ULN	**Ulaanbaatar**	**27.38**	**300**	*e*P	**P**	**15 08 31.2**	**-1.0**
	comp=Z,9.2nm,0.8s						
SONA1	**Songino Array**	**27.82**	**300**	*e*P	**P**	**15 08 33.6**	**-2.5**
SONM	**Songino Array**	**27.82**	**300**	P	**P**	**15 08 37.2**	**+1.0**
	comp=Z,8.2nm,0.7s,baz=91,slow=8.6,SNR=59						
SONM				LR	LR	15 20 14.1	
	comp=Z,356nm,18.4s,baz=108,slow=37						
XAN	**Xi'an**	**27.84**	**270**	P	**P**	**15 08 35.8**	**-0.5**
XAN				sP	sP	15 08 49.0	+0.6
XAN				PP	**PnPn**	**15 09 23.9**	**+0.8**
XAN				S	**S**	**15 13 14.9**	**-2.8**
XAN				SS	**SnSn**	**15 14 32.9**	**+1.1**
XAN				pmax	pmax		
	comp=Z,13nm,0.7s						
XAN				pmax	pmax		
	comp=Z,74nm,14.7s						
XAN				LR	LR		
	comp=Z,400nm,18.8s						
XAN				LR	LR		
	comp=Z,280nm,18.8s						
H11N2	**WAKE ISLAND Hy**	**28.18**	**127**	T	T	15 37 58.0	
	baz=318,slow=75,SNR=444						
H11N1	**WAKE ISLAND Hy**	**28.19**	**127**	T	T	15 37 58.0	
	baz=318,slow=75,SNR=386						
H11N3	**WAKE ISLAND Hy**	**28.20**	**127**	T	T	15 37 59.7	
	baz=318,slow=75,SNR=359						
ENH	**Enshi**	**28.91**	**263**	*e*P	**P**	**15 08 43.9**	**-2.0**
	comp=Z,30nm,0.7s						
H11S1	**WAKE ISLAND Hy**	**28.98**	**128**	T	T	15 39 06.7	
	baz=318,slow=76,SNR=44						
H11S3	**WAKE ISLAND Hy**	**28.98**	**128**	T	T	15 39 06.7	
	baz=318,slow=76,SNR=57						
H11S2	**WAKE ISLAND Hy**	**28.99**	**128**	T	T	15 39 06.7	
	baz=318,slow=76,SNR=28						
TLY	**Talaya**	**30.05**	**308**	P	**P**	**15 08 56.8**	**+0.9**
	comp=Z,5.3nm,0.8s,baz=118,slow=6.1,SNR=8.8						
TLY				LR	LR	15 21 37.1	
	comp=Z,312nm,18.8s,baz=100,slow=37						
TLY	**Talaya**	**30.05**	**308**	*e*P	**P**	**15 08 56.7**	**+0.9**
TLY				*e*S	S	15 14 00.5	+8.4
TLY				pmax	pmax		
	comp=Z,8.0nm,1.0s						
TLY				MLR	MLR		
	comp=Z,436nm,18.0s						
TLY	**Talaya**	**30.05**	**308**	*e*P	**P**	**15 08 56.1**	**+0.4**
	comp=Z,8.2nm,1.0s						
ZAK	**Zakamensk**	**30.11**	**305**	*e*P	**P**	**15 08 55.7**	**-0.7**
ZAK				pmax	pmax		
	comp=Z,7.0nm,1.1s						
ZAK				pmax	pmax		
	comp=Z,4.0nm,1.3s						
LZH	**Lanzhou**	**31.11**	**277**	*e*P	**P**	**15 09 07.5**	**+2.0**
LZH				pP	sP	15 09 20.7	+3.1
LZH				sP	pP	15 09 25.0	+11
LZH				*e*S	**S**	**15 14 14.0**	**+4.7**
LZH				sS	sS	15 14 27.1	+3.6
LZH				pmax	pmax		
	comp=Z,21nm,1.0s						
LZH				pmax	pmax		
	comp=Z,92nm,4.3s						
LZH				LR	LR		
	comp=Z,2μm,16.5s						
LZH				LR	LR		
	comp=Z,2μm,16.8s						
LZH				LR	LR		
	comp=Z,2μm,17.8s						
BILL	**Bilibino**	**31.63**	**16**	⇓*e*P	**P**	**15 09 11.7**	**+2.2**
BILL				*e*		15 10 11.8	
BILL				*e*PPP	PPP	15 10 25.6	
BILL				pmax	pmax		
	comp=Z,8.0nm,1.7s						
BILL				MLR	MLR		
	comp=Z,159nm,19.0s						
BILL	**Bilibino**	**31.63**	**16**	*e*P	**P**	**15 09 10.0**	**+0.5**
	comp=Z,5.6nm,0.8s						
MOY	**Mondy**	**31.69**	**307**	*e*P	**P**	**15 09 10.8**	**+0.5**
MOY				pmax	pmax		
	comp=Z,30nm,3.8s						
GYA	**Guiyang**	**32.94**	**258**	P	**P**	**15 09 21.0**	**-0.6**
GYA				pP	sP	15 09 31.5	-2.3
GYA				PP	**PnPn**	**15 10 32.0**	**+1.0**
GYA				PcP	**PcP**	**15 12 05.8**	**+0.4**
GYA				S	**S**	**15 14 35.6**	**-2.3**
GYA				sS	sS	15 14 52.2	+0.1
GYA				ScP	**ScP**	**15 15 47.7**	**+0.3**
GYA				SS	**SnSn**	**15 16 35.0**	**-1.4**
GYA				ScS	**ScS**	**15 19 45.4**	**-2.4**
GYA				pmax	pmax		
	comp=Z,30nm,0.8s						
GYA				pmax	pmax		
	comp=Z,120nm,6.0s						
GYA				LR	LR		
	comp=Z,500nm,18.0s						
GYA				LR	LR		
	comp=Z,470nm,17.6s						
GYA				LR	LR		
	comp=Z,490nm,17.8s						
CD2	**Chengdu**	**33.07**	**268**	P	**P**	**15 09 22.3**	**-0.3**
CD2				sP	sP	15 09 36.2	+1.4
CD2				PP	**PP**	**15 10 37.1**	**-0.4**
CD2				S	**S**	**15 14 38.7**	**-1.0**
CD2				sS	sS	15 14 55.3	+1.4
CD2				pmax	pmax		
	comp=Z,30nm,0.7s						
CD2				pmax	pmax		
	comp=Z,150nm,7.8s						
CD2				LR	LR		
	comp=Z,700nm,15.6s						
CD2				LR	LR		
	comp=Z,410nm,14.4s						
GTA	**Gaotai**	**33.30**	**285**	P	**P**	**15 09 25.0**	**+0.4**
GTA				pP	sP	15 09 34.6	-2.2
GTA				sP	pP	15 09 38.5	+5.3
GTA				S	**S**	**15 14 43.2**	**-0.1**
GTA				sS	sS	15 14 58.3	+0.8
GTA				SS	**SnSn**	**15 16 46.9**	**+2.1**
GTA				pmax	pmax		
	comp=Z,6.0nm,0.7s						
GTA				pmax	pmax		
	comp=Z,73nm,4.3s						
GTA				LR	LR		
	comp=Z,380nm,17.1s						
GTA				LR	LR		
	comp=Z,250nm,20.0s						
GTA				LR	LR		
	comp=Z,400nm,17.6s						
TIXI	**Tiksi**	**33.39**	**352**	P	**P**	**15 09 24.0**	**-0.8**
TIXI				pmax	pmax		
	comp=Z,4.0nm,1.4s						
TIXI	**Tiksi**	**33.39**	**352**	*e*P	**P**	**15 09 23.4**	**-1.4**
	comp=Z,5.1nm,1.0s						
QIZ	**Qiongzhong**	**35.04**	**245**	P	**P**	**15 09 39.4**	**-0.3**
QIZ				S	**S**	**15 15 08.4**	**-1.8**
QIZ				LR	LR		
	comp=Z,390nm,13.5s						
QIZ				LR	LR		
	comp=Z,500nm,13.5s						
KMI	**Kunming**	**36.65**	**260**	P	**P**	**15 09 53.9**	**+0.2**
KMI				pP	sP	15 10 03.3	-2.6
KMI				sP	pP	15 10 08.3	+5.9
KMI				S	**S**	**15 15 33.3**	**-1.9**
KMI				sS	sS	15 15 50.1	+0.6
KMI				SS	SnSn	15 17 54.9	-11
KMI				pmax	pmax		
	comp=Z,60nm,1.0s						
KMI				pmax	pmax		
	comp=Z,98nm,3.1s						
KMI				LR	LR		
	comp=Z,210nm,15.9s						
KMI				LR	LR		
	comp=Z,260nm,14.8s						
KRAR	**Krasnoyarsk**	**36.94**	**314**	⇑*i*P	**P**	**15 09 55.8**	**+0.3**
KRAR				pmax	pmax		
	comp=Z,11nm,0.4s						
WMQ	**Urumqi**	**41.15**	**295**	P	**P**	**15 10 32.5**	**+1.5**
WMQ				pP	sP	15 10 41.8	-1.5
WMQ				PP	**PnPn**	**15 12 10.5**	**-0.1**
WMQ				PcP	**PcP**	**15 12 32.0**	**+2.1**
WMQ				S	**S**	**15 16 38.3**	**-4.0**
WMQ				ScS	**ScS**	**15 20 35.0**	**+1.8**
WMQ				pmax	pmax		
	comp=Z,16nm,0.8s						
WMQ				pmax	pmax		
	comp=Z,44nm,3.8s						
CRAI	**Chiangrai**	**41.21**	**255**	P	**P**	**15 10 32.1**	**+0.4**
	comp=Z,24nm,0.9s						
JAY	**Jayapura**	**41.50**	**184**	P	**P**	**15 10 33.9**	**-0.2**
	comp=Z,1.4nm,0.8s,baz=53,slow=20,SNR=2.5						

ZAA0 Zalesovo Array 41.54 311 *eP* **P 15 10 34.0 0.0**
ZAA0 *eP* pP 15 10 34.5 -8.3
ZALV Zalesovo Beam 41.54 311 P **P 15 10 34.5 +0.4**
comp=Z,5.9nm,0.5s,baz=87,slow=7.9,SNR=24
ZALV PcP **PcP 15 12 31.4 +0.5**
comp=Z,4.2nm,0.5s,baz=106,slow=3.4,SNR=6.3
ZALV LR LR 15 27 54.1
comp=Z,95nm,18.8s,baz=70,slow=36
KHON Khomkaen 41.83 249 P **P 15 10 37.3 +0.5**
comp=Z,14nm,0.8s
NRIK Noril'sk 41.95 334 P **P 15 10 37.3 +0.1**
comp=Z,1.0nm,0.5s,baz=124,slow=7.2,SNR=3.7
NRIK LR LR 15 28 52.0
comp=Z,211nm,18.7s,baz=108,slow=37
LOEI Loei 42.22 251 P **P 15 10 37.7 -2.2**
comp=Z,18nm,1.0s,comp=Z,2µm
PHRA Phrae 42.37 253 P **P 15 10 41.9 +0.7**
comp=Z,96nm,1.7s
CMAI Chiengmai2 42.39 256 P **P 15 10 43.5 +2.0**
comp=Z,111nm,0.9s,comp=Z,11µm
NVS Novosibirsk 42.41 312 *eP* **P 15 10 41.3 +0.2**
UTTA Uttaradit 42.59 252 P **P 15 10 44.1 +1.1**
comp=Z,4.0nm,1.1s,comp=Z,66nm
CHAI Chaiyaphum 42.72 249 P **P 15 10 44.1 +0.1**
comp=Z,14nm,0.8s,comp=Z,101nm
LAMP Lampang 42.80 254 P **P 15 10 45.8 +1.1**
comp=Z,7.3nm,0.9s
PBKT Sadao Pong 43.03 251 P **P 15 10 47.0 +0.5**
comp=Z,15nm,1.1s
FAKI Fak Fak 43.03 196 P **P 15 10 47.4 +0.9**
FAKI Fak Fak 43.03 196 *eP* **P 15 10 45.2 -1.3**
comp=Z,16nm,0.7s
MRSI Marisa 43.09 212 P **P 15 10 48.6 +1.6**
CMMT Chiang Mai 43.13 255 P **P 15 10 47.7 +0.3**
comp=Z,18nm,0.8s
CHTO Chiang Mai 43.14 255 P **P 15 10 47.8 +0.4**
comp=Z,79nm,0.8s
CHTO Chiang Mai 43.14 255 *eP* **P 15 10 47.5 +0.1**
CHTO pmax pmax
comp=Z,10.0nm,0.7s
CHTO Chiang Mai 43.14 255 *eP* **P 15 10 47.5 +0.1**
comp=Z,10nm,0.7s
CM31 Chiang Mai Arr 43.35 255 *eP* **P 15 10 49.4 +0.2**
CMAR Chiang Mai Arr 43.35 255 P **P 15 10 49.8 +0.6**
comp=Z,4.2nm,0.7s,baz=43,slow=7.5,SNR=43
CMAR PcP **PcP 15 12 38.6 +1.1**
comp=Z,1.7nm,0.8s,baz=25,slow=1.6,SNR=5.2
CM01 Chiang Mai Arr 43.37 254 *eP* **P 15 10 48.0 -1.3**
LSA Lhasa 43.40 274 P **P 15 10 50.8 +0.8**
SUKH Sukhothai 43.44 253 P **P 15 10 50.7 +0.8**
comp=Z,4.8nm,0.8s
SANI Sanana 43.91 205 P **P 15 10 54.7 +1.1**
comp=Z,60nm,0.9s
MK01 Makanchi Array 44.19 301 *eP* **P 15 10 54.4 -1.2**
MK31 Makanchi Array 44.19 301 *eP* **P 15 10 55.4 -0.2**
MK31 Makanchi Array 44.19 301 *eP* **P 15 10 55.4 -0.2**
MKAR Makanchi Array 44.19 301 P **P 15 10 56.0 +0.4**
comp=Z,11nm,0.8s,baz=83,slow=9.4,SNR=108
MKAR LR LR 15 29 52.5
comp=Z,192nm,19.5s,baz=83,slow=37
NAYO Nakonayok 44.25 248 P **P 15 10 58.1 +1.8**
comp=Z,11nm,1.2s
MHMT Maesarieng 44.29 255 P **P 15 10 57.8 +1.2**
comp=Z,13nm,0.8s,comp=Z,440nm
MAKZ Makanchi 44.40 301 *eP* **P 15 10 57.1 -0.2**
MAKZ pmax pmax
comp=Z,15nm,0.9s
MAKZ Makanchi 44.40 301 *eP* **P 15 10 57.1 -0.2**
comp=Z,15nm,0.9s
RSO Redoubt South 44.42 40 *eP* **P 15 10 57.9 +0.4**
CAST Castle Rocks 44.73 35 *eP* **P 15 10 59.0 -0.7**
comp=Z,6.3nm,0.7s
SPU Mount Spurr 44.74 39 *eP* **P 15 11 00.3 +0.5**
SHL Shillong 44.81 268 *eP* **P 15 11 02.0 +1.0**
UMPA Umpang Tak 44.82 252 P **P 15 11 03.6 +2.7**
comp=Z,6.2nm,1.2s,comp=Z,66nm
BPAW Bear Paw Mtn. 45.23 34 *eP* **P 15 11 04.0 +0.4**
comp=Z,4.5nm,0.8s
KTH Kantishna Hill 45.25 35 *eP* **P 15 11 02.6 -1.3**
comp=Z,9.8nm,0.8s
MLY Manley 45.35 33 *eP* **P 15 11 05.1 +0.5**
comp=Z,6.0nm,0.8s
TRF Thorofare Moun 45.54 35 *eP* **P 15 11 07.5 +1.3**
comp=Z,6.3nm,0.8s
KURK Kurchatov 45.74 307 *eP* **P 15 11 05.5 -2.3**
KURK pmax pmax
comp=Z,28nm,0.8s
KURK Kurchatov 45.74 307 *eP* **P 15 11 05.5 -2.3**
comp=Z,28nm,0.8s
KURBB Kurchatov Arra 45.81 307 P **P 15 11 08.5 +0.1**
comp=Z,15nm,0.7s,baz=82,slow=8.2,SNR=137
PMR Palmer 46.13 38 *eP* **P 15 11 10.8 0.0**
PMR pmax pmax
comp=Z,8.0nm,0.7s
PMR Palmer 46.13 38 *eP* **P 15 11 10.8 0.0**
comp=Z,7.8nm,0.7s
MCK McKinley 46.14 35 *eP* **P 15 11 11.1 +0.3**
MCK pmax pmax
comp=Z,7.0nm,0.8s
MCK McKinley 46.14 35 *eP* **P 15 11 11.1 +0.3**
comp=Z,6.7nm,0.8s
RND Reindeer 46.18 35 *eP* **P 15 11 10.6 -0.6**
RND pmax pmax
comp=Z,8.0nm,0.7s
RND Reindeer 46.18 35 *eP* **P 15 11 10.6 -0.6**
comp=Z,8.2nm,0.7s
PHET Kaeng Krachan 46.40 248 P **P 15 11 14.9 +1.5**
comp=Z,10nm,0.8s
MDM Murphy Dome 46.42 33 *eP* **P 15 11 11.8 -1.2**
comp=Z,14nm,1.1s
WRH Wood River Hil 46.49 34 *eP* **P 15 11 13.2 -0.4**
comp=Z,7.9nm,0.9s
SML Sawmill 46.50 38 *eP* **P 15 11 12.5 -1.2**
SML pmax pmax
comp=Z,14nm,0.8s
SML Sawmill 46.50 38 *eP* **P 15 11 12.5 -1.2**
comp=Z,14nm,0.8s
COLA College 46.58 33 ⇓*iP* **P 15 11 15.3 +1.1**
COLA pmax pmax
comp=Z,4.0nm,0.7s
COLA College 46.58 33 *eP* **P 15 11 12.7 -1.5**
comp=Z,10nm,0.9s
CCB Clear Creek Bu 46.61 34 *eP* **P 15 11 15.6 +1.1**
comp=Z,12nm,1.4s
SCM Sheep Creek Mo 46.97 37 *eP* **P 15 11 18.5 +1.0**
SCM pmax pmax
comp=Z,24nm,0.7s
SCM Sheep Creek Mo 46.97 37 *eP* **P 15 11 18.5 +1.0**
comp=Z,24nm,0.7s
HDA Harding Lake 46.98 34 *eP* **P 15 11 18.3 +0.8**
comp=Z,26nm,1.5s
IL1 Eielson Array 47.00 33 *eP* **P 15 11 17.0 -0.5**
ILAR Eielson Array 47.00 33 P **P 15 11 18.0 +0.5**
comp=Z,6.6nm,0.7s,baz=265,slow=6.5,SNR=73
ILB Eielson Array 47.00 33 *eP* **P 15 11 18.0 +0.5**
TAPN Taplejung 47.17 273 *eP* **P 15 11 20.4 +0.7**
ODAN Odare 47.66 273 *eP* **P 15 11 23.7 +0.2**
comp=Z,22nm,0.8s
KLU Klutina 47.67 38 *eP* **P 15 11 23.9 +1.0**
comp=Z,64nm,1.8s
DIV Divide 47.79 38 *eP* **P 15 11 25.1 +1.3**
comp=Z,17nm,0.9s
EYAK Cordova Ski Ar 47.87 39 *eP* **P 15 11 25.7 +1.4**
comp=Z,13nm,0.8s
RAMN Ramite 48.23 273 *eP* **P 15 11 28.2 +0.3**
comp=Z,58nm,1.0s
DOT Dot Lake 48.31 35 *eP* **P 15 11 28.2 +0.5**
comp=Z,49nm,1.6s
GUN Gumba 48.32 275 *eP* **P 15 11 29.2 +0.5**
comp=Z,48nm,0.5s
BMRM Bremner River 48.37 38 *eP* **P 15 11 29.6 +1.3**
comp=Z,13nm,1.0s
STKI Sintang 48.49 224 P **P 15 11 31.4 +1.7**
KKN Kakani 48.84 275 *eP* **P 15 11 33.0 +0.4**
comp=Z,41nm,0.8s
DMN Daman 49.06 275 *eP* **P 15 11 34.7 +0.4**
GKN Gorkha 49.24 276 *eP* **P 15 11 35.8 +0.3**
comp=Z,23nm,0.6s
EGAK Eagle 49.44 33 *eP* **P 15 11 36.8 +0.5**
comp=Z,7.3nm,1.0s
TKM2 Tokmak 2 49.85 297 *eP* **P 15 11 40.7 +0.6**
TKM2 Tokmak 2 49.85 297 *eP* **P 15 11 40.7 +0.6**
KRAB Krabi 49.94 244 P **P 15 11 41.8 +1.1**
comp=Z,27nm,0.6s
KOLN Koldanda 50.15 276 *eP* **P 15 11 43.0 +0.4**
comp=Z,28nm,0.9s
BRVK Borovoye 50.24 311 *d iP* **P 15 11 43.0 +0.4**
BRVK pmax pmax
comp=Z,8.0nm,0.8s
BRVK Borovoye 50.24 311 *eP* **P 15 11 42.4 -0.2**
comp=Z,7.6nm,0.8s
DAWY Dawson 50.30 34 *eP* **P 15 11 44.0 +1.1**
comp=Z,18nm,1.8s
PYUN Piuthan 50.47 277 *eP* **P 15 11 45.4 +0.5**
comp=Z,66nm,0.8s
FRU Bishkek 50.56 298 *eP* **P 15 11 45.0 -0.2**
AAK Ala-Archa 50.71 297 P **P 15 11 46.9 +0.4**
comp=Z,5.2nm,0.6s,baz=107,slow=5.1,SNR=16
AAK Ala-Archa 50.71 297 *d iP* **P 15 11 46.8 +0.2**
AAK pmax pmax
comp=Z,20nm,1.2s
AAK Ala-Archa 50.71 297 *eP* **P 15 11 47.0 +0.4**
comp=Z,5.4nm,0.8s
PKDT Phuket 50.77 244 P **P 15 11 48.4 +1.4**
comp=Z,28nm,1.1s,comp=Z,3µm
KSH Kashi 50.81 293 P P 15 11 51.4 +4.1
KSH *es*P sP 15 12 05.4 +5.7
KSH *eP*P PP 15 13 49.4 +6.0
KSH S **S** **15 19 06.5 +5.1**
KSH sS sS 15 19 22.4 +6.3
KSH pmax pmax
comp=Z,8.0nm,1.1s
KSH pmax pmax
comp=Z,89nm,4.0s
KSH LR LR
comp=Z,130nm,5.4s
KSH LR LR
comp=Z,110nm,6.2s
KSH LR LR
comp=Z,190nm,7.3s
EKS2 Erkin-Say 51.20 298 *eP* **P 15 11 49.8 -0.4**
EKS2 pmax pmax
comp=Z,6.0nm,0.8s
EKS2 Erkin-Say 51.20 298 *eP* **P 15 11 49.8 -0.4**
comp=Z,6.2nm,0.8s
INK Inuvik 51.90 28 P **P 15 11 55.8 +1.0**
comp=Z,5.6nm,0.7s,baz=304,slow=6.9,SNR=32
INK Inuvik 51.90 28 *eP* **P 15 11 55.8 +1.0**
INK pmax pmax
comp=Z,7.0nm,0.9s
INK Inuvik 51.90 28 *eP* **P 15 11 55.8 +1.0**
comp=Z,7.1nm,0.9s
KKAR Karatay Array 53.27 299 *eP* **P 15 12 05.4 0.0**
KKAR pmax pmax
comp=Z,3.0nm,0.7s
KKAR Karatay Array 53.27 299 *eP* **P 15 12 05.4 0.0**
comp=Z,3.1nm,0.7s
SVE Sverdlovsk 54.49 318 *eP* **P 15 12 15.2 +1.2**
SDSI Sungai Dareh 55.22 234 P **P 15 12 20.5 +0.6**
ARU Arti 55.70 318 *d iP* **P 15 12 23.3 +0.5**
ARU 15 14 23.1
ARU S **S** **15 20 08.7 +1.6**
ARU SS **SS** **15 23 47.4 -4.6**
ARU pmax pmax
comp=Z,25nm,1.7s
ARU MLR MLR
comp=Z,523nm,16.0s
ARU Arti 55.70 318 *eP* **P 15 12 22.9 +0.1**
comp=Z,15nm,1.0s
GSI Gunungsitoli 56.04 239 P **P 15 12 26.0 +0.2**
comp=Z,33nm,1.1s
GSI Gunungsitoli 56.04 239 *eP* **P 15 12 25.4 -0.4**
comp=Z,32nm,1.0s
DLBC Dease Lake 56.14 39 P **P 15 12 27.7 +1.7**
comp=Z,2.7nm,0.9s,baz=210,slow=5.8,SNR=4.4
LHSI Lahat 56.21 230 P **P 15 12 29.1 +2.2**
MDSI Maura Dua 56.35 229 P **P 15 12 27.9 0.0**
ABKAR Akbulak array 57.64 310 *eP* **P 15 12 34.4 -2.3**
comp=Z,5.7nm,0.6s
KBL Kabul 57.95 290 *eP* **P 15 12 39.6 +0.3**
KBL pmax pmax
comp=Z,24nm,0.8s
KBL Kabul 57.95 290 *eP* **P 15 12 39.6 +0.3**
comp=Z,24nm,0.8s
WRA Warramunga Arr 59.34 190 P **P 15 12 47.4 -1.4**
comp=Z,13nm,0.7s,baz=7.8,slow=6.9,SNR=140
RES Resolute Bay 60.23 15 P **P 15 12 54.6 +0.4**
comp=Z,5.4nm,0.7s,baz=302,slow=7.0,SNR=25
RES Resolute Bay 60.23 15 *eP* **P 15 12 54.4 +0.2**
RES pmax pmax
comp=Z,7.0nm,0.8s
RES Resolute Bay 60.23 15 *eP* **P 15 12 54.4 +0.2**
comp=Z,6.5nm,0.8s
YKA Yellowknife Ar 61.31 31 P **P 15 13 02.1 +0.3**
comp=Z,1.4nm,0.6s,baz=304,slow=6.6,SNR=28
ARCES ARCESS Array B 62.51 339 P **P 15 13 09.1 -0.7**
comp=Z,5.5nm,1.0s,baz=46,slow=8.7,SNR=5.4
ARCES LR LR 15 46 16.1
comp=Z,114nm,19.2s,baz=48,slow=42
AS01 Alice Springs 63.06 189 *eP* **P 15 13 12.9 -1.0**
AS31 Alice Springs 63.06 189 *eP* **P 15 13 13.4 -0.6**
comp=Z,1.3nm,0.8s
ASAR Alice Springs 63.06 189 P **P 15 13 13.1 -0.9**
comp=Z,4.2nm,0.7s,baz=12,slow=5.9,SNR=64
GEYT Alibeck 64.01 299 P **P 15 13 20.5 +0.2**
comp=Z,3.2nm,0.6s,baz=41,slow=2.9,SNR=10
VRH Novokhopyorsk 66.94 318 *eP* **P 15 13 38.0 -0.9**
VRH pmax pmax
comp=Z,10.0nm,0.8s
PUL Pulkovo 67.08 330 ⇓*eP* **P 15 13 42.4 +2.8**
PUL pmax pmax
comp=Z,44nm,0.6s
OBN Obninsk 67.23 323 ⇑*eP* **P 15 13 41.2 +0.6**
OBN *e* 15 16 07.5
OBN pmax pmax
comp=Z,15nm,1.2s
OBN MLR MLR
comp=Z,232nm,15.0s
LPSR Galich'ya Gora 67.56 320 *eP* **P 15 13 42.7 -0.1**
LPSR pmax pmax
comp=Z,10.0nm,0.9s
FIA1 FINESS Array S 67.59 332 *eP* **P 15 13 42.7 -0.1**
FINES FINESS Array B 67.59 332 P **P 15 13 43.1 +0.2**
comp=Z,6.4nm,0.8s,baz=31,slow=8.9,SNR=21
YBH Yreka Blue Hor 68.00 54 P **P 15 13 47.0 +1.1**
comp=Z,1.7nm,0.7s,baz=338,slow=5.4,SNR=3.2
YBH Yreka Blue Hor 68.00 54 P **P 15 13 47.0 +1.1**
VSR Storozhevoye 68.25 319 *eP* **P 15 13 47.2 0.0**
VSR pmax pmax
comp=Z,10.0nm,0.7s
SUMG Summit 68.58 1 *i* P **P 15 13 50.2 +0.8**
comp=Z,6.6nm,0.7s
SUMG Summit 68.58 1 *i* P **P 15 13 50.2 +0.8**
SUMG pmax pmax
comp=Z,7.0nm,0.7s
SUMG Summit 68.58 1 *eP* **P 15 13 50.3 +0.8**
comp=Z,68nm,1.9s
VSU Vasula 69.33 330 ⇑*iP* **P 15 13 54.4 +0.6**
VSU pmax pmax
comp=Z,80nm,2.5s
SWMT Swartz Lake 69.84 45 *eP* **P 15 13 58.0 +0.8**
ZEI Tsey 70.52 310 *eP* **P 15 13 59.7 -1.9**
ZEI pmax pmax
comp=Z,26nm,1.5s
KIV Kislovodsk 70.56 311 *eP* **P 15 14 01.6 -0.1**
KIV *i* 15 14 21.6
KIV *i* 15 16 36.7
KIV pmax pmax
comp=Z,23nm,1.0s
KIV Kislovodsk 70.56 311 *eP* **P 15 14 03.8 +2.1**
comp=Z,21nm,0.9s
KBZ Khabaz 70.56 311 P **P 15 14 01.8 +0.2**
comp=Z,6.1nm,0.8s,baz=59,slow=5.2,SNR=9.7
STKA Stephens Creek 70.66 181 P **P 15 14 01.4 -0.7**
comp=Z,1.1nm,0.6s,baz=7.9,slow=6.0,SNR=4.5
NEY Neytrino 70.95 311 P **P 15 14 06.0 +1.8**
NEY pmax pmax
comp=Z,1.0nm,0.8s
GNI Garni 71.54 307 P **P 15 14 10.0 +2.2**
GNI pmax pmax
comp=Z,53nm,1.2s
CMB Columbia Colle 71.56 56 *eP* P 15 14 18.3 +10
CMB Columbia Colle 71.56 56 *epP* pP 15 14 18.3 +1.3
LRM Limekiln Ridge 71.70 46 *eP* **P 15 14 09.8 +1.0**
LCCM Lewis and Clar 72.01 45 *eP* **P 15 14 10.4 -0.1**
UOSS Minazif 72.46 288 *eP* **P 15 14 13.8 +0.5**
comp=Z,1.0nm,0.8s
NV01 Mina Array Sit 72.65 54 *eP* **P 15 14 15.2 +0.6**
NVAR Mina Array Bea 72.65 54 P **P 15 14 15.2 +0.6**
comp=Z,1.9nm,0.8s,baz=278,slow=7.5,SNR=8.3
NC204 NORSAR Array S 72.71 338 *eP* **P 15 14 14.7 +0.3**
NB2 NORSAR Subarra 72.77 338 P **P 15 14 14.5 -0.2**
comp=Z,5.2nm,0.7s,baz=39,slow=6.2
NOA NORSAR Array B 72.77 338 P **P 15 14 14.8 +0.1**
comp=Z,4.3nm,0.7s,baz=39,slow=6.0,SNR=16
NOA LR LR 15 51 14.6
comp=Z,72nm,20.3s,baz=20,slow=40
AKASG Malin Array Be 73.46 323 P **P 15 14 18.9 +0.1**
comp=Z,3.2nm,0.5s,baz=44,slow=5.7,SNR=30
AKASG Malin Array Be 73.46 323 *i* P **P 15 14 18.8 0.0**
AKASG pmax pmax
comp=Z,2.0nm,0.4s
KIEV Kiev 73.47 323 ⇓*iP* **P 15 14 18.7 -0.2**
KIEV pmax pmax
comp=Z,8.0nm,0.8s
KIEV Kiev 73.47 323 *eP* **P 15 14 19.0 +0.1**
comp=Z,6.9nm,0.7s
AK11 Malin Array Si 73.50 323 *eP* **P 15 14 19.2 +0.1**
BMUT Black Mountain 74.79 48 *eP* **P 15 14 28.8 +1.7**
BW06 Boulder Array 75.23 47 *eP* **P 15 14 29.6 0.0**
PDAR Pinedale Array 75.23 47 P **P 15 14 29.6 0.0**
comp=Z,1.1nm,0.6s,baz=267,slow=1.3,SNR=8.5
WMUT West Mountain 75.62 50 *eP* **P 15 14 30.4 -1.5**
BSD Bornholm Skovb 76.23 332 *i* P **P 15 14 34.9 +0.1**
comp=Z,13nm,0.9s
BSD Bornholm Skovb 76.23 332 *i* P **P 15 14 34.9 +0.1**
BSD pmax pmax
comp=Z,13nm,0.9s
LCMT Little Creek M 76.69 53 *eP* **P 15 14 39.6 +1.6**
comp=Z,7.1nm,1.2s
KNB Kanab 76.95 53 *eP* **P 15 14 41.0 +1.5**
KNB pmax pmax
comp=Z,6.0nm,1.1s
KNB Kanab 76.95 53 *eP* **P 15 14 41.0 +1.5**
comp=Z,6.2nm,1.1s
ULM Lac du Bonnet 77.00 34 P **P 15 14 38.9 -0.4**
comp=Z,1.5nm,0.7s,baz=318,slow=8.3,SNR=4.2
BUR08 Bucovina Ar. S 77.48 322 *eP* **P 15 14 41.1 -1.0**
BURAR Bucovina Array 77.50 322 ⇑*iP* **P 15 14 42.8 +0.6**
BURAR Bucovina Array 77.50 322 ⇑P **P 15 14 42.8 +0.6**
CFR Carcaliu 77.77 319 ⇓*iP* P 15 14 52.6 +9.0
CFR Carcaliu 77.77 319 ⇓P P 15 14 52.6 +9.0
KOLS Kolonicke sedl 77.91 325 *eP* **P 15 14 45.0 +0.6**
KOLS Kolonicke sedl 77.91 325 *eP* **P 15 14 45.0 +0.6**
VRI Vrincioaia 78.00 320 ⇓*iP* P 15 15 01.9 +17
VRI Vrincioaia 78.00 320 ⇓P P 15 15 01.9 +17
STHS Stebnicka Huta 78.02 325 *eP* **P 15 14 46.7 +1.7**
STHS pmax pmax
comp=Z,4.0nm,1.2s
STHS Stebnicka Huta 78.02 325 *eP* **P 15 14 46.7 +1.7**
PV10 Paradox Valley 78.38 50 *eP* **P 15 14 47.2 -0.3**
BRTR Keskin Array B 78.47 312 P **P 15 14 47.9 +0.1**
comp=Z,5.3nm,1.2s,baz=101,slow=6.4,SNR=10
BRTR Keskin Array B 78.47 312 *i* P **P 15 14 48.7 +0.9**
BRTR pmax pmax
comp=Z,5.0nm,1.2s
DOPR Dopca 78.59 321 ⇑*iP* **P 15 14 49.6 +1.4**
MLR Muntele Rosu 78.65 320 ⇑*iP* P 15 14 55.4 +6.7
MLR Muntele Rosu 78.65 320 ⇑P P 15 14 55.4 +6.7
MSAB Monastry St. A 78.68 318 ⇓*iP* **P 15 14 48.3 -0.4**
BR231 Keskin MP Arra 78.89 313 *eP* P 15 14 47.1 -3.0
LANS Liptovska Anna 78.99 326 *eP* **P 15 14 52.0 +1.6**
LANS Liptovska Anna 78.99 326 *eP* **P 15 14 52.0 +1.6**
OKC Ostrava-Krasne 79.03 327 ⇓*eP* **P 15 14 51.1 +0.6**
OKC Ostrava-Krasne 79.03 327 ⇓*eP* **P 15 14 51.1 +0.6**
VOIR 79.13 321 ⇑*iP* **P 15 14 52.7 +1.4**
VOIR 79.13 321 ⇑P **P 15 14 52.7 +1.4**
ARR Arges 79.39 321 ⇑*iP* **P 15 14 54.5 +1.9**
DPC Dobruska-Polom 79.39 329 ⇓*iP* **P 15 14 53.7 +1.2**
DPC *e*PCP **pP** **15 14 59.1 -2.8**
DPC Dobruska-Polom 79.39 329 ⇓*iP* P 15 14 53.7 +1.2
DPC *e* 15 14 59.1
UPC Upice 79.40 329 ⇓*eP* **P 15 14 53.7 +1.2**
UPC *e*PCP **pP** **15 14 58.6 -3.2**
UPC Upice 79.40 329 *eP* **P 15 14 53.7 +1.2**
UPC *e* 15 14 58.6
VYHS Vyhne 79.76 326 *eP* **P 15 14 55.2 +0.7**
VYHS pmax pmax
comp=Z,3.0nm,1.0s
VYHS Vyhne 79.76 326 *eP* **P 15 14 55.2 +0.7**
VYHS *e*PP **PP** **15 17 57.2 +2.1**
BRG Berggiesshubel 79.93 330 *eP* **P 15 14 56.1 +0.7**
comp=Z,8.3nm,1.1s
BRG Berggiesshubel 79.93 330 *eP* **P 15 14 56.1 +0.7**
BRG pmax pmax
comp=Z,8.0nm,1.1s
CLL Collm 79.94 331 ⇓*iP* **P 15 14 55.6 +0.2**
comp=Z,12nm,0.8s
CLL *i* 15 15 00.8
comp=Z,9.0nm,0.9s
CLL *es*P **sP** **15 15 11.0 +2.8**
CLL Collm 79.94 331 ⇓*iP* **P 15 14 55.6 +0.2**
CLL *i* 15 15 00.8
CLL pmax pmax
comp=Z,12nm,0.8s
CLL Collm 79.94 331 *eP* P 15 14 52.2 -3.2
comp=Z,15nm,0.9s
PVCC Panska Ves 79.95 330 ⇓*eP* **P 15 14 56.8 +1.3**
PVCC Panska Ves 79.95 330 *eP* **P 15 14 56.8 +1.3**
VRAC Vranov 80.09 328 ⇓*iP* **P 15 14 57.7 +1.4**
VRAC Vranov 80.09 328 ⇓P **P 15 14 57.7 +1.4**
GZR Gura Zlata 80.27 322 ⇓*iP* **P 15 14 58.0 +0.6**
GZR Gura Zlata 80.27 322 ⇓P **P 15 14 58.0 +0.6**
GOPC GO Pecny, Ondr 80.35 329 ⇓*eP* **P 15 14 58.9 +1.2**
GOPC GO Pecny, Ondr 80.35 329 *eP* **P 15 14 58.9 +1.2**
PRA Prague 80.37 329 ⇓*eP* **P 15 14 59.0 +1.2**
PRA Prague 80.37 329 *eP* **P 15 14 59.0 +1.2**
PRU Pruhonice 80.39 329 ⇓*eP* **P 15 14 58.7 +0.8**
PRU *e*PCP **PcP** **15 15 03.9 -1.0**
PRU Pruhonice 80.39 329 *eP* **P 15 14 58.7 +0.8**
PRU *e* 15 15 03.9
TREC Trest 80.55 328 ⇓*eP* **P 15 15 00.0 +1.2**
TREC Trest 80.55 328 *eP* **P 15 15 00.0 +1.2**
RAYN Ar Rayn 81.11 293 *eP* **P 15 15 01.0 -1.2**
comp=Z,5.1nm,1.0s
KHC Kasperske Hory 81.45 329 ⇓*iP* **P 15 15 04.2 +0.6**
KHC *e*PCP **PcP** **15 15 09.4 -0.2**
KHC AMS AMS 15 55 30.0
comp=Z,300nm,17.3s
KHC Kasperske Hory 81.45 329 ⇓*iP* **P 15 15 04.2 +0.6**
KHC *e* 15 15 09.4
KHC MLR MLR
comp=Z,300nm,17.3s
KHC Kasperske Hory 81.45 329 *eP* **P 15 15 03.3 -0.4**
comp=Z,2.2nm,0.7s
GERES GERESS Array B 81.63 329 P **P 15 15 05.0 +0.3**
comp=Z,2.0nm,0.7s,baz=42,slow=6.1,SNR=15
GERES LR LR 15 56 09.0
comp=Z,75nm,20.0s,baz=14,slow=39
GERES GERESS Array B 81.63 329 P **P 15 15 05.0 +0.3**
VTS Vitosha 82.11 320 ⇑*iP* **P 15 15 07.4 +0.1**
VTS Vitosha 82.11 320 ⇑P **P 15 15 07.4 +0.1**
VTS Vitosha 82.11 320 *eP* **P 15 15 06.9 -0.4**
comp=Z,5.0nm,0.8s
ANMO Albuquerque 82.20 51 ⇑*iP* **P 15 15 09.3 +1.2**
SOKA Soboth 82.80 327 *i* PcP **P 15 15 11.4 +0.6**
SNR=5.7
MOTA Moosalm 83.87 329 *i* PcP **P 15 15 18.2 +1.8**
SNR=5.1
RETA Reutte 83.89 330 *i* PcP **P 15 15 17.1 +0.7**
SNR=5.6
BFO Black Forest 84.12 332 *i* P **P 15 15 18.7 +1.2**
MNTX Cornudas Mount 85.07 53 *eP* **P 15 15 22.6 0.0**
comp=Z,2.3nm,0.8s
TUE Stuetta 85.28 330 *eP* P 15 15 18.5 -5.0
comp=Z,7.0nm,0.8s
TX31 Lajitas Ar. Si 87.77 53 *eP* P 15 15 29.5 -6.5
TXAR Lajitas Array 87.77 53 P **P 15 15 36.1 +0.2**
comp=Z,0.9nm,0.5s,baz=295,slow=3.3,SNR=19
SADO Sadowa 88.21 29 LR LR 15 58 50.0
comp=Z,45nm,18.3s,baz=194,slow=38
TKL Tuckaleechee C 93.89 37 LR LR 16 00 58.1
comp=Z,21nm,20.6s,baz=121,slow=37
TORD Torodi Ar. Bea 116.77 317 PKP **PKPdf** **15 21 30.6 -0.8**
comp=Z,0.4nm,0.5s,baz=16,slow=1.3,SNR=9.4
MAW Mawson 122.02 206 PKP **PKPdf** **15 21 39.7 -0.1**
comp=Z,1.9nm,0.7s,baz=0.0,slow=4.0,SNR=3.5
SNAA Sanae 143.15 197 PKP PKPab 15 22 14.7 -0.3
LPAZ La Paz 144.45 59 PKP PKPbc 15 22 23.4 +0.8
comp=Z,0.6nm,0.4s,baz=350,slow=1.7,SNR=3.5
VNA2 Neumayer--Watz 144.71 196 PKP **PKPab** **15 22 20.8 -0.1**
baz=123,slow=2.6
VNA3 Neumayer Olymp 144.94 195 PKP **PKPab** **15 22 21.3 -0.5**
VNA1 Neumayer--Stat 145.11 196 PKP **PKPbc** **15 22 22.3 +0.1**
PLCA Paso Flores 154.21 104 PKPbc **PKPbc** **15 22 46.5 +0.2**
comp=Z,0.9nm,1.0s,baz=259,slow=5.1,SNR=3.1
PLCA PKPab **PKPab** **15 22 58.2 -2.1**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
	comp=Z,1.5nm,0.9s,baz=272,slow=2.6,SNR=5.0						

*IDC **02** 15:05:00.3±0.7, 34°.54N×141°.32E, h0km, mb4.1/20, mb1 4.2/22, mb1mx4.1/47, mbtmp4.1/22, ML4.2/2, MS3.8/2, Ms1 3.9/2, ms1mx3.0/48, Error ellipse: s-maj=18.5km s-min=17.2km az=83.0*

*ISCJB **02** 15:05:01.8±0.4, 34°.36N±0°.04×141°.35E±0°.09, h27km, mb4.1/23, MS3.8/2, Error ellipse: s-maj=11.4km s-min=5.8km az=169.2*

*NEIC **02** 15:05:05.1±0.4, 34°.43N×141°.25E, h35km, mb4.6/3, Error ellipse: s-maj=11.9km s-min=9.3km az=82.0*

ISC 02 15:05:04.0±0.5, 34°.44N±0°.06×141°.38E±0°.09, h27km, n36, σ1s.18/34, mb4.1/23, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
JHJ2	Mitsune	1.86	225	ePn	Pn	15 05 31.5	-2.6
JHJ	Hachijo jima 2	1.87	226	Sn	Sb	15 06 01.8	+1.3
	145nm,0.3s,baz=62,slow=19,SNR=6.2						
MJAR	Matsushiro Arr	3.33	310	Pn	Pn	15 05 53.9	-0.5
	5.3nm,0.3s,baz=119,slow=9.1,SNR=3.8						
MAJO	Matsushiro	3.34	310	Pn	Pn	15 05 55.5	+1.0
CBIJ	Chichi jima	7.35	174	Pn	Pn	15 06 50.5	+0.8
CBIJ				Sn	Sn	15 08 09.8	-2.3
JCJ	Chichijima	7.35	174	Pn	Pn	15 06 50.5	+0.8
	21nm,0.3s,baz=306,slow=21,SNR=6.4						
JCJ				Sn	Sn	15 08 09.8	-2.4
	3.3nm,0.3s,baz=270,slow=20,SNR=1.9						
MA2	Magadan	25.90	11	P	P	15 10 32.9	-0.6
	3.6nm,0.8s,baz=208,slow=11,SNR=3.6						
MA2	Magadan	25.90	11	eP	P	15 10 32.0	-1.4
SONM	Songino Array	29.29	308	P	P	15 11 04.3	+0.2
	2.7nm,0.7s,baz=107,slow=9.0,SNR=4.7						
CMAR	Chiang Mai Arr	40.88	258	P	P	15 12 43.3	-0.6
	1.0nm,0.9s,baz=43,slow=8.7,SNR=3.1						
CMAR				LR	LR	15 32 54.2	
	comp=Z,102nm,18.1s,baz=130,slow=41						
ZALV	Zalesovo Beam	43.68	314	P	P	15 13 03.9	-2.4
	2.1nm,0.7s,baz=102,slow=6.1,SNR=2.5						
ZALV				PcP	PcP	15 14 52.0	-1.1
	1.5nm,0.6s,baz=79,slow=3.1,SNR=4.2						
MKAR	Makanchi Array	45.52	304	P	P	15 13 20.1	-1.0
	2.6nm,0.7s,baz=93,slow=9.9,SNR=4.1						
NRIK	Noril'sk	45.62	336	P	P	15 13 20.4	-1.1
	5.6nm,1.0s,baz=119,slow=12,SNR=3.3						
HNR	Honiara	47.05	155	LR	LR	15 35 14.2	
	comp=Z,117nm,18.7s,baz=346,slow=38						
KURK	Kurchatov	47.55	310	P	P	15 13 37.4	+0.4
KURBB	Kurchatov Arra	47.61	310	P	P	15 13 37.4	-0.1
	0.7nm,0.3s,baz=83,slow=7.4,SNR=9.0						
TKM2	Tokmak 2	50.88	300	eP	P	15 14 01.6	-1.2
	20nm,0.5s						
ILAR	Eielson Array	51.71	31	P	P	15 14 08.3	-0.1
	1.1nm,0.7s,baz=269,slow=5.6,SNR=7.0						
WRAB	Tennant Creek	54.48	188	eP	P	15 14 28.3	-1.0
	1.2nm,0.6s						
WRA	Warramunga Arr	54.49	188	P	P	15 14 30.5	+1.1
	2.1nm,0.7s,baz=2.7,slow=7.5,SNR=5.9						
INK	Inuvik	56.71	26	P	P	15 14 44.4	-0.4
	2.1nm,0.8s,baz=284,slow=8.9,SNR=3.4						
ASAR	Alice Springs	58.22	188	P	P	15 14 56.7	+0.7
	2.0nm,0.8s,baz=15,slow=9.5,SNR=3.6						
ARU	Arti	58.30	320	eP	P	15 14 52.2	-4.0
GEYT	Alibeck	65.09	300	P	P	15 15 42.7	+0.4
	2.2nm,0.7s,baz=337,slow=3.3,SNR=3.8						
YKA	Yellowknife Ar	66.07	30	P	P	15 15 47.8	-0.4
	0.3nm,0.5s,baz=298,slow=6.3,SNR=4.4						
FINES	FINESS Array B	71.10	333	P	P	15 16 19.8	+0.3
	3.0nm,0.7s,baz=67,slow=5.0,SNR=4.1						
AKASG	Malin Array Be	76.34	323	P	P	15 16 49.3	-1.2
	2.6nm,0.6s,baz=47,slow=6.1,SNR=8.3						
NB2	NORSAR Subarra	76.57	338	P	P	15 16 50.6	-1.1
	comp=Z,2.3nm,0.8s,baz=40,slow=5.9						
NOA	NORSAR Array B	76.57	338	P	P	15 16 52.0	+0.3
	comp=Z,1.8nm,0.7s,baz=39,slow=5.6,SNR=5.0						
NVAR	Mina Array Bea	76.57	53	P	P	15 16 52.9	+0.5
	comp=Z,1.1nm,0.8s,baz=268,slow=4.5,SNR=3.8						
PDAR	Pinedale Array	79.51	45	P	P	15 17 10.1	+1.5
	comp=Z,0.2nm,0.6s,baz=7.6,slow=2.7,SNR=2.9						
BRTR	Keskin Array B	80.56	312	P	P	15 17 14.5	+0.3
	comp=Z,1.6nm,0.8s,baz=99,slow=4.1,SNR=5.1						
RAYN	Ar Rayn	81.62	293	eP	P	15 17 16.5	-3.5
	comp=Z,4.1nm,0.7s						
TXAR	Lajitas Array	91.72	52	P	P	15 18 10.2	+0.7
	comp=Z,0.3nm,0.7s,baz=328,slow=3.2,SNR=3.2						
TORD	Torodi Ar. Bea	119.12	314	PKP	PKPdf	15 23 52.6	+1.5
	comp=Z,0.2nm,0.7s,baz=112,slow=3.9,SNR=2.2						
LPAZ	La Paz	147.96	63	PKPbc	PKPdf	15 24 48.0	+2.9
	comp=Z,1.0nm,0.6s,baz=236,slow=3.6,SNR=3.3						

*NIED **02** 15:10:00, 37°.00N×141°.40E, h5km, Mw3.7 Best double couple: Mo4.07000×10^14 NP1:φs350.00000°, δ25.00000°, λ-150.00000°. NP2:φs232.00000°, δ78.00000°, λ-68.00000°.*

*ISCJB **02** 15:10:02.2±2.0, 36°.99N±0°.04×141°.56E±0°.05, h13km±13km, mb3.6/10, Error ellipse: s-maj=7.6km s-min=6.7km az=169.1*

*JMA **02** 15:10:05.1±0.1, 37°.05N×141°.36E, h32km±1km, M3.6*

JMA Felt I J1.

*IDC **02** 15:10:05.3±0.8, 37°.01N×141°.50E, h20km±4km, mb3.5/10, mb1 3.8/13, mb1mx3.6/34, mbtmp3.7/13, ML3.8/3, MS3.5/1, Ms1 3.5/1, ms1mx2.7/49, Error ellipse: s-maj=19.2km s-min=13.5km az=99.0*

ISC 02 15:10:04.3±0.7, 36°.99N±0°.05×141°.46E±0°.05, h16km±3km, n29, σ1s.44/31, mb3.6/10, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
ONAJ	Iwakimizuishiy	0.54	283	P	Pg	15 10 14.5	-0.5
ONAJ				S	Sg	15 10 21.5	-0.8
JHO	Hitachi	0.81	243	P	Pg	15 10 19.5	-0.5
JHO				S	Sg	15 10 29.9	-0.7
JMM	Marumori	1.03	329	P	Pb	15 10 22.0	-1.7
JFT	Otama	1.04	301	P	Pb	15 10 22.7	-1.3
JFT				S	Sb	15 10 35.5	-1.9
MJAR	Matsushiro Arr	2.65	261	Pn	Pn	15 10 47.1	+0.7
	6.0nm,0.3s,baz=85,slow=15,SNR=16						
MJAR				Sn	Sn	15 11 21.0	+2.8
	12nm,0.3s,baz=91,slow=30,SNR=7.3						
MAT	Matsushiro	2.65	261	P	Pn	15 10 47.3	+0.9
MAT				eS	Sn	15 11 20.6	+2.4
JHJ	Hachijo jima 2	4.09	200	Pn	Pn	15 11 07.8	+1.6
	12nm,0.3s,baz=316,slow=22,SNR=8.8						
JHJ				Sn	Sn	15 11 54.6	+0.7
	7.2nm,0.3s,baz=232,slow=19,SNR=3.1						
JCJ	Chichijima	9.88	176	Pn	Pn	15 12 24.9	-0.8
	3.7nm,0.3s,baz=100,slow=24,SNR=7.4						
JCJ				Sn	Sn	15 14 12.0	-4.3
	1.2nm,0.3s,baz=282,slow=19,SNR=2.5						
JCJ				LR	LR	15 15 49.2	
	comp=Z,288nm,20.4s,baz=264,slow=35						
USRK	Ussuriysk Ar.	10.18	318	Pn	Pn	15 12 36.1	+6.4
	0.1nm,0.3s,baz=144,slow=12,SNR=4.8						
MA2	Magadan	23.39	12	P	P	15 15 10.9	-1.2
	0.9nm,0.5s,baz=188,slow=19,SNR=2.2						
MA2				pP	sP	15 15 18.4	-0.3
	1.0nm,0.4s,baz=198,slow=16,SNR=2.6						
SEY	Seymchan	26.83	11	pP	pP	15 15 51.4	+2.9
	1.4nm,0.7s,baz=156,slow=9.9,SNR=5.6						
SONM	Songino Array	27.84	304	P	P	15 15 54.7	+1.6
	0.5nm,0.7s,baz=98,slow=8.1,SNR=2.2						
H11N2	WAKE ISLAND Hy	28.09	121	T	T	15 45 24.7	
	baz=314,slow=75,SNR=98						
H11N1	WAKE ISLAND Hy	28.10	121	T	T	15 45 26.3	
	baz=314,slow=75,SNR=98						
H11N3	WAKE ISLAND Hy	28.11	121	T	T	15 45 26.9	
	baz=314,slow=75,SNR=90						
H11S1	WAKE ISLAND Hy	28.80	123	T	T	15 46 18.2	
	baz=315,slow=76,SNR=58						
H11S3	WAKE ISLAND Hy	28.80	123	T	T	15 46 17.1	
	baz=315,slow=76,SNR=43						
H11S2	WAKE ISLAND Hy	28.82	123	T	T	15 46 18.1	
	baz=315,slow=76,SNR=38						
ZALV	Zalesovo Beam	41.97	312	pP	pP	15 17 59.2	-0.1
	1.4nm,0.7s,baz=101,slow=9.0,SNR=4.6						
MKAR	Makanchi Array	44.17	302	P	P	15 18 12.4	+0.1
	0.2nm,0.6s,baz=82,slow=7.5,SNR=4.1						
MKAR				pP	pP	15 18 18.1	+0.9
	1.0nm,0.7s,baz=87,slow=9.2,SNR=8.1						
ILAR	Eielson Array	49.52	32	P	P	15 18 54.1	+0.4
	0.5nm,0.7s,baz=276,slow=6.1,SNR=5.3						
ILAR				pP	sP	15 19 01.1	+0.4
	0.4nm,0.7s,baz=280,slow=5.2,SNR=3.2						
WRA	Warramunga Arr	57.02	188	P	P	15 19 49.8	+0.4
	0.5nm,0.6s,baz=5.2,slow=7.4,SNR=6.9						
WRA				pP	sP	15 19 56.4	+0.1
	0.6nm,0.6s,baz=4.0,slow=7.2,SNR=3.5						
ASAR	Alice Springs	60.75	188	P	P	15 20 16.2	+0.9
	0.3nm,0.7s,baz=14,slow=10,SNR=6.5						
YKA	Yellowknife Ar	63.83	30	pP	pP	15 20 42.0	+1.4
	0.1nm,0.6s,baz=299,slow=6.5,SNR=2.7						
ARCES	ARCESS Array B	64.05	339	P	P	15 20 37.9	+1.0
	4.1nm,0.9s,baz=51,slow=7.1,SNR=2.7						
FINES	FINESS Array B	68.87	332	P	P	15 21 08.0	+0.2
	1.3nm,1.0s,baz=53,slow=5.6,SNR=2.9						
AKASG	Malin Array Be	74.36	322	P	P	15 21 40.9	-0.1
	0.2nm,0.3s,baz=45,slow=6.1,SNR=2.6						
AKASG				pP	pP	15 21 47.1	+1.0
	0.4nm,0.4s,baz=48,slow=5.8,SNR=3.5						
TXAR	Lajitas Array	90.12	52	P	P	15 23 04.2	+0.1
	0.2nm,0.6s,baz=298,slow=2.8,SNR=3.5						
LPAZ	La Paz	146.69	60	PKPbc	PKPdf	15 29 45.8	+0.9
	0.6nm,0.4s,baz=296,slow=3.7,SNR=2.5						

MAN 02 15:14:06, 12°.44N×120°.83E, h16km, mb4.3, ML3.1, MS2.9, 2C, Mindoro

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
SJMP	San Jose	0.28	86	eP	Pb	15 14 13.0	+0.4
SJMP				eS	Sb	15 14 17.5	+0.4
BUSP	Coron	0.76	235	eP	Pb	15 14 21.2	+0.3
BUSP				eS	Sn	15 14 32.5	-0.7
PGP	Puerto Galera	1.06	6	⇑eP	Pb	15 14 24.7	-1.3
PGP				eS	Sb	15 14 37.6	-2.0
BOAC	Boac	1.41	44	eP	Pb	15 14 31.7	-0.3
BOAC				eS	Sb	15 14 50.1	+0.4
CUYO	Cuyo Island	1.59	173	eP	Pn	15 14 33.4	-0.2
LQP	Lukban	1.79	22	⇑eP	Pg	15 14 42.6	+2.0
ENPP	El Nido	1.85	228	eP	Pb	15 14 39.0	-0.4

*ISCJB **02** 15:20:13.2±0.7, 35°.52N±0°.04×140°.00E±0°.06, h33km±5km, mb3.5/3, Error ellipse: s-maj=8.8km s-min=5.1km az=141.4*

*JMA **02** 15:20:13.4±0.1, 35°.55N×140°.00E, h22km±3km, M3.0 Broadband fault plane solution: P waves. NP1: φs24.00000°, δ51.00000°, λ56.00000°. NP2:φs251.00000°, δ50.00000°, λ125.00000°. Principal axes: T Plg64.0000°, Azm229.0000°; N Plg26.0000°, Azm47.0000°; P Plg1.0000°, Azm137.0000°;*

*IDC **02** 15:20:18.1±1.9, 35°.30N×139°.75E, h65km±16km, mb3.2/3, mb1 3.5/4, mb1mx3.0/55, mbtmp3.5/4 Error ellipse: s-maj=33.6km s-min=6.5km az=68.0*

ISC 02 15:20:13.3±0.9, 35°.54N±0°.04×139°.99E±0°.05, h31km±6km, n13, σ0s.96/21, mb3.6/3, 1C-4D, Near south coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
JCN	Nagara	0.22	125	⇓P	Pb	15 20 19.1	-0.7
JCN				S	Sb	15 20 24.2	0.0
TOK	Tokyo	0.23	308	⇓P	Pb	15 20 19.8	-0.2
TOK				S	Sb	15 20 25.3	+0.8
JYO	Yokosk	0.41	219	⇑P	Pb	15 20 22.3	-0.1
JYO				S	Sb	15 20 29.7	+1.0
BSO4	Boso 4	0.62	152	⇓P	Pb	15 20 25.4	-0.3
JHU	Hanno	0.65	298	P	Pb	15 20 25.8	-0.5
JHU				S	Sb	15 20 35.0	-0.1
JOD2	Odawara 2	0.79	249	P	Pb	15 20 27.9	-0.6
JOD2				S	Sb	15 20 39.4	+0.6
BSO3	Boso 3	0.86	150	P	Pb	15 20 29.0	-0.5
JAG	Ashikaga	0.98	334	⇓P	Pb	15 20 31.1	-0.7
JAG				S	Sb	15 20 44.3	-0.1
MJAR	Matsushiro Arr	1.75	305	P	Pb	15 20 44.0	-0.8
	5.6nm,0.3s,baz=127,slow=14,SNR=41						
MJAR				S	Sb	15 21 07.6	+1.2
	2.9nm,0.3s,baz=149,slow=15,SNR=6.8						
JHJ	Hachijo jima 2	2.42	184	P	Pn	15 20 50.9	+0.1
	8.1nm,0.3s,baz=56,slow=23,SNR=7.7						
JHJ				S	Sn	15 21 18.9	-0.4
	15nm,0.3s,baz=118,slow=22,SNR=9.8						
CMAR	Chiang Mai Arr	40.01	256	P	P	15 27 43.7	-1.7
	0.2nm,0.4s,baz=52,slow=10,SNR=3.8						
WRA	Warramunga Arr	55.44	186	P	P	15 29 44.4	-0.5
	0.6nm,0.8s,baz=16,slow=8.7,SNR=3.3						
TXAR	Lajitas Array	91.95	52	P	P	15 33 21.7	+2.5
	0.2nm,0.7s,baz=265,slow=3.3,SNR=2.7						

*IDC **02** 15:21:42.8±0.6, 37°.88N×143°.45E, h0km, mb4.1/25, mb1 4.3/30, mb1mx4.2/56, mbtmp4.2/30, ML3.5/4, MS3.7/16, Ms1 3.7/16, ms1mx3.4/52, Error ellipse: s-maj=16.0km s-min=12.4km az=130.0*

*ISCJB **02** 15:21:43.7±0.9, 37°.89N±0°.03×143°.42E±0°.03, h17km±6km, mb4.5/81, MS3.9/20, Error ellipse: s-maj=5.4km s-min=3.6km az=142.0*

*JMA **02** 15:21:44.9±0.3, 37°.99N×143°.45E, h40km, M4.7*

*BJI **02** 15:21:45.4, 38°.12N×143°.54E, h38km, mb4.6/62, mB5.0/44, Ms4.4/38, Ms7 4.2/27*

*MOS **02** 15:21:45.9±1.4, 38°.03N×143°.44E, h30km, mb5.0/30, Error ellipse: s-maj=7.7km s-min=5.1km az=101.4*

*NEIC **02** 15:21:48.1±0.3, 37°.92N×143°.35E, h35km, mb4.8/35, Error ellipse: s-maj=7.6km s-min=4.6km az=147.0*

ISC 02 15:21:47.2±0.5, 37°.86N±0°.05×143°.51E±0°.04, h34km±1km, h34km:pP-P, n233, σ1s.43/237, mb4.6/81, MS4.1/20, 14C-9D, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
JIO	Ouri	1.81	290	P	Pn	15 22 13.3	-2.6
OFUJ	Ofunato	1.89	311	P	Pn	15 22 13.7	-3.4
JMK	Ichinoseki	2.11	302	P	Pn	15 22 17.3	-2.7
JMM	Marumori	2.15	271	P	Pn	15 22 19.0	-1.7
JMM				S	Sn	15 22 43.2	-3.0
JOU	Okura	2.30	284	P	Pn	15 22 21.3	-1.5
JOM	Ohasama	2.37	314	P	Pn	15 22 21.0	-2.7
JTH	Tanohata	2.44	329	P	Pn	15 22 22.8	-1.9
JFT	Otama	2.54	263	P	Pn	15 22 25.7	-0.3
JFT				eS	Sn	15 22 53.8	-2.0
JHO	Hitachi	2.66	243	P	Pn	15 22 26.4	-1.2
JYK	Kaneyama	2.69	294	P	Pn	15 22 26.5	-1.6
JKZ	Kuzumaki	2.72	322	P	Pn	15 22 25.6	-3.0
JRG	Rokugo	2.73	305	P	Pn	15 22 26.6	-2.0
JANG	Nango	2.95	329	P	Pn	15 22 29.9	-1.8
JTM	Tenmabayashi	3.48	328	P	Pn	15 22 38.2	-0.8
BSO1	Boso 1	3.80	213	P	Pn	15 22 42.3	-0.5
BSO4	Boso 4	3.84	223	P	Pn	15 22 44.3	+0.5
BSO3	Boso 3	3.89	219	P	Pn	15 22 44.2	-0.2
JOT	Ohata	4.00	332	P	Pn	15 22 45.3	-0.8
JRY	Ryogami san	4.12	245	P	Pn	15 22 47.4	-0.4
ERM	Erimo	4.16	356	eP	Pn	15 22 47.4	-0.9
ERM				e		15 23 32.3	
ERM	Erimo	4.16	356	ePn	Pn	15 22 47.4	-0.9
ERM				eSn	Sn	15 23 32.3	-3.4
MJAR	Matsushiro Arr	4.43	254	Pn	Pn	15 22 52.4	+0.3
	14nm,0.3s,baz=85,slow=15,SNR=32						
MAJO	Matsushiro	4.43	254	deP	Pn	15 22 53.1	+1.0
MAJO	Matsushiro	4.43	254	ePn	Pn	15 22 52.0	-0.1
MAJO				eSn	Sn	15 23 39.5	-3.1
MAT	Matsushiro	4.43	254	P	Pn	15 22 53.1	+1.0
MAT				eS	Sn	15 23 42.5	0.0
JKB	Kayabe	4.45	335	P	Pn	15 22 51.2	-1.1
JHJ2	Mitsune	5.61	214	ePn	Pn	15 23 07.3	-0.9
JHJ2				eSn	Sn	15 24 10.5	-1.0
JHJ	Hachijo jima 2	5.62	214	Pn	Pn	15 23 07.6	-0.8
	95nm,0.3s,baz=315,slow=23,SNR=23						
JHJ				Sn	Sn	15 24 08.3	-3.4
	35nm,0.3s,baz=73,slow=19,SNR=3.7						
JHJ				LR	LR	15 24 54.5	
	comp=Z,246nm,20.1s,baz=56,slow=34						
INU	Inuyama	5.79	246	ePn	Pn	15 23 11.6	+0.9
YUK	Yuzh-Kuril'sk	6.42	15	eP	Pn	15 23 15.2	-4.1
YUK				eS	Sn	15 24 21.9	-9.5
YUK				pmax	pmax		
	comp=E,92nm,0.5s						
YUK				pmax	pmax		
	comp=Z,147nm,0.5s						
YUK				pmax	pmax		
	comp=N,114nm,0.4s						
SHO	Shikotan	6.51	22	eP	Pn	15 23 16.1	-4.4
SHO				eS	Sn	15 24 23.4	-10
SHO				pmax	pmax		
	comp=Z,133nm,0.5s						
SHO				pmax	pmax		
	comp=E,51nm,0.3s						
SHO				pmax	pmax		
	comp=N,84nm,0.5s						
KUR	Kuril'sk	8.06	23	eP	Pn	15 23 40.0	-1.8
KUR				i S	Sn	15 25 02.9	-8.8
KUR				pmax	pmax		
	comp=N,31nm,0.7s						
KUR				pmax	pmax		
	comp=E,12nm,0.7s						
KUR				pmax	pmax		
	comp=Z,29nm,0.7s						
KUR				smax	smax		
	comp=N,263nm,0.5s						
KUR				smax	smax		
	comp=E,196nm,0.5s						
YSS	Yuzh-Sakhalins	9.11	357	⇑eP	Pn	15 23 57.6	+1.5
YSS				eS	Sn	15 25 31.4	-6.0
YSS				smax	smax		
	comp=Z,50nm,1.5s						
USRK	Ussuriysk Ar.	10.76	310	Pn	Pn	15 24 18.6	-0.2
	comp=Z,0.5nm,0.3s,baz=115,slow=14,SNR=14						
USRK				LR	LR	15 28 24.9	
	comp=Z,466nm,18.2s,baz=115,slow=38						
CBIJ	Chichi jima	10.79	186	ePn	Pn	15 24 15.8	-3.5
CBIJ				Sn	Sn	15 26 10.0	-8.8
JCJ	Chichijima	10.79	186	Pn	Pn	15 24 15.8	-3.5
	comp=Z,10nm,0.3s,baz=20,slow=19,SNR=32						
JCJ				Sn	Sn	15 26 10.0	-8.8
	baz=354,slow=19						
JNU	Nakatsue	11.33	249	Pn	Pn	15 24 26.7	+0.1
	comp=Z,0.5nm,0.3s,baz=103,slow=6.6,SNR=7.8						
JNU				LR	LR	15 29 03.1	
	comp=Z,414nm,18.6s,baz=15,slow=39						
JNU	Nakatsue	11.33	249	Pn	Pn	15 24 25.6	-1.0
KSRS	Korea Array	12.36	273	Pn	Pn	15 24 42.4	+1.6
	comp=Z,0.3nm,0.3s,baz=90,slow=13,SNR=12						
KSRS				LR	LR	15 29 24.1	
	comp=Z,199nm,18.5s,baz=71,slow=37						
KS15	Wonju Array Si	12.40	273	ePn	Pn	15 24 34.6	-6.6
KSAR	Wonju Array Be	12.40	273	P	Pn	15 24 42.4	+1.2
KSAR	Wonju Array Be	12.40	273	Pn	Pn	15 24 42.4	+1.2
MDJ	Mudanjiang	12.46	307	P	Pn	15 24 41.7	-0.3
MDJ				S	Sn	15 26 59.5	0.0
MDJ				PcP	PcP	15 30 21.1	+0.6
MDJ				ScP	ScP	15 33 48.0	-2.9
MDJ				PcS	PcS	15 33 53.4	-1.2
MDJ				ScS	ScS	15 37 26.8	-0.1
MDJ				pmax	pmax		
	comp=Z,14nm,1.1s						
MDJ				pmax	pmax		
	comp=Z,140nm,6.9s						
MDJ				LR	LR		
	comp=Z,500nm,11.8s						
MDJ				LR	LR		
	comp=Z,220nm,7.8s						
MDJ	Mudanjiang	12.46	307	Pn	Pn	15 24 41.3	-0.7
	comp=Z,15nm,0.9s						
KLR	Kul'dur	14.19	327	Pn	Pn	15 25 01.4	-4.2
	comp=Z,0.2nm,0.3s,baz=132,slow=13,SNR=26						
KLR				LR	LR	15 30 29.6	
	comp=Z,382nm,19.0s,baz=124,slow=37						
CN2	Changchun	14.90	299	eP	P	15 25 33.1	+13
CN2				eS	Sn	15 28 08.3	+9.3
NKL	Nikolayevsk	15.42	354	eP	Pn	15 25 18.3	-3.7
NKL				pmax	pmax		
	comp=Z,22nm,1.0s						
JOW	Kunigami	16.91	234	ePn	Pn	15 25 37.1	-4.1
	comp=Z,13nm,0.7s						
PEA0	Petropavlovsk-	18.15	28	eP	Pn	15 25 56.1	-0.3
PETK	Petropavlovsk-	18.15	28	P	Pn	15 25 55.6	-0.8
	comp=Z,0.2nm,0.3s,baz=194,slow=12,SNR=6.0						
PET	Petropavlovsk	18.46	30	eP	Pn	15 26 10.4	+10
PET				pmax	pmax		
	comp=Z,16nm,0.8s						
PET				pmax	pmax		
	comp=Z,100nm,13.8s						
PET				MLR	MLR		
	comp=Z,200nm,14.0s						
PET	Petropavlovsk	18.46	30	P	P	15 25 57.0	-2.8
	comp=Z,34nm,1.1s						
NJ2	Nanjing	21.00	261	eP	P	15 26 27.6	0.0
NJ2				pmax	pmax		
	comp=Z,7.0nm,0.5s						
TIA	Tai'an	21.11	274	⇓P	P	15 26 28.4	-0.5
TIA				S	S	15 30 25.3	+3.4
TIA				pmax	pmax		
	comp=Z,10.0nm,0.9s						
TIA				LR	LR		
	comp=Z,400nm,14.3s						
TIA				LR	LR		
	comp=Z,350nm,18.5s						
BJI	Beijing	21.34	284	P	P	15 26 29.6	-1.7
BJI				S	S	15 30 24.4	-2.0
BJI				pmax	pmax		
	comp=Z,10.0nm,1.0s						
BJT	Baijiatuau	21.35	284	eP	P	15 26 29.8	-1.6
BJT				pmax	pmax		
	comp=Z,20nm,0.7s						
BJT	Baijiatuau	21.35	284	eP	P	15 26 29.8	-1.6
	comp=Z,20nm,0.7s						
MA2	Magadan	22.23	10	P	P	15 26 41.0	+0.3
	comp=Z,3.2nm,0.7s,baz=212,slow=9.1,SNR=7.7						
MA2	Magadan	22.23	10	P	P	15 26 41.0	+0.3
HHC	Hu-ho-hao-te	24.81	287	eP	P	15 27 05.2	-1.0
HHC				pP	sP	15 27 17.8	-2.2
HHC				S	S	15 31 20.8	-5.9
HHC				sS	sS	15 31 41.5	-1.1
HHC				pmax	pmax		
	comp=Z,25nm,1.0s						
HHC				pmax	pmax		
	comp=Z,97nm,4.7s						
HHC				LR	LR		
	comp=Z,450nm,13.3s						
HHC				LR	LR		
	comp=Z,290nm,14.3s						
CIT	Chita	25.28	314	eP	P	15 27 08.0	-2.3
CIT				e		15 27 20.0	
CIT				e		15 27 44.8	
CIT				pmax	pmax		
	comp=Z,74nm,1.5s						
YAK	Yakutsk	25.67	345	P	P	15 27 13.0	-0.6
	comp=Z,1.1nm,0.5s,baz=327,slow=23,SNR=8.0						
YAK				LR	LR	15 38 08.6	
	comp=Z,216nm,19.6s,baz=155,slow=38						
YAK	Yakutsk	25.67	345	eP	P	15 27 12.4	-1.2
YAK				e*PP	sP	15 27 28.0	+0.6
YAK				e		15 27 49.1	
YAK				eS	S	15 31 41.1	+1.5
YAK				eSS	SnSn	15 32 39.4	+3.9
YAK				pmax	pmax		
	comp=N,14nm,1.2s						
YAK				pmax	pmax		
	comp=E,6.0nm,1.0s						
YAK				pmax	pmax		
	comp=Z,27nm,0.9s						
YAK				pmax	pmax		
	comp=Z,10.0nm,0.4s						
YAK				smax	smax		
	comp=E,94nm,2.8s						
YAK				smax	smax		
	comp=N,283nm,4.2s						
YAK	Yakutsk	25.67	345	eP	P	15 27 11.8	-1.9
	comp=N,44nm,1.0s						
SEY	Seymchan	25.68	9	P	P	15 27 14.0	+0.2
	comp=N,4.7nm,0.8s,baz=185,slow=6.6,SNR=24						
SEY	Seymchan	25.68	9	⇑eP	P	15 27 14.2	+0.5
H11N2	WAKE ISLAND Hy	27.19	125	T	T	15 56 02.9	
	baz=317,slow=75,SNR=24						
H11N1	WAKE ISLAND Hy	27.20	125	T	T	15 56 04.1	
	baz=317,slow=75,SNR=16						
H11N3	WAKE ISLAND Hy	27.21	125	T	T	15 56 04.1	
	baz=317,slow=75,SNR=20						
BOD	Bodaibo	27.76	326	eP	P	15 27 31.1	-1.4
BOD				pmax	pmax		
	comp=Z,17nm,1.7s						
H11S1	WAKE ISLAND Hy	27.96	127	T	T	15 56 56.4	
	baz=317,slow=74						
H11S3	WAKE ISLAND Hy	27.96	127	T	T	15 56 59.0	
	baz=317						
H11S2	WAKE ISLAND Hy	27.98	127	T	T	15 57 00.9	
	baz=317,slow=74						

ULN Ulaanbaatar 28.30 302⇑eP P 15 27 37.9 +0.3
ULN pmax pmax
comp=Z,7.0nm,0.6s
ULN Ulaanbaatar 28.30 302 eP P 15 27 36.2 -1.5
comp=Z,17nm,0.9s
SONA1 Songino Array 28.73 302 eP P 15 27 41.7 +0.2
SONM Songino Array 28.73 302 P P 15 27 41.8 +0.3
comp=Z,11nm,1.0s,baz=91,slow=8.8,SNR=31
SONM LR LR 15 39 34.8
comp=Z,84nm,19.7s,baz=102,slow=37
ENH Enshi 29.07 265 eP P 15 27 44.5 +0.1
comp=Z,26nm,0.9s
TLY Talaya 31.08 309 eP P 15 28 04.3 +2.3
TLY pmax pmax
comp=Z,12nm,1.0s
TLY MLR MLR
comp=Z,129nm,12.0s
TLY Talaya 31.08 309 eP P 15 28 02.8 +0.8
comp=Z,9.0nm,0.9s
ZAK Zakamensk 31.09 307 eP P 15 28 01.3 -1.0
ZAK pmax pmax
comp=Z,13nm,1.2s
LZH Lanzhou 31.58 279 eP P 15 28 07.4 +0.6
LZH pP sP 15 28 18.6 -2.0
LZH sP pP 15 28 23.0 +6.5
LZH pmax pmax
comp=Z,38nm,1.4s
LZH pmax pmax
comp=Z,130nm,4.3s
LZH LR LR
comp=Z,440nm,15.2s
LZH LR LR
comp=Z,160nm,13.2s
LZH LR LR
comp=Z,450nm,15.5s
MOY Mondy 32.70 309 eP P 15 28 17.6 +1.2
BILL Bilibino 32.78 16 P P 15 28 15.6 -1.1
BILL e 15 28 24.6
BILL e 15 29 22.1
BILL pmax pmax
comp=Z,1.0nm,1.0s
BILL Bilibino 32.78 16 eP P 15 28 21.9 +5.2
comp=Z,17nm,1.6s
GYA Guiyang 33.00 261 P P 15 28 19.8 +0.5
GYA pP sP 15 28 32.0 -1.2
GYA PP PnPn 15 29 30.6 +1.5
GYA PcP PcP 15 31 03.2 +0.5
GYA S S 15 33 34.6 -1.1
GYA ScP ScP 15 34 43.0 -1.2
GYA SS SnSn 15 35 35.5 +0.5
GYA ScS ScS 15 38 41.2 -3.5
GYA pmax pmax
comp=Z,30nm,0.8s
GYA pmax pmax
comp=Z,120nm,6.2s
GYA LR LR
comp=Z,500nm,18.1s
GYA LR LR
comp=Z,470nm,17.9s
GYA LR LR
comp=Z,490nm,18.4s
CD2 Chengdu 33.34 270 P P 15 28 20.8 -1.3
CD2 sP sP 15 28 38.2 +2.2
CD2 PP PP 15 29 36.6 -1.2
CD2 S S 15 33 38.6 -2.1
CD2 sS sS 15 33 59.0 +2.1
CD2 pmax pmax
comp=Z,20nm,0.4s
CD2 pmax pmax
comp=Z,280nm,12.0s
CD2 LR LR
comp=Z,480nm,15.6s
CD2 LR LR
comp=Z,470nm,17.4s
GTA Gaotai 33.92 286 P P 15 28 27.8 +0.6
GTA pP pP 15 28 38.0 +1.0
GTA sP sP 15 28 42.1 +1.0
GTA S S 15 33 49.7 0.0
GTA sS sS 15 34 05.8 -0.1
GTA SS SnSn 15 35 57.2 +0.1
GTA pmax pmax
comp=Z,13nm,1.2s
GTA pmax pmax
comp=Z,71nm,5.0s
GTA LR LR
comp=Z,270nm,16.2s
GTA LR LR
comp=Z,310nm,17.6s
GTA LR LR
comp=Z,320nm,17.1s
TIXI Tiksi 34.69 352⇓iP P 15 28 32.1 -1.2
TIXI pmax pmax
comp=Z,4.0nm,2.5s
TIXI Tiksi 34.69 352 eP P 15 28 32.2 -1.0
comp=Z,2.4nm,0.8s
DAV Davao City (W) 34.70 212 LR LR 15 43 06.2
comp=Z,143nm,20.0s,baz=357,slow=37
QIZ Qiongzhong 34.79 247 P P 15 28 34.5 -0.2
QIZ S S 15 34 03.1 0.0
QIZ pmax pmax
comp=Z,13nm,1.9s
QIZ LR LR
comp=Z,290nm,21.3s
QIZ LR LR
comp=Z,240nm,20.4s
QIZ LR LR
comp=Z,260nm,16.5s
KMI Kunming 36.73 262 P P 15 28 52.1 +0.5
KMI pmax pmax
comp=Z,12nm,0.7s
KMI pmax pmax
comp=Z,98nm,4.9s
KRAR Krasnoyarsk 38.04 315 iP P 15 29 03.8 +1.8
KRAR pmax pmax
comp=Z,16nm,0.7s
WMQ Urumqi 41.96 296 P P 15 29 35.3 +0.4
WMQ pP sP 15 29 46.9 -2.0
WMQ S S 15 35 54.3 +3.1
WMQ ScS ScS 15 39 32.3 -2.5
WMQ pmax pmax
comp=Z,5.0nm,1.0s
WMQ pmax pmax
comp=Z,140nm,4.6s
ZAA0 Zalesovo Array 42.60 312 eP P 15 29 39.7 -0.1
ZALV Zalesovo Beam 42.60 312 P P 15 29 39.6 -0.3
comp=Z,4.0nm,0.5s,baz=90,slow=7.7,SNR=16
ZALV PcP PcP 15 31 32.2 +0.7
comp=Z,1.1nm,0.4s,baz=76,slow=3.4,SNR=3.9
CHTO Chiang Mai 43.11 257 eP P 15 29 42.1 -2.2
CHTO pmax pmax
comp=Z,11nm,0.3s
CHTO Chiang Mai 43.11 257 eP P 15 29 42.1 -2.2
comp=Z,11nm,0.3s
NRIK Noril'sk 43.23 335 P P 15 29 44.5 -0.2
comp=Z,0.8nm,0.3s,baz=121,slow=11,SNR=3.1
NRIK LR LR 15 48 51.7
comp=Z,374nm,18.2s,baz=104,slow=38
CMAR Chiang Mai Arr 43.32 256 P P 15 29 46.8 +0.8
comp=Z,1.0nm,0.5s,baz=16,slow=16,SNR=7.4
CMAR LR LR 15 50 36.5
comp=Z,76nm,18.6s,baz=55,slow=40
CM01 Chiang Mai Arr 43.33 256 eP P 15 29 47.7 +1.6
NVS Novosibirsk 43.49 313 eP P 15 29 45.8 -1.2
LSA Lhasa 43.80 275 P P 15 29 52.0 +1.6
LSA pmax pmax
comp=Z,7.0nm,0.7s
LSA Lhasa 43.80 275 P P 15 29 52.0 +1.6
comp=Z,7.5nm,0.7s
MK01 Makanchi Array 45.10 302 eP P 15 29 59.0 -1.1
MK31 Makanchi Array 45.10 302 eP P 15 29 59.4 -0.7
MK31 Makanchi Array 45.10 302 eP P 15 29 59.4 -0.7
MKAR Makanchi Array 45.10 302 P P 15 29 59.8 -0.3
comp=Z,1.7nm,0.6s,baz=86,slow=8.9,SNR=29
MKAR Makanchi Array 45.10 302 eP P 15 29 59.2 -0.8
MAKZ Makanchi 45.31 302 eP P 15 30 00.2 -1.5
MAKZ pmax pmax
comp=Z,9.0nm,0.9s
MAKZ Makanchi 45.31 302 eP P 15 30 00.2 -1.5
comp=Z,9.3nm,0.9s
SPU Mount Spurr 45.56 38 eP P 15 30 05.7 +2.1
KTH Kantishna Hill 46.13 34 eP P 15 30 10.0 +2.0
comp=Z,9.6nm,0.9s
MLY Manley 46.26 32 eP P 15 30 08.2 -0.8
comp=Z,7.6nm,1.0s
KURK Kurchatov 46.74 308 eP P 15 30 11.2 -1.7
KURK pmax pmax
comp=Z,21nm,0.6s
KURK Kurchatov 46.74 308 eP P 15 30 11.2 -1.7
comp=Z,21nm,0.6s
PMR Palmer 46.97 37 eP P 15 30 15.6 +1.2
PMR pmax pmax
comp=Z,19nm,1.4s
PMR Palmer 46.97 37 eP P 15 30 15.6 +1.2
comp=Z,20nm,1.4s
RND Reindeer 47.06 35 eP P 15 30 16.5 +1.3
RND e*PP pP 15 30 26.1 +0.8
RND Reindeer 47.06 35 eP P 15 30 16.5 +1.3
RND epP pP 15 30 26.1 +0.8
MDM Murphy Dome 47.33 33 eP P 15 30 19.4 +2.1
comp=Z,14nm,0.9s
WRH Wood River Hil 47.39 33 eP P 15 30 19.6 +1.8
comp=Z,4.6nm,0.8s
COLA College 47.49 33 P P 15 30 20.0 +1.5
COLA pmax pmax
comp=Z,11nm,1.8s
TAPN Taplejung 47.55 274 eP P 15 30 21.0 +1.2
comp=Z,30nm,1.0s
SCM Sheep Creek Mo 47.81 37 eP P 15 30 21.0 -0.2
SCM pmax pmax
comp=Z,67nm,1.8s
SCM Sheep Creek Mo 47.81 37 eP P 15 30 20.9 -0.2
comp=Z,67nm,1.8s
IL1 Eielson Array 47.90 33 eP P 15 30 21.7 0.0
ILAR Eielson Array 47.90 33 P P 15 30 22.4 +0.7
comp=Z,3.0nm,0.7s,baz=265,slow=6.5,SNR=32
ILB Eielson Array 47.90 33 eP P 15 30 21.8 +0.1
ODAN Odare 48.02 274 eP P 15 30 23.6 +0.1
KLU Klutina 48.51 37 eP P 15 30 27.4 +0.9
KLU epP sP 15 30 38.4 -2.3
RAMN Ramite 48.61 275 eP P 15 30 28.8 +0.8
comp=Z,38nm,0.8s
DIV Divide 48.61 38 eP P 15 30 30.2 +2.9
comp=Z,22nm,1.1s
GUN Gumba 48.73 276 eP P 15 30 30.1 +1.1
DOT Dot Lake 49.19 34 eP P 15 30 33.0 +1.3
comp=Z,50nm,1.8s
BMRM Bremner River 49.19 38 eP P 15 30 33.8 +2.1
comp=Z,12nm,0.9s
RAGM Ragged Mountai 49.22 39 eP P 15 30 33.2 +1.2
comp=Z,20nm,1.1s
KKN Kakani 49.26 276 eP P 15 30 33.9 +1.0
comp=Z,26nm,0.6s
MENT Mentasta 49.41 35 eP P 15 30 35.0 +1.7
comp=Z,7.0nm,0.8s
GKN Gorkha 49.67 277 eP P 15 30 36.8 +0.8
comp=Z,44nm,1.0s
KOLN Koldanda 50.59 277 eP P 15 30 43.7 +0.7
TKM2 Tokmak 2 50.71 298 eP P 15 30 43.1 -0.6
TKM2 pmax pmax
comp=Z,11nm,0.9s
TKM2 Tokmak 2 50.71 298 eP P 15 30 43.1 -0.6
comp=Z,11nm,0.9s
PYUN Piuthan 50.92 278 eP P 15 30 46.7 +1.2
VOSK Vostochnaya 50.98 312 eP P 15 30 45.0 -0.4
VOSK pmax pmax
comp=Z,6.0nm,0.8s
VOSK Vostochnaya 50.98 312 eP P 15 30 45.0 -0.4
comp=Z,6.1nm,0.8s
BRVK Borovoye 51.31 312⇓iP P 15 30 48.1 +0.3
BRVK pmax pmax
comp=Z,3.0nm,0.8s
AAK Ala-Archa 51.57 298 LR LR 15 52 24.5
comp=Z,76nm,19.9s,baz=57,slow=36
AAK Ala-Archa 51.57 298d iP P 15 30 50.5 +0.4
AAK pmax pmax
comp=Z,13nm,1.3s
AAK Ala-Archa 51.57 298 eP P 15 30 50.1 -0.1
comp=Z,6.0nm,1.1s
KSH Kashi 51.59 294 eP P 15 30 54.5 +4.2
KSH epP sP 15 31 07.4 +2.9
KSH esP pP 15 31 12.1 +12
KSH ePP PP 15 32 54.1 +6.4
KSH S S 15 38 13.2 +4.2
KSH pmax pmax
comp=Z,65nm,4.6s
KSH LR LR
comp=Z,99nm,5.6s
KSH LR LR
comp=Z,120nm,5.9s
KSH LR LR
comp=Z,200nm,5.1s
EKS2 Erkin-Say 52.06 299 eP P 15 30 52.1 -1.6
EKS2 e*PP sP 15 31 08.5 +0.6
EKS2 Erkin-Say 52.06 299 eP P 15 30 52.1 -1.6
EKS2 epP sP 15 31 08.5 +0.6
INK Inuvik 52.89 28 P P 15 31 01.1 +1.8
comp=Z,2.2nm,1.0s,baz=243,slow=6.1,SNR=4.8
INK LR LR 15 56 48.6
comp=Z,42nm,19.1s,baz=273,slow=40
KKAR Karatay Array 54.16 300 eP P 15 31 09.3 +0.3
KKAR Karatay Array 54.16 300 eP P 15 31 09.3 +0.3
ARU Arti 56.85 319 LR LR 15 58 01.4
comp=Z,146nm,19.4s,baz=77,slow=38
ARU Arti 56.85 319d iP P 15 31 28.5 +0.4
ARU 15 33 34.5
ARU S S 15 39 21.7 +2.7
ARU SS SS 15 43 05.3 -1.6
ARU pmax pmax
comp=Z,9.0nm,1.2s
ARU Arti 56.85 319 eP P 15 31 26.9 -1.2
ARU epP pP 15 31 37.4 -1.0
DLBC Dease Lake 56.95 39 P P 15 31 31.6 +2.7
comp=Z,1.2nm,0.9s,baz=338,slow=5.4,SNR=2.5
WRAB Tennant Creek 58.12 190 eP P 15 31 38.3 +0.9
WRAB pmax pmax
comp=Z,19nm,0.9s
WRAB Tennant Creek 58.12 190 eP P 15 31 38.3 +0.9
comp=Z,19nm,0.9s
WB2 Warramunga Arr 58.13 190 eP P 15 31 36.5 -1.1
comp=Z,20nm,0.9s
WB2 epP sP 15 31 50.3 -1.5
WRA Warramunga Arr 58.13 190 P P 15 31 37.6 0.0
comp=Z,15nm,0.8s,baz=8.7,slow=7.1,SNR=64
KBL Kabul 58.67 291 eP P 15 31 41.4 -0.2
KBL pmax pmax
comp=Z,12nm,1.0s
KBL Kabul 58.67 291 eP P 15 31 41.4 -0.2
comp=Z,12nm,1.0s
ABKAR Akbulak array 58.68 310 eP P 15 31 41.0 -0.1
AKTO Aktyubinsk 59.36 312 LR LR 15 58 59.4
comp=Z,56nm,18.1s,baz=33,slow=38
RES Resolute Bay 61.38 15 eP P 15 31 58.3 -0.9
RES pmax pmax
comp=Z,24nm,1.9s
RES Resolute Bay 61.38 15 eP P 15 31 58.3 -0.9
comp=Z,24nm,1.9s
AS01 Alice Springs 61.85 190 eP P 15 32 02.8 -0.2
AS31 Alice Springs 61.86 190 eP P 15 32 04.5 +1.5
comp=Z,1.2nm,0.7s
ASAR Alice Springs 61.86 190 P P 15 32 04.0 +0.9
comp=Z,3.1nm,0.8s,baz=8.6,slow=6.6,SNR=30
ASAR LR LR 16 00 33.5
comp=Z,14nm,20.2s,baz=346,slow=38
ASAR Alice Springs 61.86 190 P P 15 32 04.0 +0.9
YKA Yellowknife Ar 62.25 31 P P 15 32 06.1 +0.8
comp=Z,0.6nm,0.8s,baz=299,slow=6.8,SNR=7.5
ARCES ARCESS Array B 63.81 340 P P 15 32 17.4 +1.9
comp=Z,1.0nm,0.5s,baz=59,slow=5.8,SNR=4.0
GEYT Alibeck 64.89 299 P P 15 32 23.4 +0.2
comp=Z,4.2nm,0.8s,baz=80,slow=1.7,SNR=8.3
OBN Obninsk 68.43 324⇓eP P 15 32 45.5 +0.2
OBN i 15 33 00.9
OBN pmax pmax
comp=Z,16nm,1.4s
OBN MLR MLR
comp=Z,109nm,14.0s
LPSR Galich'ya Gora 68.73 321 eP P 15 32 47.0 -0.3
LPSR pmax pmax
comp=Z,9.0nm,1.0s
FIA1 FINESS Array S 68.85 333 eP P 15 32 47.2 -0.6
FINES FINESS Array B 68.86 333 P P 15 32 47.9 0.0
comp=Z,3.1nm,0.6s,baz=46,slow=8.2,SNR=15
FINES LR LR 16 05 18.8
comp=Z,115nm,18.4s,baz=50,slow=38
VSR Storozhevoye 69.40 319 eP P 15 32 51.5 0.0
VSU Vasula 70.58 330 P P 15 32 58.0 -0.6
VSU pmax pmax
comp=Z,30nm,1.1s
NCK Nalchik 71.34 311 P P 15 33 05.0 +1.5
NCK pmax pmax
comp=Z,9.0nm,0.4s
ZEI Tsey 71.56 310 eP pP 15 33 16.0 +0.4
ZEI pmax pmax
comp=Z,7.0nm,0.8s
KIV Kislovodsk 71.62 312 i P P 15 33 07.0 +1.7
KIV i 15 33 25.0
KIV pmax pmax
comp=Z,19nm,1.2s
KIV Kislovodsk 71.62 312 eP P 15 33 03.8 -1.5
KIV epP PcP 15 33 24.4 0.0
KBZ Khabaz 71.62 311 P P 15 33 05.3 +0.2
comp=Z,4.0nm,0.9s,baz=198,slow=4.2,SNR=6.8
FFC Flin Flon 72.10 34 eP P 15 33 07.6 -0.3
FFC pmax pmax
comp=Z,9.0nm,1.4s
FFC Flin Flon 72.10 34 eP P 15 33 07.5 -0.3
comp=Z,9.4nm,1.4s
GNI Garni 72.54 307 P P 15 33 11.0 0.0
GNI pmax pmax
comp=Z,46nm,0.9s
NV01 Mina Array Sit 73.16 54 eP P 15 33 15.2 +0.5
NVAR Mina Array Bea 73.16 54 P P 15 33 15.5 +0.7
comp=Z,1.4nm,0.8s,baz=294,slow=5.6,SNR=7.4
NB2 NORSAR Subarra 74.06 338 P P 15 33 19.4 +0.1
comp=Z,6.8nm,0.9s,baz=40,slow=5.9
NOA NORSAR Array B 74.06 338 P P 15 33 19.5 +0.1
comp=Z,2.8nm,0.9s,baz=39,slow=5.8,SNR=4.4
AKASG Malin Array Be 74.66 323 P P 15 33 23.0 0.0
comp=Z,0.8nm,0.6s,baz=44,slow=6.2,SNR=8.9
AKASG Malin Array Be 74.66 323 P P 15 33 23.0 0.0
WCHM Chimney Peak 74.78 56 eP P 15 33 28.1 +3.8
PDAR Pinedale Array 75.89 47 P P 15 33 31.8 +1.3
comp=Z,0.5nm,0.7s,baz=318,slow=1.2,SNR=3.4
KNB Kanab 77.49 53 eP P 15 33 43.5 +3.9
KNB pmax pmax
comp=Z,19nm,1.6s
KNB Kanab 77.49 53 eP P 15 33 43.5 +3.9
comp=Z,19nm,1.6s
SRU San Rafael Swe 77.61 50 eP P 15 33 37.0 -3.2
SRU pmax pmax
comp=Z,24nm,1.8s
SRU San Rafael Swe 77.61 50 eP P 15 33 37.0 -3.3
comp=Z,24nm,1.8s
ULM Lac du Bonnet 77.89 34 P P 15 33 42.6 +1.3
comp=Z,1.8nm,0.7s,baz=322,slow=2.3,SNR=3.9
BURAR Bucovina Array 78.69 323⇑iP pP 15 33 56.7 +0.1
BURAR Bucovina Array 78.69 323 ⇑P pP 15 33 56.7 +0.1
TESR Tescani 78.76 321⇑iP pP 15 34 03.0 +6.2
KOLS Kolonicke sedl 79.12 325 eP P 15 33 47.4 -0.8
KOLS Kolonicke sedl 79.12 325 eP P 15 33 47.4 -0.8
BRTR Keskin Array B 79.54 312 P P 15 33 52.0 +1.2
comp=Z,0.4nm,0.6s,baz=14,slow=6.4,SNR=3.3
DOPR Dopca 79.76 321⇑iP pP 15 34 03.1 +0.7
MLR Muntele Rosu 79.82 321⇑iP pP 15 34 07.7 +4.9
VOIR 80.31 321⇓iP pP 15 34 13.2 +7.8
ARR Arges 80.56 321⇓iP pP 15 34 08.8 +2.0
DPC Dobruska-Polom 80.63 329 eP P 15 33 58.1 +1.7
DPC epP pP 15 34 08.0 +1.0
DPC ex x 15 34 22.2
DPC Dobruska-Polom 80.63 329 eP P 15 33 58.1 +1.7
DPC e 15 34 08.0
CLL Collm 81.20 331 eP P 15 33 59.0 -0.3
CLL epP pP 15 34 10.0 +0.1
CLL Collm 81.20 331 eP P 15 33 59.0 -0.3
CLL e 15 34 10.0
VRAC Vranov 81.32 328⇑iP pP 15 34 12.1 +1.4
VRAC Vranov 81.32 328 ⇑P pP 15 34 12.1 +1.4
GZR Gura Zlata 81.45 322⇑iP P 15 34 02.0 +1.1
GZR Gura Zlata 81.45 322 ⇑P P 15 34 02.0 +1.1
KHC Kasperske Hory 82.70 329 eP P 15 34 10.0 +2.7
KHC epP pP 15 34 18.1 +0.1
KHC ex x 15 34 26.0
KHC Kasperske Hory 82.70 329 eP P 15 34 10.0 +2.7
KHC e 15 34 18.1
KHC e 15 34 26.0
GERES GERESS Array B 82.88 329 P P 15 34 08.4 +0.1
comp=Z,0.3nm,0.5s,baz=53,slow=5.5,SNR=3.7
VTS Vitosha 83.27 320⇑iP P 15 34 12.0 +1.5
VTS Vitosha 83.27 320 ⇑P P 15 34 12.0 +1.5
BFO Black Forest 85.39 332 i P P 15 34 23.0 +2.0
TXAR Lajitas Array 88.29 54 P P 15 34 35.6 0.0
comp=Z,0.2nm,0.6s,baz=297,slow=2.9,SNR=4.8
VNA2 Neumayer--Watz 143.57 196 PKP PKPbc 15 41 15.8 +1.2
baz=28,slow=1.7
VNA3 Neumayer Olymp 143.78 194 PKP PKPab 15 41 15.2 +0.6
LPAZ La Paz 144.84 61 PKP PKPdf 15 41 22.8 +1.0
comp=Z,1.7nm,0.9s,baz=271,slow=2.9,SNR=6.0

IDC **02** *15:24:20.4±7.1, 1.°78N×96.°28E, h0km, mb4.1/3, mb1 4.0/5, mb1mx3.5/52, mbtmp3.9/5, ML3.7/2, Error ellipse: s-maj=135.2km s-min=40.5km az=11.0*
DJA **02** *15:24:24.1±2.7, 2°N±5°×9°6E±2°5, h21km±18km, M3.9/9, mB4.6/1, mb4.3/2, MLv3.6/9, Mw(mB)3.8/1*
ISCJB **02** *15:24:25.6±1.0, 2.°11N±0.°08×96.°44E±0.°08, h28km, mb4.1/3, Error ellipse: s-maj=13.2km s-min=9.1km az=135.7*
ISC 02 15:24:26.7±1.2**, 2.°13N**±0.°08×**96.°4E**±0.°1**, h28**km**, n18,** σ**0.s56**/12**, mb4.1**/3**, Northern Sumatera**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
TPTI		1.34	33	P	Pn	15 24 49.1	-0.5
GSI	Gunungsitoli	1.40	126	P	Pn	15 24 49.6	-0.7
KCSI	Kotacane, Aceh	1.92	44	P	Pn	15 24 57.4	-0.1
TSI	Tuntungan	2.52	57	P	Pb	15 25 16.4	+5.1
PSI	Prapat	2.57	75	Pn	Pn	15 25 06.8	+0.2
	4.2nm,0.3s,baz=293,slow=8.4,SNR=19						
PSI				Sn	Sn	15 25 36.5	-0.5
	2.8nm,0.3s,baz=248,slow=11,SNR=4.8						
PBSI	Pulau Batu	2.84	140	P	Pn	15 25 09.8	-0.4
MNSI	Mandailing Nat	3.40	113	P	Pn	15 25 18.9	+0.9
CMAR	Chiang Mai Arr	16.41	8	Pn	P	15 28 17.2	-0.6
	0.2nm,0.3s,baz=198,slow=12,SNR=11						
SHL	Shillong	23.71	350	eP	P	15 29 37.0	+0.3
H08S2	Diego Garcia H	25.79	248	T	T	15 56 35.7	
	baz=69,slow=76,SNR=362						
H08S3	Diego Garcia H	25.79	248	T	T	15 56 33.6	
	baz=69,slow=76,SNR=253						
H08S1	Diego Carcia H	25.81	248	T	T	15 56 34.7	
	baz=69,slow=76,SNR=330						
H01W3	Cape Leeuwin H	40.38	157	T	T	16 14 45.9	
	baz=333,slow=76,SNR=9.5						
H01W2	Cape Leeuwin H	40.40	157	T	T	16 14 46.9	
	baz=333,slow=76,SNR=9.7						
H01W1	Cape Leeuwin H	40.40	157	T	T	16 14 47.1	
	baz=333,slow=76,SNR=6.7						
MKAR	Makanchi Array	46.17	347	P	P	15 32 49.3	+0.4
	1.1nm,0.4s,baz=160,slow=8.5,SNR=12						
SONM	Songino Array	46.34	9	P	P	15 32 50.6	+0.2
	0.4nm,0.5s,baz=188,slow=8.9,SNR=3.7						
ZALV	Zalesovo Beam	52.53	351	P	P	15 33 37.6	+0.2
	3.2nm,0.4s,baz=170,slow=6.6,SNR=13						

IDC **02** *15:24:43.3±1.4, 9.°77S×150.°98E, h0km, mb3.6/7, mb1 3.8/9, mb1mx3.6/40, mbtmp3.6/9, ML3.4/1, MS3.2/1, Ms1 3.2/1, ms1mx2.6/31, Error ellipse: s-maj=34.0km s-min=23.5km az=122.0*
ISCJB **02** *15:24:47.4±1.1, 9.°8S±0.°1×150.°8E±0.°2, h33km, mb3.6/7, MS3.1/1, Error ellipse: s-maj=24.7km s-min=16.3km az=28.6*
ISC 02 15:24:49.0±1.3**, 9.°8S**±0.°2×**150.°8E**±0.°2**, h35**km**, n11,** σ**0.s82**/10**, mb3.7**/7**, Eastern New Guinea region**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
PMG	Port Moresby	3.63	276	Pn	Pn	15 25 42.2	-0.7
	3.1nm,0.3s,baz=76,slow=6.6,SNR=13						
PMG				Pg		15 25 52.5	
	6.1nm,0.3s,baz=143,slow=5.2,SNR=11						
PMG				Lg	Lg	15 26 49.0	
	3.4nm,0.3s,baz=1.0,slow=22,SNR=6.7						
WRA	Warramunga Arr	18.83	236	P	Pn	15 29 06.1	-0.7
	0.1nm,0.3s,baz=62,slow=11,SNR=6.6						
ASAR	Alice Springs	21.24	227	P	P	15 29 33.2	+1.0
	0.8nm,0.8s,baz=60,slow=9.9,SNR=8.4						
STKA	Stephens Creek	23.57	200	P	P	15 29 56.3	-0.2
	3.8nm,1.0s,baz=6.9,slow=11,SNR=4.5						
FITZ	Fitzroy Crossi	25.77	249	LR	LR	15 41 03.1	
	comp=Z,50nm,18.1s,baz=3.5,slow=38						
CMAR	Chiang Mai Arr	58.38	299	P	P	15 34 42.6	+1.1
	0.3nm,0.4s,baz=106,slow=6.7,SNR=2.6						
SONM	Songino Array	69.56	330	P	P	15 35 55.0	+0.4

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
	0.5nm,0.8s,baz=142,slow=7.3,SNR=3.5						
MKAR	**Makanchi Array**	**82.83**	**320**	P	**P**	**15 37 10.2**	**+0.3**
	0.4nm,0.8s,baz=99,slow=6.3,SNR=3.6						
ZALV	**Zalesovo Beam**	**84.23**	**327**	P	**P**	**15 37 15.9**	**-1.0**
	0.5nm,0.5s,baz=86,slow=5.9,SNR=2.5						
ILAR	**Eielson Array**	**87.51**	**22**	P	**P**	**15 37 32.3**	**-0.5**
	0.4nm,0.8s,baz=222,slow=4.9,SNR=3.4						
TORD	**Torodi Ar. Bea**	**149.57**	**279**	PKPbc	**PKPbc**	**15 44 35.9**	**0.0**
	0.5nm,0.7s,baz=66,slow=2.9,SNR=3.3						

MAN 02 15:28:31, 11°.21N×124°.72E, h15km, mb4.0, ML2.8, MS2.5, 2C-1D, Leyte

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
OCLP	**Ormoc**	**0.19**	**215**	*e*P	Pb	15 28 37.4	+1.1
OCLP				*e*S	Sb	15 28 42.1	+2.4
PLP	**Palo**	**0.26**	**100**	⇓*e*P	Pn	15 28 40.8	+0.5
PLP				*i* S	Sn	15 28 47.2	+1.2
LLP	**Lapu-Lapu**	**1.16**	**220**	⇑*i*P	Pn	15 28 52.4	-0.3
LLP				*i* S	Sb	15 29 07.7	+0.2
RCP	**Roxas**	**1.97**	**280**	⇑*e*P	Pn	15 29 04.0	+0.2
GUIM	**Jordan**	**2.17**	**255**	*e*P	Pn	15 29 07.9	+1.2
GUIM				*e*S	Sb	15 29 35.3	-1.5

*CSEM **02** 15:29:54.6, 39°.44N×29°.86W, h10km, ML2.9*
PDA 02 15:29:54.6±0.9**, 39°.44N×29°.86W, h10km, MD3.5, ML2.9, Error ellipse: s-maj=17.9km s-min=8.1km az=44.0, Azores Islands**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
PCED	**Cedros**	**1.21**	**132**	*e*P	Pn	15 30 13.0	-4.5
PCED				*e*S	Sb	15 30 26.1	-7.1
PCED	**Cedros**	**1.21**	**132**	*e*P	Pn	15 30 13.0	-4.5
PCED				*e*S	Sb	15 30 26.1	-7.1
PCED				A	A	15 30 27.6	
	44nm,0.2s						
CALA	**Caldeira**	**1.24**	**133**	*e*S	Sb	15 30 27.9	-6.3
CALA	**Caldeira**	**1.24**	**133**	*e*S	Sb	15 30 27.9	-6.3
HOR	**Horta**	**1.32**	**133**	*e*P	Pn	15 30 14.2	-4.8
HOR				*e*S	Sb	15 30 29.3	-7.1
HOR	**Horta**	**1.32**	**133**	*e*P	Pn	15 30 14.2	-4.8
HOR				*e*S	Sb	15 30 29.3	-7.1
HOR				A	A	15 30 31.5	
	141nm,0.3s						
PCAN	**Candelaria**	**1.44**	**132**	*e*S	Sn	15 30 32.3	-7.5
PCAN	**Candelaria**	**1.44**	**132**	*e*S	Sn	15 30 32.3	-7.5
PCAN				A	A	15 30 38.6	
	101nm,0.3s						
ROSA	**Rosais**	**1.45**	**119**	*e*S	Sn	15 30 32.5	-7.4
ROSA	**Rosais**	**1.45**	**119**	*e*S	Sn	15 30 32.5	-7.4
ROSA				A	A	15 30 33.5	
	36nm,0.3s						
PICO	**Pico**	**1.45**	**129**	*e*P	Pn	15 30 16.5	-4.5
PICO				*e*S	Sn	15 30 32.9	-7.3
PICO	**Pico**	**1.45**	**129**	*e*P	Pn	15 30 16.5	-4.5
PICO				*e*S	Sn	15 30 32.9	-7.3
PICO				A	A	15 30 34.0	
	116nm,0.3s						
PMAN	**Manadas**	**1.59**	**120**	*e*S	Sn	15 30 35.8	-7.7
PMAN	**Manadas**	**1.59**	**120**	*e*S	Sn	15 30 35.8	-7.7
PMAN				A	A	15 30 37.0	
	49nm,0.3s						

IDC 02 15:33:23.3±27.0**, 22°.09S×172°.94W, h0km, mb4.0**/4**, mb1 4.1**/4**, mb1mx3.7**/45**, mbtmp4.0**/4**, Error ellipse: s-maj=512.4km s-min=160.6km az=77.0, Tonga Islands region**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
CTA	**Charters Tower**	**38.05**	**265**	P	P	15 40 44.5	+0.7
	2.5nm,0.3s,baz=83,slow=11,SNR=5.7						
STKA	**Stephens Creek**	**41.42**	**246**	P	P	15 41 10.3	-1.3
	1.2nm,0.5s,baz=96,slow=10,SNR=4.1						
ASAR	**Alice Springs**	**48.77**	**257**	P	P	15 42 10.1	-0.3
	0.4nm,0.5s,baz=95,slow=7.2,SNR=13						
WRA	**Warramunga Arr**	**49.06**	**262**	P	P	15 42 12.8	+0.3
	0.9nm,0.4s,baz=96,slow=8.2,SNR=29						

*IDC **02** 15:44:22.8±1.9, 2°.50S×141°.09E, h0km, mb3.2/2, mb1 3.5/3, mb1mx3.2/45, mbtmp3.3/3, ML3.5/1, MS3.4/1, Ms1 3.4/1, ms1mx2.6/21, Error ellipse: s-maj=32.0km s-min=12.3km az=5.0*
*DJA **02** 15:44:24.8±1.8, 3°S±11°×14°1E±°, h10km, M3.7/2, MLv3.7/2*
*ISCJB **02** 15:44:26.0±0.9, 2°.5S±0°.1×140°.58E±0°.06, h26km±5km, mb3.2/2, MS3.4/1, Error ellipse: s-maj=23.3km s-min=10.3km az=176.7*
ISC 02 15:44:26.6±1.2**, 2°.6S**±0°.2×**140°.56E**±0°.05**, h13km**±10km**, n11, σ0s.58**/9**, Near north coast of Irian Jaya**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
JAY	**Jayapura**	**0.15**	**74**	Pg	**Pb**	**15 44 31.0**	**-0.4**
	75nm,0.3s,baz=260,slow=18,SNR=9142						
JAY				Lg	Lg	15 44 34.9	
	153nm,0.3s,baz=97,slow=23,SNR=185						
JAY	**Jayapura**	**0.15**	**74**	P	**Pg**	**15 44 30.3**	**0.0**
JAY				S	**Sb**	**15 44 34.9**	**+0.4**
GENI	**Genyem**	**0.39**	**265**	P	**Pg**	**15 44 34.4**	**-0.1**
GENI				S	**Sb**	**15 44 41.4**	**-0.1**
SWI	**Sorong**	**9.45**	**280**	P	**Pn**	**15 46 43.5**	**+0.9**
WRA	**Warramunga Arr**	**18.32**	**199**	P	**Pn**	**15 48 40.6**	**-0.2**
	0.2nm,0.3s,baz=25,slow=12,SNR=13						
ASAR	**Alice Springs**	**21.95**	**197**	P	**P**	**15 49 20.6**	**+0.3**
	0.5nm,0.5s,baz=27,slow=11,SNR=14						
H11S3	**WAKE ISLAND Hy**	**33.15**	**50**	T	T	16 25 54.6	
	baz=236						
H11S2	**WAKE ISLAND Hy**	**33.16**	**50**	T	T	16 25 53.1	
	baz=236						
H11S1	**WAKE ISLAND Hy**	**33.17**	**50**	T	T	16 25 54.1	
	baz=236						
USRK	**Ussuriysk Ar.**	**47.18**	**352**	LR	LR	16 11 22.9	
	comp=Z,37nm,18.2s,baz=118,slow=34						
MKAR	**Makanchi Array**	**70.80**	**322**	P	**P**	**15 55 42.5**	**-0.6**
	0.2nm,0.7s,baz=106,slow=7.5,SNR=2.7						

IDC 02 15:48:05.6±6.5**, 41°.09N×138°.21E, h570km**±148km**, mb2.4**/4**, mb1 2.4**/5**, mb1mx2.2**/64**, mbtmp3.3**/5**, Error ellipse: s-maj=233.6km s-min=156.4km az=32.0, Eastern Sea of Japan**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
MAT	**Matsushiro**	**4.54**	**180**	P	P	15 49 33.4	+0.3
MJAR	**Matsushiro Arr**	**4.54**	**180**	P	P	15 49 33.3	+0.2
	2.1nm,0.3s,baz=118,slow=7.5,SNR=13						
SONM	**Songino Array**	**23.57**	**297**	P	P	15 52 32.4	-0.2
	0.3nm,0.5s,baz=98,slow=9.1,SNR=3.7						
ZALV	**Zalesovo Beam**	**37.39**	**309**	P	P	15 54 30.7	+0.2
	0.3nm,0.3s,baz=92,slow=8.7,SNR=2.4						
MKAR	**Makanchi Array**	**39.94**	**298**	P	P	15 54 51.4	+0.2
	0.4nm,0.7s,baz=80,slow=9.3,SNR=5.3						
KURBB	**Kurchatov Arra**	**41.60**	**304**	P	P	15 55 03.5	-0.8
	0.5nm,0.7s,baz=79,slow=8.6,SNR=4.5						

*IDC **02** 15:53:02.1±0.7, 37°.49N×143°.62E, h0km, mb3.7/13, mb1 3.9/15, mb1mx3.7/40, mbtmp3.7/15, ML4.0/2, MS2.8/3, Ms1 2.8/3, ms1mx2.4/43, Error ellipse: s-maj=21.7km s-min=14.9km az=115.0*
*ISCJB **02** 15:53:04.2±0.5, 37°.28N±0°.05×143°.63E±0°.07, h33km, mb3.7/14, Error ellipse: s-maj=9.1km s-min=6.0km az=137.7*
*NEIC **02** 15:53:06.8±0.5, 37°.39N×143°.57E, h35km, mb4.6/1, Error ellipse: s-maj=12.8km s-min=9.1km az=126.0*
ISC 02 15:53:06.3±0.6**, 37°.27N**±0°.07×**143°.66E**±0°.08**, h35km, n30, σ1s.39**/28**, mb3.6**/14**, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
MJAR	**Matsushiro Arr**	**4.43**	**262**	Pn	**Pn**	**15 54 11.6**	**+0.7**
	8.4nm,0.3s,baz=90,slow=15,SNR=33						
MJAR				LR	LR	15 56 06.5	
	comp=Z,178nm,19.8s,baz=70,slow=42						
MAJO	**Matsushiro**	**4.43**	**262**	*e*Pn	**Pn**	**15 54 09.6**	**-1.4**
MAJO				*e*Sn	**Sn**	**15 55 00.1**	**-1.2**
MAT	**Matsushiro**	**4.43**	**262**	P	**Pn**	**15 54 12.4**	**+1.4**
MAT				S	**Sn**	**15 55 02.3**	**+1.0**
JHJ	**Hachijo jima 2**	**5.21**	**219**	Pn	**Pn**	**15 54 23.1**	**+1.3**
	16nm,0.3s,baz=339,slow=22,SNR=8.3						
JHJ				Sn	**Sn**	**15 55 20.6**	**0.0**
	38nm,0.3s,baz=279,slow=23,SNR=9.7						
CBIJ	**Chichi jima**	**10.22**	**187**	Pn	**Pn**	**15 55 30.3**	**-0.1**
CBIJ				Sn	**Sn**	**15 57 20.9**	**-2.8**
JCJ	**Chichijima**	**10.22**	**187**	Pn	**Pn**	**15 55 30.3**	**-0.1**
	2.2nm,0.3s,baz=36,slow=19,SNR=4.7						
JCJ				Sn	**Sn**	**15 57 20.9**	**-2.9**
	baz=270,slow=20						
JNU	**Nakatsue**	**11.24**	**252**	LR	LR	16 00 05.4	
	comp=Z,40nm,20.7s,baz=119,slow=38						
KSRS	**Korea Array**	**12.53**	**276**	LR	LR	16 00 17.7	
	comp=Z,33nm,20.9s,baz=95,slow=35						
MA2	**Magadan**	**22.79**	**9**	P	**P**	**15 58 05.2**	**-0.3**
	0.6nm,0.3s,baz=184,slow=4.3,SNR=4.2						
SEY	**Seymchan**	**26.25**	**9**	P	**P**	**15 58 37.1**	**-0.6**
	1.2nm,0.8s,baz=170,slow=7.8,SNR=6.6						
H11N2	**WAKE ISLAND Hy**	**26.76**	**124**	T	T	16 27 03.4	
	baz=317						
H11N1	**WAKE ISLAND Hy**	**26.77**	**124**	T	T	16 27 01.7	
	baz=317						
H11N3	**WAKE ISLAND Hy**	**26.78**	**124**	T	T	16 27 01.0	
	baz=317						
H11S1	**WAKE ISLAND Hy**	**27.52**	**126**	T	T	16 27 56.6	
	baz=318						
H11S3	**WAKE ISLAND Hy**	**27.52**	**127**	T	T	16 27 56.3	
	baz=318						
H11S2	**WAKE ISLAND Hy**	**27.53**	**127**	T	T	16 27 56.7	
	baz=318						
ENH	**Enshi**	**29.14**	**266**	P	**P**	**15 59 04.3**	**+0.3**
SONM	**Songino Array**	**29.15**	**303**	P	**P**	**15 59 03.8**	**-0.3**
	0.2nm,0.3s,baz=110,slow=8.5,SNR=3.8						
ZALV	**Zalesovo Beam**	**43.09**	**312**	P	**P**	**16 01 02.3**	**-0.3**
	0.2nm,0.4s,baz=64,slow=9.8,SNR=2.5						
ZALV				PcP	**PcP**	**16 02 52.2**	**+0.1**
	0.5nm,0.5s,baz=77,slow=3.1,SNR=4.2						
CMAR	**Chiang Mai Arr**	**43.29**	**257**	P	**P**	**16 01 06.2**	**+1.5**
	0.3nm,0.4s,baz=41,slow=7.2,SNR=4.9						
MKAR	**Makanchi Array**	**45.51**	**302**	P	**P**	**16 01 21.8**	**-0.4**
	0.6nm,0.8s,baz=82,slow=8.7,SNR=3.9						
KURK	**Kurchatov**	**47.20**	**308**	*e*P	**P**	**16 01 33.6**	**-1.8**
	5.5nm,0.8s						
KURBB	**Kurchatov Arra**	**47.27**	**308**	P	**P**	**16 01 35.3**	**-0.6**
	baz=80,slow=7.5						
ILAR	**Eielson Array**	**48.34**	**32**	P	**P**	**16 01 43.3**	**-0.7**
	1.0nm,0.8s,baz=263,slow=7.0,SNR=11						
WRA	**Warramunga Arr**	**57.58**	**190**	P	**P**	**16 02 55.0**	**+2.5**
	4.5nm,0.7s,baz=8.0,slow=7.0,SNR=34						
ASAR	**Alice Springs**	**61.30**	**190**	P	**P**	**16 03 21.0**	**+2.8**
	1.2nm,0.7s,baz=6.7,slow=6.1,SNR=13						
RES	**Resolute Bay**	**61.92**	**15**	P	**P**	**16 03 22.1**	**+0.3**
	0.6nm,0.8s,baz=2.1,slow=8.6,SNR=3.6						
YKA	**Yellowknife Ar**	**62.70**	**31**	P	**P**	**16 03 26.9**	**-0.2**
	0.2nm,0.7s,baz=299,slow=6.1,SNR=4.4						
FINES	**FINESS Array B**	**69.43**	**333**	P	**P**	**16 04 09.2**	**-1.2**
	1.1nm,0.8s,baz=336,slow=3.0,SNR=2.7						
PDAR	**Pinedale Array**	**76.21**	**47**	P	**P**	**16 04 52.2**	**+0.9**
	0.1nm,0.6s,baz=248,slow=1.0,SNR=3.5						

*IDC **02** 15:53:12.8±4.7, 36°.05N×71°.02E, h119km±30km, mb3.4/6, mb1 3.5/11, mb1mx3.1/57, mbtmp3.8/11, Error ellipse: s-maj=54.9km s-min=23.8km az=151.0*
*NNC **02** 15:53:21.2±0.9, 36°.78N×70°.90E, h165km±13km, mb3.1, mpv4.1, Error ellipse: s-maj=9.3km s-min=7.4km az=58.0*
*ISCJB **02** 15:53:24.0±1.1, 36°.93N±0°.08×71°.06E±0°.09, h200km, mb3.3/5, Error ellipse: s-maj=12.3km s-min=8.9km az=147.9*
ISC 02 15:53:24.9±1.4**, 37°.0N**±0°.1×**70°.96E**±0°.09**, h200km, n21, σ1s.77**/28**, mb3.3**/5**, 7C-4D, Hindu Kush region**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
SFK	**Sufi-Kurgan**	**3.65**	**32**	⇑P	**Pn**	**15 54 19.7**	**-2.8**
	17nm,0.4s						
SFK				⇑S	**Sn**	**15 55 06.0**	**-1.7**
	93nm,0.3s						
MNAS	**Manas**	**5.65**	**12**	⇓P	**Pn**	**15 54 45.7**	**-2.0**
	10nm,0.5s						
MNAS				⇓S	**Sn**	**15 55 52.5**	**-0.7**
	22nm,0.6s						
KK31	**Karatay Array**	**6.15**	**357**	P	**Pn**	**15 54 52.6**	**-1.4**
	7.2nm,0.3s,baz=174,slow=12,SNR=211						
KK31				⇑S	**Sn**	**15 56 04.5**	**-0.1**
	13nm,0.5s,baz=189,slow=19,SNR=21						
AAK	**Ala-Archa**	**6.29**	**25**	P	**Pn**	**15 54 54.7**	**-1.3**
	4.5nm,0.3s,baz=174,slow=4.9,SNR=48						
AAK				S	**Sn**	**15 56 07.9**	**-0.2**
	2.8nm,0.3s,baz=136,slow=22,SNR=16						
AAK	**Ala-Archa**	**6.29**	**25**	⇓P	**Pn**	**15 54 54.1**	**-1.9**
	4.6nm,0.3s						
AAK				⇓S	**Sn**	**15 56 08.4**	**+0.3**
	16nm,0.6s						
TKM2	**Tokmak 2**	**6.94**	**29**	⇑P	**Pn**	**15 55 02.4**	**-2.1**
	9.6nm,0.6s						
TKM2				⇑S	**Sn**	**15 56 23.2**	**-0.3**
	9.4nm,1.1s						
GEYT	**Alibeck**	**10.26**	**279**	P	Pn	15 55 40.1	-7.4
	0.7nm,0.3s,baz=100,slow=8.9,SNR=5.5						
GEYT				S	Sn	15 57 32.3	-10
	2.0nm,0.3s,baz=134,slow=23,SNR=10						
MK31	**Makanchi Array**	**12.94**	**37**	⇑P	**Pn**	**15 56 22.4**	**+0.8**
	1.1nm,0.6s,baz=213,slow=11,SNR=10						
MKAR	**Makanchi Array**	**12.94**	**37**	P	**Pn**	**15 56 22.0**	**+0.4**
	0.1nm,0.3s,baz=216,slow=12,SNR=11						
AB31	**Akbulak array**	**14.67**	**330**	P	**Pn**	**15 56 42.4**	**-0.5**
	0.4nm,0.3s,baz=146,slow=12,SNR=29						
AB31				S	**Sn**	**15 59 27.0**	**+0.1**
	1.1nm,0.4s,baz=150,slow=25,SNR=6.0						
KURBB	**Kurchatov Arra**	**14.70**	**19**	P	**Pn**	**15 56 42.6**	**-0.7**
	0.1nm,0.3s,baz=208,slow=10,SNR=8.8						
BVA0	**Borovoye Array**	**16.07**	**359**	P	**P**	**15 56 58.9**	**-0.5**
	baz=156,slow=9.4,SNR=7.9						
BVAR	**Borovoye Array**	**16.07**	**359**	P	**Pn**	**15 57 02.1**	**+2.3**
	0.3nm,0.3s,baz=157,slow=10.0,SNR=6.7						
AKTO	**Aktyubinsk**	**16.37**	**329**	P	**Pn**	**15 57 04.4**	**+0.9**
	0.3nm,0.3s,baz=132,slow=11,SNR=7.6						
AKTO				S	**S**	**16 00 01.1**	**-2.6**
	0.1nm,0.3s,baz=78,slow=19,SNR=2.3						
AKTO	**Aktyubinsk**	**16.37**	**329**	⇑P	**P**	**15 57 02.5**	**-0.2**
	3.6nm,1.0s						
ZALV	**Zalesovo Beam**	**19.51**	**25**	P	**P**	**15 57 38.5**	**+1.7**
	2.6nm,0.3s,baz=224,slow=11,SNR=13						
FINES	**FINESS Array B**	**37.08**	**326**	P	**P**	**16 00 17.8**	**+2.2**
	1.3nm,0.9s,baz=118,slow=7.3,SNR=7.8						
ARCES	**ARCESS Array B**	**40.71**	**337**	P	**P**	**16 00 48.4**	**+2.8**
	3.2nm,0.9s,baz=114,slow=8.1,SNR=15						
NOA	**NORSAR Array B**	**43.99**	**323**	P	**P**	**16 01 14.0**	**+1.8**
	0.9nm,0.8s,baz=92,slow=8.1,SNR=2.7						
TORD	**Torodi Ar. Bea**	**65.69**	**268**	P	**P**	**16 03 44.8**	**-3.5**
	0.3nm,0.5s,baz=51,slow=5.9,SNR=4.2						
YKA	**Yellowknife Ar**	**80.79**	**3**	P	**P**	**16 05 17.9**	**+2.2**
	0.1nm,0.3s,baz=352,slow=5.6,SNR=4.6						

*CSEM **02** 16:03:20.6±0.3, 36°.51N×3°.67W, h5km, ML2.0, Error ellipse: s-maj=5.3km s-min=3.9km az=4.0*
*SFS **02** 16:03:21.0, 36°.51N×3°.67W, h0km, ML2.0*
MDD 02 16:03:21.5±0.5**, 36°.51N×3°.67W, h0km, mbLg2.0**/11**, Error ellipse: s-maj=4.3km s-min=3.7km az=17.0, PRXIMO, Strait of Gibraltar**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
EMAL	**Malaga-Limoner**	**0.66**	**293**	Pg	Pg	16 03 33.4	-0.7
EMAL				Lg	Lg	16 03 42.7	
EMAL	**Malaga-Limoner**	**0.66**	**293**	*e*P	Pg	16 03 33.4	-0.7
EMAL				*e*S	Sg	16 03 42.7	+0.1
EGOR	**Sierra Gorda,**	**0.69**	**330**	Pg	Pg	16 03 34.2	-0.6
	0.4nm,0.1s,SNR=7.9						
EGOR				Lg	Lg	16 03 43.2	
	9.5nm,0.2s,SNR=7.9						
EGOR	**Sierra Gorda,**	**0.69**	**330**	Pg	Pg	16 03 34.2	-0.6
	0.4nm,0.1s,SNR=7.9						
EGOR				Lg	Lg	16 03 43.2	
	9.5nm,0.2s,SNR=7.9						
EQUE	**Quentar**	**0.72**	**15**	Pg	Pg	16 03 35.0	-0.3
	3.1nm,0.2s,SNR=6.9						
EQUE				Lg	Lg	16 03 43.1	
	26nm,0.2s,SNR=5.0						
EQUE	**Quentar**	**0.72**	**15**	Pg	Pg	16 03 35.0	-0.3
	3.1nm,0.2s,SNR=6.9						
EQUE				Lg	Lg	16 03 43.1	
	26nm,0.2s,SNR=5.0						
SELV	**Sierra Elvira**	**0.73**	**357**	Pg	Pg	16 03 34.9	-0.5
	0.9nm,0.2s,SNR=7.9						
SELV				Lg	Lg	16 03 44.4	
	3.1nm,0.2s,SNR=7.9						
SELV	**Sierra Elvira**	**0.73**	**357**	Pg	Pg	16 03 34.9	-0.6
	0.9nm,0.2s,SNR=7.9						
SELV				Lg	Lg	16 03 44.4	
	3.1nm,0.2s,SNR=7.9						
EALB	**Alboran**	**0.77**	**138**	Pg	Pg	16 03 35.4	-0.8
	5.0nm,0.1s,SNR=8.7						
EALB				Lg	Lg	16 03 46.3	
	36nm,0.1s,SNR=6.8						
EALB	**Alboran**	**0.77**	**138**	Pg	Pg	16 03 35.4	-0.8
	5.0nm,0.1s,SNR=8.7						
EALB				Lg	Lg	16 03 46.3	
	36nm,0.1s,SNR=6.8						
ECOG	**Cogollos-Vega**	**0.77**	**6**	Pg	Pg	16 03 35.2	-1.1
	2.2nm,0.2s,SNR=7.9						
ECOG				Lg	Lg	16 03 46.4	
	15nm,0.2s,SNR=7.9						
ECOG	**Cogollos-Vega**	**0.77**	**6**	Pg	Pg	16 03 35.2	-1.1
	2.2nm,0.2s,SNR=7.9						
ECOG				Lg	Lg	16 03 46.4	
	15nm,0.2s,SNR=7.9						
EMIJ	**Mijas**	**0.89**	**274**	Pg	Pg	16 03 37.4	-1.0
	3.0nm,0.1s,SNR=18						
EMIJ				Lg	Lg	16 03 48.6	
	29nm,0.1s,SNR=5.0						
EMIJ	**Mijas**	**0.89**	**274**	Pg	Pg	16 03 37.4	-1.1
	3.0nm,0.1s,SNR=18						
EMIJ				Lg	Lg	16 03 48.6	
	29nm,0.1s,SNR=5.0						
ENIJ	**Nijar**	**1.27**	**68**	Pg	Pg	16 03 42.9	-2.8
	2.5nm,0.2s,SNR=7.9						
ENIJ				Lg	Lg	16 04 00.8	
	10nm,0.2s,SNR=7.9						
ENIJ	**Nijar**	**1.27**	**68**	Pg	Pg	16 03 42.9	-2.8
	2.5nm,0.2s,SNR=7.9						
ENIJ				Lg	Lg	16 04 00.8	
	10nm,0.2s,SNR=7.9						
EQES	**Quesada**	**1.38**	**20**	Pg	Pg	16 03 47.4	-0.5
	2.5nm,0.2s,SNR=25						
EQES				Lg	Lg	16 04 05.3	
	14nm,0.3s,SNR=5.0						
EQES	**Quesada**	**1.38**	**20**	Pg	Pg	16 03 47.4	-0.5
	2.5nm,0.2s,SNR=25						
EQES				Lg	Lg	16 04 05.3	
	14nm,0.3s,SNR=5.0						
EADA	**Adamuz**	**1.81**	**337**	Pn	Pn	16 03 53.3	-0.6
	0.2nm,0.1s,SNR=7.9						
EADA				Pg	Pb	16 03 55.1	-0.4
	1.0nm,0.2s,SNR=7.9						
EADA				Sn	Sn	16 04 13.3	-4.2
	1.1nm,0.1s,SNR=7.9						
EADA				Lg	Lg	16 04 19.6	
	8.0nm,0.3s,SNR=7.9						
EADA	**Adamuz**	**1.81**	**337**	Pn	Pn	16 03 53.3	-0.6
	0.2nm,0.1s,SNR=7.9						
SESP	**Santiago Espad**	**1.84**	**29**	Pn	Pn	16 03 53.8	-0.7
	0.7nm,0.1s,SNR=7.9						
SESP				Pg	Pb	16 03 56.1	0.0
	2.4nm,0.2s,SNR=7.9						
SESP				Sn	Sn	16 04 16.7	-1.9
	4.2nm,0.2s,SNR=7.9						
SESP	**Santiago Espad**	**1.84**	**29**	Pn	Pn	16 03 53.8	-0.7
	0.7nm,0.1s,SNR=7.9						
ECAB	**El Cabril**	**2.09**	**319**	Pg	Pb	16 03 59.3	-1.0
	0.8nm,0.3s,SNR=7.9						
ECAB				Lg	Lg	16 04 27.6	
	1.5nm,0.3s,SNR=7.9						
ECAB	**El Cabril**	**2.09**	**319**	Pg	Pb	16 03 59.3	-1.0
	0.8nm,0.3s,SNR=7.9						
ECAB				Lg	Lg	16 04 27.6	
	1.5nm,0.3s,SNR=7.9						
EMIN	**Mina Concepcio**	**2.71**	**299**	Pn	Pn	16 04 05.3	-1.0
	0.1nm,0.1s,SNR=7.9						
EMIN				Sn	Sn	16 04 36.6	-3.1
	0.5nm,0.2s,SNR=7.9						
EMIN	**Mina Concepcio**	**2.71**	**299**	Pn	Pn	16 04 05.3	-0.9
	0.1nm,0.1s,SNR=7.9						
EMIN				Sn	Sn	16 04 36.6	-3.1
	0.5nm,0.2s,SNR=7.9						
ETOB	**Tobarra**	**2.72**	**38**	Pn	Pn	16 04 06.2	-0.3
	0.2nm,0.2s,SNR=7.9						
ETOB				Lg	Lg	16 04 46.9	
	3.3nm,0.5s,SNR=7.9						
ETOB	**Tobarra**	**2.72**	**38**	Pn	Pn	16 04 06.2	-0.3
	0.2nm,0.2s,SNR=7.9						
ETOB				Lg	Lg	16 04 46.9	
	3.3nm,0.5s,SNR=7.9						
PVAQ	**Vaqueiros**	**3.36**	**287**	*e*Pg	Pn	16 04 14.7	-0.5
PVAQ				*e*Sg	Sn	16 04 52.7	-3.1
PVAQ	**Vaqueiros**	**3.36**	**287**	Pg	Pn	16 04 14.7	-0.5
PVAQ				Lg	Lg	16 04 52.7	
PVAQ	**Vaqueiros**	**3.36**	**287**	Pg	Pn	16 04 14.7	-0.5
PVAQ				*e*Sg	Sn	16 04 52.7	-3.1
PBDV	**Barranco-do-Ve**	**3.49**	**283**	*e*Sg	Sn	16 04 57.0	-2.1
PBDV	**Barranco-do-Ve**	**3.49**	**283**	Lg	Lg	16 04 57.0	
PBDV	**Barranco-do-Ve**	**3.49**	**283**	*e*Sg	Sn	16 04 57.0	-2.1

*NIED **02** 16:03:00, 37°.30N×143°.80E, h53km, Mw3.7 Best double couple: M0 4.52000×10¹⁴ NP1:φs342.00000°, δ45.00000°, λ138.00000°. NP2:φs104.00000°, δ62.00000°, λ53.00000°.*
*IDC **02** 16:03:24.6±0.7, 37°.14N×144°.37E, h0km, mb3.7/15, mb1 3.9/20, mb1mx3.8/45, mbtmp3.8/20, ML3.7/4, MS2.7/4, Ms1 2.8/4, ms1mx2.5/60, Error ellipse: s-maj=19.9km s-min=14.4km az=114.0*
*JMA **02** 16:03:27.7±0.8, 37°.30N×143°.84E, h16km, M4.0*
*ISCJB **02** 16:03:28.2±0.5, 37°.20N±0°.04×143°.97E±0°.05, h33km, mb3.7/15, MS3.2/1, Error ellipse: s-maj=6.0km s-min=5.1km az=142.7*
ISC 02 16:03:30.3±0.7**, 37°.22N**±0°.05×**144°.06E**±0°.07**, h35km, n39, σ1s.80**/39**, mb3.8**/15**, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**2.48**	**301**	P	**Pn**	**16 04 06.5**	**-1.6**
JIO				*e*S	**Sn**	**16 04 34.0**	**-3.1**
JMK	**Ichinoseki**	**2.83**	**309**	*e*S	**Sn**	**16 04 42.1**	**-3.8**
JFT	**Otama**	**2.98**	**277**	P	**Pn**	**16 04 15.1**	**0.0**
JFT				*e*S	**Sn**	**16 04 48.2**	**-1.4**
JOM	**Ohasama**	**3.13**	**317**	P	**Pn**	**16 04 14.9**	**-2.3**
JOM				*e*S	**Sn**	**16 04 49.1**	**-4.2**
JYK	**Kaneyama**	**3.38**	**301**	P	**Pn**	**16 04 19.4**	**-1.1**
JYK				*e*S	**Sn**	**16 04 57.0**	**-2.4**
JANG	**Nango**	**3.73**	**329**	P	**Pn**	**16 04 25.4**	**+0.1**
JRY	**Ryogami san**	**4.32**	**255**	P	**Pn**	**16 04 33.0**	**-0.5**
JRY				*e*S	**Sn**	**16 05 20.3**	**-2.3**
JOD2	**Odawara 2**	**4.47**	**246**	P	**Pn**	**16 04 35.2**	**-0.3**
JOD2				*e*S	**Sn**	**16 05 24.1**	**-2.2**
MJAR	**Matsushiro Arr**	**4.74**	**264**	Pn	**Pn**	**16 04 40.1**	**+0.8**
	5.4nm,0.3s,baz=90,slow=15,SNR=28						
MJAR				LR	LR	16 07 03.7	
	comp=Z,28nm,19.7s,baz=215,slow=44						
MAT	**Matsushiro**	**4.74**	**264**	P	**Pn**	**16 04 40.5**	**+1.2**
MAT				*e*S	**Sn**	**16 05 31.7**	**-1.3**
JHJ2	**Mitsune**	**5.37**	**222**	P	**Pn**	**16 04 46.7**	**-1.2**
JHJ2				*e*S	**Sn**	**16 05 47.0**	**-1.5**
JHJ	**Hachijo jima 2**	**5.38**	**222**	Pn	**Pn**	**16 04 46.6**	**-1.5**
	15nm,0.3s,baz=84,slow=22,SNR=10						
JHJ				Sn	**Sn**	**16 05 44.7**	**-4.1**
	26nm,0.3s,baz=78,slow=23,SNR=7.7						
JCH	**Churui**	**5.42**	**355**	P	Pn	16 04 44.6	-3.9
JCH				*e*S	Sn	16 05 40.7	-8.9
JCJ	**Chichijima**	**10.21**	**189**	Pn	Pn	16 05 50.4	-4.0
	1.2nm,0.3s,baz=285,slow=23,SNR=6.5						
JCJ				Sn	Sn	16 07 36.4	-11
	5.1nm,0.3s,baz=68,slow=2.4,SNR=5.2						
USRK	**Ussuriysk Ar.**	**11.51**	**311**	Pn	**Pn**	**16 06 12.7**	**+0.7**
	0.3nm,0.3s,baz=103,slow=13,SNR=4.7						
JNU	**Nakatsue**	**11.53**	**253**	Pn	**Pn**	**16 06 13.3**	**+0.9**
	0.1nm,0.3s,baz=51,slow=14,SNR=2.5						
KSRS	**Korea Array**	**12.85**	**276**	LR	LR	16 11 39.9	
	comp=Z,33nm,19.1s,baz=76,slow=38						
KLR	**Kul'dur**	**14.97**	**327**	LR	LR	16 12 18.8	
	comp=Z,32nm,19.3s,baz=117,slow=35						
SEY	**Seymchan**	**26.25**	**9**	P	**P**	**16 09 01.9**	**+0.1**
	1.9nm,0.6s,baz=184,slow=6.3,SNR=16						
H11N2	**WAKE ISLAND Hy**	**26.47**	**125**	T	T	16 35 55.0	
	baz=313						
H11N1	**WAKE ISLAND Hy**	**26.48**	**125**	T	T	16 35 55.0	
	baz=313						

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
H11N3	WAKE ISLAND Hy	26.49	125	T	T	16 35 56.1	
	baz=313						
H11S1	WAKE ISLAND Hy	27.23	127	T	T	16 36 55.9	
	baz=311						
H11S3	WAKE ISLAND Hy	27.23	127	T	T	16 36 57.6	
	baz=311						
H11S2	WAKE ISLAND Hy	27.25	127	T	T	16 36 57.6	
	baz=311						
SONM	Songino Array	29.45	303	P	P	16 09 33.0	+2.3
	0.4nm,0.7s,baz=102,slow=7.7,SNR=3.4						
ZALV	Zalesovo Beam	43.36	312	P	P	16 11 30.6	+1.7
	0.3nm,0.4s,baz=92,slow=8.1,SNR=2.4						
ZALV				PcP	PcP	16 13 17.3	+0.3
	0.6nm,0.4s,baz=90,slow=3.3,SNR=5.5						
CMAR	Chiang Mai Arr	43.59	257	P	P	16 11 32.9	+1.7
	0.6nm,0.7s,baz=49,slow=7.4,SNR=7.1						
CMAR				LR	LR	16 31 10.8	
	comp=Z,32nm,20.4s,baz=164,slow=38						
MKAR	Makanchi Array	45.81	302	P	P	16 11 49.3	+0.7
	0.5nm,0.7s,baz=87,slow=9.7,SNR=6.5						
ILAR	Eielson Array	48.21	32	P	P	16 12 06.1	-0.9
	0.4nm,0.7s,baz=265,slow=6.7,SNR=4.9						
INK	Inuvik	53.26	27	P	P	16 12 44.0	-0.9
	0.6nm,0.5s,baz=314,slow=7.7,SNR=6.0						
WRA	Warramunga Arr	57.59	191	P	P	16 13 16.1	-0.6
	1.5nm,0.6s,baz=9.4,slow=7.1,SNR=17						
ASAR	Alice Springs	61.31	191	P	P	16 13 42.2	-0.1
	0.4nm,0.6s,baz=7.0,slow=7.4,SNR=12						
RES	Resolute Bay	61.89	15	P	P	16 13 45.1	-0.4
	1.1nm,0.8s,baz=11,slow=5.3,SNR=4.7						
FINES	FINESS Array B	69.62	333	P	P	16 14 35.6	+0.1
	1.0nm,0.8s,baz=27,slow=13,SNR=3.7						
NVAR	Mina Array Bea	73.17	54	P	P	16 14 56.4	-1.3
	0.4nm,0.6s,baz=289,slow=8.1,SNR=3.6						
AKASG	Malin Array Be	75.43	323	P	P	16 15 10.3	0.0
	0.9nm,0.6s,baz=46,slow=5.9,SNR=7.2						
BRTR	Keskin Array B	80.30	313	P	P	16 15 39.6	+1.8
	1.0nm,0.9s,baz=10,slow=9.1,SNR=3.3						
GERES	GERESS Array B	83.65	330	P	P	16 15 55.1	-0.1
	0.4nm,0.6s,baz=30,slow=6.2,SNR=4.0						

*IDC **02** 16:17:01.7±2.0, 23°03S×171°68E, h0^{km}, mb3.8/5, mb1 4.0/6, mb1mx3.8/43, mbtmp3.8/6, ML3.8/1, MS3.4/4, Ms1 3.4/4, ms1mx2.9/46, Error ellipse: s-maj=92.7km s-min=26.0km az=168.0*

*ISCJB **02** 16:17:07.5±1.3, 23°1S±0°4×171°5E±0°1, h49^{km}, mb3.7/5, MS3.4/2, Error ellipse: s-maj=55.5km s-min=13.1km az=3.2*

ISC 02 16:17:09.0±1.6**, 23°0S**±0°5×**171°6E**±0°1**, h49^{km}, n11, σ0^{s}82**/8**, mb3.7**/5**, Southeast of Loyalty Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
DZM	Mont Dzumac	4.80	280	Pn	Pn	16 18 18.0	-0.8
	3.6nm,0.3s,baz=110,slow=17,SNR=39						
DZM				Sn	Sn	16 19 13.6	+0.3
	1.8nm,0.3s,baz=114,slow=19,SNR=2.6						
URZ	Urewera	15.98	164	LR	LR	16 25 35.3	
	comp=Z,143nm,21.8s,baz=347,slow=32						
HNR	Honiara	17.45	319	LR	LR	16 27 14.3	
	comp=Z,86nm,18.9s,baz=328,slow=35						
RPZ	Rata Peaks	20.71	181	LR	LR	16 28 25.6	
	comp=Z,102nm,19.6s,baz=106,slow=33						
ASAR	Alice Springs	34.52	261	P	P	16 23 53.0	+0.2
	0.7nm,0.6s,baz=84,slow=8.6,SNR=11						
WRA	Warramunga Arr	34.70	268	P	P	16 23 54.0	-0.5
	0.2nm,0.3s,baz=96,slow=8.4,SNR=15						
PETK	Petropavlovsk-	76.70	351	LR	LR	16 56 40.2	
	comp=Z,32nm,20.3s,baz=133,slow=31						
CMAR	Chiang Mai Arr	81.98	294	P	P	16 29 25.4	+1.3
	0.5nm,0.7s,baz=132,slow=5.4,SNR=2.3						
NVAR	Mina Array Bea	89.67	48	P	P	16 30 01.4	-0.6
	0.2nm,0.3s,baz=253,slow=9.3,SNR=3.3						
SONM	Songino Array	91.47	322	P	P	16 30 10.5	+0.4
	0.5nm,0.8s,baz=146,slow=3.7,SNR=4.7						
GERES	GERESS Array B	148.77	331	PKPbc	PKPbc	16 36 50.7	-0.3
	0.5nm,0.7s,baz=64,slow=3.1,SNR=3.6						

*NIED **02** 16:25:00, 36°20N×143°40E, h8^{km}, Mw3.8 Best double couple: Mo5.12000×10^{14} NP1:φs23.00000°, δ36.00000°, λ-82.00000°. NP2:φs194.00000°, δ55.00000°, λ-96.00000°.*

*IDC **02** 16:25:15.0±0.9, 36°06N×143°62E, h0^{km}, mb3.7/9, mb1 3.9/12, mb1mx3.6/61, mbtmp3.8/12, ML3.8/3, MS2.6/3, Ms1 2.6/3, ms1mx2.3/51, Error ellipse: s-maj=25.7km s-min=17.2km az=90.0*

*ISCJB **02** 16:25:18.5±0.6, 36°21N±0°03×143°40E±0°05, h33^{km}, mb3.7/10, MS4.3/1, Error ellipse: s-maj=6.2km s-min=4.9km az=6.6*

*JMA **02** 16:25:19.4±0.3, 36°24N×143°35E, h69^{km}, M3.8*

*NEIC **02** 16:25:19.9±0.7, 35°93N×143°52E, h35^{km}, mb4.2/1, Error ellipse: s-maj=15.7km s-min=12.1km az=72.0*

ISC 02 16:25:20.0±0.9**, 36°19N**±0°04×**143°45E**±0°08**, h35^{km}, n42, σ1^{s}50**/40**, mb3.7**/10**, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
CHOJ	Chosi	2.16	258	P	Pn	16 25 53.3	-0.1
JHO	Hitachi	2.36	281	P	Pn	16 25 55.3	-0.9
BSO1	Boso 1	2.53	234	eS	Sn	16 26 28.6	+1.2
JYT	Yasato	2.63	272	P	Pn	16 25 59.0	-0.9
JMM	Marumori	2.71	309	P	Pn	16 26 00.3	-0.7
JMM				eS	Sn	16 26 31.3	-1.2
JIO	Ouri	2.82	324	P	Pn	16 26 01.8	-0.7
JIO				eS	Sn	16 26 32.7	-2.5
JFT	Otama	2.83	299	P	Pn	16 26 03.1	+0.4
JFT				S	Sn	16 26 35.1	-0.5
OFUJ	Ofunato	3.22	334	P	Pn	16 26 06.9	-1.1
JAG	Ashikaga	3.24	275	P	Pn	16 26 08.2	-0.1
JMK	Ichinoseki	3.28	328	P	Pn	16 26 08.2	-0.7
JMK				eS	Sn	16 26 45.1	-1.5
MIYJ	Miyakonagasawa	3.62	340	P	Pn	16 26 12.2	-1.4
MIYJ				eS	Sn	16 26 51.5	-3.6
JOD2	Odawara 2	3.67	257	P	Pn	16 26 14.5	+0.3
JOD2				S	Sn	16 26 55.4	-0.8
JYK	Kaneyama	3.67	319	P	Pn	16 26 14.2	0.0
JYK				eS	Sn	16 26 55.5	-0.8
JRY	Ryogami san	3.69	269	P	Pn	16 26 14.4	-0.1
JRY				eS	Sn	16 26 55.4	-1.3
JOM	Ohasama	3.70	333	P	Pn	16 26 14.4	-0.2
JOM				S	Sn	16 26 55.5	-1.5
MJAR	Matsushiro Arr	4.25	276	Pn	Pn	16 26 22.1	-0.1
	2.8nm,0.3s,baz=102,slow=5.3,SNR=30						
MJAR				LR	LR	16 27 37.1	
	comp=Z,28nm,21.1s,baz=75,slow=33						
MAJO	Matsushiro	4.25	276	ePn	Pn	16 26 23.3	+1.2
MAT	Matsushiro	4.25	276	P	Pn	16 26 23.0	+0.8
MAT				eS	Sn	16 27 08.7	-1.8
JHJ2	Mitsune	4.29	225	P	Pn	16 26 21.8	-0.9
JHJ	Hachijo jima 2	4.30	226	Pn	Pn	16 26 21.8	-1.1
	9.2nm,0.3s,baz=346,slow=21,SNR=10						
JHJ				Sn	Sn	16 27 06.7	-5.2
	36nm,0.3s,baz=73,slow=22,SNR=6.6						
CBIJ	Chichi jima	9.13	187	Pn	Pn	16 27 24.5	-4.6
CBIJ				Sn	Sn	16 28 55.6	-15
JCJ	Chichijima	9.13	187	Pn	Pn	16 27 24.5	-4.6
	2.5nm,0.3s,baz=288,slow=22,SNR=6.1						
JCJ				Sn	Sn	16 28 55.6	-15
	baz=307,slow=20						
JNU	Nakatsue	10.80	257	LR	LR	16 32 24.3	
	comp=Z,41nm,18.0s,baz=118,slow=39						
KSRS	Korea Array	12.51	280	LR	LR	16 32 31.4	
	comp=Z,38nm,19.9s,baz=66,slow=34						
H11N2	WAKE ISLAND Hy	26.31	122	T	T	16 58 04.1	
	baz=314,slow=75,SNR=34						
H11N1	WAKE ISLAND Hy	26.32	122	T	T	16 58 03.7	
	baz=314,slow=75,SNR=31						
H11N3	WAKE ISLAND Hy	26.32	122	T	T	16 58 06.6	
	baz=314,slow=75,SNR=24						
H11S1	WAKE ISLAND Hy	27.02	124	T	T	16 59 00.0	
	baz=316,slow=76,SNR=24						
H11S3	WAKE ISLAND Hy	27.03	125	T	T	16 59 00.0	
	baz=316,slow=76,SNR=17						
H11S2	WAKE ISLAND Hy	27.04	124	T	T	16 59 01.2	
	baz=316,slow=76,SNR=19						
SONM	Songino Array	29.62	305	P	P	16 31 25.1	+3.1
	0.2nm,0.3s,baz=90,slow=8.8,SNR=3.3						
MKAR	Makanchi Array	45.96	303	P	P	16 33 42.0	+2.5
	0.2nm,0.8s,baz=86,slow=8.5,SNR=3.0						
KURK	Kurchatov	47.74	309	P	P	16 33 54.7	+1.4
KURBB	Kurchatov Arra	47.81	309	P	P	16 33 54.7	+0.9
	0.4nm,0.4s,baz=84,slow=8.3,SNR=4.7						
ILAR	Eielson Array	49.34	32	P	P	16 34 06.2	+0.8
	0.5nm,1.0s,baz=258,slow=5.1,SNR=4.2						
WRAB	Tennant Creek	56.47	190	P	P	16 34 55.9	-2.5
	1.7nm,0.6s						
WRA	Warramunga Arr	56.48	190	P	P	16 34 58.3	-0.2
	3.6nm,0.8s,baz=11,slow=7.3,SNR=19						
ASAR	Alice Springs	60.21	190	P	P	16 35 24.4	0.0
	0.9nm,0.5s,baz=3.5,slow=7.2,SNR=44						
YKA	Yellowknife Ar	63.71	30	P	P	16 35 48.6	+1.0
	0.2nm,0.8s,baz=296,slow=6.8,SNR=4.2						
FINES	FINESS Array B	70.32	333	P	P	16 36 30.9	+1.4
	1.6nm,1.0s,baz=125,slow=7.0,SNR=2.5						
AKASG	Malin Array Be	75.96	323	P	P	16 37 03.1	0.0
	0.3nm,0.4s,baz=46,slow=5.9,SNR=4.3						
KEST	Kesra	96.68	324	LR	LR	17 28 54.1	
	comp=Z,100nm,19.2s,baz=270,slow=39						

*CSEM **02** 16:25:37.9, 39°90N×16°00E, h8^{km}, ML1.6/3*

ROM 02 16:25:37.9±0.1**, 39°90N**×**16°00E, h8^{km}, Ml1.6**/3**, 2C, Error ellipse: s-maj=2.2km s-min=0.9km az=25.0, Southern Italy**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
MMN	Mormanno	0.01	219	Pg	Pg	16 25 40.1	+0.7
MMN				Sg	Sg	16 25 41.0	+0.6
MMN	Mormanno	0.01	219	Pg	Pg	16 25 40.1	+0.7
MMN				Sg	Sg	16 25 41.0	+0.6
CUC	Castrocucco	0.17	304	⇑iPg	Pg	16 25 42.1	+0.6
CUC				Sg	Sg	16 25 44.9	+0.9
CUC	Castrocucco	0.17	304	⇑iPg	Pg	16 25 42.1	+0.6
CUC				Sg	Sg	16 25 44.9	+0.9
SALB	San Lorenzo Be	0.27	95	Pg	Pg	16 25 44.0	+0.7
SALB				Sg	Sb	16 25 48.5	-1.3
SALB	San Lorenzo Be	0.27	95	Pg	Pg	16 25 44.0	+0.7
SALB				Sg	Sb	16 25 48.5	-1.3
SIRI	Monte Sirino -	0.30	340	Pg	Pb	16 25 44.8	-0.8
SIRI				Sg	Sb	16 25 50.1	-0.6
SIRI	Monte Sirino -	0.30	340	Pg	Pb	16 25 44.8	-0.8
SIRI				Sg	Sb	16 25 50.1	-0.6
MTSN	Montesano sull	0.41	333	Pg	Pg	16 25 46.7	+0.7
MTSN				Sg	Sb	16 25 53.8	-0.2
MTSN	Montesano sull	0.41	333	Pg	Pg	16 25 46.7	+0.7
MTSN				Sg	Sb	16 25 53.8	-0.2
MCEL	Monticello	0.45	340	Pg	Pb	16 25 47.6	-0.6
MCEL	Monticello	0.45	340	Pg	Pb	16 25 47.6	-0.6
BULG	Bulgheria - Ca	0.51	291	Pg	Pg	16 25 48.4	+0.6
BULG	Bulgheria - Ca	0.51	291	Pg	Pg	16 25 48.4	+0.6
CDRU	Civita di Ruta	0.80	318	Pg	Pg	16 25 53.3	+0.1
CDRU	Civita di Ruta	0.80	318	Pg	Pg	16 25 53.3	+0.1

*ISCJB **02** 16:25:45.6±0.8, 39°86N±0°05×15°98E±0°04, h9^{km}±4^{km}, Error ellipse: s-maj=8.7km s-min=4.5km az=28.5*

*ROM **02** 16:25:45.6±0.1, 39°90N×15°99E, h8^{km}±1^{km}, Ml2.7/5, Error ellipse: s-maj=2.6km s-min=1.2km az=26.0*

*CSEM **02** 16:25:46.0±0.3, 39°87N×15°97E, h8^{km}, ML2.7, Error ellipse: s-maj=6.0km s-min=3.3km az=27.0*

ISC 02 16:25:46.1±0.9**, 39°89N**±0°04×**15°98E**±0°03**, h8^{km}**±5^{km}**, n31, σ0^{s}72**/47**, Southern Italy**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
MMN	Mormanno	0.01	94	Pg	Pg	16 25 47.5	0.0
MMN				Sg	Sg	16 25 48.5	0.0
MMN	Mormanno	0.01	94	Pg	Pg	16 25 47.5	0.0
MMN				Sg	Sg	16 25 48.5	0.0
CUC	Castrocucco	0.16	310	Pg	Pg	16 25 49.5	0.0
CUC				Sg	Sg	16 25 52.1	+0.3
CUC	Castrocucco	0.16	310	Pg	Pg	16 25 49.5	0.0
CUC				Sg	Sg	16 25 52.1	+0.3
SALB	San Lorenzo Be	0.28	93	Pg	Pg	16 25 51.2	-0.6
SALB				Sg	Sg	16 25 56.2	+0.6
SALB	San Lorenzo Be	0.28	93	Pg	Pg	16 25 51.2	-0.6
SALB				Sg	Sg	16 25 56.2	+0.6
SIRI	Monte Sirino -	0.30	344	Pg	Pg	16 25 52.3	+0.2
SIRI				Sg	Sb	16 25 57.7	-1.3
SIRI	Monte Sirino -	0.30	344	Pg	Pg	16 25 52.3	+0.2
SIRI				Sg	Sb	16 25 57.7	-1.3
ORI	Oriolo Calabro	0.40	65	Pg	Pg	16 25 53.9	-0.1
ORI	Oriolo Calabro	0.40	65	Pg	Pg	16 25 53.9	-0.1
MTSN	Montesano sull	0.41	335	Pg	Pg	16 25 54.6	+0.4
MTSN				Sg	Sb	16 26 01.3	-0.9
MTSN	Montesano sull	0.41	335	Pg	Pg	16 25 54.6	+0.4
MTSN				Sg	Sb	16 26 01.3	-0.9
MCEL	Monticello	0.45	343	Pg	Pg	16 25 54.8	-0.2
MCEL				Sg	Sb	16 26 02.3	-1.1
MCEL	Monticello	0.45	343	Pg	Pg	16 25 54.8	-0.2
MCEL				Sg	Sb	16 26 02.3	-1.1
BULG	Bulgheria - Ca	0.50	292	Pg	Pg	16 25 55.8	+0.1
BULG				Sg	Sb	16 26 03.6	-1.0
	760nm,0.3s						
BULG	Bulgheria - Ca	0.50	292	Pg	Pg	16 25 55.8	+0.1
BULG				Sg	Sb	16 26 03.6	-1.0
	760nm,0.3s						
CMPR	Campora	0.67	310	Pg	Pg	16 25 58.7	-0.3
CMPR	Campora	0.67	310	Pg	Pg	16 25 58.7	-0.3
CDRU	Civita di Ruta	0.79	320	Pg	Pg	16 26 01.0	-0.3
	241nm,0.6s						
CDRU	Civita di Ruta	0.79	320	Pg	Pg	16 26 01.0	-0.3
	241nm,0.6s						
MIGL	Miglionico	0.80	26	Pg	Pb	16 26 01.9	-0.3
	673nm,0.8s						
MIGL	Miglionico	0.80	26	Pg	Pb	16 26 01.9	-0.3
	673nm,0.8s						
TIP	Timpagrande	0.93	139	Pg	Pb	16 26 04.3	-0.3
	157nm,1.0s						
TIP	Timpagrande	0.93	139	Pg	Pb	16 26 04.3	-0.3
	157nm,1.0s						
MATE	Matera	0.94	36	Pg	Pg	16 26 03.8	-0.4
	184nm,0.6s						
MATE	Matera	0.94	36	Pg	Pg	16 26 03.8	-0.4
	184nm,0.6s						
TAR1	Taranto	1.19	57	ePn	Pn	16 26 10.6	+1.6
CDT	Castel del Mon	1.21	11	ePn	Pn	16 26 09.7	+0.3
BAI	Bari	1.40	29	ePn	Pn	16 26 10.5	-1.4
STON	Ston	3.25	23	ePn	Pn	16 26 38.6	+1.3
STON				Sn	Sn	16 27 17.1	+1.0
STON	Ston	3.25	23	ePn	Pn	16 26 38.6	+1.3
STON				Sn	Sn	16 27 17.1	+1.0

*GUC **02** 16:26:51.9±0.7, 34°74S×71°82W, h44^{km}±3^{km}, ML4.9*

*NEIC **02** 16:26:51.0, 34°74S×71°82W, h44^{km}, mb4.7/10, After GUC.*

NEIC Felt [IV] at Chepica, Chimbarongo, Curico, Iloca, Lolol, Romeral, San Fernando, Santa Cruz and Talca; [III] at Graneros, Hualane, Paredones and Rancagua; [II] at Constitucion, Pencahue, San Javier and Santiago. Also felt at Machali, Rengo, San Antonio and San Vicente.

*ISCJB **02** 16:26:52.4±0.5, 34°76S±0°03×71°91W±0°07, h52^{km}±4^{km}, mb4.5/24, MS3.6/8, Error ellipse: s-maj=9.1km s-min=4.9km az=3.8*

*IDC **02** 16:26:54.2±3.0, 34°65S×71°66W, h52^{km}±26^{km}, mb4.2/15, mb1 4.3/18, mb1mx4.2/29, mbtmp4.5/18, ML4.5/3, MS3.6/10, Ms1 3.6/10, ms1mx3.3/35, Error ellipse: s-maj=21.8km s-min=14.1km az=76.0*

ISC 02 16:26:52.3±0.9**, 34°74S**±0°04×**71°91W**±0°06**, h42^{km}**±7^{km}**, n86, σ1^{s}77**/95**, mb4.6**/24**, MS3.7**/8**, 5C-7D, Near coast of central Chile**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
CHPI	Pichilemu	0.36	348	⇑iP	Pn	16 27 01.9	+0.6
CHPI				iS	Sn	16 27 08.8	+1.2
NICH	Los Niches	0.62	115	⇑iP	Pn	16 27 04.5	-0.2
NICH				iS	Sn	16 27 13.2	-0.4
TALC	Talca	0.70	161	⇑iP	Pn	16 27 06.2	+0.5
TALC				iS	Sn	16 27 16.2	+0.8
ANTU	Antumapu	1.58	43	eP	Pn	16 27 18.9	+1.0
ANTU				iS	Sn	16 27 38.9	+1.8
ANTU				AML	AML	16 27 43.5	
	comp=E,23μm,0.8s						
CLCH	Cerro Calan	1.76	41	⇓iP	Pn	16 27 21.4	+1.0
CLCH				iS	Sn	16 27 44.0	+2.3
CLCH				AML	AML	16 27 51.0	
	comp=N,37μm,0.5s						
PEL	Peldehue	1.89	33	⇑iP	Pn	16 27 23.3	+1.1
PEL				iS	Sn	16 27 47.2	+2.4
PEL				AML	AML	16 27 51.4	
	comp=N,15μm,0.4s						
ROC1	El Roble	1.91	23	eP	Pn	16 27 24.1	+1.5
ROC1				eS	Sn	16 27 47.2	+1.6
ROCH	El Roble	1.92	23	⇑iP	Pn	16 27 23.9	+1.3
AAGR	Agrelo	3.05	58	eP	Pn	16 27 40.9	+2.7
ARCO	CERRO ARCO	3.12	54	eP	Pn	16 27 44.8	+5.7
AUSP	Uspallata	3.28	41	⇓eP	Pn	16 27 44.5	+3.1
ASAL	Salagasta	3.34	51	eP	Pn	16 27 45.7	+3.5
RTLS	Leoncito	3.66	37	⇓eP	Pn	16 27 49.6	+2.9
RTCV	Cerro Valdivia	4.03	45	eP	Pn	16 27 53.5	+2.1
RTLL	Cerro Villicun	4.46	41	⇓eP	Pn	16 27 59.1	+1.7
ACAN	Cantantal	4.65	59	eP	Pn	16 28 01.8	+1.7
AVFE	Valle Fertil	5.54	44	eP	Pn	16 28 12.5	+0.2
LCO	Las Campanas	5.80	11	ePn	Pn	16 28 14.9	-1.2
LCO				eSn	Sn	16 29 20.4	-1.2
AGUA	GUANDACOL	5.99	30	⇓eP	Pn	16 28 19.2	+0.7
PLCA	Paso Flores	6.08	170	P	Pn	16 28 22.4	+2.8
	comp=N,3.2nm,0.3s,baz=358,slow=11,SNR=121						
PLCA				S	Sn	16 29 43.1	+15
	baz=340,slow=23,SNR=1.3						
PLCA				LR	LR	16 30 49.5	
	comp=N,391nm,20.4s,baz=16,slow=38						
ACLC	CERRO LA CRUZ	6.77	40	eP	Pn	16 28 27.8	-1.5
ACLC				IAML		16 30 16.1	
	comp=Z,185nm,0.7s						
CYA	Choya	8.16	41	eP	Pn	16 28 45.4	-2.8
CYA				IAML		16 30 46.6	
	comp=Z,61nm,0.7s						
TRQA	Tornquist	8.66	115	ePn	Pn	16 28 50.9	-4.2
TRQA				eSn	Sn	16 30 21.9	-10
CPUP	Villa Florida	15.09	60	P	Pn	16 30 19.4	-3.3
	comp=Z,0.2nm,0.3s,baz=207,slow=9.0,SNR=2.6						
CPUP				LR	LR	16 36 43.0	
	comp=Z,421nm,18.3s,baz=234,slow=40						
CPUP	Villa Florida	15.09	60	ePn	Pn	16 30 19.0	-3.7
LPAZ	La Paz	18.69	11	P	Pn	16 31 09.0	+0.7
	comp=Z,1.1nm,0.3s,baz=180,slow=6.8,SNR=25						
USHA	Ushuaia	20.24	174	P	Pn	16 31 25.8	-0.1
	comp=Z,33nm,0.8s,baz=338,slow=11,SNR=3.8						
SIV	San Ignacio	21.05	30	P	P	16 31 31.7	-1.2
	comp=Z,24nm,0.9s,baz=220,slow=10,SNR=47						
SIV				LR	LR	16 40 01.4	
	comp=Z,76nm,20.6s,baz=211,slow=38						
SPB	Sao Paulo	24.03	69	eP	P	16 32 00.7	-2.7
	comp=Z,20nm,0.9s						
SAML	Samuel	26.89	19	P	P	16 32 27.2	-2.2
	comp=Z,5.5nm,1.0s						
ATAH	Atahualpa	28.11	346	LR	LR	16 40 44.6	
	comp=Z,70nm,19.8s,baz=261,slow=30						
BDFB	Brasilia	28.67	54	P	P	16 32 43.5	-1.9
	comp=Z,4.7nm,0.6s,baz=136,slow=7.0,SNR=4.5						
BDFB				LR	LR	16 45 14.1	
	comp=Z,230nm,19.9s,baz=218,slow=39						
PTGA	Pitinga	35.63	21	LR	LR	16 50 26.0	
	comp=Z,81nm,21.1s,baz=200,slow=40						
PTGA	Pitinga	35.63	21	eP	P	16 33 44.5	-1.7
	comp=Z,20nm,0.7s						
SDV	Santo Domingo	43.40	2	P	P	16 34 50.7	-0.5
	comp=Z,5.6nm,0.7s,baz=135,slow=4.3,SNR=8.2						
SDV	Santo Domingo	43.40	2	eP	P	16 34 48.0	-3.1
	comp=Z,6.5nm,0.8s						
RCBR	Riachuelo	43.95	57	LR	LR	16 54 14.6	
	comp=Z,158nm,19.4s,baz=211,slow=38						
VNA3	Neumayer Olymp	48.64	158	P	P	16 35 32.1	+0.5
VNA2	Neumayer--Watz	49.29	157	P	P	16 35 38.0	+1.5
	baz=286,slow=8.1						
SNAA	Sanae	50.86	158	P	P	16 35 49.0	+0.5
SNAA	Sanae	50.86	158	eP	P	16 35 49.4	+0.8
SNAA				epP	pP	16 35 55.3	-5.1
QSPA	South Pole Qui	55.50	180	eP	P	16 36 23.2	+0.4
	comp=Z,21nm,1.0s						
SYO	Syowa Base	65.14	158	⇓eX	P	16 37 27.0	-1.4
SYO	Syowa Base	65.14	158	⇓epP	pP	16 37 36.4	-4.3
TXAR	Lajitas Array	70.43	331	P	P	16 38 04.1	+1.8
	comp=Z,0.9nm,0.6s,baz=152,slow=7.0,SNR=11						
TX31	Lajitas Ar. Si	70.43	331	eP	P	16 38 03.8	+1.5
SWET	Sewanee	70.82	348	eP	P	16 38 05.2	+0.8
	comp=Z,3.2nm,0.7s						
WVT	Waverly	72.05	347	eP	P	16 38 12.6	+0.8
	comp=Z,22nm,0.6s						
MAW	Mawson	72.44	163	P	P	16 38 14.6	+0.8
	comp=Z,4.3nm,0.9s,baz=188,slow=5.1,SNR=5.4						
MNTX	Cornudas Mount	73.20	331	eP	P	16 38 19.6	+0.8
MNTX				epP	PcP	16 38 31.7	-3.5
HHAR	Hobbs	73.58	342	eP	P	16 38 21.8	+0.9
	comp=Z,4.9nm,0.7s						
SUR	Sutherland	74.38	119	P	P	16 38 26.9	+0.7
	comp=Z,0.6nm,0.8s,baz=261,slow=8.4,SNR=3.6						
ACSO	Alum Creek Sta	75.30	351	eP	P	16 38 31.1	+0.3
	comp=Z,13nm,0.9s						
DBIC	Dimbokro	75.32	71	P	P	16 38 31.2	-0.2
	comp=Z,8.6nm,0.7s,baz=204,slow=6.3,SNR=14						
DBIC				LR	LR	17 09 38.4	
	comp=Z,38nm,18.9s,baz=146,slow=34						
TSUM	Tsumeb	78.91	106	P	P	16 38 51.8	-0.1
	comp=Z,4.1nm,0.8s,baz=168,slow=5.0,SNR=3.9						
BORC	Borrego Spring	79.49	323	eP	P	16 38 57.3	+2.9
BOSA	Boshof	79.64	118	P	P	16 38 55.8	+0.1
	comp=Z,11nm,0.8s,baz=241,slow=3.3,SNR=16						
BOSA				LR	LR	17 09 13.9	
	comp=Z,31nm,18.8s,baz=178,slow=32						
ECSD	EROS Data Cent	81.28	342	eP	P	16 39 01.1	-2.6
	comp=Z,6.4nm,0.8s						
RPZ	Rata Peaks	83.15	221	LR	LR	17 07 01.6	
	comp=Z,61nm,21.8s,baz=260,slow=29						
HWUT	Hardware Ranch	84.25	331	eP	P	16 39 21.0	+1.5
TORD	Torodi Ar. Bea	84.36	70	P	P	16 39 20.1	-0.3
	comp=Z,5.9nm,0.9s,baz=251,slow=4.1,SNR=26						
BMUT	Black Mountain	84.42	332	eP	P	16 39 24.8	+4.4
PDAR	Pinedale Array	84.47	333	P	P	16 39 21.4	+0.8
	comp=Z,0.5nm,0.5s,baz=115,slow=7.0,SNR=7.3						
NVAR	Mina Array Bea	84.55	325	P	P	16 39 23.0	+1.9
	comp=Z,0.9nm,0.8s,baz=129,slow=7.1,SNR=5.5						
MATP	Matopo	86.72	112	P	P	16 39 32.8	+0.4
	comp=Z,4.1nm,0.6s,baz=217,slow=5.1,SNR=11						
ULM	Lac du Bonnet	87.24	345	P	P	16 39 34.1	+0.3
	comp=Z,2.6nm,0.9s,baz=220,slow=1.7,SNR=4.6						
LSZ	Lusaka	89.48	108	P	P	16 39 46.9	+1.4
	comp=Z,3.6nm,0.8s,baz=44,slow=0.5,SNR=7.2						
YKA	Yellowknife Ar	102.79	341	P	Pdif	16 40 45.0	+0.4
	comp=Z,0.1nm,0.3s,baz=138,slow=4.0,SNR=3.7						
YKA	Yellowknife Ar	102.79	341	P	Pdif	16 40 45.0	+0.4
ASAR	Alice Springs	116.96	207	PKP	PKPdf	16 45 31.7	-1.3
	comp=Z,0.2nm,0.7s,baz=118,slow=1.7,SNR=3.7						
ASAR				PKKPbc	PKKPbc	16 55 57.9	+0.1
	comp=Z,0.2nm,0.4s,baz=337,slow=3.3,SNR=6.6						
WRA	Warramunga Arr	120.17	209	PKP	PKPdf	16 45 38.7	-0.5
	comp=Z,0.3nm,0.3s,baz=154,slow=1.8,SNR=12						
BRTR	Keskin Array B	122.10	61	PKP	PKPdf	16 45 42.6	+0.3
	comp=Z,0.5nm,0.9s,baz=290,slow=3.6,SNR=3.6						
WSAR	Wadi Sarin	135.64	91	PKP	PKPdf	16 46 09.7	+1.2
	comp=Z,3.3nm,0.9s,baz=254,slow=14,SNR=3.7						
SEY	Seymchan	140.72	330	PKP	PKPdf	16 46 17.2	+0.7
	comp=Z,1.5nm,1.0s,baz=161,slow=6.6,SNR=5.4						
PSI	Prapat	147.10	163	PKPbc	PKPbc	16 46 31.2	-0.3
	comp=Z,5.5nm,0.7s,baz=194,slow=3.3,SNR=5.6						
BVAR	Borovoye Array	147.75	44	PKPbc	PKPbc	16 46 32.7	+0.7
	comp=Z,1.9nm,0.6s,baz=278,slow=3.4,SNR=13						
HYB	Hyderabad	148.52	116	i PKP	PKPbc	16 46 36.0	+0.9
YAK	Yakutsk	149.46	340	PKPbc	PKPbc	16 46 35.4	-0.6
	comp=Z,0.8nm,0.5s,baz=336,slow=15,SNR=5.0						
KSH	Kashi	154.04	70	ePKPbc	PKPdf	16 46 40.5	+1.2
KSH				esPKP		16 46 54.7	
KSH				PKS	PKSdf	16 50 14.2	+0.6
KSH				ePP	PP	16 50 36.0	-0.4
KSH				SKS	SKSdf	16 53 42.7	-0.1
KSH				AMB	AMB		
	comp=Z,75nm,4.7s						
KSH				LR	LR		
	comp=Z,95nm,5.5s						
KSH				LR	LR		
	comp=Z,79nm,5.4s						
ZALV	Zalesovo Beam	154.79	33	PKPbc	PKPbc	16 46 48.0	-0.3
	comp=Z,0.7nm,0.5s,baz=299,slow=3.1,SNR=5.0						
ZALV				PKPab	PKPab	16 47 02.1	-1.5
	comp=Z,1.5nm,0.6s,baz=310,slow=4.4,SNR=6.4						
MKAR	Makanchi Array	157.16	50	PKPbc	PKPbc	16 46 56.9	
	comp=Z,0.4nm,0.7s,baz=270,slow=3.4,SNR=4.9						
MKAR				PKPab	PKPab	16 47 12.3	-1.7
	comp=Z,1.4nm,0.8s,baz=291,slow=3.2,SNR=10						
SONM	Songino Array	166.85	5	PKPab	PKPab	16 47 56.2	-0.2
	comp=Z,0.7nm,1.0s,baz=354,slow=4.5,SNR=4.6						
NJ2	Nanjing	170.61	256	ePKP	PKPdf	16 46 57.2	+1.4
GYA	Guiyang	171.66	171	ePKP	PKPdf	16 46 56.2	-0.5

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
GYA				sPKP		16 47 17.0	
GYA				PKPab	PKPab	16 48 19.8	+1.6
GYA				PKS	PKSdf	16 50 27.4	-1.8
GYA				PP	PP	16 52 11.8	+3.7
GYA				AMB	AMB		
	comp=Z,110nm,8.6s						
HHC	Hu-ho-hao-te	173.31	337	ePKP	PKPdf	16 46 51.7	-5.3
HHC				AMB	AMB		
	comp=Z,64nm,4.7s						
CD2	Chengdu	174.72	135	PKP	PKPdf	16 46 57.8	+0.1

ISCJB ***02*** *16:32:53.2±0.7, 44°.4N±0°.1×146°.3E±0°.1, h196km±9km, mb3.3/4, Error ellipse: s-maj=16.7km s-min=14.7km az=3.4*
JMA ***02*** *16:32:54.8±0.4, 44°.46N×146°.45E, h168km±4km, M3.3*
IDC ***02*** *16:32:55.1±5.7, 44°.87N×146°.01E, h183km±53km, mb3.1/4, mb1 3.3/6, mb1mx2.8/55, mbtmp3.6/6, Error ellipse: s-maj=61.3km s-min=34.4km az=155.0*
ISC 02 16:32:53.4±1.0**, 44°.5N**±0°.1×**146°.4E**±0°.1**, h184**km±11km**, n20, σ1s.38**/26**, mb3.3**/4**, Kuril Islands**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
JRA	Rausu	1.05	240	P	Pn	16 33 21.9	+0.1
NEM2	Nemuro 2	1.19	203	P	Pn	16 33 22.7	-0.3
NEM2				eS	Sn	16 33 43.9	-1.9
JNK	Nakash	1.49	234	P	Pn	16 33 26.2	+0.6
JTKR	Abashiri--Toko	1.85	255	P	Pn	16 33 29.9	+0.8
JTKR				eS	Sn	16 33 57.0	+0.3
JAK	Akkeshi	1.91	220	P	Pn	16 33 30.5	+0.8
JAK				eS	Sn	16 33 57.5	-0.4
JAR	Ashorobuto	2.22	239	P	Pn	16 33 34.9	+1.8
JMP	Maruseppu	2.22	259	eS	Sn	16 34 04.8	+0.8
JOB	Onbets	2.42	231	P	Pn	16 33 36.9	+1.5
JOB				eS	Sn	16 34 08.5	+0.6
JKK2	Kamakawa 2	2.68	259	P	Pn	16 33 39.9	+1.5
ASAJ	Asahikawa	2.74	264	P	Pn	16 33 40.6	+1.5
JSE	Soyaes	2.75	282	P	Pn	16 33 39.6	+0.4
JCH	Churui	2.87	231	P	Pn	16 33 41.8	+1.1
JCH				eS	Sn	16 34 16.7	-0.8
JWK2	Keihoku	3.30	287	P	Pn	16 33 47.4	+1.6
JNBK	Urakawa-nobuka	3.43	232	P	Pn	16 33 48.0	+0.5
JNBK				eS	Sn	16 34 27.2	-2.5
USRK	Ussuriysk Ar.	10.32	274	P	Pn	16 35 15.1	-1.8
	0.2nm,0.3s,baz=84,slow=14,SNR=3.8						
SEY	Seymchan	18.83	9	P	P	16 36 56.5	-2.4
	0.1nm,0.3s,baz=227,slow=19,SNR=6.3						
ILAR	Eielson Array	41.24	37	P	P	16 40 20.4	+0.5
	0.5nm,0.6s,baz=254,slow=6.5,SNR=5.5						
YKA	Yellowknife Ar	55.52	34	P	P	16 42 09.2	+0.4
	0.5nm,0.8s,baz=302,slow=6.8,SNR=7.9						
FINES	FINESS Array B	63.99	333	P	P	16 43 05.2	-1.4
	2.6nm,1.1s,baz=40,slow=7.4,SNR=3.6						
TXAR	Lajitas Array	82.71	56	P	P	16 44 58.4	+1.8
	0.1nm,0.3s,baz=305,slow=3.2,SNR=4.1						

ISCJB ***02*** *16:42:15.2±0.7, 8°.5S±0°.2×74°.31W±0°.10, h147km, mb3.5/7, Error ellipse: s-maj=25.3km s-min=8.3km az=26.9*
IDC ***02*** *16:42:15.5±2.1, 8°.62S×74°.31W, h138km±27km, mb3.4/7, mb1 3.7/10, mb1mx3.4/43, mbtmp3.9/10, Error ellipse: s-maj=62.4km s-min=13.7km az=32.0*
ISC 02 16:42:16.3±0.8**, 8°.7S**±0°.2×**74°.4W**±0°.1**, h147**km**, n15, σ1s.00**/14**, mb3.5**/7**, Peru-Brazil border region**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
ATAH	Atahualpa	4.27	290	P	Pn	16 43 20.6	+0.2
	49nm,0.3s,baz=18,slow=3.3,SNR=143						
ATAH				S	Sn	16 44 09.3	-0.8
	20nm,0.3s,baz=94,slow=15,SNR=8.9						
LPAZ	La Paz	9.72	142	P	Pn	16 44 33.3	+0.1
	0.4nm,0.3s,baz=315,slow=12,SNR=7.8						
SIV	San Ignacio	14.88	121	P	Pn	16 45 40.1	+0.5
	0.5nm,0.3s,baz=311,slow=14,SNR=7.3						
TXAR	Lajitas Array	47.16	324	P	P	16 50 35.1	+0.9
	0.4nm,0.5s,baz=150,slow=9.5,SNR=7.1						
PDAR	Pinedale Array	60.41	331	P	P	16 52 11.7	+1.3
	0.4nm,0.7s,baz=122,slow=8.6,SNR=3.2						
NVAR	Mina Array Bea	62.19	322	P	P	16 52 22.4	-0.1
	0.1nm,0.3s,baz=88,slow=10,SNR=3.1						
DBIC	Dimbokro	70.94	80	P	P	16 53 18.2	-0.1
	1.9nm,0.4s,baz=251,slow=4.6,SNR=9.8						
YKA	Yellowknife Ar	77.41	342	P	P	16 53 54.6	-0.1
	0.4nm,0.4s,baz=138,slow=6.7,SNR=13						
TORD	Torodi Ar. Bea	78.57	75	P	P	16 54 01.4	-0.8
	0.5nm,0.3s,baz=267,slow=5.7,SNR=11						
INK	Inuvik	87.16	341	P	P	16 54 45.0	-0.3
	1.2nm,0.8s,baz=106,slow=5.3,SNR=3.4						
ZALV	Zalesovo Beam	131.83	16	PKP	PKPdf	17 01 09.7	-2.3
	0.3nm,0.3s,baz=323,slow=2.2,SNR=3.0						
MKAR	Makanchi Array	137.09	24	PKhKP	PKPpre	17 01 17.7	
	0.3nm,0.9s,baz=311,slow=1.3,SNR=2.9						
ASAR	Alice Springs	137.62	220	PKP	PKPdf	17 01 24.4	+0.6
	0.2nm,0.6s,baz=120,slow=3.3,SNR=3.9						
WRA	Warramunga Arr	139.92	225	PKP	PKPdf	17 01 29.2	+1.1
	0.3nm,0.6s,baz=118,slow=2.2,SNR=7.4						
KSRS	Korea Array	144.95	328	PKP	PKPbc	17 01 36.1	+0.2
	1.1nm,0.8s,baz=15,slow=5.0,SNR=4.0						

NIED ***02*** *16:43:00, 37°.00N×140°.80E, h5km, Mw4.0 Best double couple: M₀1.25000×10¹⁵ NP1:φs69.00000°, δ25.00000°, λ-90.00000°. NP2:φs249.00000°, δ65.00000°, λ-90.00000°.*
ISCJB ***02*** *16:43:23.9±0.7, 37°.00N±0°.03×140°.90E±0°.04, h10km±4km, mb3.9/24, MS3.0/5, Error ellipse: s-maj=6.0km s-min=4.2km az=15.2*
IDC ***02*** *16:43:23.8±0.6, 36°.95N×140°.85E, h0km, mb3.9/21, mb1 4.1/25, mb1mx4.0/54, mbtmp3.9/25, ML3.5/4, MS3.1/10, Ms1 3.1/10, ms1mx2.9/48, Error ellipse: s-maj=16.3km s-min=13.0km az=112.0*
JMA ***02*** *16:43:25.3, 37°.04N×140°.78E, h6km±1km, M4.3 Broadband fault plane solution: P waves. NP1: φs248.00000°, δ74.00000°, λ-94.00000°. NP2:φs84.00000°, δ17.00000°, λ-75.00000°. Principal axes: T Plg29.0000°, Azm342.0000°; N Plg4.0000°, Azm250.0000°; P Plg61.0000°, Azm152.0000°;*
JMA Felt III J1.
NEIC ***02*** *16:43:29.0±1.1, 36°.82N×140°.85E, h39km±10km, mb4.6/4 Error ellipse: s-maj=11.2km s-min=9.0km az=76.0*
NEIC Recorded [3 JMA] in Fukushima.
ISC 02 16:43:24.9±1.0**, 37°.02N**±0°.03×**140°.81E**±0°.05**, h7**km±6km**, n54, σ0s.94**/55**, mb3.9**/24**, MS3.0**/5**, 5C, Eastern Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
ONAJ	Iwakimizuishiy	0.09	353	P	Pg	16 43 27.0	0.0
ONAJ				eS	Sg	16 43 28.6	+0.1
JHO	Hitachi	0.45	206	⇑P	Pg	16 43 34.1	+0.5
JHO				S	Sg	16 43 40.2	+0.7
JFT	Otama	0.63	323	⇑P	Pg	16 43 37.0	0.0
JFT				S	Sb	16 43 45.9	-1.3
JSB	Shiboa	0.72	266	⇑P	Pb	16 43 39.3	-0.4
JSB				S	Sb	16 43 49.0	-0.8
JMM	Marumori	0.85	359	⇑P	Pg	16 43 40.7	-0.5
JMM				S	Sg	16 43 52.1	-0.1
JYT	Yasato	0.93	212	P	Pg	16 43 42.8	0.0
JYT				eS	Sg	16 43 55.3	+0.4
JFY	Yanaizu	0.96	294	⇑P	Pg	16 43 42.9	-0.5
JFY				S	Sg	16 43 55.4	-0.6
MJAR	Matsushiro Arr	2.14	258	Pn	Pn	16 44 02.0	+0.9
	18nm,0.3s,baz=82,slow=16,SNR=124						
MJAR				Lg	Lg	16 44 28.3	
	38nm,0.3s,baz=91,slow=28,SNR=13						
MAJO	Matsushiro	2.14	258	ePn	Pn	16 44 01.5	+0.4
MAJO				eSn	Sb	16 44 29.6	-1.3
MAT	Matsushiro	2.14	258	P	Pn	16 44 01.9	+0.8
MAT				S	Sb	16 44 30.9	0.0
JHJ	Hachijo jima 2	3.98	193	Pn	Pn	16 44 25.8	-0.6
	8.6nm,0.3s,baz=41,slow=20,SNR=4.1						
JHJ				Sn	Sn	16 45 10.6	-2.6
	5.9nm,0.3s,baz=90,slow=20,SNR=2.2						
JHJ				LR	LR	16 46 12.4	
	comp=Z,160nm,19.6s,baz=50,slow=43						
JHJ2	Mitsune	3.98	192	ePn	Pn	16 44 24.5	-1.9
JNU	Nakatsue	9.02	247	Pn	Pn	16 45 37.4	+1.8
	0.2nm,0.3s,baz=78,slow=19,SNR=2.7						
JNU				LR	LR	16 49 17.3	
	comp=Z,55nm,18.6s,baz=126,slow=39						
USRK	Ussuriysk Ar.	9.82	320	Pn	Pn	16 45 52.0	+5.6
	0.2nm,0.3s,baz=134,slow=13,SNR=13						
USRK				LR	LR	16 49 25.0	
	comp=Z,147nm,18.1s,baz=126,slow=36						
CBIJ	Chichi jima	9.96	173	Pn	Pn	16 45 45.2	-3.3
CBIJ				Sn	Sn	16 47 31.7	-8.8
JCJ	Chichijima	9.96	173	Pn	Pn	16 45 45.2	-3.3
	3.3nm,0.3s,baz=315,slow=20,SNR=3.3						
JCJ				Sn	Sn	16 47 31.7	-8.8
	baz=285,slow=20						
KSRS	Korea Array	10.29	276	Pn	Pn	16 45 58.8	+5.9
	0.2nm,0.3s,baz=92,slow=14,SNR=7.8						
KSRS				LR	LR	16 49 33.3	
	comp=Z,49nm,19.3s,baz=58,slow=36						
KSAR	Wonju Array Be	10.32	276	Pn	Pn	16 45 58.8	+5.5
KLR	Kul'dur	13.87	334	Pn	P	16 46 48.0	-2.2
	0.1nm,0.3s,baz=125,slow=12,SNR=5.9						
KLR				LR	LR	16 51 45.3	
	comp=Z,89nm,19.7s,baz=160,slow=36						
MA2	Magadan	23.47	13	P	P	16 48 36.1	+1.3
	4.3nm,0.7s,baz=219,slow=9.5,SNR=11						
MA2				LR	LR	16 57 41.9	
	comp=Z,38nm,18.6s,baz=182,slow=36						
MA2	Magadan	23.47	13	eP	P	16 48 35.7	+0.8
	53nm,1.4s						
YAK	Yakutsk	25.98	348	P	P	16 48 58.0	+0.1
	0.4nm,0.4s,baz=232,slow=19,SNR=2.7						
YAK				LR	LR	16 58 35.1	
	comp=Z,43nm,20.6s,baz=268,slow=35						
YAK	Yakutsk	25.98	348	P	P	16 48 58.0	+0.1
ENH	Enshi	26.85	265	eP	P	16 49 06.0	-0.1
	2.5nm,0.6s						
SEY	Seymchan	26.90	12	P	P	16 49 08.5	+2.3
	5.7nm,1.1s,baz=186,slow=8.2,SNR=10.0						
SONM	Songino Array	27.39	304	P	P	16 49 11.3	+0.3
	1.7nm,0.8s,baz=106,slow=8.9,SNR=12						
SONM				PcP	PcP	16 52 29.4	-0.4
	0.4nm,0.5s,baz=107,slow=2.3,SNR=4.0						
SONM				LR	LR	16 59 49.5	
	comp=Z,41nm,18.8s,baz=101,slow=36						
H11N2	WAKE ISLAND Hy	28.55	120	T	T	17 19 05.1	
	baz=313,slow=75,SNR=293						
H11N1	WAKE ISLAND Hy	28.56	120	T	T	17 19 05.7	
	baz=313,slow=75,SNR=274						
H11N3	WAKE ISLAND Hy	28.57	120	T	T	17 19 06.5	
	baz=313,slow=75,SNR=256						
H11S1	WAKE ISLAND Hy	29.26	122	T	T	17 19 58.6	
	baz=314,slow=76,SNR=163						
H11S3	WAKE ISLAND Hy	29.26	122	T	T	17 19 57.0	
	baz=314,slow=76,SNR=126						
H11S2	WAKE ISLAND Hy	29.27	122	T	T	17 19 58.5	
	baz=314,slow=76,SNR=92						
TLY	Talaya	29.98	311	LR	LR	17 00 46.7	
	comp=Z,36nm,20.9s,baz=108,slow=35						
CMAR	Chiang Mai Arr	41.03	255	P	P	16 51 09.2	+0.2
	0.3nm,0.5s,baz=54,slow=7.5,SNR=4.3						
ZALV	Zalesovo Beam	41.57	312	P	P	16 51 13.4	+0.5
	0.7nm,0.5s,baz=107,slow=7.9,SNR=5.0						
ZALV				PcP	PcP	16 53 09.6	-0.5
	0.9nm,0.5s,baz=116,slow=3.4,SNR=3.9						
MKAR	Makanchi Array	43.72	302	P	P	16 51 30.5	-0.1
	0.9nm,0.6s,baz=86,slow=10,SNR=14						
MKAR				PcP	PcP	16 53 17.1	-0.4
	0.4nm,0.7s,baz=72,slow=4.7,SNR=3.7						
MKAR				LR	LR	17 09 40.4	
	comp=Z,35nm,18.4s,baz=38,slow=36						
KURK	Kurchatov	45.56	308	eP	P	16 51 45.0	-0.2
	13nm,0.9s						
ILAR	Eielson Array	49.77	32	P	P	16 52 17.7	0.0
	0.8nm,0.7s,baz=271,slow=6.4,SNR=11						
INK	Inuvik	54.62	27	P	P	16 52 54.5	+0.8
	0.6nm,0.5s,baz=317,slow=5.3,SNR=5.2						
WRA	Warramunga Arr	56.98	187	P	P	16 53 10.3	-0.8
	3.2nm,0.5s,baz=3.3,slow=7.1,SNR=84						
ABKAR	Akbulak array	57.58	310	eP	P	16 53 14.6	-0.6
	3.3nm,0.9s						
ASAR	Alice Springs	60.71	187	P	P	16 53 36.9	-0.1
	0.7nm,0.5s,baz=16,slow=11,SNR=25						
GEYT	Alibeck	63.42	299	P	P	16 53 56.6	+1.3
	0.9nm,0.5s,baz=186,slow=4.5,SNR=4.0						
FINES	FINESS Array B	68.60	332	P	P	16 54 28.3	+0.2
	3.6nm,0.9s,baz=33,slow=11,SNR=8.0						
KBZ	Khabaz	70.55	310	P	P	16 54 42.5	+2.1
	1.8nm,0.8s,baz=60,slow=20,SNR=4.4						
NOA	NORSAR Array B	74.01	337	P	P	16 55 00.5	-0.4
	3.3nm,1.1s,baz=39,slow=2.8,SNR=3.2						
AKASG	Malin Array Be	74.02	322	P	P	16 55 00.6	-0.5
	0.4nm,0.4s,baz=45,slow=5.9,SNR=7.1						
NVAR	Mina Array Bea	75.38	53	P	P	16 55 10.1	+0.6
	0.4nm,0.6s,baz=297,slow=6.0,SNR=2.9						
PDAR	Pinedale Array	78.02	45	P	P	16 55 24.7	+0.3
	0.4nm,0.8s,baz=333,slow=1.0,SNR=3.0						
BRTR	Keskin Array B	78.50	311	P	P	16 55 27.6	+0.7
	0.5nm,0.7s,baz=110,slow=3.2,SNR=3.6						
CLL	Collm	80.87	330	eP	P	16 55 40.0	+0.6
GERES	GERESS Array B	82.47	328	P	P	16 55 47.6	-0.5
	0.3nm,0.5s,baz=66,slow=3.3,SNR=5.2						
TXAR	Lajitas Array	90.51	52	P	P	16 56 28.6	+0.7
	0.7nm,1.0s,baz=318,slow=2.9,SNR=4.9						
LPAZ	La Paz	147.12	59	PKPbc	PKPbc	17 03 09.2	-0.7
	0.9nm,0.5s,baz=356,slow=4.7,SNR=4.6						

MEX 02 16:46:39.5±0.4**, 15°.23N**×**94°.42W, h4**km**, MD3.7, Near coast of Oaxaca**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
PCIG		1.25	67	eP	Pg	16 46 59.9	-3.6
PCIG				eS	Sg	16 47 15.9	-3.8
CCIG	Comitan	2.44	64	eP	Pn	16 47 18.3	-1.9
CCIG				i S	Sn	16 47 46.6	-4.0

ISCJB ***02*** *16:47:17.7±0.7, 19°.95S±0°.04×68°.9W±0°.1, h137km±6km, mb3.8/3, Error ellipse: s-maj=16.0km s-min=6.1km az=6.8*
GUC ***02*** *16:47:17.0±0.5, 19°.91S×68°.78W, h130km±3km, ML3.7*
IDC ***02*** *16:47:18.7±2.2, 19°.96S×68°.20W, h144km±18km, mb3.5/4, mb1 3.7/6, mb1mx3.3/46, mbtmp4.0/6, Error ellipse: s-maj=29.2km s-min=18.9km az=76.0*
ISC 02 16:47:17.6±0.9**, 19°.94S**±0°.04×**68°.8W**±0°.1**, h133**km±7km**, n19, σ1s.05**/28**, mb3.9**/3**, 5C-3D, Chile-Bolivia border region**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
PB08	IPOC Station P	0.41	241	⇓iP	Pn	16 47 36.7	-0.3
PB08				i S	Sn	16 47 51.6	-0.1
PB11	IPOC Station P	0.85	282	⇑iP	Pn	16 47 39.3	-0.3
PB11				i S	Sn	16 47 56.3	0.0
HMBC	Humberstone	1.10	252	⇑iP	Pn	16 47 41.5	-0.3
HMBC				i S	Sn	16 48 00.3	+0.1
HMBC				AML	AML	16 48 01.4	
	comp=E,1μm,0.2s						
PB01	IPOC Station P	1.28	211	⇑iP	Pn	16 47 43.8	+0.1
PB01				i S	Sn	16 48 04.3	+0.7
PB01				AML	AML	16 48 05.3	
	comp=E,2μm,0.6s						
PSGC	Pisagua	1.31	285	⇑iP	Pn	16 47 43.6	-0.4
PSGC				i S	Sn	16 48 03.5	-0.6
PSGC				AML	AML	16 48 04.1	
	comp=N,749nm,0.5s						
PATCX	Punta Patache	1.56	236	⇓iP	Pn	16 47 46.9	+0.2
PATCX				i S	Sn	16 48 09.5	+0.6
PB13	IPOC Station P	1.74	337	eP	Pn	16 47 49.5	+0.3
PB13				eS	Sn	16 48 14.2	+0.8
PB09	IPOC Station P	1.90	193	⇑iP	Pn	16 47 51.3	+0.6
PB09				i S	Sn	16 48 17.3	+1.2
PB09				AML	AML	16 48 23.3	
	comp=E,1μm,0.4s						
PB07	IPOC Station P	2.06	210	⇓iP	Pn	16 47 52.9	+0.3
PB07				i S	Sn	16 48 19.5	0.0
PB07				AML	AML	16 48 29.3	
	comp=E,380nm,0.5s						
LPAZ	La Paz	3.68	10	P	Pn	16 48 14.0	+0.1
	comp=E,8.7nm,0.3s,baz=220,slow=5.5,SNR=39						
LPAZ				S	Sn	16 48 59.0	+1.7
	baz=90,slow=20,SNR=1.4						
SIV	San Ignacio	8.31	63	P	Pn	16 49 10.2	-5.1
	comp=E,2.1nm,0.3s,baz=267,slow=11,SNR=8.8						
PLCA	Paso Flores	20.78	184	P	P	16 51 48.9	+0.7
	comp=E,2.1nm,1.1s,baz=18,slow=9.6,SNR=2.6						
ANMO	Albuquerque	65.27	326	P	P	16 57 48.3	+2.9
	comp=E,0.5nm,0.3s,baz=71,slow=11,SNR=2.4						
TORD	Torodi Ar. Bea	76.72	71	P	P	16 58 52.2	-2.5
	comp=E,0.8nm,0.5s,baz=249,slow=5.5,SNR=9.9						
YKA	Yellowknife Ar	89.77	341	P	P	17 00 00.3	-0.1
	comp=E,1.3nm,0.7s,baz=134,slow=4.7,SNR=23						
SEY	Seymchan	128.72	337	PKP	PKPdf	17 06 09.2	+0.6
	comp=E,0.6nm,0.6s,baz=60,slow=20,SNR=2.7						
ZALV	Zalesovo Beam	140.49	24	PKP	PKPdf	17 06 30.4	-0.4
	comp=E,0.4nm,0.3s,baz=343,slow=1.5,SNR=3.2						
MKAR	Makanchi Array	144.29	35	PKP	PKPab	17 06 35.0	-1.1
	comp=E,0.2nm,0.6s,baz=325,slow=1.8,SNR=3.2						
SONM	Songino Array	151.90	7	PKPbc	PKPbc	17 06 55.2	-1.7
	comp=E,0.3nm,0.5s,baz=29,slow=3.3,SNR=3.1						

ISCJB ***02*** *16:57:42.7±0.5, 37°.30N±0°.04×36°.33E±0°.03, h2km±7km, Error ellipse: s-maj=6.0km s-min=3.8km az=172.3*
DDA ***02*** *16:57:42.6, 37°.30N×36°.36E, h7km, Md2.9*
ISK ***02*** *16:57:42.9, 37°.29N×36°.30E, h10km, MD2.7*
CSEM ***02*** *16:57:43.7±0.2, 37°.28N×36°.28E, h10km, MD2.7, Error ellipse: s-maj=5.9km s-min=5.2km az=164.0*
ISC 02 16:57:41.6±1.3**, 37°.33N**±0°.03×**36°.28E**±0°.02**, h1**km±12km**, n36, σ0s.32**/46**, Turkey**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
KAMA	Osmaniye	0.34	115	i P	Pg	16 57 48.5	+0.3
KAMA				i S	Sg	16 57 52.1	-0.5
KOZT	Kozan	0.39	293	ePG	Pb	16 57 51.6	+0.3
KOZT				eSG	Sb	16 57 58.4	+0.6
KOZT	Kozan	0.39	293	ePg	Pb	16 57 51.6	+0.3
KOZT				eSg	Sb	16 57 58.4	+0.6
AYKD	Aykdinkavak	0.43	79	i P	Pg	16 57 50.3	+0.5
AYKD				i S	Sg	16 57 55.0	-0.4
CEYT	Ceyhan	0.53	233	ePG	Pb	16 57 53.4	-0.3
CEYT				eSG	Sb	16 58 01.4	-0.5
CEYT	Ceyhan	0.53	233	ePg	Pb	16 57 53.4	-0.3
CEYT				eSg	Sb	16 58 01.4	-0.5
GAZ	Gaziantep	0.76	102	ePG	Pb	16 57 57.5	-0.1
GAZ	Gaziantep	0.76	102	ePg	Pb	16 57 57.6	-0.1
KUZU	Kuzuini	0.84	131	i P	Pb	16 57 59.2	+0.1
KUZU	Kuzuini	0.84	131	P	Pb	16 57 59.2	+0.1
TAHT	Tahtakopru-Hat	0.96	185	ePG	Pb	16 58 01.1	+0.1
TAHT				eSG	Sb	16 58 14.2	+0.2
TAHT	Tahtakopru-Hat	0.96	185	ePg	Pb	16 58 01.1	+0.1
TAHT				eSg	Sb	16 58 14.3	+0.2
KARA	Karaisali	0.98	266	ePG	Pn	16 58 02.3	-0.2
KARA	Karaisali	0.98	266	ePg	Pn	16 58 02.3	-0.2
GZT	Gaziantep	1.02	88	i P	Pb	16 58 01.9	-0.3
KRTS	Karatas	1.05	224	ePG	Pb	16 58 02.6	+0.1
KRTS	Karatas	1.05	224	ePg	Pb	16 58 02.6	+0.1
DED	Mersin	1.24	253	i P	Pn	16 58 06.5	+0.5
YAYL	Yayladag	1.30	186	i P	Pg	16 58 06.8	+0.2
YAYL	Yayladag	1.30	186	P	Pg	16 58 06.8	+0.2
MERS	Mersin	1.48	252	ePN	Pg	16 58 10.1	+0.1
MERS	Mersin	1.48	252	ePn	Pg	16 58 10.1	+0.1
BNN	Bunyan	1.56	347	ePN	Pg	16 58 11.9	+0.4
BNN	Bunyan	1.56	347	ePn	Pg	16 58 11.9	+0.4
DARE	Darende-Malaty	1.56	37	ePN	Pg	16 58 11.9	+0.4
DARE	Darende-Malaty	1.56	37	ePn	Pg	16 58 11.9	+0.4
AKCD	Akcadag	1.62	53	i P	Pn	16 58 11.6	+0.2
AKCD				i S	Sn	16 58 32.8	-0.1
AKCD	Akcadag	1.62	53	P	Pn	16 58 11.6	+0.2
AKCD				S	Sn	16 58 32.8	-0.1
GULA	Gulagac	1.91	303	ePN	Pb	16 58 16.8	-0.5
GULA	Gulagac	1.91	303	ePn	Pb	16 58 16.8	-0.5
SURC	SANLIURFA_SURC	1.92	103	i P	Pg	16 58 18.6	+0.2
SURC	SANLIURFA_SURC	1.92	103	P	Pg	16 58 18.6	+0.2
CUSAR	Sarkisla-SIVAS	2.08	359	i P	Pg	16 58 21.5	-0.1
CUSAR	Sarkisla-SIVAS	2.08	359	P	Pg	16 58 21.5	-0.1
ELZG	Elazig	2.44	61	i P	Pg	16 58 28.1	-0.2
ELZG	Elazig	2.44	61	P	Pg	16 58 28.1	-0.2

IDC ***02*** *17:06:53.4±46.0, 23°.61S×177°.73W, h0km, mb4.0/3, mb1 4.2/3, mb1mx3.7/34, mbtmp4.0/3, Error ellipse: s-maj=836.3km s-min=149.9km az=87.0*
NEIC ***02*** *17:07:37.2±1.1, 24°.67S×178°.00W, h419km±14km, mb4.8/13, Error ellipse: s-maj=15.5km s-min=9.2km az=97.0*
ISC 02 17:07:36.6±1.1**, 24°.7S**±0°.1×**178°.1W**±0°.2**, h400**km**, n34, σ0s.93**/28**, mb4.5**/9**, South of Fiji Islands**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
MSVF	Nonsavu	7.84	332	eP	P	17 09 31.3	+0.9
MXZ	Matakaoa Point	13.15	193	PN	P	17 10 29.8	+0.9
MXZ	Matakaoa Point	13.15	193	eP	P	17 10 30.6	+1.7
WMGZ	Waiomatatini S	13.38	192	SN	S	17 12 50.8	-5.1
HAZ	Te Kaha	13.45	194	PN	P	17 10 30.6	-1.6
HAZ				SN	S	17 12 51.0	-6.3
PUZ	Puketiti	13.66	192	SN	S	17 12 54.1	-7.3
TWGZ	Tauwhareparae	13.81	193	eSN	S	17 12 58.9	-5.7
MWZ	Matawai	14.06	194	ePN	P	17 10 36.2	-2.6
MWZ				eSN	S	17 13 03.5	-6.2
URZ	Urewera	14.09	196	ePN	P	17 10 38.8	-0.2
URZ	Urewera	14.09	196	eP	P	17 10 38.9	-0.2
URZ				eS	S	17 12 60.0	-10
BKZ	Black Stump Fm	15.10	196	eP	P	17 10 50.3	+0.2
	44nm,1.8s						
TSZ	Takapari Road	16.08	197	ePN	P	17 10 59.3	-1.3
TSZ				eSN	S	17 13 43.4	-6.1
FUNA	Funafuti	16.32	350	eP	P	17 11 02.8	-0.7
	232nm,1.4s						
BFZ	Birch Farm	16.60	195	eP	P	17 11 07.0	+0.9
	58nm,1.3s						
MRZ	Mangatainoka R	16.75	197	PN	P	17 11 08.1	+0.4
MRZ				eSN	S	17 13 55.6	-6.8
THZ	Tophouse	18.56	202	eP	P	17 11 26.9	-0.1
	38nm,1.4s						
KHZ	Kahutara	18.95	199	eP	P	17 11 30.5	-0.4
	50nm,1.3s						
LTZ	Lake Taylor	19.68	201	eP	P	17 11 40.5	+2.4
	84nm,1.8s						
OXZ	Oxford	20.24	201	eP	P	17 11 43.9	+0.8
	111nm,1.8s						
MQZ	McQueen's Vall	20.39	200	eP	P	17 11 45.6	+1.2
	152nm,1.8s						
FOZ	Fox Glacier	21.22	205	eP	P	17 11 52.2	+0.2
	259nm,1.9s						
STKA	Stephens Creek	36.05	249	P	P	17 14 02.2	+0.1
	0.5nm,0.3s,baz=88,slow=13,SNR=9.2						
STKA	Stephens Creek	36.05	249	eP	P	17 14 02.3	+0.1
	3.4nm,1.6s						
BBOO	Buckleboo	40.73	248	eP	P	17 14 40.1	-0.5
	68nm,1.9s						
AS01	Alice Springs	43.58	261	eP	P	17 15 03.7	+0.2
AS31	Alice Springs	43.62	261	eP	P	17 15 03.4	-0.4
	3.2nm,1.4s						
ASAR	Alice Springs	43.62	261	P	P	17 15 03.9	0.0
	0.8nm,0.6s,baz=87,slow=7.6,SNR=22						
WB2	Warramunga Arr	44.08	266	eP	P	17 15 06.8	-0.6
	40nm,1.8s						
WR1	Warramunga Arr	44.09	266	eP	P	17 15 07.1	-0.4
	66nm,1.9s						
WRA	Warramunga Arr	44.09	266	P	P	17 15 07.1	-0.4
	1.2nm,0.5s,baz=104,slow=7.9,SNR=40						
SBI	Santa Barbara	80.66	47	eP	P	17 19 03.0	-3.4
SBC	Santa Barbara	80.80	45	eP	P	17 19 03.2	-3.8
LTC	Little Chuckwa	83.32	49	ePcP	PcP	17 19 24.6	+1.1
BMO	Blue Mountains	88.67	38	eP	P	17 19 44.8	-1.0
	12nm,0.6s						

IDC 02 17:09:37.9±4.9**, 21°.95N**×**110°.77W, h0**km**, mb2.9**/2**, mb1 3.6**/5**, mb1mx3.3**/40**, mbtmp3.2**/5**, ML3.7**/2**, MS2.9**/1**, Ms1 2.9**/1**, ms1mx2.5**/10**, Error ellipse: s-maj=74.3km s-min=46.3km az=140.0, Revilla Gigedo Islands region**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
LPIG	La Paz	2.19	11	Pn	Pn	17 10 15.7	+0.1
	31nm,0.3s,baz=161,slow=3.7,SNR=16						
LPIG				Sn	Sn	17 10 44.7	+1.3
	19nm,0.3s,baz=308,slow=24,SNR=5.5						
TXAR	Lajitas Array	9.75	40	Pn	Pn	17 12 01.8	+2.2
	0.1nm,0.3s,baz=214,slow=14,SNR=14						
ANMO	Albuquerque	13.49	15	LR	LR	17 17 31.7	
	comp=Z,51nm,19.8s,baz=211,slow=35						
NVAR	Mina Array Bea	17.66	340	P	P	17 13 46.7	0.0
	baz=171,slow=13,SNR=2.1						
PDAR	Pinedale Array	20.79	3	P	P	17 14 19.0	-1.9
	0.1nm,0.5s,baz=178,slow=12,SNR=2.6						
ILAR	Eielson Array	48.92	340	P	P	17 18 25.6	+0.1
	0.3nm,0.6s,baz=147,slow=6.5,SNR=5.3						

ISCJB ***02*** *17:30:06.2±0.2, 6.°80N±0.°02×73.°01W±0.°02, h161^{km}±1^{km}, mb4.9/214, Error ellipse: s-maj=3.7km s-min=2.8km az=137.7*
NEIC ***02*** *17:30:06.7±0.3, 6.°78N×72.°96W, h151^{km}±2^{km}, mb4.9/202, Error ellipse: s-maj=3.2km s-min=3.0km az=46.0*
NEIC Felt [II] at Bogota. Also felt at Barichara and Medellin. Felt at San Cristobal, Venezuela.
IDC ***02*** *17:30:06.9±0.5, 6.°75N×72.°94W, h153^{km}±4^{km}, mb4.3/25, mb1 4.5/31, mb1mx4.3/46, mbtmp4.7/31, MS3.3/4, Ms1 3.3/4, ms1mx2.9/26, Error ellipse: s-maj=9.2km s-min=7.1km az=119.0*
RSNC ***02*** *17:30:08.6±1.0, 6.°81N×73.°15W, h149^{km}±5^{km}, ML4.9*
FUNV ***02*** *17:30:08.4, 6.°87N×73.°09W, h171^{km}, MW4.4*
ISC 02 17:30:07.1±0.5, **6.°81N**±0.°03×**73.°05W**±0.°04, **h155**^{km}±4^{km}, **n837**, σ0^{s}98/874, **mb4.9**/214, **2C-17D, Northern Colombia**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
BTLC	Betulia, Santa	0.24	297	eP	Pn	17 30 28.7	+0.4
BARC	Barichara	0.25	211	i P	Pn	17 30 28.6	+0.2
BARC				eS	Sn	17 30 43.1	-1.5
BARC				i		17 30 44.9	
	comp=Z,12µm,0.6s						
GIRC	Giron, Santand	0.30	333	eP	Pn	17 30 28.6	+0.2
GIRC				eS	Sn	17 30 43.8	-0.9
PAMC	Pamplona, Colo	0.63	34	i P	Pn	17 30 31.3	+1.0
PAMC				eS	Sn	17 30 48.3	+0.3
BRRC	Barranca, Sant	0.72	295	i P	Pn	17 30 30.3	+0.1
BRRC				i		17 30 31.1	
	comp=Z,10µm,0.3s						
BRRC				eS	Sn	17 30 47.1	-0.8
GRMC	Gramalote, San	0.94	15	i P	Pn	17 30 34.3	+2.3
GRMC				i		17 30 35.9	
	comp=Z,7µm,0.3s						
GRMC				eS	Sn	17 30 53.8	+2.7
GUEC	Guerrero, Nort	1.02	7	eP	Pn	17 30 33.6	+0.7
CAPV	Capacho	1.28	35	⇓iP	Pn	17 30 36.6	+1.5
CAPV				eS	Sn	17 30 57.7	+1.1
OCAC	Ocana	1.45	350	eP	Pn	17 30 37.0	+0.4
OCAC				eS	Sn	17 30 59.1	-0.3
OCAC	Ocana	1.45	350	eP	Pn	17 30 37.0	+0.4
OCAC				eS	Sn	17 30 59.1	-0.3
OCAC				i		17 31 03.8	
	comp=Z,6µm,0.2s						
YOPC	Yopal, Colombi	1.58	156	i P	Pn	17 30 39.2	+1.3
YOPC				i		17 30 40.5	
	comp=Z,6µm,0.8s						
YOPC				eS	Sn	17 31 03.3	+1.7
NORC	Norcasia	2.19	236	i P	Pn	17 30 44.4	-0.3
NORC				eS	Sn	17 31 12.9	-0.9
CHIC	Chingaza	2.27	197	eP	Pn	17 30 46.5	+0.4
CHIC				eS	Sn	17 31 15.6	-0.5
CHIC	Chingaza	2.27	197	⇑iP	Pn	17 30 46.4	+0.3
CHIC				eS	Sn	17 31 15.6	-0.5
CHIC				i		17 31 26.5	
	comp=Z,5µm,1.1s						
ROSC	El Rosal	2.33	213	P	Pn	17 30 48.5	+1.7
	comp=Z,468nm,0.3s,baz=301,slow=14,SNR=598						
ROSC				S	Sn	17 31 17.2	-0.1
	comp=Z,307nm,0.3s,baz=64,slow=15,SNR=5.1						
ROSC	El Rosal	2.33	213	ePn	Pn	17 30 48.5	+1.7
ROSC				eSn	Sn	17 31 14.6	-2.7
HELC	Santa Helena	2.54	256	eP	Pn	17 30 48.7	-0.5
HELC	Santa Helena	2.54	256	eP	Pn	17 30 48.7	-0.5
HELC				i		17 31 28.0	
	comp=Z,6µm,0.4s						
VIGV	El Vigia	2.62	40	⇓eP	Pn	17 30 51.0	+1.1
VIGV				eS	Sn	17 31 22.5	-0.7
SOCV	Socops	2.63	56	⇓iP	Pn	17 30 50.9	+0.9
SOCV				eS	Sn	17 31 22.5	-0.7
VILC	Villavicencio,	2.75	193	i P	Pn	17 30 51.8	+0.1
VILC				eS	Sn	17 31 26.1	-0.2
VILC				i		17 31 34.5	
	comp=Z,4µm,0.4s						
GUYC	Guyana, Colomb	2.81	236	eP	Pn	17 30 53.0	+0.3
GUYC				i		17 31 35.5	
	comp=Z,8µm,0.5s						
DBBC	Dabeiba	3.14	274	eP	Pn	17 30 56.5	0.0
TOLC	Tolima	3.16	226	eP	Pn	17 30 57.7	+0.8
SDV	Santo Domingo	3.16	49	P	Pn	17 30 58.0	+1.1
	comp=Z,220nm,0.3s,baz=218,slow=12,SNR=2590						
SDV				S	Sn	17 31 34.3	-1.2
	comp=Z,214nm,0.3s,baz=258,slow=16,SNR=8.4						
SDV	Santo Domingo	3.16	49	ePn	Pn	17 30 58.0	+1.1
SDV	Santo Domingo	3.16	49	⇓iP	Pn	17 30 58.0	+1.1
MOTC	Monteria, Cord	3.25	307	⇑iP	Pn	17 30 55.9	-1.8
ELOV	Elorza	3.55	87	⇓eP	Pn	17 31 02.8	+1.1
VIRV	Villa del Rosa	3.73	10	⇓eP	Pn	17 31 03.4	-0.6
VIRV				eS	Sn	17 31 44.2	-4.0
QARV	Quebrada Arrib	4.20	36	⇓iP	Pn	17 31 10.8	+0.6
SOLC	Bahia Solano	4.37	263	eP	Pn	17 31 11.8	-0.4
SANV	Sanarito	4.39	52	⇓iP	Pn	17 31 13.0	+0.3
CURV	Curarigua	4.42	44	⇓eP	Pn	17 31 13.3	+0.3
DABV	Dabajuro	4.74	30	⇓eP	Pn	17 31 17.6	+0.5
TEPV	Terepaima	4.94	50	⇓iP	Pn	17 31 20.3	+0.4
URIC	Uribia, Colomb	4.97	12	eP	Pn	17 31 19.0	-1.2
SIQV	Siquisique	4.99	40	⇓iP	Pn	17 31 19.5	-0.9
MALC	Bahia Malaga	5.09	237	eP	Pn	17 31 23.0	+1.3
BAUV	El Baul	5.40	67	⇓iP	Pn	17 31 24.9	-1.0
MAPV	Macapo	5.45	56	⇓iP	Pn	17 31 26.4	-0.1
POPC	Popayan, Colom	5.57	221	eP	Pn	17 31 28.4	0.0
FLOC	Florencia	5.80	207	eP	Pn	17 31 30.7	-0.5
TURV	Turiamo	6.30	55	⇓iP	Pn	17 31 37.2	-0.6
GRGC	Isla de Gorgon	6.34	234	eP	Pn	17 31 36.0	-2.4
CRUC	La Cruz	6.50	217	eP	Pn	17 31 42.8	+2.0
BCIP	Isla Barro Col	7.12	290	ePn	Pn	17 31 46.6	-2.1
BCIP	Isla Barro Col	7.12	290	eP	Pn	17 31 46.3	-2.4
MERV	Las Mercedes	7.12	70	⇓iP	Pn	17 31 47.5	-1.2
BIRV	Birongo	7.63	61	⇓eP	Pn	17 31 54.4	-1.2
OTAV	Otavalo	8.46	220	ePn	Pn	17 32 05.4	-1.7
OTAV	Otavalo	8.46	220	i P	Pn	17 32 06.2	-0.9
ORIV	Oritupano	9.81	76	eP	Pn	17 32 22.9	-1.7
CRUV	Carupano	10.44	68	eP	Pn	17 32 31.7	-1.1
HDC	Heredia	11.39	287	ePn	Pn	17 32 43.3	-2.2
MTDJ	Mount Denham	12.16	339	ePn	Pn	17 32 58.2	+2.7
SDDR	Presa de Saban	12.22	8	ePn	Pn	17 32 56.7	+0.5
JTS	JuntasAbangare	12.26	287	P	Pn	17 32 58.8	+2.1
	comp=Z,1.2nm,0.3s,baz=77,slow=10,SNR=12						
JTS	JuntasAbangare	12.26	287	ePn	Pn	17 32 58.2	+1.5
GRGR	Grenville	12.42	64	ePn	Pn	17 32 57.0	-1.8
MPR	Mayaguez	12.72	26	ePn	Pn	17 32 58.1	-4.5
CELP	Cerrillos	12.86	29	ePn	Pn	17 33 03.2	-1.1
LRS	Lares	12.92	27	ePn	Pn	17 33 01.3	-3.8
SJG	San Juan	13.10	30	P	Pn	17 33 06.7	-0.7
	comp=Z,7.1nm,0.3s,baz=207,slow=13,SNR=16						
SJG				S	Sn	17 35 20.1	-12
	comp=Z,2.6nm,0.3s,baz=301,slow=18,SNR=3.1						
SJG	San Juan	13.10	30	ePn	Pn	17 33 04.4	-3.0
GTBY	Guantanamo Bay	13.19	351	ePn	Pn	17 33 08.3	-0.3
SVB	Belmont	13.27	60	ePn	Pn	17 33 09.0	-0.7
HUMP	Col San Antoni	13.28	31	ePn	Pn	17 33 08.3	-1.3
CBYP	Canovanas	13.38	31	ePn	Pn	17 33 10.5	-0.6
CDVI	St. Croix	13.55	36	ePn	Pn	17 33 12.3	-0.9
STVI	Saint Thomas	13.93	34	ePn	Pn	17 33 15.7	-2.2
FDF	Fort de France	14.09	55	eP	Pn	17 33 19.0	-1.1
FDF	Fort de France	14.09	55	ePn	Pn	17 33 19.3	-0.8
ZAM	Aeronautique	14.11	56	eP	P	17 33 23.3	+0.2
H05S1	Guadeloupe/Mar	14.19	57	P	P	17 33 24.1	+0.1
	SNR=5.5						
GDHS	Morne Mazeau,	14.51	49	ePn	Pn	17 33 24.1	-1.2
ABVI	Anegada Island	14.58	35	ePn	Pn	17 33 25.1	-1.0
GRTK	Grand Turk	14.73	7	ePn	Pn	17 33 23.0	-5.0
ATAH	Atahualpa	14.84	201	P	Pn	17 33 30.6	+0.8
	comp=Z,2.2nm,0.3s,baz=4.5,slow=5.1,SNR=11						
PTGA	Pitinga	15.05	119	P	Pn	17 33 31.2	-0.8
	comp=Z,3.8nm,0.3s,baz=328,slow=22,SNR=15						
PTGA	Pitinga	15.05	119	ePn	Pn	17 33 31.4	-0.7
	comp=Z,18nm,0.9s						
H05N1	Guadeloupe/Mar	15.07	50	P	Pn	17 33 32.7	+0.5
	SNR=23						
ANWB	Willy Bob	15.41	45	ePn	Pn	17 33 36.7	+0.3
	comp=Z,303nm,1.6s						
TGUH	Tegucigalpa,Un	15.72	298	ePn	Pn	17 33 38.8	-1.5
	comp=Z,61nm,1.0s						
SAML	Samuel	18.49	148	eP	P	17 34 11.6	+0.1
	comp=Z,57nm,0.8s						
PAYG	Puerto Ayora	18.73	247	eP	Pn	17 34 15.5	-0.9
	comp=Z,64nm,1.0s						
NNA	Nana	19.05	191	eP	P	17 34 17.7	+0.1
	comp=Z,76nm,1.0s						
TEIG	Tepich	19.90	314	P	Pn	17 34 28.3	-1.7
	comp=Z,3.7nm,0.5s,baz=82,slow=24,SNR=26						
TEIG	Tepich	19.90	314	eP	P	17 34 27.7	+1.1
	comp=Z,4.4nm,0.6s						
CCIG	Comitan	20.91	298	eP	P	17 34 39.3	+1.5
	comp=Z,31nm,0.7s						
DWPF	Disney Wildern	22.63	340	eP	P	17 34 54.1	-0.9
	comp=Z,51nm,0.5s						
LPAZ	La Paz	23.46	168	P	P	17 35 03.2	-0.2
	comp=Z,3.8nm,0.7s,baz=0.5,slow=6.0,SNR=16						
CMIG	Matias Romero	23.65	298	P	P	17 35 00.8	-3.7
	comp=Z,1.8nm,0.6s,baz=100,slow=9.2,SNR=4.5						
SIV	San Ignacio	25.57	152	pP	pP	17 35 52.1	-2.1
	comp=Z,15nm,0.8s,baz=340,slow=11,SNR=14						
SIV				LR	LR	17 46 05.2	
	comp=Z,64nm,21.4s,baz=6.5,slow=38						
TIGA	Tifton	26.41	339	P	P	17 35 31.5	+2.1
	baz=156						
PB11	IPOC Station P	26.61	173	eP	P	17 35 31.1	-0.3
TLIG	Tlapa	27.09	296	eP	P	17 35 36.8	+1.0
	comp=Z,13nm,0.8s						
PB01	IPOC Station P	27.90	173	eP	P	17 35 42.5	-0.3
GOGA	Godfrey	28.18	341	eP	P	17 35 46.6	+1.5
	comp=Z,21nm,0.8s						
445A	Amite	28.79	328	P	P	17 35 52.8	+2.2
	baz=142						
346A	Big Creek Wild	28.87	330	P	P	17 35 53.1	+1.9
	baz=144,SNR=7.0						
444A	Pine Grove	29.00	327	P	P	17 35 54.1	+1.7
	baz=142						
345A	Thompson Farm,	29.09	329	P	P	17 35 55.4	+2.2
	baz=143						
543A	St. Martinvill	29.13	325	P	P	17 35 55.5	+1.9
	baz=139						
LRAL	Lakeview Retre	29.14	335	eP	P	17 35 55.0	+1.5
	comp=Z,24nm,0.8s						
KMSC	Kings Mountain	29.21	346	P	P	17 35 55.9	+1.7
	baz=163						
246A	Jackson Lee, B	29.22	331	P	P	17 35 56.1	+1.8
	baz=146						
344A	Westbrook Farm	29.57	328	P	P	17 35 59.4	+2.0
	baz=142,SNR=14						
443A	Delano Plantat	29.60	326	P	P	17 35 59.9	+2.2
	baz=140						
245A	Little AP, Sta	29.61	330	P	P	17 35 59.6	+1.8
	baz=144,SNR=6.2						
146A	Union	29.70	332	P	P	17 36 00.4	+1.8
	baz=146						
541A	Lake Charles	29.89	323	P	P	17 36 02.5	+2.3
	baz=137						
244A	Avery, Jackson	30.01	329	P	P	17 36 03.0	+1.7
	baz=143,SNR=5.9						
VBMS	Vicksburg	30.07	329	P	P	17 36 03.2	+1.4
	baz=144						
VBMS	Vicksburg	30.07	329	eP	P	17 36 03.2	+1.4
	comp=Z,95nm,0.8s						
145A	Houston Renfro	30.09	331	P	P	17 36 03.9	+2.0
	baz=145,SNR=5.2						
243A	Waterproof	30.30	328	P	P	17 36 05.2	+1.4
	baz=142						
144A	Alexander Plac	30.35	330	P	P	17 36 05.9	+1.6
	baz=144						
TKL	Tuckaleechee C	30.35	343	P	P	17 36 06.0	+1.7
	comp=Z,1.8nm,0.3s,baz=161,slow=6.0,SNR=3.9						
TKL	Tuckaleechee C	30.35	343	eP	P	17 36 05.7	+1.4
	comp=Z,20nm,1.1s						
CPCT	Cooper Cave	30.39	341	eP	P	17 36 06.4	+1.8
	comp=Z,18nm,0.8s						
SWET	Sewanee	30.66	339	eP	P	17 36 06.0	-1.0
	comp=Z,7.1nm,0.9s						
242A	Grayson	30.80	327	P	P	17 36 10.1	+1.8
	baz=141						
035Z	Hargill	30.81	312	P	P	17 36 09.7	+1.3
	baz=125						
341A	Kurthwood	30.81	325	P	P	17 36 10.1	+1.8
	baz=138						
638A	Rosharon	30.84	320	P	P	17 36 10.2	+1.5
	baz=132						
440A	Kirbyville	30.84	323	P	P	17 36 10.2	+1.6
	baz=136						
BLA	Blacksburg	31.00	349	eP	P	17 36 11.4	+1.4
	comp=Z,26nm,1.0s						
JSRW	J. Sargeant Re	31.06	353	eP	P	17 36 11.3	+0.9
737A	Port Lavaca	31.06	318	P	P	17 36 12.1	+1.5
	baz=130						
142A	Monroe	31.07	328	P	P	17 36 11.7	+1.1
	baz=142						
035A	Encino	31.11	313	P	P	17 36 11.7	+0.7
	baz=126,SNR=6.1						
TZTN	Tazewell	31.11	344	eP	P	17 36 12.0	+1.0
	comp=Z,32nm,1.1s						
241A	Mo Tay, Goldon	31.19	326	P	P	17 36 13.1	+1.4
	baz=139						
340A	Bronson	31.29	324	P	P	17 36 14.0	+1.5
	baz=137						
OXF	Oxford	31.43	334	eP	P	17 36 14.7	+0.9
	comp=Z,36nm,1.0s						
HKT	Hockley	31.45	320	eP	P	17 36 14.2	+0.3
	comp=Z,13nm,1.1s						
CBN	Corbin Frederi	31.50	353	eP	P	17 36 14.1	-0.2
	comp=Z,117nm,0.3s						
034A	Hebbronville	31.60	313	P	P	17 36 15.9	+0.5
	baz=125,SNR=25						
736A	Circle Diamond	31.61	317	P	P	17 36 16.7	+1.4
	baz=130,SNR=5.2						
339A	Huntington	31.62	323	P	P	17 36 16.6	+1.1
	baz=136						
141A	Papa Simpson,	31.62	327	P	P	17 36 16.6	+1.2
	baz=140						
835A	Beeville	31.71	315	P	P	17 36 17.5	+1.1
	baz=128						
438A	Sam Houston St	31.77	321	P	P	17 36 17.9	+1.2
	baz=134,SNR=5.8						
934A	Benavides	31.80	314	P	P	17 36 17.6	+0.6
	baz=126						
537A	Green Hill Far	31.84	320	P	P	17 36 18.5	+1.1
	baz=132						
636A	Smothers Creek	31.94	318	P	P	17 36 19.5	+1.2
	baz=130						
NATX	Nacogdoches	31.99	324	P	P	17 36 20.0	+1.3
	baz=136						
NATX	Nacogdoches	31.99	324	eP	P	17 36 19.6	+0.9
	comp=Z,132nm,1.4s						
140A	Cam and Jess,	32.02	326	P	P	17 36 20.3	+1.4
	baz=139						
735A	Kenedy	32.05	316	P	P	17 36 20.4	+1.2
	baz=128						
CCAR	Cane Creek	32.06	330	eP	P	17 36 20.9	+1.7
	comp=Z,78nm,0.8s						
239A	Gary	32.06	324	P	P	17 36 20.6	+1.2
	baz=137						
Z41A	Richland Creek	32.07	328	P	P	17 36 20.7	+1.3
	baz=141						
338A	Crockett	32.09	322	P	P	17 36 21.1	+1.5
	baz=135,SNR=7.1						
834A	Tilden	32.13	314	P	P	17 36 20.5	+0.6
	baz=127						
WVT	Waverly	32.17	337	eP	P	17 36 21.1	+0.9
	comp=Z,71nm,1.0s						
536A	Bastrop	32.33	319	P	P	17 36 22.5	+0.8
	baz=131						
933A	Laredo	32.35	313	P	P	17 36 22.1	+0.2
	baz=125,SNR=18						
Z40A	Long Farm, Mag	32.39	327	P	P	17 36 23.2	+1.1
	baz=140						
337A	Centerville	32.41	322	P	P	17 36 23.9	+1.5
	baz=134						
238A	Jacksonville	32.44	323	P	P	17 36 23.8	+1.2
	baz=136						
139A	Bunkhouse Ranc	32.51	325	P	P	17 36 24.9	+1.8
	baz=138						
ZAIG	Zacatecas	32.55	302	eP	P	17 36 25.6	+1.6
	comp=Z,11nm,1.0s						
WLAR	White Oak Lake	32.56	328	eP	P	17 36 24.6	+1.0
	comp=Z,98nm,1.4s						
HALT	Halls	32.59	335	eP	P	17 36 24.2	+0.4
436A	Wall Ranch, Ga	32.61	320	P	P	17 36 25.3	+1.2
	baz=132,SNR=14						
833A	Chaparral WMA,	32.84	314	P	P	17 36 26.4	+0.2
	baz=126						
237A	Washetta, Mont	32.84	323	P	P	17 36 27.2	+1.1
	baz=135,SNR=5.8						
HBAR	Harrisburg	32.86	333	eP	P	17 36 27.4	+1.2
GLAT	Glass	32.87	335	eP	P	17 36 27.6	+1.3
138A	Matatall Enter	32.89	324	P	P	17 36 28.0	+1.5
	baz=137						
Y40A	Okolona	32.91	328	P	P	17 36 27.6	+0.9
	baz=141,SNR=11						
GNAR	Gosnell	32.92	334	eP	P	17 36 27.7	+0.9
733A	Divot King Ran	33.00	315	P	P	17 36 27.4	-0.2
	baz=126						
UALR	University of	33.02	330	eP	P	17 36 27.9	+0.2
	comp=Z,14nm,0.7s						
X40A	Basin Creek Fa	33.05	329	P	P	17 36 28.5	+0.7
	baz=142,SNR=20						
336A	Riesel	33.06	321	P	P	17 36 28.8	+0.8
	baz=133,SNR=5.2						
435B	Jarrell	33.13	319	P	P	17 36 29.3	+0.7
	baz=131						
534A	Blanco	33.23	317	P	P	17 36 29.3	-0.3
	baz=129,SNR=5.2						
137A	Heron Place, G	33.23	324	P	P	17 36 30.6	+1.1
	baz=136,SNR=5.8						
832A	Faith Ranch, C	33.24	313	P	P	17 36 29.4	-0.2
	baz=125,SNR=6.0						
Z38A	Mt. Pleasant	33.26	325	P	P	17 36 30.5	+0.7
	baz=138						
MCWV	Mont Chateau	33.27	350	eP	P	17 36 31.8	+2.1
	comp=Z,12nm,0.8s						
236A	Katherine and	33.28	322	P	P	17 36 30.6	+0.7
	baz=134						
Y39A	Lockesburg	33.28	327	P	P	17 36 30.3	+0.4
	baz=140,SNR=8.5						
335A	Moody	33.35	320	P	P	17 36 31.6	+1.0
	baz=132						
BDFB	Brasilia	33.36	132	P	P	17 36 31.3	+0.4
	comp=Z,3.4nm,0.5s,baz=282,slow=8.9,SNR=6.0						
BDFB				LR	LR	17 50 02.1	
	comp=Z,64nm,18.5s,baz=315,slow=36						
633A	Saathoff Ranch	33.36	316	P	P	17 36 31.3	+0.6
	baz=127						
PARMO	Parma	33.40	335	eP	P	17 36 30.8	-0.1
WHAR	Wooly Hollow	33.41	331	eP	P	17 36 31.3	+0.3
	comp=Z,35nm,0.8s						
X301	Greenbrier Sit	33.42	331	eP	P	17 36 31.7	+0.6
	comp=Z,24nm,0.6s						
X201	Greenbrier Sit	33.45	331	eP	P	17 36 32.1	+0.7
	comp=Z,37nm,0.7s						
MIAR	Mount Ida	33.47	328	P	P	17 36 31.5	0.0
	baz=141,SNR=13						
MIAR	Mount Ida	33.47	328	eP	P	17 36 31.6	0.0
	comp=Z,14nm,0.8s						
WCI	Wyandotte Cave	33.50	341	eP	P	17 36 32.4	+0.6
	comp=Z,50nm,0.7s						
Z37A	Pogue Cattle C	33.59	324	P	P	17 36 33.5	+1.0
	baz=136						
434A	Burnet	33.59	319	P	P	17 36 32.4	-0.4
	baz=130,SNR=12						
136A	Ennis	33.61	323	P	P	17 36 33.4	+0.7
	baz=134						
Y38A	Idabel	33.62	326	P	P	17 36 33.4	+0.5
	baz=138,SNR=6.5						
533A	Kerrville	33.64	317	P	P	17 36 33.0	-0.1
	baz=128,SNR=6.0						
O56A	Blue Knob Stat	33.68	352	P	P	17 36 35.3	+2.0
	baz=170,SNR=6.5						
W40A	Ferguson Farm,	33.72	330	P	P	17 36 34.9	+1.3
	baz=142,SNR=25						
X39A	Fountain Ranch	33.73	328	P	P	17 36 35.0	+1.2
	baz=140,SNR=9.7						
USIN	University of	33.73	339	eP	P	17 36 35.1	+1.4
	comp=Z,104nm,0.9s						
PBMO	Poplar Bluff	33.79	334	eP	P	17 36 35.0	+0.8
	comp=Z,83nm,0.8s						
WHTX	Lake Whitney,	33.85	321	P	P	17 36 35.7	+0.8
	baz=133,SNR=7.4						
WHTX	Lake Whitney,	33.85	321	eP	P	17 36 35.1	+0.3
	comp=Z,25nm,0.9s						
334A	Lometa	33.91	319	P	P	17 36 35.7	+0.2
	baz=131,SNR=14						
SSPA	Standing Stone	33.96	353	eP	P	17 36 37.2	+1.6
	comp=Z,100nm,1.9s						
N59A	State Game Lan	34.05	356	P	P	17 36 37.9	+1.4
	baz=175,SNR=6.1						
V40A	Witts Springs	34.08	331	P	P	17 36 37.6	+0.7
	baz=143,SNR=36						
W39A	Magazine	34.08	329	P	P	17 36 38.1	+1.2
	baz=141,SNR=34						
SIUC	Southern Illin	34.09	337	eP	P	17 36 37.2	+0.3
	comp=Z,94nm,0.7s						
433A	Art	34.10	318	P	P	17 36 37.2	+0.1
	baz=129,SNR=60						
Z36A	Blue Ridge	34.11	324	P	P	17 36 37.8	+0.7
	baz=135						
Y37A	Hugo	34.16	325	P	P	17 36 38.5	+1.0
	baz=137,SNR=5.8						
135A	Vickery Place,	34.20	322	P	P	17 36 38.4	+0.5
	baz=133,SNR=5.3						
X38A	Whitesboro	34.23	327	P	P	17 36 38.9	+0.7
	baz=139,SNR=10						
234A	Clairette	34.29	320	P	P	17 36 39.2	+0.5
	baz=132,SNR=9.2						
W38A	Poteau	34.37	328	P	P	17 36 40.1	+0.8
	baz=140						
333A	Richland Sprin	34.39	319	P	P	17 36 39.9	+0.3
	baz=130,SNR=19						
JCT	Junction City	34.41	317	P	P	17 36 40.0	+0.2
	baz=128						
JCT	Junction City	34.41	317	eP	P	17 36 39.5	-0.3
	comp=Z,29nm,1.5s						
BLO	Bloomington	34.44	341	eP	P	17 36 41.2	+1.4
	comp=Z,97nm,0.6s						
ACSO	Alum Creek Sta	34.45	347	eP	P	17 36 41.8	+1.9
	comp=Z,32nm,0.8s						
X37A	Clayton	34.47	326	P	P	17 36 40.7	+0.5
	baz=138,SNR=9.3						
Y36A	Durant	34.48	325	P	P	17 36 41.3	+1.1
	baz=136						
V39A	Pettigrew	34.52	330	P	P	17 36 41.3	+0.6
	baz=142,SNR=36						
U40A	Yellville	34.54	331	P	P	17 36 41.9	+1.1
	baz=144,SNR=90						
N54A	Moraine State	34.57	351	P	P	17 36 42.9	+2.0
	baz=168,SNR=7.6						
OLIL	Olney	34.57	339	eP	P	17 36 41.6	+0.6
	comp=Z,74nm,0.8s						
134A	White-Moore Ra	34.63	321	P	P	17 36 42.3	+0.7
	baz=132,SNR=7.8						
Z35A	Perchaven, San	34.64	323	P	P	17 36 42.7	+1.1
	baz=134,SNR=6.5						
233A	Rising Star	34.78	320	P	P	17 36 43.4	+0.4
	baz=131,SNR=13						
U39A	Green Forest	34.86	330	P	P	17 36 44.0	+0.4
	baz=143,SNR=18						
W37B	Quinton	34.91	327	P	P	17 36 44.4	+0.5
	baz=139						
Y35A	Marietta	34.92	324	P	P	17 36 44.8	+0.8
	baz=135						
V38A	Canehill	34.92	329	P	P	17 36 44.3	+0.2
	baz=141,SNR=49						
X36A	Centrahoma	35.00	325	P	P	17 36 45.3	+0.5
	baz=137,SNR=11						
HHAR	Hobbs	35.01	330	eP	P	17 36 44.7	-0.1
	comp=Z,25nm,0.7s						
T40A	Mansfield	35.02	332	P	P	17 36 45.7	+0.7
	baz=145,SNR=30						
M54A	Oil Creek Stat	35.05	351	P	P	17 36 47.0	+1.9
	baz=168,SNR=7.2						
Z34A	Collier Ranch,	35.07	322	P	P	17 36 46.2	+0.9
	baz=133,SNR=5.0						
133A	Hamilton Ranch	35.18	320	P	P	17 36 46.8	+0.4
	baz=131,SNR=14						
X35A	Drake	35.23	324	P	P	17 36 47.0	+0.3
	baz=136						
SLM	Saint Louis	35.29	336	eP	P	17 36 47.4	+0.3
	comp=Z,31nm,0.6s						
V37A	Hulbert	35.32	328	P	P	17 36 47.4	0.0
	baz=140,SNR=13						
T39A	Clever	35.33	331	P	P	17 36 48.2	+0.7
	baz=143,SNR=12						
BINY	Binghamton	35.34	356	eP	P	17 36 49.0	+1.4
	comp=Z,28nm,0.8s						
W36A	Wetumka	35.34	326	P	P	17 36 47.9	+0.2
	baz=138,SNR=12						
U38A	Gravette	35.36	330	P	P	17 36 47.8	0.0
	baz=141,SNR=9.5						
Y34A	Reagan Ranch,	35.38	323	P	P	17 36 48.7	+0.7
	baz=134,SNR=15						
S40A	Lebanon	35.38	333	P	P	17 36 48.8	+0.8
	baz=145,SNR=70						
Z33A	Whitaker Ranch	35.53	321	P	P	17 36 50.3	+0.9
	baz=132,SNR=9.9						
ABTX	Abilene, Hawle	35.65	320	P	P	17 36 51.0	+0.6
	baz=130,SNR=18						
ABTX	Abilene, Hawle	35.65	320	eP	P	17 36 51.0	+0.6
	comp=Z,40nm,0.8s						

V36A **Jenks** 35.67 327 P P 17 36 50.5 +0.1
baz=138,SNR=12
TUL1 **Leonard** 35.68 327 P P 17 36 50.7 +0.2
baz=139,SNR=10.0
TUL1 **Leonard** 35.68 327 eP P 17 36 50.6 0.0
comp=Z,34nm,0.7s
ERPA **Erie** 35.70 351 eP P 17 36 51.5 +1.0
comp=Z,21nm,0.8s
U37A **Salina** 35.70 329 P P 17 36 50.7 0.0
baz=140,SNR=11
SFIN **Lafayette** 35.72 341 P P 17 36 52.0 +1.3
baz=156,SNR=26
SFIN **Lafayette** 35.72 341 eP P 17 36 51.6 +0.9
comp=Z,103nm,0.6s
W35A **Tecumseh** 35.72 325 P P 17 36 50.9 0.0
baz=137,SNR=5.6
T38A **Diamond** 35.78 330 P P 17 36 51.5 +0.1
baz=142,SNR=31
S39A **Bolivar** 35.84 332 P P 17 36 52.3 +0.5
baz=144,SNR=25
R40A **Maddies Statio** 35.85 334 P P 17 36 52.6 +0.7
baz=146,SNR=29
X34A **Smith Ranch, M** 35.87 324 P P 17 36 52.8 +0.6
baz=135,SNR=7.6
Y33A **Hilltop Ranch,** 35.94 322 P P 17 36 53.3 +0.6
baz=133,SNR=13
U36A **Ologah** 36.02 328 P P 17 36 53.6 +0.2
baz=139,SNR=9.1
S38A **Stockton** 36.06 331 P P 17 36 53.8 0.0
baz=143,SNR=24
V35A **Meyer Ranch, C** 36.14 326 P P 17 36 54.2 -0.3
baz=137
T37A **Cheneyville 18** 36.16 330 P P 17 36 54.6 +0.1
baz=141,SNR=44
R39A **Chumby, Stover** 36.21 333 P P 17 36 55.3 +0.3
baz=145,SNR=32
X33A **Lawton** 36.23 323 P P 17 36 55.2 -0.1
baz=134,SNR=24
W34A **Bridge Creek,** 36.29 325 P P 17 36 56.0 +0.3
baz=136,SNR=10
W34A **Bridge Creek,** 36.29 325 eP P 17 36 55.7 0.0
comp=Z,84nm,0.8s
CPUP **Villa Florida** 36.30 156 LR LR 17 53 57.6
comp=Z,60nm,20.5s,baz=22,slow=40
Q40A **Laux Farm, Aux** 36.35 335 P P 17 36 57.0 +0.8
baz=147,SNR=48
R38A **Fenwick Farm,** 36.51 332 P P 17 36 57.6 +0.1
baz=144,SNR=31
LTX **Lajitas** 36.52 312 eP P 17 36 58.6 +0.7
TXAR **Lajitas Array** 36.52 312 P P 17 36 58.6 +0.7
comp=Z,11nm,0.6s,baz=127,slow=9.3,SNR=172
TXAR PcP PcP 17 39 19.8 +1.5
comp=Z,5.2nm,0.8s,baz=134,slow=5.8,SNR=14
TXAR ScP ScP 17 42 51.0 +0.4
comp=Z,0.7nm,0.9s,baz=142,slow=4.6,SNR=3.9
TXAR LR LR 17 54 40.6
comp=Z,27nm,19.6s,baz=0.0,slow=40
TX31 **Lajitas Ar. Si** 36.52 312 eP P 17 36 58.0 +0.1
WMOK **Wichita Mounta** 36.53 323 eP P 17 36 57.5 -0.3
comp=Z,22nm,0.7s
U35A **Pawnee** 36.53 327 P P 17 36 58.1 +0.3
baz=138,SNR=12
V34A **Guthrie** 36.57 326 P P 17 36 58.1 0.0
baz=136,SNR=11
V34A **Guthrie** 36.57 326 eP P 17 36 57.8 -0.4
comp=Z,109nm,1.4s
AAM **Ann Arbor** 36.57 347 eP P 17 36 59.6 +1.5
comp=Z,40nm,0.6s
T36A **Boggs Farm, Ca** 36.60 329 P P 17 36 58.1 -0.2
baz=140,SNR=8.3
S37A **Fort Scott** 36.61 330 P P 17 36 58.5 +0.1
baz=142,SNR=22
HDIL **Hopedale** 36.61 339 P P 17 36 58.5 +0.1
baz=152,SNR=5.7
HDIL **Hopedale** 36.61 339 eP P 17 36 57.9 -0.4
comp=Z,66nm,0.6s
X32A **Elmer** 36.62 322 P P 17 36 59.0 +0.5
baz=133,SNR=14
W33A **Caddo, Fort Co** 36.63 324 P P 17 36 59.1 +0.5
baz=134
Q39A **Willow Grove F** 36.78 334 P P 17 37 00.2 +0.4
baz=146
P40A **Paris** 36.79 335 P P 17 37 00.2 +0.3
baz=147,SNR=18
T35A **Sooner Cattle** 36.82 328 P P 17 37 00.2 0.0
baz=139,SNR=9.6
HPIG 36.89 307 eP P 17 37 00.6 -0.5
comp=Z,11nm,0.7s
S36A **Lake Cedric, C** 36.96 330 P P 17 37 01.1 -0.2
baz=141,SNR=7.1
V33A **Lossen Ranch,** 37.00 325 P P 17 37 01.9 +0.2
baz=135,SNR=23
Q38A **Cooks Store, C** 37.00 333 P P 17 37 02.4 +0.7
baz=145,SNR=48
U34A **Anderson Ranch** 37.02 326 P P 17 37 02.1 +0.2
baz=137,SNR=11
U34A **Anderson Ranch** 37.02 326 eP P 17 37 01.6 -0.2
comp=Z,57nm,0.6s
NCB **Newcomb** 37.03 359 eP P 17 37 02.3 +0.4
comp=Z,23nm,0.9s
R37A **Teagarden Farm** 37.05 331 P P 17 37 02.0 -0.1
baz=142,SNR=13
P39A **Salisbury** 37.05 334 P P 17 37 02.3 +0.2
baz=146,SNR=13
W32A **Sentinel** 37.07 323 P P 17 37 02.6 +0.2
baz=133,SNR=20
O40A **La Belle** 37.22 336 P P 17 37 03.8 +0.3
baz=148,SNR=12
T34A **McClaskey Farm** 37.26 327 P P 17 37 04.1 +0.2
baz=138,SNR=12
LBNH **Lisbon** 37.30 1 eP P 17 37 05.7 +1.6
comp=Z,74nm,1.6s
S35A **Otter Creek Ra** 37.30 329 P P 17 37 04.2 -0.1
baz=140,SNR=8.5
Q37A **Longview Farm,** 37.32 332 P P 17 37 04.4 0.0
baz=143,SNR=10.0
U33A **Lingo Farm, Me** 37.34 326 P P 17 37 04.2 -0.4
baz=136,SNR=5.4
V32A **Arapaho** 37.36 324 P P 17 37 04.9 +0.1
baz=134
R36A **Gordon, Harris** 37.38 330 P P 17 37 04.6 -0.3
baz=141,SNR=5.9
P38A **Dawn** 37.51 334 P P 17 37 06.3 +0.4
baz=145,SNR=31
O39A **Kirksville** 37.60 335 P P 17 37 07.1 +0.4
baz=147,SNR=8.3
LONY **Lake Ozonia** 37.69 358 eP P 17 37 07.5 0.0
comp=Z,26nm,1.3s
S34A **Willow Spring** 37.72 328 P P 17 37 07.7 -0.1
baz=139,SNR=5.3
R35A **Emporia Munici** 37.73 330 P P 17 37 07.6 -0.2
baz=140,SNR=6.5
U32A **Winter Ranch,** 37.80 325 P P 17 37 08.5 0.0
baz=135
P37A **Lathrop** 37.84 333 P P 17 37 08.7 -0.1
baz=144,SNR=9.0
Q36A **Arnold C. Orve** 37.86 331 P P 17 37 08.4 -0.5
baz=142,SNR=5.6
O38A **Galt** 37.89 334 P P 17 37 09.4 +0.3
baz=146,SNR=10
Q35A **Mercer Eighty,** 38.06 330 P P 17 37 10.6 0.0
baz=141
N39A **Derby Farms, D** 38.11 336 P P 17 37 11.2 +0.2
baz=148,SNR=12
S33A **Kaszmaul Farm,** 38.12 327 P P 17 37 11.3 +0.2
baz=137
SADO **Sadowa** 38.19 353 P P 17 37 12.9 +1.4
comp=Z,20nm,0.7s,baz=191,slow=7.9,SNR=21
SADO **Sadowa** 38.19 353 eP P 17 37 12.5 +1.0
comp=Z,27nm,0.8s
O37A **Wolven Farm, M** 38.22 334 P P 17 37 12.1 +0.2
baz=145,SNR=6.0
R34A **Isabella, Hill** 38.24 329 P P 17 37 12.2 0.0
baz=139,SNR=8.2
P36A **Good Intent, A** 38.26 332 P P 17 37 12.2 -0.1
baz=143,SNR=11
T32A **Huddler Ranch,** 38.33 326 P P 17 37 13.1 +0.2
baz=136
N38A **Joes South For** 38.34 335 P P 17 37 13.1 +0.1
baz=146,SNR=7.6
AMTX **Amarillo** 38.41 321 P P 17 37 14.4 +0.8
baz=130
AMTX **Amarillo** 38.41 321 eP P 17 37 13.5 -0.2
PKME **Peaks-Kenny Pk** 38.45 4 eP P 17 37 14.7 +1.0
comp=Z,47nm,1.3s
KSU1 **Kansas State U** 38.53 330 P P 17 37 14.2 -0.3
baz=140,SNR=9.9
KSU1 **Kansas State U** 38.53 330 eP P 17 37 14.4 -0.2
comp=Z,69nm,0.7s
MSTX **Muleshoe** 38.53 319 P P 17 37 15.0 +0.1
baz=128,SNR=13
MSTX **Muleshoe** 38.53 319 eP P 17 37 14.9 +0.1
comp=Z,35nm,0.9s
GGN **Saint George** 38.54 7 eP P 17 37 15.5 +1.0
comp=Z,30nm,0.7s
O36A **Bolckow** 38.56 333 P P 17 37 14.5 -0.3
baz=144,SNR=7.6
Q34A **Chapman** 38.56 330 P P 17 37 14.5 -0.3
baz=140,SNR=8.2
P35A **Duane Minner,** 38.58 331 P P 17 37 14.5 -0.4
baz=142,SNR=5.0
R33A **Olander Ranch,** 38.63 328 P P 17 37 15.4 -0.1
baz=138
S32A **Newby Ranch, P** 38.70 326 P P 17 37 16.4 +0.4
baz=136
N37A **Lee Faris, Mou** 38.73 334 P P 17 37 16.3 +0.1
baz=145,SNR=6.0
M38A **Pleasantville** 38.85 336 P P 17 37 17.2 +0.1
baz=147,SNR=19
P34A **Walnut Farm, R** 38.98 330 P P 17 37 18.1 -0.2
baz=140,SNR=8.8
MNTX **Cornudas Mount** 39.03 314 P P 17 37 19.5 +0.7
baz=123,SNR=66
MNTX **Cornudas Mount** 39.03 314 eP P 17 37 19.8 +1.0
comp=Z,34nm,0.8s
JFWS **Jewell Farm** 39.03 340 eP P 17 37 18.7 +0.1
comp=Z,103nm,0.6s
Q33A **Connelly Farm,** 39.07 329 P P 17 37 19.5 +0.4
baz=139,SNR=9.6
O35A **Humboldt** 39.10 332 P P 17 37 18.8 -0.5
baz=142
R32A **Long Quarter,** 39.11 327 P P 17 37 19.5 +0.1
baz=137
N36A **Muff Farm, Cla** 39.11 333 P P 17 37 19.6 +0.3
baz=144,SNR=6.4
RCBR **Riachuelo** 39.14 108 eP P 17 37 19.6 -0.4
comp=Z,20nm,1.2s
GLMI **Grayling** 39.19 347 eP P 17 37 22.7 +2.7
comp=Z,42nm,0.7s
M37A **Trindle Farm,** 39.20 335 P P 17 37 20.3 +0.2
baz=146
SCIA **State Center** 39.27 336 eP P 17 37 20.4 -0.2
comp=Z,93nm,0.6s
L38A **Oak Wood Farm,** 39.36 336 P P 17 37 21.5 +0.1
baz=148,SNR=11
O34A **Beatrice** 39.41 331 P P 17 37 22.0 +0.1
baz=141
Q32A **Meitler Ranch,** 39.44 328 P P 17 37 22.2 0.0
baz=138
N35A **Tabor** 39.45 333 P P 17 37 22.1 -0.1
baz=143
LMN **Caledonia Moun** 39.55 9 eP P 17 37 23.4 +0.5
comp=Z,46nm,0.8s
M36A **Felix, Anita** 39.56 334 P P 17 37 23.1 0.0
baz=145,SNR=13
L37A **Phoenix Point,** 39.67 336 P P 17 37 23.9 0.0
baz=147,SNR=5.1
K38A **Parkersburg** 39.72 337 P P 17 37 24.3 -0.1
baz=148,SNR=5.6
O33A **Hebron** 39.76 330 P P 17 37 24.6 -0.2
baz=140
N34A **Lincoln** 39.83 332 P P 17 37 25.3 0.0
baz=142
P32A **Huiting Farm,** 39.93 329 P P 17 37 26.0 -0.2
baz=138,SNR=5.6
CBKS **Cedar Bluff** 39.94 327 P P 17 37 26.7 +0.3
baz=136
CBKS **Cedar Bluff** 39.94 327 eP P 17 37 25.9 -0.4
comp=Z,18nm,0.6s
M35A **Nea** 39.96 333 P P 17 37 26.4 0.0
baz=144,SNR=5.8
K37A **Belmond** 40.16 336 P P 17 37 27.8 -0.2
baz=147,SNR=16
J38A **Wedel Dairy, R** 40.18 338 P P 17 37 27.9 -0.3
baz=149
O32A **Brockman Farm,** 40.25 330 P P 17 37 28.5 -0.3
baz=139
K36A **Gilmore City** 40.38 335 P P 17 37 29.9 +0.1
baz=146,SNR=6.0
M34A **Aspy Farms, Fr** 40.39 332 P P 17 37 29.7 -0.2
baz=142
L35A **Bielow Farm, R** 40.41 334 P P 17 37 30.3 +0.1
baz=144,SNR=17
J37A **Redenius Farm,** 40.58 337 P P 17 37 32.2 +0.7
baz=148,SNR=10
L34A **Svendsen Farm,** 40.67 333 P P 17 37 32.3 +0.1
baz=143,SNR=11
O31A **Woolen Ranch,** 40.70 329 P P 17 37 32.2 -0.4
baz=138
M33A **Taylor Creek F** 40.73 332 P P 17 37 32.5 -0.3
baz=142
P30A **Selden** 40.74 327 P P 17 37 33.0 +0.1
baz=136
I38A **Scanlan Farm,** 40.75 339 P P 17 37 32.7 -0.1
baz=150,SNR=12
K35A **Storm Lake** 40.78 335 P P 17 37 33.2 +0.1
baz=145,SNR=14
J36A **Sene 1, Swea** 40.91 336 P P 17 37 34.0 -0.2
baz=147,SNR=7.0
N31A **Bailey Ranch,** 41.01 330 P P 17 37 35.6 +0.5
baz=139
BGNE **Belgrade** 41.06 331 P P 17 37 35.7 +0.3
baz=140
BGNE **Belgrade** 41.06 331 eP P 17 37 35.2 -0.3
comp=Z,115nm,1.4s
K34A **Le Mars** 41.12 334 P P 17 37 35.9 +0.1
baz=136,SNR=37
I37A **Lemond, Waseca** 41.12 338 P P 17 37 36.0 +0.1
baz=148,SNR=5.8
P29A **Atwood** 41.15 327 P P 17 37 36.8 +0.5
baz=135
121A **Cookes Peak, D** 41.20 313 P P 17 37 38.6 +1.7
baz=121,SNR=13
L33A **Hoskins** 41.23 332 P P 17 37 36.7 -0.1
baz=142
J35A **Milford** 41.30 335 P P 17 37 37.0 -0.4
baz=145,SNR=12
VLDQ **Val d'Or** 41.33 356 eP P 17 37 38.9 +1.5
comp=Z,12nm,0.8s
I36A **Fitzsimmons Fa** 41.36 337 P P 17 37 37.8 0.0
baz=148
M31A **Lambtecht Ranc** 41.41 330 P P 17 37 38.4 0.0
baz=139
H37A **Dierke Farm, C** 41.43 338 P P 17 37 38.6 +0.2
baz=149,SNR=6.3
O29A **4D Ranch, Culb** 41.45 327 P P 17 37 38.9 +0.2
baz=136
K33A **Hardington** 41.45 333 P P 17 37 39.0 +0.4
baz=142
COWI **Conover** 41.54 343 eP P 17 37 39.6 +0.4
comp=Z,39nm,0.9s
J34A **George** 41.54 335 P P 17 37 39.4 +0.1
baz=144,SNR=17
T25A **Trinidad** 41.54 321 P P 17 37 41.4 +1.7
baz=129,SNR=17
T25A **Trinidad** 41.54 321 eP P 17 37 41.0 +1.3
comp=Z,20nm,0.9s
ANMO **Albuquerque** 41.57 317 P P 17 37 41.0 +1.1
baz=125
ANMO **Albuquerque** 41.57 317 eP P 17 37 40.2 +0.3
comp=Z,7.9nm,0.9s
N30A **Hueftle Ranch,** 41.57 329 P P 17 37 39.6 0.0
baz=137
I35A **Creekview Farm** 41.61 336 P P 17 37 39.7 -0.2
baz=146,SNR=11
KSCO **Kaye Shedlock'** 41.70 325 P P 17 37 41.6 +0.8
baz=133
KSCO **Kaye Shedlock'** 41.70 325 eP P 17 37 41.4 +0.7
comp=Z,24nm,0.7s
319A **Douglas** 41.74 311 eP P 17 37 42.5 +1.2
comp=Z,24nm,0.8s
H36A **Jessenland, He** 41.80 338 P P 17 37 42.0 +0.6
baz=148
N29A **Votaw Ranch, W** 41.86 328 P P 17 37 42.1 +0.1
baz=136
K32A **Verdigre** 41.94 332 P P 17 37 42.1 -0.4
baz=141,SNR=7.3
SPMN **Marine on St.** 41.94 339 P P 17 37 42.7 +0.2
baz=150,SNR=7.0
SPMN **Marine on St.** 41.94 339 eP P 17 37 42.0 -0.5
comp=Z,16nm,0.9s
L31A **Butterfield Fa** 41.98 331 P P 17 37 42.6 -0.3
baz=140,SNR=6.1
O28A **Krutsinger Ran** 41.98 327 P P 17 37 43.1 +0.1
baz=134,SNR=8.0
HSIG 42.00 306 eP P 17 37 38.7 -4.6
comp=Z,13nm,0.6s
J33A **Davis** 42.01 334 P P 17 37 43.1 0.0
baz=143,SNR=17
I34A **Hadley** 42.12 335 P P 17 37 43.8 -0.2
baz=145,SNR=11
ECSD **EROS Data Cent** 42.19 334 P P 17 37 44.1 -0.5
baz=144,SNR=22
ECSD **EROS Data Cent** 42.19 334 eP P 17 37 43.9 -0.7
comp=Z,37nm,1.0s
L30A **Spencer Herefo** 42.23 330 P P 17 37 45.2 +0.2
baz=138,SNR=10
H35A **Sunnyside Ranc** 42.25 337 P P 17 37 44.8 -0.2
baz=147,SNR=19
N28A **Pribbeno Ranch** 42.25 327 P P 17 37 45.0 -0.2
baz=135
K31A **O'Neill** 42.28 332 P P 17 37 45.1 -0.2
baz=140,SNR=8.8
G36A **St. Michael** 42.29 338 P P 17 37 45.5 +0.1
baz=148
M29A **Burnside Ranch** 42.35 329 P P 17 37 46.2 +0.2
baz=137
J32A **Parkston** 42.44 333 P P 17 37 46.4 -0.2
baz=142,SNR=34
I33A **Coleman** 42.52 335 P P 17 37 47.0 -0.2
baz=144
G35A **Watkins** 42.55 338 P P 17 37 47.6 +0.1
baz=148,SNR=19
H34A **Spellman Lake,** 42.60 336 P P 17 37 47.6 -0.3
baz=146,SNR=14
SDCO **Great Sand Dun** 42.60 321 P P 17 37 49.8 +1.4
baz=128,SNR=12
SDCO **Great Sand Dun** 42.60 321 eP P 17 37 49.4 +1.1
comp=Z,21nm,0.8s
M28A **Bar X Bar Ranc** 42.67 328 P P 17 37 48.6 0.0
baz=136
L29A **Maesberg Ranch** 42.70 330 P P 17 37 48.7 -0.1
baz=138,SNR=8.4
OGNE **Ogallala** 42.70 327 P P 17 37 49.3 +0.5
baz=135
K30A **Basset** 42.73 331 P P 17 37 49.5 +0.5
baz=139,SNR=26
F36A **Milaca** 42.75 339 P P 17 37 48.9 -0.1
baz=149,SNR=11
J31A **Geddes** 42.79 332 P P 17 37 49.6 +0.2
baz=141
I32A **Karley and Nic** 42.79 334 P P 17 37 49.1 -0.3
baz=143,SNR=6.2
E37A **Wrenshall** 42.97 340 P P 17 37 51.8 +1.0
baz=151
H33A **Prehn Over Nor** 43.01 335 P P 17 37 50.9 -0.3
baz=144,SNR=9.8
G34A **Benson** 43.02 337 P P 17 37 51.0 -0.2
baz=146
F35A **Swanville** 43.13 338 P P 17 37 52.3 +0.2
baz=148,SNR=12
K29A **Lazy Trails An** 43.13 330 P P 17 37 52.0 -0.3
baz=138
Q24A **Divide** 43.15 323 P P 17 37 53.5 +0.8
baz=130,SNR=6.8
Q24A **Divide** 43.15 323 eP P 17 37 54.1 +1.3
comp=Z,18nm,1.1s
H32A **Carlson Farm,** 43.16 334 P P 17 37 52.0 -0.3
baz=143,SNR=14
J30A **Dallas** 43.16 332 P P 17 37 51.8 -0.6
baz=140,SNR=8.8
L28A **Connealy Angus** 43.19 329 P P 17 37 52.9 +0.1
baz=136
E36A **McGregor** 43.22 340 P P 17 37 53.1 +0.3
baz=150,SNR=42
I31A **Royce, Wessing** 43.27 333 P P 17 37 53.2 0.0
baz=141,SNR=14
G33A **Ortonville** 43.30 336 P P 17 37 53.0 -0.4
baz=145
TUC **Tucson** 43.31 311 P P 17 37 55.0 +1.1
baz=118
TUC **Tucson** 43.31 311 eP P 17 37 54.5 +0.6
comp=Z,16nm,0.8s
F34A **Alexandria** 43.33 337 P P 17 37 53.7 -0.1
baz=147,SNR=8.4
C39A **Grand Marais** 43.38 343 P P 17 37 54.4 +0.3
baz=155,SNR=6.7
S22A **4UR Ranch, Cre** 43.44 320 P P 17 37 56.7 +1.6
baz=127,SNR=14
S22A **4UR Ranch, Cre** 43.44 320 eP P 17 37 56.4 +1.4
comp=Z,37nm,1.3s
D37A **Cotton** 43.50 341 P P 17 37 55.7 +0.6
baz=151,SNR=29
I30A **Oacoma** 43.58 332 P P 17 37 55.3 -0.5
baz=140,SNR=6.9
H31A **Wolsey** 43.59 334 P P 17 37 55.7 -0.1
baz=142,SNR=25
K28A **Ten Mile Ranch** 43.62 330 P P 17 37 56.2 0.0
baz=137,SNR=11
J29A **Okreek** 43.62 331 P P 17 37 55.9 -0.2
baz=139,SNR=10
C38A **Sawbill Land.** 43.63 342 P P 17 37 56.0 -0.1
baz=153,SNR=27
E35A **Pequot Lakes** 43.66 339 P P 17 37 56.8 +0.5
baz=148
D36A **Goodland** 43.76 340 P P 17 37 57.3 +0.2
baz=150,SNR=15
X18A **Snowflake** 43.77 314 eP P 17 37 58.9 +1.2
comp=Z,19nm,0.8s
F33A **5 Mile Ranch,** 43.77 337 P P 17 37 56.8 -0.4
baz=146,SNR=16
SUSD **Miller** 43.78 333 P P 17 37 57.3 -0.1
baz=141,SNR=20
G32A **Webster** 43.79 335 P P 17 37 57.3 -0.1
baz=144,SNR=12
E34A **Wadena** 43.90 338 P P 17 37 58.8 +0.5
baz=147,SNR=13
EYMN **Ely** 43.90 342 P P 17 37 58.7 +0.4
baz=153,SNR=51
EYMN **Ely** 43.90 342 eP P 17 37 58.3 0.0
comp=Z,78nm,0.6s
W18A **Petrified Fore** 43.92 315 P P 17 38 00.5 +1.6
baz=121,SNR=10.0
W18A **Petrified Fore** 43.92 315 eP P 17 38 00.1 +1.3
comp=Z,48nm,0.9s
C37A **Embarrass** 43.92 341 P P 17 37 58.9 +0.5
baz=152,SNR=18
ISCO **Idaho Springs** 43.96 323 P P 17 38 00.4 +1.2
baz=130,SNR=35
ISCO **Idaho Springs** 43.96 323 eP P 17 38 00.4 +1.2
comp=Z,30nm,0.9s
D35A **Remer** 43.98 339 P P 17 37 58.8 -0.1
baz=149,SNR=11
G31A **Conde** 44.07 334 P P 17 37 59.3 -0.3
baz=143,SNR=17
I29A **Vivian Onida** 44.08 332 P P 17 37 59.1 -0.6
baz=139,SNR=8.0
J28A **Allard Ranch,** 44.08 330 P P 17 37 59.4 -0.3
baz=138,SNR=20
F32A **Veblen** 44.13 336 P P 17 37 59.8 -0.3
baz=144
C36A **Pine Crest Far** 44.16 341 P P 17 38 00.9 +0.6
baz=151,SNR=24
MVCO **Mesa Verde** 44.21 318 P P 17 38 02.4 +1.2
baz=124,SNR=18
MVCO **Mesa Verde** 44.21 318 eP P 17 38 01.9 +0.7
comp=Z,52nm,1.4s
E33A **Westby DABS, E** 44.21 337 P P 17 38 00.5 -0.3
baz=146,SNR=7.2
J27A **Elkhorn Farm,** 44.34 330 P P 17 38 02.1 +0.2
baz=136,SNR=5.6
SMCO **Snowmass** 44.39 322 eP P 17 38 00.4 -2.4
comp=Z,26nm,0.7s
D34A **Park Rapids** 44.40 338 P P 17 38 02.1 -0.1
baz=148,SNR=16
G30A **Faulkton** 44.40 334 P P 17 38 02.0 -0.3
baz=141,SNR=21
I28A **Midland** 44.47 331 P P 17 38 02.6 -0.3
baz=138,SNR=9.6
C35A **Jirik Farms, M** 44.49 340 P P 17 38 03.2 +0.3
baz=150,SNR=30
H29A **Onida** 44.49 332 P P 17 38 02.6 -0.4
baz=140,SNR=14
F31A **Hecla** 44.59 335 P P 17 38 03.4 -0.3
baz=143,SNR=16
D33A **AnnSam, Waubun** 44.68 338 P P 17 38 04.8 +0.3
baz=147,SNR=82
214A **Organ Pipe Nat** 44.69 309 P P 17 38 06.0 +1.2
baz=116,SNR=9.0
E32A **Braaten, Kindr** 44.70 336 P P 17 38 04.3 -0.3
baz=145
C34A **RKJ Ranch, Bem** 44.77 339 P P 17 38 05.2 0.0
baz=148,SNR=8.2
X16A **Lo Mia Camp, P** 44.79 313 eP P 17 38 06.5 +0.8
comp=Z,14nm,0.9s

G29A **Hoven** 44.79 333 P P 17 38 05.3 -0.1
baz=140
PHWY **Pilot Hill** 44.84 325 eP P 17 38 07.2 +1.0
comp=Z,25nm,1.1s
N23A **Red Feather La** 44.85 324 P P 17 38 07.5 +1.3
baz=130,SNR=18
N23A **Red Feather La** 44.85 324 eP P 17 38 07.5 +1.3
comp=Z,30nm,0.9s
F30A **Leola** 44.90 334 P P 17 38 06.2 0.0
baz=142,SNR=17
H28A **Mission Ridge** 44.91 332 P P 17 38 06.1 -0.2
baz=139
J26A **Sides Ranch, S** 44.92 329 P P 17 38 06.7 +0.1
baz=135,SNR=5.7
I27A **Quinn** 44.95 330 P P 17 38 06.6 -0.2
baz=137,SNR=13
B35A **Bob, Littlefor** 44.98 341 P P 17 38 07.0 +0.2
baz=150,SNR=31
E31A **Nome** 45.00 336 P P 17 38 06.6 -0.4
baz=144,SNR=6.9
PV05 **Paradox Valley** 45.09 319 eP P 17 38 08.9 +0.7
D32A **Dogwood Acres,** 45.12 337 P P 17 38 08.0 +0.1
baz=145
G28A **Parade** 45.16 332 P P 17 38 08.4 +0.1
baz=139
C33A **Trail** 45.17 338 P P 17 38 08.1 -0.2
baz=147,SNR=31
F29A **Eureka** 45.25 334 P P 17 38 09.4 +0.4
baz=141
WUAZ **Wupatki** 45.28 315 P P 17 38 10.9 +1.4
baz=120,SNR=33
WUAZ **Wupatki** 45.28 315 eP P 17 38 11.1 +1.5
comp=Z,63nm,0.9s
I26A **New Underwood** 45.33 330 P P 17 38 09.6 -0.1
baz=136,SNR=6.9
J25A **Sunshine Ranch** 45.35 328 P P 17 38 10.3 +0.3
baz=134
PV09 **Paradox Valley** 45.35 319 eP P 17 38 11.6 +1.3
E30A **Jud** 45.38 335 P P 17 38 09.9 -0.1
baz=142,SNR=10
H27A **Howes** 45.38 331 P P 17 38 09.9 -0.2
baz=137,SNR=15
B34A **Aery, Baudette** 45.40 340 P P 17 38 10.2 +0.2
baz=149,SNR=80
C32A **Crookston** 45.51 338 P P 17 38 11.5 +0.5
baz=146,SNR=6.2
B33A **Robert and Kas** 45.54 339 P P 17 38 11.5 +0.3
baz=148,SNR=5.9
AGMN **Agassiz Nation** 45.66 339 P P 17 38 12.4 +0.3
baz=147,SNR=30
AGMN **Agassiz Nation** 45.66 339 eP P 17 38 12.5 +0.3
comp=Z,38nm,0.6s
F28A **McLaughlin** 45.69 333 P P 17 38 12.7 +0.2
baz=140,SNR=13
H26A **Fairpoint** 45.71 330 P P 17 38 12.8 +0.2
baz=136
Y14A **Wickenburg** 45.71 312 eP P 17 38 13.7 +0.9
comp=Z,113nm,0.8s
E29A **Napoleon** 45.74 334 P P 17 38 13.0 +0.1
baz=142,SNR=7.7
O20A **White River Ci** 45.75 322 P P 17 38 14.4 +1.1
baz=127,SNR=7.0
O20A **White River Ci** 45.75 322 eP P 17 38 14.3 +1.1
comp=Z,20nm,0.9s
I25A **Rochford** 45.76 329 P P 17 38 13.9 +0.6
baz=135,SNR=23
113A **Mohawk Valley,** 45.77 310 eP P 17 38 14.3 +1.1
comp=Z,13nm,1.0s
D30A **Buchanan** 45.80 336 P P 17 38 13.4 +0.2
baz=143,SNR=12
G27A **Dupree** 45.86 332 P P 17 38 14.0 +0.2
baz=138,SNR=8.5
C31A **Landman Farms,** 45.94 337 P P 17 38 14.7 +0.3
baz=145,SNR=54
RSSD **Black Hills** 45.98 329 P P 17 38 16.1 +1.1
baz=135
RSSD **Black Hills** 45.98 329 eP P 17 38 15.5 +0.4
comp=Z,11nm,0.7s
B32A **Ashes, Strandq** 45.99 338 P P 17 38 15.1 +0.4
baz=147,SNR=35
A33A **Warroad** 46.04 340 P P 17 38 15.4 +0.3
baz=148,SNR=32
D29A **Pettibone, Tap** 46.11 335 P P 17 38 16.0 +0.3
baz=142,SNR=13
G26A **Maurine** 46.12 331 P P 17 38 15.5 -0.4
baz=137,SNR=8.6
H25A **Fruitdale** 46.12 330 P P 17 38 15.9 0.0
baz=136
C30A **Mose, Pekin** 46.16 336 P P 17 38 16.4 +0.3
baz=144,SNR=20
E28A **Huff** 46.20 334 P P 17 38 17.0 +0.5
baz=140,SNR=15
F27A **Lemmon** 46.27 332 P P 17 38 17.4 +0.4
baz=138,SNR=21
K22A **Casper** 46.32 326 P P 17 38 18.4 +0.8
baz=131
K22A **Casper** 46.32 326 eP P 17 38 18.5 +0.8
comp=Z,18nm,0.9s
U15A **North Rim** 46.38 315 eP P 17 38 19.5 +1.2
comp=Z,36nm,1.0s
A32A **Rocking H Ranc** 46.41 339 P P 17 38 18.2 +0.2
baz=147,SNR=15
B31A **Greenbush Farm** 46.43 338 P P 17 38 18.2 +0.1
baz=145,SNR=34
G25A **Newell** 46.44 330 P P 17 38 18.3 -0.1
baz=136,SNR=10
E27A **Carson** 46.48 333 P P 17 38 19.5 +0.8
baz=139,SNR=10
F26A **Lodgepole** 46.56 332 P P 17 38 19.6 +0.3
baz=138
SRU **San Rafael Swe** 46.59 319 eP P 17 38 20.5 +0.7
comp=Z,29nm,0.9s
D28A **Regan** 46.63 334 P P 17 38 20.2 +0.4
baz=141
A31A **Linda, St. Vin** 46.67 338 P P 17 38 20.2 +0.2
baz=146
GLA **Glamis** 46.69 310 P P 17 38 21.7 +1.2
baz=115,SNR=10.0
GLA **Glamis** 46.69 310 eP P 17 38 21.7 +1.2
comp=Z,26nm,0.8s
P18A **Preston Nutter** 46.70 320 eP P 17 38 21.5 +0.6
comp=Z,34nm,1.2s
B30A **Myrvik Farm, E** 46.71 337 P P 17 38 20.4 0.0
baz=144,SNR=22
PDMCI **Parker Dam,Lak** 46.71 312 P P 17 38 21.7 +1.1
baz=116
MDND **Maddock** 46.73 336 P P 17 38 21.1 +0.6
baz=142,SNR=7.2
MDND **Maddock** 46.73 336 eP P 17 38 21.3 +0.7
comp=Z,140nm,0.8s
Y12C **Blythe** 46.76 311 P P 17 38 22.0 +1.1
baz=116
Y12C **Blythe** 46.76 311 eP P 17 38 22.1 +1.1
comp=Z,34nm,1.4s
W13A **Hualapai Mount** 46.88 313 eP P 17 38 23.4 +1.2
comp=Z,11nm,1.1s
E26A **Carlson Angus** 46.92 332 P P 17 38 22.4 +0.3
baz=138,SNR=19
P17A **Butcher Ranch,** 46.94 320 eP P 17 38 23.6 +1.1
comp=Z,36nm,0.9s
C28A **Hausauer Farms** 46.96 335 P P 17 38 23.4 +1.1
baz=141
D27A **Center** 46.98 334 P P 17 38 23.1 +0.6
baz=140,SNR=8.1
F25A **Bowman** 46.99 331 P P 17 38 23.1 +0.4
baz=137
KNB **Kanab** 47.04 316 eP P 17 38 25.1 +1.8
comp=Z,47nm,0.9s
A30A **Hoffart Farm,** 47.10 337 P P 17 38 23.3 0.0
baz=145,SNR=21
B29A **Wagenman Farm,** 47.12 336 P P 17 38 24.2 +0.6
baz=143,SNR=10
TMUT **Trail Mountain** 47.14 319 eP P 17 38 25.3 +1.0
comp=Z,16nm,0.9s
WESC **Westside Schoo** 47.27 309 eP P 17 38 30.3 +5.4
ULM **Lac du Bonnet** 47.32 340 P P 17 38 24.9 -0.2
comp=Z,42nm,0.6s,baz=152,slow=8.8,SNR=77
ULM PcP PcP 17 39 53.7 +0.3
comp=Z,4.6nm,0.6s,baz=127,slow=5.1,SNR=2.7
ULM **Lac du Bonnet** 47.32 340 eP P 17 38 24.5 -0.6
comp=Z,46nm,0.7s
ULM PcP PcP 17 39 53.7 +0.3
D26A **Manning** 47.33 333 P P 17 38 25.7 +0.5
baz=138,SNR=12
LCMT **Little Creek M** 47.33 315 eP P 17 38 26.9 +1.3
comp=Z,39nm,1.0s
MSU **Marysvale** 47.36 318 eP P 17 38 27.0 +1.1
PLCA **Paso Flores** 47.36 177 P P 17 38 24.1 -1.5
comp=Z,1.4nm,0.8s,baz=20,slow=7.8,SNR=6.2
PLCA pP pP 17 38 58.9 -1.5
comp=Z,6.1nm,0.9s,baz=19,slow=9.6,SNR=4.5
PLCA ScP ScP 17 43 31.1 -2.4
comp=Z,1.5nm,0.8s,baz=31,slow=9.0,SNR=4.7
E25A **Miller Ranch,** 47.38 332 P P 17 38 26.3 +0.7
baz=137
SWSC **Sam W. Stewart** 47.40 309 P P 17 38 27.1 +1.1
baz=114
IRM **Iron Mountain** 47.40 311 P P 17 38 27.0 +1.0
baz=115,SNR=12
BC3 **Big Chuckawall** 47.42 310 P P 17 38 27.0 +0.8
baz=115,SNR=8.2
C27A **Sayler Ranch,** 47.43 334 P P 17 38 26.7 +0.7
baz=140,SNR=13
A29A **Manning Farm,** 47.44 337 P P 17 38 26.3 +0.3
baz=144,SNR=16
B28A **Dugan Ranch, T** 47.52 336 P P 17 38 27.5 +0.8
baz=142,SNR=23
C26A **Wahner Farm, P** 47.77 334 P P 17 38 29.4 +0.8
baz=139,SNR=16
MPU **Maple Canyon** 47.81 320 eP P 17 38 30.2 +0.9
comp=Z,31nm,0.9s
D25A **Fairfield** 47.82 332 P P 17 38 29.8 +0.8
baz=138,SNR=6.2
A28A **Rue Farm, Bot** 47.84 336 P P 17 38 29.5 +0.3
baz=142,SNR=8.7
MONP2 **Monument Peak** 47.85 309 P P 17 38 30.3 +0.6
baz=113
B27A **Peters Farms,** 47.86 335 P P 17 38 30.1 +0.8
baz=141,SNR=5.0
BELC **Belle Mtn. Jos** 47.98 310 P P 17 38 31.2 +0.6
baz=114,SNR=9.8
JLU **Jordanelle** 48.02 320 eP P 17 38 31.9 +1.0
comp=Z,12nm,0.8s
GMRC **Granite Mounta** 48.05 311 P P 17 38 31.7 +0.5
baz=115,SNR=6.8
NLU **North Lily Min** 48.06 319 eP P 17 38 32.1 +0.9
comp=Z,21nm,1.0s
BW06 **Boulder Array** 48.13 324 P P 17 38 32.2 +0.5
baz=128,SNR=27
BW06 **Boulder Array** 48.13 324 eP P 17 38 31.7 0.0
comp=Z,30nm,1.2s
PD31 **Pinedale Array** 48.13 324 eP P 17 38 31.7 0.0
PDAR **Pinedale Array** 48.13 324 P P 17 38 32.0 +0.3
comp=Z,10nm,0.7s,baz=120,slow=8.0,SNR=76
PDAR PcP PcP 17 39 56.6 -0.3
comp=Z,1.6nm,0.6s,baz=130,slow=3.9,SNR=3.7
PDAR ScP ScP 17 43 37.0 0.0
comp=Z,0.2nm,0.5s,baz=108,slow=5.1,SNR=3.0
SCHQ **Schefferville** 48.15 5 P P 17 38 32.2 +0.9
comp=Z,33nm,0.7s,baz=188,slow=6.0,SNR=24
SCHQ **Schefferville** 48.15 5 eP P 17 38 32.1 +0.7
comp=Z,32nm,0.7s
PFO **Pinyon Flats O** 48.17 310 P P 17 38 33.4 +1.3
baz=114
PFO **Pinyon Flats O** 48.17 310 eP P 17 38 32.8 +0.7
comp=Z,16nm,1.5s
B26A **Jensen Ranch,** 48.25 334 P P 17 38 33.2 +0.9
baz=140
CTU **Camp Tracy** 48.26 320 eP P 17 38 33.6 +0.9
comp=Z,16nm,1.1s
A27A **Ledoux Ranch,** 48.28 335 P P 17 38 33.8 +1.3
baz=141
TCUT **Toone Canyon** 48.28 321 eP P 17 38 34.2 +1.2
comp=Z,80nm,0.6s
DNR **Dunn Ranch,Anz** 48.28 310 eP P 17 38 34.8 +1.9
PSUT **Pine Spring** 48.50 317 eP P 17 38 35.5 +0.9
comp=Z,15nm,0.8s
TUQ **Turquoise Moun** 48.52 312 P P 17 38 35.5 +0.8
baz=116
A26A **Wade Farm, Ken** 48.57 335 P P 17 38 35.4 +0.7
baz=140,SNR=12
HEC **Hector,Ludlow** 48.57 311 P P 17 38 36.4 +1.3
baz=115,SNR=11
RSUT **Red Spur Mount** 48.58 322 eP P 17 38 35.7 +0.4
B25A **Knox Farm, Ray** 48.58 333 P P 17 38 36.1 +1.3
baz=138,SNR=16
HWUT **Hardware Ranch** 48.65 322 eP P 17 38 36.1 +0.4
comp=Z,17nm,0.6s
DUG **Dugway, Tooele** 48.67 319 P P 17 38 36.9 +1.2
baz=122,SNR=21
DUG **Dugway, Tooele** 48.67 319 eP P 17 38 37.0 +1.2
comp=Z,17nm,0.8s
MURC **Murrieta** 48.73 309 P P 17 38 37.4 +1.2
baz=113
BBRC **Big Bear Solar** 48.78 310 eP P 17 38 36.4 -0.4
LAO **LASA Array** 48.88 330 P P 17 38 37.6 +0.4
baz=134,SNR=5.4
LAO **LASA Array** 48.88 330 eP P 17 38 37.8 +0.6
comp=Z,19nm,0.7s
SHOC **Shoshone, Teco** 48.98 313 P P 17 38 39.5 +1.4
baz=116
SPUT **South Promonto** 49.04 321 eP P 17 38 39.1 +0.6
comp=Z,40nm,1.5s
AHID **Auburn Hatcher** 49.04 323 eP P 17 38 39.0 +0.4
comp=Z,24nm,0.8s
A25A **Svangstu Ranch** 49.06 334 P P 17 38 39.5 +1.1
baz=139,SNR=8.4
GSC **Goldstone, Bar** 49.12 312 P P 17 38 40.2 +0.9
baz=115,SNR=9
GSC **Goldstone, Bar** 49.12 312 eP P 17 38 40.5 +1.2
comp=Z,18nm,0.8s
DGMT **Dagmar** 49.19 333 P P 17 38 40.6 +1.1
baz=137,SNR=43
DGMT **Dagmar** 49.19 333 eP P 17 38 40.8 +1.3
comp=Z,149nm,0.6s
BGU **Big Grassy Mou** 49.20 320 eP P 17 38 40.5 +0.7
comp=Z,38nm,0.7s
REDW **Red Top Meadow** 49.24 324 eP P 17 38 40.7 +0.5
comp=Z,40nm,0.8s
SNOW **Snow King Moun** 49.25 324 eP P 17 38 40.2 -0.1
comp=Z,34nm,1.0s
LOHW **Long Hollow** 49.25 324 eP P 17 38 40.7 +0.5
comp=Z,21nm,0.6s
BFSC **Mount Baldy Ra** 49.33 310 P P 17 38 41.6 +0.7
baz=113
MOOW **Moose Ponds** 49.41 324 eP P 17 38 41.8 +0.4
comp=Z,16nm,0.8s
TPNV **Topopah Spring** 49.42 314 P P 17 38 43.3 +1.7
baz=116,SNR=13
TPNV **Topopah Spring** 49.42 314 eP P 17 38 43.2 +1.7
comp=Z,19nm,0.9s
RLMT **Red Lodge** 49.43 327 P P 17 38 43.4 +1.8
baz=129,SNR=5.8
FXWY **Fox Creek** 49.51 324 eP P 17 38 42.6 +0.4
comp=Z,12nm,0.8s
R11A **Troy Canyon, C** 49.60 316 P P 17 38 44.1 +1.2
baz=118,SNR=29
R11A **Troy Canyon, C** 49.60 316 eP P 17 38 43.9 +1.0
comp=Z,13nm,0.9s
IMW **Indian Meadow** 49.61 324 eP P 17 38 43.6 +0.6
comp=Z,21nm,0.6s
FURC **Furnace Creek,** 49.66 313 P P 17 38 44.4 +1.3
baz=116
H17A **Grant Village** 49.71 325 P P 17 38 45.1 +1.4
baz=128
EDW2 **Edwards Air Fo** 49.84 311 P P 17 38 45.4 +0.7
baz=113,SNR=9.4
YFT **Old Faithful** 49.89 325 eP P 17 38 46.9 +1.8
comp=Z,8.1nm,0.7s
MPMC **Manual Prospec** 49.94 312 P P 17 38 46.4 +0.8
baz=115,SNR=5.5
GCMT **Greycliff** 50.07 327 eP P 17 38 47.2 +0.9
GRAC **Grapevine Rang** 50.25 313 P P 17 38 49.0 +1.3
baz=116,SNR=5.1
ISA **Isabella, Lake** 50.51 311 P P 17 38 50.5 +0.8
baz=114
ELK **Elko** 50.53 319 eP P 17 38 50.4 +0.4
comp=Z,7.3nm,0.9s
CWC **Cottonwood Cre** 50.53 312 P P 17 38 51.1 +1.1
baz=114
ARVC **Arvin** 50.57 310 P P 17 38 51.5 +1.5
baz=113
SCZ2 **Santa Cruz Isl** 50.76 309 P P 17 38 52.9 +1.4
baz=111
TIN **Tinemaha, Big** 50.90 313 P P 17 38 54.3 +1.7
baz=115
SBC **Santa Barbara** 50.98 309 P P 17 38 54.2 +1.1
baz=112
VES **Vestal, Richgr** 51.04 311 P P 17 38 54.8 +1.3
baz=113,SNR=7.6
BOZ **Bozeman (W)** 51.06 326 P P 17 38 54.6 +0.8
baz=127,SNR=22
BOZ **Bozeman (W)** 51.06 326 eP P 17 38 54.6 +0.8
comp=Z,16nm,0.8s
PKM **Mcpherson Peak** 51.22 310 P P 17 38 56.4 +1.2
baz=112
MCMT **McKenzie Canyo** 51.27 324 eP P 17 38 56.7 +1.3
RCTC **Rector, Farmer** 51.34 312 P P 17 38 56.6 +0.8
baz=113
NV11 **Mina Array Sit** 51.44 315 eP P 17 38 57.6 +0.9
comp=Z,18nm,1.3s
HLID **Hailey** 51.49 322 P P 17 38 57.9 +0.9
baz=123,SNR=25
HLID **Hailey** 51.49 322 eP P 17 38 57.9 +0.9
comp=Z,14nm,0.8s
SMMC **Simmler** 51.52 310 P P 17 38 58.5 +1.3
baz=112
NV01 **Mina Array Sit** 51.54 315 eP P 17 38 58.3 +0.8
NVAR **Mina Array Bea** 51.54 315 P P 17 38 58.6 +1.1
comp=Z,7.9nm,0.7s,baz=124,slow=6.8,SNR=46
NVAR PcP PcP 17 40 10.4 +0.9
comp=Z,3.7nm,0.6s,baz=137,slow=4.6,SNR=7.3
EGMT **Eagleton** 51.55 329 P P 17 38 58.1 +0.9
baz=131,SNR=13
EGMT **Eagleton** 51.55 329 eP P 17 38 58.2 +0.9
comp=Z,52nm,1.4s
LRM **Limekiln Ridge** 51.62 326 eP P 17 38 58.7 +0.6
BMN **Battle Mountai** 51.70 317 eP P 17 38 59.2 +0.6
comp=Z,16nm,0.9s
HRY **Holter Researc** 51.82 327 eP P 17 39 00.4 +1.1
CMB **Columbia Colle** 52.87 313 eP P 17 39 07.7 +0.6
comp=Z,8.6nm,1.2s
MSO **Missoula** 53.05 326 P P 17 39 09.0 +0.6
baz=126,SNR=7.4
MSO **Missoula** 53.05 326 eP P 17 39 09.2 +0.8
comp=Z,11nm,0.9s
FFC **Flin Flon** 53.12 339 eP P 17 39 08.5 -0.1
comp=Z,13nm,0.6s
WVOR **Wild Horse Val** 53.58 319 eP P 17 39 13.1 +0.7
comp=Z,32nm,0.9s
AFDM **Forest Hills D** 53.65 314 eP P 17 39 13.3 +0.5
comp=Z,6.3nm,0.8s
YBMT **Yellow Bay** 53.70 327 eP P 17 39 14.4 +1.3
JTMT **Jette** 53.78 327 eP P 17 39 14.7 +1.0
BLMT **Blacktail Moun** 53.98 327 eP P 17 39 16.3 +1.1
BSMT **Bassoo Peak** 54.11 326 eP P 17 39 17.4 +1.2
ORV **Oroville** 54.27 315 eP P 17 39 18.3 +1.1
comp=Z,12nm,0.8s
FCC **Fort Churchill** 54.30 347 eP P 17 39 16.7 -0.3
comp=Z,34nm,1.0s
WALA **Waterton Lakes** 54.36 328 eP P 17 39 17.9 0.0
comp=Z,9.9nm,0.9s
MOD **Modoc Plateau** 54.44 318 eP P 17 39 18.5 -0.2
comp=Z,39nm,1.8s
F10A **Beach Ranch, E** 54.47 323 eP P 17 39 18.8 +0.1
comp=Z,19nm,0.6s
O03D **Paynes Creek** 54.78 315 P P 17 39 21.0 0.0
baz=114
M04C **Macdoel** 55.42 317 P P 17 39 26.2 +0.6
baz=115,SNR=8.2
LHEM **Herd Peak** 55.62 317 eP P 17 39 27.9 +0.7
NEW **Newport** 55.64 326 P P 17 39 27.1 +0.1
comp=Z,6.9nm,0.6s,baz=133,slow=6.8,SNR=14
NEW **Newport** 55.64 326 P P 17 39 27.3 +0.3
baz=123,SNR=8.2
NEW **Newport** 55.64 326 eP P 17 39 27.1 +0.1
comp=Z,9.7nm,0.8s
J05D **Fort Rock, OR** 55.67 319 P P 17 39 28.4 +1.0
baz=116,SNR=12
K04D **Chiloquin, OR** 55.72 318 P P 17 39 28.7 +1.0
baz=116
M02C **Callahan** 55.96 316 P P 17 39 29.0 -0.4
baz=114
YBH **Yreka Blue Hor** 55.99 317 eP P 17 39 28.9 -0.8
comp=Z,8.9nm,0.8s
D08A **Wollman Farm,** 56.03 324 eP P 17 39 30.1 +0.4
comp=Z,12nm,0.8s
C09A **Chrisman Ranch** 56.04 325 eP P 17 39 30.5 +0.6
comp=Z,39nm,0.8s
G06A **Carlson Farm,** 56.18 321 eP P 17 39 32.5 +1.6
comp=Z,22nm,1.0s
I05D **Terrebonne, OR** 56.21 320 P P 17 39 32.5 +1.3
baz=117
CROR **Criterion Ridg** 56.28 321 P P 17 39 33.4 +1.8
KHMM **Horse Mountain** 56.36 315 eP P 17 39 32.9 +0.5
comp=Z,26nm,0.8s
G05D **Wamic, OR** 56.61 321 P P 17 39 36.0 +2.1
baz=118
SAW **Saint Andrews** 56.64 324 P P 17 39 34.8 +0.7
I04A **Tendick Farm,** 56.66 319 P P 17 39 34.9 +0.6
baz=116
L02D **Cave Junction,** 56.78 317 P P 17 39 35.5 +0.4
baz=114
H04A **Detroit Lake** 56.91 320 eP P 17 39 36.7 +0.7
comp=Z,34nm,0.8s
B08A **Colville Reser** 56.94 325 eP P 17 39 36.3 +0.1
comp=Z,20nm,0.8s
LTY **Liberty** 57.17 323 eP P 17 39 38.6 +0.8
comp=Z,22nm,0.8s
I03D **Drain, OR** 57.23 318 P P 17 39 38.9 +0.6
baz=115
D05A **Enumclaw** 57.92 323 eP P 17 39 43.8 +0.8
comp=Z,28nm,0.9s
JCW **Jim Creek** 58.37 324 eP P 17 39 45.8 -0.3
B05A **Bryant** 58.50 324 P P 17 39 47.0 0.0
baz=118
SFJD **Kangerlussuaq** 62.03 10 P P 17 40 10.1 -0.5
comp=Z,6.2nm,0.7s,baz=273,slow=5.4,SNR=4.3
YKA **Yellowknife Ar** 63.30 340 P P 17 40 19.4 +0.3
comp=Z,32nm,0.6s,baz=132,slow=6.8,SNR=736
YKB5 **Yellowknife Ar** 63.30 340 eP P 17 40 19.1 -0.1
YKW3 **Yellowknife Ar** 63.35 340 eP P 17 40 19.5 +0.1
comp=Z,38nm,0.7s
DLBC **Dease Lake** 67.37 331 P P 17 40 46.8 +1.3
comp=Z,9.5nm,0.6s,baz=120,slow=6.5
DLBC **Dease Lake** 67.37 331 eP P 17 40 46.7 +1.2
comp=Z,12nm,0.6s
TIC **Toumodi** 67.51 86 eP P 17 40 46.4 -0.8
LIC **Lamto** 67.54 86 eP P 17 40 46.1 -1.2
comp=Z,64nm,1.3s
DBIC **Dimbokro** 67.67 86 P P 17 40 47.2 -0.9
comp=Z,14nm,0.7s,baz=262,slow=6.2,SNR=28
DBIC **Dimbokro** 67.67 86 eP P 17 40 46.9 -1.2
comp=Z,15nm,0.7s
KIC **Kosan Boka** 67.81 86 eP P 17 40 48.0 -1.0
comp=Z,48nm,0.7s
SUMG **Summit** 68.99 11 *i* P P 17 40 56.4 +0.7
comp=Z,50nm,0.7s
SUMG **Summit** 68.99 11 eP P 17 40 56.1 +0.4
comp=Z,54nm,0.7s
RES **Resolute Bay** 68.99 354 P P 17 40 54.9 -0.3
comp=Z,3.5nm,0.8s,baz=183,slow=9.6,SNR=18
RES **Resolute Bay** 68.99 354 eP P 17 40 55.0 -0.2
comp=Z,5.4nm,0.9s
INK **Inuvik** 73.06 340 P P 17 41 20.4 +0.5
comp=Z,13nm,0.6s,baz=102,slow=5.6,SNR=87
INK **Inuvik** 73.06 340 eP P 17 41 20.2 +0.4
comp=Z,15nm,0.7s
TOA1 **Torodi Ar. Sit** 73.67 78 eP P 17 41 22.9 -1.5
comp=Z,28nm,1.8s
TOA0 **Torodi Ar. Sit** 73.67 78 eP P 17 41 22.4 -2.0
TORD **Torodi Ar. Bea** 73.67 78 P P 17 41 22.9 -1.5
comp=Z,1.2nm,0.5s,baz=280,slow=5.8,SNR=17
DAWY **Dawson** 73.68 335 eP P 17 41 24.1 +0.5
comp=Z,6.8nm,0.9s
BALM **Baldy** 74.11 332 eP P 17 41 27.5 +1.3
comp=Z,12nm,0.8s
EGAK **Eagle** 74.63 336 eP P 17 41 29.8 +0.7
comp=Z,34nm,1.4s
RAGM **Ragged Mountai** 75.07 331 eP P 17 41 33.2 +1.5
comp=Z,53nm,1.3s
BMRM **Bremner River** 75.16 331 eP P 17 41 33.4 +1.2
comp=Z,55nm,1.3s
MENT **Mentasta** 75.22 333 eP P 17 41 33.6 +1.1
comp=Z,8.7nm,0.6s
DOT **Dot Lake** 75.55 334 eP P 17 41 35.4 +1.0
comp=Z,75nm,0.7s
DAG **Danmarks Havn** 75.66 11 *i* P P 17 41 34.2 -0.5
comp=Z,14nm,0.7s
DIV **Divide** 75.75 331 eP P 17 41 36.3 +0.7
comp=Z,12nm,1.0s
KLU **Klutina** 75.90 332 eP P 17 41 37.1 +0.6
comp=Z,12nm,1.0s
PAX **Paxson** 76.01 333 eP P 17 41 37.7 +0.6
comp=Z,13nm,0.9s
SCM **Sheep Creek Mo** 76.62 332 eP P 17 41 41.2 +0.6
comp=Z,36nm,0.9s
FYU **Fort Yukon** 76.73 337 eP P 17 41 41.9 +0.9
comp=Z,28nm,1.4s
DHY **Denali Highway** 76.88 333 eP P 17 41 42.7 +0.6
comp=Z,9.0nm,0.9s
HDA **Harding Lake** 76.95 335 eP P 17 41 42.8 +0.6
comp=Z,18nm,0.7s
IL1 **Eielson Array** 77.00 335 eP P 17 41 42.8 +0.3

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
ILAR	Eielson Array	77.00	335	P	P	17 41 42.8	+0.2
	comp=Z,5.3nm,0.7s,baz=110,slow=4.5,SNR=62						
ILAR				PP	PP	17 44 35.4	-2.5
	comp=Z,1.0nm,0.7s,baz=101,slow=6.7,SNR=6.8						
ILB	Eielson Array	77.00	335	eP	P	17 41 42.6	0.0
SML	Sawmill	77.09	332	eP	P	17 41 43.7	+0.6
	comp=Z,23nm,1.0s						
CCB	Clear Creek Bu	77.36	335	eP	P	17 41 44.7	+0.2
	comp=Z,4.6nm,0.7s						
PMR	Palmer	77.43	332	eP	P	17 41 45.0	+0.2
	comp=Z,13nm,0.8s						
WRH	Wood River Hil	77.45	335	eP	P	17 41 45.2	+0.2
	comp=Z,17nm,1.6s						
RND	Reindeer	77.60	333	eP	P	17 41 47.0	+1.0
	comp=Z,39nm,0.7s						
MDM	Murphy Dome	77.60	335	eP	P	17 41 46.7	+0.8
	comp=Z,27nm,1.3s						
MCK	McKinley	77.69	334	eP	P	17 41 46.9	+0.5
	comp=Z,26nm,1.4s						
TRF	Thorofare Moun	78.24	333	eP	P	17 41 50.3	+0.7
	comp=Z,114nm,2.0s						
KTH	Kantishna Hill	78.54	333	eP	P	17 41 51.6	+0.4
	comp=Z,16nm,1.0s						
BPAW	Bear Paw Mtn.	78.64	334	eP	P	17 41 52.0	+0.4
	comp=Z,14nm,0.8s						
MLY	Manley	78.67	335	eP	P	17 41 52.0	+0.2
	comp=Z,9.7nm,0.8s						
SPU	Mount Spurr	78.77	331	eP	P	17 41 52.6	+0.2
COLD	Coldfoot	78.79	337	eP	P	17 41 53.3	+1.0
	comp=Z,9.1nm,0.8s						
PPLA	Purkeypile	79.02	333	eP	P	17 41 54.2	+0.3
	comp=Z,30nm,0.6s						
CAST	Castle Rocks	79.04	333	eP	P	17 41 53.8	0.0
	comp=Z,19nm,0.8s						
DAVOX	Davos/Dischmat	80.24	44	P	P	17 42 01.1	+0.3
	comp=Z,2.9nm,0.7s,baz=283,slow=3.7,SNR=6.9						
SVW2	Sparrevohn	80.46	331	eP	P	17 42 01.0	-0.5
	comp=Z,18nm,0.7s						
TTA	Tatalina	80.77	333	eP	P	17 42 03.2	0.0
	comp=Z,6.6nm,0.8s						
NB200	NORSAR Array S	81.31	29	eP	P	17 42 06.7	+0.7
NOA	NORSAR Array B	81.31	29	P	P	17 42 06.7	+0.7
	comp=Z,3.5nm,0.8s,baz=267,slow=5.4,SNR=7.6						
CLL	Collm	82.27	39	eP	P	17 42 11.0	-0.2
GERES	GERESS Array B	82.79	42	P	P	17 42 13.7	-0.4
	comp=Z,1.6nm,0.6s,baz=263,slow=3.2,SNR=19						
GEA0	GERESS Array S	82.79	42	eP	P	17 42 13.4	-0.7
ARCES	ARCESS Array B	86.66	20	P	P	17 42 33.0	0.0
	comp=Z,3.2nm,0.6s,baz=258,slow=3.4,SNR=13						
GAMB	Gambell	87.75	334	eP	P	17 42 39.4	+1.2
	comp=Z,14nm,0.8s						
FIA0	FINESS Array S	88.42	28	eP	P	17 42 39.5	-1.9
FINES	FINESS Array B	88.42	28	P	P	17 42 39.5	-1.9
	comp=Z,2.1nm,0.9s,baz=336,slow=4.2,SNR=5.7						
ZAA1	Zalesovo Array	116.66	14	ePKPdf	PKPdf	17 48 32.5	-0.3
ZAA0	Zalesovo Array	116.67	14	ePKPdf	PKPdf	17 48 32.2	-0.6
ZALV	Zalesovo Beam	116.67	14	PKP	PKPdf	17 48 32.5	-0.3
	comp=Z,3.7nm,0.5s,baz=269,slow=2.2,SNR=21						
ZALV				SKP		17 51 54.3	
	comp=Z,0.8nm,0.6s,baz=270,slow=1.3,SNR=5.7						
KURK	Kurchatov	117.70	20	ePKPdf	PKPdf	17 48 34.3	-0.6
KURK				ePKPdf	PKiKP	17 48 35.1	+0.2
KURBB	Kurchatov Arra	117.75	20	PKP	PKPdf	17 48 35.1	+0.1
	comp=Z,2.2nm,0.6s,baz=320,slow=2.2,SNR=22						
MK31	Makanchi Array	122.31	20	ePKPdf	PKPdf	17 48 43.3	-0.7
MK32	Makanchi Array	122.31	20	ePKPdf	PKPdf	17 48 43.5	-0.5
MKAR	Makanchi Array	122.31	20	PKP	PKPdf	17 48 43.5	-0.5
	comp=Z,2.2nm,0.4s,baz=296,slow=2.5,SNR=52						
MKAR				SKP		17 52 04.8	
	comp=Z,0.7nm,0.9s,baz=318,slow=1.6,SNR=3.6						
MK01	Makanchi Array	122.33	20	ePKPdf	PKPdf	17 48 43.2	-0.8
ULN	Ulaanbaatar	125.56	360	ePKPdf	PKPdf	17 48 50.2	-0.1
SONA1	Songino Array	125.58	0	ePKPdf	PKPdf	17 48 50.3	-0.1
SONA0	Songino Array	125.59	0	ePKPdf	PKPdf	17 48 50.9	+0.5
SONM	Songino Array	125.59	0	PKP	PKPdf	17 48 50.9	+0.5
	comp=Z,2.0nm,0.7s,baz=334,slow=0.6,SNR=12						
SONM				SKP		17 52 11.7	
	comp=Z,0.9nm,1.0s,baz=341,slow=3.1,SNR=4.5						
KSH	Kashi	125.73	29	ePKP	PKPdf	17 48 51.3	+0.4
KSH				esPKP		17 49 50.6	
KSH				ePP	PP	17 50 53.0	+9.0
KSH				PKS	PKSdf	17 52 25.8	-1.8
KSH				SKKS		17 57 26.5	
KSH				AMB	AMB		
	comp=Z,120nm,5.4s						
KSH				LR	LR		
	comp=Z,89nm,4.6s						
KSH				LR	LR		
	comp=Z,140nm,4.9s						
KSH				LR	LR		
	comp=Z,120nm,4.7s						
WMQ	Urumqi	126.68	17	ePKP	PKPdf	17 48 51.5	-1.0
WMQ				sPKP		17 49 50.4	
WMQ				PP	PP	17 50 54.5	+4.7
MJAR	Matsushiro Arr	127.86	328	PKP	PKPdf	17 48 55.3	+0.4
	comp=Z,1.1nm,0.7s,baz=49,slow=2.1,SNR=3.2						
KSRS	Korea Array	131.80	338	PKP	PKPdf	17 49 02.9	+0.6
	comp=Z,1.1nm,0.6s,baz=20,slow=3.3,SNR=3.6						
KSAR	Wonju Array Be	131.83	338	PKP	PKPdf	17 49 02.9	+0.5
HHC	Hu-ho-hao-te	132.39	355	ePKP	PKPdf	17 49 00.1	-3.4
HHC				AMB	AMB		
	comp=Z,78nm,5.6s						
GTA	Gaotai	133.54	8	ePKP	PKPdf	17 49 06.3	+0.6
GTA				sPKP		17 50 05.6	
LZH	Lanzhou	137.23	4	ePKP	PKPdf	17 49 09.8	-3.0
LZH				sPKP		17 50 11.0	
STKA	Stephens Creek	139.19	228	PKP	PKPdf	17 49 16.6	+0.4
	comp=Z,2.1nm,0.6s,baz=96,slow=5.6,SNR=6.1						
LSA	Lhasa	140.65	22	ePKPdf	PKPdf	17 49 20.4	+0.8
CD2	Chengdu	142.37	4	PKP	PKPdf	17 49 19.6	-2.5
ENH	Enshi	143.05	356	ePKPpre	PKPpre	17 49 20.0	
SHL	Shillong	144.64	24	eP	PKPdf	17 49 26.0	-0.4
YOJ	Yonaguni jima	145.20	334	ePKPdf	PKPbc	17 49 26.3	-0.7
SSLB	Suanglung	146.66	336	ePKPdf	PKPbc	17 49 31.0	-0.4
GYA	Guiyang	146.93	0	ePKPbc	PKPdf	17 49 28.0	-2.2
GYA				PKPab	PKiKP	17 49 35.2	+0.5
GYA				pPKP	pPKPdf	17 50 10.8	-0.4
GYA				sPKP		17 50 27.6	
GYA				PP	PP	17 52 59.5	+3.5
GYA				AMB	AMB		
	comp=Z,120nm,7.9s						
TPUB	Ta-pu	147.22	336	ePKPbc	PKPbc	17 49 32.9	-0.1
AS01	Alice Springs	149.12	234	ePKPdf	PKPdf	17 49 33.3	-0.4
AS01				ePKPbc	PKPbc	17 49 37.2	-0.8
AS31	Alice Springs	149.16	234	ePKPdf	PKPdf	17 49 33.5	-0.3
AS31				ePKPbc	PKPbc	17 49 37.4	-0.7
ASAR	Alice Springs	149.16	234	PKP	PKPdf	17 49 33.8	0.0
	comp=Z,12nm,0.5s,baz=115,slow=3.8,SNR=67						
ASAR				PKPbc	PKPbc	17 49 37.6	-0.5
	comp=Z,12nm,0.5s,baz=117,slow=3.4,SNR=176						
ASAR				pPKPbc	pPKPbc	17 50 17.3	-1.5
	comp=Z,2.7nm,0.8s,baz=139,slow=3.1,SNR=2.3						
WB2	Warramunga Arr	150.38	241	ePKPbc	PKPbc	17 49 40.5	-0.6
WRAB	Tennant Creek	150.38	241	ePKPbc	PKPbc	17 49 40.0	-1.1
WR1	Warramunga Arr	150.39	241	ePKPbc	PKPbc	17 49 40.5	-0.7
WRA	Warramunga Arr	150.39	241	PKPbc	PKPbc	17 49 40.5	-0.7
	comp=Z,12nm,0.5s,baz=109,slow=2.5,SNR=148						
WRA				pPKPbc	pPKPbc	17 50 21.3	-0.6
	comp=Z,4.0nm,0.7s,baz=122,slow=2.6,SNR=2.6						
CHTO	Chiang Mai	153.35	17	ePKPdf	PKPdf	17 49 40.4	+0.2
CHTO				ePKPbc	PKPbc	17 49 47.5	-0.3
CM31	Chiang Mai Arr	153.68	17	ePKPdf	PKPdf	17 49 40.8	0.0
CM31				ePKPbc	PKPbc	17 49 48.4	-0.2
CMAR	Chiang Mai Arr	153.68	17	PKP	PKPdf	17 49 41.7	+1.0
	comp=Z,2.2nm,0.7s,baz=300,slow=1.9,SNR=24						
CMAR				PKPbc	PKiKP	17 49 48.8	+0.1
	comp=Z,7.6nm,0.6s,baz=321,slow=3.3,SNR=42						
CMAR				PKPab	PKPab	17 49 59.4	-2.3
	comp=Z,1.5nm,0.6s,baz=330,slow=5.3,SNR=4.9						
CM01	Chiang Mai Arr	153.72	17	ePKPdf	PKPdf	17 49 41.4	+0.6
CM01				ePKPbc	PKiKP	17 49 49.1	+0.4
CISI	Cisompet, Garu	178.86	229	ePKPdf	PKPdf	17 50 04.9	+4.6

IDC 02 17:30:57.6±2.2, 40°.31S×78°.82E, h0km, mb3.6/3, mb1 3.7/3, mb1mx3.5/40, mbtmp3.6/3, MS3.9/12, Ms1 3.9/12, ms1mx3.5/34, Error ellipse: s-maj=112.7km s-min=38.2km az=9.0, Mid-Indian Ridge

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
MAW	Mawson	28.73	193	LR	LR	17 45 52.4	
	comp=Z,198nm,19.9s,baz=59,slow=31						
H08S2	Diego Garcia H	33.01	348	T	T	18 11 48.7	
	baz=172,slow=76,SNR=3.5						
H08S1	Diego Carcia H	33.01	348	T	T	18 11 52.6	
	baz=172,slow=76,SNR=4.2						
H08S3	Diego Garcia H	33.03	348	T	T	18 11 54.0	
	baz=172,slow=76,SNR=4.2						
BOSA	Boshof	45.06	268	LR	LR	17 54 14.0	
	comp=Z,196nm,18.9s,baz=166,slow=31						
ASAR	Alice Springs	48.81	87	P	P	17 39 44.7	-0.1
	0.7nm,0.8s,baz=227,slow=6.2,SNR=4.3						
ASAR				LR	LR	17 58 21.5	
	comp=Z,300nm,18.4s,baz=216,slow=34						
VNDA	Vanda	49.53	164	LR	LR	17 58 05.2	
	comp=Z,200nm,18.5s,baz=298,slow=33						
STKA	Stephens Creek	50.49	101	LR	LR	17 57 06.2	
	comp=Z,107nm,21.7s,baz=208,slow=31						
RPZ	Rata Peaks	65.03	127	LR	LR	18 04 22.3	
	comp=Z,143nm,21.3s,baz=265,slow=31						
URZ	Urewera	71.91	125	LR	LR	18 08 47.2	
	comp=Z,103nm,18.1s,baz=231,slow=32						
GEYT	Alibeck	80.14	344	LR	LR	18 14 21.1	
	comp=Z,29nm,19.9s,baz=275,slow=32						
MKAR	Makanchi Array	86.77	2	P	P	17 43 43.2	0.0
	0.3nm,0.8s,baz=163,slow=4.9,SNR=4.9						
MKAR				LR	LR	18 19 46.5	
	comp=Z,37nm,20.6s,baz=162,slow=34						
TORD	Torodi Ar. Bea	88.83	288	P	P	17 43 53.8	0.0
	0.4nm,0.7s,baz=142,slow=4.7,SNR=2.3						
TORD				LR	LR	18 21 32.4	
	comp=Z,80nm,19.3s,baz=95,slow=34						
DBIC	Dimbokro	89.47	279	LR	LR	18 18 41.7	
	comp=Z,73nm,19.1s,baz=129,slow=32						
ZALV	Zalesovo Beam	94.02	4	LR	LR	18 23 37.8	
	comp=Z,35nm,21.5s,baz=72,slow=34						

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*NIED **02** 17:35:00, 33°.70N×141°.10E, h47km, Mw4.1 Best double couple: Mo1.62000×10^15 NP1:φs334.00000°, δ40.00000°, λ65.00000°. NP2:φs185.00000°, δ54.00000°, λ109.00000°.*
*JMA **02** 17:35:52.6±0.1, 33°.68N×141°.05E, h44km, M3.8*
*IDC **02** 17:35:53.3±2.3, 33°.56N×141°.04E, h51km±19km, mb3.7/11, mb1 3.8/15, mb1mx3.6/51, mbtmp3.9/15, ML3.6/4, MS3.1/6, Ms1 3.1/6, ms1mx2.7/54, Error ellipse: s-maj=19.7km s-min=13.8km az=77.0*
ISC 02 17:35:50.4±1.9, 33°.55N±0°.05×141°.17E±0°.07, h29km±13km, n37, σ1.18/38, mb4.0/12, MS3.3/3, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
BSO1	Boso 1	1.11	352	P	Pn	17 36 10.1	+0.6
JHJ2	Mitsune	1.22	249	P	Pb	17 36 13.1	+0.3
JHJ2				S	Sb	17 36 27.0	-1.1
JHJ	Hachijo jima 2	1.24	250	P	Pb	17 36 13.2	0.0
	478nm,0.3s,baz=54,slow=23,SNR=332						
JHJ				S	Sn	17 36 27.0	-0.5
	304nm,0.3s,baz=72,slow=19,SNR=16						
BSO2	Boso 2	1.25	344	S	Sn	17 36 25.1	-2.1
JHCJ	Hachijojimakas	1.25	248	P	Pb	17 36 13.4	+0.1
JHCJ				eS	Sb	17 36 28.5	-0.5
BSO3	Boso 3	1.36	336	P	Pn	17 36 13.7	+0.5
BSO4	Boso 4	1.59	334	P	Pn	17 36 17.4	+0.9
JKO	Kozu shima	1.81	291	P	Pn	17 36 20.2	+0.6
JIM2	Oshima 3	1.85	309	P	Pn	17 36 20.2	0.0
KTJJ	Kamata 2	2.22	309	P	Pn	17 36 25.4	+0.2
KTJJ				S	Sn	17 36 50.0	-1.7
JIZS	Izushimoda	2.23	302	P	Pn	17 36 26.1	+0.7
JIZS				eS	Sn	17 36 51.7	-0.3
MJAR	Matsushiro Arr	3.85	322	P	Pn	17 36 49.2	+1.6
	10nm,0.3s,baz=156,slow=13,SNR=130						
MJAR				LR	LR	17 38 28.4	
	comp=Z,138nm,21.8s,baz=135,slow=41						
MAT	Matsushiro	3.85	322	P	Pn	17 36 49.5	+1.8
MAT				S	Sn	17 37 31.2	-0.8
JCJ	Chichijima	6.50	172	P	Pn	17 37 25.1	+1.1
	6.9nm,0.3s,baz=77,slow=20,SNR=9.1						
JCJ				S	Sn	17 38 33.8	-3.4
	3.9nm,0.3s,baz=294,slow=19,SNR=2.6						
JNU	Nakatsue	8.63	270	P	Pn	17 37 54.6	+1.3
	0.3nm,0.3s,baz=10.0,slow=5.5,SNR=5.7						
KSRS	Korea Array	11.48	294	P	Pn	17 38 34.4	+2.1
	0.1nm,0.3s,baz=114,slow=14,SNR=5.4						
KSRS				LR	LR	17 42 56.2	
	comp=Z,69nm,18.8s,baz=118,slow=37						
KLR	Kul'dur	17.16	339	P	Pn	17 39 45.6	-2.3
	0.1nm,0.3s,baz=90,slow=19,SNR=2.9						
KLR				LR	LR	17 45 58.4	
	comp=Z,32nm,20.9s,baz=154,slow=35						
H11N2	WAKE ISLAND Hy	26.71	115	T	T	18 09 45.8	
	baz=314,slow=75,SNR=9.1						
H11N1	WAKE ISLAND Hy	26.71	115	T	T	18 09 46.4	
	baz=314,slow=75,SNR=11						
H11N3	WAKE ISLAND Hy	26.73	115	T	T	18 09 47.5	
	baz=314,slow=75,SNR=11						
H11S3	WAKE ISLAND Hy	27.29	117	T	T	18 10 39.7	
	baz=316,slow=76,SNR=4.3						
H11S1	WAKE ISLAND Hy	27.30	117	T	T	18 10 39.6	
	baz=316,slow=76,SNR=5.4						
H11S2	WAKE ISLAND Hy	27.31	117	T	T	18 10 41.3	
	baz=316,slow=76,SNR=5.1						
SONM	Songino Array	29.70	309	P	P	17 41 54.5	+0.7
	1.0nm,0.8s,baz=116,slow=8.2,SNR=8.2						
SONM				LR	LR	17 53 47.7	
	comp=Z,30nm,20.8s,baz=84,slow=36						
CMAR	Chiang Mai Arr	40.53	259	P	P	17 43 26.4	-0.8
	0.2nm,0.3s,baz=55,slow=7.8,SNR=3.4						
ZALV	Zalesovo Beam	44.17	315	P	P	17 43 56.1	-0.3
	0.6nm,0.4s,baz=107,slow=5.0,SNR=3.9						
ZALV				PcP	PP	17 45 38.9	-0.6
	0.7nm,0.5s,baz=86,slow=1.9,SNR=3.3						
MKAR	Makanchi Array	45.88	305	P	P	17 44 09.8	-0.2
	1.3nm,0.7s,baz=91,slow=9.9,SNR=17						
KURBB	Kurchatov Arra	48.05	310	P	P	17 44 26.4	-0.6
	2.7nm,0.2s,baz=86,slow=7.9,SNR=7.1						
WRA	Warramunga Arr	53.59	188	P	P	17 45 09.5	+0.6
	7.0nm,0.5s,baz=6.9,slow=7.8,SNR=127						
ASAR	Alice Springs	57.32	188	P	P	17 45 36.5	+0.8
	1.8nm,0.6s,baz=17,slow=12,SNR=44						
INK	Inuvik	57.58	26	LR	LR	18 11 56.9	
	comp=Z,26nm,20.2s,baz=190,slow=38						
STKA	Stephens Creek	65.08	180	P	P	17 46 28.5	+0.4
	2.0nm,0.8s,baz=345,slow=4.4,SNR=3.8						
YKA	Yellowknife Ar	66.92	29	P	P	17 46 39.6	-0.1
	0.1nm,0.6s,baz=294,slow=4.6,SNR=2.4						
FINES	FINESS Array B	71.80	333	P	P	17 47 10.2	+0.3
	1.6nm,0.9s,baz=104,slow=4.4,SNR=2.4						
AKASG	Malin Array Be	76.93	323	P	P	17 47 39.6	-0.3
	0.4nm,0.6s,baz=47,slow=4.9,SNR=4.2						
AKASG				LR	LR	18 24 08.0	
	comp=Z,30nm,19.4s,baz=45,slow=38						
TXAR	Lajitas Array	92.40	52	P	P	17 48 58.9	+0.2
	0.8nm,0.9s,baz=310,slow=2.9,SNR=5.1						
LPAZ	La Paz	148.51	64	PKPbc	PKPbc	17 55 36.8	+1.1
	1.1nm,0.8s,baz=33,slow=2.6,SNR=4.5						

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*CSEM **02** 17:38:34.7±0.2, 39°.13N×29°.11E, h2km, MD2.7, Error ellipse: s-maj=3.5km s-min=3.2km az=174.0*
*DDA **02** 17:38:34.5, 39°.10N×29°.09E, h7km, Md2.9*
*ISK **02** 17:38:37.6, 39°.36N×29°.10E, h8km, MD2.7*
ISC 02 17:38:34.5±1.0, 39°.14N±0°.02×29°.09E±0°.02, h8km±9km, n37, σ0.57/51, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
GEDZ	Gediz	0.27	110	ePG	Pn	17 38 46.4	+1.6
DEMI	Demirci	0.31	252	i P	Pg	17 38 40.4	-0.2
DEMI				i S	Sg	17 38 44.8	+0.1
DEMI	Demirci	0.31	252	P	Pg	17 38 40.4	-0.2
DEMI				S	Sg	17 38 44.8	+0.1
GDZ	Gediz	0.31	99	i P	Pg	17 38 40.8	+0.1
GDZ				i S	Sg	17 38 45.1	+0.3
GDZ	Gediz	0.31	99	P	Pg	17 38 40.8	+0.1
GDZ				S	Sg	17 38 45.1	+0.3
TVSB	Tavsanli	0.42	43	ePG	Pg	17 38 43.2	+0.3
TVSB				eSG	Sg	17 38 48.4	-0.1
TVSB	Tavsanli	0.42	43	ePg	Pg	17 38 43.2	+0.3
TVSB				eSg	Sg	17 38 48.4	-0.1
DST	Dursunbey	0.59	322	ePG	Pg	17 38 46.0	0.0
DST				eSG	Sg	17 38 53.4	-0.4
DST	Dursunbey	0.59	322	ePg	Pg	17 38 46.0	0.0
DST				eSg	Sg	17 38 53.4	-0.4
DURS	Dursunbey	0.67	314	i P	Pb	17 38 48.2	-0.3
DURS				i S	Sg	17 38 56.5	+0.4
DURS	Dursunbey	0.67	314	P	Pb	17 38 48.2	-0.3
DURS				S	Sg	17 38 56.5	+0.4
KHAL	Karahalli	0.83	158	i P	Pg	17 38 50.2	-0.3
KHAL				i S	Sg	17 39 00.7	-0.5
KHAL	Karahalli	0.83	158	P	Pg	17 38 50.2	-0.3
KHAL				S	Sg	17 39 00.7	-0.5
ULDT	Uludag	1.00	2	i P	Pb	17 38 54.8	+0.5
ULDT	Uludag	1.00	2	P	Pb	17 38 54.8	+0.5
AKHS	Akhisar	1.03	256	i P	Pb	17 38 54.7	+0.1
AKHS	Akhisar	1.03	256	P	Pb	17 38 54.7	+0.1
BALB	Balikesir	1.06	299	ePG	Pn	17 38 56.9	+1.1
BALB	Balikesir	1.06	299	ePg	Pn	17 38 56.9	+1.1
IGD	Bursa	1.13	4	i P	Pg	17 38 55.7	-0.6
CAVI	Cavuskoy	1.21	28	ePG	Pg	17 38 57.5	-0.3
CAVI	Cavuskoy	1.21	28	ePg	Pg	17 38 57.5	-0.3
IZI	Iznik	1.23	14	ePG	Pg	17 38 57.8	-0.4
IZI	Iznik	1.23	14	ePg	Pg	17 38 57.8	-0.4
MDNY	Mudanya-Bursa	1.24	353	ePG	Pb	17 38 58.3	+0.1
MDNY	Mudanya-Bursa	1.24	353	ePg	Pb	17 38 58.3	+0.1
BORA	Eskisehir	1.29	54	i P	Pg	17 38 59.5	+0.2
BORA				i S	Sn	17 39 16.8	+0.3
BORA	Eskisehir	1.29	54	P	Pg	17 38 59.5	+0.2
BORA				S	Sn	17 39 16.8	+0.3
ADVT	Abdulvahap	1.39	21	ePN	Pn	17 39 00.4	+0.2
ADVT	Abdulvahap	1.39	21	ePn	Pn	17 39 00.4	+0.2
GONE	Gonen-Balikesi	1.42	310	ePN	Pg	17 39 02.8	+1.1
GONE	Gonen-Balikesi	1.42	310	ePn	Pg	17 39 02.8	+1.1
ARMT	Armutlu	1.44	353	ePN	Pn	17 39 01.2	+0.3
ARMT	Armutlu	1.44	353	ePn	Pn	17 39 01.2	+0.3
EDC	Edincik	1.53	322	ePN	Pb	17 39 03.6	+0.4
EDC	Edincik	1.53	322	ePn	Pb	17 39 03.6	+0.4
STHS	Stebnicka Huta	11.71	334	ePN	Pn	17 41 20.0	-1.8

JMA 02 17:40:15.5±0.2, 37°.50N×142°.65E, h0km, M3.9, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
JIO	Ouri	1.40	313	P	Pn	17 40 42.2	-0.1
JIO				eS	Sn	17 41 01.5	0.0
JMM	Marumori	1.52	284	P	Pn	17 40 43.6	-0.3
JMM				eS	Sg	17 41 04.2	-0.1
ONAJ	Iwakimizuishiy	1.53	255	S	Sn	17 41 04.9	+0.2
JOU	Okura	1.79	299	P	Pn	17 40 48.2	+0.5
JOU				S	Sb	17 41 12.5	+0.2
JFT	Otama	1.84	271	P	Pb	17 40 49.4	-0.6
JFT				eS	Sg	17 41 14.2	-0.4
JHO	Hitachi	1.89	243	P	Pb	17 40 50.4	-0.4
JHO				S	Sn	17 41 13.7	+0.2

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*ISCJB **02** 17:40:41.9±0.5, 50°.08N±0°.03×18°.40E±0°.03, h0km, Error ellipse: s-maj=4.6km s-min=2.5km az=17.8*
*IPEC **02** 17:40:43.2±0.2, 50°.06N×18°.48E, h0km, ML1.6/3, Error ellipse: s-maj=2.1km s-min=1.1km az=160.0*
*CSEM **02** 17:40:43.0±0.2, 50°.09N×18°.41E, h1km, ML2.5/8, Error ellipse: s-maj=4.1km s-min=2.4km az=1.0*
*PRU **02** 17:40:44.0, 50°.07N×18°.40E, h0km*
ISC 02 17:40:43.0±0.8, 50°.07N±0°.03×18°.45E±0°.02, h0km, n25, σ1.01/43, Poland

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
OKC	Ostrava-Krasne	0.30	219	ePG	Pg	17 40 49.6	+0.8
OKC				eSG	Sg	17 40 53.9	+1.2
	comp=Z,51nm,0.5s						
OKC	Ostrava-Krasne	0.30	219	Pg	Pg	17 40 49.6	+0.8
OKC				Sg	Sg	17 40 53.9	+1.2
	51nm,0.5s						
MORC	Moravsky Berou	0.65	244	ePg	Pg	17 40 55.8	+0.3
	baz=65						
MORC				eSg	Sg	17 41 04.2	+0.2
	12nm,0.2s,baz=65						
OJC	Ojcow	0.88	80	ePg	Pg	17 41 00.0	0.0
OJC				eSg	Sb	17 41 12.8	-0.8
OJC	Ojcow	0.88	80	ePg	Pg	17 41 00.0	0.0
OJC				eSg	Sb	17 41 12.8	-0.8
LANS	Liptovska Anna	1.14	144	ePG	Pg	17 41 04.8	0.0
LANS				eSG	Sg	17 41 18.8	-0.7
NIE	Niedzica	1.37	118	ePg	Pb	17 41 09.8	+0.3
NIE				eSg	Sn	17 41 29.5	+1.2
NIE	Niedzica	1.37	118	ePg	Pb	17 41 09.8	+0.3
NIE				eSg	Sn	17 41 29.5	+1.2
DPC	Dobruska-Polom	1.39	282	ePG	Pg	17 41 09.3	-0.4
DPC				eSG	Sg	17 41 27.2	-0.5
	comp=Z,12nm,0.4s						
DPC	Dobruska-Polom	1.39	282	Pg	Pg	17 41 09.3	-0.4
DPC				Sg	Sg	17 41 27.2	-0.5
	12nm,0.4s						
VRAC	Vranov	1.42	238	ePg	Pn	17 41 09.7	-0.5
	baz=58						
VRAC				eSg	Sg	17 41 28.3	-0.5
	7.9nm,0.2s,baz=58						
KSP	Ksiaz	1.58	300	ePg	Pn	17 41 12.3	0.0
KSP				eSg	Sg	17 41 34.4	+0.7
KSP	Ksiaz	1.58	300	ePg	Pn	17 41 12.3	0.0
KSP				eSg	Sg	17 41 34.4	+0.7
VYHS	Vyhne	1.60	171	ePN	Pn	17 41 12.2	-0.4
VYHS				eSN	Sn	17 41 33.5	-0.4
VYHS				eLG	Lg	17 41 37.3	
UPC	Upice	1.62	287	ePG	Pg	17 41 14.0	-0.1
UPC				eSG	Sg	17 41 35.4	+0.3
	comp=Z,8.7nm,0.7s						
UPC	Upice	1.62	287	Pg	Pg	17 41 14.0	-0.1
UPC				Sg	Sg	17 41 35.4	+0.3
	8.7nm,0.7s						
KRUC	Moravsky	1.67	234	ePg	Pn	17 41 14.0	+0.4
	baz=53						
KRUC				eSg	Sn	17 41 36.0	+0.3
	7.5nm,0.3s,baz=53						
KECS	Kecovo	2.08	139	e	Pg	17 41 24.3	+1.5
KECS	Kecovo	2.08	139	eSN	Sn	17 41 43.4	-2.3
PRU	Pruhonice	2.52	270	eSG	Sg	17 42 02.8	-1.1
	comp=Z,3.8nm,0.4s						
PRU	Pruhonice	2.52	270	Sg	Sg	17 42 02.8	-1.1
	3.8nm,0.4s						
BRG	Berggiesshubel	2.99	287	SG	Sg	17 42 17.9	-1.1
	3.7nm,0.8s						
KHC	Kasperske Hory	3.30	255	eSG	Sg	17 42 26.7	-2.4
	comp=Z,3.3nm,0.3s						
KHC	Kasperske Hory	3.30	255	Sg	Sg	17 42 26.7	-2.4
	3.3nm,0.3s						
CLL	Collm	3.67	292	ePg	Pg	17 41 55.0	+1.6
CLL				eSg	Sg	17 42 43.0	+2.0

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*IDC **02** 17:41:45.4±1.1, 36°.77N×143°.67E, h0km, mb3.6/5, mb1 3.8/7, mb1mx3.5/44, mbtmp3.7/7, ML3.6/2, Error ellipse: s-maj=34.9km s-min=22.4km az=119.0*
*ISCJB **02** 17:41:48.2±0.9, 36°.73N±0°.09×143°.35E±0°.09, h33km, mb3.7/5, Error ellipse: s-maj=13.8km s-min=9.6km az=148.6*
ISC 02 17:41:51.2±1.2, 36°.7N±0°.1×143°.3E±0°.1, h35km, n14, σ1.34/9, mb3.7/5, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
MJAR	Matsushiro Arr	4.13	269	Pn	Pn	17 42 51.5	-0.3
	1.8nm,0.3s,baz=89,slow=15,SNR=6.0						
MAT	Matsushiro	4.13	269	P	Pn	17 42 52.1	+0.3
MAT				S	Sn	17 43 37.3	-1.6
JHJ	Hachijo jima 2	4.62	220	Pn	Pn	17 42 58.6	+0.1
	13nm,0.3s,baz=90,slow=19,SNR=2.6						
JHJ				Sn	Sn	17 43 50.2	-0.8
	16nm,0.3s,baz=72,slow=19,SNR=3.0						
H11N2	WAKE ISLAND Hy	26.67	123	T	T	18 14 54.7	
	baz=316,slow=75,SNR=32						
H11N1	WAKE ISLAND Hy	26.68	123	T	T	18 14 57.1	
	baz=316,slow=75,SNR=21						
H11N3	WAKE ISLAND Hy	26.69	123	T	T	18 14 56.3	
	baz=316,slow=75,SNR=27						
H11S1	WAKE ISLAND Hy	27.40	125	T	T	18 15 58.6	
	baz=317,slow=76,SNR=13						
H11S3	WAKE ISLAND Hy	27.40	125	T	T	18 15 57.6	
	baz=317,slow=76,SNR=13						
H11S2	WAKE ISLAND Hy	27.42	125	T	T	18 15 56.5	
	baz=317,slow=76,SNR=18						
SONM	Songino Array	29.24	304	P	P	17 47 52.0	+2.1
	0.3nm,0.6s,baz=85,slow=8.6,SNR=2.9						
ILAR	Eielson Array	48.94	32	P	P	17 50 31.9	-1.6
	0.6nm,0.8s,baz=269,slow=5.5,SNR=5.3						
INK	Inuvik	53.97	27	P	P	17 51 07.8	-3.2
	0.4nm,0.4s,baz=292,slow=0.9,SNR=3.4						
WRA	Warramunga Arr	56.99	190	P	P	17 51 33.5	+0.2

Code	Station Name	Δ°	AZ°	Op	ISC	Time	Res
	1.0nm,0.7s,baz=7.8,slow=7.1,SNR=4.0						
ASAR	Alice Springs	60.71	190	P	P	17 51 59.8	+0.6
	0.5nm,0.7s,baz=8.1,slow=6.3,SNR=2.9						

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*NIED **02** 17:51:00, 37°.70N×142°.60E, h32km, Mw3.6 Best double couple: $M_0$2.64000×10^{14} NP1:ϕ_s339.00000°, δ88.00000°, λ178.00000°. NP2:ϕ_s69.00000°, δ88.00000°, λ2.00000°.*
*IDC **02** 17:51:44.8±1.9, 37°.74N×143°.12E, h0km, mb3.7/6, mb1 3.8/8, mb1mx3.4/45, mbtmp3.7/8, ML3.3/2, Error ellipse: s-maj=47.5km s-min=23.5km az=81.0*
*ISCJB **02** 17:51:47.8±0.9, 37°.70N±0°.07×142°.82E±0°.08, h24km, mb3.6/6, Error ellipse: s-maj=9.6km s-min=8.5km az=160.7*
*JMA **02** 17:51:47.5±0.3, 37°.70N×142°.62E, h0km, M3.9*
ISC 02 17:51:49.6±1.2**, 37°.68N**±0°.06×**142°.70E**±0°.08**, h24km, n21, σ1s.31**/21**, mb3.7**/6**, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
JIO	Ouri	1.31	306	P	Pn	17 52 11.5	-1.0
JIO				S	Sn	17 52 29.2	0.0
JMM	Marumori	1.52	277	P	Pn	17 52 14.5	-0.8
JMM				eS	Sn	17 52 33.7	-0.6
ONAJ	Iwakimizuishiy	1.62	250	P	Pn	17 52 16.5	-0.2
ONAJ				S	Sb	17 52 38.2	-0.7
JOU	Okura	1.74	294	P	Pn	17 52 18.5	+0.1
JFT	Otama	1.88	266	P	Pb	17 52 21.9	-1.4
JFT				S	Sb	17 52 45.8	-0.6
JHO	Hitachi	2.01	238	P	Pn	17 52 22.7	+0.7
MJAR	Matsushiro Arr	3.76	254	Pn	Pn	17 52 49.2	+3.0
	2.2nm,0.3s,baz=84,slow=15,SNR=19						
MAT	Matsushiro	3.77	254	P	Pn	17 52 49.3	+3.1
MAT				S	Sn	17 53 30.6	+0.8
JHJ	Hachijo jima 2	5.14	208	Pn	Pn	17 53 05.0	-0.1
	2.7nm,0.3s,baz=79,slow=19,SNR=4.7						
JHJ				Sn	Sn	17 54 01.6	-2.0
	11nm,0.3s,baz=107,slow=19,SNR=3.6						
H11N2	WAKE ISLAND Hy	27.63	124	T	T	18 26 27.9	
	baz=316						
H11N1	WAKE ISLAND Hy	27.64	124	T	T	18 26 31.8	
	baz=316						
H11N3	WAKE ISLAND Hy	27.65	124	T	T	18 26 28.8	
	baz=316						
SONM	Songino Array	28.28	303	P	P	17 57 42.5	+1.3
	0.5nm,0.7s,baz=96,slow=9.2,SNR=4.3						
H11S1	WAKE ISLAND Hy	28.38	126	T	T	18 27 24.2	
	baz=318						
H11S3	WAKE ISLAND Hy	28.38	126	T	T	18 27 23.6	
	baz=318						
H11S2	WAKE ISLAND Hy	28.40	126	T	T	18 27 24.8	
	baz=318						
ZALV	Zalesovo Beam	42.24	312	P	P	17 59 41.1	+0.5
	0.4nm,0.6s,baz=90,slow=8.5,SNR=3.0						
MKAR	Makanchi Array	44.64	302	P	P	18 00 00.6	+0.4
	0.6nm,0.7s,baz=79,slow=6.8,SNR=9.2						
KURBB	Kurchatov Arra	46.41	308	P	P	18 00 14.6	+0.6
	0.5nm,0.3s,baz=82,slow=8.0,SNR=3.6						
WRA	Warramunga Arr	57.85	189	P	P	18 01 39.2	-0.1
	0.9nm,1.1s,baz=6.8,slow=6.9,SNR=3.5						
FINES	FINESS Array B	68.71	333	P	P	18 02 50.6	-0.3
	1.1nm,0.8s,baz=102,slow=2.0,SNR=2.4						

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*IDC **02** 17:55:44.8±1.8, 19°.53S×167°.77E, h0km, mb4.0/7, mb1 4.1/8, mb1mx3.8/36, mbtmp3.9/8, ML3.7/1, MS3.1/4, Ms1 3.1/4, ms1mx2.8/35, Error ellipse: s-maj=56.2km s-min=23.7km az=128.0*
*NEIC **02** 17:55:46.3±0.6, 19°.51S×167°.77E, h10km, mb4.8/5, Error ellipse: s-maj=18.9km s-min=9.2km az=134.0*
*ISCJB **02** 17:55:47.6±0.7, 19°.53S±0°.08×167°.6E±0°.1, h26km, mb4.4/13, MS3.4/2, Error ellipse: s-maj=19.9km s-min=8.6km az=25.7*
ISC 02 17:55:48.7±1.0**, 19°.6S**±0°.1×**167°.8E**±0°.2**, h26km, n20, σ0s.73**/18**, mb4.2**/13**, Vanuatu Islands region**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
DZM	Mont Dzumac	2.77	206	Pn	Pn	17 56 31.9	+0.3
	12nm,0.3s,baz=109,slow=21,SNR=159						
DZM				LR	LR	17 57 02.3	
	comp=Z,119nm,21.1s,baz=54,slow=28						
DZM				Sn	Sn	17 57 03.6	-0.8
	38nm,0.3s,baz=125,slow=22,SNR=13						
HNR	Honiara	12.60	322	LR	LR	18 02 50.4	
	comp=Z,51nm,18.8s,baz=156,slow=34						
AFI	Afiamalu	20.38	77	LR	LR	18 06 46.1	
	comp=Z,136nm,18.6s,baz=175,slow=32						
STKA	Stephens Creek	26.49	237	P	P	18 01 23.9	-0.2
	2.7nm,0.8s,baz=93,slow=4.3,SNR=4.6						
WB2	Warramunga Arr	31.42	264	eP	P	18 02 07.4	-0.6
	41nm,1.8s						
WR1	Warramunga Arr	31.43	264	eP	P	18 02 07.3	-0.8
	63nm,1.9s						
WRA	Warramunga Arr	31.43	264	P	P	18 02 07.3	-0.8
	0.6nm,0.5s,baz=86,slow=8.3,SNR=13						
AS01	Alice Springs	31.65	256	eP	P	18 02 10.5	+0.4
AS31	Alice Springs	31.69	256	eP	P	18 02 11.0	+0.5
	1.6nm,0.5s						
ASAR	Alice Springs	31.70	256	P	P	18 02 10.8	+0.4
	2.9nm,0.5s,baz=83,slow=8.3,SNR=96						
ASAR				LR	LR	18 15 46.7	
	comp=Z,75nm,18.1s,baz=126,slow=38						
WAKE	Wake Island	38.63	358	eP	P	18 03 08.5	-1.5
	873nm,2.0s						
FITZ	Fitzroy Crossi	39.82	265	eP	P	18 03 20.8	+0.6
	56nm,1.7s						
CMAR	Chiang Mai Arr	77.38	295	P	P	18 07 42.9	+1.1
	1.3nm,0.9s,baz=124,slow=4.1,SNR=7.3						
SEY	Seymchan	83.12	353	P	P	18 08 11.9	+0.2
	0.5nm,0.6s,baz=168,slow=4.0,SNR=4.7						
SONA0	Songino Array	86.66	324	eP	P	18 08 30.5	+0.4
	4.8nm,1.7s						
SONM	Songino Array	86.66	324	P	P	18 08 30.5	+0.4
	0.4nm,0.7s,baz=161,slow=2.3,SNR=4.4						
WCHM	Chimney Peak	89.16	51	eP	P	18 08 42.1	-0.5
ILAR	Eielson Array	90.97	18	P	P	18 08 49.9	0.0
	0.3nm,0.8s,baz=234,slow=4.9,SNR=2.7						
BMUT	Black Mountain	96.42	48	eP	P	18 09 16.8	+0.9
GERES	GERESS Array B	144.11	330	PKP	PKPbc	18 15 20.5	+0.3
	0.2nm,0.3s,baz=64,slow=3.1,SNR=4.2						

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*IDC **02** 17:55:58.3±1.4, 38°.18N×143°.85E, h0km, mb3.8/8, mb1 3.9/12, mb1mx3.6/48, mbtmp3.8/12, ML3.1/4, MS2.5/1, Ms1 2.5/1, ms1mx2.0/60, Error ellipse: s-maj=38.6km s-min=18.4km az=72.0*
*ISCJB **02** 17:56:01.5±0.8, 38°.09N±0°.06×143°.7E±0°.1, h33km, mb3.9/12, Error ellipse: s-maj=15.0km s-min=9.1km az=173.8*
*NEIC **02** 17:56:03.5±0.6, 38°.16N×143°.73E, h35km, mb4.0/3, Error ellipse: s-maj=12.4km s-min=7.6km az=91.0*
ISC 02 17:56:03.6±1.2**, 38°.16N**±0°.10×**143°.7E**±0°.2**, h35km, n28, σ0s.75**/30**, mb3.9**/12**, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
ERM	Erimo	3.88	354	ePn	Pn	17 56 58.1	-2.6
MJAR	Matsushiro Arr	4.69	252	Pn	Pn	17 57 12.4	+0.5
	1.1nm,0.3s,baz=55,slow=11,SNR=3.0						
MAJO	Matsushiro	4.69	252	ePn	Pn	17 57 11.7	-0.2
JHJ2	Mitsune	5.96	214	ePn	Pn	17 57 27.4	-1.9
JHJ	Hachijo jima 2	5.97	214	Pn	Pn	17 57 28.4	-1.0
	12nm,0.3s,baz=84,slow=23,SNR=5.8						
JHJ				Sn	Sn	17 58 29.4	-7.2
	6.6nm,0.3s,baz=90,slow=19,SNR=2.3						
USRK	Ussuriysk Ar.	10.71	308	Pn	Pn	17 58 34.7	+0.3
	0.2nm,0.3s,baz=117,slow=13,SNR=4.3						
KSRS	Korea Array	12.53	272	Pn	Pn	17 58 59.2	-0.1
	0.1nm,0.3s,baz=70,slow=16,SNR=2.7						
KSRS				LR	LR	18 03 45.4	
	comp=Z,21nm,21.7s,baz=15,slow=37						
KSAR	Wonju Array Be	12.56	272	Pn	Pn	17 58 59.2	-0.6
ULN	Ulaanbaatar	28.29	302	eP	P	18 01 53.8	0.0
	6.3nm,1.7s						
SONA1	Songino Array	28.72	302	eP	P	18 01 57.8	+0.2
SONA0	Songino Array	28.73	302	eP	P	18 01 58.0	+0.4
	2.0nm,1.1s						
SONM	Songino Array	28.73	302	P	P	18 01 58.0	+0.4
	0.7nm,0.6s,baz=98,slow=9.6,SNR=6.2						
ZAA1	Zalesovo Array	42.53	312	eP	P	18 03 55.2	-0.3
ZAA1				ePcP	PcP	18 05 48.0	+0.5
ZALV	Zalesovo Beam	42.53	312	P	P	18 03 55.2	-0.3
	0.3nm,0.5s,baz=96,slow=10,SNR=2.3						
ZALV				PcP	PcP	18 05 48.0	+0.5
	0.4nm,0.4s,baz=72,slow=4.7,SNR=2.5						
MK01	Makanchi Array	45.09	302	eP	P	18 04 15.8	-0.4
MK31	Makanchi Array	45.09	302	eP	P	18 04 16.1	-0.1
MK32	Makanchi Array	45.09	302	eP	P	18 04 16.3	+0.1
MKAR	Makanchi Array	45.09	302	P	P	18 04 16.3	+0.1
	0.5nm,0.5s,baz=85,slow=11,SNR=9.9						
MKAR	Makanchi Array	45.09	302	eP	P	18 04 16.1	-0.1
KURK	Kurchatov	46.70	308	eP	P	18 04 29.2	+0.5
KURBB	Kurchatov Arra	46.77	307	P	P	18 04 29.2	-0.1
	0.8nm,0.3s,baz=83,slow=8.1,SNR=5.5						
BVAR	Borovoye Array	51.18	312	P	P	18 05 03.7	+0.6
	0.4nm,0.6s,baz=65,slow=10,SNR=2.8						
WR1	Warramunga Arr	58.46	190	eP	P	18 05 56.1	+0.1
	36nm,1.6s						
WRA	Warramunga Arr	58.46	190	P	P	18 05 56.1	+0.1
	3.1nm,0.8s,baz=9.6,slow=7.3,SNR=14						
AS31	Alice Springs	62.19	190	eP	P	18 06 21.6	+0.1
	1.8nm,1.2s						
ASAR	Alice Springs	62.19	190	P	P	18 06 21.9	+0.5
	0.5nm,0.8s,baz=4.5,slow=7.8,SNR=8.0						
FIA0	FINESS Array S	68.67	333	eP	P	18 07 03.7	+0.7
FINES	FINESS Array B	68.67	333	P	P	18 07 03.7	+0.7
	1.0nm,0.7s,baz=19,slow=8.8,SNR=3.9						

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*IDC **02** 18:07:15.9±2.2, 35°.67N×143°.39E, h0km, mb3.4/4, mb1 3.6/6, mb1mx3.3/57, mbtmp3.5/6, ML3.2/2, Error ellipse: s-maj=45.7km s-min=27.4km az=66.0*
ISC 02 18:07:21.2±1.7**, 35°.7N**±0°.1×**143°.4E**±0°.2**, h35km, n13, σ1s.42**/7**, mb3.4**/4**, 1C, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
JHJ	Hachijo jima 2	3.93	231	Pn	Pn	18 08 19.1	+0.2
	3.8nm,0.3s,baz=49,slow=12,SNR=2.6						
JHJ				Sn	Sn	18 09 03.7	-0.1
	8.9nm,0.3s,baz=248,slow=23,SNR=1.9						
MJAR	Matsushiro Arr	4.29	283	Pn	Pn	18 08 20.6	-3.3
	1.5nm,0.3s,baz=105,slow=9.1,SNR=11						
H11N2	WAKE ISLAND Hy	26.08	121	T	T	18 40 04.7	
	baz=314,slow=75,SNR=35						
H11N1	WAKE ISLAND Hy	26.09	121	T	T	18 40 05.5	
	baz=314,slow=75,SNR=26						
H11N3	WAKE ISLAND Hy	26.10	121	T	T	18 40 08.9	
	baz=314,slow=75,SNR=23						
H11S1	WAKE ISLAND Hy	26.78	124	T	T	18 41 01.6	
	baz=316,slow=76,SNR=12						
H11S3	WAKE ISLAND Hy	26.78	124	T	T	18 41 00.1	
	baz=316,slow=76,SNR=5.2						
H11S2	WAKE ISLAND Hy	26.80	124	T	T	18 41 00.6	
	baz=316,slow=76,SNR=5.7						
SONM	Songino Array	29.87	306	P	P	18 13 24.3	-1.0
	0.4nm,0.8s,baz=108,slow=11,SNR=2.6						
MKAR	Makanchi Array	46.20	304	P	P	18 15 43.5	+1.0
	0.2nm,0.6s,baz=92,slow=8.7,SNR=2.7						
WRA	Warramunga Arr	55.98	190	P	P	18 16 55.6	-0.5
	0.8nm,0.7s,baz=11,slow=7.1,SNR=3.5						
ASAR	Alice Springs	59.70	190	P	P	18 17 21.9	-0.3
	0.3nm,0.6s,baz=4.7,slow=7.6,SNR=2.8						
SYO	Syowa Base	127.70	206⇑	eP	Pdif	18 23 07.3	+2.4

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*ISCJB **02** 18:18:53.7±0.3, 63°.56N±0°.02×150°.86W±0°.04, h13km±2km, mb3.4/2, Error ellipse: s-maj=3.4km s-min=3.2km az=157.4*
*NEIC **02** 18:18:54.0, 63°.55N×150°.85W, h12km, ML3.1(AEIC), After AEIC.*
*IDC **02** 18:18:55.8±1.6, 63°.58N×150°.76W, h0km, mb3.3/2, mb1 3.5/5, mb1mx3.2/67, mbtmp3.2/5, ML3.0/2, Error ellipse: s-maj=19.9km s-min=15.7km az=159.0*
ISC 02 18:18:54.9±0.8**, 63°.57N**±0°.03×**150°.82W**±0°.02**, h11**km±5km**, n61, σ1s.15**/81**, Central Alaska**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
KTH	Kantishna Hill	0.05	245	ePg	Pg	18 18 57.4	+0.2
KTH				eSg	Sg	18 18 59.2	+0.3
KTH				eSg	Sg	18 18 59.4	+0.5
TRF	Thorofare Moun	0.27	117	ePg	Pg	18 19 00.2	-0.3
TRF				eSg	Sg	18 19 03.2	-1.0
BPAW	Bear Paw Mtn.	0.53	352	ePg	Pb	18 19 06.0	-0.2
BPAW				eSg	Sb	18 19 13.4	-0.5
CAST	Castle Rocks	0.59	255	ePg	Pg	18 19 05.3	-1.0
CAST				eSg	Sg	18 19 11.9	-2.1
CHUM	Lake Minchumin	0.73	296	ePn	Pg	18 19 09.1	+0.1
CHUM				eSg	Sg	18 19 18.8	+0.2
HUR	Hurricane	0.80	138	ePg	Pg	18 19 09.1	-1.2
MCK	McKinley	0.86	78	ePg	Pg	18 19 11.0	-0.4
RND	Reindeer	0.90	100	ePg	Pg	18 19 11.3	-0.9
RND				eSg	Sg	18 19 22.8	-1.1
PPLA	Purkeypile	0.92	223	ePg	Pg	18 19 10.6	-2.0
PPLA				eSg	Sg	18 19 22.4	-2.2
CUT	Chulitna	1.20	168	ePg	Pn	18 19 16.2	-1.3
MLY	Manley	1.46	1	ePn	Pn	18 19 21.0	-0.2
MLY				eSn	Sn	18 19 38.9	-1.5
WRH	Wood River Hil	1.50	52	ePn	Pn	18 19 20.9	-0.8
WRH				eSn	Sn	18 19 39.7	-1.5
DHY	Denali Highway	1.63	106	ePn	Pn	18 19 23.5	-0.1
DHY				eSn	Sn	18 19 42.9	-1.8
CCB	Clear Creek Bu	1.71	50	ePn	Pn	18 19 23.6	-0.9
CCB				eSn	Sg	18 19 49.9	+0.2
MDM	Murphy Dome	1.79	38	ePn	Pn	18 19 25.0	-0.7
MDM				eSn	Sg	18 19 51.9	-0.6
COLA	College	1.84	44	ePn	Pn	18 19 25.1	-1.2
HDA	Harding Lake	1.90	62	ePn	Pn	18 19 26.5	-0.6
HDA				ePg	Pg	18 19 32.2	+0.9
HDA				eSn	Sg	18 19 55.0	-1.0
IL1	Eielson Array	2.10	53	ePn	Pn	18 19 29.1	-0.7
ILAR	Eielson Array	2.10	53	Pn	Pn	18 19 29.2	-0.7
	3.8nm,0.3s,baz=235,slow=14,SNR=30						
ILAR				Pg	Pg	18 19 35.0	-0.1
	8.0nm,0.3s,baz=233,slow=18,SNR=56						
ILAR				Lg	Lg	18 20 00.4	
	33nm,0.3s,baz=239,slow=30,SNR=17						
ILB	Eielson Array	2.10	53	ePn	Pn	18 19 29.1	-0.7
ILB				ePg	Pg	18 19 34.8	-0.3
ILB				eSn	Sb	18 20 00.0	+1.1
SML	Sawmill	2.11	146	ePn	Pn	18 19 29.3	-0.8
STLK	Strandline Lak	2.13	193	P	Pn	18 19 29.8	-0.7
PMR	Palmer	2.14	158	ePn	Pn	18 19 29.8	-0.5
PS06	TAPS Pump Stn6	2.34	11	ePn	Pn	18 19 31.9	-1.2
SCM	Sheep Creek Mo	2.38	136	ePn	Pn	18 19 33.2	-0.5
TTA	Tatalina	2.44	257	ePn	Pn	18 19 32.6	-1.9
CKN	Chakachatna No	2.44	196	P	Pn	18 19 34.9	+0.3
TT01	Tatalina	2.45	256	ePn	Pn	18 19 32.5	-2.1
SPU	Mount Spurr	2.47	194	ePn	Pn	18 19 34.5	-0.5
PAX	Paxson	2.49	102	ePn	Pn	18 19 36.0	+0.6
RC01	Rabbit Creek A	2.54	168	ePn	Pn	18 19 35.7	-0.3
IM3	Indian Mountai	2.73	334	P	Pn	18 19 38.5	+0.1
DOT	Dot Lake	3.02	86	ePn	Pn	18 19 42.1	-0.4
KLU	Klutina	3.08	130	ePn	Pn	18 19 43.7	+0.3
SLKM	Skilak Lake	3.09	174	ePn	Pn	18 19 43.8	+0.3
RSO	Redoubt South	3.25	197	ePn	Pn	18 19 46.6	+0.7
MENT	Mentasta	3.27	98	ePn	Pn	18 19 47.5	+1.5
SVW2	Sparrevohn	3.33	224	ePn	Pn	18 19 45.3	-1.5
DIV	Divide	3.40	134	ePn	Pn	18 19 48.2	+0.5
SEW	Seward	3.54	169	ePn	Pn	18 19 49.9	+0.2
SEW				eSg	Sb	18 20 43.1	+2.7
COLD	Coldfoot	3.68	4	ePn	Pn	18 19 52.2	+0.6
BRLK	Bradley Lake	3.82	180	ePn	Pn	18 19 54.7	+1.1
FYU	Fort Yukon	3.82	36	ePn	Pn	18 19 53.3	-0.2
EYAK	Cordova Ski Ar	3.86	140	ePn	Pn	18 19 54.9	+0.9
BMRM	Bremner River	3.91	129	ePn	Pn	18 19 55.2	+0.5
BCA3	Beaver Creek A	4.11	93	ePn	Pn	18 19 57.0	-0.5
VRDI	Verde Repeater	4.16	121	P	Pn	18 19 59.4	+1.1
RAGM	Ragged Mountai	4.32	135	ePn	Pn	18 20 00.9	+0.6
EGAK	Eagle	4.40	70	ePn	Pn	18 20 00.6	-0.8
BM3	Burnt Mountain	4.65	31	ePn	Pn	18 20 04.3	-0.5
BALM	Baldy	4.70	119	ePn	Pn	18 20 06.8	+1.0
KIAG	Kiagna River	4.77	120	P	Pn	18 20 07.1	+0.5
DAWY	Dawson	5.09	79	eSg	Sg	18 21 34.2	-3.8
KDAK	Kodiak Island	5.88	189	ePn	Pn	18 20 20.7	-0.9
OHAK	Old Harbor	6.49	192	ePn	Pn	18 20 30.6	+0.5
INK	Inuvik	8.49	48	Pn	Pn	18 20 58.2	+0.7
	0.3nm,0.3s,baz=227,slow=20,SNR=9.8						
INK				Sn	Sn	18 22 31.7	-1.5
	0.1nm,0.3s,baz=342,slow=14,SNR=2.3						
INK	Inuvik	8.49	48	ePn	Pn	18 20 57.6	+0.1
INK				eSn	Sn	18 22 20.7	-12
INK				Sn	Sn	18 22 31.7	-1.5
GAMB	Gambell	9.27	281	ePn	Pn	18 21 08.9	+0.7
YKA	Yellowknife Ar	16.32	77	Pn	P	18 22 45.5	-1.1
	baz=290,slow=9.1,SNR=3.0						
TXAR	Lajitas Array	45.45	116	P	P	18 27 14.8	+1.2
	0.3nm,0.6s,baz=336,slow=6.2,SNR=4.9						
MKAR	Makanchi Array	62.27	322	P	P	18 29 19.5	+3.2
	0.2nm,0.6s,baz=50,slow=8.3,SNR=2.9						

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*CSEM **02** 18:21:26.8, 38°.91N×26°.28E, h10km, ML1.6/3*
ATH 02 18:21:26.8, 38°.91N×26°.28E, h10km±31km**, ML1.6**/3**, Error ellipse: s-maj=31.6km s-min=1.1km az=0.0, Aegean Sea**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
PRK	Paraskevi	0.33	359	P	Pg	18 21 33.2	-0.3
PRK				S	Sg	18 21 37.6	-0.3
PRK	Paraskevi	0.33	359	P	Pg	18 21 33.2	-0.3
PRK				S	Sg	18 21 37.6	-0.3
PRK				AML	AML	18 21 52.5	
	comp=E,192µm,1.3s						
PRK				AML	AML	18 21 58.5	
	comp=N,250µm,1.7s						
SIGR	SIGRI	0.45	312	P	Pb	18 21 36.5	-0.3
SIGR				S	Sg	18 21 41.3	-0.1
SIGR	SIGRI	0.45	312	P	Pb	18 21 36.5	-0.3
SIGR				S	Sg	18 21 41.3	-0.1
SIGR				AML	AML	18 21 47.0	
	comp=E,153µm,1.1s						
SIGR				AML	AML	18 21 50.6	
	comp=N,148µm,1.1s						
CHOS	Chios island	0.55	199	P	Pb	18 21 38.8	+0.1
CHOS				S	Sg	18 21 44.3	-0.6
CHOS	Chios island	0.55	199	P	Pb	18 21 38.8	+0.2
CHOS				S	Sg	18 21 44.3	-0.6
CHOS				AML	AML	18 22 04.5	
	comp=N,282µm,2.1s						
CHOS				AML	AML	18 22 09.6	
	comp=E,339µm,1.8s						
SMG	Samos	1.28	160	P	Pn	18 21 50.1	-0.7
SMG				S	Sb	18 22 07.6	+0.1
SMG	Samos	1.28	160	P	Pn	18 21 50.1	-0.7
SMG				S	Sb	18 22 07.6	+0.1

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*IDC **02** 18:21:35.1±1.2, 36°.79N×21°.27E, h0km, mb3.6/8, mb1 3.7/9, mb1mx3.4/62, mbtmp3.6/9, ML3.6/1, Error ellipse: s-maj=27.7km s-min=23.8km az=120.0*
*ATH **02** 18:21:38.8, 36°.81N×21°.02E, h19km±1km, ML3.2/3, Error ellipse: s-maj=3.9km s-min=1.3km az=41.0*
*CSEM **02** 18:21:39.7±0.3, 36°.77N×21°.09E, h15km, ML3.1, Error ellipse: s-maj=6.0km s-min=3.8km az=28.0*
*THE **02** 18:21:42.2, 36°.85N×21°.22E, h16km±1km, ML3.1/18, Error ellipse: s-maj=1.5km s-min=0.7km az=205.0*
ISC 02 18:21:40.3±1.1**, 36°.79N**±0°.03×**21°.16E**±0°.03**, h33**km±8km**, n129, σ1s.37**/186**, mb3.5**/8**, Southern Greece**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
PYL	PYLOS	0.48	77	P	Pn	18 21 50.8	-0.1
PYL				S	Sb	18 21 56.9	-0.9
PYL	PYLOS	0.48	77	P	Pn	18 21 50.8	-0.1
PYL				S	Sb	18 21 56.7	-1.1
PYL	PYLOS	0.48	77	P	Pn	18 21 51.2	+0.3
PYL				S	Sb	18 21 56.7	-1.1
PYL				AML	AML	18 22 04.2	
	comp=N,3148µm,0.3s						
PYL				AML	AML	18 22 05.4	
	comp=E,5181µm,0.4s						
ITM	Ithomi	0.73	58	P	Pn	18 21 54.2	-0.1
ITM				S	Sb	18 22 04.5	0.0
ITM	Ithomi	0.73	58	P	Pn	18 21 54.2	-0.1
ITM				S	Sb	18 22 04.2	-0.3
ITM	Ithomi	0.73	58	P	Pn	18 21 54.3	-0.1
ITM				S	Sb	18 22 04.2	-0.3
ITM				AML	AML	18 22 08.6	
	comp=E,3625µm,0.6s						
ITM				AML	AML	18 22 09.0	
	comp=N,3764µm,0.5s						
AMT	Artemida-Makis	0.86	31	P	Pb	18 21 56.4	-0.5
AMT				S	Sb	18 22 09.2	+1.0
AMT	Artemida-Makis	0.86	31	P	Pb	18 21 56.7	-0.2
AMT				S	Sb	18 22 09.2	+1.0
AMT	Artemida-Makis	0.86	31	P	Pb	18 21 56.7	-0.2
VLX	Vlachokerasia	1.14	59	P	Pb	18 22 01.6	0.0
VLX				S	Sb	18 22 16.9	+0.8
VLX	Vlachokerasia	1.14	59	P	Pb	18 22 01.6	0.0
VLX				S	Sb	18 22 16.9	+0.8
VLX	Vlachokerasia	1.14	59	P	Pb	18 22 02.6	+1.0
VLX				S	Sb	18 22 19.4	+3.3
VLX				AML	AML	18 22 23.4	
	comp=N,1984µm,0.7s						
VLX				AML	AML	18 22 25.1	
	comp=E,2591µm,0.7s						
DRO	Drossia	1.24	21	P	Pb	18 22 02.9	-0.4
DRO				S	Sb	18 22 19.1	+0.1
DRO	Drossia	1.24	21	P	Pb	18 22 02.9	-0.4
DRO				S	Sb	18 22 19.1	+0.1
DRO	Drossia	1.24	21	P	Pb	18 22 02.8	-0.4
RLS	Riolos of Patr	1.29	11	P	Pb	18 22 03.2	-0.8
RLS				S	Sb	18 22 20.5	+0.2
RLS	Riolos of Patr	1.29	11	P	Pb	18 22 03.2	-0.8
RLS				S	Sb	18 22 20.5	+0.2
KFL	Anninata	1.35	348	P	Pb	18 22 05.3	+0.2
KFL				S	Sb	18 22 23.6	+1.6
KFL	Anninata	1.35	348	P	Pb	18 22 05.3	+0.2
KFL				S	Sb	18 22 23.6	+1.6
KFL	Anninata	1.35	348	P	Pn	18 22 02.8	0.0
KFL				S	Sn	18 22 19.4	-0.2
AXS	Araxos	1.41	7	P	Pb	18 22 06.0	-0.1
AXS				S	Sb	18 22 24.1	+0.3
AXS	Araxos	1.41	7	P	Pb	18 22 06.0	-0.1
AXS				S	Sb	18 22 24.1	+0.3
AXS	Araxos	1.41	7	P	Pb	18 22 06.7	+0.5
VLI	Veliai	1.43	92	P	Pb	18 22 06.7	+0.2
VLI				S	Sb	18 22 24.5	+0.1
VLI	Veliai	1.43	92	P	Pb	18 22 05.8	-0.7
VLI				S	Sb	18 22 24.5	+0.1
VLI	Veliai	1.43	92	P	Pb	18 22 05.8	-0.7
VLS	Valsamata	1.46	342	P	Pb	18 22 05.9	-1.0
VLS				S	Sb	18 22 25.1	+0.1
VLS	Valsamata	1.46	342	P	Pb	18 22 05.9	-1.0
VLS				S	Sb	18 22 25.1	+0.1
KLV	Kalavryta, Ach	1.48	32	P	Pb	18 22 06.2	-1.1
KLV				S	Sb	18 22 25.0	-0.8
KLV	Kalavryta, Ach	1.48	32	P	Pb	18 22 06.2	-1.1
KLV				S	Sb	18 22 25.0	-0.8
KLV	Kalavryta, Ach	1.48	32	P	Pn	18 22 05.2	+0.5
LAKA	Lakka	1.59	24	P	Pb	18 22 08.4	-0.7
LAKA				S	Sb	18 22 28.4	-0.4
LAKA	Lakka	1.59	24	P	Pb	18 22 08.2	-0.9
LAKA				S	Sb	18 22 28.4	-0.4
LAKA	Lakka	1.59	24	P	Pb	18 22 08.2	-0.9
KYTH	Kithira	1.60	108	P	Pb	18 22 09.5	+0.2
KYTH				S	Sb	18 22 29.6	+0.5
KYTH	Kithira	1.60	108	P	Pb	18 22 09.4	+0.2
KYTH				S	Sb	18 22 29.6	+0.5
KYTH	Kithira	1.60	108	P	Pb	18 22 09.3	+0.1
RODI	Rodini	1.64	21	P	Pb	18 22 10.1	+0.1
RODI	Rodini	1.64	21	P	Pb	18 22 10.1	+0.1
KRND	KRANIDI	1.70	69	P	Pb	18 22 09.5	-1.5
KRND				S	Sb	18 22 31.4	-0.6
KRND	KRANIDI	1.70	69	P	Pb	18 22 09.5	-1.5
KRND				S	Sb	18 22 31.4	-0.6
THAL	Thalero	1.73	44	P	Pb	18 22 10.3	-1.2
THAL				S	Sb	18 22 31.4	-1.4
THAL	Thalero	1.73	44	P	Pb	18 22 10.3	-1.2
THAL				S	Sb	18 22 31.4	-1.4
THAL	Thalero	1.73	44	P	Pb	18 22 12.6	+1.1
EFP	Efpalio	1.74	20	P	Pb	18 22 11.8	+0.2
EFP	Efpalio	1.74	20	P	Pb	18 22 11.8	+0.2
SERG	Sergoula	1.77	24	P	Pb	18 22 10.9	-1.3
SERG				S	Sb	18 22 33.0	-1.1
SERG	Sergoula	1.77	24	P	Pb	18 22 10.9	-1.3
SERG				S	Sb	18 22 33.0	-1.1
KALE	Kalithea	1.78	26	P	Pb	18 22 10.9	-1.5
KALE				S	Sb	18 22 32.0	-2.3
KALE	Kalithea	1.78	26	P	Pb	18 22 10.9	-1.5
KALE				S	Sb	18 22 32.0	-2.3
KALE	Kalithea	1.78	26	P	Pb	18 22 11.7	-0.6
PDO	Prodromos	1.81	1	P	Pb	18 22 11.2	-1.6

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
PDO				S	Sb	18 22 34.6	-0.4
PDO	Prodromos	1.81	1	P	Pb	18 22 11.2	-1.6
PDO				S	Sb	18 22 34.6	-0.4
PDO	Prodromos	1.81	1	P	Pb	18 22 11.3	-1.5
DID	Didima	1.81	66	P	Pn	18 22 10.8	+1.6
DID				S	Sb	18 22 33.1	-2.1
DID	Didima	1.81	66	P	Pn	18 22 10.8	+1.6
DID				S	Sb	18 22 33.1	-2.1
PVO	Paravola	1.85	9	P	Pb	18 22 12.4	-1.1
PVO				S	Sb	18 22 34.8	-1.4
PVO	Paravola	1.85	9	P	Pb	18 22 12.4	-1.1
PVO				S	Sb	18 22 34.8	-1.4
PVO	Paravola	1.85	9	P	Pb	18 22 12.8	-0.7
LTK	Loutraki	1.90	49	P	Pn	18 22 12.1	+1.7
LTK	Loutraki	1.90	49	P	Pn	18 22 12.1	+1.7
ANX	Ano Chora	1.90	18	P	Pb	18 22 13.3	-1.1
ANX				S	Sn	18 22 34.8	+1.5
ANX	Ano Chora	1.90	18	P	Pb	18 22 13.3	-1.1
ANX				S	Sn	18 22 34.8	+1.5
ANX	Ano Chora	1.90	18	P	Pb	18 22 14.3	-0.2
DSF	Desfina	1.95	34	P	Pb	18 22 13.3	-2.0
DSF				S	Sb	18 22 36.9	-2.3
DSF	Desfina	1.95	34	P	Pb	18 22 13.3	-2.0
DSF				S	Sb	18 22 36.9	-2.3
DSF	Desfina	1.95	34	P	Pn	18 22 12.5	+1.3
ANKY	Antikythira Is	1.96	117	P	Pb	18 22 14.8	-0.6
ANKY	Antikythira Is	1.96	117	P	Pn	18 22 12.8	+1.6
ANKY	Antikythira Is	1.96	117	P	Pn	18 22 12.8	+1.6
LKD2	Lefkada island	2.03	349	P	Pb	18 22 14.7	-2.0
LKD2				S	Sb	18 22 39.9	-1.7
LKD2	Lefkada island	2.03	349	P	Pb	18 22 14.7	-2.0
LKD2				S	Sb	18 22 39.9	-1.7
LKD2	Lefkada island	2.03	349	P	Pb	18 22 15.5	-1.1
EVR	Evrytania	2.18	13	P	Pb	18 22 17.1	-2.2
EVR				S	Sb	18 22 43.1	-2.9
EVR	Evrytania	2.18	13	P	Pb	18 22 17.1	-2.2
EVR				S	Sb	18 22 43.1	-2.9
EVR	Evrytania	2.18	13	P	Pb	18 22 19.0	-0.3
DSL	Palaion Diasel	2.34	359	P	Pn	18 22 18.6	+2.1
DSL				S	Sb	18 22 47.4	-3.0
DSL	Palaion Diasel	2.34	359	P	Pn	18 22 18.6	+2.1
DSL				S	Sb	18 22 47.4	-3.0
DSL	Palaion Diasel	2.34	359	P	Pn	18 22 18.6	+2.1
VLY	Voula,Athens	2.35	62	P	Pn	18 22 17.8	+1.1
VLY	Voula,Athens	2.35	62	P	Pn	18 22 17.8	+1.1
IMMV	Iera Moni Meta	2.65	119	P	Pn	18 22 21.9	+1.2
IMMV	Iera Moni Meta	2.65	119	P	Pn	18 22 21.9	+1.2
IGT	Igoumenitsa	2.81	347	P	Pn	18 22 22.8	-0.2
IGT	Igoumenitsa	2.81	347	P	Pn	18 22 22.8	-0.2
THL	Klokotos Trika	2.85	13	P	Pn	18 22 25.4	+1.9
THL	Klokotos Trika	2.85	13	P	Pn	18 22 25.4	+1.9
SGD	Sagiada	2.91	346	P	Pn	18 22 24.4	+0.1
SGD	Sagiada	2.91	346	P	Pn	18 22 24.4	+0.1
KEK	Kerkira	3.11	340	P	Pn	18 22 27.4	+0.4
KEK	Kerkira	3.11	340	P	Pn	18 22 27.4	+0.4
KPRO	Kipourio	3.16	3	P	Pn	18 22 30.4	+2.6
KPRO				S	Sn	18 23 07.8	+3.3
KPRO	Kipourio	3.16	3	P	Pn	18 22 30.4	+2.6
KPRO				S	Sn	18 23 07.8	+3.3
KPRO	Kipourio	3.16	3	P	Pn	18 22 30.9	+3.0
IDI	Anoyia	3.38	115	Pn	Pn	18 22 34.0	+3.2
	comp=E,0.3nm,0.3s,baz=208,slow=9.7,SNR=1.7						
IDI				Sn	Sn	18 23 09.3	-0.5
	comp=E,1.7nm,0.3s,baz=61,slow=20,SNR=1.1						
KZN	Kozani	3.54	8	P	Pn	18 22 34.4	+1.3
NEST	Nestorio	3.62	359	P	Pn	18 22 36.9	+2.8
NEST				S	Sn	18 23 18.4	+2.7
NEST	Nestorio	3.62	359	P	Pn	18 22 36.5	+2.4
NEST				S	Sn	18 23 18.4	+2.7
NEST	Nestorio	3.62	359	P	Pn	18 22 36.5	+2.4
PAIG	Paliouri	3.71	32	P	Pn	18 22 33.5	-1.7
PAIG	Paliouri	3.71	32	P	Pn	18 22 33.5	-1.7
FNA	Florina	3.99	2	P	Pn	18 22 38.2	-1.0
FNA	Florina	3.99	2	P	Pn	18 22 38.2	-1.0
TIP	Timpagrande	4.21	306	P	Pn	18 22 43.0	+0.7
TIP	Timpagrande	4.21	306	P	Pn	18 22 43.0	+0.7
GRG	Griva	4.27	13	P	Pn	18 22 42.0	-1.0
GRG	Griva	4.27	13	P	Pn	18 22 42.0	-1.0
OHR	Ohrid	4.32	356	*i* Pn	Pn	18 22 45.3	+1.5
OHR	Ohrid	4.32	356	*i* Pn	Pn	18 22 45.2	+1.5
KNT	Kendrikon	4.57	17	P	Pn	18 22 47.3	+0.2
KNT	Kendrikon	4.57	17	P	Pn	18 22 47.3	+0.2
TAR1	Taranto	4.80	322	*e*Pn	Pn	18 22 51.0	+0.7
SG1	Sgolgore (BA)	5.34	321	*e*Pn	Pn	18 22 58.7	+0.9
BAI	Bari	5.45	324	*e*Pn	Pn	18 23 00.9	+1.8
CDT	Castel del Mon	5.73	320	*e*Pn	Pn	18 23 03.5	+0.4
STON	Ston	6.63	337	*e*Pn	Pn	18 23 13.9	-1.4
STON				Sn	Sn	18 24 22.0	-7.6
IVAS	Ivanjica	6.82	354	*e*Pn	Pn	18 23 18.0	-0.1
BBLS	Lazići	7.19	350	*e*Pn	Pn	18 23 22.8	-0.4
UDBI	Udbina	8.74	334	*e*Pn	Pn	18 23 44.8	+0.3
UDBI				Sn	Sn	18 25 16.6	-5.2
UDBI	Udbina	8.74	334	*e*Pn	Pn	18 23 44.7	+0.3
GERES	GERESS Array B	13.22	338	Pn	Pn	18 24 45.5	-0.2
	comp=E,0.1nm,0.3s,baz=162,slow=14,SNR=5.5						
HFS	Hagfors	23.85	351	P	P	18 26 49.6	-0.6
	comp=E,5.3nm,1.1s,baz=148,slow=8.7,SNR=4.1						
FINES	FINESS Array B	24.87	6	P	P	18 26 59.7	+0.1
	comp=E,0.8nm,0.5s,baz=186,slow=11,SNR=10.0						
TORD	Torodi Ar. Bea	29.30	222	P	P	18 27 39.7	0.0
	comp=E,0.2nm,0.6s,baz=33,slow=11,SNR=2.7						
KURBB	Kurchatov Arra	42.66	52	P	P	18 29 31.4	-2.2
	comp=E,0.5nm,0.5s,baz=281,slow=8.8,SNR=4.7						
MKAR	Makanchi Array	45.61	57	P	P	18 29 56.8	-0.5
	comp=E,0.3nm,0.4s,baz=272,slow=9.8,SNR=9.1						
ZALV	Zalesovo Beam	46.25	47	P	P	18 30 01.4	-0.8
	comp=E,0.6nm,0.4s,baz=266,slow=9.4,SNR=3.7						
SONM	Songino Array	60.95	50	P	P	18 31 48.8	-1.3
	comp=E,0.1nm,0.4s,baz=298,slow=9.0,SNR=2.2						
CMAR	Chiang Mai Arr	69.58	82	P	P	18 32 46.5	+0.2
	comp=E,0.2nm,0.5s,baz=291,slow=8.1,SNR=4.5						

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*NIED **02** 18:23:00, 38.°60N×141.°90E, h44km, Mw3.7 Best double couple: M0 3.61000×10^14 NP1:φs 223.00000°, δ60.00000°, λ-160.00000°. NP2:φs 122.00000°, δ72.00000°, λ-31.00000°.*

*IDC **02** 18:23:24.3±2.9, 38.°80N×142.°52E, h0km, mb3.6/3, mb1 3.8/5, mb1mx3.3/61, mbtmp3.8/5, ML3.4/2, MS3.4/3, Ms1 3.4/3, ms1mx2.5/57, Error ellipse: s-maj=67.5km s-min=29.5km az=79.0*

*ISCJB **02** 18:23:31.1±1.0, 38.°57N±0.°05×142.°1E±0.°1, h41km, mb3.6/3, MS3.4/3, Error ellipse: s-maj=11.4km s-min=6.5km az=10.5*

*JMA **02** 18:23:33.1±0.1, 38.°62N×141.°90E, h49km±1km, M3.5*
JMA Felt I J1.

ISC 02 18:23:31.9±1.2**, 38.°58N**±0.°04×**142.°02E**±0.°09**, h41km, n20, σ1.s10**/21**, mb3.6**/3**, MS3.5**/3**, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
JIO	Ouri	0.54	257	P	Pn	18 23 43.9	+0.7
JIO				S	Sn	18 23 51.1	-0.1
OFUJ	Ofunato	0.57	331	P	Pn	18 23 44.3	+0.7
JMK	Ichinoseki	0.73	301	P	Pn	18 23 46.1	+0.4
JMK				S	Sn	18 23 55.2	-0.5
MIYJ	Miyakonagasawa	1.01	351	P	Pn	18 23 50.1	+0.5
MIYJ				S	Sn	18 24 02.1	-0.4
JOM	Ohasama	1.06	328	P	Pn	18 23 50.8	+0.6
JOU	Okura	1.09	259	P	Pn	18 23 50.9	+0.3
JMM	Marumori	1.20	234	P	Pn	18 23 52.5	+0.3
JYK	Kaneyama	1.34	285	P	Pn	18 23 54.4	+0.3
JRG	Rokugo	1.35	307	P	Pn	18 23 54.7	+0.4
JKZ	Kuzumaki	1.50	339	P	Pn	18 23 57.5	+1.1
JYS	Shirataka	1.58	257	P	Pn	18 23 57.9	+0.5
MJAR	Matsushiro Arr	3.65	237	Pn	Pn	18 24 28.1	+2.2
	2.0nm,0.3s,baz=40,slow=12,SNR=12						
MAT	Matsushiro	3.65	237	P	Pn	18 24 28.0	+2.1
MAT				*e*S	Sn	18 25 14.4	+6.7
JHJ	Hachijo jima 2	5.74	199	Pn	Pn	18 24 55.7	+1.1
	4.3nm,0.3s,baz=84,slow=23,SNR=2.6						
JHJ				Sn	Sn	18 25 56.7	-2.5
	5.5nm,0.3s,baz=70,slow=18,SNR=1.5						
ZALV	Zalesovo Beam	41.24	311	P	P	18 31 12.3	-0.3
	0.7nm,0.5s,baz=72,slow=8.4,SNR=3.4						
MKAR	Makanchi Array	43.72	301	P	P	18 31 32.4	-0.6
	0.8nm,0.9s,baz=83,slow=9.9,SNR=5.6						
AAK	Ala-Archa	50.19	297	LR	LR	18 54 38.4	
	comp=Z,20nm,19.1s,baz=152,slow=37						
WRA	Warramunga Arr	58.66	188	P	P	18 33 25.1	+0.1
	0.8nm,0.9s,baz=5.6,slow=7.2,SNR=2.7						
PALK	Pallekele	63.17	257	LR	LR	19 03 22.5	
	comp=Z,45nm,21.5s,baz=296,slow=38						
NOA	NORSAR Array B	72.95	337	LR	LR	19 11 52.6	
	comp=Z,23nm,19.2s,baz=345,slow=40						

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*IDC **02** 18:25:06.5±1.6, 37.°05N×21.°03E, h0km, mb3.3/3, mb1 3.4/4, mb1mx3.1/56, mbtmp3.3/4, ML2.4/1, Error ellipse: s-maj=41.5km s-min=31.2km az=125.0*

*ISCJB **02** 18:25:09.7±0.9, 36.°76N±0.°03×21.°05E±0.°04, h19km±5km, mb3.2/3, Error ellipse: s-maj=6.3km s-min=4.6km az=139.6*

*ATH **02** 18:25:09.8, 36.°80N×21.°11E, h29km±1km, ML3.0/4, Error ellipse: s-maj=2.9km s-min=1.2km az=40.0*

*CSEM **02** 18:25:09.5±0.3, 36.°78N×21.°07E, h10km, ML3.0, Error ellipse: s-maj=5.3km s-min=3.1km az=34.0*

*THE **02** 18:25:11.6, 36.°84N×21.°16E, h12km±1km, ML3.0/15, Error ellipse: s-maj=1.2km s-min=0.7km az=217.0*

ISC 02 18:25:09.1±1.4**, 36.°76N**±0.°04×**21.°11E**±0.°04**, h12**km±9km**, n80, σ0.s75**/126**, mb3.1**/3**, Southern Greece**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
PYL	PYLOS	0.53	75	P	Pb	18 25 20.8	+0.5
PYL				S	Sb	18 25 27.6	-0.3
PYL	PYLOS	0.53	75	P	Pb	18 25 20.8	+0.5
PYL				S	Sb	18 25 27.6	-0.3
PYL	PYLOS	0.53	75	P	Pb	18 25 21.0	+0.7
PYL				S	Sb	18 25 27.9	+0.1
PYL				AML	AML	18 25 35.5	
	comp=E,3196µm,0.3s						
PYL				AML	AML	18 25 36.7	
	comp=N,2133µm,0.3s						
ITM	Ithomi	0.78	57	P	Pb	18 25 24.5	-0.1
ITM				S	Sb	18 25 35.7	+0.5
ITM	Ithomi	0.78	57	P	Pb	18 25 24.5	-0.1
ITM				S	Sb	18 25 35.7	+0.5
ITM	Ithomi	0.78	57	P	Pg	18 25 24.1	-0.2
ITM				S	Sn	18 25 36.9	-0.7
ITM				AML	AML	18 25 38.1	
	comp=E,1751µm,0.5s						
ITM				AML	AML	18 25 39.3	
	comp=N,2030µm,0.3s						
AMT	Artemida-Makis	0.91	32	P	Pg	18 25 26.6	-0.1
AMT				S	Sb	18 25 39.2	+0.3
AMT	Artemida-Makis	0.91	32	P	Pb	18 25 27.0	+0.2
AMT				S	Sb	18 25 39.0	+0.1
AMT	Artemida-Makis	0.91	32	P	Pb	18 25 27.0	+0.2
AMT				S	Sb	18 25 39.0	+0.1
AMT				AML	AML	18 25 47.6	
	comp=E,1822µm,0.6s						
AMT				AML	AML	18 25 51.2	
	comp=N,3188µm,0.5s						
VLX	Vlachokerasia	1.19	59	P	Pb	18 25 31.8	+0.2
VLX				S	Sn	18 25 47.5	-0.2
VLX	Vlachokerasia	1.19	59	P	Pn	18 25 32.0	+0.4
VLX				S	Sn	18 25 47.8	+0.1
VLX	Vlachokerasia	1.19	59	P	Pn	18 25 32.0	+0.4
VLX				S	Sn	18 25 47.8	+0.1
VLX				AML	AML	18 25 53.9	
	comp=N,1510µm,0.6s						
VLX				AML	AML	18 25 59.9	
	comp=E,1904µm,0.6s						
DRO	Drossia	1.28	22	P	Pn	18 25 33.0	+0.1
DRO				S	Sb	18 25 49.5	-0.2
DRO	Drossia	1.28	22	P	Pn	18 25 33.3	+0.4
DRO				S	Sb	18 25 49.5	-0.2
DRO	Drossia	1.28	22	P	Pn	18 25 33.3	+0.4
RLS	Riolos of Patr	1.33	12	P	Pb	18 25 34.1	+0.1
RLS				S	Sb	18 25 51.0	+0.1
RLS	Riolos of Patr	1.33	12	P	Pb	18 25 34.1	+0.1
RLS				S	Sb	18 25 51.0	+0.1
KFL	Anninata	1.37	349	P	Pn	18 25 34.8	+0.7
KFL				S	Sg	18 25 53.4	0.0
KFL	Anninata	1.37	349	P	Pn	18 25 34.8	+0.7
KFL				S	Sg	18 25 53.4	0.0
KFL	Anninata	1.37	349	P	Pn	18 25 33.5	-0.6
AXS	Araxos	1.45	8	P	Pn	18 25 35.6	+0.5
AXS				S	Sb	18 25 54.8	+0.3
AXS	Araxos	1.45	8	P	Pn	18 25 35.6	+0.5
AXS				S	Sb	18 25 54.8	+0.3
AXS	Araxos	1.45	8	P	Pg	18 25 36.8	-0.2
VLI	Veliai	1.47	91	P	Pb	18 25 37.0	+0.6
VLI				S	Sg	18 25 56.9	+0.4
VLI	Veliai	1.47	91	P	Pb	18 25 37.0	+0.6
VLI				S	Sg	18 25 56.9	+0.4
VLI	Veliai	1.47	91	P	Pg	18 25 37.4	0.0
VLS	Valsamata	1.47	344	P	Pn	18 25 36.0	+0.5
VLS	Valsamata	1.47	344	P	Pn	18 25 36.0	+0.5
KLV	Kalavryta, Ach	1.53	33	P	Pn	18 25 36.4	+0.1
KLV				S	Sn	18 25 56.3	+0.2
KLV	Kalavryta, Ach	1.53	33	P	Pn	18 25 36.9	+0.6
KLV				S	Sn	18 25 56.3	+0.2
KLV	Kalavryta, Ach	1.53	33	P	Pn	18 25 36.9	+0.6
KYTH	Kithira	1.63	107	P	Pb	18 25 39.5	+0.4
KYTH				S	Sg	18 26 01.0	-0.5
KYTH	Kithira	1.63	107	P	Pb	18 25 39.5	+0.4
KYTH				S	Sg	18 26 01.0	-0.5
KYTH	Kithira	1.63	107	P	Pb	18 25 39.9	+0.8
LAKA	Lakka	1.63	25	P	Pn	18 25 38.0	+0.3
LAKA				S	Sn	18 25 59.1	+0.5
LAKA	Lakka	1.63	25	P	Pn	18 25 38.0	+0.3
LAKA				S	Sn	18 25 59.1	+0.5
LAKA	Lakka	1.63	25	P	Pb	18 25 38.9	-0.3
KRND	KRANIDI	1.75	69	P	Pn	18 25 39.6	+0.3
KRND	KRANIDI	1.75	69	P	Pn	18 25 39.6	+0.3
KRND	KRANIDI	1.75	69	P	Pn	18 25 39.2	0.0
THAL	Thalero	1.78	44	P	Pn	18 25 40.4	+0.7
THAL				S	Sn	18 26 02.3	+0.1
THAL	Thalero	1.78	44	P	Pn	18 25 40.4	+0.7
THAL				S	Sn	18 26 02.3	+0.1
THAL	Thalero	1.78	44	P	Pn	18 25 40.8	+1.1
SERG	Sergoula	1.82	24	P	Pn	18 25 41.5	+1.3
SERG	Sergoula	1.82	24	P	Pn	18 25 41.2	+1.0
KALE	Kalithea	1.82	26	P	Pn	18 25 40.5	+0.1
KALE	Kalithea	1.82	26	P	Pn	18 25 40.5	+0.1
DID	Didima	1.86	66	P	Pn	18 25 41.1	+0.3
DID				S	Sn	18 26 04.7	+0.5
DID	Didima	1.86	66	P	Pn	18 25 41.1	+0.3
DID				S	Sn	18 26 04.7	+0.5
DID	Didima	1.86	66	P	Pn	18 25 40.5	-0.3
ANX	Ano Chora	1.94	19	P	Pn	18 25 43.3	+1.3
ANX				S	Sn	18 26 06.3	-0.1
ANX	Ano Chora	1.94	19	P	Pn	18 25 43.3	+1.3
ANX				S	Sn	18 26 06.3	-0.1
LTK	Loutraki	1.95	49	P	Pn	18 25 42.1	+0.1
LTK				S	Sb	18 26 07.6	-1.1
LTK	Loutraki	1.95	49	P	Pn	18 25 42.1	+0.1
LTK				S	Sb	18 26 07.6	-1.1
LTK	Loutraki	1.95	49	P	Pn	18 25 41.7	-0.3
DSF	Desfina	2.00	34	P	Pn	18 25 42.8	+0.1
DSF				S	Sn	18 26 08.4	+0.7
DSF	Desfina	2.00	34	P	Pn	18 25 43.1	+0.4
DSF				S	Sn	18 26 08.4	+0.7
DSF	Desfina	2.00	34	P	Pn	18 25 43.1	+0.4
LKD2	Lefkada island	2.06	350	P	Pn	18 25 45.0	+1.5
LKD2				S	Sn	18 26 10.7	+1.6
LKD2	Lefkada island	2.06	350	P	Pn	18 25 44.5	+0.9
LKD2				S	Sn	18 26 10.7	+1.6
LKD2	Lefkada island	2.06	350	P	Pn	18 25 44.5	+0.9
PROD	Prodromos	2.07	43	P	Pn	18 25 43.1	-0.6
PROD	Prodromos	2.07	43	P	Pn	18 25 43.1	-0.6
EVR	Evrytania	2.22	14	P	Pn	18 25 47.3	+1.4
EVR				S	Sn	18 26 14.5	+1.2
EVR	Evrytania	2.22	14	P	Pn	18 25 47.3	+1.4
EVR				S	Sn	18 26 14.5	+1.2
DSL	Palaion Diasel	2.37	360	P	Pn	18 25 48.4	+0.6
DSL				S	Sn	18 26 17.5	+0.6
DSL	Palaion Diasel	2.37	360	P	Pn	18 25 48.4	+0.6
DSL				S	Sn	18 26 17.5	+0.6
DSL	Palaion Diasel	2.37	360	P	Pn	18 25 48.6	+0.8
IGT	Igoumenitsa	2.83	348	P	Pn	18 25 53.2	-1.0
IGT	Igoumenitsa	2.83	348	P	Pn	18 25 53.2	-1.0
THL	Klokotos Trika	2.89	14	P	Pn	18 25 55.4	+0.5
THL				S	Sn	18 26 29.4	-0.2
THL	Klokotos Trika	2.89	14	P	Pn	18 25 55.4	+0.5
THL				S	Sn	18 26 29.4	-0.2
KEK	Kerkira	3.12	341	P	Pn	18 25 56.9	-1.3
KPRO	Kipourio	3.20	4	P	Pn	18 25 59.9	+0.7
KPRO	Kipourio	3.20	4	P	Pn	18 25 59.9	+0.7
IDI	Anoyia	3.40	114	Pn	Pn	18 26 05.1	+3.1
	comp=E,0.3nm,0.3s,baz=18,slow=19,SNR=1.8						
IDI				Sn	Sn	18 26 40.4	-1.9
	comp=E,1.1nm,0.3s,baz=57,slow=14,SNR=2.0						
STON	Ston	6.64	338	*i* Pn	Pn	18 26 44.3	-2.2
STON				Sn	Sn	18 27 54.1	-8.0
FINES	FINESS Array B	24.91	6	P	P	18 30 29.5	-2.1
	comp=E,0.5nm,0.5s,baz=179,slow=9.5,SNR=1.5						
TORD	Torodi Ar. Bea	29.25	222	P	P	18 31 11.6	+0.6
	comp=E,0.3nm,0.8s,baz=29,slow=9.3,SNR=1.9						
MKAR	Makanchi Array	45.66	57	P	P	18 33 26.5	-3.0
	comp=E,0.1nm,0.4s,baz=278,slow=7.3,SNR=2.5						

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*IDC **02** 18:31:01.2±1.4, 36.°94N×21.°25E, h0km, mb3.6/7, mb1 3.7/8, mb1mx3.4/54, mbtmp3.6/8, ML3.8/1, Error ellipse: s-maj=29.4km s-min=27.3km az=102.0*

*ISCJB **02** 18:31:02.5±0.7, 36.°68N±0.°03×20.°90E±0.°03, h17km±5km, mb3.5/7, Error ellipse: s-maj=5.0km s-min=4.0km az=16.2*

*CSEM **02** 18:31:03.2±0.3, 36.°76N×20.°97E, h5km, ML3.3, Error ellipse: s-maj=5.7km s-min=3.4km az=16.0*

*ATH **02** 18:31:04.9, 36.°81N×21.°10E, h28km±1km, ML3.3/4, Error ellipse: s-maj=3.8km s-min=1.3km az=51.0*

*THE **02** 18:31:05.7, 36.°84N×21.°09E, h5km±1km, ML3.3/19, Error ellipse: s-maj=1.4km s-min=0.7km az=176.0*

ISC 02 18:31:03.9±1.4**, 36.°80N**±0.°04×**21.°06E**±0.°04**, h8**km±9km**, n136, σ0.s99**/191**, mb3.7**/7**, 1D, Southern Greece**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
PYL	PYLOS	0.56	80	P	Pb	18 31 16.1	+0.2
PYL				S	Sb	18 31 23.3	-0.7
PYL	PYLOS	0.56	80	P	Pb	18 31 16.1	+0.2
PYL				S	Sg	18 31 22.5	+0.5
PYL	PYLOS	0.56	80	P	Pb	18 31 16.5	+0.6
PYL				S	Sg	18 31 22.5	+0.5
PYL				AML	AML	18 31 27.6	
	comp=E,4699µm,0.6s						
PYL				AML	AML	18 31 27.9	
	comp=N,3170µm,0.4s						
ITM	Ithomi	0.79	61	P	Pg	18 31 19.4	+0.2
ITM				S	Sb	18 31 30.6	-0.2
ITM	Ithomi	0.79	61	P	Pg	18 31 19.4	+0.2
ITM				S	Sb	18 31 31.2	+0.4
ITM	Ithomi	0.79	61	P	Pg	18 31 19.3	+0.2
ITM				S	Sb	18 31 31.6	+0.8
ITM				AML	AML	18 31 38.9	
	comp=N,3154µm,0.6s						
ITM				AML	AML	18 31 38.9	
	comp=E,3583µm,0.7s						
AMT	Artemida-Makis	0.90	35	P	Pb	18 31 21.6	-0.1
AMT				S	Sb	18 31 34.7	+0.9
AMT	Artemida-Makis	0.90	35	P	Pb	18 31 21.8	+0.1
AMT				S	Sb	18 31 34.7	+0.9
AMT	Artemida-Makis	0.90	35	P	Pg	18 31 21.4	+0.3
AMT				S	Sn	18 31 35.5	-0.5
AMT				AML	AML	18 31 41.3	
	comp=E,6048µm,0.5s						
AMT				AML	AML	18 31 43.8	
	comp=N,7120µm,0.6s						
VLX	Vlachokerasia	1.20	61	P	Pg	18 31 26.9	-0.1
VLX				S	Sn	18 31 44.0	+0.4
VLX	Vlachokerasia	1.20	61	P	Pg	18 31 26.9	-0.1
VLX				S	Sn	18 31 44.0	+0.4
VLX	Vlachokerasia	1.20	61	P	Pg	18 31 26.8	-0.1
VLX				S	Sb	18 31 42.2	-0.4
VLX				AML	AML	18 31 48.8	
	comp=N,2697µm,0.5s						
VLX				AML	AML	18 31 51.9	
	comp=E,3017µm,0.6s						
DRO	Drossia	1.26	24	P	Pg	18 31 28.1	0.0
DRO				S	Sn	18 31 46.3	+1.3
DRO	Drossia	1.26	24	P	Pg	18 31 28.1	0.0
DRO				S	Sn	18 31 46.3	+1.3
DRO	Drossia	1.26	24	P	Pg	18 31 27.4	-0.7
RLS	Riolos of Patr	1.30	14	P	Pn	18 31 29.0	+0.7
RLS				S	Sn	18 31 46.5	+0.7
RLS	Riolos of Patr	1.30	14	P	Pg	18 31 28.8	0.0
RLS				S	Sn	18 31 46.5	+0.7
KFL	Anninata	1.32	351	P	Pn	18 31 29.1	+0.4
KFL				S	Sn	18 31 48.2	+1.7
KFL	Anninata	1.32	351	P	Pn	18 31 29.1	+0.4
KFL				S	Sn	18 31 48.2	+1.7
KFL	Anninata	1.32	351	P	Pn	18 31 28.0	-0.7
AXS	Araxos	1.42	10	P	Pn	18 31 30.8	+0.9
AXS				S	Sn	18 31 50.7	+2.0
AXS	Araxos	1.42	10	P	Pn	18 31 30.8	+0.9
AXS				S	Sn	18 31 50.7	+2.0
AXS	Araxos	1.42	10	P	Pb	18 31 31.0	+0.4
VLS	Valsamata	1.42	345	P	Pn	18 31 30.8	+0.8
VLS				S	Sn	18 31 50.7	+1.8
VLS	Valsamata	1.42	345	P	Pn	18 31 29.9	-0.1
VLS				S	Sn	18 31 50.7	+1.8
VLI	Veliai	1.51	93	P	Pn	18 31 32.0	+0.8
VLI				S	Sg	18 31 53.4	+0.9
VLI	Veliai	1.51	93	P	Pn	18 31 32.0	+0.8
VLI				S	Sg	18 31 53.4	+0.9
VLI	Veliai	1.51	93	P	Pn	18 31 32.0	+0.8
KLV	Kalavryta, Ach	1.52	35	P	Pn	18 31 31.5	+0.1
KLV				S	Sg	18 31 52.0	-0.6
KLV	Kalavryta, Ach	1.52	35	P	Pn	18 31 32.0	+0.6
KLV				S	Sg	18 31 52.0	-0.6
KLV	Kalavryta, Ach	1.52	35	P	Pn	18 31 31.1	-0.3
UPR	University Cam	1.59	21	P	Pn	18 31 33.3	+1.0
UPR	University Cam	1.59	21	P	Pn	18 31 33.3	+1.0
LAKA	Lakka	1.61	27	P	Pn	18 31 33.5	+0.8
LAKA				S	Sg	18 31 55.0	-0.8
LAKA	Lakka	1.61	27	P	Pn	18 31 33.5	+0.8
LAKA				S	Sg	18 31 55.0	-0.8
LAKA	Lakka	1.61	27	P	Pb	18 31 34.0	+0.1
KYTH	Kithira	1.68	107	P	Pn	18 31 34.7	+1.2
KYTH				S	Sg	18 31 57.8	0.0
KYTH	Kithira	1.68	107	P	Pn	18 31 34.7	+1.2
KYTH				S	Sg	18 31 57.8	0.0
KYTH	Kithira	1.68	107	P	Pb	18 31 35.2	+0.2
EFP	Efpalio	1.76	22	P	Pb	18 31 36.4	0.0
EFP	Efpalio	1.76	22	P	Pb	18 31 36.4	0.0
KRND	KRANIDI	1.77	70	P	Pn	18 31 34.5	-0.3
KRND	KRANIDI	1.77	70	P	Pn	18 31 34.5	-0.3
THAL	Thalero	1.78	46	P	Pn	18 31 35.5	+0.6
THAL				S	Sb	18 31 59.5	+0.4
THAL	Thalero	1.78	46	P	Pn	18 31 35.5	+0.6
THAL				S	Sb	18 31 59.5	+0.4
THAL	Thalero	1.78	46	P	Pn	18 31 35.9	+1.0
SERG	Sergoula	1.79	26	P	Pb	18 31 36.6	-0.4
SERG				S	Sb	18 31 59.7	0.0
SERG	Sergoula	1.79	26	P	Pb	18 31 36.6	-0.4
SERG				S	Sb	18 31 59.7	0.0
PDO	Prodromos	1.80	3	P	Pn	18 31 36.5	+1.3
PDO				S	Sb	18 32 00.1	+0.4
PDO	Prodromos	1.80	3	P	Pn	18 31 36.5	+1.3
PDO				S	Sb	18 32 00.1	+0.4
PDO	Prodromos	1.80	3	P	Pb	18 31 37.0	0.0
KALE	Kalithea	1.81	28	P	Pn	18 31 36.5	+1.2
KALE				S	Sb	18 31 59.8	-0.2
KALE	Kalithea	1.81	28	P	Pn	18 31 36.5	+1.2
KALE				S	Sb	18 31 59.8	-0.2
KALE	Kalithea	1.81	28	P	Pb	18 31 37.2	-0.1
PVO	Paravola	1.85	11	P	Pb	18 31 37.5	-0.4
PVO	Paravola	1.85	11	P	Pb	18 31 37.5	-0.4
ANX	Ano Chora	1.92	21	P	Pb	18 31 38.6	-0.5
ANX				S	Sn	18 32 01.5	+0.3
ANX	Ano Chora	1.92	21	P	Pb	18 31 38.6	-0.5
ANX				S	Sn	18 32 01.5	+0.3
LTK	Loutraki	1.95	51	P	Pn	18 31 37.9	+0.6
LTK				S	Sn	18 32 02.9	+1.0
LTK	Loutraki	1.95	51	P	Pn	18 31 37.9	+0.6
LTK				S	Sn	18 32 02.9	+1.0
LTK	Loutraki	1.95	51	P	Pn	18 31 36.9	-0.4
DSF	Desfina	1.99	36	P	Pn	18 31 38.0	+0.2
DSF				S	Sb	18 32 05.1	-0.1
DSF	Desfina	1.99	36	P	Pn	18 31 38.0	+0.2
DSF				S	Sb	18 32 05.1	-0.1
DSF	Desfina	1.99	36	P	Pn	18 31 38.0	+0.2
LKD2	Lefkada island	2.01	351	P	Pn	18 31 39.5	+1.4
LKD2				S	Sb	18 32 05.7	-0.2
LKD2	Lefkada island	2.01	351	P	Pn	18 31 39.5	+1.4
LKD2				S	Sb	18 32 05.7	-0.2

Code	Station Name	Δ°	AZ°	Op	ISC	Time	Res
LKD2	Lefkada island	2.01	351	P	Pn	18 31 39.6	+1.4
ANKY	Antikythira Is	2.04	117	P	Pn	18 31 40.4	+1.9
ANKY	Antikythira Is	2.04	117	P	Pn	18 31 40.4	+1.9
PROD	Prodromos	2.06	45	P	Pn	18 31 38.2	-0.7
PROD	Prodromos	2.06	45	P	Pn	18 31 38.2	-0.7
EVR	Evrytania	2.19	16	P	Pn	18 31 42.4	+1.7
EVR				S	Sn	18 32 09.2	+1.1
EVR	Evrytania	2.19	16	P	Pn	18 31 42.4	+1.7
EVR				S	Sn	18 32 09.2	+1.1
DSL	Palaion Diasel	2.33	1	P	Pn	18 31 43.5	+1.0
DSL				S	Sn	18 32 12.6	+1.3
DSL	Palaion Diasel	2.33	1	P	Pn	18 31 43.5	+1.0
DSL				S	Sn	18 32 12.6	+1.3
LKR	Lokris	2.40	39	P	Pn	18 31 43.7	+0.2
LKR				S	Sn	18 32 13.8	+0.7
LKR	Lokris	2.40	39	P	Pn	18 31 43.7	+0.2
LKR				S	Sn	18 32 13.8	+0.7
SMIA	Simia	2.68	39	P	Pn	18 31 47.7	+0.3
SMIA	Simia	2.68	39	P	Pn	18 31 47.7	+0.3
IGT	Igoumenitsa	2.79	348	P	Pn	18 31 49.1	+0.3
IGT	Igoumenitsa	2.79	348	P	Pn	18 31 49.1	+0.3
THL	Klokotos Trika	2.86	15	P	Pn	18 31 50.7	+0.9
THL				S	Sn	18 32 26.4	+2.0
THL	Klokotos Trika	2.86	15	P	Pn	18 31 50.7	+0.9
THL				S	Sn	18 32 26.4	+2.0
SGD	Sagiada	2.88	347	P	Pn	18 31 50.6	+0.5
SGD	Sagiada	2.88	347	P	Pn	18 31 50.6	+0.5
XOR	Xorichti	3.06	33	P	Pn	18 31 53.0	+0.4
XOR	Xorichti	3.06	33	P	Pn	18 31 53.0	+0.4
KEK	Kerkira	3.07	342	P	Pn	18 31 53.0	+0.3
KEK	Kerkira	3.07	342	P	Pn	18 31 53.0	+0.3
KPRO	Kipourio	3.16	4	P	Pn	18 31 55.7	+1.8
KPRO				S	Sn	18 32 33.0	+1.2
KPRO	Kipourio	3.16	4	P	Pn	18 31 55.7	+1.8
KPRO				S	Sn	18 32 33.0	+1.2
IDI	Anoyia	3.45	115	Pn	Pn	18 32 00.8	+2.8
	comp=E,0.3nm,0.3s,baz=112,slow=13,SNR=1.3						
IDI				Sn	Sn	18 32 36.6	-2.5
	comp=E,1.5nm,0.3s,baz=252,slow=17,SNR=2.1						
NEST	Nestorio	3.61	360	P	Pn	18 32 02.0	+1.8
NEST				S	Sn	18 32 44.6	+1.6
NEST	Nestorio	3.61	360	P	Pn	18 32 02.0	+1.8
NEST				S	Sn	18 32 44.6	+1.6
FNA	Florina	3.98	3	P	Pn	18 32 06.2	+0.9
FNA	Florina	3.98	3	P	Pn	18 32 06.2	+0.9
OHR	Ohrid	4.31	357	*i* Pn	Pn	18 32 10.6	+0.8
OHR	Ohrid	4.31	357	*i* Pn	Pn	18 32 10.5	+0.8
TAR1	Taranto	4.75	323	*e*Pn	Pn	18 32 15.9	+0.2
SG1	Sgolgore (BA)	5.29	321	*e*Pn	Pn	18 32 23.3	+0.1
BAI	Bari	5.39	324	*e*Pn	Pn	18 32 24.5	-0.1
CDT	Castel del Mon	5.67	320	*e*Pn	Pn	18 32 28.4	0.0
BARS	Barje	6.04	5	⇓*i*Pn	Pn	18 32 33.3	-0.1
MS1	Monte Sant'Ang	6.30	323	*e*Pn	Pn	18 32 37.2	+0.1
STON	Ston	6.59	338	*e*Pn	Pn	18 32 39.4	-1.6
STON				Sn	Sn	18 33 47.3	-8.9
STON	Ston	6.59	338	*e*Pn	Pn	18 32 39.4	-1.6
IVAS	Ivanjica	6.80	354	*e*Pn	Pn	18 32 43.1	-0.9
BBLS	Lazići	7.17	350	*i* Pn	Pn	18 32 47.6	-1.4
DIVS	Divibare	7.33	354	*i* Pn	Pn	18 32 49.8	-1.5
TEKS	Tekeris	7.83	352	*e*Pn	Pn	18 32 56.2	-1.8
UDBI	Udbina	8.70	334	*e*Pn	Pn	18 33 10.4	+0.4
UDBI				Sn	Sn	18 34 42.0	-6.3
UDBI	Udbina	8.70	334	*e*Pn	Pn	18 33 10.4	+0.4
NVLJ	Novalja	9.06	331	*e*Pn	Pn	18 33 14.3	-0.6
NVLJ				Sn	Sn	18 34 48.5	-8.6
NVLJ	Novalja	9.06	331	*e*Pn	Pn	18 33 14.3	-0.6
BOJS	Bojanci	9.73	335	*i* Pn	Pn	18 33 23.3	-0.8
BOJS	Bojanci	9.73	335	Pn	Pn	18 33 23.3	-0.8
VISS	Visnje	10.13	334	*i* Pn	Pn	18 33 30.4	+0.8
VISS	Visnje	10.13	334	*i* Pn	Pn	18 33 30.4	+0.8
JAVS	Javornik	10.49	332	*i* Pn	Pn	18 33 34.1	-0.5
JAVS	Javornik	10.49	332	*i* Pn	Pn	18 33 34.1	-0.5
PERS	Pernice	10.78	338	*i* Pn	Pn	18 33 36.7	-1.8
PERS	Pernice	10.78	338	*i* Pn	Pn	18 33 36.7	-1.8
SOKA	Soboth	10.84	337	*e*Pn	Pn	18 33 37.6	-1.8
	comp=E,1.6nm,0.4s						
SOKA	Soboth	10.84	337	P	Pn	18 33 37.6	-1.8
	comp=E,1.6nm,0.4s						
OBKA	Obir	10.85	335	*i* Pn	Pn	18 33 39.4	-0.1
	comp=E,3.3nm,0.9s						
OBKA	Obir	10.85	335	P	Pn	18 33 39.4	-0.1
	comp=E,3.3nm,0.9s						
MOA	Molln	12.12	338	*i* Pn	Pn	18 33 56.7	-0.1
	comp=E,1.2nm,0.4s						
MOA	Molln	12.12	338	P	Pn	18 33 56.7	-0.1
	comp=E,1.2nm,0.4s						
GERES	GERESS Array B	13.18	338	Pn	Pn	18 34 09.6	-1.7
	comp=E,0.2nm,0.3s,baz=159,slow=15,SNR=5.2						
HFS	Hagfors	23.82	351	P	P	18 36 14.3	-2.8
	comp=E,2.1nm,0.8s,baz=134,slow=6.4,SNR=2.1						
FINES	FINESS Array B	24.87	6	P	P	18 36 24.4	-2.2
	comp=E,1.9nm,0.8s,baz=183,slow=9.6,SNR=1.9						
TORD	Torodi Ar. Bea	29.25	221	P	P	18 37 07.0	+0.5
	comp=E,0.4nm,0.7s,baz=29,slow=9.6,SNR=3.0						
KURBB	Kurchatov Arra	42.72	52	P	P	18 38 58.3	-2.9
	comp=E,1.0nm,0.8s,baz=278,slow=8.9,SNR=4.0						
MKAR	Makanchi Array	45.67	57	P	P	18 39 22.1	-2.9
	comp=E,0.3nm,0.5s,baz=272,slow=8.2,SNR=5.7						
ZALV	Zalesovo Beam	46.30	47	P	P	18 39 26.1	-3.7
	comp=E,0.4nm,0.4s,baz=258,slow=7.2,SNR=2.5						
CMAR	Chiang Mai Arr	69.66	82	P	P	18 42 11.8	-2.5
	comp=E,0.4nm,0.7s,baz=303,slow=6.0,SNR=3.3						

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*IDC **02** 18:32:41.0±0.7, 56.°33N×157.°30W, h0km, mb4.7/41, mb1 4.8/42, mb1mx4.6/73, mbtmp4.7/42, ML3.6/1, MS3.7/19, Ms1 3.7/19, ms1mx3.4/52, Error ellipse: s-maj=20.1km s-min=10.4km az=6.0*

*MOS **02** 18:32:40.8±1.0, 56.°27N×157.°35W, h10km, mb5.2/62, Error ellipse: s-maj=9.2km s-min=4.1km az=90.0*

*BJI **02** 18:32:42.2, 56.°40N×157.°37W, h18km, mb5.0/45, mB5.1/26, Ms4.8/13, Ms7 4.5/11*

*ISCJB **02** 18:32:45.7±0.3, 56.°30N±0.°02×157.°22W±0.°03, h42km±2km, mb4.8/175, MS3.8/21, Error ellipse: s-maj=4.0km s-min=2.7km az=165.4*

*NEIC **02** 18:32:46.0, 55.°98N×156.°90W, h24km, mb4.9/100, ML4.7(AEIC), After AEIC.*

ISC 02 18:32:45.8±0.8**, 56.°23N**±0.°05×**157.°03W**±0.°03**, h32**km±5km**, n503,** σ1.s53/515**, mb4.9**/177**, MS3.8**/21**, 33C-21D, Alaska Peninsula**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHGN	Chignik	0.78	276	*e*Pn	Pb	18 33 00.9	0.0
CHGN				*e*Sn	Sb	18 33 13.3	+2.1
ANPK	Aniakchak Peak	0.87	316	P	Pb	18 33 04.1	+1.6
ANPB	Aniakchak Plen	0.91	310	P	Pb	18 33 04.6	+1.6
AZAC	Aniakchak	0.95	316	P	Pb	18 33 05.5	+1.7
VNHG	Veniaminof 1	1.20	271	P	Pb	18 33 08.2	+0.2
VNNF	Veniaminof 3	1.28	274	P	Pb	18 33 09.6	+0.3
VNWF	Veniaminof 8	1.42	268	P	Pb	18 33 11.6	-0.2
PLBL	Peulik Blue Cr	1.48	4	P	Pb	18 33 13.7	+0.9
PLBL				S	Sb	18 33 36.9	+5.7
PLK3	Peulik 3	1.52	15	P	Pb	18 33 14.9	+1.4
PLK1	Peulik 1	1.60	8	P	Pb	18 33 15.7	+1.0
PLK5	Peulik 5	1.78	3	P	Pb	18 33 17.9	+0.2
SDPT	Sand Point	2.14	247	*e*Pn	Pn	18 33 19.0	-0.1
SDPT				*e*Sn	Sn	18 33 45.8	+1.2
ANCK	Angle Creek	2.15	22	P	Pb	18 33 22.4	-1.6
KABR	Katmai Barrier	2.21	30	P	Pb	18 33 22.8	-2.4
OHAK	Old Harbor	2.29	63	*e*Pn	Pn	18 33 21.4	+0.1
OHAK				S	Sn	18 33 49.4	+1.1
OHAK				*e*Sn	Sb	18 33 54.4	+0.2
KELA	Mount Kelaz	2.33	17	P	Pb	18 33 24.6	-2.5
KVTA	Katmai Vly 10	2.36	23	P	Pn	18 33 24.9	+2.6
KAWH	Katmai	2.48	28	P	Pn	18 33 26.1	+2.2
KAHC	Katmai Hardscr	2.66	23	P	Pn	18 33 29.1	+2.5
PVV	Pavlof Volcano	2.82	254	P	Pn	18 33 28.4	-0.1
PS4A	Pavlof South-4	2.87	254	P	Pn	18 33 28.8	-0.4
KDAK	Kodiak Island	2.89	55	Pn	Pb	18 33 45.2	+8.7
	32nm,0.3s,baz=217,slow=6.5,SNR=129						
KDAK	Kodiak Island	2.89	55	*e*P	Pn	18 33 30.4	+0.9
KDAK	Kodiak Island	2.89	55	*e*Pn	Pn	18 33 30.4	+0.9
KDAK				*e*Sn	Sb	18 34 21.8	+10
DT1	Dutton Round H	3.18	252	*e*Pn	Pn	18 33 33.2	-0.4
FOPK	Fourpeaked Vol	3.18	36	P	Pn	18 33 35.7	+2.2
CDD	Cape Douglas	3.27	32	P	Pn	18 33 37.0	+2.3
MCNL	McNeil River	3.30	25	P	Pn	18 33 37.7	+2.5
BALA	Baldy Mountain	3.42	255	*e*Pn	Pn	18 33 37.6	+0.8
FALS	False Pass	3.88	252	*e*Pn	Pn	18 33 42.8	-0.3
FALS				*e*Sn	Sn	18 34 29.3	+1.8
OPT	Oil Point	3.99	29	*e*Pn	Pn	18 33 47.6	+3.0
ISLZ	Isanotski Laza	4.09	251	P	Pn	18 33 45.8	-0.3
SSLN	Shishaldin Nor	4.21	253	P	Pn	18 33 48.1	+0.4
SSLW	Shishaldin Wes	4.29	253	P	Pn	18 33 47.8	-1.1
ILW	Iliamna West	4.36	27	P	Pn	18 33 52.9	+3.0
WESP	Westdahl Peak	4.72	252	P	Pn	18 33 55.0	+0.3
WECS	Westdahl Cape	4.74	252	P	Pn	18 33 55.3	+0.4
RSO	Redoubt South	4.81	26	*e*Pn	Pn	18 33 59.1	+3.1
BRLK	Bradley Lake	4.82	40	P	Pn	18 33 57.0	+0.9
NCT	North Crescent	4.85	25	P	Pn	18 33 59.5	+2.9
SVW2	Sparrevohn	4.95	8	*e*Pn	Pn	18 34 00.5	+2.8
SEW	Seward	5.58	43	*e*Pn	Pn	18 34 08.8	+2.3
SPU	Mount Spurr	5.60	25	*e*Pn	Pn	18 34 10.0	+3.2
UNV	Unalaska Valle	5.95	250	*e*Pn	Pn	18 34 11.9	+0.5
RC01	Rabbit Creek A	6.18	35	*e*Pn	Pn	18 34 16.1	+1.4
TT01	Tatalina	6.72	4	*e*Pn	Pn	18 34 25.0	+2.9
TTA	Tatalina	6.75	4	*e*P	Pn	18 34 25.1	+2.6
TTA	Tatalina	6.75	4	*e*Pn	Pn	18 34 25.1	+2.6
PMR	Palmer	6.75	34	*e*P	Pn	18 34 23.5	+1.0
PMR	Palmer	6.75	34	*e*Pn	Pn	18 34 23.5	+1.0
PPLA	Purkeypile	7.13	18	*e*Pn	Pn	18 34 31.3	+3.5
SML	Sawmill	7.17	35	*e*P	Pn	18 34 29.4	+1.1
SML	Sawmill	7.17	35	*e*Pn	Pn	18 34 29.4	+1.1
EYAK	Cordova Ski Ar	7.34	49	*e*Pn	Pn	18 34 31.4	+0.9
SCM	Sheep Creek Mo	7.52	38	*e*P	Pn	18 34 34.0	+0.8
SCM	Sheep Creek Mo	7.52	38	*e*Pn	Pn	18 34 34.0	+0.8
NIKH	Nikolski High	7.60	250	*e*Pn	Pn	18 34 33.6	-0.6
CAST	Castle Rocks	7.63	17	*e*Pn	Pn	18 34 37.2	+2.6
DIV	Divide	7.65	45	*e*Pn	Pn	18 34 35.8	+0.9
RAGM	Ragged Mountai	7.72	52	*e*Pn	Pn	18 34 36.8	+0.9
KLU	Klutina	7.81	43	*e*Pn	Pn	18 34 38.5	+1.4
KTH	Kantishna Hill	7.96	20	*e*Pn	Pn	18 34 40.9	+1.7
TRF	Thorofare Moun	8.00	22	*e*Pn	Pn	18 34 41.4	+1.6
BMRM	Bremner River	8.04	49	*e*Pn	Pn	18 34 40.7	+0.5
RND	Reindeer	8.29	26	*e*P	Pn	18 34 44.7	+1.0
RND	Reindeer	8.29	26	*e*Pn	Pn	18 34 44.7	+1.0
DHY	Denali Highway	8.42	31	*e*Pn	Pn	18 34 45.5	0.0
BPAW	Bear Paw Mtn.	8.45	18	*e*Pn	Pn	18 34 46.6	+0.8
MCK	McKinley	8.54	25	*e*P	Pn	18 34 48.2	+1.1
MCK	McKinley	8.54	25	*e*Pn	Pn	18 34 48.1	+1.1
PAX	Paxson	8.94	36	*e*P	Pn	18 34 53.6	+1.1
PAX	Paxson	8.94	36	*e*Pn	Pn	18 34 53.6	+1.1
BALM	Baldy	9.04	52	*e*P	Pn	18 34 54.5	+0.5
BALM	Baldy	9.04	52	*e*Pn	Pn	18 34 54.5	+0.5
MLY	Manley	9.35	17	*e*Pn	Pn	18 34 58.8	+0.7
WRH	Wood River Hil	9.37	24	*e*Pn	Pn	18 34 58.0	-0.4
MENT	Mentasta	9.52	40	*e*Pn	Pn	18 35 03.8	+3.4
CCB	Clear Creek Bu	9.59	24	*e*Pn	Pn	18 35 00.6	-0.7
HDA	Harding Lake	9.60	27	*e*Pn	Pn	18 35 01.4	-0.1
MDM	Murphy Dome	9.76	23	*e*Pn	Pn	18 35 03.3	-0.4
COLA	College	9.77	24	*ce*P	Pn	18 35 04.9	+1.1
COLA	College	9.77	24	*e*Pn	Pn	18 35 02.8	-1.0
DOT	Dot Lake	9.87	36	*e*Pn	Pn	18 35 06.1	+0.9
IL1	Eielson Array	9.91	26	*e*Pn	Pn	18 35 04.7	-1.0
ILAR	Eielson Array	9.91	26	Pn	Pn	18 35 04.8	-0.9
	2.1nm,0.3s,baz=217,slow=13,SNR=45						
ILAR				Sn	Sn	18 36 58.0	+2.3
	1.8nm,0.3s,baz=200,slow=28,SNR=4.6						
ILAR				LR	LR	18 39 18.5	
	comp=Z,537nm,18.9s,baz=242,slow=40						
ILB	Eielson Array	9.91	26	*e*Pn	Pn	18 35 04.7	-1.1
ILB				*e*Sn	Sn	18 36 53.8	-1.9
GAMB	Gambell	10.53	322	*e*Pn	Pn	18 35 15.6	+1.4
ATKA	Atka Island	10.82	255	*e*Pn	Pn	18 35 16.7	-1.6
COLD	Coldfoot	11.49	13	*e*Pn	Pn	18 35 28.5	+1.1
EGAK	Eagle	11.57	36	*e*Pn	Pn	18 35 29.7	+1.3
DAWY	Dawson	11.75	41	*e*Pn	Pn	18 35 31.8	+0.8
FYU	Fort Yukon	11.78	24	*e*Pn	Pn	18 35 31.1	-0.2
SKAG	Skagway	11.99	65	*e*Pn	Pn	18 35 34.2	0.0
CRAG	Craig	13.43	83	*e*Pn	Pn	18 35 53.1	-0.8
DLBC	Dease Lake	14.71	70	Pn	Pn	18 36 13.2	+1.9
	0.1nm,0.3s,baz=280,slow=12,SNR=3.9						
DLBC				LR	LR	18 42 14.7	
	comp=Z,116nm,18.4s,baz=296,slow=39						
DLBC	Dease Lake	14.71	70	*e*Pn	Pn	18 36 09.8	-1.6
INK	Inuvik	16.17	32	Pn	P	18 36 32.2	-0.9
	3.5nm,0.3s,baz=228,slow=12,SNR=64						
INK				LR	LR	18 43 29.0	
	comp=Z,361nm,20.8s,baz=214,slow=40						
INK	Inuvik	16.17	32	*e*P	Pn	18 36 26.2	-4.0
INK				*e*		18 39 35.8	
INK				pmax	pmax		
	comp=Z,32nm,0.6s						
INK	Inuvik	16.17	32	*e*Pn	Pn	18 36 26.2	-4.0
	comp=Z,32nm,0.6s						
INK				*e*Sn	S	18 39 35.8	-4.7
BILL	Bilibino	20.45	320	⇑*e*P	P	18 37 19.5	-0.6
BILL				*e*		18 37 35.9	
BILL				pmax	pmax		
	comp=Z,28nm,0.8s						
BILL				MLR	MLR		
	comp=Z,358nm,17.0s						
BILL	Bilibino	20.45	320	*e*P	P	18 37 18.8	-1.2
	comp=Z,22nm,0.7s						
YKW3	Yellowknife Ar	22.16	56	*e*P	P	18 37 38.9	+0.4
	comp=Z,18nm,1.1s						
YKA	Yellowknife Ar	22.16	56	P	P	18 37 38.9	+0.3
	comp=Z,1.9nm,0.3s,baz=270,slow=11,SNR=35						
YKB5	Yellowknife Ar	22.16	56	*e*P	P	18 37 38.1	-0.5
NEWO	Newport DOGAMI	23.76	105	*e*P	P	18 37 57.6	+2.6
H04A	Detroit Lake	24.73	103	*e*P	P	18 38 07.3	+3.3
	comp=Z,20nm,0.8s						
PET	Petropavlovsk	25.52	282	*e*P	P	18 38 09.8	-1.2
PET				pmax	pmax		
	comp=Z,29nm,1.0s						
HUMO	Hull Mountain	25.70	108	*e*P	P	18 38 14.6	+1.8
	comp=Z,7.7nm,0.8s						
SEY	Seymchan	25.87	306	P	P	18 38 11.4	-2.6
	comp=Z,7.9nm,0.7s,baz=93,slow=12,SNR=33						
SEY	Seymchan	25.87	306	⇓*i*P	P	18 38 14.0	-0.1
PEA1	Petropavlovsk-	26.00	282	*e*P	P	18 38 14.5	-0.9
PEA0	Petropavlovsk-	26.01	282	*e*P	P	18 38 14.8	-0.6
PEA0B	Petropavlovsk-	26.01	282	*e*P	P	18 38 14.7	-0.7
	comp=Z,247nm,2.0s						
PETK	Petropavlovsk-	26.01	282	P	P	18 38 14.5	-0.9
	comp=Z,5.1nm,0.5s,baz=77,slow=11,SNR=19						
K05A	Summer Lake	26.73	105	*e*P	P	18 38 25.1	+2.8
	comp=Z,60nm,1.8s						
JTMT	Jette	27.26	90	*e*P	P	18 38 29.9	+2.9
MA2	Magadan	27.35	299	P	P	18 38 26.6	-0.9
	comp=Z,3.8nm,0.7s,baz=102,slow=13,SNR=11						
MA2				LR	LR	18 49 43.0	
	comp=Z,100nm,20.8s,baz=110,slow=38						
WVOR	Wild Horse Val	28.15	103	*e*P	P	18 38 37.8	+2.9
WVOR				pmax	pmax		
	comp=Z,11nm,0.8s						
WVOR	Wild Horse Val	28.15	103	*e*P	P	18 38 37.8	+2.9
	comp=Z,11nm,0.8s						
RES	Resolute Bay	29.65	28	P	P	18 38 46.8	-0.9
	comp=Z,5.6nm,0.7s,baz=265,slow=11,SNR=22						
RES				LR	LR	18 51 34.7	
	comp=Z,102nm,20.3s,baz=284,slow=38						
RES	Resolute Bay	29.65	28	*e*P	P	18 38 47.1	-0.7
RES				pmax	pmax		
	comp=Z,5.0nm,0.8s						
RES	Resolute Bay	29.65	28	*e*P	P	18 38 47.0	-0.7
	comp=Z,5.3nm,0.8s						
HLID	Hailey	29.72	97	*e*P	P	18 38 51.6	+2.7
	comp=Z,9.3nm,1.5s						
ELK	Elko	31.16	102	*e*P	P	18 39 03.9	+2.1
ELK				pmax	pmax		
	comp=Z,7.0nm,0.8s						
ELK	Elko	31.16	102	*e*P	P	18 39 03.9	+2.1
	comp=Z,6.5nm,0.8s						
NV01	Mina Array Sit	31.16	108	*e*P	P	18 39 03.5	+1.7
NVAR	Mina Array Bea	31.16	108	P	P	18 39 04.4	+2.6
	comp=Z,2.5nm,0.7s,baz=304,slow=8.4,SNR=15						
NVAR				LR	LR	18 49 04.4	
	comp=Z,328nm,21.6s,baz=288,slow=31						
MOOW	Moose Ponds	31.64	93	*e*P	P	18 39 08.2	+2.3
	comp=Z,4.9nm,1.4s						
BGU	Big Grassy Mou	32.25	99	*e*P	P	18 39 13.6	+2.4
	comp=Z,20nm,1.9s						
HWUT	Hardware Ranch	32.59	97	*e*P	P	18 39 17.0	+2.7
	comp=Z,3.7nm,0.8s						
R11A	Troy Canyon, C	32.68	105	*e*P	P	18 39 17.0	+2.0
	comp=Z,4.4nm,0.8s						
FCC	Fort Churchill	32.82	59	*e*P	P	18 39 17.6	+1.8
FCC				pmax	pmax		
	comp=Z,34nm,1.7s						
FCC	Fort Churchill	32.82	59	*e*P	P	18 39 17.6	+1.8
	comp=Z,34nm,1.7s						
DUG	Dugway, Tooele	32.87	100	*e*P	P	18 39 19.5	+2.8
DUG				pmax	pmax		
	comp=Z,5.0nm,1.0s						
DUG	Dugway, Tooele	32.87	100	*e*P	P	18 39 19.5	+2.8
	comp=Z,5.0nm,1.0s						
BW06	Boulder Array	32.94	94	*e*P	P	18 39 19.0	+1.7
PD31	Pinedale Array	32.94	94	*e*P	P	18 39 19.0	+1.7
PDAR	Pinedale Array	32.94	94	P	P	18 39 17.9	+0.6
	comp=Z,2.9nm,0.7s,baz=304,slow=5.0,SNR=28						
TPNV	Topopah Spring	33.35	108	*e*P	P	18 39 23.8	+2.9
TPNV				pmax	pmax		
	comp=Z,10.0nm,0.8s						
TPNV	Topopah Spring	33.35	108	*e*P	P	18 39 23.8	+2.9
	comp=Z,9.7nm,0.8s						
TIXI	Tiksi	33.36	326	⇑*i*P	P	18 39 18.1	-2.3
TIXI				pmax	pmax		
	comp=Z,16nm,1.2s						
TIXI	Tiksi	33.36	326	*e*P	P	18 39 20.1	-0.3
	comp=Z,9.8nm,0.9s						
NLU	North Lily Min	33.45	100	*e*P	P	18 39 23.6	+1.9
	comp=Z,7.7nm,1.2s						
PSUT	Pine Spring	33.48	103	*e*P	P	18 39 24.6	+2.5
	comp=Z,5.0nm,0.9s						
GSC	Goldstone, Bar	34.31	110	*e*P	P	18 39 29.3	+0.2
GSC				pmax	pmax		
	comp=Z,9.0nm,1.4s						
GSC	Goldstone, Bar	34.31	110	*e*P	P	18 39 29.3	+0.2
	comp=Z,8.9nm,1.4s						
TMUT	Trail Mountain	34.38	100	*e*P	P	18 39 32.2	+2.3
	comp=Z,13nm,1.4s						
MSU	Marysvale	34.41	102	*e*P	P	18 39 32.5	+2.4
MSU	Marysvale	34.41	102	*e*P	P	18 39 32.5	+2.4
P17A	Butcher Ranch,	34.52	99	*e*P	P	18 39 33.0	+2.0
	comp=Z,3.6nm,0.7s						
SBI	Santa Barbara	34.58	115	*e*P	P	18 39 28.6	-2.8
P18A	Preston Nutter	34.68	98	*e*P	P	18 39 34.7	+2.1
	comp=Z,39nm,1.9s						
SRU	San Rafael Swe	34.89	99	*e*P	P	18 39 34.6	+0.4
SRU				pmax	pmax		
	comp=Z,25nm,0.9s						
SRU	San Rafael Swe	34.89	99	*e*P	P	18 39 34.6	+0.4
	comp=Z,25nm,0.9s						
LCMT	Little Creek M	34.92	105	*e*P	P	18 39 36.6	+2.2
	comp=Z,7.4nm,0.9s						
CIAC	Catalina I. Ai	34.96	114	*e*P	P	18 39 40.1	+5.4
NKL	Nikolayevsk	35.06	292	*e*P	P	18 39 33.8	-1.5
NKL				*e*		18 39 43.0	
NKL				pmax	pmax		
	comp=Z,90nm,1.0s						
KNB	Kanab	35.14	104	*e*P	P	18 39 38.9	+2.5
KNB	Kanab	35.14	104	*e*P	P	18 39 38.9	+2.5
RSSD	Black Hills	35.15	87	*e*P	P	18 39 38.6	+2.1
RSSD				pmax	pmax		
	comp=Z,5.0nm,0.6s						
RSSD	Black Hills	35.15	87	*e*P	P	18 39 38.6	+2.1
	comp=Z,5.0nm,0.6s						
MDND	Maddock	35.35	79	*e*P	P	18 39 40.2	+2.3
	comp=Z,21nm,1.1s						
O20A	White River Ci	35.44	96	*e*P	P	18 39 41.1	+2.1
	comp=Z,28nm,0.8s						
ULM	Lac du Bonnet	36.00	73	P	P	18 39 44.8	+1.3
	comp=Z,2.5nm,0.4s,baz=306,slow=9.0,SNR=12						
ULM				LR	LR	18 55 03.6	
	comp=Z,120nm,18.0s,baz=225,slow=37						
ULM	Lac du Bonnet	36.00	73	*e*P	P	18 39 44.2	+0.8
ULM				pmax	pmax		
	comp=Z,23nm,1.6s						
ULM	Lac du Bonnet	36.00	73	*e*P	P	18 39 44.2	+0.8
	comp=Z,23nm,1.6s						
W13A	Hualapai Mount	36.00	107	*e*P	P	18 39 45.2	+1.4
	comp=Z,5.2nm,1.0s						
R19A	Curley Farm, L	36.17	99	*e*PcP	PcP	18 42 12.0	+1.8
YAK	Yakutsk	36.17	310	P	P	18 39 43.2	-1.5
	comp=Z,1.4nm,0.3s,baz=243,slow=16,SNR=18						
YAK				LR	LR	18 55 48.0	
	comp=Z,71nm,18.3s,baz=81,slow=38						
YAK	Yakutsk	36.17	310	*e*P	P	18 39 42.7	-2.0
YAK				pmax	pmax		
	comp=N,3.0nm,0.9s						
YAK				pmax	pmax		
	comp=Z,37nm,0.7s						
YAK				pmax	pmax		
	comp=E,11nm,1.1s						
YAK	Yakutsk	36.17	310	*e*P	P	18 39 43.0	-1.8
	comp=E,48nm,0.8s						
YUH	Yuha Desert	36.83	112	*e*P	P	18 39 49.0	-1.6
YUH				*e*sP	sP	18 40 13.2	+9.2
AGMN	Agassiz Nation	37.12	76	*e*P	P	18 39 54.6	+1.6
	comp=E,9.5nm,0.8s						
Y14A	Wickenburg	37.36	108	*e*P	P	18 39 56.7	+1.5
	comp=E,19nm,0.9s						
MVCO	Mesa Verde	37.36	100	*e*P	P	18 39 57.4	+2.0
X16A	Lo Mia Camp, P	37.83	106	*e*P	P	18 40 01.4	+2.0
	comp=E,7.2nm,0.9s						
113A	Mohawk Valley,	37.86	110	*e*P	P	18 40 01.1	+1.7
	comp=E,5.2nm,1.0s						
S22A	4UR Ranch, Cre	37.90	98	*e*P	P	18 40 02.1	+2.1
	comp=E,14nm,1.3s						
T25A	Trinidad	39.68	96	*e*P	P	18 40 16.6	+1.7
	comp=E,23nm,1.5s						
EYMN	Ely	39.68	73	*e*P	P	18 40 16.5	+2.0
	comp=E,37nm,1.6s						
TUC	Tucson	39.80	107	*e*P	P	18 40 17.7	+2.0
TUC				pmax	pmax		
	comp=Z,3.0nm,0.8s						
TUC	Tucson	39.80	107	*e*P	P	18 40 17.7	+2.0
	comp=Z,3.4nm,0.8s						
ANMO	Albuquerque	40.15	100	*e*P	P	18 40 20.5	+1.8
ANMO				pmax	pmax		
	comp=Z,9.0nm,1.7s						
ANMO	Albuquerque	40.15	100	*e*P	P	18 40 20.4	+1.8
	comp=Z,9.4nm,1.7s						
HABR	Khabarovsk	40.64	289	*e*P	P	18 40 19.1	-3.3
HABR				*e*		18 41 53.5	
HABR				*e*		18 42 20.4	
HABR				*e*S	S	18 46 27.8	-1.9
HABR				*e*SS	SS	18 49 30.2	0.0
HABR				*e*		18 50 21.6	
HABR				pmax	pmax		
	comp=Z,29nm,2.0s						
HABR				MLR	MLR		
	comp=Z,43nm,17.0s						
SPMN	Marine on St.	40.66	78	*e*P	P	18 40 23.5	+0.9
	comp=Z,15nm,1.3s						
319A	Douglas	41.32	107	*e*P	P	18 40 27.6	-0.8
	comp=Z,6.6nm,0.9s						
KLR	Kul'dur	41.91	292	P	P	18 40 31.0	-1.8
	comp=Z,26nm,0.9s,baz=60,slow=8.0,SNR=23						
KLR				LR	LR	18 59 36.0	
	comp=Z,52nm,19.1s,baz=117,slow=39						
KLR	Kul'dur	41.91	292	*e*P	P	18 40 31.0	-1.8
MSTX	Muleshoe	42.90	98	*e*P	P	18 40 42.7	+1.5
	comp=Z,5.8nm,0.8s						
MNTX	Cornudas Mount	43.18	102	*e*P	P	18 40 45.6	+2.2
	comp=Z,5.5nm,1.0s						
V34A	Guthrie	44.46	91	*e*P	P	18 40 54.5	+0.9
	comp=Z,58nm,1.9s						
WMOK	Wichita Mounta	44.55	93	*e*P	P	18 40 55.9	+1.5
WMOK				pmax	pmax		
	comp=Z,9.0nm,0.7s						
WMOK	Wichita Mounta	44.55	93	*e*P	P	18 40 55.9	+1.5
	comp=Z,8.5nm,0.7s						
DAG	Danmarks Havn	44.68	13	*i* P	P	18 40 53.7	-1.1
	comp=Z,25nm,0.7s						
DAG	Danmarks Havn	44.68	13	*i* P	P	18 40 53.7	-1.1
DAG				pmax	pmax		
	comp=Z,17nm,0.7s						
W34A	Bridge Creek,	44.75	92	*e*P	P	18 40 57.4	+1.4
	comp=Z,50nm,1.9s						
KBS	Kingsbay	44.94	3	P	P	18 40 58.1	+1.2
KBS	Kingsbay	44.94	3	P	P	18 40 58.1	+1.2
TUL1	Leonard	45.37	90	*e*P	P	18 41 02.2	+1.4
	comp=Z,21nm,1.5s						
SFJD	Kangerlussuaq	45.51	32	*i* P	P	18 41 03.2	+1.7
	comp=Z,20nm,0.8s						
SFJD	Kangerlussuaq	45.51	32	*e*P	P	18 41 03.0	+1.5
SFJD				pmax	pmax		
	comp=Z,23nm,0.8s						
SFJD	Kangerlussuaq	45.51	32	*e*P	P	18 41 03.0	+1.5
	comp=Z,23nm,0.8s						
ABTX	Abilene, Hawle	45.64	96	*e*P	P	18 41 04.0	+1.0
	comp=Z,8.3nm,0.6s						
SPB5	Spitsbergen Ar	45.79	2	*e*P	P	18 41 02.5	-1.1
SPA1	Spitsbergen Ar	45.79	2	*e*P	P	18 41 03.2	-0.5
SPB1	Spitsbergen Ar	45.79	2	*e*P	P	18 41 04.1	+0.5
SPB4	Spitsbergen Ar	45.79	2	*e*P	P	18 41 02.8	-0.9
SPA0	Spitsbergen Ar	45.79	2	*e*P	P	18 41 02.5	-1.1

SPA3 **Spitsbergen Ar** 45.79 2 *e*P P 18 41 03.6 -0.1
SPA2 **Spitsbergen Ar** 45.79 2 *e*P P 18 41 03.6 -0.1
SPB2 **Spitsbergen Ar** 45.80 2 *e*P P 18 41 03.8 +0.1
SPB3 **Spitsbergen Ar** 45.80 2 *e*P P 18 41 03.4 -0.3
TX31 **Lajitas Ar. Si** 45.94 103 *e*P P 18 41 05.9 +0.3
LTX **Lajitas** 45.95 103 *e*P P 18 41 05.5 -0.1
LTX **Lajitas** 45.95 103 *e*P P 18 41 05.5 -0.1
TXAR **Lajitas Array** 45.95 103 P P 18 41 05.5 -0.1
comp=Z,3.2nm,0.7s,baz=312,slow=5.4,SNR=36
TXAR LR LR 18 58 16.1
comp=Z,117nm,21.1s,baz=0.0,slow=33
MDJ **Mudanjiang** 46.00 288 *e*P P 18 41 04.1 -1.6
comp=Z,9.3nm,0.8s
NRIK **Noril'sk** 46.34 334 P P 18 41 07.3 -0.7
comp=Z,14nm,0.8s,baz=48,slow=7.1,SNR=10.0
NRIK LR LR 19 03 53.4
comp=Z,61nm,18.6s,baz=104,slow=41
H11S1 **WAKE ISLAND Hy** 46.45 231 T T 19 31 35.0
baz=23,slow=74,SNR=2.6
H11S2 **WAKE ISLAND Hy** 46.46 231 T T 19 31 22.1
baz=23
H11S3 **WAKE ISLAND Hy** 46.47 231 T T 19 31 31.5
baz=23,slow=74,SNR=4.9
HPIG **46.76 107** *e*P P 18 41 13.2 +1.1
comp=Z,6.0nm,0.8s
MAJO **Matsushiro** 46.88 274 P P 18 41 12.0 -0.7
MAJO pmax pmax
comp=Z,98nm,1.0s
MJAR **Matsushiro Arr** 46.88 274 P P 18 41 11.5 -1.2
comp=Z,4.6nm,0.9s,baz=38,slow=6.6,SNR=2.9
WHTX **Lake Whitney,** 47.34 95 *e*P P 18 41 15.4 -0.9
comp=Z,22nm,1.4s
SCHQ **Schefferville** 47.51 52 P P 18 41 18.1 +0.8
comp=Z,3.6nm,0.4s,baz=273,slow=5.1,SNR=3.9
SCHQ LR LR 19 02 25.6
comp=Z,155nm,20.0s,baz=52,slow=38
OLIL **Olney** 47.63 81 *e*P P 18 41 19.0 +0.6
comp=Z,19nm,1.0s
HIA **Hailar** 47.94 299 *e*P P 18 41 18.2 -2.6
HIA pmax pmax
comp=Z,9.0nm,0.7s
HIA **Hailar** 47.94 299 *e*P P 18 41 18.2 -2.6
comp=Z,9.3nm,0.7s
WLAR **White Oak Lake** 48.49 90 *e*P P 18 41 25.5 +0.3
comp=Z,36nm,1.5s
CN2 **Changchun** 48.74 290 *e*P P 18 41 25.9 -1.1
CN2 pmax pmax
comp=Z,30nm,1.0s
HKT **Hockley** 49.79 95 *e*P P 18 41 36.9 +1.8
HKT pmax pmax
comp=Z,13nm,1.3s
HKT **Hockley** 49.79 95 *e*P P 18 41 36.9 +1.8
comp=Z,13nm,1.3s
PLAL **Pickwick Lake** 50.34 84 *e*P P 18 41 39.0 -0.3
comp=Z,28nm,1.4s
ZAIG **Zacatecas** 51.77 107 *e*P P 18 41 50.0 -0.5
comp=Z,4.3nm,0.8s
SSPA **Standing Stone** 51.81 72 *e*P P 18 41 51.7 +1.4
comp=Z,49nm,1.6s
KS01 **Wonju Array Si** 51.91 282 *e*P P 18 41 50.3 -0.7
CPCT **Cooper Cave** 51.97 81 *e*P P 18 41 51.5 -0.1
comp=Z,25nm,1.9s
HAMF **Hammerfest** 53.43 360 *e*P P 18 42 01.4 -0.4
TLY **Talaya** 53.65 310 P P 18 42 02.5 -1.3
comp=Z,17nm,0.9s,baz=30,slow=7.8,SNR=17
TLY LR LR 19 07 19.5
comp=Z,57nm,18.5s,baz=28,slow=39
TLY **Talaya** 53.65 310 *e*P P 18 42 03.5 -0.2
TLY pmax pmax
comp=Z,30nm,1.1s
TLY MLR MLR
comp=Z,64nm,15.0s
KEV **Kevo** 54.29 358 *e*P P 18 42 06.8 -1.2
TRO **Tromso** 54.41 2 *e*P P 18 42 11.2 +2.3
ARCES **ARCESS Array B** 54.53 359 P P 18 42 08.7 -1.2
comp=Z,3.0nm,0.6s,baz=16,slow=7.2,SNR=22
ARE0 **ARCESS Array S** 54.53 359 *e*P P 18 42 09.5 -0.4
KRAR **Krasnoyarsk** 54.65 320⇓ *e*P P 18 42 10.1 -0.8
KRAR pmax pmax
comp=Z,29nm,0.8s
ZAK **Zakamensk** 54.76 309 *e*P P 18 42 10.3 -1.6
ZAK pmax pmax
comp=Z,8.0nm,1.2s
MOY **Mondy** 54.78 312 *e*P P 18 42 13.0 +0.9
MOY pmax pmax
comp=Z,16nm,1.3s
ULN **Ulaanbaatar** 54.94 305⇑ *e*P P 18 42 13.7 +0.4
ULN pmax pmax
comp=Z,13nm,0.9s
ULN **Ulaanbaatar** 54.94 305 *e*P P 18 42 11.7 -1.7
comp=Z,12nm,0.9s
KIF **Kilpisjarvi** 55.07 1 *e*P P 18 42 11.7 -2.0
KTK1 **Kautokeino** 55.07 360 *e*P P 18 42 15.3 +1.5
SONA1 **Songino Array** 55.25 305 *e*P P 18 42 14.5 -1.1
SONA0 **Songino Array** 55.26 305 *e*P P 18 42 14.9 -0.7
comp=Z,2nm,0.8s
SONA0 *e*PcP **PcP** 18 43 17.1 +0.9
SONM **Songino Array** 55.26 305 P P 18 42 14.9 -0.7
comp=Z,26nm,0.7s,baz=44,slow=6.2,SNR=82
SONM PcP **PcP** 18 43 17.1 +0.9
comp=Z,4.0nm,0.7s,baz=39,slow=2.4,SNR=3.9
SONM LR LR 19 08 09.6
comp=Z,190nm,18.8s,baz=44,slow=39
HEF **Hetta** 55.68 360 *e*P P 18 42 17.3 -0.9
LVZ **Lovozero** 55.89 355*c e*P P 18 42 21.3 +1.6
LVZ pmax pmax
comp=Z,72nm,2.5s
TLIG **Tlapa** 58.16 107 *e*P P 18 42 35.7 -0.8
comp=Z,8.7nm,0.9s
NVS **Novosibirsk** 58.91 324 *e*P P 18 42 40.0 -1.1
NVS pmax pmax
comp=N,7.0nm,1.0s
NVS pmax pmax
comp=E,11nm,1.0s
NVS pmax pmax
comp=Z,20nm,1.0s
ZAA1 **Zalesovo Array** 59.11 323 *e*P P 18 42 41.0 -1.5
ZAA0 **Zalesovo Array** 59.12 323 *e*P P 18 42 41.0 -1.6
ZALV **Zalesovo Beam** 59.12 323 P P 18 42 41.0 -1.5
comp=Z,11nm,0.8s,baz=40,slow=5.8,SNR=36
ZALV LR LR 19 11 01.6
comp=Z,100nm,18.7s,baz=70,slow=39
TMCR **Tamitsa** 59.38 352 *e*P P 18 42 44.3 +0.1
TMCR pmax pmax
comp=Z,19nm,0.9s
NJ2 **Nanjing** 60.88 285 *e*P P 18 42 57.7 +2.7
NJ2 pmax pmax
comp=Z,10.0nm,0.5s
SOKR **Solikamsk** 61.43 341⇑ *i*P P 18 42 57.2 -1.1
SOKR pmax pmax
comp=Z,31nm,1.3s
NC204 **NORSAR Array S** 62.45 7 *e*P P 18 43 05.7 +0.5
KLMR **Klimovskoe** 62.53 351 *e*P P 18 43 03.2 -2.5
KLMR pmax pmax
comp=Z,26nm,1.0s
KLMR pmax pmax
comp=Z,24nm,1.7s
FIA1 **FINESS Array S** 62.65 358 *e*P P 18 43 06.8 +0.4
FIA0 **FINESS Array S** 62.65 358 *e*P P 18 43 05.2 -1.2
FIA0 **FINESS Array S** 62.65 358 *e*P P 18 43 05.2 -1.2
FINES **FINESS Array B** 62.65 358 P P 18 43 05.2 -1.2
comp=Z,7.6nm,0.7s,baz=10,slow=12,SNR=20
NC405 **NORSAR Array S** 62.67 6 *e*P P 18 43 07.1 +0.4
NBO02 **NORSAR Array S** 62.68 7 *e*P P 18 43 07.5 +0.9
NBO00 **NORSAR Array S** 62.69 7 *e*P P 18 43 07.4 +0.6
CCIG **Comitan** 62.69 102 *e*P P 18 43 08.7 +1.1
comp=Z,21nm,0.4s
NB2 **NORSAR Subarra** 62.71 6 P P 18 43 06.0 -0.9
comp=Z,10.0nm,0.8s,baz=353,slow=6.9
NB2 **NORSAR Subarra** 62.71 6 P P 18 43 06.0 -0.9
baz=353,slow=6.9
NB200 **NORSAR Array S** 62.71 6 *e*P P 18 43 06.3 -0.6
NOA **NORSAR Array B** 62.71 6 P P 18 43 06.3 -0.6
comp=Z,9.9nm,0.8s,baz=353,slow=6.7,SNR=20
NAO01 **NORSAR Array S** 62.88 7 *e*P P 18 43 08.5 +0.5
HFS **Hagfors** 63.75 5 P P 18 43 13.9 +0.1
comp=Z,11nm,0.7s,baz=0.2,slow=7.3,SNR=20
KURK **Kurchatov** 63.90 324 *e*P P 18 43 13.7 -1.2
KURK pmax pmax
comp=Z,24nm,0.9s
KURK **Kurchatov** 63.90 324 *e*P P 18 43 13.7 -1.2
comp=Z,24nm,0.9s
KURBB **Kurchatov Arra** 64.01 324 P P 18 43 14.7 -0.9
comp=Z,13nm,0.8s,baz=27,slow=6.1,SNR=50
ARU **Arti** 64.06 339 P P 18 43 14.7 -1.2
comp=Z,5.7nm,0.5s,baz=19,slow=2.4,SNR=16
ARU **Arti** 64.06 339*d i*P P 18 43 14.1 -1.8
ARU 18 45 35.1
ARU S S 18 51 50.9 +1.2
ARU SS SS 18 55 55.5 -2.3
ARU pmax pmax
comp=Z,14nm,1.0s
ARU **Arti** 64.06 339 *e*P P 18 43 14.4 -1.5
comp=Z,9.9nm,0.8s
BRVK **Borovoye** 64.36 331⇑ *i*P P 18 43 17.2 -0.7
BRVK pmax pmax
comp=Z,15nm,1.2s
BRVK **Borovoye** 64.36 331 *e*P P 18 43 17.0 -0.8
comp=Z,20nm,1.3s
BVAR **Borovoye Array** 64.36 330 P P 18 43 16.7 -1.2
comp=Z,5.6nm,0.7s,baz=40,slow=5.8,SNR=26
VOSK **Vostochnaya** 64.46 330 *e*P P 18 43 17.3 -1.3
VOSK pmax pmax
comp=Z,14nm,1.1s
VOSK **Vostochnaya** 64.46 330 *e*P P 18 43 17.3 -1.3
comp=Z,14nm,1.1s
GTA **Gaotai** 64.79 304 P P 18 43 21.6 +0.5
GTA pP pP 18 43 30.8 -0.3
GTA sP sP 18 43 34.9 +0.1
GTA S S 18 51 57.8 -1.7
GTA pmax pmax
comp=Z,6.0nm,1.0s
GTA pmax pmax
comp=Z,77nm,5.4s
GTA LR LR
comp=Z,180nm,14.3s
GTA LR LR
comp=Z,130nm,14.5s
GTA LR LR
comp=Z,250nm,16.2s
LZH **Lanzhou** 65.50 298 *e*P P 18 43 26.5 +0.7
LZH pP pP 18 43 33.2 -2.6
LZH sP sP 18 43 36.0 -3.6
LZH PcP **PcP** 18 43 59.2 +1.8
LZH pmax pmax
comp=Z,22nm,1.1s
VSU **Vasula** 65.62 358*c i*P P 18 43 26.7 +0.7
VSU pmax pmax
comp=Z,44nm,1.2s
MK31 **Makanchi Array** 65.99 320 *e*P P 18 43 26.8 -1.8
MK31 **Makanchi Array** 65.99 320 *e*P P 18 43 27.0 -1.6
MK31 **Makanchi Array** 65.99 320 *e*P P 18 43 26.8 -1.8
MK32 **Makanchi Array** 65.99 320 *e*P P 18 43 27.1 -1.5
MKAR **Makanchi Array** 65.99 320 P P 18 43 27.1 -1.5
comp=Z,11nm,0.7s,baz=44,slow=6.2,SNR=70
MKAR LR LR 19 15 04.4
comp=Z,136nm,19.1s,baz=25,slow=39
MKAR **Makanchi Array** 65.99 320 *e*P P 18 43 26.9 -1.7
MKAR **Makanchi Array** 65.99 320 *e*P P 18 43 26.9 -1.7
MKAR **Makanchi Array** 65.99 320 *e*P P 18 43 27.5 -1.1
MK01 **Makanchi Array** 66.01 320 *e*P P 18 43 27.0 -1.8
MK01 **Makanchi Array** 66.01 320 *e*P P 18 43 27.1 -1.6
MAKZ **Makanchi** 66.09 320 *e*P P 18 43 27.4 -1.9
MAKZ pmax pmax
comp=Z,14nm,0.8s
MAKZ **Makanchi** 66.09 320 *e*P P 18 43 27.4 -1.9
comp=Z,14nm,0.8s
MAKZ **Makanchi** 66.09 320 *e*P P 18 43 27.5 -1.7
comp=Z,14nm,0.8s
WMQ **Urumqi** 66.44 314 P P 18 43 33.7 +2.1
WMQ pP pP 18 43 38.0 -3.6
WMQ sP sP 18 43 42.0 -3.4
WMQ PcP **PcP** 18 44 05.0 +3.9
WMQ S S 18 52 25.2 +5.8
WMQ pmax pmax
comp=Z,8.0nm,0.8s
WMQ pmax pmax
comp=Z,60nm,4.6s
EKA **Eskdalemuir Ar** 66.78 16 P P 18 43 33.1 -0.4
comp=Z,11nm,0.6s,baz=332,slow=4.2,SNR=33
TGUH **Tegucigalpa,Un** 67.18 99 *e*P P 18 43 36.1 -0.5
comp=Z,21nm,0.6s
ENH **Enshi** 67.25 291 *e*P P 18 43 31.8 -5.2
comp=Z,11nm,1.0s
OBN **Obninsk** 68.47 352⇓ *i*P P 18 43 44.8 +0.7
OBN *i* 18 43 47.6
OBN pmax pmax
comp=Z,47nm,2.5s
OBN MLR MLR
comp=Z,37nm,13.0s
OBN **Obninsk** 68.47 352 *e*P P 18 43 43.7 -0.3
comp=Z,18nm,0.9s
NACGM **Naroch** 69.19 358 *e* P 18 43 48.0 -0.6
KLNR **Kaliningrad** 69.51 2 *i*P P 18 43 51.7 +1.2
KLNR pmax pmax
comp=Z,74nm,0.7s
CD2 **Chengdu** 69.69 295 P P 18 43 53.7 +1.5
CD2 pmax pmax
comp=Z,1.0nm,0.5s
AKTO **Aktyubinsk** 69.80 337 P P 18 43 51.0 -1.5
comp=Z,14nm,0.8s,baz=22,slow=5.0,SNR=35
SUW **Suwalki** 70.12 360 *e*P P 18 43 55.0 +0.6
SUW **Suwalki** 70.12 360 *e*P P 18 43 55.0 +0.6
ABKAR **Akbulak array** 70.47 335 *e*P P 18 43 55.0 -1.6
LPSR **Galich'ya Gora** 70.74 350 *e*P P 18 43 57.9 -0.3
LPSR pmax pmax
comp=Z,10.0nm,0.7s
WTSB **Winterswijk** 71.35 10 *e*P P 18 44 03.4 +1.6
TKM2 **Tokmak 2** 71.71 322 *e*P P 18 44 03.4 -1.1
TKM2 pmax pmax
comp=Z,16nm,0.8s
TKM2 **Tokmak 2** 71.71 322 *e*P P 18 44 03.4 -1.1
comp=Z,16nm,0.8s
GYA **Guiyang** 71.79 290⇓ *i*P P 18 44 05.6 +0.5
GYA pmax pmax
comp=Z,20nm,0.8s
VRH **Novokhopyorsk** 71.82 348 *e*P P 18 44 03.3 -1.4
VRH pmax pmax
comp=Z,10.0nm,0.7s
VSR **Storozhevoye** 72.09 349 *e*P P 18 44 06.0 -0.3
VSR pmax pmax
comp=Z,10.0nm,0.6s
FRU **Bishkek** 72.12 323⇑ *i*P P 18 44 08.0 +1.2
FRU pmax pmax
comp=Z,70nm,1.1s
AAK **Ala-Archa** 72.34 323 P P 18 44 07.4 -0.9
comp=Z,15nm,0.9s,baz=84,slow=2.0,SNR=52
AAK **Ala-Archa** 72.34 323⇓ *e*P P 18 44 07.1 -1.1
AAK pmax pmax
comp=Z,56nm,1.0s
AAK **Ala-Archa** 72.34 323 *e*P P 18 44 07.3 -0.9
comp=Z,20nm,0.9s
HGN **Heimansgroeve** 72.44 11 *e*P P 18 44 09.9 +1.5
CLL **Collm** 72.52 7 *i*P P 18 44 08.1 -0.8
CLL ⇑ *i*Pmax 18 44 10.3
comp=Z,21nm,0.9s
CLL *i*pP **pP** 18 44 17.7 -1.3
CLL *i*PcP **PcP** 18 44 30.5 +4.1
CLL **Collm** 72.52 7 *e*P P 18 44 07.8 -1.0
CLL pmax pmax
comp=Z,20nm,0.9s
CLL **Collm** 72.52 7 *e*P P 18 44 07.8 -1.0
comp=Z,20nm,0.9s
EKS2 **Erkin-Say** 72.56 323 *e*P P 18 44 08.9 -0.6
EKS2 pmax pmax
comp=Z,24nm,0.9s
EKS2 **Erkin-Say** 72.56 323 *e*P P 18 44 08.9 -0.6
comp=Z,24nm,0.9s
BRG **Berggiesshubel** 73.00 6 *e*PKP P 18 44 12.9 +1.1
comp=Z,21nm,1.0s
BRG *e* 18 44 32.7
comp=Z,7.0nm,1.0s
BRG **Berggiesshubel** 73.00 6 *e*P P 18 44 12.9 +1.1
BRG *e* 18 44 32.7
BRG pmax pmax
comp=Z,21nm,1.0s
KSP **Ksiaz** 73.16 4 *e*P P 18 44 14.3 +1.6
KSP **Ksiaz** 73.16 4 *e*P P 18 44 14.3 +1.6
KKAR **Karatay Array** 73.22 326 *e*P P 18 44 12.2 -1.1
KKAR **Karatay Array** 73.22 326 *e*P P 18 44 12.2 -1.1
AKASG **Malin Array Be** 73.31 356 P P 18 44 11.9 -1.6
comp=Z,16nm,0.6s,baz=3.0,slow=5.7,SNR=44
AKASG LR LR 19 19 52.2
comp=Z,36nm,19.9s,baz=305,slow=39
AKASG **Malin Array Be** 73.31 356 P P 18 44 12.0 -1.6
AKBB **Malin Array Si** 73.31 356 *e*P P 18 44 12.0 -1.6
AKBB pmax pmax
comp=Z,24nm,0.8s
AKBB **Malin Array Si** 73.31 356 *e*P P 18 44 12.0 -1.6
comp=Z,24nm,0.8s
KIEV **Kiev** 73.32 356*c e*P P 18 44 14.0 +0.4
KIEV pmax pmax
comp=Z,26nm,0.9s
KIEV **Kiev** 73.32 356 *e*P P 18 44 12.3 -1.4
comp=Z,25nm,0.9s
AK11 **Malin Array Si** 73.34 356 *e*P P 18 44 13.1 -0.7
PVCC **Panska Ves** 73.39 6 *e*P P 18 44 14.0 0.0
PVCC *ex* x 18 44 15.9
PVCC **Panska Ves** 73.39 6 *e*P P 18 44 14.0 0.0
PVCC *e* 18 44 15.9
UPC **Upice** 73.48 5 *e*P P 18 44 14.3 -0.3
UPC *ex* x 18 44 16.4
UPC **Upice** 73.48 5 *e*P P 18 44 14.3 -0.3
UPC *e* 18 44 16.4
WLF **Walferdange** 73.55 11 *e*P P 18 44 16.2 +1.2
WLF pmax pmax
comp=Z,18nm,1.0s
WLF **Walferdange** 73.55 11 *e*P P 18 44 16.2 +1.2
comp=Z,18nm,1.0s
DPC **Dobruska-Polom** 73.65 4 *e*P P 18 44 15.5 -0.2
DPC *ex* x 18 44 17.7
DPC **Dobruska-Polom** 73.65 4 *e*P P 18 44 15.5 -0.2
DPC *e* 18 44 17.7
PRA **Prague** 73.83 6 *e*P P 18 44 18.6 +1.9
PRA **Prague** 73.83 6 *e*P P 18 44 18.6 +1.9
OJC **Ojcow** 73.89 2 *e*P P 18 44 18.0 +1.0
OJC **Ojcow** 73.89 2 *e*P P 18 44 17.2 +0.2
OJC pmax pmax
comp=Z,9.0nm,0.8s
OJC **Ojcow** 73.89 2 *e*P P 18 44 17.2 +0.2
comp=Z,8.6nm,0.8s
PRU **Pruhonice** 73.92 6 *e*P P 18 44 17.0 -0.2
PRU *ex* x 18 44 19.2
PRU **Pruhonice** 73.92 6 *e*P P 18 44 17.0 -0.2
PRU *e* 18 44 19.2
GRFO **Grafenberg** 74.00 8 *e*P P 18 44 17.3 -0.4
GRFO pmax pmax
comp=Z,17nm,0.9s
GRFO **Grafenberg** 74.00 8 *e*P P 18 44 17.3 -0.4
comp=Z,17nm,0.9s
GOPC **GO Pecny, Ondr** 74.01 5 *e*P P 18 44 17.4 -0.3
GOPC *ex* x 18 44 19.6
GOPC **GO Pecny, Ondr** 74.01 5 *e*P P 18 44 17.4 -0.3
GOPC *e* 18 44 19.6
OKC **Ostrava-Krasne** 74.23 3 *e*P P 18 44 18.7 -0.3
OKC **Ostrava-Krasne** 74.23 3 *e*P P 18 44 18.7 -0.3
MORC **Moravsky Berou** 74.27 4 *e*P P 18 44 20.3 +1.0
MORC pmax pmax
comp=Z,46nm,0.8s
MORC **Moravsky Berou** 74.27 4 *e*P P 18 44 20.3 +1.0
comp=Z,46nm,0.8s
LVV **L'vov** 74.32 359 *e*P P 18 44 19.5 0.0
KSH **Kashi** 74.59 320 P P 18 44 25.9 +4.4
KSH *e*pP sP 18 44 33.9 -1.4
KSH *e*PcP **PcP** 18 44 39.6 +3.9
KSH S S 18 53 59.6 +5.0
KSH ScS **ScS** 18 54 32.5 +2.2
KSH SS SS 18 58 50.1 +9.3
KSH pmax pmax
comp=Z,22nm,0.9s
KSH LR LR
comp=Z,100nm,4.7s
KSH LR LR
comp=Z,110nm,4.3s
KSH LR LR
comp=Z,170nm,5.5s
TREC **Trest** 74.66 5 *e*P P 18 44 21.1 -0.5
TREC *ex* x 18 44 23.2
TREC **Trest** 74.66 5 *e*P P 18 44 21.1 -0.5
TREC *e* 18 44 23.2
VRAC **Vranov** 74.70 4 P P 18 44 21.8 0.0
comp=Z,11nm,0.7s,baz=343,slow=5.7,SNR=14
VRAC **Vranov** 74.70 4⇑ *i*P P 18 44 36.3 +15
NIE **Niedzica** 74.70 2 *e*P P 18 44 22.3 +0.5
NIE **Niedzica** 74.70 2 *e*P P 18 44 22.3 +0.5
STHS **Stebnicka Huta** 74.72 1 *e*P P 18 44 22.1 +0.2
STHS *e* 18 44 24.2
STHS pmax pmax
comp=Z,23nm,0.8s
STHS **Stebnicka Huta** 74.72 1 *e*P P 18 44 22.1 +0.2
STHS *e* 18 44 24.2
KHC **Kasperske Hory** 74.72 6 *e*P P 18 44 22.0 +0.1
KHC *ex* x 18 44 24.0
KHC **Kasperske Hory** 74.72 6 *e*P P 18 44 22.0 +0.1
KHC *e* 18 44 24.0
KHC **Kasperske Hory** 74.72 6 *e*P P 18 44 21.3 -0.6
comp=Z,8.0nm,0.8s
STU **Stuttgart** 74.74 9 *e*P P 18 44 20.9 -1.1
STU pmax pmax
comp=Z,11nm,0.7s
STU **Stuttgart** 74.74 9 *e*P P 18 44 20.9 -1.1
comp=Z,11nm,0.7s
LANS **Liptovska Anna** 74.95 2 *e*P P 18 44 24.1 +0.8
LANS *e* 18 44 25.7
LANS **Liptovska Anna** 74.95 2 *e*P P 18 44 24.1 +0.8
LANS *e* 18 44 25.7
GEC2 **GERESS Array S** 75.01 6 *e*P P 18 44 23.0 -0.6
GEC2 pmax pmax
comp=Z,12nm,0.9s
GEC2 **GERESS Array S** 75.01 6 *e*P P 18 44 23.0 -0.7
comp=Z,12nm,0.9s
GERES **GERESS Array B** 75.01 6 P P 18 44 23.1 -0.6
comp=Z,7.8nm,0.7s,baz=0.0,slow=5.3,SNR=47
GEA0 **GERESS Array S** 75.02 6 *e*P P 18 44 23.2 -0.5
BFO **Black Forest** 75.10 10 *e*P P 18 44 24.7 +0.6
BFO pmax pmax
comp=Z,7.0nm,0.9s
BFO **Black Forest** 75.10 10 *e*P P 18 44 24.7 +0.6
comp=Z,7.1nm,0.9s
KOLS **Kolonicke sedl** 75.21 0 *e*P P 18 44 24.4 -0.3
KOLS *e* 18 44 26.1
KOLS pmax pmax
comp=Z,11nm,1.1s
KOLS **Kolonicke sedl** 75.21 0 *e*P P 18 44 24.4 -0.3
KOLS *e* 18 44 26.1
UZH **Uzhgorod** 75.51 0 *e*P P 18 44 26.6 +0.2
UZH *e* 18 43.4
SMOL **Smolenice** 75.53 4 *e*P P 18 44 28.8 +2.3
SMOL **Smolenice** 75.53 4 *e* P 18 44 28.8 +2.3
VYHS **Vyhne** 75.59 3 *e*P P 18 44 26.6 -0.4
VYHS *e* 18 44 28.7
VYHS pmax pmax
comp=Z,12nm,1.1s
VYHS **Vyhne** 75.59 3 *e*P P 18 44 26.5 -0.4
VYHS *e* 18 44 28.7
KECS **Kecovo** 75.64 2 *e*P P 18 44 26.6 -0.6
KECS *e* 18 44 28.8
KECS pmax pmax
comp=Z,9.0nm,0.8s
KECS **Kecovo** 75.64 2 *e*P P 18 44 26.6 -0.6
KECS *e* 18 44 28.8
CONA **Conrad Observa** 76.05 5 *i*P P 18 44 31.5 +1.9
comp=Z,105nm,0.9s,SNR=7.1
PSZ **Piszkesteto** 76.19 2 *e*P P 18 44 30.8 +0.3
PSZ pmax pmax
comp=Z,21nm,1.1s
PSZ **Piszkesteto** 76.19 2 *e*P P 18 44 30.8 +0.3
comp=Z,21nm,1.1s
MOTA **Moosalm** 76.32 8 *i*pP P 18 44 33.7 +2.4
comp=Z,12nm,0.9s,SNR=11
WATA **Walderalm** 76.37 8 *e*P P 18 44 33.1 +1.6
comp=Z,12nm,0.7s,SNR=10
WTTA **Wattenberg** 76.44 8 *i*P P 18 44 33.8 +1.8
comp=Z,14nm,0.7s,SNR=6.7
BMR **Baia Mare** 76.47 360⇓ *i*P P 18 44 33.2 +1.3
BURAR **Bucovina Array** 76.51 358⇑ *i*P P 18 44 31.2 -1.1
FETA **Feichten** 76.61 9 *i*P P 18 44 34.9 +1.9
comp=Z,16nm,1.0s,SNR=11
PRAR **RASCA** 76.75 358⇓ *i*P P 18 44 34.4 +0.9
KBA **Koelnbreinsper** 76.75 7 *i*pP P 18 44 35.8 +2.1
comp=Z,13nm,0.6s,SNR=13
DAVOX **Davos/Dischmat** 76.78 9 P P 18 44 34.0 +0.1
comp=Z,6.1nm,0.7s,baz=346,slow=16,SNR=9.9
LSA **Lhasa** 76.81 304 *e*P P 18 44 33.8 -0.9
LSA pmax pmax
comp=Z,7.0nm,0.7s
LSA **Lhasa** 76.81 304 *e*P P 18 44 33.8 -0.9
comp=Z,6.7nm,0.7s
TUE **Stuetta** 77.03 10 *e*P P 18 44 37.0 +1.6
comp=Z,7.5nm,0.9s
ARCR **ARCALIA** 77.05 359⇑ *i*P P 18 44 36.8 +1.6
SOKA **Soboth** 77.25 6 *i*P P 18 44 38.1 +1.7
comp=Z,19nm,1.2s,SNR=9.7
DRGR 77.35 0⇑ *i*P P 18 44 37.2 +0.2
OBKA **Obir** 77.39 6 *i*P P 18 44 36.8 -0.4

comp=Z,25nm,0.6s,SNR=27
CJR Cluj-Napoca 77.43 360 ⇓ iP P 18 44 39.5 +2.1
LEOM Leova 77.58 356 ⇑ iP P 18 44 39.3 +1.2
TESR Tescani 77.59 357 ⇑ iP P 18 44 38.7 +0.5
GOF Gofitskoye 77.68 346 ⇑ iP P 18 44 40.0 +1.3
GOF pmax pmax
comp=Z,96nm,0.9s
DOPR Dopca 78.16 358 ⇓ iP P 18 44 41.5 +0.1
VRI Vrincioaia 78.23 357 ⇑ iP P 18 44 41.3 -0.5
PLOR Plostina 78.25 357 ⇑ iP P 18 44 40.9 -1.0
BZS Buzias 78.52 1 ⇑ iP P 18 44 42.9 -0.5
ANN Anapa 78.61 350 eP P 18 44 39.3 -4.6
ANN e 18 44 47.2
ANN e*PP PcP 18 44 50.8 -2.0
ANN e 18 47 38.8
ANN eS S 18 54 33.1 -4.9
ANN eSS SS 18 59 42.6 +1.9
ANN pmax pmax
comp=Z,42nm,1.4s
MLR Muntele Rosu 78.62 358 P P 18 44 44.6 +0.5
comp=Z,1.6nm,0.6s,baz=307,slow=5.5,SNR=21
MLR Muntele Rosu 78.62 358 ⇑ iP P 18 44 44.6 +0.5
MLR Muntele Rosu 78.62 358 eP P 18 44 44.4 +0.3
MLR pmax pmax
comp=Z,9.0nm,0.7s
MLR Muntele Rosu 78.62 358 eP P 18 44 44.4 +0.3
comp=Z,8.7nm,0.7s
PGAV Gavieira, Arco 78.67 23 eP P 18 44 46.8 +2.4
VOIR 78.69 359 ⇓ iP P 18 44 44.0 -0.5
LOT Lotru 78.69 359 ⇑ iP P 18 44 43.7 -0.8
GRER 78.71 357 ⇓ iP P 18 44 47.1 +2.7
BANR Banloc 78.75 1 ⇓ iP P 18 44 46.4 +1.8
GZR Gura Zlata 78.75 0 ⇓ iP P 18 44 44.3 -0.5
ARR Arges 78.77 359 ⇑ iP P 18 44 45.2 +0.3
KIV Kislovodsk 78.81 346 d iP P 18 44 45.8 +0.6
KIV i 18 44 53.9
KIV pmax pmax
comp=Z,38nm,1.7s
KIV MLR MLR
comp=Z,56nm,23.0s
KIV Kislovodsk 78.81 346 eP P 18 44 46.4 +1.2
comp=Z,25nm,1.0s
TLCR 78.84 356 ⇓ iP P 18 44 44.3 -0.8
CFR Carcaliu 78.87 356 ⇑ iP P 18 44 45.0 -0.3
MTUR Matau 78.90 358 ⇓ iP P 18 44 48.3 +2.7
KBZ Khabaz 79.00 345 P P 18 44 46.0 0.0
comp=Z,16nm,0.9s,baz=255,slow=3.9,SNR=20
NCK Nalchik 79.13 345 ⇑ eP P 18 44 47.3 +0.5
NCK pmax pmax
comp=Z,63nm,0.9s
POLO Lamas de Olo 79.34 23 eP P 18 44 50.6 +2.5
MDVR Moldovita 79.36 1 ⇓ iP P 18 44 49.4 +1.3
HARR Harsova 79.37 356 ⇑ iP P 18 44 47.0 -1.0
SULR 79.43 358 ⇑ iP P 18 44 48.2 -0.1
AMRR Amara 79.47 357 ⇓ iP P 18 44 49.1 +0.5
SRE Strehaia 79.48 360 ⇓ iP P 18 44 50.2 +1.5
NEY Neytrino 79.50 345 P P 18 44 50.0 +1.0
NEY pmax pmax
comp=Z,5.0nm,1.5s
SOC Sochi 79.56 348 eP P 18 44 49.6 +0.5
SOC e 18 47 47.3
SOC eS S 18 54 49.5 +1.3
SOC eSS SS 18 59 57.8 +2.8
SOC pmax pmax
comp=Z,35nm,0.8s
TIRR Tirgusor 79.58 356 ⇑ iP P 18 44 48.9 -0.3
TIRR Tirgusor 79.58 356 eP P 18 44 50.2 +1.0
TIRR pmax pmax
comp=Z,18nm,0.7s
TIRR Tirgusor 79.58 356 eP P 18 44 50.2 +1.0
comp=Z,18nm,0.7s
HUMR Humele 79.60 359 ⇑ iP P 18 44 51.4 +2.1
MVO Moncorvo 79.70 23 eP P 18 44 52.5 +2.5
ZEI Tsey 79.78 345 eP P 18 44 49.4 -1.2
ZEI pmax pmax
comp=Z,27nm,0.9s
PVIS Viseu 79.94 23 eP P 18 44 53.9 +2.6
MSAB Monastry St. A 79.97 356 ⇑ iP P 18 44 53.0 +1.7
ONI Oni 80.04 345 P P 18 44 54.3 +2.5
ONI Oni 80.04 345 P P 18 44 54.3 +2.5
MTE Manteigas 80.32 23 eP P 18 44 56.1 +2.7
ZIMR 80.47 358 ⇑ iP P 18 44 54.8 +0.8
TBLG Delisi 80.69 344 P P 18 44 58.4 +3.2
TBLG Delisi 80.69 344 P P 18 44 58.4 +3.1
PCBR Castelo Branco 80.87 23 eP P 18 44 58.7 +2.5
AKH Akhalkalaki 81.19 345 ⇑ iP P 18 45 00.5 +2.3
VTS Vitosha 81.55 360 ⇓ iP P 18 45 00.3 +0.3
VTS Vitosha 81.55 360 eP P 18 44 59.4 -0.6
VTS pmax pmax
comp=Z,9.0nm,0.9s
VTS Vitosha 81.55 360 eP P 18 44 59.4 -0.6
comp=Z,8.9nm,0.9s
GEYT Alibeck 81.57 333 P P 18 44 59.8 -0.2
comp=Z,19nm,0.8s,baz=328,slow=5.3,SNR=41
GEYT LR LR 19 26 42.0
comp=Z,65nm,19.2s,baz=110,slow=40
ES19 SONSECA Array 81.75 21 eP P 18 45 01.2 +0.2
ESDC Sonseca Array 81.77 21 P P 18 45 02.5 +1.5
comp=Z,2.0nm,0.6s,baz=343,slow=4.9,SNR=17
CHTO Chiang Mai 82.09 292 eP P 18 44 59.9 -3.1
CHTO pmax pmax
comp=Z,2.0nm,0.8s
CHTO Chiang Mai 82.09 292 eP P 18 44 59.9 -3.1
comp=Z,1.8nm,0.8s
GNI Garni 82.23 343 P P 18 45 04.0 +0.3
comp=Z,8.1nm,0.8s,baz=326,slow=6.2,SNR=5.1
GNI Garni 82.23 343 P P 18 45 03.0 -0.6
GNI pmax pmax
comp=Z,70nm,1.1s
GNI Garni 82.23 343 eP P 18 45 03.5 -0.2
comp=Z,17nm,1.0s
CM31 Chiang Mai Arr 82.39 292 eP P 18 45 02.5 -2.1
CMAR Chiang Mai Arr 82.39 292 P P 18 45 02.8 -1.8
comp=Z,9.7nm,0.8s,baz=13,slow=5.4,SNR=48
CMAR LR LR 19 25 01.0
comp=Z,15nm,18.3s,baz=30,slow=38
CM01 Chiang Mai Arr 82.41 292 eP P 18 45 02.4 -2.2
PBAR Barrancos 82.56 23 eP P 18 45 07.2 +2.0
ANTO Ankara 83.91 352 eP P 18 45 12.1 -0.1
ANTO pmax pmax
comp=Z,44nm,0.8s
ANTO Ankara 83.91 352 eP P 18 45 12.1 -0.1
comp=Z,44nm,0.8s
BR231 Keskin MP Arra 83.94 352 eP P 18 45 11.9 -0.6
BR101 Keskin Array S 83.99 352 eP P 18 45 12.2 -0.6
BR131 Keskin Array S 83.99 352 eP P 18 45 11.8 -0.9
BRTR Keskin Array B 83.99 352 P P 18 45 12.2 -0.6
comp=Z,17nm,0.8s,baz=29,slow=3.1,SNR=50
WR1 Warramunga Arr 95.15 242 eP P 18 46 04.5 -1.2
comp=Z,64nm,1.9s
WRA Warramunga Arr 95.16 242 P P 18 46 04.5 -1.2
comp=Z,0.2nm,0.3s,baz=33,slow=6.2,SNR=4.1
WSAR Wadi Sarin 95.28 327 P P 18 46 06.9 +0.6
comp=Z,3.1nm,0.7s,baz=304,slow=2.4,SNR=4.4
QSPA South Pole Qui 146.01 180 ePKPdf PKPdf 18 52 19.3 -0.5
VNA2 Neumayer--Watz 160.36 150 P PKPab 18 53 18.4 -2.9
baz=253,slow=3.4

NIED ***02*** *18:36:00, 44°.00N×139°.80E, h290^{km}, Mw4.2 Best double couple: $M_0$2.62000×10^{15} NP1:ϕ_s247.00000°, δ17.00000°, λ-155.00000°. NP2:ϕ_s133.00000°, δ83.00000°, λ-74.00000°.*
ISCJB ***02*** *18:36:20.4±0.2, 44°.01N±0°.03×139°.83E±0°.04, h243^{km}±2^{km}, mb4.2/74, Error ellipse: s-maj=5.6km s-min=3.7km az=148.8*
IDC ***02*** *18:36:20.7±1.3, 44°.08N×139°.82E, h228^{km}±13^{km}, mb3.8/29, mb1 3.9/37, mb1mx3.7/78, mbtmp4.3/37, Error ellipse: s-maj=9.9km s-min=8.0km az=122.0*
NEIC ***02*** *18:36:21.0±0.3, 44°.05N×139°.77E, h233^{km}±4^{km}, mb4.4/47, Error ellipse: s-maj=4.2km s-min=3.1km az=142.0*
JMA ***02*** *18:36:21.1±0.2, 44°.00N×139°.82E, h243^{km}±2^{km}, M4.1*
ISC 02 18:36:21.3±0.5**, 44°.00N**±0°.05×**139°.88E**±0°.05**, h241**^{km}±6^{km}**, n173,** σ**0^s.95**/190**, mb4.2**/74**, 5C-7D, Eastern Sea of Japan**

Code Station Name Δ° AZ° Phase ID Op ISC Time h m s Res ISC
JSK Shakotan 0.78 146 ⇓P Pn 18 36 54.3 +0.1
JSK eS S 18 37 19.8 -0.2
JYG Yagishiri 1.19 69 P Pn 18 36 56.4 -0.1
JHR Hokuryu 1.36 100 ⇓P Pn 18 36 58.4 +0.7
JHR eS S 18 37 26.8 +0.6
JSH Shimam 1.36 175 ⇓P Pn 18 36 57.8 0.0
JSH eS S 18 37 26.4 +0.1
JEW Eniwo 1.63 135 ⇓P Pn 18 37 00.5 +0.7
JEW eS S 18 37 31.9 +1.9
JOSM Okushiri--Mats 1.94 189 ⇓P Pn 18 37 02.6 +0.1
JWK2 Keihoku 1.95 47 ⇑P Pn 18 37 03.5 +1.0
JKK2 Kamakawa 2 2.08 93 ⇑P Pn 18 37 04.5 +0.8
JKK2 eS S 18 37 37.8 +0.7
JFR Furan 2.14 112 P Pn 18 37 04.6 +0.2
JFR eS S 18 37 38.4 +0.2
JSE Soyaes 2.16 63 ⇑P Pn 18 37 05.1 +0.6
JSE eS S 18 37 40.1 +1.7
JKB Kayabe 2.28 158 ⇓P Pn 18 37 05.4 -0.3
JNBK Urakawa-nobuka 2.72 128 P Pn 18 37 10.2 0.0
JNBK eS S 18 37 48.9 +0.2
JOT Ohata 2.76 161 P Pn 18 37 09.7 -0.9
JCH Churui 2.90 117 ⇓P Pn 18 37 10.9 -1.2
JCH eS S 18 37 49.2 -2.9
JTKR Abashiri--Toko 2.91 89 ⇑P Pn 18 37 12.7 +0.5
JTKR eS S 18 37 52.4 +0.1
JAR Ashorobuto 2.91 103 ⇑P Pn 18 37 12.8 +0.5
JAR eS S 18 37 53.5 +1.1
ERM Erimo 3.12 128 ePn Pn 18 37 15.4 +0.8
ERM eS S 18 37 55.2 -1.3
YSS Yuzh-Sakhalins 3.58 33 ePn Pn 18 37 20.0 +0.3
JAK Akkeshi 3.65 104 P Pn 18 37 19.7 -0.8
JAK eS S 18 38 05.0 -2.3
JRA Rausu 3.79 89 P Pn 18 37 23.1 +1.0
JANG Nango 3.82 161 P Pn 18 37 20.9 -1.8
NEM2 Nemuro 2 4.30 96 P Pn 18 37 26.6 -1.7
NEM2 eS S 18 38 17.0 -4.3
USRK Ussuriysk Ar. 5.68 275 P Pn 18 37 44.6 -0.6
4.9nm,0.3s,baz=80,slow=14,SNR=68
MDJ Mudanjiang 7.40 278 ePn Pn 18 38 06.2 -0.8
MJB9 Matsu-Tunnel 7.56 190 ePn Pn 18 38 08.0 -1.1
MAJO Matsushiro 7.56 190 ePn Pn 18 38 08.0 -1.1
MAT Matsushiro 7.56 190 P Pn 18 38 08.9 -0.2
MJAR Matsushiro Arr 7.56 190 P Pn 18 38 08.9 -0.1
2.6nm,0.3s,baz=5.7,slow=13,SNR=20
KLR Kul'dur 7.66 316 P Pn 18 38 09.3 -0.7
1.5nm,0.3s,baz=133,slow=13,SNR=44
INU Inuyama 8.92 195 ePn Pn 18 38 25.5 -0.8
JHJ Hachijo jima 2 10.87 180 P Pn 18 38 47.6 -3.3
12nm,0.3s,baz=302,slow=23,SNR=10.0
JHJ2 Mitsune 10.87 180 ePn Pn 18 38 47.3 -3.7
KSRS Korea Array 11.18 238 P Pn 18 38 54.6 -0.1
0.5nm,0.3s,baz=55,slow=11,SNR=14
KS01 Wonju Array Si 11.18 238 ePn Pn 18 38 54.0 -0.8
KS15 Wonju Array Si 11.21 238 ePn Pn 18 38 55.0 -0.2
KSAR Wonju Array Be 11.21 238 P Pn 18 38 54.6 -0.5
JNU Nakatsue 12.94 216 P Pn 18 39 16.4 -0.3
1.2nm,0.3s,baz=34,slow=4.5,SNR=17
HIA Hailar 14.79 298 ePn Pn 18 39 38.0 -1.2
MA2 Magadan 16.95 19 P P 18 40 02.2 -0.5
1.8nm,0.3s,baz=230,slow=10,SNR=13
CBIJ Chichi jima 16.97 173 eP Pn 18 40 04.7 -0.6
74nm,0.9s
BJT Baijiatuau 18.05 265 eP P 18 40 12.3 -2.6
9.3nm,0.9s
YAK Yakutsk 19.03 345 P P 18 40 23.2 -2.1
0.0nm,0.3s,baz=139,slow=19,SNR=7.7
YAK Yakutsk 19.03 345 eP P 18 40 23.1 -2.1
24nm,0.7s
JOW Kunigami 19.53 213 P P 18 40 30.9 -0.1
1.6nm,0.3s,baz=102,slow=14,SNR=12
JOW Kunigami 19.53 213 eP P 18 40 30.8 -0.1
29nm,1.4s
SEY Seymchan 20.30 17 P P 18 40 37.4 -1.4
2.2nm,0.5s,baz=218,slow=9.5,SNR=4.7
HHC Hu-ho-hao-te 21.09 271 eP P 18 40 45.4 -2.1
HHC pmax pmax
comp=Z,18nm,1.0s
HHC pmax pmax
comp=Z,82nm,6.5s
SONA1 Songino Array 23.49 291 eP P 18 41 08.8 -0.8
SONA0 Songino Array 23.50 291 eP P 18 41 09.2 -0.5
6.1nm,1.4s
SONM Songino Array 23.50 291 P P 18 41 09.2 -0.5
1.7nm,0.5s,baz=85,slow=8.3,SNR=16
YOJ Yonaguni jima 23.88 221 eP P 18 41 11.9 -1.3
81nm,1.3s
BILL Bilibino 27.80 21 eP P 18 41 47.4 -0.4
15nm,1.9s
GTA Gaotai 30.05 275 eP P 18 42 08.5 +0.3
GTA pP pP 18 42 53.2 -2.8
GTA sP PP 18 43 19.2 -1.9
GTA pmax pmax
comp=Z,3.0nm,1.1s
CD2 Chengdu 31.25 258 P P 18 42 17.2 -1.5
CD2 pmax pmax
comp=Z,1.0nm,0.5s
KMI Kunming 35.53 250 P P 18 42 57.4 +1.5
KMI pmax pmax
comp=Z,16nm,0.6s
KMI pmax pmax
comp=Z,53nm,4.3s
ZAA0 Zalesovo Array 36.61 306 eP P 18 43 04.5 +0.2
ZAA1 Zalesovo Array 36.61 306 eP P 18 43 03.9 -0.5
ZAA1 eScP ScP 18 48 45.6 +0.5
ZALV Zalesovo Beam 36.61 306 P P 18 43 03.9 -0.5
7.9nm,0.5s,baz=95,slow=9.2,SNR=18
ZALV ScP ScP 18 48 45.6 +0.5
0.7nm,0.5s,baz=106,slow=3.9,SNR=4.2
WMQ Urumqi 37.07 288 eP P 18 43 09.2 +0.8
WMQ S S 18 48 37.2 +1.2
WMQ pmax pmax
comp=Z,2.0nm,0.6s
TT01 Tatalina 40.56 39 eP P 18 43 37.3 +0.3
TTA Tatalina 40.56 39 eP P 18 43 37.5 +0.4
28nm,1.9s
LSA Lhasa 40.94 266 Pn P 18 43 42.8 +1.7
LSA smax smax
comp=N,4.0nm,0.9s
LSA Lhasa 40.94 266 eP P 18 43 42.7 +1.7
comp=N,6.7nm,0.7s
KURK Kurchatov 40.98 302 eP P 18 43 40.8 +0.3
comp=N,12nm,0.6s
KURK eP P 18 43 41.4 +0.8
KURK ePcP PcP 18 45 33.8 -1.9
KURBB Kurchatov Arra 41.06 302 P P 18 43 41.4 +0.2
comp=N,12nm,0.5s,baz=74,slow=9.0,SNR=26
CAST Castle Rocks 42.30 38 eP P 18 43 51.9 +0.8
comp=N,4.7nm,0.9s
PPLA Purkeypile 42.31 39 eP P 18 43 52.6 +1.3
comp=N,38nm,1.6s
CHTO Chiang Mai 42.41 247 eP P 18 43 53.2 +0.7
comp=N,4.9nm,0.6s
CM31 Chiang Mai Arr 42.66 247 eP P 18 43 55.7 +1.1
CMAR Chiang Mai Arr 42.66 247 P P 18 43 55.6 +1.1
comp=N,1.6nm,0.7s,baz=36,slow=7.2,SNR=17
OHAK Old Harbor 42.67 48 eP P 18 43 54.9 +0.8
comp=N,151nm,1.8s
CM01 Chiang Mai Arr 42.68 247 eP P 18 43 55.9 +1.3
BPAW Bear Paw Mtn. 42.71 37 eP P 18 43 55.0 +0.7
comp=N,17nm,1.8s
MLY Manley 42.72 36 eP P 18 43 55.1 +0.6
comp=N,15nm,1.7s
COLD Coldfoot 42.77 33 eP P 18 43 55.0 +0.2
comp=N,15nm,1.9s
KTH Kantishna Hill 42.80 38 eP P 18 43 56.0 +0.9
comp=N,7.3nm,1.0s
KDAK Kodiak Island 42.92 47 eP P 18 43 56.8 +0.7
comp=N,92nm,1.5s
MCK McKinley 43.66 38 eP P 18 44 02.7 +0.8
comp=N,20nm,1.8s
RND Reindeer 43.74 38 eP P 18 44 03.1 +0.5
comp=N,6.9nm,1.0s
MDM Murphy Dome 43.79 36 eP P 18 44 03.2 +0.3
comp=N,17nm,1.8s
WRH Wood River Hil 43.92 36 eP P 18 44 04.2 +0.3
comp=N,20nm,1.9s
CCB Clear Creek Bu 44.01 36 eP P 18 44 04.3 -0.3
comp=N,17nm,1.7s
SML Sawmill 44.25 40 eP P 18 44 07.8 +1.1
comp=N,9.9nm,1.0s
IL1 Eielson Array 44.38 36 eP P 18 44 08.1 +0.4
ILAR Eielson Array 44.38 36 P P 18 44 07.9 +0.2
comp=N,1.9nm,0.8s,baz=285,slow=7.7,SNR=18
ILB Eielson Array 44.38 36 eP P 18 44 07.1 -0.6
HDA Harding Lake 44.42 36 eP P 18 44 07.8 -0.1
comp=N,19nm,1.6s
DHY Denali Highway 44.46 38 eP P 18 44 08.6 +0.1
comp=N,5.0nm,0.5s
TAPN Taplejung 44.76 266 eP P 18 44 12.3 +0.8
comp=N,7.2nm,0.4s
FYU Fort Yukon 44.79 33 eP P 18 44 11.5 +0.7
comp=N,52nm,1.8s
VOSK Vostochnaya 44.97 307 eP P 18 44 12.8 +0.4
comp=N,14nm,1.1s
BVAR Borovoye Array 45.22 307 P P 18 44 14.8 +0.5
comp=N,9.1nm,0.4s,baz=78,slow=9.2,SNR=30
BRVK Borovoye 45.27 307 eP P 18 44 14.8 +0.1
comp=N,20nm,1.3s
GUN Gumba 45.75 268 eP P 18 44 20.1 +0.8
comp=N,12nm,0.2s
RAMN Ramite 45.79 266 eP P 18 44 20.0 +0.5
comp=N,17nm,0.7s
ZRNK Zerenda 46.03 307 eP P 18 44 20.9 +0.2
KKN Kakani 46.26 268 eP P 18 44 23.9 +0.8
comp=N,6.1nm,0.2s
PKIN Phulchoki 46.30 268 eP P 18 44 23.6 +0.2
comp=N,3.9nm,0.3s
RAGM Ragged Mountai 46.30 42 eP P 18 44 23.9 +1.2
comp=N,24nm,1.2s
AAK Ala-Archa 46.45 292 P P 18 44 24.8 +0.5
comp=N,5.8nm,0.6s,baz=169,slow=2.4,SNR=9.6
DMN Daman 46.48 268 eP P 18 44 25.4 +0.5
comp=N,6.8nm,0.5s
GKN Gorkha 46.60 269 eP P 18 44 25.9 +0.3
comp=N,12nm,0.3s
EGAK Eagle 46.79 35 eP P 18 44 26.1 -0.3
comp=N,6.9nm,0.8s
FAKI Fak Fak 47.21 190 eP P 18 44 31.2 +1.0
comp=N,10nm,0.8s
KOLN Koldanda 47.48 270 eP P 18 44 33.3 +0.8
comp=N,11nm,0.3s
PYUN Piuthan 47.73 270 eP P 18 44 35.4 +1.0
comp=N,16nm,0.3s
INK Inuvik 48.81 30 P P 18 44 42.4 +0.6
comp=N,34nm,0.3s,baz=285,slow=6.9,SNR=369
ARU Arti 50.49 315 P P 18 44 54.8 +0.1
comp=N,3.6nm,0.3s,baz=76,slow=17,SNR=7.4
ARU Arti 50.49 315 eP P 18 44 54.3 -0.4
comp=N,7.1nm,0.5s
ABKAR Akbulak array 52.73 306 eP P 18 45 11.5 +0.3
SPITS Spitsbergen Ar 53.47 348 P P 18 45 15.5 -0.8
comp=N,15nm,1.1s,baz=66,slow=8.4,SNR=8.3
DLBC Dease Lake 53.98 41 P P 18 45 21.8 +1.5
comp=N,2.2nm,1.0s,baz=279,slow=5.4,SNR=4.2
DLBC Dease Lake 53.98 41 eP P 18 45 21.9 +1.6
comp=N,17nm,1.7s
RES Resolute Bay 56.17 15 P P 18 45 34.7 -0.8
comp=N,4.3nm,0.6s,baz=294,slow=5.6,SNR=22
RES Resolute Bay 56.17 15 eP P 18 45 34.3 -1.2
KEV Kevo 56.54 337 eP P 18 45 37.6 -0.6
HAMF Hammerfest 56.88 339 eP P 18 45 39.2 -1.4
ARCES ARCESS Array B 57.09 338 P P 18 45 41.8 -0.3
comp=N,1.7nm,0.4s,baz=55,slow=7.8,SNR=17
ARE0 ARCESS Array S 57.09 338 eP P 18 45 41.9 -0.2
KTK1 Kautokeino 58.05 338 eP P 18 45 48.8 0.0
HEF Hetta 58.33 337 eP P 18 45 50.1 -0.6
YKA Yellowknife Ar 58.43 32 P P 18 45 51.9 +0.5
comp=N,1.8nm,0.4s,baz=306,slow=6.5,SNR=31
YKA PcP PcP 18 46 40.4 +1.1
comp=N,0.6nm,0.5s,baz=308,slow=3.3,SNR=8.8
YKB5 Yellowknife Ar 58.43 32 eP P 18 45 51.3 -0.1
KIF Kilpisjarvi 58.71 338 eP P 18 45 52.1 -1.2
TRO Tromso 58.77 339 eP P 18 45 53.3 -0.4
FIA0 FINESS Array S 62.15 330 eP P 18 46 16.2 -0.4
FINES FINESS Array B 62.15 330 P P 18 46 16.2 -0.4
comp=N,13nm,0.5s,baz=55,slow=7.5,SNR=55
WR1 Warramunga Arr 63.83 186 eP P 18 46 28.4 +0.3
comp=N,49nm,1.8s
WRA Warramunga Arr 63.83 186 P P 18 46 28.4 +0.3
comp=N,0.5nm,0.5s,baz=1.1,slow=6.8,SNR=17
KVAR Kislovodsk Arr 65.56 308 P P 18 46 39.2 -0.1
comp=N,4.4nm,0.6s,baz=235,slow=2.8,SNR=2.1
KIV Kislovodsk 65.57 308 eP P 18 46 39.5 +0.2
comp=N,9.9nm,0.8s
KBZ Khabaz 65.59 308 P P 18 46 40.2 +1.0
comp=N,2.4nm,0.8s,baz=27,slow=6.8,SNR=3.1
NC405 NORSAR Array S 67.13 336 eP P 18 46 48.6 -0.1
NC303 NORSAR Array S 67.14 336 eP P 18 46 48.3 -0.5
NC204 NORSAR Array S 67.28 336 eP P 18 46 48.8 -1.0
HFS Hagfors 67.29 334 P P 18 46 49.5 -0.3
comp=N,6.6nm,0.5s,baz=46,slow=7.0,SNR=35
NB201 NORSAR Array S 67.31 336 eP P 18 46 49.8 0.0
NB2 NORSAR Subarra 67.34 336 P P 18 46 49.7 -0.3
comp=Z,3.9nm,0.5s,baz=36,slow=6.5
NB2 NORSAR Subarra 67.34 336 P P 18 46 49.7 -0.3
baz=36,slow=6.5
NB200 NORSAR Array S 67.34 336 eP P 18 46 49.8 -0.3
NOA NORSAR Array B 67.34 336 P P 18 46 49.8 -0.3
comp=Z,5.3nm,0.7s,baz=37,slow=6.3,SNR=17
NBO02 NORSAR Array S 67.44 336 eP P 18 46 50.4 -0.3
NBO00 NORSAR Array S 67.47 336 eP P 18 46 50.5 -0.4
AS01 Alice Springs 67.55 186 eP P 18 46 52.2 +0.4
ASAR Alice Springs 67.56 186 P P 18 46 53.3 +1.5
comp=Z,0.9nm,0.6s,baz=6.6,slow=6.2,SNR=9.6
JTMT Jette 67.80 45 eP P 18 46 55.0 +1.7
BMO Blue Mountains 68.12 48 eP P 18 46 53.5 -1.8
comp=Z,11nm,0.8s
AKASG Malin Array Be 68.14 320 P P 18 46 54.9 -0.2
comp=Z,1.1nm,0.3s,baz=41,slow=8.7,SNR=11
AKBB Malin Array Si 68.14 320 eP P 18 46 54.0 -1.1
comp=Z,5.4nm,0.6s
KIEV Kiev 68.15 320 eP P 18 46 54.2 -1.0
comp=Z,4.5nm,0.8s
EGMT Eagleton 69.85 42 eP P 18 47 06.8 +0.9
comp=Z,5.5nm,0.9s
NV01 Mina Array Sit 71.80 54 eP P 18 47 19.4 +1.6
NVAR Mina Array Bea 71.80 54 P P 18 47 19.4 +1.5
comp=Z,1.3nm,0.7s,baz=305,slow=5.9,SNR=6.4
OJC Ojcow 72.65 324 eP P 18 47 22.6 +0.1
comp=Z,6.7nm,0.8s
MLR Muntele Rosu 73.37 318 P P 18 47 27.6 +0.7
comp=Z,0.2nm,0.4s,baz=344,slow=18
MLR Muntele Rosu 73.37 318 eP P 18 47 27.6 +0.7
comp=Z,18nm,1.5s
BW06 Boulder Array 73.64 46 eP P 18 47 29.4 +0.7
PD31 Pinedale Array 73.64 46 eP P 18 47 29.1 +0.5
PDAR Pinedale Array 73.64 46 P P 18 47 29.8 +1.1
comp=Z,1.8nm,0.7s,baz=290,slow=1.4,SNR=18
MORC Moravsky Berou 73.93 325 eP P 18 47 30.5 +0.6
comp=Z,13nm,0.8s
DPC Dobruska-Polom 73.98 326 eP P 18 47 31.2 +1.0
ULM Lac du Bonnet 74.33 33 P P 18 47 32.5 +0.3
comp=Z,5.9nm,0.6s,baz=325,slow=5.6,SNR=18
BRG Berggiesshubel 74.50 328 eP P 18 47 33.5 +0.4
comp=Z,2.5nm,0.6s
CLL Collm 74.51 329 i P P 18 47 33.3 +0.1
comp=Z,5.0nm,0.7s
CLL Collm 74.51 329 eP P 18 47 33.1 0.0
comp=Z,5.7nm,0.6s
GOPC GO Pecny, Ondr 74.93 327 eP P 18 47 36.1 +0.4
PRU Pruhonice 74.97 327 eP P 18 47 36.5 +0.6
KHC Kasperske Hory 76.03 327 eP P 18 47 42.5 +0.5
KHC ex x 18 47 46.8
EKA Eskdalemuir Ar 76.19 339 P P 18 47 42.8 +0.1
comp=Z,0.7nm,0.3s,baz=17,slow=5.2,SNR=12
GERES GERESS Array B 76.21 327 P P 18 47 43.5 +0.4
comp=Z,0.6nm,0.4s,baz=41,slow=6.1,SNR=8.4
PHWY Pilot Hill 76.81 45 eP P 18 47 50.5 +3.8
comp=Z,17nm,0.8s
LTX Lajitas 86.75 52 eP P 18 48 39.6 +1.1
TXAR Lajitas Array 86.75 52 P P 18 48 39.6 +1.1
comp=Z,0.3nm,0.6s,baz=304,slow=3.0,SNR=4.1

ISCJB ***02*** *18:37:28.1±0.9, 38°.2N±0°.1×143°.4E±0°.1, h19^{km}, mb4.0/10, MS4.3/1, Error ellipse: s-maj=17.1km s-min=13.5km az=29.0*
IDC ***02*** *18:37:32.2±6.0, 38°.22N×143°.41E, h34^{km}±45^{km}, mb3.9/10, mb1 3.9/13, mb1mx3.5/75, mbtmp4.0/13, ML3.1/3, MS2.8/2, Ms1 2.8/2, ms1mx2.4/52, Error ellipse: s-maj=31.5km s-min=17.4km az=90.0*
ISC 02 18:37:30.0±1.3**, 38°.3N**±0°.1×**143°.5E**±0°.2**, h19**^{km}**, n21,** σ**0^s.77**/13**, mb4.0**/10**, Off east coast of Honshu**

Code Station Name Δ° AZ° Phase ID Op ISC Time h m s Res ISC
MJAR Matsushiro Arr 4.54 249 Pn Pn 18 38 37.2 -0.5
4.8nm,0.3s,baz=58,slow=14,SNR=18
USRK Ussuriysk Ar. 10.49 308 Pn Pn 18 39 58.8 -0.6
0.2nm,0.3s,baz=114,slow=14,SNR=3.0
KSRS Korea Array 12.33 271 Pn Pn 18 40 25.7 +1.2
0.1nm,0.3s,baz=82,slow=14,SNR=2.5
KSRS LR LR 18 44 39.8
comp=Z,34nm,18.4s,baz=56,slow=35
PETK Petropavlovsk- 17.81 29 LR LR 18 50 33.1
comp=Z,31nm,18.3s,baz=82,slow=44

Code	Station Name	Δ°	AZ°	Op	ISC	Time	Res
MA2	Magadan	21.84	10	P	P	18 42 21.3	+0.3
	2.1nm,0.5s,baz=190,slow=12,SNR=4.9						
SEY	Seymchan	25.29	10	P	P	18 42 56.6	+1.7
	1.6nm,0.6s,baz=180,slow=8.9,SNR=4.3						
H11N2	WAKE ISLAND Hy	27.44	126	T	T	19 12 07.4	
	baz=318,slow=76,SNR=105						
H11N1	WAKE ISLAND Hy	27.45	126	T	T	19 12 11.2	
	baz=318,slow=76,SNR=66						
H11N3	WAKE ISLAND Hy	27.46	126	T	T	19 12 07.5	
	baz=318,slow=76,SNR=84						
H11S1	WAKE ISLAND Hy	28.22	128	T	T	19 13 07.4	
	baz=319,slow=76,SNR=12						
H11S3	WAKE ISLAND Hy	28.22	128	T	T	19 13 08.0	
	baz=319,slow=76,SNR=20						
H11S2	WAKE ISLAND Hy	28.24	128	T	T	19 13 14.8	
	baz=319,slow=76,SNR=15						
SONM	Songino Array	28.51	302	P	P	18 43 24.3	+0.1
	1.7nm,0.6s,baz=113,slow=7.3,SNR=4.4						
DAV	Davao City (W)	35.03	212	LR	LR	19 00 35.1	
	comp=Z,552nm,18.6s,baz=68,slow=40						
ZALV	Zalesovo Beam	42.32	311	P	P	18 45 21.9	-0.5
	1.2nm,0.7s,baz=82,slow=7.8,SNR=4.4						
MKAR	Makanchi Array	44.88	301	P	P	18 45 43.4	+0.3
	0.9nm,0.5s,baz=88,slow=9.3,SNR=5.8						
KURBB	Kurchatov Arra	46.56	307	P	P	18 45 55.9	-0.4
	3.8nm,0.5s,baz=81,slow=8.1,SNR=12						
WRA	Warramunga Arr	58.53	190	P	P	18 47 24.6	-0.5
	1.3nm,0.5s,baz=7.8,slow=6.9,SNR=12						
ASAR	Alice Springs	62.25	190	P	P	18 47 50.4	-0.2
	0.4nm,0.4s,baz=3.3,slow=6.4,SNR=7.2						
HFS	Hagfors	73.64	336	P	P	18 49 01.8	0.0
	2.8nm,0.9s,baz=54,slow=7.5,SNR=7.1						
AKASG	Malin Array Be	74.33	323	P	P	18 49 05.7	-0.3
	0.5nm,0.4s,baz=41,slow=6.0,SNR=4.8						

IDC 02 18:41:40.3±2.2**, 36.47°N×142.26°E, h0km, mb3.4**/4**, mb1 3.6**/5**, mb1mx3.3**/69**, mbtmp3.5**/5**, ML3.4**/1**, MS3.5**/1**, Ms1 3.5**/1**, ms1mx2.3**/39**, Error ellipse: s-maj=61.9km s-min=23.8km az=76.0, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
MJAR	Matsushiro Arr	3.26	272	Pn	Pb	18 42 39.3	+0.2
	1.1nm,0.3s,baz=85,slow=14,SNR=6.6						
JHJ	Hachijo jima 2	3.92	212	Pn	Pn	18 42 40.6	-1.1
	7.5nm,0.3s,baz=73,slow=19,SNR=2.2						
JHJ				Sn	Sn	18 43 29.5	+1.1
	12nm,0.3s,baz=74,slow=15,SNR=1.5						
MKAR	Makanchi Array	44.99	303	P	P	18 49 58.6	+1.3
	0.2nm,0.6s,baz=76,slow=6.1,SNR=1.7						
KURBB	Kurchatov Arra	46.88	309	P	P	18 50 10.4	-1.7
	0.9nm,0.6s,baz=84,slow=7.9,SNR=5.6						
FITZ	Fitzroy Crossi	56.51	199	LR	LR	19 12 58.4	
	comp=Z,43nm,21.5s,baz=112,slow=33						
WRA	Warramunga Arr	56.61	189	P	P	18 51 24.3	-0.6
	0.8nm,0.7s,baz=8.4,slow=7.4,SNR=3.3						
ASAR	Alice Springs	60.33	189	P	P	18 51 51.6	+0.6
	0.2nm,0.7s,baz=4.0,slow=6.5,SNR=2.0						

IDC 02 18:45:30.1±1.8, 16.48°N×123.37°E, h0km, mb3.3/5, mb1 3.5/5, mb1mx3.2/62, mbtmp3.3/5, MS3.6/1, Ms1 3.6/1, ms1mx2.4/30, Error ellipse: s-maj=73.3km s-min=23.6km az=58.0

ISCJB 02 18:45:35.4±0.8, 16.01°N±0.05°×122.41°E±0.09°, h39km, mb3.2/5, MS3.6/1, Error ellipse: s-maj=12.8km s-min=5.8km az=158.5

MAN 02 18:45:36, 15.88°N×121.87°E, h21km, mb4.5, ML3.3, MS3.2

ISC 02 18:45:37.5±1.1**, 15.93°N**±0.05°×**122.19°E**±0.08°**, h39km, n18, σ2s02**/18**, mb3.2**/5**, 3C-2D, Philippine Islands region**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
BALP	Baler	0.62	252	eP	Pn	18 45 44.7	-5.2
BALP				eS	Sn	18 45 53.2	-5.4
CAUP	Cauayan	1.06	341	eP	Pn	18 45 54.0	-1.9
BCPH	Baguio City Da	1.60	286	⇑iP	Pn	18 46 04.4	+0.9
BCPH				i S	Sn	18 46 27.1	+4.0
LQP	Lukban	1.92	199	⇑eP	Pn	18 46 07.2	-0.6
GQP	Guinayangan	2.03	173	⇓eP	Pn	18 46 09.7	+0.4
GQP				eS	Sn	18 46 35.7	+2.3
APYP	Conner	2.12	335	eP	Pn	18 46 09.7	-0.7
APYP				eS	Sn	18 46 27.5	-8.0
TGY	Tagaytay City	2.19	214	⇓eP	Pn	18 46 12.1	+0.7
ABRA	Dolores	2.21	321	eP	Pn	18 46 11.9	+0.2
BOLP	Bolinao	2.23	282	eP	Pn	18 46 12.7	+0.8
BOAC	Boac	2.48	188	eP	Pn	18 46 15.6	+0.2
PIP	Pasuquin	2.81	328	⇑eP	Pn	18 46 20.8	+0.9
SJMP	San Jose	3.60	197	eP	Pn	18 46 29.3	-1.5
CMAR	Chiang Mai Arr	22.34	280	P	P	18 50 40.9	+8.6
	0.4nm,0.7s,baz=79,slow=7.7,SNR=3.5						
WRA	Warramunga Arr	37.60	161	P	P	18 52 47.9	-0.7
	0.3nm,0.6s,baz=342,slow=9.6,SNR=1.8						
ASAR	Alice Springs	40.99	164	P	P	18 53 16.9	+0.1
	0.2nm,0.4s,baz=338,slow=7.3,SNR=3.0						
HNR	Honiara	45.09	121	LR	LR	19 08 54.8	
	comp=Z,79nm,20.1s,baz=41,slow=32						
MKAR	Makanchi Array	45.14	322	P	P	18 53 51.0	+0.8
	0.4nm,1.0s,baz=111,slow=7.9,SNR=2.1						
KURBB	Kurchatov Arra	49.18	324	P	P	18 54 21.1	-0.4
	0.5nm,0.7s,baz=122,slow=8.1,SNR=5.1						

BJI 02 18:50:16.1, 24.43°S×179.03°W, h448km, mb4.7/35, mB5.2/24

ISCJB 02 18:50:21.5±0.6, 24.48°S±0.03°×179.86°W±0.04°, h474km±7km, mb4.8/95, Error ellipse: s-maj=5.4km s-min=4.3km az=14.3

NEIC 02 18:50:22.6±0.6, 24.51°S×179.69°W, h488km±6km, mb5.1/43, Error ellipse: s-maj=6.9km s-min=5.9km az=113.0

MOS 02 18:50:23.8±3.4, 24.27°S×179.85°E, h463km, mb5.4/7, Error ellipse: s-maj=13.4km s-min=11.2km az=21.5

IDC 02 18:50:24.1±0.9, 24.37°S×179.93°W, h491km±8km, mb4.1/26, mb1 4.2/26, mb1mx4.1/40, mbtmp4.9/26, Error ellipse: s-maj=10.7km s-min=9.7km az=117.0

ISC 02 18:50:22.5±0.5**, 24.48°S**±0.05°×**179.71°W**±0.05°**, h483km**±4km**, h484km:pP-P, n440, σ1s53**/507**, mb4.8**/95**, 38C-23D, South of Fiji Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
MSVF	Nonsavu	7.03	342	eP	P	18 52 10.2	+1.6
NIUE	Niue	10.55	61	P	P	18 52 47.4	+1.7
	baz=10,SNR=8.5						
OUZ	Omahuta	12.18	207	eP	P	18 53 06.9	+4.1
AFI	Afiamalu	12.90	37	P	P	18 53 09.6	-1.4
	40nm,0.3s,baz=186,slow=2.4,SNR=34						
AFI				S	S	18 55 23.7	-6.1
	7.3nm,0.3s,baz=74,slow=19,SNR=4.2						
DZM	Mont Dzumac	12.95	278	P	P	18 53 14.0	+2.6
	5.8nm,0.3s,baz=275,slow=14,SNR=64						
MXZ	Matakaoa Point	13.16	187	eP	P	18 53 13.6	+0.4
ETAZ	East Tamaki Re	13.26	199	PN	P	18 53 17.7	+3.3
MKAZ	Moumakai	13.34	198	PN	P	18 53 18.1	+3.0
WMGZ	Waiomatatini S	13.40	186	PN	P	18 53 17.1	+1.3
WMGZ				eSN	S	18 55 37.6	-1.2
KBAZ	Karaka Road Bo	13.40	199	PN	P	18 53 19.3	+3.4
HAZ	Te Kaha	13.41	189	PN	P	18 53 15.8	-0.2
HAZ				eSN	S	18 55 36.6	-2.5
AWAZ	Awhitu Peninsu	13.45	200	PN	P	18 53 19.3	+2.9
PUZ	Puketiti	13.66	187	SN	S	18 55 44.3	+0.2
TWGZ	Tauwhareparae	13.80	188	PN	P	18 53 19.5	-0.7
KMRZ	Kaimai	13.84	195	PN	P	18 53 23.2	+2.7
URZ	Urewera	14.01	190	P	P	18 53 21.4	-0.9
	16nm,0.3s,baz=36,slow=1.9,SNR=36						
URZ				S	S	18 55 50.4	-0.2
	6.0nm,0.3s,baz=66,slow=22,SNR=4.7						
URZ	Urewera	14.01	190	PN	P	18 53 19.2	-3.0
URZ				eSN	S	18 55 52.5	+1.9
URZ	Urewera	14.01	190	eS	S	18 55 50.3	-0.3
MWZ	Matawai	14.02	189	PN	P	18 53 21.4	-1.0
MWZ				eSN	S	18 55 51.8	+0.9
RIGZ	Rimuhau	14.35	188	PN	P	18 53 25.9	0.0
SNGZ	Shannon Statio	14.48	189	PN	P	18 53 27.9	+0.6
HIZ	Hauiti	14.74	197	eP	P	18 53 29.8	-0.2
BKZ	Black Stump Fm	15.00	191	PN	P	18 53 30.6	-2.2
BKZ				eSN	S	18 56 04.8	-5.0
BKZ	Black Stump Fm	15.00	191	eP	P	18 53 32.0	-0.8
	105nm,0.4s						
BKZ				eS	S	18 56 07.7	-2.2
WNVZ	Wahianoa	15.33	194	PN	P	18 53 35.3	-1.1
BHHZ	Black Hill Sta	15.39	192	PN	P	18 53 34.4	-2.6
KRHZ	Kereru	15.48	191	PN	P	18 53 38.1	+0.3
KAHZ	Kahuranaki	15.54	190	ePN	P	18 53 38.4	-0.1
PXZ	Pawanui	15.78	190	PN	P	18 53 39.2	-1.7
PXZ				eSN	S	18 56 17.3	-7.5
TSZ	Takapari Road	15.96	192	PN	P	18 53 42.1	-0.8
TSZ				eSN	S	18 56 21.7	-6.7
PRHZ	Porangahau	16.04	190	ePN	P	18 53 43.6	-0.1
ANWZ	Angora Road	16.26	190	PN	P	18 53 44.7	-1.2
BFZ	Birch Farm	16.51	191	PN	P	18 53 46.1	-2.6
BFZ				eSN	S	18 56 32.9	-5.7
BFZ	Birch Farm	16.51	191	eP	P	18 53 46.6	-2.1
	72nm,0.5s						
BFZ				eS	S	18 56 34.7	-3.9
MRZ	Mangatainoka R	16.62	193	PN	P	18 53 46.5	-3.3
MRZ				eSN	S	18 56 31.5	-9.0
OGWZ	Otaki Gorge	16.85	194	PN	P	18 53 49.2	-3.0
DUWZ	D'Urville Isla	17.13	197	PN	P	18 53 52.7	-2.4
CAW	Cannon Point	17.15	193	PN	P	18 53 55.5	+0.2
SNZO	South Karori	17.42	194	eP	P	18 53 56.0	-1.9
	160nm,0.6s						
TCW	Tory Channel	17.43	195	PN	P	18 53 55.9	-2.1
NNZ	Nelson	17.66	197	PN	P	18 53 58.4	-1.9
NNZ				eSN	S	18 56 52.9	-5.6
TUWZ	Tuamarina	17.72	196	PN	P	18 53 59.0	-1.8
THZ	Tophouse	18.30	198	PN	P	18 54 05.0	-1.4
THZ	Tophouse	18.30	198	eP	P	18 54 06.0	-0.3
	70nm,0.7s						
THZ				eS	S	18 57 08.8	-0.4
DSZ	Denniston Nort	18.61	200	PN	P	18 54 09.0	-0.2
DSZ				eSN	S	18 57 11.1	-3.1
RAR	Rarotonga	18.66	84	P	P	18 54 10.4	+0.6
	2.7nm,0.3s,baz=58,slow=24,SNR=3.1						
RAR	Rarotonga	18.66	84	eP	P	18 54 08.8	-1.0
	120nm,1.5s						
KHZ	Kahutara	18.75	196	PN	P	18 54 09.0	-1.4
KHZ	Kahutara	18.75	196	eP	P	18 54 09.9	-0.5
	139nm,0.5s						
LTZ	Lake Taylor	19.42	198	eP	P	18 54 15.2	-1.4
	110nm,0.7s						
INZ	Inchbonnie	19.61	200	PN	P	18 54 18.2	-0.1
OXZ	Oxford	19.99	198	PN	P	18 54 21.2	-0.5
OXZ	Oxford	19.99	198	eP	P	18 54 20.9	-0.8
	274nm,0.6s						
LHI	Lord Howe Isla	20.00	245	P	P	18 54 24.7	+2.7
	baz=20,SNR=5.6						
LHI	Lord Howe Isla	20.00	245	eP	P	18 54 23.3	+1.4
	86nm,0.7s						
WVZ	Waitaha Valley	20.15	201	PN	P	18 54 22.8	-0.3
MQZ	McQueen's Vall	20.18	196	PN	P	18 54 22.8	-0.6
RPZ	Rata Peaks	20.63	199	P	P	18 54 27.1	-0.5
	120nm,0.5s,baz=46,slow=1.2,SNR=44						
RPZ	Rata Peaks	20.63	199	eP	P	18 54 26.9	-0.7
	102nm,0.7s						
FOZ	Fox Glacier	20.87	202	PN	P	18 54 29.0	-0.7
FOZ	Fox Glacier	20.87	202	eP	P	18 54 29.2	-0.5
	144nm,1.2s						
LBZ	Lake Benmore	21.51	200	PN	P	18 54 34.1	-1.4
LBZ	Lake Benmore	21.51	200	eP	P	18 54 33.8	-1.7
	29nm,0.9s						
ODZ	Otahua Downs	21.97	199	eP	P	18 54 39.2	-0.4
	86nm,1.5s						
MLZ	Mavora Lakes	23.06	202	eP	P	18 54 49.8	+0.3
	42nm,1.0s						
WHZ	Wether Hill Ro	23.58	202	eP	P	18 54 53.8	-0.3
	89nm,1.1s						
HNR	Honiara	24.49	304	P	P	18 55 01.3	-1.3
	59nm,0.6s,baz=124,slow=3.2,SNR=6.9						
ARMA	Armidale	26.08	250	P	P	18 55 18.3	+1.7
	baz=26,SNR=11						
ARMA	Armidale	26.08	250	eP	P	18 55 18.1	+1.5
	36nm,0.7s						
EIDS	Eidsvold	26.48	262	P	P	18 55 20.7	+0.6
	baz=27,SNR=14						
EIDS	Eidsvold	26.48	262	eP	P	18 55 20.6	+0.5
	35nm,0.8s						
MGCD	Mangrove Creek	26.93	244	P	P	18 55 25.9	+1.9
	baz=27,SNR=42						
RMQ	Roma	28.50	259	P	P	18 55 39.1	+1.2
	baz=29,SNR=71						
CNB	Canberra Magne	28.80	241	P	P	18 55 41.9	+1.4
	baz=29,SNR=49						
CAN	Canberra	29.09	241	eP	P	18 55 44.3	+1.3
CAN				pmax	pmax		
	comp=Z,30nm,0.5s						
CAN	Canberra	29.09	241	eP	P	18 55 44.3	+1.3
	comp=Z,30nm,0.5s						
YNG	Young	29.36	243	P	P	18 55 46.7	+1.4
	baz=29,SNR=33						
CMSA	Cobar Meteorol	31.26	249	P	P	18 56 02.4	+0.7
	baz=31,SNR=192						
CTA	Charters Tower	31.75	271	P	P	18 56 06.8	+0.7
	baz=32						
CTA	Charters Tower	31.75	271	P	P	18 56 06.5	+0.4
CTAO	Charters Tower	31.75	271	eP	P	18 56 06.0	-0.1
CTAO				pmax	pmax		
	comp=Z,93nm,0.8s						
CTAO	Charters Tower	31.75	271	eP	P	18 56 06.0	-0.1
	comp=Z,93nm,0.8s						
TOO	Toolangi	32.37	238	P	P	18 56 12.3	+1.2
	baz=32,SNR=43						
QLP	Quilpie	32.54	258	P	P	18 56 13.1	+0.4
	baz=33,SNR=66						
MTSU	Mount Surprise	34.04	274	P	P	18 56 26.2	+0.6
	baz=34,SNR=88						
STKA	Stephens Creek	34.76	249	P	P	18 56 32.1	+0.7
	comp=Z,44nm,0.6s,baz=95,slow=10,SNR=125						
STKA				PcP	sP	18 58 52.6	+0.2
	comp=Z,7.0nm,0.6s,baz=48,slow=1.7,SNR=3.9						
STKA				ScP	ScP	19 01 51.4	+0.4
	comp=Z,2.7nm,0.9s,baz=216,slow=23,SNR=4.1						
STKA	Stephens Creek	34.76	249	P	P	18 56 32.2	+0.7
	baz=35,SNR=80						
STKA	Stephens Creek	34.76	249	eP	P	18 56 31.9	+0.4
STKA				e		18 58 52.8	
STKA				pmax	pmax		
	comp=Z,9.0nm,0.6s						
STKA	Stephens Creek	34.76	249	eP	P	18 56 31.9	+0.4
	comp=Z,8.6nm,0.6s						
STKA				ePcP	sP	18 58 52.8	+0.2
STKA				ScP	ScP	19 01 51.4	+0.4
PMG	Port Moresby	34.94	290	eP	P	18 56 32.6	-0.5
PMG				pmax	pmax		
	comp=Z,64nm,0.8s						
PMG	Port Moresby	34.94	290	eP	P	18 56 32.6	-0.5
	comp=Z,64nm,0.8s						
ARPS	Mount Arapiles	35.06	240	P	P	18 56 34.6	+0.6
	baz=35,SNR=17						
COEN	Coen	36.47	280	P	P	18 56 46.2	+0.2
	baz=37,SNR=20						
COEN	Coen	36.47	280	eP	P	18 56 45.4	-0.5
	comp=Z,31nm,0.9s						
HTT	Hallett	37.09	246	P	P	18 56 50.9	+0.1
	baz=37,SNR=62						
QIS	Mount Isa	37.69	268	P	P	18 56 55.5	-0.5
	baz=38,SNR=5.1						
BBOO	Buckleboo	39.47	248	P	P	18 57 09.9	-0.4
	baz=40,SNR=142						
BBOO	Buckleboo	39.47	248	eP	P	18 57 09.8	-0.4
	comp=Z,64nm,0.4s						
AS01	Alice Springs	42.17	261	eP	P	18 57 31.7	-0.3
AS01				eScP	ScP	19 02 18.9	-0.8
AS31	Alice Springs	42.21	261	eP	P	18 57 32.1	-0.2
	comp=Z,9.8nm,0.8s						
ASAR	Alice Springs	42.21	261	P	P	18 57 32.1	-0.2
	comp=Z,21nm,0.5s,baz=95,slow=7.0,SNR=473						
ASAR				PP	PcP	18 59 13.4	-2.2
	comp=Z,5.2nm,0.9s,baz=82,slow=6.5,SNR=8.2						
ASAR				ScP	ScP	19 02 19.6	-0.2
	comp=Z,5.3nm,0.9s,baz=106,slow=4.3,SNR=12						
ASAR				S	S	19 03 13.7	-3.4
	comp=Z,1.7nm,0.8s,baz=94,slow=16,SNR=5.0						
ASAR				P3KPbc		19 26 44.2	
	comp=Z,0.2nm,0.8s,baz=293,slow=4.0,SNR=4.1						
WR7	Warramunga Arr	42.51	267	P	P	18 57 34.0	-0.8
	baz=43						
WB2	Warramunga Arr	42.63	267	eP	P	18 57 35.0	-0.6
	comp=Z,66nm,0.5s						
WB2				eScP	ScP	19 02 23.1	+1.5
WRAB	Tennant Creek	42.63	267	d iP	P	18 57 34.7	-1.0
WRAB				pmax	pmax		
	comp=Z,137nm,0.9s						
WRAB	Tennant Creek	42.63	267	eP	P	18 57 34.9	-0.8
	comp=Z,82nm,1.1s						
WR1	Warramunga Arr	42.64	267	eP	P	18 57 35.0	-0.7
	comp=Z,73nm,0.8s						
WR1				ePcP	PcP	18 59 16.0	-1.1
WR1				eScP	ScP	19 02 23.0	+1.4
WR1				eS	S	19 03 17.8	-5.4
WRA	Warramunga Arr	42.64	267	P	P	18 57 35.0	-0.7
	comp=Z,39nm,0.4s,baz=99,slow=8.2,SNR=407						
WRA				PcP	PcP	18 59 16.0	-1.1
	comp=Z,6.5nm,0.9s,baz=103,slow=3.6,SNR=5.7						
WRA				ScP	ScP	19 02 23.0	+1.4
	comp=Z,16nm,0.9s,baz=103,slow=4.1,SNR=23						
WRA				S	S	19 03 17.8	-5.5
	comp=Z,3.8nm,0.8s,baz=105,slow=13,SNR=7.1						
JAY	Jayapura	43.99	294	P	P	18 57 45.8	-0.6
	comp=Z,3.7nm,0.5s,baz=330,slow=23,SNR=29						
JAY	Jayapura	43.99	294	P	P	18 57 45.7	-0.6
	comp=Z,48nm,0.7s						
GENI	Genyem	44.40	293	P	P	18 57 48.8	-0.7
	comp=Z,67nm,0.8s						
KDU	Kakadu	46.61	276	P	P	18 58 05.6	-0.9
	baz=47,SNR=9.7						
WRKA	Warakurna	46.98	258	P	P	18 58 08.7	-0.5
	baz=47,SNR=191						
MTN	Manton Dam	47.77	275	P	P	18 58 14.0	-1.3
	baz=48						
MTN	Manton Dam	47.77	275	eP	P	18 58 13.7	-1.5
	comp=Z,142nm,1.7s						
KNRA	Kununurra	48.95	270	P	P	18 58 23.8	-0.3
	baz=49						
FAKI	Fak Fak	51.01	287	P	P	18 58 38.3	-0.9
	comp=Z,33nm,0.9s						
FAKI	Fak Fak	51.01	287	eP	P	18 58 38.1	-1.2
	comp=Z,22nm,0.9s						
FITZ	Fitzroy Crossi	51.05	266	P	P	18 58 39.4	-0.1
	baz=51,SNR=52						
FITZ	Fitzroy Crossi	51.05	266	eP	P	18 58 39.3	-0.2
	comp=Z,55nm,0.6s						
KMBL	Kambalda	51.56	248	P	P	18 58 42.1	-1.0
	baz=52						
SWI	Sorong	52.88	289	P	P	18 58 52.2	-0.6
	comp=Z,180nm,0.8s,comp=Z,1μm						
VNDA	Vanda	53.83	185	P	P	18 59 01.0	+2.4
	comp=Z,4.6nm,0.7s,baz=353,slow=7.3,SNR=21						
VNDA				ScP	ScP	19 03 10.9	+2.9
	comp=Z,1.6nm,0.6s,baz=329,slow=7.8,SNR=7.5						
KLBR	Kellerberrin	55.02	248	P	P	18 59 07.2	-0.6
	baz=55,SNR=38						
SOEI	Soe	55.16	275	P	P	18 59 10.0	+0.9
	comp=Z,91nm,1.1s						
SOEI	Soe	55.16	275	eP	P	18 59 10.0	+0.9
	comp=Z,94nm,1.1s						
RKGY	Rocky Gully	55.22	244	P	P	18 59 08.8	-0.3
	baz=55,SNR=18						
NWAO	Narrogin (SRO)	55.24	246	P	P	18 59 08.7	-0.6
	baz=55,SNR=9.7						
BATI	Baumata	55.53	274	P	P	18 59 12.5	+0.9
	comp=Z,14nm,0.4s,baz=107,slow=20,SNR=11						
MBWA	Marble Bar	55.54	260	eP	P	18 59 09.9	-1.6
	comp=Z,42nm,0.8s						
BLDU	Ballidu	56.06	249	P	P	18 59 14.3	-0.8
	baz=56,SNR=71						
LBMI	Labuha	56.25	287	P	P	18 59 16.3	-0.3
	comp=Z,54nm,1.1s						
SANI	Sanana	56.91	284	P	P	18 59 21.8	+0.7
	comp=Z,37nm,1.1s						
MORW	Morawa	56.93	250	P	P	18 59 20.5	-0.6
	baz=57,SNR=19						
PLAI	Plampang	61.42	273	P	P	18 59 50.8	-0.6
	comp=Z,111nm,0.9s,comp=Z,1μm						
MRSI	Marisa	61.66	285	P	P	18 59 51.3	-1.7
	comp=Z,24nm,0.9s,comp=Z,2μm						
JAGI	Jajag, Banyuwa	64.86	272	P	P	19 00 12.1	-1.5
	comp=Z,41nm,1.0s						
JAGI	Jajag, Banyuwa	64.86	272	eP	P	19 00 12.0	-1.7
	comp=Z,43nm,1.0s						
GMJI	Gumukmas	65.58	272	P	P	19 00 17.2	-1.0
	comp=Z,38nm,0.8s						
QSPA	South Pole Qui	65.61	180	eP	P	19 00 19.8	+2.1
BBKI	Banjar Baru	66.26	277	P	P	19 00 22.5	+0.1
	comp=Z,80nm,0.9s						
PWJI	Pagerwojo	67.17	271	P	P	19 00 27.5	-0.6
	comp=Z,48nm,0.7s						
PCJI	Pacitan	67.67	271	P	P	19 00 30.2	-1.0
	comp=Z,135nm,0.7s						
UWJI	Ujung Watu	68.58	273	P	P	19 00 36.5	-0.2
	comp=Z,105nm,0.9s						
KPJI	Karang Pucung	70.06	271	P	P	19 00 45.0	-0.6
	comp=Z,45nm,1.3s						
STKI	Sintang	70.80	279	P	P	19 00 50.3	+0.2
	comp=Z,69nm,0.9s						
CISI	Cisompet, Garu	70.98	270	P	P	19 00 50.0	-1.2
	comp=Z,80nm,0.8s						
LEM	Lembang	71.45	271	P	P	19 00 59.5	+5.4
JOW	Kunigami	71.57	312	P	P	19 00 54.4	+0.1
	comp=Z,23nm,0.7s,baz=132,slow=9.1,SNR=16						
MJAR	Matsushiro Arr	72.52	326	P	P	19 00 58.9	-0.7
	comp=Z,8.7nm,0.7s,baz=158,slow=6.1,SNR=21						
MAJO	Matsushiro	72.52	326	⇑iP	P	19 00 59.3	-0.3
MAJO				pmax	pmax		
	comp=Z,155nm,1.0s						
MAT	Matsushiro	72.52	326	P	P	19 00 58.5	-1.1
JNU	Nakatsue	74.13	319	P	P	19 01 08.6	-0.3
	comp=Z,11nm,0.8s,baz=70,slow=2.5,SNR=4.9						
MAW	Mawson	77.31	200	P	P	19 01 27.3	+1.4
	comp=Z,20nm,0.6s,baz=133,slow=5.7,SNR=69						
MAW	Mawson	77.31	200	eP	P	19 01 27.5	+1.5
MAW				pmax	pmax		
	comp=Z,5.0nm,0.6s						
MAW	Mawson	77.31	200	eP	P	19 01 27.5	+1.5
	comp=Z,4.6nm,0.6s						
KSRS	Korea Array	78.86	320	P	P	19 01 35.2	+0.4
	comp=Z,6.0nm,0.7s,baz=132,slow=5.7,SNR=23						
KS15	Wonju Array Si	78.87	320	eP	P	19 01 35.5	+0.7
KSAR	Wonju Array Be	78.87	320	P	P	19 01 35.2	+0.3
KSAR	Wonju Array Be	78.87	320	P	P	19 01 35.2	+0.3
KS01	Wonju Array Si	78.89	320	eP	P	19 01 35.7	+0.7
PETK	Petropavlovsk-	79.72	346	P	P	19 01 39.0	0.0
	comp=Z,10nm,0.7s,baz=127,slow=7.5,SNR=19						
PETK	Petropavlovsk-	79.72	346	P	P	19 01 39.0	0.0
PEA1	Petropavlovsk-	79.72	346	eP	P	19 01 39.0	-0.1
NJ2	Nanjing	81.24	311	eP	P	19 01 47.8	+0.4
NJ2				pmax	pmax		
	comp=Z,14nm,0.8s						
USRK	Ussuriysk Ar.	81.39	327	P	P	19 01 48.8	+0.8
	comp=Z,7.2nm,0.6s,baz=143,slow=3.6,SNR=17						
SYO	Syowa Base	82.52	193	⇑eP	P	19 01 52.2	-1.2
MDJ	Mudanjiang	82.89	326	eP	P	19 01 56.5	+1.0
	comp=Z,14nm,0.8s						
BFSC	Mount Baldy Ra	82.93	48	P	P	19 01 57.6	+1.4
	baz=234						
VES	Vestal, Richgr	82.93	46	P	P	19 01 57.4	+1.4
	baz=233						
PLM	Palomar	82.96	49	eP	P	19 01 55.4	-1.0
PLM	Palomar	82.96	49	eP	P	19 01 55.4	-1.0
MONP2	Monument Peak	83.00	49	P	P	19 01 58.1	+1.4
	baz=235						
EDW2	Edwards Air Fo	83.08	47	P	P	19 01 58.5	+1.6
	baz=234						
BORC	Borrego Spring	83.21	49	eP	P	19 01 54.2	-3.2
PSI	Prapat	83.31	276	P	P	19 01 57.3	-1.3
	comp=Z,18nm,0.9s,baz=148,slow=3.1,SNR=11						
WESC	Westside Schoo	83.40	50	eP	P	19 02 01.1	+2.8
BELC	Belle Mtn. Jos	83.92	49	P	P	19 02 02.8	+1.6
	baz=235						
M02C	Callahan	84.06	39	P	P	19 02 03.7	+2.1
	baz=230						
SNAA	Sanae	84.09	179	P	P	19 02 01.6	+0.2
SNAA	Sanae	84.09	179	⇓iP	P	19 02 01.5	+0.2
BC3	Big Chuckawall	84.09	49	P	P	19 02 03.9	+1.9
	baz=235						
MPMC	Manual Prospec	84.11	46	P	P	19 02 03.1	+1.0
	baz=234						
GSC	Goldstone, Bar	84.12	47	P	P	19 02 03.4	+1.3
	baz=234						
HEC	Hector,Ludlow	84.16	48	P	P	19 02 03.4	+1.2
	baz=235						
GLA	Glamis	84.19	50	P	P	19 02 04.5	+2.1
	baz=236						
VNA3	Neumayer Olymp	84.29	177	P	P	19 02 03.0	+0.7
CN2	Changchun	84.51	324	eP	P	19 02 04.2	+0.6
IRM	Iron Mountain	84.59	49	P	P	19 02 06.1	+1.8
	baz=236						
GMRC	Granite Mounta	84.59	48	P	P	19 02 06.0	+1.6
	baz=235						
VNA2	Neumayer--Watz	84.71	177	P	P	19 02 05.3	+1.0
	baz=180,slow=3.5						
TRTT	Trang	84.74	281	P	P	19 02 06.2	+0.7
	comp=Z,26nm,1.2s						
TIA	Tai'an	84.82	314	⇓P	P	19 02 05.9	+0.5

Code	Station Name	Δ°	AZ°	Op	ISC	Time	Res
TIA				pmax	pmax		
	comp=Z,30nm,0.9s						
NV01	**Mina Array Sit**	**84.98**	**44**	*e*P	**P**	**19 02 07.4**	**+1.0**
NVAR	**Mina Array Bea**	**84.98**	**44**	P	**P**	**19 02 07.1**	**+0.7**
	comp=Z,1.6nm,0.7s,baz=222,slow=8.4,SNR=9.2						
NVAR				pP	**pP**	**19 03 53.8**	**+0.4**
	comp=Z,0.3nm,0.3s,baz=190,slow=4.6,SNR=2.2						
SKNT	**Sakolnakorn**	**85.02**	**291**	P	P	19 01 58.8	-8.0
	comp=Z,68nm,0.8s						
SKNT				P	**PcP**	**19 02 07.2**	**-1.9**
	comp=Z,68nm,0.8s						
KLR	**Kul'dur**	**85.16**	**330**	P	**P**	**19 02 07.5**	**+0.8**
	comp=Z,3.5nm,1.0s,baz=159,slow=2.5,SNR=8.2						
PDMCI	**Parker Dam,Lak**	**85.36**	**49**	P	**P**	**19 02 09.6**	**+1.5**
	baz=236						
KHON	**Khomkaen**	**85.72**	**290**	P	**P**	**19 02 13.5**	**+3.4**
	comp=Z,6.7nm,0.9s						
W13A	**Hualapai Mount**	**85.98**	**49**	*e*P	**P**	**19 02 12.7**	**+1.4**
	comp=Z,9.2nm,1.4s						
SURT	**Suratani**	**86.02**	**282**	P	**P**	**19 02 12.9**	**+1.2**
	comp=Z,7.4nm,1.2s						
PHET	**Kaeng Krachan**	**86.98**	**286**	P	**P**	**19 02 17.9**	**+1.7**
	comp=Z,13nm,0.9s						
ENH	**Enshi**	**86.99**	**305**	*e*P	**P**	**19 02 16.2**	**+0.2**
	comp=Z,24nm,1.0s						
MA2	**Magadan**	**87.20**	**345**	P	**P**	**19 02 15.8**	**-0.4**
	comp=Z,7.4nm,0.8s,baz=159,slow=5.8,SNR=15						
GYA	**Guiyang**	**87.27**	**301**	P	**P**	**19 02 18.0**	**+0.5**
GYA				pP	pP	19 04 00.8	-4.4
GYA				sP	sP	19 04 45.2	-9.4
GYA				PP	**PP**	**19 05 52.0**	**+1.5**
GYA				SKS	**SKSac**	**19 12 01.6**	**+2.8**
GYA				S	**ScS**	**19 12 19.4**	**-2.5**
GYA				pmax	pmax		
	comp=Z,20nm,1.0s						
GYA				pmax	pmax		
	comp=Z,120nm,6.9s						
X16A	**Lo Mia Camp, P**	**87.30**	**50**	*e*P	**P**	**19 02 19.1**	**+1.6**
	comp=Z,11nm,0.6s						
PBKT	**Sadao Pong**	**87.41**	**289**	P	**P**	**19 02 19.5**	**+1.4**
	comp=Z,14nm,1.0s						
LOEI	**Loei**	**87.58**	**290**	P	**P**	**19 02 19.4**	**+0.5**
	comp=Z,13nm,1.3s						
BJI	**Beijing**	**87.63**	**316**	P	**P**	**19 02 20.6**	**+2.0**
BJI				pP	**pP**	**19 04 00.2**	**-6.3**
BJI				S	**S**	**19 12 24.6**	**+5.3**
BJI				pmax	pmax		
	comp=Z,7.0nm,0.8s						
BJI				pmax	pmax		
	comp=Z,130nm,5.2s						
PLCA	**Paso Flores**	**87.67**	**134**	P	**P**	**19 02 21.0**	**+1.8**
	comp=Z,1.5nm,0.4s,baz=268,slow=5.8,SNR=8.5						
PLCA	**Paso Flores**	**87.67**	**134**	*e*P	**P**	**19 02 21.4**	**+2.2**
PLCA				pmax	pmax		
	comp=Z,39nm,1.9s						
PLCA	**Paso Flores**	**87.67**	**134**	*e*P	**P**	**19 02 21.4**	**+2.2**
	comp=Z,39nm,1.9s						
SRDT	**SRDT**	**88.05**	**287**	P	**P**	**19 02 22.9**	**+1.7**
	comp=Z,44nm,1.0s						
UTTA	**Uttaradit**	**88.29**	**290**	P	**P**	**19 02 24.1**	**+1.9**
	comp=Z,2.0nm,1.1s						
UTHA	**Uthaitani**	**88.29**	**288**	P	**P**	**19 02 23.6**	**+1.3**
	comp=Z,5.0nm,1.0s						
NANT	**Nan**	**88.63**	**291**	P	**P**	**19 02 25.0**	**+1.2**
	comp=Z,3.7nm,1.0s						
PHRA	**Phrae**	**88.89**	**291**	P	**P**	**19 02 26.6**	**+1.5**
	comp=Z,425nm,1.7s						
SUKH	**Sukhothai**	**88.96**	**290**	P	**P**	**19 02 27.2**	**+1.8**
	comp=Z,3.3nm,0.9s						
LAMP	**Lampang**	**89.42**	**291**	P	**P**	**19 02 29.4**	**+1.9**
	comp=Z,8.0nm,0.9s						
KMI	**Kunming**	**89.77**	**298**	P	**P**	**19 02 30.6**	**+1.3**
KMI				pmax	pmax		
	comp=Z,13nm,0.8s						
KMI				pmax	pmax		
	comp=Z,110nm,4.5s						
SEY	**Seymchan**	**89.89**	**348**	P	**P**	**19 02 28.8**	**+0.2**
	comp=Z,6.2nm,0.7s,baz=145,slow=6.1,SNR=36						
SEY	**Seymchan**	**89.89**	**348**	⇑*i*P	**P**	**19 02 28.9**	**+0.3**
CM01	**Chiang Mai Arr**	**89.95**	**290**	*e*P	**P**	**19 02 30.9**	**+1.0**
CM31	**Chiang Mai Arr**	**89.97**	**290**	*e*P	**P**	**19 02 31.1**	**+0.9**
CMAR	**Chiang Mai Arr**	**89.97**	**290**	P	**P**	**19 02 31.2**	**+1.1**
	comp=Z,7.5nm,0.9s,baz=137,slow=3.3,SNR=57						
CMMT	**Chiang Mai**	**90.12**	**291**	P	**P**	**19 02 31.7**	**+0.9**
	comp=Z,16nm,1.0s						
CAST	**Castle Rocks**	**90.27**	**12**	*e*P	**P**	**19 02 29.3**	**-1.1**
	comp=Z,5.2nm,1.0s						
MNTX	**Cornudas Mount**	**90.32**	**55**	P	**P**	**19 02 33.0**	**+1.5**
	baz=241						
HLID	**Hailey**	**90.35**	**41**	P	**P**	**19 02 33.0**	**+1.5**
	baz=236						
SRU	**San Rafael Swe**	**90.40**	**47**	*e*P	**P**	**19 02 32.9**	**+1.1**
SRU				pmax	pmax		
	comp=Z,19nm,0.5s						
SRU	**San Rafael Swe**	**90.40**	**47**	*e*P	**P**	**19 02 32.9**	**+1.1**
	comp=Z,19nm,0.5s						
LTX	**Lajitas**	**90.51**	**58**	*e*P	**P**	**19 02 34.0**	**+1.5**
LTX	**Lajitas**	**90.51**	**58**	*e*P	**P**	**19 02 34.0**	**+1.5**
TX31	**Lajitas Ar. Si**	**90.51**	**58**	*e*P	**P**	**19 02 33.8**	**+1.3**
TXAR	**Lajitas Array**	**90.51**	**58**	P	**P**	**19 02 34.0**	**+1.6**
	comp=Z,5.3nm,0.8s,baz=214,slow=6.3,SNR=56						
TRF	**Thorofare Moun**	**90.65**	**13**	*e*P	**P**	**19 02 31.9**	**-0.4**
	comp=Z,7.2nm,0.9s						
HHC	**Hu-ho-hao-te**	**91.01**	**315**	*e*P	**P**	**19 02 35.4**	**+0.9**
HHC				sP	sP	19 04 58.3	-14
HHC				SKS	**SKSac**	**19 12 18.8**	**-1.0**
HHC				S	**ScS**	**19 12 51.4**	**-0.9**
HHC				pmax	pmax		
	comp=Z,35nm,1.1s						
HHC				pmax	pmax		
	comp=Z,75nm,6.3s						
ANMO	**Albuquerque**	**91.10**	**52**	P	**P**	**19 02 36.3**	**+1.1**
	baz=241						
ANMO	**Albuquerque**	**91.10**	**52**	⇓*i*P	**P**	**19 02 36.6**	**+1.4**
ANMO				pmax	pmax		
	comp=Z,3.0nm,1.2s						
CD2	**Chengdu**	**91.62**	**303**	P	**P**	**19 02 37.2**	**-0.3**
CD2				pmax	pmax		
	comp=Z,10.0nm,0.6s						
ILAR	**Eielson Array**	**92.53**	**13**	P	**P**	**19 02 39.8**	**-1.0**
	comp=Z,0.8nm,0.7s,baz=227,slow=5.2,SNR=10						
ILB	**Eielson Array**	**92.53**	**13**	*e*P	**P**	**19 02 39.7**	**-1.1**
BILL	**Bilibino**	**92.82**	**355**	⇓*e*P	**P**	**19 02 42.0**	**-0.1**
BILL				*e**PP	**pP**	**19 04 30.5**	**-0.2**
BILL				*e*		19 06 36.4	
BILL				pmax	pmax		
	comp=Z,4.0nm,0.9s						
BW06	**Boulder Array**	**92.92**	**44**	*e*P	**P**	**19 02 43.5**	**0.0**
PD31	**Pinedale Array**	**92.92**	**44**	*e*P	**P**	**19 02 43.8**	**+0.4**
PDAR	**Pinedale Array**	**92.92**	**44**	P	**P**	**19 02 44.4**	**+1.0**
	comp=Z,1.0nm,0.6s,baz=217,slow=3.3,SNR=10						
SDCO	**Great Sand Dun**	**93.13**	**50**	*e*PP	PP	19 06 33.8	-2.6
LZH	**Lanzhou**	**93.94**	**308**	*e*P	**P**	**19 02 48.6**	**+0.4**
LZH				pP	pP	19 04 33.6	-3.2
LZH				sP	sP	19 05 18.1	-7.7
LZH				pmax	pmax		
	comp=Z,18nm,1.1s						
533A	**Kerrville**	**94.44**	**59**	P	**P**	**19 02 51.4**	**+0.9**
	baz=244						
433A	**Art**	**94.69**	**58**	P	**P**	**19 02 52.1**	**+0.5**
	baz=244						
PHWY	**Pilot Hill**	**94.85**	**47**	*e*P	**P**	**19 02 51.8**	**-0.6**
	comp=Z,38nm,0.8s						
SONA0	**Songino Array**	**97.71**	**319**	*e*P	**P**	**19 03 04.9**	**+0.1**
	comp=Z,3.4nm,1.4s						
SONA0				*e*PP	**PP**	**19 07 13.7**	**+2.7**
SONM	**Songino Array**	**97.71**	**319**	P	**P**	**19 03 04.9**	**+0.1**
	comp=Z,0.7nm,0.7s,baz=140,slow=4.7,SNR=6.5						
SONM				PP	**PP**	**19 07 13.7**	**+2.7**
	comp=Z,0.6nm,0.8s,baz=126,slow=8.2,SNR=4.3						
GTA	**Gaotai**	**98.27**	**309**	*e*P	**P**	**19 03 10.9**	**+3.3**
GTA				pP	pP	19 04 52.9	-3.6
GTA				sP	sP	19 05 37.7	-7.8
GTA				pmax	pmax		
	comp=Z,2.0nm,1.1s						
YKA	**Yellowknife Ar**	**100.77**	**25**	PKKPbc	PKKPbc	19 19 29.0	-2.1
	comp=Z,0.3nm,0.5s,baz=48,slow=2.8,SNR=6.5						
YKB5	**Yellowknife Ar**	**100.77**	**25**	*e*PKKPbc	PKKPbc	19 19 28.9	-2.3
HDIL	**Hopedale**	**105.77**	**52**	*e*PKiKP	**PKiKP**	**19 07 48.1**	**-2.4**
AAM	**Ann Arbor**	**110.34**	**52**	*e*PP	PP	19 08 37.8	-5.8
ZAA0	**Zalesovo Array**	**112.56**	**320**	*e*PKiKP	**PKiKP**	**19 08 01.1**	**-1.7**
ZAA1	**Zalesovo Array**	**112.56**	**320**	*e*PKiKP	**PKiKP**	**19 08 01.6**	**-1.3**
ZAA1				*e*SKPdf	**SKPdf**	**19 10 49.2**	**-2.8**
ZALV	**Zalesovo Beam**	**112.56**	**320**	PKiKP	**PKiKP**	**19 08 01.6**	**-1.3**
	comp=Z,0.8nm,0.4s,baz=134,slow=2.2,SNR=5.2						
ZALV				SKP		19 10 49.2	

Code	Station Name	Δ°	AZ°	Op	ISC	Time	Res
	comp=Z,0.6nm,0.6s,baz=42,slow=2.4,SNR=3.7						
MK31	**Makanchi Array**	**112.74**	**312**	*e*PKiKP	**PKiKP**	**19 08 02.5**	**-1.0**
MK32	**Makanchi Array**	**112.74**	**312**	*e*Pdif	**Pdif**	**19 04 14.7**	**+3.2**
MK32				*e*PKiKP	**PKiKP**	**19 08 02.5**	**-1.0**
MK32				*e*SKPdf	**SKPdf**	**19 10 51.4**	**-1.3**
MK32				*e*PKKPab	**PKKPab**	**19 19 03.5**	**+2.1**
MKAR	**Makanchi Array**	**112.74**	**312**	Pdiff	**Pdif**	**19 04 14.7**	**+3.2**
	comp=Z,0.4nm,0.9s,baz=89,slow=5.9,SNR=3.7						
MKAR				PKiKP	**PKiKP**	**19 08 02.5**	**-1.0**
	comp=Z,1.2nm,0.7s,baz=75,slow=1.3,SNR=14						
MKAR				SKP		19 10 51.4	
	comp=Z,0.8nm,0.7s,baz=84,slow=2.6,SNR=5.7						
MKAR				PKKPab	**PKKPab**	**19 19 03.5**	**+2.1**
	comp=Z,0.8nm,0.7s,baz=290,slow=3.4,SNR=6.0						
KURK	**Kurchatov**	**115.80**	**316**	*e*PKIKP	**PKPdf**	**19 08 08.3**	**-0.9**
KURK	**Kurchatov**	**115.80**	**316**	*e*PKPdf	**PKPdf**	**19 08 08.3**	**-0.9**
KSH	**Kashi**	**115.81**	**304**	PKP	**PKPdf**	**19 08 10.3**	**+0.5**
KSH				PKS	**PKSdf**	**19 11 45.7**	**-0.8**
KSH				SKS	**SKSdf**	**19 14 36.6**	**+0.9**
KSH				AMB	AMB		
	comp=Z,130nm,5.3s						
KURBB	**Kurchatov Arra**	**115.84**	**316**	PKP	**PKPdf**	**19 08 08.3**	**-1.0**
	comp=Z,2.4nm,0.7s,baz=100,slow=1.9,SNR=14						
AAK	**Ala-Archa**	**117.46**	**307**	⇑*i*PKIKP	**PKPdf**	**19 08 12.5**	**-0.4**
KKAR	**Karatay Array**	**120.42**	**307**	*e*PKIKP	**PKPdf**	**19 08 17.7**	**-0.7**
KKAR	**Karatay Array**	**120.42**	**307**	*e*PKPdf	**PKPdf**	**19 08 17.7**	**-0.7**
VOSK	**Vostochnaya**	**120.69**	**318**	*e*PKIKP	**PKPdf**	**19 08 17.7**	**-0.9**
VOSK	**Vostochnaya**	**120.69**	**318**	*e*PKPdf	**PKPdf**	**19 08 17.7**	**-0.9**
BVAR	**Borovoye Array**	**121.05**	**318**	PKP	**PKPdf**	**19 08 18.6**	**-0.6**
	comp=Z,2.9nm,0.4s,baz=114,slow=2.2,SNR=31						
BRVK	**Borovoye**	**121.11**	**319**	⇑*i*PKIKP	**PKPdf**	**19 08 18.6**	**-0.8**
BRVK	**Borovoye**	**121.11**	**319**	*e*PKPdf	**PKPdf**	**19 08 18.5**	**-0.8**
ZRNK	**Zerenda**	**121.88**	**318**	*e*PKIKP	**PKPdf**	**19 08 19.9**	**-0.9**
ZRNK	**Zerenda**	**121.88**	**318**	*e*PKPdf	**PKPdf**	**19 08 19.9**	**-0.9**
BOSA	**Boshof**	**122.00**	**206**	PKP	**PKPdf**	**19 08 22.3**	**+0.2**
	comp=Z,2.7nm,0.7s,baz=53,slow=1.6,SNR=4.5						
ARU	**Arti**	**127.50**	**323**	*i* PKIKP	**PKPdf**	**19 08 31.1**	**-0.4**
ARU						19 14 58.9	
ARU	**Arti**	**127.50**	**323**	*e*PKPdf	**PKPdf**	**19 08 31.3**	**-0.1**
ABKAR	**Akbulak array**	**127.80**	**314**	*e*PKPdf	**PKPdf**	**19 08 32.5**	**+0.3**
GEYT	**Alibeck**	**129.49**	**300**	PKP	**PKPdf**	**19 08 36.1**	**+0.2**
	comp=Z,3.4nm,0.7s,baz=112,slow=1.6,SNR=9.8						
GEYT				SKPbc	SKPab	19 11 11.8	-0.4
	comp=Z,6.4nm,1.0s,baz=209,slow=2.7,SNR=12						
LSZ	**Lusaka**	**132.02**	**217**	SKPbc	**SKPbc**	**19 11 22.2**	**0.0**
	comp=Z,9.1nm,1.1s,baz=134,slow=3.2,SNR=10						
ARCES	**ARCESS Array B**	**132.50**	**348**	PKP	**PKPdf**	**19 08 40.0**	**-0.6**
	comp=Z,3.6nm,0.8s,baz=80,slow=2.7,SNR=20						
ARCES				SKPbc	**SKPbc**	**19 11 21.0**	**-1.0**
	comp=Z,8.4nm,0.8s,baz=12,slow=6.2,SNR=6.9						
TSUM	**Tsumeb**	**133.43**	**203**	SKPbc	**SKPbc**	**19 11 26.6**	**-0.3**
	comp=Z,4.7nm,0.8s,baz=152,slow=5.6,SNR=5.9						
KMBO	**Kilima Mbogo**	**136.05**	**240**	PKP	**PKPdf**	**19 08 48.7**	**-0.5**
	comp=Z,0.8nm,0.4s,baz=224,slow=20,SNR=4.1						
KMBO				SKPbc	**SKPbc**	**19 11 36.1**	**+0.6**
	comp=Z,0.9nm,0.4s,baz=104,slow=4.9,SNR=4.5						
RAYN	**Ar Rayn**	**138.83**	**278**	*e*PKPdf	**PKPdf**	**19 08 53.2**	**-0.5**
FIA0	**FINESS Array S**	**139.07**	**341**	*e*PKHKP	PKPpre	19 08 44.3	
FIA0				*e*		19 08 54.2	
FIA0	**FINESS Array S**	**139.07**	**341**	*e*PKPpre	PKPpre	19 08 44.3	
FIA0				*e*PKPdf	**PKiKP**	**19 08 54.2**	**-1.2**
FIA0				*e*SKPbc	**SKPbc**	**19 11 41.1**	**-1.1**
FINES	**FINESS Array B**	**139.07**	**341**	PKhKP	PKPpre	19 08 44.3	
	comp=Z,1.4nm,0.5s,baz=95,slow=2.4,SNR=25						
FINES				PKP	**PKiKP**	**19 08 54.2**	**-1.2**
	comp=Z,4.1nm,0.6s,baz=69,slow=4.6,SNR=7.3						
FINES				SKPbc	**SKPbc**	**19 11 41.1**	**-1.1**
	comp=Z,8.8nm,0.6s,baz=54,slow=3.3,SNR=19						
GNI	**Garni**	**139.75**	**304**	*i* PKIKP	**PKPdf**	**19 08 58.0**	**+2.9**
NCK	**Nalchik**	**139.92**	**309**	⇑*i*PKIKP	**PKPdf**	**19 08 57.5**	**+2.4**
NEY	**Neytrino**	**140.60**	**309**	*i* PKIKP	**PKPdf**	**19 09 00.0**	**+3.4**
DAGI	**Agillar**	**141.69**	**306**	*i* P	PKPpre	19 08 54.4	
DBAD	**Bademkaya**	**141.86**	**306**	*i* P	PKPpre	19 08 55.0	
NB2	**NORSAR Subarra**	**142.69**	**351**	PKP	PKPpre	19 08 55.1	
	comp=Z,1.4nm,0.6s,baz=17,slow=3.0						
NB200	**NORSAR Array S**	**142.69**	**351**	*e*PKPpre	PKPpre	19 08 55.2	
NB200				*e*SKPbc	**SKPbc**	**19 11 50.9**	**-0.7**
NOA	**NORSAR Array B**	**142.69**	**351**	PKhKP	PKPpre	19 08 55.2	
	comp=Z,4.0nm,0.9s,baz=16,slow=4.7,SNR=8.5						
NOA				SKPbc	**SKPbc**	**19 11 50.9**	**-0.7**
	comp=Z,1.1nm,0.6s,baz=13,slow=4.1,SNR=3.6						
ANN	**Anapa**	**143.75**	**313**	*i* PKIKP	**PKPdf**	**19 09 05.4**	**+3.6**
ANN				pmax	pmax		
	comp=Z,49nm,1.2s						
NACGM	**Naroch**	**143.84**	**334**	*e*	PKPab	19 09 00.0	-0.6
KELT	**Kelkit**	**143.87**	**305**	*i* P	**PKPdf**	**19 09 02.0**	**-0.5**
TNCL	**Tunceli-Merkez**	**143.88**	**303**	*i* P	**PKPdf**	**19 09 02.2**	**-0.3**
KONO	**Kongsberg**	**144.25**	**352**	⇓*i*PKHKP	PKPbc	19 09 01.6	-0.2
ELZG	**Elazig**	**144.44**	**303**	*i* P	**PKPab**	**19 09 04.6**	**+1.0**
SUSE	**Susehri**	**144.64**	**306**	*i* P	**PKPab**	**19 09 04.3**	**-0.1**
KEMA	**Kemaliye**	**144.64**	**304**	*i* P	**PKPab**	**19 09 04.8**	**+0.5**
SURC	**SANLIURFA_SURC**	**145.03**	**300**	*i* P	**PKPbc**	**19 09 05.3**	**+0.3**
CUZAR	**Zara_SIVAS**	**145.04**	**305**	*i* P	**PKPab**	**19 09 06.0**	**+0.2**
CUKAN	**kangal_SIVAS**	**145.41**	**304**	*i* P	**PKPab**	**19 09 07.0**	**-0.3**
ERBA	**Erbaa**	**145.57**	**307**	*i* P	**PKPbc**	**19 09 07.1**	**+0.6**
AKASG	**Malin Array Be**	**145.60**	**327**	PKPbc	**PKPdf**	**19 09 05.2**	**+0.4**
	comp=Z,5.6nm,0.4s,baz=44,slow=4.1,SNR=45						
AKASG				SKPbc	**SKPbc**	**19 11 58.1**	**-0.5**
	comp=Z,1.3nm,0.4s,baz=41,slow=2.6,SNR=8.6						
AKBB	**Malin Array Si**	**145.60**	**327**	*e*PKPdf	**PKPdf**	**19 09 04.8**	**0.0**
KIEV	**Kiev**	**145.61**	**327**	*e*PKPdf	**PKPdf**	**19 09 04.8**	**-0.1**
AK11	**Malin Array Si**	**145.64**	**327**	*e*PKPdf	**PKPdf**	**19 09 05.2**	**+0.3**
GZT	**Gaziantep**	**145.76**	**301**	*i* P	**PKPbc**	**19 09 07.7**	**+0.4**
SIM	**Simferopol'**	**145.85**	**315**	*i* PKIKP	**PKPbc**	**19 09 07.4**	**+0.3**
SIM				pmax	pmax		
	comp=Z,22nm,0.7s						
SUW	**Suwalki**	**145.90**	**336**	*e*PKP	**PKPbc**	**19 09 06.4**	**-0.5**
HAVZ	**Havza**	**146.20**	**308**	*i* P	**PKPbc**	**19 09 08.8**	**+0.5**
KUZU	**Kuzuini**	**146.26**	**300**	*i* P	**PKPbc**	**19 09 09.1**	**+0.5**
CUSAR	**Sarkisla-SIVAS**	**146.30**	**305**	*i* P	**PKPbc**	**19 09 09.1**	**+0.4**
KLNR	**Kaliningrad**	**146.46**	**339**	*i* PKHKP	**PKPdf**	**19 09 07.8**	**+1.7**
KAMA	**Osmaniye**	**146.50**	**301**	*i* P	**PKPbc**	**19 09 09.7**	**+0.4**
COAL	**Corum-Alaca**	**146.99**	**307**	*i* P	**PKPbc**	**19 09 11.1**	**+0.6**
YAYL	**Yayladag**	**147.16**	**299**	*i* P	**PKPbc**	**19 09 11.0**	**-0.2**
GULE	**Gulek**	**147.95**	**302**	*i* P	**PKPbc**	**19 09 14.0**	**+0.8**
BR101	**Keskin Array S**	**148.13**	**307**	*e*PKPbc	**PKPbc**	**19 09 13.1**	**-0.5**
BR131	**Keskin Array S**	**148.13**	**307**	*e*PKPbc	**PKPbc**	**19 09 13.2**	**-0.4**
BR131				*e*PKPab	**PKPab**	**19 09 17.9**	**-0.3**
BRTR	**Keskin Array B**	**148.13**	**307**	PKPbc	**PKPbc**	**19 09 13.1**	**-0.5**
	comp=Z,8.2nm,0.8s,baz=140,slow=4.7,SNR=37						
MMAI	**Mount Meron Ar**	**148.18**	**294**	PKPbc	**PKPbc**	**19 09 14.6**	**+0.8**
	comp=Z,17nm,0.5s,baz=78,slow=6.2,SNR=18						
KERG	**Konya-Eregli**	**148.42**	**302**	*i* P	**PKPbc**	**19 09 13.7**	**-0.7**
BEL	**Belsk**	**148.50**	**335**	*e*PKP	**PKPbc**	**19 09 14.1**	**+0.2**
KIZK	**Mersin**	**148.63**	**300**	*i* P	**PKPbc**	**19 09 14.8**	**+0.1**
LEOM	**Leova**	**148.65**	**321**	⇑*i*P	**PKPbc**	**19 09 14.3**	**-0.1**
LVV	**L'vov**	**148.67**	**330**	⇑*i*PKHKP	**PKPbc**	**19 09 13.5**	**-0.9**
ANTO	**Ankara**	**148.70**	**307**	*e*PKPbc	**PKPbc**	**19 09 15.0**	**+0.1**
ANTO				*e*PKPab	**PKPab**	**19 09 20.6**	**+0.1**
BR231	**Keskin MP Arra**	**148.73**	**307**	*e*PKPbc	**PKPbc**	**19 09 13.9**	**-1.1**
BR231				*e*PKPab	**PKPab**	**19 09 18.9**	**-1.8**
KKUL	**Konya-Kulu**	**148.84**	**306**	*i* P	**PKPbc**	**19 09 15.7**	**+0.4**
TLCR		**149.03**	**319**	⇓*i*P	**PKPbc**	**19 09 15.3**	**-0.1**
PRAR	**RASCA**	**149.23**	**324**	⇑*i*P	**PKPbc**	**19 09 15.8**	**0.0**
KWP	**Kalwaria Pacla**	**149.40**	**331**	*e*PKP	**PKPbc**	**19 09 16.4**	**+0.2**
CFR	**Carcaliu**	**149.44**	**319**	⇑*i*P	**PKPbc**	**19 09 16.3**	**-0.1**
TESR	**Tescani**	**149.52**	**323**	⇑*i*P	**PKPbc**	**19 09 16.0**	**-0.6**
BUR08	**Bucovina Ar. S**	**149.58**	**326**	*e*PKPbc	**PKPbc**	**19 09 17.2**	**+0.4**
CSS	**Mathiatis**	**149.59**	**298**	*e*PKPbc	**PKPbc**	**19 09 17.0**	**-0.1**
BURAR	**Bucovina Array**	**149.59**	**326**	⇓*i*P	**PKPbc**	**19 09 16.1**	**-0.7**
KDHN	**Kadinhani**	**149.64**	**305**	*i* P	**PKPbc**	**19 09 16.7**	**-0.5**
PETR	**Petresti**	**149.66**	**321**	⇓*i*P	**PKPbc**	**19 09 18.8**	**+1.9**
SAHE	**Sakarya_HENDEK**	**149.73**	**310**	*i* P	**PKPbc**	**19 09 17.1**	**-0.2**
HARR	**Harsova**	**149.83**	**319**	⇑*i*P	**PKPbc**	**19 09 17.3**	**0.0**
VRI	**Vrincioaia**	**149.87**	**322**	⇑*i*P	**PKPbc**	**19 09 16.3**	**-1.1**
MANR	**Mangalia**	**149.89**	**317**	⇑*i*P	**PKPbc**	**19 09 17.5**	**0.0**
PLOR	**Plostina**	**149.92**	**322**	⇑*i*P	**PKPbc**	**19 09 16.6**	**-1.0**
KOLS	**Kolonicke sedl**	**150.10**	**330**	*e*PKP	**PKPbc**	**19 09 18.7**	**+0.8**
OJC	**Ojcow**	**150.17**	**334**	*e*PKP	**PKPbc**	**19 09 17.9**	**-0.1**
OJC	**Ojcow**	**150.17**	**334**	*e*PKPbc	**PKPbc**	**19 09 17.9**	**-0.1**
STHS	**Stebnicka Huta**	**150.20**	**332**	*e*PKP	**PKPbc**	**19 09 18.9**	**+0.8**
MSAB	**Monastry St. A**	**150.21**	**318**	⇑*i*P	**PKPbc**	**19 09 16.5**	**-1.7**
ESKT	**Eskisehir**	**150.23**	**308**	*i* P	**PKPbc**	**19 09 18.4**	**-0.2**
UZH	**Uzhgorod**	**150.31**	**330**	*e*PKHKP	**PKPbc**	**19 09 17.0**	**-1.3**
UZH				*e*		19 09 25.2	
ARCR	**ARCALIA**	**150.38**	**326**	⇑*i*P	**PKPbc**	**19 09 19.2**	**+0.6**
BORA	**Eskisehir**	**150.38**	**309**	*i* P	**PKPbc**	**19 09 18.4**	**-0.5**
BMR	**Baia Mare**	**150.42**	**327**	⇓*i*P	**PKPbc**	**19 09 18.4**	**-0.2**
BMR	**Baia Mare**	**150.42**	**327**	⇓PKIKP	**PKPbc**	**19 09 18.4**	**-0.2**
MLR	**Muntele Rosu**	**150.53**	**322**	⇓*i*P	**PKPbc**	**19 09 18.8**	**-0.3**
MLR	**Muntele Rosu**	**150.53**	**322**	⇓PKIKP	**PKPbc**	**19 09 18.8**	**-0.3**
MLR	**Muntele Rosu**	**150.53**	**322**	*e*PKPbc	**PKPbc**	**19 09 18.4**	**-0.7**

Code	Station Name	Δ°	AZ°	Op	ISC	Time	Res
DOPR	**Dopca**	**150.55**	**323**	⇑*i*P	**PKPbc**	**19 09 19.7**	**+0.7**
NIE	**Niedzica**	**150.59**	**333**	*e*PKP	**PKPbc**	**19 09 19.6**	**+0.6**
NIE	**Niedzica**	**150.59**	**333**	*e*PKIKP	**PKPbc**	**19 09 19.6**	**+0.6**
SULR		**150.83**	**320**	⇑*i*P	**PKPbc**	**19 09 18.1**	**-1.5**
KSP	**Ksiaz**	**150.92**	**339**	*e*PKP	**PKPbc**	**19 09 20.1**	**+0.4**
KSP	**Ksiaz**	**150.92**	**339**	*e*PKIKP	**PKPbc**	**19 09 20.1**	**+0.4**
MDB	**Medias**	**150.98**	**324**	⇑*i*P	**PKPbc**	**19 09 20.5**	**+0.5**
MDB	**Medias**	**150.98**	**324**	⇑PKIKP	**PKPbc**	**19 09 20.5**	**+0.5**
CJR	**Cluj-Napoca**	**151.02**	**326**	⇓*i*P	**PKPbc**	**19 09 20.1**	**0.0**
CJR	**Cluj-Napoca**	**151.02**	**326**	⇓PKIKP	**PKPbc**	**19 09 20.1**	**0.0**
VOIR		**151.06**	**322**	⇓*i*P	**PKPbc**	**19 09 19.6**	**-0.7**
VOIR		**151.06**	**322**	⇓PKIKP	**PKPbc**	**19 09 19.6**	**-0.7**
OKC	**Ostrava-Krasne**	**151.11**	**336**	⇑*e*PKP	**PKPbc**	**19 09 20.3**	**+0.2**
OKC	**Ostrava-Krasne**	**151.11**	**336**	*e*PKIKP	**PKPbc**	**19 09 20.3**	**+0.2**
LANS	**Liptovska Anna**	**151.14**	**333**	*e*PKIKP	**PKPbc**	**19 09 21.4**	**+1.1**
LANS	**Liptovska Anna**	**151.14**	**333**	*e*PKP	**PKPbc**	**19 09 21.4**	**+1.1**
MTUR	**Matau**	**151.19**	**322**	⇑*i*P	**PKPbc**	**19 09 21.1**	**+0.5**
MTUR	**Matau**	**151.19**	**322**	⇑PKIKP	**PKPbc**	**19 09 21.1**	**+0.5**
ULDT	**Uludag**	**151.21**	**310**	*i* P	**PKPbc**	**19 09 20.9**	**0.0**
KECS	**Kecovo**	**151.23**	**331**	*e*PKIKP	**PKPbc**	**19 09 21.3**	**+0.8**
KECS				*e*		19 09 30.4	
KECS	**Kecovo**	**151.23**	**331**	*e*PKP	**PKPbc**	**19 09 21.3**	**+0.8**
KECS				*e*		19 09 30.4	
UPC	**Upice**	**151.30**	**339**	⇑*e*PKP	**PKPbc**	**19 09 20.8**	**+0.2**
UPC				*e*PKPAB	**PKPab**	**19 09 31.3**	**+0.5**
UPC	**Upice**	**151.30**	**339**	*e*PKIKP	**PKPbc**	**19 09 20.8**	**+0.2**
UPC				*e*		19 09 31.3	
DPC	**Dobruska-Polom**	**151.33**	**338**	⇑*e*PKP	**PKPbc**	**19 09 20.9**	**+0.2**
DPC				*e*PKPAB	**PKPab**	**19 09 31.7**	**+0.7**
DPC	**Dobruska-Polom**	**151.33**	**338**	*e*PKIKP	**PKPbc**	**19 09 20.9**	**+0.2**
DPC				*e*		19 09 31.7	
ARR	**Arges**	**151.34**	**323**	⇓*i*P	**PKPbc**	**19 09 21.3**	**+0.4**
GDZ	**Gediz**	**151.38**	**308**	*i* P	**PKPbc**	**19 09 21.0**	**-0.3**
MORC	**Moravsky Berou**	**151.38**	**336**	*e*PKIKP	**PKPbc**	**19 09 19.6**	**-1.2**
MORC	**Moravsky Berou**	**151.38**	**336**	*e*PKPbc	**PKPbc**	**19 09 19.6**	**-1.2**
DRGR		**151.41**	**327**	⇑*i*P	**PKPbc**	**19 09 20.5**	**-0.5**
DRGR		**151.41**	**327**	⇑PKIKP	**PKPbc**	**19 09 20.5**	**-0.5**
KORT	**Korkueli**	**151.43**	**303**	*i* P	**PKPbc**	**19 09 21.1**	**-0.4**
CLL	**Collm**	**151.48**	**343**	⇓*i*PKPbc	**PKPbc**	**19 09 21.0**	**+0.1**
	comp=Z,21nm,0.7s						
CLL				*i* PKPab	**PKPab**	**19 09 30.8**	**-0.7**
	comp=Z,8.0nm,0.7s						
CLL				*i*		19 09 47.3	
CLL				*e*pPKPab	**pPKPab**	**19 11 23.0**	**+1.4**
CLL				*e*		19 11 31.0	
CLL	**Collm**	**151.48**	**343**	*e*PKIKP	**PKPdf**	**19 09 12.9**	**-1.4**
CLL				*e*		19 09 21.0	
CLL				*e*		19 09 31.5	
CLL	**Collm**	**151.48**	**343**	*e*PKPdf	**PKPdf**	**19 09 12.8**	**-1.4**
CLL				*e*PKPbc	**PKPbc**	**19 09 20.9**	**+0.1**
CLL				*e*PKPab	**PKPab**	**19 09 31.5**	**0.0**
BRG	**Berggiesshubel**	**151.61**	**342**	*i* PKP	**PKPbc**	**19 09 21.5**	**+0.3**
	comp=Z,14nm,0.5s						
BRG				*e*		19 09 32.2	
	comp=Z,9.3nm,1.1s						
BRG				*e*		19 11 31.4	
	comp=Z,6.7nm,1.0s						
BRG	**Berggiesshubel**	**151.61**	**342**	*i* PKIKP	**PKPbc**	**19 09 21.5**	**+0.3**
BRG				*e*		19 09 32.2	
BRG				pmax	pmax		
	comp=Z,15nm,0.5s						
KHAL	**Karahalli**	**151.63**	**306**	*i* P	**PKPbc**	**19 09 21.6**	**-0.2**
HUMR	**Humele**	**151.65**	**321**	⇑*i*P	**PKPbc**	**19 09 21.1**	**-0.4**
PVCC	**Panska Ves**	**151.74**	**341**	⇑*e*PKP	**PKPbc**	**19 09 22.0**	**+0.5**
PVCC	**Panska Ves**	**151.74**	**341**	*e*PKIKP	**PKPbc**	**19 09 22.0**	**+0.5**
LOT	**Lotru**	**151.76**	**324**	⇑*i*P	**PKPdf**	**19 09 12.4**	**-2.7**
VYHS	**Vyhne**	**151.92**	**333**	*e*PKIKP	**PKPbc**	**19 09 21.9**	**-0.1**
VYHS				*e*		19 09 33.9	
VYHS	**Vyhne**	**151.92**	**333**	*e*PKP	**PKPbc**	**19 09 21.9**	**-0.1**
VYHS				*e*		19 09 33.8	
VRAC	**Vranov**	**152.12**	**337**	⇑*i*P	**PKPab**	**19 09 34.0**	**-0.3**
GOPC	**GO Pecny, Ondr**	**152.21**	**340**	⇑*e*PKP	**PKPbc**	**19 09 22.8**	**+0.2**
GOPC				*e*PKPAB	**PKPab**	**19 09 34.9**	**+0.2**
GOPC	**GO Pecny, Ondr**	**152.21**	**340**	*e*PKIKP	**PKPbc**	**19 09 22.8**	**+0.2**
GOPC				*e*		19 09 34.9	
PRU	**Pruhonice**	**152.22**	**340**	⇑*i*PKP	**PKPbc**	**19 09 22.6**	**0.0**
PRU				*e*PKPAB	**PKPab**	**19 09 35.0**	**+0.3**
PRU	**Pruhonice**	**152.22**	**340**	*i* PKIKP	**PKPbc**	**19 09 22.6**	**0.0**
PRU				*e*		19 09 35.0	
GZR	**Gura Zlata**	**152.32**	**325**	⇑*i*P	**PKPbc**	**19 09 22.8**	**-0.3**
GZR	**Gura Zlata**	**152.32**	**325**	⇑PKIKP	**PKPbc**	**19 09 22.8**	**-0.3**
BZS	**Buzias**	**152.77**	**326**	⇓*i*P	**PKPbc**	**19 09 23.7**	**-0.3**
BZS	**Buzias**	**152.77**	**326**	⇓PKIKP	**PKPbc**	**19 09 23.7**	**-0.3**
KHC	**Kasperske Hory**	**153.27**	**340**	⇑*e*PKP	**PKPbc**	**19 09 25.0**	**0.0**
KHC				*e*PKPAB	**PKPab**	**19 09 39.6**	**+0.4**
KHC	**Kasperske Hory**	**153.27**	**340**	*e*PKIKP	**PKPdf**	**19 09 15.8**	**-1.2**
KHC				*e*		19 09 25.3	
KHC				*e*		19 09 39.9	
KHC	**Kasperske Hory**	**153.27**	**340**	*e*PKPdf	**PKPdf**	**19 09 15.8**	**-1.2**
KHC				*e*PKPbc	**PKiKP**	**19 09 25.3**	**+0.2**
KHC				*e*PKPab	**PKPab**	**19 09 39.9**	**+0.6**
MDVR	**Moldovita**	**153.29**	**325**	⇑*i*P	**PKPbc**	**19 09 24.3**	**-0.9**
GERES	**GERESS Array B**	**153.49**	**340**	PKPbc	**PKPbc**	**19 09 25.4**	**-0.2**
	comp=Z,1.2nm,0.6s,baz=32,slow=2.4,SNR=12						
GEA0	**GERESS Array S**	**153.49**	**340**	*e*PKPbc	**PKPbc**	**19 09 25.2**	**-0.3**
GEA0				*e*PKPab	**PKPab**	**19 09 40.4**	**+0.1**
VTS	**Vitosha**	**153.84**	**319**	⇓*i*P	**PKPab**	**19 09 42.8**	**+0.7**
VTS	**Vitosha**	**153.84**	**319**	⇓PKP2	**PKPab**	**19 09 42.8**	**+0.7**
VTS	**Vitosha**	**153.84**	**319**	*e*PKPab	**PKPab**	**19 09 43.0**	**+0.9**
PERS	**Pernice**	**154.90**	**335**	*i* PKPbc	**PKPab**	**19 09 46.0**	**-0.3**
BFO	**Black Forest**	**155.36**	**347**	*e*PKIKP	**PKPdf**	**19 09 17.2**	**-2.7**
BFO				*e*		19 09 47.0	
BFO	**Black Forest**	**155.36**	**347**	*e*PKPdf	**PKPdf**	**19 09 17.1**	**-2.7**
BFO				*e*PKPab	**PKPab**	**19 09 47.0**	**-1.2**
VISS	**Visnje**	**155.70**	**335**	*i* PKPbc	**PKPab**	**19 09 49.1**	**-0.6**
BOJS	**Bojanci**	**155.78**	**334**	*i* PKPbc	**PKPab**	**19 09 49.8**	**-0.3**
JAVS	**Javornik**	**155.92**	**336**	*i* PKPbc	**PKPab**	**19 09 49.8**	**-1.0**
DAVOX	**Davos/Dischmat**	**156.45**	**343**	PKPab	**PKPab**	**19 09 53.0**	**-0.2**
	comp=Z,5.6nm,0.6s,baz=317,slow=2.0,SNR=15						
ES19	**SONSECA Array**	**164.41**	**12**	*e*PKPdf	**PKPdf**	**19 09 28.9**	**-1.4**
ES19				*e*PKPab	**PKPab**	**19 10 27.9**	**-0.1**
ESDC	**Sonseca Array**	**164.43**	**12**	PKPab	**PKPab**	**19 10 27.1**	**-0.9**
	comp=Z,0.3nm,0.4s,baz=355,slow=5.2,SNR=6.2						
TOA0	**Torodi Ar. Sit**	**168.66**	**187**	*e*PKPdf	**PKPdf**	**19 09 32.9**	**-1.2**
TOA0				*e*PKPab	**PKPab**	**19 10 46.9**	**-0.2**
TORD	**Torodi Ar. Bea**	**168.66**	**187**	PKP	**PKPdf**	**19 09 33.1**	**-1.0**
	comp=Z,0.9nm,0.8s,baz=13,slow=1.2,SNR=5.8						
TORD				PKPab	**PKPab**	**19 10 47.2**	**+0.1**
	comp=Z,2.6nm,0.7s,baz=172,slow=4.1,SNR=3.9						
TORD				PP	**PP**	**19 14 37.1**	**+1.2**
	comp=Z,1.1nm,1.0s,baz=158,slow=3.4,SNR=4.0						
TOA1	**Torodi Ar. Sit**	**168.66**	**187**	*e*PKPdf	**PKPdf**	**19 09 33.1**	**-1.0**
TOA1				*e*PKPab	**PKPab**	**19 10 47.2**	**0.0**
TOA1				*e*PP	**PP**	**19 14 37.1**	**+1.2**

JMA 02 18:52:01.2±0.2**,38°.91N×144°.14E,h41km,M3.5,Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
MIYJ	**Miyakonagasawa**	**1.92**	**291**	P	Pn	18 52 32.3	+0.9
MIYJ				S	Sn	18 52 55.6	+1.3
OFUJ	**Ofunato**	**1.93**	**276**	P	Pn	18 52 32.6	+1.0
JTH	**Tanohata**	**2.04**	**301**	P	Pn	18 52 34.3	+1.3
JIO	**Ouri**	**2.23**	**259**	P	Pn	18 52 37.2	+1.6
JMK	**Ichinoseki**	**2.28**	**272**	S	Sn	18 53 04.9	+1.8
JOM	**Ohasama**	**2.28**	**285**	P	Pn	18 52 37.8	+1.4
JKZ	**Kuzumaki**	**2.43**	**297**	P	Pn	18 52 39.9	+1.5
JOU	**Okura**	**2.78**	**260**	S	Sn	18 53 16.8	+1.4

*ISCJB **02** 18:55:00.5±1.1, 37°.09N±0°.04×140°.90E±0°.07, h6km±5km, mb3.2/2, Error ellipse: s-maj=9.9km s-min=5.9km az=9.5*

*JMA **02** 18:55:01.6, 37°.09N×140°.81E, h5km±1km, M3.2 Broadband fault plane solution: P waves. NP1: ϕ_s52.00000°, δ49.00000°, λ-79.00000°. NP2: ϕ_s215.00000°, δ43.00000°, λ-103.00000°. Principal axes: T Plg3.0000°, Azm134.0000°; N Plg9.0000°, Azm224.0000°; P Plg81.0000°, Azm26.0000°;*

JMA Felt II J1.

*IDC **02** 18:55:04.6±2.3, 36°.47N×140°.69E, h0km, mb3.3/2, mb1 3.6/2, mb1mx3.1/47, mbtmp3.3/2 Error ellipse: s-maj=33.9km s-min=19.9km az=17.0*

ISC 02 18:55:00.4±1.4**,37°.04N**±0°.06×**140°.86E**±0°.07**,h6**km±9km**, n10,σ0s.43**/16**,5C-1D,Eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.08**	**322**	⇓P	**Pg**	**18 55 02.6**	**+0.3**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
ONAJ				S	**Sg**	**18 55 03.3**	**-0.3**
JHO	**Hitachi**	**0.49**	**208**	⇑P	**Pb**	**18 55 11.4**	**0.0**
JHO				S	**Sb**	**18 55 18.5**	**-0.3**
JFT	**Otama**	**0.63**	**319**	⇑P	**Pg**	**18 55 13.0**	**+0.4**
JFT				S	**Sg**	**18 55 20.9**	**+0.1**
JSB	**Shiboa**	**0.75**	**265**	⇑P	**Pb**	**18 55 16.3**	**+0.3**
JSB				*e*S	**Sb**	**18 55 26.5**	**0.0**
JMM	**Marumori**	**0.82**	**356**	⇑P	**Pg**	**18 55 16.1**	**-0.2**
JMM				S	**Sg**	**18 55 26.9**	**-0.1**
JFY	**Yanaizu**	**0.99**	**292**	⇑P	**Pg**	**18 55 19.6**	**+0.2**
JFY				S	**Sg**	**18 55 32.0**	**-0.3**
MJAR	**Matsushiro Arr**	**2.18**	**258**	Pg	**Pb**	**18 55 39.2**	**-1.1**
	3.3nm,0.3s,baz=80,slow=15,SNR=22						
MJAR				Lg	Lg	18 56 07.7	
	6.5nm,0.3s,baz=88,slow=30,SNR=11						
MAT	**Matsushiro**	**2.19**	**258**	P	**Pb**	**18 55 40.1**	**-0.3**
MAT				*e*S	**Sb**	**18 56 07.8**	**+0.1**
MKAR	**Makanchi Array**	**43.74**	**302**	P	P	19 03 14.2	+7.7
	0.2nm,0.8s,baz=91,slow=12,SNR=2.4						
WRA	**Warramunga Arr**	**57.01**	**187**	P	**P**	**19 04 47.4**	**+0.3**
	0.3nm,0.5s,baz=2.7,slow=7.2,SNR=1.4						

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*NIED **02** 19:02:00, 37°.00N×141°.50E, h8km, Mw3.3 Best double couple: $M_0$1.12000×10^{14} NP1:ϕ_s175.00000°, δ39.00000°, λ-128.00000°. NP2:ϕ_s40.00000°, δ60.00000°, λ-63.00000°.*
*IDC **02** 19:02:20.4±1.6, 36°.68N×141°.71E, h0km, mb3.4/4, mb1 3.5/5, mb1mx3.3/56, mbtmp3.3/5, ML3.0/1, Error ellipse: s-maj=35.9km s-min=28.7km az=172.0*
*JMA **02** 19:02:24.2±0.2, 37°.00N×141°.51E, h41km±2km, M3.5*
JMA Felt I J1.
ISC 02 19:02:20.7±2.8**, 37°.03N**±0°.05×**141°.64E**±0°.07**, h1**km±17km**, n12,** σ1^s**30**/19**, mb3.4**/4**, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.68**	**277**	P	**Pb**	**19 02 35.8**	**+0.4**
ONAJ				S	**Sb**	**19 02 44.0**	**-1.3**
JHO	**Hitachi**	**0.95**	**245**	P	**Pb**	**19 02 39.8**	**-0.3**
JHO				S	**Sg**	**19 02 51.2**	**-0.2**
JMM	**Marumori**	**1.08**	**321**	P	**Pn**	**19 02 42.3**	**-0.7**
JMM				S	**Sb**	**19 02 55.8**	**-1.0**
JFT	**Otama**	**1.15**	**296**	P	**Pn**	**19 02 43.9**	**-0.1**
JFT				S	**Sb**	**19 02 57.8**	**-1.1**
JIO	**Ouri**	**1.45**	**351**	P	**Pb**	**19 02 48.6**	**+0.1**
JIO				S	**Sn**	**19 03 06.2**	**-1.5**
MJAR	**Matsushiro Arr**	**2.80**	**261**	Pn	**Pn**	**19 03 07.5**	**+0.9**
	2.2nm,0.3s,baz=67,slow=14,SNR=10						
MJAR				Sn	**Sn**	**19 03 41.6**	**+0.5**
	3.0nm,0.3s,baz=355,slow=25,SNR=3.7						
MAT	**Matsushiro**	**2.80**	**261**	P	**Pn**	**19 03 07.7**	**+1.0**
MAT				*e*S	**Sn**	**19 03 41.4**	**+0.3**
JHJ	**Hachijo jima 2**	**4.18**	**202**	Sn	**Sn**	**19 04 14.4**	**-0.8**
	6.1nm,0.3s,baz=15,slow=13,SNR=1.5						
SONM	**Songino Array**	**27.94**	**304**	P	**P**	**19 08 14.1**	**+1.4**
	0.2nm,0.5s,baz=115,slow=9.7,SNR=1.8						
MKAR	**Makanchi Array**	**44.28**	**302**	P	**P**	**19 10 33.1**	**+1.2**
	0.2nm,0.7s,baz=91,slow=7.6,SNR=1.7						
ILAR	**Eielson Array**	**49.40**	**32**	P	**P**	**19 11 13.8**	**+2.0**
	0.5nm,0.8s,baz=262,slow=6.8,SNR=2.8						
WRA	**Warramunga Arr**	**57.08**	**188**	P	**P**	**19 12 05.8**	**-2.9**
	0.4nm,0.8s,baz=3.4,slow=7.4,SNR=1.8						

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*IDC **02** 19:06:16.8±0.6, 39°.73N×144°.04E, h0km, mb4.2/26, mb1 4.3/30, mb1mx4.2/59, mbtmp4.2/30, ML3.9/4, MS3.4/21, Ms1 3.4/21, ms1mx3.3/42, Error ellipse: s-maj=15.9km s-min=12.1km az=130.0*
*ISCJB **02** 19:06:17.9±1.1, 39°.79N±0°.03×144°.00E±0°.03, h16km±7km, mb4.4/59, MS3.5/17, Error ellipse: s-maj=5.3km s-min=4.0km az=143.9*
*JMA **02** 19:06:20.4±0.2, 39°.85N×143°.92E, h36km, M4.3*
*NEIC **02** 19:06:21.5±1.5, 39°.72N×143°.98E, h31km±10km, mb4.6/25, Error ellipse: s-maj=4.9km s-min=3.8km az=125.0*
ISC 02 19:06:21.0±1.0**, 39°.77N**±0°.04×**144°.01E**±0°.05**, h28**km±6km**, n147,** σ1^s**52**/155**, mb4.4**/59**, MS3.5**/17**, 1C, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JTH	**Tanohata**	**1.66**	**276**	P	**Pn**	**19 06 46.8**	**-1.5**
JTH				*e*S	**Sn**	**19 07 06.2**	**-2.5**
MIYJ	**Miyakonagasawa**	**1.70**	**264**	P	**Pn**	**19 06 47.9**	**-0.9**
OFUJ	**Ofunato**	**1.94**	**250**	P	**Pn**	**19 06 51.2**	**-0.9**
JANG	**Nango**	**2.01**	**288**	P	**Pn**	**19 06 51.6**	**-1.4**
JANG				*e*S	**Sn**	**19 07 15.5**	**-1.7**
JOM	**Ohasama**	**2.12**	**263**	P	**Pn**	**19 06 54.4**	**-0.2**
JOM				S	**Sn**	**19 07 20.0**	**0.0**
JMK	**Ichinoseki**	**2.31**	**250**	P	**Pn**	**19 06 56.6**	**-0.6**
JMK				S	**Sn**	**19 07 23.0**	**-1.7**
ERM	**Erimo**	**2.33**	**344**	*e*Pn	**Pn**	**19 06 57.1**	**-0.4**
JTM	**Tenmabayashi**	**2.47**	**295**	P	**Pn**	**19 06 58.6**	**-0.8**
JTM				*e*S	**Sn**	**19 07 27.4**	**-1.2**
JAH	**Hinai**	**2.63**	**280**	P	**Pn**	**19 07 01.4**	**-0.1**
JAH				*e*S	**Sn**	**19 07 31.7**	**-0.8**
JRG	**Rokugo**	**2.64**	**263**	P	**Pn**	**19 07 01.5**	**-0.2**
JNBK	**Urakawa-nobuka**	**2.68**	**340**	P	**Pn**	**19 07 01.8**	**-0.5**
JNBK				S	**Sn**	**19 07 33.3**	**-0.5**
JOT	**Ohata**	**2.77**	**306**	P	**Pn**	**19 07 02.8**	**-0.7**
JOT				S	**Sn**	**19 07 35.0**	**-1.0**
JCH	**Churui**	**2.88**	**350**	P	**Pn**	**19 07 03.4**	**-1.6**
JCH				*e*S	**Sn**	**19 07 35.1**	**-3.6**
JYK	**Kaneyama**	**2.96**	**254**	P	**Pn**	**19 07 05.9**	**-0.2**
JYK				*e*S	**Sn**	**19 07 41.6**	**+1.0**
JOU	**Okura**	**2.96**	**243**	P	**Pn**	**19 07 05.5**	**-0.7**
JOU				*e*S	**Sn**	**19 07 39.8**	**-0.9**
JKB	**Kayabe**	**3.10**	**314**	P	**Pn**	**19 07 06.9**	**-1.0**
JKB				S	**Sn**	**19 07 41.9**	**-2.1**
JAR	**Ashorobuto**	**3.53**	**357**	P	**Pn**	**19 07 11.4**	**-2.5**
JAR				*e*S	**Sn**	**19 07 50.1**	**-4.6**
NEM2	**Nemuro 2**	**3.82**	**19**	P	**Pn**	**19 07 14.9**	**-3.0**
NEM2				S	**Sn**	**19 07 57.2**	**-4.6**
JTKR	**Abashiri--Toko**	**4.20**	**359**	P	**Pn**	**19 07 21.5**	**-1.6**
JTKR				S	**Sn**	**19 08 07.8**	**-3.3**
MJAR	**Matsushiro Arr**	**5.59**	**237**	Pn	**Pn**	**19 07 41.9**	**-0.5**
	8.1nm,0.3s,baz=38,slow=12,SNR=56						
MJAR				LR	LR	19 10 18.2	
	comp=Z,340nm,18.2s,baz=55,slow=43						
MAJO	**Matsushiro**	**5.60**	**237**	*e*Pn	**Pn**	**19 07 42.3**	**-0.1**
MAT	**Matsushiro**	**5.60**	**237**	P	**Pn**	**19 07 42.3**	**-0.1**
INU	**Inuyama**	**7.09**	**234**	*e*Pn	**Pn**	**19 08 02.5**	**-0.4**
JHJ	**Hachijo jima 2**	**7.46**	**208**	Pn	**Pn**	**19 08 05.7**	**-2.3**
	25nm,0.3s,baz=272,slow=23,SNR=14						
JHJ				Sn	**Sn**	**19 09 23.6**	**-8.0**
	35nm,0.3s,baz=62,slow=22,SNR=12						
USRK	**Ussuriysk Ar.**	**9.98**	**300**	Pn	**Pn**	**19 08 44.6**	**+2.1**
	1.0nm,0.3s,baz=102,slow=14,SNR=27						
USRK				LR	LR	19 12 39.5	
	comp=Z,183nm,18.3s,baz=128,slow=38						
MDJ	**Mudanjiang**	**11.74**	**299**	*e*Pn	**Pn**	**19 09 07.0**	**+0.5**
JNU	**Nakatsue**	**12.48**	**242**	Pn	**Pn**	**19 09 16.0**	**-0.7**
	0.4nm,0.3s,baz=68,slow=3.2,SNR=6.3						
JNU				LR	LR	19 14 19.1	
	comp=Z,79nm,19.8s,baz=336,slow=39						
CBIJ	**Chichi jima**	**12.73**	**187**	*e*Pn	Pn	19 09 14.8	-5.5
JCJ	**Chichijima**	**12.73**	**187**	LR	LR	19 13 28.0	
	comp=Z,32nm,21.3s,baz=174,slow=34						
KSRS	**Korea Array**	**12.80**	**265**	Pn	**Pn**	**19 09 23.3**	**+2.3**
	0.8nm,0.3s,baz=70,slow=14,SNR=13						
KSRS				LR	LR	19 14 05.1	
	comp=Z,107nm,19.0s,baz=80,slow=36						
KS01	**Wonju Array Si**	**12.81**	**265**	*e*Pn	**Pn**	**19 09 24.3**	**+3.1**
KSAR	**Wonju Array Be**	**12.83**	**265**	Pn	**Pn**	**19 09 23.3**	**+1.8**
KLR	**Kul'dur**	**12.87**	**321**	Pn	**Pn**	**19 09 20.8**	**-1.2**
	0.2nm,0.3s,baz=126,slow=13,SNR=15						
KLR				LR	LR	19 14 48.9	
	comp=Z,165nm,18.5s,baz=117,slow=40						
PETK	**Petropavlovsk-**	**16.30**	**31**	LR	LR	19 18 01.1	
	comp=Z,64nm,18.2s,baz=218,slow=43						
MA2	**Magadan**	**20.28**	**10**	P	**P**	**19 10 54.4**	**+0.3**
	10nm,0.6s,baz=219,slow=9.3,SNR=33						
MA2				LR	LR	19 20 08.7	
	comp=Z,83nm,18.5s,baz=215,slow=41						
BJI	**Beijing**	**21.33**	**280**	P	**P**	**19 11 05.5**	**-0.1**
BJI				pmax	pmax		
	comp=Z,12nm,0.7s						
TIA	**Tai'an**	**21.46**	**269**	*e*P	**P**	**19 11 05.9**	**-1.2**
TIA				pmax	pmax		
	comp=Z,30nm,0.8s						
NJ2	**Nanjing**	**21.74**	**257**	*e*P	**P**	**19 11 10.6**	**+0.5**
NJ2				pmax	pmax		
	comp=Z,18nm,0.9s						
SEY	**Seymchan**	**23.73**	**10**	P	**P**	**19 11 29.4**	**-1.1**
	comp=Z,7.4nm,0.7s,baz=186,slow=7.3,SNR=37						
YAK	**Yakutsk**	**23.94**	**343**	LR	LR	19 21 56.9	
	comp=Z,101nm,19.7s,baz=157,slow=39						
YHNB	**Yeheng**	**24.27**	**238**	*e*P	**P**	**19 11 34.4**	**-1.5**
	comp=Z,31nm,1.2s						
NACB	**Ninganchiao**	**24.47**	**237**	*e*P	**P**	**19 11 37.3**	**-0.3**
	comp=Z,16nm,0.8s						
HHC	**Hu-ho-hao-te**	**24.70**	**283**	*e*P	**P**	**19 11 38.6**	**-1.1**
HHC				sP	sP	19 11 58.6	+7.2
HHC				S	**S**	**19 15 58.4**	**-1.4**
HHC				sS	sS	19 16 07.9	-5.4
HHC				pmax	pmax		
	comp=Z,20nm,1.0s						
HHC				pmax	pmax		
	comp=Z,94nm,5.5s						
HHC				LR	LR		
	comp=N,150nm,9.6s						
HHC				LR	LR		
	comp=E,120nm,9.6s						
HHC				LR	LR		
	comp=Z,160nm,15.3s						
SSLB	**Suanglung**	**25.16**	**238**	*e*P	**P**	**19 11 43.0**	**-0.8**
	comp=Z,7.6nm,0.8s						
WHN	**Wuhan**	**25.84**	**258**	⇑P	**P**	**19 11 50.8**	**+0.8**
WHN				pmax	pmax		
	comp=Z,44nm,0.8s						
GUMO	**Guam**	**26.09**	**178**	LR	LR	19 22 04.3	
	comp=Z,20nm,18.8s,baz=18,slow=36						
ULN	**Ulaanbaatar**	**27.65**	**299**	*e*P	**P**	**19 12 06.2**	**-0.3**
	comp=Z,5.4nm,0.7s						
H11N2	**WAKE ISLAND Hy**	**28.03**	**129**	T	T	19 41 29.5	
H11N1	**WAKE ISLAND Hy**	**28.04**	**129**	T	T	19 41 29.5	
H11N3	**WAKE ISLAND Hy**	**28.05**	**129**	T	T	19 41 28.7	
	SNR=9.0						
SONA1	**Songino Array**	**28.09**	**299**	*e*P	**P**	**19 12 10.6**	**+0.3**
SONA0	**Songino Array**	**28.09**	**299**	*e*P	**P**	**19 12 11.1**	**+0.8**
	comp=Z,6.9nm,1.1s						
SONM	**Songino Array**	**28.09**	**299**	P	**P**	**19 12 11.1**	**+0.8**
	comp=Z,2.4nm,0.5s,baz=89,slow=8.9,SNR=26						
SONM				LR	LR	19 23 55.5	
	comp=Z,86nm,18.8s,baz=80,slow=38						
H11S1	**WAKE ISLAND Hy**	**28.86**	**131**	T	T	19 42 32.5	
	baz=322,slow=76,SNR=9.4						
H11S3	**WAKE ISLAND Hy**	**28.86**	**131**	T	T	19 42 30.9	
	baz=322,slow=76,SNR=9.7						
H11S2	**WAKE ISLAND Hy**	**28.88**	**131**	T	T	19 42 32.1	
	baz=322,slow=76,SNR=8.6						
ENH	**Enshi**	**29.67**	**262**	*e*P	**P**	**19 12 25.2**	**+0.9**
	comp=Z,24nm,0.8s						
TLY	**Talaya**	**30.21**	**307**	P	**P**	**19 12 29.1**	**+0.2**
	comp=Z,1.8nm,0.4s,baz=174,slow=3.2,SNR=3.5						
LZH	**Lanzhou**	**31.71**	**276**	*e*P	P	19 12 55.7	+13
LZH				pP	sP	19 13 02.4	+8.2
LZH				sP	pP	19 13 06.6	+16
LZH				pmax	pmax		
	comp=Z,15nm,1.1s						
CD2	**Chengdu**	**33.77**	**268**	P	**P**	**19 12 59.0**	**-1.4**
CD2				pmax	pmax		
	comp=Z,1.0nm,0.5s						
GTA	**Gaotai**	**33.80**	**284**	P	**P**	**19 13 01.8**	**+1.1**
GTA				pP	sP	19 13 12.1	-0.3
GTA				sP	pP	19 13 15.8	+6.8
GTA				S	**S**	**19 18 23.1**	**+0.2**
GTA				sS	sS	19 18 38.2	+1.6
GTA				SS	**SnSn**	**19 20 29.6**	**+0.9**
GTA				pmax	pmax		
	comp=Z,16nm,1.0s						
GTA				pmax	pmax		
	comp=Z,95nm,4.7s						
GTA				LR	LR		
	comp=N,82nm,17.6s						
GTA				LR	LR		
	comp=E,130nm,16.2s						
GTA				LR	LR		
	comp=Z,170nm,18.5s						
QIZ	**Qiongzhong**	**35.93**	**245**	P	**P**	**19 13 16.2**	**-2.8**
QIZ				S	**S**	**19 18 52.2**	**-3.4**
QIZ				LR	LR		
	comp=Z,36nm,19.3s						
WMQ	**Urumqi**	**41.49**	**295**	*e*P	**P**	**19 14 06.8**	**+1.2**
WMQ				pP	sP	19 14 16.3	-1.1
WMQ				sP	pP	19 14 19.1	+5.1
WMQ				pmax	pmax		
	comp=Z,9.0nm,0.6s						
WMQ				pmax	pmax		
	comp=Z,69nm,4.0s						
ZAA0	**Zalesovo Array**	**41.65**	**310**	*e*P	**P**	**19 14 06.5**	**-0.1**
ZAA1	**Zalesovo Array**	**41.65**	**310**	*e*P	**P**	**19 14 07.2**	**+0.6**
ZAA1				*e*PcP	**PcP**	**19 16 03.5**	**+0.5**
ZALV	**Zalesovo Beam**	**41.65**	**310**	P	**P**	**19 14 07.2**	**+0.6**
	comp=Z,5.0nm,0.8s,baz=90,slow=7.6,SNR=16						
ZALV				PcP	**PcP**	**19 16 03.5**	**+0.5**
	comp=Z,1.4nm,0.7s,baz=108,slow=2.1,SNR=3.6						
ZALV				LR	LR	19 31 30.7	
	comp=Z,52nm,18.2s,baz=70,slow=36						
NRIK	**Noril'sk**	**41.68**	**334**	LR	LR	19 31 51.3	
	comp=Z,74nm,19.5s,baz=114,slow=37						
CHTO	**Chiang Mai**	**43.96**	**255**	*e*P	**P**	**19 14 24.8**	**-1.0**
	comp=Z,3.4nm,0.6s						
LSA	**Lhasa**	**44.03**	**274**	*e*P	**P**	**19 14 26.3**	**-0.5**
	comp=Z,3.6nm,0.8s						
CM31	**Chiang Mai Arr**	**44.18**	**255**	*e*P	**P**	**19 14 27.6**	**+0.1**
CMAR	**Chiang Mai Arr**	**44.18**	**255**	P	**P**	**19 14 28.2**	**+0.7**
	comp=Z,1.1nm,0.8s,baz=45,slow=7.0,SNR=10						
CM01	**Chiang Mai Arr**	**44.19**	**255**	*e*P	**P**	**19 14 27.7**	**+0.1**
MK01	**Makanchi Array**	**44.45**	**300**	*e*P	**P**	**19 14 29.4**	**0.0**
MK31	**Makanchi Array**	**44.45**	**300**	*e*P	**P**	**19 14 29.6**	**+0.2**
MK32	**Makanchi Array**	**44.45**	**300**	*e*P	**P**	**19 14 29.8**	**+0.3**
MKAR	**Makanchi Array**	**44.45**	**300**	P	**P**	**19 14 29.8**	**+0.3**
	comp=Z,6.2nm,0.9s,baz=83,slow=9.3,SNR=45						
MKAR				LR	LR	19 33 41.0	
	comp=Z,41nm,19.4s,baz=72,slow=37						
MAKZ	**Makanchi**	**44.66**	**300**	*e*P	**P**	**19 14 31.5**	**+0.4**
	comp=Z,6.0nm,0.8s						
KURK	**Kurchatov**	**45.90**	**306**	*e*P	**P**	**19 14 41.0**	**+0.2**
	comp=Z,23nm,0.7s						
KURBB	**Kurchatov Arra**	**45.98**	**306**	P	**P**	**19 14 41.8**	**+0.3**
	comp=Z,14nm,0.8s,baz=80,slow=8.4,SNR=86						
ILAR	**Eielson Array**	**46.09**	**34**	P	**P**	**19 14 42.1**	**0.0**
	comp=Z,0.8nm,0.7s,baz=259,slow=6.3,SNR=9.3						
ILB	**Eielson Array**	**46.09**	**34**	*e*P	**P**	**19 14 42.2**	**0.0**
TAPN	**Taplejung**	**47.81**	**273**	*e*P	**P**	**19 14 57.5**	**+1.0**
	comp=Z,12nm,0.7s						
ODAN	**Odare**	**48.31**	**273**	*e*P	**P**	**19 15 00.7**	**+0.5**
	comp=Z,10nm,0.5s						
RAMN	**Ramite**	**48.87**	**273**	*e*P	**P**	**19 15 05.3**	**+0.7**
	comp=Z,20nm,0.5s						
GUN	**Gumba**	**48.94**	**275**	*e*P	**P**	**19 15 05.9**	**+0.7**
	comp=Z,36nm,0.6s						
KKN	**Kakani**	**49.46**	**275**	*e*P	**P**	**19 15 09.7**	**+0.6**
	comp=Z,30nm,0.6s						
PKIN	**Phulchoki**	**49.48**	**275**	*e*P	**P**	**19 15 09.6**	**+0.4**
	comp=Z,9.8nm,0.6s						
DMN	**Daman**	**49.69**	**275**	*e*P	**P**	**19 15 11.7**	**+0.9**
	comp=Z,13nm,0.7s						
GKN	**Gorkha**	**49.85**	**275**	*e*P	**P**	**19 15 12.2**	**+0.3**
	comp=Z,16nm,0.6s						
VOSK	**Vostochnaya**	**50.02**	**311**	*e*P	**P**	**19 15 12.9**	**+0.3**
	comp=Z,5.8nm,0.9s						
TKM2	**Tokmak 2**	**50.16**	**297**	*e*P	**P**	**19 15 14.8**	**+0.6**
	comp=Z,12nm,0.8s						
BRVK	**Borovoye**	**50.33**	**311**	*e*P	**P**	**19 15 15.2**	**+0.2**
	comp=Z,6.5nm,1.0s						
KOLN	**Koldanda**	**50.76**	**276**	*e*P	**P**	**19 15 19.7**	**+0.8**
INK	**Inuvik**	**51.02**	**28**	P	**P**	**19 15 21.2**	**+1.3**
	comp=Z,0.7nm,0.5s,baz=311,slow=6.3,SNR=4.2						
AAK	**Ala-Archa**	**51.02**	**297**	*e*P	**P**	**19 15 20.7**	**+0.1**
	comp=Z,3.0nm,0.8s						
PYUN	**Piuthan**	**51.07**	**277**	*e*P	**P**	**19 15 22.0**	**+0.8**
ZRNK	**Zerenda**	**51.10**	**311**	*e*P	**P**	**19 15 21.5**	**+0.7**
	comp=Z,10nm,0.7s						
KSH	**Kashi**	**51.19**	**293**	P	**P**	**19 15 26.2**	**+4.4**
KSH				*e*pP	sP	19 15 36.2	+2.4
KSH				*e*PP	**PP**	**19 17 24.1**	**+5.5**
KSH				pmax	pmax		
	comp=Z,3.0nm,0.8s						
KSH				pmax	pmax		
	comp=Z,120nm,5.1s						
EKS2	**Erkin-Say**	**51.50**	**298**	*e*P	**P**	**19 15 24.2**	**0.0**
	comp=Z,5.1nm,0.9s						
KKAR	**Karatay Array**	**53.55**	**299**	*e*P	**P**	**19 15 38.8**	**-0.4**
PSI	**Prapat**	**54.94**	**240**	P	**P**	**19 15 50.5**	**+0.7**
	comp=Z,2.9nm,0.5s,baz=0.5,slow=4.2,SNR=4.0						
PSI	**Prapat**	**54.94**	**240**	*e*P	**P**	**19 15 49.9**	**+0.1**
	comp=Z,7.1nm,1.0s						
ARU	**Arti**	**55.68**	**318**	*e*P	**P**	**19 15 54.9**	**+0.5**
	comp=Z,14nm,1.2s						
ABKAR	**Akbulak array**	**57.75**	**310**	*e*P	**P**	**19 16 09.4**	**+0.2**
RES	**Resolute Bay**	**59.44**	**15**	P	**P**	**19 16 20.7**	**+0.2**
	comp=Z,1.3nm,0.5s,baz=311,slow=5.5,SNR=6.8						
RES	**Resolute Bay**	**59.44**	**15**	*e*P	**P**	**19 16 20.8**	**+0.3**
WR1	**Warramunga Arr**	**60.09**	**191**	*e*P	**P**	**19 16 24.6**	**-1.0**
	comp=Z,65nm,1.9s						
WRA	**Warramunga Arr**	**60.09**	**191**	P	**P**	**19 16 24.6**	**-1.0**
	comp=Z,1.9nm,0.6s,baz=7.9,slow=6.9,SNR=21						
YKA	**Yellowknife Ar**	**60.41**	**32**	P	**P**	**19 16 27.9**	**+0.4**
	comp=Z,0.3nm,0.6s,baz=302,slow=6.5,SNR=3.9						
YKB5	**Yellowknife Ar**	**60.41**	**32**	*e*P	**P**	**19 16 28.1**	**+0.7**
ARCES	**ARCESS Array B**	**62.15**	**340**	LR	LR	19 49 41.1	
	comp=Z,36nm,21.2s,baz=62,slow=42						
AS01	**Alice Springs**	**63.80**	**190**	*e*P	**P**	**19 16 50.2**	**-0.3**
AS31	**Alice Springs**	**63.81**	**190**	*e*P	**P**	**19 16 50.2**	**-0.4**
	comp=Z,1.4nm,0.9s						
ASAR	**Alice Springs**	**63.81**	**190**	P	**P**	**19 16 50.5**	**-0.2**
	comp=Z,2.0nm,0.8s,baz=12,slow=6.6,SNR=21						
GEYT	**Alibeck**	**64.30**	**299**	P	**P**	**19 16 53.9**	**0.0**
	comp=Z,2.6nm,0.7s,baz=55,slow=5.6,SNR=6.8						
FIA0	**FINESS Array S**	**67.34**	**333**	*e*P	**P**	**19 17 13.4**	**+0.5**
FINES	**FINESS Array B**	**67.34**	**333**	P	**P**	**19 17 13.4**	**+0.5**
	comp=Z,2.5nm,0.7s,baz=49,slow=8.6,SNR=9.5						
FINES				LR	LR	19 48 34.3	
	comp=Z,69nm,18.4s,baz=76,slow=38						
KIV	**Kislovodsk**	**70.64**	**311**	*e*P	**P**	**19 17 32.8**	**-1.2**
	comp=Z,14nm,1.0s						
KBZ	**Khabaz**	**70.66**	**311**	P	**P**	**19 17 35.0**	**+1.1**
	comp=Z,5.6nm,0.9s,baz=88,slow=3.7,SNR=11						
STKA	**Stephens Creek**	**71.32**	**182**	LR	LR	19 53 04.6	
	comp=Z,32nm,18.4s,baz=99,slow=39						
NV01	**Mina Array Sit**	**71.73**	**55**	*e*P	**P**	**19 17 41.1**	**+0.3**
NVAR	**Mina Array Bea**	**71.73**	**55**	P	**P**	**19 17 41.5**	**+0.7**
	comp=Z,1.7nm,0.7s,baz=283,slow=6.5,SNR=9.6						
NB2	**NORSAR Subarra**	**72.44**	**338**	P	**P**	**19 17 44.5**	**+0.1**
	comp=Z,2.1nm,0.6s,baz=37,slow=6.2						
NB200	**NORSAR Array S**	**72.44**	**338**	*e*P	**P**	**19 17 44.8**	**+0.4**
NOA	**NORSAR Array B**	**72.44**	**338**	P	**P**	**19 17 44.8**	**+0.4**
	comp=Z,1.6nm,0.7s,baz=37,slow=6.1,SNR=5.4						
NOA				LR	LR	19 53 04.5	
	comp=Z,31nm,20.7s,baz=35,slow=39						
AKASG	**Malin Array Be**	**73.36**	**323**	P	**P**	**19 17 50.2**	**+0.2**
	comp=Z,2.1nm,0.5s,baz=43,slow=6.0,SNR=11						
AKBB	**Malin Array Si**	**73.36**	**323**	*e*P	**P**	**19 17 49.5**	**-0.5**
	comp=Z,33nm,1.8s						
R11A	**Troy Canyon, C**	**73.48**	**54**	*e*P	**P**	**19 17 51.9**	**+0.7**
	comp=Z,1.9nm,0.9s						
BTPC	**Burnt Peak**	**73.80**	**58**	*e*P	**P**	**19 17 49.1**	**-4.0**
BW06	**Boulder Array**	**74.30**	**47**	*e*P	**P**	**19 17 56.3**	**+0.3**
PD31	**Pinedale Array**	**74.30**	**47**	*e*P	**P**	**19 17 56.3**	**+0.3**
PDAR	**Pinedale Array**	**74.30**	**47**	P	**P**	**19 17 56.6**	**+0.6**
	comp=Z,0.8nm,0.5s,baz=276,slow=1.0,SNR=12						
LCMT	**Little Creek M**	**75.77**	**54**	*e*P	**P**	**19 18 06.5**	**+2.1**
	comp=Z,3.6nm,0.7s						
SRU	**San Rafael Swe**	**76.09**	**51**	*e*P	**P**	**19 18 07.0**	**+0.7**
	comp=Z,3.3nm,0.8s						
BUR08	**Bucovina Ar. S**	**77.39**	**323**	*e*P	**P**	**19 18 13.9**	**+0.5**
BR101	**Keskin Array S**	**78.54**	**312**	*e*P	**P**	**19 18 20.4**	**+0.4**
BRTR	**Keskin Array B**	**78.54**	**312**	P	**P**	**19 18 20.4**	**+0.4**
	comp=Z,1.2nm,0.9s,baz=81,slow=4.3,SNR=4.4						
BRTR				LR	LR	19 57 46.2	
	comp=Z,18nm,18.9s,baz=49,slow=39						
CLL	**Collm**	**79.71**	**331**	*e*P	**P**	**19 18 26.0**	**+0.1**
CLL				*e*pP	**sP**	**19 18 38.0**	**-0.2**
EKA	**Eskdalemuir Ar**	**81.21**	**342**	P	**P**	**19 18 34.2**	**+0.4**
	comp=Z,0.8nm,0.6s,baz=30,slow=5.1,SNR=3.5						
KHC	**Kasperske Hory**	**81.25**	**330**	*e*P	**P**	**19 18 34.5**	**+0.2**
ANMO	**Albuquerque**	**81.28**	**52**	LR	LR	19 49 35.2	
	comp=Z,31nm,22.0s,baz=234,slow=32						
GERES	**GERESS Array B**	**81.43**	**329**	P	**P**	**19 18 35.0**	**-0.3**
	comp=Z,0.4nm,0.5s,baz=46,slow=5.8,SNR=4.9						
GERES				LR	LR	20 00 05.8	
	comp=Z,39nm,18.1s,baz=29,slow=40						
TX31	**Lajitas Ar. Si**	**86.85**	**54**	*e*P	**P**	**19 19 04.2**	**+1.0**
LTX	**Lajitas**	**86.85**	**54**	*e*P	**P**	**19 19 04.5**	**+1.2**
TXAR	**Lajitas Array**	**86.85**	**54**	P	**P**	**19 19 04.5**	**+1.2**
	comp=Z,0.9nm,0.8s,baz=296,slow=3.7,SNR=9.0						
VNA2	**Neumayer--Watz**	**145.51**	**196**	PKP	**PKPdf**	**19 25 55.3**	**+0.1**
	baz=133,slow=3.7						
VNA3	**Neumayer Olymp**	**145.73**	**195**	PKP	**PKPdf**	**19 25 55.2**	**-0.4**

IDC 02 19:12:07.2±2.9**, 37°.63N**×**142°.82E, h0**km**, mb3.5**/3**, mb1 3.5**/4**, mb1mx3.2**/45**, mbtmp3.4**/4**, ML2.8**/1**, Error ellipse: s-maj=73.2km s-min=32.2km az=61.0, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MJAR	**Matsushiro Arr**	**3.84**	**255**	Pn	Pn	19 13 07.4	-0.2
	0.8nm,0.3s,baz=85,slow=17,SNR=4.2						
SONM	**Songino Array**	**28.40**	**303**	P	P	19 18 03.5	+0.1
	0.3nm,0.5s,baz=99,slow=8.9,SNR=2.8						
MKAR	**Makanchi Array**	**44.76**	**302**	P	P	19 20 22.0	-0.3
	0.4nm,0.8s,baz=86,slow=9.1,SNR=3.6						
WRA	**Warramunga Arr**	**57.81**	**189**	P	P	19 22 00.3	-0.1
	0.3nm,0.5s,baz=6.2,slow=7.2,SNR=6.3						

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*ISK **02** 19:32:51.4, 35°.54N×26°.86E, h5km, MD3.4*
*ATH **02** 19:32:54.0, 35°.25N×27°.17E, h29km±1km, ML2.7/3, Error ellipse: s-maj=5.3km s-min=1.2km az=327.0*
*CSEM **02** 19:32:55.4±0.2, 35°.70N×26°.89E, h10km, ML2.7, Error ellipse: s-maj=9.1km s-min=4.3km az=146.0*
*ISCJB **02** 19:32:56.7±0.6, 35°.56N±0°.09×26°.97E±0°.06, h32km±10km, Error ellipse: s-maj=16.4km s-min=5.1km az=152.4*
ISC 02 19:32:56.5±1.0**, 35°.60N**±0°.06×**26°.94E**±0°.04**, h26**km±9km**, n25,** σ**0**^{s}**99**/36**, Crete**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KARP	**Karpathos**	**0.19**	**105**	P	**Pb**	**19 33 01.7**	**-0.5**
KARP				S	**Sb**	**19 33 06.7**	**+0.6**
KARP	**Karpathos**	**0.19**	**105**	P	**Pb**	**19 33 01.7**	**-0.5**
KARP				S	**Sb**	**19 33 06.7**	**+0.6**
KARP				AML	AML	19 33 06.8	
	comp=N,6755μm,0.2s						
KARP				AML	AML	19 33 07.2	
	comp=E,3354μm,0.2s						
ZKR	**Zakros**	**0.76**	**231**	P	**Pb**	**19 33 09.1**	**-2.0**
ZKR				S	**Sn**	**19 33 21.9**	**-0.3**
ZKR	**Zakros**	**0.76**	**231**	P	**Pb**	**19 33 09.1**	**-2.0**
ZKR				S	**Sn**	**19 33 21.9**	**-0.3**
ZKR				AML	AML	19 33 25.9	
	comp=E,1661μm,0.4s						
ZKR				AML	AML	19 33 27.1	
	comp=N,1134μm,0.5s						
NPS	**Neapolis**	**1.13**	**253**	P	**Pb**	**19 33 17.6**	**+0.2**
NPS				S	**Sb**	**19 33 34.4**	**+2.7**
NPS	**Neapolis**	**1.13**	**253**	P	**Pb**	**19 33 17.6**	**+0.2**
NPS				S	**Sb**	**19 33 34.4**	**+2.7**
NPS				AML	AML	19 33 37.7	
	comp=N,374μm,0.7s						
NPS				AML	AML	19 33 39.1	
	comp=E,539μm,0.5s						
ARG	**Arkhangelos**	**1.15**	**57**	P	**Pn**	**19 33 17.4**	**+0.5**
ARG				S	**Sb**	**19 33 33.7**	**+1.5**
LAST	**Lasithi**	**1.27**	**250**	P	**Pb**	**19 33 19.6**	**-0.2**
LAST	**Lasithi**	**1.27**	**250**	P	**Pb**	**19 33 19.6**	**-0.2**
BODT	**Bodrum**	**1.49**	**12**	*e*PN	**Pn**	**19 33 21.2**	**-0.5**
BODT				*e*SN	**Sb**	**19 33 42.9**	**+0.7**
BODT	**Bodrum**	**1.49**	**12**	*e*Pn	**Pn**	**19 33 21.2**	**-0.5**
BODT				*e*Sn	**Sb**	**19 33 42.9**	**+0.7**
DALY	**Dalyan (Mu˜la**	**1.85**	**48**	*e*PN	**Pn**	**19 33 26.4**	**-0.1**
DALY				*e*SN	**Sb**	**19 33 52.9**	**+0.6**
DALY	**Dalyan (Mu˜la**	**1.85**	**48**	*e*Pn	**Pn**	**19 33 26.4**	**-0.1**
DALY				*e*Sn	**Sb**	**19 33 52.9**	**+0.6**
APE	**Apeiranthos**	**1.86**	**323**	*e*PN	**Pn**	**19 33 25.6**	**-1.1**
APE	**Apeiranthos**	**1.86**	**323**	*e*Pn	**Pn**	**19 33 25.6**	**-1.1**
YER	**Yerkesik**	**1.88**	**35**	*e*PN	**Pn**	**19 33 27.0**	**-0.1**
YER	**Yerkesik**	**1.88**	**35**	*e*Pn	**Pn**	**19 33 27.0**	**-0.1**
FETY	**Fethiye**	**2.02**	**59**	*e*PN	**Pn**	**19 33 29.1**	**+0.1**
FETY	**Fethiye**	**2.02**	**59**	*e*Pn	**Pn**	**19 33 29.1**	**+0.1**
AYDB	**Zeytinkoy-Aydi**	**2.47**	**18**	*e*PN	**Pn**	**19 33 35.2**	**0.0**
AYDB	**Zeytinkoy-Aydi**	**2.47**	**18**	*e*Pn	**Pn**	**19 33 35.2**	**0.0**
GLHS	**Glhisar (BURDU**	**2.59**	**52**	*e*PN	**Pn**	**19 33 36.7**	**-0.2**
GLHS	**Glhisar (BURDU**	**2.59**	**52**	*e*Pn	**Pn**	**19 33 36.7**	**-0.2**
ELL	**Elmali**	**2.67**	**64**	*e*PN	**Pn**	**19 33 38.0**	**+0.2**
ELL	**Elmali**	**2.67**	**64**	*e*Pn	**Pn**	**19 33 38.1**	**+0.2**

*IDC **02** 19:40:02.4±1.9, 35°.03N×141°.35E, h0km, mb3.7/5, mb1 3.8/7, mb1mx3.5/56, mbtmp3.6/7, ML3.2/2, MS2.7/4, Ms1 2.7/4, ms1mx2.4/49, Error ellipse: s-maj=47.3km s-min=19.1km az=74.0*
*ISCJB **02** 19:40:04.9±1.0, 35°.03N±0°.05×141°.43E±0°.09, h35km, mb3.6/5, MS3.0/1, Error ellipse: s-maj=11.0km s-min=6.7km az=168.5*
*JMA **02** 19:40:05.3±0.2, 35°.06N×141°.34E, h34km, M3.1*
ISC 02 19:40:06.9±1.3**, 35°.05N**±0°.05×**141°.4E**±0°.1**, h35km, n22, σ1.s41**/18**, mb3.5**/5**, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BSO1	**Boso 1**	**0.51**	**220**	P	**Pn**	**19 40 15.7**	**-1.5**
BSO1				X		19 40 24.0	
BSO3	**Boso 3**	**0.75**	**251**	P	**Pn**	**19 40 19.2**	**-1.6**
BSO3				eX		19 40 29.7	
CHOJ	**Chosi**	**0.78**	**327**	P	**Pn**	**19 40 18.9**	**-2.5**
CHOJ				eS	**Sn**	**19 40 30.1**	**-1.7**
BSO4	**Boso 4**	**0.86**	**266**	P	**Pn**	**19 40 20.8**	**-1.5**
KTR	**Katsuura**	**0.88**	**277**	P	**Pn**	**19 40 21.2**	**-1.5**
TATJ	**Tateyama 2**	**1.22**	**270**	P	**Pn**	**19 40 25.7**	**-1.7**
TATJ				eS	**Sn**	**19 40 42.2**	**-0.5**
JHJ	**Hachijo jima 2**	**2.33**	**215**	Pn	**Pn**	**19 40 42.1**	**-0.6**
	20nm,0.3s,baz=322,slow=20,SNR=14						
JHJ				Sn	**Sn**	**19 41 09.6**	**-0.6**
	29nm,0.3s,baz=79,slow=23,SNR=4.4						
JHJ				LR	LR	19 41 23.6	
	comp=Z,26nm,19.0s,baz=82,slow=35						
MJAR	**Matsushiro Arr**	**2.98**	**301**	Pn	**Pn**	**19 40 51.2**	**-0.4**
	2.8nm,0.3s,baz=284,slow=13,SNR=19						
MJAR				LR	LR	19 42 08.1	
	comp=Z,119nm,20.7s,baz=120,slow=43						
MAT	**Matsushiro**	**2.98**	**301**	P	**Pn**	**19 40 52.8**	**+1.2**
MAT				eS	**Sn**	**19 41 28.2**	**+2.1**
KSRS	**Korea Array**	**11.13**	**286**	LR	LR	19 47 17.9	
	comp=Z,62nm,18.6s,baz=105,slow=39						
H11N2	**WAKE ISLAND Hy**	**27.21**	**117**	T	T	20 14 20.5	
	baz=310,slow=75,SNR=22						
H11N1	**WAKE ISLAND Hy**	**27.21**	**117**	T	T	20 14 23.3	
	baz=310,slow=75,SNR=26						
H11N3	**WAKE ISLAND Hy**	**27.23**	**117**	T	T	20 14 21.8	
	baz=310,slow=75,SNR=23						
H11S1	**WAKE ISLAND Hy**	**27.85**	**120**	T	T	20 15 10.8	
	baz=312,slow=75,SNR=52						
H11S3	**WAKE ISLAND Hy**	**27.85**	**120**	T	T	20 15 07.1	
	baz=312,slow=75,SNR=45						
H11S2	**WAKE ISLAND Hy**	**27.87**	**120**	T	T	20 15 08.0	
	baz=312,slow=75,SNR=33						
YAK	**Yakutsk**	**28.00**	**348**	LR	LR	19 56 47.3	
	comp=Z,38nm,18.4s,baz=163,slow=36						
SONM	**Songino Array**	**28.91**	**307**	P	**P**	**19 46 03.6**	**+1.0**
	0.3nm,0.6s,baz=101,slow=9.0,SNR=3.0						
ZALV	**Zalesovo Beam**	**43.25**	**314**	P	**P**	**19 48 04.7**	**+0.1**
	0.7nm,0.7s,baz=92,slow=7.2,SNR=4.0						
MKAR	**Makanchi Array**	**45.17**	**304**	P	**P**	**19 48 20.2**	**0.0**
	0.3nm,0.5s,baz=84,slow=11,SNR=6.7						
WRA	**Warramunga Arr**	**55.09**	**188**	P	**P**	**19 49 36.2**	**+0.7**
	2.1nm,0.5s,baz=5.3,slow=7.5,SNR=9.4						
ASAR	**Alice Springs**	**58.82**	**188**	P	**P**	**19 50 02.5**	**+0.6**
	0.2nm,0.4s,baz=357,slow=5.9,SNR=7.6						

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*NIED **02** 19:45:00, 37°.90N×143°.40E, h26km, Mw3.7 Best double couple: M0 3.99000×10^14 NP1: φs 323.00000°, δ78.00000°, λ175.00000°. NP2: φs 54.00000°, δ85.00000°, λ12.00000°.*
*IDC **02** 19:45:37.0±1.3, 37°.50N×144°.10E, h0km, mb3.7/6, mb1 3.8/8, mb1mx3.5/56, mbtmp3.7/8, ML3.8/2, MS3.5/2, Ms1 3.6/2, ms1mx2.5/48, Error ellipse: s-maj=30.5km s-min=21.6km az=115.0*
*ISCJB **02** 19:45:38.9±0.8, 37°.78N±0°.05×143°.55E±0°.06, h19km, mb3.6/6, MS3.6/2, Error ellipse: s-maj=7.9km s-min=7.2km az=7.1*
*JMA **02** 19:45:40.9±0.2, 37°.93N×143°.40E, h14km, M4.0*
ISC 02 19:45:39.1±1.1**, 37°.75N**±0°.05×**143°.63E**±0°.08**, h19km, n24, σ1.s65**/25**, mb3.6**/6**, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**1.93**	**292**	P	**Pn**	**19 46 10.6**	**-0.2**
JIO				S	**Sn**	**19 46 32.0**	**-2.5**
OFUJ	**Ofunato**	**2.03**	**311**	P	**Pn**	**19 46 11.8**	**-0.5**
JMK	**Ichinoseki**	**2.24**	**303**	P	**Pn**	**19 46 15.1**	**0.0**
JMK				S	**Sn**	**19 46 40.5**	**-1.7**
JMM	**Marumori**	**2.25**	**274**	P	**Pn**	**19 46 15.6**	**+0.4**
JMM				S	**Sn**	**19 46 40.6**	**-1.8**
JOU	**Okura**	**2.42**	**286**	P	**Pn**	**19 46 18.3**	**+0.7**
JOU				S	**Sn**	**19 46 46.1**	**-0.6**
JOM	**Ohasama**	**2.51**	**314**	P	**Pn**	**19 46 19.0**	**+0.2**
JOM				S	**Sn**	**19 46 47.3**	**-1.6**
JFT	**Otama**	**2.62**	**266**	P	**Pn**	**19 46 21.5**	**+1.1**
JFT				S	**Sn**	**19 46 51.6**	**-0.1**
JYK	**Kaneyama**	**2.82**	**295**	P	**Pn**	**19 46 23.9**	**+0.8**
JYK				S	**Sn**	**19 46 56.2**	**-0.4**
JYS	**Shirataka**	**2.85**	**280**	P	**Pn**	**19 46 24.6**	**+1.0**
JANG	**Nango**	**3.09**	**329**	eS	**Sn**	**19 46 59.9**	**-3.3**
JAG	**Ashikaga**	**3.59**	**250**	P	**Pn**	**19 46 34.6**	**+0.9**
JAG				S	**Sn**	**19 47 15.6**	**0.0**
MJAR	**Matsushiro Arr**	**4.49**	**256**	Pn	**Pn**	**19 46 48.4**	**+2.2**
	4.1nm,0.3s,baz=88,slow=15,SNR=11						
JHJ	**Hachijo jima 2**	**5.59**	**215**	Pn	**Pn**	**19 47 00.7**	**-0.5**
	7.3nm,0.3s,baz=349,slow=22,SNR=6.8						
JHJ				Sn	**Sn**	**19 48 00.3**	**-4.5**
	26nm,0.3s,baz=230,slow=22,SNR=6.9						
SEY	**Seymchan**	**25.77**	**9**	P	**P**	**19 51 09.9**	**+1.6**
	0.8nm,0.7s,baz=184,slow=7.1,SNR=7.1						
H11N2	**WAKE ISLAND Hy**	**27.06**	**125**	T	T	20 19 41.2	
	baz=323,slow=76,SNR=4.2						
H11N1	**WAKE ISLAND Hy**	**27.07**	**125**	T	T	20 19 40.4	
H11N3	**WAKE ISLAND Hy**	**27.08**	**125**	T	T	20 19 41.8	
	baz=311,slow=76,SNR=4.4						
SONM	**Songino Array**	**28.87**	**302**	P	P	19 51 40.2	+3.7
	0.4nm,0.5s,baz=108,slow=8.8,SNR=4.4						
ZALV	**Zalesovo Beam**	**42.74**	**312**	P	P	19 53 40.6	+5.7
	1.3nm,0.6s,baz=81,slow=8.2,SNR=6.2						
MKAR	**Makanchi Array**	**45.23**	**302**	P	P	19 54 00.5	+5.5
	0.4nm,0.7s,baz=87,slow=10,SNR=6.2						
ILAR	**Eielson Array**	**47.94**	**33**	P	**P**	**19 54 16.8**	**+0.8**
	0.7nm,0.8s,baz=261,slow=6.8,SNR=6.3						
DLBC	**Dease Lake**	**56.97**	**39**	LR	LR	20 21 55.0	
	comp=Z,42nm,18.1s,baz=297,slow=38						
WRA	**Warramunga Arr**	**58.05**	**190**	P	**P**	**19 55 30.9**	**-0.1**
	0.6nm,0.7s,baz=7.9,slow=7.1,SNR=4.9						
ESDC	**Sonseca Array**	**97.40**	**335**	LR	LR	20 48 21.0	
	comp=Z,21nm,18.2s,baz=225,slow=38						

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*NIED **02** 19:48:00, 37°.30N×142°.40E, h20km, Mw3.4 Best double couple: M0 1.63000×10^14 NP1: φs 15.00000°, δ47.00000°, λ-117.00000°. NP2: φs 232.00000°, δ49.00000°, λ-64.00000°.*
*JMA **02** 19:48:41.5±0.3, 37°.27N×142°.41E, h0km, M3.6*
*ISCJB **02** 19:48:42.0±2.0, 37°.19N±0°.08×142°.4E±0°.2, h10km, mb3.4/2, Error ellipse: s-maj=27.4km s-min=10.5km az=173.4*
*IDC **02** 19:48:45.7±3.0, 36°.85N×142°.57E, h0km, mb3.3/2, mb1 3.5/4, mb1mx3.2/55, mbtmp3.5/4, ML3.1/2, Error ellipse: s-maj=55.5km s-min=34.7km az=79.0*
ISC 02 19:48:42.6±2.0**, 37°.32N**±0°.08×**142°.5E**±0°.2**, h10km, n8, σ2.s15**/8**, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**1.45**	**322**	P	**Pn**	**19 49 08.6**	**-0.3**
JMM	**Marumori**	**1.46**	**293**	P	**Pn**	**19 49 08.4**	**-0.6**
JFT	**Otama**	**1.73**	**277**	P	**Pn**	**19 49 12.6**	**-0.2**
JOU	**Okura**	**1.79**	**306**	P	**Pn**	**19 49 13.8**	**+0.2**
MJAR	**Matsushiro Arr**	**3.52**	**259**	Pn	**Pn**	**19 49 40.4**	**+3.0**
	0.8nm,0.3s,baz=91,slow=15,SNR=2.8						
JHJ	**Hachijo jima 2**	**4.74**	**209**	Pn	**Pn**	**19 49 54.3**	**+0.2**
	4.8nm,0.3s,baz=68,slow=21,SNR=1.6						
JHJ				Sn	**Sn**	**19 50 45.6**	**-3.5**
	7.1nm,0.3s,baz=86,slow=17,SNR=2.2						
MKAR	**Makanchi Array**	**44.70**	**302**	P	P	19 57 03.1	+7.3
	0.3nm,0.6s,baz=86,slow=8.7,SNR=2.9						
WRA	**Warramunga Arr**	**57.47**	**189**	P	**P**	**19 58 32.9**	**+1.1**
	0.4nm,0.9s,baz=7.8,slow=7.0,SNR=1.2						

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*IDC **02** 19:53:33.4±1.0, 37°.71N×143°.97E, h0km, mb3.6/8, mb1 3.8/8, mb1mx3.5/58, mbtmp3.6/8, Error ellipse: s-maj=29.6km s-min=20.4km az=95.0*
*ISCJB **02** 19:53:36.2±0.9, 37°.7N±0°.1×144°.0E±0°.2, h33km, mb3.5/8, Error ellipse: s-maj=24.5km s-min=18.0km az=11.3*
ISC 02 19:53:38.6±1.2**, 37°.7N**±0°.2×**143°.9E**±0°.2**, h35km, n9, σ0.s74**/8**, mb3.5**/8**, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MJAR	**Matsushiro Arr**	**4.73**	**257**	Pn	Pn	19 54 40.8	-6.6
	0.7nm,0.3s,baz=82,slow=15,SNR=7.9						
SEY	**Seymchan**	**25.77**	**9**	P	**P**	**19 59 06.4**	**+0.6**
	0.2nm,0.2s,baz=215,slow=3.1,SNR=4.7						
SONM	**Songino Array**	**29.10**	**302**	P	**P**	**19 59 35.6**	**-0.3**
	0.6nm,0.9s,baz=93,slow=8.9,SNR=5.2						
ZALV	**Zalesovo Beam**	**42.95**	**312**	P	**P**	**20 01 34.9**	**+1.0**
	0.3nm,0.5s,baz=86,slow=7.4,SNR=2.5						
MKAR	**Makanchi Array**	**45.46**	**302**	P	**P**	**20 01 53.4**	**-0.7**
	0.5nm,0.9s,baz=92,slow=8.6,SNR=2.8						
ILAR	**Eielson Array**	**47.84**	**33**	P	**P**	**20 02 11.8**	**-0.6**
	0.5nm,0.9s,baz=267,slow=6.1,SNR=5.6						
INK	**Inuvik**	**52.86**	**28**	P	**P**	**20 02 50.0**	**-0.3**
	1.8nm,1.1s,baz=292,slow=4.7,SNR=3.9						
WRA	**Warramunga Arr**	**58.06**	**191**	P	**P**	**20 03 28.1**	**-0.1**
	1.5nm,0.7s,baz=9.7,slow=7.1,SNR=12						
ASAR	**Alice Springs**	**61.78**	**190**	P	**P**	**20 03 54.2**	**+0.5**
	0.2nm,0.5s,baz=13,slow=8.3,SNR=4.2						

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*ATH **02** 19:57:12.7, 38°.78N×22°.50E, h21km±1km, ML3.0/14, Error ellipse: s-maj=1.3km s-min=0.6km az=173.0*
*THE **02** 19:57:13.1, 38°.78N×22°.49E, h0km, ML2.9/34, Error ellipse: s-maj=0.9km s-min=0.3km az=353.0*
*CSEM **02** 19:57:13.5±0.1, 38°.76N×22°.50E, h10km, ML3.0, Error ellipse: s-maj=2.3km s-min=2.0km az=116.0*
ISC 02 19:57:13.1±0.9**, 38°.78N**±0°.01×**22°.49E**±0°.01**, h10km**±8km**, n175, σ0.s85**/279**, 6C-8D, Greece**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DSF	**Desfina**	**0.37**	**176**	P	**Pg**	**19 57 20.1**	**-0.4**
DSF				S	**Sb**	**19 57 26.5**	**-1.2**
DSF	**Desfina**	**0.37**	**176**	P	**Pg**	**19 57 19.8**	**-0.7**
DSF				S	**Sb**	**19 57 26.5**	**-1.2**
DSF	**Desfina**	**0.37**	**176**	P	**Pg**	**19 57 19.8**	**-0.7**
LKR	**Lokris**	**0.42**	**108**	P	**Pg**	**19 57 21.2**	**-0.1**
LKR				S	**Sb**	**19 57 28.0**	**-1.0**
LKR	**Lokris**	**0.42**	**108**	P	**Pg**	**19 57 21.2**	**-0.1**
LKR				S	**Sb**	**19 57 28.0**	**-1.0**
LKR	**Lokris**	**0.42**	**108**	P	**Pg**	**19 57 21.3**	**-0.1**
LKR				S	**Sb**	**19 57 28.4**	**-0.6**
LKR				AML	AML	19 57 29.4	
	comp=E,3907μm,0.1s						
LKR				AML	AML	19 57 29.6	
	comp=N,3364μm,0.2s						
KALE	**Kalithea**	**0.48**	**216**	P	**Pg**	**19 57 22.0**	**-0.5**
KALE				S	**Sg**	**19 57 29.2**	**+0.4**
KALE	**Kalithea**	**0.48**	**216**	P	**Pg**	**19 57 22.0**	**-0.5**
KALE				S	**Sg**	**19 57 29.2**	**+0.4**
KALE	**Kalithea**	**0.48**	**216**	P	**Pg**	**19 57 21.6**	**-0.9**
KALE				S	**Sg**	**19 57 29.2**	**+0.4**
KALE				AML	AML	19 57 31.6	
	comp=E,9169μm,0.3s						
KALE				AML	AML	19 57 31.6	
	comp=N,9229μm,0.3s						
ANX	**Ano Chora**	**0.49**	**247**	P	**Pg**	**19 57 22.2**	**-0.4**
ANX				S	**Sg**	**19 57 29.8**	**+0.8**
ANX	**Ano Chora**	**0.49**	**247**	P	**Pg**	**19 57 22.2**	**-0.4**
ANX				S	**Sg**	**19 57 29.8**	**+0.8**
SERG	**Sergoula**	**0.50**	**223**	P	**Pg**	**19 57 22.3**	**-0.6**
SERG				S	**Sg**	**19 57 30.0**	**+0.5**
SERG	**Sergoula**	**0.50**	**223**	P	**Pg**	**19 57 22.3**	**-0.6**
SERG				S	**Sg**	**19 57 30.0**	**+0.5**
EVR	**Evrytania**	**0.55**	**284**	P	**Pg**	**19 57 23.9**	**0.0**
EVR				S	**Sb**	**19 57 32.3**	**-0.7**
EVR	**Evrytania**	**0.55**	**284**	P	**Pg**	**19 57 23.9**	**0.0**
EVR				S	**Sb**	**19 57 32.3**	**-0.7**
EVR	**Evrytania**	**0.55**	**284**	P	**Pg**	**19 57 23.5**	**-0.4**
EVR				S	**Sb**	**19 57 33.0**	**0.0**
EVR				AML	AML	19 57 37.6	
	comp=N,1671μm,0.3s						
SMIA	**Simia**	**0.57**	**80**	P	**Pg**	**19 57 24.1**	**-0.1**
SMIA				S	**Sb**	**19 57 33.1**	**-0.3**
SMIA	**Simia**	**0.57**	**80**	P	**Pg**	**19 57 24.1**	**-0.1**
SMIA				S	**Sb**	**19 57 33.1**	**-0.3**
SMIA	**Simia**	**0.57**	**80**	P	**Pg**	**19 57 24.5**	**+0.4**
EFP	**Efpalio**	**0.58**	**233**	P	**Pg**	**19 57 23.6**	**-0.8**
EFP				S	**Sb**	**19 57 33.0**	**-0.7**
EFP	**Efpalio**	**0.58**	**233**	P	**Pg**	**19 57 23.8**	**-0.6**
EFP				S	**Sb**	**19 57 33.0**	**-0.7**
EFP	**Efpalio**	**0.58**	**233**	P	**Pg**	**19 57 23.8**	**-0.6**
EFP				S	**Sb**	**19 57 33.4**	**-0.3**
EFP				AML	AML	19 57 33.5	
	comp=E,9930μm,0.2s						
EFP				AML	AML	19 57 33.6	
	comp=N,3078μm,0.3s						
PROD	**Prodromos**	**0.61**	**148**	P	**Pg**	**19 57 24.0**	**-1.0**
PROD				S	**Sb**	**19 57 34.2**	**-0.5**
PROD	**Prodromos**	**0.61**	**148**	P	**Pg**	**19 57 24.0**	**-1.0**
PROD				S	**Sb**	**19 57 34.1**	**-0.5**
PROD				AML	AML	19 57 39.2	
	comp=E,3195μm,0.5s						
PROD				AML	AML	19 57 39.3	
	comp=N,2855μm,0.2s						
RODI	**Rodini**	**0.66**	**226**	P	**Pg**	**19 57 24.8**	**-1.0**
RODI				S	**Sb**	**19 57 36.1**	**+0.2**
RODI	**Rodini**	**0.66**	**226**	P	**Pg**	**19 57 24.8**	**-1.0**
RODI				S	**Sb**	**19 57 36.1**	**+0.2**
RODI				AML	AML	19 57 37.2	
	comp=N,2565μm,0.2s						
RODI				AML	AML	19 57 37.4	
	comp=E,2822μm,0.2s						
LAKA	**Lakka**	**0.68**	**217**	P	**Pg**	**19 57 25.2**	**-1.0**
LAKA				S	**Sg**	**19 57 35.1**	**+0.1**
LAKA	**Lakka**	**0.68**	**217**	P	**Pg**	**19 57 25.2**	**-1.0**
LAKA				S	**Sg**	**19 57 35.1**	**+0.1**
LAKA	**Lakka**	**0.68**	**217**	P	**Pg**	**19 57 24.8**	**-1.4**
LAKA				S	**Sg**	**19 57 35.4**	**+0.3**
LAKA				AML	AML	19 57 40.1	
	comp=N,933μm,0.3s						
LAKA				AML	AML	19 57 41.5	
	comp=E,942μm,0.5s						
FYTO	**Fytoko, Volos**	**0.72**	**29**	P	**Pg**	**19 57 26.4**	**-0.6**
FYTO				S	**Sb**	**19 57 37.4**	**-0.3**
FYTO	**Fytoko, Volos**	**0.72**	**29**	P	**Pg**	**19 57 26.4**	**-0.6**
FYTO				S	**Sb**	**19 57 37.4**	**-0.3**
THAL	**Thalero**	**0.76**	**170**	P	**Pg**	**19 57 27.4**	**-0.3**
THAL				S	**Sb**	**19 57 39.5**	**+0.8**
THAL	**Thalero**	**0.76**	**170**	P	**Pg**	**19 57 27.4**	**-0.3**
THAL				S	**Sb**	**19 57 39.5**	**+0.8**
THAL	**Thalero**	**0.76**	**170**	P	**Pg**	**19 57 27.5**	**-0.3**
THAL				S	**Sn**	**19 57 40.3**	**-1.1**
THAL				AML	AML	19 57 42.2	
	comp=N,3972μm,0.4s						
THAL				AML	AML	19 57 53.6	
	comp=E,3750μm,0.5s						
NEO	**Neokhori**	**0.77**	**47**	P	**Pg**	**19 57 27.3**	**-0.8**
NEO				S	**Sb**	**19 57 38.9**	**-0.4**
NEO	**Neokhori**	**0.77**	**47**	P	**Pg**	**19 57 27.6**	**-0.5**
NEO				S	**Sb**	**19 57 38.9**	**-0.4**
NEO	**Neokhori**	**0.77**	**47**	P	**Pg**	**19 57 27.6**	**-0.5**
NEO				S	**Sb**	**19 57 39.7**	**+0.3**
NEO				AML	AML	19 57 40.5	
	comp=E,3239μm,0.3s						
NEO				AML	AML	19 57 44.3	
	comp=N,1089μm,0.4s						
PVO	**Paravola**	**0.78**	**258**	P	**Pg**	**19 57 27.6**	**-0.5**
PVO				S	**Sb**	**19 57 38.9**	**-0.4**
PVO	**Paravola**	**0.78**	**258**	P	**Pg**	**19 57 27.6**	**-0.5**
PVO				S	**Sb**	**19 57 38.9**	**-0.4**
PVO	**Paravola**	**0.78**	**258**	P	**Pg**	**19 57 27.6**	**-0.5**
PVO				S	**Sb**	**19 57 39.1**	**-0.2**
KLV	**Kalavryta, Ach**	**0.78**	**200**	P	**Pg**	**19 57 27.3**	**-1.0**
KLV				S	**Sg**	**19 57 38.8**	**+0.3**
KLV	**Kalavryta, Ach**	**0.78**	**200**	P	**Pg**	**19 57 27.3**	**-1.0**
KLV				S	**Sg**	**19 57 38.8**	**+0.3**
KLV	**Kalavryta, Ach**	**0.78**	**200**	P	**Pg**	**19 57 26.7**	**-1.6**
XOR	**Xorichti**	**0.80**	**43**	P	**Pg**	**19 57 27.8**	**-0.7**
XOR				S	**Sg**	**19 57 39.1**	**+0.1**
XOR	**Xorichti**	**0.80**	**43**	P	**Pg**	**19 57 27.8**	**-0.7**
XOR				S	**Sg**	**19 57 39.1**	**+0.1**
XOR	**Xorichti**	**0.80**	**43**	P	**Pg**	**19 57 27.2**	**-1.3**
XOR				S	**Sb**	**19 57 39.9**	**-0.2**
XOR				AML	AML	19 57 40.9	
	comp=E,1516μm,0.5s						
XOR				AML	AML	19 57 41.4	
	comp=N,2481μm,0.5s						
VIL2	**Platees**	**0.83**	**133**	P	**Pb**	**19 57 29.7**	**-0.1**
LTK	**Loutraki**	**0.84**	**154**	P	**Pg**	**19 57 28.7**	**-0.7**
LTK				S	**Sb**	**19 57 42.3**	**+1.0**
LTK	**Loutraki**	**0.84**	**154**	P	**Pg**	**19 57 28.7**	**-0.7**
LTK				S	**Sb**	**19 57 40.8**	**-0.5**
LTK	**Loutraki**	**0.84**	**154**	P	**Pg**	**19 57 28.2**	**-1.2**
LTK				S	**Sb**	**19 57 40.8**	**-0.5**
LTK				AML	AML	19 57 45.4	
	comp=E,4833μm,0.5s						
LTK				AML	AML	19 57 45.8	
	comp=N,9522μm,0.5s						
SKIA	**Skiathos**	**0.85**	**63**	P	**Pg**	**19 57 29.0**	**-0.5**
SKIA				S	**Sn**	**19 57 42.7**	**-1.1**
SKIA	**Skiathos**	**0.85**	**63**	P	**Pg**	**19 57 29.4**	**-0.1**
SKIA				S	**Sn**	**19 57 42.7**	**-1.1**
SKIA	**Skiathos**	**0.85**	**63**	P	**Pg**	**19 57 29.4**	**-0.1**
THL	**Klokotos Trika**	**0.87**	**335**	P	**Pg**	**19 57 29.2**	**-0.6**
THL				S	**Sb**	**19 57 42.0**	**0.0**
THL	**Klokotos Trika**	**0.87**	**335**	P	**Pg**	**19 57 29.3**	**-0.6**
THL				S	**Sb**	**19 57 42.0**	**0.0**
VILL	**Villia**	**0.89**	**134**	P	**Pg**	**19 57 29.6**	**-0.7**
VILL				S	**Sn**	**19 57 43.8**	**-1.0**
VILL	**Villia**	**0.89**	**134**	P	**Pg**	**19 57 29.7**	**-0.6**
VILL				S	**Sn**	**19 57 43.8**	**-1.0**
DRO	**Drossia**	**1.03**	**217**	P	**Pg**	**19 57 32.0**	**-1.0**
DRO				S	**Sn**	**19 57 47.8**	**-0.4**
DRO	**Drossia**	**1.03**	**217**	P	**Pg**	**19 57 32.0**	**-1.0**
DRO				S	**Sn**	**19 57 47.8**	**-0.4**
DRO	**Drossia**	**1.03**	**217**	P	**Pg**	**19 57 31.7**	**-1.3**
DRO				S	**Sn**	**19 57 47.9**	**-0.4**
DRO				AML	AML	19 57 48.0	
	comp=N,2149μm,0.3s						
DRO				AML	AML	19 57 52.9	
	comp=E,2476μm,0.2s						
PDO	**Prodromos**	**1.04**	**260**	P	**Pg**	**19 57 32.9**	**-0.2**
PDO				S	**Sn**	**19 57 48.4**	**-0.1**
PDO	**Prodromos**	**1.04**	**260**	P	**Pg**	**19 57 33.0**	**-0.2**
PDO				S	**Sn**	**19 57 48.4**	**-0.1**
PDO	**Prodromos**	**1.04**	**260**	P	**Pg**	**19 57 33.0**	**-0.1**
AXS	**Araxos**	**1.05**	**237**	P	**Pg**	**19 57 33.0**	**-0.4**
AXS				S	**Sn**	**19 57 48.1**	**-0.6**
AXS	**Araxos**	**1.05**	**237**	P	**Pg**	**19 57 33.0**	**-0.4**
AXS				S	**Sn**	**19 57 48.1**	**-0.6**
AXS	**Araxos**	**1.05**	**237**	P	**Pg**	**19 57 32.3**	**-1.1**
RLS	**Riolos of Patr**	**1.08**	**228**	P	**Pb**	**19 57 33.1**	**-0.9**
RLS				S	**Sn**	**19 57 49.3**	**-0.1**
RLS	**Riolos of Patr**	**1.08**	**228**	P	**Pb**	**19 57 33.1**	**-0.9**
RLS				S	**Sn**	**19 57 49.3**	**-0.1**
RLS	**Riolos of Patr**	**1.08**	**228**	S	**Sn**	**19 57 50.1**	**+0.7**
RLS				AML	AML	19 57 50.6	
	comp=E,697μm,0.4s						
RLS				AML	AML	19 57 53.6	
	comp=N,550μm,0.3s						
DSL	**Palaion Diasel**	**1.15**	**288**	P	**Pb**	**19 57 34.1**	**-1.0**
DSL				S	**Sn**	**19 57 50.9**	**-0.2**
DSL	**Palaion Diasel**	**1.15**	**288**	P	**Pb**	**19 57 34.1**	**-1.0**
DSL				S	**Sn**	**19 57 50.9**	**-0.2**
DSL	**Palaion Diasel**	**1.15**	**288**	P	**Pb**	**19 57 33.5**	**-1.5**
AOS	**Alonnisos**	**1.15**	**70**	P	**Pb**	**19 57 34.7**	**-0.4**
AOS				S	**Sg**	**19 57 50.4**	**+0.3**
AOS	**Alonnisos**	**1.15**	**70**	P	**Pb**	**19 57 34.7**	**-0.4**
AOS				S	**Sg**	**19 57 50.4**	**+0.3**
AOS	**Alonnisos**	**1.15**	**70**	P	**Pb**	**19 57 34.0**	**-1.2**
EREA	**Eretria**	**1.18**	**107**	P	**Pb**	**19 57 35.6**	**-0.1**
EREA				S	**Sn**	**19 57 52.7**	**+0.7**
EREA	**Eretria**	**1.18**	**107**	P	**Pb**	**19 57 35.6**	**-0.1**
EREA				S	**Sn**	**19 57 52.7**	**+0.7**
EREA	**Eretria**	**1.18**	**107**	P	**Pg**	**19 57 36.2**	**+0.3**
ATH	**Athens Observa**	**1.26**	**130**	P	**Pn**	**19 57 36.1**	**-0.7**
ATH				S	**Sn**	**19 57 54.3**	**+0.6**
ATH	**Athens Observa**	**1.26**	**130**	P	**Pn**	**19 57 36.1**	**-0.7**
ATH				S	**Sn**	**19 57 54.3**	**+0.6**
ATHU	**Athens Univers**	**1.30**	**128**	P	**Pn**	**19 57 37.4**	**0.0**
ATHU				S	**Sg**	**19 57 57.6**	**+2.6**
ATHU	**Athens Univers**	**1.30**	**128**	P	**Pn**	**19 57 37.4**	**0.0**
ATHU				S	**Sg**	**19 57 57.6**	**+2.6**
ATHU	**Athens Univers**	**1.30**	**128**	P	**Pb**	**19 57 37.8**	**+0.1**
PTL	**Penteli**	**1.30**	**124**	P	**Pg**	**19 57 38.0**	**-0.1**
PTL				S	**Sg**	**19 57 56.9**	**+1.9**
PTL	**Penteli**	**1.30**	**124**	P	**Pg**	**19 57 38.0**	**-0.1**
PTL				S	**Sg**	**19 57 56.3**	**+1.2**
PTL	**Penteli**	**1.30**	**124**	P	**Pg**	**19 57 38.1**	**0.0**
PTL				S	**Sg**	**19 57 56.3**	**+1.2**
PTL				AML	AML	19 57 58.8	
	comp=E,714μm,0.5s						
PTL				AML	AML	19 58 00.6	
	comp=N,664μm,1.1s						
LIT	**Litokhoron**	**1.32**	**360**	P	**Pn**	**19 57 37.7**	**0.0**
LIT				S	**Sg**	**19 57 57.4**	**+1.8**
LIT	**Litokhoron**	**1.32**	**360**	P	**Pn**	**19 57 37.7**	**0.0**
LIT				S	**Sg**	**19 57 57.4**	**+1.8**
VLY	**Voula,Athens**	**1.38**	**132**	P	**Pn**	**19 57 38.6**	**+0.1**
VLY				S	**Sg**	**19 57 58.7**	**+1.1**
VLY	**Voula,Athens**	**1.38**	**132**	P	**Pn**	**19 57 38.6**	**+0.1**
VLY				S	**Sg**	**19 57 58.7**	**+1.1**
VLY	**Voula,Athens**	**1.38**	**132**	P	**Pn**	**19 57 38.5**	**+0.1**
AMT	**Artemida-Makis**	**1.39**	**207**	P	**Pb**	**19 57 39.2**	**-0.1**
AMT				S	**Sg**	**19 57 59.2**	**+1.3**
AMT	**Artemida-Makis**	**1.39**	**207**	P	**Pb**	**19 57 39.2**	**-0.1**
AMT				S	**Sg**	**19 57 59.2**	**+1.3**
AMT	**Artemida-Makis**	**1.39**	**207**	P	**Pb**	**19 57 39.4**	**+0.2**
DID	**Didima**	**1.40**	**155**	P	**Pn**	**19 57 38.6**	**-0.2**
DID				S	**Sg**	**19 57 59.2**	**+1.0**
DID	**Didima**	**1.40**	**155**	P	**Pn**	**19 57 38.6**	**-0.2**
DID				S	**Sg**	**19 57 59.2**	**+1.0**
DID	**Didima**	**1.40**	**155**	P	**Pn**	**19 57 38.1**	**-0.7**
VLX	**Vlachokerasia**	**1.41**	**184**	P	**Pb**	**19 57 39.4**	**-0.3**
VLX				S	**Sg**	**19 58 00.2**	**+1.6**
VLX	**Vlachokerasia**	**1.41**	**184**	P	**Pb**	**19 57 39.3**	**-0.3**
VLX				S	**Sg**	**19 58 00.2**	**+1.6**
VLX	**Vlachokerasia**	**1.41**	**184**	P	**Pb**	**19 57 39.3**	**-0.3**
LKD2	**Lefkada island**	**1.44**	**271**	P	**Pb**	**19 57 39.8**	**-0.2**
LKD2				S	**Sg**	**19 58 00.1**	**+0.8**
LKD2	**Lefkada island**	**1.44**	**271**	P	**Pb**	**19 57 39.8**	**-0.2**
LKD2				S	**Sg**	**19 58 00.1**	**+0.8**
LKD2	**Lefkada island**	**1.44**	**271**	P	**Pg**	**19 57 41.5**	**+0.8**
KPRO	**Kipourio**	**1.46**	**324**	P	**Pb**	**19 57 40.4**	**-0.1**
KPRO				S	**Sg**	**19 58 00.0**	**-0.2**
KPRO	**Kipourio**	**1.46**	**324**	P	**Pb**	**19 57 40.4**	**-0.1**
KPRO				S	**Sg**	**19 58 00.0**	**-0.2**
KPRO	**Kipourio**	**1.46**	**324**	P	**Pb**	**19 57 40.8**	**+0.3**
PAIG	**Paliouri**	**1.47**	**38**	P	**Pn**	**19 57 39.3**	**-0.4**
PAIG				S	**Sg**	**19 58 01.8**	**+1.4**
PAIG	**Paliouri**	**1.47**	**38**	P	**Pn**	**19 57 39.3**	**-0.4**
PAIG				S	**Sg**	**19 58 01.8**	**+1.4**
PAIG	**Paliouri**	**1.47**	**38**	P	**Pn**	**19 57 38.3**	**-1.4**
KRND	**KRANIDI**	**1.49**	**159**	P	**Pn**	**19 57 40.2**	**+0.2**
KRND				S	**Sg**	**19 58 00.9**	**-0.1**
KRND	**KRANIDI**	**1.49**	**159**	P	**Pn**	**19 57 40.2**	**+0.2**
KRND				S	**Sg**	**19 58 00.9**	**-0.1**
KRND	**KRANIDI**	**1.49**	**159**	P	**Pn**	**19 57 40.0**	**0.0**
KFL	**Anninata**	**1.50**	**244**	P	**Pg**	**19 57 41.9**	**0.0**
KFL	**Anninata**	**1.50**	**244**	P	**Pg**	**19 57 41.9**	**0.0**
JAN	**Janina**	**1.55**	**305**	P	**Pb**	**19 57 41.8**	**-0.1**
JAN	**Janina**	**1.55**	**305**	P	**Pb**	**19 57 41.8**	**-0.1**
VLS	**Valsamata**	**1.61**	**249**	P	**Pb**	**19 57 43.0**	**0.0**
VLS	**Valsamata**	**1.61**	**249**	P	**Pb**	**19 57 43.0**	**0.0**
KZN	**Kozani**	**1.62**	**340**	P	**Pn**	**19 57 42.3**	**+0.4**
KZN				S	**Sg**	**19 58 05.6**	**+0.3**
KZN	**Kozani**	**1.62**	**340**	P	**Pb**	**19 57 43.3**	**+0.1**
KZN				S	**Sg**	**19 58 05.6**	**+0.3**
ITM	**Ithomi**	**1.66**	**196**	P	**Pb**	**19 57 43.4**	**-0.4**
ITM				S	**Sb**	**19 58 05.5**	**+0.7**
ITM	**Ithomi**	**1.66**	**196**	P	**Pb**	**19 57 43.4**	**-0.4**
ITM				S	**Sb**	**19 58 05.5**	**+0.7**
ITM	**Ithomi**	**1.66**	**196**	P	**Pb**	**19 57 43.9**	**0.0**
PLG	**Polygyros**	**1.75**	**25**	P	**Pn**	**19 57 43.3**	**-0.4**
PLG				S	**Sb**	**19 58 07.5**	**0.0**
PLG	**Polygyros**	**1.75**	**25**	P	**Pn**	**19 57 43.3**	**-0.4**
PLG				S	**Sb**	**19 58 07.5**	**0.0**
HORT	**Hortiatis**	**1.87**	**14**	P	**Pn**	**19 57 44.9**	**-0.5**
HORT	**Hortiatis**	**1.87**	**14**	P	**Pn**	**19 57 44.9**	**-0.5**
HORT	**Hortiatis**	**1.87**	**14**	P	**Pn**	**19 57 44.1**	**-1.3**
OUR	**Ouranopolis**	**1.93**	**36**	P	**Pn**	**19 57 46.0**	**-0.1**
OUR				S	**Sb**	**19 58 12.9**	**+0.3**

OUR	Ouranopolis	1.93	36	P	Pn	19 57 46.0	-0.1
OUR				S	Sb	19 58 12.9	+0.3
OUR	Ouranopolis	1.93	36	P	Pn	19 57 45.6	-0.4
PYL	PYLOS	1.97	198	P	Pb	19 57 49.0	-0.2
PYL				S	Sn	19 58 12.0	+0.5
PYL	PYLOS	1.97	198	P	Pb	19 57 49.0	-0.2
PYL				S	Sn	19 58 12.0	+0.5
PYL	PYLOS	1.97	198	P	Pg	19 57 50.2	-0.7
NEST	Nestorio	1.98	326	P	Pb	19 57 48.2	-1.1
NEST				S	Sb	19 58 14.0	0.0
NEST	Nestorio	1.98	326	P	Pb	19 57 48.2	-1.1
NEST				S	Sb	19 58 14.0	0.0
NEST	Nestorio	1.98	326	P	Pb	19 57 49.1	-0.1
VLI	Veliai	2.09	170	P	Pn	19 57 47.9	-0.3
VLI	Veliai	2.09	170	P	Pn	19 57 47.9	-0.3
SOH	Sokhos	2.14	18	P	Pn	19 57 49.4	+0.3
SOH				S	Sb	19 58 17.9	-0.9
SOH	Sokhos	2.14	18	P	Pn	19 57 49.4	+0.3
SOH				S	Sb	19 58 17.9	-0.9
SOH	Sokhos	2.14	18	P	Pn	19 57 49.3	+0.3
FNA	Florina	2.18	337	P	Pn	19 57 50.5	+1.0
FNA				S	Sb	19 58 19.2	-0.6
FNA	Florina	2.18	337	P	Pn	19 57 50.5	+1.0
FNA				S	Sb	19 58 19.2	-0.6
FNA	Florina	2.18	337	P	Pn	19 57 51.0	+1.5
KNT	Kendrikon	2.40	7	P	Pn	19 57 53.2	+0.7
KNT	Kendrikon	2.40	7	P	Pn	19 57 53.2	+0.7
BIA	Bitola	2.41	338	*i* Pn	Pb	19 57 57.8	+1.2
BIA	Bitola	2.41	338	*i* Pn	Pb	19 57 57.8	+1.2
SRS	Serrai	2.48	20	P	Pn	19 57 53.8	+0.1
SRS	Serrai	2.48	20	P	Pn	19 57 53.8	+0.1
VAY	Valandovo	2.54	1	*e*Pn	Pn	19 57 54.6	+0.2
VAY	Valandovo	2.54	1	*e*Pn	Pn	19 57 54.6	+0.2
OHR	Ohrid	2.67	331	*e*Pn	Pn	19 57 58.5	+2.3
OHR	Ohrid	2.67	331	*e*Pn	Pn	19 57 58.5	+2.3
KAVA	Kavala	2.70	34	P	Pn	19 57 54.8	-1.9
APE	Apeiranthos	2.95	125	P	Pn	19 58 00.6	+0.5
APE	Apeiranthos	2.95	125	P	Pn	19 58 00.6	+0.5
VTS	Vitosha	3.84	8	⇑*i*P	Pb	19 58 19.1	-2.1
VTS	Vitosha	3.84	8	⇑*i*P	Pb	19 58 19.1	-2.1
BARS	Barje	4.06	353	*e*Pn	Pn	19 58 16.2	+0.8
DIVS	Divibare	5.63	341	*e*Pn	Pn	19 58 37.9	+0.8
TRUS	Trudelj	5.66	345	*e*Pn	Pn	19 58 38.1	+0.8
MSAB	Monastry St. A	6.65	35	⇑*i*P	Pb	19 59 08.4	-0.4
MSAB	Monastry St. A	6.65	35	⇑*i*P	Pb	19 59 08.4	-0.4
VOIR		6.92	15	⇓*i*P	Pn	19 58 53.1	-1.5
VOIR		6.92	15	⇓*i*P	Pn	19 58 53.1	-1.5
MLR	Muntele Rosu	7.18	20	⇓*i*P	Pn	19 58 54.8	-3.5
MLR	Muntele Rosu	7.18	20	⇓*i*P	Pn	19 58 54.8	-3.5
DOPR	Dopca	7.49	16	⇓*i*P	Pn	19 58 55.3	-7.2
DOPR	Dopca	7.49	16	⇓*i*P	Pn	19 58 55.3	-7.2
PLOR	Plostina	7.71	22	⇑*i*P	Pn	19 59 08.3	+2.9
PLOR	Plostina	7.71	22	⇑*i*P	Pn	19 59 08.3	+2.9
VRI	Vrincioaia	7.74	23	⇓*i*P	Pn	19 59 09.0	+3.1
VRI	Vrincioaia	7.74	23	⇓*i*P	Pn	19 59 09.0	+3.1

*ISCJB **02** 19:58:02.8±1.1, 14°.0N±0°.2×145°.8E±0°.2, h100km, mb3.5/6, Error ellipse: s-maj=29.9km s-min=13.3km az=137.6*
*IDC **02** 19:58:06.3±1.3, 13°.98N×145°.47E, h113km±10km, mb3.2/6, mb1 3.5/6, mb1mx3.2/50, mbtmp3.6/6, Error ellipse: s-maj=36.3km s-min=24.0km az=98.0*
ISC 02 19:58:04.8±1.1**, 14°.1N**±0°.2×**145°.8E**±0°.2**, h100**km**, n8, σ1s52**/9**, mb3.5**/6**, Mariana Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GUMO	Guam	0.97	242	P	Pn	19 58 26.7	+1.8
	728nm,0.3s,baz=71,slow=3.2,SNR=508						
GUMO				S	Sn	19 58 39.7	-0.3
	633nm,0.3s,baz=26,slow=22,SNR=52						
WRA	Warramunga Arr	35.60	199	P	P	20 04 51.8	-1.2
	0.3nm,0.6s,baz=24,slow=9.9,SNR=4.4						
SONM	Songino Array	46.85	324	P	P	20 06 25.3	+0.4
	0.1nm,0.4s,baz=143,slow=6.8,SNR=3.1						
MKAR	Makanchi Array	61.75	316	P	P	20 08 11.8	-1.0
	0.2nm,0.4s,baz=91,slow=9.0,SNR=8.0						
ILAR	Eielson Array	67.78	25	P	P	20 08 52.1	+0.5
	0.4nm,0.4s,baz=251,slow=6.1,SNR=7.5						
YKA	Yellowknife Ar	82.06	28	P	P	20 10 15.1	+1.4
	0.3nm,0.3s,baz=286,slow=5.3,SNR=8.1						
FINES	FINESS Array B	91.10	335	P	P	20 10 55.7	-2.3
	0.7nm,0.6s,baz=94,slow=4.2,SNR=5.2						
TORD	Torodi Ar. Bea	135.30	306	PKP	PKPdf	20 17 14.5	+0.7
	0.1nm,0.4s,baz=114,slow=1.9,SNR=3.4						

NEIC 02 20:09:17.0, 19°.34N×155°.25W, h0km, MD3.6(HVO)**, 4C-5D, After HVO., Hawaiian Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AHA	Ahua	0.03	342	⇑*i*P	Pg	20 09 18.4	+0.7
PWH	Poliokeawe Pal	0.06	155	⇓*i*P	Pg	20 09 19.9	+1.6
HLP	Hilina Pali	0.07	228	⇓*i*P	Pg	20 09 19.8	+1.5
UWE	Uwekahuna	0.09	335	*e*Pg	Pg	20 09 19.9	+1.2
CPK	Cone Peak	0.09	307	⇑*e*P	Pg	20 09 19.8	+1.0
KNHH	Kane Nui o Ham	0.09	65	⇓*e*P	Pg	20 09 19.9	+1.2
DES	Desert	0.13	268	*e*P	Pg	20 09 20.6	+1.2
KAE	Kaena	0.13	114	⇓*e*P	Pg	20 09 21.2	+1.8
HTC	Hot Caves	0.17	233	*e*P	Pg	20 09 21.7	+1.4
AIN	Ainahou	0.20	279	*e*P	Pg	20 09 22.3	+1.5
MLH	Mauna Loa	0.20	321	*e*P	Pg	20 09 22.1	+1.3
WOH	Wood Valley	0.25	249	*e*P	Pg	20 09 23.1	+1.3
HUL	Heiheiahulu	0.27	74	*e*P	Pg	20 09 23.3	+1.1
PLL	Puu Ulaula	0.27	314	⇑*e*P	Pg	20 09 23.4	+1.2
TRH	Trail	0.29	285	⇑*e*P	Pb	20 09 23.9	-1.4
PKL	Puu Kaliu	0.34	70	*e*P	Pg	20 09 24.4	+0.9
WIH	Wilkes Camp	0.34	292	*e*P	Pg	20 09 24.5	+1.0
SWH	Southwest Rift	0.35	289	*e*P	Pg	20 09 24.5	+0.8
MLOA	Mauna Loa Obse	0.36	302	*e*Pg	Pg	20 09 24.9	+1.0
HPO	Honuapo	0.38	228	*e*Pg	Pb	20 09 25.8	-0.8
NGH	National Guard	0.42	31	⇓*e*P	Pb	20 09 26.4	-0.9
POHA	Pohakuloa	0.49	328	*e*Pn	Pg	20 09 27.3	+0.9
KIH	Kanekii	0.51	289	*e*P	Pg	20 09 27.3	+0.5
OVEH	Oceanview Est	0.52	249	*e*P	Pg	20 09 27.9	+0.9
KKU	Keanakolu	0.55	351	*e*P	Pb	20 09 28.9	-0.8
WKH	Waikii	0.64	323	*e*P	Pg	20 09 29.3	0.0
HUH	Hualalai	0.65	302	*e*P	Pg	20 09 30.3	+0.9
KKH	Kailua Kona	0.79	294	*e*Pn	Pg	20 09 28.5	-3.6
HPAH	Hawaii Prepara	0.80	329	*e*Pn	Pg	20 09 25.8	-6.6

*IDC **02** 20:11:34.8±2.9, 37°.93N×142°.51E, h0km, mb3.3/2, mb1 3.7/4, mb1mx3.2/39, mbtmp3.6/4, ML3.1/2, MS2.4/1, Ms1 2.4/1, ms1mx2.1/23, Error ellipse: s-maj=60.3km s-min=36.3km az=65.0*
*ISCJB **02** 20:11:41.6±1.1, 37°.61N±0°.05×141°.88E±0°.10, h30km, mb3.3/2, Error ellipse: s-maj=11.2km s-min=6.9km az=176.2*
*JMA **02** 20:11:44.4±0.1, 37°.67N×141°.73E, h43km±2km, M3.5*
ISC 02 20:11:42.6±1.3**, 37°.61N**±0°.04×**141°.78E**±0°.09**, h30**km**, n10, σ1s09**/15**, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JMM	Marumori	0.82	288	P	Pb	20 11 59.0	+0.7
JMM				S	Sn	20 12 09.4	+0.2
JIO	Ouri	0.91	338	P	Pb	20 11 59.9	+0.1
JIO				S	Sn	20 12 10.7	-0.6
ONAJ	Iwakimizuishiy	0.93	237	P	Pb	20 12 01.0	+0.7
ONAJ				S	Sb	20 12 13.1	+0.8
JFT	Otama	1.15	266	P	Pb	20 12 04.4	+0.5
JOU	Okura	1.16	311	P	Pn	20 12 03.4	+0.6
JOU				S	Sn	20 12 17.7	+0.1
JMK	Ichinoseki	1.41	342	P	Pn	20 12 07.1	+0.9
MJAR	Matsushiro Arr	3.05	251	Pn	Pb	20 12 33.6	-2.5
	1.3nm,0.3s,baz=58,slow=10,SNR=13						
JHJ	Hachijo jima 2	4.77	201	Pn	Pn	20 12 54.1	+1.6
	2.4nm,0.3s,baz=80,slow=15,SNR=2.5						
JHJ				Sn	Sn	20 13 46.0	-0.7
	8.0nm,0.3s,baz=74,slow=19,SNR=1.3						
JHJ				LR	LR	20 14 55.8	
	comp=Z,34nm,18.6s,baz=124,slow=38						
MKAR	Makanchi Array	44.06	302	P	P	20 19 46.7	-1.0
	0.2nm,0.7s,baz=69,slow=8.5,SNR=2.0						
WRA	Warramunga Arr	57.67	188	P	P	20 21 29.9	-0.4
	0.4nm,0.5s,baz=5.5,slow=7.1,SNR=11						

*IDC **02** 20:28:43.7±1.4, 39°.86S×176°.80E, h30km±6km, mb4.0/4, mb1 4.1/5, mb1mx3.8/21, mbtmp4.1/5, ML3.4/1, MS3.8/7, Ms1 3.8/7, ms1mx3.4/30, Error ellipse: s-maj=30.6km s-min=20.4km az=118.0*
*WEL **02** 20:28:44.5±0.1, 39°.87S×176°.92E, h41km±2km, ML4.4/19, Error ellipse: s-maj=1.1km s-min=0.7km az=90.0*
WEL Felt in the Hawke''s Bay region, maximum reported intensity MM 5.
*NEIC **02** 20:28:44.5, 39°.87S×176°.92E, h39km, mb4.5/4, ML4.4(WEL), After WEL.*
NEIC Felt along the east coast of the North Island.
ISC 02 20:28:43.5±0.7**, 39°.87S**±0°.02×**176°.91E**±0°.03**, h31**km±3km**, n226, σ0s96**/232**, mb4.0**/7**, MS3.7**/5**, 19C-15D, North Island**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KAHZ	Kahuranaki	0.08	339	⇑PN	Pn	20 28 49.9	+0.9
KAHZ				SN	Sn	20 28 54.4	+1.7
PXZ	Pawanui	0.17	193	⇓*e*PN	Pn	20 28 51.5	+1.6
PXZ				SN	Sn	20 28 57.5	+3.6
PXZ				AML	AML	20 28 58.6	
CKHZ	Cape Kidnapper	0.24	31	⇑PN	Pn	20 28 52.1	+1.1
CKHZ				SN	Sn	20 28 58.8	+3.1
CKHZ	Cape Kidnapper	0.24	31	P*	Pn	20 28 52.1	+1.1
WPHZ	Waipukurau	0.41	241	⇓PN	Pn	20 28 53.6	+0.3
WPHZ	Waipukurau	0.41	241	P*	Pn	20 28 53.6	+0.3
PRHZ	Porangahau	0.45	208	⇑PN	Pn	20 28 55.1	+1.2
PRHZ				SN	Sn	20 29 04.2	+3.2
PRHZ	Porangahau	0.45	208	P*	Pn	20 28 55.1	+1.2
KRHZ	Kereru	0.47	298	⇑PN	Pb	20 28 52.9	-0.7
PNHZ	Pukenui	0.55	265	PN	Pb	20 28 54.7	-0.1
PNHZ	Pukenui	0.55	265	P*	Pb	20 28 54.7	-0.1
ARHZ	Aropaoanui	0.61	6	⇓PN	Pn	20 28 56.8	+0.9
ARHZ	Aropaoanui	0.61	6	P*	Pn	20 28 56.9	+0.9
ANWZ	Angora Road	0.68	209	PN	Pn	20 28 58.0	+1.1
DVHZ	Dannevirke	0.72	233	⇑PN	Pn	20 28 57.9	+0.5
DVHZ	Dannevirke	0.72	233	Pn	Pn	20 28 58.0	+0.5
BHHZ	Black Hill Sta	0.76	300	⇑PN	Pn	20 28 57.3	-0.8
BHHZ	Black Hill Sta	0.76	300	Pn	Pn	20 28 57.3	-0.8
TSZ	Takapari Road	0.76	255	PN	Pn	20 28 57.9	-0.1
TSZ				AML	AML	20 29 08.7	
TSZ				AML	AML	20 29 09.5	
TSZ	Takapari Road	0.76	255	Pn	Pn	20 28 57.9	-0.1
BKZ	Black Stump Fm	0.77	335	PN	Pn	20 28 58.1	-0.2
BKZ				AML	AML	20 29 09.2	
BKZ				AML	AML	20 29 17.9	
BKZ	Black Stump Fm	0.77	335	*e*Pn	Pn	20 28 58.1	-0.2
BKZ				*e*Sn	Sb	20 29 07.9	-0.8
BKZ				*e*Sn	Sn	20 29 09.2	+0.4
WHHZ	Waihua	0.83	18	PN	Pb	20 28 59.7	+0.3
RAHZ	Arahi	0.96	8	⇓PN	Pb	20 29 01.5	-0.1
RAHZ	Arahi	0.96	8	Pn	Pb	20 29 01.5	-0.1
BFZ	Birch Farm	0.96	212	⇓PN	Pb	20 29 01.4	-0.2
BFZ				AML	AML	20 29 36.8	
BFZ				AML	AML	20 29 41.6	
BFZ	Birch Farm	0.96	212	*e*Pn	Pb	20 29 01.6	0.0
PRWZ	Pori Road	1.00	226	⇑PN	Pb	20 29 02.2	0.0
PRWZ	Pori Road	1.00	226	Pn	Pb	20 29 02.2	0.0
MOVZ	Moawhango	1.01	297	⇑PN	Pn	20 29 01.5	0.0
POWZ	Post Office Ro	1.02	239	PN	Pb	20 29 02.4	-0.2
POWZ	Post Office Ro	1.02	239	Pn	Pb	20 29 02.5	-0.2
KNZ	Kokohu	1.03	35	PN	Pb	20 29 02.2	-0.5
KNZ				AML	AML	20 29 37.2	
KNZ				AML	AML	20 29 41.9	
KNZ	Kokohu	1.03	35	*e*Pn	Pb	20 29 02.2	-0.5
MHGZ	Mahia Peninsul	1.05	47	⇓PN	Pb	20 29 02.9	-0.2
MHGZ	Mahia Peninsul	1.05	47	Pn	Pb	20 29 02.9	-0.2
MRHZ	Matea Rd	1.10	339	⇑PN	Pn	20 29 03.2	+0.4
SNGZ	Shannon Statio	1.13	17	⇓PN	Pb	20 29 03.8	-0.7
SNGZ	Shannon Statio	1.13	17	Pn	Pb	20 29 03.8	-0.7
TUVZ	Tukino	1.14	301	PN	Pn	20 29 04.1	+0.7
WNVZ	Wahianoa	1.15	298	⇑PN	Pn	20 29 03.9	+0.4
WNVZ	Wahianoa	1.15	298	*e*Pn	Pn	20 29 03.9	+0.4
HATZ	Hinemaiaia	1.16	327	⇑PN	Pn	20 29 04.0	+0.4
HATZ	Hinemaiaia	1.16	327	Pn	Pn	20 29 04.0	+0.4
CPWZ	Castlepoint	1.18	207	PN	Pb	20 29 04.6	-0.6
CPWZ	Castlepoint	1.18	207	Pn	Pb	20 29 04.6	-0.6
WHVZ	Whangaehu Hut	1.18	299	PN	Pn	20 29 04.7	+0.7
OTVZ	Oturere	1.19	306	PN	Pn	20 29 04.9	+0.8
OTVZ	Oturere	1.19	306	*e*Pn	Pn	20 29 04.5	+0.4
TRVZ	Turoa	1.20	298	PN	Pn	20 29 05.1	+0.8
TRVZ	Turoa	1.20	298	*e*Pn	Pn	20 29 05.1	+0.8
DRZ	Dome Shelter	1.20	299	PN	Pn	20 29 05.1	+0.7
TIWZ	Tintock	1.20	221	PN	Pb	20 29 04.7	-1.0
TIWZ				AML	AML	20 29 35.2	
TIWZ				AML	AML	20 29 41.8	
TIWZ	Tintock	1.20	221	Pn	Pb	20 29 04.7	-1.0
PRGZ	Paritu Road	1.21	39	⇓PN	Pb	20 29 04.7	-1.0
PRGZ	Paritu Road	1.21	39	Pn	Pb	20 29 04.7	-1.0
MTVZ	Mangateitei	1.21	293	PN	Pn	20 29 05.1	+0.8
MTVZ	Mangateitei	1.21	293	*e*Pn	Pn	20 29 05.1	+0.8
FWVZ	Far West T-bar	1.22	300	PN	Pn	20 29 05.2	+0.7
FWVZ	Far West T-bar	1.22	300	*e*Pn	Pn	20 29 04.7	+0.1
NGZ	Ngauruhoe	1.23	304	PN	Pn	20 29 05.4	+0.8
KRVZ	Karewarewa	1.25	308	PN	Pn	20 29 05.6	+0.7
KRVZ	Karewarewa	1.25	308	Pn	Pn	20 29 05.2	+0.2
WTVZ	West Tongariro	1.27	306	PN	Pn	20 29 05.9	+0.7
MRZ	Mangatainoka R	1.29	232	⇑PN	Pn	20 29 05.4	0.0
MRZ				AML	AML	20 29 26.7	
MRZ				AML	AML	20 29 41.1	
MRZ	Mangatainoka R	1.29	232	*e*Pn	Pn	20 29 05.4	0.0
MRZ				*e*Sn	Sb	20 29 26.6	+3.2
KATZ	Kakaramea	1.30	313	PN	Pn	20 29 05.9	+0.4
KATZ	Kakaramea	1.30	313	*e*Pn	Pn	20 29 06.0	+0.4
RIGZ	Rimuhau	1.33	30	⇑PN	Pn	20 29 06.5	+0.5
RATZ	Rangitukua	1.33	318	⇓PN	Pn	20 29 06.4	+0.4
RATZ	Rangitukua	1.33	318	Pn	Pn	20 29 06.4	+0.4
PKVZ	Pokaka	1.34	295	PN	Pb	20 29 07.6	-0.5
PKVZ	Pokaka	1.34	295	Pn	Pn	20 29 07.1	+1.0
ALRZ	Allen Road	1.38	341	PN	Pn	20 29 06.9	+0.3
ALRZ	Allen Road	1.38	341	Pn	Pn	20 29 06.9	+0.3
TWVZ	Taurewa	1.39	304	PN	Pn	20 29 07.2	+0.4
WHTZ	Whakaora	1.41	328	PN	Pn	20 29 07.6	+0.5
WHTZ	Whakaora	1.41	328	*e*Pn	Pn	20 29 07.6	+0.5
RAGZ	Rawiri	1.42	16	⇓PN	Pn	20 29 07.6	+0.4
RAGZ	Rawiri	1.42	16	Pn	Pn	20 29 07.6	+0.4
PRRZ	Plateau Road	1.42	343	⇓PN	Pn	20 29 07.7	+0.5
PRRZ	Plateau Road	1.42	343	Pn	Pn	20 29 07.7	+0.5
TMWZ	Te Maipa	1.46	212	PN	Pn	20 29 07.7	-0.1
TMWZ	Te Maipa	1.46	212	Pn	Pn	20 29 07.7	-0.1
WPRZ	Whakapapatarin	1.47	336	PN	Pn	20 29 08.0	+0.2
WPRZ	Whakapapatarin	1.47	336	Pn	Pn	20 29 08.0	+0.2
WATZ	Wairara	1.48	321	PN	Pn	20 29 07.8	-0.1
WATZ	Wairara	1.48	321	*e*Pn	Pn	20 29 07.8	-0.1
HOWZ	Holdsworth Sta	1.48	226	PN	Pn	20 29 07.8	-0.2
HOWZ	Holdsworth Sta	1.48	226	Pn	Pn	20 29 07.8	-0.2
WAZ	Wanganui	1.49	274	⇑PN	Pn	20 29 09.3	+1.2
WAZ	Wanganui	1.49	274	Pn	Pn	20 29 09.3	+1.2
HRRZ	Handcock Road	1.55	341	PN	Pn	20 29 09.5	+0.5
HRRZ	Handcock Road	1.55	341	Pn	Pn	20 29 09.6	+0.5
RRRZ	Republican Roa	1.56	348	⇓PN	Pn	20 29 09.3	+0.3
RRRZ	Republican Roa	1.56	348	Pn	Pn	20 29 09.3	+0.3
TKGZ	Te Karaka	1.60	27	⇑PN	Pn	20 29 09.7	+0.2
TKGZ	Te Karaka	1.60	27	Pn	Pn	20 29 09.8	+0.2
MWZ	Matawai	1.60	18	PN	Pn	20 29 09.7	0.0
MWZ				AML	AML	20 29 50.8	
MWZ				AML	AML	20 29 51.2	
MWZ	Matawai	1.60	18	*e*Pn	Pn	20 29 09.7	0.0
URZ	Urewera	1.61	6	Pn	Pn	20 29 09.8	0.0
	68nm,0.3s,baz=239,slow=5.8,SNR=187						
URZ				Sn	Sn	20 29 29.4	-0.1
	223nm,0.3s,baz=70,slow=18,SNR=14						
URZ				LR	LR	20 29 49.8	
	comp=Z,547nm,21.5s,baz=175,slow=41						
URZ	Urewera	1.61	6	⇓PN	Pn	20 29 09.8	0.0
URZ				AML	AML	20 29 53.0	
URZ				AML	AML	20 29 55.4	
URZ	Urewera	1.61	6	*e*Pn	Pn	20 29 09.7	-0.1
KUTZ	Kaahu Road	1.61	328	⇑PN	Pn	20 29 09.8	0.0
KUTZ	Kaahu Road	1.61	328	Pn	Pn	20 29 09.8	0.0
OGWZ	Otaki Gorge	1.64	234	PN	Pn	20 29 09.8	-0.3
OGWZ	Otaki Gorge	1.64	234	Pn	Pn	20 29 09.8	-0.3
HSRZ	Hossack Road	1.64	341	⇓PN	Pn	20 29 10.5	+0.3
TARZ	Mount Tarawera	1.66	349	⇑PN	Pn	20 29 11.0	+0.5
TARZ	Mount Tarawera	1.66	349	Pn	Pn	20 29 11.0	+0.5
MTW	Mount Morrison	1.68	219	PN	Pn	20 29 10.0	-0.7
MTW				AML	AML	20 29 50.5	
MTW				AML	AML	20 29 53.8	
CNGZ	Carnagh Statio	1.71	36	PN	Pn	20 29 11.4	+0.3
CNGZ	Carnagh Statio	1.71	36	Pn	Pn	20 29 11.4	+0.3
EDRZ	Edgecumbe	1.76	356	PN	Pn	20 29 12.1	+0.2
EDRZ	Edgecumbe	1.76	356	Pn	Pn	20 29 12.1	+0.2
TRWZ	Traveller	1.79	211	PN	Pn	20 29 11.5	-0.7
TRWZ				AML	AML	20 29 56.6	
TRWZ				AML	AML	20 29 57.4	
TRWZ	Traveller	1.79	211	*e*Pn	Pn	20 29 11.5	-0.7
OMRZ	Omania	1.81	346	PN	Pn	20 29 12.5	0.0
OMRZ	Omania	1.81	346	Pn	Pn	20 29 12.5	0.0
VRZ	Vera Road	1.82	293	PN	Pn	20 29 13.6	+0.9
VRZ	Vera Road	1.82	293	Pn	Pn	20 29 13.6	+0.9
KIW	Kapiti Island	1.82	236	PN	Pn	20 29 12.9	+0.2
KIW				AML	AML	20 29 54.4	
KIW				AML	AML	20 29 56.4	
KIW	Kapiti Island	1.82	236	*e*Pn	Pn	20 29 12.9	+0.2
TLZ	Tolley Road	1.87	325	PN	Pn	20 29 12.9	-0.4
TLZ	Tolley Road	1.87	325	Pn	Pn	20 29 12.9	-0.4
CAW	Cannon Point	1.88	228	PN	Pn	20 29 13.0	-0.4
CAW				AML	AML	20 29 49.2	
CAW				AML	AML	20 29 51.5	
CAW	Cannon Point	1.88	228	*e*Pn	Pn	20 29 13.0	-0.4
TWGZ	Tauwhareparae	1.88	27	PN	Pn	20 29 13.6	+0.1
TWGZ	Tauwhareparae	1.88	27	Pn	Pn	20 29 13.6	+0.1
MARZ	Manawahe	1.89	354	Pn	Pn	20 29 14.1	+0.5
PAWZ	Paruwai Farm	1.89	216	PN	Pn	20 29 13.1	-0.6
PAWZ				AML	AML	20 29 54.6	
PAWZ				AML	AML	20 30 17.1	
PAWZ	Paruwai Farm	1.89	216	*e*Pn	Pn	20 29 13.1	-0.6
KARZ	Kaharoa	1.92	344	PN	Pn	20 29 13.9	-0.1
LREZ	Lake Rotokare	1.98	281	PN	Pn	20 29 16.5	+1.7
MSWZ	Moikau Station	2.00	219	PN	Pn	20 29 13.9	-1.3
MSWZ				AML	AML	20 29 41.4	
MSWZ				AML	AML	20 30 08.7	
MSWZ	Moikau Station	2.00	219	Pn	Pn	20 29 13.9	-1.3
OPRZ	Ohinepanea	2.04	352	PN	Pn	20 29 15.2	-0.4
OPRZ	Ohinepanea	2.04	352	Pn	Pn	20 29 15.2	-0.4
PUZ	Puketiti	2.08	31	PN	Pn	20 29 15.8	-0.3
PUZ				AML	AML	20 30 19.1	
PUZ				AML	AML	20 30 22.2	
PUZ	Puketiti	2.08	31	Pn	Pn	20 29 15.8	-0.3
HIZ	Hauiti	2.09	310	PN	Pn	20 29 16.7	+0.4
PLWZ	Palliser	2.12	216	PN	Pn	20 29 15.5	-1.3
PLWZ	Palliser	2.12	216	Pn	Pn	20 29 15.5	-1.3
MHEZ	Mangahewa	2.15	291	PN	Pb	20 29 20.3	-1.5
KMRZ	Kaimai	2.16	339	PN	Pn	20 29 17.2	0.0
WEL	Wellington	2.16	228	PN	Pn	20 29 17.2	-0.1
WEL	Wellington	2.16	228	Pn	Pn	20 29 17.2	-0.1
PKGZ	Pakihiroa	2.17	25	⇑PN	Pn	20 29 17.6	+0.1
BHW	Baring Head	2.19	225	PN	Pn	20 29 16.6	-1.1
BHW				AML	AML	20 29 59.4	
BHW				AML	AML	20 30 17.4	
PREZ	Palmer Road	2.19	283	PN	Pn	20 29 19.5	+1.8
PREZ	Palmer Road	2.19	283	Pn	Pn	20 29 19.6	+1.8
DREZ	Durham Road	2.20	287	PN	Pn	20 29 20.5	+2.6
DREZ	Durham Road	2.20	287	Pn	Pn	20 29 20.5	+2.6
HAZ	Te Kaha	2.21	18	PN	Pn	20 29 18.2	+0.2
SNZO	South Karori	2.21	229	*e*Pn	Pn	20 29 17.5	-0.6
NEZ	North Egmont	2.26	284	PN	Pn	20 29 20.9	+2.2
NEZ	North Egmont	2.26	284	Pn	Pn	20 29 20.9	+2.2
KHEZ	Kahui Hut	2.31	283	PN	Pn	20 29 21.7	+2.3
KHEZ	Kahui Hut	2.31	283	Pn	Pn	20 29 21.7	+2.3
WMGZ	Waiomatatini S	2.36	30	PN	Pn	20 29 19.6	-0.4
PKE	Pukeiti	2.36	286	PN	Pn	20 29 21.8	+1.8
NMEZ	Namu Road	2.39	280	PN	Pn	20 29 22.3	+1.9
NMEZ	Namu Road	2.39	280	Pn	Pn	20 29 22.3	+1.9
TOZ	Tahuroa Road	2.40	332	PN	Pn	20 29 20.3	-0.3
TCW	Tory Channel	2.42	235	Pn	Pn	20 29 20.0	-0.8
TCW				*e*Lg	Lg	20 30 12.1	
MXZ	Matakaoa Point	2.55	26	PN	Pn	20 29 22.5	0.0
MXZ				AML	AML	20 30 33.6	
MXZ				AML	AML	20 30 33.6	
MXZ				AML	AML	20 30 36.4	
MXZ	Matakaoa Point	2.55	26	*e*Pn	Pn	20 29 22.6	0.0
TUWZ	Tuamarina	2.75	234	PN	Pn	20 29 23.9	-1.4
TUWZ				AML	AML	20 30 19.0	
TUWZ				AML	AML	20 30 32.3	
TUWZ	Tuamarina	2.75	234	*e*Pn	Pn	20 29 23.9	-1.4
TUWZ				*e*Lg	Lg	20 30 19.0	
BSWZ	Blackbirch Sta	2.95	230	Pn	Pn	20 29 27.6	-0.6
NNZ	Nelson	3.01	242	PN	Pn	20 29 28.6	-0.4
NNZ	Nelson	3.01	242	Pn	Pn	20 29 28.6	-0.4
MKAZ	Moumakai	3.08	333	PN	Pn	20 29 30.7	+0.7
MKAZ	Moumakai	3.08	333	*e*Pn	Pn	20 29 30.3	+0.3
ETAZ	East Tamaki Re	3.30	331	PN	Pn	20 29 33.8	+0.8
WIAZ	Waiheke Island	3.37	335	PN	Pn	20 29 34.6	+0.6
QRZ	Quartz Range	3.48	253	⇓PN	Pn	20 29 34.1	-1.4
THZ	Tophouse	3.58	237	PN	Pn	20 29 35.6	-1.3
THZ	Tophouse	3.58	237	*e*Pn	Pn	20 29 35.4	-1.5
KHZ	Kahutara	3.60	224	PN	Pn	20 29 35.1	-2.0
KHZ	Kahutara	3.60	224	*e*Pn	Pn	20 29 34.9	-2.2
ABAZ	Army Bay	3.65	333	PN	Pn	20 29 38.7	+0.9
ABAZ	Army Bay	3.65	333	Pn	Pn	20 29 38.7	+0.9
GRZ	Great Barrier	3.79	342	⇑PN	Pn	20 29 40.2	+0.5
DSZ	Denniston Nort	4.31	243	PN	Pn	20 29 46.1	-0.7
LTZ	Lake Taylor	4.55	229	PN	Pn	20 29 49.9	-0.3
LTZ	Lake Taylor	4.55	229	*e*Pn	Pn	20 29 48.0	-2.2
CRLZ	Canterbury Las	4.90	220	PN	Pn	20 29 53.7	-1.3
MQZ	McQueen's Vall	4.99	218	PN	Pn	20 29 52.7	-3.4
INZ	Inchbonnie	5.01	234	PN	Pn	20 29 54.4	-2.1
OUZ	Omahuta	5.33	329	*e*Pn	Pn	20 30 01.6	+0.6
WVZ	Waitaha Valley	5.64	233	PN	Pn	20 30 04.1	-0.9
WVZ	Waitaha Valley	5.64	233	Pn	Pn	20 30 04.1	-0.9
RPZ	Rata Peaks	5.83	227	Pn	Pn	20 30 06.2	-1.5
	1.1nm,0.3s,baz=219,slow=4.5,SNR=3.0						
RPZ				Sn	Sn	20 31 07.1	-6.4
	8.9nm,0.3s,baz=137,slow=23,SNR=21						
RPZ				LR	LR	20 33 03.7	
	comp=Z,700nm,18.6s,baz=44,slow=45						
RPZ	Rata Peaks	5.83	227	*e*Pn	Pn	20 30 06.2	-1.5
RPZ				*e*Pg		20 30 28.4	
RPZ				*e*Sn	Sn	20 31 07.1	-6.4
CTZ	Chatham Island	6.19	131	Pn	Pb	20 30 21.8	-8.6
FOZ	Fox Glacier	6.45	233	*e*Pn	Pn	20 30 16.8	+0.5
LBZ	Lake Benmore	6.74	226	PN	Pn	20 30 18.2	-2.0
LBZ	Lake Benmore	6.74	226	*e*Pn	Pn	20 30 19.8	-0.4
ODZ	Otahua Downs	6.95	220	PN	Pn	20 30 22.1	-0.9
ODZ	Otahua Downs	6.95	220	*e*Pn	Pn	20 30 22.3	-0.7
HHSZ	Highcliff Hill	7.59	216	PN	Pn	20 30 31.6	-0.3
WKZ	Wanaka	7.66	227	*e*Pn	Pn	20 30 32.0	-1.0
TUZ	Tuapeka	8.10	219	PN	Pn	20 30 38.6	-0.2
TUZ	Tuapeka	8.10	219	Pn	Pn	20 30 38.6	-0.2
MLZ	Mavora Lakes	8.50	227	*e*Pn	Pn	20 30 44.2	-0.2
WHZ	Wether Hill Ro	8.92	225	*e*Pn	Pn	20 30 49.7	-0.4
DZM	Mont Dzumac	19.85	330	LR	LR	20 40 13.0	
	comp=Z,322nm,19.0s,baz=166,slow=35						
STKA	Stephens Creek	29.56	275	P	P	20 34 45.3	-0.1
	2.1nm,0.6s,baz=113,slow=12,SNR=6.1						
STKA				LR	LR	20 45 52.4	
	comp=Z,178nm,19.5s,baz=46,slow=35						
STKA	Stephens Creek	29.56	275	*e*P	P	20 34 45.3	-0.1
	1.4nm,0.9s						
COEN	Coen	39.25	302	*e*P	P	20 36 09.2	0.0
	49nm,1.5s						
AS01	Alice Springs	39.53	281	*e*P	P	20 36 11.4	-0.2
AS31	Alice Springs	39.57	281	*e*P	P	20 36 11.3	-0.6
	2.1nm,0.9s						
ASAR	Alice Springs	39.57	281	P	P	20 36 11.5	-0.4
	2.3nm,0.8s,baz=122,slow=7.4,SNR=19						
ASAR				pP	pP	20 36 20.4	-0.7
	5.2nm,0.8s,baz=134,slow=9.7,SNR=22						
ASAR				LR	LR	20 52 43.7	
	comp=Z,109nm,19.8s,baz=120,slow=36						
PMG	Port Moresby	40.27	311	LR	LR	20 52 03.0	
	comp=Z,153nm,19.4s,baz=120,slow=35						
WB2	Warramunga Arr	41.43	286	*e*P	P	20 36 26.5	-0.7
	70nm,2.0s						
WR1	Warramunga Arr	41.44	286	*e*P	P	20 36 26.9	-0.5
WR1				*e*pP	pP	20 36 35.8	-0.8
WRA	Warramunga Arr	41.44	286	P	P	20 36 26.9	-0.5
	1.9nm,0.6s,baz=126,slow=7.8,SNR=33						
WRA				pP	pP	20 36 35.8	-0.9
	5.2nm,0.7s,baz=128,slow=7.5,SNR=19						
FITZ	Fitzroy Crossi	49.07	281	LR	LR	20 57 59.1	
	comp=Z,115nm,19.3s,slow=36						
QSPA	South Pole Qui	50.26	180	*e*P	P	20 37 39.5	+2.9
CMAR	Chiang Mai Arr	92.79	292	P	P	20 41 52.5	-0.5
	0.2nm,0.3s,baz=125,slow=5.8,SNR=4.1						
CMAR				pP	pP	20 42 03.0	0.0
	0.6nm,0.7s,baz=182,slow=1.8,SNR=2.6						
CMAR				LR	LR	21 25 55.2	
	comp=Z,19nm,20.6s,baz=183,slow=37						
MKAR	Makanchi Array	120.43	307	PKP	PKPdf	20 47 32.1	+0.9

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
	0.2nm,0.7s,baz=116,slow=3.4,SNR=3.9						
ARCES	**ARCESS Array B**	**146.65**	**342**	PKPbc	**PKPbc**	**20 48 21.0**	**+0.2**
	4.4nm,0.9s,baz=38,slow=2.2,SNR=9.2						
BRTR	**Keskin Array B**	**151.91**	**282**	PKPbc	**PKPbc**	**20 48 33.7**	**-1.5**
	1.7nm,0.9s,baz=158,slow=5.3,SNR=7.2						
FINES	**FINESS Array B**	**151.99**	**330**	PKPbc	**PKPbc**	**20 48 33.6**	**-0.8**
	2.3nm,0.9s,baz=15,slow=7.9,SNR=4.8						
TORD	**Torodi Ar. Bea**	**153.05**	**190**	PKPbc	**PKPbc**	**20 48 39.5**	**+1.2**
	1.0nm,0.9s,baz=194,slow=1.6,SNR=4.9						
TORD				PKPab	**PKPab**	**20 48 49.0**	**-0.6**
	0.6nm,0.5s,baz=158,slow=2.9,SNR=9.2						

*IDC **02** 20:52:24.5±1.9, 37.46N×141.25E, h0km, mb3.2/2, mb1 3.4/2, mb1mx3.1/42, mbtmp3.2/2, MS2.5/1, Ms1 2.5/1, ms1mx1.9/22, Error ellipse: s-maj=36.9km s-min=22.9km az=166.0*
*JMA **02** 20:52:28.9±0.1, 37.38N×141.38E, h29km±2km, M3.3*
JMA Felt I J1.
ISC 02 20:52:25.1±3.2**, 37.36N**±0.06×**141.6E**±0.1**, h5**km±20km**, n11, σ1.14**/14**, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.67**	**247**	P	**Pb**	**20 52 39.5**	**+0.3**
ONAJ				S	**Sg**	**20 52 47.0**	**+0.5**
JMM	**Marumori**	**0.79**	**310**	P	**Pb**	**20 52 41.4**	**+0.1**
JMM				eS	**Sg**	**20 52 50.5**	**-0.1**
JFT	**Otama**	**0.99**	**279**	P	**Pb**	**20 52 45.0**	**+0.3**
JFT				S	**Sg**	**20 52 56.3**	**-0.6**
JHO	**Hitachi**	**1.09**	**227**	eS	**Sg**	**20 52 58.4**	**-1.8**
JIO	**Ouri**	**1.10**	**351**	P	**Pb**	**20 52 47.1**	**+0.5**
JIO				S	**Sg**	**20 53 00.1**	**-0.4**
JOU	**Okura**	**1.23**	**325**	P	**Pb**	**20 52 49.1**	**+0.3**
JOU				S	**Sg**	**20 53 04.2**	**-0.4**
MJAR	**Matsushiro Arr**	**2.81**	**254**	Pg	**Pn**	**20 53 12.4**	**+1.8**
	2.0nm,0.3s,baz=76,slow=16,SNR=16						
MJAR				Lg	Lg	20 53 45.7	
	3.0nm,0.3s,baz=80,slow=30,SNR=7.8						
MAT	**Matsushiro**	**2.81**	**254**	P	Pn	20 53 04.7	-6.0
MAT				S	Sn	20 53 10.2	-35
JAY	**Jayapura**	**39.68**	**181**	LR	LR	21 14 43.0	
	comp=Z,6.7nm,21.1s,baz=15,slow=34						
MKAR	**Makanchi Array**	**44.05**	**302**	P	**P**	**21 00 31.6**	**-2.1**
	0.2nm,0.8s,baz=87,slow=9.1,SNR=2.4						
WRA	**Warramunga Arr**	**57.40**	**188**	P	**P**	**21 02 15.2**	**+0.6**
	0.4nm,0.8s,baz=9.6,slow=7.2,SNR=3.1						

*NIED **02** 20:57:00, 39.10N×142.40E, h56km, Mw4.0 Best double couple: M0 1.27000×10^15 NP1:φs256.00000°, δ53.00000°, λ-164.00000°. NP2:φs156.00000°, δ77.00000°, λ-38.00000°.*
*IDC **02** 20:57:44.5±2.2, 39.23N×143.17E, h0km, mb3.6/5, mb1 3.8/8, mb1mx3.5/54, mbtmp3.7/8, ML3.4/2, MS2.9/5, Ms1 2.9/5, ms1mx2.6/45, Error ellipse: s-maj=57.3km s-min=21.7km az=67.0*
*ISCJB **02** 20:57:49.3±1.0, 39.10N±0.06×142.7E±0.1, h35km, mb3.4/5, MS2.9/2, Error ellipse: s-maj=12.9km s-min=8.1km az=171.9*
*JMA **02** 20:57:51.9±0.1, 39.09N×142.42E, h37km±1km, M3.7*
ISC 02 20:57:51.3±1.4**, 39.10N**±0.06×**142.6E**±0.1**, h35**km**, n24, σ1.66**/16**, mb3.5**/5**, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**0.72**	**269**	P	**Pn**	**20 58 03.6**	**-1.4**
MIYJ	**Miyakonagasawa**	**0.77**	**308**	P	**Pn**	**20 58 04.8**	**-0.8**
MIYJ				S	**Sn**	**20 58 14.3**	**-1.6**
JOM	**Ohasama**	**1.08**	**290**	P	**Pn**	**20 58 09.3**	**-0.6**
JMK	**Ichinoseki**	**1.08**	**262**	P	**Pn**	**20 58 08.9**	**-1.0**
JKZ	**Kuzumaki**	**1.32**	**312**	P	**Pn**	**20 58 13.6**	**+0.4**
JANG	**Nango**	**1.52**	**327**	P	**Pn**	**20 58 16.7**	**+0.8**
MJAR	**Matsushiro Arr**	**4.32**	**235**	Pn	Pn	20 58 57.3	+2.9
	1.4nm,0.3s,baz=36,slow=12,SNR=26						
MAT	**Matsushiro**	**4.32**	**235**	P	**Pn**	**20 58 57.1**	**+2.7**
MAT				eS	**Sn**	**20 59 46.0**	**+2.5**
JHJ	**Hachijo jima 2**	**6.39**	**202**	Pn	**Pn**	**20 59 22.7**	**-0.2**
	2.5nm,0.3s,baz=108,slow=2.7,SNR=2.0						
JHJ				Sn	**Sn**	**21 00 30.9**	**-3.7**
	4.2nm,0.3s,baz=251,slow=19,SNR=2.3						
USRK	**Ussuriysk Ar.**	**9.43**	**306**	Pn	Pn	21 00 07.5	+3.0
	0.1nm,0.3s,baz=121,slow=14,SNR=5.4						
USRK				LR	LR	21 03 35.9	
	comp=Z,94nm,20.6s,baz=63,slow=36						
KSRS	**Korea Array**	**11.65**	**266**	LR	LR	21 04 06.0	
	comp=Z,32nm,21.7s,baz=135,slow=31						
KLR	**Kul'dur**	**12.76**	**326**	LR	LR	21 05 22.7	
	comp=Z,41nm,21.9s,baz=118,slow=36						
SONM	**Songino Array**	**27.48**	**300**	P	**P**	**21 03 34.8**	**+0.6**
	0.2nm,0.6s,baz=93,slow=9.7,SNR=2.8						
SONM				LR	LR	21 14 45.0	
	comp=Z,32nm,18.2s,baz=145,slow=37						
H11N2	**WAKE ISLAND Hy**	**28.50**	**126**	T	T	21 34 11.6	
	baz=317,slow=75,SNR=26						
H11N1	**WAKE ISLAND Hy**	**28.51**	**126**	T	T	21 34 11.5	
	baz=317,slow=75,SNR=17						
H11N3	**WAKE ISLAND Hy**	**28.51**	**126**	T	T	21 34 16.3	
	baz=317,slow=75,SNR=24						
H11S1	**WAKE ISLAND Hy**	**29.29**	**128**	T	T	21 35 12.9	
	baz=318,slow=76,SNR=4.1						
H11S3	**WAKE ISLAND Hy**	**29.29**	**128**	T	T	21 35 09.7	
	baz=318,slow=76,SNR=8.8						
H11S2	**WAKE ISLAND Hy**	**29.30**	**128**	T	T	21 35 13.5	
	baz=318,slow=76,SNR=5.6						
TLY	**Talaya**	**29.74**	**308**	LR	LR	21 15 00.2	
	comp=Z,26nm,21.5s,baz=96,slow=34						
ZALV	**Zalesovo Beam**	**41.25**	**311**	P	**P**	**21 05 32.4**	**-0.3**
	0.4nm,0.4s,baz=96,slow=10,SNR=2.3						
MKAR	**Makanchi Array**	**43.84**	**300**	P	**P**	**21 05 54.5**	**+0.6**
	0.5nm,0.7s,baz=84,slow=9.7,SNR=7.0						
WRA	**Warramunga Arr**	**59.24**	**189**	P	**P**	**21 07 48.8**	**-0.3**
	0.6nm,0.5s,baz=6.0,slow=7.0,SNR=9.4						
ASAR	**Alice Springs**	**62.97**	**189**	P	**P**	**21 08 14.7**	**+0.4**
	0.4nm,0.8s,baz=8.8,slow=5.1,SNR=5.0						

*IDC **02** 21:21:41.2±1.6, 37.57N×144.61E, h0km, mb3.7/2, mb1 4.0/4, mb1mx3.4/50, mbtmp3.9/4, ML3.6/2, Error ellipse: s-maj=54.3km s-min=26.9km az=130.0*
*ISCJB **02** 21:21:44.5±0.9, 37.78N±0.06×144.43E±0.07, h33km, mb3.9/2, Error ellipse: s-maj=8.6km s-min=7.4km az=42.9*
*JMA **02** 21:21:45.6±0.3, 37.83N×144.29E, h26km, M3.8*
ISC 02 21:21:45.9±1.3**, 37.73N**±0.06×**144.37E**±0.10**, h35**km**, n19, σ1.91**/29**, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
JIO	**Ouri**	**2.49**	**288**	P	**Pn**	**21 22 24.3**	**+0.4**
JIO				S	**Sn**	**21 22 53.2**	**+0.1**
OFUJ	**Ofunato**	**2.52**	**303**	P	**Pn**	**21 22 24.7**	**+0.4**
JMK	**Ichinoseki**	**2.76**	**297**	P	**Pn**	**21 22 28.2**	**+0.6**
JMK				eS	**Sn**	**21 22 59.5**	**-0.3**
JMM	**Marumori**	**2.83**	**274**	P	**Pn**	**21 22 29.2**	**+0.5**
JMM				eS	**Sn**	**21 23 01.8**	**+0.2**
JTH	**Tanohata**	**2.95**	**319**	P	**Pn**	**21 22 31.8**	**+1.5**
JTH				eS	**Sn**	**21 23 03.6**	**-0.9**
JOM	**Ohasama**	**2.98**	**307**	P	**Pn**	**21 22 31.6**	**+1.0**
JOM				eS	**Sn**	**21 23 05.7**	**+0.7**
JOU	**Okura**	**2.99**	**283**	P	**Pn**	**21 22 32.6**	**+1.7**
JOU				S	**Sn**	**21 23 06.9**	**+1.4**
JFT	**Otama**	**3.21**	**268**	P	**Pn**	**21 22 35.3**	**+1.5**
JRG	**Rokugo**	**3.37**	**301**	P	**Pn**	**21 22 37.4**	**+1.4**
JRG				S	**Sn**	**21 23 16.0**	**+1.2**
JYK	**Kaneyama**	**3.37**	**292**	P	**Pn**	**21 22 36.6**	**+0.6**
JTM	**Tenmabayashi**	**3.99**	**321**	eS	**Sn**	**21 23 28.1**	**-1.9**
JRY	**Ryogami san**	**4.70**	**250**	P	**Pn**	**21 22 55.1**	**+0.7**
JRY				S	**Sn**	**21 23 46.2**	**-1.5**
JNBK	**Urakawa-nobuka**	**4.71**	**345**	eS	**Sn**	**21 23 45.5**	**-2.4**
JCH	**Churui**	**4.94**	**351**	P	**Pn**	**21 22 56.3**	**-1.3**
JCH				eS	**Sn**	**21 23 48.9**	**-4.7**
MJAR	**Matsushiro Arr**	**5.06**	**258**	Pn	**Pn**	**21 23 00.5**	**+1.2**
	1.7nm,0.3s,baz=81,slow=14,SNR=18						
MAT	**Matsushiro**	**5.06**	**258**	P	**Pn**	**21 23 02.0**	**+2.7**
MAT				eS	Sn	21 23 50.4	-6.2
JHJ	**Hachijo jima 2**	**5.93**	**221**	Pn	**Pn**	**21 23 09.5**	**-1.6**
	5.2nm,0.3s,baz=280,slow=24,SNR=6.3						
JHJ				Sn	**Sn**	**21 24 12.3**	**-5.6**
	7.8nm,0.3s,baz=107,slow=19,SNR=3.3						
ILAR	**Eielson Array**	**47.65**	**33**	P	**P**	**21 30 18.8**	**+0.5**
	0.7nm,0.9s,baz=269,slow=7.8,SNR=5.0						
WRA	**Warramunga Arr**	**58.13**	**191**	P	**P**	**21 31 35.9**	**-0.1**
	1.3nm,0.8s,baz=9.6,slow=7.1,SNR=7.2						

*ISCJB **02** 21:29:28.7±0.6, 18.07S±0.07×168.39E±0.09, h69km, mb4.0/9, Error ellipse: s-maj=12.8km s-min=8.2km az=32.7*
*NEIC **02** 21:29:29.6±0.7, 17.97S×168.35E, h54km±7km, mb4.2/3, Error ellipse: s-maj=10.0km s-min=7.0km az=154.0*
*IDC **02** 21:29:29.3±6.7, 18.03S×168.36E, h51km±63km, mb3.5/5, mb1 3.8/6, mb1mx3.6/37, mbtmp3.9/6, ML4.2/1, MS3.1/1, Ms1 3.1/1, ms1mx2.6/23, Error ellipse: s-maj=54.0km s-min=35.4km az=145.0*
ISC 02 21:29:30.5±0.7**, 18.04S**±0.09×**168.37E**±0.09**, h69**km**, n16, σ0.85**/16**, mb3.9**/9**, Vanuatu Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**4.40**	**204**	P	**Pn**	**21 30 34.5**	**-0.5**
	13nm,0.3s,baz=77,slow=14,SNR=188						
DZM				S	**Sn**	**21 31 24.1**	**-1.0**
	32nm,0.3s,baz=321,slow=23,SNR=20						
MSVF	**Nonsavu**	**9.22**	**90**	ePn	**Pn**	**21 31 40.6**	**-0.2**
	28nm,0.9s						
HNR	**Honiara**	**11.83**	**315**	LR	LR	21 35 40.0	
	comp=Z,94nm,20.8s,baz=204,slow=31						
HNR	**Honiara**	**11.83**	**315**	ePn	**Pn**	**21 32 14.8**	**-1.6**
FUNA	**Funafuti**	**14.15**	**49**	ePn	**Pn**	**21 32 46.8**	**-0.8**
PMG	**Port Moresby**	**22.30**	**290**	eP	**P**	**21 34 22.5**	**+0.1**
	4.3nm,0.7s						
WRA	**Warramunga Arr**	**32.20**	**261**	P	**P**	**21 35 52.2**	**-0.1**
	0.3nm,0.5s,baz=80,slow=6.0,SNR=5.3						
ASAR	**Alice Springs**	**32.64**	**254**	P	**P**	**21 35 57.0**	**+0.8**
	0.9nm,0.7s,baz=84,slow=8.4,SNR=11						
MIDW	**Midway**	**48.01**	**17**	eP	**P**	**21 38 02.7**	**+0.1**
	38nm,0.8s						
MDJ	**Mudanjiang**	**71.68**	**332**	eP	**P**	**21 40 45.1**	**+0.2**
	1.1nm,0.4s						
CMAR	**Chiang Mai Arr**	**77.26**	**294**	P	**P**	**21 41 18.2**	**+0.4**
	0.7nm,0.7s,baz=143,slow=5.1,SNR=7.2						
HIA	**Hailar**	**79.66**	**330**	eP	**P**	**21 41 30.4**	**0.0**
	4.2nm,0.3s						
SONM	**Songino Array**	**85.77**	**323**	P	**P**	**21 42 03.5**	**+1.3**
	1.0nm,0.8s,baz=145,slow=6.5,SNR=6.9						
ILAR	**Eielson Array**	**89.33**	**18**	P	**P**	**21 42 19.6**	**+0.7**
	0.4nm,0.7s,baz=232,slow=6.7,SNR=3.6						
ARCES	**ARCESS Array B**	**123.70**	**345**	PKP	**PKPdf**	**21 48 20.0**	**+0.3**
	3.6nm,0.9s,baz=52,slow=2.0,SNR=4.6						
TORD	**Torodi Ar. Bea**	**166.28**	**251**	PKPab	**PKPab**	**21 50 31.5**	**+1.3**
	0.5nm,0.8s,baz=98,slow=3.8,SNR=3.3						

*IDC **02** 21:29:57.3±1.9, 0.90N×85.40W, h0km, mb3.8/3, mb1 4.1/5, mb1mx3.7/31, mbtmp4.0/5, ML3.5/2, MS3.4/10, Ms1 3.4/10, ms1mx3.2/32, Error ellipse: s-maj=74.3km s-min=24.1km az=58.0*
*ISCJB **02** 21:30:00.4±1.3, 0.9N±0.1×85.3W±0.1, h33km, mb3.8/3, MS3.2/6, Error ellipse: s-maj=22.6km s-min=14.4km az=139.4*
ISC 02 21:30:02.6±1.4**, 0.9N**±0.1×**85.3W**±0.2**, h35**km**, n14, σ0.33**/7**, mb3.8**/3**, MS3.2**/6**, Off coast of Ecuador**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
OTAV	**Otavalo**	**6.91**	**96**	eP	**Pn**	**21 31 41.4**	**-0.4**
FLOC	**Florencia**	**9.69**	**86**	eP	**Pn**	**21 32 19.9**	**+0.2**
ATAH	**Atahualpa**	**10.58**	**139**	Pn	**Pn**	**21 32 32.1**	**-0.1**
	2.6nm,0.3s,baz=357,slow=6.7,SNR=7.5						
ATAH				LR	LR	21 36 08.6	
	comp=Z,273nm,20.2s,baz=317,slow=35						
ROSC	**El Rosal**	**11.66**	**70**	LR	LR	21 37 00.8	
	comp=Z,199nm,19.9s,baz=242,slow=36						
SDV	**Santo Domingo**	**16.63**	**61**	Pn	**Pn**	**21 33 53.6**	**+0.2**
	0.3nm,0.3s,baz=234,slow=9.0,SNR=4.3						
SDV				LR	LR	21 39 48.7	
	comp=Z,182nm,18.9s,baz=252,slow=35						
CMIG	**Matias Romero**	**18.62**	**330**	LR	LR	21 39 53.5	
	comp=Z,128nm,21.7s,baz=174,slow=32						
LPAZ	**La Paz**	**24.09**	**136**	P	**P**	**21 35 15.5**	**-0.3**
	2.0nm,0.7s,baz=316,slow=10,SNR=7.1						
LPAZ				LR	LR	21 43 47.7	
	comp=Z,52nm,18.9s,baz=286,slow=34						
PTGA	**Pitinga**	**25.41**	**94**	LR	LR	21 45 12.2	
	comp=Z,67nm,18.5s,baz=272,slow=36						
SJG	**San Juan**	**25.43**	**47**	LR	LR	21 45 11.1	
	comp=Z,58nm,18.8s,baz=231,slow=36						
SIV	**San Ignacio**	**29.26**	**126**	LR	LR	21 47 54.8	
	comp=Z,78nm,19.1s,baz=3.5,slow=37						
TXAR	**Lajitas Array**	**33.23**	**330**	LR	LR	21 48 24.8	
	comp=Z,30nm,20.2s,baz=0.0,slow=33						
PLCA	**Paso Flores**	**43.59**	**164**	LR	LR	21 52 52.5	
	comp=Z,77nm,18.1s,baz=255,slow=32						
ULM	**Lac du Bonnet**	**49.96**	**351**	P	**P**	**21 38 52.8**	**-0.2**
	2.7nm,0.9s,baz=167,slow=6.6,SNR=4.0						
YKA	**Yellowknife Ar**	**65.22**	**346**	P	**P**	**21 40 40.4**	**+0.2**
	0.3nm,0.6s,baz=139,slow=6.3,SNR=8.9						

*IDC **02** 21:43:47.2±4.1, 5.21S×102.38E, h0km, mb3.5/5, mb1 3.6/5, mb1mx3.5/41, mbtmp3.5/5, Error ellipse: s-maj=175.1km s-min=21.8km az=53.0*
*ISCJB **02** 21:43:50.8±1.2, 5.3S±0.1×102.3E±0.1, h44km, mb3.6/5, Error ellipse: s-maj=18.9km s-min=12.3km az=136.1*
*DJA **02** 21:43:53.7±2.5, 5°S±11°×10°3E±2°2, h22km±19km, M3.5/6, MLv3.5/6*
ISC 02 21:43:53.5±1.5**, 5.2S**±0.1×**102.5E**±0.2**, h44**km**, n14, σ0.37**/11**, mb3.6**/5**, Southern Sumatera**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
MNAI	**Manna**	**0.95**	**29**	P	**Pn**	**21 44 10.2**	**-0.3**
LWLI	**Liwa**	**1.58**	**84**	P	**Pn**	**21 44 18.7**	**-0.4**
LHSI	**Lahat**	**1.71**	**37**	P	**Pn**	**21 44 21.4**	**+0.6**
MDSI	**Maura Dua**	**1.83**	**67**	P	**Pn**	**21 44 22.5**	**0.0**
KASI	**Kota Agung**	**2.03**	**99**	P	**Pn**	**21 44 25.0**	**-0.2**
CGJI	**Cibinong**	**3.49**	**114**	P	**Pn**	**21 44 45.5**	**+0.2**
H08S2	**Diego Garcia H**	**29.90**	**264**	T	T	22 20 46.3	
	baz=87,slow=76,SNR=6.0						
H08S3	**Diego Garcia H**	**29.91**	**264**	T	T	22 20 47.1	
	baz=87,slow=76,SNR=6.2						
H08S1	**Diego Carcia H**	**29.92**	**264**	T	T	22 20 47.8	
	baz=87,slow=76,SNR=5.5						
WRA	**Warramunga Arr**	**34.27**	**118**	P	**P**	**21 50 36.1**	**+0.2**
	0.4nm,0.9s,baz=291,slow=8.8,SNR=3.0						
ASAR	**Alice Springs**	**35.39**	**124**	P	**P**	**21 50 45.8**	**+0.3**
	0.4nm,0.9s,baz=297,slow=8.2,SNR=3.0						
SONM	**Songino Array**	**52.92**	**3**	P	**P**	**21 53 05.4**	**+0.1**
	0.4nm,0.6s,baz=186,slow=8.3,SNR=5.7						
MKAR	**Makanchi Array**	**54.77**	**343**	P	**P**	**21 53 18.7**	**-0.1**
	0.3nm,0.4s,baz=151,slow=9.1,SNR=12						
ZALV	**Zalesovo Beam**	**60.77**	**348**	P	**P**	**21 54 00.2**	**-0.5**
	0.6nm,0.4s,baz=166,slow=6.3,SNR=4.1						

*CSEM **02** 21:47:18.2, 42.58N×43.52E, h0km, ML2.3*
TIF 02 21:47:18.2, 42.58N×43.52E, h11km±1km**, Western Caucasus**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
ONI	**Oni**	**0.05**	**282**	P	Pg	21 47 20.9	+0.4
ONI				S	Sg	21 47 22.7	+0.6
ONI	**Oni**	**0.05**	**282**	P	Pg	21 47 20.9	+0.4
ONI				S	Sg	21 47 22.7	+0.5
GUDG	**Gudauri**	**0.71**	**99**	P	Pn	21 47 38.1	+3.7
GUDG				S	Sb	21 47 42.8	+0.1
GUDG	**Gudauri**	**0.71**	**99**	P	Pn	21 47 38.1	+3.7
GUDG				S	Sb	21 47 42.8	+0.1
AKH	**Akhalkalaki**	**1.17**	**181**	P	Pb	21 47 40.3	-0.2
AKH				S	Sn	21 47 56.7	+0.1
AKH	**Akhalkalaki**	**1.17**	**181**	P	Pb	21 47 40.3	-0.2
AKH				S	Sn	21 47 56.7	+0.1
DGRG	**David-gareji**	**1.78**	**129**	P	Pg	21 47 52.2	-0.2
DGRG				S	Sg	21 48 16.7	+1.3
DGRG	**David-gareji**	**1.78**	**129**	P	Pg	21 47 52.2	-0.1
DGRG				S	Sg	21 48 16.7	+1.3

IDC 02 21:50:55.8±7.0**, 30.67S**×**108.80W, h0**km**, mb3.8**/2**, mb1 4.3**/2**, mb1mx3.7**/18**, mbtmp3.8**/2**, Error ellipse: s-maj=468.8km s-min=55.2km az=105.0, Easter Island region**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
NVAR	**Mina Array Bea**	**69.31**	**352**	P	P	22 02 05.1	0.0
	1.6nm,0.7s,baz=176,slow=8.7,SNR=5.8						
PDAR	**Pinedale Array**	**73.08**	**359**	P	P	22 02 27.9	+0.1
	0.5nm,0.8s,baz=158,slow=7.4,SNR=4.3						
SONM	**Songino Array**	**148.15**	**313**	PKPbc	PKPbc	22 10 43.0	-0.5
	0.7nm,0.8s,baz=59,slow=2.9,SNR=4.2						
CMAR	**Chiang Mai Arr**	**152.08**	**251**	PKPbc	PKPbc	22 10 53.5	-0.2
	0.5nm,0.6s,baz=138,slow=1.0,SNR=5.8						

*NIED **02** 21:52:00, 39.50N×142.90E, h11km, Mw4.1 Best double couple: M0 1.75000×10^15 NP1:φs305.00000°, δ32.00000°, λ-37.00000°. NP2:φs67.00000°, δ71.00000°, λ-117.00000°.*
*ISCJB **02** 21:52:33.3±1.2, 39.47N±0.04×142.88E±0.06, h23km±7km, mb4.2/34, MS3.2/7, Error ellipse: s-maj=8.8km s-min=5.1km az=30.5*
*JMA **02** 21:52:33.2±0.2, 39.51N×142.88E, h21km±2km, M4.4*
JMA Felt I J1.
*IDC **02** 21:52:37.4±2.3, 39.42N×142.85E, h41km±21km, mb4.0/23, mb1 4.1/28, mb1mx3.9/46, mbtmp4.2/28, ML3.4/5, MS3.1/11, Ms1 3.1/11, ms1mx3.0/41, Error ellipse: s-maj=16.3km s-min=13.5km az=111.0*
*NEIC **02** 21:52:37.4±0.7, 39.50N×142.86E, h40km±5km, mb4.3/14, Error ellipse: s-maj=8.3km s-min=4.8km az=124.0*
ISC 02 21:52:33.3±2.0**, 39.47N**±0.05×**142.83E**±0.07**, h9**km±11km**, n65, σ1.16**/66**, mb4.2**/34**, MS3.3**/7**, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
MIYJ	**Miyakonagasawa**	**0.79**	**278**	P	**Pg**	**21 52 48.6**	**+0.1**
MIYJ				S	**Sb**	**21 52 59.5**	**-0.5**
JTH	**Tanohata**	**0.88**	**303**	P	**Pg**	**21 52 50.0**	**-0.3**
JTH				S	**Sg**	**21 53 01.8**	**0.0**
OFUJ	**Ofunato**	**0.98**	**247**	P	**Pg**	**21 52 52.0**	**-0.2**
JOM	**Ohasama**	**1.19**	**271**	P	**Pb**	**21 52 55.2**	**-0.8**
JOM				S	**Sg**	**21 53 11.7**	**0.0**
JKZ	**Kuzumaki**	**1.27**	**295**	P	**Pn**	**21 52 56.3**	**-0.9**
JKZ				S	**Sb**	**21 53 12.9**	**-0.9**
JMK	**Ichinoseki**	**1.35**	**248**	P	**Pn**	**21 52 58.1**	**-0.2**
JMK				S	**Sb**	**21 53 15.5**	**-0.7**
JANG	**Nango**	**1.36**	**312**	P	**Pn**	**21 52 56.7**	**-1.7**
JIO	**Ouri**	**1.54**	**229**	P	**Pn**	**21 53 00.1**	**-0.7**
JIO				S	**Sn**	**21 53 19.4**	**-1.5**
ERM	**Erimo**	**2.56**	**5**	ePn	**Pn**	**21 53 15.0**	**+0.1**
ERM				eSn	**Sn**	**21 53 46.1**	**0.0**
MJAR	**Matsushiro Arr**	**4.67**	**233**	P	**Pn**	**21 53 46.6**	**+2.6**
	3.1nm,0.3s,baz=42,slow=11,SNR=41						
MAJO	**Matsushiro**	**4.68**	**233**	ePn	**Pn**	**21 53 46.6**	**+2.6**
MAT	**Matsushiro**	**4.68**	**233**	P	**Pn**	**21 53 47.1**	**+3.1**
MAT				eS	**Sn**	**21 54 40.9**	**+2.5**
JHJ	**Hachijo jima 2**	**6.80**	**202**	P	**Pn**	**21 54 12.6**	**-0.5**
	16nm,0.3s,baz=286,slow=23,SNR=6.2						
JHJ				S	**Sn**	**21 55 28.1**	**-2.5**
	6.6nm,0.3s,baz=239,slow=19,SNR=2.9						
JHJ				LR	LR	21 56 24.4	
	comp=Z,55nm,18.6s,baz=21,slow=34						
USRK	**Ussuriysk Ar.**	**9.37**	**304**	P	**Pn**	**21 54 50.2**	**+1.8**
	0.6nm,0.3s,baz=109,slow=13,SNR=16						
JNU	**Nakatsue**	**11.53**	**240**	LR	LR	21 59 45.0	
	comp=Z,31nm,20.4s,baz=233,slow=37						
KSRS	**Korea Array**	**11.86**	**265**	P	**Pn**	**21 55 25.0**	**+2.5**
	0.2nm,0.3s,baz=73,slow=14,SNR=3.2						
KSRS				LR	LR	21 59 40.8	
	comp=Z,32nm,19.6s,baz=80,slow=36						
KSAR	**Wonju Array Be**	**11.89**	**265**	P	**Pn**	**21 55 25.0**	**+2.0**
KLR	**Kul'dur**	**12.56**	**325**	P	**Pn**	**21 55 33.2**	**+1.1**
	0.2nm,0.3s,baz=122,slow=6.6,SNR=4.8						
KLR				LR	LR	22 00 22.7	
	comp=Z,132nm,18.4s,baz=118,slow=37						
MA2	**Magadan**	**20.75**	**11**	P	**P**	**21 57 14.3**	**+0.3**
	12nm,0.7s,baz=217,slow=9.1,SNR=22						
MA2	**Magadan**	**20.75**	**11**	eP	**P**	**21 57 13.8**	**-0.2**
	48nm,0.8s						
YAK	**Yakutsk**	**23.98**	**345**	LR	LR	22 07 04.9	
	comp=Z,31nm,21.2s,baz=176,slow=36						
YAK	**Yakutsk**	**23.98**	**345**	eP	**P**	**21 57 45.8**	**-1.9**
	35nm,0.8s						
SEY	**Seymchan**	**24.19**	**11**	P	**P**	**21 57 49.3**	**-0.4**
	10nm,0.9s,baz=190,slow=7.1,SNR=32						
ULN	**Ulaanbaatar**	**27.01**	**300**	eP	**P**	**21 58 15.6**	**0.0**
	4.1nm,0.8s						
SONM	**Songino Array**	**27.45**	**300**	P	**P**	**21 58 19.8**	**+0.2**
	3.0nm,0.7s,baz=81,slow=8.3,SNR=24						
SONM				LR	LR	22 09 32.3	
	comp=Z,73nm,18.4s,baz=81,slow=37						
H11N2	**WAKE ISLAND Hy**	**28.57**	**127**	T	T	22 28 26.8	
	baz=319,slow=75,SNR=117						
H11N1	**WAKE ISLAND Hy**	**28.57**	**127**	T	T	22 28 28.1	
	baz=319,slow=75,SNR=153						
H11N3	**WAKE ISLAND Hy**	**28.58**	**127**	T	T	22 28 23.7	
	baz=319,slow=75,SNR=133						
ENH	**Enshi**	**28.72**	**262**	eP	**P**	**21 58 30.7**	**-0.3**
	4.3nm,0.7s						
H11S1	**WAKE ISLAND Hy**	**29.37**	**128**	T	T	22 29 23.7	
	baz=321,slow=76,SNR=47						
H11S3	**WAKE ISLAND Hy**	**29.37**	**129**	T	T	22 29 26.3	
	baz=321,slow=76,SNR=31						
H11S2	**WAKE ISLAND Hy**	**29.39**	**128**	T	T	22 29 24.6	
	baz=321,slow=76,SNR=29						
TIXI	**Tiksi**	**33.02**	**352**	eP	**P**	**21 59 08.5**	**+0.1**
	1.6nm,0.6s						
ZALV	**Zalesovo Beam**	**41.15**	**310**	P	**P**	**22 00 17.6**	**0.0**
	5.2nm,0.4s,baz=93,slow=8.2,SNR=30						
ZALV				LR	LR	22 17 58.0	
	comp=Z,42nm,20.3s,baz=70,slow=37						
NRIK	**Noril'sk**	**41.55**	**334**	LR	LR	22 18 42.9	
	comp=Z,89nm,18.7s,baz=106,slow=38						
CHTO	**Chiang Mai**	**43.00**	**254**	eP	**P**	**22 00 33.3**	**+0.3**
	1.7nm,0.7s						
LSA	**Lhasa**	**43.14**	**273**	eP	**P**	**22 00 35.5**	**+0.8**
	2.5nm,0.7s						
CMAR	**Chiang Mai Arr**	**43.22**	**254**	P	**P**	**22 00 34.3**	**-0.6**
	0.4nm,0.5s,baz=41,slow=7.7,SNR=4.8						
CMAR				LR	LR	22 20 15.7	
	comp=Z,15nm,19.0s,baz=285,slow=38						
MKAR	**Makanchi Array**	**43.82**	**300**	P	**P**	**22 00 39.3**	**-0.1**
	2.8nm,0.4s,baz=86,slow=10,SNR=97						
MKAR				LR	LR	22 19 39.8	
	comp=Z,60nm,18.4s,baz=60,slow=37						
KURK	**Kurchatov**	**45.35**	**306**	eP	**P**	**22 00 51.3**	**-0.2**
	20nm,0.6s						
KURBB	**Kurchatov Arra**	**45.42**	**306**	P	**P**	**22 00 51.9**	**-0.3**
	8.8nm,0.5s,baz=81,slow=8.5,SNR=65						
ILAR	**Eielson Array**	**46.85**	**34**	P	**P**	**22 01 03.5**	**+0.3**
	1.5nm,0.7s,baz=267,slow=6.8,SNR=15						
TKM2	**Tokmak 2**	**49.49**	**297**	eP	**P**	**22 01 24.1**	**-0.1**
	3.9nm,0.6s						
BVAR	**Borovoye Array**	**49.79**	**311**	P	**P**	**22 01 26.0**	**0.0**
	2.6nm,0.6s,baz=66,slow=8.0,SNR=20						
AAK	**Ala-Archa**	**50.35**	**297**	P	**P**	**22 01 30.8**	**+0.2**
	1.7nm,0.4s,baz=106,slow=5.3,SNR=12						
AAK	**Ala-Archa**	**50.35**	**297**	eP	**P**	**22 01 30.6**	**0.0**
	1.1nm,0.5s						
EKS2	**Erkin-Say**	**50.83**	**297**	eP	**P**	**22 01 34.2**	**0.0**
	2.1nm,0.7s						
INK	**Inuvik**	**51.72**	**28**	P	**P**	**22 01 40.3**	**0.0**
	0.9nm,0.7s,baz=296,slow=4.9,SNR=8.0						
KKAR	**Karatay Array**	**52.90**	**299**	eP	**P**	**22 01 49.2**	**-0.3**
	1.6nm,0.6s						
ARU	**Arti**	**55.30**	**318**	P	**P**	**22 02 07.0**	**+0.2**
	4.6nm,0.6s,baz=66,slow=3.9,SNR=13						
ABKAR	**Akbulak array**	**57.24**	**309**	eP	**P**	**22 02 20.6**	**-0.1**
	5.4nm,0.6s						
AKTO	**Aktyubinsk**	**57.90**	**311**	P	**P**	**22 02 25.0**	**-0.4**
	4.0nm,0.7s,baz=69,slow=12,SNR=15						
WRA	**Warramunga Arr**	**59.63**	**189**	P	**P**	**22 02 36.2**	**-1.4**
	1.3nm,0.7s,baz=6.8,slow=6.9,SNR=14						
YKA	**Yellowknife Ar**	**61.15**	**31**	P	**P**	**22 02 47.7**	**+0.1**
	0.6nm,0.6s,baz=302,slow=6.4,SNR=14						
ASAR	**Alice Springs**	**63.36**	**189**	P	**P**	**22 03 02.3**	**-0.5**
	0.7nm,0.7s,baz=5.9,slow=5.4,SNR=6.8						
FINES	**FINESS Array B**	**67.18**	**332**	P	**P**	**22 03 26.9**	**-0.3**
	2.9nm,0.7s,baz=50,slow=10,SNR=8.6						
KBZ	**Khabaz**	**70.17**	**311**	P	**P**	**22 03 45.8**	**-0.3**
	4.8nm,0.8s,baz=70,slow=1.5,SNR=7.2						
NB2	**NORSAR Subarra**	**72.37**	**338**	P	**P**	**22 03 58.8**	**-0.4**
	comp=Z,1.0nm,0.6s,baz=38,slow=6.2						
NOA	**NORSAR Array B**	**72.37**	**338**	P	**P**	**22 03 59.1**	**-0.2**
	comp=Z,1.4nm,0.7s,baz=39,slow=6.1,SNR=4.4						
NOA				LR	LR	22 38 16.0	
	comp=Z,14nm,22.0s,baz=330,slow=38						

Code	Station Name	Δ°	AZ°	Op	ISC	Time	Res
AKASG	**Malin Array Be**	**73.05**	**322**	P	**P**	**22 04 03.3**	**-0.1**
	comp=Z,2.0nm,0.4s,baz=45,slow=6.3,SNR=11						
KIEV	**Kiev**	**73.07**	**322**	*e*P	**P**	**22 04 02.9**	**-0.6**
	comp=Z,6.0nm,0.8s						
PDAR	**Pinedale Array**	**75.17**	**47**	P	**P**	**22 04 16.5**	**+0.2**
	comp=Z,0.4nm,0.7s,baz=240,slow=2.9,SNR=4.0						
BRTR	**Keskin Array B**	**78.07**	**312**	P	**P**	**22 04 32.9**	**+0.3**
	comp=Z,0.6nm,0.6s,baz=72,slow=4.3,SNR=4.4						
CLL	**Collm**	**79.54**	**331**	*e*P	**P**	**22 04 40.0**	**-0.2**
CLL				*e*pP	**PcP**	**22 04 52.0**	**+3.8**
GERES	**GERESS Array B**	**81.22**	**329**	P	**P**	**22 04 48.8**	**-0.7**
	comp=Z,0.2nm,0.3s,baz=32,slow=13,SNR=4.1						

JMA 02 22:20:48.9±0.1**, 38.37°N×142.05°E, h33**km±2km**, M3.7, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time (h m s)	Res ISC
JIO	**Ouri**	**0.56**	**279**	P	Pb	22 21 00.0	-0.4
JIO				S	Sb	22 21 07.3	-1.0
OFUJ	**Ofunato**	**0.77**	**337**	P	Pn	22 21 03.1	-0.3
JMK	**Ichinoseki**	**0.87**	**312**	P	Pn	22 21 05.0	+0.2
JMK				S	Sn	22 21 16.5	+0.1
JOU	**Okura**	**1.09**	**270**	P	Pb	22 21 08.8	-0.5
JOU				S	Sn	22 21 22.4	+0.6
JMM	**Marumori**	**1.11**	**243**	P	Pn	22 21 07.8	-0.3
JMM				*e*S	Sn	22 21 21.6	-0.7
MIYJ	**Miyakonagasawa**	**1.22**	**352**	P	Pn	22 21 09.5	-0.1
MIYJ				S	Sn	22 21 24.5	-0.5
JOM	**Ohasama**	**1.25**	**332**	P	Pn	22 21 10.7	+0.6
JOM				S	Sn	22 21 26.4	+0.6
JYK	**Kaneyama**	**1.43**	**293**	P	Pn	22 21 13.2	+0.6
JYK				*e*S	Sn	22 21 31.1	+0.8
JRG	**Rokugo**	**1.51**	**313**	P	Pb	22 21 15.0	-1.3
JRG				S	Sb	22 21 35.6	+0.5
JYS	**Shirataka**	**1.57**	**265**	P	Pn	22 21 15.6	+1.2
JFT	**Otama**	**1.60**	**238**	P	Pn	22 21 15.9	+1.0
JFT				*e*S	Sn	22 21 34.7	+0.3
JKZ	**Kuzumaki**	**1.71**	**341**	P	Pn	22 21 17.6	+1.2
JKZ				S	Sb	22 21 39.0	-1.8
JANG	**Nango**	**2.04**	**348**	P	Pn	22 21 22.5	+1.5

*ISCJB **02** 22:30:13.1±1.2, 37.57°N±0.05°×142.90°E±0.10°, h21km, mb3.5/3, MS3.2/1, Error ellipse: s-maj=11.4km s-min=7.6km az=9.7*
*JMA **02** 22:30:14.2±0.4, 37.63°N×142.90°E, h35km, M3.4*
*IDC **02** 22:30:18.7±2.4, 36.74°N×140.86°E, h0km, mb3.6/3, mb1 3.7/3, mb1mx3.3/49, mbtmp3.6/3, ML2.1/1, MS3.2/1, Ms1 3.2/1, ms1mx2.2/54, Error ellipse: s-maj=60.6km s-min=28.7km az=63.0*
ISC 02 22:30:14.9±1.5**, 37.66°N**±0.06°×**142.7°E**±0.1°**, h21**km**, n15, σ1.18s**/16**, mb3.5**/3**, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time (h m s)	Res ISC
JIO	**Ouri**	**1.35**	**306**	P	**Pb**	**22 30 39.3**	**-0.2**
JIO				S	**Sb**	**22 30 56.2**	**-0.1**
JMM	**Marumori**	**1.56**	**278**	P	**Pb**	**22 30 42.1**	**-0.8**
JMM				S	**Sb**	**22 31 03.1**	**+0.9**
OFUJ	**Ofunato**	**1.65**	**330**	P	**Pn**	**22 30 42.7**	**+0.2**
ONAJ	**Iwakimizuishiy**	**1.65**	**251**	S	**Sb**	**22 31 05.0**	**+0.2**
JMK	**Ichinoseki**	**1.76**	**318**	P	**Pb**	**22 30 45.0**	**-1.4**
JOU	**Okura**	**1.78**	**294**	P	**Pb**	**22 30 46.1**	**-0.7**
JFT	**Otama**	**1.92**	**266**	P	**Pb**	**22 30 48.3**	**-0.8**
JOM	**Ohasama**	**2.13**	**328**	P	**Pn**	**22 30 50.2**	**+1.0**
JOM				S	**Sb**	**22 31 18.0**	**-0.8**
JYK	**Kaneyama**	**2.25**	**304**	P	**Pb**	**22 30 52.7**	**-2.1**
CHOJ	**Chosi**	**2.47**	**218**	S	**Sn**	**22 31 22.4**	**-1.1**
MJAR	**Matsushiro Arr**	**3.79**	**254**	Pn	Pn	22 30 55.2	-17
	0.6nm,0.3s,baz=87,slow=16,SNR=5.2						
ZALV	**Zalesovo Beam**	**42.28**	**312**	P	**P**	**22 38 08.4**	**+1.9**
	0.2nm,0.3s,baz=100,slow=7.9,SNR=3.7						
MKAR	**Makanchi Array**	**44.68**	**302**	P	**P**	**22 38 27.5**	**+1.4**
	0.8nm,0.7s,baz=84,slow=7.9,SNR=12						
AAK	**Ala-Archa**	**51.12**	**298**	LR	LR	22 59 41.4	
	comp=Z,24nm,18.6s,baz=102,slow=35						
WRA	**Warramunga Arr**	**57.84**	**189**	P	**P**	**22 40 04.1**	**-0.8**
	0.3nm,0.6s,baz=6.8,slow=7.3,SNR=3.1						

*IDC **02** 22:40:36.1±2.4, 37.78°N×142.95°E, h0km, mb3.6/4, mb1 3.7/6, mb1mx3.3/62, mbtmp3.7/6, ML3.2/2, Error ellipse: s-maj=58.5km s-min=25.7km az=76.0*
ISC 02 22:40:37.0±2.1**, 36.7°N**±0.1°×**142.2°E**±0.1°**, h18**km**, n7, σ0.69s**/7**, mb3.6**/4**, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time (h m s)	Res ISC
MJAR	**Matsushiro Arr**	**3.25**	**268**	Pn	**Pg**	**22 41 39.0**	**-0.3**
	1.1nm,0.3s,baz=70,slow=13,SNR=13						
MAT	**Matsushiro**	**3.25**	**268**	P	**Pg**	**22 41 38.6**	**-0.7**
MAT				*e*S	**Sb**	**22 42 14.1**	**+0.6**
JHJ	**Hachijo jima 2**	**4.12**	**210**	Pn	**Pg**	**22 41 55.6**	**-0.3**
	3.5nm,0.3s,baz=71,slow=18,SNR=3.0						
ZALV	**Zalesovo Beam**	**42.62**	**313**	P	**P**	**22 48 31.9**	**-0.1**
	0.6nm,0.6s,baz=98,slow=7.6,SNR=3.8						
MKAR	**Makanchi Array**	**44.85**	**303**	P	**P**	**22 48 50.9**	**+0.9**
	0.7nm,0.7s,baz=83,slow=9.9,SNR=4.4						
KURBB	**Kurchatov Arra**	**46.72**	**308**	P	**P**	**22 49 04.5**	**-0.2**
	0.9nm,0.7s,baz=82,slow=7.9,SNR=8.9						
WRA	**Warramunga Arr**	**56.85**	**189**	P	P	22 50 30.7	+10
	0.2nm,0.6s,baz=7.4,slow=7.3,SNR=2.8						

*IDC **02** 22:44:54.9±1.7, 37.36°N×142.65°E, h0km, mb3.8/7, mb1 3.8/9, mb1mx3.5/65, mbtmp3.8/9, ML3.2/2, MS2.4/1, Ms1 2.4/1, ms1mx2.0/51, Error ellipse: s-maj=46.5km s-min=20.6km az=74.0*
*NEIC **02** 22:44:58.5±0.9, 37.46°N×142.88°E, h35km, mb4.2/5, Error ellipse: s-maj=17.6km s-min=13.1km az=132.0*
*JMA **02** 22:45:00.0±0.5, 37.45°N×142.30°E, h31km, M3.6*
*NIED **02** 22:45:00, 37.50°N×142.30°E, h5km, Mw3.8 Best double couple: $M_0$6.11000×10^14 NP1:ϕ_s243.00000°, δ5.00000°, λ-85.00000°. NP2:ϕ_s58.00000°, δ85.00000°, λ-90.00000°.*
ISC 02 22:44:57.7±0.9**, 37.42°N**±0.05°×**142.51°E**±0.10°**, h21**km**, n37, σ1.52s**/29**, mb4.0**/13**, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time (h m s)	Res ISC
JIO	**Ouri**	**1.38**	**319**	P	**Pb**	**22 45 22.7**	**-0.1**
JIO				*e*S	**Sn**	**22 45 38.8**	**-0.6**
ONAJ	**Iwakimizuishiy**	**1.40**	**258**	P	**Pb**	**22 45 22.4**	**-0.7**
JMM	**Marumori**	**1.43**	**289**	P	**Pb**	**22 45 21.9**	**-1.8**
JFT	**Otama**	**1.73**	**274**	P	**Pb**	**22 45 26.9**	**-1.9**
JOU	**Okura**	**1.74**	**304**	P	**Pb**	**22 45 27.3**	**-1.6**
JHO	**Hitachi**	**1.75**	**243**	P	**Pb**	**22 45 27.3**	**-1.7**
OFUJ	**Ofunato**	**1.79**	**339**	P	**Pb**	**22 45 27.9**	**-1.8**
JMK	**Ichinoseki**	**1.84**	**327**	P	**Pb**	**22 45 29.4**	**-1.2**
JYK	**Kaneyama**	**2.26**	**312**	P	**Pb**	**22 45 35.6**	**-2.2**
JOM	**Ohasama**	**2.26**	**335**	P	**Pb**	**22 45 35.8**	**-2.1**
JAG	**Ashikaga**	**2.64**	**249**	P	**Pn**	**22 45 39.1**	**+0.1**
JRY	**Ryogami san**	**3.22**	**245**	P	**Pn**	**22 45 48.1**	**+1.1**
JOD2	**Odawara 2**	**3.50**	**233**	P	**Pn**	**22 45 51.9**	**+1.0**
JOD2				*e*S	**Sn**	**22 46 32.5**	**+0.9**
MJAR	**Matsushiro Arr**	**3.55**	**257**	Pn	**Pn**	**22 45 52.3**	**+0.7**
	1.3nm,0.3s,baz=61,slow=12,SNR=13						
MJAR				LR	LR	22 47 43.6	
	comp=Z,53nm,18.0s,baz=80,slow=46						
MAJO	**Matsushiro**	**3.55**	**257**	*e*Pn	Pb	22 45 55.6	-4.2
ERM	**Erimo**	**4.62**	**6**	*e*Pn	**Pn**	**22 46 05.1**	**-1.2**
JHJ	**Hachijo jima 2**	**4.83**	**208**	Pn	**Pn**	**22 46 08.2**	**-0.9**
	4.6nm,0.3s,baz=127,slow=20,SNR=4.5						
JHJ				Sn	**Sn**	**22 47 02.0**	**-2.4**
	9.6nm,0.3s,baz=90,slow=20,SNR=3.7						
MDJ	**Mudanjiang**	**12.11**	**310**	*e*Pn	Pn	22 47 52.5	+3.6
YAK	**Yakutsk**	**25.90**	**346**	*e*P	**P**	**22 50 25.1**	**-2.7**
	8.0nm,0.6s						
H11N2	**WAKE ISLAND Hy**	**27.61**	**123**	T	T	23 19 29.2	
	baz=315,slow=75,SNR=136						
H11N1	**WAKE ISLAND Hy**	**27.62**	**123**	T	T	23 19 27.8	
	baz=315,slow=75,SNR=92						
H11N3	**WAKE ISLAND Hy**	**27.63**	**123**	T	T	23 19 30.8	
	baz=315,slow=75,SNR=106						
ENH	**Enshi**	**28.23**	**265**	*e*P	**P**	**22 50 50.2**	**+0.9**
	1.6nm,0.3s						
SONM	**Songino Array**	**28.30**	**303**	P	P	22 50 51.7	+1.9
	1.1nm,0.7s,baz=97,slow=8.9,SNR=6.1						
H11S1	**WAKE ISLAND Hy**	**28.35**	**125**	T	T	23 20 28.2	
	baz=317,slow=76,SNR=98						
H11S3	**WAKE ISLAND Hy**	**28.35**	**125**	T	T	23 20 24.1	
	baz=317,slow=76,SNR=107						
H11S2	**WAKE ISLAND Hy**	**28.36**	**125**	T	T	23 20 31.0	
	baz=317,slow=76,SNR=103						
ZALV	**Zalesovo Beam**	**42.30**	**312**	P	**P**	**22 52 51.0**	**+1.3**
	0.6nm,0.6s,baz=106,slow=11,SNR=3.8						
MKAR	**Makanchi Array**	**44.66**	**302**	P	**P**	**22 53 10.3**	**+1.5**
	0.3nm,0.6s,baz=88,slow=11,SNR=5.4						
KDAK	**Kodiak Island**	**46.23**	**42**	*e*P	P	22 53 15.8	-5.2
	83nm,0.6s						
KURK	**Kurchatov**	**46.38**	**308**	*e*P	**P**	**22 53 22.2**	**-0.1**
	2.1nm,0.6s						
KURBB	**Kurchatov Arra**	**46.46**	**308**	P	**P**	**22 53 24.2**	**+1.4**
	1.2nm,0.2s,baz=82,slow=8.0,SNR=4.6						
COLA	**College**	**48.29**	**32**	*e*P	**P**	**22 53 34.5**	**-2.4**
	0.7nm,0.3s						
AAK	**Ala-Archa**	**51.08**	**298**	*e*P	**P**	**22 53 59.3**	**+0.6**
	0.2nm,0.4s						
WRA	**Warramunga Arr**	**57.57**	**189**	P	**P**	**22 54 45.9**	**+0.1**
	0.7nm,0.8s,baz=6.8,slow=7.4,SNR=4.1						
ASAR	**Alice Springs**	**61.29**	**189**	P	P	22 55 12.3	+0.7
	0.2nm,0.7s,baz=16,slow=6.5,SNR=4.5						
FINES	**FINESS Array B**	**68.88**	**333**	P	**P**	**22 56 01.4**	**+1.0**
	1.2nm,0.9s,baz=59,slow=7.4,SNR=4.7						

*NEIC **02** 22:52:33.1, 55.79°N×151.91°W, h10km, ML3.1(AEIC), After AEIC.*
*IDC **02** 22:52:34.8±3.2, 55.67°N×152.15°W, h0km, mb3.4/5, mb1 3.6/6, mb1mx3.3/74, mbtmp3.5/6, ML4.1/1, MS3.1/2, Ms1 3.1/2, ms1mx2.5/37, Error ellipse: s-maj=67.1km s-min=31.1km az=154.0*
ISC 02 22:52:37.1±1.4**, 56.0°N**±0.1°×**151.93°W**±0.08°**, h10**km**, n24, σ1.74s**/25**, mb3.8**/4**, Kodiak Island region**

Code	Station Name	Δ°	AZ°	Op	ISC	Time (h m s)	Res ISC
OHAK	**Old Harbor**	**1.42**	**329**	P	**Pn**	**22 52 59.7**	**-3.3**
OHAK				S	**Sb**	**22 53 22.3**	**+0.4**
KDAK	**Kodiak Island**	**1.81**	**349**	Pn	Pg	22 53 20.6	+8.9
	5.0nm,0.3s,baz=188,slow=7.3,SNR=48						
KDAK				Sn	Sg	22 53 37.3	+2.1
	10nm,0.3s,baz=287,slow=17,SNR=10						
KDAK	**Kodiak Island**	**1.81**	**349**	P	**Pn**	**22 53 05.5**	**-2.7**
KDAK				Sn	**Sg**	**22 53 37.3**	**+2.1**
KABR	**Katmai Barrier**	**2.69**	**323**	P	**Pn**	**22 53 19.2**	**-1.4**
KABR				S	**Sn**	**22 53 51.9**	**-1.3**
KAWH	**Katmai**	**2.84**	**328**	P	**Pn**	**22 53 21.4**	**-1.2**
KAHG	**Katmai Hook Gl**	**2.86**	**331**	P	**Pn**	**22 53 22.3**	**-0.6**
FOPK	**Fourpeaked Vol**	**2.87**	**344**	P	**Pn**	**22 53 21.7**	**-1.3**
CDD	**Cape Douglas**	**3.06**	**343**	P	**Pn**	**22 53 25.1**	**-0.5**
KAHC	**Katmai Hardscr**	**3.12**	**329**	P	**Pn**	**22 53 24.8**	**-1.6**
KELA	**Mount Kelaz**	**3.19**	**321**	P	**Pn**	**22 53 25.5**	**-1.9**
BRLK	**Bradley Lake**	**3.80**	**8**	P	**Pn**	**22 53 33.3**	**-2.4**
SEW	**Seward**	**4.30**	**17**	P	**Pn**	**22 53 39.9**	**-2.7**
HIN	**Hinchinbrook I**	**5.25**	**31**	P	**Pn**	**22 53 54.3**	**-1.2**
SVW2	**Sparrevohn**	**5.44**	**341**	P	**Pn**	**22 53 56.2**	**-2.0**
SML	**Sawmill**	**6.10**	**16**	P	**Pn**	**22 54 05.3**	**-2.0**
SCM	**Sheep Creek Mo**	**6.30**	**20**	P	**Pn**	**22 54 08.6**	**-1.4**
MCK	**McKinley**	**7.88**	**10**	*e*Pn	**Pn**	**22 54 31.6**	**-0.2**
ILAR	**Eielson Array**	**9.13**	**14**	Pn	**Pn**	**22 54 47.1**	**-1.6**
	0.8nm,0.3s,baz=202,slow=14,SNR=30						
ILAR				LR	LR	22 58 57.4	
	comp=Z,54nm,18.0s,baz=65,slow=40						
YKA	**Yellowknife Ar**	**19.92**	**56**	P	**Pn**	**22 57 10.8**	**+0.6**
	0.4nm,0.7s,baz=271,slow=11,SNR=4.4						
JCJ	**Chichijima**	**54.59**	**267**	LR	LR	23 24 32.7	
	comp=Z,27nm,20.6s,baz=140,slow=35						
SONM	**Songino Array**	**57.66**	**309**	P	**P**	**23 02 28.9**	**+1.5**
	0.5nm,0.6s,baz=58,slow=5.9,SNR=5.0						
ZALV	**Zalesovo Beam**	**60.96**	**326**	P	**P**	**23 02 50.5**	**+0.6**
	0.5nm,0.7s,baz=28,slow=3.4,SNR=2.9						
BVAR	**Borovoye Array**	**65.88**	**334**	P	**P**	**23 03 22.8**	**+0.3**
	0.4nm,0.6s,baz=56,slow=5.7,SNR=3.6						
MKAR	**Makanchi Array**	**67.94**	**323**	P	**P**	**23 03 36.0**	**+0.3**
	0.3nm,0.8s,baz=47,slow=7.9,SNR=3.5						

*NIED **02** 22:53:00, 38.40°N×142.30°E, h35km, Mw3.5 Best double couple: $M_0$2.20000×10^14 NP1:ϕ_s222.00000°, δ29.00000°, λ-31.00000°. NP2:ϕ_s339.00000°, δ76.00000°, λ-115.00000°.*
*IDC **02** 22:53:51.0±2.2, 38.47°N×142.83°E, h0km, mb3.6/4, mb1 3.8/6, mb1mx3.4/72, mbtmp3.7/6, ML3.5/2, MS3.8/2, Ms1 3.8/2, ms1mx2.5/43, Error ellipse: s-maj=56.7km s-min=25.2km az=70.0*
*JMA **02** 22:53:57.3±0.2, 38.44°N×142.33E, h37km±3km, M3.7*
ISC 02 22:53:52.9±2.0**, 38.38°N**±0.04°×**142.44°E**±0.08°**, h6**km±12km**, n21, σ0.57s**/25**, mb4.0**/4**, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time (h m s)	Res ISC
JIO	**Ouri**	**0.86**	**275**	P	**Pn**	**22 54 11.8**	**+0.3**
JIO				S	**Sb**	**22 54 21.8**	**-0.1**
JMK	**Ichinoseki**	**1.11**	**301**	P	**Pn**	**22 54 15.4**	**+0.4**
MIYJ	**Miyakonagasawa**	**1.29**	**338**	P	**Pb**	**22 54 17.6**	**0.0**
MIYJ				S	**Sb**	**22 54 33.4**	**-1.0**
JOU	**Okura**	**1.39**	**270**	P	**Pg**	**22 54 20.1**	**+0.5**
JMM	**Marumori**	**1.39**	**249**	P	**Pg**	**22 54 19.5**	**-0.1**
JOM	**Ohasama**	**1.41**	**321**	P	**Pg**	**22 54 20.1**	**+0.2**
JOM				S	**Sb**	**22 54 36.8**	**-1.1**
JYK	**Kaneyama**	**1.71**	**289**	P	**Pb**	**22 54 24.4**	**-0.4**
JRG	**Rokugo**	**1.73**	**306**	P	**Pb**	**22 54 25.0**	**-0.2**
JRG				*e*S	**Sn**	**22 54 45.4**	**-0.6**
JKZ	**Kuzumaki**	**1.82**	**332**	P	**Pb**	**22 54 26.6**	**0.0**
JKZ				S	**Sn**	**22 54 48.8**	**+0.6**
JFT	**Otama**	**1.87**	**243**	P	**Pb**	**22 54 27.3**	**-0.2**
JFT				S	**Sn**	**22 54 49.9**	**+0.5**
JYS	**Shirataka**	**1.87**	**266**	P	**Pb**	**22 54 26.8**	**-0.7**
JANG	**Nango**	**2.12**	**341**	P	**Pb**	**22 54 30.8**	**-0.9**
MJAR	**Matsushiro Arr**	**3.83**	**243**	Pn	Pn	22 54 56.4	+3.9
	1.7nm,0.3s,baz=74,slow=13,SNR=16						
MJAR				LR	LR	22 56 33.8	
	comp=Z,67nm,19.5s,baz=55,slow=39						
MAT	**Matsushiro**	**3.83**	**243**	P	Pb	22 54 56.8	-4.1
MAT				*e*S	**Sb**	**22 55 47.4**	**-0.2**
JHJ	**Hachijo jima 2**	**5.67**	**203**	Pn	**Pn**	**22 55 18.0**	**+0.3**
	5.4nm,0.3s,baz=335,slow=22,SNR=6.2						
JHJ				Sn	**Sn**	**22 56 22.2**	**-1.1**
	9.7nm,0.3s,baz=72,slow=19,SNR=3.0						
DAV	**Davao City (W)**	**34.70**	**210**	LR	LR	23 14 46.3	
	comp=Z,82nm,18.8s,baz=212,slow=36						
MKAR	**Makanchi Array**	**44.10**	**301**	P	**P**	**23 02 02.5**	**+0.7**
	0.2nm,0.4s,baz=87,slow=10,SNR=5.3						
KURBB	**Kurchatov Arra**	**45.83**	**307**	P	**P**	**23 02 15.7**	**+0.2**
	1.3nm,0.6s,baz=81,slow=8.0,SNR=7.9						
WRA	**Warramunga Arr**	**58.51**	**189**	P	**P**	**23 03 49.9**	**-0.2**
	0.7nm,0.5s,baz=5.5,slow=7.2,SNR=5.4						
ASAR	**Alice Springs**	**62.24**	**189**	P	**P**	**23 04 15.8**	**+0.3**
	0.6nm,0.7s,baz=18,slow=6.2,SNR=6.9						
RAR	**Rarotonga**	**80.30**	**127**	LR	LR	23 38 37.7	
	comp=Z,85nm,20.0s,baz=200,slow=34						

*ISCJB **02** 23:01:51.2±0.5, 38.89°N±0.05°×144.11°E±0.04°, h23km, mb3.7/15, Error ellipse: s-maj=6.9km s-min=4.4km az=157.5*
*JMA **02** 23:01:52.0±0.2, 38.89°N×144.15°E, h47km, M4.0*
*IDC **02** 23:01:54.0±5.3, 38.80°N×144.14°E, h33km±42km, mb3.6/15, mb1 3.8/18, mb1mx3.6/61, mbtmp3.8/18, ML3.2/3, MS2.7/3, Ms1 2.7/3, ms1mx2.4/44, Error ellipse: s-maj=21.8km s-min=17.8km az=128.0*
ISC 02 23:01:52.5±0.7**, 38.83°N**±0.05°×**144.12°E**±0.07°**, h23**km**, n38, σ1.28s**/48**, mb3.8**/15**, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time (h m s)	Res ISC
OFUJ	**Ofunato**	**1.93**	**278**	P	**Pn**	**23 02 23.6**	**-0.3**
JTH	**Tanohata**	**2.07**	**303**	P	**Pn**	**23 02 25.0**	**-0.8**
JTH				S	**Sn**	**23 02 48.7**	**-2.2**
JIO	**Ouri**	**2.20**	**261**	P	**Pn**	**23 02 27.8**	**+0.2**
JIO				*e*S	**Sn**	**23 02 52.9**	**-1.2**
JMK	**Ichinoseki**	**2.27**	**274**	P	**Pn**	**23 02 28.7**	**+0.2**
JMK				*e*S	**Sn**	**23 02 55.3**	**-0.4**
JOM	**Ohasama**	**2.29**	**287**	P	**Pn**	**23 02 28.8**	**-0.1**
JOM				S	**Sn**	**23 02 56.3**	**-0.1**
JKZ	**Kuzumaki**	**2.45**	**299**	P	**Pn**	**23 02 30.8**	**-0.3**
JKZ				S	**Sn**	**23 02 59.6**	**-0.8**
JANG	**Nango**	**2.54**	**308**	P	**Pn**	**23 02 30.9**	**-1.3**
JOU	**Okura**	**2.75**	**261**	P	**Pn**	**23 02 36.0**	**+0.8**
JOU				*e*S	**Sn**	**23 03 07.6**	**-0.1**
JRG	**Rokugo**	**2.77**	**283**	P	**Pn**	**23 02 36.0**	**+0.5**
JRG				*e*S	**Sn**	**23 03 08.2**	**0.0**
JMM	**Marumori**	**2.79**	**251**	P	**Pn**	**23 02 35.7**	**0.0**
JMM				*e*S	**Sn**	**23 03 07.4**	**-1.2**
JYK	**Kaneyama**	**2.94**	**273**	P	**Pn**	**23 02 38.4**	**+0.6**
JTM	**Tenmabayashi**	**3.06**	**311**	P	**Pn**	**23 02 38.8**	**-0.6**
JTM				S	**Sn**	**23 03 13.1**	**-2.1**
JFT	**Otama**	**3.26**	**247**	P	**Pn**	**23 02 43.4**	**+1.2**
JFT				S	**Sn**	**23 03 20.0**	**-0.2**
JEM	**Erimo**	**3.27**	**347**	P	**Pn**	**23 02 41.4**	**-0.9**
JNBK	**Urakawa-nobuka**	**3.60**	**344**	P	**Pn**	**23 02 45.7**	**-1.2**
JCH	**Churui**	**3.82**	**352**	P	**Pn**	**23 02 48.1**	**-1.8**
MJAR	**Matsushiro Arr**	**5.21**	**246**	Pn	**Pn**	**23 03 10.5**	**+1.4**
	2.7nm,0.3s,baz=57,slow=11,SNR=53						
MAT	**Matsushiro**	**5.22**	**246**	P	**Pn**	**23 03 11.0**	**+1.9**
MAT				*e*S	**Sn**	**23 04 04.8**	**-3.7**
JHJ	**Hachijo jima 2**	**6.70**	**213**	Pn	**Pn**	**23 03 27.9**	**-1.5**
	2.7nm,0.3s,baz=75,slow=20,SNR=5.3						
JHJ				Sn	**Sn**	**23 04 40.5**	**-4.4**
	4.3nm,0.3s,baz=78,slow=20,SNR=3.3						
USRK	**Ussuriysk Ar.**	**10.56**	**304**	Pn	**Pn**	**23 04 23.4**	**+1.1**
	0.4nm,0.3s,baz=108,slow=14,SNR=9.3						
USRK				LR	LR	23 08 18.8	
	comp=Z,38nm,18.8s,baz=137,slow=36						
JNU	**Nakatsue**	**12.14**	**246**	LR	LR	23 09 51.9	
	comp=Z,44nm,20.1s,baz=107,slow=39						
KSRS	**Korea Array**	**12.83**	**269**	LR	LR	23 09 13.7	
	comp=Z,34nm,18.4s,baz=69,slow=34						
MA2	**Magadan**	**21.19**	**9**	P	**P**	**23 06 36.8**	**+0.6**
	1.3nm,0.3s,baz=181,slow=20,SNR=4.3						
SEY	**Seymchan**	**24.65**	**9**	P	**P**	**23 07 11.0**	**0.0**
	2.0nm,0.5s,baz=194,slow=5.3,SNR=13						
SONM	**Songino Array**	**28.64**	**301**	P	**P**	**23 07 48.5**	**+1.2**
	0.8nm,0.8s,baz=88,slow=8.3,SNR=6.2						
ZALV	**Zalesovo Beam**	**42.32**	**311**	P	**P**	**23 09 43.2**	**-1.1**
	0.5nm,0.3s,baz=92,slow=7.2,SNR=3.9						
MKAR	**Makanchi Array**	**45.00**	**301**	P	**P**	**23 10 06.8**	**+0.8**
	0.6nm,0.8s,baz=86,slow=8.8,SNR=8.1						
KURBB	**Kurchatov Arra**	**46.61**	**307**	P	**P**	**23 10 19.3**	**+0.7**
	1.1nm,0.7s,baz=82,slow=8.2,SNR=10						
ILAR	**Eielson Array**	**46.83**	**33**	P	**P**	**23 10 20.6**	**+0.5**
	0.6nm,0.8s,baz=258,slow=6.1,SNR=7.1						
BVAR	**Borovoye Array**	**50.96**	**312**	P	**P**	**23 10 52.6**	**+0.6**
	0.9nm,0.7s,baz=88,slow=7.7,SNR=6.6						
INK	**Inuvik**	**51.81**	**28**	P	**P**	**23 10 59.3**	**+1.2**
	1.2nm,0.5s,baz=302,slow=6.8,SNR=13						
WRA	**Warramunga Arr**	**59.18**	**191**	P	**P**	**23 11 51.6**	**0.0**
	1.2nm,1.0s,baz=9.8,slow=7.2,SNR=3.6						
RES	**Resolute Bay**	**60.32**	**15**	P	**P**	**23 11 58.9**	**+0.1**
	0.8nm,0.7s,baz=346,slow=5.3,SNR=4.6						
YKA	**Yellowknife Ar**	**61.17**	**31**	P	**P**	**23 12 04.7**	**-0.1**
	0.1nm,0.6s,baz=294,slow=6.0,SNR=3.9						
NB2	**NORSAR Subarra**	**73.34**	**338**	P	**P**	**23 13 22.3**	**+0.3**
	comp=Z,0.9nm,0.7s,baz=40,slow=5.9						
NOA	**NORSAR Array B**	**73.34**	**338**	P	**P**	**23 13 21.1**	**-0.9**
	comp=Z,0.9nm,0.7s,baz=42,slow=5.6,SNR=3.9						
AKASG	**Malin Array Be**	**74.17**	**323**	P	**P**	**23 13 26.8**	**-0.2**
	comp=Z,1.1nm,0.5s,baz=41,slow=5.1,SNR=5.2						
TXAR	**Lajitas Array**	**87.33**	**54**	P	**P**	**23 14 37.7**	**-0.2**
	comp=Z,0.2nm,0.6s,baz=323,slow=3.9,SNR=3.3						

*MAN **02** 23:10:20, 7.84°N×125.04°E, h1km, mb4.4, ML3.3, MS3.1*
MAN INTENSITY I - VALENCIA BUKIDNON.
*IDC **02** 23:11:07.8±1.6, 8.18°N×126.03°E, h0km, mb3.6/3, mb1 3.8/3, mb1mx3.4/42, mbtmp3.6/3, Error ellipse: s-maj=39.1km s-min=16.6km az=103.0*
ISC 02 23:11:06.0±2.8**, 8.3°N**±0.6°×**12.5°E**±°**, h12**km**, n6, σ0.54s**/6**, mb3.6**/3**, 2C, Mindanao**

Code	Station Name	Δ°	AZ°	Op	ISC	Time (h m s)	Res ISC
DMPH	**Davao City--Mi**	**1.29**	**161**⇑	*e*P	**Pg**	**23 11 31.1**	**+0.3**
DMPH				*e*S	**Sb**	**23 11 46.3**	**-0.4**
DAV	**Davao City (W)**	**1.33**	**158**	Pg	**Pn**	**23 11 29.9**	**-0.4**
	166nm,0.3s,baz=230,slow=22,SNR=4.5						
DAV				Lg	Lg	23 11 47.1	
	148nm,0.3s,baz=178,slow=19,SNR=5.5						
RCP	**Roxas**	**3.96**	**325**⇑	*e*P	**Pb**	**23 12 15.7**	**-0.1**
WRA	**Warramunga Arr**	**29.52**	**162**	P	**P**	**23 17 10.6**	**+0.1**
	0.6nm,0.7s,baz=345,slow=9.7,SNR=2.5						
ASAR	**Alice Springs**	**32.93**	**165**	P	**P**	**23 17 41.1**	**+0.6**
	0.5nm,0.5s,baz=343,slow=7.0,SNR=11						
MKAR	**Makanchi Array**	**52.89**	**324**	P	P	23 20 30.5	+8.6
	0.7nm,0.9s,baz=117,slow=6.9,SNR=4.5						

*IDC **02** 23:14:20.6±1.0, 56.36°N×152.35°W, h0km, mb4.1/17, mb1 4.3/20, mb1mx4.1/45, mbtmp4.1/20, ML3.3/3, MS3.6/17, Ms1 3.6/17, ms1mx3.4/37, Error ellipse: s-maj=28.8km s-min=13.9km az=17.0*
*NEIC **02** 23:14:20.4, 56.21°N×151.89°W, h10km, mb4.6/12, After AEIC.*
*ISCJB **02** 23:14:22.1±0.4, 56.52°N±0.04°×152.13°W±0.05°, h18km, mb4.3/41, MS3.7/17, Error ellipse: s-maj=5.7km s-min=4.2km az=161.5*
*MOS **02** 23:14:22.1±0.8, 56.60°N×152.56W, h11km, mb4.7/15, Error ellipse: s-maj=30.5km s-min=8.6km az=98.0*
*BJI **02** 23:14:26.0, 57.00°N×152.30°W, h36km, mb4.4/7, mB4.8/3, Ms4.9/1, Ms7 4.5/1*
ISC 02 23:14:23.6±0.6**, 56.51°N**±0.07°×**152.20°W**±0.05°**, h18**km**, n148, σ1.22s**/135**, mb4.5**/41**, MS3.6**/17**, 3C-8D, Kodiak Island region**

Code	Station Name	Δ°	AZ°	Op	ISC	Time (h m s)	Res ISC
OHAK	**Old Harbor**	**0.93**	**320**	P	**Pb**	**23 14 40.5**	**-0.7**
KDAK	**Kodiak Island**	**1.29**	**351**	Pn	Pg	23 15 01.4	+13
	11nm,0.3s,baz=178,slow=5.9,SNR=110						
KDAK				Sn	Sg	23 15 18.1	+13
	32nm,0.3s,baz=165,slow=8.0,SNR=15						
KDAK	**Kodiak Island**	**1.29**	**351**	*i* P	**Pn**	**23 14 46.0**	**-0.7**
KDAK	**Kodiak Island**	**1.29**	**351**	P	**Pn**	**23 14 46.4**	**-0.3**
KDAK				Sn	Sg	23 15 18.1	+13
KAWH	**Katmai**	**2.35**	**324**	P	**Pn**	**23 15 02.1**	**+0.9**
FOPK	**Fourpeaked Vol**	**2.36**	**344**	P	**Pn**	**23 15 02.4**	**+1.0**
KVTA	**Katmai Vly 10**	**2.52**	**320**	P	**Pn**	**23 15 04.8**	**+1.3**
PLK3	**Peulik 3**	**2.52**	**300**	P	**Pn**	**23 15 03.2**	**-0.4**
PLK4	**Peulik 4**	**2.54**	**298**	P	**Pn**	**23 15 05.0**	**+1.2**
CDD	**Cape Douglas**	**2.55**	**343**	P	**Pn**	**23 15 05.7**	**+1.7**
KAHC	**Katmai Hardscr**	**2.62**	**326**	P	**Pn**	**23 15 06.3**	**+1.2**
KELA	**Mount Kelaz**	**2.72**	**317**	P	**Pn**	**23 15 07.2**	**+0.8**
MCNL	**McNeil River**	**2.92**	**338**	P	**Pn**	**23 15 10.0**	**+1.0**
OPT	**Oil Point**	**3.20**	**351**	P	**Pn**	**23 15 14.8**	**+1.9**
ANPK	**Aniakchak Peak**	**3.29**	**278**	P	**Pn**	**23 15 12.7**	**-1.5**
BRLK	**Bradley Lake**	**3.34**	**11**	*e*Pn	**Pn**	**23 15 13.7**	**-1.1**
ANPB	**Aniakchak Plen**	**3.37**	**278**	P	**Pn**	**23 15 13.3**	**-1.9**
CHGN	**Chignik**	**3.46**	**269**	*e*Pn	**Pn**	**23 15 16.6**	**+0.1**
ILW	**Iliamna West**	**3.59**	**352**	P	**Pn**	**23 15 19.5**	**+1.0**
SEW	**Seward**	**3.88**	**21**	P	**Pn**	**23 15 21.0**	**-1.3**
VNHG	**Veniaminof 1**	**3.89**	**269**	P	**Pn**	**23 15 21.2**	**-1.2**
RSO	**Redoubt South**	**3.97**	**356**	*e*Pn	Pn	23 15 19.4	-4.3
RDJH	**Redoubt Jeurge**	**4.11**	**356**	P	**Pn**	**23 15 26.3**	**+0.8**
SPU	**Mount Spurr**	**4.69**	**1**	*e*Pn	**Pn**	**23 15 32.1**	**-1.3**
CKL	**Chakachamna La**	**4.70**	**359**	P	**Pn**	**23 15 34.1**	**+0.5**
RC01	**Rabbit Creek A**	**4.77**	**15**	*e*Pn	**Pn**	**23 15 34.3**	**-0.1**
SDPT	**Sand Point**	**4.80**	**259**	*e*Pn	Pn	23 15 40.0	+5.2
SVW2	**Sparrevohn**	**4.92**	**340**	*e*Pn	**Pn**	**23 15 35.3**	**-1.3**
STLK	**Strandline Lak**	**5.01**	**2**	P	**Pn**	**23 15 38.3**	**+0.5**
PMR	**Palmer**	**5.34**	**16**	*e*Pn	**Pn**	**23 15 42.5**	**+0.3**
RAGM	**Ragged Mountai**	**5.54**	**42**	*e*Pn	**Pn**	**23 15 45.7**	**+0.6**
SML	**Sawmill**	**5.67**	**19**	*e*Pn	**Pn**	**23 15 46.7**	**-0.2**
DIV	**Divide**	**5.71**	**33**	*e*Pn	**Pn**	**23 15 46.8**	**-0.6**
SCM	**Sheep Creek Mo**	**5.89**	**23**	*e*Pn	**Pn**	**23 15 48.8**	**-1.2**
KLU	**Klutina**	**5.96**	**30**	*e*Pn	**Pn**	**23 15 50.1**	**-0.7**
BMRM	**Bremner River**	**5.96**	**38**	*e*Pn	**Pn**	**23 15 50.5**	**-0.4**
KHIT	**Khitrov Hills**	**6.13**	**46**	P	**Pn**	**23 15 52.2**	**-1.0**
PPLA	**Purkeypile**	**6.41**	**0**	*e*Pn	**Pn**	**23 15 56.1**	**-0.9**
TT01	**Tatalina**	**6.70**	**345**	*e*Pn	**Pn**	**23 16 00.8**	**-0.1**
TTA	**Tatalina**	**6.72**	**345**	*e*Pn	**Pn**	**23 16 01.3**	**0.0**
CAST	**Castle Rocks**	**6.93**	**0**	*e*Pn	**Pn**	**23 16 05.1**	**+0.9**
DHY	**Denali Highway**	**7.02**	**18**	*e*Pn	**Pn**	**23 16 06.7**	**+1.3**
TRF	**Thorofare Moun**	**7.03**	**7**	*e*Pn	**Pn**	**23 16 06.1**	**+0.5**
KTH	**Kantishna Hill**	**7.09**	**5**	*e*Pn	**Pn**	**23 16 07.8**	**+1.4**
RND	**Reindeer**	**7.12**	**12**	*e*Pn	**Pn**	**23 16 07.0**	**+0.2**
MCK	**McKinley**	**7.42**	**11**	*e*Pn	**Pn**	**23 16 13.0**	**+2.1**
BPAW	**Bear Paw Mtn.**	**7.64**	**4**	*e*Pn	**Pn**	**23 16 15.6**	**+1.7**
DOT	**Dot Lake**	**8.23**	**26**	*e*Pn	**Pn**	**23 16 24.0**	**+2.1**
WRH	**Wood River Hil**	**8.24**	**13**	*e*Pn	**Pn**	**23 16 23.4**	**+1.4**
HDA	**Harding Lake**	**8.33**	**16**	*e*Pn	**Pn**	**23 16 24.0**	**+0.6**
CCB	**Clear Creek Bu**	**8.44**	**13**	*e*Pn	**Pn**	**23 16 25.9**	**+1.1**
COLA	**College**	**8.65**	**12**	*de*P	**Pn**	**23 16 27.7**	**0.0**

COLA				pmax	pmax		
	comp=Z,7.0nm,1.2s						
COLA	College	8.65	12	ePn	Pn	23 16 28.5	+0.9
IL1	Eielson Array	8.69	15	ePn	Pn	23 16 29.1	+1.0
ILAR	Eielson Array	8.69	15	Pn	Pn	23 16 28.4	+0.3
	comp=Z,1.6nm,0.3s,baz=202,slow=14,SNR=53						
ILAR				Sn	Sn	23 18 04.0	-1.5
	comp=Z,0.1nm,0.3s,baz=205,slow=27,SNR=2.6						
ILB	Eielson Array	8.69	15	ePn	Pn	23 16 29.4	+1.2
MDM	Murphy Dome	8.69	11	ePn	Pn	23 16 28.5	+0.3
FYU	Fort Yukon	10.61	15	ePn	Pn	23 16 56.0	+1.6
DLBC	Dease Lake	12.07	72	Pn	Pn	23 17 16.4	+1.8
	comp=Z,0.1nm,0.3s,baz=225,slow=11,SNR=3.0						
DLBC				LR	LR	23 21 28.3	
	comp=Z,214nm,20.0s,baz=292,slow=35						
GAMB	Gambell	12.10	315	ePn	Pn	23 17 16.1	+1.3
INK	Inuvik	14.56	28	Pn	P	23 17 53.9	-0.9
	comp=Z,0.1nm,0.3s,baz=210,slow=11,SNR=13						
INK				LR	LR	23 23 55.0	
	comp=Z,260nm,18.4s,baz=231,slow=39						
INK	Inuvik	14.56	28	ePn	Pn	23 17 49.2	+0.8
GSTR	Great Sitkin T	14.58	262	ePn	Pn	23 17 49.4	+0.6
GSTR				eSn	Sn	23 20 24.8	-5.0
BBB	Bella Bella	14.66	97	LR	LR	23 22 08.3	
	comp=Z,160nm,18.1s,baz=298,slow=32						
YKW3	Yellowknife Ar	19.76	57	eP	Pn	23 18 54.0	+0.3
YKA	Yellowknife Ar	19.77	57	P	Pn	23 18 53.8	+0.1
	comp=Z,0.1nm,0.3s,baz=268,slow=10,SNR=22						
YKB5	Yellowknife Ar	19.77	57	eP	Pn	23 18 53.4	-0.4
BILL	Bilibino	21.99	318c	iP	P	23 19 15.7	-0.5
BILL				e		23 19 23.8	
BILL				e		23 19 37.6	
BILL				pmax	pmax		
	comp=Z,17nm,1.2s						
BILL				MLR	MLR		
	comp=Z,214nm,19.0s						
BILL	Bilibino	21.99	318	eP	P	23 19 16.4	+0.2
	comp=Z,8.8nm,0.9s						
SEY	Seymchan	27.87	306	P	P	23 20 10.7	-1.0
	comp=Z,1.0nm,0.5s,baz=43,slow=14,SNR=4.8						
SEY	Seymchan	27.87	306	P	P	23 20 12.0	+0.3
PETK	Petropavlovsk-	28.55	285	LR	LR	23 31 35.0	
	comp=Z,75nm,20.6s,baz=71,slow=36						
NVAR	Mina Array Bea	28.77	114	P	P	23 20 19.6	-0.7
	comp=Z,1.1nm,0.6s,baz=292,slow=7.8,SNR=5.6						
MA2	Magadan	29.55	300⇓	eP	P	23 20 26.8	+0.1
PDAR	Pinedale Array	30.30	99	P	P	23 20 33.7	-0.1
	comp=Z,0.2nm,0.5s,baz=346,slow=5.9,SNR=3.0						
ULM	Lac du Bonnet	33.33	76	P	P	23 21 01.1	+1.1
	comp=Z,3.9nm,1.0s,baz=291,slow=8.8,SNR=3.6						
ULM				LR	LR	23 35 02.6	
	comp=Z,96nm,18.1s,baz=260,slow=37						
TIXI	Tiksi	34.60	327⇓	eP	P	23 21 11.2	+0.4
TIXI				pmax	pmax		
	comp=Z,3.0nm,1.2s						
EYMN	Ely	37.01	77	eP	P	23 21 29.9	-1.9
	comp=Z,7.6nm,0.8s						
YAK	Yakutsk	38.02	311	eP	P	23 21 40.0	-0.1
	comp=Z,19nm,0.8s						
GLMI	Grayling	42.68	76	eP	P	23 22 16.4	-2.5
	comp=Z,13nm,0.8s						
TXAR	Lajitas Array	43.43	108	P	P	23 22 25.9	+0.6
	comp=Z,1.5nm,1.1s,baz=316,slow=5.2,SNR=6.0						
KLR	Kul'dur	44.27	294	P	P	23 22 31.6	0.0
	comp=Z,8.1nm,0.8s,baz=53,slow=7.2,SNR=19						
KLR				LR	LR	23 42 03.9	
	comp=Z,64nm,19.4s,baz=30,slow=38						
KLR	Kul'dur	44.27	294	iP	P	23 22 31.4	-0.2
BOD	Bodaibo	46.89	313	eP	P	23 22 50.8	-1.4
BOD				pmax	pmax		
	comp=Z,7.0nm,1.5s						
NRIK	Noril'sk	47.24	335	P	P	23 22 55.4	+0.6
	comp=Z,4.1nm,0.8s,baz=46,slow=5.6,SNR=12						
H11N2	WAKE ISLAND Hy	47.62	237	T	T	00 14 02.3	
	baz=22,slow=75,SNR=14						
H11N1	WAKE ISLAND Hy	47.64	237	T	T	00 14 03.7	
	baz=12,slow=75,SNR=20						
H11S1	WAKE ISLAND Hy	48.78	236	T	T	00 15 32.1	
	baz=29,slow=76,SNR=33						
H11S2	WAKE ISLAND Hy	48.79	236	T	T	00 15 33.7	
	baz=29,slow=76,SNR=20						
H11S3	WAKE ISLAND Hy	48.80	236	T	T	00 15 33.9	
	baz=29,slow=76,SNR=22						
KSRS	Korea Array	54.44	286	LR	LR	23 48 48.7	
	comp=Z,30nm,18.1s,baz=75,slow=38						
TLY	Talaya	55.47	313	eP	P	23 23 57.3	+0.6
TLY				pmax	pmax		
	comp=Z,8.0nm,1.5s						
TLY				MLR	MLR		
	comp=Z,73nm,16.0s						
ULN	Ulaanbaatar	56.93	308⇓	eP	P	23 24 06.8	-0.6
ULN				pmax	pmax		
	comp=Z,5.0nm,1.2s						
ULN	Ulaanbaatar	56.93	308	eP	P	23 24 07.5	+0.1
	comp=Z,2.9nm,0.9s						
SONA1	Songino Array	57.23	308	eP	P	23 24 10.1	+0.7
SONM	Songino Array	57.24	308	P	P	23 24 10.6	+1.0
	comp=Z,5.0nm,0.8s,baz=47,slow=7.3,SNR=19						
SONM				LR	LR	23 50 43.2	
	comp=Z,128nm,18.5s,baz=38,slow=38						
NVS	Novosibirsk	60.20	327	eP	P	23 24 30.1	+0.3
ZALV	Zalesovo Beam	60.47	325	LR	LR	23 51 32.6	
	comp=Z,59nm,20.7s,baz=70,slow=37						
NB2	NORSAR Subarra	62.06	9	P	P	23 24 43.4	+0.9
	comp=Z,1.3nm,0.7s,baz=349,slow=6.9						
NOA	NORSAR Array B	62.06	9	P	P	23 24 42.9	+0.4
	comp=Z,2.5nm,0.9s,baz=351,slow=6.6,SNR=7.1						
NOA				LR	LR	23 54 26.3	
	comp=Z,20nm,18.5s,baz=335,slow=39						
FINES	FINESS Array B	62.38	1	P	P	23 24 45.4	+1.0
	comp=Z,2.8nm,0.8s,baz=354,slow=10,SNR=6.9						
KLMR	Klimovskoe	62.61	354	eP	P	23 24 43.7	-2.3
KLMR				e		23 25 23.4	
KLMR				pmax	pmax		
	comp=Z,18nm,1.4s						
ARU	Arti	64.70	342	LR	LR	23 57 35.5	
	comp=Z,68nm,18.0s,baz=347,slow=40						
ARU	Arti	64.70	342d	iP	P	23 25 00.2	+0.4
ARU						23 25 34.4	
ARU						23 27 18.4	
ARU				S	S	23 33 38.6	-0.2
ARU				SS	SS	23 37 44.1	-4.5
ARU				pmax	pmax		
	comp=Z,19nm,2.5s						
ARU	Arti	64.70	342	eP	P	23 25 00.3	+0.4
	comp=Z,6.8nm,1.0s						
BRVK	Borovoye	65.37	333d	iP	P	23 25 04.5	+0.2
BRVK				pmax	pmax		
	comp=Z,12nm,2.5s						
BRVK	Borovoye	65.37	333	eP	P	23 25 04.4	+0.1
	comp=Z,4.1nm,0.9s						
VOSK	Vostochnaya	65.50	333	eP	P	23 25 05.2	0.0
	comp=Z,8.1nm,1.6s						
GTA	Gaotai	66.82	307	eP	P	23 25 13.5	-0.5
GTA				pmax	pmax		
	comp=Z,3.0nm,1.2s						
MKAR	Makanchi Array	67.45	323	P	P	23 25 17.8	0.0
	comp=Z,1.0nm,0.7s,baz=39,slow=7.8,SNR=6.3						
MKAR				LR	LR	23 55 13.6	
	comp=Z,50nm,18.6s,baz=17,slow=36						
MAKZ	Makanchi	67.54	323	eP	P	23 25 18.7	+0.4
	comp=Z,5.2nm,1.1s						
WMQ	Urumqi	68.10	318	eP	P	23 25 25.5	+3.5
WMQ				pP	sP	23 25 35.3	+5.3
WMQ				sP	PcP	23 25 39.8	-8.1
WMQ				pmax	pmax		
	comp=Z,3.0nm,0.6s						
WMQ				pmax	pmax		
	comp=Z,58nm,5.2s						
OBN	Obninsk	68.50	355⇓	eP	P	23 25 24.8	+0.7
OBN				e		23 25 46.5	
OBN				pmax	pmax		
	comp=Z,20nm,1.7s						
OBN				MLR	MLR		
	comp=Z,46nm,18.0s						
ABKAR	Akbulak array	71.27	338	eP	P	23 25 41.6	+0.3
	comp=Z,1.7nm,0.7s						
CLL	Collm	71.85	10	eP	P	23 25 46.0	+1.2
CLL	Collm	71.85	10	eP	P	23 25 46.0	+1.2
CD2	Chengdu	71.95	299	P	P	23 25 45.6	-0.2
CD2				pmax	pmax		
	comp=Z,1.0nm,0.5s						
UPC	Upice	72.90	8	eP	P	23 25 52.7	+1.6
UPC	Upice	72.90	8	eP	P	23 25 52.7	+1.6
TKM2	Tokmak 2	73.07	325	eP	P	23 25 53.2	+0.7
	comp=Z,2.9nm,0.8s						
DPC	Dobruska-Polom	73.08	8	eP	P	23 25 53.9	+1.7
DPC				ex	x	23 26 05.1	
DPC	Dobruska-Polom	73.08	8	eP	P	23 25 53.9	+1.7
DPC				e		23 26 05.1	
AKASG	Malin Array Be	73.15	359	P	P	23 25 52.2	-0.3
	comp=Z,3.0nm,0.7s,baz=1.7,slow=5.9,SNR=11						
KIEV	Kiev	73.16	359⇑	iP	P	23 25 52.2	-0.3
KIEV				pmax	pmax		
	comp=Z,4.0nm,0.6s						
PRU	Pruhonice	73.30	9	eP	P	23 25 55.0	+1.6
PRU	Pruhonice	73.30	9	eP	P	23 25 55.0	+1.6
FRU	Bishkek	73.46	326	eP	P	23 25 55.0	+0.5
AAK	Ala-Archa	73.68	326⇓	eP	P	23 25 56.9	+0.9
AAK				pmax	pmax		
	comp=Z,11nm,1.3s						
AAK	Ala-Archa	73.68	326	eP	P	23 25 57.1	+1.1
	comp=Z,8.7nm,1.5s						
KHC	Kasperske Hory	74.06	10	eP	P	23 25 59.8	+1.8
KHC	Kasperske Hory	74.06	10	eP	P	23 25 59.8	+1.8
STHS	Stebnicka Huta	74.30	4	eP	P	23 26 01.4	+2.1
STHS	Stebnicka Huta	74.30	4	e	P	23 26 01.4	+2.1
GERES	GERESS Array B	74.36	10	P	P	23 26 00.9	+1.2
	comp=Z,0.8nm,0.6s,baz=353,slow=5.4,SNR=11						
LANS	Liptovska Anna	74.48	6	eP	P	23 26 00.4	0.0
LANS	Liptovska Anna	74.48	6	eP	P	23 26 00.4	0.0
VYHS	Vyhne	75.10	6	eP	P	23 26 05.4	+1.5
VYHS	Vyhne	75.10	6	eP	P	23 26 05.4	+1.5
DAVOX	Davos/Dischmat	75.99	13	LR	LR	00 01 31.9	
	comp=Z,27nm,19.7s,baz=309,slow=37						
KSH	Kashi	76.03	324	eP	P	23 26 13.3	+3.7
KSH				pmax	pmax		
	comp=Z,6.0nm,1.1s						
KIV	Kislovodsk	79.12	349	iP	P	23 26 26.5	-0.2
KIV				pmax	pmax		
	comp=Z,6.0nm,0.9s						
KBZ	Khabaz	79.32	349	LR	LR	00 05 17.1	
	comp=Z,53nm,18.3s,baz=18,slow=38						
NCK	Nalchik	79.48	348⇑	eP	P	23 26 29.7	+1.1
NCK				pmax	pmax		
	comp=Z,15nm,1.1s						
ES19	SONSECA Array	80.47	24	eP	P	23 26 35.6	+1.6
ESDC	Sonseca Array	80.47	24	P	P	23 26 35.7	+1.6
	comp=Z,1.6nm,0.7s,baz=345,slow=5.2,SNR=13						
ESDC				LR	LR	00 03 23.2	
	comp=Z,23nm,18.6s,baz=155,slow=36						
GEYT	Alibeck	82.47	336	P	P	23 26 45.3	+0.6
	comp=Z,1.2nm,0.6s,baz=316,slow=10,SNR=4.5						
GEYT				LR	LR	00 09 22.2	
	comp=Z,58nm,18.1s,baz=320,slow=40						
BRTR	Keskin Array B	84.00	355	P	P	23 26 53.5	+0.8
	comp=Z,1.6nm,0.9s,baz=6.7,slow=4.2,SNR=5.3						
CMAR	Chiang Mai Arr	84.73	296	P	P	23 26 56.9	+0.4
	comp=Z,0.9nm,0.4s,baz=9.5,slow=6.2,SNR=7.7						
CMAR				LR	LR	00 10 40.3	
	comp=Z,16nm,18.1s,baz=55,slow=40						

*JMA **02** 23:16:24.8±0.3, 36.67N×142.35E, h17km±4km, M4.1*
*ISCJB **02** 23:16:26.3±1.9, 36.59N±0.04×142.32E±0.06, h30km±15km, mb3.8/11, Error ellipse: s-maj=8.6km s-min=6.2km az=170.7*
*IDC **02** 23:16:29.0±5.8, 36.63N×142.29E, h33km±45km, mb3.7/11, mb1 3.9/14, mb1mx3.6/41, mbtmp3.9/14, ML3.7/3, MS2.9/3, Ms1 2.9/3, ms1mx2.5/46, Error ellipse: s-maj=24.7km s-min=17.3km az=99.0*
ISC 02 23:16:25.8±3.6**, 36.65N**±0.04×**142.25E**±0.07**, h11km**±23km**, n25, σ1.07**/32**, mb3.9**/11**, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
ONAJ	Iwakimizuishiy	1.25	292	P	Pn	23 16 48.6	-0.6
ONAJ				eS	Sb	23 17 06.4	+0.9
JHO	Hitachi	1.35	269	P	Pn	23 16 50.1	-0.5
CHOJ	Chosi	1.47	230	P	Pb	23 16 52.5	-0.6
JMM	Marumori	1.68	317	P	Pn	23 16 54.3	-0.8
JMM				eS	Sb	23 17 17.2	-0.7
JFT	Otama	1.76	300	P	Pb	23 16 56.6	-1.5
JFT				eS	Sb	23 17 19.5	-0.7
JIO	Ouri	1.94	339	P	Pn	23 16 57.9	-0.7
JOU	Okura	2.13	324	P	Pn	23 17 01.6	+0.3
JOU				S	Sb	23 17 31.1	+0.3
BSO1	Boso 1	2.25	208	P	Pn	23 17 02.5	+0.2
BSO3	Boso 3	2.32	218	P	Pn	23 17 04.0	+0.3
JMK	Ichinoseki	2.44	341	P	Pn	23 17 05.4	-0.1
JMK				S	Sn	23 17 34.9	-0.4
MJAR	Matsushiro Arr	3.25	269	Pn	Pn	23 17 18.2	+1.4
	8.4nm,0.3s,baz=94,slow=8.4,SNR=87						
MJAR				LR	LR	23 18 56.2	
	comp=Z,177nm,18.7s,baz=115,slow=45						
MAT	Matsushiro	3.26	269	P	Pn	23 17 18.6	+1.8
MAT				eS	Sn	23 17 55.2	-0.3
JHJ	Hachijo jima 2	4.06	211	Pn	Pn	23 17 27.2	-0.6
	26nm,0.3s,baz=102,slow=22,SNR=19						
JHJ				Sn	Sn	23 18 12.6	-2.8
	49nm,0.3s,baz=261,slow=23,SNR=8.2						
JHJ				LR	LR	23 19 37.3	
	comp=Z,110nm,18.1s,baz=282,slow=46						
KSRS	Korea Array	11.48	278	Pn	Pn	23 19 11.8	+2.3
	0.2nm,0.3s,baz=80,slow=13,SNR=4.7						
KSRS				LR	LR	23 23 39.1	
	comp=Z,97nm,18.8s,baz=111,slow=37						
MA2	Magadan	23.60	11	P	P	23 21 35.8	-0.5
	3.7nm,0.7s,baz=205,slow=8.1,SNR=5.7						
SEY	Seymchan	27.04	10	P	P	23 22 09.6	+1.9
	1.3nm,0.6s,baz=206,slow=7.7,SNR=5.3						
SONM	Songino Array	28.56	304	P	P	23 22 22.5	+0.9
	5.2nm,0.8s,baz=103,slow=9.2,SNR=24						
ZALV	Zalesovo Beam	42.67	313	P	P	23 24 22.5	+0.3
	0.8nm,0.3s,baz=90,slow=7.4,SNR=5.2						
MKAR	Makanchi Array	44.89	303	P	P	23 24 40.6	+0.4
	1.4nm,0.7s,baz=88,slow=9.3,SNR=20						
ILAR	Eielson Array	49.46	32	P	P	23 25 15.4	-0.1
	0.7nm,0.8s,baz=274,slow=6.2,SNR=7.3						
WRA	Warramunga Arr	56.78	189	P	P	23 26 10.8	+0.9
	1.0nm,0.9s,baz=146,slow=25,SNR=5.0						
ASAR	Alice Springs	60.51	189	P	P	23 26 35.4	-0.5
	0.5nm,0.7s,baz=13,slow=8.4,SNR=6.0						
YKA	Yellowknife Ar	63.80	30	P	P	23 26 57.4	-0.1
	0.5nm,1.0s,baz=304,slow=6.6,SNR=2.8						
FINES	FINESS Array B	69.47	333	P	P	23 27 33.1	-0.6
	2.2nm,0.8s,baz=4.1,slow=2.7,SNR=4.3						
AKASG	Malin Array Be	75.01	323	P	P	23 28 06.4	-0.6
	0.2nm,0.3s,baz=46,slow=6.1,SNR=4.2						

IDC 02 23:20:56.8±3.4**, 36.07N×142.11E, h0km, mb3.3**/3**, mb1 3.5**/4**, mb1mx3.3**/37**, mbtmp3.3**/4**, ML3.7**/1**, Error ellipse: s-maj=96.7km s-min=27.9km az=54.0, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
MJAR	Matsushiro Arr	3.19	280	Pn	Pn	23 21 47.9	-0.3
	9.0nm,0.3s,baz=84,slow=14,SNR=54						
MKAR	Makanchi Array	45.11	303	P	P	23 29 14.6	-0.1
	0.2nm,0.7s,baz=75,slow=8.6,SNR=2.3						
WRA	Warramunga Arr	56.19	189	P	P	23 30 38.3	-0.3
	0.3nm,0.5s,baz=10,slow=7.2,SNR=3.7						
ASAR	Alice Springs	59.92	189	P	P	23 31 04.7	+0.1
	0.3nm,0.9s,baz=2.9,slow=6.7,SNR=3.2						

*CSEM **02** 23:21:02.1±0.1, 67.84N×20.22E, h4km, ML1.5, Error ellipse: s-maj=2.1km s-min=1.3km az=3.0, Mining explosion.*
UPP 02 23:21:02.5±0.1**, 67.85N×20.20E, h0km, ML1.5, Explosion, Sweden**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
KUA	Kurravaara	0.12	27	P	Pg	23 21 05.0	+0.2
KUA				S	Sg	23 21 06.5	+0.3
KUA	Kurravaara	0.12	27	P	Pg	23 21 05.0	+0.3
KUA				S	Sg	23 21 06.5	+0.2
NIKU	Nikkaluokta	0.44	273	P	Pg	23 21 10.9	0.0
NIKU	Nikkaluokta	0.44	273	P	Pg	23 21 10.9	0.0
LANU	Lannavaara	0.71	73	P	Pg	23 21 15.8	-0.2
LANU	Lannavaara	0.71	73	P	Pg	23 21 15.8	-0.2
MASU	Masugnsbyn	0.79	119	P	Pg	23 21 17.3	-0.4
MASU	Masugnsbyn	0.79	119	P	Pg	23 21 17.3	-0.4
SALU	Saltoluokta	0.80	235	P	Pg	23 21 17.6	-0.2
SALU	Saltoluokta	0.80	235	P	Pg	23 21 17.6	-0.2
PAJU	Pajala	1.40	125	P	Pn	23 21 27.9	-1.3
PAJU	Pajala	1.40	125	P	Pn	23 21 27.9	-1.3

*ISCJB **02** 23:21:12.9±0.9, 36.67N±0.04×140.72E±0.07, h11km±4km, mb3.5/2, Error ellipse: s-maj=10.0km s-min=5.5km az=24.3*
*JMA **02** 23:21:14.1, 36.71N×140.62E, h6km±1km, M3.1*
JMA Felt II J1.
*IDC **02** 23:21:15.4±4.1, 36.09N×142.72E, h0km, mb3.6/2, mb1 3.9/4, mb1mx3.4/38, mbtmp3.8/4, ML3.6/2, Error ellipse: s-maj=77.3km s-min=41.5km az=33.0*
ISC 02 23:21:13.6±1.1**, 36.68N**±0.04×**140.65E**±0.05**, h10km**±7km**, n12, σ0.90**/19**, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
JHO	Hitachi	0.09	224	P	Pg	23 21 16.5	+0.4
JHO				S	Sg	23 21 18.2	+0.3
ONAJ	Iwakimizuishiy	0.44	16	P	Pg	23 21 22.2	0.0
ONAJ				S	Sg	23 21 27.8	-0.2
JYT	Yasato	0.58	219	P	Pb	23 21 25.4	-0.4
JYT				eS	Sb	23 21 33.8	-0.3
JSB	Shiboa	0.65	297	P	Pg	23 21 26.6	+0.4
JSB				S	Sb	23 21 36.2	-0.1
JFT	Otama	0.88	343	P	Pg	23 21 30.3	-0.1
JFT				S	Sg	23 21 41.4	-0.5
JAG	Ashikaga	1.00	256	P	Pg	23 21 32.3	-0.4
JAG				S	Sg	23 21 45.3	-0.4
JFY	Yanaizu	1.05	314	P	Pg	23 21 33.5	-0.3
MJAR	Matsushiro Arr	1.97	267	Pn	Sb	23 22 13.1	-1.0
	9.0nm,0.3s,baz=94,slow=16,SNR=13						
MAT	Matsushiro	1.97	267	P	Pn	23 21 48.1	+1.1
MAT				S	Sb	23 22 13.9	-0.2
JHJ	Hachijo jima 2	3.62	192	Pn	Pb	23 22 15.3	-2.4
	7.1nm,0.3s,baz=45,slow=20,SNR=2.7						
WRA	Warramunga Arr	56.63	187	P	P	23 30 57.4	+0.6
	0.8nm,0.7s,baz=5.1,slow=7.1,SNR=3.7						
ASAR	Alice Springs	60.36	187	P	P	23 31 24.4	+1.6
	0.1nm,0.6s,baz=19,slow=8.0,SNR=4.0						

MAN 02 23:23:19, 7.86N×125.02E, h1km, mb4.4, ML3.2, MS3.0, 3C, Mindanao

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
BUKP	Musuan	0.04	63	eP	Pg	23 23 20.0	+0.2
BUKP				eS	Sg	23 23 23.4	+2.9
KCP	Kidapawan	0.85	176⇑	eP	Pg	23 23 34.0	-1.3
KCP				eS	Sn	23 23 51.1	-0.2
DMPH	Davao City--Mi	0.91	148⇑	eP	Pg	23 23 36.2	-0.2
DMPH				eS	Sn	23 23 54.9	+2.2
CTBH	Cotabato--PC H	1.00	231⇑	iP	Pg	23 23 38.2	0.0
BUTP	Butuan	1.25	28	eP	Pg	23 23 42.0	-1.0
MATI	Mati	1.52	127	eP	Pb	23 23 47.9	-0.2
PAGZ	Pagadian	1.63	270	eP	Pb	23 23 49.3	-0.5

*CSEM **02** 23:23:23.7, 44.10N×6.89E, h2km, ML1.3/3*
LDG 02 23:23:23.7±0.1**, 44.10N×6.89E, h2km, Md1.6**/2**, Ml1.3**/3**, Error ellipse: s-maj=1.7km s-min=1.2km az=80.0, France**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
SBF	Sospel	0.46	121	ePg	Pg	23 23 32.8	+0.4
SBF				eSg	Sg	23 23 38.4	+0.1
	3.5nm,0.3s						
SBF	Sospel	0.46	121	ePg	Pg	23 23 32.8	+0.4
SBF				eSg	Sg	23 23 38.4	+0.1
	1.8nm,0.3s						
FRF	La Foret Royal	0.56	199	ePg	Pg	23 23 34.4	-0.1
FRF				eSg	Sg	23 23 41.9	+0.1
	1.4nm,0.2s						
FRF	La Foret Royal	0.56	199	ePg	Pg	23 23 34.4	-0.1
FRF				eSg	Sg	23 23 41.9	+0.1
	0.7nm,0.2s						
MBDF	Montbardon	0.64	352	ePg	Pg	23 23 35.7	-0.2
MBDF				eSg	Sg	23 23 44.4	+0.2
	0.9nm,0.2s						
MBDF	Montbardon	0.64	352	ePg	Pg	23 23 35.7	-0.2
MBDF				eSg	Sg	23 23 44.4	+0.2
	0.4nm,0.2s						
LMR	La Mourre	0.81	200	ePg	Pg	23 23 38.7	-0.5
LMR				eSg	Sg	23 23 49.7	0.0
	0.5nm,0.1s						
LMR	La Mourre	0.81	200	ePg	Pg	23 23 38.7	-0.5
LMR				eSg	Sg	23 23 49.7	0.0
	0.2nm,0.1s						
SMRF	Simiane la Rot	0.96	263	ePg	Pg	23 23 41.7	-0.4
SMRF				eSg	Sg	23 23 54.6	+0.1
	1.1nm,0.3s						
SMRF	Simiane la Rot	0.96	263	ePg	Pg	23 23 41.7	-0.4
SMRF				eSg	Sg	23 23 54.6	+0.1
	0.6nm,0.3s						
ORIF	Oris-en-Rattie	1.10	319	eSg	Sg	23 23 58.8	-0.1
	0.6nm,0.2s						
ORIF	Oris-en-Rattie	1.10	319	eSg	Sg	23 23 58.8	-0.1
	0.3nm,0.2s						
LPL	La Plagne	1.43	355	eSg	Sg	23 24 09.1	-0.4
	0.4nm,0.2s						
LPL	La Plagne	1.43	355	eSg	Sg	23 24 09.1	-0.4
	0.2nm,0.2s						

*NIED **02** 23:24:00, 37.00N×140.80E, h5km, Mw3.4 Best double couple: $M_0$1.54000×10^{14} NP1:ϕ_s35.00000°, δ29.00000°, λ-134.00000°. NP2:ϕ_s263.00000°, δ70.00000°, λ-69.00000°.*
*ISCJB **02** 23:24:16.2±1.2, 37.04N±0.04×140.91E±0.09, h11km±4km, mb3.5/3, Error ellipse: s-maj=11.7km s-min=6.4km az=169.0*
*IDC **02** 23:24:17.0±1.8, 36.92N×140.81E, h0km, mb3.4/3, mb1 3.6/4, mb1mx3.3/38, mbtmp3.4/4, ML3.2/1, Error ellipse: s-maj=31.7km s-min=19.4km az=11.0*
*JMA **02** 23:24:17.9, 37.03N×140.78E, h7km±1km, M3.5*
JMA Felt I J1.
ISC 02 23:24:17.6±1.3**, 37.03N**±0.04×**140.84E**±0.08**, h7km**±7km**, n10, σ0.57**/16**, mb3.4**/3**, 5C, Eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
ONAJ	Iwakimizuishiy	0.08	333	⇑P	Pg	23 24 19.6	0.0
ONAJ				S	Sg	23 24 21.0	0.0
JHO	Hitachi	0.47	207	⇑P	Pg	23 24 26.5	-0.3
JHO				S	Sg	23 24 32.7	-0.3
JFT	Otama	0.63	320	⇑P	Pg	23 24 29.6	-0.2
JFT				S	Sg	23 24 38.1	+0.1
JSB	Shiboa	0.74	265	⇑P	Pg	23 24 31.9	0.0
JSB				S	Sg	23 24 41.9	+0.4
JYT	Yasato	0.96	213	P	Pg	23 24 35.8	-0.2
JYT				S	Sg	23 24 48.7	+0.3
JFY	Yanaizu	0.98	293	⇑P	Pg	23 24 35.8	-0.7
JFY				S	Sg	23 24 48.2	-1.0
MJAR	Matsushiro Arr	2.17	258	Pn	Pn	23 24 55.0	+0.8
	7.7nm,0.3s,baz=82,slow=16,SNR=22						
MJAR				Lg	Lg	23 25 23.0	
	19nm,0.3s,baz=76,slow=20,SNR=16						
MKAR	Makanchi Array	43.73	302	P	P	23 32 23.8	+0.3
	0.2nm,0.5s,baz=91,slow=8.9,SNR=4.4						
WRA	Warramunga Arr	57.00	187	P	P	23 34 02.9	-1.1
	0.7nm,0.6s,baz=4.3,slow=7.4,SNR=6.9						
ASAR	Alice Springs	60.73	187	P	P	23 34 30.0	+0.1
	0.2nm,0.6s,baz=14,slow=7.8,SNR=4.5						

JMA 02 23:37:11.0±0.3**, 37.93N×144.45E, h50km, M3.9, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
OFUJ	Ofunato	2.47	299	P	Pn	23 37 49.7	+1.0
JIO	Ouri	2.50	283	S	Sn	23 38 19.5	+1.1
JMK	Ichinoseki	2.73	293	P	Pn	23 37 54.3	+1.9
JMK				eS	Sn	23 38 26.1	+1.9
JTH	Tanohata	2.84	316	P	Pn	23 37 55.2	+1.3
JTH				S	Sn	23 38 28.4	+1.5
JMM	Marumori	2.89	270	S	Sn	23 38 29.1	+1.0
JOM	Ohasama	2.91	303	S	Sn	23 38 30.1	+1.5
JOU	Okura	3.02	279	P	Pn	23 37 57.1	+0.8
JOU				S	Sn	23 38 33.8	+2.6
JKZ	Kuzumaki	3.18	311	P	Pn	23 37 59.9	+1.3
JKZ				eS	Sn	23 38 37.0	+1.7
JTM	Tenmabayashi	3.87	318	P	Pn	23 38 09.1	+1.1

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
JTM				S	Sn	23 38 52.1	-0.1
JCH	**Churui**	**4.75**	**350**	P	Pn	23 38 19.4	-0.6
JCH				*e*S	Sn	23 39 10.6	-3.2

*NIED **03** 00:09:00, 36.°80N×141.°70E, h23km, Mw3.7 Best double couple: M₀4.04000×10¹⁴ NP1:φs241.00000°, δ21.00000°, λ121.00000°. NP2:φs28.00000°, δ72.00000°, λ79.00000°.*
*IDC **03** 00:09:50.6±2.2, 36.°70N×142.°04E, h0km, mb3.6/4, mb1 3.7/7, mb1mx3.4/34, mbtmp3.6/7, ML3.0/3, Error ellipse: s-maj=44.9km s-min=29.8km az=54.0*
*ISCJB **03** 00:09:51.6±1.1, 36.°71N±0.°09×142.°01E±0.°09, h19km, mb3.5/4, Error ellipse: s-maj=12.9km s-min=10.5km az=176.5*
*JMA **03** 00:09:55.6±0.4, 36.°76N×141.°70E, h49km±5km, M3.6*
ISC 03 00:09:54.0±1.5**, 36.°71N**±0.°09×**141.°9E**±0.°1**, h19**km**, n20,** σ**1.°65**/18**, mb3.6**/4**, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.95**	**295**	P	**Pb**	**00 10 10.4**	**-1.6**
JHO	**Hitachi**	**1.06**	**265**	P	**Pb**	**00 10 12.0**	**-1.7**
JMM	**Marumori**	**1.45**	**323**	P	**Pn**	**00 10 17.8**	**-1.3**
JFT	**Otama**	**1.48**	**304**	P	**Pn**	**00 10 19.1**	**-0.5**
JFT				S	**Sn**	**00 10 37.7**	**-0.7**
JFY	**Yanaizu**	**1.88**	**292**	P	**Pn**	**00 10 25.2**	**+0.1**
JAG	**Ashikaga**	**1.98**	**262**	P	**Pn**	**00 10 25.6**	**-0.8**
JAG				S	**Sn**	**00 10 47.8**	**-2.9**
MJAR	**Matsushiro Arr**	**2.96**	**268**	Pn	**Pn**	**00 10 39.8**	**-0.2**
	12nm,0.3s,baz=88,slow=10.0,SNR=60						
MJAR				Sn	**Sn**	**00 11 17.2**	**+2.2**
	3.5nm,0.3s,baz=79,slow=41,SNR=6.4						
MAT	**Matsushiro**	**2.96**	**268**	P	**Pn**	**00 10 40.7**	**+0.7**
MAT				S	**Sn**	**00 11 17.1**	**+2.1**
USRK	**Ussuriysk Ar.**	**10.62**	**318**	Pn	**Pn**	**00 12 27.2**	**+2.2**
	0.2nm,0.3s,baz=142,slow=38,SNR=2.6						
KSRS	**Korea Array**	**11.18**	**278**	Pn	**Pn**	**00 12 35.7**	**+3.0**
	0.1nm,0.3s,baz=93,slow=17,SNR=3.3						
H11N2	**WAKE ISLAND Hy**	**27.66**	**121**	T	T	00 44 58.0	
	baz=313,slow=75,SNR=12						
H11N1	**WAKE ISLAND Hy**	**27.67**	**121**	T	T	00 44 58.6	
	baz=313,slow=75,SNR=7.1						
H11N3	**WAKE ISLAND Hy**	**27.68**	**121**	T	T	00 44 59.3	
	baz=313,slow=75,SNR=7.0						
SONM	**Songino Array**	**28.28**	**304**	P	**P**	**00 15 46.5**	**+0.4**
	1.1nm,0.7s,baz=108,slow=9.1,SNR=7.2						
H11S1	**WAKE ISLAND Hy**	**28.37**	**123**	T	T	00 46 11.9	
	baz=315,slow=76,SNR=7.6						
H11S3	**WAKE ISLAND Hy**	**28.37**	**123**	T	T	00 46 16.7	
	baz=315,slow=76,SNR=6.6						
H11S2	**WAKE ISLAND Hy**	**28.38**	**123**	T	T	00 45 55.8	
	baz=315,slow=76,SNR=5.3						
ZALV	**Zalesovo Beam**	**42.41**	**313**	P	**P**	**00 17 47.4**	**+0.3**
	0.4nm,0.4s,baz=102,slow=6.5,SNR=2.7						
MKAR	**Makanchi Array**	**44.61**	**302**	P	**P**	**00 18 04.3**	**-0.7**
	0.4nm,0.8s,baz=89,slow=11,SNR=5.6						
WRA	**Warramunga Arr**	**56.79**	**188**	P	**P**	**00 19 36.9**	**-0.1**
	0.6nm,1.0s,baz=0.3,slow=7.8,SNR=3.2						

*IDC **03** 00:22:48.0±1.0, 36.°98N×140.°87E, h0km, mb3.5/6, mb1 3.7/9, mb1mx3.5/43, mbtmp3.6/9, ML3.0/3, Error ellipse: s-maj=21.8km s-min=19.8km az=108.0*
*ISCJB **03** 00:22:51.1±0.7, 36.°95N±0.°03×140.°89E±0.°06, h31km±3km, mb3.5/7, Error ellipse: s-maj=8.0km s-min=5.6km az=9.8*
*JMA **03** 00:22:52.3, 36.°94N×140.°75E, h27km±1km, M3.7 Broadband fault plane solution: P waves. NP1: φs202.00000°, δ87.00000°, λ-107.00000°. NP2: φs103.00000°, δ17.00000°, λ-9.00000°. Principal axes: T Plg40.0000°, Azm307.0000°; N Plg17.0000°, Azm202.0000°; P Plg45.0000°, Azm95.0000°;*
JMA Felt II J1.
ISC 03 00:22:52.2±0.9**, 36.°98N**±0.°04×**140.°73E**±0.°06**, h27**km±6km**, n25,** σ**0.°94**/26**, mb3.5**/7**, 2C-3D, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.14**	**25**	⇓P	**Pb**	**00 22 57.7**	**+0.1**
ONAJ				S	**Sb**	**00 23 01.5**	**+0.3**
JHO	**Hitachi**	**0.39**	**199**	⇓P	**Pb**	**00 22 59.9**	**-0.8**
JHO				S	**Sb**	**00 23 05.5**	**-1.0**
JFT	**Otama**	**0.62**	**330**	⇑P	**Pn**	**00 23 05.5**	**+0.2**
JFT				S	**Sn**	**00 23 14.6**	**+0.2**
JSB	**Shiboa**	**0.65**	**269**	⇓P	**Pn**	**00 23 05.8**	**+0.2**
JSB				S	**Sn**	**00 23 15.4**	**+0.4**
JMM	**Marumori**	**0.89**	**3**	⇑P	**Pb**	**00 23 09.1**	**+0.1**
JMM				S	**Sn**	**00 23 21.1**	**+0.1**
JFY	**Yanaizu**	**0.92**	**298**	P	**Pn**	**00 23 08.7**	**-0.7**
JFY				S	**Sn**	**00 23 22.5**	**+0.7**
JFY	**Yanaizu**	**0.92**	**298**	P	**Pn**	**00 23 08.7**	**-0.7**
MJAR	**Matsushiro Arr**	**2.07**	**259**	Pn	**Pn**	**00 23 26.7**	**+1.5**
	5.0nm,0.3s,baz=85,slow=15,SNR=46						
MJAR				Sn	**Sb**	**00 23 53.7**	**-0.6**
	20nm,0.3s,baz=197,slow=5.1,SNR=12						
MAT	**Matsushiro**	**2.07**	**259**	P	**Pn**	**00 23 27.1**	**+1.9**
MAT				S	**Sb**	**00 23 54.1**	**-0.3**
JHJ	**Hachijo jima 2**	**3.93**	**192**	Pn	**Pn**	**00 23 51.3**	**+0.5**
	10nm,0.3s,baz=71,slow=19,SNR=2.4						
JHJ				Sn	**Sn**	**00 24 38.0**	**+2.1**
	9.5nm,0.3s,baz=80,slow=21,SNR=2.5						
USRK	**Ussuriysk Ar.**	**9.80**	**320**	Pn	**Pn**	**00 25 12.6**	**+1.2**
	0.4nm,0.3s,baz=59,slow=14,SNR=4.2						
KSRS	**Korea Array**	**10.22**	**277**	Pn	Pn	00 25 24.1	+7.0
	0.1nm,0.3s,baz=87,slow=14,SNR=2.9						
SONM	**Songino Array**	**27.36**	**304**	P	**P**	**00 28 35.6**	**+0.5**
	0.7nm,0.7s,baz=108,slow=9.6,SNR=6.4						
H11N2	**WAKE ISLAND Hy**	**28.59**	**120**	T	T	00 58 34.1	
	baz=313,slow=75,SNR=74						
H11N1	**WAKE ISLAND Hy**	**28.60**	**120**	T	T	00 58 37.9	
	baz=313,slow=75,SNR=100						
H11N3	**WAKE ISLAND Hy**	**28.61**	**120**	T	T	00 58 35.4	
	baz=313,slow=75,SNR=66						
H11S1	**WAKE ISLAND Hy**	**29.29**	**122**	T	T	00 59 29.0	
	baz=314,slow=75,SNR=198						
H11S3	**WAKE ISLAND Hy**	**29.30**	**122**	T	T	00 59 29.4	
	baz=314,slow=75,SNR=132						
H11S2	**WAKE ISLAND Hy**	**29.31**	**122**	T	T	00 59 30.2	
	baz=314,slow=75,SNR=94						
ZALV	**Zalesovo Beam**	**41.55**	**312**	P	**P**	**00 30 36.1**	**-1.1**
	1.1nm,0.5s,baz=91,slow=7.9,SNR=5.6						
MKAR	**Makanchi Array**	**43.68**	**302**	P	**P**	**00 30 54.9**	**+0.2**
	0.4nm,0.6s,baz=89,slow=9.7,SNR=7.7						
WRA	**Warramunga Arr**	**56.93**	**187**	P	**P**	**00 32 34.4**	**-0.6**
	0.5nm,0.3s,baz=3.0,slow=7.3,SNR=2.8						
YKA	**Yellowknife Ar**	**64.13**	**30**	P	**P**	**00 33 24.5**	**+0.8**
	0.1nm,0.6s,baz=301,slow=6.8,SNR=3.2						
PDAR	**Pinedale Array**	**78.10**	**45**	P	P	00 34 54.0	+5.1
	0.4nm,0.6s,baz=254,slow=2.6,SNR=3.7						
TXAR	**Lajitas Array**	**90.59**	**52**	P	**P**	**00 35 51.4**	**-1.0**
	0.1nm,0.4s,baz=298,slow=3.9,SNR=2.5						

JMA 03 00:23:00.8, 37.°75N×139.°97E, h8km±1km**, M2.2, Eastern Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
JYS	**Shirataka**	**0.48**	**9**	P	Pg	00 23 10.6	+0.5

*ISCJB **03** 00:30:06.2±0.2, 61.°84N±0.°02×150.°79W±0.°05, h72km±3km, mb3.8/23, Error ellipse: s-maj=4.4km s-min=3.5km az=36.5*
*NEIC **03** 00:30:07.9, 61.°80N×150.°76W, h56km, mb4.3/2, ML3.7(AEIC), After AEIC.*
NEIC Felt at Anchorage, Talkeetna and Willow.
*IDC **03** 00:30:07.9±0.6, 61.°95N×150.°86W, h71km±4km, mb3.6/21, mb1 3.7/25, mb1mx3.6/45, mbtmp3.8/25, Error ellipse: s-maj=11.9km s-min=9.3km az=40.0*
ISC 03 00:30:07.5±0.5**, 61.°83N**±0.°03×**150.°82W**±0.°03**, h69**km±4km**, n89,** σ**1.°09**/102**, mb3.8**/23**, Southern Alaska**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
STLK	**Strandline Lak**	**0.59**	**236**	P	**Pn**	**00 30 20.1**	**-1.1**
CUT	**Chulitna**	**0.63**	**24**	P	**Pn**	**00 30 20.9**	**-0.7**
FIB	**Fire Island**	**0.73**	**155**	P	**Pn**	**00 30 22.3**	**-0.4**
FIB				S	**Sn**	**00 30 34.4**	**+0.6**
PMR	**Palmer**	**0.84**	**106**	P	**Pn**	**00 30 22.2**	**-1.7**
PMR				S	**Sn**	**00 30 34.6**	**-1.4**
VOGL	**Vogel Lake**	**0.85**	**167**	P	**Pn**	**00 30 24.0**	**-0.1**
SPU	**Mount Spurr**	**0.88**	**223**	P	**Pn**	**00 30 23.5**	**-1.0**
CKN	**Chakachatna No**	**0.89**	**228**	P	**Pn**	**00 30 23.9**	**-0.7**
SPCR	**Spurr Chakacha**	**0.92**	**227**	P	**Pn**	**00 30 24.0**	**-1.0**
SPCR				S	**Sn**	**00 30 36.7**	**-1.2**
CKL	**Chakachamna La**	**0.97**	**230**	P	**Pn**	**00 30 24.7**	**-1.0**
HUR	**Hurricane**	**1.28**	**25**	P	**Pn**	**00 30 29.6**	**+0.1**
SLKM	**Skilak Lake**	**1.36**	**167**	P	**Pn**	**00 30 29.2**	**-1.3**
DFR	**Drift River**	**1.54**	**217**	P	**Pn**	**00 30 32.3**	**-0.7**
RDJH	**Redoubt Jeurge**	**1.57**	**219**	P	**Pn**	**00 30 32.9**	**-0.6**
NCT	**North Crescent**	**1.63**	**220**	P	**Pn**	**00 30 34.1**	**-0.2**
SCM	**Sheep Creek Mo**	**1.66**	**88**	P	**Pn**	**00 30 33.6**	**-1.0**
SCM				S	**Sn**	**00 30 54.2**	**-0.8**
RSO	**Redoubt South**	**1.66**	**215**	*e*Pn	**Pn**	**00 30 34.4**	**-0.3**
CAST	**Castle Rocks**	**1.70**	**340**	P	**Pn**	**00 30 35.0**	**-0.1**
KTH	**Kantishna Hill**	**1.73**	**358**	P	**Pn**	**00 30 35.9**	**+0.3**
RND	**Reindeer**	**1.83**	**29**	P	**Pn**	**00 30 36.5**	**-0.3**
DHY	**Denali Highway**	**2.03**	**50**	P	**Pn**	**00 30 39.2**	**-0.5**
BRLK	**Bradley Lake**	**2.07**	**181**	P	**Pn**	**00 30 40.6**	**+0.5**
MCK	**McKinley**	**2.10**	**24**	*e*Pn	**Pn**	**00 30 40.6**	**+0.2**
MCK				*e*Sn	**Sn**	**00 31 05.6**	**0.0**
ILW	**Iliamna West**	**2.10**	**214**	P	**Pn**	**00 30 40.6**	**-0.1**
CHUM	**Lake Minchumin**	**2.17**	**342**	P	**Pn**	**00 30 41.8**	**+0.4**
HOM	**Homer**	**2.21**	**191**	*e*Pn	**Pn**	**00 30 42.7**	**+0.7**
VLZ	**Valdez**	**2.26**	**106**	P	**Pn**	**00 30 40.6**	**-2.0**
KLU	**Klutina**	**2.36**	**96**	P	**Pn**	**00 30 42.5**	**-1.5**
SVW2	**Sparrevohn**	**2.40**	**254**	P	**Pn**	**00 30 43.8**	**-0.8**
OPT	**Oil Point**	**2.48**	**210**	P	**Pn**	**00 30 45.8**	**+0.1**
DIV	**Divide**	**2.52**	**104**	*e*Pn	**Pn**	**00 30 44.1**	**-2.1**
PS11	**TAPS Pump St11**	**2.54**	**82**	P	**Pn**	**00 30 46.3**	**0.0**
TT01	**Tatalina**	**2.66**	**296**	P	**Pn**	**00 30 47.4**	**-0.5**
TTA	**Tatalina**	**2.66**	**297**	*e*Pn	**Pn**	**00 30 47.8**	**-0.3**
EYAK	**Cordova Ski Ar**	**2.77**	**115**	*e*Pn	**Pn**	**00 30 50.1**	**+0.6**
PS10	**TAPS Pump St10**	**2.83**	**53**	P	**Pn**	**00 30 50.2**	**-0.2**
WRH	**Wood River Hil**	**2.93**	**24**	P	**Pn**	**00 30 51.2**	**-0.4**
HDA	**Harding Lake**	**3.13**	**32**	P	**Pn**	**00 30 54.4**	**+0.1**
CCB	**Clear Creek Bu**	**3.14**	**24**	P	**Pn**	**00 30 53.9**	**-0.6**
MLY	**Manley**	**3.22**	**1**	P	**Pn**	**00 30 55.4**	**-0.2**
CDD	**Cape Douglas**	**3.23**	**207**	P	**Pn**	**00 30 55.8**	**0.0**
PS08	**TAPS Pump Stn8**	**3.27**	**32**	P	**Pn**	**00 30 56.3**	**0.0**
RAGM	**Ragged Mountai**	**3.31**	**113**	*e*Pn	**Pn**	**00 30 56.7**	**-0.2**
COLA	**College**	**3.34**	**22**	P	**Pn**	**00 30 56.7**	**-0.4**
FOPK	**Fourpeaked Vol**	**3.35**	**204**	P	**Pn**	**00 30 58.5**	**+1.0**
MDM	**Murphy Dome**	**3.35**	**19**	P	**Pn**	**00 30 57.1**	**-0.3**
GLB	**Gilahina Butte**	**3.37**	**94**	P	**Pn**	**00 30 56.2**	**-1.5**
ILAR	**Eielson Array**	**3.45**	**29**	P	**Pn**	**00 30 58.0**	**-0.6**
	6.4nm,0.3s,baz=213,slow=14,SNR=292						
ILAR				S	**Sn**	**00 31 37.6**	**-0.6**
	16nm,0.3s,baz=358,slow=34,SNR=8.3						
ILB	**Eielson Array**	**3.45**	**29**	*e*Pn	**Pn**	**00 30 58.2**	**-0.5**
IL1	**Eielson Array**	**3.45**	**29**	P	**Pn**	**00 30 58.1**	**-0.5**
MENT	**Mentasta**	**3.49**	**68**	P	**Pn**	**00 30 58.8**	**-0.5**
VRDI	**Verde Repeater**	**3.58**	**96**	P	**Pn**	**00 30 58.6**	**-2.1**
KHIT	**Khitrov Hills**	**3.92**	**107**	P	**Pn**	**00 31 03.1**	**-2.2**
GRIN	**Grindle Hills**	**3.96**	**110**	P	**Pn**	**00 31 04.2**	**-1.6**
KDAK	**Kodiak Island**	**4.16**	**193**	P	Pn	00 31 24.9	+17
	2.1nm,0.3s,baz=63,slow=6.3,SNR=24						
KDAK				S	Sn	00 32 21.0	+25
	15nm,0.3s,baz=156,slow=19,SNR=15						
KDAK	**Kodiak Island**	**4.16**	**193**	*e*Pn	Pn	00 31 14.5	+6.2
FYU	**Fort Yukon**	**5.34**	**25**	*e*Pn	**Pn**	**00 31 25.1**	**+0.6**
COLD	**Coldfoot**	**5.43**	**3**	*e*Pn	**Pn**	**00 31 26.2**	**+0.5**
DAWY	**Dawson**	**5.68**	**62**	*e*Pn	**Pn**	**00 31 28.5**	**-0.7**
INK	**Inuvik**	**9.74**	**41**	P	**Pn**	**00 32 23.6**	**-1.0**
	0.4nm,0.3s,baz=238,slow=16,SNR=16						
INK				S	**Sn**	**00 34 17.2**	**+5.1**
	0.7nm,0.3s,baz=218,slow=16,SNR=3.4						
DLBC	**Dease Lake**	**10.89**	**99**	P	**Pn**	**00 32 41.0**	**+0.6**
	0.2nm,0.3s,baz=9.1,slow=19,SNR=3.6						
YKA	**Yellowknife Ar**	**16.79**	**72**	P	**Pn**	**00 33 57.3**	**-0.4**
	0.2nm,0.3s,baz=282,slow=11,SNR=16						
YKA				ScP	**ScP**	**00 42 11.0**	**+1.2**
	0.0nm,0.3s,baz=287,slow=2.1,SNR=7.6						
YKB5	**Yellowknife Ar**	**16.79**	**72**	*e*Pn	**Pn**	**00 33 56.5**	**-1.3**
RES	**Resolute Bay**	**23.19**	**34**	P	**P**	**00 35 06.6**	**-1.1**
	0.4nm,0.3s,baz=242,slow=6.9,SNR=7.5						
NEW	**Newport**	**23.26**	**110**	P	**P**	**00 35 09.2**	**+0.4**
	2.3nm,0.7s,baz=282,slow=4.2,SNR=4.1						
SEY	**Seymchan**	**25.63**	**298**	P	**P**	**00 35 29.6**	**-0.5**
	0.3nm,0.3s,baz=56,slow=8.3,SNR=2.4						
YBH	**Yreka Blue Hor**	**26.23**	**127**	P	**P**	**00 35 37.9**	**+2.2**
	1.8nm,0.7s,baz=275,slow=13,SNR=2.7						
RLMT	**Red Lodge**	**29.18**	**106**	*e*P	**P**	**00 36 03.9**	**+1.7**
	3.3nm,0.6s						
MTUT	**Morton Thiokol**	**30.45**	**114**	*e*P	P	00 36 17.3	+4.0
NVAR	**Mina Array Bea**	**30.78**	**124**	P	**P**	**00 36 17.5**	**+1.1**
	1.0nm,0.5s,baz=315,slow=9.7,SNR=5.2						
NVAR				pP	**pP**	**00 36 35.0**	**+2.1**
	0.6nm,0.6s,baz=310,slow=7.4,SNR=2.7						
PDAR	**Pinedale Array**	**30.88**	**109**	P	**P**	**00 36 18.0**	**+0.7**
	0.5nm,0.5s,baz=308,slow=3.4,SNR=12						
PDAR				pP	**pP**	**00 36 35.0**	**+1.2**
	0.2nm,0.5s,baz=354,slow=6.0,SNR=2.1						
ULM	**Lac du Bonnet**	**31.80**	**86**	P	**P**	**00 36 25.0**	**0.0**
	1.3nm,0.5s,baz=310,slow=5.0,SNR=2.8						
RSSD	**Black Hills**	**32.36**	**101**	*e*P	**P**	**00 36 30.9**	**+0.7**
	3.4nm,0.6s						
FRB	**Frobisher Bay**	**35.24**	**50**	P	**P**	**00 36 55.1**	**+0.4**
	3.0nm,0.6s,baz=298,slow=7.2,SNR=3.7						
HAY	**Hayfield**	**35.93**	**125**	*e*P	**P**	**00 37 01.9**	**+0.9**
SFJD	**Kangerlussuaq**	**39.07**	**38**	P	**P**	**00 37 27.6**	**+0.6**
SCHQ	**Schefferville**	**41.69**	**60**	P	**P**	**00 37 47.4**	**-1.5**
	1.2nm,0.5s,baz=306,slow=7.3,SNR=6.3						
TX31	**Lajitas Ar. Si**	**44.70**	**114**	*e*P	**P**	**00 38 14.6**	**+1.1**
TXAR	**Lajitas Array**	**44.70**	**114**	P	**P**	**00 38 14.2**	**+0.7**
	1.0nm,0.7s,baz=337,slow=5.4,SNR=13						
TXAR				pP	**pP**	**00 38 31.1**	**+0.5**
	0.1nm,0.3s,baz=30,slow=19,SNR=2.6						
TKL	**Tuckaleechee C**	**48.58**	**90**	P	**P**	**00 38 43.5**	**-0.2**
	2.0nm,0.6s,baz=170,slow=3.2,SNR=6.0						
ARCES	**ARCESS Array B**	**48.90**	**2**	P	**P**	**00 38 45.3**	**-0.4**
	3.0nm,0.8s,baz=348,slow=13,SNR=2.5						
SONM	**Songino Array**	**54.57**	**306**	P	**P**	**00 39 28.0**	**-0.3**
	1.0nm,0.7s,baz=38,slow=7.9,SNR=9.6						
SONM				pP	**pP**	**00 39 47.7**	**+1.7**
	0.4nm,0.8s,baz=18,slow=5.5,SNR=2.6						
ZALV	**Zalesovo Beam**	**56.52**	**324**	P	**P**	**00 39 41.3**	**-0.7**
	0.3nm,0.4s,baz=17,slow=11,SNR=2.4						
ZALV				pP	**pP**	**00 40 00.2**	**+0.4**
	0.9nm,0.6s,baz=54,slow=7.5,SNR=6.7						
NOA	**NORSAR Array B**	**56.69**	**10**	P	**P**	**00 39 41.4**	**-1.8**
	0.6nm,0.7s,baz=105,slow=14,SNR=2.6						
FINES	**FINESS Array B**	**57.03**	**2**	P	**P**	**00 39 44.1**	**-1.3**
	2.2nm,1.0s,baz=211,slow=18,SNR=3.0						
MKAR	**Makanchi Array**	**63.65**	**322**	P	**P**	**00 40 29.6**	**-1.4**
	0.4nm,0.6s,baz=46,slow=7.3,SNR=7.0						
MKAR				pP	**pP**	**00 40 47.7**	**-1.3**
	0.1nm,0.3s,baz=313,slow=27,SNR=3.3						
AKASG	**Malin Array Be**	**67.82**	**360**	P	**P**	**00 40 56.7**	**-0.9**
	0.4nm,0.3s,baz=1.7,slow=6.0,SNR=4.4						
GERES	**GERESS Array B**	**68.98**	**11**	P	**P**	**00 41 04.4**	**-0.7**
	0.2nm,0.5s,baz=348,slow=9.0,SNR=3.0						
GERES				pP	**pP**	**00 41 22.7**	**-0.6**
	0.1nm,0.3s,baz=23,slow=7.2,SNR=2.6						
ESDC	**Sonseca Array**	**75.34**	**26**	P	**P**	**00 41 42.5**	**-0.5**
	0.9nm,0.9s,baz=325,slow=7.2,SNR=4.9						
ESDC				pP	**pP**	**00 42 01.2**	**-0.4**
	0.7nm,0.8s,baz=347,slow=6.2,SNR=3.8						
BRTR	**Keskin Array B**	**78.73**	**356**	P	**P**	**00 42 03.2**	**+1.0**
	1.6nm,1.1s,baz=324,slow=12,SNR=3.0						

JMA 03 00:37:02.5±0.2**, 37.°56N×142.°04E, h28**km±4km**, M3.5, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
JMM	**Marumori**	**1.03**	**288**	P	Pn	00 37 21.1	0.0
JMM				S	Sn	00 37 34.0	-0.7
JIO	**Ouri**	**1.05**	**329**	P	Pn	00 37 21.1	-0.2
JIO				S	Sn	00 37 33.7	-1.3
ONAJ	**Iwakimizuishiy**	**1.09**	**246**	P	Pn	00 37 22.0	0.0
ONAJ				S	Sn	00 37 36.2	+0.1
JOU	**Okura**	**1.35**	**307**	P	Pb	00 37 26.6	-0.6
JOU				S	Sn	00 37 43.3	+0.7
JFT	**Otama**	**1.35**	**269**	P	Pb	00 37 26.6	-0.6
JFT				S	Sb	00 37 44.4	+0.2

MEX 03 00:41:20.4±0.4**, 13.°97N×91.°52W, h20**km±999km**, MD3.8, Near coast of Guatemala**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
THIG		**1.18**	**323**	*e*P	Pn	00 41 39.0	-2.8
PCIG		**2.38**	**317**	*e*P	Pn	00 41 56.2	-2.2
PCIG				*e*S	Sn	00 42 22.7	-4.3

*NIED **03** 00:48:00, 37.°50N×143.°50E, h38km, Mw3.6 Best double couple: M₀2.41000×10¹⁴ NP1:φs65.00000°, δ58.00000°, λ-36.00000°. NP2:φs175.00000°, δ60.00000°, λ-143.00000°.*
*IDC **03** 00:48:35.1±1.9, 37.°45N×143.°90E, h0km, mb3.6/6, mb1 3.8/9, mb1mx3.5/55, mbtmp3.7/9, ML3.6/3, Error ellipse: s-maj=50.5km s-min=21.9km az=66.0*
*ISCJB **03** 00:48:38.4±0.7, 37.°47N±0.°05×143.°64E±0.°06, h33km, mb3.6/6, Error ellipse: s-maj=7.4km s-min=6.7km az=19.2*
*JMA **03** 00:48:39.4±0.4, 37.°49N×143.°54E, h46km, M3.8*
ISC 03 00:48:39.5±1.0**, 37.°48N**±0.°05×**143.°75E**±0.°08**, h35**km**, n20,** σ**2.°19**/30**, mb3.6**/6**, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**2.13**	**298**	P	**Pn**	**00 49 11.7**	**-0.9**
JIO				*e*S	**Sn**	**00 49 34.9**	**-2.9**
OFUJ	**Ofunato**	**2.29**	**315**	P	**Pn**	**00 49 13.7**	**-1.0**
JMK	**Ichinoseki**	**2.48**	**307**	P	**Pn**	**00 49 16.6**	**-0.7**
JFT	**Otama**	**2.72**	**272**	P	**Pn**	**00 49 20.5**	**-0.1**
JFT				S	**Sn**	**00 49 50.3**	**-2.0**
JOM	**Ohasama**	**2.77**	**317**	P	**Pn**	**00 49 20.8**	**-0.5**
JOM				S	**Sn**	**00 49 51.8**	**-1.7**
JYK	**Kaneyama**	**3.03**	**299**	P	**Pn**	**00 49 24.8**	**-0.1**
JAG	**Ashikaga**	**3.60**	**254**	P	**Pn**	**00 49 32.4**	**-0.4**
JAG				S	**Sn**	**00 50 11.2**	**-2.9**
JRY	**Ryogami san**	**4.16**	**251**	P	**Pn**	**00 49 39.6**	**-0.9**
JRY				S	**Sn**	**00 50 23.6**	**-4.3**
JOD2	**Odawara 2**	**4.37**	**241**	P	**Pn**	**00 49 42.3**	**-1.0**
JOD2				S	**Sn**	**00 50 28.9**	**-4.1**
MJAR	**Matsushiro Arr**	**4.54**	**260**	Pn	**Pn**	**00 49 46.6**	**+1.0**
	4.5nm,0.3s,baz=89,slow=15,SNR=28						
MJAR				Sn	**Sn**	**00 50 37.2**	**0.0**
	1.7nm,0.3s,baz=81,slow=14,SNR=8.0						
MAT	**Matsushiro**	**4.54**	**260**	P	**Pn**	**00 49 47.0**	**+1.3**
MAT				S	**Sn**	**00 50 37.5**	**+0.3**
JCH	**Churui**	**5.13**	**357**	P	**Pn**	**00 49 52.8**	**-1.0**
JCH				*e*S	**Sn**	**00 50 47.3**	**-4.5**
JHJ	**Hachijo jima 2**	**5.43**	**218**	Pn	**Pn**	**00 49 57.3**	**-0.6**
	10nm,0.3s,baz=347,slow=21,SNR=9.4						
JHJ				Sn	**Sn**	**00 50 53.8**	**-5.4**
	6.7nm,0.3s,baz=64,slow=23,SNR=2.1						
KLR	**Kul'dur**	**14.61**	**327**	Pn	**Pn**	**00 52 03.0**	**-0.5**
	0.1nm,0.3s,baz=136,slow=11,SNR=5.1						
SONM	**Songino Array**	**29.10**	**303**	P	**P**	**00 54 38.6**	**+1.8**
	0.2nm,0.4s,baz=86,slow=7.4,SNR=2.2						
ZALV	**Zalesovo Beam**	**42.99**	**312**	P	**P**	**00 56 37.1**	**+2.0**
	0.4nm,0.3s,baz=70,slow=9.8,SNR=3.4						
MKAR	**Makanchi Array**	**45.46**	**302**	P	**P**	**00 56 56.6**	**+1.6**
	0.3nm,0.9s,baz=86,slow=7.4,SNR=3.3						
WRA	**Warramunga Arr**	**57.80**	**190**	P	**P**	**00 58 28.0**	**+0.7**
	0.8nm,0.7s,baz=7.8,slow=7.0,SNR=4.6						
ASAR	**Alice Springs**	**61.53**	**190**	P	**P**	**00 58 53.8**	**+0.9**
	0.4nm,0.7s,baz=9.3,slow=32,SNR=4.1						
STKA	**Stephens Creek**	**69.03**	**182**	P	**P**	**00 59 42.3**	**+0.9**
	1.1nm,0.5s,baz=298,slow=3.7,SNR=2.5						

*IDC **03** 00:49:12.9±1.2, 55.°92N×162.°15E, h0km, mb3.4/4, mb1 3.7/5, mb1mx3.3/57, mbtmp3.4/5, ML2.7/1, Error ellipse: s-maj=37.1km s-min=22.8km az=160.0*
*KRSC **03** 00:49:15.9±0.7, 55.°33N×162.°55E, h79km±17km, ML3.8*
*ISCJB **03** 00:49:17.6±0.4, 55.°32N±0.°03×162.°51E±0.°06, h73km±7km, mb3.4/4, Error ellipse: s-maj=5.6km s-min=4.0km az=26.7*
ISC 03 00:49:18.9±1.1**, 55.°31N**±0.°03×**162.°54E**±0.°04**, h47**km±16km**, n44,** σ**0.°95**/61**, mb3.4**/4**, Near east coast of Kamchatka Peninsula**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
KBTR	**Krutoberegovo**	**0.92**	**10**	*i* P	**Pn**	**00 49 35.3**	**-0.1**
KBTR				*e*S	**Sn**	**00 49 48.2**	**+0.8**
ZLN	**Zelenaya**	**1.21**	**307**	*e*P	**Pn**	**00 49 39.5**	**0.0**
ZLN				*e*S	**Sn**	**00 49 56.3**	**+1.5**
TUMD	**Tumrok D**	**1.23**	**266**	*e*S	**Sn**	**00 49 54.9**	**-0.2**
CIRR	**Tsirk**	**1.30**	**309**	*e*P	**Pn**	**00 49 40.6**	**-0.1**
CIRR				*e*S	**Sn**	**00 49 57.8**	**+0.9**
KZV	**Kizimen**	**1.30**	**262**	*e*P	**Pn**	**00 49 40.0**	**-0.7**
KZV				*e*S	**Sn**	**00 49 57.0**	**0.0**
LGNR	**Loginova**	**1.30**	**307**	*e*P	**Pn**	**00 49 40.9**	**0.0**
LGNR				*e*S	**Sn**	**00 49 58.3**	**+1.0**
BZMR	**Bezymyannaya**	**1.32**	**299**	*e*P	**Pn**	**00 49 40.5**	**-0.5**
TUMR	**Tumrok**	**1.37**	**270**	*e*P	**Pn**	**00 49 41.4**	**-0.2**
TUMR				*e*S	**Sn**	**00 49 58.8**	**+0.2**
KMNR	**Kamenistaya**	**1.38**	**290**	*e*P	**Pn**	**00 49 41.9**	**+0.1**
KMNR				*e*S	**Sn**	**00 49 59.5**	**+0.6**
KIRR	**Kirishev**	**1.40**	**298**	*e*P	**Pn**	**00 49 41.0**	**-1.1**
KIRR				*e*S	**Sn**	**00 49 58.5**	**-1.0**
SMKR	**Semkarok**	**1.41**	**335**	*e*P	**Pn**	**00 49 41.7**	**-0.5**
SMKR				*e*S	**Sn**	**00 50 00.3**	**+0.7**
KRSR	**Krestovskiy**	**1.44**	**310**	*e*P	**Pn**	**00 49 41.9**	**-0.7**
KRSR				*e*S	**Sn**	**00 49 59.8**	**-0.5**
KLY	**Klyuchi**	**1.47**	**314**	*e*P	**Pn**	**00 49 41.3**	**-1.5**
KLY				*e*S	**Sn**	**00 49 59.1**	**-1.7**
BDR	**Baidarnaya**	**1.47**	**330**	*i* P	**Pn**	**00 49 42.7**	**-0.2**
BDR				*e*S	**Sn**	**00 50 01.1**	**+0.1**
KPT	**Kopyto**	**1.47**	**298**	*e*P	**Pn**	**00 49 42.6**	**-0.4**
KPT				*e*S	**Sn**	**00 50 01.2**	**+0.2**
SRKR	**Sorokina**	**1.55**	**331**	*e*P	**Pn**	**00 49 43.8**	**-0.3**
KOZ	**Kozyrevsk**	**1.69**	**298**	*e*P	**Pn**	**00 49 46.0**	**+0.1**
KOZ				*e*S	**Sn**	**00 50 06.9**	**+0.7**
BKI	**Bering**	**1.97**	**92**	*e*P	**Pn**	**00 49 50.2**	**+0.5**
BKI				*e*S	**Sn**	**00 50 12.8**	**-0.3**
KII	**Karymskiy**	**2.20**	**236**	*e*P	**Pn**	**00 49 52.8**	**-0.2**
ESO	**Esso**	**2.26**	**287**	*e*P	**Pn**	**00 49 53.2**	**-0.6**
ESO				*e*S	**Sn**	**00 50 19.1**	**-1.3**
SPN	**Mys Shipunski**	**2.66**	**215**	*e*P	**Pn**	**00 49 58.0**	**-1.2**
SPN				*e*S	**Sn**	**00 50 27.6**	**-2.6**
NLC	**Nalytchevo**	**2.84**	**222**	*e*P	**Pn**	**00 50 01.9**	**+0.2**
NLC				*e*S	**Sn**	**00 50 34.5**	**-0.2**
SDLR	**Sedlovina**	**2.95**	**228**	*i* P	**Pn**	**00 50 03.6**	**+0.3**
KRX	**Arik**	**3.00**	**231**	*e*P	**Pn**	**00 50 04.3**	**+0.3**
SMAR	**Somma**	**3.00**	**228**	*e*P	**Pn**	**00 50 04.4**	**+0.4**
AVH	**Avacha**	**3.02**	**229**	*e*P	**Pn**	**00 50 05.0**	**+0.7**
UGLR	**Uglovaya**	**3.03**	**228**	*e*P	**Pn**	**00 50 04.9**	**+0.6**
KOK	**Koryaka**	**3.05**	**230**	*e*P	**Pn**	**00 50 05.5**	**+0.9**
GNL	**Ganaly**	**3.13**	**241**	*e*P	**Pn**	**00 50 06.4**	**+0.7**
DALK	**Dalny**	**3.19**	**226**	*e*P	**Pn**	**00 50 06.1**	**-0.3**
DALK				*e*S	**Sn**	**00 50 41.7**	**-1.4**
PET	**Petropavlovsk**	**3.23**	**227**	*e*P	**Pn**	**00 50 07.5**	**+0.5**
PET				*e*S	**Sn**	**00 50 43.9**	**-0.3**
KRMR	**Karymshinskiy**	**3.59**	**228**	*e*P	**Pn**	**00 50 12.6**	**+0.6**
PETK	**Petropavlovsk-**	**3.59**	**234**	Pn	**Pn**	**00 50 12.7**	**+0.6**
	2.8nm,0.3s,baz=78,slow=16,SNR=36						
PETK				Sn	Sn	00 51 01.3	+8.1
	0.8nm,0.3s,baz=76,slow=19,SNR=2.4						
RUS	**Russkaya**	**3.74**	**221**	*e*P	**Pn**	**00 50 13.1**	**-0.9**
OSSR	**Ossora**	**3.96**	**4**	*e*P	**Pn**	**00 50 16.5**	**-0.5**
OSSR				*e*S	**Sn**	**00 50 59.4**	**-2.7**
APC	**Apacha**	**3.96**	**235**	*e*P	**Pn**	**00 50 19.9**	**+2.8**
ASAK	**Asacha**	**4.02**	**225**	*e*P	**Pn**	**00 50 19.5**	**+1.6**
TILK	**Tilichiki**	**5.50**	**19**	*e*P	**Pn**	**00 50 38.2**	**+0.1**
H11N2	**WAKE ISLAND Hy**	**35.67**	**173**	T	T	01 33 37.3	
	baz=33,slow=74,SNR=2.5						
H11N1	**WAKE ISLAND Hy**	**35.69**	**173**	T	T	01 33 41.0	
	baz=1.1,slow=74,SNR=3.0						
MKAR	**Makanchi Array**	**48.50**	**295**	P	P	00 57 53.4	-3.2
	0.3nm,0.7s,baz=54,slow=3.7,SNR=3.0						
PDAR	**Pinedale Array**	**55.22**	**64**	P	**P**	**00 58 47.4**	**+0.4**
	0.2nm,0.6s,baz=316,slow=2.5,SNR=2.4						
FINES	**FINESS Array B**	**58.64**	**337**	P	P	00 59 06.6	-4.0
	0.8nm,0.4s,baz=27,slow=7.7,SNR=17						
TXAR	**Lajitas Array**	**68.48**	**69**	P	**P**	**01 00 16.5**	**+0.3**
	0.2nm,0.6s,baz=302,slow=5.2,SNR=2.0						

*SJA **03** 00:51:51.4±0.6, 22.°94S×64.°06W, h618km±30km, ML4.5, MW2.9*
*IDC **03** 00:52:04.1±8.1, 22.°16S×63.°71W, h565km±65km, mb3.5/2, mb1 3.1/4, mb1mx2.7/39, mbtmp4.0/4, Error ellipse: s-maj=157.8km s-min=42.3km az=9.0*
ISC 03 00:51:59.4±0.9**, 22.°86S**±0.°09×**64.°5W**±0.°1**, h600**km**, n15,** σ**2.°11**/16**, 4D, Salta Province**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC

HJA	Humahuaca	0.93	248⇓	eP	P	00 53 08.5	-2.4
YJA	Yavi	1.18	305	eP	P	00 53 08.9	-2.7
AZAP	Zapla	1.46	202⇓	eP	P	00 53 08.4	-3.7
SLA	San Lorenzo	2.08	207⇓	eP	P	00 53 11.2	-2.9
SLA				IAML		00 53 12.4	
	comp=Z,10nm,0.5s						
FSA	Cafayete	3.52	203⇓	eP	P	00 53 19.6	-2.1
AHML	Horco Molle	3.99	191	eP	P	00 53 22.5	-2.2
CYA	Choya	5.69	192	eP	P	00 53 36.5	-1.3
VCA	Vinchina	6.75	209	eP	P	00 53 48.9	+1.7
VCA				eS	S	00 55 14.4	-1.1
VCA				IAML		00 55 20.9	
	comp=Z,28nm,0.3s						
ACLC	CERRO LA CRUZ	6.91	198	eP	P	00 53 47.9	-0.8
ACLC				IAML		00 53 50.3	
	comp=Z,15nm,0.2s						
LPAZ	La Paz	7.39	332	P	P	00 53 55.1	+1.3
	comp=Z,0.6nm,0.3s,baz=121,slow=12,SNR=14						
LPAZ				S	S	00 55 26.5	-0.7
	comp=Z,0.1nm,0.3s,baz=246,slow=24,SNR=5.1						
AGUA	GUANDACOL	7.52	208	eP	P	00 53 55.7	+1.5
AGUA				eS	S	00 55 28.5	+0.1
BDFB	Brasilia	17.11	68	P	P	00 55 24.8	-2.4
	comp=Z,0.2nm,0.3s,baz=214,slow=5.4,SNR=3.8						
DBIC	Dimbokro	65.24	71	P	P	01 01 45.5	+2.0
	comp=Z,6.0nm,1.2s,baz=191,slow=10,SNR=4.5						
TORD	Torodi Ar. Bea	73.99	68	P	P	01 02 37.8	+2.3
	comp=Z,1.4nm,0.5s,baz=256,slow=5.7,SNR=28						
MKAR	Makanchi Array	144.17	40	PKP	PKPab	01 10 33.7	+5.6
	comp=Z,0.5nm,0.5s,baz=307,slow=4.2,SNR=10						

IDC 03 00:56:05.3±3.5, 35°.41N×143°.11E, h0^{km}, mb3.4/4, mb1 3.6/5, mb1mx3.3/58, mbtmp3.4/5, ML3.4/1, Error ellipse: s-maj=109.1km s-min=24.5km az=60.0, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
MJAR	Matsushiro Arr	4.13	287	Pn	Pn	00 57 08.7	-0.9
	2.4nm,0.3s,baz=102,slow=9.2,SNR=21						
SONM	Songino Array	29.84	306	P	P	01 02 13.4	-0.8
	0.3nm,0.4s,baz=109,slow=7.8,SNR=3.9						
MKAR	Makanchi Array	46.15	304	P	P	01 04 32.3	+0.9
	0.1nm,0.6s,baz=79,slow=10,SNR=2.4						
WRA	Warramunga Arr	55.67	190	P	P	01 05 43.3	0.0
	1.5nm,1.2s,baz=20,slow=6.6,SNR=3.4						
ASAR	Alice Springs	59.40	190	P	P	01 06 09.3	-0.2
	0.4nm,0.8s,baz=17,slow=12,SNR=4.2						

*IDC **03** 00:58:57.9±0.8, 36°.26N×143°.71E, h0^{km}, mb3.6/12, mb1 3.8/13, mb1mx3.6/55, mbtmp3.6/13, ML3.2/1, MS2.5/2, Ms1 2.5/2, ms1mx2.1/52, Error ellipse: s-maj=21.2km s-min=19.4km az=124.0*
*NIED **03** 00:59:00, 36°.40N×143°.40E, h5^{km}, Mw3.5 Best double couple: $M_0$2.04000×10^{14} NP1:ϕ_s42.00000°, δ33.00000°, λ-87.00000°. NP2:ϕ_s219.00000°, δ57.00000°, λ-92.00000°.*
*ISCJB **03** 00:59:01.5±0.6, 36°.39N±0°.06×143°.45E±0°.05, h33^{km}, mb3.6/12, Error ellipse: s-maj=8.1km s-min=5.3km az=1.0*
*JMA **03** 00:59:02.3±0.3, 36°.43N×143°.42E, h68^{km}, M3.8*
ISC 03 00:59:03.5±0.8**, 36°.39N**±0°.07×**143°.48E**±0°.07**, h35^{km}, n29, σ1^{s}.11**/31**, mb3.6**/12**, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
CHOJ	Chosi	2.23	253	P	Pn	00 59 37.4	-0.5
ONAJ	Iwakimizuishiy	2.26	289	S	Sn	01 00 04.3	-0.9
JHO	Hitachi	2.35	276	P	Pn	00 59 38.4	-1.2
JHO				S	Sn	01 00 05.8	-1.5
JFT	Otama	2.75	295	P	Pn	00 59 45.1	0.0
JFT				S	Sn	01 00 17.2	0.0
JMK	Ichinoseki	3.12	326	P	Pn	00 59 48.6	-1.5
JAG	Ashikaga	3.25	272	P	Pn	00 59 51.5	-0.4
JAG				eS	Sn	01 00 27.8	-1.5
JOM	Ohasama	3.53	331	P	Pn	00 59 55.2	-0.5
JOM				S	Sn	01 00 34.1	-2.1
JYK	Kaneyama	3.53	316	P	Pn	00 59 55.1	-0.7
JYK				eS	Sn	01 00 36.0	-0.3
JRY	Ryogami san	3.72	266	P	Pn	00 59 57.5	-0.9
JRY				eS	Sn	01 00 39.4	-1.6
MJAR	Matsushiro Arr	4.25	274	Pn	Pn	01 00 07.0	+1.3
	1.3nm,0.3s,baz=106,slow=8.7,SNR=9.9						
MAT	Matsushiro	4.25	274	P	Pn	01 00 06.4	+0.7
MAT				eS	Sn	01 00 52.5	-1.6
MAT	Matsushiro	4.25	274	P	Pn	01 00 06.4	+0.7
JNU	Nakatsue	10.86	256	LR	LR	01 05 45.8	
	comp=Z,25nm,20.3s,baz=309,slow=37						
KSRS	Korea Array	12.49	279	LR	LR	01 07 03.5	
	comp=Z,17nm,19.6s,baz=15,slow=38						
H11N2	WAKE ISLAND Hy	26.40	123	T	T	01 31 45.4	
	baz=316,slow=74,SNR=5.7						
H11N1	WAKE ISLAND Hy	26.41	123	T	T	01 31 48.9	
	baz=78,slow=74,SNR=4.9						
H11S3	WAKE ISLAND Hy	27.13	125	T	T	01 32 44.5	
	SNR=3.5						
SONM	Songino Array	29.52	304	P	P	01 05 06.5	+2.0
	0.6nm,0.8s,baz=105,slow=8.6,SNR=2.9						
ZALV	Zalesovo Beam	43.57	313	P	P	01 07 04.3	+0.5
	0.6nm,0.5s,baz=112,slow=7.5,SNR=3.9						
MKAR	Makanchi Array	45.86	303	P	P	01 07 24.0	+1.8
	0.2nm,0.8s,baz=78,slow=8.2,SNR=2.8						
ILAR	Eielson Array	49.15	32	P	P	01 07 47.2	-0.2
	0.6nm,0.8s,baz=258,slow=7.6,SNR=4.2						
INK	Inuvik	54.20	27	P	P	01 08 25.5	+0.5
	0.7nm,0.7s,baz=296,slow=7.1,SNR=4.1						
WRA	Warramunga Arr	56.69	190	P	P	01 08 42.5	-0.9
	0.6nm,0.6s,baz=11,slow=7.2,SNR=3.3						
ASAR	Alice Springs	60.42	190	P	P	01 09 08.2	-1.2
	0.3nm,0.8s,baz=360,slow=7.8,SNR=3.2						
YKA	Yellowknife Ar	63.52	30	P	P	01 09 29.6	-0.2
	0.2nm,0.7s,baz=297,slow=6.9,SNR=3.1						
YBH	Yreka Blue Hor	69.42	53	P	P	01 10 07.6	-0.4
	0.8nm,0.3s,baz=135,slow=14,SNR=2.9						
FINES	FINESS Array B	70.14	333	P	P	01 10 12.8	+0.8
	2.2nm,0.9s,baz=23,slow=15,SNR=3.0						
NOA	NORSAR Array B	75.41	338	P	P	01 10 43.7	+0.5
	1.3nm,0.9s,baz=26,slow=4.0,SNR=3.6						
TXAR	Lajitas Array	89.18	54	P	P	01 11 55.7	-0.1
	0.1nm,0.7s,baz=326,slow=4.7,SNR=2.5						

*ISCJB **03** 01:11:14.0±0.8, 36°.5N±0°.1×142°.1E±0°.1, h19^{km}, mb3.5/7, Error ellipse: s-maj=19.0km s-min=12.3km az=177.5*
*IDC **03** 01:11:13.4±1.0, 36°.50N×142°.00E, h0^{km}, mb3.4/7, mb1 3.6/8, mb1mx3.5/46, mbtmp3.4/8, ML3.1/1, Error ellipse: s-maj=26.6km s-min=22.4km az=83.0*
ISC 03 01:11:16.5±1.1**, 36°.5N**±0°.2×**141°.87E**±0°.09**, h19^{km}, n16, σ0^{s}.94**/10**, mb3.5**/7**, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
MJAR	Matsushiro Arr	2.95	272	Pn	Pn	01 12 02.3	-0.1
	2.6nm,0.3s,baz=100,slow=7.8,SNR=30						
MAT	Matsushiro	2.95	272	P	Pn	01 12 02.5	+0.2
MAT				eS	Sb	01 12 43.1	-1.0
JHJ	Hachijo jima 2	3.79	207	Pn	Pn	01 12 07.0	-6.9
	20nm,0.3s,baz=71,slow=20,SNR=5.7						
H11N2	WAKE ISLAND Hy	27.57	121	T	T	01 45 38.1	
	baz=311,slow=75,SNR=12						
H11N1	WAKE ISLAND Hy	27.57	121	T	T	01 45 27.8	
	baz=311,slow=75,SNR=12						
H11N3	WAKE ISLAND Hy	27.59	121	T	T	01 45 24.3	
	baz=311,slow=75,SNR=9.1						
H11S1	WAKE ISLAND Hy	28.27	123	T	T	01 46 13.7	
	baz=314,slow=75,SNR=11						
H11S3	WAKE ISLAND Hy	28.27	123	T	T	01 46 13.4	
	baz=314,slow=75,SNR=10						
H11S2	WAKE ISLAND Hy	28.29	123	T	T	01 46 10.4	
	baz=314,slow=75,SNR=8.4						
SONM	Songino Array	28.38	305	P	P	01 17 10.2	+0.6
	0.2nm,0.3s,baz=109,slow=8.4,SNR=3.6						
ZALV	Zalesovo Beam	42.54	313	P	P	01 19 09.9	-0.7
	0.3nm,0.3s,baz=54,slow=15,SNR=2.3						
MKAR	Makanchi Array	44.71	303	P	P	01 19 30.2	+2.0
	0.4nm,0.7s,baz=94,slow=10,SNR=6.1						
ILAR	Eielson Array	49.74	32	P	P	01 20 06.8	-0.4
	1.1nm,1.1s,baz=206,slow=9.5,SNR=4.4						
WRA	Warramunga Arr	56.59	188	P	P	01 20 58.1	0.0
	0.6nm,0.8s,baz=1.4,slow=7.2,SNR=5.6						
ASAR	Alice Springs	60.32	188	P	P	01 21 23.8	-0.3
	0.3nm,0.7s,baz=17,slow=13,SNR=3.1						
YKA	Yellowknife Ar	64.08	30	P	P	01 21 48.4	-0.4
	0.1nm,0.2s,baz=302,slow=7.1,SNR=4.2						

*IDC **03** 01:13:36.0±0.8, 36°.31N×143°.35E, h0^{km}, mb3.5/9, mb1 3.7/12, mb1mx3.6/47, mbtmp3.5/12, ML2.9/3, MS2.9/1, Ms1 3.0/1, ms1mx2.2/52, Error ellipse: s-maj=21.3km s-min=19.9km az=103.0*
*ISCJB **03** 01:13:39.0±0.7, 36°.23N±0°.07×143°.15E±0°.08, h33^{km}, mb3.5/9, MS2.9/1, Error ellipse: s-maj=11.2km s-min=8.6km az=140.8*
ISC 03 01:13:41.2±0.8**, 36°.25N**±0°.09×**143°.19E**±0°.09**, h35^{km}, n13, σ0^{s}.98**/15**, mb3.6**/9**, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
MJAR	Matsushiro Arr	4.03	276	Pn	Pn	01 14 39.6	-0.9
	1.3nm,0.3s,baz=89,slow=15,SNR=6.1						
MJAR				Sn	Sn	01 15 25.6	-0.8
	1.1nm,0.3s,baz=80,slow=6.9,SNR=3.3						
JHJ	Hachijo jima 2	4.20	223	Pn	Pn	01 14 43.3	+0.5
	11nm,0.3s,baz=84,slow=23,SNR=5.8						
JHJ				Sn	Sn	01 15 29.0	-1.7
	27nm,0.3s,baz=89,slow=22,SNR=6.3						
USRK	Ussuriysk Ar.	11.67	316	Pn	Pn	01 16 26.2	+1.0
	0.1nm,0.3s,baz=127,slow=12,SNR=5.4						
SONM	Songino Array	29.41	305	P	P	01 19 43.1	+1.7
	0.7nm,0.6s,baz=96,slow=9.0,SNR=6.5						
ZALV	Zalesovo Beam	43.50	313	P	P	01 21 40.7	-0.2
	0.7nm,0.5s,baz=95,slow=8.9,SNR=3.8						
MKAR	Makanchi Array	45.74	303	P	P	01 21 58.9	-0.1
	0.7nm,0.8s,baz=88,slow=10,SNR=3.6						
ILAR	Eielson Array	49.39	32	P	P	01 22 25.9	-1.1
	0.4nm,0.7s,baz=256,slow=6.8,SNR=4.5						
ILAR				LR	LR	01 43 01.1	
	comp=Z,12nm,21.2s,baz=12,slow=36						
BVAR	Borovoye Array	52.15	313	P	P	01 22 47.7	-0.3
	0.4nm,0.5s,baz=107,slow=5.0,SNR=3.8						
WRA	Warramunga Arr	56.51	190	P	P	01 23 20.4	+0.4
	0.4nm,0.7s,baz=9.7,slow=7.4,SNR=3.9						
ASAR	Alice Springs	60.24	190	P	P	01 23 46.8	+0.8
	0.2nm,0.4s,baz=359,slow=6.2,SNR=4.3						
YKA	Yellowknife Ar	63.76	30	P	P	01 24 08.5	-0.6
	0.1nm,0.6s,baz=288,slow=8.2,SNR=3.3						
TXAR	Lajitas Array	89.45	53	P	P	01 26 34.8	-0.1
	0.1nm,0.5s,baz=276,slow=1.7,SNR=2.6						
LPAZ	La Paz	145.81	63	PKPbc	PKPdf	01 33 17.2	-0.1
	0.5nm,0.6s,baz=359,slow=17,SNR=2.5						

*ISCJB **03** 01:15:34.6±1.0, 37°.0N±0°.1×142°.4E±0°.1, h9^{km}, mb3.4/5, Error ellipse: s-maj=21.3km s-min=11.6km az=171.9*
*IDC **03** 01:15:35.2±1.2, 37°.05N×142°.42E, h0^{km}, mb3.4/5, mb1 3.6/6, mb1mx3.4/46, mbtmp3.3/6, ML3.3/1, Error ellipse: s-maj=30.4km s-min=24.0km az=79.0*
ISC 03 01:15:36.6±1.2**, 37°.1N**±0°.2×**142°.4E**±0°.1**, h9^{km}, n13, σ0^{s}.72**/8**, mb3.4**/5**, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
MJAR	Matsushiro Arr	3.40	263	Pn	Pn	01 16 30.2	+0.4
	2.9nm,0.3s,baz=87,slow=15,SNR=8.1						
MAT	Matsushiro	3.40	263	P	Pn	01 16 30.7	+0.9
MAT				S	Sn	01 17 09.6	-0.6
H11N2	WAKE ISLAND Hy	27.49	122	T	T	01 50 35.6	
	baz=317,slow=74,SNR=14						
H11N1	WAKE ISLAND Hy	27.50	122	T	T	01 50 41.8	
	baz=317,slow=74,SNR=9.4						
H11N3	WAKE ISLAND Hy	27.51	122	T	T	01 50 35.1	
	baz=317,slow=74,SNR=11						
H11S1	WAKE ISLAND Hy	28.22	124	T	T	01 51 31.3	
	baz=318,slow=76,SNR=5.4						
H11S3	WAKE ISLAND Hy	28.22	124	T	T	01 51 36.5	
	baz=318,slow=76,SNR=5.3						
H11S2	WAKE ISLAND Hy	28.24	124	T	T	01 51 34.2	
	baz=318,slow=76,SNR=6.2						
SONM	Songino Array	28.42	304	P	P	01 21 30.9	-0.7
	0.2nm,0.4s,baz=94,slow=24,SNR=2.2						
MKAR	Makanchi Array	44.77	302	P	P	01 23 50.8	+0.4
	0.1nm,0.4s,baz=87,slow=12,SNR=3.4						
ILAR	Eielson Array	49.05	32	P	P	01 24 23.7	0.0
	0.3nm,0.8s,baz=268,slow=6.8,SNR=3.0						
WRA	Warramunga Arr	57.20	189	P	P	01 25 23.4	-0.7
	0.7nm,0.7s,baz=10,slow=7.2,SNR=3.6						
ASAR	Alice Springs	60.93	189	P	P	01 25 50.2	+0.3
	0.4nm,0.9s,baz=7.0,slow=8.4,SNR=3.1						

*CSEM **03** 01:23:29.1±0.2, 61°.08N×4°.35E, h15^{km}, ML2.6, Error ellipse: s-maj=3.9km s-min=3.3km az=121.0*
*NAO **03** 01:23:30.7±4.8, 61°.06N×4°.63E, h3^{km}±20^{km}, ML2.5*
*BER **03** 01:23:30.9±1.4, 61°.10N×4°.32E, h16^{km}±4^{km}, MD2.5, ML2.4, ML2.5(NAO)*
*BGS **03** 01:23:31.1±0.4, 61°.11N×4°.37E, h24^{km}±10^{km}, ML2.6*
*UPP **03** 01:23:33.0±2.0, 60°.88N×5°.05E, h0^{km}, ML1.8, Suspected explosion*
ISC 03 01:23:27.8±1.2**, 61°.05N**±0°.03×**4°.36E**±0°.03**, h16^{km}**±9^{km}**, n106, σ1^{s}.81**/158**, 2C-2D, Southern Norway**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
FOO	Floro	0.65	31	eP	Pb	01 23 41.9	+1.2
FOO				eS	Sb	01 23 50.1	+0.7
FOO				IAML		01 23 50.7	
	comp=Z,651nm,0.1s						
FOO	Floro	0.65	31	eP	Pb	01 23 41.8	+1.2
FOO				eS	Sb	01 23 49.8	+0.3
FOO				AML	AML	01 23 50.5	
	comp=E,197nm,0.2s						
FOO				AML	AML	01 23 53.3	
	comp=N,177nm,0.1s						
FOO	Floro	0.65	31	eP	Pb	01 23 41.8	+1.2
FOO				eS	Sb	01 23 49.8	+0.3
FOO				AML	AML	01 23 50.5	
	comp=E,197nm,0.2s						
FOO				AML	AML	01 23 53.3	
	comp=N,177nm,0.1s						
FOO	Floro	0.65	31	eP	Pb	01 23 41.9	+1.2
	SNR=97						
FOO				eS	Sb	01 23 50.1	+0.7
	SNR=97						
ASK	Askoy	0.70	144⇑	iP	Pn	01 23 44.6	+1.6
ASK				eS	Sn	01 23 54.2	+0.8
ASK				IAML		01 23 54.8	
	comp=Z,130nm,0.1s						
BER	Bergen	0.82	144⇑	iP	Pn	01 23 46.5	+1.9
BER				eS	Sn	01 23 57.6	+1.2
BER				IAML		01 23 57.8	
	comp=Z,400nm,0.2s						
BER	Bergen	0.82	144	eP	Pn	01 23 46.5	+1.9
BER				eS	Sn	01 23 57.4	+1.0
BER				AML	AML	01 23 57.9	
	comp=E,141nm,0.3s						
BER				AML	AML	01 23 57.9	
	comp=N,101nm,0.2s						
BER	Bergen	0.82	144	eP	Pn	01 23 46.5	+1.9
BER				eS	Sn	01 23 57.4	+1.0
BER				AML	AML	01 23 57.9	
	comp=E,141nm,0.3s						
BER				AML	AML	01 23 57.9	
	comp=N,101nm,0.2s						
BER	Bergen	0.82	144	eP	Pn	01 23 46.5	+1.9
BER				eS	Sn	01 23 57.4	+1.0
	comp=N,101nm,0.2s						
HYA	Hoyanger	0.90	81⇓	iP	Pn	01 23 46.6	+0.9
HYA				eS	Sb	01 23 58.5	+1.9
HYA				IAML		01 23 59.4	
	comp=Z,121nm,0.1s						
HYA	Hoyanger	0.90	81⇓	iP	Pn	01 23 46.6	+0.9
	SNR=93						
HYA				eS	Sb	01 23 58.5	+1.9
	SNR=93						
ODD1	Odda	1.60	134	eP	Pg	01 23 57.8	-0.7
ODD1				eS	Sn	01 24 17.2	+1.5
ODD1				eSg	Sg	01 24 20.7	+1.5
ODD1				IAML		01 24 21.1	
	comp=Z,316nm,0.2s						
ODD1	Odda	1.60	134	eP	Pg	01 23 57.8	-0.7
	SNR=55						
ODD1				eS	Sn	01 24 17.2	+1.5
	SNR=55						
ODD1				eSg	Sg	01 24 20.7	+1.5
	SNR=92						
AKN	Aaknes	1.70	47	Pn	Pb	01 23 58.3	-0.3
AKN				Pg	Pg	01 23 59.5	-0.9
AKN				Lg	Lg	01 24 21.6	
AKN	Aaknes	1.70	47	Pn	Pb	01 23 58.3	-0.3
AKN				Pg	Pg	01 23 59.5	-0.9
AKN				Lg	Lg	01 24 21.6	
AKN	Aaknes	1.70	47	Pn	Pb	01 23 58.3	-0.3
	SNR=55						
KMY	Karmoy	1.89	166	eP	Pb	01 24 01.6	-0.2
KMY				e		01 24 04.9	
KMY				eSg	Sg	01 24 29.5	+0.9
KMY				IAML		01 24 30.7	
	comp=Z,50nm,0.2s						
KMY	Karmoy	1.89	166	eP	Pb	01 24 01.6	-0.2
	SNR=55						
KMY				eSg	Sg	01 24 29.5	+0.9
	SNR=91						
BLS5	Blasjo	1.94	146	eP	Pb	01 24 02.6	0.0
BLS5				eS	Sn	01 24 25.2	+1.2
BLS5				eSg	Sg	01 24 30.8	+0.8
BLS5				IAML		01 24 31.0	
	comp=Z,49nm,0.2s						
BLS5	Blasjo	1.94	146	eP	Pb	01 24 02.6	0.0
	SNR=55						
BLS5				eS	Sn	01 24 25.2	+1.2
	SNR=55						
BLS5				eSg	Sg	01 24 30.8	+0.8
	SNR=91						
MOL	Molde	2.15	43	eP	Pb	01 24 06.3	0.0
MOL				e		01 24 29.8	
MOL				eSg	Sb	01 24 34.9	+2.2
MOL				IAML		01 24 36.8	
	comp=Z,89nm,0.1s						
MOL	Molde	2.15	43	eP	Pb	01 24 06.3	0.0
	SNR=55						
MOL				eSg	Sb	01 24 34.9	+2.2
	SNR=91						
STAV	Stavanger	2.22	162	eP	Pn	01 24 05.7	+1.8
STAV				eSg	Sg	01 24 39.4	+0.3
STAV				IAML		01 24 42.1	
	comp=Z,42nm,0.3s						
STAV	Stavanger	2.22	162	eP	Pn	01 24 05.7	+1.8
	SNR=55						
STAV				eSg	Sg	01 24 39.4	+0.3
	SNR=91						
YEL1	Yell	2.71	262	eP	Pn	01 24 12.0	+1.3
YEL1	Yell	2.71	262	eP	Pn	01 24 12.0	+1.3
YEL1	Yell	2.71	262	eP	Pn	01 24 12.0	+1.3
YEL1	Yell	2.71	262	eP	Pn	01 24 12.0	+1.3
LRW	Lerwick	2.88	254	eP	Pn	01 24 14.2	+1.3
LRW				eS	Sn	01 24 46.1	-1.1
LRW				AML	AML	01 24 47.1	
	comp=N,5.7nm,0.2s						
LRW				AML	AML	01 24 50.0	
	comp=E,11nm,0.5s						
LRW	Lerwick	2.88	254	eP	Pn	01 24 14.2	+1.3
LRW				eS	Sn	01 24 46.1	-1.1
LRW				AML	AML	01 24 47.1	
	comp=N,5.7nm,0.2s						
LRW				AML	AML	01 24 50.0	
	comp=E,11nm,0.5s						
LRW	Lerwick	2.88	254	eP	Pn	01 24 14.2	+1.3
LRW				eS	Sn	01 24 46.1	-1.1
LRW				AML	AML	01 24 47.1	
	comp=N,5.7nm,0.2s						
LRW				AML	AML	01 24 50.0	
	comp=E,11nm,0.5s						
LRW	Lerwick	2.88	254	eP	Pn	01 24 14.2	+1.3
LRW				eS	Sn	01 24 46.1	-1.1
	comp=E,11nm,0.5s						
KONO	Kongsberg	2.96	116	eP	Pn	01 24 15.9	+1.9
KONO				eSg	Sg	01 24 59.9	-2.8
KONO				IAML		01 25 07.5	
	comp=Z,20nm,0.4s						
KONO	Kongsberg	2.96	116	eP	Pn	01 24 15.9	+1.9
	SNR=55						
KONO				eSg	Sg	01 24 59.8	-2.8
	SNR=91						
WAL1	Walls	3.05	258	eP	Pn	01 24 16.9	+1.7
WAL1	Walls	3.05	258	eP	Pn	01 24 16.9	+1.7
WAL1	Walls	3.05	258	eP	Pn	01 24 16.9	+1.7
WAL1	Walls	3.05	258	eP	Pn	01 24 16.9	+1.7
SNART	Snartemo	3.08	151	eP	Pn	01 24 18.8	+3.2
SNART				eSg	Sg	01 25 04.4	-2.1
SNART				IAML		01 25 08.3	
	comp=Z,51nm,0.3s						
SNART	Snartemo	3.08	151	eP	Pn	01 24 18.8	+3.2
	SNR=55						
SNART				eSg	Sg	01 25 04.4	-2.1
	SNR=91						
NB2	NORSAR Subarra	3.34	87	Pn	Pn	01 24 20.6	+1.3
	baz=272,slow=14						
NB2				Lg	Lg	01 25 14.0	
	baz=273,slow=37						
NB2	NORSAR Subarra	3.34	87	Pn	Pn	01 24 20.6	+1.3
	baz=272,slow=14						
NB2				Lg	Lg	01 25 14.0	
	baz=273,slow=37						
NB2	NORSAR Subarra	3.34	87	Pn	Pn	01 24 20.6	+1.3
	SNR=55						
NB2				Lg	Lg	01 25 14.0	
	SNR=3.2						
OSL	Oslo	3.34	107	eS	Sn	01 24 59.1	+0.6
OSL	Oslo	3.34	107	eS	Sn	01 24 59.1	+0.6
	SNR=55						
HOMB	Homborsund	3.49	141	eP	Pn	01 24 23.9	+2.6
HOMB				e		01 24 25.0	
HOMB				eSg	Sg	01 25 15.6	-4.1
HOMB				IAML		01 25 22.1	
	comp=Z,13nm,0.3s						
HOMB	Homborsund	3.49	141	eP	Pn	01 24 23.9	+2.6
	SNR=55						
HOMB				eSg	Sg	01 25 15.6	-4.1
	SNR=91						
NC602	NORSAR Array S	3.52	92	eP	Pn	01 24 23.1	+1.3
NC602	NORSAR Array S	3.52	92	eP	Pn	01 24 23.1	+1.3
	SNR=55						
STRU	Stroemstad	3.97	118	P	Pn	01 24 29.0	+1.1
STRU				S	Sn	01 25 11.7	-2.4
STRU	Stroemstad	3.97	118	P	Pn	01 24 29.0	+1.1
STRU				S	Sn	01 25 11.7	-2.4
FINU	Finntorp	4.37	109	P	Pn	01 24 34.8	+1.4
FINU				S	Sn	01 25 21.5	-2.4
FINU	Finntorp	4.37	109	P	Pn	01 24 34.8	+1.4
FINU				S	Sn	01 25 21.5	-2.4
UDD	Uddeholm	4.66	98	P	Pn	01 24 38.9	+1.5
UDD	Uddeholm	4.66	98	P	Pn	01 24 38.9	+1.5
VANU	Vaenersborg	4.67	120	P	Pn	01 24 38.7	+1.3
VANU				S	Sn	01 25 28.1	-3.0
VANU	Vaenersborg	4.67	120	P	Pn	01 24 38.7	+1.3
VANU				S	Sn	01 25 28.1	-3.0
HFS	Hagfors	4.69	97	Pn	Pn	01 24 39.1	+1.3
	baz=278,slow=14						
HFS				Sn	Sn	01 25 30.8	-1.1
	baz=288,slow=18						
HFS				Lg	Lg	01 25 53.2	
	baz=283,slow=28						
HFS	Hagfors	4.69	97	Pn	Pn	01 24 39.1	+1.3
	baz=278,slow=14						
HFS				Sn	Sn	01 25 30.8	-1.1
	baz=288,slow=18						
HFS	Hagfors	4.69	97	Pn	Pn	01 24 39.2	+1.3
	SNR=55						
HFS				Sn	Sn	01 25 30.8	-1.1
	SNR=55						
HFS				Lg	Lg	01 25 53.2	
	SNR=8.4						
TJOU	Tjoern	4.78	126	P	Pn	01 24 40.4	+1.4
TJOU				S	Sn	01 25 31.1	-2.8
TJOU	Tjoern	4.78	126	P	Pn	01 24 40.4	+1.4
BIGH	Upper Bighouse	4.90	242	eP	Pn	01 24 42.0	+1.4
BIGH				eS	Sn	01 25 33.6	-3.3
BIGH				AML	AML	01 25 37.1	
	comp=N,12nm,0.4s						
BIGH				AML	AML	01 25 39.4	
	comp=E,11nm,0.4s						
BIGH	Upper Bighouse	4.90	242	eP	Pn	01 24 42.0	+1.4
BIGH				eS	Sn	01 25 33.6	-3.3
BIGH				AML	AML	01 25 37.1	
	comp=N,12nm,0.4s						
BIGH				AML	AML	01 25 39.4	
	comp=E,11nm,0.4s						
BIGH	Upper Bighouse	4.90	242	eP	Pn	01 24 42.0	+1.4
BIGH				eS	Sn	01 25 33.6	-3.3
BIGH				AML	AML	01 25 37.1	
	comp=N,12nm,0.4s						
BIGH				AML	AML	01 25 39.4	

	comp=E,11nm,0.4s						
BIGH	Upper Bighouse	4.90	242	eP	Pn	01 24 42.0	+1.4
NASU	Vaermlandsnaes	4.92	112	P	Pn	01 24 42.3	+1.4
NASU				S	Sn	01 25 34.4	-3.0
NASU	Vaermlandsnaes	4.92	112	P	Pn	01 24 42.3	+1.4
NASU				S	Sn	01 25 34.4	-3.0
MUD	Monsted U'grnd	5.24	149	i P	Pn	01 24 50.9	+5.6
MUD	Monsted U'grnd	5.24	149	i P	Pn	01 24 51.0	+5.7
	SNR=46						
DRUM	Mains of Drumt	5.45	224	eS	Sn	01 25 46.6	-3.9
DRUM				AML	AML	01 25 52.2	
	comp=N,7.0nm,0.6s						
DRUM				AML	AML	01 25 57.0	
	comp=E,7.6nm,0.5s						
DRUM	Mains of Drumt	5.45	224	eS	Sn	01 25 46.6	-3.9
DRUM				AML	AML	01 25 52.2	
	comp=N,7.0nm,0.6s						
DRUM				AML	AML	01 25 57.0	
	comp=E,7.6nm,0.5s						
DRUM	Mains of Drumt	5.45	224	eS	Sn	01 25 46.6	-3.9
DRUM				AML	AML	01 25 52.2	
	comp=N,7.0nm,0.6s						
DRUM				AML	AML	01 25 57.0	
	comp=E,7.6nm,0.5s						
BORU	Boraas	5.50	125	P	Pn	01 24 50.1	+1.2
BORU				S	Sn	01 25 48.0	-3.6
BORU	Boraas	5.50	125	P	Pn	01 24 50.1	+1.2
NRAU	Nora	5.51	101	P	Pn	01 24 51.0	+1.9
NRAU	Nora	5.51	101	P	Pn	01 24 51.0	+1.9
ROTU	Roteberg	5.55	81	P	Pn	01 24 50.7	+1.2
ROTU	Roteberg	5.55	81	P	Pn	01 24 50.7	+1.2
FKPU	Falk	5.57	117	P	Pn	01 24 51.2	+1.4
FKPU				S	Sn	01 25 49.9	-3.5
FKPU	Falk	5.57	117	P	Pn	01 24 51.2	+1.4
FALU	Falun	5.65	91	P	Pn	01 24 53.3	+2.3
FALU	Falun	5.65	91	P	Pn	01 24 53.3	+2.3
ASKU	Askersund	5.68	108	P	Pn	01 24 52.5	+1.1
ASKU				S	Sn	01 25 53.1	-3.2
ASKU	Askersund	5.68	108	P	Pn	01 24 52.5	+1.1
FABU	Falkenberg	5.92	130	P	Pn	01 24 56.0	+1.3
FABU	Falkenberg	5.92	130	P	Pn	01 24 56.0	+1.3
HASU	Hassela	5.96	74	P	Pn	01 24 56.9	+1.8
HASU	Hassela	5.96	74	P	Pn	01 24 56.9	+1.8
HUDU	Hudiksvall	6.17	78	P	Pn	01 24 59.8	+1.7
HUDU	Hudiksvall	6.17	78	P	Pn	01 24 59.8	+1.7
ESKU	Eskilstuna	6.28	102	P	Pn	01 25 01.2	+1.6
ESKU	Eskilstuna	6.28	102	P	Pn	01 25 01.2	+1.6
ARNU	Arnoeviken	6.29	78	P	Pn	01 25 00.9	+1.1
ARNU	Arnoeviken	6.29	78	P	Pn	01 25 00.9	+1.1
OSTU	Oestervaala	6.34	92	P	Pn	01 25 02.0	+1.6
OSTU	Oestervaala	6.34	92	P	Pn	01 25 02.0	+1.6
BACU	Backbrunna	6.42	95	P	Pn	01 25 03.1	+1.6
BACU	Backbrunna	6.42	95	P	Pn	01 25 03.1	+1.6
SOLU	Sollefteaa	6.44	64	P	Pn	01 25 03.4	+1.7
SOLU	Sollefteaa	6.44	64	P	Pn	01 25 03.4	+1.7
FIBU	Brunna	6.53	94	P	Pn	01 25 04.7	+1.7
LUNU	Lund	7.23	135	eP	Pn	01 25 16.1	+3.5
	SNR=46						
FIA0	FINESS Array S	10.46	78	Pn	Pn	01 25 58.4	+1.5
	baz=279,slow=12						
FIA0				Sn	Sn	01 27 47.5	-6.1
	baz=277,slow=22						
FIA0	FINESS Array S	10.46	78	Pn	Pn	01 25 58.4	+1.5
	baz=279,slow=12						
FIA0				Sn	Sn	01 27 47.5	-6.1
	baz=277,slow=22						
FIA0	FINESS Array S	10.46	78	Pn	Pn	01 25 58.4	+1.5
	SNR=55						

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*IDC **03** 01:24:03.7±1.6, 2°.72S×101°.88E, h0km, mb3.5/6, mb1 3.7/6, mb1mx3.5/38, mbtmp3.5/6, Error ellipse: s-maj=78.4km s-min=20.0km az=50.0*
*ISCJB **03** 01:24:24.1±0.6, 2°.5S±0°.1×102°.4E±0°.1, h187km, mb3.3/7, Error ellipse: s-maj=19.2km s-min=8.7km az=139.1*
*DJA **03** 01:24:25.4±0.6, 3°S±12°×10°2E±1°0, h176km±8km, M4.1/7, mb4.3/2, MLv4.0/7*
ISC 03 01:24:24.9±0.8, 2°.6S±0°.1×102°.3E±0°.1, h187km, n17, σ1s38/15, mb3.4/7, Southern Sumatera

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
MASI	Maura Aman, Be	0.53	187	P	Pn	01 24 51.2	+0.5
MASI				S	Sn	01 25 11.4	+0.7
LHSI	Lahat	1.71	135	P	Pn	01 25 00.0	+0.5
MNAI	Manna	1.85	160	P	Pn	01 25 01.0	+0.1
PPSI	Pulau Pagai	2.30	266	P	Pn	01 25 06.6	+0.9
MDSI	Maura Dua	2.64	135	P	Pn	01 25 09.8	+0.3
GSI	Gunungsitoli	6.12	309	P	Pn	01 25 53.6	0.0
	60nm,0.6s,0.3nm						
TPTI		7.76	319	P	Pn	01 26 14.3	-0.8
H08S2	Diego Garcia H	30.10	259	T	T	01 59 57.8	
	baz=82,slow=75,SNR=3.6						
H08S3	Diego Garcia H	30.11	259	T	T	01 59 52.9	
	baz=82,slow=75,SNR=4.0						
H08S1	Diego Carcia H	30.12	259	T	T	01 59 54.2	
	baz=82,slow=75,SNR=4.5						
WRA	Warramunga Arr	35.70	121	P	P	01 31 06.9	+1.1
	0.6nm,0.7s,baz=302,slow=10.0,SNR=2.9						
ASAR	Alice Springs	37.04	127	P	P	01 31 17.9	+0.8
	0.4nm,0.4s,baz=302,slow=7.6,SNR=14						
STKA	Stephens Creek	47.03	133	P	P	01 32 34.5	-3.2
	1.5nm,0.7s,baz=355,slow=14,SNR=3.2						
SONM	Songino Array	50.37	4	P	P	01 33 05.3	+2.4
	0.3nm,0.7s,baz=189,slow=10,SNR=4.0						
MKAR	Makanchi Array	52.27	343	P	P	01 33 16.1	-0.9
	0.2nm,0.4s,baz=152,slow=9.8,SNR=5.5						
BVAR	Borovoye Array	61.57	339	P	P	01 34 21.2	-1.0
	0.1nm,0.3s,baz=122,slow=7.6,SNR=3.1						
BRTR	Keskin Array B	75.44	312	P	P	01 35 49.3	+0.7
	1.0nm,0.8s,baz=134,slow=5.5,SNR=4.5						

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*ISCJB **03** 01:36:47.0±0.2, 61°.36N±0°.02×151°.15W±0°.05, h68km, mb3.8/17, Error ellipse: s-maj=3.9km s-min=2.5km az=135.3*
*NEIC **03** 01:36:48.9, 61°.31N×151°.14W, h60km, ML3.8(AEIC), After AEIC.*
NEIC Felt [III] at Anchorage. Also felt at Eagle River.
*IDC **03** 01:36:48.9±2.8, 61°.54N×151°.33W, h75km±21km, mb3.6/16, mb1 3.7/20, mb1mx3.5/65, mbtmp3.8/20, Error ellipse: s-maj=22.0km s-min=14.7km az=37.0*
ISC 03 01:36:47.7±0.5, 61°.33N±0°.03×151°.17W±0°.03, h68km, n88, σ0s92/97, mb3.9/17, Southern Alaska

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
STLK	Strandline Lak	0.36	298	P	Pn	01 36 59.5	+0.4
SPU	Mount Spurr	0.45	251	P	Pn	01 36 59.9	0.0
VOGL	Vogel Lake	0.49	133	P	Pn	01 37 01.3	+1.1
CKN	Chakachatna No	0.50	258	P	Pn	01 37 00.7	+0.3
FIB	Fire Island	0.51	109	P	Pn	01 37 01.1	+0.8
SPCR	Spurr Chakacha	0.52	256	P	Pn	01 37 00.6	+0.1
SPCR				S	Sn	01 37 10.2	+0.2
CKL	Chakachamna La	0.58	257	P	Pn	01 37 01.3	+0.1
RC01	Rabbit Creek A	0.74	109	P	Pn	01 37 02.7	-0.2
RC01				S	Sn	01 37 14.1	0.0
SLKM	Skilak Lake	0.95	150	P	Pn	01 37 05.0	-0.4
PMR	Palmer	1.01	74	P	Pn	01 37 06.4	+0.2
PMR				S	Sn	01 37 20.8	+0.8
DFR	Drift River	1.05	225	P	Pn	01 37 06.9	+0.2
RDJH	Redoubt Jeurge	1.09	228	P	Pn	01 37 07.5	+0.2
RDJH				S	Sn	01 37 22.2	+0.3
NCT	North Crescent	1.16	229	P	Pn	01 37 08.5	+0.4
CUT	Chulitna	1.16	21	P	Pn	01 37 08.3	+0.3
SML	Sawmill	1.44	69	P	Pn	01 37 12.0	+0.2
SEW	Seward	1.50	145	P	Pn	01 37 12.0	-0.5
BRLK	Bradley Lake	1.58	175	P	Pn	01 37 13.7	+0.1
ILW	Iliamna West	1.60	218	P	Pn	01 37 14.2	+0.1
PPLA	Purkeypile	1.64	344	P	Pn	01 37 15.2	+0.7
HUR	Hurricane	1.80	23	P	Pn	01 37 17.6	+1.0
SCM	Sheep Creek Mo	1.91	73	P	Pn	01 37 18.1	0.0
OPT	Oil Point	1.97	212	P	Pn	01 37 19.9	+1.0
CAST	Castle Rocks	2.14	349	P	Pn	01 37 21.8	+0.7
SVW2	Sparrevohn	2.15	266	P	Pn	01 37 21.2	0.0
TRF	Thorofare Moun	2.17	11	P	Pn	01 37 22.6	+1.0
KTH	Kantishna Hill	2.23	3	P	Pn	01 37 23.4	+1.0
AUE	Augustine Isla	2.26	210	P	Pn	01 37 23.8	+1.0
AUW	Augustine West	2.28	211	P	Pn	01 37 24.0	+1.0
RND	Reindeer	2.34	26	P	Pn	01 37 24.7	+0.7
VLZ	Valdez	2.35	93	P	Pn	01 37 23.3	-0.6
DHY	Denali Highway	2.50	44	P	Pn	01 37 26.7	+0.6
KLU	Klutina	2.53	84	P	Pn	01 37 25.9	-0.6
CHUM	Lake Minchumin	2.61	349	P	Pn	01 37 28.4	+0.9
DIV	Divide	2.62	92	P	Pn	01 37 26.9	-0.8
MCK	McKinley	2.62	22	P	Pn	01 37 29.1	+1.4
CDD	Cape Douglas	2.71	208	P	Pn	01 37 29.7	+0.8
TT01	Tatalina	2.77	307	P	Pn	01 37 30.0	+0.3
BPAW	Bear Paw Mtn.	2.78	2	P	Pn	01 37 30.0	+0.2
PS11	TAPS Pump St11	2.82	72	P	Pn	01 37 31.2	+0.9
FOPK	Fourpeaked Vol	2.83	205	P	Pn	01 37 31.0	+0.5
PAX	Paxson	3.14	56	P	Pn	01 37 35.8	+1.0
BMRM	Bremner River	3.21	94	P	Pn	01 37 34.3	-1.3
PS10	TAPS Pump St10	3.28	48	P	Pn	01 37 38.8	+2.2
KAHC	Katmai Hardscr	3.31	217	P	Pn	01 37 37.5	+0.4
WRH	Wood River Hil	3.45	23	P	Pn	01 37 39.6	+0.7
KAWH	Katmai	3.48	213	P	Pn	01 37 40.3	+1.0
KVTA	Katmai Vly 10	3.62	217	P	Pn	01 37 41.9	+0.6
KDAK	Kodiak Island	3.63	192	P	Pn	01 37 55.8	+14
	13nm,0.3s,baz=47,slow=8.7,SNR=103						
HDA	Harding Lake	3.64	30	P	Pn	01 37 42.3	+0.8
CCB	Clear Creek Bu	3.66	23	P	Pn	01 37 42.4	+0.6
KELA	Mount Kelaz	3.70	220	P	Pn	01 37 42.9	+0.4
MLY	Manley	3.72	3	P	Pn	01 37 42.9	+0.3
VRDI	Verde Repeater	3.73	88	P	Pn	01 37 42.6	-0.3
KABR	Katmai Barrier	3.74	213	P	Pn	01 37 43.6	+0.7
PS08	TAPS Pump Stn8	3.79	30	P	Pn	01 37 44.1	+0.7
MENT	Mentasta	3.85	62	P	Pn	01 37 45.0	+0.6
COLA	College	3.86	22	P	Pn	01 37 45.3	+0.8
MDM	Murphy Dome	3.88	19	P	Pn	01 37 45.2	+0.4
MCARA	McCarthy VSAT	3.92	86	P	Pn	01 37 46.0	+0.6
ILAR	Eielson Array	3.96	28	P	Pn	01 37 46.5	+0.5
	8.1nm,0.3s,baz=217,slow=14,SNR=234						
ILAR				S	Sn	01 38 29.1	-2.1
	12nm,0.3s,baz=219,slow=17,SNR=9.4						
KHIT	Khitrov Hills	3.97	99	P	Pn	01 37 46.3	+0.2
DOT	Dot Lake	4.04	52	ePn	Pn	01 37 47.5	+0.6
DOT				eSn	Sn	01 38 32.0	-0.8
OHAK	Old Harbor	4.26	196	ePn	Pn	01 37 48.8	-1.2
EGAK	Eagle	5.71	48	ePn	Pn	01 38 10.2	+0.4
	26nm,0.6s						
COLD	Coldfoot	5.94	4	ePn	Pn	01 38 14.0	+1.2
	15nm,0.5s						
COLD				eSn	Sn	01 39 13.0	-6.3
DAWY	Dawson	6.07	58	ePn	Pn	01 38 15.1	+0.3
	17nm,0.7s						
DAWY				eSn	Sn	01 39 22.9	+0.1
INK	Inuvik	10.23	39	P	Pn	01 39 11.3	-0.1
	0.5nm,0.3s,baz=249,slow=12,SNR=26						
INK				S	Sn	01 41 05.5	+1.2
	0.3nm,0.3s,baz=245,slow=20,SNR=2.8						
DLBC	Dease Lake	11.00	96	P	Pn	01 39 24.2	+2.2
	0.1nm,0.3s,baz=175,slow=17,SNR=2.6						
YKA	Yellowknife Ar	17.11	70	P	P	01 40 43.1	+0.4
	0.3nm,0.3s,baz=277,slow=9.9,SNR=29						
YKA				PcP	PcP	01 45 22.2	-0.3
	0.0nm,0.3s,baz=282,slow=1.2,SNR=4.4						
YKA				ScP	ScP	01 48 51.1	+0.2
	0.1nm,0.3s,baz=292,slow=2.2,SNR=6.5						
RES	Resolute Bay	23.69	33	P	P	01 41 52.6	-0.1
	1.1nm,0.7s,baz=256,slow=12,SNR=5.1						
PDAR	Pinedale Array	30.89	108	P	P	01 42 59.2	+1.5
	0.2nm,0.3s,baz=354,slow=6.0,SNR=3.8						
SPITS	Spitsbergen Ar	40.52	4	P	P	01 44 18.2	-1.2
	18nm,1.1s,baz=19,slow=5.4,SNR=8.0						
SCHQ	Schefferville	42.09	59	P	P	01 44 32.5	+0.1
	2.5nm,0.8s,baz=332,slow=6.5,SNR=5.6						
NRIK	Noril'sk	43.10	334	P	P	01 44 37.3	-3.1
	3.2nm,0.5s,baz=55,slow=1.4,SNR=4.2						
TXAR	Lajitas Array	44.65	114	P	P	01 44 54.9	+1.4
	0.3nm,0.5s,baz=309,slow=6.5,SNR=7.8						
ARCES	ARCESS Array B	49.40	2	P	P	01 45 28.6	-1.1
	3.1nm,0.9s,baz=350,slow=6.6,SNR=7.5						
ARCES				PcP	PcP	01 46 49.3	-1.7
	1.0nm,0.6s,baz=27,slow=3.0,SNR=5.0						
SONM	Songino Array	54.73	306	P	P	01 46 10.7	+1.0
	1.9nm,0.7s,baz=43,slow=6.9,SNR=11						
ZALV	Zalesovo Beam	56.83	324	P	P	01 46 23.9	-0.6
	0.6nm,0.3s,baz=32,slow=5.9,SNR=2.8						
NOA	NORSAR Array B	57.21	10	P	P	01 46 30.2	+3.1
	0.8nm,0.8s,baz=13,slow=9.6,SNR=3.4						
FINES	FINESS Array B	57.53	2	P	P	01 46 28.2	-1.1
	0.9nm,0.6s,baz=2.3,slow=9.5,SNR=8.0						
BVAR	Borovoye Array	61.30	333	P	P	01 46 53.7	-1.7
	0.3nm,0.4s,baz=74,slow=8.1,SNR=5.1						
KURK	Kurchatov	61.42	326	P	P	01 46 56.0	-0.2
KURBB	Kurchatov Arra	61.53	326	P	P	01 46 56.0	-1.0
	0.4nm,0.4s,baz=30,slow=6.5,SNR=5.6						
MKAR	Makanchi Array	63.94	322	P	P	01 47 11.3	-1.8
	0.2nm,0.4s,baz=33,slow=6.6,SNR=5.5						
AKTO	Aktyubinsk	66.15	340	P	P	01 47 26.1	-1.2
	0.8nm,0.6s,baz=5.3,slow=4.1,SNR=4.1						
AKASG	Malin Array Be	68.32	360	P	P	01 47 39.9	-1.2
	1.0nm,0.4s,baz=3.3,slow=6.2,SNR=6.7						
GERES	GERESS Array B	69.50	11	P	P	01 47 48.3	-0.2
	0.1nm,0.4s,baz=2.9,slow=5.3,SNR=2.5						
BOSA	Boshof	147.19	6	PKPbc	PKPdf	01 56 21.7	+1.3
	1.0nm,0.6s,baz=4.8,slow=12,SNR=3.6						

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*IDC **03** 01:37:45.4±0.8, 37°.66N×142°.03E, h0km, mb3.6/10, mb1 3.8/11, mb1mx3.6/56, mbtmp3.6/11, ML3.3/1, Error ellipse: s-maj=23.8km s-min=19.7km az=62.0*
*ISCJB **03** 01:37:47.4±1.3, 37°.65N±0°.04×141°.99E±0°.08, h24km±7km, mb3.6/10, Error ellipse: s-maj=10.5km s-min=6.8km az=20.6*
*JMA **03** 01:37:48.4±0.2, 37°.65N×141°.97E, h32km±4km, M4.0*
ISC 03 01:37:47.5±1.9, 37°.65N±0°.05×141°.91E±0°.08, h12km±10km, n27, σ0s85/29, mb3.6/10, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
JFK	Kawauchi	0.88	251	P	Pn	01 38 05.2	-0.4
JFK				S	Sb	01 38 16.7	+0.5
JMM	Marumori	0.91	284	P	Pn	01 38 05.7	-0.4
JMM				S	Sb	01 38 17.5	+0.2
JIO	Ouri	0.92	331	P	Pg	01 38 05.1	-0.1
JIO				S	Sg	01 38 16.2	-0.9
ONAJ	Iwakimizuishiy	1.05	239	P	Pg	01 38 07.6	0.0
ONAJ				eS	Sg	01 38 21.4	+0.2
JOU	Okura	1.22	306	P	Pb	01 38 10.6	+0.2
JOU				S	Sb	01 38 26.0	-0.1
JFT	Otama	1.26	264	P	Pg	01 38 11.7	0.0
JFT				S	Sg	01 38 28.0	-0.1
JHO	Hitachi	1.50	226	P	Pn	01 38 13.5	-0.6
JHO				eS	Sn	01 38 31.6	-1.9
MJAR	Matsushiro Arr	3.16	251	Pn	Pn	01 38 38.9	+1.9
	3.1nm,0.3s,baz=78,slow=16,SNR=23						
MJAR				Sn	Sb	01 39 21.9	-0.2
	2.1nm,0.3s,baz=209,slow=4.0,SNR=4.4						
MAT	Matsushiro	3.16	251	P	Pn	01 38 39.3	+2.3
MAT				eS	Sb	01 39 21.0	-1.1
USRK	Ussuriysk Ar.	9.95	314	Pn	Pn	01 40 14.2	+3.9
	0.2nm,0.3s,baz=139,slow=41,SNR=4.0						
SONM	Songino Array	27.78	303	P	P	01 43 37.0	+0.8
	0.3nm,0.3s,baz=95,slow=9.8,SNR=2.9						
H11N2	WAKE ISLAND Hy	28.13	122	T	T	02 13 12.3	
	baz=315,slow=75,SNR=64						
H11N1	WAKE ISLAND Hy	28.14	122	T	T	02 13 06.3	
	baz=315,slow=75,SNR=79						
H11N3	WAKE ISLAND Hy	28.15	122	T	T	02 13 07.9	
	baz=315,slow=75,SNR=60						
H11S1	WAKE ISLAND Hy	28.87	125	T	T	02 14 11.8	
	baz=316,slow=76,SNR=54						
H11S3	WAKE ISLAND Hy	28.87	125	T	T	02 14 07.0	
	baz=316,slow=76,SNR=58						
H11S2	WAKE ISLAND Hy	28.89	125	T	T	02 14 12.7	
	baz=316,slow=76,SNR=47						
ZALV	Zalesovo Beam	41.80	312	P	P	01 45 36.8	+0.2
	0.4nm,0.5s,baz=216,slow=36,SNR=2.2						
MKAR	Makanchi Array	44.13	302	P	P	01 45 56.2	+0.5
	0.4nm,0.7s,baz=92,slow=8.5,SNR=3.4						
KURBB	Kurchatov Arra	45.94	308	P	P	01 46 10.5	+0.6
	0.8nm,0.5s,baz=82,slow=8.0,SNR=10						
BVAR	Borovoye Array	50.45	312	P	P	01 46 44.8	+0.1
	0.4nm,0.6s,baz=92,slow=7.4,SNR=3.0						
WRA	Warramunga Arr	57.73	188	P	P	01 47 37.8	-0.3
	1.5nm,0.5s,baz=6.7,slow=7.1,SNR=6.5						
ASAR	Alice Springs	61.46	188	P	P	01 48 03.6	-0.1
	1.0nm,0.7s,baz=12,slow=6.5,SNR=10						
YKA	Yellowknife Ar	63.07	30	P	P	01 48 13.6	-0.5
	0.1nm,0.6s,baz=308,slow=7.1,SNR=3.6						
AKASG	Malin Array Be	74.05	322	P	P	01 49 22.2	-0.7
	0.4nm,0.5s,baz=195,slow=37,SNR=2.6						
TXAR	Lajitas Array	89.43	53	P	P	01 50 45.2	+0.7
	0.2nm,0.6s,baz=270,slow=2.7,SNR=4.1						
LPAZ	La Paz	146.03	59	PKPbc	PKPdf	01 57 27.7	+0.2
	0.6nm,0.5s,baz=4.7,slow=6.1,SNR=3.7						

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*JMA **03** 01:41:58.3±0.8, 37°.51N×143°.40E, h19km, M3.7*
*ISCJB **03** 01:42:02.3±0.8, 37°.59N±0°.08×143°.22E±0°.07, h24km, mb3.6/10, Error ellipse: s-maj=12.1km s-min=8.4km az=1.5*
*IDC **03** 01:42:04.1±1.1, 38°.10N×143°.26E, h0km, mb3.6/10, mb1 3.7/10, mb1mx3.5/57, mbtmp3.6/10, MS2.7/2, Ms1 2.7/2, ms1mx2.3/65, Error ellipse: s-maj=28.6km s-min=22.8km az=132.0*
ISC 03 01:42:05.0±1.1, 37°.71N±0°.09×143°.06E±0°.09, h24km, n26, σ0s92/17, mb3.7/10, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
JIO	Ouri	1.54	300	P	Pn	01 42 30.2	-0.8
JIO				S	Sb	01 42 52.6	+0.6
JMM	Marumori	1.80	276	P	Pn	01 42 33.6	-1.0
ONAJ	Iwakimizuishiy	1.90	252	P	Pn	01 42 34.4	-1.5
JMK	Ichinoseki	1.91	311	P	Pn	01 42 36.1	+0.1
JOU	Okura	2.00	290	P	Pn	01 42 37.1	-0.2
JFT	Otama	2.17	266	P	Pn	01 42 39.1	-0.5
JOM	Ohasama	2.24	322	P	Pn	01 42 41.1	+0.5
JOM				S	Sb	01 43 10.6	-1.6
MJAR	Matsushiro Arr	4.05	255	Pn	Pn	01 43 06.8	+1.4
	0.6nm,0.3s,baz=77,slow=14,SNR=4.2						
USRK	Ussuriysk Ar.	10.59	311	LR	LR	01 48 07.0	
	comp=Z,38nm,21.8s,baz=202,slow=35						
KSRS	Korea Array	12.02	273	LR	LR	01 49 34.2	
	comp=Z,37nm,18.7s,baz=56,slow=37						
SEY	Seymchan	25.89	10	P	P	01 47 34.2	-0.5
	1.0nm,0.4s,baz=177,slow=10,SNR=5.0						
H11N2	WAKE ISLAND Hy	27.40	124	T	T	02 16 23.6	
	baz=319,slow=75,SNR=18						
H11N1	WAKE ISLAND Hy	27.41	124	T	T	02 16 22.0	
H11N3	WAKE ISLAND Hy	27.42	124	T	T	02 16 31.5	
	baz=315,slow=75,SNR=16						
H11S1	WAKE ISLAND Hy	28.16	126	T	T	02 17 19.7	
H11S3	WAKE ISLAND Hy	28.16	126	T	T	02 17 19.7	
H11S2	WAKE ISLAND Hy	28.18	126	T	T	02 17 19.7	
SONM	Songino Array	28.51	303	P	P	01 48 00.0	+1.4
	0.2nm,0.4s,baz=77,slow=9.0,SNR=2.5						
MKAR	Makanchi Array	44.88	302	P	P	01 50 20.9	+3.5
	0.4nm,0.8s,baz=92,slow=9.7,SNR=4.2						
KURBB	Kurchatov Arra	46.63	308	P	P	01 50 33.0	+2.0
	0.4nm,0.6s,baz=83,slow=8.0,SNR=5.0						
ILAR	Eielson Array	48.22	33	P	P	01 50 42.9	-0.4
	0.5nm,0.7s,baz=265,slow=5.9,SNR=4.8						
INK	Inuvik	53.19	27	P	P	01 51 20.6	-0.1
	0.5nm,0.5s,baz=288,slow=6.4						
WRA	Warramunga Arr	57.92	190	P	P	01 52 01.0	+5.7
	0.4nm,0.3s,baz=6.7,slow=7.5,SNR=2.9						
RES	Resolute Bay	61.62	15	P	P	01 52 20.2	+0.2
	0.8nm,0.6s,baz=322,slow=5.3,SNR=5.8						
YKA	Yellowknife Ar	62.56	31	P	P	01 52 26.2	-0.3
	0.2nm,0.7s,baz=301,slow=6.9,SNR=3.8						
FINES	FINESS Array B	68.83	333	P	P	01 53 07.0	+0.1
	0.9nm,0.9s,baz=276,slow=9.4,SNR=2.6						

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*DJA **03** 01:48:13.9±4.7, 2°N±26°×12°8E±3°2, h133km±24km, M4.4/5, mB5.1/1, mb4.5/5, MLv4.4/5, MLv4.4/5, Mw(mB)4.4/1*
*ISCJB **03** 01:48:18.0±0.7, 1°.90N±0°.06×127°.28E±0°.07, h112km, mb4.1/8, Error ellipse: s-maj=9.8km s-min=7.7km az=151.6*
*NEIC **03** 01:48:21.5±1.1, 1°.69N×127°.25E, h127km±10km, mb4.2/2, Error ellipse: s-maj=17.8km s-min=12.4km az=68.0*
*IDC **03** 01:48:25.5±5.6, 1°.59N×127°.10E, h162km±57km, mb3.8/6, mb1 3.9/8, mb1mx3.4/44, mbtmp4.3/8, Error ellipse: s-maj=41.0km s-min=15.7km az=69.0*
ISC 03 01:48:20.0±0.9, 1°.82N±0°.08×127°.23E±0°.08, h112km, n20, σ1s47/21, mb4.2/8, Halmahera

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
TNTI	Ternate	1.05	172	P	Pn	01 48 43.4	+1.5
TNTI	Ternate	1.05	172	ePn	Pn	01 48 43.3	+1.4
LBMI	Labuha	2.45	174	P	Pn	01 48 59.9	+1.0
SGSI	Sangihe	2.52	318	S	Sn	01 49 27.3	-2.9
SANI	Sanana	4.04	198	P	Pn	01 49 20.9	+1.0
LUWI	Luwuk	5.28	238	ePn	Pn	01 49 37.1	+0.5
	47nm,0.4s						
MRSI	Marisa	5.45	256	P	Pn	01 49 41.4	+2.4
	69nm,0.6s,2μm0.3nm						
APSI	Ampana	6.20	244	P	Pn	01 49 50.1	+1.0
	56nm,1.1s,0.3nm0.3nm						
TTSI	Tana Toraja	8.84	237	P	Pn	01 50 25.2	+0.3
	41nm,0.8s						
SPSI	Sidrap Palu	9.41	232	P	Pn	01 50 33.4	+0.8
	24nm,0.7s						
KAPI	Kappang	10.09	228	P	Pn	01 50 43.6	+1.7
	5.9nm,0.3s,baz=359,slow=5.5,SNR=17						
KAPI				S	Sn	01 52 33.5	+0.3
	1.8nm,0.3s,baz=137,slow=22,SNR=6.0						
FITZ	Fitzroy Crossi	19.86	184	P	P	01 52 42.0	-0.3
	0.5nm,0.3s,baz=18,slow=9.2,SNR=8.2						
WRAB	Tennant Creek	22.72	162	eP	P	01 53 10.9	-1.7
	13nm,0.7s						
WRA	Warramunga Arr	22.72	162	P	P	01 53 11.2	-1.4
	8.2nm,0.6s,baz=342,slow=11,SNR=20						
ASAR	Alice Springs	26.15	166	P	P	01 53 42.8	-1.2
	1.9nm,0.5s,baz=354,slow=7.6,SNR=37						
STKA	Stephens Creek	36.18	159	P	P	01 55 11.1	-0.7
	9.3nm,0.4s,baz=334,slow=8.0,SNR=32						
PETK	Petropavlovsk-	57.01	21	P	P	01 57 56.2	+2.3
	3.7nm,1.0s,baz=227,slow=5.7,SNR=2.6						
MKAR	Makanchi Array	59.40	326	P	P	01 58 11.2	+0.5
	0.3nm,0.3s,baz=113,slow=8.0,SNR=8.2						
KURK	Kurchatov	63.61	328	eP	P	01 58 38.3	-0.6
	1.5nm,0.6s						
VNDA	Vanda	81.48	173	P	P	02 00 23.6	-0.7
	0.3nm,0.4s,baz=344,slow=3.9,SNR=3.2						

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*KRSC **03** 01:50:50.4±1.6, 54°.96N×164°.31E, h55km±24km, ML4.5*
*ISCJB **03** 01:50:53.2±0.5, 54°.94N±0°.03×164°.21E±0°.05, h40km±4km, mb4.2/55, MS3.4/4, Error ellipse: s-maj=5.2km s-min=3.8km az=29.8*
*MOS **03** 01:50:53.0±0.9, 55°.01N×164°.28E, h37km, mb4.3/11, Error ellipse: s-maj=7.5km s-min=6.2km az=86.3*
*IDC **03** 01:50:55.5±0.6, 55°.10N×164°.23E, h35km±3km, mb3.8/26, mb1 3.9/29, mb1mx3.8/60, mbtmp3.9/29, ML4.7/1, MS3.1/6, Ms1 3.1/6, ms1mx2.7/61, Error ellipse: s-maj=14.9km s-min=9.4km az=171.0*
*NEIC **03** 01:51:04.7±0.9, 55°.08N×162°.82E, h89km±9km, mb4.2/27, Error ellipse: s-maj=11.3km s-min=6.9km az=163.0*
ISC 03 01:50:54.2±0.4, 54°.96N±0°.04×164°.34E±0°.03, h31km±2km, n160, σ1s57/183, mb4.2/37, MS3.3/4, 2C-2D, Komandorsky Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
BKI	Bering	0.97	75	eP	Pn	01 51 09.8	-1.8
BKI				eS	Sn	01 51 22.1	-2.2
BKI	Bering	0.97	75	PN	Pn	01 51 09.8	-1.8
BKI				S	Sn	01 51 22.1	-2.2
KBTR	Krutoberegovo	1.52	326	eP	Pn	01 51 15.6	-3.7
KBTR				eS	Sn	01 51 32.8	-5.2
KBTR	Krutoberegovo	1.52	326	PN	Pn	01 51 15.6	-3.7
KBTR				S	Sn	01 51 32.8	-5.2
KBG	Krutoberegovo	1.60	325	eP	Pn	01 51 16.5	-3.8
ZLN	Zelenaya	2.28	299	eP	Pn	01 51 28.6	-1.1
ZLN				eS	Sn	01 51 56.8	0.0
ZLN	Zelenaya	2.28	299	PN	Pn	01 51 28.6	-1.1
ZLN				S	Sn	01 51 56.8	0.0
TUMD	Tumrok D	2.28	278	eP	Pn	01 51 28.2	-1.5
TUMD				eS	Sn	01 51 53.9	-2.8
KZV	Kizimen	2.34	275	eP	Pn	01 51 29.3	-1.3
KZV				eS	Sn	01 51 55.7	-2.6
LGNR	Loginova	2.36	300	eP	Pn	01 51 30.4	-0.7
LGNR				eS	Sn	01 51 58.3	-0.9
LGNR	Loginova	2.36	300	PN	Pn	01 51 30.4	-0.7
LGNR				S	Sn	01 51 58.3	-0.9
BDR	Baidarnaya	2.40	314	eP	Pn	01 51 29.5	-1.9
BDR				eS	Sn	01 51 57.3	-2.4
BZMR	Bezymyannaya	2.40	296	eP	Pn	01 51 30.6	-0.9

BZMR eS Sn 01 51 59.3 -0.6
TUMR Tumrok 2.43 279 eP Pn 01 51 31.1 -0.8
TUMR eS Sn 01 51 59.4 -1.2
TUMR Tumrok 2.43 279 PN Pn 01 51 31.1 -0.8
TUMR S Sn 01 51 59.4 -1.2
KMNR Kamenistaya 2.48 291 eP Pn 01 51 31.9 -0.6
KMNR eS Sn 01 52 02.2 +0.5
KMNR Kamenistaya 2.48 291 PN Pn 01 51 31.9 -0.6
KMNR S Sn 01 52 02.2 +0.5
KRSR Krestovskiy 2.49 302 eP Pn 01 51 31.0 -1.6
KRSR eS Sn 01 52 00.5 -1.5
KRSR Krestovskiy 2.49 302 PN Pn 01 51 31.0 -1.6
KRSR S Sn 01 52 00.5 -1.5
KLY Klyuchi 2.50 304 eP Pn 01 51 29.7 -2.9
KLY eS Sn 01 51 59.2 -2.7
KPT Kopyto 2.56 295 eP Pn 01 51 33.1 -0.4
KPT eS Sn 01 52 03.3 -0.3
KPT Kopyto 2.56 295 PN Pn 01 51 33.1 -0.4
KPT S Sn 01 52 03.3 -0.3
KOZ Kozyrevsk 2.77 295 eP Pn 01 51 36.5 +0.1
KOZ eS Sn 01 52 10.3 +1.5
KOZ Kozyrevsk 2.77 295 PN Pn 01 51 36.5 +0.1
KOZ S Sn 01 52 10.3 +1.5
SPN Mys Shipunski 3.16 236 eP Pn 01 51 39.8 -1.9
SPN Mys Shipunski 3.16 236 PN Pn 01 51 39.8 -1.9
ESO Esso 3.36 289 eP Pn 01 51 43.4 -1.1
ESO eS Sn 01 52 21.6 -1.7
ESO Esso 3.36 289 PN Pn 01 51 43.4 -1.1
ESO S Sn 01 52 21.6 -1.7
NLC Nalytchevo 3.45 241 eP Pn 01 51 44.8 -0.9
NLC eS Sn 01 52 22.0 -3.4
NLC Nalytchevo 3.45 241 PN Pn 01 51 44.8 -0.9
SDLR Sedlovina 3.63 245 eP Pn 01 51 47.9 -0.4
SDLR eS Sn 01 52 27.3 -2.8
SDLR Sedlovina 3.63 245 PN Pn 01 51 47.9 -0.4
SMAR Somma 3.68 245 eP Pn 01 51 48.9 -0.2
SMAR eS Sn 01 52 28.4 -3.0
SMAR Somma 3.68 245 PN Pn 01 51 48.9 -0.2
UGLR Uglovaya 3.69 244 eP Pn 01 51 49.0 -0.2
UGLR eS Sn 01 52 28.7 -3.0
AVH Avacha 3.71 245 eP Pn 01 51 49.4 0.0
AVH eS Sn 01 52 29.9 -2.1
AVH Avacha 3.71 245 PN Pn 01 51 49.4 0.0
KRX Arik 3.71 247 eP Pn 01 51 49.4 -0.1
KRX eS Sn 01 52 29.6 -2.6
DALK Dalny 3.82 242 eP Pn 01 51 50.6 -0.2
DALK eS Sn 01 52 31.3 -3.4
PET Petropavlovsk 3.88 242 eP Pn 01 51 50.9 -0.7
PET eS Sn 01 52 32.1 -3.9
PET Petropavlovsk 3.88 242 ePN Pn 01 51 52.9 +1.3
PET pmax pmax
comp=Z,60nm,0.7s
PET Petropavlovsk 3.88 242 ePn Pn 01 51 52.1 +0.5
PET eSn Sn 01 52 27.2 -8.9
GNL Ganaly 3.96 254 eP Pn 01 51 53.0 +0.2
GNL Ganaly 3.96 254 PN Pn 01 51 53.0 +0.2
KRMR Karymshinskiy 4.25 242 eP Pn 01 51 57.0 +0.3
KRMR eS Sn 01 52 42.6 -2.6
RUS Russkaya 4.29 236 eP Pn 01 51 56.2 -1.1
RUS eS Sn 01 52 41.5 -4.7
RUS Russkaya 4.29 236 PN Pn 01 51 56.2 -1.1
PEA0 Petropavlovsk- 4.33 247 ePn Pn 01 51 58.5 +0.6
PEA0B Petropavlovsk- 4.33 247 ePn Pn 01 51 58.0 +0.1
PETK Petropavlovsk- 4.33 247 Pn Pn 01 51 57.7 -0.2
comp=Z,5.5nm,0.3s,baz=76,slow=17,SNR=55
PETK Sn Sn 01 52 47.2 -0.1
comp=Z,5.7nm,0.3s,baz=80,slow=41,SNR=5.6
PETK LR LR 01 53 50.8
comp=Z,130nm,18.9s,baz=338,slow=40
OSSR Ossora 4.36 351 eP Pn 01 51 56.4 -1.8
MTVR Mutnovka 4.42 238 eP Pn 01 51 58.8 -0.4
MTVR eS Sn 01 52 46.5 -3.1
ASAK Asacha 4.62 239 eP Pn 01 52 02.4 +0.5
ASAK eS Sn 01 52 52.7 -1.7
APC Apacha 4.71 247 eP Pn 01 52 04.3 +1.3
APC eS Sn 01 52 56.5 0.0
APC Apacha 4.71 247 PN Pn 01 52 04.3 +1.3
TILK Tilichiki 5.59 9 eP Pn 01 52 14.5 -0.5
PAU Pauzhetka 5.72 235 eP Pn 01 52 17.3 +0.4
PAU Pauzhetka 5.72 235 PN Pn 01 52 17.3 +0.4
SKR Severo-Kuril's 6.57 233 eP Pn 01 52 29.6 +1.0
SKR Severo-Kuril's 6.57 233‖ ePN Pn 01 52 29.2 +0.6
KMSK Kamenskaya 7.59 7 eP Pn 01 52 42.5 0.0
MA2 Magadan 8.68 308 Pn Pn 01 52 58.5 +1.0
comp=Z,0.8nm,0.3s,baz=123,slow=10.0,SNR=3.7
MA2 LR LR 01 56 31.8
comp=Z,88nm,20.6s,baz=118,slow=39
SEY Seymchan 10.09 327 Pn Pn 01 53 17.3 +0.6
baz=101,slow=11,SNR=2.0
BILL Bilibino 13.16 3 PN Pn 01 53 58.9 +0.3
BILL pmax pmax
comp=Z,2.0nm,1.4s
BILL MLR MLR
comp=Z,69nm,15.0s
ERM Erimo 19.00 236 P P 01 55 13.5 +0.4
YAK Yakutsk 19.25 306 LR LR 02 03 00.9
comp=Z,36nm,19.1s,baz=119,slow=38
YAK Yakutsk 19.25 306 eP P 01 55 16.0 +0.3
YAK eS Sn 01 58 48.0 -3.4
YAK pmax pmax
comp=Z,12nm,0.9s
YAK pmax pmax
comp=N,5.0nm,1.0s
YAK pmax pmax
comp=E,5.0nm,1.1s
YAK smax smax
comp=E,21nm,1.5s
YAK Yakutsk 19.25 306 eP P 01 55 13.9 -1.7
KLR Kul'dur 20.70 267 P P 01 55 31.1 -0.5
comp=E,0.6nm,0.4s,baz=22,slow=10,SNR=3.7
TTA Tatalina 21.63 52 eP pP 01 55 52.6 +2.7
comp=E,14nm,1.3s
TIXI Tiksi 22.54 331↑ eP P 01 55 51.9 +0.8
TIXI pmax pmax
comp=Z,2.0nm,0.9s
TIXI Tiksi 22.54 331 eP P 01 55 51.5 +0.4
comp=Z,7.4nm,1.4s
PPLA Purkeypile 23.38 53 eP pP 01 56 09.9 +1.3
comp=Z,8.0nm,0.8s
CAST Castle Rocks 23.43 51 eP pP 01 56 12.2 +3.3
comp=Z,6.3nm,0.8s
BPAW Bear Paw Mtn. 23.93 50 eP pP 01 56 14.5 +0.5
comp=Z,21nm,1.8s
TRF Thorofare Moun 24.23 51 eP pP 01 56 17.9 +0.9
comp=Z,17nm,0.7s
MDJ Mudanjiang 24.46 259 P P 01 56 05.7 -4.4
MDJ pmax pmax
comp=Z,8.0nm,0.6s
MDJ pmax pmax
comp=Z,82nm,4.8s
COLD Coldfoot 24.50 42 eP pP 01 56 19.6 +0.4
comp=Z,8.6nm,0.8s
MCK McKinley 24.83 50 eP pP 01 56 24.1 +1.8
comp=Z,23nm,1.4s
RND Reindeer 24.88 51 eP pP 01 56 23.2 +0.5
comp=Z,10nm,0.8s
COLA College 25.30 48 *i* P P 01 56 18.6 +1.2
COLA College 25.30 48 eP pP 01 56 27.0 +0.7
comp=Z,5.9nm,0.9s
DHY Denali Highway 25.57 52 eP pP 01 56 29.9 +0.8
comp=Z,22nm,1.4s
SCM Sheep Creek Mo 25.70 55 eP pP 01 56 31.4 +1.2
comp=Z,17nm,0.8s
ILAR Eielson Array 25.71 48 P P 01 56 21.4 +0.1
comp=Z,1.8nm,0.8s,baz=263,slow=8.5,SNR=15
ILAR pP pP 01 56 31.1 +0.9
comp=Z,2.9nm,0.6s,baz=262,slow=8.4,SNR=9.5
IL1 Eielson Array 25.71 48 *e*P pP 01 56 31.0 +0.9
CN2 Changchun 27.32 262 eP P 01 56 35.2 -0.7
INK Inuvik 30.84 40 P P 01 57 06.9 0.0
comp=Z,0.6nm,0.5s,baz=282,slow=6.9,SNR=6.7
INK pP pP 01 57 16.9 +0.9
comp=Z,2.1nm,0.5s,baz=286,slow=6.8,SNR=12
INK PcP PcP 02 00 03.1 +0.1
comp=Z,0.4nm,0.5s,baz=316,slow=2.0,SNR=4.1
INK Inuvik 30.84 40 *e*P pP 01 57 16.4 +0.4
comp=Z,2.4nm,0.6s
INK PcP PcP 02 00 03.1 +0.1
DLBC Dease Lake 34.92 57 eP pP 01 57 54.4 +2.6
comp=Z,6.3nm,0.9s
H11N2 WAKE ISLAND Hy 35.22 176 T T 02 35 57.4
baz=359,slow=76,SNR=5.3
H11N3 WAKE ISLAND Hy 35.23 176 T T 02 35 45.8
baz=359,slow=76,SNR=33
H11N1 WAKE ISLAND Hy 35.24 176 T T 02 35 54.6
baz=359,slow=76,SNR=39
NRIK Noril'sk 35.85 324 LR LR 02 12 46.1
comp=Z,26nm,18.3s,baz=100,slow=37
SONA1 Songino Array 35.90 283 *e*P P 01 57 48.9 -2.5
SONM Songino Array 35.92 283 P P 01 57 52.3 +0.8
comp=Z,0.5nm,0.5s,baz=54,slow=8.3,SNR=4.9
SONM pP sP 01 58 02.6 -1.7
comp=Z,0.5nm,0.5s,baz=60,slow=9.1,SNR=3.4
HHC Hu-ho-hao-te 37.16 270 *e*P P 01 58 01.3 -0.9
HHC pP sP 01 58 23.8 +8.8
HHC PP PnPn 01 59 32.4 +4.9
HHC S S 02 03 36.4 -10
HHC sS ScP 02 04 08.9 +2.8
HHC pmax pmax
comp=Z,15nm,1.0s
HHC pmax pmax
comp=Z,65nm,6.6s
HHC LR LR
comp=N,220nm,16.5s
HHC LR LR
comp=E,160nm,15.5s
HHC LR LR
comp=Z,200nm,15.3s
YKA Yellowknife Ar 40.08 45 P P 01 58 26.1 0.0
comp=Z,0.5nm,0.4s,baz=298,slow=8.0,SNR=13
YKA pP pP 01 58 36.5 +1.2
comp=Z,1.7nm,0.6s,baz=298,slow=8.1,SNR=18
RES Resolute Bay 40.63 24 P P 01 58 30.6 0.0
comp=Z,0.4nm,0.6s,baz=341,slow=5.6,SNR=3.8
RES pP pP 01 58 41.0 +1.2
comp=Z,1.0nm,0.6s,baz=322,slow=6.2,SNR=5.9
RES Resolute Bay 40.63 24 *e*P P 01 58 40.0 +9.4
comp=Z,1.6nm,0.7s
WHN Wuhan 42.86 256 P P 01 58 39.4 -10
ZALV Zalesovo Beam 43.87 303 P P 01 58 55.8 -1.4
comp=Z,0.5nm,0.3s,baz=81,slow=9.2,SNR=3.1
ZALV pPcP 02 00 59.6
comp=Z,0.9nm,0.5s,baz=110,slow=2.2,SNR=3.8
NVS Novosibirsk 44.12 305 *e*P P 01 58 58.5 -0.7
SPITS Spitsbergen Ar 45.69 351 P P 01 59 11.4 -0.1
comp=Z,25nm,1.2s,baz=79,slow=8.6,SNR=5.3
SPITS pP pP 01 59 22.0 +1.2
comp=Z,4.3nm,0.7s,baz=76,slow=7.0,SNR=6.8
NEW Newport 46.81 64 *e*P pP 01 59 31.0 +1.0
comp=Z,2.3nm,0.8s
WALA Waterton Lakes 47.95 61 *e*P pP 01 59 40.4 +1.5
comp=Z,7.0nm,0.7s
BSMT Bassoo Peak 48.28 63 *e*P pP 01 59 43.6 +2.0
JTMT Jette 48.61 63 *e*P pP 01 59 46.0 +1.9
CD2 Chengdu 48.62 266 P P 01 59 31.6 -3.3
CD2 pmax pmax
comp=Z,1.0nm,0.5s
WMQ Urumqi 48.70 290 *e*P P 01 59 34.0 -1.4
WMQ pP sP 01 59 54.0 +5.6
WMQ sP pP 02 00 03.5 +19
WMQ pmax pmax
comp=Z,3.0nm,0.6s
KURK Kurchatov 48.86 303 *e*P P 01 59 35.1 -1.3
KURK pmax pmax
comp=Z,8.0nm,0.4s
KURK Kurchatov 48.86 303 *e*P P 01 59 35.1 -1.3
comp=Z,8.0nm,0.4s
MK31 Makanchi Array 49.58 297 *e*P P 01 59 41.1 -1.0
MK31 Makanchi Array 49.58 297 *e*P P 01 59 41.0 -1.0
MKAR Makanchi Array 49.58 297 P P 01 59 40.7 -1.4
comp=Z,1.7nm,0.7s,baz=56,slow=7.2,SNR=16
MKAR pP pP 01 59 52.1 +0.7
comp=Z,0.8nm,0.7s,baz=53,slow=9.7,SNR=4.2
MKAR PcP PcP 02 01 05.9 +2.6
comp=Z,0.2nm,0.4s,baz=107,slow=42,SNR=3.1
MKAR Makanchi Array 49.58 297 *e*P P 01 59 41.0 -1.0
MKAR pP pP 01 59 52.1 +0.7
MKAR PcP PcP 02 01 05.9 +2.6
MK01 Makanchi Array 49.59 297 *e*P P 01 59 40.6 -1.5
FFC Flin Flon 49.91 49 *e*P pP 01 59 54.7 +0.9
FCC Fort Churchill 50.44 41 *e*P pP 01 59 57.9 +0.2
BRVK Borovoye 51.20 309‖ *e*P P 01 59 53.6 -0.5
BRVK pmax pmax
comp=Z,2.0nm,0.8s
BRVK Borovoye 51.20 309 *e*P P 01 59 53.0 -1.1
comp=Z,1.6nm,0.8s
HLID Hailey 51.33 67 *e*P pP 02 00 05.8 +1.0
comp=Z,0.9nm,0.5s
BOZ Bozeman (W) 51.37 63 *e*P pP 02 00 06.5 +1.4
comp=Z,1.8nm,0.8s
NVAR Mina Array Bea 52.78 74 P P 02 00 08.6 +2.2
comp=Z,0.2nm,0.3s,baz=126,slow=2.0,SNR=3.0
NVAR pP sP 02 00 18.0 -1.5
comp=Z,1.3nm,0.6s,baz=302,slow=8.1,SNR=6.0
ARU Arti 53.69 318 LR LR 02 23 38.0
comp=Z,35nm,20.0s,baz=130,slow=37
ARU Arti 53.69 318 *e*P P 02 00 11.5 -1.0
ARU pmax pmax
comp=Z,2.0nm,0.6s
ARU Arti 53.69 318 *e*P P 02 00 11.5 -1.0
comp=Z,1.6nm,0.6s
BW06 Boulder Array 54.44 65 *e*P pP 02 00 29.3 +1.4
PDAR Pinedale Array 54.44 65 P P 02 00 20.5 +2.0
comp=Z,0.4nm,0.7s,baz=358,slow=3.6,SNR=3.6
PDAR pP sP 02 00 29.8 -1.8
comp=Z,1.0nm,0.6s,baz=329,slow=2.6,SNR=12
DUG Dugway, Tooele 54.53 69 *e*P pP 02 00 30.1 +1.5
comp=Z,3.1nm,0.8s
FRB Frobisher Bay 54.77 26 P P 02 00 20.4 +0.2
comp=Z,4.1nm,0.9s,baz=306,slow=6.7,SNR=3.0
FRB pP pP 02 00 29.1 -0.5
comp=Z,4.9nm,0.8s,baz=322,slow=9.1,SNR=4.9
EDW2 Edwards Air Fo 55.50 77 *e*P pP 02 00 38.5 +2.9
IR2C Iron Canyon 55.63 78 *e*P pP 02 00 35.1 -1.4
ULM Lac du Bonnet 55.71 50 P P 02 00 26.8 -0.5
comp=Z,0.7nm,0.4s,baz=317,slow=7.5,SNR=2.5
ULM pP pP 02 00 38.1 +1.4
comp=Z,2.5nm,0.6s,baz=320,slow=5.1,SNR=5.5
AAK Ala-Archa 56.47 298‖ *i*P P 02 00 32.9 -0.1
AAK pmax pmax
comp=Z,8.0nm,1.2s
AAK Ala-Archa 56.47 298 *e*P P 02 00 32.4 -0.7
comp=Z,3.7nm,1.2s
EKS2 Erkin-Say 56.81 298 *e*P P 02 00 34.6 -0.8
EKS2 pmax pmax
comp=Z,2.0nm,0.7s
EKS2 Erkin-Say 56.81 298 *e*P P 02 00 34.6 -0.8
comp=Z,1.6nm,0.7s
CRY Cary Ranch 57.17 77 *e*P pP 02 00 51.4 +3.9
KKAR Karatay Array 58.13 301 *e*P P 02 00 43.7 -0.9
KKAR pmax pmax
comp=Z,1.0nm,0.6s
KKAR Karatay Array 58.13 301 *e*P P 02 00 43.6 -0.9
comp=Z,0.9nm,0.6s
AKTO Aktyubinsk 58.38 314 LR LR 02 29 21.9
comp=Z,18nm,19.4s,baz=62,slow=40
ABKAR Akbulak array 58.46 312 *e*P P 02 00 46.4 -0.3
FINES FINESS Array B 59.36 338 P P 02 00 52.4 -0.3
comp=Z,2.9nm,0.9s,baz=23,slow=10,SNR=4.7
FINES pP sP 02 01 04.9 -1.1
comp=Z,1.4nm,0.8s,baz=46,slow=8.2,SNR=4.3
CMAR Chiang Mai Arr 60.99 261 P P 02 01 05.5 +1.0
comp=Z,1.6nm,0.6s,baz=17,slow=7.9,SNR=7.1
OBN Obninsk 62.25 329 *e*P P 02 01 11.8 -0.7
OBN pmax pmax
comp=Z,2.0nm,0.8s
NOA NORSAR Array B 62.40 346 P P 02 01 12.9 -0.6
comp=Z,0.6nm,0.6s,baz=329,slow=13,SNR=2.6
NOA pP pP 02 01 24.1 +1.1
comp=Z,0.7nm,0.7s,baz=13,slow=6.8,SNR=4.2
SCHQ Schefferville 62.80 30 P P 02 01 15.3 -0.9
comp=Z,3.5nm,1.0s,baz=243,slow=5.2,SNR=3.1
SCHQ pP pP 02 01 25.9 +0.1
comp=Z,2.6nm,0.6s,baz=255,slow=9.4,SNR=9.2
HFS Hagfors 62.90 344 P P 02 01 15.8 -0.9
comp=Z,2.4nm,1.0s,baz=77,slow=9.3,SNR=2.5
HFS pP pP 02 01 27.2 +0.9
comp=Z,1.3nm,0.8s,baz=15,slow=6.4,SNR=4.1
HHAR Hobbs 67.25 59 *e*P pP 02 01 55.7 +0.6
comp=Z,4.4nm,0.8s
TXAR Lajitas Array 67.62 71 P P 02 01 49.1 +1.1
comp=Z,1.2nm,0.6s,baz=300,slow=4.5,SNR=20
TXAR pP sP 02 01 59.6 -1.6
comp=Z,4.0nm,0.6s,baz=300,slow=4.6,SNR=28
GEYT Ailbeck 68.12 305 P P 02 01 51.0 +0.1
comp=Z,2.1nm,0.8s,baz=29,slow=3.4,SNR=5.1
AKASG Malin Array Be 68.25 331 P P 02 01 50.3 -1.1
comp=Z,0.2nm,0.4s,baz=197,slow=15,SNR=2.3
GERES GERESS Array B 73.67 340 P P 02 02 24.1 -0.3
comp=Z,0.2nm,0.5s,baz=340,slow=2.0,SNR=4.2
WRA Warramunga Arr 78.88 209 P P 02 02 54.5 +0.4
comp=Z,1.6nm,0.7s,baz=22,slow=5.9,SNR=4.8
AS01 Alice Springs 82.53 208 *e*P P 02 03 14.0 +0.4
ASAR Alice Springs 82.54 208 P P 02 03 14.6 +0.9
comp=Z,2.7nm,0.8s,baz=16,slow=5.6,SNR=29
ES19 SONSECA Array 85.17 351 *e*P P 02 03 27.9 +0.7
ESDC Sonseca Array 85.21 351 P P 02 03 28.1 +0.7
comp=Z,1.4nm,0.9s,baz=351,slow=5.1,SNR=6.7
ESDC pP pP 02 03 38.4 +1.2
comp=Z,0.5nm,0.6s,baz=355,slow=6.3,SNR=4.7
STKA Stephens Creek 88.67 199 P P 02 03 45.5 +1.6
comp=Z,1.8nm,0.8s,baz=11,slow=11,SNR=2.9

NIED ***03*** *01:54:00,37.10N×140.90E,h5km,Mw3.9 Best double couple: M₀7.68000×10¹⁴ NP1:φ±58.00000°,δ28.00000°, λ-96.00000°. NP2:φ±246.00000°,δ62.00000°, λ-87.00000°.*
ISCJB ***03*** *01:54:07.9±0.8,37.09N±0.04×140.91E±0.05,h8km±3km, mb3.8/15,Error ellipse: s-maj=7.2km s-min=5.7km az=36.3*
IDC ***03*** *01:54:07.6±0.9,37.06N×141.01E,h0km,mb3.8/10, mb1 3.9/12,mb1mx3.7/56,mbtmp3.8/12,ML3.3/2,MS2.7/3, Ms1 2.7/3,ms1mx2.5/51,Error ellipse: s-maj=23.3km s-min=20.0km az=86.0*
JMA ***03*** *01:54:09.2,37.09N×140.81E,h6km±1km,M4.1*
JMA Felt III J1.
NEIC ***03*** *01:54:13.7±2.2,37.01N×140.79E,h39km±18km,mb4.2/4, Error ellipse: s-maj=21.0km s-min=13.0km az=74.0*
NEIC Recorded [3 JMA] in Fukushima.
ISC 03 01:54:09.3±1.0,37.08N±0.04×140.83E±0.05,h6km±5km, n38,σ1°03/36,mb3.7/15,5C-1D,Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.03**	**308**	⇓P		**Pg**	**01 54 10.3**	**-0.2**
ONAJ					S	**Sg**	**01 54 11.1**	**-0.3**
JFK	**Kawauchi**	**0.29**	**7**	⇑P		**Pg**	**01 54 14.7**	**-0.2**
JHO	**Hitachi**	**0.52**	**204**	⇑P		**Pg**	**01 54 19.0**	**-0.2**
JHO					S	**Sg**	**01 54 26.1**	**+0.2**
JFT	**Otama**	**0.59**	**318**	⇑P		**Pg**	**01 54 20.4**	**-0.2**
JFT					S	**Sg**	**01 54 28.4**	**+0.2**
JSB	**Shiboa**	**0.74**	**261**	⇑P		**Pg**	**01 54 23.8**	**+0.4**
JSB					S	**Sb**	**01 54 34.1**	**-0.8**
JMM	**Marumori**	**0.78**	**358**	⇑P		**Pg**	**01 54 23.6**	**-0.7**
JFY	**Yanaizu**	**0.95**	**290**	⇑P		**Pg**	**01 54 27.0**	**-0.6**
JFY					S	**Sg**	**01 54 39.4**	**-0.6**
MJAR	**Matsushiro Arr**	**2.17**	**256**	Pn		**Pn**	**01 54 46.7**	**+0.7**
	22nm,0.3s,baz=81,slow=16,SNR=124							
MJAR					Sn	**Sb**	**01 55 16.9**	**+0.6**
	61nm,0.3s,baz=88,slow=27,SNR=19							
MAJO	**Matsushiro**	**2.17**	**256**	*e*Pn		**Pn**	**01 54 46.7**	**+0.7**
MAJO				*e*Sn		**Sn**	**01 55 11.9**	**-1.4**
MAT	**Matsushiro**	**2.17**	**256**	P		**Pn**	**01 54 46.8**	**+0.7**
MAT				S		**Sb**	**01 55 16.1**	**-0.2**
JHJ	**Hachijo jima 2**	**4.05**	**193**	LR		LR	01 56 58.8	
	comp=Z,112nm,18.3s,baz=62,slow=42							
JNU	**Nakatsue**	**9.06**	**247**	LR		LR	01 59 60.0	
	comp=Z,30nm,21.5s,baz=96,slow=38							
USRK	**Ussuriysk Ar.**	**9.78**	**319**	Pn		Pn	01 56 37.1	+6.6
	0.1nm,0.3s,baz=140,slow=13,SNR=8.3							
JCJ	**Chichijima**	**10.02**	**173**	LR		LR	02 00 33.5	
	comp=Z,79nm,21.7s,baz=104,slow=39							
KSRS	**Korea Array**	**10.29**	**276**	Pn		Pn	01 56 41.0	+3.5
	0.1nm,0.3s,baz=87,slow=12,SNR=6.6							
KSAR	**Wonju Array Be**	**10.33**	**276**	Pn		**Pn**	**01 56 41.0**	**+3.0**
SEY	**Seymchan**	**26.84**	**12**	P		**P**	**01 59 53.2**	**+3.0**
	0.3nm,0.3s,baz=196,slow=9.4,SNR=5.8							
SONM	**Songino Array**	**27.37**	**304**	P		**P**	**01 59 55.5**	**+0.1**
	1.3nm,0.8s,baz=108,slow=9.1,SNR=8.0							
H11N2	**WAKE ISLAND Hy**	**28.57**	**120**	T		T	02 29 54.3	
	baz=313,slow=75,SNR=97							
H11N1	**WAKE ISLAND Hy**	**28.58**	**120**	T		T	02 29 49.9	
	baz=313,slow=75,SNR=65							
H11N3	**WAKE ISLAND Hy**	**28.59**	**120**	T		T	02 29 50.6	
	baz=313,slow=75,SNR=85							
H11S1	**WAKE ISLAND Hy**	**29.28**	**122**	T		T	02 30 50.5	
	baz=314,slow=76,SNR=164							
H11S3	**WAKE ISLAND Hy**	**29.28**	**122**	T		T	02 30 48.9	
	baz=314,slow=76,SNR=115							
H11S2	**WAKE ISLAND Hy**	**29.30**	**122**	T		T	02 30 51.7	
	baz=314,slow=76,SNR=77							
ZALV	**Zalesovo Beam**	**41.54**	**312**	P		**P**	**02 01 58.2**	**+0.9**
	0.7nm,0.5s,baz=96,slow=8.7,SNR=3.3							
ZALV				PcP		**PcP**	**02 03 53.6**	**-1.0**
	0.6nm,0.6s,baz=48,slow=2.1,SNR=3.7							
MKAR	**Makanchi Array**	**43.70**	**302**	P		**P**	**02 02 15.0**	**-0.1**
	0.8nm,0.7s,baz=92,slow=9.3,SNR=5.6							
KURK	**Kurchatov**	**45.53**	**308**	*e*P		**P**	**02 02 28.2**	**-1.4**
	3.2nm,0.7s							
ILAR	**Eielson Array**	**49.70**	**32**	P		**P**	**02 03 01.8**	**-0.1**
	0.5nm,0.8s,baz=278,slow=6.0,SNR=5.5							
BRVK	**Borovoye**	**50.25**	**312**	*e*P		**P**	**02 03 06.8**	**+0.6**
	1.2nm,0.7s							
WRA	**Warramunga Arr**	**57.05**	**187**	P		**P**	**02 03 54.7**	**-1.5**
	0.7nm,0.5s,baz=5.2,slow=7.2,SNR=5.1							
ABKAR	**Akbulak array**	**57.55**	**310**	*e*P		**P**	**02 03 59.1**	**-0.4**
	0.9nm,0.7s							
ASAR	**Alice Springs**	**60.77**	**187**	P		**P**	**02 04 21.7**	**-0.4**
	0.5nm,0.7s,baz=358,slow=7.4,SNR=2.7							
FINES	**FINESS Array B**	**68.55**	**332**	P		**P**	**02 05 11.2**	**-1.2**
	1.7nm,0.8s,baz=45,slow=12,SNR=4.6							
SUMG	**Summit**	**70.64**	**360**	*e*P		**P**	**02 05 26.5**	**+0.9**
	5.6nm,1.0s							
NOA	**NORSAR Array B**	**73.96**	**337**	P		**P**	**02 05 44.7**	**-0.5**
	2.0nm,0.9s,baz=40,slow=5.7,SNR=3.6							
AKASG	**Malin Array Be**	**73.97**	**322**	P		**P**	**02 05 45.0**	**-0.4**
	0.2nm,0.4s,baz=46,slow=5.9,SNR=3.8							
CLL	**Collm**	**80.82**	**330**	*e*P		**P**	**02 06 24.0**	**+0.2**
CLL				*i* sP		PcP	02 06 39.4	+9.0
GERES	**GERESS Array B**	**82.42**	**328**	P		**P**	**02 06 32.0**	**-0.4**
	0.3nm,0.6s,baz=57,slow=3.7,SNR=3.7							

IDC ***03*** *01:57:50.6±2.6,36.28N×143.28E,h0km,mb3.6/5, mb1 3.6/6,mb1mx3.4/69,mbtmp3.5/6,ML3.1/1,Error ellipse: s-maj=79.4km s-min=23.2km az=62.0*
ISC 03 01:57:57.0±2.1,36.2N±0.3×143.0E±0.3,h35km,n6, σ1°06/6,mb3.5/5,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
MJAR	**Matsushiro Arr**	**3.86**	**277**	Pn		**Pn**	**01 58 53.8**	**-0.1**
	1.2nm,0.3s,baz=88,slow=15,SNR=6.1							
SONM	**Songino Array**	**29.31**	**305**	P		**P**	**02 03 57.2**	**+0.9**
	0.3nm,0.5s,baz=98,slow=10,SNR=2.6							
MKAR	**Makanchi Array**	**45.64**	**303**	P		**P**	**02 06 13.6**	**-0.4**
	0.1nm,0.3s,baz=89,slow=10,SNR=4.9							
KURBB	**Kurchatov Arra**	**47.52**	**309**	P		**P**	**02 06 27.7**	**-0.9**
	0.9nm,0.6s,baz=81,slow=8.3,SNR=9.0							
WRA	**Warramunga Arr**	**56.39**	**190**	P		**P**	**02 07 34.1**	**-0.8**
	0.6nm,0.5s,baz=12,slow=7.5,SNR=3.6							
ASAR	**Alice Springs**	**60.12**	**190**	P		**P**	**02 08 01.9**	**+0.9**
	0.3nm,0.8s,baz=5.9,slow=6.8,SNR=4.4							

ISCJB ***03*** *01:59:03.1±0.9,37.7N±0.1×143.1E±0.1,h24km,mb3.7/12, Error ellipse: s-maj=21.4km s-min=8.8km az=152.8*
IDC ***03*** *01:59:10.7±3.7,37.68N×142.91E,h75km±34km,mb3.4/12, mb1 3.5/14,mb1mx3.3/72,mbtmp3.7/14,Error ellipse: s-maj=23.2km s-min=21.9km az=116.0*
ISC 03 01:59:05.2±1.0,37.8N±0.1×143.0E±0.1,h24km,n22, σ0°98/16,mb3.7/12,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
MJAR	**Matsushiro Arr**	**4.03**	**254**	P		**Pn**	**02 00 07.7**	**+2.2**
	2.1nm,0.3s,baz=86,slow=15,SNR=4.5							
MAT	**Matsushiro**	**4.03**	**254**	P		**Pn**	**02 00 06.0**	**+0.5**
MAT				eS		**Sn**	**02 00 51.6**	**-0.4**
KSRS	**Korea Array**	**11.98**	**273**	P		Pn	02 01 58.8	+4.4
	0.2nm,0.3s,baz=229,slow=25,SNR=2.5							
KLR	**Kul'dur**	**14.06**	**328**	P		**P**	**02 02 29.6**	**-0.7**
	0.1nm,0.3s,baz=162,slow=4.9,SNR=4.0							
SEY	**Seymchan**	**25.84**	**10**	P		**P**	**02 04 36.0**	**+1.5**
	0.7nm,0.3s,baz=175,slow=6.2,SNR=5.2							
H11N2	**WAKE ISLAND Hy**	**27.46**	**124**	T		T	02 33 29.8	
H11N1	**WAKE ISLAND Hy**	**27.47**	**124**	T		T	02 33 29.8	
H11N3	**WAKE ISLAND Hy**	**27.48**	**124**	T		T	02 33 29.8	
H11S1	**WAKE ISLAND Hy**	**28.22**	**126**	T		T	02 34 24.9	
H11S3	**WAKE ISLAND Hy**	**28.22**	**126**	T		T	02 34 24.9	
H11S2	**WAKE ISLAND Hy**	**28.23**	**126**	T		T	02 34 24.9	
SONM	**Songino Array**	**28.46**	**302**	P		**P**	**02 04 58.0**	**-0.3**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
	0.4nm,0.4s,baz=112,slow=9.7,SNR=4.9						
ZALV	Zalesovo Beam	42.38	312	P	P	02 06 56.9	-0.4
	0.3nm,0.3s,baz=120,slow=6.6,SNR=3.7						
MKAR	Makanchi Array	44.82	302	P	P	02 07 17.9	+0.8
	0.5nm,0.7s,baz=92,slow=10,SNR=4.2						
KURBB	Kurchatov Arra	46.57	308	P	P	02 07 30.4	-0.4
	1.7nm,0.5s,baz=81,slow=8.0,SNR=12						
BVAR	Borovoye Array	51.03	312	P	P	02 08 05.0	-0.1
	0.5nm,0.5s,baz=80,slow=9.2,SNR=4.2						
INK	Inuvik	53.15	27	P	P	02 08 20.6	0.0
	0.6nm,0.6s,baz=187,slow=3.7,SNR=2.6						
WRA	Warramunga Arr	57.97	190	P	P	02 08 54.7	-1.1
	1.6nm,0.7s,baz=6.9,slow=6.8,SNR=2.6						
YKA	Yellowknife Ar	62.53	31	P	P	02 09 26.7	+0.2
	0.2nm,0.6s,baz=300,slow=6.0,SNR=3.5						
FINES	FINESS Array B	68.76	333	P	P	02 10 06.5	-0.2
	0.7nm,0.4s,baz=23,slow=10,SNR=7.0						
AKASG	Malin Array Be	74.50	323	P	P	02 10 40.4	-1.1
	0.8nm,0.5s,baz=46,slow=6.2,SNR=6.2						
TXAR	Lajitas Array	88.66	53	P	P	02 11 57.5	+0.8
	0.1nm,0.5s,baz=316,slow=30,SNR=2.4						

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*MAN **03** 02:01:04, 13°.60N×119°.88E, h26km, mb4.6, ML3.5, MS3.5*
*IDC **03** 02:01:05.4±6.0, 13°.73N×120°.25E, h33km±46km, mb4.0/31, mb1 4.1/31, mb1mx4.0/68, mbtmp4.2/31, MS3.6/15, Ms1 3.6/15, ms1mx3.4/45, Error ellipse: s-maj=19.6km s-min=10.7km az=68.0*
*ISCJB **03** 02:01:06.2±0.6, 13°.58N±0°.04×120°.01E±0°.06, h59km±7km, mb4.3/42, MS3.5/13, Error ellipse: s-maj=9.5km s-min=6.0km az=24.6*
*NEIC **03** 02:01:08.0±2.0, 13°.71N×120°.24E, h60km±18km, mb4.4/15, Error ellipse: s-maj=8.4km s-min=5.0km az=64.0*
ISC 03 02:01:06.7±1.4**, 13°.59N**±0°.05×**119°.96E**±0°.07**, h46**km±14km**, n63,** σ1s.**15**/67**, mb4.3**/42**, MS3.4**/13**, 2C-2D, Philippine Islands region**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
PGP	Puerto Galera	0.97	95⇓	iP	Pn	02 01 22.9	-1.1
PGP				i S	Sn	02 01 37.1	+0.4
TGY	Tagaytay City	1.08	62⇑	eP	Pn	02 01 24.2	-1.3
TGY				i S	Sn	02 01 41.8	+2.4
SJMP	San Jose	1.59	135	eP	Pn	02 01 31.7	-0.7
BUSP	Coron	1.59	172	eP	Pn	02 01 31.7	-0.8
BUSP				eS	Sn	02 01 52.2	+0.4
LQP	Lukban	1.62	71⇑	eP	Pn	02 01 32.1	-0.9
ENPP	El Nido	2.42	193	eP	Pn	02 01 42.9	-1.0
ENPP				eS	Sn	02 02 12.1	-0.2
GQP	Guinayangan	2.44	82⇓	eP	Pn	02 01 44.2	+0.2
GQP				eS	Sn	02 02 14.8	+2.1
AUQP	San Andres	2.66	95	eP	Pn	02 01 47.8	+0.7
CUYO	Cuyo Island	2.91	159	eP	Pn	02 01 49.7	-0.9
DAV	Davao City (W)	8.51	139	LR	LR	02 07 02.2	
	comp=Z,390nm,21.4s,baz=270,slow=42						
KAPI	Kappang	18.48	181	LR	LR	02 12 59.8	
	comp=Z,172nm,19.5s,baz=12,slow=38						
KULM	Kulim	20.74	248	eP	Pn	02 05 47.1	+0.6
	21nm,1.3s						
CMAR	Chiang Mai Arr	20.77	286	P	Pn	02 05 47.1	+0.3
	3.2nm,0.8s,baz=96,slow=9.1,SNR=21						
CMAR				PcP	PcP	02 09 54.1	+2.0
	1.3nm,0.4s,baz=355,slow=1.4,SNR=8.1						
CMAR				LR	LR	02 15 10.5	
	comp=Z,100nm,18.0s,baz=139,slow=40						
CHTO	Chiang Mai	20.83	287	eP	Pn	02 05 47.0	-0.6
	1.5nm,0.4s						
PSI	Prapat	23.39	245	P	P	02 06 15.2	+3.3
	3.0nm,0.7s,baz=58,slow=11,SNR=3.9						
LEM	Lembang	23.70	212	LR	LR	02 16 31.8	
	comp=Z,76nm,20.9s,baz=233,slow=39						
GUMO	Guam	24.21	87	LR	LR	02 15 31.0	
	comp=Z,109nm,19.7s,baz=262,slow=36						
KSAR	Wonju Array Be	24.79	15	P	P	02 06 22.8	-1.5
KSRS	Korea Array	24.81	15	P	P	02 06 22.8	-1.7
	1.0nm,0.7s,baz=202,slow=12,SNR=3.8						
KSRS				LR	LR	02 16 39.6	
	comp=Z,128nm,19.8s,baz=197,slow=38						
USRK	Ussuriysk Ar.	32.20	16	P	P	02 07 28.0	-2.4
	1.5nm,0.7s,baz=216,slow=7.1,SNR=2.8						
USRK				LR	LR	02 20 30.4	
	comp=Z,82nm,20.9s,baz=192,slow=36						
ULN	Ulaanbaatar	35.83	345	eP	P	02 08 00.7	-1.3
	1.3nm,0.5s						
SONM	Songino Array	35.97	344	P	P	02 08 01.9	-1.2
	1.4nm,0.9s,baz=164,slow=8.7,SNR=8.1						
WRAB	Tennant Creek	36.20	157	eP	P	02 08 04.4	-0.8
	21nm,1.0s						
WRA	Warramunga Arr	36.20	157	P	P	02 08 04.5	-0.8
	12nm,0.7s,baz=336,slow=9.5,SNR=34						
WRA				PcP	PcP	02 10 31.3	+1.1
	0.6nm,0.4s,baz=61,slow=22,SNR=2.9						
KLR	Kul'dur	36.84	13	P	P	02 08 09.4	-1.0
	2.1nm,0.5s,baz=199,slow=6.9,SNR=8.7						
KLR				LR	LR	02 23 57.6	
	comp=Z,101nm,20.2s,baz=130,slow=37						
ASAR	Alice Springs	39.46	160	P	P	02 08 33.0	+0.2
	6.8nm,0.7s,baz=340,slow=7.0,SNR=90						
TLY	Talaya	40.21	344	P	P	02 08 38.6	-0.1
	5.1nm,0.6s,baz=173,slow=1.4,SNR=3.8						
CTA	Charters Tower	42.30	142	P	P	02 08 56.5	+0.3
	5.6nm,1.0s,baz=132,slow=19,SNR=2.2						
MKAR	Makanchi Array	45.70	324	P	P	02 09 24.0	+0.8
	3.2nm,0.8s,baz=127,slow=9.3,SNR=18						
MKAR				PcP	PcP	02 11 00.9	+0.4
	1.0nm,0.6s,baz=120,slow=3.2,SNR=7.1						
MKAR				LR	LR	02 29 48.3	
	comp=Z,72nm,19.5s,baz=114,slow=38						
TKM2	Tokmak 2	48.01	316	eP	P	02 09 42.3	+0.8
	1.7nm,0.8s						
AAK	Ala-Archa	48.64	316	eP	P	02 09 46.9	+0.6
	2.2nm,1.0s						
ZALV	Zalesovo Beam	48.83	333	P	P	02 09 47.0	-0.4
	1.3nm,0.5s,baz=123,slow=6.1,SNR=6.4						
ZALV				PcP	PcP	02 11 11.6	+0.1
	0.4nm,0.3s,baz=131,slow=6.1,SNR=2.4						
EKS2	Erkin-Say	49.14	315	eP	P	02 09 51.0	+0.8
	3.1nm,0.9s						
PETK	Petropavlovsk-	49.47	29	LR	LR	02 33 09.1	
	comp=Z,33nm,19.0s,baz=166,slow=39						
STKA	Stephens Creek	49.74	156	P	P	02 09 54.1	-0.4
	1.7nm,0.4s,baz=341,slow=7.5,SNR=4.6						
STKA				LR	LR	02 33 29.5	
	comp=Z,29nm,18.6s,baz=24,slow=39						
KURBB	Kurchatov Arra	49.88	327	P	P	02 09 56.0	+0.5
	4.1nm,0.9s,baz=126,slow=7.5,SNR=22						
KURBB				PcP	PcP	02 11 15.4	0.0
	0.4nm,0.4s,baz=115,slow=3.9,SNR=4.0						
KURK	Kurchatov	49.89	327	eP	P	02 09 55.5	0.0
	12nm,0.8s						
KURK				PcP	PcP	02 11 15.4	0.0
KKAR	Karatay Array	51.54	315	eP	P	02 10 08.8	+0.7
	2.7nm,1.0s						
BVAR	Borovoye Array	55.46	326	P	P	02 10 37.2	+0.5
	1.7nm,0.7s,baz=116,slow=8.6,SNR=15						
BVAR				PcP	PcP	02 11 37.0	+0.6
	0.3nm,0.5s,baz=357,slow=28,SNR=2.2						
BRVK	Borovoye	55.53	326	eP	P	02 10 36.6	-0.6
	11nm,1.1s						
NRIK	Noril'sk	59.36	347	P	P	02 11 03.7	-0.2
	3.1nm,0.6s,baz=62,slow=11,SNR=3.7						
NRIK				LR	LR	02 38 14.8	
	comp=Z,71nm,19.9s,baz=118,slow=38						
GEYT	Alibeck	59.62	306	P	P	02 11 07.6	+1.3
	1.7nm,0.8s,baz=131,slow=4.1,SNR=4.0						
ABKAR	Akbulak array	60.35	319	eP	P	02 11 10.9	-0.1
	4.7nm,0.9s						
AKTO	Aktyubinsk	61.84	320	P	P	02 11 21.6	+0.4
	2.3nm,0.8s,baz=86,slow=8.3,SNR=7.9						
ARU	Arti	63.08	327	P	P	02 11 28.8	-0.5
	2.7nm,0.5s,baz=111,slow=3.6,SNR=7.2						
RAYN	Ar Rayn	70.62	290	eP	P	02 12 19.0	+1.0
	2.5nm,0.9s						
KBZ	Khabaz	71.42	312	P	P	02 12 23.5	+1.2
	3.3nm,1.0s,baz=317,slow=9.7,SNR=3.0						
KIV	Kislovodsk	71.57	312	eP	P	02 12 23.7	+0.3
	5.9nm,0.8s						
MCK	McKinley	78.42	27	eP	P	02 13 00.5	-2.0
	7.1nm,0.8s						
BRTR	Keskin Array B	78.66	308	P	P	02 13 04.3	-0.1
	1.0nm,0.8s,baz=29,slow=2.8,SNR=4.1						
ARCES	ARCESS Array B	78.93	339	P	P	02 13 04.9	-0.2
	3.7nm,0.9s,baz=90,slow=6.6,SNR=9.1						
ARCES				LR	LR	02 50 21.1	
	comp=Z,56nm,18.4s,baz=97,slow=38						
ILAR	Eielson Array	79.17	26	P	P	02 13 05.8	-0.7
	0.4nm,0.6s,baz=277,slow=6.7,SNR=4.3						
SPITS	Spitsbergen Ar	79.55	348	P	P	02 13 09.1	+0.7
	5.0nm,0.7s,baz=90,slow=8.3,SNR=13						
FINES	FINESS Array B	80.03	331	P	P	02 13 11.1	-0.2
	1.6nm,0.7s,baz=49,slow=4.0,SNR=9.4						
FINES				LR	LR	02 49 10.0	
	comp=Z,77nm,19.5s,baz=6.5,slow=36						
INK	Inuvik	83.46	21	P	P	02 13 27.1	-2.1
	0.8nm,0.6s,baz=301,slow=5.1,SNR=5.3						
INK	Inuvik	83.46	21	eP	P	02 13 27.1	-2.1
	4.2nm,1.3s						
HFS	Hagfors	86.23	331	P	P	02 13 42.4	-0.9
	2.5nm,0.8s,baz=116,slow=4.7,SNR=7.5						
NB2	NORSAR Subarra	87.03	333	P	P	02 13 45.7	-1.5
	comp=Z,2.3nm,0.9s,baz=69,slow=4.8						
NOA	NORSAR Array B	87.03	333	P	P	02 13 45.8	-1.5
	comp=Z,1.8nm,0.8s,baz=68,slow=4.7,SNR=5.9						
NOA				LR	LR	02 55 58.0	
	comp=Z,29nm,18.6s,baz=35,slow=38						
GERES	GERESS Array B	90.26	321	P	P	02 14 03.4	+0.6
	comp=Z,0.3nm,0.6s,baz=81,slow=4.2,SNR=3.8						
YKA	Yellowknife Ar	93.15	22	P	P	02 14 14.2	-1.6
	comp=Z,0.7nm,0.7s,baz=307,slow=4.1,SNR=20						
VNDA	Vanda	94.04	172	P	P	02 14 20.2	+0.9
	comp=Z,1.8nm,1.1s,baz=306,slow=5.9,SNR=3.8						
PLCA	Paso Flores	151.43	163	PKPbc	PKPbc	02 20 55.5	-0.5
	comp=Z,2.1nm,0.7s,baz=65,slow=15,SNR=6.2						

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*ISCJB **03** 02:03:27.0±1.3, 40°.14N±0°.05×27°.04E±0°.08, h9km, Error ellipse: s-maj=9.7km s-min=6.2km az=144.2*
*ISK **03** 02:03:26.0, 40°.13N×27°.12E, h26km, MD2.2*
*CSEM **03** 02:03:27.1±0.5, 40°.13N×27°.07E, h8km, MD2.2, Error ellipse: s-maj=10.6km s-min=5.7km az=47.0*
*DDA **03** 02:03:28.4, 40°.17N×27°.15E, h7km, Md2.7*
ISC 03 02:03:27.3±1.3**, 40°.16N**±0°.07×**27°.12E**±0°.05**, h9**km**, n11,** σ0s.**43**/18**, Turkey**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
KRBG	Karabiga-Canak	0.27	30	ePG	Pg	02 03 33.4	+0.7
KRBG				eSG	Sb	02 03 38.9	-0.2
KRBG	Karabiga-Canak	0.27	30	ePg	Pg	02 03 33.4	+0.7
KRBG				eSg	Sb	02 03 38.9	-0.2
KNL	Bal˜–kesir	0.33	70	i P	Pb	02 03 34.7	-0.6
KNL				i S	Sb	02 03 39.9	-0.8
RKY	Sarkoy-Tekirda	0.53	5	ePG	Pg	02 03 37.7	+0.1
RKY				eSG	Sb	02 03 46.5	-0.2
RKY	Sarkoy-Tekirda	0.53	5	ePg	Pg	02 03 37.7	+0.1
RKY				eSg	Sb	02 03 46.5	-0.2
EDC	Edincik	0.60	71	ePG	Pg	02 03 38.8	0.0
EDC	Edincik	0.60	71	ePg	Pg	02 03 38.8	0.0
ERIK	Erikli-Kesan	0.69	318	ePG	Pg	02 03 40.6	0.0
ERIK	Erikli-Kesan	0.69	318	ePg	Pg	02 03 40.6	0.0
DURS	Dursunbey	1.18	118	i P	Pn	02 03 50.6	+0.6
DURS				i S	Sn	02 04 06.4	+0.1
DURS	Dursunbey	1.18	118	P	Pn	02 03 50.6	+0.6
DURS				S	Sn	02 04 06.4	+0.1

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*ISCJB **03** 02:03:58.4±0.4, 36°.43N±0°.04×142°.45E±0°.05, h15km, mb4.2/28, Error ellipse: s-maj=6.3km s-min=5.7km az=37.1*
*NIED **03** 02:04:00, 36°.50N×142°.40E, h17km, Mw4.0 Best double couple: M0 1.20000×10^15 NP1:φs178.00000°, δ33.00000°, λ87.00000°. NP2:φs2.00000°, δ57.00000°, λ92.00000°.*
*JMA **03** 02:04:00.4±0.3, 36°.47N×142°.42E, h63km, M3.9*
*NEIC **03** 02:04:03.6±1.1, 36°.35N×142°.39E, h42km±10km, mb4.3/11, Error ellipse: s-maj=12.2km s-min=7.6km az=54.0*
*IDC **03** 02:04:03.8±2.8, 36°.39N×142°.40E, h40km±25km, mb3.8/16, mb1 3.9/20, mb1mx3.7/72, mbtmp4.0/20, ML3.3/4, MS3.0/2, Ms1 3.0/2, ms1mx2.5/45, Error ellipse: s-maj=21.0km s-min=15.2km az=87.0*
ISC 03 02:04:00.4±0.6**, 36°.45N**±0°.06×**142°.40E**±0°.08**, h15**km**, n45,** σ0s.**97**/46**, mb4.2**/28**, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
JHO	Hitachi	1.49	277	P	Pn	02 04 24.9	-1.7
JHO				S	Sn	02 04 44.0	-1.7
JFK	Kawauchi	1.53	307	P	Pn	02 04 25.6	-1.6
JFK				S	Sn	02 04 45.0	-1.8
JFT	Otama	1.97	303	P	Pn	02 04 32.7	-0.5
JFT				eS	Sn	02 04 56.5	-1.1
MJAR	Matsushiro Arr	3.38	273	P	Pn	02 04 53.0	+0.4
	6.2nm,0.3s,baz=88,slow=8.6,SNR=42						
MAJO	Matsushiro	3.38	273	ePn	Pn	02 04 53.3	+0.6
MAT	Matsushiro	3.38	273	P	Pn	02 04 53.4	+0.7
MAT				eS	Sn	02 05 33.9	+1.4
JHJ2	Mitsune	3.96	213	ePn	Pn	02 05 00.5	0.0
JHJ	Hachijo jima 2	3.96	214	P	Pn	02 05 00.5	-0.1
	29nm,0.3s,baz=329,slow=23,SNR=6.5						
JHJ				S	Sn	02 05 46.2	-0.7
	66nm,0.3s,baz=126,slow=22,SNR=8.2						
CBIJ	Chichi jima	9.33	181	ePn	Pn	02 06 13.8	-0.6
USRK	Ussuriysk Ar.	11.09	317	P	Pn	02 06 39.5	+1.2
	0.3nm,0.3s,baz=136,slow=12,SNR=6.4						
USRK				LR	LR	02 10 55.9	
	comp=Z,75nm,18.0s,baz=72,slow=37						
KSRS	Korea Array	11.63	279	P	Pn	02 06 49.4	+3.6
	0.1nm,0.3s,baz=93,slow=14,SNR=9.6						
KSAR	Wonju Array Be	11.66	279	P	Pn	02 06 49.4	+3.1
PETK	Petropavlovsk-	19.81	28	LR	LR	02 15 53.0	
	comp=Z,41nm,19.5s,baz=128,slow=36						
SEY	Seymchan	27.21	10	P	P	02 09 45.2	+1.9
	0.9nm,0.4s,baz=190,slow=12,SNR=6.5						
H11S1	WAKE ISLAND Hy	27.88	123	T	T	02 40 04.8	
	baz=319,slow=74,SNR=4.3						
H11S3	WAKE ISLAND Hy	27.88	123	T	T	02 40 07.8	
	baz=126,slow=74,SNR=4.2						
ENH	Enshi	28.09	267	eP	P	02 09 50.8	-0.7
	8.4nm,0.7s						
ULN	Ulaanbaatar	28.34	305	eP	P	02 09 53.4	-0.4
	4.2nm,0.9s						
SONM	Songino Array	28.77	305	P	P	02 09 58.3	+0.7
	5.5nm,0.8s,baz=105,slow=8.9,SNR=26						
TLY	Talaya	31.31	311	P	P	02 10 19.5	-0.4
	5.4nm,0.5s,baz=307,slow=6.7,SNR=3.6						
FAKI	Fak Fak	40.30	196	eP	P	02 11 36.6	-0.5
	20nm,0.5s						
CMAR	Chiang Mai Arr	42.13	257	P	P	02 11 47.7	-4.6
	0.9nm,0.6s,baz=56,slow=26,SNR=5.1						
ZALV	Zalesovo Beam	42.89	313	P	P	02 11 58.5	+0.4
	1.8nm,0.5s,baz=97,slow=7.4,SNR=6.4						
ZALV				PcP	PcP	02 13 48.6	0.0
	0.6nm,0.3s,baz=54,slow=2.6,SNR=3.1						
MKAR	Makanchi Array	45.10	303	P	P	02 12 15.7	-0.2
	2.9nm,0.7s,baz=89,slow=10,SNR=12						
KURK	Kurchatov	46.92	309	eP	P	02 12 29.5	-0.6
	9.1nm,0.8s						
KURBB	Kurchatov Arra	46.99	309	P	P	02 12 30.5	-0.1
	3.4nm,0.7s,baz=82,slow=7.9,SNR=26						
HNR	Honiara	48.53	157	P	P	02 12 42.5	-0.4
	110nm,0.5s,baz=140,slow=5.7,SNR=6.3						
ILAR	Eielson Array	49.56	32	P	P	02 12 50.6	+0.3
	0.7nm,0.7s,baz=271,slow=7.2,SNR=6.7						
TKM2	Tokmak 2	50.61	299	eP	P	02 12 59.5	+0.6
	4.3nm,0.6s						
AAK	Ala-Archa	51.47	299	eP	P	02 13 05.6	+0.4
	2.1nm,0.7s						
BVAR	Borovoye Array	51.55	313	P	P	02 13 05.7	+0.2
	0.4nm,0.5s,baz=93,slow=7.9,SNR=3.7						
EKS2	Erkin-Say	51.96	299	eP	P	02 13 08.4	-0.6
	1.7nm,0.8s						
KKAR	Karatay Array	54.10	301	eP	P	02 13 24.8	+0.3
	1.4nm,0.8s						
ARU	Arti	57.32	319	P	P	02 13 47.2	-0.2
	0.7nm,0.3s,baz=76,slow=5.3,SNR=3.7						
ARU	Arti	57.32	319	eP	P	02 13 46.7	-0.7
	2.3nm,0.6s						
ABKAR	Akbulak array	58.92	311	eP	P	02 13 57.8	-1.0
	0.9nm,0.5s						
AKTO	Aktyubinsk	59.65	312	P	P	02 14 05.4	+1.6
	1.2nm,0.8s,baz=84,slow=12,SNR=3.7						
YKA	Yellowknife Ar	63.91	30	P	P	02 14 31.8	-0.4
	0.3nm,0.7s,baz=300,slow=6.7,SNR=4.5						
GEYT	Alibeck	64.81	300	P	P	02 14 39.0	+0.4
	0.7nm,0.5s,baz=295,slow=11,SNR=2.9						
FINES	FINESS Array B	69.70	333	P	P	02 15 09.4	+0.3
	1.5nm,0.7s,baz=52,slow=12,SNR=5.0						
SUMG	Summit	71.26	0	eP	P	02 15 18.4	-0.6
	2.0nm,0.6s						
NB2	NORSAR Subarra	75.03	338	P	P	02 15 40.8	-0.2
	comp=Z,0.8nm,0.7s,baz=39,slow=5.9						
NOA	NORSAR Array B	75.03	338	P	P	02 15 40.9	-0.1
	comp=Z,0.9nm,0.9s,baz=38,slow=5.8,SNR=4.1						
AKASG	Malin Array Be	75.24	323	P	P	02 15 41.5	-0.8
	comp=Z,1.2nm,0.6s,baz=46,slow=6.0,SNR=11						
GERES	GERESS Array B	83.62	329	P	P	02 16 28.7	+0.5
	comp=Z,0.3nm,0.6s,baz=36,slow=5.0,SNR=3.8						

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*ISCJB **03** 02:09:03.4±0.3, 7°.62S±0°.04×127°.89E±0°.04, h150km, mb3.6/7, Error ellipse: s-maj=5.7km s-min=5.4km az=32.0*
*IDC **03** 02:09:03.5±1.9, 7°.69S×127°.46E, h139km±18km, mb3.5/7, mb1 3.8/13, mb1mx3.5/51, mbtmp4.2/13, Error ellipse: s-maj=22.2km s-min=14.4km az=71.0*
*DJA **03** 02:09:05.6±0.2, 8°S±3°×12°8E±°, h189km±13km, M4.8/11, mb4.5/11, mB5.3/4, MLv4.9/10, Mw(mB)4.7/4*
ISC 03 02:09:04.2±0.6**, 7°.71S**±0°.06×**127°.85E**±0°.08**, h150**km**, n48,** σ1s.**62**/49**, mb3.7**/7**, Banda Sea**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
SAUI	Saumlaki	3.43	95	P	Pn	02 09 59.3	+2.1
BNDI	Bandanaira	3.77	33	P	Pn	02 10 02.2	+0.6
AAI	Ambon	4.01	5	P	Pn	02 10 05.8	+1.1
SOEI	Soe	4.08	240	P	Pn	02 10 09.3	+3.6
MSAI	Masohi	4.47	14	P	Pn	02 10 12.0	+1.3
MMRI	Maumere	5.63	260	P	Pn	02 10 28.7	+2.7
EDFI	Ende, Flores	6.18	260	P	Pn	02 10 35.8	+2.3
	33nm,0.7s,13μm1.3nm						
FAKI	Fak Fak	6.47	43	P	Pn	02 10 35.6	-1.7
	42nm,0.7s,0.2nm						
LBMI	Labuha	7.03	357	P	Pn	02 10 44.6	-0.2
KMPI	Kaimana, Papua	7.08	56	P	Pn	02 10 45.4	0.0
	162nm,0.6s,3μm0.9nm						
BSSI	Bau Bau, Buton	7.47	282	P	Pn	02 10 52.2	+1.6
	63nm,1.5s,0.3nm						
BASI	Baing, Sumba	7.60	250	P	Pn	02 10 53.9	+1.6
	192nm,1.3s,0.9nm						
SIJI	Sorong	7.60	27	P	Pn	02 10 53.6	+1.1
	14nm,0.3s,baz=176,slow=23,SNR=1.9						
SWI	Sorong	7.61	27	P	Pn	02 10 51.6	-0.8
LUWI	Luwuk	8.33	322	P	Pn	02 11 01.5	-0.7
TNTI	Ternate	8.44	357	P	Pn	02 11 01.2	-2.4
KAPI	Kappang	8.48	288	P	Pn	02 10 57.9	-6.2
	1.8nm,0.3s,baz=90,slow=20,SNR=7.2						
RKPI	Ransiki, Papua	8.82	46	P	Pn	02 11 05.8	-2.8
APSI	Ampana	9.15	317	P	Pn	02 11 13.6	+0.5
	33nm,1.2s						
TTSI	Tana Toraja	9.24	300	P	Pn	02 11 15.4	+1.2
PLAI	Plampang	10.03	263	P	Pn	02 11 26.2	+1.5
MRSI	Marisa	10.04	324	P	Pn	02 11 24.3	-0.6
FITZ	Fitzroy Crossi	10.55	192	P	Pn	02 11 30.9	-0.6
	2.5nm,0.3s,baz=27,slow=11,SNR=30						
FITZ				S	Sn	02 13 25.3	-3.0
	3.1nm,0.3s,baz=334,slow=22,SNR=4.1						
TWSI	Taliwang, Sumb	10.90	264	P	Pn	02 11 37.7	+1.5
SGSI	Sangihe	11.55	348	P	Pn	02 11 43.7	-1.1
KBKI	Kotabaru	12.42	290	P	Pn	02 11 56.5	+0.4
MMPI	Merauke	12.44	94	P	Pn	02 11 55.5	-0.8
WRA	Warramunga Arr	13.69	153	P	Pn	02 12 12.6	+0.2
	3.0nm,0.3s,baz=322,slow=14,SNR=26						
WRA				S	Sn	02 14 36.0	-8.1
	5.7nm,0.3s,baz=332,slow=22,SNR=14						
ASAR	Alice Springs	16.90	161	P	Pn	02 12 55.1	+3.2
	1.3nm,0.3s,baz=339,slow=11,SNR=93						
ASAR				S	S	02 15 56.1	-3.8
	1.8nm,0.3s,baz=318,slow=17,SNR=11						
PMG	Port Moresby	19.17	96	P	Pn	02 13 22.2	+3.2
	1.2nm,0.3s,baz=275,slow=8.8,SNR=4.4						
ODAN	Odare	52.14	313	eP	P	02 17 58.9	-0.9
	6.7nm,0.5s						
TAPN	Taplejung	52.19	313	eP	P	02 17 59.3	-0.9
	5.2nm,0.5s						
RAMN	Ramite	52.77	312	eP	P	02 18 03.9	-0.5
	14nm,0.6s						
GUN	Gumba	53.84	313	eP	P	02 18 12.2	-0.1
	12nm,0.7s						
GKN	Gorkha	54.80	312	eP	P	02 18 18.1	-1.0
	9.3nm,0.5s						
KOLN	Koldanda	55.44	311	eP	P	02 18 22.9	-0.8
	13nm,0.7s						
PYUN	Piuthan	56.07	311	eP	P	02 18 28.3	+0.1
	17nm,0.7s						
SONM	Songino Array	58.47	343	P	P	02 18 45.6	+1.0
	0.6nm,0.7s,baz=144,slow=5.4,SNR=2.5						
MKAR	Makanchi Array	67.67	328	P	P	02 19 44.1	-1.0
	0.6nm,0.5s,baz=125,slow=7.5,SNR=7.4						
ZALV	Zalesovo Beam	71.29	335	P	P	02 20 06.0	-1.2
	1.0nm,0.5s,baz=132,slow=6.3,SNR=3.6						
KURBB	Kurchatov Arra	72.01	329	P	P	02 20 10.8	-0.8
	1.3nm,0.6s,baz=135,slow=5.1,SNR=23						
SEY	Seymchan	72.91	11	P	P	02 20 16.0	-0.6
	0.7nm,0.5s,baz=78,slow=23,SNR=4.8						
BVAR	Borovoye Array	77.54	329	P	P	02 20 42.5	-0.8
	0.3nm,0.4s,baz=134,slow=4.3,SNR=3.4						
AKTO	Aktyubinsk	83.33	323	P	P	02 21 14.5	+0.1
	1.5nm,0.7s,baz=90,slow=4.5,SNR=9.2						
TORD	Torodi Ar. Bea	126.84	281	PKP	PKPdf	02 27 51.4	+0.2
	0.5nm,0.6s,baz=92,slow=1.9,SNR=5.7						
TXAR	Lajitas Array	127.12	59	PKP	PKPdf	02 27 52.1	+0.6
	0.2nm,0.8s,baz=169,slow=0.9,SNR=2.8						
CPUP	Villa Florida	145.79	172	PKPbc	PKPbc	02 28 27.6	+1.1
	0.7nm,0.4s,baz=216,slow=3.0,SNR=4.3						
LPAZ	La Paz	151.39	146	PKPbc	PKPbc	02 28 41.7	-0.4
	0.4nm,0.3s,baz=56,slow=2.1,SNR=3.7						

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*NEIC **03** 02:12:02.8, 56°.19N×151°.85W, h1km, ML3.0(AEIC), After AEIC.*
*ISCJB **03** 02:12:03.6±0.8, 56°.45N±0°.08×152°.2W±0°.1, h20km, mb3.6/10, Error ellipse: s-maj=11.9km s-min=10.2km az=15.1*
*IDC **03** 02:12:11.8±8.9, 56°.94N×152°.66W, h43km±59km, mb3.4/9, mb1 3.6/10, mb1mx3.3/64, mbtmp3.7/10, ML3.9/1, Error ellipse: s-maj=78.4km s-min=28.7km az=160.0*
ISC 03 02:12:05.8±0.9**, 56°.52N**±0°.08×**152°.19W**±0°.08**, h20**km**, n27,** σ1s.**58**/29**, mb3.8**/10**, Kodiak Island region**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
OHAK	Old Harbor	0.93	320	P	Pb	02 12 22.0	-1.2
OHAK				S	Sn	02 12 41.6	+5.2
KDAK	Kodiak Island	1.29	351	P	Pb	02 12 42.9	+14
	4.9nm,0.3s,baz=162,slow=5.6,SNR=40						
KDAK	Kodiak Island	1.29	351	P	Pn	02 12 27.8	-0.8
KDAK				S	Sb	02 12 49.9	+4.5
KABR	Katmai Barrier	2.21	318	P	Pn	02 12 41.1	-0.3
FOPK	Fourpeaked Vol	2.35	343	P	Pn	02 12 44.0	+0.7
CDD	Cape Douglas	2.54	343	P	Pn	02 12 47.3	+1.4
KELA	Mount Kelaz	2.72	317	P	Pn	02 12 48.4	0.0
OPT	Oil Point	3.19	350	P	Pn	02 12 56.0	+1.1
ANPK	Aniakchak Peak	3.29	278	P	Pn	02 12 54.3	-2.0
BRLK	Bradley Lake	3.33	11	P	Pn	02 12 55.9	-0.8
BRLK				S	Sn	02 13 32.7	-2.9
RSO	Redoubt South	3.97	356	P	Pn	02 13 05.6	0.0
SLKM	Skilak Lake	4.13	14	P	Pn	02 13 07.2	-0.6
ILAR	Eielson Array	8.68	15	P	Pn	02 14 10.2	+0.2
	0.6nm,0.3s,baz=202,slow=14,SNR=18						
ILAR				S	Sn	02 15 42.8	-4.3
	0.1nm,0.3s,baz=317,slow=33,SNR=3.2						
INK	Inuvik	14.56	28	P	P	02 15 36.9	+0.2
	0.1nm,0.3s,baz=237,slow=8.5,SNR=4.1						
YKA	Yellowknife Ar	19.76	57	P	Pn	02 16 35.2	-0.5
	0.0nm,0.3s,baz=271,slow=10,SNR=5.1						
NVAR	Mina Array Bea	28.77	115	P	P	02 18 02.8	+0.6
	0.2nm,0.5s,baz=334,slow=12,SNR=1.9						
KLR	Kul'dur	44.27	294	P	P	02 20 12.8	-0.8
	1.4nm,0.8s,baz=26,slow=7.4,SNR=5.1						
SONM	Songino Array	57.24	308	P	P	02 21 52.0	+0.5
	0.3nm,0.6s,baz=43,slow=5.6,SNR=4.5						
SONM	Songino Array	57.24	308	P	P	02 21 52.0	+0.5
ZALV	Zalesovo Beam	60.46	325	P	P	02 22 13.2	-0.4
	0.5nm,0.6s,baz=44,slow=8.8,SNR=2.0						
FINES	FINESS Array B	62.37	1	P	P	02 22 26.6	+0.2
	2.2nm,1.1s,baz=338,slow=10,SNR=2.9						
KURK	Kurchatov	65.17	327	P	P	02 22 45.1	+0.1
KURBB	Kurchatov Arra	65.28	327	P	P	02 22 45.1	-0.6
	0.3nm,0.6s,baz=33,slow=5.7,SNR=3.5						
BVAR	Borovoye Array	65.37	333	P	P	02 22 45.6	-0.6
	0.5nm,0.6s,baz=57,slow=9.0,SNR=4.1						
EKA	Eskdalemuir Ar	65.70	19	P	P	02 22 50.1	+1.8
	0.8nm,0.7s,baz=228,slow=29,SNR=3.3						
MKAR	Makanchi Array	67.45	323	P	P	02 22 59.5	-0.2
	0.3nm,0.5s,baz=20,slow=7.5,SNR=3.7						
ESDC	Sonseca Array	80.47	24	P	P	02 24 16.4	+0.4

0.2nm,0.5s,baz=348,slow=6.0,SNR=3.6

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*ISK **03** 02:26:39.8, 34°.95N×23°.61E, h18km, MD3.9*
*ATH **03** 02:26:40.2, 34°.85N×23°.37E, h39km±1km, ML3.1/7, Error ellipse: s-maj=2.0km s-min=0.8km az=39.0*
*ISCJB **03** 02:26:41.1±0.5, 34°.90N±0°.04×23°.47E±0°.04, h68km±4km, mb3.5/11, Error ellipse: s-maj=7.5km s-min=3.2km az=32.3*
*THE **03** 02:26:42.6, 34°.90N×23°.44E, h28km±2km, ML3.1/9, Error ellipse: s-maj=3.5km s-min=0.6km az=201.0*
*CSEM **03** 02:26:42.5±0.4, 34°.94N×23°.49E, h30km, ML3.1, Error ellipse: s-maj=10.0km s-min=3.4km az=26.0*
*IDC **03** 02:26:43.3±2.0, 34°.97N×23°.45E, h66km±19km, mb3.4/10, mb1 3.4/12, mb1mx3.3/48, mbtmp3.6/12, MS2.6/1, Ms1 2.6/1, ms1mx2.1/25, Error ellipse: s-maj=25.2km s-min=18.1km az=156.0*
ISC 03 02:26:42.1±0.9**, 34°.90N**±0°.05×**23°.47E**±0°.04**, h51**km±8km**, n203,** σ1s.**19**/250**, mb3.6**/11**, Crete**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GVD	Gavdhos	0.51	97	P	Pn	02 26 52.6	-0.9
GVD				S	Sn	02 27 01.1	-0.6
GVD	Gavdhos	0.51	97	P	Pn	02 26 52.8	-0.7
GVD				S	Sn	02 27 01.1	-0.6
GVD	Gavdhos	0.51	97	P	Pn	02 26 52.8	-0.7
GVD				S	Sn	02 27 00.5	-1.2
GVD				AML	AML	02 27 04.6	
	comp=N,16159μm,0.3s						
GVD				AML	AML	02 27 05.4	
	comp=E,10328μm,0.4s						
IMMV	Iera Moni Meta	0.70	36	P	Pn	02 26 56.2	+0.3
IMMV				S	Sn	02 27 06.5	+0.7
IMMV	Iera Moni Meta	0.70	36	P	Pn	02 26 57.0	+1.1
IMMV				S	Sn	02 27 07.7	+1.9
IMMV	Iera Moni Meta	0.70	36	P	Pn	02 26 57.0	+1.1
IMMV				S	Sn	02 27 07.7	+1.9
IMMV				AML	AML	02 27 13.0	
	comp=N,4633μm,0.4s						
IMMV				AML	AML	02 27 16.2	
	comp=E,3722μm,0.4s						
VAM	Vamos	0.78	49	P	Pn	02 26 57.5	+0.5
VAM				S	Sn	02 27 08.6	+0.8
VAM	Vamos	0.78	49	P	Pn	02 26 57.5	+0.5
VAM				S	Sn	02 27 08.6	+0.8
ANKY	Antikythira Is	0.98	352	P	Pn	02 27 00.3	+0.8
ANKY				S	Sn	02 27 12.8	+0.5
ANKY	Antikythira Is	0.98	352	P	Pn	02 27 00.3	+0.8
ANKY				S	Sn	02 27 12.8	+0.5
ANKY	Antikythira Is	0.98	352	P	Pn	02 27 01.1	+1.6
ANKY				S	Sn	02 27 15.7	+3.4
ANKY				AML	AML	02 27 23.0	
	comp=E,1232μm,0.9s						
ANKY				AML	AML	02 27 25.6	
	comp=N,1222μm,0.5s						
SIVA	Sivas	1.10	83	P	Pn	02 27 01.9	+0.7
SIVA				S	Sn	02 27 16.3	+0.9
SIVA	Sivas	1.10	83	P	Pn	02 27 01.9	+0.7
SIVA				S	Sn	02 27 16.3	+0.9
SIVA	Sivas	1.10	83	P	Pn	02 27 02.5	+1.3
SIVA				S	Sn	02 27 18.6	+3.2
SIVA				AML	AML	02 27 24.0	
	comp=N,3325μm,0.6s						
SIVA				AML	AML	02 27 27.6	
	comp=E,4877μm,0.8s						
IDI	Anoyia	1.23	71	P	Pn	02 27 04.2	+1.3
	comp=E,28nm,0.3s,baz=254,slow=14,SNR=67						
IDI	Anoyia	1.23	71	P	Pn	02 27 03.9	+1.0
IDI				S	Sn	02 27 19.2	+0.7
IDI	Anoyia	1.23	71	P	Pn	02 27 03.9	+1.0
IDI				S	Sn	02 27 19.2	+0.7
IDI	Anoyia	1.23	71	P	Pn	02 27 02.4	-0.6
KYTH	Kithira	1.42	346	P	Pn	02 27 05.9	+0.3
KYTH				S	Sn	02 27 23.5	+0.3
KYTH	Kithira	1.42	346	P	Pn	02 27 05.9	+0.3
KYTH				S	Sn	02 27 23.5	+0.3
KYTH	Kithira	1.42	346	P	Pn	02 27 07.1	+1.5
LAST	Lasithi	1.67	80	P	Pn	02 27 10.2	+1.2
LAST				S	Sn	02 27 29.8	+0.5
LAST	Lasithi	1.67	80	P	Pn	02 27 10.2	+1.2
LAST				S	Sn	02 27 29.8	+0.5
LAST	Lasithi	1.67	80	P	Pn	02 27 10.9	+1.9
NPS	Neapolis	1.79	78	P	Pn	02 27 11.3	+0.7
NPS	Neapolis	1.79	78	P	Pn	02 27 11.3	+0.7
NPS				S	Sn	02 27 36.2	+4.0
NPS	Neapolis	1.79	78	P	Pn	02 27 13.0	+2.4
NPS				S	Sn	02 27 36.2	+4.0
NPS				AML	AML	02 27 57.6	
	comp=E,397μm,0.8s						
NPS				AML	AML	02 27 57.9	
	comp=N,455μm,0.9s						
VLI	Veliai	1.87	347	P	Pn	02 27 12.6	+1.0
VLI	Veliai	1.87	347	P	Pn	02 27 12.6	+1.0
VLI	Veliai	1.87	347	P	Pn	02 27 13.3	+1.7
MHLO	Agia Marina, M	1.94	23	P	Pn	02 27 12.9	+0.3
MHLO				S	Sn	02 27 36.7	+0.9
MHLO	Agia Marina, M	1.94	23	P	Pn	02 27 12.9	+0.3
MHLO				S	Sn	02 27 36.7	+0.9
MHLO	Agia Marina, M	1.94	23	P	Pn	02 27 12.3	-0.3
THR6	Thira Island,	2.14	47	P	Pn	02 27 15.9	+0.6
THR6	Thira Island,	2.14	47	P	Pn	02 27 15.9	+0.6
THR5	Thira Island,	2.15	45	P	Pn	02 27 15.9	+0.4
THR5	Thira Island,	2.15	45	P	Pn	02 27 15.9	+0.4
THR3	Thira Island,	2.18	46	P	Pn	02 27 16.1	+0.3
THR3	Thira Island,	2.18	46	P	Pn	02 27 16.1	+0.3
ZKR	Zakros	2.26	84	P	Pn	02 27 18.5	+1.4
ZKR	Zakros	2.26	84	P	Pn	02 27 18.5	+1.4
ZKR				S	Sn	02 27 45.9	+2.1
ZKR	Zakros	2.26	84	P	Pn	02 27 19.1	+2.0
ZKR				S	Sn	02 27 45.9	+2.1
ZKR				AML	AML	02 28 14.0	
	comp=N,262μm,0.7s						
ZKR				AML	AML	02 28 16.1	
	comp=E,322μm,1.2s						
SERI	Serifos	2.40	20	P	Pn	02 27 17.2	-1.8
SERI	Serifos	2.40	20	P	Pn	02 27 17.2	-1.8
PYL	PYLOS	2.44	325	P	Pn	02 27 18.8	-0.6
PYL				S	Sn	02 27 48.9	+0.8
PYL	PYLOS	2.44	325	P	Pn	02 27 18.8	-0.6
PYL				S	Sn	02 27 48.9	+0.8
PYL	PYLOS	2.44	325	P	Pn	02 27 18.1	-1.3
KRND	KRANIDI	2.49	354	P	Pn	02 27 21.5	+1.3
KRND	KRANIDI	2.49	354	P	Pn	02 27 21.5	+1.3
KRND				S	Sn	02 27 50.6	+1.2
KRND	KRANIDI	2.49	354	P	Pn	02 27 22.1	+2.0
KRND				S	Sn	02 27 50.6	+1.2
KRND				AML	AML	02 28 10.4	
	comp=E,241μm,0.9s						
KRND				AML	AML	02 28 10.5	
	comp=N,190μm,0.9s						
ITM	Ithomi	2.60	332	P	Pn	02 27 21.9	+0.3
ITM	Ithomi	2.60	332	P	Pn	02 27 22.0	+0.3
ITM	Ithomi	2.60	332	P	Pn	02 27 22.0	+0.3
DID	Didima	2.61	356	P	Pn	02 27 22.5	+0.7
DID				S	Sn	02 27 53.3	+1.0
DID	Didima	2.61	356	P	Pn	02 27 22.5	+0.7
DID				S	Sn	02 27 53.3	+1.0
DID	Didima	2.61	356	P	Pn	02 27 22.5	+0.7
DID				S	Sn	02 27 52.1	-0.2
VLX	Vlachokerasia	2.62	341	P	Pn	02 27 23.2	+1.2
VLX	Vlachokerasia	2.62	341	P	Pn	02 27 23.2	+1.2
APE	Apeiranthos	2.73	37	*e*PN	Pn	02 27 22.6	-1.0
APE				*e*SN	Sn	02 27 53.9	-1.5
APE	Apeiranthos	2.73	37	P	Pn	02 27 23.5	0.0
APE	Apeiranthos	2.73	37	*e*Pn	Pn	02 27 22.6	-1.0
APE	Apeiranthos	2.73	37	P	Pn	02 27 24.1	+0.6
APE				*e*Sn	Sn	02 27 53.9	-1.5
APE	Apeiranthos	2.73	37	P	Pn	02 27 24.1	+0.6
TRIP	Tripoli	2.80	340	P	Pn	02 27 27.6	+3.2
TRIP	Tripoli	2.80	340	P	Pn	02 27 27.6	+3.2
VLY	Voula,Athens	2.96	5	P	Pn	02 27 26.5	-0.1
VLY	Voula,Athens	2.96	5	P	Pn	02 27 26.5	-0.1
VLY				S	Sn	02 28 01.3	+0.5
VLY	Voula,Athens	2.96	5	P	Pn	02 27 26.2	-0.4
VLY				S	Sn	02 28 01.3	+0.5
AMT	Artemida-Makis	2.99	332	P	Pn	02 27 28.0	+1.0
AMT	Artemida-Makis	2.99	332	P	Pn	02 27 27.3	+0.3
AMT	Artemida-Makis	2.99	332	P	Pn	02 27 27.3	+0.3
ATHU	Athens Univers	3.07	5	P	Pn	02 27 27.0	-1.1
ATHU	Athens Univers	3.07	5	P	Pn	02 27 27.0	-1.1
ATH	Athens Observa	3.07	4	P	Pn	02 27 28.2	+0.1
KARP	Karpathos	3.09	77	P	Pn	02 27 30.3	+1.9
KARP	Karpathos	3.09	77	P	Pn	02 27 30.3	+1.9
KARP	Karpathos	3.09	77	P	Pn	02 27 30.8	+2.4
LTK	Loutraki	3.14	353	P	Pn	02 27 29.4	+0.3
LTK	Loutraki	3.14	353	P	Pn	02 27 29.4	+0.3
LTK	Loutraki	3.14	353	P	Pn	02 27 28.8	-0.3
PTL	Penteli	3.16	6	P	Pn	02 27 28.7	-0.7
PTL	Penteli	3.16	6	P	Pn	02 27 28.7	-0.7
THAL	Thalero	3.20	348	P	Pn	02 27 31.1	+1.2
THAL	Thalero	3.20	348	P	Pn	02 27 31.1	+1.2
THAL	Thalero	3.20	348	P	Pn	02 27 32.6	+2.7
KARY	Karystos	3.22	14	P	Pn	02 27 30.5	+0.3
KARY	Karystos	3.22	14	P	Pn	02 27 30.5	+0.3
KARY	Karystos	3.22	14	P	Pn	02 27 29.4	-0.8
VILL	Villia	3.26	358	P	Pn	02 27 29.5	-1.3
VIL2	Platees	3.31	357	P	Pn	02 27 29.5	-1.9
KLV	Kalavryta, Ach	3.31	342	P	Pn	02 27 32.2	+0.6
KLV	Kalavryta, Ach	3.31	342	P	Pn	02 27 32.1	+0.6
KLV	Kalavryta, Ach	3.31	342	P	Pn	02 27 32.1	+0.6
DRO	Drossia	3.36	336	P	Pn	02 27 32.9	+0.8
DRO	Drossia	3.36	336	P	Pn	02 27 32.8	+0.6
DRO	Drossia	3.36	336	P	Pn	02 27 32.8	+0.6
NIS1	Nisyros Isl.	3.46	60	P	Pn	02 27 34.8	+1.3
NIS1	Nisyros Isl.	3.46	60	P	Pn	02 27 33.9	+0.4
NIS1	Nisyros Isl.	3.46	60	P	Pn	02 27 33.9	+0.4
EREA	Eretria	3.53	6	P	Pn	02 27 34.6	+0.1
EREA	Eretria	3.53	6	P	Pn	02 27 34.6	+0.1
EREA	Eretria	3.53	6	P	Pn	02 27 33.7	-0.8
RLS	Riolos of Patr	3.54	333	P	Pn	02 27 35.2	+0.6
LAKA	Lakka	3.54	341	P	Pn	02 27 34.6	0.0
LAKA	Lakka	3.54	341	P	Pn	02 27 34.6	0.0
DSF	Desfina	3.59	348	P	Pn	02 27 35.5	+0.2
DSF				S	Sn	02 28 17.2	+0.8
DSF	Desfina	3.59	348	P	Pn	02 27 35.5	+0.2
DSF				S	Sn	02 28 17.2	+0.8
DSF	Desfina	3.59	348	P	Pn	02 27 34.9	-0.3
RODI	Rodini	3.65	340	P	Pn	02 27 38.1	+2.1
RODI	Rodini	3.65	340	P	Pn	02 27 38.1	+2.1
KALE	Kalithea	3.65	343	P	Pn	02 27 36.2	+0.1
KALE				S	Sn	02 28 18.9	+1.0
KALE	Kalithea	3.65	343	P	Pn	02 27 36.2	+0.1
KALE				S	Sn	02 28 18.9	+1.0
KALE	Kalithea	3.65	343	P	Pn	02 27 35.2	-0.9
SERG	Sergoula	3.69	342	P	Pn	02 27 37.5	+0.9
SERG	Sergoula	3.69	342	P	Pn	02 27 37.5	+0.9
AXS	Araxos	3.70	333	P	Pn	02 27 37.5	+0.8
AXS	Araxos	3.70	333	P	Pn	02 27 37.5	+0.8
EFP	Efpalio	3.74	341	P	Pn	02 27 39.9	+2.6
EFP	Efpalio	3.74	341	P	Pn	02 27 39.9	+2.6
LKR	Lokris	3.76	354	P	Pn	02 27 37.5	-0.1
LKR	Lokris	3.76	354	P	Pn	02 27 37.5	-0.1
LKR	Lokris	3.76	354	P	Pn	02 27 37.4	-0.2
BODT	Bodrum	3.79	54	*e*PN	Pn	02 27 37.5	-0.5
BODT	Bodrum	3.79	54	*e*Pn	Pn	02 27 37.5	-0.5
KFL	Anninata	3.87	327	P	Pn	02 27 39.0	0.0
KFL	Anninata	3.87	327	P	Pn	02 27 39.0	0.0
KFL	Anninata	3.87	327	P	Pn	02 27 38.3	-0.7
ANX	Ano Chora	3.89	342	P	Pn	02 27 39.5	0.0
ANX				S	Sn	02 28 24.8	+0.9
ANX	Ano Chora	3.89	342	P	Pn	02 27 39.5	0.0
ANX				S	Sn	02 28 24.8	+0.9
SMG	Samos	3.90	43	P	Pn	02 27 39.3	-0.3
SMG	Samos	3.90	43	P	Pn	02 27 39.3	-0.3
SMIA	Simia	3.98	357	P	Pn	02 27 41.0	+0.4
SMIA	Simia	3.98	357	P	Pn	02 27 41.0	+0.4
SMIA	Simia	3.98	357	P	Pn	02 27 40.2	-0.4
VLS	Valsamata	4.01	325	P	Pn	02 27 37.6	-3.4
ARG	Arkhangelos	4.01	70	P	Pn	02 27 41.6	+0.5
ARG				S	Sn	02 28 28.2	+1.4
ARG	Arkhangelos	4.01	70	P	Pn	02 27 41.6	+0.5
ARG				S	Sn	02 28 28.2	+1.4
PVO	Paravola	4.03	338	P	Pn	02 27 42.5	+1.3
PVO	Paravola	4.03	338	P	Pn	02 27 42.5	+1.3
CHOS	Chios island	4.05	30	P	Pn	02 27 41.2	-0.5
CHOS	Chios island	4.05	30	P	Pn	02 27 41.2	-0.5
PDO	Prodromos	4.12	334	P	Pn	02 27 43.0	+0.4
PDO				S	Sn	02 28 31.4	+1.9
PDO	Prodromos	4.12	334	P	Pn	02 27 43.0	+0.4
PDO				S	Sn	02 28 31.4	+1.9
PDO	Prodromos	4.12	334	P	Pn	02 27 42.6	0.0
EVR	Evrytania	4.23	342	P	Pn	02 27 45.1	+1.0
EVR	Evrytania	4.23	342	P	Pn	02 27 45.1	+1.0
EVR	Evrytania	4.23	342	P	Pn	02 27 46.4	+2.3
SKIA	Skiathos	4.26	360	P	Pn	02 27 43.5	-0.9
SKIA	Skiathos	4.26	360	P	Pn	02 27 43.5	-0.9
NEO	Neokhori	4.40	357	P	Pn	02 27 45.3	-1.1
NEO	Neokhori	4.40	357	P	Pn	02 27 45.3	-1.1
XOR	Xorichti	4.46	357	P	Pn	02 27 46.1	-1.2
XOR	Xorichti	4.46	357	P	Pn	02 27 46.1	-1.2
LKD2	Lefkada island	4.49	331	P	Pn	02 27 45.9	-1.7
LKD2	Lefkada island	4.49	331	P	Pn	02 27 45.9	-1.7
YER	Yerkesik	4.49	59	*e*PN	Pn	02 27 48.0	+0.3
YER	Yerkesik	4.49	59	*e*Pn	Pn	02 27 48.0	+0.3
FYTO	Fytoko, Volos	4.52	355	P	Pn	02 27 48.5	+0.5
FYTO	Fytoko, Volos	4.52	355	P	Pn	02 27 48.5	+0.5
DSL	Palaion Diasel	4.63	336	P	Pn	02 27 49.3	-0.3
DSL				S	Sn	02 28 43.1	+1.0
DSL	Palaion Diasel	4.63	336	P	Pn	02 27 49.3	-0.3
DSL				S	Sn	02 28 43.1	+1.0
DSL	Palaion Diasel	4.63	336	P	Pn	02 27 48.5	-1.1
THL	Klokotos Trika	4.80	346	P	Pn	02 27 51.9	+0.1
THL	Klokotos Trika	4.80	346	P	Pn	02 27 51.9	+0.1
FETY	Fethiye	4.88	68	*e*PN	Pn	02 27 52.9	0.0
FETY	Fethiye	4.88	68	P	Pn	02 27 53.1	+0.1
FETY	Fethiye	4.88	68	P	Pn	02 27 53.1	+0.1
PAIG	Paliouri	5.02	2	P	Pn	02 27 52.3	-2.6
PAIG	Paliouri	5.02	2	P	Pn	02 27 52.3	-2.6
KSL	Kastellorizon	5.14	74	P	Pn	02 27 57.4	+1.0
KSL	Kastellorizon	5.14	74	P	Pn	02 27 56.2	-0.2
KSL	Kastellorizon	5.14	74	P	Pn	02 27 56.2	-0.2
KPRO	Kipourio	5.32	342	P	Pn	02 28 00.0	+1.0
KPRO				S	Sn	02 29 01.5	+2.5
KPRO	Kipourio	5.32	342	P	Pn	02 28 00.0	+1.0
KPRO				S	Sn	02 29 01.5	+2.5
KPRO	Kipourio	5.32	342	P	Pn	02 27 57.4	-1.6
GLHS	Glhisar (BURDU	5.38	64	*e*PN	Pn	02 27 60.0	+0.1
GLHS	Glhisar (BURDU	5.38	64	*e*Pn	Pn	02 28 00.0	+0.1
OUR	Ouranopolis	5.44	4	P	Pn	02 27 58.3	-2.3
ELL	Elmali	5.54	69	*e*PN	Pn	02 28 02.6	+0.4
ELL	Elmali	5.54	69	*e*Pn	Pn	02 28 02.6	+0.4
NEST	Nestorio	5.83	341	P	Pn	02 28 05.0	-1.1
NEST	Nestorio	5.83	341	P	Pn	02 28 05.0	-1.1
SRS	Serrai	6.21	1	P	Pn	02 28 09.0	-2.2
SRS	Serrai	6.21	1	P	Pn	02 28 09.0	-2.2
STON	Ston	9.14	332	*e*Pn	Pn	02 28 45.3	-5.9
STON				Sn	Sn	02 30 21.3	-11
BRTR	Keskin Array B	9.42	56	P	Pn	02 28 56.3	+1.0
	comp=N,0.1nm,0.3s,baz=158,slow=32,SNR=5.2						
MMAI	Mount Meron Ar	10.09	97	P	Pn	02 29 03.1	-1.3
	comp=N,1.6nm,0.3s,baz=267,slow=9.9,SNR=5.5						
VRAC	Vranov	15.27	343	P	P	02 30 18.0	-0.3
	comp=N,0.2nm,0.3s,baz=130,slow=5.6,SNR=3.3						
GERES	GERESS Array B	15.70	336	P	P	02 30 24.0	+0.8
	comp=N,0.2nm,0.3s,baz=153,slow=12,SNR=13						
GERES				LR	LR	02 38 11.6	
	comp=N,21nm,18.3s,baz=62,slow=44						
KHC	Kasperske Hory	15.99	336	*e*P	P	02 30 27.0	+0.7
DPC	Dobruska-Polom	16.30	343	*e*P	P	02 30 30.2	+0.5
AKASG	Malin Array Be	16.34	13	P	Pn	02 30 27.9	0.0
	comp=N,0.8nm,0.3s,baz=208,slow=9.3,SNR=8.5						
ESDC	Sonseca Array	22.30	290	P	P	02 31 36.7	+1.4
	comp=N,0.2nm,0.5s,baz=276,slow=13,SNR=3.7						
HFS	Hagfors	26.04	349	P	P	02 32 08.7	-1.6
	comp=N,1.5nm,0.5s,baz=141,slow=9.6,SNR=13						
FINES	FINESS Array B	26.61	3	P	P	02 32 13.6	-1.9
	comp=N,1.6nm,1.0s,baz=156,slow=9.8,SNR=4.0						
NOA	NORSAR Array B	27.32	347	P	P	02 32 21.0	-0.9
	comp=N,0.3nm,0.5s,baz=151,slow=9.1,SNR=3.7						
EKA	Eskdalemuir Ar	27.47	326	P	P	02 32 25.6	+2.3
	comp=N,0.5nm,0.4s,baz=125,slow=7.8,SNR=13						
TORD	Torodi Ar. Bea	29.28	228	P	P	02 32 38.9	-0.8
	comp=N,0.2nm,0.7s,baz=35,slow=9.1,SNR=3.8						
ARCES	ARCESS Array B	34.71	1	P	P	02 33 25.5	-1.2
	comp=N,2.9nm,0.9s,baz=185,slow=10.0,SNR=4.2						
MKAR	Makanchi Array	45.07	56	P	P	02 34 52.8	-0.3
	comp=N,0.5nm,0.3s,baz=273,slow=7.8,SNR=16						
ZALV	Zalesovo Beam	46.18	46	P	P	02 35 00.9	-0.7
	comp=N,1.3nm,0.4s,baz=270,slow=9.4,SNR=6.7						
SONM	Songino Array	60.72	50	P	P	02 36 48.6	+0.2
	comp=N,0.5nm,0.5s,baz=292,slow=7.1,SNR=4.0						
YKA	Yellowknife Ar	77.26	341	P	P	02 38 29.6	-1.0
	comp=N,0.2nm,0.6s,baz=29,slow=5.6,SNR=4.2						

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*NIED **03** 02:28:00, 36°.50N×142°.30E, h17km, Mw3.8 Best double couple: M0 6.08000×10^14 NP1: φs 227.00000°, δ37.00000°, λ146.00000°. NP2: φs 346.00000°, δ70.00000°, λ58.00000°.*
*IDC **03** 02:28:21.5±0.8, 36°.45N×142°.52E, h0km, mb3.7/10, mb1 3.9/12, mb1mx3.7/41, mbtmp3.8/12, ML4.0/2, MS3.1/4, Ms1 3.1/4, ms1mx2.6/49, Error ellipse: s-maj=21.9km s-min=18.8km az=101.0*
*ISCJB **03** 02:28:22.3±0.5, 36°.44N±0°.04×142°.44E±0°.05, h15km, mb3.8/15, MS3.1/2, Error ellipse: s-maj=6.3km s-min=5.7km az=163.1*
*NEIC **03** 02:28:22.9±3.9, 36°.47N×142°.57E, h10km±24km, mb4.0/5, Error ellipse: s-maj=11.9km s-min=9.3km az=108.0*
*JMA **03** 02:28:23.3±0.2, 36°.52N×142°.32E, h8km±4km, M3.9*
ISC 03 02:28:24.1±0.8**, 36°.47N**±0°.06×**142°.38E**±0°.08**, h15**km**, n38,** σ0s.**83**/32**, mb3.9**/15**, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	Iwakimizuishiy	1.42	297	P	Pn	02 28 48.6	-0.8
ONAJ				S	Sn	02 29 06.4	-1.5
JHO	Hitachi	1.47	276	P	Pn	02 28 49.2	-0.8
JHO				*e*S	Sn	02 29 07.6	-1.3
JMM	Marumori	1.89	318	P	Pn	02 28 55.6	-0.2
JFT	Otama	1.94	303	P	Pn	02 28 57.0	+0.4
JIO	Ouri	2.15	338	*e*S	Sn	02 29 24.8	-0.9
JOU	Okura	2.34	325	*e*S	Sn	02 29 30.6	+0.1
MJAR	Matsushiro Arr	3.36	273	Pn	Pn	02 29 17.1	+1.0
	5.7nm,0.3s,baz=98,slow=19,SNR=43						
MAJO	Matsushiro	3.36	273	*e*Pn	Pn	02 29 17.1	+1.1
MAT	Matsushiro	3.36	273	P	Pn	02 29 17.3	+1.2
MAT				*e*S	Sn	02 29 54.9	-0.9
JHJ2	Mitsune	3.96	213	*e*Pn	Pn	02 29 24.2	0.0
JHJ	Hachijo jima 2	3.96	213	Pn	Pn	02 29 23.3	-1.0
	66nm,0.3s,baz=82,slow=22,SNR=12						
JHJ				Sn	Sn	02 30 09.5	-1.1
	83nm,0.3s,baz=254,slow=24,SNR=8.7						
ERM	Erimo	5.58	6	*e*Pn	Pn	02 29 44.8	-1.6
KSRS	Korea Array	11.61	279	Pn	Pn	02 31 13.3	+4.1
	0.1nm,0.3s,baz=96,slow=13,SNR=5.6						
KSRS				LR	LR	02 35 47.7	
	comp=Z,87nm,18.1s,baz=112,slow=38						
KSAR	Wonju Array Be	11.64	279	Pn	Pn	02 31 13.3	+3.7
KLR	Kul'dur	14.93	332	LR	LR	02 37 43.4	
	comp=Z,45nm,18.3s,baz=86,slow=37						
H11N2	WAKE ISLAND Hy	27.19	121	T	T	03 02 41.6	
	baz=313,slow=75,SNR=12						
H11N1	WAKE ISLAND Hy	27.20	121	T	T	03 02 37.7	
	baz=313,slow=75,SNR=13						
H11N3	WAKE ISLAND Hy	27.21	121	T	T	03 02 43.0	
	baz=313,slow=75,SNR=10.0						
H11S1	WAKE ISLAND Hy	27.90	123	T	T	03 03 33.8	
	baz=315,slow=75,SNR=6.3						
H11S3	WAKE ISLAND Hy	27.90	123	T	T	03 03 28.2	
	baz=315,slow=75,SNR=7.3						
H11S2	WAKE ISLAND Hy	27.91	123	T	T	03 03 35.2	
	baz=315,slow=75,SNR=5.5						
ULN	Ulaanbaatar	28.32	305	*e*P	P	02 34 17.9	+0.6
	1.9nm,0.7s						
SONM	Songino Array	28.75	305	P	P	02 34 21.9	+0.8
	2.7nm,0.8s,baz=106,slow=8.9,SNR=18						
TLY	Talaya	31.29	311	LR	LR	02 47 50.1	
	comp=Z,38nm,18.9s,baz=100,slow=37						
ZALV	Zalesovo Beam	42.87	313	P	P	02 36 21.9	+0.3
	0.5nm,0.4s,baz=76,slow=6.3,SNR=3.6						
MKAR	Makanchi Array	45.08	303	P	P	02 36 40.1	+0.7
	1.6nm,0.7s,baz=91,slow=9.6,SNR=15						
MKAR				LR	LR	02 55 44.6	
	comp=Z,23nm,18.5s,baz=88,slow=36						
KURK	Kurchatov	46.89	309	*e*P	P	02 36 53.9	+0.3
	4.5nm,0.5s						
ILAR	Eielson Array	49.56	32	P	P	02 37 13.4	-0.6
	0.6nm,0.9s,baz=260,slow=6.5,SNR=5.8						
TKM2	Tokmak 2	50.58	299	*e*P	P	02 37 23.1	+0.8
	2.1nm,0.7s						
AAK	Ala-Archa	51.44	299	*e*P	P	02 37 28.7	-0.1
	1.0nm,0.6s						
EKS2	Erkin-Say	51.94	299	*e*P	P	02 37 32.3	-0.2
	1.1nm,0.7s						
WRA	Warramunga Arr	56.61	189	P	P	02 38 06.7	+0.3
	0.9nm,0.7s,baz=8.0,slow=7.2,SNR=3.6						
ASAR	Alice Springs	60.34	189	P	P	02 38 32.0	-0.4
	0.3nm,0.7s,baz=3.2,slow=6.2,SNR=3.9						
YKA	Yellowknife Ar	63.91	30	P	P	02 38 55.7	-0.2
	0.1nm,0.6s,baz=300,slow=5.3,SNR=3.7						
FINES	FINESS Array B	69.68	333	P	P	02 39 33.0	+0.3
	0.9nm,0.7s,baz=9.5,slow=4.6,SNR=3.8						
AKASG	Malin Array Be	75.22	323	P	P	02 40 05.7	-0.2
	0.7nm,0.7s,baz=44,slow=5.8,SNR=4.3						
TXAR	Lajitas Array	89.85	53	P	P	02 41 23.1	+0.4
	0.2nm,0.6s,baz=300,slow=3.4,SNR=3.8						
LPAZ	La Paz	146.29	61	PKPbc	PKPdf	02 48 03.2	-1.0
	0.5nm,0.6s,baz=112,slow=2.1,SNR=3.8						

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*NIED **03** 02:32:00, 38°.20N×141°.90E, h47km, Mw3.8 Best double couple: M0 5.43000×10^14 NP1: φs 206.00000°, δ23.00000°, λ101.00000°. NP2: φs 13.00000°, δ68.00000°, λ85.00000°.*
*JMA **03** 02:32:19.1±0.1, 38°.24N×141°.91E, h47km±2km, M3.9*
JMA Felt I J1.
*IDC **03** 02:32:33.6±2.4, 37°.92N×140°.54E, h150km±22km, mb3.3/9, mb1 3.4/11, mb1mx3.2/40, mbtmp3.7/11, Error ellipse: s-maj=25.5km s-min=16.1km az=82.0*
ISC 03 02:32:17.0±2.0**, 38°.20N**±0°.05×**141°.97E**±0°.09**, h27**km±12km**, n27,** σ0s.**68**/25**, mb3.7**/10**, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	Ouri	0.55	297	P	Pn	02 32 30.1	+1.1
JIO				S	Sn	02 32 37.4	+0.2
OFUJ	Ofunato	0.91	345	P	Pn	02 32 34.8	+0.9
JMK	Ichinoseki	0.95	322	P	Pb	02 32 35.6	+0.8
JMK				S	Sn	02 32 47.1	0.0
JMM	Marumori	0.98	250	P	Pb	02 32 35.9	+0.4
JMM				*e*S	Sn	02 32 48.8	+0.8
JOU	Okura	1.04	279	P	Pb	02 32 37.1	+0.8
JOU				S	Sn	02 32 50.0	+0.6
JFK	Kawauchi	1.20	226	P	Pb	02 32 39.3	+0.1
JFK				S	Sn	02 32 53.8	+0.3
JOM	Ohasama	1.37	338	P	Pb	02 32 41.6	-0.4
JYK	Kaneyama	1.45	300	P	Pn	02 32 41.7	+0.3
JFT	Otama	1.46	243	P	Pb	02 32 43.4	-0.1
JYS	Shirataka	1.50	271	P	Pb	02 32 43.4	-0.7
JRG	Rokugo	1.58	319	P	Pb	02 32 45.1	-0.5
MJAR	Matsushiro Arr	3.42	242	P	Pn	02 33 12.3	+3.8
	2.2nm,0.3s,baz=62,slow=11,SNR=4.6						
MAT	Matsushiro	3.42	242	P	Pn	02 33 12.4	+3.8
MAT				*e*S	Sb	02 33 56.7	-1.4
USRK	Ussuriysk Ar.	9.61	312	P	Pn	02 34 39.3	+5.9
	0.4nm,0.3s,baz=122,slow=14,SNR=5.2						
SONM	Songino Array	27.52	302	P	P	02 38 00.3	-0.9
	0.1nm,0.3s,baz=94,slow=5.8,SNR=2.3						
H11N2	WAKE ISLAND Hy	28.40	123	T	T	03 08 22.4	
	baz=316,slow=76,SNR=40						
H11N1	WAKE ISLAND Hy	28.41	123	T	T	03 08 22.2	
	baz=316,slow=76,SNR=103						
H11N3	WAKE ISLAND Hy	28.41	123	T	T	03 08 23.6	
	baz=316,slow=76,SNR=70						
ZALV	Zalesovo Beam	41.46	311	P	P	02 40 00.9	-0.3
	0.9nm,0.4s,baz=64,slow=6.9,SNR=4.6						
MKAR	Makanchi Array	43.88	301	P	P	02 40 21.0	0.0
	0.4nm,0.6s,baz=92,slow=10,SNR=5.1						
ILAR	Eielson Array	48.27	33	P	P	02 41 06.0	+11
	0.2nm,0.5s,baz=253,slow=9.3,SNR=3.9						
WRA	Warramunga Arr	58.28	188	P	P	02 42 09.2	0.0
	0.7nm,0.4s,baz=9.0,slow=7.2,SNR=4.5						
ASAR	Alice Springs	62.01	188	P	P	02 42 35.1	+0.3
	0.4nm,0.8s,baz=15,slow=8.1,SNR=5.2						
ARCES	ARCESS Array B	63.06	339	P	P	02 42 42.0	+0.8
	2.4nm,0.9s,baz=38,slow=6.1,SNR=3.9						
FINES	FINESS Array B	67.98	332	P	P	02 43 12.7	-0.5
	0.9nm,0.7s,baz=72,slow=8.2,SNR=3.7						
AKASG	Malin Array Be	73.64	322	P	P	02 43 47.4	-0.4
	0.4nm,0.4s,baz=48,slow=6.6,SNR=5.2						
PDAR	Pinedale Array	76.54	46	P	P	02 44 13.4	+8.4
	0.2nm,0.6s,baz=114,slow=44,SNR=3.3						

IDC 03 02:33:56.9±4.5**,2°.97S**×**152°.86E,h0**km**,mb3.5**/2**, mb1 3.8**/2**,mb1mx3.3**/29**,mbtmp3.5**/2**,Error ellipse: s-maj=214.7km s-min=49.3km az=115.0,New Ireland region**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**24.73**	**226**	P	P	02 39 20.4	+0.2
	0.8nm,0.4s,baz=51,slow=9.8,SNR=3.1						
ASAR	**Alice Springs**	**27.56**	**220**	P	P	02 39 45.7	0.0
	0.1nm,0.3s,baz=50,slow=7.9,SNR=4.1						
TORD	**Torodi Ar. Bea**	**149.75**	**291**	PKPbc	PKPbc	02 53 49.4	-0.6
	0.3nm,0.5s,baz=86,slow=1.8,SNR=11						

IDC 03 02:46:01.8±1.2**,37°.38N**×**144°.31E,h0**km**,mb3.5**/4**, mb1 3.7**/5**,mb1mx3.4**/33**,mbtmp3.5**/5**,ML3.6**/1**,Error ellipse: s-maj=36.5km s-min=27.4km az=112.0,Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
MJAR	**Matsushiro Arr**	**4.96**	**262**	Pn	Pn	02 47 17.4	-0.2
	2.5nm,0.3s,baz=88,slow=15,SNR=13						
MAT	**Matsushiro**	**4.96**	**262**	P	Pn	02 47 17.6	0.0
MAT				*e*S	Sn	02 48 12.2	-3.5
MKAR	**Makanchi Array**	**45.89**	**302**	P	P	02 54 25.7	-0.2
	0.3nm,0.7s,baz=92,slow=8.5,SNR=3.8						
ILAR	**Eielson Array**	**47.96**	**33**	P	P	02 54 41.7	-0.1
	0.2nm,0.6s,baz=249,slow=6.7,SNR=3.0						
WRA	**Warramunga Arr**	**57.79**	**191**	P	P	02 55 55.0	+0.1
	1.4nm,0.8s,baz=9.8,slow=7.3,SNR=4.6						
ASAR	**Alice Springs**	**61.51**	**191**	P	P	02 56 20.3	-0.2
	0.4nm,0.7s,baz=9.2,slow=9.4,SNR=4.3						

*NIED **03** 02:49:00,36°.20N×140°.00E,h56km,Mw4.1 Best double couple: M₀1.42000×10^15 NP1:φs266.00000°,δ16.00000°, λ117.00000°. NP2:φs58.00000°,δ76.00000°,λ83.00000°.*
*ISCJB **03** 02:49:28.6±0.5,36°.21N±0°.05×140°.00E±0°.06,h63km±3km, mb3.9/19,Error ellipse: s-maj=8.6km s-min=7.8km az=162.3*
*JMA **03** 02:49:29.6±0.1,36°.20N×139°.97E,h53km±1km,M4.2 Broadband fault plane solution: P waves. NP1: φs64.00000°,δ73.00000°,λ87.00000°. NP2:φs253.00000°, δ17.00000°,λ98.00000°. Principal axes: T Plg62.0000°, Azm330.0000°; N Plg2.0000°, Azm65.0000°; P Plg28.0000°, Azm156.0000°;*
JMA Felt III J1.
*IDC **03** 02:49:30.3±1.4,36°.25N×139°.80E,h61km±13km,mb3.7/19, mb1 3.9/20,mb1mx3.8/34,mbtmp4.0/20,MS2.9/4, Ms1 2.9/4,ms1mx2.6/48 Error ellipse: s-maj=15.3km s-min=8.1km az=62.0*
ISC 03 02:49:29.2±0.7**,36°.21N**±0°.04×**139°.94E**±0°.05**,h54**km±6km**, n39,**σ**1s.27**/44**,mb3.9**/19**,1C-4D,Eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
JYT	**Yasato**	**0.21**	**84**	⇑P	**Pn**	**02 49 38.2**	**+0.2**
JYT				S	**Sn**	**02 49 44.2**	**-0.2**
JAG	**Ashikaga**	**0.45**	**300**	⇓P	**Pn**	**02 49 41.0**	**+0.9**
JAG				*i* S	**Sn**	**02 49 49.0**	**+1.0**
JKT	**Katashina**	**0.79**	**316**	⇓P	**Pn**	**02 49 44.9**	**+0.6**
JKT				S	**Sn**	**02 49 56.7**	**+1.3**
JRY	**Ryogami san**	**0.86**	**258**	⇓P	**Pn**	**02 49 46.1**	**+0.9**
JRY				S	**Sn**	**02 49 58.1**	**+1.2**
JOD2	**Odawara 2**	**1.17**	**216**	P	**Pn**	**02 49 50.1**	**+0.8**
JFY	**Yanaizu**	**1.21**	**351**	⇓P	**Pn**	**02 49 50.7**	**+0.8**
MJAR	**Matsushiro Arr**	**1.43**	**284**	P	**Pn**	**02 49 53.8**	**+0.9**
	90nm,0.3s,baz=85,slow=9.9,SNR=648						
MJAR				S	**Sn**	**02 50 07.9**	**-2.7**
	75nm,0.3s,baz=86,slow=17,SNR=20						
MJAR				LR	LR	02 50 41.1	
	comp=Z,241nm,19.8s,baz=120,slow=55						
MAT	**Matsushiro**	**1.43**	**284**	P	**Pn**	**02 49 54.5**	**+1.6**
MAT				S	**Sn**	**02 50 07.7**	**-3.0**
JHJ	**Hachijo jima 2**	**3.08**	**182**	P	**Pn**	**02 50 15.6**	**+0.2**
	204nm,0.3s,baz=317,slow=22,SNR=31						
JHJ				S	**Sn**	**02 50 54.5**	**+3.5**
	128nm,0.3s,baz=242,slow=23,SNR=6.9						
JHJ				LR	LR	02 51 48.3	
	comp=Z,200nm,19.4s,baz=66,slow=44						
JCJ	**Chichijima**	**9.28**	**167**	P	Pn	02 51 37.5	-2.8
	15nm,0.3s,baz=342,slow=15,SNR=10						
JCJ				S	**Sn**	**02 53 19.5**	**-3.8**
	6.9nm,0.3s,baz=288,slow=22,SNR=5.4						
KSRS	**Korea Array**	**9.71**	**281**	P	Pn	02 51 51.4	+5.3
	0.4nm,0.3s,baz=90,slow=14,SNR=5.0						
KSRS				LR	LR	02 55 26.9	
	comp=Z,63nm,18.0s,baz=90,slow=37						
USRK	**Ussuriysk Ar.**	**10.03**	**325**	P	Pn	02 51 56.2	+5.8
	0.3nm,0.3s,baz=135,slow=13,SNR=8.5						
USRK				LR	LR	02 55 19.2	
	comp=Z,75nm,21.9s,baz=158,slow=35						
JOW	**Kunigami**	**13.63**	**230**	P	**P**	**02 52 47.4**	**+0.4**
	0.4nm,0.3s,baz=198,slow=16,SNR=2.7						
KLR	**Kul'dur**	**14.33**	**338**	P	**P**	**02 52 55.1**	**+0.6**
	0.1nm,0.3s,baz=145,slow=13,SNR=6.4						
GUMO	**Guam**	**22.95**	**168**	LR	LR	03 02 39.0	
	comp=Z,42nm,20.3s,baz=248,slow=34						
MA2	**Magadan**	**24.42**	**13**	P	**P**	**02 54 42.7**	**+0.4**
	5.2nm,0.6s,baz=212,slow=7.2,SNR=10						
SONM	**Songino Array**	**27.28**	**306**	P	**P**	**02 55 08.4**	**-0.1**
	1.1nm,0.6s,baz=105,slow=9.2,SNR=5.2						
SONM				PcP	**PcP**	**02 58 26.6**	**-0.3**
	0.8nm,0.8s,baz=104,slow=9.5,SNR=3.1						
SEY	**Seymchan**	**27.84**	**12**	P	**P**	**02 55 14.6**	**+1.4**
	1.8nm,0.6s,baz=200,slow=8.1,SNR=5.9						
H11S3	**WAKE ISLAND Hy**	**29.45**	**120**	T	T	03 26 15.0	
	baz=314,slow=76,SNR=64						
H11S1	**WAKE ISLAND Hy**	**29.45**	**120**	T	T	03 26 23.3	
	baz=314,slow=76,SNR=90						
H11S2	**WAKE ISLAND Hy**	**29.46**	**120**	T	T	03 26 16.1	
	baz=314,slow=76,SNR=53						
ZALV	**Zalesovo Beam**	**41.60**	**313**	P	**P**	**02 57 11.7**	**+0.1**
	2.2nm,0.6s,baz=93,slow=6.4,SNR=10						
ZALV				PcP	**PcP**	**02 59 06.8**	**-0.9**
	0.8nm,0.7s,baz=106,slow=2.1,SNR=3.8						
MKAR	**Makanchi Array**	**43.56**	**303**	P	**P**	**02 57 27.9**	**+0.3**
	2.7nm,0.7s,baz=91,slow=9.8,SNR=38						
MKAR				PcP	**PcP**	**02 59 13.9**	**-0.5**
	0.5nm,0.8s,baz=96,slow=3.8,SNR=2.9						
BVAR	**Borovoye Array**	**50.25**	**313**	P	**P**	**02 58 20.0**	**+0.3**
	0.8nm,0.7s,baz=197,slow=37,SNR=8.7						
BVAR				PcP	**PcP**	**02 59 37.8**	**-0.2**
	0.4nm,0.7s,baz=204,slow=42,SNR=2.2						
ILAR	**Eielson Array**	**50.83**	**32**	P	**P**	**02 58 24.2**	**+0.4**
	1.2nm,0.8s,baz=273,slow=6.1,SNR=14						
INK	**Inuvik**	**55.66**	**27**	P	**P**	**02 59 00.4**	**+1.1**
	1.3nm,0.8s,baz=296,slow=6.6,SNR=8.1						
WRA	**Warramunga Arr**	**56.09**	**186**	P	**P**	**02 59 02.7**	**-0.2**
	2.3nm,0.4s,baz=2.1,slow=7.5,SNR=13						
ASAR	**Alice Springs**	**59.82**	**186**	P	**P**	**02 59 29.9**	**+1.0**
	0.5nm,0.5s,baz=21,slow=12,SNR=15						
ARCES	**ARCESS Array B**	**64.35**	**339**	P	**P**	**02 59 59.6**	**+0.8**
	4.1nm,1.0s,baz=357,slow=7.8,SNR=3.4						
YKA	**Yellowknife Ar**	**65.12**	**30**	P	**P**	**03 00 03.6**	**-0.2**
	0.6nm,0.8s,baz=302,slow=6.5,SNR=11						
FINES	**FINESS Array B**	**68.99**	**332**	P	**P**	**03 00 28.0**	**-0.4**
	2.0nm,0.8s,baz=40,slow=7.9,SNR=4.5						
AKASG	**Malin Array Be**	**74.22**	**322**	P	**P**	**03 00 59.3**	**-0.7**
	0.6nm,0.5s,baz=49,slow=6.0,SNR=8.4						
NB2	**NORSAR Subarra**	**74.48**	**337**	P	**P**	**03 01 01.0**	**-0.4**
	comp=Z,0.9nm,0.5s,baz=42,slow=5.9						
NOA	**NORSAR Array B**	**74.48**	**337**	P	**P**	**03 01 01.1**	**-0.4**
	comp=Z,1.2nm,0.7s,baz=40,slow=5.9,SNR=6.3						
NVAR	**Mina Array Bea**	**76.44**	**52**	P	**P**	**03 01 13.2**	**-0.1**
	comp=Z,0.4nm,0.4s,baz=288,slow=6.2,SNR=3.9						
PDAR	**Pinedale Array**	**79.09**	**45**	P	**P**	**03 01 27.8**	**-0.2**
	comp=Z,0.2nm,0.5s,baz=259,slow=1.5,SNR=3.3						
GERES	**GERESS Array B**	**82.78**	**328**	P	**P**	**03 01 47.0**	**-0.4**
	comp=Z,0.2nm,0.4s,baz=58,slow=8.0,SNR=4.6						
TXAR	**Lajitas Array**	**91.57**	**51**	P	**P**	**03 02 30.8**	**+0.4**
	comp=Z,0.2nm,0.6s,baz=287,slow=2.8,SNR=4.0						
TORD	**Torodi Ar. Bea**	**117.05**	**313**	PKP	**PKPdf**	**03 08 07.1**	**-1.5**
	comp=Z,0.5nm,1.1s,baz=196,slow=1.7,SNR=4.7						

*NIED **03** 02:51:00,38°.10N×143°.10E,h8km,Mw3.8 Best double couple: M₀6.10000×10^14 NP1:φs120.00000°,δ39.00000°, λ-77.00000°. NP2:φs284.00000°,δ52.00000°, λ-101.00000°.*
*ISCJB **03** 02:51:31.4±0.5,38°.10N±0°.05×143°.29E±0°.05,h18km, mb3.9/18,Error ellipse: s-maj=6.8km s-min=6.2km az=176.6*
*JMA **03** 02:51:32.9±0.4,38°.14N×143°.08E,h10km,M3.7*
*NEIC **03** 02:51:36.5±1.2,38°.13N×143°.23E,h44km±11km,mb4.1/4, Error ellipse: s-maj=10.6km s-min=8.0km az=103.0*
NEIC Recorded [3 JMA] in Ibaraki and Tochigi.
*IDC **03** 02:51:36.2±3.4,38°.12N×143°.28E,h39km±30km,mb3.6/13, mb1 3.8/16,mb1mx3.7/40,mbtmp3.9/16,ML4.0/2,MS2.9/1, Ms1 2.9/1,ms1mx2.3/41,Error ellipse: s-maj=22.4km s-min=15.5km az=96.0*
ISC 03 02:51:33.3±0.7**,38°.13N**±0°.06×**143°.15E**±0°.07**,h18**km**,n40, **σ**1s.25**/40**,mb3.9**/18**,Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
JIO	**Ouri**	**1.45**	**283**	P	**Pn**	**02 51 58.4**	**-0.2**
JIO				S	**Sn**	**02 52 17.2**	**+0.1**
OFUJ	**Ofunato**	**1.50**	**310**	P	**Pn**	**02 51 59.1**	**-0.1**
JMK	**Ichinoseki**	**1.72**	**299**	P	**Pn**	**02 52 02.7**	**+0.4**
JMM	**Marumori**	**1.88**	**263**	P	**Pn**	**02 52 04.8**	**+0.4**
JFK	**Kawauchi**	**1.96**	**248**	P	**Pn**	**02 52 05.7**	**+0.1**
JOU	**Okura**	**1.97**	**278**	P	**Pn**	**02 52 06.4**	**+0.7**
JOM	**Ohasama**	**1.97**	**313**	P	**Pn**	**02 52 07.3**	**+1.5**
JOM				S	**Sn**	**02 52 29.7**	**-0.4**
JTH	**Tanohata**	**2.06**	**331**	P	**Pb**	**02 52 08.8**	**-1.4**
JFT	**Otama**	**2.31**	**256**	P	**Pn**	**02 52 12.0**	**+1.6**
JFT				S	**Sn**	**02 52 38.5**	**+0.2**
JYK	**Kaneyama**	**2.32**	**291**	P	**Pn**	**02 52 11.4**	**+0.8**
JRG	**Rokugo**	**2.34**	**304**	P	**Pn**	**02 52 12.1**	**+1.3**
JRG				S	**Sn**	**02 52 41.1**	**+2.1**
JRY	**Ryogami san**	**4.00**	**239**	P	**Pn**	**02 52 35.2**	**+1.6**
MJAR	**Matsushiro Arr**	**4.24**	**250**	Pn	**Pn**	**02 52 39.9**	**+2.9**
	3.8nm,0.3s,baz=86,slow=25,SNR=7.4						
MAJO	**Matsushiro**	**4.24**	**250**	*e*Pn	**Pn**	**02 52 39.1**	**+2.1**
MAT	**Matsushiro**	**4.24**	**250**	P	**Pn**	**02 52 40.0**	**+3.0**
MAT				*e*S	**Sb**	**02 53 34.7**	**-3.5**
JHJ	**Hachijo jima 2**	**5.70**	**210**	Pn	**Pn**	**02 52 56.9**	**-0.1**
	34nm,0.3s,baz=82,slow=22,SNR=6.0						
USRK	**Ussuriysk Ar.**	**10.37**	**309**	Pn	Pn	02 54 04.8	+3.8
	0.2nm,0.3s,baz=146,slow=41,SNR=3.4						
JNU	**Nakatsue**	**11.16**	**247**	LR	LR	02 58 39.8	
	comp=Z,63nm,21.5s,baz=102,slow=38						
MA2	**Magadan**	**22.01**	**10**	P	**P**	**02 56 26.2**	**-0.1**
	1.7nm,0.3s,baz=210,slow=10,SNR=4.1						
SEY	**Seymchan**	**25.46**	**10**	P	**P**	**02 57 00.8**	**+0.9**
	3.3nm,0.7s,baz=202,slow=9.0,SNR=6.6						
H11N2	**WAKE ISLAND Hy**	**27.59**	**125**	T	T	03 26 05.0	
	baz=317,slow=75,SNR=8.0						
H11N1	**WAKE ISLAND Hy**	**27.59**	**125**	T	T	03 26 09.1	
	baz=317,slow=75,SNR=101						
H11N3	**WAKE ISLAND Hy**	**27.60**	**125**	T	T	03 26 16.2	
	baz=317,slow=75,SNR=132						
SONM	**Songino Array**	**28.35**	**302**	P	**P**	**02 57 26.9**	**+0.7**
	0.4nm,0.4s,baz=105,slow=9.3,SNR=4.5						
ZALV	**Zalesovo Beam**	**42.21**	**312**	P	**P**	**02 59 25.9**	**+1.1**
	0.8nm,0.5s,baz=88,slow=5.8,SNR=3.7						
MKAR	**Makanchi Array**	**44.71**	**301**	P	**P**	**02 59 46.5**	**+1.3**
	0.8nm,0.7s,baz=89,slow=8.5,SNR=4.9						
KURK	**Kurchatov**	**46.35**	**308**	*e*P	**P**	**02 59 57.8**	**-0.2**
	6.3nm,0.7s						
KURBB	**Kurchatov Arra**	**46.42**	**307**	P	**P**	**02 59 58.7**	**+0.1**
	2.6nm,0.6s,baz=82,slow=8.1						
ILAR	**Eielson Array**	**47.83**	**33**	P	**P**	**03 00 08.6**	**-0.9**
	0.8nm,0.8s,baz=252,slow=6.1,SNR=4.3						
BVAR	**Borovoye Array**	**50.86**	**312**	P	**P**	**03 00 33.2**	**+0.4**
	0.3nm,0.5s,baz=233,slow=41,SNR=3.0						
BRVK	**Borovoye**	**50.91**	**312**	*e*P	**P**	**03 00 32.9**	**-0.2**
	1.0nm,0.7s						
EKS2	**Erkin-Say**	**51.67**	**298**	*e*P	**P**	**03 00 39.4**	**+0.3**
	0.9nm,0.5s						
ARU	**Arti**	**56.45**	**318**	*e*P	**P**	**03 01 13.8**	**+0.1**
	1.2nm,0.5s						
ABKAR	**Akbulak array**	**58.29**	**310**	*e*P	**P**	**03 01 26.6**	**-0.1**
WRAB	**Tennant Creek**	**58.34**	**190**	*e*P	**P**	**03 01 26.8**	**-0.5**
	3.7nm,0.8s						
WRA	**Warramunga Arr**	**58.35**	**190**	P	**P**	**03 01 27.5**	**+0.1**
	5.0nm,0.8s,baz=9.0,slow=7.4,SNR=11						
ASAR	**Alice Springs**	**62.08**	**190**	P	**P**	**03 01 53.1**	**+0.2**
	1.3nm,0.7s,baz=12,slow=6.1,SNR=9.4						
YKA	**Yellowknife Ar**	**62.17**	**31**	P	**P**	**03 01 52.6**	**-0.5**
	0.2nm,0.6s,baz=304,slow=6.4,SNR=3.4						
AKASG	**Malin Array Be**	**74.27**	**323**	P	**P**	**03 03 08.9**	**-0.1**
	0.6nm,0.5s,baz=45,slow=5.7,SNR=5.1						
TXAR	**Lajitas Array**	**88.36**	**53**	P	**P**	**03 04 24.4**	**0.0**
	0.2nm,0.7s,baz=5.7,slow=1.3,SNR=3.4						

*ISCJB **03** 02:52:32.7±1.7,35°.8N±0°.2×141°.7E±0°.3,h33km,mb3.5/5, Error ellipse: s-maj=41.6km s-min=20.9km az=42.5*
*IDC **03** 02:52:40.6±4.2,35°.60N×140°.95E,h64km±37km,mb3.3/5, mb1 3.4/6,mb1mx3.1/43,mbtmp3.6/6,ML3.0/1,Error ellipse: s-maj=34.1km s-min=25.6km az=81.0*
ISC 03 02:52:34.9±1.8**,35°.8N**±0°.3×**141°.6E**±0°.2**,h33**km**,n13, **σ**0s.65**/7**,mb3.5**/5**,Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
MJAR	**Matsushiro Arr**	**2.84**	**286**	P	**Pn**	**02 53 17.3**	**-0.6**
	3.5nm,0.3s,baz=98,slow=14,SNR=4.8						
MAT	**Matsushiro**	**2.84**	**286**	P	**Pn**	**02 53 18.3**	**+0.3**
MAT				S	**Sb**	**02 53 59.4**	**+0.1**
H11N2	**WAKE ISLAND Hy**	**27.41**	**119**	T	T	03 29 55.4	
H11N1	**WAKE ISLAND Hy**	**27.41**	**119**	T	T	03 29 55.4	
H11N3	**WAKE ISLAND Hy**	**27.43**	**119**	T	T	03 29 55.4	
H11S1	**WAKE ISLAND Hy**	**28.08**	**121**	T	T	03 30 44.6	
H11S3	**WAKE ISLAND Hy**	**28.08**	**121**	T	T	03 30 44.6	
H11S2	**WAKE ISLAND Hy**	**28.10**	**121**	T	T	03 30 44.6	
ZALV	**Zalesovo Beam**	**42.86**	**313**	P	**P**	**03 00 29.1**	**-0.6**
	0.4nm,0.3s,baz=112,slow=9.8,SNR=2.4						
MKAR	**Makanchi Array**	**44.91**	**303**	P	**P**	**03 00 46.5**	**+0.1**
	0.4nm,0.6s,baz=94,slow=9.5,SNR=3.2						
KURBB	**Kurchatov Arra**	**46.88**	**309**	P	**P**	**03 01 02.7**	**+0.9**
	0.7nm,0.4s,baz=83,slow=7.9,SNR=3.4						
ILAR	**Eielson Array**	**50.45**	**32**	P	P	03 01 35.1	+6.1
	0.4nm,0.9s,baz=277,slow=6.0,SNR=3.1						
ASAR	**Alice Springs**	**59.60**	**188**	P	**P**	**03 02 35.5**	**0.0**
	0.2nm,0.7s,baz=13,slow=13,SNR=2.7						

JMA 03 02:55:11.5±0.2**,35°.71N**×**140°.92E,h8**km±1km**,M3.4,1C-1D, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.05**	**262**	⇓P	Pg	02 55 13.2	0.0
CHOJ				S	Sg	02 55 14.7	+0.3
JCN	**Nagara**	**0.65**	**244**	⇑P	Pb	02 55 25.1	-0.1
JCN				S	Sn	02 55 36.2	-1.3
JYT	**Yasato**	**0.78**	**311**	*e*S	Sg	02 55 36.3	-0.5
BSO4	**Boso 4**	**0.86**	**214**	P	Pb	02 55 28.5	-0.1
JHO	**Hitachi**	**0.94**	**343**	P	Pg	02 55 29.8	+0.2
MAT	**Matsushiro**	**2.35**	**292**	P	Pn	02 55 49.5	-0.9
MAT				*e*S	Sn	02 56 20.0	+0.6

*NIED **03** 02:55:00,37°.30N×141°.70E,h8km,Mw3.8 Best double couple: M₀5.39000×10^14 NP1:φs33.00000°,δ29.00000°, λ-113.00000°. NP2:φs239.00000°,δ63.00000°, λ-77.00000°.*
*JMA **03** 02:55:55.1±0.2,37°.31N×141°.67E,h28km±3km,M3.8*
JMA Felt I J1.
*IDC **03** 02:56:04.5±3.3,37°.24N×141°.49E,h90km±30km,mb3.4/15, mb1 3.6/16,mb1mx3.5/46,mbtmp3.7/16,Error ellipse: s-maj=19.4km s-min=18.6km az=45.0*
ISC 03 02:55:54.3±2.0**,37°.31N**±0°.05×**141°.68E**±0°.07**,h7**km±11km**, n32,**σ**1s.05**/33**,mb3.8**/15**,Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**0.64**	**276**	P	**Pg**	**02 56 07.3**	**+0.6**
JFK				S	**Sg**	**02 56 16.0**	**+0.9**
ONAJ	**Iwakimizuishiy**	**0.73**	**254**	P	**Pg**	**02 56 08.5**	**+0.2**
ONAJ				S	**Sg**	**02 56 18.4**	**+0.5**
JMM	**Marumori**	**0.90**	**309**	P	**Pg**	**02 56 11.2**	**-0.3**
JMM				S	**Sg**	**02 56 23.1**	**-0.1**
JFT	**Otama**	**1.09**	**282**	P	**Pb**	**02 56 14.9**	**-0.5**
JFT				S	**Sb**	**02 56 28.8**	**-1.0**
JHO	**Hitachi**	**1.13**	**232**	P	**Pb**	**02 56 14.2**	**-1.9**
JHO				S	**Sb**	**02 56 28.0**	**-2.9**
JIO	**Ouri**	**1.18**	**347**	P	**Pb**	**02 56 15.7**	**-1.2**
JIO				S	**Sb**	**02 56 30.9**	**-1.4**
JOU	**Okura**	**1.33**	**323**	P	**Pn**	**02 56 18.9**	**-0.3**
JOU				S	**Sb**	**02 56 36.2**	**-0.5**
MJAR	**Matsushiro Arr**	**2.88**	**256**	P	**Pb**	**02 56 46.4**	**+0.4**
	5.9nm,0.3s,baz=84,slow=15,SNR=6.7						
MAT	**Matsushiro**	**2.88**	**256**	P	**Pn**	**02 56 42.3**	**+1.7**
MAT				S	**Sn**	**02 57 16.1**	**+0.5**
USRK	**Ussuriysk Ar.**	**10.07**	**316**	P	Pn	02 58 30.9	+12
	0.2nm,0.3s,baz=91,slow=12,SNR=6.0						
KSRS	**Korea Array**	**10.95**	**275**	P	Pn	02 58 42.2	+11
	0.1nm,0.3s,baz=84,slow=14,SNR=4.1						
SONM	**Songino Array**	**27.81**	**303**	P	**P**	**03 01 44.4**	**+0.3**
	0.9nm,0.7s,baz=97,slow=6.2,SNR=5.1						
H11N2	**WAKE ISLAND Hy**	**28.11**	**122**	T	T	03 31 08.5	
	baz=314,slow=76,SNR=51						
H11N1	**WAKE ISLAND Hy**	**28.12**	**122**	T	T	03 31 08.0	
	baz=314,slow=76,SNR=61						
H11N3	**WAKE ISLAND Hy**	**28.13**	**122**	T	T	03 31 11.5	
	baz=314,slow=76,SNR=54						
H11S1	**WAKE ISLAND Hy**	**28.83**	**124**	T	T	03 32 04.7	
	baz=320,slow=74,SNR=59						
H11S2	**WAKE ISLAND Hy**	**28.85**	**124**	T	T	03 32 05.9	
	baz=10.0,slow=74,SNR=53						
ZALV	**Zalesovo Beam**	**41.89**	**312**	P	**P**	**03 03 44.9**	**-0.1**
	0.5nm,0.3s,baz=90,slow=8.9,SNR=5.6						
MKAR	**Makanchi Array**	**44.15**	**302**	P	**P**	**03 04 03.5**	**+0.1**
	1.4nm,0.7s,baz=88,slow=9.9,SNR=14						
KURBB	**Kurchatov Arra**	**46.00**	**308**	P	**P**	**03 04 17.2**	**-0.8**
	2.0nm,0.6s,baz=84,slow=8.2,SNR=13						
ILAR	**Eielson Array**	**49.15**	**32**	P	**P**	**03 04 43.0**	**+0.6**
	1.3nm,0.8s,baz=260,slow=6.0,SNR=11						
BVAR	**Borovoye Array**	**50.55**	**312**	P	**P**	**03 04 52.9**	**-0.2**
	0.4nm,0.6s,baz=86,slow=11,SNR=3.4						
INK	**Inuvik**	**54.05**	**27**	P	**P**	**03 05 20.8**	**+1.9**
	0.6nm,0.6s,baz=284,slow=8.6,SNR=3.7						
WRA	**Warramunga Arr**	**57.36**	**188**	P	**P**	**03 05 42.1**	**-1.1**
	0.9nm,0.6s,baz=4.7,slow=7.5,SNR=4.1						
ASAR	**Alice Springs**	**61.09**	**188**	P	**P**	**03 06 08.2**	**-0.8**
	0.3nm,0.7s,baz=15,slow=6.5,SNR=5.1						
YKA	**Yellowknife Ar**	**63.47**	**30**	P	**P**	**03 06 24.3**	**-0.2**
	0.4nm,0.7s,baz=301,slow=6.5,SNR=7.0						
FINES	**FINESS Array B**	**68.67**	**332**	P	**P**	**03 06 58.0**	**+0.1**
	0.4nm,0.5s,baz=36,slow=7.1,SNR=3.4						
AKASG	**Malin Array Be**	**74.21**	**322**	P	**P**	**03 07 30.9**	**-0.7**
	0.6nm,0.6s,baz=45,slow=6.3,SNR=5.4						
NVAR	**Mina Array Bea**	**74.66**	**53**	P	**P**	**03 07 36.1**	**+1.4**
	0.9nm,0.8s,baz=286,slow=5.5,SNR=4.1						
PDAR	**Pinedale Array**	**77.33**	**46**	P	**P**	**03 07 50.4**	**+0.5**
	0.3nm,0.6s,baz=247,slow=3.1,SNR=4.2						
TXAR	**Lajitas Array**	**89.79**	**53**	P	**P**	**03 08 54.5**	**+0.6**
	0.3nm,0.5s,baz=298,slow=3.0,SNR=6.3						
LPAZ	**La Paz**	**146.37**	**60**	PKPbc	**PKPbc**	**03 15 36.8**	**-0.3**
	1.1nm,0.8s,baz=326,slow=3.7,SNR=3.7						

JMA 03 02:56:30.3±0.1**,38°.83N**×**142°.05E,h54**km±1km**,M3.8, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**0.39**	**310**	P	Pn	02 56 40.8	+0.2
JMK	**Ichinoseki**	**0.66**	**281**	P	Pn	02 56 43.7	0.0
JMK				S	Sn	02 56 53.4	0.0
JIO	**Ouri**	**0.67**	**236**	P	Pn	02 56 43.6	-0.2
JIO				S	Sn	02 56 53.0	-0.5
JOM	**Ohasama**	**0.87**	**318**	P	Pn	02 56 46.5	+0.1
JOM				S	Sn	02 56 58.6	+0.3
JRG	**Rokugo**	**1.24**	**298**	P	Pn	02 56 51.7	+0.4

*IDC **03** 03:03:41.9±1.1,34°.06S×72°.02W,h0km,mb3.9/5, mb1 4.1/7,mb1mx3.8/31,mbtmp3.9/7,ML3.8/2,MS3.4/3, Ms1 3.4/3,ms1mx3.1/21,Error ellipse: s-maj=43.1km s-min=18.9km az=91.0*
*NEIC **03** 03:03:44.0,34°.20S×72°.44W,h11km,mb4.1/4, ML4.5(GUC),After GUC.*
NEIC Felt [II] at Talca.
*GUC **03** 03:03:44.1±0.4,34°.20S×72°.44W,h11km±3km,ML4.5*
ISC 03 03:03:44.2±0.6**,34°.03S**±0°.03×**72°.22W**±0°.07**,h17**km**,n37, **σ**1s.19**/40**,mb4.1**/8**,Near coast of central Chile**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
CHPI	**Pichilemu**	**0.40**	**153**	*i* P	**Pg**	**03 03 52.1**	**-0.4**
CHPI				*i* S	**Sb**	**03 03 58.4**	**-0.4**
NICH	**Los Niches**	**1.27**	**140**	*i* P	**Pb**	**03 04 07.3**	**-0.4**
NICH				*i* S	**Sg**	**03 04 24.8**	**-0.5**
NICH				AML	AML	03 04 30.0	
	comp=N,15μm,0.5s						
TALC	**Talca**	**1.45**	**161**	*i* P	**Pn**	**03 04 08.9**	**-0.8**
TALC				*i* S	**Sn**	**03 04 27.4**	**-0.8**
TALC				AML	AML	03 04 39.0	
	comp=N,17μm,0.0s						
ROC1	**El Roble**	**1.46**	**44**	*e*P	**Pb**	**03 04 11.1**	**+0.1**
CCHI	**Chillan**	**2.57**	**177**	*i* P	**Pn**	**03 04 25.1**	**0.0**
CCHI				*i* S	**Sn**	**03 04 56.3**	**+0.3**
CCHI				AML	AML	03 05 18.9	
	comp=E,3μm,0.7s						
AUSP	**Uspallata**	**2.98**	**54**	*e*P	**Pb**	**03 04 35.1**	**-2.0**
AAGR	**Agrelo**	**2.99**	**73**	*e*P	**Pb**	**03 04 38.4**	**+1.3**
ARCO	**CERRO ARCO**	**3.00**	**68**	*e*P	**Pb**	**03 04 38.3**	**+1.1**
ARCO				IAML		03 05 29.9	
	comp=Z,128nm,0.7s						
ASAL	**Salagasta**	**3.18**	**64**	*e*P	**Pb**	**03 04 40.5**	**+0.2**
RTLS	**Leoncito**	**3.32**	**49**	*e*P	**Pb**	**03 04 40.1**	**-2.7**
RTLS				*e*S	**Sg**	**03 05 30.1**	**-0.8**
RTCV	**Cerro Valdivia**	**3.78**	**56**	*e*P	Pn	03 04 45.2	+3.5
RTCV				*e*S	**Sg**	**03 05 44.0**	**-1.5**
RTLL	**Cerro Villicun**	**4.15**	**51**	*e*P	**Pn**	**03 04 49.9**	**+3.0**
RTLL				*e*S	**Sb**	**03 05 47.2**	**+0.4**
ACAN	**Cantantal**	**4.57**	**69**	*e*P	Pn	03 04 56.6	+4.0
LCO	**Las Campanas**	**5.17**	**15**	*e*Pn	**Pn**	**03 05 00.4**	**-0.7**
AVFE	**Valle Fertil**	**5.25**	**51**	*e*P	**Pn**	**03 05 03.1**	**+1.1**
AVFE				*e*S	Sb	03 06 11.9	-6.5
AGUA	**GUANDACOL**	**5.53**	**36**	*e*P	**Pn**	**03 05 08.5**	**+2.6**
ACLC	**CERRO LA CRUZ**	**6.42**	**46**	*e*P	**Pn**	**03 05 20.1**	**+1.9**
ACLC				IAML		03 06 55.5	
	comp=Z,23nm,0.6s						
PLCA	**Paso Flores**	**6.82**	**169**	Pn	**Pn**	**03 05 23.6**	**0.0**
	comp=Z,0.5nm,0.3s,baz=2.5,slow=11,SNR=18						
PLCA				Lg	Lg	03 07 12.7	
	comp=Z,0.5nm,0.3s,baz=284,slow=18,SNR=3.3						
PLCA				LR	LR	03 08 13.9	
	comp=Z,313nm,18.4s,baz=16,slow=40						
TRQA	**Tornquist**	**9.22**	**119**	*e*Pn	Pn	03 06 01.1	+4.7
CPUP	**Villa Florida**	**14.98**	**63**	LR	LR	03 13 51.3	
	comp=Z,123nm,18.7s,baz=238,slow=41						
LPAZ	**La Paz**	**18.05**	**13**	P	**P**	**03 07 56.0**	**+0.8**
	comp=Z,0.1nm,0.3s,baz=173,slow=9.0,SNR=11						
SIV	**San Ignacio**	**20.58**	**32**	P	**P**	**03 08 20.3**	**-2.1**
	comp=Z,2.0nm,0.6s,baz=147,slow=3.7,SNR=7.6						
ATAH	**Atahualpa**	**27.37**	**347**	LR	LR	03 19 16.1	
	comp=Z,56nm,18.1s,baz=204,slow=34						
BDFB	**Brasilia**	**28.48**	**56**	P	**P**	**03 09 37.6**	**-1.1**
	comp=Z,2.4nm,0.8s,baz=239,slow=8.0,SNR=4.2						
OTAV	**Otavalo**	**34.59**	**349**	*e*P	**P**	**03 10 34.4**	**+1.6**
	comp=Z,1.0nm,0.6s						
SNAA	**Sanae**	**51.62**	**158**	*e*P	**P**	**03 12 49.3**	**-0.1**
TXAR	**Lajitas Array**	**69.69**	**331**	P	**P**	**03 14 53.5**	**+0.4**
	comp=Z,0.2nm,0.7s,baz=159,slow=7.5,SNR=3.9						
MNTX	**Cornudas Mount**	**72.46**	**331**	*e*P	**P**	**03 15 09.4**	**-0.3**
	comp=Z,1.1nm,0.9s						
MAW	**Mawson**	**73.19**	**164**	P	**P**	**03 15 14.2**	**+0.6**
	comp=Z,2.8nm,0.9s,baz=226,slow=9.0,SNR=3.2						
DUG	**Dugway, Tooele**	**82.82**	**330**	*e*P	**P**	**03 16 07.5**	**0.0**
	comp=Z,1.0nm,0.6s						
ELK	**Elko**	**84.31**	**329**	*e*P	**P**	**03 16 16.1**	**+0.8**
	comp=Z,0.8nm,0.6s						
TORD	**Torodi Ar. Bea**	**84.36**	**70**	P	**P**	**03 16 15.9**	**+0.1**
	comp=Z,1.6nm,0.8s,baz=252,slow=3.9,SNR=9.4						
BVAR	**Borovoye Array**	**147.41**	**43**	PKPbc	**PKPab**	**03 23 27.4**	**-1.2**
	comp=Z,1.8nm,0.7s,baz=298,slow=3.2,SNR=8.0						
AAK	**Ala-Archa**	**152.66**	**62**	*e*PKPdf	**PKPdf**	**03 23 33.9**	**+1.0**
AAK				*e*PKPbc	**PKiKP**	**03 23 40.5**	**+0.4**
KURBB	**Kurchatov Arra**	**153.00**	**43**	PKPbc	**PKPbc**	**03 23 40.2**	**+0.1**
	comp=Z,0.9nm,0.9s,baz=309,slow=1.8,SNR=4.2						
KURK	**Kurchatov**	**153.01**	**43**	PKPbc	**PKPbc**	**03 23 40.2**	**0.0**
ZALV	**Zalesovo Beam**	**154.33**	**32**	PKPbc	**PKPbc**	**03 23 42.8**	**-0.2**
	comp=Z,2.0nm,0.7s,baz=282,slow=3.8,SNR=3.9						

CASC 03 03:04:04.6±1.3**,8°.87N**×**84°.09W,h7**km±12km**,MD3.5, 3C-1D,Off coast of Costa Rica**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC

QCR	**Quepos**	**0.56**	**352**	⇓	*e*P	Pg	03 04 15.4	0.0
QCR					*e*S	Sb	03 04 24.2	-0.8
BUS	**Buena Vista**	**0.76**	**25**	⇑	*e*P	Pg	03 04 19.4	+0.2
BUS					*e*S	Sb	03 04 31.0	-0.1
URSC	**Urasca**	**1.01**	**18**	⇑	*e*P	Pg	03 04 23.6	-0.4
URSC					*e*S	Sb	03 04 38.7	+0.6
PBNC	**Punta Burica N**	**1.07**	**117**	⇑	*i*P	Pg	03 04 24.2	-0.9
PBNC					*e*S	Sg	03 04 38.9	-0.1
HDC	**Heredia**	**1.13**	**359**		*e*S	Sg	03 04 41.0	0.0
CGA2	**Cerro Gallo 2**	**1.20**	**342**		*e*P	Pg	03 04 26.5	-1.2
CGA2					*e*S	Sg	03 04 43.1	-0.2
CTCR	**Cotoan**	**1.31**	**89**		*i*P	Pn	03 04 28.4	-1.2
CTCR					*e*S	Sn	03 04 48.0	+0.5
BRU2	**Volcan**	**1.38**	**93**		*e*P	Pn	03 04 29.7	-0.7
BRU2					*e*S	Sb	03 04 48.5	-0.3
TBS2		**1.41**	**93**		*e*S	Sn	03 04 50.0	+0.1
JTS	**JuntasAbangare**	**1.65**	**329**		*e*P	Pn	03 04 33.9	-0.2

NIED ***03*** *03:09:00,36.˚80N×142.˚20E,h5km,Mw5.0 Best double couple: M0 3.63000×10^16 NP1:φ=222.00000°,δ=19.00000°, λ=121.00000°. NP2:φ=9.00000°,δ=74.00000°,λ=80.00000°.*

ISCJB ***03*** *03:09:04.9±0.9,36.˚80N±0.˚02×142.˚15E±0.˚02,h0km±5km, mb5.0/194,MS4.7/64,Error ellipse: s-maj=3.8km s-min=2.3km az=172.8*

BJI ***03*** *03:09:05.3,36.˚82N×142.˚05E,h7km,mb5.0/73,mB5.1/58, Ms5.0/81,Ms7 4.8/74*

IDC ***03*** *03:09:05.9±0.4,36.˚75N×142.˚17E,h0km,mb4.8/42, mb1 4.8/48,mb1mx4.7/62,mbtmp4.7/48,ML4.1/6,MS4.3/32, Ms1 4.3/32,ms1mx4.2/41,Error ellipse: s-maj=12.1km s-min=10.4km az=114.0*

JMA ***03*** *03:09:06.1±0.3,36.˚82N×142.˚25E,h20km,M5.1*

JMA Felt II J1.

NEIC ***03*** *03:09:08.0±2.4,36.˚78N×142.˚08E,h12km±15km,mb5.1/85, Error ellipse: s-maj=5.5km s-min=3.6km az=144.0*

GCMT ***03*** *03:09:08.0±0.3,36.˚87N×142.˚13E,h12km,MW5.0/90, Moment Tensor Solution. s33,c45; s90,c145; Duration: 0 Moment tensor: Scale 10^16Nm; Mrr2.84±.07; Mθθ-0.46±.07; Mφφ-2.38±.06; Mrθ0.58±.26; Mrφ-1.20±.06; Mθφ1.28±.21; Best double couple: M0 3.22100×10^16 NP1:φ=25.00000°,δ=58.00000°,λ=89.00000°. NP2: φ=206.00000°,δ=32.00000°,λ=91.00000°. Principal axes: T 3.1620, Plg77.0000°, Azm293.0000°; N 0.1130, Plg1.0000°, Azm25.0000°; P -3.2790, Plg13.0000°, Azm116.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

MOS ***03*** *03:09:10.6±1.0,37.˚23N×142.˚03E,h25km,mb5.3/76, MS4.9/25 Error ellipse: s-maj=6.5km s-min=3.9km az=108.7*

ISC 03 03:09:08.9±0.4,**36.˚83N**±0.˚03×**142.˚17E**±0.˚03,**h19**km±1km, **h18**km:**pP-P,n805,**σ1§**46**/862,**mb5.0**/199,**MS4.7**/65, **37C-28D,Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**1.13**	**284**	P	**Pn**	**03 09 27.4**	**-2.4**
JFK	**Kawauchi**	**1.17**	**298**	⇑P	**Pn**	**03 09 27.8**	**-2.5**
JFK				*e*S	**Sb**	**03 09 44.4**	**-0.8**
JHO	**Hitachi**	**1.30**	**261**	P	**Pn**	**03 09 30.8**	**-1.3**
JHO				*e*S	**Sn**	**03 09 48.3**	**-0.8**
JMM	**Marumori**	**1.51**	**314**	⇑P	**Pn**	**03 09 33.2**	**-1.7**
JMM				*e*S	**Sn**	**03 09 52.2**	**-1.9**
JFT	**Otama**	**1.62**	**296**	⇑P	**Pn**	**03 09 35.2**	**-1.3**
JFT				*e*S	**Sn**	**03 09 56.5**	**-0.3**
JIO	**Ouri**	**1.75**	**338**	⇑P	**Pn**	**03 09 36.5**	**-1.7**
JIO				*e*S	**Sn**	**03 09 59.3**	**-0.7**
JOU	**Okura**	**1.94**	**323**	P	**Pn**	**03 09 40.6**	**-0.4**
JOU				*e*S	**Sn**	**03 10 05.4**	**+0.5**
JYS	**Shirataka**	**2.17**	**310**	P	**Pn**	**03 09 44.0**	**-0.1**
JYS				*e*S	**Sn**	**03 10 12.4**	**+1.9**
JAG	**Ashikaga**	**2.22**	**260**	P	**Pn**	**03 09 44.0**	**-0.8**
JAG				S	**Sn**	**03 10 11.3**	**-0.4**
MJAR	**Matsushiro Arr**	**3.20**	**266**	Pn	**Pn**	**03 09 58.0**	**-0.2**
	99nm,0.3s,baz=91,slow=13,SNR=837						
MJAR				Sn	**Sb**	**03 10 41.0**	**-2.6**
	19nm,0.3s,baz=136,slow=13,SNR=4.6						
MJAR				LR	LR	03 11 20.2	
	comp=Z,6μm,20.6s,baz=100,slow=42						
MAJO	**Matsushiro**	**3.20**	**266**	*de*P	**Pn**	**03 09 58.4**	**+0.2**
MAJO	**Matsushiro**	**3.20**	**266**	*e*Pn	**Pn**	**03 09 58.6**	**+0.4**
MAT	**Matsushiro**	**3.20**	**266**	P	**Pn**	**03 09 59.6**	**+1.4**
MAT				S	**Sn**	**03 10 40.0**	**+4.2**
JHJ	**Hachijo jima 2**	**4.19**	**209**	Pn	**Pn**	**03 10 10.9**	**-0.9**
	62nm,0.3s,baz=89,slow=21,SNR=14						
JHJ				Sn	**Sn**	**03 10 58.3**	**-2.0**
	78nm,0.3s,baz=101,slow=20,SNR=4.2						
JHJ				LR	LR	03 11 17.4	
	comp=Z,1μm,19.5s,baz=273,slow=32						
INU	**Inuyama**	**4.43**	**252**	*e*Pn	**Pn**	**03 10 16.3**	**+1.2**
ERM	**Erimo**	**5.23**	**8**	⇑*e*P	**Pn**	**03 10 24.9**	**-1.2**
ERM	**Erimo**	**5.23**	**8**	*e*Pn	**Pn**	**03 10 24.7**	**-1.5**
ERM				*e*Sn	**Sn**	**03 11 22.3**	**-3.6**
YUK	**Yuzh-Kuril'sk**	**7.73**	**20**	*e*P	**Pn**	**03 10 57.1**	**-3.3**
YUK				*i* S	**Sn**	**03 12 20.9**	**-6.4**
YUK				pmax	pmax		
	comp=Z,289nm,0.7s						
YUK				pmax	pmax		
	comp=N,129nm,0.2s						
YUK				pmax	pmax		
	comp=E,134nm,0.3s						
YUK				MLR	MLR		
	comp=Z,3μm,16.0s						
SHO	**Shikotan**	**7.88**	**25**	*e*P	**Pn**	**03 10 58.7**	**-3.8**
SHO				*i* S	**Sn**	**03 12 22.6**	**-8.5**
SHO				pmax	pmax		
	comp=N,117nm,0.8s						
SHO				pmax	pmax		
	comp=Z,230nm,0.8s						
SHO				pmax	pmax		
	comp=E,121nm,1.3s						
KUR	**Kuril'sk**	**9.43**	**25**	*e*P	**Pn**	**03 11 22.9**	**-0.8**
KUR				*e*S	**Sn**	**03 13 03.5**	**-5.7**
KUR				pmax	pmax		
	comp=N,32nm,0.8s						
KUR				pmax	pmax		
	comp=Z,73nm,0.8s						
KUR				smax	smax		
	comp=N,123nm,0.6s						
KUR				smax	smax		
	comp=E,99nm,0.6s						
CBIJ	**Chichi jima**	**9.71**	**180**	*e*Pn	**Pn**	**03 11 26.7**	**-0.9**
CBIJ				Sn	**Sn**	**03 13 12.2**	**-3.9**
JCJ	**Chichijima**	**9.71**	**180**	Pn	**Pn**	**03 11 24.6**	**-3.0**
	comp=E,10nm,0.3s,baz=78,slow=23,SNR=9.5						
JCJ				Sn	**Sn**	**03 13 12.2**	**-3.9**
	comp=E,16nm,0.3s,baz=290,slow=22,SNR=5.0						
JNU	**Nakatsue**	**9.97**	**252**	Pn	**Pn**	**03 11 32.0**	**+0.7**
	comp=E,0.9nm,0.3s,baz=47,slow=6.9,SNR=11						
JNU				LR	LR	03 15 23.6	
	comp=E,2μm,18.6s,baz=77,slow=38						
JNU	**Nakatsue**	**9.97**	**252**	*e*Pn	**Pn**	**03 11 32.2**	**+0.9**
YSS	**Yuzh-Sakhalins**	**10.13**	**2**	*e*P	**Pn**	**03 11 31.7**	**-1.6**
YSS	**Yuzh-Sakhalins**	**10.13**	**2**	*e*Pn	**Pn**	**03 11 31.6**	**-1.6**
USRK	**Ussuriysk Ar.**	**10.68**	**317**	Pn	**Pn**	**03 11 44.3**	**+3.4**
	comp=E,0.9nm,0.3s,baz=128,slow=14,SNR=17						
USRK				LR	LR	03 15 31.8	
	comp=E,3μm,18.3s,baz=119,slow=36						
KSRS	**Korea Array**	**11.39**	**277**	Pn	**Pn**	**03 11 54.2**	**+3.7**
	comp=E,0.5nm,0.3s,baz=88,slow=14,SNR=22						
KSRS				LR	LR	03 15 57.6	
	comp=E,3μm,19.0s,baz=86,slow=36						
KS01	**Wonju Array Si**	**11.41**	**278**	*e*Pn	**Pn**	**03 11 55.5**	**+4.6**
KS15	**Wonju Array Si**	**11.42**	**277**	*e*Pn	**Pn**	**03 11 54.7**	**+3.7**
KSAR	**Wonju Array Be**	**11.42**	**277**	P	**Pn**	**03 11 54.3**	**+3.3**
KSAR	**Wonju Array Be**	**11.42**	**277**	Pn	**Pn**	**03 11 54.2**	**+3.3**
MDJ	**Mudanjiang**	**12.30**	**313**	P	**Pn**	**03 12 01.4**	**-1.6**
MDJ				S	**Sn**	**03 14 16.7**	**-2.8**
MDJ				pmax	pmax		
	comp=E,5.0nm,0.5s						
MDJ				pmax	pmax		
	comp=E,44nm,2.8s						
MDJ				LR	LR		
	comp=E,2μm,17.3s						
MDJ				LR	LR		
	comp=E,2μm,16.5s						
MDJ				LR	LR		
	comp=E,2μm,18.6s						
INCN	**Inchon**	**12.41**	**278**	*e*Pn	**Pn**	**03 12 02.9**	**-1.8**
HABR	**Khabarovsk**	**12.75**	**338**	*e*P	**Pn**	**03 12 07.1**	**-2.0**
HABR				*e*S	**Sn**	**03 14 28.0**	**-2.5**
HABR				pmax	pmax		
	comp=Z,49nm,2.0s						
HABR				MLR	MLR		
	comp=Z,2μm,15.0s						
TYV	**Tymovskoe**	**14.03**	**1**	*e*P	**Pn**	**03 12 24.2**	**-2.4**
TYV				pmax	pmax		
	comp=Z,8.0nm,0.6s						
TYV				MLR	MLR		
	comp=N,3μm,15.0s						
TYV				MLR	MLR		
	comp=Z,4μm,16.0s						
CN2	**Changchun**	**14.52**	**304**	*e*P	**Pn**	**03 12 32.4**	**-0.9**
CN2				*e*pP	P	03 12 39.4	-0.4
CN2				*e*S	**Sn**	**03 15 11.8**	**-1.9**
CN2				pmax	pmax		
	comp=Z,20nm,1.2s						
CN2				pmax	pmax		
	comp=Z,390nm,6.0s						
CN2				LR	LR		
	comp=Z,2μm,14.0s						
CN2				LR	LR		
	comp=Z,2μm,14.0s						
CN2				LR	LR		
	comp=Z,2μm,15.0s						
KLR	**Kul'dur**	**14.53**	**332**	Pn	**Pn**	**03 12 32.6**	**-0.8**
	comp=Z,0.4nm,0.3s,baz=136,slow=11,SNR=17						
KLR				LR	LR	03 17 55.7	
	comp=Z,2μm,19.4s,baz=128,slow=36						
SNY	**Shenyang**	**15.22**	**295**	⇓P	**Pn**	**03 12 42.6**	**-0.2**
SNY				S	**Sn**	**03 15 32.7**	**+1.9**
SNY				pmax	pmax		
	comp=Z,15nm,1.2s						
SNY				pmax	pmax		
	comp=Z,500nm,6.1s						
SNY				LR	LR		
	comp=Z,2μm,13.9s						
SNY				LR	LR		
	comp=Z,4μm,17.3s						
SNY				LR	LR		
	comp=Z,7μm,14.0s						
JOW	**Kunigami**	**15.44**	**234**	*e*Pn	**Pn**	**03 12 44.2**	**-1.5**
	comp=Z,26nm,1.0s						
DL2	**Dalian**	**16.35**	**284**	⇑P	**Pn**	**03 12 57.1**	**-0.3**
DL2				S	**Sn**	**03 15 51.4**	**-6.9**
DL2				pmax	pmax		
	comp=Z,48nm,0.7s						
DL2				pmax	pmax		
	comp=Z,630nm,8.8s						
DL2				LR	LR		
	comp=Z,2μm,10.8s						
DL2				LR	LR		
	comp=Z,3μm,12.8s						
DL2				LR	LR		
	comp=Z,3μm,13.0s						
NKL	**Nikolayevsk**	**16.35**	**357**	*e*P	**Pn**	**03 12 53.0**	**-4.3**
NKL				pmax	pmax		
	comp=N,27nm,1.1s						
NKL				pmax	pmax		
	comp=Z,33nm,1.1s						
NKL				MLR	MLR		
	comp=N,1μm,14.0s						
NKL				MLR	MLR		
	comp=Z,2μm,14.0s						
SSE	**Sheshan**	**18.31**	**258**	P	**Pn**	**03 13 20.5**	**-1.3**
SSE				S	**Sn**	**03 16 44.9**	**-0.9**
SSE				pmax	pmax		
	comp=Z,17nm,0.8s						
SSE				pmax	pmax		
	comp=Z,280nm,3.4s						
SSE				LR	LR		
	comp=Z,2μm,12.5s						
SSE				LR	LR		
	comp=Z,2μm,12.5s						
SSE				LR	LR		
	comp=Z,3μm,12.5s						
PETK	**Petropavlovsk-**	**19.57**	**29**	P	**Pn**	**03 13 37.0**	**+0.1**
	comp=Z,0.3nm,0.3s,baz=206,slow=9.9,SNR=6.8						
PETK				LR	LR	03 21 44.3	
	comp=Z,477nm,18.7s,baz=211,slow=39						
NJ2	**Nanjing**	**19.80**	**263**	*e*P	**P**	**03 13 39.2**	**+1.0**
NJ2				pP	**sP**	**03 13 46.1**	**+0.2**
NJ2				sP	pP	03 13 51.2	+7.7
NJ2				S	**Sn**	**03 17 23.1**	**+1.4**
NJ2				pmax	pmax		
	comp=Z,14nm,0.5s						
NJ2				pmax	pmax		
	comp=Z,420nm,10.3s						
NJ2				LR	LR		
	comp=Z,2μm,15.6s						
NJ2				LR	LR		
	comp=Z,3μm,14.9s						
NJ2				LR	LR		
	comp=Z,2μm,15.0s						
PET	**Petropavlovsk**	**19.88**	**30**	*e*P	**Pn**	**03 13 43.9**	**+3.3**
PET				pmax	pmax		
	comp=Z,100nm,15.7s						
PET				MLR	MLR		
	comp=Z,800nm,16.0s						
TIA	**Tai'an**	**20.13**	**276**	⇓P	**P**	**03 13 40.3**	**-1.5**
TIA				pmax	pmax		
	comp=Z,30nm,1.4s						
TIA				LR	LR		
	comp=Z,2μm,13.7s						
TIA				LR	LR		
	comp=Z,2μm,16.7s						
TIA				LR	LR		
	comp=Z,3μm,17.2s						
BJI	**Beijing**	**20.59**	**287**	P	**P**	**03 13 45.4**	**-1.3**
BJI				S	**S**	**03 17 34.4**	**-1.7**
BJI				pmax	pmax		
	comp=Z,33nm,2.0s						
BJI				pmax	pmax		
	comp=Z,180nm,3.6s						
BJI				LR	LR		
	comp=Z,1μm,12.1s						
BJI				LR	LR		
	comp=Z,2μm,10.8s						
BJI				LR	LR		
	comp=Z,680nm,16.8s						
YHNB	**Yeheng**	**21.54**	**242**	*e*P	**P**	**03 13 54.7**	**-2.5**
	comp=Z,12nm,0.7s						
SSLB	**Suanglung**	**22.40**	**240**	*e*P	**P**	**03 14 04.8**	**-1.6**
	comp=Z,17nm,0.8s						
YULB	**Yu-li**	**22.42**	**239**	*e*P	**P**	**03 14 02.8**	**-3.8**
	comp=Z,11nm,0.8s						
TPUB	**Ta-pu**	**22.94**	**240**	*e*P	**P**	**03 14 08.8**	**-3.2**
	comp=Z,24nm,0.6s						
CLNS	**Chul'man**	**23.12**	**335**	*e*P	**P**	**03 14 09.6**	**-4.0**
CLNS				pmax	pmax		
	comp=E,6.0nm,0.7s						
CLNS				pmax	pmax		
	comp=Z,17nm,1.1s						
CLNS				pmax	pmax		
	comp=N,18nm,1.2s						
CLNS				MLR	MLR		
	comp=N,1μm,12.0s						
CLNS				MLR	MLR		
	comp=Z,2μm,14.0s						
CLNS				MLR	MLR		
	comp=E,1μm,12.0s						
GUMO	**Guam**	**23.27**	**173**	LR	LR	03 26 24.8	
	comp=E,101nm,19.4s,baz=314,slow=45						
QZH	**Quanzhou**	**23.38**	**246**	⇑P	**P**	**03 14 18.3**	**+1.8**
QZH				S	**S**	**03 18 22.0**	**-6.6**
QZH				LR	LR		
	comp=E,1μm,13.9s						
QZH				LR	LR		
	comp=E,3μm,13.7s						
QZH				LR	LR		
	comp=E,2μm,16.0s						
MA2	**Magadan**	**23.43**	**11**	P	**P**	**03 14 16.4**	**-0.3**
	comp=E,50nm,0.8s,baz=216,slow=8.6,SNR=52						
MA2				LR	LR	03 23 14.3	
	comp=E,205nm,21.2s,baz=226,slow=36						
MA2	**Magadan**	**23.43**	**11**	*e*P	**P**	**03 14 16.2**	**-0.5**
MA2				pmax	pmax		
	comp=Z,224nm,0.8s						
MA2	**Magadan**	**23.43**	**11**	*e*P	**P**	**03 14 16.2**	**-0.5**
	comp=Z,224nm,0.8s						
WHN	**Wuhan**	**23.93**	**263**	P	**P**	**03 14 21.1**	**-0.7**
WHN				S	**S**	**03 18 38.6**	**+1.2**
WHN				pmax	pmax		
	comp=Z,66nm,0.6s						
WHN				pmax	pmax		
	comp=Z,870nm,4.4s						
WHN				LR	LR		
	comp=Z,2μm,9.9s						
WHN				LR	LR		
	comp=Z,5μm,11.6s						
WHN				LR	LR		
	comp=Z,5μm,12.3s						
HHC	**Hu-ho-hao-te**	**24.11**	**289**	*e*P	**P**	**03 14 22.6**	**-1.0**
HHC				PP	**PnPn**	**03 14 59.4**	**+6.7**
HHC				S	**S**	**03 18 36.4**	**-4.0**
HHC				pmax	pmax		
	comp=Z,26nm,0.9s						
HHC				pmax	pmax		
	comp=Z,230nm,8.0s						
HHC				LR	LR		
	comp=Z,1μm,11.0s						
HHC				LR	LR		
	comp=Z,1μm,10.5s						
HHC				LR	LR		
	comp=Z,980nm,10.6s						
CIT	**Chita**	**25.24**	**316**	*e*P	**P**	**03 14 33.8**	**+0.1**
CIT				*e*		03 14 42.2	
CIT				*e*		03 15 08.0	
CIT				pmax	pmax		
	comp=Z,384nm,2.1s						
YAK	**Yakutsk**	**26.40**	**347**	P	**P**	**03 14 44.3**	**+0.4**
	comp=Z,7.3nm,0.6s,baz=334,slow=21,SNR=11						
YAK				LR	LR	03 25 05.7	
	comp=Z,548nm,19.1s,baz=164,slow=36						
YAK	**Yakutsk**	**26.40**	**347**	*c i*P	**P**	**03 14 43.5**	**-0.5**
YAK				*e*		03 15 17.8	
YAK				*e*		03 18 09.8	
YAK				*e*S	**S**	**03 19 12.2**	**-4.0**
YAK				*e*SS	**SnSn**	**03 20 17.0**	**-0.3**
YAK				*e*		03 25 35.0	
YAK				pmax	pmax		
	comp=Z,84nm,0.9s						
YAK				pmax	pmax		
	comp=E,10.0nm,1.0s						
YAK				pmax	pmax		
	comp=N,25nm,0.9s						
YAK				pmax	pmax		
	comp=Z,62nm,1.2s						
YAK				pmax	pmax		
	comp=N,67nm,1.0s						
YAK				pmax	pmax		
	comp=E,17nm,0.9s						
YAK				smax	smax		
	comp=E,263nm,4.6s						
YAK				smax	smax		
	comp=N,299nm,4.2s						
YAK				MLR	MLR		
	comp=Z,2μm,13.0s						
YAK				MLR	MLR		
	comp=E,542nm,13.0s						
YAK				MLR	MLR		
	comp=N,1μm,12.0s						
YAK	**Yakutsk**	**26.40**	**347**	*e*P	**P**	**03 14 44.0**	**+0.1**
	comp=N,90nm,0.7s						
SEY	**Seymchan**	**26.88**	**10**	P	**P**	**03 14 49.9**	**+1.7**
	comp=N,27nm,0.8s,baz=196,slow=7.1,SNR=46						
SEY	**Seymchan**	**26.88**	**10**	⇑*e*P	**P**	**03 14 49.4**	**+1.2**
XAN	**Xi'an**	**27.16**	**274**	P	**P**	**03 14 50.6**	**-0.5**
XAN				pP	sP	03 14 59.1	-0.1
XAN				PP	**PnPn**	**03 15 35.4**	**+1.0**
XAN				pmax	pmax		
	comp=N,29nm,1.8s						
XAN				pmax	pmax		
	comp=N,260nm,6.9s						
XAN				LR	LR		
	comp=N,1μm,15.1s						
XAN				LR	LR		
	comp=N,620nm,17.2s						
XAN				LR	LR		
	comp=N,1μm,11.7s						
H11N2	**WAKE ISLAND Hy**	**27.52**	**121**	T	T	03 44 00.0	
	baz=314,slow=75,SNR=302						
H11N1	**WAKE ISLAND Hy**	**27.53**	**122**	T	T	03 43 53.2	
	baz=314,slow=75,SNR=280						
H11N3	**WAKE ISLAND Hy**	**27.54**	**121**	T	T	03 44 01.3	
	baz=314,slow=75,SNR=249						
ULN	**Ulaanbaatar**	**27.97**	**304**	*c i*P	**P**	**03 14 58.7**	**+0.3**
ULN				pmax	pmax		
	comp=Z,34nm,1.1s						
ULN				MLR	MLR		
	comp=Z,1μm,16.0s						
ULN	**Ulaanbaatar**	**27.97**	**304**	*e*P	**P**	**03 14 58.2**	**-0.2**
	comp=Z,40nm,1.2s						
ULN	**Ulaanbaatar**	**27.97**	**304**	P	**P**	**03 14 59.1**	**+0.7**
	SNR=22						
ULN	**Ulaanbaatar**	**27.97**	**304**	P	**P**	**03 14 59.1**	**+0.7**
	SNR=22						
ULN				P	**P**	**03 14 59.1**	**+0.7**
	SNR=22						
BOD	**Bodaibo**	**28.02**	**327**	*e*P	**P**	**03 14 58.1**	**-0.5**
BOD				pmax	pmax		
	comp=Z,34nm,1.8s						
H11S1	**WAKE ISLAND Hy**	**28.24**	**124**	T	T	03 44 56.0	
	baz=316,slow=76,SNR=190						
H11S3	**WAKE ISLAND Hy**	**28.24**	**124**	T	T	03 44 49.3	
	baz=316,slow=76,SNR=192						
H11S2	**WAKE ISLAND Hy**	**28.26**	**124**	T	T	03 45 06.1	
	baz=316,slow=76,SNR=151						
GZH	**Guangzhou**	**28.36**	**249**	P	P	03 14 57.2	-4.7
SONA1	**Songino Array**	**28.40**	**304**	*e*P	**P**	**03 15 02.1**	**-0.1**
SONM	**Songino Array**	**28.40**	**304**	P	**P**	**03 15 02.6**	**+0.4**
	comp=Z,36nm,0.8s,baz=102,slow=8.2,SNR=140						
SONM				LR	LR	03 26 24.7	
	comp=Z,543nm,20.4s,baz=110,slow=36						
IRK	**Irkutsk**	**30.68**	**312**	*e*P	**P**	**03 15 20.7**	**-1.6**
IRK				pmax	pmax		
	comp=Z,65nm,1.9s						
LZH	**Lanzhou**	**30.70**	**280**	*e*P	**P**	**03 15 22.8**	**0.0**
LZH				pP	sP	03 15 30.6	-0.2
LZH				sP	pP	03 15 34.7	+6.2
LZH				PP	**PnPn**	**03 16 22.0**	**-0.5**
LZH				*e*S	S	03 20 14.0	-11
LZH				sS	sS	03 20 31.0	-3.1
LZH				pmax	pmax		
	comp=Z,37nm,1.0s						
LZH				pmax	pmax		
	comp=Z,210nm,5.7s						
LZH				LR	LR		
	comp=Z,1μm,14.8s						
LZH				LR	LR		
	comp=Z,3μm,15.7s						
LZH				LR	LR		
	comp=Z,3μm,16.0s						
ZAK	**Zakamensk**	**30.87**	**308**	*e*P	**P**	**03 15 24.0**	**0.0**
ZAK				pmax	pmax		
	comp=Z,29nm,1.2s						
TLY	**Talaya**	**30.92**	**311**	P	**P**	**03 15 25.2**	**+0.8**
	comp=Z,6.7nm,0.7s,baz=112,slow=5.2,SNR=14						
TLY	**Talaya**	**30.92**	**311**	*e*P	**P**	**03 15 24.8**	**+0.4**
TLY				*e*		03 16 35.6	
TLY				*e*SS	SS	03 22 00.6	-39
TLY				pmax	pmax		
	comp=Z,39nm,1.4s						
TLY				MLR	MLR		
	comp=Z,969nm,15.0s						
GYA	**Guiyang**	**31.79**	**261**	⇑*i*P	**P**	**03 15 31.1**	**-1.3**
GYA				pP	sP	03 15 42.8	+2.4
GYA				PcP	**PcP**	**03 18 26.2**	**+2.8**
GYA				S	**S**	**03 20 40.4**	**-1.4**
GYA				sS	sS	03 20 55.3	+4.1
GYA				ScP	**ScP**	**03 22 05.8**	**+0.1**
GYA				SS	**SnSn**	**03 22 30.0**	**+0.6**
GYA				ScS	**ScS**	**03 26 02.2**	**-2.0**
GYA				pmax	pmax		
	comp=Z,50nm,0.9s						
GYA				pmax	pmax		
	comp=Z,140nm,6.2s						
GYA				LR	LR		
	comp=Z,580nm,18.3s						
GYA				LR	LR		
	comp=Z,520nm,17.8s						
GYA				LR	LR		
	comp=Z,590nm,18.0s						
CD2	**Chengdu**	**32.28**	**271**	P	**P**	**03 15 35.3**	**-1.3**
CD2				pP	sP	03 15 44.3	-0.3
CD2				PP	**PP**	**03 16 48.1**	**-1.4**
CD2				PcP	**PcP**	**03 18 23.8**	**-0.8**
CD2				S	**S**	**03 20 46.4**	**-2.9**
CD2				sS	sS	03 21 01.9	+3.2
CD2				pmax	pmax		
	comp=Z,30nm,1.1s						
CD2				pmax	pmax		
	comp=Z,240nm,10.8s						
CD2				LR	LR		

CD2 LR LR
comp=Z,2µm,14.4s
MOY **Mondy** 32.53 310 *e*P **P** 03 15 39.0 +0.3
MOY pmax pmax
comp=Z,47nm,2.4s
GTA **Gaotai** 33.20 288 *e*P **P** 03 15 44.7 0.0
GTA pP sP 03 15 51.7 -1.0
GTA sP pP 03 15 55.0 +4.6
GTA PcP **PcP** **03 18 28.9 +1.8**
GTA S **S** **03 21 01.5 -2.1**
GTA sS sS 03 21 14.2 +1.1
GTA PcS **PcS** **03 22 14.2 +1.5**
GTA SS **SnSn** **03 23 03.3 -0.2**
GTA pmax pmax
comp=Z,12nm,0.8s
GTA pmax pmax
comp=Z,230nm,5.7s
GTA LR LR
comp=Z,1µm,14.9s
GTA LR LR
comp=Z,800nm,16.4s
GTA LR LR
comp=Z,810nm,11.8s
DAV **Davao City (W)** 33.26 211 LR LR 03 28 59.2
comp=Z,261nm,20.0s,baz=1.0,slow=36
QIZ **Qiongzhong** 33.40 247 P **P** **03 15 47.4 +1.0**
QIZ S **S** **03 21 06.8 0.0**
QIZ pmax pmax
comp=Z,18nm,1.1s
QIZ LR LR
comp=Z,770nm,14.0s
QIZ LR LR
comp=Z,610nm,13.4s
QIZ LR LR
comp=Z,800nm,13.3s
BILL **Bilibino** 34.05 16⇑ *e*P **P** **03 15 51.4 -0.2**
BILL *e* 03 15 58.7
BILL *e* 03 17 03.0
BILL *e*PPP PPP 03 17 15.7
BILL pmax pmax
comp=Z,49nm,1.6s
BILL MLR MLR
comp=Z,437nm,17.0s
BILL **Bilibino** 34.05 16 *e*P **P** **03 15 51.6 0.0**
comp=Z,60nm,1.5s
KMI **Kunming** 35.53 262 P **P** **03 16 05.0 -0.1**
KMI sP sP 03 16 18.1 +4.9
KMI PP **PP** **03 17 26.1 +0.3**
KMI S **S** **03 21 38.1 -1.9**
KMI pmax pmax
comp=Z,150nm,3.1s
KMI LR LR
comp=Z,650nm,17.5s
KMI LR LR
comp=Z,400nm,15.9s
KMI LR LR
comp=Z,700nm,18.1s
TIXI **Tiksi** 35.56 353*c* *i*P **P** **03 16 04.1 -0.5**
TIXI pmax pmax
comp=Z,29nm,1.7s
TIXI **Tiksi** 35.56 353 *e*P **P** **03 16 04.2 -0.3**
comp=Z,29nm,1.5s
KRAR **Krasnoyarsk** 38.03 316⇑ *i*P **P** **03 16 25.4 -0.3**
KRAR pmax pmax
comp=Z,49nm,0.8s
MYLDM **Lahad Datu** 38.24 220 *e*P **P** **03 16 30.0 +2.1**
comp=Z,41nm,1.1s
FAKI **Fak Fak** 40.61 195 P **P** **03 16 47.3 -0.4**
comp=Z,24nm,1.3s
MRSI **Marisa** 40.73 212 P **P** **03 16 48.5 -0.2**
comp=Z,33nm,1.1s,comp=Z,2µm
LOEI **Loei** 40.79 253 P **P** **03 16 46.9 -2.3**
comp=Z,17nm,1.5s,comp=Z,243nm
PHRA **Phrae** 41.01 255 P **P** **03 16 51.8 +0.8**
comp=Z,561nm,1.6s,comp=Z,41µm
UTTA **Uttaradit** 41.20 254 P P 03 16 57.7 +5.2
comp=Z,4.4nm,0.7s
CHAI **Chaiyaphum** 41.21 250 P **P** **03 16 53.4 +0.8**
comp=Z,9.3nm,0.9s
LAMP **Lampang** 41.46 256 P P 03 17 01.0 +6.3
comp=Z,6.1nm,0.7s
WMQ **Urumqi** 41.47 297 P **P** **03 16 56.3 +1.7**
WMQ PP **PnPn** **03 18 35.0 -0.1**
WMQ S **S** **03 23 12.8 +3.7**
WMQ SS **SS** **03 26 10.1 -3.3**
WMQ pmax pmax
comp=Z,18nm,1.4s
WMQ pmax pmax
comp=Z,280nm,4.2s
WMQ LR LR
comp=Z,660nm,13.4s
WMQ LR LR
comp=Z,410nm,14.6s
WMQ LR LR
comp=Z,250nm,23.2s
SANI **Sanana** 41.51 205 P P 03 17 07.3 +12
PBKT **Sadao Pong** 41.57 252 P **P** **03 16 56.7 +1.1**
comp=Z,22nm,1.3s,comp=Z,1µm
CMMT **Chiang Mai** 41.83 257 P **P** **03 16 58.6 +0.8**
comp=Z,13nm,1.4s,comp=Z,503nm
CHTO **Chiang Mai** 41.83 257 P **P** **03 16 58.7 +0.9**
comp=Z,56nm,0.8s
CHTO **Chiang Mai** 41.83 257 *e*P **P** **03 16 57.1 -0.7**
CHTO pmax pmax
comp=Z,9.0nm,0.8s
CHTO **Chiang Mai** 41.83 257 *e*P **P** **03 16 57.1 -0.7**
comp=Z,8.7nm,0.8s
CHTO **Chiang Mai** 41.83 257 P **P** **03 16 58.0 +0.3**
SNR=6.7
CHTO **Chiang Mai** 41.83 257 P **P** **03 16 58.0 +0.3**
SNR=6.7
CMAR **Chiang Mai Arr** 42.03 256 P **P** **03 16 59.4 -0.1**
comp=Z,2.6nm,0.6s,baz=47,slow=5.9,SNR=17
CMAR LR LR 03 36 04.9
comp=Z,374nm,18.8s,baz=55,slow=38
CM01 **Chiang Mai Arr** 42.04 256 *e*P **P** **03 17 00.5 +1.1**
SUKH **Sukhothai** 42.06 254 P **P** **03 17 00.7 +1.1**
comp=Z,5.5nm,0.8s,comp=Z,147nm
APSI **Ampana** 42.10 212 P **P** **03 17 00.2 +0.3**
comp=Z,104nm,0.8s,comp=Z,1µm
ZAA0 **Zalesovo Array** 42.50 313 *e*P **P** **03 17 02.6 -0.2**
ZALV **Zalesovo Beam** 42.50 313 P **P** **03 17 02.8 0.0**
comp=Z,19nm,0.8s,baz=94,slow=6.8,SNR=38
ZALV PcP **PcP** **03 18 55.2 0.0**
comp=Z,8.3nm,0.8s,baz=94,slow=2.1,SNR=5.3
ZALV LR LR 03 35 22.4
comp=Z,809nm,18.4s,baz=70,slow=37
NAYO **Nakonayok** 42.70 249 P **P** **03 17 07.3 +2.5**
comp=Z,12nm,1.3s
CHBT **CHBT** 42.95 247 P **P** **03 17 09.3 +2.5**
comp=Z,53nm,1.2s,comp=Z,3µm
MHMT **Maesarieng** 42.98 257 P **P** **03 17 09.3 +2.2**
comp=Z,15nm,1.3s,comp=Z,838nm
UTHA **Uthaitani** 43.35 252 P P 03 17 20.8 +11
NVS **Novosibirsk** 43.42 314⇑ *i*P **P** **03 17 10.2 0.0**
NVS *e* 03 18 59.7
NVS pmax pmax
comp=N,9.0nm,1.7s
NVS pmax pmax
comp=E,47nm,1.7s
NVS pmax pmax
comp=Z,75nm,1.7s
NRIK **Noril'sk** 43.70 335 P **P** **03 17 13.1 +0.7**
comp=Z,3.6nm,0.3s,baz=117,slow=7.4,SNR=17
NRIK PKiKP **PKiKP** **03 25 55.7 -4.8**
comp=Z,2.9nm,0.6s,baz=142,slow=6.1,SNR=4.5
NRIK LR LR 03 36 20.6
comp=Z,786nm,18.6s,baz=106,slow=37
SHL **Shillong** 44.01 270 *e*P **P** **03 17 14.0 -1.6**
SRDT **SRDT** 44.33 251 P P 03 17 27.2 +9.2
comp=Z,55nm,1.4s
MK01 **Makanchi Array** 44.74 302 *e*P **P** **03 17 20.8 -0.1**
MK31 **Makanchi Array** 44.74 302 *e*P **P** **03 17 21.0 0.0**
MK31 **Makanchi Array** 44.74 302 *e*P **P** **03 17 21.0 0.0**
MKAR **Makanchi Array** 44.74 302 P **P** **03 17 20.9 -0.1**
comp=Z,9.5nm,0.8s,baz=87,slow=9.2,SNR=78
MKAR PcP **PcP** **03 19 03.0 0.0**
comp=Z,3.4nm,0.9s,baz=64,slow=2.8,SNR=2.7
MKAR LR LR 03 36 11.6
comp=Z,341nm,21.1s,baz=84,slow=36
MKAR **Makanchi Array** 44.74 302*ce*P **P** **03 17 20.8 -0.2**
MKAR pmax pmax
comp=Z,10.0nm,0.8s
PHET **Kaeng Krachan** 44.85 249 P **P** **03 17 24.1 +1.9**
comp=Z,11nm,0.8s
MAKZ **Makanchi** 44.95 302 *e*P **P** **03 17 22.8 +0.1**
MAKZ pmax pmax
comp=Z,21nm,1.1s
MAKZ **Makanchi** 44.95 302 *e*P **P** **03 17 22.8 +0.1**
comp=Z,21nm,1.1s
OHAK **Old Harbor** 46.49 43 *e*P **P** **03 17 33.1 -1.5**
comp=Z,180nm,1.4s
KURK **Kurchatov** 46.53 308 *e*P **P** **03 17 34.5 -0.5**
KURK pmax pmax
comp=Z,50nm,0.8s
KURK **Kurchatov** 46.53 308 *e*P **P** **03 17 34.5 -0.5**
comp=Z,50nm,0.8s
KURK **Kurchatov** 46.53 308 P **P** **03 17 35.2 +0.2**
SNR=31
KURK **Kurchatov** 46.53 308 P **P** **03 17 35.2 +0.2**
SNR=31
TAPN **Taplejung** 46.56 275 *e*P **P** **03 17 36.7 +0.8**
KURBB **Kurchatov Arra** 46.60 308 P **P** **03 17 35.4 -0.2**
comp=Z,33nm,0.8s,baz=83,slow=8.1,SNR=86
KDAK **Kodiak Island** 46.85 42 *i*P **P** **03 17 37.8 +0.4**
PPLA **Purkeypile** 46.99 35 *e*P **P** **03 17 38.2 -0.4**
comp=Z,50nm,1.3s
SPU **Mount Spurr** 47.03 37 *e*P **P** **03 17 40.7 +1.8**
ODAN **Odare** 47.03 274 *e*P **P** **03 17 39.8 +0.2**
comp=Z,34nm,0.5s
CAST **Castle Rocks** 47.05 34 *e*P **P** **03 17 40.5 +1.5**
comp=Z,88nm,2.0s
PDGK **Podgornoye** 47.41 298 P **P** **03 17 41.8 -0.2**
PDGK pmax pmax
comp=Z,49nm,1.5s
BPAW **Bear Paw Mtn.** 47.56 33 *e*P **P** **03 17 41.4 -1.6**
comp=Z,48nm,1.8s
KTH **Kantishna Hill** 47.58 34 *e*P **P** **03 17 43.1 0.0**
comp=Z,31nm,1.1s
RAMN **Ramite** 47.62 275 *e*P **P** **03 17 44.3 +0.1**
comp=Z,68nm,0.7s
MLY **Manley** 47.70 32 *e*P **P** **03 17 45.5 +1.5**
comp=Z,21nm,1.0s
GUN **Gumba** 47.78 276 *e*P **P** **03 17 46.7 +1.2**
comp=Z,152nm,0.9s
TRF **Thorofare Moun** 47.86 34 *e*P **P** **03 17 47.1 +1.7**
comp=Z,27nm,1.3s
COLD **Coldfoot** 48.04 29 *e*P **P** **03 17 46.7 +0.2**
comp=Z,6.9nm,0.9s
SURT **Suratani** 48.05 246 P **P** **03 17 49.5 +2.3**
comp=Z,6.8nm,1.4s
PKIN **Phulchoki** 48.31 276 *e*P **P** **03 17 50.0 +0.5**
KKN **Kakani** 48.31 276 *e*P **P** **03 17 49.6 +0.1**
comp=Z,76nm,0.9s
SEW **Seward** 48.34 39 *e*P **P** **03 17 48.9 -0.1**
comp=Z,22nm,0.9s
PMR **Palmer** 48.43 37 *e*P **P** **03 17 49.7 +0.1**
PMR pmax pmax
comp=Z,29nm,1.2s
PMR **Palmer** 48.43 37 *e*P **P** **03 17 49.7 +0.1**
comp=Z,29nm,1.2s
MCK **McKinley** 48.47 34 *e*P **P** **03 17 49.6 -0.4**
MCK pmax pmax
comp=Z,14nm,0.9s
MCK **McKinley** 48.47 34 *e*P **P** **03 17 49.5 -0.4**
comp=Z,14nm,0.9s
RND **Reindeer** 48.51 34 *e*P **P** **03 17 50.9 +0.6**
RND pmax pmax
comp=Z,25nm,1.0s
RND **Reindeer** 48.51 34 *e*P **P** **03 17 50.9 +0.6**
comp=Z,25nm,1.0s
DMN **Daman** 48.53 276 *e*P **P** **03 17 52.0 +0.8**
GKN **Gorkha** 48.73 277 *e*P **P** **03 17 52.8 +0.2**
comp=Z,95nm,0.8s
MDM **Murphy Dome** 48.77 32 *e*P **P** **03 17 53.4 +1.2**
comp=Z,33nm,1.0s
SML **Sawmill** 48.80 36 *e*P **P** **03 17 52.5 -0.1**
SML pmax pmax
comp=Z,21nm,0.8s
SML **Sawmill** 48.80 36 *e*P **P** **03 17 52.5 -0.1**
comp=Z,21nm,0.8s
WRH **Wood River Hil** 48.83 33 *e*P **P** **03 17 53.5 +0.8**
comp=Z,9.8nm,0.8s
COLA **College** 48.93 32⇑ *e*P **P** **03 17 54.5 +1.1**
COLA pmax pmax
comp=Z,34nm,2.2s
COLA **College** 48.93 32 *e*P **P** **03 17 51.1 -2.3**
comp=Z,15nm,0.9s
CCB **Clear Creek Bu** 48.95 32 *e*P **P** **03 17 54.4 +0.8**
comp=Z,14nm,1.4s
HNR **Honiara** 48.95 156 LR LR 03 36 03.9
comp=Z,190nm,20.4s,baz=12,slow=33
DHY **Denali Highway** 49.19 35 *e*P **P** **03 17 57.4 +1.7**
comp=Z,14nm,1.1s
AAA **Alma-Ata** 49.21 299 *e*P **P** **03 18 00.2 +4.2**
AAA pmax pmax
comp=Z,300nm,3.5s
AAA MLR MLR
comp=Z,2µm,18.0s
KULM **Kulim** 49.24 241 *e*P **P** **03 17 54.1 -2.3**
comp=Z,5.3nm,0.7s
SCM **Sheep Creek Mo** 49.27 36 *e*P **P** **03 17 54.6 -1.6**
SCM pmax pmax
comp=Z,31nm,1.0s
SCM **Sheep Creek Mo** 49.27 36 *e*P **P** **03 17 54.6 -1.6**
comp=Z,31nm,1.0s
HDA **Harding Lake** 49.33 33 *e*P **P** **03 17 57.0 +0.5**
comp=Z,19nm,1.0s
IL1 **Eielson Array** 49.34 32 *e*P **P** **03 17 56.5 -0.1**
ILAR **Eielson Array** 49.34 32 P **P** **03 17 56.8 +0.1**
comp=Z,6.6nm,0.8s,baz=261,slow=6.0,SNR=92
ILAR LR LR 03 39 10.4
comp=Z,106nm,21.5s,baz=258,slow=36
ILB **Eielson Array** 49.34 32 *e*P **P** **03 17 57.1 +0.5**
IPM **Ipoh** 49.56 240 *e*P **P** **03 17 57.5 -1.4**
KOLN **Koldanda** 49.66 277 *e*P **P** **03 18 00.3 +0.5**
KLU **Klutina** 49.97 37 *e*P **P** **03 18 02.9 +1.3**
comp=Z,31nm,1.2s
FYU **Fort Yukon** 49.98 30 *e*P **P** **03 18 03.7 +2.3**
comp=Z,92nm,1.6s
PYUN **Piuthan** 50.00 278 *e*P **P** **03 18 02.6 +0.2**
comp=Z,211nm,1.2s
PAX **Paxson** 50.06 35 *e*P **P** **03 18 03.9 +1.7**
PAX pmax pmax
comp=Z,50nm,2.0s
PAX **Paxson** 50.06 35 *e*P **P** **03 18 03.9 +1.7**
comp=Z,50nm,2.0s
DIV **Divide** 50.07 37 *e*P **P** **03 18 02.8 +0.5**
comp=Z,36nm,1.1s
TKM2 **Tokmak 2** 50.26 299 *e*P **P** **03 18 05.0 +0.8**
TKM2 pmax pmax
comp=Z,46nm,1.4s
TKM2 **Tokmak 2** 50.26 299 *e*P **P** **03 18 05.0 +0.8**
comp=Z,46nm,1.4s
COEN **Coen** 50.52 179 *e*P **P** **03 18 05.7 -0.3**
comp=Z,21nm,1.2s
DOT **Dot Lake** 50.64 34 *e*P **P** **03 18 04.8 -1.8**
comp=Z,24nm,0.8s
MENT **Mentasta** 50.86 35 *e*P **P** **03 18 09.0 +0.8**
comp=Z,13nm,0.9s
VOSK **Vostochnaya** 50.87 312 *e*P **P** **03 18 08.2 -0.2**
VOSK pmax pmax
comp=Z,21nm,0.8s
VOSK **Vostochnaya** 50.87 312 *e*P **P** **03 18 08.2 -0.2**
comp=Z,21nm,0.8s
CHKZ **Chkalovo** 50.89 313 P **P** **03 18 08.2 -0.3**
CHKZ pmax pmax
comp=Z,47nm,1.4s
FRU **Bishkek** 50.97 299 *e*P **P** **03 18 09.0 -0.4**
FRU pmax pmax
comp=Z,50nm,2.1s
OTUK **Ortayu** 51.03 306 P **P** **03 18 09.6 -0.1**
OTUK pmax pmax
comp=Z,47nm,1.3s
KSH **Kashi** 51.04 294 P P 03 18 15.1 +5.1
KSH *e*PP PP 03 20 14.5 +8.1
KSH S **S** **03 25 31.2 +4.6**
KSH SS **SS** **03 29 03.7 +2.3**
KSH pmax pmax
comp=Z,180nm,3.0s
KSH LR LR
comp=Z,1µm,15.1s
KSH LR LR
comp=Z,1µm,16.2s
KSH LR LR
comp=Z,2µm,15.6s
AAK **Ala-Archa** 51.12 299 P **P** **03 18 09.5 -1.1**
comp=Z,2.7nm,0.5s,baz=116,slow=5.3,SNR=14
AAK **Ala-Archa** 51.12 299*c* *i*P **P** **03 18 10.7 +0.1**
AAK pmax pmax
comp=Z,20nm,1.2s
AAK **Ala-Archa** 51.12 299 *e*P **P** **03 18 09.5 -1.1**
comp=Z,11nm,1.1s
BVAR **Borovoye Array** 51.16 313 P **P** **03 18 10.5 0.0**
comp=Z,7.0nm,0.7s,baz=82,slow=11,SNR=28
BVAR PcP **PcP** **03 19 25.6 -0.2**
comp=Z,5.9nm,0.8s,baz=64,slow=3.4,SNR=4.6
BRVK **Borovoye** 51.21 313*c* *i*P **P** **03 18 10.7 -0.3**
BRVK pmax pmax
comp=Z,35nm,1.7s
BRVK **Borovoye** 51.21 313 *e*P **P** **03 18 10.6 -0.3**
comp=Z,32nm,1.3s
BRVK **Borovoye** 51.21 313 P **P** **03 18 11.4 +0.5**
SNR=14
BRVK **Borovoye** 51.21 313 P **P** **03 18 11.4 +0.5**
SNR=14
BRVK P **P** **03 18 11.4 +0.5**
SNR=14
EKS2 **Erkin-Say** 51.61 299 *e*P **P** **03 18 13.2 -1.1**
EKS2 pmax pmax
comp=Z,7.0nm,0.9s
EKS2 **Erkin-Say** 51.61 299 *e*P **P** **03 18 13.2 -1.1**
comp=Z,6.7nm,0.9s
EGAK **Eagle** 51.79 32 *e*P **P** **03 18 14.8 -0.3**
comp=Z,9.1nm,0.9s
ZRNK **Zerenda** 51.99 313 P **P** **03 18 16.6 -0.2**
ZRNK pmax pmax
comp=Z,40nm,1.5s
PSI **Prapat** 52.21 240 P **P** **03 18 20.6 +1.6**
comp=Z,6.1nm,0.7s,baz=52,slow=3.8,SNR=4.4
MNAS **Manas** 52.56 299 P **P** **03 18 21.5 +0.1**
MNAS pmax pmax
comp=Z,25nm,1.0s
DAWY **Dawson** 52.64 33 *e*P **P** **03 18 22.7 +1.2**
SFK **Sufi-Kurgan** 52.67 296 P **P** **03 18 22.2 -0.1**
SFK pmax pmax
comp=Z,45nm,1.7s
KK31 **Karatay Array** 53.75 300 P **P** **03 18 29.6 -0.3**
KK31 pmax pmax
comp=Z,13nm,1.0s
KKAR **Karatay Array** 53.75 300 *e*P **P** **03 18 29.9 0.0**
KKAR **Karatay Array** 53.75 300 *e*P **P** **03 18 29.9 0.0**
GSI **Gunungsitoli** 54.22 240 P **P** **03 18 33.8 +0.2**
comp=Z,56nm,1.2s
GSI **Gunungsitoli** 54.22 240 *e*P **P** **03 18 32.5 -1.2**
comp=Z,52nm,1.0s
MDSI **Maura Dua** 54.26 229 P **P** **03 18 34.1 +0.2**
comp=Z,26nm,1.8s,comp=Z,2µm
INK **Inuvik** 54.29 27 P **P** **03 18 34.3 +0.9**
comp=Z,8.8nm,0.9s,baz=299,slow=6.5,SNR=58
INK **Inuvik** 54.29 27 *e*P **P** **03 18 34.5 +1.1**
INK pmax pmax
comp=Z,13nm,0.9s
INK **Inuvik** 54.29 27 *e*P **P** **03 18 34.5 +1.1**
comp=Z,13nm,0.9s
SVE **Sverdlovsk** 55.70 319‖ *e*P **P** **03 18 44.1 +0.3**
SVE pmax pmax
comp=Z,46nm,1.2s
SVE MLR MLR
comp=Z,1µm,16.0s
FITZ **Fitzroy Crossi** 56.82 199 *e*P **P** **03 18 51.4 -0.8**
comp=Z,27nm,1.3s
SOKR **Solikamsk** 56.85 323*c* *i*P **P** **03 18 50.7 -1.2**
SOKR pmax pmax
comp=Z,14nm,0.9s
ARU **Arti** 56.91 319 P **P** **03 18 52.9 +0.5**
comp=Z,20nm,0.7s,baz=73,slow=3.5,SNR=34
ARU **Arti** 56.91 319*c* *i*P **P** **03 18 52.4 -0.1**
ARU **03 19 48.3**
ARU **03 20 59.9**
ARU S **S** **03 26 45.5 +0.3**
ARU SS **SS** **03 30 31.9 -1.1**
ARU pmax pmax
comp=Z,69nm,1.7s
ARU MLR MLR
comp=Z,676nm,15.0s
ARU **Arti** 56.91 319 *e*P **P** **03 18 52.6 +0.2**
comp=Z,32nm,0.8s
WRAB **Tennant Creek** 56.94 189⇑ *i*P **P** **03 18 53.1 +0.1**
WRAB pmax pmax
comp=Z,28nm,0.8s
WRAB **Tennant Creek** 56.94 189 *e*P **P** **03 18 51.5 -1.4**
comp=Z,10nm,0.8s
WB2 **Warramunga Arr** 56.95 189 *e*P **P** **03 18 53.2 +0.2**
comp=Z,16nm,1.0s
WB2 *ep*P **sP** **03 19 03.2 +1.9**
WRA **Warramunga Arr** 56.95 189 P **P** **03 18 51.7 -1.3**
comp=Z,11nm,0.7s,baz=6.3,slow=7.3,SNR=36
WRA PcP **PcP** **03 19 48.6 +0.4**
comp=Z,5.0nm,0.8s,baz=7.0,slow=7.5,SNR=2.7
KBL **Kabul** 58.05 291 *e*P **P** **03 19 01.1 0.0**
KBL pmax pmax
comp=Z,35nm,1.3s
KBL **Kabul** 58.05 291 *e*P **P** **03 19 01.1 0.0**
comp=Z,35nm,1.3s
DLBC **Dease Lake** 58.41 38 *e*P **P** **03 19 03.9 +0.8**
comp=Z,18nm,1.1s
AB31 **Akbulak array** 58.53 310 *i*P **P** **03 19 03.7 -0.3**
AB31 pmax pmax
comp=Z,13nm,0.8s
ABKAR **Akbulak array** 58.53 310 *e*P **P** **03 19 03.7 -0.3**
HYB **Hyderabad** 58.80 269 *i*P **P** **03 19 07.0 +0.7**
AKTO **Aktyubinsk** 59.26 312 P **P** **03 19 09.0 0.0**
comp=Z,12nm,0.9s,baz=71,slow=6.1,SNR=20
AKTO PcP **PcP** **03 19 56.7 -0.4**
comp=Z,3.2nm,0.7s,baz=107,slow=1.7,SNR=3.6
AS01 **Alice Springs** 60.67 189 *e*P **P** **03 19 17.3 -1.5**
AS31 **Alice Springs** 60.67 189 *e*P **P** **03 19 18.1 -0.8**
comp=Z,2.1nm,0.6s
ASAR **Alice Springs** 60.67 189 P **P** **03 19 17.9 -1.0**
comp=Z,6.1nm,0.8s,baz=9.6,slow=5.7,SNR=38
ASAR LR LR 03 44 32.0
comp=Z,85nm,20.5s,baz=9.5,slow=35
SPITS **Spitsbergen Ar** 60.84 349 P **P** **03 19 20.2 +0.8**
comp=Z,8.7nm,0.9s,baz=94,slow=11,SNR=6.2
MBWA **Marble Bar** 61.44 204 *e*P **P** **03 19 23.6 -0.6**
comp=Z,10nm,0.6s
POO **Poona** 61.98 273 *e*P **P** **03 19 25.0 -3.1**
RES **Resolute Bay** 62.65 15 *e*P **P** **03 19 31.3 -0.3**
RES pmax pmax
comp=Z,20nm,1.2s
RES **Resolute Bay** 62.65 15 *e*P **P** **03 19 31.3 -0.3**
comp=Z,20nm,1.2s
TMCR **Tamitsa** 63.21 332 *e*P **P** **03 19 34.6 -0.9**
TMCR pmax pmax
comp=Z,19nm,0.9s
YKW3 **Yellowknife Ar** 63.64 30 *e*P **P** **03 19 38.5 +0.1**
comp=Z,28nm,1.6s
YKA **Yellowknife Ar** 63.68 30 P **P** **03 19 38.8 +0.2**
comp=Z,3.5nm,0.7s,baz=301,slow=6.8,SNR=39
YKB5 **Yellowknife Ar** 63.68 30 *e*P **P** **03 19 38.1 -0.5**
KLMR **Klimovskoe** 64.25 328 *e*P **P** **03 19 40.5 -1.9**
KLMR *e**PP **sP** **03 19 49.9 -0.8**
KLMR *e* 03 20 13.8
KLMR *e* 03 22 00.9
KLMR pmax pmax
comp=Z,39nm,1.4s
ARCES **ARCESS Array B** 64.40 340 P **P** **03 19 43.8 +0.5**
comp=Z,6.6nm,1.1s,baz=52,slow=7.5,SNR=17
ARCES LR LR 03 52 59.1
comp=Z,406nm,18.8s,baz=40,slow=41
GEYT **Alibeck** 64.46 299 P **P** **03 19 44.5 +0.2**
comp=Z,7.1nm,0.7s,baz=35,slow=3.6,SNR=10
GEYT LR LR 03 51 12.1
comp=Z,216nm,18.9s,baz=90,slow=39
DAG **Danmarks Havn** 66.03 355 *i*P **P** **03 19 53.5 -0.2**
comp=Z,38nm,1.7s
DAG **Danmarks Havn** 66.03 355 *e*P **P** **03 19 53.5 -0.2**
DAG pmax pmax
comp=Z,150nm,1.7s
MOS **Moscow** 67.77 324 *e*P **P** **03 20 03.5 -1.6**
MOS *e* 03 20 31.2
MOS pmax pmax
comp=Z,115nm,2.0s
VRH **Novokhopyorsk** 68.14 318 *e*P **P** **03 20 07.6 +0.1**
VRH *e**PP **sP** **03 20 15.2 -0.6**
VRH pmax pmax
comp=Z,10.0nm,1.0s
VRH MLR MLR
comp=Z,600nm,12.0s
STKA **Stephens Creek** 68.35 181 P **P** **03 20 08.5 -0.4**
comp=Z,1.3nm,0.5s,baz=321,slow=6.9,SNR=4.5
B08A **Colville Reser** 68.55 45 *e*P **P** **03 20 12.1 +1.9**
B08A *ep*P **sP** **03 20 19.1 +0.5**
OBN **Obninsk** 68.62 324 P **P** **03 20 10.8 +0.3**
comp=Z,6.9nm,0.3s,baz=107,slow=4.0,SNR=7.1
OBN **Obninsk** 68.62 324*de*P **P** **03 20 11.3 +0.9**
OBN pmax pmax

comp=Z,71nm,2.0s
OBN MLR MLR
comp=Z,282nm,14.0s
PUL Pulkovo 68.67 330⇓ *i* P **P 03 20 11.8 +1.1**
PUL pmax pmax
comp=Z,33nm,0.7s
H04A Detroit Lake 68.78 50 *e* P **P 03 20 14.0 +2.3**
comp=Z,32nm,1.1s
LPSR Galich'ya Gora 68.84 320 *e* P **P 03 20 12.1 +0.2**
LPSR *e**PP **sP 03 20 20.5 +0.3**
LPSR pmax pmax
comp=Z,20nm,1.2s
LPSR MLR MLR
comp=Z,890nm,16.0s
G05D Wamic, OR 69.02 49 P **P 03 20 15.4 +2.2**
baz=302
I04A Tendick Farm, 69.10 51 P **P 03 20 14.9 +1.1**
baz=301
L02D Cave Junction, 69.20 52 P **P 03 20 15.5 +1.2**
baz=301
FIA1 FINESS Array S 69.27 333 *e* P **P 03 20 14.9 +0.5**
comp=Z,37nm,0.9s
FINES FINESS Array B 69.28 333 P **P 03 20 14.5 +0.1**
comp=Z,10nm,0.8s,baz=34,slow=8.6,SNR=34
FINES LR LR 03 52 12.2
comp=Z,254nm,19.3s,baz=40,slow=37
I05D Terrebonne, OR 69.47 50 P **P 03 20 17.0 +1.0**
baz=302
VSR Storozhevoye 69.48 319 *e* P **P 03 20 15.8 -0.1**
VSR *e**PP **sP 03 20 23.9 -0.3**
VSR pmax pmax
comp=Z,40nm,1.3s
VSR MLR MLR
comp=Z,880nm,15.0s
BBOO Buckleboo 69.52 185 *e* P **P 03 20 15.4 -0.8**
comp=Z,12nm,1.0s
NEW Newport 69.85 44 P **P 03 20 18.5 +0.2**
baz=303
NEW Newport 69.85 44 *e* P **P 03 20 20.2 +1.8**
NEW pmax pmax
comp=Z,38nm,1.8s
NEW Newport 69.85 44 *e* P **P 03 20 20.1 +1.8**
comp=Z,38nm,1.8s
J05D Fort Rock, OR 70.09 50 P **P 03 20 21.1 +1.1**
baz=302
M04C Macdoel 70.52 52 P **P 03 20 23.4 +0.8**
baz=302
K05A Summer Lake 70.61 51 *e* P **P 03 20 25.2 +1.9**
K05A *e*pP **sP 03 20 32.9 +1.3**
GOF Gofitskoye 70.68 312⇑ *e* P **P 03 20 24.5 +1.1**
GOF pmax pmax
comp=Z,35nm,0.9s
SUMG Summit 70.89 0 *i* P **P 03 20 26.1 +1.4**
comp=Z,13nm,1.0s
SUMG Summit 70.89 0 *e* P **P 03 20 24.6 -0.1**
SUMG pmax pmax
comp=Z,20nm,1.2s
SUMG Summit 70.89 0 *e* P **P 03 20 24.6 -0.1**
comp=Z,20nm,1.2s
VSU Vasula 70.94 330 P **P 03 20 26.2 +1.6**
VSU pmax pmax
comp=Z,105nm,2.5s
WALA Waterton Lakes 71.18 42 *e* P **P 03 20 27.5 +1.0**
NCK Nalchik 71.20 311 P **P 03 20 27.7 +1.1**
NCK pmax pmax
comp=Z,42nm,1.9s
GUDG Gudauri 71.21 309 P **P 03 20 28.6 +1.6**
O03D Paynes Creek 71.33 53 P **P 03 20 27.0 -0.5**
baz=303
ZEI Tsey 71.39 310 *e* P **P 03 20 27.2 -0.8**
ZEI pmax pmax
comp=Z,19nm,0.9s
MOD Modoc Plateau 71.42 51 *e* P **P 03 20 28.6 +0.5**
comp=Z,8.6nm,1.1s
TBLG Delisi 71.45 308 P **P 03 20 29.3 +1.1**
KVAR Kislovodsk Arr 71.49 311 P **P 03 20 29.5 +1.1**
comp=Z,16nm,0.8s,baz=9.6,slow=6.0,SNR=11
KBZ Khabaz 71.49 311 P **P 03 20 28.8 +0.5**
comp=Z,15nm,0.9s,baz=36,slow=5.3,SNR=17
KBZ LR LR 03 56 27.2
comp=Z,491nm,18.3s,baz=50,slow=40
KIV Kislovodsk 71.50 311 *i* P **P 03 20 29.2 +0.7**
SNR=7.5
KIV Kislovodsk 71.50 311 *e* P **P 03 20 28.7 +0.2**
KIV pmax pmax
comp=Z,44nm,1.1s
KIV MLR MLR
comp=Z,423nm,18.0s
KIV Kislovodsk 71.50 311 *e* P **P 03 20 29.1 +0.6**
comp=Z,60nm,1.2s
KIV Kislovodsk 71.50 311 P **P 03 20 30.0 +1.5**
SNR=8.3
KIV Kislovodsk 71.50 311 P **P 03 20 30.0 +1.5**
SNR=8.3
BMO Blue Mountains 71.62 47 *e* P **P 03 20 28.8 -0.4**
BMO pmax pmax
comp=Z,16nm,1.2s
BMO Blue Mountains 71.62 47 *e* P **P 03 20 28.8 -0.4**
comp=Z,16nm,1.2s
BIDO Bidbid 71.74 286 P **P 03 20 33.0 +2.8**
SNR=6.0
BIDO Bidbid 71.74 286 P **P 03 20 33.0 +2.8**
SNR=6.0
ONI Oni 71.78 310 P **P 03 20 30.9 +0.7**
ONI Oni 71.78 310 P **P 03 20 30.9 +0.7**
BANOM Banah 71.85 289 *i* P **P 03 20 31.2 +0.4**
SNR=8.0
BANOM Banah 71.85 289 P **P 03 20 33.7 +2.9**
SNR=6.0
BANOM Banah 71.85 289 P **P 03 20 33.7 +2.9**
SNR=6.0
BANOM P **P 03 20 33.7 +2.9**
SNR=6.0
NEY Neytrino 71.86 311⇑ *e* P **P 03 20 31.7 +0.9**
NEY pmax pmax
comp=Z,3.0nm,1.2s
SWMT Swartz Lake 72.02 44 *e* P **P 03 20 33.0 +1.4**
GNI Garni 72.31 307⇓ *e* P **P 03 20 35.1 +1.6**
GNI pmax pmax
comp=Z,87nm,1.2s
GNI Garni 72.31 307 *e* P **P 03 20 34.0 +0.4**
comp=Z,41nm,1.4s
SCO Scoresbysund 72.38 354 *i* P **P 03 20 34.1 +1.0**
SCO Scoresbysund 72.38 354 *i* P **P 03 20 34.1 +1.0**
AKH Akhalkalaki 72.41 309 P **P 03 20 35.1 +1.0**
AKH Akhalkalaki 72.41 309 P **P 03 20 35.1 +1.0**
MSO Missoula 72.44 44 P **P 03 20 35.0 +0.8**
baz=305
MSO Missoula 72.44 44 *e* P **P 03 20 35.5 +1.4**
comp=Z,17nm,1.2s
UOSS Minazif 72.45 288 *e* P **P 03 20 34.6 +0.2**
comp=Z,1.0nm,0.8s
HATD Hatta, Dubai 72.57 288 *i* P **P 03 20 36.0 +0.9**
SNR=7.5
HATD Hatta, Dubai 72.57 288 P **P 03 20 37.1 +2.0**
SNR=11
HATD Hatta, Dubai 72.57 288 P **P 03 20 37.1 +2.0**
SNR=11
HATD P **P 03 20 37.1 +2.0**
SNR=11
ASHO Ashiyiah 72.70 288 *i* P **P 03 20 36.1 +0.2**
SNR=8.7
ASHO Ashiyiah 72.70 288 P **P 03 20 37.7 +1.8**
SNR=10
ASHO Ashiyiah 72.70 288 P **P 03 20 37.7 +1.8**
SNR=10
EPOS Posof 72.83 309 *i* P **P 03 20 38.7 +2.1**
NAZ Nazwa, Dubai 72.84 289 P **P 03 20 39.0 +2.3**
SNR=5.6
NAZ Nazwa, Dubai 72.84 289 P **P 03 20 39.0 +2.3**
SNR=5.6
NAZ P **P 03 20 39.0 +2.3**
SNR=5.6
MICGM Minsk 73.00 326 *e* P **P 03 20 38.0 +0.9**
MICGM *e*LR LR 03 55 25.0
MNK Minsk 73.00 326 *e* P **P 03 20 38.0 +0.9**
ARQ Araqi 73.08 287 P **P 03 20 40.5 +2.4**
SNR=5.3
ARQ Araqi 73.08 287 P **P 03 20 40.5 +2.4**
SNR=5.3
NACGM Naroch 73.23 327 *e* P **P 03 20 38.0 -0.4**
NACGM *e*LR LR 03 53 14.0
ASUD Al Ashush, Dub 73.29 288 *i* P **P 03 20 39.6 +0.3**
SNR=6.2
MFID Camas Ranch 73.31 48 *e* P **P 03 20 40.3 +0.9**
comp=Z,39nm,1.6s
SOC Sochi 73.48 312 *e* P **P 03 20 38.0 -2.2**

SOC *e*PPP PPP 03 25 02.4
SOC *e*S **S 03 30 05.5 -3.3**
SOC *e*SS **SS 03 34 45.2 -5.5**
SOC pmax pmax
comp=Z,26nm,0.9s
SOC MLR MLR
comp=Z,467nm,17.0s
CMB Columbia Colle 73.49 55 *e* P **P 03 20 39.4 -1.0**
CMB Columbia Colle 73.49 55 *e* P **P 03 20 39.4 -1.0**
FFC Flin Flon 73.55 33 *e* P **P 03 20 40.7 +0.4**
FFC pmax pmax
comp=Z,18nm,0.9s
FFC Flin Flon 73.55 33 *e* P **P 03 20 40.7 +0.4**
comp=Z,18nm,0.9s
FCC Fort Churchill 73.91 27 *e* P **P 03 20 42.5 +0.1**
FCC Fort Churchill 73.91 27 *e* P **P 03 20 42.5 +0.1**
DLMT Dillon 74.06 45 *e* P **P 03 20 45.1 +1.4**
HLID Hailey 74.07 47 P **P 03 20 43.9 0.0**
baz=306
HLID Hailey 74.07 47 *e* P **P 03 20 45.2 +1.4**
comp=Z,13nm,1.3s
ANN Anapa 74.11 314⇑ *e* P **P 03 20 42.5 -1.3**
ANN *e**PP **sP 03 20 51.5 -0.7**
ANN pmax pmax
comp=Z,73nm,1.4s
ANN MLR MLR
comp=Z,402nm,17.0s
BOZ Bozeman (W) 74.43 44 P **P 03 20 46.2 +0.3**
baz=307
BOZ Bozeman (W) 74.43 44 *e* P **P 03 20 47.0 +1.1**
BOZ pmax pmax
comp=Z,21nm,1.1s
BOZ Bozeman (W) 74.43 44 *e* P **P 03 20 47.0 +1.1**
comp=Z,21nm,1.1s
HFS Hagfors 74.52 336 P **P 03 20 46.6 +0.7**
comp=Z,9.4nm,0.8s,baz=23,slow=4.8,SNR=20
NB2 NORSAR Subarra 74.61 338 P **P 03 20 46.6 +0.1**
comp=Z,23nm,1.1s,baz=39,slow=5.9
NB2 NORSAR Subarra 74.61 338 P **P 03 20 46.6 +0.1**
baz=39,slow=5.9
NOA NORSAR Array B 74.61 338 P **P 03 20 46.6 +0.1**
comp=Z,6.3nm,0.8s,baz=39,slow=5.8,SNR=17
NOA LR LR 03 56 21.0
comp=Z,284nm,19.5s,baz=35,slow=38
NVAR Mina Array Bea 74.62 53 P **P 03 20 48.4 +1.1**
comp=Z,3.4nm,0.8s,baz=286,slow=5.9,SNR=16
AKASG Malin Array Be 74.83 323 P **P 03 20 47.8 -0.1**
comp=Z,4.0nm,0.4s,baz=46,slow=5.9,SNR=60
AKASG LR LR 03 55 18.3
comp=Z,268nm,19.4s,baz=50,slow=37
AKBB Malin Array Si 74.83 323 *e* P **P 03 20 47.9 0.0**
AKBB Malin Array Si 74.83 323 *e* P **P 03 20 47.9 0.0**
KIEV Kiev 74.84 323⇓ *i* P **P 03 20 47.4 -0.5**
KIEV pmax pmax
comp=Z,44nm,1.7s
KIEV Kiev 74.84 323 *e* P **P 03 20 47.8 -0.1**
AK11 Malin Array Si 74.87 323 *e* P **P 03 20 48.0 -0.2**
ELK Elko 75.22 50 *e* P **P 03 20 52.3 +1.6**
ELK Elko 75.22 50 *e* P **P 03 20 52.3 +1.6**
RCTC Rector, Farmer 75.22 56 P **P 03 20 51.0 +0.6**
baz=305
SUW Suwalki 75.38 328 *e* P **P 03 20 52.5 +1.5**
SUW Suwalki 75.38 328 *e* P **P 03 20 52.5 +1.5**
YNR Norris Junctio 75.53 45 *e* P **P 03 20 56.0 +3.6**
VES Vestal, Richgr 75.59 56 P **P 03 20 52.2 -0.4**
baz=305
YFT Old Faithful 75.61 45 *e* P **P 03 20 57.3 +4.5**
KELT Kelkit 75.77 310 *i* P **P 03 20 54.6 +0.8**
H17A Grant Village 75.79 45 P **P 03 20 54.6 +0.7**
baz=308
H17A Grant Village 75.79 45 *e* P **P 03 20 56.3 +2.4**
IMW Indian Meadow 75.89 46 *e* P **P 03 20 55.9 +1.3**
SIM Simferopol' 75.90 316 *e* P **P 03 20 54.8 +0.6**
SIM *e*S **S 03 30 37.0 +1.3**
SIM pmax pmax
comp=Z,20nm,0.9s
SIM MLR MLR
comp=N,180nm,16.6s
FLWY Flagg Ranch 75.91 45 *e* P **P 03 20 57.0 +2.5**
RLMT Red Lodge 76.07 44 P **P 03 20 56.3 +0.8**
baz=308
RLMT Red Lodge 76.07 44 *e* P **P 03 20 56.5 +1.1**
MOOW Moose Ponds 76.09 46 *e* P **P 03 20 57.4 +1.8**
ISA Isabella, Lake 76.10 56 P **P 03 20 56.7 +1.1**
baz=306
LOHW Long Hollow 76.25 46 *e* P **P 03 20 58.3 +1.8**
SNOW Snow King Moun 76.26 46 *e* P **P 03 20 57.0 +0.4**
REDW Red Top Meadow 76.26 46 *e* P **P 03 20 56.4 -0.2**
SCZ2 Santa Cruz Isl 76.28 58 P **P 03 20 58.6 +2.0**
baz=305
DAC Darwin (Calif) 76.33 55 *e* P **P 03 20 59.4 +2.4**
DAC *e**PP **sP 03 21 05.6 +0.2**
DAC Darwin (Calif) 76.33 55 *e* P **P 03 20 59.4 +2.4**
DAC *e*pP **sP 03 21 05.6 +0.2**
R11A Troy Canyon, C 76.41 52 P **P 03 20 58.2 +0.8**
baz=306
R11A Troy Canyon, C 76.41 52 *e* P **P 03 20 58.5 +1.0**
AHID Auburn Hatcher 76.48 46 *e* P **P 03 20 59.9 +2.1**
MPMC Manual Prospec 76.52 55 P **P 03 20 58.9 +0.8**
baz=306
DGMT Dagmar 76.62 39 P **P 03 20 58.4 +0.2**
baz=311
DGMT Dagmar 76.62 39 *e* P **P 03 20 59.6 +1.4**
EDW2 Edwards Air Fo 76.87 56 P **P 03 21 01.1 +1.1**
baz=306
HWUT Hardware Ranch 76.92 48 *e* P **P 03 21 00.1 -0.2**
DUG Dugway, Tooele 77.03 49 P **P 03 21 02.0 +1.1**
baz=307,SNR=7.4
DUG Dugway, Tooele 77.03 49 *e* P **P 03 21 01.0 +0.1**
DUG Dugway, Tooele 77.03 49 *e* P **P 03 21 01.0 +0.1**
CUKAN kangal_SIVAS 77.37 310 *i* P **P 03 21 04.0 +1.2**
CTU Camp Tracy 77.37 48 *e* P **P 03 21 05.2 +2.4**
BW06 Boulder Array 77.38 46 P **P 03 21 02.9 0.0**
baz=309
BW06 Boulder Array 77.38 46 *e* P **P 03 21 03.6 +0.7**
PD31 Pinedale Array 77.38 46 *e* P **P 03 21 03.6 +0.7**
PDAR Pinedale Array 77.38 46 P **P 03 21 03.5 +0.6**
comp=N,2.8nm,0.8s,baz=260,slow=1.4,SNR=17
PSUT Pine Spring 77.39 51 *e* P **P 03 21 04.4 +1.4**
A26A Wade Farm, Ken 77.41 38 P **P 03 21 03.3 +0.6**
baz=312
BFSC Mount Baldy Ra 77.47 57 P **P 03 21 02.8 -0.6**
baz=306
JLU Jordanelle 77.61 48 *e* P **P 03 21 05.7 +1.5**
NLU North Lily Min 77.62 49 *e* P **P 03 21 07.3 +3.0**
BOYT Boyabat 77.63 313 *i* P **P 03 21 05.3 +1.3**
AKCD Akcadag 77.70 309 *i* P **P 03 21 06.1 +1.4**
LVV L'vov 77.90 324 *e* P **P 03 21 06.5 +1.1**
LVV MLR MLR
comp=Z,600nm,14.0s
LVV MLR MLR
comp=N,300nm,15.0s
LVV MLR MLR
comp=E,400nm,14.0s
BSD Bornholm Skovb 77.91 332 *i* P **P 03 21 05.4 +0.1**
BSD Bornholm Skovb 77.91 332 *e* P **P 03 21 05.4 +0.1**
BORG Borgarnes 77.93 353 P **P 03 21 07.0 +1.8**
comp=E,22nm,1.1s,baz=106,slow=14,SNR=4.2
BORG Borgarnes 77.93 353 *e* P **P 03 21 07.6 +2.4**
BEL Belsk 77.95 327 *e* P **P 03 21 07.5 +2.0**
BEL Belsk 77.95 327 *e* P **P 03 21 07.5 +2.0**
SURC SANLIURFA_SURC 78.12 307 *i* P **P 03 21 07.7 +0.8**
MURC Murrieta 78.16 57 P **P 03 21 08.3 +1.2**
baz=306
A28A Rude Farm, Bot 78.25 37 P **P 03 21 08.0 +0.6**
baz=314
COAL Corum-Alaca 78.30 312 *i* P **P 03 21 08.6 +0.7**
E25A Miller Ranch, 78.33 40 P **P 03 21 08.0 +0.1**
baz=312
COP Copenhagen 78.38 334 *i* P **P 03 21 08.9 +1.1**
comp=E,40nm,0.9s
COP Copenhagen 78.38 334 *e* P **P 03 21 08.9 +1.1**
COP pmax pmax
comp=Z,40nm,0.9s
MSU Marysvale 78.45 50 *e* P **P 03 21 10.8 +1.9**
MSU Marysvale 78.45 50 *e* P **P 03 21 10.8 +1.9**
GMRC Granite Mounta 78.48 55 P **P 03 21 10.0 +1.0**
baz=307
GZT Gaziantep 78.50 308 *i* P **P 03 21 10.5 +1.4**
PRAR RASCA 78.52 321⇓ *i* P P 03 21 15.4 +6.6
KWP Kalwaria Pacla 78.65 325 *e* P **P 03 21 11.9 +2.4**
KWP Kalwaria Pacla 78.65 325 *e* P **P 03 21 11.9 +2.4**
F25A Bowman 78.68 40 P **P 03 21 10.8 +1.0**
baz=312

LCMT Little Creek M 78.70 52 *e* P **P 03 21 11.9 +1.8**
P17A Butcher Ranch, 78.73 49 *e* P **P 03 21 13.4 +3.0**
A29A Manning Farm, 78.74 36 P **P 03 21 10.2 +0.2**
baz=314
E26A Carlson Angus 78.83 40 P **P 03 21 12.4 +1.8**
baz=312
BUR08 Bucovina Ar. S 78.83 322 *e* P **P 03 21 11.3 +0.6**
BURAR Bucovina Array 78.84 322⇓ *i* P **P 03 21 11.1 +0.3**
TESR Tescani 78.88 321⇓ *i* P **P 03 21 11.9 +1.1**
P18A Preston Nutter 78.93 49 *e* P **P 03 21 12.9 +2.2**
AYKD Aykdinkavak 78.94 309 *i* P **P 03 21 12.7 +1.3**
KNB Kanab 78.96 52 *e* P **P 03 21 13.6 +1.9**
KNB Kanab 78.96 52 *e* P **P 03 21 13.6 +1.9**
CFR Carcaliu 79.00 319⇓ *i* P P 03 21 19.4 +7.9
CDAG Cicekdag 79.06 311 *i* P **P 03 21 12.3 +0.1**
SRU San Rafael Swe 79.09 49 *e* P **P 03 21 13.7 +1.3**
SRU San Rafael Swe 79.09 49 *e* P **P 03 21 13.7 +1.3**
F26A Lodgepole 79.14 40 P **P 03 21 12.9 +0.5**
baz=312
A30A Hoffart Farm, 79.16 36 P **P 03 21 13.0 +0.6**
baz=315
KAMA Osmaniye 79.17 308 *i* P **P 03 21 13.5 +0.8**
ODBI Odobesti 79.17 320⇓ *i* P **P 03 21 13.8 +1.4**
K22A Casper 79.17 44 P **P 03 21 13.6 +0.8**
baz=311
K22A Casper 79.17 44 *e* P **P 03 21 13.5 +0.8**
IRM Iron Mountain 79.19 55 P **P 03 21 14.0 +1.1**
baz=307
VRI Vrincioaia 79.27 320⇑ *i* P **P 03 21 14.3 +1.3**
E27A Carson 79.31 39 P **P 03 21 13.5 +0.2**
baz=313
PLOR Plostina 79.32 320⇑ *i* P **P 03 21 13.7 +0.4**
ULM Lac du Bonnet 79.34 34 P **P 03 21 12.9 -0.3**
comp=Z,2.1nm,0.6s,baz=28,slow=2.5,SNR=4.4
ULM Lac du Bonnet 79.34 34 *e* P **P 03 21 13.3 0.0**
ULM Lac du Bonnet 79.34 34 *e* P **P 03 21 13.3 0.0**
KOLS Kolonicke sedl 79.34 324 *e* P **P 03 21 13.7 +0.4**
KOLS pmax pmax
comp=Z,15nm,1.4s
KOLS Kolonicke sedl 79.34 324 *e* P **P 03 21 13.7 +0.4**
KOLS *e*PP **PP 03 24 09.7 -3.0**
BR131 Keskin Array S 79.44 312 *e* P **P 03 21 14.8 +0.6**
BRTR Keskin Array B 79.44 312 P **P 03 21 14.7 +0.4**
comp=Z,4.3nm,0.9s,baz=99,slow=4.2,SNR=18
BRTR LR LR 04 02 28.4
comp=Z,151nm,18.0s,baz=55,slow=40
BRTR Keskin Array B 79.44 312 *i* P **P 03 21 14.6 +0.4**
BRTR pmax pmax
comp=Z,5.0nm,0.9s
F27A Lemmon 79.46 40 P **P 03 21 14.3 +0.2**
baz=313
STHS Stebnicka Huta 79.47 325 *e* P **P 03 21 15.0 +0.9**
STHS pmax pmax
comp=Z,9.0nm,1.1s
STHS Stebnicka Huta 79.47 325 *e* P **P 03 21 15.0 +0.9**
H25A Fruitdale 79.48 41 P **P 03 21 14.8 +0.5**
baz=312
B30A Myrvik Farm, E 79.50 36 P **P 03 21 14.4 +0.2**
baz=315
OJC Ojcow 79.54 327 *e* P **P 03 21 14.8 +0.4**
OJC Ojcow 79.54 327 *e* P **P 03 21 14.1 -0.3**
OJC Ojcow 79.54 327 *e* P **P 03 21 14.1 -0.3**
UZH Uzhgorod 79.55 324 *e* P **P 03 21 14.4 0.0**
UZH *e* 03 21 20.8
UZH *e* 03 21 29.0
G26A Maurine 79.55 40 P **P 03 21 15.2 +0.5**
baz=313
RSSD Black Hills 79.58 42 P **P 03 21 14.9 -0.1**
baz=312
PDMCI Parker Dam,Lak 79.77 55 P **P 03 21 16.7 +0.8**
baz=308
TRPA Tarpa 79.78 324⇓ *e* P **P 03 21 17.6 +1.9**
I25A Rochford 79.81 42 P **P 03 21 15.8 -0.4**
baz=312
O20A White River Ci 79.81 47 P **P 03 21 15.5 -0.8**
baz=310
B31A Greenbush Farm 79.83 36 P **P 03 21 16.0 0.0**
baz=315
G27A Dupree 79.84 40 P **P 03 21 16.2 +0.1**
baz=313
ANTO Ankara 79.85 312 *e* P **P 03 21 18.4 +2.0**
ANTO Ankara 79.85 312 *e* P **P 03 21 18.4 +2.0**
BBAL Bala 79.86 312 *i* P **P 03 21 17.6 +1.1**
BR231 Keskin MP Arra 79.88 312 *e* P **P 03 21 15.1 -1.4**
DOPR Dopca 79.89 321⇑ *i* P **P 03 21 16.5 +0.1**
MSAB Monastry St. A 79.89 318⇑ *i* P **P 03 21 16.4 0.0**
NIE Niedzica 79.90 326 *e* P **P 03 21 17.5 +1.1**
NIE Niedzica 79.90 326 *e* P **P 03 21 17.5 +1.1**
MLR Muntele Rosu 79.93 320⇓ *i* P **P 03 21 19.4 +2.6**
A32A Rocking H Ranc 80.02 35 P **P 03 21 17.2 +0.2**
baz=316
KKUL Konya-Kulu 80.22 312 *i* P **P 03 21 19.5 +1.1**
D30A Buchanan 80.23 37 P **P 03 21 18.4 +0.2**
baz=315
C31A Landman Farms, 80.24 36 P **P 03 21 18.1 -0.1**
baz=315
I26A New Underwood 80.27 42 P **P 03 21 18.6 0.0**
baz=313
H27A Howes 80.27 41 P **P 03 21 19.5 +1.0**
baz=313
B32A Ashes, Strandq 80.38 35 P **P 03 21 19.1 +0.2**
baz=316
VOIR 80.42 321⇑ *i* P **P 03 21 19.4 0.0**
PV10 Paradox Valley 80.45 49 *e* P **P 03 21 21.5 +1.7**
LANS Liptovska Anna 80.47 326 *e* P **P 03 21 22.5 +3.0**
LANS Liptovska Anna 80.47 326 *e* P **P 03 21 22.5 +3.0**
KECS Kecovo 80.49 325 *e* P **P 03 21 17.1 -2.5**
KECS Kecovo 80.49 325 *e* P **P 03 21 17.1 -2.5**
A33A Warroad 80.51 34 P **P 03 21 19.8 +0.2**
baz=317
OKC Ostrava-Krasne 80.55 327 *e* P **P 03 21 21.0 +1.2**
OKC *ex* x 03 21 29.5
OKC AMS AMS 04 00 10.0
comp=Z,500nm,15.0s
OKC Ostrava-Krasne 80.55 327 *e* P **P 03 21 21.0 +1.2**
OKC *e* 03 21 29.5
OKC MLR MLR
comp=Z,500nm,15.0s
KSP Ksiaz 80.59 329 *e* P **P 03 21 21.0 +1.0**
KSP Ksiaz 80.59 329 *e* P **P 03 21 21.1 +1.0**
KERG Konya-Eregli 80.61 310 *i* P **P 03 21 20.6 +0.1**
PV05 Paradox Valley 80.61 49 *e* P **P 03 21 22.2 +1.5**
J26A Sides Ranch, S 80.63 42 P **P 03 21 20.8 +0.3**
baz=312
DRGR 80.64 323⇑ *i* P **P 03 21 20.9 +0.4**
N23A Red Feather La 80.65 45 P **P 03 21 21.6 +0.7**
baz=311
N23A Red Feather La 80.65 45 *e* P **P 03 21 22.4 +1.5**
I27A Quinn 80.67 41 P **P 03 21 20.8 +0.1**
baz=313
ARR Arges 80.69 321⇑ *i* P **P 03 21 22.4 +1.7**
AGMN Agassiz Nation 80.76 35 P **P 03 21 20.3 -0.7**
baz=316
H28A Mission Ridge 80.79 40 P **P 03 21 21.4 +0.1**
baz=314
WUAZ Wupatki 80.81 52 P **P 03 21 21.6 -0.1**
baz=309
WUAZ Wupatki 80.81 52 *e* P **P 03 21 21.9 +0.2**
MORC Moravsky Berou 80.86 327 *e* P **P 03 21 22.5 +1.0**
MORC Moravsky Berou 80.86 327 *e* P **P 03 21 22.5 +1.0**
PV01 Paradox Valley 80.89 49 *e* P **P 03 21 20.6 -1.6**
DPC Dobruska-Polom 80.95 328 *e* P **P 03 21 22.9 +0.9**
DPC *ex* x 03 21 30.7
DPC *e*PP **PP 03 24 27.3 +1.3**
DPC AMS AMS 04 01 50.0
comp=Z,600nm,12.6s
DPC Dobruska-Polom 80.95 328 *e* P **P 03 21 22.9 +0.9**
DPC *e* 03 21 30.7
DPC *e* 03 24 27.3
DPC MLR MLR
comp=Z,600nm,12.6s
UPC Upice 80.96 329 AMS AMS 04 02 10.0
comp=Z,800nm,14.8s
LOT Lotru 81.07 321⇑ *i* P **P 03 21 23.4 +0.6**
KDHN Kadinhani 81.12 312 *i* P **P 03 21 23.5 +0.3**
B34A Aery, Baudette 81.17 34 P **P 03 21 23.3 +0.1**
baz=317
PSZ Piszkesteto 81.17 325⇓ *e* P **P 03 21 24.9 +1.6**
PSZ Piszkesteto 81.17 325 *e* P **P 03 21 24.0 +0.7**
PSZ Piszkesteto 81.17 325 *e* P **P 03 21 24.0 +0.7**
I28A Midland 81.18 41 P **P 03 21 23.9 +0.6**
baz=314
C33A Trail 81.19 35 P **P 03 21 23.9 +0.6**
baz=317

DEV Deva 81.19 322 ⇓ *i*P P 03 21 25.3 +2.0
ESKT Eskisehir 81.22 313 *i* P P 03 21 24.3 +0.5
VYHS Vyhne 81.23 326 *e*P P 03 21 24.3 +0.7
VYHS pmax pmax
comp=Z,8.0nm,1.3s
VYHS Vyhne 81.23 326 *e*P P 03 21 24.2 +0.7
VYHS *e*PP PP 03 24 26.6 -1.8
J27A Elkhorn Farm, 81.25 42 P P 03 21 24.7 +0.9
baz=313
RAYN Ar Rayn 81.29 293 *e*P P 03 21 24.1 -0.3
comp=Z,64nm,1.6s
G30A Faulkton 81.43 39 P P 03 21 24.4 -0.3
baz=315
KMER Konya-Meram 81.45 311 *i* P P 03 21 25.4 +0.3
MVCO Mesa Verde 81.53 50 P P 03 21 26.0 +0.4
baz=310
MVCO Mesa Verde 81.53 50 *e*P P 03 21 26.7 +1.1
BRG Berggiesshubel 81.53 330 *e*P P 03 21 25.4 +0.3
comp=Z,18nm,1.3s
BRG Berggiesshubel 81.53 330 *e*P P 03 21 25.4 +0.3
BRG pmax pmax
comp=Z,18nm,1.3s
BRG MLR MLR
comp=N,539nm,13.2s
BRG MLR MLR
comp=E,509nm,13.9s
BRG MLR MLR
comp=Z,914nm,13.7s
J28A Allard Ranch, 81.54 41 P P 03 21 25.2 -0.1
baz=314
PVCC Panska Ves 81.55 329 *e*P P 03 21 25.9 +0.8
PVCC AMS AMS 04 01 20.0
comp=Z,600nm,13.2s
PVCC Panska Ves 81.55 329 *e*P P 03 21 25.9 +0.8
PVCC MLR MLR
comp=Z,600nm,13.2s
ISCO Idaho Springs 81.56 46 P P 03 21 26.3 +0.5
baz=311
ISCO Idaho Springs 81.56 46 *e*P P 03 21 27.2 +1.4
ISCO Idaho Springs 81.56 46 *e*P P 03 21 27.2 +1.4
CLL Collm 81.57 331 *i*P P 03 21 25.3 +0.1
comp=Z,18nm,1.1s
CLL *i* 03 21 33.6
CLL *i* 03 21 38.2
CLL *e*PP PP 03 24 31.0 0.0
CLL *e*S S 03 31 43.0 +6.8
CLL Collm 81.57 331 *e*P P 03 21 22.0 -3.2
CLL *i* 03 21 25.3
CLL *i* 03 21 33.6
CLL *e*S S 03 31 43.0 +6.8
GZR Gura Zlata 81.60 322 ⇑ *i*P P 03 21 25.8 +0.2
I29A Vivian Onida 81.61 40 P P 03 21 26.2 +0.6
baz=314
VRAC Vranov 81.62 327 P P 03 21 27.3 +1.8
comp=Z,7.5nm,0.8s,baz=47,slow=4.1,SNR=14
VRAC Vranov 81.62 327 ⇓ *i*P P 03 21 26.4 +0.8
B35A Bob, Littlefor 81.68 34 P P 03 21 24.8 -1.1
baz=318
BOLV Bolvadin 81.68 313 *i* P P 03 21 26.2 0.0
ULDT Uludag 81.80 315 *i* P P 03 21 27.9 +0.9
SMOL Smolenice 81.85 326 *e*P P 03 21 29.0 +2.2
SMOL Smolenice 81.85 326 *e*P P 03 21 29.0 +2.2
BUD Budapest 81.89 325 ⇓ *e*P P 03 21 23.6 -3.4
GOPC GO Pecny, Ondr 81.92 329 *e*P P 03 21 27.7 +0.5
GOPC *ex* x 03 21 36.9
GOPC AMS AMS 04 02 40.0
comp=Z,700nm,16.0s
GOPC GO Pecny, Ondr 81.92 329 *e*P P 03 21 27.7 +0.5
GOPC *e* 03 21 36.9
GOPC MLR MLR
comp=Z,700nm,16.0s
D34A Park Rapids 81.95 36 P P 03 21 27.2 -0.2
baz=317
PRA Prague 81.95 329 AMS AMS 04 01 20.0
comp=Z,600nm,13.2s
K28A Ten Mile Ranch 81.96 42 P P 03 21 28.0 +0.4
baz=314
PRU Pruhonice 81.97 329 *e*P P 03 21 28.1 +0.7
PRU *ex* x 03 21 37.1
PRU *ex* x 03 21 41.3
PRU AMS AMS 04 00 50.0
comp=Z,600nm,16.8s
PRU Pruhonice 81.97 329 *e*P P 03 21 28.1 +0.7
PRU *e* 03 21 37.1
PRU *e* 03 21 41.3
PRU MLR MLR
comp=Z,600nm,16.8s
E33A Westby DABS, E 81.99 36 P P 03 21 27.5 -0.1
baz=317
BZS Buzias 82.02 322 ⇑ *i*P P 03 21 27.8 +0.1
C35A Jirik Farms, M 82.06 34 P P 03 21 27.6 -0.3
baz=318
TREC Trest 82.10 328 *e*P P 03 21 28.7 +0.6
TREC *ex* x 03 21 37.7
TREC AMS AMS 04 03 00.0
comp=Z,600nm,15.6s
TREC Trest 82.10 328 *e*P P 03 21 28.7 +0.6
TREC *e* 03 21 37.7
TREC MLR MLR
comp=Z,600nm,15.6s
PKS7 Kunszentmiklos 82.15 325 ⇓ *e*P P 03 21 29.5 +1.2
S22A 4UR Ranch, Cre 82.19 48 P P 03 21 30.4 +1.3
baz=311,SNR=9.5
S22A 4UR Ranch, Cre 82.19 48 *e*P P 03 21 30.6 +1.4
PKSG 82.25 325 ⇓ *e*P P 03 21 30.4 +1.5
PKS6 Bocsa 82.29 324 ⇓ *e*P P 03 21 29.9 +0.8
GDZ Gediz 82.30 314 *i* P P 03 21 30.0 +0.5
Q24A Divide 82.38 47 P P 03 21 30.9 +0.7
baz=312
PKST T"s 82.51 325 ⇓ *e*P P 03 21 31.0 +0.7
C36A Pine Crest Far 82.53 34 P P 03 21 31.3 +0.9
baz=319
DURS Dursunbey 82.54 314 *i* P P 03 21 27.2 -3.5
MDVR Moldovita 82.57 322 ⇓ *i*P P 03 21 30.3 -0.4
KHAL Karahalli 82.77 313 *i* P P 03 21 31.5 -0.4
DEMI Demirci 82.78 314 *i* P P 03 21 32.2 +0.3
C37A Embarrass 82.84 34 P P 03 21 31.7 -0.3
baz=319
SOP Sopron 82.86 326 ⇓ *e*P P 03 21 33.8 +1.7
PKS9 Tamasi 82.90 325 ⇓ *e*P P 03 21 30.6 -1.7
K30A Basset 82.92 41 P P 03 21 32.6 +0.1
baz=315
H33A Prehn Over Nor 82.95 38 P P 03 21 32.8 +0.2
baz=316
EYMN Ely 82.98 33 P P 03 21 32.4 -0.3
baz=320
EYMN Ely 82.98 33 *e*P P 03 21 33.0 +0.2
CONA Conrad Observa 82.98 327 *i* pP P 03 21 33.7 +0.9
comp=Z,98nm,1.2s,SNR=13
SDCO Great Sand Dun 82.98 48 P P 03 21 33.6 +0.3
baz=312,SNR=6.4
SDCO Great Sand Dun 82.98 48 *e*P P 03 21 34.7 +1.4
KHC Kasperske Hory 83.03 329 *e*P P 03 21 33.5 +0.5
KHC *ex* x 03 21 40.5
KHC *ex* x 03 21 42.6
KHC AMS AMS 04 03 10.0
comp=Z,600nm,14.3s
KHC Kasperske Hory 83.03 329 *e*P P 03 21 33.5 +0.5
KHC MLR MLR
comp=Z,600nm,14.3s
KHC Kasperske Hory 83.03 329 *e*P P 03 21 33.5 +0.5
comp=Z,5.3nm,0.9s
G34A Benson 83.08 37 P P 03 21 33.4 +0.1
baz=317
GERES GERESS Array B 83.20 329 P P 03 21 34.2 +0.3
comp=Z,4.9nm,0.8s,baz=35,slow=4.9,SNR=31
GERES LR LR 04 04 03.6
comp=Z,236nm,19.5s,baz=12,slow=40
TUC Tucson 83.20 55 P P 03 21 34.5 +0.2
baz=310
TUC Tucson 83.20 55 *e*P P 03 21 35.5 +1.3
TUC pmax pmax
comp=Z,12nm,1.4s
TUC Tucson 83.20 55 *e*P P 03 21 35.5 +1.3
comp=Z,12nm,1.4s
C38A Sawbill Land. 83.25 33 P P 03 21 33.4 -0.7
baz=320
N28A Pribbeno Ranch 83.26 43 P P 03 21 33.2 -1.2
baz=314
E36A McGregor 83.27 35 P P 03 21 34.3 0.0
baz=318
VTS Vitosha 83.36 319 ⇓ *i*P P 03 21 35.8 +0.8
VTS Vitosha 83.36 319 *e*P P 03 21 35.8 +0.8
VTS Vitosha 83.36 319 *e*P P 03 21 35.8 +0.8
GOLH Golhisar 83.48 312 *i* P P 03 21 35.4 -0.3

O28A Krutsinger Ran 83.52 44 P P 03 21 36.2 +0.5
baz=314
PMOR Pomariorio Ree 83.54 114 *e*T T 04 53 01.1
comp=Z,5.7nm,0.2s
GRFO Grafenberg 83.55 330 *e*P P 03 21 36.3 +0.7
GRFO pmax pmax
comp=Z,18nm,1.0s
GRFO Grafenberg 83.55 330 *e*P P 03 21 36.3 +0.7
comp=Z,18nm,1.0s
ARSA Arzberg 83.64 327 *i* P P 03 21 36.7 +0.5
comp=Z,8.5nm,1.2s,SNR=6.3
L31A Butterfield Fa 83.67 41 P P 03 21 37.4 +0.9
baz=315
ECSD EROS Data Cent 83.70 39 P P 03 21 37.5 +0.9
baz=316
ECSD EROS Data Cent 83.70 39 *e*P P 03 21 36.8 +0.3
KSCO Kaye Shedlock' 83.80 45 P P 03 21 38.1 +0.8
baz=313
KSCO Kaye Shedlock' 83.80 45 *e*P P 03 21 37.4 +0.1
H35A Sunnyside Ranc 83.87 37 P P 03 21 38.3 +1.0
baz=318
PPT Papeete 84.00 117 LR LR 03 56 15.9
comp=Z,243nm,18.8s,baz=304,slow=34
PPT2 Papeete2 84.02 117 *e*LR LR 03 47 48.8
comp=Z,400nm,27.5s
T25A Trinidad 84.03 48 P P 03 21 39.2 +0.6
baz=312,SNR=8.3
T25A Trinidad 84.03 48 *e*P P 03 21 39.9 +1.3
O29A 4D Ranch, Culb 84.06 43 P P 03 21 39.1 +0.6
baz=314
AYDN Tasoluk 84.19 313 *i* P P 03 21 40.4 +1.2
ANMO Albuquerque 84.25 50 P P 03 21 40.5 +0.8
baz=312
ANMO Albuquerque 84.25 50 ⇓ *i*P P 03 21 41.2 +1.5
ANMO pmax pmax
comp=Z,18nm,1.7s
ANMO Albuquerque 84.25 50 *e*P P 03 21 41.3 +1.5
comp=Z,15nm,1.1s
GROS Gronik 84.26 326 *i* P P 03 21 39.1 -0.2
PERS Pernice 84.29 326 *i* P P 03 21 39.7 +0.2
TURN Turunc 84.30 312 *i* P P 03 21 41.8 +2.2
SOKA Soboth 84.30 327 *i* P P 03 21 39.7 +0.2
comp=Z,17nm,1.1s,SNR=14
H36A Jessenland, He 84.40 37 P P 03 21 40.7 +0.7
baz=318
SPMN Marine on St. 84.44 36 P P 03 21 40.7 +0.4
baz=319
VAY Valandovo 84.60 319 *i* P P 03 21 41.3 +0.2
K34A Le Mars 84.72 39 P P 03 21 41.8 +0.1
baz=317
SKO Skopje 84.72 320 *i* P P 03 21 42.6 +0.8
LEGS Legarje 84.73 326 *i* P P 03 21 41.5 -0.2
P30A Selden 84.77 43 P P 03 21 42.2 +0.1
baz=315
BDRM Kayabasi 84.85 313 *i* P P 03 21 43.1 +0.7
N32A Stulken Farm, 84.96 42 P P 03 21 44.0 +1.0
baz=316
121A Cookes Peak, D 85.00 53 P P 03 21 43.6 +0.1
baz=311
121A Cookes Peak, D 85.00 53 *e*P P 03 21 44.3 +0.8
comp=Z,24nm,1.2s
I37A Lemond, Waseca 85.07 37 P P 03 21 43.6 +0.2
baz=318
STU Stuttgart 85.08 331 *e*P P 03 21 43.7 +0.3
STU pmax pmax
comp=Z,24nm,0.9s
STU Stuttgart 85.08 331 *e*P P 03 21 43.7 +0.3
comp=Z,24nm,0.9s
P31A Stockton 85.26 43 P P 03 21 43.8 -0.7
baz=315
CWF Charnwood Fore 85.31 339 *e*P P 03 21 46.2 +1.8
JAVS Javornik 85.33 327 *e*P P 03 21 43.8 -1.0
ABTA Abfaltersbach 85.34 328 *e*PcP P 03 21 45.2 +0.3
comp=Z,6.4nm,1.0s
SCHQ Schefferville 85.36 16 P P 03 21 44.8 +0.1
comp=Z,5.6nm,1.0s,baz=294,slow=8.2,SNR=4.1
SCHQ LR LR 04 01 09.8
comp=Z,144nm,20.8s,baz=17,slow=37
LANF Langenberg 85.44 332 *e*P P 03 21 45.4 +0.2
MOTA Moosalm 85.46 329 *i* PcP P 03 21 46.3 +0.8
comp=Z,8.0nm,1.0s,SNR=8.8
RETA Reutte 85.49 329 *i* P P 03 21 45.6 +0.1
comp=Z,16nm,1.0s,SNR=9.6
WLF Walferdange 85.49 333 *e*P P 03 21 46.1 +0.7
WLF pmax pmax
comp=Z,66nm,1.8s
WLF Walferdange 85.49 333 *e*P P 03 21 46.1 +0.7
comp=Z,66nm,1.8s
J37A Redenius Farm, 85.52 37 P P 03 21 45.9 +0.2
baz=318
TAOE Nuku Hiva Isla 85.53 104 *e*LR LR 03 48 21.6
comp=Z,419nm,30.1s
I38A Scanlan Farm, 85.56 36 P P 03 21 45.5 -0.4
baz=319
P32A Huiting Farm, 85.61 43 P P 03 21 46.0 -0.3
baz=316
OHR Ohrid 85.68 320 *i* P P 03 21 47.2 +0.6
BFO Black Forest 85.78 331 *i* P P 03 21 47.6 +0.7
BFO Black Forest 85.78 331 *e*P P 03 21 46.9 0.0
comp=Z,18nm,0.9s
N34A Lincoln 85.86 41 P P 03 21 47.1 -0.3
baz=317
K37A Belmond 85.88 38 P P 03 21 47.4 -0.1
baz=318
DAVA Damuels 86.01 330 *i* PcP P 03 21 48.9 +0.6
comp=Z,16nm,0.8s,SNR=9.4
J38A Wedel Dairy, R 86.03 37 P P 03 21 47.6 -0.6
baz=319
ECH Echery 86.32 332 *e*P P 03 21 49.0 -0.6
Q33A Connelly Farm, 86.47 43 P P 03 21 50.1 -0.4
baz=316
P34A Walnut Farm, R 86.62 42 P P 03 21 50.8 -0.5
baz=317
MOF Molkenrain 86.63 332 ⇑ *e*P P 03 21 51.0 -0.2
THEF They Montfort 86.75 332 *e*P P 03 21 51.6 -0.1
S32A Newby Ranch, P 86.79 44 P P 03 21 52.4 +0.3
baz=315
TUE Stuetta 86.88 329 *e*P P 03 21 52.6 0.0
comp=Z,11nm,1.2s
R33A Olander Ranch, 86.89 43 P P 03 21 52.7 +0.1
baz=316
Q34A Chapman 87.01 42 P P 03 21 53.6 +0.4
baz=316
MNTX Cornudas Mount 87.08 52 P P 03 21 54.0 +0.4
baz=312
MNTX Cornudas Mount 87.08 52 *e*P P 03 21 54.3 +0.7
MNTX *e*pP sP 03 22 02.2 +0.2
M38A Pleasantville 87.11 38 P P 03 21 54.0 +0.4
baz=319
T32A Huddler Ranch, 87.17 44 P P 03 21 54.5 +0.5
baz=315
AMTX Amarillo 87.19 48 P P 03 21 55.1 +0.9
baz=314
AMTX Amarillo 87.19 48 *e*P P 03 21 56.3 +2.2
JFWS Jewell Farm 87.40 36 *e*P P 03 21 56.1 +1.2
JFWS Jewell Farm 87.40 36 *e*P P 03 21 56.0 +1.2
P36A Good Intent, A 87.42 41 P P 03 21 55.6 +0.5
baz=318
Q35A Mercer Eighty, 87.54 42 P P 03 21 55.8 +0.1
baz=317
N38A Joe's South For 87.56 39 P P 03 21 55.8 +0.1
baz=319
R35A Emporia Munici 87.84 42 P P 03 21 57.8 +0.7
baz=317
N39A Derby Farms, D 87.86 38 P P 03 21 57.5 +0.3
baz=319
P37A Lathrop 87.89 40 P P 03 21 57.5 +0.1
baz=318
TBI Tubuai 87.90 121 *e*LR LR 03 49 07.4
comp=Z,312nm,36.8s,baz=326
TBI Tubuai 87.90 121 *e*T T 04 58 41.7
comp=Z,14nm,0.3s
V32A Arapaho 88.14 46 P P 03 21 60.0 +1.3
baz=315
R36A Gordon, Harris 88.22 42 P P 03 21 59.4 +0.5
baz=317
S35A Otter Creek Ra 88.25 43 P P 03 21 59.4 +0.3
baz=317
T34A McClaskey Farm 88.25 44 P P 03 21 59.6 +0.5
baz=316
P38A Dawn 88.28 40 P P 03 21 59.5 +0.3
baz=319
O39A Kirksville 88.31 39 P P 03 21 59.8 +0.5
baz=319
GLMI Grayling 88.37 31 *e*P P 03 21 59.7 +0.1
W32A Sentinel 88.44 46 P P 03 22 00.2 +0.1
baz=315

T35A Sooner Cattle 88.70 43 P P 03 22 01.5 +0.3
baz=317
Q38A Cooks Store, C 88.74 40 P P 03 22 01.9 +0.5
baz=319
O40A La Belle 88.75 38 P P 03 22 02.0 +0.6
baz=320
P39A Salisbury 88.78 39 P P 03 22 02.5 +0.9
baz=319
W33A Caddo, Fort Co 88.87 46 P P 03 22 03.3 +1.2
baz=316
X32A Elmer 88.92 47 P P 03 22 03.3 +1.0
baz=315
V34A Guthrie 88.92 45 P P 03 22 03.0 +0.7
baz=316
V34A Guthrie 88.92 45 *e*P P 03 22 04.3 +2.0
T36A Boggs Farm, Ca 88.94 43 P P 03 22 02.7 +0.4
baz=317,SNR=5.3
S37A Fort Scott 88.99 42 P P 03 22 03.1 +0.5
baz=318
Q39A Willow Grove F 89.00 40 P P 03 22 03.1 +0.5
baz=319
P40A Paris 89.11 39 P P 03 22 03.6 +0.5
baz=320
R38A Fenwick Farm, 89.16 41 P P 03 22 03.5 +0.1
baz=318
T37A Cheneyville 18 89.41 42 P P 03 22 05.1 +0.5
baz=316
Q40A Laux Farm, Aux 89.50 39 P P 03 22 04.5 -0.5
baz=320
U36A Oologah 89.51 43 P P 03 22 05.0 -0.1
baz=317
R39A Chumby, Stover 89.52 40 P P 03 22 05.1 +0.1
baz=319
S38A Stockton 89.58 41 P P 03 22 05.0 -0.3
baz=318
HDIL Hopedale 89.67 37 P P 03 22 05.8 +0.1
baz=321
HDIL Hopedale 89.67 37 *e*P P 03 22 06.4 +0.7
TX31 Lajitas Ar. Si 89.76 53 *e*P P 03 22 07.1 +0.6
TXAR Lajitas Array 89.76 53 P P 03 22 06.9 +0.4
comp=Z,3.7nm,0.8s,baz=297,slow=3.0,SNR=33
TXAR LR LR 03 59 39.1
comp=Z,46nm,19.3s,baz=0.0,slow=34
T38A Diamond 89.81 42 P P 03 22 06.1 -0.4
baz=318,SNR=7.2
TUL1 Leonard 89.83 43 P P 03 22 06.6 +0.1
baz=317
TUL1 Leonard 89.83 43 *e*P P 03 22 07.2 +0.6
U37A Salina 89.83 43 P P 03 22 06.8 +0.3
baz=318
V36A Jenks 89.84 44 P P 03 22 07.0 +0.4
baz=317
S39A Bolivar 89.84 41 P P 03 22 06.2 -0.3
baz=319
PYM Petit Puy Mans 89.94 333 ⇑ *e*P P 03 22 07.9 +0.9
R40A Maddies Statio 89.94 40 P P 03 22 07.4 +0.4
baz=319
ABTX Abilene, Hawle 89.98 48 P P 03 22 08.3 +0.9
baz=315
Z33A Whitaker Ranch 90.03 47 P P 03 22 07.6 +0.1
baz=316
HPIG 90.08 56 *e*P P 03 22 10.6 +2.5
Y34A Reagan Ranch, 90.13 46 P P 03 22 08.5 +0.5
baz=316
W36A Wetumka 90.15 44 P P 03 22 08.6 +0.5
baz=317
U38A Gravette 90.21 42 P P 03 22 08.0 -0.3
baz=318
V37A Hulbert 90.21 43 P P 03 22 08.6 +0.3
baz=318,SNR=6.4
X35A Drake 90.27 45 P P 03 22 08.7 +0.1
baz=317
LBL Lubilhac 90.29 332 *e*P P 03 22 08.6 0.0
T39A Clever 90.31 41 P P 03 22 08.5 -0.3
baz=319
S40A Lebanon 90.34 40 P P 03 22 09.0 +0.1
baz=319
Z34A Collier Ranch, 90.46 46 P P 03 22 09.7 +0.1
baz=316
HHAR Hobbs 90.56 42 *e*P P 03 22 10.4 +0.4
W37B Quinton 90.59 44 P P 03 22 09.8 -0.3
baz=318
V38A Canehill 90.62 43 P P 03 22 10.6 +0.3
baz=318,SNR=6.8
T40A Mansfield 90.67 41 P P 03 22 10.9 +0.5
baz=319
U39A Green Forest 90.74 42 P P 03 22 10.9 +0.1
baz=319,SNR=8.1
233A Rising Star 90.85 48 P P 03 22 12.3 +0.9
baz=316
Z35A Perchaven, San 90.88 46 P P 03 22 11.6 +0.1
baz=316
134A White-Moore Ra 90.94 47 P P 03 22 12.5 +0.7
baz=316
Y36A Durant 91.02 45 P P 03 22 12.5 +0.4
baz=317
X37A Clayton 91.03 44 P P 03 22 12.7 +0.5
baz=318
V39A Pettigrew 91.05 42 P P 03 22 12.1 -0.2
baz=319,SNR=5.7
U40A Yellville 91.09 41 P P 03 22 12.6 +0.2
baz=319,SNR=16
W38A Poteau 91.15 43 P P 03 22 13.1 +0.4
baz=318
X38A Whitesboro 91.27 44 P P 03 22 13.8 +0.5
baz=318
333A Richland Sprin 91.29 49 P P 03 22 14.0 +0.5
baz=316
234A Clairette 91.31 48 P P 03 22 13.9 +0.4
baz=316
JCT Junction City 91.39 50 P P 03 22 14.5 +0.5
baz=315
JCT Junction City 91.39 50 *e*P P 03 22 12.9 -1.1
JCT Junction City 91.39 50 *e*P P 03 22 12.9 -1.1
Z36A Blue Ridge 91.39 46 P P 03 22 14.0 +0.1
baz=317
W39A Magazine 91.46 43 P P 03 22 14.3 +0.1
baz=318
V40A Witts Springs 91.52 42 P P 03 22 14.2 -0.3
baz=319
WHTX Lake Whitney, 91.72 47 P P 03 22 15.7 +0.3
baz=316
334A Lometa 91.73 48 P P 03 22 15.8 +0.3
baz=316
X39A Fountain Ranch 91.79 43 P P 03 22 16.1 +0.4
baz=318
W40A Ferguson Farm, 91.85 42 P P 03 22 15.7 -0.2
baz=319
Y38A Idabel 91.88 44 P P 03 22 16.0 -0.1
baz=318
MIAR Mount Ida 92.06 43 P P 03 22 17.6 +0.6
baz=319,SNR=6.4
MIAR Mount Ida 92.06 43 *e*P P 03 22 16.5 -0.4
MIAR pmax pmax
comp=Z,22nm,1.2s
MIAR Mount Ida 92.06 43 *e*P P 03 22 16.4 -0.4
comp=Z,22nm,1.2s
434A Burnet 92.08 48 P P 03 22 17.6 +0.5
baz=316
533A Kerrville 92.15 49 P P 03 22 18.4 +0.9
baz=315
WHAR Wooly Hollow 92.19 42 *e*P P 03 22 17.9 +0.4
Y39A Lockesburg 92.22 44 P P 03 22 18.1 +0.4
baz=318
X40A Basin Creek Fa 92.50 43 P P 03 22 19.5 +0.5
baz=319
534A Blanco 92.52 49 P P 03 22 19.3 +0.1
baz=316
Z40A Long Farm, Mag 93.11 44 P P 03 22 22.7 +0.9
baz=319
KEST Kesra 95.55 323 P P 03 22 33.6 +0.6
comp=Z,2.2nm,0.9s,baz=263,slow=9.2,SNR=4.2
KEST LR LR 04 11 29.2
comp=Z,291nm,18.1s,baz=326,slow=39
ESDC Sonseca Array 97.74 334 P P 03 22 42.4 -0.4
comp=Z,0.9nm,0.8s,baz=9.4,slow=4.8,SNR=8.0
ESDC LR LR 04 11 28.2
comp=Z,208nm,18.3s,baz=45,slow=38
RKT Rikitea 98.12 113 *e*LR LR 03 54 23.4
comp=Z,300nm,29.2s
TORD Torodi Ar. Bea 117.90 315 PKP PKPdf 03 27 54.4 -0.5
comp=Z,0.7nm,0.8s,baz=29,slow=1.5,SNR=8.8
SDV Santo Domingo 125.09 41 *e*PKPdf PKPdf 03 28 08.6 -0.3
DBIC Dimbokro 126.85 317 PKP PKPdf 03 28 11.6 -0.4
comp=Z,1.7nm,0.6s,baz=9.8,slow=1.0,SNR=3.8
VNA2 Neumayer--Watz 142.29 196 PKP PKPpre 03 28 29.5
baz=108,slow=2.0
VNA3 Neumayer Olymp 142.52 195 PKP PKPpre 03 28 29.2

Code	Station Name	Δ°	AZ°	Op	ISC	Time	Res
SAML	Samuel	143.96	46	ePKPdf	PKPbc	03 28 41.6	+0.2
LPAZ	La Paz	146.27	61	PKPbc	PKPdf	03 28 49.1	+0.8
	comp=Z,5.9nm,0.7s,baz=14,slow=3.8,SNR=28						
RCBR	Riachuelo	149.09	356	PKPbc	PKPab	03 28 58.9	-1.8
	comp=Z,8.7nm,0.8s,baz=19,slow=7.6,SNR=4.3						
SIV	San Ignacio	150.75	51	PKPbc	PKPbc	03 28 59.8	-0.6
	comp=Z,1.9nm,0.5s,baz=319,slow=1.2,SNR=6.5						
LCO	Las Campanas	151.43	84	ePKPbc	PKPbc	03 29 02.2	+0.2
PLCA	Paso Flores	154.28	109	PKPbc	PKPbc	03 29 13.1	+5.3
	comp=Z,3.3nm,1.2s,baz=100,slow=7.9,SNR=2.8						

*IDC **03** 03:23:59.1±2.4, 31°.20S×70°.18W, h0km, mb3.5/4, mb1 3.7/4, mb1mx3.6/19, mbtmp3.5/4, Error ellipse: s-maj=94.4km s-min=37.0km az=13.0*
*SJA **03** 03:24:13.6±1.3, 30°.66S×70°.14W, h115km±19km, ML3.5, MW3.1*
ISC 03 03:24:02.6±1.9, **30°.18S**±0°.04×**70°.39W**±0°.08, **h15**km±10km, **n26**, σ**1s.52**/29, **mb3.5**/4, **6D, Chile-Argentina border region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RTLS	Leoncito	1.87	150	⇓eP	Pg	03 24 40.6	+2.1
RTLS				eS	Sg	03 25 04.0	+1.2
RTLL	Cerro Villicun	2.01	125	⇓eP	Pg	03 24 42.2	+1.1
RTLL				⇓eS	Sb	03 25 03.5	-0.2
SJA	San Juan	2.07	131	⇓eP	Pg	03 24 42.9	+0.6
SJA				eS	Sb	03 25 05.1	-0.3
AUSP	Uspallata	2.21	157	⇓eP	Pg	03 24 44.6	-0.5
AUSP				eS	Sn	03 25 06.4	+0.1
RTCV	Cerro Valdivia	2.31	137	eP	Pg	03 24 45.9	-1.0
VCA	Vinchina	2.39	53	IAML		03 25 35.3	
	comp=Z,264nm,0.2s						
VCA				IAML		03 25 35.3	
	comp=Z,273nm,0.2s						
AVFE	Valle Fertil	2.58	101	eP	Pg	03 24 51.6	-0.5
AVFE				⇓eS	Sb	03 25 20.4	+0.2
ASAL	Salagasta	2.75	151	eP	Pb	03 24 51.2	-0.3
ASAL				eS	Sn	03 25 19.4	+0.2
AMAR	Marayes	2.92	117	eP	Pb	03 24 54.8	+0.3
AMAR				eS	Sb	03 25 27.0	-3.1
ARCO	CERRO ARCO	2.93	155	eP	Pb	03 24 53.9	-0.8
ARCO				IAML		03 25 25.6	
	comp=Z,221nm,0.3s						
ACLC	CERRO LA CRUZ	3.08	77	eP	Pg	03 25 01.8	+0.2
ACLC				IAML		03 25 42.0	
	comp=Z,300nm,0.3s						
AAGR	Agrelo	3.19	156	eP	Pb	03 24 56.4	-2.6
ACHE	Chepes	3.35	108	eP	Pb	03 25 01.2	-0.7
ACHE				eS	Sn	03 25 36.6	+2.3
ACAN	Cantantal	3.44	128	eP	Pb	03 25 00.6	-2.8
CYA	Choya	4.36	68	eP	Pb	03 25 19.1	+0.1
CYA				eS	Sb	03 26 08.4	-3.1
CYA				IAML		03 26 09.0	
	comp=N,42nm,0.3s						
MRA	San Martin	4.58	120	eP	Pn	03 25 16.0	+4.5
AHML	Horco Molle	5.59	54	IAML		03 27 05.7	
	comp=Z,8.3nm,0.7s						
FSA	Cafayete	5.62	45	eP	Pb	03 25 39.4	-1.1
FSA				IAML		03 26 49.5	
	comp=Z,4.2nm,0.5s						
SLA	San Lorenzo	6.96	40	IAML		03 28 24.9	
	comp=Z,4.0nm,0.4s						
BDFB	Brasilia	25.11	60	P	P	03 29 29.2	+2.1
	comp=Z,3.8nm,0.9s,baz=178,slow=15,SNR=3.0						
TXAR	Lajitas Array	67.15	329	P	P	03 35 00.9	+5.0
	comp=Z,0.2nm,0.5s,baz=163,slow=9.4,SNR=4.1						
PDAR	Pinedale Array	81.03	332	P	P	03 36 21.3	+4.3
	comp=Z,0.2nm,0.7s,baz=139,slow=6.0,SNR=2.3						
TORD	Torodi Ar. Bea	81.58	70	P	P	03 36 20.4	+0.1
	comp=Z,0.2nm,0.4s,baz=284,slow=5.5,SNR=3.3						
BVAR	Borovoye Array	143.50	40	PKP	PKPdf	03 43 35.1	-1.1
	comp=Z,0.2nm,0.4s,baz=292,slow=5.8,SNR=3.2						
ZALV	Zalesovo Beam	150.24	30	PKPbc	PKPbc	03 43 53.8	+1.2
	comp=Z,1.9nm,0.5s,baz=305,slow=3.1,SNR=10.0						
MKAR	Makanchi Array	153.13	44	PKPbc	PKPbc	03 43 59.5	0.0
	comp=Z,0.2nm,0.5s,baz=284,slow=2.3,SNR=3.3						

*IDC **03** 03:25:50.6±1.1, 36°.20N×142°.64E, h0km, mb3.5/6, mb1 3.6/7, mb1mx3.4/35, mbtmp3.4/7, ML3.1/1, Error ellipse: s-maj=31.0km s-min=22.0km az=78.0*
*ISCJB **03** 03:25:51.3±0.9, 36°.2N±0°.1×142°.7E±0°.1, h18km, mb3.4/6, Error ellipse: s-maj=20.6km s-min=11.4km az=8.4*
ISC 03 03:25:53.4±1.1, **36°.2N**±0°.2×**142°.7E**±0°.1, **h18**km, **n11**, σ**0s.79**/9, **mb3.4**/6, **Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MJAR	Matsushiro Arr	3.62	277	Pn	Pn	03 26 49.2	+0.5
	1.7nm,0.3s,baz=91,slow=14,SNR=31						
MAT	Matsushiro	3.62	277	P	Pn	03 26 49.5	+0.8
MAT				eS	Sn	03 27 31.1	+0.1
H11N2	WAKE ISLAND Hy	26.85	121	T	T	04 00 21.1	
H11N1	WAKE ISLAND Hy	26.86	121	T	T	04 00 21.1	
H11N3	WAKE ISLAND Hy	26.87	121	T	T	04 00 21.1	
SONM	Songino Array	29.09	305	P	P	03 31 52.7	-0.3
	0.1nm,0.3s,baz=74,slow=11,SNR=3.1						
MKAR	Makanchi Array	45.42	303	P	P	03 34 10.6	-0.5
	0.2nm,0.9s,baz=74,slow=11,SNR=2.4						
ILAR	Eielson Array	49.65	32	P	P	03 34 44.7	+1.1
	0.3nm,0.8s,baz=251,slow=7.5,SNR=3.0						
WRA	Warramunga Arr	56.40	189	P	P	03 35 34.0	+0.2
	0.3nm,0.7s,baz=16,slow=18,SNR=2.6						
ASAR	Alice Springs	60.12	189	P	P	03 35 59.4	-0.4
	0.3nm,0.8s,baz=12,slow=6.8,SNR=2.9						
FINES	FINESS Array B	70.02	333	P	P	03 37 02.6	-1.1
	4.1nm,1.1s,baz=40,slow=11,SNR=3.1						

*JMA **03** 03:31:39.3, 23°.91N×121°.81E, h49km±1km*
*ISCJB **03** 03:31:40.3±0.7, 23°.91N±0°.03×121°.88E±0°.05, h39km±10km, Error ellipse: s-maj=8.0km s-min=3.8km az=31.7*
*TAP **03** 03:31:40.3, 23°.94N×121°.80E, h44km, ML2.8, D*
ISC 03 03:31:38.9±1.4, **23°.86N**±0°.04×**121°.88E**±0°.05, **h20**km±5km, **n25**, σ**0s.70**/39, **1D, Taiwan**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HWA	Hwalien	0.27	295	eS	Sn	03 31 54.1	+0.7
	baz=280						
TWD	Chiawan	0.34	310	⇓iP	Pn	03 31 48.5	-0.1
	baz=306						
TWD				S	Sn	03 31 54.8	-0.2
	baz=306						
ESL	Shilin	0.41	263	P	Pn	03 31 49.6	-0.1
	baz=248						
ESL				S	Sn	03 31 56.6	-0.2
	baz=248						
ENA	Nanau	0.58	348	eS	Sg	03 31 59.3	+1.0
	baz=354						
WHF	Hehuan Shan	0.62	297	P	Pg	03 31 52.0	+0.4
	baz=292						
WHF				S	Sb	03 32 00.6	+0.7
	baz=292						
WDT	Danda	0.69	261	eP	Pn	03 31 53.3	-0.5
	baz=252						
TWF1	Yuli	0.73	226	eP	Pn	03 31 55.7	+1.5
	baz=217						
TWF1				eS	Sn	03 32 04.7	-0.2
	baz=217						
NNS	Nan Shan	0.74	321	eP	Pg	03 31 53.2	-0.2
	baz=321						
NNS				eS	Sb	03 32 03.1	+0.3
	baz=321						
TWC	Suao	0.74	358	P	Pn	03 31 54.0	-0.3
	baz=4.0						
TWC				S	Sg	03 32 03.8	+0.3
	baz=4.0						
TWT	Tachien	0.75	301	eP	Pn	03 31 54.2	-0.4
	baz=297						
TWT				S	Sg	03 32 03.9	+0.1
	baz=297						
ENTT	Nioudou	0.82	340	eP	Pg	03 31 55.0	-0.1
	baz=343						
TWE	Neicheng	0.88	347	eP	Pb	03 31 55.5	+0.1
	baz=351						
TWE				eS	Sb	03 32 06.8	+0.1
	baz=351						
SMLT	Sun Moon Lake	0.89	272	eP	Pn	03 31 56.4	-0.1
	baz=265						
SMLT				eS	Sn	03 32 08.8	-0.1
	baz=265						
YUS	Yu-Shan	0.93	247	eP	Pn	03 31 57.3	+0.1
	baz=239						
YUS				eS	Sg	03 32 09.1	-0.3
	baz=239						
TYC	Yuchr	0.93	273	eP	Pn	03 31 56.7	-0.2
	baz=267						
TYC				eS	Sn	03 32 12.3	+2.6
	baz=267						
NSK	Sanguang	0.94	330	eP	Pb	03 31 56.3	-0.3
	baz=331						
NSK				eS	Sb	03 32 07.5	-1.1
	baz=331						
ELDTW	Lidau	1.03	230	eS	Sb	03 32 11.1	-0.3
	baz=223						
ALS	Alishan	1.04	251	eS	Sg	03 32 12.5	-0.6
	baz=244						
NSTT	Nanjuang	1.11	314	eP	Pb	03 31 59.6	+0.2
	baz=313						
NSTT				eS	Sn	03 32 14.2	+0.2
	baz=313						
CHN5	Tsauling	1.13	257	eP	Pg	03 32 00.2	-0.6
	baz=251						
CHN5				eS	Sg	03 32 15.2	-0.6
	baz=251						
JYNG	Yonagunijimaku	1.14	59	eS	Sb	03 32 14.2	-0.1
TWB1	Santiao Chiao	1.15	5	eS	Sb	03 32 13.0	-1.5
	baz=9.0						
NWF	Wu-fen Shan	1.21	356	eS	Sb	03 32 16.6	+0.2
	baz=358						
CHN4	Tsaushan	1.28	247	eS	Sg	03 32 20.4	-0.1
	baz=242						
WTP	Ta-pu	1.31	242	eS	Sg	03 32 21.0	-0.5
	baz=237						

*NIED **03** 03:39:00, 38°.30N×142°.10E, h35km, Mw4.1 Best double couple: Mo1.68000×10^15 NP1:φs133.00000°, δ33.00000°, λ3.00000°. NP2:φs41.00000°, δ89.00000°, λ123.00000°.*
*JMA **03** 03:39:44.6±0.1, 38°.30N×142°.12E, h41km±2km, M4.1*
JMA Felt II J1.
*ISCJB **03** 03:39:45.2±1.0, 38°.29N±0°.04×142°.08E±0°.08, h41km±8km, mb3.9/19, MS2.5/1, Error ellipse: s-maj=11.0km s-min=6.4km az=17.2*
*IDC **03** 03:39:50.6±2.5, 38°.32N×141°.97E, h73km±21km, mb3.7/19, mb1 3.8/23, mb1mx3.7/38, mbtmp3.9/23, MS3.0/4, Ms1 3.0/4, ms1mx2.7/35, Error ellipse: s-maj=20.4km s-min=16.2km az=149.0*
ISC 03 03:39:45.2±1.9, **38°.31N**±0°.06×**142°.13E**±0°.07, **h27**km±12km, **n44**, σ**1s.59**/49, **mb3.8**/19, **Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	Ouri	0.63	283	P	Pb	03 39 57.0	-0.6
JIO				S	Sb	03 40 05.4	-0.7
OFUJ	Ofunato	0.85	335	P	Pb	03 40 00.2	-1.1
JMK	Ichinoseki	0.96	312	P	Pn	03 40 02.1	-0.8
JMK				S	Sb	03 40 13.9	-1.5
JMM	Marumori	1.15	247	P	Pn	03 40 03.9	-1.6
JMM				eS	Sn	03 40 18.2	-2.1
JOU	Okura	1.15	273	P	Pn	03 40 05.0	-0.6
JOU				S	Sn	03 40 19.4	-1.1
JOM	Ohasama	1.33	331	P	Pn	03 40 07.5	-0.5
JOM				S	Sn	03 40 24.1	-0.8
JFK	Kawauchi	1.37	227	P	Pn	03 40 06.8	-1.8
JFK				S	Sn	03 40 22.6	-3.3
JYK	Kaneyama	1.51	294	P	Pn	03 40 10.4	-0.1
JYK				eS	Sn	03 40 28.9	-0.5
JFT	Otama	1.62	241	P	Pn	03 40 11.5	-0.6
JFT				S	Sn	03 40 30.9	-1.3
JYS	Shirataka	1.63	267	P	Pn	03 40 11.6	-0.5
JYS				eS	Sn	03 40 31.0	-1.2
MJAR	Matsushiro Arr	3.59	242	P	Pn	03 40 41.1	+2.0
	2.1nm,0.3s,baz=57,slow=10.0,SNR=24						
MAT	Matsushiro	3.59	242	P	Pn	03 40 42.0	+2.9
MAT				eS	Sn	03 41 24.5	+3.9
USRK	Ussuriysk Ar.	9.63	311	P	Pn	03 42 05.1	+3.1
	0.7nm,0.3s,baz=117,slow=14,SNR=16						
USRK				LR	LR	03 45 26.3	
	comp=Z,144nm,21.4s,baz=134,slow=35						
KSRS	Korea Array	11.26	270	P	Pn	03 42 28.9	+4.6
	0.2nm,0.3s,baz=197,slow=40,SNR=3.1						
KSRS				LR	LR	03 46 34.8	
	comp=Z,66nm,21.1s,baz=107,slow=36						
KLR	Kul'dur	13.23	329	P	Pn	03 42 54.2	+3.1
	0.2nm,0.3s,baz=145,slow=12,SNR=3.9						
KLR				LR	LR	03 47 19.5	
	comp=Z,132nm,19.9s,baz=120,slow=34						
MA2	Magadan	21.99	12	P	P	03 44 38.2	+1.3
	4.7nm,0.6s,baz=228,slow=9.2,SNR=8.6						
GUMO	Guam	24.75	174	LR	LR	03 58 08.5	
	comp=Z,15nm,19.4s,baz=274,slow=44						
SEY	Seymchan	25.43	11	P	P	03 45 12.2	+1.8
	3.4nm,0.7s,baz=193,slow=6.9,SNR=12						
SONM	Songino Array	27.57	302	P	P	03 45 30.4	+0.4
	1.2nm,0.5s,baz=112,slow=9.2,SNR=13						
H11N2	WAKE ISLAND Hy	28.35	124	T	T	04 16 11.5	
	baz=317,slow=75,SNR=150						
H11N1	WAKE ISLAND Hy	28.36	124	T	T	04 16 13.8	
	baz=317,slow=75,SNR=119						
H11N3	WAKE ISLAND Hy	28.37	124	T	T	04 16 12.9	
	baz=317,slow=75,SNR=100						
H11S1	WAKE ISLAND Hy	29.11	126	T	T	04 16 50.8	
	baz=318,slow=76,SNR=71						
H11S3	WAKE ISLAND Hy	29.11	126	T	T	04 16 58.9	
	baz=318,slow=76,SNR=42						
H11S2	WAKE ISLAND Hy	29.13	126	T	T	04 16 52.2	
	baz=318,slow=76,SNR=50						
ZALV	Zalesovo Beam	41.48	311	P	P	03 47 29.2	-0.5
	4.5nm,0.4s,baz=86,slow=7.7,SNR=25						
ZALV				PcP	PcP	03 49 26.0	-0.9
	0.7nm,0.5s,baz=48,slow=4.8,SNR=3.3						
MKAR	Makanchi Array	43.93	301	P	P	03 47 49.0	-0.8
	1.1nm,0.7s,baz=79,slow=9.3,SNR=14						
ILAR	Eielson Array	48.11	33	P	P	03 48 22.8	+0.5
	0.6nm,0.6s,baz=268,slow=6.3,SNR=7.8						
BVAR	Borovoye Array	50.14	312	P	P	03 48 37.5	-0.6
	1.6nm,0.5s,baz=70,slow=7.7,SNR=15						
BVAR				PcP	PcP	03 49 56.8	-0.4
	1.0nm,0.5s,baz=62,slow=2.9,SNR=6.4						
INK	Inuvik	52.99	28	P	P	03 48 59.8	+0.8
	0.3nm,0.4s,baz=286,slow=7.2,SNR=3.8						
ASAR	Alice Springs	62.13	189	P	P	03 50 03.8	-0.2
	0.4nm,0.7s,baz=20,slow=7.4,SNR=4.4						
YKA	Yellowknife Ar	62.42	31	P	P	03 50 05.4	0.0
	0.1nm,0.5s,baz=298,slow=5.6,SNR=4.2						
ARCES	ARCESS Array B	63.00	339	P	P	03 50 08.2	-1.0
	1.7nm,0.8s,baz=60,slow=5.3,SNR=8.2						
FINES	FINESS Array B	67.95	332	P	P	03 50 40.5	-0.8
	4.1nm,0.6s,baz=37,slow=9.2,SNR=35						
KBZ	Khabaz	70.50	311	P	P	03 50 57.5	+0.1
	2.4nm,0.8s,baz=1.4,slow=5.9,SNR=3.5						
NB2	NORSAR Subarra	73.23	337	P	P	03 51 12.8	-0.7
	comp=Z,1.4nm,0.6s,baz=38,slow=6.2						
NOA	NORSAR Array B	73.23	337	P	P	03 51 12.9	-0.7
	comp=Z,1.8nm,0.9s,baz=43,slow=5.5,SNR=7.9						
AKASG	Malin Array Be	73.63	322	P	P	03 51 15.1	-1.0
	comp=Z,2.1nm,0.5s,baz=44,slow=5.9,SNR=15						
PDAR	Pinedale Array	76.37	46	P	P	03 51 32.1	-0.2
	comp=Z,0.3nm,0.6s,baz=233,slow=1.5,SNR=3.8						
BRTR	Keskin Array B	78.43	312	P	P	03 51 42.9	-0.9
	comp=Z,0.3nm,0.5s,baz=82,slow=3.9,SNR=4.2						
KHC	Kasperske Hory	81.75	329	eP	P	03 52 01.4	0.0
KHC				ex	x	03 52 12.8	
GERES	GERESS Array B	81.92	328	P	P	03 52 01.5	-0.9
	comp=Z,0.4nm,0.5s,baz=54,slow=6.8,SNR=5.6						
TXAR	Lajitas Array	88.89	53	P	P	03 52 37.5	0.0
	comp=Z,0.3nm,0.7s,baz=302,slow=3.2,SNR=5.1						
LPAZ	La Paz	145.55	59	PKPbc	PKPbc	03 59 22.4	+0.1
	comp=Z,0.6nm,0.7s,baz=84,slow=1.1,SNR=2.6						

*IDC **03** 03:43:27.6±9.1, 7°.52S×128°.51E, h101km±93km, mb3.5/4, mb1 3.6/6, mb1mx3.4/32, mbtmp3.9/6, ML4.1/2, Error ellipse: s-maj=152.8km s-min=34.9km az=67.0*
ISC 03 03:43:30.3±1.1, **7°.6S**±0°.4×**128°.7E**±1°.0, **h131**km, **n6**, σ**1s.76**/7, **mb3.6**/4, **Banda Sea**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	Warramunga Arr	13.44	156	P	Pn	03 46 35.2	-0.7
	1.2nm,0.3s,baz=326,slow=14,SNR=7.6						
WRA				S	Sn	03 48 55.8	-8.6
	1.8nm,0.3s,baz=342,slow=22,SNR=7.8						
ASAR	Alice Springs	16.74	163	P	P	03 47 19.6	+2.4
	0.6nm,0.3s,baz=340,slow=8.9,SNR=42						
ASAR				S	Sn	03 50 21.7	-2.1
	0.5nm,0.3s,baz=319,slow=16,SNR=7.1						
STKA	Stephens Creek	26.99	155	P	P	03 49 00.9	+1.0
	1.0nm,0.3s,baz=331,slow=5.3,SNR=3.9						
SONM	Songino Array	58.61	343	P	P	03 53 12.9	-0.6
	0.3nm,0.8s,baz=111,slow=8.0,SNR=2.7						
MKAR	Makanchi Array	68.01	328	P	P	03 54 15.8	+0.4
	1.1nm,0.3s,baz=115,slow=7.9,SNR=27						
BVAR	Borovoye Array	77.87	328	P	P	03 55 12.8	-0.6
	0.2nm,0.5s,baz=106,slow=7.7,SNR=2.5						

*NIED **03** 03:48:00, 37°.80N×141°.70E, h65km, Mw4.7 Best double couple: Mo1.08000×10^16 NP1:φs327.00000°, δ27.00000°, λ-175.00000°. NP2:φs232.00000°, δ88.00000°, λ-63.00000°.*
JMA 03 03:48:52.2±0.1, **37°.76N**×**141°.70E**, **h47**km±2km, **M3.5, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JMM	Marumori	0.73	279	P	Pn	03 49 06.3	+0.1
JMM				S	Sn	03 49 16.4	+0.1
JIO	Ouri	0.75	338	P	Pn	03 49 06.6	+0.2
JIO				S	Sn	03 49 16.3	-0.5
JFK	Kawauchi	0.77	239	P	Pn	03 49 06.9	+0.2
JFK				S	Sn	03 49 17.5	+0.2
ONAJ	Iwakimizuishiy	0.97	228	P	Pn	03 49 09.6	+0.1
ONAJ				S	Sn	03 49 22.2	-0.1
JOU	Okura	1.02	307	S	Sn	03 49 23.3	0.0
JFT	Otama	1.11	258	P	Pn	03 49 12.4	+1.1
JFT				S	Sn	03 49 26.7	+1.2
MAT	Matsushiro	3.04	248	P	Pn	03 49 39.5	+1.6
MAT				eS	Sn	03 50 19.6	+6.5

*NIED **03** 03:51:00, 36°.80N×142°.20E, h5km, Mw3.8 Best double couple: Mo4.85000×10^14 NP1:φs281.00000°, δ20.00000°, λ173.00000°. NP2:φs18.00000°, δ87.00000°, λ70.00000°.*
*ISCJB **03** 03:51:25.6±1.2, 36°.7N±0°.2×142°.30E±0°.09, h15km, mb3.6/10, Error ellipse: s-maj=27.4km s-min=7.7km az=163.0*
*JMA **03** 03:51:25.7±0.3, 36°.81N×142°.20E, h11km±3km, M3.6*
*IDC **03** 03:51:32.3±3.9, 36°.83N×142°.09E, h52km±31km, mb3.4/10, mb1 3.6/13, mb1mx3.4/34, mbtmp3.7/13, ML3.0/3, Error ellipse: s-maj=44.3km s-min=22.0km az=163.0*
ISC 03 03:51:26.7±1.5, **36°.6N**±0°.2×**142°.31E**±0°.09, **h15**km, **n21**, σ**1s.19**/17, **mb3.7**/10, **Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHO	Hitachi	1.40	270	P	Pn	03 51 50.2	-1.5
MJAR	Matsushiro Arr	3.30	270	P	Pn	03 52 17.8	-0.1
	11nm,0.3s,baz=88,slow=14,SNR=67						
MAT	Matsushiro	3.30	270	P	Pn	03 52 18.2	+0.3
MAT				eS	Sn	03 52 58.1	+1.2
USRK	Ussuriysk Ar.	10.90	317	P	Pn	03 54 04.0	+1.8
	0.2nm,0.3s,baz=145,slow=40,SNR=4.3						
KSRS	Korea Array	11.53	278	P	Pn	03 54 12.5	+1.8
	0.1nm,0.3s,baz=79,slow=13,SNR=3.5						
MA2	Magadan	23.61	11	P	P	03 56 35.8	-1.0
	1.4nm,0.4s,baz=173,slow=5.2,SNR=4.2						
SEY	Seymchan	27.05	10	P	P	03 57 08.5	+0.3
	0.7nm,0.5s,baz=194,slow=13,SNR=2.8						
H11N2	WAKE ISLAND Hy	27.32	121	T	T	04 25 07.4	
	baz=316,slow=75,SNR=3.0						
H11N1	WAKE ISLAND Hy	27.33	121	T	T	04 25 04.4	
	baz=316,slow=75,SNR=4.3						
H11N3	WAKE ISLAND Hy	27.34	121	T	T	04 25 05.5	
	baz=316,slow=75,SNR=4.7						
H11S1	WAKE ISLAND Hy	28.04	124	T	T	04 26 00.3	
	baz=317,slow=76,SNR=4.8						
H11S3	WAKE ISLAND Hy	28.04	124	T	T	04 25 58.8	
	baz=317,slow=76,SNR=4.1						
H11S2	WAKE ISLAND Hy	28.05	124	T	T	04 26 04.7	
	baz=317,slow=76,SNR=4.2						
SONM	Songino Array	28.61	304	P	P	03 57 21.5	-0.9
	1.9nm,0.8s,baz=102,slow=8.6,SNR=15						
ZALV	Zalesovo Beam	42.72	313	P	P	03 59 21.6	-1.3
	0.8nm,0.5s,baz=98,slow=8.1,SNR=4.3						
ZALV				PcP	PcP	04 01 14.3	-0.1
	0.5nm,0.6s,baz=54,slow=2.6,SNR=2.7						
MKAR	Makanchi Array	44.94	303	P	P	03 59 39.3	-1.7
	0.5nm,0.6s,baz=88,slow=10,SNR=7.0						
ILAR	Eielson Array	49.45	32	P	P	04 00 15.8	0.0
	0.6nm,0.7s,baz=263,slow=6.9,SNR=5.8						
INK	Inuvik	54.42	27	P	P	04 00 52.3	-0.4
	1.0nm,1.0s,baz=249,slow=8.4,SNR=2.6						
YKA	Yellowknife Ar	63.80	30	P	P	04 01 57.9	+0.1
	0.2nm,0.7s,baz=299,slow=6.8,SNR=5.2						
PDAR	Pinedale Array	77.44	46	P	P	04 03 23.4	+1.7
	0.5nm,0.9s,baz=194,slow=4.4,SNR=3.2						
TXAR	Lajitas Array	89.80	53	P	P	04 04 25.2	+0.1
	0.2nm,0.8s,baz=256,slow=2.7,SNR=2.9						

JMA 03 03:59:38.2±0.1, **38°.41N**×**142°.18E**, **h21**km, **M3.1, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	Ouri	0.65	274	P	Pb	03 59 50.7	-0.3
JIO				S	Sb	03 59 59.2	-0.5
JMK	Ichinoseki	0.93	306	S	Sb	04 00 07.6	+0.2

IDC 03 04:12:24.9±3.8, **55°.73N**×**152°.52W**, **h0**km, **mb3.0**/2, **mb1 3.4**/3, **mb1mx3.2**/44, **mbtmp3.2**/3, **ML3.5**/1, **Error ellipse: s-maj=70.1km s-min=36.7km az=156.0, South of Alaska**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ILAR	Eielson Array	9.49	15	Pn	Pn	04 14 36.5	-6.1
	0.2nm,0.3s,baz=200,slow=14,SNR=10						
ILAR				Sn	Sn	04 16 11.5	-18
	0.1nm,0.3s,baz=207,slow=25,SNR=3.5						
YKA	Yellowknife Ar	20.36	55	P	P	04 17 02.5	0.0
	0.1nm,0.3s,baz=269,slow=10,SNR=4.2						
SONM	Songino Array	57.58	308	P	P	04 22 16.1	-0.1
	0.4nm,0.7s,baz=38,slow=5.6,SNR=3.9						

*NIED **03** 04:14:00, 39°.70N×142°.10E, h50km, Mw4.0 Best double couple: Mo9.62000×10^14 NP1:φs241.00000°, δ66.00000°, λ-159.00000°. NP2:φs142.00000°, δ71.00000°, λ-26.00000°.*
*IDC **03** 04:14:21.1±1.3, 39°.89N×142°.80E, h0km, mb3.8/10, mb1 3.8/13, mb1mx3.6/41, mbtmp3.7/13, ML3.0/3, MS2.9/2, Ms1 2.9/2, ms1mx2.3/49, Error ellipse: s-maj=36.4km s-min=18.6km az=74.0*
*NEIC **03** 04:14:25.9±2.2, 39°.87N×142°.66E, h29km±15km, mb4.2/6, Error ellipse: s-maj=13.1km s-min=7.0km az=105.0*
*JMA **03** 04:14:30.5, 39°.70N×142°.12E, h48km±1km, M3.6*
JMA Felt I J1.
ISC 03 04:14:26.2±1.8, **39°.78N**±0°.05×**142°.54E**±0°.08, **h30**km±11km, **n40**, σ**1s.50**/43, **mb4.0**/16, **Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JTH	Tanohata	0.54	287	P	Pn	04 14 39.5	+1.6
JTH				S	Sn	04 14 45.7	-0.3
MIYJ	Miyakonagasawa	0.59	250	P	Pn	04 14 39.1	+0.6
MIYJ				iS	Sb	04 14 45.1	-1.1
JKZ	Kuzumaki	0.95	283	P	Pb	04 14 44.0	-0.2
JKZ				S	Sn	04 14 53.6	-2.6
OFUJ	Ofunato	0.97	224	P	Pn	04 14 43.9	+0.2
JANG	Nango	0.99	307	P	Pb	04 14 45.6	+0.9
JANG				S	Sn	04 14 56.4	-0.5
JOM	Ohasama	1.01	253	P	Pn	04 14 44.0	-0.3
JOM				S	Sn	04 14 53.8	-3.7
JMK	Ichinoseki	1.31	232	P	Pn	04 14 48.5	0.0
JMK				S	Sn	04 15 01.8	-3.1
JAH	Hinai	1.52	286	P	Pn	04 14 51.9	+0.6
JAH				S	Sn	04 15 08.3	-1.7
JRG	Rokugo	1.52	256	P	Pn	04 14 50.9	-0.4
JRG				eS	Sn	04 15 05.9	-4.2
JIO	Ouri	1.61	215	P	Pn	04 14 53.3	+0.7
JIO				eS	Sn	04 15 10.0	-2.3

ERM	**Erimo**	**2.28**	**12**	*e*Pn	**Pn**	**04 15 00.1**	**-1.7**
MAJO	**Matsushiro**	**4.70**	**228**	*e*Pn	**Pn**	**04 15 36.7**	**+1.6**
MAT	**Matsushiro**	**4.70**	**228**	P	**Pn**	**04 15 37.9**	**+2.9**
MAT				*e*S	**Sn**	**04 16 29.9**	**+1.4**
MJAR	**Matsushiro Arr**	**4.70**	**228**	Pn	**Pn**	**04 15 36.9**	**+1.8**
	1.8nm,0.3s,baz=30,slow=12,SNR=29						
USRK	**Ussuriysk Ar.**	**9.01**	**303**	Pn	**Pn**	**04 16 34.2**	**0.0**
	0.2nm,0.3s,baz=105,slow=16,SNR=3.1						
JNU	**Nakatsue**	**11.50**	**238**	LR	LR	04 21 05.4	
	comp=Z,36nm,19.5s,baz=344,slow=34						
KSRS	**Korea Array**	**11.67**	**263**	Pn	**Pn**	**04 17 12.1**	**+1.6**
	0.3nm,0.3s,baz=73,slow=13,SNR=3.2						
KSAR	**Wonju Array Be**	**11.70**	**263**	Pn	**Pn**	**04 17 12.1**	**+1.1**
SONM	**Songino Array**	**27.10**	**299**	P	**P**	**04 20 06.9**	**+0.6**
	0.4nm,0.5s,baz=106,slow=9.2,SNR=4.2						
H11N2	**WAKE ISLAND Hy**	**28.93**	**127**	T	T	04 51 01.0	
	baz=319,slow=76,SNR=309						
H11N1	**WAKE ISLAND Hy**	**28.94**	**127**	T	T	04 51 01.8	
	baz=319,slow=76,SNR=288						
H11N3	**WAKE ISLAND Hy**	**28.95**	**127**	T	T	04 51 02.4	
	baz=319,slow=76,SNR=217						
H11S1	**WAKE ISLAND Hy**	**29.74**	**128**	T	T	04 52 11.8	
	baz=320,slow=76,SNR=24						
H11S3	**WAKE ISLAND Hy**	**29.74**	**129**	T	T	04 52 02.4	
	baz=320,slow=76,SNR=24						
H11S2	**WAKE ISLAND Hy**	**29.76**	**128**	T	T	04 52 08.9	
	baz=320,slow=76,SNR=18						
ZALV	**Zalesovo Beam**	**40.77**	**310**	P	**P**	**04 22 04.5**	**+0.1**
	1.6nm,0.4s,baz=91,slow=7.6,SNR=7.8						
ZALV				LR	LR	04 39 24.0	
	comp=Z,23nm,18.5s,baz=68,slow=37						
MKAR	**Makanchi Array**	**43.47**	**300**	P	**P**	**04 22 26.4**	**-0.1**
	1.3nm,0.7s,baz=84,slow=9.4,SNR=16						
KURK	**Kurchatov**	**44.98**	**306**	*e*P	**P**	**04 22 38.1**	**-0.4**
	4.2nm,0.8s						
KURBB	**Kurchatov Arra**	**45.06**	**306**	P	**P**	**04 22 39.2**	**+0.1**
	1.5nm,0.4s,baz=79,slow=8.5,SNR=14						
TKM2	**Tokmak 2**	**49.15**	**297**	*e*P	**P**	**04 23 11.8**	**+0.5**
	1.5nm,0.7s						
BVAR	**Borovoye Array**	**49.42**	**311**	P	**P**	**04 23 12.3**	**-0.7**
	0.3nm,0.3s,baz=71,slow=9.9,SNR=2.7						
BRVK	**Borovoye**	**49.47**	**311**	*e*P	**P**	**04 23 12.6**	**-0.8**
	1.4nm,0.7s						
EKS2	**Erkin-Say**	**50.49**	**297**	*e*P	**P**	**04 23 21.6**	**+0.2**
	0.9nm,0.6s						
ARU	**Arti**	**54.91**	**318**	*e*P	**P**	**04 23 54.4**	**+0.7**
	2.2nm,0.6s						
ABKAR	**Akbulak array**	**56.87**	**309**	*e*P	**P**	**04 24 08.2**	**+0.3**
	1.3nm,0.6s						
WRA	**Warramunga Arr**	**59.90**	**189**	P	**P**	**04 24 29.5**	**+0.2**
	0.3nm,0.5s,baz=7.0,slow=6.8,SNR=2.5						
ASAR	**Alice Springs**	**63.63**	**189**	P	**P**	**04 24 54.9**	**+0.6**
	0.3nm,0.9s,baz=0.3,slow=6.0,SNR=3.4						
FINES	**FINESS Array B**	**66.80**	**332**	P	**P**	**04 25 13.6**	**-0.8**
	2.3nm,0.9s,baz=27,slow=6.5,SNR=5.2						
NOA	**NORSAR Array B**	**72.00**	**337**	P	**P**	**04 25 46.7**	**0.0**
	0.3nm,0.6s,baz=30,slow=5.2,SNR=2.6						
AKASG	**Malin Array Be**	**72.67**	**322**	P	**P**	**04 25 51.1**	**+0.3**
	0.5nm,0.4s,baz=44,slow=6.2,SNR=5.9						

IDC 03 04:18:07.3±8.5**,21°.52S×65°.78W,h309**km±53km**,mb3.1**/2**, mb1 3.1**/5**,mb1mx2.9**/21**,mbtmp3.7**/5**,Error ellipse: s-maj=120.1km s-min=24.1km az=20.0,Southern Bolivia**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LPAZ	**La Paz**	**5.66**	**336**	P	Pn	04 19 33.5	-0.1
	0.5nm,0.3s,baz=158,slow=9.7,SNR=18						
LPAZ				S	S	04 20 43.5	+0.5
	baz=281,slow=17,SNR=4.2						
SIV	**San Ignacio**	**7.08**	**40**	P	Pn	04 19 50.1	+0.1
	1.0nm,0.3s,baz=244,slow=12,SNR=16						
BDFB	**Brasilia**	**17.82**	**74**	P	P	04 21 54.8	-0.1
	0.2nm,0.3s,baz=233,slow=10,SNR=2.7						
TORD	**Torodi Ar. Bea**	**74.63**	**69**	P	P	04 29 13.7	0.0
	0.2nm,0.3s,baz=257,slow=5.6,SNR=13						
YKA	**Yellowknife Ar**	**92.20**	**340**	P	P	04 30 41.8	0.0
	0.2nm,0.5s,baz=128,slow=4.3,SNR=6.2						

IDC 03 04:30:55.7±3.7**,3°.81S×152°.05E,h0**km**,mb3.9**/3**, mb1 4.2**/3**,mb1mx3.6**/46**,mbtmp3.9**/3**,MS3.8**/1**,Ms1 3.8**/1**, ms1mx2.5**/40**,Error ellipse: s-maj=149.7km s-min=46.8km az=121.0,New Ireland region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JAY	**Jayapura**	**11.40**	**276**	LR	LR	04 37 17.2	
	comp=Z,509nm,21.4s,baz=85,slow=34						
WRA	**Warramunga Arr**	**23.57**	**226**	P	P	04 36 08.6	+0.4
	1.7nm,0.3s,baz=51,slow=9.5,SNR=8.9						
ASAR	**Alice Springs**	**26.40**	**220**	P	P	04 36 33.9	-0.3
	0.5nm,0.6s,baz=52,slow=8.5,SNR=4.5						
FITZ	**Fitzroy Crossi**	**29.50**	**239**	P	P	04 37 01.9	0.0
	2.8nm,0.8s,baz=65,slow=14,SNR=2.9						
TORD	**Torodi Ar. Bea**	**149.28**	**289**	PKPbc	PKPbc	04 50 46.9	-0.6
	0.5nm,0.4s,baz=89,slow=2.6,SNR=7.3						

*IDC **03** 04:35:58.7±2.4, 36°.90N×141°.00E, h0km, mb3.3/3, mb1 3.5/4, mb1mx3.2/52, mbtmp3.3/4, ML3.1/1, Error ellipse: s-maj=41.6km s-min=29.0km az=63.0*

*ISCJB **03** 04:35:59.4±1.0, 37°.08N±0°.03×140°.94E±0°.07, h8km±4km, mb3.4/3, Error ellipse: s-maj=9.3km s-min=5.2km az=17.0*

*JMA **03** 04:36:00.7, 37°.10N×140°.84E, h8km±1km, M3.5 Broadband fault plane solution: P waves. NP1: φs206.00000°, δ61.00000°, λ-86.00000°. NP2:φs18.00000°, δ29.00000°, λ-98.00000°. Principal axes: T Plg16.0000°, Azm293.0000°; N Plg4.0000°, Azm24.0000°; P Plg74.0000°, Azm127.0000°;*

JMA Felt III J1.

ISC 03 04:35:59.7±1.4**,37°.05N**±0°.06×**140°.88E**±0°.06**,h6**km±8km**, n12,σ0s.62**/21**,mb3.3**/3**,5C-2D,Eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.09**	**309**	⇓P	**Pg**	**04 36 02.1**	**+0.3**
ONAJ				S	**Sg**	**04 36 03.1**	**0.0**
JFK	**Kawauchi**	**0.32**	**359**	⇑P	**Pg**	**04 36 06.1**	**+0.1**
JFK				*e*S	**Sg**	**04 36 10.1**	**-0.1**
JHO	**Hitachi**	**0.50**	**210**	⇓P	**Pb**	**04 36 10.8**	**-0.2**
JHO				S	**Sb**	**04 36 18.0**	**-0.6**
JFT	**Otama**	**0.64**	**317**	⇑P	**Pg**	**04 36 12.3**	**+0.2**
JFT				S	**Sg**	**04 36 20.5**	**+0.1**
JSB	**Shiboa**	**0.78**	**264**	⇑P	**Pb**	**04 36 15.7**	**0.0**
JSB				S	**Sb**	**04 36 26.1**	**-0.4**
JMM	**Marumori**	**0.82**	**355**	⇑P	**Pg**	**04 36 15.1**	**-0.4**
JMM				S	**Sg**	**04 36 25.5**	**-0.7**
JFY	**Yanaizu**	**1.01**	**291**	⇑P	**Pg**	**04 36 19.0**	**-0.1**
JFY				*e*S	**Sg**	**04 36 31.5**	**-0.6**
MJAR	**Matsushiro Arr**	**2.21**	**258**	Pn	**Pn**	**04 36 38.0**	**+1.1**
	5.0nm,0.3s,baz=84,slow=15,SNR=36						
MJAR				Sn	**Sb**	**04 37 06.6**	**-1.0**
	11nm,0.3s,baz=84,slow=28,SNR=15						
MAT	**Matsushiro**	**2.21**	**258**	P	**Pb**	**04 36 38.7**	**-1.4**
MAT				S	**Sb**	**04 37 07.9**	**+0.2**
SONM	**Songino Array**	**27.43**	**304**	P	**P**	**04 41 46.8**	**+0.5**
	0.5nm,0.9s,baz=98,slow=10,SNR=3.7						
MKAR	**Makanchi Array**	**43.75**	**302**	P	**P**	**04 44 06.5**	**+0.6**
	0.2nm,0.5s,baz=79,slow=10.0,SNR=2.4						
WRA	**Warramunga Arr**	**57.02**	**187**	P	**P**	**04 45 46.0**	**-0.5**
	0.7nm,0.3s,baz=3.5,slow=7.3,SNR=3.0						

*BJI **03** 04:37:55.2, 4°.36S×29°.37E, h10km, mb4.9/12, mB4.9/8, Ms4.9/5, Ms7 4.7/4*

*IDC **03** 04:37:56.9±0.6, 3°.52S×29°.50E, h0km, mb4.2/17, mb1 4.4/21, mb1mx4.2/39, mbtmp4.3/21, ML2.4/1, MS3.8/26, Ms1 3.8/26, ms1mx3.7/43, Error ellipse: s-maj=18.6km s-min=10.9km az=93.0*

*ISCJB **03** 04:37:57.8±0.3, 3°.69S±0°.04×29°.52E±0°.06, h10km, mb4.6/52, MS3.8/25, Error ellipse: s-maj=8.2km s-min=5.3km az=3.8*

*NEIC **03** 04:37:59.5±0.4, 3°.64S×29°.60E, h10km, mb4.7/27, Error ellipse: s-maj=12.2km s-min=7.9km az=87.0*

NEIC Felt [IV] at Bujumbura. Felt [II] at Kigali, Rwanda. Also felt at Butare. Felt at Kabare, Congo.

ISC 03 04:37:59.9±0.4**,3°.61S**±0°.05×**29°.75E**±0°.05**,h10**km**,n120, σ1s.49**/113**,mb4.6**/52**,MS3.9**/25**,10C-5D,Lake Tanganyika region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DODT	**Dodoma, Tanzan**	**6.51**	**113**	*i* P	**Pn**	**04 39 35.4**	**-0.6**
DODT				*i* S	**Sg**	**04 41 27.1**	**-1.9**
I32KE	**NAIROBI INFRAS**	**7.45**	**72**	*i*		05 27 20.0	
	baz=253,slow=319,SNR=0.9						
KMBO	**Kilima Mbogo**	**7.89**	**72**	*i* P	**Pn**	**04 39 54.4**	**-0.7**
KMBO				*i*		04 39 54.5	
	baz=276,slow=9.3						
KMBO				*i* S	**Sn**	**04 41 22.3**	**-2.4**
KMBO	**Kilima Mbogo**	**7.89**	**72**	*i* P	Pn	04 39 48.9	-6.2
KMBO				*i* S	**Sb**	**04 41 55.0**	**+3.7**
KMBO	**Kilima Mbogo**	**7.89**	**72**	Pn	**Pn**	**04 39 54.1**	**-1.0**
	6.8nm,0.3s,baz=236,slow=15,SNR=211						
KMBO				Sn	**Sn**	**04 41 22.2**	**-2.4**
	11nm,0.3s,baz=172,slow=23,SNR=6.8						
KMBO				Lg	Lg	04 42 05.1	
	38nm,0.3s,baz=233,slow=20,SNR=12						
KMBO	**Kilima Mbogo**	**7.89**	**72**	*e*Pn	**Pn**	**04 39 53.7**	**-1.3**
KMBO				*e*Sn	**Sn**	**04 41 22.0**	**-2.6**
KMBO				*e*Lg	Lg	04 42 07.7	
LSZ	**Lusaka**	**11.70**	**187**	Pn	**Pn**	**04 40 45.5**	**-1.6**
	5.2nm,0.3s,baz=1.6,slow=10,SNR=125						
LSZ				Sn	Sn	04 42 50.4	-7.5
	4.8nm,0.3s,baz=350,slow=12,SNR=2.6						
LSZ				Lg	Lg	04 44 08.8	
	11nm,0.3s,baz=98,slow=19,SNR=6.5						
LSZ	**Lusaka**	**11.70**	**187**	*e*Pn	**Pn**	**04 40 45.9**	**-1.2**
	53nm,0.6s						
LSZ				Sn	Sn	04 42 50.4	-7.5
LSZ				*e*Lg	Lg	04 44 08.6	
MATP	**Matopo**	**16.76**	**184**	*i* P	**Pn**	**04 41 54.2**	**-0.8**
MATP				*i*		04 41 54.3	
	baz=4.6,slow=16						
MATP				*i* S	**Sn**	**04 45 01.7**	**+0.2**
MATP	**Matopo**	**16.76**	**184**	Pn	**Pn**	**04 41 52.7**	**-2.4**
	1.2nm,0.3s,baz=4.7,slow=13,SNR=21						
MATP				Sn	**Sn**	**04 45 04.8**	**+3.3**
	1.0nm,0.3s,baz=292,slow=19,SNR=3.4						
MATP				Lg	Lg	04 46 50.1	
	1.8nm,0.3s,baz=285,slow=20,SNR=2.9						
MATP				LR	LR	04 48 58.6	
	comp=Z,366nm,18.2s,baz=8.5,slow=39						
TSUM	**Tsumeb**	**19.53**	**217**	P	**P**	**04 42 26.5**	**-1.4**
	0.6nm,0.3s,baz=25,slow=11,SNR=13						
TSUM				S	Sn	04 45 56.4	-12
	1.3nm,0.3s,baz=288,slow=20,SNR=3.1						
TSUM				Lg	Lg	04 48 11.2	
	0.9nm,0.3s,baz=98,slow=17,SNR=4.4						
TSUM				LR	LR	04 50 30.4	
	comp=Z,186nm,20.1s,baz=37,slow=39						
TSUM	**Tsumeb**	**19.53**	**217**	*e*P	**P**	**04 42 27.4**	**-0.5**
	29nm,0.8s						
TSUM				S	Sn	04 45 56.4	-12
TSUM				Lg	Lg	04 48 11.2	
ATD	**Arta Tunnel**	**19.90**	**41**	Lg	Lg	04 48 31.0	
	0.5nm,0.3s,baz=116,slow=20,SNR=2.9						
ATD				LR	LR	04 49 57.7	
	comp=Z,159nm,21.6s,baz=208,slow=36						
OPO	**Ambohidratompo**	**22.63**	**132**	P	**P**	**04 43 03.3**	**+1.8**
	1.6nm,0.5s,baz=287,slow=11,SNR=2.0						
OPO				LR	LR	04 51 08.2	
	comp=Z,165nm,19.2s,baz=352,slow=35						
ABPO	**Ambohimpanom**	**22.95**	**133**	*e*P	**P**	**04 43 03.3**	**-1.4**
	48nm,1.1s						
BOSA	**Boshof**	**25.23**	**189**	*i* P	**P**	**04 43 26.6**	**+0.3**
BOSA				*i*		04 43 26.8	
	baz=329,slow=10						
BOSA				*i* S	**S**	**04 47 53.8**	**+1.8**
BOSA	**Boshof**	**25.23**	**189**	P	**P**	**04 43 25.7**	**-0.6**
	18nm,1.0s,baz=14,slow=9.9,SNR=13						
BOSA				Lg	Lg	04 51 18.4	
	14nm,1.0s,baz=114,slow=20,SNR=2.2						
BOSA				LR	LR	04 53 32.5	
	comp=Z,605nm,18.9s,baz=13,slow=37						
BOSA	**Boshof**	**25.23**	**189**	*e*P	**P**	**04 43 25.8**	**-0.6**
	34nm,1.2s						
BOSA				Lg	Lg	04 51 18.4	
SUR	**Sutherland**	**29.83**	**195**	P	**P**	**04 44 06.5**	**-1.0**
	0.9nm,1.0s,baz=1.5,slow=8.5,SNR=3.6						
SUR				Lg	Lg	04 53 37.5	
	2.0nm,1.1s,baz=54,slow=6.4,SNR=4.6						
SUR				LR	LR	04 55 04.0	
	comp=Z,26nm,18.6s,baz=18,slow=34						
SUR	**Sutherland**	**29.83**	**195**	*e*P	**P**	**04 44 07.4**	**-0.2**
	37nm,1.1s						
SUR				Lg	Lg	04 53 37.5	
RAYN	**Ar Rayn**	**31.03**	**29**	*e*P	**P**	**04 44 18.6**	**+0.5**
	5.8nm,1.0s						
TOA0	**Torodi Ar. Sit**	**32.45**	**301**	*e*P	P	04 44 27.4	-3.3
	6.5nm,0.8s						
TORD	**Torodi Ar. Bea**	**32.45**	**301**	P	P	04 44 26.5	-4.2
	4.4nm,0.7s,baz=113,slow=8.3,SNR=16						
TORD				Lg	Lg	04 54 54.4	
	4.3nm,1.0s,baz=122,slow=26,SNR=7.2						
TORD				LR	LR	04 56 52.8	
	comp=Z,416nm,19.2s,baz=115,slow=35						
TAM	**Tamanrasset**	**35.33**	**319**	*e*P	**P**	**04 44 55.9**	**+0.2**
	1.4nm,0.8s						
KIC	**Kosan Boka**	**35.83**	**286**	*e*P	P	04 44 57.0	-3.1
	120nm,1.7s						
DBIC	**Dimbokro**	**36.02**	**286**	P	P	04 44 57.7	-4.0
	4.0nm,0.9s,baz=120,slow=7.0,SNR=5.1						
DBIC				LR	LR	04 59 49.1	
	comp=Z,81nm,19.0s,baz=76,slow=37						
LIC	**Lamto**	**36.07**	**286**	*e*P	P	04 44 54.5	-7.6
	74nm,1.6s						
TIC	**Toumodi**	**36.17**	**286**	*e*P	P	04 44 59.5	-3.5
CSS	**Mathiatis**	**38.51**	**5**	*e*P	**P**	**04 45 22.7**	**+0.1**
	6.5nm,1.2s						
BR131	**Keskin Array S**	**43.27**	**4**	*e*P	**P**	**04 46 03.4**	**+1.5**
BRTR	**Keskin Array B**	**43.27**	**4**	P	**P**	**04 45 59.9**	**-2.0**
	4.9nm,0.8s,baz=183,slow=8.5,SNR=24						
BR231	**Keskin MP Arra**	**43.33**	**3**	*e*P	**P**	**04 46 03.9**	**+1.6**
KEST	**Kesra**	**43.55**	**336**	P	**P**	**04 46 01.4**	**-2.8**
	6.9nm,1.0s,baz=205,slow=7.9,SNR=10						
KEST				LR	LR	05 03 41.2	
	comp=Z,144nm,21.9s,baz=308,slow=36						
KEST	**Kesra**	**43.55**	**336**	*e*P	**P**	**04 46 04.8**	**+0.6**
	8.7nm,1.0s						
TIP	**Timpagrande**	**44.23**	**345**	*e*P	**P**	**04 46 10.0**	**+0.5**
	3.2nm,0.6s						
GNI	**Garni**	**45.67**	**16**	*e*P	**P**	**04 46 23.7**	**+2.6**
	100nm,1.2s						
VSL	**Villasalto**	**46.81**	**338**	*e*P	**P**	**04 46 30.5**	**+0.6**
	17nm,1.4s						
ARR	**Arges**	**48.97**	**355**	⇓*i*P	**P**	**04 46 47.5**	**+0.9**
GEYT	**Alibeck**	**48.99**	**30**	LR	LR	05 06 28.2	
	comp=Z,140nm,20.6s,baz=175,slow=35						
MLR	**Muntele Rosu**	**49.00**	**356**	⇑*i*P	**P**	**04 46 47.6**	**+0.7**
VOIR		**49.01**	**356**	⇑*i*P	**P**	**04 46 47.7**	**+0.8**
LOT	**Lotru**	**49.13**	**354**	⇑*i*P	**P**	**04 46 49.2**	**+1.3**
GZR	**Gura Zlata**	**49.18**	**354**	⇑*i*P	**P**	**04 46 49.5**	**+1.3**
PLOR	**Plostina**	**49.32**	**357**	⇑*i*P	**P**	**04 46 50.0**	**+0.8**
VRI	**Vrincioaia**	**49.33**	**357**	⇓*i*P	**P**	**04 46 48.8**	**-0.5**
DOPR	**Dopca**	**49.51**	**356**	⇑*i*P	**P**	**04 46 51.6**	**+0.9**
BZS	**Buzias**	**49.54**	**353**	⇓*i*P	**P**	**04 46 52.1**	**+1.2**
TESR	**Tescani**	**49.98**	**357**	⇑*i*P	**P**	**04 46 54.4**	**+0.2**
SIRR	**Siria**	**50.17**	**353**	⇓*i*P	**P**	**04 46 57.5**	**+1.8**
CJR	**Cluj-Napoca**	**50.40**	**355**	⇑*i*P	**P**	**04 46 58.8**	**+1.3**
DRGR		**50.57**	**354**	⇑*i*P	**P**	**04 46 59.9**	**+1.1**
BURAR	**Bucovina Array**	**51.16**	**356**	⇑*i*P	**P**	**04 47 04.0**	**+0.7**
BUR08	**Bucovina Ar. S**	**51.19**	**356**	*e*P	**P**	**04 47 04.6**	**+1.1**
PSZ	**Piszkesteto**	**52.03**	**352**	*e*P	**P**	**04 47 10.5**	**+0.8**
	2.5nm,0.5s						
KECS	**Kecovo**	**52.50**	**352**	*e*	**P**	**04 47 11.0**	**-2.1**
KOLS	**Kolonicke sedl**	**52.73**	**354**	*e*P	**P**	**04 47 17.1**	**+2.3**
CONA	**Conrad Observa**	**52.74**	**348**	*i* P	**P**	**04 47 16.2**	**+1.2**
	19nm,1.0s						
VYHS	**Vyhne**	**52.75**	**351**	*e*P	**P**	**04 47 15.5**	**+0.5**
TUE	**Stuetta**	**53.03**	**342**	*e*P	**P**	**04 47 18.8**	**+1.4**
	14nm,0.7s						
ES19	**SONSECA Array**	**53.04**	**328**	*e*P	**P**	**04 47 17.6**	**+0.2**
ESDC	**Sonseca Array**	**53.06**	**328**	P	**P**	**04 47 14.8**	**-2.7**
	0.8nm,0.6s,baz=142,slow=7.5,SNR=3.9						
LANS	**Liptovska Anna**	**53.30**	**352**	*e*P	**P**	**04 47 20.9**	**+1.9**
STHS	**Stebnicka Huta**	**53.32**	**353**	*e*P	**P**	**04 47 20.3**	**+1.1**
RETA	**Reutte**	**53.55**	**344**	*i* P	**P**	**04 47 21.2**	**+0.2**
	7.8nm,0.9s						
SSB	**Saint Sauveur**	**53.61**	**338**	*e*P	**P**	**04 47 21.5**	**+0.1**
	6.3nm,0.8s						
DAVA	**Damuels**	**53.61**	**343**	*i* P	**P**	**04 47 21.6**	**+0.1**
	9.4nm,0.6s						
VRAC	**Vranov**	**53.92**	**349**	⇓*i*P	**P**	**04 47 24.4**	**+0.8**
GEC2	**GERESS Array S**	**54.08**	**347**	*e*P	**P**	**04 47 24.5**	**-0.3**
	30nm,2.0s						
GERES	**GERESS Array B**	**54.08**	**347**	P	P	04 47 21.8	-3.0
	2.1nm,0.7s,baz=160,slow=8.4,SNR=17						
GERES				LR	LR	05 14 01.7	
	comp=Z,83nm,18.3s,baz=151,slow=40						
KIEV	**Kiev**	**54.09**	**360**	*e*P	**P**	**04 47 24.3**	**-0.4**
	5.2nm,0.8s						
AKASG	**Malin Array Be**	**54.10**	**360**	P	P	04 47 21.6	-3.2
	3.8nm,0.7s,baz=184,slow=6.9,SNR=20						
AKASG				LR	LR	05 11 21.7	
	comp=Z,37nm,18.9s,baz=85,slow=37						
OKC	**Ostrava-Krasne**	**54.17**	**351**	*e*P	**P**	**04 47 26.9**	**+1.6**
MORC	**Moravsky Berou**	**54.21**	**350**	*e*P	**P**	**04 47 25.9**	**+0.2**
	29nm,1.0s						
KHC	**Kasperske Hory**	**54.37**	**347**	*e*P	**P**	**04 47 25.3**	**-1.6**
KHC				*e*pP	**pP**	**04 47 27.5**	**-2.6**
KHC				*e*x	x	04 48 14.6	
KHC	**Kasperske Hory**	**54.37**	**347**	*e*P	**P**	**04 47 27.1**	**+0.2**
	1.9nm,0.7s						
DPC	**Dobruska-Polom**	**54.98**	**350**	*e*P	**P**	**04 47 32.3**	**+1.0**
DPC				*e*pP	**sP**	**04 47 36.5**	**+0.8**
BFO	**Black Forest**	**55.01**	**343**	*e*P	**P**	**04 47 30.3**	**-1.2**
	11nm,1.4s						
BRG	**Berggiesshubel**	**55.94**	**348**	*e*(P)	P	04 47 43.0	+4.8
	11nm,1.6s						
CLL	**Collm**	**56.55**	**347**	*e*(P)	**P**	**04 47 45.0**	**+2.5**
CLL				*e*		04 49 57.0	
WLF	**Walferdange**	**56.85**	**342**	*e*P	**P**	**04 47 45.4**	**+0.7**
	4.1nm,0.6s						
NACGM	**Naroch**	**58.36**	**358**	*e*	**P**	**04 47 56.0**	**+0.9**
KSH	**Kashi**	**60.36**	**40**	*e*P	**P**	**04 48 10.6**	**+1.1**
KSH				*e*sP	sP	04 48 17.0	+3.0
KSH				*e*PP	**PP**	**04 50 26.1**	**+3.4**
KSH				PcS	**PcS**	**04 52 54.0**	**-3.1**
KSH				S	**S**	**04 56 23.2**	**-1.3**
KSH				pmax	pmax		
	comp=Z,77nm,5.5s						
KSH				LR	LR		
	comp=N,100nm,5.1s						
KSH				LR	LR		
	comp=E,110nm,4.5s						
KSH				LR	LR		
	comp=Z,210nm,6.4s						
EKS2	**Erkin-Say**	**60.85**	**36**	*e*P	**P**	**04 48 12.9**	**+0.1**
	0.8nm,0.4s						
AAK	**Ala-Archa**	**61.25**	**36**	*e*P	**P**	**04 48 16.5**	**+0.9**
	3.6nm,1.1s						
TKM2	**Tokmak 2**	**62.08**	**37**	*e*P	**P**	**04 48 20.9**	**-0.3**
	7.4nm,1.2s						
ARU	**Arti**	**64.29**	**17**	*e*P	**P**	**04 48 34.2**	**-1.1**
	9.9nm,1.1s						
FINES	**FINESS Array B**	**64.93**	**358**	P	**P**	**04 48 37.8**	**-1.6**
	5.1nm,0.7s,baz=164,slow=7.7,SNR=13						
FIA1	**FINESS Array S**	**64.93**	**358**	*e*P	**P**	**04 48 39.9**	**+0.5**
NB2	**NORSAR Subarra**	**66.05**	**350**	P	**P**	**04 48 46.2**	**-0.5**
	comp=Z,5.3nm,0.8s,baz=160,slow=6.5						
NOA	**NORSAR Array B**	**66.05**	**350**	P	**P**	**04 48 45.6**	**-1.1**
	comp=Z,4.1nm,0.7s,baz=162,slow=6.1,SNR=9.7						
NOA				LR	LR	05 19 14.7	
	comp=Z,26nm,19.8s,baz=210,slow=38						
NBO02	**NORSAR Array S**	**66.12**	**350**	*e*P	**P**	**04 48 46.6**	**-0.6**
MAW	**Mawson**	**67.79**	**167**	P	**P**	**04 48 58.0**	**+0.4**
	comp=Z,1.9nm,0.7s,baz=293,slow=6.6,SNR=3.7						
MAW				LR	LR	05 16 22.0	
	comp=Z,81nm,18.4s,baz=52,slow=34						
MK01	**Makanchi Array**	**68.18**	**36**	*e*P	**P**	**04 48 60.0**	**-0.6**
MK31	**Makanchi Array**	**68.18**	**36**	*e*P	**P**	**04 49 01.9**	**+1.4**
MKAR	**Makanchi Array**	**68.18**	**36**	P	**P**	**04 48 59.0**	**-1.6**
	comp=Z,2.0nm,0.8s,baz=240,slow=5.7,SNR=14						
MKAR				LR	LR	05 19 31.7	
	comp=Z,121nm,19.0s,baz=244,slow=36						
MKAR	**Makanchi Array**	**68.18**	**36**	*e*P	**P**	**04 49 02.1**	**+1.5**
KURK	**Kurchatov**	**68.34**	**31**	*e*P	**P**	**04 49 03.8**	**+2.4**
	comp=Z,11nm,1.5s						
WMQ	**Urumqi**	**70.11**	**41**	*e*P	**P**	**04 49 15.0**	**+2.4**
WMQ				pP	sP	04 49 18.7	+1.6
WMQ				sP	pP	04 49 23.0	+7.1
WMQ				PcP	**PcP**	**04 49 37.0**	**+2.3**
WMQ				S	**S**	**04 58 21.4**	**-2.5**
WMQ				pmax	pmax		
	comp=Z,2.0nm,0.6s						
WMQ				pmax	pmax		
	comp=Z,37nm,4.8s						
WMQ				LR	LR		
	comp=Z,140nm,27.8s						
WMQ				LR	LR		
	comp=Z,79nm,22.0s						
SNAA	**Sanae**	**71.01**	**190**	*e*P	**P**	**04 49 19.1**	**+1.5**
CMAR	**Chiang Mai Arr**	**71.53**	**69**	P	**P**	**04 49 21.6**	**-0.1**
	comp=Z,0.7nm,0.4s,baz=261,slow=7.6,SNR=6.0						
CMAR				LR	LR	05 20 44.9	
	comp=Z,43nm,18.6s,baz=200,slow=36						
ARCES	**ARCESS Array B**	**73.05**	**358**	P	**P**	**04 49 27.9**	**-1.8**
	comp=Z,2.9nm,0.9s,baz=171,slow=6.4,SNR=2.4						
ZALV	**Zalesovo Beam**	**73.30**	**30**	P	**P**	**04 49 31.5**	**0.0**
	comp=Z,0.6nm,0.6s,baz=249,slow=6.2,SNR=4.1						
ZALV				LR	LR	05 22 43.8	
	comp=Z,72nm,20.6s,baz=250,slow=37						
GTA	**Gaotai**	**77.05**	**48**	*e*P	P	04 49 58.9	+5.2
GTA				pP	PcP	04 50 03.7	-0.9
GTA				sP	sP	04 50 06.0	+7.8
GTA				pmax	pmax		
	comp=Z,4.0nm,1.4s						
CD2	**Chengdu**	**78.21**	**58**	P	**P**	**04 50 00.5**	**+0.3**
CD2				pmax	pmax		
	comp=Z,1.0nm,0.6s						
GYA	**Guiyang**	**79.93**	**62**	P	**P**	**04 50 11.0**	**+1.2**
GYA				pmax	pmax		
	comp=Z,10.0nm,1.0s						
NRIK	**Noril'sk**	**82.51**	**18**	LR	LR	05 33 52.0	
	comp=Z,40nm,20.0s,baz=94,slow=41						
TLY	**Talaya**	**82.91**	**37**	LR	LR	05 33 19.0	
	comp=Z,76nm,19.7s,baz=268,slow=40						
CPUP	**Villa Florida**	**85.80**	**244**	LR	LR	05 25 35.0	
	comp=Z,69nm,18.8s,baz=122,slow=33						
HHC	**Hu-ho-hao-te**	**86.16**	**49**	*e*P	**P**	**04 50 42.7**	**+0.9**
HHC				S	**S**	**05 01 17.6**	**+0.8**
HHC				pmax	pmax		
	comp=Z,14nm,1.0s						
HHC				pmax	pmax		
	comp=Z,100nm,5.2s						
HHC				LR	LR		
	comp=Z,130nm,18.2s						
HHC				LR	LR		
	comp=Z,210nm,16.5s						
HHC				LR	LR		
	comp=Z,160nm,16.9s						
QSPA	**South Pole Qui**	**86.45**	**180**	*e*P	**P**	**04 50 43.2**	**+0.5**
	comp=Z,27nm,1.1s						
KAPI	**Kappang**	**89.69**	**95**	LR	LR	05 26 58.0	
	comp=Z,32nm,19.5s,baz=272,slow=33						
NJ2	**Nanjing**	**91.13**	**58**	*e*P	**P**	**04 51 07.5**	**+2.1**
NJ2				pmax	pmax		
	comp=Z,12nm,0.6s						
FITZ	**Fitzroy Crossi**	**94.48**	**108**	LR	LR	05 27 12.1	
	comp=Z,12nm,19.6s,baz=258,slow=31						
VNDA	**Vanda**	**94.85**	**171**	LR	LR	05 31 40.2	
	comp=Z,64nm,21.5s,baz=242,slow=34						
PLCA	**Paso Flores**	**95.45**	**229**	LR	LR	05 32 59.5	
	comp=Z,48nm,19.7s,baz=158,slow=35						
LPAZ	**La Paz**	**96.54**	**253**	LR	LR	05 31 01.4	
	comp=Z,28nm,20.9s,baz=90,slow=33						
CN2	**Changchun**	**96.60**	**46**	*e*P	**P**	**04 51 31.0**	**+0.7**
YAK	**Yakutsk**	**97.83**	**28**	LR	LR	05 39 47.1	
	comp=Z,67nm,18.1s,baz=266,slow=38						
MDJ	**Mudanjiang**	**99.53**	**46**	P	**Pdif**	**04 51 43.2**	**-0.3**
MDJ				pmax	pmax		
	comp=Z,5.0nm,0.4s						
MDJ				pmax	pmax		
	comp=Z,57nm,4.3s						
TXAR	**Lajitas Array**	**129.01**	**305**	PKP	**PKPdf**	**04 57 06.8**	**-2.2**
	comp=Z,0.5nm,0.9s,baz=64,slow=2.9,SNR=4.2						

*NNC **03** 04:46:00.6±0.9, 39°.92N×72°.93E, h0km, mb2.5, mpv2.1, Error ellipse: s-maj=8.8km s-min=3.5km az=7.0*

*KRNET **03** 04:46:01.7±0.1, 39°.84N×73°.03E, mb2.0*

ISC 03 04:46:00.6±2.4**,39°.90N**±0°.09×**73°.07E**±0°.05**,h3**km±24km**, n8,σ0s.62**/13**,11C-5D,Tajikistan-Xinjiang border region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SFK	**Sufi-Kurgan**	**0.35**	**71**	⇑*e*P	**Pb**	**04 46 09.8**	**+0.1**
	baz=64						
SFK				⇑*i*S	**Sb**	**04 46 15.5**	**-0.3**
	baz=64						
SFK	**Sufi-Kurgan**	**0.35**	**71**	⇑P	**Pb**	**04 46 09.7**	**-0.1**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
	1.4nm,0.2s						
SFK				⇑S	Sb	04 46 16.0	+0.1
	13nm,0.2s						
BTK	Batken	1.73	276	⇑eP	Pb	04 46 33.3	+0.2
	baz=278						
BTK				⇑eS	Sg	04 46 56.5	+0.2
	baz=278						
ARLS	Aral	2.18	26	⇑eP	Pb	04 46 41.1	+0.3
	baz=26						
ARLS				⇑eS	Sg	04 47 11.1	+0.4
	baz=26						
AML	Almayashu	2.28	12	⇓iP	Pg	04 46 43.8	-0.5
	baz=12						
AML				⇓iS	Sg	04 47 14.7	+0.8
	baz=12						
MNAS	Manas	2.62	351	⇑Pg	Pb	04 46 47.1	-1.2
	0.2nm,0.3s						
MNAS				⇓Lg	Lg	04 47 24.3	
	1.2nm,0.6s						
AAK	Ala-Archa	2.94	21	⇓Pg	Pb	04 46 54.1	+0.3
	0.3nm,0.2s						
AAK				⇓Lg	Lg	04 47 35.1	
	3.5nm,0.8s						
KK31	Karatay Array	3.73	330	⇑Pg	Pb	04 47 07.8	+0.7
	0.3nm,0.4s,baz=142,slow=15,SNR=4.5						
KK31				⇑Lg	Lg	04 47 58.6	
	0.5nm,0.3s,baz=158,slow=27,SNR=4.2						

*IDC **03** 04:46:00.2±2.8, 35°.65N×141°.91E, h0km, mb3.4/4, mb1 3.5/5, mb1mx3.3/36, mbtmp3.4/5, ML3.1/1, MS3.0/1, Ms1 3.0/1, ms1mx2.3/33, Error ellipse: s-maj=90.1km s-min=23.5km az=61.0*

*ISCJB **03** 04:46:02.1±1.5, 35°.5N±0°.2×141°.8E±0°.2, h22km, mb3.4/4, MS2.9/1, Error ellipse: s-maj=39.8km s-min=12.6km az=35.9*

ISC 03 04:46:03.5±2.1**, 35°.5N**±0°.3×**141°.7E**±0°.3**, h22**km**, n7, σ0s.46**/6**, mb3.5**/4**, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
MJAR	Matsushiro Arr	3.05	292	Pn	Pn	04 46 50.7	+0.2
	2.1nm,0.3s,baz=103,slow=7.4,SNR=16						
MAT	Matsushiro	3.06	292	P	Pn	04 46 51.1	+0.6
MAT				eS	Sn	04 47 26.0	-0.4
MA2	Magadan	24.83	11	LR	LR	05 00 40.9	
	comp=Z,36nm,18.6s,baz=120,slow=36						
ZALV	Zalesovo Beam	43.17	314	P	P	04 54 02.2	-0.1
	0.3nm,0.4s,baz=101,slow=7.6,SNR=2.3						
MKAR	Makanchi Array	45.18	303	P	P	04 54 18.4	-0.2
	0.1nm,0.5s,baz=91,slow=9.0,SNR=2.4						
WRA	Warramunga Arr	55.55	188	P	P	04 55 37.1	-0.1
	0.4nm,0.5s,baz=3.7,slow=7.3,SNR=4.1						
ASAR	Alice Springs	59.28	188	P	P	04 56 06.6	+3.2
	0.2nm,0.5s,baz=15,slow=13,SNR=6.1						

*KRSC **03** 04:54:57.1±1.7, 52°.37N×160°.07E, h60km±20km, ML4.1*

*MOS **03** 04:54:58.9±0.9, 52°.37N×159°.95E, h64km, mb4.1/7, Error ellipse: s-maj=12.1km s-min=5.4km az=95.0*

*ISCJB **03** 04:54:59.4±0.6, 52°.40N±0°.04×159°.94E±0°.07, h70km±5km, mb3.6/12, Error ellipse: s-maj=8.6km s-min=3.9km az=41.5*

*IDC **03** 04:55:04.5±2.0, 52°.59N×159°.56E, h93km±13km, mb3.4/11, mb1 3.6/11, mb1mx3.3/51, mbtmp3.7/11, Error ellipse: s-maj=23.7km s-min=18.8km az=104.0*

ISC 03 04:54:59.0±1.2**, 52°.36N**±0°.05×**160°.03E**±0°.05**, h50**km±11km**, n77, σ1s.34**/110**, mb3.8**/12**, Off east coast of Kamchatka Peninsula**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
SPN	Mys Shipunski	0.74	359	eP	Pn	04 55 13.5	+0.3
SPN				eS	Sn	04 55 23.4	-0.2
SPN	Mys Shipunski	0.74	359	PN	Pn	04 55 13.5	+0.3
SPN				S	Sn	04 55 23.4	-0.2
NLC	Nalytchevo	0.91	333	eP	Pn	04 55 16.0	+0.5
NLC				eS	Sn	04 55 28.2	+0.5
NLC	Nalytchevo	0.91	333	PN	Pn	04 55 16.0	+0.5
NLC				S	Sn	04 55 28.2	+0.5
RUS	Russkaya	0.94	275	eP	Pn	04 55 16.2	+0.4
RUS				eS	Sn	04 55 28.3	+0.1
RUS	Russkaya	0.94	275	PN	Pn	04 55 16.2	+0.4
RUS				S	Sn	04 55 28.3	+0.1
DALK	Dalny	1.03	311	eP	Pn	04 55 17.1	0.0
DALK				eS	Sn	04 55 29.6	-0.8
PET	Petropavlovsk	1.07	309	eP	Pn	04 55 17.8	+0.1
PET				eS	Sn	04 55 30.4	-1.0
PET	Petropavlovsk	1.07	309	ePN	Pn	04 55 17.7	+0.1
PET				eS	Sn	04 55 30.5	-1.0
PET				smax	smax		
	comp=E,691nm,0.4s						
PET				smax	smax		
	comp=N,1μm,0.5s						
UGLR	Uglovaya	1.12	320	eP	Pn	04 55 19.1	+0.6
UGLR				eS	Sn	04 55 33.2	+0.3
MTVR	Mutnovka	1.14	277	eP	Pn	04 55 19.2	+0.5
MTVR				eS	Sn	04 55 33.6	+0.2
SDLR	Sedlovina	1.15	323	eP	Pn	04 55 19.3	+0.4
SDLR				eS	Sn	04 55 32.4	-1.3
SDLR	Sedlovina	1.15	323	PN	Pn	04 55 19.3	+0.4
SDLR				S	Sn	04 55 32.4	-1.3
SMAR	Somma	1.17	321	eP	Pn	04 55 19.4	+0.1
SMAR	Somma	1.17	321	PN	Pn	04 55 19.4	+0.1
AVH	Avacha	1.20	320	eP	Pn	04 55 20.2	+0.7
AVH				eS	Sn	04 55 35.6	+0.9
AVH	Avacha	1.20	320	PN	Pn	04 55 20.2	+0.7
AVH				S	Sn	04 55 35.6	+0.9
GRL	Gorelyy	1.22	280	eP	Pn	04 55 20.8	+1.1
GRL	Gorelyy	1.22	280	PN	Pn	04 55 20.8	+1.1
KRMR	Karymshinskiy	1.25	293	eP	Pn	04 55 20.3	+0.2
KRMR				eS	Sn	04 55 35.8	-0.1
KOK	Koryaka	1.26	318	eP	Pn	04 55 20.8	+0.5
KOK				eS	Sn	04 55 37.1	+0.9
KOK	Koryaka	1.26	318	PN	Pn	04 55 20.8	+0.5
KOK				S	Sn	04 55 37.1	+0.9
KRX	Arik	1.30	321	eP	Pn	04 55 21.5	+0.5
KRX				eS	Sn	04 55 37.4	0.0
ASAK	Asacha	1.31	272	eP	Pn	04 55 22.0	+1.0
ASAK				eS	Sn	04 55 38.3	+0.9
PETK	Petropavlovsk-	1.60	299	P	Pn	04 55 25.7	+0.7
	comp=N,54nm,0.3s,baz=115,slow=17,SNR=767						
PETK				S	Sn	04 55 44.5	0.0
	comp=N,49nm,0.3s,baz=119,slow=20,SNR=17						
KII	Karymskiy	1.71	348	eP	Pn	04 55 27.4	+0.9
KII				eS	Sn	04 55 47.7	+0.4
KII	Karymskiy	1.71	348	PN	Pn	04 55 27.4	+0.9
KII				S	Sn	04 55 47.7	+0.4
GNL	Ganaly	1.84	317	eP	Pn	04 55 29.4	+1.2
GNL				eS	Sn	04 55 51.5	+1.1
GNL	Ganaly	1.84	317	PN	Pn	04 55 29.4	+1.2
GNL				S	Sn	04 55 51.5	+1.1
APC	Apacha	1.84	289	eP	Pn	04 55 29.4	+1.3
APC				eS	Sn	04 55 51.7	+1.5
APC	Apacha	1.84	289	PN	Pn	04 55 29.4	+1.3
APC				S	Sn	04 55 51.7	+1.5
PAU	Pauzhetka	2.19	247	eP	Pn	04 55 34.1	+1.2
PAU				eS	Sn	04 56 00.6	+1.9
PAU	Pauzhetka	2.19	247	PN	Pn	04 55 34.1	+1.2
PAU				S	Sn	04 56 00.6	+1.9
KZV	Kizimen	2.76	3	eP	Pn	04 55 42.1	+1.2
KZV				eS	Sn	04 56 13.6	+0.6
TUMD	Tumrok D	2.86	4	eP	Pn	04 55 43.1	+1.1
TUMD				eS	Sn	04 56 14.3	-0.9
TUMR	Tumrok	2.93	1	eP	Pn	04 55 45.1	+2.0
TUMR				eS	Sn	04 56 18.1	+1.0
TUMR	Tumrok	2.93	1	PN	Pn	04 55 45.1	+2.0
TUMR				S	Sn	04 56 18.1	+1.0
SKR	Severo-Kuril's	2.97	237	eP	Pn	04 55 44.5	+1.0
SKR				eS	Sn	04 56 17.1	-0.8
SKR	Severo-Kuril's	2.97	237	ePN	Pn	04 55 43.5	0.0
SKR				eS	Sn	04 56 16.6	-1.3
SKR				pmax	pmax		
	comp=E,80nm,0.4s						
SKR				pmax	pmax		
	comp=Z,80nm,0.4s						
SKR				smax	smax		
	comp=N,370nm,0.3s						
SKR				smax	smax		
	comp=E,370nm,0.3s						
KMNR	Kamenistaya	3.40	2	eP	Pn	04 55 51.6	+2.0
KMNR	Kamenistaya	3.40	2	PN	Pn	04 55 51.6	+2.0
BZMR	Bezymyannaya	3.59	4	eP	Pn	04 55 54.4	+2.2
KPT	Kopyto	3.61	2	eP	Pn	04 55 54.4	+1.9
KPT	Kopyto	3.61	2	PN	Pn	04 55 54.4	+1.9
ESO	Esso	3.66	348	eP	Pn	04 55 54.5	+1.5
ESO	Esso	3.66	348	PN	Pn	04 55 54.5	+1.5
ZLN	Zelenaya	3.69	7	eP	Pn	04 55 55.8	+2.2
ZLN				eS	Sn	04 56 38.4	+2.6
ZLN	Zelenaya	3.69	7	PN	Pn	04 55 55.8	+2.2
ZLN				S	Sn	04 56 38.4	+2.6
LGNR	Loginova	3.75	6	eP	Pn	04 55 57.2	+2.7
LGNR	Loginova	3.75	6	PN	Pn	04 55 57.2	+2.7
CIRR	Tsirk	3.79	6	eP	Pn	04 55 57.1	+2.2
CIRR	Tsirk	3.79	6	PN	Pn	04 55 57.1	+2.2
KRSR	Krestovskiy	3.88	4	eP	Pn	04 55 57.8	+1.7
KRSR	Krestovskiy	3.88	4	PN	Pn	04 55 57.8	+1.7
KLY	Klyuchi	3.98	5	eP	Pn	04 55 59.3	+2.0
KBTR	Krutoberegovo	4.18	22	eP	Pn	04 56 01.1	+0.9
KBTR				eS	Sn	04 56 45.3	-2.5
KBTR	Krutoberegovo	4.18	22	PN	Pn	04 56 01.1	+0.9
KBTR				S	Sn	04 56 45.3	-2.5
BKI	Bering	4.53	49	eP	Pn	04 56 05.5	+0.6
BKI				eS	Sn	04 56 51.7	-4.5
BKI	Bering	4.53	49	PN	Pn	04 56 05.5	+0.6
MJAR	Matsushiro Arr	22.07	233	P	P	04 59 50.7	+1.2
	comp=E,0.6nm,0.6s,baz=29,slow=13,SNR=2.6						
H11N2	WAKE ISLAND Hy	33.00	168	T	T	05 37 27.3	
	baz=352,slow=76,SNR=24						
H11N3	WAKE ISLAND Hy	33.02	168	T	T	05 37 21.6	
	baz=352,slow=76,SNR=19						
H11N1	WAKE ISLAND Hy	33.02	168	T	T	05 37 12.8	
	baz=352,slow=76,SNR=32						
SONM	Songino Array	34.04	284	P	P	05 01 36.7	-1.4
	comp=E,0.2nm,0.4s,baz=50,slow=7.1,SNR=3.4						
H11S1	WAKE ISLAND Hy	34.19	169	T	T	05 38 43.7	
	baz=351						
H11S3	WAKE ISLAND Hy	34.20	169	T	T	05 38 43.7	
	baz=351						
H11S2	WAKE ISLAND Hy	34.20	169	T	T	05 38 43.7	
	baz=351						
KURK	Kurchatov	48.09	302	P	P	05 03 31.3	-1.9
KURK				pmax	pmax		
	comp=Z,1.0nm,0.6s						
KURBB	Kurchatov Arra	48.19	302	P	P	05 03 31.3	-2.7
	comp=Z,0.4nm,0.3s,baz=60,slow=7.5,SNR=7.5						
MKAR	Makanchi Array	48.44	296	P	P	05 03 33.4	-2.6
	comp=Z,0.4nm,0.4s,baz=51,slow=5.7,SNR=6.7						
ARCES	ARCESS Array B	53.97	342	P	P	05 04 15.7	-1.4
	comp=Z,0.8nm,0.5s,baz=36,slow=7.8,SNR=10						
CMAR	Chiang Mai Arr	58.00	258	P	P	05 04 47.1	+0.6
	comp=Z,0.6nm,0.3s,baz=24,slow=6.0,SNR=4.2						
FINES	FINESS Array B	60.78	337	P	P	05 05 03.9	-1.2
	comp=Z,1.7nm,0.5s,baz=31,slow=8.6,SNR=18						
NOA	NORSAR Array B	64.23	344	P	P	05 05 27.0	-1.2
	comp=Z,0.6nm,0.8s,baz=20,slow=7.3,SNR=4.2						
TXAR	Lajitas Array	70.96	67	P	P	05 06 13.4	+2.3
	comp=Z,0.1nm,0.4s,baz=297,slow=6.1,SNR=2.9						
WRA	Warramunga Arr	75.40	205	P	P	05 06 37.7	+0.5
	comp=Z,0.8nm,0.7s,baz=23,slow=6.4,SNR=3.1						
ASAR	Alice Springs	79.08	204	P	P	05 06 58.8	+1.1
	comp=Z,0.5nm,0.6s,baz=12,slow=5.4,SNR=10						

IDC 03 05:00:57.4±3.2**, 46°.50N**×**154°.83E, h0**km**, mb3.6**/3**, mb1 3.8**/4**, mb1mx3.3**/46**, mbtmp3.5**/4**, ML2.2**/1**, Error ellipse: s-maj=72.6km s-min=52.2km az=27.0, East of Kuril Islands**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
PETK	Petropavlovsk-	6.87	15	Pn	Pn	05 02 38.9	-0.5
	0.2nm,0.3s,baz=184,slow=12,SNR=5.4						
YKA	Yellowknife Ar	50.42	37	P	P	05 09 56.5	+0.4
	0.2nm,0.8s,baz=298,slow=7.2,SNR=3.7						
FINES	FINESS Array B	64.77	336	P	P	05 11 37.3	+0.1
	1.0nm,0.7s,baz=30,slow=8.7,SNR=3.6						
TXAR	Lajitas Array	76.58	62	P	P	05 12 49.6	-0.2
	0.4nm,0.6s,baz=298,slow=3.9,SNR=6.6						

*ISCJB **03** 05:03:14.5±0.6, 19°.73S±0°.05×69°.4W±0°.1, h117km±8km, mb3.3/2, Error ellipse: s-maj=22.1km s-min=8.2km az=5.7*

*GUC **03** 05:03:15.0±0.5, 19°.68S×69°.38W, h100km±6km, ML3.9*

*IDC **03** 05:03:41.0±1.8, 16°.31S×67°.86W, h222km±18km, mb3.0/2, mb1 3.1/4, mb1mx2.9/24, mbtmp3.6/4, Error ellipse: s-maj=141.2km s-min=24.0km az=13.0*

ISC 03 05:03:14.9±0.9**, 19°.68S**±0°.06×**69°.4W**±0°.1**, h107**km±10km**, n10, σ1s.19**/15**, 3C-2D, Northern Chile**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
PSGC	Pisagua	0.72	277	⇓iP	Pn	05 03 33.1	-0.1
PSGC				iS	Sn	05 03 46.6	-0.5
PSGC				AML	AML	05 03 47.5	
	comp=N,3μm,0.3s						
HMBC	Humberstone	0.77	220	⇑iP	Pn	05 03 33.5	-0.3
HMBC				iS	Sn	05 03 47.4	-0.5
HMBC				AML	AML	05 03 48.9	
	comp=N,7μm,0.6s						
PB13	IPOC Station P	1.34	354	⇓iP	Pn	05 03 41.1	+0.8
PB13				iS	Sn	05 04 00.7	+1.2
PATCX	Punta Patache	1.35	213	⇑iP	Pn	05 03 39.9	0.0
PATCX				iS	Sn	05 03 58.9	0.0
PB01	IPOC Station P	1.36	185	⇑iP	Pn	05 03 40.2	+0.2
PB01				iS	Sn	05 03 59.5	+0.6
PB01				AML	AML	05 04 00.8	
	comp=N,4μm,0.2s						
LPAZ	La Paz	3.57	19	P	Pn	05 04 11.2	+2.1
	comp=N,2.6nm,0.3s,baz=114,slow=2.4,SNR=94						
SIV	San Ignacio	8.71	66	P	Pn	05 05 15.3	-2.8
	comp=N,0.6nm,0.3s,baz=271,slow=13,SNR=9.2						
BDFB	Brasilia	20.73	82	P	P	05 07 47.5	+0.2
	comp=N,0.2nm,0.3s,baz=246,slow=10.0,SNR=3.5						
TORD	Torodi Ar. Bea	77.15	71	P	P	05 14 56.9	-0.5
	comp=N,0.3nm,0.5s,baz=252,slow=5.7,SNR=12						
YKA	Yellowknife Ar	89.34	341	P	P	05 15 59.1	+0.2
	comp=N,0.2nm,0.7s,baz=133,slow=4.8,SNR=7.2						

MEX 03 05:04:11.1±0.3**, 13°.59N**×**91°.15W, h15**km**, MD3.9, Near coast of Guatemala**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
THIG		1.69	321	eP	Pn	05 04 37.5	-2.7
THIG				eS	Sn	05 04 56.4	-5.2
CCIG	Comitan	2.84	341	eP	Pn	05 04 53.4	-2.7
CCIG				eS	Sn	05 05 26.4	-3.7
PCIG		2.90	317	eP	Pn	05 04 54.5	-2.3
PCIG				eS	Sn	05 05 27.4	-3.9

*IDC **03** 05:08:45.2±2.5, 37°.35N×141°.83E, h0km, mb3.5/3, mb1 3.7/3, mb1mx3.3/45, mbtmp3.5/3, ML2.4/1, MS2.9/1, Ms1 2.9/1, ms1mx2.2/36, Error ellipse: s-maj=65.5km s-min=30.8km az=64.0*

*JMA **03** 05:08:46.7±0.3, 37°.48N×142°.11E, h21km±5km, M3.2*

ISC 03 05:08:46.3±2.5**, 37°.45N**±0°.06×**142°.02E**±0°.10**, h15**km±12km**, n14, σ0s.72**/19**, mb3.6**/3**, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
JFK	Kawauchi	0.92	265	P	Pn	05 09 05.1	+0.3
JFK				eS	Sn	05 09 17.6	-0.1
ONAJ	Iwakimizuishiy	1.04	251	P	Pn	05 09 06.5	+0.1
ONAJ				eS	Sn	05 09 21.0	+0.3
JMM	Marumori	1.06	293	P	Pn	05 09 06.9	+0.2
JMM				S	Sn	05 09 21.3	+0.1
JIO	Ouri	1.13	332	P	Pb	05 09 07.2	-0.5
JIO				S	Sb	05 09 21.5	-0.7
JFT	Otama	1.34	273	P	Pg	05 09 12.1	-0.1
JFT				S	Sg	05 09 30.2	+0.6
JOU	Okura	1.41	311	P	Pb	05 09 12.4	0.0
JMK	Ichinoseki	1.63	337	P	Pn	05 09 14.6	+0.1
JMK				eS	Sn	05 09 34.4	-0.8
JYS	Shirataka	1.73	297	P	Pb	05 09 18.0	+0.2
JFY	Yanaizu	1.84	269	P	Pb	05 09 19.5	-0.3
MJAR	Matsushiro Arr	3.18	255	Pn	Pn	05 09 33.7	-2.2
	0.5nm,0.3s,baz=88,slow=15,SNR=4.7						
MKAR	Makanchi Array	44.31	302	P	P	05 16 56.1	+0.5
	0.6nm,0.9s,baz=88,slow=8.8,SNR=2.7						
KURBB	Kurchatov Arra	46.13	308	P	P	05 17 10.5	+0.6
	0.3nm,0.4s,baz=79,slow=8.0,SNR=2.3						
ARU	Arti	56.37	318	LR	LR	05 42 51.2	
	comp=Z,9.7nm,19.9s,baz=156,slow=36						
WRA	Warramunga Arr	57.54	189	P	P	05 18 35.6	+0.3
	0.7nm,0.9s,baz=14,slow=7.0,SNR=2.3						

*IDC **03** 05:10:17.2±13.0, 13°.63N×120°.68E, h200km±143km, mb3.1/7, mb1 3.2/7, mb1mx3.0/50, mbtmp3.6/7, Error ellipse: s-maj=39.0km s-min=13.0km az=65.0*

ISC 03 05:10:17.7±0.9**, 13°.6N**±0°.1×**120°.5E**±0°.2**, h200**km**, n10, σ1s.11**/11**, mb3.4**/7**, 1C-2D, Mindoro**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
PGP	Puerto Galera	0.42	105	⇓eP	Pn	05 10 46.1	+1.6
PGP				eS	Sn	05 11 06.1	+0.9
LQP	Lukban	1.09	63	⇑eP	Pn	05 10 49.6	+1.3
BCPH	Baguio City Da	2.75	1	⇓eP	Pn	05 11 08.3	+3.7
BCPH				eS	Sn	05 11 42.1	+0.7
CMAR	Chiang Mai Arr	21.30	286	P	P	05 14 49.9	+0.9
	0.4nm,0.4s,baz=100,slow=8.0,SNR=6.3						
WRA	Warramunga Arr	36.00	158	P	P	05 16 58.7	-1.1
	0.4nm,0.4s,baz=331,slow=10,SNR=2.5						
SONM	Songino Array	36.10	344	P	P	05 16 59.5	-1.0
	0.4nm,0.4s,baz=163,slow=9.3,SNR=4.4						
KLR	Kul'dur	36.70	12	P	P	05 17 04.2	-1.1
	1.0nm,0.6s,baz=256,slow=9.1,SNR=4.0						
ASAR	Alice Springs	39.29	160	P	P	05 17 26.7	-0.6
	1.0nm,0.4s,baz=336,slow=6.8,SNR=25						
MKAR	Makanchi Array	46.01	324	P	P	05 18 21.1	0.0
	0.2nm,0.7s,baz=120,slow=8.3,SNR=2.9						
KURBB	Kurchatov Arra	50.18	326	P	P	05 18 53.1	+0.2
	0.3nm,0.5s,baz=116,slow=9.0,SNR=4.1						

*TIF **03** 05:10:24.5, 41°.23N×43°.85E, h14km±1km*

*CSEM **03** 05:10:25.4±0.1, 41°.22N×43°.82E, h2km, ML2.3, Error ellipse: s-maj=4.0km s-min=2.1km az=166.0*

*DDA **03** 05:10:29.8, 41°.05N×43°.43E, h7km, Md2.7*

ISC 03 05:10:25.1±1.0**, 41°.21N**±0°.03×**43°.82E**±0°.02**, h9**km±10km**, n20, σ0s.30**/35**, Turkey-Georgia-Armenia border region**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
AKH	Akhalkalaki	0.32	310	P	Pg	05 10 31.6	0.0
AKH				S	Sg	05 10 36.1	+0.2
AKH	Akhalkalaki	0.32	310	P	Pg	05 10 31.6	0.0
AKH				S	Sg	05 10 36.1	+0.2
KZR	Kazreti	0.48	69	P	Pg	05 10 34.4	-0.2
KZR				S	Sg	05 10 40.7	-0.2
KZR	Kazreti	0.48	69	P	Pg	05 10 34.4	-0.2
KZR				S	Sg	05 10 40.7	-0.2
EAK	Akyaka	0.55	197	iP	Pg	05 10 36.2	+0.4
EAK				iS	Sb	05 10 44.4	-0.5
EAK	Akyaka	0.55	197	P	Pg	05 10 36.2	+0.4
EAK				S	Sb	05 10 44.4	-0.5
TBLG	Delisi	0.87	53	P	Pb	05 10 42.5	+0.1
TBLG				S	Sb	05 10 54.3	+0.2
TBLG	Delisi	0.87	53	P	Pb	05 10 42.5	+0.1
TBLG				S	Sb	05 10 54.3	+0.2
EPOS	Posof	0.87	290	iP	Pg	05 10 41.9	-0.1
EPOS				iS	Sb	05 10 54.0	-0.4
EPOS	Posof	0.87	290	P	Pg	05 10 41.9	-0.1
EPOS				S	Sb	05 10 54.0	-0.4
DGRG	David-gareji	1.20	78	P	Pb	05 10 47.6	-0.4
DGRG				S	Sn	05 11 04.8	+0.4
DGRG	David-gareji	1.20	78	P	Pb	05 10 47.6	-0.4
DGRG				S	Sn	05 11 04.8	+0.4
ONI	Oni	1.41	349	P	Sb	05 11 10.2	+0.4
ARTV	Artvin	1.43	270	iP	Pg	05 10 52.4	-0.1
ARTV	Artvin	1.43	270	P	Pg	05 10 52.4	-0.1
DAGI	Agillar	1.45	265	iP	Pb	05 10 52.2	-0.1
DAGI				iS	Sg	05 11 12.2	+0.5
DBAD	Bademkaya	1.62	264	iP	Pb	05 10 55.2	0.0
DBAD				iS	Sg	05 11 17.1	0.0
DBAD	Bademkaya	1.62	264	P	Pb	05 10 55.2	0.0
DBAD				S	Sg	05 11 17.1	0.0
DBOC	Borcka	1.63	276	iP	Pb	05 10 55.1	-0.3
DBOC	Borcka	1.63	276	P	Pb	05 10 55.1	-0.3

*ISCJB **03** 05:13:49.3±0.3, 0°.78N±0°.04×100°.18E±0°.05, h200km, mb3.7/14, Error ellipse: s-maj=7.9km s-min=4.7km az=144.8*

*DJA **03** 05:13:51.1±0.3, 1°N±3°×10°0E±°, h189km±8km, M4.1/25, mB4.5/1, mb4.2/6, MLv4.1/25, Mw(mB)3.7/1*

*IDC **03** 05:13:51.7±1.9, 0°.77N×100°.22E, h212km±16km, mb3.6/13, mb1 3.6/15, mb1mx3.4/55, mbtmp4.1/15, Error ellipse: s-maj=27.7km s-min=12.4km az=55.0*

*KLM **03** 05:13:56.9, 1°.12N×100°.44E, h129km, mb4.3, ML3.5*

ISC 03 05:13:50.1±0.6**, 0°.76N**±0°.05×**100°.17E**±0°.05**, h200**km**, n50, σ1s.04**/52**, mb3.8**/14**, 7C, Northern Sumatera**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
MNSI	Mandailing Nat	0.59	273	P	Pn	05 14 17.1	-0.5
BKNI	Bangkinang	0.97	117	P	Pn	05 14 19.8	+0.1
PDSI	Padang	1.69	170	P	Pn	05 14 25.2	-0.4
PBSI	Pulau Batu	2.06	247	P	Pn	05 14 29.4	+0.2
SDSI	Sungai Dareh	2.10	143	P	Pn	05 14 29.3	-0.4
PSI	Prapat	2.38	328	P	Pn	05 14 34.1	+1.3
	2.9nm,0.3s,baz=119,slow=12,SNR=7.8						
PSI				S	Sn	05 15 02.2	-3.9
	2.4nm,0.3s,baz=14,slow=20,SNR=6.5						
GSI	Gunungsitoli	2.65	282	P	Pn	05 14 35.3	-0.4
FRIM	Kepong	2.85	31	⇑P	Pn	05 14 36.2	-1.9
TSI	Tuntungan	3.16	329	P	Pn	05 14 41.9	+0.3
KGM	Kluang	3.38	68	⇑P	Pn	05 14 44.3	0.0
PPSI	Pulau Pagai	3.51	183	P	Pn	05 14 45.2	-0.6
KCSI	Kotacane, Aceh	3.64	319	P	Pn	05 14 49.1	+1.6
IPM	Ipoh	3.79	13	⇑P	Pn	05 14 49.2	-0.1
MYKOM	Kota Tinggi	3.82	74	⇑P	Pn	05 14 49.3	-0.3
TPTI		3.88	310	P	Pn	05 14 50.2	-0.3
TPRI	Tanjung Pinang	4.36	88	P	Pn	05 14 58.0	+1.6
MASI	Maura Aman, Be	4.40	152	P	Pn	05 14 56.5	-0.4
KULM	Kulim	4.52	6	⇑P	Pn	05 14 58.0	-0.4
DSRI	Dabo	4.58	106	P	Pn	05 15 00.3	+1.2
KTGM	Kuala Trenggan	5.41	33	⇑P	Pn	05 15 09.9	0.0
LHMI	Lhok Sumawe	5.48	324	P	Pn	05 15 11.3	+0.6
	92nm,1.1s,0.3nm						
LHSI	Lahat	5.66	144	P	Pn	05 15 13.6	+0.6
	18nm,0.5s,0.2nm						
MNAI	Manna	5.80	151	P	Pn	05 15 15.3	+0.5
	152nm,1.1s,1.1nm						
PMBI	Palembang	5.88	129	P	Pn	05 15 14.7	-1.2
	313nm,0.4s,3.6nm						
MDSI	Maura Dua	6.58	143	P	Pn	05 15 23.9	-0.9
KSM	Kuching	10.16	86	⇑P	P	05 16 15.6	-3.8
CMAR	Chiang Mai Arr	17.62	356	P	Pn	05 17 43.5	-0.4
	0.2nm,0.3s,baz=185,slow=9.1,SNR=3.8						
H08S2	Diego Garcia H	28.84	253	T	T	05 47 59.7	
	baz=74,slow=76,SNR=2.1						
H08S3	Diego Garcia H	28.84	253	T	T	05 47 59.0	
	baz=74,slow=76,SNR=2.0						
H08S1	Diego Carcia H	28.86	253	T	T	05 48 01.7	
	baz=74,slow=76,SNR=7.2						
TAPN	Taplejung	29.02	337	eP	P	05 19 31.4	-0.4
	6.1nm,0.5s						
RAMN	Ramite	29.12	335	eP	P	05 19 34.0	+1.3
GUN	Gumba	30.27	334	eP	P	05 19 43.9	+1.0
	14nm,0.4s						
KOLN	Koldanda	31.20	331	eP	P	05 19 52.2	+1.2
	18nm,0.6s						
WRA	Warramunga Arr	39.30	123	P	P	05 21 00.2	+0.2
	1.5nm,0.5s,baz=303,slow=9.0,SNR=5.5						
WRA				PcP	PcP	05 23 04.6	-0.1
	0.6nm,0.3s,baz=316,slow=2.3,SNR=3.6						
ASAR	Alice Springs	40.78	129	P	P	05 21 12.3	+0.2
	0.2nm,0.3s,baz=304,slow=7.7,SNR=6.2						
ASAR				PcP	PcP	05 23 09.4	0.0
	0.9nm,0.5s,baz=307,slow=2.7,SNR=14						
SONM	Songino Array	47.20	6	P	P	05 22 03.1	+0.3
	0.5nm,0.5s,baz=192,slow=8.5,SNR=6.0						
SONM				PcP	PcP	05 23 30.7	-0.2
	0.5nm,0.3s,baz=185,slow=3.9,SNR=5.7						
AAK	Ala-Archa	47.63	334	P	P	05 22 07.7	+1.4
	1.2nm,0.5s,baz=136,slow=7.1,SNR=8.1						
MKAR	Makanchi Array	48.44	344	P	P	05 22 12.7	+0.5
	2.7nm,0.3s,baz=158,slow=8.2,SNR=60						
MKAR				PcP	PcP	05 23 36.0	+0.7
	0.4nm,0.6s,baz=148,slow=4.4,SNR=2.7						
KURBB	Kurchatov Arra	52.97	343	P	P	05 22 46.4	+0.4
	1.8nm,0.7s,baz=163,slow=7.1,SNR=19						
KURBB				PcP	sP	05 23 51.9	-0.9

Code	Station Name	Δ°	AZ°	Op	ISC	Time	Res
	0.8nm,0.4s,baz=154,slow=3.2,SNR=7.9						
ZALV	Zalesovo Beam	54.50	349	P	P	05 22 56.9	-0.1
	2.6nm,0.3s,baz=168,slow=7.5,SNR=23						
KLR	Kul'dur	55.36	25	P	P	05 23 03.0	-0.2
	1.4nm,0.7s,baz=230,slow=10.0,SNR=4.9						
BRTR	Keskin Array B	71.61	312	P	P	05 24 50.3	+0.2
	1.2nm,0.6s,baz=134,slow=6.8,SNR=8.3						
AKASG	Malin Array Be	77.42	322	P	P	05 25 23.2	+0.1
	0.8nm,0.4s,baz=88,slow=5.0,SNR=12						
FINES	FINESS Array B	81.76	332	P	P	05 25 46.8	+0.6
	3.5nm,0.5s,baz=99,slow=5.5,SNR=55						
ARCES	ARCESS Array B	83.95	340	P	P	05 25 57.8	+0.4
	1.1nm,0.4s,baz=105,slow=6.2,SNR=27						
BRG	Berggiesshubel	87.02	321	e(P)	P	05 26 14.6	+1.7
	13nm,1.6s						
GERES	GERESS Array B	87.10	319	P	P	05 26 14.3	+0.8
	0.4nm,0.4s,baz=88,slow=3.2,SNR=6.2						
TXAR	Lajitas Array	142.39	35	PKP	PKPdf	05 32 56.9	-2.9
	0.3nm,0.5s,baz=287,slow=0.6,SNR=6.5						
BDFB	Brasilia	145.30	243	PKPbc	PKPab	05 33 05.0	-0.8
	1.0nm,0.5s,baz=139,slow=7.5,SNR=4.7						

*NIED **03** 05:18:00, 39°.40N×143°.10E, h20km, Mw3.5 Best double couple: $M_0$2.10000×10^14 NP1:ϕ_s123.00000°,δ29.00000°, λ160.00000°. NP2:ϕ_s231.00000°,δ80.00000°,λ62.00000°.*

JMA 03 05:18:38.6±0.2**, 39°.40N×143°.07E, h21**km±3km**, M3.7, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
MIYJ	Miyakonagasawa	0.98	281	P	Pb	05 18 56.7	-0.2
MIYJ				S	Sb	05 19 09.6	+0.2
JTH	Tanohata	1.07	300	P	Pn	05 18 58.1	-0.3
JTH				eS	Sn	05 19 12.6	-0.1
OFUJ	Ofunato	1.13	254	P	Pn	05 18 58.9	-0.3
JOM	Ohasama	1.38	274	P	Pn	05 19 03.1	+0.5
JOM				eS	Sb	05 19 20.7	-0.1
JMK	Ichinoseki	1.51	253	P	Pn	05 19 05.0	+0.7
JMK				eS	Sn	05 19 23.8	+0.5
JANG	Nango	1.54	310	P	Pn	05 19 04.8	0.0
JIO	Ouri	1.64	235	P	Pn	05 19 06.7	+0.5
JIO				eS	Sn	05 19 26.8	+0.2
JRG	Rokugo	1.89	271	P	Pb	05 19 11.6	-0.7
JAH	Hinai	2.03	294	P	Pb	05 19 13.6	-1.2
JTM	Tenmabayashi	2.07	313	P	Pn	05 19 13.4	+1.3
JOU	Okura	2.14	242	P	Pb	05 19 15.4	-1.3
JYK	Kaneyama	2.16	258	P	Pb	05 19 15.8	-1.2

*IDC **03** 05:25:57.2±0.6, 36°.19N×142°.71E, h0km, mb4.0/20, mb1 4.1/27, mb1mx4.0/43, mbtmp4.0/27, ML3.4/6, MS2.5/1, Ms1 2.5/1, ms1mx2.1/61, Error ellipse: s-maj=15.1km s-min=13.4km az=157.0*

*ISCJB **03** 05:25:58.5±0.4, 36°.24N±0°.03×142°.62E±0°.04, h18km, mb4.0/29, MS4.7/1, Error ellipse: s-maj=5.0km s-min=4.7km az=25.7*

*NIED **03** 05:26:00, 36°.30N×142°.60E, h20km, Mw3.8 Best double couple: $M_0$5.72000×10^14 NP1:ϕ_s336.00000°,δ7.00000°, λ36.00000°. NP2:ϕ_s210.00000°,δ86.00000°,λ96.00000°.*

*JMA **03** 05:26:00.5±0.2, 36°.32N×142°.61E, h61km, M3.9*

*NEIC **03** 05:26:02.0±0.3, 36°.10N×142°.69E, h35km, mb4.4/10, Error ellipse: s-maj=7.2km s-min=6.2km az=140.0*

ISC 03 05:26:00.0±0.5**, 36°.21N**±0°.05×**142°.64E**±0°.06**, h18**km**, n64, σ1s.31**/67**, mb4.1**/29**, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
CHOJ	Chosi	1.54	251	P	Pn	05 26 26.4	-0.1
JHO	Hitachi	1.72	284	P	Pn	05 26 27.9	-1.2
JHO				S	Sn	05 26 47.9	-2.7
ONAJ	Iwakimizuishiy	1.73	301	P	Pn	05 26 27.9	-1.3
ONAJ				eS	Sn	05 26 48.2	-2.7
JFK	Kawauchi	1.83	310	P	Pn	05 26 28.6	-2.0
JFK				eS	Sn	05 26 50.6	-2.7
BSO1	Boso 1	2.07	222	P	Pn	05 26 34.1	+0.8
JMM	Marumori	2.22	319	P	Pn	05 26 33.9	-2.0
JMM				eS	Sn	05 26 59.4	-3.4
BSO3	Boso 3	2.24	232	P	Pn	05 26 36.8	+0.8
JFT	Otama	2.26	306	P	Pn	05 26 36.0	-0.5
JFT				eS	Sn	05 27 01.5	-2.5
JAG	Ashikaga	2.58	276	P	Pn	05 26 40.3	-0.7
JMK	Ichinoseki	2.96	338	P	Pn	05 26 44.6	-1.5
JRY	Ryogami san	3.04	267	P	Pn	05 26 46.7	-0.5
JOD2	Odawara 2	3.04	253	P	Pn	05 26 47.3	0.0
JYK	Kaneyama	3.25	327	P	Pn	05 26 48.8	-1.3
JYN	Shimob	3.41	259	P	Pn	05 26 52.3	0.0
MJAR	Matsushiro Arr	3.59	277	Pn	Pn	05 26 54.8	-0.1
	12nm,0.3s,baz=102,slow=8.6,SNR=147						
MJAR				Sn	Sn	05 27 37.5	+0.7
	3.3nm,0.3s,baz=101,slow=19,SNR=3.8						
MJAR				LR	LR	05 28 11.5	
	comp=Z,69nm,18.6s,baz=115,slow=37						
MAJO	Matsushiro	3.59	277	ePn	Pn	05 26 55.6	+0.7
MAT	Matsushiro	3.59	277	P	Pn	05 26 55.4	+0.5
MAT				eS	Sn	05 27 32.4	-4.5
MAT	Matsushiro	3.59	277	P	Pn	05 26 55.6	+0.7
JHJ2	Mitsune	3.87	218	ePn	Pn	05 26 56.3	-2.3
JHJ2				eSn	Sn	05 27 42.0	-1.8
JHJ	Hachijo jima 2	3.88	218	Pn	Pn	05 26 58.3	-0.5
	32nm,0.3s,baz=59,slow=15,SNR=7.1						
JHJ				Sn	Sn	05 27 41.2	-2.8
	90nm,0.3s,baz=312,slow=22,SNR=9.5						
ASAJ	Asahikawa	7.89	360	ePn	Pn	05 27 55.4	+1.5
CBIJ	Chichi jima	9.10	183	Pn	Pn	05 28 07.7	-2.7
CBIJ				Sn	Sn	05 29 44.8	-7.6
JCJ	Chichijima	9.10	183	Pn	Pn	05 28 07.7	-2.7
	9.1nm,0.3s,baz=358,slow=19,SNR=13						
JCJ				Sn	Sn	05 29 44.8	-7.6
	8.8nm,0.3s,baz=56,slow=21,SNR=5.8						
JNU	Nakatsue	10.17	256	Pn	Pn	05 28 24.9	-0.2
	0.3nm,0.3s,baz=38,slow=19,SNR=3.1						
YSS	Yuzh-Sakhalins	10.73	0	Pn	Pn	05 28 30.9	-1.9
USRK	Ussuriysk Ar.	11.39	318	Pn	Pn	05 28 41.8	0.0
	0.3nm,0.3s,baz=139,slow=15,SNR=5.0						
KSRS	Korea Array	11.86	280	Pn	Pn	05 28 50.4	+2.2
	0.2nm,0.3s,baz=100,slow=13,SNR=11						
KSAR	Wonju Array Be	11.89	280	Pn	Pn	05 28 50.4	+1.7
MDJ	Mudanjiang	13.00	314	ePn	Pn	05 29 03.9	+0.1
KLR	Kul'dur	15.25	332	Pn	Pn	05 29 32.6	-1.7
	0.1nm,0.3s,baz=146,slow=11,SNR=2.8						
PET	Petropavlovsk	20.23	29	eP	P	05 30 32.3	-1.6
	148nm,1.7s						
HIA	Hailar	21.18	315	eP	P	05 30 45.4	+1.0
	7.0nm,0.9s						
SEY	Seymchan	27.42	10	P	P	05 31 44.6	+0.3
	0.8nm,0.7s,baz=187,slow=8.1,SNR=3.5						
ENH	Enshi	28.27	268	eP	P	05 31 52.8	+0.5
	9.4nm,0.7s						
ULN	Ulaanbaatar	28.63	305	eP	P	05 31 56.5	+1.0
	4.3nm,0.9s						
SONM	Songino Array	29.06	305	P	P	05 32 00.1	+0.7
	4.4nm,0.6s,baz=104,slow=8.9,SNR=34						
CMAR	Chiang Mai Arr	42.26	257	P	P	05 33 53.2	+0.6
	0.8nm,0.3s,baz=46,slow=6.8,SNR=4.5						
ZALV	Zalesovo Beam	43.20	313	P	P	05 33 59.7	+0.1
	2.9nm,0.5s,baz=92,slow=6.8,SNR=13						
MKAR	Makanchi Array	45.39	303	P	P	05 34 17.9	+0.4
	4.6nm,0.7s,baz=88,slow=10,SNR=37						
KURK	Kurchatov	47.22	309	P	P	05 34 32.4	+0.8
	0.9nm,0.8s						
KURBB	Kurchatov Arra	47.28	309	P	P	05 34 32.4	+0.2
ILAR	Eielson Array	49.66	32	P	P	05 34 50.3	0.0
	0.8nm,0.7s,baz=272,slow=6.1,SNR=8.9						
TKM2	Tokmak 2	50.89	299	eP	P	05 35 01.0	+0.8
	8.8nm,0.7s						
AAK	Ala-Archa	51.75	299	eP	P	05 35 06.5	-0.1
	2.4nm,0.6s						
BVAR	Borovoye Array	51.85	313	P	P	05 35 08.1	+1.1
	0.8nm,0.7s,baz=81,slow=7.5,SNR=5.0						
EKS2	Erkin-Say	52.25	300	eP	P	05 35 12.4	+2.2
	3.3nm,0.9s						
KKAR	Karatay Array	54.39	301	eP	P	05 35 26.6	+0.7
	3.6nm,0.8s						
INK	Inuvik	54.67	27	P	P	05 35 27.5	+0.1
	0.9nm,0.5s,baz=309,slow=7.0,SNR=10						
WRA	Warramunga Arr	56.40	189	P	P	05 35 40.3	-0.1
	1.2nm,0.6s,baz=7.8,slow=7.5,SNR=4.8						
ARU	Arti	57.63	319	P	P	05 35 48.9	+0.1
	1.2nm,0.4s,baz=65,slow=6.1,SNR=2.4						
ABKAR	Akbulak array	59.22	311	eP	P	05 35 59.9	-0.1
	0.8nm,0.4s						
AKTO	Aktyubinsk	59.96	313	P	P	05 36 05.1	0.0
	0.8nm,0.5s,baz=80,slow=11						
ASAR	Alice Springs	60.13	189	P	P	05 36 06.4	-0.1
	0.5nm,0.5s,baz=2.5,slow=6.7,SNR=12						
YKA	Yellowknife Ar	64.02	30	P	P	05 36 31.9	-0.2
	0.4nm,0.7s,baz=300,slow=6.8,SNR=10						
FINES	FINESS Array B	70.00	333	P	P	05 37 10.4	+0.3
	2.5nm,0.9s,baz=44,slow=8.4,SNR=3.3						
NVAR	Mina Array Bea	74.68	54	P	P	05 37 38.9	0.0
	2.0nm,0.6s,baz=291,slow=6.0,SNR=18						
AKASG	Malin Array Be	75.55	323	P	P	05 37 43.4	+0.1
	0.2nm,0.3s,baz=43,slow=5.8,SNR=3.4						
PDAR	Pinedale Array	77.53	46	P	P	05 37 55.1	+0.1
	0.3nm,0.7s,baz=299,slow=1.5,SNR=3.5						
BRTR	Keskin Array B	80.14	312	P	P	05 38 10.1	+0.9
	0.6nm,0.7s,baz=67,slow=3.2,SNR=3.6						
GERES	GERESS Array B	83.93	329	P	P	05 38 29.4	+0.4
	0.2nm,0.5s,baz=23,slow=5.3,SNR=3.8						
IDI	Anoyia	88.27	314	LR	LR	06 23 44.2	
	comp=Z,261nm,18.0s,baz=299,slow=39						
TXAR	Lajitas Array	89.83	53	P	P	05 38 58.1	+0.1
	0.4nm,0.6s,baz=302,slow=3.3,SNR=7.8						
LPAZ	La Paz	146.23	62	PKPbc	PKPdf	05 45 40.5	+0.9
	1.1nm,0.5s,baz=325,slow=3.3,SNR=9.8						
LCO	Las Campanas	151.11	85	ePKPdf	PKPdf	05 45 45.6	-1.1

*CSEM **03** 05:29:56.3, 39°.45N×44°.60E, h6km, ML2.5*

TEH 03 05:29:56.3, 39°.45N×44°.60E, h6km**, ML2.5, Iran-Armenia-Azerbaijan border region**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
VMUR	Van-Muradiye	0.92	241	iP	Pn	05 30 18.2	+2.2
VMUR				iS	Sn	05 30 36.8	+7.1
IMRD	Marand	1.13	130	ePg	Pg	05 30 16.6	-1.3
IMRD				eAMB	AMB	05 30 36.1	
	comp=Z,6μm,0.2s						
IMRD	Marand	1.13	130	ePg	Pg	05 30 16.6	-1.3
ISHB	Shabestar	1.41	145	ePg	Pn	05 30 21.6	-1.1
ISHB				eSg	Sb	05 30 40.2	-1.2
ISHB				eAMB	AMB	05 30 44.7	
	comp=Z,996nm,0.2s						
EAK	Akyaka	1.46	329	iP	Pn	05 30 22.5	-0.9
EAK				iS	Sb	05 30 41.3	-1.5
ITBZ	Tabriz	1.71	135	ePn	Pn	05 30 26.6	-0.2
ITBZ				eAMB	AMB	05 30 31.1	
	comp=Z,509nm,0.1s						
ITBZ	Tabriz	1.71	135	ePn	Pn	05 30 26.6	-0.2
DGRG	David-gareji	2.09	16	P	Pn	05 30 32.4	+0.4
DGRG				S	Sb	05 31 00.4	-0.4
IHRS	Heris	2.21	120	ePn	Pn	05 30 33.5	-0.3
IHRS				eAMB	AMB	05 31 06.9	
	comp=Z,327nm,0.1s						
IHRS	Heris	2.21	120	ePn	Pn	05 30 33.5	-0.3
IBST	Bostanabad	2.50	133	ePn	Pn	05 30 37.7	-0.1
IBST				eAMB	AMB	05 31 31.6	
	comp=N,579nm,0.1s						
IBST				eAMB	AMB	05 31 31.6	
	comp=Z,291nm,0.1s						
IBST	Bostanabad	2.50	133	ePn	Pn	05 30 37.7	-0.1

*NIED **03** 05:40:00, 38°.90N×142°.00E, h41km, Mw4.0 Best double couple: $M_0$1.05000×10^15 NP1:ϕ_s207.00000°,δ19.00000°, λ94.00000°. NP2:ϕ_s22.00000°,δ71.00000°,λ89.00000°.*

*ISCJB **03** 05:40:18.9±1.0, 38°.84N±0°.04×142°.1E±0°.1, h57km±7km, mb4.1/21, MS3.1/3, Error ellipse: s-maj=14.3km s-min=7.4km az=5.1*

*JMA **03** 05:40:19.9±0.1, 38°.85N×142°.02E, h46km±1km, M3.9*

JMA Felt II J1.

*IDC **03** 05:40:22.5±2.2, 38°.82N×142°.00E, h74km±20km, mb3.7/21, mb1 3.8/25, mb1mx3.7/47, mbtmp4.1/25, MS3.0/7, Ms1 3.0/7, ms1mx2.6/62, Error ellipse: s-maj=17.1km s-min=13.7km az=101.0*

ISC 03 05:40:19.9±1.6**, 38°.83N**±0°.05×**142°.1E**±0°.1**, h50**km±13km**, n42, σ1s.01**/41**, mb4.1**/21**, MS3.1**/3**, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
JMK	Ichinoseki	0.66	281	P	Pn	05 40 32.7	-0.5
JMK				S	Sn	05 40 41.9	-0.8
JIO	Ouri	0.67	236	P	Pn	05 40 32.8	-0.4
JIO				S	Sn	05 40 41.6	-1.2
JOM	Ohasama	0.88	318	P	Pn	05 40 35.5	-0.5
JOM				S	Sn	05 40 46.8	-0.9
JOU	Okura	1.19	247	P	Pn	05 40 39.9	-0.2
JOU				S	Sn	05 40 55.2	0.0
JRG	Rokugo	1.24	298	P	Pn	05 40 40.6	-0.3
JYK	Kaneyama	1.33	274	P	Pn	05 40 41.9	-0.2
JMM	Marumori	1.38	226	P	Pn	05 40 42.3	-0.5
JMM				eS	Sn	05 40 59.0	-0.9
MJAR	Matsushiro Arr	3.81	234	P	Pn	05 41 18.1	+2.0
	6.5nm,0.3s,baz=33,slow=13,SNR=65						
MJAR				LR	LR	05 42 56.9	
	comp=Z,99nm,20.3s,baz=35,slow=41						
MAT	Matsushiro	3.81	234	P	Pn	05 41 17.9	+1.8
MAT				eS	Sn	05 42 06.5	+6.8
JHJ	Hachijo jima 2	5.99	199	P	Pn	05 41 47.7	+1.8
	9.4nm,0.3s,baz=64,slow=17,SNR=5.0						
JHJ				S	Sn	05 42 50.8	-2.4
	16nm,0.3s,baz=90,slow=20,SNR=3.4						
USRK	Ussuriysk Ar.	9.26	309	P	Pn	05 42 33.0	+2.3
	0.6nm,0.3s,baz=112,slow=16,SNR=15						
JNU	Nakatsue	10.70	241	LR	LR	05 47 16.3	
	comp=Z,57nm,21.1s,baz=302,slow=39						
KSRS	Korea Array	11.22	267	P	Pn	05 43 00.3	+2.8
	0.3nm,0.3s,baz=87,slow=14,SNR=5.5						
KSRS				LR	LR	05 46 54.5	
	comp=Z,46nm,19.6s,baz=0.5,slow=35						
KLR	Kul'dur	12.76	328	LR	LR	05 48 01.0	
	comp=Z,81nm,20.8s,baz=318,slow=36						
MA2	Magadan	21.50	12	P	P	05 45 03.7	-0.5
	1.4nm,0.3s,baz=190,slow=13,SNR=4.9						
SEY	Seymchan	24.93	11	P	P	05 45 39.1	+1.0
	3.4nm,0.8s,baz=194,slow=12,SNR=10						
SONM	Songino Array	27.25	301	P	P	05 45 59.3	-0.1
	0.7nm,0.7s,baz=88,slow=10,SNR=4.9						
H11N2	WAKE ISLAND Hy	28.69	124	T	T	06 16 37.1	
	baz=317,slow=76,SNR=1940						
H11N1	WAKE ISLAND Hy	28.70	125	T	T	06 16 37.8	
	baz=317,slow=76,SNR=2596						
H11N3	WAKE ISLAND Hy	28.70	124	T	T	06 16 39.2	
	baz=317,slow=76,SNR=1892						
H11S1	WAKE ISLAND Hy	29.46	126	T	T	06 17 34.7	
	baz=318,slow=76,SNR=461						
H11S3	WAKE ISLAND Hy	29.46	126	T	T	06 17 35.7	
	baz=318,slow=76,SNR=421						
H11S2	WAKE ISLAND Hy	29.48	126	T	T	06 17 36.8	
	baz=318,slow=76,SNR=239						
TLY	Talaya	29.58	308	LR	LR	05 59 04.0	
	comp=Z,24nm,18.7s,baz=87,slow=38						
ZALV	Zalesovo Beam	41.10	311	P	P	05 47 58.4	-0.2
	1.9nm,0.4s,baz=89,slow=7.3,SNR=13						
ZALV				PcP	PcP	05 49 56.8	-0.6
	1.1nm,0.6s,baz=68,slow=3.1,SNR=3.6						
MKAR	Makanchi Array	43.62	301	P	P	05 48 19.1	-0.2
	2.6nm,0.5s,baz=85,slow=9.9,SNR=22						
MKAR				LR	LR	06 07 03.2	
	comp=Z,26nm,20.3s,baz=14,slow=37						
KURBB	Kurchatov Arra	45.32	307	P	P	05 48 32.5	-0.3
	9.9nm,0.5s,baz=81,slow=8.1,SNR=80						
ILAR	Eielson Array	47.71	33	P	P	05 48 51.7	+0.4
	0.8nm,0.7s,baz=264,slow=5.9,SNR=9.4						
BVAR	Borovoye Array	49.76	311	P	P	05 49 07.0	-0.1
	2.9nm,0.4s,baz=67,slow=7.9,SNR=27						
BVAR				PcP	PcP	05 50 27.3	-0.1
	1.2nm,0.5s,baz=116,slow=3.4,SNR=5.0						
AAK	Ala-Archa	50.10	297	P	P	05 49 09.9	-0.2
	0.7nm,0.3s,baz=78,slow=4.3,SNR=4.8						
INK	Inuvik	52.56	28	P	P	05 49 28.6	+0.7
	0.6nm,0.5s,baz=292,slow=5.5,SNR=5.3						
ARU	Arti	55.36	318	P	P	05 49 48.4	-0.2
	2.9nm,0.4s,baz=90,slow=8.6,SNR=9.5						
ARU				LR	LR	06 14 34.2	
	comp=Z,28nm,18.5s,baz=181,slow=37						
AKTO	Aktyubinsk	57.86	311	P	P	05 50 06.1	-0.3
	2.6nm,0.7s,baz=70,slow=11,SNR=7.7						
WRA	Warramunga Arr	58.91	188	P	P	05 50 13.6	-0.3
	1.0nm,0.4s,baz=6.2,slow=7.0,SNR=4.1						
RES	Resolute Bay	60.74	15	P	P	05 50 25.8	-0.1
	0.9nm,0.6s,baz=308,slow=7.1,SNR=6.0						
YKA	Yellowknife Ar	62.01	31	P	P	05 50 34.8	+0.3
	0.2nm,0.6s,baz=303,slow=6.8,SNR=6.2						
ARCES	ARCESS Array B	62.50	339	P	P	05 50 37.5	-0.3
	3.0nm,0.9s,baz=50,slow=8.6,SNR=2.9						
ASAR	Alice Springs	62.63	188	P	P	05 50 38.9	-0.4
	0.4nm,0.6s,baz=4.9,slow=5.2,SNR=8.4						
FINES	FINESS Array B	67.47	332	P	P	05 51 09.7	-0.4
	1.9nm,0.6s,baz=41,slow=6.1,SNR=9.7						
NOA	NORSAR Array B	72.73	337	P	P	05 51 41.8	-0.6
	1.2nm,0.8s,baz=40,slow=6.4,SNR=2.8						
BRTR	Keskin Array B	78.04	312	P	P	05 52 13.0	-0.5
	0.6nm,0.4s,baz=119,slow=4.3,SNR=6.4						
GERES	GERESS Array B	81.45	328	P	P	05 52 31.5	-0.2
	0.4nm,0.5s,baz=27,slow=6.7,SNR=4.6						

IDC 03 05:53:56.7±3.9**, 3°.38S×130°.83E, h0**km**, mb3.4**/2**, mb1 3.6**/3**, mb1mx3.3**/48**, mbtmp3.4**/3**, Error ellipse: s-maj=287.1km s-min=28.1km az=72.0, Seram**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
WRA	Warramunga Arr	16.82	169	Pn	Pn	05 57 53.8	0.0
	baz=350,slow=11,SNR=2.4						
WRA				Sn	Sn	06 00 46.5	-15
	0.2nm,0.3s,baz=348,slow=24,SNR=3.0						
ASAR	Alice Springs	20.39	172	P	P	05 58 35.3	0.0
	0.7nm,0.4s,baz=350,slow=11,SNR=14						
MKAR	Makanchi Array	65.70	326	P	P	06 04 43.2	0.0
	0.3nm,0.6s,baz=141,slow=7.4,SNR=3.3						

*ISCJB **03** 05:54:57.3±1.3, 15°.0S±0°.2×72°.1W±0°.2, h124km, mb3.6/5, Error ellipse: s-maj=30.4km s-min=11.2km az=136.5*

*IDC **03** 05:55:01.5±3.8, 14°.95S×71°.99W, h152km±31km, mb3.5/5, mb1 3.6/9, mb1mx3.3/46, mbtmp4.0/9, Error ellipse: s-maj=45.7km s-min=24.1km az=51.0*

ISC 03 05:54:58.1±1.7**, 15°.0S**±0°.2×**72°.1W**±0°.2**, h124**km**, n12, σ0s.55**/11**, mb3.7**/5**, Southern Peru**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
LPAZ	La Paz	4.04	109	P	Pn	05 56 02.1	+3.3
	6.1nm,0.3s,baz=290,slow=8.9,SNR=195						
SIV	San Ignacio	10.69	97	P	Pn	05 57 28.0	+0.1
	0.6nm,0.3s,baz=291,slow=11,SNR=10						
CRUC	La Cruz	17.16	343	eP	P	05 58 50.5	+0.1
CPUP	Villa Florida	17.81	132	P	Pn	05 58 58.8	+0.5
	0.2nm,0.3s,baz=314,slow=10,SNR=4.9						
PTGA	Pitinga	18.58	41	P	P	05 59 05.6	-0.2
	1.2nm,0.3s,baz=217,slow=20,SNR=7.4						
GUYC	Guyana, Colomb	20.37	351	eP	P	05 59 26.7	+1.1
DBBC	Dabeiba	22.26	349	eP	P	05 59 45.0	-0.2
BDFB	Brasilia	23.25	95	P	P	05 59 54.4	-0.5
	1.5nm,0.5s,baz=258,slow=10,SNR=5.5						
SDV	Santo Domingo	23.79	4	P	P	06 00 00.4	+0.6
	4.9nm,0.5s,baz=174,slow=9.2,SNR=12						
TORD	Torodi Ar. Bea	78.21	73	P	P	06 06 44.4	-0.2
	0.6nm,0.4s,baz=256,slow=5.1,SNR=7.1						
YKA	Yellowknife Ar	84.10	342	P	P	06 07 14.3	-0.3
	0.2nm,0.8s,baz=137,slow=5.4,SNR=4.0						
DLBC	Dease Lake	87.08	333	P	P	06 07 29.5	-0.2
	1.1nm,0.8s,baz=153,slow=6.8,SNR=6.0						

IDC 03 06:08:17.7±9.0**, 36°.59N×142°.17E, h0**km**, mb3.5**/3**, mb1 3.5**/4**, mb1mx3.2**/53**, mbtmp3.5**/4**, ML3.5**/1**, MS3.0**/2**, Ms1 3.0**/2**, ms1mx2.3**/44**, Error ellipse: s-maj=155.3km s-min=68.3km az=137.0, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
MJAR	Matsushiro Arr	3.19	270	Pn	Pn	06 09 08.7	-0.3
	5.9nm,0.3s,baz=88,slow=15,SNR=34						
MJAR				LR	LR	06 10 30.2	
	comp=Z,33nm,18.1s,baz=125,slow=42						
MAT	Matsushiro	3.19	270	P	Pn	06 09 09.6	+0.5
MAT				S	Sn	06 09 44.8	-3.0
H11N2	WAKE ISLAND Hy	27.40	121	T	T	06 43 30.9	
	baz=314,slow=75,SNR=17						
H11N1	WAKE ISLAND Hy	27.41	121	T	T	06 43 33.1	
	baz=314,slow=75,SNR=21						
H11N3	WAKE ISLAND Hy	27.42	121	T	T	06 43 31.9	
	baz=314,slow=75,SNR=19						
H11S1	WAKE ISLAND Hy	28.11	123	T	T	06 44 25.4	
	baz=316,slow=76,SNR=10						
H11S3	WAKE ISLAND Hy	28.11	123	T	T	06 44 30.8	
	baz=316,slow=76,SNR=9.1						
H11S2	WAKE ISLAND Hy	28.13	123	T	T	06 44 26.5	
	baz=316,slow=76,SNR=9.5						
SONM	Songino Array	28.54	304	P	P	06 14 14.7	-0.3
	0.2nm,0.3s,baz=99,slow=8.9,SNR=3.0						
MKAR	Makanchi Array	44.87	303	P	P	06 16 33.8	+0.1
	0.4nm,0.6s,baz=80,slow=7.9,SNR=4.1						
KURBB	Kurchatov Arra	46.75	308	P	P	06 16 48.4	-0.1
	0.4nm,0.6s,baz=82,slow=7.7,SNR=4.7						
PFO	Pinyon Flats O	78.78	57	LR	LR	06 50 10.3	
	comp=Z,56nm,21.6s,baz=145,slow=32						

*NIED **03** 06:23:00, 37°.00N×140°.50E, h5km, Mw3.5 Best double couple: $M_0$1.80000×10^14 NP1:ϕ_s358.00000°,δ28.00000°, λ-85.00000°. NP2:ϕ_s173.00000°,δ62.00000°, λ-92.00000°.*

*IDC **03** 06:23:20.0±2.0, 37°.10N×140°.58E, h0km, mb3.6/3, mb1 3.8/3, mb1mx3.3/62, mbtmp3.6/3, Error ellipse: s-maj=38.2km s-min=29.1km az=58.0*

*ISCJB **03** 06:23:22.1±0.5, 37°.00N±0°.03×140°.56E±0°.05, h19km±6km, mb3.5/3, Error ellipse: s-maj=6.5km s-min=5.3km az=30.9*

*JMA **03** 06:23:22.2, 37°.00N×140°.49E, h5km±2km, M3.5 Broadband fault plane solution: P waves. NP1: ϕ_s158.00000°,δ80.00000°,λ-89.00000°. NP2: ϕ_s332.00000°,δ10.00000°,λ-95.00000°. Principal axes: T Plg35.0000°, Azm247.0000°; N Plg1.0000°, Azm338.0000°; P Plg55.0000°, Azm69.0000°;*

JMA Felt II J1.

ISC 03 06:23:21.8±1.1**, 37°.02N**±0°.04×**140°.46E**±0°.05**, h8**km±10km**, n12, σ0s.43**/21**, mb3.7**/3**, 5C, Eastern Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
ONAJ	Iwakimizuishiy	0.29	73	⇑P	Pg	06 23 27.6	0.0
ONAJ				S	Sg	06 23 31.6	+0.2
JHO	Hitachi	0.42	167	⇑P	Pg	06 23 29.8	-0.2
JHO				S	Sg	06 23 35.1	-0.4
JSB	Shiboa	0.43	264	⇑P	Pb	06 23 31.9	+0.2
JSB				S	Sb	06 23 38.7	+0.4
JFK	Kawauchi	0.48	44	⇑P	Pg	06 23 31.4	+0.2
JFK				S	Sg	06 23 37.9	+0.3
JFT	Otama	0.51	349	P	Pb	06 23 32.8	-0.2
JFT				S	Sb	06 23 39.9	-0.7
JFY	Yanaizu	0.71	303	⇑P	Pb	06 23 36.7	+0.2
JFY				S	Sb	06 23 46.4	-0.1
JMM	Marumori	0.89	18	P	Pg	06 23 38.8	-0.1
JMM				S	Sg	06 23 50.5	0.0
MJAR	Matsushiro Arr	1.86	256	Pn	Pn	06 23 54.9	+0.9
	17nm,0.3s,baz=72,slow=14,SNR=116						
MJAR				Sn	Sb	06 24 20.3	+0.7
	11nm,0.3s,baz=82,slow=30,SNR=12						
MAT	Matsushiro	1.87	256	P	Pb	06 23 55.6	-0.6
MAT				S	Sg	06 24 21.3	-0.5
SONM	Songino Array	27.16	304	P	P	06 29 05.3	-0.3
	0.3nm,0.6s,baz=90,slow=9.2,SNR=2.8						
KURBB	Kurchatov Arra	45.41	308	P	P	06 31 40.3	-0.4
	0.4nm,0.4s,baz=81,slow=7.6,SNR=5.9						
WRA	Warramunga Arr	56.95	187	P	P	06 33 07.7	0.0
	0.8nm,0.8s,baz=4.3,slow=7.9,SNR=7.8						

*IDC **03** 06:26:33.7±2.9, 38°.53N×142°.51E, h0km, mb3.6/3, mb1 3.7/4, mb1mx3.3/63, mbtmp3.5/4, ML3.3/1, Error ellipse: s-maj=68.6km s-min=34.8km az=72.0*

*ISCJB **03** 06:26:42.2±1.1, 38°.33N±0°.04×141°.8E±0°.1, h55km±7km, mb3.5/3, Error ellipse: s-maj=15.4km s-min=5.9km az=18.4*

*JMA **03** 06:26:42.6±0.1, 38°.34N×141°.83E, h49km±1km, M3.7*

JMA Felt I J1.

ISC 03 06:26:42.1±1.8**, 38°.34N**±0°.05×**141°.9E**±0°.1**, h43**km±15km**, n22, σ1s.00**/25**, mb3.7**/3**, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
JIO	Ouri	0.45	285	P	Pn	06 26 52.6	+0.3
JIO				S	Sn	06 26 59.4	-0.1

Code	Station Name	Δ°	AZ°	Op	ISC	Time	Res
OFUJ	Ofunato	0.76	347	P	Pn	06 26 56.8	+0.3
JMK	Ichinoseki	0.81	319	P	Pn	06 26 57.5	+0.3
JMK				S	Sn	06 27 07.8	-0.3
JOU	Okura	0.97	272	P	Pn	06 26 59.5	+0.2
JOU				S	Sn	06 27 11.8	-0.2
JMM	Marumori	0.99	242	P	Pn	06 26 59.3	-0.3
JMM				S	Sn	06 27 10.7	-1.7
JOM	Ohasama	1.23	338	P	Pn	06 27 03.4	+0.5
JOM				S	Sn	06 27 18.7	+0.4
JFK	Kawauchi	1.26	220	P	Pn	06 27 03.3	0.0
JFK				S	Sn	06 27 18.6	-0.5
JYK	Kaneyama	1.34	296	P	Pn	06 27 04.6	+0.3
JRG	Rokugo	1.45	317	P	Pn	06 27 06.5	+0.7
JYS	Shirataka	1.45	266	P	Pn	06 27 06.1	+0.3
JYS				*e*S	Sn	06 27 23.1	-0.5
JFT	Otama	1.48	237	P	Pn	06 27 07.2	+0.9
JFT				S	Sn	06 27 24.3	-0.1
MJAR	Matsushiro Arr	3.44	240	Pn	Pn	06 27 35.4	+2.2
	2.0nm,0.3s,baz=54,slow=9.9,SNR=10						
MAT	Matsushiro	3.44	240	P	Pn	06 27 36.3	+3.1
MAT				*e*S	Sn	06 28 12.2	-0.5
H11N2	WAKE ISLAND Hy	28.51	123	T	T	07 02 31.0	
	baz=316,slow=76,SNR=24						
H11N1	WAKE ISLAND Hy	28.52	124	T	T	07 02 52.9	
	baz=316,slow=76,SNR=37						
H11N3	WAKE ISLAND Hy	28.53	123	T	T	07 02 49.2	
	baz=316,slow=76,SNR=31						
H11S1	WAKE ISLAND Hy	29.27	126	T	T	07 03 48.9	
	baz=318,slow=76,SNR=44						
H11S3	WAKE ISLAND Hy	29.27	126	T	T	07 03 49.1	
	baz=318,slow=76,SNR=54						
H11S2	WAKE ISLAND Hy	29.29	126	T	T	07 03 49.8	
	baz=318,slow=76,SNR=42						
MKAR	Makanchi Array	43.77	301	P	P	06 34 43.3	0.0
	0.4nm,0.7s,baz=80,slow=6.7,SNR=3.7						
KURBB	Kurchatov Arra	45.52	307	P	P	06 34 56.7	-0.4
	0.7nm,0.7s,baz=80,slow=7.9,SNR=7.5						
WRA	Warramunga Arr	58.40	188	P	P	06 36 32.7	-0.6
	0.7nm,0.9s,baz=6.0,slow=7.1,SNR=2.6						

*NIED **03** 06:27:00, 35°.70N×141°.00E, h44km, Mw4.0 Best double couple: $M_0$1.23000×10[15] NP1:φs218.00000°, δ18.00000°, λ130.00000°. NP2:φs357.00000°, δ76.00000°, λ78.00000°.*
*IDC **03** 06:27:39.0±1.4, 35°.77N×141°.39E, h0km, mb3.9/8, mb1 3.9/12, mb1mx3.6/66, mbtmp3.9/12, ML3.3/3, MS2.9/3, Ms1 2.9/3, ms1mx2.5/45, Error ellipse: s-maj=41.1km s-min=18.0km az=70.0*
*ISCJB **03** 06:27:42.5±0.8, 35°.70N±0°.05×141°.24E±0°.08, h33km, mb3.8/8, MS2.9/1, Error ellipse: s-maj=9.7km s-min=6.5km az=167.9*
*JMA **03** 06:27:45.5±0.1, 35°.74N×140°.97E, h34km±1km, M3.5*
JMA Felt I J1.
ISC 03 06:27:44.7±1.0**, 35°.70N**±0°.07×**141°.14E**±0°.08**, h33**km**, n19,** σ**0s.92**/22**, mb3.9**/8**, 1C-1D, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
CHOJ	Chosi	0.23	271	⇑P	Pn	06 27 51.2	-0.2
CHOJ				S	Sn	06 27 55.3	+0.4
JCN	Nagara	0.81	250	⇓P	Pn	06 27 59.7	-0.1
JYT	Yasato	0.93	305	P	Pn	06 28 00.2	-1.2
BSO4	Boso 4	0.96	223	P	Pn	06 28 03.2	+1.4
BSO3	Boso 3	1.03	210	P	Pn	06 28 03.6	+1.0
BSO3				*e*S	Sn	06 28 15.2	-0.6
MJAR	Matsushiro Arr	2.52	290	Pn	Pn	06 28 23.1	-0.2
	12nm,0.3s,baz=98,slow=11,SNR=34						
MAT	Matsushiro	2.52	290	P	Pn	06 28 23.7	+0.4
MAT				*e*S	Sn	06 28 52.1	-0.8
JHJ	Hachijo jima 2	2.81	204	Pn	Pn	06 28 27.4	+0.1
	9.1nm,0.3s,baz=73,slow=17,SNR=3.8						
JHJ				Sn	Sn	06 28 58.6	-1.4
	50nm,0.3s,baz=91,slow=21,SNR=8.0						
JHJ				LR	LR	06 29 44.7	
	comp=Z,128nm,18.8s,baz=80,slow=43						
JCJ	Chichijima	8.62	174	Pn	Pn	06 29 45.9	-1.3
	baz=336,slow=19						
JCJ				Sn	Sn	06 31 17.7	-5.6
	3.2nm,0.3s,baz=150,slow=20,SNR=2.9						
KSRS	Korea Array	10.77	283	Pn	Pn	06 30 19.1	+2.5
	0.1nm,0.3s,baz=109,slow=15,SNR=3.3						
KSRS				LR	LR	06 34 24.7	
	comp=Z,99nm,19.1s,baz=116,slow=37						
MA2	Magadan	24.70	12	LR	LR	06 42 15.7	
	comp=Z,31nm,18.1s,baz=167,slow=36						
SONM	Songino Array	28.37	306	P	P	06 33 35.8	-0.1
	0.7nm,0.8s,baz=106,slow=8.7,SNR=4.4						
MKAR	Makanchi Array	44.65	303	P	P	06 35 53.9	-0.2
	1.4nm,0.8s,baz=88,slow=10,SNR=9.6						
KURBB	Kurchatov Arra	46.66	309	P	P	06 36 09.4	-0.4
	1.3nm,0.4s,baz=82,slow=7.6,SNR=13						
BVAR	Borovoye Array	51.31	313	P	P	06 36 45.4	-0.1
	0.6nm,0.4s,baz=90,slow=5.8,SNR=5.1						
WRA	Warramunga Arr	55.71	188	P	P	06 37 17.8	-0.2
	0.5nm,0.4s,baz=4.7,slow=6.7,SNR=4.7						
ASAR	Alice Springs	59.44	188	P	P	06 37 43.9	-0.3
	0.2nm,0.4s,baz=6.1,slow=9.6,SNR=3.6						
FINES	FINESS Array B	69.89	332	P	P	06 38 51.8	-0.1
	1.5nm,0.8s,baz=40,slow=9.1,SNR=3.5						
NOA	NORSAR Array B	75.33	337	P	P	06 39 24.7	+0.4
	1.0nm,0.7s,baz=39,slow=5.8,SNR=3.6						

*ISCJB **03** 06:32:01.2±0.6, 56°.09N±0°.06×156°.74W±0°.06, h50km, mb3.8/15, Error ellipse: s-maj=8.8km s-min=4.4km az=162.1*
*NEIC **03** 06:32:02.4, 56°.12N×157°.06W, h4km, ML3.4(AEIC), After AEIC.*
*IDC **03** 06:32:04.9±4.8, 56°.42N×157°.00W, h57km±39km, mb3.5/15, mb1 3.7/17, mb1mx3.4/65, mbtmp3.8/17, ML4.0/2, Error ellipse: s-maj=31.0km s-min=18.8km az=18.0*
ISC 03 06:32:02.8±0.8**, 56°.09N**±0°.08×**156°.92W**±0°.05**, h50**km**, n36,** σ**1s.62**/43**, mb3.9**/15**, Alaska Peninsula**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
CHGN	Chignik	0.86	285	P	Pn	06 32 17.8	-0.8
ANPK	Aniakchak Peak	1.01	319	P	Pn	06 32 21.0	+0.3
ANPK				S	Sn	06 32 34.6	+0.8
ANNE	Aniakchak Nort	1.04	323	P	Pn	06 32 21.4	+0.4
ANNE				S	Sn	06 32 35.9	+1.4
VNHG	Veniaminof 1	1.26	277	P	Pn	06 32 24.9	+0.8
VNHG				S	Sn	06 32 41.7	+1.7
VNNF	Veniaminof 3	1.35	279	P	Pn	06 32 26.6	+1.2
VNWF	Veniaminof 8	1.48	273	P	Pn	06 32 28.3	+1.2
PLK4	Peulik 4	1.57	11	P	Pn	06 32 30.6	+2.2
PLK3	Peulik 3	1.64	12	P	Pn	06 32 31.7	+2.5
PLK3				S	Sn	06 32 53.9	+4.8
PLK2	Peulik 2	1.71	11	P	Pn	06 32 32.7	+2.6
SDPT	Sand Point	2.15	251	P	Pn	06 32 36.7	+0.6
ANCK	Angle Creek	2.25	20	P	Pn	06 32 39.3	+1.8
OHAK	Old Harbor	2.30	59	*e*Pn	Pn	06 32 38.4	+0.3
KDAK	Kodiak Island	2.92	53	P	Pn	06 33 00.9	+14
	3.0nm,0.3s,baz=232,slow=7.2,SNR=21						
KDAK				S	Sn	06 33 34.0	+14
	5.3nm,0.3s,baz=43,slow=23,SNR=8.4						
RC01	Rabbit Creek A	6.26	34	*e*Pn	Pn	06 33 32.9	+0.5
RC01				*e*Sn	Sn	06 34 41.9	-0.6
SML	Sawmill	7.24	34	*e*Pn	Pn	06 33 45.3	-0.6
SML				*e*Sn	Sn	06 35 09.5	+2.8
BMRM	Bremner River	8.08	48	*e*Pn	Pn	06 33 57.4	0.0
BMRM				Sn	Sn	06 35 25.8	-1.5
MCK	McKinley	8.64	24	Pn	Pn	06 34 03.9	-1.1
PAX	Paxson	9.01	35	*e*Pn	Pn	06 34 10.1	0.0
ILAR	Eielson Array	10.00	25	P	Pn	06 34 21.6	-2.0
	0.2nm,0.3s,baz=215,slow=13,SNR=12						
ILAR				S	Sn	06 36 09.8	-4.4
	0.1nm,0.3s,baz=213,slow=28,SNR=3.0						
INK	Inuvik	16.25	32	P	Pn	06 35 45.9	-1.3
	0.8nm,0.3s,baz=247,slow=12,SNR=26						
YKA	Yellowknife Ar	22.19	56	P	P	06 36 54.8	+0.5
	0.4nm,0.3s,baz=272,slow=10,SNR=11						
PETK	Petropavlovsk-	26.09	283	P	P	06 37 32.1	+0.7
	4.1nm,1.0s,baz=65,slow=13,SNR=2.9						
PDAR	Pinedale Array	32.87	94	P	P	06 38 34.0	+2.0
	0.5nm,0.6s,baz=319,slow=4.8,SNR=6.6						
TXAR	Lajitas Array	45.86	103	P	P	06 40 21.8	+1.8
	0.2nm,0.6s,baz=305,slow=5.9,SNR=3.7						
ARCES	ARCESS Array B	54.66	359	P	P	06 41 24.8	-1.1
	4.8nm,0.9s,baz=359,slow=9.5,SNR=3.1						
SONM	Songino Array	55.39	306	P	P	06 41 31.5	-0.1
	1.1nm,0.8s,baz=41,slow=6.8,SNR=6.2						
FINES	FINESS Array B	62.78	358	P	P	06 42 21.2	-1.1
	0.8nm,0.7s,baz=6.7,slow=13,SNR=2.7						
KURK	Kurchatov	64.04	324	P	P	06 42 30.5	-0.3
KURBB	Kurchatov Arra	64.15	324	P	P	06 42 30.5	-1.0
	0.2nm,0.3s,baz=26,slow=5.6,SNR=3.2						
BVAR	Borovoye Array	64.50	331	P	P	06 42 33.0	-0.8
	0.4nm,0.7s,baz=17,slow=5.3,SNR=2.7						
MKAR	Makanchi Array	66.13	320	P	P	06 42 44.0	-0.5
	0.5nm,0.7s,baz=42,slow=5.6,SNR=4.2						
EKA	Eskdalemuir Ar	66.89	16	P	P	06 42 49.0	-0.2
	0.6nm,0.5s,baz=345,slow=5.1,SNR=4.7						
AKTO	Aktyubinsk	69.95	337	P	P	06 43 07.9	-0.4
	1.2nm,0.7s,baz=144,slow=4.4,SNR=4.4						
AKASG	Malin Array Be	73.45	356	P	P	06 43 28.7	-0.6
	0.8nm,0.6s,baz=6.4,slow=5.7,SNR=4.7						
GERES	GERESS Array B	75.14	6	P	P	06 43 38.9	-0.4
	0.3nm,0.5s,baz=356,slow=5.5,SNR=5.3						
BRTR	Keskin Array B	84.13	352	P	P	06 44 27.9	-0.4
	0.8nm,0.6s,baz=49,slow=1.6,SNR=4.3						

*NIED **03** 06:35:00, 37°.20N×143°.70E, h29km, Mw3.6 Best double couple: $M_0$2.88000×10[14] NP1:φs318.00000°, δ66.00000°, λ168.00000°. NP2:φs53.00000°, δ79.00000°, λ24.00000°.*
*JMA **03** 06:35:53.4±0.2, 37°.19N×143°.75E, h75km, M3.6*
*IDC **03** 06:35:53.5±1.2, 36°.34N×143°.60E, h0km, mb3.8/6, mb1 3.9/8, mb1mx3.5/57, mbtmp3.8/8, ML3.6/2, MS2.3/1, Ms1 2.3/1, ms1mx1.9/47, Error ellipse: s-maj=29.3km s-min=22.2km az=67.0*
ISC 03 06:35:53.5±2.0**, 37°.2N**±0°.2×**143°.9E**±0°.1**, h35**km**, n15,** σ**1s.11**/16**, mb3.8**/6**, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
JFK	Kawauchi	2.40	276	P	Pn	06 36 30.3	0.0
ONAJ	Iwakimizuishiy	2.46	270	P	Pn	06 36 30.7	-0.4
ONAJ				S	Sn	06 36 58.8	-1.2
JMM	Marumori	2.55	287	P	Pn	06 36 31.6	-0.7
JMM				*e*S	Sn	06 37 00.8	-1.3
JHO	Hitachi	2.70	259	P	Pn	06 36 34.0	-0.5
JHO				*e*S	Sn	06 37 05.6	-0.3
JOU	Okura	2.82	296	S	Sn	06 37 08.5	-0.3
JFT	Otama	2.84	278	*e*S	Sn	06 37 08.8	-0.6
MJAR	Matsushiro Arr	4.58	264	Pn	Pn	06 37 01.1	+0.8
	5.2nm,0.3s,baz=73,slow=9.3,SNR=21						
MJAR				Sn	Sn	06 37 51.7	-0.6
	1.8nm,0.3s,baz=92,slow=28,SNR=5.6						
MAT	Matsushiro	4.58	264	P	Pn	06 37 01.9	+1.6
MAT				*e*S	Sn	06 37 52.0	-0.4
KSRS	Korea Array	12.71	276	Pn	Pn	06 38 54.3	+2.7
	0.2nm,0.3s,baz=88,slow=15,SNR=3.9						
KSRS				LR	LR	06 43 13.4	
	comp=Z,13nm,19.0s,baz=15,slow=35						
ZALV	Zalesovo Beam	43.29	312	P	P	06 43 58.9	+7.4
	0.5nm,0.4s,baz=96,slow=9.3,SNR=3.4						
KURBB	Kurchatov Arra	47.48	308	P	P	06 44 31.6	+6.8
	0.6nm,0.3s,baz=81,slow=8.3,SNR=5.5						
BVAR	Borovoye Array	51.94	313	P	P	06 45 08.3	+10
	0.4nm,0.5s,baz=91,slow=8.6,SNR=2.2						
INK	Inuvik	53.38	27	P	P	06 45 20.1	+11
	0.3nm,0.5s,baz=294,slow=7.2,SNR=4.0						
WRA	Warramunga Arr	57.49	191	P	P	06 45 38.6	-0.6
	1.6nm,0.5s,baz=12,slow=7.4,SNR=6.3						
ASAR	Alice Springs	61.22	190	P	P	06 46 04.4	-0.5
	0.6nm,0.7s,baz=15,slow=8.1,SNR=8.7						

JMA 03 06:40:07.5±0.3**, 37°.48N**×**143°.99E, h46**km**, M3.6, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
JIO	Ouri	2.30	296	P	Pn	06 40 44.2	+1.3
JIO				S	Sn	06 41 11.4	+1.4
JMM	Marumori	2.57	280	P	Pn	06 40 47.6	+1.1
JMK	Ichinoseki	2.63	305	P	Pn	06 40 49.4	+2.0
JMK				S	Sn	06 41 19.7	+1.6
JOU	Okura	2.77	290	P	Pn	06 40 50.7	+1.2
JOM	Ohasama	2.91	314	P	Pn	06 40 53.1	+1.9
JOM				S	Sn	06 41 26.9	+2.0

IDC 03 06:42:17.0±2.9**, 37°.98N**×**144°.59E, h0**km**, mb3.5**/3**, mb1 3.7**/4**, mb1mx3.3**/48**, mbtmp3.5**/4**, ML3.6**/1**, Error ellipse: s-maj=72.1km s-min=35.9km az=67.0, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
MJAR	Matsushiro Arr	5.29	256	Pn	Pn	06 43 37.2	-0.1
	2.0nm,0.3s,baz=77,slow=15,SNR=4.1						
MAT	Matsushiro	5.29	256	P	Pn	06 43 38.9	+1.6
MAT				*e*S	Sn	06 44 36.7	-2.3
MKAR	Makanchi Array	45.76	302	P	P	06 50 40.8	+0.7
	0.4nm,0.7s,baz=86,slow=9.4,SNR=3.7						
KURBB	Kurchatov Arra	47.41	308	P	P	06 50 52.0	-1.0
	0.5nm,0.4s,baz=82,slow=7.8,SNR=6.0						
WRA	Warramunga Arr	58.42	191	P	P	06 52 14.3	-0.1
	0.6nm,1.0s,baz=10,slow=7.0,SNR=2.6						

IDC 03 06:54:28.3±10.0**, 2°.46S**×**127°.65E, h0**km**, mb3.4**/2**, mb1 3.5**/3**, mb1mx3.3**/34**, mbtmp3.4**/3**, ML3.2**/1**, Error ellipse: s-maj=193.0km s-min=139.5km az=83.0, Ceram Sea**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
WRA	Warramunga Arr	18.56	160	P	P	06 58 45.8	-1.2
	0.1nm,0.3s,baz=340,slow=11,SNR=3.0						
ASAR	Alice Springs	21.93	164	P	P	06 59 22.0	-1.6
	0.3nm,0.5s,baz=347,slow=12,SNR=5.9						
STKA	Stephens Creek	32.08	157	P	P	07 00 59.1	+1.9
	2.6nm,1.1s,baz=315,slow=10.0,SNR=2.9						

IDC 03 06:54:40.3±1.7**, 1°.91N**×**127°.34E, h0**km**, mb3.9**/4**, mb1 4.1**/5**, mb1mx3.6**/33**, mbtmp3.9**/5**, ML4.0**/1**, MS3.3**/1**, Ms1 3.3**/1**, ms1mx2.5**/48**, Error ellipse: s-maj=103.3km s-min=22.4km az=68.0, Halmahera**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
FITZ	Fitzroy Crossi	19.96	185	P	Pn	06 59 15.0	-0.8
	0.3nm,0.3s,baz=5.2,slow=11,SNR=5.2						
WRA	Warramunga Arr	22.78	163	P	P	06 59 44.8	+0.2
	3.8nm,0.4s,baz=340,slow=11,SNR=23						
ASAR	Alice Springs	26.21	166	P	P	07 00 16.6	-0.4
	0.4nm,0.4s,baz=347,slow=11,SNR=12						
JCJ	Chichijima	28.80	28	LR	LR	07 11 16.2	
	comp=Z,58nm,19.9s,baz=44,slow=35						
STKA	Stephens Creek	36.22	159	P	P	07 01 44.7	-0.4
	1.4nm,0.3s,baz=333,slow=8.8,SNR=6.8						
MKAR	Makanchi Array	59.39	326	P	P	07 04 44.7	+0.1
	0.2nm,0.4s,baz=124,slow=7.4,SNR=2.5						

*IDC **03** 07:05:00.6±1.5, 12°.79N×124°.15E, h0km, mb3.5/5, mb1 3.6/5, mb1mx3.3/51, mbtmp3.5/5, Error ellipse: s-maj=171.1km s-min=19.1km az=68.0*
*MAN **03** 07:05:01, 12°.98N×124°.53E, h169km, mb4.8, ML3.7, MS3.7*
*ISCJB **03** 07:05:04.6±0.8, 12°.96N±0°.06×124°.62E±0°.07, h44km, mb3.4/5, Error ellipse: s-maj=10.6km s-min=7.7km az=144.8*
ISC 03 07:05:06.6±1.0**, 12°.95N**±0°.07×**124°.57E**±0°.09**, h44**km**, n17,** σ**1s.95**/15**, mb3.6**/5**, 2C-1D, Samar**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
PLP	Palo	1.81	167	⇑*e*P	Pn	07 05 35.0	-0.4
PLP				*i* S	Sn	07 06 00.8	+3.7
AUQP	San Andres	1.89	282	*e*P	Pn	07 05 37.1	+0.7
AUQP				*e*S	Sn	07 06 04.1	+5.0
RCP	Roxas	2.26	233	⇑*e*P	Pn	07 05 40.1	-1.4
RCP				*e*S	Sn	07 06 07.6	-0.5
GQP	Guinayangan	2.28	295	⇓*e*P	Pn	07 05 41.3	-0.5
GQP				*e*S	Sn	07 06 08.8	+0.1
MSLP	Maasin	2.81	174	*e*P	Pn	07 05 49.3	+0.2
GUIM	Jordan	3.02	220	*e*P	Pn	07 05 51.1	-0.9
WRA	Warramunga Arr	34.06	163	P	P	07 11 45.7	-1.3
	0.7nm,0.9s,baz=342,slow=8.8,SNR=2.7						
ASAR	Alice Springs	37.51	166	P	P	07 12 16.6	+0.1
	0.2nm,0.5s,baz=342,slow=6.8,SNR=4.8						
SONM	Songino Array	37.95	340	P	P	07 12 20.1	0.0
	0.3nm,0.7s,baz=150,slow=6.7,SNR=2.7						
H11S3	WAKE ISLAND Hy	40.84	77	T	T	07 56 38.6	
	baz=269,slow=75,SNR=17						
H11S1	WAKE ISLAND Hy	40.86	77	T	T	07 56 47.4	
	baz=269,slow=75,SNR=13						
H11S2	WAKE ISLAND Hy	40.86	77	T	T	07 56 48.6	
	baz=269,slow=75,SNR=17						
H11N1	WAKE ISLAND Hy	41.08	75	T	T	07 56 58.4	
	baz=267,slow=75,SNR=47						
H11N2	WAKE ISLAND Hy	41.09	75	T	T	07 56 59.2	
	baz=267,slow=75,SNR=37						
H11N3	WAKE ISLAND Hy	41.10	75	T	T	07 56 59.7	
	baz=267,slow=75,SNR=43						
MKAR	Makanchi Array	48.91	322	P	P	07 13 47.6	-0.6
	0.6nm,0.7s,baz=112,slow=8.8,SNR=6.8						
ZALV	Zalesovo Beam	51.50	331	P	P	07 14 07.0	-0.8
	0.3nm,0.4s,baz=126,slow=7.3,SNR=2.5						

JMA 03 07:13:07.0±0.3**, 38°.37N**×**143°.94E, h1**km**, M3.7, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
OFUJ	Ofunato	1.91	292	P	Pn	07 13 41.2	+0.5
JIO	Ouri	2.04	273	S	Sn	07 14 08.6	+0.1
MIYJ	Miyakonagasawa	2.04	307	P	Pn	07 13 42.9	+0.3
JMK	Ichinoseki	2.21	286	P	Pn	07 13 45.7	+0.9
JMK				S	Sn	07 14 14.0	+1.3
JOM	Ohasama	2.34	299	P	Pn	07 13 48.0	+1.4
JYK	Kaneyama	2.86	282	P	Pn	07 13 55.1	+1.4
JKB	Kayabe	4.16	329	P	Pn	07 14 13.7	+2.1

*NIED **03** 07:17:00, 35°.50N×143°.00E, h5km, Mw4.3 Best double couple: $M_0$2.89000×10[15] NP1:φs39.00000°, δ39.00000°, λ-83.00000°. NP2:φs209.00000°, δ52.00000°, λ-96.00000°.*
*IDC **03** 07:17:07.4±0.6, 35°.40N×143°.04E, h0km, mb4.2/26, mb1 4.3/32, mb1mx4.2/65, mbtmp4.2/32, ML3.6/4, MS3.0/5, Ms1 3.0/5, ms1mx2.7/58, Error ellipse: s-maj=15.3km s-min=12.6km az=130.0*
*NEIC **03** 07:17:09.5±2.4, 35°.39N×143°.08E, h14km±15km, mb4.7/10, Error ellipse: s-maj=6.4km s-min=5.4km az=121.0*
*JMA **03** 07:17:10.8±0.4, 35°.54N×142°.99E, h60km, M4.4*
*MOS **03** 07:17:11.5±0.9, 35°.76N×142°.88E, h24km, mb4.6/19, Error ellipse: s-maj=10.1km s-min=6.2km az=111.8*
*ISCJB **03** 07:17:13.9±0.3, 35°.46N±0°.04×142°.80E±0°.04, h59km, mb4.3/52, MS3.3/3, Error ellipse: s-maj=6.3km s-min=3.6km az=153.4*
ISC 03 07:17:15.6±0.5**, 35°.42N**±0°.04×**142°.76E**±0°.05**, h59**km**, n131,** σ**1s.31**/124**, mb4.3**/52**, MS3.6**/3**, 5C-1D, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
CHOJ	Chosi	1.57	281	P	Pn	07 17 39.7	-1.5
CHOJ				S	Sn	07 18 00.8	+0.3
BSO1	Boso 1	1.65	243	P	Pn	07 17 40.1	-1.6
BSO1				S	Sn	07 18 02.5	+0.9
BSO3	Boso 3	1.94	252	P	Pn	07 17 45.4	-0.6
KTR	Katsuura	2.02	263	P	Pn	07 17 46.6	-0.6
KTR				S	Sn	07 18 13.4	+2.1
BSO4	Boso 4	2.03	258	P	Pn	07 17 47.0	-0.3
JFT	Otama	2.86	318	P	Pn	07 17 56.1	-2.7
JFT				S	Sn	07 18 28.8	-3.2
JAG	Ashikaga	2.86	291	P	Pn	07 17 56.2	-2.6
JOD2	Odawara 2	3.00	268	P	Pn	07 17 59.2	-1.5
JOD2				S	Sn	07 18 35.7	+0.2
JRY	Ryogami san	3.19	282	P	Pn	07 18 02.2	-1.1
JHJ2	Mitsune	3.35	227	P	Pn	07 18 04.6	-0.9
JHJ2	Mitsune	3.35	227	*e*Pn	Pn	07 18 04.2	-1.2
JHJ2				*e*Sn	Sn	07 18 44.4	+0.4
JHJ	Hachijo jima 2	3.37	228	Pn	Pn	07 18 03.2	-2.4
	29nm,0.3s,baz=315,slow=18,SNR=23						
JHJ				Sn	Sn	07 18 41.8	-2.6
	213nm,0.3s,baz=51,slow=22,SNR=16						
JYN	Shimob	3.44	273	P	Pn	07 18 05.9	-0.8
JNS	Sasagawa	3.66	312	S	Sn	07 18 50.1	-1.5
JMK	Ichinoseki	3.73	341	P	Pn	07 18 05.8	-4.9
MJAR	Matsushiro Arr	3.85	288	Pn	Pn	07 18 11.7	-0.7
	8.1nm,0.3s,baz=94,slow=14,SNR=71						
MJAR				LR	LR	07 19 57.5	
	comp=Z,353nm,21.4s,baz=110,slow=42						
MAJO	Matsushiro	3.86	288	*c i*P	Pn	07 18 12.7	+0.3
MAJO	Matsushiro	3.86	288	*e*Pn	Pn	07 18 12.4	0.0
MAT	Matsushiro	3.86	288	P	Pn	07 18 12.7	+0.3
MAT				*e*S	Sn	07 18 51.3	-5.2
MAT	Matsushiro	3.86	288	P	Pn	07 18 12.7	+0.3
JYK	Kaneyama	3.98	332	P	Pn	07 18 09.6	-4.5
JOM	Ohasama	4.21	344	P	Pn	07 18 13.1	-4.1
JSD	Sado	4.46	307	P	Pn	07 18 18.8	-1.8
INU	Inuyama	4.69	271	*e*Pn	Pn	07 18 24.5	+0.7
ERM	Erimo	6.59	3	*e*P	Pn	07 18 45.6	-4.2
ERM				*e*		07 19 55.8	
ERM	Erimo	6.59	3	*e*Pn	Pn	07 18 45.5	-4.3
ERM				*e*Sn	Sn	07 19 55.8	-7.7
CBIJ	Chichi jima	8.31	184	*e*Pn	Pn	07 19 08.3	-5.1
CBIJ				*e*Sn	Sn	07 20 36.9	-9.0
JCJ	Chichijima	8.31	184	Pn	Pn	07 19 07.5	-6.0
	11nm,0.3s,baz=32,slow=22,SNR=13						
JCJ				Sn	Sn	07 20 34.7	-11
	7.3nm,0.3s,baz=252,slow=20,SNR=3.6						
JCJ				LR	LR	07 22 45.7	
	comp=Z,18nm,21.2s,baz=330,slow=41						
YUK	Yuzh-Kuril'sk	8.93	15	P	Pn	07 19 21.4	-0.4
SHO	Shikotan	9.00	19	*e*P	Pn	07 19 21.1	-1.7
JNU	Nakatsue	10.09	260	Pn	Pn	07 19 37.9	+0.1
	0.4nm,0.3s,baz=124,slow=6.3,SNR=4.5						
YSS	Yuzh-Sakhalins	11.52	360	*e*P	Pn	07 19 50.9	-6.3
YSS				pmax	pmax		
	comp=Z,20nm,1.0s						
USRK	Ussuriysk Ar.	12.05	320	Pn	Pn	07 20 03.3	-1.1
	comp=Z,0.2nm,0.3s,baz=134,slow=14,SNR=6.2						
USRK				LR	LR	07 24 18.7	
	comp=Z,172nm,20.9s,baz=146,slow=35						
KSRS	Korea Array	12.12	284	Pn	Pn	07 20 06.0	+0.6
	comp=Z,0.1nm,0.3s,baz=100,slow=13,SNR=7.3						
KSRS				LR	LR	07 24 43.8	
	comp=Z,107nm,19.9s,baz=90,slow=37						
KSRS	Korea Array	12.12	284	P	Pn	07 20 06.0	+0.6
KSRS				MLR	MLR		
	comp=Z,107nm,19.9s						
KSAR	Wonju Array Be	12.15	284	P	Pn	07 20 06.0	+0.2
KSAR	Wonju Array Be	12.15	284	Pn	Pn	07 20 06.0	+0.2
CN2	Changchun	15.73	307	*e*P	P	07 20 56.0	-0.2
KLR	Kul'dur	16.00	333	Pn	Pn	07 20 51.4	-5.3
	comp=Z,0.1nm,0.3s,baz=120,slow=13,SNR=3.8						
NJ2	Nanjing	20.15	267	*e*P	Pn	07 21 47.9	+0.7
NJ2				pmax	pmax		
	comp=Z,7.0nm,0.7s						
BJI	Beijing	21.49	290		P	07 22 04.0	+4.7
GUMO	Guam	21.82	174	LR	LR	07 29 12.1	
	comp=Z,28nm,21.8s,baz=31,slow=33						
MA2	Magadan	24.73	10	P	P	07 22 29.9	-1.2
	comp=Z,1.7nm,0.5s,baz=225,slow=10,SNR=5.1						
HHC	Hu-ho-hao-te	25.05	292	*e*P	P	07 22 36.3	+1.9
HHC				sP	pP	07 22 49.8	+1.0
HHC				S	S	07 27 02.4	+7.9
HHC				sS	sS	07 27 15.0	-4.1
HHC				pmax	pmax		
	comp=Z,21nm,0.9s						
HHC				pmax	pmax		
	comp=Z,120nm,5.4s						
HHC				LR	LR		
	comp=N,150nm,13.1s						
HHC				LR	LR		
	comp=E,210nm,13.3s						
HHC				LR	LR		
	comp=Z,110nm,15.3s						
H11S1	WAKE ISLAND Hy	27.08	122	T	T	07 51 07.7	
	baz=314,slow=75,SNR=5.8						
H11S3	WAKE ISLAND Hy	27.08	122	T	T	07 51 06.8	
	baz=314,slow=75,SNR=4.7						
H11S2	WAKE ISLAND Hy	27.09	122	T	T	07 51 06.6	
	baz=314,slow=75,SNR=4.7						
XAN	Xi'an	27.77	277	P	P	07 23 00.9	+2.0
XAN				pmax	pmax		
	comp=Z,5.0nm,1.1s						
XAN				pmax	pmax		
	comp=Z,41nm,4.6s						

Code	Station Name	Δ°	AZ°	Op	ISC	Time	Res
YAK	Yakutsk	27.88	347	P	P	07 22 58.3	-1.2
	comp=Z,0.9nm,0.3s,baz=256,slow=19,SNR=2.8						
YAK	Yakutsk	27.88	347	eP	P	07 22 57.7	-1.8
YAK				pmax	pmax		
	comp=E,4.0nm,1.0s						
YAK				pmax	pmax		
	comp=Z,20nm,0.9s						
YAK				pmax	pmax		
	comp=N,6.0nm,0.9s						
SEY	Seymchan	28.18	9	P	P	07 23 01.4	-0.8
	comp=N,1.6nm,0.4s,baz=196,slow=6.8,SNR=14						
ENH	Enshi	28.34	269	eP	P	07 23 05.7	+1.8
	comp=N,18nm,1.1s						
ULN	Ulaanbaatar	29.17	306	eP	P	07 23 12.6	+1.3
ULN				pmax	pmax		
	comp=Z,2.0nm,1.1s						
BOD	Bodaibo	29.47	328	eP	P	07 23 12.9	-0.8
BOD				pmax	pmax		
	comp=Z,4.0nm,1.3s						
SONA1	Songino Array	29.60	306	eP	P	07 23 15.9	+0.9
SONM	Songino Array	29.60	306	P	P	07 23 16.4	+1.3
	comp=Z,2.2nm,1.0s,baz=112,slow=9.3,SNR=9.3						
LZH	Lanzhou	31.45	283	eP	P	07 23 34.7	+3.1
LZH				pP	pP	07 23 41.5	-4.7
LZH				sP	sP	07 23 45.4	-7.8
LZH				pmax	pmax		
	comp=Z,12nm,1.0s						
ZAK	Zakamensk	32.13	310	eP	P	07 23 37.6	+0.3
ZAK				pmax	pmax		
	comp=Z,2.0nm,1.7s						
TLY	Talaya	32.21	313	eP	P	07 23 38.7	+0.7
TLY				pmax	pmax		
	comp=Z,1.0nm,0.7s						
TLY				MLR	MLR		
	comp=Z,114nm,20.0s						
CD2	Chengdu	32.81	273	P	P	07 23 44.4	+1.0
CD2				pmax	pmax		
	comp=Z,11nm,0.6s						
BILL	Bilibino	35.28	15	eP	P	07 24 03.3	-1.0
BILL				pmax	pmax		
	comp=Z,1.0nm,1.0s						
TIXI	Tiksi	37.02	353	eP	P	07 24 18.2	-0.9
TIXI				pmax	pmax		
	comp=Z,3.0nm,0.9s						
CMAR	Chiang Mai Arr	42.18	258	P	P	07 25 03.5	+0.8
	comp=Z,0.6nm,0.4s,baz=46,slow=5.2,SNR=3.2						
WMQ	Urumqi	42.55	299	eP	P	07 25 08.9	+3.4
WMQ				sP	pP	07 25 19.1	-1.5
WMQ				pmax	pmax		
	comp=Z,3.0nm,0.6s						
WMQ				pmax	pmax		
	comp=Z,19nm,4.6s						
ZAA0	Zalesovo Array	43.81	314	eP	P	07 25 16.1	+0.7
ZALV	Zalesovo Beam	43.81	314	P	P	07 25 15.9	+0.5
	comp=Z,1.9nm,0.6s,baz=94,slow=6.5,SNR=11						
ZALV				PcP	PcP	07 27 01.2	+0.3
	comp=Z,1.1nm,0.6s,baz=91,slow=2.7,SNR=3.7						
NRIK	Noril'sk	45.18	336	P	P	07 25 26.1	-0.1
	comp=Z,1.1nm,0.4s,baz=142,slow=5.1,SNR=4.0						
MK01	Makanchi Array	45.90	304	eP	P	07 25 33.3	+1.1
MKAR	Makanchi Array	45.91	304	P	P	07 25 33.5	+1.2
	comp=Z,1.6nm,0.7s,baz=92,slow=9.8,SNR=11						
KURK	Kurchatov	47.79	309	eP	P	07 25 47.5	+0.7
KURK				e*PP	pP	07 25 55.6	-6.5
KURK	Kurchatov	47.79	309	eP	P	07 25 47.5	+0.7
KURK				epP	pP	07 25 55.6	-6.5
KURBB	Kurchatov Arra	47.86	309	P	P	07 25 48.0	+0.6
	comp=Z,1.2nm,0.2s,baz=84,slow=7.8,SNR=28						
MDM	Murphy Dome	49.71	31	eP	P	07 26 01.2	-0.2
	comp=Z,12nm,1.0s						
ILAR	Eielson Array	50.28	32	P	P	07 26 04.5	-1.2
	comp=Z,4.3nm,0.9s,baz=267,slow=6.1,SNR=34						
ILB	Eielson Array	50.28	32	eP	P	07 26 04.8	-0.8
IL1	Eielson Array	50.28	32	eP	P	07 26 04.3	-1.4
TKM2	Tokmak 2	51.36	300	eP	P	07 26 16.2	+1.8
TKM2				pmax	pmax		
	comp=Z,14nm,1.5s						
TKM2	Tokmak 2	51.36	300	eP	P	07 26 16.2	+1.8
	comp=Z,14nm,1.5s						
MENT	Mentasta	51.75	34	eP	P	07 26 16.9	+0.1
	comp=Z,7.1nm,0.8s						
AAK	Ala-Archa	52.22	300	eP	P	07 26 21.4	+0.6
AAK				pmax	pmax		
	comp=Z,3.0nm,0.9s						
BRVK	Borovoye	52.52	314	eP	P	07 26 23.4	+0.8
BRVK				pmax	pmax		
	comp=Z,2.0nm,1.2s						
KKAR	Karatay Array	54.88	301	eP	P	07 26 41.5	+1.5
KKAR	Karatay Array	54.88	301	eP	P	07 26 41.5	+1.5
INK	Inuvik	55.33	27	P	P	07 26 42.6	-0.1
	comp=Z,4.3nm,0.8s,baz=296,slow=7.7,SNR=17						
INK	Inuvik	55.33	27	eP	P	07 26 42.7	-0.1
INK				pmax	pmax		
	comp=Z,5.0nm,0.9s						
INK	Inuvik	55.33	27	eP	P	07 26 42.7	-0.1
	comp=Z,5.3nm,0.9s						
WRA	Warramunga Arr	55.63	190	P	P	07 26 45.1	-0.4
	comp=Z,6.2nm,1.0s,baz=8.1,slow=7.5,SNR=17						
WRA	Warramunga Arr	55.63	190	ceP	P	07 26 51.2	+5.7
WRA				pmax	pmax		
	comp=Z,2.0nm,1.0s						
ARU	Arti	58.29	319	d iP	P	07 27 03.5	-0.4
ARU						07 29 11.2	
ARU				S	S	07 35 02.4	+0.8
ARU				SS	SS	07 38 51.7	-1.9
ARU				pmax	pmax		
	comp=Z,7.0nm,1.7s						
AS01	Alice Springs	59.35	189	eP	P	07 27 11.4	-0.2
ASAR	Alice Springs	59.36	189	P	P	07 27 11.8	0.0
	comp=Z,1.4nm,0.8s,baz=9.4,slow=6.0,SNR=11						
ABKAR	Akbulak array	59.81	311	eP	P	07 27 15.2	+0.6
RES	Resolute Bay	63.89	14	P	P	07 27 41.3	-0.2
	comp=Z,6.8nm,0.8s,baz=307,slow=6.2,SNR=30						
RES	Resolute Bay	63.89	14	eP	P	07 27 41.3	-0.2
RES				e*SP	pP	07 27 51.8	-5.7
RES				pmax	pmax		
	comp=Z,8.0nm,0.9s						
RES	Resolute Bay	63.89	14	eP	P	07 27 41.3	-0.2
	comp=Z,8.3nm,0.9s						
RES				esP	pP	07 27 51.8	-5.8
YKA	Yellowknife Ar	64.66	30	P	P	07 27 45.9	-0.9
	comp=Z,2.2nm,0.8s,baz=298,slow=6.6,SNR=34						
YKB5	Yellowknife Ar	64.66	30	eP	P	07 27 45.2	-1.5
GEYT	Alibeck	65.57	300	P	P	07 27 54.6	+1.4
	comp=Z,2.7nm,0.8s,baz=106,slow=3.2,SNR=5.3						
OBN	Obninsk	70.04	324	eP	P	07 28 22.9	+2.0
OBN				pmax	pmax		
	comp=Z,4.0nm,0.9s						
FINES	FINESS Array B	70.74	333	P	P	07 28 25.4	+0.3
	comp=Z,3.9nm,0.8s,baz=46,slow=8.2,SNR=9.6						
FINES	FINESS Array B	70.74	333	ceP	P	07 28 25.6	+0.5
FINES				pmax	pmax		
	comp=Z,4.0nm,0.8s						
KBZ	Khabaz	72.78	312	P	P	07 28 39.4	+1.8
	comp=Z,4.5nm,0.9s,baz=41,slow=7.8,SNR=5.4						
KIV	Kislovodsk	72.79	312	eP	P	07 28 39.2	+1.4
KIV				pmax	pmax		
	comp=Z,8.0nm,0.9s						
GNI	Garni	73.55	308	eP	P	07 28 44.1	+1.6
GNI				pmax	pmax		
	comp=Z,25nm,1.0s						
FFC	Flin Flon	74.47	33	eP	P	07 28 46.7	-0.7
FFC				pmax	pmax		
	comp=Z,5.0nm,0.9s						
FFC	Flin Flon	74.47	33	eP	P	07 28 46.7	-0.7
	comp=Z,4.5nm,0.9s						
FCC	Fort Churchill	74.95	27	eP	P	07 28 49.3	-0.7
FCC				pmax	pmax		
	comp=Z,35nm,1.9s						
FCC	Fort Churchill	74.95	27	eP	P	07 28 49.3	-0.7
	comp=Z,35nm,1.9s						
NB2	NORSAR Subarra	76.09	338	P	P	07 28 56.9	+0.3
	comp=Z,2.2nm,0.8s,baz=41,slow=5.9						
NOA	NORSAR Array B	76.09	338	P	P	07 28 57.2	+0.6
	comp=Z,1.7nm,0.7s,baz=39,slow=5.7,SNR=5.4						
AKASG	Malin Array Be	76.24	323	P	P	07 28 57.9	+0.3
	comp=Z,2.4nm,0.6s,baz=46,slow=5.9,SNR=17						
KIEV	Kiev	76.25	323	eP	P	07 28 57.2	-0.4
KIEV				pmax	pmax		
	comp=Z,3.0nm,0.9s						
AK11	Malin Array Si	76.28	323	eP	P	07 28 58.3	+0.5
R11A	Troy Canyon, C	76.89	52	eP	P	07 29 00.5	-1.3
	comp=Z,4.9nm,1.3s						
PDAR	Pinedale Array	78.02	46	P	P	07 29 07.5	-0.6
	comp=Z,0.8nm,0.7s,baz=265,slow=1.9,SNR=9.3						
FRB	Frobisher Bay	78.09	14	P	P	07 29 07.1	-0.6
	comp=Z,4.5nm,1.1s,baz=322,slow=7.4,SNR=3.9						
ULM	Lac du Bonnet	80.24	34	P	P	07 29 18.6	-1.1
	comp=Z,2.7nm,0.9s,baz=276,slow=4.8,SNR=5.7						
BRTR	Keskin Array B	80.74	312	P	P	07 29 24.5	+1.7
	comp=Z,1.5nm,0.7s,baz=118,slow=3.9,SNR=6.9						
BRTR	Keskin Array B	80.74	312	ceP	P	07 29 24.7	+1.9
BRTR				pmax	pmax		
	comp=Z,2.0nm,0.7s						
SMCO	Snowmass	81.77	47	eP	P	07 29 24.6	-4.0
	comp=Z,39nm,0.9s						
VYHS	Vyhne	82.67	326	eP	P	07 29 33.9	+1.3
VYHS	Vyhne	82.67	326	eP	P	07 29 33.9	+1.3
CLL	Collm	83.03	331	eP	P	07 29 35.0	+0.6
	comp=Z,5.0nm,0.8s						
CLL				e(sP)	PcP	07 29 44.0	+5.0
CLL	Collm	83.03	331	eP	P	07 29 35.0	+0.6
CLL				e		07 29 44.0	
CLL				pmax	pmax		
	comp=Z,5.0nm,0.8s						
KHC	Kasperske Hory	84.48	329	eP	P	07 29 42.7	+0.8
KHC	Kasperske Hory	84.48	329	eP	P	07 29 42.7	+0.8
GERES	GERESS Array B	84.65	329	P	P	07 29 43.0	+0.1
	comp=Z,0.8nm,0.6s,baz=38,slow=6.8,SNR=8.9						
GERES	GERESS Array B	84.65	329	P	P	07 29 43.0	+0.1
BFO	Black Forest	87.24	332	ceP	P	07 29 56.8	+1.3
TXAR	Lajitas Array	90.23	53	P	P	07 30 09.8	-0.3
	comp=Z,0.5nm,0.7s,baz=319,slow=3.1,SNR=7.3						
LPAZ	La Paz	146.51	63	PKPbc	PKPbc	07 36 51.1	-0.3
	comp=Z,1.5nm,0.8s,baz=333,slow=4.9,SNR=6.8						

NIED ***03*** *07:19:00, 35°.60N×142°.90E, h5km, Mw4.0 Best double couple: M₀1.08000×10^15 NP1:φs36.00000°, δ29.00000°, λ-82.00000°. NP2:φs207.00000°, δ61.00000°, λ-94.00000°.*
IDC ***03*** *07:19:14.9±0.7, 35°.46N×142°.98E, h0km, mb4.0/18, mb1 4.2/21, mb1mx4.0/60, mbtmp4.0/21, ML3.5/3, Error ellipse: s-maj=19.3km s-min=16.2km az=144.0*
NEIC ***03*** *07:19:19.7±0.4, 35°.39N×142°.98E, h35km, mb4.0/3, Error ellipse: s-maj=9.1km s-min=7.6km az=122.0*
JMA ***03*** *07:19:19.5±0.2, 35°.60N×142°.87E, h73km, M3.9*
ISCJB ***03*** *07:19:20.8±0.5, 35°.37N±0°.05×142°.75E±0°.05, h59km, mb4.0/21, Error ellipse: s-maj=7.6km s-min=5.4km az=148.7*

ISC 03 07:19:22.6±0.6**, 35°.43N**±0°.06×**142°.78E**±0°.07**, h59**km**, n43, σ1s.27**/46**, mb4.0**/21**, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
CHOJ	Chosi	1.59	281	P	Pn	07 19 46.9	-1.6
CHOJ				S	Sn	07 20 08.1	+0.1
JHO	Hitachi	2.15	304	P	Pn	07 19 53.3	-2.8
JFT	Otama	2.87	317	P	Pn	07 20 04.3	-1.6
JFT				S	Sn	07 20 36.3	-3.0
JAG	Ashikaga	2.88	291	P	Pn	07 20 04.1	-1.9
JOD2	Odawara 2	3.02	268	P	Pn	07 20 07.0	-1.0
JOD2				S	Sn	07 20 42.3	-0.7
JRY	Ryogami san	3.21	282	P	Pn	07 20 09.5	-1.1
JHJ2	Mitsune	3.37	228	ePn	Pn	07 20 10.4	-2.3
JHJ2				eSn	Sn	07 20 50.4	-1.1
JHJ	Hachijo jima 2	3.38	228	Pn	Pn	07 20 11.4	-1.6
	29nm,0.3s,baz=72,slow=20,SNR=6.3						
JHJ				Sn	Sn	07 20 48.9	-3.0
	107nm,0.3s,baz=76,slow=21,SNR=7.9						
JYN	Shimob	3.46	272	P	Pn	07 20 13.5	-0.5
MJAR	Matsushiro Arr	3.87	288	Pn	Pn	07 20 19.0	-0.7
	2.9nm,0.3s,baz=104,slow=7.1,SNR=4.1						
MAJO	Matsushiro	3.87	288	ePn	Pn	07 20 20.8	+1.1
ERM	Erimo	6.59	2	ePn	Pn	07 20 51.4	-5.3
CBIJ	Chichi jima	8.32	184	Pn	Pn	07 21 14.9	-5.7
CBIJ				Sn	Sn	07 22 41.3	-12
JCJ	Chichijima	8.32	184	Pn	Pn	07 21 14.9	-5.7
	8.2nm,0.3s,baz=294,slow=20,SNR=3.5						
JCJ				Sn	Sn	07 22 41.3	-12
	4.7nm,0.3s,baz=286,slow=20,SNR=2.6						
JNU	Nakatsue	10.11	260	Pn	Pn	07 21 43.8	-1.3
	0.2nm,0.3s,baz=349,slow=5.2,SNR=3.1						
JNU	Nakatsue	10.11	260	ePn	Pn	07 21 44.1	-1.1
PET	Petropavlovsk	20.87	28	eP	P	07 23 57.4	-2.1
	342nm,1.4s						
HIA	Hailar	21.82	316	eP	P	07 24 09.2	-0.6
	5.5nm,0.7s						
ENH	Enshi	28.36	269	eP	P	07 25 12.3	+1.2
	6.4nm,1.1s						
ULN	Ulaanbaatar	29.18	306	eP	P	07 25 19.4	+0.9
	50nm,3.3s						
SONM	Songino Array	29.61	306	P	P	07 25 22.9	+0.7
	0.6nm,0.7s,baz=86,slow=8.1,SNR=3.0						
ZALV	Zalesovo Beam	43.82	314	P	P	07 27 23.2	+0.7
	1.2nm,0.5s,baz=89,slow=7.8,SNR=3.8						
ZALV				PcP	PcP	07 29 08.0	0.0
	0.6nm,0.5s,baz=90,slow=4.5,SNR=3.4						
MKAR	Makanchi Array	45.92	304	P	P	07 27 40.6	+1.2
	0.7nm,0.6s,baz=88,slow=8.0,SNR=3.7						
KURK	Kurchatov	47.80	309	P	P	07 27 55.3	+1.4
KURBB	Kurchatov Arra	47.87	309	P	P	07 27 55.3	+0.9
	0.6nm,0.2s,baz=82,slow=7.5,SNR=4.9						
INK	Inuvik	55.32	27	P	P	07 28 50.1	+0.4
	2.4nm,0.6s,baz=294,slow=6.0,SNR=13						
WRAB	Tennant Creek	55.63	190	eP	P	07 28 52.7	+0.1
	0.5nm,0.5s						
WRA	Warramunga Arr	55.64	190	P	P	07 28 52.9	+0.3
	1.8nm,0.9s,baz=7.3,slow=7.2,SNR=4.4						
ASAR	Alice Springs	59.37	189	P	P	07 29 19.6	+0.7
	0.8nm,0.7s,baz=12,slow=9.5,SNR=5.1						
RES	Resolute Bay	63.88	14	P	P	07 29 48.7	+0.2
	4.6nm,0.8s,baz=318,slow=7.7,SNR=11						
YKA	Yellowknife Ar	64.64	30	P	P	07 29 53.2	-0.5
	1.5nm,0.8s,baz=300,slow=6.8,SNR=15						
FINES	FINESS Array B	70.75	333	P	P	07 30 32.8	+0.7
	1.6nm,0.6s,baz=60,slow=11,SNR=5.0						
NB2	NORSAR Subarra	76.09	338	P	P	07 31 02.9	-0.7
	comp=Z,0.7nm,0.6s,baz=40,slow=5.9						
NOA	NORSAR Array B	76.09	338	P	P	07 31 04.1	+0.5
	comp=Z,1.2nm,0.7s,baz=40,slow=5.7,SNR=4.5						
AKASG	Malin Array Be	76.24	323	P	P	07 31 05.1	+0.5
	comp=Z,1.0nm,0.5s,baz=46,slow=6.0,SNR=7.4						
PDAR	Pinedale Array	78.00	46	P	P	07 31 15.0	0.0
	comp=Z,0.7nm,0.6s,baz=285,slow=2.2,SNR=8.1						
FRB	Frobisher Bay	78.08	14	P	P	07 31 13.8	-0.9
	comp=Z,1.9nm,0.6s,baz=310,slow=7.9,SNR=4.2						
ULM	Lac du Bonnet	80.23	34	P	P	07 31 26.3	-0.4
	comp=Z,1.8nm,0.8s,baz=330,slow=5.9,SNR=3.0						
BRTR	Keskin Array B	80.75	312	P	P	07 31 31.1	+1.3
	comp=Z,0.9nm,0.6s,baz=105,slow=3.3,SNR=4.2						
CLL	Collm	83.04	331	eP	P	07 31 42.0	+0.6
GERES	GERESS Array B	84.66	329	P	P	07 31 50.0	+0.1
	comp=Z,0.5nm,0.6s,baz=32,slow=5.3,SNR=5.5						
TXAR	Lajitas Array	90.21	53	P	P	07 32 17.2	+0.2
	comp=Z,0.4nm,0.6s,baz=295,slow=3.5,SNR=5.4						
LPAZ	La Paz	146.49	63	PKPbc	PKPbc	07 38 58.7	+0.2
	comp=Z,0.9nm,0.8s,baz=243,slow=4.5,SNR=4.5						

MEX 03 07:21:12.1±0.4**, 16°.18N**×**92°.88W, h192**km±6km**, MD3.9, Chiapas**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
PCIG		0.57	215	eP	Pn	07 21 37.2	-1.5
PCIG				eS	Sn	07 21 56.8	-2.4
CCIG	Comitan	0.72	82	i P	Pn	07 21 38.3	-1.2
CCIG				eS	Sn	07 21 58.5	-2.2
THIG		1.40	155	eP	Pn	07 21 43.2	-1.1

NIED ***03*** *07:21:00, 35°.80N×142°.70E, h5km, Mw4.3 Best double couple: M₀3.28000×10^15 NP1:φs31.00000°, δ19.00000°, λ-82.00000°. NP2:φs203.00000°, δ71.00000°, λ-93.00000°.*
IDC ***03*** *07:21:11.4±0.5, 35°.42N×143°.04E, h0km, mb4.3/29, mb1 4.4/35, mb1mx4.3/60, mbtmp4.3/35, ML3.6/6, Error ellipse: s-maj=14.5km s-min=11.6km az=121.0*
NEIC ***03*** *07:21:12.8±0.2, 35°.40N×143°.08E, h10km, mb4.5/11, Error ellipse: s-maj=5.5km s-min=4.5km az=127.0*
JMA ***03*** *07:21:15.1±0.3, 35°.78N×142°.73E, h0km, M4.6*
ISCJB ***03*** *07:21:17.8±0.3, 35°.44N±0°.04×142°.73E±0°.04, h59km, mb4.2/40, Error ellipse: s-maj=5.6km s-min=4.5km az=168.0*

ISC 03 07:21:19.6±0.5**, 35°.48N**±0°.05×**142°.79E**±0°.06**, h59**km**, n70, σ1s.48**/75**, mb4.2**/39**, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
CHOJ	Chosi	1.59	279	P	Pn	07 21 43.7	-1.8
CHOJ				eS	Sn	07 22 04.4	-0.6
JFK	Kawauchi	2.44	321	P	Pn	07 21 53.0	-4.0
JFT	Otama	2.84	317	P	Pn	07 22 00.0	-2.5
JFT				S	Sn	07 22 32.3	-3.2
JAG	Ashikaga	2.87	290	S	Sn	07 22 33.5	-2.7
JOD2	Odawara 2	3.04	267	P	Pn	07 22 03.3	-1.9
JOD2				S	Sn	07 22 39.2	-1.1
JRY	Ryogami san	3.21	281	P	Pn	07 22 06.0	-1.6
JHJ2	Mitsune	3.41	227	ePn	Pn	07 22 08.4	-1.9
JHJ2				eSn	Sn	07 22 46.9	-2.6
JHJ	Hachijo jima 2	3.43	227	Pn	Pn	07 22 08.3	-2.2
	15nm,0.3s,baz=60,slow=20,SNR=3.2						
JHJ				Sn	Sn	07 22 45.0	-4.8
	55nm,0.3s,baz=308,slow=18,SNR=5.1						
JNS	Sasagawa	3.64	311	S	Sn	07 22 54.2	-1.0
MJAR	Matsushiro Arr	3.87	287	Pn	Pn	07 22 15.5	-1.0
	6.6nm,0.3s,baz=91,slow=7.8,SNR=6.8						
MAJO	Matsushiro	3.87	287	ePn	Pn	07 22 16.0	-0.6
MAT	Matsushiro	3.87	287	P	Pn	07 22 16.8	+0.3
MAT				eS	Sn	07 22 57.7	-3.0
MAT	Matsushiro	3.87	287	P	Pn	07 22 16.9	+0.4
JYK	Kaneyama	3.94	331	P	Pn	07 22 13.8	-3.8
JYK				S	Sn	07 22 58.2	-4.4
JSD	Sado	4.45	306	P	Pn	07 22 22.4	-2.0
ERM	Erimo	6.53	2	ePn	Pn	07 22 49.4	-3.6
CBIJ	Chichi jima	8.37	184	Pn	Pn	07 23 11.6	-6.7
CBIJ				Sn	Sn	07 24 37.4	-14
JCJ	Chichijima	8.37	184	Pn	Pn	07 23 11.6	-6.7
	6.3nm,0.3s,baz=294,slow=20,SNR=3.4						
JCJ				Sn	Sn	07 24 37.4	-14
	3.5nm,0.3s,baz=270,slow=20,SNR=2.3						
JNU	Nakatsue	10.13	260	Pn	Pn	07 23 42.3	-0.1
	0.3nm,0.3s,baz=14,slow=8.3,SNR=2.5						
KSRS	Korea Array	12.13	284	Pn	Pn	07 24 10.8	+1.3
	0.1nm,0.3s,baz=100,slow=14,SNR=5.5						
KSAR	Wonju Array Be	12.16	284	Pn	Pn	07 24 10.8	+0.8
JOW	Kunigami	15.11	239	ePn	Pn	07 24 47.9	-1.6
	16nm,1.6s						
KLR	Kul'dur	15.96	333	Pn	Pn	07 24 58.1	-2.0
	0.2nm,0.3s,baz=144,slow=14,SNR=2.8						
HIA	Hailar	21.79	316	P	P	07 26 07.2	+0.8
	6.4nm,0.9s						
MA2	Magadan	24.67	10	P	P	07 26 33.8	-0.8
	2.1nm,0.5s,baz=150,slow=18,SNR=3.5						
YAK	Yakutsk	27.83	347	eP	P	07 27 02.7	-0.3
	18nm,0.8s						
SEY	Seymchan	28.12	9	P	P	07 27 05.7	+0.1
	4.2nm,0.6s,baz=203,slow=6.9,SNR=8.6						
ENH	Enshi	28.37	269	eP	P	07 27 08.9	+0.7
	17nm,1.1s						
ULN	Ulaanbaatar	29.16	306	P	P	07 27 16.9	+1.6
	3.3nm,1.1s						
SONM	Songino Array	29.59	306	P	P	07 27 20.5	+1.5
	0.7nm,0.7s,baz=95,slow=7.5,SNR=3.8						
CMAR	Chiang Mai Arr	42.23	258	P	P	07 29 08.4	+1.4
	0.4nm,0.3s,baz=40,slow=7.1,SNR=4.1						
ZALV	Zalesovo Beam	43.79	314	P	P	07 29 20.0	+0.8
	1.9nm,0.6s,baz=89,slow=7.0,SNR=7.1						
ZALV				PcP	PcP	07 31 05.4	+0.5
	1.2nm,0.5s,baz=86,slow=2.1,SNR=4.3						
NRIK	Noril'sk	45.14	336	P	P	07 29 30.3	+0.5
	2.4nm,0.5s,baz=118,slow=8.3,SNR=4.3						
MKAR	Makanchi Array	45.90	304	P	P	07 29 37.2	+1.0
	1.4nm,0.7s,baz=90,slow=9.9,SNR=8.9						
KURK	Kurchatov	47.77	309	P	P	07 29 51.9	+1.2
	0.7nm,0.9s						
KURBB	Kurchatov Arra	47.84	309	P	P	07 29 51.9	+0.7
	1.6nm,0.6s,baz=83,slow=7.7,SNR=7.8						
ILAR	Eielson Array	50.22	32	P	P	07 30 08.2	-1.0
	6.4nm,0.8s,baz=258,slow=6.2,SNR=25						
TKM2	Tokmak 2	51.36	300	eP	P	07 30 20.1	+1.8
	2.8nm,0.9s						
DOT	Dot Lake	51.49	33	eP	P	07 30 17.6	-1.1
	9.8nm,0.7s						
KKAR	Karatay Array	54.88	301	eP	P	07 30 45.4	+1.5
	3.6nm,1.0s						
INK	Inuvik	55.27	27	P	P	07 30 46.4	+0.1
	4.6nm,0.6s,baz=303,slow=6.4,SNR=22						
WRAB	Tennant Creek	55.69	190	eP	P	07 30 48.9	-0.9
	4.2nm,0.9s						
WRA	Warramunga Arr	55.70	190	P	P	07 30 49.3	-0.7
	5.6nm,0.9s,baz=9.4,slow=7.5,SNR=13						
DLBC	Dease Lake	59.17	38	P	P	07 31 14.4	+0.3
	1.4nm,0.7s,baz=275,slow=9.3,SNR=3.3						
ASAR	Alice Springs	59.42	189	P	P	07 31 15.8	-0.3
	1.8nm,0.8s,baz=12,slow=8.5,SNR=15						
ABKAR	Akbulak array	59.80	311	eP	P	07 31 19.1	+0.6
	3.3nm,0.6s						
RES	Resolute Bay	63.83	14	P	P	07 31 44.9	-0.3
	11nm,0.8s,baz=317,slow=7.0,SNR=27						
YKA	Yellowknife Ar	64.59	30	P	P	07 31 49.6	-0.7
	2.7nm,0.8s,baz=300,slow=6.5,SNR=25						
YKA				PcP	PcP	07 32 23.8	0.0
	0.3nm,0.6s,baz=298,slow=4.0,SNR=5.8						
GEYT	Alibeck	65.57	300	P	P	07 31 57.6	+0.4
	0.8nm,0.3s,baz=325,slow=2.3,SNR=4.3						
STKA	Stephens Creek	67.01	181	P	P	07 32 06.2	+0.1
	0.8nm,0.5s,baz=317,slow=6.2,SNR=2.9						
NWAO	Narrogin (SRO)	72.14	202	P	P	07 32 37.8	0.0
	4.2nm,0.6s,baz=292,slow=0.0,SNR=4.5						
KBZ	Khabaz	72.76	312	P	P	07 32 43.1	+1.6
	3.4nm,0.8s,baz=51,slow=6.4,SNR=5.1						
NVAR	Mina Array Bea	75.02	53	P	P	07 32 55.1	0.0
	1.2nm,0.5s,baz=294,slow=2.9,SNR=3.9						
NB2	NORSAR Subarra	76.05	338	P	P	07 33 00.6	+0.3
	comp=Z,1.4nm,0.6s,baz=38,slow=5.9						
NOA	NORSAR Array B	76.05	338	P	P	07 33 00.7	+0.3
	comp=Z,2.7nm,0.8s,baz=40,slow=5.7,SNR=7.5						
AKASG	Malin Array Be	76.21	323	P	P	07 33 01.6	+0.3
	comp=Z,2.2nm,0.5s,baz=46,slow=6.0,SNR=18						
PDAR	Pinedale Array	77.95	46	P	P	07 33 11.3	-0.4
	comp=Z,1.5nm,0.6s,baz=270,slow=1.9,SNR=12						
FRB	Frobisher Bay	78.02	14	P	P	07 33 11.1	-0.2
	comp=Z,3.3nm,0.6s,baz=329,slow=6.9,SNR=6.4						
ULM	Lac du Bonnet	80.18	34	P	P	07 33 22.0	-1.3
	comp=Z,2.9nm,0.8s,baz=321,slow=7.1,SNR=5.6						
BRTR	Keskin Array B	80.72	312	P	P	07 33 27.6	+1.0
	comp=Z,1.5nm,0.7s,baz=90,slow=2.7,SNR=7.5						
DPC	Dobruska-Polom	82.36	329	eP	P	07 33 36.4	+1.4
DPC				epP	PcP	07 33 42.3	+2.2
BRG	Berggiesshubel	82.95	330	eP	P	07 33 36.5	-1.5
	comp=Z,3.1nm,1.0s						
CLL	Collm	83.00	331	i P	P	07 33 39.0	+0.8
PRU	Pruhonice	83.39	329	eP	P	07 33 41.4	+1.2
KHC	Kasperske Hory	84.45	329	eP	P	07 33 46.7	+1.0
GERES	GERESS Array B	84.62	329	P	P	07 33 46.8	+0.1
	comp=Z,1.0nm,0.6s,baz=37,slow=5.3,SNR=11						
TXAR	Lajitas Array	90.17	53	P	P	07 34 13.7	-0.1
	comp=Z,1.1nm,0.8s,baz=300,slow=3.4,SNR=4.3						
ESDC	Sonseca Array	99.17	335	P	Pdif	07 34 54.4	-0.3
	comp=Z,0.5nm,0.7s,baz=356,slow=4.8,SNR=4.5						
TORD	Torodi Ar. Bea	119.22	316	PKP	PKPdf	07 40 02.3	-0.3
	comp=Z,0.4nm,0.9s,baz=116,slow=3.4,SNR=3.1						
LPAZ	La Paz	146.46	63	PKPbc	PKPbc	07 40 54.9	-0.4
	comp=Z,2.0nm,0.8s,baz=15,slow=5.8,SNR=7.5						

KRSC ***03*** *07:22:09.7±1.6, 54°.14N×163°.27E, h92km±31km, ML4.8*
BJI ***03*** *07:22:10.4, 54°.20N×163°.20E, h39km, mb4.5/22, mB4.7/15, Ms4.7/5, Ms7 4.5/3*
ISCJB ***03*** *07:22:12.0±0.4, 54°.13N±0°.02×163°.20E±0°.04, h46km±3km, mb4.4/60, MS4.1/1, Error ellipse: s-maj=4.1km s-min=2.7km az=41.4*
NEIC ***03*** *07:22:12.9±0.3, 54°.21N×163°.10E, h35km, mb4.6/25, Error ellipse: s-maj=8.4km s-min=4.4km az=170.0*
MOS ***03*** *07:22:14.4±1.0, 54°.24N×162°.90E, h73km, mb4.7/17, Error ellipse: s-maj=7.2km s-min=5.4km az=97.6*
IDC ***03*** *07:22:15.4±0.6, 54°.25N×162°.96E, h60km±5km, mb3.9/21, mb1 4.1/26, mb1mx3.9/57, mbtmp4.2/26, MS3.1/3, Ms1 3.1/3, ms1mx2.8/68, Error ellipse: s-maj=15.9km s-min=8.1km az=161.0*

ISC 03 07:22:13.2±0.7**, 54°.11N**±0°.04×**163°.31E**±0°.04**, h37**km±2km**, n194, σ1s.62**/262**, mb4.4**/59**, 1C-2D, Off east coast of Kamchatka Peninsula**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
BKI	Bering	1.90	54	eP	Pn	07 22 42.0	-1.0
BKI				eS	Sn	07 23 02.7	-2.9
BKI	Bering	1.90	54	PN	Pn	07 22 42.0	-1.0
TUMD	Tumrok D	2.01	304	eP	Pn	07 22 43.7	-0.9

TUMD eS Sn 07 23 08.5 0.0
KZV Kizimen 2.02 301 eP Pn 07 22 44.0 -0.8
KZV eS Sn 07 23 08.1 -0.8
KBG Krutoberegovo 2.18 351 eP Pn 07 22 44.8 -2.0
KBG eS Sn 07 23 10.7 -1.8
TUMR Tumrok 2.18 304 eP Pn 07 22 46.5 -0.5
TUMR eS Sn 07 23 13.4 +0.7
TUMR Tumrok 2.18 304 PN Pn 07 22 46.5 -0.5
TUMR S Sn 07 23 13.4 +0.7
SPN Mys Shipunski 2.20 244 eP Pn 07 22 46.1 -1.1
SPN eS Sn 07 23 10.5 -2.6
SPN Mys Shipunski 2.20 244 PN Pn 07 22 46.1 -1.1
SPN S Sn 07 23 10.5 -2.6
KII Karymskiy 2.27 270 eP Pn 07 22 47.8 -0.4
KII eS Sn 07 23 13.1 -1.9
KII Karymskiy 2.27 270 PN Pn 07 22 47.8 -0.4
KII S Sn 07 23 13.1 -1.9
ZLN Zelenaya 2.39 324 eP Pn 07 22 49.2 -0.7
ZLN eS Sn 07 23 19.2 +1.2
ZLN Zelenaya 2.39 324 PN Pn 07 22 49.2 -0.7
ZLN S Sn 07 23 19.2 +1.2
KMNR Kamenistaya 2.42 314 eP Pn 07 22 49.8 -0.5
KMNR eS Sn 07 23 17.7 -1.0
KMNR Kamenistaya 2.42 314 PN Pn 07 22 49.8 -0.5
KMNR S Sn 07 23 17.7 -1.0
BZMR Bezymyannaya 2.45 320 eP Pn 07 22 49.6 -1.1
LGNR Loginova 2.49 324 eP Pn 07 22 50.7 -0.6
LGNR eS Sn 07 23 21.7 +1.2
LGNR Loginova 2.49 324 PN Pn 07 22 50.7 -0.6
CIRR Tsirk 2.49 325 eP Pn 07 22 50.6 -0.7
CIRR eS Sn 07 23 19.0 -1.5
CIRR Tsirk 2.49 325 PN Pn 07 23 19.0 -1.5
CIRR S Sn 07 23 19.0 -1.5
KIRR Kirishev 2.52 319 eP Pn 07 22 50.7 -0.9
KIRR eS Sn 07 23 20.9 -0.2
NLC Nalytchevo 2.54 250 eP Pn 07 22 51.0 -0.8
NLC eS Sn 07 23 18.9 -2.5
NLC Nalytchevo 2.54 250 PN Pn 07 22 51.0 -0.8
NLC S Sn 07 23 18.9 -2.5
KPT Kopyto 2.57 318 eP Pn 07 22 51.5 -0.9
KPT eS Sn 07 23 20.5 -1.9
KPT Kopyto 2.57 318 PN Pn 07 22 51.5 -0.9
KPT S Sn 07 23 20.5 -1.9
KRSR Krestovskiy 2.63 324 eP Pn 07 22 51.9 -1.3
KRSR eS Sn 07 23 21.4 -2.5
KRSR Krestovskiy 2.63 324 PN Pn 07 22 51.9 -1.3
KRSR S Sn 07 23 21.4 -2.5
KLY Klyuchi 2.68 327 eP Pn 07 22 51.8 -2.0
KLY eP Pn 07 22 52.0 -1.8
KLY eS Sn 07 23 20.6 -4.3
KLY eS Sn 07 23 23.4 -1.5
SMKR Semkarok 2.69 338 eP Pn 07 22 52.8 -1.2
SMKR eS Sn 07 23 24.7 -0.6
SMKR Semkarok 2.69 338 PN Pn 07 22 52.8 -1.2
SMKR S Sn 07 23 24.7 -0.6
BDR Baidarnaya 2.74 335 eP Pn 07 22 54.0 -0.7
BDR eS Sn 07 23 25.8 -0.7
SDLR Sedlovina 2.76 254 eP Pn 07 22 54.4 -0.5
SDLR eS Sn 07 23 25.5 -1.5
SDLR Sedlovina 2.76 254 PN Pn 07 22 54.4 -0.5
SDLR S Sn 07 23 25.5 -1.5
KOZ Kozyrevsk 2.78 316 eP Pn 07 22 54.7 -0.4
KOZ eS Sn 07 23 29.1 +1.8
KOZ Kozyrevsk 2.78 316 PN Pn 07 22 54.7 -0.4
SMAR Somma 2.81 254 eP Pn 07 22 55.6 -0.1
SMAR eS Sn 07 23 27.3 -1.1
SMAR Somma 2.81 254 PN Pn 07 22 55.6 -0.1
SMAR S Sn 07 23 27.3 -1.1
UGLR Uglovaya 2.81 253 eP Pn 07 22 55.8 +0.1
UGLR eS Sn 07 23 27.6 -0.8
SRKR Sorokina 2.83 335 eP Pn 07 22 55.1 -0.8
SRKR eS Sn 07 23 28.2 -0.5
SRKR Sorokina 2.83 335 PN Pn 07 22 55.1 -0.8
SRKR S Sn 07 23 28.2 -0.5
AVH Avacha 2.84 255 eP Pn 07 22 56.5 +0.4
AVH eS Sn 07 23 28.5 -0.6
AVH Avacha 2.84 255 PN Pn 07 22 56.5 +0.4
AVH S Sn 07 23 28.5 -0.6
KRX Arik 2.87 257 eP Pn 07 22 56.3 -0.1
KRX eS Sn 07 23 28.0 -1.7
KOK Koryaka 2.89 255 eP Pn 07 22 57.1 +0.3
KOK eS Sn 07 23 29.5 -0.8
KOK Koryaka 2.89 255 PN Pn 07 22 57.1 +0.3
KOK S Sn 07 23 29.5 -0.8
DALK Dalny 2.92 250 eP Pn 07 22 56.5 -0.5
DALK eS Sn 07 23 28.6 -2.2
PET Petropavlovsk 2.98 251 eP Pn 07 22 57.6 -0.2
PET eS Sn 07 23 30.0 -2.2
PET Petropavlovsk 2.98 251 ePN Pn 07 22 57.7 -0.1
PET eS Sn 07 23 30.0 -2.2
PET pmax pmax
comp=Z,114nm,0.6s
PET smax smax
comp=N,953nm,0.5s
PET smax smax
comp=E,839nm,0.6s
PET MLR MLR
comp=Z,500nm,20.0s
PET Petropavlovsk 2.98 251 ePn Pn 07 22 57.4 -0.4
PET eSn Sn 07 23 26.9 -5.3
GNL Ganaly 3.20 265 eP Pn 07 23 01.3 +0.3
GNL eS Sn 07 23 36.7 -1.2
GNL Ganaly 3.20 265 PN Pn 07 23 01.3 +0.3
GNL S Sn 07 23 36.7 -1.2
ESO Esso 3.22 306 eP Pn 07 23 00.3 -0.8
ESO eS Sn 07 23 36.0 -2.2
ESO Esso 3.22 306 PN Pn 07 23 00.3 -0.8
ESO S Sn 07 23 36.0 -2.2
RUS Russkaya 3.33 242 eP Pn 07 23 02.3 -0.4
RUS eS Sn 07 23 38.3 -2.6
RUS Russkaya 3.33 242 PN Pn 07 23 02.3 -0.4
RUS S Sn 07 23 38.3 -2.6
KRMR Karymshinskiy 3.35 250 eP Pn 07 23 03.0 +0.1
KRMR eS Sn 07 23 40.0 -1.3
PEA0 Petropavlovsk- 3.49 256 ePn Pn 07 23 05.0 +0.1
PEA0 eSn Sn 07 23 43.3 -1.5
PEA0B Petropavlovsk- 3.49 256 ePn Pn 07 23 05.1 +0.3
PEA0B eSn Sn 07 23 45.0 +0.1
PETK Petropavlovsk- 3.49 256 P Pn 07 23 05.1 +0.3
comp=Z,19nm,0.3s,baz=96,slow=20,SNR=70
PETK S Sn 07 23 43.2 -1.6
comp=Z,26nm,0.3s,baz=75,slow=25,SNR=6.1
PETK LR LR 07 24 04.8
comp=Z,62nm,20.4s,baz=92,slow=33
ASAK Asacha 3.68 244 eP Pn 07 23 08.1 +0.6
ASAK eS Sn 07 23 48.9 -0.7
APC Apacha 3.86 255 eP Pn 07 23 11.1 +1.2
APC eS Sn 07 23 54.7 +0.8
APC Apacha 3.86 255 PN Pn 07 23 11.1 +1.2
APC S Sn 07 23 54.7 +0.8
PAU Pauzhetka 4.75 239 eP Pn 07 23 21.9 -0.2
PAU Pauzhetka 4.75 239 PN Pn 07 23 21.9 -0.2
OSSR Ossora 5.16 359 eP Pn 07 23 26.4 -1.3
OSSR eS Sn 07 24 21.1 -4.8
SKR Severo-Kuril's 5.58 235 eP Pn 07 23 32.8 -0.7
SKR eS Sn 07 24 31.0 -5.3
SKR Severo-Kuril's 5.58 235 ePN Pn 07 23 31.7 -1.8
SKR pmax pmax
comp=Z,80nm,0.5s
TILK Tilichiki 6.54 12 eP Pn 07 23 47.2 +0.5
TILK eS Sn 07 24 56.9 -2.9
SMY Shemya 6.60 98 eP Pn 07 23 49.0 +1.5
SMY Shemya 6.60 98 ePn Pn 07 23 49.0 +1.5
KMSK Kamenskaya 8.52 9 eP Pn 07 24 14.4 +0.6
KMSK eS Sn 07 25 44.1 -4.4
MA2 Magadan 8.78 314 P Pn 07 24 17.4 0.0
comp=Z,0.4nm,0.3s,baz=153,slow=10,SNR=8.2
MA2 LR LR 07 28 11.8
comp=Z,230nm,19.1s,baz=195,slow=42
SEY Seymchan 10.52 332 P Pn 07 24 41.0 -0.1
comp=Z,0.2nm,0.3s,baz=153,slow=18,SNR=2.7
SEY Seymchan 10.52 332 PN Pn 07 24 41.0 -0.1
NKL Nikolayevsk 13.45 275 ePN P 07 25 29.0 -1.0
NKL pmax pmax
comp=Z,34nm,0.9s
BILL Bilibino 14.05 5 eP Pn 07 25 28.8 -0.5
BILL pmax pmax
comp=Z,10.0nm,1.1s
BILL MLR MLR
comp=Z,42nm,15.0s
BILL Bilibino 14.05 5 ePn Pn 07 25 29.2 -0.1

YSS Yuzh-Sakhalins 14.87 250 eP Pn 07 25 39.0 -1.5
HABR Khabarovsk 18.47 264 eP P 07 26 22.6 -3.0
HABR eS Sn 07 29 48.6 -2.5
HABR pmax pmax
comp=Z,55nm,2.3s
HABR pmax pmax
comp=N,46nm,2.3s
HABR pmax pmax
comp=E,53nm,2.3s
HABR MLR MLR
comp=Z,63nm,14.0s
FALS False Pass 19.25 74 eP P 07 26 34.6 +0.6
comp=Z,541nm,0.8s
YAK Yakutsk 19.27 308 P P 07 26 31.0 -3.3
comp=Z,0.0nm,0.3s,baz=107,slow=23,SNR=12
YAK LR LR 07 34 53.3
comp=Z,126nm,19.1s,baz=92,slow=40
YAK Yakutsk 19.27 308 eP P 07 26 30.5 -3.8
YAK pmax pmax
comp=Z,59nm,0.9s
YAK pmax pmax
comp=E,20nm,1.2s
YAK pmax pmax
comp=N,9.0nm,1.2s
YAK Yakutsk 19.27 308 P P 07 26 31.0 -3.3
comp=N,5.7nm,0.7s
KLR Kul'dur 20.07 269 P P 07 26 41.7 -1.4
comp=N,0.3nm,0.3s,baz=63,slow=9.2,SNR=6.2
TTA Tatalina 22.63 51 eP P 07 27 10.7 +0.1
TTA pmax pmax
comp=Z,11nm,1.0s
TTA Tatalina 22.63 51 eP P 07 27 10.7 +0.1
comp=Z,11nm,1.0s
TIXI Tiksi 23.01 333↑ *i*P P 07 27 12.2 -2.1
TIXI pmax pmax
comp=Z,31nm,1.9s
TIXI Tiksi 23.01 333 eP P 07 27 12.4 -1.9
comp=Z,14nm,1.0s
MDJ Mudanjiang 23.71 260 P P 07 27 20.1 -1.4
MDJ pmax pmax
comp=Z,3.0nm,0.9s
MDJ pmax pmax
comp=Z,130nm,3.8s
CAST Castle Rocks 24.44 50 eP P 07 27 28.6 +0.6
comp=Z,9.5nm,0.8s
SPU Mount Spurr 24.49 55 eP P 07 27 29.6 +1.1
KDAK Kodiak Island 24.64 63 P P 07 27 44.0 +14
comp=Z,15nm,0.7s,baz=322,slow=8.2,SNR=4.5
KDAK Kodiak Island 24.64 63 *i* P P 07 27 30.0 +0.2
MAJO Matsushiro 24.69 235*d i*P P 07 27 31.2 +0.7
MAJO pmax pmax
comp=Z,62nm,0.9s
MJAR Matsushiro Arr 24.69 235 P P 07 27 30.5 0.0
comp=Z,4.3nm,0.9s,baz=36,slow=9.6,SNR=3.6
BPAW Bear Paw Mtn. 24.95 48 eP P 07 27 33.0 +0.4
comp=Z,6.6nm,0.8s
TRF Thorofare Moun 25.24 50 eP P 07 27 35.7 +0.2
comp=Z,17nm,0.9s
COLD Coldfoot 25.54 41 eP P 07 27 38.1 +0.2
comp=Z,5.2nm,0.8s
CCB Clear Creek Bu 26.34 47 eP P 07 27 45.3 +0.1
comp=Z,31nm,1.9s
CN2 Changchun 26.61 263 eP P 07 27 48.3 +0.5
ILAR Eielson Array 26.73 47 P P 07 27 48.1 -0.6
comp=Z,2.7nm,0.8s,baz=263,slow=8.6,SNR=15
ILAR pP **sP** 07 28 02.7 -1.0
comp=Z,1.5nm,0.8s,baz=258,slow=9.3,SNR=4.3
ILB Eielson Array 26.73 47 eP P 07 27 48.6 -0.1
EGAK Eagle 29.18 46 eP P 07 28 09.9 -0.7
comp=Z,8.2nm,1.3s
KSRS Korea Array 29.37 250 P P 07 28 12.7 +0.3
comp=Z,2.3nm,0.6s,baz=39,slow=9.6,SNR=8.6
KSRS Korea Array 29.37 250 eP P 07 28 13.1 +0.7
KSRS pmax pmax
comp=Z,2.0nm,0.6s
KSAR Wonju Array Be 29.40 250 P P 07 28 12.7 0.0
KSAR Wonju Array Be 29.40 250 P P 07 28 12.7 0.0
H11N2 WAKE ISLAND Hy 34.43 174 T T 08 06 30.3
baz=355,slow=76,SNR=18
H11N3 WAKE ISLAND Hy 34.44 174 T T 08 06 38.7
baz=355,slow=76,SNR=18
H11N1 WAKE ISLAND Hy 34.44 174 T T 08 06 39.3
baz=355,slow=76,SNR=17
DLBC Dease Lake 35.90 55 P P 07 29 10.8 +1.4
comp=Z,1.8nm,0.9s,baz=278,slow=6.8,SNR=3.2
HHC Hu-ho-hao-te 36.56 270 eP P 07 29 16.1 +0.8
HHC sP pP 07 29 28.1 +2.2
HHC S S **07 34 58.0 +2.8**
HHC sS sS 07 35 07.4 -5.4
HHC pmax pmax
comp=Z,14nm,1.0s
HHC pmax pmax
comp=Z,150nm,4.9s
HHC LR LR
comp=Z,190nm,14.3s
HHC LR LR
comp=Z,290nm,15.1s
HHC LR LR
comp=Z,170nm,14.3s
NJ2 Nanjing 38.39 253 eP P 07 29 30.6 -0.1
NJ2 pmax pmax
comp=Z,15nm,0.5s
YKB5 Yellowknife Ar 41.11 44 eP P 07 29 52.9 0.0
ZALV Zalesovo Beam 43.83 303 P P 07 30 11.3 -3.8
comp=Z,1.0nm,0.5s,baz=52,slow=6.0,SNR=3.7
NVS Novosibirsk 44.11 305 eP P 07 30 12.8 -4.5
GTA Gaotai 44.38 278 eP P 07 30 18.1 -1.8
GTA pP pP 07 30 28.7 -2.1
GTA sP sP 07 30 32.9 -2.3
GTA pmax pmax
comp=Z,6.0nm,1.0s
CD2 Chengdu 47.96 266 P P 07 30 46.2 -1.8
CD2 pmax pmax
comp=Z,1.0nm,0.5s
WMQ Urumqi 48.42 290 eP P 07 30 52.2 +0.7
WMQ pP pP 07 31 02.2 -0.2
WMQ sP sP 07 31 06.2 -0.7
WMQ pmax pmax
comp=Z,3.0nm,0.6s
WMQ pmax pmax
comp=Z,49nm,6.2s
KURK Kurchatov 48.81 303 eP P 07 30 51.5 -2.8
KURK pmax pmax
comp=Z,17nm,1.4s
KURK Kurchatov 48.81 303 eP P 07 30 51.5 -2.8
comp=Z,17nm,1.4s
KURBB Kurchatov Arra 48.91 303 P P 07 30 52.2 -2.8
comp=Z,2.8nm,0.4s,baz=54,slow=7.9,SNR=14
MK31 Makanchi Array 49.42 297 eP P 07 30 56.2 -2.9
MK31 Makanchi Array 49.42 297 eP P 07 30 56.1 -2.9
MKAR Makanchi Array 49.42 297 P P 07 30 55.9 -3.1
comp=Z,2.0nm,0.7s,baz=56,slow=7.3,SNR=8.5
MK01 Makanchi Array 49.44 297 eP P 07 30 56.2 -2.9
VOSK Vostochnaya 51.17 309 eP P 07 31 09.9 -2.2
VOSK pmax pmax
comp=Z,3.0nm,0.5s
VOSK Vostochnaya 51.17 309 eP P 07 31 09.9 -2.2
comp=Z,2.7nm,0.5s
BRVK Borovoye 51.27 309 eP P 07 31 10.9 -2.0
BRVK pmax pmax
comp=Z,5.0nm,0.6s
BRVK Borovoye 51.27 309 eP P 07 31 11.0 -1.8
comp=Z,5.6nm,0.7s
ARCES ARCESS Array B 52.90 343 P P 07 31 23.4 -1.3
comp=Z,0.8nm,0.6s,baz=28,slow=10,SNR=6.3
NVAR Mina Array Bea 53.60 73 P P 07 31 32.0 +1.3
comp=Z,1.5nm,0.7s,baz=286,slow=7.2,SNR=4.0
RLMT Red Lodge 53.88 61 eP P 07 31 33.6 +1.1
comp=Z,7.1nm,0.9s
ARU Arti 53.93 318*d i*P P 07 31 30.3 -2.2
ARU S S 07 39 02.8 -2.1
ARU SS **SKiKP** 07 42 40.9 -0.7
ARU pmax pmax
comp=Z,18nm,1.0s
ARU Arti 53.93 318 eP P 07 31 31.1 -1.3
comp=Z,12nm,0.8s
BW06 Boulder Array 55.35 63 eP P 07 31 43.9 +0.6
PD31 Pinedale Array 55.36 63 eP P 07 31 44.4 +1.0
PDAR Pinedale Array 55.36 63 P P 07 31 43.7 +0.4
comp=Z,2.1nm,0.8s,baz=325,slow=1.4,SNR=12
PDAR pP **sP** 07 32 00.5 +1.7
comp=Z,1.4nm,0.9s,baz=336,slow=3.3,SNR=4.3
DUG Dugway, Tooele 55.41 68 eP P 07 31 44.6 +0.9
DUG pmax pmax
comp=Z,6.0nm,1.1s
DUG Dugway, Tooele 55.41 68 eP P 07 31 44.6 +0.9
comp=Z,5.8nm,1.1s
AAK Ala-Archa 56.33 298 P P 07 31 48.4 -1.8
comp=Z,2.8nm,0.7s,baz=88,slow=4.0,SNR=7.2
AAK Ala-Archa 56.33 298 eP P 07 31 47.6 -2.6
AAK pmax pmax
comp=Z,8.0nm,0.9s
AAK Ala-Archa 56.33 298 eP P 07 31 48.7 -1.5
comp=Z,4.0nm,0.8s
EKS2 Erkin-Say 56.68 298 eP P 07 31 51.2 -1.4
EKS2 Erkin-Say 56.68 298 eP P 07 31 51.3 -1.4
comp=Z,4.4nm,0.8s
ULM Lac du Bonnet 56.72 49 P P 07 31 52.5 -0.2
comp=Z,5.1nm,0.8s,baz=306,slow=6.3,SNR=9.2
ULM Lac du Bonnet 56.72 49 eP P 07 31 53.0 +0.3
ULM pmax pmax
comp=Z,5.0nm,0.8s
KLMR Klimovskoe 57.01 331 eP P 07 31 50.5 -4.0
KLMR *e* 07 32 46.1
KLMR pmax pmax
comp=Z,16nm,1.2s
KSH Kashi 57.76 294 P P 07 32 02.4 +2.0
KSH *es*P sP 07 32 16.1 +0.2
KSH PcS **PcS** 07 36 56.2 +2.0
KSH S **S** 07 39 56.3 -0.3
KSH pmax pmax
comp=Z,83nm,3.8s
KKAR Karatay Array 58.04 300 eP P 07 31 59.3 -2.9
KKAR Karatay Array 58.04 300 eP P 07 31 59.3 -2.9
PFO Pinyon Flats O 58.08 76 eP P 07 32 02.1 -0.6
PFO Pinyon Flats O 58.08 76 eP P 07 32 02.1 -0.6
ABKAR Akbulak array 58.57 312 eP P 07 32 04.8 -0.9
N23A Red Feather La 58.58 63 eP P 07 32 06.9 +0.6
comp=Z,30nm,1.9s
SMCO Snowmass 59.29 65 eP P 07 32 11.7 +0.4
comp=Z,39nm,0.9s
ISCO Idaho Springs 59.55 63 eP P 07 32 14.7 +1.6
comp=Z,6.5nm,1.3s
FINES FINESS Array B 59.93 338 P P 07 32 13.9 -0.9
comp=Z,5.5nm,0.5s,baz=33,slow=7.5,SNR=41
FINES FINESS Array B 59.93 338 *i* P P 07 32 13.8 -1.0
FINES pmax pmax
comp=Z,6.0nm,0.5s
CMAR Chiang Mai Arr 60.25 260 P P 07 32 16.8 -0.9
comp=Z,1.2nm,0.6s,baz=20,slow=8.0,SNR=6.3
OBN Obninsk 62.67 329 eP P 07 32 33.3 -0.1
OBN pmax pmax
comp=Z,4.0nm,0.9s
ANMO Albuquerque 62.69 68 eP P 07 32 35.1 +0.9
ANMO pmax pmax
comp=Z,2.0nm,1.0s
ANMO Albuquerque 62.69 68 eP P 07 32 35.3 +1.2
comp=Z,2.3nm,0.8s
NB2 NORSAR Subarra 63.08 345 P P 07 32 35.6 -0.6
comp=Z,1.2nm,0.7s,baz=19,slow=6.9
NOA NORSAR Array B 63.08 345 P P 07 32 34.6 -1.6
comp=Z,1.1nm,1.0s,baz=270,slow=2.3,SNR=5.9
MSTX Muleshoe 65.42 66 eP P 07 32 52.6 +0.6
comp=Z,6.2nm,1.0s
MNTX Cornudas Mount 65.72 69 eP P 07 32 54.6 +0.7
comp=Z,3.5nm,0.8s
GEYT Alibeck 68.11 305 P P 07 33 07.5 -1.5
comp=Z,3.0nm,0.7s,baz=356,slow=2.1,SNR=6.4
HHAR Hobbs 68.21 58 eP P 07 33 08.7 -1.0
comp=Z,6.0nm,0.7s
TX31 Lajitas Ar. Si 68.48 70 eP P 07 33 11.9 +0.4
TXAR Lajitas Array 68.48 70 P P 07 33 12.1 +0.6
comp=Z,6.5nm,0.7s,baz=299,slow=4.5,SNR=66
TXAR pP **sP** 07 33 28.6 +1.4
comp=Z,2.1nm,0.7s,baz=299,slow=4.4,SNR=7.4
TXAR sP **PcP** 07 33 35.3 -1.3
comp=Z,0.7nm,0.6s,baz=309,slow=3.8,SNR=2.6
AKASG Malin Array Be 68.70 331 P P 07 33 11.1 -1.4
comp=Z,0.7nm,0.3s,baz=28,slow=6.7,SNR=8.5
KIEV Kiev 68.71 331 eP P 07 33 11.1 -1.4
KIEV pmax pmax
comp=Z,3.0nm,1.0s
JCT Junction City 69.70 66 eP P 07 33 18.7 -0.3
JCT pmax pmax
comp=Z,7.0nm,0.9s
JCT Junction City 69.70 66 eP P 07 33 18.6 -0.3
comp=Z,6.6nm,0.9s
KBZ Khabaz 70.08 318 P P 07 33 20.4 -0.6
comp=Z,2.2nm,0.7s,baz=304,slow=3.6,SNR=3.4
EKA Eskdalemuir Ar 70.36 352 P P 07 33 24.6 +2.0
comp=Z,0.5nm,0.4s,baz=11,slow=5.1,SNR=5.0
STHS Stebnicka Huta 72.01 335 eP P 07 33 31.9 -0.8
STHS pmax pmax
comp=Z,3.0nm,0.9s
STHS Stebnicka Huta 72.01 335 eP P 07 33 31.9 -0.8
CLL Collm 72.05 341 eP P 07 33 35.0 +2.1
comp=Z,5.0nm,1.1s
CLL Collm 72.05 341 eP P 07 33 35.0 +2.1
CLL pmax pmax
comp=Z,5.0nm,1.1s
KOLS Kolonicke sedl 72.20 334 eP P 07 33 35.6 +1.8
KOLS Kolonicke sedl 72.20 334 eP P 07 33 35.6 +1.8
LANS Liptovska Anna 72.69 336 eP P 07 33 39.8 +3.0
LANS Liptovska Anna 72.69 336 eP P 07 33 39.8 +3.0
KECS Kecovo 73.07 335 eP P 07 33 40.0 +1.0
KECS Kecovo 73.07 335 eP P 07 33 40.0 +1.0
VYHS Vyhne 73.46 336 eP P 07 33 43.4 +2.1
VYHS Vyhne 73.46 336 eP P 07 33 43.4 +2.1
BRTR Keskin Array B 77.02 322 P P 07 34 02.8 +0.6
comp=Z,1.1nm,0.7s,baz=42,slow=4.0,SNR=3.8
WRA Warramunga Arr 77.84 209 P P 07 34 05.8 -0.8
comp=Z,0.6nm,0.5s,baz=20,slow=5.9,SNR=4.4
ASAR Alice Springs 81.50 207 P P 07 34 26.1 -0.3
comp=Z,0.9nm,0.7s,baz=21,slow=5.7,SNR=6.4
PTCN Pitcairn Islan 97.38 123 eP Pdif 07 35 43.1 +0.6
comp=Z,1μm,0.6s
QSPA South Pole Qui 143.86 180 ePKPdf PKPab 07 41 39.1 -0.9

NIED ***03*** *07:28:00,38˚.50N×143˚.60E,h8km,Mw3.7 Best double couple: M◎3.37000×10^14 NP1:φs180.00000°,δ36.00000°, λ-56.00000°. NP2:φs320.00000°,δ61.00000°, λ-112.00000°.*
ISCJB ***03*** *07:28:33.9±0.5,38˚.33N±0˚.05×143˚.69E±0˚.06,h15km, mb3.6/11, Error ellipse: s-maj=7.9km s-min=5.9km az=152.1*
IDC ***03*** *07:28:33.5±0.8,38˚.35N×143˚.68E,h0km,mb3.6/9, mb1 3.8/11,mb1mx3.6/46,mbtmp3.7/11,ML4.0/2, Error ellipse: s-maj=23.6km s-min=18.3km az=114.0*
JMA ***03*** *07:28:34.3±0.6,38˚.45N×143˚.55E,h6km,M3.7*
NEIC ***03*** *07:28:36.4±3.4,38˚.34N×143˚.65E,h19km±21km,mb4.0/3, Error ellipse: s-maj=12.7km s-min=6.1km az=110.0*

ISC 03 07:28:35.3±0.8,38˚.38N±0˚.06×143˚.72E±0˚.08,h15km,n32, σ1°80/35,mb3.7/11, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time h m s	Res ISC
OFUJ	**Ofunato**	**1.75**	**294**	P	**Pn**	**07 29 03.9**	**-1.3**
JIO	**Ouri**	**1.87**	**273**	P	**Pn**	**07 29 05.2**	**-1.5**
JIO				S	**Sn**	**07 29 27.0**	**-3.0**
JMK	**Ichinoseki**	**2.04**	**287**	P	**Pn**	**07 29 07.6**	**-1.5**
JOM	**Ohasama**	**2.19**	**301**	P	**Pn**	**07 29 10.0**	**-1.2**
JMM	**Marumori**	**2.37**	**258**	P	**Pn**	**07 29 12.5**	**-1.1**
JOU	**Okura**	**2.40**	**271**	P	**Pn**	**07 29 13.4**	**-0.8**
JOU				S	**Sn**	**07 29 42.4**	**-0.9**
JRG	**Rokugo**	**2.62**	**294**	P	**Pn**	**07 29 16.1**	**-0.9**
JYK	**Kaneyama**	**2.69**	**283**	P	**Pn**	**07 29 17.6**	**-0.4**
JFT	**Otama**	**2.81**	**253**	P	**Pn**	**07 29 20.1**	**+0.4**
JFT				S	**Sn**	**07 29 52.6**	**-0.8**
ERM	**Erimo**	**3.66**	**353**	*e*Pn	**Pn**	**07 29 32.1**	**+0.7**
ERM				*e*Sn	**Sn**	**07 30 10.4**	**-3.8**
MJAR	**Matsushiro Arr** 5.8nm,0.3s,baz=57,slow=11,SNR=18	**4.75**	**249**	Pn	**Pn**	**07 29 47.5**	**+1.0**
MAJO	**Matsushiro**	**4.75**	**249**	*e*Pn	**Pn**	**07 29 46.4**	**-0.1**
MAT	**Matsushiro**	**4.75**	**249**	P	**Pn**	**07 29 48.1**	**+1.6**
MAT				*e*S	**Sn**	**07 30 45.9**	**+4.6**
JHJ2	**Mitsune**	**6.14**	**212**	Pn	**Pn**	**07 30 04.5**	**-0.9**
JHJ	**Hachijo jima 2** 14nm,0.3s,baz=90,slow=20,SNR=6.2	**6.15**	**213**	Pn	**Pn**	**07 30 04.7**	**-0.9**
JHJ				Sn	**Sn**	**07 31 09.9**	**-5.7**
YSS	**Yuzh-Sakhalins** 8.2nm,0.3s,baz=72,slow=19,SNR=2.0	**8.60**	**356**	*e*Pn	**Pn**	**07 30 40.0**	**+0.8**
JOW	**Kunigami** 9.6nm,1.3s	**17.35**	**233**	*e*P	**Pn**	**07 32 36.0**	**-1.0**
SEY	**Seymchan** 2.0nm,1.0s,baz=198,slow=5.6,SNR=4.7	**25.14**	**9**	P	**P**	**07 34 01.1**	**+1.5**
H11N2	**WAKE ISLAND Hy** baz=318,slow=75,SNR=5.5	**27.36**	**126**	T	T	08 02 43.1	
H11N1	**WAKE ISLAND Hy**	**27.37**	**126**	T	T	08 02 42.2	

baz=318,slow=75,SNR=5.2
H11N3 WAKE ISLAND Hy 27.38 126 T T 08 02 42.8
baz=318,slow=75,SNR=4.8
SONM Songino Array 28.60 301 P **P** **07 34 32.2 +1.2**
0.8nm,0.8s,baz=91,slow=8.4,SNR=3.3
ZALV Zalesovo Beam 42.38 311 P **P** **07 36 28.4 -0.4**
0.6nm,0.5s,baz=95,slow=8.7,SNR=2.6
MKAR Makanchi Array 44.97 301 P **P** **07 36 49.2 -0.6**
0.6nm,0.6s,baz=89,slow=10,SNR=6.4
TKM2 Tokmak 2 50.61 298 *e*P **P** **07 37 34.0 +0.2**
1.9nm,0.6s
INK Inuvik 52.35 28 P **P** **07 37 47.0 +0.8**
0.3nm,0.5s,baz=306,slow=5.6,SNR=4.1
ABKAR Akbulak array 58.47 310 *e*P **P** **07 38 30.3 -0.2**
0.7nm,0.6s
WRAB Tennant Creek 58.67 190 *e*P **P** **07 38 32.1 0.0**
WRA Warramunga Arr 58.68 190 P **P** **07 38 32.3 +0.1**
1.3nm,0.7s,baz=8.3,slow=7.0,SNR=12
ASAR Alice Springs 62.40 190 P **P** **07 38 58.0 +0.4**
0.2nm,0.3s,baz=8.6,slow=13,SNR=4.1
PDAR Pinedale Array 75.42 47 P **P** **07 40 19.7 +0.9**
0.2nm,0.6s,baz=266,slow=2.7,SNR=3.2
TXAR Lajitas Array 87.85 54 P **P** **07 41 25.6 +1.1**
0.1nm,0.6s,baz=249,slow=2.5,SNR=2.4

ROM 03 07:34:13.0±0.1, 42.42°N×13.30°E, h6km, Md1.4/2, Error ellipse: s-maj=0.4km s-min=0.3km az=152.0, Central Italy

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
RM33	**Pellescritta (**	**0.11**	**327**	Pg	Pg	07 34 15.8	+0.3
RM33				Sg	Sg	07 34 17.8	+0.6
RM32	**Poggio Cancell**	**0.15**	**359**	Pg	Pg	07 34 16.6	+0.4
RM32				Sg	Sg	07 34 19.3	+0.9
SMA1	**SAN MARTINO**	**0.22**	**7**	Pg	Pg	07 34 18.0	+0.7
SMA1				Sg	Sg	07 34 21.6	+1.3

JMA 03 07:37:10.0±0.2, 35.96°N×141.13°E, h21km±3km, M3.0, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CHOJ	**Chosi**	**0.34**	**221**	P	Pb	07 37 17.1	-0.1
JHO	**Hitachi**	**0.79**	**325**	S	Sb	07 37 35.6	+0.2

*NIED **03** 07:38:00, 37.60N×141.60E, h53km, Mw5.3 Best double couple: M0 9.16000×10^16 NP1:φs38.00000°, δ38.00000°, λ107.00000°. NP2:φs197.00000°, δ54.00000°, λ77.00000°.*
*MOS **03** 07:38:41.9±0.8, 37.65N×141.43E, h32km, mb5.5/99, MS4.7/22, Error ellipse: s-maj=6.4km s-min=3.9km az=102.7*
*BJI **03** 07:38:41.9, 37.52N×141.74E, h55km, mb5.0/84, mB5.2/52, Ms4.8/85, Ms7 4.6/84*
*ISCJB **03** 07:38:45.7±0.3, 37.66N±0.02×141.48E±0.02, h64km±2km, mb5.3/320, Error ellipse: s-maj=3.3km s-min=2.1km az=155.8*
*JMA **03** 07:38:45.1, 37.63N×141.65E, h47km±2km, M5.4*
JMA Felt IV J1.
*IDC **03** 07:38:45.9±0.5, 37.65N×141.53E, h57km±4km, mb4.7/44, mb1 4.7/50, mb1mx4.7/59, mbtmp4.9/50, MS4.5/27, Ms1 4.5/27, ms1mx4.4/39, Error ellipse: s-maj=9.6km s-min=7.8km az=101.0*
*NEIC **03** 07:38:46.5±0.4, 37.64N×141.45E, h59km±3km, mb5.4/185, Error ellipse: s-maj=3.1km s-min=2.1km az=138.0*
NEIC Recorded [4 JMA] in Fukushima and Miyagi.
*GCMT **03** 07:38:46.5±0.1, 37.72N×141.57E, h54km, MW5.2/110, Moment Tensor Solution. s97,c155; s110,c184; Duration: 1!0 Moment tensor: Scale 10^17 Nm; Mrr 0.88±.02; Mθθ -0.19±.01; Mφφ -0.68±.01; Mrθ 0.10±.01; Mθφ -0.31±.01; Mφr -0.26±.01; Best double couple: M0 0.89800×10^17 NP1:φs194.00000°, δ52.00000°, λ76.00000°. NP2:φs37.00000°, δ40.00000°, λ108.00000°. Principal axes: T 0.9380, Plg77.0000°, Azm53.0000°; N -0.0820, Plg11.0000°, Azm203.0000°; P -0.8580, Plg6.0000°, Azm294.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

ISC 03 07:38:45.6±0.3, 37.59N±0.03×141.57E±0.03, h57km±2km, h56km: pP-P, n1034, σ1s46/1184, mb5.3/338, MS4.7/59, 49C-37D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JFK	**Kawauchi**	**0.59**	**248**	⇓P	**Pn**	**07 38 58.4**	**-0.1**
JFK				S	**Sn**	**07 39 07.8**	**0.0**
JMM	**Marumori**	**0.67**	**294**	⇓P	**Pn**	**07 38 59.0**	**-0.3**
JMM				S	**Sn**	**07 39 09.1**	**-0.2**
ONAJ	**Iwakimizuishiy**	**0.78**	**232**	⇓P	**Pn**	**07 39 00.8**	**0.0**
ONAJ				S	**Sn**	**07 39 12.6**	**+0.7**
JIO	**Ouri**	**0.88**	**349**	⇓P	**Pn**	**07 39 01.1**	**-0.8**
JIO				S	**Sn**	**07 39 12.4**	**-1.5**
JFT	**Otama**	**0.98**	**266**	⇓P	**Pn**	**07 39 04.3**	**+1.0**
JFT				S	**Sn**	**07 39 18.1**	**+1.8**
JOU	**Okura**	**1.05**	**318**	⇓P	**Pn**	**07 39 04.0**	**-0.2**
JOU				S	**Sn**	**07 39 17.9**	**-0.1**
JYS	**Shirataka**	**1.34**	**298**	⇓P	**Pn**	**07 39 08.4**	**+0.3**
JYS				*e*S	**Sn**	**07 39 25.6**	**+0.6**
JMK	**Ichinoseki**	**1.38**	**349**	⇓P	**Pn**	**07 39 08.4**	**-0.3**
JMK				S	**Sn**	**07 39 25.4**	**-0.5**
JFY	**Yanaizu**	**1.49**	**263**	⇓P	**Pn**	**07 39 10.8**	**+0.7**
JFY				S	**Sn**	**07 39 29.8**	**+1.2**
JYK	**Kaneyama**	**1.63**	**325**	⇓P	**Pn**	**07 39 12.0**	**0.0**
JYK				S	**Sn**	**07 39 32.9**	**+1.0**
MJAR	**Matsushiro Arr**	**2.88**	**250**	P	**Pn**	**07 39 30.8**	**+1.7**
	78nm,0.3s,baz=71,slow=12,SNR=89						
MJAR				S	**Sn**	**07 40 02.8**	**+0.2**
	141nm,0.3s,baz=85,slow=26,SNR=7.3						
MJAR				LR	LR	07 41 01.0	
	comp=Z,14μm,20.4s,baz=70,slow=47						
MAJO	**Matsushiro**	**2.88**	**250**	*d*⇓P	**Pn**	**07 39 31.1**	**+2.0**
MAJO	**Matsushiro**	**2.88**	**250**	*e*Pn	**Pn**	**07 39 31.3**	**+2.2**
MAJO				*e*Sn	**Sn**	**07 40 06.6**	**+4.0**
INU	**Inuyama**	**4.29**	**240**	*e*Pn	**Pn**	**07 39 51.0**	**+2.5**
INU				*e*Sn	**Sn**	**07 40 41.4**	**+4.1**
ERM	**Erimo**	**4.58**	**15**	*de*P	**Pn**	**07 39 50.7**	**-1.7**
ERM				pmax	pmax		
	comp=Z,239nm,1.2s						
ERM	**Erimo**	**4.58**	**15**	*e*Pn	**Pn**	**07 39 51.0**	**-1.4**
ERM				*e*Sn	**Sn**	**07 40 45.5**	**+1.2**
JHJ2	**Mitsune**	**4.69**	**198**	*e*Pn	**Pn**	**07 39 54.5**	**+0.6**
JHJ2				*e*Sn	**Sn**	**07 40 45.9**	**-1.2**
JHJ	**Hachijo jima 2**	**4.70**	**199**	P	**Pn**	**07 39 54.2**	**+0.2**
	comp=Z,556nm,0.3s,baz=357,slow=3.1,SNR=59						
JHJ				S	**Sn**	**07 40 44.7**	**-2.4**
	comp=Z,1μm,0.3s,baz=289,slow=23,SNR=16						
ASAJ	**Asahikawa**	**6.56**	**7**	*e*Pn	**Pn**	**07 40 20.3**	**+0.8**
YUK	**Yuzh-Kuril'sk**	**7.21**	**25**	*e*P	**Pn**	**07 40 24.7**	**-3.6**
YUK				*e*S	**Sn**	**07 41 42.4**	**-6.4**
YUK				pmax	pmax		
	comp=Z,284nm,0.5s						
YUK				pmax	pmax		
	comp=N,60nm,0.3s						
YUK				pmax	pmax		
	comp=E,133nm,0.4s						
YUK				MLR	MLR		
	comp=Z,3μm,17.0s						
SHO	**Shikotan**	**7.43**	**31**	*e*P	Pn	07 40 26.0	-5.4
SHO				pmax	pmax		
	comp=E,25nm,0.4s						
SHO				pmax	pmax		
	comp=Z,70nm,0.4s						
SHO				pmax	pmax		
	comp=N,43nm,0.3s						
KUR	**Kuril'sk**	**8.98**	**30**	*e*P	**Pn**	**07 40 53.4**	**+0.9**
KUR				*i* S	**Sn**	**07 42 24.1**	**-8.0**
KUR				pmax	pmax		
	comp=Z,93nm,0.7s						
KUR				pmax	pmax		
	comp=N,32nm,0.6s						
KUR				smax	smax		
	comp=N,345nm,0.8s						
KUR				smax	smax		
	comp=E,233nm,0.8s						
KUR				smax	smax		
	comp=N,647nm,2.3s						
KUR				smax	smax		
	comp=E,775nm,2.3s						
YSS	**Yuzh-Sakhalins**	**9.40**	**5**	*e*S	**Sn**	**07 42 41.1**	**-1.2**
YSS				pmax	pmax		
	comp=Z,70nm,1.0s						
YSS				MLR	MLR		
	comp=Z,2μm,19.0s						
YSS	**Yuzh-Sakhalins**	**9.40**	**5**	*e*Pn	**Pn**	**07 40 58.0**	**-0.3**
JNU	**Nakatsue**	**9.80**	**246**	P	**Pn**	**07 41 05.9**	**+2.1**
	comp=Z,3.2nm,0.3s,baz=90,slow=1.4,SNR=24						
JNU				LR	LR	07 45 13.6	
	comp=Z,6μm,21.7s,baz=61,slow=40						
JNU	**Nakatsue**	**9.80**	**246**	*e*Pn	**Pn**	**07 41 06.3**	**+2.5**
USRK	**Ussuriysk Ar.**	**9.80**	**315**	P	**Pn**	**07 41 04.4**	**+0.7**
	comp=Z,5.7nm,0.3s,baz=131,slow=7.8,SNR=111						
USRK				LR	LR	07 44 44.0	
	comp=Z,4μm,18.4s,baz=112,slow=37						
CBIJ	**Chichi jima**	**10.48**	**177**	*e*Pn	**Pn**	**07 41 11.5**	**-1.7**
CBIJ				S	Sn	07 42 57.3	-12
JCJ	**Chichijima**	**10.48**	**177**	P	**Pn**	**07 41 09.8**	**-3.3**
	comp=Z,37nm,0.3s,baz=8.8,slow=21,SNR=25						
JCJ				S	Sn	07 42 57.3	-12
	baz=287,slow=19						
KSRS	**Korea Array**	**10.84**	**273**	P	**Pn**	**07 41 21.9**	**+3.9**
	comp=Z,4.2nm,0.3s,baz=90,slow=12,SNR=131						
KSRS				LR	LR	07 45 07.8	
	comp=Z,4μm,21.2s,baz=66,slow=35						
KS01	**Wonju Array Si**	**10.86**	**274**	*e*Pn	**Pn**	**07 41 21.1**	**+2.9**
KS15	**Wonju Array Si**	**10.87**	**273**	*e*Pn	**Pn**	**07 41 22.3**	**+3.9**
KSAR	**Wonju Array Be**	**10.87**	**273**	P	**Pn**	**07 41 21.9**	**+3.5**
KSAR	**Wonju Array Be**	**10.87**	**273**	P	**Pn**	**07 41 21.9**	**+3.5**
MDJ	**Mudanjiang**	**11.43**	**312**	P	**Pn**	**07 41 27.0**	**+1.0**
MDJ				S	**Sn**	**07 43 37.6**	**+5.5**
MDJ				ScS	**ScS**	**07 54 19.5**	**+1.4**
MDJ				pmax	pmax		
	comp=Z,26nm,2.0s						
MDJ				pmax	pmax		
	comp=Z,570nm,6.2s						
MDJ				LR	LR		
	comp=Z,2μm,18.9s						
MDJ				LR	LR		
	comp=Z,2μm,24.3s						
MDJ				LR	LR		
	comp=Z,4μm,23.1s						
MDJ	**Mudanjiang**	**11.43**	**312**	*e*Pn	**Pn**	**07 41 27.3**	**+1.3**
	comp=Z,202nm,1.1s						
MDJ				*e*Sn	**Sn**	**07 43 38.9**	**+6.8**
INCN	**Inchon**	**11.86**	**274**	*e*Pn	**Pn**	**07 41 36.1**	**+4.1**
HABR	**Khabarovsk**	**11.87**	**338**	*e*P	**Pn**	**07 41 27.2**	**-4.7**
HABR				*e*S	**Sn**	**07 43 38.7**	**-4.0**
HABR				pmax	pmax		
	comp=Z,28nm,2.0s						
HABR				MLR	MLR		
	comp=Z,966nm,11.0s						
TYV	**Tymovskoe**	**13.29**	**3**	*e*P	**Pn**	**07 41 49.8**	**-1.5**
TYV				pmax	pmax		
	comp=Z,68nm,0.8s						
KLR	**Kul'dur**	**13.63**	**332**	P	**Pn**	**07 41 54.5**	**-1.5**
	comp=Z,0.4nm,0.3s,baz=138,slow=12,SNR=14						
CN2	**Changchun**	**13.70**	**302**	⇑P	**Pn**	**07 41 57.9**	**+0.9**
CN2				*es*P	sP	07 42 17.2	
CN2				*e*S	**Sn**	**07 44 29.0**	**+1.5**
CN2				pmax	pmax		
	comp=Z,50nm,1.2s						
CN2				pmax	pmax		
	comp=Z,500nm,4.0s						
CN2				LR	LR		
	comp=Z,1μm,14.0s						
CN2				LR	LR		
	comp=Z,2μm,14.0s						
CN2				LR	LR		
	comp=Z,2μm,18.0s						
SNY	**Shenyang**	**14.47**	**293**	⇑P	**Pn**	**07 42 08.3**	**+1.1**
SNY				pP	pP	07 42 19.2	
SNY				pmax	pmax		
	comp=Z,66nm,1.5s						
SNY				pmax	pmax		
	comp=Z,580nm,6.5s						
SNY				LR	LR		
	comp=Z,1μm,22.7s						
SNY				LR	LR		
	comp=Z,4μm,21.6s						
SNY				LR	LR		
	comp=Z,6μm,20.6s						
JOW	**Kunigami**	**15.53**	**230**	P	**Pn**	**07 42 19.6**	**-1.3**
	baz=70,slow=11						
JOW	**Kunigami**	**15.53**	**230**	*e*Pn	**Pn**	**07 42 18.7**	**-2.3**
	comp=Z,99nm,1.2s						
NKL	**Nikolayevsk**	**15.57**	**358**	*e*P	**Pn**	**07 42 20.0**	**-1.3**
NKL				*e*		07 45 17.0	
NKL				pmax	pmax		
	comp=N,27nm,1.1s						
NKL				pmax	pmax		
	comp=E,17nm,1.1s						
NKL				pmax	pmax		
	comp=Z,55nm,1.1s						
NKL				MLR	MLR		
	comp=N,1μm,16.0s						
NKL				MLR	MLR		
	comp=E,900nm,16.0s						
NKL				MLR	MLR		
	comp=Z,1μm,16.0s						
DL2	**Dalian**	**15.72**	**281**	⇓P	**Pn**	**07 42 23.7**	**+0.3**
DL2				sP	**pP**	**07 42 40.7**	**+2.0**
DL2				S	**Sn**	**07 45 19.4**	**+2.9**
DL2				pmax	pmax		
	comp=Z,220nm,1.1s						
DL2				pmax	pmax		
	comp=Z,440nm,6.4s						
DL2				LR	LR		
	comp=Z,890nm,14.0s						
DL2				LR	LR		
	comp=Z,2μm,19.6s						
DL2				LR	LR		
	comp=Z,3μm,19.5s						
SKR	**Severo-Kuril's**	**16.70**	**34**	*e*P	**Pn**	**07 42 35.5**	**-0.1**
SKR				pmax	pmax		
	comp=Z,220nm,1.0s						
SSE	**Sheshan**	**18.02**	**255**	P	**Pn**	**07 42 49.6**	**-2.2**
SSE				sP	**sP**	**07 43 08.2**	**-3.2**
SSE				S	**Sn**	**07 46 10.1**	**-2.1**
SSE				pmax	pmax		
	comp=Z,24nm,0.7s						
SSE				pmax	pmax		
	comp=Z,67nm,2.8s						
SSE				LR	LR		
	comp=Z,1μm,27.9s						
SSE				LR	LR		
	comp=Z,1μm,27.9s						
SSE				LR	LR		
	comp=Z,2μm,25.5s						
PEA0	**Petropavlovsk-**	**19.14**	**31**	*e*P	**P**	**07 43 02.5**	**-1.6**
PETK	**Petropavlovsk-**	**19.14**	**31**	P	**P**	**07 43 03.9**	**-0.2**
	comp=Z,0.8nm,0.3s,baz=207,slow=12,SNR=9.3						
NJ2	**Nanjing**	**19.43**	**260**	*e*P	**P**	**07 43 06.9**	**-0.4**
NJ2				pP	**pP**	**07 43 19.5**	**-0.3**
NJ2				sP	**sP**	**07 43 26.5**	**-0.4**
NJ2				S	**S**	**07 46 43.7**	**-0.2**
NJ2				sS	**sS**	**07 47 00.3**	**-3.8**
NJ2				pmax	pmax		
	comp=Z,23nm,0.8s						
NJ2				pmax	pmax		
	comp=Z,310nm,4.3s						
NJ2				LR	LR		
	comp=Z,2μm,24.1s						
NJ2				LR	LR		
	comp=Z,2μm,25.7s						
NJ2				LR	LR		
	comp=Z,2μm,26.2s						
PET	**Petropavlovsk**	**19.48**	**32**	*e*P	**P**	**07 43 07.5**	**-0.1**
PET				*e*S	**Sn**	**07 46 48.7**	**+1.7**
PET				pmax	pmax		
	comp=Z,82nm,1.4s						
PET				pmax	pmax		
	comp=Z,200nm,11.7s						
PET				smax	smax		
	comp=E,600nm,12.5s						
PET				MLR	MLR		
	comp=Z,600nm,16.0s						
TIA	**Tai'an**	**19.59**	**273**	⇓P	**P**	**07 43 08.0**	**-1.0**
TIA				PP	**sP**	**07 43 28.0**	**-0.6**
TIA				S	**S**	**07 46 42.1**	**-4.9**
TIA				pmax	pmax		
	comp=Z,20nm,1.4s						
TIA				pmax	pmax		
	comp=Z,400nm,3.0s						
TIA				LR	LR		
	comp=Z,1μm,16.1s						
TIA				LR	LR		
	comp=Z,2μm,15.5s						
TIA				LR	LR		
	comp=Z,2μm,15.5s						
HIA	**Hailar**	**19.60**	**313**	*e*P	**P**	**07 43 07.8**	**-1.3**
HIA				pmax	pmax		
	comp=E,15nm,0.6s						
HIA	**Hailar**	**19.60**	**313**	*e*P	**P**	**07 43 07.8**	**-1.3**
	comp=Z,15nm,0.6s						
BJI	**Beijing**	**19.92**	**285**	P	**P**	**07 43 11.8**	**-0.7**
BJI				S	**S**	**07 46 45.6**	**-7.9**
BJI				pmax	pmax		
	comp=Z,120nm,1.8s						
BJI				pmax	pmax		
	comp=Z,240nm,3.5s						
BJI				LR	LR		
	comp=Z,900nm,22.0s						
BJI				LR	LR		
	comp=Z,940nm,25.1s						
BJI				LR	LR		
	comp=Z,2μm,29.6s						
BJT	**Baijiatuan**	**19.92**	**285**	*e*P	**P**	**07 43 10.9**	**-1.7**
BJT				*e*S	**S**	**07 46 47.5**	**-6.2**
BJT				pmax	pmax		
	comp=Z,81nm,0.8s						
BJT	**Baijiatuan**	**19.92**	**285**	*e*P	**P**	**07 43 10.9**	**-1.7**
	comp=Z,82nm,0.8s						
BJT				*e*S	**S**	**07 46 47.5**	**-6.2**
YHNB	**Yeheng**	**21.50**	**239**	*e*P	**P**	**07 43 29.0**	**-0.8**
	comp=Z,161nm,1.7s						
CLNS	**Chul'man**	**22.22**	**335**	*e*P	**P**	**07 43 34.7**	**-2.6**
CLNS				*e**PP	**pP**	**07 43 44.2**	**-5.8**
CLNS				*e*		07 43 56.7	
CLNS				*e*		07 47 29.3	
CLNS				*e*S	**S**	**07 47 36.8**	**-1.5**
CLNS				*e*SS	**SnSn**	**07 48 21.8**	**+13**
CLNS				pmax	pmax		
	comp=Z,86nm,1.3s						
CLNS				pmax	pmax		
	comp=N,86nm,1.2s						
CLNS				pmax	pmax		
	comp=E,29nm,1.3s						
CLNS				pmax	pmax		
	comp=Z,33nm,1.0s						
CLNS				pmax	pmax		
	comp=N,57nm,1.3s						
CLNS				pmax	pmax		
	comp=E,29nm,1.4s						
CLNS				smax	smax		
	comp=E,267nm,9.9s						
CLNS				smax	smax		
	comp=N,782nm,10.3s						
CLNS				MLR	MLR		
	comp=N,875nm,17.0s						
CLNS				MLR	MLR		
	comp=E,815nm,15.0s						
CLNS				MLR	MLR		
	comp=Z,1μm,18.0s						
SSLB	**Suanglung**	**22.37**	**238**	*e*P	**P**	**07 43 37.5**	**-1.7**
	comp=Z,31nm,0.8s						
YULB	**Yu-li**	**22.41**	**237**	*e*P	**P**	**07 43 39.3**	**-0.3**
	comp=Z,24nm,0.6s						
MA2	**Magadan**	**22.78**	**12**	P	**P**	**07 43 41.9**	**-1.2**
	comp=Z,34nm,0.6s,baz=218,slow=9.6,SNR=54						
TPUB	**Ta-pu**	**22.92**	**238**	*e*P	**P**	**07 43 41.6**	**-3.3**
	comp=Z,43nm,0.5s						
TWG	**Pinlang**	**22.96**	**236**	*e*P	**P**	**07 43 44.7**	**-0.6**
	comp=Z,360nm,1.2s						
TIY	**Taiyuan**	**23.03**	**279**	*e*P	**P**	**07 43 46.9**	**+1.0**
TIY				PP	**PnPn**	**07 44 18.4**	**+5.5**
TIY				S	**S**	**07 47 47.7**	**-4.6**
TIY				pmax	pmax		
	comp=Z,83nm,1.0s						
TIY				LR	LR		
	comp=Z,360nm,13.3s						
TIY				LR	LR		
	comp=Z,2μm,14.6s						
TIY				LR	LR		
	comp=Z,2μm,15.9s						
QZH	**Quanzhou**	**23.27**	**244**	*e*P	**P**	**07 43 49.4**	**+1.2**
QZH				S	**S**	**07 47 53.8**	**-2.4**
QZH				LR	LR		
	comp=Z,3μm,26.1s						
HHC	**Hu-ho-hao-te**	**23.41**	**287**	*e*P	**P**	**07 43 48.6**	**-1.1**
HHC				sP	sP	07 44 10.4	+0.5
HHC				PP	**PnPn**	**07 44 17.8**	**-0.4**
HHC				S	**S**	**07 47 54.7**	**-4.0**
HHC				pmax	pmax		
	comp=Z,77nm,1.0s						
HHC				pmax	pmax		
	comp=Z,160nm,5.4s						
HHC				LR	LR		
	comp=Z,540nm,13.1s						
HHC				LR	LR		
	comp=Z,1μm,15.9s						
HHC				LR	LR		
	comp=Z,1μm,13.3s						
WHN	**Wuhan**	**23.56**	**261**	⇓*i*P	**P**	**07 43 50.7**	**-0.3**
WHN				S	**S**	**07 47 52.8**	**-8.2**
WHN				pmax	pmax		
	comp=Z,98nm,0.8s						
WHN				LR	LR		
	comp=Z,1μm,11.6s						
WHN				LR	LR		
	comp=Z,4μm,17.9s						
WHN				LR	LR		
	comp=Z,4μm,14.6s						
CIT	**Chita**	**24.36**	**315**	*e*P	**P**	**07 43 57.8**	**-0.4**
CIT				*e*		07 44 35.6	
CIT				*e*		07 44 38.7	
CIT				pmax	pmax		
	comp=Z,184nm,1.6s						
BTO	**Baotou**	**24.60**	**287**	*e*P	**P**	**07 43 58.8**	**-1.7**
YAK	**Yakutsk**	**25.55**	**347**	P	**P**	**07 44 07.9**	**-0.9**
	comp=Z,3.8nm,0.3s,baz=145,slow=18,SNR=16						
YAK				S	**S**	**07 48 29.1**	**-3.0**
	comp=Z,0.9nm,0.3s,baz=144,slow=24,SNR=8.8						
YAK	**Yakutsk**	**25.55**	**347**	*c i*P	**P**	**07 44 07.7**	**-1.1**
YAK				*e*		07 47 44.5	
YAK				*e*S	**S**	**07 48 28.4**	**-3.8**
YAK				*e*		07 55 07.9	
YAK				pmax	pmax		
	comp=Z,60nm,0.8s						
YAK				pmax	pmax		
	comp=N,21nm,0.9s						
YAK				pmax	pmax		
	comp=E,20nm,1.0s						
YAK				pmax	pmax		
	comp=Z,104nm,1.0s						
YAK				pmax	pmax		
	comp=N,68nm,0.9s						
YAK				pmax	pmax		
	comp=E,34nm,1.0s						
YAK				smax	smax		
	comp=E,724nm,2.3s						
YAK				smax	smax		
	comp=N,2μm,2.4s						
YAK				MLR	MLR		
	comp=Z,1μm,15.0s						
YAK				MLR	MLR		
	comp=N,853nm,14.0s						
YAK				MLR	MLR		
	comp=E,230nm,14.0s						
YAK	**Yakutsk**	**25.55**	**347**	*e*P	**P**	**07 44 08.2**	**-0.5**
	comp=E,90nm,0.6s						
YAK				*e*S	**S**	**07 48 33.3**	**+1.1**
SEY	**Seymchan**	**26.22**	**11**	P	**P**	**07 44 14.9**	**+0.1**
	comp=E,53nm,0.9s,baz=195,slow=7.6,SNR=60						
SEY	**Seymchan**	**26.22**	**11**	*ce*P	**P**	**07 44 15.6**	**+0.8**
XAN	**Xi'an**	**26.63**	**272**	P	**P**	**07 44 18.5**	**-0.4**
XAN				pP	pP	07 44 33.0	0.0
XAN				PP	**PnPn**	**07 44 59.8**	**-2.3**
XAN				S	**S**	**07 48 46.7**	**-3.3**
XAN				pmax	pmax		
	comp=E,84nm,0.6s						
XAN				pmax	pmax		
	comp=E,120nm,4.3s						
XAN				LR	LR		
	comp=E,510nm,18.3s						
XAN				LR	LR		
	comp=E,730nm,18.9s						
XAN				LR	LR		
	comp=E,900nm,19.6s						
BOD	**Bodaibo**	**27.12**	**327**	*e*P	**P**	**07 44 22.0**	**-1.0**
BOD				pmax	pmax		
	comp=Z,37nm,1.3s						
ULN	**Ulaanbaatar**	**27.15**	**303**	*de*P	**P**	**07 44 23.4**	**-0.1**

ULN pmax pmax
comp=Z,109nm,1.7s
ULN Ulaanbaatar 27.15 303 *e*P **P 07 44 24.3 +0.7**
comp=Z,130nm,1.5s
ENH Enshi 27.50 264 *e*P **P 07 44 26.6 -0.2**
comp=Z,136nm,0.9s
SONA1 Songino Array 27.57 303 *e*P **P 07 44 26.9 -0.5**
SONM Songino Array 27.58 303 P **P 07 44 27.1 -0.3**
comp=Z,25nm,1.0s,baz=104,slow=9.1,SNR=54
SONM PcP **PcP 07 47 44.2 +0.5**
comp=Z,1.3nm,0.5s,baz=109,slow=2.0,SNR=5.0
GZH Guangzhou 28.19 247 P **P 07 44 29.1 -3.8**
GZH S **S 07 49 09.2 -5.3**
GZH LR LR
comp=Z,4μm,17.3s
H11N2 WAKE ISLAND Hy 28.33 122 T T 08 14 54.1
baz=315,slow=75,SNR=1193
H11N1 WAKE ISLAND Hy 28.34 122 T T 08 14 54.8
baz=315,slow=75,SNR=1817
H11N3 WAKE ISLAND Hy 28.35 122 T T 08 14 54.2
baz=315,slow=75,SNR=1594
H11S1 WAKE ISLAND Hy 29.07 124 T T 08 15 48.5
baz=317,slow=76,SNR=1229
H11S3 WAKE ISLAND Hy 29.07 124 T T 08 15 48.6
baz=317,slow=76,SNR=1578
H11S2 WAKE ISLAND Hy 29.08 124 T T 08 15 50.7
baz=317,slow=76,SNR=954
ZAK Zakamensk 30.02 308 *e*P **P 07 44 47.1 -1.9**
ZAK pmax pmax
comp=Z,14nm,1.3s
TLY Talaya 30.06 310 P **P 07 44 48.9 -0.4**
comp=Z,4.8nm,0.6s,baz=82,slow=5.2,SNR=8.7
TLY LR LR 07 57 07.0
comp=Z,1μm,21.1s,baz=109,slow=37
TLY Talaya 30.06 310⇑ *i*P **P 07 44 49.2 0.0**
TLY *e*S **S 07 49 42.5 -1.0**
TLY pmax pmax
comp=Z,18nm,1.0s
TLY MLR MLR
comp=Z,1μm,17.0s
LZH Lanzhou 30.10 279 *e*P **P 07 44 50.2 +0.3**
LZH PP **PnPn 07 45 49.1 +0.2**
LZH S **S 07 49 38.1 -6.5**
LZH SS **SnSn 07 51 23.1 +1.4**
LZH pmax pmax
comp=Z,86nm,1.2s
LZH pmax pmax
comp=Z,280nm,4.4s
LZH LR LR
comp=Z,820nm,15.0s
LZH LR LR
comp=Z,2μm,16.0s
LZH LR LR
comp=Z,2μm,16.8s
GYA Guiyang 31.44 260⇑ *i*P **P 07 45 00.9 -0.9**
GYA pP pP 07 45 18.4 +2.4
GYA sP sP 07 45 25.8 +3.1
GYA PP **PnPn 07 46 09.0 +2.6**
GYA PcP **PcP 07 47 55.2 +1.2**
GYA S **S 07 50 02.7 -3.0**
GYA sS sS 07 50 31.8 +2.0
GYA ScP **ScP 07 51 32.6 +0.4**
GYA SS **SnSn 07 51 56.0 +1.5**
GYA ScS **ScS 07 55 28.9 -1.3**
GYA pmax pmax
comp=Z,90nm,0.9s
GYA pmax pmax
comp=Z,160nm,5.8s
GYA LR LR
comp=Z,380nm,17.1s
GYA LR LR
comp=Z,630nm,22.0s
GYA LR LR
comp=Z,1μm,22.3s
MOY Mondy 31.67 310 *e*P **P 07 45 03.5 -0.1**
MOY pmax pmax
comp=Z,32nm,1.9s
CD2 Chengdu 31.80 269 P **P 07 45 04.4 -0.4**
CD2 sP sP 07 45 25.8 +0.1
CD2 PcP **PcP 07 47 54.4 -0.4**
CD2 S **S 07 50 07.4 -3.7**
CD2 sS sS 07 50 35.9 +0.6
CD2 pmax pmax
comp=Z,120nm,0.7s
CD2 pmax pmax
comp=Z,160nm,5.3s
CD2 LR LR
comp=Z,1μm,18.0s
CD2 LR LR
comp=Z,1μm,19.2s
GTA Gaotai 32.52 286 P **P 07 45 10.4 -0.7**
GTA pP pP 07 45 25.0 -0.4
GTA sP sP 07 45 31.7 -0.4
GTA PP **PP 07 46 23.6 -1.7**
GTA PcP **PcP 07 47 57.9 +1.2**
GTA S **S 07 50 20.4 -1.9**
GTA sS sS 07 50 46.7 +0.2
GTA PcS **PcS 07 51 42.4 +0.4**
GTA SS **SnSn 07 52 20.5 +0.1**
GTA pmax pmax
comp=Z,8.0nm,1.0s
GTA pmax pmax
comp=Z,92nm,5.1s
GTA LR LR
comp=Z,750nm,17.6s
GTA LR LR
comp=Z,1μm,20.4s
GTA LR LR
comp=Z,1μm,24.7s
QIZ Qiongzhong 33.27 245 P **P 07 45 18.9 +1.2**
QIZ sP **sP 07 45 38.1 -0.6**
QIZ S **S 07 50 35.8 +1.7**
QIZ pmax pmax
comp=Z,22nm,1.4s
QIZ pmax pmax
comp=Z,210nm,3.1s
QIZ LR LR
comp=Z,660nm,22.2s
QIZ LR LR
comp=Z,820nm,14.8s
QIZ Qiongzhong 33.27 245 *e*P **P 07 45 19.3 +1.6**
comp=Z,33nm,1.3s
BILL Bilibino 33.46 17 *d i e* P **P 07 45 18.6 -0.2**
BILL 07 46 27.1
BILL pmax pmax
comp=Z,40nm,1.8s
BILL MLR MLR
comp=Z,797nm,23.0s
BILL Bilibino 33.46 17 *e*P **P 07 45 18.2 -0.6**
comp=Z,65nm,1.7s
DAV Davao City (W) 33.68 210 LR LR 07 57 35.8
comp=Z,498nm,22.0s,baz=350,slow=34
TIXI Tiksi 34.75 353 *e*P **P 07 45 28.9 -1.0**
TIXI pmax pmax
comp=Z,13nm,0.7s
TIXI Tiksi 34.75 353 *e*P **P 07 45 28.9 -1.0**
comp=Z,13nm,0.7s
KMI Kunming 35.17 261 P **P 07 45 34.6 +0.2**
KMI pP pP 07 45 46.5 -2.2
KMI sP sP 07 45 52.0 -3.4
KMI PP **PnPn 07 46 53.5 0.0**
KMI S **S 07 51 01.8 -1.9**
KMI SS **SnSn 07 53 19.4 -5.7**
KMI pmax pmax
comp=Z,62nm,1.0s
KMI pmax pmax
comp=Z,92nm,3.1s
KMI LR LR
comp=Z,710nm,17.5s
KMI LR LR
comp=Z,640nm,26.6s
KMI LR LR
comp=Z,1μm,27.1s
MYLDM Lahad Datu 38.52 219 *e*P **P 07 46 04.6 +2.0**
comp=Z,91nm,1.1s
SKNT Sakolnakorn 38.86 248 P **P 07 46 06.1 +0.6**
comp=Z,37nm,1.1s,comp=Z,2μm
CRAI Chiangrai 39.63 256 P **P 07 46 11.6 -0.4**
comp=Z,32nm,1.1s,comp=Z,1μm
KHON Khomkaen 40.12 249 P **P 07 46 19.4 +3.4**
comp=Z,17nm,0.7s,comp=Z,3μm
FALS False Pass 40.63 47 *e*P **P 07 46 15.5 -4.2**
comp=Z,1μm,1.0s
WMQ Urumqi 40.70 296 P **P 07 46 21.8 +1.2**
WMQ pP pP 07 46 38.4 +3.2
WMQ sP sP 07 46 44.6 +2.8
WMQ ScP **ScP 07 52 06.5 +0.7**
WMQ S **S 07 52 28.5 +1.8**
WMQ SS **SS 07 55 23.9 -4.8**
WMQ pmax pmax
comp=Z,25nm,1.0s
WMQ pmax pmax
comp=Z,200nm,4.0s
WMQ LR LR
comp=Z,230nm,15.6s
WMQ LR LR
comp=Z,350nm,26.4s
WMQ LR LR
comp=Z,620nm,28.8s
PHRA Phrae 40.75 254 P **P 07 46 21.8 +0.6**
comp=Z,392nm,1.2s,comp=Z,54μm
CMAI Chiengmai2 40.83 257 P **P 07 46 26.3 +4.3**
comp=Z,33nm,1.3s
UTTA Uttaradit 40.95 253 P **P 07 46 23.7 +0.9**
comp=Z,4.6nm,1.0s
CHAI Chaiyaphum 41.02 249 P **P 07 46 23.7 +0.3**
comp=Z,12nm,1.1s
MRSI Marisa 41.13 211 P **P 07 46 26.5 +2.2**
comp=Z,102nm,1.2s
LAMP Lampang 41.19 254 P **P 07 46 27.4 +2.6**
comp=Z,6.1nm,0.8s
FAKI Fak Fak 41.22 194 *e*P **P 07 46 25.8 +0.7**
comp=Z,221nm,1.5s
PBKT Sadao Pong 41.36 251 P **P 07 46 26.5 +0.4**
comp=Z,17nm,1.1s,comp=Z,1μm
CMMT Chiang Mai 41.55 255 P **P 07 46 28.7 +1.0**
comp=Z,18nm,1.1s
CHTO Chiang Mai 41.55 255 P **P 07 46 28.7 +0.9**
comp=Z,77nm,1.1s
CHTO Chiang Mai 41.55 255 *e*P **P 07 46 27.9 +0.1**
CHTO pmax pmax
comp=Z,28nm,1.3s
CHTO Chiang Mai 41.55 255 *e*P **P 07 46 27.9 +0.1**
comp=Z,28nm,1.3s
CHTO Chiang Mai 41.55 255 P **P 07 46 27.9 +0.1**
SNR=11
ZAA0 Zalesovo Array 41.63 312 *e*P **P 07 46 27.6 -0.4**
ZALV Zalesovo Beam 41.63 312 P **P 07 46 28.1 +0.1**
comp=Z,19nm,0.8s,baz=91,slow=6.8,SNR=69
ZALV PcP **PcP 07 48 23.9 0.0**
comp=Z,4.0nm,0.5s,baz=93,slow=2.4,SNR=3.0
CMAR Chiang Mai Arr 41.76 255 P **P 07 46 29.6 +0.1**
comp=Z,1.5nm,0.5s,baz=47,slow=8.2,SNR=13
CMAR LR LR 08 05 01.3
comp=Z,364nm,21.1s,baz=58,slow=38
CMAR Chiang Mai Arr 41.76 255 *i* P **P 07 46 30.0 +0.5**
CMAR pmax pmax
comp=Z,2.0nm,0.5s
CM01 Chiang Mai Arr 41.77 255 *e*P **P 07 46 29.8 +0.3**
SUKH Sukhothai 41.81 253 P **P 07 46 30.6 +0.7**
comp=Z,7.1nm,0.9s
LSA Lhasa 42.28 275 P **P 07 46 35.1 +0.9**
LSA pmax pmax
comp=Z,11nm,1.2s
LSA Lhasa 42.28 275 *e*P **P 07 46 35.6 +1.4**
LSA pmax pmax
comp=Z,58nm,1.1s
LSA Lhasa 42.28 275 *e*P **P 07 46 35.6 +1.4**
comp=Z,58nm,1.1s
ZSN Zaisan 42.40 302⇑ *i*P **P 07 46 32.8 -1.6**
ZSN *e*S **S 07 52 49.1 -2.6**
APSI Ampana 42.51 210 P **P 07 46 36.6 +1.1**
comp=Z,130nm,1.3s,comp=Z,1μm
NAYO Nanayok 42.52 248 P **P 07 46 39.0 +3.3**
comp=Z,18nm,0.8s,comp=Z,1μm
NVS Novosibirsk 42.54 313 *i*P **P 07 46 34.9 -0.5**
NVS *e*S **S 07 52 51.7 -1.8**
NVS pmax pmax
comp=N,8.0nm,1.4s
NVS pmax pmax
comp=E,65nm,1.4s
NVS pmax pmax
comp=Z,78nm,1.4s
NVS smax smax
comp=N,45nm,2.4s
NVS smax smax
comp=E,132nm,2.4s
MHMT Maesariang 42.70 255 P **P 07 46 38.5 +1.4**
comp=E,15nm,1.2s
NRIK Noril'sk 42.81 335 P **P 07 46 36.1 -1.2**
comp=E,5.1nm,0.5s,baz=106,slow=7.5,SNR=13
NRIK S **S 07 52 53.7 -3.4**
comp=E,0.8nm,0.4s,baz=93,slow=21,SNR=7.4
CHBT CHBT 42.82 245 P **P 07 46 39.9 +1.8**
comp=E,51nm,1.1s
UTHA Uthaitani 43.13 251 P **P 07 46 42.2 +1.6**
comp=E,4.6nm,1.3s,comp=E,56nm
SHL Shillong 43.54 269 *e*P **P 07 46 43.0 -1.0**
SHL *e*S **S 07 53 10.0 +0.8**
MK01 Makanchi Array 43.92 302 *e*P **P 07 46 46.8 +0.1**
MK31 Makanchi Array 43.93 302 *e*P **P 07 46 47.0 +0.2**
MK31 Makanchi Array 43.93 302 *e*P **P 07 46 47.0 +0.2**
MKAR Makanchi Array 43.93 302 P **P 07 46 46.9 +0.1**
comp=E,23nm,0.8s,baz=85,slow=9.9,SNR=117
SRDT SRDT 44.13 250 P **P 07 46 49.9 +1.2**
comp=E,49nm,1.1s
MAKZ Makanchi 44.14 302 *e*P **P 07 46 48.0 -0.4**
MAKZ pmax pmax
comp=Z,91nm,1.4s
MAKZ Makanchi 44.14 302 *e*P **P 07 46 48.0 -0.4**
comp=Z,90nm,1.4s
SBUM Sibu 44.15 225⇓P **P 07 46 49.8 +1.1**
SBUM Sibu 44.15 225 *e*P **P 07 46 49.4 +0.6**
comp=Z,26nm,1.1s
SEM Semipalatinsk 44.70 307 *i* P **P 07 46 52.5 -0.3**
comp=Z,287nm,1.3s
SEM LR LR 08 04 45.8
comp=Z,487nm,19.9s
TTA Tatalina 44.90 35 *e*P **P 07 46 55.4 +1.1**
TTA pmax pmax
comp=Z,45nm,1.5s
TTA Tatalina 44.90 35 *e*P **P 07 46 55.4 +1.1**
comp=Z,45nm,1.5s
SVW2 Sprevohn 45.01 38 *e*P **P 07 46 56.5 +1.3**
comp=Z,45nm,1.1s
KURK Kurchatov 45.69 308 *e*P **P 07 47 00.4 -0.2**
KURK S **S 07 53 37.4 -1.9**
KURK pmax pmax
comp=Z,173nm,0.9s
KURK Kurchatov 45.69 308 *e*P **P 07 47 00.4 -0.2**
comp=Z,173nm,0.9s
KURK S **S 07 53 37.4 -1.9**
KURBB Kurchatov Arra 45.76 308 P **P 07 47 00.9 -0.2**
comp=Z,84nm,0.6s,baz=83,slow=8.2,SNR=148
KURBB S **S 07 53 37.4 -3.0**
comp=Z,0.4nm,0.3s,baz=79,slow=16,SNR=6.3
TAPN Taplejung 46.02 274 *e*P **P 07 47 04.5 +0.5**
comp=Z,56nm,0.6s
KSM Kuching 46.03 226⇓P **P 07 47 05.8 +2.1**
KSM Kuching 46.03 226 *e*P **P 07 47 04.3 +0.7**
comp=Z,32nm,1.0s
SHLS Shalkode 46.39 297 *e*P **P 07 47 06.9 +0.3**
comp=Z,418nm,1.2s
ODAN Odare 46.50 273 *e*P **P 07 47 08.0 +0.4**
comp=Z,219nm,1.1s
STKI Sintang 46.53 224 P **P 07 47 09.5 +1.9**
comp=Z,46nm,0.8s
KDAK Kodiak Island 46.60 42 P P 07 47 22.7 +15
comp=Z,54nm,0.7s,baz=266,slow=4.2,SNR=24
KDAK LR LR 08 05 59.1
comp=Z,601nm,20.6s,baz=272,slow=35
KDAK Kodiak Island 46.60 42 *i* P **P 07 47 07.8 +0.1**
PDGK Podgornoye 46.63 297 P **P 07 47 08.2 +0.1**
PDGK pmax pmax
comp=Z,92nm,0.8s
PPLA Purkeypile 46.64 35 *e*P **P 07 47 09.4 +1.3**
comp=Z,152nm,1.8s
CAST Castle Rocks 46.70 34 *e*P **P 07 47 09.2 +0.8**
comp=Z,29nm,0.9s
SPU Mount Spurr 46.72 38 *e*P **P 07 47 08.2 -0.4**
SPU *epP* **pP 07 47 25.0 +1.5**
UZB Uzynbulak 47.00 297⇑ *i*P **P 07 47 11.1 -0.2**
comp=Z,252nm,1.1s
UZB *e*S **S 07 54 00.4 +1.7**
UZB LR LR 08 06 41.0
comp=Z,355nm,16.5s
KAPI Kappang 47.00 210 P **P 07 47 12.4 +1.2**
comp=Z,13nm,0.3s,baz=79,slow=10,SNR=3.5
KAPI LR LR 08 06 40.3
comp=Z,150nm,19.9s,baz=57,slow=36
PMG Port Moresby 47.04 172 LR LR 08 05 27.0
comp=Z,202nm,21.6s,baz=357,slow=34
RAMN Ramite 47.09 274 *e*P **P 07 47 12.5 +0.3**
comp=Z,134nm,0.7s
KTH Kantishna Hill 47.22 34 *e*P **P 07 47 13.4 +0.9**
comp=Z,199nm,1.9s
GUN Gumba 47.22 275 *e*P **P 07 47 13.8 +0.4**
comp=Z,161nm,0.5s
MLY Manley 47.31 32 *e*P **P 07 47 14.1 +0.8**
comp=Z,22nm,1.0s
SATY Saty 47.46 297⇑ *i*P **P 07 47 15.2 +0.4**
comp=Z,380nm,1.2s
KTGM Kuala Trenggan 47.50 237⇓P **P 07 47 16.6 +1.4**
TRF Thorofare Moun 47.50 34 *e*P **P 07 47 16.7 +1.8**
comp=Z,139nm,2.0s
COLD Coldfoot 47.61 29 *e*P **P 07 47 16.3 +0.8**
comp=Z,15nm,0.9s
KKN Kakani 47.75 275 *e*P **P 07 47 17.8 +0.5**
comp=Z,159nm,0.7s
PKIN Phulchoki 47.76 275 *e*P **P 07 47 17.4 0.0**
comp=Z,39nm,0.6s
SURT Suratani 47.93 245 P **P 07 47 20.1 +1.6**
comp=Z,10nm,1.3s
DMN Daman 47.97 275 *e*P **P 07 47 19.4 +0.3**
comp=Z,35nm,0.5s
TRTT Trang 48.06 243 P **P 07 47 21.1 +1.5**
comp=Z,23nm,1.3s,comp=Z,983nm
MCK McKinley 48.10 34 *e*P **P 07 47 19.6 +0.3**
MCK pmax pmax
comp=Z,138nm,1.9s
MCK McKinley 48.10 34 *e*P **P 07 47 19.6 +0.3**
comp=Z,138nm,1.9s
PMR Palmer 48.11 37 *e*P **P 07 47 19.8 +0.5**
PMR pmax pmax
comp=Z,73nm,1.6s
PMR Palmer 48.11 37 *e*P **P 07 47 19.8 +0.5**
comp=Z,73nm,1.6s
KRAB Krabi 48.15 244 P **P 07 47 21.2 +1.0**
comp=Z,54nm,0.9s,comp=Z,610nm
RND Reindeer 48.15 34 *e*P **P 07 47 19.9 +0.1**
RND pmax pmax
comp=Z,207nm,1.9s
RND Reindeer 48.15 34 *e*P **P 07 47 19.9 +0.1**
comp=Z,207nm,1.9s
GKN Gorkha 48.16 276 *e*P **P 07 47 20.8 +0.3**
comp=Z,195nm,0.8s
MDM Murphy Dome 48.38 32 *e*P **P 07 47 22.4 +0.9**
comp=Z,195nm,1.8s
MDOK Medeo 48.38 298⇓ *i*P **P 07 47 22.5 +0.5**
comp=Z,242nm,1.3s
MDOK *e*S **S 07 54 21.4 +3.1**
MDOK LR LR 08 06 38.7
comp=Z,657nm,20.9s
WRH Wood River Hil 48.45 33 *e*P **P 07 47 21.9 -0.1**
comp=Z,47nm,1.4s
SML Sawmill 48.47 37 *e*P **P 07 47 22.9 +0.7**
SML pmax pmax
comp=Z,39nm,0.7s
SML Sawmill 48.47 37 *e*P **P 07 47 22.9 +0.7**
comp=Z,39nm,0.7s
COLA College 48.54 32 *e*P **P 07 47 23.5 +0.9**
COLA pmax pmax
comp=Z,132nm,1.8s
COLA College 48.54 32 *e*P **P 07 47 23.5 +0.9**
comp=Z,132nm,1.8s
CCB Clear Creek Bu 48.57 33 *e*P **P 07 47 23.1 +0.2**
comp=Z,69nm,1.8s
KUU Kurty 48.67 299⇑ *i*P **P 07 47 23.8 -0.3**
comp=Z,412nm,1.3s
KUU LRM MLR 08 09 09.1
comp=Z,258nm,13.7s
DHY Denali Highway 48.84 35 *e*P **P 07 47 25.8 +0.7**
comp=Z,16nm,0.8s
SCM Sheep Creek Mo 48.95 37 *e*P **P 07 47 26.2 +0.3**
SCM pmax pmax
comp=Z,265nm,1.9s
SCM Sheep Creek Mo 48.95 37 *e*P **P 07 47 26.2 +0.3**
comp=Z,265nm,1.9s
HDA Harding Lake 48.95 33 *e*P **P 07 47 26.1 +0.3**
comp=Z,125nm,1.8s
IL1 Eielson Array 48.96 33 *e*P **P 07 47 25.6 -0.3**
ILAR Eielson Array 48.96 33 P **P 07 47 25.9 0.0**
comp=Z,14nm,0.7s,baz=266,slow=5.7,SNR=146
ILAR PcP **PcP 07 48 48.5 -0.7**
comp=Z,4.5nm,1.0s,baz=292,slow=3.6,SNR=4.1
ILB Eielson Array 48.96 33 *e*P **P 07 47 25.4 -0.4**
PKDT Phuket 48.99 244 P **P 07 47 27.9 +1.2**
comp=Z,47nm,1.1s,comp=Z,7μm
KOLN Koldanda 49.09 276 *e*P **P 07 47 28.0 +0.4**
comp=Z,222nm,1.3s
KULM Kulim 49.20 239⇑P **P 07 47 30.3 +2.0**
KULM Kulim 49.20 239 *e*P **P 07 47 29.2 +0.9**
comp=Z,27nm,1.2s
PYUN Piuthan 49.42 277 *e*P **P 07 47 30.6 +0.4**
comp=Z,420nm,1.1s
TKM2 Tokmak 2 49.47 298 *e*P **P 07 47 31.1 +0.7**
TKM2 pmax pmax
comp=Z,58nm,1.0s
TKM2 Tokmak 2 49.47 298 *e*P **P 07 47 31.1 +0.7**
comp=Z,58nm,1.0s
IPM Ipoh 49.54 238 *e*P **P 07 47 31.1 +0.2**
comp=Z,22nm,0.8s
FYU Fort Yukon 49.57 30 *e*P **P 07 47 32.2 +1.8**
comp=Z,61nm,1.1s
KLU Klutina 49.65 37 *e*P **P 07 47 31.8 +0.6**
comp=Z,22nm,0.8s
PAX Paxson 49.71 35 *e*P **P 07 47 32.7 +1.0**
PAX pmax pmax
comp=Z,58nm,1.8s
PAX Paxson 49.71 35 *e*P **P 07 47 32.7 +1.0**
comp=Z,58nm,1.8s
EDFI Ende, Flores 49.71 206 P P 07 47 48.7 +16
DIV Divide 49.76 37 *e*P **P 07 47 32.5 +0.4**
comp=Z,210nm,1.9s
SOEI Soe 49.81 203 P P 07 47 48.7 +16
SOEI Soe 49.81 203 *e*P **P 07 47 32.9 -0.1**
comp=Z,230nm,1.3s
TPRI Tanjung Pinang 49.94 232 P P 07 47 50.7 +17
VOSK Vostochnaya 50.00 312 *e*P **P 07 47 33.6 -0.4**
VOSK pmax pmax
comp=Z,69nm,1.2s
VOSK Vostochnaya 50.00 312 *e*P **P 07 47 33.6 -0.4**
comp=Z,69nm,1.2s
CHKZ Chkalovo 50.02 313 P **P 07 47 33.6 -0.5**
CHKZ pmax pmax
comp=Z,43nm,1.2s
FRU Bishkek 50.19 298 *i* P **P 07 47 35.0 -0.6**
FRU *e*S **S 07 54 43.5 +0.1**
FRU pmax pmax
comp=Z,70nm,1.9s
OTUK Ortayu 50.20 306 P **P 07 47 35.1 -0.5**
OTUK pmax pmax
comp=Z,79nm,1.5s
DOT Dot Lake 50.27 34 *e*P **P 07 47 36.0 0.0**
comp=Z,56nm,0.8s
BVA0 Borovoye Array 50.29 312 *i* P **P 07 47 35.8 -0.3**
BVA0 pmax pmax
comp=Z,31nm,1.4s
BVAR Borovoye Array 50.29 312 P **P 07 47 36.0 -0.1**
comp=Z,6.9nm,0.5s,baz=70,slow=7.5,SNR=57
BVAR PcP **PcP 07 48 54.9 +0.6**
comp=Z,3.7nm,0.7s,baz=48,slow=2.1,SNR=1.6
BVAR LR LR 08 10 03.0
comp=Z,874nm,18.7s,baz=72,slow=37
KSH Kashi 50.29 294 P **P 07 47 40.9 +4.4**
KSH *e*sP sP 07 48 03.5 +5.5
KSH PcS **PcS 07 52 55.2 +3.2**
KSH S **S 07 54 49.2 +4.1**
KSH ScS **ScS 07 57 24.1 +1.5**
KSH pmax pmax
comp=Z,20nm,1.0s
KSH pmax pmax
comp=Z,110nm,2.8s
KSH LR LR
comp=Z,680nm,14.1s
KSH LR LR
comp=Z,880nm,17.8s
KSH LR LR
comp=Z,1μm,15.8s
AAK Ala-Archa 50.33 298 P **P 07 47 36.8 0.0**
comp=Z,9.0nm,0.5s,baz=110,slow=5.3,SNR=31
AAK LR LR 08 09 59.5
comp=Z,1μm,20.9s,baz=63,slow=37
AAK Ala-Archa 50.33 298 *e*P **P 07 47 37.1 +0.2**
AAK pmax pmax
comp=Z,30nm,0.9s
AAK Ala-Archa 50.33 298 *e*P **P 07 47 37.1 +0.2**
comp=Z,30nm,0.9s
BMRM Bremner River 50.34 37 *e*P **P 07 47 38.0 +1.5**

comp=Z,44nm,1.0s
BRVK Borovoye 50.34 312 *de* P **P** 07 47 36.7 +0.2
BRVK pmax pmax
comp=Z,25nm,1.2s
BRVK Borovoye 50.34 312 *e* P **P** 07 47 36.5 0.0
comp=Z,20nm,0.8s
MENT Mentasta 50.51 35 *e* P **P** 07 47 39.1 +1.4
comp=Z,42nm,1.2s
EKS2 Erkin-Say 50.83 298 *e* P **P** 07 47 40.8 +0.2
EKS2 pmax pmax
comp=Z,21nm,0.8s
EKS2 Erkin-Say 50.83 298 *e* P **P** 07 47 40.8 +0.2
comp=Z,21nm,0.8s
MTN Manton Dam 51.12 193 *e* P **P** 07 47 43.2 +0.6
comp=Z,216nm,1.3s
ZRNK Zerenda 51.12 312 P **P** 07 47 41.7 -0.7
ZRNK pmax pmax
comp=Z,36nm,1.1s
PLAI Plampang 51.26 211 P P 07 48 02.0 +18
COEN Coen 51.30 178 *e* P **P** 07 47 44.2 +0.2
comp=Z,51nm,1.1s
PPBI Pangkal Pinang 51.39 228 P **P** 07 47 46.2 +1.4
comp=Z,26nm,1.1s,comp=Z,6µm
EGAK Eagle 51.40 32 *e* P **P** 07 47 44.5 +0.2
comp=Z,96nm,1.8s
SRBI Singaraja 51.69 214 P P 07 48 07.2 +20
MNAS Manas 51.77 298 P **P** 07 47 47.9 +0.3
MNAS pmax pmax
comp=Z,77nm,0.8s
SFK Sufi-Kurgan 51.91 295 P **P** 07 47 48.9 +0.1
SFK pmax pmax
comp=Z,57nm,1.0s
PSI Prapat 52.18 239 LR LR 08 10 30.2
comp=Z,429nm,20.8s,baz=26,slow=36
DAWY Dawson 52.27 33 *e* P **P** 07 47 51.5 +0.7
comp=Z,75nm,1.9s
KCSI Kotacane, Aceh 52.45 241 P P 07 48 10.3 +17
BKNI Bangkinang 52.61 235 P P 07 48 11.3 +17
GMJI Gumukmas 52.66 216 P P 07 48 10.3 +16
KK31 Karatay Array 52.95 300 *i* P **P** 07 47 56.2 0.0
KK31 pmax pmax
comp=Z,53nm,1.2s
KKAR Karatay Array 52.95 300 *e* P **P** 07 47 56.2 0.0
KKAR Karatay Array 52.95 300 *e* P **P** 07 47 56.2 0.0
MNSI Mandailing Nat 53.22 237 P P 07 48 04.4 +6.0
IUG Iuzhnay 53.61 299⇑ *i* P **P** 07 48 01.7 +0.5
comp=Z,590nm,1.2s
IUG *e* S **S** 07 55 34.4 +3.8
UGM Wanagama 53.76 219 *e* P **P** 07 48 01.5 -0.9
comp=Z,2µm,2.0s
INK Inuvik 53.84 27 P **P** 07 48 02.7 +0.5
comp=Z,21nm,0.8s,baz=292,slow=6.8,SNR=143
INK Inuvik 53.84 27 *e* P **P** 07 48 02.4 +0.2
INK pmax pmax
comp=Z,143nm,1.9s
INK Inuvik 53.84 27 *e* P **P** 07 48 02.4 +0.2
comp=Z,143nm,1.9s
KPJI Karang Pucung 54.09 221 P **P** 07 48 05.0 +0.3
comp=Z,86nm,0.9s
GSI Gunungsitoli 54.19 239 P **P** 07 48 06.3 +0.8
comp=Z,122nm,1.4s
GSI Gunungsitoli 54.19 239 *e* P **P** 07 48 05.5 0.0
comp=Z,268nm,1.5s
LHSI Lahat 54.27 229 P **P** 07 48 07.3 +1.2
comp=Z,84nm,1.1s,comp=Z,2µm
LEM Lembang 54.37 223 LR LR 08 12 10.2
comp=Z,188nm,20.3s,baz=14,slow=37
LEM Lembang 54.37 223 P P 07 48 17.7 +11
MDSI Maura Dua 54.41 228 P **P** 07 48 07.5 +0.5
comp=Z,43nm,1.2s
MASI Maura Aman, Be 54.52 231 P P 07 48 25.0 +17
SVE Sverdlovsk 54.81 318 *d* *i* P **P** 07 48 09.8 +0.3
SVE pmax pmax
comp=Z,92nm,1.3s
SVE MLR MLR
comp=Z,1µm,18.0s
SOKR Solikamsk 55.96 322 *c* *i* P **P** 07 48 15.5 -2.1
SOKR S **S** 07 56 02.2 +1.1
SOKR pmax pmax
comp=Z,50nm,1.4s
SOKR MLR MLR
comp=Z,333nm,17.0s
ARU Arti 56.02 318 P **P** 07 48 18.1 -0.1
comp=Z,24nm,0.4s,baz=73,slow=4.2,SNR=46
ARU LR LR 08 14 41.8
comp=Z,1µm,18.5s,baz=75,slow=38
ARU Arti 56.02 318 *c* *i* P **P** 07 48 18.1 -0.1
ARU 07 49 15.8
ARU 07 50 21.0
ARU PPP PPP 07 51 33.7
ARU S **S** **07 56 05.8 +3.6**
ARU SS **SS** **07 59 48.7 +0.4**
ARU pmax pmax
comp=Z,102nm,1.2s
ARU MLR MLR
comp=Z,1µm,18.0s
ARU Arti 56.02 318 *e* P **P** 07 48 18.2 -0.1
comp=Z,101nm,1.2s
KBL Kabul 57.33 291 *e* P **P** 07 48 28.1 0.0
KBL pmax pmax
comp=Z,56nm,1.2s
KBL Kabul 57.33 291 *e* P **P** 07 48 28.1 0.0
comp=Z,56nm,1.2s
FITZ Fitzroy Crossi 57.39 198 P **P** 07 48 29.0 +0.8
comp=Z,14nm,0.6s,baz=12,slow=7.1,SNR=20
FITZ Fitzroy Crossi 57.39 198 *e* P **P** 07 48 28.7 +0.5
FITZ *e* pP **pP** **07 48 44.9 +1.4**
CTA Charters Tower 57.54 175 P **P** 07 48 29.6 +0.3
comp=Z,6.5nm,0.5s,baz=0.1,slow=7.5,SNR=16
WRAB Tennant Creek 57.62 188 *ce* P **P** 07 48 30.1 +0.3
WRAB pmax pmax
comp=Z,219nm,1.7s
WRAB Tennant Creek 57.62 188 *e* P **P** 07 48 29.9 0.0
comp=Z,230nm,1.5s
WRAB *e* pP **pP** **07 48 45.4 +0.3**
WB2 Warramunga Arr 57.63 188 *e* P **P** 07 48 29.9 0.0
comp=Z,119nm,1.1s
WRA Warramunga Arr 57.63 188 P **P** 07 48 29.9 0.0
comp=Z,30nm,0.6s,baz=5.5,slow=7.1,SNR=58
WRA pP **pP** **07 48 45.6 +0.4**
comp=Z,50nm,0.8s,baz=5.3,slow=7.3,SNR=16
WRA LR LR 08 12 36.3
comp=Z,193nm,21.1s,baz=10.0,slow=35
WRAK Wrangell Islan 57.65 41 *e* P **P** 07 48 30.8 +1.2
comp=Z,61nm,1.6s
AB31 Akbulak array 57.67 310 *i* P **P** 07 48 29.5 -0.5
AB31 pmax pmax
comp=Z,14nm,0.5s
ABKAR Akbulak array 57.67 310 *e* P **P** 07 48 29.8 -0.2
DLBC Dease Lake 58.11 38 *e* P **P** 07 48 35.0 +1.9
comp=Z,93nm,1.6s
HYB Hyderabad 58.34 268 *i* P **P** 07 48 35.0 -0.2
AKTO Aktyubinsk 58.39 312 P **P** 07 48 34.2 -0.8
comp=Z,12nm,0.6s,baz=62,slow=7.5,SNR=39
AKTO LR LR 08 14 52.2
comp=Z,525nm,20.9s,baz=76,slow=37
SPA0 Spitsbergen Ar 60.00 349 *e* P **P** 07 48 46.7 +1.0
SPA0 IAmb IAmb 07 48 57.3
comp=Z,816nm,2.8s
SPITS Spitsbergen Ar 60.00 349 P **P** 07 48 46.3 +0.5
comp=Z,3.2nm,0.6s,baz=82,slow=10,SNR=5.4
AS01 Alice Springs 61.35 188 *e* P **P** 07 48 55.7 +0.1
AS31 Alice Springs 61.36 188 *e* P **P** 07 48 55.3 -0.2
comp=Z,9.4nm,0.9s
ASAR Alice Springs 61.36 188 P **P** 07 48 55.9 +0.3
comp=Z,14nm,0.7s,baz=13,slow=5.7,SNR=182
ASAR pP **pP** **07 49 11.2 +0.2**
comp=Z,24nm,0.9s,baz=7.5,slow=6.3,SNR=19
ASAR LR LR 08 15 01.8
comp=Z,208nm,21.1s,baz=358,slow=35
ASAR PKP2bc 08 18 17.7
comp=Z,0.8nm,1.0s,baz=154,slow=2.5,SNR=5.9
MBWA Marble Bar 61.95 203 *e* P **P** 07 49 00.1 +0.6
comp=Z,52nm,0.6s
RES Resolute Bay 62.03 15 P **P** 07 48 59.1 -0.4
comp=Z,12nm,0.7s,baz=304,slow=7.8,SNR=82
RES Resolute Bay 62.03 15 *e* P **P** 07 48 59.2 -0.3
RES pmax pmax
comp=Z,114nm,1.8s
RES Resolute Bay 62.03 15 *e* P **P** 07 48 59.2 -0.3
comp=Z,114nm,1.8s
YKW3 Yellowknife Ar 63.23 30 *e* P **P** 07 49 07.8 +0.2
comp=Z,44nm,1.4s
YKA Yellowknife Ar 63.27 30 P **P** 07 49 07.8 0.0
comp=Z,6.2nm,0.6s,baz=302,slow=6.5,SNR=143
YKA pP **pP** **07 49 23.5 +0.1**
comp=Z,4.6nm,0.8s,baz=300,slow=5.9,SNR=9.4
YKA PKP2bc 08 18 15.9
comp=Z,0.8nm,1.0s,baz=150,slow=3.1,SNR=5.0
HAMF Hammerfest 63.33 341 *e* P **P** **07 49 08.8 +0.6**
KLMR Klimovskoe 63.35 328 *e* P **P** **07 49 04.7 -3.8**
KLMR *e* *SP **pP** **07 49 21.6 -2.3**
KLMR *e* 07 49 41.3
KLMR *e* 07 51 24.3
KLMR pmax pmax
comp=Z,90nm,1.5s
ARCES ARCESS Array B 63.52 339 P **P** **07 49 09.3 -0.2**
comp=Z,8.0nm,0.8s,baz=46,slow=5.2,SNR=14
ARE0 ARCESS Array S 63.52 339 *e* P **P** **07 49 10.0 +0.5**
ARE0 IAmb IAmb 07 49 22.0
comp=Z,579nm,2.9s
GEYT Alibeck 63.67 299 P **P** **07 49 11.1 0.0**
comp=Z,36nm,1.1s,baz=29,slow=3.4,SNR=32
DZM Mont Dzumac 63.80 154 LR LR 08 14 22.6
comp=Z,552nm,20.5s,baz=338,slow=34
KTK1 Kautokeino 64.48 339 *e* P **P** **07 49 15.8 +0.1**
KTK1 IAmb IAmb 07 49 17.6
comp=Z,209nm,2.1s
DAG Danmarks Havn 65.23 355⇑ *i* P **P** **07 49 20.1 -0.4**
comp=Z,14nm,0.7s
DAG Danmarks Havn 65.23 355⇑ *i* P **P** **07 49 20.1 -0.4**
DAG pmax pmax
comp=Z,10.0nm,0.7s
MBW Mount Baker 66.68 46 P **P** **07 49 31.3 +0.8**
MOS Moscow 66.87 323 *e* P **P** **07 49 29.6 -1.8**
MOS *e* 07 49 57.9
MOS *e* 07 52 03.6
MOS pmax pmax
comp=Z,120nm,1.4s
MOS pmax pmax
comp=Z,300nm,2.0s
JCW Jim Creek 66.97 46 P **P** **07 49 33.7 +1.5**
VRH Novokhopyorsk 67.25 318 *e* P **P** **07 49 33.0 -0.8**
VRH pmax pmax
comp=Z,90nm,1.5s
D05A Enumclaw 67.45 47 *e* P **P** **07 49 36.2 +1.0**
comp=Z,288nm,1.9s
LOF Lofoten 67.67 341 *e* P **P** **07 49 36.2 0.0**
LOF IAmb IAmb 07 49 49.4
comp=Z,156nm,1.4s
OBN Obninsk 67.72 323 P **P** **07 49 36.3 -0.4**
comp=Z,15nm,0.5s,baz=53,slow=4.2,SNR=11
OBN Obninsk 67.72 323 *ce* P **P** **07 49 36.4 -0.4**
OBN *e* 07 49 49.8
OBN *e* PPP PPP 07 53 48.8
OBN pmax pmax
comp=Z,93nm,1.7s
OBN MLR MLR
comp=Z,414nm,17.0s
OBN Obninsk 67.72 323 *e* P **P** **07 49 36.5 -0.2**
comp=Z,127nm,1.5s
F04A Amboy 67.85 49 *e* P **P** **07 49 37.9 +0.2**
comp=Z,68nm,1.3s
LPSR Galich'ya Gora 67.95 320 *e* P **P** **07 49 37.6 -0.7**
LPSR pmax pmax
comp=Z,80nm,1.5s
LPSR MLR MLR
comp=Z,900nm,19.0s
LTY Liberty 68.18 47 *e* P **P** **07 49 40.2 +0.3**
comp=Z,31nm,1.4s
ETW Entiat 68.19 46 P **P** **07 49 41.2 +1.1**
B08A Colville Reser 68.36 45 *e* P **P** **07 49 42.1 +1.1**
B08A *e* pP **pP** **07 49 57.8 +1.1**
FIA1 FINESS Array S 68.38 332 *e* P **P** **07 49 40.6 -0.2**
FINES FINESS Array B 68.38 332 P **P** **07 49 40.4 -0.3**
comp=Z,19nm,0.7s,baz=42,slow=9.3,SNR=66
FINES LR LR 08 22 02.0
comp=Z,676nm,19.1s,baz=59,slow=38
I03D Drain, OR 68.46 51 P **P** **07 49 43.8 +2.2**
baz=302
VSR Storozhevoye 68.59 319 *e* P **P** **07 49 41.6 -0.7**
VSR pmax pmax
comp=Z,140nm,1.9s
H04A Detroit Lake 68.65 50 *e* P **P** **07 49 43.5 +0.7**
comp=Z,58nm,1.2s
VFP Flag Point 68.75 49 P **P** **07 49 45.2 +1.6**
MOR8 Moi Rana 68.88 340 *e* P **P** **07 49 42.9 -0.9**
MOR8 IAmb IAmb 07 49 44.0
comp=Z,38nm,1.0s
I04A Tendick Farm, 68.99 50 P **P** **07 49 46.5 +1.5**
baz=302
STKA Stephens Creek 69.11 180 P **P** **07 49 46.2 +0.6**
comp=Z,6.6nm,0.5s,baz=357,slow=6.5,SNR=16
STKA LR LR 08 19 16.9
comp=Z,233nm,21.9s,baz=17,slow=35
STKA Stephens Creek 69.11 180 *e* P **P** **07 49 46.3 +0.7**
STKA pmax pmax
comp=Z,9.0nm,1.0s
STKA Stephens Creek 69.11 180 *e* P **P** **07 49 46.3 +0.7**
comp=Z,9.0nm,1.0s
L02D Cave Junction, 69.12 52 P **P** **07 49 47.6 +1.8**
baz=302
STOK Stokkvaagen 69.15 340 *e* P **P** **07 49 46.5 +1.0**
CROR Criterion Rid 69.21 49 P **P** **07 49 47.5 +1.1**
C09A Chrisman Ranch 69.26 45 *e* P **P** **07 49 46.9 +0.3**
C09A *e* pP **pP** **07 50 03.5 +1.4**
HUMO Hull Mountain 69.28 52 *e* P **P** **07 49 47.4 +0.6**
comp=Z,57nm,1.8s
D08A Wollman Farm, 69.30 46 *e* P **P** **07 49 46.9 +0.2**
D08A *e* pP **pP** **07 50 04.4 +1.9**
I05D Terrebonne, OR 69.35 50 P **P** **07 49 48.7 +1.4**
baz=303
VTHM Trough 69.36 48 P P **07 49 48.8 +1.6**
NEW Newport 69.64 44 P P **07 49 50.1 +1.2**
baz=304
NEW Newport 69.64 44 *e* P **P** **07 49 49.8 +0.8**
NEW pmax pmax
comp=Z,43nm,1.2s
NEW Newport 69.64 44 *e* P **P** **07 49 49.8 +0.8**
comp=Z,43nm,1.2s
GOF Gofitskoye 69.81 312⇑ *e* P **P** **07 49 49.9 -0.1**
GOF pmax pmax
comp=Z,62nm,1.1s
YBH Yreka Blue Hor 69.91 52 *e* P **P** **07 49 51.9 +1.2**
YBH *e* *PP **pP** **07 50 09.2 +2.8**
YBH pmax pmax
comp=Z,73nm,1.8s
YBH Yreka Blue Hor 69.91 52 *e* P **P** **07 49 51.9 +1.2**
comp=Z,73nm,1.8s
YBH *e* pP **pP** **07 50 09.2 +2.8**
J05D Fort Rock, OR 69.98 50 P **P** **07 49 53.2 +1.9**
baz=303
K04D Chiloquin, OR 70.02 51 P **P** **07 49 53.6 +2.1**
baz=303
VSU Vasula 70.03 330 *e* P **P** **07 49 51.3 +0.2**
VSU pmax pmax
comp=Z,82nm,1.3s
SUMG Summit 70.13 0 *i* P **P** **07 49 52.4 +0.5**
SUMG Summit 70.13 0 *e* P **P** **07 49 52.5 +0.5**
SUMG pmax pmax
comp=Z,21nm,0.8s
SUMG Summit 70.13 0 *e* P **P** **07 49 52.5 +0.6**
comp=Z,21nm,0.8s
BBOO Buckleboo 70.23 185 *e* P **P** **07 49 53.1 +0.7**
BBOO *e* pP **pP** **07 50 09.3 +1.2**
N02D Trinity Center 70.32 53 P **P** **07 49 55.2 +1.9**
baz=303
NCK Nalchik 70.34 310 *e* P **P** **07 49 52.4 -0.9**
NCK pmax pmax
comp=Z,19nm,1.2s
GUDG Gudauri 70.36 309 P **P** **07 49 54.9 +1.3**
M04C Macdoel 70.43 52 P **P** **07 49 55.7 +1.7**
baz=303
K05A Summer Lake 70.50 51 *e* P **P** **07 49 56.2 +1.7**
comp=Z,104nm,1.3s
ZEI Tsey 70.54 309 *e* P **P** **07 49 53.2 -1.5**
ZEI pmax pmax
comp=Z,22nm,0.8s
KBZ Khabaz 70.63 311 P **P** **07 49 54.9 -0.1**
comp=Z,29nm,1.0s,baz=49,slow=3.9,SNR=18
KIV Kislovodsk 70.63 311 *i* P **P** **07 49 55.7 +0.6**
SNR=9.8
KIV Kislovodsk 70.63 311 *e* P **P** **07 49 55.4 +0.3**
KIV *e* 07 50 16.8
KIV *e* S **S** **07 59 07.2 +2.4**
KIV pmax pmax
comp=Z,74nm,1.1s
KIV pmax pmax
comp=Z,18nm,4.2s
KIV MLR MLR
comp=Z,297nm,17.0s
KIV Kislovodsk 70.63 311 *e* P **P** **07 49 55.7 +0.6**
comp=Z,69nm,1.0s
WDC Whiskeytown Da 70.64 53 *e* P **P** **07 49 56.4 +1.3**
WDC pmax pmax
comp=Z,30nm,1.3s
WDC Whiskeytown Da 70.64 53 *e* P **P** **07 49 56.4 +1.3**
comp=Z,30nm,1.3s
NSS Namsos 70.80 339 *e* P **P** **07 49 55.7 0.0**
NSS IAmb IAmb 07 49 57.0
comp=Z,156nm,2.0s
F10A Beach Ranch, E 70.87 46 *e* P **P** **07 49 56.8 +0.3**
comp=Z,30nm,1.4s
WALA Waterton Lakes 70.94 42 *e* P **P** **07 49 57.8 +0.8**
comp=Z,34nm,0.9s
NEY Neytrino 71.00 310 *e* P **P** **07 49 57.7 +0.2**
NEY pmax pmax
comp=Z,1.0nm,0.6s
BANOM Banah 71.15 288 *i* P **P** **07 49 58.8 +0.4**
SNR=11
BANOM Banah 71.15 288 P **P** **07 49 59.1 +0.6**
SNR=7.0
BSMT Bassoo Peak 71.17 44 *e* P **P** **07 50 00.0 +1.6**
O03D Paynes Creek 71.27 53 P **P** **07 49 59.6 +0.6**
baz=304
BLMT Blacktail Moun 71.31 43 *e* P **P** **07 50 01.3 +2.0**
MOD Modoc Plateau 71.32 51 *e* P **P** **07 50 00.1 +0.7**
comp=Z,24nm,1.2s
SMDO Samad 71.39 285 P **P** **07 50 01.0 +0.9**
SNR=10
BMO Blue Mountains 71.46 47 *e* P **P** **07 50 01.2 +1.0**
BMO pmax pmax
comp=Z,19nm,1.0s
BMO Blue Mountains 71.46 47 *e* P **P** **07 50 01.2 +1.0**
comp=Z,19nm,1.0s
GNI Garni 71.47 307 *ce* P **P** **07 50 02.0 +1.6**
GNI pmax pmax
comp=Z,233nm,1.2s
GNI Garni 71.47 307 *e* P **P** **07 50 01.7 +1.3**
comp=Z,218nm,1.1s
JTMT Jette 71.51 44 *e* P **P** **07 50 01.9 +1.4**
AKH Akhalkalaki 71.56 308 ‖ *i* P **P** **07 50 02.0 +1.1**
SCO Scoresbysund 71.57 354 *i* P **P** **07 50 00.6 +0.4**
comp=Z,24nm,1.2s
SCO Scoresbysund 71.57 354 *i* P **P** **07 50 00.6 +0.4**
SCO pmax pmax
comp=Z,24nm,1.2s
JMDO Jabal Madar 71.72 284 P **P** **07 50 02.3 +0.3**
SNR=10
UOSS Minazif 71.75 288 *e* P **P** **07 50 02.3 +0.2**
comp=Z,2.2nm,0.9s
SWMT Swartz Lake 71.80 44 *e* P **P** **07 50 03.1 +0.9**
ORV Oroville 71.87 54 *e* P **P** **07 50 03.5 +0.9**
ORV pmax pmax
comp=Z,30nm,1.4s
ORV Oroville 71.87 54 *e* P **P** **07 50 03.5 +0.9**
comp=Z,30nm,1.4s
HATD Hatta, Dubai 71.87 288 *i* P **P** **07 50 03.2 +0.4**
SNR=17
HATD Hatta, Dubai 71.87 288 P **P** **07 50 03.7 +0.9**
SNR=21
IZAR Zarasai 72.00 327 *e* P **P** **07 50 02.4 -0.7**
IZAR IAmb IAmb 07 50 04.8
comp=Z,20nm,0.5s
ASHO Ashiyiah 72.01 288 *i* P **P** **07 50 03.9 +0.2**
SNR=16
ASHO Ashiyiah 72.01 288 P **P** **07 50 03.9 +0.2**
SNR=15
WVOR Wild Horse Val 72.04 50 *e* P **P** **07 50 04.1 +0.4**
WVOR pmax pmax
comp=Z,37nm,1.3s
WVOR Wild Horse Val 72.04 50 *e* P **P** **07 50 04.1 +0.4**
comp=Z,37nm,1.3s
NAZ Nazwa, Dubai 72.14 288 *i* P **P** **07 50 04.3 -0.1**
SNR=6.5
ISAL Salakas 72.17 327 *e* P **P** **07 50 03.2 -0.8**
ISAL IAmb IAmb 07 50 05.0
comp=Z,13nm,0.6s
BSY Bisya 72.21 285 P **P** **07 50 05.2 +0.3**
SNR=9.2
MSO Missoula 72.23 44 P **P** **07 50 05.5 +0.8**
baz=306
MSO Missoula 72.23 44 *e* P **P** **07 50 05.1 +0.4**
comp=Z,30nm,1.3s
TBLU Trondheim 72.27 339 *e* P **P** **07 50 04.4 -0.2**
NACGM Naroch 72.33 327 *e* P **P** **07 50 04.0 -1.0**
AFDM Forest Hills D 72.55 54 *e* P **P** **07 50 07.1 +0.4**
AFDM *e* pP **PcP** **07 50 23.9 -0.2**
ASUD Al Ashush, Dub 72.59 288 *i* P **P** **07 50 07.4 +0.3**
SNR=10
SOC Sochi 72.61 312 *c* *i* P **P** **07 50 06.0 -0.9**
SOC *e* S **S** **07 59 28.9 +1.5**
SOC *e* SS **SS** **08 04 14.7 +8.1**
SOC pmax pmax
comp=Z,25nm,0.6s
SOC MLR MLR
comp=Z,538nm,19.0s
CAN Canberra 72.87 174 *e* P **P** **07 50 09.2 +0.8**
CAN *e* *PP **PcP** **07 50 26.0 +0.8**
CAN Canberra 72.87 174 *e* P **P** **07 50 09.2 +0.8**
CAN *e* pP **PcP** **07 50 26.0 +0.8**
MFID Camas Ranch 73.16 48 *e* P **P** **07 50 11.0 +0.7**
comp=Z,96nm,1.6s
MFID *e* pP **PcP** **07 50 27.4 +0.7**
FFC Flin Flon 73.17 33 *e* P **P** **07 50 10.2 +0.2**
FFC pmax pmax
comp=Z,58nm,1.4s
FFC Flin Flon 73.17 33 *e* P **P** **07 50 10.2 +0.2**
comp=Z,58nm,1.4s
ANN Anapa 73.23 314 *e* P **P** **07 50 07.2 -3.3**
ANN *e* S **S** **07 59 32.5 -1.8**
ANN pmax pmax
comp=Z,77nm,1.4s
ANN MLR MLR
comp=Z,290nm,20.0s
CMB Columbia Colle 73.45 55 *e* P **P** **07 50 13.0 +1.0**
CMB pmax pmax
comp=Z,38nm,1.4s
CMB Columbia Colle 73.45 55 *e* P **P** **07 50 13.0 +1.0**
comp=Z,38nm,1.4s
FCC Fort Churchill 73.45 27 *e* P **P** **07 50 11.4 -0.1**
FCC pmax pmax
comp=Z,125nm,1.8s
FCC Fort Churchill 73.45 27 *e* P **P** **07 50 11.4 -0.1**
comp=Z,125nm,1.8s
NC405 NORSAR Array S 73.51 337 *e* P **P** **07 50 12.0 +0.1**
NC303 NORSAR Array S 73.53 337 *e* P **P** **07 50 12.4 +0.4**
HFS Hagfors 73.63 336 LR LR 08 25 13.6
comp=Z,837nm,19.7s,baz=32,slow=38
NC204 NORSAR Array S 73.67 338 *e* P **P** **07 50 13.1 +0.2**
NB201 NORSAR Array S 73.69 337 *e* P **P** **07 50 13.1 +0.1**
NB2 NORSAR Subarra 73.72 337 P **P** **07 50 12.8 -0.4**
comp=Z,208nm,2.0s,baz=39,slow=6.2
NB2 NORSAR Subarra 73.72 337 P **P** **07 50 12.8 -0.4**
baz=39,slow=6.2
NOA NORSAR Array B 73.72 337 P **P** **07 50 13.0 -0.2**
comp=Z,11nm,0.6s,baz=38,slow=5.9,SNR=54
NOA LR LR 08 25 06.6
comp=Z,612nm,21.8s,baz=30,slow=38
NWAO Narrogin (SRO) 73.73 201 *e* P **P** **07 50 14.4 +1.0**
NWAO *e* *PP **PcP** **07 50 29.3 +0.5**
NWAO Narrogin (SRO) 73.73 201 *e* P **P** **07 50 14.4 +1.0**
NWAO *e* pP **PcP** **07 50 29.3 +0.5**
EGMT Eagleton 73.77 41 P **P** **07 50 14.8 +1.0**
baz=309
EGMT Eagleton 73.77 41 *e* P **P** **07 50 14.8 +1.0**
comp=Z,65nm,1.0s
WAKR Walker 73.79 54 *e* P **P** **07 50 14.7 +0.5**
WAKR *e* pP **pP** **07 50 31.8 +1.7**
NBO02 NORSAR Array S 73.82 337 *e* P **P** **07 50 13.7 -0.1**
NC602 NORSAR Array S 73.86 337 *e* P **P** **07 50 14.0 +0.1**
NC602 IAmb IAmb 07 50 15.4
comp=Z,93nm,1.8s
NC602 NORSAR Array S 73.86 337 *e* P **P** **07 50 12.7 -1.2**
NBO00 NORSAR Array S 73.86 337 *e* P **P** **07 50 14.3 +0.3**
DLMT Dillon 73.86 45 *e* P **P** **07 50 15.7 +1.2**
comp=Z,41nm,1.0s
HLID Hailey 73.90 47 P **P** **07 50 16.0 +1.2**
baz=307
HLID Hailey 73.90 47 *e* P **P** **07 50 15.8 +1.0**
comp=Z,21nm,1.2s
AKASG Malin Array Be 73.93 322 P **P** **07 50 14.1 -0.4**
comp=Z,14nm,0.5s,baz=46,slow=6.0,SNR=132
AKASG LR LR 08 26 04.1
comp=Z,571nm,18.4s,baz=70,slow=38
AKBB Malin Array Si 73.93 322 *e* P **P** **07 50 14.3 -0.3**
AKBB pmax pmax
comp=Z,120nm,1.6s

AKBB **Malin Array Si** 73.93 322 *e*P P 07 50 14.2 -0.3
comp=Z,120nm,1.6s
KIEV **Kiev** 73.94 322 *e*P P 07 50 14.1 -0.5
KIEV pmax pmax
comp=Z,128nm,1.6s
KIEV **Kiev** 73.94 322 *e*P P 07 50 14.1 -0.5
comp=Z,128nm,1.6s
NAO01 **NORSAR Array S** 73.97 337 *e*P P 07 50 14.8 +0.1
AK11 **Malin Array Si** 73.97 322 *e*P P 07 50 14.5 -0.3
BMN **Battle Mountai** 74.07 51 *e*P P 07 50 16.5 +0.7
BMN pmax pmax
comp=Z,34nm,1.1s
BMN **Battle Mountai** 74.07 51 *e*P P 07 50 16.5 +0.7
comp=Z,34nm,1.1s
BOZ **Bozeman (W)** 74.23 44 P P 07 50 17.5 +0.9
baz=308
BOZ **Bozeman (W)** 74.23 44 *e*P P 07 50 17.7 +1.1
BOZ pmax pmax
comp=Z,31nm,1.0s
BOZ **Bozeman (W)** 74.23 44 *e*P P 07 50 17.7 +1.1
comp=Z,31nm,1.0s
SUW **Suwalki** 74.48 327 *e*P P 07 50 18.1 +0.4
SUW **Suwalki** 74.48 327 *e*P P 07 50 18.1 +0.4
NV01 **Mina Array Sit** 74.56 53 *e*P P 07 50 19.8 +1.0
NVAR **Mina Array Bea** 74.56 53 P P 07 50 19.8 +1.0
comp=Z,5.5nm,0.7s,baz=286,slow=5.8,SNR=17
NVAR pP **pP** 07 50 35.4 +0.9
comp=Z,5.0nm,0.6s,baz=295,slow=5.7,SNR=6.3
NV11 **Mina Array Sit** 74.65 53 *e*P P 07 50 20.2 +1.1
comp=Z,49nm,1.6s
OSL **Oslo** 74.73 337 *e*P P 07 50 19.0 0.0
OSL IAmb IAmb 07 50 20.8
comp=Z,113nm,1.6s
SIM **Simferopol'** 75.02 315 *e*P P 07 50 21.5 +0.6
SIM *e*S S 07 59 53.0 -1.4
SIM pmax pmax
comp=Z,25nm,1.5s
SIM MLR MLR
comp=N,170nm,15.7s
HYA **Hoyanger** 75.09 339 *e*P P 07 50 21.9 +0.8
HYA IAmb IAmb 07 50 22.9
comp=Z,19nm,0.9s
ELK **Elko** 75.10 50 *e*P P 07 50 23.6 +1.8
ELK pmax pmax
comp=Z,20nm,1.4s
ELK **Elko** 75.10 50 *e*P P 07 50 23.6 +1.8
comp=Z,20nm,1.4s
RCTC **Rector, Farmer** 75.19 56 P P 07 50 23.7 +1.6
baz=306
YMR **Madison River** 75.20 45 *e*P P 07 50 23.8 +1.5
comp=Z,24nm,0.9s
KONO **Kongsberg** 75.31 337 *e*P P 07 50 23.0 +0.6
KONO IAmb IAmb 07 50 24.0
comp=Z,12nm,0.9s
SFJD **Kangerlussuaq** 75.32 5 *i* P P 07 50 21.8 -0.5
comp=Z,12nm,0.9s
SFJD **Kangerlussuaq** 75.32 5 *e*P P 07 50 22.2 0.0
SFJD pmax pmax
comp=Z,91nm,2.0s
SFJD **Kangerlussuaq** 75.32 5 *e*P P 07 50 22.2 0.0
comp=Z,91nm,2.0s
YNR **Norris Junctio** 75.33 45 *e*P P 07 50 25.4 +2.3
comp=Z,90nm,1.8s
YFT **Old Faithful** 75.41 45 *e*P P 07 50 26.6 +3.1
comp=Z,37nm,1.1s
VES **Vestal, Richgr** 75.57 56 P P 07 50 24.7 +0.4
baz=306
SUE **Sulen** 75.58 340 *e*P P 07 50 24.8 +0.9
SUE IAmb IAmb 07 50 29.4
comp=Z,47nm,1.1s
LKWY **Lake** 75.58 45 *e*P P 07 50 26.9 +2.4
LKWY pmax pmax
comp=Z,60nm,1.4s
LKWY **Lake** 75.58 45 *e*P P 07 50 26.9 +2.4
comp=Z,60nm,1.4s
H17A **Grant Village** 75.59 45 P P 07 50 27.4 +2.8
baz=309
H17A **Grant Village** 75.59 45 *e*P P 07 50 27.4 +2.8
comp=Z,101nm,1.3s
IMW **Indian Meadow** 75.69 45 *e*P P 07 50 27.0 +1.8
comp=Z,27nm,1.0s
FLWY **Flagg Ranch** 75.71 45 *e*P P 07 50 27.1 +1.8
comp=Z,81nm,1.4s
RLMT **Red Lodge** 75.86 44 P P 07 50 27.6 +1.5
baz=310
RLMT **Red Lodge** 75.86 44 *e*P P 07 50 27.6 +1.5
comp=Z,78nm,1.5s
MOOW **Moose Ponds** 75.90 45 *e*P P 07 50 27.2 +0.8
comp=Z,45nm,1.3s
ASK **Askoy** 75.93 339 *e*P P 07 50 26.6 +0.7
ASK IAmb IAmb 07 50 30.4
comp=Z,51nm,1.3s
BER **Bergen** 75.98 339 *e*P P 07 50 27.2 +1.0
BER IAmb IAmb 07 50 29.4
comp=Z,78nm,1.5s
LOHW **Long Hollow** 76.06 45 *e*P P 07 50 28.9 +1.7
comp=Z,44nm,1.6s
SNOW **Snow King Moun** 76.07 46 *e*P P 07 50 28.9 +1.6
comp=Z,26nm,1.0s
REDW **Red Top Meadow** 76.08 46 *e*P P 07 50 28.7 +1.3
comp=Z,37nm,1.1s
ARVC **Arvin** 76.15 56 P P 07 50 29.0 +1.3
baz=306
DAC **Darwin (Calif)** 76.28 55 *e*P P 07 50 29.7 +1.1
DAC pmax pmax
comp=Z,16nm,1.1s
DAC **Darwin (Calif)** 76.28 55 *e*P P 07 50 29.7 +1.1
comp=Z,16nm,1.1s
AHID **Auburn Hatcher** 76.31 46 *e*P P 07 50 29.6 +0.9
comp=Z,24nm,1.0s
BGU **Big Grassy Mou** 76.32 49 *e*P P 07 50 30.2 +1.5
comp=Z,35nm,1.5s
R11A **Troy Canyon, C** 76.32 52 P P 07 50 29.9 +1.1
baz=307
R11A **Troy Canyon, C** 76.32 52 *e*P P 07 50 29.8 +1.1
comp=Z,82nm,1.8s
DGMT **Dagmar** 76.33 39 P P 07 50 28.8 +0.3
baz=312
DGMT **Dagmar** 76.33 39 *e*P P 07 50 28.8 +0.3
comp=Z,117nm,1.4s
MPMC **Manual Prospec** 76.48 55 P P 07 50 30.7 +0.9
baz=307
OSI **Osito Audit: C** 76.53 57 P P 07 50 30.8 +0.9
baz=307
OSI **Osito Audit: C** 76.53 57 *e*P P 07 50 31.3 +1.4
comp=Z,62nm,1.6s
A25A **Svangstu Ranch** 76.55 38 P P 07 50 29.7 +0.1
baz=313
KIS **Kishinev** 76.55 320 *e*P P 07 50 27.0 -2.6
KIS LRM MLR 08 27 16.0
comp=Z,900nm,16.0s
KIS **Kishinev** 76.55 320 *e*P P 07 50 27.0 -2.6
KIS *e* 07 50 39.0
KIS *e* 08 00 14.0
KIS MLR MLR
comp=Z,1μm,15.0s
KIS MLR MLR
comp=N,800nm,16.0s
KIS MLR MLR
comp=Z,900nm,16.0s
TPNV **Topopah Spring** 76.75 54 P P 07 50 32.2 +1.0
baz=307
TPNV **Topopah Spring** 76.75 54 *e*P P 07 50 32.2 +1.0
TPNV pmax pmax
comp=Z,30nm,1.0s
TPNV **Topopah Spring** 76.75 54 *e*P P 07 50 32.2 +1.0
comp=Z,30nm,1.0s
HOMB **Homborsund** 76.76 337 *e*P P 07 50 30.4 -0.1
HOMB IAmb IAmb 07 50 32.2
comp=Z,95nm,1.6s
HWUT **Hardware Ranch** 76.76 47 *e*P P 07 50 32.5 +1.3
comp=Z,78nm,1.4s
EDW2 **Edwards Air Fo** 76.85 56 P P 07 50 32.8 +1.1
baz=307
DUG **Dugway, Tooele** 76.90 49 P P 07 50 33.5 +1.5
baz=308
DUG **Dugway, Tooele** 76.90 49 *e*P P 07 50 33.3 +1.3
DUG pmax pmax
comp=Z,32nm,1.0s
DUG **Dugway, Tooele** 76.90 49 *e*P P 07 50 33.2 +1.3
comp=Z,32nm,1.0s
B25A **Knox Farm, Ray** 76.97 38 P P 07 50 33.0 +0.9
baz=313
DECC **Green Verdugo** 77.00 57 P P 07 50 34.2 +1.7
baz=307
LVV **L'vov** 77.00 324 ⇓ *i*P P 07 50 32.1 -0.1
LVV MLR MLR
comp=N,400nm,15.0s
LVV MLR MLR
comp=E,400nm,15.0s
LVV MLR MLR
comp=Z,500nm,15.0s
BEL **Belsk** 77.05 327 *e*P P 07 50 32.9 +0.6
BEL **Belsk** 77.05 327 *e*P P 07 50 32.9 +0.6
STAV **Stavanger** 77.07 338 *e*P P 07 50 33.1 +0.8
STAV IAmb IAmb 07 50 36.8
comp=Z,22nm,0.9s
A26A **Wade Farm, Ken** 77.09 37 P P 07 50 33.9 +1.1
baz=313
SNART **Snartemo** 77.10 337 *e*P P 07 50 33.4 +0.8
SNART IAmb IAmb 07 50 37.0
comp=Z,49nm,1.4s
BORG **Borgarnes** 77.11 353 P P 07 50 34.0 +1.5
comp=Z,16nm,0.8s,baz=289,slow=4.4,SNR=6.8
BORG **Borgarnes** 77.11 353 P P 07 50 34.0 +1.5
TCUT **Toone Canyon** 77.16 48 *e*P P 07 50 35.1 +1.6
comp=Z,235nm,1.8s
BW06 **Boulder Array** 77.19 46 P P 07 50 34.3 +0.6
baz=310
BW06 **Boulder Array** 77.19 46 *e*P P 07 50 34.1 +0.4
PD31 **Pinedale Array** 77.19 46 *e*P P 07 50 34.0 +0.4
PDAR **Pinedale Array** 77.19 46 P P 07 50 34.0 +0.4
comp=Z,3.9nm,0.6s,baz=261,slow=2.3,SNR=53
PDAR pP **pP** 07 50 49.7 +0.1
comp=Z,6.8nm,0.6s,baz=276,slow=1.7,SNR=13
MWC **Mount Wilson** 77.20 57 *e*P P 07 50 35.0 +1.2
MWC pmax pmax
comp=Z,42nm,1.4s
MWC **Mount Wilson** 77.20 57 *e*P P 07 50 35.0 +1.2
comp=Z,42nm,1.4s
CTU **Camp Tracy** 77.22 48 *e*P P 07 50 35.3 +1.4
comp=Z,84nm,1.9s
PSUT **Pine Spring** 77.29 51 *e*P P 07 50 35.7 +1.4
comp=Z,21nm,1.0s
B26A **Jensen Ranch,** 77.36 38 P P 07 50 35.1 +0.9
baz=313
GSC **Goldstone, Bar** 77.38 55 P P 07 50 35.2 +0.5
baz=307
GSC **Goldstone, Bar** 77.38 55 *e*P P 07 50 35.5 +0.8
GSC *e**PP PcP 07 50 47.8 +2.8
GSC **Goldstone, Bar** 77.38 55 *e*P P 07 50 35.5 +0.8
GSC *ep*P PcP 07 50 47.8 +2.8
A27A **Ledoux Ranch,** 77.44 37 P P 07 50 35.3 +0.7
baz=314
BFSC **Mount Baldy Ra** 77.46 56 P P 07 50 36.1 +0.9
baz=307
JLU **Jordanelle** 77.46 48 *e*P P 07 50 36.7 +1.5
comp=Z,67nm,1.6s
NLU **North Lily Min** 77.49 49 *e*P P 07 50 36.9 +1.5
comp=Z,25nm,1.4s
D25A **Fairfield** 77.65 39 P P 07 50 36.7 +0.8
baz=313
MPU **Maple Canyon** 77.72 49 *e*P P 07 50 38.2 +1.6
comp=Z,25nm,1.0s
KWP **Kalwaria Pacla** 77.75 324 *e*P P 07 50 37.2 +0.8
KWP **Kalwaria Pacla** 77.75 324 *e*P P 07 50 37.2 +0.8
C26A **Wahner Farm, P** 77.80 38 P P 07 50 37.8 +1.0
baz=313
A28A **Rude Farm, Bot** 77.93 36 P P 07 50 38.1 +0.6
baz=314
BUR08 **Bucovina Ar. S** 77.94 322 *e*P P 07 50 38.3 +0.7
BURAR **Bucovina Array** 77.95 322 ⇑ *i*P P 07 50 38.0 +0.4
TESR **Tescani** 77.98 320 ⇓ *i*P P 07 50 38.2 +0.5
E25A **Miller Ranch,** 78.05 40 P P 07 50 39.1 +0.9
baz=313
CFR **Carcaliu** 78.11 318 ⇓ *i*P P 07 50 38.4 0.0
MURC **Murrieta** 78.15 57 P P 07 50 39.6 +0.7
baz=308
C27A **Sayler Ranch,** 78.17 38 P P 07 50 39.6 +0.8
baz=314
D26A **Manning** 78.18 39 P P 07 50 39.4 +0.6
baz=313
B28A **Dugan Ranch, T** 78.21 37 P P 07 50 39.8 +0.9
baz=314
VRI **Vrincioaia** 78.38 320 ⇑ *i*P P 07 50 41.0 +1.1
A29A **Manning Farm,** 78.41 36 P P 07 50 40.3 +0.3
baz=315
PLOR **Plostina** 78.43 320 ⇑ *i*P P 07 50 41.6 +1.4
KOLS **Kolonicke sedl** 78.44 324 *e*P P 07 50 40.3 +0.1
KOLS pmax pmax
comp=Z,18nm,1.4s
KOLS **Kolonicke sedl** 78.44 324 *e*P P 07 50 40.3 +0.1
E26A **Carlson Angus** 78.55 39 P P 07 50 41.5 +0.7
baz=313
BR131 **Keskin Array S** 78.57 312 *e*P P 07 50 41.8 +0.5
STHS **Stebnicka Huta** 78.57 325 *e*P P 07 50 41.8 +0.9
STHS pmax pmax
comp=Z,16nm,1.1s
STHS **Stebnicka Huta** 78.57 325 *e*P P 07 50 41.8 +0.9
BRTR **Keskin Array B** 78.57 312 P P 07 50 41.4 +0.1
comp=Z,16nm,1.2s,baz=100,slow=3.8,SNR=22
D27A **Center** 78.57 38 P P 07 50 41.8 +0.8
baz=314
P17A **Butcher Ranch,** 78.59 49 *e*P P 07 50 43.1 +1.6
comp=Z,37nm,1.0s
LCMT **Little Creek M** 78.61 52 *e*P P 07 50 42.9 +1.4
comp=Z,34nm,1.2s
PFO **Pinyon Flats O** 78.63 56 P P 07 50 42.1 +0.5
baz=308
PFO **Pinyon Flats O** 78.63 56 *e*P P 07 50 42.6 +0.9
PFO *e**PP pP 07 50 59.2 +1.6
PFO **Pinyon Flats O** 78.63 56 *e*P P 07 50 42.6 +0.9
PFO *ep*P pP 07 50 59.2 +1.6
OJC **Ojcow** 78.64 326 *e*P P 07 50 41.8 +0.5
OJC **Ojcow** 78.64 326 *e*P P 07 50 41.9 +0.6
OJC **Ojcow** 78.64 326 *e*P P 07 50 41.7 +0.5
comp=Z,166nm,1.9s
UZH **Uzhgorod** 78.65 324 *e*P P 07 50 41.0 -0.3
UZH *e* 07 50 50.2
B29A **Wagenman Farm,** 78.67 36 P P 07 50 41.7 +0.2
baz=315
BELC **Belle Mtn. Jos** 78.70 56 P P 07 50 43.2 +1.1
baz=308
C28A **Hausauer Farms** 78.71 37 P P 07 50 42.6 +0.9
baz=315
ARCR **ARCALIA** 78.74 322 ⇓ *i*P P 07 50 43.3 +1.4
BMR **Baia Mare** 78.75 323 ⇓ *i*P P 07 50 43.0 +1.1
P18A **Preston Nutter** 78.79 48 *e*P P 07 50 44.1 +1.4
comp=Z,129nm,1.9s
A30A **Hoffart Farm,** 78.83 36 P P 07 50 42.7 +0.4
baz=316
F26A **Lodgepole** 78.86 40 P P 07 50 43.2 +0.5
baz=313
KNB **Kanab** 78.87 52 *e*P P 07 50 45.0 +2.0
KNB pmax pmax
comp=Z,143nm,1.8s
KNB **Kanab** 78.87 52 *e*P P 07 50 45.0 +2.0
comp=Z,143nm,1.8s
TRPA **Tarpa** 78.88 323 ⇑ *e*S P 07 50 43.6 +1.0
G25A **Newell** 78.93 41 P P 07 50 43.5 +0.5
baz=313
SRU **San Rafael Swe** 78.95 49 *e*P P 07 50 44.5 +1.0
SRU *e**PP PcP 07 50 55.6 +3.7
SRU **San Rafael Swe** 78.95 49 *e*P P 07 50 44.5 +1.0
SRU *ep*P PcP 07 50 55.6 +3.7
K22A **Casper** 78.97 44 P P 07 50 44.0 +0.6
baz=312
K22A **Casper** 78.97 44 *e*P P 07 50 44.0 +0.6
comp=Z,124nm,1.7s
ULM **Lac du Bonnet** 78.97 33 P P 07 50 42.5 -0.6
comp=Z,5.8nm,0.6s,baz=297,slow=5.6,SNR=12
ULM LR LR 08 25 39.5
comp=Z,95nm,22.0s,baz=323,slow=36
ULM **Lac du Bonnet** 78.97 33 *e*P P 07 50 42.8 -0.3
ULM pmax pmax
comp=Z,73nm,1.4s
ULM **Lac du Bonnet** 78.97 33 *e*P P 07 50 42.8 -0.3
comp=Z,73nm,1.4s
ANTO **Ankara** 78.98 312 *e*P P 07 50 44.4 +1.0
ANTO pmax pmax
comp=Z,27nm,1.0s
ANTO **Ankara** 78.98 312 *e*P P 07 50 44.4 +1.0
comp=Z,27nm,1.0s
DOPR **Dopca** 79.00 320 ⇓ *i*P P 07 50 44.3 +1.0
NIE **Niedzica** 79.00 325 *e*P P 07 50 44.0 +0.7
NIE **Niedzica** 79.00 325 *e*P P 07 50 44.0 +0.7
MSAB **Monastry St. A** 79.00 318 ⇑ *i*P P 07 50 43.6 +0.3
BR231 **Keskin MP Arra** 79.01 312 *e*P P 07 50 42.1 -1.5
E27A **Carson** 79.02 39 P P 07 50 44.1 +0.6
baz=314
MLR **Muntele Rosu** 79.04 320 ⇑ *i*P P 07 50 44.2 +0.5
MLR **Muntele Rosu** 79.04 320 *e*P P 07 50 44.0 +0.3
MLR pmax pmax
comp=Z,50nm,1.5s
MLR **Muntele Rosu** 79.04 320 *e*P P 07 50 44.0 +0.3
comp=Z,50nm,1.5s
BAR **Barrett** 79.05 57 *e*P P 07 50 45.0 +1.1
BAR *ep*P pP 07 51 00.8 +1.0
MONP2 **Monument Peak** 79.09 57 P P 07 50 45.5 +1.2
baz=308
IRM **Iron Mountain** 79.16 55 P P 07 50 45.3 +0.8
baz=308
B30A **Myrvik Farm, E** 79.16 36 P P 07 50 44.6 +0.4
baz=316
F27A **Lemmon** 79.18 40 P P 07 50 44.9 +0.5
baz=314
H25A **Fruitdale** 79.22 41 P P 07 50 44.9 +0.3
baz=313
BC3 **Big Chuckawall** 79.27 56 P P 07 50 45.5 +0.4
baz=308
RSSD **Black Hills** 79.33 42 P P 07 50 45.9 +0.5
baz=313
RSSD **Black Hills** 79.33 42 *e*P P 07 50 46.1 +0.6
RSSD pmax pmax
comp=Z,63nm,1.5s
RSSD **Black Hills** 79.33 42 *e*P P 07 50 46.1 +0.6
comp=Z,63nm,1.5s
E28A **Huff** 79.36 38 P P 07 50 45.7 +0.4
baz=314
CJR **Cluj-Napoca** 79.37 322 ⇑ *i*P P 07 50 46.3 +0.9
W13A **Hualapai Mount** 79.39 54 *e*P P 07 50 46.7 +0.8
comp=Z,22nm,1.4s
B31A **Greenbush Farm** 79.50 36 P P 07 50 46.3 +0.3
baz=316
I25A **Rochford** 79.56 42 P P 07 50 47.5 +0.8
baz=313
G27A **Dupree** 79.57 40 P P 07 50 46.8 +0.3
baz=314
LANS **Liptovska Anna** 79.57 326 *e*P P 07 50 47.6 +1.2
LANS **Liptovska Anna** 79.57 326 *e*P P 07 50 47.6 +1.2
U15A **North Rim** 79.57 52 *e*P P 07 50 48.8 +1.8
U15A *ep*P pP 07 51 04.8 +1.9
KECS **Kecovo** 79.59 325 *e*P P 07 50 46.9 +0.4
KECS pmax pmax
comp=Z,6.0nm,1.5s
KECS **Kecovo** 79.59 325 *e*P P 07 50 46.9 +0.4
C30A **Mose, Pekin** 79.63 37 P P 07 50 47.5 +0.8
baz=316
O20A **White River Ci** 79.64 47 P P 07 50 48.3 +1.1
baz=311
O20A **White River Ci** 79.64 47 *e*P P 07 50 48.2 +1.0
comp=Z,38nm,1.2s
OKC **Ostrava-Krasne** 79.65 327 *e*P P 07 50 46.9 +0.1
OKC AMS AMS 08 29 20.0
comp=Z,600nm,19.0s
OKC **Ostrava-Krasne** 79.65 327 *e*P P 07 50 46.9 +0.1
OKC MLR MLR
comp=Z,600nm,19.0s
H26A **Fairpoint** 79.66 41 P P 07 50 47.4 +0.4
baz=314
A32A **Rocking H Ranc** 79.67 35 P P 07 50 46.7 -0.2
baz=317
KSP **Ksiaz** 79.69 328 *e*P P 07 50 47.6 +0.6
KSP **Ksiaz** 79.69 328 *e*P P 07 50 47.7 +0.7
PDMCI **Parker Dam,Lak** 79.72 55 P P 07 50 48.5 +1.1
baz=309
DRGR 79.75 322 ⇑ *i*P P 07 50 47.7 +0.2
ARR **Arges** 79.79 320 ⇑ *i*P P 07 50 49.0 +1.3
F28A **McLaughlin** 79.81 39 P P 07 50 48.1 +0.4
baz=315
Y12C **Blythe** 79.82 55 P P 07 50 49.0 +1.0
baz=309
Y12C **Blythe** 79.82 55 *e*P P 07 50 49.4 +1.4
Y12C *ep*P pP 07 51 06.0 +2.0
E29A **Napoleon** 79.88 38 P P 07 50 48.3 +0.2
baz=315
C31A **Landman Farms,** 79.91 36 P P 07 50 48.7 +0.4
baz=316
D30A **Buchanan** 79.92 37 P P 07 50 48.6 +0.3
baz=316
MORC **Moravsky Berou** 79.96 327 *e*P P 07 50 49.1 +0.6
MORC pmax pmax
comp=Z,229nm,1.5s
MORC **Moravsky Berou** 79.96 327 *e*P P 07 50 49.1 +0.6
comp=Z,229nm,1.5s
H27A **Howes** 80.01 41 P P 07 50 49.5 +0.6
baz=314
B32A **Ashes, Strandq** 80.03 35 P P 07 50 48.5 -0.4
baz=317
DPC **Dobruska-Polom** 80.05 328 *i* P P 07 50 49.8 +0.8
DPC *ep*P pP 07 51 05.1 +0.1
DPC *ep*P PP 07 53 54.3 +3.5
DPC AMS AMS 08 29 40.0
comp=Z,500nm,14.6s
DPC **Dobruska-Polom** 80.05 328 *i* P P 07 50 49.8 +0.8
DPC *e* 07 51 05.1
DPC *e* 07 53 54.3
DPC MLR MLR
comp=Z,500nm,14.6s
GLA **Glamis** 80.05 56 P P 07 50 50.0 +0.7
baz=309
GLA **Glamis** 80.05 56 *e*P P 07 50 51.6 +2.3
GLA pmax pmax
comp=Z,97nm,1.9s
GLA **Glamis** 80.05 56 *e*P P 07 50 51.6 +2.3
comp=Z,97nm,1.9s
UPC **Upice** 80.06 328 *e*P P 07 50 49.5 +0.5
UPC *e*PCP PcP 07 50 57.5 +1.2
UPC AMS AMS 08 29 40.0
comp=Z,600nm,15.1s
UPC **Upice** 80.06 328 *e*P P 07 50 49.5 +0.5
UPC *e* 07 50 57.5
UPC MLR MLR
comp=Z,600nm,15.1s
A33A **Warroad** 80.15 34 P P 07 50 49.3 -0.2
baz=318
LOT **Lotru** 80.17 321 ⇓ *i*P P 07 50 50.3 +0.5
PSZ **Piszkesteto** 80.27 324 ⇓ *e*S P 07 50 50.9 +0.7
PSZ **Piszkesteto** 80.27 324 *e*P P 07 50 51.0 +0.7
PSZ pmax pmax
comp=Z,116nm,1.7s
PSZ **Piszkesteto** 80.27 324 *e*P P 07 50 51.0 +0.7
comp=Z,116nm,1.7s
E30A **Jud** 80.28 38 P P 07 50 50.5 +0.2
baz=316
G28A **Parade** 80.29 40 P P 07 50 50.8 +0.4
baz=315
F29A **Eureka** 80.30 39 P P 07 50 50.8 +0.4
baz=315
PV10 **Paradox Valley** 80.31 49 *e*P P 07 50 52.7 +1.7
VYHS **Vyhne** 80.33 325 *e*P P 07 50 51.0 +0.5
VYHS pmax pmax
comp=Z,19nm,1.4s
VYHS **Vyhne** 80.33 325 *e*P P 07 50 51.0 +0.5
J26A **Sides Ranch, S** 80.39 42 P P 07 50 51.4 +0.4
baz=314
AGMN **Agassiz Nation** 80.41 35 P P 07 50 50.5 -0.4
baz=317
AGMN **Agassiz Nation** 80.41 35 *e*P P 07 50 50.5 -0.4
AGMN *ep*P pP 07 51 05.3 -1.6
I27A **Quinn** 80.41 41 P P 07 50 51.7 +0.6
baz=314
N23A **Red Feather La** 80.46 45 P P 07 50 52.7 +1.0
baz=312
N23A **Red Feather La** 80.46 45 *e*P P 07 50 52.8 +1.1
comp=Z,79nm,1.4s
PV05 **Paradox Valley** 80.47 49 *e*P P 07 50 53.0 +1.3
H28A **Mission Ridge** 80.52 40 P P 07 50 52.1 +0.5
baz=315
B33A **Robert and Kas** 80.55 35 P P 07 50 51.4 -0.3
baz=318
RAYN **Ar Rayn** 80.56 292 *e*P P 07 50 52.0 -0.2
comp=Z,44nm,1.2s
SIRR **Siria** 80.63 322 ⇓ *i*P P 07 50 52.8 +0.6
BRG **Berggiesshubel** 80.63 329 *e*P P 07 50 52.1 0.0
comp=Z,50nm,1.8s
BRG **Berggiesshubel** 80.63 329 *e*P P 07 50 52.1 0.0
BRG pmax pmax
comp=Z,50nm,1.8s
PVCC **Panska Ves** 80.64 329 *e*P P 07 50 52.8 +0.7
PVCC AMS AMS 08 29 50.0
comp=Z,500nm,14.0s
PVCC **Panska Ves** 80.64 329 *e*P P 07 50 52.8 +0.7
PVCC MLR MLR
comp=Z,500nm,14.0s
CLL **Collm** 80.67 330 ⇑ *i*P P 07 50 52.0 -0.2
comp=Z,60nm,1.5s
CLL *ep*P pP 07 51 09.0 +0.8
CLL *e* 07 51 13.0

CLL eS S 08 00 56.0 +0.9
comp=N,100nm,26.4s
CLL eS S 08 00 56.0 +0.9
comp=E,200nm,31.2s
CLL eSS SS 08 06 06.0 -1.6
CLL eSSS SSS 08 09 48.0
CLL Lm MLR 08 29 00.0
comp=Z,400nm,18.2s
CLL Collm 80.67 330⇑ *i*P P 07 50 52.0 -0.2
CLL *e* 07 51 09.0
CLL eS S 08 00 56.0 +0.9
CLL pmax pmax
comp=Z,60nm,1.5s
CLL MLR MLR
comp=Z,400nm,18.2s
CLL Collm 80.67 330 *e*P P 07 50 52.0 -0.2
comp=Z,108nm,1.7s
Y14A Wickenburg 80.68 54 *e*P P 07 50 53.7 +0.9
comp=Z,406nm,1.9s
F30A Leola 80.70 38 P P 07 50 52.7 +0.1
baz=316
GZR Gura Zlata 80.71 321⇑ *i*P P 07 50 52.7 +0.1
G29A Hoven 80.71 39 P P 07 50 52.4 -0.2
baz=315
VRAC Vranov 80.72 327 LR LR 08 30 05.8
comp=Z,525nm,18.2s,baz=38,slow=38
VRAC Vranov 80.72 327⇑ *i*P P 07 50 53.2 +0.6
WUAZ Wupatki 80.72 52 P P 07 50 54.3 +1.2
baz=310
E31A Nome 80.73 37 P P 07 50 52.7 +0.1
baz=316
B34A Aery, Baudette 80.81 34 P P 07 50 52.4 -0.6
baz=318
C33A Trail 80.84 35 P P 07 50 53.1 -0.2
baz=318
I28A Midland 80.92 41 P P 07 50 54.0 +0.3
baz=315
113A Mohawk Valley, 80.92 56 *e*P P 07 50 55.1 +1.2
113A *epP* pP 07 51 11.7 +1.7
H29A Onida 80.96 40 P P 07 50 53.8 -0.2
baz=315
BUD Budapest 80.99 325⇑ *e*P P 07 50 54.8 +0.8
J27A Elkhorn Farm, 81.00 41 P P 07 50 54.7 +0.4
baz=314
GOPC GO Pecny, Ondr 81.03 328 *e*P P 07 50 54.6 +0.4
GOPC *e*PCP PcP 07 51 02.8 +2.3
GOPC *epP* pP 07 51 08.7 -1.5
GOPC AMS AMS 08 29 40.0
comp=Z,600nm,14.5s
GOPC GO Pecny, Ondr 81.03 328 *e*P P 07 50 54.6 +0.4
GOPC *e* 07 51 02.8
GOPC *e* 07 51 08.7
GOPC MLR MLR
comp=Z,600nm,14.5s
PRU Pruhonice 81.07 329 *e*P P 07 50 55.0 +0.6
PRU *e*PCP PcP 07 51 03.1 +2.4
PRU *epP* pP 07 51 09.1 -1.3
PRU AMS AMS 08 30 00.0
comp=Z,500nm,16.4s
PRU Pruhonice 81.07 329 *e*P P 07 50 55.0 +0.6
PRU *e* 07 51 03.1
PRU *e* 07 51 09.1
PRU MLR MLR
comp=Z,500nm,16.4s
BZS Buzias 81.12 322⇑ *i*P P 07 50 54.7 0.0
G30A Faulkton 81.14 39 P P 07 50 55.0 +0.1
baz=316
TREC Trest 81.20 328 *e*P P 07 50 55.7 +0.5
TREC AMS AMS 08 30 10.0
comp=Z,700nm,18.5s
TREC Trest 81.20 328 *e*P P 07 50 55.7 +0.5
TREC MLR MLR
comp=Z,700nm,18.5s
PKS7 Kunszentmiklos 81.25 324⇓ *e*P P 07 50 56.4 +1.0
J28A Allard Ranch, 81.28 41 P P 07 50 56.3 +0.6
baz=315
B35A Bob, Littlefor 81.32 34 P P 07 50 55.6 -0.1
baz=319
C34A RKJ Ranch, Bem 81.32 35 P P 07 50 55.3 -0.5
baz=318
I29A Vivian Onida 81.34 40 P P 07 50 56.2 +0.2
baz=315
PKSG 81.35 325⇓ *e*P P 07 50 56.8 +0.9
ISCO Idaho Springs 81.38 46 P P 07 50 57.5 +0.8
baz=312
ISCO Idaho Springs 81.38 46 *e*P P 07 50 57.7 +1.1
ISCO pmax pmax
comp=Z,86nm,1.8s
ISCO Idaho Springs 81.38 46 *e*P P 07 50 57.7 +1.1
comp=Z,86nm,1.8s
X16A Lo Mia Camp, P 81.38 53 *e*P P 07 50 58.4 +1.7
X16A *epP* pP 07 51 10.3 -2.3
PKS6 Bocsa 81.39 324⇓ *e*P P 07 50 56.9 +0.8
MVCO Mesa Verde 81.40 49 P P 07 50 57.5 +0.8
baz=311
MVCO Mesa Verde 81.40 49 *e*P P 07 50 58.0 +1.3
comp=Z,113nm,1.8s
CSKK Cs˙žkako 81.43 325⇑ *e*P P 07 50 56.8 +0.4
G31A Conde 81.54 38 P P 07 50 57.1 +0.1
baz=316
D34A Park Rapids 81.61 35 P P 07 50 56.9 -0.4
baz=318
PKST T''s 81.61 325⇑ *e*P P 07 50 57.5 +0.1
PKS2 Kecel 81.63 324⇓ *e*P P 07 50 57.8 +0.4
ISP Isparta 81.66 312 *e*P P 07 50 57.8 -0.1
ISP pmax pmax
comp=Z,16nm,1.3s
ISP Isparta 81.66 312 *e*P P 07 50 57.8 -0.1
comp=Z,16nm,1.3s
E33A Westby DABS, E 81.66 36 P P 07 50 57.8 +0.2
baz=318
MDVR Moldovita 81.67 321⇑ *i*P P 07 50 57.7 -0.1
C35A Jirik Farms, M 81.70 34 P P 07 50 57.4 -0.4
baz=319
K28A Ten Mile Ranch 81.71 42 P P 07 50 58.4 +0.4
baz=315
SUSD Miller 81.73 39 P P 07 50 58.0 0.0
baz=316
MMAI Mount Meron Ar 81.74 305 P P 07 50 58.1 -0.2
comp=Z,15nm,1.0s,baz=55,slow=7.2,SNR=9.3
J29A Okreek 81.77 41 P P 07 50 58.8 +0.5
baz=315
G32A Webster 81.86 38 P P 07 50 58.6 -0.1
baz=317
I30A Oacoma 81.87 40 P P 07 50 58.8 +0.1
baz=316
SOP Sopron 81.96 326⇑ *e*P P 07 50 59.8 +0.7
PKS9 Tamasi 82.00 324⇓ *e*P P 07 50 59.7 +0.3
W18A Petrified Fore 82.00 52 P P 07 51 01.0 +1.1
baz=311
F33A 5 Mile Ranch, 82.01 37 P P 07 50 59.8 +0.4
baz=317
S22A 4UR Ranch, Cre 82.04 48 P P 07 51 01.5 +1.3
baz=312
S22A 4UR Ranch, Cre 82.04 48 *e*P P 07 51 01.6 +1.4
comp=Z,104nm,1.8s
214A Organ Pipe Nat 82.06 56 P P 07 51 01.5 +1.5
baz=310
CONA Conrad Observa 82.08 327 *i*P P 07 51 00.7 +0.8
comp=Z,143nm,1.7s,SNR=14
D35A Remer 82.13 35 P P 07 50 59.5 -0.6
baz=319
KHC Kasperske Hory 82.13 328 *e*P P 07 51 00.5 +0.4
KHC *epP* pP 07 51 15.8 -0.3
KHC AMS AMS 08 30 40.0
comp=Z,600nm,17.2s
KHC Kasperske Hory 82.13 328 *e*P P 07 51 00.5 +0.4
KHC *e* 07 51 15.8
KHC MLR MLR
comp=Z,600nm,17.2s
KHC Kasperske Hory 82.13 328 *e*P P 07 50 59.9 -0.2
comp=Z,35nm,1.7s
C36A Pine Crest Far 82.16 34 P P 07 51 00.1 -0.1
baz=320
Q24A Divide 82.20 46 P P 07 51 01.6 +0.6
baz=313
Q24A Divide 82.20 46 *e*P P 07 51 01.9 +0.8
comp=Z,10.0nm,0.9s
K29A Lazy Trails An 82.23 41 P P 07 51 01.1 +0.4
baz=315
X18A Snowflake 82.25 52 *e*P P 07 51 02.7 +1.5
X18A *epP* pP 07 51 18.7 +1.5
J30A Dallas 82.25 40 P P 07 51 00.9 +0.1
baz=316
GEC2 GERESS Array S 82.30 328 *e*P P 07 51 01.1 0.0
GEC2 pmax pmax
comp=Z,37nm,1.7s
GEC2 GERESS Array S 82.30 328 *e*P P 07 51 01.1 0.0
comp=Z,37nm,1.7s
GERES GERESS Array B 82.30 328 P P 07 51 01.0 -0.1
comp=Z,4.0nm,0.6s,baz=37,slow=5.9,SNR=47
GERES GERESS Array B 82.30 328 P P 07 51 01.0 -0.1
E35A Pequot Lakes 82.36 35 P P 07 51 01.5 +0.2
baz=319
D36A Goodland 82.46 34 P P 07 51 01.7 -0.1
baz=319
C37A Embarrass 82.47 33 P P 07 51 01.5 -0.4
baz=320
VTS Vitosha 82.47 319⇑ *i*P P 07 50 02.7 +0.6
VTS Vitosha 82.47 319 *e*P P 07 50 02.3 +0.1
VTS pmax pmax
comp=Z,13nm,0.9s
VTS Vitosha 82.47 319 *e*P P 07 51 02.2 +0.1
comp=Z,13nm,0.9s
OGNE Ogallala 82.59 43 P P 07 51 03.5 +0.8
baz=314
OGNE Ogallala 82.59 43 *e*P P 07 51 04.3 +1.6
OGNE *epP* pP 07 51 20.1 +1.4
EYMN Ely 82.60 33 P P 07 51 02.5 0.0
baz=320
EYMN Ely 82.60 33 *e*P P 07 51 02.7 +0.2
comp=Z,75nm,1.4s
H33A Prehn Over Nor 82.65 38 P P 07 51 03.2 +0.3
baz=317
GRFO Grafenberg 82.65 330 *e*P P 07 51 02.7 0.0
GRFO pmax pmax
comp=Z,124nm,1.7s
GRFO Grafenberg 82.65 330 *e*P P 07 51 02.7 0.0
comp=Z,124nm,1.7s
K30A Basset 82.66 41 P P 07 51 03.5 +0.6
baz=316
J31A Geddes 82.66 40 P P 07 51 02.8 -0.1
baz=316
ESK Esdalemuir 82.67 341 *i*P P 07 51 05.2 +2.5
ARSA Arzberg 82.75 326 *i*P P 07 51 03.6 +0.3
comp=Z,18nm,1.3s,SNR=12
G34A Benson 82.77 37 P P 07 51 02.3 -1.1
baz=318
BEHE Becsehely 82.78 325⇑ *e*P P 07 51 04.0 +0.6
D37A Cotton 82.80 34 P P 07 51 03.3 -0.3
baz=320
SDCO Great Sand Dun 82.82 47 P P 07 51 05.5 +1.2
baz=313
MOA Molln 82.83 327 *i*P P 07 51 04.1 +0.4
comp=Z,25nm,1.7s,SNR=8.9
C38A Sawbill Land. 82.88 33 P P 07 51 03.6 -0.3
baz=321
E36A McGregor 82.92 35 P P 07 51 04.2 0.0
baz=319
N28A Pribbeno Ranch 83.03 43 P P 07 51 05.0 0.0
baz=315
J32A Parkston 83.05 39 P P 07 51 04.8 -0.2
baz=317
H34A Spellman Lake, 83.12 37 P P 07 51 06.1 +0.8
baz=318
K31A O'Neill 83.13 40 P P 07 51 05.5 0.0
baz=316
TUC Tucson 83.16 54 P P 07 51 06.7 +0.9
baz=311
TUC Tucson 83.16 54 *e*P P 07 51 07.1 +1.3
TUC *e**PP pP 07 51 18.9 -2.9
TUC Tucson 83.16 54 *e*P P 07 51 07.1 +1.3
TUC *epP* pP 07 51 18.9 -2.9
C39A Grand Marais 83.29 32 P P 07 51 05.5 -0.5
baz=321
O28A Krutsinger Ran 83.30 44 P P 07 51 06.3 -0.1
baz=315
G35A Watkins 83.33 36 P P 07 51 06.6 +0.3
baz=319
PERS Pernice 83.39 326 *i*P P 07 51 06.4 -0.3
comp=Z,114nm,1.7s
SOKA Soboth 83.40 326 *i*P P 07 51 06.8 0.0
comp=Z,6µm,0.0s,SNR=32
ECSD EROS Data Cent 83.40 38 P P 07 51 07.0 +0.3
baz=317
ECSD EROS Data Cent 83.40 38 *e*P P 07 51 06.7 -0.1
comp=Z,60nm,1.4s
L31A Butterfield Fa 83.41 41 P P 07 51 07.0 +0.2
baz=316
KSCO Kaye Shedlock' 83.60 45 P P 07 51 08.3 +0.3
baz=314
KSCO Kaye Shedlock' 83.60 45 *e*P P 07 51 08.9 +0.8
KSCO *epP* pP 07 51 24.7 +0.6
GOLS Golise 83.64 325 *i*P P 07 51 07.6 -0.4
VAY Valandovo 83.71 318 *i*P P 07 51 08.1 -0.2
KBA Koelnbreinsper 83.83 327 *i*P P 07 51 08.7 -0.3
comp=Z,16nm,0.8s,SNR=12
BEBN Eben Emael 83.83 334 P P 07 51 08.4 -0.3
LEGS Legarje 83.83 326 *e*P P 07 51 08.4 -0.5
SKO Skopje 83.83 320 *i*P P 07 51 09.6 +0.7
O29A 4D Ranch, Culb 83.83 43 P P 07 51 09.1 0.0
baz=315
MEM Membach 83.87 333 P P 07 51 08.5 -0.5
comp=Z,12nm,1.7s
T25A Trinidad 83.87 47 P P 07 51 10.3 +0.8
baz=313
T25A Trinidad 83.87 47 *e*P P 07 51 10.8 +1.2
comp=Z,136nm,1.9s
M31A Lambtecht Ranc 83.94 41 P P 07 51 09.8 +0.2
baz=316
MYKA Terra Mystica 84.05 327 *i*P P 07 51 09.6 -0.5
comp=Z,12nm,0.7s,SNR=8.1
H36A Jessenland, He 84.07 36 P P 07 51 10.7 +0.6
baz=319
SPMN Marina on St. 84.10 35 P P 07 51 10.1 -0.1
baz=320
SPMN Marine on St. 84.10 35 *e*P P 07 51 10.6 +0.3
SPMN *epP* pP 07 51 27.1 +0.7
LJU Ljubljana 84.11 326 *i*P P 07 51 09.8 -0.5
ANMO Albuquerque 84.14 50 P P 07 51 12.7 +1.8
baz=312
ANMO Albuquerque 84.14 50 *e*P P 07 51 11.9 +1.0
ANMO pmax pmax
comp=Z,41nm,1.4s
ANMO Albuquerque 84.14 50 *e*P P 07 51 11.9 +1.0
comp=Z,41nm,1.4s
STU Stuttgart 84.18 331 *e*P P 07 51 11.2 +0.6
STU pmax pmax
comp=Z,118nm,1.8s
STU Stuttgart 84.18 331 *e*P P 07 51 11.2 +0.6
comp=Z,118nm,1.8s
O30A MW Ranch, Wils 84.20 43 P P 07 51 10.8 -0.1
baz=316
BCLA Clavier 84.27 334 P P 07 51 10.6 -0.4
comp=Z,13nm,1.5s
PMOR Pomariorio Ree 84.29 114 *e*T T 09 23 49.8
comp=Z,65nm,0.2s
BGNE Belgrade 84.32 41 P P 07 51 11.2 -0.3
baz=317
BGNE Belgrade 84.32 41 *e*P P 07 51 11.8 +0.3
BGNE *epP* pP 07 51 28.5 +0.9
N31A Bailey Ranch, 84.32 42 P P 07 51 11.4 -0.1
baz=316
CWF Charnwood Fore 84.42 338 *e*P P 07 51 12.0 +0.3
comp=Z,50nm,1.7s
K34A Le Mars 84.43 39 P P 07 51 11.9 -0.1
baz=318
JAVS Javornik 84.43 326 *i*P P 07 51 11.0 -1.0
comp=Z,85nm,1.8s
ABTA Abfaltersbach 84.44 328 *i*P P 07 51 11.1 -1.0
comp=Z,9.0nm,1.0s,SNR=6.9
H37A Dierke Farm, C 84.54 36 P P 07 51 13.1 +0.6
baz=320
P30A Selen 84.54 43 P P 07 51 13.0 +0.3
baz=316
LANF Langenberg 84.55 331 *e*P P 07 51 12.4 -0.1
SNF Seneffe 84.56 334 P P 07 51 11.6 -0.8
MOTA Moosalm 84.56 329 *i*PcP P 07 51 13.5 +0.7
comp=Z,7.9nm,0.7s,SNR=7.3
RETA Reutte 84.59 329 *i*P P 07 51 13.0 +0.2
comp=Z,29nm,1.0s,SNR=20
WLF Walferdange 84.60 333 P P 07 51 13.3 +0.6
comp=Z,24nm,1.9s
WLF Walferdange 84.60 333 *e*P P 07 51 13.0 +0.3
WLF pmax pmax
comp=Z,38nm,1.4s
WLF Walferdange 84.60 333 *e*P P 07 51 13.0 +0.3
comp=Z,38nm,1.4s
TRI Trieste 84.71 326 *e*P P 07 51 11.8 -1.5
TRI pmax pmax
comp=Z,46nm,1.7s
TRI Trieste 84.71 326 *e*P P 07 51 11.8 -1.5
comp=Z,46nm,1.7s
319A Douglas 84.73 54 *e*P P 07 51 14.9 +1.0
comp=Z,72nm,1.4s
I37A Lemond, Waseca 84.74 36 P P 07 51 14.2 +0.6
baz=319
SCHQ Schefferville 84.77 16 P P 07 51 13.3 -0.2
comp=Z,6.4nm,0.6s,baz=351,slow=6.6,SNR=9.6
OHR Ohrid 84.79 319 *i*P P 07 51 13.4 -0.5
PPT2 Papeete2 84.79 117 *e*LR LR 08 17 50.5
comp=Z,719nm,24.8s,baz=320
PPT2 Papeete2 84.79 117 *e*T T 09 24 32.1
comp=Z,5.7nm,0.2s
DOU Dourbes 84.79 334 P P 07 51 13.4 -0.3
comp=Z,12nm,1.8s
BFO Black Forest 84.88 331 *i*P P 07 51 14.3 +0.1
BFO Black Forest 84.88 331 *e*P P 07 51 13.7 -0.5
comp=Z,91nm,1.6s
121A Cookes Peak, D 84.92 53 P P 07 51 16.1 +1.1
baz=312
121A Cookes Peak, D 84.92 53 *e*P P 07 51 15.9 +1.1
comp=Z,45nm,1.4s
121A *epP* pP 07 51 32.4 +1.4
TIAR Tiarei 84.93 117 *e*T T 09 24 41.7
comp=Z,6.6nm,0.3s
FETA Feichten 84.97 329 *i*P P 07 51 14.6 -0.3
comp=Z,14nm,1.1s,SNR=6.8
P31A Stockton 85.03 43 P P 07 51 14.9 -0.3
baz=316
COWI Conner 85.05 33 *e*P P 07 51 14.9 -0.2
comp=Z,37nm,1.4s
DAVA Damuels 85.11 329 *i*P P 07 51 15.4 -0.1
comp=Z,27nm,1.2s,SNR=10
HSIG 85.17 57 *e*P P 07 51 16.5 +0.5
HSIG *epP* pP 07 51 32.2 +0.1
I38A Scanlan Farm, 85.22 36 P P 07 51 16.0 0.0
baz=320
CBKS Cedar Bluff 85.34 43 P P 07 51 16.6 -0.1
baz=316
P32A Huiting Farm, 85.38 42 P P 07 51 16.4 -0.5
baz=316
ECH Echery 85.42 331⇑ *e*P P 07 51 16.7 -0.2
FUORN Ofenpass-Fuorn 85.48 329 *e*P P 07 51 17.5 0.0
comp=Z,137nm,1.8s
DAVOX Davos/Dischmat 85.51 329 P P 07 51 17.0 -0.6
comp=Z,8.4nm,1.0s,baz=67,slow=4.4,SNR=11
DAVOX Davos/Dischmat 85.51 329 P P 07 51 17.0 -0.6
MOF Molkenrain 85.73 331⇑ *e*P P 07 51 18.2 -0.3
THEF They Montfort 85.85 332⇑ *e*P P 07 51 18.7 -0.3
Q32A Meitler Ranch, 85.85 43 P P 07 51 18.9 -0.3
baz=316
O34A Beatrice 85.97 41 P P 07 51 19.3 -0.5
baz=318
TUE Stuetta 85.98 329 *e*P P 07 51 19.7 -0.2
comp=Z,43nm,1.6s
M36A Felix, Anita 85.99 39 P P 07 51 19.8 -0.1
baz=319
MEH Mehetia 86.05 116 *e*T T 09 26 05.0
comp=Z,67nm,0.2s
TAOE Nuku Hiva Isla 86.19 104 *e*LR LR 08 18 37.2
comp=Z,918nm,25.4s
P34A Walnut Farm, R 86.37 41 P P 07 51 21.5 -0.3
baz=318
N36A Muff Farm, Cla 86.39 39 P P 07 51 22.0 +0.2
baz=319
S32A Newby Ranch, P 86.58 44 P P 07 51 23.0 +0.2
baz=316
M38A Pleasantville 86.81 38 P P 07 51 24.0 +0.2
baz=320
KSU1 Kansas State U 86.81 41 P P 07 51 23.7 -0.2
baz=318
KSU1 Kansas State U 86.81 41 *e*P P 07 51 24.1 +0.2
KSU1 *epP* pP 07 51 34.7 -5.4
SENIN Lac Senin/Sane 86.89 330 *e*P P 07 51 24.1 -0.2
comp=Z,33nm,1.8s
O36A Bolckow 86.90 40 P P 07 51 24.5 +0.3
baz=319
T32A Huddler Ranch, 86.96 44 P P 07 51 25.2 +0.5
baz=316
MNTX Cornudas Mount 86.99 52 P P 07 51 25.5 +0.6
baz=313
MNTX Cornudas Mount 86.99 52 *e*P P 07 51 25.7 +0.8
comp=Z,64nm,2.0s
MSTX Muleshoe 87.02 49 *e*P P 07 51 25.7 +0.6
MSTX *epP* pP 07 51 42.4 +1.1
JFWS Jewell Farm 87.06 35 *e*P P 07 51 25.1 +0.1
JFWS *e**PP pP 07 51 41.0 -0.2
JFWS Jewell Farm 87.06 35 *e*P P 07 51 25.1 +0.1
JFWS *epP* pP 07 51 41.0 -0.2
P36A Good Intent, A 87.16 40 P P 07 51 25.3 -0.2
baz=318
N38A Joes South For 87.27 38 P P 07 51 26.4 +0.3
baz=320
O37A Wolven Farm, M 87.28 39 P P 07 51 26.3 +0.1
baz=319
Q35A Mercer Eighty, 87.29 41 P P 07 51 26.1 -0.1
baz=318
N39A Derby Farms, D 87.56 38 P P 07 51 27.6 +0.2
baz=320
S34A Willow Spring 87.57 43 P P 07 51 27.8 +0.2
baz=317
R35A Emporia Munici 87.60 42 P P 07 51 28.2 +0.4
baz=318
P37A Lathrop 87.62 40 P P 07 51 27.8 0.0
baz=319
VLDQ Val d'Or 87.86 25 *e*P P 07 51 28.2 -0.5
comp=Z,129nm,1.8s
VLDQ *epP* pP 07 51 39.4 -5.6
R36A Gordon, Harris 87.97 41 P P 07 51 29.7 +0.2
baz=318
GLMI Grayling 87.97 31 *e*P P 07 51 30.5 +1.1
GLMI *epP* pP 07 51 47.0 +1.4
P38A Dawn 88.00 39 P P 07 51 29.9 +0.3
baz=320
S35A Otter Creek Ra 88.01 42 P P 07 51 30.0 +0.4
baz=318
O39A Kirksville 88.02 38 P P 07 51 29.9 +0.2
baz=320
S36A Lake Cedric, C 88.37 42 P P 07 51 31.2 -0.2
baz=318
O40A La Belle 88.45 38 P P 07 51 32.0 +0.3
baz=321
Q38A Cooks Store, C 88.46 40 P P 07 51 32.0 +0.2
baz=320
T35A Sooner Cattle 88.47 43 P P 07 51 32.0 +0.1
baz=318
P39A Salisbury 88.50 39 P P 07 51 32.4 +0.5
baz=320
PLDF La Plantade 88.63 332 *e*P P 07 51 34.0 +1.5
W33A Caddo, Fort Co 88.68 45 P P 07 51 34.0 +1.1
baz=317
T36A Boggs Farm, Ca 88.70 42 P P 07 51 33.6 +0.6
baz=318
TBI Tubuai 88.71 121 *e*LR LR 08 19 31.9
comp=Z,614nm,23.5s,baz=318
TBI Tubuai 88.71 121 *e*T T 09 29 32.2
comp=Z,188nm,0.3s
V34A Guthrie 88.72 44 P P 07 51 34.0 +1.0
baz=317
V34A Guthrie 88.72 44 *e*P P 07 51 34.0 +1.0
comp=Z,53nm,1.3s
Q39A Willow Grove F 88.72 39 P P 07 51 33.2 +0.2
baz=320
S37A Fort Scott 88.74 41 P P 07 51 33.4 +0.3
baz=319
U35A Pawnee 88.75 43 P P 07 51 34.3 +1.0
baz=318
WMOK Wichita Mounta 88.80 46 *e*P P 07 51 34.2 +0.7
WMOK *e**PP pP 07 51 50.5 +0.8
WMOK Wichita Mounta 88.80 46 *e*P P 07 51 34.2 +0.7
WMOK *epP* pP 07 51 50.5 +0.8
P40A Paris 88.82 39 P P 07 51 33.7 +0.2
baz=320
W34A Bridge Creek, 89.01 45 *e*P P 07 51 35.2 +0.8
W34A *epP* pP 07 51 52.0 +1.3
PYM Petit Puy Mans 89.04 332 *e*P P 07 51 35.6 +1.1
X33A Lawton 89.10 46 P P 07 51 34.9 0.0
baz=317
V35A Meyer Ranch, C 89.14 44 P P 07 51 35.5 +0.5
baz=318
T37A Cheneyville 18 89.17 42 P P 07 51 35.5 +0.4
baz=319
Q40A Laux Farm, Aux 89.21 39 P P 07 51 35.8 +0.5
baz=320
R39A Chumby, Stover 89.25 40 P P 07 51 35.1 -0.4
baz=320
HDIL Hopedale 89.35 36 *e*P P 07 51 36.0 +0.1
HDIL *epP* pP 07 51 53.2 +1.0
LBL Lubilhac 89.39 332⇑ *e*P P 07 51 37.2 +1.1

Y33A Hilltop Ranch, 89.42 46 P **P** 07 51 36.6 +0.3
baz=317
X34A Smith Ranch, M 89.44 45 P **P** 07 51 37.4 +1.0
baz=317
T38A Diamond 89.57 41 P **P** 07 51 37.0 0.0
baz=319
W35A Tecumseh 89.57 44 P **P** 07 51 37.7 +0.6
baz=318
S39A Bolivar 89.58 40 P **P** 07 51 36.8 -0.3
baz=320
U37A Salina 89.60 42 P **P** 07 51 37.5 +0.3
baz=319
TUL1 Leonard 89.61 43 P **P** 07 51 37.9 +0.7
baz=318
TUL1 Leonard 89.61 43 *e*P **P** 07 51 38.0 +0.7
TUL1 *e*pP **pP** 07 51 54.7 +1.3
V36A Jenks 89.61 43 P **P** 07 51 38.0 +0.7
baz=318
R40A Maddies Statio 89.66 39 P **P** 07 51 37.5 +0.1
baz=320
TX31 Lajitas Ar. Si 89.68 52 *e*P **P** 07 51 38.4 +0.5
TXAR Lajitas Array 89.69 52 P **P** 07 51 38.2 +0.4
comp=Z,3.7nm,0.6s,baz=302,slow=3.2,SNR=82
ABTX Abilene, Hawle 89.82 48 *e*P **P** 07 51 39.4 +1.0
ABTX *e*pP **pP** 07 51 55.4 +0.9
ATD Arta Tunnel 89.85 284 LR LR 08 37 06.3
comp=Z,141nm,18.8s,baz=38,slow=39
Z33A Whitaker Ranch 89.86 47 P **P** 07 51 38.6 +0.1
baz=317
W36A Wetumka 89.94 44 P **P** 07 51 38.9 +0.1
baz=318
U38A Gravette 89.97 42 P **P** 07 51 39.1 +0.2
baz=319
V37A Hulbert 89.98 43 P **P** 07 51 39.4 +0.4
baz=319
HPIG 90.04 55 *e*P **P** 07 51 40.4 +0.7
HPIG *e*pP **pP** 07 51 56.9 +1.0
T39A Clever 90.05 41 P **P** 07 51 39.2 -0.1
baz=320
S40A Lebanon 90.07 40 P **P** 07 51 39.6 +0.2
baz=320
133A Hamilton Ranch 90.26 47 P **P** 07 51 40.5 +0.2
baz=316
Z34A Collier Ranch, 90.28 46 P **P** 07 51 40.5 0.0
baz=317
X36A Centrahoma 90.29 44 P **P** 07 51 40.7 +0.3
baz=318
HHAR Hobbs 90.32 42 *e*P **P** 07 51 40.7 +0.2
comp=Z,10nm,1.0s
V38A Canehill 90.39 42 P **P** 07 51 41.0 +0.1
baz=319
T40A Mansfield 90.40 40 P **P** 07 51 41.1 +0.2
baz=320
U39A Green Forest 90.49 41 P **P** 07 51 41.3 0.0
baz=320
SFIN Lafayette 90.50 35 *e*P **P** 07 51 42.6 +1.3
SFIN *e*pP **pP** 07 51 58.8 +1.3
Z35A Perchaven, San 90.69 46 P **P** 07 51 42.3 -0.1
baz=317
233A Rising Star 90.69 48 P **P** 07 51 42.9 +0.5
baz=316
V39A Pettigrew 90.81 42 P **P** 07 51 42.9 -0.1
baz=320
Y36A Durant 90.82 45 P **P** 07 51 43.1 +0.2
baz=318
U40A Yellville 90.83 41 P **P** 07 51 42.9 0.0
baz=320
W38A Poteau 90.92 43 P **P** 07 51 43.8 +0.4
baz=319
X38A Whitesboro 91.05 43 P **P** 07 51 44.4 +0.4
baz=319
333A Richland Sprin 91.14 48 P **P** 07 51 44.7 +0.2
baz=316
234A Clairette 91.15 47 P **P** 07 51 44.7 +0.2
baz=317
135A Vickery Place, 91.17 46 P **P** 07 51 45.1 +0.5
baz=317
Z36A Blue Ridge 91.20 45 P **P** 07 51 44.8 +0.2
baz=318
W39A Magazine 91.22 42 P **P** 07 51 44.9 +0.2
baz=319
JCT Junction City 91.26 49 P **P** 07 51 45.2 +0.1
baz=316
JCT Junction City 91.26 49 *e*P **P** 07 51 45.2 +0.1
JCT *e*'PP **pP** 07 52 01.8 +0.5
JCT Junction City 91.26 49 *e*P **P** 07 51 45.2 +0.1
JCT *e*pP **pP** 07 52 01.8 +0.5
OLIL Olney 91.35 37 *e*P **P** 07 51 46.1 +0.8
OLIL *e*pP **pP** 07 52 02.8 +1.3
433A Art 91.49 49 P **P** 07 51 45.8 -0.3
baz=316
WHTX Lake Whitney, 91.56 47 P **P** 07 51 46.9 +0.6
baz=317
WHTX Lake Whitney, 91.56 47 *e*P **P** 07 51 47.0 +0.6
comp=Z,24nm,0.9s
X39A Fountain Ranch 91.56 43 P **P** 07 51 46.5 +0.2
baz=319
334A Lometa 91.58 48 P **P** 07 51 46.8 +0.3
baz=317
W40A Ferguson Farm, 91.61 42 P **P** 07 51 46.7 +0.2
baz=320
SIUC Southern Illin 91.62 38 *e*P **P** 07 51 47.3 +0.8
SIUC *e*pP **pP** 07 52 03.4 +0.6
Z37A Pogue Cattle C 91.71 45 P **P** 07 51 47.1 +0.1
baz=318
PBMO Poplar Bluff 91.75 39 *e*P **P** 07 51 47.3 +0.2
comp=Z,28nm,0.8s
MIAR Mount Ida 91.83 43 P **P** 07 51 47.9 +0.3
baz=320
MIAR Mount Ida 91.83 43 *e*P **P** 07 51 48.1 +0.6
MIAR pmax pmax
comp=Z,28nm,1.1s
MIAR Mount Ida 91.83 43 *e*P **P** 07 51 48.1 +0.6
comp=Z,28nm,1.1s
434A Burnet 91.94 48 P **P** 07 51 48.0 -0.1
baz=317
WHAR Wooly Hollow 91.94 41 *e*P **P** 07 51 48.4 +0.3
WHAR *e*pP **pP** 07 52 04.7 +0.4
Y39A Lockesburg 92.00 43 P **P** 07 51 48.8 +0.4
baz=319
533A Kerrville 92.02 49 P **P** 07 51 49.1 +0.5
baz=316
X40A Basin Creek Fa 92.27 42 P **P** 07 51 50.1 +0.5
baz=320
336A Riesel 92.35 47 P **P** 07 51 50.2 +0.2
baz=318
435B Jarrell 92.36 48 P **P** 07 51 50.4 +0.3
baz=317
534A Blanco 92.38 49 P **P** 07 51 50.4 +0.2
baz=317
WCI Wyandotte Cave 92.60 36 *e*P **P** 07 51 51.6 +0.5
WCI *e*'PP **pP** 07 52 08.5 +1.1
WCI Wyandotte Cave 92.60 36 *e*P **P** 07 51 51.6 +0.5
WCI *e*pP **pP** 07 52 08.5 +1.1
636A Smothers Creek 93.62 48 P **P** 07 51 56.8 +0.9
baz=317
933A Laredo 93.63 51 P **P** 07 51 57.2 +1.2
baz=316
HKT Hockley 94.00 47 *e*P **P** 07 51 58.2 +0.7
HKT *e*'PP **pP** 07 52 14.7 +0.9
HKT Hockley 94.00 47 *e*P **P** 07 51 58.2 +0.7
HKT *e*pP **pP** 07 52 14.7 +0.9
736A Circle Diamond 94.00 49 P **P** 07 51 59.3 +1.6
baz=317
034A Hebbronville 94.39 51 P **P** 07 52 01.1 +1.6
baz=316
KEST Kesra 94.65 323 P **P** 07 52 00.2 -0.4
comp=Z,4.5nm,1.1s,baz=90,slow=7.1,SNR=4.5
KEST Kesra 94.65 323 P **P** 07 52 00.2 -0.4
KEST *e*pP **pP** 07 52 17.4 +0.5
ZAIG Zacatecas 94.94 56 *e*P **P** 07 52 03.6 +1.2
ZAIG *e*pP **pP** 07 52 20.3 +1.6
ESDC Sonseca Array 96.84 334 P **P** 07 52 09.6 -1.0
comp=Z,0.1nm,0.3s,baz=8.4,slow=6.0,SNR=5.5
RKT Rikitea 98.85 112 *e*LR LR 08 24 27.2
comp=Z,691nm,25.8s,baz=310
VNDA Vanda 115.52 175 PKP **PKPdf** 07 57 20.1 +0.2
comp=Z,0.5nm,0.7s,baz=0.0,slow=6.1,SNR=3.7
VNDA pPKP pPKP 07 57 36.6
comp=Z,1.6nm,0.8s,baz=335,slow=3.5,SNR=5.0
TORD Torodi Ar. Bea 117.02 315 PKP **PKPdf** 07 57 23.6 -1.0
comp=Z,0.8nm,0.5s,baz=36,slow=1.4,SNR=19
TORD PP **PP** 07 58 30.8 -3.0
comp=Z,5.7nm,1.1s,baz=35,slow=5.8,SNR=12
TORD PKKPab **PKKPab** 08 07 53.0 -2.8
comp=Z,0.4nm,0.7s,baz=199,slow=2.8,SNR=4.1
MAW Mawson 120.09 206 pPKP pPKPdf 07 57 45.9 +0.3
comp=Z,3.5nm,0.8s,baz=47,slow=5.6,SNR=4.2
SDV Santo Domingo 124.82 40 PKP **PKPdf** 07 57 39.6 -0.3
comp=Z,6.4nm,0.7s,baz=252,slow=2.1,SNR=12
SDV Santo Domingo 124.82 40 *e*PKPdf **PKPdf** 07 57 40.0 +0.1
DBIC Dimbokro 125.96 317 PKP **PKPdf** 07 57 40.9 -0.9
comp=Z,3.7nm,0.7s,baz=305,slow=1.3,SNR=7.9
ROSC El Rosal 126.19 46 PKP **PKPdf** 07 57 43.0 +0.2
comp=Z,3.0nm,0.6s,baz=307,slow=2.0,SNR=3.5
BOSA Boshof 126.80 260 PKP **PKPdf** 07 57 43.2 +0.2
comp=Z,1.9nm,0.4s,baz=42,slow=2.5,SNR=9.7
QSPA South Pole Qui 127.33 180 *e*PKPdf **PKPdf** 07 57 42.7 -0.2
SYO Syowa Base 128.76 207 *e*X **PP** 07 59 47.4 -5.6
SNAA Sanae 141.32 197 PKP PKPpre 07 58 01.5
SNAA Sanae 141.32 197 *e*PKHKP PKPpre 07 58 03.7
SNAA Sanae 141.32 197 *e*PKPpre PKPpre 07 58 03.7
VNA2 Neumayer--Watz 142.89 196 PKP **PKPdf** 07 58 08.3 -3.3
baz=94,slow=2.3
VNA3 Neumayer Olymp 143.14 195 PKP PKPab 07 58 08.1 +0.5
SAML Samuel 143.76 44 *e*PKPpre PKPpre 07 58 12.1
LPAZ La Paz 146.30 59 PKPbc **PKPbc** 07 58 21.1 0.0
comp=Z,13nm,0.5s,baz=336,slow=3.2,SNR=62
RCBR Riachuelo 148.30 355 PKPbc **PKPbc** 07 58 24.7 -1.3
comp=Z,6.6nm,0.8s,baz=77,slow=1.6,SNR=5.7
PB01 IPOC Station P 148.49 67 *e*PKPbc **PKPbc** 07 58 26.9 +0.5
SIV San Ignacio 150.63 49 PKP **PKPdf** 07 58 26.3 +0.1
comp=Z,5.3nm,1.0s,baz=355,slow=3.3,SNR=3.4
SIV PKPbc **PKPbc** 07 58 31.7 0.0
comp=Z,5.8nm,0.5s,baz=317,slow=2.8,SNR=19
SIV PKPab **PKPab** 07 58 38.7 +0.1
comp=Z,6.0nm,0.8s,baz=260,slow=6.2,SNR=6.1
LCO Las Campanas 151.81 82 *e*PKPbc **PKPbc** 07 58 34.6 +0.1
PLCA Paso Flores 154.97 107 PKP **PKPdf** 07 58 32.8 +0.9
comp=Z,3.4nm,1.1s,baz=270,slow=5.1,SNR=2.6
PLCA PKPbc PKPbc 07 58 41.5 +0.8
comp=Z,2.9nm,1.1s,baz=290,slow=3.9,SNR=3.9
PLCA PKPab **PKPab** 07 58 56.6 +0.2
comp=Z,7.5nm,0.9s,baz=260,slow=1.1,SNR=7.5
PLCA Paso Flores 154.97 107 PKP **PKPdf** 07 58 32.8 +0.9
PLCA PKPbc PKPbc 07 58 41.5 +0.8
PLCA *e*PKPab **PKPab** 07 58 58.5 +2.1
BDFB Brasilia 156.55 24 PKP **PKPdf** 07 58 35.2 +0.4
comp=Z,3.0nm,1.0s,baz=65,slow=3.2,SNR=3.8
BDFB PKPab **PKPab** 07 59 03.8 +0.2
comp=Z,1.9nm,0.8s,baz=33,slow=7.6,SNR=3.8
BDFB Brasilia 156.55 24 PKP **PKPdf** 07 58 35.2 +0.4
BDFB *e*PKPab **PKPab** 07 59 05.0 +1.4

JMA 03 07:38:51.8±0.1, 36.19N×139.88E, h79km±1km, M2.9, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JYT	**Yasato**	**0.26**	**81**	P	Pn	07 39 04.0	+0.3
JYT				S	Sn	07 39 13.2	+0.7
JAG	**Ashikaga**	**0.42**	**304**	P	Pn	07 39 04.8	0.0
JAG				S	Sn	07 39 14.2	-0.2
JKT	**Katashina**	**0.77**	**319**	P	Pn	07 39 08.3	+0.1
JRY	**Ryogami san**	**0.81**	**258**	P	Pn	07 39 08.9	+0.3
JOD2	**Odawara 2**	**1.13**	**215**	P	Pn	07 39 12.1	-0.3
JHK	**Hiroka**	**1.26**	**327**	P	Pn	07 39 14.4	+0.4
JYN	**Shimob**	**1.29**	**238**	P	Pn	07 39 14.7	+0.3
MAT	**Matsushiro**	**1.40**	**285**	P	Pn	07 39 16.1	+0.4
MAT	**Matsushiro**	**1.40**	**285**	P	Pn	07 39 16.3	+0.6

SKHL 03 07:43:21.6±0.6, 48.95N×131.43E, h9km±3km, mb4.4/4, Priamurye-Northeastern China border region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
KHBR	**Khabarovsk**	**2.45**	**100**	*e*Pn	Pn	07 44 03.5	+1.8
KHBR				*e*Pg	Pb	07 44 04.8	-0.9
KHBR				sPg	Pg	07 44 10.9	+2.4
KHBR				*e*Sn	Sb	07 44 34.6	-1.4
KHBR				*e*Sg	Sg	07 44 36.1	-4.1
GRNR	**Gornyy**	**3.71**	**59**	*e*Pg	Pb	07 44 28.4	+1.2
GRNR				AMB	AMB	07 44 30.1	
	129nm,1.0s						
GRNR				*e*Sg	Sg	07 45 17.5	-3.1
GRNR				A	A	07 45 25.1	
	449nm,0.9s						
EKMR	**Ekimchan**	**4.24**	**13**	*e*Pn	Pn	07 44 27.5	+1.2
EKMR				*e*Pg	Pb	07 44 38.1	+1.9
EKMR				AMB	AMB	07 44 41.8	
	40nm,0.5s						
EKMR				*e*Sn	Sn	07 45 14.4	-1.4
EKMR				*e*Sg	Sg	07 45 33.8	-3.7
EKMR				A	A	07 45 39.4	
	160nm,0.6s						
EKMR				A	A	07 45 39.4	
	192nm,0.6s						
TEY	**Ternei**	**5.28**	**136**	*e*rx	rx	07 44 37.8	
TEY				*e*Sg	Sg	07 46 04.5	-6.4
TEY				A	A	07 46 11.5	
	74nm,0.6s						
ZEA	**Zeya**	**5.46**	**333**	*e*Pn	Pn	07 44 43.1	0.0
ZEA				*e*Sg	Sg	07 46 11.3	-5.5
ZEA				A	A	07 46 13.3	
	100nm,0.7s						
BMKR	**Bomnak**	**5.99**	**345**	*e*Pn	Pn	07 44 52.0	+1.7
BMKR				*e*Sg	Sg	07 46 27.6	-6.1
BMKR				A	A	07 46 39.5	
	54nm,0.5s						
BMKR				A	A	07 46 39.5	
	80nm,0.5s						
KROS	**Kirovskiy**	**6.15**	**335**	*e*Sg	Sg	07 46 32.7	-6.2
KROS				A	A	07 46 42.5	
	110nm,0.8s						
NKL	**Nikolayevsk**	**7.19**	**51**	*e*Pg	Pb	07 45 32.0	+5.6
NKL				AMB	AMB	07 45 33.0	
	16nm,0.8s						
NKL				*e*Sg	Sg	07 47 07.0	-5.1
NKL				A	A	07 47 23.0	
	107nm,0.9s						

IDC ***03*** *07:50:59.8±0.5, 35.90N×141.77E, h0km, mb4.3/30, mb1 4.4/34, mb1mx4.3/63, mbtmp4.3/34, ML4.2/2, MS3.7/7, Ms1 3.7/7, ms1mx3.3/59, Error ellipse: s-maj=14.6km s-min=11.5km az=87.0*

NIED ***03*** *07:51:00, 36.00N×141.80E, h17km, Mw4.3 Best double couple: M0 3.25000×10^15 NP1:φs=29.00000°, δ35.00000°, λ-108.00000°. NP2:φs=231.00000°, δ57.00000°, λ-78.00000°.*

ISCJB ***03*** *07:51:01.7±0.3, 35.90N±0.03×141.80E±0.04, h23km, mb4.4/50, MS3.7/6, Error ellipse: s-maj=5.0km s-min=3.9km az=38.2*

JMA ***03*** *07:51:02.6±0.3, 36.00N×141.77E, h35km±5km, M4.4*

JMA Felt I J1.

NEIC ***03*** *07:51:05.3±0.6, 35.85N×141.73E, h38km±5km, mb4.6/13, Error ellipse: s-maj=5.4km s-min=4.6km az=86.0*

ISC 03 07:51:03.6±0.4, 35.88N±0.04×141.78E±0.05, h23km, n116, σ1§27/124, mb4.4/50, MS3.8/6, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CHOJ	**Chosi**	**0.77**	**257**	P	**Pb**	**07 51 17.5**	**-0.7**
CHOJ				S	**Sb**	**07 51 28.8**	**+0.5**
JHO	**Hitachi**	**1.22**	**307**	P	**Pb**	**07 51 22.5**	**-2.7**
BSO1	**Boso 1**	**1.39**	**208**	P	**Pb**	**07 51 27.9**	**-0.6**
BSO3	**Boso 3**	**1.50**	**224**	P	**Pb**	**07 51 29.8**	**-0.7**
JFK	**Kawauchi**	**1.65**	**334**	P	**Pn**	**07 51 28.9**	**-2.3**
JAG	**Ashikaga**	**1.96**	**287**	P	**Pn**	**07 51 33.5**	**-1.8**
JFT	**Otama**	**2.00**	**325**	P	**Pn**	**07 51 34.9**	**-1.1**
JMM	**Marumori**	**2.13**	**339**	P	**Pn**	**07 51 36.4**	**-1.3**
JKT	**Katashina**	**2.22**	**294**	P	**Pn**	**07 51 37.8**	**-1.3**
MJAR	**Matsushiro Arr**	**2.96**	**284**	Pn	**Pn**	**07 51 48.8**	**-0.3**
	23nm,0.3s,baz=95,slow=9.5,SNR=294						
MJAR				Sn	**Sn**	**07 52 23.3**	**-0.7**
	16nm,0.3s,baz=69,slow=18,SNR=6.7						
MAJO	**Matsushiro**	**2.96**	**284**	*e*Pn	**Pn**	**07 51 49.3**	**+0.2**
MAT	**Matsushiro**	**2.96**	**284**	P	**Pn**	**07 51 49.0**	**-0.2**
MAT				S	**Sb**	**07 52 29.2**	**-2.2**
JHJ2	**Mitsune**	**3.20**	**211**	*e*Pn	**Pn**	**07 51 52.2**	**-0.3**
JHJ2				*e*Sn	**Sn**	**07 52 30.4**	**+0.4**
JHJ	**Hachijo jima 2**	**3.21**	**211**	Pn	**Pn**	**07 51 52.5**	**-0.1**
	109nm,0.3s,baz=302,slow=4.1,SNR=15						
JHJ				Sn	**Sn**	**07 52 29.1**	**-1.1**
	200nm,0.3s,baz=46,slow=22,SNR=8.8						
INU	**Inuyama**	**3.91**	**264**	*e*Pn	**Pn**	**07 52 03.6**	**+1.3**
ERM	**Erimo**	**6.22**	**10**	*e*Pn	**Pn**	**07 52 35.9**	**+2.0**

CBIJ Chichi jima 8.77 178 *e*Pn **Pn** 07 53 06.8 -2.1
CBIJ Sn Sn 07 54 39.2 -7.9
JCJ Chichijima 8.77 178 Pn **Pn** 07 53 06.2 -2.8
17nm,0.3s,baz=284,slow=21,SNR=11
JCJ Sn Sn 07 54 39.2 -7.9
17nm,0.3s,baz=280,slow=22,SNR=5.5
JNU Nakatsue 9.41 256 Pn **Pn** 07 53 19.6 +1.9
0.3nm,0.3s,baz=88,slow=15,SNR=3.8
JNU Nakatsue 9.41 256 *e*Pn **Pn** 07 53 19.3 +1.6
USRK Ussuriysk Ar. 11.18 321 Pn **Pn** 07 53 42.1 +0.2
0.3nm,0.3s,baz=136,slow=12,SNR=18
USRK LR LR 07 57 59.1
comp=Z,628nm,18.1s,baz=127,slow=38
KSRS Korea Array 11.24 282 Pn Pn 07 53 46.3 +3.6
0.3nm,0.3s,baz=96,slow=13,SNR=21
KSRS LR LR 07 58 10.4
comp=Z,251nm,18.0s,baz=120,slow=38
KSAR Wonju Array Be 11.27 282 Pn **Pn** 07 53 46.3 +3.2
MDJ Mudanjiang 12.74 317 P **Pn** 07 54 03.6 +0.3
MDJ pmax pmax
comp=Z,5.0nm,0.8s
MDJ pmax pmax
comp=Z,40nm,3.8s
CN2 Changchun 14.81 307 *e*P **Pn** 07 54 33.5 +2.0
KLR Kul'dur 15.23 334 Pn **Pn** 07 54 32.7 -4.3
comp=Z,0.1nm,0.3s,baz=129,slow=11,SNR=4.8
KLR LR LR 08 00 38.0
comp=Z,368nm,18.3s,baz=134,slow=38
NJ2 Nanjing 19.38 265 *e*P **Pn** 07 55 29.0 0.0
NJ2 pmax pmax
comp=Z,14nm,0.6s
HIA Hailar 20.93 317 *e*P **P** 07 55 45.7 +1.2
comp=Z,10.0nm,0.8s
GUMO Guam 22.37 172 LR LR 08 07 06.5
comp=Z,74nm,19.4s,baz=46,slow=43
HHC Hu-ho-hao-te 24.14 291 *e*P **P** 07 56 18.4 +0.5
HHC sP sP 07 56 30.7 +3.1
HHC PP **PnPn** 07 56 51.1 +3.8
HHC S **S** 08 00 35.6 +1.1
HHC sS sS 08 00 45.0 -0.7
HHC pmax pmax
comp=Z,17nm,1.0s
HHC pmax pmax
comp=Z,170nm,6.5s
HHC LR LR
comp=N,140nm,13.1s
HHC LR LR
comp=E,290nm,14.3s
HHC LR LR
comp=Z,240nm,13.7s
MA2 Magadan 24.42 11 P **P** 07 56 20.1 0.0
comp=Z,3.1nm,0.6s,baz=210,slow=8.9,SNR=6.8
MA2 Magadan 24.42 11 *e*P **P** 07 56 20.3 +0.2
XAN Xi'an 26.92 276 P **P** 07 56 43.6 +0.5
XAN pmax pmax
comp=Z,9.0nm,1.2s
YAK Yakutsk 27.25 348 P **P** 07 56 44.7 -0.9
comp=Z,2.1nm,0.4s,baz=193,slow=19,SNR=2.8
YAK LR LR 08 09 03.8
comp=Z,141nm,20.5s,baz=138,slow=40
ENH Enshi 27.55 268 *e*P **P** 07 56 47.4 -1.4
comp=Z,17nm,0.8s
SEY Seymchan 27.86 10 P **P** 07 56 51.6 +0.5
comp=Z,1.2nm,0.6s,baz=225,slow=19,SNR=3.5
H11S1 WAKE ISLAND Hy 28.00 122 T T 08 26 16.8
baz=313,slow=75,SNR=11
H11S3 WAKE ISLAND Hy 28.00 122 T T 08 26 07.3
baz=313,slow=75,SNR=7.8
H11S2 WAKE ISLAND Hy 28.02 122 T T 08 26 13.3
baz=313,slow=75,SNR=7.9
ULN Ulaanbaatar 28.25 306 *e*P **P** 07 56 54.8 -0.2
comp=Z,8.5nm,1.0s
SONA1 Songino Array 28.68 306 *e*P **P** 07 56 57.6 -1.1
SONM Songino Array 28.68 306 P **P** 07 56 58.1 -0.7
comp=Z,4.2nm,0.7s,baz=105,slow=8.8,SNR=18
SONM LR LR 08 07 49.7
comp=Z,194nm,21.1s,baz=88,slow=35
LZH Lanzhou 30.57 282 *e*P **P** 07 57 15.2 -0.5
LZH pP pP 07 57 22.4 -0.2
LZH sP sP 07 57 25.8 +0.4
LZH pmax pmax
comp=Z,12nm,1.0s
TLY Talaya 31.31 312 P **P** 07 57 21.8 -0.1
comp=Z,13nm,0.7s,baz=116,slow=6.5,SNR=16
TLY LR LR 08 10 56.9
comp=Z,210nm,18.9s,baz=100,slow=38
TLY Talaya 31.31 312 *e*P **P** 07 57 22.1 +0.2
comp=Z,16nm,0.8s
CD2 Chengdu 31.99 272 P **P** 07 57 27.3 -0.8
CD2 pmax pmax
comp=Z,1.0nm,0.5s
GTA Gaotai 33.20 289 P **P** 07 57 38.4 -0.3
GTA pP pP 07 57 44.2 -1.4
GTA sP sP 07 57 47.3 -1.2
GTA S **S** **08 02 54.8** **-2.5**
GTA sS sS 08 03 04.8 -3.9
GTA SS **SnSn** **08 04 54.5** **-2.9**
GTA pmax pmax
comp=Z,14nm,1.0s
GTA LR LR
comp=N,210nm,13.3s
GTA LR LR
comp=E,220nm,17.1s
GTA LR LR
comp=Z,240nm,13.8s
TIXI Tiksi 36.46 353 *e*P **P** 07 58 05.8 -0.5
comp=Z,4.5nm,0.9s
NIKH Nikolski High 38.32 48 *e*P **P** 07 58 23.2 +1.0
comp=Z,201nm,0.6s
FAKI Fak Fak 39.62 195 *e*P **P** 07 58 33.6 +0.1
CMAR Chiang Mai Arr 41.51 257 P **P** 07 58 48.8 -0.4
comp=Z,0.6nm,0.4s,baz=54,slow=5.7,SNR=5.0
WMQ Urumqi 41.63 298 *e*P **P** 07 58 51.4 +1.4
WMQ pP sP 07 58 59.2 -0.6
WMQ sP pP 07 59 01.0 +4.0
WMQ pmax pmax
comp=Z,6.0nm,0.6s
ZAA0 Zalesovo Array 42.91 313 *e*P **P** 07 59 00.0 -0.1
ZALV Zalesovo Beam 42.91 313 P **P** 07 58 59.8 -0.3
comp=Z,6.4nm,0.6s,baz=93,slow=6.6,SNR=29
NRIK Noril'sk 44.43 336 P **P** 07 59 11.5 -0.7
comp=Z,1.2nm,0.4s,baz=175,slow=11,SNR=5.7
MK01 Makanchi Array 44.98 303 *e*P **P** 07 59 16.5 -0.4
MK31 Makanchi Array 44.98 303 *e*P **P** 07 59 17.1 +0.1
MKAR Makanchi Array 44.98 303 P **P** 07 59 16.8 -0.2
comp=Z,10nm,0.8s,baz=89,slow=8.9,SNR=51
TAPN Taplejung 46.33 275 *e*P **P** 07 59 28.3 +0.1
ODAN Odare 46.79 275 *e*P **P** 07 59 31.7 0.0
KURK Kurchatov 46.88 309 *e*P **P** 07 59 31.2 -0.6
comp=Z,17nm,0.8s
KURBB Kurchatov Arra 46.94 309 P **P** 07 59 31.5 -0.8
comp=Z,10nm,0.7s,baz=84,slow=7.7,SNR=35
RAMN Ramite 47.39 275 *e*P **P** 07 59 36.7 +0.3
comp=Z,45nm,0.8s
GUN Gumba 47.57 277 *e*P **P** 07 59 38.3 +0.3
comp=Z,27nm,0.7s
GKN Gorkha 48.53 278 *e*P **P** 07 59 45.6 +0.4
comp=Z,49nm,0.9s
KOLN Koldanda 49.47 278 *e*P **P** 07 59 52.8 +0.4
comp=Z,11nm,0.8s
PYUN Piuthan 49.82 279 *e*P **P** 07 59 55.3 +0.2
comp=Z,40nm,0.8s
ILAR Eielson Array 50.31 32 P **P** 07 59 58.0 0.0
comp=Z,2.8nm,0.8s,baz=278,slow=5.9,SNR=6.6
TKM2 Tokmak 2 50.44 299 *e*P **P** 07 59 59.6 0.0
comp=Z,29nm,1.5s
KSH Kashi 51.15 295 P P 08 00 09.0 +4.1
KSH *es*P sP 08 00 19.7 +4.9
KSH *e*PP **PP** **08 02 06.1** **+4.6**
KSH S **S** **08 07 25.0** **+3.3**
KSH pmax pmax
comp=Z,4.0nm,0.7s
KSH pmax pmax
comp=Z,57nm,4.7s
VOSK Vostochnaya 51.27 313 *e*P **P** 08 00 04.6 -0.8
comp=Z,11nm,0.8s
AAK Ala-Archa 51.30 299 P **P** 08 00 06.6 +0.6
comp=Z,2.7nm,0.8s,baz=112,slow=6.5,SNR=11
AAK Ala-Archa 51.30 299 *e*P **P** 08 00 06.0 0.0
comp=Z,6.9nm,1.0s
BVAR Borovoye Array 51.56 313 P **P** 08 00 07.1 -0.6
comp=Z,2.5nm,0.6s,baz=90,slow=7.4,SNR=15
BVAR PcP **PcP** 08 01 20.7 -0.6
comp=Z,1.8nm,0.7s,baz=76,slow=6.3,SNR=3.6
BRVK Borovoye 51.62 313 *e*P **P** 08 00 07.7 -0.4
comp=Z,6.0nm,0.8s
EKS2 Erkin-Say 51.80 300 *e*P **P** 08 00 09.0 -0.7

Code	Station Name	Δ°	AZ°	Op	ISC	Time	Res
	comp=Z,3.7nm,0.6s						
KKAR	Karatay Array	53.96	301	eP	P	08 00 25.6	+0.1
INK	Inuvik	55.28	27	P	P	08 00 34.5	-0.1
	comp=Z,1.6nm,0.9s,baz=260,slow=7.9,SNR=4.9						
FITZ	Fitzroy Crossi	55.83	199	P	P	08 00 39.6	+0.6
	comp=Z,4.0nm,0.9s,baz=0.0,slow=9.1,SNR=3.8						
WB2	Warramunga Arr	55.97	188	eP	P	08 00 39.0	-1.0
	comp=Z,14nm,0.9s						
WRA	Warramunga Arr	55.97	188	P	P	08 00 39.7	-0.4
	comp=Z,8.6nm,0.8s,baz=6.1,slow=7.2,SNR=46						
ARU	Arti	57.42	319	P	P	08 00 49.2	-0.8
	comp=Z,4.0nm,0.5s,baz=64,slow=0.9,SNR=13						
ARU	Arti	57.42	319	eP	P	08 00 49.2	-0.8
	comp=Z,11nm,0.8s						
ABKAR	Akbulak array	58.91	311	eP	P	08 01 00.2	-0.4
AS01	Alice Springs	59.69	188	eP	P	08 01 06.0	-0.2
ASAR	Alice Springs	59.69	188	P	P	08 01 06.2	-0.1
	comp=Z,2.6nm,0.9s,baz=16,slow=5.6,SNR=17						
GEYT	Alibeck	64.65	300	P	P	08 01 39.5	0.0
	comp=Z,2.1nm,0.6s,baz=20,slow=1.7,SNR=4.0						
YKA	Yellowknife Ar	64.66	30	P	P	08 01 39.3	+0.2
	comp=Z,1.8nm,0.9s,baz=297,slow=6.5,SNR=20						
YKB5	Yellowknife Ar	64.66	30	eP	P	08 01 38.8	-0.3
ARCES	ARCESS Array B	65.17	340	P	P	08 01 42.3	-0.1
	comp=Z,5.1nm,0.9s,baz=58,slow=9.2,SNR=4.9						
STKA	Stephens Creek	67.41	180	P	P	08 01 57.3	+0.3
	comp=Z,2.1nm,0.9s,baz=352,slow=7.7,SNR=3.1						
FINES	FINESS Array B	69.97	333	P	P	08 02 11.4	-1.3
	comp=Z,3.1nm,0.8s,baz=72,slow=6.2,SNR=7.9						
KBZ	Khabaz	71.87	311	P	P	08 02 25.2	+0.6
	comp=Z,2.4nm,0.8s,baz=12,slow=5.3,SNR=3.5						
FFC	Flin Flon	74.51	33	eP	P	08 02 40.0	0.0
	comp=Z,7.6nm,1.2s						
FCC	Fort Churchill	74.90	27	eP	P	08 02 42.4	+0.3
	comp=Z,17nm,1.4s						
NB2	NORSAR Subarra	75.36	338	P	P	08 02 44.6	-0.3
	comp=Z,3.3nm,0.9s,baz=40,slow=5.9						
NOA	NORSAR Array B	75.36	338	P	P	08 02 43.9	-1.0
	comp=Z,2.3nm,0.9s,baz=38,slow=5.8,SNR=6.7						
AKASG	Malin Array Be	75.39	323	P	P	08 02 44.6	-0.5
	comp=Z,2.6nm,0.7s,baz=45,slow=5.9,SNR=16						
AK11	Malin Array Si	75.43	323	eP	P	08 02 44.9	-0.5
R11A	Troy Canyon, C	77.24	52	eP	P	08 02 56.4	+0.3
	comp=Z,14nm,1.9s						
SSK	Sunset Peak	78.25	56	eP	P	08 03 05.1	+3.2
PDAR	Pinedale Array	78.26	45	P	P	08 03 01.8	-0.1
	comp=Z,0.8nm,0.8s,baz=251,slow=2.8,SNR=7.4						
BORC	Borrego Spring	79.66	56	eP	P	08 03 08.3	-1.1
BR131	Keskin Array S	79.83	312	eP	P	08 03 11.1	+0.8
BRTR	Keskin Array B	79.83	312	P	P	08 03 10.9	+0.5
	comp=Z,2.1nm,0.9s,baz=104,slow=5.2,SNR=8.2						
BR231	Keskin MP Arra	80.28	312	eP	P	08 03 12.0	-0.7
PV10	Paradox Valley	81.31	49	eP	P	08 03 19.4	+0.9
DPC	Dobruska-Polom	81.59	328	eP	P	08 03 20.9	+1.5
DPC				epP	sP	08 03 30.8	+1.1
PV01	Paradox Valley	81.75	49	eP	P	08 03 22.5	+1.7
CLL	Collm	82.24	330	eP	P	08 03 22.0	-0.8
CLL				i pP	sP	08 03 36.2	+3.2
CLL				i sP	pP	08 03 39.2	+8.9
KHC	Kasperske Hory	83.67	329	eP	P	08 03 31.2	+0.9
KHC				epP	sP	08 03 39.8	-0.8
KHC				esP	pP	08 03 43.7	+5.9
GERES	GERESS Array B	83.84	328	P	P	08 03 29.8	-1.5
	comp=Z,0.6nm,0.8s,baz=46,slow=5.8,SNR=5.4						
TX31	Lajitas Ar. Si	90.59	53	eP	P	08 04 04.6	+0.2
TXAR	Lajitas Array	90.59	53	P	P	08 04 04.8	+0.5
	comp=Z,1.2nm,0.9s,baz=295,slow=3.8,SNR=9.8						
LPAZ	La Paz	147.00	62	PKPbc	PKPbc	08 10 45.1	-0.4
	comp=Z,1.9nm,0.6s,baz=281,slow=1.9,SNR=9.4						
SIV	San Ignacio	151.59	52	PKPbc	PKPbc	08 10 56.3	-0.1
	comp=Z,3.4nm,0.9s,baz=30,slow=2.0,SNR=4.0						

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*NIED **03** 07:53:00, 37°.70N×141°.60E, h53km, Mw4.3 Best double couple: M₀3.28000×10¹⁵ NP1:φs185.00000°, δ36.00000°, λ75.00000°. NP2:φs23.00000°, δ55.00000°, λ101.00000°.*
*ISCJB **03** 07:53:05.1±0.5, 37°.62N±0°.03×141°.70E±0°.06, h55km±4km, mb4.4/45, Error ellipse: s-maj=8.0km s-min=4.1km az=13.4*
*NEIC **03** 07:53:05.4±0.3, 37°.67N×141°.64E, h35km, mb4.5/10, Error ellipse: s-maj=7.2km s-min=5.2km az=112.0*
*JMA **03** 07:53:07.2±0.1, 37°.68N×141°.60E, h46km±2km, M4.3*
JMA Felt II J1.
*IDC **03** 07:53:07.5±0.6, 37°.69N×141°.52E, h55km±4km, mb4.1/34, mb1 4.2/38, mb1mx4.1/65, mbtmp4.4/38, Error ellipse: s-maj=11.7km s-min=9.9km az=108.0*
ISC 03 07:53:07.1±0.5**, 37°.64N**±0°.04×**141°.62E**±0°.05**, h54**km±4km**, n85,** σ**0s.86**/90**, mb4.4**/45**, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	Kawauchi	0.66	245	P	Pn	07 53 20.3	-0.2
JFK				S	Sn	07 53 29.4	-0.8
JMM	Marumori	0.69	289	P	Pn	07 53 20.4	-0.5
JMM				S	Sn	07 53 29.5	-1.5
JIO	Ouri	0.84	345	P	Pn	07 53 22.1	-0.7
JIO				S	Sn	07 53 32.6	-1.7
ONAJ	Iwakimizuishiy	0.85	231	P	Pn	07 53 22.8	-0.2
ONAJ				S	Sn	07 53 33.9	-0.7
JFT	Otama	1.03	263	P	Pn	07 53 25.8	+0.5
JFT				S	Sn	07 53 39.4	+0.6
JOU	Okura	1.05	314	P	Pn	07 53 25.0	-0.5
JMK	Ichinoseki	1.34	347	P	Pn	07 53 29.4	-0.1
JMK				S	Sn	07 53 45.7	-0.6
JYS	Shirataka	1.36	296	P	Pn	07 53 29.8	+0.1
MJAR	Matsushiro Arr	2.94	249	P	Pn	07 53 52.4	+1.1
	27nm,0.3s,baz=57,slow=11,SNR=11						
MAJO	Matsushiro	2.94	249	ePn	Pn	07 53 53.1	+1.8
MAT	Matsushiro	2.94	249	P	Pn	07 53 52.9	+1.5
MAT				S	Sn	07 54 31.6	+6.1
ERM	Erimo	4.52	15	ePn	Pn	07 54 11.8	-1.2
ERM				eSn	Sn	07 55 03.8	-0.4
JHJ2	Mitsune	4.75	199	ePn	Pn	07 54 15.2	-1.0
JHJ2				eSn	Sn	07 55 09.0	-1.0
JHJ	Hachijo jima 2	4.76	199	P	Pn	07 54 16.4	+0.2
	38nm,0.3s,baz=6.3,slow=9.2,SNR=6.9						
JHJ				S	Sn	07 55 08.6	-1.5
	126nm,0.3s,baz=90,slow=20,SNR=8.8						
YSS	Yuzh-Sakhalins	9.34	5	ePn	Pn	07 55 19.1	+0.2
USRK	Ussuriysk Ar.	9.80	315	P	Pn	07 55 25.9	+0.8
	2.1nm,0.3s,baz=124,slow=14,SNR=12						
JNU	Nakatsue	9.86	246	P	Pn	07 55 29.3	+3.2
	1.2nm,0.3s,baz=45,slow=5.3,SNR=6.8						
CBIJ	Chichi jima	10.53	177	P	Pn	07 55 33.9	-1.3
CBIJ				S	Sn	07 57 21.7	-10
JCJ	Chichijima	10.53	177	P	Pn	07 55 33.9	-1.3
	baz=270,slow=20						
JCJ				S	Sn	07 57 21.7	-10
	9.4nm,0.3s,baz=270,slow=20,SNR=4.6						
KSRS	Korea Array	10.88	273	P	Pn	07 55 43.3	+3.3
	0.5nm,0.3s,baz=85,slow=14,SNR=9.7						
KSAR	Wonju Array Be	10.91	273	P	Pn	07 55 43.3	+2.9
KLR	Kul'dur	13.61	331	P	Pn	07 56 17.0	-0.2
	0.1nm,0.3s,baz=134,slow=13,SNR=1.9						
PET	Petropavlovsk	19.41	32	eP	P	07 57 29.1	+0.6
BJT	Baijiatuau	19.95	285	eP	P	07 57 35.4	+0.8
	11nm,0.5s						
MA2	Magadan	22.73	12	P	P	07 58 03.3	-0.9
	6.8nm,0.7s,baz=216,slow=8.7,SNR=6.1						
YAK	Yakutsk	25.51	347	P	P	07 58 29.7	-0.4
	1.5nm,0.3s,baz=156,slow=20,SNR=5.9						
SEY	Seymchan	26.16	11	P	P	07 58 37.1	+1.1
	7.4nm,0.8s,baz=199,slow=6.2,SNR=9.1						
ULN	Ulaanbaatar	27.16	303	eP	P	07 58 44.6	-0.7
	2.5nm,0.6s						
ENH	Enshi	27.55	264	eP	P	07 58 48.2	-0.7
	21nm,0.8s						
SONM	Songino Array	27.59	303	P	P	07 58 49.2	0.0
	2.7nm,0.6s,baz=102,slow=8.5,SNR=8.0						
H11N2	WAKE ISLAND Hy	28.32	122	T	T	08 29 12.5	
	baz=315,slow=75,SNR=77						
H11N1	WAKE ISLAND Hy	28.33	122	T	T	08 29 13.1	
	baz=315,slow=75,SNR=30						
H11N3	WAKE ISLAND Hy	28.34	122	T	T	08 29 13.9	
	baz=315,slow=75,SNR=52						
H11S1	WAKE ISLAND Hy	29.06	124	T	T	08 30 06.4	
	baz=316,slow=76,SNR=43						
H11S3	WAKE ISLAND Hy	29.06	124	T	T	08 30 07.6	
	baz=316,slow=76,SNR=33						
H11S2	WAKE ISLAND Hy	29.07	124	T	T	08 30 11.5	
	baz=316,slow=76,SNR=31						
TIXI	Tiksi	34.71	353	eP	P	07 59 50.0	-1.2
	2.9nm,0.6s						
ZALV	Zalesovo Beam	41.63	312	P	P	08 00 49.6	-0.1
	5.4nm,0.7s,baz=96,slow=6.2,SNR=6.9						
CMAR	Chiang Mai Arr	41.81	255	P	P	08 00 52.2	+0.6
	1.5nm,0.3s,baz=44,slow=6.8,SNR=3.2						
NRIK	Noril'sk	42.79	335	P	P	08 00 57.7	-1.2
	1.0nm,0.3s,baz=131,slow=6.4,SNR=3.0						
MKAR	Makanchi Array	43.94	302	P	P	08 01 08.2	-0.4
	3.1nm,0.6s,baz=83,slow=11,SNR=8.3						
KURK	Kurchatov	45.69	308	P	P	08 01 22.4	0.0
KURBB	Kurchatov Arra	45.76	308	P	P	08 01 22.4	-0.5
	15nm,0.7s,baz=81,slow=7.9,SNR=13						
ILAR	Eielson Array	48.89	33	P	P	08 01 47.8	+0.7
	1.8nm,0.6s,baz=261,slow=6.1,SNR=6.8						
TKM2	Tokmak 2	49.49	298	eP	P	08 01 52.6	+0.4
	9.3nm,0.5s						
SOEI	Soe	49.87	203	eP	P	08 01 52.2	-3.0
	55nm,0.5s						
BVAR	Borovoye Array	50.29	312	P	P	08 01 57.0	-0.8
	1.0nm,0.5s,baz=75,slow=6.1,SNR=3.5						
BVAR				PcP	PcP	08 03 16.0	0.0
	1.7nm,0.7s,baz=72,slow=4.7,SNR=3.5						
AAK	Ala-Archa	50.35	298	P	P	08 01 58.2	-0.5
	2.8nm,0.5s,baz=116,slow=4.5,SNR=8.8						
AAK	Ala-Archa	50.35	298	eP	P	08 01 58.5	-0.2
KKAR	Karatay Array	52.97	300	eP	P	08 02 18.1	+0.1
	1.9nm,0.5s						
INK	Inuvik	53.77	27	P	P	08 02 24.5	+1.0
	4.3nm,0.5s,baz=291,slow=6.2,SNR=30						
INK				pP	pP	08 02 39.2	+1.2
	2.3nm,0.7s,baz=303,slow=7.3,SNR=4.2						
ARU	Arti	56.02	318	P	P	08 02 39.6	-0.2
	3.7nm,0.4s,baz=96,slow=6.0,SNR=7.7						
FITZ	Fitzroy Crossi	57.45	198	P	P	08 02 51.4	+1.0
	3.1nm,0.7s,baz=342,slow=9.6,SNR=4.6						
WRAB	Tennant Creek	57.67	188	eP	P	08 02 51.9	-0.1
	3.6nm,0.6s						
ABKAR	Akbulak array	57.68	310	eP	P	08 02 51.1	-0.6
	3.2nm,0.4s						
WRA	Warramunga Arr	57.69	188	P	P	08 02 52.1	+0.1
	6.7nm,0.5s,baz=5.5,slow=6.9,SNR=29						
ASAR	Alice Springs	61.41	188	P	P	08 03 18.1	+0.4
	2.9nm,0.7s,baz=12,slow=5.6,SNR=16						
YKA	Yellowknife Ar	63.20	30	P	P	08 03 29.5	+0.3
	1.6nm,0.6s,baz=302,slow=6.4,SNR=22						
YKA				pP	pP	08 03 43.9	-0.1
	0.7nm,0.7s,baz=299,slow=5.3,SNR=5.9						
ARCES	ARCESS Array B	63.49	339	P	P	08 03 31.0	0.0
	3.9nm,0.8s,baz=36,slow=9.0,SNR=5.9						
GEYT	Alibeck	63.69	299	P	P	08 03 32.4	-0.5
	1.7nm,0.5s,baz=357,slow=5.9,SNR=3.8						
FINES	FINESS Array B	68.35	332	P	P	08 04 02.0	-0.4
	8.6nm,0.7s,baz=63,slow=8.8,SNR=15						
STKA	Stephens Creek	69.16	180	P	P	08 04 08.2	+0.6
	1.4nm,0.8s,baz=351,slow=6.6,SNR=4.5						
STKA				pP	pP	08 04 23.3	+0.6
	3.9nm,0.8s,baz=348,slow=9.2,SNR=5.8						
YBH	Yreka Blue Hor	69.84	53	P	P	08 04 13.0	+1.0
	1.5nm,0.7s,baz=336,slow=5.9						
KBZ	Khabaz	70.63	311	P	P	08 04 16.6	-0.1
	4.5nm,0.9s,baz=52,slow=6.7,SNR=3.7						
NB2	NORSAR Subarra	73.69	337	P	P	08 04 34.3	-0.5
	comp=Z,9.2nm,0.9s,baz=39,slow=6.2						
NOA	NORSAR Array B	73.69	337	P	P	08 04 34.6	-0.1
	comp=Z,4.8nm,0.8s,baz=38,slow=5.8,SNR=13						
AKASG	Malin Array Be	73.92	322	P	P	08 04 35.8	-0.4
	comp=Z,5.4nm,0.5s,baz=45,slow=6.2,SNR=24						
NVAR	Mina Array Bea	74.49	53	P	P	08 04 41.3	+1.2
	comp=Z,1.3nm,0.6s,baz=280,slow=7.5,SNR=4.6						
PDAR	Pinedale Array	77.12	46	P	P	08 04 55.8	+0.7
	comp=Z,1.3nm,0.6s,baz=262,slow=2.1,SNR=14						
PDAR				pP	pP	08 05 10.8	+0.5
	comp=Z,1.6nm,0.8s,baz=283,slow=1.7,SNR=7.7						
BRTR	Keskin Array B	78.57	312	P	P	08 05 02.8	-0.3
	comp=Z,0.8nm,0.6s,baz=52,slow=3.1,SNR=4.2						
ULM	Lac du Bonnet	78.90	33	P	P	08 05 04.3	-0.1
	comp=Z,0.9nm,0.4s,baz=329,slow=8.3,SNR=3.6						
MLR	Muntele Rosu	79.03	320	P	P	08 05 04.8	-0.6
	comp=Z,0.4nm,0.4s,baz=330,slow=20						
DPC	Dobruska-Polom	80.03	328	eP	P	08 05 11.4	+0.8
BRG	Berggiesshubel	80.61	329	eP	P	08 05 13.7	0.0
	comp=Z,4.5nm,1.0s						
CLL	Collm	80.65	330	i P	P	08 05 13.8	-0.1
	comp=Z,5.0nm,0.9s						
KHC	Kasperske Hory	82.11	329	eP	P	08 05 22.1	+0.3
KHC	Kasperske Hory	82.11	329	eP	P	08 05 22.0	+0.3
	comp=Z,2.0nm,1.0s						
GERES	GERESS Array B	82.28	328	P	P	08 05 22.4	-0.3
	comp=Z,1.7nm,0.6s,baz=40,slow=5.8,SNR=11						
SCHQ	Schefferville	84.71	16	P	P	08 05 35.0	+0.1
	comp=Z,3.2nm,0.7s,baz=24,slow=11,SNR=4.2						
TXAR	Lajitas Array	89.62	52	P	P	08 06 00.3	+1.0
	comp=Z,1.3nm,0.6s,baz=307,slow=3.1,SNR=16						
TXAR				pP	pP	08 06 15.4	+0.5
	comp=Z,1.1nm,0.5s,baz=294,slow=3.0,SNR=10						
SDV	Santo Domingo	124.75	40	PKP	PKPdf	08 12 01.2	-0.3
	comp=Z,2.5nm,0.7s,baz=29,slow=6.4,SNR=3.6						
VNA2	Neumayer--Watz	142.95	196	PKP	PKPdf	08 12 28.3	-5.1
	baz=98,slow=2.0						
VNA3	Neumayer Olymp	143.20	195	PKP	PKPab	08 12 27.1	-2.5
LPAZ	La Paz	146.24	59	PKPbc	PKPbc	08 12 43.0	+0.3
	comp=Z,2.6nm,0.5s,baz=351,slow=1.6,SNR=18						
LCO	Las Campanas	151.76	82	ePKPbc	PKPbc	08 12 57.0	+0.9

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*IDC **03** 07:59:06.7±1.6, 3°.54S×135°.61E, h0km, mb3.8/2, mb1 4.2/4, mb1mx3.6/46, mbtmp4.0/4, ML3.6/3, Error ellipse: s-maj=29.2km s-min=25.5km az=15.0*
*ISCJB **03** 07:59:07.5±0.5, 3°.66S±0°.06×135°.57E±0°.04, h22km, mb3.7/1, Error ellipse: s-maj=8.7km s-min=5.2km az=7.6*
*DJA **03** 07:59:11.3±0.3, 4°S±5°×13°6E±°, h53km±14km, M4.5/16, mb4.6/15, mB5.4/4, MLv4.5/16, Mw(mB)4.8/4*
ISC 03 07:59:09.4±0.8**, 3°.66S**±0°.08×**135°.55E**±0°.06**, h22**km**, n23,** σ**0s.97**/23**, Irian Jaya region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KMPI	Kaimana, Papua	1.84	270	P	Pb	07 59 41.5	-0.8
RKPI	Ransiki, Papua	2.54	327	P	Pn	07 59 50.1	+0.8
FAKI	Fak Fak	3.37	283	P	Pn	08 00 01.1	+0.3
FAKI	Fak Fak	3.37	283	ePP	Pn	08 00 01.1	+0.3
GENI	Genyem	4.74	77	P	Pn	08 00 19.4	-0.1
SIJI	Sorong	5.10	303	Pn	Pn	08 00 25.9	+1.4
	15nm,0.3s,baz=194,slow=4.2,SNR=3.6						
SIJI				Sn	Sn	08 01 24.1	+1.4
	14nm,0.3s,baz=270,slow=20,SNR=2.3						
SWI	Sorong	5.11	303	P	Pn	08 00 25.0	+0.4
	30nm,0.5s,2μm0.3nm						
JAY	Jayapura	5.28	78	Pn	Pn	08 00 27.2	+0.2
	0.2nm,0.3s,baz=212,slow=23,SNR=6.4						
JAY				Sn	Sn	08 01 26.8	-0.4
	0.1nm,0.3s,baz=53,slow=20,SNR=1.8						
JAY	Jayapura	5.28	78	P	Pn	08 00 26.5	-0.5
	27nm,1.0s,0.1nm						
BNDI	Bandanaira	5.69	261	P	Pn	08 00 33.6	+1.0
	146nm,1.0s,0.7nm						
SAUI	Saumlaki	6.02	224	P	Pn	08 00 37.8	+0.6
	180nm,0.7s,0.9nm						
MSAI	Masohi	6.61	273	P	Pn	08 00 46.4	+1.1
	12nm,0.6s,1μm0.1nm						
MMPI	Merauke	6.78	135	P	Pn	08 00 48.2	+0.6
	254nm,0.4s,7.1nm						
AAI	Ambon	7.33	270	P	Pn	08 00 56.3	+1.0
	1.2nm,0.3s,0.0nm						
NLAI	Namlea	8.44	273	P	Pn	08 01 08.9	-1.5
LBMI	Labuha	8.58	290	P	Pn	08 01 10.7	-1.7
SANI	Sanana	9.68	279	P	Pn	08 01 22.5	-4.9
BATI	Baumata	13.46	241	P	Pn	08 02 19.3	0.0
	19nm,1.1s						
TTSI	Tana Toraja	15.71	272	P	Pn	08 02 47.9	-1.6
WRA	Warramunga Arr	16.23	184	Pn	Pn	08 02 56.8	+0.7
	0.3nm,0.3s,baz=6.1,slow=12,SNR=6.9						
WRA				Sn	Sn	08 05 44.8	-11
	0.2nm,0.3s,baz=3.8,slow=24,SNR=3.4						
FITZ	Fitzroy Crossi	17.32	213	S	Sn	08 06 10.0	-12
	0.2nm,0.3s,baz=304,slow=18,SNR=3.0						
ASAR	Alice Springs	19.95	184	P	Pn	08 03 42.2	+0.3
	3.4nm,0.5s,baz=9.2,slow=10,SNR=12						
ILAR	Eielson Array	88.01	25	P	P	08 11 57.0	-0.6
	0.3nm,0.6s,baz=261,slow=4.0,SNR=5.0						

JMA 03 07:59:14.1±0.1**, 39°.00N**×**142°.30E, h35**km±2km**, M3.5, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	Ofunato	0.50	279	P	Pn	07 59 24.5	-0.2
MIYJ	Miyakonagasawa	0.69	327	P	Pn	07 59 26.9	-0.4
MIYJ				S	Sn	07 59 36.0	-0.8
JMK	Ichinoseki	0.84	267	P	Pn	07 59 29.6	+0.1
JOM	Ohasama	0.91	301	P	Pn	07 59 30.9	+0.4
JOM				S	Sn	07 59 43.0	+0.6
JIO	Ouri	0.92	234	P	Pn	07 59 30.1	-0.4
JKZ	Kuzumaki	1.24	323	P	Pn	07 59 36.0	+1.1
JKZ				S	Sn	07 59 51.9	+1.5
JOU	Okura	1.43	244	P	Pn	07 59 38.8	+1.3
JOU				S	Sn	07 59 56.9	+1.8
JANG	Nango	1.50	336	P	Pn	07 59 39.5	+1.0
JANG				S	Sn	07 59 58.4	+1.5

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*ISCJB **03** 08:00:36.8±0.7, 6°.88S±0°.08×125°.6E±0°.2, h511km, mb3.5/5, Error ellipse: s-maj=19.9km s-min=10.7km az=1.8*
*IDC **03** 08:00:38.8±1.3, 7°.01S×125°.54E, h533km±18km, mb3.1/5, mb1 3.1/9, mb1mx2.8/54, mbtmp3.9/9, Error ellipse: s-maj=34.1km s-min=16.2km az=74.0*
ISC 03 08:00:37.8±0.8**, 6°.96S**±0°.10×**125°.5E**±0°.2**, h511**km**, n11,** σ**1s.22**/12**, mb3.5**/5**, Banda Sea**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BATI	Baumata	3.72	210	P	P	08 01 57.3	+2.4
	7.8nm,0.3s,baz=297,slow=24,SNR=8.1						
BATI				S	S	08 02 57.5	0.0
	4.4nm,0.3s,baz=107,slow=20,SNR=3.8						
SIJI	Sorong	8.32	44	P	P	08 02 39.2	+1.3
	16nm,0.3s,baz=176,slow=16,SNR=1.9						
FITZ	Fitzroy Crossi	11.08	179	P	P	08 03 06.8	+0.2
	0.6nm,0.3s,baz=5.7,slow=9.0,SNR=10						
WRA	Warramunga Arr	15.48	147	P	P	08 03 52.7	-0.2
	0.6nm,0.3s,baz=336,slow=9.1,SNR=5.8						
ASAR	Alice Springs	18.46	155	P	P	08 04 21.5	-0.4
	0.3nm,0.3s,baz=331,slow=8.6,SNR=5.6						
STKA	Stephens Creek	28.97	151	P	P	08 05 55.1	-0.5
	1.2nm,0.4s,baz=333,slow=10,SNR=4.3						
SONM	Songino Array	57.11	345	P	P	08 09 35.4	+0.2
	0.4nm,0.5s,baz=142,slow=6.2,SNR=2.6						
ZALV	Zalesovo Beam	69.65	336	P	P	08 10 54.2	-1.2
	1.1nm,0.4s,baz=143,slow=4.9,SNR=6.1						
KURBB	Kurchatov Arra	70.22	330	P	P	08 10 58.7	-0.1
	0.7nm,0.5s,baz=135,slow=5.4,SNR=5.6						
SEY	Seymchan	72.65	13	P	P	08 11 12.3	-0.5
	0.8nm,0.5s,baz=160,slow=6.3,SNR=3.9						
TORD	Torodi Ar. Bea	124.45	281	PKP	PKPdf	08 18 37.7	-1.9
	0.2nm,0.5s,baz=69,slow=3.6,SNR=2.4						

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*NIED **03** 08:11:00, 37°.00N×141°.70E, h41km, Mw3.7 Best double couple: M₀4.20000×10¹⁴ NP1:φs152.00000°, δ10.00000°, λ57.00000°. NP2:φs6.00000°, δ81.00000°, λ96.00000°.*
*IDC **03** 08:11:19.7±1.3, 37°.05N×141°.90E, h0km, mb3.6/6, mb1 3.7/8, mb1mx3.4/53, mbtmp3.6/8, ML2.8/2, Error ellipse: s-maj=29.4km s-min=25.7km az=62.0*
*ISCJB **03** 08:11:21.0±1.7, 37°.01N±0°.06×141°.92E±0°.10, h19km±10km, mb3.5/6, Error ellipse: s-maj=13.1km s-min=9.9km az=179.9*
*JMA **03** 08:11:25.0±0.2, 37°.02N×141°.66E, h47km±3km, M3.9*
JMA Felt I J1.
ISC 03 08:11:21.0±2.5**, 37°.04N**±0°.07×**141°.88E**±0°.10**, h7**km±13km**, n21,** σ**0s.87**/20**, mb3.6**/6**, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	Kawauchi	0.87	292	P	Pg	08 11 38.6	+0.9
JFK				S	Sg	08 11 48.0	-1.0
ONAJ	Iwakimizuishiy	0.87	274	P	Pg	08 11 38.4	+0.7
ONAJ				eS	Sg	08 11 47.9	-1.1
JHO	Hitachi	1.14	248	P	Pb	08 11 42.1	-0.9
JMM	Marumori	1.19	314	P	Pb	08 11 43.8	-0.2
JFT	Otama	1.32	291	P	Pn	08 11 46.0	+0.1
JIO	Ouri	1.47	343	P	Pn	08 11 48.5	+0.6
JIO				S	Sn	08 12 07.4	0.0
JOU	Okura	1.64	324	P	Pn	08 11 51.1	+0.9
JOU				S	Sn	08 12 10.5	-1.0
MJAR	Matsushiro Arr	2.99	261	Pn	Pn	08 12 09.5	+0.7
	7.3nm,0.3s,baz=84,slow=16,SNR=44						
MJAR				Sn	Sn	08 12 46.8	+1.9
	5.9nm,0.3s,baz=136,slow=29,SNR=5.9						
USRK	Ussuriysk Ar.	10.37	317	Pn	Pn	08 13 50.8	+0.7
	0.2nm,0.3s,baz=100,slow=14,SNR=2.2						
H11N2	WAKE ISLAND Hy	27.83	121	T	T	08 46 36.6	
	baz=314,slow=75,SNR=22						
H11N1	WAKE ISLAND Hy	27.84	121	T	T	08 46 37.7	
	baz=314,slow=75,SNR=13						
H11N3	WAKE ISLAND Hy	27.85	121	T	T	08 46 39.9	
	baz=314,slow=75,SNR=14						
SONM	Songino Array	28.09	304	P	P	08 17 13.2	-0.1
	0.3nm,0.3s,baz=110,slow=9.4,SNR=3.2						
H11S1	WAKE ISLAND Hy	28.55	124	T	T	08 47 28.3	
	baz=315,slow=76,SNR=8.9						
H11S3	WAKE ISLAND Hy	28.55	124	T	T	08 47 34.7	
	baz=315,slow=76,SNR=8.3						
H11S2	WAKE ISLAND Hy	28.57	124	T	T	08 47 31.2	
	baz=315,slow=76,SNR=8.4						
ZALV	Zalesovo Beam	42.18	312	P	P	08 19 13.9	-0.2
	0.4nm,0.4s,baz=105,slow=5.3,SNR=2.7						
MKAR	Makanchi Array	44.43	302	P	P	08 19 31.8	-0.6
	0.8nm,0.8s,baz=87,slow=9.7,SNR=7.1						
KURBB	Kurchatov Arra	46.29	308	P	P	08 19 46.3	-0.7
	0.6nm,0.4s,baz=85,slow=8.0,SNR=9.3						
ILAR	Eielson Array	49.28	32	P	P	08 20 10.2	+0.1
	0.3nm,0.7s,baz=270,slow=6.3,SNR=3.9						
WRA	Warramunga Arr	57.12	188	P	P	08 21 08.0	-0.3
	0.7nm,1.0s,baz=5.7,slow=7.4,SNR=3.0						

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*NNC **03** 08:22:04.5±1.7, 36°.67N×69°.62E, h174km±22km, mb3.0, mpv4.1, Error ellipse: s-maj=15.6km s-min=11.4km az=52.0*
ISC 03 08:21:50.4±1.8**, 36°.1N**±0°.1×**69°.1E**±0°.1**, h35**km**, n11,** σ**1s.42**/14**, 10C-7D, Hindu Kush region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SFK	Sufi-Kurgan	5.22	40	⇑P	Pn	08 23 12.2	+6.0
	20nm,0.4s						
SFK				⇑S	Sn	08 24 05.6	+0.3
	25nm,0.3s						
THN	Thein Dam	6.56	122	eP	Pn	08 23 31.8	+7.5
THN				eS	Sn	08 24 37.8	0.0
MNAS	Manas	6.91	21	⇑P	Pn	08 23 35.4	+6.2
	15nm,0.6s						
MNAS				⇓S	Sn	08 24 46.0	-0.6
	22nm,1.0s						
KK31	Karatay Array	7.09	8	⇓P	Pn	08 23 38.2	+6.7
	1.9nm,0.3s,baz=201,slow=14,SNR=67						
KK31				⇑S	Sn	08 24 51.3	+0.4
	14nm,0.5s						
AAK	Ala-Archa	7.75	31	⇑P	Pn	08 23 46.0	+5.2
	4.4nm,0.3s						
AAK				⇑S	Sn	08 25 06.1	-1.2
	19nm,0.7s						
TKM2	Tokmak 2	8.46	34	⇑P	Pn	08 23 54.0	+3.5
	12nm,0.8s						
TKM2				⇑S	Sn	08 25 23.1	-1.8
	5.9nm,0.6s						
MK31	Makanchi Array	14.54	39	⇓P	Pn	08 25 12.2	-1.2
	0.7nm,0.4s,baz=216,slow=9.8,SNR=18						
AB31	Akbulak array	14.78	336	⇑P	P	08 25 21.2	-1.0
	0.2nm,0.3s,baz=150,slow=12,SNR=28						
AB31				⇓S	Sn	08 27 58.6	-0.4
	1.2nm,0.4s,baz=151,slow=25,SNR=6.2						
KURBB	Kurchatov Arra	16.04	22	⇓P	Pn	08 25 31.5	-1.5
	3.2nm,0.8s						
AKTO	Aktyubinsk	16.44	334	⇓P	P	08 25 40.5	-0.1
	4.0nm,1.2s						
AKTO				⇑S	Sn	08 28 39.8	+0.3
	3.0nm,0.8s						
VOSK	Vostochnaya	16.69	4	⇓P	Pn	08 25 41.6	+0.4
	2.0nm,1.0s						

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*JMA **03** 08:22:54.1±0.1, 40°.15N×142°.47E, h33km±1km, M3.8*
*IDC **03** 08:22:58.3±4.0, 40°.07N×142°.41E, h77km±39km, mb3.4/9, mb1 3.5/10, mb1mx3.2/56, mbtmp3.6/10, ML3.1/1, MS2.9/1, Ms1 2.9/1, ms1mx2.4/32, Error ellipse: s-maj=25.0km s-min=21.3km az=110.0*

ISC 03 08:22:51.4±1.8, 40°.21N±0°.04×142°.54E±0°.07, h13km±10km, n30, σ0s.83/33, mb3.7/9, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
JTH	Tanohata	0.59	242	P	Pn	08 23 04.8	-0.6
JTH				S	Sb	08 23 12.3	+0.5
JANG	Nango	0.80	282	P	Pn	08 23 08.4	0.0
JANG				S	Sb	08 23 18.2	+0.3
MIYJ	Miyakonagasawa	0.84	221	P	Pb	08 23 08.1	+0.2
MIYJ				S	Sg	08 23 18.0	-0.8
JKZ	Kuzumaki	0.96	257	P	Pn	08 23 10.6	0.0
JKZ				S	Sg	08 23 22.3	-0.1
JOM	Ohasama	1.21	233	P	Pb	08 23 14.4	+0.2
JOM				S	Sb	08 23 29.1	-0.7
JTM	Tenmabayashi	1.26	297	P	Pg	08 23 15.8	+0.1
JTM				S	Sn	08 23 31.9	+0.4
OFUJ	Ofunato	1.32	211	P	Pn	08 23 15.5	0.0
JAH	Hinai	1.46	270	P	Pb	08 23 18.5	+0.1
JAH				S	Sn	08 23 36.7	+0.3
JMK	Ichinoseki	1.62	219	S	Sn	08 23 40.1	-0.3
JOT	Ohata	1.63	316	P	Pb	08 23 21.4	+0.2
JOT				S	Sb	08 23 42.1	+0.5
JRG	Rokugo	1.68	242	P	Pb	08 23 22.4	+0.2
JRG				eS	Sb	08 23 43.8	+0.6
JIO	Ouri	1.99	208	P	Pn	08 23 25.4	+0.8
JIO				S	Sn	08 23 49.4	+0.1
JKB	Kayabe	2.02	326	P	Pb	08 23 27.4	-0.6
MJAR	Matsushiro Arr	5.00	224	P	Pn	08 24 08.9	+2.7
	0.7nm,0.3s,baz=31,slow=14,SNR=10.0						
JNU	Nakatsue	11.73	237	LR	LR	08 30 25.9	
	comp=Z,58nm,20.7s,baz=36,slow=39						
SEY	Seymchan	23.50	11	P	P	08 28 01.6	+1.0
	0.5nm,0.4s,baz=124,slow=6.3,SNR=4.1						
H11N2	WAKE ISLAND Hy	29.19	127	T	T	08 59 37.3	
	baz=319,slow=75,SNR=58						
H11N1	WAKE ISLAND Hy	29.20	127	T	T	08 59 35.5	
	baz=319,slow=75,SNR=25						
H11N3	WAKE ISLAND Hy	29.21	127	T	T	08 59 49.4	
	baz=319,slow=75,SNR=23						
H11S1	WAKE ISLAND Hy	30.01	129	T	T	09 00 48.5	
	baz=321,slow=76,SNR=8.1						
H11S3	WAKE ISLAND Hy	30.01	129	T	T	09 00 52.4	
	baz=321,slow=76,SNR=9.5						
H11S2	WAKE ISLAND Hy	30.03	129	T	T	09 00 55.0	
	baz=321,slow=76,SNR=9.4						
ZALV	Zalesovo Beam	40.50	310	P	P	08 30 28.8	-0.8
	0.4nm,0.4s,baz=93,slow=7.9,SNR=2.6						
MKAR	Makanchi Array	43.25	299	P	P	08 30 51.8	-0.6
	0.3nm,0.4s,baz=86,slow=9.4,SNR=4.8						
KURBB	Kurchatov Arra	44.80	306	P	P	08 31 03.8	-0.9
	1.4nm,0.6s,baz=81,slow=8.7,SNR=7.8						
ILAR	Eielson Array	46.35	34	P	P	08 31 17.5	+0.8
	0.3nm,0.7s,baz=264,slow=8.1,SNR=4.1						
BVAR	Borovoye Array	49.13	311	P	P	08 31 38.1	-0.4
	1.1nm,0.4s,baz=78,slow=8.1,SNR=10						
INK	Inuvik	51.16	28	P	P	08 31 54.4	+0.8
	0.4nm,0.4s,baz=294,slow=6.0,SNR=4.5						
WRA	Warramunga Arr	60.33	189	P	P	08 32 57.8	-2.1
	0.7nm,0.9s,baz=6.0,slow=6.9,SNR=3.4						
FINES	FINESS Array B	66.42	332	P	P	08 33 40.0	+0.3
	1.8nm,0.9s,baz=40,slow=9.1,SNR=2.8						

*IDC **03** 08:30:01.1±4.5, 32°.94N×136°.48E, h115km±56km, mb2.9/3, mb1 3.2/5, mb1mx2.9/47, mbtmp3.6/5, Error ellipse: s-maj=53.6km s-min=23.8km az=64.0*
*JMA **03** 08:30:05.3±0.3, 33°.84N×138°.58E, h278km±3km, M3.1*
*ISCJB **03** 08:30:06.8±0.6, 33°.94N±0°.07×138°.61E±0°.08, h270km±6km, mb2.7/3, Error ellipse: s-maj=11.9km s-min=9.5km az=139.0*
ISC 03 08:30:08.0±1.0, 33°.95N±0°.07×138°.59E±0°.07, h264km±8km, n23, σ0s.92/28, mb2.8/3, Southeast of Honshu

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
HMMJ	Hamamatsu 2	1.15	322	P	Pn	08 30 44.8	-0.5
JHJ	Hachijo jima 2	1.30	129	P	Pn	08 30 45.8	-0.5
	11nm,0.3s,baz=270,slow=20,SNR=4.9						
JHJ				S	S	08 31 18.4	+1.8
	8.6nm,0.3s,baz=246,slow=20,SNR=4.4						
JHJ2	Mitsune	1.32	129	P	Pn	08 30 45.4	-1.1
JOD2	Odawara 2	1.37	17	P	Pn	08 30 46.7	-0.1
JOD2				eS	S	08 31 18.7	+1.2
JNY	Yasuok	1.53	337	P	Pn	08 30 47.8	-0.1
TTO1	TONANKAI O.B.S	1.54	258	P	Pn	08 30 46.9	-0.7
JYN	Shimob	1.54	359	P	Pn	08 30 48.3	+0.3
JIE	Ise	1.62	286	P	Pn	08 30 47.6	-0.9
JAO	Obara	1.71	321	P	Pn	08 30 48.8	-0.5
BSO4	Boso 4	1.78	54	P	Pn	08 30 49.7	+0.1
BSO4				eS	S	08 31 23.0	+0.4
BSO3	Boso 3	1.80	61	S	S	08 31 23.0	+0.4
JHU	Hanno	1.98	17	P	Pn	08 30 51.4	0.0
JHU				eS	S	08 31 24.9	-1.0
BSO1	Boso 1	2.10	70	P	Pn	08 30 51.3	-0.6
BSO1				eS	S	08 31 26.6	-0.1
JAG	Ashikaga	2.57	16	P	Pn	08 30 56.5	-0.4
MAT	Matsushiro	2.60	353	P	Pn	08 30 57.6	+0.3
JYT	Yasato	2.63	30	P	Pn	08 30 56.6	-0.8
JYT				eS	S	08 31 34.6	-2.1
JWT	Wachi	2.94	298	P	Pn	08 30 59.8	-0.9
JKG	Kaga	2.97	322	P	Pn	08 31 00.8	-0.1
JSZ	Suzu	3.63	344	S	S	08 31 57.1	+1.1
JCJ	Chichijima	7.50	155	P	Pn	08 31 49.5	-5.7
	baz=0.0,slow=20						
JCJ				S	S	08 33 09.8	-12
	9.9nm,0.3s,baz=260,slow=20,SNR=7.2						
MKAR	Makanchi Array	43.88	304	P	P	08 37 48.8	+0.2
	0.2nm,0.5s,baz=84,slow=9.5,SNR=3.6						
WRA	Warramunga Arr	53.74	185	P	P	08 39 02.4	-1.0
	0.2nm,0.3s,baz=0.0,slow=7.6,SNR=10.0						
ASAR	Alice Springs	57.47	185	P	P	08 39 31.2	+1.4
	0.1nm,0.4s,baz=7.5,slow=15,SNR=4.3						

*ISCJB **03** 08:35:07.6±0.5, 53°.00N±0°.05×63°.23E±0°.05, h0km, mb3.5/1, Error ellipse: s-maj=7.3km s-min=4.0km az=170.0*
*IDC **03** 08:35:11.1±1.1, 53°.19N×63°.21E, h0km, mb3.5/1, mb1 3.5/6, mb1mx3.2/48, mbtmp3.4/6, ML2.7/5, Error ellipse: s-maj=20.9km s-min=7.6km az=26.0*
*NNC **03** 08:35:12.3±1.5, 52°.64N×63°.49E, h0km, mb3.4, mpv3.0, Error ellipse: s-maj=29.2km s-min=5.3km az=153.0, Suspected Mining explosion.*
*CSEM **03** 08:35:12.3, 52°.64N×63°.49E, h0km, mb3.4, Suspected Mining explosion.*
ISC 03 08:35:09.9±0.9, 53°.00N±0°.04×63°.13E±0°.03, h0km, n21, σ1s.58/38, 15C-11D, Western Kazakhstan

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
ZRNK	Zerenda	3.55	88	⇓Pn	Pn	08 36 07.8	+1.5
	3.5nm,0.5s						
ZRNK				⇑Pg	Pb	08 36 15.5	+2.0
	3.4nm,0.5s						
ZRNK				⇓Sn	Sn	08 36 44.7	-4.2
ZRNK				⇑Lg	Lg	08 36 58.8	
	5.0nm,0.4s						
ZRNK	Zerenda	3.55	88	Pn	Pn	08 36 07.8	+1.5
	3.5nm,0.5s						
AKTO	Aktyubinsk	4.09	233	⇑Pn	Pn	08 36 15.4	+1.9
	0.7nm,0.5s						
AKTO				⇓Pg	Pb	08 36 23.5	+0.9
	3.8nm,0.9s						
AKTO				⇓Sn	Sn	08 37 03.8	+1.8
	2.3nm,0.9s						
AKTO				⇑Lg	Lg	08 37 17.9	
	18nm,0.8s						
AKTO	Aktyubinsk	4.09	233	Pn	Pn	08 36 15.4	+1.9
	0.7nm,0.5s						
AB31	Akbulak array	4.25	209	Pn	Pn	08 36 16.3	+0.5
	0.5nm,0.3s,baz=27,slow=13,SNR=29						
AB31				⇑Pg	Pb	08 36 25.1	-0.3
	0.7nm,0.3s,baz=24,slow=15,SNR=12						
AB31				⇑Sn	Sn	08 37 05.4	-0.7
	1.6nm,0.3s,baz=43,slow=26,SNR=6.4						
AB31				⇓Lg	Lg	08 37 21.6	
	18nm,0.7s,baz=19,slow=29,SNR=11						
AB31	Akbulak array	4.25	209	Pn	Pn	08 36 16.3	+0.5
	0.5nm,0.3s,SNR=29						
AB31	Akbulak array	4.25	209	Pg	Pb	08 36 25.1	-0.3
	0.7nm,0.3s,SNR=12						
AB31				Sn	Sn	08 37 05.4	-0.7
	1.6nm,0.3s,SNR=6.4						
AB31				Lg	Lg	08 37 21.6	
	18nm,0.7s,SNR=11						
BRVK	Borovoye	4.32	86	⇓Pn	Pn	08 36 18.6	+1.8
	3.5nm,0.6s						
BRVK				⇑Pg	Pb	08 36 28.5	+1.9
	2.4nm,0.5s						
BRVK				⇑Sn	Sn	08 37 05.8	-2.0
	4.9nm,0.5s						
BRVK				⇑Lg	Lg	08 37 23.7	
BRVK	Borovoye	4.32	86	Pn	Pn	08 36 18.6	+1.8
	3.5nm,0.6s						
ARU	Arti	4.34	324	Pn	Pn	08 36 18.1	+1.2
	0.0nm,0.3s,baz=102,slow=19,SNR=4.5						
ARU				Pg	Pb	08 36 26.9	0.0
	0.0nm,0.3s,baz=105,slow=20,SNR=6.5						
ARU				Sn	Sn	08 37 07.9	-0.3
	0.0nm,0.3s,baz=80,slow=20,SNR=6.1						
ARU				Lg	Lg	08 37 25.9	
	0.1nm,0.3s,baz=294,slow=23,SNR=16						
BVA0	Borovoye Array	4.39	87	⇑Pn	Pn	08 36 19.2	+1.5
	2.0nm,0.3s,baz=288,slow=13,SNR=47						
BVA0				⇓Pg	Pb	08 36 28.7	+1.0
	1.3nm,0.4s,baz=285,slow=13,SNR=6.4						
BVA0				⇓Sn	Sn	08 37 08.5	-0.9
	9.9nm,1.1s,baz=277,slow=26,SNR=5.3						
BVA0				⇑Lg	Lg	08 37 27.0	
	9.4nm,0.5s,baz=277,slow=34,SNR=7.1						
BVA0	Borovoye Array	4.39	87	Pn	Pn	08 36 19.2	+1.5
	2.0nm,0.3s,SNR=47						
BVA0	Borovoye Array	4.39	87	Pg	Pb	08 36 28.7	+1.0
	1.3nm,0.4s,SNR=6.4						
BVA0				Sn	Sn	08 37 08.5	-0.9
	9.9nm,1.1s,SNR=5.3						
BVA0				Lg	Lg	08 37 27.0	
	9.4nm,0.5s,SNR=7.1						
BVAR	Borovoye Array	4.39	87	Pn	Pn	08 36 19.3	+1.7
	2.0nm,0.3s,baz=281,slow=13,SNR=47						
BVAR				Sn	Sn	08 37 09.1	-0.3
	2.5nm,0.3s,baz=278,slow=26,SNR=8.9						
BVAR				Lg	Lg	08 37 26.0	
	6.0nm,0.3s,baz=274,slow=32,SNR=11						
CHKZ	Chkalovo	4.54	78	⇑Pn	Pn	08 36 20.6	+0.9
CHKZ				⇑Pg	Pb	08 36 29.7	-0.6
CHKZ				⇑Lg	Lg	08 37 31.6	
	26nm,0.8s						
CHKZ	Chkalovo	4.54	78	Pn	Pn	08 36 20.6	+0.9
VOSK	Vostochnaya	4.77	90	⇓Pn	Pn	08 36 23.6	+0.7
	0.4nm,0.4s						
VOSK				⇑Pg	Pb	08 36 36.8	+2.6
	0.9nm,0.4s						
VOSK				⇓Sn	Sn	08 37 16.6	-2.3
	5.9nm,0.7s						
VOSK				⇓Lg	Lg	08 37 37.3	
	16nm,0.7s						
KURBB	Kurchatov Arra	9.83	98	Pn	Pn	08 37 33.0	+0.7
	0.1nm,0.3s,baz=290,slow=14,SNR=4.5						
KURBB				Lg	Lg	08 40 19.4	
	0.1nm,0.3s,baz=302,slow=30,SNR=3.5						
MKAR	Makanchi Array	13.80	109	Pn	Pn	08 38 23.5	-3.2
	0.1nm,0.3s,baz=302,slow=14,SNR=2.6						
MKAR				Lg	Lg	08 42 28.3	
	0.1nm,0.3s,baz=309,slow=28,SNR=2.8						
KBZ	Khabaz	16.28	243	Pn	Pn	08 38 57.2	-2.5
	0.2nm,0.3s,baz=51,slow=6.5,SNR=3.4						
FINES	FINESS Array B	21.49	308	P	P	08 39 59.4	-0.4
	1.0nm,0.5s,baz=96,slow=11,SNR=9.2						

*IDC **03** 08:39:57.0±1.4, 37°.06N×142°.05E, h0km, mb3.8/8, mb1 3.9/11, mb1mx3.6/52, mbtmp3.9/11, ML4.0/3, Error ellipse: s-maj=39.4km s-min=19.7km az=81.0*
*NIED **03** 08:40:00, 37°.00N×141°.60E, h41km, Mw3.8 Best double couple: M0 5.50000×10^14 NP1:ϕs214.00000°, δ13.00000°, λ76.00000°. NP2:ϕs48.00000°, δ77.00000°, λ93.00000°.*
*JMA **03** 08:40:03.2±0.2, 37°.05N×141°.65E, h44km±2km, M3.7*
ISC 03 08:39:58.5±2.0, 37°.00N±0°.04×141°.90E±0°.07, h11km±11km, n19, σ1s.90/29, mb3.7/8, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
ONAJ	Iwakimizuishiy	0.89	277	P	Pg	08 40 16.4	+0.7
ONAJ				S	Sg	08 40 25.6	-1.8
JFK	Kawauchi	0.90	295	P	Pg	08 40 16.5	+0.6
JFK				S	Sg	08 40 26.4	-1.3
JHO	Hitachi	1.14	251	P	Pb	08 40 20.1	-0.1
JHO				eS	Sb	08 40 32.5	-2.4
JMM	Marumori	1.24	315	P	Pn	08 40 21.8	0.0
JMM				eS	Sb	08 40 35.1	-2.8
JFT	Otama	1.35	293	P	Pn	08 40 23.9	+0.5
JIO	Ouri	1.52	343	P	Pn	08 40 26.5	+0.9
JIO				S	Sn	08 40 44.9	-0.5
JOU	Okura	1.69	325	P	Pn	08 40 28.9	+1.0
JOU				S	Sn	08 40 48.8	-0.7
MJAR	Matsushiro Arr	3.00	262	Pn	Pn	08 40 47.7	+1.7
	6.6nm,0.3s,baz=84,slow=15,SNR=52						
MJAR				Sn	Sn	08 41 23.1	+1.2
	5.7nm,0.3s,baz=82,slow=28,SNR=8.6						
MAT	Matsushiro	3.00	262	P	Pn	08 40 48.8	+2.8
MAT				S	Sn	08 41 24.3	+2.3
JHJ	Hachijo jima 2	4.24	205	Pn	Pn	08 41 05.2	+2.2
	21nm,0.3s,baz=335,slow=21,SNR=14						
JHJ				Sn	Sn	08 41 50.8	-1.6
	19nm,0.3s,baz=107,slow=19,SNR=7.6						
JCJ	Chichijima	9.87	179	Pn	Pn	08 42 20.9	+0.5
	2.9nm,0.3s,baz=356,slow=19,SNR=4.5						
JCJ				Sn	Sn	08 44 04.9	-6.3
	2.4nm,0.3s,baz=287,slow=19,SNR=2.4						
SONM	Songino Array	28.13	304	P	P	08 45 51.6	+1.0
	0.7nm,0.4s,baz=102,slow=9.5,SNR=6.2						
ZALV	Zalesovo Beam	42.23	312	P	P	08 47 52.0	+0.6
	0.4nm,0.3s,baz=100,slow=7.5,SNR=3.9						
MKAR	Makanchi Array	44.47	302	P	P	08 48 10.1	+0.5
	1.1nm,0.7s,baz=86,slow=10,SNR=15						
KURBB	Kurchatov Arra	46.33	308	P	P	08 48 24.1	-0.2
	0.9nm,0.5s,baz=84,slow=7.9,SNR=11						
WRA	Warramunga Arr	57.08	188	P	P	08 49 45.2	+0.5
	0.3nm,0.9s,baz=5.6,slow=7.2,SNR=4.3						
HFS	Hagfors	74.28	336	P	P	08 51 36.0	+0.6
	0.3nm,0.4s,baz=54,slow=7.3,SNR=3.4						
NOA	NORSAR Array B	74.37	337	P	P	08 51 36.9	+0.9
	0.3nm,0.5s,baz=32,slow=4.2,SNR=3.2						
AKASG	Malin Array Be	74.57	323	P	P	08 51 37.4	+0.2
	0.4nm,0.3s,baz=41,slow=6.1,SNR=4.5						

*NIED **03** 08:42:00, 38°.50N×142°.10E, h29km, Mw3.9 Best double couple: M0 6.96000×10^14 NP1:ϕs160.00000°, δ27.00000°, λ-32.00000°. NP2:ϕs280.00000°, δ76.00000°, λ-114.00000°.*
*IDC **03** 08:42:01.7±0.6, 38°.42N×142°.07E, h0km, mb3.8/16, mb1 4.0/19, mb1mx3.8/53, mbtmp3.9/19, ML3.9/3, MS3.0/3, Ms1 3.0/3, ms1mx2.6/43, Error ellipse: s-maj=19.8km s-min=13.8km az=99.0*
*ISCJB **03** 08:42:03.0±1.1, 38°.35N±0°.03×142°.19E±0°.07, h25km±7km, mb3.9/19, Error ellipse: s-maj=8.9km s-min=4.7km az=13.9*
*JMA **03** 08:42:05.5±0.1, 38°.48N×142°.09E, h34km±2km, M4.1*
JMA Felt II J1.
*NEIC **03** 08:42:06.5±0.3, 38°.36N×142°.08E, h35km, mb4.7/5, Error ellipse: s-maj=8.7km s-min=5.3km az=114.0*
ISC 03 08:42:03.6±1.6, 38°.37N±0°.04×142°.09E±0°.06, h15km±10km, n49, σ1s.09/49, mb3.9/19, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
JIO	Ouri	0.59	278	P	Pn	08 42 17.1	-0.3
JIO				i S	Sn	08 42 24.6	-2.1
OFUJ	Ofunato	0.78	335	P	Pb	08 42 18.6	-0.3
JMK	Ichinoseki	0.89	311	P	Pg	08 42 20.9	0.0
JMK				S	Sb	08 42 31.6	-0.9
JOU	Okura	1.12	270	P	Pg	08 42 25.6	+0.4
JOU				eS	Sg	08 42 40.0	+0.1
JMM	Marumori	1.14	244	P	Pg	08 42 25.6	0.0
JMM				eS	Sg	08 42 40.4	-0.1
JOM	Ohasama	1.26	331	P	Pn	08 42 26.1	-0.6
JOM				S	Sb	08 42 40.9	-2.3
JFK	Kawauchi	1.39	224	P	Pb	08 42 29.3	0.0
JYK	Kaneyama	1.46	292	P	Pb	08 42 30.0	-0.5
MJAR	Matsushiro Arr	3.59	241	Pn	Pn	08 43 00.2	+1.4
	1.7nm,0.3s,baz=81,slow=16,SNR=6.2						
MAJO	Matsushiro	3.59	241	ePn	Pn	08 42 59.2	+0.4
MAJO				eSn	Sn	08 43 43.8	+2.9
MAT	Matsushiro	3.59	241	P	Pb	08 43 05.1	-1.7
MAT				S	Sb	08 43 49.4	-0.8
ERM	Erimo	3.73	12	ePn	Pn	08 43 00.6	0.0
ERM				eSn	Sn	08 43 44.1	-0.1
JHJ2	Mitsune	5.57	200	ePn	Pn	08 43 27.1	+1.2
JHJ2				eSn	Sn	08 44 27.8	-1.9
JHJ	Hachijo jima 2	5.57	200	Pn	Pn	08 43 28.0	+2.0
	22nm,0.3s,baz=107,slow=19,SNR=5.2						
JHJ				Sn	Sn	08 44 28.0	-1.7
	15nm,0.3s,baz=73,slow=19,SNR=4.7						
USRK	Ussuriysk Ar.	9.57	311	Pn	Pn	08 44 23.6	+2.8
	0.2nm,0.3s,baz=116,slow=14,SNR=2.5						
JNU	Nakatsue	10.51	243	LR	LR	08 48 59.4	
	comp=Z,92nm,20.6s,baz=126,slow=40						
JNU	Nakatsue	10.51	243	ePn	Pn	08 44 33.8	+0.1
CBIJ	Chichi jima	11.25	180	Pn	Pn	08 44 42.9	-0.9
CBIJ				Sn	Sn	08 46 42.1	-7.2
JCJ	Chichijima	11.25	180	Pn	Pn	08 44 42.9	-0.9
	3.3nm,0.3s,baz=307,slow=20,SNR=4.1						
JCJ				Sn	Sn	08 46 42.1	-7.2
	baz=306,slow=19						
KLR	Kul'dur	13.16	329	LR	LR	08 49 59.2	
	comp=Z,83nm,18.4s,baz=118,slow=36						
PETK	Petropavlovsk-	18.26	31	LR	LR	08 53 25.7	
	comp=Z,44nm,21.0s,baz=255,slow=38						
PET	Petropavlovsk	18.60	33	eP	P	08 46 15.1	-5.0
	243nm,2.1s						
HIA	Hailar	19.38	311	eP	Pn	08 46 29.6	-0.4
	37nm,1.0s						
MA2	Magadan	21.93	12	P	P	08 46 55.4	-0.9
	4.3nm,0.6s,baz=210,slow=8.6,SNR=7.4						
SEY	Seymchan	25.38	11	P	P	08 47 30.8	+0.9
	4.0nm,0.7s,baz=202,slow=6.2,SNR=16						
ENH	Enshi	28.00	263	eP	P	08 47 54.1	0.0
	10.0nm,1.4s						
H11N2	WAKE ISLAND Hy	28.41	124	T	T	09 18 11.0	
	baz=316,slow=75,SNR=122						
H11N1	WAKE ISLAND Hy	28.42	124	T	T	09 18 15.1	
	baz=316,slow=75,SNR=134						
H11N3	WAKE ISLAND Hy	28.43	124	T	T	09 18 17.1	
	baz=316,slow=75,SNR=111						
H11S1	WAKE ISLAND Hy	29.17	126	T	T	09 19 09.4	
	baz=318,slow=76,SNR=118						
H11S3	WAKE ISLAND Hy	29.17	126	T	T	09 19 09.3	
	baz=318,slow=76,SNR=140						
H11S2	WAKE ISLAND Hy	29.19	126	T	T	09 19 14.4	
	baz=318,slow=76,SNR=132						
ZALV	Zalesovo Beam	41.42	311	P	P	08 49 48.9	-0.4
	0.5nm,0.3s,baz=84,slow=11,SNR=3.4						
MKAR	Makanchi Array	43.87	301	P	P	08 50 09.6	+0.2
	0.7nm,0.7s,baz=87,slow=9.1,SNR=7.3						
KURK	Kurchatov	45.54	307	P	P	08 50 23.1	+0.5
	0.9nm,0.6s						
KURBB	Kurchatov Arra	45.61	307	P	P	08 50 23.1	0.0
	1.1nm,0.5s,baz=80,slow=8.1,SNR=5.7						
ILAR	Eielson Array	48.08	33	P	P	08 50 42.6	+0.4
	0.4nm,0.6s,baz=272,slow=6.0,SNR=6.1						
BVAR	Borovoye Array	50.08	312	P	P	08 50 58.9	+1.3
	0.2nm,0.3s,baz=80,slow=9.2,SNR=2.8						
INK	Inuvik	52.95	28	P	P	08 51 19.5	+0.6
	0.9nm,0.8s,baz=283,slow=5.4,SNR=3.8						
WRAB	Tennant Creek	58.45	189	eP	P	08 51 58.9	0.0
	1.7nm,0.4s						
WRA	Warramunga Arr	58.46	189	P	P	08 51 59.2	+0.2
	3.3nm,0.4s,baz=6.4,slow=6.9,SNR=55						
ASAR	Alice Springs	62.19	188	P	P	08 52 25.1	+0.6
	2.0nm,0.6s,baz=6.5,slow=5.1,SNR=32						
FINES	FINESS Array B	67.88	332	P	P	08 53 00.7	-0.4
	3.1nm,1.0s,baz=37,slow=7.1,SNR=2.9						
HFS	Hagfors	73.09	336	P	P	08 53 32.5	-0.4
	0.4nm,0.4s,baz=46,slow=6.2,SNR=3.2						
NOA	NORSAR Array B	73.16	337	P	P	08 53 33.1	-0.3
	0.6nm,0.7s,baz=39,slow=5.8,SNR=3.2						
AKASG	Malin Array Be	73.56	322	P	P	08 53 35.4	-0.5
	0.2nm,0.3s,baz=46,slow=6.2,SNR=2.7						
PDAR	Pinedale Array	76.35	46	P	P	08 53 53.1	+0.6
	0.1nm,0.4s,baz=264,slow=4.1,SNR=2.9						
TXAR	Lajitas Array	88.88	53	P	P	08 54 57.6	0.0
	0.2nm,0.8s,baz=272,slow=3.3,SNR=3.2						
LPAZ	La Paz	145.55	59	PKPbc	PKPab	09 01 43.1	+0.3
	0.6nm,0.5s,baz=315,slow=4.3,SNR=3.1						

JMA 03 08:43:48.0, 36°.98N×140°.68E, h7km±1km, M3.0, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
ONAJ	Iwakimizuishiy	0.15	38	P	Pg	08 43 51.3	+0.1
ONAJ				S	Sg	08 43 53.5	+0.1
JHO	Hitachi	0.38	194	P	Pg	08 43 55.3	-0.1
JHO				S	Sg	08 44 00.5	+0.1
JFK	Kawauchi	0.42	22	P	Pg	08 43 56.0	-0.1
JFK				S	Sg	08 44 01.7	+0.1
JFT	Otama	0.60	333	S	Sg	08 44 08.1	+0.6
JMM	Marumori	0.89	6	P	Pg	08 44 04.5	-0.6
JMM				S	Sg	08 44 16.5	-0.1
JOU	Okura	1.38	359	S	Sb	08 44 32.2	+0.1
JIO	Ouri	1.56	20	P	Pn	08 44 16.0	-0.2
MAT	Matsushiro	2.03	258	P	Pn	08 44 23.9	+1.2
MAT				S	Sb	08 44 51.1	+0.3

*CSEM **03** 08:51:00.2±1.1, 51°.50N×16°.01E, h1km, ML2.7/5, Error ellipse: s-maj=14.5km s-min=8.9km az=176.0*
*PRU **03** 08:51:01.4, 51°.46N×16°.10E, h0km*
ISC 03 08:51:00.2±2.3, 51°.43N±0°.09×16°.18E±0°.08, h0km, n18, σ0s.62/29, Poland

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
KSP	Ksiaz	0.59	173	ePg	Pb	08 51 13.7	+0.3
KSP				eSg	Sb	08 51 22.4	0.0
KSP	Ksiaz	0.59	173	ePg	Pb	08 51 13.7	+0.3
KSP				eSg	Sb	08 51 22.4	0.0
UPC	Upice	0.93	187	ePG	Pn	08 51 20.3	-0.2
UPC				eSG	Sb	08 51 32.1	0.0
	comp=Z,9.1nm,0.3s						
UPC	Upice	0.93	187	Pg	Pn	08 51 20.3	-0.2
UPC				Sg	Sb	08 51 32.1	0.0
	9.1nm,0.3s						
DPC	Dobruska-Polom	1.09	175	ePG	Pb	08 51 22.5	+0.6
DPC				eSG	Sb	08 51 37.1	+0.5
	comp=Z,6.0nm,0.5s						
DPC	Dobruska-Polom	1.09	175	Pg	Pb	08 51 22.5	+0.6
DPC				Sg	Sb	08 51 37.1	+0.5
	6.0nm,0.5s						
PVCC	Panska Ves	1.36	229	eSG	Sn	08 51 45.3	+0.1
	comp=Z,24nm,0.3s						
PVCC	Panska Ves	1.36	229	Sg	Sn	08 51 45.3	+0.1
	24nm,0.3s						
BRG	Berggiesshubel	1.52	249	SG	Sn	08 51 49.4	+0.3
	16nm,0.4s						
GOPC	GO Pecny, Ondr	1.76	211	eSG	Sg	08 51 57.5	+0.8
GOPC	GO Pecny, Ondr	1.76	211	Sg	Sg	08 51 57.5	+0.8
PRU	Pruhonice	1.78	216	eSG	Sg	08 51 58.4	+1.0
	comp=Z,9.0nm,0.4s						
PRU	Pruhonice	1.78	216	Sg	Sg	08 51 58.4	+1.0
	9.0nm,0.4s						
CLL	Collm	2.00	268	ePg	Pb	08 51 38.0	+0.6
CLL				eSg	Sb	08 52 03.0	+0.2
	comp=Z,6.0nm,0.5s						
TREC	Trest	2.19	192	eSG	Sg	08 52 11.0	+0.7
	comp=Z,5.0nm,0.3s						
TREC	Trest	2.19	192	Sg	Sg	08 52 11.0	+0.7
	comp=Z,5.0nm,0.3s						
KHC	Kasperske Hory	2.84	217	ePG	Pg	08 51 53.8	-0.9
KHC				eSN	Sn	08 52 21.0	-0.8
KHC				eSG	Sg	08 52 31.0	-0.5
KHC	Kasperske Hory	2.84	217	Pg	Pg	08 51 53.8	-0.9
KHC				Sn	Sn	08 52 21.0	-0.8
KHC				Sg	Sg	08 52 31.0	-0.5

IDC 03 08:57:59.4±6.0, 2°.46S×101°.80E, h0km, mb3.3/4, mb1 3.5/4, mb1mx3.2/47, mbtmp3.3/4, Error ellipse: s-maj=306.0km s-min=23.0km az=53.0, Southern Sumatera

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
WRA	Warramunga Arr	36.21	121	P	P	09 05 04.2	-0.2
	0.2nm,0.6s,baz=297,slow=8.5,SNR=6.1						

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
ASAR	**Alice Springs**	**37.53**	**127**	P	P	09 05 15.7	0.0
	0.3nm,0.7s,baz=301,slow=8.0,SNR=5.7						
MKAR	**Makanchi Array**	**51.97**	**343**	P	P	09 07 10.9	+0.5
	0.2nm,0.4s,baz=150,slow=9.3,SNR=3.8						
ZALV	**Zalesovo Beam**	**57.97**	**348**	P	P	09 07 53.0	-0.6
	0.4nm,0.5s,baz=142,slow=5.4,SNR=2.5						
KZR	**Kazreti**	**67.84**	**317**	P	P	09 08 55.1	-4.7

IDC 03 09:00:56.5±4.1**, 18°.60S×73°.74W, h0**km**, mb3.5**/2**, mb1 3.7**/3**, mb1mx3.3**/35**, mbtmp3.5**/3**, ML3.4**/1**, MS3.3**/1**, Ms1 3.3**/1**, ms1mx2.7**/18**, Error ellipse: s-maj=145.8km s-min=47.5km az=5.0, Off coast of northern Chile**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
LPAZ	**La Paz**	**5.82**	**68**	Pn	Pn	09 02 24.8	+0.1
	0.6nm,0.3s,baz=282,slow=7.6,SNR=22						
LPAZ				Sn	Sn	09 03 21.3	-11
	baz=358,slow=23,SNR=2.2						
SDV	**Santo Domingo**	**27.48**	**7**	LR	LR	09 18 13.9	
	comp=Z,59nm,19.9s,baz=80,slow=38						
TORD	**Torodi Ar. Bea**	**80.75**	**73**	P	P	09 13 12.4	0.0
	0.4nm,0.6s,baz=250,slow=6.0,SNR=4.5						
YKA	**Yellowknife Ar**	**87.00**	**342**	P	P	09 13 43.3	0.0
	0.1nm,0.6s,baz=135,slow=5.0,SNR=5.6						

JMA 03 09:04:53.4, 37°.03N×140°.78E, h7km±1km**, M2.7, Eastern Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.07**	**12**	P	Pg	09 04 55.3	0.0
ONAJ				S	Sg	09 04 56.7	0.0
JFK	**Kawauchi**	**0.34**	**13**	P	Pg	09 05 00.2	0.0
JHO	**Hitachi**	**0.45**	**202**	P	Pg	09 05 02.0	-0.1
JHO				S	Sg	09 05 08.1	+0.1
JFT	**Otama**	**0.60**	**324**	P	Pg	09 05 05.2	+0.2
JMM	**Marumori**	**0.83**	**1**	P	Pg	09 05 09.1	-0.3
JMM				S	Sg	09 05 20.5	+0.2
MAT	**Matsushiro**	**2.12**	**258**	P	Pn	09 05 30.1	+0.8
MAT				S	Sb	09 05 58.8	+0.1

JMA 03 09:07:40.8, 36°.75N×140°.59E, h7km±1km**, M2.6, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
JHO	**Hitachi**	**0.14**	**187**	P	Pg	09 07 43.9	+0.2
JHO				S	Sg	09 07 46.0	+0.3
ONAJ	**Iwakimizuishiy**	**0.39**	**25**	P	Pg	09 07 48.3	-0.1
ONAJ				S	Sg	09 07 53.7	+0.2
JFK	**Kawauchi**	**0.66**	**20**	P	Pg	09 07 53.0	-0.5
JFK				S	Sg	09 08 01.7	-0.3
JFT	**Otama**	**0.79**	**345**	P	Pg	09 07 55.7	-0.4
JFT				S	Sg	09 08 06.2	-0.2
MAT	**Matsushiro**	**1.93**	**265**	P	Pn	09 08 14.5	+0.5
MAT				S	Sb	09 08 40.4	-0.1

MEX 03 09:15:10.5±0.4**, 14°.07N×91°.59W, h30**km±15km**, MD3.8, Guatemala**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
THIG		**1.06**	**322**	*e*P	Pb	09 15 42.3	+12
CCIG	**Comitan**	**2.27**	**347**	*e*P	Pn	09 15 45.3	-0.8
CCIG				*e*S	Sn	09 16 09.9	-3.3
PCIG		**2.27**	**316**	*e*P	Pn	09 15 44.4	-1.5
PCIG				*e*S	Sn	09 16 09.9	-3.0

*IDC **03** 09:20:38.7±4.4, 13°.20S×167°.58E, h60km±33km, mb3.4/3, mb1 3.9/5, mb1mx3.4/37, mbtmp4.1/5, ML4.3/2, MS2.9/4, Ms1 2.9/4, ms1mx2.7/22, Error ellipse: s-maj=39.4km s-min=21.0km az=64.0*

ISC 03 09:20:35.4±1.9**, 13°.2S**±0°.1**×167°.8E**±0°.2**, h35**km**, n9, σ1°.54**/9**, mb3.6**/3**, Vanuatu Islands**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
HNR	**Honiara**	**8.52**	**295**	P	**Pn**	**09 22 38.5**	**+2.0**
	13nm,0.3s,baz=10,slow=1.0,SNR=5.9						
HNR				S	**Sn**	**09 24 09.5**	**-2.0**
	6.2nm,0.3s,baz=189,slow=9.2,SNR=2.0						
HNR				LR	LR	09 25 42.0	
	comp=Z,41nm,19.4s,baz=132,slow=36						
DZM	**Mont Dzumac**	**8.90**	**188**	P	Pn	09 22 45.8	+4.2
	1.2nm,0.3s,baz=341,slow=6.4,SNR=27						
DZM				S	**Sn**	**09 24 20.3**	**-0.5**
	baz=142,slow=19,SNR=1.5						
DZM				LR	LR	09 25 23.0	
	comp=Z,100nm,19.6s,baz=42,slow=32						
STKA	**Stephens Creek**	**30.34**	**228**	P	**P**	**09 26 45.2**	**+1.3**
	1.3nm,0.6s,baz=52,slow=10,SNR=7.8						
STKA				LR	LR	09 36 33.5	
	comp=Z,33nm,20.2s,baz=18,slow=32						
WRA	**Warramunga Arr**	**32.67**	**254**	P	**P**	**09 27 03.7**	**-0.9**
	0.4nm,0.7s,baz=86,slow=8.7,SNR=4.9						
ASAR	**Alice Springs**	**33.67**	**247**	P	**P**	**09 27 12.8**	**-0.6**
	0.5nm,0.6s,baz=73,slow=9.7,SNR=13						
GUMO	**Guam**	**34.97**	**319**	LR	LR	09 38 53.4	
	comp=Z,24nm,21.1s,baz=146,slow=31						
NB2	**NORSAR Subarra**	**129.28**	**346**	PKP	**PKPdf**	**09 39 38.6**	**-1.2**
	comp=Z,0.7nm,0.5s,baz=15,slow=3.3						
NOA	**NORSAR Array B**	**129.28**	**346**	PKP	**PKPdf**	**09 39 38.7**	**-1.2**
	comp=Z,0.3nm,0.5s,baz=16,slow=4.1,SNR=4.6						
HFS	**Hagfors**	**129.41**	**344**	PKP	**PKPdf**	**09 39 39.8**	**-0.2**
	comp=Z,1.4nm,0.5s,baz=106,slow=3.1,SNR=8.5						

*IDC **03** 09:30:03.6±1.1, 36°.34N×143°.20E, h0km, mb3.5/4, mb1 3.8/7, mb1mx3.5/65, mbtmp3.8/7, ML3.5/2, Error ellipse: s-maj=40.2km s-min=19.0km az=117.0*

*ISCJB **03** 09:30:05.4±0.9, 36°.34N±0°.08×143°.12E±0°.09, h29km, mb3.5/4, Error ellipse: s-maj=11.8km s-min=9.7km az=154.6*

ISC 03 09:30:07.2±1.0**, 36°.29N**±0°.08×**143°.13E**±0°.10**, h29**km**, n8, σ1°.82**/11**, mb3.6**/4**, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
MJAR	**Matsushiro Arr**	**3.98**	**275**	Pn	**Pn**	**09 31 06.0**	**-0.3**
	2.7nm,0.3s,baz=89,slow=15,SNR=23						
MAT	**Matsushiro**	**3.98**	**275**	P	**Pn**	**09 31 06.3**	**0.0**
MAT				S	**Sn**	**09 31 51.0**	**-1.0**
JHJ	**Hachijo jima 2**	**4.19**	**222**	Pn	**Pn**	**09 31 11.1**	**+1.9**
	6.9nm,0.3s,baz=343,slow=21,SNR=6.3						
JHJ				Sn	**Sn**	**09 31 59.0**	**+1.8**
	25nm,0.3s,baz=73,slow=19,SNR=4.2						
JCJ	**Chichijima**	**9.20**	**185**	Pn	**Pn**	**09 32 18.1**	**+0.2**
	baz=95,slow=14						
JCJ				Sn	**Sn**	**09 33 56.5**	**-4.0**
	1.5nm,0.3s,baz=72,slow=19,SNR=3.7						
INK	**Inuvik**	**54.42**	**27**	P	**P**	**09 39 30.9**	**-0.3**
	0.6nm,1.0s,baz=281,slow=10,SNR=4.3						
WRA	**Warramunga Arr**	**56.54**	**190**	P	**P**	**09 39 48.0**	**+1.0**
	0.4nm,0.5s,baz=8.0,slow=7.0,SNR=6.9						
ASAR	**Alice Springs**	**60.26**	**190**	P	**P**	**09 40 14.1**	**+1.1**
	0.4nm,0.7s,baz=3.0,slow=6.6,SNR=5.6						
YKA	**Yellowknife Ar**	**63.76**	**30**	P	**P**	**09 40 36.8**	**+0.8**
	0.3nm,0.8s,baz=275,slow=7.2,SNR=6.4						

*NIED **03** 09:35:00, 37°.20N×141°.20E, h50km, Mw3.9 Best double couple: M₀8.45000×10^14 NP1:φs206.00000°, δ25.00000°, λ115.00000°. NP2:φs359.00000°, δ67.00000°, λ78.00000°.*

*ISCJB **03** 09:35:51.7±0.7, 37°.18N±0°.03×141°.47E±0°.06, h45km±6km, mb3.9/23, MS3.0/2, Error ellipse: s-maj=8.6km s-min=4.7km az=6.3*

*NEIC **03** 09:35:54.2±1.3, 37°.19N×141°.44E, h50km±12km, mb4.3/8, Error ellipse: s-maj=13.7km s-min=8.8km az=61.0*

*IDC **03** 09:35:54.3±2.3, 37°.18N×141°.37E, h53km±22km, mb3.5/16, mb1 3.8/20, mb1mx3.6/64, mbtmp3.9/20, ML3.9/4, MS2.9/6, Ms1 2.9/6, ms1mx2.6/52, Error ellipse: s-maj=16.8km s-min=11.7km az=69.0*

*JMA **03** 09:35:54.1±0.1, 37°.23N×141°.24E, h50km±1km, M4.0*
JMA Felt II J1.

ISC 03 09:35:52.9±0.7**, 37°.21N**±0°.04×**141°.42E**±0°.07**, h38**km±2km**, n53, σ0°.98**/52**, mb3.9**/23**, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**0.46**	**289**	P	**Pn**	**09 36 03.4**	**+0.4**
JFK				S	**Sn**	**09 36 09.8**	**-0.3**
ONAJ	**Iwakimizuishiy**	**0.51**	**258**	P	**Pn**	**09 36 04.0**	**+0.2**
ONAJ				S	**Sn**	**09 36 11.0**	**-0.3**
JMM	**Marumori**	**0.82**	**323**	P	**Pn**	**09 36 08.2**	**+0.3**
JMM				S	**Sn**	**09 36 18.2**	**-0.7**
JHO	**Hitachi**	**0.91**	**229**	P	**Pn**	**09 36 09.0**	**-0.2**
JHO				S	**Sn**	**09 36 19.6**	**-1.5**
JFT	**Otama**	**0.92**	**290**	P	**Pn**	**09 36 09.6**	**+0.3**
JIO	**Ouri**	**1.24**	**357**	P	**Pn**	**09 36 14.5**	**+0.8**
JIO				S	**Sn**	**09 36 29.0**	**-0.1**
JOU	**Okura**	**1.30**	**333**	P	**Pn**	**09 36 15.2**	**+0.7**
JOU				S	**Sn**	**09 36 31.0**	**+0.4**
JFY	**Yanaizu**	**1.38**	**279**	P	**Pn**	**09 36 15.6**	**-0.1**
JYS	**Shirataka**	**1.47**	**313**	P	**Pn**	**09 36 17.3**	**+0.4**
JYS				*e*S	**Sn**	**09 36 34.6**	**-0.3**
MJAR	**Matsushiro Arr**	**2.66**	**256**	P	**Pn**	**09 36 33.9**	**+0.7**
	17nm,0.3s,baz=81,slow=16,SNR=59						
MJAR				S	**Sn**	**09 37 05.2**	**+0.9**
	13nm,0.3s,baz=79,slow=30,SNR=5.7						
MJAR				LR	LR	09 37 50.8	
	comp=Z,219nm,19.0s,baz=80,slow=45						
MAJO	**Matsushiro**	**2.66**	**256**	*e*Pn	**Pn**	**09 36 34.2**	**+0.9**
MAT	**Matsushiro**	**2.66**	**256**	P	**Pn**	**09 36 34.2**	**+0.9**
MAT				S	**Sn**	**09 37 06.2**	**+1.9**
JHJ2	**Mitsune**	**4.30**	**198**	*e*Pn	**Pn**	**09 36 57.3**	**+1.5**
JHJ	**Hachijo jima 2**	**4.30**	**199**	P	**Pn**	**09 36 56.8**	**+1.1**
	49nm,0.3s,baz=6.2,slow=9.7,SNR=17						
JHJ				S	**Sn**	**09 37 44.5**	**-0.1**
	76nm,0.3s,baz=94,slow=23,SNR=9.6						
JNU	**Nakatsue**	**9.55**	**248**	P	**Pn**	**09 38 10.3**	**+2.5**
	0.3nm,0.3s,baz=77,slow=13,SNR=3.3						
JNU				LR	LR	09 42 23.1	
	comp=Z,68nm,18.1s,baz=118,slow=41						
USRK	**Ussuriysk Ar.**	**9.99**	**317**	P	Pn	09 38 18.6	+4.8
	0.3nm,0.3s,baz=128,slow=13,SNR=12						
CBIJ	**Chichi jima**	**10.11**	**176**	P	**Pn**	**09 38 14.6**	**-0.9**
CBIJ				S	Sn	09 39 58.5	-9.1
JCJ	**Chichijima**	**10.11**	**176**	P	**Pn**	**09 38 14.6**	**-0.9**
	7.1nm,0.3s,baz=338,slow=19,SNR=8.7						
JCJ				S	Sn	09 39 58.5	-9.1
	3.4nm,0.3s,baz=285,slow=20,SNR=5.0						
KSRS	**Korea Array**	**10.75**	**275**	P	Pn	09 38 28.2	+4.0
	0.2nm,0.3s,baz=87,slow=12,SNR=5.9						
KSRS				LR	LR	09 42 14.8	
	comp=Z,36nm,19.6s,baz=80,slow=35						
KSAR	**Wonju Array Be**	**10.79**	**275**	P	Pn	09 38 28.2	+3.5
KLR	**Kul'dur**	**13.91**	**333**	LR	LR	09 43 39.9	
	comp=Z,40nm,19.1s,baz=119,slow=33						
SEY	**Seymchan**	**26.61**	**11**	P	**P**	**09 41 28.5**	**+1.1**
	0.6nm,0.4s,baz=230,slow=9.9,SNR=4.4						
SONM	**Songino Array**	**27.69**	**304**	P	**P**	**09 41 36.2**	**-1.3**
	1.4nm,0.5s,baz=106,slow=8.9,SNR=9.1						
SONM				LR	LR	09 52 18.0	
	comp=Z,37nm,21.2s,baz=104,slow=36						
H11N2	**WAKE ISLAND Hy**	**28.23**	**121**	T	T	10 11 56.1	
	baz=314,slow=76,SNR=155						
H11N1	**WAKE ISLAND Hy**	**28.24**	**121**	T	T	10 11 49.1	
	baz=314,slow=76,SNR=146						
H11N3	**WAKE ISLAND Hy**	**28.25**	**121**	T	T	10 11 50.7	
	baz=314,slow=76,SNR=128						
H11S1	**WAKE ISLAND Hy**	**28.95**	**123**	T	T	10 12 32.8	
	baz=315,slow=75,SNR=88						
H11S3	**WAKE ISLAND Hy**	**28.95**	**123**	T	T	10 12 32.8	
	baz=315,slow=75,SNR=74						
H11S2	**WAKE ISLAND Hy**	**28.97**	**123**	T	T	10 12 33.9	
	baz=315,slow=75,SNR=84						
ZALV	**Zalesovo Beam**	**41.80**	**312**	P	**P**	**09 43 38.3**	**-0.2**
	1.3nm,0.5s,baz=88,slow=6.7,SNR=6.1						
MKAR	**Makanchi Array**	**44.03**	**302**	P	**P**	**09 43 56.4**	**-0.4**
	1.1nm,0.7s,baz=89,slow=10.0,SNR=11						
KURK	**Kurchatov**	**45.83**	**308**	*e*P	**P**	**09 44 11.6**	**+0.7**
	8.2nm,0.8s						
ILAR	**Eielson Array**	**49.34**	**32**	P	**P**	**09 44 38.5**	**+0.4**
	0.5nm,0.8s,baz=264,slow=6.3,SNR=4.0						
TKM2	**Tokmak 2**	**49.55**	**298**	*e*P	**P**	**09 44 41.6**	**+1.4**
	1.6nm,0.6s						
COEN	**Coen**	**50.92**	**178**	*e*P	**P**	**09 44 51.2**	**+0.7**
	18nm,1.6s						
KKAR	**Karatay Array**	**53.04**	**300**	*e*P	**P**	**09 45 08.4**	**+2.3**
	0.4nm,0.6s						
INK	**Inuvik**	**54.22**	**27**	P	**P**	**09 45 12.8**	**-1.6**
	1.0nm,0.9s,baz=256,slow=4.2,SNR=4.2						
INK	**Inuvik**	**54.22**	**27**	*e*P	**P**	**09 45 13.9**	**-0.5**
	5.7nm,1.6s						
ARU	**Arti**	**56.23**	**318**	*e*P	**P**	**09 45 28.3**	**-0.7**
	2.0nm,0.5s						
WRAB	**Tennant Creek**	**57.23**	**188**	*e*P	**P**	**09 45 37.2**	**+0.8**
	2.2nm,0.9s						
WRA	**Warramunga Arr**	**57.24**	**188**	P	**P**	**09 45 35.5**	**-1.0**
	0.7nm,0.6s,baz=1.5,slow=7.5,SNR=18						
ABKAR	**Akbulak array**	**57.83**	**310**	*e*P	**P**	**09 45 38.9**	**-1.5**
	1.5nm,0.5s						
ASAR	**Alice Springs**	**60.97**	**188**	P	**P**	**09 46 02.2**	**-0.1**
	0.4nm,0.6s,baz=11,slow=10,SNR=7.5						
YKA	**Yellowknife Ar**	**63.65**	**30**	P	**P**	**09 46 20.1**	**+0.3**
	0.1nm,0.7s,baz=310,slow=7.8,SNR=3.9						
ARCES	**ARCESS Array B**	**63.83**	**339**	P	**P**	**09 46 21.2**	**+0.3**
	4.1nm,1.0s,baz=66,slow=7.2,SNR=3.6						
FINES	**FINESS Array B**	**68.66**	**332**	P	**P**	**09 46 51.1**	**-0.8**
	1.6nm,0.7s,baz=44,slow=8.8,SNR=5.5						
STKA	**Stephens Creek**	**68.73**	**180**	P	**P**	**09 46 52.5**	**-0.1**
	1.4nm,0.8s,baz=346,slow=4.2,SNR=4.1						
AKASG	**Malin Array Be**	**74.16**	**322**	P	**P**	**09 47 24.1**	**-1.2**
	0.5nm,0.4s,baz=47,slow=5.7,SNR=4.3						
PDAR	**Pinedale Array**	**77.53**	**45**	P	**P**	**09 47 45.7**	**+0.6**
	0.3nm,0.6s,baz=291,slow=2.5,SNR=3.2						
MLR	**Muntele Rosu**	**79.25**	**320**	LR	LR	10 25 30.1	
	comp=Z,6.4nm,18.8s,baz=310,slow=38						
GERES	**GERESS Array B**	**82.56**	**328**	P	**P**	**09 48 11.0**	**-0.9**
	0.1nm,0.3s,baz=45,slow=6.0,SNR=4.1						
TXAR	**Lajitas Array**	**90.01**	**52**	P	**P**	**09 48 49.8**	**+1.0**
	0.2nm,0.5s,baz=297,slow=3.2,SNR=4.3						
LPAZ	**La Paz**	**146.59**	**59**	PKPbc	**PKPbc**	**09 55 32.0**	**+0.4**
	1.1nm,0.5s,baz=288,slow=3.2,SNR=10						

*IDC **03** 09:49:16.5±3.2, 35°.83N×70°.51E, h92km±26km, mb3.6/13, mb1 3.8/17, mb1mx3.5/49, mbtmp4.0/17, Error ellipse: s-maj=26.8km s-min=15.5km az=171.0*

*ISCJB **03** 09:49:18.8±0.5, 36°.22N±0°.04×70°.68E±0°.06, h110km, mb3.8/18, Error ellipse: s-maj=6.9km s-min=5.5km az=164.3*

*NNC **03** 09:49:21.8±2.9, 36°.54N×70°.00E, h65km±54km, mb4.2, mpv4.3, Error ellipse: s-maj=22.1km s-min=20.9km az=124.0*

*MOS **03** 09:49:21.6±1.6, 36°.43N×70°.75E, h120km, mb4.1/13, Error ellipse: s-maj=12.7km s-min=6.5km az=91.7*

*BJI **03** 09:49:23.1, 36°.65N×70°.63E, h90km, mb4.0/3*

ISC 03 09:49:19.3±0.6**, 36°.12N**±0°.06×**70°.57E**±0°.06**, h110**km**, n62, σ1°.91**/71**, mb3.9**/18**, 11C-13D, Hindu Kush region**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
SFK	**Sufi-Kurgan**	**4.52**	**30**	⇑P	**Pn**	**09 50 27.1**	**+1.1**
	32nm,0.4s						
SFK				⇓S	**Sn**	**09 51 18.7**	**+1.1**
	144nm,0.4s						
SFK	**Sufi-Kurgan**	**4.52**	**30**	PN	**Pn**	**09 50 27.0**	**+1.1**
SFK				S	**Sn**	**09 51 18.7**	**+1.1**
SFK				pmax	pmax		
	comp=Z,25nm,0.3s						
SFK				smax	smax		
	comp=N,144nm,0.4s						
KSH	**Kashi**	**5.46**	**50**	P	Pn	09 50 35.1	-3.3
KSH				S	Sn	09 51 32.1	-7.9
KSH				smax	smax		
	comp=N,240nm,0.3s						
KSH				smax	smax		
	comp=N,140nm,0.3s						
THN	**Thein Dam**	**5.63**	**129**	*e*P	**Pn**	**09 50 41.0**	**+0.4**
THN				*e*S	**Sn**	**09 51 45.2**	**+1.2**
MNAS	**Manas**	**6.53**	**13**	⇑P	**Pn**	**09 50 52.0**	**-1.0**
	comp=N,9.7nm,0.4s						
MNAS				⇓S	**Sn**	**09 52 02.7**	**-3.4**
	comp=N,13nm,0.4s						
MNAS	**Manas**	**6.53**	**13**	PN	**Pn**	**09 50 51.9**	**-1.0**
MNAS				S	**Sn**	**09 52 02.7**	**-3.4**
MNAS				pmax	pmax		
	comp=Z,10.0nm,0.4s						
MNAS				smax	smax		
	comp=N,16nm,0.4s						
KK31	**Karatay Array**	**6.97**	**360**	⇓P	**Pn**	**09 50 56.9**	**-1.9**
	comp=N,12nm,0.5s,baz=189,slow=14,SNR=218						
KK31				⇓S	**Sn**	**09 52 10.9**	**-5.7**
	comp=N,5.3nm,0.3s,baz=192,slow=24,SNR=5.2						
KK31	**Karatay Array**	**6.97**	**360**	*e*PN	**Pn**	**09 50 57.3**	**-1.6**
KK31				pmax	pmax		
	comp=Z,12nm,0.5s						
AAK	**Ala-Archa**	**7.18**	**24**	P	**Pn**	**09 51 01.6**	**-0.1**
	comp=Z,10nm,0.3s,baz=200,slow=8.8,SNR=79						
AAK				S	**Sn**	**09 52 19.7**	**-2.1**
	comp=Z,4.3nm,0.3s,baz=209,slow=12,SNR=17						
AAK	**Ala-Archa**	**7.18**	**24**	⇑P	**Pn**	**09 51 01.5**	**-0.3**
	comp=Z,19nm,0.7s						
AAK				⇓S	**Sn**	**09 52 20.4**	**-1.5**
	comp=Z,50nm,0.8s						
AAK	**Ala-Archa**	**7.18**	**24***d*	*i*PN	**Pn**	**09 51 01.3**	**-0.5**
AAK				*i* S	**Sn**	**09 52 20.3**	**-1.5**
AAK				pmax	pmax		
	comp=Z,19nm,0.6s						
AAK				smax	smax		
	comp=Z,32nm,0.5s						
SMLA	**Simla**	**7.42**	**130**	*i* P	**Pn**	**09 51 04.7**	**-0.2**
SMLA				*i* S	**Sn**	**09 52 24.1**	**-3.3**
SMLA				*i* S	**Sn**	**09 52 24.1**	**-3.3**
SMLA				AML	AML	09 52 26.7	
	comp=N,378nm,0.3s						
SMLA				AML	AML	09 52 27.5	
	comp=E,498nm,0.3s						
TKM2	**Tokmak 2**	**7.82**	**28**	⇓P	**Pn**	**09 51 09.7**	**-0.8**
	comp=E,8.8nm,0.6s						
TKM2				⇓S	**Sn**	**09 52 34.5**	**-3.1**
	comp=E,16nm,0.8s						
TKM2	**Tokmak 2**	**7.82**	**28**	PN	**Pn**	**09 51 09.7**	**-0.8**
TKM2				S	**Sn**	**09 52 34.4**	**-3.1**
TKM2				pmax	pmax		
	comp=Z,5.0nm,0.3s						
TKM2				smax	smax		
	comp=N,17nm,0.9s						
PDGK	**Podgornoye**	**9.94**	**41**	⇑P	**Pn**	**09 51 38.2**	**-0.8**
	comp=N,4.5nm,1.0s						
GEYT	**Alibeck**	**10.12**	**284**	P	**Pn**	**09 51 38.7**	**-2.8**
	comp=N,1.3nm,0.3s,baz=127,slow=9.0,SNR=7.7						
GEYT				S	Sn	09 53 25.7	-7.5
	comp=N,2.4nm,0.3s,baz=190,slow=24,SNR=5.6						
MAKZ	**Makanchi**	**13.66**	**35**	⇑P	**P**	**09 52 34.4**	**+1.0**
	comp=N,11nm,0.7s						
MK31	**Makanchi Array**	**13.80**	**36**	⇑P	**P**	**09 52 34.2**	**-0.7**
	comp=N,3.6nm,0.6s,baz=221,slow=16,SNR=46						
MKAR	**Makanchi Array**	**13.80**	**36**	P	**Pn**	**09 52 31.4**	**+1.2**
	comp=N,0.2nm,0.3s,baz=224,slow=15,SNR=15						
AB31	**Akbulak array**	**15.26**	**333**	⇓P	**Pn**	**09 52 45.4**	**-3.2**
	comp=N,13nm,0.5s,baz=154,slow=13,SNR=193						
AB31				S	Sn	09 55 22.6	-15
	comp=N,3.8nm,0.5s,baz=148,slow=23,SNR=9.6						
AB31	**Akbulak array**	**15.26**	**333**	*e*P	**Pn**	**09 52 45.7**	**-2.9**
AB31				pmax	pmax		
	comp=Z,13nm,0.5s						
KURBB	**Kurchatov Arra**	**15.59**	**19**	P	**Pn**	**09 52 51.4**	**-1.4**
	comp=Z,0.1nm,0.3s,baz=210,slow=11,SNR=11						
KURBB	**Kurchatov Arra**	**15.59**	**19**	⇑P	**P**	**09 52 55.4**	**+0.7**
	comp=Z,5.3nm,0.7s						
KURK	**Kurchatov**	**15.70**	**19**	P	**Pn**	**09 52 51.4**	**-2.8**
VOSK	**Vostochnaya**	**16.60**	**1**	⇑P	**Pn**	**09 53 04.6**	**-0.7**
	comp=Z,2.5nm,0.7s						
BVA0	**Borovoye Array**	**16.90**	**360**	⇓P	**P**	**09 53 10.5**	**+1.3**
	comp=Z,2.4nm,0.5s,baz=158,slow=9.4,SNR=5.4						
BVAR	**Borovoye Array**	**16.90**	**360**	P	**Pn**	**09 53 07.8**	**-1.2**
	comp=Z,1.8nm,0.3s,baz=162,slow=11,SNR=25						
BRVK	**Borovoye**	**16.94**	**359**	*e*P	**Pn**	**09 53 08.4**	**-1.0**
BRVK				pmax	pmax		
	comp=Z,2.0nm,0.6s						
AKTO	**Aktyubinsk**	**16.94**	**332**	P	**Pn**	**09 53 08.9**	**-0.6**
	comp=Z,0.9nm,0.3s,baz=146,slow=14,SNR=36						
AKTO				S	Sn	09 56 04.4	-13
	comp=Z,0.4nm,0.3s,baz=101,slow=23,SNR=5.2						
AKTO	**Aktyubinsk**	**16.94**	**332**	⇓P	**Pn**	**09 53 09.1**	**-0.4**
	comp=Z,16nm,0.8s						
AKTO				⇑S	Sn	09 56 05.8	-12
AKTO	**Aktyubinsk**	**16.94**	**332**	P	**Pn**	**09 53 09.1**	**-0.4**
AKTO				pmax	pmax		
	comp=Z,16nm,0.8s						
CHKZ	**Chkalovo**	**17.56**	**0**	⇓P	**Pn**	**09 53 17.0**	**+0.2**
	comp=Z,2.3nm,0.6s						
ZALV	**Zalesovo Beam**	**20.40**	**25**	P	**P**	**09 53 48.5**	**+1.2**
	comp=Z,53nm,0.4s,baz=220,slow=11,SNR=195						
NVS	**Novosibirsk**	**20.66**	**21**	*e*P	**P**	**09 53 51.4**	**+1.3**
NVS				pmax	pmax		
	comp=N,15nm,0.9s						
NVS				pmax	pmax		
	comp=E,12nm,0.9s						
NVS				pmax	pmax		
	comp=Z,21nm,0.9s						
GNI	**Garni**	**20.68**	**289**	P	**P**	**09 53 50.6**	**-0.2**
	comp=Z,23nm,0.9s,baz=336,slow=22,SNR=2.8						
GNI	**Garni**	**20.68**	**289**	*e*P	Pn	09 53 54.9	+0.8
GNI				pmax	pmax		
	comp=Z,127nm,1.0s						
ARU	**Arti**	**21.88**	**342**	P	**P**	**09 54 04.9**	**+1.8**
	comp=Z,3.5nm,0.4s,baz=126,slow=3.7,SNR=8.9						
ARU	**Arti**	**21.88**	**342***d*	*i*P	**P**	**09 54 04.6**	**+1.5**
ARU						09 54 36.4	
ARU				S	**S**	**09 57 59.5**	**+1.6**
ARU				pmax	pmax		
	comp=Z,10.0nm,0.8s						
NCK	**Nalchik**	**21.93**	**298**	*e*P	**P**	**09 54 08.4**	**+4.6**
NCK				pmax	pmax		
	comp=Z,7.0nm,1.0s						
KBZ	**Khabaz**	**22.47**	**298**	P	**P**	**09 54 10.7**	**+1.4**
	comp=Z,1.5nm,0.8s,baz=84,slow=10,SNR=3.5						
KIV	**Kislovodsk**	**22.66**	**299**	*e*P	**P**	**09 54 14.8**	**+3.4**
KIV				pmax	pmax		
	comp=Z,9.0nm,1.1s						
SONM	**Songino Array**	**28.84**	**55**	P	**P**	**09 55 09.5**	**+2.2**
	comp=Z,0.5nm,0.7s,baz=269,slow=8.1,SNR=3.4						
BRTR	**Keskin Array B**	**29.22**	**288**	P	**P**	**09 55 13.3**	**+2.5**
	comp=Z,0.2nm,0.4s,baz=83,slow=7.9,SNR=3.7						
BRTR	**Keskin Array B**	**29.22**	**288***c*	*e*P	P	09 55 15.3	+4.5
OBN	**Obninsk**	**30.00**	**320**	*e*P	**P**	**09 55 17.4**	**+0.1**
OBN				*e*		09 56 17.1	
OBN				pmax	pmax		
	comp=Z,3.0nm,0.7s						
AKASG	**Malin Array Be**	**32.91**	**309**	P	**P**	**09 55 43.8**	**+0.8**
	comp=Z,1.2nm,0.5s,baz=83,slow=7.3,SNR=11						
AKASG	**Malin Array Be**	**32.91**	**309**	*i* P	**P**	**09 55 44.0**	**+1.1**
AKASG				pmax	pmax		
	comp=Z,2.0nm,0.5s						
WHN	**Wuhan**	**36.76**	**86**	P	P	09 56 25.4	+9.2
FINES	**FINESS Array B**	**37.61**	**327**	P	**P**	**09 56 24.3**	**+1.4**
	comp=Z,2.4nm,0.6s,baz=107,slow=9.3,SNR=14						
FINES	**FINESS Array B**	**37.61**	**327**	*i* P	**P**	**09 56 24.7**	**+1.7**
FINES				pmax	pmax		
	comp=Z,2.0nm,0.6s						
ARCES	**ARCESS Array B**	**41.36**	**338**	P	**P**	**09 56 56.2**	**+2.1**
	comp=Z,1.9nm,0.5s,baz=117,slow=7.7,SNR=22						
ARCES	**ARCESS Array B**	**41.36**	**338**	P	**P**	**09 56 56.2**	**+2.1**
ARCES				pmax	pmax		
	comp=Z,3.0nm,0.7s						
NB2	**NORSAR Subarra**	**44.48**	**323**	P	**P**	**09 57 19.1**	**-0.2**
	comp=Z,1.8nm,0.5s,baz=98,slow=7.9						
NOA	**NORSAR Array B**	**44.48**	**323**	P	**P**	**09 57 19.2**	**-0.2**
	comp=Z,3.0nm,0.7s,baz=98,slow=7.9,SNR=10						
TIXI	**Tiksi**	**46.26**	**22***c*	*e*P	**P**	**09 57 33.5**	**+0.4**
TIXI				pmax	pmax		
	comp=Z,4.0nm,1.0s						
BFO	**Black Forest**	**46.47**	**305**	*i* P	P	09 57 41.0	+5.8
BILL	**Bilibino**	**59.10**	**26**	*e*P	**P**	**09 59 08.8**	**+1.1**
BILL				*e*		10 00 02.7	
BILL				*e*		10 01 18.6	
BILL				pmax	pmax		
	comp=Z,1.0nm,0.9s						
TORD	**Torodi Ar. Bea**	**65.36**	**269**	P	**P**	**09 59 48.0**	**-2.3**
	comp=Z,0.6nm,0.5s,baz=50,slow=6.1,SNR=8.9						
INK	**Inuvik**	**74.33**	**9**	P	**P**	**10 00 45.0**	**+0.7**
	comp=Z,0.8nm,0.5s,baz=344,slow=5.9,SNR=8.8						
ILAR	**Eielson Array**	**75.24**	**16**	P	**P**	**10 00 49.0**	**-0.6**
	comp=Z,0.2nm,0.5s,baz=305,slow=6.3,SNR=5.1						
YKA	**Yellowknife Ar**	**81.64**	**2**	P	**P**	**10 01 25.0**	**+0.3**
	comp=Z,0.4nm,0.5s,baz=351,slow=5.4,SNR=20						
WRA	**Warramunga Arr**	**82.09**	**122**	P	**P**	**10 01 27.4**	**-0.4**
	comp=Z,0.3nm,0.5s,baz=326,slow=5.1,SNR=4.6						

TAP 03 09:59:40.8, 24°.09N×121°.74E, h8km**, ML3.5, 6C-8D, B, Taiwan**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TWD	**Chiawan** baz=274	**0.13**	**265** ⇓	*i* P	Pg	09 59 44.1	+0.5
TWD	baz=274			*i* S	Sg	09 59 46.4	+0.8
HWA	**Hwalien** baz=236	**0.17**	**227**	*e* P	Pg	09 59 45.4	+1.1
EHP	**Heping Village** baz=351	**0.22**	**0**	*e* P	Pg	09 59 45.9	+0.7
ESF	**Shoufeng Towns** baz=236	**0.31**	**224**	*e* P	Pg	09 59 47.5	+0.7
ENA	**Nanau** baz=358	**0.34**	**0** ⇑	*i* P	Pg	09 59 48.0	+0.6
ENA	baz=358			*i* S	Sg	09 59 53.0	+1.2
ESL	**Shilin** baz=239	**0.39**	**225**	P	Pg	09 59 48.8	+0.3
TEGC	**Jichi Village** baz=212	**0.42**	**206**	*e* P	Pb	09 59 50.9	+0.4
WHF	**Hehuan Shan** baz=279	**0.44**	**277** ⇓	*i* P	Pg	09 59 49.9	+0.5
WHF	baz=279			S	Sg	09 59 56.2	+1.0
NNS	**Nan Shan** baz=315	**0.48**	**316** ⇑	*i* P	Pg	09 59 50.9	+0.7
NNS	baz=315			S	Sg	09 59 57.4	+0.9
TWC	**Suao** baz=2.0	**0.52**	**11** ⇑	*i* P	Pb	09 59 51.7	-0.6
TWC	baz=2.0			*e* S	Sb	09 59 59.5	-0.6
TWT	**Tachien** baz=287	**0.54**	**287** ⇓	*i* P	Pb	09 59 52.4	-0.3
TWT	baz=287			S	Sb	09 59 59.6	-1.1
ENTT	**Nioudou** baz=341	**0.57**	**344**	*i* P	Pb	09 59 52.7	-0.3
ENTT	baz=341			S	Sb	10 00 00.9	-0.5
TWE	**Neicheng** baz=352	**0.63**	**354** ⇑	*i* P	Pb	09 59 53.9	-0.2
TWE	baz=352			*i* S	Sb	10 00 02.8	-0.3
WDT	**Danda** baz=242	**0.65**	**239** ⇓	*i* P	Pg	09 59 53.9	+0.5
WDT	baz=242			S	Sb	10 00 03.7	-0.2
NSK	**Sanguang** baz=327	**0.68**	**329** ⇑	*i* P	Pb	09 59 54.9	-0.1
NSK	baz=327			*e* S	Sb	10 00 04.0	-0.5
EHY	**Hungye** baz=231	**0.70**	**213**	*e* P	Pg	09 59 54.3	0.0
EHY	baz=231			*e* S	Sb	10 00 06.0	+0.9
SMLT	**Sun Moon Lake** baz=258	**0.80**	**255** ⇓	*i* P	Pb	09 59 56.9	-0.1
SMLT	baz=258			*e* S	Sb	10 00 07.3	-0.7
TYC	**Yuchr** baz=260	**0.83**	**257** ⇓	*i* P	Pb	09 59 57.2	-0.2
TYC	baz=260			S	Sg	10 00 07.8	+0.3
TWF1	**Yuli** baz=227	**0.84**	**209**	*e* P	Pg	09 59 56.4	-0.6
NSTT	**Nanjuang** baz=308	**0.86**	**309** ⇓	P	Pb	09 59 58.6	+0.5
NSTT	baz=308			*e* S	Sb	10 00 10.5	+0.7
TWA	**Mucha** baz=348	**0.90**	**351**	P	Pb	09 59 58.6	0.0
TWA	baz=348			*e* S	Sg	10 00 09.5	-0.2
TWQ1	**Liyutan** baz=286	**0.92**	**286**	*e* P	Pn	09 59 59.9	-0.2
YUS	**Yu-Shan** baz=236	**0.94**	**230**	P	Pb	09 59 59.6	-0.1
YUS	baz=236			S	Sb	10 00 13.2	+0.7
TWB1	**Santiao Chiao** baz=359	**0.94**	**14**	*e* P	Pg	09 59 58.9	0.0
NSY	**Sanyi** baz=291	**0.95**	**290**	P	Pn	10 00 00.8	+0.3
NSY	baz=291			*e* S	Sn	10 00 14.7	+0.4
TCU	**Taichung** baz=271	**0.97**	**273** ⇓	*i* P	Pn	10 00 01.6	+0.8
TCU	baz=271			*e* S	Sn	10 00 15.6	+0.8
NWF	**Wu-fen Shan** baz=341	**0.97**	**2**	*e* P	Pb	10 00 00.1	0.0
WNT	**Mingjian** baz=261	**0.99**	**258**	*e* P	Pn	10 00 00.8	-0.2
WNT	baz=261			*e* S	Sn	10 00 15.7	+0.5
HSN	**Hsinchu** baz=316	**1.00**	**315**	*e* P	Pn	10 00 01.5	+0.4
HSN	baz=316			*e* S	Sn	10 00 16.5	+1.1
NCU	**National Centr** baz=328	**1.01**	**330**	*e* P	Pn	10 00 01.6	+0.3
NCU	baz=328			*e* S	Sn	10 00 17.5	+1.8
ALS	**Alishan** baz=241	**1.03**	**236**	P	Pb	10 00 01.2	+0.1
ALS	baz=241			*e* S	Sn	10 00 16.4	-0.3
CHKT	**Chengkung** baz=196	**1.05**	**199**	*e* P	Pg	10 00 00.4	-0.5
CHN5	**Tsauling** baz=249	**1.09**	**243** ⇑	P	Pn	10 00 02.7	+0.2
CHN5	baz=249			*e* S	Sn	10 00 20.2	+2.3
ELDTW	**Lidau** baz=224	**1.12**	**217**	*e* P	Pg	10 00 00.8	-1.4
WGK	**Gukeng** baz=254	**1.15**	**250**	*e* P	Pn	10 00 04.1	+0.9
TWY	**Chenhua** baz=331	**1.19**	**354**	*e* P	Pn	10 00 05.2	+1.5
YOJ	**Yonaguni jima** baz=74	**1.22**	**72**	*e* P	Pb	10 00 03.3	-0.8
CHN4	**Tsaushan** baz=241	**1.28**	**235**	*e* P	Pg	10 00 06.0	+0.6
CHN4	baz=241			S	Sn	10 00 25.0	+2.5
STYT	**Tauyuan** baz=232	**1.29**	**224**	P	Pn	10 00 05.0	-0.2
STYT	baz=232			*e* S	Sn	10 00 24.0	+1.2
WTP	**Ta-pu** baz=238	**1.33**	**231**	*e* P	Pb	10 00 06.0	-0.1
WTP	baz=238			*e* S	Sn	10 00 26.3	+2.6
CHY	**Chiayi** baz=249	**1.34**	**244**	*e* P	Pg	10 00 07.6	+1.1
TWG	**Pinlang** baz=215	**1.41**	**206**	*e* P	Pn	10 00 05.0	-1.8
TWK	**Hsinying** baz=240	**1.41**	**235**	*e* P	Pg	10 00 07.8	-0.1
TWK	baz=240			*e* S	Sg	10 00 28.1	+1.9
CHN1	**Nanshi** baz=238	**1.43**	**231**	*e* P	Pb	10 00 07.8	0.0
CHN1	baz=238			*e* S	Sg	10 00 29.6	+2.7
SGST	**Jiashian** baz=234	**1.46**	**227**	*e* P	Pb	10 00 08.4	+0.1
SSD	**Sandimen** baz=217	**1.68**	**217**	*e* P	Pb	10 00 11.4	-0.6
EAST	**Anshuo** baz=204	**1.89**	**206**	*e* P	Pn	10 00 14.0	+0.5
SCZT	**Fangliau** baz=206	**2.00**	**211**	*e* P	Pn	10 00 14.8	-0.1
PNG	**Penghu** baz=260	**2.07**	**256**	*e* P	Pb	10 00 16.7	+0.8
WDGT	**Dungji** baz=251	**2.08**	**247**	*e* P	Pb	10 00 17.7	-1.1

*ISCJB **03** 10:00:16.7±0.7,20.9S±0.1×178.7W±0.1, h579km, mb3.7/11, Error ellipse: s-maj=22.4km s-min=10.2km az=142.5*

*IDC **03** 10:00:18.1±2.1,21.01S×178.65W, h588km±25km, mb3.3/11, mb1 3.5/13, mb1mx3.3/46, mbtmp4.2/13, Error ellipse: s-maj=26.3km s-min=14.7km az=150.0*

ISC 03 10:00:17.4±0.8, 20.9S±0.2×178.6W±0.1, h579km, n18, σ1§18/19, mb3.7/11, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AFI	**Afiamalu** 3.7nm,0.3s,baz=188,slow=1.2,SNR=6.1	**9.55**	**44**	P	**P**	**10 02 32.5**	**+1.0**
AFI	2.2nm,0.3s,baz=24,slow=20,SNR=4.9			S	**S**	**10 04 18.9**	**-2.6**
URZ	**Urewera** 0.7nm,0.3s,baz=350,slow=12,SNR=8.1	**17.66**	**191**	P	**P**	**10 03 49.8**	**-0.7**
JAY	**Jayapura** 1.7nm,0.6s,baz=194,slow=23,SNR=6.0	**43.65**	**289**	P	**P**	**10 07 32.3**	**+0.2**
ASAR	**Alice Springs** 3.6nm,0.6s,baz=95,slow=7.6,SNR=72	**43.87**	**257**	P	**P**	**10 07 33.7**	**0.0**
ASAR	0.6nm,0.6s,baz=103,slow=3.7,SNR=4.9			PcP	**PcP**	**10 09 06.5**	**-0.4**
WRA	**Warramunga Arr** 5.4nm,0.7s,baz=97,slow=7.7,SNR=114	**43.98**	**263**	P	**P**	**10 07 34.0**	**-0.6**
PETK	**Petropavlovsk-** 8.1nm,1.1s,baz=134,slow=6.2,SNR=2.7	**76.55**	**346**	P	**P**	**10 11 08.7**	**+0.2**
USRK	**Ussuriysk Ar.** 1.6nm,0.7s,baz=161,slow=2.5,SNR=4.4	**79.01**	**326**	P	**P**	**10 11 22.7**	**+0.8**
NVAR	**Mina Array Bea** 0.5nm,0.6s,baz=226,slow=4.9,SNR=3.1	**81.73**	**44**	P	**P**	**10 11 37.5**	**+1.0**
SEY	**Seymchan** 0.5nm,0.3s,baz=56,slow=22,SNR=5.3	**86.67**	**347**	P	**P**	**10 11 59.6**	**-0.2**
TXAR	**Lajitas Array** 0.5nm,0.9s,baz=232,slow=5.3,SNR=4.4	**87.77**	**58**	P	**P**	**10 12 07.9**	**+2.0**
ILAR	**Eielson Array** 0.6nm,0.7s,baz=227,slow=5.3,SNR=6.2	**88.87**	**13**	P	**P**	**10 12 09.2**	**-0.8**
PDAR	**Pinedale Array** 0.3nm,0.6s,baz=208,slow=3.4,SNR=4.8	**89.67**	**43**	P	**P**	**10 12 14.8**	**+0.2**
CMAR	**Chiang Mai Arr** 1.0nm,0.4s,baz=112,slow=2.1,SNR=5.4	**89.73**	**290**	P	**P**	**10 12 16.0**	**+0.8**
BVAR	**Borovoye Array** 0.4nm,0.4s,baz=99,slow=1.2,SNR=4.2	**119.05**	**320**	PKP	**PKPdf**	**10 17 59.0**	**-1.7**
FINES	**FINESS Array B** 1.3nm,0.8s,baz=28,slow=3.3,SNR=4.4	**136.03**	**343**	PKP	**PKPdf**	**10 18 33.2**	**+0.5**
AKASG	**Malin Array Bo** 2.7nm,0.5s,baz=43,slow=4.3,SNR=26	**143.12**	**330**	PKhKP	PKPpre	10 18 42.5	
BRTR	**Keskin Array B** 0.9nm,0.6s,baz=88,slow=3.3,SNR=4.7	**146.71**	**311**	PKPbc	**PKPbc**	**10 18 54.0**	**-1.3**
GERES	**GERESS Array B** 0.9nm,0.8s,baz=17,slow=3.6,SNR=5.6	**150.46**	**343**	PKPbc	**PKPbc**	**10 19 03.0**	**-1.2**

*ISCJB **03** 10:03:13.7±0.5, 6.84N±0.03×73.08W±0.04, h154km±5km, Error ellipse: s-maj=7.6km s-min=3.8km az=37.1*

*FUNV **03** 10:03:15.2, 6.81N×73.08W, h167km, MW2.9*

*RSNC **03** 10:03:16.2±0.8, 6.80N×73.13W, h142km±4km, ML2.9*

ISC 03 10:03:13.7±1.3, 6.83N±0.04×73.09W±0.04, h158km±7km, n27, σ1§06/45, 1C-1D, Northern Colombia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BTLC	**Betulia, Santa**	**0.20**	**297**	*e* P	**Pn**	**10 03 35.5**	**+0.2**
BTLC				*e* S	**Sn**	**10 03 50.8**	**-0.9**
BARC	**Barichara**	**0.25**	**202**	*e* P	**Pn**	**10 03 35.5**	**0.0**
BARC				*e* S	**Sn**	**10 03 49.6**	**-2.4**
BARC	comp=Z,219nm,0.3s			*i*		10 03 51.1	
GIRC	**Giron, Santand**	**0.27**	**337**	*i* P	**Pn**	**10 03 35.4**	**+0.1**
GIRC				*e* S	**Sn**	**10 03 50.6**	**-1.3**
PAMC	**Pamplona, Colo**	**0.64**	**37**	*i* P	**Pn**	**10 03 38.3**	**+1.0**
PAMC				*e* S	**Sn**	**10 03 54.0**	**-1.3**
PAMC	comp=Z,131nm,0.5s			*i*		10 03 57.5	
BRRC	**Barranca, Sant**	**0.68**	**294** ⇑	*i* P	**Pn**	**10 03 37.2**	**+0.2**
BRRC				*e* S	**Sn**	**10 03 54.0**	**-0.7**
GRMC	**Gramalote, San**	**0.93**	**18**	*i* P	**Pn**	**10 03 41.2**	**+2.4**
GRMC				*e* S	**Sn**	**10 04 00.6**	**+2.4**
GRMC	comp=Z,232nm,0.4s			*i*		10 04 01.7	
CAPV	**Capacho**	**1.28**	**37** ⇓	*i* P	**Pn**	**10 03 43.4**	**+1.4**
CAPV				*e* S	**Sn**	**10 04 04.7**	**+0.9**
OCAC	**Ocana**	**1.42**	**351**	*i* P	**Pn**	**10 03 43.8**	**+0.5**
OCAC				*e* S	**Sn**	**10 04 05.8**	**-0.3**
YOPC	**Yopal, Colombi**	**1.61**	**156**	*e* P	**Pn**	**10 03 45.8**	**+0.6**
YOPC				*e* S	**Sn**	**10 04 09.6**	**+0.2**
YOPC	comp=Z,35nm,0.4s			*i*		10 04 11.4	
NORC	**Norcasia**	**2.17**	**235**	*e* P	**Pn**	**10 03 51.6**	**+0.2**
NORC				*e* S	**Sn**	**10 04 19.4**	**-1.1**
CHIC	**Chingaza**	**2.28**	**196**	*e* P	**Pn**	**10 03 53.8**	**+0.8**
CHIC				*e* S	**Sn**	**10 04 22.9**	**-0.3**
CHIC	comp=Z,31nm,0.4s			*i*		10 04 32.8	
HELC	**Santa Helena**	**2.51**	**256**	*e* P	**Pn**	**10 03 56.7**	**+1.0**
HELC				*e* S	**Sn**	**10 04 27.9**	**-0.1**
HELC	comp=Z,56nm,0.3s			*i*		10 04 34.7	
VIGV	**El Vigia**	**2.63**	**40**	*e* P	**Pn**	**10 03 58.2**	**+1.3**
VIGV				*e* S	**Sn**	**10 04 28.7**	**-1.6**
SOCV	**Socops**	**2.64**	**57**	*e* P	**Pn**	**10 03 57.9**	**+0.9**
SOCV				*e* S	**Sn**	**10 04 29.7**	**-0.8**
VILC	**Villavicencio,**	**2.77**	**193**	*e* P	**Pn**	**10 03 59.6**	**+1.0**
VILC				*e* S	**Sn**	**10 04 33.0**	**-0.4**
VILC	comp=Z,32nm,0.3s			*i*		10 04 45.5	
GUYC	**Guyana, Colomb**	**2.79**	**235**	*e* P	**Pn**	**10 04 00.3**	**+1.0**
GUYC				*e* S	**Sn**	**10 04 33.7**	**-0.7**
GUYC	comp=Z,70nm,0.3s			*i*		10 04 42.6	
DBBC	**Dabeiba**	**3.11**	**274**	*e* P	**Pn**	**10 04 03.9**	**+1.1**
PRAC	**Prado**	**3.58**	**210**	*e* P	**Pn**	**10 04 09.9**	**+1.2**
PRAC				*e* S	**Sn**	**10 04 50.5**	**-1.1**
ELOV	**Elorza**	**3.58**	**87**	*e* P	**Pn**	**10 04 09.8**	**+1.0**
VIRV	**Villa del Rosa**	**3.71**	**10**	*e* P	**Pn**	**10 04 10.6**	**+0.1**
VIRV				*e* S	**Sn**	**10 04 53.4**	**-1.3**
QARV	**Quebrada Arrib**	**4.21**	**37**	*e* P	**Pn**	**10 04 16.7**	**-0.3**
SANV	**Sanarito**	**4.41**	**53**	*e* P	**Pn**	**10 04 20.2**	**+0.6**
CURV	**Curarigua**	**4.42**	**44**	*e* P	**Pn**	**10 04 20.0**	**+0.2**
TEPV	**Terepaima**	**4.96**	**51**	*e* P	**Pn**	**10 04 27.2**	**+0.4**
BAUV	**El Baul**	**5.42**	**67**	*e* P	**Pn**	**10 04 32.0**	**-0.8**
MAPV	**Macapo**	**5.47**	**57**	*e* P	**Pn**	**10 04 33.6**	**+0.2**
MONV	**Montecano**	**5.95**	**31**	*e* P	**Pn**	**10 04 39.5**	**-0.4**

IDC 03 10:08:38.7±17.0, 2.35N×128.03E, h385km±206km, mb3.3/8, mb1 3.4/8, mb1mx3.0/57, mbtmp4.0/8, Error ellipse: s-maj=96.7km s-min=30.5km az=52.0, Halmahera

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi** 0.9nm,0.4s,baz=29,slow=11,SNR=4.0	**20.46**	**187**	P	P	10 12 48.8	+0.4
WRA	**Warramunga Arr** 1.1nm,0.3s,baz=343,slow=10.0,SNR=41	**23.00**	**165**	P	P	10 13 10.9	-0.7
ASAR	**Alice Springs** 0.5nm,0.3s,baz=350,slow=7.4,SNR=19	**26.48**	**168**	P	P	10 13 42.9	+0.2
STKA	**Stephens Creek** 0.7nm,0.3s,baz=329,slow=7.2,SNR=11	**36.40**	**160**	P	P	10 15 08.2	0.0
MKAR	**Makanchi Array** 0.4nm,0.4s,baz=118,slow=8.2,SNR=8.4	**59.42**	**325**	P	P	10 18 02.4	+0.1
KURBB	**Kurchatov Arra** 1.3nm,0.6s,baz=127,slow=6.0,SNR=15	**63.59**	**327**	P	P	10 18 29.7	-0.1
BVAR	**Borovoye Array** 0.8nm,0.6s,baz=111,slow=8.0,SNR=3.9	**69.18**	**327**	P	P	10 19 04.6	-0.1
ARCES	**ARCESS Array B** 1.5nm,0.9s,baz=73,slow=5.4,SNR=3.8	**92.18**	**340**	P	P	10 21 05.2	0.0

*NIED **03** 10:10:00, 37.80N×144.20E, h8km, Mw3.7 Best double couple: M0=4.09000×10^14 NP1:φs=358.00000°, δ30.00000°, λ=-101.00000°. NP2:φs=191.00000°, δ61.00000°, λ=-84.00000°.*

*IDC **03** 10:10:52.1±0.9, 37.58N×144.49E, h0km, mb3.5/9, mb1 3.8/11, mb1mx3.6/57, mbtmp3.6/11, ML3.5/2, MS2.6/1, Ms1 2.6/1, ms1mx2.0/50, Error ellipse: s-maj=24.3km s-min=19.2km az=119.0*

*ISCJB **03** 10:10:56.4±0.7, 37.86N±0.05×144.22E±0.05, h33km, mb3.5/9, Error ellipse: s-maj=6.8km s-min=5.5km az=157.2*

*JMA **03** 10:10:56.2±0.3, 37.78N×144.18E, h44km, M3.7*

ISC 03 10:10:57.8±0.9, 37.82N±0.07×144.26E±0.07, h35km, n28, σ1§30/36, mb3.4/9, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**2.38**	**286**	P	**Pn**	**10 11 33.4**	**-0.9**
JIO				S	**Sn**	**10 12 01.1**	**-1.1**
OFUJ	**Ofunato**	**2.39**	**303**	P	**Pn**	**10 11 33.6**	**-0.9**
JMK	**Ichinoseki**	**2.64**	**296**	P	**Pn**	**10 11 37.4**	**-0.5**
JMK				S	**Sn**	**10 12 07.8**	**-0.9**
JFK	**Kawauchi**	**2.72**	**262**	P	**Pn**	**10 11 37.6**	**-1.5**
JMM	**Marumori**	**2.74**	**272**	P	**Pn**	**10 11 38.1**	**-1.2**
JMM				S	**Sn**	**10 12 09.2**	**-2.0**
JTH	**Tanohata**	**2.82**	**319**	*e* S	**Sn**	**10 12 11.4**	**-1.8**
JOM	**Ohasama**	**2.85**	**306**	P	**Pn**	**10 11 40.7**	**-0.1**
JOM				S	**Sn**	**10 12 13.2**	**-0.6**
JOU	**Okura**	**2.89**	**282**	P	**Pn**	**10 11 40.6**	**-0.7**
JFT	**Otama**	**3.12**	**266**	P	**Pn**	**10 11 44.1**	**-0.5**
JFT				S	**Sn**	**10 12 19.4**	**-1.3**
JRG	**Rokugo**	**3.25**	**300**	P	**Pn**	**10 11 46.3**	**+0.1**
JYK	**Kaneyama**	**3.25**	**291**	P	**Pn**	**10 11 46.5**	**+0.2**
JYK				*e* S	**Sn**	**10 12 23.9**	**+0.1**
JANG	**Nango**	**3.33**	**321**	P	**Pn**	**10 11 47.2**	**-0.1**
JTM	**Tenmabayashi**	**3.86**	**321**	*e* S	**Sn**	**10 12 36.4**	**-2.4**
JNBK	**Urakawa-nobuka**	**4.60**	**346**	P	**Pn**	**10 12 04.9**	**0.0**
JNBK				S	**Sn**	**10 12 55.7**	**-1.4**
JRY	**Ryogami san**	**4.65**	**249**	P	**Pn**	**10 12 03.9**	**-1.7**
JCH	**Churui**	**4.84**	**352**	P	**Pn**	**10 12 06.9**	**-1.2**
MJAR	**Matsushiro Arr** 3.6nm,0.3s,baz=85,slow=14,SNR=40	**4.99**	**257**	Pn	**Pn**	**10 12 10.4**	**+0.1**
MAT	**Matsushiro**	**5.00**	**257**	P	**Pn**	**10 12 10.8**	**+0.5**
MAT				S	**Sn**	**10 13 08.6**	**+1.8**
KSRS	**Korea Array** 0.1nm,0.3s,baz=94,slow=14,SNR=6.1	**12.96**	**273**	Pn	**Pn**	**10 14 01.9**	**+2.6**
KSRS	comp=Z,24nm,18.9s,baz=59,slow=40			LR	LR	10 19 35.2	
SEY	**Seymchan** 0.2nm,0.3s,baz=225,slow=7.6,SNR=6.8	**25.63**	**9**	P	**P**	**10 16 25.1**	**+1.4**
MKAR	**Makanchi Array** 0.3nm,0.8s,baz=79,slow=7.6,SNR=2.3	**45.62**	**302**	P	**P**	**10 19 16.8**	**+2.2**
KURBB	**Kurchatov Arra** 0.3nm,0.5s,baz=81,slow=7.8,SNR=5.0	**47.31**	**308**	P	**P**	**10 19 28.8**	**+1.0**
ILAR	**Eielson Array** 1.0nm,0.7s,baz=262,slow=6.7,SNR=12	**47.62**	**33**	P	**P**	**10 19 30.1**	**+0.2**
BVAR	**Borovoye Array** 0.2nm,0.4s,baz=90,slow=9.2,SNR=2.1	**51.72**	**312**	P	**P**	**10 20 02.6**	**+1.2**
WRA	**Warramunga Arr** 1.6nm,0.7s,baz=12,slow=7.4,SNR=10	**58.20**	**191**	P	**P**	**10 20 46.5**	**-1.9**
ASAR	**Alice Springs** 0.3nm,0.7s,baz=5.9,slow=6.9,SNR=4.9	**61.93**	**191**	P	**P**	**10 21 12.2**	**-1.8**
YKA	**Yellowknife Ar** 0.1nm,0.7s,baz=302,slow=6.7,SNR=3.8	**61.98**	**31**	P	**P**	**10 21 13.9**	**0.0**
TXAR	**Lajitas Array** 0.1nm,0.4s,baz=316,slow=3.8,SNR=2.9	**87.84**	**54**	P	**P**	**10 23 44.2**	**+0.3**

*IDC **03** 10:17:43.9±2.5, 37.95N×142.38E, h0km, mb3.8/3, mb1 3.7/4, mb1mx3.3/55, mbtmp3.6/4, ML3.1/1, MS3.6/3, Ms1 3.5/3, ms1mx2.6/51, Error ellipse: s-maj=64.2km s-min=31.1km az=66.0*

*JMA **03** 10:17:53.1±0.1, 37.85N×141.73E, h51km±2km, M3.7*

ISC 03 10:17:50.8±2.3, 37.84N±0.05×141.8E±0.1, h28km±13km, n15, σ1§28/20, mb3.8/3, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**0.73**	**328**	P	**Pn**	**10 18 06.7**	**+1.5**
JIO				S	**Sn**	**10 18 15.9**	**+0.5**
JMM	**Marumori**	**0.83**	**272**	P	**Pn**	**10 18 07.5**	**+0.9**
JMM				S	**Sn**	**10 18 17.8**	**0.0**
JFK	**Kawauchi**	**0.90**	**239**	P	**Pn**	**10 18 08.7**	**+1.1**
JFK				S	**Sn**	**10 18 19.9**	**+0.3**
JOU	**Okura**	**1.07**	**300**	P	**Pn**	**10 18 10.7**	**+0.1**
JOU				S	**Sn**	**10 18 23.9**	**+0.1**
ONAJ	**Iwakimizuishiy**	**1.11**	**229**	P	**Pb**	**10 18 11.6**	**+0.3**
ONAJ				*e* S	**Sb**	**10 18 24.5**	**-0.8**
JFT	**Otama**	**1.23**	**255**	P	**Pb**	**10 18 13.5**	**+0.1**
JFT				S	**Sb**	**10 18 28.6**	**-0.3**
JHO	**Hitachi**	**1.59**	**220**	P	**Pn**	**10 18 18.5**	**+1.5**
JHO				S	**Sn**	**10 18 37.7**	**+1.1**
MJAR	**Matsushiro Arr** 1.7nm,0.3s,baz=54,slow=11,SNR=14	**3.17**	**247**	Pn	**Pn**	**10 18 40.9**	**+2.0**
MJAR	comp=Z,34nm,20.3s,baz=105,slow=42			LR	LR	10 20 14.1	
MAT	**Matsushiro**	**3.17**	**247**	P	**Pn**	**10 18 41.3**	**+2.4**
MAT				S	**Sb**	**10 19 22.6**	**-2.1**
JNU	**Nakatsue** comp=Z,533nm,20.8s,baz=292,slow=39	**10.10**	**246**	LR	LR	10 24 37.4	
MKAR	**Makanchi Array** 0.3nm,0.7s,baz=88,slow=8.8,SNR=2.9	**43.98**	**301**	P	**P**	**10 25 55.1**	**-0.4**
KURBB	**Kurchatov Arra** 0.5nm,0.2s,baz=81,slow=8.3,SNR=5.3	**45.78**	**307**	P	**P**	**10 26 09.1**	**-0.6**
WRA	**Warramunga Arr** 0.7nm,0.7s,baz=6.5,slow=7.3,SNR=8.5	**57.90**	**188**	P	**P**	**10 27 38.8**	**-1.5**
STKA	**Stephens Creek** comp=Z,29nm,21.4s,baz=207,slow=36	**69.36**	**180**	LR	LR	10 59 17.0	
YBH	**Yreka Blue Hor** comp=Z,52nm,21.3s,baz=185,slow=29	**69.59**	**53**	LR	LR	10 51 11.4	

IDC 03 10:18:06.8±613.0, 47.42N×50.09E, h0km, Error ellipse: s-maj=238.1km s-min=122.6km az=49.0, Western Kazakhstan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
I31KZ	**AKTYUBINSK INF** baz=245,slow=318,SNR=7.2	**6.03**	**57**	*i*		10 53 00.0	
I43RU	**DUBNA INFRASON** baz=133,slow=312,SNR=0.5	**12.20**	**324**	*i*		11 31 10.0	
I46RU	**ZALESOVO INFRA** baz=260,slow=326,SNR=2.9	**22.78**	**60**	*i*		12 40 20.0	
I18DK	**QAANAAQ INFRAS** baz=47,slow=342,SNR=0.7	**39.93**	**346**	*i*		16 05 40.0	

*JMA **03** 10:18:41.8±0.2, 24.05N×121.73E, h0km, M2.8*

*TAP **03** 10:18:42.9, 24.11N×121.73E, h8km, ML3.4, D*

ISC 03 10:18:42.8±1.1, 24.06N±0.02×121.80E±0.03, h6km±9km, n47, σ0§58/72, 3C, Taiwan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TWD	**Chiawan** baz=258	**0.19**	**276** ⇑	*i* P	**Pg**	**10 18 46.2**	**-0.5**
TWD	baz=258			S	**Sg**	**10 18 48.8**	**-0.4**
HWA	**Hwalien** baz=219	**0.20**	**246**	P	**Pg**	**10 18 47.4**	**+0.6**
EHP	**Heping Village** baz=4.0	**0.26**	**347**	*e* P	**Pg**	**10 18 48.2**	**+0.3**
ENA	**Nanau** baz=2.0	**0.37**	**351**	*e* P	**Pg**	**10 18 49.8**	**-0.3**
ENA	baz=2.0			*e* S	**Sg**	**10 18 55.5**	**+0.5**
ESL	**Shilin** baz=222	**0.42**	**234**	P	**Pg**	**10 18 50.9**	**-0.1**
ESL	baz=222			*e* S	**Sg**	**10 18 56.6**	**+0.2**
WHF	**Hehuan Shan** baz=275	**0.50**	**280**	*i* P	**Pg**	**10 18 52.0**	**-0.6**
WHF	baz=275			*e* S	**Sg**	**10 18 58.9**	**-0.3**
NNS	**Nan Shan** baz=316	**0.55**	**314**	*i* P	**Pg**	**10 18 52.8**	**-0.6**
NNS	baz=316			*e* S	**Sg**	**10 19 00.1**	**-0.5**
TWC	**Suao** baz=13	**0.55**	**4**	*e* P	**Pg**	**10 18 53.4**	**0.0**
TWT	**Tachien** baz=285	**0.61**	**289**	P	**Pg**	**10 18 54.8**	**+0.2**
TWT	baz=285			*e* S	**Sg**	**10 19 02.5**	**0.0**
ENTT	**Nioudou** baz=344	**0.62**	**339** ⇑	*i* P	**Pg**	**10 18 54.6**	**-0.1**
ENTT	baz=344			*e* S	**Sg**	**10 19 03.0**	**+0.2**
TWE	**Neicheng** baz=355	**0.67**	**349**	P	**Pg**	**10 18 55.7**	**-0.1**
TWE	baz=355			S	**Sg**	**10 19 04.4**	**-0.1**
WDT	**Danda** baz=237	**0.68**	**244**	*i* P	**Pg**	**10 18 55.9**	**-0.1**
WDT	baz=237			S	**Sg**	**10 19 06.0**	**+1.0**
EHY	**Hungye** baz=211	**0.71**	**219**	*e* P	**Pg**	**10 18 55.9**	**-0.5**
NSK	**Sanguang** baz=329	**0.74**	**327** ⇑	*i* P	**Pg**	**10 18 56.7**	**-0.4**
NSK	baz=329			S	**Sg**	**10 19 06.8**	**+0.2**
TWF1	**Yuli** baz=207	**0.84**	**214**	*e* P	**Pg**	**10 18 58.4**	**-0.6**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
SMLT	Sun Moon Lake	0.85	258	i P	Pg	10 18 59.0	-0.1
	baz=253						
SMLT				eS	Sb	10 19 10.8	-0.8
	baz=253						
TYC	Yuchr	0.88	260	i P	Pg	10 18 59.4	-0.4
	baz=255						
TYC				S	Sg	10 19 11.0	-0.2
	baz=255						
NSTT	Nanjuang	0.93	308	eP	Pg	10 19 00.8	+0.1
	baz=308						
NSTT				eS	Sg	10 19 12.4	-0.3
	baz=308						
TWA	Mucha	0.94	348	eP	Pg	10 19 01.1	+0.2
	baz=351						
TWA				eS	Sg	10 19 13.3	+0.2
	baz=351						
TWB1	Santiao Chiao	0.96	10	eP	Pb	10 19 02.1	+0.3
	baz=15						
YUS	Yu-Shan	0.96	234	eP	Pg	10 19 01.5	+0.1
	baz=228						
TWQ1	Liyutan	0.98	287	eP	Pb	10 19 02.1	-0.2
	baz=285						
NWF	Wu-fen Shan	1.01	359	eP	Pb	10 19 02.6	-0.1
	baz=2.0						
TAP1	Taipei	1.01	345	eP	Pg	10 19 01.6	-0.6
	baz=347						
TAP1				eS	Sb	10 19 16.2	0.0
	baz=347						
NSY	Sanyi	1.02	291	eP	Pb	10 19 03.0	+0.1
	baz=289						
TCU	Taichung	1.03	275	eP	Pb	10 19 03.1	0.0
	baz=272						
CHKT	Chengkung	1.04	203	eP	Pg	10 19 02.9	+0.2
	baz=198						
CHKT				eS	Sn	10 19 18.6	-0.1
	baz=198						
HSN	Hsinchu	1.06	314	eP	Pn	10 19 04.7	+0.5
	baz=317						
ALS	Alishan	1.07	239	eP	Pg	10 19 03.5	+0.2
	baz=234						
ALS				eS	Sg	10 19 17.0	-0.2
	baz=234						
NCU	National Centr	1.07	328	eP	Pg	10 19 02.3	-1.0
	baz=330						
JYNG	Yonagunijimaku	1.11	69	P	Pn	10 19 05.0	+0.1
ELDTW	Lidau	1.13	220	eP	Pg	10 19 01.7	-2.8
	baz=215						
CHN5	Tsauling	1.13	246	i P	Pb	10 19 04.8	0.0
	baz=242						
CHN5				eS	Sn	10 19 21.3	+0.2
	baz=242						
STYT	Tauyuan	1.31	227	eP	Pn	10 19 07.0	-0.7
	baz=223						
CHN4	Tsaushan	1.31	238	eP	Pg	10 19 08.3	+0.3
	baz=234						
CHN4				eS	Sn	10 19 26.1	+0.5
	baz=234						
WTP	Ta-pu	1.36	234	eP	Pg	10 19 08.8	-0.1
	baz=229						
CHY	Chiayi	1.38	246	eP	Pg	10 19 09.8	+0.4
	baz=242						
CHY				eS	Sn	10 19 27.6	+0.4
	baz=242						
TWK	Hsinying	1.44	237	eP	Pb	10 19 10.2	+0.1
	baz=233						
TWK				eS	Sg	10 19 30.9	+1.7
	baz=233						
CHN1	Nanshi	1.46	234	eP	Pb	10 19 10.3	-0.1
	baz=230						
CHN1				eS	Sg	10 19 29.8	+0.1
	baz=230						
SGST	Jiashian	1.48	229	eP	Pg	10 19 11.3	0.0
	baz=225						
SGST				eS	Sg	10 19 32.1	+1.5
	baz=225						
SSD	Sandimen	1.69	220	eP	Pn	10 19 13.1	+0.2
	baz=216						
IRIF	Iriomote-Funau	1.78	81	eS	Sb	10 19 38.8	+0.4
EAST	Anshuo	1.89	208	eP	Pg	10 19 18.5	-0.5
	baz=205						
JKRS	Kuro-shima	2.02	85	P	Pn	10 19 17.0	-0.4
JKRS				eS	Sn	10 19 42.7	-0.3
JIJ	Ishigaki jima	2.16	81	eS	Sn	10 19 45.7	-0.6
JISG	Ishigakijimahi	2.35	77	P	Pn	10 19 22.0	+0.1
JISG				eS	Sn	10 19 51.1	+0.1
JTJ	Tarama	2.71	77	eS	Sn	10 20 00.5	+0.6

*KRSC **03** 10:25:50.0±0.8, 49°.93N×156°.60E, h46km±18km, ML4.1*
*MOS **03** 10:25:54.4±0.9, 50°.21N×156°.20E, h35km, mb4.2/1, Error ellipse: s-maj=36.2km s-min=9.4km az=76.1*
ISC 03 10:25:53.7±3.5**, 50°.0N**±0°.2×**156°.3E**±0°.1**, h55**km**, n19,** σ1s.**13**/27**, Kuril Islands**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
SKR	Severo-Kuril's	0.67	351	eP	Pn	10 26 05.8	-1.5
SKR				eS	Sn	10 26 17.3	+0.2
SKR	Severo-Kuril's	0.67	351	ePN	Pn	10 26 04.9	-2.4
SKR				eS	Sn	10 26 16.5	-0.6
SKR				pmax	pmax		
	comp=Z,90nm,0.3s						
SKR				smax	smax		
	comp=E,1μm,0.2s						
PAU	Pauzhetka	1.49	13	eP	Pn	10 26 16.7	-1.3
PAU				eS	Sn	10 26 36.3	-0.1
PAU	Pauzhetka	1.49	13	PN	Pn	10 26 16.7	-1.3
PAU				S	Sn	10 26 36.3	-0.1
ASAK	Asacha	2.58	23	eP	Pn	10 26 32.0	-1.0
ASAK	Asacha	2.58	23	PN	Pn	10 26 32.0	-1.0
RUS	Russkaya	2.79	29	eS	Sn	10 27 08.3	0.0
KRMR	Karymshinskiy	3.04	22	eP	Pn	10 26 39.2	-0.1
KRMR				eS	Sn	10 27 14.9	+0.5
KRMR	Karymshinskiy	3.04	22	PN	Pn	10 26 39.2	-0.1
KRMR				S	Sn	10 27 14.9	+0.5
PET	Petropavlovsk	3.35	25	i PN	Pn	10 26 42.1	-1.4
UGLR	Uglovaya	3.56	25	eP	Pn	10 26 47.5	+1.0
UGLR	Uglovaya	3.56	25	PN	Pn	10 26 47.5	+1.0
AVH	Avacha	3.59	24	eP	Pn	10 26 47.4	+0.5
AVH				eS	Sn	10 27 28.6	+0.6
AVH	Avacha	3.59	24	PN	Pn	10 26 47.4	+0.5
AVH				S	Sn	10 27 28.6	+0.6
SDLR	Sedlovina	3.64	25	eP	Pn	10 26 46.9	-0.7
SDLR	Sedlovina	3.64	25	PN	Pn	10 26 46.9	-0.7
GNL	Ganaly	3.82	15	eP	Pn	10 26 50.9	+0.9
GNL	Ganaly	3.82	15	PN	Pn	10 26 50.9	+0.9
TYV	Tymovskoe	8.74	281	ePN	Pn	10 28 00.2	+3.0

MEX 03 10:27:13.6±0.3**, 14°.02N×91°.73W, h9**km**, MD3.8, Guatemala**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
PCIG		2.21	320	eP	Pn	10 27 47.7	-2.8
PCIG				eS	Sn	10 28 17.2	-0.8

*IDC **03** 10:40:19.9±0.6, 34°.68N×141°.46E, h0km, mb3.9/19, mb1 4.0/24, mb1mx3.9/59, mbtmp3.9/24, ML3.1/4, MS3.1/5, Ms1 3.1/5, ms1mx2.8/46, Error ellipse: s-maj=16.8km s-min=13.4km az=106.0*
*JMA **03** 10:40:20.4±0.4, 34°.62N×141°.65E, h31km±2km, M3.4*
*ISCJB **03** 10:40:21.8±0.4, 34°.64N±0°.04×141°.55E±0°.05, h27km, mb4.0/24, MS3.2/2, Error ellipse: s-maj=6.4km s-min=5.5km az=140.0*
*NEIC **03** 10:40:22.8±3.6, 34°.66N×141°.47E, h19km±22km, mb4.3/7, Error ellipse: s-maj=10.9km s-min=6.9km az=70.0*
ISC 03 10:40:22.6±0.7**, 34°.61N**±0°.04×**141°.44E**±0°.07**, h27**km**, n53,** σ1s.**65**/37**, mb4.0**/24**, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
BSO1	Boso 1	0.39	277	P	Pn	10 40 31.5	-0.4
BSO1				X		10 40 38.1	
BSO3	Boso 3	0.79	284	P	Pb	10 40 37.8	+0.2
BSO4	Boso 4	0.99	293	P	Pb	10 40 40.6	-0.4
KTR	Katsuura	1.07	300	P	Pb	10 40 42.5	0.0
KTR				S	Sb	10 40 57.3	+1.2
CHOJ	Chosi	1.19	336	P	Pb	10 40 42.4	-2.1
JCN	Nagara	1.30	309	P	Pb	10 40 45.8	-0.6
JIM2	Oshima 3	1.66	274	P	Pn	10 40 50.6	+0.6
JHJ2	Mitsune	2.02	223	ePn	Pb	10 40 57.7	-0.8
JHJ	Hachijo jima 2	2.03	223	Pn	Pb	10 40 57.6	-1.2
	38nm,0.3s,baz=280,slow=23,SNR=8.4						
JHJ				Sn	Sb	10 41 22.8	-0.8
	72nm,0.3s,baz=38,slow=22,SNR=9.2						
JHJ				LR	LR	10 41 31.9	
	comp=Z,106nm,20.1s,baz=60,slow=35						
MJAR	Matsushiro Arr	3.27	307	Pn	Pn	10 41 13.2	+1.1
	5.1nm,0.3s,baz=115,slow=9.6,SNR=31						
MJAR				LR	LR	10 42 56.0	
	comp=Z,325nm,18.5s,baz=125,slow=49						
MAJO	Matsushiro	3.27	307	ePn	Pn	10 41 13.1	+1.0
MAT	Matsushiro	3.27	307	P	Pn	10 41 13.9	+1.8
MAT				S	Sb	10 41 54.3	-5.0
CBIJ	Chichi jima	7.52	175	Pn	Pn	10 42 11.0	+0.5
CBIJ				Sn	Sn	10 43 31.0	-3.8
JCJ	Chichijima	7.52	175	Pn	Pn	10 42 11.0	+0.5
	15nm,0.3s,baz=275,slow=19,SNR=13						
JCJ				Sn	Sn	10 43 31.0	-3.8
	9.4nm,0.3s,baz=252,slow=20,SNR=6.8						
KSRS	Korea Array	11.31	288	Pn	Pn	10 43 03.5	+1.1
	0.1nm,0.3s,baz=102,slow=15,SNR=2.9						
KSAR	Wonju Array Be	11.34	288	Pn	Pn	10 43 03.5	+0.7
USRK	Ussuriysk Ar.	12.04	326	Pn	Pn	10 43 12.1	-0.2
	0.3nm,0.3s,baz=137,slow=13,SNR=6.5						
KLR	Kul'dur	16.27	337	LR	LR	10 50 49.9	
	comp=Z,112nm,18.4s,baz=143,slow=39						
MA2	Magadan	25.72	11	P	P	10 45 51.4	+1.0
	3.8nm,0.6s,baz=226,slow=9.9,SNR=6.7						
MA2				LR	LR	10 58 28.0	
	comp=Z,69nm,18.1s,baz=204,slow=42						
H11N2	WAKE ISLAND Hy	26.96	117	T	T	11 14 11.0	
	baz=310,slow=74						
H11N1	WAKE ISLAND Hy	26.97	117	T	T	11 14 18.0	
	baz=310,slow=74						
H11N3	WAKE ISLAND Hy	26.98	117	T	T	11 14 16.9	
	baz=310						
H11S3	WAKE ISLAND Hy	27.59	119	T	T	11 15 02.9	
	baz=308,slow=74						
H11S1	WAKE ISLAND Hy	27.59	119	T	T	11 15 04.4	
	baz=308,slow=74						
H11S2	WAKE ISLAND Hy	27.61	119	T	T	11 15 12.3	
	baz=308						
YAK	Yakutsk	28.44	348	LR	LR	10 58 42.6	
	comp=Z,61nm,18.2s,baz=187,slow=39						
SONM	Songino Array	29.22	308	P	P	10 46 23.6	+1.5
	0.7nm,0.6s,baz=108,slow=8.6,SNR=6.5						
ZALV	Zalesovo Beam	43.59	314	P	P	10 48 24.8	+0.6
	0.8nm,0.4s,baz=112,slow=7.0,SNR=3.7						
ZALV				PcP	PcP	10 50 12.3	+1.0
	1.2nm,0.5s,baz=109,slow=3.0,SNR=5.7						
MKAR	Makanchi Array	45.46	304	P	P	10 48 38.5	-0.7
	1.2nm,0.6s,baz=85,slow=9.7,SNR=13						
KURK	Kurchatov	47.48	310	eP	P	10 48 51.0	-3.9
	3.5nm,0.8s						
TKM2	Tokmak 2	50.84	300	eP	P	10 49 22.8	+1.7
	2.4nm,0.6s						
ILAR	Eielson Array	51.54	31	P	P	10 49 26.6	+0.8
	0.6nm,0.7s,baz=268,slow=6.1,SNR=6.8						
KKAR	Karatay Array	54.39	302	eP	P	10 49 48.2	+1.1
	1.4nm,0.7s						
WRAB	Tennant Creek	54.66	188	eP	P	10 49 51.3	+2.2
	7.2nm,1.2s						
WRA	Warramunga Arr	54.67	188	P	P	10 49 50.8	+1.6
	1.6nm,0.5s,baz=5.1,slow=7.5,SNR=21						
INK	Inuvik	56.54	26	P	P	10 50 03.5	+1.4
	1.5nm,0.6s,baz=290,slow=5.8,SNR=14						
INK	Inuvik	56.54	26	eP	P	10 50 03.4	+1.4
	3.6nm,1.1s						
ASAR	Alice Springs	58.40	188	P	P	10 50 17.4	+1.7
	0.9nm,0.7s,baz=12,slow=10,SNR=16						
ABKAR	Akbulak array	59.54	311	eP	P	10 50 20.4	-3.0
	1.2nm,0.4s						
AKTO	Aktyubinsk	60.33	313	P	P	10 50 30.8	+2.0
	1.2nm,0.7s,baz=72,slow=6.4,SNR=5.3						
RES	Resolute Bay	64.94	14	P	P	10 51 00.1	+0.9
	1.2nm,0.6s,baz=320,slow=7.0,SNR=9.0						
RES	Resolute Bay	64.94	14	eP	P	10 51 00.3	+1.2
	1.4nm,0.7s						
YKA	Yellowknife Ar	65.89	30	P	P	10 51 05.6	+0.1
	0.3nm,0.8s,baz=298,slow=5.9,SNR=7.4						
FINES	FINESS Array B	70.97	333	P	P	10 51 38.2	+0.8
	0.8nm,0.5s,baz=34,slow=5.2,SNR=7.1						
AKASG	Malin Array Be	76.23	323	P	P	10 52 09.0	+0.6
	0.6nm,0.3s,baz=48,slow=6.0,SNR=10						
NVAR	Mina Array Bea	76.43	53	P	P	10 52 12.1	+2.0
	1.4nm,1.0s,baz=282,slow=3.7,SNR=4.0						
NB2	NORSAR Subarra	76.43	338	P	P	10 52 10.2	+0.7
	comp=Z,1.1nm,0.7s,baz=41,slow=5.9						
NOA	NORSAR Array B	76.43	338	P	P	10 52 10.1	+0.7
	comp=Z,0.6nm,0.5s,baz=39,slow=5.7,SNR=2.8						
PDAR	Pinedale Array	79.35	45	P	P	10 52 27.9	+1.6
	comp=Z,0.3nm,0.8s,baz=318,slow=3.6,SNR=3.3						
BRTR	Keskin Array B	80.48	312	P	P	10 52 35.2	+2.9
	comp=Z,1.2nm,0.7s,baz=78,slow=3.5,SNR=5.9						
GERES	GERESS Array B	84.78	328	P	P	10 52 54.9	+0.4
	comp=Z,0.7nm,0.7s,baz=40,slow=9.2,SNR=5.1						
TXAR	Lajitas Array	91.58	52	P	P	10 53 29.3	+1.9
	comp=Z,0.1nm,0.6s,baz=289,slow=5.6,SNR=2.6						
LPAZ	La Paz	147.84	63	PKPbc	PKPab	11 00 08.0	-0.9
	comp=Z,0.8nm,0.6s,baz=297,slow=4.5,SNR=3.4						

*NIED **03** 10:40:00, 39°.10N×142°.40E, h35km, Mw3.8 Best double couple: M0 6.27000×10^14 NP1: φs 272.00000°, δ22.00000°, λ-142.00000°. NP2: φs 146.00000°, δ77.00000°, λ-72.00000°.*
*IDC **03** 10:40:31.4±1.1, 38°.95N×142°.34E, h0km, mb3.7/8, mb1 3.9/8, mb1mx3.6/53, mbtmp3.7/8, MS3.1/2, Ms1 3.1/2, ms1mx2.5/48, Error ellipse: s-maj=30.0km s-min=27.5km az=145.0*
*ISCJB **03** 10:40:34.1±1.1, 39°.05N±0°.04×142°.48E±0°.07, h25km±6km, mb3.6/8, MS3.0/2, Error ellipse: s-maj=9.1km s-min=6.9km az=19.5*
*JMA **03** 10:40:35.9±0.1, 39°.10N×142°.40E, h33km±1km, M4.0*
JMA Felt I J1.
ISC 03 10:40:34.9±1.8**, 39°.06N**±0°.04×**142°.36E**±0°.07**, h20**km±8km**, n20,** σ0s.**41**/26**, mb3.8**/8**, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
OFUJ	Ofunato	0.54	273	P	Pn	10 40 47.4	-0.1
MIYJ	Miyakonagasawa	0.67	321	P	Pg	10 40 48.4	+0.2
MIYJ				S	Sb	10 40 57.2	+0.4
JMK	Ichinoseki	0.90	264	P	Pn	10 40 52.7	+0.3
JMK				S	Sg	10 41 04.7	+0.4
JOM	Ohasama	0.93	297	P	Pn	10 40 53.0	+0.1
JOM				S	Sg	10 41 05.2	-0.2
JTH	Tanohata	0.96	336	P	Pb	10 40 52.6	-0.3
JIO	Ouri	0.99	233	P	Pn	10 40 53.7	0.0
JIO				S	Sb	10 41 06.1	0.0
JKZ	Kuzumaki	1.23	320	P	Pb	10 40 57.3	-0.1
JKZ				S	Sb	10 41 12.6	-0.2
JRG	Rokugo	1.39	285	P	Pb	10 40 59.9	-0.2
JRG				S	Sg	10 41 19.2	-0.6
JANG	Nango	1.47	334	P	Pn	10 41 00.4	+0.1
JANG				S	Sn	10 41 18.8	-0.2
JOU	Okura	1.50	243	P	Pb	10 41 01.8	-0.2
JOU				S	Sb	10 41 21.4	+0.8
GUMO	Guam	25.46	174	LR	LR	10 58 36.2	
	comp=Z,25nm,18.4s,baz=27,slow=43						
ZALV	Zalesovo Beam	41.14	311	P	P	10 48 17.6	+0.2
	0.8nm,0.5s,baz=94,slow=7.7,SNR=4.1						
MKAR	Makanchi Array	43.71	300	LR	LR	11 08 42.1	
	comp=Z,35nm,19.6s,baz=36,slow=39						
ILAR	Eielson Array	47.39	33	P	P	10 49 08.0	+0.6
	0.5nm,0.6s,baz=262,slow=5.6,SNR=8.2						
INK	Inuvik	52.25	28	P	P	10 49 44.4	+0.2
	0.3nm,0.5s,baz=270,slow=4.4,SNR=3.6						
AKTO	Aktyubinsk	57.90	311	P	P	10 50 25.6	+0.3
	0.9nm,0.7s,baz=78,slow=9.3,SNR=3.3						
WRA	Warramunga Arr	59.17	189	P	P	10 50 33.3	-1.0
	0.8nm,0.5s,baz=7.0,slow=7.6,SNR=5.5						
AKASG	Malin Array Be	73.16	322	P	P	10 52 03.5	-0.4
	0.5nm,0.4s,baz=45,slow=6.4,SNR=6.6						
PDAR	Pinedale Array	75.72	46	P	P	10 52 19.4	+0.2
	0.1nm,0.4s,baz=346,slow=3.7,SNR=3.5						
TXAR	Lajitas Array	88.30	53	P	P	10 53 25.6	+0.3
	0.1nm,0.6s,baz=327,slow=4.8,SNR=4.1						

*IDC **03** 10:47:31.0±2.7, 39°.95N×143°.19E, h0km, mb3.5/4, mb1 3.6/6, mb1mx3.3/38, mbtmp3.4/6, ML3.3/2, Error ellipse: s-maj=58.2km s-min=30.6km az=72.0*
*ISCJB **03** 10:47:40.7±0.9, 39°.66N±0°.04×142°.15E±0°.09, h51km±5km, mb3.3/4, Error ellipse: s-maj=12.1km s-min=5.9km az=3.5*
*JMA **03** 10:47:41.3±0.1, 39°.66N×142°.14E, h48km±1km, M3.4*
ISC 03 10:47:41.1±1.4**, 39°.67N**±0°.04×**142°.2E**±0°.1**, h45**km±8km**, n19,** σ1s.**00**/28**, mb3.5**/4**, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
MIYJ	Miyakonagasawa	0.29	251	P	Pn	10 47 49.8	+0.1
MIYJ				S	Sn	10 47 55.7	-0.1
JTH	Tanohata	0.36	318	P	Pn	10 47 50.7	+0.3
JTH				S	Sn	10 47 57.2	+0.2
JOM	Ohasama	0.71	254	P	Pn	10 47 54.8	0.0
JOM				S	Sn	10 48 04.3	-0.4
JKZ	Kuzumaki	0.72	296	P	Pn	10 47 55.1	+0.1
JKZ				S	Sn	10 48 04.7	-0.4
JANG	Nango	0.87	324	P	Pn	10 47 56.9	0.0
JANG				S	Sn	10 48 08.1	-0.4
JMK	Ichinoseki	1.03	226	P	Pn	10 47 59.0	-0.2
JMK				S	Sn	10 48 11.7	-0.8
JRG	Rokugo	1.23	258	P	Pn	10 48 02.3	+0.5
JRG				eS	Sn	10 48 15.6	-1.6
JAH	Hinai	1.29	294	P	Pn	10 48 03.0	+0.3
JAH				S	Sn	10 48 19.3	+0.5
JIO	Ouri	1.38	208	P	Pn	10 48 03.9	+0.1
JIO				S	Sn	10 48 19.7	-1.1
JTM	Tenmabayashi	1.40	323	P	Pn	10 48 04.6	+0.4
JTM				S	Sn	10 48 21.6	+0.1
JYK	Kaneyama	1.60	242	P	Pn	10 48 06.9	0.0
JYK				eS	Sn	10 48 26.1	-0.3
MJAR	Matsushiro Arr	4.42	226	Pn	Pn	10 48 48.5	+2.8
	1.0nm,0.3s,baz=31,slow=12,SNR=15						
MAT	Matsushiro	4.42	226	P	Pn	10 48 48.6	+2.9
MAT				S	Sn	10 49 44.9	+9.0
USRK	Ussuriysk Ar.	8.84	304	Pn	Pn	10 49 51.0	+4.9
	0.2nm,0.3s,baz=94,slow=13,SNR=6.5						
KSRS	Korea Array	11.38	263	Pn	Pn	10 50 28.4	+7.4
	0.2nm,0.3s,baz=76,slow=14,SNR=3.0						
SONM	Songino Array	26.91	299	P	P	10 53 18.9	+0.9
	0.2nm,0.6s,baz=79,slow=7.8,SNR=2.4						
ZALV	Zalesovo Beam	40.63	310	P	P	10 55 16.2	-0.2
	0.7nm,0.4s,baz=96,slow=9.4,SNR=3.3						
MKAR	Makanchi Array	43.28	300	P	P	10 55 37.5	-0.7
	0.4nm,0.6s,baz=72,slow=6.5,SNR=3.6						
WRA	Warramunga Arr	59.75	189	P	P	10 57 40.6	-0.8
	0.3nm,0.6s,baz=6.3,slow=6.9,SNR=3.8						

MEX 03 10:49:57.2±0.3**, 14°.33N×91°.89W, h5**km**, MD3.8, Guatemala**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
PCIG		1.88	317	eP	Pn	10 50 26.5	-3.5
PCIG				eS	Sn	10 50 49.5	-4.6
CCIG	Comitan	1.96	353	eP	Pn	10 50 29.4	-1.8
CCIG				eS	Sn	10 50 55.9	-0.4

*ISCJB **03** 11:05:36.6±0.7, 3°.35N±0°.04×97°.85E±0°.05, h27km±6km, mb3.9/8, MS3.1/2, Error ellipse: s-maj=8.8km s-min=6.7km az=142.7*
*IDC **03** 11:05:36.9±4.3, 3°.14N×97°.79E, h22km±26km, mb3.7/8, mb1 3.8/8, mb1mx3.5/40, mbtmp3.9/8, MS3.3/4, Ms1 3.3/4, ms1mx2.8/43, Error ellipse: s-maj=47.9km s-min=16.0km az=49.0*
*DJA **03** 11:05:37.5±0.3, 3°N±2°×9°8E±°, h10km, M4.5/6, mB5.3/2, mb4.7/3, MLv4.4/6, Mw(mB)4.8/2*
*KLM **03** 11:05:40.8, 3°.36N×97°.96E, h36km, mb4.0, ML4.2, MS6.0*
ISC 03 11:05:37.0±1.1**, 3°.41N**±0°.05×**97°.80E**±0°.04**, h17**km±7km**, n38,** σ1s.**26**/35**, mb4.1**/8**, 7C, Northern Sumatera**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
KCSI	Kotacane, Aceh	0.11	345	P	Pg	11 05 40.9	+0.2
TPTI		0.64	256	P	Pg	11 05 48.9	-0.7
TSI	Tuntungan	0.77	83	P	Pg	11 05 51.5	-0.5
PSI	Prapat	1.27	118	Pg	Pn	11 05 59.5	-0.6
	110nm,0.3s,baz=312,slow=14,SNR=129						
PSI				Lg	Lg	11 06 15.6	
	212nm,0.3s,baz=156,slow=20,SNR=28						
LHMI	Lhok Sumawe	2.00	335	P	Pb	11 06 12.6	-0.2
GSI	Gunungsitoli	2.11	186	P	Pn	11 06 11.8	+0.3
MNSI	Mandailing Nat	3.15	146	P	Pn	11 06 25.3	-0.5
IPM	Ipoh	3.39	72	⇑P	Pn	11 06 28.6	-0.5
KULM	Kulim	3.40	57	⇑P	Pn	11 06 30.4	+1.2
PBSI	Pulau Batu	3.48	172	P	Pn	11 06 31.5	+1.2
FRIM	Kepong	3.82	93	⇑P	Pn	11 06 35.6	+0.5
BKNI	Bangkinang	4.46	133	P	Pb	11 06 57.5	+2.6
PDSI	Padang	5.05	148	P	Pn	11 06 51.1	-0.9
SDSI	Sungai Dareh	5.64	140	P	Pn	11 07 00.5	+0.5
KTGM	Kuala Trenggan	5.65	70	⇑P	Pn	11 07 00.7	+0.6
KGM	Kluang	5.68	104	⇑P	Pn	11 07 00.6	-0.1
MYKOM	Kota Tinggi	6.25	105	⇑P	Pn	11 07 07.8	-0.7
PPSI	Pulau Pagai	6.52	160	P	Pn	11 07 13.6	+1.4
DSRI	Dabo	7.80	120	P	Pn	11 07 31.2	+1.4
MASI	Maura Aman, Be	7.88	146	P	Pn	11 07 31.7	+0.8
LHSI	Lahat	9.19	141	P	Pn	11 07 49.3	+0.5
MNAI	Manna	9.28	146	P	Pn	11 07 50.0	-0.1
PMBI	Palembang	9.39	132	P	Pn	11 07 50.4	-1.2
MDSI	Maura Dua	10.11	141	P	Pn	11 08 01.4	0.0
KLSI		10.62	139	P	Pn	11 08 08.5	+0.1
KSM	Kuching	12.64	98	⇑P	Pn	11 08 35.8	-0.3
LEM	Lembang	14.12	136	LR	LR	11 14 42.8	
	comp=Z,165nm,18.8s,baz=229,slow=39						
CMAR	Chiang Mai Arr	14.99	4	Pn	P	11 09 16.3	+2.7
	0.3nm,0.3s,baz=196,slow=11,SNR=14						
PALK	Pallekele	17.45	283	LR	LR	11 16 15.9	
	comp=Z,81nm,18.6s,baz=116,slow=36						
KAPI	Kappang	23.47	111	LR	LR	11 22 03.4	
	comp=Z,42nm,18.2s,baz=294,slow=42						
WRA	Warramunga Arr	42.73	124	P	P	11 13 31.4	-2.3
	2.7nm,0.6s,baz=304,slow=9.0,SNR=37						
ASAR	Alice Springs	44.28	129	P	P	11 13 43.8	-2.3
	0.8nm,0.8s,baz=300,slow=8.0,SNR=13						
SONM	Songino Array	44.87	8	P	P	11 13 51.4	+0.8
	0.2nm,0.4s,baz=181,slow=8.4,SNR=2.3						
MKAR	Makanchi Array	45.26	345	P	P	11 13 56.1	+2.5
	0.2nm,0.4s,baz=154,slow=7.4,SNR=4.1						
GEYT	Alibeck	49.93	319	P	P	11 14 30.7	+0.6
	0.8nm,0.3s,baz=157,slow=7.8,SNR=4.1						
ZALV	Zalesovo Beam	51.49	350	P	P	11 14 42.0	+0.6
	0.7nm,0.3s,baz=178,slow=7.4,SNR=3.3						
STKA	Stephens Creek	54.41	134	P	P	11 15 01.7	-1.7
	3.2nm,0.8s,baz=281,slow=8.8,SNR=4.9						
STKA				LR	LR	11 40 03.4	
	comp=Z,27nm,18.8s,baz=208,slow=38						
BRTR	Keskin Array B	68.09	312	P	P	11 16 35.7	-0.5
	1.3nm,0.8s,baz=134,slow=5.6,SNR=5.7						

*DDA **03** 11:10:51.5, 36°.27N×37°.09E, h7km, Md2.7*
*CSEM **03** 11:10:51.8±0.3, 36°.33N×37°.01E, h2km, ML1.7, Error ellipse: s-maj=8.0km s-min=3.9km az=123.0*
*NSSC **03** 11:10:51.6±0.6, 36°.34N×36°.99E, h4km±10km, MD1.3, ML1.7*
ISC 03 11:10:51.9±1.4**, 36°.33N**±0°.04×**36°.99E**±0°.05**, h4**km±12km**, n15,** σ0s.**39**/26**, Jordan-Syria region**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
DRWC	Darouich	0.39	319	eP	Pg	11 10 59.3	-0.1
DRWC				eS	Sg	11 11 04.7	0.0
DRWC				AML	AML	11 11 13.2	
	comp=E,39nm,0.6s						
DRWC				AML	AML	11 11 16.3	
	comp=N,62nm,0.5s						
DRWC	Darouich	0.39	319	eP	Pg	11 10 59.3	-0.1
DRWC				eS	Sg	11 11 04.6	0.0
	comp=N,62nm,0.5s						
KUZU	Kuzuini	0.45	9	i P	Pg	11 11 00.6	0.0
KUZU	Kuzuini	0.45	9	P	Pg	11 11 00.6	0.0
BTCH	Batrach	0.52	236	eP	Pg	11 11 01.9	+0.2
BTCH				eS	Sg	11 11 08.8	+0.3
BTCH				AML	AML	11 11 13.8	
	comp=E,93nm,0.6s						
BTCH				AML	AML	11 11 23.0	
	comp=N,97nm,0.5s						
BTCH	Batrach	0.52	236	eP	Pg	11 11 02.0	+0.2
BTCH				eS	Sg	11 11 08.6	+0.2
	comp=N,97nm,0.5s						
YAYL	Yayladag	0.77	248	i P	Pb	11 11 07.6	-0.3
YAYL				i S	Sb	11 11 19.6	+0.8

Code	Station Name	Δ°	AZ°	Op	ISC	Time	Res
YAYL	Yayladag	0.77	248	P	Pb	11 11 07.6	-0.3
YAYL				S	Sb	11 11 19.6	+0.8
KAMA	Osmaniye	0.90	343	iP	Pb	11 11 09.9	-0.1
KAMA				iS	Sn	11 11 25.1	+0.3
ARNB	Al Arnab	0.94	241	eP	Pg	11 11 09.7	-0.2
ARNB				eS	Sb	11 11 23.1	-0.6
ARNB				AML	AML	11 11 26.8	
	comp=N,18nm,0.2s						
ARNB				AML	AML	11 11 27.9	
	comp=E,8.0nm,0.3s						
ARNB	Al Arnab	0.94	241	eP	Pg	11 11 09.8	-0.2
ARNB				eS	Sb	11 11 23.4	-0.3
	comp=E,8.0nm,0.3s						
SLNF	Slenfeh	0.96	221	eP	Pg	11 11 10.1	-0.1
SLNF				eS	Sb	11 11 23.4	-0.8
SLNF				AML	AML	11 11 32.0	
	comp=N,44nm,0.5s						
SLNF				AML	AML	11 11 35.0	
	comp=E,48nm,0.6s						
SLNF	Slenfeh	0.96	221	eP	Pg	11 11 10.2	-0.1
SLNF				eS	Sg	11 11 23.1	+0.5
	comp=E,48nm,0.6s						
AYKD	Aykdinkavak	1.10	352	iP	Pb	11 11 13.3	-0.1
SURC	SANLIURFA_SURC	1.42	67	iP	Pn	11 11 10.6	-7.9
SURC				iS	Sb	11 11 37.5	+0.1

*ISK **03** 11:21:04.8, 37°.29N×28°.22E, h7km, MD2.6*
*ISCJB **03** 11:21:05.3±0.7, 37°.28N±0°.05×28°.23E±0°.07, h14km±7km, Error ellipse: s-maj=11.4km s-min=4.8km az=141.2*
*CSEM **03** 11:21:05.5±0.2, 37°.26N×28°.21E, h10km, MD2.6, Error ellipse: s-maj=7.6km s-min=3.8km az=44.0*
*DDA **03** 11:21:06.2, 37°.27N×28°.18E, h7km, Md2.4*
ISC 03 11:21:05.3±1.0, **37°.27N**±0°.04×**28°.20E**±0°.03, **h10**km±8km, **n16**, σ0^s**38**/26, **Turkey**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
YER	Yerkesik	0.15	154	ePG	Pg	11 21 08.3	-0.4
YER				eSG	Sg	11 21 11.5	+0.5
YER	Yerkesik	0.15	154	ePg	Pg	11 21 08.3	-0.4
YER				eSg	Sg	11 21 11.5	+0.5
AYDN	Tasoluk	0.47	327	iP	Pb	11 21 15.7	0.0
AYDN				iS	Sb	11 21 22.6	-0.1
AYDN	Tasoluk	0.47	327	P	Pb	11 21 15.6	0.0
AYDN				S	Sb	11 21 22.6	-0.1
TURN	Turunc	0.51	141	iP	Pg	11 21 15.0	-0.2
TURN				iS	Sb	11 21 24.4	+0.6
TURN	Turunc	0.51	141	P	Pg	11 21 15.0	-0.2
TURN				S	Sb	11 21 24.4	+0.6
DALY	Dalyan (Mu˜la	0.58	141	ePG	Pg	11 21 16.6	+0.1
DALY				eSG	Sb	11 21 25.1	-0.7
DALY	Dalyan (Mu˜la	0.58	141	ePg	Pg	11 21 16.6	+0.1
DALY				eSg	Sb	11 21 25.1	-0.7
BDRM	Kayabasi	0.64	252	iP	Pg	11 21 17.4	-0.2
BDRM				iS	Sb	11 21 27.9	+0.4
BDRM	Kayabasi	0.64	252	P	Pg	11 21 17.4	-0.2
BDRM				S	Sb	11 21 27.9	+0.4
AYDB	Zeytinkoy-Aydi	0.72	340	ePG	Pg	11 21 19.1	-0.1
AYDB	Zeytinkoy-Aydi	0.72	340	ePg	Pg	11 21 19.1	-0.1
BODT	Bodrum	0.74	254	ePG	Pb	11 21 20.0	-0.2
BODT	Bodrum	0.74	254	ePg	Pb	11 21 20.0	-0.2
FETY	Fethiye	0.95	132	ePG	Pb	11 21 23.7	-0.1
FETY	Fethiye	0.95	132	ePg	Pb	11 21 23.7	-0.1

KRSC 03 11:24:18.7±1.6, **52°.62N**×**163°.36E**, **h41**km±25km, **ML3.6**, **Off east coast of Kamchatka Peninsula**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
SDLR	Sedlovina	2.79	285	eP	Pn	11 25 04.1	+3.3
UGLR	Uglovaya	2.81	284	eP	Pn	11 25 04.5	+3.4
DALK	Dalny	2.82	280	eP	Pn	11 25 04.1	+2.9
DALK				eS	Sn	11 25 37.7	+3.8
SMAR	Somma	2.83	285	eP	Pn	11 25 05.0	+3.5
AVH	Avacha	2.87	285	eP	Pn	11 25 05.6	+3.7
PET	Petropavlovsk	2.88	280	eS	Sn	11 25 38.7	+3.3
KRX	Arik	2.94	286	eP	Pn	11 25 06.2	+3.2
KRX				eS	Sn	11 25 41.3	+4.2
RUS	Russkaya	2.97	268	eP	Pn	11 25 06.1	+3.0
MTVR	Mutnovka	3.16	270	eS	Sn	11 25 46.3	+3.8
KRMR	Karymshinskiy	3.19	276	eP	Pn	11 25 09.2	+3.0
KRMR				eS	Sn	11 25 46.6	+3.7
ASAK	Asacha	3.34	268	eP	Pn	11 25 11.8	+3.4
GNL	Ganaly	3.43	290	eP	Pn	11 25 14.5	+4.8
GNL				eS	Sn	11 25 55.6	+6.4
KMNR	Kamenistaya	3.64	331	eP	Pn	11 25 15.4	+2.9
KMNR				eS	Sn	11 25 57.3	+3.1
ZLN	Zelenaya	3.72	337	eP	Pn	11 25 17.8	+4.2
ZLN				eS	Sn	11 26 01.3	+5.2
CIRR	Tsirk	3.82	337	eS	Sn	11 26 03.9	+5.2

*NIED **03** 11:39:00, 37°.00N×142°.00E, h23km, Mw3.7 Best double couple: Mo3.39000×10^14 NP1:φs280.00000°, δ23.00000°, λ-142.00000°. NP2:φs155.00000°, δ76.00000°, λ-71.00000°.*
*IDC **03** 11:39:24.4±0.8, 36°.80N×142°.38E, h0km, mb3.5/9, mb1 3.7/11, mb1mx3.6/50, mbtmp3.5/11, ML3.6/2, Error ellipse: s-maj=24.2km s-min=18.8km az=116.0*
*ISCJB **03** 11:39:25.5±0.6, 36°.92N±0°.06×142°.13E±0°.05, h19km, mb3.5/9, Error ellipse: s-maj=8.7km s-min=5.6km az=178.4*
*JMA **03** 11:39:27.2±0.2, 36°.97N×142°.02E, h31km±4km, M3.6*
ISC 03 11:39:26.8±0.8, **36°.86N**±0°.05×**141°.95E**±0°.05, **h19**km, **n22**, σ1^s**25**/24, **mb3.5**/9, **Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
ONAJ	Iwakimizuishiy	0.95	285	P	Pn	11 39 45.1	-0.1
ONAJ				eS	Sg	11 39 58.0	+0.1
JFK	Kawauchi	1.00	301	P	Pb	11 39 44.9	-0.6
JFK				S	Sb	11 39 57.4	-0.8
JHO	Hitachi	1.14	258	P	Pg	11 39 48.8	0.0
JHO				eS	Sg	11 40 04.9	+1.2
JMM	Marumori	1.36	318	P	Pn	11 39 49.9	-0.9
JFT	Otama	1.45	297	P	Pn	11 39 52.5	+0.6
JFT				eS	Sn	11 40 10.2	-0.2
JOU	Okura	1.82	326	P	Pn	11 39 57.1	+0.1
JMK	Ichinoseki	2.17	345	P	Pn	11 40 02.0	+0.2
MJAR	Matsushiro Arr	3.02	265	Pn	Pn	11 40 16.5	+2.8
	4.4nm,0.3s,baz=86,slow=15,SNR=44						
MJAR				Sn	Sb	11 40 56.0	-0.5
	5.0nm,0.3s,baz=107,slow=33,SNR=5.5						
MAT	Matsushiro	3.02	265	P	Pb	11 40 17.3	-2.7
MAT				S	Sb	11 40 55.0	-1.6
JHJ	Hachijo jima 2	4.13	206	Pn	Pn	11 40 28.5	-0.4
	13nm,0.3s,baz=87,slow=17,SNR=3.5						
JHJ				Sn	Sn	11 41 15.8	-0.9
	29nm,0.3s,baz=40,slow=22,SNR=6.9						
H11N2	WAKE ISLAND Hy	27.69	121	T	T	12 14 11.3	
	baz=314,slow=75,SNR=8.8						
H11N1	WAKE ISLAND Hy	27.70	121	T	T	12 14 14.5	
	baz=314,slow=75,SNR=9.5						
H11N3	WAKE ISLAND Hy	27.71	121	T	T	12 14 15.7	
	baz=314,slow=75,SNR=5.6						
SONM	Songino Array	28.24	304	P	P	11 45 22.1	+3.5
	0.5nm,0.5s,baz=103,slow=6.4,SNR=5.1						
ZALV	Zalesovo Beam	42.35	313	P	P	11 47 22.0	+2.6
	0.2nm,0.3s,baz=75,slow=11,SNR=2.7						
MKAR	Makanchi Array	44.57	302	P	P	11 47 42.4	+4.9
	0.4nm,0.7s,baz=91,slow=8.6,SNR=3.0						
ILAR	Eielson Array	49.41	32	P	P	11 48 13.7	-1.3
	0.7nm,0.8s,baz=272,slow=6.2,SNR=6.4						
INK	Inuvik	54.34	27	P	P	11 48 51.6	-0.1
	0.8nm,0.8s,baz=270,slow=4.5,SNR=5.7						
WRA	Warramunga Arr	56.95	189	P	P	11 49 11.8	+0.9
	0.2nm,0.4s,baz=6.6,slow=7.0,SNR=7.4						
ASAR	Alice Springs	60.68	188	P	P	11 49 37.5	+0.7
	0.3nm,0.7s,baz=357,slow=5.3,SNR=5.6						
YKA	Yellowknife Ar	63.74	30	P	P	11 49 56.4	-0.5
	0.1nm,0.7s,baz=302,slow=6.4,SNR=3.6						
TXAR	Lajitas Array	89.89	53	P	P	11 52 25.1	+0.2
	0.2nm,0.5s,baz=280,slow=3.4,SNR=4.7						

*IDC **03** 11:40:15.1±0.9, 36°.99N×143°.94E, h0km, mb3.8/9, mb1 4.1/13, mb1mx3.8/53, mbtmp3.9/13, ML3.8/3, MS3.1/4, Ms1 3.1/4, ms1mx2.6/50, Error ellipse: s-maj=22.9km s-min=18.9km az=77.0*
*NEIC **03** 11:40:16.6±0.6, 36°.94N×143°.93E, h10km, mb4.5/4, Error ellipse: s-maj=12.8km s-min=10.5km az=97.0*
*ISCJB **03** 11:40:17.9±0.6, 36°.82N±0°.05×143°.86E±0°.07, h33km, mb4.0/13, MS3.3/2, Error ellipse: s-maj=8.4km s-min=7.4km az=40.2*
ISC 03 11:40:19.7±0.7, **36°.79N**±0°.07×**143°.92E**±0°.09, **h35**km, **n28**, σ1^s**42**/29, **mb3.9**/13, **Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
MJAR	Matsushiro Arr	4.60	269	Pn	Pn	11 41 25.5	-1.3
	6.7nm,0.3s,baz=78,slow=15,SNR=7.7						
MAJO	Matsushiro	4.60	269	ePn	Pn	11 41 26.0	-0.8
MAT	Matsushiro	4.60	269	P	Pn	11 41 26.1	-0.7
MAT				S	Sn	11 42 19.3	+0.2
JHJ	Hachijo jima 2	5.00	224	Sn	Sn	11 42 29.3	+0.5
	15nm,0.3s,baz=62,slow=22,SNR=2.9						
ERM	Erimo	5.25	354	ePn	Pn	11 41 31.0	-4.7
CBIJ	Chichi jima	9.78	189	Pn	Pn	11 42 38.1	+0.2
CBIJ				Sn	Sn	11 44 23.6	-2.8
JCJ	Chichijima	9.78	189	Pn	Pn	11 42 38.1	+0.2
	2.5nm,0.3s,baz=280,slow=23,SNR=2.8						
JCJ				Sn	Sn	11 44 23.6	-2.8
	2.3nm,0.3s,baz=246,slow=19,SNR=2.8						
JNU	Nakatsue	11.31	255	LR	LR	11 47 17.1	
	comp=Z,63nm,20.5s,baz=128,slow=37						
USRK	Ussuriysk Ar.	11.71	313	Pn	Pn	11 43 02.7	-1.5
	0.2nm,0.3s,baz=110,slow=12,SNR=3.1						
KSRS	Korea Array	12.79	278	Pn	Pn	11 43 20.3	+1.3
	0.1nm,0.3s,baz=88,slow=13,SNR=11						
KSRS				LR	LR	11 47 45.8	
	comp=Z,51nm,19.7s,baz=92,slow=35						
KSAR	Wonju Array Be	12.82	278	Pn	Pn	11 43 20.3	+0.9
KLR	Kul'dur	15.26	328	Pn	Pn	11 43 52.8	+0.3
	0.1nm,0.3s,baz=136,slow=14,SNR=15						
ENH	Enshi	29.32	267	eP	P	11 46 20.2	+1.1
	11nm,1.0s						
SONM	Songino Array	29.59	304	P	P	11 46 22.2	+0.7
	2.4nm,0.9s,baz=101,slow=8.8,SNR=12						
CMAR	Chiang Mai Arr	43.40	258	P	P	11 48 20.8	+1.7
	0.5nm,0.7s,baz=44,slow=7.8,SNR=5.4						
ZALV	Zalesovo Beam	43.56	313	P	P	11 48 18.3	-1.6
	0.4nm,0.3s,baz=77,slow=6.5,SNR=4.0						
ZALV				PcP	PcP	11 50 07.1	0.0
	0.8nm,0.6s,baz=90,slow=4.3,SNR=3.3						
MKAR	Makanchi Array	45.95	303	P	P	11 48 37.8	-1.3
	1.6nm,0.9s,baz=90,slow=9.6,SNR=9.0						
ILAR	Eielson Array	48.62	32	P	P	11 48 59.5	-0.1
	0.7nm,0.8s,baz=262,slow=6.2,SNR=6.4						
AAK	Ala-Archa	52.37	299	LR	LR	12 12 26.9	
	comp=Z,22nm,19.8s,baz=102,slow=37						
INK	Inuvik	53.68	27	eP	P	11 49 38.6	+1.1
	6.1nm,1.6s						
WRAB	Tennant Creek	57.14	191	eP	P	11 50 04.9	+2.0
	12nm,1.4s						
WRA	Warramunga Arr	57.15	191	P	P	11 50 04.9	+1.9
	1.9nm,0.8s,baz=11,slow=7.2,SNR=8.3						
ABKAR	Akbulak array	59.62	311	eP	P	11 50 18.9	-1.1
	3.2nm,1.1s						
ASAR	Alice Springs	60.87	191	P	P	11 50 31.0	+2.2
	0.9nm,0.8s,baz=16,slow=7.2,SNR=9.5						
FINES	FINESS Array B	69.95	333	P	P	11 51 25.6	-1.5
	0.9nm,0.7s,baz=23,slow=7.5,SNR=4.3						
KBZ	Khabaz	72.57	312	LR	LR	12 26 29.8	
	comp=Z,20nm,19.3s,baz=174,slow=38						
CLL	Collm	82.29	331	eP	P	11 52 37.0	-0.4
CLL				epP	pP	11 52 47.0	-1.4
TXAR	Lajitas Array	88.66	54	P	P	11 53 10.4	+0.7
	0.4nm,0.7s,baz=308,slow=3.3,SNR=5.1						

*NIED **03** 11:57:00, 35°.90N×141°.10E, h8km, Mw4.1 Best double couple: Mo1.44000×10^15 NP1:φs250.00000°, δ27.00000°, λ-3.00000°. NP2:φs343.00000°, δ89.00000°, λ-117.00000°.*
*IDC **03** 11:57:11.7±0.8, 35°.89N×141°.05E, h0km, mb3.8/13, mb1 4.0/16, mb1mx3.8/66, mbtmp3.9/16, ML3.7/2, MS3.1/7, Ms1 3.1/7, ms1mx2.8/51, Error ellipse: s-maj=20.0km s-min=17.0km az=112.0*
*NEIC **03** 11:57:12.0±2.8, 35°.90N×141°.06E, h2km±18km, mb4.4/7, Error ellipse: s-maj=8.8km s-min=6.6km az=82.0*
*ISCJB **03** 11:57:14.6±0.4, 35°.94N±0°.03×141°.04E±0°.05, h31km, mb4.0/19, MS2.9/3, Error ellipse: s-maj=6.2km s-min=4.7km az=176.9*
*JMA **03** 11:57:14.2±0.1, 35°.91N×141°.05E, h30km±1km, M4.1*
JMA Felt II J1.
ISC 03 11:57:16.2±0.5, **35°.91N**±0°.05×**140°.99E**±0°.07, **h31**km, **n48**, σ1^s**23**/40, **mb4.0**/19, **MS2.9**/3, **Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
CHOJ	Chosi	0.23	207	P	Pb	11 57 20.9	-2.0
CHOJ				S	Sb	11 57 25.6	-1.8
JYT	Yasato	0.72	296	P	Pn	11 57 28.2	-2.0
JYT				S	Sb	11 57 38.4	-1.4
JHO	Hitachi	0.78	334	P	Pn	11 57 28.7	-2.3
JHO				S	Sb	11 57 39.2	-2.3
BSO4	Boso 4	1.06	210	P	Pn	11 57 35.3	+0.5
BSO3	Boso 3	1.17	200	P	Pn	11 57 35.3	-0.9
MJAR	Matsushiro Arr	2.33	286	Pn	Pn	11 57 52.3	-0.2
	9.3nm,0.3s,baz=140,slow=21,SNR=43						
MJAR				LR	LR	11 58 49.2	
	comp=Z,226nm,19.2s,baz=115,slow=41						
MAJO	Matsushiro	2.34	286	ePn	Pn	11 57 52.5	0.0
MAT	Matsushiro	2.34	286	P	Pn	11 57 52.7	+0.2
MAT				S	Sn	11 58 19.8	-0.4
JHJ2	Mitsune	2.96	199	ePn	Pn	11 58 01.3	+0.3
JHJ	Hachijo jima 2	2.96	200	Pn	Pn	11 58 01.3	+0.3
	42nm,0.3s,baz=24,slow=18,SNR=12						
JHJ				Sn	Sn	11 58 37.1	+1.7
	65nm,0.3s,baz=75,slow=20,SNR=8.2						
ERM	Erimo	6.32	15	ePn	Pn	11 58 46.8	-0.4
JNU	Nakatsue	8.80	254	LR	LR	12 02 59.3	
	comp=Z,233nm,18.2s,baz=118,slow=39						
CBIJ	Chichi jima	8.85	173	Pn	Pn	11 59 19.0	-2.9
CBIJ				Sn	Sn	12 00 50.2	-10
JCJ	Chichijima	8.85	173	Pn	Pn	11 59 19.0	-2.9
	24nm,0.3s,baz=276,slow=22,SNR=25						
JCJ				Sn	Sn	12 00 50.2	-10
	4.5nm,0.3s,baz=307,slow=20,SNR=2.6						
KSRS	Korea Array	10.61	282	Pn	Pn	11 59 50.8	+4.8
	0.2nm,0.3s,baz=100,slow=14,SNR=3.9						
KSRS				LR	LR	12 03 53.9	
	comp=Z,88nm,18.0s,baz=110,slow=38						
KSAR	Wonju Array Be	10.64	282	Pn	Pn	11 59 50.8	+4.4
USRK	Ussuriysk Ar.	10.77	323	LR	LR	12 03 40.8	
	comp=Z,94nm,18.8s,baz=58,slow=36						
MA2	Magadan	24.52	12	LR	LR	12 11 41.8	
	comp=Z,32nm,19.9s,baz=182,slow=36						
H11N2	WAKE ISLAND Hy	27.89	118	T	T	12 31 57.9	
	baz=311,slow=75,SNR=102						
H11N1	WAKE ISLAND Hy	27.90	118	T	T	12 32 02.4	
	baz=311,slow=75,SNR=97						
H11N3	WAKE ISLAND Hy	27.91	118	T	T	12 32 05.1	
	baz=311,slow=75,SNR=88						
SEY	Seymchan	27.96	11	P	P	12 03 03.7	+0.2
	0.3nm,0.3s,baz=120,slow=16,SNR=3.7						
SONM	Songino Array	28.15	306	P	P	12 03 05.7	+0.1
	0.8nm,0.6s,baz=112,slow=8.7,SNR=7.0						
SONM				LR	LR	12 12 59.3	
	comp=Z,35nm,21.2s,baz=102,slow=34						
H11S1	WAKE ISLAND Hy	28.56	121	T	T	12 32 51.7	
	baz=313,slow=75,SNR=125						
H11S3	WAKE ISLAND Hy	28.56	121	T	T	12 33 05.1	
	baz=313,slow=75,SNR=114						
H11S2	WAKE ISLAND Hy	28.58	121	T	T	12 33 06.3	
	baz=313,slow=75,SNR=83						
TLY	Talaya	30.82	313	LR	LR	12 16 28.6	
	comp=Z,32nm,18.3s,baz=128,slow=38						
ZALV	Zalesovo Beam	42.43	313	P	P	12 05 08.0	+0.3
	0.7nm,0.6s,baz=93,slow=12,SNR=4.0						
MKAR	Makanchi Array	44.43	303	P	P	12 05 24.6	+0.4
	2.1nm,0.6s,baz=90,slow=10,SNR=31						
KURK	Kurchatov	46.36	309	eP	P	12 05 39.8	+0.5
	9.2nm,0.3s						
TKM2	Tokmak 2	49.87	299	eP	P	12 06 07.5	+0.7
	1.8nm,0.6s						
ILAR	Eielson Array	50.62	32	P	P	12 06 12.0	+0.1
	0.7nm,0.8s,baz=262,slow=5.9,SNR=7.5						
INK	Inuvik	55.54	27	P	P	12 06 48.3	+0.3
	0.5nm,0.6s,baz=321,slow=6.5,SNR=6.1						
INK	Inuvik	55.54	27	eP	P	12 06 48.3	+0.3
	4.0nm,1.3s						
WRAB	Tennant Creek	55.89	188	eP	P	12 06 52.4	+1.3
	8.6nm,0.9s						
WRA	Warramunga Arr	55.90	188	P	P	12 06 50.4	-0.8
	1.8nm,0.4s,baz=0.8,slow=7.1,SNR=2.1						
ARU	Arti	56.98	319	eP	P	12 06 58.7	+0.2
	1.9nm,0.5s						
ABKAR	Akbulak array	58.40	311	eP	P	12 07 08.6	0.0
	2.0nm,0.7s						
RES	Resolute Bay	63.77	14	eP	P	12 07 44.5	-0.1
	5.4nm,1.3s						
YKA	Yellowknife Ar	64.95	30	P	P	12 07 52.3	-0.1
	0.4nm,0.8s,baz=297,slow=6.6,SNR=6.9						
FINES	FINESS Array B	69.65	332	P	P	12 08 22.7	+0.5
	2.0nm,1.0s,baz=77,slow=7.3,SNR=2.7						
NOA	NORSAR Array B	75.09	337	P	P	12 08 55.1	+0.3
	0.6nm,0.8s,baz=40,slow=5.8,SNR=2.7						
PDAR	Pinedale Array	78.70	45	P	P	12 09 15.4	-0.3
	0.4nm,0.6s,baz=260,slow=2.2,SNR=5.8						
CLL	Collm	81.90	330	e(pP)	pP	12 09 40.0	-2.3
GERES	GERESS Array B	83.48	328	P	P	12 09 41.5	+0.7
	0.3nm,0.6s,baz=18,slow=7.7,SNR=3.7						
TXAR	Lajitas Array	91.08	52	P	P	12 10 19.5	+1.4
	0.4nm,0.7s,baz=298,slow=1.6,SNR=5.7						
QSPA	South Pole Qui	125.66	180	ePKPdf	PKPdf	12 16 15.6	+2.0
LPAZ	La Paz	147.55	61	PKPbc	PKPbc	12 16 58.9	+0.3
	1.4nm,0.5s,baz=24,slow=2.8,SNR=8.5						

*ISCJB **03** 11:58:10.9±0.4, 6°.91S±0°.04×130°.48E±0°.07, h78km, mb4.3/12, Error ellipse: s-maj=9.2km s-min=5.9km az=176.5*
*IDC **03** 11:58:11.3±2.6, 6°.88S×130°.39E, h62km±25km, mb3.9/7, mb1 4.3/10, mb1mx3.8/54, mbtmp4.4/10, ML4.8/3, MS3.2/3, Ms1 3.2/3, ms1mx2.6/39, Error ellipse: s-maj=35.4km s-min=18.9km az=80.0*
*NEIC **03** 11:58:12.5±0.9, 6°.91S×130°.53E, h76km±9km, mb4.3/6, Error ellipse: s-maj=10.8km s-min=7.4km az=77.0*
*DJA **03** 11:58:15.4±0.4, 7°S±3°×13°1E±°, h114km±11km, M4.8/15, mb4.8/10, mB5.4/5, MLv4.8/15, Mw(mB)4.8/5*
ISC 03 11:58:12.4±0.5, **7°.03S**±0°.06×**130°.54E**±0°.07, **h78**km, **n48**, σ1^s**65**/42, **mb4.3**/12, **Tanimbar Islands region**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
SAUI	Saumlaki	1.21	141	P	Pn	11 58 40.5	+6.6
BNDI	Bandanaira	2.57	346	P	Pn	11 58 53.3	+1.4
MSAI	Masohi	4.00	336	P	Pn	11 59 14.3	+3.0
FAKI	Fak Fak	4.43	23	P	Pn	11 59 16.0	-1.2
FAKI	Fak Fak	4.43	23	ePn	Pn	11 59 15.8	-1.3
KMPI	Kaimana, Papua	4.60	43	P	Pn	11 59 18.3	-1.2
NLAI	Namlea	5.09	318	P	Pn	11 59 33.7	+7.5
SIJI	Sorong	6.17	7	P	Pn	11 59 39.0	-1.9
	baz=180,slow=20						
SIJI				S	Sn	12 00 41.1	-8.9
	baz=270,slow=20						
SWI	Sorong	6.17	7	P	Pn	11 59 39.1	-1.9
	102nm,0.6s,3μm0.6nm						
RKPI	Ransiki, Papua	6.58	34	P	Pn	11 59 46.8	+0.3
	260nm,0.6s,8μm1.9nm						
SANI	Sanana	6.71	317	P	Pn	11 59 53.1	+4.7
	24nm,1.0s,0.1nm						
SOEI	Soe	6.77	246	P	Pn	11 59 53.6	+4.4
	105nm,0.6s,3μm0.6nm						
SOEI	Soe	6.77	246	ePn	Pn	11 59 52.4	+3.1
	62nm,0.6s						
LBMI	Labuha	7.04	334	P	Pn	11 59 55.0	+2.2
	40nm,1.0s,0.3nm						
BATI	Baumata	7.49	245	P	Pn	12 00 04.2	+5.2
	32nm,0.7s,841nm0.3nm						
TNTI	Ternate	8.37	338	P	Pn	12 00 11.3	+0.2
	89nm,1.2s						
MMRI	Maumere	8.37	258	P	Pn	12 00 17.0	+5.9
FITZ	Fitzroy Crossi	11.99	203	P	Pn	12 01 01.0	+0.6
	7.2nm,0.3s,baz=20,slow=8.7,SNR=75						
FITZ				S	Sn	12 03 08.1	-4.3
	5.7nm,0.3s,baz=247,slow=18,SNR=4.4						
FITZ				LR	LR	12 07 23.9	
	comp=Z,40nm,19.1s,baz=9.5,slow=46						
FITZ	Fitzroy Crossi	11.99	203	ePn	Pn	12 01 00.8	+0.4
	32nm,0.6s						
FITZ				S	Sn	12 03 08.1	-4.3
WRAB	Tennant Creek	13.35	164	ePn	Pn	12 01 18.9	+0.2
	15nm,0.5s						
WRA	Warramunga Arr	13.35	164	P	Pn	12 01 18.8	0.0
	2.9nm,0.3s,baz=338,slow=13,SNR=102						
WRA				S	Sn	12 03 41.5	-4.1
	9.8nm,0.3s,baz=342,slow=21,SNR=14						
COEN	Coen	14.20	120	ePn	Pn	12 01 32.1	+2.3
ASAR	Alice Springs	16.85	169	P	P	12 02 05.5	+1.1
	3.4nm,0.3s,baz=342,slow=10.0,SNR=222						
ASAR				S	Sn	12 05 04.1	-6.2
	1.7nm,0.3s,baz=353,slow=27,SNR=8.0						
MBWA	Marble Bar	17.51	216	eP	P	12 02 12.8	+1.3
	13nm,0.8s						
KKM	Kota Kinabalu	19.31	312	eP	P	12 02 30.5	-1.0
	19nm,0.8s						
HNR	Honiara	29.20	97	LR	LR	12 15 59.8	
	comp=Z,26nm,21.6s,baz=182,slow=36						
TAU	Tasmania Unive	38.68	160	eP	P	12 05 30.9	+2.4
	117nm,1.4s						
CMAR	Chiang Mai Arr	40.16	310	P	P	12 05 40.4	-0.8
	1.4nm,0.5s,baz=135,slow=7.1,SNR=17						
CHTO	Chiang Mai	40.37	310	eP	P	12 05 42.6	-0.4
	2.7nm,0.6s						
ODAN	Odare	53.68	311	eP	P	12 07 25.8	-1.0
	14nm,0.4s						
TAPN	Taplejung	53.70	311	eP	P	12 07 25.9	-1.1
	22nm,0.4s						
RAMN	Ramite	54.32	310	eP	P	12 07 30.8	-0.7
	53nm,0.5s						
GUN	Gumba	55.38	311	eP	P	12 07 38.0	-1.2
	33nm,0.5s						
GKN	Gorkha	56.36	310	eP	P	12 07 44.9	-1.1
	18nm,0.4s						
KOLN	Koldanda	57.03	309	eP	P	12 07 49.8	-1.0
	12nm,0.5s						
PYUN	Piuthan	57.66	310	eP	P	12 07 54.6	-0.6
ULN	Ulaanbaatar	58.46	342	eP	P	12 07 59.9	-0.5
	2.9nm,0.8s						
SONM	Songino Array	58.64	341	P	P	12 08 01.1	-0.5
	1.4nm,0.5s,baz=161,slow=6.9,SNR=21						
PETK	Petropavlovsk-	64.19	18	P	P	12 08 38.6	-0.1
	4.6nm,0.8s,baz=197,slow=8.3,SNR=3.4						
MKAR	Makanchi Array	68.54	327	P	P	12 09 06.3	-0.4
	3.3nm,0.6s,baz=123,slow=8.1,SNR=39						
AAK	Ala-Archa	70.91	320	eP	P	12 09 21.2	-0.3
	2.0nm,0.7s						
ZALV	Zalesovo Beam	71.85	334	P	P	12 09 25.2	-1.5
	1.2nm,0.5s,baz=143,slow=5.7,SNR=6.6						
KURBB	Kurchatov Arra	72.82	328	P	P	12 09 31.9	-0.7
	1.6nm,0.6s,baz=130,slow=5.1,SNR=21						
KURK	Kurchatov	72.82	328	P	P	12 09 31.9	-0.7
BVAR	Borovoye Array	78.37	328	P	P	12 10 03.9	-0.4
	0.3nm,0.4s,baz=116,slow=8.3,SNR=4.1						
BVAR				LR	LR	12 44 48.5	
	comp=Z,54nm,21.1s,baz=71,slow=36						
QSPA	South Pole Qui	82.94	180	eP	P	12 10 30.3	+1.6
	4.6nm,0.6s						
TORD	Torodi Ar. Bea	129.34	281	PKP	PKPdf	12 17 13.1	+0.2
	0.8nm,0.6s,baz=107,slow=3.1,SNR=5.6						
LPAZ	La Paz	150.37	142	PKPbc	PKPbc	12 17 58.5	+1.9
	1.3nm,0.4s,baz=225,slow=1.4,SNR=9.3						

*IDC **03** 12:04:47.7±1.8, 10°.27N×91°.07E, h0km, mb3.7/6, mb1 3.8/7, mb1mx3.5/62, mbtmp3.7/7, ML3.9/1, MS3.2/5, Ms1 3.2/5, ms1mx2.8/47, Error ellipse: s-maj=63.3km s-min=19.8km az=64.0*
*ISCJB **03** 12:04:50.8±1.3, 10°.3N±0°.1×91°.1E±0°.2, h33km, mb3.7/6, MS3.3/3, Error ellipse: s-maj=31.3km s-min=17.2km az=157.4*
ISC 03 12:04:52.5±1.7, **10°.3N**±0°.2×**91°.0E**±0°.3, **h35**km, **n14**, σ0^s**98**/7, **mb3.7**/6, **MS3.3**/3, **Andaman Islands region**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
PALK	Pallekele	10.62	255	LR	LR	12 11 14.6	
	comp=Z,105nm,20.0s,baz=116,slow=36						
CMAR	Chiang Mai Arr	11.19	42	Pn	Pn	12 07 30.6	+0.5
	0.3nm,0.3s,baz=233,slow=18,SNR=3.6						
CMAR				LR	LR	12 11 33.9	
	comp=Z,54nm,20.0s,baz=205,slow=36						
H08S3	Diego Garcia H	25.62	227	T	T	12 37 59.9	
	baz=47,slow=75,SNR=32						
H08S2	Diego Garcia H	25.63	227	T	T	12 37 53.0	

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
	baz=47,slow=75,SNR=27						
H08S1	**Diego Carcia H**	**25.64**	**227**	T	T	12 37 56.7	
	baz=47,slow=75,SNR=37						
MKAR	**Makanchi Array**	**37.15**	**350**	P	**P**	**12 12 00.3**	**+0.3**
	0.4nm,0.5s,baz=174,slow=8.5,SNR=4.5						
SONM	**Songino Array**	**39.62**	**16**	P	**P**	**12 12 19.5**	**-1.4**
	0.7nm,0.5s,baz=204,slow=8.2,SNR=6.9						
KURBB	**Kurchatov Arra**	**41.53**	**348**	P	**P**	**12 12 37.6**	**+1.1**
	0.7nm,0.9s,baz=166,slow=7.1,SNR=4.3						
KSRS	**Korea Array**	**42.82**	**45**	LR	LR	12 33 13.9	
	comp=Z,24nm,20.3s,baz=201,slow=40						
ZALV	**Zalesovo Beam**	**43.84**	**355**	P	**P**	**12 12 55.4**	**+0.2**
	0.4nm,0.4s,baz=162,slow=6.1,SNR=3.2						
WRA	**Warramunga Arr**	**52.16**	**125**	P	**P**	**12 13 60.0**	**-0.1**
	0.9nm,0.7s,baz=306,slow=8.3,SNR=8.6						
ASAR	**Alice Springs**	**53.81**	**129**	P	**P**	**12 14 12.4**	**+0.2**
	2.4nm,0.9s,baz=306,slow=7.1,SNR=15						
STKA	**Stephens Creek**	**63.99**	**133**	LR	LR	12 47 44.9	
	comp=Z,33nm,19.0s,baz=203,slow=40						
AKASG	**Malin Array Be**	**64.37**	**322**	LR	LR	12 44 31.6	
	comp=Z,20nm,21.0s,baz=275,slow=37						

IDC 03 12:10:05.0±599.0**, 47°.45N×50°.36E, h0km, Error ellipse: s-maj=229.7km s-min=120.5km az=49.0, Western Kazakhstan**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
I31KZ	**AKTYUBINSK INF**	**5.86**	**57**	*i*		12 43 40.0	
	baz=245,slow=316,SNR=3.8						
I43RU	**DUBNA INFRASON**	**12.29**	**324**	*i*		13 27 00.0	
	baz=135,slow=315,SNR=0.3						
I46RU	**ZALESOVO INFRA**	**22.61**	**60**	*i*		14 30 30.0	
	baz=260,slow=323,SNR=4.5						
I18DK	**QAANAAQ INFRAS**	**49.95**	**346**	*i*		18 00 20.0	
	baz=46,slow=342,SNR=0.5						

IDC 03 12:12:13.7±2.6**, 38°.49N×142°.93E, h0km, mb3.5**/3**, mb1 3.6**/4**, mb1mx3.3**/53**, mbtmp3.4**/4**, ML3.3**/1**, Error ellipse: s-maj=66.7km s-min=31.5km az=68.0, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
MJAR	**Matsushiro Arr**	**4.22**	**244**	Pn	Pn	12 13 19.1	-0.2
	1.6nm,0.3s,baz=48,slow=10,SNR=18						
MAT	**Matsushiro**	**4.22**	**244**	P	Pn	12 13 19.3	-0.1
MAT				S	Sb	12 14 15.3	-5.2
MKAR	**Makanchi Array**	**44.38**	**301**	P	P	12 20 25.9	+0.1
	0.3nm,0.7s,baz=72,slow=8.2,SNR=2.8						
KURBB	**Kurchatov Arra**	**46.07**	**307**	P	P	12 20 38.7	-0.4
	0.6nm,0.7s,baz=82,slow=8.4,SNR=4.5						
WRA	**Warramunga Arr**	**58.68**	**189**	P	P	12 22 12.9	-0.1
	0.5nm,0.6s,baz=11,slow=7.1,SNR=4.3						

*NNC **03** 12:19:04.8±1.1, 40°.26N×71°.63E, h0km, mb3.0, mpv2.7, Error ellipse: s-maj=9.7km s-min=3.3km az=40.0*
*KRNET **03** 12:19:05.4±0.1, 40°.00N×71°.58E, mb2.1*
ISC 03 12:19:04.3±1.5**, 40°.16N**±0°.06×**71°.60E**±0°.04**, h3**km±14km**, n11, σ1.04**/21**, 17C-8D, Tajikistan**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
BTK	**Batken**	**0.61**	**261**	⇑*e*P	**Pg**	**12 19 16.4**	**+0.4**
	baz=276						
BTK				⇑*e*S	**Sb**	**12 19 25.9**	**-0.7**
	baz=276						
SFK	**Sufi-Kurgan**	**1.47**	**95**	⇑*i*P	**Pb**	**12 19 32.8**	**+0.5**
	baz=89						
SFK				⇑*i*S	**Sg**	**12 19 50.9**	**-0.5**
	baz=89						
SFK	**Sufi-Kurgan**	**1.47**	**95**	⇑P	**Pn**	**12 19 31.5**	**-0.4**
SFK				⇑S	**Sn**	**12 19 51.7**	**+0.1**
MNAS	**Manas**	**2.43**	**16**	⇑*e*P	**Pb**	**12 19 48.1**	**-0.6**
	baz=15						
MNAS				⇑*e*S	**Sb**	**12 20 19.4**	**+0.4**
	baz=15						
MNAS	**Manas**	**2.43**	**16**	⇓Pg	**Pb**	**12 19 47.7**	**-0.9**
MNAS				⇑Lg	Lg	12 20 19.1	
	6.6nm,0.3s						
AML	**Almayashu**	**2.53**	**38**	⇑*i*P	**Pb**	**12 19 49.3**	**-1.2**
	baz=36						
AML				⇑*i*S	**Sb**	**12 20 21.7**	**-0.5**
	baz=36						
ARLS	**Aral**	**2.67**	**50**	⇓*e*P	**Pb**	**12 19 51.1**	**-1.8**
	baz=47						
ARLS				⇓*e*S	**Sb**	**12 20 24.5**	**-1.6**
	baz=47						
EKS2	**Erkin-Say**	**2.99**	**32**	⇑*i*P	**Pn**	**12 19 54.5**	**+1.8**
	baz=31						
EKS2				⇑*i*S	**Sn**	**12 20 30.5**	**+1.4**
	baz=31						
KK31	**Karatay Array**	**3.06**	**345**	⇓Pn	**Pn**	**12 19 53.4**	**-0.1**
	1.1nm,0.2s,baz=169,slow=18,SNR=16						
KK31				⇓Pg	**Pb**	**12 19 59.5**	**+0.2**
	1.0nm,0.3s,baz=165,slow=18,SNR=18						
KK31				⇑Sn	**Sn**	**12 20 29.7**	**-0.9**
	0.9nm,0.3s						
KK31				⇑Lg	Lg	12 20 38.8	
	2.8nm,0.3s,baz=160,slow=26,SNR=5.8						
AAK	**Ala-Archa**	**3.29**	**40**	⇓Pg	**Pb**	**12 20 04.3**	**+0.8**
	0.6nm,0.3s						
AAK				⇑Lg	Lg	12 20 46.5	
	7.3nm,0.5s						
TKM2	**Tokmak 2**	**4.08**	**46**	⇑Pn	**Pn**	**12 20 07.9**	**+0.2**
TKM2				⇓Pg	**Pb**	**12 20 18.1**	**+1.3**
	1.3nm,0.9s						
TKM2				⇓Lg	Lg	12 21 09.8	
	2.3nm,0.5s						

*ISK **03** 12:24:07.3, 41°.38N×35°.86E, h7km, MD2.7*
*ISCJB **03** 12:24:08.0±0.5, 41°.39N±0°.05×35°.85E±0°.04, h9km±6km, Error ellipse: s-maj=8.3km s-min=4.2km az=26.9*
*DDA **03** 12:24:08.0, 41°.36N×35°.82E, h7km, Md2.8*
*CSEM **03** 12:24:08.1±0.1, 41°.38N×35°.85E, h10km, MD2.8, Error ellipse: s-maj=4.7km s-min=2.5km az=33.0*
ISC 03 12:24:07.3±1.3**, 41°.41N**±0°.04×**35°.86E**±0°.02**, h6**km±13km**, n30, σ0.39**/40**, Turkey**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
SAMS	**Samsun-Alacam**	**0.25**	**101**	*i* P	**Pb**	**12 24 13.7**	**-0.6**
SAMS				*i* S	**Sb**	**12 24 18.6**	**-0.3**
SAMS	**Samsun-Alacam**	**0.25**	**101**	P	**Pb**	**12 24 13.7**	**-0.6**
SAMS				S	**Sb**	**12 24 18.6**	**-0.3**
KVT	**Kavak**	**0.36**	**156**	*e*PG	**Pg**	**12 24 13.9**	**-0.4**
KVT				*e*SG	**Sg**	**12 24 19.4**	**+0.4**
KVT	**Kavak**	**0.36**	**156**	*e*Pg	**Pg**	**12 24 13.9**	**-0.4**
KVT				*e*Sg	**Sg**	**12 24 19.4**	**+0.4**
DIKM	**Dikmen**	**0.51**	**298**	*e*PG	**Pb**	**12 24 18.0**	**-0.7**
DIKM				*e*SG	**Sb**	**12 24 25.9**	**-0.4**
DIKM	**Dikmen**	**0.51**	**298**	*e*Pg	**Pb**	**12 24 18.0**	**-0.7**
DIKM				*e*Sg	**Sb**	**12 24 25.9**	**-0.4**
BOYT	**Boyabat**	**0.72**	**271**	*i* P	**Pg**	**12 24 21.4**	**+0.3**
BOYT				*i* S	**Sb**	**12 24 32.5**	**+0.2**
BOYT	**Boyabat**	**0.72**	**271**	P	**Pg**	**12 24 21.4**	**+0.3**
BOYT				S	**Sb**	**12 24 32.5**	**+0.2**
SNOP	**Sinop**	**0.78**	**322**	*e*PG	**Pb**	**12 24 23.2**	**-0.1**
SNOP	**Sinop**	**0.78**	**322**	*e*Pg	**Pb**	**12 24 23.2**	**-0.1**
BYBT	**Boyabat**	**0.82**	**274**	*e*PG	**Pb**	**12 24 23.6**	**-0.4**
BYBT	**Boyabat**	**0.82**	**274**	*e*Pg	**Pb**	**12 24 23.6**	**-0.4**
ERBA	**Erbaa**	**0.99**	**137**	*i* P	**Pg**	**12 24 26.5**	**+0.1**
ERBA	**Erbaa**	**0.99**	**137**	P	**Pg**	**12 24 26.5**	**+0.1**
TOKT	**Tokat**	**1.21**	**154**	*e*PN	**Pg**	**12 24 30.2**	**-0.2**
TOKT	**Tokat**	**1.21**	**154**	*e*Pn	**Pg**	**12 24 30.2**	**-0.2**
COAL	**Corum-Alaca**	**1.33**	**210**	*i* P	**Pg**	**12 24 32.7**	**-0.1**
COAL				*i* S	**Sb**	**12 24 50.2**	**+0.2**
COAL	**Corum-Alaca**	**1.33**	**210**	P	**Pg**	**12 24 32.7**	**-0.1**
COAL				S	**Sb**	**12 24 50.2**	**+0.2**
TOS	**Tosya**	**1.43**	**256**	*e*PN	**Pn**	**12 24 33.9**	**0.0**
TOS	**Tosya**	**1.43**	**256**	*e*Pn	**Pn**	**12 24 33.9**	**0.0**
BZK	**Bozkurt**	**1.49**	**292**	*e*PN	**Pg**	**12 24 35.6**	**-0.3**
BZK	**Bozkurt**	**1.49**	**292**	*e*Pn	**Pg**	**12 24 35.6**	**-0.3**
CORM	**Corum**	**1.54**	**218**	*e*PN	**Pb**	**12 24 36.1**	**-0.2**
CORM	**Corum**	**1.54**	**218**	*e*Pn	**Pb**	**12 24 36.1**	**-0.2**
SVSK	**Karacayir**	**1.73**	**149**	*e*PN	**Pn**	**12 24 38.1**	**+0.3**
SVSK	**Karacayir**	**1.73**	**149**	*e*Pn	**Pn**	**12 24 38.1**	**+0.3**
YOZ	**Yozgat**	**1.81**	**193**	*e*PN	**Pn**	**12 24 39.2**	**0.0**
YOZ	**Yozgat**	**1.81**	**193**	*e*Pn	**Pn**	**12 24 39.2**	**0.0**
ESPY	**Espiye-Giresun**	**2.22**	**102**	*e*PN	**Pn**	**12 24 45.6**	**+0.9**
ESPY	**Espiye-Giresun**	**2.22**	**102**	*e*Pn	**Pn**	**12 24 45.6**	**+0.9**

*ISCJB **03** 12:25:36.0±0.5, 60°.10N±0°.04×153°.48W±0°.09, h172km±3km, mb3.5/3, Error ellipse: s-maj=7.0km s-min=6.6km az=12.7*
*NEIC **03** 12:25:37.6, 60°.08N×153°.57W, h168km, MG2.9(AEIC), After AEIC.*
*IDC **03** 12:25:39.2±8.8, 60°.45N×153°.72W, h163km±69km, mb3.2/3, mb1 3.1/5, mb1mx2.8/56, mbtmp3.5/5, Error ellipse: s-maj=77.1km s-min=30.3km az=26.0*
ISC 03 12:25:36.8±1.0**, 60°.11N**±0°.05×**153°.48W**±0°.05**, h169**km±7km**, n57, σ0.79**/66**, mb3.5**/3**, Southern Alaska**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
INE	**Iliamna NE**	**0.21**	**103**	P	**Pn**	**12 25 59.6**	**0.0**
OPT	**Oil Point**	**0.47**	**165**	P	**Pn**	**12 26 00.5**	**+0.3**
NCT	**North Crescent**	**0.53**	**31**	P	**Pn**	**12 26 01.0**	**+0.5**
REF	**Redoubt East F**	**0.54**	**45**	P	**Pn**	**12 26 01.1**	**+0.4**
REF				S	**Sn**	**12 26 19.4**	**+0.4**
RDJH	**Redoubt Jeurge**	**0.59**	**34**	P	**Pn**	**12 26 01.4**	**+0.5**
RDJH				S	**Sn**	**12 26 19.1**	**-0.3**
DFR	**Drift River**	**0.62**	**39**	P	**Pn**	**12 26 01.2**	**+0.2**
AUL	**Augustine Lava**	**0.73**	**178**	P	**Pn**	**12 26 01.8**	**+0.3**
AUL				S	**Sn**	**12 26 20.1**	**-0.3**
HOM	**Homer**	**1.03**	**115**	P	**Pn**	**12 26 04.4**	**+0.8**
HOM				S	**Sn**	**12 26 24.2**	**+0.1**
CDD	**Cape Douglas**	**1.19**	**184**	P	**Pn**	**12 26 04.7**	**-0.3**
CKL	**Chakachamna La**	**1.23**	**27**	P	**Pn**	**12 26 06.1**	**+0.8**
SPU	**Mount Spurr**	**1.28**	**32**	P	**Pn**	**12 26 06.2**	**+0.5**
CKN	**Chakachatna No**	**1.29**	**29**	P	**Pn**	**12 26 06.7**	**+0.8**
BRLK	**Bradley Lake**	**1.35**	**104**	P	**Pn**	**12 26 07.0**	**+0.6**
BRLK				S	**Sn**	**12 26 28.1**	**-1.1**
SVW2	**Sparrevohn**	**1.44**	**315**	P	**Pn**	**12 26 07.0**	**-0.1**
SVW2				S	**Sn**	**12 26 29.1**	**-1.5**
STLK	**Strandline Lak**	**1.61**	**29**	P	**Pn**	**12 26 09.6**	**+0.6**
SLKM	**Skilak Lake**	**1.67**	**75**	P	**Pn**	**12 26 09.8**	**+0.3**
FIB	**Fire Island**	**1.94**	**55**	P	**Pn**	**12 26 13.1**	**+0.7**
SEW	**Seward**	**2.02**	**88**	P	**Pn**	**12 26 13.7**	**+0.5**
SEW				S	**Sn**	**12 26 40.0**	**-1.4**
RC01	**Rabbit Creek A**	**2.09**	**60**	P	**Pn**	**12 26 13.9**	**-0.2**
RC01				S	**Sn**	**12 26 42.2**	**-0.8**
KDAK	**Kodiak Island**	**2.38**	**168**	P	**Pn**	**12 26 15.8**	**-1.6**
CUT	**Chulitna**	**2.78**	**33**	P	**Pn**	**12 26 22.9**	**+0.8**
PPLA	**Purkeypile**	**2.87**	**12**	P	**Pn**	**12 26 24.8**	**+1.4**
OHAK	**Old Harbor**	**2.90**	**178**	P	**Pn**	**12 26 21.7**	**-1.9**
SML	**Sawmill**	**3.03**	**54**	P	**Pn**	**12 26 24.6**	**-0.7**
TT01	**Tatalina**	**3.06**	**338**	P	**Pn**	**12 26 25.6**	**0.0**
CAST	**Castle Rocks**	**3.39**	**11**	P	**Pn**	**12 26 30.3**	**+0.6**
HUR	**Hurricane**	**3.42**	**31**	P	**Pn**	**12 26 30.1**	**+0.1**
SCM	**Sheep Creek Mo**	**3.46**	**57**	P	**Pn**	**12 26 30.5**	**-0.2**
KTH	**Kantishna Hill**	**3.66**	**18**	P	**Pn**	**12 26 33.5**	**+0.3**
VLZ	**Valdez**	**3.67**	**71**	P	**Pn**	**12 26 34.1**	**+1.0**
TRF	**Thorofare Moun**	**3.68**	**23**	P	**Pn**	**12 26 33.8**	**+0.2**
CHUM	**Lake Minchumin**	**3.83**	**8**	P	**Pn**	**12 26 35.9**	**+0.7**
KLU	**Klutina**	**3.96**	**66**	P	**Pn**	**12 26 36.9**	**-0.1**
RND	**Reindeer**	**3.97**	**32**	P	**Pn**	**12 26 37.0**	**-0.1**
DHY	**Denali Highway**	**4.17**	**42**	P	**Pn**	**12 26 39.7**	**0.0**
BPAW	**Bear Paw Mtn.**	**4.17**	**15**	P	**Pn**	**12 26 39.5**	**-0.2**
MCK	**McKinley**	**4.22**	**29**	P	**Pn**	**12 26 40.5**	**+0.2**
BMRM	**Bremner River**	**4.47**	**75**	P	**Pn**	**12 26 44.0**	**+0.4**
PAX	**Paxson**	**4.79**	**50**	P	**Pn**	**12 26 48.2**	**+0.5**
WRH	**Wood River Hil**	**5.05**	**28**	P	**Pn**	**12 26 50.6**	**-0.4**
MLY	**Manley**	**5.10**	**13**	P	**Pn**	**12 26 51.5**	**-0.3**
CCB	**Clear Creek Bu**	**5.26**	**28**	P	**Pn**	**12 26 53.4**	**-0.4**
HDA	**Harding Lake**	**5.28**	**32**	P	**Pn**	**12 26 54.0**	**-0.1**
MDM	**Murphy Dome**	**5.44**	**24**	P	**Pn**	**12 26 55.9**	**-0.3**
COLA	**College**	**5.45**	**26**	P	**Pn**	**12 26 56.1**	**-0.1**
ILAR	**Eielson Array**	**5.59**	**30**	P	**Pn**	**12 26 57.9**	**-0.2**
	1.9nm,0.3s,baz=222,slow=13,SNR=56						
ILAR				S	**Sn**	**12 27 58.9**	**-3.1**
	0.7nm,0.3s,baz=216,slow=28,SNR=6.3						
ILB	**Eielson Array**	**5.59**	**30**	P	**Pn**	**12 26 57.9**	**-0.2**
DOT	**Dot Lake**	**5.69**	**47**	P	**Pn**	**12 26 59.9**	**+0.3**
IM3	**Indian Mountai**	**5.90**	**359**	P	**Pn**	**12 27 03.0**	**+0.8**
BCA3	**Beaver Creek A**	**6.32**	**57**	P	**Pn**	**12 27 08.9**	**+1.2**
COLD	**Coldfoot**	**7.29**	**10**	P	**Pn**	**12 27 20.1**	**-0.5**
EGAK	**Eagle**	**7.38**	**45**	P	**Pn**	**12 27 21.8**	**0.0**
YKA	**Yellowknife Ar**	**18.63**	**66**	P	**Pn**	**12 29 43.1**	**-0.4**
	0.1nm,0.3s,baz=277,slow=9.9,SNR=9.3						
ZALV	**Zalesovo Beam**	**57.14**	**323**	P	**P**	**12 35 06.3**	**+1.0**
	0.7nm,0.5s,baz=41,slow=6.7,SNR=3.6						
KURK	**Kurchatov**	**61.80**	**325**	P	**P**	**12 35 38.5**	**+1.3**
KURBB	**Kurchatov Arra**	**61.91**	**325**	P	**P**	**12 35 38.5**	**+0.6**
	0.3nm,0.4s,baz=29,slow=6.6,SNR=5.7						
MKAR	**Makanchi Array**	**64.20**	**321**	P	**P**	**12 35 53.7**	**+0.6**
	0.2nm,0.5s,baz=20,slow=9.8,SNR=2.8						

IDC 03 12:33:46.1±2.8**, 39°.20N×142°.82E, h0km, mb3.5**/3**, mb1 3.6**/4**, mb1mx3.2**/48**, mbtmp3.4**/4**, ML3.2**/1**, MS2.8**/1**, Ms1 2.8**/1**, ms1mx2.1**/36**, Error ellipse: s-maj=69.5km s-min=31.7km az=71.0, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
MJAR	**Matsushiro Arr**	**4.51**	**235**	Pn	Pn	12 34 55.5	-0.2
	1.1nm,0.3s,baz=39,slow=11,SNR=18						
KLR	**Kul'dur**	**12.77**	**325**	LR	LR	12 42 29.4	
	comp=Z,36nm,19.0s,baz=12,slow=41						
MKAR	**Makanchi Array**	**43.94**	**300**	P	P	12 41 54.6	-0.1
	0.2nm,0.4s,baz=81,slow=8.9,SNR=3.1						
KURBB	**Kurchatov Arra**	**45.58**	**307**	P	P	12 42 07.3	-0.2
	0.8nm,0.7s,baz=81,slow=8.2,SNR=4.5						
WRA	**Warramunga Arr**	**59.37**	**189**	P	P	12 43 50.0	-0.1
	0.2nm,0.4s,baz=6.7,slow=7.1,SNR=6.2						

*IDC **03** 12:36:08.7±1.0, 35°.70N×73°.22E, h0km, mb3.7/7, mb1 3.8/11, mb1mx3.5/47, mbtmp3.7/11, ML3.3/5, Error ellipse: s-maj=25.4km s-min=20.0km az=63.0*
*ISCJB **03** 12:36:11.9±0.5, 35°.90N±0°.04×73°.32E±0°.08, h26km, mb3.6/7, Error ellipse: s-maj=10.2km s-min=4.6km az=158.6*
*NNC **03** 12:36:18.2±2.2, 36°.20N×72°.51E, h0km, mb3.8, mpv3.6, Error ellipse: s-maj=16.7km s-min=15.3km az=163.0*
ISC 03 12:36:13.6±0.6**, 35°.85N**±0°.06×**73°.22E**±0°.08**, h26**km**, n30, σ2.71**/35**, mb3.7**/7**, 4C-9D, Northwestern Kashmir**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
THN	**Thein Dam**	**3.98**	**148**	*e*PN	**Pn**	**12 37 15.6**	**+2.7**
THN				*e*SN	**Sn**	**12 38 02.8**	**+4.0**
SFK	**Sufi-Kurgan**	**4.17**	**3**	⇓Pn	**Pn**	**12 37 19.7**	**+4.0**
	26nm,0.8s						
SFK				⇓Sn	**Sn**	**12 38 08.1**	**+4.4**
	13nm,0.2s						
SDNR	**Sundarnagar**	**5.34**	**143**	*e*P	**Pn**	**12 37 33.0**	**+1.3**
SMLA	**Simla**	**5.75**	**144**	*i* P	**Pn**	**12 37 38.9**	**+1.7**
SMLA				*i* S	**Sn**	**12 38 41.1**	**-1.2**
SMLA				*i* S	**Sn**	**12 38 41.2**	**-1.0**
SMLA				AML	AML	12 38 45.0	
	comp=E,2μm,0.3s						
SMLA				AML	AML	12 38 45.1	
	comp=N,1μm,0.2s						
MNAS	**Manas**	**6.66**	**355**	⇑Pn	**Pn**	**12 37 52.1**	**+2.3**
	comp=N,1.1nm,0.3s						
MNAS				⇓Sn	**Sn**	**12 39 04.0**	**-0.8**
	comp=N,3.8nm,0.3s						
AAK	**Ala-Archa**	**6.85**	**8**	Pn	Pn	12 37 57.5	+5.0
	comp=N,0.6nm,0.3s,baz=158,slow=2.8,SNR=9.2						
AAK				Sn	**Sn**	**12 39 09.5**	**-0.2**
	baz=100,slow=23,SNR=2.2						
AAK	**Ala-Archa**	**6.85**	**8**	⇓Pn	**Pn**	**12 37 56.6**	**+4.1**
	comp=N,4.1nm,0.9s						
AAK				⇑Sn	**Sn**	**12 39 13.6**	**+3.9**
	comp=N,6.9nm,1.2s						
TKM2	**Tokmak 2**	**7.30**	**14**	⇓Pn	Pn	12 38 03.6	+4.8
	comp=N,0.8nm,0.4s						
TKM2				⇓Sn	**Sn**	**12 39 19.5**	**-1.4**
	comp=N,2.9nm,0.6s						
KK31	**Karatay Array**	**7.54**	**345**	⇓Pn	**Pn**	**12 38 02.8**	**+0.9**
	comp=N,2.2nm,0.5s,baz=155,slow=12,SNR=29						
KK31				⇑Sn	**Sn**	**12 39 26.7**	**+0.1**
	comp=N,5.4nm,0.7s,baz=184,slow=28,SNR=7.4						
PYUN	**Piuthan**	**11.33**	**130**	*e*P	**Pn**	**12 38 50.7**	**-3.3**
	comp=N,14nm,0.3s						
GEYT	**Alibeck**	**12.27**	**284**	Pn	**Pn**	**12 39 09.6**	**+3.0**
	comp=N,0.3nm,0.3s,baz=94,slow=9.2,SNR=2.4						
GKN	**Gorkha**	**12.45**	**126**	*e*P	Pn	12 39 03.2	-6.1
	comp=N,9.3nm,0.3s						
MKAR	**Makanchi Array**	**12.88**	**29**	Pn	**Pn**	**12 39 16.7**	**+1.8**
	comp=N,0.0nm,0.3s,baz=202,slow=15,SNR=2.6						
DMN	**Daman**	**13.02**	**126**	*e*P	Pn	12 39 12.4	-4.8
	comp=N,14nm,0.4s						
PKIN	**Phulchoki**	**13.24**	**125**	*e*P	Pn	12 39 14.7	-5.4
	comp=N,7.0nm,0.3s						
RAMN	**Ramite**	**14.45**	**124**	*e*P	Pn	12 39 30.6	-6.1
TAPN	**Taplejung**	**14.96**	**120**	*e*P	**Pn**	**12 39 38.5**	**-5.1**
KURBB	**Kurchatov Arra**	**15.26**	**13**	Pn	**P**	**12 39 50.7**	**-1.1**
	comp=N,0.1nm,0.3s,baz=201,slow=10,SNR=8.2						
AB31	**Akbulak array**	**16.56**	**328**	P	**P**	**12 40 04.5**	**-1.7**
	comp=N,0.6nm,0.5s,baz=137,slow=13,SNR=23						
AB31				⇓S	**Sn**	**12 42 59.2**	**-7.5**
	comp=N,1.1nm,0.8s,baz=132,slow=24,SNR=3.2						
BVAR	**Borovoye Array**	**17.29**	**354**	P	**P**	**12 40 13.9**	**-0.4**
	comp=N,0.1nm,0.3s,baz=162,slow=9.1,SNR=4.5						
AKTO	**Aktyubinsk**	**18.27**	**328**	P	**P**	**12 40 25.3**	**+0.3**
	comp=N,0.2nm,0.3s,baz=125,slow=12,SNR=4.4						
AKTO	**Aktyubinsk**	**18.27**	**328**	⇑P	**P**	**12 40 26.0**	**+0.9**
	comp=N,0.5nm,0.5s						
AKTO				⇓S	**Sn**	**12 43 44.3**	**-3.8**
	comp=N,1.1nm,0.9s						
ZALV	**Zalesovo Beam**	**19.83**	**21**	P	**P**	**12 40 41.4**	**-0.8**
	comp=N,0.5nm,0.3s,baz=213,slow=12,SNR=8.1						
SONM	**Songino Array**	**27.26**	**54**	P	**P**	**12 41 55.6**	**-0.1**
	comp=N,0.4nm,0.5s,baz=251,slow=11,SNR=4.4						
FINES	**FINESS Array B**	**39.03**	**326**	P	**P**	**12 43 38.0**	**+0.3**
	comp=N,2.5nm,0.9s,baz=125,slow=9.0,SNR=6.4						
NOA	**NORSAR Array B**	**45.98**	**323**	P	**P**	**12 44 34.2**	**-0.1**
	comp=N,0.6nm,0.8s,baz=103,slow=7.2,SNR=3.7						
TORD	**Torodi Ar. Bea**	**67.50**	**270**	P	**P**	**12 47 06.9**	**-0.8**
	comp=N,0.3nm,0.5s,baz=48,slow=6.3,SNR=4.5						
WRA	**Warramunga Arr**	**80.13**	**123**	P	**P**	**12 48 20.2**	**-1.3**
	comp=N,0.6nm,0.6s,baz=324,slow=5.0,SNR=7.3						
YKA	**Yellowknife Ar**	**81.80**	**4**	P	**P**	**12 48 29.3**	**-0.5**
	comp=N,0.3nm,0.6s,baz=347,slow=5.4,SNR=9.4						
ASAR	**Alice Springs**	**82.42**	**126**	P	**P**	**12 48 33.0**	**-0.6**
	comp=N,0.4nm,0.6s,baz=312,slow=5.0,SNR=10						

*IDC **03** 12:43:15.4±0.5, 35°.45N×143°.03E, h0km, mb4.5/29, mb1 4.6/36, mb1mx4.5/56, mbtmp4.5/36, ML3.7/6, MS3.5/8, Ms1 3.5/8, ms1mx3.1/58, Error ellipse: s-maj=13.2km s-min=11.6km az=136.0*
*ISCJB **03** 12:43:16.5±1.1, 35°.46N±0°.03×142°.93E±0°.03, h14km±6km, mb4.7/135, MS3.8/8, Error ellipse: s-maj=5.8km s-min=3.8km az=158.9*
*BJI **03** 12:43:17.3, 35°.67N×143°.00E, h23km, mb4.5/53, mB4.8/34, Ms4.3/24, Ms7 4.3/17*
*NEIC **03** 12:43:19.3±1.2, 35°.45N×142°.94E, h23km±8km, mb4.8/76, Error ellipse: s-maj=4.0km s-min=3.3km az=132.0*
*MOS **03** 12:43:20.9±0.8, 35°.90N×142°.89E, h31km, mb4.9/46, Error ellipse: s-maj=8.7km s-min=5.5km az=109.0*
ISC 03 12:43:18.9±0.8**, 35°.45N**±0°.04×**143°.01E**±0°.04**, h24**km±5km**, n273, σ1.59**/294**, mb4.7**/134**, MS3.7**/8**, 10C-5D, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
JHJ2	**Mitsune**	**3.53**	**230**	*e*Pn	**Pn**	**12 44 12.1**	**-0.1**
JHJ	**Hachijo jima 2**	**3.54**	**230**	Pn	**Pn**	**12 44 11.7**	**-0.8**
	57nm,0.3s,baz=348,slow=16,SNR=24						
JHJ				Sn	**Sn**	**12 44 51.4**	**-2.2**
	161nm,0.3s,baz=70,slow=23,SNR=9.6						
JHJ				LR	LR	12 46 00.6	
	comp=Z,172nm,18.2s,baz=78,slow=47						
MJAR	**Matsushiro Arr**	**4.04**	**287**	Pn	**Pn**	**12 44 19.2**	**-0.1**
	15nm,0.3s,baz=95,slow=14,SNR=87						
MJAR				LR	LR	12 46 05.4	
	comp=Z,746nm,21.9s,baz=110,slow=42						
MAJO	**Matsushiro**	**4.05**	**287**	*d i*P	**Pn**	**12 44 20.1**	**+0.7**
MAJO	**Matsushiro**	**4.05**	**287**	*e*Pn	**Pn**	**12 44 20.0**	**+0.7**
MAT	**Matsushiro**	**4.05**	**287**	P	**Pn**	**12 44 19.7**	**+0.3**
MAT				S	**Sn**	**12 45 04.9**	**-1.1**
INU	**Inuyama**	**4.90**	**271**	*e*Pn	**Pn**	**12 44 32.0**	**+0.9**
ERM	**Erimo**	**6.55**	**1**	*e*P	**Pn**	**12 44 49.9**	**-3.9**
ERM	**Erimo**	**6.55**	**1**	*e*Pn	**Pn**	**12 44 49.9**	**-3.9**
CBIJ	**Chichi jima**	**8.36**	**185**	*e*Pn	**Pn**	**12 45 18.3**	**-0.3**
CBIJ				Sn	**Sn**	**12 46 45.0**	**-7.2**
JCJ	**Chichijima**	**8.36**	**185**	Pn	**Pn**	**12 45 15.7**	**-2.9**
	7.0nm,0.3s,baz=279,slow=23,SNR=18						
JCJ				Sn	**Sn**	**12 46 45.0**	**-7.3**
	15nm,0.3s,baz=111,slow=23,SNR=6.1						
JCJ				LR	LR	12 48 41.7	
	comp=Z,22nm,21.2s,baz=276,slow=39						
YUK	**Yuzh-Kuril'sk**	**8.85**	**13**	*e*P	**Pn**	**12 45 20.6**	**-4.6**
YUK				*e*S	Sn	12 46 50.5	-14
YUK				pmax	pmax		
	comp=N,35nm,0.5s						
YUK				pmax	pmax		
	comp=E,40nm,0.5s						
YUK				pmax	pmax		
	comp=Z,65nm,0.5s						
SHO	**Shikotan**	**8.91**	**18**	*e*P	**Pn**	**12 45 21.9**	**-4.1**
JNU	**Nakatsue**	**10.31**	**260**	Pn	**Pn**	**12 45 45.7**	**+0.4**
	comp=Z,0.6nm,0.3s,baz=26,slow=4.2,SNR=5.9						
JNU				LR	LR	12 50 13.8	
	comp=Z,562nm,20.4s,baz=98,slow=40						
KUR	**Kuril'sk**	**10.45**	**19**	*e*P	**Pn**	**12 45 43.0**	**-4.1**
KUR				pmax	pmax		
	comp=N,17nm,0.4s						
KUR				pmax	pmax		
	comp=Z,19nm,0.4s						
KUR				pmax	pmax		
	comp=E,9.0nm,0.1s						
YSS	**Yuzh-Sakhalins**	**11.49**	**359**	⇓*e*P	**Pn**	**12 45 59.0**	**-2.4**
YSS				*e*S	Sn	12 47 59.0	-10
YSS				pmax	pmax		
	comp=Z,20nm,1.2s						
YSS	**Yuzh-Sakhalins**	**11.49**	**359**	*e*Pn	**Pn**	**12 45 59.3**	**-2.2**
USRK	**Ussuriysk Ar.**	**12.16**	**319**	Pn	**Pn**	**12 46 09.8**	**-0.8**
	comp=Z,0.3nm,0.3s,baz=122,slow=13,SNR=7.0						
USRK				LR	LR	12 50 35.2	
	comp=Z,363nm,19.0s,baz=129,slow=36						
KSRS	**Korea Array**	**12.32**	**284**	Pn	**Pn**	**12 46 13.8**	**+1.0**
	comp=Z,0.1nm,0.3s,baz=99,slow=13,SNR=14						
KSRS				LR	LR	12 50 53.1	
	comp=Z,254nm,20.5s,baz=100,slow=37						
KSAR	**Wonju Array Be**	**12.35**	**284**	P	**Pn**	**12 46 13.8**	**+0.6**
KSAR	**Wonju Array Be**	**12.35**	**284**	Pn	**Pn**	**12 46 13.8**	**+0.6**
MDJ	**Mudanjiang**	**13.75**	**316**	P	**Pn**	**12 46 33.0**	**+0.7**
MDJ				S	**Sn**	**12 49 02.3**	**-1.9**
MDJ				pmax	pmax		
	comp=Z,6.0nm,0.5s						
MDJ				pmax	pmax		
	comp=Z,23nm,3.6s						
JOW	**Kunigami**	**15.25**	**240**	Pn	**Pn**	**12 46 50.9**	**-1.9**
	comp=Z,0.2nm,0.3s,baz=64,slow=18,SNR=2.2						
TYV	**Tymovskoe**	**15.41**	**359**	*e*P	**Pn**	**12 46 51.0**	**-3.6**
TYV				pmax	pmax		
	comp=Z,6.0nm,0.6s						
CN2	**Changchun**	**15.88**	**307**	*e*P	P	12 47 12.5	+8.3
KLR	**Kul'dur**	**16.07**	**332**	Pn	**Pn**	**12 46 59.5**	**-3.6**
	comp=Z,0.1nm,0.3s,baz=148,slow=8.7,SNR=6.7						
KLR				LR	LR	12 53 01.5	
	comp=Z,129nm,20.1s,baz=123,slow=36						
NKL	**Nikolayevsk**	**17.77**	**355**	*e*P	**Pn**	**12 47 22.0**	**-2.5**
NKL				pmax	pmax		
	comp=Z,10.0nm,1.1s						
NJ2	**Nanjing**	**20.36**	**267**	*e*P	**P**	**12 47 53.0**	**-0.7**
NJ2				pmax	pmax		
	comp=Z,11nm,0.6s						
PET	**Petropavlovsk**	**20.76**	**27**	*e*P	Pn	12 48 01.4	+1.2
PET				*e*S	**S**	**12 51 44.6**	**-3.6**
PET				pmax	pmax		
	comp=Z,25nm,0.9s						
PET				MLR	MLR		
	comp=Z,300nm,18.0s						
PET	**Petropavlovsk**	**20.76**	**27**	*e*P	**P**	**12 47 57.9**	**+0.1**
	comp=Z,214nm,1.7s						
GUMO	**Guam**	**21.83**	**175**	LR	LR	12 55 09.0	
	comp=Z,57nm,22.0s,baz=10,slow=33						
TPUB	**Ta-pu**	**22.90**	**244**	*e*P	**P**	**12 48 21.0**	**0.0**
	comp=Z,114nm,2.0s						
WHN	**Wuhan**	**24.49**	**267**	P	**P**	**12 48 35.6**	**-0.7**
WHN				pmax	pmax		
	comp=Z,140nm,1.5s						
CLNS	**Chul'man**	**24.65**	**336**	*e*P	**P**	**12 48 38.3**	**+0.8**
CLNS				pmax	pmax		
	comp=Z,19nm,0.9s						
CLNS				pmax	pmax		
	comp=N,12nm,1.0s						
CLNS				pmax	pmax		

comp=E,9.0nm,1.0s
MA2 Magadan 24.66 9 P **P** **12 48 37.2 -0.3**
comp=E,6.8nm,0.8s,baz=211,slow=9.4,SNR=9.4
HHC Hu-ho-hao-te 25.23 292 *e*P **P** **12 48 43.1 +0.1**
HHC sP sP 12 48 59.1 +6.1
HHC PP **PnPn** **12 49 25.3 +7.7**
HHC S **S** **12 53 05.6 -1.7**
HHC sS sS 12 53 16.2 -2.7
HHC pmax pmax
comp=E,16nm,1.1s
HHC pmax pmax
comp=E,110nm,5.0s
HHC LR LR
comp=E,140nm,11.4s
HHC LR LR
comp=E,210nm,13.3s
H11N2 WAKE ISLAND Hy 26.23 120 T T 13 16 25.3
baz=313,slow=75,SNR=6.8
H11N1 WAKE ISLAND Hy 26.24 120 T T 13 16 26.3
baz=313,slow=75,SNR=8.0
H11N3 WAKE ISLAND Hy 26.25 120 T T 13 16 27.3
baz=313,slow=75,SNR=7.5
H11S1 WAKE ISLAND Hy 26.92 123 T T 13 17 09.0
baz=314,slow=75,SNR=8.0
H11S3 WAKE ISLAND Hy 26.92 123 T T 13 17 15.1
baz=314,slow=75,SNR=7.1
H11S2 WAKE ISLAND Hy 26.93 123 T T 13 17 17.8
baz=314,slow=75,SNR=6.4
YAK Yakutsk 27.90 347 P **P** **12 49 06.4 -0.3**
comp=E,2.2nm,0.6s,baz=329,slow=21,SNR=9.4
YAK Yakutsk 27.90 347 *e*P **P** **12 49 06.2 -0.5**
YAK *e* 12 49 54.2
YAK *e* 12 52 22.0
YAK *e*S **S** **12 53 47.6 -1.1**
YAK *e*SS **SnSn** **12 54 59.8 -3.2**
YAK *e* 13 59 52.6
YAK pmax pmax
comp=Z,40nm,0.9s
YAK pmax pmax
comp=N,13nm,1.1s
YAK pmax pmax
comp=E,5.0nm,1.0s
YAK pmax pmax
comp=Z,82nm,4.1s
YAK pmax pmax
comp=N,96nm,4.6s
YAK smax smax
comp=N,79nm,4.3s
YAK smax smax
comp=E,33nm,3.3s
YAK MLR MLR
comp=Z,132nm,19.0s
YAK MLR MLR
comp=N,110nm,18.0s
YAK Yakutsk 27.90 347 *e*P **P** **12 49 06.6 -0.1**
comp=N,38nm,0.7s
XAN Xi'an 27.97 277 P **P** **12 49 08.5 +0.8**
XAN S **S** **12 53 50.3 -0.2**
XAN pmax pmax
comp=N,15nm,1.3s
XAN pmax pmax
comp=N,67nm,5.3s
SEY Seymchan 28.12 9 P **P** **12 49 09.3 +0.7**
comp=N,6.9nm,0.6s,baz=196,slow=6.2,SNR=42
ULN Ulaanbaatar 29.32 306*ce*P **P** **12 49 20.0 +0.3**
ULN pmax pmax
comp=Z,14nm,2.5s
ULN Ulaanbaatar 29.32 306 *e*P **P** **12 49 21.0 +1.2**
comp=Z,9.8nm,1.1s
BOD Bodaibo 29.55 328 *e*P **P** **12 49 20.7 -0.8**
BOD *e*S **ScP** **12 56 06.8 +0.5**
BOD pmax pmax
comp=Z,8.0nm,1.4s
SONA1 Songino Array 29.75 306 *e*P **P** **12 49 24.4 +0.9**
SONM Songino Array 29.75 306 P **P** **12 49 24.4 +0.9**
comp=Z,4.2nm,0.8s,baz=107,slow=8.7,SNR=22
SONM PcP **PcP** **12 52 27.5 +0.7**
comp=Z,1.0nm,0.6s,baz=111,slow=3.4,SNR=4.6
LZH Lanzhou 31.64 283 *e*P **P** **12 49 40.5 +0.1**
LZH pP sP 12 49 49.1 -1.3
LZH sP pP 12 49 53.0 +5.5
LZH pmax pmax
comp=Z,17nm,1.0s
ZAK Zakamensk 32.27 310 *e*P **P** **12 49 45.9 +0.3**
ZAK *e* 12 50 03.2
ZAK pmax pmax
comp=Z,3.0nm,1.2s
ZAK pmax pmax
comp=Z,5.0nm,1.4s
GYA Guiyang 32.29 264 P **P** **12 49 47.8 +1.7**
GYA pP sP 12 49 57.6 +1.5
GYA PP **PnPn** **12 50 55.0 +2.3**
GYA PcP **PcP** **12 52 35.4 +1.4**
GYA S **S** **12 54 57.0 -1.5**
GYA sS sS 12 55 13.2 +3.0
GYA ScP **ScP** **12 56 15.6 -0.5**
GYA SS **SnSn** **12 56 52.3 +1.5**
GYA ScS **ScS** **13 00 13.0 -2.4**
GYA pmax pmax
comp=Z,20nm,0.8s
GYA pmax pmax
comp=Z,120nm,6.6s
GYA LR LR
comp=Z,620nm,18.0s
GYA LR LR
comp=Z,560nm,17.9s
GYA LR LR
comp=Z,570nm,17.8s
TLY Talaya 32.35 312 *e*P **P** **12 49 47.4 +1.2**
TLY pmax pmax
comp=Z,5.0nm,0.8s
TLY MLR MLR
comp=Z,125nm,15.0s
CD2 Chengdu 33.02 273 P **P** **12 49 51.1 -1.2**
CD2 pmax pmax
comp=Z,20nm,0.7s
QIZ Qiongzhong 33.52 250 P **P** **12 49 56.6 -0.2**
QIZ S **S** **12 55 17.1 -0.4**
GTA Gaotai 34.29 290 P **P** **12 50 04.2 +0.8**
GTA pP sP 12 50 13.8 +0.3
GTA sP pP 12 50 17.7 +7.1
GTA PcP **PcP** **12 52 40.5 +1.1**
GTA S **S** **12 55 28.2 -1.1**
GTA sS sS 12 55 43.8 +2.7
GTA PcS **PcS** **12 56 26.8 +1.0**
GTA SS **SnSn** **12 57 38.9 -0.2**
GTA pmax pmax
comp=Z,6.0nm,0.9s
GTA pmax pmax
comp=Z,110nm,5.8s
GTA LR LR
comp=Z,140nm,14.3s
GTA LR LR
comp=Z,190nm,17.6s
BILL Bilibino 35.20 15⇧ *i*P **P** **12 50 10.2 -0.5**
BILL *e* 12 51 21.9
BILL *e*PPP PPP 12 51 41.4
BILL pmax pmax
comp=Z,13nm,2.2s
TIXI Tiksi 37.02 353 *e*P **P** **12 50 26.0 -0.2**
TIXI pmax pmax
comp=Z,10.0nm,1.2s
TIXI Tiksi 37.02 353 *e*P **P** **12 50 25.9 -0.4**
comp=Z,5.9nm,0.8s
MANU Manus Island 37.52 173 *e*P **P** **12 50 31.7 +0.6**
comp=Z,275nm,0.1s
NONG Nongkai 39.28 254 P **P** **12 50 47.0 +1.1**
comp=Z,36nm,1.5s
CRAI Chiangrai 40.32 259 P **P** **12 50 55.1 +0.5**
comp=Z,14nm,1.1s
LOEI Loei 41.07 255 P **P** **12 50 59.0 -1.8**
comp=Z,16nm,1.0s
PHRA Phrae 41.35 257 P **P** **12 51 04.8 +1.7**
comp=Z,94nm,0.8s
UTTA Uttaradit 41.50 256 P **P** **12 51 06.0 +1.7**
comp=Z,4.4nm,0.8s
CMAI Chiengmai2 41.54 260 P **P** **12 51 07.0 +2.2**
comp=Z,7.6nm,1.7s
PBKT Sadao Pong 41.83 254 P **P** **12 51 08.3 +1.3**
comp=Z,13nm,1.0s
CMMT Chiang Mai 42.20 259 P **P** **12 51 11.8 +1.7**
comp=Z,7.9nm,1.3s
CHTO Chiang Mai 42.20 259 P **P** **12 51 11.9 +1.8**
comp=Z,30nm,0.7s
CHTO Chiang Mai 42.20 259 *e*P **P** **12 51 09.6 -0.5**
CHTO pmax pmax
comp=Z,10.0nm,1.5s
CHTO Chiang Mai 42.20 259 *e*P **P** **12 51 09.6 -0.5**
comp=Z,10.0nm,1.5s
SUKH Sukhothai 42.38 257 P **P** **12 51 15.7 +4.2**
comp=Z,2.4nm,0.8s
CMAR Chiang Mai Arr 42.40 258 P **P** **12 51 12.6 +0.9**
comp=Z,1.2nm,0.8s,baz=45,slow=9.0,SNR=8.3
CMAR PcP **PcP** **12 53 06.2 +1.6**
comp=Z,0.3nm,0.3s,baz=45,slow=2.9,SNR=4.8
SRAK Srakaew 42.50 250 P **P** **12 51 10.9 -1.6**
comp=Z,42nm,1.0s
WMQ Urumqi 42.72 299 P **P** **12 51 16.0 +1.9**
WMQ pP sP 12 51 24.7 +0.5
WMQ sP pP 12 51 28.0 +6.7
WMQ PcP **PcP** **12 53 06.9 +1.4**
WMQ S **S** **12 57 38.2 +1.9**
WMQ SS **SS** **13 00 40.1 -6.9**
WMQ pmax pmax
comp=Z,3.0nm,0.8s
WMQ pmax pmax
comp=Z,85nm,4.8s
NAYO Nakonayok 42.88 251 P **P** **12 51 17.4 +1.9**
comp=Z,9.0nm,0.9s
CHBT CHBT 43.05 249 P **P** **12 51 20.1 +3.1**
comp=Z,18nm,1.1s
ZAA0 Zalesovo Array 43.94 314 *e*P **P** **12 51 23.3 -0.4**
ZALV Zalesovo Beam 43.94 314 P **P** **12 51 23.8 +0.1**
comp=Z,6.3nm,0.7s,baz=94,slow=7.0,SNR=30
ZALV PcP **PcP** **12 53 09.3 +0.1**
comp=Z,2.6nm,0.6s,baz=106,slow=3.0,SNR=5.4
SRDT SRDT 44.57 253 P **P** **12 51 33.5 +4.4**
comp=Z,26nm,0.9s
NVS Novosibirsk 44.87 315⇧ *i*P **P** **12 51 31.6 +0.5**
NVS pmax pmax
comp=N,2.0nm,0.9s
NVS pmax pmax
comp=E,5.0nm,0.9s
NVS pmax pmax
comp=Z,7.0nm,0.9s
PHET Kaeng Krachan 45.03 251 P **P** **12 51 36.0 +3.2**
NRIK Noril'sk 45.24 336 P **P** **12 51 34.0 +0.1**
comp=Z,4.0nm,0.6s,baz=123,slow=4.7,SNR=8.8
NRIK Noril'sk 45.24 336 P **P** **12 51 34.0 +0.1**
NRIK pmax pmax
comp=Z,4.0nm,0.6s
MK01 Makanchi Array 46.06 304 *e*P **P** **12 51 40.6 -0.1**
MKAR Makanchi Array 46.06 304 P **P** **12 51 41.1 +0.3**
comp=Z,3.9nm,0.7s,baz=89,slow=10,SNR=56
MAKZ Makanchi 46.27 304 *e*P **P** **12 51 42.9 +0.5**
MAKZ pmax pmax
comp=Z,5.0nm,0.6s
MAKZ Makanchi 46.27 304 *e*P **P** **12 51 42.9 +0.5**
comp=Z,5.2nm,0.6s
KURK Kurchatov 47.93 309 *e*P **P** **12 51 55.1 -0.1**
KURK pmax pmax
comp=Z,15nm,0.9s
KURK Kurchatov 47.93 309 *e*P **P** **12 51 55.1 -0.1**
comp=Z,15nm,0.9s
MLY Manley 48.52 31 *e*P **P** **12 52 01.1 +1.5**
comp=Z,10nm,1.0s
COEN Coen 49.14 180 *e*P **P** **12 52 04.8 0.0**
comp=Z,13nm,1.0s
RND Reindeer 49.27 33 *e*P **P** **12 52 06.0 +0.6**
RND pmax pmax
comp=Z,24nm,1.1s
RND Reindeer 49.27 33 *e*P **P** **12 52 06.0 +0.6**
comp=Z,24nm,1.1s
MDM Murphy Dome 49.58 31 *e*P **P** **12 52 09.2 +1.5**
comp=Z,23nm,1.0s
COLA College 49.74 32 *e*P **P** **12 52 10.6 +1.8**
COLA pmax pmax
comp=Z,9.0nm,0.9s
COLA College 49.74 32 *e*P **P** **12 52 10.6 +1.8**
comp=Z,9.3nm,0.9s
CCB Clear Creek Bu 49.75 32 *e*P **P** **12 52 09.9 +1.0**
comp=Z,4.9nm,0.8s
HDA Harding Lake 50.12 32 *e*P **P** **12 52 12.2 +0.4**
comp=Z,11nm,0.8s
IL1 Eielson Array 50.15 32 *e*P **P** **12 51 19.9 -0.1**
ILAR Eielson Array 50.15 32 P **P** **12 52 12.1 +0.1**
comp=Z,9.4nm,0.8s,baz=266,slow=6.3,SNR=76
ILB Eielson Array 50.15 32 *e*P **P** **12 52 12.3 +0.3**
KLU Klutina 50.67 36 *e*P **P** **12 52 17.5 +1.4**
comp=Z,19nm,1.0s
DIV Divide 50.77 36 *e*P **P** **12 52 18.2 +1.4**
comp=Z,21nm,1.0s
FYU Fort Yukon 50.84 29 *e*P **P** **12 52 19.4 +2.2**
comp=Z,56nm,1.6s
RAGM Ragged Mountai 51.36 37 *e*P **P** **12 52 22.5 +1.2**
comp=Z,432nm,1.0s
DOT Dot Lake 51.41 33 *e*P **P** **12 52 22.2 +0.6**
comp=Z,21nm,0.8s
MENT Mentasta 51.61 34 *e*P **P** **12 52 24.6 +1.5**
comp=Z,13nm,1.0s
KSH Kashi 52.24 296 *e*P **P** **12 52 32.7 +4.4**
KSH *es*P sP 12 52 46.9 +8.4
KSH S **S** **12 59 53.5 +1.5**
KSH sS sS 13 00 11.7 +7.6
KSH pmax pmax
comp=Z,120nm,4.5s
KSH LR LR
comp=Z,110nm,5.5s
KSH LR LR
comp=Z,84nm,5.1s
KSH LR LR
comp=Z,220nm,6.2s
VOSK Vostochnaya 52.30 313 *e*P **P** **12 52 28.1 -0.3**
VOSK pmax pmax
comp=Z,5.0nm,0.9s
VOSK Vostochnaya 52.30 313 *e*P **P** **12 52 28.1 -0.3**
comp=Z,5.2nm,0.9s
AAK Ala-Archa 52.39 300 *i*P **P** **12 52 29.0 -0.4**
AAK pmax pmax
comp=Z,5.0nm,0.9s
BRVK Borovoye 52.65 314*ce*P **P** **12 52 31.3 +0.4**
BRVK pmax pmax
comp=Z,4.0nm,0.8s
BRVK Borovoye 52.65 314 *e*P **P** **12 52 31.1 +0.2**
comp=Z,3.7nm,0.8s
GSI Gunungsitoli 54.14 242 *e*P **P** **12 52 43.2 +0.9**
comp=Z,29nm,1.0s
KKAR Karatay Array 55.05 302 *e*P **P** **12 52 49.1 +0.5**
KKAR Karatay Array 55.05 302 *e*P **P** **12 52 49.1 +0.5**
INK Inuvik 55.21 27 *e*P **P** **12 52 50.3 +1.0**
INK pmax pmax
comp=Z,12nm,1.0s
INK Inuvik 55.21 27 *e*P **P** **12 52 50.3 +1.0**
comp=Z,12nm,1.0s
WRAB Tennant Creek 55.69 190*ce*P **P** **12 52 54.0 +0.7**
WRAB pmax pmax
comp=Z,94nm,2.5s
WRAB Tennant Creek 55.69 190 *e*P **P** **12 52 53.9 +0.5**
comp=Z,14nm,1.0s
WB2 Warramunga Arr 55.70 190 *e*P **P** **12 52 53.5 +0.2**
comp=Z,19nm,1.1s
WRA Warramunga Arr 55.70 190 P **P** **12 52 53.1 -0.3**
comp=Z,12nm,0.9s,baz=7.8,slow=7.5,SNR=42
ARU Arti 58.40 320*c i*P **P** **12 53 12.1 -0.1**
ARU 12 54 01.6
ARU S **S** **13 01 12.0 -1.5**
ARU SS **SS** **13 04 59.8 -5.4**
ARU pmax pmax
comp=Z,20nm,1.7s
ARU Arti 58.40 320 *e*P **P** **12 53 12.1 -0.1**
comp=Z,11nm,1.0s
AS01 Alice Springs 59.42 190 *e*P **P** **12 53 19.2 -0.3**
AS31 Alice Springs 59.42 190 *e*P **P** **12 53 19.9 +0.3**
comp=Z,1.1nm,0.6s
ASAR Alice Springs 59.42 190 P **P** **12 53 19.8 +0.2**
comp=Z,3.6nm,0.8s,baz=12,slow=7.6,SNR=35
ABKAR Akbulak array 59.95 311 *e*P **P** **12 53 22.8 -0.3**
RES Resolute Bay 63.81 15 *e*P **P** **12 53 48.9 +0.4**
RES pmax pmax
comp=Z,20nm,0.8s
RES Resolute Bay 63.81 15 *e*P **P** **12 53 48.9 +0.4**
comp=Z,20nm,0.8s
YKW3 Yellowknife Ar 64.49 30 *e*P **P** **12 53 53.6 +0.4**
comp=Z,6.8nm,1.0s
YKA Yellowknife Ar 64.52 30 P **P** **12 53 53.5 +0.1**
comp=Z,4.6nm,0.8s,baz=299,slow=6.6,SNR=72
YKB5 Yellowknife Ar 64.52 30 *e*P **P** **12 53 53.2 -0.2**
GEYT Alibeck 65.74 300 P **P** **12 54 02.5 +0.7**
comp=Z,4.9nm,0.8s,baz=29,slow=3.4,SNR=11
KLMR Klimovskoe 65.78 329 *e*P **P** **12 54 00.3 -1.3**
KLMR pmax pmax
comp=Z,10.0nm,0.9s
STKA Stephens Creek 66.99 181 P **P** **12 54 09.9 +0.3**
comp=Z,0.9nm,0.3s,baz=350,slow=7.4,SNR=4.8
B08A Colville Reser 69.04 45 *e*P **P** **12 54 23.4 +0.9**
comp=Z,12nm,1.3s
VRH Novokhopyorsk 69.62 319 *e*P **P** **12 54 24.8 -1.2**
VRH pmax pmax
comp=Z,10.0nm,1.0s
OBN Obninsk 70.14 324 *e*P **P** **12 54 26.7 -2.3**
OBN *e* 12 54 48.5
OBN *e* 12 56 59.8
OBN pmax pmax
comp=Z,8.0nm,1.0s
YBH Yreka Blue Hor 70.28 52 P **P** **12 54 30.9 +0.5**
comp=Z,3.0nm,1.0s,baz=284,slow=6.1,SNR=4.2
NEW Newport 70.36 44 P **P** **12 54 31.4 +0.8**
comp=Z,4.6nm,0.9s,baz=275,slow=5.5,SNR=5.9
NEW Newport 70.36 44 *e*P **P** **12 54 31.6 +0.9**
NEW pmax pmax
comp=Z,7.0nm,1.0s
NEW Newport 70.36 44 *e*P **P** **12 54 31.6 +0.9**
comp=Z,7.3nm,1.0s
FIA1 FINESS Array S 70.81 333 *e*P **P** **12 54 33.3 +0.2**
FINES FINESS Array B 70.81 333 P **P** **12 54 32.8 -0.3**
comp=Z,9.2nm,0.8s,baz=56,slow=7.1,SNR=22
FINES FINESS Array B 70.81 333 *i*P **P** **12 54 33.2 +0.1**
FINES pmax pmax
comp=Z,9.0nm,0.7s
K05A Summer Lake 70.94 51 *e*P **P** **12 54 36.3 +1.8**
comp=Z,36nm,1.5s
VSR Storozhevoye 70.97 320 *e*P **P** **12 54 33.7 -0.6**
VSR pmax pmax
comp=Z,10.0nm,1.1s
WALA Waterton Lakes 71.73 42 *e*P **P** **12 54 40.0 +0.9**
comp=Z,22nm,1.5s
SWMT Swartz Lake 72.54 44 *e*P **P** **12 54 44.9 +1.0**
KBZ Khabaz 72.92 312 P **P** **12 54 46.7 +0.7**
comp=Z,6.9nm,0.8s,baz=90,slow=5.3,SNR=10.0
KIV Kislovodsk 72.92 312 *e*P **P** **12 54 47.4 +1.2**
KIV pmax pmax
comp=Z,23nm,0.9s
KIV Kislovodsk 72.92 312 *e*P **P** **12 54 47.5 +1.2**
comp=Z,19nm,0.8s
UOSS Minazif 73.53 289 *e*P **P** **12 54 50.5 +0.5**
comp=Z,0.5nm,1.1s
FFC Flin Flon 74.33 33 *e*P **P** **12 54 54.5 +0.3**
FFC pmax pmax
comp=Z,10.0nm,0.8s
FFC Flin Flon 74.33 33 *e*P **P** **12 54 54.5 +0.3**
comp=Z,10nm,0.8s
BMN Battle Mountai 74.50 51 *e*P **P** **12 54 57.7 +2.1**
BMN pmax pmax
comp=Z,7.0nm,1.2s
BMN Battle Mountai 74.50 51 *e*P **P** **12 54 57.7 +2.1**
comp=Z,6.8nm,1.2s
FCC Fort Churchill 74.83 27 *e*P **P** **12 54 56.7 -0.2**
FCC pmax pmax
comp=Z,20nm,1.2s
FCC Fort Churchill 74.83 27 *e*P **P** **12 54 56.7 -0.2**
comp=Z,20nm,1.2s
NV01 Mina Array Si 74.89 54 *e*P **P** **12 54 58.8 +0.8**
NVAR Mina Array Bea 74.89 54 P **P** **12 54 59.2 +1.1**
comp=Z,3.0nm,0.9s,baz=286,slow=5.5,SNR=8.2
BOZ Bozeman (W) 74.94 44 *e*P **P** **12 54 59.3 +1.2**
BOZ pmax pmax
comp=Z,3.0nm,0.8s
BOZ Bozeman (W) 74.94 44 *e*P **P** **12 54 59.2 +1.2**
comp=Z,3.3nm,0.8s
NV11 Mina Array Sit 74.99 53 *e*P **P** **12 55 00.8 +2.3**
comp=Z,12nm,1.6s
NC204 NORSAR Array S 76.09 338 *e*P **P** **12 55 04.6 +0.3**
NB2 NORSAR Subarra 76.14 338 P **P** **12 55 04.5 0.0**
comp=Z,6.9nm,0.8s,baz=39,slow=5.9
NOA NORSAR Array B 76.14 338 P **P** **12 55 04.8 +0.3**
comp=Z,5.2nm,0.8s,baz=39,slow=5.7,SNR=14
AKASG Malin Array Be 76.34 323 P **P** **12 55 05.5 -0.2**
comp=Z,4.6nm,0.6s,baz=46,slow=6.0,SNR=33
AKBB Malin Array Si 76.34 323 *e*P **P** **12 55 05.9 +0.1**
AKBB pmax pmax
comp=Z,9.0nm,0.8s
AKBB Malin Array Si 76.34 323 *e*P **P** **12 55 05.9 +0.1**
comp=Z,9.1nm,0.8s
KIEV Kiev 76.35 323 *e*P **P** **12 55 05.5 -0.3**
KIEV pmax pmax
comp=Z,9.0nm,0.8s
KIEV Kiev 76.35 323 *e*P **P** **12 55 05.5 -0.3**
comp=Z,8.7nm,0.8s
IMW Indian Meadow 76.36 46 *e*P **P** **12 55 08.2 +1.8**
comp=Z,5.2nm,0.8s
AK11 Malin Array Si 76.38 323 *e*P **P** **12 55 05.8 -0.2**
DAC Darwin (Calif) 76.56 55 *e*P **P** **12 55 08.3 +0.7**
DAC pmax pmax
comp=Z,4.0nm,1.0s
DAC Darwin (Calif) 76.56 55 *e*P **P** **12 55 08.3 +0.7**
comp=Z,3.9nm,1.0s
MOOW Moose Ponds 76.56 46 *e*P **P** **12 55 09.2 +1.7**
comp=Z,1.6nm,0.8s
LOHW Long Hollow 76.72 46 *e*P **P** **12 55 09.8 +1.4**
comp=Z,17nm,1.9s
REDW Red Top Meadow 76.73 46 *e*P **P** **12 55 09.8 +1.3**
comp=Z,5.4nm,1.1s
TPNV Topopah Spring 77.07 54 *e*P **P** **12 55 11.4 +1.0**
TPNV pmax pmax
comp=Z,5.0nm,0.8s
TPNV Topopah Spring 77.07 54 *e*P **P** **12 55 11.3 +1.0**
comp=Z,4.6nm,0.8s
DGMT Dagmar 77.26 39 *e*P **P** **12 55 12.2 +1.1**
comp=Z,21nm,1.2s
DUG Dugway, Tooele 77.40 50 *e*P **P** **12 55 13.6 +1.4**
DUG pmax pmax
comp=Z,6.0nm,1.0s
DUG Dugway, Tooele 77.40 50 *e*P **P** **12 55 13.6 +1.4**
comp=Z,6.3nm,1.0s
PSUT Pine Spring 77.72 51 *e*P **P** **12 55 15.6 +1.5**
comp=Z,4.9nm,1.1s
BW06 Boulder Array 77.84 46 *e*P **P** **12 55 14.8 +0.1**
PD31 Pinedale Array 77.84 46 *e*P **P** **12 55 15.2 +0.5**
PDAR Pinedale Array 77.84 46 P **P** **12 55 15.2 +0.5**
comp=Z,2.1nm,0.6s,baz=272,slow=2.2,SNR=28
NLU North Lily Min 78.00 49 *e*P **P** **12 55 17.3 +1.7**
comp=Z,8.1nm,1.5s
FLU Fool Peak 78.28 50 *e*P **P** **12 55 21.9 +4.7**
PFO Pinyon Flats O 78.83 57 P **P** **12 55 20.3 +0.1**
comp=Z,3.8nm,1.0s,baz=39,slow=1.9,SNR=3.6
PFO Pinyon Flats O 78.83 57 *e*P **P** **12 55 20.9 +0.7**
comp=Z,7.2nm,1.1s
LCMT Little Creek M 79.00 52 *e*P **P** **12 55 22.5 +1.4**
comp=Z,5.6nm,1.0s
KNB Kanab 79.27 52 *e*P **P** **12 55 24.8 +2.2**
KNB pmax pmax
comp=Z,8.0nm,0.9s
KNB Kanab 79.27 52 *e*P **P** **12 55 24.8 +2.2**
comp=Z,7.9nm,0.9s
ULM Lac du Bonnet 80.10 34 P **P** **12 55 26.5 -0.1**
comp=Z,5.7nm,0.9s,baz=325,slow=8.4,SNR=9.2
ULM Lac du Bonnet 80.10 34 *e*P **P** **12 55 26.6 -0.1**
comp=Z,9.8nm,1.0s
GLA Glamis 80.27 56 *e*P **P** **12 55 29.4 +1.5**
GLA pmax pmax
comp=Z,12nm,1.1s
GLA Glamis 80.27 56 *e*P **P** **12 55 29.4 +1.5**
comp=Z,12nm,1.1s
BURAR Bucovina Array 80.35 323⇧ *i*P **P** **12 55 29.0 +0.8**
KOLS Kolonicke sedl 80.86 325 *e*P **P** **12 55 31.7 +0.9**
KOLS Kolonicke sedl 80.86 325 *e*P **P** **12 55 31.6 +0.8**
BR131 Keskin Array S 80.87 313 *e*P **P** **12 55 31.9 +0.8**
BRTR Keskin Array B 80.87 313 P **P** **12 55 31.2 +0.1**
comp=Z,3.9nm,0.7s,baz=110,slow=3.7,SNR=18
BRTR Keskin Array B 80.87 313 *i*P **P** **12 55 32.2 +1.0**
BRTR pmax pmax
comp=Z,4.0nm,0.7s
Y14A Wickenburg 80.97 55 *e*P **P** **12 55 32.8 +1.1**
comp=Z,24nm,1.0s
STHS Stebnicka Huta 80.99 326 *e*P **P** **12 55 32.7 +1.2**
STHS Stebnicka Huta 80.99 326 *e*P **P** **12 55 32.7 +1.2**
OJC Ojcow 81.07 327 *e*P **P** **12 55 32.4 +0.6**
OJC pmax pmax
comp=Z,13nm,1.1s
OJC Ojcow 81.07 327 *e*P **P** **12 55 32.4 +0.6**
comp=Z,13nm,1.1s
113A Mohawk Valley, 81.16 56 *e*P **P** **12 55 33.4 +0.7**
comp=Z,4.4nm,0.9s
BR231 Keskin MP Arra 81.31 313 *e*P **P** **12 55 32.1 -1.4**
X16A Lo Mia Camp, P 81.72 54 *e*P **P** **12 55 37.1 +1.3**
comp=Z,5.8nm,1.1s
LANS Liptovska Anna 81.99 326 *e*P **P** **12 55 38.0 +1.2**
LANS Liptovska Anna 81.99 326 *e*P **P** **12 55 38.0 +1.2**

DPC	**Dobruska-Polom**	**82.48**	**329**	eP	**P**	**12 55 40.1**	**+0.8**
DPC				epP	**PcP**	**12 55 44.1**	**-0.3**
DPC	**Dobruska-Polom**	**82.48**	**329**	eP	**P**	**12 55 40.1**	**+0.8**
VYHS	**Vyhne**	**82.76**	**326**	eP	**P**	**12 55 40.7**	**-0.1**
VYHS	**Vyhne**	**82.76**	**326**	eP	**P**	**12 55 40.7**	**-0.1**
BRG	**Berggiesshubel**	**83.07**	**330**	eP	**P**	**12 55 42.5**	**+0.2**
	comp=Z,3.5nm,0.7s						
BRG	**Berggiesshubel**	**83.07**	**330**	eP	**P**	**12 55 42.5**	**+0.2**
BRG				pmax	pmax		
	comp=Z,4.0nm,0.7s						
CLL	**Collm**	**83.11**	**331**	⇓iP	**P**	**12 55 42.2**	**-0.3**
	comp=Z,8.0nm,0.8s						
CLL				e		12 55 45.0	
CLL				esP	**sP**	**12 55 52.0**	**-1.0**
CLL	**Collm**	**83.11**	**331**	⇓iP	**P**	**12 55 42.2**	**-0.3**
CLL				e		12 55 52.0	
CLL				pmax	pmax		
	comp=Z,8.0nm,0.8s						
CLL	**Collm**	**83.11**	**331**	eP	**P**	**12 55 42.2**	**-0.3**
	comp=Z,9.5nm,0.9s						
TUC	**Tucson**	**83.44**	**55**	eP	**P**	**12 55 46.0**	**+1.3**
TUC				pmax	pmax		
	comp=Z,6.0nm,1.4s						
TUC	**Tucson**	**83.44**	**55**	eP	**P**	**12 55 46.0**	**+1.3**
	comp=Z,6.3nm,1.4s						
PRU	**Pruhonice**	**83.50**	**329**	eP	**P**	**12 55 44.9**	**+0.3**
PRU	**Pruhonice**	**83.50**	**329**	eP	**P**	**12 55 44.9**	**+0.3**
BZS	**Buzias**	**83.52**	**323**	⇑iP	**P**	**12 55 43.0**	**-1.8**
EYMN	**Ely**	**83.76**	**33**	eP	**P**	**12 55 46.3**	**+0.4**
	comp=Z,7.8nm,0.8s						
MMAI	**Mount Meron Ar**	**83.94**	**306**	LR	LR	13 36 02.4	
	comp=Z,36nm,21.9s,baz=165,slow=38						
MDVR	**Moldovita**	**84.07**	**322**	⇓iP	**P**	**12 55 47.5**	**-0.2**
ECSD	**EROS Data Cent**	**84.34**	**39**	eP	**P**	**12 55 49.2**	**+0.1**
	comp=Z,6.5nm,0.9s						
KHC	**Kasperske Hory**	**84.56**	**329**	eP	**P**	**12 55 50.4**	**+0.3**
KHC	**Kasperske Hory**	**84.56**	**329**	eP	**P**	**12 55 50.4**	**+0.3**
KHC	**Kasperske Hory**	**84.56**	**329**	eP	**P**	**12 55 50.2**	**+0.1**
	comp=Z,2.2nm,0.8s						
ANMO	**Albuquerque**	**84.60**	**51**	P	**P**	**12 55 51.5**	**+0.7**
	comp=Z,1.2nm,0.7s,baz=306,slow=6.3,SNR=9.1						
ANMO	**Albuquerque**	**84.60**	**51**	ceP	**P**	**12 55 51.0**	**+0.3**
ANMO				pmax	pmax		
	comp=Z,10.0nm,2.5s						
ANMO	**Albuquerque**	**84.60**	**51**	eP	**P**	**12 55 52.2**	**+1.5**
	comp=Z,3.3nm,1.0s						
GERES	**GERESS Array B**	**84.73**	**329**	P	**P**	**12 55 50.5**	**-0.5**
	comp=Z,2.3nm,0.7s,baz=34,slow=5.1,SNR=17						
VTS	**Vitosha**	**84.86**	**320**	⇑iP	**P**	**12 55 53.0**	**+1.2**
VTS	**Vitosha**	**84.86**	**320**	eP	**P**	**12 55 52.8**	**+1.0**
VTS				pmax	pmax		
	comp=Z,8.0nm,0.7s						
VTS	**Vitosha**	**84.86**	**320**	eP	**P**	**12 55 52.8**	**+1.0**
	comp=Z,7.5nm,0.7s						
GRFO	**Grafenberg**	**85.08**	**331**	eP	**P**	**12 55 53.3**	**+0.7**
GRFO				pmax	pmax		
	comp=Z,17nm,1.2s						
GRFO	**Grafenberg**	**85.08**	**331**	eP	**P**	**12 55 53.3**	**+0.7**
	comp=Z,17nm,1.2s						
HSIG		**85.35**	**58**	eP	**P**	**12 55 54.7**	**+0.3**
	comp=Z,6.3nm,1.1s						
COWI	**Conover**	**86.21**	**33**	eP	**P**	**12 55 58.6**	**+0.3**
	comp=Z,34nm,2.0s						
BFO	**Black Forest**	**87.31**	**332**	eP	**P**	**12 56 03.4**	**-0.3**
BFO				pmax	pmax		
	comp=Z,6.0nm,0.8s						
BFO	**Black Forest**	**87.31**	**332**	eP	**P**	**12 56 03.4**	**-0.3**
	comp=Z,5.5nm,0.8s						
FUORN	**Ofenpass-Fuorn**	**87.92**	**330**	eP	**P**	**12 56 07.1**	**+0.2**
	comp=Z,4.4nm,0.8s						
TX31	**Lajitas Ar. Si**	**90.04**	**53**	eP	**P**	**12 56 17.3**	**+0.3**
TXAR	**Lajitas Array**	**90.04**	**53**	P	**P**	**12 56 17.7**	**+0.7**
	comp=Z,1.5nm,0.7s,baz=295,slow=3.0,SNR=9.2						
OLIL	**Olney**	**92.35**	**38**	eP	**P**	**12 56 28.3**	**+0.9**
	comp=Z,64nm,1.9s						
MIAR	**Mount Ida**	**92.59**	**44**	eP	**P**	**12 56 29.3**	**+0.7**
MIAR				pmax	pmax		
	comp=Z,11nm,1.0s						
MIAR	**Mount Ida**	**92.59**	**44**	eP	**P**	**12 56 29.3**	**+0.7**
	comp=Z,11nm,1.0s						
PBMO	**Poplar Bluff**	**92.65**	**40**	eP	**P**	**12 56 29.6**	**+0.8**
	comp=Z,12nm,1.2s						
ESDC	**Sonseca Array**	**99.27**	**335**	P	**Pdif**	**12 56 58.8**	**-0.2**
	comp=Z,0.5nm,0.6s,baz=15,slow=5.3,SNR=3.7						
TORD	**Torodi Ar. Bea**	**119.36**	**316**	PKP	**PKPdf**	**13 02 06.4**	**-0.4**
	comp=Z,0.4nm,0.8s,baz=17,slow=2.0,SNR=2.6						
SEUS	**St. Eustatius**	**121.86**	**30**	ePKPdf	**PKPdf**	**13 02 11.5**	**-0.1**
QSPA	**South Pole Qui**	**125.20**	**180**	ePKPdf	**PKPdf**	**13 02 16.9**	**+0.4**
SDV	**Santo Domingo**	**125.66**	**42**	ePKPdf	**PKPdf**	**13 02 19.4**	**+0.2**
SNAA	**Sanae**	**139.60**	**196**	PKP	PKPpre	13 02 34.7	
VNA2	**Neumayer--Watz**	**141.14**	**195**	PKP	PKPpre	13 02 40.7	
	baz=123,slow=1.6						
SAML	**Samuel**	**144.39**	**49**	ePKPdf	**PKPdf**	**13 02 53.4**	**-0.2**
LPAZ	**La Paz**	**146.31**	**64**	PKPbc	**PKPbc**	**13 02 58.9**	**+0.1**
	comp=Z,2.6nm,0.7s,baz=324,slow=4.1,SNR=10						
LPAZ	**La Paz**	**146.31**	**64**	ePKIKP	**PKPdf**	**13 02 58.6**	**+1.0**
LPAZ	**La Paz**	**146.31**	**64**	ePKPdf	**PKPdf**	**13 02 58.6**	**+1.0**
PB01	**IPOC Station P**	**148.14**	**72**	ePKPbc	**PKPbc**	**13 03 04.9**	**+1.8**

*CSEM **03** 12:47:04.9±0.1, 37°.09N×28°.77E, h10km, ML3.6, Error ellipse: s-maj=2.7km s-min=2.5km az=66.0*
*HLW **03** 12:47:04.9, 37°.12N×28°.85E, h33km±18km, Ml3.6*
*ISK **03** 12:47:04.6, 37°.12N×28°.76E, h9km, ML3.3*
*ATH **03** 12:47:04.4, 37°.16N×28°.63E, h13km±3km, ML3.6/6, Error ellipse: s-maj=4.7km s-min=1.7km az=56.0*
*DDA **03** 12:47:05.4, 37°.14N×28°.71E, h37km, Ml3.6*
*ISCJB **03** 12:47:05.5±0.4, 37°.09N±0°.02×28°.74E±0°.03, h18km±5km, Error ellipse: s-maj=4.1km s-min=3.8km az=145.8*
ISC 03 12:47:05.3±0.9**, 37°.10N**±0°.02×**28°.74E**±0°.02**, h13**km±8km**, n121,** σ**1s.02**/132**, Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TURN	**Turunc**	**0.25**	**206**	iP	**Pn**	**12 47 14.5**	**-0.2**
DALY	**Dalyan (Mu˜la**	**0.29**	**194**	ePG	**Pg**	**12 47 10.7**	**-0.7**
DALY				eSG	**Sg**	**12 47 16.4**	**+1.0**
DALY	**Dalyan (Mu˜la**	**0.29**	**194**	ePg	**Pg**	**12 47 10.7**	**-0.7**
DALY				eSg	**Sg**	**12 47 16.4**	**+1.0**
YER	**Yerkesik**	**0.37**	**275**	ePG	**Pg**	**12 47 12.8**	**+0.1**
YER				eSG	**Sb**	**12 47 18.9**	**-0.5**
YER	**Yerkesik**	**0.37**	**275**	ePg	**Pg**	**12 47 12.8**	**+0.1**
YER				eSg	**Sb**	**12 47 18.9**	**-0.5**
FETY	**Fethiye**	**0.54**	**149**	ePG	**Pg**	**12 47 15.1**	**-0.9**
FETY				eSG	**Sg**	**12 47 23.5**	**+0.4**
FETY	**Fethiye**	**0.54**	**149**	ePg	**Pg**	**12 47 15.1**	**-0.9**
FETY				eSg	**Sg**	**12 47 23.5**	**+0.4**
GLHS	**Glhisar (BURDU**	**0.61**	**85**	ePG	**Pg**	**12 47 16.7**	**-0.6**
GLHS	**Glhisar (BURDU**	**0.61**	**85**	ePg	**Pg**	**12 47 16.7**	**-0.6**
GOLH	**Golhisar**	**0.67**	**78**	iP	**Pg**	**12 47 17.6**	**-0.8**
GOLH	**Golhisar**	**0.67**	**78**	P	**Pg**	**12 47 17.6**	**-0.8**
DENT	**Denizli**	**0.69**	**20**	ePG	**Pg**	**12 47 18.3**	**-0.5**
DENT	**Denizli**	**0.69**	**20**	ePg	**Pg**	**12 47 18.3**	**-0.5**
AYDN	**Tasoluk**	**0.88**	**309**	iP	**Pb**	**12 47 22.5**	**-0.1**
AYDN	**Tasoluk**	**0.88**	**309**	P	**Pb**	**12 47 22.5**	**-0.1**
UZP	**Denizli**	**0.99**	**20**	iP	**Pg**	**12 47 23.7**	**-0.8**
ELL	**Elmali**	**1.00**	**110**	ePG	**Pb**	**12 47 24.7**	**+0.1**
ELL	**Elmali**	**1.00**	**110**	ePg	**Pb**	**12 47 24.7**	**+0.1**
ARG	**Arkhangelos**	**1.01**	**209**	P	**Pg**	**12 47 23.1**	**-1.8**
BDRM	**Kayabasi**	**1.04**	**268**	iP	**Pg**	**12 47 24.8**	**-0.5**
BDRM	**Kayabasi**	**1.04**	**268**	P	**Pg**	**12 47 24.8**	**-0.5**
AYDB	**Zeytinkoy-Aydi**	**1.08**	**322**	ePG	**Pb**	**12 47 25.6**	**-0.3**
AYDB	**Zeytinkoy-Aydi**	**1.08**	**322**	ePg	**Pb**	**12 47 25.6**	**-0.3**
AKAS	**Kas**	**1.11**	**141**	iP	**Pb**	**12 47 26.8**	**+0.3**
AKAS				iS	**Sn**	**12 47 46.3**	**+4.4**
AKAS	**Kas**	**1.11**	**141**	P	**Pb**	**12 47 26.8**	**+0.3**
BODT	**Bodrum**	**1.14**	**268**	ePN	**Pg**	**12 47 26.7**	**-0.7**
BODT	**Bodrum**	**1.14**	**268**	ePn	**Pg**	**12 47 26.7**	**-0.7**
KSL	**Kastellorizon**	**1.17**	**144**	P	**Pg**	**12 47 26.4**	**-1.4**
KSL				S	**Sn**	**12 47 47.2**	**+4.2**
KSL				AML	AML	12 47 47.9	
	comp=E,8780µm,0.7s						
KSL				AML	AML	12 47 49.0	
	comp=N,4987µm,0.6s						
KORT	**Korkueli**	**1.29**	**94**	iP	**Pg**	**12 47 30.1**	**-0.1**
KORT	**Korkueli**	**1.29**	**94**	P	**Pg**	**12 47 30.1**	**-0.1**
GCAM	**G?zelcaml?**	**1.34**	**297**	iP	**Pn**	**12 47 29.7**	**0.0**
GCAM	**G?zelcaml?**	**1.34**	**297**	P	**Pn**	**12 47 29.7**	**0.0**
NIS1	**Nisyros Isl.**	**1.35**	**249**	ePN	**Pg**	**12 47 31.0**	**-0.3**
NIS1	**Nisyros Isl.**	**1.35**	**249**	P	**Pg**	**12 47 30.8**	**-0.4**
NIS1	**Nisyros Isl.**	**1.35**	**249**	ePn	**Pg**	**12 47 31.0**	**-0.3**
NIS1	**Nisyros Isl.**	**1.35**	**249**	P	**Pg**	**12 47 30.8**	**-0.4**
NIS1				AML	AML	12 47 57.6	
	comp=N,7420µm,0.8s						
NIS1				AML	AML	12 47 59.1	
	comp=E,10118µm,0.7s						
KHL	**Karahalli**	**1.37**	**27**	ePN	**Pn**	**12 47 30.2**	**0.0**
KHL	**Karahalli**	**1.37**	**27**	ePn	**Pn**	**12 47 30.2**	**0.0**
KHAL	**Karahalli**	**1.40**	**25**	iP	**Pn**	**12 47 30.7**	**0.0**
KHAL	**Karahalli**	**1.40**	**25**	P	**Pn**	**12 47 30.7**	**0.0**
KULA	**Kula-Manisa**	**1.41**	**357**	ePN	**Pn**	**12 47 30.3**	**-0.5**
KULA	**Kula-Manisa**	**1.41**	**357**	ePn	**Pn**	**12 47 30.3**	**-0.5**
BCK	**Bucak**	**1.52**	**76**	ePN	**Pb**	**12 47 33.0**	**-0.4**
BCK	**Bucak**	**1.52**	**76**	ePn	**Pb**	**12 47 33.0**	**-0.4**
ANTB	**Antalya**	**1.54**	**97**	ePN	**Pn**	**12 47 32.6**	**+0.2**
ANTB	**Antalya**	**1.54**	**97**	ePn	**Pn**	**12 47 32.7**	**+0.2**
ISP	**Isparta**	**1.59**	**63**	ePN	**Pn**	**12 47 33.3**	**0.0**
ISP	**Isparta**	**1.59**	**63**	ePn	**Pn**	**12 47 33.3**	**0.0**
SMG	**Samos**	**1.63**	**292**	P	**Pn**	**12 47 33.7**	**-0.1**
SMG	**Samos**	**1.63**	**292**	P	**Pn**	**12 47 33.7**	**-0.1**
SMG				AML	AML	12 48 04.4	
	comp=E,997µm,0.4s						
SMG				AML	AML	12 48 05.8	
	comp=N,1624µm,0.5s						
IZM	**Izmir**	**1.75**	**318**	ePN	**Pn**	**12 47 36.2**	**+0.8**
IZM	**Izmir**	**1.75**	**318**	ePn	**Pn**	**12 47 36.2**	**+0.8**
BAGO	**Egridir - ISPA**	**1.85**	**61**	iP	**Pn**	**12 47 37.9**	**+1.0**
BLCB	**Balcova**	**1.86**	**314**	ePN	**Pn**	**12 47 36.5**	**-0.3**
BLCB	**Balcova**	**1.86**	**314**	ePn	**Pn**	**12 47 36.5**	**-0.3**
AKHS	**Akhisar**	**1.92**	**338**	iP	**Pn**	**12 47 37.5**	**-0.2**
AKHS	**Akhisar**	**1.92**	**338**	P	**Pn**	**12 47 37.5**	**-0.2**
AKS	**Akhisar**	**1.92**	**338**	ePN	**Pn**	**12 47 38.0**	**+0.3**
AKS	**Akhisar**	**1.92**	**338**	ePn	**Pn**	**12 47 38.0**	**+0.3**
DEMI	**Demirci**	**1.94**	**359**	iP	**Pn**	**12 47 38.2**	**+0.2**
DEMI	**Demirci**	**1.94**	**359**	P	**Pn**	**12 47 38.2**	**+0.2**
KARP	**Karpathos**	**2.01**	**220**	ePN	**Pn**	**12 47 40.1**	**+1.1**
KARP	**Karpathos**	**2.01**	**220**	ePn	**Pn**	**12 47 40.1**	**+1.1**
KARP	**Karpathos**	**2.01**	**220**	P	**Pn**	**12 47 40.3**	**+1.4**
KARP				S	**Sb**	**12 48 07.0**	**+0.4**
KARP	**Karpathos**	**2.01**	**220**	P	**Pn**	**12 47 40.3**	**+1.4**
KARP				S	**Sb**	**12 48 07.0**	**+0.4**
KARP				AML	AML	12 48 11.4	
	comp=N,2504µm,0.4s						
KARP				AML	AML	12 48 12.4	
	comp=E,2087µm,0.6s						
SHUT	**Suhut-Afyon**	**2.04**	**44**	ePN	**Pn**	**12 47 40.3**	**+0.9**
SHUT	**Suhut-Afyon**	**2.04**	**44**	ePn	**Pn**	**12 47 40.3**	**+0.9**
GDZ	**Gediz**	**2.07**	**16**	iP	**Pn**	**12 47 39.9**	**0.0**
GDZ	**Gediz**	**2.07**	**16**	P	**Pn**	**12 47 39.9**	**0.0**
ZEY	**˜zmir**	**2.11**	**303**	iP	**Pn**	**12 47 40.1**	**-0.1**
URLA	**Izmir**	**2.11**	**307**	iP	**Pg**	**12 47 45.8**	**0.0**
TVSB	**Tavsanli**	**2.41**	**13**	ePN	**Pn**	**12 47 44.6**	**0.0**
TVSB	**Tavsanli**	**2.41**	**13**	ePn	**Pn**	**12 47 44.6**	**0.0**
DKL	**Dikili**	**2.44**	**324**	ePN	**Pn**	**12 47 44.9**	**0.0**
DKL	**Dikili**	**2.44**	**324**	ePn	**Pn**	**12 47 44.9**	**0.0**
CHOS	**Chios island**	**2.48**	**302**	ePN	**Pn**	**12 47 46.8**	**+1.3**
CHOS	**Chios island**	**2.48**	**302**	P	**Pn**	**12 47 45.9**	**+0.4**
CHOS	**Chios island**	**2.48**	**302**	ePn	**Pn**	**12 47 46.8**	**+1.3**
CHOS	**Chios island**	**2.48**	**302**	P	**Pn**	**12 47 45.9**	**+0.4**
DST	**Dursunbey**	**2.50**	**358**	ePN	**Pn**	**12 47 45.5**	**-0.2**
DST	**Dursunbey**	**2.50**	**358**	ePn	**Pn**	**12 47 45.6**	**-0.2**
DURS	**Dursunbey**	**2.50**	**355**	iP	**Pn**	**12 47 46.1**	**+0.3**
DURS	**Dursunbey**	**2.50**	**355**	P	**Pn**	**12 47 46.1**	**+0.3**
APE	**Apeiranthos**	**2.57**	**270**	ePN	**Pn**	**12 47 48.0**	**+1.3**
APE	**Apeiranthos**	**2.57**	**270**	P	**Pn**	**12 47 46.1**	**-0.6**
APE	**Apeiranthos**	**2.57**	**270**	ePn	**Pn**	**12 47 48.0**	**+1.3**
APE	**Apeiranthos**	**2.57**	**270**	P	**Pn**	**12 47 46.1**	**-0.6**
BALB	**Balikesir**	**2.62**	**345**	ePN	**Pn**	**12 47 48.1**	**+0.8**
BALB	**Balikesir**	**2.62**	**345**	ePn	**Pn**	**12 47 48.1**	**+0.8**
SANT	**Santorini**	**2.73**	**256**	ePN	**Pn**	**12 47 50.2**	**+1.3**
SANT	**Santorini**	**2.73**	**256**	ePn	**Pn**	**12 47 50.2**	**+1.3**
BALY	**Balya**	**2.78**	**342**	iP	**Pn**	**12 47 49.7**	**+0.2**
BALY	**Balya**	**2.78**	**342**	P	**Pn**	**12 47 49.7**	**+0.2**
ZKR	**Zakros**	**2.85**	**227**	P	**Pn**	**12 47 51.9**	**+1.5**
ZKR	**Zakros**	**2.85**	**227**	P	**Pn**	**12 47 51.9**	**+1.5**
ZKR				AML	AML	12 48 38.7	
	comp=E,544µm,0.8s						
ZKR				AML	AML	12 48 39.8	
	comp=N,604µm,0.5s						
SIGR	**SIGRI**	**3.10**	**314**	ePN	**Pn**	**12 47 54.8**	**+0.9**
SIGR	**SIGRI**	**3.10**	**314**	ePn	**Pn**	**12 47 54.8**	**+0.9**
NPS	**Neapolis**	**3.13**	**235**	P	**Pn**	**12 47 54.5**	**+0.2**
NPS				S	**Sn**	**12 48 31.3**	**-0.2**
NPS	**Neapolis**	**3.13**	**235**	P	**Pn**	**12 47 54.5**	**+0.2**
NPS				S	**Sn**	**12 48 31.3**	**-0.2**
NPS				AML	AML	12 48 35.3	
	comp=E,775µm,0.3s						
NPS				AML	AML	12 48 35.8	
	comp=N,514µm,0.4s						
KCTX	**Karacabey (Bur**	**3.17**	**355**	ePN	**Pn**	**12 47 55.0**	**+0.1**
KCTX	**Karacabey (Bur**	**3.17**	**355**	ePn	**Pn**	**12 47 55.0**	**+0.1**
LAST	**Lasithi**	**3.27**	**235**	P	**Pn**	**12 47 56.9**	**+0.5**
LAST	**Lasithi**	**3.27**	**235**	P	**Pn**	**12 47 56.9**	**+0.5**
IMMV	**Iera Moni Meta**	**4.18**	**248**	P	Pn	12 48 12.1	+3.3
IMMV	**Iera Moni Meta**	**4.18**	**248**	P	Pn	12 48 12.1	+3.3
HMAT	**Matruh**	**6.15**	**193**	P	**Pn**	**12 48 35.1**	**-0.7**
	baz=195						
HMAT				S	**Sn**	**12 49 41.4**	**-4.5**
	baz=195						
HMAT	**Matruh**	**6.15**	**193**	P	**Pn**	**12 48 35.1**	**-0.7**
SLUM	**Salum**	**6.31**	**209**	P	**Pn**	**12 48 37.2**	**-0.9**
	baz=210						
SLUM				AMP		12 49 00.0	
	comp=E,80µm,0.7s,logA/T=5.1,baz=210						
SLUM				S	Sn	12 49 44.8	-5.2
	baz=210						
SLUM	**Salum**	**6.31**	**209**	P	**Pn**	**12 48 37.2**	**-0.9**
KOT	**Kottamia**	**7.61**	**159**	P	**Pn**	**12 48 54.5**	**-1.4**
	baz=160						
KOT	**Kottamia**	**7.61**	**159**	P	**Pn**	**12 48 54.5**	**-1.4**
HNAT	**Natroun**	**7.61**	**168**	P	**Pn**	**12 48 54.7**	**-1.2**
	baz=168						
HNAT	**Natroun**	**7.61**	**168**	P	**Pn**	**12 48 54.7**	**-1.2**
HSAF	**As Saff**	**7.83**	**162**	P	**Pn**	**12 48 57.3**	**-1.6**
	baz=162						
HSAF	**As Saff**	**7.83**	**162**	P	**Pn**	**12 48 57.3**	**-1.6**
GLL	**Jalalah**	**7.90**	**161**	P	**Pn**	**12 48 58.4**	**-1.6**
	baz=161						
GLL	**Jalalah**	**7.90**	**161**	P	**Pn**	**12 48 58.4**	**-1.6**
SUZ	**Suez**	**8.01**	**154**	P	**Pn**	**12 48 59.7**	**-1.6**
	baz=154						
SUZ	**Suez**	**8.01**	**154**	P	**Pn**	**12 48 59.7**	**-1.6**
ZNM	**Zenema**	**8.45**	**155**	P	**Pn**	**12 49 06.0**	**-1.4**
	baz=155						
ZNM				AMP		12 50 00.0	
	comp=E,20µm,0.3s,logA/T=4.8,baz=155						
ZNM				S	Sn	12 50 29.5	-13
	baz=155						
ZNM	**Zenema**	**8.45**	**155**	P	**Pn**	**12 49 06.0**	**-1.4**

*ISCJB **03** 12:48:11.3±2.0, 3°.6N±0°.2×97°.72E±0°.07, h33km, mb3.2/2, Error ellipse: s-maj=29.2km s-min=7.3km az=166.7*
*DJA **03** 12:48:13.5±0.3, 3°N±2°×9°8E±°, h10km, M3.7/13, MLv3.7/13*
*IDC **03** 12:48:19.6±2.4, 3°.40N×99°.54E, h0km, mb3.3/2, mb1 3.6/3, mb1mx3.2/42, mbtmp3.4/3, ML3.8/1, Error ellipse: s-maj=46.4km s-min=12.8km az=143.0*
ISC 03 12:48:11.7±2.0**, 3°.7N**±0°.2×**97°.71E**±0°.07**, h35**km**, n10,** σ**0s.91**/11**, Northern Sumatera**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KCSI	**Kotacane, Aceh**	**0.14**	**153**	P	**Pn**	**12 48 16.8**	**-1.3**
KCSI				S	**Sn**	**12 48 20.8**	**-1.7**
TPTI		**0.65**	**233**	P	**Pn**	**12 48 24.9**	**+0.4**
TPTI				S	**Sn**	**12 48 34.0**	**+0.4**
TSI	**Tuntungan**	**0.87**	**100**	P	**Pn**	**12 48 27.6**	**+0.1**
TSI				S	**Sn**	**12 48 40.0**	**+1.1**
PSI	**Prapat**	**1.48**	**125**	Pg	**Pn**	**12 48 35.8**	**-0.2**
	2.8nm,0.3s,baz=135,slow=7.8,SNR=3.6						
PSI				Lg	Lg	12 48 51.5	
	59nm,0.3s,baz=9.0,slow=20,SNR=20						
LHMI	**Lhok Sumawe**	**1.74**	**334**	P	Pn	12 48 48.4	+9.0
GSI	**Gunungsitoli**	**2.34**	**183**	P	**Pn**	**12 48 47.6**	**-0.1**
MNSI	**Mandailing Nat**	**3.40**	**147**	P	**Pn**	**12 49 03.1**	**+0.8**
CMAR	**Chiang Mai Arr**	**14.76**	**5**	Pn	P	12 51 53.9	+10
	0.1nm,0.3s,baz=183,slow=7.2,SNR=4.7						
WRA	**Warramunga Arr**	**42.95**	**125**	P	**P**	**12 56 07.7**	**0.0**
	0.4nm,0.6s,baz=303,slow=9.0,SNR=4.8						
ASAR	**Alice Springs**	**44.51**	**129**	P	**P**	**12 56 20.3**	**+0.1**
	0.2nm,0.6s,baz=301,slow=7.9,SNR=3.8						

*ISCJB **03** 12:51:42.5±0.4, 35°.33N±0°.04×143°.02E±0°.05, h10km, mb4.0/29, MS3.7/2, Error ellipse: s-maj=6.7km s-min=5.4km az=142.7*
*IDC **03** 12:51:43.1±0.6, 35°.42N×143°.07E, h0km, mb4.0/23, mb1 4.1/27, mb1mx4.0/51, mbtmp4.0/27, ML3.8/4, MS3.7/2, Ms1 3.7/2, ms1mx2.6/61, Error ellipse: s-maj=16.2km s-min=14.2km az=131.0*
*NEIC **03** 12:51:44.4±0.3, 35°.40N×143°.09E, h10km, mb4.3/8, Error ellipse: s-maj=7.2km s-min=6.1km az=123.0*
ISC 03 12:51:44.1±0.5**, 35°.36N**±0°.06×**143°.07E**±0°.07**, h10**km**, n47,** σ**1s.20**/50**, mb4.1**/29**, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHJ2	**Mitsune**	**3.50**	**231**	ePn	**Pn**	**12 52 40.3**	**+1.7**
JHJ2				eSn	**Sn**	**12 53 18.8**	**-1.3**
JHJ	**Hachijo jima 2**	**3.52**	**232**	Pn	**Pn**	**12 52 40.0**	**+1.1**
	16nm,0.3s,baz=136,slow=23,SNR=8.5						
JHJ				Sn	**Sn**	**12 53 18.2**	**-2.3**
	204nm,0.3s,baz=246,slow=24,SNR=18						
MJAR	**Matsushiro Arr**	**4.11**	**288**	Pn	**Pn**	**12 52 46.8**	**-0.2**
	5.7nm,0.3s,baz=91,slow=15,SNR=38						
MJAR				Sn	**Sn**	**12 53 34.7**	**-0.5**
	3.0nm,0.3s,baz=82,slow=15,SNR=5.0						
MAJO	**Matsushiro**	**4.12**	**288**	ePn	**Pn**	**12 52 47.4**	**+0.3**
MAT	**Matsushiro**	**4.12**	**288**	P	**Pn**	**12 52 47.6**	**+0.6**
MAT				S	**Sn**	**12 53 32.8**	**-2.4**
ERM	**Erimo**	**6.64**	**1**	ePn	**Pn**	**12 53 19.9**	**-1.8**
CBIJ	**Chichi jima**	**8.27**	**185**	ePn	**Pn**	**12 53 43.2**	**-1.0**
CBIJ				eSn	**Sn**	**12 55 14.4**	**-3.3**
JCJ	**Chichijima**	**8.27**	**185**	Pn	**Pn**	**12 53 44.1**	**-0.1**
	7.1nm,0.3s,baz=279,slow=22,SNR=9.3						
JCJ				Sn	Sn	12 55 11.6	-6.2
	12nm,0.3s,baz=74,slow=23,SNR=5.9						
KSRS	**Korea Array**	**12.38**	**284**	Pn	**Pn**	**12 54 41.6**	**+1.3**
	0.1nm,0.3s,baz=102,slow=15,SNR=6.2						
KSAR	**Wonju Array Be**	**12.41**	**284**	Pn	**Pn**	**12 54 41.6**	**+0.9**
KLR	**Kul'dur**	**16.16**	**332**	Pn	**Pn**	**12 55 27.2**	**-4.1**
	0.1nm,0.3s,baz=340,slow=15,SNR=3.5						
MA2	**Magadan**	**24.75**	**9**	P	**P**	**12 57 05.6**	**+0.1**
	1.6nm,0.5s,baz=197,slow=20,SNR=3.9						
YAK	**Yakutsk**	**28.00**	**347**	P	**P**	**12 57 34.1**	**-0.7**
	0.5nm,0.3s,baz=340,slow=24,SNR=3.0						
SEY	**Seymchan**	**28.20**	**9**	P	**P**	**12 57 37.3**	**+0.7**
	1.8nm,0.6s,baz=190,slow=6.6,SNR=11						
ENH	**Enshi**	**28.59**	**269**	eP	**P**	**12 57 40.5**	**0.0**
	10nm,1.1s						
SONM	**Songino Array**	**29.84**	**306**	P	**P**	**12 57 52.5**	**+1.0**
	2.3nm,1.0s,baz=96,slow=8.0,SNR=7.5						
SIJI	**Sorong**	**37.69**	**200**	LR	LR	13 13 26.5	
	comp=Z,84nm,19.1s,baz=21,slow=34						
ZALV	**Zalesovo Beam**	**44.03**	**314**	P	**P**	**12 59 51.9**	**+0.2**
	2.0nm,0.6s,baz=88,slow=6.3,SNR=10						
NRIK	**Noril'sk**	**45.34**	**336**	P	**P**	**13 00 02.4**	**+0.4**
	3.2nm,0.6s,baz=113,slow=4.5,SNR=3.6						
MKAR	**Makanchi Array**	**46.15**	**304**	P	**P**	**13 00 08.9**	**+0.2**
	1.2nm,0.6s,baz=88,slow=10.0,SNR=17						
KURK	**Kurchatov**	**48.02**	**310**	eP	**P**	**13 00 22.7**	**-0.5**
	7.2nm,0.8s						
BATI	**Baumata**	**48.89**	**206**	LR	LR	13 20 21.9	
	comp=Z,91nm,19.6s,baz=321,slow=35						
ILAR	**Eielson Array**	**50.20**	**32**	P	**P**	**13 00 40.4**	**+0.7**
	2.4nm,0.9s,baz=264,slow=6.4,SNR=20						
TKM2	**Tokmak 2**	**51.61**	**300**	eP	**P**	**13 00 51.6**	**+0.7**
	2.7nm,1.0s						
KKAR	**Karatay Array**	**55.13**	**302**	eP	**P**	**13 01 17.4**	**+0.8**
	0.5nm,0.4s						
INK	**Inuvik**	**55.27**	**27**	P	**P**	**13 01 18.1**	**+1.1**
	2.5nm,0.8s,baz=286,slow=4.5,SNR=15						
INK	**Inuvik**	**55.27**	**27**	eP	**P**	**13 01 18.2**	**+1.1**
	1.8nm,0.6s						
WRAB	**Tennant Creek**	**55.61**	**190**	eP	**P**	**13 01 20.4**	**+0.3**
	3.5nm,1.0s						
WRA	**Warramunga Arr**	**55.62**	**190**	P	**P**	**13 01 21.4**	**+1.3**
	2.1nm,0.9s,baz=8.7,slow=7.7,SNR=8.6						
ASAR	**Alice Springs**	**59.34**	**190**	P	**P**	**13 01 47.7**	**+1.3**
	0.6nm,0.8s,baz=15,slow=5.2,SNR=5.7						
ABKAR	**Akbulak array**	**60.04**	**311**	eP	**P**	**13 01 50.6**	**-0.4**
	1.0nm,0.6s						
RES	**Resolute Bay**	**63.88**	**15**	P	**P**	**13 02 17.2**	**+0.8**
	5.0nm,0.8s,baz=316,slow=6.6,SNR=27						
RES	**Resolute Bay**	**63.88**	**15**	eP	**P**	**13 02 16.6**	**+0.2**
	5.1nm,0.9s						
YKA	**Yellowknife Ar**	**64.58**	**30**	P	**P**	**13 02 21.8**	**+0.7**
	1.1nm,0.8s,baz=298,slow=6.4,SNR=20						
GEYT	**Alibeck**	**65.82**	**300**	P	**P**	**13 02 30.6**	**+0.9**
	0.7nm,0.5s,baz=20,slow=4.6,SNR=3.1						
FINES	**FINESS Array B**	**70.91**	**333**	P	**P**	**13 03 00.9**	**-0.2**
	1.4nm,0.7s,baz=46,slow=11,SNR=5.2						
NB2	**NORSAR Subarra**	**76.24**	**338**	P	**P**	**13 03 32.6**	**+0.1**
	comp=Z,0.9nm,0.6s,baz=40,slow=5.9						
NOA	**NORSAR Array B**	**76.24**	**338**	P	**P**	**13 03 32.9**	**+0.4**
	comp=Z,1.7nm,0.8s,baz=39,slow=5.7,SNR=4.9						
AKASG	**Malin Array Be**	**76.44**	**323**	P	**P**	**13 03 33.4**	**-0.3**
	comp=Z,1.1nm,0.5s,baz=47,slow=5.7,SNR=11						
PDAR	**Pinedale Array**	**77.88**	**46**	P	**P**	**13 03 42.5**	**+0.2**
	comp=Z,0.5nm,0.6s,baz=272,slow=2.5,SNR=6.8						
ULM	**Lac du Bonnet**	**80.15**	**34**	P	**P**	**13 03 52.9**	**-1.5**
	comp=Z,0.8nm,0.5s,baz=243,slow=2.3,SNR=3.8						
BRTR	**Keskin Array B**	**80.96**	**313**	P	**P**	**13 04 00.1**	**+1.0**
	comp=Z,1.0nm,0.8s,baz=80,slow=4.3,SNR=3.7						
CLL	**Collm**	**83.21**	**331**	iP	**P**	**13 04 11.1**	**+0.7**
ANMO	**Albuquerque**	**84.63**	**51**	P	**P**	**13 04 17.6**	**-0.6**
	comp=Z,0.2nm,0.3s,baz=17,slow=11,SNR=3.6						
GERES	**GERESS Array B**	**84.83**	**329**	P	**P**	**13 04 18.4**	**-0.5**
	comp=Z,0.5nm,0.6s,baz=46,slow=5.8,SNR=5.0						
TXAR	**Lajitas Array**	**90.06**	**53**	P	**P**	**13 04 44.9**	**+0.3**
	comp=Z,0.4nm,0.8s,baz=300,slow=3.4,SNR=4.7						
LPAZ	**La Paz**	**146.31**	**64**	PKPbc	**PKPab**	**13 11 27.5**	**+0.4**
	comp=Z,0.6nm,0.8s,baz=24,slow=4.8,SNR=4.4						

*NIED **03** 12:57:00, 37°.30N×141°.50E, h41km, Mw4.7 Best double couple: $M_0$1.26000×10[16] NP1:ϕ_s203.00000°, δ23.00000°, λ89.00000°. NP2:ϕ_s23.00000°, δ67.00000°, λ90.00000°.*
*IDC **03** 12:57:33.0±0.5, 37°.26N×141°.38E, h0km, mb4.5/30, mb1 4.6/31, mb1mx4.6/39, mbtmp4.5/31, ML5.1/1, MS3.8/18, Ms1 3.8/18, ms1mx3.5/63, Error ellipse: s-maj=13.7km s-min=12.0km az=122.0*
*BJI **03** 12:57:35.1, 37°.14N×141°.60E, h39km, mb4.9/63, mB5.0/40, Ms4.2/44, Ms7 4.1/40*
*MOS **03** 12:57:36.5±0.9, 37°.25N×141°.30E, h32km, mb5.1/51, Error ellipse: s-maj=9.1km s-min=5.0km az=111.1*
*ISCJB **03** 12:57:38.8±0.4, 37°.25N±0°.02×141°.38E±0°.03, h52km±2km, mb4.8/159, MS3.8/24, Error ellipse: s-maj=4.4km s-min=3.2km az=32.2*
*JMA **03** 12:57:39.2±0.1, 37°.26N×141°.40E, h48km±1km, M4.6*
JMA Felt IV J1.
*NEIC **03** 12:57:41.4±0.6, 37°.28N×141°.30E, h59km±5km, mb4.9/69, Error ellipse: s-maj=5.3km s-min=3.6km az=132.0*
NEIC Recorded [4 JMA] in Fukushima.
ISC 03 12:57:39.3±0.6**, 37°.25N**±0°.03×**141°.46E**±0°.04**, h45**km±4km**, h44**km**:pP-P, n365,** σ**1s.26**/387**, mb4.8**/159**, MS3.8**/25**, 12C-17D, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**0.48**	**284**	P	**Pn**	**12 57 49.4**	**-0.6**
JFK				S	**Sn**	**12 57 56.4**	**-1.2**
ONAJ	**Iwakimizuishiy**	**0.55**	**254**	P	**Pn**	**12 57 50.4**	**-0.5**
ONAJ				S	**Sn**	**12 57 58.2**	**-1.0**
JMM	**Marumori**	**0.81**	**319**	P	**Pn**	**12 57 53.6**	**-0.7**
JMM				S	**Sn**	**12 58 03.8**	**-1.4**
JFT	**Otama**	**0.93**	**287**	P	**Pn**	**12 57 56.1**	**+0.1**
JFT				S	**Sn**	**12 58 08.2**	**0.0**
JHO	**Hitachi**	**0.96**	**228**	P	**Pn**	**12 57 55.5**	**-0.8**
JHO				S	**Sn**	**12 58 07.1**	**-1.7**
JIO	**Ouri**	**1.20**	**356**	P	**Pn**	**12 57 59.2**	**-0.4**
JIO				S	**Sn**	**12 58 13.2**	**-1.6**
JOU	**Okura**	**1.28**	**331**	P	**Pn**	**12 58 00.4**	**-0.3**
JOU				S	**Sn**	**12 58 16.9**	**+0.2**
JFY	**Yanaizu**	**1.41**	**277**	P	**Pn**	**12 58 02.4**	**-0.1**
JFY				S	**Sn**	**12 58 20.0**	**+0.2**
JYS	**Shirataka**	**1.47**	**312**	P	**Pn**	**12 58 03.4**	**+0.1**
JYS				S	**Sn**	**12 58 22.3**	**+1.0**
MJAR	**Matsushiro Arr**	**2.70**	**256**	Pn	**Pn**	**12 58 20.5**	**+0.3**
	54nm,0.3s,baz=81,slow=16,SNR=247						
MJAR				Sn	**Sn**	**12 58 52.8**	**+1.1**
	50nm,0.3s,baz=77,slow=15,SNR=6.1						
MJAR				LR	LR	12 59 40.7	
	comp=Z,3µm,19.8s,baz=75,slow=49						
MAJO	**Matsushiro**	**2.70**	**256**	d iP	**Pn**	**12 58 21.1**	**+0.9**
MAJO	**Matsushiro**	**2.70**	**256**	ePn	**Pn**	**12 58 21.3**	**+1.0**

MAT Matsushiro 2.70 256 P Pn 12 58 21.3 +1.1
MAT S Sn 12 58 55.5 +3.8
INU Inuyama 4.06 243 *e*Pn **Pn 12 58 40.7 +1.9**
JHJ2 Mitsune 4.34 199 *e*Pn **Pn 12 58 43.6 +0.8**
JHJ Hachijo jima 2 4.35 199 Pn **Pn 12 58 43.7 +0.9**
118nm,0.3s,baz=325,slow=20,SNR=25
JHJ Sn **Sn 12 59 31.9 -0.4**
170nm,0.3s,baz=33,slow=23,SNR=9.3
ERM Erimo 4.93 15 *e*P **Pn 12 58 50.7 -0.1**
ERM Erimo 4.93 15 *e*Pn **Pn 12 58 52.8 +2.0**
ERM Erimo 4.93 15 *e*ScS **Pn 12 58 52.6 +1.8**
YUK Yuzh-Kuril'sk 7.55 25 *e*P Pn 12 59 22.6 -4.2
YUK pmax pmax
comp=E,38nm,0.3s
YUK pmax pmax
comp=Z,98nm,0.3s
YUK pmax pmax
comp=N,38nm,0.6s
SHO Shikotan 7.77 30 *e*P Pn 12 59 24.1 -5.6
SHO pmax pmax
comp=Z,34nm,0.5s
KUR Kuril'sk 9.32 29 *e*P **Pn 12 59 48.3 -2.6**
KUR *e*S Sn 13 01 28.5 -5.7
KUR pmax pmax
comp=N,19nm,0.5s
KUR pmax pmax
comp=E,17nm,0.5s
KUR pmax pmax
comp=Z,24nm,0.5s
JNU Nakatsue 9.59 248 Pn **Pn 12 59 56.4 +1.7**
comp=Z,1.3nm,0.3s,baz=74,slow=7.2,SNR=17
JNU LR LR 13 04 02.7
comp=Z,554nm,20.5s,baz=78,slow=41
JNU Nakatsue 9.59 248 *e*Pn **Pn 12 59 55.8 +1.0**
YSS Yuzh-Sakhalins 9.74 5⇑ *e*P **Pn 12 59 57.3 +0.6**
YSS pmax pmax
comp=Z,20nm,0.9s
YSS Yuzh-Sakhalins 9.74 5 *e*Pn **Pn 12 59 57.5 +0.8**
USRK Ussuriysk Ar. 9.98 317 Pn **Pn 13 00 01.3 +1.2**
comp=Z,1.9nm,0.3s,baz=131,slow=13,SNR=77
USRK LR LR 13 03 36.6
comp=Z,803nm,19.4s,baz=129,slow=37
CBIJ Chichi jima 10.15 176 *e*Pn **Pn 13 00 00.2 -2.2**
CBIJ Sn Sn 13 01 47.0 -7.8
JCJ Chichijima 10.15 176 Pn **Pn 13 00 00.1 -2.3**
comp=Z,15nm,0.3s,baz=277,slow=23,SNR=20
JCJ Sn Sn 13 01 47.0 -7.8
comp=Z,10nm,0.3s,baz=81,slow=24,SNR=5.5
KSRS Korea Array 10.78 275 Pn Pn 13 00 14.2 +3.3
comp=Z,0.9nm,0.3s,baz=88,slow=14,SNR=58
KSRS LR LR 13 04 13.6
comp=Z,645nm,18.4s,baz=89,slow=37
KS01 Wonju Array Si 10.80 275 *e*Pn Pn 13 00 14.7 +3.5
KS15 Wonju Array Si 10.81 275 *e*Pn Pn 13 00 14.9 +3.5
KSAR Wonju Array Be 10.81 275 P **Pn 13 00 14.3 +2.9**
KSAR Wonju Array Be 10.81 275 Pn **Pn 13 00 14.2 +2.9**
MDJ Mudanjiang 11.60 313 P **Pn 13 00 23.1 +1.0**
MDJ S **Sn 13 02 33.0 +2.9**
MDJ pmax pmax
comp=Z,6.0nm,0.5s
MDJ pmax pmax
comp=Z,43nm,3.2s
MDJ Mudanjiang 11.60 313 *e*Pn **Pn 13 00 23.9 +1.8**
HABR Khabarovsk 12.15 339 P Pn 13 00 25.1 -4.5
HABR *e*S Sn 13 02 37.3 -6.3
HABR MLR MLR
comp=Z,205nm,13.0s
TYV Tymovskoe 13.63 3 *e*P **Pn 13 00 51.5 +1.7**
TYV pmax pmax
comp=Z,6.0nm,0.6s
CN2 Changchun 13.81 303 *e*P **Pn 13 00 52.8 +0.4**
CN2 *ep*P P 13 00 59.9 +0.2
CN2 *e*S **Sn 13 03 24.8 +0.6**
CN2 pmax pmax
comp=Z,20nm,1.2s
CN2 LR LR
comp=Z,290nm,15.0s
CN2 LR LR
comp=Z,440nm,15.0s
CN2 LR LR
comp=Z,430nm,16.0s
KLR Kul'dur 13.89 333 Pn **Pn 13 00 54.7 +1.3**
comp=Z,0.5nm,0.3s,baz=142,slow=12,SNR=7.5
KLR LR LR 13 06 11.6
comp=Z,449nm,18.4s,baz=141,slow=37
SNY Shenyang 14.53 294 ⇓P **Pn 13 01 02.5 +0.5**
SNY sP P 13 01 14.5 +6.8
SNY pmax pmax
comp=Z,17nm,1.2s
SNY pmax pmax
comp=Z,190nm,3.5s
SNY LR LR
comp=Z,410nm,15.1s
SNY LR LR
comp=Z,760nm,18.6s
SNY LR LR
comp=Z,960nm,20.6s
JOW Kunigami 15.25 231 *e*Pn **Pn 13 01 11.7 +0.2**
comp=Z,25nm,1.1s
DL2 Dalian 15.71 282 P **Pn 13 01 17.9 +0.5**
DL2 S **Sn 13 04 09.4 -0.9**
DL2 pmax pmax
comp=Z,83nm,1.0s
NKL Nikolayevsk 15.91 358 *e*P **Pn 13 01 16.7 -3.1**
NKL pmax pmax
comp=Z,13nm,1.0s
NJ2 Nanjing 19.29 261 *e*P **P 13 01 59.1 -1.3**
NJ2 pmax pmax
comp=Z,14nm,0.6s
PETK Petropavlovsk- 19.48 30 LR LR 13 09 13.5
comp=Z,110nm,21.1s,baz=219,slow=36
TIA Tai'an 19.52 274 ⇓P **P 13 02 01.5 -1.4**
TIA pmax pmax
comp=Z,30nm,1.0s
HIA Hailar 19.78 314 *e*P **P 13 02 03.9 -1.7**
HIA pmax pmax
comp=Z,14nm,1.0s
HIA Hailar 19.78 314 *e*P **P 13 02 03.9 -1.7**
comp=Z,14nm,1.0s
PET Petropavlovsk 19.81 32 *e*P **Pn 13 02 08.1 +0.4**
PET *e*S **S 13 05 44.7 -1.7**
PET MLR MLR
comp=Z,200nm,18.0s
BJT Baijiatuau 19.93 286 *e*P **P 13 02 06.4 -0.9**
BJT pmax pmax
comp=Z,25nm,0.7s
BJT Baijiatuau 19.93 286 *e*P **P 13 02 06.4 -0.9**
comp=Z,25nm,0.7s
TATO Taipei 20.98 240 *e*P **P 13 02 17.9 -0.8**
comp=Z,681nm,2.0s
YHNB Yeheng 21.25 240 *e*P **P 13 02 20.8 -1.0**
comp=Z,234nm,1.9s
NACB Ninganchiao 21.43 238 *e*P **P 13 02 22.1 -1.5**
comp=Z,142nm,2.0s
SSLB Suanglung 22.12 238 *e*P **P 13 02 28.8 -2.3**
comp=Z,15nm,0.8s
YULB Yu-li 22.16 237 *e*P **P 13 02 27.8 -3.6**
comp=Z,15nm,1.0s
TPUB Ta-pu 22.67 238 *e*P **P 13 02 33.0 -3.9**
comp=Z,143nm,1.8s
TWG Pinlang 22.70 236 *e*P **P 13 02 35.9 -1.3**
comp=Z,517nm,1.6s
MA2 Magadan 23.13 12 P **P 13 02 41.2 0.0**
comp=Z,11nm,0.8s,baz=222,slow=8.0,SNR=28
MA2 LR LR 13 11 44.3
comp=Z,93nm,18.1s,baz=208,slow=37
WHN Wuhan 23.43 261 P **P 13 02 44.3 -0.1**
WHN pmax pmax
comp=Z,44nm,0.5s
HHC Hu-ho-hao-te 23.44 288 *e*P **P 13 02 43.3 -1.3**
HHC PP **PnPn 13 03 17.2 +4.9**
HHC S **S 13 06 50.4 -4.4**
HHC sS sS 13 07 09.7 -4.7
HHC pmax pmax
comp=Z,26nm,1.0s
HHC pmax pmax
comp=Z,130nm,6.2s
HHC LR LR
comp=Z,190nm,10.0s
HHC LR LR
comp=Z,180nm,10.1s
HHC LR LR
comp=Z,150nm,10.8s
GUMO Guam 23.76 172 LR LR 13 12 41.5
comp=Z,52nm,20.2s,baz=20,slow=38
YAK Yakutsk 25.86 347 P **P 13 03 05.5 -0.9**
comp=Z,1.3nm,0.4s,baz=345,slow=22,SNR=6.9
YAK LR LR 13 13 40.6
comp=Z,303nm,18.6s,baz=181,slow=37
YAK Yakutsk 25.86 347 *e*P **P 13 03 05.3 -1.1**
YAK *e* 13 06 33.8
YAK *e*S **S 13 07 31.0 -1.9**
YAK *e* 13 13 59.3
YAK pmax pmax
comp=Z,31nm,0.9s
YAK pmax pmax
comp=N,11nm,1.0s
YAK pmax pmax
comp=E,7.0nm,1.1s
YAK pmax pmax
comp=Z,35nm,1.5s
YAK smax smax
comp=N,67nm,2.2s
YAK smax smax
comp=E,39nm,2.6s
YAK MLR MLR
comp=Z,328nm,19.0s
YAK MLR MLR
comp=N,212nm,18.0s
YAK MLR MLR
comp=E,60nm,19.0s
YAK Yakutsk 25.86 347 *e*P **P 13 03 05.5 -0.9**
comp=E,32nm,0.6s
XAN Xi'an 26.56 273 P **P 13 03 12.2 -0.9**
XAN S **S 13 07 46.4 +1.8**
XAN pmax pmax
comp=E,23nm,0.6s
XAN LR LR
comp=E,160nm,20.1s
XAN LR LR
comp=E,190nm,16.8s
SEY Seymchan 26.57 11 P **P 13 03 13.2 +0.5**
comp=E,2.7nm,0.6s,baz=201,slow=8.6,SNR=16
SEY Seymchan 26.57 11 *e*P **P 13 03 13.5 +0.7**
ULN Ulaanbaatar 27.26 304 *e*P **P 13 03 18.5 -0.9**
ULN pmax pmax
comp=Z,14nm,0.7s
ULN Ulaanbaatar 27.26 304 *e*P **P 13 03 18.5 -0.9**
comp=Z,14nm,0.7s
BOD Bodaibo 27.36 328 *e*P **P 13 03 18.4 -1.6**
BOD pmax pmax
comp=Z,7.0nm,0.8s
ENH Enshi 27.39 265 *e*P **P 13 03 19.8 -0.8**
comp=Z,35nm,0.8s
SONA1 Songino Array 27.69 304 *e*P **P 13 03 22.7 -0.5**
SONM Songino Array 27.69 304 P **P 13 03 22.3 -1.0**
comp=Z,15nm,0.6s,baz=104,slow=8.0,SNR=104
SONM LR LR 13 14 37.8
comp=Z,180nm,18.7s,baz=114,slow=37
H11N2 WAKE ISLAND Hy 28.23 121 T T 13 33 37.9
baz=314,slow=75,SNR=506
H11N1 WAKE ISLAND Hy 28.24 121 T T 13 33 35.3
baz=314,slow=75,SNR=669
H11N3 WAKE ISLAND Hy 28.25 121 T T 13 33 44.7
baz=314,slow=75,SNR=632
H11S1 WAKE ISLAND Hy 28.95 123 T T 13 34 32.5
baz=315,slow=76,SNR=328
H11S3 WAKE ISLAND Hy 28.95 123 T T 13 34 33.4
baz=315,slow=76,SNR=309
H11S2 WAKE ISLAND Hy 28.96 123 T T 13 34 33.6
baz=315,slow=76,SNR=254
LZH Lanzhou 30.07 279 *e*P **P 13 03 44.1 -0.4**
LZH pP pP 13 03 52.0 -4.3
LZH sP sP 13 03 55.7 -5.9
LZH PP **PnPn 13 04 43.0 +0.4**
LZH *e*S **S 13 08 38.2 -1.7**
LZH sS sS 13 08 59.0 -0.8
LZH pmax pmax
comp=Z,32nm,1.1s
LZH pmax pmax
comp=Z,77nm,4.5s
LZH LR LR
comp=Z,380nm,13.5s
LZH LR LR
comp=Z,500nm,14.1s
LZH LR LR
comp=Z,690nm,14.7s
ZAK Zakamensk 30.16 308 *e*P **P 13 03 44.9 -0.2**
ZAK pmax pmax
comp=Z,12nm,1.0s
TLY Talaya 30.21 311 P **P 13 03 44.7 -0.7**
comp=Z,7.3nm,0.7s,baz=105,slow=8.4,SNR=7.7
TLY LR LR 13 16 20.0
comp=Z,218nm,19.8s,baz=107,slow=37
TLY Talaya 30.21 311 *e*P **P 13 03 45.7 +0.3**
TLY pmax pmax
comp=Z,16nm,1.1s
TLY MLR MLR
comp=Z,218nm,16.0s
GYA Guiyang 31.29 260⇓ *i*P **P 13 03 54.0 -1.3**
GYA pP sP 13 04 11.0 -1.5
GYA PP **PnPn 13 05 00.1 +1.4**
GYA PcP **PcP 13 06 51.4 +2.6**
GYA S **S 13 08 59.5 +0.3**
GYA sS sS 13 09 16.3 -2.8
GYA ScP **ScP 13 10 30.0 +1.9**
GYA SS **SnSn 13 10 45.8 +0.7**
GYA ScS **ScS 13 14 25.5 -0.3**
GYA pmax pmax
comp=Z,50nm,0.9s
GYA pmax pmax
comp=Z,130nm,6.4s
GYA LR LR
comp=Z,620nm,18.2s
GYA LR LR
comp=Z,560nm,17.9s
GYA LR LR
comp=Z,570nm,17.8s
CD2 Chengdu 31.71 270 P **P 13 03 57.1 -1.8**
CD2 pP pP 13 04 07.1 -3.7
CD2 PP **PP 13 05 08.8 -2.1**
CD2 PcP **PcP 13 06 48.8 -0.9**
CD2 S **S 13 09 04.2 -1.3**
CD2 sS sS 13 09 21.3 -4.1
CD2 pmax pmax
comp=Z,30nm,0.9s
CD2 pmax pmax
comp=Z,150nm,4.5s
CD2 LR LR
comp=Z,310nm,10.2s
CD2 LR LR
comp=Z,270nm,16.8s
MOY Mondy 31.82 310 *e*P **P 13 03 59.4 -0.3**
MOY pmax pmax
comp=Z,10.0nm,1.6s
GTA Gaotai 32.53 287 *e*P **P 13 04 04.4 -1.7**
GTA pP pP 13 04 14.8 -3.2
GTA sP sP 13 04 18.9 -4.4
GTA PcP **PcP 13 06 52.8 +0.9**
GTA S **S 13 09 15.3 -3.1**
GTA ScP **ScP 13 10 31.9 -0.2**
GTA SS **SnSn 13 11 11.7 -3.2**
GTA pmax pmax
comp=Z,6.0nm,1.0s
GTA pmax pmax
comp=Z,130nm,4.5s
GTA LR LR
comp=Z,140nm,18.1s
GTA LR LR
comp=Z,170nm,16.6s
GTA LR LR
comp=Z,230nm,20.4s
QIZ Qiongzhong 33.05 245 P **P 13 04 11.5 +0.9**
QIZ S **S 13 09 28.7 +2.2**
QIZ pmax pmax
comp=Z,7.0nm,0.9s
QIZ LR LR
comp=Z,130nm,21.5s
QIZ LR LR
comp=Z,130nm,19.3s
BILL Bilibino 33.81 16⇓ *e*P **P 13 04 16.5 -0.1**
BILL *ep*PPP PPP 13 05 37.1
BILL pmax pmax
comp=Z,6.0nm,1.2s
BILL MLR MLR
comp=Z,68nm,15.0s
BILL Bilibino 33.81 16 *e*P **P 13 04 16.6 -0.1**
comp=Z,6.5nm,1.1s
KMI Kunming 35.03 261 P **P 13 04 27.7 -0.3**
KMI pP pP 13 04 37.4 -2.6
KMI sP sP 13 04 42.9 -2.4
KMI S **S 13 09 53.7 -3.7**
KMI pmax pmax
comp=Z,52nm,0.9s
KMI pmax pmax
comp=Z,40nm,3.3s
KMI LR LR
comp=Z,170nm,22.7s
KMI LR LR
comp=Z,220nm,23.8s
KMI LR LR
comp=Z,290nm,24.2s
TIXI Tiksi 35.08 353 *ce*P **P 13 04 27.4 -0.2**
TIXI pmax pmax
comp=Z,4.0nm,1.0s
TIXI Tiksi 35.08 353 *e*P **P 13 04 26.7 -0.9**
comp=Z,7.2nm,1.2s
KRAR Krasnoyarsk 37.33 316 *e*P **P 13 04 45.9 -1.1**
KRAR pmax pmax
comp=Z,20nm,0.5s
PANO Nakornpanom 38.08 248 P **P 13 04 54.3 +0.5**
comp=Z,19nm,0.9s
MYLDM Lahad Datu 38.20 219 *e*P **P 13 04 57.7 +2.9**
comp=Z,32nm,1.0s
NONG Nongkai 38.61 251 P **P 13 04 58.4 +0.1**
comp=Z,50nm,0.7s
UBPT Khong Chiam 38.65 245 P **P 13 04 59.5 +0.9**
comp=Z,50nm,1.1s
CRAI Chiangrai 39.47 256 P **P 13 05 05.6 +0.1**
comp=Z,18nm,1.2s
KHON Khomkaen 39.92 249 P **P 13 05 09.5 +0.3**
comp=Z,13nm,0.8s,comp=Z,564nm
LOEI Loei 40.37 252 P **P 13 05 09.9 -3.1**
comp=Z,22nm,0.8s,comp=Z,6μm
PHRA Phrae 40.57 254 P **P 13 05 14.6 0.0**
comp=Z,588nm,1.1s,comp=Z,18μm
CMAI Chiengmai2 40.67 257 P **P 13 05 15.7 +0.1**
comp=Z,14nm,0.9s
UTTA Uttaradit 40.77 253 P **P 13 05 16.4 +0.2**
comp=Z,4.7nm,0.9s
WMQ Urumqi 40.77 297 P **P 13 05 17.1 +1.0**
WMQ pP pP 13 05 26.8 -1.4
WMQ PP **PnPn 13 06 56.7 +1.8**
WMQ S **S 13 11 20.4 -3.3**
WMQ pmax pmax
comp=Z,30nm,0.8s
WMQ pmax pmax
comp=Z,82nm,4.0s
WMQ LR LR
comp=Z,64nm,29.0s
WMQ LR LR
comp=Z,52nm,19.8s
WMQ LR LR
comp=Z,84nm,28.2s
FALS False Pass 40.92 46 *e*P **P 13 05 19.9 +2.9**
comp=Z,648nm,0.9s
LAMP Lampang 41.02 255 P **P 13 05 19.5 +1.2**
comp=Z,6.2nm,0.9s
PBKT Sadao Pong 41.17 251 P **P 13 05 19.4 -0.1**
comp=Z,18nm,0.9s,comp=Z,964nm
CMMT Chiang Mai 41.38 256 P **P 13 05 20.9 -0.4**
comp=Z,7.1nm,1.2s
CHTO Chiang Mai 41.38 256 P **P 13 05 21.0 -0.3**
comp=Z,32nm,1.3s
CHTO Chiang Mai 41.38 256 *e*P **P 13 05 21.3 0.0**
CHTO pmax pmax
comp=Z,5.0nm,0.7s
CHTO Chiang Mai 41.38 256 *e*P **P 13 05 21.3 0.0**
comp=Z,4.7nm,0.7s
CMAR Chiang Mai Arr 41.59 255 P **P 13 05 23.2 +0.2**
comp=Z,6.8nm,0.8s,baz=48,slow=5.3,SNR=33
CMAR PcP **PcP 13 07 20.6 +1.1**
comp=Z,2.0nm,0.9s,baz=24,slow=2.6,SNR=8.1
CMAR LR LR 13 23 40.0
comp=Z,132nm,18.8s,baz=77,slow=38
CM01 Chiang Mai Arr 41.60 255 *e*P **P 13 05 22.8 -0.2**
SUKH Sukhothai 41.63 253 P **P 13 05 23.6 +0.3**
comp=Z,6.7nm,0.8s
ZAA0 Zalesovo Array 41.79 312 *e*P **P 13 05 24.7 +0.5**
ZALV Zalesovo Beam 41.79 312 P **P 13 05 24.1 -0.1**
comp=Z,39nm,0.7s,baz=92,slow=6.7,SNR=175
ZALV PcP **PcP 13 07 18.9 -0.7**
comp=Z,2.5nm,0.8s,baz=81,slow=3.6,SNR=4.1
ZALV LR LR 13 23 26.9
comp=Z,208nm,18.3s,baz=68,slow=37
SRAK Srakaew 41.98 247 P **P 13 05 23.1 -3.1**
comp=Z,67nm,0.8s,comp=Z,581nm
LSA Lhasa 42.23 275 *e*P **P 13 05 30.3 +1.7**
LSA pmax pmax
comp=Z,16nm,1.1s
LSA Lhasa 42.23 275 *e*P **P 13 05 30.3 +1.7**
comp=Z,16nm,1.1s
NAYO Nakonayok 42.32 248 P **P 13 05 29.5 +0.6**
comp=Z,9.5nm,1.0s
MHMT Maesarieng 42.53 256 P **P 13 05 31.3 +0.7**
comp=Z,11nm,0.9s
CHBT CHBT 42.60 245 P **P 13 05 32.2 +1.0**
comp=Z,26nm,0.8s,comp=Z,2μm
NVS Novosibirsk 42.72 314⇑ *i*P **P 13 05 31.9 +0.2**
NVS pmax pmax
comp=Z,41nm,1.1s
NVS pmax pmax
comp=N,9.0nm,1.4s
NVS pmax pmax
comp=E,35nm,1.4s
UTHA Uthaitani 42.94 251 P **P 13 05 34.5 +0.5**
comp=E,4.4nm,0.9s
UMPA Umpang Tak 42.99 253 P **P 13 05 35.9 +1.5**
comp=E,8.7nm,0.9s,comp=E,999nm
SRDT SRDT 43.94 250 P **P 13 05 43.1 +1.1**
comp=E,32nm,1.0s
MK01 Makanchi Array 44.03 302 *e*P **P 13 05 42.0 -0.5**
MK31 Makanchi Array 44.03 302 *e*P **P 13 05 42.6 +0.1**
MK31 Makanchi Array 44.03 302 *e*P **P 13 05 42.6 +0.1**
MKAR Makanchi Array 44.03 302 P **P 13 05 42.2 -0.3**
comp=E,13nm,0.7s,baz=84,slow=9.8,SNR=88
MKAR LR LR 13 24 37.2
comp=E,80nm,21.4s,baz=102,slow=37
MKAR Makanchi Array 44.03 302 *e*P **P 13 05 42.6 +0.1**
MKAR Makanchi Array 44.03 302 *e*P **P 13 05 42.6 +0.1**
KHLT Khaolaem Dam 44.06 251 P **P 13 05 44.2 +1.2**
comp=E,6.9nm,1.2s
MAKZ Makanchi 44.24 302 *e*P **P 13 05 44.0 -0.2**
MAKZ pmax pmax
comp=Z,14nm,0.7s
MAKZ Makanchi 44.24 302 *e*P **P 13 05 44.0 -0.2**
comp=Z,14nm,0.7s
PHET Kaeng Krachan 44.48 248 P **P 13 05 47.1 +0.8**
comp=Z,22nm,0.7s,comp=Z,162nm
KSM Kuching 45.73 226 *e*P **P 13 05 57.2 +1.0**
comp=Z,15nm,1.0s
KURK Kurchatov 45.83 308 *e*P **P 13 05 56.0 -0.6**
KURK pmax pmax
comp=Z,63nm,0.7s
KURK Kurchatov 45.83 308 *e*P **P 13 05 56.0 -0.6**
comp=Z,63nm,0.7s
TAPN Taplejung 45.96 274 *e*P **P 13 05 58.4 0.0**
comp=Z,20nm,0.4s
STKI Sintang 46.23 224 P **P 13 06 03.0 +2.9**
comp=Z,21nm,0.7s
ODAN Odare 46.44 273 *e*P **P 13 06 02.0 0.0**
comp=Z,49nm,0.9s
KAPI Kappang 46.67 210 LR LR 13 25 33.5
comp=Z,50nm,18.8s,baz=30,slow=36
PDGK Podgornoye 46.71 298 P **P 13 06 03.2 -0.4**
PDGK pmax pmax
comp=Z,17nm,0.8s
RAMN Ramite 47.02 274 *e*P **P 13 06 06.6 -0.1**
comp=Z,112nm,0.8s
GUN Gumba 47.17 275 *e*P **P 13 06 08.1 +0.2**
comp=Z,57nm,0.4s
SKLT Songkhla 47.64 241 P **P 13 06 12.6 +1.4**
comp=Z,33nm,0.9s
KKN Kakani 47.70 276 *e*P **P 13 06 11.8 -0.1**
comp=Z,44nm,0.6s
PKIN Phulchoki 47.70 275 *e*P **P 13 06 12.1 +0.2**
comp=Z,17nm,0.6s
SURT Suratani 47.71 245 P **P 13 06 12.3 +0.6**
comp=Z,8.1nm,1.0s
TRTT Trang 47.83 243 P **P 13 06 13.6 +0.9**
comp=Z,17nm,1.0s
DMN Daman 47.92 276 *e*P **P 13 06 13.6 0.0**
comp=Z,26nm,0.7s
KRAB Krabi 47.92 244 P **P 13 06 14.0 +0.6**
comp=Z,63nm,0.6s,comp=Z,478nm
GKN Gorkha 48.12 276 *e*P **P 13 06 14.9 -0.1**
comp=Z,198nm,1.1s
MDM Murphy Dome 48.71 32 *e*P **P 13 06 20.8 +1.9**
comp=Z,27nm,1.4s

PKDT **Phuket** 48.76 244 P P 13 06 20.6 +0.7
comp=Z,59nm,0.9s,comp=Z,26µm
KULM **Kulim** 48.96 240 eP P 13 06 22.1 +0.7
comp=Z,26nm,1.3s
KOLN **Koldanda** 49.04 277 eP P 13 06 22.3 +0.1
comp=Z,61nm,0.9s
IPM **Ipoh** 49.29 239 eP P 13 06 23.6 -0.3
comp=Z,20nm,1.0s
IL1 **Eielson Array** 49.29 32 eP P 13 06 23.4 +0.1
ILAR **Eielson Array** 49.29 32 P P 13 06 24.0 +0.7
comp=Z,4.8nm,0.8s,baz=271,slow=6.5,SNR=47
ILB **Eielson Array** 49.29 32 eP P 13 06 24.1 +0.7
PYUN **Piuthan** 49.38 277 eP P 13 06 24.8 0.0
comp=Z,191nm,0.9s
TKM2 **Tokmak 2** 49.56 298 eP P 13 06 26.4 +0.4
TKM2 pmax pmax
comp=Z,23nm,0.8s
TKM2 **Tokmak 2** 49.56 298 eP P 13 06 26.4 +0.4
comp=Z,23nm,0.8s
VOSK **Vostochnaya** 50.16 312 eP P 13 06 29.5 -0.6
VOSK pmax pmax
comp=Z,32nm,0.8s
VOSK **Vostochnaya** 50.16 312 eP P 13 06 29.5 -0.6
comp=Z,32nm,0.8s
CHKZ **Chkalovo** 50.19 313 P P 13 06 29.4 -0.9
CHKZ pmax pmax
comp=Z,21nm,1.1s
OTUK **Ortayu** 50.33 306 P P 13 06 31.0 -0.5
OTUK pmax pmax
comp=Z,32nm,0.9s
KSH **Kashi** 50.35 294 P P 13 06 36.1 +4.2
KSH epP pP 13 06 46.1 +1.8
KSH esP sP 13 06 49.8 +0.3
KSH ePP PP 13 08 34.7 +7.2
KSH S **S** **13 13 47.4 +5.6**
KSH SS **SS** **13 17 19.5 +3.9**
KSH pmax pmax
comp=Z,110nm,6.0s
KSH LR LR
comp=Z,150nm,6.5s
KSH LR LR
comp=Z,130nm,10.4s
KSH LR LR
comp=Z,280nm,14.8s
AAK **Ala-Archa** 50.42 298 LR LR 13 29 08.8
comp=Z,315nm,19.9s,baz=64,slow=38
AAK **Ala-Archa** 50.42 298 eP P 13 06 32.5 +0.1
AAK pmax pmax
comp=Z,9.0nm,0.6s
AAK **Ala-Archa** 50.42 298 eP P 13 06 32.5 +0.1
comp=Z,9.1nm,0.6s
BVAR **Borovoye Array** 50.45 312 LR LR 13 28 47.5
comp=Z,267nm,20.7s,baz=73,slow=37
BRVK **Borovoye** 50.51 312 ceP P 13 06 32.7 0.0
BRVK pmax pmax
comp=Z,17nm,0.7s
BRVK **Borovoye** 50.51 312 eP P 13 06 33.2 +0.5
comp=Z,18nm,0.8s
DOT **Dot Lake** 50.60 34 eP P 13 06 34.6 +1.3
comp=Z,68nm,1.7s
EKS2 **Erkin-Say** 50.91 298 eP P 13 06 36.3 +0.2
EKS2 pmax pmax
comp=Z,8.0nm,0.8s
EKS2 **Erkin-Say** 50.91 298 eP P 13 06 36.2 +0.2
comp=Z,8.2nm,0.8s
PSI **Prapat** 51.94 239 eP P 13 06 44.1 +0.1
PSI pmax pmax
comp=Z,15nm,0.8s
PSI **Prapat** 51.94 239 eP P 13 06 44.1 +0.1
comp=Z,15nm,0.8s
SFK **Sufi-Kurgan** 51.97 295 P P 13 06 44.1 -0.1
SFK pmax pmax
comp=Z,33nm,1.2s
KCSI **Kotacane, Aceh** 52.22 241 P P 13 06 44.5 -1.5
comp=Z,14nm,0.8s
KK31 **Karatay Array** 53.05 300 P P 13 06 51.4 -0.4
KK31 pmax pmax
comp=Z,28nm,1.1s
KKAR **Karatay Array** 53.05 300 eP P 13 06 51.0 -0.9
KKAR **Karatay Array** 53.05 300 eP P 13 06 51.0 -0.9
GSI **Gunungsitoli** 53.94 239 P P 13 06 58.9 +0.2
comp=Z,121nm,1.0s
GSI **Gunungsitoli** 53.94 239 eP P 13 06 58.8 +0.1
comp=Z,63nm,0.6s
LHSI **Lahat** 53.99 229 P P 13 07 00.0 +1.1
comp=Z,38nm,1.2s
MDSI **Maura Dua** 54.12 228 P P 13 06 59.3 -0.6
INK **Inuvik** 54.18 27 P P 13 07 00.6 +1.0
comp=Z,5.1nm,0.9s,baz=280,slow=7.4,SNR=15
SVE **Sverdlovsk** 55.01 319⇑ eP P 13 07 06.4 +0.5
SVE pmax pmax
comp=Z,42nm,0.9s
ARU **Arti** 56.22 318 c iP P 13 07 13.9 -0.7
ARU 13 08 12.6
ARU 13 09 17.3
ARU S **S** **13 15 01.7 +0.9**
ARU pmax pmax
comp=Z,40nm,0.8s
ARU **Arti** 56.22 318 eP P 13 07 14.3 -0.3
comp=Z,45nm,1.0s
WB2 **Warramunga Arr** 57.28 188 eP P 13 07 22.5 +0.1
comp=Z,34nm,1.6s
WRA **Warramunga Arr** 57.28 188 P P 13 07 22.4 -0.1
comp=Z,4.9nm,0.7s,baz=6.2,slow=7.3,SNR=49
KBL **Kabul** 57.37 291 eP P 13 07 23.0 -0.4
KBL pmax pmax
comp=Z,27nm,1.0s
KBL **Kabul** 57.37 291 eP P 13 07 23.0 -0.4
comp=Z,27nm,1.0s
AB31 **Akbulak array** 57.83 310 iP P 13 07 25.4 -0.6
AB31 pmax pmax
comp=Z,18nm,0.9s
ABKAR **Akbulak array** 57.83 310 eP P 13 07 25.4 -0.7
DLBC **Dease Lake** 58.43 38 P P 13 07 28.9 -1.3
comp=Z,3.1nm,0.9s,baz=152,slow=14,SNR=2.3
AS01 **Alice Springs** 61.00 188 eP P 13 07 47.9 -0.3
AS31 **Alice Springs** 61.01 188 eP P 13 07 48.2 0.0
comp=Z,1.7nm,0.6s
ASAR **Alice Springs** 61.01 188 P P 13 07 47.9 -0.4
comp=Z,2.8nm,0.8s,baz=10,slow=6.5,SNR=27
POO **Poona** 61.40 272 eP P 13 07 49.0 -2.1
RES **Resolute Bay** 62.38 14 P P 13 07 57.1 +0.2
comp=Z,5.1nm,1.0s,baz=314,slow=6.9,SNR=15
RES **Resolute Bay** 62.38 14 eP P 13 07 57.0 +0.2
RES pmax pmax
comp=Z,6.0nm,1.0s
RES **Resolute Bay** 62.38 14 eP P 13 07 57.0 +0.2
comp=Z,6.1nm,1.0s
YKW3 **Yellowknife Ar** 63.56 30 eP P 13 08 05.5 +0.7
comp=Z,20nm,1.8s
KLMR **Klimovskoe** 63.59 328 eP P 13 08 01.2 -3.9
KLMR pmax pmax
comp=Z,23nm,1.1s
YKA **Yellowknife Ar** 63.60 30 P P 13 08 04.9 -0.1
comp=Z,1.5nm,0.7s,baz=300,slow=6.6,SNR=16
GEYT **Alibeck** 63.76 299 P P 13 08 05.9 -0.8
comp=Z,14nm,0.9s,baz=40,slow=2.5,SNR=28
ARCES **ARCESS Array B** 63.80 339 P P 13 08 06.3 0.0
comp=Z,5.0nm,0.8s,baz=53,slow=8.6,SNR=11
DAG **Danmarks Havn** 65.56 355 iP P 13 08 17.3 -0.4
comp=Z,7.9nm,0.8s
DAG **Danmarks Havn** 65.56 355 iP P 13 08 17.3 -0.4
DAG pmax pmax
comp=Z,6.0nm,0.8s
AFI **Afiamalu** 67.25 130 LR LR 13 33 13.7
comp=Z,51nm,21.4s,baz=50,slow=32
VRH **Novokhopyorsk** 67.44 318 eP P 13 08 28.6 -1.5
VRH pmax pmax
comp=Z,10.0nm,0.9s
OBN **Obninsk** 67.94 323⇓ eP P 13 08 33.0 -0.1
OBN e 13 08 43.5
OBN e 13 08 55.6
OBN e 13 10 59.4
OBN pmax pmax
comp=Z,34nm,2.5s
OBN MLR MLR
comp=Z,62nm,15.0s
LON **Longmire** 68.08 47 eP P 13 08 35.2 +0.9
LON pmax pmax
comp=Z,20nm,1.7s
LON **Longmire** 68.08 47 eP P 13 08 35.2 +0.9
comp=Z,20nm,1.7s
LPSR **Galich'ya Gora** 68.16 320 eP P 13 08 35.9 +1.3
LPSR pmax pmax
comp=Z,9.0nm,0.8s
FIA1 **FINESS Array S** 68.64 332 eP P 13 08 37.3 -0.1
FINES **FINESS Array B** 68.64 332 P P 13 08 37.2 -0.2
comp=Z,5.2nm,0.7s,baz=42,slow=8.6,SNR=17
STKA **Stephens Creek** 68.77 180 P P 13 08 39.2 +0.7
comp=Z,3.7nm,0.8s,baz=339,slow=5.9,SNR=6.5
VSR **Storozhevoye** 68.79 319 eP P 13 08 37.6 -0.9
VSR pmax pmax
comp=Z,7.0nm,0.5s
NEW **Newport** 69.95 44 P P 13 08 46.6 +0.7
comp=Z,2.1nm,0.9s,baz=223,slow=5.9,SNR=3.7
YBH **Yreka Blue Hor** 70.18 52 P P 13 08 47.4 -0.1
comp=Z,1.4nm,0.9s,baz=162,slow=3.2,SNR=2.6
SUMG **Summit** 70.47 360 iP P 13 08 49.7 +0.7
comp=Z,11nm,1.1s
SUMG **Summit** 70.47 360 iP P 13 08 49.7 +0.7
SUMG pmax pmax
comp=Z,11nm,1.1s
SUMG **Summit** 70.47 360 eP P 13 08 49.6 +0.7
comp=Z,12nm,1.1s
ZEI **Tsey** 70.69 309 eP P 13 08 49.1 -1.6
ZEI pmax pmax
comp=Z,8.0nm,0.7s
KBZ **Khabaz** 70.79 311 P P 13 08 51.4 +0.4
comp=Z,8.3nm,0.9s,baz=97,slow=3.3,SNR=8.8
KIV **Kislovodsk** 70.79 311 P P 13 08 51.5 +0.3
KIV **Kislovodsk** 70.79 311 eP P 13 08 51.6 +0.5
KIV pmax pmax
comp=Z,22nm,0.9s
KIV MLR MLR
comp=Z,63nm,17.0s
KIV **Kislovodsk** 70.79 311 eP P 13 08 50.5 -0.7
comp=Z,22nm,0.9s
NEY **Neytrino** 71.16 310 eP P 13 08 53.4 -0.1
NEY pmax pmax
comp=Z,1.0nm,0.8s
BANOM **Banah** 71.17 289 iP P 13 08 53.7 +0.1
SNR=8.2
WALA **Waterton Lakes** 71.25 42 eP P 13 08 55.2 +1.4
comp=Z,12nm,1.1s
GNI **Garni** 71.60 307 eP P 13 08 56.0 -0.2
GNI pmax pmax
comp=Z,32nm,0.9s
AKH **Akhalkalaki** 71.70 308⇑ iP P 13 08 57.9 +1.1
UOSS **Minazif** 71.78 288 eP P 13 08 57.1 -0.2
comp=Z,0.9nm,0.8s
HATD **Hatta, Dubai** 71.90 288 iP P 13 08 58.0 0.0
SNR=8.1
SCO **Scoresbysund** 71.90 354 iP P 13 08 57.8 +0.6
comp=Z,4.4nm,1.1s
SCO **Scoresbysund** 71.90 354 iP P 13 08 57.8 +0.6
SCO pmax pmax
comp=Z,4.0nm,1.1s
ASHO **Ashiyiah** 72.03 288 iP P 13 08 58.7 -0.2
SNR=8.1
NACGM **Naroch** 72.56 327 e P 13 09 14.0 +13
ASUD **Al Ashush, Dub** 72.61 288 P P 13 09 02.3 0.0
FFC **Flin Flon** 73.50 33 eP P 13 09 07.9 +0.9
FFC pmax pmax
comp=Z,10.0nm,1.0s
FFC **Flin Flon** 73.50 33 eP P 13 09 07.9 +0.9
comp=Z,10nm,1.0s
FCC **Fort Churchill** 73.79 27 eP P 13 09 09.1 +0.5
FCC pmax pmax
comp=Z,13nm,1.0s
FCC **Fort Churchill** 73.79 27 eP P 13 09 09.1 +0.5
comp=Z,13nm,1.0s
NC204 **NORSAR Array S** 73.95 338 eP P 13 09 10.6 +0.9
NB2 **NORSAR Subarra** 74.00 337 P P 13 09 09.2 -0.7
comp=Z,5.2nm,0.8s,baz=39,slow=6.2
NOA **NORSAR Array B** 74.00 337 P P 13 09 09.6 -0.3
comp=Z,4.4nm,0.8s,baz=39,slow=5.9,SNR=11
AKASG **Malin Array Ba** 74.15 322 P P 13 09 10.2 -0.6
comp=Z,3.4nm,0.3s,baz=46,slow=6.0,SNR=38
AKBB **Malin Array Si** 74.15 322 eP P 13 09 10.7 -0.1
AKBB pmax pmax
comp=Z,10.0nm,0.7s
AKBB **Malin Array Si** 74.15 322 eP P 13 09 10.7 -0.1
comp=Z,9.5nm,0.7s
KIEV **Kiev** 74.16 322⇓ iP P 13 09 10.5 -0.4
KIEV pmax pmax
comp=Z,11nm,1.0s
KIEV **Kiev** 74.16 322 eP P 13 09 10.2 -0.7
comp=Z,9.4nm,0.7s
DLMT **Dillon** 74.16 45 eP P 13 09 13.4 +2.2
comp=Z,14nm,1.0s
AK11 **Malin Array Si** 74.19 322 eP P 13 09 10.3 -0.8
BOZ **Bozeman (W)** 74.53 44 eP P 13 09 15.0 +1.6
BOZ pmax pmax
comp=Z,10.0nm,1.0s
BOZ **Bozeman (W)** 74.53 44 eP P 13 09 15.0 +1.6
comp=Z,9.9nm,1.0s
NV01 **Mina Array Sit** 74.83 53 eP P 13 09 16.7 +1.4
NVAR **Mina Array Bea** 74.83 53 P P 13 09 17.1 +1.7
comp=Z,2.4nm,0.9s,baz=283,slow=6.0,SNR=8.9
H17A **Grant Village** 75.89 45 eP P 13 09 24.8 +3.4
comp=Z,19nm,1.0s
IMW **Indian Meadow** 75.99 45 eP P 13 09 24.4 +2.4
comp=Z,16nm,1.1s
MOOW **Moose Ponds** 76.19 45 eP P 13 09 25.2 +2.2
comp=Z,9.9nm,1.1s
R11A **Troy Canyon, C** 76.60 52 eP P 13 09 27.1 +1.7
comp=Z,8.7nm,1.0s
BW06 **Boulder Array** 77.49 46 eP P 13 09 31.4 +1.0
comp=Z,4.9nm,1.0s
PD31 **Pinedale Array** 77.49 46 eP P 13 09 31.8 +1.4
PDAR **Pinedale Array** 77.49 46 P P 13 09 31.2 +0.9
comp=Z,1.6nm,0.8s,baz=273,slow=2.1,SNR=14
BURAR **Bucovina Array** 78.16 322⇓ iP P 13 09 34.1 +0.2
VRI **Vrincioaia** 78.58 320⇓ iP P 13 09 37.4 +1.3
KOLS **Kolonicke sedl** 78.67 324 eP P 13 09 36.8 +0.3
KOLS **Kolonicke sedl** 78.67 324 eP P 13 09 36.8 +0.3
BR131 **Keskin Array S** 78.73 312 eP P 13 09 37.4 +0.2
BRTR **Keskin Array B** 78.73 312 P P 13 09 37.2 0.0
comp=Z,2.6nm,0.8s,baz=113,slow=3.2,SNR=8.8
STHS **Stebnicka Huta** 78.80 325 eP P 13 09 37.8 +0.5
STHS e 13 09 51.0
STHS pmax pmax
comp=Z,5.0nm,0.8s
STHS **Stebnicka Huta** 78.80 325 eP P 13 09 37.8 +0.5
STHS e 13 09 51.0
UZH **Uzhgorod** 78.87 324 eP P 13 09 39.0 +1.4
OJC **Ojcow** 78.88 326 eP P 13 09 37.3 -0.3
OJC pmax pmax
comp=Z,22nm,1.2s
OJC **Ojcow** 78.88 326 eP P 13 09 37.3 -0.3
comp=Z,22nm,1.2s
PFO **Pinyon Flats O** 78.89 56 eP P 13 09 35.8 -2.3
PFO **Pinyon Flats O** 78.89 56 eP P 13 09 35.8 -2.3
BR231 **Keskin MP Arra** 79.17 312 eP P 13 09 37.9 -1.7
MSAB **Monastry St. A** 79.20 318⇑ iP P 13 09 40.6 +1.1
DOPR **Dopca** 79.20 320⇓ iP P 13 09 40.8 +1.3
MLR **Muntele Rosu** 79.24 320⇓ iP P 13 09 40.7 +0.8
ULM **Lac du Bonnet** 79.30 33 P P 13 09 39.8 -0.2
comp=Z,3.2nm,0.9s,baz=314,slow=8.5,SNR=5.4
VOIR 79.74 320⇑ iP P 13 09 43.3 +0.8
LANS **Liptovska Anna** 79.80 326 eP P 13 09 43.8 +1.1
LANS e 13 09 56.6
LANS **Liptovska Anna** 79.80 326 eP P 13 09 43.8 +1.1
LANS e 13 09 56.6
KECS **Kecovo** 79.82 325 eP P 13 09 46.9 +4.1
KECS e 13 09 56.6
KECS pmax pmax
comp=Z,2.0nm,0.8s
KECS **Kecovo** 79.82 325 eP P 13 09 46.9 +4.1
KECS e 13 09 56.6
DRGR 79.96 322⇑ iP P 13 09 43.6 -0.1
ARR **Arges** 80.00 320⇓ iP P 13 09 45.4 +1.5
MORC **Moravsky Berou** 80.19 327 eP P 13 09 45.5 +0.6
MORC pmax pmax
comp=Z,28nm,0.9s
MORC **Moravsky Berou** 80.19 327 eP P 13 09 45.5 +0.6
comp=Z,28nm,0.9s
DPC **Dobruska-Polom** 80.29 328 eP P 13 09 46.0 +0.6
DPC epP pP 13 09 59.7 +1.2
DPC **Dobruska-Polom** 80.29 328 eP P 13 09 46.0 +0.6
DPC e 13 09 59.7
LOT **Lotru** 80.38 321⇓ iP P 13 09 46.3 +0.3
PSZ **Piszkesteto** 80.50 324 eP P 13 09 47.3 +0.7
PSZ pmax pmax
comp=Z,13nm,1.1s
PSZ **Piszkesteto** 80.50 324 eP P 13 09 47.3 +0.7
comp=Z,12nm,1.1s
VYHS **Vyhne** 80.56 325 eP P 13 09 47.3 +0.4
VYHS e 13 10 00.2
VYHS pmax pmax
comp=Z,6.0nm,1.2s
VYHS **Vyhne** 80.56 325 eP P 13 09 47.2 +0.4
VYHS e 13 10 00.2
PV10 **Paradox Valley** 80.60 49 eP P 13 09 47.2 -0.3
BRG **Berggiesshubel** 80.88 329 eP P 13 09 48.2 -0.3
comp=Z,6.3nm,1.0s
BRG **Berggiesshubel** 80.88 329 eP P 13 09 48.2 -0.3
BRG pmax pmax
comp=Z,6.0nm,1.0s
GZR **Gura Zlata** 80.92 321⇓ iP P 13 09 49.2 +0.4
CLL **Collm** 80.92 330 eP P 13 09 48.4 -0.3
CLL pmax pmax
comp=Z,15nm,1.0s
CLL **Collm** 80.92 330 eP P 13 09 48.4 -0.3
comp=Z,15nm,1.0s
VRAC **Vranov** 80.96 327⇓ iP P 13 09 49.9 +1.0
PRU **Pruhonice** 81.31 329 eP P 13 09 51.1 +0.3
PRU **Pruhonice** 81.31 329 eP P 13 09 51.1 +0.3
BZS **Buzias** 81.33 322⇓ iP P 13 09 50.9 0.0
MDVR **Moldovita** 81.88 321⇓ iP P 13 09 54.2 +0.3
S22A **4UR Ranch, Cre** 82.33 48 eP P 13 09 58.7 +1.9
comp=Z,8.8nm,1.1s
KHC **Kasperske Hory** 82.38 328 eP P 13 09 56.7 +0.3
KHC ePCP PcP 13 09 59.9 -1.7
KHC epP pP 13 10 10.1 +0.5
KHC **Kasperske Hory** 82.38 328 eP P 13 09 56.7 +0.3
KHC e 13 10 10.1
KHC **Kasperske Hory** 82.38 328 eP P 13 09 56.9 +0.5
comp=Z,4.1nm,1.1s
GEC2 **GERESS Array S** 82.54 328 eP P 13 09 57.5 +0.1
GEC2 pmax pmax
comp=Z,8.0nm,1.2s
GEC2 **GERESS Array S** 82.54 328 eP P 13 09 57.5 +0.1
comp=Z,8.3nm,1.2s
GERES **GERESS Array B** 82.54 328 P P 13 09 57.4 +0.1
comp=Z,1.4nm,0.4s,baz=40,slow=5.8,SNR=17
VTS **Vitosha** 82.67 319⇑ iP P 13 09 58.8 +0.6
VTS **Vitosha** 82.67 319 eP P 13 09 58.9 +0.7
VTS pmax pmax
comp=Z,6.0nm,0.8s
VTS **Vitosha** 82.67 319 eP P 13 09 58.9 +0.7
comp=Z,6.4nm,0.8s
PERS **Pernice** 83.63 326 eP P 13 10 02.6 -0.3
PERS epP pP 13 10 16.5 +0.3
PERS **Pernice** 83.63 326 eP P 13 10 02.6 -0.4
PERS epP pP 13 10 16.5 +0.3
SOKA **Soboth** 83.63 326 iP P 13 10 03.3 +0.3
SNR=9.4
ECSD **EROS Data Cent** 83.72 38 eP P 13 10 04.0 +0.6
comp=Z,12nm,1.2s
LEGS **Legarje** 84.06 325 iP P 13 10 04.5 -0.7
LEGS iP pP 13 10 18.4 0.0
LEGS **Legarje** 84.06 325 iP P 13 10 04.5 -0.6
LEGS iP pP 13 10 18.4 0.0
PDKS **Podkum** 84.12 326 eP P 13 10 04.9 -0.6
PDKS **Podkum** 84.12 326 eP P 13 10 04.9 -0.6
PMOR **Pomariorio Ree** 84.23 114 eT T 14 43 01.8
comp=Z,8.9nm,0.2s
ANMO **Albuquerque** 84.42 50 eP P 13 10 08.8 +1.4
ANMO pmax pmax
comp=Z,3.0nm,0.8s
ANMO **Albuquerque** 84.42 50 eP P 13 10 09.7 +2.3
comp=Z,9.8nm,1.1s
JAVS **Javornik** 84.67 326 iP P 13 10 07.1 -1.2
JAVS **Javornik** 84.67 326 iP P 13 10 07.1 -1.2
PPT2 **Papeete2** 84.71 117 eLR LR 13 36 16.4
comp=Z,156nm,25.5s
RETA **Reutte** 84.83 329 iP P 13 10 09.0 -0.1
SNR=6.9
319A **Douglas** 85.00 54 eP P 13 10 11.2 +0.9
comp=Z,12nm,1.0s
BFO **Black Forest** 85.13 331 ceP P 13 10 10.6 +0.1
BFO **Black Forest** 85.13 331 eP P 13 10 10.1 -0.5
comp=Z,12nm,1.0s
FUORN **Ofenpass-Fuorn** 85.73 329 eP P 13 10 13.5 -0.3
comp=Z,9.8nm,0.9s
TAOE **Nuku Hiva Isla** 86.19 104 eLR LR 13 37 26.9
comp=Z,163nm,23.0s
TUE **Stuetta** 86.23 329 eP P 13 10 18.2 +2.0
comp=Z,5.1nm,1.0s
VLDQ **Val d'Or** 88.21 25 eP P 13 10 25.6 +0.2
comp=Z,51nm,1.8s
TBI **Tubuai** 88.61 121 eLR LR 13 38 26.3
comp=Z,159nm,26.5s
TBI **Tubuai** 88.61 121 eT T 14 48 29.2
comp=Z,35nm,0.3s
TX31 **Lajitas Ar. Si** 89.96 52 eP P 13 10 35.3 +1.1
TXAR **Lajitas Array** 89.96 52 P P 13 10 35.6 +1.4
comp=Z,1.7nm,0.8s,baz=308,slow=3.4,SNR=16
MIAR **Mount Ida** 92.13 43 eP P 13 10 45.0 +1.0
MIAR pmax pmax
comp=Z,11nm,1.0s
MIAR **Mount Ida** 92.13 43 eP P 13 10 45.0 +1.0
comp=Z,11nm,1.0s
TORD **Torodi Ar. Bea** 117.20 315 PKP PKPdf 13 16 18.6 -1.6
comp=Z,0.9nm,1.0s,baz=58,slow=2.5,SNR=4.4
QSPA **South Pole Qui** 127.00 180 ePKPdf PKPdf 13 16 38.5 +1.1
VNA2 **Neumayer--Watz** 142.54 196 PKP PKPdf 13 17 03.2 -3.0
baz=131,slow=1.6
VNA3 **Neumayer Olymp** 142.79 195 PKP PKPdf 13 17 02.7 -3.9
LPAZ **La Paz** 146.55 59 PKPbc PKPbc 13 17 16.4 -0.6
comp=Z,2.3nm,0.5s,baz=349,slow=1.8,SNR=13
LPAZ **La Paz** 146.55 59 ePKPdf PKPbc 13 17 16.8 -0.2
BDFB **Brasilia** 156.89 24 PKPab PKPab 13 18 01.2 +0.9
comp=Z,3.0nm,0.9s,baz=61,slow=5.2,SNR=3.6

JMA 03 13:00:19.4±0.1, 36.02N×141.13E, h41km±2km, M3.1,
Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CHOJ	**Chosi**	**0.39**	**215**	P	Pn	13 00 28.4	-0.3
CHOJ				S	Sn	13 00 35.1	-0.1
JHO	**Hitachi**	**0.74**	**323**	P	Pn	13 00 33.3	-0.2
JHO				S	Sn	13 00 43.5	-0.1
MAT	**Matsushiro**	**2.42**	**283**	P	Pn	13 00 58.3	+1.8
MAT				S	Sn	13 01 29.6	+4.8

*NSSP **03** 13:05:36.4, 38.45N×45.23E, h14km, Ms3.2*
*TEH **03** 13:05:38.9, 38.41N×45.20E, h14km, ML3.0*
*CSEM **03** 13:05:39.9±1.1, 38.45N×45.36E, h2km, ML3.0, Error ellipse: s-maj=26.8km s-min=13.6km az=66.0*

ISC 03 13:05:38.6±1.8, 38.44N±0.05×45.31E±0.07, h15km±15km, n16, σ0.976/24, 11C-4D, Iran-Armenia-Azerbaijan border region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ISHB	**Shabestar**	**0.29**	**123⇑**	ePg	**Pb**	**13 05 45.8**	**+0.2**
ISHB				eAMB	AMB	13 05 46.1	
	comp=Z,43µm,0.0s						
ISHB				eSg	**Sb**	**13 05 50.6**	**+0.3**
IMRD	**Marand**	**0.41**	**48⇑**	ePg	**Pb**	**13 05 48.2**	**+0.5**
IMRD				eAMB	AMB	13 05 56.4	
	comp=Z,75µm,0.1s						
IMRD	**Marand**	**0.41**	**48⇑**	ePg	**Pb**	**13 05 48.2**	**+0.5**
ITBZ	**Tabriz**	**0.69**	**107⇓**	ePg	**Pb**	**13 05 53.0**	**+0.6**
ITBZ				eAMB	AMB	13 06 04.9	
	comp=Z,7µm,0.1s						
ITBZ	**Tabriz**	**0.69**	**107⇓**	ePg	**Pb**	**13 05 53.0**	**+0.6**
GRS	**Goris**	**1.32**	**37⇑**	iP	**Pn**	**13 06 02.0**	**-0.7**
GRS				⇓iS	**Sg**	**13 06 21.0**	**-0.4**
GRS	**Goris**	**1.32**	**37**	⇑P	**Pn**	**13 06 02.0**	**-0.7**
GRS				S	**Sg**	**13 06 21.0**	**-0.4**
IHRS	**Heris**	**1.36**	**95**	eAMB	AMB	13 06 26.3	
	comp=Z,4µm,0.2s						
IHRS				ePn	**Pg**	**13 06 05.0**	**+0.1**
IBST	**Bostanabad**	**1.45**	**120**	eAMB	AMB	13 06 28.5	
	comp=Z,1µm,0.1s						
IBST				⇓ePn	**Pb**	**13 06 05.9**	**+0.5**
GNI	**Garni**	**1.76**	**346⇑**	iP	**Pb**	**13 06 11.8**	**+1.1**
GNI				⇑iS	**Sg**	**13 06 35.9**	**+0.5**
GNI	**Garni**	**1.76**	**346**	⇑P	**Pb**	**13 06 11.8**	**+1.1**
GNI				S	**Sg**	**13 06 35.9**	**+0.5**
STKZ		**1.77**	**39⇑**	iP	**Pg**	**13 06 12.0**	**-0.6**
STKZ				⇑iS	**Sg**	**13 06 36.6**	**+1.0**
STKZ		**1.77**	**39**	⇑P	**Pg**	**13 06 12.0**	**-0.6**
STKZ				S	**Sg**	**13 06 36.6**	**+1.0**
ISRB	**Sarab**	**1.96**	**108**	ePn	**Pg**	**13 06 15.7**	**-0.5**
ISRB				eAMB	AMB	13 06 16.4	
	comp=Z,931nm,0.1s						
ISRB	**Sarab**	**1.96**	**108**	ePn	**Pg**	**13 06 15.7**	**-0.5**
DGRG	**David-gareji**	**3.01**	**1**	P	**Pg**	**13 06 34.8**	**-1.5**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DGRG				S	Sg	13 07 15.9	+0.7

*ISCJB **03** 13:07:36.9±1.5, 37.°13N±0.°04×142.°45E±0.°06, h19km±10km, mb3.9/21, MS3.5/1, Error ellipse: s-maj=7.7km s-min=6.3km az=155.6*
*JMA **03** 13:07:36.6±0.3, 37.°18N×142.°43E, h14km±5km, M4.1*
*IDC **03** 13:07:36.2±0.6, 37.°14N×142.°35E, h0km, mb3.9/19, mb1 4.1/21, mb1mx3.9/59, mbtmp3.9/21, ML3.9/2, MS3.4/4, Ms1 3.4/4, ms1mx2.9/59, Error ellipse: s-maj=17.9km s-min=13.9km az=127.0*
*NEIC **03** 13:07:37.9±2.9, 37.°15N×142.°41E, h12km±19km, mb4.8/2, Error ellipse: s-maj=8.7km s-min=6.1km az=108.0*
ISC 03 13:07:36.1±4.6**, 37.°18N**±0.°05×**142.°39E**±0.°06**, h1**km±29km**, n51, σ1.°12**/48**, mb4.0**/21**, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	Kawauchi	1.22	279	P	Pn	13 07 59.2	-1.2
JFK				S	Sb	13 08 15.9	-0.5
ONAJ	Iwakimizuishiy	1.27	267	P	Pn	13 08 00.0	-1.1
ONAJ				eS	Sb	13 08 17.6	-0.3
JMM	Marumori	1.44	299	P	Pn	13 08 02.4	-1.0
JMM				eS	Sn	13 08 21.5	-1.5
JIO	Ouri	1.51	327	P	Pn	13 08 03.8	-0.6
JIO				eS	Sn	13 08 23.2	-1.6
JHO	Hitachi	1.56	249	P	Pn	13 08 05.0	-0.1
JFT	Otama	1.67	282	P	Pn	13 08 06.7	+0.1
JFT				S	Sb	13 08 28.7	-0.5
JOU	Okura	1.81	311	P	Pn	13 08 08.7	+0.2
JOU				S	Sn	13 08 31.4	-0.6
MJAR	Matsushiro Arr	3.41	260	Pn	Pn	13 08 31.9	+1.4
	7.4nm,0.3s,baz=86,slow=15,SNR=56						
MJAR				LR	LR	13 10 00.6	
	comp=Z,473nm,18.7s,baz=90,slow=43						
MAJO	Matsushiro	3.41	260	ePn	Pn	13 08 33.0	+2.4
MAT	Matsushiro	3.41	260	P	Pn	13 08 33.2	+2.7
MAT				S	Sn	13 09 14.5	+2.8
JHJ2	Mitsune	4.58	208	ePn	Pn	13 08 46.4	-0.1
JHJ	Hachijo jima 2	4.58	209	Pn	Pn	13 08 46.9	+0.3
	32nm,0.3s,baz=337,slow=23,SNR=10						
JHJ				Sn	Sn	13 09 36.9	-3.5
	28nm,0.3s,baz=126,slow=23,SNR=5.8						
ERM	Erimo	4.86	7	ePn	Pn	13 08 49.6	-0.8
CBIJ	Chichi jima	10.06	181	ePn	Pn	13 10 01.2	-0.6
JNU	Nakatsue	10.26	250	LR	LR	13 14 19.0	
	comp=Z,106nm,18.2s,baz=114,slow=39						
USRK	Ussuriysk Ar.	10.55	315	Pn	Pn	13 10 15.1	+6.6
	0.1nm,0.3s,baz=121,slow=14,SNR=5.6						
USRK				LR	LR	13 13 59.6	
	comp=Z,189nm,18.7s,baz=101,slow=36						
KSRS	Korea Array	11.52	276	Pn	Pn	13 10 28.1	+6.3
	0.2nm,0.3s,baz=89,slow=13,SNR=4.0						
KSAR	Wonju Array Be	11.55	276	Pn	Pn	13 10 28.1	+5.9
MA2	Magadan	23.05	11	P	P	13 12 43.3	+0.5
	1.6nm,0.6s,baz=227,slow=5.8,SNR=3.6						
YAK	Yakutsk	26.10	346	eP	P	13 13 11.9	+0.7
SEY	Seymchan	26.50	10	P	P	13 13 16.5	+1.7
	1.8nm,0.8s,baz=179,slow=7.2,SNR=6.1						
H11N2	WAKE ISLAND Hy	27.56	122	T	T	13 42 19.2	
	baz=315,slow=75,SNR=119						
H11N1	WAKE ISLAND Hy	27.57	122	T	T	13 42 21.6	
	baz=315,slow=75,SNR=71						
H11N3	WAKE ISLAND Hy	27.58	122	T	T	13 42 18.5	
	baz=315,slow=75,SNR=97						
ENH	Enshi	28.12	266	eP	P	13 13 29.3	-0.4
	8.5nm,0.8s						
H11S1	WAKE ISLAND Hy	28.29	124	T	T	13 43 12.6	
	baz=317,slow=76,SNR=65						
H11S3	WAKE ISLAND Hy	28.30	125	T	T	13 43 13.7	
	baz=317,slow=76,SNR=72						
H11S2	WAKE ISLAND Hy	28.31	125	T	T	13 43 14.8	
	baz=317,slow=76,SNR=72						
SONM	Songino Array	28.35	304	P	P	13 13 32.4	+0.6
	2.4nm,0.8s,baz=95,slow=9.0,SNR=18						
TLY	Talaya	30.82	310	LR	LR	13 24 58.5	
	comp=Z,112nm,21.8s,baz=84,slow=34						
CMAR	Chiang Mai Arr	42.29	256	P	P	13 15 31.4	-0.1
	0.2nm,0.3s,baz=47,slow=4.0,SNR=3.3						
ZALV	Zalesovo Beam	42.39	312	P	P	13 15 32.0	0.0
	0.7nm,0.4s,baz=76,slow=7.8,SNR=6.7						
MKAR	Makanchi Array	44.70	302	P	P	13 15 50.8	+0.1
	0.8nm,0.7s,baz=90,slow=8.7,SNR=9.5						
KURK	Kurchatov	46.45	308	eP	P	13 16 04.0	-0.4
	10nm,0.7s						
KURBB	Kurchatov Arra	46.52	308	P	P	13 16 04.7	-0.3
	1.4nm,0.5s,baz=83,slow=8.1,SNR=19						
ILAR	Eielson Array	48.95	32	P	P	13 16 24.1	+0.4
	1.1nm,0.8s,baz=269,slow=6.1,SNR=11						
INK	Inuvik	53.90	27	P	P	13 17 00.9	+0.2
	1.1nm,0.6s,baz=301,slow=5.2,SNR=9.5						
WRAB	Tennant Creek	57.31	189	eP	P	13 17 25.3	-0.4
WRA	Warramunga Arr	57.32	189	P	P	13 17 25.1	-0.7
	2.3nm,0.6s,baz=5.8,slow=7.2,SNR=34						
ABKAR	Akbulak array	58.44	310	eP	P	13 17 32.7	-0.7
ASAR	Alice Springs	61.05	189	P	P	13 17 51.4	-0.3
	1.0nm,0.8s,baz=6.4,slow=6.3,SNR=10						
RES	Resolute Bay	62.26	15	P	P	13 17 59.7	+0.5
	3.9nm,1.1s,baz=312,slow=5.4,SNR=7.5						
YKA	Yellowknife Ar	63.29	30	P	P	13 18 06.5	+0.4
	0.3nm,0.7s,baz=296,slow=5.9,SNR=4.5						
FINES	FINESS Array B	69.04	333	P	P	13 18 43.0	-0.2
	2.5nm,0.7s,baz=56,slow=7.4,SNR=7.3						
NVAR	Mina Array Bea	74.28	54	P	P	13 19 16.9	+1.5
	0.8nm,0.7s,baz=295,slow=7.9,SNR=4.7						
AKASG	Malin Array Be	74.65	323	P	P	13 19 16.9	-0.2
	1.3nm,0.5s,baz=46,slow=6.0,SNR=5.6						
PDAR	Pinedale Array	77.01	46	P	P	13 19 31.3	+0.3
	0.4nm,0.6s,baz=247,slow=1.1,SNR=5.2						
CLL	Collm	81.35	331	eP	P	13 19 54.0	-0.3
GERES	GERESS Array B	82.99	329	P	P	13 20 02.9	-0.2
	0.1nm,0.5s,baz=35,slow=7.2,SNR=4.5						
TXAR	Lajitas Array	89.41	53	P	P	13 20 35.4	+0.4
	0.6nm,0.8s,baz=287,slow=3.5,SNR=7.2						
LPAZ	La Paz	145.94	61	PKPbc	PKPab	13 27 19.0	-0.2
	1.8nm,0.7s,baz=32,slow=10,SNR=9.3						

JMA 03 13:10:47.7±0.2**, 38.°23N**×**143.°86E, h35**km**, M3.6, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	Ofunato	1.91	297	P	Pn	13 11 19.1	+1.3
JIO	Ouri	1.99	277	P	Pn	13 11 20.0	+1.2
JIO				S	Sn	13 11 43.4	+1.0
JMK	Ichinoseki	2.19	290	P	Pn	13 11 23.1	+1.5
JOM	Ohasama	2.36	303	P	Pn	13 11 25.6	+1.7
JMM	Marumori	2.45	262	P	Pn	13 11 26.2	+1.1
JMM				S	Sn	13 11 55.1	+1.3
JOU	Okura	2.52	274	P	Pn	13 11 28.0	+1.9

JMA 03 13:12:08.2±0.3**, 37.°21N**×**142.°35E, h7**km**, M3.6, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JMM	Marumori	1.40	298	P	Pn	13 12 34.0	-0.1
JIO	Ouri	1.47	328	P	Pn	13 12 34.8	-0.4
JFT	Otama	1.63	281	P	Pb	13 12 38.1	-0.6
JOU	Okura	1.77	311	P	Pb	13 12 40.1	-0.8
JOU				S	Sn	13 13 02.5	+0.6

*CSEM **03** 13:13:57.2, 45.°79N×15.°43E, h0km, ML0.5*
LJU 03 13:13:57.2, 45.°79N×**15.°43E, h2**km**, ML0.5, 2C, Northwestern Balkan Peninsula**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CRES	Cresnjev	0.04	29⥣	iPg	Pg	13 13 58.1	0.0
CRES				i Sg	Sg	13 13 58.9	+0.1
	comp=Z,96nm,0.1s						
CRES	Cresnjev	0.04	29⥣	iPg	Pg	13 13 58.1	0.0
CRES				i Sg	Sg	13 13 58.8	0.0
	comp=Z,96nm,0.1s						
GCIS	Gornji Cirnik	0.16	61	i Pg	Pg	13 14 00.3	0.0
GCIS				i Sg	Sg	13 14 03.0	+0.5
	comp=Z,3.0nm,0.1s						
GCIS	Gornji Cirnik	0.16	61	i Pg	Pg	13 14 00.3	0.0
GCIS				i Sg	Sg	13 14 03.0	+0.6
	comp=Z,3.0nm,0.1s						
LEGS	Legarje	0.18	334	i Pg	Pg	13 14 00.5	-0.1
LEGS	Legarje	0.18	334	i Pg	Pg	13 14 00.5	-0.1
CESS	Cesta pri Krsk	0.18	8	i Pg	Pg	13 14 00.6	-0.2
CESS				i Sg	Sg	13 14 03.9	+0.6
CESS	Cesta pri Krsk	0.18	8	i Pg	Pg	13 14 00.6	-0.2
CESS				i Sg	Sg	13 14 03.8	+0.6
VISS	Visnje	0.41	272	i Pg	Pg	13 14 05.6	+0.5
VISS				i Sg	Sg	13 14 11.2	+0.8
	comp=Z,2.0nm,0.2s						
VISS	Visnje	0.41	272	i Pg	Pg	13 14 05.6	+0.5
VISS				i Sg	Sg	13 14 11.2	+0.7
	comp=Z,2.0nm,0.2s						

*NIED **03** 13:15:00, 38.°80N×144.°00E, h8km, Mw3.6 Best double couple: M0 2.73000×10^14 NP1:φs353.00000°, δ41.00000°, λ-109.00000°. NP2:φs198.00000°, δ51.00000°, λ-74.00000°.*
*IDC **03** 13:15:18.8±2.5, 37.°98N×144.°26E, h0km, mb3.4/4, mb1 3.5/5, mb1mx3.2/77, mbtmp3.4/5, ML3.4/1, Error ellipse: s-maj=66.9km s-min=30.1km az=69.0*
*JMA **03** 13:15:18.5±0.2, 38.°79N×143.°97E, h37km, M3.9*
*ISCJB **03** 13:15:19.2±1.2, 38.°81N±0.°04×143.°94E±0.°09, h62km±19km, mb3.4/4, Error ellipse: s-maj=12.2km s-min=6.8km az=17.3*
ISC 03 13:15:19.6±2.7**, 38.°80N**±0.°07×**144.°0E**±0.°2**, h36**km±6km**, n21, σ1.°50**/29**, mb3.5**/4**, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	Ofunato	1.85	279	P	Pn	13 15 48.5	-0.3
JTH	Tanohata	2.02	305	P	Pn	13 15 50.7	-0.4
JTH				S	Sn	13 16 14.1	-1.0
JIO	Ouri	2.12	261	P	Pn	13 15 52.1	-0.4
JIO				S	Sn	13 16 15.6	-2.0
JMK	Ichinoseki	2.19	275	P	Pn	13 15 53.5	+0.1
JMK				S	Sn	13 16 19.8	+0.5
JOM	Ohasama	2.22	288	P	Pn	13 15 54.0	+0.1
JOM				S	Sn	13 16 20.3	+0.1
JANG	Nango	2.49	310	P	Pn	13 15 57.3	-0.3
JOU	Okura	2.67	262	P	Pn	13 16 00.2	+0.2
JOU				S	Sn	13 16 30.9	-0.2
JRG	Rokugo	2.70	284	P	Pn	13 16 01.4	+0.9
JRG				S	Sn	13 16 33.1	+1.2
JMM	Marumori	2.70	251	P	Pn	13 15 59.9	-0.6
JMM				S	Sn	13 16 29.8	-2.2
JYK	Kaneyama	2.86	273	P	Pn	13 16 03.2	+0.5
JFK	Kawauchi	2.87	241	P	Pn	13 16 02.1	-0.7
JFK				S	Sn	13 16 33.2	-2.8
JTM	Tenmabayashi	3.02	312	eS	Sn	13 16 38.9	-0.8
JFT	Otama	3.17	247	P	Pn	13 16 07.1	+0.1
JFT				S	Sn	13 16 42.5	-1.1
JOT	Ohata	3.44	319	S	Sn	13 16 48.1	-2.0
JNBK	Urakawa-nobuka	3.61	345	P	Pn	13 16 14.0	+1.1
JNBK				S	Sn	13 16 54.4	+0.2
MJAR	Matsushiro Arr	5.13	246	Pn	Pn	13 16 35.5	+1.6
	1.4nm,0.3s,baz=70,slow=12,SNR=14						
MAT	Matsushiro	5.13	246	P	Pn	13 16 35.8	+1.9
MAT				S	Sn	13 17 36.5	+4.6
ZALV	Zalesovo Beam	42.28	311	P	P	13 23 19.8	+10
	0.4nm,0.3s,baz=69,slow=7.9,SNR=2.5						
MKAR	Makanchi Array	44.95	301	P	P	13 23 39.3	+8.4
	0.1nm,0.4s,baz=90,slow=7.7,SNR=2.8						
KURBB	Kurchatov Arra	46.56	307	P	P	13 23 53.3	+10
	0.3nm,0.5s,baz=80,slow=8.4,SNR=4.1						
WRA	Warramunga Arr	59.13	191	P	P	13 25 15.8	-0.8
	0.4nm,0.6s,baz=8.2,slow=6.9,SNR=5.5						

*NIED **03** 13:18:00, 36.°70N×142.°30E, h20km, Mw5.1 Best double couple: M0 4.44000×10^16 NP1:φs210.00000°, δ23.00000°, λ93.00000°. NP2:φs27.00000°, δ67.00000°, λ89.00000°.*
*IDC **03** 13:18:02.5±0.4, 36.°71N×142.°16E, h0km, mb4.6/53, mb1 4.7/58, mb1mx4.6/79, mbtmp4.6/58, ML4.1/4, MS4.5/24, Ms1 4.5/24, ms1mx4.2/60, Error ellipse: s-maj=11.1km s-min=9.1km az=111.0*
*JMA **03** 13:18:02.6±0.4, 36.°74N×142.°32E, h15km±5km, M4.9*
JMA Felt II J1.
*ISCJB **03** 13:18:04.4±0.7, 36.°75N±0.°02×142.°17E±0.°02, h21km±5km, mb4.9/236, MS4.8/51, Error ellipse: s-maj=3.7km s-min=2.8km az=152.8*
*BJI **03** 13:18:05.8, 36.°83N×141.°97E, h30km, mb5.1/82, mB5.1/58, Ms5.0/85, Ms7 4.9/79*
*MOS **03** 13:18:07.6±0.9, 37.°07N×142.°07E, h32km, mb5.2/96, MS4.8/28, Error ellipse: s-maj=6.6km s-min=4.2km az=108.4*
*NEIC **03** 13:18:08.0±0.5, 36.°76N×142.°14E, h36km±4km, mb5.0/119, Error ellipse: s-maj=4.0km s-min=2.9km az=136.0*
*GCMT **03** 13:18:08.0±0.2, 36.°74N×142.°28E, h26km, MW5.1/89, Moment Tensor Solution. s52,c73; s89,c155; Duration: 0 Moment tensor: Scale 10^16Nm; Mrr3.84±.17; Mθθ-1.05±.10; Mφφ-2.79±.11; Mrθ2.33±.20; Mθφ-1.37±.06; Mφr3.98±.22; Best double couple: M0 5.90700×10^16 NP1:φs30.00000°, δ71.00000°, λ91.00000°. NP2: φs208.00000°, δ19.00000°, λ88.00000°. Principal axes: T 6.0570, Plg64.0000°, Azm301.0000°; N -0.2990, Plg1.0000°, Azm210.0000°; P -5.7580, Plg26.0000°, Azm119.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
ISC 03 13:18:06.7±0.5**, 36.°74N**±0.°03×**142.°17E**±0.°03**, h29**km±3km**, h29**km**:pP-P, n593, σ1.°51**/635**, mb5.0**/241**, MS4.9**/51**, 32C-9D, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	Iwakimizuishiy	1.16	289	P	Pn	13 18 25.5	-1.5
JFK	Kawauchi	1.21	302	P	Pn	13 18 26.0	-1.7
JHO	Hitachi	1.29	265	P	Pn	13 18 27.9	-0.9
JHO				eS	Sb	13 18 46.1	-0.6
JMM	Marumori	1.57	316	P	Pn	13 18 31.6	-1.1
JMM				S	Sn	13 18 52.4	+0.4
JFT	Otama	1.66	299	P	Pn	13 18 33.7	-0.2
JFT				eS	Sb	13 18 57.1	-0.1
JIO	Ouri	1.83	339	P	Pn	13 18 35.3	-0.9
JIO				eS	Sn	13 18 58.9	+0.5
JOU	Okura	2.02	324	P	Pn	13 18 39.3	+0.5
JOU				eS	Sn	13 19 04.7	+1.6
JAG	Ashikaga	2.21	263	P	Pn	13 18 41.4	0.0
BSO1	Boso 1	2.30	205	P	Pn	13 18 42.1	0.0
BSO1				S	Sn	13 19 09.9	+0.8
JMK	Ichinoseki	2.33	341	P	Pn	13 18 42.6	-0.5
JNS	Sasagawa	2.52	296	P	Pn	13 18 46.3	+0.6
JYK	Kaneyama	2.61	327	P	Pn	13 18 46.8	-0.1
MJAR	Matsushiro Arr	3.19	268	Pn	Pn	13 18 55.4	+0.4
	95nm,0.3s,baz=92,slow=14,SNR=299						
MJAR				LR	LR	13 20 25.0	
	comp=Z,10μm,18.5s,baz=120,slow=45						
MAJO	Matsushiro	3.19	268c	iP	Pn	13 18 56.3	+1.3
MAJO	Matsushiro	3.19	268	ePn	Pn	13 18 56.1	+1.1
MAT	Matsushiro	3.19	268	P	Pn	13 18 56.2	+1.2
MAT				S	Sb	13 19 37.3	-3.9
JHJ2	Mitsune	4.10	209	ePn	Pn	13 19 06.2	-1.2
JHJ	Hachijo jima 2	4.11	209	Pn	Pn	13 19 06.8	-0.7
	110nm,0.3s,baz=98,slow=0.8,SNR=17						
JHJ				Sn	Sn	13 19 51.7	-2.9
	222nm,0.3s,baz=43,slow=23,SNR=6.7						
JHJ				LR	LR	13 20 55.8	
	comp=Z,2μm,18.5s,baz=10,slow=43						
INU	Inuyama	4.40	253	ePn	Pn	13 19 12.9	+1.3
ERM	Erimo	5.33	8c	eP	Pn	13 19 22.5	-1.7
ERM				pmax	pmax		
	comp=Z,147nm,1.2s						
ERM	Erimo	5.33	8	ePn	Pn	13 19 22.3	-1.9
YUK	Yuzh-Kuril'sk	7.81	20	eP	Pn	13 19 54.4	-3.9
YUK				eS	Sn	13 21 16.6	-9.1
YUK				pmax	pmax		
	comp=N,119nm,0.4s						
YUK				pmax	pmax		
	comp=E,56nm,0.4s						
YUK				pmax	pmax		
	comp=Z,228nm,0.4s						
YUK				MLR	MLR		
	comp=Z,3μm,17.0s						
YUK				MLR	MLR		
	comp=N,2μm,12.0s						
YUK				MLR	MLR		
	comp=E,3μm,12.0s						
SHO	Shikotan	7.96	25	eP	Pn	13 19 57.3	-3.1
SHO				eS	Sn	13 21 19.3	-10
SHO				pmax	pmax		
	comp=Z,47nm,0.4s						
SHO				pmax	pmax		
	comp=E,11nm,0.2s						
SHO				pmax	pmax		
	comp=N,21nm,0.3s						
KUR	Kuril'sk	9.51	25	eP	Pn	13 20 20.5	-1.2
KUR				eS	Sn	13 21 58.8	-8.7
KUR				pmax	pmax		
	comp=Z,78nm,0.5s						
KUR				pmax	pmax		
	comp=N,43nm,0.7s						
KUR				pmax	pmax		
	comp=E,29nm,0.5s						
KUR				MLR	MLR		
	comp=E,2μm,15.0s						
KUR				MLR	MLR		
	comp=Z,2μm,15.0s						
CBIJ	Chichi jima	9.61	180	ePn	Pn	13 20 20.6	-2.6
CBIJ				eSn	Sn	13 22 01.9	-8.2
JCJ	Chichijima	9.61	180	Pn	Pn	13 20 20.5	-2.6
JCJ				Sn	Sn	13 22 01.6	-8.6
JCJ				LR	LR	13 26 08.8	
	comp=Z,399nm,20.0s,baz=358,slow=51						
JNU	Nakatsue	9.95	252	Pn	Pn	13 20 29.2	+1.5
	comp=Z,1.2nm,0.3s,baz=43,slow=2.9,SNR=12						
JNU				LR	LR	13 24 29.6	
	comp=Z,2μm,19.1s,baz=67,slow=39						
YSS	Yuzh-Sakhalins	10.22	2	eP	Pn	13 20 29.9	-1.4
YSS				pmax	pmax		
	comp=Z,60nm,0.7s						
YSS				MLR	MLR		
	comp=Z,2μm,13.0s						
YSS				MLR	MLR		
	comp=N,2μm,15.0s						
YSS	Yuzh-Sakhalins	10.22	2	ePn	Pn	13 20 29.8	-1.5
USRK	Ussuriysk Ar.	10.75	317	Pn	Pn	13 20 41.3	+2.7
	comp=N,0.8nm,0.3s,baz=134,slow=13,SNR=14						
KSRS	Korea Array	11.40	278	Pn	Pn	13 20 51.0	+3.4
	comp=N,0.7nm,0.3s,baz=88,slow=13,SNR=42						
KSRS				LR	LR	13 25 04.4	
	comp=N,5μm,18.9s,baz=91,slow=37						
KSRS	Korea Array	11.40	278	P	Pn	13 20 51.0	+3.4
KSRS				pmax	pmax		
	comp=Z,1.0nm,0.3s						
KSRS				MLR	MLR		
	comp=Z,5μm,18.9s						
KS01	Wonju Array Si	11.43	278	ePn	Pn	13 20 49.0	+1.1
KS15	Wonju Array Si	11.43	278	ePn	Pn	13 20 50.5	+2.5
KSAR	Wonju Array Be	11.43	278	P	Pn	13 20 51.0	+3.0
KSAR	Wonju Array Be	11.43	278	Pn	Pn	13 20 51.0	+3.0
MDJ	Mudanjiang	12.36	313	P	Pn	13 21 02.1	+1.4
MDJ				S	Sn	13 23 18.9	+1.5
MDJ				ScP	ScP	13 30 12.2	+0.7
MDJ				PcS	PcS	13 30 15.0	+0.2
MDJ				pmax	pmax		
	comp=Z,6.0nm,0.8s						
MDJ				pmax	pmax		
	comp=Z,300nm,7.2s						
MDJ				LR	LR		
	comp=Z,2μm,17.7s						
MDJ				LR	LR		
	comp=Z,2μm,18.6s						
MDJ				LR	LR		
	comp=Z,4μm,17.7s						
MDJ	Mudanjiang	12.36	313	ePn	Pn	13 21 02.2	+1.6
HABR	Khabarovsk	12.84	338c	eP	Pn	13 21 00.8	-6.3
HABR				eS	Sn	13 23 16.5	-12
HABR				pmax	pmax		
	comp=N,31nm,2.2s						
HABR				pmax	pmax		
	comp=E,49nm,2.2s						
HABR				pmax	pmax		
	comp=Z,55nm,2.2s						
HABR				MLR	MLR		
	comp=Z,3μm,13.0s						
TYV	Tymovskoe	14.12	1	eP	Pn	13 21 22.5	-2.2
TYV				pmax	pmax		
	comp=Z,8.0nm,0.6s						
TYV				MLR	MLR		
	comp=N,4μm,16.0s						
TYV				MLR	MLR		
	comp=Z,5μm,16.0s						
CN2	Changchun	14.57	304	eP	Pn	13 21 29.1	-1.7
CN2				epP	P	13 21 36.4	-0.6
CN2				eS	Sn	13 24 09.7	-1.6
CN2				pmax	pmax		
	comp=Z,10.0nm,1.2s						
CN2				pmax	pmax		
	comp=Z,410nm,8.0s						
CN2				LR	LR		
	comp=Z,2μm,14.0s						
CN2				LR	LR		
	comp=Z,3μm,14.0s						
CN2				LR	LR		
	comp=Z,3μm,16.0s						
KLR	Kul'dur	14.61	332	Pn	Pn	13 21 30.1	-1.3
	comp=Z,0.4nm,0.3s,baz=150,slow=8.9,SNR=10						
KLR				LR	LR	13 27 03.7	
	comp=Z,3μm,19.0s,baz=123,slow=37						
SNY	Shenyang	15.26	295	⥣P	Pn	13 21 38.9	-1.1
SNY				pmax	pmax		
	comp=Z,20nm,1.4s						
SNY				pmax	pmax		
	comp=Z,500nm,12.0s						
SNY				LR	LR		
	comp=Z,2μm,15.1s						
SNY				LR	LR		
	comp=Z,6μm,16.4s						
SNY				LR	LR		
	comp=Z,9μm,15.5s						
JOW	Kunigami	15.38	234	ePn	P	13 21 44.5	-1.6
	comp=Z,150nm,1.8s						
DL2	Dalian	16.38	284⥣	iP	Pn	13 21 54.1	-0.3
DL2				eS	Sn	13 24 55.6	+0.4
DL2				pmax	pmax		
	comp=Z,57nm,0.6s						
DL2				pmax	pmax		
	comp=Z,760nm,9.1s						
DL2				LR	LR		
	comp=Z,1μm,12.9s						
DL2				LR	LR		
	comp=Z,3μm,17.8s						
DL2				LR	LR		
	comp=Z,5μm,17.1s						
NKL	Nikolayevsk	16.44	357	eP	Pn	13 21 52.0	-3.1
NKL				MLR	MLR		
	comp=N,1μm,18.0s						
NKL				MLR	MLR		
	comp=E,1μm,18.0s						
NKL				MLR	MLR		
	comp=Z,2μm,18.0s						
SKR	Severo-Kuril's	17.16	31	eP	Pn	13 22 04.4	+0.2
SSE	Sheshan	18.29	258	P	Pn	13 22 19.6	+1.3
SSE				S	Sn	13 25 42.4	+0.8
SSE				pmax	pmax		
	comp=Z,27nm,1.0s						
SSE				pmax	pmax		
	comp=Z,170nm,6.7s						
SSE				LR	LR		
	comp=Z,1μm,14.0s						
SSE				LR	LR		
	comp=Z,3μm,14.0s						
SSE				LR	LR		
	comp=Z,4μm,13.7s						
PEA0	Petropavlovsk-	19.65	29	eP	P	13 22 32.7	-0.3
PETK	Petropavlovsk-	19.65	29	P	P	13 22 33.5	+0.6
	comp=Z,0.4nm,0.3s,baz=194,slow=10,SNR=8.3						
PETK				LR	LR	13 30 45.4	
	comp=Z,634nm,19.0s,baz=211,slow=39						
NJ2	Nanjing	19.79	263	eP	P	13 22 32.8	-1.8
NJ2				pP	pP	13 22 41.6	-0.8
NJ2				pmax	pmax		
	comp=Z,17nm,0.8s						
NJ2				pmax	pmax		
	comp=Z,410nm,3.7s						
NJ2				LR	LR		
	comp=Z,1μm,16.4s						
NJ2				LR	LR		
	comp=Z,4μm,15.4s						
NJ2				LR	LR		
	comp=Z,4μm,15.9s						
PET	Petropavlovsk	19.96	30	eP	Pn	13 22 43.2	+5.1
PET				eS	S	13 26 20.2	+1.1
PET				pmax	pmax		
	comp=Z,77nm,1.5s						
PET				pmax	pmax		

comp=Z,200nm,13.2s
PET MLR MLR
comp=Z,2µm,16.0s
PET MLR MLR
comp=Z,1µm,16.0s
TIA Tai'an 20.14 276 ⇓P P 13 22 36.7 -1.7
TIA pmax pmax
comp=Z,40nm,1.2s
TIA LR LR
comp=Z,2µm,16.1s
TIA LR LR
comp=Z,3µm,16.7s
TIA LR LR
comp=Z,3µm,16.7s
HIA Hailar 20.54 315 eP P 13 22 39.7 -3.1
HIA pmax pmax
comp=Z,73nm,1.4s
HIA Hailar 20.54 315 eP P 13 22 39.7 -3.1
comp=Z,74nm,1.4s
BJI Beijing 20.62 287 P P 13 22 41.3 -2.3
BJI S **S** **13 26 33.4 +0.9**
BJI pmax pmax
comp=Z,20nm,1.9s
BJI pmax pmax
comp=Z,400nm,10.9s
BJI LR LR
comp=Z,2µm,14.0s
BJI LR LR
comp=Z,2µm,15.3s
BJI LR LR
comp=Z,1µm,21.7s
SSLB Suanglung 22.35 241 eP P 13 22 59.6 -2.8
SSLB *es*P **pP** **13 23 08.0 -2.4**
TPUB Ta-pu 22.89 240 eP P 13 23 04.7 -3.4
comp=Z,35nm,0.8s
GUMO Guam 23.18 173 P P 13 23 10.8 -0.2
comp=Z,33nm,0.9s,baz=45,slow=17,SNR=2.1
GUMO LR LR 13 31 15.3
comp=Z,336nm,21.5s,baz=5.0,slow=34
GUMO Guam 23.18 173 P P 13 23 10.6 -0.4
GUMO pmax pmax
comp=Z,242nm,1.3s
GUMO Guam 23.18 173 P P 13 23 10.6 -0.4
comp=Z,242nm,1.3s
CLNS Chul'man 23.20 336 eP P 13 23 09.8 -1.2
CLNS pmax pmax
comp=Z,22nm,1.3s
CLNS pmax pmax
comp=E,8.0nm,1.2s
CLNS pmax pmax
comp=N,26nm,1.3s
CLNS MLR MLR
comp=E,1µm,15.0s
CLNS MLR MLR
comp=Z,2µm,12.0s
CLNS MLR MLR
comp=N,2µm,11.0s
QZH Quanzhou 23.34 246 eP P 13 23 13.0 +0.4
QZH LR LR
comp=N,3µm,13.2s
QZH LR LR
comp=N,4µm,16.2s
QZH LR LR
comp=N,4µm,14.4s
MA2 Magadan 23.52 11 P P 13 23 13.6 -0.5
comp=N,23nm,0.8s,baz=212,slow=8.5,SNR=45
MA2 LR LR 13 33 00.5
comp=N,392nm,18.1s,baz=216,slow=38
MA2 Magadan 23.52 11 eP P 13 23 13.5 -0.6
comp=N,90nm,0.8s
WHN Wuhan 23.92 263 ⇑P P 13 23 17.3 -0.9
WHN S **S** **13 27 31.5 -1.3**
WHN pmax pmax
comp=N,120nm,1.2s
WHN LR LR
comp=N,5µm,13.4s
WHN LR LR
comp=N,2µm,11.6s
WHN LR LR
comp=N,5µm,14.8s
HHC Hu-ho-hao-te 24.14 289 eP P 13 23 19.3 -1.0
HHC sP sP 13 23 36.3 +4.0
HHC PP **PnPn** **13 23 50.6 +0.6**
HHC S **S** **13 27 35.4 -1.0**
HHC sS sS 13 27 43.8 -6.5
HHC pmax pmax
comp=N,24nm,1.2s
HHC pmax pmax
comp=N,190nm,5.2s
HHC LR LR
comp=N,2µm,13.1s
HHC LR LR
comp=N,1µm,13.9s
HHC LR LR
comp=N,830nm,13.5s
CIT Chita 25.31 316 eP P 13 23 31.5 +0.8
CIT *e* 13 23 41.8
CIT *e* 13 23 47.4
CIT pmax pmax
comp=Z,373nm,1.5s
BTO Baotou 25.32 289 eP P 13 23 28.5 -2.4
YAK Yakutsk 26.49 347 P P 13 23 40.8 -0.4
comp=Z,5.0nm,0.6s,baz=339,slow=23,SNR=22
YAK LR LR 13 34 20.6
comp=Z,753nm,18.3s,baz=158,slow=37
YAK Yakutsk 26.49 347 *c i*P P **13 23 40.7 -0.4**
YAK *e* 13 24 18.1
YAK *e* 13 27 04.5
YAK *e*S **S** **13 28 09.4 -3.7**
YAK *e*SS **SnSn** **13 29 14.5 -1.3**
YAK *e* 13 34 36.8
YAK pmax pmax
comp=Z,99nm,1.0s
YAK pmax pmax
comp=N,37nm,1.1s
YAK pmax pmax
comp=E,16nm,1.3s
YAK pmax pmax
comp=Z,62nm,1.5s
YAK pmax pmax
comp=N,38nm,1.6s
YAK smax smax
comp=E,239nm,4.3s
YAK smax smax
comp=N,76nm,3.0s
YAK MLR MLR
comp=Z,3µm,14.0s
YAK MLR MLR
comp=N,2µm,13.0s
YAK MLR MLR
comp=E,698nm,13.0s
YAK Yakutsk 26.49 347 eP P 13 23 40.5 -0.7
comp=E,91nm,0.8s
SEY Seymchan 26.97 10 P P 13 23 46.7 +1.3
comp=E,24nm,0.9s,baz=193,slow=7.1,SNR=45
SEY Seymchan 26.97 10 *ce*P P **13 23 46.5 +1.0**
XAN Xi'an 27.16 274 P P 13 23 47.0 -0.6
XAN pmax pmax
comp=E,48nm,0.5s
XAN pmax pmax
comp=E,240nm,5.1s
XAN LR LR
comp=E,1µm,15.2s
XAN LR LR
comp=E,1µm,16.9s
XAN LR LR
comp=E,1µm,17.6s
H11N2 WAKE ISLAND Hy 27.48 121 T T 13 52 30.7
baz=313,slow=75,SNR=39
H11N1 WAKE ISLAND Hy 27.48 121 T T 13 52 41.4
baz=313,slow=75,SNR=31
H11N3 WAKE ISLAND Hy 27.49 121 T T 13 52 33.0
baz=313,slow=75,SNR=32
ENH Enshi 27.91 266 eP P 13 23 53.5 -0.9
comp=E,194nm,1.2s
ULN Ulaanbaatar 28.02 304 *ce*P P **13 23 55.6 +0.3**
ULN pmax pmax
comp=Z,57nm,1.2s
ULN Ulaanbaatar 28.02 304 eP P 13 23 55.4 +0.1
comp=Z,70nm,1.3s
ULN Ulaanbaatar 28.02 304 P P **13 23 56.0 +0.7**
SNR=17
ULN P P **13 23 56.0 +0.7**
SNR=17
BOD Bodaibo 28.10 328 ⇓*i*P P **13 23 55.1 -0.6**
BOD pmax pmax
comp=Z,36nm,1.2s

H11S1 WAKE ISLAND Hy 28.19 123 T T 13 53 35.8
baz=316,slow=75,SNR=18
H11S3 WAKE ISLAND Hy 28.19 124 T T 13 53 42.7
baz=316,slow=75,SNR=29
H11S2 WAKE ISLAND Hy 28.21 124 T T 13 53 26.6
baz=316,slow=75,SNR=28
SONA1 Songino Array 28.45 304 *e*P **P** **13 23 58.7 -0.4**
SONM Songino Array 28.45 304 P P **13 23 59.3 +0.2**
comp=Z,36nm,0.8s,baz=104,slow=9.1,SNR=195
SONM LR LR 13 35 31.5
comp=Z,1µm,19.5s,baz=92,slow=37
LZH Lanzhou 30.72 280 eP P 13 24 19.6 +0.3
LZH pP pP 13 24 29.2 +1.3
LZH sP sP 13 24 34.1 +2.7
LZH S **S** **13 29 12.2 -8.3**
LZH sS sS 13 29 31.1 -3.5
LZH SS **SnSn** **13 31 02.4 +2.9**
LZH pmax pmax
comp=Z,86nm,1.2s
LZH pmax pmax
comp=Z,260nm,4.3s
LZH LR LR
comp=Z,2µm,15.0s
LZH LR LR
comp=Z,4µm,15.4s
LZH LR LR
comp=Z,5µm,16.8s
IRK Irkutsk 30.75 312 eP P 13 24 18.2 -1.0
IRK pmax pmax
comp=Z,50nm,1.7s
ZAK Zakamensk 30.93 309 eP P 13 24 21.4 +0.4
ZAK pmax pmax
comp=Z,30nm,1.2s
TLY Talaya 30.98 311 P P 13 24 21.4 +0.1
comp=Z,7.4nm,0.6s,baz=122,slow=5.1,SNR=27
TLY Talaya 30.98 311 eP P 13 24 22.2 +0.9
TLY *e*S **S** **13 29 29.7 +5.7**
TLY *e*SS **ScP** **13 30 58.3 +0.8**
TLY pmax pmax
comp=Z,36nm,1.0s
TLY MLR MLR
comp=Z,2µm,19.0s
TLY Talaya 30.98 311 P P 13 24 22.3 +0.9
TLY P P **13 24 22.3 +0.9**
GYA Guiyang 31.77 261 ⇑*i*P P **13 24 27.6 -1.1**
GYA pP sP 13 24 40.2 -0.6
GYA PP **PnPn** **13 25 35.6 +2.3**
GYA PcP **PcP** **13 27 21.0 +1.5**
GYA S **S** **13 29 36.8 -0.3**
GYA sS sS 13 29 52.4 +1.2
GYA ScP **ScP** **13 31 00.6 -0.2**
GYA SS **SnSn** **13 31 27.0 +1.7**
GYA pmax pmax
comp=Z,80nm,1.1s
GYA pmax pmax
comp=Z,130nm,6.2s
GYA LR LR
comp=Z,580nm,18.0s
GYA LR LR
comp=Z,520nm,18.4s
GYA LR LR
comp=Z,550nm,17.7s
CD2 Chengdu 32.28 271 P P **13 24 32.5 -0.5**
CD2 sP sP 13 24 47.1 +2.0
CD2 S **S** **13 29 43.7 -1.1**
CD2 sS sS 13 30 01.1 +2.2
CD2 pmax pmax
comp=Z,60nm,0.9s
CD2 pmax pmax
comp=Z,270nm,4.7s
CD2 LR LR
comp=Z,2µm,19.2s
CD2 LR LR
comp=Z,2µm,15.6s
MOY Mondy 32.59 310 eP P 13 24 36.0 +0.4
MOY pmax pmax
comp=Z,55nm,2.7s
GTA Gaotai 33.23 288 P P **13 24 41.0 -0.3**
GTA pP pP 13 24 50.6 +0.7
GTA sP sP 13 24 54.6 +1.1
GTA PcP **PcP** **13 27 23.5 +0.1**
GTA S **S** **13 29 57.2 -2.4**
GTA sS sS 13 30 13.7 0.0
GTA SS **SnSn** **13 31 59.9 -0.6**
GTA pmax pmax
comp=Z,13nm,1.2s
GTA pmax pmax
comp=Z,260nm,4.2s
GTA LR LR
comp=Z,1µm,14.8s
GTA LR LR
comp=Z,990nm,17.2s
GTA LR LR
comp=Z,920nm,16.2s
QIZ Qiongzhong 33.37 247 P P **13 24 43.7 +1.2**
QIZ sP **sP** **13 24 56.6 +2.0**
QIZ S **S** **13 30 02.9 +1.2**
QIZ pmax pmax
comp=Z,27nm,1.1s
QIZ pmax pmax
comp=Z,170nm,3.9s
QIZ LR LR
comp=Z,950nm,15.4s
QIZ LR LR
comp=Z,950nm,13.8s
QIZ Qiongzhong 33.37 247 eP P 13 24 43.5 +1.0
comp=Z,46nm,1.3s
BILL Bilibino 34.14 16 eP P 13 24 48.8 +0.1
BILL *e* 13 24 54.9
BILL *e* 13 26 04.3
BILL *e*PPP PPP 13 26 13.2
BILL pmax pmax
comp=Z,32nm,1.7s
BILL MLR MLR
comp=Z,542nm,18.0s
BILL Bilibino 34.14 16 *e*P P **13 24 48.4 -0.3**
comp=Z,45nm,1.5s
KMI Kunming 35.52 262 P P **13 25 01.1 -0.3**
KMI pP pP 13 25 10.4 +0.4
KMI sP sP 13 25 14.7 +1.2
KMI S **S** **13 30 35.2 -0.1**
KMI pmax pmax
comp=Z,30nm,0.9s
KMI pmax pmax
comp=Z,79nm,3.1s
KMI LR LR
comp=Z,490nm,14.2s
KMI LR LR
comp=Z,1µm,15.6s
KMI LR LR
comp=Z,1µm,19.0s
TIXI Tiksi 35.66 353 *ce*P P **13 25 01.3 -0.4**
TIXI pmax pmax
comp=Z,17nm,1.2s
TIXI Tiksi 35.66 353 eP P 13 25 01.0 -0.7
comp=Z,30nm,1.6s
KRAR Krasnoyarsk 38.09 316 eP P 13 25 19.9 -2.8
KRAR pmax pmax
comp=Z,14nm,0.9s
MYLDM Lahad Datu 38.17 220 eP P 13 25 25.4 +1.7
comp=Z,81nm,1.1s
PANO Nakornpanom 38.43 250 P P **13 25 27.2 +1.3**
comp=Z,163nm,1.3s
NONG Nongkai 38.99 252 P P **13 25 31.3 +0.7**
comp=Z,56nm,1.1s
SKNT Sakolnakorn 39.01 250 P P **13 25 31.6 +0.8**
comp=Z,57nm,1.3s
KHON Khomkaen 40.28 250 P P **13 25 43.4 +2.1**
comp=Z,14nm,1.0s,comp=Z,782nm
MRSI Marisa 40.66 212 P P **13 25 44.5 +0.1**
comp=Z,52nm,1.2s,comp=Z,3µm
LOEI Loei 40.76 253 P P **13 25 42.7 -2.7**
comp=Z,29nm,1.3s,comp=Z,3µm
PHRA Phrae 40.99 255 P P **13 25 47.8 +0.6**
comp=Z,477nm,1.6s,comp=Z,34µm
CMAI Chiengmai2 41.11 258 P P **13 25 49.3 +0.9**
comp=Z,25nm,1.3s
UTTA Uttaradit 41.17 254 P P **13 25 51.3 +2.6**
comp=Z,74nm,1.3s,comp=Z,76nm
CHAI Chaiyaphum 41.18 251 P P **13 25 49.1 +0.3**
comp=Z,14nm,1.4s,comp=Z,147nm
SANI Sanana 41.42 205 P P **13 25 51.8 +1.1**
comp=Z,57nm,1.0s
LAMP Lampang 41.44 256 P P 13 25 56.0 +5.1
comp=Z,8.5nm,1.1s
WMQ Urumqi 41.51 297 P P **13 25 52.4 +1.0**

WMQ pP sP 13 26 02.1 -1.5
WMQ sP pP 13 26 06.6 +6.5
WMQ S **S** **13 32 05.0 -0.1**
WMQ pmax pmax
comp=Z,14nm,2.2s
WMQ pmax pmax
comp=Z,200nm,4.0s
WMQ LR LR
comp=Z,430nm,11.8s
WMQ LR LR
comp=Z,620nm,16.6s
WMQ LR LR
comp=Z,420nm,23.8s
PBKT Sadao Pong 41.55 252 P P **13 25 52.1 +0.3**
comp=Z,47nm,1.3s
CMMT Chiang Mai 41.81 257 P P **13 25 54.2 +0.2**
comp=Z,23nm,1.3s
CHTO Chiang Mai 41.81 257 P P **13 25 54.3 +0.3**
comp=Z,60nm,1.9s
CHTO Chiang Mai 41.81 257 eP P 13 25 54.1 +0.1
CHTO pmax pmax
comp=Z,50nm,1.5s
CHTO Chiang Mai 41.81 257 eP P 13 25 54.1 +0.1
comp=Z,50nm,1.5s
CHTO Chiang Mai 41.81 257 P P **13 25 54.4 +0.4**
CHTO P P **13 25 54.4 +0.4**
CMAR Chiang Mai Arr 42.01 256 P P **13 25 55.7 +0.1**
comp=Z,2.8nm,0.8s,baz=44,slow=6.3,SNR=13
CMAR LR LR 13 45 01.5
comp=Z,426nm,18.5s,baz=55,slow=39
CMAR Chiang Mai Arr 42.01 256 P P **13 25 55.7 +0.1**
CMAR pmax pmax
comp=Z,2.0nm,0.6s
CMAR MLR MLR
comp=Z,426nm,18.5s
CM01 Chiang Mai Arr 42.02 256 eP P 13 25 55.9 +0.2
APSI Ampana 42.03 212 P P **13 25 55.4 -0.3**
comp=Z,116nm,1.2s,comp=Z,1µm
SUKH Sukhothai 42.04 254 P P **13 25 57.2 +1.4**
comp=Z,7.0nm,1.3s
SRAK Srakaew 42.31 248 P P **13 25 55.7 -2.4**
ZAA0 Zalesovo Array 42.56 313 eP P 13 25 59.4 -0.2
ZALV Zalesovo Beam 42.56 313 P P **13 26 00.1 +0.4**
comp=Z,17nm,0.8s,baz=90,slow=6.4,SNR=63
ZALV PcP **PcP** **13 27 51.4 -0.2**
comp=Z,3.9nm,0.6s,baz=101,slow=2.0,SNR=3.5
ZALV LR LR 13 44 29.8
comp=Z,2µm,18.0s,baz=70,slow=37
NAYO Nakonayok 42.66 249 P P **13 26 02.8 +1.9**
comp=Z,15nm,1.2s,comp=Z,513nm
LSA Lhasa 42.84 276 P P **13 26 04.3 +1.5**
LSA pmax pmax
comp=Z,21nm,1.3s
LSA Lhasa 42.84 276 eP P 13 26 03.3 +0.5
LSA pmax pmax
comp=Z,21nm,1.0s
LSA Lhasa 42.84 276 eP P 13 26 03.2 +0.5
comp=Z,21nm,1.0s
CHBT CHBT 42.91 247 P P **13 26 05.3 +2.4**
comp=Z,39nm,1.6s
MHMT Maesarieng 42.96 257 P P **13 26 04.8 +1.5**
comp=Z,14nm,1.2s
UTHA Uthaitani 43.32 252 P P **13 26 09.1 +2.9**
comp=Z,5.5nm,1.2s,comp=Z,61nm
UMPA Umpang Tak 43.38 254 P P 13 26 13.0 +6.2
NVS Novosibirsk 43.48 314 ⇑*i*P P **13 26 07.8 +0.7**
NVS pmax pmax
comp=Z,39nm,1.4s
NVS pmax pmax
comp=N,13nm,1.6s
NVS pmax pmax
comp=E,36nm,1.4s
NRIK Noril'sk 43.79 335 P P **13 26 09.3 -0.1**
comp=E,5.7nm,0.5s,baz=122,slow=6.5,SNR=17
NRIK LR LR 13 45 47.0
comp=E,2µm,18.3s,baz=106,slow=38
SBUM Sibu 43.89 226 eP P 13 26 11.3 +0.5
comp=E,13nm,1.0s
SRDT SRDT 44.31 251 P P **13 26 15.9 +1.7**
comp=E,74nm,1.2s
KHLT Khaolaem Dam 44.44 252 P P **13 26 18.1 +2.9**
comp=E,13nm,1.2s,comp=E,228nm
MK01 Makanchi Array 44.79 302 eP P 13 26 17.7 0.0
MK31 Makanchi Array 44.79 302 *i* P P **13 26 17.5 -0.2**
MK31 pmax pmax
comp=Z,10.0nm,0.7s
MK31 Makanchi Array 44.79 302 eP P 13 26 17.2 -0.5
MKAR Makanchi Array 44.79 302 P P **13 26 17.9 +0.2**
comp=Z,8.3nm,0.6s,baz=84,slow=8.9,SNR=109
MKAR LR LR 13 45 30.1
comp=Z,533nm,19.9s,baz=81,slow=37
MKAR Makanchi Array 44.79 302 eP P 13 26 17.3 -0.5
MKAR Makanchi Array 44.79 302 eP P 13 26 17.2 -0.5
PHET Kaeng Krachan 44.82 249 P P **13 26 20.1 +1.8**
comp=Z,14nm,0.8s,comp=Z,141nm
MAKZ Makanchi 45.00 303 eP P 13 26 19.4 0.0
MAKZ pmax pmax
comp=Z,24nm,1.0s
MAKZ Makanchi 45.00 303 eP P 13 26 19.4 0.0
comp=Z,24nm,1.0s
PMG Port Moresby 46.14 173 LR LR 13 44 16.4
comp=Z,126nm,21.1s,baz=354,slow=34
KAPI Kappang 46.52 212 P P **13 26 31.9 +0.3**
comp=Z,17nm,0.9s,baz=222,slow=2.4,SNR=4.0
KAPI Kappang 46.52 212 eP P 13 26 32.4 +0.7
comp=Z,141nm,1.4s
TAPN Taplejung 46.57 275 eP P 13 26 33.0 +0.6
KURK Kurchatov 46.59 308 eP P 13 26 31.7 -0.1
KURK pmax pmax
comp=Z,112nm,1.4s
KURK Kurchatov 46.59 308 eP P 13 26 31.7 -0.1
comp=Z,112nm,1.4s
KURK Kurchatov 46.59 308 P P **13 26 32.1 +0.2**
SNR=22
KURK P P **13 26 32.1 +0.2**
SNR=22
KURBB Kurchatov Arra 46.66 308 P P **13 26 32.4 0.0**
comp=Z,22nm,0.7s,baz=82,slow=8.0,SNR=133
KDAK Kodiak Island 46.91 42 *i* P P **13 26 34.7 +0.5**
ODAN Odare 47.04 274 eP P 13 26 36.5 +0.5
comp=Z,68nm,0.8s
SPU Mount Spurr 47.10 37 eP P 13 26 36.6 +0.9
CAST Castle Rocks 47.13 34 eP P 13 26 36.9 +1.0
comp=Z,11nm,0.8s
BBKI Banjar Baru 47.42 218 P P **13 26 42.2 +3.5**
comp=Z,59nm,1.2s
RAMN Ramite 47.63 275 eP P 13 26 41.1 +0.5
comp=Z,237nm,1.2s
BPAW Bear Paw Mtn. 47.64 33 eP P 13 26 40.7 +0.8
comp=Z,34nm,1.8s
KTH Kantishna Hill 47.65 34 eP P 13 26 40.8 +0.8
comp=Z,22nm,1.0s
MLY Manley 47.78 32 eP P 13 26 42.2 +1.2
comp=Z,24nm,1.1s
GUN Gumba 47.79 276 eP P 13 26 42.5 +0.6
comp=Z,44nm,0.5s
SURT Suratani 48.01 246 P P **13 26 44.3 +1.0**
comp=Z,7.7nm,1.3s
TRTT Trang 48.11 244 P P **13 26 45.4 +1.3**
comp=Z,17nm,1.2s
KRAB Krabi 48.21 245 P P **13 26 45.7 +0.8**
comp=Z,38nm,0.8s,comp=Z,462nm
PKIN Phulchoki 48.32 276 eP P 13 26 46.7 +0.8
KKN Kakani 48.32 276 eP P 13 26 46.5 +0.6
comp=Z,69nm,0.7s
DMN Daman 48.54 276 eP P 13 26 47.9 +0.3
RND Reindeer 48.58 34 eP P 13 26 47.4 +0.2
RND pmax pmax
comp=Z,19nm,0.9s
RND Reindeer 48.58 34 eP P 13 26 47.4 +0.2
comp=Z,19nm,0.9s
GKN Gorkha 48.74 277 eP P 13 26 49.6 +0.5
comp=Z,87nm,0.7s
MDM Murphy Dome 48.84 32 eP P 13 26 50.1 +1.0
comp=Z,30nm,0.9s
WRH Wood River Hil 48.91 33 eP P 13 26 49.7 +0.1
comp=Z,14nm,1.0s
COLA College 49.01 32 eP P 13 26 51.1 +0.8
COLA pmax pmax
comp=Z,88nm,2.0s
COLA College 49.01 32 eP P 13 26 51.1 +0.8
comp=Z,88nm,2.0s
CCB Clear Creek Bu 49.03 32 eP P 13 26 50.4 -0.1
comp=Z,11nm,1.3s
PKDT Phuket 49.06 245 P P **13 26 52.4 +1.0**
comp=Z,35nm,1.0s
KULM Kulim 49.20 241 eP P 13 26 52.5 +0.1

comp=Z,42nm,1.7s
SOEI Soe 49.22 204 P **P** **13 26 56.5 +3.9**
comp=Z,88nm,1.0s,comp=Z,2µm
SOEI Soe 49.22 204 *e*P **P** **13 26 52.3 -0.3**
comp=Z,87nm,1.1s
HDA Harding Lake 49.40 33 *e*P **P** **13 26 53.5 +0.1**
comp=Z,21nm,1.2s
IL1 Eielson Array 49.42 32 *e*P **P** **13 26 53.3 -0.3**
ILAR Eielson Array 49.42 32 P **P** **13 26 53.6 +0.1**
comp=Z,5.7nm,0.6s,baz=260,slow=6.0,SNR=105
ILB Eielson Array 49.42 32 *e*P **P** **13 26 53.4 -0.2**
IPM Ipoh 49.51 240 *e*P **P** **13 26 54.5 -0.4**
comp=Z,15nm,1.0s
KOLN Koldanda 49.67 277 *e*P **P** **13 26 56.6 +0.4**
comp=Z,76nm,1.1s
PYUN Piuthan 50.01 278 *e*P **P** **13 26 59.3 +0.5**
comp=Z,142nm,0.9s
FYU Fort Yukon 50.06 30 *e*P **P** **13 27 00.2 +1.8**
comp=Z,84nm,1.6s
TKM2 Tokmak 2 50.30 299 *e*P **P** **13 27 01.7 +0.9**
TKM2 pmax pmax
comp=Z,88nm,1.6s
TKM2 Tokmak 2 50.30 299 *e*P **P** **13 27 01.7 +0.9**
comp=Z,88nm,1.6s
COEN Coen 50.43 179 *e*P **P** **13 27 04.6 +2.9**
comp=Z,18nm,1.0s
DOT Dot Lake 50.71 34 *e*P **P** **13 27 03.3 -0.1**
comp=Z,150nm,2.0s
VOSK Vostochnaya 50.93 312 P **P** **13 27 04.9 -0.3**
VOSK pmax pmax
comp=Z,28nm,1.1s
VOSK Vostochnaya 50.93 312 *e*P **P** **13 27 04.9 -0.3**
comp=Z,34nm,1.2s
MENT Mentasta 50.93 35 *e*P **P** **13 27 06.2 +1.2**
comp=Z,24nm,1.2s
CHKZ Chkalovo 50.96 313 P **P** **13 27 04.9 -0.4**
CHKZ pmax pmax
comp=Z,36nm,1.5s
FRU Bishkek 51.02 299 *i* P **P** **13 27 06.0 0.0**
KSH Kashi 51.08 295 P **P** **13 27 11.4 +4.7**
KSH *e*pP sP 13 27 21.2 +2.2
KSH *e*sP pP 13 27 25.0 +9.5
KSH *e*PcP **PcP** **13 28 25.7 +3.5**
KSH PcS **PcS** **13 32 24.0 +4.1**
KSH S **S** **13 34 27.8 +5.3**
KSH pmax pmax
comp=Z,50nm,1.6s
KSH pmax pmax
comp=Z,130nm,2.7s
KSH LR LR
comp=Z,2µm,15.1s
KSH LR LR
comp=Z,1µm,16.4s
KSH LR LR
comp=Z,3µm,16.4s
OTUK Ortayu 51.09 306 P **P** **13 27 06.5 0.0**
OTUK pmax pmax
comp=Z,63nm,1.5s
AAK Ala-Archa 51.16 299 P **P** **13 27 07.8 +0.5**
comp=Z,4.9nm,0.7s,baz=92,slow=5.4,SNR=11
AAK Ala-Archa 51.16 299 *e*P **P** **13 27 06.6 -0.7**
AAK pmax pmax
comp=Z,14nm,1.0s
AAK Ala-Archa 51.16 299 *e*P **P** **13 27 07.5 +0.2**
comp=Z,43nm,1.8s
BVAR Borovoye Array 51.22 313 P **P** **13 27 07.5 +0.2**
comp=Z,4.4nm,0.6s,baz=78,slow=7.7,SNR=29
BVAR PcP **PcP** **13 28 22.7 +0.4**
comp=Z,3.2nm,0.5s,baz=105,slow=3.6,SNR=4.1
BRVK Borovoye 51.27 313*c e*P **P** **13 27 08.0 +0.2**
BRVK pmax pmax
comp=Z,42nm,2.5s
BRVK Borovoye 51.27 313 *e*P **P** **13 27 08.0 +0.2**
comp=Z,18nm,1.1s
BRVK Borovoye 51.27 313 P **P** **13 27 08.1 +0.4**
SNR=8.7
BRVK P **P** **13 27 08.1 +0.4**
SNR=8.7
EKS2 Erkin-Say 51.66 299 *e*P **P** **13 27 11.0 +0.1**
EKS2 pmax pmax
comp=Z,7.0nm,0.8s
EKS2 Erkin-Say 51.66 299 *e*P **P** **13 27 11.0 +0.1**
comp=Z,7.4nm,0.8s
EGAK Eagle 51.87 32 *e*P **P** **13 27 11.8 -0.2**
comp=Z,25nm,1.5s
PSI Prapat 52.17 240 P **P** **13 27 14.6 -0.4**
comp=Z,4.0nm,0.5s,baz=8.9,slow=4.3,SNR=3.9
MNAS Manas 52.61 299 P **P** **13 27 18.4 +0.4**
MNAS pmax pmax
comp=Z,19nm,0.9s
SFK Sufi-Kurgan 52.71 296 P **P** **13 27 19.5 +0.6**
SFK pmax pmax
comp=Z,39nm,1.1s
DAWY Dawson 52.72 33 *e*P **P** **13 27 18.8 +0.4**
PWJI Pagerwojo 52.85 219 P **P** **13 27 19.3 -0.6**
KK31 Karatay Array 53.80 301 P **P** **13 27 26.7 +0.1**
KK31 pmax pmax
comp=Z,33nm,1.3s
KKAR Karatay Array 53.80 301 *e*P **P** **13 27 26.5 -0.1**
KKAR Karatay Array 53.80 301 *e*P **P** **13 27 26.5 -0.1**
LEM Lembang 54.08 224 P **P** **13 27 29.8 +0.7**
comp=Z,20nm,0.8s,baz=313,slow=22,SNR=1.9
LEM Lembang 54.08 224 P P 13 27 34.6 +5.5
comp=Z,630nm,1.0s
GSI Gunungsitoli 54.17 240 P **P** **13 27 29.8 +0.2**
comp=Z,67nm,1.4s
GSI Gunungsitoli 54.17 240 *e*P **P** **13 27 29.6 0.0**
comp=Z,124nm,1.4s
MDSI Maura Dua 54.20 229 P **P** **13 27 33.0 +3.2**
comp=Z,27nm,1.7s
NDI New Delhi 54.33 282 *e*P **P** **13 27 27.0 -3.6**
INK Inuvik 54.37 27 P **P** **13 27 31.2 +0.9**
comp=Z,4.9nm,0.6s,baz=300,slow=7.0,SNR=64
SVE Sverdlovsk 55.77 319*de*P **P** **13 27 41.3 +0.7**
SVE pmax pmax
comp=Z,48nm,1.4s
SVE MLR MLR
comp=Z,2µm,18.0s
FITZ Fitzroy Crossi 56.73 199 P **P** **13 27 48.1 +0.2**
comp=Z,2.3nm,0.5s,baz=328,slow=4.5,SNR=12
WRAB Tennant Creek 56.85 189 *e*P **P** **13 27 48.0 -0.6**
WRAB pmax pmax
comp=Z,20nm,0.9s
WRAB Tennant Creek 56.85 189 *e*P **P** **13 27 48.0 -0.6**
comp=Z,20nm,0.9s
WB2 Warramunga Arr 56.86 189 *e*P **P** **13 27 47.9 -0.8**
comp=Z,26nm,1.0s
WRA Warramunga Arr 56.86 189 P **P** **13 27 47.8 -0.9**
comp=Z,3.2nm,0.4s,baz=6.1,slow=7.1,SNR=68
WRA LR LR 13 51 14.1
comp=Z,189nm,21.7s,baz=5.0,slow=35
ARU Arti 56.98 319 LR LR 13 54 37.5
comp=Z,2µm,18.0s,baz=78,slow=38
ARU Arti 56.98 319*c i*P **P** **13 27 49.4 +0.1**
ARU 13 28 44.1
ARU S **S** **13 35 40.8 -0.6**
ARU SS **SS** **13 39 26.2 -3.4**
ARU pmax pmax
comp=Z,55nm,1.2s
ARU MLR MLR
comp=Z,2µm,18.0s
ARU Arti 56.98 319 *e*P **P** **13 27 49.2 -0.1**
comp=Z,80nm,1.4s
KBL Kabul 58.09 291 *e*P **P** **13 27 57.3 -0.4**
KBL pmax pmax
comp=Z,51nm,1.3s
KBL Kabul 58.09 291 *e*P **P** **13 27 57.3 -0.4**
comp=Z,51nm,1.3s
DLBC Dease Lake 58.48 38 P **P** **13 28 01.7 +1.8**
comp=Z,2.9nm,0.9s,baz=280,slow=2.4,SNR=4.9
DLBC Dease Lake 58.48 38 *e*P **P** **13 28 01.9 +2.0**
comp=Z,14nm,0.9s
AB31 Akbulak array 58.59 310 P **P** **13 28 00.5 -0.2**
AB31 pmax pmax
comp=Z,8.0nm,0.6s
ABKAR Akbulak array 58.59 310 *e*P **P** **13 28 00.4 -0.3**
HYB Hyderabad 58.80 269 *i* P **P** **13 28 02.0 -0.7**
AS01 Alice Springs 60.58 189 *e*P **P** **13 28 13.7 -0.9**
AS31 Alice Springs 60.58 189 *e*P **P** **13 28 14.0 -0.7**
comp=Z,3.0nm,0.6s
ASAR Alice Springs 60.58 189 P **P** **13 28 14.1 -0.6**
comp=Z,3.8nm,0.9s,baz=12,slow=10,SNR=53
SPITS Spitsbergen Ar 60.93 349 P **P** **13 28 16.4 0.0**
comp=Z,6.5nm,0.9s,baz=112,slow=11,SNR=4.9
MBWA Marble Bar 61.36 204 *e*P **P** **13 28 19.8 -0.1**
comp=Z,14nm,0.8s

POO Poona 61.99 273 *e*P **P** **13 28 23.0 -1.4**
RES Resolute Bay 62.73 15 P **P** **13 28 28.6 +0.1**
comp=Z,3.7nm,0.8s,baz=313,slow=6.4,SNR=13
RES Resolute Bay 62.73 15 *e*P **P** **13 28 28.2 -0.3**
RES Resolute Bay 62.73 15 *e*P **P** **13 28 28.2 -0.3**
YKW3 Yellowknife Ar 63.72 30 *e*P **P** **13 28 35.0 -0.2**
comp=Z,6.1nm,1.0s
YKA Yellowknife Ar 63.76 30 P **P** **13 28 35.5 0.0**
comp=Z,1.5nm,0.5s,baz=301,slow=6.3,SNR=44
YKB5 Yellowknife Ar 63.76 30 *e*P **P** **13 28 34.4 -1.1**
MSVF Nonsavu 63.90 142 *e*P **P** **13 28 38.2 +1.3**
MSVF pmax pmax
comp=Z,18nm,1.1s
MSVF Nonsavu 63.90 142 *e*P **P** **13 28 38.2 +1.3**
comp=Z,18nm,1.1s
KLMR Klimovskoe 64.33 328 *e*P **P** **13 28 37.7 -1.5**
KLMR *e**PP **pP** **13 28 47.6 -0.7**
KLMR *e* 13 30 58.4
KLMR *e*S **S** **13 37 08.3 -6.8**
KLMR pmax pmax
comp=Z,18nm,0.9s
ARCES ARCESS Array B 64.48 340 P **P** **13 28 40.3 +0.1**
comp=Z,1.1nm,0.5s,baz=58,slow=12,SNR=9.0
ARCES LR LR 14 01 59.6
comp=Z,682nm,18.1s,baz=38,slow=41
ARCES ARCESS Array B 64.48 340 *e*P **P** **13 28 40.7 +0.5**
GEYT Alibeck 64.51 299 P **P** **13 28 41.4 +0.5**
comp=Z,5.5nm,0.6s,baz=29,slow=3.4,SNR=17
GEYT LR LR 13 59 00.9
comp=Z,371nm,18.1s,baz=70,slow=38
MOS Moscow 67.85 324 *e*P **P** **13 28 58.0 -3.9**
MOS *e* 13 29 07.7
MOS *e* 13 31 30.8
MOS pmax pmax
comp=Z,30nm,0.9s
MOS MLR MLR
comp=Z,900nm,19.0s
VRH Novokhopyorsk 68.20 318 *e*P **P** **13 29 03.3 -0.9**
VRH pmax pmax
comp=Z,50nm,1.5s
STKA Stephens Creek 68.26 181 P **P** **13 29 05.1 +0.4**
comp=Z,1.7nm,0.7s,baz=357,slow=6.1,SNR=4.2
B08A Colville Reser 68.62 45 *e*P **P** **13 29 07.2 +0.3**
comp=Z,12nm,1.3s
OBN Obninsk 68.69 324 P **P** **13 29 06.9 -0.3**
comp=Z,11nm,0.5s,baz=98,slow=22,SNR=5.6
OBN Obninsk 68.69 324‖ *e*P **P** **13 29 07.4 +0.2**
OBN *e* 13 29 15.8
OBN *e* 13 29 27.4
OBN *e* 13 31 38.9
OBN pmax pmax
comp=Z,51nm,1.7s
OBN MLR MLR
comp=Z,493nm,16.0s
LPSR Galich'ya Gora 68.92 320 *e*P **P** **13 29 08.8 +0.2**
LPSR pmax pmax
comp=Z,40nm,1.6s
LPSR MLR MLR
comp=Z,1µm,17.0s
FINES FINESS Array B 69.36 333 P **P** **13 29 11.4 +0.2**
comp=Z,7.6nm,0.7s,baz=52,slow=7.5,SNR=19
FINES LR LR 14 01 49.5
comp=Z,868nm,18.8s,baz=28,slow=38
FINES FINESS Array B 69.36 333 *i* P **P** **13 29 11.3 +0.1**
FINES pmax pmax
comp=Z,8.0nm,0.7s
C09A Chrisman Ranch 69.51 45 *e*P **P** **13 29 12.8 +0.3**
comp=Z,24nm,1.3s
VSR Storozhevoye 69.55 319 *e*P **P** **13 29 12.1 -0.5**
VSR pmax pmax
comp=Z,10.0nm,0.5s
NEW Newport 69.92 44 P **P** **13 29 16.0 +1.0**
comp=Z,2.5nm,0.8s,baz=320,slow=5.0,SNR=3.9
NEW Newport 69.92 44 P **P** **13 29 15.7 +0.7**
baz=303
NEW Newport 69.92 44 *e*P **P** **13 29 15.2 +0.2**
NEW pmax pmax
comp=Z,13nm,1.3s
NEW Newport 69.92 44 *e*P **P** **13 29 15.2 +0.2**
comp=Z,13nm,1.3s
YBH Yreka Blue Hor 70.04 52 P **P** **13 29 16.3 +0.3**
comp=Z,2.1nm,1.0s,baz=40,slow=7.9,SNR=3.0
M04C Mabel 70.57 52 P **P** **13 29 19.3 +0.1**
baz=302
K05A Summer Lake 70.66 51 *e*P **P** **13 29 20.8 +0.9**
comp=Z,38nm,1.1s
VSU Vasula 71.01 330*ce*P **P** **13 29 22.2 +0.8**
VSU pmax pmax
comp=Z,154nm,2.5s
WALA Waterton Lakes 71.25 42 *e*P **P** **13 29 23.4 +0.2**
comp=Z,29nm,1.9s
NCK Nalchik 71.26 311 *e*P **P** **13 29 22.6 -0.6**
NCK pmax pmax
comp=Z,11nm,1.0s
O03D Paynes Creek 71.39 53 P **P** **13 29 24.7 +0.6**
baz=303
ZEI Tsey 71.45 310 *e*P **P** **13 29 21.3 -3.4**
ZEI pmax pmax
comp=Z,85nm,1.7s
KVAR Kislovodsk Arr 71.55 311 P **P** **13 29 25.8 +0.7**
comp=Z,19nm,0.7s,baz=96,slow=1.7,SNR=14
KBZ Khabaz 71.55 311 P **P** **13 29 25.7 +0.7**
comp=Z,17nm,1.1s,baz=36,slow=3.6,SNR=14
KBZ LR LR 14 05 35.3
comp=Z,632nm,18.6s,baz=36,slow=40
KIV Kislovodsk 71.56 311 *i* P **P** **13 29 26.1 +0.9**
SNR=7.0
KIV Kislovodsk 71.56 311 *e*P **P** **13 29 25.7 +0.6**
KIV pmax pmax
comp=Z,46nm,1.1s
KIV MLR MLR
comp=Z,620nm,17.0s
KIV Kislovodsk 71.56 311 *e*P **P** **13 29 24.1 -1.0**
comp=Z,49nm,1.0s
KIV Kislovodsk 71.56 311 P **P** **13 29 26.0 +0.9**
SNR=8.1
KIV P **P** **13 29 26.0 +0.9**
SNR=8.1
BMO Blue Mountains 71.68 47 *e*P **P** **13 29 26.4 +0.5**
BMO pmax pmax
comp=Z,14nm,1.2s
BMO Blue Mountains 71.68 47 *e*P **P** **13 29 26.4 +0.5**
comp=Z,14nm,1.2s
NEY Neytrino 71.92 311 *e*P **P** **13 29 28.0 +0.5**
NEY pmax pmax
comp=Z,1.0nm,0.9s
SWMT Swartz Lake 72.08 44 *e*P **P** **13 29 28.7 +0.4**
WVOR Wild Horse Val 72.22 50 *e*P **P** **13 29 33.7 +4.5**
WVOR pmax pmax
comp=Z,22nm,1.4s
WVOR Wild Horse Val 72.22 50 *e*P **P** **13 29 33.7 +4.5**
comp=Z,22nm,1.4s
GNI Garni 72.37 307 P **P** **13 29 30.8 +0.6**
comp=Z,3.2nm,0.5s,baz=197,slow=11,SNR=3.5
GNI Garni 72.37 307*c i*P **P** **13 29 31.0 +0.9**
GNI pmax pmax
comp=Z,179nm,1.7s
AKH Akhalkalaki 72.47 309‖ *i*P **P** **13 29 31.7 +1.0**
UOSS Minazif 72.48 288 *e*P **P** **13 29 30.8 0.0**
comp=Z,1.6nm,0.9s
MSO Missoula 72.51 44 P **P** **13 29 31.1 +0.3**
baz=305
MSO Missoula 72.51 44 *e*P **P** **13 29 31.0 +0.3**
comp=Z,13nm,1.1s
HATD Hatta, Dubai 72.60 288 *i* P **P** **13 29 33.0 +1.4**
SNR=7.7
HATD Hatta, Dubai 72.60 288 P **P** **13 29 32.4 +0.9**
SNR=10
HATD P **P** **13 29 32.4 +0.9**
SNR=10
ASHO Ashiyiah 72.73 288 *i* P **P** **13 29 32.9 +0.5**
SNR=5.6
ASHO Ashiyiah 72.73 288 P **P** **13 29 33.0 +0.6**
SNR=10
BSY Bisya 72.91 286 P **P** **13 29 34.5 +1.1**
SNR=5.3
FAQ Al Faqa, Dubai 73.05 288 P **P** **13 29 34.3 +0.1**
ARQ Araqi 73.11 287 P **P** **13 29 34.9 +0.3**
SNR=9.2
NACGM Naroch 73.30 327 *e* **P** **13 29 36.0 +0.8**
NACGM *e*LR LR 14 03 38.0
ASUD Al Ashush, Dub 73.32 288 P **P** **13 29 36.3 +0.5**
CMB Columbia Colle 73.55 55 *e*P **P** **13 29 41.5 +4.5**
CMB pmax pmax
comp=Z,12nm,1.2s
CMB Columbia Colle 73.55 55 *e*P **P** **13 29 41.5 +4.5**
comp=Z,12nm,1.2s
FFC Flin Flon 73.62 33 *e*P **P** **13 29 37.2 +0.1**
FFC pmax pmax
comp=Z,14nm,1.1s
FFC Flin Flon 73.62 33 *e*P **P** **13 29 37.1 +0.1**
comp=Z,14nm,1.1s
FCC Fort Churchill 73.99 27 *e*P **P** **13 29 39.1 0.0**
FCC pmax pmax
comp=Z,18nm,1.4s
FCC Fort Churchill 73.99 27 *e*P **P** **13 29 39.1 0.0**
comp=Z,18nm,1.4s
EGMT Eagleton 74.09 42 P **P** **13 29 40.7 +0.6**
baz=308
EGMT Eagleton 74.09 42 *e*P **P** **13 29 39.8 -0.3**
comp=Z,13nm,1.0s
DLMT Dillon 74.12 45 *e*P **P** **13 29 38.9 -1.5**
comp=Z,24nm,1.1s
HLID Hailey 74.13 47 P **P** **13 29 42.2 +1.7**
baz=306
HLID Hailey 74.13 47 *e*P **P** **13 29 41.0 +0.5**
comp=Z,8.6nm,1.1s
ANN Anapa 74.17 314 *e*P P 13 29 48.6 +8.2
ANN pmax pmax
comp=Z,117nm,1.9s
ANN MLR MLR
comp=Z,577nm,18.0s
BMN Battle Mountai 74.22 51 *e*P **P** **13 29 42.0 +0.9**
BMN pmax pmax
comp=Z,19nm,1.4s
BMN Battle Mountai 74.22 51 *e*P **P** **13 29 42.0 +0.9**
comp=Z,19nm,1.4s
BOZ Bozeman (W) 74.50 44 P **P** **13 29 43.6 +1.0**
baz=307
BOZ Bozeman (W) 74.50 44 *e*P **P** **13 29 43.3 +0.7**
BOZ pmax pmax
comp=Z,16nm,1.0s
BOZ Bozeman (W) 74.50 44 *e*P **P** **13 29 43.3 +0.7**
comp=Z,16nm,1.0s
HFS Hagfors 74.61 336 P **P** **13 29 43.1 +0.4**
comp=Z,6.7nm,0.9s,baz=90,slow=1.5,SNR=20
NC204 NORSAR Array S 74.64 338 *e*P **P** **13 29 43.4 +0.3**
NB201 NORSAR Array S 74.66 338 *e*P **P** **13 29 43.0 -0.1**
NV01 Mina Array Sit 74.68 53 *e*P **P** **13 29 44.1 +0.2**
NVAR Mina Array Bea 74.68 53 P **P** **13 29 44.4 +0.5**
comp=Z,2.4nm,0.8s,baz=303,slow=5.5,SNR=8.9
NB2 NORSAR Subarra 74.69 338 P **P** **13 29 43.2 -0.1**
comp=Z,22nm,1.2s,baz=38,slow=5.9
NB2 NORSAR Subarra 74.69 338 P **P** **13 29 43.2 -0.1**
baz=38,slow=5.9
NOA NORSAR Array B 74.69 338 P **P** **13 29 43.5 +0.3**
comp=Z,6.0nm,0.9s,baz=40,slow=5.8,SNR=12
NOA LR LR 14 06 12.0
comp=Z,646nm,18.7s,baz=50,slow=39
NBO02 NORSAR Array S 74.79 338 *e*P **P** **13 29 43.9 +0.1**
AKASG Malin Array Be 74.90 323 P **P** **13 29 44.6 +0.1**
comp=Z,6.9nm,0.6s,baz=44,slow=6.0,SNR=38
AKBB Malin Array Si 74.90 323 *e*P **P** **13 29 43.5 -1.1**
AKBB pmax pmax
comp=Z,16nm,0.8s
AKBB Malin Array Si 74.90 323 *e*P **P** **13 29 43.5 -1.1**
comp=Z,16nm,0.8s
KIEV Kiev 74.91 323*c i*P **P** **13 29 44.6 0.0**
KIEV pmax pmax
comp=Z,18nm,0.9s
KIEV Kiev 74.91 323 *e*P **P** **13 29 44.0 -0.7**
comp=Z,32nm,1.3s
AK11 Malin Array Si 74.94 323 *e*P **P** **13 29 44.3 -0.5**
YMR Madison River 75.46 45 *e*P **P** **13 29 49.4 +1.1**
comp=Z,22nm,1.3s
YFT Old Faithful 75.67 45 *e*P **P** **13 29 50.0 +0.5**
comp=Z,11nm,1.0s
LKWY Lake 75.85 45 *e*P **P** **13 29 53.0 +2.5**
LKWY pmax pmax
comp=Z,14nm,1.1s
LKWY Lake 75.85 45 *e*P **P** **13 29 53.0 +2.5**
comp=Z,14nm,1.1s
H17A Grant Village 75.85 45 P **P** **13 29 53.0 +2.5**
baz=308
IMW Indian Meadow 75.95 45 *e*P **P** **13 29 52.3 +1.2**
comp=Z,20nm,1.2s
SIM Simferopol' 75.96 316 *e*P **P** **13 29 51.7 +0.9**
SIM pmax pmax
comp=Z,19nm,0.9s
SIM MLR MLR
comp=Z,240nm,16.6s
FLWY Flagg Ranch 75.97 45 *e*P **P** **13 29 52.8 +1.6**
comp=Z,36nm,1.4s
RLMT Red Lodge 76.14 44 P **P** **13 29 52.9 +0.8**
baz=308
RLMT Red Lodge 76.14 44 *e*P **P** **13 29 52.8 +0.7**
comp=Z,16nm,1.3s
MOOW Moose Ponds 76.15 46 *e*P **P** **13 29 53.1 +0.9**
comp=Z,21nm,1.4s
LOHW Long Hollow 76.31 46 *e*P **P** **13 29 54.9 +1.8**
comp=Z,5.4nm,1.1s
SNOW Snow King Moun 76.32 46 *e*P **P** **13 29 54.8 +1.6**
comp=Z,7.6nm,0.9s
REDW Red Top Meadow 76.33 46 *e*P **P** **13 29 53.4 +0.2**
comp=Z,21nm,1.5s
R11A Troy Canyon, C 76.46 52 P **P** **13 29 55.0 +1.0**
baz=306
MPMC Manual Prospec 76.57 55 P **P** **13 29 55.5 +0.8**
baz=306
TPNV Topopah Spring 76.86 54 P **P** **13 29 57.2 +0.9**
baz=306
TPNV Topopah Spring 76.86 54 *e*P **P** **13 29 56.5 +0.2**
TPNV pmax pmax
comp=Z,9.0nm,1.0s
TPNV Topopah Spring 76.86 54 *e*P **P** **13 29 56.5 +0.2**
comp=Z,8.8nm,1.0s
FRB Frobisher Bay 76.92 13 P **P** **13 29 56.3 +0.5**
comp=Z,3.6nm,0.5s,baz=332,slow=5.9,SNR=15
EDW2 Edwards Air Fo 76.92 56 P **P** **13 29 57.8 +1.2**
baz=306
DUG Dugway, Tooele 77.09 49 P **P** **13 29 58.6 +1.1**
baz=307
DUG Dugway, Tooele 77.09 49 *e*P **P** **13 29 58.4 +0.9**
DUG pmax pmax
comp=Z,16nm,1.1s
DUG Dugway, Tooele 77.09 49 *e*P **P** **13 29 58.4 +0.9**
comp=Z,16nm,1.1s
TCUT Toone Canyon 77.37 48 *e*P **P** **13 30 00.8 +1.6**
comp=Z,20nm,1.1s
CTU Camp Tracy 77.43 48 *e*P **P** **13 30 00.3 +0.9**
comp=Z,4.7nm,0.9s
BW06 Boulder Array 77.44 46 P **P** **13 29 59.7 +0.2**
baz=309
BW06 Boulder Array 77.44 46 *e*P **P** **13 29 59.6 +0.1**
comp=Z,5.8nm,1.1s
PD31 Pinedale Array 77.44 46 *e*P **P** **13 29 59.4 -0.1**
PDAR Pinedale Array 77.44 46 P **P** **13 29 59.9 +0.4**
comp=Z,1.6nm,0.5s,baz=272,slow=1.8,SNR=28
PSUT Pine Spring 77.45 51 *e*P **P** **13 29 58.6 -1.0**
GSC Goldstone, Bar 77.47 55 P **P** **13 29 60.0 +0.4**
baz=306
KIS Kishinev 77.51 320 *e*P **P** **13 30 04.0 +4.5**
KIS LRM MLR 14 07 04.0
comp=Z,2µm,16.0s
KIS Kishinev 77.51 320 *e*P **P** **13 30 04.0 +4.5**
KIS *e* 13 30 10.0
KIS *e* 13 30 19.0
KIS *e* 13 32 58.0
KIS *e* 13 40 32.0
KIS MLR MLR
comp=Z,2µm,16.0s
KIS MLR MLR
comp=N,1µm,15.0s
KIS MLR MLR
comp=Z,2µm,16.0s
NLU North Lily Min 77.68 49 *e*P **P** **13 30 01.6 +0.7**
comp=Z,17nm,1.2s
MPU Maple Canyon 77.92 49 *e*P **P** **13 30 02.9 +0.7**
comp=Z,18nm,1.2s
LVV L'vov 77.97 324 *e*P **P** **13 30 02.5 +0.5**
MSU Marysvale 78.50 50 *e*P **P** **13 30 07.0 +1.5**
MSU Marysvale 78.50 50 *e*P **P** **13 30 07.0 +1.5**
GMRC Granite Mounta 78.53 55 P **P** **13 30 06.4 +0.8**
baz=307
KWP Kalwaria Pacla 78.72 325 *e*P **P** **13 30 06.8 +0.6**
KWP Kalwaria Pacla 78.72 325 *e*P **P** **13 30 06.8 +0.6**
LCMT Little Creek M 78.75 52 *e*P **P** **13 30 07.5 +0.7**
comp=Z,17nm,1.2s
P17A Butcher Ranch, 78.79 49 *e*P **P** **13 30 07.8 +0.8**
comp=Z,24nm,1.2s
BUR08 Bucovina Ar. S 78.91 322 *e*P **P** **13 30 08.0 +0.6**
BURAR Bucovina Array 78.92 322‖ *i*P **P** **13 30 08.5 +1.1**
KNB Kanab 79.02 52 *e*P **P** **13 30 10.2 +1.9**

KNB pmax pmax
comp=Z,17nm,1.2s
KNB Kanab 79.02 52 *e*P **P 13 30 10.2 +1.9**
comp=Z,17nm,1.2s
SRU San Rafael Swe 79.15 49 *e*P **P 13 30 09.5 +0.5**
SRU pmax pmax
comp=Z,17nm,1.0s
SRU San Rafael Swe 79.15 49 *e*P **P 13 30 09.5 +0.5**
comp=Z,17nm,1.0s
IRM Iron Mountain 79.25 55 P **P 13 30 09.6 +0.2**
baz=307
VRI Vrincioaia 79.34 320⇑ *i*P **P 13 30 11.9 +2.2**
D28A Regan 79.36 38 P **P 13 30 09.9 +0.2**
baz=314
ULM Lac du Bonnet 79.41 34 P **P 13 30 10.2 +0.3**
comp=Z,1.6nm,0.8s,baz=316,slow=9.8,SNR=3.6
KOLS Kolonicke sedl 79.42 324 *e*P **P 13 30 10.8 +0.8**
KOLS *e* 13 30 19.8
KOLS pmax pmax
comp=Z,11nm,1.2s
KOLS Kolonicke sedl 79.42 324 *e*P **P 13 30 10.8 +0.8**
KOLS *e* 13 30 19.8
BR131 Keskin Array S 79.50 312 *e*P **P 13 30 11.1 +0.3**
BRTR Keskin Array B 79.50 312 P **P 13 30 11.6 +0.8**
comp=Z,10nm,1.1s,baz=108,slow=4.0,SNR=23
STHS Stebnicka Huta 79.55 325 *e*P **P 13 30 11.7 +1.0**
STHS pmax pmax
comp=Z,12nm,1.3s
STHS Stebnicka Huta 79.55 325 *e*P **P 13 30 11.7 +1.0**
B30A Myrvik Farm, E 79.57 36 P **P 13 30 11.0 +0.1**
baz=315
UZH Uzhgorod 79.62 324 *e*P **P 13 30 09.0 -2.1**
UZH *e* 13 30 15.2
OJC Ojcow 79.62 327 *e*P **P 13 30 12.0 +0.9**
OJC Ojcow 79.62 327 *e*P **P 13 30 11.8 +0.7**
OJC pmax pmax
comp=Z,45nm,1.2s
OJC Ojcow 79.62 327 *e*P **P 13 30 11.8 +0.7**
comp=Z,45nm,1.2s
ARCR ARCALIA 79.71 322⇑ *i*P **P 13 30 14.0 +2.4**
TRPA Tarpa 79.86 324⇑ *e*SKSac **P 13 30 13.8 +1.4**
I25A Rochford 79.87 42 P **P 13 30 12.5 -0.3**
baz=312
BR231 Keskin MP Arra 79.94 312 *e*P **P 13 30 11.9 -1.3**
MSAB Monastry St. A 79.96 318⇓ *i*P **P 13 30 14.4 +1.4**
DOPR Dopca 79.96 321⇑ *i*P **P 13 30 14.8 +1.8**
NIE Niedzica 79.98 326 *e*P **P 13 30 14.3 +1.2**
NIE Niedzica 79.98 326 *e*P **P 13 30 14.4 +1.3**
MLR Muntele Rosu 80.00 320 P **P 13 30 12.0 -1.4**
comp=Z,1.8nm,1.1s,baz=85,slow=8.2,SNR=3.1
MLR Muntele Rosu 80.00 320⇑ *i*P **P 13 30 14.6 +1.2**
GLA Glamis 80.12 56 P **P 13 30 14.5 +0.3**
baz=308
C31A Landman Farms, 80.32 36 P **P 13 30 14.8 -0.1**
baz=315
H27A Howes 80.34 41 P **P 13 30 14.6 -0.5**
baz=313
VOIR 80.50 321⇓ *i*P **P 13 30 17.5 +1.5**
PV10 Paradox Valley 80.51 49 *e*P **P 13 30 13.9 -2.5**
LANS Liptovska Anna 80.55 326 *e*P **P 13 30 17.6 +1.4**
LANS *e* 13 30 27.6
LANS Liptovska Anna 80.55 326 *e*P **P 13 30 17.6 +1.4**
LANS *e* 13 30 27.6
KECS Kecovo 80.57 325 *e*P **P 13 30 17.6 +1.3**
KECS pmax pmax
comp=Z,5.0nm,1.3s
KECS Kecovo 80.57 325 *e*P **P 13 30 17.5 +1.3**
A33A Warroad 80.58 34 P **P 13 30 16.4 +0.1**
baz=317
OKC Ostrava-Krasne 80.63 327 AMS AMS 14 09 10.0
comp=Z,900nm,20.1s
KSP Ksiaz 80.67 329 *e*P **P 13 30 17.7 +1.0**
KSP Ksiaz 80.67 329 *e*P **P 13 30 17.8 +1.0**
N23A Red Feather La 80.71 45 P **P 13 30 17.7 +0.2**
baz=311
DRGR 80.72 323⇑ *i*P **P 13 30 18.0 +0.8**
ARR Arges 80.76 321⇑ *i*P **P 13 30 19.1 +1.7**
Y14A Wickenburg 80.79 55 *e*P **P 13 30 18.2 +0.4**
comp=Z,43nm,1.4s
H28A Mission Ridge 80.86 40 P **P 13 30 17.8 -0.1**
baz=314
MORC Moravsky Berou 80.94 327 *e*P **P 13 30 18.7 +0.5**
MORC pmax pmax
comp=Z,76nm,1.1s
MORC Moravsky Berou 80.94 327 *e*P **P 13 30 18.7 +0.5**
comp=Z,76nm,1.1s
DPC Dobruska-Polom 81.03 328 *e*P **P 13 30 19.9 +1.2**
DPC *e*pP **pP 13 30 28.8 +0.8**
DPC AMS AMS 14 09 10.0
comp=Z,700nm,15.3s
DPC Dobruska-Polom 81.03 328 *e*P **P 13 30 19.9 +1.2**
DPC *e* 13 30 28.8
DPC MLR MLR
comp=Z,700nm,15.3s
UPC Upice 81.04 329 AMS AMS 14 11 10.0
comp=Z,900nm,15.1s
LOT Lotru 81.14 321⇑ *i*P **P 13 30 20.0 +0.5**
SMCO Snowmass 81.23 47 *e*P **P 13 30 21.4 +0.9**
comp=Z,15nm,1.3s
PSZ Piszkesteto 81.25 325⇑ *e*S **P 13 30 21.0 +1.0**
PSZ Piszkesteto 81.25 325 *e*P **P 13 30 20.6 +0.7**
PSZ pmax pmax
comp=Z,35nm,1.2s
PSZ Piszkesteto 81.25 325 *e*P **P 13 30 20.6 +0.7**
comp=Z,35nm,1.2s
VYHS Vyhne 81.31 326 *e*P **P 13 30 21.3 +1.0**
VYHS *e* 13 30 29.3
VYHS *e* 13 33 26.8
VYHS pmax pmax
comp=Z,9.0nm,1.3s
VYHS Vyhne 81.31 326 *e*P **P 13 30 21.2 +1.0**
VYHS *e* 13 30 29.3
VYHS *e*PP **PP 13 33 26.8 +1.4**
X16A Lo Mia Camp, P 81.50 53 *e*P **P 13 30 23.0 +1.3**
comp=Z,8.2nm,1.0s
MVCO Mesa Verde 81.58 50 P **P 13 30 22.4 +0.2**
baz=310
MVCO Mesa Verde 81.58 50 *e*P **P 13 30 23.1 +0.9**
comp=Z,17nm,1.1s
SIRR Siria 81.60 323⇑ *i*P **P 13 30 22.8 +1.0**
BRG Berggiesshubel 81.61 330 *e*P **P 13 30 21.9 +0.2**
comp=Z,11nm,1.1s
BRG *e* 13 30 32.5
comp=Z,10nm,1.1s
comp=N,725nm,16.0s
comp=E,707nm,15.5s
comp=Z,1μm,15.9s
BRG Berggiesshubel 81.61 330 *e*P **P 13 30 21.9 +0.2**
BRG *e* 13 30 32.5
BRG pmax pmax
comp=Z,11nm,1.1s
BRG MLR MLR
comp=N,725nm,16.0s
BRG MLR MLR
comp=E,707nm,15.5s
BRG MLR MLR
comp=Z,1μm,15.9s
ISCO Idaho Springs 81.62 46 P **P 13 30 23.1 +0.7**
baz=311
ISCO Idaho Springs 81.62 46 *e*P **P 13 30 23.2 +0.8**
ISCO pmax pmax
comp=Z,20nm,1.7s
ISCO Idaho Springs 81.62 46 *e*P **P 13 30 23.2 +0.8**
comp=Z,20nm,1.7s
PVCC Panska Ves 81.62 329 *e*P **P 13 30 22.8 +1.0**
PVCC AMS AMS 14 09 30.0
comp=Z,800nm,15.7s
PVCC Panska Ves 81.62 329 *e*P **P 13 30 22.8 +1.0**
PVCC MLR MLR
comp=Z,800nm,15.7s
CLL Collm 81.65 331⇑ *i*P **P 13 30 22.1 +0.2**
comp=Z,23nm,1.2s
CLL *e*pP **pP 13 30 32.0 +0.8**
CLL Collm 81.65 331⇑ *i*P **P 13 30 22.1 +0.2**
CLL *e* 13 30 32.0
CLL pmax pmax
comp=Z,23nm,1.2s
CLL Collm 81.65 331 *e*P **P 13 30 22.1 +0.2**
comp=Z,36nm,1.3s
VRAC Vranov 81.70 327 P **P 13 30 23.3 +1.1**
comp=Z,15nm,1.1s,baz=38,slow=5.3,SNR=15
VRAC Vranov 81.70 327⇓ *i*P **P 13 30 23.4 +1.2**
B35A Bob, Littlefor 81.76 34 P **P 13 30 22.5 0.0**
baz=318
GOPC GO Pecny, Ondr 82.00 329 *e*P **P 13 30 24.7 +0.9**
GOPC AMS AMS 14 09 50.0
comp=Z,900nm,15.1s
GOPC GO Pecny, Ondr 82.00 329 *e*P **P 13 30 24.7 +0.9**
GOPC MLR MLR
comp=Z,900nm,15.1s
PRA Prague 82.03 329 *e*P **P 13 30 24.9 +1.0**
PRA Prague 82.03 329 *e*P **P 13 30 24.9 +1.0**
PRU Pruhonice 82.05 329 *e*P **P 13 30 25.0 +1.0**
PRU *e*pP **pP 13 30 34.1 +0.7**
PRU AMS AMS 14 09 50.0
comp=Z,900nm,18.4s
PRU Pruhonice 82.05 329 *e*P **P 13 30 25.0 +1.0**
PRU *e* 13 30 34.1
PRU MLR MLR
comp=Z,900nm,18.4s
C35A Jirik Farms, M 82.13 34 P **P 13 30 24.5 -0.1**
baz=318
ASF Jabal al Asfar 82.17 304 P **P 13 30 25.9 +0.8**
comp=Z,3.6nm,0.8s,baz=50,slow=6.9,SNR=6.8
TREC Trest 82.18 328 *e*P **P 13 30 25.5 +0.7**
TREC AMS AMS 14 12 10.0
comp=Z,800nm,14.9s
TREC Trest 82.18 328 *e*P **P 13 30 25.5 +0.7**
TREC MLR MLR
comp=Z,800nm,14.9s
S22A 4UR Ranch, Cre 82.25 48 P **P 13 30 27.1 +1.3**
baz=311
F33A 5 Mile Ranch, 82.41 37 P **P 13 30 26.2 +0.2**
baz=316
Q24A Divide 82.44 47 P **P 13 30 26.8 +0.1**
baz=312
ISP Isparta 82.59 312 *e*P **P 13 30 27.7 +0.5**
ISP pmax pmax
comp=Z,27nm,1.4s
ISP Isparta 82.59 312 *e*P **P 13 30 27.7 +0.5**
comp=Z,27nm,1.4s
MMAI Mount Meron Ar 82.63 306 P **P 13 30 28.6 +1.1**
comp=Z,2.2nm,0.5s,baz=44,slow=7.3,SNR=9.0
MDVR Moldovita 82.64 322⇓ *i*P **P 13 30 27.9 +0.6**
SOP Sopron 82.94 326⇑ *e*S **P 13 30 29.9 +1.2**
H33A Prehn Over Nor 83.02 38 P **P 13 30 29.4 +0.1**
baz=316
SDCO Great Sand Dun 83.04 48 P **P 13 30 30.4 +0.6**
baz=312
SDCO Great Sand Dun 83.04 48 *e*P **P 13 30 29.8 0.0**
comp=Z,15nm,1.4s
CONA Conrad Observa 83.06 327 *i* P **P 13 30 30.4 +0.9**
comp=Z,119nm,1.2s,SNR=19
KHC Kasperske Hory 83.11 329 *e*P **P 13 30 30.4 +0.7**
KHC *e*pP **pP 13 30 39.3 +0.3**
KHC *e*PP **PP 13 33 40.6 +0.5**
KHC AMS AMS 14 12 30.0
comp=Z,800nm,16.4s
KHC Kasperske Hory 83.11 329 *e*P **P 13 30 30.4 +0.7**
KHC *e* 13 33 40.6
KHC MLR MLR
comp=Z,800nm,16.4s
KHC Kasperske Hory 83.11 329 *e*P **P 13 30 30.2 +0.6**
comp=Z,11nm,1.3s
TUC Tucson 83.26 55 *e*P **P 13 30 34.6 +3.8**
TUC pmax pmax
comp=Z,15nm,1.6s
TUC Tucson 83.26 55 *e*P **P 13 30 34.6 +3.8**
comp=Z,15nm,1.6s
GEC2 GERESS Array S 83.28 329 *e*P **P 13 30 30.8 +0.2**
GEC2 pmax pmax
comp=Z,7.0nm,0.8s
GEC2 GERESS Array S 83.28 329 *e*P **P 13 30 30.8 +0.2**
comp=Z,6.5nm,0.8s
GERES GERESS Array B 83.28 329 P **P 13 30 30.9 +0.3**
comp=Z,3.1nm,0.6s,baz=37,slow=6.1,SNR=23
C38A Sawbill Land. 83.33 33 P **P 13 30 30.7 -0.1**
baz=320
VTS Vitosha 83.43 319 *e*P **P 13 30 32.4 +0.8**
VTS pmax pmax
comp=Z,11nm,0.7s
VTS Vitosha 83.43 319 *e*P **P 13 30 32.4 +0.8**
comp=Z,11nm,0.7s
PMOR Pomariorio Ree 83.50 114 *e*T T 15 02 29.2
comp=Z,3.7nm,0.2s
EKA Eskdalemuir Ar 83.61 341 P **P 13 30 33.1 +1.1**
comp=Z,1.2nm,0.6s,baz=34,slow=5.6,SNR=5.9
GRFO Grafenberg 83.63 330 *e*P **P 13 30 33.2 +0.9**
GRFO pmax pmax
comp=Z,39nm,1.3s
GRFO Grafenberg 83.63 330 *e*P **P 13 30 33.2 +0.9**
comp=Z,39nm,1.3s
ARSA Arzberg 83.72 327 *i* PcP **P 13 30 33.6 +0.8**
comp=Z,11nm,1.2s,SNR=7.0
ECSD EROS Data Cent 83.77 39 P **P 13 30 32.9 -0.2**
baz=316
ECSD EROS Data Cent 83.77 39 *e*P **P 13 30 32.7 -0.4**
comp=Z,8.8nm,0.9s
MOA Molln 83.81 328 *i* PcP **P 13 30 34.2 +0.9**
comp=Z,12nm,1.2s,SNR=7.0
PPT2 Papeete2 83.97 117 *e*LR LR 13 56 53.3
comp=Z,436nm,23.2s,baz=316
ANMO Albuquerque 84.31 50 P **P 13 30 38.3 +2.0**
comp=Z,5.1nm,1.1s,baz=300,slow=5.2,SNR=7.1
ANMO Albuquerque 84.31 50 P **P 13 30 37.1 +0.8**
baz=311
ANMO Albuquerque 84.31 50 *e*P **P 13 30 35.8 -0.5**
ANMO pmax pmax
comp=Z,13nm,1.1s
ANMO Albuquerque 84.31 50 *e*P **P 13 30 35.8 -0.5**
comp=Z,13nm,1.1s
PERS Pernice 84.37 326 *e*P **P 13 30 36.4 +0.2**
comp=Z,42nm,1.5s
SOKA Soboth 84.38 327 *i* P **P 13 30 36.7 +0.4**
comp=Z,29nm,1.3s,SNR=19
GOLS Golise 84.62 326 *e*P **P 13 30 37.4 0.0**
CRES Cresnjev 84.84 326 *i* P **P 13 30 38.5 0.0**
MOZS Mozjanca 84.93 327 *e*P **P 13 30 38.4 -0.6**
MOZS *e*PP **PP 13 33 50.0 -5.1**
EIL Elat 85.05 303 P **P 13 30 39.6 -0.2**
comp=Z,12nm,1.0s,baz=36,slow=2.7,SNR=13
121A Cookes Peak, D 85.06 53 P **P 13 30 40.7 +0.6**
baz=311
STU Stuttgart 85.16 331 *e*P **P 13 30 40.4 +0.4**
STU pmax pmax
comp=Z,35nm,1.2s
STU Stuttgart 85.16 331 *e*P **P 13 30 40.4 +0.4**
comp=Z,36nm,1.2s
P31A Stockton 85.33 43 P **P 13 30 40.1 -1.1**
baz=315
CWF Charnwood Fore 85.39 339 *e*P **P 13 30 41.9 +0.8**
comp=Z,42nm,1.5s
JAVS Javornik 85.41 327 *e*P **P 13 30 40.7 -0.8**
TAOE Nuku Hiva Isla 85.51 104 *e*LR LR 13 57 45.3
comp=Z,723nm,23.0s
RETA Reutte 85.56 329 *i* PcP **P 13 30 42.7 +0.5**
comp=Z,23nm,1.2s,SNR=10.0
BFO Black Forest 85.86 331 *c*e*P **P 13 30 44.0 +0.5**
BFO Black Forest 85.86 331 *e*P **P 13 30 43.4 -0.1**
comp=Z,38nm,1.3s
FETA Feichten 85.95 329 *i* PcP **P 13 30 44.5 +0.3**
comp=Z,10nm,1.3s,SNR=5.4
DAVA Damuels 86.08 330 *i* PcP **P 13 30 45.2 +0.3**
comp=Z,20nm,1.2s,SNR=7.3
FUORN Ofenpass-Fuorn 86.46 329 *e*P **P 13 30 47.0 +0.1**
comp=Z,36nm,1.4s
DAVOX Davos/Dischmat 86.49 329 P **P 13 30 48.6 +1.7**
comp=Z,1.8nm,0.5s,baz=63,slow=2.6,SNR=6.6
P34A Walnut Farm, R 86.69 42 P **P 13 30 47.7 -0.1**
baz=316
TUE Stuetta 86.96 329 *e*P **P 13 30 49.0 -0.2**
comp=Z,8.8nm,1.1s
MNTX Cornudas Mount 87.14 52 P **P 13 30 50.1 0.0**
baz=312
M38A Pleasantville 87.18 38 P **P 13 30 50.2 +0.1**
baz=319
TBI Tubuai 87.85 121 *e*LR LR 13 58 48.1
comp=Z,567nm,23.8s,baz=318
TBI Tubuai 87.85 121 *e*T T 15 07 47.4
comp=Z,6.4nm,0.3s
R35A Emporia Munici 87.91 42 P **P 13 30 54.3 +0.5**
baz=317
N39A Derby Farms, D 87.93 38 P **P 13 30 54.2 +0.5**
baz=319
S35A Otter Creek Ra 88.31 43 P **P 13 30 55.5 -0.1**
baz=317
P38A Dawn 88.35 40 P **P 13 30 55.8 0.0**
baz=319
VLDQ Val d'Or 88.43 25 *e*P **P 13 30 55.2 -0.7**
comp=Z,14nm,1.1s
GLMI Grayling 88.45 31 *e*P **P 13 30 57.1 +0.9**
comp=Z,44nm,0.9s
WMOK Wichita Mounta 89.05 46 *e*P **P 13 30 59.9 +0.7**
WMOK pmax pmax
comp=Z,6.0nm,0.7s
WMOK Wichita Mounta 89.05 46 *e*P **P 13 30 59.9 +0.7**
comp=Z,5.8nm,0.7s
S37A Fort Scott 89.06 42 P **P 13 30 59.1 -0.1**
baz=318
U36A Oologah 89.57 43 P **P 13 31 02.1 +0.6**
baz=317
S38A Stockton 89.64 41 P **P 13 31 01.7 -0.2**
baz=318
TX31 Lajitas Ar. Si 89.82 53 *e*P **P 13 31 03.1 +0.1**
TXAR Lajitas Array 89.82 53 P **P 13 31 03.4 +0.4**
comp=Z,2.4nm,0.9s,baz=303,slow=3.3,SNR=22
T38A Diamond 89.88 42 P **P 13 31 02.9 -0.2**
baz=318
S39A Bolivar 89.91 41 P **P 13 31 02.7 -0.4**
baz=319
V37A Hulbert 90.27 43 P **P 13 31 05.0 +0.2**
baz=318
U38A Gravette 90.27 42 P **P 13 31 04.8 -0.1**
baz=318
Z34A Collier Ranch, 90.53 46 P **P 13 31 06.2 +0.1**
baz=316
X36A Centrahoma 90.56 45 P **P 13 31 06.4 +0.3**
baz=317
U39A Green Forest 90.80 42 P **P 13 31 07.2 -0.1**
baz=319
134A White-Moore Ra 91.00 47 P **P 13 31 08.5 +0.2**
baz=316
Y36A Durant 91.08 45 P **P 13 31 08.6 0.0**
baz=317
V39A Pettigrew 91.12 42 P **P 13 31 08.8 -0.1**
baz=318
U40A Yellville 91.16 41 P **P 13 31 08.9 0.0**
baz=319
X38A Whitesboro 91.34 44 P **P 13 31 09.8 0.0**
baz=318
234A Clairette 91.37 48 P **P 13 31 10.8 +0.7**
baz=316
WHTX Lake Whitney, 91.78 47 P **P 13 31 12.0 +0.1**
baz=316
334A Lometa 91.79 48 P **P 13 31 12.2 +0.2**
baz=316
X39A Fountain Ranch 91.85 43 P **P 13 31 12.9 +0.7**
baz=318
MIAR Mount Ida 92.12 43 P **P 13 31 13.7 +0.3**
baz=318
MIAR Mount Ida 92.12 43 *e*P **P 13 31 13.4 -0.1**
MIAR pmax pmax
comp=Z,15nm,1.0s
MIAR Mount Ida 92.12 43 *e*P **P 13 31 13.4 -0.1**
comp=Z,15nm,1.0s
WHAR Wooly Hollow 92.26 42 *e*P **P 13 31 14.7 +0.7**
comp=Z,11nm,0.8s
Y39A Lockesburg 92.29 44 P **P 13 31 14.5 +0.3**
baz=318
534A Blanco 92.58 49 P **P 13 31 15.8 +0.2**
baz=316
ESDC Sonseca Array 97.82 334 LR LR 14 20 28.2
comp=Z,536nm,19.6s,baz=210,slow=38
RKT Rikitea 98.08 113 *e*LR LR 14 03 46.4
comp=Z,517nm,25.0s,baz=317
TORD Torodi Ar. Bea 117.97 315 PKP **PKPdf 13 36 50.5 -0.7**
comp=Z,0.5nm,0.5s,baz=37,slow=1.4,SNR=5.5
QSPA South Pole Qui 126.48 180 *e*PKPdf **PKPdf 13 37 06.0 +0.1**
SNAA Sanae 140.64 197 PKP PKPpre 13 37 24.7
VNA2 Neumayer--Watz 142.20 196 PKP **PKPdf 13 37 31.6 -3.4**
baz=108,slow=2.0
VNA3 Neumayer Olymp 142.44 195 PKP PKPpre 13 37 28.4
LPAZ La Paz 146.31 61 PKPbc **PKPbc 13 37 45.6 -0.1**
comp=Z,4.1nm,0.7s,baz=5.6,slow=3.0,SNR=17
LPAZ La Paz 146.31 61 *e*PKP2 **PKPbc 13 37 45.5 -0.3**
LPAZ La Paz 146.31 61 *e*PKPdf **PKPbc 13 37 45.5 -0.3**
LCO Las Campanas 151.44 84 *e*PKPab **PKPab 13 38 09.0 +2.3**
PLCA Paso Flores 154.25 109 PKPbc **PKPbc 13 38 04.6 +0.7**
comp=Z,2.1nm,1.0s,baz=248,slow=5.6,SNR=3.0

*ISCJB **03** 13:40:56.4±0.6,36.°95N±0.°03×36.°59E±0.°04,h3km±8km,*
Error ellipse: s-maj=5.7km s-min=4.2km az=43.4
*CSEM **03** 13:40:56.7±0.1,36.°94N×36.°61E,h8km,ML2.2,Error*
ellipse: s-maj=3.0km s-min=2.3km az=147.0
*DDA **03** 13:40:56.4,36.°96N×36.°63E,h7km,Md2.9*
*ISK **03** 13:40:56.0,36.°93N×36.°65E,h14km,MD2.4,ML2.2*
ISC 03 13:40:56.0±1.0,**36.°93N**±0.°03×**36.°62E**±0.°03,**h15**km±9km,
n24,σ0°77/34,Jordan-Syria region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
KAMA	**Osmaniye**	**0.25**	**9**	*i* P	**Sg**	**13 41 04.7**	**-0.7**
KUZU	**Kuzuini**	**0.40**	**114**	*i* P	**Pb**	**13 41 04.9**	**+0.1**
KUZU				*i* S	**Sb**	**13 41 10.6**	**-0.2**
KUZU	**Kuzuini**	**0.40**	**114**	P	**Pb**	**13 41 04.9**	**+0.1**
KUZU				S	**Sb**	**13 41 10.6**	**-0.2**
AYKD	**Aykdinkavak**	**0.50**	**17**	*i* P	**Pg**	**13 41 06.3**	**+0.3**
AYKD				*i* S	**Sg**	**13 41 12.8**	**0.0**
GAZ	**Gaziantep**	**0.53**	**63**	*e*PG	**Pg**	**13 41 06.6**	**+0.1**
GAZ				*e*SG	**Sb**	**13 41 14.3**	**-0.3**
GAZ	**Gaziantep**	**0.53**	**63**	*e*Pg	**Pg**	**13 41 06.6**	**+0.1**
GAZ				*e*Sg	**Sb**	**13 41 14.3**	**-0.3**
KMRS	**Kahramanmaras**	**0.61**	**22**	*e*PG	**Pb**	**13 41 08.4**	**-0.1**
KMRS	**Kahramanmaras**	**0.61**	**22**	*e*Pg	**Pb**	**13 41 08.4**	**-0.1**
TAHT	**Tahtakopru-Hat**	**0.66**	**212**	*e*PG	**Pb**	**13 41 09.4**	**+0.2**
TAHT	**Tahtakopru-Hat**	**0.66**	**212**	*e*Pg	**Pb**	**13 41 09.4**	**+0.2**
CEYT	**Ceyhan**	**0.70**	**276**	*e*PG	**Pb**	**13 41 10.5**	**+0.6**
CEYT	**Ceyhan**	**0.70**	**276**	*e*Pg	**Pb**	**13 41 10.5**	**+0.6**
KOZT	**Kozan**	**0.83**	**311**	*e*PG	**Pn**	**13 41 12.9**	**-0.3**
KOZT	**Kozan**	**0.83**	**311**	*e*Pg	**Pn**	**13 41 12.9**	**-0.3**
GZT	**Gaziantep**	**0.86**	**61**	*i* P	**Pn**	**13 41 13.6**	**-0.2**
GZT				*i* S	**Sn**	**13 41 27.0**	**+0.8**
BTCH	**Batrach**	**0.90**	**188**	*e*P	**Pg**	**13 41 13.9**	**+0.4**
BTCH				*e*S	**Sn**	**13 41 26.7**	**-0.4**
	111nm,0.6s						
YAYL	**Yayladag**	**0.99**	**205**	*i* P	**Pn**	**13 41 15.7**	**+0.3**
YAYL				*i* S	**Sn**	**13 41 29.7**	**+0.5**
YAYL	**Yayladag**	**0.99**	**205**	P	**Pn**	**13 41 15.7**	**+0.3**
YAYL				S	**Sn**	**13 41 29.7**	**+0.5**
KRTS	**Karatas**	**1.06**	**250**	*e*PN	**Pg**	**13 41 17.3**	**+0.8**
KRTS	**Karatas**	**1.06**	**250**	*e*Pn	**Pg**	**13 41 17.3**	**+0.8**
ARNB	**Al Arnab**	**1.19**	**206**	*e*P	Pn	13 41 14.6	-3.6
ARNB				*e*S	**Sb**	**13 41 30.1**	**-3.5**
	43nm,0.8s						
SLNF	**Slenfeh**	**1.37**	**194**	*e*P	Pn	13 41 13.3	-7.5
SLNF				*e*S	Sn	13 41 31.0	-7.8
	76nm,0.4s						
SURC	**SANLIURFA_SURC**	**1.60**	**91**	*i* P	**Pb**	**13 41 25.9**	**+0.6**
SURC				*i* S	**Sg**	**13 41 47.5**	**0.0**
SURC	**SANLIURFA_SURC**	**1.60**	**91**	P	**Pb**	**13 41 25.9**	**+0.6**
SURC				S	**Sg**	**13 41 47.5**	**0.0**

*ISCJB **03** 13:42:11.7±0.5,37.°14N±0.°03×28.°74E±0.°03,h4km±6km,*
Error ellipse: s-maj=4.6km s-min=3.9km az=10.7
*CSEM **03** 13:42:11.8±0.1,37.°12N×28.°75E,h10km,MD2.6,Error*
ellipse: s-maj=3.1km s-min=2.6km az=20.0
*ISK **03** 13:42:11.2,37.°11N×28.°77E,h8km,MD2.7*
*DDA **03** 13:42:12.1,37.°14N×28.°71E,h7km,Md2.6*
ISC 03 13:42:11.7±1.0,**37.°12N**±0.°03×**28.°72E**±0.°02,**h10**km±9km,
n36,σ0°70/51,Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
TURN	**Turunc**	**0.27**	**201**	*i* P	**Pn**	**13 42 20.9**	**-0.8**
DALY	**Dalyan (Mu˘la**	**0.31**	**190**	*e*PG	**Pg**	**13 42 17.5**	**-0.4**
DALY				*e*SG	**Sg**	**13 42 22.5**	**+0.5**
DALY	**Dalyan (Mu˘la**	**0.31**	**190**	*e*Pg	**Pg**	**13 42 17.5**	**-0.4**
DALY				*e*Sg	**Sg**	**13 42 22.5**	**+0.5**
YER	**Yerkesik**	**0.35**	**272**	*e*PG	**Pg**	**13 42 19.2**	**+0.5**
YER				*e*SG	**Sb**	**13 42 25.2**	**-0.6**
YER	**Yerkesik**	**0.35**	**272**	*e*Pg	**Pg**	**13 42 19.2**	**+0.5**
YER				*e*Sg	**Sb**	**13 42 25.2**	**-0.6**
FETY	**Fethiye**	**0.57**	**149**	*e*PG	**Pg**	**13 42 22.2**	**-0.5**
FETY				*e*SG	**Sg**	**13 42 30.4**	**+0.3**
FETY	**Fethiye**	**0.57**	**149**	*e*Pg	**Pg**	**13 42 22.2**	**-0.5**
FETY				*e*Sg	**Sg**	**13 42 30.4**	**+0.3**
GLHS	**Glhisar (BURDU**	**0.62**	**87**	*e*PG	**Pg**	**13 42 23.0**	**-0.7**
GLHS	**Glhisar (BURDU**	**0.62**	**87**	*e*Pg	**Pg**	**13 42 23.0**	**-0.7**
DENT	**Denizli**	**0.68**	**21**	*e*PG	**Pg**	**13 42 24.7**	**-0.1**
DENT	**Denizli**	**0.68**	**21**	*e*Pg	**Pg**	**13 42 24.7**	**-0.1**
GOLH	**Golhisar**	**0.68**	**80**	*i* P	**Pb**	**13 42 25.3**	**-0.4**
GOLH				*i* S	**Sb**	**13 42 35.4**	**+0.1**
GOLH	**Golhisar**	**0.68**	**80**	P	**Pb**	**13 42 25.3**	**-0.4**

Code	Station Name	Δ°	AZ°	Op	ISC	Time	Res
AYDN	**Tasoluk**	**0.86**	**309**	*i* P	**Pb**	**13 42 28.9**	**+0.1**
AYDN				*i* S	**Sn**	**13 42 42.0**	**-0.7**
AYDN	**Tasoluk**	**0.86**	**309**	P	**Pb**	**13 42 28.9**	**+0.1**
AYDN				S	**Sn**	**13 42 42.0**	**-0.7**
UZP	**Denizli**	**0.97**	**21**	*i* P	**Pb**	**13 42 30.8**	**0.0**
UZP				*i* S	**Sn**	**13 42 48.9**	**+3.2**
ELL	**Elmali**	**1.02**	**111**	*e*PG	**Pg**	**13 42 30.8**	**-0.5**
ELL	**Elmali**	**1.02**	**111**	*e*Pg	**Pg**	**13 42 30.8**	**-0.5**
BDRM	**Kayabasi**	**1.02**	**267**	*i* P	**Pg**	**13 42 30.8**	**-0.6**
BDRM				*i* S	**Sn**	**13 42 46.3**	**-0.4**
BDRM	**Kayabasi**	**1.02**	**267**	P	**Pg**	**13 42 30.8**	**-0.6**
BDRM				S	**Sn**	**13 42 46.3**	**-0.4**
AYDB	**Zeytinkoy-Aydi**	**1.06**	**321**	*e*PN	**Pn**	**13 42 32.8**	**+0.1**
AYDB	**Zeytinkoy-Aydi**	**1.06**	**321**	*e*Pn	**Pn**	**13 42 32.8**	**+0.1**
BODT	**Bodrum**	**1.13**	**267**	*e*PN	**Pn**	**13 42 34.0**	**+0.3**
BODT	**Bodrum**	**1.13**	**267**	*e*Pn	**Pn**	**13 42 34.0**	**+0.3**
AKAS	**Kas**	**1.14**	**141**	*i* P	**Pn**	**13 42 34.5**	**+0.7**
AKAS				*i* S	**Sn**	**13 42 51.2**	**+1.6**
AKAS	**Kas**	**1.14**	**141**	P	**Pn**	**13 42 34.5**	**+0.7**
NIS1	**Nisyros Isl.**	**1.34**	**248**	*e*PN	**Pg**	**13 42 37.5**	**0.0**
NIS1	**Nisyros Isl.**	**1.34**	**248**	*e*Pn	**Pg**	**13 42 37.5**	**0.0**
KHL	**Karahalli**	**1.36**	**28**	*e*PN	**Pg**	**13 42 37.2**	**-0.5**
KHL	**Karahalli**	**1.36**	**28**	*e*Pn	**Pg**	**13 42 37.2**	**-0.5**
KHAL	**Karahalli**	**1.39**	**26**	*i* P	**Pn**	**13 42 37.1**	**-0.2**
KHAL				*i* S	**Sb**	**13 42 55.2**	**-0.4**
KHAL	**Karahalli**	**1.39**	**26**	P	**Pn**	**13 42 37.1**	**-0.2**
KHAL				S	**Sb**	**13 42 55.2**	**-0.4**
KULA	**Kula-Manisa**	**1.39**	**358**	*e*PN	**Pb**	**13 42 37.6**	**-0.3**
KULA	**Kula-Manisa**	**1.39**	**358**	*e*Pn	**Pb**	**13 42 37.6**	**-0.3**
IZM	**Izmir**	**1.72**	**318**	*e*PN	**Pn**	**13 42 41.7**	**-0.1**
IZM	**Izmir**	**1.72**	**318**	*e*Pn	**Pn**	**13 42 41.7**	**-0.1**

IDC 03 13:44:28.1±3.0**, 72°52N×4°02E, h0km, mb3.2**/1**, mb1 3.6**/5**, mb1mx3.2**/54**, mbtmp3.5**/5**, ML2.8**/4**, Error ellipse: s-maj=46.0km s-min=24.8km az=92.0, Norwegian Sea**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SPITS	**Spitsbergen Ar**	**6.47**	**23**	Pn	Pn	13 46 01.8	-2.5
	baz=212,slow=15,SNR=9.2						
ARCES	**ARCESS Array B**	**7.59**	**103**	Pn	Pn	13 46 20.1	+0.3
	0.2nm,0.3s,baz=307,slow=14,SNR=3.7						
HFS	**Hagfors**	**13.01**	**158**	Pn	Pn	13 47 33.6	-0.2
	0.1nm,0.3s,baz=313,slow=20,SNR=4.3						
FINES	**FINESS Array B**	**13.94**	**131**	Pn	Pn	13 47 45.5	-1.0
	0.1nm,0.3s,baz=338,slow=14,SNR=3.0						
GERES	**GERESS Array B**	**24.16**	**164**	P	P	13 49 46.8	+1.2
	0.5nm,0.7s,baz=354,slow=11,SNR=4.8						

*IDC **03** 13:48:40.2±2.7, 36°12N×142°69E, h0km, mb3.4/3, mb1 3.6/5, mb1mx3.3/40, mbtmp3.5/5, ML3.6/2, Error ellipse: s-maj=61.2km s-min=27.9km az=67.0*

*JMA **03** 13:48:48.0±0.3, 36°29N×141°92E, h71km, M3.2*

ISC 03 13:48:44.5±1.5**, 36°23N**±0°06×**142°3E**±0°1**, h18km, n13, σ1s63**/17**, mb3.5**/3**, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**1.25**	**245**	P	**Pb**	**13 49 07.4**	**-0.1**
CHOJ				*e*S	**Sb**	**13 49 22.2**	**-1.1**
JHO	**Hitachi**	**1.41**	**286**	P	**Pn**	**13 49 08.1**	**-1.1**
ONAJ	**Iwakimizuishiy**	**1.46**	**307**	P	**Pn**	**13 49 09.6**	**-0.3**
ONAJ				*e*S	**Sn**	**13 49 25.7**	**-2.9**
JCN	**Nagara**	**1.86**	**245**	P	**Pb**	**13 49 17.5**	**-0.3**
BSO1	**Boso 1**	**1.89**	**214**	P	**Pb**	**13 49 17.9**	**-0.2**
JRY	**Ryogami san**	**2.72**	**266**	P	**Pn**	**13 49 27.1**	**-0.2**
JOD2	**Odawara 2**	**2.75**	**250**	P	**Pn**	**13 49 28.5**	**+0.8**
MJAR	**Matsushiro Arr**	**3.28**	**277**	Pn	**Pn**	**13 49 35.5**	**+0.6**
	4.1nm,0.3s,baz=112,slow=8.6,SNR=58						
MAT	**Matsushiro**	**3.28**	**277**	P	**Pn**	**13 49 36.0**	**+1.0**
MAT				S	**Sn**	**13 50 16.0**	**+2.4**
JHJ	**Hachijo jima 2**	**3.71**	**214**	Pn	**Pn**	**13 49 42.4**	**+1.4**
	16nm,0.3s,baz=72,slow=20,SNR=4.8						
JHJ				Sn	**Sn**	**13 50 22.3**	**-1.9**
	31nm,0.3s,baz=90,slow=23,SNR=6.7						
SONM	**Songino Array**	**28.80**	**305**	P	**P**	**13 54 43.1**	**+1.7**
	0.4nm,0.5s,baz=106,slow=8.6,SNR=5.5						
MKAR	**Makanchi Array**	**45.12**	**303**	P	**P**	**13 57 01.5**	**+1.8**
	0.6nm,0.8s,baz=93,slow=9.6,SNR=6.9						
WRA	**Warramunga Arr**	**56.37**	**189**	P	**P**	**13 58 22.2**	**-2.4**
	0.5nm,1.1s,baz=5.7,slow=8.0,SNR=2.9						

GUC 03 14:04:50.6±0.5**, 22°99S×69°27W, h88km**±3km**, ML4.0, 4C-2D, Northern Chile**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PB06	**IPOC Station P**	**0.40**	**315**	⇓*i*P	Pn	14 05 04.8	+0.2
PB06				*i* S	Sn	14 05 15.7	+0.7
PB06				AML	AML	14 05 16.6	
	comp=E,14μm,0.3s						
PB04	**IPOC Station P**	**1.04**	**309**	⇑*i*P	Pn	14 05 11.4	+0.5
PB04				*i* S	Sn	14 05 27.4	+1.3
PB04				AML	AML	14 05 29.6	
	comp=N,4μm,0.2s						
PB09	**IPOC Station P**	**1.19**	**1**	⇓*i*P	Pn	14 05 13.2	+0.6
PB09				*e*S	Sn	14 05 30.5	+1.4
PB09				AML	AML	14 05 32.3	
	comp=E,5μm,0.5s						
PB10	**IPOC Station P**	**1.29**	**246**	⇑*i*P	Pn	14 05 14.1	+0.4
PB10				*i* S	Sn	14 05 32.0	+0.9
PB10				AML	AML	14 05 39.2	
	comp=N,2μm,0.3s						
PB07	**IPOC Station P**	**1.38**	**335**	⇑*i*P	Pn	14 05 15.4	+0.4
PB07				*i* S	Sn	14 05 34.3	+0.9
PB07				AML	AML	14 05 36.0	
	comp=E,3μm,0.2s						
PB01	**IPOC Station P**	**1.95**	**354**	⇑*i*P	Pn	14 05 22.4	+0.3
PB01				*i* S	Sn	14 05 47.8	+1.6
PB01				AML	AML	14 05 50.9	
	comp=E,1μm,0.2s						

*MOS **03** 14:07:06.9±0.8, 17°51S×178°58W, h527km, mb5.9/44, Error ellipse: s-maj=7.4km s-min=5.9km az=51.0*

*ISCJB **03** 14:07:06.0±0.4, 17°63S±0°02×178°59W±0°02, h520km±5km, mb6.0/220, Error ellipse: s-maj=3.3km s-min=2.2km az=158.0*

*IDC **03** 14:07:07.5±0.6, 17°56S×178°54W, h525km±5km, mb5.3/39, mb1 5.4/42, mb1mx5.3/43, mbtmp6.2/42, Error ellipse: s-maj=7.9km s-min=7.0km az=2.0*

*NEIC **03** 14:07:09.3±0.1, 17°64S×178°59W, mb5.6/5, MW6.4, MW6.4, Error ellipse: s-maj=3.5km s-min=2.3km az=141.0, Moment Tensor Solution. s86 Moment tensor: Scale 10^{18}Nm; M_{rr}0.24; $M_{\theta\theta}$0.43; $M_{\phi\phi}$-0.66; $M_{r\theta}$-1.04; $M_{\theta\phi}$0.69; $M_{\phi r}$-5.29; Best double couple: $M_0$5.50000×10^{18} NP1: ϕ_s191.00000°, δ88.00000°, λ99.00000°. NP2: ϕ_s291.00000°, δ9.00000°, λ10.00000°. Principal axes: T 5.4000, Plg46.0000°, Azm110.0000°; N 0.1300, Plg9.0000°, Azm11.0000°; P -5.5300, Plg43.0000°, Azm273.0000°;*

*GCMT **03** 14:07:09.3±0.1, 17°65S×178°45W, h562km, MW6.4/140, Moment Tensor Solution. s140,c337; s122,c194; Duration: 3s9 Moment tensor: Scale 10^{18}Nm; M_{rr}0.52±.02; $M_{\theta\theta}$0.09±.03; $M_{\phi\phi}$-0.61±.03; $M_{r\theta}$-1.05±.03; $M_{\theta\phi}$-0.04±.03; $M_{\phi r}$-4.79±.02; Best double couple: $M_0$4.93700×10^{18} NP1:ϕ_s192.00000°, δ87.00000°, λ91.00000°. NP2:ϕ_s351.00000°, δ4.00000°, λ69.00000°. Principal axes: T 4.9000, Plg48.0000°, Azm104.0000°; N 0.0740, Plg1.0000°, Azm12.0000°; P -4.9740, Plg42.0000°, Azm281.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to mantle waves, cutoff=125s.*

*NEIC **03** 14:07:09.0±0.0, 17°65S×178°58W, h551km, Moment Tensor Solution. s63 Moment tensor: Scale 10^{18}Nm; M_{rr}0.59; $M_{\theta\theta}$0.11; $M_{\phi\phi}$-0.70; $M_{r\theta}$-1.03; $M_{\theta\phi}$0.11; $M_{\phi r}$-4.46; Best double couple: $M_0$4.60000×10^{18} NP1:ϕ_s193.00000°, δ86.00000°, λ93.00000°. NP2:ϕ_s330.00000°, δ5.00000°, λ48.00000°. Principal axes: T 4.6100, Plg48.0000°, Azm106.0000°; N 0.0200, Plg3.0000°, Azm12.0000°; P -4.6300, Plg41.0000°, Azm279.0000°;*

*BJI **03** 14:07:09.3, 17°50S×178°65W, h550km, mb6.0/78, mB6.1/67*

ISC 03 14:07:09.0±0.2**, 17°61S**±0°03×**178°53W**±0°03**, h547km**±1km**, h547km:pP-P, n2418, σ1s59**/2878**, mb6.1**/219**, 75C-109D, Fiji Islands region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MSVF	**Nonsavu**	**3.26**	**267**	*e*P	**P**	**14 08 27.2**	**+1.7**
MSVF	**Nonsavu**	**3.26**	**267**	*e*P	**P**	**14 08 27.2**	**+1.7**
MSVF				*e*ScS	ScS	14 20 57.3	+7.9
AFI	**Afiamalu**	**7.47**	**61**	P	**P**	**14 08 58.5**	**-3.1**
	458nm,0.3s,baz=256,slow=6.4,SNR=115						
AFI				S	**S**	**14 10 29.2**	**-4.6**
	66nm,0.3s,baz=157,slow=18,SNR=2.6						
FUNA	**Funafuti**	**9.29**	**346**	*e*P	**P**	**14 09 19.5**	**-0.3**
DZM	**Mont Dzumac**	**14.81**	**250**	P	**P**	**14 10 15.7**	**-1.0**
	12nm,0.3s,baz=77,slow=13,SNR=91						
RAR	**Rarotonga**	**18.05**	**104**	P	**P**	**14 10 47.6**	**+0.1**
	19nm,0.3s,baz=247,slow=6.9,SNR=90						
RAR				ScP	**ScP**	**14 17 38.3**	**+2.1**
	0.2nm,0.3s,baz=308,slow=3.8,SNR=6.1						
RAR	**Rarotonga**	**18.05**	**104**	*e*P	**P**	**14 10 47.0**	**-0.5**
RAR				pmax	pmax		
	comp=Z,1μm,1.0s						
RAR	**Rarotonga**	**18.05**	**104**	*e*P	**P**	**14 10 47.0**	**-0.5**
RAR				*e*ScP	**ScP**	**14 17 39.6**	**+3.4**
OUZ	**Omahuta**	**18.89**	**200**	PN	**P**	**14 10 57.3**	**+2.4**
OUZ				ScP	**ScP**	**14 17 40.3**	**+2.6**
OUZ	**Omahuta**	**18.89**	**200**	*e*P	**P**	**14 10 57.1**	**+2.1**
OUZ				*e*ScP	**ScP**	**14 17 41.3**	**+3.6**
GRZ	**Great Barrier**	**19.32**	**195**	PN	**P**	**14 11 00.2**	**+1.3**
WCZ	**Waipu Caves**	**19.32**	**198**	PN	**P**	**14 11 01.0**	**+2.1**
KUZ	**Kuaotunu**	**19.73**	**194**	PN	**P**	**14 11 03.2**	**+0.7**
KUZ				ScP	**ScP**	**14 17 41.2**	**+1.5**
ABAZ	**Army Bay**	**19.81**	**196**	*e*PN	**P**	**14 11 04.9**	**+1.6**
WIAZ	**Waiheke Island**	**19.91**	**195**	*e*PN	**P**	**14 11 05.4**	**+1.1**
MTAZ	**Motutapu**	**19.96**	**196**	*e*PN	**P**	**14 11 06.1**	**+1.4**
RVAZ	**Riverhead Bore**	**20.04**	**196**	*e*PN	**P**	**14 11 06.3**	**+1.0**
MXZ	**Matakaoa Point**	**20.07**	**187**	*e*P	**P**	**14 11 03.4**	**-2.3**
ETAZ	**East Tamaki Re**	**20.12**	**195**	*e*PN	**P**	**14 11 07.1**	**+1.0**
WTAZ	**Waiatarua**	**20.19**	**196**	*e*PN	**P**	**14 11 08.4**	**+1.6**
MKAZ	**Moumakai**	**20.20**	**195**	PN	**P**	**14 11 07.6**	**+0.7**
KBAZ	**Karaka Road Bo**	**20.26**	**195**	*e*PN	**P**	**14 11 08.7**	**+1.3**
AWAZ	**Awhitu Peninsu**	**20.30**	**196**	*e*PN	**P**	**14 11 08.9**	**+1.2**
WMGZ	**Waiomatatini S**	**20.31**	**187**	PN	**P**	**14 11 06.1**	**-1.7**
WMGZ				*e*SN	**S**	**14 14 17.7**	**-3.7**
HAZ	**Te Kaha**	**20.33**	**188**	*e*PN	**P**	**14 11 06.1**	**-1.9**
HAZ				*e*SN	**S**	**14 14 15.8**	**-5.9**
HAZ				ScP	**ScP**	**14 17 43.0**	**+1.9**
TARA	**Tarawa**	**20.64**	**335**	*e*P	**P**	**14 11 10.5**	**-0.6**
TWGZ	**Tauwhareparae**	**20.72**	**188**	PN	**P**	**14 11 09.0**	**-2.6**
TWGZ				*e*SN	**S**	**14 14 22.5**	**-5.5**
TOZ	**Tahuroa Road**	**20.72**	**193**	*e*PN	**P**	**14 11 12.2**	**+0.6**
KMRZ	**Kaimai**	**20.74**	**192**	*e*PN	**P**	**14 11 12.4**	**+0.6**
OMRZ	**Omania**	**20.91**	**191**	*e*PN	**P**	**14 11 12.3**	**-1.0**
URZ	**Urewera**	**20.93**	**190**	P	**P**	**14 11 10.8**	**-2.6**
	comp=Z,544nm,0.6s,baz=273,slow=1.5,SNR=135						
URZ				S	**S**	**14 14 25.6**	**-5.5**
	comp=Z,220nm,0.8s,baz=152,slow=21,SNR=6.5						
URZ				ScS	**ScS**	**14 21 24.3**	**-2.5**
	comp=Z,45nm,0.9s,baz=141,slow=8.3,SNR=20						
URZ	**Urewera**	**20.93**	**190**	PN	**P**	**14 11 10.0**	**-3.4**
URZ				*e*SN	**S**	**14 14 24.5**	**-6.6**
URZ	**Urewera**	**20.93**	**190**	*e*P	**P**	**14 11 10.7**	**-2.7**
URZ				S	**S**	**14 14 25.6**	**-5.5**
URZ				*e*ScS	**ScS**	**14 21 22.8**	**-4.0**
MWZ	**Matawai**	**20.94**	**189**	PN	**P**	**14 11 11.1**	**-2.4**
TKGZ	**Te Karaka**	**21.00**	**188**	*e*PN	**P**	**14 11 11.6**	**-2.4**
HSRZ	**Hossack Road**	**21.13**	**191**	PN	**P**	**14 11 14.5**	**-0.8**
RIGZ	**Rimuhau**	**21.27**	**188**	PN	**P**	**14 11 13.4**	**-3.2**
RIGZ				*e*SN	**S**	**14 14 30.8**	**-5.8**
KNZ	**Kokohu**	**21.59**	**188**	PN	**P**	**14 11 17.9**	**-1.4**
KNZ				ScP	**ScP**	**14 17 46.7**	**+2.5**
HIZ	**Hauiti**	**21.62**	**194**	PN	**P**	**14 11 20.9**	**+1.2**
HIZ	**Hauiti**	**21.62**	**194**	*e*P	**P**	**14 11 20.7**	**+1.1**
MHGZ	**Mahia Peninsul**	**21.69**	**188**	PN	**P**	**14 11 19.2**	**-1.1**
BKZ	**Black Stump Fm**	**21.91**	**190**	*e*P	**P**	**14 11 18.8**	**-3.6**
WNVZ	**Wahianoa**	**22.24**	**192**	PN	**P**	**14 11 23.0**	**-2.3**
BHHZ	**Black Hill Sta**	**22.30**	**191**	PN	**P**	**14 11 22.5**	**-3.4**
HNR	**Honiara**	**22.43**	**288**	P	**P**	**14 11 26.4**	**-0.8**
	comp=Z,654nm,0.7s,baz=143,slow=5.8,SNR=48						
HNR				ScP	**ScP**	**14 17 47.5**	**+0.6**
	comp=Z,184nm,0.9s,baz=191,slow=8.8,SNR=5.2						
HNR	**Honiara**	**22.43**	**288**	*e*P	**P**	**14 11 27.0**	**-0.2**
HNR	**Honiara**	**22.43**	**288**	*e*P	**P**	**14 11 26.0**	**-1.2**
HNR				pmax	pmax		
	comp=Z,2μm,1.0s						
HNR	**Honiara**	**22.43**	**288**	*e*P	**P**	**14 11 26.0**	**-1.2**
HNR				*e*ScP	**ScP**	**14 17 47.9**	**+1.1**
PXZ	**Pawanui**	**22.70**	**189**	PN	**P**	**14 11 27.3**	**-2.0**
PXZ				*e*SN	**S**	**14 14 54.4**	**-4.6**
TSZ	**Takapari Road**	**22.88**	**191**	PN	**P**	**14 11 28.3**	**-2.6**
TSZ				ScP	**ScP**	**14 17 49.0**	**+1.4**
ANWZ	**Angora Road**	**23.18**	**190**	PN	**P**	**14 11 31.6**	**-1.9**
BFZ	**Birch Farm**	**23.43**	**190**	PN	**P**	**14 11 33.7**	**-2.1**
BFZ				*e*SN	**S**	**14 15 07.9**	**-2.6**
BFZ	**Birch Farm**	**23.43**	**190**	*e*P	**P**	**14 11 33.7**	**-2.1**
BFZ				*e*ScP	**ScP**	**14 17 52.1**	**+3.0**
BFZ				*e*ScS	**ScS**	**14 21 38.3**	**+2.0**
MRZ	**Mangatainoka R**	**23.53**	**191**	PN	**P**	**14 11 33.8**	**-2.9**
MRZ				*e*SN	**S**	**14 15 07.8**	**-4.3**
HOWZ	**Holdsworth Sta**	**23.77**	**191**	*e*PN	**P**	**14 11 36.1**	**-2.7**
MTW	**Mount Morrison**	**24.03**	**191**	PN	**P**	**14 11 38.5**	**-2.6**
CAW	**Cannon Point**	**24.06**	**192**	PN	**P**	**14 11 39.1**	**-2.3**
MSWZ	**Moikau Station**	**24.32**	**191**	PN	**P**	**14 11 42.3**	**-1.5**
TCW	**Tory Channel**	**24.32**	**193**	PN	**P**	**14 11 42.2**	**-1.5**
SNZO	**South Karori**	**24.33**	**192**	*e*P	**P**	**14 11 40.7**	**-3.0**
SNZO				*e*S	**S**	**14 15 25.7**	**+1.1**
SNZO				*e*ScS	**ScS**	**14 21 42.5**	**+2.6**
QRZ	**Quartz Range**	**24.39**	**197**	PN	**P**	**14 11 44.1**	**-0.2**
NNZ	**Nelson**	**24.54**	**195**	PN	**P**	**14 11 44.2**	**-1.4**
LHI	**Lord Howe Isla**	**24.57**	**232**	P	**P**	**14 11 47.0**	**+1.0**
	baz=25,SNR=30						
LHI	**Lord Howe Isla**	**24.57**	**232**	*e*P	**P**	**14 11 46.8**	**+0.7**
LHI				*e*ScP	**ScP**	**14 17 56.9**	**+4.5**
TUWZ	**Tuamarina**	**24.61**	**194**	PN	**P**	**14 11 44.4**	**-1.8**
THZ	**Tophouse**	**25.17**	**195**	PN	**P**	**14 11 49.8**	**-1.4**
THZ	**Tophouse**	**25.17**	**195**	*e*P	**P**	**14 11 49.9**	**-1.4**
THZ				*e*ScS	ScS	14 21 41.2	-2.4
DSZ	**Denniston Nort**	**25.44**	**197**	PN	**P**	**14 11 53.1**	**-0.6**
KHZ	**Kahutara**	**25.64**	**194**	PN	**P**	**14 11 53.5**	**-1.8**
KHZ				ScP	**ScP**	**14 17 57.0**	**+1.7**
KHZ	**Kahutara**	**25.64**	**194**	*e*P	**P**	**14 11 52.8**	**-2.5**
KHZ				*e*S	**S**	**14 15 43.2**	**-1.9**
KHZ				*e*ScS	**ScS**	**14 21 47.1**	**+1.8**
CTZ	**Chatham Island**	**26.10**	**177**	PN	P	14 12 08.4	+9.1
LTZ	**Lake Taylor**	**26.29**	**195**	PN	**P**	**14 11 59.6**	**-1.5**
LTZ	**Lake Taylor**	**26.29**	**195**	*e*P	**P**	**14 11 59.5**	**-1.6**
LTZ				*e*S	**S**	**14 15 55.0**	**-0.4**
LTZ				*e*ScS	**ScS**	**14 21 50.2**	**+1.8**
INZ	**Inchbonnie**	**26.45**	**197**	PN	**P**	**14 12 00.4**	**-2.1**
OXZ	**Oxford**	**26.86**	**195**	*e*PN	**P**	**14 12 03.6**	**-2.4**
OXZ				ScP	**ScP**	**14 18 00.1**	**+1.2**
OXZ	**Oxford**	**26.86**	**195**	*e*P	**P**	**14 12 04.2**	**-1.8**
OXZ				*e*S	**S**	**14 16 05.8**	**+1.6**
OXZ				*e*ScP	**ScP**	**14 18 00.6**	**+1.7**
OXZ				*e*ScS	**ScS**	**14 21 49.0**	**-1.8**
CRLZ	**Canterbury Las**	**26.95**	**194**	*e*P	**P**	**14 12 04.9**	**-1.9**
WVZ	**Waitaha Valley**	**26.97**	**198**	PN	**P**	**14 12 05.5**	**-1.5**
MQZ	**McQueen's Vall**	**27.07**	**194**	PN	**P**	**14 12 06.3**	**-1.5**
MQZ				ScP	**ScP**	**14 18 01.3**	**+1.8**
MQZ	**McQueen's Vall**	**27.07**	**194**	*e*P	**P**	**14 12 06.1**	**-1.7**
MQZ				*e*S	**S**	**14 16 10.1**	**+2.7**
RPZ	**Rata Peaks**	**27.48**	**197**	P	**P**	**14 12 11.1**	**-0.4**
	comp=Z,61nm,0.6s,baz=271,slow=1.0,SNR=21						
RPZ				S	**S**	**14 16 10.8**	**-3.2**
	comp=Z,63nm,0.9s,baz=351,slow=23,SNR=3.2						
RPZ				ScP	**ScP**	**14 18 02.1**	**+1.2**
	comp=Z,28nm,0.7s,baz=317,slow=9.9,SNR=3.1						
RPZ				ScS	**ScS**	**14 21 53.5**	**-0.1**
	comp=Z,57nm,1.2s,baz=99,slow=23,SNR=16						
RPZ	**Rata Peaks**	**27.48**	**197**	*e*P	**P**	**14 12 09.8**	**-1.7**
RPZ				S	**S**	**14 16 10.8**	**-3.2**
RPZ				ScP	**ScP**	**14 18 02.1**	**+1.2**
RPZ				*e*ScS	**ScS**	**14 21 55.1**	**+1.5**
PAE	**Paea**	**27.58**	**95**	⇑*i*P	**P**	**14 12 12.8**	**+0.1**
	comp=Z,260nm,0.8s						
PAE				*e*ScP	**ScP**	**14 18 04.5**	**+2.9**
	comp=Z,49nm,1.2s						
PAE	**Paea**	**27.58**	**95**	*e*T	T	14 38 44.0	
	comp=Z,8.3nm,0.3s						
PPT2	**Papeete2**	**27.59**	**94**	⇑*i*P	**P**	**14 12 13.1**	**+0.2**
	comp=Z,2μm,0.8s						
PPT2				*e*pP	pP	14 13 34.2	-7.9
	comp=Z,309nm,1.1s						
PPT2				*e*ScP	**ScP**	**14 18 04.9**	**+3.1**
	comp=Z,360nm,1.2s						
PPT2	**Papeete2**	**27.59**	**94**	*e*T	T	14 38 48.6	
	comp=Z,5.7nm,0.3s						
PPT	**Papeete**	**27.59**	**94**	P	**P**	**14 12 13.2**	**+0.3**
	comp=Z,2μm,0.7s,baz=299,slow=1.6,SNR=130						
PPT				ScP	**ScP**	**14 18 03.8**	**+2.1**
	comp=Z,305nm,1.1s,baz=120,slow=1.9,SNR=7.6						
PPT	**Papeete**	**27.59**	**94**	*e*P	**P**	**14 12 13.1**	**+0.2**
PPT				*e*ScP	**ScP**	**14 18 05.8**	**+4.0**
FOZ	**Fox Glacier**	**27.66**	**198**	PN	**P**	**14 12 11.7**	**-1.3**
FOZ				ScP	**ScP**	**14 18 01.5**	**+0.1**
FOZ	**Fox Glacier**	**27.66**	**198**	*e*P	**P**	**14 12 11.6**	**-1.5**
FOZ				*e*ScS	ScS	14 21 49.0	-5.4
TBI	**Tubuai**	**27.80**	**107**	⇑*i*P	**P**	**14 12 15.1**	**+0.5**
	comp=Z,2μm,0.8s						
TBI				*e*pP	**pP**	**14 13 39.3**	**-4.5**
	comp=Z,578nm,0.9s						
TIAR	**Tiarei**	**27.81**	**94**	⇑*i*P	**P**	**14 12 15.0**	**+0.2**
	comp=Z,520nm,0.9s						
TIAR				*e*ScP	**ScP**	**14 18 05.3**	**+2.9**
	comp=Z,49nm,1.0s						
TVO	**Taravao**	**27.89**	**95**	⇑*i*P	**P**	**14 12 15.7**	**+0.2**
	comp=Z,303nm,0.7s						
TVO				*e*pP	pP	14 13 36.8	-8.0
	comp=Z,149nm,1.2s						
TVO				*e*ScP	**ScP**	**14 18 05.7**	**+3.0**
	comp=Z,52nm,1.1s						
LBZ	**Lake Benmore**	**28.34**	**197**	PN	**P**	**14 12 17.0**	**-2.0**
LBZ	**Lake Benmore**	**28.34**	**197**	*e*P	**P**	**14 12 16.8**	**-2.2**
LBZ				*e*ScS	ScS	14 22 01.3	+3.7
JCZ	**Jackson Bay**	**28.47**	**199**	PN	**P**	**14 12 19.7**	**-0.6**
XMAS	**Kiritimati**	**28.52**	**49**	*e*P	**P**	**14 12 20.9**	**-0.1**
ODZ	**Otahua Downs**	**28.82**	**196**	PN	**P**	**14 12 21.0**	**-2.1**
ODZ				ScP	**ScP**	**14 18 08.2**	**+3.2**
ODZ	**Otahua Downs**	**28.82**	**196**	*e*P	**P**	**14 12 22.1**	**-1.0**
MEH	**Mehetia**	**29.01**	**95**	⇑*i*P	**P**	**14 12 25.2**	**0.0**
	comp=Z,170nm,0.8s						
MEH				*e*pP	pP	14 13 47.0	-8.0
	comp=Z,127nm,1.3s						
MEH				*e*ScP	**ScP**	**14 18 08.6**	**+2.4**
	comp=Z,95nm,1.2s						
WKZ	**Wanaka**	**29.08**	**198**	PN	**P**	**14 12 23.6**	**-1.8**
WKZ				ScP	**ScP**	**14 18 09.0**	**+3.1**
WKZ	**Wanaka**	**29.08**	**198**	*e*P	**P**	**14 12 23.9**	**-1.5**
WKZ				*e*S	**S**	**14 16 41.0**	**+2.1**
WKZ				*e*ScS	**ScS**	**14 22 05.7**	**+4.5**
EIDS	**Eidsvold**	**29.26**	**249**	P	**P**	**14 12 27.1**	**-0.2**
	baz=29,SNR=141						
EIDS	**Eidsvold**	**29.26**	**249**	*e*P	**P**	**14 12 26.9**	**-0.4**
EAZ	**Earnscleugh**	**29.36**	**198**	PN	**P**	**14 12 26.0**	**-1.9**
PMOR	**Pomariorio Ree**	**29.50**	**89**	⇑*i*P	**P**	**14 12 29.7**	**+0.2**
	comp=Z,3μm,1.0s						
PMOR				*e*ScP	**ScP**	**14 18 11.1**	**+3.3**
	comp=Z,386nm,1.1s						
PMOR	**Pomariorio Ree**	**29.50**	**89**	*e*T	T	14 42 24.8	
	comp=Z,8.9nm,0.2s						
KWAJ	**Kwajalein Atol**	**29.60**	**331**	*e*P	**P**	**14 12 30.6**	**+0.3**
KWAJ				pmax	pmax		
	comp=Z,2μm,0.9s						
KWAJ	**Kwajalein Atol**	**29.60**	**331**	*e*P	**P**	**14 12 30.6**	**+0.3**
VAH	**Vaihoa**	**29.72**	**90**	⇑*i*P	**P**	**14 12 31.2**	**-0.2**
	comp=Z,1μm,0.9s						
VAH				*e*ScP	**ScP**	**14 18 11.5**	**+3.0**
	comp=Z,199nm,1.2s						
MLZ	**Mavora Lakes**	**29.84**	**199**	PN	**P**	**14 12 31.6**	**-0.4**
MLZ	**Mavora Lakes**	**29.84**	**199**	*e*P	**P**	**14 12 31.7**	**-0.4**
MLZ				*e*ScS	ScS	14 22 09.0	+4.1
TUZ	**Tuapeka**	**29.93**	**197**	PN	**P**	**14 12 32.1**	**-0.7**
TUZ				ScP	**ScP**	**14 18 11.6**	**+3.0**
ARMA	**Armidale**	**29.99**	**239**	P	**P**	**14 12 34.0**	**+0.4**
	baz=30,SNR=1000						
ARMA	**Armidale**	**29.99**	**239**	*e*P	**P**	**14 12 34.2**	**+0.5**
DCZ	**Deep Cove**	**30.24**	**200**	*e*P	**P**	**14 12 35.3**	**-0.1**
WHZ	**Wether Hill Ro**	**30.37**	**199**	PN	**P**	**14 12 36.2**	**-0.3**
WHZ				ScP	**ScP**	**14 18 12.5**	**+2.4**
WHZ	**Wether Hill Ro**	**30.37**	**199**	*e*P	**P**	**14 12 36.4**	**-0.2**
SYZ	**Scrubby Hill**	**30.60**	**197**	*e*PN	**P**	**14 12 38.2**	**-0.3**
PYZ	**Puysegur Point**	**31.01**	**200**	*e*P	**P**	**14 12 42.0**	**-0.1**
APZ	**The Paps**	**31.20**	**198**	PN	**P**	**14 12 43.7**	**0.0**
MGCD	**Mangrove Creek**	**31.37**	**234**	P	**P**	**14 12 46.0**	**+0.6**
	baz=32,SNR=381						
RMQ	**Roma**	**31.50**	**248**	P	**P**	**14 12 46.8**	**+0.2**
	baz=32,SNR=780						
RABL	**Rabaul**	**31.64**	**291**	*e*P	**P**	**14 12 46.7**	**-1.3**
RABL				*e*ScS	ScS	14 22 20.5	+5.6
PATS	**Pohnpei**	**33.36**	**315**	P	**P**	**14 13 03.9**	**+1.5**
	baz=34,SNR=15						
PATS	**Pohnpei**	**33.36**	**315**	*e*P	**P**	**14 13 02.9**	**+0.5**
PATS				*e*ScP	**ScP**	**14 18 23.6**	**+2.7**
CTA	**Charters Tower**	**33.38**	**260**	P	**P**	**14 13 02.5**	**-0.1**
	comp=Z,807nm,0.9s,baz=84,slow=10,SNR=418						
CTA				S	**S**	**14 17 43.3**	**-2.1**
	comp=Z,35nm,1.0s,baz=277,slow=12,SNR=3.2						
CTA				ScP	**ScP**	**14 18 23.9**	**+2.9**
	comp=Z,314nm,1.0s,baz=73,slow=2.8,SNR=31						
CTA				ScS	**ScS**	**14 22 26.4**	**+2.6**
	comp=Z,8.4nm,0.9s,baz=151,slow=23,SNR=10						
CTAO	**Charters Tower**	**33.38**	**260**	*e*P	**P**	**14 13 02.1**	**-0.5**
CTAO	**Charters Tower**	**33.38**	**260**	*e*P	**P**	**14 13 02.1**	**-0.5**
CNB	**Canberra Magne**	**33.52**	**232**	P	**P**	**14 13 03.9**	**+0.3**
	baz=34,SNR=783						
CAN	**Canberra**	**33.79**	**232**	*e*P	**P**	**14 13 06.1**	**+0.2**
CAN				pmax	pmax		
	comp=Z,580nm,0.9s						
CAN	**Canberra**	**33.79**	**232**	*e*P	**P**	**14 13 06.1**	**+0.2**
YNG	**Young**	**33.87**	**234**	P	**P**	**14 13 07.2**	**+0.7**
	baz=34,SNR=170						
PMG	**Port Moresby**	**34.29**	**279**	P	**P**	**14 13 11.1**	**+0.8**
	comp=Z,4μm,1.0s,baz=84,slow=5.9,SNR=502						
PMG				S	**S**	**14 17 59.1**	**-0.1**
	comp=Z,16nm,0.8s,baz=284,slow=20,SNR=3.1						
PMG				ScP	**ScP**	**14 18 26.4**	**+2.1**
	comp=Z,115nm,1.0s,baz=108,slow=22,SNR=6.4						
PMG				ScS	**ScS**	**14 22 30.8**	**+1.9**
	comp=Z,19nm,0.9s,baz=218,slow=21,SNR=8.3						
CMSA	**Cobar Meteorol**	**35.20**	**240**	P	**P**	**14 13 17.5**	**-0.1**
	baz=35,SNR=1000						
JOHN	**Johnston Islan**	**35.26**	**15**	*e*P	**P**	**14 13 18.3**	**+0.1**
MTSU	**Mount Surprise**	**35.32**	**263**	P	**P**	**14 13 18.3**	**-0.6**
	baz=35,SNR=383						
QLP	**Quilpie**	**35.53**	**249**	P	**P**	**14 13 20.0**	**-0.5**
	baz=36,SNR=1000						
MANU	**Manus Island**	**36.88**	**291**	*e*P	**P**	**14 13 32.8**	**+1.0**
COEN	**Coen**	**36.98**	**270**	P	**P**	**14 13 32.8**	**+0.2**
	baz=37,SNR=812						
COEN	**Coen**	**36.98**	**270**	*e*P	**P**	**14 13 33.0**	**+0.4**
TOO	**Toolangi**	**37.27**	**230**	P	**P**	**14 13 35.0**	**+0.3**
	baz=37,SNR=534						
MOO	**Moorlands**	**38.23**	**222**	P	**P**	**14 13 42.9**	**+0.5**
	baz=38,SNR=35						
TAOE	**Nuku Hiva Isla**	**38.30**	**82**	*e*P	**P**	**14 13 44.1**	**+0.6**
	comp=Z,3μm,0.9s						
TAU	**Tasmania Unive**	**38.38**	**222**	*e*P	**P**	**14 13 43.7**	**+0.1**
TAU				pmax	pmax		
	comp=Z,400nm,0.9s						
TAU	**Tasmania Unive**	**38.38**	**222**	*e*P	**P**	**14 13 43.7**	**+0.1**
STKA	**Stephens Creek**	**38.67**	**241**	P	**P**	**14 13 46.5**	**+0.3**
	comp=Z,1μm,0.7s,baz=92,slow=9.7,SNR=996						
STKA				ScP	**ScP**	**14 18 43.1**	**+2.7**
	comp=Z,121nm,1.1s,baz=63,slow=4.3,SNR=8.1						
STKA				S	**S**	**14 19 03.6**	**-0.4**
	comp=Z,17nm,0.7s,baz=322,slow=22,SNR=1.9						
STKA				ScS	**ScS**	**14 22 56.0**	**+2.6**
	comp=Z,19nm,1.2s,baz=278,slow=22,SNR=3.7						
STKA				P3KPbc		14 43 39.8	
	comp=Z,3.7nm,0.7s,baz=281,slow=3.5,SNR=6.0						
STKA	**Stephens Creek**	**38.67**	**241**	P	**P**	**14 13 46.5**	**+0.3**
	baz=39,SNR=1000						
WAKE	**Wake Island**	**39.44**	**338**	*e*P	**P**	**14 13 52.5**	**+0.1**
QIS	**Mount Isa**	**39.59**	**259**	P	**P**	**14 13 52.5**	**-1.2**
	baz=40,SNR=95						
ARPS	**Mount Arapiles**	**39.73**	**233**	P	**P**	**14 13 54.6**	**0.0**
	baz=40,SNR=283						
H11N3	**WAKE ISLAND Hy**	**39.75**	**338**	P	**P**	**14 13 55.1**	**+0.5**
	baz=173,slow=9.9,SNR=23						
H11N1	**WAKE ISLAND Hy**	**39.75**	**338**	P	**P**	**14 13 55.3**	**+0.7**
	baz=173,slow=9.9,SNR=22						
H11N2	**WAKE ISLAND Hy**	**39.77**	**338**	P	**P**	**14 13 55.3**	**+0.5**
	baz=173,slow=9.9,SNR=23						
MMPI	**Merauke**	**40.96**	**277**	P	**P**	**14 14 05.6**	**+0.9**
	comp=Z,4μm,1.0s,comp=Z,37μm						
RKT	**Rikitea**	**41.09**	**105**	⇑*i*P	**P**	**14 14 06.1**	**+0.5**
	comp=Z,661nm,1.0s						
RKT				*e*ScP	**ScP**	**14 18 53.5**	**+3.4**
	comp=Z,309nm,1.4s						

HTT Hallett 41.20 239 P P 14 14 06.2 -0.2
baz=41,SNR=1000
JAY Jayapura 42.71 286 P P 14 14 19.2 +0.6
comp=Z,176nm,0.8s,baz=175,slow=20,SNR=233
JAY ScP **ScP 14 18 58.5 +1.7**
comp=Z,13nm,1.1s,baz=291,slow=23,SNR=7.8
JAY S **S 14 20 04.2 +1.2**
comp=Z,2.8nm,0.9s,baz=228,slow=23,SNR=1.9
JAY ScS **ScS 14 23 22.9 +4.3**
comp=Z,2.2nm,1.0s,baz=259,slow=24,SNR=4.4
MLOA Mauna Loa Obse 43.25 32 *eP* **P 14 14 23.6 +0.5**
UWE Uwekahuna 43.30 33 *eP* **P 14 14 23.7 +0.5**
BBOO Buckleboo 43.45 241 *eP* **P 14 14 23.9 -0.1**
KEKH Kekaha 43.45 26 *eP* **P 14 14 24.1 +0.1**
POHA Pohakuloa 43.46 32 *eP* **P 14 14 25.1 +0.6**
HPAH Hawaii Prepara 43.61 32 *eP* **P 14 14 26.2 +0.8**
HON Honolulu 43.61 28 *eP* **P 14 14 26.4 +1.1**
HON Honolulu 43.61 28 *eP* **P 14 14 26.4 +1.1**
KIP Kipapa 43.69 28 *ceP* **P 14 14 26.6 +0.7**
KIP pmax pmax
comp=Z,3µm,1.2s
KIP Kipapa 43.69 28 *eP* **P 14 14 26.4 +0.4**
OPA Opana 43.92 28 *eP* **P 14 14 28.3 +0.5**
OPA pmax pmax
comp=Z,150nm,0.9s
OPA Opana 43.92 28 *eP* **P 14 14 28.3 +0.5**
HLK Haleakala 43.95 31 *eP* **P 14 14 28.9 +0.7**
WB2 Warramunga Arr 44.56 259 *eP* **P 14 14 31.7 -1.1**
WRAB Tennant Creek 44.56 259 *deP* **P 14 14 31.8 -1.1**
WRAB pmax pmax
comp=Z,1µm,0.9s
WRAB Tennant Creek 44.56 259 *eP* **P 14 14 31.7 -1.1**
WRA Warramunga Arr 44.57 259 P P 14 14 31.4 -1.5
comp=Z,480nm,0.8s,baz=93,slow=6.9,SNR=935
WRA PcP **PcP 14 16 04.8 +0.7**
comp=Z,116nm,0.8s,baz=91,slow=3.2,SNR=6.4
WRA ScP **ScP 14 19 06.7 +2.3**
comp=Z,134nm,0.9s,baz=87,slow=4.1,SNR=32
WRA S **S 14 20 25.0 -4.3**
comp=Z,39nm,0.9s,baz=94,slow=14,SNR=5.5
WRA ScS **ScS 14 23 29.9 -0.5**
comp=Z,34nm,1.1s,baz=90,slow=8.3,SNR=13
WRA P3KPbc 14 43 15.3
comp=Z,1.3nm,0.8s,baz=296,slow=2.8,SNR=7.4
AS01 Alice Springs 44.72 254 *eP* **P 14 14 33.5 -0.6**
AS31 Alice Springs 44.76 254 *eP* **P 14 14 33.8 -0.5**
ASAR Alice Springs 44.76 254 P P 14 14 33.9 -0.5
comp=Z,3µm,0.6s,baz=89,slow=7.9
ASAR PcP **PcP 14 16 05.5 +0.8**
comp=Z,185nm,0.8s,baz=93,slow=5.7,SNR=4.8
ASAR ScP **ScP 14 19 08.0 +2.8**
comp=Z,85nm,0.8s,baz=98,slow=3.7,SNR=12
ASAR S **S 14 20 29.4 -2.4**
comp=Z,68nm,0.9s,baz=87,slow=17,SNR=13
ASAR ScS **ScS 14 23 33.0 +1.4**
comp=Z,39nm,1.0s,baz=89,slow=6.2,SNR=12
ASAR P3KPbc 14 43 14.5
comp=Z,1.0nm,0.8s,baz=288,slow=3.5,SNR=9.0
MIDW Midway 45.57 1 *eP* **P 14 14 39.7 -0.5**
comp=Z,102nm,0.8s
KDU Kakadu 47.44 269 P P 14 14 54.1 -0.6
baz=48,SNR=158
GUMO Guam 47.60 308 P P 14 14 55.8 0.0
comp=Z,4µm,0.8s,baz=154,slow=5.2,SNR=174
GUMO PcP **PcP 14 16 15.1 +0.2**
comp=Z,372nm,0.9s,baz=91,slow=2.9,SNR=2.1
GUMO ScP **ScP 14 19 19.1 +2.1**
comp=Z,617nm,1.0s,baz=172,slow=4.9,SNR=15
GUMO Guam 47.60 308 *eP* **P 14 14 56.4 +0.6**
GUMO 14 16 15.1
GUMO Guam 47.60 308 *eP* **P 14 14 56.4 +0.6**
GUMO PcP **PcP 14 16 15.1 +0.2**
GUMO *e*ScP **ScP 14 19 19.0 +2.1**
MTN Manton Dam 48.69 268 P P 14 15 03.1 -0.9
baz=49,SNR=192
MTN Manton Dam 48.69 268 *eP* **P 14 15 03.4 -0.6**
KMPI Kaimana, Papua 48.78 281 P P 14 15 05.2 +0.4
comp=Z,3µm,1.0s,comp=Z,32µm
RKPI Ransiki, Papua 49.11 284 P P 14 15 07.7 +0.5
comp=Z,2µm,0.9s,comp=Z,20µm
SAUI Saumlaki 49.72 274 P P 14 15 12.1 +0.4
comp=Z,3µm,1.2s,comp=Z,44µm
SAUI Saumlaki 49.72 274 *eP* **P 14 15 12.5 +0.8**
WRKA Warakurna 49.82 252 P P 14 15 12.0 -0.4
baz=50,SNR=1000
FAKI Fak Fak 50.40 281 P P 14 15 16.5 -0.2
comp=Z,798nm,1.2s,comp=Z,17µmcomp=Z,34µm
FAKI Fak Fak 50.40 281 *eP* **P 14 15 16.2 -0.4**
SWI Sorong 52.06 283 P P 14 15 29.1 +0.4
comp=Z,5µm,0.9s,comp=Z,46µm
BNDI Bandanaira 52.08 278 P P 14 15 28.8 0.0
comp=Z,3µm,1.0s,comp=Z,47µm
FITZ Fitzroy Crossi 52.96 260 P P 14 15 34.8 -0.2
comp=Z,153nm,0.5s,baz=93,slow=5.3,SNR=329
FITZ S **S 14 22 23.5 -0.4**
comp=Z,12nm,0.9s,baz=311,slow=19,SNR=6.3
FITZ PKPPKP **P'P'df 14 45 49.8 -2.5**
comp=Z,12nm,1.0s,baz=245,slow=0.8,SNR=5.6
MSAI Masohi 53.38 279 P P 14 15 38.1 0.0
comp=Z,290nm,0.9s,comp=Z,3µm
NLAI Namlea 55.13 279 P P 14 15 50.8 +0.4
comp=Z,1µm,1.3s,comp=Z,24µm
LBMI Labuha 55.64 282 P P 14 15 54.7 +0.7
comp=Z,2µm,1.2s,comp=Z,25µm
SOEI Soe 55.95 270 P P 14 15 57.7 +1.5
comp=Z,4µm,1.3s,comp=Z,44µm
SOEI Soe 55.95 270 *eP* **P 14 15 57.6 +1.4**
TNTI Ternate 56.28 283 P P 14 15 58.8 +0.4
comp=Z,3µm,1.4s,comp=Z,46µm
TNTI Ternate 56.28 283 *eP* **P 14 15 58.7 +0.4**
SANI Sanana 56.58 279 P P 14 16 01.9 +1.5
comp=Z,2µm,1.2s,comp=Z,23µmcomp=Z,31µm
MBWA Marble Bar 58.03 256 *eP* **P 14 16 09.5 -0.7**
MBWA Marble Bar 58.03 256 P P 14 16 09.8 -0.4
SNR=46
MMRI Maumere 58.17 271 P P 14 16 10.8 -0.5
comp=Z,1µm,1.0s,comp=Z,24µmcomp=Z,28µm
MMRI Maumere 58.17 271 *eP* **P 14 16 10.4 -0.9**
MMRI *e*ScP **ScP 14 20 06.1 +2.8**
CBIJ Chichi jima 58.54 319 *eP* **P 14 16 13.4 -0.1**
CBIJ *ep*P **pP 14 18 02.4 +1.6**
JCJ Chichijima 58.54 319 P P 14 16 12.7 -0.8
comp=Z,484nm,0.8s,baz=141,slow=1.7,SNR=34
EDFI Ende, Flores 58.67 270 P P 14 16 14.0 -0.7
comp=Z,1µm,1.1s,comp=Z,19µm
SGSI Sangihe 59.08 285 P P 14 16 17.5 +0.1
comp=Z,2µm,1.0s,comp=Z,18µm
NWAO Narrogin (SRO) 59.25 242 *eP* **P 14 16 17.8 -0.4**
NWAO pmax pmax
comp=Z,390nm,1.2s
NWAO Narrogin (SRO) 59.25 242 *eP* **P 14 16 17.8 -0.4**
NWAO Narrogin (SRO) 59.25 242 P P 14 16 18.0 -0.3
SNR=20
BASI Baing, Sumba 59.35 268 P P 14 16 19.8 +0.6
comp=Z,2µm,1.7s,comp=Z,25µm
MATI Mati 59.73 289 *eP* **P 14 16 20.7 -1.0**
LUWI Luwuk 59.94 279 P P 14 16 23.6 +0.5
comp=Z,2µm,1.3s,comp=Z,32µm
LUWI Luwuk 59.94 279 *eP* **P 14 16 23.6 +0.5**
DAV Davao City (W) 60.39 289 P P 14 16 25.4 -0.6
comp=Z,1µm,0.8s,baz=80,slow=2.0,SNR=32
DAV Davao City (W) 60.39 289 *eP* **P 14 16 26.5 +0.4**
DAV Davao City (W) 60.39 289 P P 14 16 26.1 0.0
SNR=21
BSSI Bau Bau, Buton 60.52 273 P P 14 16 26.7 -0.3
comp=Z,934nm,1.2s,comp=Z,15µm
SBA Scott Base 60.71 184 *eP* **P 14 16 29.0 +1.9**
SBA pmax pmax
comp=Z,180nm,1.0s
SBA Scott Base 60.71 184 *eP* **P 14 16 28.9 +1.9**
VNDA Vanda 60.73 185 P P 14 16 28.4 +1.1
comp=Z,69nm,1.0s,baz=1.4,slow=6.9,SNR=154
VNDA Vanda 60.73 185 *eP* **P 14 16 28.3 +1.0**
APSI Ampana 61.04 279 P P 14 16 31.2 +0.8
comp=Z,3µm,1.0s,comp=Z,38µmcomp=Z,19µm
BUTP Butuan 61.16 291 *eP* **P 14 16 31.2 +0.1**
BUKP Musuan 61.19 290 *eP* **P 14 16 31.8 +0.4**
MRSI Marisa 61.24 281 P P 14 16 31.1 -0.6
comp=Z,662nm,1.0s,comp=Z,10µm
KAPI Kappang 61.55 274 *eP* **P 14 16 33.5 -0.2**
KAPI Kappang 61.55 274 P P 14 16 34.1 +0.4
SNR=29
SCPH Surigao 61.63 292 ‖ *eP* **P 14 16 33.9 -0.2**
CTBH Cotabato--PC H 61.66 289 ‖ *iP* **P 14 16 35.1 +0.8**
H01W1 Cape Leeuwin H 61.73 239 P P 14 16 36.0 +1.7
baz=110,slow=6.9,SNR=31
H01W3 Cape Leeuwin H 61.75 239 P P 14 16 36.0 +1.6
baz=110,slow=6.9,SNR=39
H01W2 Cape Leeuwin H 61.75 239 P P 14 16 36.1 +1.6
baz=110,slow=6.9,SNR=43
SPSI Sidrap Palu 61.85 275 P P 14 16 34.9 -0.8
comp=Z,692nm,1.0s,comp=Z,9µmcomp=Z,12µm
TTSI Tana Toraja 62.09 276 P P 14 16 37.2 0.0
comp=Z,529nm,1.0s,comp=Z,7µm
MSLP Maasin 62.34 292 *eP* **P 14 16 39.1 +0.3**
PLAI Plampang 62.38 269 P P 14 16 38.8 -0.3
comp=Z,3µm,1.0s,comp=Z,27µm
PLP Palo 62.68 293 ‖ *iP* **P 14 16 41.0 -0.1**
PAGZ Pagadian 62.69 289 *eP* **P 14 16 41.8 +0.7**
OCLP Ormoc 62.96 293 *eP* **P 14 16 43.5 +0.7**
LLP Lapu-Lapu 63.21 292 ‖ *eP* **P 14 16 44.5 +0.1**
TWSI Taliwang, Sumb 63.26 269 P P 14 16 44.5 -0.3
comp=Z,2µm,1.2s,comp=Z,21µm
JHJ2 Mitsune 64.24 322 *eP* **P 14 16 50.6 +0.1**
JHJ Hachijo jima 2 64.26 322 P P 14 16 51.3 +0.6
comp=Z,977nm,0.4s,baz=150,slow=4.7,SNR=41
GUIM Jordan 64.56 291 *eP* **P 14 16 51.7 -1.3**
RCP Roxas 64.82 292 ‖ *eP* **P 14 16 54.7 0.0**
DNP Denpasar 64.87 269 P P 14 16 55.1 +0.1
comp=Z,3µm,1.0s,comp=Z,38µm
BKB Balikpapan 65.42 277 P P 14 17 00.7 +2.2
comp=Z,765nm,1.1s,comp=Z,17µmcomp=Z,31µm
KBKI Kotabaru 65.48 274 P P 14 16 59.2 +0.4
comp=Z,644nm,1.1s,comp=Z,13µm
JAGI Jajag, Banyuwa 65.93 268 P P 14 17 00.4 -1.3
comp=Z,2µm,1.1s,comp=Z,21µm
ABJI Asem Bagus 66.03 269 P P 14 17 02.2 -0.1
comp=Z,1µm,1.2s,comp=Z,19µmcomp=Z,29µm
CUYO Cuyo Island 66.06 291 *eP* **P 14 17 02.4 0.0**
GQP Guinayangan 66.11 294 ‖ *eP* **P 14 17 03.0 +0.3**
MYLDM Lahad Datu 66.12 284 *eP* **P 14 17 04.2 +1.4**
CASY Casey 66.36 205 *eP* **P 14 17 03.6 +0.3**
TSM Tawau 66.38 283 ⇑ *P* **P 14 17 04.8 +0.4**
GMJI Gumukmas 66.66 268 P P 14 17 05.3 -0.9
comp=Z,861nm,0.8s,comp=Z,13µm
BBKI Banjar Baru 66.69 274 P P 14 17 06.8 +0.4
comp=Z,2µm,1.1s,comp=Z,25µm
LQP Lukban 66.99 294 ‖ *eP* **P 14 17 08.5 +0.1**
MTKI Muara Teweh, K 67.41 276 P P 14 17 11.3 +0.5
comp=Z,594nm,1.0s,comp=Z,11µm
INU Inuyama 67.45 322 *eP* **P 14 17 10.8 +0.2**
MJAR Matsushiro Arr 67.59 323 P P 14 17 11.2 -0.3
comp=Z,424nm,0.9s,baz=159,slow=6.0,SNR=112
MJAR PKP2bc 14 45 26.9
comp=Z,6.4nm,1.0s,baz=291,slow=3.1,SNR=8.5
MAJO Matsushiro 67.60 323 *diP* **P 14 17 11.4 -0.1**
MAJO pmax pmax
comp=Z,2µm,0.9s
MAJO Matsushiro 67.60 323 *eP* **P 14 17 11.4 -0.1**
ENPP El Nido 67.62 290 *eP* **P 14 17 12.6 +0.6**
JOW Kunigami 67.94 309 *eP* **P 14 17 14.6 +0.9**
PWJI Pagerwojo 68.29 268 P P 14 17 16.0 -0.1
comp=Z,757nm,1.2s,comp=Z,13µm
CVP Callao Caves 68.37 298 *eP* **P 14 17 16.7 +0.2**
KKM Kota Kinabalu 68.55 284 *eP* **P 14 17 18.0 +0.1**
NGJI Ngawi 68.79 269 P P 14 17 21.0 +1.8
comp=Z,968nm,1.0s,comp=Z,15µm
BCPH Baguio City Da 68.83 296 ‖ *eP* **P 14 17 22.0 +2.5**
PCJI Pacitan 68.84 268 P P 14 17 19.9 +0.4
comp=Z,4µm,1.1s,comp=Z,37µmcomp=Z,25µm
ERM Erimo 69.07 330 *dc iP* **P 14 17 21.1 +0.9**
ERM pmax pmax
comp=Z,170nm,1.1s
ERM Erimo 69.07 330 *eP* **P 14 17 21.2 +1.0**
WOJI Wonogiri, Jawa 69.18 268 P P 14 17 21.9 +0.4
comp=Z,2µm,1.2s,comp=Z,24µm
YUK Yuzh-Kuril'sk 69.45 333 *eP* P 14 17 14.4 -8.0
YUK *i* *PP pP 14 19 07.5 -7.4
YUK *i* 14 19 58.7
YUK *i* PPP PPP 14 21 46.7
YUK *i* SSS SSS 14 33 38.5
YUK pmax pmax
comp=Z,659nm,1.0s
YUK pmax pmax
comp=E,62nm,0.5s
YUK pmax pmax
comp=N,348nm,1.2s
YUK pmax pmax
comp=Z,3µm,3.9s
UGM Wanagama 69.54 268 P P 14 17 23.9 +0.2
comp=Z,2µm,0.8s,comp=Z,29µm
UGM Wanagama 69.54 268 *eP* **P 14 17 23.2 -0.5**
UWJI Ujung Watu 69.54 270 P P 14 17 26.6 +2.9
comp=Z,1µm,1.2s,comp=Z,19µm
KUR Kuril'sk 69.60 335 *diP* **P 14 17 23.9 +0.6**
KUR *e* 14 19 10.2
KUR *e*PPP PPP 14 20 08.9
KUR *i* S **S 14 25 51.6 +3.5**
KUR pmax pmax
comp=Z,610nm,1.4s
KUR pmax pmax
comp=Z,2µm,5.3s
KUR MLR MLR
comp=Z,1µm,19.0s
ATKA Atka Island 69.61 3 *eP* **P 14 17 22.5 -0.7**
PIP Pasuquin 69.67 298 ‖ *eP* **P 14 17 24.5 +0.2**
JNU Nakatsue 69.84 316 P P 14 17 25.3 +0.2
comp=Z,282nm,0.9s,baz=85,slow=3.7,SNR=73
JNU Nakatsue 69.84 316 *eP* **P 14 17 25.1 0.0**
JNU *ep*P **pP 14 19 18.7 +0.9**
PBKI Pangkalan Bun 69.93 274 P P 14 17 27.3 +1.3
comp=Z,4µm,1.0s,comp=Z,25µmcomp=Z,22µm
YOJ Yonaguni jima 70.68 305 *eP* **P 14 17 30.7 +0.5**
YOJ pmax pmax
comp=Z,1µm,0.8s
YOJ Yonaguni jima 70.68 305 *eP* **P 14 17 30.7 +0.5**
NIKH Nikolski High 70.78 6 *eP* **P 14 17 29.2 -0.9**
STKI Sintang 70.97 276 P P 14 17 33.2 +1.0
comp=Z,1µm,1.3s,comp=Z,15µm
SBUM Sibu 71.04 279 ⇑ *P* **P 14 17 33.1 +0.5**
SBUM Sibu 71.04 279 *eP* **P 14 17 33.2 +0.6**
KPJI Karang Pucung 71.21 268 P P 14 17 33.5 -0.1
comp=Z,1µm,0.9s,comp=Z,15µm
TWG Pinlang 71.41 302 *eP* **P 14 17 33.0 -1.5**
YULB Yu-li 71.51 303 *eP* **P 14 17 33.2 -1.9**
CMJI Cimerak 71.55 268 P P 14 17 34.7 -0.8
comp=Z,1µm,1.3s,comp=Z,15µm
SKR Severo-Kuril's 71.56 343 *eP* **P 14 17 34.0 -0.7**
SKR *eS* **S 14 26 09.0 -1.0**
SKR *e* 14 26 50.0
SKR pmax pmax
comp=Z,560nm,0.9s
SKR pmax pmax
comp=E,270nm,1.0s
SKR smax smax
comp=N,8µm,12.0s
SKR smax smax
comp=E,13µm,12.0s
NACB Ninganchiao 71.65 304 *eP* **P 14 17 35.2 -0.7**
UNV Unalaska Valle 71.91 7 *eP* **P 14 17 36.1 -0.6**
SSLB Suanglung 71.97 303 *eP* **P 14 17 37.0 -0.8**
TPUB Ta-pu 72.00 302 *eP* **P 14 17 36.5 -1.5**
TPUB *ep*P **pP 14 19 32.9 +1.4**
YHNB Yeheng 72.07 304 *eP* **P 14 17 38.4 0.0**
JCJI Jatiwangi 72.08 269 P P 14 17 38.6 0.0
comp=E,2µm,1.2s,comp=E,32µm
TATO Taipei 72.13 304 *eP* **P 14 17 38.6 -0.1**
TATO Taipei 72.13 304 P P 14 17 38.9 +0.3
SNR=6.7
CISI Cisompet, Garu 72.22 268 P P 14 17 38.8 -0.7
comp=E,2µm,1.1s,comp=E,22µm
CISI Cisompet, Garu 72.22 268 *eP* **P 14 17 38.3 -1.2**
QSPA South Pole Qui 72.45 180 *eP* **P 14 17 40.3 +0.3**
KSM Kuching 72.53 277 *eP* **P 14 17 42.0 +0.8**
LEM Lembang 72.61 268 P P 14 17 46.6 +4.7
comp=E,24µm,1.3s,comp=E,283µm
CNJI Cibinong 72.94 268 P P 14 17 43.0 -0.6
comp=E,2µm,0.9s,comp=E,19µm
PET Petropavlovsk 73.06 346 *eP* **P 14 17 42.6 -0.7**
PET *e**PP **pP 14 19 39.2 +1.8**
PET *eS* S **14 26 26.6 0.0**
PET *e*SPP SPP 14 27 18.7
PET pmax pmax
comp=Z,182nm,0.7s
PET pmax pmax
comp=Z,2µm,12.3s
PET MLR MLR
comp=Z,800nm,17.0s
PET MLR MLR
comp=Z,1µm,17.0s
PET Petropavlovsk 73.06 346 *eP* **P 14 17 43.1 -0.2**
YSS Yuzh-Sakhalins 73.09 333 *kiP* **P 14 17 44.8 +1.1**
YSS *e* 14 19 38.0
YSS *e**SP **sP 14 20 35.0 +0.6**
YSS *i* S **S 14 26 30.6 +3.3**
YSS pmax pmax
comp=Z,400nm,1.0s
YSS pmax pmax
comp=Z,4µm,4.0s
YSS smax smax
comp=N,6µm,10.0s
YSS smax smax
comp=E,6µm,10.0s
YSS Yuzh-Sakhalins 73.09 333 *eP* **P 14 17 44.6 +0.9**
YSS *ep*P **pP 14 19 39.8 +2.0**
PEA0 Petropavlovsk- 73.36 345 *eP* **P 14 17 45.0 -0.1**
PEA0 *ep*P **pP 14 19 41.9 +2.6**
PEA0B Petropavlovsk- 73.36 345 *eP* **P 14 17 45.4 +0.3**
PETK Petropavlovsk- 73.36 345 P P 14 17 45.0 0.0
comp=E,430nm,0.9s,baz=134,slow=8.0,SNR=212
MIR Mirnyy 73.39 205 *iP* **P 14 17 47.0 +1.9**
MIR pmax pmax
comp=Z,18nm,1.5s
CBJI Citeko 73.45 268 P P 14 17 45.6 -0.9
comp=Z,5µm,1.1s,comp=Z,62µm
XMIS Christmas Isla 73.49 264 *eP* **P 14 17 46.7 0.0**
DBJI Dramaga 73.51 268 P P 14 17 46.7 -0.2
comp=Z,2µm,1.1s,comp=Z,29µm
SKJI Sukabumi 73.57 268 P P 14 17 46.8 -0.4
comp=Z,3µm,0.8s,comp=Z,27µm
TNG Tangerang 73.72 269 P P 14 17 48.6 +0.6
comp=Z,3µm,1.1s,comp=Z,53µm
TNG P **P 14 17 48.6 +0.6**
comp=Z,2µm,1.1s,comp=Z,33µm
SBJI Serang 74.22 268 P P 14 17 50.8 -0.1
comp=Z,2µm,1.2s,comp=Z,21µm
SDPT Sand Point 74.27 11 *eP* **P 14 17 49.5 -0.7**
KSRS Korea Array 74.40 318 P P 14 17 52.6 +1.3
comp=Z,105nm,0.8s,baz=136,slow=6.1,SNR=282
KS15 Wonju Array Si 74.42 318 *eP* **P 14 17 52.5 +1.1**
KSAR Wonju Array Be 74.42 318 P P 14 17 52.6 +1.2
KSAR Wonju Array Be 74.42 318 P P 14 17 52.6 +1.2
QZH Quanzhou 74.42 303 ‖ *iP* **P 14 17 50.3 -1.4**
QZH pP **pP 14 19 43.3 -3.0**
QZH sP **sP 14 20 42.0 -0.8**
QZH S **S 14 26 38.2 -4.5**
QZH pmax pmax
comp=Z,2µm,1.0s
QZH pmax pmax
comp=Z,10µm,3.2s
KS01 Wonju Array Si 74.43 318 *eP* **P 14 17 51.7 +0.2**
CGJI Cibinong 74.50 268 P P 14 17 51.6 -0.8
comp=Z,3µm,0.6s,comp=Z,31µm
INCN Inchon 75.24 318 *eP* **P 14 17 57.2 +1.1**
INCN Inchon 75.24 318 P P 14 17 57.6 +1.5
SNR=20
BLSI Bandar Lampung 75.28 269 P P 14 17 56.0 -0.8
comp=Z,1µm,1.0s,comp=Z,13µm
PPBI Pangkal Pinang 75.37 272 P P 14 17 57.9 +0.6
comp=Z,521nm,1.1s,comp=Z,11µm
SSE Sheshan 75.46 310 P P 14 17 57.7 +0.3
SSE PP **sP 14 20 52.5 +3.7**
SSE S **S 14 26 56.8 +3.1**
SSE sS **sS 14 30 17.0 -1.8**
SSE pmax pmax
comp=Z,180nm,1.0s
SSE pmax pmax
comp=Z,2µm,7.6s
CHGN Chignik 75.55 11 *eP* **P 14 17 56.0 -1.3**
H06E1 SOCORRO T-PHAS 75.64 65 P P 14 18 00.2 +1.5
SNR=104
SNCC San Nicolas Is 75.67 48 P P 14 17 59.6 +1.0
baz=237
SNCC San Nicolas Is 75.67 48 *eP* **P 14 17 59.3 +0.7**
KLI Kotabumi 75.79 269 P P 14 17 58.5 -1.2
comp=Z,333nm,1.9s,comp=Z,5µm
KASI Kota Agung 75.95 269 P P 14 17 59.6 -0.9
comp=Z,2µm,1.0s,comp=Z,20µm
SCZ2 Santa Cruz Isl 76.00 47 P P 14 18 01.5 +1.1
baz=237
MCCM Marconi Confer 76.15 42 *eP* **P 14 18 02.0 +0.9**
SBC Santa Barbara 76.18 47 P P 14 18 02.5 +1.2
baz=237
TYV Tymovskoe 76.21 336 *eP* **P 14 18 02.5 +1.4**
TYV *e**S **S 14 27 04.0 +3.1**
TYV pmax pmax
comp=N,2µm,3.0s
TYV pmax pmax
comp=Z,4µm,3.0s
TYV pmax pmax
comp=Z,766nm,1.0s
TYV smax smax
comp=E,2µm,2.5s
TYV smax smax
comp=E,10µm,10.0s
SCI2 San Clemente I 76.22 49 P P 14 18 02.6 +1.0
baz=238
SAO San Andreas Ge 76.29 44 *eP* **P 14 18 02.7 +0.8**
SAO *e**PP **pP 14 19 59.0 +1.7**
SAO San Andreas Ge 76.29 44 *eP* **P 14 18 02.7 +0.8**
SAO *ep*P **pP 14 19 59.0 +1.7**
USRK Ussuriysk Ar. 76.30 326 P P 14 18 02.7 +1.0
comp=E,131nm,0.9s,baz=111,slow=4.3,SNR=124
PKM Mcpherson Peak 76.36 46 P P 14 18 03.6 +1.0
baz=237
PMBI Palembang 76.44 271 P P 14 18 04.6 +1.4
comp=E,1µm,1.0s,comp=E,18µmcomp=E,17µm
BLG Laguna Peak, P 76.45 47 P P 14 18 03.7 +0.8
baz=238
BLG S **S 14 27 06.6 +2.2**
baz=238
SMMC Simmler 76.46 46 P P 14 18 04.3 +1.4
baz=237
LWLI Liwa 76.51 269 P P 14 18 03.2 -0.6
comp=E,1µm,0.7s,comp=E,15µm
HOPS Hopland Field 76.53 41 *eP* **P 14 18 04.5 +1.4**
CIS Catalina Islan 76.54 48 P P 14 18 04.3 +0.9
baz=238
MDSI Maura Dua 76.55 270 P P 14 18 02.5 -1.3
comp=E,463nm,1.0s,comp=E,8µm
FMP Fort Macarthur 76.79 48 P P 14 18 05.7 +1.0
baz=238
HKC Hong Kong Obse 76.85 299 ‖ *iP* **P 14 18 07.0 +1.8**
KMRM Mail Ridge 76.86 40 *eP* **P 14 18 06.6 +1.6**
OSI Osito Audit: C 76.96 47 P P 14 18 06.7 +1.0
baz=238
OSI Osito Audit: C 76.96 47 *eP* **P 14 18 06.2 +0.5**
DECC Green Verdugo 77.05 48 P P 14 18 06.8 +0.7
baz=238
PASC Pasadena Art C 77.11 48 *eP* **P 14 18 06.8 +0.3**
PASC *ep*P **pP 14 20 03.7 +1.6**
ARVC Arvin 77.16 47 P P 14 18 07.7 +1.0
baz=238
109C Camp Elliot, M 77.21 49 P P 14 18 08.0 +1.0
baz=239
MWC Mount Wilson 77.22 48 *eP* **P 14 18 07.7 +0.4**
MWC pmax pmax
comp=Z,300nm,0.9s
MWC Mount Wilson 77.22 48 *eP* **P 14 18 07.7 +0.4**
MWC *ep*P **pP 14 20 05.1 +2.1**
KHMM Horse Mountain 77.24 39 *eP* **P 14 18 09.1 +1.9**
DSRI Dabo 77.36 274 P P 14 18 09.1 +0.8
comp=Z,2µm,1.4s,comp=Z,32µm
LHSI Lahat 77.37 270 P P 14 18 07.7 -0.6
comp=Z,620nm,1.1s,comp=Z,11µm
VES Vestal, Richgr 77.37 46 P P 14 18 08.4 +0.6
baz=237
FOXC Fox Airport 77.38 47 *eP* **P 14 18 09.1 +1.1**
LRRC Littlerock Res 77.40 47 *eP* **P 14 18 09.1 +1.1**
BAR Barrett 77.42 50 *eP* **P 14 18 08.9 +0.7**
OHAK Old Harbor 77.47 14 *eP* **P 14 18 08.0 +0.2**
RCTC Rector, Farmer 77.51 45 P P 14 18 09.0 +0.5
baz=237
MURC Murrieta 77.51 49 P P 14 18 09.5 +0.8
baz=239
BFSC Mount Baldy Ra 77.52 48 P P 14 18 09.2 +0.4
baz=238
EDW2 Edwards Air Fo 77.61 47 P P 14 18 10.3 +1.0
baz=238
NJ2 Nanjing 77.66 309 *eP* **P 14 18 10.7 +1.3**
NJ2 pP **pP 14 20 05.1 -0.2**
NJ2 sP **sP 14 21 04.5 +3.0**
NJ2 S **S 14 27 22.4 +5.3**
NJ2 pmax pmax
comp=Z,410nm,1.0s
NJ2 pmax pmax

comp=Z,2µm,5.4s
HABR Khabarovsk 77.69 330 *d i*P **P 14 18 08.7 -0.5**
HABR *e* 14 18 16.1
HABR *e**PP **pP 14 20 01.4 -3.7**
HABR *e**SP **sP 14 20 56.2 -5.1**
HABR *e* 14 21 12.9
HABR *e*PPP PPP 14 23 04.8
HABR *e*S **S 14 27 17.5 +0.8**
HABR *e* 14 27 38.0
HABR *e*SS **SS 14 32 31.6 -1.2**
HABR *e*SSS SSS 14 36 03.0
HABR pmax pmax
comp=N,109nm,1.5s
HABR pmax pmax
comp=Z,725nm,1.5s
HABR pmax pmax
comp=E,56nm,0.7s
HABR pmax pmax
comp=Z,3µm,2.3s
HABR MLR MLR
comp=Z,285nm,20.0s
ISA Isabella, Lake 77.69 46 P **P 14 18 10.5 +0.8**
baz=238
ISA Isabella, Lake 77.69 46 *e*P **P 14 18 10.5 +0.8**
ISA pmax pmax
comp=Z,310nm,1.0s
ISA Isabella, Lake 77.69 46 *e*P **P 14 18 10.5 +0.8**
ISA *e*pP **pP 14 20 08.2 +2.6**
CMB Columbia Colle 77.70 43 *e*P **P 14 18 09.8 +0.2**
CMB *e**PP **pP 14 20 07.7 +2.1**
CMB Columbia Colle 77.70 43 *e*P **P 14 18 09.8 +0.2**
CMB *e*pP **pP 14 20 07.7 +2.1**
MONP2 Monument Peak 77.71 50 P **P 14 18 11.0 +1.0**
baz=240
MNAI Manna 77.75 269 P **P 14 18 10.5 +0.1**
comp=Z,3µm,0.8s,comp=Z,28µm
MNAI Manna 77.75 269 *e*P **P 14 18 10.0 -0.4**
WDC Whiskeytown Da 77.79 40 *e*P **P 14 18 11.4 +1.4**
WDC *e**PP **pP 14 20 08.7 +2.7**
WDC Whiskeytown Da 77.79 40 *e*P **P 14 18 11.4 +1.4**
WDC *e*pP **pP 14 20 08.7 +2.7**
IBP Imperial Bould 77.83 50 P **P 14 18 11.6 +1.1**
baz=240
AFDM Forest Hills D 77.84 42 *e*P **P 14 18 10.3 0.0**
CBKC Canebrake 77.84 50 *e*P **P 14 18 11.7 +1.2**
ORV Oroville 77.85 42 *e*P **P 14 18 11.7 +1.4**
ORV pmax pmax
comp=Z,210nm,1.2s
ORV Oroville 77.85 42 *e*P **P 14 18 10.6 +0.2**
MDJ Mudanjiang 77.87 325 P **P 14 18 11.8 +1.5**
MDJ pP pP 14 20 04.8 -1.5
MDJ sP sP 14 21 03.2 +0.8
MDJ S **S 14 27 25.9 +7.1**
MDJ ScS **ScS 14 27 37.8 -1.4**
MDJ pmax pmax
comp=Z,720nm,1.0s
MDJ pmax pmax
comp=Z,3µm,6.0s
MDJ Mudanjiang 77.87 325 *e*P **P 14 18 11.4 +1.1**
GZH Guangzhou 77.88 299 ⇓ *i*P **P 14 18 11.8 +1.0**
GZH pP **pP 14 20 05.2 -1.5**
GZH S **S 14 27 21.7 +2.0**
GZH pmax pmax
comp=Z,7µm,6.9s
JMBI JAMBI 77.90 272 P **P 14 18 13.4 +2.2**
comp=Z,2µm,1.1s,comp=Z,32µm
N02D Trinity Center 77.92 40 P **P 14 18 11.9 +1.1**
baz=234,SNR=35
PFO Pinyon Flats O 78.05 49 P **P 14 18 12.7 +1.0**
baz=239
PFO Pinyon Flats O 78.05 49 *e*P **P 14 18 12.3 +0.6**
PFO pmax pmax
comp=Z,130nm,1.1s
PFO Pinyon Flats O 78.05 49 *e*P **P 14 18 12.0 +0.3**
BBRC Big Bear Solar 78.05 48 P **P 14 18 12.7 +0.9**
baz=239
M02C Callahan 78.08 39 P **P 14 18 13.0 +1.4**
baz=234,SNR=47
O03D Paynes Creek 78.08 41 P **P 14 18 12.2 +0.6**
baz=234,SNR=54
L02D Cave Junction, 78.09 38 P **P 14 18 12.6 +1.0**
baz=233,SNR=13
KDAK Kodiak Island 78.14 14 P P 14 18 27.0 +16
comp=Z,128nm,0.6s,baz=194,slow=2.6,SNR=66
KDAK Kodiak Island 78.14 14 *ce*P **P 14 18 11.6 +0.2**
KDAK Kodiak Island 78.14 14 *e*P **P 14 18 11.9 +0.5**
LRMC Laurel Mtn Rad 78.15 47 P **P 14 18 12.9 +0.7**
baz=238
SWSC Sam W. Stewart 78.19 50 P **P 14 18 13.3 +1.0**
baz=240
SRIG Santa Rosalia 78.23 56 *e*P **P 14 18 13.4 +0.7**
BLKC Black Mountain 78.27 47 *e*P **P 14 18 13.7 +1.0**
RRX Edison Barstow 78.31 48 P **P 14 18 13.7 +0.7**
baz=239
YBH Yreka Blue Hor 78.37 39 S **S 14 27 27.5 +3.1**
comp=Z,14nm,1.3s,baz=298,slow=21,SNR=16
YBH Yreka Blue Hor 78.37 39 *e*P **P 14 18 13.6 +0.4**
YBH *e**PP **pP 14 20 12.3 +3.0**
YBH S **S 14 27 27.5 +3.1**
YBH Yreka Blue Hor 78.37 39 *e*P **P 14 18 13.6 +0.4**
YBH *e*pP **pP 14 20 12.3 +3.0**
YBH S **S 14 27 27.5 +3.1**
MLAC Mammoth, Mammo 78.50 44 P **P 14 18 15.3 +1.1**
baz=237
BELC Belle Mtn. Jos 78.58 49 P **P 14 18 15.5 +0.9**
baz=240
MPMC Manual Prospec 78.58 46 P **P 14 18 15.4 +0.8**
baz=238
WAKR Walker 78.58 43 *e*P **P 14 18 14.9 +0.4**
WAKR *e*pP **pP 14 20 13.5 +2.7**
TIN Tinemaha, Big 78.60 45 P **P 14 18 15.5 +0.9**
baz=238
LHEM Herd Peak 78.60 40 P **P 14 18 15.2 +0.6**
DAC Darwin (Calif) 78.62 46 *e*P **P 14 18 15.4 +0.6**
DAC pmax pmax
comp=Z,120nm,1.1s
DAC Darwin (Calif) 78.62 46 *e*P **P 14 18 15.4 +0.6**
DAC *e*pP **pP 14 20 13.3 +2.2**
GSC Goldstone, Bar 78.67 47 P **P 14 18 15.7 +0.8**
baz=239
GSC Goldstone, Bar 78.67 47 *e*P **P 14 18 15.2 +0.3**
GSC *e**PP **pP 14 20 13.6 +2.4**
GSC Goldstone, Bar 78.67 47 *e*P **P 14 18 15.2 +0.3**
GSC *e*pP **pP 14 20 13.6 +2.4**
HUMO Hull Mountain 78.74 38 *e*P **P 14 18 15.8 +0.8**
MYKOM Kota Tinggi 78.75 276 ⇑ P **P 14 18 16.8 +1.1**
MYKOM Kota Tinggi 78.75 276 *e*P **P 14 18 16.2 +0.4**
HEC Hector,Ludlow 78.75 48 P **P 14 18 16.3 +0.9**
baz=239
NKL Nikolayevsk 78.76 336 *i*P **P 14 18 14.5 -0.3**
NKL *e* 14 20 08.0
NKL *i*S **S 14 27 29.0 +1.4**
NKL *e* 14 27 48.0
NKL pmax pmax
comp=N,86nm,1.0s
NKL pmax pmax
comp=E,50nm,1.0s
NKL pmax pmax
comp=Z,500nm,1.0s
NKL pmax pmax
comp=N,1µm,4.0s
NKL pmax pmax
comp=E,1µm,4.0s
NKL pmax pmax
comp=Z,3µm,4.0s
NKL smax smax
comp=E,290nm,2.0s
NKL smax smax
comp=N,860nm,3.0s
NKL smax smax
comp=N,4µm,6.0s
NKL smax smax
comp=E,3µm,6.0s
NKL MLR MLR
comp=Z,1µm,17.0s
MASI Maura Aman, Be 78.79 270 P **P 14 18 15.8 -0.2**
comp=Z,1µm,1.2s,comp=Z,14µm
BC3 Big Chuckawall 78.79 49 P **P 14 18 16.9 +1.3**
baz=240
M04C Macdoel 78.92 40 P **P 14 18 17.0 +0.8**
baz=234,SNR=56
GLA Glamis 78.95 50 P **P 14 18 17.8 +1.4**
baz=240
GLA Glamis 78.95 50 *e*P **P 14 18 17.4 +1.0**
GLA Glamis 78.95 50 *e*P **P 14 18 17.4 +1.0**

GRAC Grapevine Rang 79.16 46 P **P 14 18 18.6 +1.2**
baz=238
I03D Drain, OR 79.17 37 P **P 14 18 18.0 +0.8**
baz=233,SNR=19
VSP Spence Mountai 79.18 39 P **P 14 18 19.3 +1.7**
GMRC Granite Mounta 79.21 48 P **P 14 18 18.7 +0.8**
baz=240
HSO Harness Mounta 79.21 38 *e*P **P 14 18 18.7 +1.1**
HSO Harness Mounta 79.21 38 *e*P **P 14 18 18.7 +1.1**
QIZ Qiongzhong 79.22 294 P **P 14 18 18.8 +0.7**
QIZ pP **pP 14 20 15.6 +1.1**
QIZ sP **sP 14 21 12.2 +1.6**
QIZ S **S 14 27 33.8 -0.1**
QIZ pmax pmax
comp=Z,160nm,1.9s
QIZ pmax pmax
comp=Z,3µm,9.8s
QIZ Qiongzhong 79.22 294 *e*P **P 14 18 18.5 +0.4**
FURC Furnace Creek, 79.23 46 P **P 14 18 18.7 +1.0**
baz=239
IRM Iron Mountain 79.27 49 P **P 14 18 19.4 +1.3**
baz=240
HOG Hogback Mounta 79.27 39 P **P 14 18 18.9 +0.8**
DL2 Dalian 79.29 317 ⇓ *i*P **P 14 18 18.4 +0.4**
DL2 pP **pP 14 20 14.9 +0.4**
DL2 sP **sP 14 21 08.1 -2.4**
DL2 S **S 14 27 39.5 +5.7**
DL2 sS **sS 14 31 00.9 -0.6**
DL2 pmax pmax
comp=Z,530nm,0.8s
DL2 pmax pmax
comp=Z,3µm,6.1s
NV01 Mina Array Sit 79.29 44 *e*P **P 14 18 18.4 +0.1**
NVAR Mina Array Bea 79.29 44 P **P 14 18 19.0 +0.6**
comp=Z,170nm,0.8s,baz=226,slow=8.5,SNR=448
NVAR pP **pP 14 20 14.5 -0.4**
comp=Z,33nm,1.1s,baz=217,slow=7.5,SNR=2.8
NVAR S **S 14 27 39.8 +5.5**
comp=Z,1.9nm,0.9s,baz=277,slow=9.1,SNR=4.3
NVAR PKKPbc **PKKPbc 14 37 06.5 +1.5**
comp=Z,0.7nm,0.5s,baz=63,slow=5.0,SNR=4.0
KGM Kluang 79.32 276 ⇑ P **P 14 18 19.2 +0.4**
SHOC Shoshone, Teco 79.34 47 P **P 14 18 19.1 +0.7**
baz=239
TUQ Turquoise Moun 79.35 48 P **P 14 18 19.4 +0.8**
baz=239
NV11 Mina Array Sit 79.39 44 *e*P **P 14 18 19.3 +0.5**
K04D Chiloquin, OR 79.47 39 P **P 14 18 19.9 +0.8**
baz=234,SNR=15
Y12C Blythe 79.52 50 P **P 14 18 20.5 +1.2**
baz=241
113A Mohawk Valley, 79.59 51 *e*P **P 14 18 20.3 +0.5**
SNY Shenyang 79.68 320 ⇓ P **P 14 18 20.4 +0.4**
SNY pP **pP 14 27 17.0 +0.4**
SNY sP **sP 14 21 12.2 -0.4**
SNY S **S 14 27 44.8 +7.1**
SNY pmax pmax
comp=Z,270nm,2.3s
SNY pmax pmax
comp=Z,4µm,4.7s
CN2 Changchun 79.71 322 ⇓ *i*P **P 14 18 21.0 +0.9**
CN2 *ep*P pP 14 20 17.0 +0.2
CN2 *es*P sP 14 21 11.2 -1.5
CN2 *e*S **S 14 27 40.1 +2.2**
CN2 *e*SKS **SKSac 14 27 43.2 -1.6**
CN2 *es*S sS 14 31 05.1 -0.8
CN2 pmax pmax
comp=Z,660nm,1.0s
CN2 pmax pmax
comp=Z,400nm,4.0s
COR Corvallis 79.73 37 *e*P **P 14 18 21.6 +1.4**
COR Corvallis 79.73 37 *e*P **P 14 18 21.6 +1.4**
I04A Tendick Farm, 79.77 38 P **P 14 18 20.7 +0.3**
baz=234,SNR=26
KLR Kul'dur 79.79 329 P **P 14 18 21.4 +1.0**
comp=Z,126nm,1.0s,baz=103,slow=3.8,SNR=183
KLR S **S 14 27 44.6 +6.0**
comp=Z,9.8nm,1.2s,baz=12,slow=20,SNR=23
KLR Kul'dur 79.79 329 P **P 14 18 21.4 +1.0**
KLR S **S 14 27 44.6 +6.0**
KLR pmax pmax
comp=Z,126nm,1.0s
KLR smax smax
comp=N,10.0nm,1.2s
TPNV Topopah Spring 79.90 46 P **P 14 18 22.3 +0.8**
baz=239
TPNV Topopah Spring 79.90 46 *e*P **P 14 18 22.2 +0.8**
TPNV pmax pmax
comp=Z,720nm,1.8s
TPNV Topopah Spring 79.90 46 *e*P **P 14 18 22.2 +0.7**
214A Organ Pipe Nat 79.92 52 P **P 14 18 22.9 +1.4**
baz=242
MOD Modoc Plateau 79.93 40 *e*P **P 14 18 21.9 +0.4**
NEE2 Needles Airpor 79.95 49 P **P 14 18 22.9 +1.3**
baz=240
HSIG 80.01 55 *e*P **P 14 18 22.3 +0.3**
K05A Summer Lake 80.04 39 *e*P **P 14 18 22.8 +0.6**
HOM Homer 80.05 13 *e*P **P 14 18 22.2 +0.7**
PDMCI Parker Dam,Lak 80.06 49 P **P 14 18 23.4 +1.2**
baz=241
G03D McMinnville, O 80.13 36 P **P 14 18 23.1 +0.8**
baz=233,SNR=10
J05D Fort Rock, OR 80.16 39 P **P 14 18 23.7 +1.0**
baz=234,SNR=222
SDSI Sungai Dareh 80.22 272 P **P 14 18 23.1 -0.4**
comp=Z,483nm,1.0s
BRLK Bradley Lake 80.31 14 *e*P **P 14 18 22.3 -0.6**
WHN Wuhan 80.33 306 ⇓ *i*P **P 14 18 24.6 +1.0**
WHN pP **pP 14 20 20.2 -0.3**
WHN sP **sP 14 21 16.8 +0.4**
WHN S **S 14 27 47.7 +2.9**
WHN pmax pmax
comp=Z,10µm,4.3s
F03A Seaside 80.40 35 *e*P **P 14 18 24.3 +0.6**
H04A Detroit Lake 80.42 37 *e*P **P 14 18 23.6 -0.3**
H04A *ep*P **pP 14 20 23.0 +2.2**
RSO Redoubt South 80.54 13 *e*P **P 14 18 23.7 -0.6**
SVW2 Sparrevohn 80.57 11 *e*P **P 14 18 23.1 -1.1**
W13A Hualapai Mount 80.63 49 *e*P **P 14 18 25.9 +0.5**
W13A *ep*P **pP 14 20 24.8 +2.3**
I05D Terrebonne, OR 80.71 38 P **P 14 18 26.3 +0.9**
baz=234,SNR=37
Y14A Wickenburg 80.71 50 *e*P **P 14 18 26.3 +0.6**
Y14A *ep*P **pP 14 20 25.3 +2.6**
E03A Lebam 80.78 35 *e*P **P 14 18 25.7 +0.2**
F04D Rainier, OR 80.80 36 P **P 14 18 26.8 +1.1**
baz=233,SNR=9.3
MA2 Magadan 80.88 345 P **P 14 18 25.4 -0.4**
comp=Z,186nm,0.8s,baz=169,slow=5.4,SNR=260
MA2 pP **pP 14 20 20.9 -2.1**
comp=Z,13nm,0.9s,baz=180,slow=7.0,SNR=1.6
MA2 S **S 14 27 47.3 -1.9**
comp=Z,3.0nm,0.8s,baz=7.0,slow=22,SNR=16
MA2 Magadan 80.88 345 *e*P **P 14 18 24.9 -0.9**
comp=Z,1µm,0.9s
MA2 pP **pP 14 20 20.9 -2.1**
MA2 S **S 14 27 47.3 -1.9**
H02S1 DAWSON INLET T 80.91 26 P **P 14 18 27.4 +1.3**
SNR=32
H02N1 VAN INLET T-PH 80.92 26 P **P 14 18 27.9 +1.6**
SNR=9.2
SEW Seward 80.95 14 *e*P **P 14 18 25.8 -0.4**
TIA Tai'an 80.96 312 ⇓ P **P 14 18 27.6 +0.8**
TIA pP **pP 14 20 23.2 -0.8**
TIA sP **sP 14 21 20.8 +1.0**
TIA S **S 14 27 55.7 +4.7**
TIA pmax pmax
comp=Z,300nm,1.1s
TIA pmax pmax
comp=Z,4µm,6.0s
BKNI Bangkinang 80.97 273 P **P 14 18 28.0 +0.6**
comp=Z,1µm,1.4s,comp=Z,17µmcomp=Z,19µm
BKNI Bangkinang 80.97 273 *e*P **P 14 18 27.4 0.0**
BKNI *ep*P **pP 14 21 40.8 -1.5**
TDH Tom, Dick, Har 81.01 37 P **P 14 18 27.3 +0.2**
PPSI Pulau Pagai 81.03 270 P **P 14 18 29.4 +1.7**
comp=Z,1µm,1.2s,comp=Z,21µm
F04A Amboy 81.04 36 *e*P **P 14 18 27.7 +0.8**
F04A *ep*P **pP 14 20 26.5 +2.3**
R11A Troy Canyon, C 81.07 45 P **P 14 18 28.2 +0.7**
baz=239
BMN Battle Mountai 81.07 43 *e*P **P 14 18 28.0 +0.5**
BMN *e**PP **pP 14 20 27.2 +2.5**
BMN *e* 14 21 43.0

BMN Battle Mountai 81.07 43 *e*P **P 14 18 28.0 +0.5**
BMN *ep*P **pP 14 20 27.2 +2.5**
BMN *e*PP **PP 14 21 43.0 +0.2**
NLWA Neilton Lookou 81.13 34 *e*P **P 14 18 28.8 +1.3**
PDSI Padang 81.15 272 P **P 14 18 27.2 -1.1**
comp=Z,221nm,1.0s,comp=Z,3µm
VFP Flag Point 81.21 37 P **P 14 18 28.4 +0.3**
G05D Wamic, OR 81.25 37 P **P 14 18 28.9 +0.8**
baz=234,SNR=20
WVOR Wild Horse Val 81.26 40 *e*P **P 14 18 29.0 +0.7**
WVOR pmax pmax
comp=Z,260nm,0.9s
WVOR Wild Horse Val 81.26 40 *e*P **P 14 18 29.0 +0.7**
WVOR *ep*P **pP 14 20 27.0 +1.4**
GAMB Gambell 81.29 3 *e*P **P 14 18 27.9 +0.1**
FRIM Kepong 81.31 276 ⇑ P **P 14 18 29.8 +0.6**
SPU Mount Spurr 81.34 13 *e*P **P 14 18 26.8 -1.4**
COCO West Island 81.35 260 *e*P **P 14 18 30.9 +1.6**
COCO pmax pmax
comp=Z,470nm,1.1s
COCO West Island 81.35 260 *e*P **P 14 18 30.0 +0.7**
COCO West Island 81.35 260 P **P 14 18 30.7 +1.4**
SNR=5.4
TUC Tucson 81.61 52 P **P 14 18 32.1 +1.8**
baz=243
TUC Tucson 81.61 52 *e*P **P 14 18 31.8 +1.4**
TUC pmax pmax
comp=Z,350nm,1.0s
TUC Tucson 81.61 52 *e*P **P 14 18 31.8 +1.4**
TUC *ep*P **pP 14 20 29.5 +1.8**
G06A Carlson Farm, 81.64 37 *e*P **P 14 18 30.4 +0.3**
RC01 Rabbit Creek A 81.76 14 *e*P **P 14 18 29.4 -0.9**
LON Longmire 81.86 36 *e*P **P 14 18 30.7 -0.5**
LON *e**PP **pP 14 20 30.4 +1.6**
LON Longmire 81.86 36 *e*P **P 14 18 30.7 -0.5**
LON *ep*P **pP 14 20 30.4 +1.6**
LCMT Little Creek M 82.01 47 *e*P **P 14 18 32.9 +0.5**
LCMT *ep*P **pP 14 20 32.3 +2.4**
D05A Enumclaw 82.03 35 *e*P **P 14 18 32.8 +0.8**
D05A *ep*P **pP 14 20 32.6 +3.1**
X16A Lo Mia Camp, P 82.08 50 *e*P **P 14 18 33.9 +1.0**
X16A *ep*P **pP 14 20 33.2 +2.8**
BBB Bella Bella 82.11 29 P **P 14 18 32.8 +0.6**
comp=Z,45nm,0.7s,baz=272,slow=3.2,SNR=31
BBB pP **pP 14 20 28.6 -1.3**
comp=Z,18nm,1.0s,baz=198,slow=22,SNR=1.4
PGC Sidney 82.13 33 *e*P **P 14 18 33.2 +0.8**
TT01 Tatalina 82.18 10 *e*P **P 14 18 32.3 -0.1**
TT01 *ep*P **pP 14 20 33.0 +3.0**
TTA Tatalina 82.20 10 *e*P **P 14 18 32.5 -0.1**
TTA *e**PP **pP 14 20 31.9 +1.6**
TTA Tatalina 82.20 10 *e*P **P 14 18 32.5 -0.1**
TTA *ep*P **pP 14 20 31.9 +1.6**
EYAK Cordova Ski Ar 82.25 16 *e*P **P 14 18 31.7 -1.1**
IPM Ipoh 82.27 277 *e*P **P 14 18 34.2 +0.2**
CRAG Craig 82.29 24 *e*P **P 14 18 34.0 +0.9**
KNB Kanab 82.31 47 *e*P **P 14 18 34.9 +1.0**
KNB Kanab 82.31 47 *e*P **P 14 18 34.9 +1.0**
PSUT Pine Spring 82.33 46 *e*P **P 14 18 34.3 +0.2**
PMR Palmer 82.34 14 *e*P **P 14 18 32.5 -0.7**
PMR *e**PP **pP 14 20 31.9 +1.0**
PMR Palmer 82.34 14 *e*P **P 14 18 32.5 -0.7**
PMR *ep*P **pP 14 20 31.9 +1.0**
319A Douglas 82.34 54 *e*P **P 14 18 35.6 +1.4**
NAC Nachas 82.40 36 P **P 14 18 34.4 +0.5**
U15A North Rim 82.41 48 *e*P **P 14 18 35.4 +0.8**
U15A *ep*P **pP 14 20 34.6 +2.3**
C05A Tolt Reservoir 82.49 35 *e*P **P 14 18 36.3 +1.9**
MNSI Mandailing Nat 82.50 273 P **P 14 18 34.5 -0.7**
comp=Z,328nm,1.2s,comp=Z,7µm
ELK Elko 82.52 43 *e*P **P 14 18 35.3 +0.3**
ELK *e**PP **pP 14 20 34.4 +1.7**
ELK Elko 82.52 43 *e*P **P 14 18 35.3 +0.3**
ELK *ep*P **pP 14 20 34.4 +1.7**
A04D Lummi Island 82.56 34 P **P 14 18 35.3 +0.7**
baz=233,SNR=11
B05A Bryant 82.61 34 P **P 14 18 35.5 +0.6**
baz=233,SNR=32
WUAZ Wupatki 82.64 49 P **P 14 18 36.7 +1.1**
baz=242
WUAZ Wupatki 82.64 49 *e*P **P 14 18 36.3 +0.7**
WUAZ *ep*P **pP 14 20 35.8 +2.4**
SML Sawmill 82.71 14 *e*P **P 14 18 34.9 -0.3**
SML Sawmill 82.71 14 *e*P **P 14 18 34.1 -1.0**
DIV Divide 82.74 15 *e*P **P 14 18 34.5 -0.8**
DIV *ep*P **pP 14 20 35.4 +2.2**
LTY Liberty 82.79 36 *e*P **P 14 18 35.8 -0.2**
PPLA Purkeypile 82.86 12 *e*P **P 14 18 34.3 -1.7**
PKCU Pink Cliffs 82.87 47 *e*P **P 14 18 38.2 +1.3**
KULM Kulim 82.88 278 *e*P **P 14 18 37.0 0.0**
BMRM Bremner River 82.90 16 *e*P **P 14 18 35.6 -0.6**
BMRM *ep*P **pP 14 20 35.5 +1.5**
HAWA Hanford 82.94 37 *e*P **P 14 18 36.3 -0.3**
HAWA *ep*P **pP 14 20 36.3 +1.8**
SCM Sheep Creek Mo 82.97 14 *e*P **P 14 18 35.8 -0.7**
SCM *e**PP **pP 14 20 35.0 +0.5**
SCM Sheep Creek Mo 82.97 14 *e*P **P 14 18 35.8 -0.7**
SCM *ep*P **pP 14 20 35.0 +0.5**
KLU Klutina 83.01 15 *e*P **P 14 18 36.2 -0.5**
WRW Wenatchee Ridg 83.03 35 P **P 14 18 38.1 +1.0**
C06D Leavenworth 83.06 35 P **P 14 18 37.3 +0.1**
baz=234,SNR=7.0
PANO Nakornpanom 83.15 290 P **P 14 18 38.8 +0.5**
comp=Z,723nm,1.2s,comp=Z,8µm
ETW Entiat 83.18 35 P **P 14 18 38.2 +0.2**
X18A Snowflake 83.23 51 *e*P **P 14 18 39.3 +0.7**
X18A *ep*P **pP 14 20 39.1 +2.5**
FSU Fish Springs 83.23 45 *e*P **P 14 18 39.2 +0.8**
WRAK Wrangell Islan 83.28 24 *e*P **P 14 18 38.9 +0.9**
CAST Castle Rocks 83.36 12 *e*P **P 14 18 36.7 -1.7**
HPIG 83.38 59 *e*P **P 14 18 39.9 +0.3**
BMO Blue Mountains 83.38 39 P **P 14 18 39.0 0.0**
BMO *e**PP **pP 14 20 38.5 +1.4**
BMO Blue Mountains 83.38 39 *e*P **P 14 18 39.0 0.0**
BMO *ep*P **pP 14 20 38.5 +1.4**
WTV Waterville 83.44 35 P **P 14 18 39.2 0.0**
SEY Seymchan 83.46 347 P **P 14 18 38.7 -0.1**
comp=Z,308nm,0.6s,baz=157,slow=4.3,SNR=1076
SEY pP **pP 14 20 35.4 -1.5**
comp=Z,37nm,1.0s,baz=136,slow=4.2,SNR=1.9
SEY S **S 14 28 09.5 -5.2**
comp=Z,3.6nm,1.0s,baz=294,slow=20,SNR=12
MSU Marysvale 83.47 46 P **P 14 18 40.7 +0.9**
MSU *e**PP **pP 14 20 38.5 +0.6**
MSU Marysvale 83.47 46 *e*P **P 14 18 40.7 +0.9**
MSU *ep*P **pP 14 20 38.5 +0.6**
BJT Baijiatuao 83.48 315 *e*P **P 14 18 40.1 +0.6**
BJT Baijiatuao 83.48 315 *e*P **P 14 18 40.1 +0.6**
PBSI Pulau Batu 83.49 272 P **P 14 18 47.1 +7.0**
BJI Beijing 83.49 315 P **P 14 18 40.5 +1.0**
BJI pP **pP 14 20 37.9 +0.3**
BJI sP **sP 14 21 34.9 +1.8**
BJI S **S 14 28 10.4 -5.5**
BJI pmax pmax
comp=Z,520nm,1.3s
BJI pmax pmax
comp=Z,6µm,4.4s
SKLT Songkhla 83.50 280 P **P 14 18 41.4 +1.3**
comp=Z,1µm,1.1s
MFID Camas Ranch 83.52 41 *e*P **P 14 18 40.1 +0.4**
comp=Z,213nm,1.1s
W18A Petrified Fore 83.65 50 P **P 14 18 41.6 +0.9**
baz=243
SKNT Sakolnakorn 83.65 290 P **P 14 18 41.3 +0.5**
comp=Z,1µm,1.1s,comp=Z,14µm
D08A Wollman Farm, 83.66 36 *e*P **P 14 18 40.4 +0.2**
KTH Kantishna Hill 83.71 12 *e*P **P 14 18 38.4 -1.7**
KTH *ep*P **pP 14 20 39.1 +0.7**
CHBT CHBT 83.72 285 P **P 14 18 42.1 +0.9**
comp=Z,771nm,1.3s,comp=Z,12µm
PSI Prapat 83.74 275 P **P 14 18 41.5 0.0**
comp=Z,635nm,0.9s,baz=145,slow=3.5,SNR=13
PSI PP **PP 14 22 02.9 -1.8**
comp=Z,70nm,1.0s,baz=204,slow=3.9,SNR=7.6
PSI S S 14 28 09.2 -11
comp=Z,7.4nm,0.9s,baz=215,slow=21,SNR=28
PSI Prapat 83.74 275 *e*P **P 14 18 40.9 -0.6**
PSI *e* 14 22 03.3
PSI S S 14 28 09.2 -11
PSI Prapat 83.74 275 *e*P **P 14 18 40.9 -0.6**
PSI *ep*P **PP 14 22 03.3 -1.5**
PSI S S 14 28 09.2 -11

TRF **Thorofare Moun** 83.74 12 eP P 14 18 39.1 -1.3
TRF epP pP 14 20 39.7 +1.0
WCU Willow Creek 83.75 46 eP P 14 18 42.5 +1.3
DUG Dugway, Tooele 83.85 45 P P 14 18 42.1 +0.6
baz=241
DUG Dugway, Tooele 83.85 45 eP P 14 18 41.3 -0.2
DUG e*PP pP 14 20 41.5 +1.8
DUG e 14 22 04.6
DUG Dugway, Tooele 83.85 45 eP P 14 18 41.3 -0.2
DUG epP pP 14 20 41.5 +1.8
DUG ePP PP 14 22 04.6 -0.7
FLU Fool Peak 83.89 46 eP P 14 18 42.7 +0.9
121A Cookes Peak, D 83.99 53 P P 14 18 43.9 +1.5
baz=245
ENH Enshi 84.00 304 eP P 14 18 43.5 +1.1
RND Reindeer 84.00 13 eP P 14 18 41.0 -0.6
RND Reindeer 84.00 13 eP P 14 18 40.6 -1.0
F10A Beach Ranch, E 84.04 38 eP P 14 18 42.0 -0.2
F10A epP pP 14 20 42.4 +1.8
DHY Denali Highway 84.04 14 eP P 14 18 41.0 -0.9
BGU Big Grassy Mou 84.06 44 eP P 14 18 43.0 +0.5
MAW Mawson 84.10 200 P P 14 18 42.6 +0.5
comp=Z,39nm,0.6s,baz=127,slow=5.9,SNR=94
MAW pP pP 14 20 39.9 -0.3
comp=Z,9.2nm,0.8s,baz=133,slow=5.5,SNR=1.9
MAW S S 14 28 12.7 -8.4
comp=Z,13nm,1.1s,baz=271,slow=21,SNR=10.0
MAW Mawson 84.10 200 P P 14 18 42.4 +0.4
baz=84,SNR=54
MAW Mawson 84.10 200 eP P 14 18 42.2 +0.2
MAW pP pP 14 20 39.9 -0.3
MAW S S 14 28 12.7 -8.4
PMSA Palmer Station 84.13 157 P P 14 18 43.4 +1.2
comp=Z,88nm,0.8s,baz=228,slow=2.5,SNR=23
PMSA Palmer Station 84.13 157 eP P 14 18 43.0 +0.8
SGU Sterling 84.16 46 eP P 14 18 44.6 +1.4
B08A Colville Reser 84.16 35 eP P 14 18 42.4 -0.3
BPAW Bear Paw Mtn. 84.19 12 eP P 14 18 41.0 -1.5
BPAW epP pP 14 20 41.0 +0.2
NLU North Lily Min 84.23 45 eP P 14 18 43.7 +0.2
NLU ePP PP 14 22 07.4 -1.0
MCK McKinley 84.28 13 eP P 14 18 42.1 -0.8
MCK McKinley 84.28 13 eP P 14 18 41.8 -1.0
TSI Tuntungan 84.30 275 P P 14 18 44.5 +0.4
comp=Z,898nm,1.1s,comp=Z,12µm
ZAIG Zacatecas 84.39 64 eP P 14 18 46.1 +1.4
PAX Paxson 84.39 15 eP P 14 18 42.6 -0.9
PAX Paxson 84.39 15 eP P 14 18 42.2 -1.3
SRAK Srakaew 84.40 287 P P 14 18 43.0 -1.5
comp=Z,894nm,1.2s
SRAK Srakaew 84.40 287 P SKSac 14 28 16.8 +0.1
comp=Z,902nmcomp=Z,62nm,1.1s
C09A Chrisman Ranch 84.44 36 eP P 14 18 43.7 -0.3
SKAG Skagway 84.46 21 eP P 14 18 44.6 +0.8
SKAG epP pP 14 20 44.3 +2.0
KHON Khomkaen 84.48 289 P P 14 18 46.1 +1.2
comp=Z,184nm,0.9s,comp=Z,2µm
MOIG Morelia 84.48 67 eP P 14 18 45.9 +0.8
HLID Hailey 84.48 41 P P 14 18 45.6 +1.0
baz=240
HLID Hailey 84.48 41 eP P 14 18 45.1 +0.6
MPU Maple Canyon 84.56 45 eP P 14 18 46.0 +0.9
MPU epP pP 14 20 44.2 +0.7
GSI Gunungsitoli 84.57 273 P P 14 18 46.5 +1.0
comp=Z,1µm,1.6s,comp=Z,20µm
GSI Gunungsitoli 84.57 273 eP P 14 18 46.5 +1.0
TRTT Trang 84.58 280 P P 14 18 46.8 +1.3
comp=Z,1µm,1.2s,comp=Z,14µm
SPUT South Promonto 84.63 44 eP P 14 18 45.8 +0.4
HVU Hansel Valley 84.64 43 eP P 14 18 45.8 +0.4
HVU e*PP pP 14 20 45.5 +1.6
HVU Hansel Valley 84.64 43 eP P 14 18 45.8 +0.4
HVU epP pP 14 20 45.5 +1.6
GMU Granite Mounta 84.74 45 eP P 14 18 46.4 +0.5
NONG Nongkai 84.78 291 P P 14 18 46.9 +0.6
comp=Z,394nm,1.4s,comp=Z,8µm
GYA Guiyang 84.78 300 ||iP P 14 18 47.2 +0.8
GYA pP pP 14 20 43.9 -1.0
GYA sP sP 14 21 38.5 -1.9
GYA PP PP 14 22 15.0 +2.0
GYA SKS SKSac 14 28 15.8 -3.1
GYA S S 14 28 29.5 +0.1
GYA sS sS 14 32 00.5 -0.2
GYA SS SS 14 34 20.0 +1.7
GYA pmax pmax
comp=Z,260nm,1.2s
GYA pmax pmax
comp=Z,3µm,9.7s
MENT Mentasta 84.79 15 eP P 14 18 45.1 -0.3
CTU Camp Tracy 84.80 45 eP P 14 18 46.2 0.0
CTU epP pP 14 20 46.8 +2.0
CTU ePP PP 14 22 12.4 -0.5
MTUT Morton Thiokol 84.82 43 eP P 14 18 46.6 +0.4
SRU San Rafael Swe 84.90 46 eP P 14 18 47.0 +0.3
SRU San Rafael Swe 84.90 46 eP P 14 18 47.0 +0.3
SRU epP pP 14 20 47.7 +2.3
P17A Butcher Ranch, 84.91 46 eP P 14 18 47.1 +0.3
P17A epP pP 14 20 48.0 +2.6
JLU Jordanelle 84.96 45 eP P 14 18 47.9 +0.8
JLU epP pP 14 20 46.3 +0.6
TIY Taiyuan 84.98 312 eP P 14 18 48.4 +1.4
TIY pP pP 14 20 47.1 +1.5
TIY sP sP 14 21 45.7 +4.6
TIY S S 14 28 21.6 -9.1
TIY pmax pmax
comp=Z,520nm,0.9s
TIY pmax pmax
comp=Z,2µm,7.0s
GZU Grizzly Peak 85.00 44 eP P 14 18 47.8 +0.5
DAU Daniels Canyon 85.00 45 eP P 14 18 47.8 +0.4
DAU Daniels Canyon 85.00 45 eP P 14 18 47.8 +0.4
KLJ Keetly 85.00 45 eP P 14 18 47.9 +0.6
KCSI Kotacane, Aceh 85.06 275 P P 14 18 47.5 -0.3
comp=Z,399nm,1.1s,comp=Z,8µm
MLY Manley 85.07 11 eP P 14 18 45.5 -1.3
MLY epP pP 14 20 45.8 +0.3
CHAI Chaiyaphum 85.08 288 P P 14 18 48.3 +0.4
comp=Z,100nm,0.9s,comp=Z,791nm
WVUT Wellsville 85.10 44 eP P 14 18 48.1 +0.5
WRH Wood River Hil 85.10 13 eP P 14 18 45.9 -0.9
WRH epP pP 14 20 46.0 +0.4
PATY Pattaya 85.12 285 P P 14 18 49.9 +1.8
comp=Z,165nm,0.9s,comp=Z,4µm
NAYO Nakonayok 85.16 287 P P 14 18 49.4 +1.2
comp=Z,289nm,1.3s,comp=Z,5µm
KRAB Krabi 85.17 280 P P 14 18 49.6 +1.3
comp=Z,496nm,0.9s,comp=Z,4µm
KRAB Krabi 85.17 280 P SKSac 14 28 26.8 +5.3
comp=Z,528nmcomp=Z,36nm,1.6s
MLI Malad Range 85.19 43 eP P 14 18 47.6 -0.5
TCUT Toone Canyon 85.23 44 eP P 14 18 48.8 +0.4
Y22D IRIS PASSCAL I 85.29 52 P P 14 18 50.1 +1.4
baz=245
HDA Harding Lake 85.29 13 eP P 14 18 46.9 -0.9
HDA epP pP 14 20 47.8 +1.2
DOT Dot Lake 85.31 15 eP P 14 18 47.2 -0.7
DOT epP pP 14 20 48.2 +1.6
CCB Clear Creek Bu 85.32 13 eP P 14 18 46.7 -1.2
CCB epP pP 14 20 47.0 +0.4
P18A Preston Nutter 85.33 46 eP P 14 18 49.3 +0.4
P18A epP pP 14 20 48.2 +0.5
MCU Monte Cristo P 85.33 44 eP P 14 18 49.2 +0.3
NEW Newport 85.34 36 P P 14 18 48.4 0.0
comp=Z,43nm,0.7s,baz=258,slow=4.1,SNR=9.4
NEW Newport 85.34 36 P P 14 18 48.4 0.0
baz=237
NEW Newport 85.34 36 eP P 14 18 47.8 -0.6
PV05 Paradox Valley 85.43 48 eP P 14 18 49.1 -0.2
BEI Bear River Ran 85.46 43 eP P 14 18 50.0 +0.6
MVCO Mesa Verde 85.47 49 P P 14 18 50.3 +0.7
baz=244
MVCO Mesa Verde 85.47 49 eP P 14 18 49.5 -0.1
MNTX Cornudas Mount 85.50 55 P P 14 18 50.7 +1.1
baz=246
MNTX Cornudas Mount 85.50 55 eP P 14 18 50.2 +0.6
MNTX epP pP 14 20 50.0 +1.6
MNTX ePKKPbc PKKPbc 14 36 50.7 +0.6
MDM Murphy Dome 85.50 12 eP P 14 18 47.2 -1.6
MDM epP pP 14 20 48.1 +0.4
COLA College 85.51 13*c* *i*P P 14 18 47.5 -1.3
COLA pmax pmax
comp=Z,230nm,1.2s
COLA College 85.51 13 eP P 14 18 47.1 -1.6

TPTI 85.54 275 P P 14 18 50.6 +0.5
comp=Z,958nm,1.2s,comp=Z,14µm
PV09 Paradox Valley 85.59 47 eP P 14 18 51.2 +1.0
PV09 epP pP 14 20 51.2 +2.1
PV10 Paradox Valley 85.60 48 eP P 14 18 51.0 +0.8
DLBC Dease Lake 85.60 23 P P 14 18 49.5 0.0
comp=Z,28nm,0.9s,baz=225,slow=5.2,SNR=46
DLBC pP pP 14 20 47.7 -0.7
comp=Z,22nm,1.4s,baz=106,slow=8.0,SNR=1.3
DLBC Dease Lake 85.60 23 eP P 14 18 50.4 +0.9
DLBC pP pP 14 20 47.7 -0.7
IL1 Eielson Array 85.62 13 eP P 14 18 48.0 -1.4
ILAR Eielson Array 85.62 13 P P 14 18 48.2 -1.1
comp=Z,37nm,0.4s,baz=224,slow=5.1,SNR=509
ILAR pP pP 14 20 48.5 +0.2
comp=Z,12nm,1.0s,baz=226,slow=4.5,SNR=1.8
ILB Eielson Array 85.62 13 eP P 14 18 48.5 -0.8
ILB epP pP 14 20 49.3 +1.0
BMUT Black Mountain 85.74 44 eP P 14 18 50.9 +0.1
SURT Suratani 85.77 281 P P 14 18 52.5 +1.3
comp=Z,210nm,1.7s,comp=Z,4µm
PV01 Paradox Valley 85.83 48 eP P 14 18 52.3 +1.0
comp=Z,10µm,1.1s
PKDT Phuket 85.87 280 P P 14 18 52.9 +1.2
comp=Z,537nm,1.2s,comp=Z,9µm
TX31 Lajitas Ar. Si 85.94 58 eP P 14 18 52.5 +0.7
TX31 epP pP 14 20 52.6 +1.8
TXAR Lajitas Array 85.94 58 P P 14 18 53.3 +1.5
comp=Z,195nm,0.8s,baz=222,slow=5.0,SNR=1348
TXAR PKKPbc PKKPbc 14 36 49.5 +0.4
comp=Z,1.2nm,0.8s,baz=146,slow=2.7,SNR=15
TXAR PKPPKP P'P'df 14 44 54.1 -1.1
comp=Z,0.9nm,0.9s,baz=116,slow=2.9,SNR=3.7
TXAR Lajitas Array 85.94 58 P P 14 18 53.3 +1.5
TXAR pmax pmax
comp=Z,197nm,0.8s
TXAR pmax pmax
comp=Z,1.0nm,0.8s
TXAR pmax pmax
comp=Z,1.0nm,1.0s
XAN Xi'an 85.98 307 P P 14 18 53.3 +1.4
XAN pP pP 14 20 50.3 -0.6
XAN sP sP 14 21 48.1 +1.9
XAN SKS SKSac 14 28 24.6 -1.2
XAN S ScS 14 28 46.3 -0.3
XAN pmax pmax
comp=Z,830nm,1.1s
XAN pmax pmax
comp=Z,3µm,5.5s
ANMO Albuquerque 86.00 52 P P 14 18 52.8 +0.7
baz=245
ANMO Albuquerque 86.00 52*ce*P P 14 18 52.6 +0.4
ANMO pmax pmax
comp=Z,128nm,1.0s
ANMO Albuquerque 86.00 52 eP P 14 18 52.4 +0.2
ANMO epP pP 14 20 53.4 +2.2
HIA Hailar 86.06 325 eP P 14 18 52.4 +0.6
HIA Hailar 86.06 325 eP P 14 18 52.4 +0.6
TLIG Tlapa 86.08 70 eP P 14 18 53.8 +1.0
BILL Bilibino 86.12 354*ce*P P 14 18 51.6 -0.1
BILL e*PP pP 14 20 49.1 -1.7
BILL e*SP sP 14 21 42.0 -4.1
BILL e 14 22 19.9
BILL pmax pmax
comp=Z,222nm,0.9s
BILL Bilibino 86.12 354 eP P 14 18 51.5 -0.2
BILL epP pP 14 20 51.9 +1.1
AHID Auburn Hatcher 86.21 43 eP P 14 18 53.3 +0.3
AHID epP pP 14 20 54.0 +2.0
PBKT Sadao Pong 86.23 289 P P 14 18 54.4 +1.1
comp=Z,340nm,1.2s,comp=Z,6µm
LOEI Loei 86.27 290 P P 14 18 52.4 -1.1
comp=Z,442nm,1.2s,comp=Z,6µm
LHMI Lhok Sumawe 86.36 277 P P 14 18 55.5 +1.5
comp=Z,887nm,1.0s,comp=Z,15µm
LHMI Lhok Sumawe 86.36 277 eP P 14 18 54.8 +0.8
MSO Missoula 86.42 38 P P 14 18 53.5 -0.2
baz=240
MSO Missoula 86.42 38 eP P 14 18 53.8 +0.1
BSMT Bassoo Peak 86.45 37 eP P 14 18 53.5 -0.4
BSMT epP pP 14 20 54.8 +1.7
DLMT Dillon 86.51 40 eP P 14 18 54.5 +0.3
DLMT epP pP 14 20 55.7 +2.3
REDW Red Top Meadow 86.65 43 eP P 14 18 55.6 +0.5
JTMT Jette 86.69 38 eP P 14 18 54.9 -0.1
SWMT Swartz Lake 86.73 38 eP P 14 18 54.6 -0.6
SWMT ePKKPbc PKKPbc 14 36 47.6 -0.5
SNOW Snow King Moun 86.76 42 eP P 14 18 56.2 +0.7
BLMT Blacktail Moun 86.78 37 eP P 14 18 55.4 -0.1
BLMT epP pP 14 20 56.0 +1.2
USHA Ushuaia 86.81 147 P P 14 18 56.6 +1.2
comp=Z,726nm,0.9s,baz=208,slow=5.2,SNR=34
MCID Moose Creek 86.83 42 eP P 14 18 57.0 +1.2
DAWY Dawson 86.83 16 eP P 14 18 54.7 -0.5
DAWY epP pP 14 20 56.2 +1.7
IMW Indian Meadow 86.84 42 eP P 14 18 56.5 +0.5
IMW epP pP 14 20 57.0 +1.6
MOOW Moose Ponds 86.90 42 eP P 14 18 56.6 +0.4
S22A 4UR Ranch, Cre 86.90 49 P P 14 18 57.4 +1.0
baz=245
YBMT Yellow Bay 86.91 38 eP P 14 18 55.7 -0.3
YBMT epP pP 14 20 55.2 -0.1
LOHW Long Hollow 86.92 42 eP P 14 18 56.6 +0.3
LOHW epP pP 14 20 57.5 +1.8
O20A White River Ci 86.93 46 P P 14 18 57.1 +0.7
baz=244
PHIT Phitsanulok 86.93 289 P P 14 18 58.1 +1.5
comp=Z,239nm,0.9s,comp=Z,2µm
EGAK Eagle 86.96 15 eP P 14 18 55.1 -0.6
HHC Hu-ho-hao-te 86.98 314 ||P P 14 18 57.9 +1.4
HHC pP pP 14 20 56.1 +0.2
HHC sP sP 14 21 51.4 +0.3
HHC PP PP 14 22 27.1 -3.0
HHC SKS SKKSac 14 28 34.4 -8.2
HHC S ScS 14 28 54.3 -0.3
HHC pmax pmax
comp=Z,350nm,1.2s
HHC pmax pmax
comp=Z,2µm,5.3s
UTTA Uttaradit 86.99 290 P P 14 18 58.1 +1.2
comp=Z,64nm,1.0s,comp=Z,610nm
FLWY Flagg Ranch 87.08 42 eP P 14 18 57.8 +0.8
YHB Horse Butte 87.08 41 eP P 14 18 58.4 +1.4
COLD Coldfoot 87.14 11 eP P 14 18 56.5 0.0
YFT Old Faithful 87.17 42 eP P 14 18 59.2 +1.7
SRDT SRDT 87.19 286 P P 14 18 59.4 +1.5
comp=Z,1µm,1.1s,comp=Z,21µm
YMR Madison River 87.19 41 eP P 14 18 58.5 +1.0
YMR epP pP 14 21 00.1 +3.0
YMC Maple Creek 87.21 41 eP P 14 18 59.0 +1.3
NANT Nan 87.21 291 P P 14 18 58.8 +0.9
comp=Z,61nm,0.9s,comp=Z,560nm
BW06 Boulder Array 87.22 43 P P 14 18 58.0 +0.3
baz=243
BW06 Boulder Array 87.22 43 eP P 14 18 57.6 -0.2
BW06 epP pP 14 20 58.4 +1.2
PD31 Pinedale Array 87.22 43 eP P 14 18 57.5 -0.2
PD31 epP pP 14 20 58.7 +1.5
PDAR Pinedale Array 87.22 43 P P 14 18 57.7 0.0
comp=Z,46nm,0.6s,baz=218,slow=3.2,SNR=351
PDAR pP pP 14 20 57.0 -0.2
comp=Z,13nm,1.0s,baz=230,slow=3.6,SNR=4.7
PDAR PP PP 14 22 30.1 -2.1
comp=Z,20nm,1.0s,baz=238,slow=8.3,SNR=6.1
PDAR PKKPbc PKKPbc 14 36 46.7 -0.2
comp=Z,1.1nm,0.7s,baz=81,slow=3.2,SNR=5.6
PDAR SKKPbc SKKPbc 14 39 33.4 -1.5
comp=Z,0.9nm,0.8s,baz=64,slow=3.4,SNR=3.4
PDAR PKPPKP P'P'df 14 44 55.5 +3.5
comp=Z,1.5nm,1.0s,baz=78,slow=1.3,SNR=4.7
BOZ Bozeman (W) 87.24 40 P P 14 18 58.7 +1.0
baz=241
BOZ Bozeman (W) 87.24 40 eP P 14 18 57.8 +0.1
BOZ e*PP pP 14 20 58.7 +1.6
BOZ Bozeman (W) 87.24 40 eP P 14 18 57.8 +0.1
BOZ epP pP 14 20 58.7 +1.6
YPM Purple Mountai 87.24 41 eP P 14 18 59.6 +1.7
UTHA Uthaitani 87.28 287 P P 14 18 59.7 +1.4
comp=Z,86nm,0.9s,comp=Z,723nm
H17A Grant Village 87.31 42 P P 14 19 00.1 +2.0
baz=242
YHH Holmes Hill 87.32 41 eP P 14 18 59.5 +1.3
YNR Norris Junctio 87.39 41 eP P 14 19 00.2 +1.7
SMCO Snowmass 87.40 48 eP P 14 18 58.9 0.0

SMCO epP pP 14 21 00.8 +2.4
SMCO ePKKPbc PKKPbc 14 36 47.0 +0.5
YTP The Promontory 87.49 42 eP P 14 19 00.3 +1.3
LKWY Lake 87.50 42 eP P 14 19 00.7 +1.7
LKWY e*PP pP 14 21 01.9 +3.3
LKWY Lake 87.50 42 eP P 14 19 00.7 +1.7
LKWY epP pP 14 21 01.9 +3.3
FYU Fort Yukon 87.52 13 eP P 14 18 57.3 -0.9
PHRA Phrae 87.53 290 P P 14 19 00.4 +1.0
comp=Z,1µm,2.1s,comp=Z,29µm
PHRA Phrae 87.53 290 P SKSac 14 28 44.6 +9.0
WALA Waterton Lakes 87.57 37 eP P 14 18 58.8 -0.3
WALA epP pP 14 21 00.1 +1.5
KMI Kunming 87.59 297 P P 14 19 01.8 +1.9
KMI pP pP 14 21 00.4 +1.0
KMI sP sP 14 21 53.3 -1.4
KMI PP PP 14 22 33.6 -1.8
KMI SKS SKSac 14 28 37.3 +1.1
KMI S ScS 14 29 00.2 -0.4
KMI sS sS 14 32 31.5 +2.2
KMI pmax pmax
comp=Z,330nm,1.0s
KMI pmax pmax
comp=Z,3µm,3.1s
SUKH Sukhothai 87.74 289 P P 14 19 01.7 +1.3
comp=Z,70nm,1.0s,comp=Z,725nm
KHLT Khaolaem Dam 87.82 286 P P 14 19 02.1 +1.3
comp=Z,122nm,1.9s,comp=Z,2µm
CLNS Chul'man 87.85 333 eP P 14 19 01.1 +1.0
CLNS e 14 22 38.0
CLNS ePPP PPP 14 24 39.6
CLNS eS SKSac 14 28 35.5 -0.4
CLNS e 14 29 01.9
CLNS pmax pmax
comp=Z,294nm,1.0s
CLNS pmax pmax
comp=E,88nm,1.0s
CLNS pmax pmax
comp=N,135nm,1.2s
CLNS pmax pmax
comp=N,16nm,0.9s
CLNS pmax pmax
comp=Z,8.0nm,0.9s
CLNS pmax pmax
comp=E,12nm,1.0s
CLNS smax smax
comp=N,1µm,11.9s
CLNS smax smax
comp=E,1µm,12.7s
SDCO Great Sand Dun 87.86 49 P P 14 19 01.4 +0.5
baz=246
SDCO Great Sand Dun 87.86 49 eP P 14 19 01.4 +0.5
SDCO epP pP 14 21 02.8 +2.2
BTO Baotou 87.93 314 eP P 14 19 01.7 +0.8
CRAI Chiangrai 87.97 292 P P 14 19 01.4 -0.1
comp=E,110nm,1.6s,comp=E,7µm
UMPA Umpang Tak 88.02 288 P P 14 19 03.1 +1.3
comp=E,82nm,1.2s,comp=E,833nm
LAMP Lampang 88.07 290 P P 14 19 03.5 +1.5
comp=E,124nm,0.9s,comp=E,889nm
PAYG Puerto Ayora 88.13 90 eP P 14 19 03.9 +1.5
T25A Trinidad 88.41 50 P P 14 19 03.8 +0.4
baz=246
MSTX Muleshoe 88.41 54 P P 14 19 03.9 +0.5
baz=248
RLMT Red Lodge 88.47 41 P P 14 19 04.6 +1.1
baz=243
RLMT Red Lodge 88.47 41 eP P 14 19 04.2 +0.7
RLMT epP pP 14 21 05.3 +1.9
832A Faith Ranch, C 88.56 60 P P 14 19 05.2 +1.1
baz=249
Q24A Divide 88.61 48 P P 14 19 05.3 +0.8
baz=246
ISCO Idaho Springs 88.62 47 P P 14 19 05.3 +0.9
baz=246
ISCO Idaho Springs 88.62 47 eP P 14 19 04.6 +0.2
ISCO e*PP pP 14 21 05.9 +1.6
ISCO e 14 22 41.6
ISCO Idaho Springs 88.62 47 eP P 14 19 04.6 +0.2
ISCO epP pP 14 21 05.9 +1.6
ISCO ePP PP 14 22 41.6 -1.8
CM01 Chiang Mai Arr 88.64 290 eP P 14 19 05.5 +0.8
CM01 epP pP 14 21 06.9 +2.4
CM31 Chiang Mai Arr 88.67 290 eP P 14 19 06.1 +1.4
CMAR Chiang Mai Arr 88.67 290 P P 14 19 06.3 +1.5
comp=E,197nm,0.9s,baz=108,slow=2.9,SNR=571
CMAR PP PP 14 22 44.8 +1.0
comp=E,21nm,0.9s,baz=120,slow=6.2,SNR=5.4
CMAR PKKPbc PKKPbc 14 36 42.9 +0.8
comp=E,8.8nm,0.8s,baz=286,slow=4.5,SNR=23
CMAR SKKPbc SKKPbc 14 39 31.2 +2.2
comp=E,2.6nm,1.0s,baz=297,slow=4.2,SNR=5.9
CMAR PKPPKP P'P'df 14 44 49.8 -1.1
comp=E,1.1nm,0.7s,baz=280,slow=3.6,SNR=5.2
CMMT Chiang Mai 88.78 290 P P 14 19 06.1 +0.8
comp=E,326nm,1.3s,comp=E,5µm
CMMT Chiang Mai 88.78 290 P SKSac 14 28 46.4 +3.4
comp=E,57nm,2.6s
CHTO Chiang Mai 88.79 290 P P 14 19 06.1 +0.8
comp=E,1µm,1.3s,comp=E,24µm
CHTO Chiang Mai 88.79 290 P SKSac 14 28 46.4 +3.4
comp=E,312nm,3.2s
CHTO Chiang Mai 88.79 290 eP P 14 19 06.3 +1.0
CHTO Chiang Mai 88.79 290 eP P 14 19 06.3 +1.0
CHTO Chiang Mai 88.79 290 P P 14 19 06.6 +1.3
SNR=136
CD2 Chengdu 88.81 303 P P 14 19 06.4 +1.2
CD2 pP pP 14 21 03.2 -1.9
CD2 sP sP 14 21 59.7 -0.5
CD2 PP PP 14 22 45.2 +0.5
CD2 SKS SKSac 14 28 44.3 +1.5
CD2 S ScS 14 29 09.2 -0.9
CD2 sS sS 14 32 38.4 -2.3
CD2 SS SS 14 35 16.9 +0.8
CD2 pmax pmax
comp=E,220nm,1.2s
CD2 pmax pmax
comp=E,3µm,10.8s
N23A Red Feather La 88.84 46 P P 14 19 06.4 +1.0
baz=246
933A Laredo 88.91 61 P P 14 19 06.9 +1.3
baz=250
833A Chaparral WMA, 89.05 60 P P 14 19 07.5 +1.2
baz=249
CMAI Chiengmai2 89.06 291 P P 14 19 07.8 +1.1
comp=E,291nm,2.1s,comp=E,4µm
K22A Casper 89.18 45 P P 14 19 07.3 +0.5
baz=245
034A Hebbronville 89.21 61 P P 14 19 09.4 +2.3
baz=250
CMIG Matias Romero 89.25 72 PKKPbc PKKPbc 14 36 40.1 -0.4
comp=E,1.6nm,0.6s,baz=238,slow=1.7,SNR=4.1
YAK Yakutsk 89.25 338 P P 14 19 05.9 -0.5
comp=E,8.1nm,0.7s,baz=299,slow=22,SNR=31
YAK PP PP 14 22 43.8 -3.5
comp=E,0.7nm,0.4s,baz=102,slow=23,SNR=2.6
YAK S SKSac 14 28 42.3 -1.5
comp=E,0.7nm,0.3s,baz=349,slow=24,SNR=42
YAK Yakutsk 89.25 338 eP P 14 19 05.3 -1.1
YAK 14 22 43.9
YAK S SKSac 14 28 42.3 -1.5
YAK Yakutsk 89.25 338 eP P 14 19 05.2 -1.1
YAK PP PP 14 22 43.9 -3.5
YAK S SKSac 14 28 42.3 -1.5
733A Divot King Ran 89.27 60 P P 14 19 08.5 +1.1
baz=250
PHWY Pilot Hill 89.34 46 eP P 14 19 08.5 +0.7
PHWY ePP PP 14 22 46.6 -2.3
PHWY ePKKPdf PKKPbc 14 36 46.8 +5.1
SYO Syowa Base 89.42 193 ||*i*P P 14 19 05.2 -2.0
SYO Syowa Base 89.42 193 ||*i*PcP PcP 14 19 08.0 -0.2
JCT Junction City 89.47 58 P P 14 19 08.8 +0.5
baz=249
JCT Junction City 89.47 58 eP P 14 19 08.6 +0.3
JCT Junction City 89.47 58 eP P 14 19 08.2 -0.1
EGMT Eagleton 89.49 39 P P 14 19 08.7 +0.7
baz=243
EGMT Eagleton 89.49 39 eP P 14 19 08.2 +0.2
EGMT epP pP 14 21 10.0 +1.9
MHMT Maesarieng 89.49 289 P P 14 19 09.8 +1.2
comp=E,130nm,1.5s,comp=E,2µm
035Z Hargill 89.52 62 P P 14 19 10.3 +1.8
baz=250
934A Benavides 89.53 61 P P 14 19 10.9 +2.3
baz=250

AMTX	Amarillo	89.59	53	P	P	14 19 09.1	+0.3
	baz=248						
AMTX	Amarillo	89.59	53	eP	P	14 19 09.3	+0.5
633A	Saathoff Ranch	89.63	59	P	P	14 19 10.5	+1.6
	baz=250						
035A	Encino	89.65	62	P	P	14 19 11.3	+2.2
	baz=250						
834A	Tilden	89.68	60	P	P	14 19 11.1	+1.8
	baz=250						
CMBY	CAMPBELL BAY	89.76	277	eP	P	14 19 09.1	-0.8
734A	La Parita Cree	89.92	60	P	P	14 19 12.0	+1.6
	baz=250						
533A	Kerrville	89.95	58	P	P	14 19 11.6	+1.0
	baz=250						
KVTX	Kingsville	90.03	61	eP	P	14 19 13.2	+2.4
433A	Art	90.15	58	P	P	14 19 12.0	+0.6
	baz=250						
634A	China Grove, S	90.28	59	P	P	14 19 13.3	+1.4
	baz=250						
835A	Beeville	90.34	60	P	P	14 19 14.7	+2.4
	baz=250						
ABTX	Abilene, Hawle	90.36	56	P	P	14 19 12.9	+0.6
	baz=249						
534A	Blanco	90.39	59	P	P	14 19 13.5	+0.9
	baz=250						
333A	Richland Sprin	90.43	57	P	P	14 19 13.1	+0.4
	baz=250						
KSCO	Kaye Shedlock'	90.43	49	P	P	14 19 13.4	+0.7
	baz=248						
936A	North Padre Is	90.48	61	P	P	14 19 14.8	+1.9
	baz=250						
735A	Kenedy	90.55	60	P	P	14 19 15.1	+1.9
	baz=250						
LZH	Lanzhou	90.61	308	⇓P	P	14 19 15.2	+1.6
LZH				pP	pP	14 21 14.6	+0.7
LZH				sP	sP	14 22 13.0	+4.2
LZH				PP	PP	14 22 58.5	-0.4
LZH				SKS	SKSac	14 28 53.1	-0.1
LZH				S	S	14 29 20.1	-3.1
LZH				pmax	pmax		
	comp=E,420nm,1.0s						
LZH				pmax	pmax		
	comp=E,2μm,5.4s						
233A	Rising Star	90.74	57	P	P	14 19 14.9	+0.8
	baz=250						
635A	Leesville	90.75	59	P	P	14 19 15.6	+1.4
	baz=250						
434A	Burnet	90.83	58	P	P	14 19 15.0	+0.5
	baz=250						
CIT	Chita	90.85	325	eP	P	14 19 14.9	+0.8
CIT				pmax	pmax		
	comp=Z,570nm,2.0s						
SNAA	Sanae	90.90	179	eP	P	14 19 13.5	-0.7
SNAA	Sanae	90.90	179	eP	P	14 19 13.2	-0.9
133A	Hamilton Ranch	90.93	56	P	P	14 19 15.5	+0.5
	baz=250						
334A	Lometa	91.03	58	P	P	14 19 16.2	+0.7
	baz=250						
LAO	LASA Array	91.06	41	P	P	14 19 16.9	+1.6
	baz=245						
LAO	LASA Array	91.06	41	eP	P	14 19 17.1	+1.8
535A	Dale	91.13	59	P	P	14 19 17.0	+1.1
	baz=250						
736A	Circle Diamond	91.19	60	P	P	14 19 18.4	+2.3
	baz=250						
X32A	Elmer	91.27	54	P	P	14 19 16.9	+0.4
	baz=250						
Z33A	Whitaker Ranch	91.28	56	P	P	14 19 17.0	+0.5
	baz=250						
J25A	Sunshine Ranch	91.30	45	P	P	14 19 17.1	+0.6
	baz=247						
234A	Clairette	91.34	57	P	P	14 19 17.4	+0.6
	baz=250						
636A	Smothers Creek	91.37	60	P	P	14 19 18.9	+1.8
	baz=251						
435B	Jarrell	91.37	58	P	P	14 19 17.9	+0.9
	baz=250						
RSSD	Black Hills	91.43	44	P	P	14 19 17.4	+0.2
	baz=247						
RSSD	Black Hills	91.43	44	eP	P	14 19 17.1	-0.1
RSSD	Black Hills	91.43	44	eP	P	14 19 17.1	-0.1
O28A	Krutsinger Ran	91.46	48	P	P	14 19 18.0	+0.7
	baz=248						
CCIG	Comitan	91.50	74	eP	P	14 19 18.8	+0.7
W32A	Sentinel	91.54	54	P	P	14 19 18.3	+0.5
	baz=250						
536A	Bastrop	91.56	59	P	P	14 19 19.2	+1.3
	baz=251						
NVL	N'lazarevskaya	91.56	183	eP	P	14 19 16.8	-0.3
NVL				e*PP	pP	14 21 18.3	+0.9
NVL				e		14 23 04.0	
NVL				eS	SKSac	14 28 55.6	-1.4
NVL				e		14 29 24.6	
134A	White-Moore Ra	91.58	56	P	P	14 19 18.8	+0.8
	baz=250						
OGNE	Ogallala	91.58	47	P	P	14 19 18.4	+0.5
	baz=248						
OGNE	Ogallala	91.58	47	eP	P	14 19 18.5	+0.7
I25A	Rochford	91.59	44	P	P	14 19 18.3	+0.3
	baz=247						
PLCA	Paso Flores	91.62	134	P	P	14 19 19.2	+1.0
	comp=Z,82nm,0.9s,baz=263,slow=5.1,SNR=94						
PLCA				PP	PP	14 23 05.0	-0.9
	comp=Z,9.6nm,1.0s,baz=284,slow=8.7,SNR=3.2						
PLCA				PKKPbc	PKKPbc	14 36 35.3	-0.2
	comp=Z,11nm,0.9s,baz=143,slow=1.4,SNR=14						
PLCA				SKKPbc	SKKPbc	14 39 23.5	+3.1
	comp=Z,3.9nm,1.0s,baz=25,slow=6.9,SNR=3.1						
PLCA				PKPPKP	P'P'df	14 44 44.0	-1.4
	comp=Z,6.1nm,1.0s,baz=139,slow=6.7,SNR=4.4						
PLCA	Paso Flores	91.62	134	eP	P	14 19 19.2	+1.0
PLCA				epP	pP	14 21 20.1	+1.6
PLCA				ePP	PP	14 23 05.0	-0.9
PLCA				ePKKPdf	PKKPbc	14 36 35.5	-0.1
PLCA				SKKPbc	SKKPbc	14 39 23.5	+3.1
PLCA				P'P'	P'P'df	14 44 44.0	-1.4
INK	Inuvik	91.63	15	P	P	14 19 16.6	-0.6
	comp=Z,74nm,1.0s,baz=214,slow=4.9,SNR=126						
Y33A	Hilltop Ranch,	91.64	55	P	P	14 19 18.5	+0.3
	baz=250						
737A	Port Lavaca	91.65	60	P	P	14 19 20.6	+2.3
	baz=251						
335A	Moody	91.67	58	P	P	14 19 19.0	+0.6
	baz=250						
J26A	Sides Ranch, S	91.76	45	P	P	14 19 19.3	+0.7
	baz=247						
WMOK	Wichita Mounta	91.77	54	eP	P	14 19 19.1	+0.3
WMOK	Wichita Mounta	91.77	54	eP	P	14 19 18.3	-0.5
WMOK				ePKKPdf	PKKPbc	14 36 36.3	+1.4
N28A	Pribbeno Ranch	91.83	48	P	P	14 19 19.7	+0.7
	baz=248						
P29A	Atwood	91.87	49	P	P	14 19 19.9	+0.7
	baz=249						
WHTX	Lake Whitney,	91.88	57	P	P	14 19 20.0	+0.7
	baz=250						
V32A	Arapaho	91.90	53	P	P	14 19 20.6	+1.2
	baz=250						
X33A	Lawton	91.92	54	P	P	14 19 19.6	+0.2
	baz=250						
H25A	Fruitdale	91.92	44	P	P	14 19 19.9	+0.6
	baz=247						
637A	Eagle Lake	91.95	60	P	P	14 19 21.5	+1.8
	baz=251						
Z34A	Collier Ranch,	91.98	56	P	P	14 19 20.3	+0.5
	baz=250						
436A	Wall Ranch, Ga	92.01	58	P	P	14 19 21.2	+1.3
	baz=251						
135A	Vickery Place,	92.11	57	P	P	14 19 21.0	+0.6
	baz=250						
W33A	Caddo, Fort Co	92.15	54	P	P	14 19 21.7	+1.2
	baz=250						
O29A	4D Ranch, Culb	92.16	49	P	P	14 19 21.1	+0.7
	baz=249						
U32A	Winter Ranch,	92.16	53	P	P	14 19 21.4	+0.8
	baz=250						
336A	Riesel	92.17	58	P	P	14 19 21.3	+0.6
	baz=251						
537A	Green Hill Far	92.18	59	P	P	14 19 22.5	+1.8
	baz=251						
I26A	New Underwood	92.18	44	P	P	14 19 21.2	+0.7
	baz=248						
M28A	Bar X Bar Ranc	92.21	47	P	P	14 19 21.0	+0.2
	baz=248						
G25A	Newell	92.26	43	P	P	14 19 21.3	+0.5
	baz=247						
PBA	Port Blair	92.27	281	eP	P	14 19 19.9	-1.6
Y34A	Reagan Ranch,	92.30	55	P	P	14 19 21.4	+0.2
	baz=250						
738A	Farr-Stevens R	92.33	61	P	P	14 19 23.7	+2.3
	baz=251						
L28A	Connealy Angus	92.33	47	P	P	14 19 21.9	+0.6
	baz=248						
P30A	Selden	92.35	49	P	P	14 19 22.5	+1.1
	baz=249						
X34A	Smith Ranch, M	92.45	55	P	P	14 19 23.0	+1.1
	baz=250						
H26A	Fairpoint	92.46	44	P	P	14 19 22.0	+0.2
	baz=248						
CBKS	Cedar Bluff	92.46	50	P	P	14 19 22.4	+0.6
	baz=249						
CBKS	Cedar Bluff	92.46	50	eP	P	14 19 23.0	+1.1
CBKS	Cedar Bluff	92.46	50	eP	P	14 19 21.7	-0.1
CBKS				ePP	PP	14 23 11.2	-1.8
J27A	Elkhorn Farm,	92.46	45	P	P	14 19 22.9	+1.0
	baz=248						
Z35A	Perchaven, San	92.49	56	P	P	14 19 22.7	+0.6
	baz=251						
T32A	Huddler Ranch,	92.49	52	P	P	14 19 22.6	+0.6
	baz=250						
F25A	Bowman	92.51	42	P	P	14 19 22.8	+0.8
	baz=247						
V33A	Lossen Ranch,	92.52	53	P	P	14 19 22.6	+0.4
	baz=250						
N29A	Votaw Ranch, W	92.53	48	P	P	14 19 22.8	+0.6
	baz=249						
HKT	Hockley	92.53	60	eP	P	14 19 22.9	+0.7
HKT				e*PP	pP	14 21 24.7	+2.0
HKT				e		14 23 11.8	
HKT	Hockley	92.53	60	eP	P	14 19 22.9	+0.7
HKT				epP	pP	14 21 24.7	+2.0
HKT				ePP	PP	14 23 11.8	-1.8
DGPR	DIGLIPUR	92.54	283	eP	P	14 19 21.7	-1.0
437A	Phantom Ranch,	92.56	59	P	P	14 19 23.8	+1.4
	baz=251						
236A	Katherine and	92.62	57	P	P	14 19 23.3	+0.6
	baz=251						
S32A	Newby Ranch, P	92.66	51	P	P	14 19 23.4	+0.6
	baz=250						
638A	Rosharon	92.68	60	P	P	14 19 24.9	+1.9
	baz=251						
K28A	Ten Mile Ranch	92.70	46	P	P	14 19 23.8	+0.9
	baz=248						
O30A	MW Ranch, Wils	92.71	49	P	P	14 19 23.2	+0.2
	baz=249						
M29A	Burnside Ranch	92.71	47	P	P	14 19 23.7	+0.7
	baz=249						
W34A	Bridge Creek,	92.71	54	P	P	14 19 23.8	+0.7
	baz=250						
I27A	Quinn	92.73	45	P	P	14 19 23.9	+0.8
	baz=248						
E25A	Miller Ranch,	92.77	42	P	P	14 19 24.2	+1.1
	baz=247						
136A	Ennis	92.78	57	P	P	14 19 24.2	+0.7
	baz=251						
G26A	Maurine	92.83	43	P	P	14 19 23.8	+0.4
	baz=248						
Y35A	Marietta	92.84	55	P	P	14 19 24.5	+0.8
	baz=251						
ULN	Ulaanbaatar	92.85	320	ceP	P	14 19 23.7	+0.1
ULN				pmax	pmax		
	comp=Z,150nm,1.0s						
ULN	Ulaanbaatar	92.85	320	eP	P	14 19 23.6	+0.1
ULN	Ulaanbaatar	92.85	320	P	P	14 19 24.1	+0.5
	SNR=89						
U33A	Lingo Farm, Me	92.85	53	P	P	14 19 23.9	+0.2
	baz=250						
N30A	Hueftle Ranch,	92.89	48	P	P	14 19 24.7	+0.9
	baz=249						
538A	Harpers Horsep	92.90	59	P	P	14 19 25.9	+1.9
	baz=251						
H27A	Howes	92.92	44	P	P	14 19 24.4	+0.5
	baz=248						
337A	Centerville	92.93	58	P	P	14 19 25.5	+1.4
	baz=251						
P31A	Stockton	92.97	50	P	P	14 19 24.7	+0.5
	baz=250						
T33A	Patterson Ranc	92.97	52	P	P	14 19 24.8	+0.6
	baz=250						
F26A	Lodgepole	92.99	43	P	P	14 19 24.8	+0.6
	baz=248						
DGMT	Dagmar	93.04	40	P	P	14 19 25.1	+0.8
	baz=247						
DGMT	Dagmar	93.04	40	eP	P	14 19 24.2	0.0
DGMT				epP	pP	14 21 26.9	+2.2
DGMT				ePP	PP	14 23 16.5	-0.7
J28A	Allard Ranch,	93.05	45	P	P	14 19 25.0	+0.5
	baz=249						
X35A	Drake	93.06	55	P	P	14 19 25.0	+0.3
	baz=251						
D25A	Fairfield	93.07	41	P	P	14 19 25.7	+1.2
	baz=247						
L29A	Maesberg Ranch	93.08	47	P	P	14 19 25.6	+1.0
	baz=249						
R32A	Long Quarter,	93.08	51	P	P	14 19 25.5	+0.8
	baz=250						
438A	Sam Houston St	93.08	59	P	P	14 19 26.4	+1.5
	baz=251						
V34A	Guthrie	93.11	53	P	P	14 19 25.0	+0.1
	baz=251						
Z36A	Blue Ridge	93.11	56	P	P	14 19 25.8	+0.8
	baz=251						
237A	Washetta, Mont	93.21	58	P	P	14 19 26.3	+1.0
	baz=251						
O31A	Woolen Ranch,	93.22	49	P	P	14 19 26.0	+0.7
	baz=250						
SONA1	Songino Array	93.25	319	eP	P	14 19 24.5	-0.9
SONA1				ePKKPdf	PKKPdf	14 36 30.6	+0.5
SONM	Songino Array	93.25	319	P	P	14 19 25.3	0.0
	comp=Z,52nm,0.9s,baz=103,slow=3.2,SNR=248						
SONM				pP	pP	14 21 25.0	-0.9
	comp=Z,6.6nm,1.1s,baz=151,slow=13,SNR=1.2						
SONM				PP	PP	14 23 20.2	+1.3
	comp=Z,9.5nm,0.9s,baz=129,slow=8.3,SNR=3.0						
SONM				S	SKSac	14 29 03.9	-3.2
	comp=Z,16nm,1.0s,baz=126,slow=3.7,SNR=4.7						
SONM				PKKPbc	PKKPdf	14 36 30.3	+0.3
	comp=Z,4.9nm,0.9s,baz=262,slow=2.1,SNR=12						
SONM				SKKPbc	SKKPbc	14 39 18.3	-2.6
	comp=Z,3.4nm,1.1s,baz=232,slow=1.7,SNR=6.1						
U34A	Anderson Ranch	93.29	53	P	P	14 19 26.1	+0.4
	baz=251						
G27A	Dupree	93.30	43	P	P	14 19 25.9	+0.3
	baz=248						
I28A	Midland	93.30	45	P	P	14 19 26.1	+0.5
	baz=249						
M30A	Dale-Ortello V	93.31	48	P	P	14 19 26.3	+0.6
	baz=249						
S33A	Kaszmaul Farm,	93.33	52	P	P	14 19 26.5	+0.6
	baz=250						
C25A	Freed Ranch, W	93.33	41	P	P	14 19 26.8	+1.1
	baz=248						
BOD	Bodaibo	93.34	330	⇑iP	P	14 19 24.4	-1.0
BOD				eS	SKSac	14 29 04.6	-2.2
BOD				pmax	pmax		
	comp=Z,59nm,1.1s						
E26A	Carlson Angus	93.36	42	P	P	14 19 26.5	+0.7
	baz=248						
W35A	Tecumseh	93.38	54	P	P	14 19 26.8	+0.7
	baz=251						
Q32A	Meitler Ranch,	93.38	50	P	P	14 19 26.9	+0.8
	baz=250						
338A	Crockett	93.41	58	P	P	14 19 27.6	+1.3
	baz=252						
F27A	Lemmon	93.42	43	P	P	14 19 26.6	+0.5
	baz=248						
Y36A	Durant	93.44	56	P	P	14 19 27.2	+0.8
	baz=251						
K29A	Lazy Trails An	93.44	46	P	P	14 19 27.2	+0.9
	baz=249						
137A	Heron Place, G	93.44	57	P	P	14 19 27.6	+1.1
	baz=251						
539A	Cross D Ranch,	93.49	60	P	P	14 19 28.1	+1.4
	baz=252						
L30A	Spencer Herefo	93.57	47	P	P	14 19 27.5	+0.6
	baz=250						
P32A	Huiting Farm,	93.57	50	P	P	14 19 27.3	+0.4
	baz=250						
R33A	Olander Ranch,	93.58	51	P	P	14 19 27.9	+0.9
	baz=250						
D26A	Manning	93.59	42	P	P	14 19 27.7	+0.9
	baz=248						
X36A	Centrahoma	93.60	55	P	P	14 19 27.4	+0.3
	baz=251						
B25A	Knox Farm, Ray	93.60	40	P	P	14 19 28.0	+1.2
	baz=248						
V35A	Meyer Ranch, C	93.61	54	P	P	14 19 27.2	+0.1
	baz=251						
H28A	Mission Ridge	93.64	44	P	P	14 19 27.5	+0.3
	baz=249						
J29A	Okreek	93.66	46	P	P	14 19 27.7	+0.5
	baz=249						
439A	Center Grove,	93.67	59	P	P	14 19 28.9	+1.4
	baz=252						
N31A	Bailey Ranch,	93.72	48	P	P	14 19 28.4	+0.8
	baz=250						
Z37A	Pogue Cattle C	93.73	56	P	P	14 19 28.8	+1.0
	baz=251						
T34A	McClaskey Farm	93.75	52	P	P	14 19 28.3	+0.5
	baz=251						
238A	Jacksonville	93.76	58	P	P	14 19 29.5	+1.6
	baz=252						
EFI	East Falkland	93.78	147	d iP	P	14 19 28.6	+1.0
EFI				pmax	pmax		
	comp=Z,152nm,1.1s						
EFI	East Falkland	93.78	147	eP	P	14 19 27.9	+0.3
G28A	Parade	93.86	44	P	P	14 19 28.5	+0.4
	baz=249						
W36A	Wetumka	93.88	54	P	P	14 19 28.9	+0.5
	baz=251						
M31A	Lambtecht Ranc	93.88	48	P	P	14 19 29.5	+1.2
	baz=250						
A25A	Svangstu Ranch	93.88	40	P	P	14 19 28.8	+0.7
	baz=248						
U35A	Pawnee	93.88	53	P	P	14 19 28.9	+0.5
	baz=251						
I29A	Vivian Onida	93.89	45	P	P	14 19 28.5	+0.2
	baz=249						
K30A	Basset	93.89	47	P	P	14 19 29.0	+0.6
	baz=250						
Q33A	Connelly Farm,	93.92	50	P	P	14 19 29.1	+0.6
	baz=251						
E27A	Carson	93.92	42	P	P	14 19 29.1	+0.8
	baz=249						
Y37A	Hugo	93.98	56	P	P	14 19 29.6	+0.7
	baz=252						
138A	Matatall Enter	93.99	57	P	P	14 19 30.3	+1.3
	baz=252						
339A	Huntington	94.01	59	P	P	14 19 30.2	+1.1
	baz=252						
O32A	Brockman Farm,	94.02	49	P	P	14 19 29.5	+0.5
	baz=250						
S34A	Willow Spring	94.03	52	P	P	14 19 29.6	+0.6
	baz=251						
NATX	Nacogdoches	94.06	58	P	P	14 19 30.2	+1.0
	baz=252						
NATX	Nacogdoches	94.06	58	eP	P	14 19 29.0	-0.3
C26A	Wahner Farm, P	94.10	41	P	P	14 19 30.0	+0.9
	baz=248						
YKA	Yellowknife Ar	94.11	25	P	P	14 19 28.1	-0.7
	comp=Z,16nm,0.7s,baz=245,slow=4.4,SNR=207						
YKA				pP	pP	14 21 29.1	-0.3
	comp=Z,4.2nm,0.9s,baz=238,slow=4.5,SNR=2.1						
YKA				PP	PP	14 23 24.3	-0.7
	comp=Z,3.1nm,0.9s,baz=243,slow=6.9,SNR=4.4						
YKA				PKKPbc	PKKPdf	14 36 27.0	-1.7
	comp=Z,0.6nm,0.4s,baz=40,slow=2.2,SNR=8.9						
YKA				SKKPbc	SKKPbc	14 39 15.8	-3.9
	comp=Z,0.5nm,0.6s,baz=36,slow=2.1,SNR=6.9						
YKA				PKPPKP	P'P'df	14 44 35.6	-1.9
	comp=Z,0.4nm,0.9s,baz=44,slow=2.5,SNR=3.8						
YKB5	Yellowknife Ar	94.11	25	eP	P	14 19 27.7	-1.1
R34A	Isabella, Hill	94.12	51	P	P	14 19 30.0	+0.6
	baz=251						
540A	Vidor	94.14	60	P	P	14 19 31.5	+1.9
	baz=252						
YKW3	Yellowknife Ar	94.14	25	eP	P	14 19 27.8	-1.1
YKW3				epP	pP	14 21 32.3	+2.8
H29A	Onida	94.16	45	P	P	14 19 29.7	+0.2
	baz=249						
P33A	Williams Farm,	94.16	50	P	P	14 19 30.3	+0.6
	baz=251						
N32A	Stulken Farm,	94.17	49	P	P	14 19 29.9	+0.3
	baz=250						
D27A	Center	94.19	42	P	P	14 19 30.3	+0.7
	baz=249						
J30A	Dallas	94.20	46	P	P	14 19 29.9	+0.2
	baz=250						
F28A	McLaughlin	94.21	43	P	P	14 19 29.9	+0.2
	baz=249						
B26A	Jensen Ranch,	94.21	41	P	P	14 19 30.8	+1.2
	baz=248						
T35A	Sooner Cattle	94.23	53	P	P	14 19 30.5	+0.6
	baz=251						
Z38A	Mt. Pleasant	94.26	57	P	P	14 19 31.1	+0.9
	baz=252						
L31A	Butterfield Fa	94.26	47	P	P	14 19 30.6	+0.6
	baz=250						
239A	Gary	94.29	58	P	P	14 19 31.1	+0.8
	baz=252						
V36A	Jenks	94.30	54	P	P	14 19 30.8	+0.5
	baz=251						
440A	Kirbyville	94.32	59	P	P	14 19 31.6	+1.1
	baz=252						
X37A	Clayton	94.37	55	P	P	14 19 30.9	+0.2
	baz=252						
C27A	Sayler Ranch,	94.43	41	P	P	14 19 31.4	+0.8
	baz=249						
I30A	Oacoma	94.45	45	P	P	14 19 30.8	0.0
	baz=250						
O33A	Hebron	94.45	49	P	P	14 19 31.6	+0.7
	baz=251						
TUL1	Leonard	94.46	54	P	P	14 19 31.5	+0.5
	baz=252						
K31A	O'Neill	94.47	47	P	P	14 19 31.4	+0.5
	baz=250						
BGNE	Belgrade	94.49	48	P	P	14 19 31.9	+0.9
	baz=250						
W37B	Quinton	94.50	55	P	P	14 19 31.6	+0.4
	baz=252						
ROC1	El Roble	94.50	126	eP	P	14 19 32.1	+0.4
A26A	Wade Farm, Ken	94.53	40	P	P	14 19 31.8	+0.7
	baz=248						
E28A	Huff	94.53	43	P	P	14 19 31.1	0.0
	baz=249						
Q34A	Chapman	94.55	51	P	P	14 19 32.1	+0.7
	baz=251						
G29A	Hoven	94.55	44	P	P	14 19 30.6	-0.7
	baz=250						
139A	Bunkhouse Ranc	94.56	57	P	P	14 19 32.4	+0.9
	baz=252						
340A	Bronson	94.58	59	P	P	14 19 32.1	+0.5
	baz=252						
S35A	Otter Creek Ra	94.62	52	P	P	14 19 32.3	+0.6
	baz=251						
U36A	Oologah	94.66	53	P	P	14 19 32.6	+0.7
	baz=252						
Y38A	Idabel	94.67	56	P	P	14 19 32.2	+0.2
	baz=252						
J31A	Geddes	94.70	46	P	P	14 19 31.7	-0.2
	baz=250						
541A	Lake Charles	94.75	60	P	P	14 19 33.9	+1.4
	baz=252						
GTA	Gaotai	94.75	310	⇓P	P	14 19 32.9	+0.5
GTA				pP	pP	14 21 33.0	0.0
GTA				sP	sP	14 22 28.3	+0.4
GTA				PP	PP	14 23 34.5	+3.8
GTA				SKS	SKSac	14 29 14.8	-0.7
GTA				S	ScS	14 30 02.2	+2.7
GTA				pmax	pmax		
	comp=Z,86nm,1.1s						
GTA				pmax	pmax		
	comp=Z,850nm,5.5s						
T36A	Boggs Farm, Ca	94.75	53	P	P	14 19 32.9	+0.6
	baz=252						
N33A	J Bar K, Exete	94.77	49	P	P	14 19 32.9	+0.5
	baz=251						
L32A	Elgin	94.79	48	P	P	14 19 32.7	+0.3
	baz=251						
X38A	Whitesboro	94.82	55	P	P	14 19 33.3	+0.6
	baz=252						
B27A	Peters Farms,	94.83	41	P	P	14 19 33.1	+0.7
	baz=249						
D28A	Regan	94.83	42	P	P	14 19 32.6	+0.1
	baz=249						
P34A	Walnut Farm, R	94.83	50	P	P	14 19 33.7	+1.0
	baz=251						
F29A	Eureka	94.84	43	P	P	14 19 32.5	-0.1
	baz=250						
KSU1	Kansas State U	94.85	51	P	P	14 19 33.7	+0.9
	baz=251						
KSU1	Kansas State U	94.85	51	eP	P	14 19 33.3	+0.6
240A	Hunter Patters	94.87	58	P	P	14 19 34.1	+1.1

	baz=252						
Z39A	Irene McRaven,	94.90	57	P	P	14 19 34.3	+1.3
	baz=252						
R35A	Emporia Munici	94.91	51	P	P	14 19 33.8	+0.8
	baz=252						
SUSD	Miller	94.94	45	P	P	14 19 32.9	-0.1
	baz=250						
441A	DeRidder	94.95	59	P	P	14 19 34.9	+1.6
	baz=252						
V37A	Hulbert	94.95	54	P	P	14 19 33.5	+0.3
	baz=252						
K32A	Verdigre	95.03	47	P	P	14 19 32.9	-0.5
	baz=251						
A27A	Ledoux Ranch,	95.04	40	P	P	14 19 33.9	+0.6
	baz=249						
G30A	Faulkton	95.05	44	P	P	14 19 33.2	-0.3
	baz=250						
I31A	Royce, Wessing	95.09	45	P	P	14 19 33.7	0.0
	baz=250						
C28A	Hausauer Farms	95.13	42	P	P	14 19 34.4	+0.6
	baz=250						
U37A	Salina	95.13	54	P	P	14 19 34.6	+0.5
	baz=252						
O34A	Beatrice	95.14	50	P	P	14 19 34.4	+0.4
	baz=251						
341A	Kurthwood	95.14	59	P	P	14 19 35.3	+1.1
	baz=253						
S36A	Lake Cedric, C	95.18	52	P	P	14 19 34.8	+0.6
	baz=252						
Y39A	Lockesburg	95.18	56	P	P	14 19 34.5	+0.2
	baz=252						
W38A	Poteau	95.19	55	P	P	14 19 35.3	+1.0
	baz=252						
Q35A	Mercer Eighty,	95.20	51	P	P	14 19 35.0	+0.6
	baz=252						
140A	Cam and Jess,	95.20	58	P	P	14 19 35.7	+1.3
	baz=252						
E29A	Napoleon	95.21	43	P	P	14 19 33.8	-0.4
	baz=250						
M33A	Taylor Creek F	95.22	48	P	P	14 19 34.7	+0.4
	baz=251						
H31A	Wolsey	95.28	45	P	P	14 19 34.1	-0.5
	baz=251						
542A	Morse	95.29	60	P	P	14 19 37.0	+2.1
	baz=253						
TGUH	Tegucigalpa,Un	95.33	77	eP	P	14 19 35.5	+0.2
TGUH				epP	pP	14 21 38.4	+2.4
X39A	Fountain Ranch	95.33	56	P	P	14 19 35.6	+0.6
	baz=252						
J32A	Parkston	95.35	46	P	P	14 19 34.2	-0.6
	baz=251						
L33A	Hoskins	95.36	48	P	P	14 19 34.8	-0.2
	baz=251						
F30A	Leola	95.37	44	P	P	14 19 34.3	-0.6
	baz=250						
B28A	Dugan Ranch, T	95.40	41	P	P	14 19 35.3	+0.3
	baz=250						
D29A	Pettibone, Tap	95.41	42	P	P	14 19 34.8	-0.3
	baz=250						
P35A	Duane Minner,	95.42	50	P	P	14 19 36.3	+0.9
	baz=252						
R36A	Gordon, Harris	95.43	52	P	P	14 19 35.9	+0.5
	baz=252						
N34A	Lincoln	95.48	49	P	P	14 19 36.3	+0.8
	baz=252						
T37A	Cheneyville 18	95.50	53	P	P	14 19 36.2	+0.5
	baz=252						
V38A	Canehill	95.51	54	P	P	14 19 36.1	+0.3
	baz=252						
Z40A	Long Farm, Mag	95.53	57	P	P	14 19 36.6	+0.8
	baz=253						
241A	Mo Tay, Goldon	95.55	58	P	P	14 19 37.2	+1.2
	baz=253						
442A	Mamou	95.56	60	P	P	14 19 37.3	+1.2
	baz=253						
A28A	Rude Farm, Bot	95.62	40	P	P	14 19 36.3	+0.3
	baz=250						
M34A	Aspy Farms, Fr	95.63	48	P	P	14 19 36.8	+0.6
	baz=252						
Q36A	Arnold C. Orve	95.66	51	P	P	14 19 36.8	+0.4
	baz=252						
E30A	Jud	95.67	43	P	P	14 19 36.0	-0.2
	baz=250						
MDND	Maddock	95.67	42	P	P	14 19 36.3	0.0
	baz=250						
K33A	Hardington	95.69	47	P	P	14 19 36.4	-0.1
	baz=251						
U38A	Gravette	95.70	54	P	P	14 19 37.2	+0.5
	baz=252						
G31A	Conde	95.71	44	P	P	14 19 36.1	-0.3
	baz=251						
O35A	Humboldt	95.73	50	P	P	14 19 37.6	+1.0
	baz=252						
141A	Papa Simpson,	95.73	58	P	P	14 19 38.2	+1.3
	baz=253						
S37A	Fort Scott	95.77	52	P	P	14 19 37.4	+0.5
	baz=252						
MIAR	Mount Ida	95.77	56	P	P	14 19 37.4	+0.4
	baz=253						
MIAR	Mount Ida	95.77	56	eP	P	14 19 38.0	+1.0
MIAR	Mount Ida	95.77	56	eP	P	14 19 36.8	-0.1
W39A	Magazine	95.80	55	P	P	14 19 37.5	+0.4
	baz=253						
I32A	Karley and Nic	95.82	46	P	P	14 19 36.6	-0.4
	baz=251						
TIXI	Tiksi	95.84	345	ceP	P	14 19 35.4	-1.0
TIXI				pmax	pmax		
	comp=Z,54nm,0.9s						
TIXI	Tiksi	95.84	345	eP	P	14 19 35.4	-1.0
342A	Flagon Creek P	95.84	59	P	P	14 19 38.5	+1.2
	baz=253						
Y40A	Okolona	95.84	56	P	P	14 19 38.1	+0.8
	baz=253						
543A	St. Martinvill	95.86	60	P	P	14 19 38.9	+1.5
	baz=253						
WLAR	White Oak Lake	95.88	57	eP	P	14 19 38.3	+0.8
WLAR				epP	pP	14 21 43.5	+5.3
F31A	Hecla	95.89	44	P	P	14 19 36.9	-0.3
	baz=251						
L34A	Svendsen Farm,	95.93	48	P	P	14 19 37.2	-0.4
	baz=252						
R37A	Teagarden Farm	95.93	52	P	P	14 19 38.1	+0.5
	baz=252						
J33A	Davis	95.94	47	P	P	14 19 37.5	0.0
	baz=252						
T38A	Diamond	95.95	53	P	P	14 19 38.2	+0.5
	baz=252						
D30A	Buchanan	95.97	43	P	P	14 19 37.3	-0.3
	baz=251						
H32A	Carlson Farm,	95.99	45	P	P	14 19 37.7	-0.1
	baz=251						
HHAR	Hobbs	96.00	54	eP	P	14 19 37.8	-0.2
HHAR				ePP	PP	14 23 37.7	-2.4
Z41A	Richland Creek	96.00	57	P	P	14 19 38.8	+0.7
	baz=253						
B29A	Wagenman Farm,	96.04	41	P	P	14 19 37.9	0.0
	baz=250						
P36A	Good Intent, A	96.05	50	P	P	14 19 38.7	+0.6
	baz=252						
AUSP	Uspallata	96.06	126	eP	P	14 19 40.1	+1.3
ZAK	Zakamensk	96.08	321	eP	P	14 19 37.8	-0.3
ZAK				e		14 23 38.1	
ZAK				e		14 29 22.5	
ZAK				pmax	pmax		
	comp=Z,42nm,1.0s						
ZAK				pmax	pmax		
	comp=Z,11nm,1.2s						
ZAK				pmax	pmax		
	comp=Z,38nm,1.2s						
V39A	Pettigrew	96.10	54	P	P	14 19 38.9	+0.3
	baz=253						
N35A	Tabor	96.11	49	P	P	14 19 39.3	+1.0
	baz=252						
AAGR	Agrelo	96.12	127	eP	P	14 19 40.1	+1.2
ARCO	CERRO ARCO	96.15	127⇓	eP	P	14 19 39.6	+0.6
IRK	Irkutsk	96.15	323	eP	P	14 19 35.1	-3.2
IRK				eS	SKSac	14 29 22.2	+0.3
IRK				pmax	pmax		
	comp=Z,58nm,2.1s						
242A	Grayson	96.18	58	P	P	14 19 39.5	+0.7
	baz=253						
G32A	Webster	96.19	45	Pdiff	P	14 19 38.2	-0.4
	baz=251						
M35A	Neola	96.26	49	Pdiff	P	14 19 38.9	-0.1
	baz=252						
A29A	Manning Farm,	96.27	41	Pdiff	P	14 19 38.8	-0.1
	baz=250						
I33A	Coleman	96.28	46	Pdiff	P	14 19 37.8	-1.3
	baz=252						
RTLS	Leoncito	96.31	126	eP	P	14 19 40.6	+0.7
ECSD	EROS Data Cent	96.31	46	Pdiff	P	14 19 39.1	-0.1
	baz=252						
ECSD	EROS Data Cent	96.31	46	eP	P	14 19 38.7	-0.5
ECSD				ePKKPbc	PKKPbc	14 36 22.5	-1.0
TLY	Talaya	96.32	322	P	P	14 19 38.5	-0.6
	comp=Z,26nm,0.9s,baz=164,slow=4.4,SNR=15						
TLY				S	SKSac	14 29 25.2	+2.4
	comp=Z,1.7nm,0.5s,baz=317,slow=20,SNR=10						
TLY	Talaya	96.32	322	d iP	P	14 19 38.5	-0.6
TLY				e		14 21 38.7	
TLY				e		14 22 32.6	
TLY				e		14 29 24.2	
TLY				pmax	pmax		
	comp=Z,33nm,0.9s						
ASAL	Salagasta	96.33	127	eP	P	14 19 40.2	+0.5
X40A	Basin Creek Fa	96.34	56	Pdiff	P	14 19 39.4	-0.1
	baz=253						
C30A	Mose, Pekin	96.34	42	Pdiff	P	14 19 39.0	-0.3
	baz=251						
K34A	Le Mars	96.35	47	Pdiff	P	14 19 39.1	-0.3
	baz=252						
E31A	Nome	96.35	43	Pdiff	P	14 19 38.9	-0.4
	baz=251						
W40A	Ferguson Farm,	96.36	55	Pdiff	P	14 19 40.1	+0.5
	baz=253						
LCO	Las Campanas	96.36	123	eP	P	14 19 40.3	+0.1
LCO				epP	pP	14 21 45.0	+4.1
O36A	Bolckow	96.38	50	Pdiff	P	14 19 40.1	+0.5
	baz=252						
Q37A	Longview Farm,	96.38	51	Pdiff	P	14 19 40.0	+0.3
	baz=253						
U39A	Green Forest	96.38	54	Pdiff	P	14 19 39.6	-0.1
	baz=253						
343A	Vidalia	96.40	59	Pdiff	P	14 19 39.0	-0.8
	baz=253						
S38A	Stockton	96.42	53	Pdiff	P	14 19 40.0	+0.1
	baz=253						
JTS	JuntasAbangare	96.43	81	c iP	P	14 19 41.1	+0.7
JTS				pmax	pmax		
	comp=Z,92nm,1.1s						
JTS	JuntasAbangare	96.43	81	eP	P	14 19 40.0	-0.4
JTS				epP	pP	14 21 43.8	+2.7
544A	White Castle	96.44	61	Pdiff	P	14 19 40.9	+0.8
	baz=253						
142A	Monroe	96.49	58	Pdiff	P	14 19 38.4	-1.8
	baz=253						
H33A	Prehn Over Nor	96.52	45	Pdiff	P	14 19 40.1	-0.1
	baz=252						
L35A	Bielow Farm, R	96.56	48	Pdiff	P	14 19 40.3	-0.1
	baz=252						
N36A	Muff Farm, Cla	96.59	49	Pdiff	P	14 19 40.9	+0.4
	baz=252						
R38A	Fenwick Farm,	96.59	52	Pdiff	P	14 19 40.7	+0.2
	baz=253						
D31A	Mcclaflin, Tow	96.62	43	Pdiff	P	14 19 39.8	-0.7
	baz=251						
J34A	George	96.63	47	Pdiff	P	14 19 40.1	-0.5
	baz=252						
F32A	Veblen	96.63	44	Pdiff	P	14 19 40.1	-0.5
	baz=252						
T39A	Clever	96.65	53	Pdiff	P	14 19 41.3	+0.4
	baz=253						
P37A	Lathrop	96.67	51	Pdiff	P	14 19 41.1	+0.2
	baz=253						
FFC	Flin Flon	96.68	35	eP	P	14 19 40.4	-0.2
FFC	Flin Flon	96.68	35	eP	P	14 19 40.3	-0.2
243A	Waterproof	96.68	59	Pdiff	P	14 19 41.6	+0.5
	baz=253						
B30A	Myrvik Farm, E	96.68	41	Pdiff	P	14 19 40.4	-0.3
	baz=251						
V40A	Witts Springs	96.73	55	Pdiff	P	14 19 41.6	+0.3
	baz=253						
645A	Chauvin	96.73	61	Pdiff	P	14 19 41.7	+0.3
	baz=254						
UALR	University of	96.81	56	eP	P	14 19 41.2	-0.4
UALR				epP	pP	14 21 46.8	+4.4
UALR				ePP	PP	14 23 44.8	-1.4
C31A	Landman Farms,	96.85	42	Pdiff	P	14 19 41.3	-0.2
	baz=251						
A30A	Hoffart Farm,	96.85	41	Pdiff	P	14 19 41.0	-0.6
	baz=251						
U40A	Yellville	96.86	54	Pdiff	P	14 19 41.8	-0.1
	baz=253						
RTCV	Cerro Valdivia	96.87	126	eP	P	14 19 42.9	+0.8
G33A	Ortonville	96.88	45	Pdiff	P	14 19 41.2	-0.6
	baz=252						
S39A	Bolivar	96.89	53	Pdiff	P	14 19 42.1	+0.2
	baz=253						
M36A	Felix, Anita	96.89	49	Pdiff	P	14 19 41.7	-0.2
	baz=253						
E32A	Braaten, Kindr	96.90	43	Pdiff	P	14 19 41.5	-0.2
	baz=252						
I34A	Hadley	96.92	46	Pdiff	P	14 19 41.6	-0.4
	baz=252						
444A	Pine Grove	96.95	60	Pdiff	P	14 19 42.6	+0.2
	baz=254						
K35A	Storm Lake	96.96	48	Pdiff	P	14 19 41.6	-0.5
	baz=253						
143A	Socs Landing,	96.97	58	Pdiff	P	14 19 42.9	+0.5
	baz=254						
O37A	Wolven Farm, M	96.99	50	Pdiff	P	14 19 42.8	+0.5
	baz=253						
WHAR	Wooly Hollow	97.00	55	eP	P	14 19 42.3	-0.2
WHAR				epP	pP	14 21 48.4	+5.2
Q38A	Cooks Store, C	97.03	51	Pdiff	Pdif	14 19 42.8	+0.2
	baz=253						
SHL	Shillong	97.05	294	eP	P	14 19 42.1	-1.0
SHL				i S	SKSac	14 29 27.0	-1.1
B31A	Greenbush Farm	97.10	42	Pdiff	P	14 19 42.0	-0.6
	baz=252						
D32A	Dogwood Acres,	97.10	43	Pdiff	P	14 19 41.9	-0.7
	baz=252						
N37A	Lee Faris, Mou	97.11	50	Pdiff	Pdif	14 19 43.1	+0.2
	baz=253						
RTLL	Cerro Villicun	97.14	126	eP	P	14 19 43.2	-0.2
H34A	Spellman Lake,	97.17	46	Pdiff	P	14 19 43.1	+0.1
	baz=252						
344A	Westbrook Farm	97.17	59	Pdiff	Pdif	14 19 44.3	+0.9
	baz=254						
J35A	Milford	97.17	47	Pdiff	Pdif	14 19 42.7	-0.4
	baz=253						
F33A	5 Mile Ranch,	97.18	44	Pdiff	Pdif	14 19 42.6	-0.4
	baz=252						
L36A	Harm Buss Farm	97.18	48	Pdiff	Pdif	14 19 43.0	-0.2
	baz=253						
R39A	Chumby, Stover	97.28	52	Pdiff	P	14 19 43.8	+0.1
	baz=253						
P38A	Dawn	97.28	51	Pdiff	P	14 19 43.7	0.0
	baz=253						
445A	Amite	97.30	60	Pdiff	P	14 19 44.2	+0.3
	baz=254						
AMOG	MOGNA	97.30	126⇓	eP	P	14 19 45.3	+1.2
T40A	Mansfield	97.34	53	Pdiff	Pdif	14 19 44.0	0.0
	baz=254						
244A	Avery, Jackson	97.37	59	Pdiff	P	14 19 45.2	+1.0
	baz=254						
M37A	Trindle Farm,	97.41	49	Pdiff	P	14 19 44.6	+0.4
	baz=253						
G34A	Benson	97.44	45	Pdiff	Pdif	14 19 43.9	-0.3
	baz=253						
ATAH	Atahualpa	97.44	100	P	P	14 19 47.4	+1.9
	comp=Z,8.0nm,0.8s,baz=276,slow=4.9,SNR=8.9						
O38A	Galt	97.47	50	Pdiff	P	14 19 44.6	+0.1
	baz=253						
I35A	Creekview Farm	97.47	46	Pdiff	Pdif	14 19 44.2	-0.2
	baz=253						
S40A	Lebanon	97.48	53	Pdiff	P	14 19 44.9	+0.3
	baz=254						
K36A	Gilmore City	97.49	48	Pdiff	P	14 19 44.5	0.0
	baz=253						
A31A	Linda, St. Vin	97.55	41	Pdiff	Pdif	14 19 44.3	-0.3
	baz=252						
VBMS	Vicksburg	97.56	59	Pdiff	P	14 19 45.6	+0.5
	baz=254						
E33A	Westby DABS, E	97.57	44	Pdiff	Pdif	14 19 44.5	-0.3
	baz=252						
ACAN	Cantantal	97.72	127	eP	P	14 19 46.3	+0.4
144A	Alexander Plac	97.75	58	Pdiff	Pdif	14 19 45.1	-0.7
	baz=254						
J36A	Seneca 1, Swea	97.77	47	Pdiff	P	14 19 45.8	0.0
	baz=253						
B32A	Ashes, Strandq	97.80	42	Pdiff	Pdif	14 19 45.1	-0.6
	baz=252						
P39A	Salisbury	97.82	51	Pdiff	Pdif	14 19 45.9	-0.1
	baz=254						
H35A	Sunnyside Ranc	97.82	46	Pdiff	P	14 19 46.0	0.0
	baz=253						
N38A	Joes South For	97.83	50	Pdiff	P	14 19 46.5	+0.4
	baz=254						
L37A	Phoenix Point,	97.84	48	Pdiff	P	14 19 46.1	0.0
	baz=253						
R40A	Maddies Statio	97.85	52	Pdiff	Pdif	14 19 46.0	-0.2
	baz=254						
F34A	Alexandria	97.86	45	Pdiff	Pdif	14 19 46.0	-0.1
	baz=253						
D33A	AnnSam, Waubun	97.86	43	Pdiff	Pdif	14 19 45.8	-0.3
	baz=253						
MOY	Mondy	97.87	322	eP	Pdif	14 19 45.7	-0.4
MOY				pmax	pmax		
	comp=Z,58nm,3.0s						
AGUA	GUANDACOL	97.92	124⇓	eP	P	14 19 48.8	+1.8
A32A	Rocking H Ranc	97.98	41	Pdiff	P	14 19 46.6	0.0
	baz=252						
245A	Little AP, Sta	98.02	59	Pdiff	P	14 19 47.2	+0.1
	baz=254						
M38A	Pleasantville	98.04	49	Pdiff	P	14 19 47.1	+0.2
	baz=254						
C33A	Trail	98.09	43	Pdiff	Pdif	14 19 46.6	-0.5
	baz=253						
K37A	Belmond	98.10	48	Pdiff	Pdif	14 19 47.2	0.0
	baz=254						
E34A	Wadena	98.12	44	Pdiff	P	14 19 48.4	+1.2
	baz=253						
145A	Houston Renfro	98.14	58	Pdiff	P	14 19 48.0	+0.3
	baz=254						
SCIA	State Center	98.16	49	ePdif	P	14 19 48.4	+0.9
O39A	Kirksville	98.19	50	Pdiff	Pdif	14 19 47.7	0.0
	baz=254						
I36A	Fitzsimmons Fa	98.19	47	Pdiff	Pdif	14 19 47.4	-0.1
	baz=254						
Q40A	Laux Farm, Aux	98.19	52	Pdiff	P	14 19 47.9	+0.1
	baz=254						
346A	Big Creek Wild	98.20	60	Pdiff	P	14 19 48.7	+0.8
	baz=254						
AGMN	Agassiz Nation	98.20	42	Pdiff	Pdif	14 19 47.4	-0.1
	baz=253						
AGMN	Agassiz Nation	98.20	42	ePdif	Pdif	14 19 47.3	-0.2
AGMN				epP	pP	14 21 50.0	+1.6
AGMN				ePP	PP	14 23 53.9	-2.5
G35A	Watkins	98.21	45	Pdiff	P	14 19 47.8	+0.1
	baz=253						
AVFE	Valle Fertil	98.22	126	eP	P	14 19 48.5	+0.2
D34A	Park Rapids	98.27	43	Pdiff	Pdif	14 19 47.5	-0.4
	baz=253						
J37A	Redenius Farm,	98.31	47	Pdiff	Pdif	14 19 48.0	-0.2
	baz=254						
F35A	Swanville	98.33	45	Pdiff	P	14 19 48.5	+0.3
	baz=253						
P40A	Paris	98.36	51	Pdiff	Pdif	14 19 48.4	-0.1
	baz=254						
B33A	Robert and Kas	98.36	42	Pdiff	Pdif	14 19 47.5	-0.7
	baz=253						
N39A	Derby Farms, D	98.39	50	Pdiff	Pdif	14 19 48.5	-0.1
	baz=254						
H36A	Jessenland, He	98.41	46	Pdiff	P	14 19 48.9	+0.3
	baz=254						
L38A	Oak Wood Farm,	98.41	49	Pdiff	Pdif	14 19 47.8	-0.7
	baz=254						
VCA	Vinchina	98.46	124	eP	P	14 19 51.1	+1.6
ACHE	Chepes	98.61	126	eP	P	14 19 50.3	+0.2
I37A	Lemond, Waseca	98.61	47	Pdiff	P	14 19 49.9	+0.4
	baz=254						
C34A	RKJ Ranch, Bem	98.62	43	Pdiff	Pdif	14 19 49.0	-0.4
	baz=253						
246A	Jackson Lee, B	98.64	59	Pdiff	P	14 19 50.5	+0.6
	baz=255						
E35A	Pequot Lakes	98.64	44	Pdiff	Pdif	14 19 49.3	-0.2
	baz=254						
O40A	La Belle	98.65	51	Pdiff	P	14 19 49.9	+0.1
	baz=254						
A33A	Warroad	98.68	41	Pdiff	Pdif	14 19 49.5	-0.1
	baz=253						
G36A	St. Michael	98.71	45	Pdiff	Pdif	14 19 49.6	-0.2
	baz=254						
TRQA	Tornquist	98.74	134	ePdif	P	14 19 52.6	+2.2
TRQA				ePP	PP	14 23 58.7	-1.4
ULM	Lac du Bonnet	98.76	40	P	Pdif	14 19 49.8	-0.2
	comp=Z,4.0nm,0.6s,baz=282,slow=5.7,SNR=13						
ULM				S	SKSac	14 29 35.0	-0.1
	comp=Z,1.3nm,0.8s,baz=9.1,slow=22,SNR=6.6						
ULM	Lac du Bonnet	98.76	40	ePdif	Pdif	14 19 49.6	-0.3
ULM				ePP	PP	14 23 55.5	-5.0
ULM				S	SKSac	14 29 35.0	-0.1
LSA	Lhasa	98.79	298	P	P	14 19 52.0	+0.7
LSA	Lhasa	98.79	298	eP	P	14 19 51.9	+0.7
LSA				e		14 24 02.9	
LSA	Lhasa	98.79	298	ePdif	P	14 19 51.9	+0.7
LSA				ePP	PP	14 24 02.9	+1.0
LSA				ePKKPbc	PKKPbc	14 36 18.0	+1.3
D35A	Remer	99.02	44	Pdiff	Pdif	14 19 50.1	-1.0
	baz=254						
B34A	Aery, Baudette	99.02	42	Pdiff	Pdif	14 19 51.7	+0.5
	baz=254						
F36A	Milaca	99.04	45	Pdiff	Pdif	14 19 51.4	+0.1
	baz=254						
OXF	Oxford	99.06	57	eP	Pdif	14 19 55.1	+3.4
OXF	Oxford	99.06	57	ePdif	Pdif	14 19 50.4	-1.2
J38A	Wedel Dairy, R	99.07	48	Pdiff	Pdif	14 19 51.3	-0.2
	baz=254						
H37A	Dierke Farm, C	99.10	46	Pdiff	Pdif	14 19 52.1	+0.5
	baz=254						
ACLC	CERRO LA CRUZ	99.16	125	eP	Pdif	14 19 53.0	+0.5
C35A	Jirik Farms, M	99.24	43	Pdiff	Pdif	14 19 52.0	-0.2
	baz=254						
SPMN	Marine on St.	99.35	46	Pdiff	Pdif	14 19 52.8	+0.1
	baz=254						
I38A	Scanlan Farm,	99.36	47	Pdiff	Pdif	14 19 53.1	+0.3
	baz=255						
E36A	McGregor	99.39	44	Pdiff	Pdif	14 19 52.8	-0.1
	baz=254						
B35A	Bob, Littlefor	99.58	42	Pdiff	Pdif	14 19 53.8	+0.1
	baz=254						
D36A	Goodland	99.63	44	Pdiff	Pdif	14 19 53.6	-0.3
	baz=255						
OTAV	Otavalo	99.68	93	ePdif	Pdif	14 19 56.4	+0.9
	comp=Z,5.7nm,0.9s						
E37A	Wrenshall	99.98	44	Pdiff	Pdif	14 19 55.1	-0.3
	baz=255						
C36A	Pine Crest Far	100.00	43	Pdiff	Pdif	14 19 55.6	+0.1
	baz=255						
SIUC	Southern Illin	100.03	54	ePdif	Pdif	14 19 57.7	+1.9
SIUC				ePP	PP	14 24 06.3	-4.0
D37A	Cotton	100.11	44	Pdiff	Pdif	14 19 56.0	-0.1
	baz=255						
C37A	Embarrass	100.42	43	Pdiff	Pdif	14 19 57.8	+0.4
	baz=255						
JFWS	Jewell Farm	100.55	48	eP	Pdif	14 19 59.5	+1.4
JFWS	Jewell Farm	100.55	48	ePdif	Pdif	14 19 58.8	+0.8
JFWS				ePP	PP	14 24 10.6	-3.5
PB01	IPOC Station P	100.57	116	ePdif	Pdif	14 19 59.9	+1.1
PB01				ePP	PP	14 24 10.0	-4.4
PB01				ePKKPbc	PKKPbc	14 36 01.1	-10
LRAL	Lakeview Retre	100.64	59	ePP	PP	14 24 13.9	-1.1
HDIL	Hopedale	100.67	51	Pdiff	Pdif	14 19 58.4	-0.3
	baz=256						
EYMN	Ely	100.92	43	Pdiff	Pdif	14 20 00.0	+0.4
	baz=256						
C38A	Sawbill Land.	101.01	43	Pdiff	Pdif	14 20 00.2	+0.1
	baz=256						
TAPN	Taplejung	101.13	295	eP	Pdif	14 20 01.6	+0.2
	comp=Z,47nm,1.0s						
ODAN	Odare	101.28	295	eP	Pdif	14 20 02.3	+0.3
	comp=Z,80nm,0.9s						
C39A	Grand Marais	101.78	43	Pdiff	Pdif	14 20 04.1	+0.7
	baz=257						
BOK	Bokaro	101.86	291	eP	Pdif	14 20 04.9	+0.6
RAMN	Ramite	101.99	295	eP	Pdif	14 20 05.2	0.0
SWET	Sewanee	102.01	57	ePdif	Pdif	14 20 05.8	+1.0
SWET				ePP	PKiKP	14 24 22.1	-2.0
FCC	Fort Churchill	102.03	32	eP	Pdif	14 20 06.0	+1.7
FCC	Fort Churchill	102.03	32	ePdif	Pdif	14 20 06.0	+1.7
FCC				ePP	PKiKP	14 24 15.5	-7.7
COWI	Conover	102.06	45	ePdif	Pdif	14 20 05.3	+0.5
	comp=Z,24nm,0.9s						
CHLP	Challavanipeta	102.21	286	ePdif	Pdif	14 20 06.4	+0.4
CHLP				epPdif	pPdif	14 22 08.6	+1.6
CHLP				ePKiKP	PKiKP	14 24 20.7	-4.1
CHLP				ePP	PP	14 24 25.6	-1.3
CHLP				eSKSac	SKSac	14 29 52.6	-0.3
CHLP				eSdif	Sdif	14 31 04.7	+2.5

SFIN Lafayette 102.26 51 Pdiff **Pdif** 14 20 06.3 +0.6
baz=257
PALK Pallekele 102.39 274 P **Pdif** 14 20 07.2 +0.2
comp=Z,12nm,0.9s,baz=116,slow=4.1,SNR=4.4
PALK Pallekele 102.39 274 *e*P **Pdif** 14 20 08.7 +1.7
PALK Pallekele 102.39 274 *e*Pdif **Pdif** 14 20 08.7 +1.7
PALK *e*PP **PKiKP** 14 24 23.7 -1.6
WCI Wyandotte Cave 102.39 54 *e*PKiKP **PKiKP** 14 24 25.1 +0.5
VIS Vishakhapatnam 102.69 285 *e*P **Pdif** 14 20 08.6 +0.4
GUN Gumba 102.84 295 *e*P **Pdif** 14 20 09.5 +0.4
comp=Z,58nm,1.0s
KKN Kakani 103.33 295 *e*P **Pdif** 14 20 11.3 +0.2
comp=Z,26nm,0.8s
DMN Daman 103.44 295 *e*P **Pdif** 14 20 12.1 +0.5
comp=Z,74nm,1.0s
LPAZ La Paz 103.62 112 Pdiff **Pdif** 14 20 15.1 +2.0
comp=Z,20nm,0.8s,baz=253,slow=2.3,SNR=32
LPAZ PKKPbc **PKKPbc** 14 36 03.2 +0.3
comp=Z,9.4nm,0.8s,baz=46,slow=3.7,SNR=15
LPAZ La Paz 103.62 112 *e*P **Pdif** 14 20 14.5 +1.3
LPAZ La Paz 103.62 112 *e*Pdif **Pdif** 14 20 14.5 +1.3
LPAZ *e*PKKPbc **PKKPbc** 14 36 03.2 +0.3
TKL Tuckaleechee C 103.82 57 *e*P **Pdif** 14 20 12.0 -0.8
TKL *e* 14 24 36.2
TKL Tuckaleechee C 103.82 57 *e*Pdif **Pdif** 14 20 12.0 -0.8
TKL *e*PP **PP** 14 24 36.2 -2.3
GKN Gorkha 103.93 295 *e*P **Pdif** 14 20 13.5 -0.2
comp=Z,55nm,0.9s
PVM Polavaram 104.15 284 *e*Pdif **Pdif** 14 20 14.2 -0.4
PVM *e*pPdif **pPdif** 14 22 17.0 +1.4
PVM *e*PKiKP **PKiKP** 14 24 29.1 +0.8
PVM *e*PP **PP** 14 24 39.9 -1.3
PVM *e*SKSac **SKSac** 14 29 59.8 -2.0
PVM *e*SKSdf **SKKSac** 14 30 46.3 -2.1
PVM *e*Sdif **Sdif** 14 31 19.9 +1.5
MDRS Chennai 104.38 279 *e*P **Pdif** 14 20 16.0 +0.3
KOLN Koldanda 104.77 295 *e*P **Pdif** 14 20 17.1 -0.4
comp=Z,43nm,0.9s
SKHT Srikalahasti 105.06 280 *e*Pdif **Pdif** 14 20 19.4 +0.6
SKHT *e*pPdif **pPdif** 14 22 20.6 +0.9
SKHT *e*sPdif **sPdif** 14 23 16.2 +1.8
SKHT *e*PKiKP **PKiKP** 14 24 28.9 -1.1
SKHT *e*PP **PP** 14 24 47.8 -0.1
SKHT *e*SKSac **SKSac** 14 30 04.5 -1.5
SKHT *e* 14 30 55.1
RES Resolute Bay 105.17 16 PKiKP **PKiKP** 14 24 28.8 +0.2
comp=Z,3.3nm,0.8s,baz=218,slow=4.2,SNR=5.7
ACSO Alum Creek Sta 105.31 52 *e*PP PP 14 24 47.0 -2.2
ADKI Addanki 105.34 282 *e*Pdif **Pdif** 14 20 20.4 +0.4
ADKI *e*pPdif **pPdif** 14 22 22.2 +1.3
ADKI *e*PKiKP **PKiKP** 14 24 30.0 -0.6
ADKI *e*PP **PP** 14 24 48.0 -1.9
ADKI *e*SKSac **SKSac** 14 30 05.5 -1.7
ADKI *e*SKSdf **SKKSac** 14 30 54.1 -2.8
ADKI *e* 14 32 55.5
ADKI *e*SKKPbc **SKKPbc** 14 38 42.5 -4.5
PYUN Piuthan 105.37 295 *e*P **Pdif** 14 20 19.5 -0.7
comp=Z,54nm,0.8s
DGAR Diego Garcia 105.64 257 *e*PP PP 14 24 46.8 -5.1
KMSC Kings Mountain 105.68 58 PKiKP **PKiKP** 14 24 30.5 -0.2
baz=259
NJS Nagarjunasagar 106.13 283 *e*Pdif **Pdif** 14 20 23.6 +0.1
NJS *e*pPdif **pPdif** 14 22 25.1 +0.7
NJS *e*PKiKP **PKiKP** 14 24 30.8 -1.2
NJS *e*PP **PP** 14 24 54.6 -1.1
NJS *e*SKSac **SKSac** 14 30 06.5 -4.2
NJS *e* 14 30 59.2
RCLA Racherla 106.19 281 *e*Pdif **Pdif** 14 20 23.9 +0.1
RCLA *e*pPdif **pPdif** 14 22 27.8 +3.1
RCLA *e*sPdif **sPdif** 14 23 19.1 -0.3
RCLA *e*PKiKP **PKiKP** 14 24 31.2 -1.0
RCLA *e*PP **PP** 14 24 52.9 -3.2
RCLA *e*SKSac **SKSac** 14 30 08.6 -2.4
RCLA *e* 14 30 59.1
TRD Trivandrum 106.29 274 *e*P **Pdif** 14 20 23.8 -0.4
SRLM Srisailam 106.41 282 *e*Pdif **Pdif** 14 20 25.0 +0.2
SRLM *e*pPdif **pPdif** 14 22 26.5 +0.8
SRLM *e*sPdif **sPdif** 14 23 21.4 +1.0
SRLM *e*PKiKP **PKiKP** 14 24 32.8 +0.2
SRLM *e*PP **PP** 14 24 54.4 -3.3
SRLM *e*SKSac **SKSac** 14 30 09.2 -2.8
SRLM *e* 14 31 00.8
RPR Rampur 106.68 285 *e*Pdif **Pdif** 14 20 25.6 -0.3
RPR *e*pPdif **pPdif** 14 22 27.7 +0.9
RPR *e*sPdif **sPdif** 14 23 22.8 +1.3
RPR *e*PKiKP **PKiKP** 14 24 31.9 -1.0
RPR *e*PP **PP** 14 24 58.9 -0.7
RPR *e*SKSac **SKSac** 14 30 11.4 -1.7
RPR *e* 14 31 00.3
RPR *e*Sdif **Sdif** 14 31 35.2 -4.3
HYB Hyderabad 107.03 283 *i* Pdiff **Pdif** 14 20 30.0 +2.5
HYB *e*pPdiff **pPdif** 14 22 28.0 -0.5
HYB *e*sPdidd 14 23 28.0
HYB *e* 14 24 32.0
HYB *e* 14 24 51.5
HYB *e*PP **PP** 14 24 59.0 -3.2
HYB *e*SKP 14 27 18.0
HYB *e*SKS **SKSac** 14 30 14.0 -0.7
HYB *e*SKKS **SKKSac** 14 31 04.0 -4.8
HYB *e*PKKPab **PKKPbc** 14 35 53.0 +1.1
HYB *e*PKKPdf **PKKPab** 14 36 10.0 +1.1
HYB Hyderabad 107.03 283 *e*P **Pdif** 14 20 27.1 -0.4
HYBB Hyderabad (bro 107.03 283 *e*Pdif **Pdif** 14 20 27.1 -0.5
HYBB *e*pPdif **pPdif** 14 22 29.1 +0.6
HYBB *e*PKiKP **PKiKP** 14 24 31.8 -1.9
HYBB *e*PP **PP** 14 24 59.8 -2.4
HYBB *e*SKSac **SKSac** 14 30 14.0 -0.7
HYBB *e* 14 31 04.6
ZSN Zaisan 107.48 315 *i* Pdif **Pdif** 14 20 28.6 -0.3
comp=Z,72nm,1.1s
ZSN *e*PKiKP **PKiKP** 14 24 33.0 -0.7
ZSN *i* PP **PP** 14 25 02.9 -1.9
ZSN *e*SKSac **SKSac** 14 30 14.8 -0.5
SRSP Sriramsagar 107.57 285 *e*Pdif **Pdif** 14 20 29.0 -0.4
SRSP *e*pPdif **pPdif** 14 22 30.9 +0.1
SRSP *e*sPdif **sPdif** 14 23 27.6 +2.1
SRSP *e*PKiKP **PKiKP** 14 24 32.3 -2.4
SRSP *e*PP **PP** 14 25 04.5 -1.6
SRSP *e*SKSac **SKSac** 14 30 14.6 -2.3
SRSP *e*SKSdf **SKSdf** 14 30 53.4 -1.8
SRSP *e* 14 31 06.9
SRSP *e*Sdif **Sdif** 14 31 47.0 0.0
URV Uravakonda 107.66 280 *e*Pdif **Pdif** 14 20 30.1 -0.2
URV *e*pPdif **pPdif** 14 22 34.1 +2.8
URV *e*sPdif **sPdif** 14 23 28.3 +2.4
URV *e*PKiKP **PKiKP** 14 24 33.8 -1.2
URV *e*PP **PP** 14 25 05.3 -1.4
URV *e*SKSac **SKSac** 14 30 15.3 -2.1
URV *e* 14 31 10.1
NRIK Noril'sk 107.71 338 Pdiff **Pdif** 14 20 29.3 0.0
comp=Z,8.4nm,0.9s,baz=97,slow=4.8,SNR=8.9
NRIK PKiKP **PKiKP** 14 24 33.8 +0.3
comp=Z,7.3nm,0.6s,baz=101,slow=3.6,SNR=6.8
ZAA0 Zalesovo Array 107.92 322 *e*Pdif **Pdif** 14 20 29.9 -0.7
ZAA0 *e*PKiKP **PKiKP** 14 24 33.3 -1.0
ZAA0 *e*PKiKP **PKiKP** 14 24 33.8 -0.5
ZAA0 *e*PP **PP** 14 25 02.4 -5.3
ZAA0 *e*PKKPbc **PKKPbc** 14 35 48.5 -1.6
ZALV Zalesovo Beam 107.92 322 Pdiff **Pdif** 14 20 29.6 -1.0
comp=Z,9.5nm,1.0s,baz=101,slow=4.7,SNR=34
ZALV PKiKP **PKiKP** 14 24 33.7 -0.6
comp=Z,16nm,0.7s,baz=170,slow=1.0,SNR=28
ZALV PP **PP** 14 25 07.4 -0.2
comp=Z,5.7nm,0.7s,baz=76,slow=6.3,SNR=5.3
ZALV PKKPbc **PKKPbc** 14 35 48.5 -1.6
comp=Z,3.2nm,0.4s,baz=262,slow=3.9,SNR=7.9
ZALV PKKP **PKKPab** 14 36 04.1 +0.2
comp=Z,4.2nm,0.8s,baz=277,slow=4.6,SNR=4.5
M54A Oil Creek Stat 108.00 51 PKiKP **PKiKP** 14 24 34.7 -0.2
baz=262
CPUP Villa Florida 108.11 126 PKiKP **PKiKP** 14 24 35.3 -0.2
comp=Z,3.3nm,0.8s,baz=255,slow=4.8,SNR=3.2
CPUP PKKPbc **PKKPbc** 14 35 48.9 -0.2
comp=Z,7.7nm,0.9s,baz=76,slow=3.8,SNR=5.2
CPUP PKKPab **PKKPab** 14 36 04.8 -1.0
comp=Z,8.5nm,0.9s,baz=53,slow=3.8,SNR=5.6
CPUP Villa Florida 108.11 126 PKiKP **PKiKP** 14 24 35.3 -0.2
CPUP *e*PP **PP** 14 25 07.8 -1.2
CPUP PKKPbc **PKKPbc** 14 35 48.9 -0.2
CPUP PKKPab **PKKPab** 14 36 04.8 -1.0
O56A Blue Knob Stat 108.66 53 PKiKP **PKiKP** 14 24 36.1 -0.1
baz=262

MK31 Makanchi Array 108.84 314 *e*P **Pdif** 14 20 34.1 -0.8
MK31 Makanchi Array 108.84 314 *e*Pdif **Pdif** 14 20 34.1 -0.8
MK31 *e*PKiKP **PKiKP** 14 24 35.4 -0.9
MK31 *e*PKKPbc **PKKPbc** 14 35 46.7 -0.3
MKAR Makanchi Array 108.84 314 Pdiff **Pdif** 14 20 34.4 -0.5
comp=Z,11nm,1.0s,baz=95,slow=7.4,SNR=33
MKAR PKiKP **PKiKP** 14 24 35.8 -0.5
comp=Z,22nm,0.7s,baz=165,slow=0.7,SNR=43
MKAR PP **PP** 14 25 13.9 -0.6
comp=Z,13nm,0.9s,baz=94,slow=9.0,SNR=6.1
MKAR PKKPbc **PKKPbc** 14 35 46.2 -0.8
comp=Z,12nm,0.8s,baz=270,slow=3.9,SNR=19
MKAR SKKPbc SKKPbc 14 38 37.4 -2.1
comp=Z,3.6nm,0.9s,baz=264,slow=3.5,SNR=5.3
MKAR Makanchi Array 108.84 314 *e*Pdif **Pdif** 14 20 34.3 -0.7
MKAR *e*PKiKP **PKiKP** 14 24 35.4 -0.9
MKAR PP **PP** 14 25 13.9 -0.6
MKAR *e*PKKPbc **PKKPbc** 14 35 46.7 -0.3
MKAR SKKPbc SKKPbc 14 38 37.4 -2.1
NVS Novosibirsk 108.92 323⇓ *i*P **Pdif** 14 20 35.7 +0.7
NVS pmax pmax
comp=Z,17nm,1.8s
NVS pmax pmax
comp=N,3.0nm,1.6s
NVS pmax pmax
comp=E,10.0nm,1.6s
KLRI Killari 109.00 283 *e*Pdif **Pdif** 14 20 36.1 -0.2
KLRI *e*pPdif **pPdif** 14 22 39.0 +1.9
KLRI *e*PKiKP **PKiKP** 14 24 35.2 -2.2
KLRI *e*PP **PP** 14 25 13.8 -2.6
KLRI *e*SKSac **SKSac** 14 30 20.8 -2.2
KLRI *e* 14 31 17.2
URVA University of 109.09 56 *e*PP PP 14 25 12.7 -3.8
SSPA Standing Stone 109.22 52 *e*PP PP 14 25 15.0 -2.3
BHPL Bhopal 109.32 289 *e*P **Pdif** 14 20 36.9 -0.7
MNGI Mangalore 109.46 278 *ex* **PP** 14 25 23.5 +3.8
SDV Santo Domingo 109.62 87 *e*Pdif **Pdif** 14 20 37.7 -1.6
SDV *e*PKiKP **PKiKP** 14 24 38.6 -0.3
SDV *e*PKKPab **PKKPdf** 14 35 58.5 -0.3
SIV San Ignacio 109.92 115 PKKPbc PKKPbc 14 35 43.2 +0.1
comp=E,13nm,0.8s,baz=89,slow=3.1,SNR=16
SIV PKKP **PKKPab** 14 35 57.0 -0.4
comp=E,11nm,0.9s,baz=97,slow=7.4,SNR=8.1
DDI Dehra Dun 110.02 296 *e*P **Pdif** 14 20 40.9 +0.3
DDI IAMs_20 IAMs_20 14 53 59.7
comp=Z,2μm,24.7s
SEM Semipalatinsk 110.47 318 *e*PPP PPP 14 27 49.9
SEM *e*SKSac **SKSac** 14 30 26.7 -0.8
NDI New Delhi 110.48 295 *e*P **PKiKP** 14 24 38.0 -1.9
NDI *e*P **PKiKP** 14 24 39.0 -0.9
UZB Uzynbulak 110.81 310 *e*Pdif **Pdif** 14 20 44.7 +0.8
comp=Z,98nm,2.1s
UZB *e*PKiKP **PKiKP** 14 24 39.3 -1.0
UZB *e*PP **PP** 14 25 27.8 -1.0
SMLA Simla 110.89 297 *e*P **PKiKP** 14 24 39.4 -1.1
SAML Samuel 110.92 107 *e*PP PP 14 25 20.3 -9.3
SAML *e*PKKPbc **PKKPbc** 14 35 40.8 +1.0
SAML *e*PKKPab **PKKPab** 14 35 53.3 +0.6
GOA Goa 111.01 280 *e*P **PKiKP** 14 24 38.8 -2.4
KURK Kurchatov 111.52 318 *e*P **Pdif** 14 20 46.3 -0.4
KURK *i* 14 24 40.3
KURK Kurchatov 111.52 318 *e*Pdif **Pdif** 14 20 46.2 -0.4
KURK *e*PKiKP **PKiKP** 14 24 40.3 -0.9
KURK SKP 14 27 26.0
KURK *e*PKKPbc **PKKPbc** 14 35 35.9 -2.6
KURK Kurchatov 111.52 318 P **PKiKP** 14 24 40.5 -0.6
SNR=6.6
KURBB Kurchatov Arra 111.58 318 Pdiff **Pdif** 14 20 46.6 -0.3
comp=Z,1.5nm,1.0s,baz=98,slow=3.4,SNR=12
KURBB PKiKP **PKiKP** 14 24 40.6 -0.7
comp=Z,32nm,0.7s,baz=94,slow=1.7,SNR=89
KURBB SKP 14 27 26.0
comp=Z,9.8nm,0.9s,baz=93,slow=2.1,SNR=4.4
POO Poona 111.64 283⇑ *i*P **PKiKP** 14 24 40.0 -2.4
comp=Z,9.0nm,1.0s
POO *e*P **PKiKP** 14 24 41.5 -1.0
DHRM DHARAMSHALA 111.78 298 *e*P **PKiKP** 14 24 41.6 -1.0
MDOK Medeo 112.25 310⇑ *i*PKiKP **PKiKP** 14 24 42.1 -0.9
comp=Z,188nm,1.0s
MDOK *i* PP **PP** 14 25 37.4 -1.6
KSH Kashi 112.81 306 PKP **PKiKP** 14 24 45.1 +0.9
KSH *e*PP **PP** 14 25 47.0 +4.1
KSH *e*sPKP 14 27 47.0
KSH PKS **PKSdf** 14 28 18.4 -2.5
KSH SKS **SKSdf** 14 31 04.9 +0.2
KSH AMB AMB
comp=Z,2μm,7.4s
KUU Kurty 112.81 311⇑ *i*PKiKP **PKiKP** 14 24 43.2 -0.7
comp=Z,289nm,1.0s
KUU *e*PP **PP** 14 25 41.5 -1.1
comp=Z,940nm,1.9s
KUU *e*PPP PPP 14 28 09.3
KUU *i* SKSac **SKSac** 14 30 39.1 +1.8
TKM2 Tokmak 2 113.30 310 *e*PKiKP **PKiKP** 14 24 44.7 -0.4
LBNH Lisbon 113.89 49 *e*PP PP 14 25 49.1 -1.1
AAK Ala-Archa 114.10 309 PKiKP PKPdf 14 24 46.4 -0.2
comp=Z,19nm,0.8s,baz=158,slow=2.5,SNR=28
AAK SKP 14 27 31.8
comp=Z,21nm,1.0s,baz=157,slow=4.2,SNR=5.5
AAK PKKPbc **PKKPbc** 14 35 28.2 -1.8
comp=Z,13nm,1.0s,baz=245,slow=4.9,SNR=11
AAK PKKPab **PKKPab** 14 35 38.6 +1.6
comp=Z,41nm,0.7s,baz=194,slow=0.5,SNR=37
AAK SKKPbc SKKPbc 14 38 22.4 -1.5
comp=Z,15nm,1.1s,baz=210,slow=3.2,SNR=5.2
AAK Ala-Archa 114.10 309 *e*PKiKP PKPdf 14 24 46.3 -0.3
AAK SKP 14 27 31.8
AAK *e*PKKPbc **PKKPbc** 14 35 28.9 -1.1
AAK PKKPab **PKKPab** 14 35 38.6 +1.6
AAK SKKPbc SKKPbc 14 38 22.4 -1.5
EKS2 Erkin-Say 114.63 309 *e*PKiKP PKPdf 14 24 47.5 -0.1
EKS2 Erkin-Say 114.63 309 *e*PKPdf PKPdf 14 24 47.5 -0.1
EKS2 *e*PKKPbc **PKKPbc** 14 35 27.5 -0.7
SFK Sufi-Kurgan 114.74 306 PKiKP PKPdf 14 24 47.7 -0.3
SFK pmax pmax
comp=Z,52nm,0.7s
KULLO Kullorsuaq 114.98 15 *i* P PKPdf 14 24 46.8 -0.3
KULLO Kullorsuaq 114.98 15 *i* PKiKP PKPdf 14 24 46.8 -0.3
MNAS Manas 115.57 309 PKiKP **PKPdf** 14 24 48.9 -0.5
MNAS pmax pmax
comp=Z,59nm,0.8s
OTUK Ortayu 115.63 316 PKiKP **PKPdf** 14 24 48.6 -0.6
OTUK pmax pmax
comp=Z,45nm,0.8s
SJG San Juan 116.00 78 *e*PKiKP **PKPdf** 14 24 49.9 -0.8
SJG San Juan 116.00 78 *e*PKPdf **PKPdf** 14 24 49.9 -0.8
VOSK Vostochnaya 116.21 321 *e*PKiKP **PKPdf** 14 24 49.3 -0.8
VOSK Vostochnaya 116.21 321 *e*PKPdf **PKPdf** 14 24 49.3 -0.8
VOSK *e*PKKPbc **PKKPbc** 14 35 22.2 -0.7
HUMP Col San Antoni 116.28 78 *e*PKPdf **PKPdf** 14 24 50.5 -0.8
CHKZ Chkalovo 116.33 322 PKiKP **PKPdf** 14 24 49.2 -1.1
CHKZ pmax pmax
comp=Z,38nm,0.7s
BHJ Bhuj 116.36 288 *ex* **PKPdf** 14 24 45.6 -5.7
BVA0 Borovoye Array 116.54 321 *i* PKiKP **PKPdf** 14 24 49.9 -0.9
BVA0 pmax pmax
comp=Z,62nm,0.9s
BVAR Borovoye Array 116.54 321 PKP **PKPdf** 14 24 50.4 -0.3
comp=Z,30nm,0.4s,baz=111,slow=2.8,SNR=118
BVAR PP **PP** 14 26 10.3 +2.2
comp=Z,32nm,0.9s,baz=96,slow=6.6,SNR=4.6
BVAR PKKPbc **PKKPbc** 14 35 20.8 -1.0
comp=Z,5.2nm,0.9s,baz=231,slow=2.3,SNR=8.5
BRVK Borovoye 116.60 321 *e*PKiKP **PKPdf** 14 24 50.3 -0.5
BRVK Borovoye 116.60 321 *e*PKPdf **PKPdf** 14 24 50.3 -0.5
BRVK *e*PKKPbc **PKKPbc** 14 35 19.2 -2.4
BRVK Borovoye 116.60 321 P **PKPdf** 14 24 50.6 -0.3
SNR=13
SCHQ Schefferville 116.69 37 PP PP 14 26 06.7 -2.5
comp=Z,19nm,1.0s,baz=299,slow=7.9,SNR=5.3
SCHQ Schefferville 116.69 37 *e*PP PP 14 26 07.2 -1.9
PTGA Pitinga 116.89 100 PKP **PKPdf** 14 24 52.4 -0.2
comp=Z,12nm,0.7s,baz=226,slow=1.3,SNR=14
PTGA SKP 14 27 38.5
comp=Z,16nm,0.9s,baz=172,slow=2.6,SNR=5.1
PTGA PKKPbc **PKKPbc** 14 35 19.9 +0.1
comp=Z,24nm,0.9s,baz=88,slow=4.1,SNR=22
PTGA SKKPbc SKKPbc 14 38 14.3 +1.6
comp=Z,7.8nm,0.9s,baz=117,slow=6.6,SNR=4.2
PTGA Pitinga 116.89 100 *e*PKPdf **PKPdf** 14 24 52.0 -0.6
PTGA *e*PP **PP** 14 26 10.4 -1.0
PTGA SKP 14 27 38.5
PTGA *e*PKKPbc **PKKPbc** 14 35 21.2 +1.5
PTGA SKKPbc SKKPbc 14 38 14.3 +1.6

KK31 Karatay Array 117.03 310 *i* PKiKP **PKPdf** 14 24 51.1 -1.0
KK31 pmax pmax
comp=Z,38nm,0.9s
KKAR Karatay Array 117.03 310 *e*PKiKP **PKPdf** 14 24 51.5 -0.6
KKAR Karatay Array 117.03 310 *e*PKPdf **PKPdf** 14 24 51.5 -0.6
KKAR *e*PKKPbc **PKKPbc** 14 35 18.1 -1.7
IUG luzhnay 117.40 309 *i* PKiKP **PKPdf** 14 24 52.9 0.0
comp=Z,827nm,0.9s
IUG *i* PP **PP** 14 26 12.7 -1.9
IUG *e*SKSac **SKSac** 14 30 51.3 -3.6
KBL Kabul 118.03 300 *e*PKiKP **PKPdf** 14 24 54.5 0.0
KBL Kabul 118.03 300 *e*PKPdf **PKPdf** 14 24 54.5 0.0
KBL *e*SP SP 14 35 21.6 +11
KBS Kingsbay 118.44 358 *e*PKPdf **PKPdf** 14 24 54.2 +0.5
KBS *e*PP **PP** 14 26 20.0 -0.2
SPA0 Spitsbergen Ar 118.96 357 *e*PKPdf **PKPdf** 14 24 54.9 +0.1
SPA0 *e*SS SS 14 42 04.0 +2.5
SPA0 Spitsbergen Ar 118.96 357 *e*PKPdf **PKPdf** 14 24 54.6 -0.2
SPITS Spitsbergen Ar 118.96 357 PKP **PKPdf** 14 24 54.4 -0.4
comp=Z,54nm,0.8s,baz=52,slow=5.4,SNR=65
SPITS PP **PP** 14 26 21.8 -2.0
comp=Z,43nm,1.1s,baz=84,slow=8.5,SNR=4.2
SPITS Spitsbergen Ar 118.96 357 PKIKP **PKPdf** 14 24 54.4 -0.4
SPITS 14 26 21.8
SPITS pmax pmax
comp=Z,19nm,0.5s
SPITS pmax pmax
comp=Z,43nm,1.1s
ILULI Ilulissat 119.19 19 *i* P **PKPdf** 14 24 55.0 -0.4
comp=Z,28nm,0.5s
ILULI Ilulissat 119.19 19 *i* PKIKP **PKPdf** 14 24 55.0 -0.4
ILULI pmax pmax
comp=Z,28nm,0.5s
HOPEN Hopen 119.83 354 *e*PKPdf **PKPdf** 14 24 56.6 +0.2
HOPEN *e*SS SS 14 42 15.1 +2.6
DAG Danmarks Havn 119.92 5 *i* P **PKPdf** 14 24 55.0 -1.6
comp=Z,18nm,0.8s
DAG Danmarks Havn 119.92 5 *i* PKIKP **PKPdf** 14 24 55.0 -1.6
DAG pmax pmax
comp=Z,13nm,0.8s
FDF Fort de France 120.03 83 *e*PKIKP **PKPdf** 14 24 57.6 -1.0
FDF Fort de France 120.03 83 *e*PKPdf **PKPdf** 14 24 57.6 -1.0
HSPB Hornsund (broa 120.15 356 *e*PKPdf **PKPdf** 14 24 54.4 -2.6
HSPB *e*SS SS 14 42 18.8 +2.4
SFJD Kangerlussuaq 120.45 21 PKP **PKPdf** 14 24 57.7 -0.2
comp=Z,13nm,0.4s,baz=290,slow=0.5,SNR=22
SFJD Kangerlussuaq 120.45 21 *i* P **PKPdf** 14 24 57.4 -0.4
SFJD Kangerlussuaq 120.45 21 *e*PKIKP **PKPdf** 14 24 57.3 -0.5
SFJD *e* 14 26 33.1
SFJD Kangerlussuaq 120.45 21 *e*PKPdf **PKPdf** 14 24 57.2 -0.5
SFJD *e*PP **PP** 14 26 33.1 -1.0
SUMG Summit 120.47 13 *i* P **PKPdf** 14 24 58.6 +0.3
comp=Z,28nm,1.1s
SUMG Summit 120.47 13 *e*PKIKP **PKPdf** 14 24 58.5 +0.3
SUMG Summit 120.47 13 *e*PKPdf **PKPdf** 14 24 58.5 +0.3
SUMG *e*PP **PP** 14 26 28.5 -6.0
SUMG *e*PKKPbc **PKKPbc** 14 35 09.1 +0.4
BDFB Brasilia 121.09 121 PKP **PKPdf** 14 25 00.4 -0.4
comp=Z,13nm,0.8s,baz=262,slow=2.2,SNR=19
BDFB PKKPbc **PKKPbc** 14 35 06.5 +1.2
comp=Z,30nm,0.8s,baz=88,slow=3.4,SNR=28
BDFB Brasilia 121.09 121 *e*PKPdf **PKPdf** 14 24 59.9 -0.9
BDFB *e*PKKPbc **PKKPbc** 14 35 06.5 +1.2
SVE Sverdlovsk 121.32 326*c* *i*PKIKP **PKPdf** 14 24 59.7 -0.1
SVE pmax pmax
comp=Z,94nm,0.8s
ABPO Ambohimpanom 122.15 233 *e*PKIKP **PKPdf** 14 25 02.3 -0.5
ABPO Ambohimpanom 122.15 233 *e*PKPdf **PKPdf** 14 25 02.3 -0.5
ABPO *e*PKKPbc **PKKPbc** 14 35 02.6 +1.0
OPO Ambohidratompo 122.44 234 SKP 14 27 49.6
comp=Z,13nm,0.9s,baz=95,slow=3.4,SNR=5.2
OPO PKKPbc PKKPbc 14 35 01.5 +1.0
comp=Z,5.1nm,0.9s,baz=294,slow=6.6,SNR=5.0
ARU Arti 122.53 326 PKP **PKPdf** 14 25 01.9 -0.2
comp=Z,83nm,0.7s,baz=92,slow=0.7,SNR=108
ARU SKP 14 27 47.9
comp=Z,37nm,1.1s,baz=82,slow=4.0,SNR=5.2
ARU PKKPbc **PKKPab** 14 34 59.4 0.0
comp=Z,13nm,0.6s,baz=270,slow=3.2,SNR=14
ARU Arti 122.53 326 *i* PKIKP **PKPdf** 14 25 01.8 -0.4
ARU PPP PPP 14 29 26.5
ARU 14 31 12.5
ARU PS PKKPdf 14 35 49.2 +14
ARU Arti 122.53 326 *e*PKPdf **PKPdf** 14 25 01.1 -1.0
ARU SKP 14 27 47.9
ARU *e*PKKPbc **PKKPab** 14 34 58.0 -1.3
AB31 Akbulak array 123.63 318 PKIKP **PKPdf** 14 25 03.8 -0.7
AB31 pmax pmax
comp=Z,54nm,1.0s
ABKAR Akbulak array 123.63 318 *e*PKPdf **PKPdf** 14 25 03.9 -0.6
AKTO Aktyubinsk 124.56 320 PKP **PKPdf** 14 25 06.1 -0.2
comp=Z,61nm,0.8s,baz=68,slow=2.2,SNR=89
AKTO PKKPbc **PKKPbc** 14 34 51.8 -0.6
comp=Z,8.8nm,0.8s,baz=219,slow=2.6,SNR=8.0
SCO Scoresbysund 125.26 9 *i* P **PKPdf** 14 25 07.5 +0.5
comp=Z,35nm,0.9s
SCO Scoresbysund 125.26 9 *i* PKIKP **PKPdf** 14 25 07.5 +0.5
SCO pmax pmax
comp=Z,35nm,0.9s
HAMF Hammerfest 125.30 351 *e*PKPdf **PKPdf** 14 25 06.1 -1.0
HAMF *e*SS SS 14 43 23.6 +2.7
NRS Narsarsuaq 125.38 26 *i* P **PKPdf** 14 25 07.3 -0.1
comp=Z,48nm,0.9s
NRS Narsarsuaq 125.38 26 *i* PKIKP **PKPdf** 14 25 07.3 -0.1
NRS pmax pmax
comp=Z,48nm,0.9s
LVZ Lovozero 125.47 345*c* *i*PKIKP **PKPdf** 14 25 08.4 +0.9
LVZ pmax pmax
comp=Z,68nm,1.7s
LVZ Lovozero 125.47 345 *e*PKPdf **PKPdf** 14 25 07.2 -0.4
KEV Kevo 125.55 349 *e*PKIKP **PKPdf** 14 25 07.4 -0.1
KEV Kevo 125.55 349 *e*PKPdf **PKPdf** 14 25 07.4 -0.1
ARA0 ARCESS Array S 126.00 350 *e*PKPdf **PKPdf** 14 25 08.2 -0.2
ARCES ARCESS Array B 126.00 350 PKP **PKPdf** 14 25 08.6 +0.1
comp=Z,62nm,0.8s,baz=5.7,slow=1.2,SNR=46
ARCES PKKPbc **PKKPab** 14 34 44.6 +0.4
comp=Z,7.9nm,0.9s,baz=197,slow=2.0,SNR=7.0
ARCES ARCESS Array B 126.00 350 PKIKP **PKPdf** 14 25 08.6 +0.1
ARCES pmax pmax
comp=Z,61nm,0.8s
ARCES pmax pmax
comp=Z,8.0nm,0.9s
ARE0 ARCESS Array S 126.00 350 *e*PKPdf **PKPdf** 14 25 08.5 0.0
ARE0 *e*SS SS 14 43 31.1 +1.4
ARE0 ARCESS Array S 126.00 350 *e*PKPdf **PKPdf** 14 25 08.4 -0.1
WSAR Wadi Sarin 126.42 286 PKKPbc PKKPbc 14 34 45.0 +0.6
comp=Z,8.7nm,0.7s,baz=254,slow=2.4,SNR=10
POGA Pongola 126.58 214 *i* P PKPdf 14 25 21.3 +10
POGA 14 28 16.6
GEYT Alibeck 126.77 304 PKhKP PKPpre 14 24 56.7
comp=Z,20nm,0.8s,baz=263,slow=1.2,SNR=30
GEYT PKP **PKiKP** 14 25 11.2 -0.3
comp=Z,96nm,0.8s,baz=256,slow=1.2,SNR=60
GEYT PP **PP** 14 27 15.1 -2.0
comp=Z,37nm,1.0s,baz=58,slow=5.4,SNR=9.8
GEYT PKKPbc **PKKPbc** 14 34 43.3 +0.1
comp=Z,9.9nm,0.8s,baz=264,slow=5.8,SNR=13
GEYT SKKPbc SKKPbc 14 37 42.6 -0.1
comp=Z,4.5nm,1.1s,baz=232,slow=7.3,SNR=5.6
KTK1 Kautokeino 126.84 350 *e*PKPdf **PKPdf** 14 25 08.8 -1.3
TRO Tromso 126.88 352 *e*PKPdf **PKPdf** 14 25 09.5 -0.6
TRO *e*SS SS 14 43 43.2 +2.9
BIDO Bidbid 126.90 286 P **PKPdf** 14 25 11.5 0.0
SNR=5.3
SMDO Samad 126.93 286 P **PKPdf** 14 25 12.3 +0.5
SNR=14
SUR Sutherland 126.96 201 PKP **PKPdf** 14 25 12.6 +0.9
comp=Z,1.4nm,0.7s,baz=195,slow=2.9,SNR=9.0
SUR SKPbc SKPbc 14 27 40.1
comp=Z,1.5nm,0.7s,baz=161,slow=5.5,SNR=7.7
SUR Sutherland 126.96 201 *e*PKPdf **PKPdf** 14 25 12.2 +0.5
SUR SKPbc SKPbc 14 27 40.1
TMCR Tamitsa 127.29 341 *e*PKIKP **PKPdf** 14 25 10.9 -0.1
TMCR pmax pmax
comp=Z,37nm,0.9s
HOQ Hoqain 127.65 286 P **PKPdf** 14 25 12.9 -0.1
SNR=6.4
ARQ Araqi 128.36 286 P **PKPdf** 14 25 14.3 -0.1
SNR=9.7
BOSA Boshof 128.61 207 PKP **PKPdf** 14 25 15.7 +0.7
comp=Z,11nm,0.8s,baz=153,slow=1.7,SNR=13
BOSA SKPbc SKiKP 14 27 44.5 -15
comp=Z,12nm,0.6s,baz=155,slow=3.5,SNR=9.0
BOSA Boshof 128.61 207 *e*PKIKP **PKPdf** 14 25 15.8 +0.9

BOSA e 14 27 32.2
BOSA Boshof 128.61 207 *e*PKPdf **PKPdf** **14 25 15.8 +0.9**
BOSA *e*PP **PP** **14 27 32.2 +4.3**
BOSA SKPbc SKPbc 14 27 44.5
BANOM Banah 128.71 289 *i* P **PKPdf** **14 25 16.0 +1.0**
SNR=6.4
UOSS Minazif 128.75 288 *e*PKPpre PKPpre 14 25 05.1
UOSS *e*PKPdf **PKPdf** **14 25 14.1 -0.9**
HATD Hatta, Dubai 128.81 288 *i* P **PKPdf** **14 25 16.0 +0.8**
SNR=27
HATD Hatta, Dubai 128.81 288 P **PKPdf** **14 25 14.6 -0.5**
SNR=29
ASHO Ashiyiah 128.87 288 *i* P **PKPdf** **14 25 14.8 -0.5**
SNR=14
ASHO Ashiyiah 128.87 288 P **PKPdf** **14 25 14.7 -0.5**
SNR=24
STEI Steigen 128.93 353 *e*PKPdf **PKPdf** **14 25 14.1 0.0**
KLMR Klimovskoe 129.04 337 *e*PKIKP **PKPdf** **14 25 12.5 -1.9**
KLMR pmax pmax
comp=Z,71nm,1.0s
NAZ Nazwa, Dubai 129.25 288 *i* P **PKPdf** **14 25 16.4 +0.5**
SNR=13
NAZ Nazwa, Dubai 129.25 288 P **PKPdf** **14 25 15.4 -0.6**
SNR=15
FAQ Al Faqa, Dubai 129.29 288 *i* P **PKPdf** **14 25 16.4 +0.4**
SNR=8.7
FAQ Al Faqa, Dubai 129.29 288 P **PKPdf** **14 25 15.2 -0.8**
SNR=8.7
ASUD Al Ashush, Dub 129.53 288 *i* P **PKPdf** **14 25 16.9 +0.4**
SNR=21
ASUD Al Ashush, Dub 129.53 288 P **PKPdf** **14 25 16.5 0.0**
SNR=8.8
RBK Rabkut 129.86 278 P **PKPdf** **14 25 17.2 -0.1**
SNR=15
BORG Borgarnes 130.45 13 PKP **PKPdf** **14 25 18.1 +1.1**
comp=Z,9.7nm,0.8s
BORG SKPbc **SKPab** **14 27 52.2 +2.0**
comp=Z,16nm,0.6s,baz=314,slow=5.0,SNR=8.0
BORG Borgarnes 130.45 13 PKP **PKPdf** **14 25 18.1 +1.1**
BORG eSKPbc **SKPab** **14 27 52.6 +2.4**
KONS Konsvik 130.54 354 *e*PKPdf **PKPdf** **14 25 17.3 +0.2**
ABTO Aybut 130.69 278 P **PKPdf** **14 25 18.9 -0.1**
SNR=12
LBTB Lobatse 131.55 210 PKP **PKPdf** **14 25 20.4 -0.1**
comp=Z,12nm,0.8s,baz=136,slow=3.8,SNR=7.2
LBTB SKPbc **SKPab** **14 27 57.0 +0.7**
comp=Z,35nm,0.8s,baz=142,slow=4.0,SNR=15
LBTB Lobatse 131.55 210 *e*PKIKP **PKPdf** **14 25 20.8 +0.2**
LBTB 14 27 57.1
LBTB Lobatse 131.55 210 *e*PKPdf **PKPdf** **14 25 20.8 +0.2**
LBTB SKPbc **SKPab** **14 27 57.0 +0.7**
NSS Namsos 132.58 354 *e*PP PP 14 27 52.7 -0.1
NSS eSS SS 14 44 52.1 +2.8
FIA1 FINESS Array S 132.87 344 *e*PKPpre PKPpre 14 25 06.2
FIA1 *e*PKPpre PKPpre 14 25 11.2
FIA1 *e*PKPdf **PKPdf** **14 25 21.0 -0.7**
FIA1 *e*PP **PP** **14 27 53.0 -1.7**
FIA1 *e*PP PP 14 27 59.6 +4.9
FINES FINESS Array B 132.87 344 PKhKP PKPpre 14 25 05.9
comp=Z,1.9nm,0.4s,baz=42,slow=3.7,SNR=19
FINES PKP **PKPdf** **14 25 21.0 -0.7**
comp=Z,24nm,0.7s,baz=102,slow=3.4,SNR=19
FINES SKPbc **SKPab** **14 28 00.2 -0.4**
comp=Z,168nm,0.9s,baz=58,slow=4.7,SNR=36
FINES SKKPbc **SKKPbc** **14 37 21.3 -1.2**
comp=Z,5.0nm,0.8s,baz=224,slow=5.3,SNR=5.9
MOS Moscow 133.11 333 *e*PKIKP **PKPdf** **14 25 20.0 -2.3**
MOS *e* 14 27 56.0
MOS pmax pmax
comp=Z,104nm,1.0s
VRH Novokhopyorsk 133.76 326 *e*PKIKP **PKPdf** **14 25 23.5 -0.1**
VRH *e* 14 28 00.9
VRH pmax pmax
comp=Z,100nm,0.8s
VRH pmax pmax
comp=Z,670nm,1.3s
MATP Matopo 133.83 216 SKPbc **SKPab** **14 28 04.9 -1.5**
comp=Z,51nm,1.0s,baz=155,slow=3.5,SNR=8.9
OBN Obninsk 133.98 333 PKP **PKPdf** **14 25 24.6 +0.7**
comp=Z,34nm,0.4s,baz=136,slow=3.9,SNR=15
OBN Obninsk 133.98 333 *c i*PKIKP **PKPdf** **14 25 25.2 +1.3**
OBN *e* 14 27 27.4
OBN *i* 14 27 58.8
OBN *e* 14 28 21.2
OBN pmax pmax
comp=Z,94nm,1.0s
OBN Obninsk 133.98 333 *e*PKPdf **PKPdf** **14 25 24.3 +0.4**
OBN eSKPbc **SKPbc** **14 28 02.6 +0.5**
LPSR Galich'ya Gora 134.43 329 *e*PKIKP **PKPdf** **14 25 24.5 -0.3**
LPSR *e* 14 28 00.3
LPSR pmax pmax
comp=Z,60nm,0.9s
MOL Molde 134.88 356 *e*PP PP 14 28 07.0 -0.2
MOL eSS SS 14 45 10.3 -6.4
VSR Storozhevoye 135.10 327 *e*PKIKP **PKPdf** **14 25 26.0 -0.2**
VSR *e* 14 28 06.2
VSR eSS SS 14 45 18.2 -2.3
VSR pmax pmax
comp=Z,150nm,1.1s
VSR pmax pmax
comp=Z,1µm,1.7s
AKN Aaknes 135.31 356 *e* PKPdf 14 25 16.9 -9.4
AKN *e*PP **PP** **14 28 10.0 +0.1**
AKN eSS SS 14 45 23.6 +1.8
AKN eSS **SS** **14 45 24.2 +2.3**
DGRG David-gareji 135.63 312 P PKPpre 14 25 17.4
DGRG David-gareji 135.63 312 P **SKPdf** **14 28 10.3 -0.6**
DGRG David-gareji 135.63 312 P **SKKPbc** **14 37 12.7 +1.4**
DGRG David-gareji 135.63 312 PKHKP PKPpre 14 25 17.4
NC303 NORSAR Array S 135.87 353 *e*PKPpre PKPpre 14 25 13.0
NC303 *e*PKPpre PKPpre 14 25 16.8
NC303 *e*PKPdf **PKiKP** **14 25 28.9 -0.2**
NC204 NORSAR Array S 135.88 354 *e*PKPpre PKPpre 14 25 17.8
DUS Dusheti 135.89 313 P **SKPdf** **14 28 11.3 -0.1**
GUDG Gudauri 135.91 313 P **PKPdf** **14 25 29.8 +1.5**
GUDG Gudauri 135.91 313 P **SKPdf** **14 28 11.7 +0.1**
NC405 NORSAR Array S 135.93 353 *e*PKPpre PKPpre 14 25 16.8
NC405 eSKPdf **SKPdf** **14 28 10.4 -0.3**
TBLG Delisi 135.98 312 P **PKPdf** **14 25 30.0 +1.8**
TBLG Delisi 135.98 312 P **SKPdf** **14 28 12.2 +0.7**
TBLG Delisi 135.98 312 PKIKP **PKPdf** **14 25 30.0 +1.8**
FOO Floro 135.99 358 *e* 14 28 10.7
FOO *e*PP **PP** **14 28 11.6 -2.4**
FOO eSS SS 14 45 32.5 +2.7
NB201 NORSAR Array S 136.04 353 *e*PKPpre PKPpre 14 25 16.0
NB201 *e*PKPpre PKPpre 14 25 19.3
NB201 *e*PP **PP** **14 28 10.7 -3.8**
NB2 NORSAR Subarra136.06 353 PKP PKPpre 14 25 16.8
comp=Z,7.2nm,0.6s,baz=16,slow=3.2
NB2 NORSAR Subarra136.06 353 PKP PKPpre 14 25 16.8
baz=16,slow=3.2
NOA NORSAR Array B 136.06 353 PKhKP PKPpre 14 25 16.9
comp=Z,16nm,0.9s,baz=38,slow=2.2,SNR=26
NOA PKP **PKiKP** **14 25 28.7 -0.8**
comp=Z,16nm,0.8s,baz=14,slow=4.0,SNR=18
NOA SKPbc **SKPbc** **14 28 10.3 +1.8**
comp=Z,42nm,1.0s,baz=6.3,slow=4.0,SNR=22
NBO02 NORSAR Array S 136.09 353 *e*PKPpre PKPpre 14 25 16.4
NBO02 *e*PKPdf **PKPdf** **14 25 28.1 +0.4**
NBO00 NORSAR Array S 136.12 353 *e*PKPpre PKPpre 14 25 17.3
NBO00 *e*PKPdf **PKPdf** **14 25 28.1 +0.3**
NCK Nalchik 136.13 315 *e*PKIKP **PKPdf** **14 25 27.9 -0.5**
ZEI Tsey 136.19 314 *e*PKIKP **PKPdf** **14 25 27.8 -1.0**
ZEI pmax pmax
comp=Z,86nm,0.9s
NAO01 NORSAR Array S 136.29 353 *e*PKPpre PKPpre 14 25 14.3
NAO01 *e*PKPpre PKPpre 14 25 17.7
NC602 NORSAR Array S 136.32 353 *e* PKPpre 14 25 18.3
NC602 *e* 14 28 10.3
NC602 *e*PP **PP** **14 28 12.9 -3.2**
NC602 NORSAR Array S 136.32 353 *e*PKPpre PKPpre 14 25 16.6
HYA Hoyanger 136.36 357 *e*PP PP 14 28 12.2 -4.1
HYA eSS SS 14 45 35.8 +1.6
RCBR Riachuelo 136.37 119 PKhKP PKPpre 14 25 15.6
comp=Z,16nm,0.7s,baz=263,slow=2.1,SNR=14
RCBR SKPbc **SKPbc** **14 28 12.1 +1.1**
comp=Z,62nm,1.1s,baz=194,slow=3.1,SNR=17
RCBR Riachuelo 136.37 119 *e*PKPpre PKPpre 14 25 18.7
RCBR eSKPbc **SKPbc** **14 28 12.0 +1.1**
GNI Garni 136.50 310 PKP **PKPdf** **14 25 29.9 +0.5**
comp=Z,46nm,0.8s,baz=3.1,slow=8.9,SNR=16
GNI SKPbc **SKPbc** **14 28 12.0 +1.3**
comp=Z,202nm,1.2s,baz=144,slow=2.2,SNR=26
GNI Garni 136.50 310 *e*PKPpre PKPpre 14 25 17.9
GNI *e*PKPpre PKPpre 14 25 22.5
GNI *e*PKPdf **PKPdf** **14 25 29.3 0.0**
GNI *e*PP **PP** **14 28 13.2 -5.5**
KBZ Khabaz 136.51 316 PKhKP PKPpre 14 25 18.8
comp=Z,6.7nm,0.9s,baz=138,slow=3.2,SNR=6.1
KBZ PKP **PKiKP** **14 25 30.4 -0.5**
comp=Z,28nm,0.8s,baz=126,slow=1.1,SNR=22
KBZ SKPbc **SKPbc** **14 28 11.9 +1.6**
comp=Z,74nm,1.0s,baz=74,slow=2.6,SNR=29
KBZ SKKPbc **SKKPbc** **14 37 10.8 +2.8**
comp=Z,2.7nm,0.9s,baz=237,slow=8.5,SNR=5.7
SUE Sulen 136.54 358 *e*PP PP 14 28 14.3 -3.1
KVAR Kislovodsk Arr 136.55 316 PKP **PKPdf** **14 25 29.6 +0.3**
comp=Z,27nm,0.8s,baz=102,slow=2.1,SNR=11
KVAR SKPbc **SKPbc** **14 28 12.0 +1.4**
KIV Kislovodsk 136.56 316 *i* PKIKP **PKPdf** **14 25 29.3 +0.1**
KIV *e* 14 28 12.8
KIV *e* 14 31 47.2
KIV *e*SS SS 14 45 37.3 -1.3
KIV *e*SSS SSS 14 50 54.5
KIV pmax pmax
comp=Z,44nm,1.1s
KIV Kislovodsk 136.56 316 *e*PKPdf **PKPdf** **14 25 29.4 +0.2**
KIV *e*SKPbc **SKPbc** **14 28 09.6 -1.0**
KIV Kislovodsk 136.56 316 P **PKPdf** **14 25 29.5 +0.2**
SNR=5.2
HFS Hagfors 136.62 351 PKhKP PKPpre 14 25 15.9
comp=Z,9.4nm,0.7s,baz=56,slow=2.7,SNR=31
HFS PKP **PKiKP** **14 25 30.4 -0.2**
comp=Z,22nm,0.7s,baz=101,slow=1.5,SNR=12
NEY Neytrino 136.81 315 *e*PKHKP PKPpre 14 25 20.9
NEY *i* 14 25 29.9
AKH Akhalkalaki 136.97 312 P **PKPdf** **14 25 31.1 +0.9**
AKH Akhalkalaki 136.97 312 P **SKPdf** **14 28 11.4 +1.0**
AKH Akhalkalaki 136.97 312 *i* P PKPpre 14 25 21.4
AKH Akhalkalaki 136.97 312 *i* P **SKPdf** **14 28 14.5 +1.0**
AKH Akhalkalaki 136.97 312 PKIKP **PKPdf** **14 25 31.1 +0.9**
BER Bergen 137.19 357 *e*PP PP 14 28 14.3 -7.1
BER eSS SS 14 45 47.1 +3.3
CHVG Ch'k'valeri 137.45 315 P **PKPdf** **14 25 26.6 -4.3**
CHVG Ch'k'valeri 137.45 315 P **SKPdf** **14 28 14.9 +0.8**
CHVG Ch'k'valeri 137.45 315 *i* P PKPpre 14 25 23.8
IZAR Zarasai 137.52 339 *e*P PKPpre 14 25 24.6
IZAR IAmb IAmb 14 25 32.7
comp=Z,17nm,0.7s
IZAR Zarasai 137.52 339 *e*P PKPpre 14 25 23.9
IZAR IAmb IAmb 14 25 25.9
comp=Z,16nm,0.7s
ODD1 Odda 137.59 356 *e* PKPpre 14 25 24.9
ODD1 *e*PP **PP** **14 28 17.7 -6.2**
KONO Kongsberg 137.60 354 *e*PKPdf **PKPdf** **14 25 30.0 -0.5**
KONO *e*PP PP 14 28 15.0 -9.0
KONO eSS SS 14 45 52.7 +4.0
KONO Kongsberg 137.60 354 *e*PKHKP PKPpre 14 25 20.0
KONO Kongsberg 137.60 354 *e*PKPpre PKPpre 14 25 20.0
KONO *e*PKPpre PKPpre 14 25 20.4
KONO eSKPbc **SKiKP** **14 28 15.2 -1.7**
ISAL Salakas 137.71 339 *e*P PKPpre 14 25 23.8
ISAL IAmb IAmb 14 25 26.3
comp=Z,18nm,0.8s
ISAL Salakas 137.71 339 *e*P PKPpre 14 25 24.5
ISAL IAmb IAmb 14 25 26.3
comp=Z,17nm,0.8s
IIGN Ignalina 137.85 339 *e*P PKPpre 14 25 23.7
IIGN IAmb IAmb 14 25 33.3
comp=Z,25nm,0.7s
IIGN Ignalina 137.85 339 *e*P PKPpre 14 25 24.3
IIGN IAmb IAmb 14 25 33.2
comp=Z,25nm,0.7s
MICGM Minsk 137.94 337 *e*PKP1 PKPpre 14 25 24.0
MICGM *ep*PKP1 14 27 42.0
MICGM *es*PKP1 14 28 16.0
MICGM *e*PP **PKSdf** **14 29 00.0 -7.2**
MICGM *e*SKS **SKSdf** **14 31 50.0 0.0**
MICGM *e*PPP PPP 14 32 08.0
MICGM *e*SKKS **SKKSac** **14 34 25.0 -0.2**
MICGM *e*SS SS 14 47 14.0 +81
MNK Minsk 137.94 337 *e*PKHKP PKPpre 14 25 24.0
MNK *e* 14 31 50.0
NACGM Naroch 138.02 338 *e* PKPpre 14 25 23.0
NACGM *e* 14 28 15.0
NACGM *e*LQ LQ 15 13 20.0
NACGM *e*LR LR 15 17 04.0
LSZ Lusaka 138.03 220 PKP **PKPdf** **14 25 34.7 +1.8**
comp=Z,18nm,0.7s,baz=105,slow=2.4,SNR=17
LSZ SKPbc **SKPbc** **14 28 17.2 +1.5**
comp=Z,22nm,0.8s,baz=140,slow=2.5,SNR=12
BLS5 Blasjo 138.08 356 *e*SS SS 14 45 56.7 +2.3
CUKT Cukurca 138.20 307 *e*P PKPpre 14 25 23.0
EATA Eleskirt 138.22 311 *i* P PKPpre 14 25 23.8
KMY Karmoy 138.36 357 *e*PKPdf PKPpre 14 25 26.6
KMY *e* 14 28 17.7
KMY *e*SS SS 14 46 00.3 +2.8
STAV Stavanger 138.61 357 *e*SS SS 14 46 03.0 +2.5
SOC Sochi 138.66 317 *d i*PKIKP **PKPdf** **14 25 32.2 -0.8**
SOC *e* 14 28 29.5
SOC pmax pmax
comp=Z,42nm,0.9s
SOC pmax pmax
comp=Z,70nm,1.0s
DAMY Dhamar 138.71 272 *e*PKPpre PKPpre 14 25 27.3
DAMY *e*SKPdf **SKPdf** **14 28 14.7 -2.7**
EKAR Karacoban 138.74 310 *i* P PKPpre 14 25 26.2
ERZM Erzurum 139.02 311 *i* P PKPpre 14 25 29.3
HOMB Hombersund 139.06 354 *e* 14 28 20.3
ANN Anapa 139.52 320 *e*PKHKP PKPpre 14 25 27.4
ANN *i* 14 25 35.1
ANN *i* *SP **PP** **14 28 31.3 -5.3**
ANN *i* 14 28 35.9
ANN *e* 14 31 53.3
ANN pmax pmax
comp=Z,87nm,1.7s
ANN pmax pmax
comp=Z,76nm,1.5s
ATD Arta Tunnel 139.56 267 PKhKP PKPpre 14 25 30.5
comp=Z,26nm,0.8s,baz=304,slow=4.7,SNR=7.6
ATD SKPbc **SKiKP** **14 28 22.6 +0.2**
comp=Z,117nm,1.0s,baz=21,slow=2.5,SNR=26
HAJJ Hajjah 139.65 274 *e*P **SKiKP** **14 28 22.9 +0.1**
SUW Suwalki 139.96 340 *e*PKP **PKPpre** 14 25 28.5
SUW *ep*PKPdf PP 14 28 21.4 -17
SUW *e*PP PP 14 28 32.8 -5.8
SUW *e* 14 29 13.1
SUW *e*SKKSac SKKSac 14 34 35.7 -1.3
SUW Suwalki 139.96 340 *e*PKHKP PKPpre 14 25 28.6
KSB Sheil Bridge 140.13 6 *e* PKPpre 14 25 29.0
TSUM Tsumeb 140.14 204 SKPbc **SKiKP** **14 28 24.0 +0.2**
comp=Z,9.2nm,0.9s,baz=107,slow=6.0,SNR=4.7
TSUM Tsumeb 140.14 204 *e*PKPpre PKPpre 14 25 31.0
TSUM SKPbc **SKiKP** **14 28 24.0 +0.2**
KMBO Kilima Mbogo 140.14 246 PKhKP PKPpre 14 25 31.8
comp=Z,10nm,0.8s,baz=72,slow=3.7,SNR=27
KMBO SKPbc **SKiKP** **14 28 23.4 -0.6**
comp=Z,76nm,1.0s,baz=88,slow=2.2,SNR=24
KMBO Kilima Mbogo 140.14 246 *e*PKHKP PKPpre 14 25 31.6
KMBO Kilima Mbogo 140.14 246 *e*PKPpre PKPpre 14 25 31.6
KMBO *e*SKPbc **SKiKP** **14 28 25.1 +1.1**
KMBO Kilima Mbogo 140.14 246 P PKPpre 14 25 30.3
SNR=25
AKASG Malin Array Be 140.24 332 PKhKP PKPpre 14 25 28.6
comp=Z,10nm,0.3s,baz=44,slow=4.0,SNR=59
AKASG SKPbc **SKPbc** **14 28 21.5 +1.1**
comp=Z,94nm,0.9s,baz=36,slow=3.1,SNR=28
AKASG SKKPbc **SKKPbc** **14 36 54.0 -0.2**
comp=Z,9.9nm,1.0s,baz=230,slow=4.7,SNR=19
AKBB Malin Array Si 140.24 332 *e*PKHKP PKPpre 14 25 28.4
AKBB Malin Array Si 140.24 332 *e*PKPpre PKPpre 14 25 28.4
KIEV Kiev 140.25 332 *de*PKHKP PKPpre 14 25 28.7
KIEV *i* 14 25 35.2
KIEV Kiev 140.25 332 *e*PKPpre PKPpre 14 25 28.6
AK11 Malin Array Si 140.28 332 *e*PKPpre PKPpre 14 25 28.4
MAZI Mazidag 140.54 308 *e*P PKPpre 14 25 30.6
MUD Monsted U'grnd 140.78 353 *i* P PKPpre 14 25 30.1
comp=Z,43nm,0.9s
MUD Monsted U'grnd 140.78 353 *i* PKHKP PKPpre 14 25 30.1
MUD pmax pmax
comp=Z,43nm,0.9s
EDU Dundee 140.98 4 *e*P PKPpre 14 25 30.7
COP Copenhagen 141.08 350 *i* P PKPpre 14 25 32.7
comp=Z,38nm,0.8s
COP Copenhagen 141.08 350 *i* PKHKP PKPpre 14 25 32.7
COP pmax pmax
comp=Z,38nm,0.8s
BSD Bornholm Skovb 141.17 348 *i* P PKPpre 14 25 31.5
comp=Z,80nm,0.8s
BSD Bornholm Skovb 141.17 348 *i* PKHKP PKPpre 14 25 31.5
BSD pmax pmax
comp=Z,80nm,0.8s
EAB Aberfoyle 141.24 5 *e*P PKPpre 14 25 32.2
KEMA Kemaliye 141.31 312 *i* P **PKPdf** **14 25 34.8 -3.3**
SIM Simferopol' 141.44 322 *d i*PKHKP PKPpre 14 25 34.1
SIM *e* 14 32 07.0
SIM pmax pmax
comp=Z,87nm,0.8s
SIM pmax pmax
comp=Z,620nm,9.2s
RSDY Resadiye-TOKAT 141.66 314 *e*P **PKPdf** **14 25 35.3 -3.2**
GMK Mull of Kintyr 141.94 7 *e*P PKPpre 14 25 34.2
SVSK Karacayir 142.10 313 *e*P **PKPdf** **14 25 36.4 -2.9**
AKCD Akcadag 142.10 310 *i* P **PKPdf** **14 25 37.5 -2.1**
SURC SANLIURFA_SURC 142.11 308 *i* P **PKPdf** **14 25 36.7 -2.8**
EKA Eskdalemuir Ar 142.18 4 PKhKP PKPpre 14 25 34.9
comp=Z,11nm,0.4s,baz=344,slow=2.8,SNR=60
EKA SKPbc **SKiKP** **14 28 27.8 +1.3**
comp=Z,30nm,0.9s,baz=342,slow=2.6,SNR=12
EKA SKKPbc **SKKPab** **14 36 45.9 0.0**
comp=Z,6.4nm,0.8s,baz=166,slow=4.4,SNR=12
ESK Eskdalemuir 142.19 4 *e*P PKPpre 14 25 33.1
ESK Eskdalemuir 142.19 4 *e*PKHKP PKPpre 14 25 34.5
ESK Eskdalemuir 142.19 4 *e*PKPpre PKPpre 14 25 34.5
KVT Kavak 142.22 316 *e*P **PKPdf** **14 25 37.5 -2.1**
BWH Wardlaw 142.30 5 *e*P PKPpre 14 25 35.1
DARE Darende-Malaty 142.31 311 *e*P **PKPdf** **14 25 38.1 -1.7**
SNOP Sinop 142.32 317 *e*P **PKPdf** **14 25 36.6 -3.0**
ECK Cauldkaine Hil 142.33 4 *e*P PKPpre 14 25 35.6
CUGUR Gurin_S˙VAS 142.40 311 *i* P **PKPdf** **14 25 39.0 -1.1**
DIKM Dikmen 142.47 317 *e*P **PKPdf** **14 25 38.1 -1.8**
GAL1 Galloway 142.51 6 *e*P PKPpre 14 25 35.5
CUALT Altinyayla-SIV 142.54 312 *i* P **PKPdf** **14 25 39.2 -1.2**
BEL Belsk 142.58 340 *e*PKPdf **PKPdf** **14 25 37.6 -2.1**
BEL *ep*PKPdf **SKiKP** **14 28 28.6 +1.1**
BEL *e*PP **PP** **14 28 47.5 -6.7**
BEL Belsk 142.58 340 *e*PKIKP **PKPdf** **14 25 37.6 -2.1**
BEL *e* 14 28 28.6
GZT Gaziantep 142.72 309 *i* P **PKPdf** **14 25 37.7 -3.0**
BBO1 Bothel 142.76 5 *e*P PKPpre 14 25 36.6
AAE Adis Abeba 142.78 262 *i* P **PKPdf** **14 25 40.5 -1.1**
AAE 14 28 31.9
BOYT Boyabat 142.82 317 *i* P **PKPdf** **14 25 39.6 -0.9**
FURI Furi 142.82 261 *e*PKPdf **PKPdf** **14 25 41.4 -0.3**
FURI *e*SKPbc **SKiKP** **14 28 33.4 +3.8**
CUSAR Sarkisla-SIVAS 142.84 313 *i* P **PKPdf** **14 25 39.4 -1.4**
BYBT Boyabat 142.88 317 *e*P **PKPdf** **14 25 39.9 -0.7**
KESW Keswick, Cumbr 142.92 4 *e*P **PKPdf** **14 25 38.5 -1.8**
GMM Mts of Mourne 142.99 7 *e*P **PKPdf** **14 25 37.2 -3.2**
KIS Kishinev 143.03 328 *j*PKP PKPbc 14 25 39.0 +0.2
KIS M 14 25 39.5
comp=Z,1µm,2.2s
KIS *j* pPKP pPKPdf 14 27 44.0 -5.0
KIS Kishinev 143.03 328 *i* PP **SKiKP** **14 28 29.5 +0.9**
comp=Z,700nm,1.5s
KIS Kishinev 143.03 328 *i* PKS **PP** **14 28 54.0 -3.3**
KIS *i* SKS SKSdf 14 31 45.0 -14
KIS *i* SKKS **SKKSac** **14 34 56.0 +0.9**
KIS *i* SKSP 14 38 16.0
KIS LRM MLR 15 31 00.0
comp=Z,700nm,22.0s
KIS Kishinev 143.03 328 *k*PKIKP PKPbc 14 25 39.0 +0.2
KIS *i* 14 27 44.0
KIS *i* 14 28 54.0
KIS *e* 14 32 10.0
KIS pmax pmax
comp=Z,1µm,2.2s
KIS pmax pmax
comp=Z,2µm,8.0s
KIS pmax pmax
comp=Z,700nm,1.5s
KIS pmax pmax
comp=Z,1µm,10.0s
KIS MLR MLR
comp=Z,800nm,20.0s
KIS MLR MLR
comp=Z,700nm,22.0s
GAZ Gaziantep 143.05 309 *e*P PKPbc 14 25 40.0 +0.7
LVV L'vov 143.08 336 *i* PKIKP PKPab 14 25 38.5 +0.1
LVV *e* 14 28 29.5
BZK Bozkurt 143.12 318 *e*P **PKPdf** **14 25 40.3 -0.7**
KMRS Kahramanmaras 143.16 310 *e*P PKPbc 14 25 40.3 +0.7
WIM Isle of Man 143.22 6 *e*P PKPab 14 25 38.0 -0.8
AYKD Aykdinkavak 143.26 310 *i* P PKPbc 14 25 40.4 +0.5
KUZU Kuzuini 143.30 309 *i* P PKPbc 14 25 40.7 +0.7
COAL Corum-Alaca 143.32 315 *i* P **PKPdf** **14 25 41.1 -0.5**
BNN Bunyan 143.36 312 *e*P **PKPdf** **14 25 41.0 -0.7**
KAST KASTAMONU 143.41 317 *i* P **PKPdf** **14 25 42.2 +0.6**
KAMA Osmaniye 143.45 309 *i* P **PKPdf** **14 25 41.3 -0.6**
IAS Iasi 143.51 330 *i* P PKPbc 14 25 40.6 +0.4
IAS Iasi 143.51 330 *i* PKIKP PKPbc 14 25 40.6 +0.4
TOS Tosya 143.58 317 *e*P **PKPdf** **14 25 42.0 0.0**
CORM Corum 143.60 315 *e*P **PKPdf** **14 25 42.3 +0.2**
HPK Haverah Park 143.64 3 *e*P PKPab 14 25 39.8 -0.5
DRWC Darouich 143.66 308 *e*P **PKPdf** **14 25 41.8 -0.4**
DRWC Darouich 143.66 308 *e*P **PKPdf** **14 25 42.0 -0.3**
LEOM Leova 143.68 328 *e*P **PKPdf** **14 25 41.5 -0.3**
LEOM Leova 143.68 328 *j*P **PKPdf** **14 25 41.8 0.0**
LEOM Leova 143.68 328 *j*PKIKP **PKPdf** **14 25 41.8 0.0**
KWP Kalwaria Pacla 143.75 337 *i* PKPdf **PKPdf** **14 25 41.5 -0.4**
KWP *ep*PKPdf **SKiKP** **14 28 31.1 +1.1**
KWP *e*SKKSac **SKKSac** **14 34 59.0 0.0**
KWP Kalwaria Pacla 143.75 337 *j i*PKIKP **PKPdf** **14 25 41.5 -0.4**
ILGA Ilgaz 143.78 317 *i* P **PKPdf** **14 25 42.3 -0.2**
DSB Dublin 143.91 8 *e*PKPbc 14 25 40.9 -0.4
KOZT Kozan 143.95 310 *e*P PKPab 14 25 42.2 +0.1
WME Myndd Eilian 144.00 6 *e*P PKPbc 14 25 40.6 -1.0
RABH Abou Rabah 144.01 305 *e*P **PKPdf** **14 25 43.1 +0.2**
RABH Abou Rabah 144.01 305 *e*P **PKPdf** **14 25 43.1 +0.2**
PRAR RASCA 144.02 331 *i* P **PKPdf** **14 25 42.5 0.0**
ROOS tl_alroos 144.02 304 *e*P **PKPdf** **14 25 43.2 +0.3**
ROOS tl_alroos 144.02 304 *e*P **PKPdf** **14 25 43.9 +1.0**
BTCH Batrach 144.03 308 *e*P **PKPab** **14 25 42.5 0.0**
BTCH Batrach 144.03 308 *e*P **PKPdf** **14 25 42.8 -0.2**
CDAG Cicekdag 144.04 314 *i* P **PKPdf** **14 25 42.9 +0.1**
LHO Holmfirth 144.04 3 *e*P PKPbc 14 25 41.0 -0.8
CANT Cankiri 144.06 316 *e*P **PKPdf** **14 25 43.4 +0.6**
AVNS Nevsehir-Avano 144.08 313 *i* P PKPbc 14 25 42.0 -0.5
WLF1 Llynfaes 144.10 6 *e*P PKPbc 14 25 41.0 -0.8
TAHT Tahtakopru-Hat 144.12 308 *e*P **PKPdf** **14 25 43.4 +0.5**
YRC Rhoscolyn 144.12 6 *e*P PKPbc 14 25 41.1 -0.8
WPM1 Penmaenmawr 144.18 6 *e*P PKPbc 14 25 41.6 -0.5
CEYT Ceyhan 144.19 310 *e*P **PKPdf** **14 25 43.9 +0.8**
LMK Market Rasen 144.20 2 *e*P PKPbc 14 25 41.5 -0.6
H07N1 FLORES T-PHASB 144.22 45 *e*PKP **PKPab** **14 25 43.5 +0.4**
ELDT Eldivan 144.25 316 *i* P **PKPab** **14 25 43.9 +0.5**
TLCR 144.26 326 *i j* P **PKPab** **14 25 44.0 +1.0**
TLCR 144.26 326 *j*PKIKP **PKPab** **14 25 44.0 +1.0**
YLL Llanberis 144.27 6 *e*P PKPbc 14 25 41.7 -0.7
BUR08 Bucovina Ar. S 144.28 332 *e*PKPbc **PKPab** **14 25 43.5 +0.3**
OJC Ojcow 144.29 340 *e*PKP PKPbc 14 25 42.7 +0.1
OJC *ep*PKPdf **SKiKP** **14 28 32.3 +1.2**
OJC *e* 14 50 38.9
OJC Ojcow 144.29 340 *e*PKIKP PKPbc 14 25 42.7 +0.1
OJC Ojcow 144.29 340 *e*PKPbc PKPbc 14 25 42.6 0.0
BURAR Bucovina Array 144.29 332 *i* P **PKPab** **14 25 44.1 +0.9**
BURAR Bucovina Array 144.29 332 *j i*P **SKKPab** **14 36 36.6 0.0**
BURAR Bucovina Array 144.29 332 *i*PKIKP **PKPab** **14 25 44.1 +0.9**
YAYL Yayladag 144.30 308 *i* P **PKPab** **14 25 43.5 +0.1**
H07S1 FLORES T-PHASB 144.31 46 *e*PKP **PKPab** **14 25 43.4 0.0**
SAFT Safranbolu 144.34 318 *e*P **PKPab** **14 25 44.2 +0.7**
ZALF Zalf 144.36 302 *e*P **PKPab** **14 25 43.8 0.0**
ZALF Zalf 144.36 302 *e*P **PKPab** **14 25 44.2 +0.4**
SLNF Slenfeh 144.37 307 *e*P **PKPab** **14 25 44.2 +0.3**
SLNF Slenfeh 144.37 307 *e*P **PKPab** **14 25 44.2 +0.3**
YRE Yr Eifl 144.40 6 *e*P PKPbc 14 25 42.0 -0.8
BTIN Bart¯–n 144.41 319 *i* P PKPbc 14 25 43.0 -0.3
TESR Tescani 144.44 330 *j i*P **PKPab** **14 25 44.0 +0.3**
ARNB Al Arnab 144.47 308 *e*P PKPbc 14 25 43.9 +0.1
ARNB Al Arnab 144.47 308 *e*P **PKPab** **14 25 44.3 0.0**
STHS Stebnicka Huta 144.47 338 *e*PKIKP **PKPab** **14 25 44.0 +0.3**
STHS Stebnicka Huta 144.47 338 *e*PKP **PKPab** **14 25 44.0 +0.3**
STNC Stoke 144.47 4 *e*P PKPbc 14 25 43.0 0.0
KOLS Kolonicke sedl 144.48 336 *e*PKIKP **PKPab** **14 25 43.8 +0.1**
KOLS Kolonicke sedl 144.48 336 *e*PKP **PKPab** **14 25 43.8 +0.1**
KOLS *e* 14 28 33.5
BR131 Keskin Array S 144.49 315 *e*PKPdf **PKPdf** **14 25 43.4 -0.3**
BRTR Keskin Array B 144.49 315 PKP **PKPdf** **14 25 43.6 0.0**

	comp=Z,411nm,0.9s,baz=137,slow=2.9,SNR=623						
BRTR				SKPbc	SKiKP	14 28 33.2	+1.2
	comp=Z,51nm,1.0s,baz=119,slow=1.5,SNR=6.6						
BRTR				SKKPbc	SKKPbc	14 36 37.0	+0.2
	comp=Z,20nm,1.0s,baz=213,slow=4.3,SNR=26						
VAL	Valentia	144.51	12	eP	PKPab	14 25 43.5	-0.2
NIG	Nigde	144.56	312	eP	PKPab	14 25 44.7	-0.1
KARA	Karaisali	144.60	310	eP	PKPab	14 25 44.8	+0.2
FOEL	Foel Wylfa	144.60	5	eP	PKPdf	14 25 43.3	0.0
KAMT	Kaman	144.61	314	eP	PKPbc	14 25 44.4	+0.3
CFR	Carcaliu	144.62	327	⇑iP	PKPab	14 25 44.1	-0.2
CFR	Carcaliu	144.62	327	⇑PKIKP	PKPab	14 25 44.1	-0.2
KRTS	Karatas	144.64	309	eP	PKPab	14 25 45.6	+0.9
FKH	Fakeheh	144.69	305	eP	PKPab	14 25 45.5	+0.3
MARH	Ras Al Marh	144.70	304	eP	PKPab	14 25 45.7	+0.2
MARH	Ras Al Marh	144.70	304	eP	PKPab	14 25 45.3	-0.2
UZH	Uzhgorod	144.72	336	⇓iPKIKP	PKPab	14 25 44.7	+0.1
ODBI	Odobesti	144.77	328	⇓iP	PKPab	14 25 46.5	+1.6
KSP	Ksiaz	144.79	344	ePKPdf	PKPab	14 25 45.1	+0.3
KSP				epPKPdf	SKiKP	14 28 33.8	+1.7
KSP				eSKKSac	SKKSac	14 35 06.0	+1.2
KSP				eSS	SS	14 47 12.7	+1.2
KSP				e		14 50 46.1	
KSP	Ksiaz	144.79	344	⇓ePKIKP	PKPab	14 25 45.2	+0.4
KSP				eSS	SS	14 47 12.7	+1.2
GULE	Gulek	144.79	311	iP	PKPab	14 25 46.6	+1.0
NIE	Niedzica	144.80	339	ePKP	PKPab	14 25 45.2	+0.3
NIE				epPKPdf	SKiKP	14 28 33.0	+0.8
NIE	Niedzica	144.80	339	ePKIKP	PKPab	14 25 45.3	+0.3
VRI	Vrincioaia	144.86	329	eP	PKPab	14 25 45.2	-0.1
VRI	Vrincioaia	144.86	329	⇓iP	PKPab	14 25 45.4	+0.1
VRI	Vrincioaia	144.86	329	⇑iP	SKKPab	14 36 32.8	-1.2
VRI	Vrincioaia	144.86	329	⇓PKIKP	PKPab	14 25 45.4	+0.1
CWF	Charnwood Fore	144.88	3	eP	PKPdf	14 25 43.6	-0.1
CWF	Charnwood Fore	144.88	3	ePKPdf	PKPdf	14 25 43.6	-0.1
SALA	Sala	144.90	302	eP	PKPbc	14 25 45.6	+0.3
SALA	Sala	144.90	302	eP	PKPab	14 25 45.8	-0.3
DED	Mersin	144.91	310	iP	PKPbc	14 25 44.8	-0.1
PLOR	Plostina	144.91	329	⇑iP	PKPab	14 25 45.7	+0.2
PLOR	Plostina	144.91	329	⇓iP	SKKPab	14 36 31.9	-1.9
PLOR	Plostina	144.91	329	⇑PKIKP	PKPab	14 25 45.7	+0.2
SERE	Sereflikochisa	144.91	314	eP	PKPab	14 25 45.7	-0.2
AKSY	AKSARAY - Alti	144.91	313	iP	PKPbc	14 25 45.0	0.0
ASF	Jabal al Asfar	144.92	301	PKP	PKPbc	14 25 45.3	0.0
	comp=Z,415nm,1.0s,baz=40,slow=1.4,SNR=208						
ASF				SKPbc	SKiKP	14 28 34.6	+1.5
	comp=Z,78nm,1.1s,baz=227,slow=0.5,SNR=12						
ASF				SKKPbc	SKKPbc	14 36 36.0	+1.5
	comp=Z,12nm,1.2s,baz=170,slow=0.5,SNR=12						
RAC	Raciborz	144.92	341	ePKIKP	PKPbc	14 25 44.9	+0.4
BBAL	Bala	144.92	315	iP	PKPbc	14 25 44.9	-0.1
TIRR	Tirgusor	144.95	326	⇑iP	PKPab	14 25 46.0	+0.4
TIRR	Tirgusor	144.95	326	⇑PKIKP	PKPab	14 25 46.0	+0.4
TIRR	Tirgusor	144.95	326	ePKPdf	PKPbc	14 25 45.2	+0.4
TOTH	TOTAH	144.96	303	eP	PKPab	14 25 45.8	-0.4
TOTH	TOTAH	144.96	303	eP	PKPbc	14 25 45.7	+0.4
BCAM	Yenicaga	144.97	318	iP	PKPdf	14 25 44.4	0.0
ANTO	Ankara	144.98	316	ePKIKP	PKPbc	14 25 44.8	-0.4
ANTO	Ankara	144.98	316	ePKPdf	PKPbc	14 25 44.8	-0.3
ANTO	Ankara	144.98	316	P	PKPbc	14 25 45.5	+0.3
	SNR=65						
LOD	Lodumlu	144.99	316	eP	PKPbc	14 25 44.9	-0.3
BMR	Baia Mare	144.99	334	⇑iP	PKPab	14 25 46.0	+0.3
BMR	Baia Mare	144.99	334	⇑iP	SKKPab	14 36 34.4	+1.0
BMR	Baia Mare	144.99	334	⇑PKIKP	PKPab	14 25 46.0	+0.3
HLM1	Long Mynd	145.00	5	eP	PKPdf	14 25 44.0	0.0
BR231	Keskin MP Arra	145.01	316	ePKPdf	PKPdf	14 25 44.4	-0.1
BR231				ePKPdf	PKPbc	14 25 44.8	-0.5
QASN	Qassioun	145.02	304	eP	PKPbc	14 25 45.5	0.0
TRPA	Tarpa	145.03	335	⇓ePKiKP	PKPab	14 25 45.5	-0.3
TRPA	Tarpa	145.03	335	⇓eS	SKKPab	14 36 32.6	-0.6
HWQ	Hawqa	145.04	305	eP	PKPbc	14 25 45.9	+0.3
HARR	Harsova	145.06	326	⇓iP	PKPab	14 25 46.8	+0.8
HARR	Harsova	145.06	326	⇓PKIKP	PKPab	14 25 46.8	+0.8
ARCR	ARCALIA	145.08	332	⇓iP	PKPab	14 25 45.7	-0.4
GRER		145.08	328	⇑iP	PKPab	14 25 47.3	+1.2
EFOR	EFORIE	145.08	325	⇓iP	PKPab	14 25 47.1	+1.0
CLL	Collm	145.15	347	⇓iPKPdf	PKPbc	14 25 44.7	-0.4
CLL				⇓iPKPbc	PKPbc	14 25 45.5	+0.4
	comp=Z,592nm,1.0s						
CLL				iPKiKP	PKiKP	14 25 48.0	-0.4
CLL				e		14 25 58.0	
CLL				epPKPdf	pPKPdf	14 27 54.0	+1.4
CLL				e		14 28 14.0	
CLL				iSKPbc	SKiKP	14 28 34.7	+1.9
	comp=Z,121nm,1.3s						
CLL				e		14 30 59.0	
CLL				eSKSdf	SKSdf	14 32 02.0	+0.5
CLL				ePPP	PPP	14 32 30.0	
CLL				iSKKSac	SKKSac	14 35 07.4	+0.7
CLL				e		14 35 41.0	
CLL				eSKKPbc	SKKPab	14 36 32.0	-0.7
	comp=Z,23nm,1.1s						
CLL				e		14 38 16.0	
CLL				eSKSP		14 38 30.0	
CLL				ePPPrev		14 40 19.0	
CLL				e(SKKSdf)		14 40 57.0	
CLL				e(PPS)		14 42 14.0	
CLL				e		14 43 58.0	
CLL				eSS	SS	14 47 13.0	-2.4
CLL				esSS		14 50 37.0	
CLL				e		14 51 40.0	
CLL				eSSS	SSS	14 52 47.0	
CLL				esSSS		14 56 10.0	
CLL				eSSSS		14 56 48.0	
CLL	Collm	145.15	347	⇓iPKP2	PKPbc	14 25 45.5	+0.4
CLL				pmax	pmax		
	comp=Z,592nm,1.0s						
CLL	Collm	145.15	347	ePKPdf	PKPbc	14 25 44.7	-0.4
MERS	Mersin	145.15	310	eP	PKPab	14 25 46.3	-0.5
OKC	Ostrava-Krasne	145.15	341	ePKP	PKPbc	14 25 44.8	-0.4
OKC				epPKP	pPKPdf	14 27 49.9	-2.8
OKC				eSKP		14 28 34.4	
OKC				eSKKP		14 36 31.7	
OKC	Ostrava-Krasne	145.15	341	ePKIKP	PKPbc	14 25 44.8	-0.4
OKC				e		14 27 49.9	
UPC	Upice	145.17	344	ePKP	PKPbc	14 25 45.0	-0.3
UPC				ex	x	14 25 46.1	
UPC				epPKP	pPKPdf	14 27 51.4	-1.3
UPC				eSKP		14 28 35.6	
UPC				eSKKS		14 35 09.4	
UPC				eSKKP		14 36 31.5	
UPC				eSS	SS	14 47 09.3	-6.5
UPC	Upice	145.17	344	ePKIKP	PKPbc	14 25 45.0	-0.3
UPC				e		14 25 46.1	
KERG	Konya-Eregli	145.21	311	iP	PKPdf	14 25 44.7	-0.3
DPC	Dobruska-Polom	145.23	343	ePKP	PKPbc	14 25 45.0	-0.5
DPC				ex	x	14 25 46.8	
DPC				epPKP	pPKPdf	14 27 51.0	-1.9
DPC				ex	x	14 27 55.6	
DPC				eSKP		14 28 35.3	
DPC				eSKKS		14 35 09.7	
DPC				eSKKP		14 36 30.6	
DPC				eSS	SS	14 47 10.0	-6.6
DPC	Dobruska-Polom	145.23	343	ePKIKP	PKPbc	14 25 45.0	-0.5
DPC				e		14 25 46.8	
CVDA	Cernavoda	145.24	326	⇓iP	PKPab	14 25 48.2	+1.5
KKUL	Konya-Kulu	145.24	315	iP	PKPdf	14 25 45.4	+0.4
MANR	Mangalia	145.28	325	⇓iP	PKPab	14 25 47.3	+0.4
SULT	Sultanhani-AKS	145.29	313	eP	PKPbc	14 25 46.3	+0.2
LPW	Lampeter	145.29	6	eP	PKPdf	14 25 44.9	+0.5
LANS	Liptovska Anna	145.32	339	ePKP2	PKPab	14 25 47.1	+0.1
LANS	Liptovska Anna	145.32	339	ePKP	PKPab	14 25 47.1	+0.1
LANS	Liptovska Anna	145.32	339	eP	SKKPab	14 36 31.5	-0.5
BRBR	Barbar	145.32	304	eP	PKPbc	14 25 47.0	+0.5
BRBR	Barbar	145.32	304	eP	PKPdf	14 25 45.9	+0.5
BRG	Berggiesshubel	145.35	346	ePKP	PKPbc	14 25 45.4	-0.3
	comp=Z,19nm,1.4s						
BRG				i		14 25 46.5	
	comp=Z,366nm,0.9s						
BRG				pPKP	pPKPdf	14 27 48.0	-5.0
BRG				sPKP		14 28 35.2	
	comp=Z,159nm,1.5s						
BRG				e		14 36 32.5	
	comp=Z,31nm,1.4s						
BRG				SS	SS	14 47 13.0	-4.7
BRG	Berggiesshubel	145.35	346	eP	SKKPab	14 36 32.1	+0.3
	comp=Z,32nm,1.4s						
BRG	Berggiesshubel	145.35	346	ePKIKP	PKPbc	14 25 45.4	-0.3
BRG				i		14 25 46.5	
BRG						14 27 48.0	
BRG				pmax	pmax		
	comp=Z,19nm,1.4s						
BRG				pmax	pmax		
	comp=N,159nm,1.5s						
RCY	Rachaya	145.38	304	eP	PKPab	14 25 47.4	-0.5
MORC	Moravsky Berou	145.39	342	ePKIKP	PKPdf	14 25 45.2	+0.4
MORC	Moravsky Berou	145.39	342	ePKPdf	PKPdf	14 25 45.2	+0.4
BHL	Bhannes	145.39	305	eP	PKPbc	14 25 47.1	+0.5
PGOR	Pogoanele	145.40	327	⇑iP	PKPab	14 25 47.6	+0.2
DOPR	Dopca	145.44	330	⇑iP	PKPab	14 25 47.7	+0.2
WTSB	Winterswijk	145.46	354	ePKP	PKPbc	14 25 45.4	-0.6
ISR	Istrita	145.48	328	⇑iP	PKPab	14 25 47.6	-0.2
ISR	Istrita	145.48	328	⇑PKP2	PKPab	14 25 47.6	-0.2
MCH1	Michaelchurch	145.50	5	eP	PKPbc	14 25 45.6	-0.5
MSAB	Monastry St. A	145.51	326	⇑iP	PKPab	14 25 47.7	-0.1
MLR	Muntele Rosu	145.51	329	PKPbc	PKPbc	14 25 46.1	-0.5
	comp=N,41nm,0.8s,baz=38,slow=2.7,SNR=80						
MLR				SKKPbc	SKKPbc	14 36 30.8	-2.0
	comp=N,14nm,1.2s,baz=256,slow=1.9,SNR=20						
MLR	Muntele Rosu	145.51	329	⇓iP	PKPdf	14 25 45.8	+0.6
MLR	Muntele Rosu	145.51	329	⇓iP	SKKPab	14 36 31.0	-0.3
MLR	Muntele Rosu	145.51	329	⇓PKIKP	PKPdf	14 25 45.8	+0.6
MLR	Muntele Rosu	145.51	329	ePKPdf	PKPdf	14 25 45.2	0.0
MLR				SKKPbc	SKKPbc	14 36 30.8	-2.0
PVCC	Panska Ves	145.52	345	ePKP	PKPbc	14 25 45.7	-0.6
PVCC				ex	x	14 25 47.4	
PVCC				epPKP	pPKPdf	14 27 52.6	-0.7
PVCC				ex	x	14 27 56.3	
PVCC				eSKP		14 28 36.5	
PVCC				eSS	SS	14 47 14.9	-4.8
PVCC	Panska Ves	145.52	345	ePKIKP	PKPbc	14 25 45.7	-0.6
PVCC				e		14 25 47.4	
PVCC				e		14 28 36.5	
PVCC				eSS	SS	14 47 14.9	-4.8
KECS	Kecovo	145.52	337	ePKP2	PKPbc	14 25 46.9	+0.5
KECS	Kecovo	145.52	337	ePKP	PKPbc	14 25 46.8	+0.4
KECS				e		14 28 36.4	
KECS				e		14 35 07.5	
DQRL	Deir Qamar	145.53	304	eP	PKPab	14 25 48.0	-0.4
BEYL	Beirut	145.53	305	eP	PKPbc	14 25 47.3	+0.5
TCHB	Talchebab	145.53	302	eP	PKPab	14 25 48.0	-0.4
TCHB	Talchebab	145.53	302	eP	PKPbc	14 25 47.5	+0.5
KIZK	Mersin	145.59	310	iP	PKPdf	14 25 45.4	-0.1
SSW	Stow on the Wo	145.62	4	eP	PKPbc	14 25 45.9	-0.6
MONM	Monmouth	145.68	5	eP	PKPbc	14 25 46.0	-0.7
MDUB	Mudurnu	145.71	318	eP	PKPdf	14 25 45.7	0.0
SAHE	Sakarya_HENDEK	145.72	319	iP	PKPdf	14 25 45.6	0.0
BTAS	Taskesti	145.78	318	iP	PKPbc	14 25 46.7	-0.7
STRD	Stroud	145.79	4	eP	PKPdf	14 25 46.1	+0.8
AUMIH	MIHALICIK	145.85	317	iP	PKPdf	14 25 45.9	-0.1
OLDB	Oldbury-Upon-S	145.87	4	eP	PKPbc	14 25 46.5	-0.7
MMAI	Mount Meron Ar	145.88	303	PKPbc	PKPbc	14 25 48.0	0.0
	comp=N,694nm,0.8s,baz=69,slow=4.7,SNR=437						
MMAI				SKKPbc	SKKPbc	14 36 31.6	+1.1
	comp=N,2.3nm,0.6s,baz=235,slow=2.9,SNR=5.2						
SKP1	Kophill	145.91	3	eP	PKPdf	14 25 46.1	+0.6
SULR		145.93	328	⇓iP	PKPab	14 25 48.7	-0.8
EREN	Erenkoy	145.95	308	eP	PKPbc	14 25 48.7	+0.8
PRA	Prague	145.98	345	ePKP	PKPdf	14 25 46.2	+0.5
PRA				ex	x	14 25 48.4	
PRA				ex	x	14 25 50.9	
PRA				eSKKS		14 35 14.3	
PRA	Prague	145.98	345	ePKIKP	PKPdf	14 25 46.2	+0.5
PRA				e		14 25 48.4	
VOIR		145.99	330	⇑iP	PKPbc	14 25 48.0	+0.1
VOIR		145.99	330	⇑PKP2	PKPbc	14 25 48.0	+0.1
KAND	Kocaeli-Kandir	146.00	319	iP	PKPbc	14 25 48.6	+0.7
DRGR		146.02	334	⇓iP	PKPbc	14 25 48.8	+0.9
DRGR		146.02	334	⇓PKP2	PKPbc	14 25 48.8	+0.9
IKL	Isikli	146.02	310	eP	PKPbc	14 25 48.5	+0.4
PRU	Pruhonice	146.02	345	ePKP	PKPdf	14 25 46.0	+0.2
PRU				ex	x	14 25 48.4	
PRU				epPKP	pPKPdf	14 27 53.9	-0.3
PRU				ex	x	14 27 59.0	
PRU				eSKKS		14 35 14.4	
PRU				eSKKP		14 36 27.7	
PRU				ex	x	14 47 16.9	
PRU	Pruhonice	146.02	345	ePKIKP	PKPdf	14 25 46.0	+0.2
PRU				e		14 25 48.4	
GOPC	GO Pecny, Ondr	146.03	345	iPKP	PKPdf	14 25 46.2	+0.4
GOPC				ex	x	14 25 48.4	
GOPC				ex	x	14 25 50.9	
GOPC				epPKP	pPKPdf	14 27 53.6	-0.7
GOPC				ex	x	14 27 56.9	
GOPC				eSKP		14 28 36.6	
GOPC				eSKKS		14 35 14.1	
GOPC				eSKKP		14 36 28.5	
GOPC				ex	x	14 47 16.4	
GOPC	GO Pecny, Ondr	146.03	345	iPKIKP	PKPdf	14 25 46.2	+0.4
GOPC				e		14 25 48.4	
SVRH	Sivrihisar-ESK	146.04	316	eP	PKPdf	14 25 45.9	-0.3
SWN1	Swindon	146.07	4	eP	PKPbc	14 25 47.5	-0.3
VRAC	Vranov	146.09	342	PKPbc	PKPbc	14 25 48.6	+0.7
	comp=N,167nm,1.0s,baz=33,slow=1.9,SNR=86						
VRAC				SKKPbc	SKKPbc	14 36 28.1	-2.4
	comp=N,14nm,1.1s,baz=204,slow=4.7,SNR=14						
VRAC	Vranov	146.09	342	⇑iP	PKPab	14 25 49.2	-0.8
VRAC	Vranov	146.09	342	⇑iP	SKKPab	14 36 27.5	-1.0
KIZT	Kizilcal	146.09	315	eP	PKPbc	14 25 48.4	0.0
LADK	Ladik-KONYA	146.09	314	eP	PKPbc	14 25 48.4	0.0
VYHS	Vyhne	146.09	339	ePKP2	PKPbc	14 25 48.8	+0.8
VYHS	Vyhne	146.09	339	ePKP	PKPbc	14 25 48.8	+0.8
VYHS	Vyhne	146.09	339	eP	SKKPab	14 36 28.1	-0.4
KDHN	Kadinhani	146.11	314	iP	PKPdf	14 25 46.5	+0.1
MTUR	Matau	146.13	329	⇓iP	PKPbc	14 25 48.7	+0.4
MTUR	Matau	146.13	329	⇓PKP2	PKPbc	14 25 48.7	+0.4
SPNC	Sapanca-Adapaz	146.15	319	eP	PKPbc	14 25 49.2	+0.8
GULT	Gulveren	146.16	318	eP	PKPbc	14 25 49.1	+0.6
BTMR	Bucharest-Geot	146.18	328	⇓iP	PKPbc	14 25 49.1	+0.8
BUC	Bucharest	146.20	328	⇓PKP2	PKPab	14 25 49.5	-1.0
PSZ	Piszkesteto	146.21	338	⇓ePKiKP	PKPbc	14 25 49.0	+0.6
PSZ	Piszkesteto	146.21	338	⇓eS	SKKPab	14 36 27.6	-0.5
PSZ	Piszkesteto	146.21	338	ePKIKP	PKPdf	14 25 46.3	0.0
PSZ				e		14 25 49.0	
PSZ	Piszkesteto	146.21	338	ePKPdf	PKPdf	14 25 46.2	0.0
PSZ				ePKPbc	PKPbc	14 25 49.0	+0.6
ARR	Arges	146.24	330	⇓iP	PKPdf	14 25 47.1	+0.7
PHNC	Paralimni	146.25	307	P	PKPbc	14 25 49.5	+0.7
BUC1	Bucharest	146.28	328	⇓iP	PKPbc	14 25 49.5	+0.9
KMER	Konya-Meram	146.29	313	iP	PKPdf	14 25 47.8	+1.0
SILT	Sile	146.30	320	eP	PKPbc	14 25 49.6	+0.8
WOL	Wolverton	146.30	3	eP	PKPbc	14 25 47.9	-0.5
HEX	Exmoor	146.35	6	eP	PKPdf	14 25 47.4	+1.1
GPA	Golpazari	146.38	318	eP	PKPbc	14 25 48.7	-0.3
PCED	Cedros	146.38	45	ePKP	PKPdf	14 25 47.5	+0.8
TREC	Trest	146.41	343	ex	x	14 25 49.6	
TREC				epPKP	pPKPdf	14 27 54.9	0.0
TREC				eSKP		14 28 37.4	
TREC	Trest	146.41	343	ePKP2	PKPbc	14 25 49.6	+0.7
ESKT	Eskisehir	146.44	317	iP	PKPdf	14 25 47.0	+0.1
LFK	Lefkose	146.53	308	eP	PKPbc	14 25 50.2	+0.6
SMOL	Smolenice	146.54	341	ePKP2	PKPbc	14 25 50.1	+0.9
SMOL	Smolenice	146.54	341	ePKP	PKPbc	14 25 50.1	+0.9
LOT	Lotru	146.58	331	eP	PKPbc	14 25 49.0	-0.6
LOT	Lotru	146.58	331	⇑iP	PKPbc	14 25 48.9	-0.6
PCAN	Candelaria	146.61	45	ePKP	PKPdf	14 25 47.2	+0.1
DEV	Deva	146.64	332	⇑iP	PKPbc	14 25 48.3	-1.2
DEV	Deva	146.64	332	⇑PKIKP	PKPbc	14 25 48.3	-1.2
ROSA	Rosais	146.65	45	ePKP	PKPdf	14 25 44.9	-2.3
ROSA	Rosais	146.65	45	ePKPbc	PKPbc	14 25 50.4	+0.5
ADVT	Abdulvahap	146.66	319	eP	PKPbc	14 25 50.2	+0.5
PGRA	Graciosa	146.66	44	ePKP	PKPdf	14 25 46.0	-1.2
HUMR	Humele	146.68	329	⇓iP	PKPbc	14 25 49.8	+0.1
ISK	Istanbul-Kandi	146.71	320	eP	PKPdf	14 25 47.8	+0.6
ISK	Istanbul-Kandi	146.71	320	P	PKPdf	14 25 46.4	-0.8
BEBN	Eben Emael	146.72	355	PKPbc	PKPbc	14 25 49.8	+0.3
CAVI	Cavuskoy	146.72	318	eP	PKPbc	14 25 50.6	+0.6
HGN	Heimansgroeve	146.73	355	ePKP	PKPbc	14 25 50.0	+0.4
HGN				epPKP	pPKPdf	14 27 54.9	-0.4
AUKIR	K˜–rka- Seyitg	146.78	317	iP	PKPdf	14 25 48.6	+1.1
PMAN	Manadas	146.79	45	ePKP	PKPdf	14 25 47.6	+0.2
BUY	Buyukada	146.80	320	iP	PKPdf	14 25 47.8	+0.5
BOLV	Bolvadin	146.80	315	iP	PKPbc	14 25 50.4	0.0
CSS	Mathiatis	146.80	308	eP	PKPbc	14 25 49.9	-0.4
CSS	Mathiatis	146.80	308	P	PKPbc	14 25 51.0	+0.6
CSS	Mathiatis	146.80	308	P	PKPdf	14 25 47.1	-0.5
CSS	Mathiatis	146.80	308	ePKPdf	PKPdf	14 25 47.0	-0.5
CSS				ePKPbc	PKPbc	14 25 50.6	+0.2
HMNX	Herstmonceux	146.81	1	eP	PKPbc	14 25 49.2	-0.6
MAMC	Mammari	146.81	308	P	PKPbc	14 25 50.9	+0.6
BGKT	Bogazkoy	146.81	321	eP	PKPbc	14 25 50.7	+0.5
MEM	Membach	146.88	355	PKP	PKPdf	14 25 47.5	+0.3
MEM				PKPbc	PKPbc	14 25 50.4	+0.4
IZI	Iznik	146.88	319	eP	PKPbc	14 25 51.0	+0.5
SIRR	Siria	146.88	334	⇓iP	PKPdf	14 25 47.7	+0.4
BUD	Budapest	146.89	338	⇓ePKiKP	PKPbc	14 25 50.8	+0.6
CTYL	Yalikoy Yolu	146.92	322	eP	PKPbc	14 25 50.0	-0.5
CTKS	Kestanelik-??a	146.94	321	eP	PKPbc	14 25 49.7	-0.8
DYA	Yadsworthy	146.97	6	eP	PKPbc	14 25 50.2	0.0
GEMT	Gemlik	147.00	319	eP	PKPbc	14 25 51.1	+0.4
HRFI	Mount Harif	147.02	298	eP	PKPdf	14 25 48.3	+0.2
GRFO	Grafenberg	147.04	348	ePKIKP	PKPdf	14 25 47.9	+0.4
GRFO				e		14 25 51.5	
GRFO	Grafenberg	147.04	348	ePKPdf	PKPdf	14 25 47.9	+0.4
GRFO				ePKPbc	PKiKP	14 25 51.5	-0.9
CCA1	Carnmenellis	147.06	8	eP	PKPbc	14 25 49.7	-0.8
KHC	Kasperske Hory	147.06	345	ePKP	PKPdf	14 25 47.9	+0.3
KHC				ex	x	14 25 51.4	
KHC				epPKP	pPKPdf	14 27 55.8	-0.3
KHC				eSKKS		14 35 20.8	
KHC				eSKKP		14 36 22.9	
KHC				ex	x	14 36 43.8	
KHC				ex	x	14 47 29.3	
KHC	Kasperske Hory	147.06	345	ePKIKP	PKPdf	14 25 47.9	+0.3
KHC				e		14 25 51.4	
KHC	Kasperske Hory	147.06	345	ePKPdf	PKPdf	14 25 47.9	+0.3
KHC				ePKPbc	PKiKP	14 25 51.5	-0.9
GZR	Gura Zlata	147.08	332	⇑iP	PKPbc	14 25 51.2	+0.4
GZR	Gura Zlata	147.08	332	⇑PKHKP	PKPbc	14 25 51.2	+0.4
IGD	Bursa	147.09	319	iP	PKPdf	14 25 46.0	-1.8
SNF	Seneffe	147.10	357	PKPbc	PKPbc	14 25 50.7	+0.1
ZIMR		147.11	327	⇓iP	PKPbc	14 25 52.1	+1.3
ZIMR		147.11	327	⇓PKP2	PKPbc	14 25 52.1	+1.3
BCLA	Clavier	147.12	355	PKP	PKPbc	14 25 50.0	-0.7
ARMT	Armutlu	147.12	320	eP	PKPbc	14 25 51.4	+0.3
SHUT	Suhut-Afyon	147.15	315	eP	PKPdf	14 25 48.7	+0.5
EIL	Elat	147.18	298	eP	PKPdf	14 25 48.4	+0.1
EIL	Elat	147.18	298	PKPbc	PKPbc	14 25 51.8	+0.3
	comp=N,305nm,0.9s,baz=336,slow=3.0,SNR=24						
EIL				SKPbc	SKiKP	14 28 39.6	+1.9
	comp=N,78nm,1.0s,baz=73,slow=1.1,SNR=6.8						
EIL				SKKPbc		14 36 25.9	
	comp=N,17nm,1.0s,baz=307,slow=3.3,SNR=7.0						
PKSG		147.20	339	⇓ePKiKP	PKPbc	14 25 51.3	+0.3
ULDT	Uludag	147.20	319	iP	PKPdf	14 25 48.8	+0.5
PKS7	Kunszentmiklos	147.22	337	⇓ePKiKP	PKPbc	14 25 51.4	+0.4
SZAC	Souni	147.22	308	P	PKPbc	14 25 52.2	+0.7
MDNY	Mudanya-Bursa	147.22	319	eP	PKPbc	14 25 51.8	+0.5
CSKK	Csˆ‡kako	147.27	339	⇓ePKiKP	PKPbc	14 25 51.6	+0.4
PHSR	Pinarhisar	147.27	322	eP	PKPbc	14 25 52.0	+0.7
ALFC	Alefka	147.28	308	P	PKPbc	14 25 51.8	+0.2
BAGO	Egridir - ISPA	147.28	314	iP	PKPbc	14 25 51.2	-0.4
GEC2	GERESS Array S	147.29	345	ePKIKP	PKPdf	14 25 48.2	+0.1
GEC2	GERESS Array S	147.29	345	ePKPdf	PKPdf	14 25 48.1	+0.1
GERES	GERESS Array B	147.29	345	PKPbc	PKPbc	14 25 51.5	+0.2
	comp=N,215nm,0.8s,baz=25,slow=2.8,SNR=304						
GERES				SKKPbc		14 36 23.5	
	comp=N,3.1nm,0.9s,baz=186,slow=2.4,SNR=5.8						
KZIT	Kziot	147.32	300	eP	PKPdf	14 25 48.9	+0.4
ADH	Angra Heroismo	147.35	44	ePKP	PKPbc	14 25 53.0	+1.4
TVSB	Tavsanli	147.38	318	eP	PKPbc	14 25 52.1	+0.3
ORLT	Orhaneli	147.41	319	eP	PKPbc	14 25 52.9	+1.0
BZS	Buzias	147.41	333	⇑iP	PKPbc	14 25 52.6	+1.0
BZS	Buzias	147.41	333	⇑PKP2	PKPbc	14 25 52.6	+1.0
PKST	Tˆ's	147.43	339	⇓ePKiKP	PKPbc	14 25 51.9	+0.3
SRE	Strehaia	147.44	331	⇑iP	PKPbc	14 25 52.9	+1.2
SRE	Strehaia	147.44	331	⇑PKP2	PKPbc	14 25 52.9	+1.2
PKS6	Bocsa	147.44	337	⇓ePKiKP	PKPbc	14 25 52.0	+0.4
TIM	Timisoara	147.48	334	⇓iP	PKPbc	14 25 53.3	+1.6
TIM	Timisoara	147.48	334	⇓PKP2	PKPbc	14 25 53.3	+1.6
DOU	Dourbes	147.49	356	PKP	PKPdf	14 25 48.7	+0.5
DOU				PKPbc	PKPbc	14 25 51.8	+0.2
AKMC	Akamas	147.53	308	P	PKPbc	14 25 52.1	-0.2
ISP	Isparta	147.54	314	eP	PKPdf	14 25 48.2	-0.6
ISP	Isparta	147.54	314	P	PKPdf	14 25 44.8	-4.0
ISP	Isparta	147.54	314	P	SKKSac	14 35 21.0	-0.2
ISP	Isparta	147.54	314	ePKPdf	PKPdf	14 25 47.8	-1.0
ISP				ePKPbc	PKPbc	14 25 51.5	-0.8
SOP	Sopron	147.55	341	⇓ePKiKP	PKiKP	14 25 52.8	-0.6
GDZ	Gediz	147.57	317	iP	PKPdf	14 25 49.2	+0.3
PPCY	Paphos	147.57	308	P	PKPbc	14 25 52.2	-0.1
EDRB	Edirne	147.58	323	eP	PKPbc	14 25 52.8	+0.7
EDRB	Edirne	147.58	323	P	PKPdf	14 25 48.0	-0.6
KCTX	Karacabey (Bur	147.61	320	eP	PKPdf	14 25 48.5	-0.2
GEDZ	Gediz	147.64	317	eP	PKPab	14 26 00.7	+4.0
TKR	Tekirdag	147.67	322	eP	PKPbc	14 25 51.8	-0.6
RMGR	Halanga-Turnu	147.68	331	⇑iP	PKPbc	14 25 53.9	+1.6
WLF	Walferdange	147.80	354	PKP	PKPdf	14 25 50.0	+1.2
WLF				PKPbc	PKiKP	14 25 53.3	-0.6
WLF	Walferdange	147.80	354	ePKHKP	PKPdf	14 25 49.8	+1.1
WLF				e		14 25 53.5	
WLF	Walferdange	147.80	354	ePKPdf	PKPdf	14 25 49.8	+1.1
WLF				ePKPbc	PKiKP	14 25 53.5	-0.4
BANR	Banloc	147.80	334	⇑iP	PKPbc	14 25 53.5	+0.9
DST	Dursunbey	147.83	319	eP	PKPbc	14 25 53.6	+0.7
EDC	Edincik	147.87	320	eP	PKPbc	14 25 53.2	+0.3
MRMT	Marmara Adasi	147.87	321	eP	PKPbc	14 25 53.2	+0.2
ANTB	Antalya	147.91	313	eP	PKPbc	14 25 51.5	-1.6
PKS9	Tamasi	147.93	338	⇓ePKiKP	PKPbc	14 25 53.1	+0.2
DURS	Dursunbey	147.93	319	iP	PKPdf	14 25 49.6	+0.2
KHAL	Karahalli	147.95	316	iP	PKPdf	14 25 49.5	0.0
KHL	Karahalli	147.96	316	eP	PKPbc	14 25 53.1	-0.3
MDVR	Moldovita	148.03	332	⇑iP	PKPdf	14 25 49.3	0.0
RKY	Sarkoy-Tekirda	148.07	321	eP	PKPbc	14 25 53.8	+0.3
KORT	Korkueli	148.07	313	iP	PKPdf	14 25 48.9	-0.8
KESN	Edirne-Kesan	148.28	322	iP	PKPdf	14 25 49.9	-0.4
BALB	Balikesir	148.28	319	eP	PKPbc	14 25 53.4	-0.6
LANF	Langenberg	148.28	352	PKP	PKPdf	14 25 50.8	+1.2
STU	Stuttgart	148.28	350	ePKPdf	PKPdf	14 25 49.7	+0.1
STU				ePKPbc	PKiKP	14 25 54.5	-0.4
UZP	Denizli	148.35	316	iP	PKPbc	14 25 55.4	+1.0
JSA	Saint Aubin	148.36	5	eP	PKPbc	14 25 53.7	-0.2
BALY	Balya	148.38	320	iP	PKPdf	14 25 50.0	-0.1
KULA	Kula-Manisa	148.42	317	eP	PKPdf	14 25 50.5	+0.3
KULA	Kula-Manisa	148.42	317	P	PKPdf	14 25 49.0	-1.2
KULA	Kula-Manisa	148.42	317	P	SKKSac	14 35 27.7	+1.7
KULA	Kula-Manisa	148.42	317	P	PKPdf	14 25 49.0	-1.2
KULA				P	SKKSac	14 35 27.7	+1.7
ERIK	Erikli-Kesan	148.47	322	eP	PKPbc	14 25 54.7	+0.3
GOLH	Golhisar	148.50	314	iP	PKPdf	14 25 51.2	+0.8
ELL	Elmali	148.50	313	eP	PKPbc	14 25 54.3	-0.5
BEHE	Becsehely	148.55	340	⇓ePKiKP	PKiKP	14 25 55.0	-0.5
DENT	Denizli	148.59	315	eP	PKPbc	14 25 55.8	+0.9
ALN	Alexandroupoli	148.60	323	eP	PKPbc	14 25 55.1	+0.4
ALN	Alexandroupoli	148.60	323	P	PKPdf	14 25 48.5	-1.8
ENEZ	Enez	148.64	322	P	PKPdf	14 25 50.4	+0.1
GELI	Tayfur-Gelibol	148.67	322	eP	PKPbc	14 25 53.4	-1.5
KOGS	Kog	148.74	340	ePKPdf	PKPdf	14 25 50.0	-0.4
KOGS				ePKPbc	PKPbc	14 25 55.2	+0.3
KOGS				epPKPab	pPKPab	14 28 03.8	+0.3
KOGS				ePP	PP	14 29 32.4	+2.3
KOGS				eSS	SS	14 48 02.0	+6.3
KOGS				eS'S'ac	S'S'ac	14 49 10.7	+16
AKHS	Akhisar	148.76	318	iP	PKPdf	14 25 50.4	-0.2
AKS	Akhisar	148.76	318	eP	PKPbc	14 25 55.0	-0.3
PSET	Sete Cidades	148.81	44	ePKP	PKPdf	14 25 48.3	-2.5
BFO	Black Forest	148.85	351	ePKPdf	PKPdf	14 25 50.4	-0.2
BFO				ePKPbc	PKPbc	14 25 55.0	-0.2
PDA	Ponta Delgada	148.88	44	ePKP	PKPdf	14 25 52.2	+1.4
PERS	Pernice	148.93	342	ePKPdf	PKPdf	14 25 49.8	-0.9
PERS				ePKPbc	PKPbc	14 25 55.4	0.0
PERS				epPP		14 31 27.9	
PERS				esPP		14 32 24.9	
PERS				eSKKSac	SKKSac	14 35 27.2	-1.0
PERS				eSS	SS	14 48 00.9	+3.1
PERS				esSS		14 51 28.9	
PERS				eSSS	SSS	14 53 44.9	
CMLA	Cha da Macela	148.97	44	iPKP2	PKPbc	14 25 57.8	+2.0
AKAS	Kas	148.97	312	iP	PKPbc	14 25 55.9	-0.1
VTS	Vitosha	148.97	328	⇑iP	PKPbc	14 25 56.7	+0.9
VTS	Vitosha	148.97	328	P	PKPdf	14 25 50.7	-0.4
VTS	Vitosha	148.97	328	ePKIKP	PKPdf	14 25 50.6	-0.5
VTS	Vitosha	148.97	328	ePKPdf	PKPdf	14 25 50.5	-0.5
VTS				ePKPbc	PKPbc	14 25 55.7	-0.1
KSL	Kastellorizon	149.03	312	P	PKPbc	14 25 55.8	-0.1
KSL	Kastellorizon	149.03	312	P	PKPbc	14 25 55.8	-0.1
EZN	Ezine	149.12	321	eP	PKPbc	14 25 56.3	+0.3
EZN	Ezine	149.12	321	P	PKPdf	14 25 50.8	-0.3
ECH	Echery	149.12	353	PKP	PKPdf	14 25 51.4	+0.5
FETY	Fethiye	149.13	313	eP	PKPbc	14 25 56.8	+0.6

FETY	Fethiye	149.13	313	P	PKPdf	14 25 52.8	+1.5
FETY	Fethiye	149.13	313	P	SKKSac	14 35 28.3	-1.6
FETY	Fethiye	149.13	313	P	SKKSac	14 35 28.3	-1.6
SMTH	Samothraki Isl	149.17	323	P	PKPdf	14 25 50.3	-1.0
SMTH	Samothraki Isl	149.17	323	P	PKPdf	14 25 50.3	-1.0
BART	Pico Bartolome	149.20	44	ePKP	PKPdf	14 25 51.1	-0.4
AYVA	Ayvalik	149.21	320	iP	PKPbc	14 25 56.2	0.0
THEF	They Montfort	149.24	354	PKP	PKPdf	14 25 51.0	-0.1
AYDB	Zeytinkoy-Aydi	149.24	317	eP	PKPbc	14 25 57.3	+0.7
DALY	Dalyan (Mu˜la	149.34	314	eP	PKPbc	14 25 57.3	+0.6
TURN	Turunc	149.34	314	iP	PKPdf	14 25 54.1	+2.5
IZM	Izmir	149.39	318	eP	PKPbc	14 25 56.9	+0.1
KAVA	Kavala	149.40	324	P	PKPdf	14 25 50.9	-0.7
KAVA	Kavala	149.40	324	P	SKKSac	14 35 30.1	-0.9
KAVA	Kavala	149.40	324	P	PKPdf	14 25 50.9	-0.7
AYDN	Tasoluk	149.41	316	iP	PKPdf	14 25 51.9	+0.2
YER	Yerkesik	149.42	315	eP	PKPbc	14 25 57.6	+0.7
YER	Yerkesik	149.42	315	P	PKPdf	14 25 51.3	-0.5
YER	Yerkesik	149.42	315	P	SKKSac	14 35 31.0	-0.5
YER	Yerkesik	149.42	315	P	SKKSac	14 35 31.0	-0.5
GCIS	Gornji Cirnik	149.46	340	ePKPdf	PKPdf	14 25 51.6	+0.1
GCIS				iPKPbc	PKiKP	14 25 57.2	-0.2
MOF	Molkenrain	149.48	352	PKP	PKPdf	14 25 51.2	-0.4
PRK	Paraskevi	149.51	320	P	PKPbc	14 25 55.6	-1.4
PRK	Paraskevi	149.51	320	P	SKKSac	14 35 31.4	-0.3
PRK	Paraskevi	149.51	320	PKHKP	PKPbc	14 25 55.6	-1.4
PRK	Paraskevi	149.51	320	P	PKPbc	14 25 55.6	-1.4
NVR	Nevrokopi	149.51	326	P	PKPdf	14 25 50.6	-1.2
NVR	Nevrokopi	149.51	326	P	SKKSac	14 35 29.3	-2.4
BLCB	Balcova	149.54	318	eP	PKPbc	14 25 57.1	0.0
LJU	Ljubljana	149.64	342	ePKPdf	PKPdf	14 25 51.3	-0.5
LJU				iPKPbc	PKiKP	14 25 57.5	-0.3
LJU				ePKPab	PKPab	14 26 05.5	+1.0
LJU				epPKPbc	pPKPbc	14 28 02.0	-2.2
LJU				epPKPab	pPKPab	14 28 07.5	+0.4
LJU				eSKPdf	SKPdf	14 28 36.2	+2.4
LJU				e		14 28 44.2	
LJU				ePP	PP	14 29 36.1	+0.9
LJU				epPP		14 31 30.9	
LJU				eSKKSac	SKKSac	14 35 31.0	-1.0
LJU				e		14 36 11.8	
LJU				eSS	SS	14 48 07.6	+2.1
LJU				esSS		14 51 30.1	
LJU				eSSS	SSS	14 53 50.4	
PSMA	Santa Maria	149.65	45	ePKP	PKPdf	14 25 51.4	-0.7
PSMN	Pico do Norte,	149.69	45	ePKP	PKPdf	14 25 51.4	-0.8
LIA	Limnos Island	149.75	322	P	PKPdf	14 25 49.9	-2.2
LIA	Limnos Island	149.75	322	P	SKKSac	14 35 46.5	+14
LIA	Limnos Island	149.75	322	P	PKPdf	14 25 49.9	-2.2
LIA				P	SKKSac	14 35 46.5	+14
SIGR	SIGRI	149.78	320	eP	PKPbc	14 25 57.2	-0.4
SIGR	SIGRI	149.78	320	P	PKPdf	14 25 51.6	-0.6
SIGR	SIGRI	149.78	320	P	SKKSac	14 35 38.7	+5.5
SIGR	SIGRI	149.78	320	P	PKPdf	14 25 51.6	-0.6
GCAM	G?zelcaml?	149.81	317	iP	PKPbc	14 25 57.9	+0.2
SRS	Serrai	149.82	326	P	PKPdf	14 25 50.9	-1.4
SRS	Serrai	149.82	326	P	SKKSac	14 35 34.0	+0.6
SRS	Serrai	149.82	326	PKIKP	PKPdf	14 25 50.9	-1.4
SRS	Serrai	149.82	326	P	PKPdf	14 25 50.9	-1.4
SRS				P	SKKSac	14 35 34.0	+0.6
ZEY	˜zmir	149.97	318	iP	PKPbc	14 25 57.7	-0.4
LOMF	Lomont	150.01	353	PKP	PKPdf	14 25 52.7	+0.3
ARG	Arkhangelos	150.01	313	P	PKPbc	14 25 58.1	-0.2
ARG	Arkhangelos	150.01	313	PKHKP	PKPpre	14 25 58.1	
ARG	Arkhangelos	150.01	313	P	PKPbc	14 25 58.1	-0.2
BDRM	Kayabasi	150.02	315	iP	PKPbc	14 25 57.9	-0.4
SMG	Samos	150.06	317	P	PKPdf	14 25 52.5	-0.2
DAVOX	Davos/Dischmat	150.09	348	PKP	PKPdf	14 25 53.0	+0.3
	comp=N,35nm,0.8s,baz=28,slow=1.3,SNR=60						
DAVOX				PKPbc	PKiKP	14 25 59.7	+0.8
	comp=N,443nm,0.7s,baz=333,slow=4.5,SNR=273						
DAVOX				SKKPbc		14 36 12.9	
	comp=N,6.0nm,0.9s,baz=184,slow=3.9,SNR=4.5						
BODT	Bodrum	150.12	316	eP	PKPbc	14 25 58.6	0.0
BODT	Bodrum	150.12	316	P	PKPdf	14 25 52.3	-0.5
BODT	Bodrum	150.12	316	P	PKPdf	14 25 52.3	-0.5
OUR	Ouranopolis	150.15	324	eP	PKPbc	14 25 58.6	+0.2
OUR	Ouranopolis	150.15	324	P	PKPdf	14 25 51.3	-1.4
OUR	Ouranopolis	150.15	324	P	SKKSac	14 35 34.2	-0.9
OUR	Ouranopolis	150.15	324	P	SKKSac	14 35 34.2	-0.9
SOH	Sokhos	150.16	325	P	PKPbc	14 25 56.6	-1.9
KNT	Kendrikon	150.16	326	eP	PKPbc	14 25 58.5	0.0
KNT	Kendrikon	150.16	326	P	PKPbc	14 25 57.7	-0.8
KNT	Kendrikon	150.16	326	P	SKKSac	14 35 26.6	-8.6
KNT	Kendrikon	150.16	326	PKIKP	PKPbc	14 25 57.7	-0.8
KNT	Kendrikon	150.16	326	P	PKPbc	14 25 57.7	-0.8
TRI	Trieste	150.16	343	ePKIKP	PKPdf	14 25 51.3	-1.3
TRI				e		14 25 57.9	
TRI	Trieste	150.16	343	ePKPdf	PKPdf	14 25 51.3	-1.3
TRI				ePKPbc	PKPbc	14 25 57.9	-0.5
CHOS	Chios island	150.16	319	eP	PKPbc	14 25 58.7	0.0
CHOS	Chios island	150.16	319	P	PKPdf	14 25 54.7	+1.7
CHOS	Chios island	150.16	319	P	PKPdf	14 25 54.7	+1.7
FUORN	Ofenpass-Fuorn	150.16	348	ePKPdf	PKPdf	14 25 53.0	+0.1
FUORN				ePKPbc	PKPbc	14 25 58.8	+0.2
ASCN	Ascension	150.19	147	ePKPbc	PKPbc	14 25 59.9	+0.5
PLE	Pljevlja	150.20	333	⇓iPKP	PKPbc	14 25 59.3	+0.6
VAY	Valandovo	150.22	327	P	PKPdf	14 25 51.6	-1.2
VAY	Valandovo	150.22	327	P	SKKSac	14 35 37.0	+1.5
VAY	Valandovo	150.22	327	ePKP	PKPdf	14 25 51.7	-1.2
VAY	Valandovo	150.22	327	P	SKKSac	14 35 37.0	+1.5
SKO	Skopje	150.31	329	P	PKPdf	14 25 53.0	0.0
SKO	Skopje	150.31	329	P	SKKSac	14 35 33.5	-2.5
SKO	Skopje	150.31	329	ePKP	PKPdf	14 25 52.5	-0.5
IVA	Berane	150.34	332	⇓iPKP	PKPbc	14 25 59.3	+0.3
PLG	Polygyros	150.42	325	P	PKPbc	14 25 58.0	-1.2
PLG	Polygyros	150.42	325	P	SKKSac	14 35 32.4	-4.3
PLG	Polygyros	150.42	325	PKIKP	PKPbc	14 25 58.0	-1.2
PLG	Polygyros	150.42	325	P	PKPbc	14 25 58.0	-1.2
HORT	Hortiatis	150.45	325	eP	PKPbc	14 25 58.6	-0.7
HORT	Hortiatis	150.45	325	P	PKPdf	14 25 52.0	-1.3
HORT	Hortiatis	150.45	325	P	PKPdf	14 25 52.0	-1.3
NIS1	Nisyros Isl.	150.46	315	eP	PKPbc	14 25 58.6	-0.8
NIS1	Nisyros Isl.	150.46	315	P	PKPbc	14 25 58.0	-1.3
NIS1	Nisyros Isl.	150.46	315	P	PKPbc	14 25 58.0	-1.3
NISR	Nisiros	150.48	315	P	PKPbc	14 25 58.8	-0.5
NISR	Nisiros	150.48	315	P	PKPbc	14 25 58.8	-0.5
TUE	Stuetta	150.48	349	ePKPdf	PKPdf	14 25 53.5	+0.1
TUE				ePKPbc	PKiKP	14 25 59.8	-0.1
THE	Thessaloniki	150.50	325	P	PKPdf	14 25 52.0	-1.3
THE	Thessaloniki	150.50	325	PKIKP	PKPdf	14 25 52.0	-1.3
THE	Thessaloniki	150.50	325	P	PKPdf	14 25 52.0	-1.3
UPM	Unac-Piva	150.51	334	⇓iPKP	PKPbc	14 25 59.4	-0.1
PVY	Plav	150.53	332	⇓iPKP	PKPbc	14 25 59.3	-0.2
GRG	Griva	150.57	327	eP	PKPbc	14 25 58.9	-0.6
GRG	Griva	150.57	327	P	PKPdf	14 25 52.3	-1.1
GRG	Griva	150.57	327	PKIKP	PKPdf	14 25 52.3	-1.1
GRG	Griva	150.57	327	P	PKPdf	14 25 52.3	-1.1
PAIG	Paliouri	150.59	324	P	PKPdf	14 25 52.3	-1.1
NKY	Niksic	150.79	333	⇓iPKP	PKPbc	14 26 00.0	0.0
NKME	Niksic	150.84	333	⇓iPKP	PKPbc	14 26 00.0	-0.1
BRY	Bratogost	150.91	334	⇓iPKP	PKPbc	14 25 59.8	-0.5
SENIN	Lac Senin/Sane	150.92	352	ePKPdf	PKPdf	14 25 54.0	-0.1
SENIN				ePKPbc	PKiKP	14 26 00.6	-0.2
PDG	Podgorica	150.98	332	P	PKPdf	14 25 53.6	-0.3
PDG	Podgorica	150.98	332	P	SKKSac	14 35 40.4	+0.9
TTG	Podgorica	150.98	332	⇓iPKP	PKPbc	14 26 00.3	0.0
AOS	Alonnisos	150.99	322	eP	PKPbc	14 26 00.2	-0.2
AOS	Alonnisos	150.99	322	P	PKPbc	14 25 58.8	-1.6
AOS	Alonnisos	150.99	322	P	PKPbc	14 25 58.8	-1.6
KARP	Karpathos	151.03	313	eP	PKPbc	14 26 00.7	-0.1
KARP	Karpathos	151.03	313	P	PKPdf	14 25 55.4	+1.1
KARP	Karpathos	151.03	313	ePKPbc	PKPbc	14 26 00.6	-0.1
CEME	Cevo	151.03	333	⇓iPKP	PKPbc	14 26 00.3	-0.2
BIA	Bitola	151.08	328	P	PKPbc	14 26 00.2	-0.5
BIA	Bitola	151.08	328	ePKP	PKPdf	14 25 54.5	+0.3
BIA	Bitola	151.08	328	P	PKPbc	14 26 00.2	-0.5
LIT	Litokhoron	151.13	325	P	PKPdf	14 25 53.4	-0.9
LIT	Litokhoron	151.13	325	P	SKKSac	14 35 34.9	-5.7
LIT	Litokhoron	151.13	325	PKIKP	PKPdf	14 25 53.4	-0.9
LIT	Litokhoron	151.13	325	P	PKPdf	14 25 53.4	-0.9
DRME	Dracevica, Mon	151.21	332	⇓iPKP	PKPbc	14 26 00.9	+0.1
SKIA	Skiathos	151.23	323	P	PKPdf	14 25 53.3	-1.2
FNA	Florina	151.23	328	eP	PKPbc	14 26 01.2	+0.2
FNA	Florina	151.23	328	P	PKPdf	14 25 53.6	-0.9
FNA	Florina	151.23	328	P	SKKSac	14 35 22.9	-18
BUM	Brajici-Budva	151.24	332	⇓iPKP	PKPbc	14 26 01.0	0.0
XOR	Xorichti	151.25	323	P	PKPdf	14 25 53.2	-1.3
XOR	Xorichti	151.25	323	P	SKKSac	14 35 38.2	-3.1

XOR	Xorichti	151.25	323	P	PKPdf	14 25 53.2	-1.3
XOR				P	SKKSac	14 35 38.2	-3.1
NEO	Neokhori	151.27	323	P	PKPbc	14 25 59.2	-1.9
NEO	Neokhori	151.27	323	P	PKPbc	14 25 59.2	-1.9
NEO				P	SKKSac	14 35 37.6	-3.8
OHR	Ohrid	151.28	329	ePKP	PKPdf	14 25 53.5	-1.0
APE	Apeiranthos	151.28	317	P	PKPdf	14 25 50.7	-4.0
HCY	Herceg Novi	151.30	333	⇓iPKP	PKPbc	14 26 00.8	-0.2
ULC	Ulcinj	151.35	332	⇓iPKP	PKPbc	14 26 01.2	0.0
FYTO	Fytoko, Volos	151.37	324	P	PKPbc	14 25 59.5	-1.8
FYTO	Fytoko, Volos	151.37	324	P	PKPbc	14 25 59.5	-1.8
KZN	Kozani	151.37	326	P	PKPdf	14 25 53.7	-1.0
KZN	Kozani	151.37	326	PKIKP	PKPdf	14 25 53.7	-1.0
KZN	Kozani	151.37	326	P	PKPdf	14 25 53.7	-1.0
KARY	Karystos	151.39	320	P	PKPdf	14 25 54.2	-0.5
KARY	Karystos	151.39	320	P	SKKSac	14 35 41.6	-0.4
EREA	Eretria	151.45	321	P	PKPdf	14 25 50.3	-4.5
TIR	Tirane	151.55	330	P	PKPdf	14 25 53.0	-1.9
TIR	Tirane	151.55	330	ePKIKP	PKPbc	14 26 01.5	-0.1
TIR	Tirane	151.55	330	ePKPbc	PKPbc	14 26 01.5	-0.1
SMIA	Simia	151.57	323	P	PKPdf	14 25 54.1	-0.9
SMIA	Simia	151.57	323	P	SKKSac	14 35 41.5	-1.5
NEST	Nestorio	151.67	327	P	PKPdf	14 25 54.5	-0.7
NEST	Nestorio	151.67	327	P	SKKSac	14 35 42.5	-1.1
RSL	Roselend	151.67	352	PKP	PKPdf	14 25 56.6	+1.5
THR2	Thira island,	151.71	316	P	PKPbc	14 25 59.4	-2.7
THR2	Thira island,	151.71	316	P	PKPbc	14 25 59.4	-2.7
PTL	Penteli	151.72	321	P	PKPdf	14 25 54.1	-1.2
PTL	Penteli	151.72	321	P	SKKSac	14 35 39.2	-4.7
PTL	Penteli	151.72	321	P	PKPdf	14 25 54.1	-1.2
SANT	Santorini	151.73	316	eP	PKPbc	14 26 01.9	-0.3
SANT	Santorini	151.73	316	P	PKPdf	14 25 55.4	+0.1
SANT	Santorini	151.73	316	P	PKPdf	14 25 55.4	+0.1
SANT				ePKPbc	PKPbc	14 26 01.1	-1.1
THT1	Athinios (Pele	151.74	316	P	PKPbc	14 25 58.8	-3.4
THR3	Thira Island,	151.75	316	P	PKPbc	14 26 01.2	-1.0
THR3	Thira Island,	151.75	316	P	PKPbc	14 26 01.2	-1.0
THL	Klokotos Trika	151.77	325	P	PKPdf	14 25 53.6	-1.6
THL	Klokotos Trika	151.77	325	P	SKKSac	14 35 39.9	-4.1
THR5	Thira Island,	151.78	316	eP	PKPbc	14 26 01.7	-0.6
THR5	Thira Island,	151.78	316	P	PKPdf	14 25 58.4	+3.1
THR6	Thira Island,	151.78	316	P	PKPbc	14 26 01.1	-1.2
THR6	Thira Island,	151.78	316	P	PKPbc	14 26 01.1	-1.2
MATF	Mathat	151.82	3	PKP	PKPdf	14 25 56.0	+0.9
ATHU	Athens Univers	151.83	321	P	PKPbc	14 26 01.1	-1.3
ATHU	Athens Univers	151.83	321	P	SKKSac	14 35 40.8	-3.6
ATHU	Athens Univers	151.83	321	P	PKPbc	14 26 01.1	-1.3
KPRO	Kipourio	151.84	326	P	PKPdf	14 25 55.2	-0.2
KPRO	Kipourio	151.84	326	P	SKKSac	14 35 43.5	-1.0
LKR	Lokris	151.84	322	P	PKPdf	14 25 54.3	-1.1
LKR	Lokris	151.84	322	P	PKPdf	14 25 54.3	-1.1
ATH	Athens Observa	151.86	321	P	PKPbc	14 26 01.4	-1.0
ATH	Athens Observa	151.86	321	PKIKP	PKPbc	14 26 01.4	-1.0
ATH	Athens Observa	151.86	321	P	PKPbc	14 26 01.4	-1.0
VLY	Voula,Athens	151.89	320	P	PKPbc	14 26 01.2	-1.3
VLY	Voula,Athens	151.89	320	P	SKKSac	14 35 43.6	-1.2
VLY	Voula,Athens	151.89	320	P	PKPbc	14 26 01.2	-1.3
ZKR	Zakros	151.91	313	P	PKPdf	14 25 48.9	-6.7
ZKR	Zakros	151.91	313	P	SKKSac	14 35 45.0	-0.1
ZKR	Zakros	151.91	313	P	SKKSac	14 35 45.0	-0.1
VILL	Villia	151.98	321	P	PKPdf	14 25 54.9	-0.8
VILL	Villia	151.98	321	P	SKKSac	14 35 41.6	-3.8
GDM	Grand'Maison	152.21	353	PKP	PKPdf	14 25 57.4	+1.5
GRN	Grenoble	152.21	354	PKP	PKPdf	14 25 57.4	+1.6
MHLO	Agia Marina, M	152.23	318	P	PKPbc	14 26 00.4	-2.9
MHLO	Agia Marina, M	152.23	318	P	SKKSac	14 35 44.3	-2.4
NPS	Neapolis	152.25	314	P	PKPdf	14 25 59.0	+2.9
NPS	Neapolis	152.25	314	P	SKKSac	14 35 45.9	-1.0
NPS	Neapolis	152.25	314	PKIKP	PKPdf	14 25 59.0	+2.9
NPS	Neapolis	152.25	314	P	PKPdf	14 25 59.0	+2.9
NPS				P	SKKSac	14 35 45.9	-1.0
DSF	Desfina	152.28	323	P	PKPdf	14 25 56.6	+0.5
DSF	Desfina	152.28	323	P	SKKSac	14 35 41.4	-5.6
DSF	Desfina	152.28	323	P	PKPdf	14 25 56.6	+0.5
DSF				P	SKKSac	14 35 41.4	-5.6
LTK	Loutraki	152.28	322	P	PKPdf	14 25 55.0	-1.1
LTK	Loutraki	152.28	322	P	SKKSac	14 35 44.4	-2.5
LTK	Loutraki	152.28	322	P	PKPdf	14 25 55.0	-1.1
LTK				P	SKKSac	14 35 44.4	-2.5
SSB	Saint Sauveur	152.29	355	PKP	PKPdf	14 25 58.1	+2.2
SSB	Saint Sauveur	152.29	355	ePKIKP	PKPdf	14 25 56.2	+0.3
SSB				e		14 26 03.8	
SSB	Saint Sauveur	152.29	355	ePKPdf	PKPdf	14 25 56.2	+0.3
SSB				ePKPbc	PKiKP	14 26 03.8	+0.4
JAN	Janina	152.33	327	P	PKPdf	14 25 56.1	0.0
JAN	Janina	152.33	327	P	SKKSac	14 35 47.2	+0.1
JAN	Janina	152.33	327	PKIKP	PKPdf	14 25 56.1	0.0
JAN	Janina	152.33	327	P	PKPdf	14 25 56.1	0.0
JAN				P	SKKSac	14 35 47.2	+0.1
EVR	Evrytania	152.34	324	P	PKPdf	14 25 56.4	+0.2
EVR	Evrytania	152.34	324	P	PKPdf	14 25 56.4	+0.2
LAST	Lasithi	152.40	314	P	PKPdf	14 25 56.9	+0.5
LAST	Lasithi	152.40	314	P	SKKSac	14 35 45.6	-2.3
LAST	Lasithi	152.40	314	ePKPdf	PKPdf	14 25 56.1	-0.3
LAST				ePKPbc	PKiKP	14 26 04.1	+0.1
LAST				P	SKKSac	14 35 45.6	-2.3
THAL	Thalero	152.45	322	P	PKPdf	14 25 53.0	-3.3
THAL	Thalero	152.45	322	P	SKKSac	14 35 42.9	-4.8
DID	Didima	152.45	320	P	PKPdf	14 25 52.8	-3.6
DID	Didima	152.45	320	P	SKKSac	14 35 44.2	-3.7
DID	Didima	152.45	320	P	PKPdf	14 25 52.8	-3.6
DID				P	SKKSac	14 35 44.2	-3.7
ANX	Ano Chora	152.50	324	P	PKPdf	14 25 57.1	+0.6
ANX	Ano Chora	152.50	324	P	SKKSac	14 35 43.1	-5.1
KALE	Kalithea	152.51	323	P	PKPdf	14 25 55.5	-1.0
KALE	Kalithea	152.51	323	P	SKKSac	14 35 46.5	-1.8
KALE	Kalithea	152.51	323	P	PKPdf	14 25 55.5	-1.0
KALE				P	SKKSac	14 35 46.5	-1.8
SERG	Sergoula	152.55	323	P	PKPdf	14 25 55.9	-0.6
SERG	Sergoula	152.55	323	P	SKKSac	14 35 44.6	-3.7
DSL	Palaion Diasel	152.58	325	P	PKPdf	14 25 56.0	-0.5
DSL	Palaion Diasel	152.58	325	P	SKKSac	14 35 41.6	-6.9
DSL	Palaion Diasel	152.58	325	P	PKPdf	14 25 56.0	-0.5
KRND	KRANIDI	152.59	320	P	PKPbc	14 26 03.0	-1.0
KRND	KRANIDI	152.59	320	P	SKKSac	14 35 45.3	-3.2
EFP	Efpalio	152.62	323	P	PKPdf	14 25 56.5	0.0
EFP	Efpalio	152.62	323	P	SKKSac	14 35 43.8	-4.9
SGD	Sagiada	152.68	327	P	PKPdf	14 25 55.5	-1.1
SGD	Sagiada	152.68	327	P	SKKSac	14 35 47.2	-1.7
IGT	Igoumenitsa	152.69	327	P	PKPdf	14 25 55.8	-0.8
IGT	Igoumenitsa	152.69	327	P	SKKSac	14 35 49.0	0.0
IGT	Igoumenitsa	152.69	327	PKIKP	PKPdf	14 25 55.8	-0.8
IGT	Igoumenitsa	152.69	327	P	PKPdf	14 25 55.8	-0.8
IGT				P	SKKSac	14 35 49.0	0.0
PVO	Paravola	152.71	324	P	SKKSac	14 35 49.0	-0.1
LAKA	Lakka	152.71	323	P	PKPdf	14 25 56.4	-0.3
LAKA	Lakka	152.71	323	P	SKKSac	14 35 47.0	-2.2
LAKA	Lakka	152.71	323	P	PKPdf	14 25 56.4	-0.3
LAKA				P	SKKSac	14 35 47.0	-2.2
IDI	Anoyia	152.73	315	PKP	PKPdf	14 25 57.1	+0.2
	comp=N,24nm,0.9s,baz=120,slow=7.7,SNR=6.8						
IDI				PKPbc	PKPbc	14 26 04.0	-0.5
	comp=N,126nm,0.7s,baz=299,slow=12,SNR=37						
IDI	Anoyia	152.73	315	P	PKPdf	14 25 55.4	-1.5
IDI	Anoyia	152.73	315	ePKPdf	PKPdf	14 25 55.9	-0.9
IDI				ePKPbc	PKPbc	14 26 04.1	-0.5
IDI				P	SKKSac	14 35 44.8	-4.8
KLV	Kalavryta, Ach	152.75	322	P	PKPdf	14 25 56.1	-0.7
KLV	Kalavryta, Ach	152.75	322	P	SKKSac	14 35 40.4	-9.1
KLV	Kalavryta, Ach	152.75	322	P	PKPdf	14 25 56.1	-0.7
KLV				P	SKKSac	14 35 40.4	-9.1
KEK	Kerkira	152.83	328	P	PKPdf	14 25 56.5	-0.3
KEK	Kerkira	152.83	328	P	SKKSac	14 35 48.4	-1.3
KEK	Kerkira	152.83	328	P	SKKSac	14 35 48.4	-1.3
PDO	Prodromos	152.91	325	P	PKPdf	14 25 55.9	-1.0
PDO	Prodromos	152.91	325	P	SKKSac	14 35 43.4	-6.8
OG26	St.-Nazaire-De	152.92	354	PKP	PKPdf	14 25 59.5	+2.6
SIVA	Sivas	152.93	314	P	PKPdf	14 26 00.6	+3.5
SIVA	Sivas	152.93	314	P	SKKSac	14 35 46.5	-4.0
SIVA	Sivas	152.93	314	P	PKPdf	14 26 00.6	+3.5
SIVA				P	SKKSac	14 35 46.5	-4.0
VLX	Vlachokerasia	153.06	321	P	PKPdf	14 25 58.4	+1.1
VLX	Vlachokerasia	153.06	321	P	SKKSac	14 35 43.6	-7.7
VLX	Vlachokerasia	153.06	321	P	PKPdf	14 25 58.4	+1.1
VLX				P	SKKSac	14 35 43.6	-7.7
DRO	Drossia	153.06	323	P	PKPdf	14 25 57.5	+0.3
DRO	Drossia	153.06	323	P	SKKSac	14 35 52.2	+1.1
LKD2	Lefkada island	153.06	325	P	PKPdf	14 25 57.0	-0.2
LKD2	Lefkada island	153.06	325	P	SKKSac	14 35 50.0	-1.1

LKD2	Lefkada island	153.06	325	P	PKPdf	14 25 57.0	-0.2
LKD2				P	SKKSac	14 35 50.0	-1.1
AXS	Araxos	153.09	324	P	PKPdf	14 25 57.2	0.0
VAM	Vamos	153.12	316	P	PKPdf	14 26 01.0	+3.7
VAM	Vamos	153.12	316	P	SKKSac	14 35 52.0	+0.4
VAM	Vamos	153.12	316	PKIKP	PKPdf	14 26 01.0	+3.7
VAM	Vamos	153.12	316	P	PKPdf	14 26 01.0	+3.7
VAM				P	SKKSac	14 35 52.0	+0.4
RLS	Riolos of Patr	153.13	323	P	PKPdf	14 25 57.4	+0.2
RLS	Riolos of Patr	153.13	323	P	SKKSac	14 35 45.0	-6.4
RLS	Riolos of Patr	153.13	323	P	PKPdf	14 25 57.4	+0.2
RLS				P	SKKSac	14 35 45.0	-6.4
VLI	Veliai	153.14	319	P	PKPbc	14 26 02.1	-3.2
VLI	Veliai	153.14	319	P	SKKSac	14 35 46.6	-5.0
VLI	Veliai	153.14	319	P	PKPbc	14 26 02.1	-3.2
VLI				P	SKKSac	14 35 46.6	-5.0
AUTN	L'Aution	153.22	350	PKP	PKPdf	14 25 58.8	+1.3
IMMV	Iera Moni Meta	153.24	316	P	PKPdf	14 25 58.4	+0.9
IMMV	Iera Moni Meta	153.24	316	P	SKKSac	14 35 51.3	-0.9
LUCF	Luceram	153.33	351	PKP	PKPdf	14 26 00.1	+2.6
AMT	Artemida-Makis	153.35	322	P	PKPbc	14 26 05.0	-0.7
AMT	Artemida-Makis	153.35	322	P	SKKSac	14 35 52.4	-0.3
MVIF	Mont Vial	153.35	351	PKP	PKPdf	14 26 00.3	+2.7
KYTH	Kithira	153.36	318	P	PKPbc	14 26 02.7	-3.1
KYTH	Kithira	153.36	318	P	SKKSac	14 35 46.6	-6.2
KYTH	Kithira	153.36	318	P	PKPbc	14 26 02.7	-3.1
KYTH				P	SKKSac	14 35 46.6	-6.2
ANKY	Antikythira Is	153.44	317	P	PKPdf	14 25 58.7	+0.9
ANKY	Antikythira Is	153.44	317	P	SKKSac	14 35 50.7	-2.5
ANKY	Antikythira Is	153.44	317	P	PKPdf	14 25 58.7	+0.9
ANKY				P	SKKSac	14 35 50.7	-2.5
ITM	Ithomi	153.46	321	P	PKPdf	14 25 57.8	0.0
ITM	Ithomi	153.46	321	P	SKKSac	14 35 45.8	-7.5
ITM	Ithomi	153.46	321	P	PKPdf	14 25 57.8	0.0
ITM				P	SKKSac	14 35 45.8	-7.5
KFL	Anninata	153.47	324	P	PKPdf	14 25 54.6	-3.2
KFL	Anninata	153.47	324	P	SKKSac	14 35 50.5	-2.8
GVD	Gavdhos	153.52	315	P	PKPbc	14 26 06.1	0.0
GVD	Gavdhos	153.52	315	P	PKPbc	14 26 06.1	0.0
CALN	Calern	153.53	351	PKP	PKPdf	14 26 00.1	+2.2
VLS	Valsamata	153.54	325	P	PKPbc	14 26 05.3	-0.8
VLS	Valsamata	153.54	325	PKIKP	PKPbc	14 26 05.3	-0.8
VLS	Valsamata	153.54	325	P	PKPbc	14 26 05.3	-0.8
VLS				P	SKKSac	14 35 53.3	-0.3
PYL	PYLOS	153.75	321	P	PKPbc	14 26 05.5	-1.1
PYL	PYLOS	153.75	321	P	SKKSac	14 35 48.9	-5.9
PYL	PYLOS	153.75	321	P	PKPbc	14 26 05.5	-1.1
PYL				P	SKKSac	14 35 48.9	-5.9
PGAV	Gavieira, Arco	154.33	17	ePKPdf	PKPdf	14 25 59.8	+0.8
PGAV	Gavieira, Arco	154.33	17	ePKPab	PKPab	14 26 25.3	+0.7
PGAV	Gavieira, Arco	154.33	17	eSS	SS	14 49 03.4	+6.8
CUC	Castrocucco	154.46	334	ePKPbc	PKPbc	14 26 06.3	-1.7
PCAB	Cabril	154.64	17	ePKPdf	PKPdf	14 25 59.3	0.0
PCAB	Cabril	154.64	17	ePKPab	PKPab	14 26 26.6	+0.7
TIP	Timpagrande	154.72	331	P	PKPdf	14 25 58.8	-0.7
TIP	Timpagrande	154.72	331	ePKPdf	PKPdf	14 25 59.2	-0.4
VIEF	Viey	154.77	2	PKP	PKPdf	14 26 01.6	+2.1
PBRG	Braganca	154.88	15	ePKPab	PKPab	14 26 27.8	+0.9
POLO	Lamas de Olo	155.01	17	ePKPdf	PKPdf	14 26 01.3	+1.4
POLO	Lamas de Olo	155.01	17	ePKPab	PKPab	14 26 28.1	+0.5
POLO	Lamas de Olo	155.01	17	eSS	SS	14 49 07.6	+3.7
FILF	Fillols	155.11	358	PKP	PKPdf	14 26 02.0	+2.0
PVRL	Vila Real	155.12	17	ePKPdf	PKPdf	14 25 59.1	-0.9
PVRL	Vila Real	155.12	17	ePKPab	PKPab	14 26 28.8	+0.8
VALF	Valcebollere	155.28	359	PKP	PKPdf	14 26 02.0	+1.7
MVO	Moncorvo	155.41	16	ePKPdf	PKPdf	14 26 01.8	+1.4
MVO	Moncorvo	155.41	16	ePKPab	PKPab	14 26 30.1	+0.8
MVO	Moncorvo	155.41	16	eSS	SS	14 49 09.8	+1.8
PVIS	Viseu	155.59	17	ePKPdf	PKPdf	14 26 02.4	+1.8
PVIS	Viseu	155.59	17	ePKPab	PKPab	14 26 30.6	+0.5
MTE	Manteigas	155.99	17	ePKPdf	PKPdf	14 26 02.1	+0.9
MTE	Manteigas	155.99	17	ePKPab	PKPab	14 26 32.5	+0.7
MTE	Manteigas	155.99	17	eSS	SS	14 49 20.4	+6.2
MTE	Manteigas	155.99	17	ePKPdf	PKPdf	14 26 01.1	-0.1
PTOM	Tomar	156.45	19	ePKPdf	PKPdf	14 26 01.1	-0.6
PTOM	Tomar	156.45	19	ePKPab	PKPab	14 26 34.1	+0.4
PCBR	Castelo Branco	156.53	17	ePKPdf	PKPdf	14 26 02.7	+0.9
PCBR	Castelo Branco	156.53	17	ePKPab	PKPab	14 26 34.8	+0.8
PMAFR	Mafra	156.75	22	ePKPab	PKPab	14 26 36.1	+1.0
PMAFR	Mafra	156.75	22	eSS	SS	14 49 28.0	+5.6
PMRV	Marv??o	156.93	18	ePKPdf	PKPdf	14 26 03.3	+0.9
PMRV	Marv??o	156.93	18	ePKPab	PKPab	14 26 37.0	+1.2
PMRV	Marv??o	156.93	18	eSS	SS	14 49 31.7	+7.5
PMTG	Montargil	157.01	20	ePKPdf	PKPdf	14 26 04.0	+1.6
PMTG	Montargil	157.01	20	ePKPab	PKPab	14 26 36.1	0.0
PMTG	Montargil	157.01	20	eSS	SS	14 49 30.6	+5.6
VSL	Villasalto	157.13	344	ePKPdf	PKPdf	14 26 02.7	+0.1
PESTR	Estremoz	157.39	19	ePKPdf	PKPdf	14 26 04.2	+1.3
PESTR	Estremoz	157.39	19	ePKPab	PKPab	14 26 37.4	-0.4
PESTR	Estremoz	157.39	19	eSS	SS	14 49 34.2	+5.2
ES19	SONSECA Array	157.50	11	ePKPdf	PKPdf	14 26 02.8	-0.3
ES19				ePKPab	PKPab	14 26 38.3	0.0
ESDC	Sonseca Array	157.51	11	PKP	PKPdf	14 26 03.4	+0.2
	comp=N,3.2nm,0.8s,baz=344,slow=2.3,SNR=23						
ESDC				PKPab	PKPab	14 26 38.5	+0.2
	comp=N,31nm,1.0s,baz=344,slow=4.2,SNR=28						
ESDC				PP	PP	14 30 19.9	+1.0
	comp=N,4.5nm,1.0s,baz=358,slow=4.0,SNR=4.4						
ESLA	Sonseca Array	157.51	11	ePKPab	PKPab	14 26 38.3	-0.1
PAB	San Pablo	157.56	12	ePKIKP	PKPdf	14 26 02.7	-0.5
PAB				e		14 26 38.2	
PAB	San Pablo	157.56	12	ePKPdf	PKPdf	14 26 02.7	-0.5
PAB				ePKPab	PKPab	14 26 38.2	-0.4
EVO	Evora	157.56	20	ePKPdf	PKPdf	14 26 04.4	+1.3
EVO	Evora	157.56	20	ePKPab	PKPab	14 26 38.5	-0.1
EVO	Evora	157.56	20	ePP	PP	14 30 22.4	+3.1
PMAR	Madeira	157.62	44	ePKPab	PKPab	14 26 40.3	+1.0
PNCL	Nicolau / Gran	157.77	21	ePKPdf	PKPdf	14 26 05.2	+1.8
PNCL	Nicolau / Gran	157.77	21	ePKPab	PKPab	14 26 40.0	+0.5
PNCL	Nicolau / Gran	157.77	21	eSS	SS	14 49 38.3	+5.2
PBEJ	Beja	158.07	20	ePKPdf	PKPdf	14 26 04.0	+0.2
PBEJ	Beja	158.07	20	ePKPab	PKPab	14 26 41.8	+1.0
MESJ	Messejana	158.12	21	ePKPdf	PKPdf	14 26 05.6	+1.8
PBAR	Barrancos	158.19	18	ePKPdf	PKPdf	14 26 05.2	+1.3
PBAR	Barrancos	158.19	18	ePKPab	PKPab	14 26 42.5	+1.2
PBAR	Barrancos	158.19	18	eSS	SS	14 49 43.6	+6.2
PCVE	Castro Verde	158.37	21	ePKPab	PKPab	14 26 43.2	+1.1
PCVE	Castro Verde	158.37	21	eSS	SS	14 49 43.9	+4.5
WDD	Wied Dalam	158.44	330	ePKPab	PKPab	14 26 42.8	+0.3
MORF	Marmelete	158.45	22	ePKPdf	PKPdf	14 26 04.7	+0.4
MORF	Marmelete	158.45	22	ePKPab	PKPab	14 26 43.4	+0.9
MORF	Marmelete	158.45	22	eSS	SS	14 49 43.5	+3.1
PVAQ	Vaqueiros	158.69	20	ePKPab	PKPab	14 26 44.9	+1.4
PVAQ	Vaqueiros	158.69	20	eSS	SS	14 49 46.6	+3.9
PBDV	Barranco-do-Ve	158.76	21	eSS	SS	14 49 48.2	+4.7
KEST	Kesra	160.64	340	PKP	PKPdf	14 26 07.1	+0.2
	comp=N,12nm,0.9s,baz=289,slow=2.3,SNR=20						
KEST				PKPab	PKPab	14 26 52.3	+0.2
	comp=N,98nm,0.9s,baz=317,slow=3.1,SNR=31						
KEST	Kesra	160.64	340	ePKPdf	PKPdf	14 26 06.7	-0.2
KEST				ePKPab	PKPab	14 26 52.7	+0.5
ABA	Alger-Bouzarea	160.83	356	P	PKPdf	14 26 10.8	+3.9
AKF	Akfadou	160.85	352	P	PKPdf	14 26 08.3	+1.1
SET	Setif	161.15	350	P	PKPdf	14 26 06.0	-1.4
ADJB	Djebel Djouab	161.44	355	P	PKPdf	14 26 07.2	-0.5
ATAF	Djebel Tarf	161.63	353	P	PKPdf	14 26 08.7	+0.8
BBTS	Babate	162.46	97	PKP	PKPdf	14 26 09.7	+0.6
	comp=N,56nm,1.1s,baz=63,slow=1.9,SNR=5.1						
BBTS				PKPab	PKPab	14 27 00.8	0.0
	comp=N,97nm,1.1s,baz=289,slow=3.2,SNR=6.2						
MDT	Midelt	163.89	19	PKP	PKPdf	14 26 11.0	+0.8
	comp=N,16nm,0.8s,baz=26,slow=1.8,SNR=28						
MDT				PKPab	PKPab	14 27 07.4	+0.8
	comp=N,30nm,0.9s,baz=327,slow=3.2,SNR=22						
LIC	Lamto	167.03	150	ePKP1	PKPdf	14 26 11.5	-1.6
	comp=N,150nm,1.9s						
KIC	Kosan Boka	167.28	151	ePKP1	PKPdf	14 26 12.4	-0.9
	comp=N,158nm,1.3s						
TIC	Toumodi	167.40	149	ePKP1	PKPdf	14 26 11.5	-1.9
DBIC	Dimbokro	167.50	150	PKP	PKPdf	14 26 12.5	-1.0
	comp=N,18nm,0.8s,baz=137,slow=2.3,SNR=20						
DBIC				PKPab	PKPab	14 27 23.4	+0.6
	comp=N,39nm,0.8s,baz=185,slow=4.1,SNR=12						
DBIC	Dimbokro	167.50	150	ePKIKP	PKPdf	14 26 13.1	-0.3
DBIC				e		14 27 23.5	
DBIC	Dimbokro	167.50	150	ePKPdf	PKPdf	14 26 13.1	-0.3
DBIC				ePKPab	PKPab	14 27 23.4	+0.6
TAM	Tamanrasset	173.59	324	ePKIKP	PKPdf	14 26 16.1	-0.5
TAM				e		14 27 50.9	
TAM	Tamanrasset	173.59	324	ePKPdf	PKPdf	14 26 16.1	-0.5
TAM				ePKPab	PKPab	14 27 50.9	+1.0

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
TOA0	Torodi Ar. Sit	175.56	183	ePKPdf	PKPdf	14 26 15.7	-1.5
TOA0				ePKPdf	PKPdf	14 26 15.8	-1.4
TORD	Torodi Ar. Bea	175.56	183	PKP	PKPdf	14 26 16.5	-0.7
	comp=N,17nm,0.7s,baz=343,slow=0.7,SNR=95						
TORD				PKPab	PKPab	14 27 57.5	-0.9
	comp=N,9.3nm,0.6s,baz=209,slow=1.2,SNR=4.3						
TORD				PP	PP	14 31 51.8	+1.8
	comp=N,16nm,1.1s,baz=191,slow=4.0,SNR=7.4						

*ISCJB **03** 14:09:04.0±0.6, 64.°4N±0.°1×17.°3W±0.°2, h10^{km}, mb3.5/9, Error ellipse: s-maj=17.2km s-min=8.0km az=25.7*

*IDC **03** 14:09:04.3±0.8, 64.°45N×17.°48W, h0^{km}, mb3.5/8, mb1 3.8/9, mb1mx3.5/73, mbtmp3.6/9, ML4.1/1, Error ellipse: s-maj=27.6km s-min=15.6km az=36.0*

*NEIC **03** 14:09:05.5±0.6, 64.°36N×17.°57W, h10^{km}, mb4.5/1, Error ellipse: s-maj=22.6km s-min=10.2km az=38.0*

ISC 03 14:09:05.5±0.7**, 64.°4N**±0.°1×**17.°50W**±0.°09**, h10**^{km}**, n14, σ1^{s}21**/15**, mb3.4**/9**, Iceland**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
BORG	Borgarnes	1.69	284	Pn	Pn	14 09 33.5	-1.6
	23nm,0.3s,baz=101,slow=9.5,SNR=126						
BORG				Sn	Sg	14 10 00.5	+0.7
	9.0nm,0.3s,baz=72,slow=23,SNR=7.4						
EKA	Eskdalemuir Ar	11.56	135	Pn	Pn	14 11 48.6	-1.7
	baz=323,slow=13,SNR=11						
ESK	Eskdalemuir	11.56	135	ePn	Pn	14 11 49.3	-1.0
KHC	Kasperske Hory	22.54	118	eP	P	14 14 06.4	+1.0
DPC	Dobruska-Polom	22.65	112	eP	P	14 14 07.2	+0.6
DPC				ex	x	14 14 16.0	
GERES	GERESS Array B	22.82	118	P	P	14 14 10.7	+2.3
	0.9nm,1.0s,baz=337,slow=8.7,SNR=5.1						
ESDC	Sonseca Array	26.00	156	P	P	14 14 38.0	-0.3
	0.1nm,0.2s,baz=346,slow=9.2,SNR=4.9						
YKA	Yellowknife Ar	39.41	313	P	P	14 16 35.1	+0.2
	0.3nm,0.6s,baz=43,slow=9.0,SNR=7.8						
ILAR	Eielson Array	45.94	333	P	P	14 17 28.1	+0.3
	1.2nm,1.1s,baz=20,slow=4.8,SNR=6.6						
KURK	Kurchatov	48.26	58	eP	P	14 17 46.0	-0.1
	3.4nm,0.8s						
KURBB	Kurchatov Arra	48.30	58	P	P	14 17 45.5	-0.9
	1.0nm,0.9s,baz=321,slow=7.6,SNR=6.4						
MKAR	Makanchi Array	52.87	58	P	P	14 18 20.4	-0.7
	0.4nm,0.8s,baz=310,slow=5.1,SNR=4.0						
TORD	Torodi Ar. Bea	52.88	156	P	P	14 18 22.7	+1.3
	0.3nm,0.6s,baz=341,slow=6.9,SNR=2.6						
PDAR	Pinedale Array	53.29	293	P	P	14 18 25.1	+0.6
	0.8nm,0.8s,baz=46,slow=8.5,SNR=6.3						

JMA 03 14:13:42.0±0.1**, 38.°30N**×**142.°15E, h37**^{km}±2^{km}**, M2.4, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
JIO	Ouri	0.65	284	P	Pn	14 13 54.5	-0.3
JIO				S	Sn	14 14 03.5	-0.2
JMK	Ichinoseki	0.98	312	P	Pn	14 13 59.6	+0.5
JMK				eS	Sn	14 14 11.2	-0.5
JOU	Okura	1.17	274	P	Pn	14 14 02.5	+0.7
MIYJ	Miyakonagasawa	1.30	349	P	Pn	14 14 03.8	+0.2
MIYJ				S	Sn	14 14 19.9	+0.2
JOM	Ohasama	1.35	331	P	Pn	14 14 05.4	+1.1
JOM				S	Sn	14 14 22.5	+1.6

*NIED **03** 14:14:00, 39.°00N×142.°40E, h29^{km}, Mw4.0 Best double couple: M₀1.05000×10^{15} NP1:ϕ_s334.00000°, δ27.00000°, λ-122.00000°. NP2:ϕ_s188.00000°, δ67.00000°, λ-75.00000°.*

*IDC **03** 14:14:38.5±1.9, 39.°07N×143.°08E, h0^{km}, mb4.2/5, mb1 4.1/8, mb1mx3.8/79, mbtmp4.0/8, ML3.5/2, MS4.4/1, Ms1 4.4/1, ms1mx3.2/76, Error ellipse: s-maj=50.7km s-min=21.5km az=64.0*

*ISCJB **03** 14:14:44.9±1.3, 38.°99N±0.°05×142.°4E±0.°1, h38^{km}±9^{km}, mb4.3/6, MS4.2/1, Error ellipse: s-maj=13.6km s-min=7.9km az=16.2*

*NEIC **03** 14:14:44.3±0.9, 39.°02N×142.°90E, h35^{km}, mb4.4/1, Error ellipse: s-maj=16.2km s-min=12.3km az=95.0*

*JMA **03** 14:14:45.1±0.1, 39.°01N×142.°38E, h34^{km}±2^{km}, M3.7*

JMA Felt I J1.

ISC 03 14:14:44.6±2.2**, 39.°00N**±0.°06×**142.°41E**±0.°10**, h25**^{km}±13^{km}**, n24, σ1^{s}03**/26**, mb4.3**/6**, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
OFUJ	Ofunato	0.59	278	P	Pb	14 14 56.4	+0.2
OFUJ				S	Sb	14 15 04.2	+0.1
MIYJ	Miyakonagasawa	0.74	322	P	Pb	14 14 58.5	-0.3
MIYJ				S	Sb	14 15 08.1	-0.5
JMK	Ichinoseki	0.93	268	P	Pn	14 15 01.5	-0.6
JMK				S	Sn	14 15 13.4	-1.2
JOM	Ohasama	0.99	299	P	Pn	14 15 02.6	-0.3
JOM				S	Sn	14 15 15.6	-0.6
JIO	Ouri	0.99	237	P	Pn	14 15 01.9	-1.0
JIO				S	Sn	14 15 13.6	-2.6
JTH	Tanohata	1.03	336	P	Pn	14 15 03.6	+0.1
JRG	Rokugo	1.44	287	P	Pn	14 15 09.8	+0.7
JOU	Okura	1.51	246	P	Pn	14 15 09.9	-0.1
JOU				S	Sn	14 15 29.0	+0.1
JANG	Nango	1.54	334	P	Pn	14 15 10.8	+0.3
JYK	Kaneyama	1.60	268	P	Pn	14 15 11.7	+0.4
JYK				eS	Sn	14 15 31.8	+0.5
MJAR	Matsushiro Arr	4.13	235	Pn	Pn	14 15 48.8	+2.6
	5.5nm,0.3s,baz=33,slow=14,SNR=28						
MAJO	Matsushiro	4.14	235	ePn	Pn	14 15 49.7	+3.5
USRK	Ussuriysk Ar.	9.38	307	Pn	Pn	14 17 01.7	+3.6
	0.1nm,0.3s,baz=108,slow=14,SNR=6.1						
KSRS	Korea Array	11.50	267	Pn	Pn	14 17 32.0	+4.8
	0.1nm,0.3s,baz=79,slow=14,SNR=6.2						
KSAR	Wonju Array Be	11.54	267	Pn	Pn	14 17 32.0	+4.4
GUMO	Guam	25.40	174	LR	LR	14 31 51.3	
	comp=Z,743nm,18.8s,baz=166,slow=41						
CHTO	Chiang Mai	42.56	254	eP	P	14 22 39.8	+1.3
MKAR	Makanchi Array	43.77	301	P	P	14 22 48.4	+0.3
	2.5nm,0.7s,baz=85,slow=9.8,SNR=3.9						
KURK	Kurchatov	45.37	307	P	P	14 23 01.3	+0.7
KURBB	Kurchatov Arra	45.44	307	P	P	14 23 01.3	+0.1
	4.0nm,0.6s,baz=80,slow=8.1,SNR=15						
BVAR	Borovoye Array	49.85	311	P	P	14 23 36.3	+0.8
	2.4nm,0.9s,baz=87,slow=6.4,SNR=2.8						
BRVK	Borovoye	49.91	311	eP	P	14 23 35.8	-0.1
	3.2nm,0.8s						
WRA	Warramunga Arr	59.11	189	P	P	14 24 42.1	-0.9
	3.9nm,1.0s,baz=5.9,slow=7.0,SNR=6.1						
ASAR	Alice Springs	62.84	189	P	P	14 25 07.0	-1.3
	1.7nm,0.9s,baz=354,slow=5.8,SNR=2.2						

*ISCJB **03** 14:20:55.5±0.7, 36.°68N±0.°03×140.°71E±0.°05, h12^{km}±4^{km}, mb3.8/8, MS4.4/3, Error ellipse: s-maj=7.5km s-min=4.2km az=23.7*

*IDC **03** 14:20:55.1±0.8, 36.°82N×140.°53E, h0^{km}, mb3.9/8, mb1 4.0/9, mb1mx3.7/76, mbtmp3.9/9, ML3.2/1, MS4.4/4, Ms1 4.4/4, ms1mx3.7/67, Error ellipse: s-maj=18.5km s-min=14.0km az=166.0*

*JMA **03** 14:20:56.5, 36.°70N×140.°64E, h6^{km}±1^{km}, M3.7 Broadband fault plane solution: P waves. NP1: ϕ_s120.00000°, δ69.00000°, λ-126.00000°. NP2:ϕ_s4.00000°, δ41.00000°, λ-33.00000°. Principal axes: T Plg16.0000°, Azm236.0000°; N Plg34.0000°, Azm135.0000°; P Plg52.0000°, Azm347.0000°;*

JMA Felt III J1.

ISC 03 14:20:55.6±1.2**, 36.°78N**±0.°04×**140.°53E**±0.°04**, h5**^{km}±9^{km}**, n23, σ0^{s}68**/28**, mb3.9**/8**, MS4.5**/3**, 5C-1D, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
JHO	Hitachi	0.17	170	⇑P	Pg	14 20 58.9	-0.1
JHO				S	Sg	14 21 00.5	-0.8
ONAJ	Iwakimizuishiy	0.38	34	⇑P	Pb	14 21 04.8	-0.2
ONAJ				S	Sb	14 21 10.6	-0.6
JSB	Shiboa	0.53	291	P	Pn	14 21 09.4	-0.4
JSB				S	Sn	14 21 18.1	-1.0
JYT	Yasato	0.62	206	⇑P	Pg	14 21 07.8	+0.4
JYT				eS	Sg	14 21 16.0	+0.6
JFK	Kawauchi	0.65	25	⇓P	Pb	14 21 09.6	+0.2
JFK				S	Sb	14 21 18.6	-0.1
JFT	Otama	0.75	348	P	Pn	14 21 12.8	-0.1
JFT				S	Sn	14 21 24.0	-0.7
JFY	Yanaizu	0.91	314	⇑P	Pn	14 21 16.0	+0.9
JAG	Ashikaga	0.94	248	⇑P	Pb	14 21 14.6	+0.3
JAG				S	Sn	14 21 28.8	-0.5
MJAR	Matsushiro Arr	1.88	263	Pg	Pb	14 21 30.3	-0.2
	23nm,0.3s,baz=83,slow=11,SNR=147						
MJAR				Lg	Lg	14 21 55.2	
	43nm,0.3s,baz=248,slow=24,SNR=19						
MAT	Matsushiro	1.89	263	P	Pb	14 21 30.4	-0.1
MAT				S	Sg	14 21 56.4	+0.3
JHJ	Hachijo jima 2	3.71	190	Pn	Pn	14 21 53.2	-0.2
	5.3nm,0.3s,baz=55,slow=19,SNR=2.2						
JHJ				Sn	Sn	14 22 37.1	-0.5
	19nm,0.3s,baz=54,slow=17,SNR=3.2						
KLR	Kul'dur	13.99	336	LR	LR	14 28 40.1	
	comp=Z,1μm,19.0s,baz=106,slow=33						
CMAR	Chiang Mai Arr	40.75	255	LR	LR	14 45 42.0	
	comp=Z,735nm,19.3s,baz=120,slow=36						
ZALV	Zalesovo Beam	41.56	313	P	P	14 28 43.4	-0.6
	3.0nm,0.7s,baz=99,slow=7.4,SNR=2.4						
MKAR	Makanchi Array	43.66	302	P	P	14 28 59.7	-1.4
	3.3nm,0.9s,baz=90,slow=7.2,SNR=2.1						
KURBB	Kurchatov Arra	45.60	308	P	P	14 29 15.5	-1.0
	2.0nm,0.6s,baz=84,slow=8.0,SNR=7.6						
PMG	Port Moresby	46.36	171	LR	LR	14 47 27.0	
	comp=Z,456nm,18.3s,baz=336,slow=34						
WRA	Warramunga Arr	56.72	187	P	P	14 30 40.5	+0.2
	0.7nm,0.5s,baz=3.8,slow=7.2,SNR=17						
ASAR	Alice Springs	60.45	187	P	P	14 31 06.7	+0.4
	0.7nm,0.7s,baz=1.6,slow=7.6,SNR=8.0						
BBB	Bella Bella	62.74	44	LR	LR	14 54 50.2	
	comp=Z,189nm,21.9s,baz=226,slow=32						
YKA	Yellowknife Ar	64.38	30	P	P	14 31 33.7	+1.5
	0.2nm,0.7s,baz=305,slow=7.1,SNR=3.4						
NOA	NORSAR Array B	74.14	337	P	P	14 32 32.6	-0.2
	0.6nm,0.7s,baz=35,slow=6.3,SNR=2.8						
TXAR	Lajitas Array	90.83	52	P	P	14 34 01.2	+0.7
	0.4nm,0.8s,baz=316,slow=2.5,SNR=2.5						

JMA 03 14:30:53.0±0.1**, 36.°33N**×**140.°99E, h42**^{km}±2^{km}**, M2.6, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
JHO	Hitachi	0.44	310	P	Pn	14 31 02.8	-0.3
JHO				S	Sn	14 31 09.5	-0.7
CHOJ	Chosi	0.64	190	P	Pn	14 31 05.0	-0.6
ONAJ	Iwakimizuishiy	0.79	349	P	Pn	14 31 07.2	-0.5
ONAJ				S	Sn	14 31 17.0	-1.4
MAT	Matsushiro	2.25	276	P	Pn	14 31 29.8	+2.0
MAT				eS	Sn	14 31 57.8	+3.4

*IDC **03** 14:43:37.8±1.7, 30.°79S×177.°55W, h0^{km}, mb4.4/4, mb1 4.5/5, mb1mx4.0/45, mbtmp4.4/5, ML3.5/1, Error ellipse: s-maj=49.1km s-min=27.5km az=138.0*

*ISCJB **03** 14:43:39.4±3.9, 30.°8S±0.°1×177.°4W±0.°6, h33^{km}, mb4.4/5, Error ellipse: s-maj=70.4km s-min=12.9km az=6.4*

*NEIC **03** 14:43:44.6±8.0, 30.°85S×177.°59W, h48^{km}±74^{km}, mb4.4/1, Error ellipse: s-maj=80.2km s-min=25.3km az=189.0*

ISC 03 14:43:40.7±2.0**, 30.°8S**±0.°1×**177.°3W**±0.°3**, h33**^{km}**, n12, σ1^{s}01**/14**, mb4.5**/5**, Kermadec Islands**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
URZ	Urewera	8.82	210	Pn	Pn	14 45 43.6	-2.2
	0.6nm,0.3s,baz=281,slow=6.1,SNR=9.0						
URZ				Sn	Sn	14 47 24.5	+0.4
	2.6nm,0.3s,baz=251,slow=22,SNR=11						
URZ	Urewera	8.82	210	eP	Pn	14 45 45.9	0.0
URZ				Sn	Sn	14 47 24.5	+0.4
KHZ	Kahutara	13.79	210	Pn	Pn	14 46 54.3	+0.5
CTA	Charters Tower	34.49	279	P	P	14 50 26.2	+0.2
	3.6nm,0.4s,baz=99,slow=11,SNR=10						
CTAO	Charters Tower	34.49	279	eP	P	14 50 26.3	+0.4
STKA	Stephens Creek	35.03	257	P	P	14 50 31.1	+0.7
	4.2nm,0.4s,baz=100,slow=12,SNR=27						
ASAR	Alice Springs	43.74	267	P	P	14 51 42.3	-0.9
	0.8nm,0.3s,baz=107,slow=7.5,SNR=39						
WRAB	Tennant Creek	44.75	272	eP	P	14 51 50.9	-0.5
	8.0nm,1.1s						
WRA	Warramunga Arr	44.76	272	P	P	14 51 50.4	-1.0
	1.8nm,0.3s,baz=110,slow=8.1,SNR=82						
FINES	FINESS Array B	145.69	340	PKPbc	PKPab	15 03 16.5	+0.7
	4.4nm,0.4s,baz=53,slow=4.0,SNR=48						
NOA	NORSAR Array B	149.19	352	PKPbc	PKPab	15 03 28.6	-1.1
	1.0nm,0.9s,baz=43,slow=2.3,SNR=3.3						
AKASG	Malin Array Be	151.97	323	PKPbc	PKPbc	15 03 33.0	+1.0
	1.4nm,0.4s,baz=50,slow=2.9,SNR=11						

*MOS **03** 14:47:50.3±0.3, 54.°83N×158.°29E, h384^{km}, mb4.3/1, Error ellipse: s-maj=52.4km s-min=18.5km az=86.7*

*KRSC **03** 14:47:57.7±1.9, 54.°81N×158.°42E, h301^{km}±20^{km}, ML4.1*

*ISCJB **03** 14:47:59.8±1.7, 54.°79N±0.°08×158.°5E±0.°2, h293^{km}±17^{km}, Error ellipse: s-maj=19.0km s-min=8.0km az=31.8*

ISC 03 14:47:58.8±3.4**, 54.°76N**±0.°08×**158.°6E**±0.°1**, h303**^{km}±24^{km}**, n37, σ0^{s}84**/43**, Kamchatka Peninsula**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
TUMR	Tumrok	1.04	59	eP	Pn	14 48 40.9	+1.1
TUMR	Tumrok	1.04	59	PN	Pn	14 48 40.9	+1.1
GNL	Ganaly	1.13	200	eP	Pn	14 48 40.6	+0.3
GNL	Ganaly	1.13	200	PN	Pn	14 48 40.6	+0.3
TUMD	Tumrok D	1.14	66	eP	Pn	14 48 40.7	+0.6
ESO	Esso	1.17	3	eP	Pn	14 48 40.0	-0.2
ESO	Esso	1.17	3	PN	Pn	14 48 40.0	-0.2
KMNR	Kamenistaya	1.38	43	eP	Pn	14 48 42.3	+0.8
KMNR	Kamenistaya	1.38	43	PN	Pn	14 48 42.3	+0.8
KRX	Arik	1.40	178	eP	Pn	14 48 42.6	+0.7
SDLR	Sedlovina	1.50	173	eP	Pn	14 48 43.1	+0.7
SDLR	Sedlovina	1.50	173	PN	Pn	14 48 43.1	+0.7
AVH	Avacha	1.50	176	eP	Pn	14 48 43.1	+0.7
AVH	Avacha	1.50	176	PN	Pn	14 48 43.1	+0.7
SMAR	Somma	1.51	175	eP	Pn	14 48 43.5	+0.9
SMAR	Somma	1.51	175	PN	Pn	14 48 43.5	+0.9
KPT	Kopyto	1.53	37	eP	Pn	14 48 42.9	+0.5
KPT	Kopyto	1.53	37	PN	Pn	14 48 42.9	+0.5
UGLR	Uglovaya	1.56	175	eP	Pn	14 48 43.5	+0.7
BZMR	Bezymyannaya	1.61	42	eP	Pn	14 48 43.9	+0.9
NLC	Nalytchevo	1.66	164	eP	Pn	14 48 43.5	+0.2
NLC				eS	S	14 49 18.9	+0.1
NLC	Nalytchevo	1.66	164	PN	Pn	14 48 43.5	+0.2
DALK	Dalny	1.73	176	eP	Pn	14 48 43.9	0.0
PET	Petropavlovsk	1.74	178	eP	Pn	14 48 44.2	+0.3
PET	Petropavlovsk	1.74	178	PN	Pn	14 48 44.2	+0.3
KRSR	Krestovskiy	1.85	37	eP	Pn	14 48 44.8	+0.1
KRSR	Krestovskiy	1.85	37	PN	Pn	14 48 44.8	+0.1
SPN	Mys Shipunski	1.87	152	eP	Pn	14 48 44.6	-0.3
SPN				eS	S	14 49 20.1	-1.5
SPN	Mys Shipunski	1.87	152	PN	Pn	14 48 44.6	-0.3
KRMR	Karymshinskiy	1.95	188	eP	Pn	14 48 45.2	-0.3
MTVR	Mutnovka	2.29	186	eP	Pn	14 48 49.8	+1.4
MTVR				eS	S	14 49 28.7	+0.7
RUS	Russkaya	2.33	181	eP	Pn	14 48 48.0	-0.6
RUS				eS	S	14 49 26.4	-1.9
RUS	Russkaya	2.33	181	PN	Pn	14 48 48.0	-0.6
ASAK	Asacha	2.42	190	eP	Pn	14 48 50.8	+1.4
KBTR	Krutoberegovo	2.82	57	eP	Pn	14 48 52.1	-0.7
KBTR				eS	S	14 49 35.2	-0.8
KBTR	Krutoberegovo	2.82	57	PN	Pn	14 48 52.1	-0.7
KBTR				S	S	14 49 35.2	-0.8
BKI	Bering	4.28	81	eS	S	14 50 05.8	+2.0

*ISCJB **03** 14:48:34.9±1.7, 39.°49N±0.°05×142.°6E±0.°1, h22^{km}±10^{km}, mb3.5/10, Error ellipse: s-maj=14.0km s-min=6.9km az=15.2*

*JMA **03** 14:48:34.9±0.1, 39.°47N×142.°62E, h27^{km}±1^{km}, M3.8*

*IDC **03** 14:48:34.4±0.9, 39.°68N×142.°63E, h0^{km}, mb3.5/10, mb1 3.7/11, mb1mx3.5/70, mbtmp3.5/11, ML3.5/1, Error ellipse: s-maj=23.8km s-min=18.4km az=100.0*

ISC 03 14:48:36.3±2.1**, 39.°52N**±0.°05×**142.°53E**±0.°08**, h18**^{km}±11^{km}**, n27, σ1^{s}37**/29**, mb3.7**/10**, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
MIYJ	Miyakonagasawa	0.55	277	P	Pg	14 48 47.1	-0.2
MIYJ				S	Sg	14 48 55.8	+1.0
JTH	Tanohata	0.67	310	P	Pg	14 48 49.0	-0.4
JTH				eS	Sg	14 48 59.2	+0.9
OFUJ	Ofunato	0.80	237	P	Pb	14 48 50.4	-1.3
JOM	Ohasama	0.96	268	P	Pb	14 48 53.6	-0.8
JOM				S	Sb	14 49 07.2	+0.4
JKZ	Kuzumaki	1.04	297	P	Pb	14 48 55.1	-0.7
JKZ				S	Sb	14 49 08.7	-0.4
JANG	Nango	1.16	318	P	Pn	14 48 56.5	-1.2
JANG				eS	Sb	14 49 12.4	-0.2
JMK	Ichinoseki	1.16	241	P	Pn	14 48 56.3	-1.4
JMK				S	Sb	14 49 12.0	-0.6
JIO	Ouri	1.40	221	P	Pn	14 48 58.9	-2.1
JIO				S	Sn	14 49 16.9	-2.2
JRG	Rokugo	1.47	266	P	Pn	14 49 02.1	+0.1
MJAR	Matsushiro Arr	4.52	230	Pn	Pn	14 49 45.5	+1.5
	2.1nm,0.3s,baz=37,slow=12,SNR=44						
MAT	Matsushiro	4.52	230	P	Pn	14 49 45.6	+1.6
MAT				eS	Sb	14 50 49.1	-0.3
SEY	Seymchan	24.19	11	P	P	14 53 51.1	-0.4
	2.3nm,0.9s,baz=205,slow=6.1,SNR=8.5						
SONM	Songino Array	27.22	300	P	P	14 54 21.3	+2.1
	0.1nm,0.4s,baz=98,slow=11,SNR=3.2						
H11N2	WAKE ISLAND Hy	28.78	126	T	T	15 24 59.6	
	baz=318,slow=76,SNR=55						
H11N1	WAKE ISLAND Hy	28.79	126	T	T	15 25 05.4	
	baz=318,slow=76,SNR=57						
H11N3	WAKE ISLAND Hy	28.80	126	T	T	15 25 01.1	
	baz=318,slow=76,SNR=59						
H11S1	WAKE ISLAND Hy	29.58	128	T	T	15 26 05.2	
	baz=320,slow=76,SNR=5.2						
H11S3	WAKE ISLAND Hy	29.59	128	T	T	15 26 01.4	
	baz=320,slow=76,SNR=3.7						
H11S2	WAKE ISLAND Hy	29.60	128	T	T	15 26 00.0	
	baz=320,slow=76,SNR=4.6						
ZALV	Zalesovo Beam	40.94	310	P	P	14 56 19.2	+1.6
	1.0nm,0.5s,baz=95,slow=7.2,SNR=5.1						
MKAR	Makanchi Array	43.59	300	P	P	14 56 38.5	-0.9
	0.2nm,0.4s,baz=83,slow=7.8,SNR=5.0						
KURBB	Kurchatov Arra	45.21	306	P	P	14 56 51.5	-0.7
	0.9nm,0.5s,baz=80,slow=8.7,SNR=8.6						
ILAR	Eielson Array	46.94	34	P	P	14 57 04.8	-0.8
	0.5nm,0.7s,baz=271,slow=6.9,SNR=5.1						
BVAR	Borovoye Array	49.58	311	P	P	14 57 26.3	+0.1
	0.4nm,0.5s,baz=69,slow=7.9,SNR=2.9						
WRA	Warramunga Arr	59.64	189	P	P	14 58 43.0	+3.6
	1.0nm,0.7s,baz=5.9,slow=6.9,SNR=7.7						
YKA	Yellowknife Ar	61.23	31	P	P	14 58 49.0	-0.8
	0.1nm,0.5s,baz=299,slow=6.2,SNR=3.3						
ASAR	Alice Springs	63.37	189	P	P	14 59 05.3	+0.8
	0.2nm,0.7s,baz=14,slow=4.9,SNR=4.1						

JMA 03 14:53:11.9±0.1**, 33.°19N**×**137.°04E, h51**^{km}±1^{km}**, M1.4, Near south coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
TTO1	TONANKAI O.B.S	0.48	334	P	Pn	14 53 23.1	+0.4
TTO1				X		14 53 32.7	
TTO2	TONANKAI O.B.S	0.54	359	P	Pn	14 53 23.7	+0.2
TTO2				X		14 53 34.0	
TTO4	TONANKAI O.B.S	0.92	27	S	Sn	14 53 40.6	+0.3
JWZ	Kozaga	1.16	287	eS	Sn	14 53 46.7	+0.1
JKN2	Miekihoku	1.23	329	P	Pn	14 53 32.9	+0.2
JKN2				S	Sn	14 53 48.3	+0.1
JIE	Ise	1.23	347	P	Pn	14 53 33.4	+0.6
JWM	Minabe	1.55	295	S	Sn	14 53 56.6	+0.4
JWY	Kouya	1.58	311	S	Sn	14 53 58.3	+1.3

*NIED **03** 14:53:00, 37.°90N×142.°10E, h38^{km}, Mw4.8 Best double couple: M₀1.55000×10^{16} NP1:ϕ_s211.00000°, δ45.00000°, λ-81.00000°. NP2:ϕ_s18.00000°, δ46.00000°, λ-99.00000°.*

*MOS **03** 14:53:22.9±0.9, 37.°91N×142.°13E, h31^{km}, mb5.1/90, Error ellipse: s-maj=6.5km s-min=4.2km az=107.5*

*ISCJB **03** 14:53:23.6±0.5, 37.°86N±0.°02×142.°13E±0.°03, h37^{km}±3^{km}, mb4.9/222, MS4.3/7, Error ellipse: s-maj=4.3km s-min=3.1km az=40.3*

*JMA **03** 14:53:23.7±0.2, 37.°87N×142.°13E, h40^{km}±4^{km}, M4.9*

JMA Felt III J1.

*BJI **03** 14:53:24.3, 37.°84N×142.°14E, h55^{km}, mb5.0/66, mB5.2/30, Ms4.5/29, Ms7 4.4/29*

*IDC **03** 14:53:25.6±1.7, 37.°84N×142.°13E, h41^{km}±15^{km}, mb4.6/47, mb1 4.7/54, mb1mx4.6/72, mbtmp4.8/54, ML4.0/6, MS3.9/4, Ms1 3.9/4, ms1mx3.4/59, Error ellipse: s-maj=10.4km s-min=8.0km az=97.0*

*NEIC **03** 14:53:26.5±0.4, 37.°88N×142.°10E, h49^{km}±4^{km}, mb4.9/120, Error ellipse: s-maj=3.7km s-min=2.6km az=135.0*

NEIC Recorded [3 JMA] in Miyagi.

ISC 03 14:53:23.7±0.6**, 37.°84N**±0.°03×**142.°22E**±0.°04**, h30**^{km}±3^{km}**, h30**^{km}**:pP-P, n507, σ1^{s}32**/542**, mb5.0**/227**, MS4.3**/8**, 20C-20D, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
JIO	Ouri	0.92	312	P	Pn	14 53 39.5	-1.0
JIO				S	Sb	14 53 50.2	-2.6
JMM	Marumori	1.13	272	P	Pn	14 53 42.4	-1.0
JMM				S	Sn	14 53 55.6	-2.2
JFK	Kawauchi	1.17	246	P	Pn	14 53 42.9	-1.1
JFK				S	Sn	14 53 56.6	-2.3
JOU	Okura	1.33	294	P	Pn	14 53 45.8	-0.4
JMK	Ichinoseki	1.36	325	P	Pn	14 53 46.0	-0.5
JMK				eS	Sn	14 54 01.7	-1.8
JFT	Otama	1.52	258	P	Pn	14 53 49.0	+0.1
JFT				eS	Sn	14 54 06.8	-0.9
JYS	Shirataka	1.74	283	P	Pn	14 53 51.5	-0.3
JOM	Ohasama	1.78	336	P	Pn	14 53 52.2	-0.2
JOM				S	Sn	14 54 13.0	-1.0
JYK	Kaneyama	1.81	307	P	Pn	14 53 52.6	-0.2
JRG	Rokugo	1.98	322	P	Pn	14 53 55.4	+0.2
JRG				S	Sn	14 54 19.6	+0.5
JFY	Yanaizu	2.04	258	P	Pn	14 53 56.1	+0.1
JFY				eS	Sn	14 54 20.4	-0.1
JYA	Atsumi	2.11	292	P	Pn	14 53 56.7	-0.2
JNS	Sasagawa	2.29	270	P	Pn	14 53 59.6	+0.1
MJAR	Matsushiro Arr	3.45	249	P	Pn	14 54 16.6	+1.2
	19nm,0.3s,baz=52,slow=10,SNR=105						
MJAR				LR	LR	14 55 56.0	
	comp=Z,3μm,18.0s,baz=55,slow=45						
MAJO	Matsushiro	3.45	249	c iP	Pn	14 54 16.6	+1.2
MAJO	Matsushiro	3.45	249	ePn	Pn	14 54 16.6	+1.2
MAT	Matsushiro	3.45	249	P	Pn	14 54 16.5	+1.1
MAT				S	Sb	14 55 00.7	-4.9
ERM	Erimo	4.23	10	deP	Pn	14 54 26.2	+0.2
ERM				pmax	pmax		
	comp=Z,62nm,0.7s						
ERM	Erimo	4.23	10	ePn	Pn	14 54 25.7	-0.3
INU	Inuyama	4.87	241	ePn	Pn	14 54 37.2	+2.3
JHJ2	Mitsune	5.11	203	ePn	Pn	14 54 38.5	+0.3
JHJ	Hachijo jima 2	5.11	204	P	Pn	14 54 38.6	+0.4
	comp=Z,71nm,0.3s,baz=322,slow=6.7,SNR=12						
JHJ				S	Sn	14 55 35.8	-0.4
	comp=Z,129nm,0.3s,baz=72,slow=23,SNR=7.5						
JHJ				LR	LR	14 56 35.7	
	comp=Z,877nm,21.1s,baz=54,slow=37						
YUK	Yuzh-Kuril'sk	6.77	23	eP	Pn	14 54 59.1	-1.9
YUK				eS	Sn	14 56 11.7	-5.3
YUK				pmax	pmax		
	comp=Z,197nm,0.3s						
YUK				pmax	pmax		
	comp=E,43nm,0.1s						
YUK				pmax	pmax		
	comp=N,75nm,0.4s						
YUK				MLR	MLR		
	comp=Z,1μm,16.0s						
SHO	Shikotan	6.96	29	eP	Pn	14 55 01.0	-2.6
SHO				eS	Sn	14 56 14.0	-7.7
SHO				pmax	pmax		
	comp=Z,49nm,0.5s						
SHO				pmax	pmax		
	comp=E,27nm,0.6s						
SHO				pmax	pmax		
	comp=N,21nm,0.5s						
KUR	Kuril'sk	8.51	28	eP	Pn	14 55 25.0	+0.2
KUR				eS	Sn	14 56 54.1	-5.7
KUR				pmax	pmax		

comp=N,25nm,0.4s
KUR pmax pmax
comp=E,25nm,0.4s
KUR pmax pmax
comp=Z,49nm,0.4s
KUR smax smax
comp=E,159nm,0.5s
KUR smax smax
comp=N,1.0nm,0.3s
YSS Yuzh-Sakhalins 9.11 2⇓ *i*P **Pn 14 55 33.1 0.0**
YSS pmax pmax
comp=Z,40nm,0.8s
YSS MLR MLR
comp=Z,1μm,16.0s
YSS Yuzh-Sakhalins 9.11 2 *e*Pn **Pn 14 55 33.3 +0.2**
USRK Ussuriysk Ar. 10.00 313 P **Pn 14 55 45.9 +0.7**
comp=Z,5.9nm,0.3s,baz=122,slow=14,SNR=83
USRK LR LR 14 59 19.0
comp=Z,1μm,21.4s,baz=119,slow=36
JNU Nakatsue 10.37 246 P **Pn 14 55 53.0 +2.6**
comp=Z,1.5nm,0.3s,baz=57,slow=6.6,SNR=22
JNU Nakatsue 10.37 246 *e*Pn **Pn 14 55 53.9 +3.4**
CBIJ Chichi jima 10.72 180 *e*Pn **Pn 14 55 54.1 -1.0**
CBIJ *e*Sn **Sn 14 57 50.1 -3.9**
JCJ Chichijima 10.72 180 P **Pn 14 55 54.1 -1.0**
comp=Z,11nm,0.3s,baz=288,slow=16,SNR=9.9
JCJ S **Sn 14 57 46.8 -7.3**
comp=Z,12nm,0.3s,baz=262,slow=23,SNR=4.2
KSRS Korea Array 11.34 272 P **Pn 14 56 06.3 +2.7**
comp=Z,1.9nm,0.3s,baz=82,slow=14,SNR=44
KS01 Wonju Array Si 11.36 273 *e*Pn **Pn 14 56 07.3 +3.4**
KS15 Wonju Array Si 11.37 272 *e*Pn **Pn 14 56 08.1 +4.1**
KSAR Wonju Array Be 11.37 272 P **Pn 14 56 06.3 +2.3**
KSAR Wonju Array Be 11.37 272 P **Pn 14 56 06.3 +2.3**
MDJ Mudanjiang 11.66 309 P **Pn 14 56 08.0 +0.1**
MDJ S **Sn 14 58 15.1 -1.9**
MDJ pmax pmax
comp=Z,5.0nm,1.8s
MDJ pmax pmax
comp=Z,120nm,4.3s
MDJ LR LR
comp=Z,1μm,17.1s
MDJ Mudanjiang 11.66 309 *e*Pn **Pn 14 56 10.7 +2.8**
HABR Khabarovsk 11.84 336 *ce*P **Pn 14 56 07.6 -2.7**
HABR *e*S **Sn 14 58 18.2 -3.0**
HABR pmax pmax
comp=E,11nm,1.6s
HABR pmax pmax
comp=N,13nm,1.6s
HABR pmax pmax
comp=Z,17nm,1.6s
HABR MLR MLR
comp=Z,429nm,11.0s
TYV Tymovskoe 13.02 1 *e*P Pn 14 56 20.5 -6.0
TYV pmax pmax
comp=Z,31nm,1.0s
KLR Kul'dur 13.66 330 P **Pn 14 56 35.4 +0.1**
comp=Z,0.5nm,0.3s,baz=128,slow=13,SNR=11
CN2 Changchun 14.01 300 *e*P **Pn 14 56 42.0 +1.9**
CN2 *es*P P 14 56 57.4 +10
CN2 pmax pmax
comp=Z,10.0nm,1.2s
CN2 LR LR
comp=Z,550nm,15.0s
CN2 LR LR
comp=Z,740nm,15.0s
CN2 LR LR
comp=Z,720nm,16.0s
SNY Shenyang 14.86 291 ⇓P **Pn 14 56 53.5 +1.9**
SNY pmax pmax
comp=Z,19nm,1.3s
SNY pmax pmax
comp=Z,970nm,12.0s
SNY LR LR
comp=Z,330nm,8.3s
SNY LR LR
comp=Z,1μm,17.0s
SNY LR LR
comp=Z,2μm,13.5s
NKL Nikolayevsk 15.35 357 *e*P **Pn 14 56 58.0 +0.1**
NKL pmax pmax
comp=Z,13nm,1.0s
JOW Kunigami 16.08 231 P **Pn 14 57 08.0 +0.3**
baz=121,slow=18
JOW Kunigami 16.08 231 *e*Pn **P 14 57 09.7 -1.0**
comp=Z,41nm,0.9s
DL2 Dalian 16.18 280 P **Pn 14 57 09.6 +0.8**
DL2 pmax pmax
comp=Z,100nm,0.9s
PETK Petropavlovsk- 18.67 30 P **Pn 14 57 40.9 +1.3**
comp=Z,0.4nm,0.3s,baz=214,slow=7.8,SNR=8.2
PETK LR LR 15 04 10.5
comp=Z,271nm,21.8s,baz=211,slow=34
PET Petropavlovsk 18.99 32 *e*P **P 14 57 43.2 +0.6**
HIA Hailar 19.81 312 *e*P **P 14 57 50.1 -1.6**
HIA pmax pmax
comp=Z,48nm,1.6s
HIA Hailar 19.81 312 *e*P **P 14 57 50.0 -1.6**
comp=Z,48nm,1.6s
NJ2 Nanjing 19.98 260 *e*P **P 14 57 53.5 -0.1**
NJ2 pmax pmax
comp=Z,31nm,0.7s
TIA Tai'an 20.09 273 *e*P **P 14 57 53.7 -1.0**
TIA pmax pmax
comp=Z,50nm,1.1s
BJI Beijing 20.35 284 P **P 14 57 57.0 -0.6**
BJI pmax pmax
comp=Z,35nm,1.4s
BJT Baijiatuau 20.36 284 *e*P **P 14 57 56.5 -1.2**
BJT pmax pmax
comp=Z,47nm,0.6s
BJT Baijiatuau 20.36 284 *e*P **P 14 57 56.5 -1.2**
comp=Z,47nm,0.6s
MA2 Magadan 22.43 11 P **P 14 58 20.0 +0.3**
comp=Z,50nm,0.8s,baz=216,slow=8.5,SNR=84
MA2 Magadan 22.43 11 *e*P **P 14 58 19.6 -0.2**
comp=Z,190nm,0.8s
SSLB Suanglung 22.94 238 *e*P **P 14 58 22.7 -2.8**
comp=Z,36nm,1.0s
YULB Yu-li 22.98 237 *e*P **P 14 58 25.1 -0.8**
comp=Z,62nm,1.6s
TPUB Ta-pu 23.49 238 *e*P **P 14 58 29.2 -1.8**
comp=Z,50nm,0.8s
TWG Pinlang 23.53 236 *e*P **P 14 58 29.9 -1.3**
comp=Z,151nm,0.7s
HHC Hu-ho-hao-te 23.83 287 *e*P **P 14 58 33.6 -0.6**
HHC S **S 15 02 46.1 -2.2**
HHC pmax pmax
comp=Z,31nm,1.1s
HHC LR LR
comp=Z,330nm,14.5s
HHC LR LR
comp=Z,450nm,14.5s
HHC LR LR
comp=Z,520nm,14.5s
WHN Wuhan 24.11 261 ⇑P **P 14 58 36.6 -0.2**
CIT Chita 24.55 314 *e*P **P 14 58 41.3 +0.6**
CIT pmax pmax
comp=Z,147nm,1.2s
YAK Yakutsk 25.43 346 P **P 14 58 47.7 -0.7**
comp=Z,3.0nm,0.3s,baz=352,slow=21,SNR=16
YAK Yakutsk 25.43 346 *e*P **P 14 58 48.2 -0.2**
YAK *e* 14 59 23.9
YAK *e* 15 02 20.0
YAK *es*S **S 15 03 13.3 +0.2**
YAK *es*S **SnSn 15 04 07.3 +0.7**
YAK *e* 15 09 43.9
YAK pmax pmax
comp=Z,81nm,0.9s
YAK pmax pmax
comp=E,8.0nm,0.9s
YAK pmax pmax
comp=N,29nm,0.9s
YAK pmax pmax
comp=Z,18nm,0.8s
YAK smax smax
comp=N,203nm,2.5s
YAK smax smax
comp=E,125nm,2.2s
YAK MLR MLR
comp=Z,344nm,17.0s
YAK MLR MLR
comp=N,306nm,17.0s
YAK MLR MLR
comp=E,304nm,18.0s
YAK Yakutsk 25.43 346 *e*P **P 14 58 46.8 -1.6**
comp=E,78nm,0.9s
SEY Seymchan 25.88 11 P **P 14 58 53.4 +0.9**
comp=E,26nm,0.8s,baz=194,slow=8.7,SNR=114
SEY Seymchan 25.88 11⇓ *e*P **P 14 58 53.7 +1.2**
XAN Xi'an 27.14 272 P **P 14 59 03.9 -0.3**
XAN pP sP 14 59 15.1 -1.5
XAN pmax pmax
comp=E,33nm,0.6s
BOD Bodaibo 27.20 326⇑ *i*P **P 14 59 03.9 -0.5**
BOD pmax pmax
comp=Z,18nm,0.8s
ULN Ulaanbaatar 27.44 303⇑ *e*P **P 14 59 07.4 +0.4**
ULN pmax pmax
comp=Z,31nm,1.2s
ULN Ulaanbaatar 27.44 303 *e*P **P 14 59 07.1 +0.2**
comp=Z,22nm,1.0s
SONA1 Songino Array 27.87 303 *e*P **P 14 59 10.8 0.0**
SONM Songino Array 27.88 303 P **P 14 59 11.3 +0.5**
comp=Z,12nm,0.7s,baz=101,slow=8.6,SNR=121
ENH Enshi 28.04 264 *e*P **P 14 59 11.6 -0.8**
comp=Z,84nm,1.0s
ZAK Zakamensk 30.28 307 *e*P **P 14 59 31.7 -0.4**
ZAK pmax pmax
comp=Z,7.0nm,1.0s
ZAK pmax pmax
comp=Z,3.0nm,0.8s
TLY Talaya 30.29 310 P **P 14 59 32.1 0.0**
comp=Z,4.8nm,0.7s,baz=100,slow=4.0,SNR=11
TLY Talaya 30.29 310 *e*P **P 14 59 32.7 +0.6**
TLY pmax pmax
comp=Z,5.0nm,0.7s
LZH Lanzhou 30.57 279 *e*P **P 14 59 33.9 -1.0**
LZH pmax pmax
comp=Z,31nm,1.1s
LZH pmax pmax
comp=Z,84nm,4.5s
MOY Mondy 31.91 309 *e*P **P 14 59 46.6 +0.1**
GYA Guiyang 31.99 260⇓ *i*P **P 14 59 46.5 -0.9**
GYA pP sP 15 00 02.0 +2.2
GYA PP **PnPn 15 00 54.2 +1.2**
GYA PcP **PcP 15 02 38.4 +1.5**
GYA S **S 15 04 53.8 -3.4**
GYA sS sS 15 05 16.0 +4.4
GYA ScP **ScP 15 06 15.2 -3.0**
GYA SS **SnSn 15 06 47.8 +0.4**
GYA ScS **ScS 15 10 13.3 -3.7**
GYA pmax pmax
comp=Z,40nm,0.8s
GYA pmax pmax
comp=Z,130nm,6.2s
GYA LR LR
comp=Z,580nm,18.0s
GYA LR LR
comp=Z,520nm,18.4s
GYA LR LR
comp=Z,550nm,17.7s
CD2 Chengdu 32.31 269 P **P 14 59 49.5 -0.6**
CD2 pP sP 15 00 02.0 -0.5
CD2 PP **PP 15 01 02.6 -0.7**
CD2 S **S 15 04 59.6 -2.5**
CD2 sS sS 15 05 21.2 +4.7
CD2 pmax pmax
comp=Z,80nm,0.9s
CD2 pmax pmax
comp=Z,280nm,7.8s
CD2 LR LR
comp=Z,740nm,17.4s
CD2 LR LR
comp=Z,840nm,24.0s
GTA Gaotai 32.94 286 *e*P **P 14 59 55.6 -0.1**
GTA PcP **PcP 15 02 40.5 +1.1**
GTA pmax pmax
comp=Z,6.0nm,0.7s
BILL Bilibino 33.07 16 *e*P **P 14 59 56.3 0.0**
BILL *e*PPP PPP 15 01 15.8
BILL pmax pmax
comp=Z,16nm,1.2s
BILL MLR MLR
comp=Z,393nm,17.0s
BILL Bilibino 33.07 16 *e*P **P 14 59 55.6 -0.6**
comp=Z,18nm,1.3s
QIZ Qiongzhong 33.84 245 P **P 15 00 03.6 +0.1**
QIZ pmax pmax
comp=Z,13nm,1.4s
TIXI Tiksi 34.57 353 *e*P **P 15 00 08.8 -0.4**
TIXI pmax pmax
comp=Z,8.0nm,1.2s
TIXI Tiksi 34.57 353 *e*P **P 15 00 08.1 -1.1**
comp=Z,6.0nm,0.6s
KMI Kunming 35.72 261 P **P 15 00 20.0 +0.1**
KMI pP sP 15 00 32.6 +0.3
KMI sP pP 15 00 37.5 +8.8
KMI S **S 15 05 47.9 -7.2**
KMI pmax pmax
comp=Z,25nm,0.9s
KMI pmax pmax
comp=Z,410nm,10.5s
KMI LR LR
comp=Z,190nm,14.1s
KMI LR LR
comp=Z,220nm,13.2s
KMI LR LR
comp=Z,420nm,21.7s
KRAR Krasnoyarsk 37.33 315 *e*P **P 15 00 32.9 -0.1**
KRAR pmax pmax
comp=Z,12nm,0.9s
MYLDM Laad Datu 39.04 219 *e*P **P 15 00 50.0 +2.1**
comp=Z,39nm,1.1s
NONG Nongkai 39.37 251 P **P 15 00 51.4 +0.8**
comp=Z,50nm,0.8s
CRAI Chiangrai 40.20 256 P **P 15 00 57.4 -0.1**
comp=Z,228nm,0.7s
LBMI Labuha 40.63 203 P **P** 15 01 07.3 +6.3
KHON Khomkaen 40.69 249 P **P 15 01 05.0 +3.4**
comp=Z,9.3nm,0.7s,comp=Z,482nm
WMQ Urumqi 41.05 296 P **P 15 01 05.4 +1.0**
WMQ pP sP 15 01 16.2 -0.7
WMQ sP pP 15 01 23.0 +10
WMQ S **S 15 07 16.8 +1.8**
WMQ pmax pmax
comp=Z,32nm,1.0s
WMQ pmax pmax
comp=Z,47nm,4.0s
LOEI Loei 41.13 252 P **P 15 01 02.5 -2.7**
comp=Z,56nm,1.0s
PHRA Phrae 41.31 254 P **P 15 01 07.6 +0.9**
comp=Z,103nm,1.3s
CMAI Chiengmai2 41.39 257 P **P 15 01 07.9 +0.4**
comp=Z,15nm,1.0s
UTTA Uttaradit 41.52 253 P **P 15 01 10.1 +1.7**
comp=Z,2.9nm,0.9s
CHAI Chaiyaphum 41.59 249 P **P 15 01 11.5 +2.5**
comp=Z,5.6nm,0.7s
FAKI Fak Fak 41.60 195 P **P 15 01 09.6 +0.6**
comp=Z,29nm,0.7s
FAKI Fak Fak 41.60 195 *e*P **P 15 01 09.2 +0.2**
comp=Z,20nm,0.8s
MRSI Marisa 41.61 211 P **P 15 01 11.2 +2.1**
comp=Z,32nm,0.9s
LAMP Lampang 41.76 255 P **P 15 01 11.6 +1.3**
comp=Z,6.0nm,0.6s
ZAA0 Zalesovo Array 41.85 312 *e*P **P 15 01 10.3 -0.3**
ZALV Zalesovo Beam 41.85 312 P **P 15 01 10.9 +0.3**
comp=Z,16nm,0.5s,baz=89,slow=6.9,SNR=101
ZALV PcP **PcP 15 03 06.3 +0.2**
comp=Z,5.8nm,0.6s,baz=89,slow=3.1,SNR=5.2
PBKT Sadao Pong 41.93 251 P **P 15 01 12.3 +0.6**
comp=Z,8.6nm,0.8s
CMMT Chiang Mai 42.11 256 P **P 15 01 13.3 +0.1**
comp=Z,12nm,1.2s
CHTO Chiang Mai 42.11 256 P **P 15 01 13.4 +0.2**
comp=Z,63nm,0.9s
CHTO Chiang Mai 42.11 256 *e*P **P 15 01 12.9 -0.3**
CHTO pmax pmax
comp=Z,9.0nm,0.9s
CHTO Chiang Mai 42.11 256 *e*P **P 15 01 12.9 -0.3**
comp=Z,9.3nm,0.9s
CM31 Chiang Mai Arr 42.32 255 *e*P **P 15 01 15.4 +0.4**
CMAR Chiang Mai Arr 42.32 255 P **P 15 01 15.8 +0.8**
comp=Z,3.8nm,0.7s,baz=46,slow=6.0,SNR=46
CMAR PcP **PcP 15 03 08.4 +0.2**
comp=Z,1.8nm,0.7s,baz=24,slow=3.6,SNR=6.0
CM01 Chiang Mai Arr 42.33 255 *e*P **P 15 01 15.2 +0.2**
SANI Sanana 42.44 204 P **P 15 01 17.6 +1.7**
comp=Z,52nm,0.8s
NVS Novosibirsk 42.75 313⇑ *i*P **P 15 01 18.5 +0.5**
NVS *e*S **S 15 07 38.5 -1.1**
NVS pmax pmax
comp=Z,15nm,0.8s
NVS pmax pmax
comp=N,5.0nm,1.0s
NVS pmax pmax
comp=E,20nm,1.2s
NVS smax smax
comp=N,11nm,2.2s
NVS smax smax
comp=E,18nm,2.0s
SRAK Srakaew 42.77 247 P **P 15 01 16.0 -2.6**
LSA Lhasa 42.77 275 P **P 15 01 20.2 +1.1**
LSA pmax pmax
comp=E,7.0nm,1.2s
LSA Lhasa 42.77 275 *e*P **P 15 01 19.7 +0.6**
LSA pmax pmax
comp=Z,10.0nm,0.8s
LSA Lhasa 42.77 275 *e*P **P 15 01 19.7 +0.6**
comp=Z,10nm,0.8s
NRIK Noril'sk 42.80 335 P **P 15 01 17.9 -0.3**
comp=Z,4.2nm,0.3s,baz=112,slow=8.9,SNR=15
APSI Ampana 42.99 211 P P 15 01 25.8 +5.5
MHMT Maesarieng 43.26 256 P **P 15 01 23.5 +0.9**
comp=Z,13nm,0.9s
UMPA Umpang Tak 43.74 253 P **P 15 01 28.9 +2.4**
comp=Z,4.1nm,1.1s
MK01 Makanchi Array 44.23 302 *e*P **P 15 01 30.1 -0.1**
MK31 Makanchi Array 44.23 302 *e*P **P 15 01 30.1 -0.1**
MK31 Makanchi Array 44.23 302 *e*P **P 15 01 30.1 -0.1**
MKAR Makanchi Array 44.23 302 P **P 15 01 30.1 0.0**
comp=Z,3.3nm,0.4s,baz=80,slow=10,SNR=87
MAKZ Makanchi 44.44 302 *e*P **P 15 01 31.9 +0.1**
MAKZ pmax pmax
comp=Z,19nm,0.8s
MAKZ Makanchi 44.44 302 *e*P **P 15 01 31.9 +0.1**
comp=Z,19nm,0.8s
SBUM Sibu 44.69 225 *e*P **P 15 01 34.2 +0.2**
comp=Z,8.6nm,1.0s
SRDT SRDT 44.70 250 P **P 15 01 36.0 +1.9**
KHLT Khaolaem Dam 44.82 251 P P 15 01 48.2 +13
KURK Kurchatov 45.94 308 *e*P **P 15 01 43.4 -0.2**
KURK pmax pmax
comp=Z,45nm,0.8s
KURK Kurchatov 45.94 308 *e*P **P 15 01 43.4 -0.2**
comp=Z,45nm,0.8s
KURBB Kurchatov Arra 46.01 307 P **P 15 01 44.0 -0.1**
comp=Z,26nm,0.5s,baz=82,slow=8.0,SNR=330
KDAK Kodiak Island 46.07 42 P P 15 02 00.4 +16
comp=Z,19nm,0.6s,baz=261,slow=4.3,SNR=12
KDAK Kodiak Island 46.07 42 *i*P **P 15 01 45.2 +0.7**
PPLA Purkeypile 46.14 35 *e*P **P 15 01 45.5 +0.3**
comp=Z,42nm,1.3s
CAST Castle Rocks 46.20 35 *e*P **P 15 01 47.3 +1.8**
comp=Z,47nm,1.9s
TAPN Taplejung 46.52 274 *e*P **P 15 01 49.1 +0.3**
comp=Z,20nm,0.6s
KSM Kuching 46.57 227 *e*P **P 15 01 49.8 +0.8**
comp=Z,18nm,0.7s
BPAW Bear Paw Mtn. 46.70 34 *e*P **P 15 01 51.0 +1.6**
comp=Z,43nm,2.0s
KTH Kantishna Hill 46.72 34 *e*P **P 15 01 51.4 +1.7**
comp=Z,14nm,0.9s
MLY Manley 46.83 32 *e*P **P 15 01 52.1 +1.7**
comp=Z,16nm,1.0s
ODAN Odare 47.00 273 *e*P **P 15 01 52.6 +0.1**
comp=Z,36nm,0.6s
STKI Sintang 47.06 224 P **P 15 01 54.2 +1.4**
comp=Z,23nm,1.0s
COLD Coldfoot 47.14 29 *e*P **P 15 01 53.8 +1.0**
comp=Z,22nm,1.8s
KAPI Kappang 47.48 211 P **P 15 01 56.7 +0.7**
comp=Z,9.6nm,0.7s,baz=340,slow=13,SNR=5.3
KAPI Kappang 47.48 211 *e*P **P 15 01 57.2 +1.2**
comp=Z,89nm,1.5s
RAMN Ramite 47.59 274 *e*P **P 15 01 57.2 +0.1**
comp=Z,127nm,1.0s
RND Reindeer 47.65 35 *e*P **P 15 01 57.8 +0.9**
RND pmax pmax
comp=Z,87nm,2.0s
RND Reindeer 47.65 35 *e*P **P 15 01 57.8 +0.9**
comp=Z,87nm,2.0s
GUN Gumba 47.71 275 *e*P **P 15 01 58.3 +0.1**
comp=Z,69nm,0.6s
MDM Murphy Dome 47.89 33 *e*P **P 15 01 59.7 +1.0**
comp=Z,22nm,0.9s
WRH Wood River Hil 47.96 33 *e*P **P 15 02 00.1 +0.9**
comp=Z,11nm,0.9s
COLA College 48.05 33 *e*P **P 15 02 00.9 +1.1**
COLA pmax pmax
comp=Z,6.0nm,0.8s
COLA College 48.05 33 *e*P **P 15 02 00.9 +1.1**
comp=Z,6.3nm,0.8s
CCB Clear Creek Bu 48.08 33 *e*P **P 15 02 01.1 +1.0**
comp=Z,42nm,2.0s
KKN Kakani 48.24 276 *e*P **P 15 02 02.4 +0.3**
comp=Z,82nm,0.8s
PKIN Phulchoki 48.24 275 *e*P **P 15 02 02.8 +0.6**
comp=Z,20nm,0.5s
BBKI Banjar Baru 48.31 218 P **P 15 02 03.1 +0.7**
comp=Z,82nm,1.0s
HDA Harding Lake 48.46 33 *e*P **P 15 02 03.5 +0.5**
comp=Z,11nm,0.8s
DMN Daman 48.46 275 *e*P **P 15 02 03.9 +0.1**
ILAR Eielson Array 48.47 33 P **P 15 02 03.7 +0.6**
comp=Z,9.0nm,0.8s,baz=264,slow=6.0,SNR=99
ILB Eielson Array 48.47 33 *e*P **P 15 02 03.8 +0.6**
IL1 Eielson Array 48.47 33 *e*P **P 15 02 03.6 +0.5**
GKN Gorkha 48.65 276 *e*P **P 15 02 05.4 +0.2**
comp=Z,118nm,0.8s
KOLN Koldanda 49.57 276 *e*P **P 15 02 12.5 +0.2**
comp=Z,79nm,1.1s
DOT Dot Lake 49.78 34 *e*P **P 15 02 13.7 +0.5**
comp=Z,19nm,1.0s
TKM2 Tokmak 2 49.81 298 *e*P **P 15 02 14.8 +0.8**
TKM2 pmax pmax
comp=Z,39nm,0.6s
TKM2 Tokmak 2 49.81 298 *e*P **P 15 02 14.8 +0.8**
comp=Z,39nm,0.6s
PYUN Piuthan 49.90 277 *e*P **P 15 02 15.1 +0.3**
comp=Z,129nm,0.8s
MENT Mentasta 50.01 35 *e*P **P 15 02 16.5 +1.6**
comp=Z,9.1nm,0.7s
IPM Ipoh 50.11 239 *e*P **P 15 02 16.2 0.0**
comp=Z,25nm,1.3s
VOSK Vostochnaya 50.22 311 *e*P **P 15 02 16.4 -0.3**
VOSK pmax pmax
comp=Z,16nm,0.9s
VOSK Vostochnaya 50.22 311 *e*P **P 15 02 16.4 -0.3**
comp=Z,16nm,0.9s
CHKZ Chkalovo 50.23 313 P **P 15 02 16.3 -0.3**
CHKZ pmax pmax
comp=Z,8.0nm,0.6s
SOEI Soe 50.24 203 P **P 15 02 19.2 +1.9**
comp=Z,56nm,1.1s
OTUK Ortayu 50.47 306 P **P 15 02 18.6 -0.1**
OTUK pmax pmax
comp=Z,13nm,0.8s
BVA0 Borovoye Array 50.50 312 *i*P **P 15 02 18.6 -0.2**
BVA0 pmax pmax
comp=Z,6.0nm,0.6s
BVAR Borovoye Array 50.50 312 P **P 15 02 18.8 0.0**
comp=Z,7.7nm,0.6s,baz=75,slow=9.0,SNR=52
BVAR PcP **PcP 15 03 37.0 +0.5**
comp=Z,6.7nm,0.8s,baz=96,slow=4.5,SNR=5.2
BRVK Borovoye 50.56 312 *e*P **P 15 02 19.5 +0.3**
BRVK pmax pmax
comp=Z,13nm,1.0s
BRVK Borovoye 50.56 312 *e*P **P 15 02 18.8 -0.3**
comp=Z,10nm,0.8s
KSH Kashi 50.66 294 P **P 15 02 24.9 +4.6**
KSH *es*P sP 15 02 42.8 +10
KSH *e*PP **PP 15 04 22.8 +6.5**
KSH S **S 15 09 37.2 +3.8**
KSH sS sS 15 09 58.4 +10
KSH pmax pmax
comp=Z,17nm,0.6s
KSH pmax pmax
comp=Z,130nm,6.6s
KSH LR LR
comp=Z,150nm,6.1s
KSH LR LR
comp=Z,150nm,6.8s
KSH LR LR
comp=Z,430nm,15.9s
AAK Ala-Archa 50.67 298 P **P 15 02 20.3 -0.1**
comp=Z,5.0nm,0.5s,baz=127,slow=6.0,SNR=17

AAK **Ala-Archa** 50.67 298 P **P** 15 02 21.2 +0.8
AAK pmax pmax
comp=Z,9.0nm,0.7s
AAK **Ala-Archa** 50.67 298 *e*P **P** 15 02 20.6 +0.2
comp=Z,9.9nm,0.8s
EKS2 **Erkin-Say** 51.16 298 *e*P **P** 15 02 24.2 +0.2
EKS2 pmax pmax
comp=Z,9.0nm,0.9s
EKS2 **Erkin-Say** 51.16 298 *e*P **P** 15 02 24.2 +0.2
comp=Z,9.3nm,0.9s
ZRNK **Zerenda** 51.34 312 P **P** 15 02 24.9 -0.1
ZRNK pmax pmax
comp=Z,14nm,0.9s
COEN **Coen** 51.53 179 *e*P **P** 15 02 28.0 +1.2
comp=Z,31nm,1.1s
MNAS **Manas** 52.11 298 P **P** 15 02 31.5 +0.4
MNAS pmax pmax
comp=Z,25nm,0.8s
PSI **Prapat** 52.76 239 *e*P **P** 15 02 36.3 +0.1
PSI pmax pmax
comp=Z,13nm,0.8s
PSI **Prapat** 52.76 239 *e*P **P** 15 02 36.3 +0.1
comp=Z,12nm,0.8s
KK31 **Karatay Array** 53.27 300 *i* P **P** 15 02 39.5 -0.1
KK31 pmax pmax
comp=Z,20nm,1.1s
KKAR **Karatay Array** 53.27 300 *e*P **P** 15 02 39.6 0.0
KKAR **Karatay Array** 53.27 300 *e*P **P** 15 02 39.6 0.0
INK **Inuvik** 53.38 27 P **P** 15 02 41.0 +1.1
comp=Z,6.3nm,0.7s,baz=298,slow=6.7,SNR=53
INK **Inuvik** 53.38 27 P **P** 15 02 41.0 +1.1
INK pmax pmax
comp=Z,4.0nm,0.5s
INK **Inuvik** 53.38 27 *e*P **P** 15 02 40.4 +0.5
comp=Z,25nm,1.5s
GSI **Gunungsitoli** 54.76 239 P **P** 15 02 51.7 +1.0
comp=Z,58nm,1.2s
GSI **Gunungsitoli** 54.76 239 *e*P **P** 15 02 51.4 +0.6
comp=Z,75nm,1.2s
LHSI **Lahat** 54.83 230 P **P** 15 02 52.5 +1.4
comp=Z,44nm,1.1s
MDSI **Maura Dua** 54.96 229 P **P** 15 02 52.4 +0.3
comp=Z,18nm,1.1s
SVE **Sverdlovsk** 54.97 318 *ce*P **P** 15 02 52.2 +0.5
SVE pmax pmax
comp=Z,46nm,0.9s
ARU **Arti** 56.18 318 P **P** 15 03 00.5 +0.1
comp=Z,18nm,0.6s,baz=70,slow=3.6,SNR=33
ARU **Arti** 56.18 318 *d* iP **P** 15 03 00.2 -0.2
ARU 15 03 56.6
ARU SS **SS** 15 14 34.5 +0.8
ARU pmax pmax
comp=Z,39nm,1.0s
ARU **Arti** 56.18 318 *e*P **P** 15 03 00.2 -0.2
comp=Z,39nm,1.0s
DLBC **Dease Lake** 57.60 38 P **P** 15 03 12.2 +1.7
comp=Z,6.1nm,0.8s,baz=276,slow=7.3,SNR=8.9
DLBC **Dease Lake** 57.60 38 *e*P **P** 15 03 12.7 +2.2
comp=Z,9.2nm,1.0s
KBL **Kabul** 57.72 291 *e*P **P** 15 03 11.2 -0.7
KBL pmax pmax
comp=Z,33nm,1.0s
KBL **Kabul** 57.72 291 *e*P **P** 15 03 11.2 -0.7
comp=Z,33nm,1.0s
CTA **Charters Tower** 57.75 176 P **P** 15 03 12.2 +0.4
comp=Z,4.5nm,0.9s,baz=272,slow=5.2,SNR=2.8
FITZ **Fitzroy Crossi** 57.79 199 P **P** 15 03 12.8 +0.7
comp=Z,14nm,0.9s,baz=276,slow=22,SNR=11
AB31 **Akbulak array** 57.91 310 *i* P **P** 15 03 12.5 -0.2
AB31 pmax pmax
comp=Z,8.0nm,0.5s
ABKAR **Akbulak array** 57.91 310 *e*P **P** 15 03 12.4 -0.4
WRAB **Tennant Creek** 57.94 189 *ce*P **P** 15 03 13.6 +0.4
WRAB pmax pmax
comp=Z,161nm,1.7s
WRAB **Tennant Creek** 57.94 189 *e*P **P** 15 03 13.2 0.0
comp=Z,29nm,0.8s
WB2 **Warramunga Arr** 57.95 189 *e*P **P** 15 03 12.9 -0.3
comp=Z,30nm,0.8s
WRA **Warramunga Arr** 57.95 189 P **P** 15 03 13.4 +0.1
comp=Z,24nm,0.6s,baz=6.1,slow=7.2,SNR=117
WRA **Warramunga Arr** 57.95 189 *i* P **P** 15 03 13.3 0.0
WRA pmax pmax
comp=Z,24nm,0.6s
AKTO **Aktyubinsk** 58.61 312 P **P** 15 03 17.3 -0.4
comp=Z,12nm,0.8s,baz=72,slow=11,SNR=23
HYB **Hyderabad** 58.86 268 *i* P **P** 15 03 20.0 +0.1
HYB *ep*P **sP** 15 03 32.0 -0.6
RES **Resolute Bay** 61.66 15 P **P** 15 03 38.5 +0.4
comp=Z,16nm,0.8s,baz=308,slow=6.4,SNR=55
RES **Resolute Bay** 61.66 15 *e*P **P** 15 03 38.1 0.0
RES **Resolute Bay** 61.66 15 *e*P **P** 15 03 38.1 0.0
AS01 **Alice Springs** 61.67 189 *e*P **P** 15 03 38.9 +0.1
AS31 **Alice Springs** 61.68 189 *e*P **P** 15 03 39.1 +0.3
comp=Z,3.7nm,0.6s
ASAR **Alice Springs** 61.68 189 P **P** 15 03 39.3 +0.4
comp=Z,9.1nm,0.8s,baz=12,slow=5.7,SNR=75
POO **Poona** 61.97 272 *e*P P 15 03 35.0 -6.1
YKW3 **Yellowknife Ar** 62.75 30 *e*P **P** 15 03 46.0 +0.4
comp=Z,30nm,1.7s
YKA **Yellowknife Ar** 62.79 31 P **P** 15 03 46.4 +0.6
comp=Z,4.0nm,0.6s,baz=303,slow=6.7,SNR=94
YKB5 **Yellowknife Ar** 62.79 31 *e*P **P** 15 03 45.6 -0.3
KLMR **Klimovskoe** 63.41 328 *e*P **P** 15 03 47.5 -2.5
KLMR *e* 15 06 07.4
KLMR pmax pmax
comp=Z,18nm,1.4s
ARCES **ARCESS Array B** 63.47 339 P **P** 15 03 50.7 +0.4
comp=Z,9.3nm,0.8s,baz=52,slow=8.0,SNR=11
GEYT **Alibeck** 64.00 299 P **P** 15 03 54.3 -0.1
comp=Z,6.9nm,0.7s,baz=29,slow=3.4,SNR=13
DAG **Danmarks Havn** 65.02 355 *i* P **P** 15 04 00.1 -0.2
comp=Z,13nm,1.0s
DAG **Danmarks Havn** 65.02 355 *i* P **P** 15 04 00.1 -0.2
DAG pmax pmax
comp=Z,13nm,1.0s
VRH **Novokhopyorsk** 67.41 318 *e*P **P** 15 04 15.1 -0.9
VRH pmax pmax
comp=Z,30nm,1.6s
B08A **Colville Reser** 67.81 45 *e*P **P** 15 04 18.4 -0.3
comp=Z,12nm,1.4s
OBN **Obninsk** 67.83 323 *e*P **P** 15 04 18.8 +0.2
OBN *e* 15 04 42.4
OBN pmax pmax
comp=Z,27nm,1.7s
OBN MLR MLR
comp=Z,410nm,18.0s
LPSR **Galich'ya Gora** 68.09 320 *e*P **P** 15 04 20.4 +0.1
LPSR pmax pmax
comp=Z,30nm,1.9s
FIA1 **FINESS Array S** 68.39 332 *e*P **P** 15 04 21.9 -0.2
FINES **FINESS Array B** 68.40 332 P **P** 15 04 21.9 -0.2
comp=Z,15nm,0.8s,baz=56,slow=7.8,SNR=22
VSR **Storozhevoye** 68.74 319 *e*P **P** 15 04 23.9 -0.5
VSR pmax pmax
comp=Z,20nm,1.2s
NEW **Newport** 69.11 45 P **P** 15 04 26.8 0.0
comp=Z,1.0nm,0.5s,baz=311,slow=3.8,SNR=4.2
NEW **Newport** 69.11 45 P **P** 15 04 26.8 0.0
NEW pmax pmax
comp=Z,3.0nm,0.8s
YBH **Yreka Blue Hor** 69.35 53 P **P** 15 04 28.8 +0.3
comp=Z,1.0nm,0.3s,baz=323,slow=2.6,SNR=7.3
STKA **Stephens Creek** 69.36 181 P **P** 15 04 28.8 +0.5
comp=Z,4.4nm,0.7s,baz=334,slow=7.9,SNR=7.7
SUMG **Summit** 69.88 0 *i* P **P** 15 04 32.5 +0.9
comp=Z,16nm,0.6s
SUMG **Summit** 69.88 0 *i* P **P** 15 04 32.5 +0.9
SUMG pmax pmax
comp=Z,16nm,0.6s
SUMG **Summit** 69.88 0 *e*P **P** 15 04 31.6 0.0
comp=Z,15nm,0.7s
K05A **Summer Lake** 69.94 51 *e*P **P** 15 04 33.7 +1.4
comp=Z,21nm,1.1s
VSU **Vasula** 70.08 330 *ce*P **P** 15 04 33.5 +1.0
VSU pmax pmax
comp=Z,67nm,1.7s
WALA **Waterton Lakes** 70.41 43 *e*P **P** 15 04 34.9 0.0
comp=Z,7.0nm,0.8s
NCK **Nalchik** 70.57 310 *e*P **P** 15 04 35.3 -0.6
NCK pmax pmax
comp=Z,8.0nm,0.9s
ZEI **Tsey** 70.78 310 *e*P **P** 15 04 34.6 -2.8
ZEI pmax pmax
comp=Z,9.0nm,0.6s
KVAR **Kislovodsk Arr** 70.85 311 P **P** 15 04 37.9 +0.2
comp=Z,25nm,1.0s,baz=352,slow=5.0,SNR=7.8
KIV **Kislovodsk** 70.86 311 P **P** 15 04 39.1 +1.4
KIV **Kislovodsk** 70.86 311 *e*P **P** 15 04 39.1 +1.4
KIV pmax pmax
comp=Z,44nm,1.1s
KIV **Kislovodsk** 70.86 311 *e*P **P** 15 04 38.3 +0.6
comp=Z,32nm,0.9s
KBZ **Khabaz** 70.86 311 P **P** 15 04 37.9 +0.4
comp=Z,11nm,0.9s,baz=78,slow=3.1,SNR=14
KBZ **Khabaz** 70.86 311 P **P** 15 04 37.9 +0.4
KBZ pmax pmax
comp=Z,9.0nm,0.7s
BMO **Blue Mountains** 70.91 48 *e*P **P** 15 04 39.3 +1.2
BMO pmax pmax
comp=Z,5.0nm,1.0s
BMO **Blue Mountains** 70.91 48 *e*P **P** 15 04 39.2 +1.2
comp=Z,5.3nm,1.0s
NEY **Neytrino** 71.23 310 *e*P **P** 15 04 40.2 +0.1
NEY pmax pmax
comp=Z,1.0nm,0.8s
SWMT **Swartz Lake** 71.26 44 *e*P **P** 15 04 41.4 +1.2
SCO **Scoresbysund** 71.37 354 *i* P **P** 15 04 41.0 +0.8
comp=Z,9.1nm,1.0s
SCO **Scoresbysund** 71.37 354 *i* P **P** 15 04 41.0 +0.8
SCO pmax pmax
comp=Z,9.0nm,1.0s
MSO **Missoula** 71.69 45 *e*P **P** 15 04 43.8 +1.1
comp=Z,9.5nm,1.4s
GNI **Garni** 71.73 307 P **P** 15 04 43.9 +0.7
comp=Z,6.4nm,0.8s,baz=92,slow=12,SNR=3.9
GNI **Garni** 71.73 307 *e*P **P** 15 04 44.0 +0.8
GNI pmax pmax
comp=Z,120nm,1.3s
UOSS **Minazif** 72.17 288 *e*P **P** 15 04 45.7 -0.1
comp=Z,0.9nm,0.7s
HATD **Hatta, Dubai** 72.29 288 *i* P **P** 15 04 47.1 +0.6
SNR=8.5
FFC **Flin Flon** 72.68 33 *e*P **P** 15 04 48.9 +0.5
FFC pmax pmax
comp=Z,16nm,0.9s
FFC **Flin Flon** 72.68 33 *e*P **P** 15 04 48.9 +0.5
comp=Z,16nm,0.9s
FAQ **Al Faqa, Dubai** 72.74 288 P **P** 15 04 48.9 -0.3
FCC **Fort Churchill** 72.99 27 *e*P **P** 15 04 50.0 -0.1
FCC pmax pmax
comp=Z,20nm,1.1s
FCC **Fort Churchill** 72.99 27 *e*P **P** 15 04 50.0 -0.1
comp=Z,20nm,1.1s
ASUD **Al Ashush, Dub** 73.00 288 P **P** 15 04 50.6 -0.1
EGMT **Eagleton** 73.24 42 *e*P **P** 15 04 52.7 +0.8
comp=Z,13nm,1.0s
DLMT **Dillon** 73.32 45 *e*P **P** 15 04 53.7 +1.2
comp=Z,12nm,1.1s
HLID **Hailey** 73.36 48 *e*P **P** 15 04 53.9 +1.1
comp=Z,4.3nm,0.9s
NC405 **NORSAR Array S** 73.48 337 *e*P **P** 15 04 53.3 +0.3
NB201 **NORSAR Array S** 73.65 337 *e*P **P** 15 04 54.1 0.0
NB2 **NORSAR Subarra** 73.69 337 P **P** 15 04 54.1 -0.1
comp=Z,14nm,0.8s,baz=40,slow=5.9
NB2 **NORSAR Subarra** 73.69 337 P **P** 15 04 54.1 -0.1
baz=40,slow=5.9
NOA **NORSAR Array B** 73.69 337 P **P** 15 04 54.3 +0.1
comp=Z,8.9nm,0.7s,baz=39,slow=5.9,SNR=37
BOZ **Bozeman (W)** 73.69 45 P **P** 15 04 55.3 +0.7
BOZ pmax pmax
comp=Z,8.0nm,1.0s
BOZ **Bozeman (W)** 73.69 45 P **P** 15 04 55.3 +0.7
comp=Z,7.7nm,1.0s
NBO02 **NORSAR Array S** 73.79 338 *e*P **P** 15 04 54.9 +0.1
NBO00 **NORSAR Array S** 73.83 338 *e*P **P** 15 04 54.8 -0.2
NC602 **NORSAR Array S** 73.83 337 *e*P **P** 15 04 55.4 +0.4
NV01 **Mina Array Sit** 73.99 54 *e*P **P** 15 04 57.7 +1.1
NVAR **Mina Array Bea** 73.99 54 P **P** 15 04 58.5 +1.8
comp=Z,2.9nm,0.8s,baz=288,slow=5.8,SNR=14
AKASG **Malin Array Be** 74.05 322 P **P** 15 04 56.2 -0.2
comp=Z,8.9nm,0.6s,baz=45,slow=5.9,SNR=44
AKBB **Malin Array Si** 74.05 322 *e*P **P** 15 04 56.3 -0.1
AKBB pmax pmax
comp=Z,16nm,0.7s
AKBB **Malin Array Si** 74.05 322 *e*P **P** 15 04 56.3 -0.1
comp=Z,16nm,0.7s
KIEV **Kiev** 74.06 322 ⇑*i*P **P** 15 04 55.5 -1.0
KIEV pmax pmax
comp=Z,12nm,0.9s
KIEV **Kiev** 74.06 322 *e*P **P** 15 04 56.3 -0.2
comp=Z,13nm,0.8s
AK11 **Malin Array Si** 74.09 322 *e*P **P** 15 04 56.0 -0.7
YMR **Madison River** 74.66 45 *e*P **P** 15 05 01.9 +1.5
comp=Z,20nm,1.5s
SFJD **Kangerlussuaq** 75.03 5 P **P** 15 05 02.2 +0.4
comp=Z,10nm,0.7s,baz=18,slow=6.0,SNR=6.6
SFJD **Kangerlussuaq** 75.03 5 *i* P **P** 15 05 02.3 +0.5
comp=Z,9.5nm,0.7s
SFJD **Kangerlussuaq** 75.03 5 *e*P **P** 15 05 02.3 +0.5
SFJD pmax pmax
comp=Z,10.0nm,0.7s
SFJD **Kangerlussuaq** 75.03 5 *e*P **P** 15 05 01.1 -0.7
comp=Z,11nm,0.9s
HYA **Hoyanger** 75.04 340 *e*P **P** 15 05 02.8 +0.8
IMW **Indian Meadow** 75.15 46 *e*P **P** 15 05 05.0 +1.6
comp=Z,9.4nm,0.9s
FLWY **Flags Ranch** 75.17 45 *e*P **P** 15 05 05.4 +2.0
comp=Z,18nm,1.4s
KONO **Kongsberg** 75.28 337 *e*P **P** 15 05 04.0 +0.6
KONO **Kongsberg** 75.28 337 *e*P **P** 15 05 03.4 0.0
KONO **Kongsberg** 75.28 337 *e*P **P** 15 05 03.4 0.0
RLMT **Red Lodge** 75.32 44 *e*P **P** 15 05 04.2 -0.1
comp=Z,21nm,1.4s
MOOW **Moose Ponds** 75.35 46 *e*P **P** 15 05 05.8 +1.4
comp=Z,6.2nm,1.0s
HVU **Hansel Valley** 75.39 48 *e*P **P** 15 05 05.8 +1.1
HVU pmax pmax
comp=Z,9.0nm,1.1s
HVU **Hansel Valley** 75.39 48 *e*P **P** 15 05 05.8 +1.1
comp=Z,9.2nm,1.1s
LOHW **Long Hollow** 75.52 46 *e*P **P** 15 05 06.7 +1.3
comp=Z,5.2nm,1.2s
SNOW **Snow King Moun** 75.53 46 *e*P **P** 15 05 06.5 +0.9
comp=Z,5.6nm,0.8s
REDW **Red Top Meadow** 75.53 46 *e*P **P** 15 05 07.0 +1.5
comp=Z,11nm,1.2s
BER **Bergen** 75.92 340 *e*P **P** 15 05 08.2 +1.1
TPNV **Topopah Spring** 76.18 54 *e*P **P** 15 05 10.1 +0.9
TPNV pmax pmax
comp=Z,13nm,1.1s
TPNV **Topopah Spring** 76.18 54 *e*P **P** 15 05 10.1 +0.9
comp=Z,13nm,1.1s
DUG **Dugway, Tooele** 76.34 50 *e*P **P** 15 05 11.3 +1.2
DUG pmax pmax
comp=Z,19nm,1.4s
DUG **Dugway, Tooele** 76.34 50 *e*P **P** 15 05 11.2 +1.2
comp=Z,19nm,1.4s
TCUT **Tooele Canyon** 76.61 48 *e*P **P** 15 05 13.2 +1.5
comp=Z,19nm,1.2s
BW06 **Boulder Array** 76.64 46 *e*P **P** 15 05 12.6 +0.7
comp=Z,14nm,1.3s
PD31 **Pinedale Array** 76.65 46 *e*P **P** 15 05 12.6 +0.8
PDAR **Pinedale Array** 76.65 46 P **P** 15 05 12.7 +0.8
comp=Z,3.9nm,0.6s,baz=301,slow=0.7,SNR=43
JLU **Jordanelle** 76.91 49 *e*P **P** 15 05 14.8 +1.4
comp=Z,4.8nm,0.9s
BORG **Borgarnes** 76.93 353 P **P** 15 05 14.4 +1.8
comp=Z,15nm,1.0s,baz=103,slow=1.2,SNR=4.7
BORG **Borgarnes** 76.93 353 *i* P **P** 15 05 16.0 +3.3
BOYT **Boyabat** 76.97 313 *i* P **P** 15 05 14.2 +0.7
BSD **Bornholm Skovb** 77.03 332 *i* P **P** 15 05 13.9 +0.5
comp=Z,35nm,1.1s
BSD **Bornholm Skovb** 77.03 332 *e*P **P** 15 05 13.9 +0.5
BSD pmax pmax
comp=Z,35nm,1.1s
MPU **Maple Canyon** 77.17 49 *e*P **P** 15 05 16.1 +1.3
comp=Z,14nm,1.1s
COP **Copenhagen** 77.49 334 *i* P **P** 15 05 16.2 +0.2
comp=Z,15nm,0.5s
COP **Copenhagen** 77.49 334 *e*P **P** 15 05 16.2 +0.2
COP pmax pmax
comp=Z,15nm,0.5s
COAL **Corum-Alaca** 77.66 312 *i* P **P** 15 05 18.0 +0.6
MSU **Marysvale** 77.78 51 *e*P **P** 15 05 20.1 +1.8
MSU **Marysvale** 77.78 51 *e*P **P** 15 05 20.1 +1.8
P17A **Butcher Ranch,** 78.04 49 *e*P **P** 15 05 21.2 +1.5
comp=Z,31nm,1.5s
LCMT **Little Creek M** 78.05 52 *e*P **P** 15 05 21.5 +1.8
comp=Z,11nm,1.1s
BUR08 **Bucovina Ar. S** 78.06 322 *e*P **P** 15 05 19.9 +0.4
BURAR **Bucovina Array** 78.07 322 ⇓*i*P **P** 15 05 20.4 +0.8
BURAR **Bucovina Array** 78.07 322 ⇓P **P** 15 05 20.4 +0.8
TESR **Tescani** 78.12 320 ⇑*i*P **P** 15 05 20.4 +0.7
SRU **San Rafael Swe** 78.40 49 *e*P **P** 15 05 22.5 +0.8
SRU pmax pmax
comp=Z,10.0nm,0.8s
SRU **San Rafael Swe** 78.40 49 *e*P **P** 15 05 22.4 +0.8
comp=Z,9.7nm,0.8s
ULM **Lac du Bonnet** 78.48 34 P **P** 15 05 21.9 +0.3
comp=Z,5.2nm,0.8s,baz=313,slow=7.3,SNR=9.9
ULM **Lac du Bonnet** 78.48 34 *e*P **P** 15 05 21.9 +0.3
comp=Z,11nm,1.0s
VRI **Vrincioaia** 78.52 320 ⇓*i*P **P** 15 05 24.6 +2.6
VRI **Vrincioaia** 78.52 320 ⇓P **P** 15 05 24.6 +2.6
KOLS **Kolonicke sedl** 78.54 324 *e*P **P** 15 05 22.5 +0.5
KOLS pmax pmax
comp=Z,8.0nm,1.0s
KOLS **Kolonicke sedl** 78.54 324 *e*P **P** 15 05 22.5 +0.5
STHS **Stebnicka Huta** 78.66 325 *e*P **P** 15 05 23.9 +1.2
STHS pmax pmax
comp=Z,10.0nm,1.2s
STHS **Stebnicka Huta** 78.66 325 *e*P **P** 15 05 23.8 +1.1
OJC **Ojcow** 78.72 326 *e*P **P** 15 05 23.6 +0.6
OJC **Ojcow** 78.72 326 *e*P **P** 15 05 23.7 +0.7
OJC **Ojcow** 78.72 326 *e*P **P** 15 05 23.3 +0.4
comp=Z,40nm,1.2s
UZH **Uzhgorod** 78.75 324 *e*P **P** 15 05 23.0 -0.1
UZH *e* 15 05 35.5
BR131 **Keskin Array S** 78.79 312 *e*P **P** 15 05 23.9 +0.2
BRTR **Keskin Array B** 78.79 312 P **P** 15 05 24.0 +0.2
comp=Z,2.7nm,0.4s,baz=108,slow=3.4,SNR=19
RSSD **Black Hills** 78.80 42 *e*P **P** 15 05 24.4 +0.6
RSSD pmax pmax
comp=Z,5.0nm,0.7s
RSSD **Black Hills** 78.80 42 *e*P **P** 15 05 24.4 +0.6
comp=Z,5.2nm,0.7s
ARCR **ARCALIA** 78.86 322 ⇑*i*P **P** 15 05 25.5 +1.7
NIE **Niedzica** 79.09 326 *e*P **P** 15 05 26.1 +1.1
NIE **Niedzica** 79.09 326 *e*P **P** 15 05 26.2 +1.2
MLR **Muntele Rosu** 79.18 320 P **P** 15 05 26.0 +0.3
comp=Z,0.7nm,0.4s,baz=355,slow=3.7,SNR=12
MLR **Muntele Rosu** 79.18 320 ⇓*i*P **P** 15 05 26.0 +0.3
MLR **Muntele Rosu** 79.18 320 *e*P **P** 15 05 26.2 +0.4
comp=Z,20nm,1.3s
ANTO **Ankara** 79.19 312 *e*P **P** 15 05 26.4 +0.5
ANTO pmax pmax
comp=Z,12nm,0.6s
ANTO **Ankara** 79.19 312 *e*P **P** 15 05 26.4 +0.5
comp=Z,12nm,0.6s
BR231 **Keskin MP Arra** 79.22 312 *e*P **P** 15 05 24.8 -1.2
KKUL **Konya-Kulu** 79.58 312 *i* P **P** 15 05 28.4 +0.4
PV09 **Paradox Valley** 79.63 49 *e*P **P** 15 05 29.6 +1.1
LANS **Liptovska Anna** 79.65 326 *e*P **P** 15 05 29.5 +1.4
LANS **Liptovska Anna** 79.65 326 *e*P **P** 15 05 29.5 +1.4
VOIR 79.67 320 ⇑*i*P **P** 15 05 29.3 +0.9
VOIR 79.67 320 ⇑P **P** 15 05 29.3 +0.9
KECS **Kecovo** 79.68 325 *e*P **P** 15 05 29.0 +0.7
KECS pmax pmax
comp=Z,4.0nm,1.1s
KECS **Kecovo** 79.68 325 *e*P **P** 15 05 29.0 +0.7
OKC **Ostrava-Krasne** 79.72 327 *e*P **P** 15 05 29.0 +0.6
OKC *e*PCP **PcP** 15 05 36.6 +0.5
OKC **Ostrava-Krasne** 79.72 327 *e*P **P** 15 05 29.0 +0.6
OKC *e* 15 05 36.6
KSP **Ksiaz** 79.75 329 *e*P **P** 15 05 29.3 +0.7
KSP **Ksiaz** 79.75 329 *e*P **P** 15 05 29.3 +0.7
DRGR 79.86 323 ⇓*i*P **P** 15 05 30.1 +0.7
DRGR 79.86 323 ⇓P **P** 15 05 30.1 +0.7
AGMN **Agassiz Nation** 79.91 35 *e*P **P** 15 05 29.5 0.0
comp=Z,8.3nm,0.9s
ARR **Arges** 79.93 321 ⇑*i*P **P** 15 05 31.4 +1.7
MORC **Moravsky Berou** 80.03 327 *e*P **P** 15 05 30.5 +0.3
MORC pmax pmax
comp=Z,57nm,0.9s
MORC **Moravsky Berou** 80.03 327 *e*P **P** 15 05 30.5 +0.3
comp=Z,57nm,0.9s
DPC **Dobruska-Polom** 80.11 328 *e*P **P** 15 05 31.6 +1.0
DPC *e*PCP **PcP** 15 05 37.1 -0.8
DPC *ex* x 15 05 41.2
DPC **Dobruska-Polom** 80.11 328 *e*P **P** 15 05 31.6 +1.0
DPC *e* 15 05 37.1
DPC *e* 15 05 41.2
UPC **Upice** 80.12 328 *e*P **P** 15 05 31.4 +0.8
UPC **Upice** 80.12 328 *e*P **P** 15 05 31.4 +0.8
Y14A **Wickenburg** 80.12 55 *e*P **P** 15 05 31.9 +0.9
comp=Z,46nm,1.3s
PSZ **Piszkesteto** 80.37 325 *e*P **P** 15 05 32.5 +0.4
PSZ pmax pmax
comp=Z,22nm,1.1s
PSZ **Piszkesteto** 80.37 325 *e*P **P** 15 05 32.5 +0.4
comp=Z,22nm,1.1s
VYHS **Vyhne** 80.42 326 *e*P **P** 15 05 33.2 +0.9
VYHS pmax pmax
comp=Z,6.0nm,1.1s
VYHS **Vyhne** 80.42 326 *e*P **P** 15 05 33.2 +0.9
SMCO **Snowmass** 80.46 47 *e*P **P** 15 05 34.4 +1.2
comp=Z,5.4nm,1.0s
KDHN **Kadinhani** 80.47 312 *i* P **P** 15 05 32.7 -0.1
KDHN *i* S **sP** 15 05 47.6 +1.8
BRG **Berggiesshubel** 80.68 330 *e*P **P** 15 05 34.2 +0.6
comp=Z,11nm,0.9s
BRG **Berggiesshubel** 80.68 330 *e*P **P** 15 05 34.2 +0.6
BRG pmax pmax
comp=Z,11nm,1.0s
PVCC **Panska Ves** 80.69 329 *e*P **P** 15 05 34.5 +0.8
PVCC **Panska Ves** 80.69 329 *e*P **P** 15 05 34.5 +0.8
CLL **Collm** 80.71 330 ⇓*i*P **P** 15 05 33.9 +0.2
comp=Z,22nm,1.0s
CLL *e* 15 05 42.0
CLL *e* 15 07 49.0
CLL **Collm** 80.71 330 ⇓*i*P **P** 15 05 33.9 +0.2
CLL *e* 15 05 42.0
CLL pmax pmax
comp=Z,22nm,1.0s
CLL **Collm** 80.71 330 *e*P **P** 15 05 33.6 -0.1
comp=Z,24nm,0.9s
SIRR **Siria** 80.75 323 ⇓*i*P **P** 15 05 34.9 +0.8
VRAC **Vranov** 80.79 327 P **P** 15 05 35.0 +0.8
comp=Z,12nm,0.8s,baz=49,slow=4.4,SNR=17
VRAC **Vranov** 80.79 327 ⇓*i*P **P** 15 05 35.4 +1.2
VRAC **Vranov** 80.79 327 ⇓P **P** 15 05 35.4 +1.2
X16A **Lo Mia Camp, P** 80.82 53 *e*P **P** 15 05 36.9 +2.0
comp=Z,7.7nm,1.0s
GZR **Gura Zlata** 80.83 322 ⇑*i*P **P** 15 05 35.2 +0.6
GZR **Gura Zlata** 80.83 322 ⇑P **P** 15 05 35.2 +0.6
ISCO **Idaho Springs** 80.83 46 *e*P **P** 15 05 36.6 +1.6
ISCO pmax pmax
comp=Z,5.0nm,1.1s
ISCO **Idaho Springs** 80.83 46 *e*P **P** 15 05 36.6 +1.6
comp=Z,5.2nm,1.1s
GOPC **GO Pecny, Ondr** 81.08 329 *e*P **P** 15 05 36.4 +0.6
GOPC *e*PCP **pP** 15 05 44.1 -1.2
GOPC **GO Pecny, Ondr** 81.08 329 *e*P **P** 15 05 36.4 +0.6
GOPC *e* 15 05 44.1
PRU **Pruhonice** 81.12 329 *e*P **P** 15 05 36.6 +0.6
PRU **Pruhonice** 81.12 329 *e*P **P** 15 05 36.6 +0.6
BZS **Buzias** 81.24 322 ⇓*i*P **P** 15 05 37.7 +1.0
BZS **Buzias** 81.24 322 ⇓P **P** 15 05 37.7 +1.0
TREC **Trest** 81.27 328 *e*P **P** 15 05 37.5 +0.7
TREC *e*PCP **pP** 15 05 45.9 -0.4
TREC **Trest** 81.27 328 *e*P **P** 15 05 37.5 +0.7
TREC *e* 15 05 45.9
MDVR **Moldovita** 81.80 322 ⇑*i*P **P** 15 05 39.8 +0.1
MPEP **Malo Peshtene** 81.80 320 *e*P **P** 15 05 40.2 +0.5
CONA **Conrad Observa** 82.15 327 *i* P **P** 15 05 42.6 +1.0
comp=Z,87nm,0.9s,SNR=8.8
KHC **Kasperske Hory** 82.19 329 *e*P **P** 15 05 42.3 +0.6
KHC *e*PCP **pP** 15 05 49.9 -1.3
KHC **Kasperske Hory** 82.19 329 *e*P **P** 15 05 42.3 +0.6
KHC *e* 15 05 49.9
KHC **Kasperske Hory** 82.19 329 *e*P **P** 15 05 42.0 +0.4
comp=Z,6.7nm,0.9s
GEC2 **GERESS Array S** 82.36 329 *e*P **P** 15 05 42.7 +0.1
GEC2 pmax pmax
comp=Z,10.0nm,1.0s
GEC2 **GERESS Array S** 82.36 329 *e*P **P** 15 05 42.7 +0.1
comp=Z,9.9nm,1.0s
GERES **GERESS Array B** 82.36 329 P **P** 15 05 42.8 +0.1
comp=Z,4.1nm,0.5s,baz=36,slow=5.9,SNR=48
TUC **Tucson** 82.59 55 *e*P **P** 15 05 45.5 +1.3
TUC pmax pmax
comp=Z,10.0nm,1.5s
TUC **Tucson** 82.59 55 *e*P **P** 15 05 45.5 +1.3
comp=Z,10nm,1.5s

VTS	Vitosha	82.62	319⇑	iP	P	15 05 45.2	+1.0
VTS	Vitosha	82.62	319	⇑P	P	15 05 45.2	+1.0
VTS	Vitosha	82.62	319	eP	P	15 05 44.6	+0.4
VTS	Vitosha	82.62	319	eP	P	15 05 45.0	+0.8
	comp=Z,14nm,0.8s						
GRFO	Grafenberg	82.69	330	eP	P	15 05 44.9	+0.7
GRFO				pmax	pmax		
	comp=Z,16nm,0.8s						
GRFO	Grafenberg	82.69	330	eP	P	15 05 44.9	+0.7
	comp=Z,16nm,0.8s						
ECSD	EROS Data Cent	82.89	39	eP	P	15 05 45.9	+0.6
	comp=Z,10nm,0.9s						
MOA	Molln	82.90	328	i P	P	15 05 45.9	+0.5
	comp=Z,8.6nm,1.0s,SNR=5.4						
MMB	Musomiste	83.06	318	eP	P	15 05 46.7	+0.3
PERS	Pernice	83.47	326	i P	P	15 05 48.7	+0.3
SOKA	Soboth	83.48	326	i P	P	15 05 48.8	+0.3
	comp=Z,13nm,0.6s,SNR=17						
ANMO	Albuquerque	83.58	50	eP	P	15 05 51.4	+2.0
ANMO				pmax	pmax		
	comp=Z,12nm,1.2s						
ANMO	Albuquerque	83.58	50	eP	P	15 05 51.0	+1.7
	comp=Z,11nm,1.1s						
OBKA	Obir	83.82	327	i P	P	15 05 50.0	-0.3
	comp=Z,7.7nm,0.8s,SNR=5.4						
MEM	Membach	83.87	334	P	P	15 05 50.6	+0.3
KBA	Koelnbreinsper	83.89	328	i PcP	P	15 05 51.2	+0.5
	comp=Z,16nm,0.9s,SNR=10.0						
CRES	Cresnjev	83.95	326	i P	P	15 05 50.5	-0.2
MYKA	Terra Mystica	84.12	327	i P	P	15 05 51.3	-0.4
	comp=Z,9.6nm,0.6s,SNR=7.8						
319A	Douglas	84.17	55	eP	P	15 05 53.5	+1.2
	comp=Z,16nm,1.0s						
BCLA	Clavier	84.28	334	P	P	15 05 51.5	-0.8
JAVS	Javornik	84.51	327	i P	P	15 05 53.0	-0.8
HSIG		84.61	57	eP	P	15 05 55.7	+1.3
	comp=Z,6.8nm,0.9s						
MOTA	Moosalm	84.61	329	i PcP	P	15 05 55.2	+0.9
	comp=Z,8.8nm,0.7s,SNR=8.1						
RETA	Reutte	84.64	329	i PcP	P	15 05 54.6	+0.3
	comp=Z,16nm,0.7s,SNR=13						
BFO	Black Forest	84.91	331	i P	P	15 05 56.0	+0.4
BFO	Black Forest	84.91	331	eP	P	15 05 55.8	+0.1
	comp=Z,17nm,0.9s						
FETA	Feichten	85.02	329	i PcP	P	15 05 56.4	0.0
	comp=Z,8.8nm,0.7s,SNR=5.7						
DAVA	Damuels	85.15	330	i PcP	P	15 05 57.2	+0.2
	comp=Z,19nm,0.8s,SNR=9.5						
FUORN	Ofenpass-Fuorn	85.54	329	eP	P	15 05 59.3	+0.2
	comp=Z,31nm,0.6s						
DAVOX	Davos/Dischmat	85.56	329	P	P	15 05 59.1	0.0
	comp=Z,6.8nm,0.7s,baz=360,slow=5.0,SNR=13						
TUE	Stuetta	86.03	329	eP	P	15 06 01.6	+0.1
	comp=Z,8.1nm,0.9s						
SENIN	Lac Senin/Sane	86.93	331	eP	P	15 06 05.8	-0.1
	comp=Z,4.6nm,0.8s						
VLDQ	Val d'Or	87.42	25	eP	P	15 06 07.6	-0.3
	comp=Z,37nm,1.4s						
WMOK	Wichita Mounta	88.26	46	eP	P	15 06 13.2	+0.9
WMOK				pmax	pmax		
	comp=Z,6.0nm,0.9s						
WMOK	Wichita Mounta	88.26	46	eP	P	15 06 13.2	+0.9
	comp=Z,5.8nm,0.9s						
TIP	Timpagrande	88.43	321	eP	P	15 06 12.4	-0.6
	comp=Z,7.5nm,0.7s						
TX31	Lajitas Ar. Si	89.12	53	eP	P	15 06 17.0	+0.5
TXAR	Lajitas Array	89.12	53	P	P	15 06 17.7	+1.2
	comp=Z,3.2nm,0.7s,baz=297,slow=3.1,SNR=41						
JCT	Junction City	90.71	50	eP	P	15 06 24.3	+0.4
JCT				pmax	pmax		
	comp=Z,7.0nm,0.8s						
JCT	Junction City	90.71	50	eP	P	15 06 24.3	+0.4
	comp=Z,7.4nm,0.8s						
OLIL	Olney	90.84	37	eP	P	15 06 25.2	+1.0
	comp=Z,18nm,1.0s						
MIAR	Mount Ida	91.29	43	eP	P	15 06 27.3	+0.9
MIAR				pmax	pmax		
	comp=Z,15nm,0.9s						
MIAR	Mount Ida	91.29	43	eP	P	15 06 27.3	+0.9
	comp=Z,15nm,0.9s						
WHAR	Wooly Hollow	91.42	42	eP	P	15 06 27.6	+0.6
	comp=Z,14nm,0.8s						
KEST	Kesra	94.76	323	P	P	15 06 41.5	-1.0
	comp=Z,1.8nm,0.6s,baz=318,slow=14,SNR=3.8						
ES19	SONSECA Array	96.80	334	eP	P	15 06 51.4	-0.3
ESDC	Sonseca Array	96.84	334	P	P	15 06 51.0	-0.8
	comp=Z,0.7nm,0.7s,baz=7.1,slow=3.4,SNR=5.3						
VNDA	Vanda	115.73	175	PKP	PKPdf	15 12 01.9	+0.2
	comp=Z,1.0nm,0.8s,baz=351,slow=4.8,SNR=5.1						
TORD	Torodi Ar. Bea	117.20	316	PKP	PKPdf	15 12 05.9	-0.6
	comp=Z,0.5nm,0.6s,baz=27,slow=2.7,SNR=4.2						
MAW	Mawson	120.54	206	PKP	PKPdf	15 12 10.0	-1.2
	comp=Z,2.0nm,0.8s,baz=255,slow=12,SNR=4.7						
MAW	Mawson	120.54	206	PKIKP	PKPdf	15 12 10.0	-1.2
MAW				pmax	pmax		
	comp=Z,2.0nm,0.8s						
DBIC	Dimbokro	126.13	318	PKP	PKPdf	15 12 23.1	-0.5
	comp=Z,2.5nm,0.7s,baz=261,slow=16,SNR=3.6						
QSPA	South Pole Qui	127.58	180	ePKPdf	PKPdf	15 12 24.6	-0.2
SNAA	Sanae	141.71	197	PKP	PKPpre	15 12 46.0	
SNAA	Sanae	141.71	197	ePKHKP	PKPpre	15 12 46.2	
SNAA	Sanae	141.71	197	ePKPpre	PKPpre	15 12 46.2	
VNA2	Neumayer--Watz	143.27	196	PKP	PKPbc	15 12 51.0	+0.1
	baz=102,slow=2.9						
VNA3	Neumayer Olymp	143.51	195	PKP	PKPbc	15 12 51.6	0.0
LPAZ	La Paz	145.73	60	PKPbc	PKPab	15 13 01.3	+0.1
	comp=Z,16nm,0.8s,baz=338,slow=3.4,SNR=67						
LPAZ	La Paz	145.73	60	ePKPdf	PKPbc	15 13 01.2	+0.3
PB01	IPOC Station P	147.92	68	ePKPbc	PKPbc	15 13 06.8	+0.4
LCO	Las Campanas	151.27	82	ePKPbc	PKPbc	15 13 15.2	+0.5
PLCA	Paso Flores	154.56	107	PKPbc	PKPbc	15 13 22.2	+0.9
	comp=Z,2.2nm,0.9s,baz=35,slow=18,SNR=2.9						
PLCA				PKPab	PKPab	15 13 35.2	-0.8
	comp=Z,2.0nm,0.7s,baz=261,slow=5.5,SNR=5.4						
BDFB	Brasilia	156.11	25	PKPab	PKPab	15 13 43.1	0.0
	comp=Z,3.1nm,0.8s,baz=286,slow=7.4,SNR=4.8						
CPUP	Villa Florida	159.90	61	PKPab	PKPab	15 13 58.7	-0.6
	comp=Z,2.0nm,0.9s,baz=224,slow=2.3,SNR=3.7						

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*NIED **03** 14:55:00, 37.°90N×142.°20E, h32km, Mw4.4 Best double couple: M₀3.96000×10¹⁵ NP1:φs157.00000°, δ55.00000°, λ173.00000°. NP2:φs251.00000°, δ84.00000°, λ35.00000°.*
*ISCJB **03** 14:55:26.7±0.7, 37.°84N±0.°03×142.°25E±0.°05, h34km±6km, mb4.3/34, Error ellipse: s-maj=7.0km s-min=5.0km az=19.1*
*MOS **03** 14:55:26.2±1.1, 37.°83N×142.°33E, h32km, mb4.5/17, Error ellipse: s-maj=10.0km s-min=7.3km az=80.0*
*JMA **03** 14:55:27.4±0.2, 37.°86N×142.°16E, h36km±4km, M4.5*
JMA Felt II J1.
*IDC **03** 14:55:29.8±1.9, 37.°82N×142.°10E, h42km±18km, mb4.0/28, mb1 4.2/33, mb1mx4.0/68, mbtmp4.3/33, ML3.5/4, Error ellipse: s-maj=14.5km s-min=9.8km az=93.0*
*NEIC **03** 14:55:30.4±0.6, 37.°81N×142.°16E, h51km±6km, mb5.0/4, Error ellipse: s-maj=6.3km s-min=4.6km az=89.0*
ISC 03 14:55:27.7±0.7, **37.°86N**±0.°04×**142.°25E**±0.°05, **h27**km±5km, **n82**, σ**1.°30**/93, **mb4.4**/34, **Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	Ouri	0.93	311	P	Pn	14 55 43.5	-1.4
JIO				S	Sn	14 55 54.1	-3.1
JMM	Marumori	1.15	271	P	Pn	14 55 46.5	-1.4
JMM				S	Sn	14 55 59.7	-3.1
JFK	Kawauchi	1.19	246	P	Pn	14 55 47.1	-1.5
JFK				S	Sn	14 56 00.7	-3.2
JOU	Okura	1.35	293	P	Pn	14 55 49.8	-0.9
JMK	Ichinoseki	1.36	324	P	Pn	14 55 50.1	-0.7
JMK				eS	Sn	14 56 05.7	-2.3
JFT	Otama	1.55	258	P	Pn	14 55 53.3	-0.2
JFT				eS	Sn	14 56 11.1	-1.6
JYS	Shirataka	1.76	283	P	Pn	14 55 55.8	-0.6
JOM	Ohasama	1.78	336	P	Pn	14 55 56.2	-0.4
JYK	Kaneyama	1.82	306	P	Pn	14 55 56.8	-0.4
JRG	Rokugo	1.99	321	P	Pn	14 55 59.8	+0.3
JRG				eS	Sn	14 56 23.6	+0.1
JFY	Yanaizu	2.06	258	eS	Sn	14 56 25.6	+0.2
MJAR	Matsushiro Arr	3.48	249	P	Pn	14 56 20.9	+0.9
	10.0nm,0.3s,baz=20,slow=13,SNR=4.4						
MAJO	Matsushiro	3.48	249	eP	Pn	14 56 21.9	+1.9
MAJO	Matsushiro	3.48	249	ePn	Pn	14 56 21.9	+1.9
MAT	Matsushiro	3.48	249	P	Pn	14 56 22.4	+2.4
MAT				S	Sn	14 57 03.4	+3.1
JHJ2	Mitsune	5.13	203	ePn	Pn	14 56 43.0	+0.3
JHJ	Hachijo jima 2	5.13	204	P	Pn	14 56 42.9	+0.2
	124nm,0.3s,baz=326,slow=22,SNR=10						
JHJ				S	Sn	14 57 38.5	-2.5
	159nm,0.3s,baz=86,slow=23,SNR=5.7						
YUK	Yuzh-Kuril'sk	6.75	23	eP	Pn	14 57 04.0	-0.9
YUK				eS	Sn	14 58 16.5	-4.4
YUK				pmax	pmax		
	comp=Z,539nm,0.2s						
YUK				pmax	pmax		
	comp=N,78nm,0.3s						
YUK				pmax	pmax		
	comp=E,54nm,0.2s						
SHO	Shikotan	6.94	29	eP	Pn	14 57 05.7	-1.8
SHO				eS	Sn	14 58 17.1	-8.4
SHO				pmax	pmax		
	comp=Z,219nm,0.4s						
SHO				pmax	pmax		
	comp=N,35nm,0.3s						
SHO				pmax	pmax		
	comp=E,153nm,0.7s						
KUR	Kuril'sk	8.49	28	P	Pn	14 57 29.7	+1.0
KUR				eS	Sn	14 58 57.5	-6.1
KUR				pmax	pmax		
	comp=Z,53nm,0.6s						
KUR				smax	smax		
	comp=N,89nm,0.3s						
KUR				smax	smax		
	comp=E,77nm,0.4s						
USRK	Ussuriysk Ar.	10.01	313	P	Pn	14 57 50.0	+0.4
	comp=E,1.8nm,0.3s,baz=128,slow=14,SNR=8.0						
JNU	Nakatsue	10.40	246	P	Pn	14 57 56.3	+1.3
	comp=E,0.5nm,0.3s,baz=54,slow=4.7,SNR=3.6						
CBIJ	Chichi jima	10.73	180	ePn	Pn	14 57 59.4	-0.1
KSRS	Korea Array	11.36	272	P	Pn	14 58 10.8	+2.7
	comp=E,0.3nm,0.3s,baz=80,slow=12,SNR=3.4						
KSAR	Wonju Array Be	11.39	272	P	Pn	14 58 10.8	+2.2
KSAR	Wonju Array Be	11.39	272	P	Pn	14 58 10.8	+2.2
MDJ	Mudanjiang	11.67	309	ePn	Pn	14 58 13.8	+1.4
PETK	Petropavlovsk-	18.65	30	P	Pn	14 59 43.5	-0.1
	comp=E,0.2nm,0.3s,baz=208,slow=8.9,SNR=3.0						
MA2	Magadan	22.42	11	P	P	15 00 25.5	+1.6
	comp=E,15nm,0.8s,baz=217,slow=13,SNR=4.8						
MA2	Magadan	22.42	11	eP	P	15 00 25.6	+1.7
YAK	Yakutsk	25.42	346	P	P	15 00 52.5	-0.1
	comp=E,0.9nm,0.3s,baz=307,slow=20,SNR=3.4						
YAK	Yakutsk	25.42	346	eP	P	15 00 53.9	+1.3
YAK	Yakutsk	25.42	346	eP	P	15 00 53.9	+1.3
SEY	Seymchan	25.86	11	P	P	15 00 58.0	+1.4
	comp=E,7.5nm,0.8s,baz=192,slow=18,SNR=3.3						
ULN	Ulaanbaatar	27.45	303	eP	P	15 01 11.2	-0.2
ULN	Ulaanbaatar	27.45	303	eP	P	15 01 11.2	-0.2
SONM	Songino Array	27.89	302	P	P	15 01 15.8	+0.5
	comp=E,7.6nm,0.8s,baz=101,slow=8.9,SNR=5.6						
ENH	Enshi	28.07	264	eP	P	15 01 16.1	-0.8
ZALV	Zalesovo Beam	41.86	312	P	P	15 03 14.9	-0.2
	comp=E,3.2nm,0.4s,baz=87,slow=6.8,SNR=3.6						
CHTO	Chiang Mai	42.14	256	eP	P	15 03 17.5	-0.3
CHTO				pmax	pmax		
	comp=Z,2.0nm,0.6s						
CHTO	Chiang Mai	42.14	256	eP	P	15 03 17.5	-0.3
	comp=Z,2.1nm,0.6s						
CMAR	Chiang Mai Arr	42.34	255	P	P	15 03 18.4	-1.1
	comp=Z,1.0nm,0.7s,baz=61,slow=8.4,SNR=2.9						
MKAR	Makanchi Array	44.25	302	P	P	15 03 34.0	-0.6
	comp=Z,2.1nm,0.6s,baz=80,slow=10,SNR=3.9						
KURK	Kurchatov	45.95	308	eP	P	15 03 47.4	-0.6
KURK				pmax	pmax		
	comp=Z,22nm,0.7s						
KURK	Kurchatov	45.95	308	eP	P	15 03 47.4	-0.6
	comp=Z,22nm,0.7s						
KURBB	Kurchatov Arra	46.02	307	P	P	15 03 48.0	-0.6
	comp=Z,8.1nm,0.5s,baz=97,slow=25,SNR=7.5						
ILAR	Eielson Array	48.45	33	P	P	15 04 07.9	+0.6
	comp=Z,1.5nm,0.9s,baz=261,slow=6.2,SNR=2.6						
BVAR	Borovoye Array	50.51	312	P	P	15 04 22.6	-0.7
	comp=Z,2.0nm,0.6s,baz=59,slow=9.4,SNR=2.4						
AAK	Ala-Archa	50.69	298	P	P	15 04 25.2	+0.3
	comp=Z,2.0nm,0.5s,baz=0.0,slow=11,SNR=1.9						
ARU	Arti	56.19	318	P	P	15 05 04.0	-0.8
	comp=Z,4.3nm,0.7s,baz=96,slow=18,SNR=3.1						
ARU	Arti	56.19	318	P	P	15 05 04.0	-0.8
ARU				pmax	pmax		
	comp=Z,4.0nm,0.7s						
CTA	Charters Tower	57.76	176	P	P	15 05 15.4	-0.9
	comp=Z,17nm,1.2s,baz=320,slow=7.9,SNR=2.8						
FITZ	Fitzroy Crossi	57.81	199	P	P	15 05 17.0	+0.4
	comp=Z,4.0nm,0.7s,baz=22,slow=5.4,SNR=3.4						
ABKAR	Akbulak array	57.92	310	eP	P	15 05 16.3	-0.8
WRAB	Tennant Creek	57.96	189	eP	P	15 05 17.1	-0.6
WRAB	Tennant Creek	57.96	189	eP	P	15 05 17.1	-0.6
WRA	Warramunga Arr	57.97	189	P	P	15 05 17.4	-0.3
	comp=Z,8.9nm,0.5s,baz=6.4,slow=7.2,SNR=13						
ASAR	Alice Springs	61.69	189	P	P	15 05 43.5	+0.1
	comp=Z,2.6nm,0.6s,baz=12,slow=6.0,SNR=5.0						
MBWA	Marble Bar	62.40	204	eP	P	15 05 47.9	-0.2
	comp=Z,282nm,2.5s						
YKA	Yellowknife Ar	62.77	31	P	P	15 05 50.6	+0.6
	comp=Z,0.6nm,0.7s,baz=302,slow=5.8,SNR=2.9						
ARCES	ARCESS Array B	63.46	339	P	P	15 05 54.4	-0.2
	comp=Z,2.7nm,0.9s,baz=51,slow=13,SNR=2.7						
GEYT	Alibeck	64.02	299	P	P	15 05 58.7	-0.2
	comp=Z,1.7nm,0.7s,baz=73,slow=6.2,SNR=2.3						
FINES	FINESS Array B	68.40	332	P	P	15 06 26.5	0.0
	comp=Z,3.3nm,0.8s,baz=42,slow=6.6,SNR=4.3						
STKA	Stephens Creek	69.38	181	P	P	15 06 33.2	+0.4
	comp=Z,2.1nm,0.7s,baz=347,slow=9.3,SNR=3.6						
SUMG	Summit	69.86	0	eP	P	15 06 35.9	0.0
SUMG				pmax	pmax		
	comp=Z,12nm,1.1s						
SUMG	Summit	69.86	0	eP	P	15 06 35.9	0.0
	comp=Z,12nm,1.1s						
KIV	Kislovodsk	70.87	311	eP	P	15 06 55.0	+13
KIV				pmax	pmax		
	comp=Z,20nm,1.1s						
NB2	NORSAR Subarra	73.68	338	P	P	15 06 58.1	-0.5
	comp=Z,3.1nm,0.7s,baz=40,slow=6.2						
NOA	NORSAR Array B	73.68	338	P	P	15 06 58.4	-0.1
	comp=Z,2.0nm,0.8s,baz=38,slow=6.0,SNR=2.9						
NVAR	Mina Array Bea	73.97	54	P	P	15 07 02.4	+1.5
	comp=Z,0.6nm,0.7s,baz=302,slow=8.8,SNR=3.0						
AKASG	Malin Array Be	74.05	323	P	P	15 07 00.2	-0.6
	comp=Z,1.1nm,0.4s,baz=44,slow=6.4,SNR=4.2						
PDAR	Pinedale Array	76.62	46	P	P	15 07 16.9	+0.8
	comp=Z,0.7nm,0.6s,baz=277,slow=1.5,SNR=4.0						
BRTR	Keskin Array B	78.80	312	P	P	15 07 27.6	-0.6
	comp=Z,1.2nm,1.0s,baz=58,slow=4.6,SNR=3.2						
DPC	Dobruska-Polom	80.11	328	eP	P	15 07 36.7	+1.7
DPC				ePCP	pP	15 07 43.7	-0.1
DPC				epP	sP	15 07 46.7	-0.3
DPC	Dobruska-Polom	80.11	328	eP	P	15 07 36.7	+1.7
DPC				e		15 07 46.7	
CLL	Collm	80.71	330	e(P)	P	15 07 38.0	-0.1
	comp=Z,6.0nm,1.1s						
CLL	Collm	80.71	330	eP	P	15 07 38.0	-0.1
KHC	Kasperske Hory	82.19	329	eP	P	15 07 45.7	-0.3
KHC				epP	sP	15 07 58.0	-0.1
KHC	Kasperske Hory	82.19	329	eP	P	15 07 45.7	-0.3
KHC				e		15 07 58.0	
GERES	GERESS Array B	82.36	329	P	P	15 07 46.4	-0.6
	comp=Z,1.0nm,0.8s,baz=32,slow=5.8,SNR=4.5						
TXAR	Lajitas Array	89.10	53	P	P	15 08 21.5	+0.7
	comp=Z,0.5nm,0.7s,baz=297,slow=3.9,SNR=3.8						
LPAZ	La Paz	145.71	60	PKPbc	PKPab	15 15 05.5	0.0
	comp=Z,3.2nm,0.8s,baz=3.3,slow=8.2,SNR=4.3						

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*IDC **03** 15:03:05.0±1.7, 3.°21S×130.°83E, h0km, mb3.8/5, mb1 4.1/6, mb1mx3.7/45, mbtmp3.9/6, ML3.7/1, MS4.0/1, Ms1 4.0/1, ms1mx3.0/49, Error ellipse: s-maj=93.5km s-min=23.5km az=71.0*
*DJA **03** 15:03:06.1±1.5, 4°S±11°×13°1E±°, h122km±20km, M3.8/10, mb3.9/1, MLv3.7/10*
*ISCJB **03** 15:03:08.0±0.6, 3.°36S±0.°06×130.°55E±0.°07, h30km, mb3.7/4, MS3.8/1, Error ellipse: s-maj=10.6km s-min=8.8km az=160.6*
ISC 03 15:03:09.2±0.9, **3.°45S**±0.°07×**130.°58E**±0.°06, **h30**km, **n14**, σ**0.°91**/14, **mb3.8**/4, **Seram**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BNDI	Bandanaira	1.26	212	P	Pn	15 03 29.6	-1.2
MSAI	Masohi	1.65	274	P	Pb	15 03 38.3	-0.7
FAKI	Fak Fak	1.75	73	P	Pn	15 03 36.6	-0.9
SWI	Sorong	2.66	15	P	Pn	15 03 49.9	-0.1
NLAI	Namlea	3.48	273	P	Pn	15 04 02.0	+0.7
LBMI	Labuha	4.16	312	P	Pn	15 04 09.4	-1.2
SANI	Sanana	4.79	287	P	Pn	15 04 18.8	-0.6
WRA	Warramunga Arr	16.80	168	Pn	P	15 07 05.0	+0.7
	0.3nm,0.3s,baz=349,slow=11,SNR=5.8						
WRA				Sn	Sn	15 10 00.1	-8.1
	0.1nm,0.3s,baz=344,slow=22,SNR=4.6						
ASAR	Alice Springs	20.35	171	P	P	15 07 45.0	+1.6
	7.2nm,0.8s,baz=355,slow=9.6,SNR=21						
ASAR				S	S	15 11 30.0	-0.1
	0.8nm,0.9s,baz=350,slow=21,SNR=3.3						
LEM	Lembang	23.11	261	LR	LR	15 18 32.6	
	comp=Z,353nm,19.3s,baz=330,slow=40						
CMAR	Chiang Mai Arr	38.01	306	P	P	15 10 25.9	+0.9
	0.3nm,0.3s,baz=124,slow=8.1,SNR=6.7						
SONM	Songino Array	55.30	340	P	P	15 12 40.0	0.0
	0.5nm,0.8s,baz=166,slow=7.4,SNR=5.7						
MKAR	Makanchi Array	65.61	326	P	P	15 13 50.4	0.0
	2.0nm,1.0s,baz=127,slow=6.7,SNR=10						
ZALV	Zalesovo Beam	68.69	333	P	P	15 14 09.2	-0.5
	1.0nm,0.9s,baz=134,slow=8.4,SNR=3.4						

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*IDC **03** 15:14:43.2±0.7, 3.°30S×130.°69E, h0km, mb4.0/12, mb1 4.2/13, mb1mx3.9/41, mbtmp4.0/13, ML3.8/1, Error ellipse: s-maj=36.9km s-min=15.1km az=71.0*
*ISCJB **03** 15:14:45.7±0.3, 3.°41S±0.°04×130.°62E±0.°05, h31km, mb4.1/17, Error ellipse: s-maj=7.2km s-min=5.4km az=162.7*
*DJA **03** 15:14:46.6±0.4, 3°S±5°×13°1E±°, h10km, M4.0/8, MLv4.0/8*
*NEIC **03** 15:14:48.2±0.3, 3.°37S×130.°66E, h35km, mb4.2/8, Error ellipse: s-maj=8.4km s-min=5.9km az=62.0*
ISC 03 15:14:47.6±0.5, **3.°41S**±0.°05×**130.°67E**±0.°07, **h31**km, **n43**, σ**1.°36**/44, **mb4.1**/17, **Seram**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BNDI	Bandanaira	1.34	215	P	Pb	15 15 11.9	-0.2
FAKI	Fak Fak	1.65	73	P	Pn	15 15 15.5	+1.1
FAKI	Fak Fak	1.65	73	ePn	Pn	15 15 15.3	+0.9
MSAI	Masohi	1.74	272	P	Pn	15 15 16.8	+1.1
SWI	Sorong	2.60	13	P	Pn	15 15 24.8	-2.7
NLAI	Namlea	3.57	273	P	Pb	15 15 45.6	-4.4
RKPI	Ransiki, Papua	3.98	62	P	Pn	15 15 46.9	+0.4
LBMI	Labuha	4.20	311	P	Pn	15 15 46.6	-2.9
SANI	Sanana	4.87	286	P	Pn	15 15 58.2	-0.5
LUWI	Luwuk	8.24	286	ePn	Pn	15 16 44.7	-0.3
MTN	Manton Dam	9.38	177	ePn	Pn	15 17 00.7	0.0
MMRI	Maumere	9.86	238	ePn	Pn	15 17 07.6	+0.3
KAPI	Kappang	11.01	261	ePn	Pn	15 17 22.7	-0.3
WRAB	Tennant Creek	16.81	168	eP	P	15 18 43.6	+0.9
	9.0nm,0.8s						
WRA	Warramunga Arr	16.82	168	Pn	Pn	15 18 39.4	-1.5
	0.4nm,0.3s,baz=347,slow=12,SNR=12						
WRA				Sn	Sn	15 21 42.5	-4.4
	0.3nm,0.3s,baz=350,slow=24,SNR=6.2						
WB2	Warramunga Arr	16.82	168	ePn	Pn	15 18 39.6	-1.3
	9.2nm,0.9s						
JAGI	Jajag, Banyuwa	17.18	252	P	P	15 18 47.4	+0.6
AS31	Alice Springs	20.38	171	eP	P	15 19 22.5	+0.6
	7.4nm,0.8s						
ASAR	Alice Springs	20.38	171	P	P	15 19 22.9	+1.1
	18nm,0.7s,baz=353,slow=11,SNR=155						
ASAR				S	S	15 23 05.8	-3.0
	0.7nm,0.8s,baz=350,slow=15,SNR=4.8						
AS01	Alice Springs	20.38	171	eP	P	15 19 23.1	+1.1
CTA	Charters Tower	22.49	139	P	P	15 19 46.4	+1.7
	7.9nm,1.0s,baz=322,slow=12,SNR=6.0						
CTAO	Charters Tower	22.49	139	eP	P	15 19 46.4	+1.7
	10nm,0.8s						
STKA	Stephens Creek	30.12	161	P	P	15 20 55.1	+0.4
	2.5nm,0.7s,baz=339,slow=7.9,SNR=6.2						
IPM	Ipoh	30.64	285	eP	P	15 20 59.8	+0.3
	40nm,1.8s						
CM01	Chiang Mai Arr	38.03	306	eP	P	15 22 04.0	+0.6
CMAR	Chiang Mai Arr	38.06	306	P	P	15 22 03.9	+0.2
	0.6nm,0.4s,baz=135,slow=6.6,SNR=11						
CHTO	Chiang Mai	38.25	306	eP	P	15 22 04.6	-0.6
	5.2nm,1.1s						
MJAR	Matsushiro Arr	40.37	9	P	P	15 22 20.5	-2.1
	1.3nm,0.9s,baz=198,slow=9.8,SNR=3.6						
KSAR	Wonju Array Be	40.73	357	P	P	15 22 25.2	-0.4
KSRS	Korea Array	40.74	357	P	P	15 22 25.2	-0.4
	0.7nm,0.6s,baz=175,slow=10.0,SNR=6.7						
CD2	Chengdu	42.71	325	P	P	15 22 42.3	+0.3
CD2				pmax	pmax		
	comp=Z,1.0nm,0.5s						
CN2	Changchun	47.23	355	eP	P	15 23 19.7	+2.0
USRK	Ussuriysk Ar.	47.41	1	P	P	15 23 18.6	-0.4
	comp=Z,0.8nm,0.5s,baz=192,slow=9.0,SNR=4.4						
SONM	Songino Array	55.29	340	P	P	15 24 18.3	0.0
	comp=Z,0.7nm,0.7s,baz=158,slow=7.4,SNR=5.5						
WMQ	Urumqi	60.80	326	eP	P	15 24 58.1	+1.2
WMQ				pP	sP	15 25 09.8	-0.3
WMQ				pmax	pmax		
	comp=Z,4.0nm,0.6s						
WMQ				pmax	pmax		
	comp=Z,100nm,5.4s						
YAK	Yakutsk	65.27	359	eP	P	15 25 25.8	-0.2
	comp=Z,5.4nm,0.8s						
MKAR	Makanchi Array	65.63	326	P	P	15 25 28.6	-0.3
	comp=Z,0.9nm,0.4s,baz=111,slow=8.0,SNR=30						
ZALV	Zalesovo Beam	68.70	333	P	P	15 25 47.2	-0.8
	comp=Z,0.7nm,0.5s,baz=104,slow=7.8,SNR=4.7						
VOSK	Vostochnaya	74.96	327	eP	P	15 26 24.8	-0.9
	comp=Z,2.1nm,0.7s						
NRIK	Noril'sk	78.27	346	P	P	15 26 44.3	+0.3
	comp=Z,0.9nm,0.4s,baz=149,slow=13,SNR=3.4						
ABKAR	Akbulak array	80.14	321	eP	P	15 26 54.5	-0.2
ILAR	Eielson Array	89.84	25	P	P	15 27 43.6	+0.6
	comp=Z,0.3nm,0.7s,baz=270,slow=4.5,SNR=3.2						
TORD	Torodi Ar. Bea	128.68	284	PKP	PKPdf	15 33 53.5	+0.7
	comp=Z,0.6nm,0.8s,baz=98,slow=1.4,SNR=3.6						

IDC 03 15:23:40.8±3.3, **36.°51N**×**143.°94E**, **h0**km, **mb3.6**/2, **mb1 3.9**/5, **mb1mx3.4**/46, **mbtmp4.0**/5, **ML3.7**/3, **Error ellipse: s-maj=55.7km s-min=40.1km az=14.0, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MJAR	Matsushiro Arr	4.62	272	Pn	Pn	15 24 51.1	-0.8
	2.1nm,0.3s,baz=85,slow=15,SNR=20						
MAT	Matsushiro	4.62	272	P	Pn	15 24 51.7	-0.2
MAT				eS	Sn	15 25 42.5	-3.7
JHJ	Hachijo jima 2	4.81	227	Pn	Pn	15 24 55.8	+1.3
	11nm,0.3s,baz=234,slow=19,SNR=2.9						
JHJ				Sn	Sn	15 25 49.5	-1.4
	11nm,0.3s,baz=217,slow=20,SNR=2.5						
JCJ	Chichijima	9.50	190	Pn	Pn	15 25 58.0	-0.9
	1.3nm,0.3s,baz=294,slow=20,SNR=3.1						
JCJ				Sn	Sn	15 27 40.4	-6.2
	2.4nm,0.3s,baz=216,slow=19,SNR=3.1						
WRA	Warramunga Arr	56.87	191	P	P	15 33 27.2	-0.2
	0.4nm,0.5s,baz=9.4,slow=7.1,SNR=12						
ASAR	Alice Springs	60.60	191	P	P	15 33 53.5	+0.2
	0.5nm,1.0s,baz=3.9,slow=6.3,SNR=6.4						

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*ISCJB **03** 15:30:21.5±0.5, 31.°76N±0.°03×116.°10W±0.°03, h11km±4km, Error ellipse: s-maj=4.8km s-min=3.3km az=32.8*
*NEIC **03** 15:30:22.9, 31.°75N×116.°11W, h7km, ML3.4(PAS), ML3.5(ECX), After ECX.*
NEIC Felt at Ensenada.
*ECX **03** 15:30:22.9±0.5, 31.°75N×116.°11W, h7km, MD3.3, ML3.5*
*MEX **03** 15:30:23.7±1.0, 31.°71N×116.°19W, h16km±12km, MD3.6*
ISC 03 15:30:21.2±1.1, **31.°79N**±0.°03×**116.°07W**±0.°02, **h5**km±11km, **n70**, σ**1.°01**/88, **3C, Baja California**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ZAX	El Zacaton	0.32	212⇑	e	Pn	15 30 33.0	+0.3
ZAX				AML	AML	15 30 33.0	
	comp=N,7µm,0.5s						
ECNX	Esteban Cantu	0.47	254	i P	Pg	15 30 30.6	+0.4
PBX	Punta Banda	0.56	265	i P	Pg	15 30 32.2	+0.3
PBX				⇑iS	Sg	15 30 39.7	+0.5
CBX	Cerro Bola	0.72	316	i P	Pg	15 30 35.8	+0.7
CBX	Cerro Bola	0.72	316	eP	Pg	15 30 35.6	+0.5
CBX				eS	Sg	15 30 43.4	-1.1
RMX	La Rumorosa	0.81	360	eP	Pb	15 30 37.6	-0.3
RMX				AML	AML	15 30 50.0	
	comp=N,2µm,0.1s						

TJIG	**Tijuana**	**0.82**	**322**	*e*P	**Pg**	**15 30 37.3**	**+0.3**
TJIG				*e*S	**Sg**	**15 30 46.5**	**-1.1**
YUH	**Yuha Desert**	**0.86**	**8**	*e*Pg	**Pb**	**15 30 39.6**	**+0.9**
IBP	**Imperial Bould**	**0.87**	**359**	*e*P	**Pb**	**15 30 39.3**	**+0.5**
IBP	**Imperial Bould**	**0.87**	**359**	P	**Pb**	**15 30 39.2**	**+0.4**
	baz=182						
IBP				S	**Sb**	**15 30 50.5**	**-0.4**
	baz=182						
SPIG	**San Pedro Mart**	**0.91**	**145**	*e*P	**Pg**	**15 30 38.4**	**-0.1**
SPIG	**San Pedro Mart**	**0.91**	**145**	*i* P	**Pg**	**15 30 38.8**	**+0.3**
SPIG				*e*S	**Sg**	**15 30 48.6**	**-1.7**
SPX	**San Pedro Mart**	**0.91**	**145**	⇑*i*P	**Pg**	**15 30 38.8**	**+0.2**
ECBX	**El Chinero**	**0.93**	**110**	*e*P	**Pg**	**15 30 39.5**	**+0.6**
ECBX				*e*S	**Sg**	**15 30 52.0**	**+1.1**
MBIG	**Mexicali**	**0.96**	**50**	*e*P	**Pb**	**15 30 40.9**	**+0.5**
MBIG				*e*S	**Sb**	**15 30 53.3**	**-0.1**
WESC	**Westside Schoo**	**1.01**	**17**	*e*Pg	**Pn**	**15 30 42.0**	**0.0**
ERPC	**Ernies Place**	**1.01**	**20**	*e*Pg	**Pn**	**15 30 42.3**	**+0.2**
BAR	**Barrett**	**1.02**	**330**	*e*P	**Pg**	**15 30 40.6**	**-0.2**
BAR	**Barrett**	**1.02**	**330**	*e*Pg	**Pg**	**15 30 40.8**	**-0.1**
BAR				*e*Sg	**Sg**	**15 30 54.0**	**-0.1**
CBKC	**Canebrake**	**1.12**	**352**	*e*Pg	**Pn**	**15 30 44.3**	**+0.7**
MONP2	**Monument Peak**	**1.14**	**345**	P	**Pg**	**15 30 43.3**	**+0.3**
	baz=168						
MONP2				S	**Sg**	**15 30 58.1**	**+0.4**
	baz=168						
SWSC	**Sam W. Stewart**	**1.17**	**11**	P	**Pb**	**15 30 44.1**	**+0.2**
	baz=193						
SWSC				S	**Sb**	**15 31 00.4**	**+0.9**
	baz=193						
SWSC	**Sam W. Stewart**	**1.17**	**11**	*e*Pn	**Pn**	**15 30 44.9**	**+0.6**
SDRC	**San Diego Road**	**1.20**	**322**	*e*P	**Pg**	**15 30 43.6**	**-0.5**
EML	**El Monte Cty P**	**1.28**	**329**	*e*Pn	**Pb**	**15 30 46.2**	**+0.4**
EMSC	**East Mesa**	**1.32**	**44**	*e*Pn	**Pg**	**15 30 46.3**	**-0.2**
COA	**Coachella**	**1.34**	**37**	*e*Pn	**Pg**	**15 30 46.8**	**-0.1**
109C	**Camp Elliot, M**	**1.40**	**322**	Pb	**Pn**	**15 30 46.9**	**-0.6**
	baz=144						
109C				S	**Sg**	**15 31 04.8**	**-1.4**
	baz=144						
CPE	**Camp Elliot**	**1.40**	**322**	*e*Pn	**Pn**	**15 30 46.9**	**-0.5**
CPE				*e*Sn	**Sg**	**15 31 05.4**	**-0.8**
DPP	**Dos Picos Cty**	**1.41**	**329**	*e*Pn	**Pn**	**15 30 48.1**	**+0.5**
HWB	**Hans Werner Br**	**1.44**	**329**	*e*Pn	**Pn**	**15 30 48.5**	**+0.5**
BORC	**Borrego Spring**	**1.50**	**349**	*e*Pn	**Pb**	**15 30 49.7**	**+0.1**
BORC				*e*Sn	**Sg**	**15 31 06.0**	**-3.5**
GLA	**Glamis**	**1.64**	**40**	P	**Pn**	**15 30 50.5**	**-0.3**
	baz=220						
GLA	**Glamis**	**1.64**	**40**	*e*Pn	**Pn**	**15 30 50.5**	**-0.3**
GLA				*e*Pg	**Pb**	**15 30 51.0**	**-1.0**
GLA				*e*Sn	**Sn**	**15 31 10.6**	**-1.7**
FRK	**Frink**	**1.65**	**13**	*e*Pn	**Pn**	**15 30 51.4**	**+0.5**
BATC	**Bat Cave Butte**	**1.68**	**7**	*e*Pn	**Pb**	**15 30 52.5**	**-0.1**
PLM	**Palomar**	**1.70**	**337**	*e*Pn	**Pn**	**15 30 52.6**	**+0.9**
SNDA	**J Saunders Pla**	**1.81**	**346**	*e*Pn	**Pn**	**15 30 54.2**	**+0.9**
DNR	**Dunn Ranch,Anz**	**1.83**	**345**	*e*Pn	**Pn**	**15 30 54.4**	**+0.9**
PFO	**Pinyon Flats O**	**1.84**	**350**	Pb	**Pn**	**15 30 54.1**	**+0.5**
	baz=171						
PFO				Sb	**Sb**	**15 31 19.3**	**+0.4**
	baz=171						
PFO	**Pinyon Flats O**	**1.84**	**350**	*e*Pn	**Pn**	**15 30 53.9**	**+0.3**
CRY	**Cary Ranch**	**1.86**	**343**	*e*Pn	**Pn**	**15 30 54.7**	**+0.9**
CTW	**Cottonwood Mou**	**1.89**	**5**	*e*Pn	**Pn**	**15 30 55.5**	**+1.3**
LTC	**Little Chuckwa**	**1.89**	**26**	*e*Pn	**Pn**	**15 30 55.0**	**+0.8**
BC3	**Big Chuckawall**	**1.93**	**15**	P	**Pn**	**15 30 55.2**	**+0.3**
	baz=197						
BACC	**Bachelor Mtn.**	**1.99**	**336**	*e*Pn	**Pn**	**15 30 56.5**	**+0.9**
MURC	**Murrieta**	**2.04**	**333**	Pb	**Pn**	**15 30 57.4**	**+1.1**
	baz=154						
HMTC	**Hemet**	**2.07**	**338**	*e*Pn	**Pn**	**15 30 57.6**	**+1.0**
113A	**Mohawk Valley,**	**2.18**	**63**	*e*Pn	**Pn**	**15 30 58.1**	**-0.1**
113A				*e*Sn	**Sn**	**15 31 24.3**	**-1.3**
BELC	**Belle Mtn. Jos**	**2.21**	**2**	P	**Pn**	**15 30 59.1**	**+0.4**
	baz=183						
SCI2	**San Clemente I**	**2.41**	**300**	P	**Pn**	**15 31 00.4**	**-0.8**
	baz=120						
CIS	**Catalina Islan**	**2.54**	**310**	P	**Pn**	**15 31 01.8**	**-1.4**
	baz=130						
SSK	**Sunset Peak**	**2.77**	**331**	*e*Pn	**Pn**	**15 31 07.5**	**+1.0**
214A	**Organ Pipe Nat**	**2.78**	**86**	P	**Pn**	**15 31 06.0**	**-0.4**
	baz=267						
BFSC	**Mount Baldy Ra**	**2.78**	**332**	*e*Pn	**Pn**	**15 31 07.6**	**+1.1**
MWC	**Mount Wilson**	**2.94**	**326**	*e*Pn	**Pn**	**15 31 09.1**	**+0.3**
PASC	**Pasadena Art C**	**2.96**	**324**	*e*Pn	**Pn**	**15 31 09.2**	**+0.2**
PASC				*e*Sn	**Sg**	**15 31 55.5**	**-1.0**
SBI	**Santa Barbara**	**3.01**	**305**	*e*Pn	**Pn**	**15 31 09.9**	**+0.4**
HOLC	**Holcomb Ridge**	**3.05**	**331**	*e*Pn	**Pn**	**15 31 11.4**	**+1.2**
IR2C	**Iron Canyon**	**3.25**	**324**	*e*Pn	**Pn**	**15 31 14.0**	**+1.1**
Y14A	**Wickenburg**	**3.35**	**49**	*e*Pn	**Pn**	**15 31 15.1**	**+0.8**
GSC	**Goldstone, Bar**	**3.56**	**350**	*e*Pn	**Pn**	**15 31 19.1**	**+1.9**
OSI	**Osito Audit: C**	**3.59**	**322**	*e*Pn	**Pn**	**15 31 18.3**	**+0.7**
W13A	**Hualapai Mount**	**3.77**	**28**	*e*Pn	**Pn**	**15 31 21.5**	**+1.2**
MARC	**Maricopa**	**4.21**	**320**	*e*Pn	**Pn**	**15 31 27.8**	**+1.7**
X16A	**Lo Mia Camp, P**	**4.69**	**55**	*e*Pn	**Pn**	**15 31 34.2**	**+1.4**
CARC	**Carrizo Plain**	**4.72**	**319**	*e*Pn	**Pn**	**15 31 34.8**	**+1.8**
U15A	**North Rim**	**5.59**	**33**	*e*Pn	**Pn**	**15 31 47.4**	**+2.1**
LCMT	**Little Creek M**	**5.71**	**23**	*e*Pn	**Pn**	**15 31 49.4**	**+2.6**
LCMT				*e*Lg	Lg	15 33 29.0	
KNB	**Kanab**	**5.87**	**26**	*e*Pn	**Pn**	**15 31 51.8**	**+2.8**

*IDC **03** 15:40:42.5±1.4, 38°.41N×142°.01E, h0km, mb3.6/5, mb1 3.7/5, mb1mx3.3/50, mbtmp3.6/5, Error ellipse: s-maj=51.8km s-min=23.1km az=79.0*
*ISCJB **03** 15:40:45.2±1.3, 38°.46N±0°.05×142°.06E±0°.08, h29km±6km, mb3.5/5, Error ellipse: s-maj=10.9km s-min=8.9km az=16.3*
*JMA **03** 15:40:46.6±0.1, 38°.50N×142°.00E, h32km±1km, M3.8*
JMA Felt I J1.
ISC 03 15:40:46.3±2.2**, 38°.50N**±0°.06×**142°.0E**±0°.1**, h25**km±13km**, n13,** σ**0s.40**/19**, mb3.6**/5**, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
JIO	**Ouri**	**0.51**	**266**	P	**Pb**	**15 40 57.0**	**+0.3**
JIO				S	**Sb**	**15 41 03.9**	**+0.2**
OFUJ	**Ofunato**	**0.64**	**336**	P	**Pb**	**15 40 58.8**	**0.0**
OFUJ				*e*S	**Sb**	**15 41 07.3**	**0.0**
JMK	**Ichinoseki**	**0.76**	**307**	P	**Pb**	**15 41 00.9**	**0.0**
JMK				S	**Sb**	**15 41 10.9**	**+0.1**
JOU	**Okura**	**1.05**	**263**	P	**Pn**	**15 41 05.4**	**-0.1**
JOU				S	**Sb**	**15 41 19.0**	**-0.3**
JOM	**Ohasama**	**1.12**	**331**	P	**Pn**	**15 41 06.5**	**+0.1**
JOM				*e*S	**Sb**	**15 41 20.7**	**-0.4**
JMM	**Marumori**	**1.14**	**237**	P	**Pn**	**15 41 06.5**	**-0.1**
JYK	**Kaneyama**	**1.35**	**289**	P	**Pn**	**15 41 09.6**	**0.0**
JYK				S	**Sn**	**15 41 26.7**	**0.0**
JRG	**Rokugo**	**1.39**	**311**	P	**Pb**	**15 41 10.9**	**-0.7**
SEY	**Seymchan**	**25.27**	**11**	P	**P**	**15 46 10.9**	**+0.7**
	1.0nm,0.9s,baz=229,slow=8.8,SNR=3.8						
ZALV	**Zalesovo Beam**	**41.29**	**311**	P	**P**	**15 48 29.6**	**+0.2**
	0.6nm,0.5s,baz=69,slow=7.9,SNR=3.8						
MKAR	**Makanchi Array**	**43.75**	**301**	P	**P**	**15 48 50.0**	**+0.5**
	0.3nm,0.5s,baz=80,slow=9.1,SNR=3.2						
WRA	**Warramunga Arr**	**58.57**	**188**	P	**P**	**15 50 40.2**	**-0.7**
	0.7nm,0.9s,baz=6.6,slow=7.0,SNR=8.2						
ASAR	**Alice Springs**	**62.30**	**188**	P	**P**	**15 51 06.1**	**-0.3**
	0.4nm,0.8s,baz=15,slow=8.8,SNR=4.6						

*ISCJB **03** 15:41:57.4±0.6, 39°.34N±0°.03×29°.20E±0°.07, h8km, Error ellipse: s-maj=7.4km s-min=4.6km az=175.2*
*CSEM **03** 15:41:57.5±0.1, 39°.33N×29°.20E, h8km, MD2.5, Error ellipse: s-maj=3.9km s-min=2.3km az=92.0*
*ISK **03** 15:41:57.0, 39°.32N×29°.23E, h8km, MD2.5*
*DDA **03** 15:42:00.2, 39°.23N×29°.27E, h7km, Md2.6*
ISC 03 15:41:57.5±0.9**, 39°.33N**±0°.03×**29°.20E**±0°.04**, h8**km**, n20,** σ**0s.23**/26**, Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
TVSB	**Tavsanli**	**0.24**	**60**	*e*PG	**Pg**	**15 42 02.5**	**+0.2**
TVSB				*e*SG	**Sg**	**15 42 05.3**	**-0.3**
TVSB	**Tavsanli**	**0.24**	**60**	*e*Pg	**Pg**	**15 42 02.5**	**+0.2**
TVSB				*e*Sg	**Sg**	**15 42 05.3**	**-0.3**
GDZ	**Gediz**	**0.33**	**137**	*i* P	**Pg**	**15 42 04.2**	**+0.2**
GDZ				*i* S	**Sg**	**15 42 08.4**	**0.0**
GDZ	**Gediz**	**0.33**	**137**	P	**Pg**	**15 42 04.2**	**+0.2**
GDZ				S	**Sg**	**15 42 08.4**	**0.0**
KULA	**Kula-Manisa**	**0.92**	**207**	*e*PG	**Pg**	**15 42 14.8**	**-0.2**
KULA	**Kula-Manisa**	**0.92**	**207**	*e*Pg	**Pg**	**15 42 14.9**	**-0.2**
KHAL	**Karahalli**	**0.99**	**166**	*i* P	**Pb**	**15 42 17.2**	**+0.3**
KHAL				*i* S	**Sb**	**15 42 29.8**	**-0.4**
KHAL	**Karahalli**	**0.99**	**166**	P	**Pb**	**15 42 17.2**	**+0.3**
KHAL				S	**Sb**	**15 42 29.8**	**-0.4**
CAVI	**Cavuskoy**	**1.00**	**30**	*e*PG	**Pg**	**15 42 16.5**	**-0.3**
CAVI	**Cavuskoy**	**1.00**	**30**	*e*Pg	**Pg**	**15 42 16.5**	**-0.3**
IZI	**Iznik**	**1.03**	**12**	*e*PG	**Pb**	**15 42 17.6**	**0.0**
IZI	**Iznik**	**1.03**	**12**	*e*Pg	**Pb**	**15 42 17.6**	**0.0**
MDNY	**Mudanya-Bursa**	**1.06**	**347**	*e*PN	**Pg**	**15 42 18.1**	**+0.2**
MDNY	**Mudanya-Bursa**	**1.06**	**347**	*e*Pn	**Pg**	**15 42 18.1**	**+0.2**
KCTX	**Karacabey (Bur**	**1.13**	**326**	*e*PN	**Pn**	**15 42 20.0**	**+0.3**
KCTX	**Karacabey (Bur**	**1.13**	**326**	*e*Pn	**Pn**	**15 42 20.0**	**+0.3**
ARMT	**Armutlu**	**1.26**	**348**	*e*PN	**Pg**	**15 42 21.8**	**+0.1**
ARMT	**Armutlu**	**1.26**	**348**	*e*Pn	**Pg**	**15 42 21.8**	**+0.1**
GULT	**Gulveren**	**1.50**	**42**	*e*PN	**Pn**	**15 42 24.8**	**+0.1**
GULT	**Gulveren**	**1.50**	**42**	*e*Pn	**Pn**	**15 42 24.8**	**+0.1**

*IDC **03** 15:41:59.1±0.8, 35°.34N×142°.99E, h0km, mb3.5/8, mb1 3.8/11, mb1mx3.5/57, mbtmp3.6/11, ML3.5/3, Error ellipse: s-maj=27.4km s-min=16.9km az=119.0*
*ISCJB **03** 15:42:04.2±0.6, 35°.2N±0°.1×142°.8E±0°.1, h59km, mb3.5/8, Error ellipse: s-maj=20.2km s-min=8.6km az=41.6*
ISC 03 15:42:06.0±0.8**, 35°.27N**±0°.10×**142°.7E**±0°.1**, h59**km**, n11,** σ**1s.77**/12**, mb3.6**/8**, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
JHJ	**Hachijo jima 2**	**3.23**	**229**	Pn	**Pn**	**15 42 52.6**	**-1.7**
	7.5nm,0.3s,baz=105,slow=20,SNR=1.9						
JHJ				Sn	**Sn**	**15 43 31.9**	**+0.3**
	24nm,0.3s,baz=75,slow=20,SNR=4.7						
MJAR	**Matsushiro Arr**	**3.86**	**290**	Pn	**Pn**	**15 43 00.7**	**-2.2**
	1.6nm,0.3s,baz=93,slow=11,SNR=6.9						
JCJ	**Chichijima**	**8.16**	**183**	Pn	**Pn**	**15 43 59.8**	**-2.0**
	2.3nm,0.3s,baz=294,slow=20,SNR=5.1						
JCJ				Sn	Sn	15 45 26.1	-6.6
	2.3nm,0.3s,baz=285,slow=20,SNR=2.6						
MKAR	**Makanchi Array**	**45.95**	**304**	P	**P**	**15 50 25.5**	**+2.5**
	0.2nm,0.7s,baz=89,slow=10,SNR=3.0						
ILAR	**Eielson Array**	**50.43**	**32**	P	**P**	**15 50 56.7**	**-0.6**
	0.8nm,0.9s,baz=276,slow=6.9,SNR=5.7						
WRA	**Warramunga Arr**	**55.48**	**190**	P	**P**	**15 51 36.3**	**+1.4**
	1.1nm,0.9s,baz=7.5,slow=7.5,SNR=7.3						
INK	**Inuvik**	**55.48**	**27**	P	**P**	**15 51 34.6**	**+0.3**
	0.5nm,0.6s,baz=303,slow=7.6,SNR=4.4						
ASAR	**Alice Springs**	**59.21**	**189**	P	**P**	**15 52 03.5**	**+2.5**
	0.4nm,0.7s,baz=19,slow=12,SNR=7.7						
YKA	**Yellowknife Ar**	**64.81**	**30**	P	**P**	**15 52 37.8**	**-0.4**
	0.3nm,0.8s,baz=300,slow=6.3,SNR=3.3						
NVAR	**Mina Array Bea**	**75.21**	**53**	P	**P**	**15 53 41.7**	**-0.9**
	0.2nm,0.3s,baz=309,slow=5.7,SNR=2.8						
PDAR	**Pinedale Array**	**78.15**	**46**	P	**P**	**15 53 59.5**	**+0.3**
	0.2nm,0.6s,baz=198,slow=2.8,SNR=4.1						

IDC 03 15:47:19.9±5.0**, 15°.37S**×**176°.66W, h0**km**, mb3.9**/3**, mb1 4.1**/3**, mb1mx3.6**/41**, mbtmp3.9**/3**, Error ellipse: s-maj=172.1km s-min=99.6km az=154.0, Fiji Islands region**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
STKA	**Stephens Creek**	**41.34**	**239**	P	P	15 55 07.6	-0.1
	1.8nm,1.0s,baz=82,slow=7.2,SNR=5.0						
WRA	**Warramunga Arr**	**46.79**	**257**	P	P	15 55 50.1	-1.6
	0.2nm,0.4s,baz=92,slow=7.6,SNR=6.9						
ASAR	**Alice Springs**	**47.13**	**252**	P	P	15 55 55.5	+1.1
	3.4nm,0.5s,baz=89,slow=7.8,SNR=130						
ASAR				PcP	PcP	15 57 25.9	-0.3
	0.2nm,0.4s,baz=104,slow=4.1,SNR=4.6						

*IDC **03** 15:55:21.0±1.4, 32°.38N×142°.67E, h0km, mb3.5/4, mb1 3.7/7, mb1mx3.4/48, mbtmp3.6/7, ML3.3/2, Error ellipse: s-maj=39.9km s-min=21.6km az=65.0*
*ISCJB **03** 15:55:25.3±1.0, 32°.31N±0°.08×142°.2E±0°.2, h52km, mb3.5/4, Error ellipse: s-maj=25.1km s-min=8.3km az=162.8*
ISC 03 15:55:26.5±1.1**, 32°.38N**±0°.09×**142°.3E**±0°.2**, h52**km**, n8,** σ**1s.49**/9**, mb3.6**/4**, Southeast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
JHJ	**Hachijo jima 2**	**2.24**	**290**	Pn	**Pn**	**15 56 01.8**	**+0.8**
	13nm,0.3s,baz=127,slow=20,SNR=4.4						
JHJ				Sn	Sn	15 56 32.4	+4.9
	20nm,0.3s,baz=232,slow=21,SNR=3.0						
JCJ	**Chichijima**	**5.27**	**181**	Pn	**Pn**	**15 56 42.1**	**-0.6**
	baz=180,slow=13						
JCJ				Sn	**Sn**	**15 57 40.6**	**-1.5**
	6.0nm,0.3s,baz=266,slow=23,SNR=5.1						
MJAR	**Matsushiro Arr**	**5.34**	**322**	Pn	**Pn**	**15 56 43.5**	**-0.2**
	1.2nm,0.3s,baz=147,slow=11,SNR=9.5						
MAT	**Matsushiro**	**5.35**	**322**	P	**Pn**	**15 56 43.7**	**0.0**
MAT				*e*S	**Sn**	**15 57 41.9**	**-2.1**
MKAR	**Makanchi Array**	**47.32**	**306**	P	P	16 03 59.6	+4.8
	0.1nm,0.5s,baz=79,slow=7.5,SNR=3.0						
WRA	**Warramunga Arr**	**52.58**	**189**	P	**P**	**16 04 36.6**	**+1.6**
	0.8nm,0.6s,baz=7.7,slow=7.6,SNR=8.7						
ASAR	**Alice Springs**	**56.31**	**189**	P	**P**	**16 05 03.7**	**+1.8**
	0.4nm,0.9s,baz=6.4,slow=7.2,SNR=5.5						
TXAR	**Lajitas Array**	**92.36**	**53**	P	**P**	**16 08 32.2**	**+0.5**
	0.3nm,0.7s,baz=302,slow=3.6,SNR=4.8						

*ISK **03** 16:11:18.6, 39°.98N×35°.37E, h5km, MD2.7*
*ISCJB **03** 16:11:19.8±0.9, 39°.99N±0°.04×35°.39E±0°.06, h9km±7km, Error ellipse: s-maj=8.6km s-min=6.0km az=142.4*
*DDA **03** 16:11:19.8, 39°.95N×35°.33E, h7km, Md2.7*
*CSEM **03** 16:11:19.7±0.3, 39°.98N×35°.37E, h5km, MD2.7, Error ellipse: s-maj=7.1km s-min=5.0km az=43.0*
ISC 03 16:11:18.7±1.5**, 39°.96N**±0°.03×**35°.36E**±0°.04**, h5**km±13km**, n18,** σ**0s.65**/28**, Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
YOZ	**Yozgat**	**0.32**	**186**	*e*PG	**Pb**	**16 11 26.5**	**-0.5**
YOZ				*e*SG	**Sb**	**16 11 32.3**	**-0.2**
YOZ	**Yozgat**	**0.32**	**186**	*e*Pg	**Pb**	**16 11 26.5**	**-0.5**
YOZ				*e*Sg	**Sb**	**16 11 32.3**	**-0.2**
COAL	**Corum-Alaca**	**0.41**	**316**	*i* P	**Pg**	**16 11 27.2**	**+0.4**
COAL				*i* S	**Sb**	**16 11 34.6**	**-0.7**
COAL	**Corum-Alaca**	**0.41**	**316**	P	**Pg**	**16 11 27.2**	**+0.4**
COAL				S	**Sb**	**16 11 34.6**	**-0.7**
CORM	**Corum**	**0.60**	**292**	*e*PG	**Pb**	**16 11 31.4**	**-0.5**
CORM				*e*SG	**Sb**	**16 11 40.8**	**+0.1**
CORM	**Corum**	**0.60**	**292**	*e*Pg	**Pb**	**16 11 31.4**	**-0.5**
CORM				*e*Sg	**Sb**	**16 11 40.8**	**+0.1**
CDAG	**Cicekdag**	**0.83**	**247**	*i* P	**Pg**	**16 11 35.2**	**+0.5**
CDAG				*i* S	**Sb**	**16 11 47.6**	**+0.3**
CDAG	**Cicekdag**	**0.83**	**247**	P	**Pg**	**16 11 35.2**	**+0.5**
CDAG				S	**Sb**	**16 11 47.6**	**+0.3**
CUSAR	**Sarkisla-SIVAS**	**0.87**	**128**	*i* P	**Pn**	**16 11 37.3**	**-0.4**
CUSAR	**Sarkisla-SIVAS**	**0.87**	**128**	P	**Pn**	**16 11 37.3**	**-0.4**
AVNS	**Nevsehir-Avano**	**1.22**	**199**	*i* P	**Pg**	**16 11 42.1**	**0.0**
AVNS				*i* S	**Sn**	**16 12 00.4**	**+1.0**
AVNS	**Nevsehir-Avano**	**1.22**	**199**	P	**Pg**	**16 11 42.1**	**0.0**
AVNS				S	**Sn**	**16 12 00.4**	**+1.0**
SVSK	**Karacayir**	**1.26**	**91**	*e*PN	**Pg**	**16 11 43.5**	**+0.7**
SVSK	**Karacayir**	**1.26**	**91**	*e*Pn	**Pg**	**16 11 43.5**	**+0.7**
SERE	**Sereflikochisa**	**1.72**	**235**	*e*PN	**Pb**	**16 11 51.3**	**+0.4**
SERE	**Sereflikochisa**	**1.72**	**235**	*e*Pn	**Pb**	**16 11 51.3**	**+0.4**
SULT	**Sultanhani-AKS**	**2.27**	**220**	*e*PN	**Pb**	**16 11 58.9**	**-1.3**
SULT	**Sultanhani-AKS**	**2.27**	**220**	*e*Pn	**Pb**	**16 11 58.9**	**-1.3**

*IDC **03** 16:11:18.7±2.7, 21°.11S×69°.66W, h0km, mb3.6/2, mb1 3.8/4, mb1mx3.5/20, mbtmp3.6/4, ML3.5/2, Error ellipse: s-maj=61.8km s-min=51.0km az=170.0*
*ISCJB **03** 16:11:34.8±0.8, 20°.20S±0°.05×69°.28W±0°.10, h104km, mb3.4/2, Error ellipse: s-maj=13.4km s-min=7.5km az=9.1*
*GUC **03** 16:11:34.5±0.5, 20°.20S×69°.23W, h102km±6km, ML3.5*
ISC 03 16:11:34.9±1.0**, 20°.18S**±0°.06×**69°.21W**±0°.10**, h104**km**, n11,** σ**1s.37**/13**, 3C-1D, Northern Chile**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
PB01	**IPOC Station P**	**0.90**	**197**	*i* P	**Pn**	**16 11 54.0**	**-0.7**
PB01				⇓*i*P	**Pn**	**16 11 54.0**	**-0.7**
PB01				*i* S	**Sn**	**16 12 08.9**	**-0.7**
PB01				AML	AML	16 12 10.3	
	comp=N,4µm,0.2s						
PSGC	**Pisagua**	**1.04**	**304**	⇑*i*P	**Pn**	**16 11 55.4**	**-0.8**
PSGC				*i* S	**Sn**	**16 12 11.6**	**-0.5**
PSGC				AML	AML	16 12 13.8	
	comp=N,1µm,0.2s						
PATCX	**Punta Patache**	**1.09**	**234**	⇑*i*P	**Pn**	**16 11 56.0**	**-0.7**
PATCX				*i* S	**Sn**	**16 12 12.3**	**-0.8**
PATCX				AML	AML	16 12 15.4	
	comp=E,1µm,0.2s						
PB07	**IPOC Station P**	**1.66**	**202**	⇑*i*P	**Pn**	**16 12 03.2**	**-0.4**
PB07				*i* S	**Sn**	**16 12 25.4**	**0.0**
PB07				AML	AML	16 12 29.0	
	comp=E,636nm,0.3s						
LPAZ	**La Paz**	**4.01**	**15**	Pn	**Pn**	**16 12 36.8**	**+1.9**
	comp=E,1.0nm,0.3s,baz=188,slow=8.0,SNR=23						
SIV	**San Ignacio**	**8.79**	**63**	Pn	**Pn**	**16 13 36.3**	**-3.0**
	comp=E,0.5nm,0.3s,baz=64,slow=15,SNR=7.4						
TORD	**Torodi Ar. Bea**	**77.19**	**71**	P	**P**	**16 23 19.6**	**+1.7**
	comp=E,0.2nm,0.3s,baz=235,slow=5.1,SNR=4.1						
YKA	**Yellowknife Ar**	**89.86**	**341**	P	**P**	**16 24 21.7**	**+0.1**
	comp=E,0.2nm,0.7s,baz=131,slow=4.8,SNR=5.8						
H11S2	**WAKE ISLAND Hy**	**127.42**	**278**	T	T	18 50 19.8	
	baz=102,slow=75,SNR=8.7						
H11S1	**WAKE ISLAND Hy**	**127.43**	**278**	T	T	18 50 20.4	
	baz=102,slow=75,SNR=5.6						
H11S3	**WAKE ISLAND Hy**	**127.44**	**278**	T	T	18 50 21.1	
	baz=102,slow=75,SNR=6.8						

IDC 03 16:14:34.3±5.5**, 17°.46S**×**69°.37W, h156**km±32km**, mb3.5**/3**, mb1 3.5**/4**, mb1mx3.2**/22**, mbtmp3.9**/4**, Error ellipse: s-maj=78.0km s-min=36.8km az=22.0, Peru-Bolivia border region**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
LPAZ	**La Paz**	**1.66**	**46**	P	Pn	16 15 06.8	0.0
	20nm,0.3s,baz=236,slow=6.5,SNR=230						
LPAZ				S	Sn	16 15 31.7	+0.2
	baz=18,slow=19,SNR=2.5						
SIV	**San Ignacio**	**8.08**	**81**	P	Pn	16 16 28.2	-0.6
	0.3nm,0.3s,baz=298,slow=14,SNR=3.3						
DBIC	**Dimbokro**	**68.06**	**75**	P	P	16 25 17.7	+0.2
	2.1nm,0.8s,baz=234,slow=7.2,SNR=6.2						
TORD	**Torodi Ar. Bea**	**76.45**	**71**	P	P	16 26 07.4	+0.1
	1.6nm,0.8s,baz=251,slow=5.7,SNR=8.4						
YKA	**Yellowknife Ar**	**87.25**	**341**	P	P	16 27 02.5	-0.2
	0.1nm,0.6s,baz=132,slow=4.5,SNR=4.8						

JMA 03 16:19:50.7±0.3**, 36°.78N**×**143°.52E, h10**km**, M3.8, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**2.19**	**286**	P	Pn	16 20 27.4	+0.1
JFK				S	Sn	16 20 55.2	+0.7
ONAJ	**Iwakimizuishiy**	**2.20**	**279**	P	Pn	16 20 28.2	+0.8
ONAJ				S	Sn	16 20 55.7	+0.9
JHO	**Hitachi**	**2.38**	**267**	P	Pn	16 20 31.4	+1.7
JHO				*e*S	Sn	16 21 00.4	+1.4
JFT	**Otama**	**2.65**	**287**	P	Pn	16 20 35.6	+2.1
JFT				S	Sn	16 21 07.7	+2.0
JMK	**Ichinoseki**	**2.83**	**321**	P	Pn	16 20 37.6	+1.6
JMK				S	Sn	16 21 06.5	-3.6
BSO1	**Boso 1**	**2.96**	**225**	P	Pn	16 20 38.5	+1.2
BSO1				S	Sb	16 21 16.6	-2.7
JOM	**Ohasama**	**3.21**	**328**	P	Pn	16 20 40.2	-1.0
JOM				S	Sn	16 21 14.5	-5.0
JAG	**Ashikaga**	**3.29**	**265**	P	Pn	16 20 43.8	+1.5
JAG				S	Sn	16 21 22.9	+1.4
JRY	**Ryogami san**	**3.80**	**260**	P	Pn	16 20 50.5	+1.1
JRY				*e*S	Sn	16 21 35.8	+1.6
JOD2	**Odawara 2**	**3.90**	**248**	P	Pn	16 20 51.9	+1.2
JOD2				S	Sn	16 21 39.1	+2.6
JANG	**Nango**	**3.92**	**337**	S	Sn	16 21 29.5	-7.4
MAT	**Matsushiro**	**4.28**	**268**	P	Pg	16 21 14.3	+1.6

IDC 03 16:22:50.5±6.8**, 4°.67N**×**124°.07E, h487**km±95km**, mb2.7**/5**, mb1 2.8**/5**, mb1mx2.5**/42**, mbtmp3.6**/5**, Error ellipse: s-maj=139.6km s-min=20.0km az=67.0, Celebes Sea**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**26.45**	**158**	P	P	16 27 47.1	-0.6
	0.3nm,0.5s,baz=337,slow=9.5,SNR=3.3						
ASAR	**Alice Springs**	**29.75**	**162**	P	P	16 28 16.4	-0.2
	0.5nm,0.6s,baz=339,slow=7.4,SNR=12						
STKA	**Stephens Creek**	**39.99**	**157**	P	P	16 29 43.0	+0.9
	0.5nm,0.4s,baz=322,slow=12,SNR=4.0						
SONM	**Songino Array**	**45.61**	**343**	P	P	16 30 26.1	-0.1
	0.8nm,1.0s,baz=161,slow=9.2,SNR=3.6						
MKAR	**Makanchi Array**	**55.29**	**326**	P	P	16 31 37.2	+0.1
	0.3nm,0.3s,baz=122,slow=7.8,SNR=11						
MKAR				PcP	PcP	16 32 30.1	-0.7
	0.5nm,0.7s,baz=116,slow=4.6,SNR=5.8						

IDC 03 16:33:43.5±8.8**, 9°.43S**×**15°.00W, h0**km**, mb3.6**/3**, mb1 3.6**/3**, mb1mx3.3**/35**, mbtmp3.6**/3**, MS3.6**/6**, Ms1 3.6**/6**, ms1mx3.3**/32**, Error ellipse: s-maj=413.3km s-min=149.4km az=140.0, Ascension Island region**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
BBTS	**Babate**	**23.98**	**356**	LR	LR	16 46 42.9	
	comp=Z,96nm,21.8s,baz=286,slow=32						
TORD	**Torodi Ar. Bea**	**27.89**	**37**	P	P	16 39 35.4	0.0
	0.6nm,0.9s,baz=208,slow=12,SNR=3.7						
TORD				LR	LR	16 49 37.6	
	comp=Z,130nm,18.0s,baz=70,slow=34						
CPUP	**Villa Florida**	**43.41**	**242**	LR	LR	16 57 32.0	
	comp=Z,107nm,19.1s,baz=150,slow=33						
KEST	**Kesra**	**50.45**	**26**	LR	LR	17 04 42.2	
	comp=Z,79nm,18.1s,baz=182,slow=37						
KMBO	**Kilima Mbogo**	**52.62**	**84**	LR	LR	17 01 55.5	
	comp=Z,93nm,21.9s,baz=88,slow=32						
BRTR	**Keskin Array B**	**66.47**	**39**	P	P	16 44 35.2	+0.1
	0.6nm,0.8s,baz=251,slow=4.4,SNR=3.5						
AKASG	**Malin Array Be**	**71.09**	**28**	P	P	16 45 03.5	0.0
	0.5nm,0.6s,baz=226,slow=7.0,SNR=6.5						
NOA	**NORSAR Array B**	**73.22**	**13**	LR	LR	17 17 15.3	
	comp=Z,22nm,18.6s,baz=290,slow=36						

*IDC **03** 16:41:26.5±1.8, 17°.66S×178°.52W, h511km±21km, mb3.4/12, mb1 3.6/14, mb1mx3.3/39, mbtmp4.3/14, Error ellipse: s-maj=17.9km s-min=13.3km az=138.0*
*ISCJB **03** 16:41:28.5±0.7, 17°.7S±0°.1×178°.6W±0°.1, h547km, mb3.9/12, Error ellipse: s-maj=19.8km s-min=14.4km az=136.4*
ISC 03 16:41:29.0±0.7**, 17°.7S**±0°.1×**178°.5W**±0°.1**, h547**km**, n17,** σ**1s.37**/19**, mb3.8**/12**, Fiji Islands region**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
AFI	**Afiamalu**	**7.47**	**61**	P	**P**	**16 43 18.6**	**-3.0**
	5.7nm,0.3s,baz=56,slow=6.1,SNR=7.4						
DZM	**Mont Dzumac**	**14.83**	**250**	P	**P**	**16 44 35.0**	**-1.9**
	0.5nm,0.3s,baz=90,slow=16,SNR=5.3						
URZ	**Urewera**	**20.86**	**190**	P	**P**	**16 45 30.7**	**-2.1**
	12nm,0.5s,baz=343,slow=2.0,SNR=10						
HNR	**Honiara**	**22.49**	**289**	P	**P**	**16 45 47.2**	**-0.6**
	18nm,0.6s,baz=172,slow=7.1,SNR=3.6						
STKA	**Stephens Creek**	**38.67**	**241**	P	**P**	**16 48 06.9**	**+0.8**
	7.6nm,0.5s,baz=88,slow=9.6,SNR=48						
WRA	**Warramunga Arr**	**44.60**	**259**	P	**P**	**16 48 52.2**	**-0.9**
	5.5nm,0.6s,baz=94,slow=7.0,SNR=66						
WRA				PcP	**PcP**	**16 50 25.0**	**+0.8**
	1.0nm,0.7s,baz=95,slow=4.0,SNR=5.1						
ASAR	**Alice Springs**	**44.78**	**254**	P	**P**	**16 48 54.4**	**-0.1**
	56nm,0.6s,baz=89,slow=7.9,SNR=1715						
ASAR				PcP	**PcP**	**16 50 24.6**	**-0.2**
	1.7nm,0.7s,baz=90,slow=6.0,SNR=4.3						
VNDA	**Vanda**	**60.66**	**185**	P	**P**	**16 50 48.5**	**+1.8**
	1.1nm,0.9s,baz=357,slow=5.6,SNR=4.5						
MJAR	**Matsushiro Arr**	**67.68**	**323**	P	**P**	**16 51 31.9**	**-0.1**
	1.2nm,0.5s,baz=155,slow=6.2,SNR=7.6						
SEY	**Seymchan**	**83.54**	**347**	P	**P**	**16 52 59.2**	**0.0**
	1.9nm,0.6s,baz=126,slow=6.9,SNR=19						
ILAR	**Eielson Array**	**85.69**	**13**	P	**P**	**16 53 09.3**	**-0.4**
	0.8nm,1.0s,baz=202,slow=6.8,SNR=3.0						
TXAR	**Lajitas Array**	**85.94**	**58**	P	**P**	**16 53 13.9**	**+2.1**
	0.6nm,0.7s,baz=221,slow=6.0,SNR=8.8						
PDAR	**Pinedale Array**	**87.24**	**43**	P	**P**	**16 53 18.7**	**+0.9**

Code	Station Name	Δ°	AZ°	Op	ISC	Time	Res
	0.2nm,0.5s,baz=72,slow=2.9,SNR=2.7						
CMAR	Chiang Mai Arr	88.74	290	P	P	16 53 26.6	+1.5
	1.4nm,0.9s,baz=108,slow=3.2,SNR=13						
SONM	Songino Array	93.33	319	P	P	16 53 45.8	0.0
	0.2nm,0.4s,baz=111,slow=6.8,SNR=2.7						
BRTR	Keskin Array B	144.57	315	PKP	PKPdf	17 00 04.1	+0.3
	2.4nm,0.8s,baz=120,slow=3.7,SNR=14						
GERES	GERESS Array B	147.38	345	PKPbc	PKPbc	17 00 12.2	+0.6
	0.8nm,0.7s,baz=28,slow=3.2,SNR=8.1						

*IDC **03** 16:50:37.7±0.7, 38°.17N×143°.53E, h0km, mb3.8/13, mb1 4.0/16, mb1mx3.8/45, mbtmp3.9/16, ML3.6/3, MS3.5/4, Ms1 3.6/4, ms1mx2.9/46, Error ellipse: s-maj=18.5km s-min=14.5km az=121.0*

*ISCJB **03** 16:50:38.8±0.5, 38°.18N±0°.05×143°.50E±0°.05, h19km, mb4.0/18, MS3.6/4, Error ellipse: s-maj=7.1km s-min=5.3km az=157.2*

*NEIC **03** 16:50:38.9±4.4, 38°.17N×143°.64E, h9km±28km, mb4.7/4, Error ellipse: s-maj=13.4km s-min=8.0km az=115.0*

*JMA **03** 16:50:40.2±0.3, 38°.28N×143°.52E, h46km, M4.0*

ISC 03 16:50:40.2±0.7, **38°.18N**±0°.06×**143°.54E**±0°.07, **h19**km, **n49**, σ1^s**64**/42, **mb4.0**/18, **MS3.6**/4, **Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	Ofunato	1.72	302	P	Pn	16 51 07.7	-1.4
JIO	Ouri	1.75	280	P	Pn	16 51 08.6	-0.8
JIO				S	Sn	16 51 28.3	-2.9
MIYJ	Miyakonagasawa	1.94	317	S	Sn	16 51 32.0	-3.9
JMK	Ichinoseki	1.98	294	P	Pn	16 51 11.7	-0.9
JOM	Ohasama	2.18	307	P	Pn	16 51 14.3	-1.1
JTH	Tanohata	2.19	324	P	Pn	16 51 13.5	-2.1
JMM	Marumori	2.19	263	P	Pn	16 51 15.2	-0.4
JMM				S	Sn	16 51 39.9	-2.3
JFK	Kawauchi	2.26	250	P	Pn	16 51 15.8	-0.8
JOU	Okura	2.27	276	P	Pn	16 51 16.7	0.0
JOU				S	Sn	16 51 42.9	-1.3
JRG	Rokugo	2.58	299	P	Pn	16 51 20.6	-0.3
ERM	Erimo	3.84	356	ePn	Pn	16 51 36.6	-1.6
MJAR	Matsushiro Arr	4.55	251	Pn	Pn	16 51 49.5	+1.5
	5.7nm,0.3s,baz=58,slow=12,SNR=97						
MAJO	Matsushiro	4.55	251	ePn	Pn	16 51 49.1	+1.1
MAT	Matsushiro	4.55	251	P	Pn	16 51 49.4	+1.3
MAT				eS	Sn	16 52 39.0	-1.4
JHJ2	Mitsune	5.89	212	ePn	Pn	16 52 05.9	-0.6
JHJ	Hachijo jima 2	5.90	212	Pn	Pn	16 52 05.5	-1.1
	30nm,0.3s,baz=233,slow=18,SNR=4.6						
JHJ				Sn	Sn	16 53 09.1	-4.6
	37nm,0.3s,baz=252,slow=20,SNR=4.1						
USRK	Ussuriysk Ar.	10.58	308	Pn	Pn	16 53 09.5	-1.1
	0.5nm,0.3s,baz=102,slow=15,SNR=6.6						
CBIJ	Chichi jima	11.11	186	ePn	Pn	16 53 14.9	-3.1
JCJ	Chichijima	11.11	186	Pn	Pn	16 53 13.2	-4.8
	3.9nm,0.3s,baz=6.5,slow=21,SNR=7.7						
KSRS	Korea Array	12.38	271	Pn	Pn	16 53 38.6	+3.4
	0.1nm,0.3s,baz=81,slow=14,SNR=3.1						
KSAR	Wonju Array Be	12.41	271	Pn	Pn	16 53 38.6	+2.9
KLR	Kul'dur	13.94	326	Pn	Pn	16 53 53.0	-3.5
	0.1nm,0.3s,baz=115,slow=9.8,SNR=3.8						
MA2	Magadan	21.91	10	P	P	16 55 32.1	+0.1
	0.5nm,0.3s,baz=180,slow=20,SNR=3.2						
SEY	Seymchan	25.36	9	P	P	16 56 07.0	+1.3
	2.7nm,0.9s,baz=202,slow=7.1,SNR=8.2						
H11N2	WAKE ISLAND Hy	27.36	126	T	T	17 25 15.1	
	baz=318,slow=74,SNR=12						
H11N1	WAKE ISLAND Hy	27.37	126	T	T	17 25 08.8	
	baz=318,slow=74,SNR=8.0						
H11N3	WAKE ISLAND Hy	27.38	126	T	T	17 25 20.4	
	baz=318,slow=74,SNR=10.0						
H11S1	WAKE ISLAND Hy	28.14	128	T	T	17 26 20.3	
	baz=319,slow=76,SNR=3.4						
H11S3	WAKE ISLAND Hy	28.14	128	T	T	17 26 16.8	
	baz=319,slow=76,SNR=4.8						
ULN	Ulaanbaatar	28.15	302	eP	P	16 56 32.9	+1.7
	2.0nm,0.4s						
H11S2	WAKE ISLAND Hy	28.16	128	T	T	17 26 15.5	
	baz=319,slow=76,SNR=4.6						
SONM	Songino Array	28.59	302	P	P	16 56 35.7	+0.6
	1.6nm,0.6s,baz=101,slow=9.4,SNR=11						
ENH	Enshi	29.12	265	eP	P	16 56 40.8	+0.9
	9.1nm,0.9s						
ZALV	Zalesovo Beam	42.41	311	P	P	16 58 33.5	+0.3
	0.7nm,0.4s,baz=90,slow=7.7,SNR=4.3						
CMAR	Chiang Mai Arr	43.42	256	P	P	16 58 42.9	+1.1
	0.2nm,0.6s,baz=50,slow=6.0,SNR=3.9						
MKAR	Makanchi Array	44.95	302	P	P	16 58 54.4	+0.5
	1.1nm,0.5s,baz=85,slow=10,SNR=28						
MKAR				LR	LR	17 20 04.7	
	comp=Z,50nm,19.4s,baz=341,slow=39						
KURK	Kurchatov	46.57	308	eP	P	16 59 06.7	+0.2
	7.5nm,0.6s						
KURBB	Kurchatov Arra	46.64	307	P	P	16 59 07.2	+0.1
	3.0nm,0.4s,baz=82,slow=8.5,SNR=21						
ILAR	Eielson Array	47.62	33	P	P	16 59 15.0	+0.4
	0.9nm,0.9s,baz=267,slow=6.8,SNR=6.2						
WRAB	Tennant Creek	58.44	190	eP	P	17 00 34.5	-0.2
	7.3nm,0.8s						
WRA	Warramunga Arr	58.45	190	P	P	17 00 34.8	-0.1
	6.3nm,0.6s,baz=8.4,slow=7.0,SNR=40						
YKA	Yellowknife Ar	61.97	31	P	P	17 00 59.0	+0.6
	0.4nm,0.8s,baz=300,slow=6.6,SNR=6.3						
ASAR	Alice Springs	62.18	190	P	P	17 01 00.6	+0.3
	1.5nm,0.6s,baz=8.5,slow=8.5,SNR=48						
FINES	FINESS Array B	68.58	333	P	P	17 01 40.1	-1.2
	2.5nm,0.9s,baz=35,slow=7.0,SNR=3.9						
NVAR	Mina Array Bea	72.95	54	P	P	17 02 10.1	+1.4
	0.8nm,0.7s,baz=258,slow=4.2,SNR=2.1						
NOA	NORSAR Array B	73.77	338	LR	LR	17 39 22.2	
	comp=Z,44nm,20.3s,baz=25,slow=40						
AKASG	Malin Array Be	74.41	323	LR	LR	17 38 01.0	
	comp=Z,44nm,20.0s,baz=285,slow=38						
PDAR	Pinedale Array	75.66	47	P	P	17 02 25.4	+1.0
	0.4nm,0.6s,baz=298,slow=1.9,SNR=3.8						
TKL	Tuckaleechee C	94.47	37	LR	LR	17 52 10.5	
	comp=Z,15nm,19.1s,slow=39						

*NIED **03** 16:52:00, 36°.70N×142°.40E, h20km, Mw4.3 Best double couple: $M_0$3.34000×10^{15} NP1:ϕ_s202.00000°, δ29.00000°, λ86.00000°. NP2:ϕ_s27.00000°, δ61.00000°, λ92.00000°.*

*IDC **03** 16:52:45.9±0.6, 36°.67N×142°.23E, h0km, mb4.0/24, mb1 4.2/27, mb1mx4.1/46, mbtmp4.1/27, ML4.2/3, MS3.5/5, Ms1 3.5/5, ms1mx3.0/46, Error ellipse: s-maj=16.1km s-min=13.6km az=128.0*

*ISCJB **03** 16:52:46.0±0.3, 36°.65N±0°.04×142°.40E±0°.05, h15km, mb4.1/38, MS3.5/4, Error ellipse: s-maj=5.9km s-min=4.9km az=30.8*

*JMA **03** 16:52:46.6±0.5, 36°.67N×142°.35E, h18km, M4.2*

*NEIC **03** 16:52:47.2±2.4, 36°.69N×142°.32E, h9km±15km, mb4.7/4, Error ellipse: s-maj=7.5km s-min=5.5km az=117.0*

*MOS **03** 16:52:50.7±0.9, 36°.99N×142°.09E, h30km, mb4.4/21, Error ellipse: s-maj=10.0km s-min=7.1km az=114.5*

ISC 03 16:52:47.3±0.6, **36°.77N**±0°.04×**142°.33E**±0°.06, **h15**km, **n104**, σ1^s**54**/82, **mb4.2**/38, **MS3.5**/4, **4C**, **Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	Iwakimizuishiy	1.27	286	P	Pb	16 53 09.4	-1.5
JFK	Kawauchi	1.31	298	P	Pg	16 53 10.9	-1.6
JHO	Hitachi	1.42	264	P	Pb	16 53 11.8	-1.7
CHOJ	Chosi	1.59	229	P	Pb	16 53 14.5	-1.9
JFT	Otama	1.76	296	P	Pb	16 53 17.8	-1.4
JIO	Ouri	1.85	336	P	Pb	16 53 19.4	-1.5
JOU	Okura	2.07	321	P	Pb	16 53 23.5	-1.1
JOU				eS	Sg	16 53 51.2	-2.7
JFY	Yanaizu	2.19	288	P	Pb	16 53 24.5	-2.1
JAG	Ashikaga	2.34	262	P	Pn	16 53 24.8	-0.4
MJAR	Matsushiro Arr	3.32	267	Pn	Pn	16 53 39.7	+1.0
	17nm,0.3s,baz=107,slow=10,SNR=24						
MAJO	Matsushiro	3.32	267	c iP	Pn	16 53 40.0	+1.3
MAJO	Matsushiro	3.32	267	ePn	Pn	16 53 39.9	+1.1
MAT	Matsushiro	3.32	267	P	Pn	16 53 39.9	+1.2
MAT				S	Sn	16 54 19.9	+2.0
JHJ2	Mitsune	4.19	210	ePn	Pn	16 53 50.7	0.0
JHJ	Hachijo jima 2	4.20	211	Pn	Pn	16 53 50.5	-0.3
	37nm,0.3s,baz=317,slow=23,SNR=6.9						
JHJ				Sn	Sn	16 54 34.3	-5.2
	36nm,0.3s,baz=78,slow=20,SNR=4.2						
ERM	Erimo	5.28	7	eP	Pn	16 54 06.3	+0.7
ERM	Erimo	5.28	7	ePn	Pn	16 54 06.2	+0.7
YUK	Yuzh-Kuril'sk	7.74	19	eP	Pn	16 54 38.6	-0.8
YUK				eS	Sn	16 56 02.0	-4.8
YUK				pmax	pmax		
	comp=Z,72nm,0.3s						
YUK				pmax	pmax		
	comp=N,10.0nm,0.4s						
YUK				pmax	pmax		
	comp=E,19nm,0.6s						
SHO	Shikotan	7.88	24	eP	Pn	16 54 40.1	-1.2
SHO				eS	Sn	16 56 03.7	-6.5
KUR	Kuril'sk	9.43	25	eP	Pn	16 55 01.1	-1.5
KUR				eS	Sn	16 56 42.8	-5.5
KUR				pmax	pmax		
	comp=Z,18nm,0.4s						
KUR				pmax	pmax		
	comp=N,11nm,0.2s						
KUR				pmax	pmax		
	comp=E,14nm,0.2s						
CBIJ	Chichi jima	9.64	181	ePn	Pn	16 55 04.3	-1.3
CBIJ				Sn	Sn	16 56 43.4	-10
JCJ	Chichijima	9.64	181	Pn	Pn	16 55 04.4	-1.2
	comp=E,4.0nm,0.3s,baz=287,slow=20,SNR=8.3						
JCJ				Sn	Sn	16 56 43.4	-10
	baz=300,slow=20						
YSS	Yuzh-Sakhalins	10.18	2	eP	Pn	16 55 14.0	+1.2
YSS	Yuzh-Sakhalins	10.18	2	ePn	Pn	16 55 13.5	+0.7
	comp=E,17nm,0.8s						
USRK	Ussuriysk Ar.	10.81	317	Pn	Pn	16 55 25.6	+4.1
	comp=E,0.1nm,0.3s,baz=108,slow=13,SNR=4.4						
USRK				LR	LR	16 59 15.8	
	comp=E,288nm,19.4s,baz=101,slow=36						
KSRS	Korea Array	11.52	278	Pn	Pn	16 55 34.3	+3.1
	comp=E,0.2nm,0.3s,baz=90,slow=13,SNR=6.4						
KSRS				LR	LR	16 59 39.5	
	comp=E,260nm,19.2s,baz=56,slow=36						
KSAR	Wonju Array Be	11.55	278	P	Pn	16 55 34.3	+2.6
KSAR	Wonju Array Be	11.55	278	Pn	Pn	16 55 34.3	+2.6
TYV	Tymovskoe	14.09	1	eP	Pn	16 56 07.0	+0.7
KLR	Kul'dur	14.64	332	Pn	Pn	16 56 10.9	-2.9
	comp=E,0.5nm,0.3s,baz=306,slow=20,SNR=6.4						
KLR	Kul'dur	14.64	332	P	Pn	16 56 11.0	-2.9
KLR				pmax	pmax		
	comp=Z,1.0nm,0.3s						
NKL	Nikolayevsk	16.42	356	eP	P	16 56 40.0	+0.2
MA2	Magadan	23.47	11	P	P	16 57 57.3	+1.3
	comp=Z,5.5nm,0.7s,baz=207,slow=10.0,SNR=10.0						
CIT	Chita	25.38	316	eP	P	16 58 15.0	+1.2
CIT				e		16 58 25.0	
CIT				pmax	pmax		
	comp=Z,44nm,1.5s						
YAK	Yakutsk	26.49	347	P	P	16 58 24.9	+1.2
	comp=Z,1.5nm,0.6s,baz=347,slow=23,SNR=5.1						
YAK	Yakutsk	26.49	347	eP	P	16 58 24.5	+0.8
YAK				pmax	pmax		
	comp=Z,22nm,0.8s						
YAK				pmax	pmax		
	comp=E,2.0nm,0.9s						
YAK				pmax	pmax		
	comp=N,7.0nm,0.9s						
SEY	Seymchan	26.92	10	P	P	16 58 29.8	+2.2
	comp=N,4.3nm,0.7s,baz=190,slow=8.8,SNR=12						
SEY	Seymchan	26.92	10	ceP	P	16 58 31.4	+3.9
H11N2	WAKE ISLAND Hy	27.39	122	T	T	17 27 15.1	
	baz=314,slow=75,SNR=13						
H11N1	WAKE ISLAND Hy	27.39	122	T	T	17 27 24.0	
	baz=314,slow=75,SNR=9.7						
H11N3	WAKE ISLAND Hy	27.40	122	T	T	17 27 16.1	
	baz=314,slow=75,SNR=11						
ENH	Enshi	28.04	266	eP	P	16 58 37.2	-0.8
	comp=N,19nm,0.7s						
H11S1	WAKE ISLAND Hy	28.10	124	T	T	17 28 42.9	
	baz=316,slow=76,SNR=9.3						
H11S3	WAKE ISLAND Hy	28.10	124	T	T	17 28 34.8	
	baz=316,slow=76,SNR=9.8						
ULN	Ulaanbaatar	28.11	304	ceP	P	16 58 38.8	+0.2
ULN				pmax	pmax		
	comp=Z,9.0nm,1.2s						
ULN	Ulaanbaatar	28.11	304	eP	P	16 58 39.7	+1.1
	comp=Z,10nm,1.3s						
H11S2	WAKE ISLAND Hy	28.12	124	T	T	17 28 23.1	
	baz=316,slow=76,SNR=8.7						
BOD	Bodaibo	28.14	327	eP	P	16 58 38.5	-0.1
BOD				pmax	pmax		
	comp=Z,6.0nm,1.0s						
SONM	Songino Array	28.54	304	P	P	16 58 43.7	+1.2
	comp=Z,7.1nm,0.7s,baz=104,slow=9.1,SNR=33						
SONM				LR	LR	17 10 07.6	
	comp=Z,98nm,18.2s,baz=203,slow=36						
ZAK	Zakamensk	31.01	308	eP	P	16 59 04.5	+0.3
ZAK				pmax	pmax		
	comp=Z,4.0nm,1.3s						
ZAK				pmax	pmax		
	comp=Z,1.0nm,1.4s						
TLY	Talaya	31.06	311	eP	P	16 59 06.4	+1.9
TLY				pmax	pmax		
	comp=Z,5.0nm,1.1s						
TLY				MLR	MLR		
	comp=Z,75nm,11.0s						
BILL	Bilibino	34.08	16	eP	P	16 59 35.8	+5.1
BILL				pmax	pmax		
	comp=Z,1.0nm,1.0s						
TIXI	Tiksi	35.64	353	eP	P	16 59 46.0	+1.8
TIXI				pmax	pmax		
	comp=Z,1.0nm,0.9s						
CHTO	Chiang Mai	41.94	257	eP	P	17 00 38.2	+0.6
CHTO	Chiang Mai	41.94	257	eP	P	17 00 38.2	+0.6
CMAR	Chiang Mai Arr	42.14	256	P	P	17 00 39.7	+0.4
	comp=Z,0.8nm,0.8s,baz=46,slow=7.5,SNR=7.0						
ZALV	Zalesovo Beam	42.63	313	P	P	17 00 44.1	+1.3
	comp=Z,2.3nm,0.7s,baz=94,slow=6.1,SNR=9.2						
ZALV				PcP	PcP	17 02 35.5	+0.8
	comp=Z,0.9nm,0.6s,baz=76,slow=1.7,SNR=3.3						
ZALV				LR	LR	17 19 33.2	
	comp=Z,50nm,21.5s,baz=254,slow=38						
LSA	Lhasa	42.96	276	P	P	17 00 47.1	+0.7
LSA				pmax	pmax		
	comp=Z,3.0nm,0.7s						
LSA	Lhasa	42.96	276	P	P	17 00 47.1	+0.7
	comp=Z,2.8nm,0.7s						
MKAR	Makanchi Array	44.88	302	P	P	17 01 01.8	+0.7
	comp=Z,2.3nm,0.6s,baz=87,slow=9.7,SNR=13						
KURK	Kurchatov	46.67	308	eP	P	17 01 15.7	+0.6
KURK				pmax	pmax		
	comp=Z,15nm,0.8s						
KURK	Kurchatov	46.67	308	eP	P	17 01 15.7	+0.6
	comp=Z,15nm,0.8s						
TAPN	Taplejung	46.69	275	eP	P	17 01 17.1	+1.2
	comp=Z,22nm,1.1s						
KURBB	Kurchatov Arra	46.74	308	P	P	17 01 16.3	+0.6
	comp=Z,4.1nm,0.6s,baz=82,slow=7.8,SNR=16						
ODAN	Odare	47.16	274	eP	P	17 01 21.1	+1.5
	comp=Z,19nm,1.1s						
RAMN	Ramite	47.75	275	eP	P	17 01 24.9	+0.7
	comp=Z,34nm,1.1s						
GUN	Gumba	47.91	276	eP	P	17 01 27.0	+1.5
	comp=Z,24nm,0.8s						
KKN	Kakani	48.44	277	eP	P	17 01 30.8	+1.3
GKN	Gorkha	48.86	277	eP	P	17 01 33.0	+0.4
	comp=Z,21nm,0.9s						
ILAR	Eielson Array	49.33	32	P	P	17 01 37.6	+2.2
	comp=Z,1.7nm,0.8s,baz=266,slow=6.5,SNR=12						
KOLN	Koldanda	49.79	277	eP	P	17 01 40.3	+0.5
	comp=Z,23nm,1.2s						
PYUN	Piuthan	50.13	278	eP	P	17 01 43.0	+0.6
AAK	Ala-Archa	51.26	299	P	P	17 01 51.5	+0.9
	comp=Z,1.6nm,0.8s,baz=190,slow=12,SNR=3.0						
AAK	Ala-Archa	51.26	299	eP	P	17 01 50.4	-0.2
AAK				pmax	pmax		
	comp=Z,5.0nm,1.0s						
BRVK	Borovoye	51.35	313	eP	P	17 01 51.5	+0.6
BRVK				pmax	pmax		
	comp=Z,2.0nm,1.0s						
INK	Inuvik	54.29	27	P	P	17 02 14.8	+2.4
	comp=Z,1.4nm,0.7s,baz=314,slow=9.5,SNR=7.2						
WRA	Warramunga Arr	56.91	189	P	P	17 02 31.4	-0.3
	comp=Z,0.6nm,0.5s,baz=4.7,slow=7.3,SNR=4.2						
ARU	Arti	57.04	319	c iP	P	17 02 33.3	+0.9
ARU						17 04 38.1	
ARU				S	S	17 10 19.6	-6.6
ARU				pmax	pmax		
	comp=Z,7.0nm,1.2s						
ASAR	Alice Springs	60.63	189	P	P	17 02 57.5	-0.2
	comp=Z,0.9nm,0.7s,baz=11,slow=6.6,SNR=6.6						
YKA	Yellowknife Ar	63.67	30	P	P	17 03 19.4	+1.8
	comp=Z,0.3nm,0.5s,baz=301,slow=6.2,SNR=8.7						
ARCES	ARCESS Array B	64.50	340	LR	LR	17 34 49.4	
	comp=Z,42nm,18.9s,baz=9.5,slow=39						
GEYT	Alibeck	64.60	299	P	P	17 03 24.9	+0.7
	comp=Z,1.6nm,0.7s,baz=2.7,slow=3.1,SNR=3.6						
OBN	Obninsk	68.74	324	eP	P	17 03 50.4	+0.2
OBN				pmax	pmax		
	comp=Z,5.0nm,1.0s						
FINES	FINESS Array B	69.39	333	P	P	17 03 54.9	+0.8
	comp=Z,2.5nm,1.0s,baz=85,slow=12,SNR=4.6						
FINES	FINESS Array B	69.39	333	P	P	17 03 54.9	+0.8
FINES				pmax	pmax		
	comp=Z,2.0nm,0.8s						
KBZ	Khabaz	71.63	311	P	P	17 04 09.3	+1.2
	comp=Z,3.1nm,0.8s,baz=75,slow=6.8,SNR=4.5						
KIV	Kislovodsk	71.63	311	eP	P	17 04 09.0	+0.7
KIV				pmax	pmax		
	comp=Z,12nm,1.1s						
NVAR	Mina Array Bea	74.56	54	P	P	17 04 28.1	+2.3
	comp=Z,0.3nm,0.5s,baz=309,slow=8.0,SNR=2.5						
NB2	NORSAR Subarra	74.71	338	P	P	17 04 27.4	+1.4
	comp=Z,2.2nm,0.8s,baz=42,slow=6.2						
NOA	NORSAR Array B	74.71	338	P	P	17 04 27.5	+1.4
	comp=Z,1.7nm,0.9s,baz=31,slow=2.5,SNR=3.4						
NOA	NORSAR Array B	74.71	338	P	P	17 04 27.5	+1.4
NOA				pmax	pmax		
	comp=Z,1.0nm,0.9s						
AKASG	Malin Array Be	74.95	323	P	P	17 04 28.4	+0.8
	comp=Z,2.0nm,0.6s,baz=45,slow=6.0,SNR=10						
PDAR	Pinedale Array	77.33	46	P	P	17 04 43.6	+2.0
	comp=Z,0.6nm,0.7s,baz=254,slow=1.2,SNR=5.4						
BRTR	Keskin Array B	79.57	312	P	P	17 04 55.3	+1.3
	comp=Z,1.1nm,0.9s,baz=112,slow=3.3,SNR=4.8						
DPC	Dobruska-Polom	81.07	328	eP	P	17 05 04.0	+2.3
DPC	Dobruska-Polom	81.07	328	eP	P	17 05 04.0	+2.3
CLL	Collm	81.69	331	eP	P	17 05 06.0	+1.1
CLL				e		17 05 18.0	
CLL				LmV		18 01 00.0	
	comp=Z,100nm,20.1s						
CLL	Collm	81.69	331	eP	P	17 05 06.0	+1.1
CLL				e		17 05 18.0	
KHC	Kasperske Hory	83.15	329	eP	P	17 05 13.9	+1.3
KHC	Kasperske Hory	83.15	329	eP	P	17 05 13.9	+1.3
GERES	GERESS Array B	83.32	329	P	P	17 05 14.3	+0.8
	comp=Z,0.8nm,0.5s,baz=30,slow=6.2,SNR=9.0						
BFO	Black Forest	85.89	331	i P	P	17 05 28.6	+2.1
TXAR	Lajitas Array	89.70	53	P	P	17 05 47.2	+2.0
	comp=Z,0.3nm,0.6s,baz=288,slow=1.9,SNR=4.7						
LPAZ	La Paz	146.19	61	PKPbc	PKPab	17 12 29.3	+0.4
	comp=Z,0.9nm,0.7s,baz=28,slow=14,SNR=4.7						

*JMA **03** 16:56:28.7±0.2, 37°.73N×141°.90E, h19km±3km, M3.8*

*IDC **03** 16:56:29.9±2.4, 37°.27N×142°.09E, h0km, mb3.7/4, mb1 3.8/5, mb1mx3.4/47, mbtmp3.6/5, ML3.6/1, Error ellipse: s-maj=61.5km s-min=30.6km az=68.0*

ISC 03 16:56:27.6±2.0, **37°.69N**±0°.05×**141°.81E**±0°.08, **h10**km±11km, **n17**, σ0^s**89**/24, **mb3.7**/4, **Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	Kawauchi	0.81	247	P	Pn	16 56 45.4	+0.2
JFK				S	Sn	16 56 56.7	-0.6
JMM	Marumori	0.83	283	P	Pn	16 56 45.0	-0.4
JMM				S	Sb	16 56 56.2	+0.9
JIO	Ouri	0.85	335	P	Pg	16 56 44.4	+0.4
JIO				S	Sg	16 56 55.2	+0.1
ONAJ	Iwakimizuishiy	1.00	235	P	Pn	16 56 48.0	+0.2
ONAJ				S	Sn	16 57 02.2	+0.3
JOU	Okura	1.13	307	P	Pg	16 56 50.1	+0.7
JOU				S	Sn	16 57 04.8	-0.5
JFT	Otama	1.19	262	P	Pg	16 56 51.6	+1.2
JFT				S	Sn	16 57 07.9	+1.4
JMK	Ichinoseki	1.35	340	P	Pn	16 56 52.2	-0.3
JYS	Shirataka	1.48	292	P	Pg	16 56 56.2	+0.1
JYS				S	Sg	16 57 15.7	+0.4
JYK	Kaneyama	1.68	318	P	Pn	16 56 57.7	+0.6
JYK				S	Sb	16 57 20.0	+0.1
JFY	Yanaizu	1.70	261	P	Pg	16 57 00.4	+0.2
JFY				S	Sg	16 57 22.6	+0.4
JOM	Ohasama	1.83	347	P	Pn	16 56 59.2	0.0
MJAR	Matsushiro Arr	3.10	249	Pn	Pb	16 57 20.9	-1.9
	6.3nm,0.3s,baz=82,slow=17,SNR=35						
MAT	Matsushiro	3.10	250	P	Pb	16 57 20.8	-2.1
MAT				eS	Sb	16 58 00.1	-0.7
ZALV	Zalesovo Beam	41.72	312	P	P	17 04 24.0	+7.5
	0.9nm,0.7s,baz=87,slow=7.4,SNR=4.1						
MKAR	Makanchi Array	44.05	302	P	P	17 04 43.0	+7.5
	0.4nm,0.8s,baz=77,slow=9.0,SNR=3.1						
KURBB	Kurchatov Arra	45.85	308	P	P	17 04 56.1	+6.3
	1.6nm,0.7s,baz=81,slow=8.2,SNR=7.7						
WRA	Warramunga Arr	57.75	188	P	P	17 06 19.8	+1.0
	0.5nm,0.5s,baz=5.7,slow=6.9,SNR=4.6						

*IDC **03** 17:08:44.2±2.4, 36°.51N×143°.00E, h0km, mb3.6/5, mb1 3.7/7, mb1mx3.4/41, mbtmp3.6/7, ML2.8/2, Error ellipse: s-maj=72.5km s-min=22.3km az=63.0*

*ISCJB **03** 17:08:50.0±0.9, 35°.77N±0°.07×142°.24E±0°.07, h23km, mb3.6/6, Error ellipse: s-maj=10.2km s-min=7.7km az=37.5*

*JMA **03** 17:08:52.2±0.3, 35°.82N×142°.18E, h53km, M3.2*

ISC 03 17:08:51.9±1.2, **35°.82N**±0°.08×**142°.17E**±0°.09, **h23**km, **n18**, σ1^s**06**/18, **mb3.7**/6, **Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	Chosi	1.07	264	P	Pn	17 09 10.6	-0.9
CHOJ				S	Sb	17 09 25.5	+0.1
JHO	Hitachi	1.52	302	P	Pn	17 09 17.4	-0.3
JFK	Kawauchi	1.86	326	P	Pn	17 09 22.6	+0.1
JFT	Otama	2.25	320	eS	Sn	17 09 56.5	+1.7
JAG	Ashikaga	2.28	286	P	Pn	17 09 28.2	0.0
JOD2	Odawara 2	2.58	258	P	Pn	17 09 32.6	+0.4
JOD2				eS	Sn	17 10 02.5	-0.3
JRY	Ryogami san	2.66	275	P	Pn	17 09 34.0	+0.6
MJAR	Matsushiro Arr	3.29	284	Pn	Pn	17 09 43.5	+1.5
	3.1nm,0.3s,baz=92,slow=8.9,SNR=60						
MAT	Matsushiro	3.29	284	P	Pn	17 09 43.2	+1.2
MAT				eS	Sn	17 10 20.4	0.0
JCJ	Chichijima	8.70	180	Pn	Pn	17 10 55.8	-0.6
	3.0nm,0.3s,baz=261,slow=16,SNR=5.6						
USRK	Ussuriysk Ar.	11.44	320	Pn	Pn	17 11 25.8	-8.0
	0.1nm,0.3s,baz=117,slow=12,SNR=5.8						
KLR	Kul'dur	15.43	334	Pn	Pn	17 12 16.6	-11
	0.1nm,0.3s,baz=145,slow=9.7,SNR=9.4						
SONM	Songino Array	28.98	306	P	P	17 14 48.4	-1.4
	1.3nm,1.1s,baz=95,slow=8.5,SNR=5.2						
ZALV	Zalesovo Beam	43.19	313	P	P	17 16 50.8	+0.1
	1.4nm,0.7s,baz=90,slow=6.5,SNR=6.4						
MKAR	Makanchi Array	45.29	303	P	P	17 17 06.2	-1.6
	0.7nm,0.7s,baz=84,slow=8.3,SNR=8.5						
BVAR	Borovoye Array	51.84	313	P	P	17 17 52.6	-5.5
	0.9nm,0.9s,baz=64,slow=5.0,SNR=3.7						
WRA	Warramunga Arr	55.95	189	P	P	17 18 29.6	+1.2
	0.6nm,0.6s,baz=8.2,slow=7.5,SNR=3.4						
ASAR	Alice Springs	59.68	189	P	P	17 18 56.0	+1.5
	0.3nm,0.8s,baz=5.7,slow=8.0,SNR=4.1						

*IDC **03** 17:10:15.8±0.8, 38°.20N×141°.90E, h0km, mb3.6/9, mb1 3.9/10, mb1mx3.5/40, mbtmp3.6/10, ML2.4/1, MS3.9/3, Ms1 3.9/3, ms1mx2.9/48, Error ellipse: s-maj=26.0km s-min=19.7km az=87.0*

*ISCJB **03** 17:10:21.5±0.9, 38°.28N±0°.05×141°.83E±0°.10, h52km±7km, mb3.6/9, MS4.0/3, Error ellipse: s-maj=13.9km s-min=6.0km az=22.1*

*JMA **03** 17:10:22.2±0.1, 38°.29N×141°.80E, h49km±1km, M3.9*

JMA Felt I J1.

ISC 03 17:10:21.7±1.8, **38°.26N**±0°.07×**141°.9E**±0°.1, **h41**km±16km, **n31**, σ0^s**54**/30, **mb3.6**/9, **MS3.7**/3, **Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	Ouri	0.46	295	P	Pn	17 10 32.3	+0.3
JIO				S	Sn	17 10 39.0	-0.2
OFUJ	Ofunato	0.84	349	P	Pn	17 10 37.1	0.0
OFUJ				eS	Sn	17 10 47.2	-1.0
JMK	Ichinoseki	0.86	323	P	Pn	17 10 37.5	+0.1
JMK				S	Sn	17 10 48.3	-0.6
JMM	Marumori	0.94	246	P	Pn	17 10 38.4	-0.1
JMM				eS	Sn	17 10 49.8	-1.0

JOU	Okura	0.96	277	P	Pn	17 10 38.9	+0.1
JOU				S	Sn	17 10 51.0	-0.3
JFK	Kawauchi	1.20	222	P	Pn	17 10 42.2	+0.2
JOM	Ohasama	1.30	339	P	Pn	17 10 43.7	+0.3
JOM				eS	Sn	17 10 59.3	-0.2
JYK	Kaneyama	1.36	299	P	Pn	17 10 44.3	0.0
JFT	Otama	1.43	239	P	Pn	17 10 45.9	+0.7
JFT				eS	Sn	17 11 02.9	+0.1
JYS	Shirataka	1.43	269	P	Pn	17 10 45.5	+0.3
JYS				eS	Sn	17 11 03.0	+0.2
JRG	Rokugo	1.50	320	P	Pn	17 10 46.6	+0.5
USRK	Ussuriysk Ar.	9.52	312	Pn	Pn	17 12 36.9	+0.7
	0.3nm,0.3s,baz=123,slow=14,SNR=4.3						
MA2	Magadan	22.08	12	P	P	17 15 14.4	+1.4
	2.3nm,0.6s,baz=230,slow=6.5,SNR=5.5						
H11N2	WAKE ISLAND Hy	28.48	123	T	T	17 46 34.1	
	baz=316,slow=76,SNR=30						
H11N1	WAKE ISLAND Hy	28.49	123	T	T	17 46 29.7	
	baz=316,slow=76,SNR=38						
H11N3	WAKE ISLAND Hy	28.50	123	T	T	17 46 34.5	
	baz=316,slow=76,SNR=43						
H11S1	WAKE ISLAND Hy	29.24	125	T	T	17 47 31.3	
	baz=318,slow=76,SNR=42						
H11S3	WAKE ISLAND Hy	29.24	125	T	T	17 47 32.9	
	baz=318,slow=76,SNR=53						
H11S2	WAKE ISLAND Hy	29.26	125	T	T	17 47 34.2	
	baz=318,slow=76,SNR=47						
ZALV	Zalesovo Beam	41.37	311	P	P	17 18 02.8	-0.8
	0.6nm,0.4s,baz=96,slow=6.5,SNR=2.7						
MKAR	Makanchi Array	43.79	301	P	P	17 18 23.9	+0.5
	0.4nm,0.6s,baz=83,slow=12,SNR=2.3						
ILAR	Eielson Array	48.26	33	P	P	17 18 58.1	-0.2
	0.3nm,0.8s,baz=268,slow=7.2,SNR=4.1						
AAK	Ala-Archa	50.24	298	LR	LR	17 42 25.0	
	comp=Z,70nm,18.6s,baz=239,slow=38						
INK	Inuvik	53.13	28	LR	LR	17 42 49.9	
	comp=Z,541nm,21.0s,baz=159,slow=37						
ARU	Arti	55.69	318	LR	LR	17 45 44.2	
	comp=Z,47nm,18.1s,baz=220,slow=38						
WRA	Warramunga Arr	58.33	188	P	P	17 20 12.3	-0.4
	0.5nm,0.6s,baz=5.5,slow=7.0,SNR=3.7						
ASAR	Alice Springs	62.05	188	P	P	17 20 38.0	-0.1
	0.3nm,0.7s,baz=16,slow=7.2,SNR=4.1						
NOA	NORSAR Array B	73.20	337	P	P	17 21 47.7	-0.4
	0.8nm,0.7s,baz=45,slow=5.3,SNR=3.0						
PDAR	Pinedale Array	76.55	46	P	P	17 22 08.1	+0.1
	0.2nm,0.5s,baz=321,slow=1.9,SNR=3.6						
TXAR	Lajitas Array	89.08	53	P	P	17 23 13.2	+0.2
	0.2nm,0.6s,baz=270,slow=1.8,SNR=3.2						
LPAZ	La Paz	145.75	59	PKPbc	PKPbc	17 29 57.2	-0.3
	0.6nm,0.7s,baz=18,slow=6.4,SNR=2.4						

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*ISCJB **03** 17:14:34.3±0.9, 38°.84N±0°.04×27°.90E±0°.07, h9km±10km, Error ellipse: s-maj=9.5km s-min=7.4km az=171.2*
*CSEM **03** 17:14:34.4±0.1, 38°.84N×27°.89E, h6km±1km, MD2.6, Error ellipse: s-maj=3.5km s-min=2.7km az=112.0*
*ISK **03** 17:14:34.2, 38°.83N×27°.91E, h6km, MD2.6*
ISC 03 17:14:34.1±1.1**, 38°.87N**±0°.05×**27°.89E**±0°.04**, h12**km±7km**, n14,** σ**0s.17**/20**, Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
AKHS	Akhisar	0.06	283	i P	Pg	17 14 36.5	0.0
AKHS				i S	Sg	17 14 38.2	-0.1
AKHS	Akhisar	0.06	283	P	Pg	17 14 36.5	0.0
AKHS				S	Sg	17 14 38.2	-0.1
AKS	Akhisar	0.06	283	ePG	Pg	17 14 36.6	+0.1
AKS	Akhisar	0.06	283	ePg	Pg	17 14 36.6	+0.1
IZM	Izmir	0.68	227	ePG	Pg	17 14 47.3	+0.1
IZM	Izmir	0.68	227	ePg	Pg	17 14 47.3	+0.1
KULA	Kula-Manisa	0.70	120	ePG	Pg	17 14 47.5	-0.2
KULA				eSG	Sg	17 14 57.2	+0.3
KULA	Kula-Manisa	0.70	120	ePg	Pg	17 14 47.5	-0.2
KULA				eSg	Sg	17 14 57.2	+0.3
AYDB	Zeytinkoy-Aydi	0.92	180	ePG	Pg	17 14 51.6	-0.2
AYDB				eSG	Sb	17 15 04.3	+0.1
AYDB	Zeytinkoy-Aydi	0.92	180	ePg	Pg	17 14 51.6	-0.2
AYDB				eSg	Sb	17 15 04.3	+0.1
DST	Dursunbey	0.93	37	ePG	Pn	17 14 52.9	-0.1
DST	Dursunbey	0.93	37	ePg	Pn	17 14 52.9	-0.1
TVSB	Tavsanli	1.35	64	ePN	Pg	17 15 00.1	0.0
TVSB	Tavsanli	1.35	64	ePn	Pg	17 15 00.1	0.0

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*CSEM **03** 17:15:04.0±0.1, 43°.76N×20°.74E, h2km, ML2.5, Error ellipse: s-maj=2.9km s-min=2.5km az=37.0*
*BEO **03** 17:15:05.0±0.2, 43°.76N×20°.73E, h0km, M2.5/1*
ISC 03 17:15:04.3±1.1**, 43°.77N**±0°.02×**20°.74E**±0°.02**, h1**km±10km**, n46,** σ**0s.88**/74**, 17C-10D, Northwestern Balkan Peninsula**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
GRUS	Gruza	0.12	353	⇑iPg	Pg	17 15 06.8	+0.1
GRUS				eSg	Sg	17 15 09.4	+1.1
GRUS	Gruza	0.12	353	⇑iPg	Pg	17 15 06.8	+0.1
GRUS				eSg	Sg	17 15 09.4	+1.1
IVAS	Ivanjica	0.47	246	i Pg	Pg	17 15 13.1	-0.1
IVAS				eSg	Sg	17 15 19.0	-0.2
IVAS	Ivanjica	0.47	246	i Pg	Pg	17 15 13.1	-0.1
IVAS				eSg	Sg	17 15 19.0	-0.2
TRUS	Trudelj	0.52	333	⇑iPg	Pg	17 15 13.3	-0.9
TRUS	Trudelj	0.52	333	⇑iPg	Pg	17 15 13.3	-0.9
SELS	Selova	0.61	153	⇑iPg	Pg	17 15 15.5	-0.6
SELS				eSg	Sg	17 15 23.8	-0.2
DIVS	Divibare	0.63	302	i Pg	Pg	17 15 16.1	-0.4
DIVS				eSg	Sg	17 15 25.1	+0.4
DIVS	Divibare	0.63	302	i Pg	Pg	17 15 16.1	-0.4
DIVS				eSg	Sg	17 15 25.1	+0.4
SJES	Sjenica	0.75	228	⇑iPg	Pg	17 15 18.5	-0.2
SJES				eSg	Sg	17 15 28.6	+0.2
BBLS	Lazići	0.97	276	⇑iPg	Pg	17 15 22.3	-0.6
BBLS				eSg	Sg	17 15 35.8	+0.3
BBLS	Lazići	0.97	276	⇑iPg	Pg	17 15 22.3	-0.6
BBLS				eSg	Sg	17 15 35.8	+0.3
TEKS	Tekeris	1.17	312	i Pg	Pg	17 15 26.5	-0.3
TEKS				eSg	Sg	17 15 42.1	+0.2
TEKS	Tekeris	1.17	312	i Pg	Pg	17 15 26.5	-0.3
TEKS				eSg	Sg	17 15 42.1	+0.2
BARS	Barje	1.23	140	⇑iPg	Pg	17 15 27.3	-0.6
BARS				eSg	Sb	17 15 44.9	+0.1
BARS	Barje	1.23	140	⇑iPg	Pg	17 15 27.3	-0.6
BARS				eSg	Sb	17 15 44.9	+0.1
MDVR	Moldovita	1.23	34	⇑iP	Pg	17 15 27.4	-0.6
MDVR	Moldovita	1.23	34	⇑iP	Pg	17 15 27.4	-0.6
MDVR				S	Sb	17 15 45.3	+0.4
ZAPS	Zavoj	1.46	109	⇑iPg	Pn	17 15 31.3	-0.6
ZAPS				eSg	Sg	17 15 51.2	-0.1
FGSL	Fruska Gora	1.54	335	ePn	Pn	17 15 33.2	+0.2
FGSL				eSg	Sg	17 15 54.1	+0.3
FRGS	Fruska Gora	1.54	335	ePn	Pn	17 15 33.2	+0.2
FRGS				eSg	Sg	17 15 54.1	+0.2
RMGR	Halanga-Turnu	1.67	57	S	Sg	17 15 59.8	+1.9
RMGR	Halanga-Turnu	1.67	57	S	Sg	17 15 59.8	+1.9
BZS	Buzias	1.95	18	⇓iP	Pn	17 15 36.8	-1.8
BZS	Buzias	1.95	18	⇓iP	Pn	17 15 36.8	-1.8
BZS				S	Sb	17 16 05.7	+0.1
SRE	Strehaia	1.99	62	⇓iP	Pg	17 15 42.5	+0.1
SRE	Strehaia	1.99	62	⇓iP	Pg	17 15 42.5	+0.1
SRE				S	Sg	17 16 08.8	+0.6
VTS	Vitosha	2.15	122	⇑iP	Pn	17 15 40.6	-0.9
VTS	Vitosha	2.15	122	ePn	Pn	17 15 42.6	+1.1
VTS				eSn	Sn	17 16 09.9	+1.0
VTS	Vitosha	2.15	122	⇑iP	Pn	17 15 40.6	-0.9
VTS	Vitosha	2.15	122	ePn	Pn	17 15 42.6	+1.1
VTS				eSn	Sn	17 16 09.9	+1.0
VTS				S	Sb	17 16 12.2	+0.7
VTS	Vitosha	2.15	122	i P	Pn	17 15 40.2	-1.3
GZR	Gura Zlata	2.18	41	⇓iP	Pn	17 15 40.7	-1.1
GZR	Gura Zlata	2.18	41	⇓iP	Pn	17 15 40.7	-1.1
GZR				S	Sb	17 16 12.3	0.0
MPEP	Malo Peshtene	2.22	100	i P	Pn	17 15 41.5	-0.8
STON	Ston	2.39	249	ePn	Pn	17 15 44.5	-0.1
STON				Sn	Sn	17 16 15.8	+1.3
STON	Ston	2.39	249	ePn	Pn	17 15 44.5	-0.1
STON				Sn	Sn	17 16 15.7	+1.3
KKB	Krupnik	2.56	137	i P	Pn	17 15 46.7	-0.3
SIRR	Siria	2.59	14	⇓iP	Pn	17 15 47.0	-0.3
SIRR	Siria	2.59	14	⇓iP	Pn	17 15 47.0	-0.3
SIRR				S	Sn	17 16 20.1	+0.7
MMB	Musomiste	3.10	134	i P	Pn	17 15 54.0	-0.4
DRGR		3.33	24	⇓iP	Pn	17 15 57.1	-0.5
DRGR		3.33	24	⇓iP	Pn	17 15 57.1	-0.5
DRGR				S	Sn	17 16 34.5	-3.4
PVL	Pavlikeni	3.39	98	i P	Pn	17 15 56.5	-1.8
VOIR		3.50	60	⇑iP	Pn	17 16 00.4	+0.4
VOIR		3.50	60	⇑iP	Pn	17 16 00.4	+0.4

MEX 03 17:16:53.1±0.3**, 16°.42N**×**99°.60W, h14**km±51km**, MD3.6, Near coast of Guerrero**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
ACX	Acapulco	0.52	331	eP	Pn	17 17 05.2	-0.9
ACX				eS	Sb	17 17 12.8	+1.5
ACP2	Acapulco	0.53	329	eP	Pg	17 17 02.2	-1.4
ACP2				eS	Sg	17 17 09.4	-1.4
CAIG	El Cayaco	0.90	314	eP	Pb	17 17 07.5	-3.0
CAIG				eS	Sg	17 17 18.2	-4.1
TLIG	Tlapa	1.51	41	eP	Pn	17 17 16.3	-3.5
TLIG				eS	Sn	17 17 34.0	-5.3

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*IDC **03** 17:17:06.0±2.3, 34°.84N×141°.21E, h0km, mb3.3/4, mb1 3.5/7, mb1mx3.3/43, mbtmp3.5/7, ML3.4/3, Error ellipse: s-maj=63.1km s-min=19.6km az=67.0*
*JMA **03** 17:17:07.1±0.3, 34°.85N×141°.21E, h39km±3km, M2.9*
ISC 03 17:17:10.7±1.8**, 34°.79N**±0°.06×**140°.9E**±0°.1**, h30**km±10km**, n14,** σ**1s.35**/19**, mb3.5**/4**, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
BSO1	Boso 1	0.14	168	P	Pn	17 17 14.8	-1.6
BSO1				X		17 17 20.5	
BSO3	Boso 3	0.36	273	P	Pb	17 17 19.1	+0.4
BSO3				X		17 17 28.3	
BSO4	Boso 4	0.54	292	P	Pn	17 17 21.8	-0.5
BSO4				eX		17 17 31.9	
KTR	Katsuura	0.63	305	P	Pn	17 17 22.1	-1.6
KTR				eS	Sb	17 17 31.9	+0.1
JCN	Nagara	0.88	316	P	Pn	17 17 25.5	-1.6
JCN				eS	Sn	17 17 38.8	0.0
JIM2	Oshima 3	1.25	267	P	Pn	17 17 31.2	-1.0
JIM2				S	Sn	17 17 46.7	-1.3
JHJ	Hachijo jima 2	1.92	210	Pn	Pn	17 17 42.1	+0.6
	21nm,0.3s,baz=90,slow=20,SNR=3.4						
JHJ				Sn	Sn	17 18 03.4	-1.3
	64nm,0.3s,baz=341,slow=22,SNR=23						
MJAR	Matsushiro Arr	2.83	309	Pn	Pn	17 17 52.7	-1.3
	1.5nm,0.3s,baz=121,slow=13,SNR=20						
MAT	Matsushiro	2.83	309	P	Pn	17 17 52.7	-1.3
MAT				eS	Sn	17 18 26.0	-1.2
JCJ	Chichijima	7.74	172	Pn	Pn	17 18 59.4	-2.1
	2.7nm,0.3s,baz=281,slow=19,SNR=3.9						
SONM	Songino Array	28.79	307	P	P	17 23 08.1	+2.1
	0.7nm,1.1s,baz=110,slow=8.0,SNR=3.2						
MKAR	Makanchi Array	45.02	304	P	P	17 25 23.7	+0.1
	0.6nm,0.9s,baz=88,slow=7.2,SNR=3.6						
WRA	Warramunga Arr	54.79	188	P	P	17 26 37.5	-0.4
	0.3nm,0.4s,baz=6.3,slow=7.6,SNR=5.5						
ASAR	Alice Springs	58.52	188	P	P	17 27 05.4	+1.0
	0.3nm,0.8s,baz=24,slow=12,SNR=3.7						

IDC 03 17:22:20.8±5.2**, 10°.21S**×**13°.89W, h0**km**, mb4.0**/4**, mb1 3.8**/5**, mb1mx3.5**/47**, mbtmp3.9**/5**, ML3.5**/1**, MS4.0**/15**, Ms1 4.0**/15**, ms1mx3.8**/24**, Error ellipse: s-maj=248.3km s-min=99.6km az=117.0, Ascension Island region**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
H10S2	ASCENSION HYDR	1.45	329	T	T	17 25 27.1	
	baz=135,slow=74,SNR=244						
H10S3	ASCENSION HYDR	1.46	328	T	T	17 25 12.8	
	baz=135,slow=74,SNR=422						
H10S1	ASCENSION HYDR	1.47	329	T	T	17 25 23.3	
	baz=135,slow=74,SNR=483						
H10N1	ASCENSION HYDR	2.42	346	Pn	Pg	17 23 09.3	+2.1
H10N1				T	T	17 26 23.7	
	baz=217,SNR=5.0						
H10N3	ASCENSION HYDR	2.43	345	Pn	Pg	17 23 09.0	+1.6
H10N3				T	T	17 26 31.2	
	baz=217,SNR=4.5						
H10N2	ASCENSION HYDR	2.44	346	Pn	Pg	17 23 09.5	+2.0
H10N2				T	T	17 26 27.8	
	baz=217,SNR=4.5						
DBIC	Dimbokro	19.02	29	P	Pn	17 26 45.5	+0.3
	0.1nm,0.3s,baz=190,slow=12,SNR=2.7						
DBIC				LR	LR	17 32 23.1	
	comp=Z,478nm,20.1s,baz=184,slow=32						
TORD	Torodi Ar. Bea	27.89	34	P	P	17 28 11.8	-0.9
	0.8nm,0.8s,baz=223,slow=8.3,SNR=5.4						
TORD				LR	LR	17 37 38.0	
	comp=Z,410nm,19.9s,baz=210,slow=33						
TSUM	Tsumeb	31.68	110	LR	LR	17 38 34.9	
	comp=Z,354nm,20.2s,baz=323,slow=31						
BDFB	Brasilia	33.67	257	LR	LR	17 40 21.3	
	comp=Z,421nm,21.4s,baz=70,slow=32						
BOSA	Boshof	40.96	122	LR	LR	17 43 38.2	
	comp=Z,151nm,19.8s,baz=262,slow=31						
CPUP	Villa Florida	44.02	243	LR	LR	17 46 19.9	
	comp=Z,333nm,19.8s,baz=98,slow=33						
PTGA	Pitinga	46.77	279	LR	LR	17 50 05.3	
	comp=Z,340nm,21.1s,baz=359,slow=36						
KEST	Kesra	50.68	25	P	P	17 31 22.0	-0.3
	2.2nm,0.8s,baz=159,slow=18,SNR=3.8						
KMBO	Kilima Mbogo	51.61	83	LR	LR	17 51 54.5	
	comp=Z,236nm,18.1s,baz=104,slow=34						
LPAZ	La Paz	53.03	257	LR	LR	17 52 26.6	
	comp=Z,109nm,21.3s,baz=96,slow=34						
PLCA	Paso Flores	58.30	228	LR	LR	17 54 14.2	
	comp=Z,135nm,20.8s,baz=154,slow=33						
ROSC	El Rosal	62.02	281	LR	LR	17 58 49.3	
	comp=Z,153nm,19.6s,baz=94,slow=35						
BRTR	Keskin Array B	66.38	38	P	P	17 33 12.3	+0.4
	0.9nm,0.8s,baz=200,slow=7.3,SNR=6.2						
AKASG	Malin Array Be	71.27	27	P	P	17 33 41.9	0.0
	1.8nm,0.8s,baz=221,slow=6.4,SNR=7.0						
AKASG				LR	LR	18 06 20.4	
	comp=Z,88nm,20.2s,baz=240,slow=37						
NOA	NORSAR Array B	73.73	12	LR	LR	18 07 48.4	
	comp=Z,38nm,18.0s,baz=205,slow=37						
GEYT	Alibeck	82.37	49	LR	LR	18 10 38.1	
	comp=Z,70nm,21.1s,baz=90,slow=35						
ARCES	ARCESS Array B	84.10	13	LR	LR	18 14 32.1	
	comp=Z,46nm,18.2s,baz=227,slow=37						

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*NIED **03** 17:24:00, 36°.90N×143°.00E, h5km, Mw4.0 Best double couple: M0 1.07000×10[15] NP1:φs44.00000°, δ18.00000°, λ-85.00000°. NP2:φs218.00000°, δ72.00000°, λ-92.00000°.*
*IDC **03** 17:24:39.9±0.7, 36°.92N×143°.74E, h0km, mb3.9/14, mb1 4.1/18, mb1mx3.9/57, mbtmp4.0/18, ML3.1/3, MS2.9/2, Ms1 2.9/2, ms1mx2.4/47, Error ellipse: s-maj=18.3km s-min=15.2km az=79.0*
*ISCJB **03** 17:24:42.5±0.5, 36°.83N±0°.04×143°.48E±0°.04, h33km, mb4.0/18, Error ellipse: s-maj=5.9km s-min=4.7km az=154.3*
*NEIC **03** 17:24:44.6±0.6, 36°.83N×143°.55E, h35km, mb4.4/3, Error ellipse: s-maj=13.3km s-min=10.8km az=119.0*
*JMA **03** 17:24:49.4±0.3, 36°.91N×143°.05E, h31km, M4.0*
ISC 03 17:24:44.6±0.6**, 36°.90N**±0°.06×**143°.50E**±0°.07**, h35**km**, n40,** σ**1s.69**/42**, mb4.0**/18**, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
JFK	Kawauchi	2.15	283	eS	Sn	17 25 40.9	-2.6
ONAJ	Iwakimizuishiy	2.17	276	eS	Sn	17 25 41.6	-2.4
JFT	Otama	2.60	285	P	Pn	17 25 26.0	+1.8
JFT				eS	Sn	17 25 52.7	-1.9
BSO1	Boso 1	3.04	223	eS	Sn	17 26 07.4	+2.9
JAG	Ashikaga	3.29	263	S	Sn	17 26 09.9	-1.6
JRY	Ryogami san	3.81	258	P	Pn	17 25 42.3	+1.5
JRY				eS	Sn	17 26 22.8	-1.6
JOD2	Odawara 2	3.93	247	P	Pn	17 25 42.9	+0.5
JOD2				S	Sn	17 26 25.8	-1.5
MJAR	Matsushiro Arr	4.27	267	Pn	Pn	17 25 47.5	+0.4
	5.4nm,0.3s,baz=76,slow=11,SNR=17						
MAJO	Matsushiro	4.27	267	ePn	Pn	17 25 45.8	-1.3
MAJO				eSn	Sn	17 26 37.6	+1.9
JNY	Yasuok	4.82	253	P	Pn	17 25 57.2	+2.5
JHJ2	Mitsune	4.84	220	P	Pn	17 25 55.5	+0.6
JHJ2				eS	Sn	17 26 48.3	-1.4
JHJ2	Mitsune	4.84	220	ePn	Pn	17 25 53.2	-1.7
JHJ2				eSn	Sn	17 26 49.3	-0.4
JHJ	Hachijo jima 2	4.85	220	Sn	Sn	17 26 46.8	-3.2
	32nm,0.3s,baz=72,slow=20,SNR=3.1						
CBIJ	Chichi jima	9.84	187	Pn	Pn	17 27 01.4	-2.2
JCJ	Chichijima	9.84	187	Pn	Pn	17 27 01.4	-2.2
	baz=279,slow=19						
JNU	Nakatsue	11.01	254	LR	LR	17 31 41.1	
	comp=Z,87nm,18.6s,baz=69,slow=38						
USRK	Ussuriysk Ar.	11.39	313	Pn	Pn	17 27 24.8	+0.1
	0.3nm,0.3s,baz=99,slow=14,SNR=5.6						
KSRS	Korea Array	12.44	277	Pn	Pn	17 27 41.9	+2.8
	0.1nm,0.3s,baz=92,slow=14,SNR=10						
KSRS				LR	LR	17 31 44.2	
	comp=Z,36nm,21.0s,baz=54,slow=34						
KSAR	Wonju Array Be	12.47	277	Pn	Pn	17 27 41.9	+2.3
KLR	Kul'dur	15.00	329	Pn	Pn	17 28 09.9	-3.9
	0.2nm,0.3s,baz=126,slow=14,SNR=10						
JOW	Kunigami	16.35	236	ePn	Pn	17 28 29.1	-2.4
YAK	Yakutsk	26.59	345	eP	P	17 30 17.0	-2.2
	4.4nm,0.6s						
SEY	Seymchan	26.63	9	P	P	17 30 19.6	+0.1
	0.9nm,0.5s,baz=221,slow=20,SNR=5.2						
SONM	Songino Array	29.25	304	P	P	17 30 45.6	+2.3
	2.3nm,0.8s,baz=98,slow=8.2,SNR=19						
ZALV	Zalesovo Beam	43.24	313	P	P	17 32 42.7	+0.5
	0.8nm,0.8s,baz=100,slow=7.5,SNR=3.5						
NRIK	Noril'sk	44.09	335	P	P	17 32 53.3	+4.4
	3.1nm,0.5s,baz=135,slow=5.7,SNR=4.5						
MKAR	Makanchi Array	45.60	303	P	P	17 33 04.6	+3.3
	1.9nm,0.7s,baz=88,slow=9.6,SNR=16						
KURK	Kurchatov	47.33	308	eP	P	17 33 14.7	0.0
	8.5nm,0.7s						
KURBB	Kurchatov Arra	47.40	308	P	P	17 33 15.5	+0.3
	1.2nm,0.8s,baz=81,slow=7.8,SNR=8.3						
ILAR	Eielson Array	48.72	32	P	P	17 33 24.9	-0.3
	0.4nm,0.6s,baz=278,slow=6.3,SNR=4.1						
BVAR	Borovoye Array	51.90	313	P	P	17 33 50.7	+1.3
	0.4nm,0.6s,baz=90,slow=5.0,SNR=2.8						
WRAB	Tennant Creek	57.18	190	eP	P	17 34 28.4	+0.3
	1.5nm,0.7s						
WRA	Warramunga Arr	57.19	190	P	P	17 34 29.1	+1.0
	4.2nm,0.5s,baz=9.4,slow=7.2,SNR=10						
ASAR	Alice Springs	60.91	190	P	P	17 34 55.1	+1.2
	2.0nm,0.6s,baz=4.4,slow=7.2,SNR=62						
YKA	Yellowknife Ar	63.08	31	P	P	17 35 08.0	0.0
	0.4nm,0.8s,baz=305,slow=6.6,SNR=5.2						
STKA	Stephens Creek	68.44	182	P	P	17 35 43.6	+0.8
	3.0nm,0.9s,baz=308,slow=8.1,SNR=4.5						
FINES	FINESS Array B	69.70	333	P	P	17 35 50.5	+0.1
	1.2nm,0.8s,baz=70,slow=4.6,SNR=3.4						
PDAR	Pinedale Array	76.56	46	P	P	17 36 30.1	-1.5
	0.4nm,0.6s,baz=323,slow=2.2,SNR=3.8						
TXAR	Lajitas Array	88.87	54	P	P	17 37 36.2	+0.7
	0.6nm,0.7s,baz=295,slow=2.7,SNR=8.0						
LPAZ	La Paz	145.30	62	PKPbc	PKPdf	17 44 19.9	0.0
	0.9nm,0.5s,baz=5.9,slow=11,SNR=3.6						

IDC 03 17:27:04.4±5.3**, 9°.95S**×**13°.46W, h0**km**, mb3.9**/4**, mb1 4.1**/4**, mb1mx3.6**/48**, mbtmp3.9**/4**, Error ellipse: s-maj=272.2km s-min=24.3km az=138.0, Ascension Island region**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
H10S2	ASCENSION HYDR	1.53	310	T	T	17 30 05.2	
	baz=137,slow=74,SNR=20						
H10S1	ASCENSION HYDR	1.54	310	T	T	17 30 02.2	
	baz=137,slow=74,SNR=22						
H10S3	ASCENSION HYDR	1.55	310	T	T	17 30 05.2	
	baz=137,slow=74,SNR=23						
TORD	Torodi Ar. Bea	27.44	34	P	P	17 32 51.1	-1.0
	1.1nm,0.8s,baz=210,slow=9.6,SNR=4.4						
CPUP	Villa Florida	44.52	243	P	P	17 35 18.4	+0.3
	6.5nm,1.2s,baz=83,slow=11,SNR=2.5						
LPAZ	La Paz	53.49	257	P	P	17 36 26.9	-0.9
	0.7nm,0.5s,baz=103,slow=8.8,SNR=3.8						
GERES	GERESS Array B	63.24	20	P	P	17 37 35.5	+0.8
	0.1nm,0.3s,baz=198,slow=5.1,SNR=2.9						

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*IDC **03** 17:32:27.1±0.9, 37°.20N×57°.24E, h0km, mb3.9/16, mb1 4.2/23, mb1mx3.9/60, mbtmp4.0/23, ML3.7/6, Error ellipse: s-maj=15.7km s-min=8.8km az=161.0*
*CSEM **03** 17:32:28.1±0.1, 37°.26N×57°.43E, h5km, mb4.3/16, Error ellipse: s-maj=4.0km s-min=3.4km az=1.0*
*ISCJB **03** 17:32:28.9±0.5, 37°.27N±0°.02×57°.44E±0°.03, h25km±4km, mb4.0/22, Error ellipse: s-maj=4.0km s-min=3.3km az=142.9*
*THR **03** 17:32:28.1±0.5, 37°.18N×57°.39E, h14km±10km, ML4.1*
*NEIC **03** 17:32:29.0, 37°.20N×57°.41E, h3km, mb4.0/6, MN4.1(TEH), After TEH.*
*NNC **03** 17:32:29.6±5.4, 37°.68N×57°.01E, h19km±66km, mb4.2, mpv5.1, Error ellipse: s-maj=55.1km s-min=13.4km az=12.0*
*TEH **03** 17:32:29.4, 37°.20N×57°.41E, h3km, ML4.1*
*MOS **03** 17:32:31.3±1.3, 37°.36N×57°.38E, h33km, mb4.4/16, Error ellipse: s-maj=9.2km s-min=6.5km az=114.3*
ISC 03 17:32:28.0±1.1**, 37°.25N**±0°.03×**57°.39E**±0°.02**, h8**km±7km**, n199,** σ**1s.77**/209**, mb4.2**/22**, 25C-20D, Iran-Turkmenistan border region**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
ISHV	Shirvan	0.38	41	ePg	Pb	17 32 37.2	0.0
ISHV				eAMB	AMB	17 32 46.4	
	comp=Z,83μm,0.2s						
BJRD	Bojnurd	0.45	2	ePg	Pb	17 32 38.4	0.0
BJRD				eSg	Sb	17 32 46.1	+0.7
BJRD	Bojnurd	0.45	2	ePg	Pb	17 32 38.4	0.0
BJRD				eSg	Sb	17 32 46.1	+0.7
ISFR	Sfrayin	0.53	111	ePg	Pg	17 32 38.0	-0.3
ISFR				eSg	Sg	17 32 44.7	-0.5
ISFR				eAMB	AMB	17 32 49.0	
	comp=Z,21μm,0.1s						
ISFR	Sfrayin	0.53	111	ePg	Pg	17 32 38.0	-0.3
ISFR				eSg	Sg	17 32 44.7	-0.5
GEYT	Alibeck	0.89	40	Pg	Pb	17 32 46.2	+0.3
	comp=Z,262nm,0.3s,baz=218,slow=18,SNR=521						
GEYT				Lg	Lg	17 33 00.5	
	comp=Z,476nm,0.3s,baz=216,slow=14,SNR=26						
IQHU	Qucahn	0.94	100	ePg	Pg	17 32 45.8	-0.2
IQHU				eAMB	AMB	17 33 04.6	
	comp=Z,95μm,0.1s						
IQHU	Qucahn	0.94	100	ePg	Pg	17 32 45.8	-0.2
IKRD	Kardeh	1.02	117	ePn	Pn	17 32 59.9	+11
IKRD				eAMB	AMB	17 33 28.9	
	comp=Z,24μm,0.2s						
IEMG	Emamgholi	1.02	80	ePg	Pg	17 32 47.6	-0.1
IEMG				eAMB	AMB	17 33 08.5	
	comp=Z,43μm,0.3s						
IEMG	Emamgholi	1.02	80	ePg	Pg	17 32 47.6	-0.1
ASHT	Ashkhabad	1.05	48	⇓P	Pn	17 32 50.5	+1.3
	comp=Z,1μm,0.6s						
ASHT				⇑S	Sn	17 33 07.2	+3.1
	comp=Z,11μm,1.3s						
ASHT	Ashkhabad	1.05	48	P	Pn	17 32 50.5	+1.3
	comp=Z,1μm,0.6s						
MRVT	Maraveh tapeh	1.11	292	ePg	Pg	17 32 49.4	0.0
MRVT	Maraveh tapeh	1.11	292	ePg	Pg	17 32 49.4	0.0
IAKL	Akhelmad	1.27	120	ePg	Pg	17 32 51.0	-1.5
IAKL				eAMB	AMB	17 33 13.8	
	comp=Z,60μm,0.1s						
IPAY	Payeh	1.52	121	ePn	Pn	17 32 55.1	-0.6
IPAY				eAMB	AMB	17 33 21.6	
	comp=Z,42μm,0.1s						
IPAY	Payeh	1.52	121	ePn	Pn	17 32 55.1	-0.6
SHRO	Shahrood	1.67	222	ePg	Pn	17 32 57.4	-0.4
SHRO				eSg	Sn	17 33 19.5	-0.1
SHRO				AML	AML	17 33 21.9	
	comp=E,2μm,0.8s						
SHRO				AML	AML	17 33 23.3	
	comp=N,3μm,0.8s						
SHRO	Shahrood	1.67	222	eP	Pn	17 32 57.4	-0.4
SHRO				eSg	Sn	17 33 19.5	-0.1
ISRO	Mashad	1.92	119	ePn	Pn	17 33 01.9	+0.8
ISRO	Mashad	1.92	119	ePn	Pn	17 33 01.9	+0.8
IMOG	Moghan	1.94	125	eSg	Sb	17 33 28.9	+0.7
IMOG				ePn	Pb	17 33 03.1	-0.7
IMOG				eAMB	AMB	17 33 32.6	
	comp=Z,19μm,0.1s						

Code	Station Name	Δ°	AZ°	Op	ISC	Time	Res
IMYA	Miami	2.36	112	eAMB	AMB	17 33 46.5	
	comp=Z,11µm,0.2s						
IMYA				ePn	Pn	17 33 09.0	+1.7
IANJ	Anjilo	3.32	239	ePn	Pn	17 33 21.6	+1.1
IANJ				eAMB	AMB	17 34 21.6	
	comp=Z,4µm,0.3s						
IANJ	Anjilo	3.32	239	ePn	Pn	17 33 21.6	+1.1
TABS	Tabas	3.60	184	ePn	Pn	17 33 24.7	+0.5
TABS				AML	AML	17 34 31.4	
	comp=N,380nm,0.7s						
TABS	Tabas	3.60	184	ePn	Pn	17 33 24.7	+0.5
ILAS	Lasjerd	4.03	244	ePn	Pn	17 33 31.3	+1.0
ILAS				eAMB	AMB	17 34 48.9	
	comp=E,5µm,0.4s						
ILAS	Lasjerd	4.03	244	ePn	Pn	17 33 31.3	+1.0
IFIR	Firoozkooh	4.07	248	ePn	Pn	17 33 31.8	+1.0
IFIR				eAMB	AMB	17 33 51.0	
	comp=Z,2µm,0.1s						
IFIR	Firoozkooh	4.07	248	ePn	Pn	17 33 31.8	+1.0
SHRT	Shahrakht	4.30	146	ePn	Pn	17 33 34.4	+0.5
SHRT	Shahrakht	4.30	146	ePn	Pn	17 33 34.4	+0.5
IMON	Monand	4.46	155	ePn	Pn	17 33 36.2	0.0
IMON				eAMB	AMB	17 33 46.5	
	comp=Z,1µm,0.1s						
IMON	Monand	4.46	155	ePn	Pn	17 33 36.2	0.0
ITEG	Tejag	4.48	165	ePn	Pn	17 33 37.3	+0.8
ITEG	Tejag	4.48	165	ePn	Pn	17 33 37.3	+0.8
IDMV	Damavand	4.63	251	ePn	Pn	17 33 40.2	+1.6
IDMV				eAMB	AMB	17 35 14.6	
	comp=Z,2µm,0.4s						
IDMV	Damavand	4.63	251	ePn	Pn	17 33 40.2	+1.6
IAFJ	Afjeh	4.78	255	ePn	Pn	17 33 44.1	+3.5
IAFJ				eAMB	AMB	17 35 21.1	
	comp=Z,2µm,0.4s						
IAFJ	Afjeh	4.78	255	ePn	Pn	17 33 44.1	+3.5
IDAH	Dahanechah	4.94	155	ePn	Pn	17 33 43.4	+0.6
IDAH				eAMB	AMB	17 34 13.3	
	comp=Z,734nm,0.2s						
IDAH	Dahanechah	4.94	155	ePn	Pn	17 33 43.4	+0.6
IKOO	Kooshah	4.99	164	ePn	Pn	17 33 43.8	+0.3
IKOO				eAMB	AMB	17 33 49.2	
	comp=Z,914nm,0.2s						
IKOO	Kooshah	4.99	164	ePn	Pn	17 33 43.8	+0.3
IVRN	Varamin	5.10	246	ePn	Pn	17 33 45.3	+0.4
IVRN				eAMB	AMB	17 35 30.9	
	comp=Z,1µm,0.3s						
IVRN	Varamin	5.10	246	ePn	Pn	17 33 45.3	+0.4
IBAF	Bafgh	5.84	195	ePn	Pn	17 33 56.3	+1.2
IBAF				eAMB	AMB	17 35 50.5	
	comp=Z,1µm,0.4s						
IBAF	Bafgh	5.84	195	ePn	Pn	17 33 56.3	+1.2
IZEF	Zefreh	6.00	225	ePn	Pn	17 33 58.2	+0.7
IZEF				eAMB	AMB	17 35 59.0	
	comp=Z,576nm,0.4s						
IZEF	Zefreh	6.00	225	ePn	Pn	17 33 58.2	+0.7
ISAD	Sadrabad	6.13	211	ePn	Pn	17 33 59.3	0.0
ISAD				eAMB	AMB	17 35 42.1	
	comp=Z,966nm,0.4s						
ISAD	Sadrabad	6.13	211	ePn	Pn	17 33 59.3	0.0
IKLH	Kolahrood	6.16	232	ePn	Pn	17 34 00.1	+0.5
IKLH				eAMB	AMB	17 35 59.0	
	comp=Z,838nm,0.3s						
IKLH	Kolahrood	6.16	232	ePn	Pn	17 34 00.1	+0.5
IMEH	Mehriz	6.28	202	ePn	Pn	17 34 02.1	+0.9
IMEH				eAMB	AMB	17 35 55.8	
	comp=Z,884nm,0.4s						
IMEH	Mehriz	6.28	202	ePn	Pn	17 34 02.1	+0.9
IRAZ	Razeghan	6.30	255	ePn	Pn	17 34 03.3	+1.9
IRAZ				eAMB	AMB	17 36 15.1	
	comp=Z,556nm,0.3s						
IRAZ	Razeghan	6.30	255	ePn	Pn	17 34 03.3	+1.9
IGAR	Gharneh	6.53	224	eAMB	AMB	17 34 12.6	
	comp=Z,466nm,0.2s						
IGAR				ePn	Pn	17 34 05.7	+1.0
IRAM	Ramesheh	6.82	219	ePn	Pn	17 34 08.7	+0.1
IRAM				eAMB	AMB	17 36 35.3	
	comp=Z,422nm,0.5s						
IRAM	Ramesheh	6.82	219	ePn	Pn	17 34 08.7	+0.1
DGRG	David-gareji	10.21	298	P	Pn	17 34 55.0	0.0
DGRG	David-gareji	10.21	298	P	Pn	17 34 54.9	0.0
DGRG	David-gareji	10.21	298	P	Pn	17 34 54.9	0.0
GNI	Garni	10.30	290	Pn	Pn	17 34 58.7	+2.4
	comp=Z,1.0nm,0.3s,baz=28,slow=6.7,SNR=8.5						
GNI	Garni	10.30	290	ceP	Pn	17 34 58.5	+2.2
GNI				pmax	pmax		
	comp=Z,68nm,0.7s						
GNI	Garni	10.30	290	eP	Pn	17 34 58.5	+2.2
	comp=Z,68nm,0.7s						
GNI	Garni	10.30	290	Pn	Pn	17 34 58.7	+2.4
	comp=Z,6.6nm,0.6s						
GUDG	Gudauri	11.21	302	P	Pn	17 35 09.8	+1.1
GUDG	Gudauri	11.21	302	P	Pn	17 35 09.8	+1.1
KK31	Karatay Array	11.61	56	Pn	Pn	17 35 13.3	-0.8
	comp=Z,2.2nm,0.7s,baz=241,slow=15,SNR=12						
KK31				⇓Sn	Sn	17 37 20.3	-3.6
	comp=Z,7.8nm,0.9s,baz=234,slow=26,SNR=4.1						
KK31	Karatay Array	11.61	56	Pn	Pn	17 35 13.3	-0.8
	comp=Z,2.2nm,0.7s,SNR=12						
KKAR	Karatay Array	11.61	56	eP	Pn	17 35 12.5	-1.6
KKAR				e		17 37 26.3	
KKAR				pmax	pmax		
	comp=Z,3.0nm,0.6s						
KKAR	Karatay Array	11.61	56	eP	Pn	17 35 12.5	-1.6
	comp=Z,3.0nm,0.6s						
KKAR				eS	Sn	17 37 26.3	+2.3
KKAR	Karatay Array	11.61	56	ePn	Pn	17 35 12.5	-1.6
	comp=Z,2.9nm,0.6s						
KKAR				eSn	Sn	17 37 26.3	+2.3
AB31	Akbulak array	12.15	8	⇑Pn	Pn	17 35 19.7	-1.6
	comp=Z,2.1nm,0.6s						
AB31				Sn	Sn	17 37 32.8	-4.1
	comp=Z,3.7nm,0.5s,baz=191,slow=24,SNR=5.3						
AB31	Akbulak array	12.15	8	Pn	Pn	17 35 19.7	-1.6
	comp=Z,2.1nm,0.6s						
ABKAR	Akbulak array	12.15	8	ePn	Pn	17 35 19.4	-1.9
	comp=Z,3.0nm,0.5s						
NCK	Nalchik	12.22	305	i P	Pn	17 35 20.2	-2.3
NCK				pmax	pmax		
	comp=Z,6.0nm,1.0s						
MNAS	Manas	12.73	61	⇓Pn	Pn	17 35 28.7	-0.8
	comp=Z,2.7nm,1.0s						
MNAS				⇑Sn	Sn	17 37 47.3	-4.3
	comp=Z,8.3nm,0.8s						
MNAS	Manas	12.73	61	Pn	Pn	17 35 28.7	-0.8
	comp=Z,2.7nm,1.0s						
KBZ	Khabaz	12.78	305	Pn	Pn	17 35 28.1	-1.9
	comp=Z,0.4nm,0.3s,baz=156,slow=4.3,SNR=11						
SFK	Sufi-Kurgan	12.90	73	⇑Pn	Pn	17 35 33.5	+1.6
	comp=Z,2.4nm,0.7s						
SFK				⇑Sn	Sn	17 37 55.2	-0.6
	comp=Z,7.4nm,0.6s						
SFK	Sufi-Kurgan	12.90	73	Pn	Pn	17 35 33.5	+1.6
	comp=Z,2.4nm,0.7s						
SFK				Sn	Sn	17 37 55.2	-0.6
	comp=Z,7.4nm,0.6s						
KVAR	Kislovodsk Arr	13.01	306	Pn	Pn	17 35 31.2	-2.1
	baz=130,slow=16,SNR=4.6						
KVAR				Sn	Sn	17 37 50.0	-8.3
	baz=249,slow=17,SNR=5.0						
KIV	Kislovodsk	13.02	306	eP	Pn	17 35 30.6	-2.8
KIV				eS	Sn	17 37 53.1	-5.3
KIV				pmax	pmax		
	comp=Z,8.0nm,0.8s						
KIV				MLR	MLR		
	comp=Z,35nm,10.0s						
AKTO	Aktyubinsk	13.19	2	Pn	Pn	17 35 35.0	-0.6
	comp=Z,1.7nm,0.3s,baz=182,slow=11,SNR=30						
AKTO				Sn	Sn	17 37 56.8	-5.7
	comp=Z,0.7nm,0.3s,baz=356,slow=13,SNR=5.5						
AKTO	Aktyubinsk	13.19	2	⇑Pn	Pn	17 35 34.3	-1.3
	comp=Z,8.2nm,0.9s						
AKTO				⇑Sn	Sn	17 37 56.6	-5.9
	comp=Z,10nm,0.8s						
AAK	Ala-Archa	14.18	62	Pn	Pn	17 35 47.4	-1.8
	comp=Z,0.3nm,0.3s,baz=182,slow=6.5,SNR=4.9						
AAK	Ala-Archa	14.18	62	eP	Pn	17 35 49.5	+0.2
AAK				pmax	pmax		
	comp=Z,10.0nm,1.0s						
OTUK	Ortayu	15.51	40	⇓Pn	Pn	17 36 04.9	-2.1
	comp=Z,4.6nm,0.7s						
OTUK				⇓Sn	Sn	17 38 53.1	-5.8
	comp=Z,6.8nm,1.0s						
RAYN	Ar Rayn	17.07	220	ePn	Pn	17 36 25.2	-2.0
	comp=Z,4.6nm,0.7s						
ZRNK	Zerenda	17.68	24	⇓P	Pn	17 36 32.8	-1.7
	comp=Z,7.8nm,1.1s						
ZRNK				⇑S	Sn	17 39 42.3	-9.2
	comp=Z,9.0nm,1.4s						
VRH	Novokhopyorsk	17.85	326	eP	Pn	17 36 37.1	+0.4
VRH				pmax	pmax		
	comp=Z,5.0nm,0.8s						
VRH	Novokhopyorsk	17.85	326	eP	Pn	17 36 37.1	+0.4
	comp=Z,5.0nm,0.8s						
VOSK	Vostochnaya	18.17	27	⇑P	Pn	17 36 37.8	-2.8
	comp=Z,6.7nm,1.1s						
BRVK	Borovoye	18.19	26	⇑P	Pn	17 36 35.4	-5.5
	comp=Z,22nm,1.5s						
BRVK				⇓S	Sn	17 39 57.0	-6.9
	comp=Z,7.2nm,0.9s						
BRVK	Borovoye	18.19	26	i P	P	17 36 41.1	0.0
BRVK				pmax	pmax		
	comp=Z,7.0nm,1.1s						
BRVK	Borovoye	18.19	26	ePn	P	17 36 41.2	+0.1
	comp=Z,6.1nm,0.8s						
BRVK	Borovoye	18.19	26	ePn	P	17 36 41.2	+0.1
	comp=Z,6.1nm,0.8s						
BVA0	Borovoye Array	18.20	26	⇓P	Pn	17 36 36.8	-4.1
	comp=Z,9.2nm,0.8s,baz=190,slow=12,SNR=38						
BVA0				S	Sn	17 39 55.2	-9.0
	comp=Z,0.2nm,0.5s,baz=217,slow=26,SNR=5.4						
BVAR	Borovoye Array	18.20	26	P	Pn	17 36 40.3	-0.6
	comp=Z,1.0nm,0.3s,baz=219,slow=7.9,SNR=31						
BVAR				S	Sn	17 39 57.9	-6.3
	comp=Z,0.5nm,0.3s,baz=226,slow=21,SNR=6.9						
BRTR	Keskin Array B	18.75	285	P	Pn	17 36 49.1	+1.3
	comp=Z,0.1nm,0.3s,baz=82,slow=8.9,SNR=8.0						
BRTR	Keskin Array B	18.75	285	ceP	Pn	17 36 49.5	+1.6
BRTR				pmax	pmax		
	comp=Z,2.0nm,1.0s						
CHKZ	Chkalovo	18.81	25	⇑P	P	17 36 45.4	-2.5
	comp=Z,7.2nm,0.8s						
VSR	Storozhevoye	19.04	323	eP	Pn	17 36 51.5	+0.3
VSR				pmax	pmax		
	comp=Z,8.0nm,0.5s						
VSR	Storozhevoye	19.04	323	eP	Pn	17 36 51.5	+0.3
	comp=Z,8.0nm,0.5s						
ARU	Arti	19.21	2	P	Pn	17 36 54.5	+1.3
	comp=Z,0.0nm,0.3s,baz=183,slow=8.2,SNR=6.4						
ARU	Arti	19.21	2c	iP	Pn	17 36 56.3	+3.2
ARU				pmax	pmax		
	comp=Z,5.0nm,0.8s						
ARU	Arti	19.21	2	eP	P	17 36 52.3	+0.1
	comp=Z,3.8nm,0.6s						
ARU	Arti	19.21	2	eP	P	17 36 52.3	+0.1
	comp=Z,3.9nm,0.6s						
LPSR	Galich'ya Gora	20.07	326	eP	P	17 37 02.7	+1.0
LPSR				pmax	pmax		
	comp=Z,10.0nm,0.8s						
LPSR	Galich'ya Gora	20.07	326	eP	P	17 37 02.7	+1.0
	comp=Z,10.0nm,0.8s						
EIL	Elat	20.16	255	P	Pn	17 37 06.6	+1.9
	comp=Z,3.6nm,0.7s,baz=353,slow=7.6,SNR=5.7						
KURBB	Kurchatov Arra	20.17	42	P	Pn	17 37 05.3	+0.6
	comp=Z,1.6nm,0.8s,baz=241,slow=11,SNR=12						
KURBB	Kurchatov Arra	20.17	42	⇑P	P	17 37 02.9	+0.1
	comp=Z,5.1nm,1.0s						
KURBB	Kurchatov Arra	20.17	42	P	P	17 37 02.9	+0.1
	comp=Z,5.1nm,1.0s						
KURK	Kurchatov	20.27	42	⇑P	Pn	17 37 05.4	-0.4
	comp=Z,10nm,0.9s						
KURK	Kurchatov	20.27	42	P	Pn	17 37 05.3	-0.5
KURK				pmax	pmax		
	comp=Z,2.0nm,0.8s						
KURK	Kurchatov	20.27	42	P	Pn	17 37 05.3	-0.5
	comp=Z,0.6nm,1.5s						
KURK	Kurchatov	20.27	42	P	Pn	17 37 05.3	-0.5
	comp=Z,0.6nm,1.5s						
MAKZ	Makanchi	20.54	55	⇑P	P	17 37 07.2	+0.3
	comp=Z,6.1nm,1.2s						
MAKZ	Makanchi	20.54	55	P	P	17 37 07.2	+0.3
	comp=Z,6.1nm,1.2s						
MK31	Makanchi Array	20.74	55	P	P	17 37 07.2	-1.9
	comp=Z,1.6nm,0.5s,baz=249,slow=7.2,SNR=30						
MK31	Makanchi Array	20.74	55	P	P	17 37 07.2	-1.9
	comp=Z,1.6nm,0.5s,SNR=30						
MKAR	Makanchi Array	20.74	55	P	Pn	17 37 11.6	+0.1
	comp=Z,1.5nm,0.6s,baz=245,slow=11,SNR=16						
OBN	Obninsk	22.81	328	eP	P	17 37 32.3	+1.2
OBN				e		17 37 54.1	
OBN				pmax	pmax		
	comp=Z,18nm,0.7s						
OBN	Obninsk	22.81	328	eP	P	17 37 32.3	+1.2
	comp=Z,18nm,0.7s						
AKASG	Malin Array Be	24.15	313	P	P	17 37 44.8	+0.4
	comp=Z,5.5nm,0.7s,baz=111,slow=8.5,SNR=20						
AKASG	Malin Array Be	24.15	313	ceP	P	17 37 44.7	+0.3
AKASG				pmax	pmax		
	comp=Z,6.0nm,0.7s						
KIEV	Kiev	24.16	313	eP	P	17 37 43.2	-1.3
KIEV				pmax	pmax		
	comp=Z,14nm,1.0s						
KIEV	Kiev	24.16	313	eP	P	17 37 43.2	-1.3
	comp=Z,14nm,1.0s						
KIEV	Kiev	24.16	313	eP	P	17 37 43.2	-1.3
	comp=Z,14nm,1.0s						
VRI	Vrincioaia	24.39	300	⇑iP	P	17 37 50.5	+3.8
VRI	Vrincioaia	24.39	300	⇑P	P	17 37 50.5	+3.8
PLOR	Plostina	24.44	300	⇓iP	P	17 37 49.7	+2.5
PLOR	Plostina	24.44	300	⇓P	P	17 37 49.7	+2.5
PLOR	Plostina	24.44	300	P	P	17 37 49.7	+2.5
TESR	Tescani	24.56	302	⇑iP	P	17 37 51.4	+3.1
TESR	Tescani	24.56	302	⇑iP	P	17 37 51.4	+3.1
MLR	Muntele Rosu	24.87	299	P	P	17 37 51.2	-0.1
	comp=Z,1.6nm,0.8s,baz=162,slow=13,SNR=6.2						
MLR	Muntele Rosu	24.87	299	⇓iP	P	17 37 54.4	+3.2
MLR	Muntele Rosu	24.87	299	⇓P	P	17 37 54.4	+3.2
ZALV	Zalesovo Beam	25.21	40	P	P	17 37 55.8	+1.8
	comp=Z,1.9nm,0.5s,baz=255,slow=11,SNR=10						
ZALV	Zalesovo Beam	25.21	40	i P	P	17 37 56.5	+2.5
ZALV				pmax	pmax		
	comp=Z,2.0nm,0.5s						
DOPR	Dopca	25.33	300	⇓iP	P	17 37 56.4	+1.2
DOPR	Dopca	25.33	300	⇓iP	P	17 37 56.4	+1.2
VOIR		25.49	299	⇓iP	P	17 37 58.2	+1.4
VOIR		25.49	299	⇓P	P	17 37 58.2	+1.4
VOIR		25.49	299	P	P	17 37 58.2	+1.4
BURAR	Bucovina Array	25.74	304	⇑iP	P	17 38 00.2	+1.2
BURAR	Bucovina Array	25.74	304	⇑P	P	17 38 00.2	+1.2
BURAR	Bucovina Array	25.74	304	⇑iP	P	17 38 00.2	+1.2
ARR	Arges	25.77	299	⇓iP	P	17 38 00.7	+1.4
ARR	Arges	25.77	299	⇓iP	P	17 38 00.7	+1.4
KLMR	Klimovskoe	26.19	340	eP	P	17 38 02.6	-0.3
KLMR				e		17 38 39.2	
KLMR				pmax	pmax		
	comp=Z,23nm,1.8s						
KLMR	Klimovskoe	26.19	340	eP	P	17 38 02.6	-0.3
	comp=Z,23nm,1.8s						
DRGR		27.28	301	⇓iP	P	17 38 14.3	+1.4
DRGR		27.28	301	⇓P	P	17 38 14.3	+1.4
DRGR		27.28	301	P	P	17 38 14.3	+1.4
KECS	Kecovo	29.02	305	eP	P	17 38 28.9	+0.6
KECS	Kecovo	29.02	305	eP	P	17 38 28.9	+0.6
KECS	Kecovo	29.02	305	eP	P	17 38 28.9	+0.6
VSU	Vasula	29.13	327	eP	P	17 38 31.0	+1.8
VSU				pmax	pmax		
	comp=Z,30nm,1.0s						
VSU	Vasula	29.13	327	eP	P	17 38 31.0	+1.8
	comp=Z,30nm,1.0s						
LANS	Liptovska Anna	29.79	306	eP	P	17 38 34.1	-1.1
LANS	Liptovska Anna	29.79	306	eP	P	17 38 34.1	-1.1
LANS	Liptovska Anna	29.79	306	eP	P	17 38 34.1	-1.1
FINES	FINESS Array B	31.11	331	P	P	17 38 47.6	+0.9
	comp=Z,1.9nm,0.5s,baz=126,slow=9.1,SNR=19						
FINES	FINESS Array B	31.11	331	i P	P	17 38 48.4	+1.7
FINES				pmax	pmax		
	comp=Z,2.0nm,0.5s						
GERES	GERESS Array B	33.52	304	P	P	17 39 09.0	+0.8
	comp=Z,0.4nm,0.5s,baz=96,slow=11,SNR=5.4						
ARCES	ARCESS Array B	36.63	342	P	P	17 39 36.0	+1.4
	comp=Z,5.4nm,1.0s,baz=145,slow=9.6,SNR=5.5						
NB2	NORSAR Subarra	37.30	325	P	P	17 39 40.7	+0.3
	comp=Z,2.7nm,0.6s,baz=110,slow=8.6						
NB2	NORSAR Subarra	37.30	325	P	P	17 39 40.7	+0.3
	comp=Z,2.7nm,0.6s,SNR=8.0						
NOA	NORSAR Array B	37.30	325	P	P	17 39 40.8	+0.3
	comp=Z,4.7nm,0.7s,baz=114,slow=8.1,SNR=19						
ULN	Ulaanbaatar	37.50	57	eP	P	17 39 43.7	+1.3
ULN				pmax	pmax		
	comp=Z,2.0nm,0.9s						
ULN	Ulaanbaatar	37.50	57	eP	P	17 39 43.7	+1.3
	comp=Z,2.0nm,0.9s						
CHTO	Chiang Mai	40.64	105	eP	P	17 40 09.3	+0.5
CHTO				pmax	pmax		
	comp=Z,3.0nm,0.9s						
CHTO	Chiang Mai	40.64	105	eP	P	17 40 09.3	+0.5
	comp=Z,2.5nm,0.9s						
CHTO	Chiang Mai	40.64	105	eP	P	17 40 09.3	+0.5
	comp=Z,2.5nm,0.9s						
CMAR	Chiang Mai Arr	40.85	106	P	P	17 40 11.0	+0.5
	comp=Z,4.5nm,0.7s,baz=301,slow=8.6,SNR=40						
ESDC	Sonseca Array	47.27	293	P	P	17 41 00.1	-1.8
	comp=Z,0.1nm,0.3s,baz=66,slow=7.1,SNR=4.3						
TIXI	Tiksi	49.31	23	eP	P	17 41 17.6	+0.5
TIXI				pmax	pmax		
	comp=Z,2.0nm,0.9s						
TIXI	Tiksi	49.31	23	eP	P	17 41 17.6	+0.5
	comp=Z,2.0nm,0.9s						
KLR	Kul'dur	53.41	52	eP	P	17 41 49.2	+1.0
KLR	Kul'dur	53.41	52	eP	P	17 41 49.2	+1.0
KSAR	Wonju Array Be	54.77	67	P	P	17 41 59.4	+1.2
KSAR	Wonju Array Be	54.77	67	P	P	17 41 59.4	+1.2
KSAR	Wonju Array Be	54.77	67	P	P	17 41 59.4	+1.2
KSRS	Korea Array	54.79	67	P	P	17 41 59.4	+1.0
	comp=Z,1.6nm,0.7s,baz=286,slow=7.5,SNR=7.4						
TORD	Torodi Ar. Bea	54.95	259	P	P	17 41 58.6	-1.2
	comp=Z,0.4nm,0.4s,baz=59,slow=7.2,SNR=11						
BILL	Bilibino	62.53	24	eP	P	17 42 52.7	+0.9
BILL				pmax	pmax		
	comp=Z,2.0nm,0.9s						
BILL	Bilibino	62.53	24	eP	P	17 42 52.7	+0.9
	comp=Z,2.0nm,0.9s						
BILL	Bilibino	62.53	24	P	P	17 42 49.9	-2.0
	comp=Z,2.1nm,0.8s						
INK	Inuvik	74.44	4	P	P	17 44 06.8	+0.5
	comp=Z,1.9nm,0.8s,baz=0.4,slow=7.4,SNR=4.5						
ILAR	Eielson Array	76.54	10	P	P	17 44 19.6	+1.2
	comp=Z,0.6nm,1.0s,baz=14,slow=7.7,SNR=5.2						
YKA	Yellowknife Ar	80.39	356	P	P	17 44 38.8	-0.8
	comp=Z,0.6nm,0.7s,baz=0.4,slow=6.0,SNR=13						

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*ISCJB **03** 17:36:25.4±0.9, 33.°19S±0.°06×70.°23W±0.°05, h117km±7km, mb3.5/1, Error ellipse: s-maj=10.8km s-min=5.9km az=148.0*

*SJA **03** 17:36:25.5±1.3, 33.°13S×70.°26W, h112km±9km, ML3.2, MW3.3*

*GUC **03** 17:36:26.9±0.8, 33.°12S×70.°31W, h111km±5km, ML4.0*

ISC 03 17:36:23.5±2.4**, 33.°29S**±0.°09×**70.°26W**±0.°06**, h127**km±15km**, n25,** σ1.s**43**/36**, 4C-7D, Chile-Argentina border region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CLCH	Cerro Calan	0.26	246	⇓iP	Pn	17 36 42.6	+1.3
CLCH				i S	Sn	17 36 54.5	-0.1
CLCH				IAML		17 36 55.1	
	comp=E,6µm,0.7s						
FSR	Penalolen	0.29	230	eP	Pn	17 36 44.7	+3.4
FSR				eS	Sn	17 36 56.2	+1.4
PEL	Peldehue	0.39	292	eP	Pn	17 36 42.3	+0.6
PEL				i S	Sn	17 36 54.5	-1.0
PEL				IAML		17 36 55.5	
	comp=E,6µm,0.2s						
YECH	El Yeso	0.40	159	⇑iP	Pn	17 36 41.3	-0.8
YECH				i S	Sn	17 36 55.4	-0.8
ANTU	Antumapu	0.42	229	eP	Pn	17 36 43.6	+1.7
ANTU				i S	Sn	17 36 56.4	+0.6
ANTU				IAML		17 36 57.9	
	comp=E,4µm,0.5s						
RCDM	Rinconada Maip	0.50	247	⇑iP	Pn	17 36 40.1	-2.1
RCDM				i S	Sn	17 36 53.1	-3.4
RCDM				IAML		17 36 54.4	
	comp=E,19µm,0.1s						
ROCH	El Roble	0.71	297	⇑iP	Pn	17 36 44.7	+0.8
ROCH				i S	Sn	17 36 58.4	-0.9
ROCH				IAML		17 36 59.8	
	comp=N,5µm,0.1s						
ROC1	El Roble	0.71	296	eP	Pn	17 36 44.7	+0.8
ROC1				⇓eS	Sn	17 36 58.5	-0.9
IHA	Instituto Hidr	1.19	283	⇑iP	Pn	17 36 49.5	+1.5
IHA				i S	Sn	17 37 07.3	+0.7
ARCO	CERRO ARCO	1.20	68	eP	Pn	17 36 49.8	+1.5
ARCO				IAML		17 37 09.2	
	comp=Z,448nm,0.6s						
AUSP	Uspallata	1.29	35	eP	Pn	17 36 50.3	+0.8
AUSP				⇓eS	Sn	17 37 07.7	-1.5
ASAL	Salagasta	1.39	60	eP	Pn	17 36 51.6	+1.4
ASAL				⇓eS	Sn	17 37 10.6	+0.1
RTLS	Leoncito	1.70	29	eP	Pn	17 36 55.5	+1.5
RTLS				⇓eS	Sn	17 37 17.2	0.0
RTCV	Cerro Valdivia	2.03	46	⇓eP	Pn	17 36 59.0	+1.2
RTCV				eS	Sn	17 37 23.3	-0.8
SJA	San Juan	2.27	40	eS	Sn	17 37 27.8	-1.5
SJA				IAML		17 37 32.9	
	comp=Z,89nm,0.2s						
RTLL	Cerro Villicun	2.47	38	eP	Pn	17 37 04.5	+1.2
RTLL				eS	Sn	17 37 33.3	-0.5
ACAN	Cantantal	2.78	69	eP	Pn	17 37 08.9	+1.7
AMOG	MOGNA	2.78	33	eP	Pn	17 37 08.6	+1.2
AVFE	Valle Fertil	3.54	43	eP	Pn	17 37 17.7	+0.4
AVFE				⇓eS	Sn	17 37 57.4	-1.4
ACHE	Chepes	3.71	56	eP	Pn	17 37 20.6	+1.1
ACLC	CERRO LA CRUZ	4.78	37	eP	Pn	17 37 33.5	-0.3
ACLC				eS	Sn	17 38 25.1	-3.3
ACLC				IAML		17 38 34.6	
	comp=Z,19nm,0.4s						
VCA	Vinchina	4.87	22	IAML		17 38 39.6	
	comp=Z,31nm,0.3s						
CYA	Choya	6.17	40	IAML		17 39 49.1	
	comp=Z,6.0nm,0.8s						
TORD	Torodi Ar. Bea	82.57	69	P	P	17 48 25.1	-7.6
	comp=Z,0.3nm,0.4s,baz=251,slow=4.9,SNR=7.5						
ZALV	Zalesovo Beam	152.83	33	PKP	PKPbc	17 56 11.2	+6.3
	comp=Z,0.7nm,0.4s,baz=306,slow=2.0,SNR=4.6						

IDC 03 17:44:06.4±12.0**, 36.°94N**×**143.°73E, h0**km**, mb3.4**/2**, mb1 3.3**/3**, mb1mx3.1**/44**, mbtmp3.3**/3**, ML3.0**/1**, Error ellipse: s-maj=214.5km s-min=76.3km az=136.0, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MJAR	Matsushiro Arr	4.45	267	Pn	Pn	17 45 14.9	-0.2
	0.8nm,0.3s,baz=86,slow=15,SNR=9.0						
SONM	Songino Array	29.38	304	P	P	17 50 10.4	-0.8
	0.6nm,0.7s,baz=95,slow=7.3,SNR=4.3						
MKAR	Makanchi Array	45.73	303	P	P	17 52 29.7	+0.4
	0.2nm,0.7s,baz=72,slow=9.3,SNR=3.1						

IDC 03 17:51:00.6±1.1**, 16.°53N**×**46.°40W, h0**km**, mb3.7**/6**, mb1 4.0**/6**, mb1mx3.5**/38**, mbtmp3.7**/6**, MS3.3**/4**, Ms1 3.4**/4**, ms1mx2.9**/47**, Error ellipse: s-maj=29.8km s-min=27.7km az=16.0, Northern Mid-Atlantic Ridge**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SJG	San Juan	18.92	278	LR	LR	18 01 30.8	
	comp=Z,68nm,20.6s,baz=78,slow=33						
SDV	Santo Domingo	24.81	255	P	P	17 56 24.6	-0.2
	2.6nm,0.8s,baz=48,slow=16,SNR=2.8						
TKL	Tuckaleechee C	38.29	307	LR	LR	18 12 11.9	
	comp=Z,40nm,21.3s,baz=70,slow=33						
H10N3	ASCENSION HYDR	39.78	125	T	T	18 40 45.0	
	baz=307,slow=75,SNR=71						
H10N2	ASCENSION HYDR	39.78	125	T	T	18 40 45.3	
	baz=307,slow=75,SNR=79						
H10N1	ASCENSION HYDR	39.80	125	T	T	18 40 46.5	
	baz=307,slow=75,SNR=90						
H10S3	ASCENSION HYDR	40.34	127	T	T	18 41 27.6	
	baz=308,slow=75,SNR=11						
H10S1	ASCENSION HYDR	40.34	127	T	T	18 41 27.9	
	baz=308,slow=75,SNR=12						
H10S2	ASCENSION HYDR	40.36	127	T	T	18 41 28.3	
	baz=308,slow=75,SNR=11						
ESDC	Sonseca Array	43.44	49	LR	LR	18 12 41.0	
	comp=Z,49nm,21.6s,baz=25,slow=30						
CPUP	Villa Florida	43.91	194	P	P	17 59 08.9	-0.2
	4.1nm,0.9s,baz=8.2,slow=12,SNR=4.5						
TORD	Torodi Ar. Bea	46.53	87	P	P	17 59 30.4	+0.1
	0.2nm,0.5s,baz=286,slow=10,SNR=2.6						
TORD				LR	LR	18 16 54.1	
	comp=Z,53nm,18.3s,baz=350,slow=33						
PDAR	Pinedale Array	59.32	310	P	P	18 01 06.3	+1.6

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
	0.5nm,0.9s,baz=92,slow=4.6,SNR=3.7						
YKA	Yellowknife Ar	65.43	332	P	P	18 01 43.8	-1.2
	0.5nm,1.0s,baz=96,slow=6.3,SNR=3.5						
ILAR	Eielson Array	79.59	335	P	P	18 03 09.7	+0.3
	0.9nm,1.0s,baz=76,slow=4.1,SNR=5.6						

*IDC **03** 17:51:38.2±1.2, 13°.87N×93°.03E, h0km, mb3.7/8, mb1 3.8/9, mb1mx3.6/35, mbtmp3.7/9, ML3.5/1, Error ellipse: s-maj=32.6km s-min=25.4km az=52.0*
*ISCJB **03** 17:51:41.3±1.0, 13°.9N±0°.2×93°.2E±0°.1, h32km, mb3.7/8, Error ellipse: s-maj=22.7km s-min=18.2km az=163.4*
ISC 03 17:51:43.4±1.1, 14°.0N±0°.2×93°.2E±0°.1, h32km, n9, σ1s23/10, mb3.8/8, Andaman Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
CMAR	Chiang Mai Arr	7.09	50	Pn	Pn	17 53 26.4	+1.4
	0.2nm,0.3s,baz=240,slow=15,SNR=11						
CMAR				Sn	Sn	17 54 42.2	-2.3
	0.5nm,0.3s,baz=241,slow=33,SNR=6.1						
MKAR	Makanchi Array	33.97	347	P	P	17 58 24.2	+0.3
	0.6nm,0.6s,baz=161,slow=8.9,SNR=10						
SONM	Songino Array	35.49	15	P	P	17 58 38.4	+1.1
	0.7nm,1.0s,baz=204,slow=8.0,SNR=4.0						
ZALV	Zalesovo Beam	40.42	352	P	P	17 59 17.6	-0.8
	1.2nm,0.6s,baz=189,slow=8.2,SNR=7.5						
ASAR	Alice Springs	54.63	133	P	P	18 01 09.2	-0.1
	0.3nm,0.5s,baz=310,slow=7.0,SNR=7.5						
BRTR	Keskin Array B	57.85	308	P	P	18 01 31.9	-0.4
	0.7nm,0.7s,baz=106,slow=6.9,SNR=5.1						
GERES	GERESS Array B	72.71	317	P	P	18 03 08.5	+0.1
	0.4nm,0.6s,baz=77,slow=5.9,SNR=4.5						
TORD	Torodi Ar. Bea	88.31	283	P	P	18 04 31.6	-0.9
	0.6nm,0.7s,baz=99,slow=5.0,SNR=4.1						
INK	Inuvik	91.41	16	P	P	18 04 46.4	+0.5
	0.5nm,0.6s,baz=9.5,slow=6.1,SNR=3.3						

*IDC **03** 18:06:50.3±2.2, 43°.76N×105°.36W, h0km, mb1 3.5/3, mb1mx3.2/48, mbtmp3.3/3, ML3.2/3, Error ellipse: s-maj=57.2km s-min=8.5km az=149.0*
*ISCJB **03** 18:06:51.9±0.9, 43°.62N±0°.05×105°.38W±0°.10, h0km, Error ellipse: s-maj=11.1km s-min=5.4km az=150.8*
*NEIC **03** 18:06:52.8±0.9, 43°.69N×105°.36W, h0km, ML3.1, Error ellipse: s-maj=11.2km s-min=7.3km az=58.0, Suspected Mining explosion.*
NEIC 71 km [44 miles] SSE of Gillette.
ISC 03 18:06:49.6±0.9, 43°.78N±0°.04×105°.30W±0°.05, h0km, n21, σ1s86/25, Wyoming

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
K22A	Casper	1.44	219	ePg	Pb	18 07 17.4	0.0
K22A				eSg	Sg	18 07 21.0	-15
PHWY	Pilot Hill	2.48	183	ePn	Pb	18 07 33.8	-1.5
PHWY				eSn	Sn	18 08 00.7	-2.0
LAO	LASA Array	2.98	348	ePn	Pb	18 07 42.5	-1.0
LAO				eSn	Sg	18 08 26.0	+0.7
RLMT	Red Lodge	3.14	297	ePn	Pn	18 07 42.3	+1.8
RLMT				eSn	Sb	18 08 23.8	-1.5
PDAR	Pinedale Array	3.27	253	Pn	Pn	18 07 44.7	+2.4
	3.3nm,0.3s,baz=74,slow=18,SNR=55						
PDAR				Pg	Pg	18 07 53.2	+1.0
	10nm,0.3s,baz=67,slow=21,SNR=35						
PDAR				Lg	Lg	18 08 29.9	
	16nm,0.3s,baz=65,slow=25,SNR=15						
BW06	Boulder Array	3.27	253	ePn	Pn	18 07 44.0	+1.7
BW06				eSn	Sb	18 08 28.2	-0.9
OGNE	Ogallala	3.73	138	ePn	Pn	18 07 50.5	+2.0
LKWY	Lake	3.75	284	ePn	Pb	18 07 55.9	-1.0
H17A	Grant Village	3.85	281	ePn	Pn	18 07 52.5	+2.2
LOHW	Long Hollow	3.85	269	ePn	Pb	18 07 55.9	-2.6
FLWY	Flagg Ranch	3.91	276	ePn	Pn	18 07 53.1	+2.0
SNOW	Snow King Moun	3.97	267	ePn	Pb	18 07 57.3	-3.3
ISCO	Idaho Springs	3.99	183	ePn	Pn	18 07 54.6	+2.4
ISCO				eSn	Sn	18 08 38.1	-1.7
REDW	Red Top Meadow	4.05	266	ePn	Pn	18 07 56.4	+3.2
IMW	Indian Meadow	4.08	274	ePn	Pn	18 07 56.0	+2.5
O20A	White River Ci	4.25	212	ePn	Pn	18 07 56.9	+1.0
AHID	Auburn Hatcher	4.35	258	ePn	Pn	18 07 59.0	+1.8
PV04	Paradox Valley	6.03	208	ePn	Pn	18 08 23.0	+2.8
DUG	Dugway, Tooele	6.64	240	ePn	Pn	18 08 30.5	+1.9
	3.6nm,0.8s						
ULM	Lac du Bonnet	9.12	42	Pn	Pn	18 09 01.5	-0.9
	0.8nm,0.3s,baz=227,slow=11,SNR=8.3						
ULM				Lg	Lg	18 11 31.3	
	0.4nm,0.3s,baz=142,slow=19,SNR=2.2						
YKA	Yellowknife Ar	19.52	347	P	Pn	18 11 19.9	+0.5
	0.1nm,0.3s,baz=156,slow=12,SNR=4.2						

IDC 03 18:06:51.3±2.9, 38°.13N×144°.31E, h0km, mb3.3/3, mb1 3.4/4, mb1mx3.1/48, mbtmp3.2/4, ML2.9/1, Error ellipse: s-maj=72.1km s-min=31.2km az=62.0, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
MJAR	Matsushiro Arr	5.11	254	Pn	Pn	18 08 08.7	-0.4
	0.5nm,0.3s,baz=52,slow=10,SNR=6.4						
SONM	Songino Array	29.12	302	P	P	18 12 54.3	+0.4
	0.2nm,0.5s,baz=94,slow=8.6,SNR=3.0						
MKAR	Makanchi Array	45.49	302	P	P	18 15 11.8	-0.5
	0.3nm,0.9s,baz=86,slow=10,SNR=2.9						
WRA	Warramunga Arr	58.52	191	P	P	18 16 49.4	0.0
	0.2nm,0.5s,baz=8.9,slow=7.1,SNR=3.0						

*CSEM **03** 18:07:21.4, 38°.17N×15°.20E, h9km, ML2.3/13*
ROM 03 18:07:21.4±0.1, 38°.17N×15°.20E, h9km, Ml2.3/13, Error ellipse: s-maj=1.2km s-min=0.9km az=113.0, Sicily

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
MILZ	Milazzo	0.10	15	Pg	Pg	18 07 24.3	+0.5
MILZ				Sg	Sg	18 07 26.3	+0.7
	233nm,0.4s						
MILZ	Milazzo	0.10	15	Pg	Pg	18 07 24.3	+0.5
MILZ				Sg	Sg	18 07 26.3	+0.7
	233nm,0.4s						
MCSR	Castroreale	0.12	160	Pg	Pg	18 07 24.6	+0.4
MCSR				Sg	Sg	18 07 26.9	+0.8
MCSR	Castroreale	0.12	160	Pg	Pg	18 07 24.6	+0.4
MCSR				Sg	Sg	18 07 26.9	+0.8
MPNC	Port Mandanici	0.12	103	Pg	Pg	18 07 25.0	+0.8
MPNC				Sg	Sg	18 07 27.5	+1.3
	2µm,0.2s						
MPNC	Port Mandanici	0.12	103	Pg	Pg	18 07 25.0	+0.8
MPNC				Sg	Sg	18 07 27.5	+1.3
	2µm,0.2s						
NOV	Novara	0.15	198	Pg	Pg	18 07 25.1	+0.4
NOV				Sg	Sg	18 07 27.9	+0.9
	820nm,0.2s						
NOV	Novara	0.15	198	Pg	Pg	18 07 25.1	+0.4
NOV				Sg	Sg	18 07 27.9	+0.9
	820nm,0.2s						
MMME	Mongiuffi-Meli	0.24	169	Pg	Pg	18 07 26.9	+0.6
MMME				Sg	Sg	18 07 30.9	+1.3
	505nm,0.3s						
MMME	Mongiuffi-Meli	0.24	169	Pg	Pg	18 07 26.9	+0.6
MMME				Sg	Sg	18 07 30.9	+1.3
	505nm,0.3s						
MSRU	Castanea	0.26	70	Pg	Pb	18 07 27.5	-0.8
MSRU				Sg	Sb	18 07 31.8	-1.2
	350nm,0.2s						
MSRU	Castanea	0.26	70	Pg	Pb	18 07 27.5	-0.8
MSRU				Sg	Sb	18 07 31.8	-1.2
	350nm,0.2s						
LLI	Lipari	0.33	324	Pg	Pb	18 07 28.9	-0.7
	941nm,0.5s						
LLI	Lipari	0.33	324	Pg	Pb	18 07 28.9	-0.7
	941nm,0.5s						
MSCL	Scilla	0.47	83	Pg	Pg	18 07 30.9	+0.3
	242nm,0.5s						
MSCL	Scilla	0.47	83	Pg	Pg	18 07 30.9	+0.3
	242nm,0.5s						
CEL	Celeste	0.56	81	Pg	Pg	18 07 32.2	0.0
CEL	Celeste	0.56	81	Pg	Pg	18 07 32.2	0.0
IFIL	Filicudi I Eol	0.63	308	Pg	Pg	18 07 33.4	-0.2
IFIL				Sg	Sb	18 07 44.1	+0.5
	287nm,0.4s						
IFIL	Filicudi I Eol	0.63	308	Pg	Pg	18 07 33.4	-0.2
IFIL				Sg	Sb	18 07 44.1	+0.5
	287nm,0.4s						
MPAZ	Palizzi	0.68	109	Pg	Pg	18 07 34.5	+0.1
	78nm,0.4s						
MPAZ	Palizzi	0.68	109	Pg	Pg	18 07 34.5	+0.1
	78nm,0.4s						
SOI	Samo	0.68	98	Pg	Pg	18 07 34.5	-0.1
SOI				Sg	Sb	18 07 44.5	-0.6
	49nm,0.5s						
SOI	Samo	0.68	98	Pg	Pg	18 07 34.5	-0.1
SOI				Sg	Sb	18 07 44.5	-0.6
	49nm,0.5s						
JOPP	Joppolo	0.69	51	Pg	Pb	18 07 35.3	-0.4
	37nm,0.3s						
JOPP	Joppolo	0.69	51	Pg	Pb	18 07 35.3	-0.4
	37nm,0.3s						
IACL	Alicudi	0.75	299	Pg	Pg	18 07 35.3	-0.6
	203nm,0.3s						
IACL	Alicudi	0.75	299	Pg	Pg	18 07 35.3	-0.6
	203nm,0.3s						
PLLN	Pollina	0.85	258	Pg	Pg	18 07 37.7	-0.1
	61nm,0.4s						
PLLN	Pollina	0.85	258	Pg	Pg	18 07 37.7	-0.1
	61nm,0.4s						
HLNI	Lentini	0.86	197	Pg	Pb	18 07 38.3	-0.3
HLNI	Lentini	0.86	197	Pg	Pb	18 07 38.3	-0.3
HCRL	Carlentini	0.90	188	Pg	Pb	18 07 39.1	-0.1
HCRL	Carlentini	0.90	188	Pg	Pb	18 07 39.1	-0.1
AGST	Augusta-Monte	0.92	179	Pg	Pb	18 07 39.3	-0.2
AGST	Augusta-Monte	0.92	179	Pg	Pb	18 07 39.3	-0.2
PLAC	Placanica	1.01	74	Pg	Pg	18 07 41.0	+0.1
PLAC	Placanica	1.01	74	Pg	Pg	18 07 41.0	+0.1
SSY	Sortino	1.02	186	Pg	Pg	18 07 41.0	-0.1
SSY	Sortino	1.02	186	Pg	Pg	18 07 41.0	-0.1
HAVL	Avola	1.21	183	Pg	Pb	18 07 44.2	-0.4
HAVL	Avola	1.21	183	Pg	Pb	18 07 44.2	-0.4
ALJA	Alia	1.22	250	Pg	Pb	18 07 44.6	-0.1
	24nm,0.8s						
ALJA	Alia	1.22	250	Pg	Pb	18 07 44.6	-0.1
	24nm,0.8s						

*CSEM **03** 18:07:51.7, 38°.17N×15°.19E, h9km, ML1.9/9*
ROM 03 18:07:51.7±0.1, 38°.17N×15°.19E, h9km±1km, Ml1.9/9, Error ellipse: s-maj=1.7km s-min=1.0km az=104.0, Sicily

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
MILZ	Milazzo	0.11	20	Pg	Pg	18 07 54.7	+0.4
MILZ				Sg	Sg	18 07 56.7	+0.6
	233nm,0.4s						
MILZ	Milazzo	0.11	20	Pg	Pg	18 07 54.7	+0.4
MILZ				Sg	Sg	18 07 56.7	+0.6
	233nm,0.4s						
MCSR	Castroreale	0.12	155	Pg	Pg	18 07 54.9	+0.3
MCSR				Sg	Sg	18 07 57.4	+0.8
MCSR	Castroreale	0.12	155	Pg	Pg	18 07 54.9	+0.3
MCSR				Sg	Sg	18 07 57.4	+0.8
MPNC	Port Mandanici	0.13	102	Pg	Pg	18 07 55.5	+0.8
MPNC				Sg	Sg	18 07 58.1	+1.2
	220nm,0.2s						
MPNC	Port Mandanici	0.13	102	Pg	Pg	18 07 55.5	+0.8
MPNC				Sg	Sg	18 07 58.1	+1.2
	220nm,0.2s						
NOV	Novara	0.15	195	Pg	Pg	18 07 55.5	+0.5
NOV				Sg	Sg	18 07 58.0	+0.7
	273nm,0.2s						
NOV	Novara	0.15	195	Pg	Pg	18 07 55.5	+0.5
NOV				Sg	Sg	18 07 58.0	+0.7
	273nm,0.2s						
MMME	Mongiuffi-Meli	0.24	167	Pg	Pg	18 07 57.4	+0.7
MMME				Sg	Sg	18 08 01.7	+1.7
	131nm,0.3s						
MMME	Mongiuffi-Meli	0.24	167	Pg	Pg	18 07 57.4	+0.7
MMME				Sg	Sg	18 08 01.7	+1.7
	131nm,0.3s						
MSRU	Castanea	0.27	70	Pg	Pg	18 07 57.8	+0.6
MSRU				Sg	Sb	18 08 02.4	-1.1
	165nm,0.2s						
MSRU	Castanea	0.27	70	Pg	Pg	18 07 57.8	+0.6
MSRU				Sg	Sb	18 08 02.4	-1.1
	165nm,0.2s						
MSCL	Scilla	0.48	83	Pg	Pg	18 08 01.5	+0.4
	40nm,0.5s						
MSCL	Scilla	0.48	83	Pg	Pg	18 08 01.5	+0.4
	40nm,0.5s						
IFIL	Filicudi I Eol	0.62	309	Pg	Pb	18 08 04.8	0.0
	95nm,0.4s						
IFIL	Filicudi I Eol	0.62	309	Pg	Pb	18 08 04.8	0.0
	95nm,0.4s						
MPAZ	Palizzi	0.68	108	Pg	Pg	18 08 05.0	+0.1
	78nm,0.4s						
MPAZ	Palizzi	0.68	108	Pg	Pg	18 08 05.0	+0.1
	78nm,0.4s						
SOI	Samo	0.69	98	Pg	Pb	18 08 05.9	0.0
	49nm,0.5s						
SOI	Samo	0.69	98	Pg	Pb	18 08 05.9	0.0
	49nm,0.5s						

IDC 03 18:21:11.5±16.0, 6°.22S×119°.24E, h0km, mb3.3/3, mb1 3.6/3, mb1mx3.2/32, mbtmp3.4/3, Error ellipse: s-maj=310.8km s-min=203.3km az=14.0, Flores Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
WRA	Warramunga Arr	20.04	134	P	P	18 25 47.0	+0.7
	0.7nm,0.9s,baz=308,slow=12,SNR=8.6						
ASAR	Alice Springs	22.36	142	P	P	18 26 11.2	-0.3
	0.4nm,0.3s,baz=321,slow=10,SNR=24						
STKA	Stephens Creek	32.99	144	P	P	18 27 48.1	-0.2
	1.3nm,0.8s,baz=311,slow=11,SNR=2.9						

*IDC **03** 18:28:19.5±0.5, 13°.21N×120°.11E, h0km, mb4.4/29, mb1 4.5/29, mb1mx4.3/45, mbtmp4.4/29, MS3.4/15, Ms1 3.5/15, ms1mx3.3/43, Error ellipse: s-maj=19.8km s-min=11.4km az=73.0*
*MAN **03** 18:28:23, 13°.11N×119°.89E, h50km, mb5.4, ML4.4, MS4.7*
*BJI **03** 18:28:24.4, 12°.99N×120°.12E, h63km, mb4.5/40, mB4.8/20, Ms4.4/19, Ms7 4.2/14*
*ISCJB **03** 18:28:25.7±0.4, 13°.14N±0°.03×120°.05E±0°.03, h59km±4km, mb4.6/56, MS3.5/17, Error ellipse: s-maj=5.4km s-min=4.8km az=150.7*
*NEIC **03** 18:28:26.0±1.5, 13°.17N×119°.99E, h50km±14km, mb4.8/18, Error ellipse: s-maj=10.3km s-min=5.4km az=64.0*
NEIC Felt at Manila, Luzon.
*BKK **03** 18:28:27.2±0.6, 14°N±5°×12°0E±°, h10km, M4.8/30, mB5.5/4, mb4.2/30, MLv5.1/1, Mw(mB)5.0/4*
*DJA **03** 18:28:29.9±0.5, 14°N±5°×11°9E±°, h10km, M4.5/24, mb4.4/24, mB5.4/4, mb4.3/1, mB6.0/1, Mw(mB)4.8/4, Mw(mB)5.6/1*
ISC 03 18:28:27.2±0.6, 13°.09N±0°.03×120°.01E±0°.04, h57km±5km, n148, σ1s92/153, mb4.5/56, MS3.5/18, 2C-7D, Mindoro

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
PGP	Puerto Galera	1.01	66	⇓eP	Pn	18 28 42.7	-2.6
PGP				i S	Sn	18 28 58.0	-0.7
BUSP	Coron	1.10	170	eP	Pn	18 28 44.2	-2.3
BUSP				eS	Sn	18 28 58.6	-2.2
SJMP	San Jose	1.26	120	eP	Pn	18 28 47.1	-1.4
SJMP				eS	Sn	18 29 04.2	-0.3
TGY	Tagaytay City	1.35	42	⇑iP	Pn	18 28 48.3	-1.6
TGY				i S	Sn	18 29 07.2	+0.3
LQP	Lukban	1.80	56	⇓eP	Pn	18 28 53.9	-2.3
BOAC	Boac	1.83	78	eP	Pn	18 28 55.4	-0.9
ENPP	El Nido	1.96	197	eP	Pn	18 28 55.4	-2.7
CUYO	Cuyo Island	2.44	156	eP	Pn	18 29 03.1	-1.6
GQP	Guinayangan	2.51	71	⇓eP	Pn	18 29 04.4	-1.2
AUQP	San Andres	2.61	85	eP	Pn	18 29 17.2	+10
RCP	Roxas	3.08	119	⇑eP	Pn	18 29 14.4	+1.0
BCPH	Baguio City Da	3.32	10	⇓eP	Pn	18 29 14.1	-2.7
GUIM	Jordan	3.52	134	eP	Pn	18 29 19.5	0.0
PPR	Puerto Princes	3.53	201	⇓iP	Sn	18 29 56.9	-3.1
MYLDM	Lahad Datu	8.00	191	ePn	Pn	18 30 20.5	-0.4
DAV	Davao City (W)	8.12	137	LR	LR	18 34 21.3	
	comp=Z,606nm,20.2s,baz=344,slow=44						
QIZ	Qiongzhong	11.41	302	P	Pn	18 31 07.7	+0.2
QIZ				PP	PnPn	18 31 19.3	+3.7
QIZ				sP		18 31 26.9	
QIZ				S	Sn	18 33 14.0	+0.5
QIZ				SS	SnSn	18 33 32.3	+6.2
QIZ				pmax	pmax		
	comp=Z,12nm,1.3s						
STKI	Sintang	15.46	214	P	P	18 32 08.1	+2.9
	20nm,1.4s,20nm,1.4s,7µm7µm						
TTSI	Tana Toraja	16.03	181	P	P	18 32 22.5	+11
	22nm,1.2s						
SANI	Sanana	16.17	158	P	P	18 32 21.4	+8.2
BBKI	Banjar Baru	17.23	198	P	P	18 32 34.4	+10
	54nm,1.4s						
SRAK	Srakaew	17.49	275	P	P	18 32 35.1	+7.4
CHAI	Chaiyaphum	17.67	281	P	P	18 32 32.0	+2.3
	4.1nm,0.9s						
SWI	Sorong	17.80	140	P	P	18 32 45.6	+14
	13nm,1.4s						
WHN	Wuhan	18.14	344	P	Pn	18 32 37.4	+2.4
NAYO	Nakonayok	18.19	276	P	Pn	18 32 37.5	+1.6
	127nm,0.8s						
GYA	Guiyang	18.26	319	P	Pn	18 32 37.8	+1.0
GYA				pP	pP	18 32 49.6	+0.8
GYA				PP	sP	18 32 56.0	-0.1
GYA				S	Sn	18 35 56.2	-3.9
GYA				SS	SnSn	18 36 22.0	+7.2
GYA				PcP	PcP	18 37 08.4	+1.7
GYA				pmax	pmax		
	comp=Z,10.0nm,0.8s						
MSAI	Masohi	18.58	151	P	Pn	18 32 48.0	+7.4
LOEI	Loei	18.60	286	P	P	18 32 36.4	-3.6
	6.3nm,1.7s,4µm						
PBKT	Sadao Pong	18.72	283	P	P	18 32 41.9	+0.6
	13nm,1.3s						
NJ2	Nanjing	18.90	357	eP	Pn	18 32 46.9	+2.7
NJ2				pmax	pmax		
	comp=Z,20nm,0.8s						
PHIT	Phitsanulok	19.34	285	P	Pn	18 32 51.1	+1.5
	14nm,0.9s						
NANT	Nan	19.40	289	P	Pn	18 32 50.2	-0.2
	3.7nm,1.1s						
ENH	Enshi	19.67	332	eP	P	18 32 49.1	-2.5
	8.9nm,1.0s						
PHRA	Phrae	19.77	288	P	Pn	18 32 54.3	-0.4
	96nm,1.1s						
PHET	Kaeng Krachan	19.85	272	P	Pn	18 32 56.3	+0.6
	4.0nm,0.9s						
SKLT	Songkhla	19.96	255	P	Pn	18 32 57.6	+0.6
	24nm,1.1s						
SUKH	Sukhothai	20.13	285	P	Pn	18 32 58.8	-0.1
	3.2nm,1.3s						
KMI	Kunming	20.20	309	P	Pn	18 32 59.3	-0.7
KMI				pP	sP	18 33 15.4	-2.2
KMI				S	S	18 36 36.3	-5.2
KMI				pmax	pmax		
	comp=Z,7.0nm,0.7s						
KMI				LR	LR		
	comp=N,160nm,9.2s						
KMI				LR	LR		
	comp=E,200nm,12.0s						
LAMP	Lampang	20.32	288	P	Pn	18 33 01.1	-0.2
	5.9nm,0.8s						
SRDT	SRDT	20.33	276	P	Pn	18 33 02.1	+0.8
	47nm,1.3s,2µm						
PPBI	Pangkal Pinang	20.47	223	P	Pn	18 33 11.5	+8.5
	25nm,1.0s						
IPM	Ipoh	20.60	247	eP	P	18 33 01.1	-0.7
	14nm,1.0s						
KULM	Kulim	20.61	250	eP	P	18 32 59.7	-2.1
	35nm,1.3s						
TRTT	Trang	20.64	257	P	Pn	18 33 04.0	-1.0
	26nm,1.3s						
UMPA	Umpang Tak	20.69	281	P	Pn	18 33 05.7	+0.1
	6.2nm,1.0s						
KHLT	Khaolaem Dam	20.85	277	P	P	18 33 06.0	+1.5
	6.2nm,1.4s						
CM01	Chiang Mai Arr	20.93	287	eP	P	18 33 04.3	-1.0
CM31	Chiang Mai Arr	20.95	287	eP	P	18 33 06.3	+0.8
CMAR	Chiang Mai Arr	20.95	287	P	P	18 33 05.9	+0.3
	8.7nm,0.8s,baz=98,slow=8.9,SNR=88						
CMAR				PcP	PcP	18 37 13.9	+2.4
	1.4nm,0.8s,baz=52,slow=0.8,SNR=8.9						
CMAR				LR	LR	18 41 31.0	
	comp=Z,81nm,18.3s,baz=126,slow=38						
KRAB	Krabi	21.01	259	P	P	18 33 07.7	+1.5
	26nm,0.9s						
CMMT	Chiang Mai	21.02	288	P	P	18 33 06.6	+0.3
	8.7nm,0.9s,489nm						
CHTO	Chiang Mai	21.02	288	P	P	18 33 06.7	+0.3
	35nm,1.1s						
CHTO	Chiang Mai	21.02	288	eP	P	18 33 04.8	-1.5
	6.3nm,0.9s						
CMAI	Chiengmai2	21.20	291	P	P	18 33 08.9	+0.5
	33nm,1.4s,7µm						
SURT	Suratani	21.22	261	P	P	18 33 09.8	+1.4
	8.2nm,1.1s						
XAN	Xi'an	23.16	336	P	P	18 33 26.9	-2.0
XAN				pP	pP	18 33 45.5	+3.5
XAN				pmax	pmax		
	comp=Z,9.0nm,0.9s						
XAN				pmax	pmax		
	comp=Z,120nm,4.5s						
CD2	Chengdu	23.21	322	P	P	18 33 28.3	-1.1
CD2				pP	pP	18 33 42.4	-0.2
CD2				sP	sP	18 33 50.0	+0.3
CD2				S	S	18 37 36.8	-0.3
CD2				sS	sS	18 38 01.1	+0.4
CD2				SS	SnSn	18 38 23.5	+7.7
CD2				pmax	pmax		
	comp=Z,50nm,1.0s						
CD2				pmax	pmax		
	comp=Z,300nm,5.5s						
CD2				LR	LR		
	comp=E,360nm,7.2s						
CD2				LR	LR		
	comp=Z,330nm,12.6s						
PSI	Prapat	23.22	246	P	P	18 33 29.6	-0.1
	13nm,1.1s,baz=69,slow=11,SNR=10						
PSI	Prapat	23.22	246	eP	P	18 33 29.0	-0.8
	19nm,1.1s						
TSI	Tuntungan	23.23	248	P	P	18 33 35.7	+6.0
	77nm,1.2s						
TNG	Tangerang	23.29	216	P	P	18 33 41.9	+12
	1µm,0.4s						
TNG				P	pP	18 33 42.0	-1.5
	2µm,0.4s						
BATI	Baumata	23.43	171	P	P	18 33 30.8	-0.7
	28nm,0.9s,baz=288,slow=20,SNR=4.4						
MNSI	Mandailing Nat	23.64	240	P	P	18 33 45.9	+12
KCSI	Kotacane, Aceh	23.94	249	P	P	18 33 40.5	+4.2
	13nm,1.3s						
GUMO	Guam	24.20	86	LR	LR	18 44 52.8	
	comp=Z,37nm,18.1s,baz=258,slow=41						
KSAR	Wonju Array Be	25.25	15	P	P	18 33 45.4	-2.6
KSRS	Korea Array	25.27	15	P	P	18 33 45.4	-2.7
	1.7nm,0.9s,baz=196,slow=11,SNR=7.4						
KSRS				LR	LR	18 44 57.2	
	comp=Z,104nm,19.4s,baz=211,slow=40						
DL2	Dalian	25.75	3	P	P	18 33 51.0	-1.4
DL2				pmax	pmax		
	comp=Z,48nm,0.8s						
LZH	Lanzhou	27.12	330	eP	P	18 34 07.0	+1.9
LZH				pP	pP	18 34 20.6	+1.3
LZH				sP	sP	18 34 27.1	+0.9
LZH				pmax	pmax		
	comp=Z,17nm,1.0s						
MJAR	Matsushiro Arr	28.50	32	LR	LR	18 45 16.4	
	comp=Z,53nm,22.0s,baz=190,slow=36						
HHC	Hu-ho-hao-te	28.62	347	eP	P	18 34 19.5	+1.2
HHC				pP	sP	18 34 37.3	-2.2
HHC				PP	PnPn	18 35 15.1	+4.0
HHC				S	S	18 39 00.7	-2.2
HHC				sS	sS	18 39 28.4	+1.1
HHC				pmax	pmax		
	comp=Z,21nm,1.1s						
HHC				pmax	pmax		
	comp=Z,74nm,6.2s						
HHC				LR	LR		
	comp=N,250nm,14.8s						
HHC				LR	LR		
	comp=E,180nm,14.4s						
CN2	Changchun	30.96	8	eP	P	18 34 32.0	-6.8
GTA	Gaotai	31.70	329	eP	P	18 34 45.3	-0.3
GTA				pP	pP	18 35 00.6	+0.6
GTA				sP	sP	18 35 07.4	+0.6
GTA				PcP	PcP	18 37 38.0	+1.7
GTA				S	S	18 39 50.0	-1.4
GTA				sS	sS	18 40 16.2	+0.4
GTA				SS	SnSn	18 41 44.5	+1.8

Code	Station Name	Δ°	AZ°	Op	ISC	Time	Res
GTA				pmax	pmax		
	comp=Z,120nm,4.2s						
GTA				LR	LR		
	comp=N,190nm,13.3s						
GTA				LR	LR		
	comp=E,220nm,13.8s						
GTA				LR	LR		
	comp=Z,310nm,15.2s						
MDJ	Mudanjiang	32.47	13	P	P	18 34 53.0	+0.9
MDJ				pP	pP	18 35 07.6	+1.1
MDJ				sP	sP	18 35 15.0	+1.7
MDJ				S	S	18 40 07.7	+4.9
MDJ				pmax	pmax		
	comp=Z,10.0nm,1.6s						
MDJ				pmax	pmax		
	comp=Z,120nm,3.2s						
USRK	Ussuriysk Ar.	32.66	16	P	P	18 34 51.9	-1.8
	1.8nm,0.6s,baz=224,slow=10,SNR=3.5						
TAPN	Taplejung	33.34	300	eP	P	18 35 00.0	-0.3
	11nm,0.6s						
ODAN	Odare	33.46	299	eP	P	18 35 01.1	-0.2
RAMN	Ramite	34.16	299	eP	P	18 35 06.8	-0.6
	37nm,1.1s						
GUN	Gumba	35.05	300	eP	P	18 35 15.1	-0.1
PKIN	Phulchoki	35.36	299	eP	P	18 35 17.3	-0.5
KKN	Kakani	35.52	300	eP	P	18 35 18.2	-0.9
	26nm,1.0s						
DMN	Daman	35.62	299	eP	P	18 35 19.5	-0.5
	36nm,1.0s						
WRAB	Tennant Creek	35.73	156	eP	P	18 35 20.1	-0.5
	16nm,0.9s						
WRA	Warramunga Arr	35.73	156	P	P	18 35 21.0	+0.3
	3.0nm,0.6s,baz=340,slow=9.2,SNR=34						
WB2	Warramunga Arr	35.74	156	eP	P	18 35 20.9	+0.2
	27nm,1.1s						
GKN	Gorkha	36.13	300	eP	P	18 35 23.8	-0.4
ULN	Ulaanbaatar	36.31	345	eP	P	18 35 24.6	-0.9
	12nm,1.5s						
SONM	Songino Array	36.45	345	P	P	18 35 26.0	-0.7
	3.6nm,0.8s,baz=161,slow=10,SNR=40						
SONM				PcP	PcP	18 37 50.6	+0.9
	1.9nm,0.9s,baz=147,slow=1.0,SNR=6.1						
SONA1	Songino Array	36.46	345	eP	P	18 35 25.6	-1.1
SONA1				ePcP	PcP	18 37 50.3	+0.6
KOLN	Koldanda	36.95	299	eP	P	18 35 30.6	-0.6
	27nm,1.0s						
KLR	Kul'dur	37.31	13	P	P	18 35 32.5	-1.2
	3.1nm,0.9s,baz=233,slow=8.1,SNR=13						
KLR				LR	LR	18 50 58.7	
	comp=Z,87nm,19.9s,baz=304,slow=37						
PYUN	Piuthan	37.55	299	eP	P	18 35 35.6	-0.8
	86nm,1.1s						
AS31	Alice Springs	38.98	160	eP	P	18 35 49.5	+1.4
	5.6nm,0.9s						
ASAR	Alice Springs	38.98	160	P	P	18 35 49.3	+1.2
	2.1nm,0.3s,baz=339,slow=7.4,SNR=145						
ASAR				LR	LR	18 54 03.9	
	comp=Z,54nm,19.0s,baz=237,slow=40						
AS01	Alice Springs	39.00	159	eP	P	18 35 49.2	+1.0
HYB	Hyderabad	40.17	282	iP	P	18 35 59.0	+0.8
TLY	Talaya	40.69	344	P	P	18 36 01.4	-0.7
	5.3nm,0.6s,baz=155,slow=5.7,SNR=3.6						
WMQ	Urumqi	41.29	324	P	P	18 36 08.1	+1.0
WMQ				pP	pP	18 36 22.1	+0.2
WMQ				sP	sP	18 36 30.5	+1.9
WMQ				PP	PnPn	18 37 46.5	-1.8
WMQ				S	S	18 42 18.2	+0.9
WMQ				SS	SS	18 45 16.5	-6.1
WMQ				pmax	pmax		
	comp=Z,3.0nm,0.6s						
WMQ				pmax	pmax		
	comp=Z,38nm,4.6s						
MK01	Makanchi Array	46.10	324	eP	P	18 36 45.5	-0.2
MKAR	Makanchi Array	46.12	324	P	P	18 36 45.9	+0.1
	10nm,0.9s,baz=130,slow=9.0,SNR=84						
MKAR				PcP	PcP	18 38 21.9	+0.7
	2.2nm,0.7s,baz=119,slow=4.3,SNR=5.5						
MKAR				LR	LR	18 56 57.3	
	comp=Z,123nm,18.4s,baz=114,slow=37						
MAKZ	Makanchi	46.31	324	eP	P	18 36 47.2	-0.1
	26nm,1.5s						
KSH	Kashi	46.80	312	eP	P	18 36 54.3	+2.9
KSH				esP	sP	18 37 16.7	+3.6
KSH				S	S	18 43 40.5	+2.7
KSH				pmax	pmax		
	comp=Z,120nm,4.5s						
KSH				LR	LR		
	comp=N,140nm,6.1s						
KSH				LR	LR		
	comp=E,120nm,5.2s						
KSH				LR	LR		
	comp=Z,170nm,4.9s						
AAK	Ala-Archa	49.02	316	P	P	18 37 07.4	-1.2
	2.9nm,0.8s,baz=127,slow=7.7,SNR=6.7						
STKA	Stephens Creek	49.27	156	P	P	18 37 10.9	+0.6
	3.4nm,0.8s,baz=331,slow=5.8,SNR=5.6						
ZAA0	Zalesovo Array	49.29	333	eP	P	18 37 09.1	-1.1
ZALV	Zalesovo Beam	49.29	333	P	P	18 37 09.5	-0.7
	3.2nm,0.9s,baz=116,slow=6.8,SNR=14						
ZALV				PcP	PcP	18 38 31.9	-0.4
	1.1nm,0.7s,baz=147,slow=2.9,SNR=2.4						
ZALV				LR	LR	18 58 17.4	
	comp=Z,48nm,18.8s,baz=262,slow=36						
KURBB	Kurchatov Arra	50.32	327	P	P	18 37 18.4	+0.3
	14nm,0.9s,baz=120,slow=8.5,SNR=91						
KURK	Kurchatov	50.32	327	eP	P	18 37 17.6	-0.5
	36nm,0.8s						
MA2	Magadan	51.69	19	LR	LR	19 00 22.4	
	comp=Z,31nm,19.2s,baz=245,slow=37						
KKAR	Karatay Array	51.92	315	eP	P	18 37 30.2	-0.1
VOSK	Vostochnaya	55.44	326	eP	P	18 37 55.3	-0.5
	8.1nm,0.8s						
BVAR	Borovoye Array	55.90	326	P	P	18 37 59.2	+0.1
	3.5nm,0.6s,baz=116,slow=10,SNR=22						
BRVK	Borovoye	55.97	326	eP	P	18 37 58.0	-1.6
	24nm,1.1s						
TIXI	Tiksi	58.77	3	eP	P	18 38 17.4	-1.6
	11nm,1.0s						
NRIK	Noril'sk	59.85	347	P	P	18 38 26.2	-0.3
	11nm,0.8s,baz=133,slow=5.0,SNR=11						
NRIK				LR	LR	19 07 25.3	
	comp=Z,55nm,19.7s,baz=288,slow=39						
GEYT	Alibeck	59.95	306	P	P	18 38 28.8	+1.0
	6.3nm,0.8s,baz=155,slow=4.9,SNR=19						
GEYT				LR	LR	19 07 57.4	
	comp=Z,38nm,18.6s,baz=165,slow=40						
ABKAR	Akbulak array	60.75	319	eP	P	18 38 31.9	-1.1
DGRG	David-gareji	69.97	310	P	P	18 39 33.9	+1.0
GNI	Garni	70.45	308	P	P	18 39 37.9	+1.9
	14nm,1.1s,baz=254,slow=1.8,SNR=5.8						
GNI	Garni	70.45	308	eP	P	18 39 33.1	-2.9
	19nm,1.1s						
RAYN	Ar Rayn	70.83	291	eP	P	18 39 37.1	-1.3
	16nm,1.3s						
KBZ	Khabaz	71.78	312	P	P	18 39 44.1	+0.4
	7.3nm,1.0s,baz=131,slow=5.5,SNR=6.4						
KIV	Kislovodsk	71.93	312	eP	P	18 39 44.9	+0.1
	18nm,0.9s						
BRTR	Keskin Array B	78.99	308	P	P	18 40 25.4	0.0
	0.9nm,0.8s,baz=108,slow=5.4,SNR=7.0						
BRTR				LR	LR	19 20 16.8	
	comp=Z,14nm,18.1s,baz=336,slow=40						
ARCES	ARCESS Array B	79.41	339	P	P	18 40 26.9	+0.1
	8.2nm,1.1s,baz=57,slow=4.5,SNR=8.4						
ARCES				LR	LR	19 17 11.1	
	comp=Z,17nm,20.0s,baz=149,slow=37						
BR231	Keskin MP Arra	79.64	309	eP	P	18 40 25.5	-3.3
FINES	FINESS Array B	80.48	331	P	P	18 40 32.0	-0.8
	3.6nm,0.8s,baz=19,slow=6.5,SNR=6.8						
AKASG	Malin Array Be	80.49	320	P	P	18 40 31.5	-1.6
	0.3nm,0.4s,baz=71,slow=4.9,SNR=5.6						
KMBO	Kilima Mbogo	83.19	267	P	P	18 40 48.0	-0.3
	1.0nm,0.4s,baz=53,slow=5.7,SNR=9.6						
BURAR	Bucovina Array	83.64	317	⇓iP	P	18 40 50.0	+0.2
BUR08	Bucovina Ar. S	83.65	317	eP	P	18 40 49.9	+0.1
KWP	Kalwaria Pacla	84.81	320	eP	P	18 40 55.9	+0.3
DRGR		85.49	317	⇓iP	P	18 40 59.0	-0.1
STHS	Stebnicka Huta	85.78	320	eP	P	18 41 01.0	+0.6
OJC	Ojcow	86.47	321	eP	P	18 41 04.1	+0.3
KECS	Kecovo	86.51	319	eP	P	18 41 03.9	-0.1
NB2	NORSAR Subarra	87.48	333	P	P	18 41 07.1	-1.4
	comp=Z,3.9nm,0.9s,baz=70,slow=4.6						
NB2	NORSAR Subarra	87.48	333	P	P	18 41 07.1	-1.4
	baz=70,slow=4.6						
NOA	NORSAR Array B	87.48	333	P	P	18 41 07.3	-1.2
	comp=Z,3.5nm,1.0s,baz=71,slow=4.7,SNR=4.8						
NOA				LR	LR	19 21 15.7	
	comp=Z,12nm,20.9s,baz=60,slow=36						
VYHS	Vyhne	87.56	319	eP	P	18 41 09.2	0.0
BRG	Berggiesshubel	89.81	322	eP	P	18 41 19.7	+0.1
	comp=Z,8.2nm,1.3s						
CLL	Collm	90.21	323	eP	P	18 41 21.0	-0.5
GERES	GERESS Array B	90.67	321	P	P	18 41 22.7	-1.1
	comp=Z,0.4nm,0.5s,baz=59,slow=5.1,SNR=4.8						
VNDA	Vanda	93.54	172	P	P	18 41 37.4	+1.1
	comp=Z,1.5nm,1.0s,baz=296,slow=7.4,SNR=5.2						
YKA	Yellowknife Ar	93.59	22	P	P	18 41 36.1	-0.8
	comp=Z,0.8nm,0.8s,baz=309,slow=4.3,SNR=16						
FUORN	Ofenpass-Fuorn	93.66	319	eP	P	18 41 37.2	-0.7
	comp=Z,5.0nm,0.9s						
TXAR	Lajitas Array	120.38	44	PKP	PKPdf	18 47 11.5	-1.5
	comp=Z,0.3nm,0.7s,baz=51,slow=4.7,SNR=3.2						

WEL 03 18:30:11.9±0.5, 36°.70S×176°.71E, h226km±6km, ML3.6/11, 3C-2D, Error ellipse: s-maj=10.2km s-min=8.8km az=90.0, Off east coast of North Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HAZ	Te Kaha	1.36	141	PN	Pn	18 30 47.0	+0.3
HAZ				SN	S	18 31 13.7	-0.3
MXZ	Matakaoa Point	1.54	124	PN	Pn	18 30 48.8	+0.6
MXZ				SN	S	18 31 16.4	-0.1
URZ	Urewera	1.59	168	PN	Pn	18 30 48.6	+0.1
URZ				SN	S	18 31 17.7	+0.3
PKGZ	Pakihiroa	1.61	138	PN	Pn	18 30 48.3	-0.5
MWZ	Matawai	1.75	158	PN	Pn	18 30 50.2	+0.1
MWZ				SN	S	18 31 20.2	+0.2
WMGZ	Waiomatatini S	1.76	130	PN	Pn	18 30 50.5	+0.4
TWGZ	Tauwhareparae	1.79	146	PN	Pn	18 30 51.0	+0.6
PUZ	Puketiti	1.84	138	PN	Pn	18 30 50.3	-0.6
TKGZ	Te Karaka	1.96	153	PN	Pn	18 30 51.8	-0.1
SNGZ	Shannon Statio	2.13	167	PN	Pn	18 30 53.8	+0.1
MRHZ	Matea Rd	2.14	186	PN	Pn	18 30 53.9	+0.1
RIGZ	Rimuhau	2.17	158	PN	Pn	18 30 54.1	+0.1
WHHZ	Waihua	2.41	170	PN	Pn	18 30 56.1	-0.4
KNZ	Kokohu	2.44	162	PN	Pn	18 30 55.7	-1.0
BKZ	Black Stump Fm	2.46	184	PN	Pn	18 30 56.2	-0.8
ARHZ	Aropaoanui	2.57	175	PN	Pn	18 30 57.5	-0.6
WNVZ	Wahianoa	2.76	198	⇑PN	Pn	18 31 00.3	-0.2
BHHZ	Black Hill Sta	2.83	190	PN	Pn	18 31 00.0	-1.0
KRHZ	Kereru	2.95	185	PN	Pn	18 31 01.1	-1.3
CKHZ	Cape Kidnapper	2.96	174	PN	Pn	18 31 01.2	-1.3
KAHZ	Kahuranaki	3.09	178	⇓PN	Pn	18 31 02.6	-1.3
PNHZ	Pukenui	3.23	187	⇓PN	Pn	18 31 03.8	-1.8
PXZ	Pawanui	3.33	178	PN	Pn	18 31 04.5	-2.0
TSZ	Takapari Road	3.40	190	⇑PN	Pn	18 31 05.5	-2.0
PRHZ	Porangahau	3.56	181	PN	Pn	18 31 06.9	-2.4
ANWZ	Angora Road	3.76	183	PN	Pn	18 31 09.4	-2.2
PRWZ	Pori Road	3.89	188	PN	Pn	18 31 11.3	-1.9
MRZ	Mangatainoka R	4.05	192	PN	Pn	18 31 12.2	-2.9
OGWZ	Otaki Gorge	4.28	196	PN	Pn	18 31 15.0	-3.0
HOWZ	Holdsworth Sta	4.29	192	PN	Pn	18 31 14.8	-3.3
KIW	Kapiti Island	4.38	198	PN	Pn	18 31 16.2	-3.1
MTW	Mount Morrison	4.55	192	PN	Pn	18 31 17.6	-3.6
CAW	Cannon Point	4.58	196	PN	Pn	18 31 18.0	-3.7
DUWZ	D'Urville Isla	4.64	207	⇑PN	Pn	18 31 19.8	-2.6
TUWZ	Tuamarina	5.19	204	PN	Pn	18 31 25.6	-3.6
THZ	Tophouse	5.85	209	PN	Pn	18 31 34.2	-3.5
KHZ	Kahutara	6.21	202	PN	Pn	18 31 38.2	-3.9
OXZ	Oxford	7.52	207	PN	Pn	18 31 53.7	-5.2
MQZ	McQueen's Vall	7.65	203	PN	Pn	18 31 55.1	-5.4

IDC 03 18:39:20.6±0.9, 37°.12N×143°.71E, h0km, mb3.7/10, mb1 3.8/12, mb1mx3.6/52, mbtmp3.7/12, ML2.9/2, Error ellipse: s-maj=22.5km s-min=17.9km az=85.0
ISCJB 03 18:39:23.2±0.8, 37°.01N±0°.08×143°.5E±0°.1, h33km, mb3.7/10, Error ellipse: s-maj=15.1km s-min=9.4km az=33.0
ISC 03 18:39:25.7±1.0, 37°.0N±0°.1×143°.5E±0°.1, h35km, n15, σ1s27/14, mb3.6/10, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MJAR	Matsushiro Arr	4.31	265	Pn	Pn	18 40 28.8	+0.1
	3.5nm,0.3s,baz=89,slow=15,SNR=22						
MAT	Matsushiro	4.31	265	P	Pn	18 40 26.7	-2.0
JHJ	Hachijo jima 2	4.97	219	Sn	Sn	18 41 32.5	-1.4
	14nm,0.3s,baz=252,slow=19,SNR=2.5						
USRK	Ussuriysk Ar.	11.33	313	Pn	Pn	18 42 04.7	-0.2
	0.2nm,0.3s,baz=120,slow=14,SNR=3.3						
KLR	Kul'dur	14.91	329	Pn	Pn	18 42 47.6	-6.0
	0.2nm,0.3s,baz=130,slow=12,SNR=9.9						
SEY	Seymchan	26.50	9	P	P	18 44 58.6	-0.8
	1.1nm,1.0s,baz=66,slow=23,SNR=6.2						
SONM	Songino Array	29.20	304	P	P	18 45 25.1	+1.2
	1.1nm,0.8s,baz=106,slow=8.6,SNR=8.9						
ZALV	Zalesovo Beam	43.18	312	P	P	18 47 22.1	-0.6
	0.2nm,0.2s,baz=107,slow=5.0,SNR=3.2						
MKAR	Makanchi Array	45.56	302	P	P	18 47 42.0	0.0
	0.9nm,0.8s,baz=88,slow=10,SNR=6.3						
KURBB	Kurchatov Arra	47.35	308	P	P	18 47 55.4	-0.5
	2.6nm,0.6s,baz=81,slow=8.2,SNR=33						
ILAR	Eielson Array	48.59	32	P	P	18 48 04.3	-1.0
	0.7nm,1.1s,baz=246,slow=6.5,SNR=5.5						
BVAR	Borovoye Array	51.83	313	P	P	18 48 32.2	+2.2
	0.3nm,0.5s,baz=71,slow=6.2,SNR=2.7						
WRA	Warramunga Arr	57.32	190	P	P	18 49 11.1	+0.9
	1.2nm,0.5s,baz=8.2,slow=7.3,SNR=15						
ASAR	Alice Springs	61.05	190	P	P	18 49 37.1	+1.2
	0.5nm,0.4s,baz=1.5,slow=6.4,SNR=20						
YKA	Yellowknife Ar	62.95	31	P	P	18 49 47.3	-0.9
	0.1nm,0.3s,baz=308,slow=7.0,SNR=3.0						

IDC 03 18:40:40.7±1.5, 36°.45N×142°.68E, h0km, mb3.7/5, mb1 3.8/5, mb1mx3.4/51, mbtmp3.7/5, Error ellipse: s-maj=53.0km s-min=23.6km az=80.0, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SEY	Seymchan	27.18	10	P	P	18 46 25.6	0.0
	0.8nm,0.6s,baz=79,slow=23,SNR=4.6						
MKAR	Makanchi Array	45.29	303	P	P	18 48 59.7	-0.4
	0.4nm,0.8s,baz=85,slow=11,SNR=2.5						
KURBB	Kurchatov Arra	47.16	309	P	P	18 49 14.8	+0.1
	1.2nm,0.6s,baz=81,slow=8.2,SNR=5.5						
WRA	Warramunga Arr	56.64	189	P	P	18 50 25.6	0.0
	0.7nm,0.5s,baz=10.0,slow=7.1,SNR=3.7						
ASAR	Alice Springs	60.37	189	P	P	18 50 51.5	-0.1
	0.2nm,0.4s,baz=1.6,slow=6.6,SNR=4.9						

IDC 03 18:56:32.0±2.9, 37°.93N×143°.78E, h0km, mb3.4/3, mb1 3.5/4, mb1mx3.2/52, mbtmp3.3/4, ML2.9/1, MS3.3/1, Ms1 3.3/1, ms1mx2.4/30, Error ellipse: s-maj=73.3km s-min=34.5km az=54.0, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MJAR	Matsushiro Arr	4.65	254	Pn	Pn	18 57 43.5	0.0
	0.5nm,0.3s,baz=83,slow=14,SNR=6.0						
KLR	Kul'dur	14.25	326	LR	LR	19 05 20.4	
	comp=Z,124nm,19.6s,baz=32,slow=37						
MKAR	Makanchi Array	45.24	302	P	P	19 04 50.8	-0.2
	0.2nm,0.6s,baz=83,slow=9.3,SNR=4.1						
WRA	Warramunga Arr	58.24	190	P	P	19 06 27.5	-0.7
	0.6nm,0.6s,baz=7.8,slow=7.2,SNR=7.4						
ASAR	Alice Springs	61.97	190	P	P	19 06 54.4	+0.6
	0.2nm,0.7s,baz=11,slow=12,SNR=4.5						

ISCJB 03 18:56:43.0±0.8, 42°.43N±0°.04×69°.25E±0°.06, h0km, Error ellipse: s-maj=6.8km s-min=5.4km az=160.2
NNC 03 18:56:43.9±1.1, 42°.30N×69°.48E, h0km, mb3.6, mpv3.3, Error ellipse: s-maj=8.5km s-min=4.9km az=89.0, Suspected Mining explosion.
KRNET 03 18:56:44.1±0.1, 42°.36N×69°.45E, mb2.9
SOME 03 18:56:44.5, 42°.27N×69°.50E, h5km
ISC 03 18:56:42.3±1.1, 42°.35N±0°.04×69°.25E±0°.05, h0km, n23, σ1s76/37, 22C-16D, Central Kazakhstan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BRLS	Borolday	0.54	36	⇓iP	Pb	18 56 54.8	+0.1
	27nm,0.1s						
BRLS				⇑iS	Sb	18 57 02.5	-0.6
	215nm,0.1s						
IUG	Iuzhnay	0.62	109	eS	Sg	18 56 58.9	-3.2
	3μm,0.2s						
IUG	Iuzhnay	0.62	109	eP	Pg	18 56 52.9	-1.2
	538nm,0.2s						
KK31	Karatay Array	1.20	51	P	Pb	18 57 05.8	-0.2
	16nm,0.5s,baz=225,slow=16,SNR=596						
KK31				S	Sb	18 57 20.5	-1.5
	25nm,0.3s,baz=227,slow=26,SNR=13						
DZA	Taraz	1.63	70	⇑iP	Pb	18 57 13.0	-0.2
	53nm,0.1s						
DZA				eS	Sg	18 57 33.4	-1.3
	195nm,0.2s						
ARK	Arkit	2.10	104	⇑eP	Pb	18 57 20.3	-0.9
	baz=106						
ARK				⇑eS	Sb	18 57 47.5	-0.4
	baz=106						
MNAS	Manas	2.42	86	⇓eP	Pb	18 57 25.5	-1.2
	baz=86						
MNAS				⇓eS	Sb	18 57 55.7	-1.4
	baz=86						
MNAS	Manas	2.42	86	⇑Pg	Pn	18 57 24.9	+1.7
	12nm,0.4s						
MNAS				⇓Lg	Lg	18 57 54.7	
	144nm,0.5s						
BTK	Batken	2.58	152	⇑eP	Pb	18 57 28.9	-0.5
	baz=155						
BTK				⇑eS	Sb	18 58 01.5	-0.2
	baz=155						
MRKS	Merke	2.97	81	⇓iP	Pb	18 57 34.1	-2.0
	16nm,0.6s						
MRKS				⇓iS	Sn	18 58 08.8	+1.7
	48nm,0.5s						
AML	Almayashu	3.31	92	⇑iP	Pn	18 57 37.3	+1.6
	baz=93						
AML				⇑iS	Sn	18 58 15.5	-0.4
	baz=93						
ARLS	Aral	3.81	96	⇓eP	Pn	18 57 45.0	+2.6
	baz=96						
ARLS				⇓eS	Sn	18 58 28.4	+0.5
	baz=96						
AAK	Ala-Archa	3.89	84	⇑Pg	Pb	18 57 51.9	0.0
	2.1nm,0.4s						
AAK				⇑Lg	Lg	18 58 41.9	
	5.7nm,0.4s						
SFK	Sufi-Kurgan	3.97	125	⇑eP	Pn	18 57 47.7	+3.0
	baz=126						
SFK				⇑eS	Sn	18 58 33.0	+1.0
	baz=126						
SFK	Sufi-Kurgan	3.97	125	⇓Pn	Pn	18 57 43.8	-0.8
SFK				⇑Pg	Pb	18 57 54.7	+1.4
	3.8nm,0.5s						
SFK				⇑Sn	Sn	18 58 30.0	-2.0
	5.5nm,0.4s						
SFK				⇑Lg	Lg	18 58 43.2	
	9.8nm,0.5s						
TKM2	Tokmak 2	4.72	81	⇓Pg	Pb	18 58 07.0	+1.0
	11nm,0.8s						
TKM2				⇓Lg	Lg	18 59 05.1	
	9.4nm,0.5s						
DGS	Degeres	4.88	77	eP	Pb	18 58 10.3	+1.5
	4.7nm,0.6s						
DGS				eS	Sb	18 59 11.9	+3.8
	12nm,0.6s						
KUU	Kurty	5.42	71	eP	Pb	18 58 19.9	+2.2
	6.2nm,0.1s						
KUU				⇑iS	Sg	18 59 29.2	-7.0
	7.3nm,0.8s						
OTUK	Ortayu	6.29	19	⇑Pn	Pn	18 58 17.9	+1.6
	0.8nm,0.3s						
OTUK				⇓Sn	Sn	18 59 28.6	-0.1
	1.2nm,0.5s						
OTUK				⇑Lg	Lg	18 59 58.4	
	3.0nm,0.9s						
AB31	Akbulak array	9.48	320	Pn	Pn	18 59 02.0	+2.0
	0.6nm,0.8s,baz=130,slow=15,SNR=9.1						
AB31				⇑Sn	Sn	19 00 43.5	-3.7
	0.9nm,0.5s						
MK31	Makanchi Array	10.31	60	⇓Pn	Pn	18 59 10.3	-1.2
	0.8nm,0.5s,baz=241,slow=14,SNR=8.9						
MK31				⇑Sn	Sn	19 01 04.4	-3.3
	0.4nm,0.5s						
MK31				⇓Lg	Lg	19 02 08.1	
	2.7nm,0.9s						
KURBB	Kurchatov Arra	10.45	34	⇑Lg	Lg	19 02 15.1	
	5.2nm,0.7s						
KURK	Kurchatov	10.56	34	⇓Lg	Lg	19 02 15.6	
	8.4nm,1.1s						
BVA0	Borovoye Array	10.71	4	⇓Pn	Pn	18 59 18.3	+1.4
	1.5nm,1.0s,baz=163,slow=11,SNR=4.1						

BUC 03 18:58:34.0±0.5, 45°.50N×26°.94E, h26km±5km, MD2.2/2, 8C-6D, Error ellipse: s-maj=8.3km s-min=5.0km az=27.0, Romania

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GRER		0.12	168	⇓iP	Pb	18 58 39.1	+0.2
GRER		0.12	168	S	Sb	18 58 44.4	+2.2
GRER		0.12	168	⇓iP	Pb	18 58 39.1	+0.2
GRER				iS	Sb	18 58 44.4	+2.2
PETR	Petresti	0.31	42	⇑iP	Pn	18 58 42.3	-0.5
PETR	Petresti	0.31	42	⇑iP	Pn	18 58 42.3	-0.5
VRI	Vrincioaia	0.40	338	⇑iP	Pb	18 58 43.0	+0.4
VRI	Vrincioaia	0.40	338	⇑iP	Pb	18 58 43.0	+0.4
VRI				iS	Sn	18 58 50.9	+0.1
PLOR	Plostina	0.41	330	⇓iP	Pb	18 58 43.0	+0.2
PLOR	Plostina	0.41	330	⇓iP	Pb	18 58 43.0	+0.2
MLR	Muntele Rosu	0.70	270	⇓iP	Pn	18 58 48.3	-0.1
MLR	Muntele Rosu	0.70	270	⇓iP	Pn	18 58 48.3	-0.1
MLR				iS	Sn	18 58 59.4	+1.0
CFR	Carcaliu	0.90	110	⇑iP	Pb	18 58 50.9	-0.1
CFR	Carcaliu	0.90	110	⇑iP	Pb	18 58 50.9	-0.1
CFR				iS	Sn	18 59 03.7	+0.5
TIRR	Tirgusor	1.48	134	⇑iP	Pb	18 59 00.0	-0.7
TIRR				S	Sb	18 59 20.2	+1.2
TIRR	Tirgusor	1.48	134	⇑iP	Pb	18 59 00.0	-0.7
TIRR				iS	Sb	18 59 20.2	+1.2

IDC 03 19:04:16.7±3.8, 11°.10N×91°.75E, h0km, mb3.3/4, mb1 3.5/4, mb1mx3.2/45, mbtmp3.3/4, Error ellipse: s-maj=147.7km s-min=25.4km az=66.0, Andaman Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
H08S3	Diego Garcia H	26.72	227	T	T	19 37 54.9	
	baz=46,slow=75,SNR=10						
H08S2	Diego Garcia H	26.72	227	T	T	19 37 54.7	
	baz=46,slow=75,SNR=11						
H08S1	Diego Carcia H	26.74	227	T	T	19 37 54.3	
	baz=46,slow=75,SNR=11						
MKAR	Makanchi Array	36.46	349	P	P	19 11 23.1	-0.3
	0.2nm,0.7s,baz=178,slow=8.7,SNR=5.0						
SONM	Songino Array	38.63	16	P	P	19 11 42.0	+0.2
	0.3nm,0.8s,baz=205,slow=8.0,SNR=4.2						
WRA	Warramunga Arr	52.05	126	P	P	19 13 28.3	-0.3
	0.6nm,0.8s,baz=308,slow=8.0,SNR=5.1						
ASAR	Alice Springs	53.79	130	P	P	19 13 41.5	0.0
	0.2nm,0.5s,baz=316,slow=6.9,SNR=4.4						

NIED 03 19:07:00, 37°.60N×144°.40E, h8km, Mw4.4 Best double couple: $M_0$4.94000×10^15 NP1:ϕ_s21.00000°, δ46.00000°, λ-71.00000°. NP2:ϕ_s174.00000°, δ47.00000°, λ-109.00000°.
IDC 03 19:07:31.8±0.5, 37°.48N×144°.63E, h0km, mb4.2/26, mb1 4.4/32, mb1mx4.3/54, mbtmp4.3/32, ML4.0/5, MS3.6/19, Ms1 3.6/19, ms1mx3.4/55, Error ellipse: s-maj=14.5km s-min=11.7km az=130.0
MOS 03 19:07:35.2±1.0, 37°.48N×144°.59E, h35km, mb4.6/35, Error ellipse: s-maj=9.0km s-min=6.7km az=108.5
ISCJB 03 19:07:35.5±0.2, 37°.58N±0°.03×144°.46E±0°.03, h33km, mb4.4/73, MS3.7/21, Error ellipse: s-maj=4.4km s-min=2.8km az=158.8
NEIC 03 19:07:36.8±0.9, 37°.47N×144°.58E, h36km±8km, mb4.7/31, Error ellipse: s-maj=7.9km s-min=6.4km az=146.0
JMA 03 19:07:36.5±0.4, 37°.64N×144°.37E, h56km, M5.1
ISC 03 19:07:37.3±0.4, 37°.59N±0°.04×144°.54E±0°.04, h35km, n221, σ1s50/219, mb4.4/73, MS3.8/21, 18C-10D, Off east coast

of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
JIO	Ouri	2.67	290	⇑P	Pn	19 08 16.3	-1.4
JIO				S	Sn	19 08 45.7	-3.1
JMK	Ichinoseki	2.95	298	⇑P	Pn	19 08 20.3	-1.3
JMK				S	Sn	19 08 53.5	-2.3
JMM	Marumori	2.99	276	⇑P	Pn	19 08 19.6	-2.5
JMM				S	Sn	19 08 53.6	-3.1
ONAJ	Iwakimizuishiy	3.02	262	P	Pn	19 08 21.3	-1.4
ONAJ				S	Sn	19 08 54.1	-3.7
JOM	Ohasama	3.17	307	⇑P	Pn	19 08 23.4	-1.2
JFT	Otama	3.34	270	P	Pn	19 08 26.6	-0.5
JFT				S	Sn	19 09 03.7	-1.9
JYK	Kaneyama	3.55	293	⇑P	Pn	19 08 29.2	-0.7
JYK				S	Sn	19 09 08.7	-2.0
JANG	Nango	3.65	321	P	Pn	19 08 29.2	-2.0
JANG				S	Sn	19 09 09.3	-3.7
BSO1	Boso 1	4.11	226	P	Pn	19 08 35.6	-1.6
BSO1				S	Sn	19 09 23.0	-0.8
ERM	Erimo	4.55	347	*de*P	Pn	19 08 41.7	-1.9
ERM				pmax	pmax		
	comp=Z,60nm,0.6s						
ERM	Erimo	4.55	347	*e*Pn	Pn	19 08 41.3	-2.2
ERM				*e*Sn	Sn	19 09 33.9	-1.2
JOT	Ohata	4.65	326	P	Pn	19 08 43.5	-1.5
JOT				S	Sn	19 09 33.9	-3.9
JRY	Ryogami san	4.79	253	P	Pn	19 08 45.8	-1.2
JRY				S	Sn	19 09 37.1	-4.2
JOD2	Odawara 2	4.97	244	P	Pn	19 08 48.2	-1.3
JKB	Kayabe	5.07	329	P	Pn	19 08 49.8	-1.0
JCH	Churui	5.10	350	P	Pn	19 08 48.5	-2.7
MJAR	Matsushiro Arr	5.17	260	Pn	Pn	19 08 52.2	0.0
	comp=Z,32nm,0.3s,baz=89,slow=15,SNR=201						
MJAR				Sn	Sn	19 09 50.0	-0.7
	comp=Z,11nm,0.3s,baz=55,slow=24,SNR=4.3						
MAJO	Matsushiro	5.17	260	*c i*P	Pn	19 08 52.6	+0.3
MAJO	Matsushiro	5.17	260	*e*Pn	Pn	19 08 52.3	+0.1
MAJO				*e*Sn	Sn	19 09 50.8	+0.1
MAT	Matsushiro	5.17	260	P	Pn	19 08 52.5	+0.2
MAT				S	Sn	19 09 49.7	-1.0
JHJ2	Mitsune	5.91	222	*e*Pn	Pn	19 08 59.0	-3.3
JHJ	Hachijo jima 2	5.92	222	Pn	Pn	19 08 59.5	-3.0
	comp=Z,29nm,0.3s,baz=51,slow=22,SNR=13						
JHJ				Sn	Sn	19 10 02.3	-6.7
	comp=Z,174nm,0.3s,baz=119,slow=22,SNR=9.4						
JOSM	Okushiri--Mats	5.94	321	P	Pn	19 09 01.5	-1.3
JTKR	Abashiri--Toko	6.39	356	P	Pn	19 09 06.2	-2.7
INU	Inuyama	6.46	252	*e*Pn	Pn	19 09 09.4	-0.5
SHO	Shikotan	6.51	15	*d i*P	Pn	19 09 05.9	-4.6
SHO				pmax	pmax		
	comp=Z,259nm,0.5s						
SHO				pmax	pmax		
	comp=N,126nm,0.6s						
SHO				pmax	pmax		
	comp=E,149nm,0.4s						
YUK	Yuzh-Kuril'sk	6.51	8	*d i*P	Pn	19 09 06.2	-4.4
YUK				pmax	pmax		
	comp=Z,532nm,0.3s						
YUK				pmax	pmax		
	comp=N,59nm,0.1s						
YUK				pmax	pmax		
	comp=E,155nm,0.2s						
YUK				MLR	MLR		
	comp=Z,637nm,15.0s						
KUR	Kuril'sk	8.03	17	*d i*P	Pn	19 09 27.4	-4.0
KUR				pmax	pmax		
	comp=Z,104nm,0.8s						
KUR				pmax	pmax		
	comp=N,80nm,0.3s						
KUR				pmax	pmax		
	comp=E,69nm,0.2s						
YSS	Yuzh-Sakhalins	9.45	353	*e*P	Pn	19 09 49.8	-1.0
YSS				pmax	pmax		
	comp=Z,40nm,0.8s						
YSS	Yuzh-Sakhalins	9.45	353	*e*Pn	Pn	19 09 45.9	-4.9
CBIJ	Chichi jima	10.65	191	*e*Pn	Pn	19 10 00.9	-6.5
CBIJ				*e*Sn	Sn	19 12 02.5	-2.9
JCJ	Chichijima	10.65	191	Pn	Pn	19 10 02.2	-5.2
	baz=90,slow=20						
JCJ				Sn	Sn	19 11 52.0	-13
	comp=Z,11nm,0.3s,baz=345,slow=22,SNR=6.0						
JCJ				LR	LR	19 14 41.1	
	comp=Z,108nm,18.8s,baz=359,slow=41						
USRK	Ussuriysk Ar.	11.56	309	Pn	Pn	19 10 20.0	+0.2
	comp=Z,1.4nm,0.3s,baz=117,slow=16,SNR=18						
USRK				LR	LR	19 14 31.7	
	comp=Z,440nm,18.5s,baz=115,slow=36						
JNU	Nakatsue	12.01	252	Pn	Pn	19 10 25.2	-0.8
	comp=Z,0.5nm,0.3s,baz=28,slow=6.1,SNR=6.2						
JNU				LR	LR	19 15 56.9	
	comp=Z,311nm,18.9s,baz=112,slow=42						
JNU	Nakatsue	12.01	252	*e*Pn	Pn	19 10 25.4	-0.6
HABR	Khabarovsk	12.89	331	*ce*P	Pn	19 10 34.1	-3.8
HABR				*e*SS	Sn	19 13 07.1	+7.1
HABR				pmax	pmax		
	comp=Z,82nm,1.8s						
HABR				MLR	MLR		
	comp=Z,59nm,11.0s						
KSRS	Korea Array	13.20	274	Pn	Pn	19 10 43.2	+1.1
	comp=Z,0.8nm,0.3s,baz=86,slow=12,SNR=16						
KSRS				LR	LR	19 15 41.2	
	comp=Z,376nm,18.9s,baz=93,slow=37						
KS01	Wonju Array Si	13.22	275	*e*Pn	Pn	19 10 42.1	-0.3
KS15	Wonju Array Si	13.23	274	*e*Pn	Pn	19 10 43.2	+0.6
KSAR	Wonju Array Be	13.23	274	P	Pn	19 10 43.2	+0.6
KSAR	Wonju Array Be	13.23	274	Pn	Pn	19 10 43.2	+0.6
MDJ	Mudanjiang	13.27	307	P	Pn	19 10 42.4	-0.7
MDJ				S	Sn	19 13 06.0	-3.3
MDJ				pmax	pmax		
	comp=Z,37nm,1.3s						
MDJ				pmax	pmax		
	comp=Z,62nm,3.3s						
MDJ				LR	LR		
	comp=N,340nm,14.6s						
MDJ				LR	LR		
	comp=E,260nm,15.4s						
MDJ				LR	LR		
	comp=Z,520nm,16.2s						
MDJ	Mudanjiang	13.27	307	*e*Pn	Pn	19 10 42.8	-0.3
	comp=Z,2.8nm,1.1s						
TYV	Tymovskoe	13.34	355	*e*P	Pn	19 10 36.2	-7.8
TYV				pmax	pmax		
	comp=Z,6.0nm,0.6s						
KLR	Kul'dur	14.87	326	Pn	Pn	19 11 01.9	-2.9
	comp=Z,0.6nm,0.3s,baz=128,slow=11,SNR=11						
KLR				LR	LR	19 16 40.9	
	comp=Z,162nm,18.0s,baz=136,slow=37						
CN2	Changchun	15.74	299	*e*P	P	19 11 18.8	-1.1
NKL	Nikolayevsk	15.79	351	*e*P	Pn	19 11 15.0	-1.8
PETK	Petropavlovsk-	18.02	26	P	Pn	19 11 39.1	-5.6
	comp=Z,0.1nm,0.3s,baz=195,slow=8.2,SNR=3.1						
PETK				LR	LR	19 20 36.8	
	comp=Z,142nm,18.0s,baz=213,slow=43						
DL2	Dalian	18.04	281	P	P	19 11 46.0	+0.7
DL2				*e*S	Sn	19 15 07.0	+1.7
DL2				pmax	pmax		
	comp=Z,25nm,1.0s						
DL2				pmax	pmax		
	comp=Z,280nm,4.9s						
DL2				LR	LR		
	comp=N,170nm,14.5s						
DL2				LR	LR		
	comp=E,410nm,16.2s						
DL2				LR	LR		
	comp=Z,380nm,15.8s						
PET	Petropavlovsk	18.29	28	*e*P	Pn	19 11 50.4	+2.3
PET				*e*S	Sn	19 15 11.3	+0.2
PET				MLR	MLR		
	comp=Z,200nm,14.0s						
NJ2	Nanjing	21.77	263	*e*P	P	19 12 28.6	+2.7
NJ2				pmax	pmax		
	comp=Z,11nm,0.7s						
TIA	Tai'an	21.95	275	*e*P	P	19 12 27.5	-0.3
TIA				pmax	pmax		
	comp=Z,20nm,1.0s						
MA2	Magadan	22.36	8	P	P	19 12 33.1	+1.0
	comp=Z,2.5nm,0.7s,baz=232,slow=14,SNR=3.7						
MA2				LR	LR	19 20 45.9	
	comp=Z,77nm,19.6s,baz=206,slow=35						
HHC	Hu-ho-hao-te	25.67	288	*e*P	P	19 13 05.8	+1.8
HHC				pP	pP	19 13 14.4	+0.5
HHC				PP	PnPn	19 13 53.4	+12
HHC				S	S	19 17 35.7	+5.5
HHC				sS	sS	19 17 44.5	-2.2
HHC				pmax	pmax		
	comp=Z,18nm,0.9s						
HHC				pmax	pmax		
	comp=Z,130nm,6.6s						
HHC				LR	LR		
	comp=N,200nm,14.9s						
HHC				LR	LR		
	comp=E,320nm,14.1s						
HHC				LR	LR		
	comp=Z,310nm,15.9s						
SEY	Seymchan	25.82	8	P	P	19 13 05.6	+0.7
	comp=Z,5.1nm,1.1s,baz=189,slow=7.1,SNR=12						
SEY	Seymchan	25.82	8	*e*P	P	19 13 04.1	-0.8
CIT	Chita	26.05	314	*e*P	P	19 13 08.0	+0.7
CIT				*e*		19 13 25.4	
CIT				pmax	pmax		
	comp=Z,28nm,1.2s						
YAK	Yakutsk	26.15	344	LR	LR	19 24 20.4	
	comp=Z,94nm,19.8s,baz=139,slow=38						
YAK	Yakutsk	26.15	344	*e*P	P	19 13 07.5	-0.4
YAK				*e*		19 16 35.4	
YAK				*e*S	S	19 17 36.1	-0.9
YAK				*e*SS	SnSn	19 18 39.2	+2.1
YAK				*e*		19 24 00.2	
YAK				pmax	pmax		
	comp=Z,15nm,1.0s						
YAK				pmax	pmax		
	comp=E,5.0nm,1.3s						
YAK				pmax	pmax		
	comp=N,10.0nm,1.2s						
YAK				pmax	pmax		
	comp=Z,20nm,1.2s						
YAK				pmax	pmax		
	comp=N,18nm,1.4s						
YAK				pmax	pmax		
	comp=E,14nm,1.5s						
YAK				smax	smax		
	comp=N,145nm,4.2s						
YAK				smax	smax		
	comp=E,143nm,4.8s						
YAK				MLR	MLR		
	comp=Z,103nm,19.0s						
YAK				MLR	MLR		
	comp=N,110nm,19.0s						
H11N2	WAKE ISLAND Hy	26.37	126	T	T	19 40 10.3	
	baz=318,slow=74,SNR=28						
H11N1	WAKE ISLAND Hy	26.38	126	T	T	19 40 33.7	
	baz=318,slow=74,SNR=19						
H11N3	WAKE ISLAND Hy	26.39	126	T	T	19 40 41.5	
	baz=318,slow=74,SNR=25						
H11S1	WAKE ISLAND Hy	27.15	128	T	T	19 41 31.8	
	baz=319,slow=76,SNR=13						
H11S3	WAKE ISLAND Hy	27.16	128	T	T	19 41 29.0	
	baz=319,slow=76,SNR=12						
H11S2	WAKE ISLAND Hy	27.17	128	T	T	19 41 10.7	
	baz=319,slow=76,SNR=8.4						
BOD	Bodaibo	28.45	325	*e*P	P	19 13 28.4	-0.1
BOD				pmax	pmax		
	comp=Z,21nm,0.8s						
ULN	Ulaanbaatar	29.13	303	*e*P	P	19 13 34.3	-0.7
ULN				pmax	pmax		
	comp=Z,10.0nm,1.1s						
ULN	Ulaanbaatar	29.13	303	*e*P	P	19 13 34.3	-0.7
	comp=Z,9.5nm,1.1s						
SONA1	Songino Array	29.57	303	*e*P	P	19 13 38.9	+0.1
SONM	Songino Array	29.57	303	P	P	19 13 40.7	+1.9
	comp=Z,0.9nm,0.3s,baz=92,slow=9.4,SNR=11						
SONM				LR	LR	19 25 59.8	
	comp=Z,150nm,18.2s,baz=74,slow=37						
ENH	Enshi	29.86	266	*e*P	P	19 13 38.9	-2.6
	comp=Z,10.0nm,0.6s						
TLY	Talaya	31.88	309	*e*P	P	19 14 09.7	+11
TLY				pmax	pmax		
	comp=Z,5.0nm,0.7s						
ZAK	Zakamensk	31.91	307	*e*P	P	19 14 00.9	+1.5
ZAK				pmax	pmax		
	comp=Z,5.0nm,1.2s						
LZH	Lanzhou	32.43	280	*e*P	P	19 14 06.2	+2.0
LZH				pP	pP	19 14 14.3	0.0
LZH				sP	sP	19 14 17.7	-0.8
LZH				pmax	pmax		
	comp=Z,13nm,1.0s						
BILL	Bilibino	32.82	15	⇑*i*P	P	19 14 06.7	-0.3
BILL				*e*		19 15 12.3	
BILL				pmax	pmax		
	comp=Z,3.0nm,1.0s						
BILL				MLR	MLR		
	comp=Z,59nm,15.0s						
MOY	Mondy	33.51	309	*e*P	P	19 14 24.2	+11
GYA	Guiyang	33.77	262	⇓*i*P	P	19 14 14.7	-1.3
GYA				pP	pP	19 14 27.2	+1.1
GYA				PP	PnPn	19 15 30.0	+1.2
GYA				PcP	PcP	19 16 54.8	0.0
GYA				S	S	19 19 37.3	-0.2
GYA				sS	sS	19 19 55.0	+0.9
GYA				ScP	ScP	19 20 34.5	-2.2
GYA				SS	SnSn	19 21 44.6	+1.0
GYA	Guiyang	33.77	262	ScS	ScS	19 24 25.3	-13
GYA				pmax	pmax		
	comp=Z,20nm,0.8s						
GYA				pmax	pmax		
	comp=Z,120nm,6.0s						
GYA				LR	LR		
	comp=N,480nm,17.9s						
GYA				LR	LR		
	comp=E,460nm,18.0s						
GYA				LR	LR		
	comp=Z,490nm,17.7s						
CD2	Chengdu	34.16	271	P	P	19 14 17.9	-1.3
CD2				pmax	pmax		
	comp=Z,1.0nm,0.6s						
GTA	Gaotai	34.78	287	*e*P	P	19 14 28.3	+3.7
GTA				pP	pP	19 14 32.6	-2.1
GTA				sP	sP	19 14 35.5	-3.5
GTA				PcP	PcP	19 17 02.6	+5.1
GTA				S	S	19 19 59.3	+6.4
GTA				sS	sS	19 20 06.0	-3.6
GTA				SS	SnSn	19 22 14.3	+6.4
GTA				pmax	pmax		
	comp=Z,3.0nm,0.7s						
GTA				pmax	pmax		
	comp=Z,85nm,5.1s						
GTA				LR	LR		
	comp=N,170nm,17.1s						
GTA				LR	LR		
	comp=E,270nm,17.1s						
GTA				LR	LR		
	comp=Z,300nm,16.2s						
TIXI	Tiksi	35.07	351	*ce*P	P	19 14 26.4	-0.1
TIXI				pmax	pmax		
	comp=Z,5.0nm,2.5s						
QIZ	Qiongzhong	35.44	248	P	P	19 14 29.7	-0.6
QIZ				S	S	19 20 03.7	+0.6
QIZ				LR	LR		
	comp=N,150nm,15.0s						
QIZ				LR	LR		
	comp=Z,140nm,16.3s						
WMQ	Urumqi	42.81	297	*e*P	P	19 15 32.2	+0.5
WMQ				pP	pP	19 15 43.4	+1.4
WMQ				sP	sP	19 15 47.3	+1.1
WMQ				S	S	19 21 56.3	+2.7
WMQ				pmax	pmax		
	comp=Z,2.0nm,0.6s						
WMQ				pmax	pmax		
	comp=Z,29nm,3.6s						
WMQ				LR	LR		
	comp=N,40nm,22.0s						
WMQ				LR	LR		
	comp=E,45nm,20.4s						
WMQ				LR	LR		
	comp=Z,24nm,24.8s						
ZAA0	Zalesovo Array	43.39	312	*e*P	P	19 15 36.5	+0.3
ZALV	Zalesovo Beam	43.39	312	P	P	19 15 36.5	+0.4
	comp=Z,0.5nm,0.4s,baz=97,slow=6.1,SNR=5.1						
ZALV				PcP	PcP	19 17 24.1	0.0
	comp=Z,1.8nm,0.4s,baz=92,slow=3.4,SNR=7.3						
ZALV				LR	LR	19 34 22.1	
	comp=Z,137nm,18.1s,baz=70,slow=37						
NRIK	Noril'sk	43.82	335	P	P	19 15 39.3	-0.1
	comp=Z,2.0nm,0.3s,baz=165,slow=4.7,SNR=3.8						
NRIK				LR	LR	19 35 36.7	
	comp=Z,110nm,19.5s,baz=114,slow=38						
NRIK	Noril'sk	43.82	335	P	P	19 15 39.3	-0.1
NRIK				pmax	pmax		
	comp=Z,3.0nm,0.4s						
NRIK				MLR	MLR		
	comp=Z,110nm,19.5s						
CHTO	Chiang Mai	43.85	258	*e*P	P	19 15 39.5	-0.8
CHTO				pmax	pmax		
	comp=Z,7.0nm,0.9s						
CHTO	Chiang Mai	43.85	258	*e*P	P	19 15 39.5	-0.8
	comp=Z,6.8nm,0.9s						
CMAR	Chiang Mai Arr	44.05	257	P	P	19 15 43.5	+1.6
	comp=Z,3.3nm,0.9s,baz=46,slow=7.3,SNR=15						
CMAR				LR	LR	19 37 03.2	
	comp=Z,75nm,19.9s,baz=60,slow=40						
CM01	Chiang Mai Arr	44.06	257	*e*P	P	19 15 43.2	+1.3
LSA	Lhasa	44.64	276	*e*P	P	19 15 46.0	-1.1
LSA				pmax	pmax		
	comp=Z,2.0nm,0.6s						
LSA	Lhasa	44.64	276	*e*P	P	19 15 46.0	-1.1
	comp=Z,2.3nm,0.6s						
KDAK	Kodiak Island	45.01	42	*ce*P	P	19 15 49.0	0.0
MK01	Makanchi Array	45.94	302	*e*P	P	19 15 56.9	+0.3
MKAR	Makanchi Array	45.94	302	P	P	19 15 57.4	+0.7
	comp=Z,2.1nm,0.8s,baz=86,slow=9.5,SNR=15						
MKAR				LR	LR	19 35 39.6	
	comp=Z,45nm,19.6s,baz=78,slow=37						
MLY	Manley	46.05	32	*e*P	P	19 15 58.3	+1.0
	comp=Z,7.1nm,0.6s						
MAKZ	Makanchi	46.14	302	*e*P	P	19 15 59.8	+1.6
MAKZ				pmax	pmax		
	comp=Z,9.0nm,1.0s						
MAKZ	Makanchi	46.14	302	*e*P	P	19 15 59.8	+1.6
	comp=Z,9.3nm,1.0s						
RND	Reindeer	46.81	35	*e*P	P	19 16 03.5	+0.2
RND				pmax	pmax		
	comp=Z,38nm,1.5s						
RND	Reindeer	46.81	35	*e*P	P	19 16 03.5	+0.2
	comp=Z,38nm,1.5s						
MDM	Murphy Dome	47.11	32	*e*P	P	19 16 06.4	+0.8
	comp=Z,38nm,1.4s						
KURK	Kurchatov	47.55	308	*e*P	P	19 16 09.1	0.0
KURK				pmax	pmax		
	comp=Z,15nm,0.7s						
KURK	Kurchatov	47.55	308	*e*P	P	19 16 09.1	0.0
	comp=Z,16nm,0.7s						
HDA	Harding Lake	47.66	33	*e*P	P	19 16 09.1	-0.7
	comp=Z,32nm,1.4s						
IL1	Eielson Array	47.68	33	*e*P	P	19 16 08.2	-1.8
ILAR	Eielson Array	47.68	33	P	P	19 16 09.9	-0.1
	comp=Z,3.9nm,0.7s,baz=258,slow=6.3,SNR=46						
ILB	Eielson Array	47.68	33	*e*P	P	19 16 10.1	+0.1
ODAN	Odare	48.86	275	*e*P	P	19 16 24.2	+4.3
	comp=Z,12nm,0.8s						
HNR	Honiara	48.95	160	LR	LR	19 36 12.7	
	comp=Z,42nm,19.6s,baz=260,slow=35						
GUN	Gumba	49.58	277	*e*P	P	19 16 26.7	+1.3
KKN	Kakani	50.10	277	*e*P	P	19 16 30.4	+1.1
GKN	Gorkha	50.51	278	*e*P	P	19 16 32.9	+0.6
KOLN	Koldanda	51.44	278	*e*P	P	19 16 41.0	+1.7
PYUN	Piuthan	51.77	279	*e*P	P	19 16 43.1	+1.3
	comp=Z,42nm,0.9s						
VOSK	Vostochnaya	51.77	312	*e*P	P	19 16 41.8	+0.6
VOSK				pmax	pmax		
	comp=Z,5.0nm,0.9s						
VOSK	Vostochnaya	51.77	312	*e*P	P	19 16 41.8	+0.6
	comp=Z,4.9nm,0.9s						
BRVK	Borovoye	52.09	313	*e*P	P	19 16 43.2	-0.4
BRVK				pmax	pmax		
	comp=Z,4.0nm,1.0s						
BRVK	Borovoye	52.09	313	*e*P	P	19 16 43.2	-0.4
	comp=Z,4.4nm,1.0s						
AAK	Ala-Archa	52.41	299	LR	LR	19 40 30.7	
	comp=Z,36nm,19.6s,baz=85,slow=38						
KSH	Kashi	52.45	295	*e*P	P	19 16 52.0	+5.4
KSH				*e*sP	sP	19 17 05.1	+3.8
KSH				PcS	PcS	19 21 58.1	+2.5
KSH				S	S	19 24 17.8	+7.2
KSH				pmax	pmax		
	comp=Z,130nm,4.3s						
KSH				LR	LR		
	comp=N,180nm,5.0s						
KSH				LR	LR		
	comp=E,150nm,6.4s						
KSH				LR	LR		
	comp=Z,170nm,7.0s						
INK	Inuvik	52.75	28	P	P	19 16 49.0	+0.8
	comp=Z,2.6nm,0.5s,baz=301,slow=6.6,SNR=29						
INK	Inuvik	52.75	28	*e*P	P	19 16 47.9	-0.3
INK				pmax	pmax		
	comp=Z,15nm,1.5s						
INK	Inuvik	52.75	28	*e*P	P	19 16 47.9	-0.3
	comp=Z,15nm,1.5s						
KKAR	Karatay Array	55.00	301	*e*P	P	19 17 03.4	-1.7
KKAR				pmax	pmax		
	comp=Z,1.0nm,0.4s						
KKAR	Karatay Array	55.00	301	*e*P	P	19 17 03.4	-1.7
	comp=Z,0.8nm,0.4s						
ARU	Arti	57.59	319	*d i*P	P	19 17 23.1	-0.2
ARU						19 18 13.9	
ARU						19 19 27.5	
ARU				S	S	19 25 19.0	+0.4
ARU				SS	SS	19 29 04.0	-4.3
ARU				pmax	pmax		
	comp=Z,13nm,1.7s						
ARU	Arti	57.59	319	*e*P	P	19 17 23.3	0.0
	comp=Z,18nm,1.5s						
WRAB	Tennant Creek	58.02	191	*e*P	P	19 17 25.4	-1.2
WRAB				pmax	pmax		
	comp=Z,22nm,1.0s						
WRAB	Tennant Creek	58.02	191	*e*P	P	19 17 25.4	-1.2
	comp=Z,22nm,1.0s						
WB2	Warramunga Arr	58.02	191	*e*P	P	19 17 24.3	-2.4
	comp=Z,20nm,0.9s						
WRA	Warramunga Arr	58.03	191	P	P	19 17 25.7	-1.0
	comp=Z,9.7nm,0.6s,baz=12,slow=7.3,SNR=75						
ABKAR	Akbulak array	59.48	311	*e*P	P	19 17 36.4	-0.2
	comp=Z,0.6nm,0.5s						
RES	Resolute Bay	61.43	15	*e*P	P	19 17 49.5	0.0
RES				pmax	pmax		
	comp=Z,4.0nm,0.8s						
RES	Resolute Bay	61.43	15	*e*P	P	19 17 49.5	0.0
	comp=Z,3.8nm,0.8s						
AS01	Alice Springs	61.74	191	*e*P	P	19 17 51.0	-1.2
ASAR	Alice Springs	61.75	191	P	P	19 17 51.5	-0.8
	comp=Z,3.0nm,0.5s,baz=8.2,slow=7.0,SNR=35						
YKA	Yellowknife Ar	62.06	31	P	P	19 17 53.9	0.0
	comp=Z,0.5nm,0.7s,baz=297,slow=6.4,SNR=8.6						
GEYT	Alibeck	65.73	300	P	P	19 18 19.1	+0.5
	comp=Z,2.9nm,1.0s,baz=80,slow=3.3,SNR=7.4						
GEYT				LR	LR	19 50 13.9	
	comp=Z,82nm,18.3s,baz=290,slow=39						
NEW	Newport	67.97	45	P	P	19 18 33.0	+0.3
	comp=Z,2.2nm,0.7s,baz=298,slow=6.7,SNR=4.6						
OBN	Obninsk	69.12	324	*e*P	P	19 18 41.2	+1.6
OBN				*e*		19 19 11.0	
OBN				*e*		19 21 12.0	
OBN				pmax	pmax		
	comp=Z,6.0nm,1.4s						
OBN				MLR	MLR		
	comp=Z,108nm,15.0s						
STKA	Stephens Creek	69.16	183	P	P	19 18 39.0	-1.0
	comp=Z,1.9nm,0.9s,baz=315,slow=4.3,SNR=2.7						
FINES	FINESS Array B	69.46	333	P	P	19 18 41.7	+0.1
	comp=Z,1.7nm,0.8s,baz=45,slow=8.4,SNR=6.3						
FINES				LR	LR	19 52 13.7	
	comp=Z,94nm,18.8s,baz=66,slow=38						
FINES	FINESS Array B	69.46	333	*i* P	P	19 18 41.4	-0.2
FINES				pmax	pmax		
	comp=Z,4.0nm,1.1s						
SWMT	Swartz Lake	70.15	45	*e*P	P	19 18 42.3	-4.0
FFC	Flin Flon	71.87	34	*e*P	P	19 18 56.4	0.0
FFC				pmax	pmax		
	comp=Z,14nm,1.4s						
FFC	Flin Flon	71.87	34	*e*P	P	19 18 56.4	0.0
	comp=Z,14nm,1.4s						
KIV	Kislovodsk	72.41	312	*e*P	P	19 19 01.7	+1.8
KIV				pmax	pmax		
	comp=Z,17nm,1.1s						
KIV				MLR	MLR		
	comp=Z,63nm,17.0s						
KIV	Kislovodsk	72.41	312	*e*P	P	19 19 01.9	+2.0
	comp=Z,14nm,0.9s						
KBZ	Khabaz	72.41	312	P	P	19 19 00.3	+0.5
	comp=Z,3.6nm,0.9s,baz=109,slow=9.1,SNR=4.1						
NV01	Mina Array Sit	72.64	55	*e*P	P	19 19 02.4	+0.8
NVAR	Mina Array Bea	72.64	55	P	P	19 19 02.7	+1.1
	comp=Z,1.5nm,0.7s,baz=296,slow=7.2,SNR=7.7						
NVAR				LR	LR	19 42 40.8	
	comp=Z,33nm,20.9s,baz=268,slow=29						

Code	Station Name	Δ°	AZ°	Op	ISC	Time	Res
IMW	Indian Meadow	73.99	47	eP	P	19 19 10.9	+1.3
	comp=Z,22nm,1.5s						
FXWY	Fox Creek	74.10	47	eP	P	19 19 08.8	-1.3
	comp=Z,9.1nm,1.3s						
MOOW	Moose Ponds	74.19	47	eP	P	19 19 11.7	+1.0
	comp=Z,13nm,1.5s						
R11A	Troy Canyon, C	74.44	54	eP	P	19 19 12.2	+0.1
	comp=Z,3.9nm,1.0s						
NB2	NORSAR Subarra	74.61	338	P	P	19 19 12.5	0.0
	comp=Z,12nm,1.2s,baz=39,slow=5.9						
NOA	NORSAR Array B	74.61	338	P	P	19 19 12.8	+0.3
	comp=Z,0.6nm,0.7s,baz=47,slow=4.7,SNR=6.1						
NOA				LR	LR	19 55 44.0	
	comp=Z,53nm,20.8s,baz=45,slow=39						
DUG	Dugway, Tooele	75.09	51	eP	P	19 19 16.9	+1.1
DUG				pmax	pmax		
	comp=Z,4.0nm,0.8s						
DUG	Dugway, Tooele	75.09	51	eP	P	19 19 16.9	+1.1
	comp=Z,4.1nm,0.8s						
AKASG	Malin Array Be	75.36	324	P	P	19 19 17.0	+0.1
	comp=Z,1.2nm,0.5s,baz=44,slow=6.2,SNR=12						
PSUT	Pine Spring	75.43	53	eP	P	19 19 16.0	-1.9
BW06	Boulder Array	75.48	47	eP	P	19 19 17.5	-0.6
PDAR	Pinedale Array	75.48	47	P	P	19 19 18.3	+0.2
	comp=Z,1.2nm,0.5s,baz=293,slow=1.5,SNR=8.2						
SNDA	J Saunders Pla	76.57	58	eP	P	19 19 20.8	-3.6
LCMT	Little Creek M	76.73	53	eP	P	19 19 22.9	-2.3
	comp=Z,4.9nm,0.8s						
ULM	Lac du Bonnet	77.64	35	P	P	19 19 29.4	-0.5
	comp=Z,2.5nm,1.1s,baz=333,slow=4.5,SNR=2.7						
LVV	L'vov	78.37	325	eP	P	19 19 38.7	+4.7
PV10	Paradox Valley	78.52	50	eP	P	19 19 36.0	+0.7
PV05	Paradox Valley	78.67	51	eP	P	19 19 33.5	-2.6
PV01	Paradox Valley	78.95	50	eP	P	19 19 35.8	-2.0
BUR08	Bucovina Ar. S	79.38	323	eP	P	19 19 39.6	-0.1
BURAR	Bucovina Array	79.39	323	⇑iP	P	19 19 40.2	+0.5
BURAR	Bucovina Array	79.39	323	⇑P	P	19 19 40.2	+0.5
KOLS	Kolonicke sedl	79.81	325	eP	P	19 19 42.4	+0.5
KOLS	Kolonicke sedl	79.81	325	eP	P	19 19 42.4	+0.5
VRI	Vrincioaia	79.89	321	⇑iP	P	19 19 55.5	+13
VRI	Vrincioaia	79.89	321	⇑P	P	19 19 55.5	+13
STHS	Stebnicka Huta	79.91	326	eP	P	19 19 47.2	+4.8
STHS	Stebnicka Huta	79.91	326	e	P	19 19 47.2	+4.8
BRTR	Keskin Array B	80.32	313	P	P	19 19 44.2	-0.7
	comp=Z,1.2nm,1.0s,baz=103,slow=5.6,SNR=6.4						
BRTR	Keskin Array B	80.32	313	ceP	P	19 19 46.5	+1.5
BRTR				pmax	pmax		
	comp=Z,2.0nm,1.1s						
BR231	Keskin MP Arra	80.75	314	eP	P	19 19 45.0	-2.2
LANS	Liptovska Anna	80.88	327	eP	P	19 19 49.1	+1.4
LANS	Liptovska Anna	80.88	327	eP	P	19 19 49.1	+1.4
KECS	Kecovo	80.94	326	eP	P	19 19 48.5	+0.6
KECS	Kecovo	80.94	326	eP	P	19 19 48.5	+0.6
DRGR		81.17	324	⇑iP	P	19 20 02.3	+13
DRGR		81.17	324	⇑P	P	19 20 02.3	+13
ARR	Arges	81.28	322	⇑iP	P	19 19 51.5	+1.6
DPC	Dobruska-Polom	81.28	329	eP	P	19 19 51.0	+1.2
DPC	Dobruska-Polom	81.28	329	eP	P	19 19 51.0	+1.2
VYHS	Vyhne	81.65	327	eP	P	19 19 52.7	+1.0
VYHS	Vyhne	81.65	327	eP	P	19 19 52.7	+1.0
BRG	Berggiesshubel	81.81	331	eP	P	19 19 52.9	+0.4
	comp=Z,11nm,1.7s						
BRG	Berggiesshubel	81.81	331	eP	P	19 19 52.9	+0.4
BRG				pmax	pmax		
	comp=Z,11nm,1.7s						
CLL	Collm	81.82	332	⇓iP	P	19 19 52.5	0.0
	comp=Z,7.0nm,1.1s						
CLL				i		19 19 56.5	
CLL				i		19 20 05.1	
CLL	Collm	81.82	332	⇓iP	P	19 19 52.5	0.0
CLL				i		19 20 05.1	
CLL				pmax	pmax		
	comp=Z,7.0nm,1.1s						
CLL	Collm	81.82	332	eP	P	19 19 52.0	-0.5
	comp=Z,9.9nm,1.2s						
PVCC	Panska Ves	81.84	330	eP	P	19 19 53.8	+1.1
PVCC	Panska Ves	81.84	330	eP	P	19 19 53.8	+1.1
SMOL	Smolenice	82.24	328	eP	P	19 19 56.1	+1.3
SMOL	Smolenice	82.24	328	eP	P	19 19 56.1	+1.3
PRU	Pruhonice	82.28	330	eP	P	19 19 55.8	+0.8
PRU				epP	sP	19 20 08.2	-1.8
PRU	Pruhonice	82.28	330	eP	P	19 19 55.8	+0.8
PRU				e		19 20 08.2	
ANMO	Albuquerque	82.30	52	P	P	19 19 57.1	+1.5
	comp=Z,0.6nm,0.3s,baz=312,slow=6.8,SNR=4.2						
ANMO	Albuquerque	82.30	52	eP	P	19 19 55.1	-0.5
ANMO				pmax	pmax		
	comp=Z,8.0nm,1.7s						
KHC	Kasperske Hory	83.34	330	eP	P	19 20 01.2	+0.6
KHC				epP	pP	19 20 13.3	+1.7
KHC	Kasperske Hory	83.34	330	eP	P	19 19 59.9	-0.7
KHC				pmax	pmax		
	comp=Z,1.0nm,0.7s						
KHC	Kasperske Hory	83.34	330	eP	P	19 19 59.9	-0.7
	comp=Z,1.1nm,0.7s						
GERES	GERESS Array B	83.52	330	P	P	19 20 01.4	-0.1
	comp=Z,0.4nm,0.6s,baz=57,slow=4.9,SNR=6.4						
VTS	Vitosha	84.00	321	⇓iP	P	19 20 17.5	+13
VTS	Vitosha	84.00	321	⇓P	P	19 20 17.5	+13
BFO	Black Forest	86.00	332	eP	P	19 20 12.5	-1.5
BFO				pmax	pmax		
	comp=Z,14nm,1.4s						
BFO	Black Forest	86.00	332	eP	P	19 20 12.5	-1.5
	comp=Z,14nm,1.4s						
FUORN	Ofenpass-Fuorn	86.69	330	eP	P	19 20 16.1	-1.6
	comp=Z,5.7nm,0.8s						
TX31	Lajitas Ar. Si	87.79	54	eP	P	19 20 22.5	-0.6
TXAR	Lajitas Array	87.79	54	P	P	19 20 23.1	0.0
	comp=Z,0.4nm,0.5s,baz=303,slow=3.0,SNR=8.4						
TORD	Torodi Ar. Bea	118.65	318	PP	PP	19 27 34.1	-4.9
	comp=Z,1.2nm,1.1s,baz=318,slow=4.0,SNR=3.6						
LPAZ	La Paz	144.24	63	PKP	PKPab	19 27 08.5	0.0
	comp=Z,1.1nm,0.5s,baz=359,slow=0.6,SNR=4.7						
SIV	San Ignacio	148.78	53	PKPbc	PKPbc	19 27 21.6	+0.1
	comp=Z,2.4nm,0.7s,baz=226,slow=3.8,SNR=3.5						

*IDC **03** 19:11:37.1±1.6, 33°.50S×71°.66W, h0km, mb3.5/2, mb1 3.7/5, mb1mx3.6/33, mbtmp3.5/5, ML3.6/3, MS3.1/1, Ms1 3.1/1, ms1mx2.7/20, Error ellipse: s-maj=50.8km s-min=31.1km az=86.0*

*ISCJB **03** 19:11:39.0±1.2, 33°.62S±0°.05×72°.02W±0°.08, h22km±9km, mb3.5/2, Error ellipse: s-maj=13.4km s-min=5.9km az=33.6*

*GUC **03** 19:11:39.4±0.6, 33°.62S×71°.98W, h25km±709km, ML3.7*

ISC 03 19:11:39.8±1.6, 33°.67S±0°.07×71°.98W±0°.09, h26km±14km, n26, σ1.62/31, 3C-4D, Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
CHPI	Pichilemu	0.72	182	eP	Pb	19 11 53.2	-0.5
CHPI				iS	Sb	19 12 04.3	+1.1
RCDM	Rinconada Maip	0.99	80	⇑iP	Pn	19 11 57.1	-1.0
RCDM				eS	Sb	19 12 10.0	-1.1
ROC1	El Roble	1.06	50	eP	Pb	19 11 58.6	-1.1
ROCH	El Roble	1.07	50	⇑iP	Pn	19 11 58.5	-0.8
ROCH				iS	Sn	19 12 12.4	-1.0
ROCH				AML	AML	19 12 20.3	
	comp=N,5µm,0.5s						
ANTU	Antumapu	1.12	85	⇑iP	Pn	19 11 59.7	-0.3
ANTU				iS	Sb	19 12 14.4	-0.5
PEL	Peldehue	1.20	64	⇓iP	Pb	19 12 01.1	-0.9
PEL				iS	Sb	19 12 16.2	-0.8
PEL				AML	AML	19 12 22.6	
	comp=N,4µm,0.4s						
CLCH	Cerro Calan	1.23	78	⇓iP	Pn	19 12 01.2	-0.3
CLCH				iS	Sb	19 12 17.7	-0.3
CLCH				AML	AML	19 12 24.4	
	comp=E,2µm,0.4s						
AUSP	Uspallata	2.61	57	eP	Pb	19 12 25.5	-0.6
AUSP				eS	Sb	19 12 59.6	+1.7
ARCO	CERRO ARCO	2.68	73	eP	Pb	19 12 27.0	-0.2
ARCO				eS	Sb	19 13 03.2	+3.4
ARCO				IAML		19 13 06.0	
	comp=Z,262nm,0.3s						
ASAL	Salagasta	2.85	69	eP	Pb	19 12 29.5	-0.5
ASAL				eS	Sb	19 13 06.9	+2.5
RTLS	Leoncito	2.93	51	eS	Sb	19 13 08.0	+0.9
RTCV	Cerro Valdivia	3.41	59	eS	Sb	19 13 24.2	+3.5
AMOG	MOGNA	4.01	48	eP	Pn	19 12 41.1	+1.4
ACAN	Cantantal	4.26	72	⇓eP	Pn	19 12 47.4	+4.3
AMAR	Marayes	4.50	62	eP	Pn	19 12 49.7	+3.2
AVFE	Valle Fertil	4.87	53	eP	Pn	19 12 52.4	+0.9
AGUA	GUANDACOL	5.12	36	eP	Pn	19 12 56.5	+1.5
ACHE	Chepes	5.14	62	eP	Pn	19 12 59.3	+3.9
ACLC	CERRO LA CRUZ	6.02	47	⇓eP	Pn	19 13 09.1	+1.6
ACLC				IAML		19 14 53.2	
	comp=Z,31nm,0.5s						
PLCA	Paso Flores	7.14	171	Pn	Pn	19 13 25.4	+2.7
	comp=Z,0.3nm,0.3s,baz=358,slow=11,SNR=9.2						
CYA	Choya	7.43	47	eP	Pn	19 13 28.8	+2.2
CYA				IAML		19 15 02.7	
	comp=Z,9.9nm,0.5s						
CPUP	Villa Florida	14.64	64	LR	LR	19 21 06.4	
	comp=Z,77nm,21.4s,baz=199,slow=40						
LPAZ	La Paz	17.65	12	P	Pn	19 15 43.8	-0.8
	comp=Z,0.1nm,0.3s,baz=196,slow=8.2,SNR=3.9						
SIV	San Ignacio	20.17	32	P	P	19 16 10.1	-2.3
	comp=Z,0.2nm,0.3s,baz=127,slow=5.1,SNR=3.0						
TXAR	Lajitas Array	69.47	331	P	P	19 22 47.2	+1.2
	comp=Z,0.1nm,0.5s,baz=173,slow=7.8,SNR=2.6						
TORD	Torodi Ar. Bea	84.05	70	P	P	19 24 08.2	-0.3
	comp=Z,0.8nm,0.8s,baz=251,slow=3.7,SNR=4.5						

*ISCJB **03** 19:13:14.6±0.7, 6°.82N±0°.04×73°.04W±0°.05, h156km±6km, Error ellipse: s-maj=9.0km s-min=4.5km az=34.3*

*FUNV **03** 19:13:14.8, 6°.73N×73°.09W, h165km, MW2.8*

*RSNC **03** 19:13:17.3±0.9, 6°.78N×73°.11W, h139km±6km, ML2.6*

ISC 03 19:13:14.8±1.4, 6°.81N±0°.04×73°.05W±0°.05, h156km±8km, n21, σ1.02/34, 1D, Northern Colombia

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
BTLC	Betulia, Santa	0.24	296	eP	Pn	19 13 36.4	+0.2
BARC	Barichara	0.25	211	eP	Pn	19 13 35.8	-0.4
BARC				eS	Sn	19 13 50.0	-2.6
BARC				i		19 13 52.1	
	comp=Z,84nm,0.2s						
GIRC	Giron, Santand	0.30	332	eP	Pn	19 13 35.9	-0.3
PAMC	Pamplona, Colo	0.63	33	eP	Pn	19 13 38.5	+0.4
PAMC				eS	Sn	19 13 55.6	-0.2
PAMC				i		19 13 57.7	
	comp=Z,32nm,0.5s						
BRRC	Barranca, Sant	0.72	294	⇓iP	Pn	19 13 37.7	-0.4
BRRC				eS	Sn	19 13 54.6	-1.2
BRRC				i		19 13 57.9	
	comp=Z,64nm,0.1s						
GRMC	Gramalote, San	0.93	15	eP	Pn	19 13 41.7	+2.0
GRMC				eS	Sn	19 14 00.9	+2.0
GRMC				i		19 14 02.6	
	comp=Z,70nm,0.3s						
CAPV	Capacho	1.28	35	eP	Pn	19 13 43.8	+0.9
CAPV				eS	Sn	19 14 05.3	+1.0
OCAC	Ocana	1.44	349	eP	Pn	19 13 45.8	+1.4
OCAC				eS	Sn	19 14 07.3	+0.1
OCAC				i		19 14 12.3	
	comp=Z,58nm,0.3s						
YOPC	Yopal, Colombi	1.58	157	eP	Pn	19 13 46.6	+0.9
YOPC				eS	Sn	19 14 09.6	+0.1
YOPC				i		19 14 11.7	
	comp=Z,24nm,0.6s						
NORC	Norcasia	2.19	236	eP	Pn	19 13 52.4	-0.2
CHIC	Chingaza	2.27	197	eP	Pn	19 13 54.1	+0.2
CHIC				eS	Sn	19 14 23.5	-0.5
CHIC				i		19 14 30.1	
	comp=Z,15nm,0.5s						
HELC	Santa Helena	2.54	256	eP	Pn	19 13 57.8	+0.7
HELC				i		19 14 34.1	
	comp=Z,14nm,0.2s						
VIGV	El Vigia	2.62	40	eP	Pn	19 13 58.3	+0.6
VIGV				eS	Sn	19 14 30.4	-0.5
SOCV	Socops	2.62	56	eP	Pn	19 13 58.1	+0.5
SOCV				eS	Sn	19 14 29.8	-1.1
GUYC	Guyana, Colomb	2.81	236	eP	Pn	19 14 01.1	+0.6
GUYC				eS	Sn	19 14 35.9	+0.1
GUYC				i		19 14 42.7	
	comp=Z,32nm,0.4s						
DBBC	Dabeiba	3.15	274	eP	Pn	19 14 04.3	0.0
TOLC	Tolima	3.16	226	eP	Pn	19 14 05.9	+1.2
PRAC	Prado	3.58	211	eP	Pn	19 14 10.3	+0.5
PRAC				eS	Sn	19 14 52.7	+0.1
PRAC				i		19 14 57.1	
	comp=Z,56nm,0.2s						
VIRV	Villa del Rosa	3.72	10	eP	Pn	19 14 10.9	-0.7
VIRV				eS	Sn	19 14 54.0	-1.9
CURV	Curarigua	4.41	44	eP	Pn	19 14 21.5	+0.8
BAUV	El Baul	5.39	67	eP	Pn	19 14 32.5	-1.0

*ATH **03** 19:14:44.9, 40°.40N×26°.26E, h29km±1km, ML2.3/3, Error ellipse: s-maj=2.1km s-min=0.9km az=276.0*

*ISK **03** 19:14:44.7, 40°.37N×26°.30E, h7km, MD2.9*

*THE **03** 19:14:45.7, 40°.37N×26°.26E, h9km, ML2.2/11, Error ellipse: s-maj=1.0km s-min=0.6km az=89.0*

*ISCJB **03** 19:14:45.2±0.3, 40°.39N±0°.02×26°.27E±0°.02, h10km±2km, Error ellipse: s-maj=2.9km s-min=2.6km az=30.1*

*CSEM **03** 19:14:45.3±0.1, 40°.39N×26°.28E, h10km, MD2.9, Error ellipse: s-maj=1.8km s-min=1.6km az=11.0*

*DDA **03** 19:14:45.0, 40°.38N×26°.28E, h30km, Md3.0*

ISC 03 19:14:45.0±0.9, 40°.39N±0°.01×26°.27E±0°.02, h9km±7km, n100, σ0.58/148, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
GELI	Tayfur-Gelibol	0.15	86	ePG	Pg	19 14 48.2	-0.2
GELI				eSG	Sg	19 14 50.5	-0.2
GELI	Tayfur-Gelibol	0.15	86	ePg	Pg	19 14 48.2	-0.2
GELI				eSg	Sg	19 14 50.5	-0.2
ERIK	Erikli-Kesan	0.34	33	ePG	Pg	19 14 51.9	+0.2
ERIK				eSG	Sg	19 14 57.2	+1.0
ERIK	Erikli-Kesan	0.34	33	ePg	Pg	19 14 51.9	+0.2
ERIK				eSg	Sg	19 14 57.2	+1.0
GADA	Gvkgeada	0.35	236	ePG	Pg	19 14 52.4	+0.5
GADA				eSG	Sb	19 14 57.7	-1.3
GADA	Gvkgeada	0.35	236	P	Pb	19 14 52.8	-0.6
GADA				S	Sb	19 14 57.7	-1.3
GADA	Gvkgeada	0.35	236	ePg	Pg	19 14 52.4	+0.5
GADA	Gvkgeada	0.35	236	P	Pb	19 14 52.8	-0.6
GADA				S	Sb	19 14 57.7	-1.3
ENEZ	Enez	0.36	345	ePG	Pb	19 14 53.1	-0.6
ENEZ	Enez	0.36	345	P	Pb	19 14 53.0	-0.6
ENEZ				S	Sb	19 14 58.7	-0.7
ENEZ	Enez	0.36	345	P	Pb	19 14 53.0	-0.6
ENEZ				S	Sb	19 14 58.7	-0.7
ALN	Alexandroupoli	0.54	341	ePG	Pg	19 14 55.9	+0.4
ALN	Alexandroupoli	0.54	341	P	Pg	19 14 55.9	+0.4
ALN				S	Sb	19 15 03.8	-0.7
ALN	Alexandroupoli	0.54	341	P	Pg	19 14 55.9	+0.4
ALN				S	Sb	19 15 03.8	-0.7
ALN	Alexandroupoli	0.54	341	P	Pg	19 14 55.9	+0.4
ALN				S	Sb	19 15 03.8	-0.7
ALN				AML	AML	19 15 10.5	
	comp=N,336µm,0.4s						
ALN				AML	AML	19 15 11.5	
	comp=E,212µm,0.6s						
EZN	Ezine	0.56	176	ePG	Pg	19 14 55.6	-0.3
EZN	Ezine	0.56	176	P	Pg	19 14 55.6	-0.3
EZN				S	Sg	19 15 03.8	+0.5
EZN	Ezine	0.56	176	P	Pg	19 14 55.6	-0.3
EZN				S	Sg	19 15 03.8	+0.5
BOZC	Bozcaada	0.57	197	iP	Pn	19 15 00.0	+0.8
BOZC				iS	Sb	19 15 04.8	-0.6
SMTH	Samothraki Isl	0.57	279	P	Pg	19 14 56.4	+0.2
SMTH				S	Sg	19 15 04.6	+0.9
SMTH	Samothraki Isl	0.57	279	P	Pg	19 14 56.4	+0.2
SMTH				S	Sg	19 15 04.6	+0.9
SMTH	Samothraki Isl	0.57	279	P	Pg	19 14 56.2	+0.1
SMTH				S	Sb	19 15 05.0	-0.5
SMTH				AML	AML	19 15 08.8	
	comp=E,591µm,0.1s						
SMTH				AML	AML	19 15 08.8	
	comp=N,772µm,0.1s						
RKY	Sarkoy-Tekirda	0.75	66	ePG	Pg	19 14 59.1	-0.4
RKY	Sarkoy-Tekirda	0.75	66	ePg	Pg	19 14 59.1	-0.4
LIA	Limnos Island	0.97	240	P	Pb	19 15 03.9	0.0
LIA				S	Sb	19 15 17.0	+0.2
LIA	Limnos Island	0.97	240	P	Pb	19 15 04.0	0.0
LIA				S	Sb	19 15 17.0	+0.2
MRMT	Marmara Adasi	1.03	77	ePG	Pg	19 15 04.4	-0.4
MRMT	Marmara Adasi	1.03	77	ePg	Pg	19 15 04.4	-0.5
AYVA	Ayvalik	1.12	163	iP	Pb	19 15 06.4	-0.2
AYVA				iS	Sg	19 15 21.1	-0.1
AYVA	Ayvalik	1.12	163	P	Pb	19 15 06.4	-0.2
AYVA				S	Sg	19 15 21.1	-0.1
GONE	Gonen-Balikesi	1.13	107	ePN	Pb	19 15 06.3	-0.4
GONE	Gonen-Balikesi	1.13	107	ePn	Pb	19 15 06.3	-0.4
TKR	Tekirdag	1.13	57	ePN	Pb	19 15 06.6	-0.2
TKR	Tekirdag	1.13	57	ePn	Pb	19 15 06.6	-0.2
PRK	Paraskevi	1.14	180	P	Pn	19 15 07.0	-0.1
PRK				S	Sn	19 15 22.9	+0.1
PRK	Paraskevi	1.14	180	P	Pn	19 15 07.0	-0.1
PRK				S	Sn	19 15 22.9	+0.1
PRK	Paraskevi	1.14	180	P	Pb	19 15 06.5	-0.4
PRK				S	Sn	19 15 23.7	+0.9
EDC	Edincik	1.22	91	ePN	Pn	19 15 08.0	-0.2
EDC	Edincik	1.22	91	ePn	Pn	19 15 08.0	-0.2
BALY	Balya	1.22	122	iP	Pg	19 15 08.4	0.0
BALY	Balya	1.22	122	P	Pg	19 15 08.4	0.0
SIGR	SIGRI	1.22	196	ePN	Pn	19 15 07.9	-0.3
SIGR	SIGRI	1.22	196	P	Pn	19 15 07.7	-0.5
SIGR				S	Sn	19 15 24.6	-0.2
SIGR	SIGRI	1.22	196	ePn	Pn	19 15 07.9	-0.3
SIGR				S	Sn	19 15 24.5	-0.2
SIGR	SIGRI	1.22	196	P	Pn	19 15 07.5	-0.7
SIGR				S	Sn	19 15 24.5	-0.2
SIGR				AML	AML	19 15 25.8	
	comp=E,467µm,0.3s						
SIGR				AML	AML	19 15 25.9	
	comp=N,821µm,0.7s						
CRLT	Corlu	1.33	56	ePN	Pb	19 15 10.2	0.0
CRLT	Corlu	1.33	56	ePn	Pb	19 15 10.2	0.0
DKL	Dikili	1.40	159	ePN	Pb	19 15 10.9	-0.4
DKL	Dikili	1.40	159	ePn	Pb	19 15 10.9	-0.4
BALB	Balikesir	1.44	121	ePN	Pb	19 15 11.7	-0.3
BALB	Balikesir	1.44	121	ePn	Pb	19 15 11.7	-0.3
KAVA	Kavala	1.47	295	P	Pn	19 15 11.4	-0.3
KAVA				S	Sn	19 15 30.6	-0.4
KAVA	Kavala	1.47	295	P	Pn	19 15 11.6	0.0
KAVA				S	Sn	19 15 30.6	-0.4
KAVA	Kavala	1.47	295	P	Pn	19 15 11.7	0.0
EDRB	Edirne	1.50	14	ePN	Pn	19 15 12.4	+0.3
EDRB	Edirne	1.50	14	P	Pn	19 15 11.8	-0.3
EDRB				S	Sg	19 15 33.1	-0.2
EDRB	Edirne	1.50	14	P	Pn	19 15 11.8	-0.3
EDRB	Edirne	1.50	14	ePn	Pn	19 15 12.4	+0.3
EDRB				S	Sg	19 15 33.1	-0.2
PHSR	Pinarhisar	1.56	37	ePN	Pb	19 15 14.1	0.0
PHSR	Pinarhisar	1.56	37	ePn	Pb	19 15 14.1	0.0
KCTX	Karacabey (Bur	1.60	94	ePN	Pn	19 15 13.3	-0.1
KCTX	Karacabey (Bur	1.60	94	ePn	Pn	19 15 13.3	-0.1
OUR	Ouranopolis	1.75	269	ePN	Pn	19 15 14.9	-0.6
OUR	Ouranopolis	1.75	269	P	Pn	19 15 14.9	-0.6
OUR				S	Sn	19 15 37.2	-0.7
OUR	Ouranopolis	1.75	269	P	Pn	19 15 14.9	-0.6
OUR				S	Sn	19 15 37.2	-0.7
OUR	Ouranopolis	1.75	269	P	Pn	19 15 14.2	-1.3
DURS	Dursunbey	1.86	114	iP	Pb	19 15 19.5	+0.2
DURS				iS	Sb	19 15 42.4	-0.3
DURS	Dursunbey	1.86	114	P	Pb	19 15 19.5	+0.2
DURS				S	Sb	19 15 42.4	-0.3
CTKS	Kestanelik-??a	1.90	63	ePN	Pb	19 15 18.6	-1.1
CTKS	Kestanelik-??a	1.90	63	ePn	Pb	19 15 18.6	-1.1
AKS	Akhisar	1.92	141	ePN	Pn	19 15 18.4	+0.5
AKS	Akhisar	1.92	141	ePn	Pn	19 15 18.4	+0.5
DST	Dursunbey	1.96	113	ePN	Pn	19 15 19.0	+0.5
DST	Dursunbey	1.96	113	ePn	Pn	19 15 19.0	+0.5
MDNY	Mudanya-Bursa	1.99	90	ePN	Pn	19 15 19.4	+0.5
MDNY	Mudanya-Bursa	1.99	90	ePn	Pn	19 15 19.4	+0.5
CHOS	Chios island	2.00	185	ePN	Pn	19 15 19.6	+0.5
CHOS	Chios island	2.00	185	P	Pn	19 15 19.3	+0.2
CHOS	Chios island	2.00	185	ePn	Pn	19 15 19.6	+0.5
CHOS	Chios island	2.00	185	P	Pn	19 15 19.3	+0.2
BGKT	Bogazkoy	2.06	67	ePN	Pn	19 15 20.3	+0.6
BGKT	Bogazkoy	2.06	67	ePn	Pn	19 15 20.3	+0.6
NVR	Nevrokopi	2.07	299	P	Pn	19 15 19.9	0.0
NVR				S	Sn	19 15 45.2	-0.6
NVR	Nevrokopi	2.07	299	P	Pn	19 15 20.1	+0.2
NVR				S	Sn	19 15 45.2	-0.6
BLCB	Balcova	2.09	163	ePN	Pn	19 15 20.7	+0.6
BLCB	Balcova	2.09	163	ePn	Pn	19 15 20.7	+0.6
IZM	Izmir	2.13	159	ePN	Pn	19 15 21.1	+0.3
IZM	Izmir	2.13	159	ePn	Pn	19 15 21.1	+0.3
PLG	Polygyros	2.16	271	P	Pn	19 15 20.6	-0.6
PLG				S	Sn	19 15 48.9	+0.8
PLG	Polygyros	2.16	271	P	Pn	19 15 20.6	-0.6
PLG				S	Sn	19 15 48.9	+0.8
SRS	Serrai	2.16	291	P	Pn	19 15 20.9	-0.3
SRS				S	Sn	19 15 49.0	+0.8
SRS	Serrai	2.16	291	P	Pn	19 15 20.9	-0.3
SRS				S	Sn	19 15 49.0	+0.8
DEMI	Demirci	2.31	125	iP	Pn	19 15 24.4	+1.1
DEMI				iS	Sn	19 15 52.7	+0.8
DEMI	Demirci	2.31	125	P	Pn	19 15 24.4	+1.1
DEMI				S	Sn	19 15 52.7	+0.8
KNT	Kendrikon	2.68	288	ePN	Pn	19 15 29.5	+1.2
KNT	Kendrikon	2.68	288	P	Pn	19 15 28.7	+0.4
KNT				S	Sn	19 16 02.3	+1.5
KNT	Kendrikon	2.68	288	P	Pn	19 15 28.7	+0.4
KNT	Kendrikon	2.68	288	ePn	Pn	19 15 29.5	+1.2
KNT				S	Sn	19 16 02.3	+1.5
KHAL	Karahalli	3.21	128	iP	Pn	19 15 36.5	+0.9
KHAL				iS	Sn	19 16 14.6	+0.6
KHAL	Karahalli	3.21	128	P	Pn	19 15 36.5	+0.9
KHAL				S	Sn	19 16 14.6	+0.6

IDC 03 19:15:19.8±4.0, 36°.53N×140°.36E, h0km, mb3.4/2, mb1 3.7/2, mb1mx3.1/47, mbtmp3.4/2, Error ellipse: s-maj=83.5km s-min=34.0km az=35.0, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
MJAR	Matsushiro Arr	1.73	271	Pn	Pn	19 15 50.8	-0.4
	1.1nm,0.3s,baz=89,slow=15,SNR=9.8						
WRA	Warramunga Arr	56.45	187	P	P	19 25 03.0	-0.5
	0.2nm,0.4s,baz=5.4,slow=7.4,SNR=3.4						
ASAR	Alice Springs	60.18	187	P	P	19 25 29.8	+0.3
	0.4nm,0.8s,baz=7.5,slow=7.8,SNR=3.1						

IDC 03 19:15:27.4±2.9, 36°.34N×142°.05E, h0km, mb3.6/3, mb1 3.6/4, mb1mx3.3/48, mbtmp3.5/4, ML2.9/1, Error ellipse: s-maj=77.6km s-min=29.7km az=59.0, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
MJAR	Matsushiro Arr	3.11	275	Pn	Pn	19 16 18.0	+0.3
	1.5nm,0.3s,baz=88,slow=16,SNR=7.4						
MAT	Matsushiro	3.11	275	P	Pn	19 16 18.3	+0.6
MAT				eS	Sn	19 16 54.5	-1.1
SONM	Songino Array	28.60	305	P	P	19 21 24.9	-0.5
	0.4nm,0.5s,baz=119,slow=12,SNR=3.1						
MKAR	Makanchi Array	44.92	303	P	P	19 23 44.4	+0.4
	0.5nm,0.7s,baz=88,slow=8.7,SNR=4.7						
WRA	Warramunga Arr	56.45	189	P	P	19 25 10.7	-0.3
	0.4nm,0.5s,baz=2.0,slow=7.4,SNR=6.8						

JMA 03 19:15:58.6, 37°.73N×139°.97E, h9km±1km, M1.7, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
JFY	Yanaizu	0.39	213	P	Pg	19 16 06.1	-0.1
JFY				S	Sg	19 16 11.2	-0.1
JNS	Sasagawa	0.53	280	P	Pg	19 16 08.7	-0.1
JMM	Marumori	0.67	78	P	Pg	19 16 11.5	0.0

IDC 03 19:20:25.4±2.3, 6°.76S×130°.37E, h0km, mb3.3/1, mb1 3.3/3, mb1mx3.1/41, mbtmp3.1/3, ML3.1/2, Error ellipse: s-maj=137.4km s-min=31.9km az=70.0, Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
WRA	Warramunga Arr	13.66	164	Pn	Pn	19 23 40.2	-0.4
	0.1nm,0.3s,baz=347,slow=13,SNR=6.6						
WRA				Sn	Sn	19 26 03.2	-10
	0.3nm,0.3s,baz=312,slow=12,SNR=6.3						
ASAR	Alice Springs	17.15	169	P	Pn	19 24 27.0	+0.3
	0.1nm,0.3s,baz=342,slow=8.3,SNR=6.5						
MKAR	Makanchi Array	68.22	327	P	P	19 31 28.0	0.0

0.2nm,0.5s,baz=118,slow=7.9,SNR=3.6

IDC 03 19:34:43.4±4.4**, 2°.36S×67°.81E, h0**km**, mb3.7**/6**, mb1 3.8**/6**, mb1mx3.4**/38**, mbtmp3.7**/6**, MS3.5**/3**, Ms1 3.6**/3**, ms1mx3.1**/45**, Error ellipse: s-maj=108.4km s-min=40.2km az=173.0, Carlsberg Ridge**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
H08N2	**Diego Garcia H**	**5.06**	**141**	T	T	19 40 48.9	
	baz=322,slow=75,SNR=377						
H08N3	**Diego Garcia H**	**5.07**	**141**	T	T	19 40 58.3	
	baz=322						
H08N1	**Diego Carcia H**	**5.08**	**141**	T	T	19 40 46.4	
	baz=322,slow=75,SNR=358						
PALK	**Pallekele**	**16.03**	**53**	LR	LR	19 43 19.0	
	comp=Z,135nm,18.7s,baz=295,slow=32						
OPO	**Ambohidratompo**	**25.84**	**230**	LR	LR	19 48 25.3	
	comp=Z,135nm,18.5s,baz=1.0,slow=32						
CMAR	**Chiang Mai Arr**	**36.97**	**55**	P	P	19 41 54.2	-0.6
	1.1nm,0.9s,baz=251,slow=11,SNR=9.7						
CMAR				LR	LR	19 55 50.6	
	comp=Z,55nm,19.0s,baz=206,slow=34						
MKAR	**Makanchi Array**	**50.58**	**13**	P	P	19 43 44.3	+0.3
	0.4nm,0.8s,baz=209,slow=7.0,SNR=4.0						
KURBB	**Kurchatov Arra**	**53.57**	**8**	P	P	19 44 05.4	-0.7
	0.8nm,1.0s,baz=204,slow=7.5,SNR=4.8						
ZALV	**Zalesovo Beam**	**57.88**	**12**	P	P	19 44 36.8	-0.1
	0.2nm,0.3s,baz=208,slow=11,SNR=4.3						
SONM	**Songino Array**	**60.27**	**29**	P	P	19 44 54.4	+0.5
	1.4nm,0.9s,baz=220,slow=6.7,SNR=13						
ESDC	**Sonseca Array**	**77.58**	**311**	P	P	19 46 41.6	-0.1
	0.6nm,0.7s,baz=80,slow=5.0,SNR=4.6						

IDC 03 19:40:36.8±56.0**, 16°.86S×179°.25W, h0**km**, mb3.8**/3**, mb1 4.0**/3**, mb1mx3.6**/30**, mbtmp3.8**/3**, Error ellipse: s-maj=1022.0km s-min=151.2km az=77.0, Fiji Islands region**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
STKA	**Stephens Creek**	**38.45**	**240**	P	P	19 48 00.8	+0.3
	1.2nm,0.9s,baz=96,slow=10,SNR=3.3						
WRA	**Warramunga Arr**	**44.05**	**259**	P	P	19 48 46.4	-0.3
	0.4nm,0.7s,baz=94,slow=7.7,SNR=5.1						
ASAR	**Alice Springs**	**44.31**	**253**	P	P	19 48 48.5	-0.4
	2.1nm,0.6s,baz=90,slow=7.8,SNR=42						

*ISCJB **03** 19:45:36.7±0.7, 7°.08S±0°.09×76°.48W±0°.07, h150km, mb3.5/3, Error ellipse: s-maj=12.8km s-min=9.5km az=31.0*

*IDC **03** 19:45:38.2±2.3, 7°.31S×76°.64W, h156km±42km, mb3.4/3, mb1 3.4/5, mb1mx3.2/37, mbtmp3.8/5, MS3.2/2, Ms1 3.3/2, ms1mx2.8/27, Error ellipse: s-maj=101.4km s-min=20.3km az=36.0*

ISC 03 19:45:37.6±0.8**, 7°.09S**±0°.10×**76°.53W**±0°.09**, h150**km**, n13, σ1ˢ19**/12**, mb3.3**/3**, Northern Peru**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
ATAH	**Atahualpa**	**1.85**	**269**	P	**Pn**	**19 46 11.2**	**-0.1**
	62nm,0.3s,baz=35,slow=3.6,SNR=267						
ATAH				S	**Sn**	**19 46 37.0**	**-0.3**
	68nm,0.3s,baz=164,slow=23,SNR=19						
OTAV	**Otavalo**	**7.53**	**345**	*e*P	**Pn**	**19 47 26.0**	**+0.8**
CMBC	**Cumbal**	**8.08**	**351**	*e*P	**Pn**	**19 47 31.2**	**-1.4**
CRUC	**La Cruz**	**8.61**	**357**	*e*P	**Pn**	**19 47 38.7**	**-0.8**
LPAZ	**La Paz**	**12.29**	**139**	P	**Pn**	**19 48 27.8**	**-0.5**
	0.1nm,0.3s,baz=284,slow=14,SNR=3.4						
SIV	**San Ignacio**	**17.53**	**122**	P	**P**	**19 49 31.8**	**0.0**
	0.3nm,0.3s,baz=291,slow=7.8,SNR=3.3						
JTS	**JuntasAbangare**	**19.20**	**334**	LR	LR	19 56 20.4	
	comp=Z,54nm,20.9s,baz=58,slow=33						
CPUP	**Villa Florida**	**26.46**	**139**	LR	LR	20 03 00.4	
	comp=Z,85nm,19.8s,baz=186,slow=40						
DBIC	**Dimbokro**	**72.80**	**81**	P	**P**	**19 56 51.5**	**+1.1**
	5.3nm,1.1s,baz=240,slow=8.1,SNR=2.8						
YKA	**Yellowknife Ar**	**75.28**	**343**	P	**P**	**19 57 05.0**	**+1.3**
	0.2nm,0.5s,baz=137,slow=6.1,SNR=6.1						
TORD	**Torodi Ar. Bea**	**80.24**	**75**	P	**P**	**19 57 32.7**	**+0.4**
	0.3nm,0.5s,baz=279,slow=5.7,SNR=4.6						
SONM	**Songino Array**	**139.33**	**357**	PKP	**PKPdf**	**20 04 44.8**	**-2.4**
	0.2nm,0.6s,baz=22,slow=1.6,SNR=3.7						
WRA	**Warramunga Arr**	**139.44**	**228**	PKP	**PKPdf**	**20 04 48.0**	**-0.1**
	0.5nm,0.4s,baz=136,slow=2.1,SNR=4.4						

*ISCJB **03** 19:59:52.9±0.4, 61°.30N±0°.03×150°.76W±0°.06, h69km±5km, mb3.3/1, Error ellipse: s-maj=5.1km s-min=4.2km az=151.7*

*NEIC **03** 19:59:54.5, 61°.29N×150°.79W, h54km, ML2.7(AEIC), After AEIC.*

*IDC **03** 19:59:55.7±8.2, 61°.40N×150°.79W, h84km±79km, mb2.9/1, mb1 2.9/3, mb1mx2.7/54, mbtmp3.0/3, ML2.7/2, Error ellipse: s-maj=63.3km s-min=47.1km az=38.0*

ISC 03 19:59:53.7±1.0**, 61°.29N**±0°.03×**150°.78W**±0°.03**, h62**km±8km**, n48, σ0ˢ66**/55**, Southern Alaska**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
FIB	**Fire Island**	**0.32**	**112**	P	**Pn**	**20 00 04.5**	**+0.4**
FIB				S	**Sn**	**20 00 12.1**	**+0.5**
VOGL	**Vogel Lake**	**0.34**	**150**	P	**Pn**	**20 00 05.0**	**+0.7**
RC01	**Rabbit Creek A**	**0.54**	**111**	P	**Pn**	**20 00 06.0**	**-0.3**
RC01				S	**Sn**	**20 00 15.6**	**+0.2**
STLK	**Strandline Lak**	**0.55**	**293**	P	**Pn**	**20 00 06.2**	**-0.3**
SPU	**Mount Spurr**	**0.63**	**261**	P	**Pn**	**20 00 06.9**	**-0.4**
CKN	**Chakachatna No**	**0.68**	**265**	P	**Pn**	**20 00 07.7**	**-0.2**
SPCR	**Spurr Chakacha**	**0.70**	**263**	P	**Pn**	**20 00 07.5**	**-0.6**
SPCR				S	**Sn**	**20 00 18.2**	**-0.5**
CKL	**Chakachamna La**	**0.76**	**264**	P	**Pn**	**20 00 08.5**	**-0.4**
SLKM	**Skilak Lake**	**0.83**	**161**	P	**Pn**	**20 00 09.5**	**-0.2**
PMR	**Palmer**	**0.85**	**68**	P	**Pn**	**20 00 09.3**	**-0.5**
PMR				S	**Sn**	**20 00 21.7**	**-0.1**
CUT	**Chulitna**	**1.15**	**12**	P	**Pn**	**20 00 13.4**	**-0.3**
DFR	**Drift River**	**1.16**	**234**	P	**Pn**	**20 00 14.1**	**0.0**
RDJH	**Redoubt Jeurge**	**1.21**	**236**	P	**Pn**	**20 00 14.8**	**+0.1**
NCT	**North Crescent**	**1.28**	**236**	P	**Pn**	**20 00 15.8**	**+0.2**
SML	**Sawmill**	**1.28**	**65**	P	**Pn**	**20 00 15.3**	**-0.3**
SML				S	**Sn**	**20 00 31.7**	**-0.2**
SEW	**Seward**	**1.36**	**151**	P	**Pn**	**20 00 16.3**	**-0.2**
SEW				S	**Sn**	**20 00 35.2**	**+1.6**
BRLK	**Bradley Lake**	**1.53**	**182**	P	**Pn**	**20 00 19.2**	**+0.3**
BRLK				S	**Sn**	**20 00 38.1**	**+0.3**
SCM	**Sheep Creek Mo**	**1.74**	**70**	P	**Pn**	**20 00 21.4**	**-0.3**
PPLA	**Purkeypile**	**1.75**	**338**	P	**Pn**	**20 00 22.0**	**+0.1**
HUR	**Hurricane**	**1.78**	**17**	P	**Pn**	**20 00 23.2**	**+1.0**
OPT	**Oil Point**	**2.04**	**218**	P	**Pn**	**20 00 27.3**	**+1.5**
VLZ	**Valdez**	**2.16**	**92**	P	**Pn**	**20 00 26.5**	**-0.8**
TRF	**Thorofare Moun**	**2.18**	**6**	P	**Pn**	**20 00 28.9**	**+1.0**
CAST	**Castle Rocks**	**2.22**	**345**	P	**Pn**	**20 00 28.3**	**+0.1**
KTH	**Kantishna Hill**	**2.27**	**358**	P	**Pn**	**20 00 30.2**	**+1.2**
RND	**Reindeer**	**2.31**	**22**	P	**Pn**	**20 00 29.4**	**0.0**
SVW2	**Sparrevohn**	**2.33**	**267**	P	**Pn**	**20 00 29.4**	**-0.4**
KLU	**Klutina**	**2.35**	**83**	P	**Pn**	**20 00 29.2**	**-0.8**
DHY	**Denali Highway**	**2.40**	**40**	P	**Pn**	**20 00 30.7**	**-0.1**
DIV	**Divide**	**2.43**	**92**	P	**Pn**	**20 00 30.0**	**-1.1**
MCK	**McKinley**	**2.60**	**18**	P	**Pn**	**20 00 34.6**	**+1.2**
CHUM	**Lake Minchumin**	**2.70**	**345**	P	**Pn**	**20 00 35.1**	**+0.5**
BPAW	**Bear Paw Mtn.**	**2.83**	**358**	P	**Pn**	**20 00 36.6**	**+0.2**
TT01	**Tatalina**	**2.95**	**306**	P	**Pn**	**20 00 37.9**	**-0.2**
PAX	**Paxson**	**3.01**	**54**	P	**Pn**	**20 00 39.7**	**+0.7**
PS10	**TAPS Pump St10**	**3.17**	**45**	P	**Pn**	**20 00 42.0**	**+0.9**
GLB	**Gilahina Butte**	**3.36**	**84**	P	**Pn**	**20 00 43.0**	**-0.7**
WRH	**Wood River Hil**	**3.42**	**20**	P	**Pn**	**20 00 45.5**	**+0.9**
CCB	**Clear Creek Bu**	**3.63**	**21**	P	**Pn**	**20 00 47.9**	**+0.5**
KDAK	**Kodiak Island**	**3.63**	**195**	P	Pn	20 01 02.5	+15
	1.6nm,0.3s,baz=79,slow=5.6,SNR=11						
KDAK				S	Sn	20 01 42.1	+13
	1.9nm,0.3s,baz=257,slow=20,SNR=6.0						
MCARA	**McCarthy VSAT**	**3.74**	**85**	P	**Pn**	**20 00 49.2**	**+0.3**
MLY	**Manley**	**3.76**	**0**	P	**Pn**	**20 00 49.8**	**+0.6**
ILAR	**Eielson Array**	**3.92**	**25**	P	**Pn**	**20 00 52.5**	**+1.2**
	0.5nm,0.3s,baz=212,slow=14,SNR=24						
ILAR				S	**Sn**	**20 01 35.9**	**-0.2**
	1.1nm,0.3s,baz=187,slow=15,SNR=5.6						
BCA3	**Beaver Creek A**	**4.58**	**63**	P	**Pn**	**20 01 00.5**	**+0.1**
IM3	**Indian Mountai**	**4.90**	**346**	P	**Pn**	**20 01 04.9**	**+0.2**
BM3	**Burnt Mountain**	**6.71**	**21**	P	**Pn**	**20 01 29.9**	**+0.4**
YKA	**Yellowknife Ar**	**16.95**	**70**	P	**P**	**20 03 47.8**	**+0.4**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
	0.0nm,0.3s,baz=274,slow=10,SNR=4.3						
SONM	**Songino Array**	**54.91**	**307**	P	**P**	**20 09 16.8**	**-1.0**
	0.2nm,0.6s,baz=46,slow=8.3,SNR=2.6						

*IDC **03** 20:06:38.5±0.3, 9°.74S×107°.82E, h0km, mb5.7/36, mb1 5.7/36, mb1mx5.7/37, mbtmp5.7/36, MS6.1/41, Ms1 6.1/41, ms1mx6.0/50, Error ellipse: s-maj=10.8km s-min=8.5km az=63.0*

*ISCJB **03** 20:06:39.8±0.5, 9°.84S±0°.02×107°.77E±0°.01, h18km±3km, mb6.2/218, MS6.3/245, Error ellipse: s-maj=2.9km s-min=2.2km az=34.3*

*BJI **03** 20:06:40.9, 9°.85S×107°.80E, h20km, mb6.1/70, mB6.5/74, Ms6.7/97, Ms7 6.5/92*

*GCMT **03** 20:06:40.4±0.1, 10°.10S×107°.72E, h21km, MW6.7/144, Moment Tensor Solution. s144,c320; s139,c602; Duration: 5ˢ7 Moment tensor: Scale 10¹⁹Nm; Mrr-1.18±.01; Mθθ1.42±.01; Mφφ-0.23±.01; Mrθ0.27±.01; Mθφ-0.89±.01; Mφr-0.30±.02; Best double couple: M₀1.56000×10¹⁹ NP1:φs307.00000°, δ53.00000°, λ-72.00000°. NP2:φs98.00000°, δ40.00000°, λ-112.00000°. Principal axes: T 1.8540, Plg7.0000°, Azm24.0000°; N -0.5850, Plg14.0000°, Azm116.0000°; P -1.2660, Plg74.0000°, Azm269.0000°; nsta1 refers to body waves, cutoff=50s. nsta2 refers to surface/mantle waves, cutoff=50s.*

*NEIC **03** 20:06:40.4±0.1, 9°.85S×107°.69E, h14km, mb6.4/99, ME6.7, MS6.3/147, MW6.7 Error ellipse: s-maj=4.3km s-min=3.2km az=214.0 Broadband fault plane solution: P waves. NP1:φs183.00000°, δ46.00000°, λ-36.00000°. NP2:φs300.00000°, δ65.00000°, λ-130.00000°. Principal axes: T Plg11.0000°, Azm58.0000°; N Plg0.0000°, Azm0.0000°; P Plg52.0000°, Azm162.0000°; Depth from synthetics of broadband displacement seismograms. Energy computed from BB mechanism.*

NEIC Felt [V] at Tasikmalaya and Wonosobo; [IV] at Cilacap and Pangandaran; [III] at Bandung, Bogor and Sleman; [II] at Cisarua, Jakarta, Karangkates, Purworejo and Yogyakarta. Felt [II] at Denpasar, Kuta and Ubud, Bali. Felt in much of Bali and Java. Also felt in Singapore.

*DJA **03** 20:06:40.5±0.1, 10°S±1°×10°8E±°, h10km, M6.6/89, mb6.3/88, mB6.8/89, MLv8.0/1, Mw(mB)6.7/89, Mwp6.4/54*

*MOS **03** 20:06:41.9±1.0, 9°.72S×107°.89E, h33km, mb6.3/76, MS6.1/65, Error ellipse: s-maj=7.5km s-min=4.3km az=120.2*

*KLM **03** 20:06:42.6, 9°.94S×107°.57E, h55km, mb6.7, ML6.6, MS7.5*

*NEIC **03** 20:06:42.0±0.0, 10°.19S×107°.95E, h24km, Moment Tensor Solution. s25 Moment tensor: Scale 10¹⁹Nm; Mrr-1.21; Mθθ1.16; Mφφ0.05; Mrθ0.40; Mθφ-0.66; Mφr-0.08; Best double couple: M₀1.40000×10¹⁹ NP1:φs290.00000°, δ53.00000°, λ-96.00000°. NP2:φs121.00000°, δ37.00000°, λ-81.00000°. Principal axes: T 1.5200, Plg8.0000°, Azm24.0000°; N -0.2500, Plg5.0000°, Azm293.0000°; P -1.2700, Plg80.0000°, Azm171.0000°;*

ISC 03 20:06:43.3±0.3**, 9°.73S**±0°.02×**107°.77E**±0°.03**, h32**km±2km**, h32**km**:pP-P, n2019, σ1ˢ79**/2080**, mb6.3**/245**, MS6.3**/256**, 53C-68D, South of Jawa**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
CMJI	**Cimerak**	**2.05**	**19**	P	**Pn**	**20 07 17.1**	**+1.5**
CMJI				S	**Sb**	**20 07 45.0**	**0.0**
CISI	**Cisompet, Garu**	**2.17**	**1**	P	**Pn**	**20 07 18.4**	**+1.2**
CISI				S	**Sb**	**20 07 47.4**	**-0.9**
CISI	**Cisompet, Garu**	**2.17**	**1**	*e*Pn	**Pn**	**20 07 17.4**	**+0.2**
CISI				*e*Sn	**Sn**	**20 07 42.5**	**-0.5**
XMIS	**Christmas Isla**	**2.21**	**250**	*e*Pn	Pn	20 07 12.3	-5.5
XMIS				*e*Sn	**Sn**	**20 07 42.4**	**-1.7**
CNJI	**Cibinong**	**2.49**	**345**	P	**Pn**	**20 07 22.6**	**+1.0**
CNJI				S	**Sb**	**20 07 55.1**	**-2.5**
KPJI	**Karang Pucung**	**2.65**	**26**	P	**Pn**	**20 07 25.2**	**+1.4**
KPJI				S	**Sb**	**20 07 59.8**	**-2.4**
LEM	**Lembang**	**2.89**	**357**	Pn	**Pb**	**20 07 33.4**	**-0.9**
	2µm,0.3s,baz=328,slow=7.5,SNR=839						
LEM				Sn	**Sb**	**20 08 10.5**	**+1.1**
	6µm,0.3s,baz=71,slow=12,SNR=4.8						
LEM	**Lembang**	**2.89**	**357**	P	**Pn**	**20 07 28.4**	**+1.1**
SKJI	**Sukabumi**	**2.96**	**336**	P	**Pn**	**20 07 28.6**	**+0.4**
UGM	**Wanagama**	**3.27**	**57**	P	**Pn**	**20 07 33.5**	**+1.1**
UGM	**Wanagama**	**3.27**	**57**	*e*Pn	**Pn**	**20 07 33.2**	**+0.9**
DBJI	**Dramaga**	**3.32**	**342**	P	**Pn**	**20 07 33.9**	**+0.9**
WOJI	**Wonogiri, Jawa**	**3.64**	**59**	P	**Pn**	**20 07 38.5**	**+1.0**
PCJI	**Pacitan**	**3.70**	**66**	P	**Pn**	**20 07 39.3**	**+1.1**
TNG	**Tangerang**	**3.71**	**342**	P	**Pn**	**20 07 39.3**	**+0.9**
TNG				P	**Pn**	**20 07 39.1**	**+0.7**
CGJI	**Cibinong**	**3.72**	**326**	P	**Pn**	**20 07 39.1**	**+0.6**
SBJI	**Serang**	**3.94**	**336**	P	**Pn**	**20 07 42.5**	**+0.9**
PWJI	**Pagerwojo**	**4.33**	**67**	P	**Pn**	**20 07 46.8**	**-0.2**
NGJI	**Ngawi**	**4.34**	**58**	P	**Pn**	**20 07 48.4**	**+1.3**
UWJI	**Ujung Watu**	**4.55**	**44**	P	**Pn**	**20 07 51.5**	**+1.5**
BLSI	**Bandar Lampung**	**5.01**	**330**	P	**Pn**	**20 07 56.8**	**+0.5**
KASI	**Kota Agung**	**5.29**	**322**	P	**Pn**	**20 08 00.1**	**-0.1**
KLI	**Kotabumi**	**5.64**	**329**	P	**Pn**	**20 08 06.1**	**+1.2**
GMJI	**Gumukmas**	**5.79**	**76**	P	**Pn**	**20 08 08.5**	**+1.5**
LWLI	**Liwa**	**5.96**	**322**	P	**Pn**	**20 08 09.1**	**-0.3**
JAGI	**Jajag, Banyuwa**	**6.43**	**79**	P	**Pn**	**20 08 16.5**	**+0.7**
JAGI	**Jajag, Banyuwa**	**6.43**	**79**	*e*Pn	**Pn**	**20 08 15.1**	**-0.7**
JAGI				Sn	**Sn**	**20 09 30.7**	**+2.6**
ABJI	**Asem Bagus**	**6.67**	**74**	P	**Pn**	**20 08 21.1**	**+1.9**
MNAI	**Manna**	**7.16**	**318**	P	**Pn**	**20 08 25.8**	**-0.1**
MNAI	**Manna**	**7.16**	**318**	*e*Pn	**Pn**	**20 08 25.5**	**-0.4**
MNAI				*e*Sn	**Sn**	**20 09 45.5**	**-0.8**
LHSI	**Lahat**	**7.23**	**324**	P	**Pn**	**20 08 26.4**	**-0.3**
PMBI	**Palembang**	**7.39**	**336**	P	**Pn**	**20 08 28.4**	**-0.6**
DNP	**Denpasar**	**7.42**	**82**	P	**Pn**	**20 08 30.4**	**+1.0**
	21µm,0.7s,478µm497µm382nm						
PPBI	**Pangkal Pinang**	**7.70**	**348**	P	**Pn**	**20 08 33.8**	**+0.6**
PBKI	**Pangkalan Bun**	**7.99**	**29**	P	**Pn**	**20 08 39.2**	**+2.0**
MASI	**Maura Aman, Be**	**8.55**	**320**	P	**Pn**	**20 08 45.2**	**+0.3**
JMBI	**JAMBI**	**9.03**	**333**	P	**Pn**	**20 08 53.6**	**+2.0**
TWSI	**Taliwang, Sumb**	**9.05**	**84**	P	**Pn**	**20 08 50.2**	**-1.6**
BBKI	**Banjar Baru**	**9.39**	**49**	P	**Pn**	**20 08 59.9**	**+3.5**
PLAI	**Plampang**	**9.92**	**86**	P	**Pn**	**20 09 02.5**	**-1.2**
	6µm,0.7s,113µm256µm						
PPSI	**Pulau Pagai**	**10.36**	**311**	P	**Pn**	**20 09 10.8**	**+1.0**
	4µm,0.9s,53µm						
STKI	**Sintang**	**10.41**	**21**	P	**Pn**	**20 09 13.9**	**+3.4**
	2µm,1.3s,45µm624µm						
KBKI	**Kotabaru**	**10.51**	**53**	P	**Pn**	**20 09 14.6**	**+2.8**
	2µm,1.1s,24µm539µm						
SDSI	**Sungai Dareh**	**10.78**	**324**	P	**Pn**	**20 09 14.8**	**-0.7**
	980nm,1.3s,32µm						
COCO	**West Island**	**11.01**	**256**	*i* P	**Pn**	**20 09 15.8**	**-2.8**
COCO	**West Island**	**11.01**	**256**	*e*Pn	Pn	20 09 13.3	-5.4
MTKI	**Muara Teweh, K**	**11.25**	**39**	P	**Pn**	**20 09 25.1**	**+3.1**
	2µm,1.9s,35µm634µm						
PDSI	**Padang**	**11.39**	**320**	P	**Pn**	**20 09 21.3**	**-2.6**
	308nm,0.8s,11µm						
KSM	**Kuching**	**11.42**	**13**	⇑P	**Pn**	**20 09 26.5**	**+2.3**
KSM	**Kuching**	**11.42**	**13**	*e*Pn	**Pn**	**20 09 25.9**	**+1.7**
BKNI	**Bangkinang**	**12.03**	**326**	P	**Pn**	**20 09 31.0**	**-1.6**
	1µm,0.8s,18µm178µm						
BKNI	**Bangkinang**	**12.03**	**326**	*e*P	**Pn**	**20 09 29.1**	**-3.5**
MYKOM	**Kota Tinggi**	**12.10**	**341**	*e*Pn	**Pn**	**20 09 33.5**	**-0.1**
BKB	**Balikpapan**	**12.38**	**48**	P	**P**	**20 09 46.2**	**-2.8**
BASI	**Baing, Sumba**	**12.63**	**93**	P	**Pn**	**20 09 40.9**	**+0.1**
	3µm,1.1s,51µm138µm						
KAPI	**Kappang**	**12.77**	**69**	Pn	**Pn**	**20 09 44.3**	**+1.6**
	17nm,0.3s,baz=254,slow=11,SNR=88						
KAPI				Sn	**Sn**	**20 11 59.0**	**-5.0**
	11nm,0.3s,baz=128,slow=19,SNR=1.4						
KAPI				LR	LR	20 16 01.1	
	comp=Z,48µm,18.8s,baz=265,slow=44						
KAPI	**Kappang**	**12.77**	**69**	*e*Pn	**Pn**	**20 09 43.6**	**+0.9**
KAPI				Sn	**Sn**	**20 11 59.0**	**-5.0**
SBUM	**Sibu**	**12.89**	**20**	⇑P	**Pn**	**20 09 48.3**	**+3.9**
SBUM	**Sibu**	**12.89**	**20**	*e*Pn	**Pn**	**20 09 47.6**	**+3.2**
BSSI	**Bau Bau, Buton**	**13.09**	**75**	P	**Pn**	**20 09 48.5**	**+1.3**
	3µm,1.4s,70µm246µm						
SPSI	**Sidrap Palu**	**13.22**	**65**	P	**Pn**	**20 09 50.6**	**+1.7**
	2µm,1.7s,41µm351µm						
MNSI	**Mandailing Nat**	**13.26**	**322**	P	**Pn**	**20 09 45.3**	**-4.2**
	837nm,0.8s,15µm140µm						
PBSI	**Pulau Batu**	**13.48**	**315**	P	**Pn**	**20 09 52.0**	**-0.4**
	2µm,0.8s,35µm121µm						
TTSI	**Tana Toraja**	**13.69**	**62**	P	**Pn**	**20 09 58.1**	**+2.8**
	3µm,1.8s,65µm382µm						
EDFI	**Ende, Flores**	**13.78**	**87**	P	**Pn**	**20 09 52.4**	**-4.2**
	1µm,0.9s,15µm						
FRIM	**Kepong**	**14.27**	**334**	⇑P	**Pn**	**20 10 03.0**	**-0.1**
MMRI	**Maumere**	**14.33**	**87**	P	**Pn**	**20 09 59.9**	**-4.1**
	2µm,1.2s,35µm140µm						
MMRI	**Maumere**	**14.33**	**87**	*e*Pn	**Pn**	**20 09 59.2**	**-4.8**
GSI	**Gunungsitoli**	**14.94**	**317**	P	Pn	20 10 07.4	-5.0
	2µm,0.7s,47µm139µm						
GSI	**Gunungsitoli**	**14.94**	**317**	*e*Pn	Pn	20 10 06.3	-6.0
	4µm,1.4s						
PSI	**Prapat**	**15.26**	**324**	Pn	**Pn**	**20 10 09.7**	**-7.0**
	12nm,0.3s,baz=135,slow=13,SNR=23						
PSI				Sn	**Sn**	**20 13 07.0**	**+2.3**
	11nm,0.3s,baz=211,slow=5.9,SNR=3.3						
PSI	**Prapat**	**15.26**	**324**	*e*Pn	**Pn**	**20 10 09.8**	**-6.8**
	680nm,0.8s						
PSI				Sn	**Sn**	**20 13 07.0**	**+2.3**
IPM	**Ipoh**	**15.64**	**334**	⇑P	**Pn**	**20 10 21.3**	**-0.2**
IPM	**Ipoh**	**15.64**	**334**	*e*Pn	**Pn**	**20 10 20.0**	**-1.4**
	2µm,1.1s						
KTGM	**Kuala Trenggan**	**15.66**	**343**	⇑P	**Pn**	**20 10 21.9**	**+0.2**
TSI	**Tuntungan**	**16.03**	**325**	P	**Pn**	**20 10 24.8**	**-1.7**
	2µm,1.0s,30µm155µm						
MBWA	**Marble Bar**	**16.17**	**136**	*e*Pn	**Pn**	**20 10 21.8**	**-6.5**
	1µm,0.8s						
SOEI	**Soe**	**16.26**	**91**	P	**Pn**	**20 10 26.7**	**-2.9**
	4µm,1.0s,74µm						
SOEI	**Soe**	**16.26**	**91**	*e*Pn	**Pn**	**20 10 26.2**	**-3.4**
	6µm,0.9s						
SOEI				*e*Sn	**Sn**	**20 13 28.5**	**-0.7**
APSI	**Ampana**	**16.35**	**58**	P	**P**	**20 10 33.2**	**0.0**
	4µm,1.3s,64µm311µm						
KCSI	**Kotacane, Aceh**	**16.51**	**322**	P	**Pn**	**20 10 27.1**	**-5.6**
KULM	**Kulim**	**16.52**	**334**	⇑P	**Pn**	**20 10 31.6**	**-1.2**
KULM	**Kulim**	**16.52**	**334**	*e*Pn	**Pn**	**20 10 30.0**	**-2.8**
	974nm,1.0s						
KULM				*e*Sn	**Sn**	**20 13 36.1**	**+0.7**
TPTI		**16.67**	**320**	P	**Pn**	**20 10 29.8**	**-4.9**
	3µm,0.8s,39µm						
LUWI	**Luwuk**	**17.24**	**61**	P	**P**	**20 10 44.9**	**+1.8**
	2µm,1.3s,36µm314µm						
LUWI	**Luwuk**	**17.24**	**61**	*e*Pn	**Pn**	**20 10 41.8**	**0.0**
	3µm,1.0s						
MRSI	**Marisa**	**17.38**	**55**	P	**Pn**	**20 10 43.8**	**+0.3**
	5µm,0.9s,41µm						
KKM	**Kota Kinabalu**	**17.79**	**29**	⇑P	**P**	**20 10 50.6**	**+1.3**
KKM	**Kota Kinabalu**	**17.79**	**29**	*e*Pn	**Pn**	**20 10 48.4**	**-0.3**
	2µm,1.2s						
SKLT	**Songkhla**	**18.24**	**337**	P	**P**	**20 10 51.5**	**-2.6**
	817nm,0.9s,17µm						
MYLDM	**Lahad Datu**	**18.27**	**36**	*e*P	**Pn**	**20 10 58.0**	**+3.5**
LHMI	**Lhok Sumawe**	**18.36**	**324**	P	**P**	**20 10 50.7**	**-4.8**
	1µm,0.8s,50µm120µm						
LHMI	**Lhok Sumawe**	**18.36**	**324**	*e*P	**P**	**20 10 50.2**	**-5.2**
	2µm,0.8s						
KDM	**Kudat**	**18.84**	**29**	⇑P	**Pn**	**20 11 03.3**	**+1.8**
TRTT	**Trang**	**19.22**	**335**	P	**P**	**20 11 03.0**	**-1.9**
	890nm,1.2s,26µm						
FITZ	**Fitzroy Crossi**	**19.22**	**118**	P	**P**	**20 11 03.2**	**-1.7**
	baz=186,slow=19						
SANI	**Sanana**	**19.65**	**68**	P	**Pn**	**20 11 11.3**	**+0.1**
	1µm,1.2s,40µm179µm						
KRAB	**Krabi**	**19.77**	**334**	P	**P**	**20 11 09.7**	**-1.2**
	2µm,0.8s,13µm						
NLAI	**Namlea**	**20.25**	**73**	P	Pn	20 11 17.7	-0.6
	3µm,0.9s,38µm116µm						
SURT	**Suratani**	**20.61**	**334**	P	**P**	**20 11 18.7**	**-1.3**
	625nm,0.7s,10µm						
MORW	**Morawa**	**20.74**	**159**	P	**P**	**20 11 20.3**	**-1.1**
	baz=21,SNR=135						
KNRA	**Kununurra**	**21.30**	**108**	P	**P**	**20 11 26.8**	**-0.8**
	baz=21						
CMBY	**CAMPBELL BAY**	**21.61**	**320**	*e*P	**P**	**20 11 32.2**	**+1.4**
LBMI	**Labuha**	**21.61**	**66**	P	**P**	**20 11 31.0**	**+0.2**
	4µm,1.6s,52µm164µm						
MSAI	**Masohi**	**21.95**	**75**	P	**P**	**20 11 34.2**	**-0.3**
	209nm,0.7s,4µm24µm						
TNTI	**Ternate**	**22.13**	**63**	P	**P**	**20 11 36.7**	**+0.3**
	8µm,1.6s,99µm233µm						
TNTI	**Ternate**	**22.13**	**63**	*e*P	**P**	**20 11 36.2**	**-0.2**
	22µm,1.6s						
SGSI	**Sangihe**	**22.15**	**54**	P	**P**	**20 11 43.7**	**+7.0**
PPR	**Puerto Princes**	**22.24**	**30**	⇓*i*P	**P**	**20 11 41.2**	**+3.7**
BLDU	**Ballidu**	**22.38**	**159**	P	**P**	**20 11 38.0**	**-1.0**
	baz=22,SNR=39						
BNDI	**Bandanaira**	**22.56**	**78**	P	**P**	**20 11 41.4**	**+0.4**
	4µm,1.3s,89µm173µm						
CHBT	**CHBT**	**22.98**	**346**	P	**P**	**20 11 47.0**	**+1.6**
	681nm,1.0s,30µm						
MTN	**Manton Dam**	**23.12**	**100**	P	**P**	**20 11 45.8**	**-1.1**
	baz=23,SNR=72						
MTN	**Manton Dam**	**23.12**	**100**	*e*P	**P**	**20 11 45.7**	**-1.1**
	1µm,0.9s						
SAUI	**Saumlaki**	**23.31**	**88**	P	**P**	**20 11 46.9**	**-1.9**
	3µm,1.1s,64µm140µm						
SAUI	**Saumlaki**	**23.31**	**88**	*e*P	**P**	**20 11 46.3**	**-2.5**
	8µm,1.3s						
CTBH	**Cotabato--PC H**	**23.52**	**45**	⇑*e*P	**P**	**20 11 52.1**	**+1.4**
PATY	**Pattaya**	**23.53**	**343**	P	**P**	**20 11 53.1**	**+2.3**
	234nm,1.0s,2µm						
KLBR	**Kellerberrin**	**23.64**	**158**	P	**P**	**20 11 50.6**	**-1.2**
	baz=24,SNR=17						
ENPP	**El Nido**	**23.81**	**29**	*e*P	**P**	**20 11 54.6**	**+1.1**
KCP	**Kidapawan**	**23.97**	**47**	⇑*e*P	**P**	**20 11 54.6**	**-0.5**
CUYO	**Cuyo Island**	**24.33**	**33**	*e*P	**P**	**20 11 59.5**	**+1.1**
DAV	**Davao City (W)**	**24.36**	**47**	P	**P**	**20 12 00.8**	**+2.1**
	110nm,0.3s,baz=88,slow=1.3,SNR=13						
DAV				S	**S**	**20 16 13.9**	**-2.4**
	106nm,0.4s,baz=27,slow=18,SNR=2.4						
DAV				LR	LR	20 24 22.0	
	comp=Z,64µm,19.5s,baz=216,slow=44						
DAV	**Davao City (W)**	**24.36**	**47**	⇑*e*P	**P**	**20 12 00.5**	**+1.9**
DAV	**Davao City (W)**	**24.36**	**47**	*e*P	**P**	**20 11 59.4**	**+0.8**
	298nm,0.9s						
DAV				S	**S**	**20 16 13.9**	**-2.4**
KDU	**Kakadu**	**24.41**	**99**	P	**P**	**20 11 58.2**	**-0.8**
	baz=24,SNR=54						
BUKP	**Musuan**	**24.55**	**45**	*e*P	**P**	**20 12 02.3**	**+1.9**
NWAO	**Narrogin (SRO)**	**24.68**	**161**	P	**P**	**20 11 59.3**	**-2.1**
	170nm,0.6s,baz=160,slow=0.0,SNR=59						
NWAO				S	**S**	**20 16 23.6**	**+2.4**
	116nm,0.7s,baz=280,slow=0.0,SNR=3.5						
NWAO				LR	LR	20 20 34.0	
	comp=Z,460nm,19.7s,baz=14,slow=34						
NWAO	**Narrogin (SRO)**	**24.68**	**161**	*e*P	**P**	**20 11 59.2**	**-2.2**
	600nm,0.9s						
NWAO				S	**S**	**20 16 23.6**	**+2.4**
NWAO	**Narrogin (SRO)**	**24.68**	**161**	P	**P**	**20 12 01.2**	**-0.2**
	SNR=28						
NWAO				P	**P**	**20 12 01.2**	**-0.2**
	SNR=28						
NWAO				P	**P**	**20 12 01.2**	**-0.2**
	SNR=28						
NWAO	**Narrogin (SRO)**	**24.68**	**161**	P	**P**	**20 12 01.2**	**-0.2**
	SNR=28						
WRKA	**Warakurna**	**24.75**	**131**	P	**P**	**20 12 00.7**	**-1.4**
	baz=25,SNR=199						
SWI	**Sorong**	**24.97**	**71**	P	**P**	**20 12 03.0**	**-1.2**
	1µm,0.9s,23µm						
SIJI	**Sorong**	**24.98**	**71**	P	**P**	**20 12 02.9**	**-1.4**
	52nm,0.4s,baz=354,slow=3.2,SNR=3.9						
SIJI				S	**S**	**20 16 17.1**	**-9.2**
	65nm,0.3s,baz=346,slow=0.9,SNR=2.4						
KMBL	**Kambalda**	**25.20**	**151**	P	**P**	**20 12 04.1**	**-2.1**
	baz=25,SNR=47						
FAKI	**Fak Fak**	**25.24**	**76**	P	**P**	**20 12 05.8**	**-0.9**
	2µm,1.2s,28µm86µm						
FAKI	**Fak Fak**	**25.24**	**76**	*e*P	**P**	**20 12 05.5**	**-1.2**
	2µm,1.1s						
FAKI				*e*S	**S**	**20 16 33.6**	**+3.1**
LLP	**Lapu-Lapu**	**25.62**	**39**	⇑*e*P	**P**	**20 12 11.0**	**+1.0**
LLP				*e*S	**S**	**20 16 39.1**	**+2.7**
H01W3	**Cape Leeuwin H**	**25.70**	**168**	P	P	20 12 18.8	+8.4
	baz=63,slow=6.8,SNR=8.3						
H01W3				S	S	20 16 52.2	+15
	baz=51,slow=23,SNR=21						
H01W3				T	T	20 39 26.2	
	baz=341,slow=76,SNR=11						
H01W1	**Cape Leeuwin H**	**25.71**	**168**	P	**P**	**20 12 15.8**	**+5.3**
	baz=63,slow=6.8,SNR=11						
H01W1				S	S	20 16 50.9	+14
	baz=51,slow=23,SNR=15						
H01W1				T	T	20 39 25.0	
	baz=341,slow=76,SNR=14						
H01W2	**Cape Leeuwin H**	**25.71**	**168**	P	P	20 12 19.4	+8.9
	baz=63,slow=6.8,SNR=9.7						
H01W2				S	S	20 16 52.8	+16

baz=51,slow=23,SNR=18
H01W2 T T 20 39 30.2
baz=341,slow=76,SNR=20
RCP Roxas 25.87 35⇑ *e*P **P** **20 12 14.0 +1.7**
PBA Port Blair 25.98 325 *e*P P 20 12 14.4 +1.1
PBA IAmb IAmb 20 12 25.7
comp=Z,245nm,0.7s
MSLP Maasin 26.05 41 *e*P **P** **20 12 15.1 +1.1**
CHAI Chaiyaphum 26.11 347 P **P** **20 12 15.4 +1.0**
comp=Z,602nm,0.7s,comp=Z,4μm
RKGY Rocky Gully 26.16 163 P **P** **20 12 14.6 -0.2**
baz=26,SNR=19
SCPH Surigao 26.21 43⇑ *e*P **P** **20 12 19.0 +3.6**
KMPI Kaimana, Papua 26.44 79 P **P** **20 12 18.2 +0.6**
comp=Z,2μm,1.1s,comp=Z,55μm
UTHA Uthaitani 26.45 342 P **P** **20 12 19.5 +2.0**
comp=Z,197nm,1.2s,comp=Z,2μm
PGP Puerto Galera 26.54 30⇓ *e*P **P** **20 12 20.6 +2.3**
OCLP Ormoc 26.59 39 *e*P **P** **20 12 20.1 +1.3**
PANO Nakornpanom 26.89 353 P **P** **20 12 22.6 +1.1**
comp=Z,1μm,1.1s,comp=Z,17μm
PLP Palo 26.91 40⇓ *e*P **P** **20 12 22.2 +0.5**
DGPR DIGLIPUR 27.11 327 *e*P **P** **20 12 25.0 +1.4**
DGPR IAmb IAmb 20 12 31.6
comp=Z,750nm,0.8s
UMPA Umpang Tak 27.24 341 P **P** **20 12 24.9 +0.2**
comp=Z,207nm,0.9s,comp=Z,1μm
AUQP San Andres 27.27 33 *e*P **P** **20 12 30.7 +5.8**
LQP Lukban 27.35 30⇓ *e*P **P** **20 12 27.4 +1.5**
RKPI Ransiki, Papua 27.50 74 P **P** **20 12 29.0 +1.9**
comp=Z,3μm,1.0s,comp=Z,36μm
WRA Warramunga Arr 27.57 115 P **P** **20 12 25.1 -2.6**
comp=Z,527nm,1.0s,baz=287,slow=10,SNR=351
WRA P3KPbc 20 44 58.6
comp=Z,1.3nm,0.7s,baz=103,slow=4.1,SNR=8.3
WRA Warramunga Arr 27.57 115 P **P** **20 12 25.2 -2.6**
WRA pmax pmax
comp=Z,238nm,1.0s
WRA pmax pmax
comp=Z,1.0nm,0.7s
WRAB Tennant Creek 27.58 115 *d* iP **P** **20 12 26.8 -1.0**
WRAB pmax pmax
comp=Z,2μm,1.1s
WRAB Tennant Creek 27.58 115 *e*P **P** **20 12 26.0 -1.8**
comp=Z,750nm,1.1s
WRAB LR LR
comp=Z,73μm,20.0s
WB2 Warramunga Arr 27.59 115 *e*P **P** **20 12 25.9 -1.9**
comp=Z,578nm,1.0s
GQP Guinayangan 27.64 32⇓ *e*P **P** **20 12 29.8 +1.6**
PHIT Philsanuiok 27.72 345 P **P** **20 12 31.3 +2.4**
comp=Z,508nm,0.9s,comp=Z,4μm
NONG Nongkai 28.00 351 P **P** **20 12 32.8 +1.4**
comp=Z,860nm,0.8s,comp=Z,16μm
SCZP Santa Cruz 28.05 26 *e*P **P** **20 12 33.0 +1.1**
SUKH Sukhothai 28.21 343 P **P** **20 12 35.0 +1.7**
comp=Z,177nm,1.1s,comp=Z,1μm
UTTA Uttaradit 28.22 345 P **P** **20 12 34.8 +1.4**
comp=Z,137nm,0.8s,comp=Z,1μm
PVCP Virac 28.32 35 *e*P **P** **20 12 36.3 +2.0**
AS31 Alice Springs 28.54 122 *e*P **P** **20 12 35.1 -1.2**
comp=Z,98nm,0.8s
ASAR Alice Springs 28.54 122 P **P** **20 12 35.3 -1.0**
comp=Z,56nm,0.9s,baz=300,slow=7.9,SNR=160
ASAR LR LR 20 26 04.0
comp=Z,52μm,18.1s,baz=288,slow=41
ASAR P3KPbc 20 44 44.1
comp=Z,0.9nm,0.8s,baz=159,slow=8.6,SNR=5.5
ASAR P3KP 20 46 04.8
comp=Z,2.5nm,1.0s,baz=67,slow=2.4,SNR=3.3
AS01 Alice Springs 28.58 122 *e*P **P** **20 12 35.3 -1.4**
BOLP Bolinao 28.59 25 *e*P **P** **20 12 37.8 +1.0**
QIZ Qiongzhong 28.65 4 P **P** **20 12 40.0 +2.7**
QIZ sP **pP** **20 12 48.1 +1.6**
QIZ S **S** **20 17 26.0 +1.9**
QIZ PcS **PcS** **20 19 31.1 +0.6**
QIZ pmax pmax
comp=Z,130nm,1.2s
QIZ pmax pmax
comp=Z,15μm,12.1s
QIZ LR LR
comp=Z,98μm,17.5s
QIZ LR LR
comp=Z,72μm,15.0s
QIZ Qiongzhong 28.65 4 *e*P **P** **20 12 39.7 +2.4**
comp=Z,2μm,1.9s
QIZ LR LR
comp=Z,51μm,19.0s
BALP Baler 28.77 29 *e*P **P** **20 12 39.6 +1.3**
BCPH Baguio City Da 28.88 26⇓ *e*P **P** **20 12 39.8 +0.3**
BCPH eS **S** **20 17 25.9 -2.1**
PHRA Phrae 29.02 345 P **P** **20 12 41.9 +1.3**
comp=Z,3μm,0.9s,comp=Z,67μm
CM01 Chiang Mai Arr 29.30 343 *e*P **P** **20 12 44.1 +1.2**
CM31 Chiang Mai Arr 29.34 343 *e*P **P** **20 12 45.0 +1.7**
CMAR Chiang Mai Arr 29.34 343 P **P** **20 12 44.5 +1.1**
comp=Z,65nm,0.7s,baz=178,slow=8.6,SNR=139
CMAR S **S** **20 17 31.5 -3.4**
comp=Z,2.7nm,0.8s,baz=133,slow=27,SNR=1.8
CMAR LR LR 20 25 36.9
comp=Z,24μm,18.3s,baz=165,slow=39
CMAR P3KPbc 20 44 49.6
comp=Z,1.8nm,0.8s,baz=328,slow=5.0,SNR=16
CHTO Chiang Mai 29.67 343 P **P** **20 12 47.5 +1.2**
comp=Z,2μm,1.1s,comp=Z,40μm
CHTO Chiang Mai 29.67 343 *e*P **P** **20 12 47.3 +1.0**
CHTO pmax pmax
comp=Z,720nm,1.2s
CHTO Chiang Mai 29.67 343 *e*P **P** **20 12 47.3 +1.0**
comp=Z,716nm,1.2s
CHTO LR LR
comp=Z,33μm,20.0s
CHTO Chiang Mai 29.67 343 P **P** **20 12 48.1 +1.8**
SNR=271
CHTO P **P** **20 12 48.1 +1.8**
SNR=271
CHTO Chiang Mai 29.67 343 P **P** **20 12 48.1 +1.8**
SNR=271
CAUP Cauayan 29.93 28 *e*P **P** **20 12 48.7 +0.1**
ABRA Dolores 30.06 25 *e*P **P** **20 12 50.2 +0.5**
SIPP Brgy, Tapao 30.20 25⇑ *e*P **P** **20 12 54.0 +3.0**
APYP Conner 30.48 26 *e*P **P** **20 12 53.7 +0.3**
CVP Callao Caves 30.59 27 *e*P **P** **20 12 52.7 -1.8**
PALU Palau 31.55 58 P **P** **20 13 03.7 +0.7**
baz=32
PALK Pallekele 31.82 301 *i* P **P** **20 13 07.6 +2.2**
SNR=60
PALK Pallekele 31.82 301 *ce*P **P** **20 13 08.8 +3.4**
PALK Pallekele 31.82 301 *e*P **P** **20 13 07.7 +2.3**
comp=Z,1μm,2.0s
MCO Taipa Grande 32.16 10 P **P** **20 13 12.0 +3.8**
MMPI Merauke 32.22 90 P **P** **20 13 10.9 +2.0**
comp=Z,1μm,1.6s,comp=Z,14μm
HKC Hong Kong Obse 32.45 11⇑ *i* P **P** **20 13 13.0 +2.3**
QIS Mount Isa 32.49 113 P **P** **20 13 10.7 -0.6**
baz=32,SNR=48
GENI Genyem 32.96 80 P **P** **20 13 15.1 -0.3**
comp=Z,393nm,1.2s,comp=Z,8μm
GZH Guangzhou 33.07 9⇑ *i* P P 20 13 23.7 +7.5
GZH S S 20 18 45.8 +13
GZH pmax pmax
comp=Z,16μm,11.1s
JAY Jayapura 33.50 80 P **P** **20 13 19.9 -0.2**
comp=Z,10nm,0.9s,baz=235,slow=22,SNR=21
JAY S S 20 18 28.0 -12
comp=Z,1.3nm,0.8s,baz=136,slow=24,SNR=13
JAY LR LR 20 29 40.9
comp=Z,566nm,20.7s,baz=234,slow=41
JAY Jayapura 33.50 80 P **P** **20 13 20.0 -0.2**
comp=Z,192nm,1.0s,comp=Z,4μm
JAY Jayapura 33.50 80 P **P** **20 13 20.0 -0.2**
JAY S S 20 18 28.0 -12
JAY pmax pmax
comp=Z,10.0nm,0.9s
JAY smax smax
comp=N,1.0nm,0.8s
JAY MLR MLR
comp=Z,566nm,20.7s
BBOO Buckleboo 34.76 136 P **P** **20 13 29.5 -1.3**
baz=35,SNR=51
BBOO Buckleboo 34.76 136 *e*P **P** **20 13 29.5 -1.3**
comp=Z,400nm,0.9s
TWG Pinlang 34.88 22 *e*P **P** **20 13 35.0 +3.0**
comp=Z,1μm,0.8s
COEN Coen 34.88 100 P **P** **20 13 31.7 -0.5**
baz=35,SNR=150
COEN Coen 34.88 100 *e*P **P** **20 13 31.6 -0.5**
comp=Z,877nm,1.1s
H08S2 Diego Garcia H 34.92 271 P **P** **20 13 33.8 +1.6**
baz=58,slow=7.8,SNR=24
H08S2 T T 20 48 35.6
baz=98,slow=76,SNR=25
H08S3 Diego Garcia H 34.93 271 P **P** **20 13 33.8 +1.5**
baz=58,slow=7.8,SNR=37
H08S3 T T 20 48 36.5
baz=98,slow=76,SNR=27
H08S1 Diego Garcia H 34.94 271 P **P** **20 13 34.2 +1.9**
baz=58,slow=7.8,SNR=32
H08S1 T T 20 48 36.6
baz=98,slow=76,SNR=24
DGAR Diego Garcia 34.99 271 *d* iP **P** **20 13 33.7 +0.7**
DGAR Diego Garcia 34.99 271 *e*P **P** **20 13 33.4 +0.4**
comp=Z,1μm,1.4s
DGAR LR LR
comp=Z,45μm,20.0s
DGAR Diego Garcia 34.99 271 P **P** **20 13 34.0 +1.0**
SNR=15
DGAR P **P** **20 13 34.0 +1.0**
SNR=15
DGAR Diego Garcia 34.99 271 P **P** **20 13 34.0 +1.0**
SNR=15
KMI Kunming 34.99 352 P **P** **20 13 37.1 +4.0**
KMI pP pP 20 13 44.3 +1.9
KMI sP sP 20 13 47.9 +1.6
KMI PcP **PcP** **20 16 09.7 +4.6**
KMI S **S** **20 19 06.9 +3.6**
KMI SS **SnSn** **20 21 24.1 +3.7**
KMI pmax pmax
comp=Z,500nm,1.3s
KMI pmax pmax
comp=Z,9μm,6.3s
KMI LR LR
comp=Z,88μm,14.1s
KMI LR LR
comp=Z,33μm,13.3s
KMI LR LR
comp=Z,94μm,13.3s
TPUB Ta-pu 35.16 21 *e*P **P** **20 13 36.2 +1.8**
comp=Z,591nm,0.9s
YULB Yu-li 35.48 22 *e*P **P** **20 13 38.2 +1.0**
comp=Z,404nm,0.8s
MDRS Chennai 35.50 309 *e*P **P** **20 13 38.6 +1.2**
MDRS IAmb IAmb 20 13 41.8
TRD Trivandrum 35.63 300 *e*P **P** **20 13 38.6 +0.1**
SSLB Suanglung 35.72 21 *e*P **P** **20 13 40.8 +1.5**
comp=Z,1μm,0.9s
SSLB eS **S** **20 19 20.4 +6.1**
GYA Guiyang 35.99 358⇑ *i* P **P** **20 13 42.9 +1.3**
GYA pP pP 20 13 52.0 +1.1
GYA PcP **PcP** **20 16 10.8 +2.9**
GYA S **S** **20 19 20.3 +1.9**
GYA sS sS 20 19 35.0 +1.1
GYA ScP **ScP** **20 19 54.2 +2.2**
GYA SS **SnSn** **20 21 47.7 +3.3**
GYA ScS **ScS** **20 23 58.5 +0.8**
GYA pmax pmax
comp=Z,580nm,0.7s
GYA pmax pmax
comp=Z,10μm,12.1s
GYA LR LR
comp=Z,31μm,22.7s
GYA LR LR
comp=Z,58μm,19.3s
GYA LR LR
comp=Z,47μm,23.6s
QZH Quanzhou 36.05 17⇑ *i* P **P** **20 13 42.8 +0.9**
QZH S **S** **20 19 15.0 -4.0**
QZH pmax pmax
comp=Z,220nm,0.8s
QZH pmax pmax
comp=Z,16μm,6.5s
QZH LR LR
comp=Z,46μm,13.3s
QZH LR LR
comp=Z,20μm,13.1s
QZH LR LR
comp=Z,78μm,16.3s
SKHT Srikalahasti 36.32 309 *e*P **P** **20 13 45.9 +1.5**
SKHT IAmb IAmb 20 14 03.9
comp=Z,2μm,1.7s
SKHT *e*PP **PnPn** **20 15 06.5 -0.5**
SKHT eS **S** **20 19 25.9 +2.3**
SKHT IVMs_BB IVMs_BB 20 26 11.2
comp=Z,19μm,23.2s
MTSU Mount Surprise 36.38 107 P **P** **20 13 44.4 -0.6**
baz=36,SNR=49
VIS Vishakhapatnam 36.43 318 *e*P **P** **20 13 45.5 +0.2**
CHLP Challavanipeta 36.54 320 *e*P **P** **20 13 46.1 -0.1**
CHLP IAmb IAmb 20 14 05.3
comp=Z,890nm,1.4s
CHLP *e* 20 15 13.9
CHLP eS **S** **20 19 27.5 +0.8**
CHLP IVMs_BB IVMs_BB 20 27 34.1
comp=Z,11μm,25.5s
H08N1 Diego Garcia H 36.54 272 T T 20 51 20.5
baz=156,slow=76,SNR=28
H08N2 Diego Garcia H 36.55 272 T T 20 51 14.2
baz=156,slow=76,SNR=24
H08N3 Diego Garcia H 36.56 272 T T 20 51 25.5
baz=156,slow=76,SNR=12
YHNB Yeheng 36.68 21 *e*P **P** **20 13 49.0 +1.5**
comp=Z,461nm,0.7s
YHNB LR LR
comp=Z,28μm,20.0s
TATO Taipei 37.00 21 *e*P **P** **20 13 51.5 +1.5**
comp=Z,941nm,1.0s
TATO eS **S** **20 19 38.3 +4.7**
TATO LR LR
comp=Z,23μm,22.0s
HTT Hallett 37.10 134 P **P** **20 13 49.1 -1.8**
baz=37,SNR=92
YOJ Yonaguni jima 37.10 23 *e*P **P** **20 13 52.0 +1.1**
YOJ pmax pmax
comp=Z,2μm,0.8s
YOJ Yonaguni jima 37.10 23 *e*P **P** **20 13 52.0 +1.1**
comp=Z,2μm,0.8s
PVM Polavaram 37.24 316 *e*P **P** **20 13 53.5 +1.3**
PVM IAmb IAmb 20 14 10.0
comp=Z,607nm,1.3s
PVM *e* 20 15 32.4
PVM eS **S** **20 19 37.6 +0.2**
PVM IVMs_BB IVMs_BB 20 27 23.6
comp=Z,11μm,24.4s
ADKI Addanki 37.47 312 *e*P **P** **20 13 55.5 +1.4**
ADKI IAmb IAmb 20 14 12.5
comp=Z,634nm,1.1s
ADKI *e* 20 15 33.2
ADKI eS **S** **20 19 43.0 +2.0**
ADKI eSS **SS** **20 22 26.5 +0.4**
ADKI IVMs_BB IVMs_BB 20 27 09.3
comp=Z,17μm,27.0s
RCLA Racherla 37.96 311 *e*P **P** **20 13 59.3 +0.9**
RCLA IAmb IAmb 20 14 16.2
comp=Z,2μm,1.9s
RCLA *e* 20 15 34.9
RCLA eS **S** **20 19 50.6 +2.1**
RCLA IVMs_BB IVMs_BB 20 27 11.1
comp=Z,18μm,24.4s
STKA Stephens Creek 38.28 130 P **P** **20 13 58.9 -2.0**
comp=Z,314nm,0.5s,baz=301,slow=8.0,SNR=214
STKA LR LR 20 30 56.3
comp=Z,73μm,19.5s,baz=280,slow=38
STKA Stephens Creek 38.28 130 *e*P **P** **20 13 58.5 -2.4**
STKA pmax pmax
comp=Z,200nm,1.1s
STKA Stephens Creek 38.28 130 *e*P **P** **20 13 58.5 -2.4**
comp=Z,200nm,1.1s
QLP Quilpie 38.31 121 P **P** **20 13 60.0 -1.2**
baz=38,SNR=164
SHL Shillong 38.35 337 *e*P **P** **20 14 02.5 +0.8**
SHL IAmb IAmb 20 14 09.4
comp=Z,444nm,0.5s
SHL *i* S **S** **20 19 57.0 +2.6**
NJS Nagarjunasagar 38.41 313 *e*P **P** **20 14 03.0 +0.9**
NJS IAmb IAmb 20 14 20.0
comp=Z,927nm,1.4s
NJS *e* 20 15 43.3
NJS eS **S** **20 19 56.1 +0.8**
NJS IVMs_BB IVMs_BB 20 27 38.4
comp=Z,13μm,26.8s
SRLM Srisailam 38.42 312 *e*P **P** **20 14 03.1 +0.8**
SRLM IAmb IAmb 20 14 20.1
comp=Z,928nm,1.5s
SRLM *e* 20 15 43.4
SRLM eS **S** **20 19 56.5 +1.0**
SRLM IVMs_BB IVMs_BB 20 27 40.3
comp=Z,14μm,21.1s
CTA Charters Tower 38.50 110 P **P** **20 14 01.9 -1.0**
comp=Z,137nm,1.0s,baz=272,slow=11,SNR=43
CTA LR LR 20 29 53.8
comp=Z,48μm,20.9s,baz=284,slow=36
CTA Charters Tower 38.50 110 P **P** **20 14 02.0 -0.9**
baz=38
CTAO Charters Tower 38.50 110 *e*P **P** **20 14 02.9 0.0**
CTAO pmax pmax
comp=Z,690nm,1.5s
CTAO Charters Tower 38.50 110 *e*P **P** **20 14 02.9 0.0**
comp=Z,693nm,1.5s
CTAO LR LR
comp=Z,59μm,22.0s
PMG Port Moresby 38.83 93 P **P** **20 14 05.2 -0.5**
comp=Z,428nm,0.9s,baz=298,slow=7.3,SNR=58
PMG LR LR 20 32 51.0
comp=Z,33μm,19.4s,baz=260,slow=41
PMG Port Moresby 38.83 93 *ce*P **P** **20 14 05.5 -0.2**
PMG pmax pmax
comp=Z,3μm,1.1s
PMG MLR MLR
comp=Z,68μm,16.0s
PMG Port Moresby 38.83 93 *e*P **P** **20 14 06.5 +0.8**
comp=Z,1μm,1.2s
URV Uravakonda 38.93 309 *e*P P 20 14 01.1 -5.5
URV IAmb IAmb 20 14 24.4
comp=Z,372nm,1.1s
URV *e*PP **PP** **20 15 36.2 0.0**
URV eS **S** **20 20 04.8 +1.5**
URV IVMs_BB IVMs_BB 20 27 37.5
comp=Z,14μm,24.6s
HYB Hyderabad 39.52 313 *i* P **P** **20 14 12.0 +0.6**
comp=Z,270nm,1.0s
HYB *e* 20 14 16.5
HYB *e*PP **PnPn** **20 15 46.0 +0.4**
HYB *e* 20 16 19.0
HYB eS **S** **20 20 10.0 -2.0**
HYB eSS **SS** **20 23 02.0 -5.5**
HYB Hyderabad 39.52 313 *e*P **P** **20 14 11.7 +0.3**
HYB IAmb IAmb 20 14 16.4
comp=Z,379nm,1.3s
HYBB Hyderabad (bro 39.52 313 *e*P **P** **20 14 11.8 +0.4**
HYBB IAmb IAmb 20 14 29.1
comp=Z,1μm,1.6s
HYBB *e* 20 15 53.7
HYBB eS **S** **20 20 11.9 -0.1**
HYBB IVMs_BB IVMs_BB 20 28 21.1
comp=Z,10μm,28.8s
BOK Bokaro 39.60 328 *e*P **P** **20 14 12.8 +0.9**
BOK IAmb IAmb 20 14 16.8
comp=Z,385nm,0.5s
ENH Enshi 39.81 2 *e*P **P** **20 14 14.3 +0.7**
comp=Z,551nm,0.9s
ENH LR LR
comp=Z,52μm,19.0s
RPR Rampur 39.95 315 *e*P **P** **20 14 15.9 +0.9**
RPR IAmb IAmb 20 14 33.0
comp=Z,575nm,1.0s
RPR *e* 20 15 57.7
RPR eS **S** **20 20 18.4 0.0**
RPR IVMs_BB IVMs_BB 20 29 08.2
comp=Z,15μm,24.8s
MANU Manus Island 40.09 82 *e*P **P** **20 14 16.5 +0.3**
comp=Z,459nm,1.3s
WHN Wuhan 40.54 9⇑ P **P** **20 14 21.6 +1.9**
WHN LR LR
comp=Z,138μm,16.5s
WHN LR LR
comp=Z,46μm,13.2s
WHN LR LR
comp=Z,139μm,17.0s
CD2 Chengdu 40.59 355 P **P** **20 14 20.9 +0.7**
CD2 pP pP 20 14 28.0 -1.6
CD2 PP **PP** **20 15 55.4 +1.2**
CD2 S **S** **20 20 31.6 +3.8**
CD2 sS sS 20 20 44.1 +0.8
CD2 pmax pmax
comp=Z,810nm,1.0s
CD2 pmax pmax
comp=Z,15μm,12.0s
CD2 LR LR
comp=Z,106μm,15.6s
CD2 LR LR
comp=Z,67μm,14.4s
SRSP Sriramsagar 40.66 314 *e*P **P** **20 14 21.4 +0.5**
SRSP IAmb IAmb 20 14 26.1
comp=Z,270nm,1.0s
SRSP *e* 20 16 01.2
SRSP eS **S** **20 20 28.7 -0.3**
SRSP IVMs_BB IVMs_BB 20 28 58.1
comp=Z,12μm,28.4s
ARPS Mount Arapiles 40.90 137 P **P** **20 14 22.1 -0.6**
baz=41,SNR=39
CMSA Cobar Meteorol 41.29 127 P **P** **20 14 24.7 -1.2**
baz=41,SNR=149
KLRI Killari 41.36 312 *e*P **P** **20 14 27.1 +0.4**
KLRI IAmb IAmb 20 14 31.8
comp=Z,936nm,1.5s
KLRI *e* 20 16 19.4
KLRI eS **S** **20 20 41.7 +2.2**
KLRI IVMs_BB IVMs_BB 20 29 15.3
comp=Z,19μm,22.2s
ODAN Odare 41.41 332 *e*P **P** **20 14 27.6 +0.4**
comp=Z,1μm,0.8s
JOW Kunigami 41.44 28 LR LR 20 33 37.4
comp=Z,21μm,19.8s,baz=221,slow=39
JOW Kunigami 41.44 28 *e*P **P** **20 14 27.8 +0.7**
comp=Z,2μm,1.3s
TAPN Taplejung 41.68 333 *e*P **P** **20 14 30.8 +1.3**
comp=Z,2μm,0.9s
RAMN Ramite 41.85 331 *e*P **P** **20 14 32.2 +1.4**
comp=Z,3μm,1.3s
GOA Goa 41.94 306 *e*P **P** **20 14 32.5 +1.1**
GOA IAmb IAmb 20 14 34.2
comp=Z,1μm,2.4s
RMQ Roma 42.15 119 P **P** **20 14 33.7 +0.6**
baz=42,SNR=32
LSA Lhasa 42.35 338 P **P** **20 14 35.9 +0.8**
LSA S **S** **20 20 53.7 -1.0**
LSA pmax pmax
comp=Z,6μm,10.9s
LSA LR LR
comp=Z,20μm,31.8s
LSA LR LR
comp=Z,57μm,45.2s
LSA LR LR
comp=Z,44μm,30.2s
LSA Lhasa 42.35 338 *e*P **P** **20 14 35.2 +0.1**
LSA pmax pmax
comp=Z,848nm,0.8s
LSA MLR MLR
comp=Z,23μm,22.0s
LSA Lhasa 42.35 338 *e*P **P** **20 14 35.2 +0.1**
comp=Z,848nm,0.8s
LSA LR LR
comp=Z,23μm,22.0s
SSE Sheshan 42.59 17 P **P** **20 14 39.5 +3.1**
SSE sP **sP** **20 14 48.7 -1.0**
SSE S **S** **20 21 03.4 +6.2**
SSE pmax pmax
comp=Z,160nm,1.0s
SSE pmax pmax
comp=Z,4μm,7.9s
SSE LR LR
comp=Z,25μm,19.0s
SSE LR LR
comp=Z,12μm,19.0s
SSE LR LR
comp=Z,32μm,16.7s
NJ2 Nanjing 42.88 14 *e*P **P** **20 14 40.1 +1.3**
NJ2 sP **pP** **20 14 48.8 +0.5**
NJ2 S **S** **20 21 04.4 +2.9**
NJ2 pmax pmax
comp=Z,110nm,0.8s
NJ2 pmax pmax
comp=Z,6μm,5.4s
NJ2 LR LR
comp=Z,14μm,17.8s
NJ2 LR LR
comp=Z,33μm,17.1s
NJ2 LR LR

comp=Z,33µm,19.0s
PKIN Phulchoki 42.96 330 *e*P **P 20 14 41.4 +1.5**
comp=Z,684nm,1.1s
GUN Gumba 43.01 331 *e*P **P 20 14 41.5 +1.2**
comp=Z,2µm,0.9s
DMN Daman 43.13 330 *e*P **P 20 14 42.1 +0.9**
comp=Z,2µm,1.0s
KKN Kakani 43.19 330 *e*P **P 20 14 42.5 +0.8**
comp=Z,3µm,1.1s
GUMO Guam 43.51 58 P **P 20 14 43.4 -0.7**
comp=Z,237nm,0.7s,baz=191,slow=12,SNR=9.5
GUMO LR LR 20 33 15.7
comp=Z,7µm,20.7s,baz=238,slow=37
GUMO Guam 43.51 58 *e*P **P 20 14 41.0 -3.1**
GUMO pmax pmax
comp=Z,380nm,0.8s
GUMO Guam 43.51 58 *e*P **P 20 14 41.0 -3.1**
comp=Z,382nm,0.8s
XAN Xi'an 43.55 1 P **P 20 14 44.6 +0.4**
XAN PP **PP 20 16 26.2 +0.2**
XAN S **S 20 21 10.9 -0.4**
XAN SS **SS 20 24 27.6 +0.7**
XAN pmax pmax
comp=Z,570nm,0.9s
XAN pmax pmax
comp=Z,11µm,11.6s
XAN LR LR
comp=Z,27µm,35.6s
XAN LR LR
comp=Z,79µm,33.8s
XAN LR LR
comp=Z,79µm,16.5s
GKN Gorkha 43.69 330 *e*P **P 20 14 46.4 +0.8**
comp=Z,2µm,1.1s
POO Poona 43.69 310 *e*P **P 20 14 46.1 +0.5**
POO IAmb IAmb 20 14 50.2
comp=Z,1µm,1.8s
TOO Toolangi 43.82 135 P **P 20 14 47.4 +0.9**
baz=44,SNR=30
EIDS Eidsvold 43.91 117 P **P 20 14 48.0 +0.7**
baz=44,SNR=9.4
EIDS Eidsvold 43.91 117 *e*P **P 20 14 47.4 +0.1**
comp=Z,137nm,1.0s
KOLN Koldanda 44.02 329 *e*P **P 20 14 49.3 +1.0**
comp=Z,1µm,0.7s
BHPL Bhopal 44.23 318 *e*P **P 20 14 50.4 +0.5**
BHPL IAmb IAmb 20 14 54.1
comp=Z,1µm,1.9s
BHPL IAMs_20 IAMs_20 20 41 04.1
comp=Z,21µm,14.0s
RABL Rabaul 44.38 86 *e*P **P 20 14 51.4 +0.1**
comp=Z,213nm,0.8s
YNG Young 44.47 130 P **P 20 14 50.9 -0.8**
baz=44,SNR=68
PYUN Piuthan 44.60 328 *e*P **P 20 14 54.0 +1.0**
comp=Z,3µm,1.1s
CAN Canberra 45.34 131 P **P 20 14 57.9 -0.8**
baz=45
CAN Canberra 45.34 131 *e*P **P 20 14 58.3 -0.3**
CAN pmax pmax
comp=Z,180nm,0.7s
CAN Canberra 45.34 131 *e*P **P 20 14 58.3 -0.3**
comp=Z,181nm,0.7s
CAN LR LR
comp=Z,76µm,22.0s
CNB Canberra Magne 45.60 131 P **P 20 15 00.5 -0.2**
baz=46,SNR=15
ARMA Armidale 45.68 123 P **P 20 15 01.9 +0.5**
baz=46,SNR=26
ARMA Armidale 45.68 123 *e*P **P 20 15 02.0 +0.5**
comp=Z,141nm,0.9s
LZH Lanzhou 45.72 356 ⇑P **P 20 15 04.3 +2.6**
LZH pP pP 20 15 10.0 -1.3
LZH sP sP 20 15 13.7 -1.4
LZH PP **PP 20 16 53.5 +4.2**
LZH S **S 20 21 42.1 -1.0**
LZH pmax pmax
comp=Z,540nm,1.2s
LZH pmax pmax
comp=Z,6µm,9.0s
LZH LR LR
comp=Z,48µm,12.6s
LZH LR LR
comp=Z,35µm,13.4s
LZH LR LR
comp=Z,60µm,14.2s
MGCD Mangrove Creek 46.16 127 P **P 20 15 04.8 -0.3**
baz=46,SNR=21
RIV Riverview 46.42 128 P **P 20 15 06.9 -0.2**
baz=46
TIA Tai'an 46.54 10 ⇓P **P 20 15 07.6 -0.3**
TIA S **S 20 21 52.4 -2.1**
TIA pmax pmax
comp=Z,390nm,0.8s
TIA pmax pmax
comp=Z,6µm,8.6s
TIA LR LR
comp=Z,19µm,15.0s
TIA LR LR
comp=Z,58µm,16.1s
TIA LR LR
comp=Z,30µm,22.0s
LGTI Lohaghat 47.13 327 *e*P **P 20 15 14.8 +2.2**
TIY Taiyuan 47.40 5 *e*P **P 20 15 16.7 +2.0**
TIY S **S 20 22 08.1 +1.2**
TIY pmax pmax
comp=Z,500nm,0.9s
TIY pmax pmax
comp=Z,9µm,7.2s
TIY LR LR
comp=Z,45µm,14.8s
TIY LR LR
comp=Z,16µm,12.6s
TIY LR LR
comp=Z,31µm,16.8s
MOO Moorlands 47.42 140 P **P 20 15 14.7 -0.1**
baz=47,SNR=8.8
TAU Tasmania Unive 47.75 141 *e*P **P 20 15 17.9 +0.6**
TAU pmax pmax
comp=Z,400nm,1.1s
TAU Tasmania Unive 47.75 141 *e*P **P 20 15 17.9 +0.6**
comp=Z,404nm,1.1s
TAU LR LR
comp=Z,40µm,20.0s
JNU Nakatsue 47.97 26 P **P 20 15 19.2 +0.1**
comp=Z,60nm,0.7s,baz=180,slow=3.2,SNR=17
JNU LR LR 20 38 00.2
comp=Z,20µm,20.0s,baz=214,slow=39
JNU Nakatsue 47.97 26 *e*P **P 20 15 18.9 -0.3**
comp=Z,461nm,1.2s
KALG Kalgarh 48.00 325 *ex* P 20 15 09.7 -10
SONA Sohna 48.02 323 *e*P **P 20 15 19.0 -0.6**
BISR Bishrakh 48.05 323 *e*P **P 20 15 18.9 -0.9**
BISR IAmb IAmb 20 15 25.2
comp=Z,643nm,0.6s
AYAN Aya Nagar 48.17 323 *e*P **P 20 15 19.9 -0.8**
AYAN IAmb IAmb 20 15 29.8
comp=Z,202nm,0.7s
NDI New Delhi 48.27 323 *ex* **P 20 15 17.0 -4.5**
NDI *ex* **S 20 22 11.5 -7.8**
KUDL Kundal 48.30 322 *e*P **P 20 15 22.4 +0.6**
BHGR Bahadurgarh 48.43 323 *e*P **P 20 15 23.2 +0.4**
KHET Khetri 48.67 321 *e*P **P 20 15 24.4 -0.3**
KHET IAmb IAmb 20 15 27.2
comp=Z,141nm,0.8s
RTK Rohtak 49.00 323 *e*P **P 20 15 28.0 +0.9**
DDI Dehra Dun 49.01 325 *e*P **P 20 15 28.1 +0.8**
DDI IAmb IAmb 20 15 35.6
comp=Z,265nm,0.7s
KKR Kurukshetra 49.44 324 *e*P **P 20 15 32.2 +1.6**
GTA Gaotai 49.45 352 ⇓P **P 20 15 32.5 +1.9**
GTA pP pP 20 15 40.2 0.0
GTA sP sP 20 15 43.3 -0.7
GTA PcP **PcP 20 16 56.0 +3.6**
GTA PP **PP 20 17 28.0 +2.9**
GTA S **S 20 22 38.7 +2.8**
GTA sS sS 20 22 51.1 -0.6
GTA ScS **ScS 20 25 19.2 -1.0**
GTA SS **SS 20 26 08.2 -0.1**
GTA pmax pmax
comp=Z,8µm,7.1s
GTA LR LR
comp=Z,29µm,22.3s
GTA LR LR
comp=Z,91µm,21.4s
GTA LR LR
comp=Z,34µm,21.9s
CBIJ Chichi jima 49.54 41 *e*P **P 20 15 30.3 -1.0**
comp=Z,970nm,1.1s
JCJ Chichijima 49.54 41 P **P 20 15 31.1 -0.3**
comp=Z,219nm,0.8s,baz=308,slow=12
JCJ LR LR 20 36 22.8
comp=Z,9µm,21.7s,baz=231,slow=36
BHJ Bhuj 49.66 312 *e*P **P 20 15 33.7 +1.5**
BHJ IAmb IAmb 20 15 38.8
comp=Z,331nm,0.5s
DL2 Dalian 50.08 14 ⇓*i*P **P 20 15 35.1 -0.1**
DL2 PcS **PcS 20 20 52.0 +0.5**
DL2 S **S 20 22 44.5 +0.1**
DL2 SS **SS 20 26 16.8 -1.4**
DL2 pmax pmax
comp=Z,320nm,1.0s
DL2 pmax pmax
comp=Z,10µm,6.8s
DL2 LR LR
comp=Z,22µm,19.0s
DL2 LR LR
comp=Z,31µm,18.5s
DL2 LR LR
comp=Z,28µm,18.7s
BJT Baijiatuau 50.11 8 *e*P **P 20 15 35.8 +0.4**
BJT pmax pmax
comp=Z,713nm,0.8s
BJT MLR MLR
comp=Z,31µm,22.0s
BJT Baijiatuau 50.11 8 *e*P **P 20 15 35.8 +0.4**
comp=Z,713nm,0.8s
BJT LR LR
comp=Z,31µm,22.0s
SMLA Simla 50.12 325 *i* P **P 20 15 36.0 +0.4**
SMLA *i* x x 20 22 43.1
BTO Baotou 50.13 2 *e*P **P 20 15 38.8 +3.1**
BTO S **S 20 22 43.6 -1.7**
BJI Beijing 50.13 8 P **P 20 15 37.9 +2.4**
BJI PP **PP 20 17 34.1 +3.0**
BJI S **S 20 22 49.9 +4.8**
BJI pmax pmax
comp=Z,190nm,1.7s
BJI pmax pmax
comp=Z,14µm,10.1s
BJI LR LR
comp=Z,85µm,16.5s
BJI LR LR
comp=Z,48µm,15.9s
BJI LR LR
comp=Z,51µm,17.5s
INCN Inchon 50.19 20 *e*P **P 20 15 37.1 +1.1**
comp=Z,514nm,1.5s
INCN LR LR
comp=Z,13µm,21.0s
PAF Port-aux-Franc 50.35 211 PFAKE 20 15 50.0 +13
PAF LR LR
comp=Z,78µm,19.0s
HHC Hu-ho-hao-te 50.45 4 *e*P **P 20 15 40.3 +2.2**
HHC sP sP 20 15 54.3 +2.8
HHC S **S 20 22 51.2 +1.4**
HHC sS sS 20 23 10.3 +4.7
HHC pmax pmax
comp=Z,120nm,1.6s
HHC pmax pmax
comp=Z,8µm,11.1s
HHC LR LR
comp=Z,58µm,14.0s
HHC LR LR
comp=Z,14µm,13.5s
HHC LR LR
comp=Z,58µm,15.0s
SDNR Sundarnagar 50.51 325 *e*P **P 20 15 40.0 +1.4**
KS15 Wonju Array Si 50.58 21 *e*P **P 20 15 40.6 +1.7**
KSAR Wonju Array Be 50.58 21 P **P 20 15 39.0 0.0**
KSAR S **S 20 22 53.8 +2.4**
KSAR Wonju Array Be 50.58 21 P **P 20 15 39.0 0.0**
KSAR S **S 20 22 53.8 +2.4**
KSAR P'P'ab **P'P'ab 20 47 10.4 0.0**
KSRS Korea Array 50.60 21 P **P 20 15 39.0 -0.1**
comp=Z,26nm,0.7s,baz=204,slow=7.1,SNR=34
KSRS S **S 20 22 53.8 +2.1**
comp=Z,0.7nm,0.8s,baz=285,slow=8.0,SNR=2.8
KSRS LR LR 20 38 08.3
comp=Z,12µm,21.0s,baz=232,slow=37
KSRS PKP2ab 20 47 10.4
comp=Z,1.1nm,0.4s,baz=11,slow=2.3,SNR=4.6
KSRS Korea Array 50.60 21 P **P 20 15 39.0 -0.1**
KSRS S **S 20 22 53.8 +2.1**
KSRS pmax pmax
comp=Z,14nm,0.9s
KSRS smax smax
comp=N,1.0nm,0.8s
KSRS MLR MLR
comp=Z,12µm,21.0s
KSRS pmax pmax
comp=Z,1.0nm,0.4s
KS01 Wonju Array Si 50.61 21 *e*P **P 20 15 40.3 +1.1**
RER Riviere de l'E 51.21 251 *e*P **P 20 15 44.3 +0.1**
comp=Z,455nm,0.8s
RER LR LR
comp=Z,31µm,19.0s
HNR Honiara 51.41 94 P **P 20 15 46.2 +0.5**
comp=Z,519nm,0.9s,baz=183,slow=5.4,SNR=47
HNR Honiara 51.41 94 *e*P **P 20 15 46.0 +0.3**
HNR Honiara 51.41 94 *e*P **P 20 15 45.7 0.0**
HNR pmax pmax
comp=Z,4µm,1.6s
HNR Honiara 51.41 94 *e*P **P 20 15 45.7 0.0**
comp=Z,4µm,1.6s
HNR LR LR
comp=Z,13µm,22.0s
DHRM DHARAMSHALA 51.45 326 *e*P **P 20 15 45.4 -0.5**
DHRM IAmb IAmb 20 15 54.8
comp=Z,351nm,0.7s
THN Thein Dam 51.91 325 ⇑*i*P **P 20 15 48.0 -1.1**
LHI Lord Howe Isla 52.13 122 *e*P **P 20 15 49.5 -1.3**
comp=Z,1µm,1.7s
PATS Pohnpei 52.97 74 P **P 20 15 57.3 0.0**
baz=53,SNR=3.5
PATS Pohnpei 52.97 74 *e*P **P 20 15 57.4 +0.1**
comp=Z,509nm,1.3s
SNY Shenyang 53.33 15 ⇓P **P 20 15 58.4 -0.9**
SNY pmax pmax
comp=Z,8µm,12.0s
SNY LR LR
comp=Z,23µm,19.1s
SNY LR LR
comp=Z,26µm,20.1s
SNY LR LR
comp=Z,30µm,20.3s
MAJO Matsushiro 54.20 30*d i*P **P 20 16 04.2 -1.8**
MAJO pmax pmax
comp=Z,564nm,1.4s
MAJO MLR MLR
comp=Z,70µm,19.0s
MAJO Matsushiro 54.20 30 PFAKE 20 16 20.0 +14
MAJO LR LR
comp=Z,14µm,21.0s
MAT Matsushiro 54.20 30 P **P 20 16 03.8 -2.2**
MAT *e*S **S 20 23 37.0 -4.2**
MJAR Matsushiro Arr 54.21 30 P **P 20 16 05.1 -0.9**
comp=Z,90nm,1.0s,baz=206,slow=7.6,SNR=22
MJAR S **S 20 23 37.0 -4.2**
comp=Z,1.0nm,0.4s,baz=225,slow=3.4,SNR=4.4
MJAR LR LR 20 41 03.9
comp=Z,12µm,19.4s,baz=255,slow=38
CN2 Changchun 55.65 15 ⇓P **P 20 16 15.5 -0.8**
CN2 *e*S **S 20 23 53.4 -6.9**
CN2 pmax pmax
comp=Z,220nm,1.2s
CN2 pmax pmax
comp=Z,7µm,9.0s
CN2 LR LR
comp=Z,23µm,16.0s
CN2 LR LR
comp=Z,16µm,16.0s
CN2 LR LR
comp=Z,15µm,17.0s
WMQ Urumqi 56.34 343 P **P 20 16 22.7 +1.4**
WMQ pP pP 20 16 30.3 -0.7
WMQ sP sP 20 16 34.4 -0.4
WMQ PcP **PcP 20 17 21.9 +3.6**
WMQ PP **PP 20 18 31.5 +4.4**
WMQ S **S 20 24 11.2 +1.6**
WMQ SS **SS 20 28 03.1 +6.0**
WMQ pmax pmax
comp=Z,5µm,5.4s
WMQ LR LR
comp=Z,10µm,23.0s
WMQ LR LR
comp=Z,12µm,19.6s
WMQ LR LR
comp=Z,11µm,39.4s
CASY Casey 56.50 179 *e*P **P 20 16 20.3 -1.7**
comp=Z,304nm,2.3s
CASY LR LR
comp=Z,8µm,19.0s
KSH Kashi 57.20 331 *e*P **P 20 16 26.9 -0.7**
KSH *es*P pP 20 16 37.6 +0.3
KSH *e*PP **PP 20 18 34.0 -1.0**
KSH PcS **PcS 20 21 18.9 -4.0**
KSH S **S 20 24 17.3 -4.0**
KSH ScS **ScS 20 26 10.5 -4.3**
KSH pmax pmax
comp=Z,210nm,1.3s
KSH pmax pmax
comp=Z,6µm,8.3s
KSH LR LR
comp=Z,8µm,13.6s
KSH LR LR
comp=Z,14µm,14.4s
KSH LR LR
comp=Z,19µm,21.5s
KBL Kabul 57.31 322 *e*P **P 20 16 28.2 -0.3**
KBL pmax pmax
comp=Z,530nm,1.2s
KBL Kabul 57.31 322 *e*P **P 20 16 28.2 -0.3**
comp=Z,530nm,1.3s
SONM Songino Array 57.33 359 P **P 20 16 28.6 +0.3**
comp=Z,118nm,0.6s,baz=174,slow=7.6,SNR=237
SONM S **S 20 24 25.7 +3.1**
comp=Z,2.2nm,0.9s,baz=153,slow=9.7,SNR=2.2
SONM LR LR 20 43 27.6
comp=Z,31µm,19.5s,baz=173,slow=38
SONM PKPPKP P'P'df 20 46 04.0 -10
comp=Z,2.5nm,1.1s,baz=331,slow=3.2,SNR=4.5
SONM PKP2bc 20 46 23.0
comp=Z,6.6nm,1.2s,baz=316,slow=1.8,SNR=6.3
SONM P4KPbc 20 53 42.7
comp=Z,0.7nm,0.9s,baz=157,slow=3.2,SNR=4.1
SONA1 Songino Array 57.34 359 *e*P **P 20 16 28.4 0.0**
ULN Ulaanbaatar 57.35 359*de*P **P 20 16 28.8 +0.4**
ULN pmax pmax
comp=Z,151nm,0.7s
ULN MLR MLR
comp=Z,56µm,16.0s
ULN Ulaanbaatar 57.35 359 *e*P **P 20 16 28.9 +0.4**
comp=Z,327nm,0.7s
ULN LR LR
comp=Z,39µm,20.0s
ULN Ulaanbaatar 57.35 359 P **P 20 16 29.2 +0.8**
SNR=223
ULN P **P 20 16 29.2 +0.8**
SNR=223
ULN P **P 20 16 29.2 +0.8**
SNR=223
ULN Ulaanbaatar 57.35 359 P **P 20 16 29.2 +0.8**
SNR=223
DZM Mont Dzumac 57.44 110 P **P 20 16 30.7 +1.1**
comp=Z,84nm,0.7s,baz=274,slow=7.0,SNR=38
DZM S **S 20 24 25.1 0.0**
comp=Z,6.9nm,1.0s,baz=289,slow=17,SNR=2.1
DZM LR LR 20 40 19.0
comp=Z,8µm,20.8s,baz=286,slow=35
MDJ Mudanjiang 57.59 18 P **P 20 16 29.2 -0.8**
MDJ S **S 20 24 25.8 -0.1**
MDJ ScS **ScS 20 26 18.2 +1.1**
MDJ SS **SS 20 28 17.6 +1.0**
MDJ pmax pmax
comp=Z,3µm,11.4s
MDJ LR LR
comp=Z,10µm,25.1s
MDJ LR LR
comp=Z,11µm,38.8s
MDJ LR LR
comp=Z,20µm,43.4s
MDJ Mudanjiang 57.59 18 *e*P **P 20 16 29.5 -0.5**
comp=Z,647nm,1.6s
MDJ LR LR
comp=Z,19µm,21.0s
MIR Mirnyy 57.63 187 ⇑*i*P P 20 16 36.0 +6.0
MIR *i* S **S 20 24 26.0 +0.2**
MIR pmax pmax
comp=Z,5µm,9.0s
MIR smax smax
comp=N,25µm,10.0s
USRK Ussuriysk Ar. 58.00 20 P **P 20 16 31.9 -1.0**
comp=N,30nm,0.5s,baz=209,slow=5.6,SNR=87
USRK S **S 20 24 30.2 -1.0**
comp=N,1.9nm,0.9s,baz=224,slow=37,SNR=2.7
USRK PKP2bc 20 46 19.0
comp=N,4.6nm,1.1s,baz=56,slow=3.4,SNR=4.5
WSAR Wadi Sarin 58.17 305 LR LR 20 40 11.3
comp=N,37µm,19.3s,baz=130,slow=35
SMDO Samad 58.56 305 P **P 20 16 37.4 +0.1**
SNR=77
SMDO Samad 58.56 305 P **P 20 16 37.4 +0.1**
SNR=77
BIDO Bidbid 58.72 305 P **P 20 16 39.0 +0.6**
SNR=78
BIDO P **P 20 16 39.0 +0.6**
SNR=78
BIDO Bidbid 58.72 305 P **P 20 16 39.0 +0.6**
SNR=78
UZB Uzynbulak 58.80 336 *i* P **P 20 16 39.2 +0.5**
comp=N,1µm,1.3s
UZB *i* S **S 20 24 42.6 +0.6**
UZB LRM MLR 20 47 08.8
comp=N,7µm,15.6s
SATY Saty 58.97 335 *i* P **P 20 16 40.9 +1.0**
comp=N,1µm,1.6s
SATY *i* S **S 20 24 45.4 +1.1**
SATY *e*SS **SS 20 28 40.5 +1.7**
SATY LR LR 20 42 27.3
comp=N,4µm,16.2s
ABPO Ambohimpanom 59.13 254 *e*P **P 20 16 42.2 +0.7**
ABPO pmax pmax
comp=Z,160nm,1.0s
ABPO Ambohimpanom 59.13 254 *e*P **P 20 16 42.2 +0.7**
comp=Z,160nm,0.9s
ABPO LR LR
comp=Z,11µm,19.0s
OPO Ambohidratompo 59.17 254 PKPPKP **P'P'df 20 46 14.0 -3.0**
comp=Z,4.1nm,1.0s,baz=256,slow=6.5,SNR=3.3
RBK Rabkut 59.44 297 P **P 20 16 43.5 0.0**
SNR=36
RBK Rabkut 59.44 297 P **P 20 16 43.5 0.0**
SNR=36
MDOK Medeo 59.63 334 ⇑*i*P **P 20 16 44.3 -0.2**
comp=Z,968nm,1.9s
MDOK *i* PP **PP 20 18 57.3 +0.8**
MDOK *i* S **S 20 24 53.3 +0.4**
MDOK *e*SS **SS 20 28 50.1 +1.0**
MDOK LR LR 20 42 29.6
comp=Z,12µm,17.9s
HIA Hailar 59.68 9 *e*P **P 20 16 44.0 -0.5**
HIA pmax pmax
comp=Z,185nm,1.1s
HIA MLR MLR
comp=Z,22µm,19.0s
HIA Hailar 59.68 9 *e*P **P 20 16 44.0 -0.5**
comp=Z,185nm,1.1s
HIA LR LR
comp=Z,22µm,19.0s
AAA Alma-Ata 59.76 334 *e*P **P 20 16 45.2 -0.1**
AAA *e*S **S 20 24 48.6 -5.7**
AAA pmax pmax
comp=Z,12µm,10.5s
AAA smax smax
comp=E,22µm,12.5s
AAA MLR MLR
comp=Z,30µm,17.0s
AAA Alma-Ata 59.76 334 *i* P **P 20 16 45.5 +0.2**
comp=Z,375nm,0.9s
AAA *i* PcP **PcP 20 17 30.4 -1.4**
AAA *e*PP **PP 20 18 58.8 +1.2**
AAA *e*S **S 20 24 54.7 +0.3**
AAA LRM MLR 20 47 14.6
comp=Z,7µm,17.5s
ARQ Araqi 59.93 304 P **P 20 16 47.0 +0.2**
SNR=43
ARQ Araqi 59.93 304 P **P 20 16 47.0 +0.2**
SNR=43

ZAK Zakamensk 59.99 357 *e*P **P** **20 16 48.2 +1.5**
ZAK *e* 20 25 03.7
ZAK pmax pmax
comp=Z,162nm,1.4s
TKM2 Tokmak 2 60.07 333 *e*P **P** **20 16 47.1 -0.5**
TKM2 pmax pmax
comp=Z,1μm,1.5s
TKM2 Tokmak 2 60.07 333 *e*P **P** **20 16 47.1 -0.5**
comp=Z,1μm,1.5s
TKM2 LR LR
comp=Z,18μm,21.0s
MCQ Macquarie Isla 60.21 148 P **P** **20 16 47.8 -0.2**
baz=60
MCQ Macquarie Isla 60.21 148 *e*P **P** **20 16 49.8 +1.7**
MCQ pmax pmax
comp=Z,750nm,1.2s
MCQ Macquarie Isla 60.21 148 *e*P **P** **20 16 49.8 +1.7**
comp=Z,753nm,1.2s
AAK Ala-Archa 60.34 332 PKPPKP 20 46 12.6
comp=Z,2.9nm,0.9s,baz=241,slow=10,SNR=3.7
AAK LR LR 20 47 02.4
comp=Z,11μm,18.3s,baz=136,slow=40
AAK Ala-Archa 60.34 332 *d i*P **P** **20 16 49.0 -0.4**
AAK pmax pmax
comp=Z,930nm,3.7s
AAK MLR MLR
comp=Z,60μm,26.0s
AAK Ala-Archa 60.34 332 *e*P **P** **20 16 50.6 +1.3**
comp=Z,362nm,1.3s
AAK P'P' 20 46 12.6
AAK Ala-Archa 60.34 332 P **P** **20 16 50.1 +0.8**
SNR=30
AAK P **P** **20 16 50.1 +0.8**
SNR=30
AAK P **P** **20 16 50.1 +0.8**
SNR=30
AAK Ala-Archa 60.34 332 P **P** **20 16 50.1 +0.8**
SNR=30
FRU Bishkek 60.44 332 *e*P **P** **20 16 51.0 +1.1**
FRU *i* 20 19 08.0
FRU *i* S **S** **20 25 05.0 +2.0**
FRU pmax pmax
comp=Z,1μm,2.1s
FRU MLR MLR
comp=Z,24μm,24.0s
KUU Kurty 60.52 334⇓ *i*P **P** **20 16 50.5 +0.1**
comp=Z,2μm,1.7s
KUU *e*PcP **PcP** **20 17 36.3 +1.5**
KUU *i* S **S** **20 25 04.3 +0.3**
KUU *e*SS **SS** **20 29 02.4 -0.5**
KUU LR LR 20 43 31.9
comp=Z,5μm,17.8s
ZSN Zaisan 60.61 342⇓ *i*P **P** **20 16 51.1 +0.2**
comp=Z,884nm,1.0s
ZSN *i* PP **PP** **20 19 03.9 -1.0**
ZSN *i* S **S** **20 25 05.9 +1.0**
ZSN *e*SS **SS** **20 29 05.2 +1.2**
ZSN LRM MLR 20 46 33.5
comp=Z,5μm,11.8s
MK01 Makanchi Array 60.68 340 *e*P **P** **20 16 51.0 -0.4**
EKS2 Erkin-Say 60.69 332 *e*P **P** **20 16 53.2 +1.5**
EKS2 pmax pmax
comp=Z,230nm,0.9s
EKS2 Erkin-Say 60.69 332 *e*P **P** **20 16 53.2 +1.5**
comp=Z,230nm,0.8s
EKS2 LR LR
comp=Z,15μm,20.0s
MK31 Makanchi Array 60.70 340 *e*P **P** **20 16 51.8 +0.2**
MK31 Makanchi Array 60.70 340 *e*P **P** **20 16 51.8 +0.2**
MKAR Makanchi Array 60.70 340 P **P** **20 16 51.2 -0.4**
comp=Z,64nm,0.7s,baz=150,slow=7.5,SNR=138
MKAR S **S** **20 25 04.0 -2.2**
comp=Z,2.1nm,0.7s,baz=263,slow=4.0,SNR=2.6
MKAR PKPPKP **P'P'df** **20 46 09.3 +0.6**
comp=Z,2.8nm,1.1s,baz=309,slow=2.1,SNR=4.0
MKAR PKP2bc 20 46 19.4
comp=Z,3.2nm,0.9s,baz=340,slow=2.8,SNR=9.1
MKAR LR LR 20 46 46.3
comp=Z,11μm,20.9s,baz=152,slow=40
MKAR P4KPbc 20 53 57.3
comp=Z,1.1nm,0.8s,baz=162,slow=5.1,SNR=8.2
MKAR Makanchi Array 60.70 340 *e*P **P** **20 16 51.8 +0.3**
MKAR S **S** **20 25 04.0 -2.2**
MKAR P'P' 20 46 09.3
MKAR ⇑*e* 20 46 19.4
MKAR *e* 20 53 57.3
MAKZ Makanchi 60.82 340 *e*P **P** **20 16 52.7 +0.3**
MAKZ pmax pmax
comp=Z,402nm,1.1s
MAKZ Makanchi 60.82 340 *e*P **P** **20 16 52.7 +0.3**
comp=Z,402nm,1.1s
ERM Erimo 60.86 30 *e*P **P** **20 16 52.5 -0.2**
ERM pmax pmax
comp=Z,69nm,1.2s
ERM MLR MLR
comp=Z,9μm,17.0s
ERM Erimo 60.86 30 *e*P **P** **20 16 53.7 +1.0**
comp=Z,293nm,1.1s
ERM LR LR
comp=Z,12μm,20.0s
ASHO Ashiyiah 60.93 305 *i* P **P** **20 16 53.7 +0.1**
SNR=114
ASHO Ashiyiah 60.93 305 P **P** **20 16 53.6 +0.1**
SNR=101
ASHO P **P** **20 16 53.6 +0.1**
SNR=101
ASHO Ashiyiah 60.93 305 P **P** **20 16 53.6 +0.1**
SNR=101
UOSS Minazif 60.93 306 *e*P **P** **20 16 53.0 -0.5**
comp=Z,21nm,1.0s
HATD Hatta, Dubai 60.94 305 *i* P **P** **20 16 54.0 +0.4**
SNR=74
TLY Talaya 61.27 357 LR LR 20 46 30.4
comp=Z,25μm,18.1s,baz=162,slow=39
TLY Talaya 61.27 357 *d i*P **P** **20 16 56.6 +1.3**
TLY *e* 20 19 20.1
TLY *e*S **S** **20 25 11.5 -1.7**
TLY *e*SS **SS** **20 29 09.8 -4.4**
TLY pmax pmax
comp=Z,377nm,2.0s
TLY MLR MLR
comp=Z,28μm,18.0s
BANOM Banah 61.32 307 *i* P **P** **20 16 57.0 +0.8**
SNR=46
BANOM Banah 61.32 307 P **P** **20 16 56.4 +0.3**
SNR=28
BANOM Banah 61.32 307 P **P** **20 16 56.4 +0.3**
SNR=28
FAQ Al Faqa, Dubai 61.33 305 *i* P **P** **20 16 56.0 -0.3**
SNR=146
NAZ Nazwa, Dubai 61.39 305 *i* P **P** **20 16 56.7 +0.1**
SNR=39
MOY Mondy 61.43 355 *e*P **P** **20 16 58.0 +1.5**
MOY pmax pmax
comp=Z,431nm,1.8s
ASUD Al Ashush, Dub 61.49 305 *i* P **P** **20 16 57.6 +0.3**
SNR=72
CIT Chita 61.71 4 *e*P **P** **20 16 59.4 +1.1**
CIT *e*S **S** **20 25 17.0 -1.8**
CIT pmax pmax
comp=Z,2μm,2.4s
DCZ Deep Cove 61.79 137 *e*P **P** **20 16 59.7 +0.6**
comp=Z,262nm,1.1s
IRK Irkutsk 61.80 358 *e*P **P** **20 16 59.8 +0.9**
IRK *e*S **S** **20 25 25.1 +5.2**
IRK pmax pmax
comp=Z,945nm,2.4s
IUG Iuzhnay 62.13 329⇓ *i*P **P** **20 17 01.6 +0.1**
comp=Z,3μm,1.7s
IUG *i* S **S** **20 25 26.0 +1.3**
IUG *e*SS **SS** **20 29 25.8 -2.5**
KLR Kul'dur 62.38 17 PKPPKP **P'P'df** **20 46 07.9 +2.1**
comp=Z,1.4nm,0.9s,baz=128,slow=1.4,SNR=4.0
KLR Kul'dur 62.38 17 *i* P **P** **20 17 02.4 -0.4**
MLZ Mavora Lakes 62.42 136 *e*P **P** **20 17 03.5 +0.1**
comp=Z,266nm,1.2s
WHZ Wether Hill Ro 62.44 137 PN **P** **20 17 04.5 +1.1**
WHZ Wether Hill Ro 62.44 137 *e*P **P** **20 17 04.7 +1.3**
comp=Z,187nm,1.2s
JCZ Jackson Bay 62.56 135 PN **P** **20 17 03.6 -0.8**
KKAR Karatay Array 62.59 330 *e*P **P** **20 17 04.6 +0.2**
KKAR Karatay Array 62.59 330 *e*P **P** **20 17 04.6 +0.2**
HABR Khabarovsk 62.76 20 *d* P **P** **20 17 03.8 -1.6**
HABR *e**PP **pP** **20 17 13.5 -1.7**
HABR *e**SP **sP** **20 17 17.5 -1.5**
HABR *e* 20 17 41.5
HABR *e* 20 19 21.6
HABR *e*PPP PPP 20 20 49.5
HABR *e*S **S** **20 25 31.2 -0.9**
HABR *e**SS **sS** **20 25 47.7 -0.7**
HABR *e* 20 26 52.9
HABR *e*SS **SS** **20 29 36.0 -1.6**
HABR pmax pmax
comp=N,25nm,1.1s
HABR pmax pmax
comp=E,41nm,1.1s
HABR pmax pmax
comp=Z,135nm,1.1s
HABR pmax pmax
comp=Z,594nm,3.5s
HABR MLR MLR
comp=Z,12μm,21.0s
WKZ Wanaka 62.91 136 *e*P **P** **20 17 08.6 +2.0**
comp=Z,607nm,1.5s
MUKL Al Mukalla 63.01 292 *e*P **P** **20 17 08.0 +0.4**
MUKL AMb AMB 20 17 10.6
comp=Z,1μm,1.9s
TUZ Tuapeka 63.60 137 PN **P** **20 17 10.6 -0.5**
LBZ Lake Benmore 63.62 135 *e*P **P** **20 17 12.0 +0.8**
comp=Z,270nm,1.5s
YUK Yuzh-Kuril'sk 63.69 30 *d i*P **P** **20 17 11.0 -0.6**
YUK *i* 20 17 45.7
YUK *i* 20 19 30.1
YUK *e*PPP PPP 20 20 59.5
YUK *i* S **S** **20 25 41.3 -2.6**
YUK *i* 20 27 03.1
YUK *i* SS **SS** **20 29 51.5 -0.8**
YUK pmax pmax
comp=Z,797nm,1.4s
YUK pmax pmax
comp=N,223nm,1.0s
YUK pmax pmax
comp=E,306nm,1.5s
YUK pmax pmax
comp=Z,6μm,7.7s
ODZ Otahua Downs 64.08 135 PN **P** **20 17 14.6 +0.4**
RPZ Rata Peaks 64.09 134 P **P** **20 17 14.1 -0.3**
comp=Z,42nm,0.9s,baz=187,slow=19,SNR=7.1
RPZ LR LR 20 44 31.7
comp=Z,52μm,19.3s,baz=276,slow=36
RPZ Rata Peaks 64.09 134 *e*P **P** **20 17 14.8 +0.4**
comp=Z,912nm,1.8s
DSZ Denniston Nort 64.25 132 PN **P** **20 17 16.1 +0.6**
YSS Yuzh-Sakhalins 64.48 26 *b i*P **P** **20 17 17.5 +0.8**
YSS *e*S **S** **20 25 52.0 -1.5**
YSS *e*SS **SS** **20 29 56.0 -8.4**
YSS pmax pmax
comp=Z,140nm,1.1s
YSS pmax pmax
comp=Z,4μm,4.0s
YSS smax smax
comp=N,12μm,11.0s
YSS smax smax
comp=E,10μm,10.0s
YSS MLR MLR
comp=Z,10μm,16.0s
YSS Yuzh-Sakhalins 64.48 26 *e*P **P** **20 17 16.6 -0.1**
comp=Z,1μm,1.1s
YSS LR LR
comp=Z,4μm,19.0s
SEM Semipalatinsk 64.51 341⇓ *i*P **P** **20 17 17.4 +0.5**
comp=Z,1μm,1.5s
SEM *i* PP **PP** **20 19 42.7 +3.5**
SEM *i* S **S** **20 25 55.2 +1.3**
SEM LRM MLR 20 49 27.3
comp=Z,12μm,15.8s
OXZ Oxford 64.71 133 *e*P **P** **20 17 18.7 +0.2**
comp=Z,172nm,0.6s
OUZ Omahuta 64.72 124 *e*P **P** **20 17 20.8 +2.1**
comp=Z,626nm,1.8s
LTZ Lake Taylor 64.78 133 *e*P **P** **20 17 19.0 0.0**
comp=Z,118nm,1.0s
WAKE Wake Island 64.78 63 P **P** **20 17 18.9 -0.4**
comp=Z,507nm,1.2s
WAKE LR LR
comp=Z,6μm,20.0s
MAW Mawson 64.99 197 P **P** **20 17 19.4 -0.3**
comp=Z,87nm,0.7s,baz=46,slow=6.3,SNR=104
MAW S **S** **20 25 57.3 -2.1**
comp=Z,2.3nm,1.0s,baz=79,slow=19,SNR=1.5
MAW LR LR 20 40 51.2
comp=Z,23μm,19.7s,baz=36,slow=32
MAW PKPPKP **P'P'df** **20 46 05.8 +0.1**
comp=Z,7.4nm,1.0s,baz=213,slow=3.0,SNR=6.6
MAW Mawson 64.99 197 P **P** **20 17 18.6 -1.1**
baz=65,SNR=104
MAW Mawson 64.99 197 *e*P **P** **20 17 18.7 -1.1**
comp=Z,72nm,1.0s
MAW S **S** **20 25 57.3 -2.1**
MAW P'P' 20 46 05.8
THZ Tophouse 65.07 132 PN **P** **20 17 19.9 -1.0**
THZ Tophouse 65.07 132 *e*P **P** **20 17 20.9 0.0**
comp=Z,2μm,1.9s
MQZ McQueen's Vall 65.22 134 *e*PN **P** **20 17 21.8 +0.1**
MQZ McQueen's Vall 65.22 134 *e*P **P** **20 17 23.8 +2.0**
comp=Z,936nm,2.0s
KURBB Kurchatov Arra 65.27 340 PKPPKP **P'P'df** **20 46 03.0 +1.8**
comp=Z,2.0nm,0.8s,baz=322,slow=2.8,SNR=5.7
KURBB P4KPbc 20 54 18.4
comp=Z,0.9nm,1.0s,baz=163,slow=3.2,SNR=5.1
KURK Kurchatov 65.31 340 *e*P **P** **20 17 22.0 -0.1**
KURK pmax pmax
comp=Z,980nm,1.3s
KURK Kurchatov 65.31 340 *e*P **P** **20 17 22.0 -0.1**
comp=Z,975nm,1.3s
KURK P'P' 20 46 03.0
KURK *e* 20 54 18.4
KURK LR LR
comp=Z,36μm,19.0s
KURK Kurchatov 65.31 340 P **P** **20 17 22.7 +0.6**
SNR=271
KURK P **P** **20 17 22.7 +0.6**
SNR=271
KURK P **P** **20 17 22.7 +0.6**
SNR=271
KURK Kurchatov 65.31 340 P **P** **20 17 22.7 +0.6**
SNR=271
KUR Kuril'sk 65.55 30 *c i*P **P** **20 17 26.0 +2.3**
KUR *i* S **S** **20 26 04.9 -1.8**
KUR pmax pmax
comp=Z,5μm,8.6s
KUR pmax pmax
comp=Z,439nm,2.3s
KUR MLR MLR
comp=N,4μm,20.0s
KUR MLR MLR
comp=E,3μm,20.0s
KUR MLR MLR
comp=Z,8μm,20.0s
KHZ Kahutara 65.64 132 *e*P **P** **20 17 24.6 +0.1**
comp=Z,524nm,1.6s
DUWZ D'Urville Isla 65.67 130 PN **P** **20 17 23.9 -0.9**
TARA Tarawa 65.78 84 *e*P **P** **20 17 29.2 +3.2**
comp=Z,995nm,1.4s
TARA LR LR
comp=Z,960nm,19.0s
BDHA Al Bayda' **66.05 290** *e*P **P** **20 17 28.2 +0.4**
BDHA AMb AMB 20 17 31.4
comp=Z,1μm,1.5s
HIZ Hauiti 66.09 128 *e*P **P** **20 17 29.8 +2.3**
comp=Z,1μm,1.9s
MKAZ Moumakai 66.18 126 PN **P** **20 17 29.5 +1.5**
GEYT Alibeck 66.31 319 P **P** **20 17 29.3 +0.4**
comp=Z,178nm,1.0s,baz=145,slow=5.4,SNR=100
GEYT S **S** **20 26 11.0 -5.4**
comp=Z,0.5nm,0.3s,baz=11,slow=1.5,SNR=2.4
GEYT PKP2bc 20 46 05.0
comp=Z,2.5nm,0.8s,baz=243,slow=0.7,SNR=6.3
GEYT LR LR 20 49 17.6
comp=Z,19μm,19.1s,baz=135,slow=39
SNZO South Karori 66.33 131 *e*P **P** **20 17 27.9 -1.0**
comp=Z,242nm,0.8s
SNZO LR LR
comp=Z,37μm,20.0s
ZALV Zalesovo Beam 66.35 345 P **P** **20 17 28.5 -0.2**
comp=Z,10nm,0.4s,baz=144,slow=4.1,SNR=49
ZALV S **S** **20 26 15.3 -0.9**
comp=Z,2.3nm,0.7s,baz=233,slow=7.0,SNR=1.9
ZALV PKPPKP **P'P'df** **20 46 00.2 +1.0**
comp=Z,2.1nm,0.9s,baz=305,slow=5.2,SNR=8.7
KRAR Krasnoyarsk 66.67 351 *d i*P **P** **20 17 29.0 -1.7**
KRAR pmax pmax
comp=Z,88nm,1.0s
KRAR MLR MLR
comp=Z,20μm,20.0s
WNVZ Wahianoa 66.76 129 PN **P** **20 17 31.6 -0.3**
BHHZ Black Hill Sta 67.14 129 PN **P** **20 17 33.1 -1.1**
DAMY Dhamar 67.31 290 *e*P **P** **20 17 37.4 +1.4**
comp=Z,581nm,1.1s
KRHZ Kereru 67.39 129 PN **P** **20 17 35.6 -0.2**
BFZ Birch Farm 67.41 130 *e*P **P** **20 17 36.6 +0.7**
comp=Z,1μm,1.7s
BKZ Black Stump Fm 67.43 128 *e*P **P** **20 17 35.3 -0.8**
comp=Z,425nm,0.8s
BOD Bodaibo 67.51 4 *e*P **P** **20 17 35.6 -0.4**
BOD pmax pmax
comp=Z,460nm,1.9s
TYV Tymovskoe 67.51 23 *e*P **P** **20 17 38.0 +1.9**
TYV *e*S S 20 26 19.0 -11
TYV pmax pmax
comp=Z,6μm,8.0s
TYV pmax pmax
comp=E,800nm,2.0s
TYV pmax pmax
comp=Z,1μm,2.0s
TYV smax smax
comp=N,6μm,12.0s
TYV MLR MLR
comp=E,11μm,20.0s
TYV MLR MLR
comp=Z,15μm,19.0s
NVS Novosibirsk 67.56 345⇑ *i*P **P** **20 17 37.9 +1.5**
NVS *e* 20 18 05.5
NVS *i* S **S** **20 26 34.7 +3.9**
NVS *e* 20 27 28.7
NVS pmax pmax
comp=N,468nm,2.2s
NVS pmax pmax
comp=E,379nm,2.2s
NVS pmax pmax
comp=Z,743nm,2.2s
NVS pmax pmax
comp=Z,277nm,1.9s
NVS pmax pmax
comp=N,219nm,2.5s
NVS pmax pmax
comp=E,245nm,2.2s
NVS smax smax
comp=N,183nm,2.5s
NVS smax smax
comp=E,127nm,2.5s
PXZ Pawanui 67.81 129 *e*PN **P** **20 17 36.8 -1.6**
URZ Urewera 67.83 127 P **P** **20 17 37.5 -1.1**
comp=E,36nm,0.6s,baz=290,slow=3.7,SNR=18
URZ LR LR 20 49 39.7
comp=E,22μm,18.9s,baz=284,slow=38
URZ Urewera 67.83 127 PN **P** **20 17 37.5 -1.1**
URZ Urewera 67.83 127 *e*P **P** **20 17 38.6 +0.1**
comp=E,114nm,0.9s
ATD Arta Tunnel 67.91 287 LR LR 20 43 54.7
comp=E,9μm,19.0s,slow=33
SNGZ Shannon Statio 68.06 128 PN **P** **20 17 39.8 -0.2**
HAJJ Hajjah 68.38 291 *e*P **P** **20 17 42.9 +0.4**
RIGZ Rimuhau 68.38 128 PN **P** **20 17 41.6 -0.4**
MSVF Nonsavu 68.42 105 *e*P **P** **20 17 42.5 -0.2**
MSVF pmax pmax
comp=Z,790nm,1.3s
MSVF Nonsavu 68.42 105 *e*P **P** **20 17 42.5 -0.2**
comp=Z,793nm,1.3s
MSVF LR LR
comp=Z,18μm,21.0s
NKL Nikolayevsk 68.63 21 *i*P **P** **20 17 43.0 -0.1**
NKL *e* 20 18 03.7
NKL *e*S **S** **20 26 40.0 -3.6**
NKL *e* 20 31 03.0
NKL pmax pmax
comp=N,60nm,0.9s
NKL pmax pmax
comp=E,30nm,0.9s
NKL pmax pmax
comp=Z,280nm,0.9s
NKL pmax pmax
comp=N,4μm,12.0s
NKL pmax pmax
comp=E,4μm,12.0s
NKL pmax pmax
comp=Z,8μm,14.0s
RAYN Ar Rayn 69.24 300 *e*P **P** **20 17 46.2 -1.5**
comp=Z,3.0nm,0.8s
RAYN LR LR
comp=Z,27μm,22.0s
VOSK Vostochnaya 69.70 337 *e*P **P** **20 17 49.3 -0.5**
VOSK pmax pmax
comp=Z,910nm,1.4s
VOSK Vostochnaya 69.70 337 *e*P **P** **20 17 49.3 -0.5**
comp=Z,908nm,1.4s
BVAR Borovoye Array 70.17 337 PKP2ab 20 45 47.0
comp=Z,0.8nm,0.8s,baz=209,slow=2.7,SNR=3.7
BVAR LR LR 20 52 13.9
comp=Z,20μm,21.6s,baz=144,slow=39
BRVK Borovoye 70.23 337 *de*P **P** **20 17 53.5 +0.5**
BRVK pmax pmax
comp=Z,364nm,1.7s
BRVK MLR MLR
comp=Z,25μm,23.0s
BRVK Borovoye 70.23 337 *e*P **P** **20 17 52.2 -0.8**
comp=Z,356nm,1.0s
BRVK LR LR
comp=Z,23μm,22.0s
BRVK Borovoye 70.23 337 P **P** **20 17 54.0 +1.0**
SNR=202
BRVK P **P** **20 17 54.0 +1.0**
SNR=202
BRVK Borovoye 70.23 337 P **P** **20 17 54.0 +1.0**
SNR=202
FUNA Funafuti 70.41 96 *e*P **P** **20 17 57.7 +2.7**
comp=Z,1μm,1.5s
FUNA LR LR
comp=Z,13μm,19.0s
KMBO Kilima Mbogo 70.61 272 P **P** **20 17 57.0 +0.5**
comp=Z,61nm,1.0s,baz=63,slow=7.4,SNR=79
KMBO S **S** **20 27 10.4 +1.5**
comp=Z,0.4nm,0.4s,baz=37,slow=20,SNR=3.3
KMBO LR LR 20 43 25.7
comp=Z,27μm,21.2s,baz=103,slow=31
KMBO PKPPKP **P'P'df** **20 45 55.7 -2.0**
comp=Z,3.3nm,1.2s,baz=293,slow=5.3,SNR=7.4
KMBO Kilima Mbogo 70.61 272 *e*P **P** **20 17 56.9 +0.4**
comp=Z,190nm,1.4s
KMBO S **S** **20 27 10.4 +1.5**
KMBO P'P' 20 45 55.7
KMBO Kilima Mbogo 70.61 272 P **P** **20 17 57.3 +0.8**
SNR=129
KMBO P **P** **20 17 57.3 +0.8**
SNR=129
KMBO Kilima Mbogo 70.61 272 P **P** **20 17 57.3 +0.8**
SNR=129
AAE Adis Abeba 71.17 283 *i* P **P** **20 18 02.9 +2.9**
FURI Furi 71.23 283 *i* P **P** **20 18 03.2 +2.9**
FURI Furi 71.23 283 *e*P **P** **20 18 04.3 +4.0**
comp=Z,587nm,0.6s
DODT Dodoma, Tanzan 71.30 267 *i* P **P** **20 18 00.8 +0.2**
ABKAR Akbulak array 72.14 329 *e*P **P** **20 18 04.0 -0.7**
VNDA Vanda 73.16 169 P **P** **20 18 09.1 -1.2**
comp=Z,45nm,0.9s,baz=312,slow=6.2,SNR=72
VNDA PKPPKP **P'P'df** **20 45 49.3 -2.2**
comp=Z,4.1nm,1.1s,baz=148,slow=3.7,SNR=4.1
VNDA LR LR 20 46 20.0
comp=Z,9μm,20.3s,baz=314,slow=33
VNDA Vanda 73.16 169 *e*P **P** **20 18 08.6 -1.8**
comp=Z,481nm,1.9s
VNDA P'P' 20 45 49.3
SYO Syowa Base 73.22 200‖ *e*P P 20 18 05.2 -5.6
SYO Syowa Base 73.22 200⇑ *i*P **P** **20 18 07.4 -3.4**
SKR Severo-Kuril's 73.31 30 *e*P P 20 18 02.5 -9.1
SKR *e* 20 18 19.0
SKR *e*S **SKiKP** **20 27 40.0 -0.8**
SKR *e* 20 28 11.0
SKR pmax pmax
comp=Z,450nm,1.0s
SKR MLR MLR
comp=N,10μm,18.0s
SKR MLR MLR
comp=E,4μm,18.0s
SKR MLR MLR
comp=Z,11μm,18.0s
YAK Yakutsk 73.56 11 LR LR 20 54 36.1
comp=Z,8μm,18.1s,baz=223,slow=39

YAK Yakutsk 73.56 11 d iP P 20 18 12.4 -0.4
YAK e 20 18 29.2
YAK e 20 20 54.7
YAK ePPP PPP 20 22 40.0
YAK eS S 20 27 36.7 -3.7
YAK e 20 28 18.4
YAK eSS SS 20 32 18.2 -5.8
YAK pmax pmax
comp=Z,575nm,0.9s
YAK pmax pmax
comp=E,103nm,1.2s
YAK pmax pmax
comp=N,142nm,1.1s
YAK pmax pmax
comp=Z,310nm,2.3s
YAK pmax pmax
comp=N,247nm,2.0s
YAK pmax pmax
comp=E,157nm,1.8s
YAK smax smax
comp=N,17µm,10.1s
YAK smax smax
comp=E,5µm,9.4s
YAK MLR MLR
comp=Z,30µm,17.0s
YAK MLR MLR
comp=N,19µm,16.0s
YAK Yakutsk 73.56 11 eP P 20 18 11.9 -0.9
comp=N,1µm,1.0s
SBA Scott Base 74.23 169 eP P 20 18 15.6 -1.0
SBA pmax pmax
comp=Z,350nm,1.4s
SBA Scott Base 74.23 169 eP P 20 18 15.6 -1.0
comp=Z,352nm,1.4s
SBA LR LR
comp=Z,10µm,20.0s
PEA0 Petropavlovsk- 75.61 28 eP P 20 18 24.7 -0.2
PEA0B Petropavlovsk- 75.61 28 eP P 20 18 25.5 +0.6
PETK Petropavlovsk- 75.61 28 P P 20 18 24.6 -0.3
comp=Z,26nm,0.5s,baz=188,slow=4.4,SNR=42
PETK LR LR 20 54 50.4
comp=Z,4µm,19.3s,baz=241,slow=38
PET Petropavlovsk 76.01 29 d iP P 20 18 27.9 +0.8
PET e 20 21 25.5
PET eS S 20 28 09.7 +1.7
PET ePS PnS 20 28 50.2 +2.1
PET pmax pmax
comp=Z,6µm,11.0s
PET pmax pmax
comp=Z,7µm,13.2s
PET pmax pmax
comp=Z,166nm,0.9s
PET smax smax
comp=E,14µm,13.0s
PET smax smax
comp=E,16µm,11.7s
PET MLR MLR
comp=Z,8µm,19.0s
PET MLR MLR
comp=Z,7µm,17.0s
PET Petropavlovsk 76.01 29 eP P 20 18 27.9 +0.8
comp=Z,687nm,1.3s
PET LR LR
comp=Z,8µm,20.0s
GNI Garni 76.42 315 LR LR 20 54 52.6
comp=Z,5µm,20.9s,baz=103,slow=38
GNI Garni 76.42 315 i P P 20 18 30.5 +0.5
SNR=24
GNI Garni 76.42 315 deP P 20 18 30.4 +0.4
GNI pmax pmax
comp=Z,2µm,2.5s
GNI MLR MLR
comp=Z,53µm,25.0s
GNI Garni 76.42 315 eP P 20 18 31.2 +1.1
comp=Z,379nm,1.0s
GNI Garni 76.42 315 P P 20 18 30.6 +0.5
SNR=41
GNI Garni 76.42 315 P P 20 18 30.6 +0.5
SNR=41
DGRG David-gareji 76.55 317 P P 20 18 32.0 +1.4
DGRG David-gareji 76.55 317 P P 20 18 32.0 +1.4
CLDR Caldiran 76.57 314 eP P 20 18 31.5 +0.5
MATP Matopo 76.68 251 PKKPbc PKKPbc 20 37 44.3 +2.0
comp=Z,2.3nm,0.8s,baz=176,slow=3.7,SNR=3.7
VANB Van 76.72 313 eP P 20 18 31.8 0.0
SVE Sverdlovsk 76.80 336 c iP P 20 18 32.6 +1.0
SVE e 20 21 30.4
SVE eS S 20 28 16.1 -0.5
SVE pmax pmax
comp=Z,2µm,1.5s
SVE pmax pmax
comp=Z,7µm,10.8s
SIRT Sirnak 76.97 312 eP P 20 18 32.2 -1.0
TBLG Delisi 77.10 317 eP P 20 18 36.0 +2.3
TBLG Delisi 77.10 317 P P 20 18 36.0 +2.3
TBLG Delisi 77.10 317 P P 20 18 35.9 +2.3
MA2 Magadan 77.15 21 LR LR 20 54 11.3
comp=Z,6µm,20.6s,baz=269,slow=37
MA2 Magadan 77.15 21 eP P 20 18 33.6 +0.1
MA2 pmax pmax
comp=Z,36nm,1.3s
MA2 Magadan 77.15 21 eP P 20 18 33.6 +0.1
comp=Z,36nm,1.3s
ARU Arti 77.40 334 d iP P 20 18 34.3 -0.7
ARU 20 21 29.6
ARU PPP PPP 20 23 13.6
ARU eS S 20 28 23.6 +0.4
ARU SS SS 20 33 23.4 +0.8
ARU SSS SSS 20 36 47.1
ARU pmax pmax
comp=Z,506nm,1.7s
ARU MLR MLR
comp=Z,23µm,25.0s
ARU Arti 77.40 334 eP P 20 18 34.3 -0.7
ARU LR LR
comp=Z,17µm,22.0s
AGRB Hanur-Agry 77.40 314 eP P 20 18 36.5 +0.9
GRM Grahamstown 77.45 238 i P P 20 18 36.0 +0.1
LSZ Lusaka 77.52 256 LR LR 20 47 45.1
comp=Z,27µm,20.5s,baz=99,slow=32
LSZ Lusaka 77.52 256 eP P 20 18 35.0 -1.7
LSZ pmax pmax
comp=Z,337nm,1.3s
LSZ Lusaka 77.52 256 eP P 20 18 35.0 -1.7
comp=Z,337nm,1.3s
GUDG Gudauri 77.59 317 P P 20 18 38.2 +1.5
KARS Kars 77.77 315 eP P 20 18 38.7 +1.1
AKH Akhalkalaki 77.81 316 P P 20 18 38.7 +0.8
AKH Akhalkalaki 77.81 316 ⇓ iP P 20 18 40.1 +2.2
AKH Akhalkalaki 77.81 316 P P 20 18 38.7 +0.8
BTMT Batman 77.94 312 eP P 20 18 40.0 +1.6
ZEI Tsey 78.12 318 eP P 20 18 40.1 +0.5
ZEI eS S 20 28 32.5 +0.5
ZEI pmax pmax
comp=Z,1µm,1.1s
ZEI pmax pmax
comp=N,2µm,1.2s
ZEI pmax pmax
comp=E,838nm,0.9s
SVAN Silvan-Diyarba 78.13 312 eP P 20 18 40.0 +0.5
ONI Oni 78.33 317 P P 20 18 41.5 +0.9
ONI Oni 78.33 317 P P 20 18 41.5 +0.9
VRTB Varto-Mus 78.33 313 eP P 20 18 41.4 +0.6
MAZI Mazidag 78.42 311 eP P 20 18 41.7 +0.4
AFI Afiamalu 78.53 102 P P 20 18 44.2 +1.9
comp=E,434nm,1.2s,baz=242,slow=5.3,SNR=20
NCK Nalchik 78.62 318 d iP P 20 18 42.8 +0.7
NCK pmax pmax
comp=Z,48nm,0.9s
NCK MLR MLR
comp=Z,6µm,22.0s
EZM Erzurum 78.69 314 eP P 20 18 44.1 +1.2
MNKR ALMNKUR 78.75 310 eP P 20 18 43.7 +0.8
BNGB Bingˆ¶l 78.83 313 eP P 20 18 44.9 +1.4
DYBB Diyarbakir 78.83 312 eP P 20 18 44.4 +0.9
BOSA Boshof 78.87 243 P P 20 18 44.9 +0.8
comp=Z,89nm,1.1s,baz=109,slow=4.5,SNR=37
BOSA S S 20 28 38.5 -2.1
comp=Z,6.5nm,1.1s,baz=90,slow=4.0,SNR=1.5
BOSA PKKPbc PKKPbc 20 37 38.4 +0.6
comp=Z,5.8nm,0.9s,baz=172,slow=3.9,SNR=5.2
BOSA LR LR 20 48 57.2
comp=Z,42µm,18.4s,baz=100,slow=32
BOSA Boshof 78.87 243 eP P 20 18 44.0 0.0
BOSA S S 20 28 38.5 -2.1
BOSA PKKPbc PKKPbc 20 37 38.4 +0.6
LBTB Lobatse 78.90 246 PKKPbc PKKPbc 20 37 40.3 +2.7
comp=Z,4.7nm,0.9s,baz=272,slow=2.7,SNR=4.8
LBTB Lobatse 78.90 246 eP P 20 18 45.0 +0.7
LBTB Lobatse 78.90 246 eP P 20 18 45.0 +0.7
LBTB PKKPbc PKKPbc 20 37 40.3 +2.7
KSRV Kasrt alli 78.93 310 eP P 20 18 44.7 +0.8
NEY Neytrino 79.09 318 d iP P 20 18 45.6 +0.7
KBZ Khabaz 79.18 318 P P 20 18 45.5 +0.4
comp=Z,122nm,0.9s,baz=128,slow=4.3,SNR=60
KBZ S S 20 28 40.7 -2.1
comp=Z,4.5nm,1.1s,baz=258,slow=19,SNR=2.5
KBZ PKKPbc PKKPbc 20 37 37.8 -0.4
comp=Z,5.7nm,0.9s,baz=345,slow=0.9,SNR=8.3
KBZ LR LR 20 58 34.7
comp=Z,4µm,21.6s,baz=122,slow=39
ZALF Zalf 79.23 306 eP P 20 18 47.0 +1.2
ASF Jabal al Asfar 79.34 305 PKPPKP P'P'df 20 45 42.4 +2.6
comp=Z,0.6nm,0.3s,baz=310,slow=4.9,SNR=3.6
KIV Kislovodsk 79.41 318 eP P 20 18 46.9 +0.4
KIV Kislovodsk 79.41 318 i P P 20 18 47.2 +0.7
SNR=54
KIV Kislovodsk 79.41 318 eP P 20 18 46.4 -0.1
KIV e 20 21 42.7
KIV eS S 20 28 44.4 -1.1
KIV eSS SS 20 33 54.9 +1.3
KIV pmax pmax
comp=Z,124nm,1.0s
KIV pmax pmax
comp=Z,4µm,5.6s
KIV MLR MLR
comp=Z,5µm,18.0s
KIV Kislovodsk 79.41 318 eP P 20 18 47.7 +1.2
KIV LR LR
comp=Z,6µm,20.0s
KIV Kislovodsk 79.41 318 P P 20 18 46.9 +0.4
SNR=51
KIV Kislovodsk 79.41 318 P P 20 18 46.9 +0.4
SNR=51
GOF Gofitskoye 79.64 319 ⇓ iP P 20 18 48.0 +0.4
GOF i S S 20 29 05.7 +18
GOF pmax pmax
comp=Z,228nm,1.0s
GOF smax smax
comp=E,88nm,1.0s
SALA Sala 79.65 306 eP P 20 18 50.8 +2.6
NIUE Niue 79.66 108 P P 20 18 47.7 -0.6
baz=80,SNR=5.2
ROOS tl_alroos 79.68 307 eP P 20 18 50.8 +2.6
PTK Pertek 79.72 312 eP P 20 18 49.0 +0.6
ERZN Erzincan 79.74 313 eP P 20 18 48.6 +0.2
BAYT Ayd˜–ntepe-Bay 79.74 314 eP P 20 18 49.9 +1.4
RABH Abou Rabah 79.83 308 eP P 20 18 50.1 +1.1
TOTH TOTAH 80.09 306 eP P 20 18 51.4 +1.0
SEY Seymchan 80.12 19 P P 20 18 50.8 +1.0
comp=E,67nm,1.0s,baz=225,slow=5.4,SNR=62
SEY PKKPbc PKKPbc 20 37 34.2 -2.9
comp=E,4.6nm,0.9s,baz=131,slow=3.6,SNR=10
SEY PKPPKP P'P'df 20 45 45.0 +9.5
comp=E,3.3nm,0.9s,baz=85,slow=2.6,SNR=4.9
NRIK Noril'sk 80.14 353 P P 20 18 50.0 +0.3
comp=E,77nm,0.8s,baz=166,slow=5.2,SNR=90
NRIK S S 20 28 44.6 -7.3
comp=E,0.9nm,0.5s,baz=207,slow=14,SNR=1.9
NRIK LR LR 20 59 07.2
comp=E,13µm,18.5s,baz=168,slow=39
EIL Elat 80.17 302 eP P 20 18 51.3 +0.5
HRFI Mount Harif 80.21 303 eP P 20 18 52.2 +1.2
KTUT Trabzon 80.22 315 eP P 20 18 50.8 -0.1
GUMT Gumushane 80.23 314 eP P 20 18 53.0 +1.9
TCHB Talchebab 80.24 306 eP P 20 18 53.1 +1.9
MARH Ras Al Marh 80.27 307 eP P 20 18 53.0 +1.4
QSPA South Pole Qui 80.27 180 eP P 20 18 48.9 -1.9
QSPA LR LR
comp=Z,34µm,22.0s
BRBR Barbar 80.49 306 eP P 20 18 53.8 +1.0
ILIC ilic-Erzincan 80.52 313 eP P 20 18 53.2 +0.6
RCY Rachaya 80.61 306 eP P 20 18 54.4 +1.2
GAZ Gaziantep 80.73 310 eP P 20 18 54.7 +0.9
HWQ Hawqa 80.77 307 eP P 20 18 54.4 +0.4
BHL Bhannes 80.88 307 eP P 20 18 55.9 +1.2
DQRL Deir Qamar 80.88 306 eP P 20 18 56.1 +1.5
BTCH Batrach 80.93 309 eP P 20 18 54.8 -0.1
ESPY Espiye-Giresun 80.93 314 eP P 20 18 55.2 +0.5
DRWC Darouich 80.96 310 eP P 20 18 56.3 +1.3
SLNF Slenfeh 80.97 308 eP P 20 18 56.5 +1.3
KZIT Kziot 80.99 304 eP P 20 18 56.0 +0.7
BEYL Beirut 81.00 307 eP P 20 18 56.1 +1.0
DARE Darende-Malaty 81.00 312 eP P 20 18 56.2 +1.0
KMRS Kahramanmaras 81.08 310 eP P 20 18 56.7 +1.1
SOC Sochi 81.24 317 d iP P 20 18 55.6 -0.6
SOC e*PP pP 20 19 06.2 -0.1
SOC e*SP sP 20 19 09.9 -0.1
SOC ePPP PPP 20 23 52.4
SOC eS S 20 29 04.2 -0.3
SOC eSS SS 20 34 25.4 +4.7
SOC pmax pmax
comp=Z,130nm,0.9s
SOC MLR MLR
comp=Z,7µm,20.0s
ARNB Al Arnab 81.25 309 eP P 20 18 57.1 +0.5
TAHT Tahtakopru-Hat 81.25 309 eP P 20 18 57.4 +1.0
MIDW Midway 81.48 59 PFAKE 20 19 10.0 +12
MIDW LR LR
comp=Z,6µm,22.0s
RSDY Resadiye-TOKAT 81.74 313 eP P 20 19 00.1 +1.1
CEYT Ceyhan 81.78 310 eP P 20 19 00.4 +1.1
SVSK Karacayir 81.82 313 eP P 20 19 00.5 +1.2
KOZT Kozan 81.88 310 eP P 20 19 00.4 +0.6
KRTS Karatas 81.93 309 eP P 20 19 01.0 +1.0
TOKT Tokat 82.28 313 eP P 20 19 03.1 +1.2
BNN Bunyan 82.31 311 eP P 20 19 02.6 +0.5
SUR Sutherland 82.31 238 eP P 20 19 04.1 +1.6
SUR LR LR
comp=Z,46µm,22.0s
SUR Sutherland 82.31 238 P P 20 19 02.7 +0.2
SNR=23
SUR Sutherland 82.31 238 P P 20 19 02.7 +0.2
SNR=23
KARA Karaisali 82.39 310 eP P 20 19 03.1 +0.7
TIXI Tiksi 82.42 7 deP P 20 19 01.0 -0.8
TIXI pmax pmax
comp=Z,470nm,1.7s
TIXI MLR MLR
comp=Z,14µm,18.0s
TIXI Tiksi 82.42 7 eP P 20 19 00.6 -1.2
TIXI LR LR
comp=Z,15µm,21.0s
EREN Erenkoy 82.54 308 eP P 20 19 04.5 +1.2
MERS Mersin 82.67 309 eP P 20 19 04.5 +0.4
NVL N'lazarevskaya 82.84 199 eP P 20 19 03.6 -0.5
NVL e 20 22 14.0
NVL eS S 20 29 19.5 -0.6
NVL eSSS SSS 20 38 13.6
KVT Kavak 82.89 314 eP P 20 19 06.1 +1.1
YOZ Yozgat 82.95 312 eP P 20 19 06.0 +0.6
NIG Nigde 82.99 310 eP P 20 19 06.4 +0.5
CSS Mathiatis 83.03 307 eP P 20 19 07.0 +1.2
CSS Mathiatis 83.03 307 P P 20 19 07.8 +2.0
CSS Mathiatis 83.03 307 P P 20 19 06.3 +0.5
CSS Mathiatis 83.03 307 eP P 20 19 05.8 -0.1
CSS LR LR
comp=Z,4µm,19.0s
VRH Novokhopyorsk 83.04 325 eP P 20 19 05.9 +0.5
VRH e 20 22 18.8
VRH eS S 20 29 20.2 -2.4
VRH eSS SS 20 34 55.8 +8.7
VRH pmax pmax
comp=Z,430nm,0.7s
VRH pmax pmax
comp=Z,560nm,0.8s
VRH smax smax
comp=E,2µm,4.3s
VRH MLR MLR
comp=Z,11µm,23.0s
IKL Isikli 83.13 308 eP P 20 19 06.7 +0.4
MAMC Mammari 83.18 307 P P 20 19 08.8 +2.2
ANN Anapa 83.21 318 d iP P 20 19 06.1 -0.4
ANN i 20 22 17.5
ANN ePPP PPP 20 24 12.1
ANN i S S 20 29 22.9 -1.7
ANN eSS SS 20 34 52.8 +2.9
ANN pmax pmax
comp=Z,199nm,1.4s
ANN pmax pmax
comp=N,66nm,1.5s
ANN pmax pmax
comp=E,40nm,1.5s
ANN pmax pmax
comp=N,3µm,8.4s
ANN pmax pmax
comp=E,2µm,8.4s
ANN pmax pmax
comp=Z,9µm,8.4s
ANN MLR MLR
comp=Z,5µm,18.0s
SZAC Souni 83.32 307 P P 20 19 09.2 +1.8
CORM Corum 83.62 312 eP P 20 19 09.8 +0.8
DIKM Dikmen 83.64 314 eP P 20 19 09.7 +0.8
ALFC Alefka 83.66 307 P P 20 19 10.4 +1.3
PPCY Paphos 83.78 307 P P 20 19 10.5 +0.8
SNOP Sinop 83.79 314 eP P 20 19 10.5 +0.9
AKMC Akamas 83.83 307 P P 20 19 11.2 +1.2
SULT Sultanhani-AKS 83.84 310 eP P 20 19 11.0 +0.9
BYBT Boyabat 83.93 314 eP P 20 19 12.0 +1.7
SERE Sereflikochisa 84.03 311 eP P 20 19 11.9 +0.9
KAMT Kaman 84.04 311 eP P 20 19 12.1 +1.0
BR131 Keskin Array S 84.20 312 eP P 20 19 11.2 -0.7
BRTR Keskin Array B 84.20 312 P P 20 19 10.8 -1.1
comp=Z,46nm,0.6s,baz=135,slow=5.4,SNR=124
BRTR PKKPbc PKKPbc 20 37 25.4 -1.3
comp=Z,2.5nm,0.8s,baz=247,slow=2.2,SNR=7.4
BRTR PKPPKP P'P'df 20 45 31.7 +1.2
comp=Z,2.5nm,1.2s,baz=313,slow=4.4,SNR=4.9
BRTR LR LR 20 58 23.3
comp=Z,8µm,20.8s,baz=90,slow=37
BRTR Keskin Array B 84.20 312 P P 20 19 10.8 -1.1
BRTR pmax pmax
comp=Z,46nm,0.6s
BRTR pmax pmax
comp=Z,3.0nm,0.8s
BRTR pmax pmax
comp=Z,3.0nm,1.2s
BRTR MLR MLR
comp=Z,8µm,20.8s
TOS Tosya 84.33 313 eP P 20 19 14.3 +1.8
CHBY Cihanbeyli 84.42 311 eP P 20 19 14.1 +1.1
CANT Cankiri 84.49 313 eP P 20 19 14.0 +0.8
VSR Storozhevoye 84.51 324 eP P 20 19 13.1 +0.1
VSR e 20 22 27.4
VSR eS S 20 29 31.2 -6.3
VSR eSS SS 20 35 04.4 -4.5
VSR pmax pmax
comp=Z,340nm,0.7s
VSR pmax pmax
comp=Z,700nm,1.0s
VSR smax smax
comp=E,3µm,6.9s
VSR MLR MLR
comp=Z,13µm,26.0s
AFSR Af¯ar-Bala (A 84.54 311 eP P 20 19 14.1 +0.5
BZK Bozkurt 84.63 314 eP P 20 19 15.6 +1.8
VORR Voronezh 84.67 324 eP P 20 19 14.0 +0.2
VORR pmax pmax
comp=Z,750nm,2.0s
LADK Ladik-KONYA 84.71 310 eP P 20 19 14.6 +0.2
ANTO Ankara 84.87 312 eP P 20 19 15.6 +0.4
ANTO Ankara 84.87 312 eP P 20 19 15.6 +0.4
ANTO LR LR
comp=Z,12µm,20.0s
ANTO Ankara 84.87 312 P P 20 19 15.9 +0.7
SNR=49
ANTO P P 20 19 15.9 +0.7
SNR=49
ANTO Ankara 84.87 312 P P 20 19 15.9 +0.7
SNR=49
BR231 Keskin MP Arra 84.88 312 eP P 20 19 15.9 +0.7
LOD Lodumlu 84.90 312 eP P 20 19 15.6 +0.2
LPSR Galich'ya Gora 85.19 325 eP P 20 19 17.0 +0.6
LPSR eS S 20 29 43.0 -1.1
LPSR pmax pmax
comp=Z,130nm,0.9s
LPSR pmax pmax
comp=Z,1µm,2.0s
LPSR smax smax
comp=N,5µm,8.4s
LPSR MLR MLR
comp=Z,10µm,27.0s
KIZT Kizilcal 85.26 311 eP P 20 19 18.1 +0.9
SAFT Safranbolu 85.35 313 eP P 20 19 19.3 +1.8
SIM Simferopol' 85.48 317 d iP P 20 19 18.9 +0.8
SIM e 20 22 36.0
SIM eS S 20 29 46.0 -1.4
SIM ePS PnS 20 30 47.0 +0.3
SIM eSS SS 20 35 25.0 +1.5
SIM pmax pmax
comp=Z,254nm,1.0s
SIM pmax pmax
comp=Z,4µm,9.2s
SIM MLR MLR
comp=N,5µm,19.6s
ANTB Antalya 85.65 308 eP P 20 19 18.0 -1.1
SVRH Sivrihisar-ESK 85.69 311 eP P 20 19 20.1 +0.7
JOHN Johnston Islan 85.88 72 eP P 20 19 20.5 -0.1
comp=N,167nm,1.3s
JOHN LR LR
comp=Z,529nm,22.0s
ISP Isparta 86.00 309 eP P 20 19 20.6 -0.3
ISP Isparta 86.00 309 P P 20 19 19.9 -1.0
ISP Isparta 86.00 309 eP P 20 19 21.3 +0.3
ISP Isparta 86.00 309 eP P 20 19 21.2 +0.3
ISP LR LR
comp=Z,13µm,19.0s
SHUT Suhut-Afyon 86.17 310 eP P 20 19 22.4 +0.6
ELL Elmali 86.19 308 eP P 20 19 22.8 +0.8
MDUB Mudurnu 86.21 312 eP P 20 19 21.5 -0.4
KSL Kastellorizon 86.29 307 P P 20 19 21.5 -0.7
KSL Kastellorizon 86.29 307 P P 20 19 21.5 -0.7
GLHS Glhisar (BURDU 86.61 308 eP P 20 19 23.4 -0.6
GULT Gulveren 86.70 312 eP P 20 19 25.2 +0.9
FETY Fethiye 86.80 308 eP P 20 19 25.6 +0.8
FETY Fethiye 86.80 308 P P 20 19 24.5 -0.3
FETY Fethiye 86.80 308 P P 20 19 24.5 -0.3
KHL Karahalli 86.89 310 eP P 20 19 26.4 +1.1
SPNC Sapanca-Adapaz 86.92 312 eP P 20 19 24.5 -0.8
TSUM Tsumeb 87.03 251 eP P 20 19 26.0 -0.4
TSUM LR LR
comp=Z,18µm,19.0s
MOS Moscow 87.09 328 eP P 20 19 24.4 -1.3
MOS e 20 19 37.1
MOS e 20 22 51.7
MOS ePPP PPP 20 24 45.7
MOS e 20 29 48.3
MOS i 20 30 01.7
MOS pmax pmax
comp=Z,647nm,1.5s
MOS pmax pmax
comp=N,86nm,1.6s
MOS pmax pmax
comp=E,647nm,1.5s
MOS pmax pmax
comp=Z,4µm,3.8s
DENT Denizli 87.12 309 eP P 20 19 26.4 0.0
CAVI Cavuskoy 87.14 311 eP P 20 19 27.5 +1.1
SNAA Sanae 87.16 197 P P 20 19 26.2 +0.2
SNAA Sanae 87.16 197 d iP P 20 19 25.7 -0.2
SNAA pmax pmax
comp=Z,8µm,1.1s
SNAA Sanae 87.16 197 eP P 20 19 25.1 -0.9
DALY Dalyan (Mu˜la 87.18 308 eP P 20 19 26.6 0.0
TVSB Tavsanli 87.23 311 eP P 20 19 27.9 +1.0
ADVT Abdulvahap 87.28 312 eP P 20 19 27.7 +0.7
OBN Obninsk 87.42 327 deP P 20 19 27.4 +0.1
OBN i 20 22 54.1
OBN ePPP PPP 20 24 46.7
OBN i S SKSac 20 29 51.0 -1.5
OBN eSSS SSS 20 39 18.1
OBN pmax pmax
comp=Z,921nm,1.7s
OBN MLR MLR
comp=Z,15µm,22.0s
OBN Obninsk 87.42 327 eP P 20 19 26.2 -1.1
OBN LR LR
comp=Z,11µm,22.0s
IZI Iznik 87.45 311 eP P 20 19 29.6 +1.7
ARG Arkhangelos 87.45 307 P P 20 19 28.4 +0.5
ARG Arkhangelos 87.45 307 P P 20 19 28.4 +0.5

ARG	Arkhangelos	87.45 307	P	P	20 19 28.4	+0.5
SILT	Sile	87.53 312	eP	P	20 19 28.0	-0.2
YER	Yerkesik	87.55 308	eP	P	20 19 26.4	-2.1
YER	Yerkesik	87.55 308	P	P	20 19 28.0	-0.4
YER	Yerkesik	87.55 308	P	P	20 19 28.0	-0.4
YER	Yerkesik	87.55 308	P	P	20 19 28.0	-0.4
KULA	Kula-Manisa	87.60 310	eP	P	20 19 30.1	+1.4
KULA	Kula-Manisa	87.60 310	P	P	20 19 29.3	+0.6
KULA	Kula-Manisa	87.60 310	P	P	20 19 29.3	+0.6
GEMT	Gemlik	87.68 312	eP	P	20 19 29.0	+0.1
BILL	Bilibino	87.82 19	deP	P	20 19 28.9	0.0
BILL			i		20 19 40.4	
BILL			e		20 22 53.8	
BILL			iS	SKSac	20 29 53.4	-1.1
BILL			eSS	SS	20 35 54.7	-2.0
BILL			eSSS	SSS	20 39 25.2	
BILL			pmax	pmax		
	comp=Z,195nm,1.7s					
BILL			MLR	MLR		
	comp=Z,6µm,16.0s					
BILL	Bilibino	87.82 19	eP	P	20 19 28.3	-0.7
BILL			LR	LR		
	comp=Z,8µm,20.0s					
MDNY	Mudanya-Bursa	87.89 311	eP	P	20 19 30.4	+0.5
DST	Dursunbey	87.90 311	eP	P	20 19 30.9	+0.8
ISK	Istanbul-Kandi	87.94 312	eP	P	20 19 31.3	+1.2
ISK	Istanbul-Kandi	87.94 312	P	P	20 19 30.1	0.0
ISK	Istanbul-Kandi	87.94 312	P	P	20 19 30.1	0.0
ISK	Istanbul-Kandi	87.94 312	P	P	20 19 30.1	0.0
ARMT	Armutlu	87.96 312	eP	P	20 19 30.7	+0.5
AYDB	Zeytinkoy-Aydi	88.05 309	eP	P	20 19 32.0	+1.1
KARP	Karpathos	88.05 306	eP	P	20 19 32.2	+1.4
KARP	Karpathos	88.05 306	P	P	20 19 31.4	+0.5
KARP	Karpathos	88.05 306	eP	P	20 19 32.1	+1.2
KLMR	Klimovskoe	88.15 333	eP	P	20 19 29.2	-1.4
KLMR			e*PP	pP	20 19 40.7	-0.1
KLMR			eS	SKSac	20 29 54.8	-1.9
KLMR			pmax	pmax		
	comp=Z,694nm,1.2s					
KLMR			MLR	MLR		
	comp=Z,15µm,21.0s					
BGKT	Bogazkoy	88.17 312	eP	P	20 19 31.7	+0.5
KCTX	Karacabey (Bur	88.25 311	eP	P	20 19 32.2	+0.5
NIS1	Nisyros Isl.	88.28 307	eP	P	20 19 30.6	-1.3
NIS1	Nisyros Isl.	88.28 307	P	P	20 19 31.8	-0.1
NIS1	Nisyros Isl.	88.28 307	P	P	20 19 31.8	-0.1
BODT	Bodrum	88.29 308	eP	P	20 19 31.2	-0.7
BODT	Bodrum	88.29 308	P	P	20 19 31.9	0.0
BODT	Bodrum	88.29 308	P	P	20 19 31.9	0.0
NISR	Nisiros	88.32 307	P	P	20 19 28.9	-3.1
NISR	Nisiros	88.32 307	P	P	20 19 28.9	-3.1
AKS	Akhisar	88.33 310	eP	P	20 19 31.5	-0.6
CTKS	Kestanelik-??a	88.38 312	eP	P	20 19 31.5	-0.7
BALB	Balikesir	88.46 310	eP	P	20 19 33.8	+1.2
CTYL	Yalikoy Yolu	88.60 312	eP	P	20 19 34.2	+0.9
IZM	Izmir	88.63 309	eP	P	20 19 35.6	+2.1
EDC	Edincik	88.64 311	eP	P	20 19 33.6	+0.1
ZKR	Zakros	88.71 306	P	P	20 19 35.0	+1.1
RAR	Rarotonga	88.80 111	P	P	20 19 36.6	+2.0
	comp=Z,16nm,0.9s,baz=255,slow=1.0,SNR=4.2					
RAR			LR	LR	20 58 57.6	
	comp=Z,5µm,19.8s,baz=245,slow=35					
BLCB	Balcova	88.80 309	eP	P	20 19 35.8	+1.5
SMG	Samos	88.80 308	P	P	20 19 34.6	+0.3
SMG	Samos	88.80 308	P	P	20 19 34.6	+0.3
VNA2	Neumayer--Watz	88.81 197	P	P	20 19 34.0	+0.2
	baz=92,slow=3.9					
MRMT	Marmara Adasi	88.90 311	eP	P	20 19 33.9	-0.9
CRLT	Corlu	88.92 312	eP	P	20 19 35.5	+0.7
TKR	Tekirdag	89.04 312	eP	P	20 19 37.7	+2.4
TLCR		89.15 316	⇓iP	P	20 19 37.6	+1.9
VNA1	Neumayer--Stat	89.19 197	P	P	20 19 36.1	+0.6
PHSR	Pinarhisar	89.20 312	eP	P	20 19 36.6	+0.5
PSN	Preselentsi	89.22 314	iP	P	20 19 37.1	+1.0
NPS	Neapolis	89.22 306	P	P	20 19 37.3	+0.9
RKY	Sarkoy-Tekirda	89.23 311	eP	P	20 19 37.1	+0.8
TIRR	Tirgusor	89.25 315	⇑iP	P	20 19 37.9	+1.7
TIRR	Tirgusor	89.25 315	eP	P	20 19 36.1	-0.1
TIRR	Tirgusor	89.25 315	eP	P	20 19 36.1	-0.1
LAST	Lasithi	89.31 306	P	P	20 19 37.5	+0.6
LAST	Lasithi	89.31 306	eP	P	20 19 37.7	+0.8
VNA3	Neumayer Olymp	89.31 197	P	P	20 19 36.2	+0.1
CHOS	Chios island	89.56 309	eP	P	20 19 39.6	+1.7
CHOS	Chios island	89.56 309	P	P	20 19 38.6	+0.7
CHOS	Chios island	89.56 309	P	P	20 19 38.6	+0.7
MSAB	Monastry St. A	89.57 315	⇓iP	P	20 19 39.7	+2.0
PRK	Paraskevi	89.58 310	P	P	20 19 37.7	-0.2
PRK	Paraskevi	89.58 310	P	P	20 19 37.7	-0.2
PRK	Paraskevi	89.58 310	P	P	20 19 37.7	-0.2
SANT	Santorini	89.58 307	eP	P	20 19 38.5	+0.5
SANT	Santorini	89.58 307	P	P	20 19 37.9	-0.1
SANT	Santorini	89.58 307	eP	P	20 19 38.3	+0.3
SANT			LR	LR		
	comp=Z,5µm,21.0s					
KIS	Kishinev	89.61 318	⇓iP	P	20 19 38.0	+0.2
	comp=Z,1µm,3.0s					
KIS	Kishinev	89.61 318	iPP	PP	20 23 10.0	0.0
	comp=Z,4µm,10.0s					
KIS	Kishinev	89.61 318	iPPP	PPP	20 25 26.0	
KIS			iS	S	20 30 28.0	+1.2
KIS	Kishinev	89.61 318	iPS	PS	20 32 08.0	+32
KIS	Kishinev	89.61 318	κ iP	P	20 19 38.0	+0.2
KIS			i		20 23 10.0	
KIS			iS	S	20 30 28.0	+1.2
KIS			iPS	PS	20 32 08.0	+32
KIS			iSS	SS	20 36 20.0	-3.6
KIS			pmax	pmax		
	comp=Z,1µm,3.0s					
KIS			pmax	pmax		
	comp=Z,6µm,8.0s					
KIS			pmax	pmax		
	comp=Z,6µm,12.0s					
KIS			pmax	pmax		
	comp=Z,4µm,10.0s					
KIS			pmax	pmax		
	comp=Z,5µm,12.0s					
KIS			MLR	MLR		
	comp=N,6µm,22.0s					
KIS			MLR	MLR		
	comp=Z,11µm,22.0s					
KIS			MLR	MLR		
	comp=E,5µm,20.0s					
KIS			MLR	MLR		
	comp=Z,11µm,24.0s					
THT1	Athinios (Pele	89.61 307	P	P	20 19 37.6	-0.5
CFR	Carcaliu	89.61 316	⇓iP	P	20 19 38.6	+0.7
THR3	Thira Island,	89.64 307	P	P	20 19 38.0	-0.2
THR3	Thira Island,	89.64 307	P	P	20 19 38.0	-0.2
CMBO	Columbo, Santo	89.65 307	P	P	20 19 38.6	+0.3
PRD	Provadia	89.66 314	iP	P	20 19 38.8	+0.7
IACM	Heraklion	89.67 306	P	P	20 19 39.6	+1.2
EZN	Ezine	89.67 310	eP	P	20 19 39.4	+1.2
EZN	Ezine	89.67 310	P	P	20 19 38.6	+0.3
EZN	Ezine	89.67 310	P	P	20 19 38.6	+0.3
EZN	Ezine	89.67 310	P	P	20 19 38.6	+0.3
APE	Apeiranthos	89.68 308	eP	P	20 19 40.6	+2.1
APE	Apeiranthos	89.68 308	P	P	20 19 37.7	-0.8
APE	Apeiranthos	89.68 308	d iP	P	20 19 38.6	+0.1
APE			pmax	pmax		
	comp=Z,21nm,0.8s					
APE	Apeiranthos	89.68 308	P	P	20 19 37.7	-0.8
THR5	Thira Island,	89.68 307	eP	P	20 19 38.6	+0.2
THR5	Thira Island,	89.68 307	P	P	20 19 38.1	-0.3
GELI	Tayfur-Gelibol	89.69 311	eP	P	20 19 40.1	+1.7
ERIK	Erikli-Kesan	89.72 311	eP	P	20 19 40.0	+1.5
IDI	Anoyia	89.81 306	P	P	20 19 39.6	+0.4
IDI	Anoyia	89.81 306	eP	P	20 19 39.1	-0.1
EDRB	Edirne	89.81 312	eP	P	20 19 33.4	-5.6
EDRB	Edirne	89.81 312	P	P	20 19 39.6	+0.7
EDRB	Edirne	89.81 312	P	P	20 19 39.6	+0.7
SIVA	Sivas	89.81 305	eP	P	20 19 40.7	+1.6
SIVA	Sivas	89.81 305	P	P	20 19 39.6	+0.5
LEOM	Leova	89.86 317	⇑iP	P	20 19 39.9	+0.9
SIGR	SIGRI	89.89 310	eP	P	20 19 39.9	+0.5
SIGR	SIGRI	89.89 310	P	P	20 19 39.3	0.0
SIGR	SIGRI	89.89 310	P	P	20 19 39.3	0.0
ENEZ	Enez	90.00 311	eP	P	20 19 41.2	+1.4
ENEZ	Enez	90.00 311	P	P	20 19 40.2	+0.4
GADA	Gvkgeada	90.07 311	eP	P	20 19 39.8	-0.3
GADA	Gvkgeada	90.07 311	P	P	20 19 40.2	0.0
GADA	Gvkgeada	90.07 311	P	P	20 19 40.2	0.0
JMB	Yambol	90.07 313	iP	P	20 19 40.4	+0.3
TMCR	Tamitsa	90.08 336	eP	P	20 19 40.7	+1.1
TMCR			pmax	pmax		
	comp=Z,190nm,0.9s					
ALN	Alexandroupoli	90.11 311	eP	P	20 19 40.2	-0.1
ALN	Alexandroupoli	90.11 311	P	P	20 19 40.5	+0.2
ALN	Alexandroupoli	90.11 311	P	P	20 19 40.5	+0.2
ALN	Alexandroupoli	90.11 311	P	P	20 19 40.5	+0.2
SORM	Soroca	90.20 319	⇓iP	P	20 19 43.3	+2.7
AKASG	Malin Array Be	90.30 321	P	P	20 19 40.2	-0.8
	comp=Z,28nm,0.8s,baz=86,slow=4.4,SNR=76					
AKASG			PP	PP	20 23 15.6	+0.3
	comp=Z,16nm,0.9s,baz=91,slow=6.3,SNR=4.1					
AKASG			S	S	20 30 20.8	-12
	comp=Z,0.4nm,0.3s,baz=86,slow=3.5,SNR=5.5					
AKASG			PKKPbc	PKKPdf	20 37 09.4	+1.0
	comp=Z,1.2nm,0.7s,baz=286,slow=3.3,SNR=4.2					
AKASG			LR	LR	21 05 07.4	
	comp=Z,5µm,21.1s,baz=100,slow=39					
AKBB	Malin Array Si	90.30 321	eP	P	20 19 40.7	-0.3
AKBB	Malin Array Si	90.30 321	eP	P	20 19 40.7	-0.3
KIEV	Kiev	90.30 321	d iP	P	20 19 40.3	-0.7
KIEV			pmax	pmax		
	comp=Z,49nm,0.9s					
KIEV			MLR	MLR		
	comp=Z,8µm,24.0s					
KIEV	Kiev	90.30 321	eP	P	20 19 40.6	-0.3
KIEV			LR	LR		
	comp=Z,8µm,21.0s					
AK11	Malin Array Si	90.32 321	eP	P	20 19 40.4	-0.7
PGOR	Pogoanele	90.34 315	⇑iP	P	20 19 43.6	+2.3
GVD	Gavdhos	90.36 305	P	P	20 19 41.2	-0.5
PETR	Petresti	90.36 316	⇑iP	P	20 19 43.3	+1.9
ATKA	Atka Island	90.38 37	eP	P	20 19 42.0	+0.7
VAM	Vamos	90.38 306	P	P	20 19 42.7	+0.9
SMTH	Samothraki Isl	90.40 311	P	P	20 19 41.5	-0.3
SMTH	Samothraki Isl	90.40 311	P	P	20 19 41.5	-0.3
GRER		90.46 316	⇑iP	P	20 19 44.3	+2.4
MHLO	Agia Marina, M	90.48 307	P	P	20 19 44.9	+2.7
ODBI	Odobesti	90.49 316	⇓iP	P	20 19 44.3	+2.3
LIA	Limnos Island	90.54 310	P	P	20 19 41.8	-0.6
LIA	Limnos Island	90.54 310	P	P	20 19 41.8	-0.6
IMMV	Iera Moni Meta	90.57 306	P	P	20 19 43.4	+0.8
ISR	Istrita	90.70 316	⇓iP	P	20 19 45.1	+2.0
SZH	Strazhica	90.71 314	iP	P	20 19 43.6	+0.5
KARY	Karystos	90.73 308	P	P	20 19 43.1	-0.2
KDZ	Kurdzhali	90.74 312	iP	P	20 19 43.6	+0.3
VRI	Vrincioaia	90.74 316	⇑iP	P	20 19 45.0	+1.8
PLOR	Plostina	90.79 316	⇑iP	P	20 19 45.1	+1.6
SULR		90.80 315	⇓iP	P	20 19 45.2	+1.8
TESR	Tescani	90.94 317	⇑iP	P	20 19 45.7	+1.6
PVL	Pavlikeni	91.13 314	iP	P	20 19 46.7	+1.7
PTL	Penteli	91.17 308	P	P	20 19 45.1	-0.3
PTL	Penteli	91.17 308	P	P	20 19 45.1	-0.3
VLY	Voula,Athens	91.19 308	P	P	20 19 44.9	-0.6
VLY	Voula,Athens	91.19 308	P	P	20 19 44.9	-0.6
MLR	Muntele Rosu	91.19 316	⇑iP	P	20 19 47.1	+1.6
MLR	Muntele Rosu	91.19 316	eP	P	20 19 44.6	-0.9
MLR	Muntele Rosu	91.19 316	eP	P	20 19 44.6	-0.9
ANKY	Antikythira Is	91.19 306	P	P	20 19 46.4	+0.9
EREA	Eretria	91.19 309	P	P	20 19 47.2	+1.7
ATHU	Athens Univers	91.22 308	P	P	20 19 44.6	-1.0
ATHU	Athens Univers	91.22 308	P	P	20 19 44.6	-1.0
RZN	Rozhen	91.26 312	iP	P	20 19 46.3	+0.4
KAVA	Kavala	91.27 311	P	P	20 19 46.5	+0.8
KAVA	Kavala	91.27 311	P	P	20 19 46.5	+0.8
ATH	Athens Observa	91.27 308	P	P	20 19 45.7	-0.1
ATH	Athens Observa	91.27 308	P	P	20 19 45.7	-0.1
ATH	Athens Observa	91.27 308	P	P	20 19 45.7	-0.1
PLD	Plovdiv	91.36 312	iP	P	20 19 46.2	+0.1
AOS	Alonnisos	91.38 309	P	P	20 19 47.5	+1.2
AOS	Alonnisos	91.38 309	P	P	20 19 47.5	+1.2
PRAR	RASCA	91.41 318	⇑iP	P	20 19 47.4	+1.1
KYTH	Kithira	91.47 306	P	P	20 19 46.4	-0.4
KYTH	Kithira	91.47 306	P	P	20 19 46.4	-0.4
OUR	Ouranopolis	91.53 311	eP	P	20 19 48.1	+1.1
OUR	Ouranopolis	91.53 311	P	P	20 19 47.0	0.0
OUR	Ouranopolis	91.53 311	P	P	20 19 47.0	0.0
OUR	Ouranopolis	91.53 311	P	P	20 19 47.0	0.0
DID	Didima	91.56 308	P	P	20 19 46.2	-1.0
DID	Didima	91.56 308	P	P	20 19 46.2	-1.0
KRND	KRANIDI	91.60 308	P	P	20 19 46.1	-1.3
VILL	Villia	91.62 308	P	P	20 19 47.8	+0.3
VLI	Veliai	91.64 307	P	P	20 19 45.9	-1.7
VLI	Veliai	91.64 307	P	P	20 19 45.9	-1.7
HUMR	Humele	91.66 315	⇑iP	P	20 19 48.4	+1.0
DOPR	Dopca	91.67 316	⇓iP	P	20 19 49.1	+1.6
PAIG	Paliouri	91.68 310	P	P	20 19 47.2	-0.5
PAIG	Paliouri	91.68 310	P	P	20 19 47.2	-0.5
PAIG	Paliouri	91.68 310	P	P	20 19 47.2	-0.5
SKIA	Skiathos	91.70 309	P	P	20 19 45.0	-2.8
GOLR		91.73 315	⇑iP	P	20 19 50.0	+2.2
MTUR	Matau	91.74 315	⇑iP	P	20 19 49.3	+1.3
VOIR		91.80 316	⇓iP	P	20 19 50.8	+2.6
NVR	Nevrokopi	91.82 311	P	P	20 19 47.8	-0.6
NVR	Nevrokopi	91.82 311	P	P	20 19 47.8	-0.6
PGB	Panagyurishte	91.83 313	iP	P	20 19 48.4	0.0
SMIA	Simia	91.84 309	P	P	20 19 48.4	-0.1
LTK	Loutraki	91.86 308	P	P	20 19 47.0	-1.6
LTK	Loutraki	91.86 308	P	P	20 19 47.0	-1.6
NEO	Neokhori	91.91 309	P	P	20 19 51.6	+2.8
NEO	Neokhori	91.91 309	P	P	20 19 51.6	+2.8
PLG	Polygyros	91.94 310	P	P	20 19 48.4	-0.5
PLG	Polygyros	91.94 310	P	P	20 19 48.4	-0.5
PLG	Polygyros	91.94 310	P	P	20 19 48.4	-0.5
XOR	Xorichti	91.94 309	P	P	20 19 47.3	-1.7
XOR	Xorichti	91.94 309	P	P	20 19 47.3	-1.7
LKR	Lokris	91.95 309	P	P	20 19 47.6	-1.4
LKR	Lokris	91.95 309	P	P	20 19 47.6	-1.4
MMB	Musomiste	91.97 312	iP	P	20 19 48.7	-0.3
SRS	Serrai	91.98 311	P	P	20 19 48.5	-0.5
SRS	Serrai	91.98 311	P	P	20 19 48.5	-0.5
SRS	Serrai	91.98 311	P	P	20 19 48.5	-0.5
MICGM	Minsk	92.03 325	⇑eP	P	20 19 49.0	+0.1
MICGM			PM		20 19 50.0	
	comp=Z,0.2nm,1.5s					
MICGM			ePP	PP	20 23 28.0	-1.0
MICGM			PPM		20 23 32.0	
	comp=Z,10.0nm,10.0s					
MICGM			ePsP		20 24 26.0	
MICGM			ePPP	PPP	20 25 42.0	
MICGM			eSKS	SKSac	20 30 18.0	-1.6
MICGM			eS	S	20 30 44.0	-4.7
MICGM			ePS	PS	20 31 44.0	-19
MICGM			eSS	SS	20 36 30.0	-28
MICGM			eSSS	SSS	20 40 24.0	
MICGM			eLQ	LQ	20 46 25.0	
MICGM			eLR	LR	20 54 20.0	
MICGM			LRM	MLR	21 06 54.0	
	comp=Z,23nm,12.0s					
MICGM			LRM	MLR	21 06 58.0	
	comp=Z,20nm,21.0s					
MICGM			LRM	MLR	21 07 25.0	
	comp=E,11nm,18.0s					
MNK	Minsk	92.03 325	⇑eP	P	20 19 49.0	+0.1
MNK			e		20 23 28.0	
MNK			e		20 30 18.0	
MNK			eS	S	20 30 44.0	-4.7
MNK			pmax	pmax		
	comp=Z,200nm,1.5s					
MNK			pmax	pmax		
	comp=Z,10µm,10.0s					
MNK			MLR	MLR		
	comp=Z,23µm,12.0s					
ARR	Arges	92.07 316	⇓iP	P	20 19 50.1	+0.7
PUL	Pulkovo	92.09 330	deP	P	20 19 51.0	+1.9
PUL			pmax	pmax		
	comp=Z,54nm,0.8s					
SOH	Sokhos	92.10 311	P	P	20 19 48.2	-1.5
SOH	Sokhos	92.10 311	P	P	20 19 48.2	-1.5
SOH	Sokhos	92.10 311	P	P	20 19 48.2	-1.5
THAL	Thalero	92.10 308	P	P	20 19 48.6	-1.1
BURAR	Bucovina Array	92.13 318	⇓iP	P	20 19 50.7	+1.0
FYTO	Fytoko, Volos	92.14 309	P	P	20 19 51.9	+2.1
FYTO	Fytoko, Volos	92.14 309	P	P	20 19 51.9	+2.1
VLX	Vlachokerasia	92.20 307	P	P	20 19 49.4	-0.9
VLX	Vlachokerasia	92.20 307	P	P	20 19 49.4	-0.9
HORT	Hortiatis	92.24 311	eP	P	20 19 49.6	-0.8
HORT	Hortiatis	92.24 311	P	P	20 19 49.9	-0.5
HORT	Hortiatis	92.24 311	P	P	20 19 49.9	-0.5
DSF	Desfina	92.28 308	P	P	20 19 49.1	-1.4
DSF	Desfina	92.28 308	P	P	20 19 49.1	-1.4
MPEP	Malo Peshtene	92.30 313	iP	P	20 19 51.1	+0.6
THE	Thessaloniki	92.35 311	P	P	20 19 50.0	-0.7
THE	Thessaloniki	92.35 311	P	P	20 19 50.0	-0.7
THE	Thessaloniki	92.35 311	P	P	20 19 50.0	-0.7
MDB	Medias	92.40 316	⇓iP	P	20 19 53.5	+2.6
KKB	Krupnik	92.49 312	iP	P	20 19 50.7	-0.7
KNT	Kendrikon	92.50 311	eP	P	20 19 52.3	+0.9
KNT	Kendrikon	92.50 311	P	P	20 19 50.6	-0.9
KNT	Kendrikon	92.50 311	P	P	20 19 50.6	-0.9
KNT	Kendrikon	92.50 311	P	P	20 19 50.6	-0.9
KLV	Kalavryta, Ach	92.50 308	P	P	20 19 50.3	-1.3
KLV	Kalavryta, Ach	92.50 308	P	P	20 19 50.3	-1.3
ITM	Ithomi	92.52 307	P	P	20 19 51.3	-0.4
ITM	Ithomi	92.52 307	P	P	20 19 51.3	-0.4
VTS	Vitosha	92.54 313	⇓iP	P	20 19 52.6	+0.8
VTS	Vitosha	92.54 313	P	P	20 19 51.5	-0.2
VTS	Vitosha	92.54 313	eP	P	20 19 51.6	-0.2
VTS	Vitosha	92.54 313	iP	P	20 19 52.2	+0.4
VTS	Vitosha	92.54 313	eP	P	20 19 51.6	-0.2
KALE	Kalithea	92.57 308	P	P	20 19 51.5	-0.4
KALE	Kalithea	92.57 308	P	P	20 19 51.5	-0.4
ARCR	ARCALIA	92.60 317	⇑iP	P	20 19 53.8	+2.0
LIT	Litokhoron	92.61 310	P	P	20 19 51.6	-0.4
LIT	Litokhoron	92.61 310	P	P	20 19 51.6	-0.4
LIT	Litokhoron	92.61 310	P	P	20 19 51.6	-0.4
PYL	PYLOS	92.62 307	P	P	20 19 51.5	-0.6
PYL	PYLOS	92.62 307	P	P	20 19 51.5	-0.6
SERG	Sergoula	92.64 308	P	P	20 19 49.9	-2.3
LAKA	Lakka	92.67 308	P	P	20 19 51.9	-0.4
LAKA	Lakka	92.67 308	P	P	20 19 51.9	-0.4
LOT	Lotru	92.68 316	⇓iP	P	20 19 53.2	+0.9
LVZ	Lovozero	92.70 339	eP	P	20 19 52.8	+1.0
LVZ			pmax	pmax		
	comp=Z,111nm,1.0s					
LVZ	Lovozero	92.70 339	eP	P	20 19 51.9	+0.1
LVZ			LR	LR		
	comp=Z,21µm,19.0s					
NACGM	Naroch	92.75 325	eP	P	20 19 52.0	-0.2
NACGM			PM		20 20 10.0	
	comp=Z,0.6nm,1.0s					
NACGM			ePP	PP	20 23 12.0	-23
NACGM			ePPP	PPP	20 25 02.0	
NACGM			eSKS	SKSac	20 30 04.0	-20
NACGM			eSKKS	SKKSac	20 30 15.0	-27
NACGM			eSKKKS		20 30 46.0	
NACGM			ePS	PS	20 32 06.0	-4.8
NACGM			eSS	SS	20 37 05.0	-3.5
NACGM			eSSS	SSS	20 40 54.0	
NACGM			eLQ	LQ	20 53 34.0	
NACGM			eLR	LR	21 01 10.0	
NACGM			LRM	MLR	21 07 50.0	
	comp=Z,18nm,20.0s					
AMT	Artemida-Makis	92.75 307	P	P	20 19 53.4	+0.7
EFP	Efpalio	92.76 308	P	P	20 19 56.2	+3.5
VAY	Valandovo	92.77 311	P	P	20 19 53.0	+0.3
VAY	Valandovo	92.77 311	iP	P	20 19 53.2	+0.5
VAY	Valandovo	92.77 311	P	P	20 19 53.0	+0.3
VAY	Valandovo	92.77 311	P	P	20 19 53.0	+0.3
ANX	Ano Chora	92.78 309	P	P	20 19 53.0	+0.1
DRO	Drossia	92.83 308	P	P	20 19 53.9	+0.8
GRG	Griva	92.83 311	eP	P	20 19 52.1	-0.9
GRG	Griva	92.83 311	P	P	20 19 51.8	-1.2
GRG	Griva	92.83 311	P	P	20 19 51.8	-1.2
GRG	Griva	92.83 311	P	P	20 19 51.8	-1.2
THL	Klokotos Trika	92.88 309	P	P	20 19 52.2	-1.0
EVR	Evrytania	92.92 309	P	P	20 19 53.5	-0.1
EVR	Evrytania	92.92 309	P	P	20 19 53.5	-0.1
RLS	Riolos of Patr	93.03 308	P	P	20 19 54.6	+0.6
RLS	Riolos of Patr	93.03 308	P	P	20 19 54.6	+0.6
CJR	Cluj-Napoca	93.04 317	⇓iP	P	20 19 56.5	+2.6
AXS	Araxos	93.13 308	P	P	20 19 55.5	+1.1
IIGN	Ignalina	93.16 326	eP	P	20 19 55.3	+1.1
IIGN			IAmb	IAmb	20 20 15.5	
	comp=Z,82nm,1.0s					
KZN	Kozani	93.19 310	P	P	20 19 53.9	-0.9
KZN	Kozani	93.19 310	P	P	20 19 53.9	-0.9
KZN	Kozani	93.19 310	P	P	20 19 53.9	-0.9
IZAR	Zarasai	93.23 326	eP	P	20 19 55.6	+1.2
IZAR			IAmb	IAmb	20 20 15.8	
	comp=Z,72nm,1.3s					
ISAL	Salakas	93.26 326	eP	P	20 19 55.8	+1.2
ISAL			IAmb	IAmb	20 20 15.8	
	comp=Z,60nm,1.1s					
BMR	Baia Mare	93.29 318	⇑iP	P	20 19 55.8	+0.9
LVV	L'vov	93.34 320	eP	P	20 19 55.3	+0.2
LVV			e		20 23 40.1	
LVV			e		20 30 27.0	
LVV			eS	S	20 31 02.1	+1.5
LVV			eSS	SS	20 37 21.9	+4.6
LVV			MLR	MLR		
	comp=E,5µm,23.0s					
LVV			MLR	MLR		
	comp=Z,5µm,23.0s					
LVV			MLR	MLR		
	comp=N,2µm,17.0s					
PDO	Prodromos	93.35 308	P	P	20 19 55.6	+0.2
GZR	Gura Zlata	93.36 315	⇓iP	P	20 19 57.3	+1.9
DEV	Deva	93.36 316	⇓iP	P	20 19 57.0	+1.7
KPRO	Kipourio	93.44 310	P	P	20 19 52.9	-3.0
DSL	Palaion Diasel	93.50 309	P	P	20 19 56.4	+0.2
DSL	Palaion Diasel	93.50 309	P	P	20 19 56.4	+0.2
VSU	Vasula	93.56 329	deP	P	20 19 56.5	+0.6
VSU			pmax	pmax		
	comp=Z,106nm,0.9s					
VSU			MLR	MLR		
	comp=Z,24µm,18.0s					
FNA	Florina	93.57 311	eP	P	20 19 55.5	-1.0
FNA	Florina	93.57 311	P	P	20 19 54.8	-1.7
FNA	Florina	93.57 311	P	P	20 19 54.8	-1.7
FNA	Florina	93.57 311	P	P	20 19 54.8	-1.7
KFL	Anninata	93.57 308	P	P	20 19 56.8	+0.3
BIA	Bitola	93.64 311	eP	P	20 19 56.5	-0.3
DRGR		93.65 317	⇓iP	P	20 19 57.5	+0.8
SKO	Skopje	93.72 312	P	P	20 19 55.6	-1.5
SKO	Skopje	93.72 312	iP	P	20 19 56.9	-0.1
SKO	Skopje	93.72 312	P	P	20 19 55.6	-1.5
SKO	Skopje	93.72 312	P	P	20 19 55.6	-1.5
VLS	Valsamata	93.74 308	P	P	20 19 57.2	0.0
VLS	Valsamata	93.74 308	P	P	20 19 57.2	0.0
VLS	Valsamata	93.74 308	P	P	20 19 57.2	0.0
NEST	Nestorio	93.75 310	P	P	20 19 55.8	-1.6
JAN	Janina	93.78 309	P	P	20 19 57.5	+0.1
JAN	Janina	93.78 309	P	P	20 19 57.5	+0.1
JAN	Janina	93.78 309	P	P	20 19 57.5	+0.1
LKD2	Lefkada island	93.78 309	P	P	20 19 57.0	-0.5
LKD2	Lefkada island	93.78 309	P	P	20 19 57.0	-0.5
MDVR	Moldovita	93.99 315	⇑iP	P	20 19 59.8	+1.5
OHR	Ohrid	94.05 311	iP	P	20 19 58.7	+0.1
IGT	Igoumenitsa	94.15 309	eP	P	20 19 59.7	+0.6
IGT	Igoumenitsa	94.15 309	P	P	20 19 58.9	-0.2
IGT	Igoumenitsa	94.15 309	P	P	20 19 58.9	-0.2
IGT	Igoumenitsa	94.15 309	P	P	20 19 58.9	-0.2
KWP	Kalwaria Pacla	94.15 319	eP	P	20 19 59.4	+0.5
KWP			ePP	PP	20 23 43.9	-1.9
KWP			eSKSac	SKSac	20 30 34.3	+2.7
KWP			LMZ	LR	21 01 14.4	
KWP	Kalwaria Pacla	94.15 319	eP	P	20 19 59.4	+0.5
KWP			e		20 23 44.0	
KWP			e		20 30 34.3	
KWP			MLR	MLR		
	comp=Z,8µm,27.2s					
BZS	Buzias	94.20 315	⇓iP	P	20 20 00.0	+0.8
SGD	Sagiada	94.24 309	P	P	20 19 58.9	-0.6
UZH	Uzhgorod	94.25 318	eP	P	20 19 59.0	-0.3
UZH			e		20 20 06.9	
UZH			e		20 23 43.0	
UZH			e		20 30 35.1	
UZH			ePS	PS	20 32 18.7	-8.9
UZH			MLR	MLR		
	comp=N,12µm,20.0s					
UZH			MLR	MLR		
	comp=E,6µm,20.0s					
UZH			MLR	MLR		
	comp=Z,10µm,20.0s					
KOLS	Kolonicke sedl	94.31 319	eP	P	20 20 00.7	+1.1
KOLS			pmax	pmax		
	comp=Z,145nm,1.5s					
KOLS	Kolonicke sedl	94.31 319	eP	P	20 20 00.7	+1.1
KOLS			ePP	PP	20 23 39.3	-7.8
KOLS			eSS	SS	20 37 33.8	+2.5

KOLS eL L 21 08 03.0
BANR Banloc 94.50 315 *i* P **P 20 20 02.1 +1.6**
GAMB Gambell 94.50 26 eP **P 20 20 01.6 +1.6**
FIA1 FINESS Array S 94.52 332 eP **P 20 20 01.0 +0.7**
FINES FINESS Array B 94.52 332 P **P 20 20 00.6 +0.4**
comp=Z,28nm,0.8s,baz=111,slow=4.9,SNR=46
FINES PKKPbc **PKKPdf 20 36 59.9 -1.2**
comp=Z,1.4nm,0.8s,baz=236,slow=0.7,SNR=4.6
FINES LR LR 21 07 32.4
comp=Z,7µm,20.4s,baz=104,slow=39
FINES FINESS Array B 94.52 332 *ce*P **P 20 20 01.2 +1.0**
FINES pmax pmax
comp=Z,28nm,0.8s
KEK Kerkira 94.59 309 P **P 20 20 00.6 -0.5**
KEK Kerkira 94.59 309 P **P 20 20 00.6 -0.5**
SUW Suwalki 94.63 324 eP **P 20 20 00.4 -0.5**
SUW ePP **PP 20 23 48.5 -0.8**
SUW eS **S 20 31 15.2 +3.6**
SUW LMZ LR 21 00 45.5
SUW Suwalki 94.63 324 eP **P 20 20 00.5 -0.5**
SUW e 20 23 48.5
SUW eS **S 20 31 15.2 +3.6**
SUW MLR MLR
comp=Z,14µm,31.9s
TIR Tirane 94.78 311 P **P 20 20 01.4 -0.6**
TIR Tirane 94.78 311 eP **P 20 20 03.4 +1.4**
TIR Tirane 94.78 311 eP **P 20 20 03.4 +1.4**
TIR LR LR
comp=Z,10µm,21.0s
STHS Stebnicka Huta 95.06 319 eP **P 20 20 03.5 +0.4**
STHS pmax pmax
comp=Z,25nm,1.0s
STHS Stebnicka Huta 95.06 319 eP **P 20 20 03.5 +0.4**
UNV Unalaska Valle 95.27 36 eP **P 20 20 05.0 +1.1**
PDG Podgorica 95.39 312 P **P 20 20 03.8 -0.9**
TTG Podgorica 95.39 312 P **P 20 20 03.8 -0.9**
TTG Podgorica 95.39 312 P **P 20 20 03.8 -0.9**
KECS Kecovo 95.41 318 eP **P 20 20 05.0 +0.3**
KECS e 20 20 15.7
KECS pmax pmax
comp=Z,15nm,1.1s
KECS Kecovo 95.41 318 eP **P 20 20 05.0 +0.3**
KECS e 20 20 15.7
NIE Niedzica 95.67 319 eP **P 20 20 06.6 +0.7**
NIE ePP **PP 20 23 55.0 -2.6**
NIE LMZ LR 21 02 59.4
NIE Niedzica 95.67 319 eP **P 20 20 06.6 +0.7**
NIE e 20 23 55.0
NIE MLR MLR
comp=Z,5µm,31.0s
BEL Belsk 95.71 321 eP **P 20 20 06.7 +0.8**
BEL epP **pP 20 20 13.6 -2.6**
BEL ePP **PP 20 23 59.2 +1.4**
BEL LMZ LR 21 01 32.1
BEL Belsk 95.71 321 eP **P 20 20 06.7 +0.8**
BEL e*PP **pP 20 20 13.6 -2.6**
BEL e 20 23 59.2
PSZ Piszkesteto 95.72 318 eP **P 20 20 06.9 +0.7**
PSZ Piszkesteto 95.72 318 eP **P 20 20 06.9 +0.7**
PSZ LR LR
comp=Z,8µm,19.0s
AKUT Akutan 95.74 36 eP **P 20 20 08.1 +2.1**
KEV Kevo 95.88 340 eP **P 20 20 07.5 +1.2**
KEV Kevo 95.88 340 eP **P 20 20 07.5 +1.2**
KEV LR LR
comp=Z,8µm,20.0s
OJC Ojcow 96.10 320 eP **P 20 20 07.9 +0.1**
OJC ePP **PP 20 24 03.3 +2.4**
OJC eSKSac **SKSac 20 30 45.1 +3.2**
OJC eSS **SS 20 38 03.9 +7.3**
OJC LMZ LR 20 59 18.8
OJC Ojcow 96.10 320 eP **P 20 20 07.9 +0.1**
OJC e 20 24 03.4
OJC e 20 30 45.1
OJC eSS SS 20 38 03.9 +7.3
OJC Ojcow 96.10 320 eP **P 20 20 08.6 +0.8**
LANS Liptovska Anna 96.17 319 eP **P 20 20 09.4 +1.2**
LANS Liptovska Anna 96.17 319 eP **P 20 20 09.4 +1.2**
ARA0 ARCESS Array S 96.35 339 eP **P 20 20 09.4 +1.0**
ARCES ARCESS Array B 96.35 339 P **P 20 20 09.2 +0.7**
comp=Z,45nm,0.9s,baz=94,slow=7.3,SNR=48
ARCES PKKPbc **PKKPbc 20 36 53.5 -3.4**
comp=Z,8.4nm,1.0s,baz=284,slow=3.6,SNR=3.8
ARCES LR LR 21 09 46.8
comp=Z,7µm,19.0s,baz=104,slow=39
ARE0 ARCESS Array S 96.35 339 eP **P 20 20 08.6 +0.1**
ARE0 IAmb IAmb 20 20 13.0
comp=Z,43nm,0.9s
ARE0 eSKSac **SKSac 20 30 46.4 +4.0**
ARE0 ARCESS Array S 96.35 339 eP **P 20 20 09.9 +1.5**
KLNR Kaliningrad 96.44 324 eP **P 20 20 09.7 +0.6**
KLNR pmax pmax
comp=Z,160nm,1.9s
VYHS Vyhne 96.50 318 eP **P 20 20 10.3 +0.7**
VYHS e 20 20 20.8
VYHS e 20 24 02.2
VYHS eS **SKSac 20 30 38.4 -5.7**
VYHS pmax pmax
comp=Z,36nm,1.6s
VYHS Vyhne 96.50 318 eP **P 20 20 10.3 +0.7**
VYHS e 20 20 20.8
VYHS ePP **PP 20 24 02.2 -1.8**
VYHS eS **SKSac 20 30 38.4 -5.7**
VYHS eSS SS 20 37 48.9 -13
VYHS eL L 21 12 47.4
TIP Timpagrande 96.85 308 P **P 20 20 11.6 +0.1**
TIP Timpagrande 96.85 308 eP **P 20 20 12.2 +0.7**
TIP LR LR
comp=Z,5µm,19.0s
KTK1 Kautokeino 97.06 339 eP Pdif 20 20 13.1 +1.4
KTK1 IAmb IAmb 20 20 26.0
comp=Z,107nm,1.3s
KTK1 eSKSac **SKSac 20 30 48.3 +2.2**
RAC Raciborz 97.11 320 eP Pdif 20 20 13.2 +0.8
RAC e 20 30 48.9
RAC eS **S 20 31 34.5 +1.2**
RAC MLR MLR
comp=Z,7µm,19.5s
OKC Ostrava-Krasne 97.11 319 eP Pdif 20 20 13.5 +1.1
OKC ex x 20 20 23.8
OKC ex x 20 20 28.2
OKC ePP **PP 20 24 07.9 -0.8**
OKC AMS AMS 21 17 50.0
comp=Z,7µm,16.1s
OKC Ostrava-Krasne 97.11 319 eP Pdif 20 20 13.5 +1.1
OKC e 20 20 23.8
OKC e 20 20 28.2
OKC e 20 24 07.9
OKC MLR MLR
comp=Z,7µm,16.1s
HAMF Hammerfest 97.15 340 eP Pdif 20 20 13.4 +1.2
HAMF ePP **PP 20 24 08.6 +0.2**
KIP Kipapa 97.39 70 PFAKE 20 20 30.0 +16
KIP LR LR
comp=Z,9µm,19.0s
CEL Celeste 97.41 307 eP Pdif 20 20 16.0 +1.9
CEL LR LR
comp=Z,4µm,21.0s
SMOL Smolenice 97.43 318 eP Pdif 20 20 16.0 +2.1
SMOL Smolenice 97.43 318 eP Pdif 20 20 16.0 +2.1
MORC Moravsky Berou 97.49 319 eP Pdif 20 20 14.2 0.0
MORC Moravsky Berou 97.49 319 eP **P 20 20 14.2 0.0**
CUC Castrocucco 97.66 309 eP Pdif 20 20 18.1 +2.9
CUC LR LR
comp=Z,7µm,22.0s
TBI Tubuai 97.70 115 ePP PP 20 24 10.4 -3.3
comp=Z,753nm,26.3s
TBI eSKSac **SKSac 20 30 48.2 -3.2**
comp=Z,3µm,28.5s
TBI eSP **SP 20 33 00.3 -1.8**
comp=Z,7µm,34.8s
TBI eSS **SS 20 38 22.9 +2.8**
comp=Z,4µm,28.8s
TBI eLQ LQ 20 47 58.4
comp=Z,12µm,38.5s
TBI eLR LR 20 51 59.9
comp=Z,18µm,22.5s
HOPEN Hopen 97.71 346 eP Pdif 20 20 16.2 +1.7
HOPEN IAmb IAmb 20 20 21.0
comp=Z,716nm,2.2s
HOPEN IAMs_20 IAMs_20 21 10 35.5
comp=Z,18µm,18.2s
KOGS Kog 98.01 316 ePdiff **P 20 20 16.0 -0.5**
KOGS ePP **PP 20 24 14.4 -1.3**
KOGS eSKSac SKSac 20 31 02.9 +11
WDD Wied Dalam 98.24 305 PFAKE 20 20 30.0 +12
WDD LR LR
comp=Z,5µm,21.0s
DPC Dobruska-Polom 98.33 320 ePDIFF Pdif 20 20 18.3 +0.4
DPC ex x 20 20 28.9
DPC ePP **PP 20 24 17.3 -0.8**
DPC eS **S 20 31 41.1 -2.7**
DPC eSS **SS 20 38 21.6 -6.5**
DPC AMS AMS 21 15 20.0
comp=Z,8µm,16.6s
DPC Dobruska-Polom 98.33 320 eP Pdif 20 20 18.3 +0.4
DPC e 20 20 28.9
DPC e 20 24 17.3
DPC eS **S 20 31 41.1 -2.7**
DPC eSS **SS 20 38 21.6 -6.5**
DPC MLR MLR
comp=Z,8µm,16.6s
KSP Ksiaz 98.39 320 eP Pdif 20 20 18.6 +0.5
KSP epP pP 20 20 28.2 -0.1
KSP ePP **PP 20 24 16.9 -1.6**
KSP eS SKSac 20 31 08.0 +14
KSP eSS **SS 20 38 34.0 +5.1**
KSP LMZ LR 21 01 31.2
KSP Ksiaz 98.39 320 eP Pdif 20 20 18.6 +0.5
KSP e*PP pP 20 20 28.3 -0.1
KSP e 20 24 16.9
KSP eSS SS 20 38 34.0 +5.1
KSP MLR MLR
comp=Z,11µm,34.3s
CONA Conrad Observa 98.42 317 *i* Pdiff Pdif 20 20 18.4 0.0
comp=Z,48nm,1.7s,SNR=6.8
UPC Upice 98.55 320 ePP PP 20 24 18.1 -1.6
UPC eS **S 20 31 44.1 -1.4**
UPC eSS **SS 20 38 28.6 -2.4**
UPC AMS AMS 21 12 20.0
comp=Z,10µm,21.0s
ARSA Arzberg 98.59 316 *i* Pdiff Pdif 20 20 19.3 +0.2
comp=Z,23nm,1.4s,SNR=9.7
BOJS Bojanci 98.62 315 ePdiff **P 20 20 18.5 -0.7**
TRO Tromso 98.65 339 ePP PP 20 24 21.0 +1.1
TREC Trest 98.78 319 ePDIFF Pdif 20 20 20.4 +0.5
TREC ex x 20 20 31.2
TREC ex x 20 20 35.6
TREC ePP **PP 20 24 17.2 -4.3**
TREC eSKS **SKSac 20 31 01.3 +5.5**
TREC eS **S 20 31 46.2 -1.4**
TREC eSS **SS 20 38 29.6 -4.8**
TREC AMS AMS 21 14 10.0
comp=Z,7µm,16.2s
TREC Trest 98.78 319 eP Pdif 20 20 20.4 +0.5
TREC e 20 20 31.2
TREC e 20 20 35.6
TREC e 20 24 17.2
TREC e 20 31 01.3
TREC eS **S 20 31 46.2 -1.4**
TREC eSS **SS 20 38 29.6 -4.8**
TREC MLR MLR
comp=Z,7µm,16.2s
SOKA Soboth 98.87 316 *i* Pdiff **P 20 20 20.4 -0.1**
comp=Z,37nm,1.5s,SNR=25
BJO Bjornoya 98.93 344 eP Pdif 20 20 23.2 +3.2
BJO ePP **PP 20 24 23.5 +1.6**
BJO eSKSac **SKSac 20 30 59.1 +3.7**
PPT2 Papeete2 98.95 110 ePP PP 20 24 15.0 -8.5
comp=Z,643nm,25.5s
PPT2 eSKSac **SKSac 20 30 55.8 -2.3**
comp=Z,3µm,28.8s
PPT2 eSP **SP 20 33 17.0 +1.1**
comp=Z,10µm,30.0s
PPT2 eSS **SS 20 38 39.6 +1.6**
comp=Z,7µm,27.2s
PPT2 eLQ LQ 20 48 16.5
comp=Z,14µm,29.0s
PPT2 eLR LR 20 52 34.9
comp=Z,23µm,24.2s
PPT Papeete 98.95 110 LR LR 21 06 30.0
comp=Z,5µm,18.7s,baz=259,slow=36
LJU Ljubljana 99.17 315 ePdiff **Pdif 20 20 21.2 -0.5**
LJU ePP **PP 20 24 23.6 -1.0**
LJU eSKSac SKSac 20 31 09.7 +12
LJU eS **ScS 20 31 50.6 -0.3**
LJU e 20 32 40.4
LJU eSS **SS 20 38 38.9 -1.1**
LJU e 20 39 07.8
LJU e 20 46 06.1
LJU e 20 49 27.5
OBKA Obir 99.19 316 *i* Pdiff **Pdif 20 20 22.2 +0.3**
comp=Z,22nm,1.8s,SNR=9.2
GBAS Gorenja Brezov 99.22 315 ePdiff **Pdif 20 20 22.1 +0.1**
GOPC GO Pecny, Ondr 99.28 319 ePDIFF **Pdif 20 20 24.3 +2.2**
GOPC ex x 20 20 33.6
GOPC ePP **PP 20 24 24.1 -1.2**
GOPC eSS SS 20 38 39.4 -2.0
GOPC AMS AMS 21 12 40.0
comp=Z,7µm,17.6s
GOPC GO Pecny, Ondr 99.28 319 eP **Pdif 20 20 24.3 +2.2**
GOPC e 20 20 33.6
GOPC e 20 24 24.1
GOPC eSS SS 20 38 39.4 -2.0
GOPC MLR MLR
comp=Z,7µm,17.6s
PRU Pruhonice 99.45 319 ePDIFF **Pdif 20 20 23.5 +0.7**
PRU ex x 20 20 34.3
PRU ePP **PP 20 24 22.0 -4.5**
PRU eSKS **SKSac 20 31 05.0 +6.0**
PRU eSDIF **ScS 20 31 52.2 -0.9**
PRU eSS **SS 20 38 41.0 -2.6**
PRU AMS AMS 21 15 40.0
comp=Z,8µm,17.3s
PRU Pruhonice 99.45 319 eP **Pdif 20 20 23.5 +0.7**
PRU e 20 20 34.3
PRU e 20 24 22.0
PRU eS **ScS 20 31 52.2 -0.9**
PRU eSS **SS 20 38 41.0 -2.6**
PRU MLR MLR
comp=Z,8µm,17.3s
CLTB Caltabellotta 99.45 307 PFAKE 20 20 30.0 +6.7
CLTB LR LR
comp=Z,3µm,20.0s
PVCC Panska Ves 99.47 320 ePDIFF **Pdif 20 20 24.0 +1.1**
PVCC ex x 20 20 34.1
PVCC ePP **PP 20 24 25.7 -1.0**
PVCC AMS AMS 21 08 50.0
comp=Z,10µm,22.3s
PVCC Panska Ves 99.47 320 eP **Pdif 20 20 24.0 +1.1**
PVCC e 20 20 34.1
PVCC e 20 24 25.7
PVCC MLR MLR
comp=Z,10µm,22.3s
MOA Molln 99.48 317 *i* Pdiff **Pdif 20 20 22.7 -0.4**
comp=Z,11nm,1.2s,SNR=5.3
POHA Pohakuloa 99.48 72 PFAKE 20 20 40.0 +16
POHA LR LR
comp=Z,6µm,20.0s
PRA Prague 99.52 319 ePP PP 20 24 23.0 -4.1
PRA eSS SS 20 38 38.9 -5.7
PRA AMS AMS 21 15 50.0
comp=Z,9µm,17.5s
BSD Bornholm Skovb 99.54 324 *i* P **PP 20 24 25.5 -1.5**
SPA0 Spitsbergen Ar 99.75 348 eP **Pdif 20 20 26.4 +2.8**
SPA0 IAmb IAmb 20 20 35.8
comp=Z,346nm,1.2s
SPA0 ePP **PP 20 24 27.8 -0.3**
MYKA Terra Mystica 99.82 316 *i* Pdiff **Pdif 20 20 26.2 +1.5**
comp=Z,23nm,1.7s,SNR=8.2
BRG Berggiesshubel 99.88 320 eP **Pdif 20 20 25.8 +1.1**
comp=Z,18nm,1.0s
BRG PP PP 20 24 17.0 -13
BRG S **S 20 32 00.0 +3.2**
BRG SS **SS 20 38 41.0 -8.7**
BRG ePKPPKP **P'P'df 20 45 06.9 +6.4**
comp=Z,39nm,2.1s
BRG Berggiesshubel 99.88 320 eP **Pdif 20 20 25.8 +1.1**
BRG S **S 20 32 00.0 +3.2**
BRG pmax pmax
comp=Z,18nm,1.0s
BRG pmax pmax
comp=Z,39nm,2.1s
BRG MLR MLR
comp=N,6µm,18.8s
BRG MLR MLR
comp=E,7µm,19.9s
BRG MLR MLR
comp=Z,9µm,20.3s
GERES GERESS Array B 99.92 318 P **Pdif 20 20 25.8 +0.7**
comp=Z,2.9nm,0.7s,baz=76,slow=5.6,SNR=16
GERES PKKPbc **PKKPbc 20 36 45.1 -1.3**
comp=Z,1.4nm,0.9s,baz=318,slow=1.8,SNR=4.7
HSPB Hornsund (broa 99.92 347 eP **Pdif 20 20 26.6 +2.3**
HSPB ePP **PP 20 24 29.8 +0.4**
KHC Kasperske Hory 100.02 318 ePDIFF **Pdif 20 20 25.2 -0.3**
KHC ex x 20 20 36.5
KHC ePP **PP 20 24 25.1 -5.9**
KHC eSKS 20 31 07.0
KHC eSDIF **Sdif 20 31 59.0 +0.9**
KHC ePKKP **PKKPbc 20 36 46.4 +0.4**
KHC ex x 20 37 02.2
KHC eSS **SS 20 38 45.2 -6.6**
KHC AMS AMS 21 13 20.0
comp=Z,9µm,20.8s
KHC Kasperske Hory 100.02 318 eP **Pdif 20 20 25.2 -0.3**
KHC e 20 31 07.0
KHC eS **Sdif 20 31 59.0 +0.9**
KHC eSS **SS 20 38 45.2 -6.6**
KHC MLR MLR
comp=Z,9µm,20.8s
MOR8 Moi Rana 100.18 336 eP **Pdif 20 20 27.2 +1.5**
CLL Collm 100.50 320 ePdif **Pdif 20 20 28.0 +0.6**
comp=Z,13nm,1.2s
CLL e 20 20 40.0
comp=Z,193nm,2.8s
CLL e 20 23 19.0
comp=Z,44nm,1.8s
CLL e 20 23 37.0
CLL *i* 20 24 20.5
comp=Z,60nm,1.3s
CLL ePP **PP 20 24 35.0 +0.5**
comp=Z,4µm,12.3s
CLL e 20 24 57.0
CLL ePPP PPP 20 26 45.0
CLL ePPPP 20 28 24.0
CLL eSKSac **SKSac 20 31 02.0 -2.1**
CLL eSdif **Sdif 20 31 59.0 -2.8**
CLL eSP **SP 20 33 21.0 -10**
CLL ePS **PS 20 33 35.0 -0.5**
CLL ePPS PPS 20 35 06.0
CLL eSS **SS 20 38 55.0 -3.2**
CLL e 20 40 08.0
CLL e 20 40 40.0
CLL eSSS SSS 20 42 48.0
CLL ePKPPKPdf **P'P'df 20 44 58.0 -1.2**
CLL *i* 20 45 13.7
comp=Z,71nm,2.6s
CLL eSSSS 20 46 12.0
CLL Lm MLR 21 12 00.0
comp=N,4µm,21.8s
CLL Lm MLR 21 12 00.0
comp=E,10µm,22.0s
CLL Collm 100.50 320 eP **Pdif 20 20 28.0 +0.6**
CLL e 20 24 35.0
CLL e 20 31 02.0
CLL eS **Sdif 20 31 59.0 -2.8**
CLL pmax pmax
comp=Z,13nm,1.2s
ABTA Abfaltersbach 100.61 316 ePdiff **Pdif 20 20 29.2 +1.1**
comp=Z,7.6nm,1.5s
KBS Kingsbay 100.61 349 eP **Pdif 20 20 28.1 +0.7**
KBS IAmb IAmb 20 20 39.1
comp=Z,45nm,1.0s
KBS ePP **PP 20 24 35.5 +0.9**
KBS Kingsbay 100.61 349 PFAKE 20 20 40.0 +13
KBS LR LR
comp=Z,15µm,22.0s
NSS Namsos 101.22 334 eP **Pdif 20 20 32.4 +2.1**
NSS IAmb IAmb 20 20 47.1
comp=Z,492nm,2.8s
NC602 NORSAR Array S 101.47 330 eP **Pdif 20 20 34.1 +2.5**
NC602 IAmb IAmb 20 20 44.1
comp=Z,92nm,1.9s
MOTA Moosalm 101.59 316 *i* Pdiff **Pdif 20 20 33.3 +0.6**
comp=Z,6.0nm,0.8s,SNR=7.9
NB2 NORSAR Subarra101.62 330 P **Pdif 20 20 32.2 -0.1**
comp=Z,28nm,1.2s,baz=85,slow=4.4
NB2 NORSAR Subarra101.62 330 P **Pdif 20 20 32.2 -0.1**
baz=85,slow=4.4
NOA NORSAR Array B 101.62 330 P **Pdif 20 20 32.7 +0.4**
comp=Z,3.1nm,0.8s,baz=92,slow=4.6,SNR=7.7
NOA PP **PP 20 24 45.4 +2.6**
comp=Z,8.2nm,0.8s,baz=100,slow=8.2,SNR=4.3
NOA PKKPbc **PKKPbc 20 36 39.1 -2.7**
comp=Z,2.2nm,0.8s,baz=257,slow=2.3,SNR=4.2
NOA NORSAR Array B 101.62 330 P **Pdif 20 20 32.7 +0.4**
NOA 20 24 45.4
NOA pmax pmax
comp=Z,4.0nm,0.9s
NOA pmax pmax
comp=Z,8.0nm,0.8s
NOA pmax pmax
comp=Z,2.0nm,0.8s
OSL Oslo 101.89 329 eP **Pdif 20 20 36.4 +3.0**
VLC Villacollemand 101.99 313 PFAKE 20 20 50.0 +16
VLC LR LR
comp=Z,5µm,21.0s
TBLU Trondheim 102.01 333 eP **Pdif 20 20 36.4 +2.5**
TBLU ePP **PP 20 24 41.5 -4.0**
TBLU IAMs_20 IAMs_20 21 10 54.4
comp=Z,11µm,20.7s
KEST Kesra 102.42 304 P **Pdif 20 20 37.3 +0.8**
comp=Z,6.7nm,0.9s,baz=74,slow=2.0,SNR=8.3
DAVA Damuels 102.42 316 *i* Pdiff **Pdif 20 20 36.7 +0.4**
comp=Z,13nm,1.1s,SNR=6.3
KONO Kongsberg 102.47 329 eP **Pdif 20 20 38.3 +2.3**
KONO ePP **PP 20 24 46.9 -2.1**
KONO eSKSac **SKSac 20 31 16.0 +2.9**
KONO IAMs_20 IAMs_20 21 12 35.1
comp=Z,12µm,21.3s
KONO Kongsberg 102.47 329 PFAKE 20 20 50.0 +14
KONO LR LR
comp=Z,11µm,19.0s
VSL Villasalto 102.58 308 PFAKE 20 20 50.0 +13
VSL LR LR
comp=Z,5µm,21.0s
TUE Stuetta 102.78 315 PFAKE 20 20 50.0 +12
TUE LR LR
comp=Z,8µm,20.0s
HOMB Homborsund 103.09 328 *e* **Pdif 20 20 35.3 -3.5**
HOMB IAMs_20 IAMs_20 21 10 13.7
comp=Z,11µm,20.6s
MOL Molde 103.29 332 eP **Pdif 20 20 45.9 +6.4**
MOL ePP **PP 20 24 54.6 -0.5**
KDAK Kodiak Island 103.32 33 PFAKE 20 20 50.0 +10
KDAK LR LR
comp=Z,8µm,20.0s
BFO Black Forest 103.47 317 PFAKE 20 20 50.0 +9.2
BFO LR LR
comp=Z,7µm,19.0s
AKN Aaknes 103.58 332 eP **Pdif 20 20 46.8 +5.8**
AKN ePP **PKiKP 20 25 00.2 +0.9**
ODD1 Odda 103.95 329 eP **Pdif 20 20 47.4 +4.7**
ABSA Djebel Ababsia 103.96 305 P PP 20 25 11.1 +10
CMAH Djebel Manchou 104.02 305 P PP 20 25 11.7 +10
HYA Hoyanger 104.06 331 eP **Pdif 20 20 51.4 +8.4**
HYA ePP **PKiKP 20 24 58.4 -1.7**
BLS5 Blasjo 104.08 329 eP **Pdif 20 20 47.2 +3.9**
BLS5 ePP **PKiKP 20 25 00.5 +0.2**
CAEH 'Ain El Ouahch 104.48 305 P PP 20 25 12.9 +8.0
STAV Stavanger 104.51 328 eP **Pdif 20 20 45.9 +0.9**
BER Bergen 104.55 330 eP **Pdif 20 20 48.5 +3.3**
BER ePP **PP 20 25 04.2 -0.3**
FOO Floro 104.56 331 eP **Pdif 20 20 50.2 +5.0**
FOO ePP **PP 20 25 06.0 +1.5**
FOO IAMs_20 IAMs_20 21 11 57.4
comp=Z,11µm,20.5s
CKFL Kef-Lekhel 104.58 305 P PP 20 25 13.9 +8.2
ASK Askoy 104.61 330 *e* 20 25 07.6
BNI Bardonecchia 104.65 314 PFAKE 20 21 00.0 +14
BNI LR LR
comp=Z,8µm,21.0s
KMY Karmoy 104.71 329 eP **Pdif 20 20 48.1 +2.1**
KMY ePP **PP 20 25 05.3 -0.5**
SUE Sulen 104.76 331 eP **Pdif 20 20 48.2 +2.1**
CASM Ain Smara 104.76 305 P PP 20 25 15.3 +8.3
COLA College 104.86 25 PFAKE 20 21 00.0 +13
COLA LR LR
comp=Z,7µm,20.0s

WLF Walferdange 104.87 319 PKP **PKiKP** **20 25 01.3 -0.7**
WLF Walferdange 104.87 319 PFAKE 20 21 00.0 +13
WLF LR LR
comp=Z,8µm,22.0s
MEM Membach 104.92 320 PKP 20 25 05.7
TAM Tamanrasset 104.93 291 PFAKE 20 21 00.0 +12
TAM LR LR
comp=Z,7µm,19.0s
BEBN Eben Emael 105.12 320 PKP **PKiKP** **20 25 00.2 -2.2**
DFRA Djebel Bou Aff 105.26 305 P **PP** **20 25 18.0 +7.2**
ILAR Eielson Array 105.28 25 Pdiff **Pdif** **20 20 48.6 +0.2**
comp=Z,0.6nm,0.8s,baz=273,slow=4.6,SNR=5.7
ILAR PKiKP **PKiKP** **20 25 03.2 +0.9**
comp=Z,4.9nm,1.0s,baz=254,slow=3.3,SNR=4.1
ILAR PKKPbc **PKKPbc** **20 36 26.2 -4.7**
comp=Z,1.7nm,0.7s,baz=108,slow=2.3,SNR=6.8
ILAR PKPPKP P'P'df 20 44 57.3 +8.1
comp=Z,2.7nm,1.1s,baz=69,slow=2.1,SNR=5.5
BCLA Clavier 105.38 320 PKP **PKiKP** **20 25 05.8 +2.9**
PMSA Palmer Station 105.45 184 PFAKE 20 25 10.0
PMSA LR LR
comp=Z,24µm,20.0s
SET Setif 105.64 305 P **PKiKP** **20 25 03.0 -1.0**
DOU Dourbes 105.86 319 PKP **PKiKP** **20 25 04.4 +0.6**
SSB Saint Sauveur 106.15 314 PFAKE 20 25 20.0
SSB LR LR
comp=Z,5µm,19.0s
ATAF Djebel Tarf 106.55 305 P **PP** **20 25 15.4 -4.9**
TRIS Tristan da Cun 107.12 226 PFAKE 20 25 20.0
TRIS LR LR
comp=Z,18µm,20.0s
ADJB Djebel Djouab 107.23 305 P PP 20 25 11.2 -14
DAG Danmarks Havn 107.35 349 *i* P **Pdif** **20 20 58.4 +1.0**
DAG Danmarks Havn 107.35 349 *i* P **PP** **20 25 24.2 -0.5**
DAG Danmarks Havn 107.35 349 *eP* **Pdif** **20 20 58.4 +1.0**
ABA Alger-Bouzarea 107.54 306 P **PKiKP** **20 25 10.0 +2.6**
JMIC Jan Mayen 107.56 342 *e*PP PP 20 25 26.4 +0.1
EGAK Eagle 107.68 25 PFAKE 20 25 20.0
EGAK LR LR
comp=Z,8µm,21.0s
TORD Torodi Ar. Bea 107.69 281 Pdiff **Pdif** **20 21 02.5 +2.2**
comp=Z,0.4nm,0.7s,baz=101,slow=3.8,SNR=4.1
TORD PKiKP **PKiKP** **20 25 08.9 +0.7**
comp=Z,11nm,0.6s,baz=90,slow=1.4,SNR=49
TORD PKKPbc **PKKPbc** **20 36 23.3 +1.4**
comp=Z,6.3nm,0.8s,baz=295,slow=2.8,SNR=9.9
INK Inuvik 109.39 20 Pdiff **Pdif** **20 21 07.7 +1.1**
comp=Z,3.7nm,1.0s,baz=324,slow=4.1,SNR=9.0
INK PKiKP **PKiKP** **20 25 11.2 +1.3**
comp=Z,9.2nm,0.9s,baz=328,slow=2.9,SNR=8.6
INK PKKPbc **PKKPbc** **20 36 15.9 -2.1**
comp=Z,6.2nm,0.9s,baz=111,slow=6.7,SNR=7.2
HOPE Hope Point 109.46 201 PFAKE 20 25 20.0
HOPE LR LR
comp=Z,26µm,21.0s
ESK Eskdalemuir 109.85 325 PFAKE 20 25 20.0
ESK LR LR
comp=Z,10µm,19.0s
TAOE Nuku Hiva Isla 109.91 103 *e*PP PP 20 25 36.2 -9.0
comp=Z,1µm,25.3s
TAOE *e*SP SP 20 35 09.2 -1.6
comp=Z,2µm,25.9s
TAOE *e*SS **SS** **20 41 10.5 +1.7**
comp=Z,5µm,26.9s
TAOE Nuku Hiva Isla 109.91 103 *e*LQ LQ 20 52 11.9
comp=Z,14µm,32.4s
TAOE *e*LR LR 20 57 39.5
comp=Z,11µm,24.7s
RKT Rikitea 110.49 119 *e*PP PP 20 25 32.3 -17
comp=Z,900nm,28.2s
RKT *e*SKSac **SKSac** **20 31 47.1 -3.2**
comp=Z,1µm,30.3s
RKT *e*SP **SP** **20 35 14.0 -1.6**
comp=Z,3µm,29.2s
RKT *e*SS **SS** **20 41 18.2 +2.7**
comp=Z,5µm,31.2s
RKT Rikitea 110.49 119 *e*LR LR 20 57 52.4
comp=Z,16µm,29.2s
ESDC Sonseca Array 112.86 309 PKiKP **PKiKP** **20 25 17.9 +0.5**
comp=Z,4.4nm,0.6s,baz=16,slow=2.7,SNR=19
ESDC PP **PP** **20 26 07.4 +1.6**
comp=Z,13nm,0.9s,baz=68,slow=6.9,SNR=6.6
ESDC PKKPbc **PKKPbc** **20 36 07.4 +1.5**
comp=Z,1.1nm,0.8s,baz=271,slow=3.5,SNR=5.0
PAB San Pablo 113.17 309 PFAKE 20 25 30.0
PAB LR LR
comp=Z,5µm,20.0s
KIC Kosan Boka 113.18 273 *eP* **PKiKP** **20 25 16.9 -1.7**
comp=Z,195nm,1.7s
DBIC Dimbokro 113.33 273 PKiKP **PKiKP** **20 25 18.8 -0.1**
comp=Z,16nm,0.8s,baz=82,slow=2.0,SNR=13
DBIC PKKPbc **PKKPbc** **20 36 05.2 +1.7**
comp=Z,2.2nm,0.6s,baz=311,slow=2.7,SNR=3.6
LIC Lamto 113.44 273 *eP* **PKiKP** **20 25 16.6 -2.5**
comp=Z,81nm,1.8s
TIC Toumodi 113.49 273 *eP* **PKiKP** **20 25 18.8 -0.5**
RES Resolute Bay 113.81 6 PKiKP **PKiKP** **20 25 19.0 +0.9**
comp=Z,21nm,0.9s,baz=293,slow=2.3,SNR=20
RES PKKPbc **PKKPbc** **20 36 01.1 -2.4**
comp=Z,2.1nm,0.9s,baz=190,slow=3.5,SNR=5.2
PTCN Pitcairn Islan 113.88 123 PFAKE 20 25 30.0
PTCN LR LR
comp=Z,15µm,20.0s
SUMG Summit 114.02 349 *i* P **PKKPbc** **20 36 00.0 -3.3**
comp=Z,6.8nm,0.9s
WRAK Wrangell Islan 114.37 32 PFAKE 20 25 30.0 +10
WRAK LR LR
comp=Z,5µm,20.0s
PBRG Braganca 114.67 312 *e*Pdif **Pdif** **20 21 33.6 +2.8**
PBRG Braganca 114.67 312 *e*PKPdf PKPdf 20 25 21.4 +0.6
PBRG Braganca 114.67 312 *e*PP **PP** **20 26 17.1 -1.4**
PBRG Braganca 114.67 312 *e*SS SS 20 42 18.1 +7.5
BORG Borgarnes 114.73 338 PFAKE 20 25 30.0 +10
BORG LR LR
comp=Z,7µm,19.0s
DLBC Dease Lake 114.78 29 PKP PKPdf 20 25 19.3 -1.2
comp=Z,5.4nm,0.8s,baz=214,slow=6.3,SNR=5.9
DLBC PKKPbc **PKKPbc** **20 35 58.6 -1.4**
comp=Z,3.2nm,0.7s,baz=111,slow=16,SNR=4.4
MVO Moncorvo 114.98 311 *e*Pdif **Pdif** **20 21 34.6 +2.4**
MVO Moncorvo 114.98 311 *e*PKPdf PKPdf 20 25 22.6 +1.2
MVO Moncorvo 114.98 311 *e*PP **PP** **20 26 16.4 -4.4**
MVO Moncorvo 114.98 311 *e*SS SS 20 42 22.8 +8.0
MVO Moncorvo 114.98 311 *e*LR LR 21 04 01.4
comp=Z,4µm,18.0s
PBAR Barrancos 115.43 308 *e*Pdif **Pdif** **20 21 37.7 +3.5**
PBAR Barrancos 115.43 308 *e*PKPdf **PKPdf** **20 25 23.1 +0.8**
PBAR Barrancos 115.43 308 *e*PP PP 20 26 24.5 +0.6
PBAR Barrancos 115.43 308 *e*SS SS 20 42 27.3 +6.5
PVRL Vila Real 115.47 311 *e*PKPdf **PKPdf** **20 25 23.2 +0.9**
PVRL Vila Real 115.47 311 *e*PP PP 20 26 26.3 +2.1
MTE Manteigas 115.49 310 *e*Pdif **Pdif** **20 21 39.5 +5.0**
MTE Manteigas 115.49 310 *e*PKPdf **PKPdf** **20 25 22.7 +0.3**
MTE Manteigas 115.49 310 *e*PP **PP** **20 26 21.0 -3.4**
MTE Manteigas 115.49 310 *e*LR LR 21 05 00.9
comp=Z,8µm,18.0s
MTE Manteigas 115.49 310 PFAKE 20 25 30.0 +7.6
MTE LR LR
comp=Z,9µm,19.0s
POLO Lamas de Olo 115.52 311 *e*Pdif **Pdif** **20 21 41.4 +6.8**
POLO Lamas de Olo 115.52 311 *e*PKPdf **PKPdf** **20 25 22.6 +0.1**
POLO Lamas de Olo 115.52 311 *e*PP PP 20 26 25.1 +0.6
POLO Lamas de Olo 115.52 311 *e*SS SS 20 42 46.0 +24
PMRV Marv??o 115.52 309 *e*Pdif **Pdif** **20 21 37.2 +2.6**
PMRV Marv??o 115.52 309 *e*PKPdf **PKPdf** **20 25 22.3 -0.1**
PMRV Marv??o 115.52 309 *e*PP PP 20 26 26.2 +1.6
PMRV Marv??o 115.52 309 *e*SS SS 20 42 25.8 +3.8
PMRV Marv??o 115.52 309 *e*LR LR 21 04 21.2
comp=Z,5µm,18.0s
PCBR Castelo Branco 115.53 309 *e*PKPdf **PKPdf** **20 25 22.4 0.0**
PCBR Castelo Branco 115.53 309 *e*PP PP 20 26 25.4 +0.9
USHA Ushuaia 115.60 182 PKP **PKPdf** **20 25 22.5 +0.4**
comp=Z,62nm,0.6s,baz=126,slow=2.3,SNR=10
PCAB Cabril 115.63 312 *e*PP **PP** **20 26 22.2 -3.0**
PVIS Viseu 115.70 311 *e*PKPdf **PKPdf** **20 25 22.7 -0.1**
PVIS Viseu 115.70 311 *e*PP PP 20 26 28.5 +2.7
PESTR Estremoz 115.76 308 *e*Pdif **Pdif** **20 21 43.4 +7.7**
PESTR Estremoz 115.76 308 *e*PKPdf **PKPdf** **20 25 24.0 +1.1**
PESTR Estremoz 115.76 308 *e*PP PP 20 26 26.9 +0.7
PESTR Estremoz 115.76 308 *e*SS SS 20 42 36.9 +12
PGAV Gavieira, Arco 115.76 312 *e*Pdif **Pdif** **20 21 35.5 -0.2**
PGAV Gavieira, Arco 115.76 312 *e*PKPdf **PKPdf** **20 25 23.7 +0.8**
PGAV Gavieira, Arco 115.76 312 *e*PP PP 20 26 27.1 +0.9
PGAV Gavieira, Arco 115.76 312 *e*SS SS 20 42 40.2 +15
PGAV Gavieira, Arco 115.76 312 *e*LR LR 21 03 28.2
comp=Z,6µm,22.0s
RTC Rabat Centre 115.77 303 PFAKE 20 25 30.0 +7.0
RTC LR LR
comp=Z,23µm,20.0s
PVAQ Vaqueiros 116.06 307 *e*PKPdf **PKPdf** **20 25 23.4 -0.1**
PVAQ Vaqueiros 116.06 307 *e*PP PP 20 26 29.1 +0.7
PVAQ Vaqueiros 116.06 307 *e*LR LR 21 03 30.9
comp=Z,6µm,20.0s
PBEJ Beja 116.09 308 *e*PKPdf **PKPdf** **20 25 24.8 +1.2**
PBEJ Beja 116.09 308 *e*PP PP 20 26 33.5 +4.9
EVO Evora 116.14 308 *e*Pdif **Pdif** **20 21 40.4 +3.1**
EVO Evora 116.14 308 *e*PP PP 20 26 29.1 +0.2
PMTG Montargil 116.22 309 *e*Pdif **Pdif** **20 21 42.8 +5.1**
PMTG Montargil 116.22 309 *e*PKPdf **PKPdf** **20 25 23.5 -0.3**
PMTG Montargil 116.22 309 *e*PP PP 20 26 30.3 +0.9
PMTG Montargil 116.22 309 *e*SS SS 20 42 42.3 +11
PBDV Barranco-do-Ve 116.26 307 *e*Pdif **Pdif** **20 21 40.6 +2.7**
PBDV Barranco-do-Ve 116.26 307 *e*PKPdf **PKPdf** **20 25 24.0 +0.1**
PBDV Barranco-do-Ve 116.26 307 *e*PP PP 20 26 31.5 +1.7
PBDV Barranco-do-Ve 116.26 307 *e*SS SS 20 42 38.9 +7.2
PTOM Tomar 116.27 309 *e*PKPdf **PKPdf** **20 25 25.1 +1.3**
PTOM Tomar 116.27 309 *e*PP PP 20 26 31.1 +1.3
PCVE Castro Verde 116.29 307 *e*Pdif **Pdif** **20 21 40.2 +2.2**
PCVE Castro Verde 116.29 307 *e*PKPdf **PKPdf** **20 25 24.8 +0.9**
PCVE Castro Verde 116.29 307 *e*PP PP 20 26 32.0 +2.0
PCVE Castro Verde 116.29 307 *e*SS SS 20 42 40.5 +8.5
MESJ Messejana 116.40 307 *eP* **PKPdf** **20 25 22.9 -1.3**
MESJ *e*PP **PP** **20 26 29.9 -0.8**
MESJ AMS AMS 21 22 17.1
comp=N,5µm,21.6s
MESJ Messejana 116.40 307 *e*Pdif **Pdif** **20 21 42.7 +4.2**
MESJ Messejana 116.40 307 *e*PKPdf **PKPdf** **20 25 24.9 +0.8**
MESJ Messejana 116.40 307 *e*PP PP 20 26 30.8 +0.1
MESJ Messejana 116.40 307 *e*PKIKP **PKPdf** **20 25 22.8 -1.3**
MESJ *e* 20 26 29.9
PNCL Nicolau / Gran 116.60 308 *e*Pdif **Pdif** **20 21 42.6 +3.2**
PNCL Nicolau / Gran 116.60 308 *e*PKPdf **PKPdf** **20 25 25.4 +0.9**
PNCL Nicolau / Gran 116.60 308 *e*PP PP 20 26 33.1 +1.0
PNCL Nicolau / Gran 116.60 308 *e*SS SS 20 42 44.9 +8.9
MORF Marmelete 116.82 307 *eP* **PKPdf** **20 25 23.9 -1.1**
MORF *e*PP **PP** **20 26 32.8 -0.9**
MORF AMS AMS 21 26 39.4
comp=Z,5µm,20.4s
MORF Marmelete 116.82 307 *e*Pdif **Pdif** **20 21 46.1 +5.7**
MORF Marmelete 116.82 307 *e*PKPdf **PKPdf** **20 25 24.4 -0.6**
MORF Marmelete 116.82 307 *e*PP PP 20 26 33.7 0.0
MORF Marmelete 116.82 307 *e*PKIKP **PKPdf** **20 25 23.9 -1.1**
MORF *e* 20 26 32.8
PTEO Sao Teotonio 116.84 307 *e*PKPdf **PKPdf** **20 25 27.0 +2.0**
PTEO Sao Teotonio 116.84 307 *e*PP PP 20 26 39.6 +5.8
LIS Lisbon 116.98 308 *eP* **PKPdf** **20 25 24.2 -1.0**
LIS *e*PP **PP** **20 26 33.3 -1.5**
LIS AMS AMS 21 30 14.5
comp=E,6µm,17.1s
LIS Lisbon 116.98 308 *e*PKIKP **PKPdf** **20 25 24.2 -1.0**
LIS *e* 20 26 33.3
PMAFR Mafra 117.05 309 *e*Pdif **Pdif** **20 21 43.8 +2.4**
PMAFR Mafra 117.05 309 *e*PKPdf **PKPdf** **20 25 26.5 +1.1**
PMAFR Mafra 117.05 309 *e*PP PP 20 26 35.5 +0.3
PMAFR Mafra 117.05 309 *e*SS SS 20 42 58.8 +17
EFI East Falkland 117.63 190 PFAKE 20 25 40.0 +14
EFI LR LR
comp=Z,15µm,20.0s
BBB Bella Bella 118.22 35 PKP **PKPdf** **20 25 28.1 +1.0**
comp=Z,25nm,0.9s,baz=327,slow=4.2,SNR=3.9
ILULI Ilulissat 119.02 352 *i* P **PKPdf** **20 25 29.7 +1.5**
ILULI Ilulissat 119.02 352 *i* PKIKP **PKPdf** **20 25 29.7 +1.5**
ILULI MLR MLR
comp=Z,13µm,25.0s
YKA Yellowknife Ar 119.14 21 PKP **PKPdf** **20 25 27.9 -0.8**
comp=Z,25nm,0.8s,baz=327,slow=1.7,SNR=63
YKA PKKPab **PKKPab** **20 35 41.7 -2.5**
comp=Z,6.1nm,0.8s,baz=121,slow=4.6,SNR=19
YKA SKKPbc SKKPbc 20 39 20.9 -10
comp=Z,0.9nm,0.8s,baz=156,slow=4.0,SNR=3.8
YKA Yellowknife Ar 119.14 21 PKIKP **PKPdf** **20 25 27.9 -0.8**
YKA pmax pmax
comp=Z,24nm,0.8s
YKA pmax pmax
comp=Z,6.0nm,0.9s
YKA pmax pmax
comp=N,1.0nm,0.8s
ASCN Ascension 119.75 255 PFAKE 20 25 40.0 +8.7
ASCN LR LR
comp=Z,10µm,20.0s
SFJD Kangerlussuaq 120.97 350 PKP **PKPdf** **20 25 32.3 +0.3**
comp=Z,34nm,0.8s,baz=24,slow=3.8,SNR=13
SFJD Kangerlussuaq 120.97 350 *i* P **PKPdf** **20 25 31.6 -0.4**
SFJD *i* 20 27 09.5
SFJD Kangerlussuaq 120.97 350 *i* PKIKP **PKPdf** **20 25 31.6 -0.4**
SFJD *i* 20 27 09.5
SFJD Kangerlussuaq 120.97 350 PFAKE 20 25 40.0 +8.0
SFJD LR LR
comp=Z,8µm,22.0s
NLWA Neilton Lookou 122.61 39 PFAKE 20 25 50.0 +14
NLWA LR LR
comp=Z,4µm,22.0s
A04D Lummi Island 122.77 37 PKiKP **PKPdf** **20 25 35.9 -0.2**
baz=295
B05A Bryant 123.34 38 PKiKP **PKPdf** **20 25 37.2 0.0**
baz=296
F04D Rainier, OR 123.67 40 PKiKP **PKPdf** **20 25 37.7 -0.2**
baz=294
PMPS Porto Santo 123.73 303 *e*PKPdf **PKPdf** **20 25 37.2 -1.2**
PMPS Porto Santo 123.73 303 *e*PP PP 20 27 25.4 +4.2
G03D McMinnville, O 123.85 41 PKiKP **PKPdf** **20 25 37.9 -0.3**
baz=293
C06D Leavenworth 124.21 38 PKiKP **PKPdf** **20 25 38.0 -0.9**
baz=296
FUL Funchal 124.28 303 *e*PP PP 20 27 25.0 +0.1
PMAR Madeira 124.28 303 *e*PKPdf **PKPdf** **20 25 41.5 +1.8**
I03D Drain, OR 124.36 43 PKiKP **PKPdf** **20 25 38.8 -0.5**
baz=292
PMOZ Porto Moniz, M 124.49 303 *e*Pdif **Pdif** **20 22 13.6 -1.1**
PMOZ Porto Moniz, M 124.49 303 *e*PKPdf **PKPdf** **20 25 41.3 +1.3**
PMOZ Porto Moniz, M 124.49 303 *e*PP PP 20 27 26.7 +0.2
PMOZ Porto Moniz, M 124.49 303 *e*SS SS 20 44 21.9 +4.0
PMOZ Porto Moniz, M 124.49 303 *e*LR LR 21 07 34.5
comp=Z,8µm,18.0s
L02D Cave Junction, 124.74 45 PKiKP **PKPdf** **20 25 39.8 -0.3**
baz=290
I04A Tendick Farm, 124.96 43 PKiKP **PKPdf** **20 25 40.4 -0.1**
baz=293
NRS Narsarsuaq 125.00 345 *i* P **PKPdf** **20 25 40.9 +1.0**
NRS *i* 20 27 34.6
NRS Narsarsuaq 125.00 345 *i* PKIKP **PKPdf** **20 25 40.9 +1.0**
NRS *i* 20 27 34.6
G05D Wamic, OR 125.10 41 PKiKP **PKPdf** **20 25 40.3 -0.4**
baz=294
I05D Terrebonne, OR 125.45 42 PKiKP **PKPdf** **20 25 41.0 -0.5**
baz=294
YBH Yreka Blue Hor 125.52 45 PKP **PKPdf** **20 25 44.0 +2.3**
comp=Z,22nm,1.1s,baz=80,slow=7.7,SNR=12
M02C Callahan 125.53 46 PKiKP **PKPdf** **20 25 41.0 -0.7**
baz=291
HAWA Hanford 125.73 39 PFAKE 20 25 50.0 +8.2
HAWA LR LR
comp=Z,4µm,21.0s
N02D Trinity Center 125.79 46 PKiKP **PKPdf** **20 25 41.5 -0.7**
baz=290
K04D Chiloquin, OR 125.85 44 PKiKP **PKPdf** **20 25 41.7 -0.6**
baz=292
LHEM Herd Peak 125.90 45 P **PKPdf** **20 25 43.9 +1.3**
J05D Fort Rock, OR 125.94 43 PKiKP **PKPdf** **20 25 42.0 -0.5**
baz=293
FRB Frobisher Bay 126.01 358 PKP **PKPdf** **20 25 42.3 +0.5**
comp=Z,68nm,1.0s,baz=21,slow=2.8,SNR=19
M04C Macdoel 126.11 45 PKiKP **PKPdf** **20 25 42.4 -0.4**
baz=292
NEW Newport 126.27 36 PKP **PKPdf** **20 25 43.8 +0.9**
comp=Z,19nm,1.0s,baz=332,slow=1.6,SNR=18
NEW Newport 126.27 36 PKiKP **PKPdf** **20 25 42.0 -0.9**
baz=300
NEW Newport 126.27 36 PFAKE 20 25 50.0 +7.1
NEW LR LR
comp=Z,4µm,19.0s
O03D Paynes Creek 126.67 47 PKiKP **PKPdf** **20 25 43.3 -0.6**
baz=291
BMO Blue Mountains 127.82 40 PFAKE 20 26 00.0 +14
BMO LR LR
comp=Z,4µm,22.0s
BSMT Bassoo Peak 127.83 35 P **PKPdf** **20 25 47.1 +1.0**
WVOR Wild Horse Val 128.03 43 PFAKE 20 26 00.0 +13
WVOR LR LR
comp=Z,5µm,21.0s
MSO Missoula 128.86 36 PKiKP **PKPdf** **20 25 47.7 -0.2**
baz=303
FFC Flin Flon 129.29 22 PFAKE 20 26 00.0 +12
FFC LR LR
comp=Z,5µm,22.0s
PSMN Pico do Norte, 129.58 310 *e*PKPdf **PKPdf** **20 25 46.9 -2.6**
PSMN Pico do Norte, 129.58 310 *e*PP PP 20 27 55.7 -4.0
PSMA Santa Maria 129.63 310 *e*PKPdf **PKPdf** **20 25 49.6 +0.1**
PSMA Santa Maria 129.63 310 *e*PP PP 20 27 56.9 -3.1
CMLA Cha da Macela 129.66 311 *e*PKPdf **PKPdf** **20 25 50.3 +0.7**
CMLA Cha da Macela 129.66 311 *e*PP PP 20 27 56.9 -3.3
CMLA Cha da Macela 129.66 311 PFAKE 20 26 00.0 +10
CMLA LR LR
comp=Z,6µm,19.0s
SMMC Simmler 129.69 52 PKiKP **PKiKP** **20 25 50.7 +0.2**
baz=288
PLCA Paso Flores 129.76 182 *e*P **PKPdf** **20 25 50.0 +0.2**
PLCA Paso Flores 129.76 182 PKhKP PKPpre 20 25 44.2
comp=Z,2.6nm,0.9s,baz=211,slow=1.7,SNR=3.6
PLCA PKP **PKPdf** **20 25 50.0 +0.2**
comp=Z,34nm,1.1s,baz=286,slow=0.6,SNR=50
MLAC Mammoth, Mammt 129.78 49 PKiKP **PKPdf** **20 25 48.9 -1.2**
baz=291
PSET Sete Cidades 129.78 312 *e*PP PP 20 27 57.4 -3.6
NVAR Mina Array Bea 129.87 47 PKhKP PKPpre 20 25 43.2
comp=Z,1.1nm,0.7s,baz=243,slow=3.4,SNR=4.9
NVAR PKP **PKiKP** **20 25 51.5 +0.4**
comp=Z,12nm,0.8s,baz=268,slow=2.0,SNR=20
NVAR SKP 20 29 24.0
comp=Z,24nm,1.1s,baz=271,slow=4.1,SNR=3.7
NVAR SKKPbc SKKPbc 20 38 48.5 -5.6
comp=Z,3.2nm,0.9s,baz=97,slow=4.7,SNR=4.5
RCTC Rector, Farmer 129.94 50 PKiKP **PKPdf** **20 25 50.2 +0.1**
baz=290
PKM Mcpherson Peak 129.96 52 PKiKP **PKPdf** **20 25 50.1 -0.4**
baz=288
SBC Santa Barbara 130.18 53 PKiKP **PKPdf** **20 25 49.8 -0.8**
baz=288
VES Vestal, Richgr 130.22 51 PKiKP **PKPdf** **20 25 50.7 0.0**
baz=290
HLID Hailey 130.27 40 PKiKP **PKPdf** **20 25 50.9 +0.1**
baz=300
HLID Hailey 130.27 40 PFAKE 20 26 00.0 +9.2
HLID LR LR
comp=Z,4µm,20.0s
SCZ2 Santa Cruz Isl 130.38 53 PKiKP **PKPdf** **20 25 50.6 -0.5**
baz=288
TIN Tinemaha, Big 130.44 49 PKiKP **PKPdf** **20 25 51.0 -0.2**
baz=291
EGMT Eagleton 130.49 33 PKiKP **PKPdf** **20 25 51.4 +0.4**
baz=308
EGMT Eagleton 130.49 33 PFAKE 20 26 00.0 +9.0
EGMT LR LR
comp=Z,6µm,19.0s
ARVC Arvin 130.65 52 PKiKP **PKPdf** **20 25 51.5 0.0**
baz=289
ISA Isabella, Lake 130.74 51 PKiKP **PKiKP** **20 25 52.6 -0.1**
baz=290
CWC Cottonwood Cre 130.77 50 PKiKP **PKPdf** **20 25 51.8 -0.2**
baz=291
BLG Laguna Peak, P 130.79 53 PKiKP **PKiKP** **20 25 52.9 +0.1**
baz=288
BOZ Bozeman (W) 130.85 36 PKiKP **PKPdf** **20 25 51.9 +0.1**
baz=304
BOZ Bozeman (W) 130.85 36 PFAKE 20 26 00.0 +8.2
BOZ LR LR
comp=Z,6µm,20.0s
OSI Osito Alaidit: C 130.90 52 PKiKP **PKPdf** **20 25 52.1 -0.1**
baz=289
PGRA Graciosa 130.95 314 *e*PKPdf **PKPdf** **20 25 50.3 -1.7**
PGRA Graciosa 130.95 314 *e*PP PP 20 28 05.9 -2.5
GRAC Grapevine Rang 131.10 49 PKiKP **PKPdf** **20 25 52.8 +0.3**
baz=292
PMAN Manadas 131.19 314 *e*PKPdf **PKPdf** **20 25 51.3 -1.1**
PMAN Manadas 131.19 314 *e*PP PP 20 28 14.2 +4.2
ROSA Rosais 131.26 314 *e*PKPdf **PKPdf** **20 25 48.6 -4.0**
ROSA Rosais 131.26 314 *e*PP PP 20 28 14.1 +3.6
DECC Green Verdugo 131.32 53 PKiKP **PKiKP** **20 25 53.5 -0.4**
baz=289
MPMC Manual Prospec 131.35 50 PKiKP **PKPdf** **20 25 53.0 -0.1**
baz=291
EDW2 Edwards Air Fo 131.38 52 PKiKP **PKiKP** **20 25 53.7 -0.3**
baz=290
LRMC Laurel Mtn Rad 131.41 51 PKiKP **PKPdf** **20 25 53.5 +0.3**
baz=290
TRQA Tornquist 131.50 191 PFAKE 20 26 00.0 +6.8
TRQA LR LR
comp=Z,20µm,22.0s
FMP Fort Macarthur 131.53 53 PKiKP **PKiKP** **20 25 55.2 +1.0**
baz=288
CIS Catalina Islan 131.53 54 PKiKP **PKiKP** **20 25 54.5 +0.2**
baz=288
PCAN Candelaria 131.54 314 *e*PP PP 20 28 08.5 -3.8
SCI2 San Clemente I 131.55 54 PKiKP **PKiKP** **20 25 54.4 +0.1**
baz=288
PCED Cedros 131.62 314 *e*PP PP 20 28 08.5 -4.3
FURC Furnace Creek, 131.68 49 PKiKP **PKiKP** **20 25 54.5 +0.1**
baz=292
BFSC Mount Baldy Ra 131.85 52 PKiKP **PKiKP** **20 25 54.8 -0.2**
baz=290
R11A Troy Canyon, C 131.87 46 PKiKP **PKiKP** **20 25 54.6 -0.4**
baz=295
TPNV Topopah Spring 131.95 48 PKiKP **PKiKP** **20 25 54.9 -0.3**
baz=293
GSC Goldstone, Bar 132.15 51 PKiKP **PKiKP** **20 25 55.5 -0.1**
baz=291
RRX Edison Barstow 132.15 51 PKiKP **PKPdf** **20 25 54.2 -0.2**
baz=291
H17A Grant Village 132.17 37 PKiKP **PKiKP** **20 25 55.6 +0.1**
baz=304
LKWY Lake 132.18 37 PFAKE 20 26 10.0 +15
LKWY LR LR
comp=Z,8µm,20.0s
SHOC Shoshone, Teco 132.33 50 PKiKP **PKPdf** **20 25 55.0 +0.2**
baz=292
BBRC Big Bear Solar 132.42 52 PKiKP **PKiKP** **20 25 56.2 -0.2**
baz=290
MURC Murrieta 132.43 53 PKiKP **PKPdf** **20 25 55.2 +0.1**
baz=289
RLMT Red Lodge 132.51 35 PKiKP **PKiKP** **20 25 55.9 -0.3**
baz=306
RLMT Red Lodge 132.51 35 PFAKE 20 26 10.0 +15
RLMT LR LR
comp=Z,7µm,21.0s
HEC Hector,Ludlow 132.68 51 PKiKP **PKiKP** **20 25 56.2 -0.4**
baz=291
109C Camp Elliot, M 132.73 54 PKiKP **PKiKP** **20 25 56.2 -0.4**
baz=289
AHID Auburn Hatcher 132.75 39 PFAKE 20 26 10.0 +14
AHID LR LR
comp=Z,6µm,19.0s
TUQ Turquoise Moun 132.77 50 PKiKP **PKiKP** **20 25 56.8 -0.1**
baz=292
DUG Dugway, Tooele 132.96 43 PKiKP **PKPdf** **20 25 56.2 +0.3**
baz=299
DUG Dugway, Tooele 132.96 43 PFAKE 20 26 10.0 +14
DUG LR LR
comp=Z,5µm,22.0s
DGMT Dagmar 133.00 29 PKiKP **PKPdf** **20 25 55.9 +0.2**
baz=315
DGMT Dagmar 133.00 29 PFAKE 20 26 10.0 +14
DGMT LR LR
comp=Z,7µm,22.0s
PFO Pinyon Flats O 133.00 53 PKhKP PKPpre 20 25 50.0
comp=Z,3.9nm,0.8s,baz=235,slow=5.3,SNR=4.4
PFO PKP **PKPdf** **20 25 57.8 +1.6**
comp=Z,21nm,0.8s,baz=260,slow=1.6,SNR=16
PFO Pinyon Flats O 133.00 53 PKiKP **PKiKP** **20 25 57.6 +0.2**
baz=290
PFO Pinyon Flats O 133.00 53 PKP **PKPdf** **20 25 57.8 +1.6**
PFO LR LR
comp=Z,6µm,22.0s
H07S1 FLORES T-PHASE 133.04 316 *e*PKPdf **PKPdf** **20 25 55.8 -0.2**
HWUT Hardware Ranch 133.07 41 PFAKE 20 26 10.0 +14
HWUT LR LR
comp=Z,4µm,20.0s
A25A Svangstu Ranch 133.17 28 PKiKP **PKiKP** **20 25 56.6 -0.6**
baz=316
LAO LASA Array 133.20 32 PKiKP **PKPdf** **20 25 56.5 +0.4**
baz=311
LAO LASA Array 133.20 32 PFAKE 20 26 10.0 +14
LAO LR LR
comp=Z,6µm,22.0s
GMRC Granite Mounta 133.21 51 PKiKP **PKiKP** **20 25 58.0 +0.2**
baz=292
BELC Belle Mtn. Jos 133.23 52 PKiKP **PKiKP** **20 25 58.0 +0.2**

baz=291
MONP2 **Monument Peak** 133.27 54 PKiKP **PKiKP** 20 25 57.7 -0.3
baz=289
LPA **La Plata** 133.58 196 *ce*PKIKP **PKPdf** 20 26 02.0 +4.9
LPA pPP 20 28 26.0
LPA PKS PKSdf 20 29 24.0 -10
LPA SSS SSS 20 51 08.0
IBP **Imperial Bould** 133.61 54 PKiKP **PKiKP** 20 25 58.2 -0.4
baz=289
B25A **Knox Farm, Ray** 133.62 28 PKiKP **PKiKP** 20 25 58.0 -0.1
baz=316
A26A **Wade Farm, Ken** 133.68 27 PKiKP **PKPdf** 20 25 57.1 +0.2
baz=317
BW06 **Boulder Array** 133.70 38 PKiKP **PKPdf** 20 25 57.7 +0.3
baz=304
BW06 **Boulder Array** 133.70 38 PFAKE 20 26 10.0 +13
BW06 LR LR
comp=Z,6μm,20.0s
PDAR **Pinedale Array** 133.70 38 PKhKP PKPpre 20 25 49.0
comp=Z,0.6nm,0.6s,baz=96,slow=0.9,SNR=4.7
PDAR PKP **PKPdf** 20 25 57.9 +0.5
comp=Z,3.4nm,0.5s,baz=155,slow=1.2,SNR=12
SWSC **Sam W. Stewart** 133.75 53 PKiKP **PKiKP** 20 25 58.2 -0.5
baz=290
BC3 **Big Chuckawall** 133.78 52 PKiKP **PKPdf** 20 25 57.0 -0.6
baz=291
IRM **Iron Mountain** 133.83 52 PKiKP **PKPdf** 20 25 57.0 -0.6
baz=292
B26A **Jensen Ranch,** 133.98 28 PKiKP **PKiKP** 20 25 58.3 -0.5
baz=317
C25A **Freed Ranch, W** 133.98 29 PKiKP **PKiKP** 20 25 58.6 -0.2
baz=315
A27A **Ledoux Ranch,** 134.00 26 PKiKP **PKPdf** 20 25 58.0 +0.5
baz=318
NEE2 **Needles Airpor** 134.01 51 PKiKP **PKPdf** 20 25 58.2 +0.3
baz=292
D25A **Fairfield** 134.34 30 PKiKP **PKPdf** 20 25 58.4 +0.1
baz=315
B27A **Peters Farms,** 134.40 27 PKiKP **PKPdf** 20 25 58.1 -0.2
baz=318
C26A **Wahner Farm, P** 134.44 28 PKiKP **PKiKP** 20 25 59.3 -0.5
baz=317
A28A **Rude Farm, Bot** 134.45 26 PKiKP **PKPdf** 20 25 58.7 +0.3
baz=320
Y12C **Blythe** 134.46 52 PKiKP **PKPdf** 20 25 59.1 +0.3
baz=292
GLA **Glamis** 134.48 53 PKiKP **PKiKP** 20 26 00.2 -0.1
baz=291
PDMCI **Parker Dam,Lak** 134.55 51 PKiKP **PKiKP** 20 25 59.8 -0.5
baz=292
E25A **Miller Ranch,** 134.76 30 PKiKP **PKiKP** 20 25 59.9 -0.6
baz=314
B28A **Dugan Ranch, T** 134.76 26 PKiKP **PKPdf** 20 25 59.5 +0.6
baz=319
C27A **Sayler Ranch,** 134.80 28 PKiKP **PKPdf** 20 25 59.6 +0.5
baz=317
SCHQ **Schefferville** 134.81 356 PKP **PKPdf** 20 25 59.8 +0.9
comp=Z,42nm,0.8s,baz=39,slow=2.5,SNR=17
D26A **Manning** 134.85 29 PKiKP **PKPdf** 20 25 59.1 -0.1
baz=316
A29A **Manning Farm,** 134.88 25 PKiKP **PKPdf** 20 25 59.6 +0.5
baz=321
ULM **Lac du Bonnet** 135.12 21 PKhKP PKPpre 20 25 49.2
comp=Z,7.8nm,0.8s,baz=338,slow=4.1,SNR=5.6
ULM PKP **PKiKP** 20 26 00.9 -0.1
comp=Z,32nm,1.0s,baz=339,slow=3.4,SNR=17
F25A **Bowman** 135.13 31 PKiKP **PKPdf** 20 26 00.2 +0.5
baz=314
B29A **Wagenman Farm,** 135.18 25 PKiKP **PKPdf** 20 26 00.0 +0.3
baz=320
D27A **Center** 135.23 28 PKiKP **PKiKP** 20 26 00.6 -0.7
baz=317
E26A **Carlson Angus** 135.24 30 PKiKP **PKPdf** 20 26 00.5 +0.6
baz=315
A30A **Hoffart Farm,** 135.25 24 PKiKP **PKPdf** 20 25 59.9 +0.1
baz=322
C28A **Hausauer Farms** 135.30 27 PKiKP **PKPdf** 20 26 00.6 +0.7
baz=319
MDND **Maddock** 135.55 26 PKiKP **PKPdf** 20 26 00.1 -0.3
baz=320
F26A **Lodgepole** 135.57 30 PKiKP **PKPdf** 20 26 00.8 +0.2
baz=315
K22A **Casper** 135.58 36 PKiKP **PKPdf** 20 26 00.6 -0.3
baz=308
D28A **Regan** 135.61 28 PKiKP **PKPdf** 20 26 00.7 +0.1
baz=318
B30A **Myrvik Farm, E** 135.62 25 PKiKP **PKPdf** 20 26 00.5 -0.1
baz=322
G25A **Newell** 135.65 32 PKiKP **PKPdf** 20 26 00.3 -0.5
baz=313
A31A **Linda, St. Vin** 135.70 23 PKiKP **PKPdf** 20 25 59.8 -0.8
baz=324
E27A **Carson** 135.70 29 PKiKP **PKPdf** 20 26 01.3 +0.5
baz=316
F27A **Lemmon** 135.88 30 PKiKP **PKPdf** 20 26 00.6 -0.6
baz=315
B31A **Greenbush Farm** 135.92 24 PKiKP **PKPdf** 20 26 00.5 -0.5
baz=323
H25A **Fruitdale** 135.94 32 PKiKP **PKPdf** 20 26 01.5 +0.1
baz=313
A32A **Rocking H Ranc** 135.98 23 PKiKP **PKiKP** 20 26 02.0 -0.8
baz=324
O20A **White River Ci** 135.99 40 PKiKP **PKPdf** 20 26 02.2 +0.5
baz=304
G26A **Maurine** 136.00 31 PKiKP **PKPdf** 20 26 01.8 +0.4
baz=314
E28A **Huff** 136.01 28 PKiKP **PKPdf** 20 26 01.3 0.0
baz=318
RSSD **Black Hills** 136.05 33 PKiKP **PKPdf** 20 26 01.1 -0.6
baz=312
WUAZ **Wupatki** 136.12 48 PKiKP **PKPdf** 20 26 01.0 -1.1
baz=296
WUAZ **Wupatki** 136.12 48 PFAKE 20 26 10.0 +7.9
WUAZ LR LR
comp=Z,6μm,22.0s
C30A **Mose, Pekin** 136.14 26 PKiKP **PKPdf** 20 26 01.5 0.0
baz=321
D29A **Pettibone, Tap** 136.15 27 PKiKP **PKPdf** 20 26 01.4 -0.1
baz=319
G27A **Dupree** 136.28 30 PKiKP **PKPdf** 20 26 01.1 -0.8
baz=315
I25A **Rochford** 136.28 33 PKiKP **PKPdf** 20 26 01.8 -0.3
baz=312
H26A **Fairpoint** 136.38 32 PKPdf **PKPdf** 20 26 01.1 -1.0
baz=314
A33A **Warroad** 136.38 22 PKiKP **PKPdf** 20 26 02.1 +0.2
baz=326
C31A **Landman Farms,** 136.38 25 PKPdf **PKPdf** 20 26 01.2 -0.7
baz=322
B32A **Ashes, Strandq** 136.39 23 PKPdf **PKPdf** 20 26 01.0 -0.9
baz=324
214A **Organ Pipe Nat** 136.46 53 PKPdf **PKPdf** 20 26 01.9 -0.8
baz=291
D30A **Buchanan** 136.48 26 PKPdf **PKPdf** 20 26 01.3 -0.9
baz=320
F28A **McLaughlin** 136.49 29 PKPdf **PKPdf** 20 26 01.6 -0.7
baz=317
E29A **Napoleon** 136.50 27 PKPdf **PKPdf** 20 26 01.8 -0.4
baz=319
J25A **Sunshine Ranch** 136.66 34 PKPdf **PKPdf** 20 26 01.9 -0.8
baz=311
H27A **Howes** 136.73 31 PKPdf **PKPdf** 20 26 01.5 -1.2
baz=314
AGMN **Agassiz Nation** 136.73 23 PKPdf **PKPdf** 20 26 01.5 -1.1
baz=325
AGMN **Agassiz Nation** 136.73 23 PFAKE 20 26 10.0 +7.4
AGMN LR LR
comp=Z,8μm,20.0s
I26A **New Underwood** 136.74 32 PKPdf **PKPdf** 20 26 01.0 -1.8
baz=313
C32A **Crookston** 136.85 24 PKPdf **PKPdf** 20 26 01.2 -1.6
baz=324
B33A **Robert and Kas** 136.85 23 PKPdf **PKPdf** 20 26 01.5 -1.3
baz=325
E30A **Jud** 136.88 27 PKPdf **PKPdf** 20 26 01.5 -1.4
baz=320
F29A **Eureka** 136.96 28 PKPdf **PKPdf** 20 26 02.3 -0.8
baz=318
D31A **Mcclaflin, Tow** 136.97 26 PKPdf **PKPdf** 20 26 02.6 -0.5
baz=322
N23A **Red Feather La** 136.99 38 PKPdf **PKPdf** 20 26 02.6 -1.0
baz=307
G28A **Parade** 137.00 30 PKPdf **PKPdf** 20 26 02.5 -0.7
baz=316
B34A **Aery, Baudette** 137.03 22 PKPdf **PKPdf** 20 26 02.0 -1.1
baz=327
J26A **Sides Ranch, S** 137.10 33 PKPdf **PKPdf** 20 26 02.6 -0.9
baz=312
I27A **Quinn** 137.13 32 PKPdf **PKPdf** 20 26 02.4 -1.2
baz=314
C33A **Trail** 137.20 23 PKPdf **PKPdf** 20 26 02.2 -1.2
baz=325
D32A **Dogwood Acres,** 137.20 25 PKPdf **PKPdf** 20 26 02.6 -0.9
baz=323
H28A **Mission Ridge** 137.23 30 PKPdf **PKPdf** 20 26 03.1 -0.6
baz=316
E31A **Nome** 137.29 26 PKPdf **PKPdf** 20 26 03.1 -0.5
baz=321
AAGR **Agrelo** 137.30 184 *eP* PKPpre 20 25 56.6
F30A **Leola** 137.33 28 PKPdf **PKPdf** 20 26 03.2 -0.6
baz=319
MVCO **Mesa Verde** 137.37 44 PKPdf **PKPdf** 20 26 03.9 -0.5
baz=301
MVCO **Mesa Verde** 137.37 44 PFAKE 20 26 20.0 +16
MVCO LR LR
comp=Z,6μm,19.0s
G29A **Hoven** 137.39 29 PKPdf **PKPdf** 20 26 03.3 -0.6
baz=318
B35A **Bob, Littlefor** 137.47 21 PKPdf **PKPdf** 20 26 03.8 -0.1
baz=328
W18A **Petrified Fore** 137.50 48 PKPdf **PKPdf** 20 26 04.3 -0.4
baz=297
ROC1 **El Roble** 137.51 182 *eP* PKPpre 20 25 56.5
ARCO **CERRO ARCO** 137.55 184 *eP* PKPpre 20 25 55.6
E32A **Braaten, Kindr** 137.61 25 PKPdf **PKPdf** 20 26 03.9 -0.4
baz=322
C34A **RKJ Ranch, Bem** 137.62 23 PKPdf **PKPdf** 20 26 03.9 -0.4
baz=326
I28A **Midland** 137.63 31 PKPdf **PKPdf** 20 26 03.9 -0.5
baz=315
F31A **Hecla** 137.66 27 PKPdf **PKPdf** 20 26 04.0 -0.4
baz=320
H29A **Onida** 137.66 30 PKPdf **PKPdf** 20 26 04.1 -0.3
baz=317
D33A **AnnSam, Waubun** 137.68 24 PKPdf **PKPdf** 20 26 04.0 -0.4
J27A **Elkhorn Farm,** 137.72 33 PKPdf **PKPdf** 20 26 04.2 -0.5
baz=313
ASAL **Salagasta** 137.79 184 *eP* PKPpre 20 25 57.9
G30A **Faulkton** 137.81 28 PKPdf **PKPdf** 20 26 04.4 -0.3
baz=318
ISCO **Idaho Springs** 137.84 39 PKPdf **PKPdf** 20 26 05.2 -0.1
baz=306
ISCO **Idaho Springs** 137.84 39 PFAKE 20 26 20.0 +15
ISCO LR LR
comp=Z,5μm,19.0s
TUC **Tucson** 137.91 52 PKPdf **PKPdf** 20 26 04.0 -1.4
baz=294
TUC **Tucson** 137.91 52 PFAKE 20 26 20.0 +15
TUC LR LR
comp=Z,6μm,21.0s
C35A **Jirik Farms, M** 137.93 22 PKPdf **PKPdf** 20 26 04.4 -0.4
baz=327
D34A **Park Rapids** 137.98 23 PKPdf **PKPdf** 20 26 03.2 -1.8
baz=325
J28A **Allard Ranch,** 138.00 32 PKPdf **PKPdf** 20 26 05.0 -0.2
baz=314
I29A **Vivian Onida** 138.06 31 PKPdf **PKPdf** 20 26 04.6 -0.6
baz=316
E33A **Westby DABS, E** 138.12 25 PKPdf **PKPdf** 20 26 03.7 -1.6
baz=324
F32A **Veblen** 138.15 26 PKPdf **PKPdf** 20 26 04.6 -0.7
baz=322
G31A **Conde** 138.17 28 PKPdf **PKPdf** 20 26 03.6 -1.7
baz=320
AUSP **Uspallata** 138.19 184 *eP* PKPpre 20 25 59.5
S22A **4UR Ranch, Cre** 138.22 42 PKPdf **PKPdf** 20 26 04.1 -1.9
baz=303
C36A **Pine Crest Far** 138.29 21 PKPdf **PKPdf** 20 26 03.6 -1.9
baz=329
SUSD **Miller** 138.41 29 PKPdf **PKPdf** 20 26 04.2 -1.6
baz=318
D35A **Remer** 138.42 23 PKPdf **PKPdf** 20 26 04.6 -1.2
baz=327
K28A **Ten Mile Ranch** 138.43 33 PKPdf **PKPdf** 20 26 04.2 -1.8
baz=314
E34A **Wadena** 138.46 24 PKPdf **PKPdf** 20 26 05.0 -0.8
baz=325
G32A **Webster** 138.47 27 PKPdf **PKPdf** 20 26 05.2 -0.7
baz=321
J29A **Okreek** 138.49 31 PKPdf **PKPdf** 20 26 05.5 -0.5
baz=316
RTCV **Cerro Valdivia** 138.49 185 *eP* PKPpre 20 25 59.5
F33A **S Mile Ranch,** 138.54 25 PKPdf **PKPdf** 20 26 05.7 -0.3
baz=323
C37A **Embarrass** 138.55 20 PKPdf **PKPdf** 20 26 04.9 -1.0
baz=330
I30A **Oacoma** 138.57 30 PKPdf **PKPdf** 20 26 04.2 -1.9
baz=317
EYMN **Ely** 138.59 20 PKPdf **PKPdf** 20 26 04.6 -1.4
baz=331
EYMN **Ely** 138.59 20 PFAKE 20 26 20.0 +14
EYMN LR LR
comp=Z,11μm,22.0s
RTLS **Leoncito** 138.61 184 *eP* PKPpre 20 26 00.7
H31A **Wolsey** 138.61 29 PKPdf **PKPdf** 20 26 04.0 -2.1
baz=319
Q24A **Divide** 138.62 40 PKPdf **PKPdf** 20 26 05.2 -1.5
baz=306
D36A **Goodland** 138.67 22 PKPdf **PKPdf** 20 26 04.3 -1.9
baz=328
E35A **Pequot Lakes** 138.72 23 PKPdf **PKPdf** 20 26 04.6 -1.7
baz=326
L28A **Connealy Angus** 138.83 34 PKPdf **PKPdf** 20 26 05.1 -1.7
baz=313
C38A **Sawbill Land.** 138.86 20 PKPdf **PKPdf** 20 26 05.6 -0.9
baz=331
I31A **Royce, Wessing** 138.92 29 PKPdf **PKPdf** 20 26 05.5 -1.3
baz=318
K29A **Lazy Trails An** 138.95 32 PKPdf **PKPdf** 20 26 05.4 -1.5
baz=315
SPB **Sao Paulo** 138.95 216 PFAKE 20 26 20.0 +13
SPB LR LR
comp=Z,14μm,20.0s
D37A **Cotton** 138.95 21 PKPdf **PKPdf** 20 26 06.3 -0.4
baz=329
J30A **Dallas** 138.97 31 PKPdf **PKPdf** 20 26 06.1 -0.8
baz=317
G33A **Ortonville** 138.98 26 PKPdf **PKPdf** 20 26 03.2 -3.6
baz=322
ACHE **Chepes** 138.99 187 *eP* PKPpre 20 25 59.5
F34A **Alexandria** 139.00 25 PKPdf **PKPdf** 20 26 03.7 -3.1
baz=324
RTLL **Cerro Villicun** 139.01 185 *eP* PKPpre 20 26 00.7
H32A **Carlson Farm,** 139.07 28 PKPdf **PKPdf** 20 26 04.4 -2.7
baz=320
SDCO **Great Sand Dun** 139.09 42 PKPdf **PKPdf** 20 26 04.5 -3.2
baz=304
SDCO **Great Sand Dun** 139.09 42 PFAKE 20 26 20.0 +12
SDCO LR LR
comp=Z,5μm,21.0s
C39A **Grand Marais** 139.14 18 PKPdf **PKPdf** 20 26 04.8 -2.3
baz=332
E36A **McGregor** 139.19 22 PKPdf **PKPdf** 20 26 04.1 -3.1
baz=327
F35A **Swanville** 139.23 24 PKPdf **PKPdf** 20 26 05.2 -2.1
baz=325
H33A **Prehn Over Nor** 139.25 27 PKPdf **PKPdf** 20 26 05.7 -1.7
baz=321
OGNE **Ogallala** 139.26 35 PKPdf **PKPdf** 20 26 05.3 -2.3
baz=311
OGNE **Ogallala** 139.26 35 PFAKE 20 26 20.0 +12
OGNE LR LR
comp=Z,6μm,20.0s
G34A **Benson** 139.29 25 PKPdf **PKPdf** 20 26 04.3 -3.1
baz=323
M28A **Bar X Bar Ranc** 139.33 34 PKPdf **PKPdf** 20 26 05.4 -2.3
baz=313
L29A **Maesberg Ranch** 139.35 33 PKPdf **PKPdf** 20 26 05.8 -1.9
baz=314
J31A **Geddes** 139.37 30 PKPdf **PKPdf** 20 26 04.9 -2.7
baz=318
K30A **Basset** 139.38 31 PKPdf **PKPdf** 20 26 06.8 -0.9
baz=316
I32A **Karley and Nic** 139.43 28 PKPdf **PKPdf** 20 26 05.0 -2.7
baz=320
E37A **Wrenshall** 139.47 21 PKPdf **PKPdf** 20 26 05.6 -2.0
baz=329
AVFE **Valle Fertil** 139.58 186 *eP* PKPpre 20 26 01.1
F36A **Milaca** 139.64 23 PKPdf **PKPdf** 20 26 05.9 -2.1
baz=327
M29A **Burnside Ranch** 139.67 34 PKPdf **PKPdf** 20 26 06.6 -1.7
baz=314
H34A **Spellman Lake,** 139.69 26 PKPdf **PKPdf** 20 26 06.0 -2.1
baz=323
N28A **Pribbeno Ranch** 139.71 35 PKPdf **PKPdf** 20 26 06.6 -1.8
baz=312
I33A **Coleman** 139.72 28 PKPdf **PKPdf** 20 26 06.1 -2.1
baz=321
J32A **Parkston** 139.74 29 PKPdf **PKPdf** 20 26 06.1 -2.1
baz=319
G35A **Watkins** 139.79 24 PKPdf **PKPdf** 20 26 06.9 -1.4
baz=325
L30A **Spencer Herefo** 139.84 32 PKPdf **PKPdf** 20 26 05.8 -2.8
baz=315
K31A **O'Neill** 139.85 31 PKPdf **PKPdf** 20 26 06.3 -2.2
baz=317
ANMO **Albuquerque** 139.94 46 PKhKP PKPpre 20 26 03.2
comp=Z,5.7nm,0.9s,baz=221,slow=3.4,SNR=7.1
ANMO **Albuquerque** 139.94 46 PKPdf **PKPdf** 20 26 06.5 -2.6
baz=301
ANMO **Albuquerque** 139.94 46 PFAKE 20 26 20.0 +11
ANMO LR LR
comp=Z,6μm,19.0s
O28A **Krutsinger Ran** 139.94 36 PKPdf **PKPdf** 20 26 06.0 -2.9
baz=311
Y22D **IRIS PASSCAL I** 140.04 47 PKPdf **PKPdf** 20 26 08.0 -1.3
baz=299
ECSD **EROS Data Cent** 140.05 28 PKPdf **PKPdf** 20 26 06.1 -2.7
baz=321
ECSD **EROS Data Cent** 140.05 28 PFAKE 20 26 20.0 +11
ECSD LR LR
comp=Z,7μm,21.0s
M30A **Dale-Ortello V** 140.05 33 PKPdf **PKPdf** 20 26 06.2 -2.8
baz=315
H35A **Sunnyside Ranc** 140.07 25 PKPdf **PKPdf** 20 26 06.7 -2.1
baz=324
G36A **St. Michael** 140.07 24 PKPdf **PKPdf** 20 26 06.2 -2.6
baz=326
121A **Cookes Peak, D** 140.12 50 PKPdf **PKPdf** 20 26 09.0 -0.5
baz=297
L31A **Buttfield Fa** 140.13 31 PKPdf **PKPdf** 20 26 06.3 -2.8
baz=317
N29A **Votaw Ranch, W** 140.13 34 PKPdf **PKPdf** 20 26 08.3 -0.8
baz=313
I34A **Hadley** 140.15 27 PKPdf **PKPdf** 20 26 06.8 -2.2
baz=322
T25A **Trinidad** 140.15 42 PKPdf **PKPdf** 20 26 07.4 -2.1
baz=305
KSCO **Kaye Shedlock'** 140.15 38 PKPdf **PKPdf** 20 26 07.4 -1.9
baz=309
J33A **Davis** 140.20 28 PKPdf **PKPdf** 20 26 07.5 -1.6
baz=320
K32A **Verdigre** 140.21 30 PKPdf **PKPdf** 20 26 07.6 -1.6
baz=318
N30A **Hueftle Ranch,** 140.44 34 PKPdf **PKPdf** 20 26 07.4 -2.3
baz=314
SPMN **Marine on St.** 140.45 23 PKPdf **PKPdf** 20 26 07.7 -1.8
baz=327
O29A **4D Ranch, Culb** 140.50 35 PKPdf **PKPdf** 20 26 08.6 -1.2
baz=312
H36A **Jessenland, He** 140.54 25 PKPdf **PKPdf** 20 26 08.5 -1.2
baz=325
RCBR **Riachuelo** 140.64 248 PKhKP PKPpre 20 26 04.7
comp=Z,8.2nm,0.9s,baz=117,slow=7.7,SNR=3.9
RCBR **Riachuelo** 140.64 248 PFAKE 20 26 20.0 +9.2
RCBR LR LR
comp=Z,18μm,20.0s
M31A **Lambtecht Ranc** 140.66 32 PKPdf **PKPdf** 20 26 08.0 -2.1
baz=316
I35A **Creekview Farm** 140.68 26 PKPdf **PKPdf** 20 26 08.9 -1.1
baz=323
L32A **Elgin** 140.68 31 PKPdf **PKPdf** 20 26 08.9 -1.1
baz=318
J34A **George** 140.69 28 PKPdf **PKPdf** 20 26 09.2 -0.8
baz=321
K33A **Hardington** 140.73 29 PKPdf **PKPdf** 20 26 08.9 -1.2
baz=319
ACLC **CERRO LA CRUZ** 140.74 187 *eP* PKPpre 20 26 04.7
AGUA **GUANDACOL** 140.84 185 *eP* PKPpre 20 26 05.6
O30A **MW Ranch, Wils** 140.89 35 PKPdf **PKPdf** 20 26 09.0 -1.5
baz=313
L33A **Hoskins** 140.93 30 PKPdf **PKPdf** 20 26 10.1 -0.4
baz=319
H37A **Dierke Farm, C** 140.94 24 PKPdf **PKPdf** 20 26 09.7 -0.7
baz=327
I36A **Fitzsimmons Fa** 140.96 25 PKPdf **PKPdf** 20 26 08.6 -1.8
baz=325
J35A **Milford** 140.97 27 PKPdf **PKPdf** 20 26 08.3 -2.2
baz=322
COWI **Conover** 140.98 19 PFAKE 20 26 20.0 +10
COWI LR LR
comp=Z,8μm,21.0s
LPIG **La Paz** 141.02 64 PKP **PKPdf** 20 26 09.3 -1.8
comp=Z,27nm,0.3s,baz=49,slow=0.7,SNR=3.4
N31A **Bailey Ranch,** 141.04 33 PKPdf **PKPdf** 20 26 08.9 -1.8
baz=315
BGNE **Belgrade** 141.04 32 PKPdf **PKPdf** 20 26 08.4 -2.3
baz=317
K34A **Le Mars** 141.09 28 PKPdf **PKPdf** 20 26 09.3 -1.5
baz=321
I37A **Lemond, Waseca** 141.22 25 PKPdf **PKPdf** 20 26 09.5 -1.5
baz=326
O31A **Woolen Ranch,** 141.31 34 PKPdf **PKPdf** 20 26 09.8 -1.5
baz=314
CPUP **Villa Florida** 141.34 202 *eP* PKPpre 20 26 06.0
CPUP **Villa Florida** 141.34 202 PKhKP PKPpre 20 26 05.9
comp=Z,15nm,0.7s,baz=143,slow=2.8,SNR=21
J36A **Seneca 1, Swea** 141.38 26 PKPdf **PKPdf** 20 26 10.0 -1.2
baz=324
M33A **Taylor Creek F** 141.41 31 PKPdf **PKPdf** 20 26 10.3 -1.0
baz=318
N32A **Stulken Farm,** 141.43 32 PKPdf **PKPdf** 20 26 09.5 -1.9
baz=316
LCO **Las Campanas** 141.45 182 PFAKE 20 26 20.0 +7.8
LCO LR LR
comp=Z,20μm,20.0s
K35A **Storm Lake** 141.47 28 PKPdf **PKPdf** 20 26 09.9 -1.5
baz=322
L34A **Svendsen Farm,** 141.51 29 PKPdf **PKPdf** 20 26 09.9 -1.6
baz=320
CYA **Choya** 141.54 189 *eP* PKPpre 20 26 06.0
VCA **Vinchina** 141.56 186 *eP* PKPpre 20 25 44.8
I38A **Scanlan Farm,** 141.63 24 PKPdf **PKPdf** 20 26 10.6 -1.1
baz=327
P31A **Stockton** 141.72 35 PKPdf **PKPdf** 20 26 10.8 -1.2
baz=314
J37A **Redenius Farm,** 141.73 25 PKPdf **PKPdf** 20 26 10.4 -1.5
baz=325
M34A **Aspy Farms, Fr** 141.76 30 PKPdf **PKPdf** 20 26 10.8 -1.2
baz=319
L35A **Bielow Farm, R** 141.80 28 PKPdf **PKPdf** 20 26 10.9 -1.1
baz=321
O32A **Brockman Farm,** 141.80 33 PKPdf **PKPdf** 20 26 11.0 -1.1
baz=316
K36A **Gilmore City** 141.88 27 PKPdf **PKPdf** 20 26 10.9 -1.2
baz=323
N33A **J Bar K, Exete** 141.89 32 PKPdf **PKPdf** 20 26 10.8 -1.4
baz=317
CBKS **Cedar Bluff** 141.99 36 PKPdf **PKPdf** 20 26 11.5 -1.0
baz=312
CBKS **Cedar Bluff** 141.99 36 PFAKE 20 26 20.0 +7.5
CBKS LR LR
comp=Z,8μm,22.0s
P32A **Huiting Farm,** 142.08 34 PKPdf **PKPdf** 20 26 11.3 -1.4
baz=315
K37A **Belmond** 142.14 26 PKPdf **PKPdf** 20 26 11.5 -1.1
baz=324
J38A **Wedel Dairy, R** 142.17 24 PKPdf **PKPdf** 20 26 11.5 -1.1
baz=326
L36A **Harm Buss Farm** 142.21 28 PKPdf **PKPdf** 20 26 11.7 -1.0
baz=322
M35A **Neola** 142.22 29 PKPdf **PKPdf** 20 26 12.2 -0.7
baz=320
N34A **Lincoln** 142.30 31 PKPdf **PKPdf** 20 26 10.6 -2.4
baz=319
O33A **Hebron** 142.31 33 PKPdf **PKPdf** 20 26 10.6 -2.4
baz=316
MNTX **Cornudas Mount** 142.31 50 PKPdf **PKPdf** 20 26 11.3 -1.9
baz=298
MNTX **Cornudas Mount** 142.31 50 PFAKE 20 26 30.0 +17
MNTX LR LR
comp=Z,9μm,22.0s
Q32A **Meitler Ranch,** 142.54 35 PKPdf **PKPdf** 20 26 11.7 -1.8
baz=314
K38A **Parkersburg** 142.60 25 PKPdf **PKPdf** 20 26 11.6 -1.8
baz=325
L37A **Phoenix Point,** 142.60 27 PKPdf **PKPdf** 20 26 11.8 -1.7
baz=324
M36A **Felix, Anita** 142.66 28 PKPdf **PKPdf** 20 26 11.9 -1.7
baz=322
O34A **Beatrice** 142.69 32 PKPdf **PKPdf** 20 26 12.1 -1.6
baz=318

P33A	Williams Farm, baz=316	142.71	33	PKPdf	PKPdf	20 26	12.0	-1.8	
N35A	Tabor baz=320	142.71	30	PKPdf	PKPdf	20 26	11.8	-1.9	
R32A	Long Quarter, baz=313	142.85	35	PKPdf	PKPdf	20 26	12.2	-1.8	
L38A	Oak Wood Farm, baz=325	142.94	26	PKPdf	PKPdf	20 26	12.3	-1.7	
Q33A	Connelly Farm, baz=315	142.94	34	PKPdf	PKPdf	20 26	12.2	-1.9	
SCIA	State Center	143.02	26	PFAKE		20 26	30.0	+16	
SCIA	comp=Z,10µm,20.0s			LR	LR				
O35A	Humboldt baz=319	143.03	31	PKPdf	PKPbc	20 26	12.0	+1.0	
MSTX	Muleshoe baz=304	143.04	45	PKPdf	PKPbc	20 26	12.3	+0.9	
M37A	Trindle Farm, baz=323	143.04	28	PKPdf	PKPbc	20 26	11.8	+0.7	
N36A	Muff Farm, Cla baz=321	143.08	29	PKPdf	PKPbc	20 26	12.0	+0.8	
P34A	Walnut Farm, R baz=317	143.09	32	PKPdf	PKPbc	20 26	11.8	+0.5	
S32A	Newby Ranch, P baz=312	143.21	37	PKPdf	PKPbc	20 26	12.2	+0.6	
AMTX	Amarillo baz=306	143.26	43	PKPdf	PKPbc	20 26	12.8	+0.9	
R33A	Olander Ranch, baz=314	143.34	35	PKPdf	PKPbc	20 26	12.6	+0.6	
JFWS	Jewell Farm	143.38	22	PFAKE		20 26	30.0	+15	
JFWS	comp=Z,9µm,21.0s			LR	LR				
M38A	Pleasantville baz=324	143.42	27	PKPdf	PKPbc	20 26	12.8	+0.7	
GLMI	Grayling	143.44	15	PFAKE		20 26	30.0	+15	
GLMI	comp=Z,7µm,21.0s			LR	LR				
N37A	Lee Faris, Mou baz=322	143.48	29	PKPdf	PKPbc	20 26	12.9	+0.6	
Q34A	Chapman baz=316	143.48	33	PKPdf	PKPbc	20 26	12.8	+0.5	
P35A	Duane Minner, baz=318	143.53	32	PKPdf	PKPbc	20 26	12.3	-0.2	
KSU1	Kansas State U baz=317	143.53	33	PKPdf	PKPbc	20 26	13.1	+0.7	
KSU1	Kansas State U	143.53	33	PFAKE		20 26	30.0	+15	
KSU1	comp=Z,8µm,20.0s			LR	LR				
T32A	Huddler Ranch, baz=312	143.56	37	PKPdf	PKPbc	20 26	13.2	+0.5	
O36A	Bolckow baz=320	143.60	30	PKPdf	PKPbc	20 26	13.0	+0.4	
R34A	Isabella, Hill baz=315	143.76	34	PKPdf	PKPbc	20 26	13.8	+0.6	
S33A	Kaszmaul Farm, baz=314	143.82	36	PKPdf	PKPbc	20 26	13.8	+0.4	
FSA	Cafayete	143.85	190	*eP*	PKPab	20 26	13.6	+0.2	
P36A	Good Intent, A baz=319	143.87	31	PKPdf	PKPbc	20 26	13.9	+0.4	
N38A	Joes South For baz=323	143.91	28	PKPdf	PKPbc	20 26	14.1	+0.6	
O37A	Wolven Farm, M baz=321	143.97	29	PKPdf	PKPbc	20 26	14.5	+0.8	
Q35A	Mercer Eighty, baz=318	144.01	32	PKPdf	PKPbc	20 26	14.5	+0.5	
T33A	Patterson Ranc baz=313	144.03	37	PKPdf	PKPbc	20 26	14.5	+0.5	
U32A	Winter Ranch, baz=311	144.04	38	PKPdf	PKPbc	20 26	14.8	+0.7	
N39A	Derby Farms, D baz=324	144.17	27	PKPdf	PKPbc	20 26	14.7	+0.4	
Q36A	Arnold C. Orve baz=318	144.24	32	PKPdf	PKPbc	20 26	14.7	+0.1	
S34A	Willow Spring baz=315	144.26	35	PKPdf	PKPbc	20 26	14.9	+0.2	
R35A	Emporia Munici baz=317	144.32	33	PKPdf	PKPbc	20 26	15.4	+0.5	
P37A	Lathrop baz=321	144.32	30	PKPdf	PKPbc	20 26	15.3	+0.4	
O38A	Galt baz=322	144.33	28	PKPdf	PKPbc	20 26	15.3	+0.4	
V32A	Arapaho baz=310	144.44	39	PKPdf	PKPbc	20 26	16.0	+0.6	
PKME	Peaks-Kenny Pk	144.51	356	PFAKE		20 26	30.0	+13	
PKME	comp=Z,7µm,20.0s			LR	LR				
U33A	Lingo Farm, Me baz=312	144.54	37	PKPdf	PKPbc	20 26	15.8	+0.1	
SADO	Sadowa	144.59	9	PKP	PKPab	20 26	15.1	-0.2	
	comp=Z,88nm,0.8s,baz=342,slow=4.5,SNR=44								
O39A	Kirksville baz=324	144.65	27	PKPdf	PKPbc	20 26	15.9	0.0	
R36A	Gordon, Harris baz=318	144.69	33	PKPdf	PKPbc	20 26	16.3	+0.2	
T34A	McClaskey Farm baz=314	144.69	36	PKPdf	PKPbc	20 26	16.6	+0.5	
P38A	Dawn baz=322	144.69	29	PKPdf	PKPbc	20 26	16.4	+0.4	
W32A	Sentinel baz=309	144.70	40	PKPdf	PKPbc	20 26	16.8	+0.5	
S35A	Otter Creek Ra baz=316	144.71	34	PKPdf	PKPbc	20 26	16.4	+0.2	
TXAR	Lajitas Array	144.72	52	PKP	PKPbc	20 26	17.1	+0.5	
	comp=Z,105nm,0.8s,baz=256,slow=1.7,SNR=151								
Q37A	Longview Farm, baz=320	144.82	31	PKPdf	PKPab	20 26	16.2	-0.2	
V33A	Lossen Ranch, baz=311	144.85	38	PKPdf	PKPbc	20 26	17.1	+0.5	
U34A	Anderson Ranch baz=313	144.89	37	PKPdf	PKPbc	20 26	17.1	+0.4	
R37A	Teagarden Farm baz=319	145.05	32	PKPab	PKPbc	20 26	16.9	-0.3	
O40A	La Belle baz=325	145.06	27	PKPab	PKPab	20 26	17.3	+0.1	
S36A	Lake Cedric, C baz=317	145.08	33	PKPab	PKPab	20 26	17.5	+0.1	
X32A	Elmer baz=308	145.11	41	PKPab	PKPdf	20 26	18.2	+0.1	
SLA	San Lorenzo	145.13	191	*eP*	PKPbc	20 26	17.6	-0.5	
T35A	Sooner Cattle baz=315	145.15	35	PKPab	PKPdf	20 26	17.9	-0.2	
P39A	Salisbury baz=323	145.17	28	PKPab	PKPab	20 26	17.8	+0.1	
Q38A	Cooks Store, C baz=321	145.17	30	PKPab	PKPbc	20 26	17.1	-0.5	
W33A	Caddo, Fort Co baz=310	145.17	39	PKPab	PKPdf	20 26	18.7	+0.5	
LONY	Lake Ozonia	145.18	3	PFAKE		20 26	30.0	+12	
LONY	comp=Z,7µm,20.0s			LR	LR				
BDFB	Brasilia	145.20	224	PKPbc	PKPbc	20 26	18.0	-0.5	
	comp=Z,212nm,0.8s,baz=138,slow=3.2,SNR=115								
BDFB	Brasilia	145.20	224	PKIKP	PKPbc	20 26	18.0	-0.5	
BDFB	comp=Z,212nm,0.8s			pmax	pmax				
WMOK	Wichita Mounta	145.24	40	PFAKE		20 26	30.0	+12	
WMOK	comp=Z,7µm,22.0s			LR	LR				
V34A	Guthrie baz=312	145.30	38	PKPab	PKPdf	20 26	18.8	+0.4	
T36A	Boggs Farm, Ca baz=316	145.40	34	PKPab	PKPab	20 26	18.7	+0.2	
U35A	Pawnee baz=314	145.40	36	PKPab	PKPab	20 26	18.9	+0.3	
Q39A	Willow Grove F baz=322	145.41	29	PKPab	PKPdf	20 26	18.4	0.0	
P40A	Paris baz=324	145.46	28	PKPab	PKPbc	20 26	18.5	0.0	
S37A	Fort Scott baz=318	145.46	32	PKPab	PKPbc	20 26	18.5	0.0	
X33A	Lawton baz=310	145.54	40	PKPab	PKPbc	20 26	18.9	0.0	
W34A	Bridge Creek, baz=311	145.55	39	PKPab	PKPab	20 26	19.6	+0.4	
R38A	Fenwick Farm, baz=320	145.62	31	PKPab	PKPdf	20 26	18.4	-0.4	
V35A	Meyer Ranch, C baz=313	145.76	37	PKPab	PKPbc	20 26	19.5	-0.1	
HDIL	Hopedale baz=329	145.77	23	PKPab	PKPbc	20 26	19.4	-0.1	
HDIL	Hopedale	145.77	23	PFAKE		20 26	30.0	+10	
HDIL	comp=Z,7µm,21.0s			LR	LR				
Y33A	Hilltop Ranch, baz=309	145.80	41	PKPab	PKPbc	20 26	19.6	-0.2	
NCB	Newcomb	145.85	3	PFAKE		20 26	30.0	+10	
NCB	comp=Z,8µm,20.0s			LR	LR				
Q40A	Laux Farm, Aux baz=324	145.88	28	PKPab	PKPbc	20 26	19.7	-0.2	
T37A	Cheneyville 18 baz=317	145.88	33	PKPab	PKPbc	20 26	19.8	-0.1	
X34A	Smith Ranch, M baz=311	145.92	40	PKPab	PKPbc	20 26	20.3	+0.2	
ABTX	Abilene, Hawle baz=306	145.96	44	PKPab	PKPab	20 26	20.9	0.0	
R39A	Chumby, Stover baz=321	145.96	30	PKPab	PKPdf	20 26	19.7	+0.3	
U36A	Oologah baz=316	145.96	35	PKPab	PKPbc	20 26	20.0	-0.2	
S38A	Stockton baz=319	146.04	32	PKPab	PKPdf	20 26	19.9	+0.3	
AAM	Ann Arbor	146.04	15	PFAKE		20 26	30.0	+9.2	
AAM	comp=Z,10µm,20.0s			LR	LR				
W35A	Tecumseh baz=313	146.15	38	PKPab	PKPbc	20 26	20.7	-0.1	
Z33A	Whitaker Ranch baz=308	146.15	42	PKPdf	PKPdf	20 26	19.7	-0.2	
TUL1	Leonard baz=315	146.27	36	PKPdf	PKPdf	20 26	20.1	+0.1	
V36A	Jenks baz=315	146.27	36	PKPdf	PKPdf	20 26	20.4	+0.4	
T38A	Diamond baz=318	146.28	33	PKPdf	PKPdf	20 26	19.8	-0.2	
S39A	Bolivar baz=320	146.29	31	PKPdf	PKPdf	20 26	20.2	+0.2	
U37A	Salina baz=316	146.30	34	PKPdf	PKPdf	20 26	20.1	0.0	
R40A	Maddies Statio baz=323	146.35	29	PKPdf	PKPdf	20 26	20.6	+0.6	
Y34A	Reagan Ranch, baz=310	146.39	40	PKPdf	PKPbc	20 26	21.0	-0.6	
133A	Hamilton Ranch baz=307	146.46	43	PKPdf	PKPbc	20 26	21.4	-0.4	
W36A	Wetumka baz=314	146.55	37	PKPdf	PKPdf	20 26	21.0	+0.5	
HJA	Humahuaca	146.59	191	*eP*	PKPab	20 26	23.9	0.0	
X35A	Drake baz=312	146.59	39	PKPdf	PKPdf	20 26	20.8	+0.2	
Z34A	Collier Ranch, baz=309	146.66	41	PKPdf	PKPdf	20 26	20.7	-0.1	
V37A	Hulbert baz=316	146.66	35	PKPdf	PKPdf	20 26	20.9	+0.3	
U38A	Gravette baz=318	146.68	34	PKPdf	PKPdf	20 26	20.4	-0.3	
SFIN	Lafayette baz=333	146.75	21	PKPdf	PKPdf	20 26	20.9	+0.2	
T39A	Clever baz=320	146.78	32	PKPdf	PKPdf	20 26	21.0	+0.1	
S40A	Lebanon baz=322	146.78	30	PKPdf	PKPdf	20 26	21.6	+0.8	
233A	Rising Star baz=306	146.82	44	PKPdf	PKPdf	20 26	21.1	0.0	
X36A	Centrahoma baz=313	146.86	38	PKPdf	PKPdf	20 26	21.5	+0.5	
Y35A	Marietta baz=311	146.88	40	PKPdf	PKPdf	20 26	20.9	-0.2	
W37B	Quinton baz=315	147.02	36	PKPdf	PKPdf	20 26	21.8	+0.5	
134A	White-Moore Ra baz=308	147.04	43	PKPdf	PKPdf	20 26	21.3	-0.1	
JCT	Junction City baz=303	147.05	47	PKPdf	PKPdf	20 26	22.0	+0.4	
JCT	Junction City	147.05	47	PFAKE		20 26	30.0	+4.9	
JCT	comp=Z,8µm,20.0s			LR	LR				
V38A	Canehill baz=317	147.09	34	PKPdf	PKPdf	20 26	21.6	+0.2	
Z35A	Perchaven, San baz=310	147.11	41	PKPdf	PKPdf	20 26	21.7	+0.2	
T40A	Mansfield baz=321	147.12	31	PKPdf	PKPdf	20 26	21.4	0.0	
333A	Richland Sprin baz=305	147.16	45	PKPdf	PKPdf	20 26	21.7	0.0	
U39A	Green Forest baz=319	147.21	33	PKPdf	PKPdf	20 26	21.3	-0.3	
234A	Clairette baz=307	147.35	43	PKPdf	PKPdf	20 26	22.5	+0.5	
Y36A	Durant baz=312	147.35	39	PKPdf	PKPdf	20 26	21.6	-0.3	
433A	Art baz=304	147.41	46	PKPdf	PKPdf	20 26	22.5	+0.3	
X37A	Clayton baz=314	147.44	37	PKPdf	PKPdf	20 26	22.6	+0.6	
BINY	Binghamton	147.49	5	PFAKE		20 26	30.0	+3.6	
BINY	comp=Z,11µm,19.0s			LR	LR				
135A	Vickery Place, baz=309	147.50	42	PKPdf	PKPdf	20 26	23.0	+0.8	
V39A	Pettigrew baz=318	147.52	34	PKPdf	PKPdf	20 26	23.0	+0.8	
U40A	Yellville baz=320	147.56	32	PKPdf	PKPdf	20 26	22.3	+0.1	
W38A	Poteau baz=316	147.59	35	PKPdf	PKPdf	20 26	23.2	+1.0	
YJA	Yavi	147.61	192	*eP*	PKPbc	20 26	25.1	-0.8	
Z36A	Blue Ridge baz=311	147.67	40	PKPdf	PKPdf	20 26	23.1	+0.7	
334A	Lometa baz=306	147.68	45	PKPdf	PKPdf	20 26	22.9	+0.4	
M54A	Oil Creek Stat baz=346	147.68	10	PKPdf	PKPdf	20 26	23.0	+0.8	
X38A	Whitesboro baz=315	147.70	36	PKPdf	PKPdf	20 26	22.9	+0.5	
Y37A	Hugo baz=313	147.70	38	PKPdf	PKPdf	20 26	22.9	+0.4	
WHTX	Lake Whitney, baz=308	147.81	43	PKPdf	PKPdf	20 26	23.7	+1.0	
533A	Kerrville baz=304	147.83	47	PKPdf	PKPdf	20 26	23.3	+0.4	
W39A	Magazine baz=317	147.92	35	PKPdf	PKPdf	20 26	22.9	+0.1	
434A	Burnet baz=305	147.96	45	PKPdf	PKPdf	20 26	23.6	+0.6	
V40A	Witts Springs baz=319	147.99	33	PKPdf	PKPdf	20 26	23.5	+0.5	
633A	Saathoff Ranch	148.06	48	PKPdf	PKPdf	20 26	24.0	+0.8	
832A	Faith Ranch, C baz=300	148.06	51	PKPdf	PKPdf	20 26	23.8	+0.6	
136A	Ennis baz=310	148.12	41	PKPdf	PKPdf	20 26	23.7	+0.5	
N54A	Moraine State baz=346	148.15	11	PKPdf	PKPdf	20 26	23.3	+0.3	
ACSO	Alum Creek Sta	148.16	16	PFAKE		20 26	30.0	+0.9	
ACSO	comp=Z,8µm,22.0s			LR	LR				
X39A	Fountain Ranch baz=316	148.23	36	PKPdf	PKPdf	20 26	23.7	+0.4	
Z37A	Pogue Cattle C baz=312	148.23	39	PKPdf	PKPdf	20 26	23.6	+0.3	
534A	Blanco baz=304	148.26	47	PKPdf	PKPdf	20 26	24.1	+0.6	
335A	Moody baz=307	148.26	44	PKPdf	PKPdf	20 26	24.2	+0.7	
Y38A	Idabel baz=314	148.28	37	PKPdf	PKPdf	20 26	24.0	+0.6	
W40A	Ferguson Farm, baz=318	148.32	34	PKPdf	PKPdf	20 26	23.5	+0.1	
733A	Divot King Ran baz=301	148.36	50	PKPdf	PKPdf	20 26	24.3	+0.6	
236A	Katherine and baz=309	148.42	42	PKPdf	PKPdf	20 26	24.1	+0.4	
435B	Jarrell baz=306	148.45	45	PKPdf	PKPdf	20 26	24.1	+0.3	
833A	Chaparral WMA, baz=301	148.49	50	PKPdf	PKPdf	20 26	24.1	+0.2	
MIAR	Mount Ida baz=317	148.51	35	PKPdf	PKPdf	20 26	23.8	+0.1	
MIAR	Mount Ida	148.51	35	PFAKE		20 26	40.0	+9.3	
MIAR	comp=Z,10µm,20.0s			LR	LR				
137A	Heron Place, G baz=311	148.54	40	PKPdf	PKPdf	20 26	24.4	+0.5	
Z38A	Mt. Pleasant baz=313	148.59	38	PKPdf	PKPdf	20 26	24.3	+0.4	
336A	Riesel baz=308	148.60	43	PKPdf	PKPdf	20 26	24.9	+0.9	
Y39A	Lockesburg baz=315	148.65	37	PKPdf	PKPdf	20 26	24.9	+0.9	
634A	China Grove, S baz=303	148.70	48	PKPdf	PKPdf	20 26	24.8	+0.6	
N59A	State Game Lan baz=353	148.79	5	PKPdf	PKPdf	20 26	24.2	+0.1	
734A	La Parita Cree	148.84	49	PKPdf	PKPdf	20 26	25.4	+1.0	
237A	Washetta, Mont baz=302	148.90	41	PKPdf	PKPdf	20 26	24.6	+0.1	
535A	Dale baz=310	148.90	46	PKPdf	PKPdf	20 26	25.2	+0.7	
138A	Matatall Enter baz=305	148.92	39	PKPdf	PKPdf	20 26	25.0	+0.5	
933A	Laredo baz=312	148.93	51	PKPdf	PKPdf	20 26	25.7	+1.0	
X40A	Basin Creek Fa baz=300	148.97	34	PKPdf	PKPdf	20 26	25.1	+0.6	
436A	Wall Ranch, Ga baz=318	149.00	44	PKPdf	PKPdf	20 26	25.0	+0.4	
Y40A	Okolona baz=307	149.06	35	PKPdf	PKPdf	20 26	25.2	+0.6	
O56A	Blue Knob Stat baz=317	149.07	9	PKPdf	PKPdf	20 26	25.0	+0.5	
Z39A	Irene McRaven, baz=348	149.08	38	PKPdf	PKPdf	20 26	25.6	+0.9	
635A	Leesville baz=314	149.12	47	PKPdf	PKPdf	20 26	25.9	+1.0	
834A	Tilden baz=304	149.22	50	PKPdf	PKPdf	20 26	26.2	+1.1	
536A	Bastrop baz=301	149.23	45	PKPdf	PKPdf	20 26	25.9	+0.8	
337A	Centerville baz=306	149.28	42	PKPdf	PKPdf	20 26	26.1	+1.0	
238A	Jacksonville baz=309	149.28	42	PKPdf	PKPdf	20 26	26.1	+1.0	
139A	Bunkhouse Ranc baz=311	149.34	40	PKPdf	PKPdf	20 26	26.7	+1.5	
735A	Kenedy baz=313	149.34	39	PKPdf	PKPdf	20 26	26.0	+0.9	
437A	Phantom Ranch, baz=303	149.39	48	PKPdf	PKPdf	20 26	25.5	+0.2	
934A	Benavides baz=308	149.42	43	PKPdf	PKPdf	20 26	25.9	+0.6	
Z40A	Long Farm, Mag baz=301	149.52	51	PKPdf	PKPdf	20 26	26.9	+1.3	
636A	Smothers Creek baz=316	149.53	37	PKPdf	PKPdf	20 26	26.4	+0.9	
338A	Crockett baz=305	149.58	46	PKPdf	PKPdf	20 26	26.7	+1.1	
034A	Hebbronville baz=310	149.63	42	PKPdf	PKPdf	20 26	26.5	+0.9	
835A	Beeville baz=300	149.66	52	PKPdf	PKPdf	20 26	27.1	+1.3	
239A	Gary baz=302	149.68	49	PKPdf	PKPdf	20 26	27.0	+1.2	
537A	Green Hill Far baz=312	149.74	40	PKPdf	PKPdf	20 26	26.7	+0.9	
NATX	Nacogdoches baz=307	149.75	45	PKPdf	PKPdf	20 26	26.1	+0.2	
NATX	Nacogdoches	149.79	40	PKPdf	PKPdf	20 26	25.8	-0.2	
NATX	comp=Z,10µm,22.0s	149.79	40	PFAKE		20 26	40.0	+4.0	
140A	Cam and Jess, baz=314	149.87	38	PKPdf	PKPdf	20 26	26.5	+0.5	
736A	Circle Diamond baz=304	149.87	47	PKPdf	PKPdf	20 26	27.4	+1.3	
Z41A	Richland Creek baz=316	149.88	36	PKPdf	PKPdf	20 26	26.3	+0.3	
438A	Sam Houston St baz=309	149.91	43	PKPdf	PKPdf	20 26	26.7	+0.6	
KVTX	Kingsville	150.02	50	PFAKE		20 26	40.0	+2.9	
KVTX	comp=Z,8µm,19.0s			LR	LR				
637A	Eagle Lake baz=306	150.12	46	PKPdf	PKPdf	20 26	28.1	+1.6	
339A	Huntington baz=311	150.14	41	PKPdf	PKPdf	20 26	27.2	+0.7	
240A	Hunter Patters baz=314	150.17	39	PKPdf	PKPdf	20 26	27.0	+0.5	
035A	Encino baz=300	150.17	52	PKPdf	PKPdf	20 26	27.5	+0.9	
538A	Harpers Horsep baz=308	150.23	44	PKPdf	PKPdf	20 26	27.8	+1.2	
141A	Papa Simpson, baz=316	150.29	37	PKPdf	PKPdf	20 26	27.7	+1.0	
439A	Center Grove, baz=310	150.35	42	PKPdf	PKPdf	20 26	27.5	+0.7	
035Z	Hargill baz=300	150.43	52	PKPdf	PKPdf	20 26	27.7	+0.6	
737A	Port Lavaca baz=305	150.43	47	PKPdf	PKPdf	20 26	28.0	+1.1	
340A	Bronson baz=312	150.51	40	PKPdf	PKPdf	20 26	27.8	+0.7	
241A	Mo Tay, Goldon baz=315	150.69	38	PKPdf	PKPdf	20 26	27.4	+0.1	
638A	Rosharon baz=307	150.75	45	PKPdf	PKPdf	20 26	28.0	+0.6	
539A	Cross D Ranch, baz=309	150.82	43	PKPdf	PKPdf	20 26	28.2	+0.7	
142A	Monroe baz=317	150.89	36	PKPdf	PKPdf	20 26	27.7	+0.1	
440A	Kirbyville baz=312	150.91	41	PKPdf	PKPdf	20 26	28.1	+0.5	
738A	Farr-Stevens R baz=306	150.96	46	PKPdf	PKPdf	20 26	27.8	0.0	
341A	Kurthwood baz=314	151.02	39	PKPdf	PKPdf	20 26	27.4	-0.4	
143A	Socs Landing, baz=318	151.09	35	PKPdf	PKPdf	20 26	26.5	-1.4	
242A	Grayson baz=316	151.12	37	PKPdf	PKPdf	20 26	27.3	-0.7	
540A	Vidor baz=311	151.25	42	PKPdf	PKPdf	20 26	28.8	+0.6	
CBN	Corbin Frederi	151.28	8	PFAKE		20 26	40.0	-1.9	
CBN	comp=Z,7µm,22.0s			LR	LR				
441A	DeRidder baz=313	151.40	40	PKPdf	PKPdf	20 26	27.2	-1.2	
342A	Flagon Creek P baz=315	151.51	38	PKPdf	PKPdf	20 26	29.0	+0.5	
243A	Waterproof baz=317	151.65	36	PKPdf	PKPdf	20 26	28.9	+0.1	
BLA	Blacksburg	151.66	14	PFAKE		20 26	40.0	-3.6	
BLA	comp=Z,9µm,19.0s			LR	LR				
144A	Alexander Plac baz=320	151.69	34	PKPdf	PKPdf	20 26	29.2	+0.4	
541A	Lake Charles baz=312	151.86	41	PKPdf	PKPdf	20 26	28.9	-0.2	
442A	Mamou baz=314	151.90	39	PKPdf	PKPdf	20 26	30.1	+1.0	
VBMS	Vicksburg baz=319	151.95	34	PKPdf	PKPdf	20 26	29.2	0.0	
145A	Houston Renfro baz=320	151.98	33	PKPdf	PKPdf	20 26	28.3	-0.9	
244A	Avery, Jackson baz=318	151.99	35	PKPdf	PKPdf	20 26	29.5	+0.2	
343A	Vidalia baz=316	152.00	37	PKPdf	PKPdf	20 26	29.6	+0.3	
TKL	Tuckaleechee C	152.13	20	PKP	PKPdf	20 26	29.4	-0.1	
	comp=Z,30nm,1.0s,baz=139,slow=2.5,SNR=16								
TKL				PKPbc	PKiKP	20 26	37.2	+0.9	
	comp=Z,197nm,1.0s,baz=132,slow=1.8,SNR=43								
SIV	San Ignacio	152.16	203	PKP	PKPdf	20 26	30.5	+0.5	
	comp=Z,27nm,0.8s,baz=134,slow=3.1,SNR=27								
SIV				PKPbc	PKiKP	20 26	36.9	0.0	
	comp=Z,188nm,0.9s,baz=178,slow=3.5,SNR=106								
542A	Morse baz=313	152.23	40	PKPdf	PKPdf	20 26	29.9	+0.2	
443A	Delano Plantat baz=315	152.27	38	PKPdf	PKPdf	20 26	29.7	-0.1	
344A	Westbrook Farm baz=318	152.40	36	PKPdf	PKPdf	20 26	28.1	-1.8	
146A	Union baz=322	152.41	32	PKPdf	PKPdf	20 26	28.6	-1.3	
245A	Little AP, Sta baz=320	152.43	34	PKPdf	PKPdf	20 26	28.2	-1.7	
543A	St. Martinvill baz=314	152.69	39	PKPdf	PKPdf	20 26	30.0	-0.3	
246A	Jackson Lee, B baz=321	152.86	33	PKPdf	PKPdf	20 26	30.9	+0.3	
345A	Thompson Farm, baz=319	152.90	35	PKPdf	PKPdf	20 26	30.8	+0.2	
444A	Pine Grove baz=317	152.92	37	PKPdf	PKPdf	20 26	31.4	+0.7	
544A	White Castle baz=315	153.11	38	PKPdf	PKPdf	20 26	31.3	+0.3	
445A	Amite baz=317	153.15	36	PKPdf	PKPdf	20 26	31.5	+0.4	
346A	Big Creek Wild baz=320	153.16	34	PKPdf	PKPdf	20 26	30.3	-0.7	
KMSC	Kings Mountain baz=340	153.38	17	PKPdf	PKPdf	20 26	31.1	-0.1	
545A	Edgard	153.56	38	PKPdf	PKPdf	20 26	30.0	-1.6	

	baz=316						
LPAZ	La Paz	153.83	189	PKP	PKPdf	20 26 33.0	-0.2
	comp=Z,19nm,0.9s,baz=122,slow=1.0,SNR=25						
LPAZ				PKPbc	PKiKP	20 26 42.9	+1.7
	comp=Z,74nm,0.7s,baz=170,slow=2.4,SNR=60						
546A	Slidell	153.88	36	PKPdf	PKPdf	20 26 30.9	-1.2
	baz=318						
645A	Chauvin	153.91	39	PKPdf	PKPdf	20 26 29.5	-2.6
	baz=315						
GOGA	Godfrey	154.26	22	PFAKE		20 26 40.0	-0.8
GOGA				LR	LR		
	comp=Z,14µm,22.0s						
BRAL	Brewton	154.61	31	PFAKE		20 26 40.0	-1.6
BRAL				LR	LR		
	comp=Z,10µm,21.0s						
NHSC	New Hope	155.61	16	PFAKE		20 26 50.0	-10
NHSC				LR	LR		
	comp=Z,10µm,21.0s						
TIGA	Tifton	155.96	24	PKPdf	PKPdf	20 26 34.1	-0.8
	baz=332						
BBSR	BB Station	156.42	344	PFAKE		20 26 50.0	-14
BBSR				LR	LR		
	comp=Z,7µm,19.0s						
CMIG	Matias Romero	156.80	69	PKP	PKPdf	20 26 36.0	-0.3
	comp=Z,36nm,1.1s,baz=179,slow=1.9,SNR=24						
NNA	Nana	157.94	168	PFAKE		20 26 50.0	+12
NNA				LR	LR		
	comp=Z,4µm,19.0s						
PAYG	Puerto Ayora	159.26	119	PFAKE		20 26 50.0	+10
PAYG				LR	LR		
	comp=Z,7µm,22.0s						
SAML	Samuel	159.37	206	PFAKE		20 26 50.0	+10
SAML				LR	LR		
	comp=Z,18µm,21.0s						
TEIG	Tepich	161.34	54	PKP	PKPdf	20 26 42.2	+0.6
	comp=Z,0.9nm,0.3s,baz=280,slow=23,SNR=6.2						
TEIG	Tepich	161.34	54	PKP	PKPdf	20 26 42.2	+0.6
TEIG				LR	LR		
	comp=Z,358nm,21.0s						
ATAH	Atahualpa	162.15	160	PKP	PKPdf	20 26 43.4	+0.2
	comp=Z,32nm,1.0s,baz=164,slow=1.3,SNR=12						
ATAH				PP	PP	20 31 18.8	+6.7
	comp=Z,8.0nm,0.8s,baz=284,slow=17,SNR=2.6						
PTGA	Pitinga	163.96	230	PKP	PKPdf	20 26 43.8	-0.7
	comp=Z,13nm,1.0s,baz=7.1,slow=1.0,SNR=12						
PTGA				PKPab	PKPab	20 27 38.7	+1.4
	comp=Z,30nm,1.0s,baz=133,slow=4.7,SNR=6.0						
PTGA				PP	PP	20 31 25.9	+3.5
	comp=Z,37nm,1.3s,baz=144,slow=5.8,SNR=5.6						
PTGA	Pitinga	163.96	230	PKP	PKPdf	20 26 43.8	-0.7
PTGA				PKPab	PKPab	20 27 38.7	+1.4
PTGA				PP	PP	20 31 25.9	+3.5
PTGA				LR	LR		
	comp=Z,36µm,20.0s						
BBGH	Gun Hill	167.13	286	eP	PKPdf	20 26 50.4	+3.5
BBGH	Gun Hill	167.13	286	PFAKE		20 27 00.0	+13
BBGH				LR	LR		
	comp=Z,19µm,22.0s						
ANWB	Willy Bob	167.15	309	e	PKPpre	20 26 40.5	
ANWB	Willy Bob	167.15	309	eP	PKPdf	20 26 45.9	-1.0
ANWB	Willy Bob	167.15	309	e	PP	20 31 38.9	-0.1
ANWB	Willy Bob	167.15	309	PFAKE		20 27 00.0	+13
ANWB				LR	LR		
	comp=Z,10µm,21.0s						
DEG	La Desirade	167.31	302	e	PKPdf	20 26 43.7	-3.4
JTS	JuntasAbangare	167.46	86	PKP	PKPdf	20 26 48.0	+0.8
	comp=Z,6.4nm,1.0s,baz=103,slow=2.1,SNR=5.2						
JTS				PKPab	PKPab	20 27 55.1	+2.3
	comp=Z,15nm,0.6s,baz=288,slow=6.1,SNR=7.5						
DLPL	La Plaine	167.92	299	eP	PKPdf	20 26 45.6	-1.9
MLYT	Lee's Yard	168.01	306	e	PKPdf	20 26 50.0	+2.4
MLYT	Lee's Yard	168.01	306	e	PP	20 31 18.5	-25
FDF	Fort de France	168.09	296	e	PKPpre	20 26 41.3	
FDF	Fort de France	168.09	296	eP	PKPdf	20 26 48.7	+1.0
FDF	Fort de France	168.09	296	e	PP	20 31 40.2	-4.2
FDF	Fort de France	168.09	296	PFAKE		20 27 00.0	+12
FDF				LR	LR		
	comp=Z,6µm,20.0s						
GRTK	Grand Turk	168.24	355	PFAKE		20 27 00.0	+12
GRTK				LR	LR		
	comp=Z,13µm,22.0s						
MCLT	Moule a Chique	168.26	291	eP	PKPdf	20 26 44.7	-3.1
MCLT	Moule a Chique	168.26	291	e	PKPdf	20 26 46.9	-0.8
MCLT	Moule a Chique	168.26	291	e	PP	20 31 48.2	+2.8
TOSP	Speyside	168.40	279	eP	PKPdf	20 26 47.8	-0.1
SVB	Belmont	168.68	289	eP	PKPdf	20 26 45.4	-2.6
SVB	Belmont	168.68	289	e	PKPdf	20 26 49.0	+1.0
OTAV	Otavalo	168.72	146	PFAKE		20 27 00.0	+11
OTAV				LR	LR		
	comp=Z,11µm,22.0s						
OTAV	Otavalo	168.72	146	eP	PKPdf	20 26 50.1	+1.3
GRGR	Grenville	169.34	284	eP	PKPdf	20 26 48.2	-0.2
GRGR	Grenville	169.34	284	e	PP	20 31 52.8	+1.7
GRGR	Grenville	169.34	284	PFAKE		20 27 00.0	+12
GRGR				LR	LR		
	comp=Z,10µm,20.0s						
GTBY	Guantanamo Bay	169.49	15	PFAKE		20 27 00.0	+12
GTBY				LR	LR		
	comp=Z,7µm,19.0s						
CMBC	Cumbal	169.64	147	eP	PKPdf	20 26 53.0	+3.7
SJG	San Juan	169.79	325	PKP	PKPdf	20 26 48.8	+0.2
	comp=Z,53nm,1.0s,baz=89,slow=3.1,SNR=13						
SJG				PP	PP	20 31 55.1	+3.5
	comp=Z,20nm,1.0s,baz=5.9,slow=9.0,SNR=3.4						
SJG	San Juan	169.79	325	eP	PKPdf	20 26 45.5	-3.1
MTDJ	Mount Denham	170.12	31	PFAKE		20 27 00.0	+11
MTDJ				LR	LR		
	comp=Z,14µm,20.0s						
CRUC	La Cruz	170.63	150	eP	PKPdf	20 26 54.3	+4.6
SDDR	Presa de Saban	170.76	354	PFAKE		20 27 00.0	+11
SDDR				LR	LR		
	comp=Z,16µm,22.0s						
GRGC	Isla de Gorgon	171.08	138	eP	PKPdf	20 26 49.7	+0.2
FLOC	Florencia	171.22	157	eP	PKPdf	20 26 50.9	+1.3
POPC	Popayan, Colom	171.60	148	eP	PKPdf	20 26 50.1	0.0
BCIP	Isla Barro Col	172.47	94	PFAKE		20 27 00.0	+10
BCIP				LR	LR		
	comp=Z,15µm,20.0s						
BCIP	Isla Barro Col	172.47	94	eP	PKPdf	20 26 51.7	+1.6
PRAC	Prado	173.46	156	eP	PKPdf	20 26 50.1	-0.6
TOLC	Tolima	174.04	149	eP	PKPdf	20 26 51.7	+0.5
GUYC	Guyana, Colomb	174.53	145	eP	PKPdf	20 26 50.1	-1.5
CHIC	Chingaza	174.71	164	eP	PKPdf	20 26 50.9	-0.6
ROSC	El Rosal	174.71	157	PKP	PKPdf	20 26 51.2	-0.3
	comp=Z,9.7nm,0.6s,baz=100,slow=4.5,SNR=20						
ROSC				PP	PP	20 32 22.7	+6.7
	comp=Z,6.9nm,0.4s,baz=158,slow=16,SNR=4.1						
NORC	Norcasia	175.10	148	eP	PKPdf	20 26 50.1	-1.1
HELC	Santa Helena	175.20	137	eP	PKPdf	20 26 50.1	-1.5
DBBC	Dabeiba	175.23	124	eP	PKPdf	20 26 52.3	+1.0
MOTC	Monteria, Cord	176.48	105	eP	PKPdf	20 26 50.1	-1.3
MOTC				eP	PKPdf	20 26 50.1	-1.3
BARC	Barichara	176.74	163	eP	PKPdf	20 26 50.9	-0.9
BRRC	Barranca, Sant	177.01	151	eP	PKPdf	20 26 51.7	+0.2
BTLC	Betulia, Santa	177.02	160	eP	PKPdf	20 26 51.4	-0.5
GIRC	Giron, Santand	177.19	160	eP	PKPdf	20 26 51.3	-0.5
PAMC	Pamplona, Colo	177.58	169	eP	PKPdf	20 26 50.1	-2.2
GRMC	Gramalote, San	177.92	164	eP	PKPdf	20 26 49.4	-2.5
OCAC	Ocana	178.17	144	eP	PKPdf	20 26 51.8	-0.1
SDV	Santo Domingo	178.21	242	PKP	PKPdf	20 26 51.0	-0.9
	comp=Z,9.7nm,0.9s,baz=122,slow=2.0,SNR=16						
SDV				PKPab		20 28 41.7	
	comp=Z,19nm,1.1s,baz=75,slow=4.0,SNR=2.8						
SDV				PP	PP	20 32 37.3	+3.3
	comp=Z,10.0nm,0.9s,baz=291,slow=1.9,SNR=3.1						
SDV	Santo Domingo	178.21	242	PP	PP	20 32 37.3	+3.3
SDV				LR	LR		
	comp=Z,15µm,19.0s						
SDV	Santo Domingo	178.21	242	eP	PKPdf	20 26 49.8	-2.1

*ISCJB **03** 20:22:19.6±0.4, 40°.65N±0°.02×29°.15E±0°.04, h4km±6km, Error ellipse: s-maj=5.0km s-min=3.8km az=14.3*
*ISK **03** 20:22:19.1, 40°.65N×29°.14E, h9km, MD2.6*
*CSEM **03** 20:22:19.7±0.1, 40°.66N×29°.14E, h10km, MD2.5, Error ellipse: s-maj=2.7km s-min=2.2km az=128.0*
*DDA **03** 20:22:20.1, 40°.68N×29°.12E, h7km, Md2.5*
ISC 03 20:22:20.0±0.9**, 40°.65N**±0°.02×**29°.14E**±0°.02**, h11**km±7km**, n33, σ0s.54**/48**, Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
BUY	Buyukada	0.21	356	i P	Pg	20 22 24.6	+0.2
BUY				i S	Sg	20 22 27.9	+0.4
BUY	Buyukada	0.21	356	P	Pg	20 22 24.6	+0.2
BUY				S	Sg	20 22 27.9	+0.4
GEMT	Gemlik	0.21	169	ePG	Pg	20 22 24.4	0.0
GEMT				eSG	Sg	20 22 27.5	-0.1
GEMT	Gemlik	0.21	169	ePg	Pg	20 22 24.5	0.0
GEMT				eSg	Sg	20 22 27.5	-0.1
ARMT	Armutlu	0.23	249	ePG	Pg	20 22 24.4	-0.3
ARMT				eSG	Sg	20 22 27.7	-0.2
ARMT	Armutlu	0.23	249	ePg	Pg	20 22 24.4	-0.3
ARMT				eSg	Sg	20 22 27.7	-0.2
MDNY	Mudanya-Bursa	0.34	215	ePG	Pg	20 22 26.3	-0.5
MDNY				eSG	Sg	20 22 31.6	+0.3
MDNY	Mudanya-Bursa	0.34	215	ePg	Pg	20 22 26.3	-0.5
MDNY				eSg	Sg	20 22 31.6	+0.3
IGD	Bursa	0.38	173	i P	Pg	20 22 26.8	-0.8
IGD				i S	Sg	20 22 32.1	-0.6
IZI	Iznik	0.40	140	ePG	Pg	20 22 27.6	-0.4
IZI				eSG	Sg	20 22 33.9	+0.6
IZI	Iznik	0.40	140	ePg	Pg	20 22 27.6	-0.4
IZI				eSg	Sg	20 22 33.9	+0.6
ISK	Istanbul-Kandi	0.42	352	ePG	Pg	20 22 27.7	-0.7
ISK	Istanbul-Kandi	0.42	352	ePg	Pg	20 22 27.7	-0.7
ADVT	Abdulvahap	0.51	115	ePG	Pg	20 22 29.5	-0.3
ADVT	Abdulvahap	0.51	115	ePg	Pg	20 22 29.5	-0.3
BGKT	Bogazkoy	0.60	333	ePG	Pg	20 22 31.2	-0.5
BGKT	Bogazkoy	0.60	333	ePg	Pg	20 22 31.2	-0.5
SILT	Sile	0.64	37	ePG	Pg	20 22 31.6	-0.8
SILT	Sile	0.64	37	ePg	Pg	20 22 31.6	-0.8
KCTX	Karacabey (Bur	0.71	238	ePG	Pg	20 22 33.4	-0.3
KCTX	Karacabey (Bur	0.71	238	ePg	Pg	20 22 33.4	-0.3
KAND	Kocaeli-Kandir	0.92	60	i P	Pb	20 22 37.5	-0.4
KAND				i S	Sb	20 22 49.9	-0.1
KAND	Kocaeli-Kandir	0.92	60	P	Pb	20 22 37.5	-0.4
KAND				S	Sb	20 22 49.9	-0.1
EDC	Edincik	1.02	253	ePG	Pg	20 22 38.9	-0.6
EDC	Edincik	1.02	253	ePg	Pg	20 22 38.9	-0.6
GULT	Gulveren	1.07	101	ePG	Pg	20 22 40.3	-0.3
GULT	Gulveren	1.07	101	ePg	Pg	20 22 40.3	-0.3
DST	Dursunbey	1.11	201	ePN	Pb	20 22 40.5	-0.7
DST	Dursunbey	1.11	201	ePn	Pb	20 22 40.6	-0.7
DURS	Dursunbey	1.16	206	i P	Pn	20 22 43.4	+1.1
DURS				i S	Sn	20 22 59.0	+0.9
DURS	Dursunbey	1.16	206	P	Pn	20 22 43.3	+1.1
DURS				S	Sn	20 22 59.0	+0.9
TVSB	Tavsanli	1.22	168	ePN	Pn	20 22 42.9	-0.1
TVSB	Tavsanli	1.22	168	ePn	Pn	20 22 42.9	-0.1

DJA 03 20:24:32.7±0.8**, 10°S**±8°×**10°8E**±°**, h10**km**, M4.8**/13**, MLv4.8**/13**, South of Jawa**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
CMJI	Cimerak	2.57	12	P	Pn	20 25 13.9	-0.5
CISI	Cisompet, Garu	2.74	358	P	Pn	20 25 15.2	-1.6
CNJI	Cibinong	3.08	346	P	Pn	20 25 19.6	-1.8
KPJI	Karang Pucung	3.13	19	P	Pn	20 25 23.0	+0.9
LEM	Lembang	3.47	356	P	Pn	20 25 27.3	+0.3
UGM	Wanagama	3.53	48	P	Pn	20 25 28.2	+0.6
SKJI	Sukabumi	3.54	338	P	Pn	20 25 28.9	+1.1
PCJI	Pacitan	3.87	57	P	Pn	20 25 31.7	-0.6
DBJI	Dramaga	3.90	343	P	Pn	20 25 32.6	-0.1
CGJI	Cibinong	4.27	329	P	Pn	20 25 38.1	+0.3

IDC 03 20:28:32.6±25.0**, 37°.27N**×**141°.29E, h0**km**, mb3.7**/4**, mb1 3.6**/5**, mb1mx3.3**/73**, mbtmp3.6**/5**, ML3.0**/1**, Error ellipse: s-maj=444.8km s-min=51.3km az=128.0, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
MJAR	Matsushiro Arr	2.57	254	Pn	Pn	20 29 15.1	-0.5
	2.7nm,0.3s,baz=104,slow=8.0,SNR=15						
MAT	Matsushiro	2.57	255	P	Pn	20 29 14.9	-0.7
MAT				eS	Sg	20 29 55.0	-0.3
SONM	Songino Array	27.57	304	P	P	20 34 21.3	0.0
	1.2nm,0.8s,baz=107,slow=8.2,SNR=5.9						
ZALV	Zalesovo Beam	41.68	312	P	P	20 36 22.5	-0.2
	0.5nm,0.6s,baz=93,slow=5.9,SNR=2.4						
MKAR	Makanchi Array	43.91	302	P	P	20 36 41.8	+0.9
	0.6nm,0.6s,baz=78,slow=9.5,SNR=7.5						
KURBB	Kurchatov Arra	45.78	308	P	P	20 36 54.8	-0.9
	0.6nm,0.8s,baz=84,slow=8.5,SNR=4.3						

DJA 03 20:32:18.7±2.5**, 10°S**±6°×**10°8E**±°**, h12**km±22km**, M4.4**/11**, MLv4.4**/11**, South of Jawa**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
CMJI	Cimerak	2.71	17	P	Pn	20 33 01.9	-0.2
CISI	Cisompet, Garu	2.83	3	P	Pn	20 33 03.2	-0.6
CNJI	Cibinong	3.12	350	P	Pn	20 33 07.8	+0.1
KPJI	Karang Pucung	3.29	22	P	Pn	20 33 09.6	-0.5
SKJI	Sukabumi	3.55	342	P	Pn	20 33 13.3	-0.4
LEM	Lembang	3.55	359	P	Pn	20 33 13.7	-0.1
UGM	Wanagama	3.75	49	P	Pn	20 33 16.6	+0.2
PCJI	Pacitan	4.10	58	P	Pn	20 33 20.7	-0.5
CGJI	Cibinong	4.24	332	P	Pn	20 33 22.9	-0.3
PWJI	Pagerwojo	4.72	60	P	Pn	20 33 28.2	-1.5

*ISCJB **03** 20:38:41.2±1.2, 37°.07N±0°.06×71°.2E±0°.1, h100km, Error ellipse: s-maj=15.0km s-min=9.2km az=179.2*
*NNC **03** 20:38:45.0±5.8, 37°.46N×71°.02E, h6km±170km, mb4.2, mpv3.9, Error ellipse: s-maj=180.3km s-min=23.4km az=14.0*
ISC 03 20:38:40.8±1.5**, 36°.94N**±0°.08×**71°.2E**±0°.1**, h100**km**, n7, σ1s.87**/13**, 7C-4D, Afghanistan-Tajikistan border region**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
SFK	Sufi-Kurgan	3.57	30	⇑P	Pn	20 39 36.8	+2.4
	9.4nm,0.3s						
SFK				⇑S	Sn	20 40 16.8	+1.0
	16nm,0.2s						
MNAS	Manas	5.64	10	⇑P	Pn	20 40 03.2	+1.0
	3.4nm,0.3s						
MNAS				⇑S	Sn	20 41 03.4	-2.3
	9.6nm,0.5s						
THN	Thein Dam	5.84	139	eP	Pn	20 40 06.8	+2.0
THN				eS	Sn	20 41 08.0	-2.4
KK31	Karatay Array	6.18	355	⇓P	Pn	20 40 10.6	+1.1
	7.9nm,0.4s,baz=176,slow=11,SNR=257						
KK31				⇓S	Sn	20 41 17.1	-1.7
	2.0nm,0.3s,baz=186,slow=24,SNR=6.3						
AAK	Ala-Archa	6.23	23	⇑P	Pn	20 40 12.0	+1.6
	7.4nm,0.4s						
AAK				⇓S	Sn	20 41 17.9	-2.3
	4.8nm,0.3s						
TKM2	Tokmak 2	6.87	28	⇓P	Pn	20 40 19.1	+0.1
	20nm,1.2s						
TKM2				⇑S	Sn	20 41 35.0	-0.8
	1.9nm,0.6s						
AB31	Akbulak array	14.78	330	P	Pn	20 42 04.2	-0.3
	0.8nm,0.5s,baz=136,slow=14,SNR=26						
AB31				⇑S	Sn	20 44 37.0	-10
	1.2nm,0.7s,baz=152,slow=24,SNR=4.0						

*IDC **03** 20:39:07.9±1.7, 10°.57S×107°.01E, h0km, mb3.9/7, mb1 4.0/8, mb1mx3.7/57, mbtmp4.0/8, ML4.5/1, Error ellipse: s-maj=74.3km s-min=25.7km az=58.0*
*ISCJB **03** 20:39:10.3±0.7, 10°.15S±0°.07×107°.55E±0°.06, h23km, mb3.9/8, Error ellipse: s-maj=10.3km s-min=7.0km az=149.8*
*NEIC **03** 20:39:10.7±0.8, 10°.14S×107°.58E, h10km, mb4.3/1, Error ellipse: s-maj=16.9km s-min=11.4km az=180.0*
*DJA **03** 20:39:12.2±0.6, 10°S±7°×10°7E±°, h10km, M4.6/12, MLv4.6/12*
ISC 03 20:39:12.2±0.9**, 10°.07S**±0°.07×**107°.49E**±0°.07**, h23**km**, n23, σ1s.08**/21**, mb4.1**/8**, South of Jawa**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
XMIS	Christmas Isla	1.86	257	ePn	Pn	20 39 42.3	-0.4
XMIS				eSn	Sn	20 40 03.8	-1.7
CMJI	Cimerak	2.46	23	P	Pn	20 39 49.8	-1.1
CISI	Cisompet, Garu	2.51	7	P	Pn	20 39 50.9	-0.9
CISI	Cisompet, Garu	2.51	7	ePn	Pn	20 39 50.9	-0.9
CISI				eSn	Sn	20 40 22.5	+0.7
CNJI	Cibinong	2.76	352	P	Pn	20 39 54.8	-0.3
KPJI	Karang Pucung	3.06	28	P	Pn	20 39 59.8	+0.5
LEM	Lembang	3.22	2	Pn	Pb	20 40 08.1	-0.7
	40nm,0.3s,baz=328,slow=8.5,SNR=60						
LEM				Sn	Sb	20 40 46.3	-1.4
	66nm,0.3s,baz=130,slow=23,SNR=21						
LEM	Lembang	3.22	2	P	Pb	20 40 08.2	-0.7
DBJI	Dramaga	3.57	348	P	Pn	20 40 08.7	+2.5
CGJI	Cibinong	3.87	332	P	Pb	20 40 23.6	+3.9
PWJI	Pagerwojo	4.72	65	P	Pn	20 40 24.7	+2.7
JAGI	Jajag, Banyuwa	6.76	77	ePn	Pn	20 40 48.9	-1.2
	39nm,0.4s						
KAPI	Kappang	13.14	68	Pn	Pn	20 42 16.3	-1.3
CMAR	Chiang Mai Arr	29.57	343	P	P	20 45 18.3	+2.7
	0.3nm,0.5s,baz=172,slow=8.8,SNR=4.2						
STKA	Stephens Creek	38.28	130	P	P	20 46 30.6	-0.4
	3.4nm,0.9s,baz=319,slow=9.3,SNR=3.3						
SONM	Songino Array	57.65	359	P	P	20 49 02.3	+1.5
	1.4nm,0.8s,baz=178,slow=9.1,SNR=9.0						
MKAR	Makanchi Array	60.92	340	P	P	20 49 24.9	+1.6
	0.9nm,0.5s,baz=147,slow=6.8,SNR=23						
KURBB	Kurchatov Arra	65.48	340	P	P	20 49 53.7	+0.3
	0.2nm,0.4s,baz=154,slow=6.1,SNR=3.1						
KURK	Kurchatov	65.53	340	P	P	20 49 53.7	0.0
ZALV	Zalesovo Beam	66.61	346	P	P	20 50 03.7	+3.1
	0.5nm,0.3s,baz=162,slow=6.7,SNR=5.0						
BVAR	Borovoye Array	70.36	337	P	P	20 50 25.4	+1.3
	0.9nm,0.7s,baz=148,slow=8.6,SNR=3.6						
ABKAR	Akbulak array	72.28	330	eP	P	20 50 36.7	+0.9
	1.6nm,0.6s						
TXAR	Lajitas Array	145.13	52	PKPbc	PKPdf	20 58 49.4	+0.7
	0.2nm,0.5s,baz=284,slow=3.6,SNR=2.7						

*IDC **03** 20:44:56.5±34.0, 35°.81N×142°.75E, h0km, mb3.5/3, mb1 3.5/4, mb1mx3.2/56, mbtmp3.3/4, ML2.6/1, Error ellipse: s-maj=872.1km s-min=34.5km az=169.0*
*ISCJB **03** 20:45:17.0±1.3, 39°.02N±0°.04×142°.43E±0°.08, h24km±6km, mb3.5/3, Error ellipse: s-maj=11.2km s-min=7.0km az=17.9*
*JMA **03** 20:45:18.3±0.1, 39°.06N×142°.38E, h31km±1km, M3.6*
JMA Felt I J1.
ISC 03 20:45:17.9±2.1**, 39°.01N**±0°.05×**142°.34E**±0°.10**, h23**km±14km**, n14, σ0s.58**/22**, mb3.6**/3**, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
OFUJ	Ofunato	0.53	278	P	Pn	20 45 29.6	-0.3
MIYJ	Miyakonagasawa	0.70	325	P	Pb	20 45 31.0	-0.3
MIYJ				S	Sb	20 45 39.8	-0.7
JMK	Ichinoseki	0.87	267	P	Pn	20 45 34.9	+0.2
JMK				S	Sb	20 45 46.2	+0.6
JOM	Ohasama	0.94	300	P	Pn	20 45 35.6	0.0
JOM				S	Sn	20 45 48.1	-0.2
JIO	Ouri	0.95	235	P	Pb	20 45 35.5	-0.2
JIO				S	Sb	20 45 47.9	+0.1
JTH	Tanohata	1.00	339	P	Pn	20 45 36.2	-0.3
JKZ	Kuzumaki	1.25	322	P	Pn	20 45 40.0	+0.1
JKZ				S	Sn	20 45 56.0	-0.1
JRG	Rokugo	1.38	287	P	Pb	20 45 43.3	+0.3
JRG				eS	Sb	20 46 01.0	+0.8
JOU	Okura	1.46	244	P	Pb	20 45 43.8	-0.5
JOU				S	Sb	20 46 03.1	+0.6
JANG	Nango	1.50	335	P	Pn	20 45 44.0	+0.6
JANG				S	Sn	20 46 02.7	+0.4
MAT	Matsushiro	4.09	234	S	Pb	20 46 29.0	-0.3
MKAR	Makanchi Array	43.72	301	P	P	20 53 20.1	-1.0
	0.3nm,0.7s,baz=80,slow=9.3,SNR=4.1						
KURBB	Kurchatov Arra	45.39	307	P	P	20 53 33.6	-0.8
	0.8nm,0.6s,baz=80,slow=8.5,SNR=7.9						
ILAR	Eielson Array	47.44	33	P	P	20 53 51.3	+1.0
	0.4nm,0.6s,baz=267,slow=5.8,SNR=5.2						

*ISCJB **03** 20:58:28.5±0.2, 60°.70N±0°.02×151°.59W±0°.05, h86km±3km, mb3.6/5, Error ellipse: s-maj=4.9km s-min=3.0km az=41.2*
*NEIC **03** 20:58:30.6, 60°.70N×151°.61W, h70km, ML3.4(AEIC), After AEIC.*
NEIC Felt at Girdwood.
*IDC **03** 20:58:33.3±5.9, 60°.95N×151°.42W, h100km±43km, mb3.4/5, mb1 3.3/8, mb1mx3.1/49, mbtmp3.6/8, Error ellipse: s-maj=52.4km s-min=37.2km az=167.0*
ISC 03 20:58:29.7±0.8**, 60°.69N**±0°.03×**151°.60W**±0°.03**, h78**km±6km**, n75, σ0s.75**/87**, mb3.9**/5**, Kenai Peninsula**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
RDT	Redoubt	0.41	254	P	Pn	20 58 41.8	-0.7
SPU	Mount Spurr	0.54	336	P	Pn	20 58 43.0	-0.7
DFR	Drift River	0.54	260	P	Pn	20 58 43.1	-0.6
REF	Redoubt East F	0.58	250	P	Pn	20 58 43.6	-0.5
REF				S	Sn	20 58 54.4	-0.4
SPCR	Spurr Chakacha	0.59	330	P	Pn	20 58 43.5	-0.6
SPCR				S	Sn	20 58 54.0	-0.9
RDJH	Redoubt Jeurge	0.60	261	P	Pn	20 58 43.9	-0.4
RDJH				S	Sn	20 58 54.9	-0.2
CKN	Chakachatna No	0.60	332	P	Pn	20 58 43.9	-0.3
CKL	Chakachamna La	0.62	325	P	Pn	20 58 43.9	-0.5
NCT	North Crescent	0.67	259	P	Pn	20 58 44.5	-0.4
SLKM	Skilak Lake	0.71	105	P	Pn	20 58 45.1	-0.2
STLK	Strandline Lak	0.82	352	P	Pn	20 58 46.2	-0.4
FIB	Fire Island	0.84	55	P	Pn	20 58 47.6	+0.9
FIB				S	Sn	20 59 01.6	+2.2
RC01	Rabbit Creek A	0.99	66	P	Pn	20 58 48.5	0.0
RC01				S	Sn	20 59 02.9	+0.3
BRLK	Bradley Lake	1.00	159	P	Pn	20 58 48.5	0.0
BRLK				S	Sn	20 59 03.3	+0.7
HOM	Homer	1.04	181	P	Pn	20 58 49.1	+0.1
HOM				S	Sn	20 59 04.9	+1.5
ILS	Iliamna Low So	1.04	225	P	Pn	20 58 49.1	0.0
SEW	Seward	1.22	118	P	Pn	20 58 50.8	-0.4
OPT	Oil Point	1.32	219	P	Pn	20 58 53.0	+0.4
AUL	Augustine Lava	1.60	216	P	Pn	20 58 56.6	+0.4
AUW	Augustine West	1.62	216	P	Pn	20 58 56.9	+0.4
AUI	Augustine Isla	1.64	215	P	Pn	20 58 56.9	+0.2
SML	Sawmill	1.94	53	P	Pn	20 59 00.5	-0.2
SVW2	Sparrevohn	1.99	284	P	Pn	20 59 00.1	-1.2
MCNL	McNeil River	2.04	224	P	Pn	20 59 02.1	0.0
CDD	Cape Douglas	2.05	211	P	Pn	20 59 02.3	+0.2
FOPK	Fourpeaked Vol	2.16	207	P	Pn	20 59 03.8	+0.1
PPLA	Purkeypile	2.23	353	P	Pn	20 59 05.0	+0.4
SCM	Sheep Creek Mo	2.36	59	P	Pn	20 59 06.3	-0.1
SCM				S	Sn	20 59 34.2	-0.2
HUR	Hurricane	2.48	21	P	Pn	20 59 09.2	+1.3
VLZ	Valdez	2.61	78	P	Pn	20 59 08.8	-0.8
KAHC	Katmai Hardscr	2.68	222	P	Pn	20 59 10.5	-0.2
CAST	Castle Rocks	2.75	355	P	Pn	20 59 11.6	+0.1
TRF	Thorofare Moun	2.84	12	P	Pn	20 59 12.9	0.0
KLU	Klutina	2.87	71	P	Pn	20 59 12.7	-0.6
KLU				S	Sn	20 59 45.3	-1.6
DIV	Divide	2.88	79	ePn	Pn	20 59 12.4	-1.0
DIV				eSn	Sn	20 59 45.9	-1.1
KTH	Kantishna Hill	2.89	6	P	Pn	20 59 14.0	+0.5
KDAK	Kodiak Island	2.96	190	P	Pn	20 59 28.4	+14
	7.7nm,0.3s,baz=44,slow=7.5,SNR=110						
KDAK				S	Sn	21 00 01.9	+13
	18nm,0.3s,baz=188,slow=18,SNR=6.8						
KDAK	Kodiak Island	2.96	190	P	Pn	20 59 13.5	-0.9
KVTA	Katmai Vly 10	2.98	221	P	Pn	20 59 14.9	+0.2
RND	Reindeer	3.02	24	P	Pn	20 59 15.5	+0.3
TT01	Tatalina	3.06	319	P	Pn	20 59 15.7	0.0
KCE	Katmai Mt Cerb	3.06	218	P	Pn	20 59 16.5	+0.7
KELA	Mount Kelaz	3.09	225	P	Pn	20 59 16.4	+0.2
DHY	Denali Highway	3.12	38	P	Pn	20 59 16.9	+0.3
DHY				S	Sn	20 59 52.8	-0.1
CHUM	Lake Minchumin	3.22	354	P	Pn	20 59 18.3	+0.4
CNTC	Contact Creek	3.27	224	P	Pn	20 59 19.0	+0.3
MCK	McKinley	3.30	21	P	Pn	20 59 19.6	+0.7
BPAW	Bear Paw Mtn.	3.43	5	P	Pn	20 59 20.7	-0.1
OHAK	Old Harbor	3.59	195	ePn	Pn	20 59 21.7	-1.2
OHAK				eSn	Sn	21 00 02.9	-1.1
PAX	Paxson	3.70	49	P	Pn	20 59 25.1	+0.7
GLB	Gilahina Butte	3.86	75	P	Pn	20 59 25.8	-0.8
PLK1	Peulik 1	3.87	224	P	Pn	20 59 27.0	+0.2
PS10	TAPS Pump St10	3.88	43	P	Pn	20 59 28.5	+1.6
WRH	Wood River Hil	4.13	22	P	Pn	20 59 30.1	-0.1
HDA	Harding Lake	4.30	28	P	Pn	20 59 33.3	+0.7
CCB	Clear Creek Bu	4.34	22	P	Pn	20 59 33.1	+0.1
MLY	Manley	4.37	5	P	Pn	20 59 33.8	+0.2

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
PS08	TAPS Pump Stn8	4.45	28	P	Pn	20 59 35.0	+0.4
COLA	College	4.54	21	P	Pn	20 59 35.9	+0.2
BALM	Baldy	4.54	82	P	Pn	20 59 34.7	-1.2
MDM	Murphy Dome	4.55	18	P	Pn	20 59 36.3	+0.3
DOT	Dot Lake	4.61	47	P	Pn	20 59 37.1	+0.2
ILAR	Eielson Array	4.63	26	P	Pn	20 59 37.6	+0.6
	5.9nm,0.3s,baz=210,slow=13,SNR=109						
ILAR				S	Sn	21 00 27.2	-2.3
	3.4nm,0.3s,baz=199,slow=16,SNR=5.6						
ILB	Eielson Array	4.63	26	P	Pn	20 59 37.1	+0.1
BCA3	Beaver Creek A	5.22	59	P	Pn	20 59 45.0	-0.1
EGAK	Eagle	6.31	45	ePn	Pn	20 59 59.6	-0.3
	9.4nm,0.5s						
COLD	Coldfoot	6.59	5	ePn	Pn	21 00 04.6	+0.8
	6.2nm,0.6s						
DAWY	Dawson	6.61	54	ePn	Pn	21 00 04.3	+0.3
	5.9nm,0.3s						
INK	Inuvik	10.87	38	P	Pn	21 01 01.5	-0.5
	0.1nm,0.3s,baz=239,slow=15,SNR=6.0						
YKA	Yellowknife Ar	17.54	68	P	Pn	21 02 28.8	+0.2
	0.0nm,0.3s,baz=277,slow=9.9,SNR=5.1						
SONM	Songino Array	54.94	306	P	P	21 07 53.4	+1.2
	1.0nm,0.6s,baz=40,slow=7.0,SNR=9.9						
ZALV	Zalesovo Beam	57.22	324	P	P	21 08 08.7	+0.5
	0.5nm,0.5s,baz=26,slow=7.2,SNR=3.3						
FINES	FINESS Array B	58.18	1	P	P	21 08 16.1	+1.3
	1.9nm,0.9s,baz=344,slow=6.2,SNR=4.3						
MKAR	Makanchi Array	64.32	322	P	P	21 08 55.5	-1.1
	0.1nm,0.4s,baz=46,slow=11,SNR=4.1						
AKASG	Malin Array Be	68.96	359	P	P	21 09 24.5	-1.4
	0.1nm,0.3s,baz=0.5,slow=5.9,SNR=3.1						

*ISCJB **03** 21:06:54.2±0.8,23.60S±0.07×66.99W±0.07,h196km, mb3.1/1,Error ellipse: s-maj=9.7km s-min=8.3km az=14.7*
*IDC **03** 21:06:56.2±2.9,23.47S×66.97W,h208km±44km,mb2.9/1, mb1 3.2/4,mb1mx3.0/26,mbtmp3.7/4,Error ellipse: s-maj=44.5km s-min=20.9km az=110.0*
*GUC **03** 21:06:57.4±0.5,23.41S×67.40W,h231km±14km,ML3.7*
ISC 03 21:06:55.0±1.1,**23.56S**±0.09×**67.00W**±0.08,**h196km,n8, σ1s07**/13,**3C-1D,Jujuy Province**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
PB06	IPOC Station P	2.52	289	⇑iP	Pn	21 07 40.3	+1.3
PB06				iS	Sn	21 08 13.4	+0.1
PB06				AML	AML	21 08 17.2	
	comp=N,112nm,0.7s						
PB04	IPOC Station P	3.15	292	⇓iP	Pn	21 07 47.5	+1.1
PB04				iS	Sn	21 08 25.5	-1.1
PB04				AML	AML	21 08 31.0	
	comp=N,138nm,0.4s						
PB10	IPOC Station P	3.27	270	⇑iP	Pn	21 07 48.6	+1.0
PB10				iS	Sn	21 08 27.4	-1.4
PB01	IPOC Station P	3.41	317	⇑iP	Pn	21 07 50.6	+1.2
PB01				iS	Sn	21 08 30.7	-1.3
PB01				AML	AML	21 08 35.8	
	comp=E,95nm,0.3s						
LPAZ	La Paz	7.31	351	P	Pn	21 08 40.8	+0.8
	comp=E,0.5nm,0.3s,baz=158,slow=6.7,SNR=8.2						
LPAZ				S	Sn	21 10 02.5	-0.7
	comp=E,0.1nm,0.3s,baz=72,slow=19,SNR=1.8						
PLCA	Paso Flores	17.38	189	P	Pn	21 10 45.6	-0.3
	comp=E,0.1nm,0.3s,baz=34,slow=11,SNR=2.9						
BDFB	Brasilia	19.52	70	P	P	21 11 07.7	-0.1
	comp=E,0.3nm,0.3s,baz=227,slow=6.1,SNR=5.1						
TORD	Torodi Ar. Bea	76.41	69	P	P	21 18 23.0	-0.3
	comp=E,0.2nm,0.4s,baz=256,slow=5.4,SNR=4.7						

IDC 03 21:09:00.6±2.7,**37.68N×143.16E,h0km,mb3.4**/3, **mb1 3.5**/4,**mb1mx3.1**/46,**mbtmp3.3**/4,**ML2.7**/1,**Error ellipse: s-maj=68.8km s-min=30.2km az=64.0,Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
MJAR	Matsushiro Arr	4.12	255	Pn	Pn	21 10 04.7	-0.1
	0.4nm,0.3s,baz=79,slow=14,SNR=4.3						
SONM	Songino Array	28.60	303	P	P	21 14 58.1	-0.4
	0.2nm,0.6s,baz=96,slow=5.9,SNR=2.2						
KURBB	Kurchatov Arra	46.70	308	P	P	21 17 31.0	0.0
	0.2nm,0.3s,baz=78,slow=7.7,SNR=2.6						
WRA	Warramunga Arr	57.91	190	P	P	21 18 54.5	0.0
	3.1nm,0.9s,baz=7.9,slow=7.4,SNR=4.1						

*ISCJB **03** 21:12:15.0±0.5,43.19N±0.02×75.27E±0.02,h1km±3km, Error ellipse: s-maj=4.3km s-min=2.1km az=161.6*
*NNC **03** 21:12:14.9±0.8,42.57N×75.52E,h0km,mb2.6,mpv2.3, Error ellipse: s-maj=6.4km s-min=2.8km az=144.0*
*KRNET **03** 21:12:15.2±0.1,43.18N×75.27E,h15km,mb2.4*
*KNET **03** 21:12:15.4±0.6,43.15N×75.24E,h18km±3km,ml1.8,Error ellipse: s-maj=4.6km s-min=2.7km az=31.0*
*SOME **03** 21:12:16.0,43.13N×75.27E,h15km*
ISC 03 21:12:15.1±0.9,**43.18N**±0.03×**75.28E**±0.01,**h16km**±8km, **n39,σ0s67**/78,**36C-17D,Lake Issyk-Kul region**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
TKM2	Tokmak 2	0.35	138	⇑iP	Pg	21 12 22.5	+0.1
	baz=137						
TKM2				⇑iS	Sg	21 12 27.6	+0.2
	baz=137						
TKM2	Tokmak 2	0.35	138	⇑P	Pg	21 12 22.4	0.0
	1.1nm,0.1s						
TKM2				⇑S	Sg	21 12 27.1	-0.3
	29nm,0.3s						
TKM2	Tokmak 2	0.35	138	⇓P	Pb	21 12 22.7	-0.3
	12nm,0.1s						
TKM2				⇑S	Sb	21 12 27.8	-0.5
	82nm,0.1s						
DGS	Degeres	0.37	80	eP	Pb	21 12 23.2	0.0
	14nm,0.2s						
DGS				eS	Sg	21 12 28.5	+0.7
	167nm,0.2s						
CHMS	Chumysh	0.43	245	⇑iP	Pg	21 12 23.5	-0.2
	baz=244						
CHMS				⇑iS	Sg	21 12 29.3	-0.2
	baz=244						
CHMS	Chumysh	0.43	245	⇑P	Pg	21 12 23.8	+0.1
	28nm,0.1s						
CHMS				⇑S	Sg	21 12 29.7	+0.2
	65nm,0.1s						
KST	Kastek	0.52	105	⇑iP	Pb	21 12 25.9	0.0
	6.9nm,0.2s						
KST				eS	Sb	21 12 33.4	+0.2
	62nm,0.2s						
KBK	Karagaybulak	0.58	205	⇑iP	Pb	21 12 26.9	+0.1
	baz=204						
KBK				⇑iS	Sb	21 12 34.9	+0.1
	baz=204						
KBK	Karagaybulak	0.58	205	⇓P	Pb	21 12 27.0	+0.2
	6.0nm,0.1s						
KBK				⇓S	Sb	21 12 35.2	+0.4
	94nm,0.3s						
USP	Ospenovka	0.58	279	⇓iP	Pg	21 12 25.9	-0.6
	baz=279						
USP				⇓iS	Sg	21 12 33.7	-0.5
	baz=279						
USP	Ospenovka	0.58	279	⇑P	Pg	21 12 26.2	-0.3
	16nm,0.1s						
USP				⇑S	Sg	21 12 34.0	-0.2
	42nm,0.2s						
FRU1	Bishkek	0.60	232	⇑iP	Pb	21 12 27.1	-0.1
	baz=232						
FRU1				⇑iS	Sb	21 12 35.7	+0.2
	baz=232						
AAK	Ala-Archa	0.79	227	⇓iP	Pb	21 12 30.0	-0.5
	baz=226						
AAK				⇓iS	Sg	21 12 40.9	-0.1
	baz=226						
AAK	Ala-Archa	0.79	227	⇑P	Pb	21 12 29.8	-0.8
	1.5nm,0.2s						
AAK				⇑S	Sb	21 12 40.2	-0.9
	12nm,0.3s						
AAK	Ala-Archa	0.79	227	⇑P	Pb	21 12 30.5	-0.1
	4.2nm,0.2s						
AAK				⇑S	Sg	21 12 41.1	+0.1
	25nm,0.3s						
BOOM	Boomskoye usch	0.84	145	⇓eP	Pg	21 12 31.5	0.0
	baz=144						
BOOM				⇓eS	Sg	21 12 43.2	+0.6
	baz=144						
MTBS	Maitube	0.84	93	eP	Pb	21 12 31.5	+0.1
	5.1nm,0.1s						
MTBS				eS	Sb	21 12 42.4	-0.1
	14nm,0.2s						
KUU	Kurty	1.05	47	eP	Pb	21 12 34.9	0.0
	8.2nm,0.1s						
KUU				eS	Sb	21 12 48.5	+0.1
	15nm,0.2s						
KZA	Kyzart	1.10	181	⇓iP	Pn	21 12 36.1	-0.1
	baz=181						
KZA				⇓iS	Sg	21 12 50.7	-0.2
	baz=181						
UCH	Uchtor	1.10	211	⇑iP	Pb	21 12 36.0	0.0
	baz=210						
UCH				⇑iS	Sg	21 12 50.7	-0.3
	baz=210						
UCH	Uchtor	1.10	211	⇓P	Pn	21 12 36.2	-0.1
	1.4nm,0.1s						
UCH				⇑S	Sg	21 12 50.8	-0.2
	18nm,0.1s						
KTBS	Karatobe	1.15	62	eP	Pb	21 12 36.9	+0.3
KTBS				eS	Sb	21 12 51.6	+0.2
ULHL	Ulahol	1.17	142	⇓iP	Pb	21 12 37.0	0.0
	baz=143						
ULHL				⇓iS	Sg	21 12 52.7	-0.4
	baz=143						
EKS2	Erkin-Say	1.22	245	⇑iP	Pn	21 12 37.4	-0.1
	baz=245						
EKS2				⇑iS	Sg	21 12 54.2	-0.3
	baz=245						
EKS2	Erkin-Say	1.22	245	⇑P	Pb	21 12 38.0	+0.3
	3.9nm,0.2s						
EKS2				⇑S	Sg	21 12 54.7	+0.3
	4.1nm,0.1s						
TNSS	Tian-Shan	1.23	96	eP	Pg	21 12 38.6	-0.2
	3.3nm,0.1s						
TNSS				eS	Sn	21 12 54.5	+0.1
	44nm,0.2s						
KNDC	Almaty	1.23	88	⇑P	Pb	21 12 38.3	+0.3
	3.5nm,0.2s						
KNDC				⇑S	Sg	21 12 55.3	+0.3
	16nm,0.7s						
MDOK	Medeo	1.29	90	eP	Pb	21 12 39.6	+0.5
	8.5nm,0.1s						
MDOK				eS	Sg	21 12 56.7	-0.2
	11nm,0.2s						
KOTS	Kotyrbulak	1.34	87	eP	Pg	21 12 40.8	-0.1
KOTS				eS	Sg	21 12 58.4	-0.1
CHKK	Chushkaly	1.43	61	eP	Pb	21 12 41.5	+0.2
	9.2nm,0.2s						
CHKK				eS	Sb	21 12 59.6	+0.2
	27nm,0.2s						
ARLS	Aral	1.49	209	⇓eP	Pb	21 12 42.5	0.0
	baz=208						
ARLS				⇓eS	Sg	21 13 03.3	0.0
	baz=208						
MRKS	Merke	1.57	255	eP	Pb	21 12 44.1	+0.4
	2.5nm,0.2s						
MRKS				eS	Sb	21 13 04.4	+1.1
	7.6nm,0.3s						
AML	Almayashu	1.57	229	⇑iP	Pb	21 12 44.1	+0.2
	baz=229						
AML				⇑iS	Sg	21 13 04.9	-0.8
	baz=229						
KDJ	Kajisay	1.75	126	⇑eP	Pg	21 12 48.2	-0.5
	baz=126						
KDJ				⇑eS	Sg	21 13 12.0	+0.5
	baz=126						
ARXS	Arharly	2.12	60	eP	Pb	21 12 52.8	-0.3
	1.8nm,0.3s						
ARXS				eS	Sb	21 13 19.1	-0.1
	23nm,0.4s						
MNAS	Manas	2.15	252	⇑eP	Pb	21 12 53.6	-0.1
	baz=252						
MNAS				⇑eS	Sb	21 13 21.6	+1.3
	baz=252						
MNAS	Manas	2.15	252	⇑Pn	Pb	21 12 54.9	+1.2
	1.5nm,0.7s						
MNAS				⇓Sn	Sb	21 13 20.9	+0.6
	2.8nm,0.5s						
SATY	Saty	2.29	92	eP	Pb	21 12 57.0	+0.9
	3.4nm,0.1s						
SATY				eS	Sg	21 13 26.9	-1.9
	11nm,0.2s						
KK31	Karatay Array	3.49	270	Pn	Pb	21 13 13.9	-2.5
	0.2nm,0.3s,baz=94,slow=18,SNR=15						
KK31				Sn	Sb	21 14 01.9	+3.4
	1.0nm,0.4s,baz=94,slow=30,SNR=11						

JMA 03 21:15:18.5±0.1,**37.71N×141.74E,h34km**±2km,**M3.9, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
JMM	Marumori	0.77	282	P	Pn	21 15 33.0	+0.1
JMM				S	Sn	21 15 42.8	-0.4
JFK	Kawauchi	0.77	244	P	Pn	21 15 32.9	-0.1
JFK				S	Sn	21 15 42.7	-0.7
JIO	Ouri	0.81	338	P	Pn	21 15 33.4	0.0
JIO				S	Sn	21 15 43.3	-0.9
ONAJ	Iwakimizuishiy	0.96	231	P	Pn	21 15 35.7	0.0
ONAJ				S	Sn	21 15 47.6	-0.6
JOU	Okura	1.07	308	P	Pn	21 15 37.8	+0.7
JOU				S	Sn	21 15 51.1	+0.2
JFT	Otama	1.13	261	P	Pb	21 15 39.0	-0.6
JFT				S	Sb	21 15 53.3	-0.7
JMK	Ichinoseki	1.31	342	P	Pn	21 15 40.8	+0.5
JYS	Shirataka	1.42	292	P	Pn	21 15 42.9	+1.0
JYS				S	Sb	21 16 01.4	-0.8
JYK	Kaneyama	1.62	318	P	Pn	21 15 45.4	+0.7
JFY	Yanaizu	1.65	260	P	Pn	21 15 46.2	+1.2
JFY				S	Sb	21 16 06.9	-1.8

IDC 03 21:18:45.2±3.2,**9.64S×154.11E,h0km,mb3.4**/4, **mb1 3.6**/4,**mb1mx3.4**/31,**mbtmp3.5**/4,**Error ellipse: s-maj=103.8km s-min=32.9km az=117.0, D'Entrecasteaux Islands region**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
WRA	Warramunga Arr	21.66	240	P	P	21 23 38.1	+0.6
	1.0nm,0.8s,baz=64,slow=9.9,SNR=5.4						
ASAR	Alice Springs	23.81	232	P	P	21 23 59.8	-0.2
	0.9nm,0.8s,baz=58,slow=9.6,SNR=6.8						
SONM	Songino Array	71.09	328	P	P	21 30 06.4	+0.9
	0.4nm,0.7s,baz=145,slow=5.4,SNR=4.5						
MKAR	Makanchi Array	84.81	319	P	P	21 31 21.5	-0.2
	0.4nm,0.8s,baz=109,slow=6.7,SNR=4.7						
TORD	Torodi Ar. Bea	152.74	280	PKPbc	PKPbc	21 38 44.2	-0.9
	0.2nm,0.6s,baz=57,slow=1.3,SNR=2.2						

*IDC **03** 21:27:10.8±1.2,36.35N×142.43E,h0km,mb3.6/6, mb1 3.7/7,mb1mx3.5/45,mbtmp3.5/7,ML3.2/1,MS4.2/1, Ms1 4.4/1,ms1mx3.4/64,Error ellipse: s-maj=33.1km s-min=22.5km az=68.0*
*ISCJB **03** 21:27:11.1±0.9,36.3N±0.1×142.4E±0.1,h15km,mb3.6/6, MS4.1/1,Error ellipse: s-maj=20.8km s-min=11.7km az=7.4*
ISC 03 21:27:13.1±1.2,**36.3N**±0.2×**142.4E**±0.1,**h15km,n9, σ0s54**/9,**mb3.5**/6,**Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
MJAR	Matsushiro Arr	3.37	275	Pn	Pn	21 28 04.8	-0.3
	2.6nm,0.3s,baz=92,slow=8.9,SNR=34						
MAT	Matsushiro	3.37	275	P	Pn	21 28 04.2	-1.0
MAT				eS	Sn	21 28 45.3	+0.4
SONM	Songino Array	28.81	305	P	P	21 33 11.2	+0.5
	0.6nm,0.7s,baz=109,slow=8.8,SNR=5.9						
CMAR	Chiang Mai Arr	42.08	257	LR	LR	21 55 28.2	
	comp=Z,260nm,18.7s,baz=355,slow=40						
ZALV	Zalesovo Beam	42.95	313	P	P	21 35 11.5	+0.3
	0.3nm,0.4s,baz=78,slow=9.0,SNR=2.3						
MKAR	Makanchi Array	45.14	303	P	P	21 35 28.9	0.0
	0.5nm,0.7s,baz=88,slow=9.1,SNR=7.4						
ILAR	Eielson Array	49.67	32	P	P	21 36 03.6	-0.3
	1.8nm,1.2s,baz=224,slow=7.6,SNR=4.4						
WRA	Warramunga Arr	56.49	189	P	P	21 36 54.6	0.0
	0.3nm,0.6s,baz=5.3,slow=6.9,SNR=5.8						
ASAR	Alice Springs	60.22	189	P	P	21 37 20.9	+0.3
	0.4nm,0.7s,baz=7.0,slow=8.4,SNR=4.1						

*ISCJB **03** 21:38:53.8±0.7,36.81N±0.04×27.54E±0.05,h13km,Error ellipse: s-maj=5.9km s-min=5.4km az=161.6*
*ISK **03** 21:38:53.7,36.84N×27.51E,h10km,MD2.7*
*DDA **03** 21:38:54.1,36.82N×27.39E,h7km,Md2.5*
*CSEM **03** 21:38:54.2±0.2,36.83N×27.51E,h12km,MD2.5,Error ellipse: s-maj=5.0km s-min=4.2km az=153.0*
ISC 03 21:38:53.9±0.9,**36.85N**±0.03×**27.55E**±0.03,**h13km,n17, σ0s88**/25,**Dodecanese Islands**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
BDRM	Kayabasi	0.23	339	iP	Pb	21 38 59.7	-0.3
BDRM				iS	Sb	21 39 03.6	-0.5
BDRM	Kayabasi	0.23	339	P	Pb	21 38 59.7	-0.3
BDRM				S	Sb	21 39 03.6	-0.5
BODT	Bodrum	0.29	318	ePG	Pg	21 38 59.7	-0.2
BODT				eSG	Sg	21 39 04.0	+0.1
BODT	Bodrum	0.29	318	ePg	Pg	21 38 59.7	-0.2
BODT				eSg	Sg	21 39 04.0	+0.1
NIS1	Nisyros Isl.	0.39	231	ePG	Pg	21 39 01.3	-0.3
NIS1				eSG	Sg	21 39 06.8	0.0
NIS1	Nisyros Isl.	0.39	231	ePg	Pg	21 39 01.3	-0.3
NIS1				eSg	Sg	21 39 06.8	0.0
YER	Yerkesik	0.65	64	ePG	Pb	21 39 07.6	+0.4
YER	Yerkesik	0.65	64	ePg	Pb	21 39 07.6	+0.4
TURN	Turunc	0.84	88	iP	Pg	21 39 07.2	-3.0
TURN				iS	Sg	21 39 17.7	-3.5
AYDN	Tasoluk	0.85	18	iP	Pn	21 39 11.7	0.0
AYDN				iS	Sn	21 39 25.1	+1.1
AYDN	Tasoluk	0.85	18	P	Pn	21 39 11.7	0.0
AYDN				S	Sn	21 39 25.1	+1.1
DALY	Dalyan (Mu˜la	0.89	92	ePG	Pb	21 39 11.7	+0.7
DALY	Dalyan (Mu˜la	0.89	92	ePg	Pb	21 39 11.7	+0.7
AYDB	Zeytinkoy-Aydi	1.13	14	ePN	Pg	21 39 15.8	+0.2
AYDB	Zeytinkoy-Aydi	1.13	14	ePn	Pg	21 39 15.8	+0.2
FETY	Fethiye	1.25	99	ePN	Pg	21 39 18.2	+0.3
FETY	Fethiye	1.25	99	ePn	Pg	21 39 18.2	+0.3

DJA 03 21:45:58.8±0.6,**10°S**±5°×**10°8E**±°,**h10km,M3.8**/10, **MLv3.8**/10,**South of Jawa**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
CMJI	Cimerak	2.31	23	P	Pn	21 46 36.0	-0.9
CISI	Cisompet, Garu	2.37	7	P	Pn	21 46 38.0	+0.2
CNJI	Cibinong	2.62	351	P	Pn	21 46 42.0	+0.7
CNJI				S	Sn	21 47 13.8	+0.6
KPJI	Karang Pucung	2.92	28	P	Pn	21 46 45.3	0.0
SKJI	Sukabumi	3.05	342	P	Pn	21 46 46.9	-0.3
LEM	Lembang	3.08	2	P	Pg	21 46 55.9	-1.9
UGM	Wanagama	3.57	56	P	Pn	21 46 54.1	-0.2
CGJI	Cibinong	3.75	331	P	Pn	21 46 56.8	0.0

SKHL 03 21:46:07.9±1.0,**43.27N×147.11E,h40km**±6km,**mb4.1**/3, **Kuril Islands**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
SHO	Shikotan	0.63	341	iP	Pn	21 46 19.2	-1.2
SHO				AMB	AMB	21 46 19.7	
	160nm,0.4s						
SHO				iS	Sn	21 46 28.2	-1.2
SHO				A	A	21 46 30.6	
	550nm,0.4s						
SHO				A	A	21 46 30.6	
	930nm,0.4s						
YUK	Yuzh-Kuril'sk	1.19	311	iP	Pn	21 46 30.3	+2.3
YUK				AMB	AMB	21 46 31.0	
	30nm,0.2s						
YUK				AMB	AMB	21 46 31.0	
	60nm,0.2s						
YUK				iS	Sn	21 46 47.1	+4.2
YUK				A	A	21 46 50.6	
	280nm,0.7s						
YUK				A	A	21 46 50.6	
	140nm,0.7s						
KUR	Kuril'sk	2.04	15	eP	Pn	21 46 40.0	+0.3
KUR				AMB	AMB	21 46 42.4	
	10.0nm,0.1s						
KUR				eS	Sn	21 47 03.2	-0.6
YSS	Yuzh-Sakhalins	4.80	322	eP	Pn	21 47 17.9	+0.3

DJA 03 21:49:22.2±0.8,**10°S**±8°×**10°8E**±°,**h10km,M3.8**/8,**mb3.9**/1, **MLv3.8**/8,**South of Jawa**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
CMJI	Cimerak	2.43	18	P	Pn	21 50 00.0	-2.0
CISI	Cisompet, Garu	2.54	3	P	Pn	21 50 01.9	-1.7
CNJI	Cibinong	2.84	349	P	Pn	21 50 07.8	+0.2
KPJI	Karang Pucung	3.02	24	P	Pn	21 50 10.5	+0.3
SKJI	Sukabumi	3.28	340	P	Pb	21 50 18.9	-1.6
UGM	Wanagama	3.56	52	P	Pn	21 50 17.5	0.0
PCJI	Pacitan	3.94	61	P	Pn	21 50 23.3	+0.5
CGJI	Cibinong	3.99	330	P	Pn	21 50 22.7	-0.8
KASI	Kota Agung	5.54	325	P	Pn	21 50 42.5	-2.3

*ISCJB **03** 21:50:28.6±0.4,39.49N±0.03×29.08E±0.04,h3km±8km, Error ellipse: s-maj=5.1km s-min=4.4km az=137.7*
*ISK **03** 21:50:28.7,39.49N×29.10E,h6km,MD2.6*
*DDA **03** 21:50:28.9,39.48N×29.04E,h7km,Md2.7*
*CSEM **03** 21:50:29.0±0.1,39.48N×29.09E,h8km,MD2.6,Error ellipse: s-maj=1.6km s-min=1.3km az=60.0*
ISC 03 21:50:28.9±1.0,**39.48N**±0.03×**29.08E**±0.02,**h8km**±11km, **n32,σ0s17**/40,**Turkey**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
TVSB	Tavsanli	0.29	96	ePG	Pg	21 50 34.8	0.0
TVSB				eSG	Sg	21 50 39.0	+0.2
TVSB	Tavsanli	0.29	96	ePg	Pg	21 50 34.8	0.0
TVSB				eSg	Sg	21 50 39.0	+0.2
DST	Dursunbey	0.38	289	ePG	Pg	21 50 36.7	+0.3
DST	Dursunbey	0.38	289	ePg	Pg	21 50 36.7	+0.3
DURS	Dursunbey	0.49	285	iP	Pg	21 50 38.4	0.0
DURS				iS	Sg	21 50 44.4	-0.4
DURS	Dursunbey	0.49	285	P	Pg	21 50 38.4	0.0
DURS				S	Sg	21 50 44.4	-0.4
GDZ	Gediz	0.50	142	iP	Pg	21 50 38.6	0.0
GDZ				iS	Sg	21 50 44.9	-0.2
GDZ	Gediz	0.50	142	P	Pg	21 50 38.6	0.0
GDZ				S	Sg	21 50 44.9	-0.2
DEMI	Demirci	0.52	213	iP	Pg	21 50 38.9	-0.2
DEMI				iS	Sg	21 50 46.2	+0.4
MDNY	Mudanya-Bursa	0.90	350	ePG	Pg	21 50 46.4	+0.1
MDNY	Mudanya-Bursa	0.90	350	ePg	Pg	21 50 46.4	+0.1
IZI	Iznik	0.91	19	ePG	Pg	21 50 46.5	+0.1
IZI	Iznik	0.91	19	ePg	Pg	21 50 46.5	+0.1
CAVI	Cavuskoy	0.93	39	ePG	Pg	21 50 46.8	0.0
CAVI	Cavuskoy	0.93	39	ePg	Pg	21 50 46.8	0.0
BALB	Balikesir	0.94	280	ePG	Pb	21 50 47.5	0.0
BALB	Balikesir	0.94	280	ePg	Pb	21 50 47.5	0.0
GEMT	Gemlik	0.96	5	ePG	Pg	21 50 47.3	0.0
GEMT	Gemlik	0.96	5	ePg	Pg	21 50 47.3	0.0
KCTX	Karacabey (Bur	0.96	325	ePG	Pb	21 50 47.7	-0.2
KCTX	Karacabey (Bur	0.96	325	ePg	Pb	21 50 47.7	-0.2
KULA	Kula-Manisa	1.02	199	ePG	Pb	21 50 48.8	-0.1
KULA	Kula-Manisa	1.02	199	ePg	Pb	21 50 48.8	-0.1
ADVT	Abdulvahap	1.08	28	ePG	Pg	21 50 49.6	0.0
ADVT	Abdulvahap	1.08	28	ePg	Pg	21 50 49.6	0.0
ARMT	Armutlu	1.10	351	ePN	Pg	21 50 50.0	0.0
ARMT	Armutlu	1.10	351	ePn	Pg	21 50 50.0	0.0
KHAL	Karahalli	1.15	164	iP	Pn	21 50 51.7	+0.3
KHAL				iS	Sb	21 51 06.5	+0.1
KHL	Karahalli	1.21	163	ePN	Pn	21 50 52.2	+0.1
KHL	Karahalli	1.21	163	ePn	Pn	21 50 52.2	+0.1
SHUT	Suhut-Afyon	1.47	129	ePN	Pb	21 50 56.5	-0.1
SHUT	Suhut-Afyon	1.47	129	ePn	Pb	21 50 56.5	-0.1

IDC 03 21:56:40.8±3.9,**3.90S×150.74E,h0km,mb3.0**/2, **mb1 3.4**/2,**mb1mx3.1**/41,**mbtmp3.1**/2,**Error ellipse: s-maj=164.2km s-min=46.7km az=115.0,New Ireland region**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
WRA	Warramunga Arr	22.58	224	P	P	22 01 42.0	-1.2
	0.4nm,0.6s,baz=49,slow=10,SNR=4.0						

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
ASAR	Alice Springs	25.51	218	P	P	22 02 12.1	+0.9
	0.2nm,0.5s,baz=61,slow=9.4,SNR=2.4						
TORD	Torodi Ar. Bea	148.07	289	PKPbc	PKPbc	22 16 28.8	-0.8
	0.8nm,0.8s,baz=84,slow=1.8,SNR=7.7						

IDC 03 22:02:43.0±2.2, 36.65N×140.43E, h0km, mb3.3/4, mb1 3.4/4, mb1mx3.2/68, mbtmp3.3/4, Error ellipse: s-maj=54.6km s-min=26.5km az=64.0, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
MJAR	Matsushiro Arr	1.79	267	Pn	Pn	22 03 14.7	-0.5
	0.9nm,0.3s,baz=90,slow=16,SNR=8.0						
MAT	Matsushiro	1.79	267	P	Pg	22 03 22.7	+5.4
MAT				eS	Sg	22 03 53.7	+13
SONM	Songino Array	27.35	305	P	P	22 08 30.2	+0.4
	0.7nm,0.8s,baz=97,slow=7.6,SNR=4.6						
ZALV	Zalesovo Beam	41.59	313	P	P	22 10 32.1	-0.3
	0.3nm,0.4s,baz=116,slow=13,SNR=2.4						
MKAR	Makanchi Array	43.65	302	P	P	22 10 48.8	-0.5
	0.1nm,0.5s,baz=82,slow=9.6,SNR=3.1						
WRA	Warramunga Arr	56.57	187	P	P	22 12 27.7	+0.2
	0.6nm,1.1s,baz=14,slow=7.5,SNR=3.1						

ISCJB 03 22:06:30.6±1.0, 36.9N±0.2×141.8E±0.1, h10km, mb3.5/7, Error ellipse: s-maj=23.6km s-min=10.9km az=167.2
IDC 03 22:06:30.6±1.1, 36.92N×141.87E, h0km, mb3.5/7, mb1 3.7/8, mb1mx3.4/68, mbtmp3.5/8, ML3.1/1, Error ellipse: s-maj=27.8km s-min=24.9km az=9.0
ISC 03 22:06:32.2±1.1, 36.9N±0.2×141.8E±0.1, h10km, n15, σ1.11s/10, mb3.5/7, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
MJAR	Matsushiro Arr	2.87	264	Pn	Pn	22 07 18.3	+0.4
	2.4nm,0.3s,baz=86,slow=15,SNR=8.8						
MAT	Matsushiro	2.87	264	P	Pn	22 07 18.1	+0.1
MAT				eS	Sn	22 07 51.2	-1.4
H11N2	WAKE ISLAND Hy	27.84	121	T	T	22 41 47.5	
	baz=314,slow=75,SNR=70						
H11N1	WAKE ISLAND Hy	27.85	121	T	T	22 41 42.6	
	baz=314,slow=75,SNR=73						
H11N3	WAKE ISLAND Hy	27.86	121	T	T	22 41 54.1	
	baz=314,slow=75,SNR=60						
SONM	Songino Array	28.09	304	P	P	22 12 25.1	+1.0
	0.3nm,0.6s,baz=91,slow=7.4,SNR=1.9						
H11S1	WAKE ISLAND Hy	28.55	123	T	T	22 42 38.5	
	baz=316,slow=76,SNR=35						
H11S3	WAKE ISLAND Hy	28.55	123	T	T	22 42 34.1	
	baz=316,slow=76,SNR=26						
H11S2	WAKE ISLAND Hy	28.57	123	T	T	22 42 39.7	
	baz=316,slow=76,SNR=31						
ZALV	Zalesovo Beam	42.21	312	P	P	22 14 25.4	+0.4
	0.3nm,0.3s,baz=108,slow=3.3,SNR=4.4						
MKAR	Makanchi Array	44.42	302	P	P	22 14 43.2	+0.1
	0.3nm,0.6s,baz=86,slow=11,SNR=4.6						
ILAR	Eielson Array	49.47	32	P	P	22 15 20.2	-2.0
	0.6nm,1.0s,baz=239,slow=7.0,SNR=2.8						
BVAR	Borovoye Array	50.87	312	P	P	22 15 33.2	+0.1
	0.6nm,0.6s,baz=275,slow=37,SNR=3.6						
WRA	Warramunga Arr	56.95	188	P	P	22 16 17.6	-0.1
	0.3nm,0.8s,baz=2.3,slow=7.6,SNR=3.3						
TXAR	Lajitas Array	90.00	53	P	P	22 19 33.4	+1.1
	0.3nm,0.6s,baz=36,slow=3.4,SNR=2.6						

SKHL 03 22:07:12.5±0.7, 54.16N×141.92E, h10km, mb4.2/2, Sakhalin Island

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
OKH	Okha	0.86	135	ePg	Pg	22 07 27.9	-1.1
OKH				AMB	AMB	22 07 29.4	
	400nm,0.4s						
OKH				eSg	Sg	22 07 38.2	-1.9
OKH				A	A	22 07 39.0	
	400nm,0.4s						
NKL	Nikolayevsk	1.25	217	ePg	Pg	22 07 37.2	+0.7
NKL				AMB	AMB	22 07 38.0	
	11nm,0.3s						
NKL				AMB	AMB	22 07 38.0	
	22nm,0.3s						
NKL				AMB	AMB	22 07 38.0	
	30nm,0.3s						
NKL				eSg	Sn	22 07 55.0	+2.1
NKL				A	A	22 07 57.0	
	40nm,0.4s						
NKL				A	A	22 07 57.0	
	170nm,0.4s						
EKMR	Ekimchan	5.45	262	eSg	Sg	22 10 15.5	+8.2
EKMR				A	A	22 10 25.5	
	8.0nm,0.8s						

IDC 03 22:12:14.9±2.9, 36.29N×142.43E, h0km, mb3.5/5, mb1 3.7/7, mb1mx3.5/56, mbtmp3.5/7, ML2.8/2, Error ellipse: s-maj=82.9km s-min=25.0km az=1.0
JMA 03 22:12:29.3±0.1, 36.81N×141.11E, h48km±1km, M3.7
JMA Felt I J1.
ISC 03 22:12:28.7±2.5, 36.83N±0.08×141.2E±0.1, h30km±11km, n15, σ0.78s/19, mb3.3/5, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
ONAJ	Iwakimizuishiy	0.43	310	P	Pn	22 12 38.9	0.0
ONAJ				S	Sn	22 12 45.5	-0.3
JHO	Hitachi	0.56	247	P	Pb	22 12 40.1	0.0
JHO				S	Sb	22 12 47.8	-0.1
JFK	Kawauchi	0.60	333	P	Pn	22 12 41.2	0.0
JFK				S	Sn	22 12 49.4	-0.6
JFT	Otama	0.98	315	P	Pb	22 12 47.0	-0.1
JFT				S	Sn	22 12 59.2	-0.2
JMM	Marumori	1.09	342	P	Pn	22 12 48.0	+0.1
JMM				S	Sn	22 13 01.6	-0.4
JFY	Yanaizu	1.34	296	P	Pn	22 12 51.9	+0.6
JAG	Ashikaga	1.47	255	P	Pn	22 12 52.8	-0.3
JAG				S	Sn	22 13 09.7	-1.7
MJAR	Matsushiro Arr	2.43	264	Pn	Pn	22 13 07.0	+0.6
	5.7nm,0.3s,baz=89,slow=16,SNR=44						
MAT	Matsushiro	2.43	264	P	Pn	22 13 07.0	+0.6
MAT				S	Sn	22 13 35.5	+0.4
USRK	Ussuriysk Ar.	10.17	319	Pn	Pn	22 14 57.6	+5.1
	0.1nm,0.3s,baz=130,slow=13,SNR=6.4						
SONM	Songino Array	27.77	304	P	P	22 18 16.7	+1.9
	0.3nm,0.4s,baz=103,slow=9.3,SNR=3.0						
ZALV	Zalesovo Beam	41.93	313	P	P	22 20 15.7	-0.7
	0.4nm,0.4s,baz=107,slow=8.0,SNR=2.7						
MKAR	Makanchi Array	44.09	302	P	P	22 20 33.4	-0.6
	0.2nm,0.6s,baz=92,slow=8.7,SNR=2.9						
YKA	Yellowknife Ar	64.07	30	P	P	22 22 48.8	-11
	0.1nm,0.7s,baz=306,slow=2.4,SNR=3.1						
TXAR	Lajitas Array	90.38	52	P	P	22 25 17.6	-10
	0.4nm,0.6s,baz=310,slow=3.4,SNR=4.0						

ATH 03 22:13:47.7, 34.20N×25.22E, h6km±3km, ML3.3/6, Error ellipse: s-maj=4.4km s-min=1.4km az=346.0
ISCJB 03 22:13:47.4±1.0, 34.10N±0.04×25.22E±0.04, h17km±6km, mb4.0/8, Error ellipse: s-maj=7.9km s-min=4.4km az=21.6
IDC 03 22:13:47.1±1.0, 34.27N×25.24E, h0km, mb3.8/8, mb1 3.9/14, mb1mx3.6/62, mbtmp3.7/14, ML3.6/6, Error ellipse: s-maj=18.4km s-min=16.9km az=23.0
ISK 03 22:13:47.5, 34.16N×25.26E, h5km, ML3.4
CSEM 03 22:13:48.6±0.4, 34.23N×25.17E, h2km, ML3.2, Error ellipse: s-maj=7.8km s-min=3.8km az=9.0
THE 03 22:13:49.2, 34.29N×25.25E, h0km±1km, ML3.2/10, Error ellipse: s-maj=3.9km s-min=1.0km az=169.0
ISC 03 22:13:47.8±1.6, 34.22N±0.05×25.25E±0.03, h4km±10km, n98, σ1.03s/128, mb4.0/8, Crete

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
SIVA	Sivas	0.88	336	ePG	Pb	22 14 05.9	+0.3
SIVA				eSG	Sn	22 14 19.4	-0.7
SIVA	Sivas	0.88	336	P	Pg	22 14 04.9	+0.3
SIVA				S	Sb	22 14 18.2	+0.6
SIVA	Sivas	0.88	336	P	Pg	22 14 04.9	+0.3
SIVA	Sivas	0.88	336	ePg	Pb	22 14 05.9	+0.3
SIVA				S	Sb	22 14 16.9	-0.7
SIVA				eSg	Sn	22 14 19.4	-0.7
SIVA	Sivas	0.88	336	P	Pb	22 14 05.4	-0.2
SIVA				S	Sb	22 14 16.9	-0.7
SIVA				AML	AML	22 14 21.0	
	comp=E,25377µm,0.5s						
SIVA				AML	AML	22 14 21.5	
	comp=N,22179µm,0.5s						
LAST	Lasithi	0.96	11	P	Pg	22 14 06.1	-0.1
LAST				S	Sb	22 14 20.5	+0.4
LAST	Lasithi	0.96	11	P	Pg	22 14 06.1	-0.1
LAST				S	Sb	22 14 20.5	+0.4
LAST	Lasithi	0.96	11	P	Pg	22 14 05.9	-0.3
NPS	Neapolis	1.08	16	P	Pg	22 14 08.1	-0.5
NPS				S	Sb	22 14 24.4	+0.8
NPS	Neapolis	1.08	16	P	Pg	22 14 08.1	-0.5
NPS				S	Sb	22 14 24.4	+0.8
NPS	Neapolis	1.08	16	P	Pg	22 14 07.9	-0.7
NPS				S	Sg	22 14 23.3	+0.7
NPS				AML	AML	22 14 27.6	
	comp=N,1032µm,0.3s						
NPS				AML	AML	22 14 38.4	
	comp=E,1743µm,0.7s						
IACM	Heraklion	1.10	352	P	Pn	22 14 09.8	-0.1
IACM	Heraklion	1.10	352	P	Pn	22 14 09.8	-0.1
IACM				AML	AML	22 14 36.3	
	comp=N,10084µm,0.8s						
IACM				AML	AML	22 14 36.8	
	comp=E,8261µm,0.6s						
IDI	Anoyia	1.11	345	Pn	Pg	22 14 08.7	-0.3
	comp=E,12nm,0.3s,baz=180,slow=10,SNR=99						
IDI				Sn	Sb	22 14 25.2	+0.8
	comp=E,107nm,0.3s,baz=213,slow=10,SNR=30						
IDI	Anoyia	1.11	345	P	Pg	22 14 08.6	-0.4
IDI				S	Sb	22 14 24.4	0.0
IDI	Anoyia	1.11	345	P	Pg	22 14 08.6	-0.4
IDI				S	Sb	22 14 24.4	0.0
GVD	Gavdhos	1.14	303	P	Pg	22 14 09.4	-0.3
GVD				S	Sn	22 14 27.7	+1.1
GVD	Gavdhos	1.14	303	P	Pg	22 14 09.4	-0.3
GVD				S	Sb	22 14 25.3	0.0
GVD	Gavdhos	1.14	303	P	Pg	22 14 09.6	-0.1
GVD				S	Sb	22 14 25.3	0.0
GVD				AML	AML	22 14 29.7	
	comp=E,4991µm,0.5s						
GVD				AML	AML	22 14 32.1	
	comp=N,5255µm,0.4s						
ZKR	Zakros	1.20	41	P	Pg	22 14 09.9	-0.8
ZKR				S	Sn	22 14 28.0	0.0
ZKR	Zakros	1.20	41	P	Pg	22 14 10.6	-0.2
ZKR				S	Sn	22 14 28.5	+0.5
ZKR	Zakros	1.20	41	P	Pg	22 14 10.6	-0.2
ZKR				S	Sn	22 14 28.5	+0.5
ZKR				AML	AML	22 14 37.0	
	comp=N,1536µm,1.2s						
ZKR				AML	AML	22 14 37.5	
	comp=E,2064µm,0.6s						
VAM	Vamos	1.47	324	P	Pn	22 14 14.8	-0.2
VAM				S	Sn	22 14 34.7	0.0
VAM	Vamos	1.47	324	P	Pn	22 14 14.8	-0.2
VAM				S	Sn	22 14 34.7	0.0
IMMV	Iera Moni Meta	1.62	320	P	Pn	22 14 17.3	+0.2
IMMV				S	Sn	22 14 38.6	+0.1
IMMV	Iera Moni Meta	1.62	320	P	Pn	22 14 17.3	+0.2
IMMV				S	Sn	22 14 38.6	+0.1
IMMV	Iera Moni Meta	1.62	320	P	Pn	22 14 16.6	-0.5
IMMV				AML	AML	22 14 43.6	
	comp=E,1413µm,0.5s						
IMMV				AML	AML	22 14 54.0	
	comp=N,1357µm,0.7s						
KARP	Karpathos	2.06	49	ePN	Pn	22 14 24.1	+1.0
KARP	Karpathos	2.06	49	ePn	Pn	22 14 24.1	+1.0
KARP	Karpathos	2.06	49	P	Pg	22 14 26.9	-0.3
KARP	Karpathos	2.06	49	P	Pg	22 14 26.9	-0.3
SANT	Santorini	2.15	4	ePN	Pb	22 14 26.3	-1.1
SANT	Santorini	2.15	4	ePn	Pb	22 14 26.3	-1.1
THR5	Thira Island,	2.20	2	ePN	Pn	22 14 26.5	+1.5
THR5	Thira Island,	2.20	2	ePn	Pn	22 14 26.5	+1.5
ANKY	Antikythira Is	2.29	316	P	Pb	22 14 30.2	+0.5
ANKY	Antikythira Is	2.29	316	P	Pb	22 14 30.2	+0.5
MHLO	Agia Marina, M	2.56	345	P	Pn	22 14 30.8	+0.8
MHLO	Agia Marina, M	2.56	345	P	Pn	22 14 30.8	+0.8
MHLO	Agia Marina, M	2.56	345	P	Pn	22 14 31.6	+1.5
KYTH	Kithira	2.74	319	P	Pn	22 14 33.2	+0.6
KYTH				S	Sn	22 15 06.0	-0.2
KYTH	Kithira	2.74	319	P	Pn	22 14 33.2	+0.6
KYTH				S	Sn	22 15 06.0	-0.2
KYTH	Kithira	2.74	319	P	Pn	22 14 34.9	+2.3
APE	Apeiranthos	2.85	4	ePN	Pn	22 14 35.8	+1.7
APE	Apeiranthos	2.85	4	P	Pn	22 14 34.6	+0.5
APE	Apeiranthos	2.85	4	P	Pn	22 14 34.6	+0.5
APE	Apeiranthos	2.85	4	ePn	Pn	22 14 35.8	+1.7
APE	Apeiranthos	2.85	4	P	Pb	22 14 37.5	-1.8
ARG	Arkhangelos	3.08	49	P	Pn	22 14 37.9	+0.7
ARG	Arkhangelos	3.08	49	P	Pn	22 14 39.5	+2.3
VLI	Veliai	3.13	324	P	Pn	22 14 39.5	+1.7
VLI	Veliai	3.13	324	P	Pn	22 14 38.8	+1.0
VLI	Veliai	3.13	324	P	Pn	22 14 38.8	+1.0
DID	Didima	3.67	334	P	Pn	22 14 45.4	+0.1
DID				S	Sn	22 15 29.4	+0.4
DID	Didima	3.67	334	P	Pn	22 14 45.4	+0.1
DID				S	Sn	22 15 29.4	+0.4
DALY	Dalyan (Mu˜la	3.80	46	ePN	Pn	22 14 48.9	+1.9
DALY	Dalyan (Mu˜la	3.80	46	ePn	Pn	22 14 48.9	+1.9
YER	Yerkesik	3.82	39	ePN	Pn	22 14 49.3	+2.0
YER	Yerkesik	3.82	39	P	Pn	22 14 48.4	+1.1
YER	Yerkesik	3.82	39	P	Pn	22 14 48.4	+1.1
YER	Yerkesik	3.82	39	ePn	Pn	22 14 49.3	+2.0
PYL	PYLOS	3.91	314	P	Pn	22 14 48.9	+0.3
PYL				S	Sn	22 15 35.3	+0.3
PYL	PYLOS	3.91	314	P	Pn	22 14 48.9	+0.3
PYL				S	Sn	22 15 35.3	+0.3
VLX	Vlachokerasia	3.92	324	P	Pn	22 14 47.9	-0.9
VLX	Vlachokerasia	3.92	324	P	Pn	22 14 47.9	-0.9
FETY	Fethiye	3.95	51	ePN	Pn	22 14 51.2	+2.0
FETY	Fethiye	3.95	51	ePn	Pn	22 14 51.2	+2.0
ITM	Ithomi	4.01	318	P	Pn	22 14 49.6	-0.3
ITM	Ithomi	4.01	318	P	Pn	22 14 49.6	-0.3
VILL	Villia	4.24	339	P	Pn	22 14 53.6	+0.4
VILL	Villia	4.24	339	P	Pn	22 14 53.6	+0.4
AYDB	Zeytinkoy-Aydi	4.29	29	ePN	Pn	22 14 56.1	+2.2
AYDB	Zeytinkoy-Aydi	4.29	29	ePn	Pn	22 14 56.1	+2.2
AMT	Artemida-Makis	4.38	320	P	Pn	22 14 55.1	0.0
AMT	Artemida-Makis	4.38	320	P	Pn	22 14 55.1	0.0
GLHS	Glhisar (BURDU	4.53	48	ePN	Pn	22 14 59.5	+2.2
GLHS	Glhisar (BURDU	4.53	48	ePn	Pn	22 14 59.5	+2.2
ELL	Elmali	4.56	55	ePN	Pn	22 14 59.2	+1.5
ELL	Elmali	4.56	55	ePn	Pn	22 14 59.2	+1.5
BCK	Bucak	5.41	52	ePN	Pn	22 15 11.9	+2.7
BCK	Bucak	5.41	52	ePn	Pn	22 15 12.0	+2.7
MMAI	Mount Meron Ar	8.55	95	Pn	Pn	22 15 52.0	-0.4
	comp=N,0.9nm,0.3s,baz=288,slow=12,SNR=9.4						
MMAI				Sn	Sn	22 17 27.5	-1.9
	comp=N,0.9nm,0.3s,baz=263,slow=21,SNR=4.1						
BRTR	Keskin Array B	8.67	48	Pn	Pn	22 15 55.6	+1.5
	comp=N,0.1nm,0.3s,baz=221,slow=13,SNR=6.9						
EIL	Elat	9.40	116	Pn	Pn	22 16 03.0	-1.0
	comp=N,0.9nm,0.3s,baz=294,slow=7.4,SNR=12						
STON	Ston	10.46	328	ePn	Pn	22 16 17.3	-1.2
STON				Sn	Sn	22 18 05.8	-10
KBZ	Khabaz	16.66	50	Pn	P	22 17 44.1	-0.4
	comp=N,0.1nm,0.3s,baz=229,slow=14,SNR=4.0						
AKASG	Malin Array Be	16.73	9	Pn	Pn	22 17 42.8	-0.1
	comp=N,1.1nm,0.3s,baz=202,slow=11,SNR=4.7						
GERES	GERESS Array B	16.95	333	Pn	P	22 17 47.1	-0.7
	comp=N,0.1nm,0.3s,baz=144,slow=10,SNR=11						
DAVOX	Davos/Dischmat	17.11	322	Pn	P	22 17 51.9	+2.2
	comp=N,0.1nm,0.3s,baz=177,slow=9.5,SNR=3.0						
ESDC	Sonseca Array	23.92	292	P	P	22 19 02.2	-0.6
	comp=N,1.7nm,0.9s,baz=82,slow=9.5,SNR=5.8						
ESDC	Sonseca Array	23.92	292	Pn	P	22 19 01.9	-0.9
	comp=N,16µm,0.1s,baz=6.0,slow=31,SNR=7.6						
FINES	FINESS Array B	27.25	1	P	P	22 19 31.8	-0.9
	comp=N,1.5nm,0.9s,baz=168,slow=14,SNR=3.7						
TORD	Torodi Ar. Bea	29.95	231	P	P	22 19 57.4	+0.2
	comp=N,0.8nm,0.4s,baz=32,slow=8.9,SNR=24						
ARCES	ARCESS Array B	35.37	0	P	P	22 20 43.7	-0.4
	comp=N,3.3nm,1.0s,baz=172,slow=8.1,SNR=3.0						
MKAR	Makanchi Array	44.24	56	P	P	22 21 58.2	+0.1
	comp=N,1.4nm,0.6s,baz=267,slow=7.7,SNR=25						
ZALV	Zalesovo Beam	45.60	46	P	P	22 22 08.2	-0.6
	comp=N,0.8nm,0.5s,baz=262,slow=8.7,SNR=5.6						
SONM	Songino Array	60.03	50	P	P	22 23 56.0	+0.3
	comp=N,0.4nm,0.4s,baz=291,slow=7.8,SNR=4.9						
YKA	Yellowknife Ar	78.37	342	P	P	22 25 49.1	+0.1
	comp=N,0.1nm,0.5s,baz=32,slow=5.5,SNR=3.3						

IDC 03 22:16:02.7±7.0, 7.13S×129.92E, h234km±76km, mb2.8/1, mb1 3.0/3, mb1mx2.7/48, mbtmp3.6/3, Error ellipse: s-maj=106.6km s-min=30.3km az=72.0, Banda Sea

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
WRA	Warramunga Arr	13.44	162	P	Pn	22 19 03.7	-0.9
	0.2nm,0.3s,baz=342,slow=10.0,SNR=5.1						
WRA				S	S	22 21 23.8	-10
	0.8nm,0.3s,baz=329,slow=24,SNR=9.3						
ASAR	Alice Springs	16.88	167	P	Pn	22 19 45.2	-0.8
	0.3nm,0.3s,baz=342,slow=11,SNR=13						
ASAR				S	S	22 22 48.4	0.0
	0.2nm,0.3s,baz=332,slow=14,SNR=5.5						
MKAR	Makanchi Array	68.29	327	P	P	22 26 38.5	0.0
	0.4nm,1.0s,baz=117,slow=8.1,SNR=4.8						

ISCJB 03 22:17:49.6±0.7, 42.51N±0.02×9.22W±0.05, h12km±3km, Error ellipse: s-maj=6.1km s-min=3.9km az=9.7
CSEM 03 22:17:50.6±0.3, 42.58N×9.20W, h10km, ML2.9/18, Error ellipse: s-maj=5.3km s-min=3.1km az=103.0
MDD 03 22:17:50.7±1.1, 42.61N×9.21W, h12km±7km, mbLg2.6/11, Error ellipse: s-maj=9.7km s-min=5.1km az=85.0, PRXIMO
INMG 03 22:17:51.8±1.3, 42.60N×9.19W, h0km, ML2.4, Error ellipse: s-maj=3.8km s-min=1.8km az=92.0
IGIL 03 22:17:51.9, 42.62N×9.26W, h11km, ML2.1
ISC 03 22:17:49.9±1.4, 42.60N±0.03×9.31W±0.05, h13km±9km, n94, σ1.44s/155, 2C-2D, Spain

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
EMAZ	Mazaricos	0.42	36	⇑Pg	Pg	22 17 58.4	0.0
	15nm,0.1s,SNR=18						
EMAZ				Lg	Lg	22 18 03.4	
	197nm,0.1s,SNR=7.9						
EMAZ	Mazaricos	0.42	36	Pg	Pg	22 17 58.4	0.0
	15nm,0.1s,SNR=18						
EMAZ				Lg	Lg	22 18 03.4	
	197nm,0.1s,SNR=7.9						
EAGO	Agolada(Pontev	0.93	77	⇑Pg	Pg	22 18 07.0	-0.8
	28nm,0.1s,SNR=18						
EAGO				Lg	Lg	22 18 19.1	
	67nm,0.1s,SNR=7.9						
EAGO	Agolada(Pontev	0.93	77	Pg	Pg	22 18 07.0	-0.8
	28nm,0.1s,SNR=18						
EAGO				Lg	Lg	22 18 19.1	
	67nm,0.1s,SNR=7.9						
PGAV	Gavieira, Arco	1.00	129	⇓iP	Pg	22 18 09.2	-0.1
PGAV				eS	Sg	22 18 21.8	-0.6
PGAV				A	A	22 18 24.8	
	71nm,0.8s						
PGAV	Gavieira, Arco	1.00	129	⇓iP	Pg	22 18 09.2	-0.1
PGAV				eS	Sg	22 18 21.8	-0.6
	71nm,0.8s						
ELOB	Lobios	1.19	128	Pg	Pb	22 18 12.3	0.0
	6.6nm,0.1s,SNR=46						
ELOB				Lg	Lg	22 18 27.0	
	40nm,0.2s,SNR=109						
ELOB	Lobios	1.19	128	Pg	Pb	22 18 12.3	0.0
	6.6nm,0.1s,SNR=46						
ELOB				Lg	Lg	22 18 27.0	
	40nm,0.2s,SNR=109						
PCAB	Cabril	1.31	133	eP	Pn	22 18 14.8	+0.9
PCAB				eS	Sb	22 18 31.5	+0.4
PCAB				A	A	22 18 35.4	
	65nm,0.3s						
PCAB	Cabril	1.31	133	Pg	Pn	22 18 14.8	+0.9
PCAB				Lg	Lg	22 18 31.5	
	32nm,0.3s						
PCAB	Cabril	1.31	133	eP	Pn	22 18 14.8	+0.9
PCAB				eS	Sb	22 18 31.5	+0.4
	65nm,0.3s						
PTO	Porto	1.56	160	ePn	Pn	22 18 19.0	+1.7
PTO				eSn	Sn	22 18 39.3	+2.0
PTO				A	A	22 18 41.7	
	49nm,0.1s						
PTO	Porto	1.56	160	Pn	Pn	22 18 19.0	+1.7
PTO				Sn	Sn	22 18 39.3	+2.0
	25nm,0.1s						
PTO	Porto	1.56	160	Pn	Pn	22 18 19.0	+1.7
PTO				eSn	Sn	22 18 39.3	+2.0
	49nm,0.1s						
POLO	Lamas de Olo	1.67	137	ePn	Pn	22 18 19.4	+0.4
POLO				eSg	Sb	22 18 42.7	+1.1
POLO				A	A	22 18 43.8	
	14nm,0.2s						
POLO	Lamas de Olo	1.67	137	ePn	Pn	22 18 19.4	+0.4
POLO				eSg	Sb	22 18 42.7	+1.1
	14nm,0.2s						
EPON	Pontenova	1.75	65	Pn	Pn	22 18 19.0	-0.9
	0.7nm,0.1s,SNR=7.9						
EPON				Pg	Pb	22 18 22.3	+0.5
	11nm,0.2s,SNR=60						
EPON	Pontenova	1.75	65	Pn	Pn	22 18 19.0	-0.9
	0.7nm,0.1s,SNR=7.9						
PVRL	Vila Real	1.78	138	ePg	Pn	22 18 22.6	+2.1
PVRL				eSg	Sg	22 18 46.5	-0.8
PVRL				A	A	22 18 48.2	
	30nm,0.1s						
PVRL	Vila Real	1.78	138	Pg	Pn	22 18 22.6	+2.1
PVRL				Lg	Lg	22 18 46.5	
	15nm,0.1s						
PVRL	Vila Real	1.78	138	Pg	Pn	22 18 22.6	+2.1
PVRL				eSg	Sg	22 18 46.5	-0.8
	30nm,0.1s						
ECAL	Calabor	2.02	108	Sn	Sn	22 18 48.4	-0.6
	6.3nm,0.1s,SNR=7.9						
ECAL				Lg	Lg	22 18 53.1	
	46nm,0.3s,SNR=18						
ECAL	Calabor	2.02	108	Sn	Sn	22 18 48.4	-0.6
	6.3nm,0.1s,SNR=7.9						
ECAL				Lg	Lg	22 18 53.1	
	46nm,0.3s,SNR=18						
PBRG	Braganca	2.07	112	ePn	Pn	22 18 24.9	+0.5
PBRG				eSg	Sg	22 18 54.9	-1.6
PBRG				A	A	22 18 58.1	
	23nm,0.6s						
PBRG	Braganca	2.07	112	Pn	Pn	22 18 24.9	+0.5
PBRG				Lg	Lg	22 18 54.9	
	12nm,0.6s						
PBRG	Braganca	2.07	112	Pn	Pn	22 18 24.9	+0.5
PBRG				eSg	Sg	22 18 54.9	-1.6
	23nm,0.6s						
PVIS	Viseu	2.17	150	ePg	Pb	22 18 29.1	+0.1
PVIS				eSg	Sb	22 18 57.3	+1.6
PVIS				A	A	22 19 02.8	
	17nm,0.2s						
PVIS	Viseu	2.17	150	Pg	Pb	22 18 29.1	+0.1
PVIS				Lg	Lg	22 18 57.3	
	8.4nm,0.2s						
PVIS	Viseu	2.17	150	Pg	Pb	22 18 29.1	+0.1
PVIS				eSg	Sb	22 18 57.3	+1.6
	17nm,0.2s						
MVO	Moncorvo	2.23	129	ePn	Pn	22 18 27.1	+0.5
MVO				eSg	Sg	22 19 00.1	-1.5
MVO				A	A	22 19 05.3	
	26nm,0.4s						
MVO	Moncorvo	2.23	129	Pn	Pn	22 18 26.7	+0.1
	0.3nm,0.2s,SNR=7.9						
MVO				Pg	Pb	22 18 32.2	+2.1
	1.1nm,0.1s,SNR=8.7						
MVO				Sn	Sn	22 18 52.6	-1.5
	3.8nm,0.2s,SNR=7.9						
MVO				Lg	Lg	22 18 59.2	
	16nm,0.2s,SNR=11						
MVO	Moncorvo	2.23	129	ePn	Pn	22 18 27.1	+0.5
MVO	Moncorvo	2.23	129	Pg	Pb	22 18 32.2	+2.1
	1.1nm,0.1s,SNR=8.7						
MVO				Sn	Sn	22 18 52.6	-1.5
	3.8nm,0.2s,SNR=7.9						
MVO				Lg	Lg	22 18 59.2	
	16nm,0.2s,SNR=11						
MVO				eSg	Sg	22 19 00.1	-1.5
	26nm,0.4s						
MTE	Manteigas	2.57	148	ePg	Pb	22 18 37.5	+1.6
MTE				eSn	Sn	22 19 02.6	+0.1
MTE				eSg	Sg	22 19 11.3	-1.3
MTE				A	A	22 19 15.6	
	25nm,0.5s						

MTE Manteigas 2.57 148 Pg Pb 22 18 37.5 +1.6
MTE Sn Sn 22 19 02.6 +0.1
MTE Lg Lg 22 19 11.3
12nm,0.5s
MTE Manteigas 2.57 148 Pg Pb 22 18 37.5 +1.6
MTE Sn Sn 22 19 02.6 +0.1
MTE eSg Sg 22 19 11.3 -1.3
25nm,0.5s
PCBR Castelo Branco 3.09 153 ePn Pn 22 18 39.5 +1.2
PCBR eSn Sn 22 19 14.7 -0.4
PCBR eSg Sg 22 19 28.9 -0.2
PCBR A A 22 19 37.4
6.3nm,0.5s
PCBR Castelo Branco 3.09 153 Pn Pn 22 18 39.5 +1.2
PCBR Sn Sn 22 19 14.7 -0.4
PCBR Lg Lg 22 19 28.9
3.2nm,0.5s
PCBR Castelo Branco 3.09 153 Pn Pn 22 18 39.5 +1.2
PCBR Sn Sn 22 19 14.7 -0.4
PCBR eSg Sg 22 19 28.9 -0.2
6.3nm,0.5s
EARI Arriondas 3.09 76 Pn Pn 22 18 38.7 +0.3
0.7nm,0.2s,SNR=7.9
EARI Pg Pb 22 18 47.0 +2.3
0.8nm,0.3s,SNR=11
EARI Sn Sn 22 19 15.2 -0.1
0.4nm,0.2s,SNR=7.9
EARI Lg Lg 22 19 27.6
2.3nm,0.2s
EARI Arriondas 3.09 76 Pn Pn 22 18 38.7 +0.3
0.7nm,0.2s,SNR=7.9
PMRV Marv??o 3.49 155 ePn Pn 22 18 44.7 +0.8
PMRV eSn Sn 22 19 24.3 -0.8
PMRV eSg Sg 22 19 41.6 -0.4
PMRV A A 22 19 45.0
5.8nm,0.6s
PMRV Marv??o 3.49 155 Pn Pn 22 18 44.7 +0.8
PMRV Sn Sn 22 19 24.3 -0.8
PMRV Lg Lg 22 19 41.6
5.8nm,0.6s
PMRV Marv??o 3.49 155 Pn Pn 22 18 44.7 +0.8
PMRV Sn Sn 22 19 24.3 -0.8
PMRV eSg Sg 22 19 41.6 -0.4
5.8nm,0.6s
EPLA Plasencia 3.52 135 Pn Pn 22 18 43.1 -1.2
0.2nm,0.1s,SNR=4.0
EPLA Pg Pb 22 18 54.4 +2.4
0.4nm,0.2s,SNR=4.0
EPLA Sn Sn 22 19 24.2 -1.6
1.0nm,0.2s,SNR=7.9
EPLA Lg Lg 22 19 41.3
3.5nm,0.3s,SNR=7.9
EPLA Plasencia 3.52 135 Pn Pn 22 18 43.1 -1.2
0.2nm,0.1s,SNR=4.0
EPLA Plasencia 3.52 135 Pg Pb 22 18 54.4 +2.4
0.4nm,0.2s,SNR=4.0
EPLA Sn Sn 22 19 24.2 -1.6
1.0nm,0.2s,SNR=7.9
EPLA Lg Lg 22 19 41.3
3.5nm,0.3s,SNR=7.9
PMTG Montargil 3.63 166 ePn Pn 22 18 46.1 +0.4
PMTG eSn Sn 22 19 27.5 -0.9
PMTG A A 22 19 44.5
3.1nm,0.7s
PMTG Montargil 3.63 166 ePn Pn 22 18 46.1 +0.4
PMTG eSn Sn 22 19 27.5 -0.9
3.1nm,0.7s
PMAFR Mafra 3.65 180 Sn Sn 22 19 26.1 -2.8
3.2nm,0.2s,SNR=7.9
PESTR Estremoz 3.96 160 ePn Pn 22 18 50.9 +0.6
PESTR eSn Sn 22 19 35.2 -1.3
PESTR eSg Sg 22 19 55.0 -1.9
PESTR A A 22 19 59.6
3.0nm,0.6s
PESTR Estremoz 3.96 160 Pn Pn 22 18 50.9 +0.6
PESTR Sn Sn 22 19 35.2 -1.3
PESTR Lg Lg 22 19 55.0
3.0nm,0.6s
PESTR Estremoz 3.96 160 Pn Pn 22 18 50.9 +0.6
PESTR Sn Sn 22 19 35.2 -1.3
PESTR eSg Sg 22 19 55.0 -1.9
3.0nm,0.6s
EBAD Badajoz 4.22 155 Pn Pn 22 18 54.2 +0.3
0.1nm,0.1s,SNR=6.8
EBAD Sn Sn 22 19 40.4 -2.7
1.0nm,0.2s,SNR=5.1
EBAD Lg Lg 22 20 03.2
1.0nm,0.1s
EBAD Badajoz 4.22 155 Pn Pn 22 18 54.2 +0.3
0.1nm,0.1s,SNR=6.8
EBAD Lg Lg 22 20 03.2
1.0nm,0.1s
GUD Guadarrama 4.34 115 Pn Pn 22 18 56.8 +1.2
1.7nm,0.3s,SNR=6.1
GUD Sn Sn 22 19 44.8 -1.3
0.9nm,0.3s,SNR=7.9
GUD Lg Lg 22 20 04.1
5.7nm,0.4s
GUD Guadarrama 4.34 115 Pn Pn 22 18 56.8 +1.2
1.7nm,0.3s,SNR=6.1
GUD Sn Sn 22 19 44.8 -1.3
0.9nm,0.3s,SNR=7.9
GUD Lg Lg 22 20 04.1
5.7nm,0.4s
ELAN Lanestosa 4.36 80 Pn Pn 22 18 56.6 +0.7
0.7nm,0.2s,SNR=6.6
ELAN Sn Sn 22 19 47.1 +0.5
1.0nm,0.4s,SNR=7.9
ELAN Lg Lg 22 20 07.6
0.2nm,0.1s
ELAN Lanestosa 4.36 80 Pn Pn 22 18 56.6 +0.7
0.7nm,0.2s,SNR=6.6
ELAN Sn Sn 22 19 47.2 +0.5
1.0nm,0.4s,SNR=7.9
ELAN Lg Lg 22 20 07.6
0.2nm,0.1s
PNCL Nicolau / Gran 4.53 172 ePn Pn 22 18 58.9 +0.8
PNCL eSn Sn 22 19 48.4 -2.2
PNCL Nicolau / Gran 4.53 172 ePn Pn 22 18 58.9 +0.8
PNCL eSn Sn 22 19 48.4 -2.2
PBEJ Beja 4.70 166 ePn Pn 22 19 01.4 +0.8
PBEJ eSn Sn 22 19 52.5 -2.5
PBEJ Beja 4.70 166 Pn Pn 22 19 01.4 +0.8
PBEJ Sn Sn 22 19 52.5 -2.5
PBEJ Beja 4.70 166 Pn Pn 22 19 01.4 +0.8
PBEJ eSn Sn 22 19 52.5 -2.5
PBAR Barrancos 4.75 158 eSn Sn 22 19 54.4 -1.8
PBAR A A 22 20 30.2
4.0nm,0.4s
PBAR Barrancos 4.75 158 Sn Sn 22 19 54.4 -1.8
4.0nm,0.4s
PBAR Barrancos 4.75 158 eSn Sn 22 19 54.4 -1.8
4.0nm,0.4s
MESJ Messejana 4.83 170 eP Pn 22 19 02.7 +0.4
MESJ eS Sn 22 19 54.2 -3.9
MESJ AML AML 22 19 55.7
comp=N,3.3nm,0.6s
MESJ Messejana 4.83 170 ePn Pn 22 19 02.7 +0.4
MESJ eSn Sn 22 19 54.5 -3.6
MESJ Messejana 4.83 170 Pn Pn 22 19 02.7 +0.4
MESJ Sn Sn 22 19 54.5 -3.6
MESJ Messejana 4.83 170 Pn Pn 22 19 02.7 +0.4
MESJ eSn Sn 22 19 54.5 -3.6
ESDC Sonseca Array 4.99 124 Sn Sn 22 20 00.2 -1.9
comp=N,1.3nm,0.3s,baz=318,slow=23,SNR=7.9
ESDC Lg Lg 22 20 24.0
comp=N,0.6nm,0.3s,baz=314,slow=28,SNR=5.9
ESDC Sonseca Array 4.99 124 Sn Sn 22 20 00.2 -1.9
comp=N,1.3nm,0.3s,SNR=7.9
ESDC Lg Lg 22 20 24.0
comp=N,0.6nm,0.3s,SNR=5.9
PCVE Castro Verde 5.06 168 ePn Pn 22 19 05.8 +0.3
PCVE Castro Verde 5.06 168 Pn Pn 22 19 05.8 +0.3
PCVE Castro Verde 5.06 168 Pn Pn 22 19 05.8 +0.3
PTEO Sao Teotonio 5.07 175 ePn Pn 22 19 06.3 +0.7
PTEO Sao Teotonio 5.07 175 Pn Pn 22 19 06.3 +0.7
PTEO Sao Teotonio 5.07 175 Pn Pn 22 19 06.3 +0.7
EMIN Mina Concepcio 5.24 156 Pn Pn 22 19 08.6 +0.7
comp=N,0.2nm,0.1s,SNR=7.9
EMIN Sn Sn 22 20 03.6 -4.5
comp=N,0.5nm,0.3s,SNR=7.9
EMIN Lg Lg 22 20 34.8
comp=N,0.9nm,0.3s,SNR=7.9
EMIN Mina Concepcio 5.24 156 Pn Pn 22 19 08.6 +0.7
comp=N,0.2nm,0.1s,SNR=7.9
EMIN Lg Lg 22 20 34.8
comp=N,0.9nm,0.3s,SNR=7.9
PVAQ Vaqueiros 5.34 166 ePn Pn 22 19 09.8 +0.6
PVAQ eSn Sn 22 20 07.3 -3.3
PVAQ Vaqueiros 5.34 166 Pn Pn 22 19 09.8 +0.6
PVAQ Sn Sn 22 20 07.3 -3.3
PVAQ Vaqueiros 5.34 166 Pn Pn 22 19 09.8 +0.6
PVAQ eSn Sn 22 20 07.3 -3.3
ECAB El Cabril 5.41 145 Pn Pn 22 19 10.1 -0.3
comp=N,0.1nm,0.2s,SNR=7.9
ECAB Sn Sn 22 20 08.7 -3.8
comp=N,0.8nm,0.4s,SNR=7.9
ECAB Lg Lg 22 20 39.3
comp=N,3.5nm,0.5s,SNR=7.9
ECAB El Cabril 5.41 145 Pn Pn 22 19 10.1 -0.3
comp=N,0.1nm,0.2s,SNR=7.9
ECAB Lg Lg 22 20 39.3
comp=N,3.5nm,0.5s,SNR=7.9
EADA Adamuz 5.72 139 Sn Sn 22 20 14.8 -5.2
comp=N,0.2nm,0.2s,SNR=7.9
EADA Lg Lg 22 20 49.9
comp=N,0.5nm,0.2s,SNR=7.9
EADA Adamuz 5.72 139 Lg Lg 22 20 49.9
comp=N,0.5nm,0.2s,SNR=7.9
IELO Elcoad 5.96 85 Pn Pn 22 19 18.3 +0.5
comp=N,0.2nm,0.2s,SNR=7.9
IELO Sn Sn 22 20 23.7 -2.2
comp=N,0.2nm,0.2s,SNR=4.0
IELO Lg Lg 22 20 59.5
comp=N,0.3nm,0.2s,SNR=4.0
IELO Elcoad 5.96 85 Pn Pn 22 19 18.3 +0.5
comp=N,0.2nm,0.2s,SNR=7.9
IELO Lg Lg 22 20 59.5
comp=N,0.3nm,0.2s,SNR=4.0
SESP Santiago Espad 6.84 129 Lg Lg 22 21 26.8
comp=N,1.3nm,0.4s,SNR=7.9
SESP Santiago Espad 6.84 129 Lg Lg 22 21 26.8
comp=N,1.3nm,0.4s,SNR=7.9
ETOB Tobarra 7.11 121 Lg Lg 22 21 33.5
comp=N,0.6nm,0.4s,SNR=4.0
ETOB Tobarra 7.11 121 Lg Lg 22 21 33.5
comp=N,0.6nm,0.4s,SNR=4.0

IDC 03 22:19:22.5±0.9, 35°.79N×143°.53E, h0km, mb3.5/8, mb1 3.7/9, mb1mx3.5/59, mbtmp3.5/9, ML3.2/1, Error ellipse: s-maj=27.5km s-min=21.4km az=65.0, Off east coast of Honshu

Code Station Name Δ° AZ° Phase ID Op ISC Time h m s Res ISC
MJAR Matsushiro Arr 4.37 281 Pn Pn 22 20 27.9 -2.2
1.3nm,0.3s,baz=90,slow=13,SNR=6.6
H11N2 WAKE ISLAND Hy 26.05 122 T T 22 52 10.3
H11N1 WAKE ISLAND Hy 26.05 122 T T 22 52 10.3
H11N3 WAKE ISLAND Hy 26.06 122 T T 22 52 10.3
H11S1 WAKE ISLAND Hy 26.75 124 T T 22 53 04.5
H11S3 WAKE ISLAND Hy 26.75 124 T T 22 53 04.5
H11S2 WAKE ISLAND Hy 26.77 124 T T 22 53 04.5
SONM Songino Array 29.89 305 P P 22 25 31.5 -0.5
0.3nm,0.5s,baz=98,slow=10,SNR=2.3
ZALV Zalesovo Beam 44.01 313 P P 22 27 27.5 -4.1
0.3nm,0.5s,baz=317,slow=37,SNR=2.3
MKAR Makanchi Array 46.23 303 P P 22 27 50.5 +1.2
0.3nm,0.8s,baz=93,slow=8.7,SNR=3.3
KURBB Kurchatov Arra 48.11 309 P P 22 28 04.9 +1.0
1.6nm,0.3s,baz=81,slow=8.1,SNR=4.2
BVAR Borovoye Array 52.67 313 P P 22 28 37.2 -1.2
0.6nm,0.8s,baz=254,slow=36,SNR=3.2
WRA Warramunga Arr 56.11 190 P P 22 29 03.3 -0.4
0.3nm,0.5s,baz=37,slow=2.2,SNR=3.9
ASAR Alice Springs 59.83 190 P P 22 29 30.2 +0.4
0.2nm,0.3s,baz=124,slow=38,SNR=3.0
YKA Yellowknife Ar 64.02 30 P P 22 29 57.9 +0.4
0.2nm,0.8s,baz=302,slow=7.7,SNR=2.8
TXAR Lajitas Array 89.50 54 P P 22 32 20.9 -1.1
0.2nm,0.4s,baz=245,slow=11,SNR=4.0

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*CSEM **03** 22:21:51.0±0.2, 76°.98N×18°.97E, h2km, ML3.2, Error ellipse: s-maj=8.8km s-min=4.3km az=60.0*
*IDC **03** 22:21:52.8±0.8, 77°.14N×19°.76E, h0km, mb3.2/1, mb1 3.6/5, mb1mx3.2/63, mbtmp3.6/5, ML3.3/4, Error ellipse: s-maj=19.0km s-min=7.5km az=69.0*
*NAO **03** 22:21:52.3±0.9, 76°.94N×18°.71E, h12km±9km, ML3.6*
*BER **03** 22:21:55.3±3.6, 76°.99N×18°.59E, h22km±21km, MD2.4, ML3.2, ML3.6(NAO)*
*KOLA **03** 22:22:00.4, 76°.43N×18°.63E, h0km*
ISC 03 22:21:51.8±1.1, 76°.92N±0°.03×18°.40E±0°.04, h16km±9km, n35, σ1s86/51, Svalbard region

Code Station Name Δ° AZ° Phase ID Op ISC Time h m s Res ISC
HSP Hornsund 0.65 279 Pg Pn 22 22 06.6 +0.3
HSP Lg Lg 22 22 16.1
HSPB Hornsund (broa 0.66 279 eP Pn 22 22 06.7 +0.4
HSPB eS Sn 22 22 16.1 -0.2
HSPB IAML 22 22 21.9
comp=Z,313nm,0.3s
HSPB Hornsund (broa 0.66 279 Pg Pn 22 22 06.6 +0.2
HSPB eS Sn 22 22 16.1 -0.2
SNR=62
SPA0 Spitsbergen Ar 1.34 342 Pn Pn 22 22 15.9 +0.1
baz=148,slow=18
SPA0 Pg Pg 22 22 16.9 -0.8
baz=152,slow=16
SPA0 Lg Lg 22 22 35.0
baz=156,slow=28
SPA0 Spitsbergen Ar 1.34 342 Pn Pn 22 22 15.9 +0.1
baz=148,slow=18
SPA0 Pg Pg 22 22 16.9 -0.8
baz=152,slow=16
SPA0 Lg Lg 22 22 35.0
baz=156,slow=28
SPA0 Spitsbergen Ar 1.34 342 Pn Pn 22 22 15.9 +0.1
SNR=62
SPA0 Spitsbergen Ar 1.34 342 Pg Pg 22 22 16.9 -0.8
SNR=95
SPA0 Lg Lg 22 22 35.0
SNR=27
SPITS Spitsbergen Ar 1.34 342 Pn Pn 22 22 16.0 +0.1
baz=147,slow=19,SNR=1480
SPITS Sn Sg 22 22 36.0 +0.9
baz=144,slow=39,SNR=18
BRBA Barentsburg A 1.47 324 Pn Pg 22 22 19.8 -0.2
SNR=62
BRBA Lg Lg 22 22 39.8
HOPEN Hopen 1.58 102 Pn Pn 22 22 19.2 +0.2
HOPEN Lg Lg 22 22 40.6
HOPEN Hopen 1.58 102 eP Pn 22 22 19.3 +0.2
HOPEN eS Sb 22 22 40.6 +0.4
HOPEN IAML 22 22 44.3
comp=Z,1μm,0.6s
HOPEN Hopen 1.58 102 Pn Pn 22 22 19.2 +0.2
HOPEN Lg Lg 22 22 40.6
KBS Kingsbay 2.43 329 Pn Pn 22 22 30.8 +0.1
KBS Pg Pg 22 22 36.4 -2.0
KBS Lg Lg 22 23 07.9
KBS Kingsbay 2.43 329 eP Pn 22 22 31.0 +0.2
KBS ePg Pg 22 22 37.7 -0.7
KBS eSg Sg 22 23 07.1 -2.8
KBS IAML 22 23 14.4
comp=Z,874nm,0.4s
KBS Kingsbay 2.43 329 eP Pn 22 22 31.0 +0.2
SNR=62
KBS Kingsbay 2.43 329 ePg Pg 22 22 37.7 -0.7
SNR=92
KBS Lg Lg 22 23 07.9
BJO Bjornoya 2.44 175 eP Pb 22 22 34.8 -0.4
BJO eSg Sg 22 23 10.9 +0.9
BJO IAML 22 23 19.9
comp=Z,222nm,0.7s
BJO Bjornoya 2.44 175 Pg Pg 22 22 37.7 -0.8
BJO Lg Lg 22 23 09.7
BJO eSg Sg 22 23 10.9 +0.9
SNR=92
BJO1 Bjornoya 2.44 176 Pg Pg 22 22 37.7 -0.7
BJO1 Lg Lg 22 23 09.7
HAMF Hammerfest 6.48 164 eP Pn 22 23 29.4 +3.1
HAMF eS Sn 22 24 36.1 -3.6
HAMF IAML 22 24 49.7
comp=Z,18nm,0.5s
HAMF Hammerfest 6.48 164 eP Pn 22 23 29.4 +3.1
SNR=57
ARA0 ARCESS Array S 7.69 161 Pn Pn 22 23 43.5 +0.6
baz=350,slow=11
ARA0 Sn Sn 22 25 04.7 -4.9
baz=1.2,slow=22
ARA0 ARCESS Array S 7.69 161 Pn Pn 22 23 43.5 +0.6
baz=350,slow=11
ARA0 Sn Sn 22 25 04.7 -4.9
baz=1.2,slow=22
ARA0 ARCESS Array S 7.69 161 Pn Pn 22 23 43.5 +0.6
SNR=62
ARCES ARCESS Array B 7.69 161 Pn Pn 22 23 45.9 +2.9
comp=Z,1.1nm,0.3s,baz=350,slow=11,SNR=21
ARCES Sn Sn 22 25 09.4 -0.1
comp=Z,2.2nm,0.3s,baz=354,slow=20,SNR=6.0
APA0 Apatity Array 10.31 147 Pn Pn 22 24 19.3 +0.6
baz=338,slow=12
APA0 Apatity Array 10.31 147 Pn Pn 22 24 19.3 +0.6
baz=338,slow=12
APA0 Apatity Array 10.31 147 P Pn 22 24 20.2 +1.5
APA0 S Sn 22 26 05.7 -8.0
APA0 Apatity Array 10.31 147 Pn Pn 22 24 19.3 +0.6
SNR=62
FIA0 FINESS Array S 15.76 166 P Pn 22 25 32.0 -0.7
baz=4.6,slow=14
FIA0 FINESS Array S 15.76 166 P Pn 22 25 32.0 -0.7
baz=4.6,slow=14
FINES FINESS Array B 15.76 166 Pn Pn 22 25 33.7 +1.0
comp=Z,0.1nm,0.3s,baz=8.5,slow=13,SNR=5.6
FINES Sn Sn 22 28 21.1 -5.6
comp=Z,0.2nm,0.3s,baz=350,slow=24,SNR=4.3
NOA NORSAR Array B 16.14 193 Pn P 22 25 43.5 +2.7
comp=Z,0.1nm,0.3s,baz=326,slow=21,SNR=2.5
HFS Hagfors 16.94 188 Pn P 22 25 51.7 +2.1
comp=Z,0.1nm,0.3s,baz=331,slow=12,SNR=4.1
MKAR Makanchi Array 39.07 102 P P 22 29 19.8 +2.3
comp=Z,0.2nm,0.7s,baz=335,slow=5.4,SNR=3.6

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*MOS **03** 22:24:01.8±0.6, 49°.99N×155°.01E, h233km, mb4.0/1, Error ellipse: s-maj=26.1km s-min=8.2km az=65.9*
*ISCJB **03** 22:24:03.0±0.6, 50°.3N±0°.1×154°.4E±0°.1, h200km, mb3.3/10, Error ellipse: s-maj=16.5km s-min=6.3km az=149.3*
*KRSC **03** 22:24:03.8±2.1, 49°.95N×155°.70E, h222km±15km, ML4.1*
*IDC **03** 22:24:05.7±2.4, 50°.50N×154°.36E, h208km±22km, mb3.2/9, mb1 3.3/10, mb1mx3.0/66, mbtmp3.7/10, Error ellipse: s-maj=23.7km s-min=15.7km az=170.0*
ISC 03 22:24:04.2±0.9, 50°.4N±0°.1×154°.6E±0°.1, h200km, n38, σ1s40/41, mb3.3/10, Kuril Islands

Code Station Name Δ° AZ° Phase ID Op ISC Time h m s Res ISC
SKR Severo-Kuril's 1.04 71 eP Pn 22 24 34.4 +0.2
SKR eS Sn 22 24 58.1 +0.7
SKR Severo-Kuril's 1.04 71 ePN Pn 22 24 33.7 -0.5
SKR eS Sn 22 24 57.0 -0.4
SKR pmax pmax
comp=Z,150nm,0.5s
SKR smax smax
comp=N,90nm,0.5s
SKR smax smax
comp=E,150nm,0.5s
PAU Pauzhetka 1.81 51 eS Sn 22 25 13.1 +4.0
ASAK Asacha 2.91 44 eP Pn 22 24 54.4 +1.6
ASAK Asacha 2.91 44 PN Pn 22 24 54.4 +1.6
MTVR Mutnovka 3.11 45 eS Sn 22 25 35.7 +0.6
RUS Russkaya 3.23 48 eP Pn 22 24 57.2 +0.7
RUS eS Sn 22 25 34.8 -2.7
RUS Russkaya 3.23 48 PN Pn 22 24 57.2 +0.7
RUS S Sn 22 25 34.8 -2.7
KRMR Karymshinskiy 3.33 40 eP Pn 22 24 58.0 +0.4
KRMR Karymshinskiy 3.33 40 PN Pn 22 24 58.0 +0.4
PETK Petropavlovsk- 3.38 34 P Pn 22 24 59.5 +1.3
comp=E,1.0nm,0.3s,baz=209,slow=13,SNR=9.8
PETK S Sn 22 25 47.4 +6.7
comp=E,0.4nm,0.3s,baz=268,slow=40,SNR=2.7
DALK Dalny 3.74 43 eP Pn 22 25 03.6 +1.0
DALK Dalny 3.74 43 PN Pn 22 25 03.6 +1.0
UGLR Uglovaya 3.89 41 eP Pn 22 25 06.2 +1.5
UGLR Uglovaya 3.89 41 PN Pn 22 25 06.2 +1.5
AVH Avacha 3.90 40 eP Pn 22 25 06.6 +1.9
AVH Avacha 3.90 40 PN Pn 22 25 06.6 +1.9
SMAR Somma 3.92 40 eP Pn 22 25 06.4 +1.3
SMAR Somma 3.92 40 PN Pn 22 25 06.4 +1.3
SDLR Sedlovina 3.97 41 eP Pn 22 25 06.5 +0.9
SDLR Sedlovina 3.97 41 PN Pn 22 25 06.5 +0.9
SPN Mys Shipunski 4.37 49 eP Pn 22 25 09.5 -0.9
SPN eS Sn 22 25 55.8 -6.8
SPN Mys Shipunski 4.37 49 PN Pn 22 25 09.5 -0.9
KBTR Krutoberegovo 7.67 37 eP Pn 22 25 53.1 +0.2
KBTR Krutoberegovo 7.67 37 PN Pn 22 25 53.1 +0.2
SHO Shikotan 8.36 222 PN Pn 22 26 00.3 -1.7
BKI Bering 8.45 51 eP Pn 22 26 01.5 -1.5
BKI eS Sn 22 27 28.3 -10
BKI Bering 8.45 51 PN Pn 22 26 01.5 -1.5
SONM Songino Array 31.21 284 P P 22 30 03.8 -0.9
comp=E,0.2nm,0.4s,baz=79,slow=7.8,SNR=2.4
ZALV Zalesovo Beam 41.37 303 P P 22 31 29.5 -0.8
comp=E,0.4nm,0.4s,baz=57,slow=5.3,SNR=2.9
MKAR Makanchi Array 46.22 295 P P 22 32 08.3 -0.7
comp=E,0.3nm,0.4s,baz=37,slow=5.9,SNR=7.2
KURK Kurchatov 46.24 301 P P 22 32 10.0 +1.0
KURK pmax pmax
comp=Z,1.0nm,0.2s
KURBB Kurchatov Arra 46.34 301 P P 22 32 09.9 +0.1
comp=Z,1.0nm,0.4s,baz=64,slow=8.3,SNR=6.7
YKA Yellowknife Ar 47.48 39 P P 22 32 18.4 0.0
comp=Z,0.4nm,0.6s,baz=298,slow=7.3,SNR=5.3
HFS Hagfors 65.41 340 P P 22 34 23.4 -1.5
comp=Z,0.8nm,0.7s,baz=71,slow=6.2,SNR=3.9
SCHQ Schefferville 69.62 24 P P 22 34 50.9 -0.4
comp=Z,3.6nm,0.8s,baz=8.2,slow=6.2,SNR=5.3
WRA Warramunga Arr 72.23 200 P P 22 35 08.1 +0.8
comp=Z,0.6nm,1.1s,baz=13,slow=7.7,SNR=2.3
TXAR Lajitas Array 74.92 62 P P 22 35 25.3 +2.1
comp=Z,0.3nm,0.5s,baz=218,slow=20,SNR=3.6

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*ISCJB **03** 22:28:32.2±0.5, 37°.43N±0°.04×72°.05E±0°.06, h130km, mb3.6/6, Error ellipse: s-maj=7.5km s-min=4.2km az=148.6*
*IDC **03** 22:28:34.5±3.4, 37°.38N×72°.08E, h163km±24km, mb3.4/6, mb1 3.5/12, mb1mx3.2/67, mbtmp3.9/12, Error ellipse: s-maj=38.0km s-min=14.4km az=154.0*
*NNC **03** 22:28:40.3±2.2, 37°.82N×71°.84E, h176km±30km, mb3.0, mpv3.9, Error ellipse: s-maj=30.4km s-min=17.0km az=67.0*
ISC 03 22:28:32.7±0.6, 37°.36N±0°.05×71°.97E±0°.06, h130km, n28, σ1s92/30, mb3.7/6, 7C-4D, Afghanistan-Tajikistan border region

Code Station Name Δ° AZ° Phase ID Op ISC Time h m s Res ISC
SFK Sufi-Kurgan 2.91 24 ⇑P Pn 22 29 22.8 +4.4
36nm,0.3s
SFK ⇑S Sn 22 29 57.6 +3.9
96nm,0.2s
MNAS Manas 5.14 4 ⇑P Pn 22 29 51.0 +3.2
11nm,0.5s
MNAS ⇓S Sn 22 30 45.7 -0.6
29nm,0.4s
AAK Ala-Archa 5.62 19 P Pn 22 29 57.2 +3.0
4.0nm,0.3s,baz=163,slow=6.8,SNR=89
AAK S Sn 22 30 58.0 +0.3
2.6nm,0.3s,baz=305,slow=22,SNR=14
AAK Ala-Archa 5.62 19 ⇑P Pn 22 29 57.0 +2.8
8.2nm,0.5s
AAK ⇑S Sn 22 30 57.6 -0.1
16nm,0.6s
THN Thein Dam 5.80 147 eP Pn 22 30 01.0 +4.5
THN eS Sn 22 31 04.6 +2.8
KK31 Karatay Array 5.85 349 ⇓P Pn 22 30 00.4 +3.2
1.7nm,0.2s,baz=160,slow=11,SNR=61
KK31 ⇓S Sn 22 31 01.4 -1.6
11nm,0.3s,baz=190,slow=25,SNR=7.0
GEYT Alibeck 11.00 277 P Pn 22 31 08.9 +2.5
1.0nm,0.3s,baz=118,slow=10,SNR=16
GEYT S Sn 22 33 09.5 +1.8
0.7nm,0.3s,baz=353,slow=37,SNR=3.7
MKAR Makanchi Array 12.14 36 P Pn 22 31 21.1 -0.3
0.0nm,0.3s,baz=212,slow=16,SNR=3.3
PYUN Piuthan 13.08 132 eP Pn 22 31 33.1 -0.7
19nm,0.4s
PYUN eS Sn 22 33 48.0 -10

KURBB	Kurchatov Arra	14.07	17	P	Pn	22 31 47.4	+1.3
	0.1nm,0.3s,baz=209,slow=9.5,SNR=3.3						
GKN	Gorkha	14.16	128	eP	Pn	22 31 47.3	-0.3
	21nm,0.4s						
KKN	Kakani	14.71	127	eP	Pn	22 31 54.3	-0.4
	26nm,0.6s						
DMN	Daman	14.73	128	eP	Pn	22 31 54.5	-0.4
	19nm,0.4s						
AB31	Akbulak array	14.74	328	P	Pn	22 31 55.2	+0.6
	3.2nm,0.5s,baz=147,slow=12,SNR=64						
AB31				⇑S	Sn	22 34 28.2	-10
	1.9nm,0.5s,baz=118,slow=24,SNR=8.1						
PKIN	Phulchoki	14.94	127	eP	Pn	22 31 58.1	+0.6
	24nm,0.6s						
GUN	Gumba	15.02	125	eP	Pn	22 31 58.9	+0.2
	29nm,0.4s						
BVAR	Borovoye Array	15.71	356	P	Pn	22 32 05.8	-0.9
	0.1nm,0.3s,baz=170,slow=13,SNR=4.9						
AKTO	Aktyubinsk	16.46	327	P	P	22 32 17.8	+1.6
	1.0nm,0.3s,baz=124,slow=10,SNR=17						
AKTO	Aktyubinsk	16.46	327	⇓P	P	22 32 16.6	+0.4
	2.1nm,0.4s						
AKTO				⇑S	Sn	22 35 13.2	-5.7
	2.7nm,0.7s						
TAPN	Taplejung	16.61	122	eP	P	22 32 18.8	+0.4
ODAN	Odare	16.72	124	eP	P	22 32 20.8	+1.2
	15nm,0.5s						
ZALV	Zalesovo Beam	18.82	24	P	P	22 32 40.9	-1.2
	0.5nm,0.3s,baz=217,slow=9.5,SNR=8.3						
SONM	Songino Array	27.21	56	P	P	22 34 03.0	-1.4
	0.2nm,0.4s,baz=258,slow=6.9,SNR=3.0						
ARCES	ARCESS Array B	40.66	337	P	P	22 35 59.7	0.0
	7.4nm,1.0s,baz=106,slow=8.5,SNR=3.0						
TORD	Torodi Ar. Bea	66.51	269	P	P	22 39 07.2	-1.6
	0.7nm,0.4s,baz=49,slow=5.6,SNR=22						
INK	Inuvik	72.94	10	P	P	22 39 44.9	-2.4
	0.6nm,0.4s,baz=7.8,slow=3.8,SNR=5.7						
ILAR	Eielson Array	73.74	16	P	P	22 39 49.7	-2.4
	0.2nm,0.5s,baz=304,slow=5.3,SNR=3.5						
YKA	Yellowknife Ar	80.35	3	P	P	22 40 26.5	-2.6
	0.6nm,0.4s,baz=351,slow=5.5,SNR=20						

IDC 03 22:29:38.0±1.7**, 6°.68S×128°.32E, h0km, mb3.3**/2**, mb1 3.5**/4**, mb1mx3.3**/49**, mbtmp3.3**/4**, ML3.2**/2**, Error ellipse: s-maj=195.2km s-min=29.1km az=69.0, Banda Sea**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	Warramunga Arr	14.42	157	Pn	Pn	22 33 04.8	+1.2
	0.1nm,0.3s,baz=332,slow=13,SNR=4.6						
WRA				Sn	Sn	22 35 30.1	-14
	0.3nm,0.3s,baz=98,slow=39,SNR=4.9						
ASAR	Alice Springs	17.72	163	P	Pn	22 33 45.4	-1.1
	0.1nm,0.3s,baz=337,slow=10,SNR=4.8						
SONM	Songino Array	57.63	343	P	P	22 39 29.6	-0.5
	0.3nm,0.8s,baz=160,slow=4.6,SNR=2.0						
MKAR	Makanchi Array	67.06	328	P	P	22 40 33.7	+0.5
	0.2nm,0.6s,baz=110,slow=8.8,SNR=3.1						

*IDC **03** 22:30:15.6±0.8, 36°.48N×143°.78E, h0km, mb3.7/12, mb1 3.9/16, mb1mx3.7/61, mbtmp3.7/16, ML3.5/4, Error ellipse: s-maj=21.4km s-min=17.9km az=164.0*
*ISCJB **03** 22:30:18.4±0.6, 36°.38N±0°.07×143°.68E±0°.07, h33km, mb3.7/12, Error ellipse: s-maj=10.9km s-min=7.1km az=152.8*
ISC 03 22:30:20.7±0.7**, 36°.45N**±0°.09×**143°.68E**±0°.08**, h35km, n25, σ1s27**/22**, mb3.7**/12**, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MJAR	Matsushiro Arr	4.41	273	Pn	Pn	22 31 24.3	-0.9
	2.8nm,0.3s,baz=84,slow=16,SNR=16						
MJAR				Sn	Sn	22 32 16.6	+1.2
	0.8nm,0.3s,baz=144,slow=19,SNR=5.9						
MAT	Matsushiro	4.41	273	P	Pn	22 31 24.1	-1.1
MAT				eS	Sn	22 32 12.1	-3.2
JHJ	Hachijo jima 2	4.62	225	Pn	Pn	22 31 27.1	-0.9
	12nm,0.3s,baz=77,slow=21,SNR=2.1						
JHJ				Sn	Sn	22 32 19.2	-1.2
	22nm,0.3s,baz=157,slow=22,SNR=3.4						
KSRS	Korea Array	12.65	279	Pn	Pn	22 33 19.8	+1.7
	0.2nm,0.3s,baz=93,slow=13,SNR=4.7						
KLR	Kul'dur	15.46	329	Pn	Pn	22 33 56.5	+0.5
	0.1nm,0.3s,baz=156,slow=7.0,SNR=3.9						
H11N2	WAKE ISLAND Hy	26.29	123	T	T	23 03 20.4	
	SNR=2.9						
H11N1	WAKE ISLAND Hy	26.30	123	T	T	23 03 11.5	
H11N3	WAKE ISLAND Hy	26.31	123	T	T	23 03 11.5	
H11S1	WAKE ISLAND Hy	27.02	125	T	T	23 04 05.8	
H11S3	WAKE ISLAND Hy	27.03	125	T	T	23 03 57.8	
	SNR=4.2						
H11S2	WAKE ISLAND Hy	27.04	125	T	T	23 04 05.8	
SONM	Songino Array	29.62	304	P	P	22 36 25.0	+2.3
	0.6nm,0.7s,baz=101,slow=9.6,SNR=4.1						
MKAR	Makanchi Array	45.97	303	P	P	22 38 40.8	+0.5
	0.3nm,0.7s,baz=78,slow=12,SNR=3.5						
KURBB	Kurchatov Arra	47.79	309	P	P	22 38 53.5	-0.9
	1.0nm,0.8s,baz=83,slow=8.0,SNR=7.2						
ILAR	Eielson Array	49.02	32	P	P	22 39 03.3	-0.4
	0.5nm,0.8s,baz=261,slow=7.2,SNR=4.5						
WRA	Warramunga Arr	56.78	191	P	P	22 40 01.1	-0.3
	1.0nm,0.9s,baz=12,slow=7.5,SNR=4.7						
YKA	Yellowknife Ar	63.39	31	P	P	22 40 45.6	-0.6
	0.4nm,0.8s,baz=299,slow=6.5,SNR=5.5						
STKA	Stephens Creek	68.00	182	P	P	22 41 17.3	+1.1
	1.7nm,0.8s,baz=336,slow=2.9,SNR=3.3						
NVAR	Mina Array Bea	73.87	54	P	P	22 41 52.2	-0.1
	0.2nm,0.3s,baz=4.2,slow=4.9,SNR=2.5						
NB2	NORSAR Subarra	75.41	338	P	P	22 41 59.2	-1.4
	comp=Z,1.6nm,0.8s,baz=38,slow=5.9						
NOA	NORSAR Array B	75.41	338	P	P	22 42 00.6	0.0
	comp=Z,1.3nm,0.8s,baz=38,slow=5.6,SNR=4.1						
AKASG	Malin Array Be	75.86	323	P	P	22 42 02.8	-0.4
	comp=Z,1.1nm,0.7s,baz=47,slow=5.1,SNR=3.9						
PDAR	Pinedale Array	76.76	46	P	P	22 42 08.6	-0.3
	comp=Z,0.2nm,0.6s,baz=67,slow=15,SNR=2.7						
TXAR	Lajitas Array	89.02	54	P	P	22 43 11.8	-0.6
	comp=Z,0.5nm,0.7s,baz=313,slow=5.1,SNR=3.5						
LPAZ	La Paz	145.38	63	PKPbc	PKPab	22 49 57.1	+0.9
	comp=Z,1.0nm,0.9s,baz=15,slow=9.5,SNR=3.8						

IDC 03 22:32:20.7±2.9**, 8°.72S×118°.54E, h0km, mb3.3**/3**, mb1 3.5**/4**, mb1mx3.3**/49**, mbtmp3.3**/4**, ML3.1**/1**, Error ellipse: s-maj=175.1km s-min=24.2km az=54.0, Sumbawa region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	Warramunga Arr	18.92	128	P	Pn	22 36 43.7	-0.1
	0.1nm,0.3s,baz=301,slow=12,SNR=3.8						
ASAR	Alice Springs	20.91	137	P	P	22 37 04.7	-0.3
	1.0nm,0.7s,baz=318,slow=13,SNR=9.8						
SONM	Songino Array	57.32	350	P	P	22 42 10.4	-0.2
	0.2nm,0.5s,baz=169,slow=7.7,SNR=1.9						
MKAR	Makanchi Array	64.00	333	P	P	22 42 56.1	+0.1
	0.1nm,0.4s,baz=146,slow=7.8,SNR=4.3						

*IDC **03** 22:34:39.7±2.0, 36°.74N×140°.75E, h0km, mb3.6/3, mb1 3.7/4, mb1mx3.3/59, mbtmp3.6/4, ML3.6/1, Error ellipse: s-maj=43.1km s-min=28.7km az=48.0*
*ISCJB **03** 22:34:41.5±0.7, 36°.76N±0°.03×140°.68E±0°.07, h17km±6km, mb3.5/3, Error ellipse: s-maj=9.5km s-min=4.6km az=25.3*
*JMA **03** 22:34:42.4, 36°.80N×140°.56E, h7km±1km, M3.4*
JMA Felt II J1.
ISC 03 22:34:41.9±1.0**, 36°.79N**±0°.03×**140°.57E**±0°.06**, h13km**±8km**, n13, σ0s74**/21**, mb3.6**/3**, 6C, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHO	Hitachi	0.18	180	⇑P	Pg	22 34 46.3	+0.2
JHO				eS	Sg	22 34 48.9	0.0
ONAJ	Iwakimizuishiy	0.36	30	⇑P	Pg	22 34 49.3	+0.1
ONAJ				S	Sg	22 34 54.4	+0.2
JSB	Shiboa	0.55	289	⇑P	Pb	22 34 53.5	0.0
JSB				eS	Sb	22 35 01.2	-0.1
JFK	Kawauchi	0.62	23	⇑P	Pg	22 34 53.9	-0.2
JFK				S	Sg	22 35 02.5	+0.1
JYT	Yasato	0.64	208	⇑P	Pg	22 34 54.5	+0.1
JYT				S	Sg	22 35 03.2	+0.4
JFT	Otama	0.75	346	P	Pg	22 34 56.5	0.0
JFT				S	Sg	22 35 06.3	-0.1
JFY	Yanaizu	0.93	312	P	Pg	22 35 00.0	+0.2
JAG	Ashikaga	0.97	248	⇑P	Pb	22 35 00.0	-0.6
MJAR	Matsushiro Arr	1.92	263	Pn	Pb	22 35 15.7	-1.1
	22nm,0.3s,baz=87,slow=15,SNR=88						
MJAR				Sn	Sb	22 35 40.9	+0.3
	16nm,0.3s,baz=76,slow=28,SNR=8.8						
MAT	Matsushiro	1.92	263	P	Pb	22 35 15.5	-1.3
MAT				S	Sb	22 35 40.5	-0.1
SONM	Songino Array	27.36	305	P	P	22 40 29.2	+2.3
	0.1nm,0.3s,baz=97,slow=7.4,SNR=2.1						
KURBB	Kurchatov Arra	45.62	308	P	P	22 43 01.4	-0.4
	0.5nm,0.3s,baz=93,slow=15,SNR=2.4						
WRA	Warramunga Arr	56.73	187	P	P	22 44 25.0	-0.5
	0.2nm,0.3s,baz=2.0,slow=8.2,SNR=7.6						

*NNC **03** 22:35:15.2±4.6, 31°.81N×70°.37E, h0km, mb3.8, mpv3.6, Error ellipse: s-maj=88.1km s-min=36.1km az=101.0*
ISC 03 22:35:12.3±3.3**, 31°.3N**±0°.2×**71°.0E**±0°.2**, h35km, n5, σ2s37**/11**, 6D, Pakistan**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
THN	Thein Dam	4.14	73	eP	Pn	22 36 12.7	-0.3
THN				eS	Sn	22 37 03.6	+3.4
SMLA	Simla	5.26	90	i P	Pn	22 36 29.3	+1.0
SMLA				i S	Sn	22 37 25.0	-2.7
SMLA				i S	Sn	22 37 26.1	-1.6
SMLA				AML	AML	22 37 31.2	
	comp=N,823nm,0.3s						
SMLA				AML	AML	22 37 31.6	
	comp=E,746nm,0.4s						
SFK	Sufi-Kurgan	8.93	12	⇓Pn	Pn	22 37 20.2	+1.3
	comp=E,0.9nm,0.3s						
SFK				⇓Sn	Sn	22 39 00.8	+2.5
	comp=E,2.3nm,0.4s						
MNAS	Manas	11.23	6	⇓Pn	Pn	22 37 50.4	0.0
	comp=E,2.2nm,0.8s						
MNAS				⇓Sn	Sn	22 39 52.0	-2.7
	comp=E,1.7nm,0.7s						
KK31	Karatay Array	11.79	358	⇓Pn	Pn	22 37 58.9	+1.0
	comp=E,0.3nm,0.3s,baz=180,slow=13,SNR=5.1						
KK31				⇓Sn	Sn	22 40 05.7	-2.5
	comp=E,1.0nm,0.6s,baz=183,slow=26,SNR=4.2						

*ISCJB **03** 22:48:03.2±1.0, 11°.7N±0°.2×87°.4W±0°.1, h48km, mb3.8/8, Error ellipse: s-maj=29.8km s-min=8.4km az=39.9*
*IDC **03** 22:48:07.1±2.5, 11°.82N×87°.36W, h65km±24km, mb3.6/8, mb1 3.8/11, mb1mx3.5/48, mbtmp3.9/11, ML3.1/3, Error ellipse: s-maj=39.0km s-min=14.1km az=51.0*
ISC 03 22:48:04.8±0.9**, 11°.8N**±0°.2×**87°.3W**±0°.2**, h48km, n14, σ1s35**/14**, mb4.0**/8**, Near coast of Nicaragua**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JTS	JuntasAbangare	2.73	122	P	Pn	22 48 50.2	+4.0
	2.8nm,0.3s,baz=312,slow=18,SNR=6.5						
JTS				S	Sn	22 49 16.4	-1.7
	16nm,0.3s,baz=238,slow=17,SNR=11						
CMIG	Matias Romero	9.05	307	P	Pn	22 50 12.8	-0.2
	0.7nm,0.3s,baz=124,slow=9.4,SNR=7.0						
SDV	Santo Domingo	16.65	98	P	P	22 51 58.1	+1.1
	0.2nm,0.3s,baz=279,slow=6.3,SNR=3.8						
TXAR	Lajitas Array	23.20	321	P	P	22 53 08.5	+0.8
	1.4nm,0.7s,baz=134,slow=9.4,SNR=9.3						
TKL	Tuckaleechee C	24.02	7	P	P	22 53 16.8	+1.6
	1.9nm,0.4s,baz=170,slow=13,SNR=5.4						
PDAR	Pinedale Array	36.45	332	P	P	22 55 05.7	+0.3
	0.3nm,0.6s,baz=106,slow=9.6,SNR=3.0						
SIV	San Ignacio	37.87	136	P	P	22 55 19.1	+1.7
	2.9nm,0.6s,baz=320,slow=9.7,SNR=9.3						
ULM	Lac du Bonnet	39.03	351	P	P	22 55 25.6	-1.1
	1.3nm,0.6s,baz=182,slow=12,SNR=2.8						
SCHQ	Schefferville	45.91	16	P	P	22 56 22.0	-0.6
	5.7nm,1.1s,baz=217,slow=8.8,SNR=4.2						
BDFB	Brasilia	47.47	124	P	P	22 56 35.3	-0.2
	3.8nm,0.7s,baz=252,slow=5.8,SNR=7.0						
YKA	Yellowknife Ar	54.32	345	P	P	22 57 25.4	-0.7
	0.1nm,0.5s,baz=139,slow=8.1,SNR=3.6						
ASAR	Alice Springs	139.13	247	PKP	PKPdf	23 07 27.1	-0.1
	0.2nm,0.6s,baz=183,slow=22,SNR=2.9						
WRA	Warramunga Arr	139.20	253	PKP	PKPdf	23 07 24.8	-2.6
	0.2nm,0.3s,baz=237,slow=32,SNR=3.0						
CMAR	Chiang Mai Arr	149.35	348	PKPbc	PKPbc	23 07 50.4	+0.9
	0.8nm,0.7s,baz=342,slow=3.4,SNR=6.1						

*IDC **03** 22:57:23.9±1.9, 44°.21N×142°.05E, h199km±19km, mb3.4/10, mb1 3.6/16, mb1mx3.3/47, mbtmp4.0/16, Error ellipse: s-maj=17.7km s-min=12.2km az=134.0*
*ISCJB **03** 22:57:24.6±0.3, 44°.15N±0°.04×141°.95E±0°.06, h226km±2km, mb3.5/10, Error ellipse: s-maj=7.1km s-min=6.2km az=35.5*
*JMA **03** 22:57:25.3±0.2, 44°.20N×141°.91E, h225km±2km, M3.6*
ISC 03 22:57:25.6±0.6**, 44°.13N**±0°.05×**141°.95E**±0°.05**, h223km**±5km**, n37, σ0s94**/55**, mb3.5**/10**, Hokkaido region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JSS	Shosan	0.28	345	P	Pn	22 57 54.9	+0.2
JSS				eS	S	22 58 17.5	-0.1
JHR	Hokuryu	0.42	203	P	Pn	22 57 55.7	+0.6
JHR				eS	S	22 58 18.9	+0.8
ASAJ	Asahikawa	0.47	92	P	Pn	22 57 55.3	+0.1
ASAJ				eS	S	22 58 18.0	-0.3
JYG	Yagishiri	0.48	308	P	Pn	22 57 55.0	-0.1
JYG				eS	S	22 58 17.8	-0.6
JKK2	Kamakawa 2	0.63	114	P	Pn	22 57 56.3	+0.5
JKK2				eS	S	22 58 19.6	+0.2
JAB	Ashibetsu	0.66	162	P	Pn	22 57 56.6	+0.6
JAB				eS	S	22 58 20.4	+0.8
JSE	Soyaes	0.94	29	P	Pn	22 57 56.8	-0.4
JSE				eS	S	22 58 20.9	-1.2
JFR	Furan	1.08	154	P	Pn	22 57 58.5	+0.3
JWK2	Keihoku	1.18	358	P	Pn	22 57 58.3	-0.5
JWK2				eS	S	22 58 23.5	-1.4
JSK	Shakotan	1.32	234	P	Pn	22 57 59.9	0.0
JSK				eS	S	22 58 26.4	-0.1
JEW	Eniwo	1.34	196	P	Pn	22 58 00.9	+0.8
JEW				eS	S	22 58 28.1	+1.2
JTKR	Abashiri--Toko	1.42	96	P	Pn	22 58 01.6	+1.0
JTKR				eS	S	22 58 29.0	+1.1
JAR	Ashorobuto	1.56	122	P	Pn	22 58 03.0	+1.2
JCH	Churui	1.83	145	P	Pn	22 58 03.7	-0.6
JCH				eS	S	22 58 32.5	-1.8
JNBK	Urakawa-nobuka	1.94	162	P	Pn	22 58 06.1	+0.8
JAK	Akkeshi	2.30	119	eS	S	22 58 41.7	-0.6
JKB	Kayabe	2.34	197	P	Pn	22 58 09.0	-0.3
JKB				eS	S	22 58 41.5	-1.8
JOSM	Okushiri--Mats	2.74	222	P	Pn	22 58 13.2	-0.3
JOT	Ohata	2.83	194	P	Pn	22 58 14.1	-0.4
JOT				eS	S	22 58 50.6	-2.1
NEM2	Nemuro 2	2.85	104	P	Pn	22 58 14.4	-0.3
NEM2				eS	S	22 58 51.1	-2.0
USRK	Ussuriysk Ar.	7.16	274	P	Pn	22 59 07.2	-0.8
	1.4nm,0.3s,baz=85,slow=14,SNR=30						
MJAR	Matsushiro Arr	8.10	202	P	Pn	22 59 20.1	-0.1
	1.2nm,0.3s,baz=7.2,slow=14,SNR=10						
KLR	Kul'dur	8.66	310	P	Pn	22 59 25.8	-1.5
	0.3nm,0.3s,baz=116,slow=14,SNR=20						
KSRS	Korea Array	12.54	243	P	Pn	23 00 15.9	-0.6
	0.2nm,0.3s,baz=52,slow=14,SNR=7.0						
PETK	Petropavlovsk-	13.73	44	P	P	23 00 32.3	-0.4
	0.9nm,0.3s,baz=218,slow=8.4,SNR=10						
MA2	Magadan	16.37	16	P	P	23 01 01.5	-0.3
	0.7nm,0.3s,baz=225,slow=11,SNR=7.7						
SEY	Seymchan	19.78	14	P	P	23 01 36.4	-2.2
	1.3nm,0.3s,baz=192,slow=7.2,SNR=16						
SONM	Songino Array	24.84	291	P	P	23 02 29.4	+1.8
	0.5nm,0.3s,baz=84,slow=8.4,SNR=9.2						
ZALV	Zalesovo Beam	37.75	306	P	P	23 04 20.2	+0.5
	0.6nm,0.4s,baz=92,slow=8.6,SNR=3.7						
ZALV				PcP	PcP	23 06 32.1	+0.5
	0.3nm,0.3s,baz=96,slow=6.0,SNR=2.7						
MKAR	Makanchi Array	41.05	295	P	P	23 04 48.5	+1.3
	0.7nm,0.6s,baz=83,slow=8.5,SNR=6.9						
MKAR				PcP	PcP	23 06 42.4	+0.1
	0.1nm,0.4s,baz=195,slow=23,SNR=2.7						
ILAR	Eielson Array	43.40	36	P	P	23 05 05.8	+0.1
	1.0nm,0.6s,baz=282,slow=9.3,SNR=13						
INK	Inuvik	47.96	30	P	P	23 05 40.9	-0.4
	1.6nm,0.5s,baz=291,slow=6.1,SNR=14						
RES	Resolute Bay	55.64	16	P	P	23 06 37.2	-0.6
	2.0nm,0.6s,baz=299,slow=6.7,SNR=11						
YKA	Yellowknife Ar	57.53	32	P	P	23 06 51.4	+0.2
	1.0nm,0.6s,baz=305,slow=6.8,SNR=17						
YKA				PcP	PcP	23 07 42.1	+0.1
	0.2nm,0.7s,baz=46,slow=4.0,SNR=3.5						
FINES	FINESS Array B	62.77	331	P	P	23 07 26.4	-0.3
	4.6nm,1.1s,baz=46,slow=5.5,SNR=3.4						
ASAR	Alice Springs	67.87	188	P	P	23 08 01.1	+1.2
	0.6nm,0.6s,baz=5.1,slow=4.6,SNR=7.8						
PDAR	Pinedale Array	72.46	47	P	P	23 08 28.9	+1.0
	0.1nm,0.3s,baz=298,slow=1.9,SNR=3.3						

MEX 03 23:02:11.5±0.3**, 14°.66N×92°.59W, h73km**±10km**, MD3.5, Near coast of Chiapas**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PCIG		1.21	330	eP	Pn	23 02 31.7	-1.0
PCIG				eS	Sn	23 02 46.2	-2.4
CCIG	Comitan	1.67	15	eP	Pn	23 02 37.8	-1.3
CCIG				eS	Sn	23 02 58.4	-1.4

*ISCJB **03** 23:03:18.3±1.1, 2°.62N±0°.03×79°.73W±0°.02, h28km±8km, mb4.8/177, MS3.9/4, Error ellipse: s-maj=4.5km s-min=3.1km az=26.1*
*RSNC **03** 23:03:19.1±0.6, 2°.61N×79°.76W, h32km±999km, ML4.0*
*NEIC **03** 23:03:21.3±0.5, 2°.54N×79°.76W, h39km±4km, mb4.8/158, Error ellipse: s-maj=4.3km s-min=3.0km az=217.0*
*IDC **03** 23:03:23.0±1.9, 2°.62N×79°.72W, h53km±16km, mb4.2/26, mb1 4.4/30, mb1mx4.4/33, mbtmp4.5/30, ML3.4/5, MS3.9/5, Ms1 3.9/5, ms1mx3.5/38, Error ellipse: s-maj=14.3km s-min=9.7km az=54.0*
ISC 03 23:03:20.6±0.3**, 2°.58N**±0°.04×**79°.78W**±0°.05**, h34km**±4km**, n462, σ1s16**/495**, mb4.8**/177**, MS3.9**/4**, 1C, South of Panama**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TUMC	Tumaco	1.29	126	⇑iP	Pn	23 03 40.1	-2.2
TUMC				eS	Sn	23 03 56.5	-1.9
TUMC				i		23 04 05.1	
	comp=Z,5µm,0.6s						
GRGC	Isla de Gorgon	1.66	75	eP	Pn	23 03 44.4	-2.9
GRGC				eS	Sn	23 04 04.6	-2.9
GRGC				i		23 04 06.3	
	comp=Z,477nm,0.2s						
CMBC	Cumbal	2.54	130	eP	Pn	23 03 57.3	-2.6
OTAV	Otavalo	2.68	150	ePn	Pn	23 03 58.7	-3.1
OTAV	Otavalo	2.68	150	eP	Pn	23 03 59.1	-2.7
OTAV				eS	Sn	23 04 31.4	-1.9
OTAV				i		23 04 46.1	
	comp=Z,185nm,0.6s						
MALC	Bahia Malaga	2.82	60	eS	Sn	23 04 33.5	-2.6
CRUC	La Cruz	3.00	110	eP	Pn	23 04 05.8	-0.3
POPC	Popayan, Colom	3.10	91	eP	Pn	23 04 05.5	-1.9
POPC				eS	Sn	23 04 41.4	-2.0
POPC				i		23 04 47.8	
	comp=Z,508nm,0.2s						
FLOC	Florencia	4.24	103	eP	Pn	23 04 22.8	-0.1
TOLC	Tolima	4.87	66	eP	Pn	23 04 31.8	-0.1
PRAC	Prado	5.01	77	eP	Pn	23 04 33.5	-0.1
GUYC	Guyana, Colomb	5.10	59	eP	Pn	23 04 33.8	-1.4
GUYC				eS	Sn	23 05 30.3	-2.9
GUYC				i		23 05 41.9	
	comp=Z,90nm,0.5s						
HELC	Santa Helena	5.55	50	eP	Pn	23 04 39.6	-1.6
HELC				eS	Sn	23 05 41.3	-2.7
HELC				i		23 05 50.3	
	comp=Z,25nm,0.8s						
DBBC	Dabeiba	5.66	39	eP	Pn	23 04 42.5	0.0
NORC	Norcasia	5.72	59	eP	Pn	23 04 43.5	+0.2
ROSC	El Rosal	5.89	67	P	Pn	23 04 47.5	+1.7
	comp=Z,5.8nm,0.3s,baz=220,slow=5.9,SNR=52						
ROSC				S	Sn	23 05 55.4	+3.0
	comp=Z,1.5nm,0.3s,baz=204,slow=20,SNR=1.7						
ROSC				LR	LR	23 07 22.5	
	comp=Z,1µm,20.1s,baz=258,slow=41						
ROSC	El Rosal	5.89	67	ePn	Pn	23 04 47.0	+1.2
ROSC				S	Sn	23 05 55.4	+3.0
CHIC	Chingaza	6.37	71	i P	Pn	23 04 52.8	+0.4
BCIP	Isla Barro Col	6.54	359	ePn	Pn	23 04 56.4	+1.9
BCIP	Isla Barro Col	6.54	359	eP	Pn	23 04 52.1	-2.4
BARC	Barichara	7.69	59	eP	Pn	23 05 10.4	-0.1
GIRC	Giron, Santand	7.94	56	eP	Pn	23 05 14.3	+0.5
PAMC	Pamplona, Colo	8.49	56	eP	Pn	23 05 22.3	+0.6
GRMC	Gramalote, San	8.62	53	eP	Pn	23 05 26.6	+3.5
JTS	JuntasAbangare	9.22	326	P	Pn	23 05 33.7	+2.4
	comp=Z,0.6nm,0.3s,baz=233,slow=6.8,SNR=4.9						
JTS				S	Sn	23 07 10.2	-3.8
	comp=Z,0.6nm,0.3s,baz=315,slow=19,SNR=4.9						
JTS	JuntasAbangare	9.22	326	ePn	Pn	23 05 32.8	+1.4
JTS				S	Sn	23 07 10.2	-3.8
ATAH	Atahualpa	9.75	172	P	Pn	23 05 41.9	+3.0
	comp=Z,1.0nm,0.3s,baz=16,slow=11,SNR=4.3						
ATAH				S	Sn	23 07 26.8	-0.7
	comp=Z,1.3nm,0.3s,baz=343,slow=11,SNR=2.8						
PAYG	Puerto Ayora	10.99	253	ePn	Pn	23 05 56.1	+0.5
SDV	Santo Domingo	11.04	55	P	Pn	23 05 56.7	+0.3
	comp=Z,2.5nm,0.3s,baz=202,slow=11,SNR=28						
SDV				S	Sn	23 07 58.3	-0.6
	comp=Z,2.0nm,0.3s,baz=36,slow=18,SNR=5.3						
TGUH	Tegucigalpa,Un	13.60	327	ePn	Pn	23 06 32.8	+1.6
NNA	Nana	14.77	169	ePn	Pn	23 06 47.7	+0.6
MTDJ	Mount Denham	15.70	8	ePn	Pn	23 07 00.6	+1.0
	comp=Z,130nm,1.6s						
BANI	BANI	18.22	30	ePn	Pn	23 07 31.8	+0.7
CCIG	Comitan	18.26	319	eP	Pn	23 07 33.4	+1.8
	comp=Z,25nm,1.0s						
SDDR	Presa de Saban	18.30	26	eP	Pn	23 07 33.8	+1.8
	comp=Z,28nm,1.2s						
TEIG	Tepich	19.40	335	P	Pn	23 07 44.9	-0.3
	comp=Z,0.2nm,0.3s,baz=268,slow=24,SNR=9.5						
TEIG	Tepich	19.40	335	eP	Pn	23 07 45.0	-0.2
	comp=Z,0.8nm,0.6s						
MPR	Mayaguez	19.87	38	eP	P	23 07 49.2	+0.1
	comp=Z,27nm,0.9s						
PTGA	Pitinga	20.08	99	P	P	23 07 51.4	0.0
	comp=Z,19nm,0.5s,baz=294,slow=14,SNR=25						
PTGA	Pitinga	20.08	99	eP	P	23 07 51.7	+0.4
	comp=Z,32nm,0.9s						
LRS	Lares	20.11	38	eP	P	23 07 51.6	-0.1
CELP	Cerrillos	20.11	39	eP	P	23 07 51.8	+0.1
SAML	Samuel	20.12	125	eP	P	23 07 51.0	-0.8
	comp=Z,38nm,0.6s						
SJG	San Juan	20.41	40	P	Pn	23 07 56.4	-0.8
	comp=Z,16nm,0.6s,baz=224,slow=9.5,SNR=8.2						
SJG	San Juan	20.41	40	eP	Pn	23 07 57.6	+0.4
	comp=Z,28nm,0.9s						
HUMP	Col San Antoni	20.63	41	eP	Pn	23 07 58.9	-0.9
	comp=Z,34nm,0.9s						
CMIG	Matias Romero	20.69	315	P	Pn	23 07 59.4	-1.1
	comp=Z,6.4nm,0.9s,baz=103,slow=10,SNR=6.2						
CBYP	Canovanas	20.72	40	eP	P	23 07 59.0	+0.6
	comp=Z,51nm,0.9s						
CDVI	St. Croix	21.08	43	eP	P	23 08 02.8	+0.7
	comp=Z,90nm,0.9s						
SVB	Belmont	21.18	59	eP	P	23 08 04.2	+0.9
SVB	Belmont	21.18	59	eP	P	23 08 04.1	+0.8
	comp=Z,120nm,0.7s						
STVI	Saint Thomas	21.37	42	eP	P	23 08 05.5	+0.2
	comp=Z,41nm,0.9s						
MCLT	Moule a Chique	21.65	58	eP	P	23 08 10.2	+1.9
FDF	Fort de France	21.99	56	eP	P	23 08 15.2	+3.2
FDF	Fort de France	21.99	56	eP	P	23 08 12.5	+0.5
	comp=Z,420nm,1.7s						
LPAZ	La Paz	22.00	149	P	P	23 08 12.6	0.0
	comp=Z,4.7nm,0.7s,baz=335,slow=11,SNR=26						
LPAZ				LR	LR	23 18 34.2	
	comp=Z,275nm,20.3s,baz=336,slow=41						
LPAZ	La Paz	22.00	149	eP	P	23 08 12.7	0.0
	comp=Z,25nm,1.1s						
ZAM	Aeronautique	22.01	56	eP	P	23 08 13.9	+1.8
GBMF	Grand Be	22.01	55	eP	P	23 08 16.1	+3.8
BAMF	Morne Balai	22.03	55	eP	P	23 08 15.7	+3.1
LPMF	Morne Lapointe	22.06	56	eP	P	23 08 15.9	+3.1
MVM	Montagne Vaucl	22.11	56	eP	P	23 08 15.0	+1.7
SMRT	St. Maarten	22.46	46	eP	P	23 08 19.0	+1.9
	comp=Z,67nm,1.0s						
DWPF	Disney Wildern	25.43	357	eP	P	23 08 46.9	+1.6
	comp=Z,88nm,1.4s						

PB01 IPOC Station P 25.55 157 eP P 23 08 46.8 +0.3
comp=Z,19nm,0.8s
SIV San Ignacio 26.13 136 P P 23 08 52.5 +0.7
comp=Z,2.8nm,0.5s,baz=308,slow=12,SNR=9.2
TIGA Tifton 28.93 353 P P 23 09 17.5 +0.9
baz=172
TIGA Tifton 28.93 353 eP P 23 09 17.1 +0.4
comp=Z,22nm,0.8s
ZAIG Zacatecas 29.85 314 eP P 23 09 25.4 +0.1
comp=Z,22nm,1.9s
345A Thompson Farm, 30.17 342 P P 23 09 28.8 +1.2
baz=159
CSU Charleston Sou 30.25 360 eP P 23 09 28.7 +0.4
KVTX Kingsville 30.27 327 eP P 23 09 29.9 +1.2
comp=Z,48nm,0.8s
245A Little AP, Sta 30.80 343 P P 23 09 34.5 +1.2
baz=160
GOGA Godfrey 30.86 354 eP P 23 09 34.4 +0.6
comp=Z,9.3nm,0.8s
736A Circle Diamond 30.96 330 P P 23 09 36.3 +1.5
baz=145
LRAL Lakeview Retre 31.04 348 eP P 23 09 35.6 +0.2
comp=Z,15nm,1.0s
933A Laredo 31.10 325 P P 23 09 36.7 +0.8
baz=140
VBMS Vicksburg 31.16 342 eP P 23 09 36.5 +0.1
comp=Z,29nm,0.8s
HKT Hockley 31.19 332 eP P 23 09 37.3 +0.7
comp=Z,9.9nm,1.3s
341A Kurthwood 31.27 338 P P 23 09 38.2 +0.8
baz=154
636A Smothers Creek 31.39 330 P P 23 09 39.6 +1.2
baz=145
JSC Jenkinsville 31.57 358 eP P 23 09 41.0 +1.0
comp=Z,14nm,0.9s
536A Bastrop 31.88 331 P P 23 09 43.6 +0.8
baz=146
535A Dale 32.09 330 P P 23 09 45.4 +0.8
baz=145
338A Crockett 32.16 335 P P 23 09 46.2 +1.0
baz=150
NATX Nacogdoches 32.23 336 eP P 23 09 46.9 +1.0
comp=Z,11nm,0.8s
NATX eScP ScP 23 16 12.4 -2.8
337A Centerville 32.37 334 P P 23 09 48.2 +1.1
baz=149
239A Gary 32.38 336 P P 23 09 48.6 +1.4
baz=152
KMSC Kings Mountain 32.43 358 eP P 23 09 47.5 0.0
comp=Z,50nm,0.1s
534A Blanco 32.55 329 P P 23 09 48.8 +0.1
baz=144
435B Jarrell 32.72 331 P P 23 09 51.0 +0.9
baz=146
336A Riesel 32.87 332 P P 23 09 51.8 +0.3
baz=147
237A Washetta, Mont 32.93 334 P P 23 09 52.1 +0.1
baz=150
139A Bunkhouse Ranc 32.94 337 P P 23 09 52.7 +0.7
baz=152
SWET Sewanee 32.97 351 eP P 23 09 52.4 0.0
comp=Z,2.2nm,0.7s
CPCT Cooper Cave 33.00 353 eP P 23 09 53.3 +0.7
comp=Z,8.6nm,0.9s
335A Moody 33.05 332 P P 23 09 53.4 +0.3
baz=146
Z40A Long Farm, Mag 33.08 339 P P 23 09 53.5 +0.2
baz=155
434A Burnet 33.08 330 P P 23 09 53.2 -0.1
baz=145
138A Matatall Enter 33.20 336 P P 23 09 54.8 +0.5
baz=151
236A Katherine and 33.24 333 P P 23 09 55.2 +0.5
baz=148
Z39A Irene McRaven, 33.35 338 P P 23 09 56.2 +0.6
baz=153
137A Heron Place, G 33.42 335 P P 23 09 56.7 +0.5
baz=150
433A Art 33.45 329 P P 23 09 56.8 +0.3
baz=143,SNR=6.2
334A Lometa 33.49 331 P P 23 09 57.0 +0.1
baz=145,SNR=5.7
JCT Junction City 33.60 328 eP P 23 09 57.8 -0.2
comp=Z,5.4nm,0.9s
WHTX Lake Whitney, 33.66 332 P P 23 09 58.1 -0.2
baz=147
WHTX Lake Whitney, 33.66 332 eP P 23 09 58.0 -0.3
comp=Z,18nm,0.8s
Z38A Mt. Pleasant 33.67 337 P P 23 09 58.7 +0.3
baz=152
Y40A Okolona 33.72 340 P P 23 09 59.2 +0.4
baz=155
333A Richland Sprin 33.85 330 P P 23 10 00.0 0.0
baz=144
TZTN Tazewell 33.98 355 eP P 23 10 01.4 +0.4
comp=Z,25nm,1.4s
234A Clairette 33.99 331 P P 23 10 01.4 +0.1
baz=146,SNR=9.7
X40A Basin Creek Fa 34.00 341 P P 23 10 01.2 0.0
baz=156
UALR University of 34.10 341 eP P 23 10 02.1 0.0
comp=Z,20nm,0.8s
WVT Waverly 34.20 348 eP P 23 10 02.1 -0.9
comp=Z,9.9nm,1.0s
Z36A Blue Ridge 34.28 335 P P 23 10 03.5 -0.2
baz=150
MIAR Mount Ida 34.30 340 P P 23 10 03.9 0.0
baz=155
MIAR Mount Ida 34.30 340 eP P 23 10 04.0 0.0
comp=Z,17nm,1.4s
HBAR Harrisburg 34.33 344 eP P 23 10 05.3 +1.2
233A Rising Star 34.37 330 P P 23 10 04.3 -0.3
baz=145
134A White-Moore Ra 34.43 332 P P 23 10 04.9 -0.2
baz=146
X39A Fountain Ranch 34.46 339 P P 23 10 05.4 +0.1
baz=154
BLA Blacksburg 34.47 359 eP P 23 10 06.1 +0.7
comp=Z,20nm,1.2s
VWCC Virginia Weste 34.50 360 eP P 23 10 05.5 0.0
WHAR Wooly Hollow 34.56 342 eP P 23 10 05.5 -0.6
comp=Z,22nm,0.9s
WHAR eScP ScP 23 16 19.7 -3.6
Y37A Hugo 34.56 336 P P 23 10 06.3 +0.2
baz=151
HPIG 34.66 317 eP P 23 10 07.5 +0.1
comp=Z,29nm,0.8s
HPIG ePcP PcP 23 12 37.2 -4.0
Z35A Perchaven, San 34.69 334 P P 23 10 07.5 +0.2
baz=148
W40A Ferguson Farm, 34.72 341 P P 23 10 07.8 +0.4
baz=156
133A Hamilton Ranch 34.86 331 P P 23 10 08.9 +0.1
baz=145
X38A Whitesboro 34.87 338 P P 23 10 09.2 +0.4
baz=153
URVA University of 34.88 3 eP P 23 10 09.7 +0.9
W39A Magazine 34.96 340 P P 23 10 09.6 0.0
baz=155,SNR=7.3
TX31 Lajitas Ar. Si 34.98 322 eP P 23 10 10.6 +0.6
TX31 ePcP PcP 23 12 42.9 +1.0
TXAR Lajitas Array 34.98 322 P P 23 10 10.6 +0.7
comp=Z,1.2nm,0.8s,baz=128,slow=8.1,SNR=7.3
TXAR PcP PcP 23 12 42.8 +0.9
comp=Z,5.0nm,0.9s,baz=141,slow=6.5,SNR=19
X37A Clayton 35.00 337 P P 23 10 10.1 +0.2
baz=152
Z34A Collier Ranch, 35.02 333 P P 23 10 10.0 -0.2
baz=147
Y35A Marietta 35.09 335 P P 23 10 11.2 +0.5
baz=149
W38A Poteau 35.11 339 P P 23 10 10.6 -0.3
baz=154
V40A Witts Springs 35.20 341 P P 23 10 11.4 -0.3
baz=157
ABTX Abilene, Hawle 35.23 330 P P 23 10 11.8 -0.2
baz=144
ABTX Abilene, Hawle 35.23 330 eP P 23 10 12.5 +0.5
comp=Z,12nm,1.0s
Z33A Whitaker Ranch 35.34 332 P P 23 10 12.8 -0.1
baz=146
X36A Centrahoma 35.37 336 P P 23 10 12.8 -0.3
baz=151
PBMO Poplar Bluff 35.42 345 eP P 23 10 14.1 +0.6
comp=Z,39nm,1.3s
PBMO eScP ScP 23 16 23.9 -2.5
Y34A Reagan Ranch, 35.45 334 P P 23 10 13.4 -0.4
baz=148

X35A Drake 35.48 335 P P 23 10 14.0 -0.1
baz=150
V39A Pettigrew 35.50 340 P P 23 10 13.9 -0.3
baz=156
W37B Quinton 35.51 338 P P 23 10 14.0 -0.3
baz=152
CBN Corbin Frederi 35.52 3 eP P 23 10 15.0 +0.7
comp=Z,36nm,0.3s
U40A Yellville 35.72 342 P P 23 10 15.3 -0.8
baz=157,SNR=9.3
V38A Canehill 35.78 339 P P 23 10 15.9 -0.7
baz=154,SNR=7.6
W36A Wetumka 35.82 337 P P 23 10 16.5 -0.5
baz=151
Y33A Hilltop Ranch, 35.88 333 P P 23 10 17.1 -0.4
baz=147
U39A Green Forest 35.94 341 P P 23 10 17.3 -0.7
baz=156
WCI Wyandotte Cave 35.98 351 eP P 23 10 17.8 -0.5
comp=Z,12nm,0.7s
HHAR Hobbs 36.00 340 eP P 23 10 18.9 +0.4
comp=Z,66nm,1.6s
CPUP Villa Florida 36.02 144 P P 23 10 18.0 -0.8
comp=Z,6.1nm,0.8s,baz=327,slow=9.0,SNR=8.5
CPUP PcP PcP 23 12 44.9 0.0
comp=Z,1.4nm,0.8s,baz=315,slow=5.7,SNR=3.1
CPUP LR LR 23 26 33.4
comp=Z,183nm,18.8s,baz=55,slow=39
SIUC Southern Illin 36.02 347 eP P 23 10 18.3 -0.4
comp=Z,45nm,1.3s
V37A Hulbert 36.06 339 P P 23 10 18.5 -0.5
baz=153
W35A Tecumseh 36.09 336 P P 23 10 18.7 -0.6
baz=150
BDFB Brasilia 36.26 121 P P 23 10 20.3 -0.8
comp=Z,2.1nm,0.7s,baz=257,slow=12,SNR=3.3
X33A Lawton 36.27 333 P P 23 10 20.4 -0.4
baz=147
V36A Jenks 36.28 338 P P 23 10 20.2 -0.6
baz=152,SNR=5.1
TUL1 Leonard 36.33 338 P P 23 10 20.6 -0.7
baz=152
TUL1 Leonard 36.33 338 eP P 23 10 21.1 -0.2
comp=Z,14nm,0.8s
T40A Mansfield 36.35 343 P P 23 10 20.7 -0.8
baz=158,SNR=12
T39A Clever 36.49 342 P P 23 10 21.6 -1.1
baz=157,SNR=5.5
U37A Salina 36.52 339 P P 23 10 22.3 -0.6
baz=154,SNR=6.1
W34A Bridge Creek, 36.54 335 P P 23 10 22.2 -0.9
baz=149
W34A Bridge Creek, 36.54 335 eP P 23 10 23.1 0.0
comp=Z,111nm,0.6s
WMOK Wichita Mounta 36.56 333 eP P 23 10 23.5 +0.1
comp=Z,9.7nm,0.8s
V35A Meyer Ranch, C 36.60 336 P P 23 10 22.5 -1.2
baz=151,SNR=5.4
U36A Oologah 36.73 338 P P 23 10 23.8 -0.9
baz=153
SDMD Soldier's Deli 36.75 4 eP P 23 10 25.4 +0.5
comp=Z,6.6nm,1.1s
S40A Lebanon 36.76 343 P P 23 10 24.1 -0.9
baz=158,SNR=6.6
OLIL Olney 36.78 349 eP P 23 10 24.1 -1.0
comp=Z,23nm,0.8s
OLIL ePcP PcP 23 12 42.1 -4.8
T38A Diamond 36.80 340 P P 23 10 24.1 -1.3
baz=155
BLO Bloomington 36.94 351 eP P 23 10 25.8 -0.6
comp=Z,20nm,0.6s
V34A Guthrie 36.94 336 P P 23 10 25.4 -1.2
baz=150,SNR=5.5
V34A Guthrie 36.94 336 eP P 23 10 25.4 -1.2
comp=Z,21nm,0.7s
V34A eScP ScP 23 16 34.2 +2.2
W32A Sentinel 37.09 333 P P 23 10 27.1 -0.7
baz=147
S39A Bolivar 37.09 342 P P 23 10 27.0 -0.7
baz=157
T37A Cheneyville 18 37.09 340 P P 23 10 27.1 -0.7
baz=154,SNR=5.0
U35A Pawnee 37.09 337 P P 23 10 27.6 -0.2
baz=151
S38A Stockton 37.22 341 P P 23 10 28.1 -0.8
baz=156
V33A Lossen Ranch, 37.25 335 P P 23 10 28.7 -0.5
baz=148
T36A Boggs Farm, Ca 37.38 339 P P 23 10 29.8 -0.4
baz=153
U34A Anderson Ranch 37.47 336 P P 23 10 30.4 -0.6
baz=150
T35A Sooner Cattle 37.49 338 P P 23 10 30.6 -0.6
baz=152
V32A Arapaho 37.50 334 P P 23 10 31.1 -0.2
baz=147
O56A Blue Knob Stat 37.53 2 P P 23 10 32.3 +0.8
baz=182
R39A Chumby, Stover 37.58 343 P P 23 10 31.2 -0.7
baz=158
ACSO Dum Creek Sta 37.59 356 eP P 23 10 32.1 +0.1
comp=Z,13nm,0.8s
S37A Fort Scott 37.64 340 P P 23 10 31.9 -0.5
baz=155,SNR=11
MNTX Cornudas Mount 37.69 323 eP P 23 10 33.7 +0.7
comp=Z,7.6nm,1.0s
U33A Lingo Farm, Me 37.70 335 P P 23 10 32.1 -0.9
baz=149
R38A Fenwick Farm, 37.73 342 P P 23 10 32.5 -0.6
baz=157
T34A McClaskey Farm 37.84 337 P P 23 10 33.7 -0.5
baz=151
S36A Lake Cedric, C 37.87 339 P P 23 10 33.9 -0.5
baz=154,SNR=5.9
MSTX Muleshoe 37.89 328 P P 23 10 34.6 -0.2
baz=141,SNR=5.6
MSTX Muleshoe 37.89 328 eP P 23 10 35.6 +0.8
comp=Z,50nm,1.3s
SSPA Standing Stone 37.92 2 eP P 23 10 35.8 +1.0
comp=Z,19nm,1.0s
Q40A Laux Farm, Aux 37.94 344 P P 23 10 34.0 -0.9
baz=160
U32A Winter Ranch, 38.03 334 P P 23 10 35.3 -0.6
baz=148
AMTX Amarillo 38.05 330 P P 23 10 35.7 -0.4
baz=143
S35A Otter Creek Ra 38.09 339 P P 23 10 35.7 -0.6
baz=153
R37A Teagarden Farm 38.14 341 P P 23 10 36.1 -0.5
baz=155
N54A Moraine State 38.21 360 P P 23 10 36.9 -0.3
baz=180
Q39A Willow Grove F 38.24 343 P P 23 10 36.4 -1.1
baz=158
Q38A Cooks Store, C 38.35 343 P P 23 10 37.8 -0.6
baz=157
R36A Gordon, Harris 38.38 340 P P 23 10 38.1 -0.5
baz=154
CPNY Central Park 38.40 7 eP P 23 10 39.5 +0.7
comp=Z,33nm,1.4s
S34A Willow Spring 38.40 338 P P 23 10 38.3 -0.6
baz=152
P39A Salisbury 38.59 344 P P 23 10 39.8 -0.6
baz=159
R35A Emporia Munici 38.62 339 P P 23 10 40.2 -0.4
baz=153
M54A Oil Creek Stat 38.75 0 P P 23 10 41.4 -0.4
baz=180
HDIL Hopedale 38.77 348 eP P 23 10 41.4 -0.6
comp=Z,42nm,0.8s
R34A Isabella, Hill 38.98 338 P P 23 10 42.0 -1.7
baz=152
Q35A Mercer Eighty, 39.04 340 P P 23 10 43.7 -0.6
baz=154
R33A Olander Ranch, 39.27 337 P P 23 10 46.0 -0.1
baz=151
ERPA Erie 39.36 360 eP P 23 10 47.0 +0.2
comp=Z,9.8nm,0.8s
Q34A Chapman 39.41 339 P P 23 10 47.3 -0.1
baz=152
P36A Good Intent, A 39.45 341 P P 23 10 47.2 -0.4
baz=155
KSU1 Kansas State U 39.45 339 P P 23 10 47.4 -0.3
baz=153
KSU1 Kansas State U 39.45 339 eP P 23 10 47.3 -0.3
comp=Z,18nm,0.9s
BINY Binghamton 39.59 4 eP P 23 10 50.2 +1.5
comp=Z,21nm,1.0s

SRIG Santa Rosalia 39.62 311 eP P 23 10 50.0 +0.9
comp=Z,20nm,1.3s
HSIG 39.63 315 eP P 23 10 49.8 +0.5
comp=Z,8.2nm,1.4s
P35A Duane Minner, 39.63 340 P P 23 10 49.2 +0.1
baz=154
R32A Long Quarter, 39.65 336 P P 23 10 49.2 -0.2
baz=150
AAM Ann Arbor 39.70 355 eP P 23 10 50.8 +1.2
comp=Z,24nm,1.3s
121A Cookes Peak, D 39.74 322 P P 23 10 49.5 -0.9
baz=133
P34A Walnut Farm, R 39.93 339 P P 23 10 51.7 +0.1
baz=153
319A Douglas 39.93 319 eP P 23 10 52.6 +0.8
comp=Z,16nm,1.1s
MMNY Mt. Morris Dam 40.01 2 eP P 23 10 52.8 +0.6
comp=Z,198nm,0.2s
BNM Barren Site 40.17 324 eP P 23 10 55.4 +1.4
LPM Los Pinos Moun 40.28 325 eP P 23 10 55.6 +0.7
LENM Lemitar 40.38 324 eP P 23 10 56.4 +0.7
CBKS Cedar Bluff 40.40 336 eP P 23 10 56.0 +0.3
comp=Z,33nm,1.0s
HRV Adam Dziewonsk 40.42 9 eP P 23 10 55.4 -0.3
comp=Z,31nm,1.2s
ANMO Albuquerque 40.64 326 P P 23 10 59.4 +1.6
baz=137
ANMO Albuquerque 40.64 326 eP P 23 10 59.5 +1.7
comp=Z,16nm,0.8s
LAZ Ladron 40.64 324 eP P 23 10 58.0 +0.1
P32A Huiting Farm, 40.65 338 P P 23 10 58.0 +0.4
baz=150
SCIA State Center 40.97 345 eP P 23 11 00.2 0.0
comp=Z,25nm,0.7s
T25A Trinidad 41.19 330 P P 23 11 03.5 +1.1
baz=141,SNR=7.5
T25A Trinidad 41.19 330 eP P 23 11 03.0 +0.7
comp=Z,20nm,1.0s
NCB Newcomb 41.51 6 eP P 23 11 04.9 +0.3
comp=Z,25nm,0.7s
TUC Tucson 41.51 319 P P 23 11 06.0 +1.1
baz=129
TUC Tucson 41.51 319 eP P 23 11 06.5 +1.6
comp=Z,5.2nm,1.0s
N32A Stulken Farm, 41.53 339 P P 23 11 06.6 +1.7
baz=152
MDV Middlebury 41.66 7 eP P 23 11 07.1 +1.3
KSCO Kaye Shedlock' 41.82 333 eP P 23 11 08.2 +0.8
comp=Z,21nm,0.8s
SADO Sadowa 42.02 1 P P 23 11 09.0 +0.3
comp=Z,5.8nm,1.0s,baz=238,slow=13,SNR=3.3
SDCO Great Sand Dun 42.21 329 P P 23 11 12.7 +1.9
baz=140
SDCO Great Sand Dun 42.21 329 eP P 23 11 12.6 +1.9
comp=Z,15nm,1.0s
O28A Krutsinger Ran 42.36 335 P P 23 11 12.9 +1.2
baz=146
X18A Snowflake 42.41 322 eP P 23 11 12.1 -0.3
comp=Z,13nm,1.3s
214A Organ Pipe Nat 42.65 317 P P 23 11 15.6 +1.4
baz=127
W18A Petrified Fore 42.68 323 P P 23 11 16.0 +1.5
baz=133
W18A Petrified Fore 42.68 323 eP P 23 11 15.2 +0.7
comp=Z,22nm,0.8s
S22A 4UR Ranch, Cre 42.90 328 P P 23 11 18.0 +1.6
baz=138
S22A 4UR Ranch, Cre 42.90 328 eP P 23 11 16.6 +0.2
comp=Z,23nm,1.9s
L31A Butterfield Fa 42.96 339 P P 23 11 16.4 -0.1
baz=152
Q24A Divide 42.97 331 P P 23 11 17.9 +0.9
baz=141
Q24A Divide 42.97 331 eP P 23 11 16.6 -0.4
comp=Z,11nm,1.3s
OGNE Ogallala 43.15 335 P P 23 11 18.9 +0.9
baz=146
OGNE Ogallala 43.15 335 eP P 23 11 19.0 +0.9
comp=Z,30nm,0.7s
X16A Lo Mia Camp, P 43.27 321 eP P 23 11 19.4 +0.1
comp=Z,5.5nm,0.7s
K31A O'Neill 43.33 340 P P 23 11 19.7 +0.3
baz=152
MVCO Mesa Verde 43.42 326 P P 23 11 21.4 +0.9
baz=136
MVCO Mesa Verde 43.42 326 eP P 23 11 22.1 +1.6
comp=Z,8.1nm,0.8s
ECSD EROS Data Cent 43.62 342 eP P 23 11 20.3 -1.4
comp=Z,23nm,1.6s
K30A Basset 43.68 339 P P 23 11 24.5 +2.2
baz=151
113A Mohawk Valley, 43.78 317 eP P 23 11 24.3 +1.1
comp=Z,5.8nm,1.1s
ISCO Idaho Springs 43.84 331 P P 23 11 25.4 +1.4
baz=141
ISCO Idaho Springs 43.84 331 eP P 23 11 25.6 +1.6
comp=Z,7.2nm,1.1s
ISCO ePP PcP 23 13 11.1 +1.0
PLCA Paso Flores 43.92 170 P P 23 11 25.1 +0.8
comp=Z,11nm,0.8s,baz=5.2,slow=8.7,SNR=25
PLCA PcP PcP 23 13 10.6 +0.6
comp=Z,3.8nm,0.9s,baz=324,slow=2.7,SNR=3.1
PLCA Paso Flores 43.92 170 eP P 23 11 25.6 +1.3
comp=Z,13nm,0.8s
PLCA PcP PcP 23 13 10.6 +0.6
WUAZ Wupatki 43.94 322 P P 23 11 26.3 +1.6
baz=131
WUAZ Wupatki 43.94 322 eP P 23 11 26.0 +1.3
comp=Z,19nm,0.8s
Y14A Wickenburg 43.98 319 eP P 23 11 26.3 +1.4
comp=Z,54nm,1.5s
SPMN Marine on St. 43.99 347 eP P 23 11 23.4 -1.3
comp=Z,46nm,1.6s
SMCO Snowmass 44.05 329 eP P 23 11 27.6 +1.9
comp=Z,8.6nm,0.8s
COWI Conover 44.11 351 eP P 23 11 25.7 0.0
comp=Z,26nm,1.4s
PV10 Paradox Valley 44.55 327 eP P 23 11 30.8 +1.2
GLA Glamis 44.67 317 eP P 23 11 27.5 -2.9
comp=Z,6.6nm,0.8s
N23A Red Feather La 44.86 332 P P 23 11 33.2 +1.1
baz=142
N23A Red Feather La 44.86 332 eP P 23 11 32.7 +0.7
comp=Z,5.5nm,0.9s
Y12C Blythe 44.87 318 eP P 23 11 32.5 +0.5
comp=Z,5.8nm,1.1s
PHWY Pilot Hill 44.95 332 eP P 23 11 34.1 +1.3
comp=Z,7.3nm,0.6s
J27A Elkhorn Farm, 45.07 337 P P 23 11 34.9 +1.4
baz=148
U15A North Rim 45.10 322 eP P 23 11 34.9 +0.8
comp=Z,9.9nm,1.0s
W13A Hualapai Mount 45.26 320 eP P 23 11 36.2 +0.9
comp=Z,5.8nm,0.8s
O20A White River Ci 45.41 329 P P 23 11 36.9 +0.5
baz=138
O20A White River Ci 45.41 329 eP P 23 11 37.6 +1.3
comp=Z,20nm,1.5s
BC3 Big Chuckawall 45.45 317 P P 23 11 36.7 +0.1
baz=125
IRM Iron Mountain 45.53 318 P P 23 11 38.0 +0.8
baz=126
LMQ La Malbaie 45.53 9 eP P 23 11 37.7 +0.7
comp=Z,21nm,1.1s
J26A Sides Ranch, S 45.55 336 P P 23 11 38.1 +0.9
baz=146
BAR Barrett 45.75 315 eP P 23 11 39.0 +0.1
comp=Z,27nm,1.8s
PKCU Pink Cliffs 45.78 323 eP P 23 11 39.6 +0.2
comp=Z,36nm,0.6s
KNB Kanab 45.81 323 eP P 23 11 40.4 +0.9
comp=Z,31nm,1.8s
SRU San Rafael Swe 45.89 326 eP P 23 11 41.5 +1.4
comp=Z,15nm,0.9s
J25A Sunshine Ranch 45.91 336 P P 23 11 41.2 +1.1
baz=146
P18A Preston Nutter 46.10 327 eP P 23 11 43.4 +1.4
comp=Z,8.8nm,0.9s
GMRC Granite Mounta 46.24 318 P P 23 11 43.9 +1.0
baz=126
P17A Butcher Ranch, 46.26 327 eP P 23 11 43.8 +0.7
comp=Z,9.9nm,1.0s
H27A Howes 46.27 338 P P 23 11 44.0 +1.1
baz=148
I25A Rochford 46.40 336 P P 23 11 45.0 +0.9
baz=146,SNR=8.7
MSU Marysvale 46.41 325 eP P 23 11 45.0 +0.7
K22A Casper 46.50 333 P P 23 11 45.5 +0.7

Code	Station Name	Δ°	AZ°	Op	ISC	Time	Res
	baz=142						
K22A	**Casper**	**46.50**	**333**	*e*P	**P**	**23 11 46.1**	**+1.3**
	comp=Z,18nm,1.4s						
RSSD	**Black Hills**	**46.61**	**336**	P	**P**	**23 11 47.0**	**+1.3**
	baz=146						
RSSD	**Black Hills**	**46.61**	**336**	*e*P	**P**	**23 11 46.9**	**+1.2**
	comp=Z,18nm,0.8s						
HEC	**Hector,Ludlow**	**46.72**	**318**	P	**P**	**23 11 47.8**	**+1.1**
	baz=125						
E30A	**Jud**	**46.82**	**342**	P	**P**	**23 11 47.5**	**+0.4**
	baz=153						
GSC	**Goldstone, Bar**	**47.31**	**318**	P	**P**	**23 11 51.6**	**+0.4**
	baz=125						
GSC	**Goldstone, Bar**	**47.31**	**318**	*e*P	**P**	**23 11 52.9**	**+1.7**
	comp=Z,8.9nm,1.3s						
NLU	**North Lily Min**	**47.34**	**326**	*e*P	**P**	**23 11 51.8**	**+0.3**
	comp=Z,5.7nm,1.2s						
PSUT	**Pine Spring**	**47.41**	**323**	*e*P	**P**	**23 11 52.6**	**+0.5**
PSUT				*e*PcP	**PcP**	**23 13 24.0**	**+1.6**
JLU	**Jordanelle**	**47.44**	**327**	*e*P	**P**	**23 11 53.4**	**+1.1**
	comp=Z,9.3nm,0.8s						
E27A	**Carson**	**47.63**	**340**	P	**P**	**23 11 53.8**	**+0.3**
	baz=150						
C31A	**Landman Farms,**	**47.64**	**344**	P	**P**	**23 11 53.4**	**0.0**
	baz=155						
CTU	**Camp Tracy**	**47.67**	**327**	*e*P	**P**	**23 11 55.5**	**+1.5**
	comp=Z,10nm,1.0s						
TCUT	**Toone Canyon**	**47.78**	**328**	*e*P	**P**	**23 11 56.4**	**+1.4**
	comp=Z,19nm,0.7s						
EDW2	**Edwards Air Fo**	**47.88**	**317**	P	**P**	**23 11 56.7**	**+1.1**
	baz=124						
DUG	**Dugway, Tooele**	**47.91**	**326**	P	**P**	**23 11 57.1**	**+1.2**
	baz=133						
DUG	**Dugway, Tooele**	**47.91**	**326**	*e*P	**P**	**23 11 57.5**	**+1.6**
	comp=Z,24nm,1.6s						
LRMC	**Laurel Mtn Rad**	**48.00**	**318**	P	**P**	**23 11 57.5**	**+0.9**
	baz=124						
BW06	**Boulder Array**	**48.03**	**331**	P	**P**	**23 11 57.2**	**+0.4**
	baz=138						
BW06	**Boulder Array**	**48.03**	**331**	*e*P	**P**	**23 11 56.0**	**-0.8**
BW06				*e*PcP	**PcP**	**23 13 24.1**	**-0.4**
PD31	**Pinedale Array**	**48.03**	**331**	*e*P	**P**	**23 11 57.2**	**+0.4**
PD31				*e*PcP	**PcP**	**23 13 24.5**	**0.0**
PDAR	**Pinedale Array**	**48.03**	**331**	P	**P**	**23 11 57.2**	**+0.4**
	comp=Z,2.2nm,0.8s,baz=118,slow=9.1,SNR=15						
PDAR				PcP	**PcP**	**23 13 24.2**	**-0.3**
	comp=Z,2.2nm,0.7s,baz=134,slow=5.1,SNR=9.1						
MPMC	**Manual Prospec**	**48.20**	**318**	P	**P**	**23 11 58.4**	**+0.1**
	baz=125						
D27A	**Center**	**48.20**	**340**	P	**P**	**23 11 59.2**	**+1.4**
	baz=150						
HWUT	**Hardware Ranch**	**48.21**	**328**	*e*P	**P**	**23 11 58.6**	**+0.4**
HWUT				*e*PcP	**PcP**	**23 13 25.8**	**+0.7**
R11A	**Troy Canyon, C**	**48.34**	**322**	P	**P**	**23 12 00.2**	**+0.9**
	baz=129						
R11A	**Troy Canyon, C**	**48.34**	**322**	*e*P	**P**	**23 11 59.1**	**-0.2**
	comp=Z,3.0nm,0.9s						
DAC	**Darwin (Calif)**	**48.39**	**318**	*e*P	**P**	**23 11 59.1**	**-0.6**
	comp=Z,12nm,1.4s						
BGU	**Big Grassy Mou**	**48.53**	**326**	*e*P	**P**	**23 12 01.8**	**+1.1**
	comp=Z,7.1nm,1.0s						
AHID	**Auburn Hatcher**	**48.80**	**329**	*e*P	**P**	**23 12 03.2**	**+0.4**
	comp=Z,30nm,1.8s						
CWC	**Cottonwood Cre**	**48.80**	**318**	P	**P**	**23 12 03.8**	**+0.9**
	baz=125						
HVU	**Hansel Valley**	**48.98**	**327**	*e*P	**P**	**23 12 05.1**	**+1.0**
	comp=Z,4.6nm,0.8s						
REDW	**Red Top Meadow**	**49.11**	**330**	*e*P	**P**	**23 12 06.0**	**+0.8**
	comp=Z,9.3nm,1.0s						
SNOW	**Snow King Moun**	**49.13**	**330**	*e*P	**P**	**23 12 06.3**	**+1.0**
	comp=Z,15nm,1.3s						
LOHW	**Long Hollow**	**49.17**	**331**	*e*P	**P**	**23 12 06.0**	**+0.4**
	comp=Z,7.1nm,1.0s						
MOOW	**Moose Ponds**	**49.34**	**331**	*e*P	**P**	**23 12 07.5**	**+0.6**
	comp=Z,7.6nm,1.1s						
MOOW				*e*PcP	**PcP**	**23 13 29.6**	**+0.3**
FXWY	**Fox Creek**	**49.40**	**330**	*e*P	**P**	**23 12 07.9**	**+0.5**
	comp=Z,7.7nm,1.2s						
ULM	**Lac du Bonnet**	**49.42**	**346**	P	**P**	**23 12 05.5**	**-1.5**
	comp=Z,7.4nm,0.9s,baz=149,slow=6.6,SNR=9.4						
ULM				PcP	**PcP**	**23 13 28.6**	**-0.5**
	comp=Z,1.7nm,0.5s,baz=216,slow=2.7,SNR=3.2						
ULM	**Lac du Bonnet**	**49.42**	**346**	*e*P	**P**	**23 12 05.6**	**-1.5**
	comp=Z,10nm,1.0s						
ULM				PcP	**PcP**	**23 13 28.6**	**-0.5**
IMW	**Indian Meadow**	**49.54**	**331**	*e*P	**P**	**23 12 09.3**	**+0.7**
	comp=Z,6.6nm,0.7s						
FLWY	**Flagg Ranch**	**49.56**	**331**	*e*P	**P**	**23 12 09.7**	**+1.1**
	comp=Z,10nm,0.9s						
LAO	**LASA Array**	**49.59**	**336**	*e*P	**P**	**23 12 08.5**	**-0.1**
	comp=Z,15nm,0.8s						
ELK	**Elko**	**49.66**	**325**	*e*P	**P**	**23 12 10.5**	**+1.1**
ELK				*e*PcP	**PcP**	**23 13 31.5**	**+1.1**
RLMT	**Red Lodge**	**49.67**	**333**	P	**P**	**23 12 09.8**	**+0.4**
	baz=140						
RLMT	**Red Lodge**	**49.67**	**333**	*e*P	**P**	**23 12 10.0**	**+0.6**
	comp=Z,6.5nm,1.0s						
H17A	**Grant Village**	**49.73**	**331**	P	**P**	**23 12 10.8**	**+0.8**
	baz=138						
B25A	**Knox Farm, Ray**	**49.77**	**340**	P	**P**	**23 12 10.9**	**+1.1**
	baz=149						
YFT	**Old Faithful**	**49.90**	**331**	*e*P	**P**	**23 12 13.4**	**+2.2**
	comp=Z,11nm,1.1s						
NV01	**Mina Array Sit**	**50.09**	**320**	*e*P	**P**	**23 12 14.0**	**+1.2**
NVAR	**Mina Array Bea**	**50.09**	**320**	P	**P**	**23 12 13.9**	**+1.2**
	comp=Z,2.3nm,0.6s,baz=130,slow=7.0,SNR=12						
NVAR				PcP	**PcP**	**23 13 33.1**	**+1.0**
	comp=Z,6.3nm,0.7s,baz=124,slow=4.4,SNR=18						
YMR	**Madison River**	**50.12**	**331**	*e*P	**P**	**23 12 14.4**	**+1.5**
	comp=Z,9.1nm,0.8s						
DGMT	**Dagmar**	**50.30**	**339**	P	**P**	**23 12 15.0**	**+1.1**
	baz=148						
DGMT	**Dagmar**	**50.30**	**339**	*e*P	**P**	**23 12 13.4**	**-0.5**
	comp=Z,43nm,1.7s						
BMN	**Battle Mountai**	**50.63**	**323**	*e*P	**P**	**23 12 18.1**	**+1.4**
	comp=Z,12nm,0.8s						
HLID	**Hailey**	**51.08**	**328**	P	**P**	**23 12 20.8**	**+0.7**
	baz=133						
HLID	**Hailey**	**51.08**	**328**	*e*P	**P**	**23 12 20.9**	**+0.9**
	comp=Z,4.0nm,0.8s						
HLID				*e*PcP	**PcP**	**23 13 37.1**	**+1.6**
BOZ	**Bozeman (W)**	**51.16**	**332**	P	**P**	**23 12 21.1**	**+0.4**
	baz=138						
BOZ	**Bozeman (W)**	**51.16**	**332**	*e*P	**P**	**23 12 21.0**	**+0.4**
	comp=Z,6.2nm,0.8s						
AFDM	**Forest Hills D**	**52.11**	**319**	*e*P	**P**	**23 12 28.2**	**+0.6**
	comp=Z,18nm,1.9s						
EGMT	**Eagleton**	**52.12**	**335**	P	**P**	**23 12 28.5**	**+0.9**
	baz=141						
WVOR	**Wild Horse Val**	**52.70**	**324**	*e*P	**P**	**23 12 33.0**	**+0.9**
	comp=Z,18nm,1.2s						
ORV	**Oroville**	**52.78**	**320**	*e*P	**P**	**23 12 34.5**	**+1.9**
	comp=Z,14nm,1.1s						
MSO	**Missoula**	**53.12**	**331**	P	**P**	**23 12 35.6**	**+0.5**
	baz=136						
MSO	**Missoula**	**53.12**	**331**	*e*P	**P**	**23 12 35.8**	**+0.7**
	comp=Z,9.1nm,1.3s						
SCHQ	**Schefferville**	**53.15**	**9**	P	**P**	**23 12 33.0**	**-2.0**
	comp=Z,9.5nm,1.0s,baz=274,slow=0.2,SNR=5.2						
O03D	**Paynes Creek**	**53.38**	**320**	P	**P**	**23 12 37.3**	**+0.2**
	baz=124						
YBMT	**Yellow Bay**	**53.90**	**332**	*e*P	**P**	**23 12 42.0**	**+1.2**
JTMT	**Jette**	**53.94**	**332**	*e*P	**P**	**23 12 42.6**	**+1.5**
WDC	**Whiskeytown Da**	**54.01**	**320**	*e*P	**P**	**23 12 41.9**	**+0.2**
	comp=Z,8.6nm,1.0s						
BLMT	**Blacktail Moun**	**54.17**	**332**	*e*P	**P**	**23 12 43.9**	**+1.1**
F10A	**Beach Ranch, E**	**54.19**	**328**	*e*P	**P**	**23 12 43.5**	**+0.6**
	comp=Z,8.1nm,0.8s						
M04C	**Macdoel**	**54.24**	**322**	P	**P**	**23 12 43.6**	**+0.2**
	baz=124						
J05D	**Fort Rock, OR**	**54.74**	**324**	P	**P**	**23 12 47.2**	**+0.2**
	baz=126						
I05D	**Terrebonne, OR**	**55.42**	**325**	P	**P**	**23 12 52.5**	**+0.7**
	baz=126						
NEW	**Newport**	**55.67**	**331**	P	**P**	**23 12 54.2**	**+0.7**
	baz=133						
NEW	**Newport**	**55.67**	**331**	*e*P	**P**	**23 12 54.0**	**+0.5**
	comp=Z,14nm,1.4s						
NEW				*e*pP	**pP**	**23 13 01.2**	**-2.7**
I04A	**Tendick Farm,**	**55.73**	**324**	P	**P**	**23 12 54.5**	**+0.4**
	baz=125						
LON	**Longmire**	**57.13**	**327**	*e*P	**P**	**23 13 04.1**	**+0.1**
	comp=Z,6.3nm,0.9s						
FCC	**Fort Churchill**	**57.13**	**351**	*e*P	**P**	**23 13 02.6**	**-1.1**
	comp=Z,8.4nm,0.9s						
FRB	**Frobisher Bay**	**61.59**	**6**	P	**P**	**23 13 32.7**	**-1.6**
	comp=Z,5.9nm,0.9s,baz=207,slow=6.0,SNR=2.8						
YKA	**Yellowknife Ar**	**65.14**	**343**	P	**P**	**23 13 57.2**	**-0.7**
	comp=Z,4.0nm,0.7s,baz=139,slow=6.0,SNR=66						
YKA				PcP	**PcP**	**23 14 30.0**	**-0.3**
	comp=Z,1.0nm,0.6s,baz=149,slow=4.4,SNR=7.6						
YKB5	**Yellowknife Ar**	**65.14**	**343**	*e*P	**P**	**23 13 56.9**	**-0.9**
YKW3	**Yellowknife Ar**	**65.20**	**343**	*e*P	**P**	**23 13 56.8**	**-1.4**
	comp=Z,6.5nm,0.8s						
RES	**Resolute Bay**	**72.58**	**356**	*e*P	**P**	**23 14 42.8**	**-1.1**
SUMG	**Summit**	**74.41**	**12**	*i* P	**P**	**23 14 54.9**	**-0.4**
	comp=Z,14nm,0.8s						
SUMG	**Summit**	**74.41**	**12**	*e*P	**P**	**23 14 55.1**	**-0.1**
	comp=Z,28nm,1.1s						
LIC	**Lamto**	**74.57**	**84**	*e*P	**P**	**23 14 55.4**	**-1.4**
	comp=Z,46nm,1.0s						
TIC	**Toumodi**	**74.57**	**84**	*e*P	**P**	**23 14 56.5**	**-0.4**
DBIC	**Dimbokro**	**74.73**	**84**	P	**P**	**23 14 57.2**	**-0.5**
	comp=Z,11nm,0.8s,baz=262,slow=5.7,SNR=13						
DBIC				LR	LR	23 45 47.8	
	comp=Z,70nm,20.1s,baz=88,slow=34						
DBIC	**Dimbokro**	**74.73**	**84**	*e*P	**P**	**23 14 58.1**	**+0.4**
	comp=Z,17nm,0.9s						
KIC	**Kosan Boka**	**74.85**	**84**	*e*P	**P**	**23 14 58.5**	**0.0**
	comp=Z,44nm,0.9s						
INK	**Inuvik**	**74.86**	**342**	*e*P	**P**	**23 14 57.8**	**+0.4**
	comp=Z,16nm,1.1s						
MDT	**Midelt**	**76.14**	**57**	P	**P**	**23 15 06.4**	**+0.7**
	comp=Z,4.0nm,0.9s,baz=285,slow=9.9,SNR=4.2						
DOT	**Dot Lake**	**76.50**	**336**	*e*P	**P**	**23 15 08.0**	**+1.0**
	comp=Z,23nm,0.8s						
SCO	**Scoresbysund**	**77.24**	**17**	*i* P	**P**	**23 15 08.6**	**-2.3**
	comp=Z,1.9nm,0.8s						
ESDC	**Sonseca Array**	**77.44**	**50**	P	**P**	**23 15 13.3**	**+0.5**
	comp=Z,2.8nm,0.6s,baz=260,slow=6.0,SNR=27						
ES19	**SONSECA Array**	**77.50**	**50**	*e*P	**P**	**23 15 13.9**	**+0.8**
HDA	**Harding Lake**	**77.96**	**336**	*e*P	**P**	**23 15 15.4**	**+0.3**
	comp=Z,10nm,0.9s						
IL1	**Eielson Array**	**78.06**	**336**	*e*P	**P**	**23 15 15.3**	**-0.3**
ILAR	**Eielson Array**	**78.06**	**336**	P	**P**	**23 15 15.4**	**-0.2**
	comp=Z,2.5nm,0.8s,baz=121,slow=4.8,SNR=23						
ILB	**Eielson Array**	**78.06**	**336**	*e*P	**P**	**23 15 15.9**	**+0.3**
RND	**Reindeer**	**78.43**	**335**	*e*P	**P**	**23 15 18.8**	**+1.0**
	comp=Z,12nm,0.8s						
BPAW	**Bear Paw Mtn.**	**79.54**	**335**	*e*P	**P**	**23 15 24.1**	**+0.3**
	comp=Z,64nm,2.0s						
MLY	**Manley**	**79.70**	**336**	*e*P	**P**	**23 15 25.0**	**+0.3**
	comp=Z,6.3nm,1.0s						
COLD	**Coldfoot**	**80.12**	**338**	*e*P	**P**	**23 15 28.8**	**+1.9**
	comp=Z,16nm,1.4s						
DAG	**Danmarks Havn**	**81.10**	**12**	*i* P	**P**	**23 15 30.8**	**-1.1**
	comp=Z,5.3nm,0.8s						
TOA0	**Torodi Ar. Sit**	**81.12**	**77**	*e*P	**P**	**23 15 33.0**	**-0.3**
TORD	**Torodi Ar. Bea**	**81.12**	**77**	P	**P**	**23 15 33.1**	**-0.2**
	comp=Z,4.2nm,0.6s,baz=281,slow=6.4,SNR=64						
TAM	**Tamanrasset**	**84.68**	**67**	*e*P	**P**	**23 15 52.7**	**+0.9**
	comp=Z,5.8nm,0.8s						
WLF	**Walferdange**	**85.41**	**41**	*e*P	**P**	**23 15 56.0**	**+1.3**
	comp=Z,19nm,1.1s						
SENIN	**Lac Senin/Sane**	**86.12**	**44**	*e*P	**P**	**23 16 00.2**	**+1.5**
	comp=Z,12nm,1.4s						
BFO	**Black Forest**	**86.83**	**42**	*e*P	**P**	**23 16 02.3**	**+0.5**
	comp=Z,8.2nm,1.2s						
MUD	**Monsted U'grnd**	**87.28**	**34**	*i* P	**P**	**23 16 05.3**	**+1.6**
	comp=Z,26nm,1.0s						
TUE	**Stuetta**	**87.54**	**44**	*e*P	**P**	**23 16 06.7**	**+1.2**
	comp=Z,7.2nm,0.8s						
VSL	**Villasalto**	**87.72**	**51**	*e*P	**P**	**23 16 06.7**	**+0.4**
	comp=Z,4.9nm,1.0s						
KEST	**Kesra**	**87.80**	**54**	P	**P**	**23 16 05.1**	**-1.7**
	comp=Z,1.4nm,0.8s,baz=265,slow=5.4,SNR=5.3						
NC204	**NORSAR Array S**	**88.02**	**29**	*e*P	**P**	**23 16 08.9**	**+1.7**
NBO02	**NORSAR Array S**	**88.07**	**29**	*e*P	**P**	**23 16 08.1**	**+0.7**
FUORN	**Ofenpass-Fuorn**	**88.17**	**44**	*e*P	**P**	**23 16 09.9**	**+1.3**
	comp=Z,12nm,1.4s						
NB2	**NORSAR Subarra**	**88.24**	**29**	P	**P**	**23 16 08.9**	**+0.6**
	comp=Z,14nm,1.0s,baz=271,slow=4.6						
NB2	**NORSAR Subarra**	**88.24**	**29**	P	**P**	**23 16 08.9**	**+0.6**
	baz=271,slow=4.6						
NOA	**NORSAR Array B**	**88.24**	**29**	P	**P**	**23 16 08.9**	**+0.6**
	comp=Z,7.3nm,0.8s,baz=271,slow=4.5,SNR=17						
NB201	**NORSAR Array S**	**88.28**	**29**	*e*P	**P**	**23 16 09.6**	**+1.1**
GAMB	**Gambell**	**88.56**	**334**	*e*P	**P**	**23 16 11.1**	**+1.4**
	comp=Z,18nm,1.2s						
CLL	**Collm**	**89.75**	**39**	*e*P	**P**	**23 16 15.0**	**-0.5**
	comp=Z,14nm,1.8s						
CLL	**Collm**	**89.75**	**39**	*e*P	**P**	**23 16 16.4**	**+0.9**
	comp=Z,17nm,1.8s						
BRG	**Berggiesshubel**	**90.37**	**39**	*e*P	**P**	**23 16 19.4**	**+0.9**
	comp=Z,3.2nm,1.0s						
GERES	**GERESS Array B**	**90.37**	**41**	P	**P**	**23 16 19.2**	**+0.6**
	comp=Z,0.8nm,0.8s,baz=282,slow=2.6,SNR=7.4						
VRAC	**Vranov**	**92.22**	**41**	LR	LR	23 58 09.8	
	comp=Z,71nm,18.1s,baz=18,slow=36						
ARCES	**ARCESS Array B**	**92.91**	**20**	P	**P**	**23 16 29.9**	**+0.1**
	comp=Z,9.3nm,0.9s,baz=297,slow=5.3,SNR=7.4						
FINES	**FINESS Array B**	**95.27**	**28**	P	**P**	**23 16 40.9**	**+0.1**
	comp=Z,3.0nm,0.8s,baz=252,slow=0.6,SNR=7.3						
ZAA0	**Zalesovo Array**	**122.22**	**11**	*e*PKPdf	**PKPdf**	**23 22 11.2**	**-0.8**
ZALV	**Zalesovo Beam**	**122.22**	**11**	PKP	**PKPdf**	**23 22 11.3**	**-0.7**
	comp=Z,1.4nm,0.6s,baz=285,slow=2.9,SNR=9.4						
GEYT	**Alibeck**	**123.97**	**40**	PKP	**PKPdf**	**23 22 15.9**	**+0.1**
	comp=Z,1.2nm,0.6s,baz=272,slow=5.5,SNR=6.3						
MKAR	**Makanchi Array**	**128.35**	**16**	PKP	**PKPdf**	**23 22 23.5**	**-0.5**
	comp=Z,1.6nm,0.8s,baz=352,slow=2.5,SNR=16						
MK01	**Makanchi Array**	**128.38**	**16**	*e*PKPdf	**PKPdf**	**23 22 23.3**	**-0.8**
SONM	**Songino Array**	**129.50**	**355**	PKP	**PKPdf**	**23 22 26.3**	**0.0**
	comp=Z,1.7nm,0.8s,baz=314,slow=1.2,SNR=12						
WMQ	**Urumqi**	**132.46**	**12**	*e*PKP	**PKPdf**	**23 22 30.1**	**-1.8**
HHC	**Hu-ho-hao-te**	**135.55**	**348**	*e*PKP	**PKPdf**	**23 22 35.6**	**-2.3**
ASAR	**Alice Springs**	**141.27**	**234**	PKhKP	PKPpre	23 22 42.1	
	comp=Z,1.0nm,0.7s,baz=120,slow=3.8,SNR=6.3						
ASAR				PKP	**PKPdf**	**23 22 48.1**	**-0.6**
	comp=Z,1.1nm,0.7s,baz=112,slow=1.8,SNR=6.3						
NJ2	**Nanjing**	**141.28**	**334**	*e*PKP	**PKPdf**	**23 22 49.0**	**+0.6**
WRA	**Warramunga Arr**	**142.49**	**240**	PKhKP	PKPpre	23 22 45.8	
	comp=Z,2.3nm,0.7s,baz=117,slow=2.9,SNR=10.0						
ENH	**Enshi**	**146.15**	**346**	*e*PKPdf	**PKPdf**	**23 22 57.4**	**+0.3**
CD2	**Chengdu**	**146.53**	**354**	PKPbc	**PKPdf**	**23 22 55.5**	**-2.2**
MTN	**Manton Dam**	**147.76**	**250**	*e*PKPbc	**PKPbc**	**23 23 02.8**	**-0.1**
GYA	**Guiyang**	**150.47**	**348**	*e*PKPbc	**PKPdf**	**23 23 02.8**	**-1.6**
GYA				PKPab	**PKPab**	**23 23 17.0**	**+0.9**
GYA				PKS	**PKSdf**	**23 26 36.6**	**-2.8**
GYA				PP	**PP**	**23 26 47.2**	**+3.4**
GYA				AMB	AMB		
	comp=Z,110nm,8.0s						
HYB	**Hyderabad**	**150.81**	**46**	*i* PKP	**PKPab**	**23 23 17.0**	**-0.7**
CMAR	**Chiang Mai Arr**	**159.06**	**3**	PKP	**PKPdf**	**23 23 16.4**	**+0.1**
	comp=Z,1.0nm,0.4s,baz=312,slow=1.9,SNR=10.0						
CMAR				PKPab	**PKPab**	**23 23 51.6**	**-0.9**
	comp=Z,2.7nm,0.9s,baz=334,slow=5.1,SNR=12						

ISCJB ***03*** *23:04:02.0±1.1, 35°.95N±0°.08×140°.9E±0°.1, h35km, mb3.2/3, Error ellipse: s-maj=16.6km s-min=8.4km az=145.4*

JMA ***03*** *23:04:02.3±0.1, 35°.90N×140°.87E, h39km±1km, M2.8*

IDC ***03*** *23:04:19.5±4.7, 36°.46N×139°.36E, h96km±18km, mb3.1/3, mb1 3.1/3, mb1mx2.9/29, mbtmp3.4/3, Error ellipse: s-maj=78.1km s-min=62.6km az=97.0*

ISC 03 23:04:02.3±1.4**, 35°.93N**±0°.08×**140°.9E**±0°.1**, h35**km**, n9,** σ**1s.09**/12**, mb3.3**/3**, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.24**	**193**	P	**Pn**	**23 04 09.2**	**-0.3**
CHOJ				*e*S	**Sn**	**23 04 14.4**	**0.0**
JYT	**Yasato**	**0.66**	**296**	P	**Pn**	**23 04 14.7**	**-0.5**
JYT				S	**Sn**	**23 04 23.5**	**-0.8**
JHO	**Hitachi**	**0.73**	**337**	P	**Pn**	**23 04 16.4**	**+0.2**
JAG	**Ashikaga**	**1.29**	**293**	P	**Pn**	**23 04 23.7**	**-0.1**
MJAR	**Matsushiro Arr**	**2.28**	**286**	P	**Pn**	**23 04 38.7**	**+1.3**
	2.3nm,0.3s,baz=93,slow=8.7,SNR=12						
MAT	**Matsushiro**	**2.28**	**286**	P	**Pn**	**23 04 39.8**	**+2.4**
MAT				S	**Sn**	**23 05 02.8**	**-1.5**
SONM	**Songino Array**	**28.09**	**306**	P	**P**	**23 09 50.5**	**-0.2**
	0.3nm,0.5s,baz=104,slow=6.1,SNR=2.6						
ZALV	**Zalesovo Beam**	**42.37**	**313**	P	**P**	**23 11 53.4**	**+0.5**
	0.2nm,0.3s,baz=68,slow=5.0,SNR=2.5						
MKAR	**Makanchi Array**	**44.38**	**303**	P	**P**	**23 12 09.1**	**-0.1**
	0.5nm,0.7s,baz=91,slow=9.6,SNR=6.8						

WEL 03 23:11:37.0±0.4**, 37°.99S**×**176°.20E, h141**km±4km**, ML3.6**/5**, 7C-2D, Error ellipse: s-maj=3.3km s-min=3.1km az=90.0, North Island**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
URZ	**Urewera**	**0.77**	**111**	PN	Pn	23 11 59.1	+0.1
URZ				SN	Sn	23 12 15.3	-0.4
URZ				AML	AML	23 12 15.7	
MWZ	**Matawai**	**1.10**	**109**	PN	Pn	23 12 02.1	+0.2
MWZ				SN	Sn	23 12 20.2	-0.6
MWZ				AML	AML	23 12 20.6	
MWZ				AML	AML	23 12 20.8	
MWZ				AML	AML	23 12 21.1	
RAHZ	**Arahi**	**1.16**	**143**	PN	Pn	23 12 02.6	+0.3
RAHZ				SN	Sn	23 12 21.7	0.0
KRVZ	**Karewarewa**	**1.19**	**201**	PN	Pn	23 12 03.2	+0.4
SNGZ	**Shannon Statio**	**1.20**	**132**	PN	Pn	23 12 03.0	+0.3
BKZ	**Black Stump Fm**	**1.20**	**169**	⇑PN	Pn	23 12 02.6	-0.2
BKZ				AML	AML	23 12 21.7	
HAZ	**Te Kaha**	**1.27**	**80**	⇓PN	Pn	23 12 03.1	-0.4
WHHZ	**Waihua**	**1.36**	**144**	PN	Pn	23 12 04.3	0.0
FWVZ	**Far West T-bar**	**1.36**	**202**	PN	Pn	23 12 04.7	+0.1
TKGZ	**Te Karaka**	**1.37**	**110**	PN	Pn	23 12 03.4	-1.0
TWGZ	**Tauwhareparae**	**1.42**	**98**	PN	Pn	23 12 05.3	+0.3
ARHZ	**Aropaoanui**	**1.42**	**154**	PN	Pn	23 12 05.0	0.0
WNVZ	**Wahianoa**	**1.42**	**199**	⇑PN	Pn	23 12 05.3	+0.1
RIGZ	**Rimuhau**	**1.42**	**121**	PN	Pn	23 12 05.2	+0.1
MOVZ	**Moawhango**	**1.46**	**194**	PN	Pn	23 12 05.1	-0.4
PKGZ	**Pakihiroa**	**1.49**	**87**	PN	Pn	23 12 05.9	+0.1
BHHZ	**Black Hill Sta**	**1.50**	**184**	⇑PN	Pn	23 12 05.4	-0.5
PUZ	**Puketiti**	**1.63**	**94**	PN	Pn	23 12 06.8	-0.4
CNGZ	**Carnagh Statio**	**1.66**	**108**	PN	Pn	23 12 07.8	+0.3
KRHZ	**Kereru**	**1.66**	**175**	PN	Pn	23 12 06.4	-1.2
MXZ	**Matakaoa Point**	**1.72**	**76**	PN	Pn	23 12 08.5	+0.3
WMGZ	**Waiomatatini S**	**1.76**	**85**	PN	Pn	23 12 08.5	-0.2
MHGZ	**Mahia Peninsul**	**1.77**	**132**	PN	Pn	23 12 08.5	-0.4
CKHZ	**Cape Kidnapper**	**1.80**	**158**	PN	Pn	23 12 08.7	-0.5
KAHZ	**Kahuranaki**	**1.88**	**164**	PN	Pn	23 12 09.5	-0.7
PNHZ	**Pukenui**	**1.92**	**180**	PN	Pn	23 12 09.5	-1.2
TSZ	**Takapari Road**	**2.08**	**185**	⇑PN	Pn	23 12 11.1	-1.4
WPHZ	**Waipukurau**	**2.08**	**175**	PN	Pn	23 12 11.2	-1.3
PXZ	**Pawanui**	**2.10**	**166**	⇑PN	Pn	23 12 11.5	-1.3
PXZ				AML	AML	23 12 37.8	
PRHZ	**Porangahau**	**2.30**	**172**	PN	Pn	23 12 13.6	-1.6
DVHZ	**Dannevirke**	**2.31**	**181**	PN	Pn	23 12 13.4	-1.9
POWZ	**Post Office Ro**	**2.42**	**188**	PN	Pn	23 12 14.8	-1.9
ANWZ	**Angora Road**	**2.48**	**175**	⇑PN	Pn	23 12 15.7	-1.7
PRWZ	**Pori Road**	**2.57**	**184**	PN	Pn	23 12 16.8	-1.7
BFZ	**Birch Farm**	**2.69**	**179**	PN	Pn	23 12 17.7	-2.3
TIWZ	**Tintock**	**2.80**	**185**	PN	Pn	23 12 19.0	-2.4
TIWZ				AML	AML	23 12 20.3	
OGWZ	**Otaki Gorge**	**2.94**	**195**	PN	Pn	23 12 20.7	-2.5
HOWZ	**Holdsworth Sta**	**2.96**	**190**	⇑PN	Pn	23 12 20.5	-2.9
KIW	**Kapiti Island**	**3.04**	**199**	PN	Pn	23 12 21.7	-2.8
TMWZ	**Te Maipa**	**3.12**	**184**	PN	Pn	23 12 22.6	-3.0
CAW	**Cannon Point**	**3.24**	**195**	⇓PN	Pn	23 12 24.0	-3.0
TRWZ	**Traveller**	**3.43**	**186**	PN	Pn	23 12 26.1	-3.4
MSWZ	**Moikau Station**	**3.50**	**192**	PN	Pn	23 12 26.7	-3.7
TCW	**Tory Channel**	**3.55**	**204**	PN	Pn	23 12 27.9	-3.1
PLWZ	**Palliser**	**3.65**	**191**	PN	Pn	23 12 28.5	-4.0
TUWZ	**Tuamarina**	**3.85**	**206**	PN	Pn	23 12 31.8	-3.2

ISCJB ***03*** *23:17:26.9±0.3, 43°.87N±0°.05×145°.76E±0°.05, h127km±2km, mb3.8/21, Error ellipse: s-maj=8.4km s-min=4.9km az=155.5*

MOS ***03*** *23:17:26.6±1.1, 44°.03N×145°.63E, h125km, mb3.9/10, Error ellipse: s-maj=17.1km s-min=11.4km az=74.4*

IDC ***03*** *23:17:27.7±2.8, 44°.05N×145°.64E, h115km±25km, mb3.5/20, mb1 3.7/24, mb1mx3.6/53, mbtmp3.9/24, Error ellipse: s-maj=15.9km s-min=12.7km az=142.0*

SKHL ***03*** *23:17:27.8±0.2, 43°.78N×145°.84E, h124km±4km, mb5.0/4, msh5.5/3*

JMA ***03*** *23:17:28.2±0.2, 43°.91N×145°.76E, h117km±2km, M3.7*

JMA Felt I J1.

ISC 03 23:17:27.7±0.6**, 43°.90N**±0°.06×**145°.74E**±0°.04**, h121**km±5km**, n61,** σ**0s.83**/73**, mb3.8**/21**, 4D, Hokkaido region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
YUK	**Yuzh-Kuril'sk**	**0.16**	**34**	*i* P	**Pn**	**23 17 44.6**	**+0.3**
YUK				AMB	AMB	23 17 45.3	
	1µm,0.3s						
YUK				*i* S	**Sn**	**23 17 57.3**	**+0.5**
YUK				A	A	23 17 58.1	
	3µm,0.6s						
YUK				A	A	23 17 58.1	
	1µm,0.6s						
YUK	**Yuzh-Kuril'sk**	**0.16**	**34**	*d i*PN	**Pn**	**23 17 44.6**	**+0.3**
YUK				*i* S	**Sn**	**23 17 57.2**	**+0.5**
YUK				pmax	pmax		
	comp=Z,1µm,0.2s						
YUK				pmax	pmax		
	comp=N,182nm,0.1s						
YUK				pmax	pmax		
	comp=E,379nm,0.1s						
YUK				smax	smax		
	comp=N,3µm,0.4s						
YUK				smax	smax		
	comp=E,10µm,0.8s						
JRA	**Rausu**	**0.45**	**275**	P	**Pn**	**23 17 45.4**	**0.0**
NEM2	**Nemuro 2**	**0.54**	**180**	P	**Pn**	**23 17 46.1**	**+0.2**
NEM2				*e*S	**Sn**	**23 17 59.1**	**-0.5**
SHO	**Shikotan**	**0.79**	**92**	*i* P	**Pn**	**23 17 47.8**	**0.0**
SHO				AMB	AMB	23 17 49.3	
	comp=E,980nm,0.4s						
SHO				*i* S	**Sn**	**23 18 02.6**	**-0.4**
SHO				A	A	23 18 03.3	
	comp=E,540nm,0.2s						
SHO				A	A	23 18 03.3	
	comp=E,450nm,0.2s						
SHO	**Shikotan**	**0.79**	**92**	*d i*PN	**Pn**	**23 17 47.8**	**0.0**
SHO				*i* S	**Sn**	**23 18 02.3**	**-0.7**
SHO				pmax	pmax		
	comp=Z,979nm,0.4s						
SHO				pmax	pmax		
	comp=N,669nm,0.3s						
SHO				pmax	pmax		
	comp=E,881nm,0.3s						
SHO				smax	smax		
	comp=N,5µm,0.5s						
SHO				smax	smax		
	comp=E,4µm,0.3s						
JNK	**Nakash**	**0.81**	**247**	P	**Pn**	**23 17 48.3**	**+0.3**
JAK	**Akkeshi**	**1.18**	**220**	P	**Pn**	**23 17 52.0**	**+0.4**
JAK				*e*S	**Sn**	**23 18 09.8**	**+0.1**
JTKR	**Abashiri--Toko**	**1.32**	**274**	P	**Pn**	**23 17 53.4**	**+0.3**
JTKR				*e*S	**Sn**	**23 18 12.2**	**-0.2**
JAR	**Ashorobuto**	**1.56**	**248**	P	**Pn**	**23 17 56.9**	**+1.1**
JOB	**Onbets**	**1.71**	**235**	P	**Pn**	**23 17 58.6**	**+1.0**
JOB				*e*S	**Sn**	**23 18 21.2**	**+0.8**
JMP	**Maruseppu**	**1.72**	**274**	P	**Pn**	**23 17 58.2**	**+0.4**
JMP				*e*S	**Sn**	**23 18 20.9**	**+0.2**
HRK	**Horoka**	**1.94**	**258**	*e*P	**Pn**	**23 18 01.3**	**+0.8**
KUR	**Kuril'sk**	**2.02**	**48**	*e*P	**Pn**	**23 18 02.3**	**+1.0**
KUR				AMB	AMB	23 18 03.3	
	comp=E,280nm,0.6s						
KUR				*i* S	**Sn**	**23 18 28.2**	**+1.1**
KUR				A	A	23 18 29.7	
	comp=E,170nm,0.5s						
KUR				A	A	23 18 29.7	
	comp=E,360nm,0.5s						
KUR	**Kuril'sk**	**2.02**	**48**	*d i*PN	**Pn**	**23 18 02.3**	**+1.0**
KUR				*e*S	**Sn**	**23 18 28.3**	**+1.1**
KUR				pmax	pmax		
	comp=N,43nm,0.4s						
KUR				pmax	pmax		
	comp=E,52nm,0.4s						
KUR				pmax	pmax		
	comp=Z,174nm,0.4s						
KUR				smax	smax		
	comp=E,170nm,0.9s						
KUR				smax	smax		
	comp=N,93nm,0.7s						
JCH	**Churui**	**2.16**	**234**	P	**Pn**	**23 18 03.6**	**+0.4**
JCH				*e*S	**Sn**	**23 18 29.7**	**-0.7**
JKK2	**Kamakawa 2**	**2.16**	**270**	P	**Pn**	**23 18 04.0**	**+0.8**
JKK2				*e*S	**Sn**	**23 18 31.5**	**+1.1**
YSS	**Yuzh-Sakhalins**	**3.70**	**326**	*e*P	Pn	23 18 28.0	+4.8
YSS	**Yuzh-Sakhalins**	**3.70**	**326**	⇓*i*PN	Pn	23 18 31.2	+8.0
YSS				pmax	pmax		
	comp=Z,40nm,0.5s						
TEY	**Ternei**	**6.64**	**283**	*e*P	**Pn**	**23 19 03.2**	**+0.6**
TEY				AMB	AMB	23 19 05.0	

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
	comp=Z,40nm,0.8s						
TYV	Tymovskoe	7.27	344	eP	Pn	23 19 14.6	+3.5
MJAR	Matsushiro Arr	9.34	221	P	Pn	23 19 39.9	+0.7
	comp=Z,0.6nm,0.3s,baz=30,slow=14,SNR=8.9						
USRK	Ussuriysk Ar.	9.91	276	P	Pn	23 19 47.0	+0.3
	comp=Z,0.3nm,0.3s,baz=92,slow=13,SNR=7.2						
KLR	Kul'dur	11.00	304	P	Pn	23 20 03.1	+1.6
	comp=Z,0.2nm,0.3s,baz=113,slow=16,SNR=9.6						
EKMR	Ekimchan	12.48	322	eP	Pn	23 20 20.5	-0.4
EKMR				AMB	AMB	23 20 35.0	
	comp=Z,5.0nm,0.8s						
KSRS	Korea Array	14.96	251	P	Pn	23 20 51.8	-1.1
	comp=Z,0.3nm,0.3s,baz=57,slow=12,SNR=2.9						
BMKR	Bomnak	15.39	321	eP	P	23 21 01.0	+0.9
KROS	Kirovskiy	16.12	317	eP	P	23 21 09.0	+0.9
SEY	Seymchan	19.45	9	P	P	23 21 42.6	-1.9
	comp=Z,0.6nm,0.3s,baz=172,slow=7.9,SNR=5.9						
SONM	Songino Array	27.47	292	P	P	23 23 02.3	-0.1
	comp=Z,2.6nm,0.5s,baz=84,slow=8.5,SNR=28						
ZALV	Zalesovo Beam	40.09	307	P	P	23 24 50.7	-0.3
	comp=Z,0.7nm,0.4s,baz=88,slow=10,SNR=3.8						
ZALV				PcP	PcP	23 26 53.5	+0.3
	comp=Z,0.5nm,0.5s,baz=134,slow=4.2,SNR=4.5						
ILAR	Eielson Array	41.97	36	P	P	23 25 06.7	+0.5
	comp=Z,0.7nm,0.6s,baz=270,slow=4.9,SNR=8.5						
MKAR	Makanchi Array	43.61	297	P	P	23 25 19.6	-0.2
	comp=Z,1.5nm,0.5s,baz=79,slow=9.7,SNR=26						
MKAR				PcP	PcP	23 27 04.8	-0.2
	comp=Z,0.3nm,0.7s,baz=78,slow=6.7,SNR=2.4						
INK	Inuvik	46.78	30	P	P	23 25 44.3	-0.1
	comp=Z,0.6nm,0.3s,baz=303,slow=8.3,SNR=9.0						
ODAN	Odare	49.51	270	eP	P	23 26 07.8	+1.6
GUN	Gumba	49.99	272	eP	P	23 26 10.2	+0.2
	comp=Z,8.1nm,0.3s						
RAMN	Ramite	50.02	271	eP	P	23 26 10.2	0.0
	comp=Z,22nm,0.5s						
KKN	Kakani	50.49	272	eP	P	23 26 14.6	+1.0
DMN	Daman	50.72	272	eP	P	23 26 15.6	+0.2
	comp=Z,6.5nm,0.5s						
GKN	Gorkha	50.83	273	eP	P	23 26 16.1	0.0
	comp=Z,5.8nm,0.4s						
KOLN	Koldanda	51.71	274	eP	P	23 26 23.2	+0.4
	comp=Z,9.8nm,0.6s						
PYUN	Piuthan	51.96	274	eP	P	23 26 24.7	+0.1
RES	Resolute Bay	55.11	16	P	P	23 26 45.3	-1.3
	comp=Z,1.1nm,0.4s,baz=332,slow=3.7,SNR=13						
YKA	Yellowknife Ar	56.24	33	P	P	23 26 55.0	+0.2
	comp=Z,0.4nm,0.6s,baz=304,slow=6.8,SNR=10						
GEYT	Alibeck	63.47	298	P	P	23 27 44.1	-0.7
	comp=Z,1.0nm,0.5s,baz=57,slow=5.5,SNR=4.6						
FINES	FINESS Array B	64.27	332	P	P	23 27 48.6	-0.9
	comp=Z,1.1nm,0.5s,baz=45,slow=8.3,SNR=13						
WRA	Warramunga Arr	64.39	192	P	P	23 27 51.2	+0.5
	comp=Z,0.7nm,0.9s,baz=11,slow=7.0,SNR=3.1						
ASAR	Alice Springs	68.11	192	P	P	23 28 16.4	+2.0
	comp=Z,0.1nm,0.3s,baz=333,slow=7.2,SNR=3.4						
NVAR	Mina Array Bea	68.36	57	P	P	23 28 17.9	+1.6
	comp=Z,0.4nm,0.5s,baz=299,slow=7.8,SNR=2.5						
KIV	Kislovodsk	68.90	311	eP	P	23 28 17.8	-1.6
KIV	Kislovodsk	68.90	311	eP	P	23 28 17.8	-1.6
KIV				pmax	pmax		
	comp=Z,9.0nm,1.0s						
KBZ	Khabaz	68.93	311	P	P	23 28 20.4	+1.0
	comp=Z,4.3nm,0.8s,baz=174,slow=3.9,SNR=6.2						
NOA	NORSAR Array B	69.09	338	P	P	23 28 19.1	-1.0
	comp=Z,0.4nm,0.6s,baz=31,slow=6.4,SNR=3.2						
PDAR	Pinedale Array	70.58	49	P	P	23 28 30.7	+0.8
	comp=Z,0.5nm,0.6s,baz=245,slow=1.5,SNR=5.6						
AKASG	Malin Array Be	70.85	323	P	P	23 28 30.1	-0.9
	comp=Z,0.7nm,0.4s,baz=44,slow=6.2,SNR=6.5						
BRTR	Keskin Array B	76.69	313	P	P	23 29 06.5	+1.0
	comp=Z,0.5nm,0.7s,baz=99,slow=3.9,SNR=4.8						
SCHQ	Schefferville	77.81	19	P	P	23 29 12.1	+0.8
	comp=Z,3.8nm,0.9s,baz=280,slow=12,SNR=3.2						
GERES	GERESS Array B	78.52	330	P	P	23 29 15.0	-0.5
	comp=Z,0.2nm,0.5s,baz=33,slow=5.8,SNR=3.1						
GERES	GERESS Array B	78.52	330	eP	P	23 29 15.0	-0.5
GERES	GERESS Array B	78.52	330	P	P	23 29 15.0	-0.5
TXAR	Lajitas Array	83.41	55	P	P	23 29 41.3	-0.4
	comp=Z,0.2nm,0.4s,baz=289,slow=3.8,SNR=4.5						

ISCJB 03 23:20:07.0±0.8, 10°.81N±0°.09×62°.44W±0°.03, h95km±8km, Error ellipse: s-maj=14.5km s-min=5.1km az=174.1
FUNV 03 23:20:08.4, 10°.79N×62°.30W, h76km, MW2.8
TRN 03 23:20:09.8, 10°.96N×62°.32W, h81km, MD3.2
ISC 03 23:20:07.1±1.5, 10°.72N±0°.07×62°.41W±0°.04, h103km±11km, n14, σ1.s59/25, Near coast of Venezuela

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
TCE	Chacachacare	0.65	92	eP	Pn	23 20 24.9	+0.6
TCE				eS	Sn	23 20 36.1	-1.1
GUNV	Guanoco	0.76	223	eP	Pn	23 20 25.5	+0.2
GUNV				eS	Sn	23 20 39.2	+0.3
CRUV	Carupano	0.81	267	eP	Pn	23 20 25.8	+0.1
CRUV				eS	Sn	23 20 37.6	-2.1
TRN	Trinidad (W)	1.00	94	eP	Pn	23 20 28.7	+1.1
TRN				eS	Sn	23 20 41.9	-1.2
TPP	Pointe-a-Pierr	1.03	113	eP	Pn	23 20 30.2	+2.2
TPP				eS	Sn	23 20 44.7	+0.9
TBH	Brigand Hill	1.34	100	eP	Pn	23 20 33.3	+1.7
TBH				eS	Sn	23 20 50.2	0.0
ORIV	Oritupano	1.91	211	eP	Pn	23 20 39.4	+0.8
TOSP	Speyside	1.93	73	eP	Pn	23 20 38.6	-0.2
TOSP				eS	Sn	23 21 01.0	-2.1
GURV	El Guri	3.02	193	eP	Pn	23 20 54.9	+1.7
CUPV	Cœpira	3.38	259	eP	Pn	23 21 00.1	+1.9
CUPV				eS	Sn	23 21 36.8	-0.8
BIRV	Birongo	3.80	267	eP	Pn	23 21 05.0	+1.4
BIRV				eS	Sn	23 21 47.8	+0.4
MERV	Las Mercedes	4.09	249	eP	Pn	23 21 08.6	+1.0
LUEV	Luepa	4.94	169	eP	Pn	23 21 19.6	+0.4
LUEV				eS	Sn	23 22 11.6	-3.6
BAUV	El Baul	5.82	253	eP	Pn	23 21 32.1	+1.2
BAUV				eS	Sn	23 22 34.1	-2.3

IDC 03 23:20:42.1±2.6, 10°.03S×155°.20E, h0km, mb3.7/5, mb1 4.0/5, mb1mx3.7/36, mbtmp3.7/5, Error ellipse: s-maj=79.0km s-min=28.7km az=126.0, D'Entrecasteaux Islands region

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
WRA	Warramunga Arr	22.40	241	P	P	23 25 41.5	-1.0
	2.8nm,0.8s,baz=64,slow=10,SNR=5.1						
ASAR	Alice Springs	24.43	234	P	P	23 26 03.3	+0.5
	1.5nm,0.9s,baz=61,slow=10.0,SNR=9.5						
CMAR	Chiang Mai Arr	62.29	297	P	P	23 31 07.8	+1.1
	0.7nm,0.3s,baz=133,slow=5.9,SNR=4.8						
SONM	Songino Array	71.98	328	P	P	23 32 07.2	-0.6
	0.2nm,0.3s,baz=128,slow=2.4,SNR=3.7						
ILAR	Eielson Array	86.11	21	P	P	23 33 24.6	-0.1
	0.5nm,0.8s,baz=218,slow=6.7,SNR=4.0						

IDC 03 23:24:41.4±0.9, 36°.76N×144°.68E, h0km, mb3.8/10, mb1 3.9/14, mb1mx3.7/52, mbtmp3.8/14, ML3.0/3, Error ellipse: s-maj=23.3km s-min=19.6km az=94.0
NEIC 03 23:24:42.6±0.6, 36°.66N×144°.71E, h10km, mb4.4/1, Error ellipse: s-maj=11.6km s-min=10.2km az=67.0
ISCJB 03 23:24:45.3±0.6, 36°.87N±0°.05×144°.29E±0°.05, h26km, mb3.9/12, Error ellipse: s-maj=7.7km s-min=6.2km az=4.1
JMA 03 23:24:46.5±0.3, 36°.93N×144°.27E, h47km, M4.3
ISC 03 23:24:46.4±0.8, 36°.86N±0°.06×144°.36E±0°.08, h26km, n38, σ1.s43/40, mb3.8/12, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
JFK	Kawauchi	2.83	281	P	Pn	23 25 29.2	-0.8
JFK				eS	Sn	23 26 01.4	-1.9
ONAJ	Iwakimizuishiy	2.87	276	P	Pn	23 25 30.1	-0.3
ONAJ				eS	Sn	23 26 02.5	-1.6
JIO	Ouri	2.88	305	P	Pn	23 25 29.5	-1.0
JIO				eS	Sn	23 26 01.3	-2.9
JMM	Marumori	3.02	291	P	Pn	23 25 31.7	-0.8
JMM				eS	Sn	23 26 05.5	-2.3
JHO	Hitachi	3.06	267	P	Pn	23 25 32.6	-0.4
JMK	Ichinoseki	3.25	311	P	Pn	23 25 34.9	-0.7
JMK				eS	Sn	23 26 10.9	-2.6
JFT	Otama	3.28	283	P	Pn	23 25 36.4	+0.3
JFT				eS	Sn	23 26 13.5	-0.9
JYT	Yasato	3.42	261	P	Pn	23 25 37.9	0.0
BSO3	Boso 3	3.74	238	P	Pn	23 25 42.6	+0.4
JRG	Rokugo	3.88	312	P	Pn	23 25 44.5	+0.1
MJAR	Matsushiro Arr	4.96	268	Pn	Pn	23 26 00.1	+0.9
	4.5nm,0.3s,baz=87,slow=15,SNR=19						
MAJO	Matsushiro	4.96	268	ePn	Pn	23 26 00.6	+1.4
	19nm,0.4s						
MAT	Matsushiro	4.96	268	P	Pn	23 26 00.0	+0.8
MAT				S	Sn	23 26 55.4	-0.3
ERM	Erimo	5.24	350	ePn	Pn	23 26 04.3	+1.4
JHJ	Hachijo jima 2	5.29	227	Pn	Pn	23 26 02.5	-1.3
	32nm,0.3s,baz=42,slow=15,SNR=4.9						
JHJ				Sn	Sn	23 27 01.2	-2.8
	39nm,0.3s,baz=49,slow=17,SNR=4.1						
USRK	Ussuriysk Ar.	11.93	312	Pn	Pn	23 27 35.4	+0.7
	0.1nm,0.3s,baz=104,slow=15,SNR=3.0						
KSRS	Korea Array	13.13	278	Pn	Pn	23 27 54.0	+2.8
	0.1nm,0.3s,baz=90,slow=14,SNR=4.2						
KSAR	Wonju Array Be	13.16	278	Pn	Pn	23 27 54.0	+2.4
KLR	Kul'dur	15.40	327	Pn	P	23 28 25.6	-0.6
	0.1nm,0.3s,baz=134,slow=11,SNR=5.4						
H11N2	WAKE ISLAND Hy	26.06	125	T	T	23 57 02.6	
	baz=317,slow=75,SNR=125						
H11N1	WAKE ISLAND Hy	26.07	125	T	T	23 57 03.9	
	baz=317,slow=75,SNR=66						
H11N3	WAKE ISLAND Hy	26.08	125	T	T	23 57 03.9	
	baz=317,slow=75,SNR=101						
SEY	Seymchan	26.57	8	P	P	23 30 21.3	-0.6
	0.6nm,0.3s,baz=180,slow=19,SNR=2.6						
H11S1	WAKE ISLAND Hy	26.82	127	T	T	23 58 03.3	
	baz=318,slow=76,SNR=37						
H11S3	WAKE ISLAND Hy	26.82	127	T	T	23 58 05.5	
	baz=318,slow=76,SNR=28						
H11S2	WAKE ISLAND Hy	26.84	127	T	T	23 58 05.5	
	baz=318,slow=76,SNR=34						
SONM	Songino Array	29.85	304	P	P	23 30 53.5	+1.9
	0.3nm,0.7s,baz=108,slow=9.3,SNR=2.3						
CMAR	Chiang Mai Arr	43.76	258	P	P	23 32 51.8	+2.0
	0.8nm,0.7s,baz=43,slow=7.2,SNR=5.6						
ZALV	Zalesovo Beam	43.78	313	P	P	23 32 50.4	+0.9
	0.5nm,0.4s,baz=102,slow=7.6,SNR=3.0						
ZALV				PcP	PcP	23 34 35.5	-0.4
	0.9nm,0.4s,baz=115,slow=3.8,SNR=4.6						
MKAR	Makanchi Array	46.21	303	P	P	23 33 09.9	+0.8
	1.4nm,0.8s,baz=86,slow=9.9,SNR=17						
KURK	Kurchatov	47.90	309	eP	P	23 33 22.6	+0.5
	2.0nm,0.5s						
HNR	Honiara	48.31	159	eP	P	23 33 20.5	-5.2
	14nm,0.4s						
WRA	Warramunga Arr	57.28	191	P	P	23 34 30.3	-1.6
	0.7nm,0.5s,baz=11,slow=7.2,SNR=5.2						
ASAR	Alice Springs	61.00	191	P	P	23 34 56.4	-1.2
	0.3nm,0.4s,baz=358,slow=6.1,SNR=4.3						
FINES	FINESS Array B	70.05	333	P	P	23 35 55.8	+0.2
	3.0nm,1.0s,baz=33,slow=7.7,SNR=4.2						
AKASG	Malin Array Be	75.86	324	P	P	23 36 30.4	+0.2
	0.5nm,0.4s,baz=37,slow=6.3,SNR=6.0						
TXAR	Lajitas Array	88.33	54	P	P	23 37 35.6	-0.5
	0.2nm,0.5s,baz=259,slow=1.8,SNR=2.4						
TORD	Torodi Ar. Bea	119.10	317	PKP	PKPdf	23 43 32.0	-1.4
	0.2nm,0.9s,baz=42,slow=2.3,SNR=2.4						

IDC 03 23:32:00.8±1.3, 30°.28N×138°.93E, h428km±25km, mb2.9/8, mb1 3.0/10, mb1mx2.7/59, mbtmp3.7/10, Error ellipse: s-maj=50.6km s-min=16.6km az=73.0, Southeast of Honshu

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
JCJ	Chichijima	4.27	137	P	P	23 33 18.4	+1.3
	4.8nm,0.3s,baz=286,slow=20,SNR=3.7						
JCJ				S	S	23 34 19.1	-0.1
	20nm,0.3s,baz=286,slow=23,SNR=11						
KLR	Kul'dur	19.70	346	P	P	23 36 00.6	+0.1
	0.1nm,0.3s,baz=158,slow=16,SNR=4.2						
MKAR	Makanchi Array	46.26	307	P	P	23 39 45.9	0.0
	0.5nm,0.6s,baz=87,slow=9.5,SNR=6.6						
KURBB	Kurchatov Arra	48.78	313	P	P	23 40 04.5	-0.3
	0.7nm,0.4s,baz=92,slow=8.0,SNR=15						
WRA	Warramunga Arr	50.13	186	P	P	23 40 15.2	+0.1
	0.3nm,0.4s,baz=1.0,slow=7.6,SNR=2.6						
AAK	Ala-Archa	52.12	302	P	P	23 40 29.7	0.0
	1.1nm,0.8s,baz=108,slow=3.2,SNR=3.8						
ASAR	Alice Springs	53.86	186	P	P	23 40 42.0	-0.2
	0.2nm,0.4s,baz=16,slow=14,SNR=3.6						
FINES	FINESS Array B	73.82	333	P	P	23 42 49.9	0.0
	0.4nm,0.3s,baz=60,slow=4.6,SNR=6.0						
AKASG	Malin Array Be	78.36	322	P	P	23 43 14.9	-0.5
	0.4nm,0.4s,baz=53,slow=4.7,SNR=4.0						
NOA	NORSAR Array B	79.59	337	P	P	23 43 22.4	+0.6
	0.8nm,0.8s,baz=57,slow=4.2,SNR=2.4						

JMA 03 23:32:41.2±0.1, 37°.14N×141°.32E, h48km±1km, M3.6, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
ONAJ	Iwakimizuishiy	0.42	265	P	Pn	23 32 51.4	0.0
ONAJ				S	Sn	23 32 58.4	-0.3
JFK	Kawauchi	0.42	303	P	Pn	23 32 51.2	-0.3
JFK				S	Sn	23 32 58.3	-0.5
JHO	Hitachi	0.80	229	P	Pn	23 32 55.7	-0.5
JHO				S	Sn	23 33 06.1	-1.0
JMM	Marumori	0.84	330	P	Pn	23 32 56.5	-0.2
JMM				eS	Sn	23 33 07.7	-0.3
JFT	Otama	0.87	296	P	Pn	23 32 58.0	+0.9
JFT				S	Sn	23 33 09.8	+1.0
MAT	Matsushiro	2.57	258	P	Pn	23 33 21.4	+1.1
MAT				eS	Sn	23 33 54.3	+4.0

ISCJB 03 23:33:01.3±0.8, 35°.65N±0°.06×140°.7E±0°.1, h57km±6km, mb3.7/13, Error ellipse: s-maj=17.1km s-min=9.3km az=179.7
JMA 03 23:33:01.5±0.2, 35°.72N×140°.70E, h47km±2km, M3.3
JMA Felt I J1.
IDC 03 23:33:03.7±2.7, 35°.59N×140°.57E, h60km±24km, mb3.4/13, mb1 3.5/15, mb1mx3.4/62, mbtmp3.7/15, ML3.5/2, MS3.3/1, Ms1 3.3/1, ms1mx2.8/40, Error ellipse: s-maj=30.0km s-min=12.9km az=74.0
ISC 03 23:33:02.1±1.0, 35°.68N±0°.06×140°.74E±0°.09, h46km±8km, n26, σ0.s82/21, mb3.7/13, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
CHOJ	Chosi	0.10	79	P	Pn	23 33 09.1	-0.2
JCN	Nagara	0.52	239	P	Pn	23 33 13.3	+0.1
JCN				S	Sn	23 33 22.2	+1.0
JYT	Yasato	0.70	321	P	Pn	23 33 14.6	-1.1
BSO4	Boso 4	0.77	206	P	Pn	23 33 16.7	+0.2
MJAR	Matsushiro Arr	2.22	293	P	Pn	23 33 37.1	+0.7
	11nm,0.3s,baz=98,slow=14,SNR=23						
JHJ	Hachijo jima 2	2.68	198	P	Pn	23 33 42.5	-0.3
	27nm,0.3s,baz=74,slow=18,SNR=4.1						
JHJ				S	Sn	23 34 12.8	-1.1
	46nm,0.3s,baz=146,slow=23,SNR=6.1						
KSRS	Korea Array	10.46	283	LR	LR	23 39 21.9	
	comp=Z,189nm,21.3s,baz=290,slow=36						
H11N2	WAKE ISLAND Hy	27.96	118	T	T	00 08 00.7	
	baz=312,slow=75,SNR=18						
H11N1	WAKE ISLAND Hy	27.97	118	T	T	00 08 00.7	
	baz=312,slow=75,SNR=16						
H11N3	WAKE ISLAND Hy	27.98	118	T	T	00 08 00.7	
	baz=312,slow=75,SNR=15						
SONM	Songino Array	28.12	306	P	P	23 38 50.0	+0.3
	0.3nm,0.6s,baz=116,slow=9.5,SNR=2.8						
H11S1	WAKE ISLAND Hy	28.62	120	T	T	00 08 54.9	
	baz=312,slow=75,SNR=15						
H11S3	WAKE ISLAND Hy	28.62	120	T	T	00 08 51.7	
	baz=312,slow=75,SNR=12						
H11S2	WAKE ISLAND Hy	28.64	120	T	T	00 08 53.0	
	baz=312,slow=75,SNR=11						
ZALV	Zalesovo Beam	42.44	313	P	P	23 40 52.4	+0.2
	0.3nm,0.3s,baz=120,slow=8.8,SNR=3.7						
MKAR	Makanchi Array	44.39	303	P	P	23 41 07.8	-0.3
	0.6nm,0.5s,baz=84,slow=9.2,SNR=11						
KURBB	Kurchatov Arra	46.42	309	P	P	23 41 23.4	-0.5
	1.6nm,0.7s,baz=84,slow=8.0,SNR=9.7						
ILAR	Eielson Array	50.92	32	P	P	23 41 59.5	+1.1
	0.2nm,0.5s,baz=265,slow=6.0,SNR=3.5						
WRA	Warramunga Arr	55.65	187	P	P	23 42 32.4	-1.2
	0.7nm,0.5s,baz=0.6,slow=7.5,SNR=6.9						
ARU	Arti	57.02	319	P	P	23 42 42.7	-0.2
	1.0nm,0.4s,baz=90,slow=19						
ASAR	Alice Springs	59.38	187	P	P	23 42 60.0	+0.2
	0.4nm,0.6s,baz=16,slow=10,SNR=5.4						
FINES	FINESS Array B	69.75	332	P	P	23 44 06.0	-1.0
	0.9nm,0.8s,baz=70,slow=8.1,SNR=2.9						
AKASG	Malin Array Be	75.03	322	P	P	23 44 37.8	-0.9
	1.0nm,0.7s,baz=48,slow=6.8,SNR=3.9						
HFS	Hagfors	75.09	336	P	P	23 44 39.0	+0.1
	1.9nm,0.9s,baz=174,slow=39,SNR=2.6						
NOA	NORSAR Array B	75.22	337	P	P	23 44 39.3	-0.3
	0.4nm,0.7s,baz=24,slow=2.6,SNR=3.2						
PDAR	Pinedale Array	79.00	45	P	P	23 45 02.9	+1.5
	0.2nm,0.5s,baz=320,slow=2.7,SNR=2.8						

SKHL 03 23:36:35.1±0.5, 53°.77N×125°.48E, h10km±4km, mb3.9/6, 1D, Priamurye-Northeastern China border region

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
ZEA	Zeya	1.05	91	ePg	Pg	23 36 54.2	-1.1
ZEA				AMB	AMB	23 36 54.9	
	55nm,0.3s						
ZEA				eSg	Sg	23 37 08.0	-1.0
ZEA				A	A	23 37 09.3	
	400nm,0.4s						
ZEA				A	A	23 37 09.3	
	340nm,0.4s						
ZEA				A	A	23 37 09.3	
	170nm,0.4s						
KROS	Kirovskiy	1.10	52	⇓iPg	Pb	23 36 55.5	-0.7
KROS				AMB	AMB	23 36 56.1	
	35nm,0.3s						
KROS				AMB	AMB	23 36 56.1	
	30nm,0.3s						
KROS				AMB	AMB	23 36 56.1	
	80nm,0.3s						
KROS				eSg	Sg	23 37 09.7	-0.9
KROS				A	A	23 37 13.5	
	160nm,0.6s						
BMKR	Bomnak	2.19	63	ePn	Pn	23 37 10.6	-0.9
BMKR				ePg	Pb	23 37 14.5	-0.2
BMKR				AMB	AMB	23 37 15.3	
	11nm,0.4s						
BMKR				AMB	AMB	23 37 15.3	
	18nm,0.4s						
BMKR				AMB	AMB	23 37 15.3	
	22nm,0.4s						
BMKR				eSg	Sb	23 37 43.0	+1.1
BMKR				A	A	23 37 46.9	
	27nm,0.4s						
BMKR				A	A	23 37 46.9	
	60nm,0.4s						
TUP	Tupik	3.32	284	ePn	Pn	23 37 27.3	+0.2
TUP				ePg	Pb	23 37 34.7	+0.7
TUP				AMB	AMB	23 37 40.2	
	9.0nm,0.3s						
TUP				eSn	Sn	23 38 07.2	+0.6
TUP				eSg	Sg	23 38 18.1	-3.5
TUP				A	A	23 38 24.6	
	68nm,0.6s						
EKMR	Ekimchan	4.52	96	ePn	Pn	23 37 43.2	-0.4
EKMR				ePg	Pb	23 37 56.0	+1.5
EKMR				AMB	AMB	23 38 04.0	
	4.0nm,0.5s						
EKMR				eSg	Sg	23 38 56.9	-3.3
EKMR				A	A	23 39 07.0	
	30nm,0.7s						
EKMR				A	A	23 39 07.0	
	12nm,0.7s						
CRS	Chara	5.17	310	ePg	Pb	23 38 08.3	+2.7
CRS				eSg	Sg	23 39 17.3	-3.8

IDC 03 23:42:16.9±0.6, 36°.37N×28°.80E, h0km, mb3.9/18, mb1 4.0/28, mb1mx3.9/59, mbtmp3.9/28, ML3.7/10, Error ellipse: s-maj=13.3km s-min=11.1km az=0.0
CSEM 03 23:42:18.4±0.1, 36°.35N×28°.86E, h2km, ML4.0, Error ellipse: s-maj=2.8km s-min=2.1km az=35.0
THE 03 23:42:18.2, 36°.47N×28°.84E, h1km±1km, ML4.0/6, Error ellipse: s-maj=1.5km s-min=0.8km az=95.0
ISCJB 03 23:42:18.5±0.4, 36°.33N±0°.01×28°.89E±0°.02, h19km±4km, mb3.8/18, Error ellipse: s-maj=2.5km s-min=1.9km az=35.2
ISK 03 23:42:18.3, 36°.49N×28°.77E, h5km, ML4.0
DDA 03 23:42:18.4, 36°.42N×28°.77E, h22km, Ml4.0
ATH 03 23:42:19.3, 36°.50N×28°.79E, h20km±1km, ML3.8/6, Error ellipse: s-maj=1.7km s-min=1.0km az=179.0
HLW 03 23:42:20.0, 36°.29N×28°.98E, h20km±6km, Ml3.5
NIC 03 23:42:20.8±0.4, 36°.18N×28°.69E, h25km, mb4.3, ML4.0
GII 03 23:42:22.2±0.0, 36°.25N×28°.88E, h30km, mb4.2/2, MD3.9/3
ISC 03 23:42:18.5±0.8, 36°.40N±0°.02×28°.78E±0°.01, h9km±5km, n401, σ1.s56/443, mb3.9/18, 22C-6D, Dodecanese Islands

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
FETY	Fethiye	0.34	46	ePG	Pg	23 42 25.1	-0.2
FETY				eSG	Sg	23 42 29.9	0.0
FETY	Fethiye	0.34	46	P	Pg	23 42 23.9	-1.5
FETY				S	Sg	23 42 28.7	-1.2
FETY	Fethiye	0.34	46	P	Pg	23 42 23.9	-1.5
FETY	Fethiye	0.34	46	ePg	Pg	23 42 25.1	-0.2
FETY				S	Sg	23 42 28.7	-1.2
FETY				eSg	Sg	23 42 29.9	0.0
TURN	Turunc	0.50	344	i P	Pb	23 42 29.2	-0.2
TURN				i S	Sb	23 42 38.0	+1.2
TURN	Turunc	0.50	344	P	Pb	23 42 29.2	-0.2
TURN				S	Sb	23 42 38.0	+1.2
ARG	Arkhangelos	0.56	251	P	Pb	23 42 30.2	-0.2
ARG				S	Sn	23 42 40.2	-1.7
ARG	Arkhangelos	0.56	251	P	Pg	23 42 29.5	+0.2
ARG				S	Sn	23 42 40.1	-1.8
AKAS	Kas	0.69	103	i P	Pb	23 42 32.2	-0.6
AKAS				i S	Sn	23 42 43.9	-1.5
AKAS	Kas	0.69	103	P	Pb	23 42 32.2	-0.6
KSL	Kastellorizon	0.70	110	P	Pg	23 42 31.2	-0.8
KSL				S	Sb	23 42 42.7	+0.2
KSL	Kastellorizon	0.70	110	P	Pb	23 42 32.4	-0.4
KSL				S	Sn	23 42 44.9	-0.5
KSL				AML	AML	23 42 53.8	
	comp=N,7424μm,0.6s						
KSL				AML	AML	23 42 55.9	
	comp=E,11439μm,0.8s						
YER	Yerkesik	0.84	332	ePG	Pg	23 42 33.9	-0.8
YER				eSG	Sg	23 42 45.2	-0.4
YER	Yerkesik	0.84	332	P	Pg	23 42 33.5	-1.2
YER				S	Sg	23 42 45.8	+0.2
YER	Yerkesik	0.84	332	ePg	Pg	23 42 33.9	-0.8
YER				eSg	Sg	23 42 45.2	-0.4
GLHS	Glhisar (BURDU	0.95	37	ePG	Pg	23 42 36.3	-0.6
GLHS	Glhisar (BURDU	0.95	37	ePg	Pg	23 42 36.3	-0.6
ELL	Elmali	0.98	69	ePG	Pb	23 42 37.5	-0.2
ELL	Elmali	0.98	69	ePg	Pb	23 42 37.5	-0.2
GOLH	Golhisar	1.05	37	i P	Pg	23 42 38.0	-0.7
GOLH	Golhisar	1.05	37	P	Pg	23 42 38.0	-0.7
BDRM	Kayabasi	1.26	302	i P	Pn	23 42 42.3	0.0
BDRM				i S	Sg	23 43 00.1	+1.0
BDRM	Kayabasi	1.26	302	P	Pn	23 42 42.3	0.0
BDRM				S	Sg	23 43 00.2	+1.0
NIS1	Nisyros Isl.	1.30	280	ePN	Pg	23 42 44.1	+0.5
NIS1	Nisyros Isl.	1.30	280	P	Pb	23 42 43.1	-0.1
NIS1				S	Sg	23 43 00.8	+0.3
NIS1	Nisyros Isl.	1.30	280	P	Pg	23 42 43.8	+0.2
NIS1	Nisyros Isl.	1.30	280	ePn	Pg	23 42 44.1	+0.5
NIS1				S	Sg	23 43 00.8	+0.3
NIS1	Nisyros Isl.	1.30	280	P	Pg	23 42 43.8	+0.2
NIS1				S	Sg	23 43 03.5	+3.0
NIS1				AML	AML	23 43 09.7	
	comp=N,20169μm,0.6s						
NIS1				AML	AML	23 43 11.4	
	comp=E,22031μm,0.9s						
NISR	Nisiros	1.35	280	P	Pg	23 42 44.3	-0.1
NISR				S	Sg	23 43 02.5	+0.7
NISR	Nisiros	1.35	280	P	Pg	23 42 44.3	-0.1
NISR				S	Sg	23 43 02.5	+0.7
NISR				AML	AML	23 43 06.1	
	comp=N,5315μm,0.8s						
NISR				AML	AML	23 43 10.6	
	comp=E,7142μm,0.6s						
BODT	Bodrum	1.35	300	ePN	Pb	23 42 44.0	+0.1
BODT	Bodrum	1.35	300	P	Pn	23 42 43.3	-0.3
BODT				S	Sn	23 43 01.8	+0.2

BODT	Bodrum	1.35	300	P	Pn	23 42 43.3	-0.3
BODT	Bodrum	1.35	300	ePn	Pb	23 42 44.1	+0.1
BODT				S	Sn	23 43 01.8	+0.2
DENT	Denizli	1.37	9	ePN	Pn	23 42 43.6	-0.3
DENT	Denizli	1.37	9	ePn	Pn	23 42 43.6	-0.3
KORT	Korkueli	1.40	64	i P	Pg	23 42 46.3	+0.9
KORT				i S	Sg	23 43 07.0	+3.4
KORT	Korkueli	1.40	64	P	Pg	23 42 46.3	+0.9
KORT				S	Sg	23 43 07.0	+3.4
AYDN	Tasoluk	1.45	331	i P	Pn	23 42 45.3	+0.3
AYDN				i S	Sb	23 43 04.9	+0.6
AYDN	Tasoluk	1.45	331	P	Pn	23 42 45.3	+0.3
AYDN				S	Sb	23 43 04.9	+0.6
KARP	Karpathos	1.56	238	ePN	Pg	23 42 48.9	+0.4
KARP	Karpathos	1.56	238	P	Pg	23 42 47.9	-0.6
KARP				S	Sg	23 43 09.4	+0.7
KARP	Karpathos	1.56	238	P	Pg	23 42 47.9	-0.6
KARP	Karpathos	1.56	238	ePn	Pg	23 42 48.9	+0.4
KARP				S	Sg	23 43 09.4	+0.7
KARP	Karpathos	1.56	238	P	Pg	23 42 48.8	+0.4
KARP				S	Sg	23 43 11.9	+3.2
KARP				AML	AML	23 43 19.4	
	comp=N,3497µm,0.5s						
KARP				AML	AML	23 43 20.2	
	comp=E,2847µm,0.3s						
ANTB	Antalya	1.59	71	ePN	Pb	23 42 48.3	+0.2
ANTB	Antalya	1.59	71	ePn	Pb	23 42 48.3	+0.2
UZP	Denizli	1.66	11	i P	Pb	23 42 49.0	-0.3
UZP				i S	Sb	23 43 10.9	+0.4
AYDB	Zeytinkoy-Aydi	1.70	336	ePN	Pn	23 42 48.9	+0.4
AYDB	Zeytinkoy-Aydi	1.70	336	ePn	Pn	23 42 48.9	+0.4
GCAM	G?zelcaml?	1.79	317	i P	Pn	23 42 50.3	+0.7
GCAM				i S	Sb	23 43 14.4	+0.3
GCAM	G?zelcaml?	1.79	317	P	Pn	23 42 50.3	+0.7
GCAM				S	Sb	23 43 14.4	+0.3
BCK	Bucak	1.80	53	ePN	Pb	23 42 51.1	-0.6
BCK	Bucak	1.80	53	ePn	Pb	23 42 51.1	-0.6
ISP	Isparta	1.99	44	ePN	Pn	23 42 53.6	+1.2
ISP	Isparta	1.99	44	Pn	Pb	23 42 54.0	-1.0
ISP	Isparta	1.99	44	ePn	Pn	23 42 53.7	+1.2
KHL	Karahalli	2.01	17	ePN	Pn	23 42 53.5	+0.8
KHL	Karahalli	2.01	17	ePn	Pn	23 42 53.5	+0.8
SMG	Samos	2.03	311	P	Pn	23 42 52.2	-0.7
SMG				S	Sn	23 43 17.8	-0.6
SMG	Samos	2.03	311	P	Pn	23 42 52.8	-0.1
SMG				S	Sn	23 43 17.4	-1.0
SMG	Samos	2.03	311	P	Pn	23 42 52.8	-0.1
SMG				S	Sn	23 43 17.4	-1.0
SMG				AML	AML	23 43 23.3	
	comp=N,6316µm,0.8s						
SMG				AML	AML	23 43 30.1	
	comp=E,3691µm,0.4s						
KHAL	Karahalli	2.05	16	i P	Pb	23 42 55.1	-0.9
KHAL				i S	Sn	23 43 20.0	+1.0
KHAL	Karahalli	2.05	16	P	Pb	23 42 55.1	-0.9
KHAL				S	Sn	23 43 20.0	+1.0
KULA	Kula-Manisa	2.12	358	ePN	Pn	23 42 54.8	+0.6
KULA	Kula-Manisa	2.12	358	P	Pn	23 42 53.8	-0.3
KULA	Kula-Manisa	2.12	358	P	Pn	23 42 53.8	-0.3
KULA	Kula-Manisa	2.12	358	ePn	Pn	23 42 54.8	+0.6
IZM	Izmir	2.33	329	ePN	Pn	23 42 57.9	+0.8
IZM	Izmir	2.33	329	ePn	Pn	23 42 57.9	+0.8
BLCB	Balcova	2.42	326	ePN	Pn	23 42 58.8	+0.6
BLCB	Balcova	2.42	326	ePn	Pn	23 42 58.8	+0.6
ZKR	Zakros	2.44	239	P	Pb	23 43 01.6	-1.0
ZKR	Zakros	2.44	239	P	Pb	23 43 01.6	-1.0
SHUT	Suhut-Afyon	2.58	33	ePN	Pn	23 43 01.5	+1.0
SHUT	Suhut-Afyon	2.58	33	ePn	Pn	23 43 01.5	+1.0
AKHS	Akhisar	2.59	343	i P	Pn	23 43 01.2	+0.6
AKHS	Akhisar	2.59	343	P	Pn	23 43 01.2	+0.6
AKS	Akhisar	2.59	343	ePN	Pn	23 43 01.6	+1.0
AKS	Akhisar	2.59	343	ePn	Pn	23 43 01.6	+1.0
URLA	Izmir	2.62	319	i P	Pb	23 43 03.6	-2.0
URLA				i S	Sb	23 43 36.4	-1.5
URLA	Izmir	2.62	319	P	Pb	23 43 03.6	-2.0
URLA				S	Sb	23 43 36.4	-1.5
DEMI	Demirci	2.64	359	i P	Pn	23 43 01.6	+0.2
DEMI				i S	Sn	23 43 34.1	+0.5
DEMI	Demirci	2.64	359	P	Pn	23 43 01.6	+0.2
DEMI				S	Sn	23 43 34.1	+0.5
SANT	Santorini	2.68	270	ePN	Pb	23 43 04.2	-2.4
SANT	Santorini	2.68	270	ePn	Pb	23 43 04.2	-2.4
APE	Apeiranthos	2.69	285	ePN	Pn	23 43 03.7	+1.7
APE	Apeiranthos	2.69	285	P	Pn	23 43 02.2	+0.2
APE	Apeiranthos	2.69	285	P	Pn	23 43 02.6	+0.6
APE	Apeiranthos	2.69	285	ePn	Pn	23 43 03.7	+1.7
APE	Apeiranthos	2.69	285	P	Pn	23 43 02.6	+0.6
GDZ	Gediz	2.75	12	i P	Pn	23 43 03.3	+0.5
GDZ				i S	Sn	23 43 37.5	+1.3
GDZ	Gediz	2.75	12	P	Pn	23 43 03.3	+0.5
GDZ				S	Sn	23 43 37.5	+1.3
THR5	Thira Island,	2.77	271	ePN	Pn	23 43 05.3	+2.3
THR5	Thira Island,	2.77	271	ePn	Pn	23 43 05.3	+2.3
NPS	Neapolis	2.81	247	P	Pn	23 43 04.4	+0.8
NPS				S	Sn	23 43 39.7	+2.1
NPS	Neapolis	2.81	247	P	Pn	23 43 04.4	+0.8
NPS				S	Sn	23 43 39.7	+2.1
NPS				AML	AML	23 43 49.4	
	comp=E,1852µm,0.5s						
NPS				AML	AML	23 43 53.1	
	comp=N,1361µm,0.6s						
CHOS	Chios island	2.94	313	ePN	Pn	23 43 06.7	+1.2
CHOS	Chios island	2.94	313	P	Pn	23 43 06.0	+0.5
CHOS	Chios island	2.94	313	ePn	Pn	23 43 06.7	+1.2
CHOS	Chios island	2.94	313	P	Pn	23 43 06.0	+0.5
LAST	Lasithi	2.95	246	P	Pn	23 43 06.2	+0.6
LAST				S	Sn	23 43 43.1	+1.9
LAST	Lasithi	2.95	246	P	Pn	23 43 06.2	+0.6
LAST				S	Sn	23 43 43.0	+1.9
LAST	Lasithi	2.95	246	P	Pn	23 43 06.8	+1.1
DKL	Dikili	3.06	332	ePN	Pn	23 43 08.6	+1.7
DKL	Dikili	3.06	332	ePn	Pn	23 43 08.6	+1.7
TVSB	Tavsanli	3.10	10	ePN	Pn	23 43 08.3	+0.7
TVSB	Tavsanli	3.10	10	ePn	Pn	23 43 08.3	+0.7
AKMC	Akamas	3.20	114	P	Pn	23 43 09.2	+0.3
	baz=292						
AKMC	Akamas	3.20	114	P	Pn	23 43 09.2	+0.3
PPCY	Paphos	3.27	116	P	Pn	23 43 10.7	+0.8
	baz=294						
PPCY	Paphos	3.27	116	P	Pn	23 43 10.7	+0.8
BALB	Balikesir	3.31	348	ePN	Pn	23 43 11.9	+1.4
BALB	Balikesir	3.31	348	ePn	Pn	23 43 11.9	+1.4
ALFC	Alefka	3.34	111	P	Pn	23 43 11.1	+0.1
	baz=288						
ALFC				S	Sn	23 43 52.0	+1.2
ALFC	Alefka	3.34	111	P	Pn	23 43 11.1	+0.1
ALFC				S	Sn	23 43 52.0	+1.2
IDI	Anoyia	3.35	252	Pn	Pn	23 43 12.6	+1.6
	comp=N,15nm,0.3s,baz=14,slow=7.6,SNR=85						
IDI				Sn	Sn	23 43 53.5	+2.6
	comp=N,20nm,0.3s,baz=325,slow=13,SNR=11						
IDI	Anoyia	3.35	252	P	Pn	23 43 11.7	+0.7
IDI				S	Sn	23 43 53.0	+2.1
IDI	Anoyia	3.35	252	P	Pn	23 43 11.7	+0.7
IDI				S	Sn	23 43 53.0	+2.1
LADK	Ladik-KONYA	3.38	57	ePN	Pn	23 43 13.4	+1.9
LADK	Ladik-KONYA	3.38	57	ePn	Pn	23 43 13.4	+1.9
PRK	Paraskevi	3.47	326	P	Pn	23 43 13.7	+1.1
PRK	Paraskevi	3.47	326	P	Pn	23 43 13.7	+1.1
KIZT	Kizilcal	3.50	44	ePN	Pn	23 43 14.8	+1.7
KIZT	Kizilcal	3.50	44	ePn	Pn	23 43 14.8	+1.7
SIVA	Sivas	3.51	248	ePN	Pn	23 43 16.4	+3.3
SIVA	Sivas	3.51	248	ePn	Pn	23 43 16.5	+3.3
SIVA	Sivas	3.51	248	P	Pn	23 43 16.6	+3.4
SIGR	SIGRI	3.64	321	ePN	Pn	23 43 16.7	+1.7
SIGR	SIGRI	3.64	321	P	Pn	23 43 15.8	+0.8
SIGR	SIGRI	3.64	321	ePn	Pn	23 43 16.7	+1.7
SIGR	SIGRI	3.64	321	P	Pn	23 43 15.8	+0.8
SZAC	Souni	3.73	115	P	Pn	23 43 16.8	+0.6
	baz=293						
SZAC				S	Sn	23 43 59.7	-0.5
SZAC	Souni	3.73	115	P	Pn	23 43 16.8	+0.6
SZAC				S	Sn	23 43 59.7	-0.5
SVRH	Sivrihisar-ESK	3.74	35	ePN	Pn	23 43 18.4	+1.9
SVRH	Sivrihisar-ESK	3.74	35	ePn	Pn	23 43 18.4	+1.9
MAMC	Mammari	3.81	107	P	Pn	23 43 17.9	+0.5
	baz=286						
MAMC	Mammari	3.81	107	P	Pn	23 43 17.9	+0.5
VAM	Vamos	3.84	256	P	Pn	23 43 21.2	+3.4
KCTX	Karacabey (Bur	3.88	355	ePN	Pn	23 43 19.7	+1.4
KCTX	Karacabey (Bur	3.88	355	ePn	Pn	23 43 19.7	+1.4

CAVI	Cavuskoy	3.89	12	ePN	Pn	23 43 20.1	+1.6
CAVI	Cavuskoy	3.89	12	ePn	Pn	23 43 20.1	+1.6
CHBY	Cihanbeyli	3.93	55	ePN	Pn	23 43 21.0	+1.9
CHBY	Cihanbeyli	3.93	55	ePn	Pn	23 43 21.0	+1.9
EZN	Ezine	3.93	331	ePN	Pn	23 43 21.0	+2.0
EZN	Ezine	3.93	331	ePn	Pn	23 43 21.0	+2.0
IKL	Isikli	3.97	91	ePN	Pn	23 43 22.5	+3.0
IKL	Isikli	3.97	91	ePn	Pn	23 43 22.5	+3.0
MDNY	Mudanya-Bursa	3.97	1	ePN	Pn	23 43 21.1	+1.6
MDNY	Mudanya-Bursa	3.97	1	ePn	Pn	23 43 21.1	+1.6
CSS	Mathiatis	3.97	110	P	Pn	23 43 20.4	+0.8
	baz=289						
CSS	Mathiatis	3.97	110	Pn	Pn	23 43 19.4	-0.2
CSS	Mathiatis	3.97	110	Pn	Pn	23 43 19.4	-0.2
CSS	Mathiatis	3.97	110	P	Pn	23 43 20.4	+0.8
IZI	Iznik	3.97	8	ePN	Pn	23 43 21.4	+1.8
IZI	Iznik	3.97	8	ePn	Pn	23 43 21.4	+1.8
IMMV	Iera Moni Meta	4.00	258	P	Pn	23 43 21.7	+1.7
IMMV	Iera Moni Meta	4.00	258	P	Pn	23 43 21.7	+1.7
EDC	Edincik	4.01	350	ePN	Pn	23 43 21.6	+1.5
EDC	Edincik	4.01	350	ePn	Pn	23 43 21.6	+1.5
GEMT	Gemlik	4.05	4	ePN	Pn	23 43 22.3	+1.7
GEMT	Gemlik	4.05	4	ePn	Pn	23 43 22.3	+1.7
ADVT	Abdulvahap	4.10	10	ePN	Pn	23 43 22.8	+1.5
ADVT	Abdulvahap	4.10	10	ePn	Pn	23 43 22.8	+1.5
GVD	Gavdhos	4.12	249	P	Pn	23 43 24.1	+2.5
GVD	Gavdhos	4.12	249	P	Pn	23 43 24.1	+2.5
KRBG	Karabiga-Canak	4.16	344	ePN	Pn	23 43 24.0	+1.9
KRBG	Karabiga-Canak	4.16	344	ePn	Pn	23 43 24.0	+1.9
ARMT	Armutlu	4.16	1	ePN	Pn	23 43 24.0	+1.8
ARMT	Armutlu	4.16	1	ePn	Pn	23 43 24.0	+1.8
SULT	Sultanhani-AKS	4.18	63	ePN	Pn	23 43 25.1	+2.5
SULT	Sultanhani-AKS	4.18	63	ePn	Pn	23 43 25.1	+2.5
VLY	Voula,Athens	4.24	292	P	Pn	23 43 24.8	+1.6
VLY	Voula,Athens	4.24	292	P	Pn	23 43 24.8	+1.6
PTL	Penteli	4.25	294	P	Pn	23 43 26.9	+3.4
PTL	Penteli	4.25	294	P	Pn	23 43 26.9	+3.4
GULT	Gulveren	4.25	18	ePN	Pn	23 43 25.1	+1.6
GULT	Gulveren	4.25	18	ePn	Pn	23 43 25.1	+1.6
ATHU	Athens Univers	4.28	293	P	Pn	23 43 26.9	+3.1
ATHU	Athens Univers	4.28	293	P	Pn	23 43 26.9	+3.1
MRMT	Marmara Adasi	4.30	348	ePN	Pn	23 43 25.9	+1.8
MRMT	Marmara Adasi	4.30	348	ePn	Pn	23 43 26.0	+1.8
EREA	Eretria	4.35	299	P	Pn	23 43 26.7	+1.8
EREA	Eretria	4.35	299	P	Pn	23 43 26.7	+1.8
GELI	Tayfur-Gelibol	4.39	336	ePN	Pn	23 43 27.0	+1.8
GELI	Tayfur-Gelibol	4.39	336	ePn	Pn	23 43 27.0	+1.8
GADA	Gvkgeada	4.41	330	ePN	Pn	23 43 27.9	+2.3
GADA	Gvkgeada	4.41	330	ePn	Pn	23 43 27.9	+2.3
ANKY	Antikythira Is	4.46	265	P	Pn	23 43 28.5	+2.2
ANKY	Antikythira Is	4.46	265	P	Pn	23 43 28.4	+2.2
RKY	Sarkoy-Tekirda	4.46	344	ePN	Pn	23 43 28.1	+1.7
RKY	Sarkoy-Tekirda	4.46	344	ePn	Pn	23 43 28.1	+1.7
MDUB	Mudurnu	4.49	24	ePN	Pn	23 43 28.6	+1.8
MDUB	Mudurnu	4.49	24	ePn	Pn	23 43 28.6	+1.8
LIA	Limnos Island	4.50	322	P	Pn	23 43 28.1	+1.3
AFSR	Af¯ar-Bala (A	4.56	47	ePN	Pn	23 43 30.1	+2.3
AFSR	Af¯ar-Bala (A	4.56	47	ePn	Pn	23 43 30.1	+2.3
ERIK	Erikli-Kesan	4.62	338	ePN	Pn	23 43 30.5	+2.0
ERIK	Erikli-Kesan	4.62	338	ePn	Pn	23 43 30.5	+2.0
KYTH	Kithira	4.64	270	P	Pn	23 43 31.6	+2.9
KYTH	Kithira	4.64	270	P	Pn	23 43 31.6	+2.9
ISK	Istanbul-Kandi	4.67	3	ePN	Pn	23 43 31.0	+1.9
ISK	Istanbul-Kandi	4.67	3	ePn	Pn	23 43 31.0	+1.9
LOD	Lodumlu	4.69	41	ePN	Pn	23 43 31.8	+2.2
LOD	Lodumlu	4.69	41	ePn	Pn	23 43 31.8	+2.2
VILL	Villia	4.70	294	P	Pn	23 43 33.3	+3.7
VLI	Veliai	4.71	276	P	Pn	23 43 32.2	+2.5
VLI	Veliai	4.71	276	P	Pn	23 43 32.2	+2.5
VIL2	Platees	4.75	294	P	Pn	23 43 33.3	+3.0
AOS	Alonnisos	4.77	307	P	Pn	23 43 34.5	+4.0
AOS	Alonnisos	4.77	307	P	Pn	23 43 34.5	+4.0
BGKT	Bogazkoy	4.78	360	ePN	Pn	23 43 32.5	+1.9
BGKT	Bogazkoy	4.78	360	ePn	Pn	23 43 32.5	+1.9
CRLT	Corlu	4.80	351	ePN	Pn	23 43 32.7	+1.8
CRLT	Corlu	4.80	351	ePn	Pn	23 43 32.7	+1.8
ENEZ	Enez	4.80	335	ePN	Pn	23 43 33.3	+2.4
ENEZ	Enez	4.80	335	ePn	Pn	23 43 33.3	+2.4
SILT	Sile	4.80	8	ePN	Pn	23 43 32.7	+1.8
SILT	Sile	4.80	8	ePn	Pn	23 43 32.7	+1.8
SMTH	Samothraki Isl	4.80	329	P	Pn	23 43 33.8	+2.9
SMTH	Samothraki Isl	4.80	329	P	Pn	23 43 33.8	+2.9
LTK	Loutraki	4.91	291	P	Pn	23 43 35.2	+2.7
LTK	Loutraki	4.91	291	P	Pn	23 43 35.2	+2.7
ALN	Alexandroupoli	4.98	335	ePN	Pn	23 43 35.7	+2.3
ALN	Alexandroupoli	4.98	335	P	Pn	23 43 33.7	+0.3
ALN	Alexandroupoli	4.98	335	ePn	Pn	23 43 35.7	+2.3
ALN	Alexandroupoli	4.98	335	P	Pn	23 43 33.7	+0.3
PROD	Prodromos	5.04	293	P	Pn	23 43 37.7	+3.5
PROD	Prodromos	5.04	293	P	Pn	23 43 37.7	+3.5
BRTR	Keskin Array B	5.08	48	Pn	Pn	23 43 36.3	+1.4
	comp=N,0.8nm,0.3s,baz=228,slow=13,SNR=29						
BRTR				Sn	Sn	23 44 36.3	+2.6
	comp=N,2.5nm,0.3s,baz=214,slow=26,SNR=12						
CTYL	Yalikoy Yolu	5.09	356	ePN	Pn	23 43 37.0	+2.2
CTYL	Yalikoy Yolu	5.09	356	ePn	Pn	23 43 37.0	+2.2
LKR	Lokris	5.11	298	P	Pn	23 43 39.3	+4.1
LKR	Lokris	5.11	298	P	Pn	23 43 39.3	+4.0
MATC	Matruh	5.20	195	P	Pn	23 43 36.5	+0.1
	baz=197						
VLX	Vlachokerasia	5.22	283	P	Pn	23 43 40.3	+3.5
VLX	Vlachokerasia	5.22	283	P	Pn	23 43 40.3	+3.5
PAIG	Paliouri	5.34	313	P	Pn	23 43 39.3	+0.9
PAIG	Paliouri	5.34	313	P	Pn	23 43 39.3	+0.9
OUR	Ouranopolis	5.45	318	P	Pn	23 43 41.4	+1.6
OUR	Ouranopolis	5.45	318	P	Pn	23 43 41.4	+1.6
HMAT	Matruh	5.47	195	S	Sn	23 44 38.7	-4.5
	baz=198						
HMAT				AMP		23 44 00.0	
	comp=N,80µm,0.5s,logA/T=5.2,baz=198						
KLV	Kalavryta, Ach	5.54	289	P	Pn	23 43 45.3	+4.2
KLV	Kalavryta, Ach	5.54	289	P	Pn	23 43 45.3	+4.2
ITM	Ithomi	5.55	280	P	Pn	23 43 46.5	+5.2
KALE	Kalithea	5.65	293	P	Pn	23 43 45.8	+3.2
KALE	Kalithea	5.65	293	P	Pn	23 43 45.8	+3.2
KAVA	Kavala	5.68	325	P	Pn	23 43 43.6	+0.7
KAVA	Kavala	5.68	325	P	Pn	23 43 43.6	+0.7
PYL	PYLOS	5.68	277	P	Pn	23 43 49.6	+6.6
SLUM	Salum	5.72	212	P	Pn	23 43 44.4	+0.8
	baz=215						
SLUM				S	Sn	23 44 46.2	-3.0
	baz=215						
SLUM	Salum	5.72	212	P	Pn	23 43 44.4	+0.8
LAKA	Lakka	5.72	291	P	Pn	23 43 48.9	+5.2
AMT	Artemida-Makis	5.77	283	P	Pn	23 43 49.2	+4.9
DRO	Drossia	5.85	287	P	Pn	23 43 48.8	+3.4
DRO	Drossia	5.85	287	P	Pn	23 43 48.8	+3.3
KDZ	Kurdzhali	5.86	335	eP	Pn	23 43 46.7	+1.2
EVR	Evrytania	6.07	297	P	Pn	23 43 53.5	+4.9
HORT	Hortiatis	6.12	315	P	Pn	23 43 51.5	+2.4
HORT	Hortiatis	6.12	315	P	Pn	23 43 51.5	+2.4
SOH	Sokhos	6.13	318	P	Pn	23 43 51.3	+2.1
SOH	Sokhos	6.13	318	P	Pn	23 43 51.3	+2.1
RZN	Rozhen	6.16	330	eP	Pn	23 43 51.4	+1.7
THL	Klokotos Trika	6.21	303	P	Pn	23 43 53.1	+2.8
SRS	Serrai	6.21	321	P	Pn	23 43 53.0	+2.6
SRS	Serrai	6.21	321	P	Pn	23 43 53.0	+2.6
NVR	Nevrokopi	6.26	324	P	Pn	23 43 50.6	-0.4
OFRI	'Ofer	6.36	125	Pn	Pn	23 43 51.5	-0.9
OFRI	'Ofer	6.36	125	Pn	Pn	23 43 51.5	-0.9
MMC7	Mount Meron ar	6.40	120	Pn	Pn	23 43 52.3	-0.7
MMC7	Mount Meron ar	6.40	120	Pn	Pn	23 43 52.3	-0.7
MMA0B	Mount Meron ar	6.41	120	Pn	Pn	23 43 52.4	-0.8
MMA0B				Sn	Sn	23 45 03.6	-3.0
MMA0B	Mount Meron ar	6.41	120	Pn	Pn	23 43 52.4	-0.8
MMA0B				Sn	Sn	23 45 03.6	-3.0
MMAI	Mount Meron Ar	6.41	120	Pn	Pn	23 43 52.7	-0.5
	comp=N,6.4nm,0.3s,baz=298,slow=12,SNR=42						
MMAI				Sn	Sn	23 45 04.0	-2.5
	comp=N,6.9nm,0.3s,baz=314,slow=21,SNR=8.2						
KSDI	Kefar Szold	6.50	117	Pn	Pn	23 43 54.0	-0.3
KSDI	Kefar Szold	6.50	117	Pn	Pn	23 43 54.0	-0.3
MMB	Musomiste	6.51	324	eP	Pn	23 43 55.5	+1.1
PLD	Plovdiv	6.52	332	eP	Pn	23 43 54.3	-0.2
KNT	Kendrikon	6.61	318	P	Pn	23 43 58.3	+2.5
KNT	Kendrikon	6.61	318	P	Pn	23 43 58.3	+2.5
SLTI	Sal'it	6.63	127	Pn	Pn	23 43 55.1	-1.1
SLTI	Sal'it	6.63	127	Pn	Pn	23 43 55.1	-1.1
KSHT	Keshet	6.72	118	Pn	Pn	23 43 56.9	-0.5
KSHT	Keshet	6.72	118	Pn	Pn	23 43 56.9	-0.5

GRG	Griva	6.75	314	P	Pn	23 44 01.2	+3.4
GRG	Griva	6.75	314	P	Pn	23 44 01.2	+3.5
MMLI	Mount Malkishu	6.76	124	Pn	Pn	23 43 57.3	-0.6
MMLI	Mount Malkishu	6.76	124	Pn	Pn	23 43 57.3	-0.6
PRD	Provadia	6.88	352	eP	Pn	23 44 02.0	+2.6
HNAT	Natroun	6.92	167	P	Pn	23 43 59.3	-0.8
	baz=167						
HNAT	Natroun	6.92	167	P	Pn	23 43 59.3	-0.8
KOT	Kottamia	6.94	158	P	Pn	23 43 59.2	-1.2
	baz=158						
KOT	Kottamia	6.94	158	P	Pn	23 43 59.2	-1.2
HMDT	Nahal Hemdat	6.95	125	Pn	Pn	23 43 59.9	-0.5
HMDT				Sn	Sn	23 45 16.7	-2.8
HMDT	Nahal Hemdat	6.95	125	Pn	Pn	23 43 59.9	-0.5
HMDT				Sn	Sn	23 45 16.7	-2.8
HHAG	Hagoal	7.00	156	P	Pn	23 43 60.0	-1.3
	baz=156						
HHAG	Hagoal	7.00	156	P	Pn	23 44 00.0	-1.3
KKB	Krupnik	7.03	323	eP	Pn	23 44 04.4	+2.8
SZH	Strazhica	7.20	343	eP	Pn	23 44 05.6	+1.7
KZIT	Kziot	7.21	138	Pn	Pn	23 44 03.1	-0.9
KZIT	Kziot	7.21	138	Pn	Pn	23 44 03.1	-0.9
GLL	Jalalah	7.23	159	P	Pn	23 44 03.5	-1.0
	baz=160						
GLL	Jalalah	7.23	159	P	Pn	23 44 03.4	-1.0
REVI	Revivim	7.28	135	Pn	Pn	23 44 04.3	-0.7
REVI	Revivim	7.28	135	Pn	Pn	23 44 04.3	-0.7
DSI	Dead Sea	7.29	129	Pn	Pn	23 44 04.7	-0.5
DSI				Sn	Sn	23 45 25.7	-2.5
DSI	Dead Sea	7.29	129	Pn	Pn	23 44 04.7	-0.5
DSI				Sn	Sn	23 45 25.7	-2.5
PVL	Pavlikeni	7.31	340	eP	Pn	23 44 06.3	+0.9
SUZ	Suez	7.37	151	P	Pn	23 44 05.1	-1.1
	baz=152						
SUZ	Suez	7.37	151	P	Pn	23 44 05.1	-1.1
MZDA	Masada	7.46	131	Pn	Pn	23 44 06.8	-0.7
MZDA	Masada	7.46	131	Pn	Pn	23 44 06.8	-0.7
VTS	Vitosha	7.54	327	⇑i P	Pn	23 44 08.6	0.0
VTS	Vitosha	7.54	327	⇑i P	Pn	23 44 08.6	0.0
VTS	Vitosha	7.54	327	eP	Pn	23 44 12.0	+3.4
ZFRI	Zfri	7.91	136	Pn	Pn	23 44 12.4	-1.2
ZFRI	Zfri	7.91	136	Pn	Pn	23 44 12.4	-1.2
ASF	Jabal al Asfar	7.93	120	Pn	Pn	23 44 14.3	+0.3
	comp=N,0.4nm,0.3s,baz=344,slow=4.2,SNR=11						
ASF				Sn	Sn	23 45 43.8	-0.1
	comp=N,0.2nm,0.3s,baz=10.0,slow=17,SNR=1.7						
MPEP	Malo Peshtene	7.96	332	eP	Pn	23 44 15.6	+1.3
PRNI	Paran	7.96	137	Pn	Pn	23 44 13.4	-1.0
PRNI				Sn	Sn	23 45 39.7	-5.0
PRNI	Paran	7.96	137	Pn	Pn	23 44 13.4	-1.0
TIRR	Tirgusor	8.06	358	⇓i P	Pn	23 44 17.3	+1.7
TIRR	Tirgusor	8.06	358	⇓i P	Pn	23 44 17.3	+1.7
HRFI	Mount Harif	8.23	139	Pn	Pn	23 44 17.0	-1.1
HRFI				Sn	Sn	23 45 47.6	-3.5
HRFI	Mount Harif	8.23	139	Pn	Pn	23 44 17.0	-1.1
HRFI				Sn	Sn	23 45 47.6	-3.5
MBRI	Mt Berech	8.36	140	Pn	Pn	23 44 18.6	-1.3
MBRI				Sn	Sn	23 45 50.7	-3.7
MBRI	Mt Berech	8.36	140	Pn	Pn	23 44 18.6	-1.3
MBRI				Sn	Sn	23 45 50.7	-3.7
BARS	Barje	8.36	322	ePn	Pn	23 44 22.1	+2.2
EIL	Elat	8.47	141	Pn	Pn	23 44 21.1	-0.3
	comp=N,1.0nm,0.3s,baz=338,slow=3.4,SNR=29						
EIL				Sn	Sn	23 45 51.5	-5.7
	comp=N,4.1nm,0.3s,baz=90,slow=21,SNR=9.5						
EIL	Elat	8.47	141	Pn	Pn	23 44 20.4	-1.0
EIL				Sn	Sn	23 45 53.9	-3.3
EIL	Elat	8.47	141	Pn	Pn	23 44 20.4	-1.0
EIL				Sn	Sn	23 45 53.9	-3.3
HBST	Basata	8.74	143	P	Pn	23 44 24.1	-0.9
	baz=143						
HBST	Basata	8.74	143	P	Pn	23 44 24.1	-0.9
TLCR		8.78	0	⇑i P	Pn	23 44 28.4	+2.9
TLCR		8.78	0	⇑i P	Pn	23 44 28.4	+2.9
MLR	Muntele Rosu	9.33	348	Pn	Pn	23 44 34.5	+1.2
	comp=N,0.2nm,0.3s,baz=263,slow=23,SNR=15						
MLR				Sn	Sn	23 46 19.0	+0.6
	comp=N,0.0nm,0.3s,baz=175,slow=19,SNR=2.1						
MLR	Muntele Rosu	9.33	348	⇓i P	Pn	23 44 35.6	+2.3
MLR	Muntele Rosu	9.33	348	⇓i P	Pn	23 44 35.6	+2.3
VOIR		9.46	344	⇑i P	Pn	23 44 35.7	+0.7
VOIR		9.46	344	⇑i P	Pn	23 44 35.7	+0.7
PLOR	Plostina	9.58	351	⇓i P	Pn	23 44 38.3	+1.7
PLOR	Plostina	9.58	351	⇓i P	Pn	23 44 38.3	+1.7
VRI	Vrincioaia	9.59	351	⇑i P	Pn	23 44 38.5	+1.9
VRI	Vrincioaia	9.59	351	⇑i P	Pn	23 44 38.5	+1.9
IVAS	Ivanjica	9.75	320	ePn	Pn	23 44 42.7	+3.7
LOT	Lotru	9.80	339	⇑i P	Pn	23 44 40.4	+0.7
LOT	Lotru	9.80	339	⇑i P	Pn	23 44 40.4	+0.7
DOPR	Dopca	9.90	346	⇑i P	Pn	23 44 42.2	+1.3
DOPR	Dopca	9.90	346	⇑i P	Pn	23 44 42.2	+1.3
MDVR	Moldovita	9.95	330	⇑i P	Pn	23 44 41.3	-0.3
MDVR	Moldovita	9.95	330	⇑i P	Pn	23 44 41.3	-0.3
GZR	Gura Zlata	10.07	335	⇑i P	Pn	23 44 43.5	+0.2
GZR	Gura Zlata	10.07	335	⇑i P	Pn	23 44 43.5	+0.2
DIVS	Divibare	10.21	322	ePn	Pn	23 44 48.6	+3.4
TESR	Tescani	10.23	352	⇑i P	Pn	23 44 47.3	+1.8
TESR	Tescani	10.23	352	⇑i P	Pn	23 44 47.3	+1.8
TEKS	Tekeris	10.76	322	ePn	Pn	23 44 56.4	+3.7
DRGR		11.33	338	⇑i P	Pn	23 45 01.4	+0.8
DRGR		11.33	338	⇑i P	Pn	23 45 01.4	+0.8
BURAR	Bucovina Array	11.52	348	⇑i P	Pn	23 45 04.6	+1.5
BURAR	Bucovina Array	11.52	348	⇑i P	Pn	23 45 04.6	+1.5
VAE	Valguarnera	11.55	280	Pn	Pn	23 45 02.6	-1.0
	comp=N,0.5nm,0.3s,baz=94,slow=14,SNR=4.1						
VAE				Sn	Sn	23 47 16.8	+4.1
	comp=N,0.4nm,0.3s,baz=171,slow=19,SNR=2.9						
KECS	Kecovo	13.53	336	ePN	Pn	23 45 34.9	+4.4
STHS	Stebnicka Huta	14.12	339	ePN	P	23 45 47.4	+1.0
VYHS	Vyhne	14.13	332	ePN	P	23 45 46.4	0.0
AKASG	Malin Array Be	14.30	1	Pn	Pn	23 45 41.5	+0.4
	comp=N,0.3nm,0.3s,baz=173,slow=12,SNR=4.4						
VRAC	Vranov	15.67	329	Pn	P	23 46 01.8	-1.7
	comp=N,0.2nm,0.3s,baz=142,slow=12,SNR=3.6						
KEST	Kesra	15.73	273	Pn	P	23 46 05.2	+0.8
	comp=N,0.1nm,0.3s,baz=52,slow=3.7,SNR=9.3						
DPC	Dobruska-Polom	16.59	331	eP	P	23 46 13.7	-0.1
DPC				epP	pP	23 46 16.7	+0.3
DPC	Dobruska-Polom	16.59	331	P	P	23 46 13.7	-0.1
GERES	GERESS Array B	16.63	323	Pn	P	23 46 15.2	+0.9
	comp=N,0.2nm,0.3s,baz=130,slow=12,SNR=26						
UPC	Upice	16.84	331	eP	P	23 46 16.5	0.0
UPC	Upice	16.84	331	P	P	23 46 16.5	0.0
KHC	Kasperske Hory	16.89	324	eP	P	23 46 18.2	+1.2
KHC	Kasperske Hory	16.89	324	P	P	23 46 18.2	+1.2
PRU	Pruhonice	17.05	327	eP	P	23 46 20.7	+1.9
PRU	Pruhonice	17.05	327	P	P	23 46 20.7	+1.9
PVCC	Panska Ves	17.45	328	eP	P	23 46 25.5	+2.4
PVCC	Panska Ves	17.45	328	P	P	23 46 25.5	+2.4
DAVOX	Davos/Dischmat	17.49	312	P	P	23 46 27.3	+3.4
	comp=N,0.1nm,0.3s,baz=154,slow=12,SNR=5.3						
BRG	Berggiesshubel	17.97	328	eP	P	23 46 30.6	+1.7
	comp=N,4.9nm,1.1s						
CLL	Collm	18.69	328	eP	Pn	23 46 38.0	+0.8
CLL				i		23 46 50.2	
GEYT	Alibeck	23.39	77	P	P	23 47 28.6	+1.0
	comp=N,2.1nm,0.8s,baz=256,slow=10,SNR=5.1						
FINES	FINESS Array B	25.13	357	P	P	23 47 44.2	+0.7
	comp=N,8.4nm,0.6s,baz=159,slow=11,SNR=38						
AKTO	Aktyubinsk	25.26	47	P	P	23 47 44.2	-0.6
	comp=N,1.8nm,0.6s,baz=248,slow=14,SNR=3.7						
HFS	Hagfors	25.66	342	P	P	23 47 47.6	-0.7
	comp=N,3.7nm,1.0s,baz=168,slow=7.6,SNR=4.5						
ESDC	Sonseca Array	25.91	287	P	P	23 47 50.5	-0.5
	comp=N,0.3nm,0.4s,baz=82,slow=9.3,SNR=7.1						
NOA	NORSAR Array B	27.07	341	P	P	23 48 01.6	+0.5
	comp=N,0.5nm,0.6s,baz=138,slow=8.6,SNR=3.0						
TORD	Torodi Ar. Bea	33.56	233	P	P	23 48 58.8	0.0
	comp=N,2.0nm,0.6s,baz=35,slow=8.7,SNR=28						
MKAR	Makanchi Array	40.63	58	P	P	23 49 58.1	-0.6
	comp=N,1.3nm,0.6s,baz=281,slow=6.5,SNR=24						
ZALV	Zalesovo Beam	42.02	47	P	P	23 50 08.7	-1.2
	comp=N,0.6nm,0.5s,baz=257,slow=10,SNR=3.6						
DBIC	Dimbokro	42.66	234	P	P	23 50 14.8	-0.8
	comp=N,1.5nm,0.5s,baz=28,slow=11,SNR=5.1						
NRIK	Noril'sk	45.51	25	P	P	23 50 37.6	-0.2
	comp=N,0.5nm,0.3s,baz=233,slow=5.1,SNR=3.0						
SONM	Songino Array	56.42	52	P	P	23 52 00.3	0.0
	comp=N,0.4nm,0.6s,baz=297,slow=6.5,SNR=4.1						
CMAR	Chiang Mai Arr	63.53	86	P	P	23 52 49.5	+0.1
	comp=N,0.7nm,0.4s,baz=294,slow=6.8,SNR=5.4						
KLR	Kul'dur	70.89	43	P	P	23 53 35.4	-0.3
	comp=N,0.9nm,0.5s,baz=321,slow=11,SNR=4.3						

USRK	**Ussuriysk Ar.**	**73.87**	**47**	P	**P**	**23 53 53.4**	**-0.2**
	comp=N,2.2nm,0.8s,baz=36,slow=3.5,SNR=5.0						
KSRS	**Korea Array**	**75.19**	**54**	P	**P**	**23 54 00.8**	**-0.6**
	comp=N,0.7nm,0.3s,baz=299,slow=5.0,SNR=3.5						
YKA	**Yellowknife Ar**	**77.14**	**343**	P	**P**	**23 54 10.8**	**-1.2**
	comp=N,0.1nm,0.5s,baz=16,slow=6.0,SNR=3.9						
ILAR	**Eielson Array**	**79.11**	**358**	P	**P**	**23 54 23.1**	**+0.2**
	comp=N,0.4nm,0.8s,baz=329,slow=5.0,SNR=4.6						

*BKK **03** 23:53:08.2±2.1, 20˚N±13˚×12˚3E±2˚2, h10km, M4.3/28, mB4.7/3, mb4.4/28, Mw(mB)3.9/3*
*ISCJB **03** 23:53:28.9±0.3, 19˚.07N±0˚.03×121˚.14E±0˚.04, h46km, mb4.2/33, MS3.3/2, Error ellipse: s-maj=5.6km s-min=4.0km az=177.9*
*NEIC **03** 23:53:28.6±1.1, 18˚.73N×121˚.27E, h51km±10km, mb4.4/5, Error ellipse: s-maj=9.3km s-min=7.8km az=143.0*
NEIC Felt [II PIVS] at Camalaniugan and Claveria.
*MAN **03** 23:53:30, 18˚.86N×121˚.14E, h10km, mb5.1, ML4.1, MS4.3*
MAN INTENSITY II - CLAVERIA & CALAMANIUGAN CAGAYAN.
*IDC **03** 23:53:31.1±3.6, 18˚.73N×121˚.29E, h75km±34km, mb3.9/23, mb1 4.0/24, mb1mx3.9/47, mbtmp4.2/24, MS3.5/3, Ms1 3.5/3, ms1mx3.1/51, Error ellipse: s-maj=19.4km s-min=12.7km az=70.0*
ISC 03 23:53:30.1±0.5**, 19˚.05N**±0˚.06×**121˚.12E**±0˚.05**, h46**km**, n73,** σ1s**61**/72**, mb4.2**/33**, 2C-1D, Philippine Islands region**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
PIP	**Pasuquin**	**0.87**	**214**	⇑*i*P	**Pn**	**23 53 43.9**	**-2.0**
PIP				*e*S	**Sn**	**23 53 54.9**	**-2.6**
APYP	**Conner**	**1.19**	**175**	*e*P	**Pn**	**23 53 49.3**	**-1.0**
APYP				*e*S	**Sn**	**23 54 04.9**	**-0.4**
SGCP	**Mt. Cagua**	**1.19**	**133**	*e*P	**Pn**	**23 53 49.9**	**-0.4**
SGCP				*e*S	**Sn**	**23 54 06.2**	**+0.9**
SIPP	**Brgy, Tapao**	**1.29**	**209**	⇑*e*P	**Pn**	**23 53 50.2**	**-1.5**
SIPP				*e*S	**Sn**	**23 54 09.6**	**+1.9**
ABRA	**Dolores**	**1.45**	**196**	*e*P	**Pn**	**23 53 52.8**	**-1.1**
CAUP	**Cauayan**	**2.20**	**162**	*e*P	**Pn**	**23 54 05.5**	**+1.4**
BCPH	**Baguio City Da**	**2.71**	**191**	⇓*i*P	**Pn**	**23 54 12.8**	**+1.5**
BCPH				*e*S	**Sn**	**23 54 41.7**	**-1.2**
JOW	**Kunigami**	**10.16**	**39**	P	**Pn**	**23 55 54.8**	**+1.3**
	4.3nm,0.3s,baz=231,slow=12,SNR=7.9						
JOW				S	**Sn**	**23 57 42.9**	**-3.1**
	0.4nm,0.3s,baz=90,slow=20,SNR=2.0						
QIZ	**Qiongzhong**	**10.67**	**272**	*e*Pn	**Pn**	**23 55 59.0**	**-1.4**
	22nm,0.6s						
DAV	**Davao City (W)**	**12.67**	**159**	LR	LR	00 01 35.0	
	comp=Z,260nm,21.4s,baz=12,slow=39						
PANO	**Nakornpanom**	**15.81**	**266**	P	**P**	**23 57 15.4**	**+2.6**
	44nm,1.2s						
JNU	**Nakatsue**	**16.51**	**30**	*e*Pn	**P**	**23 57 19.4**	**-1.1**
	19nm,1.0s						
NONG	**Nongkai**	**17.08**	**270**	P	**P**	**23 57 30.3**	**+3.5**
	82nm,1.1s						
CHAI	**Chaiyaphum**	**18.52**	**263**	P	**Pn**	**23 57 44.6**	**+1.2**
	5.3nm,0.9s						
LOEI	**Loei**	**18.92**	**269**	P	**P**	**23 57 46.4**	**-0.8**
CHBT	**CHBT**	**19.12**	**254**	P	**Pn**	**23 57 53.4**	**+2.8**
	23nm,0.8s						
PBKT	**Sadao Pong**	**19.35**	**266**	P	**Pn**	**23 57 54.1**	**+0.9**
	17nm,0.9s						
NAYO	**Nakonayok**	**19.54**	**259**	P	**Pn**	**23 58 00.1**	**+4.5**
	113nm,1.5s						
UTTA	**Uttaradit**	**19.56**	**269**	P	**Pn**	**23 57 57.4**	**+1.6**
	2.4nm,0.9s						
PHIT	**Phitsanulok**	**19.77**	**268**	P	**Pn**	**23 58 01.5**	**+3.3**
	26nm,0.9s						
PHRA	**Phrae**	**19.79**	**272**	P	**Pn**	**23 57 58.7**	**+0.2**
	155nm,1.0s						
LAMP	**Lampang**	**20.36**	**272**	P	Pn	23 58 08.0	+2.8
	3.5nm,1.0s						
PATY	**Pattaya**	**20.40**	**256**	P	**P**	**23 58 05.5**	**+2.2**
	10nm,0.9s,830nm						
SUKH	**Sukhothai**	**20.47**	**269**	P	**P**	**23 58 06.0**	**+1.9**
	5.6nm,1.0s						
CMAI	**Chiengmai2**	**20.83**	**276**	P	**P**	**23 58 10.3**	**+2.1**
	21nm,1.3s						
CMMT	**Chiang Mai**	**20.98**	**273**	P	**P**	**23 58 10.6**	**+1.0**
	21nm,1.0s,326nm						
CHTO	**Chiang Mai**	**20.98**	**273**	P	**P**	**23 58 10.7**	**+1.1**
	93nm,1.0s						
CHTO	**Chiang Mai**	**20.98**	**273**	*e*P	**P**	**23 58 10.3**	**+0.7**
	14nm,0.8s						
UTHA	**Uthaitani**	**20.98**	**264**	P	**P**	**23 58 11.2**	**+1.6**
	8.7nm,1.3s,91nm						
CMAR	**Chiang Mai Arr**	**21.01**	**272**	P	**P**	**23 58 10.8**	**+0.9**
	13nm,1.0s,baz=80,slow=8.5,SNR=34						
CMAR				LR	LR	00 05 40.7	
	comp=Z,106nm,19.0s,baz=120,slow=34						
UMPA	**Umpang Tak**	**21.40**	**266**	P	**P**	**23 58 16.9**	**+2.7**
	5.1nm,1.0s						
PHET	**Kaeng Krachan**	**21.54**	**257**	P	**P**	**23 58 16.8**	**+1.3**
	12nm,0.9s						
SRDT	**SRDT**	**21.58**	**261**	P	**P**	**23 58 17.7**	**+1.7**
	71nm,1.4s						
KHLT	**Khaolaem Dam**	**21.96**	**262**	P	**P**	**23 58 21.5**	**+1.4**
	8.9nm,1.3s						
MHMT	**Maesarieng**	**22.00**	**271**	P	**P**	**23 58 23.0**	**+2.5**
	13nm,1.4s						
SWI	**Sorong**	**22.15**	**152**	P	P	23 58 44.9	+23
GUMO	**Guam**	**23.41**	**100**	LR	LR	00 06 12.6	
	comp=Z,108nm,21.1s,baz=133,slow=33						
TRTT	**Trang**	**23.61**	**245**	P	**P**	**23 58 36.3**	**-0.7**
	33nm,0.9s						
KRAB	**Krabi**	**23.84**	**246**	P	**P**	**23 58 39.1**	**-0.1**
	28nm,0.7s						
IPM	**Ipoh**	**24.39**	**236**	*e*P	**P**	**23 58 42.0**	**-2.2**
	12nm,0.8s						
USRK	**Ussuriysk Ar.**	**26.68**	**18**	P	**P**	**23 59 05.9**	**+1.3**
	5.7nm,1.0s,baz=202,slow=7.2,SNR=2.9						
LSA	**Lhasa**	**29.21**	**297**	*e*P	**P**	**23 59 29.7**	**+1.7**
	11nm,0.8s						
SONM	**Songino Array**	**31.12**	**341**	P	**P**	**23 59 45.9**	**+1.6**
	1.8nm,0.8s,baz=159,slow=9.6,SNR=14						
TAPN	**Taplejung**	**31.73**	**291**	*e*P	**P**	**23 59 51.1**	**+1.0**
	21nm,1.0s						
RAMN	**Ramite**	**32.66**	**290**	*e*P	**P**	**23 59 59.3**	**+1.1**
	36nm,0.7s						
GUN	**Gumba**	**33.41**	**292**	*e*P	**P**	**00 00 05.8**	**+0.9**
	56nm,0.8s						
PKIN	**Phulchoki**	**33.79**	**291**	*e*P	**P**	**00 00 08.8**	**+0.6**
KKN	**Kakani**	**33.92**	**292**	*e*P	**P**	**00 00 09.4**	**+0.2**
DMN	**Daman**	**34.05**	**291**	*e*P	**P**	**00 00 10.6**	**+0.2**
	40nm,1.1s						
GKN	**Gorkha**	**34.51**	**292**	*e*P	**P**	**00 00 14.3**	**0.0**
	43nm,1.0s						
TLY	**Talaya**	**35.35**	**341**	P	**P**	**00 00 23.1**	**+2.1**
	0.9nm,0.3s,baz=165,slow=3.8,SNR=4.8						
KOLN	**Koldanda**	**35.40**	**291**	*e*P	**P**	**00 00 22.3**	**+0.3**
	27nm,1.0s						
PYUN	**Piuthan**	**35.97**	**292**	*e*P	**P**	**00 00 27.3**	**+0.4**
	34nm,1.0s						
WRA	**Warramunga Arr**	**40.86**	**161**	P	P	00 01 02.3	-5.4
	1.2nm,0.3s,baz=342,slow=9.2,SNR=15						
MKAR	**Makanchi Array**	**42.10**	**320**	P	**P**	**00 01 19.1**	**+1.4**
	5.8nm,0.6s,baz=113,slow=9.2,SNR=69						
PETK	**Petropavlovsk-**	**44.21**	**31**	P	**P**	**00 01 33.9**	**-0.6**
	2.4nm,0.6s,baz=227,slow=8.9,SNR=3.1						
ASAR	**Alice Springs**	**44.25**	**163**	P	P	00 01 30.6	-4.6
	0.8nm,0.4s,baz=343,slow=7.0,SNR=10						
ZALV	**Zalesovo Beam**	**44.58**	**330**	P	**P**	**00 01 37.7**	**+0.3**
	1.2nm,0.6s,baz=114,slow=7.2,SNR=6.7						
STKA	**Stephens Creek**	**54.31**	**159**	P	P	00 02 47.8	-4.1
	0.7nm,0.5s,baz=333,slow=6.8,SNR=2.8						
NRIK	**Noril'sk**	**54.33**	**346**	P	**P**	**00 02 52.4**	**+0.8**
	8.2nm,0.8s,baz=139,slow=11,SNR=7.6						
GEYT	**Alibeck**	**57.45**	**303**	P	**P**	**00 03 14.4**	**0.0**
	3.7nm,1.0s,baz=90,slow=0.4,SNR=4.9						
AKTO	**Aktyubinsk**	**58.46**	**318**	P	**P**	**00 03 21.9**	**+0.6**
	2.5nm,0.7s,baz=83,slow=4.9,SNR=3.7						
KBZ	**Khabaz**	**68.69**	**310**	P	**P**	**00 04 29.0**	**+0.1**
	2.7nm,0.9s,baz=117,slow=11,SNR=3.9						
RAYN	**Ar Rayn**	**69.86**	**289**	*e*P	**P**	**00 04 35.6**	**-0.9**
	5.3nm,0.9s						
ILAR	**Eielson Array**	**73.79**	**26**	P	**P**	**00 04 57.9**	**-1.5**
	1.4nm,0.9s,baz=267,slow=4.6,SNR=4.2						
ARCES	**ARCESS Array B**	**74.27**	**339**	P	**P**	**00 05 01.7**	**-0.3**
	3.1nm,0.7s,baz=42,slow=7.4,SNR=6.2						
FINES	**FINESS Array B**	**75.84**	**330**	P	**P**	**00 05 10.8**	**-0.5**
	2.8nm,0.9s,baz=101,slow=6.0,SNR=4.8						
BRTR	**Keskin Array B**	**76.20**	**307**	P	**P**	**00 05 12.4**	**-1.6**
	0.7nm,1.0s,baz=108,slow=3.2,SNR=4.0						
AKASG	**Malin Array Be**	**76.67**	**319**	P	**P**	**00 05 15.0**	**-1.1**
	2.5nm,0.7s,baz=61,slow=5.9,SNR=7.7						
NOA	**NORSAR Array B**	**82.72**	**333**	P	**P**	**00 05 47.7**	**-1.2**
	0.9nm,0.6s,baz=65,slow=4.9,SNR=4.0						
KMBO	**Kilima Mbogo**	**84.57**	**267**	P	**P**	**00 05 58.0**	**-1.5**
	1.1nm,0.7s,baz=32,slow=6.8,SNR=5.5						
GERES	**GERESS Array B**	**86.76**	**321**	P	**P**	**00 06 08.9**	**-0.7**
	0.4nm,0.6s,baz=57,slow=4.9,SNR=5.3						
YKA	**Yellowknife Ar**	**87.70**	**23**	P	**P**	**00 06 13.4**	**-0.2**
	1.9nm,0.8s,baz=306,slow=4.4,SNR=4.7						

*HLW **03** 23:53:34.5, 36˚.03N×22˚.21E, h7km±13km, Ml4.1*
*BJI **03** 23:53:36.7, 36˚.19N×21˚.63E, h10km, mb4.8/14, mB5.1/7, Ms4.8/3, Ms7 4.4/3*
*ATH **03** 23:53:39.0, 35˚.64N×21˚.90E, h12km±1km, ML4.3/24, Error ellipse: s-maj=2.3km s-min=0.9km az=41.0*
*IDC **03** 23:53:38.5±0.4, 35˚.77N×22˚.08E, h0km, mb4.5/38, mb1 4.5/49, mb1mx4.5/59, mbtmp4.5/49, ML4.0/10, MS3.7/11, Ms1 3.7/11, ms1mx3.4/53, Error ellipse: s-maj=11.0km s-min=9.9km az=170.0*
*NEIC **03** 23:53:38.9, 35˚.64N×21˚.90E, h12km, mb4.5/13, ML4.3(ATH), After ATH.*
*ISCJB **03** 23:53:38.2±0.2, 35˚.64N±0˚.02×21˚.88E±0˚.02, h10km, mb4.6/65, MS3.8/7, Error ellipse: s-maj=2.9km s-min=1.9km az=13.6*
*THE **03** 23:53:39.1, 35˚.60N×21˚.84E, h0km±2km, ML4.5/13, Error ellipse: s-maj=3.4km s-min=1.0km az=217.0*
*CSEM **03** 23:53:40.0±0.1, 35˚.66N×21˚.89E, h10km, mb4.8/27, Error ellipse: s-maj=3.9km s-min=2.6km az=18.0*
*MOS **03** 23:53:41.3±1.1, 35˚.85N×21˚.99E, h26km, mb4.8/20, Error ellipse: s-maj=7.0km s-min=3.5km az=85.7*
*PDG **03** 23:53:43.0±0.3, 35˚.98N×21˚.63E, h14km±3km, ML4.5/10, Error ellipse: s-maj=4.4km s-min=1.2km az=90.0*
*GII **03** 23:53:47.4±0.2, 35˚.20N×22˚.74E, h10km, mb4.5/2, MD4.4/2*
ISC 03 23:53:40.9±0.8**, 35˚.76N**±0˚.03×**21˚.96E**±0˚.02**, h17**km±4km**, n746,** σ1s**70**/739**, mb4.6**/63**, MS3.8**/7**, 25C-28D, Central Mediterranean Sea**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
KYTH	**Kithira**	**1.02**	**59**	P	**Pg**	**23 54 00.4**	**-0.3**
KYTH				S	**Sn**	**23 54 19.2**	**+4.9**
KYTH	**Kithira**	**1.02**	**59**	P	**Pg**	**23 54 00.7**	**+0.1**
KYTH				S	**Sn**	**23 54 14.3**	**0.0**
KYTH	**Kithira**	**1.02**	**59**	P	**Pg**	**23 54 00.7**	**+0.1**
ANKY	**Antikythira Is**	**1.10**	**84**	P	**Pb**	**23 54 00.8**	**-0.6**
ANKY				S	**Sg**	**23 54 21.2**	**+4.7**
ANKY	**Antikythira Is**	**1.10**	**84**	P	**Pn**	**23 54 01.5**	**+0.1**
ANKY				S	**Sg**	**23 54 18.2**	**+1.6**
ANKY	**Antikythira Is**	**1.10**	**84**	P	**Pn**	**23 54 01.6**	**+0.1**
ANKY				S	**Sg**	**23 54 18.2**	**+1.6**
ANKY				AML	AML	23 54 23.6	
	comp=N,28853μm,0.9s						
ANKY				AML	AML	23 54 23.9	
	comp=E,28498μm,0.7s						
PYL	**PYLOS**	**1.15**	**351**	P	**Pg**	**23 54 02.1**	**-1.0**
PYL				S	**Sg**	**23 54 22.5**	**+4.3**
PYL	**PYLOS**	**1.15**	**351**	P	**Pg**	**23 54 02.1**	**-1.0**
PYL				S	**Sg**	**23 54 20.6**	**+2.4**
PYL	**PYLOS**	**1.15**	**351**	P	**Pb**	**23 54 01.7**	**-0.6**
PYL				S	**Sg**	**23 54 20.6**	**+2.4**
PYL				AML	AML	23 54 31.6	
	comp=N,13250μm,1.3s						
PYL				AML	AML	23 54 35.5	
	comp=E,17191μm,0.9s						
VLI	**Veliai**	**1.25**	**39**	P	**Pg**	**23 54 04.2**	**-0.7**
VLI				S	Sg	23 54 26.9	+5.7
VLI	**Veliai**	**1.25**	**39**	P	**Pg**	**23 54 04.6**	**-0.3**
VLI	**Veliai**	**1.25**	**39**	P	**Pg**	**23 54 04.6**	**-0.3**
VLI				AML	AML	23 54 34.2	
	comp=E,28305μm,1.0s						
VLI				AML	AML	23 54 35.6	
	comp=N,25463μm,1.1s						
ITM	**Ithomi**	**1.42**	**359**	P	**Pb**	**23 54 06.8**	**-0.1**
ITM				S	**Sg**	**23 54 29.8**	**+3.0**
ITM	**Ithomi**	**1.42**	**359**	P	**Pg**	**23 54 07.5**	**-0.8**
ITM				S	**Sg**	**23 54 29.8**	**+3.0**
ITM	**Ithomi**	**1.42**	**359**	P	**Pg**	**23 54 07.5**	**-0.8**
ITM				S	**Sg**	**23 54 30.8**	**+4.0**
ITM				AML	AML	23 54 39.7	
	comp=E,15120μm,0.6s						
ITM				AML	AML	23 54 40.1	
	comp=N,13102μm,0.6s						
VLX	**Vlachokerasia**	**1.65**	**12**	P	**Pg**	**23 54 11.1**	**-1.5**
VLX				S	**Sg**	**23 54 37.0**	**+3.0**
VLX	**Vlachokerasia**	**1.65**	**12**	P	**Pb**	**23 54 10.8**	**0.0**
VLX	**Vlachokerasia**	**1.65**	**12**	P	**Pb**	**23 54 10.8**	**0.0**
VLX				S	**Sg**	**23 54 35.3**	**+1.3**
VLX				AML	AML	23 54 43.1	
	comp=E,20053μm,0.8s						
VLX				AML	AML	23 54 47.3	
	comp=N,25163μm,0.8s						
IMMV	**Iera Moni Meta**	**1.68**	**100**	P	**Pb**	**23 54 10.9**	**-0.3**
IMMV				S	**Sg**	**23 54 35.4**	**+0.5**
IMMV	**Iera Moni Meta**	**1.68**	**100**	P	**Pb**	**23 54 10.9**	**-0.3**
IMMV				S	**Sg**	**23 54 35.4**	**+0.5**
IMMV	**Iera Moni Meta**	**1.68**	**100**	P	**Pb**	**23 54 11.6**	**+0.3**
IMMV				S	**Sg**	**23 54 35.0**	**+0.1**
IMMV				AML	AML	23 54 38.8	
	comp=N,15707μm,0.7s						
IMMV				AML	AML	23 54 50.7	
	comp=E,12974μm,0.8s						
AMT	**Artemida-Makis**	**1.78**	**354**	P	**Pb**	**23 54 13.2**	**+0.1**
AMT				S	**Sg**	**23 54 39.3**	**+0.9**
AMT	**Artemida-Makis**	**1.78**	**354**	P	**Pb**	**23 54 13.2**	**+0.1**
AMT				S	**Sg**	**23 54 39.3**	**+0.9**
AMT	**Artemida-Makis**	**1.78**	**354**	P	**Pg**	**23 54 14.0**	**-1.2**
AMT				S	**Sg**	**23 54 39.8**	**+1.4**
AMT				AML	AML	23 54 56.8	
	comp=E,18402μm,1.2s						
AMT				AML	AML	23 54 57.8	
	comp=N,13025μm,0.6s						
TRIP	**Tripoli**	**1.79**	**8**	P	**Pb**	**23 54 12.8**	**-0.4**
TRIP	**Tripoli**	**1.79**	**8**	P	**Pb**	**23 54 12.8**	**-0.4**
VAM	**Vamos**	**1.86**	**100**	P	**Pb**	**23 54 13.4**	**-1.0**
VAM	**Vamos**	**1.86**	**100**	P	**Pb**	**23 54 13.4**	**-1.0**
KRND	**KRANIDI**	**1.89**	**30**	P	**Pb**	**23 54 14.9**	**+0.1**
KRND	**KRANIDI**	**1.89**	**30**	P	**Pb**	**23 54 14.9**	**+0.1**
KRND	**KRANIDI**	**1.89**	**30**	P	**Pb**	**23 54 15.1**	**+0.3**
GVD	**Gavdhos**	**1.97**	**117**	P	**Pn**	**23 54 14.0**	**+0.6**
GVD	**Gavdhos**	**1.97**	**117**	P	**Pn**	**23 54 14.0**	**+0.6**
GVD	**Gavdhos**	**1.97**	**117**	P	**Pn**	**23 54 13.8**	**+0.4**
GVD				AML	AML	23 55 09.1	
	comp=E,7389μm,0.9s						
GVD				AML	AML	23 55 10.9	
	comp=N,7281μm,0.9s						
DID	**Didima**	**2.03**	**30**	P	**Pb**	**23 54 16.4**	**-0.9**
DID	**Didima**	**2.03**	**30**	P	**Pb**	**23 54 16.2**	**-1.1**
DID	**Didima**	**2.03**	**30**	P	**Pb**	**23 54 16.2**	**-1.1**
MHLO	**Agia Marina, M**	**2.19**	**64**	P	**Pn**	**23 54 18.0**	**+1.6**
MHLO	**Agia Marina, M**	**2.19**	**64**	P	**Pn**	**23 54 18.0**	**+1.6**
MHLO				S	**Sb**	**23 54 46.0**	**-0.7**
MHLO	**Agia Marina, M**	**2.19**	**64**	P	**Pn**	**23 54 17.0**	**+0.6**
MHLO				S	**Sb**	**23 54 46.0**	**-0.7**
MHLO				AML	AML	23 54 55.6	
	comp=E,26164μm,1.1s						
MHLO				AML	AML	23 54 55.6	
	comp=N,30580μm,1.0s						
DRO	**Drossia**	**2.20**	**355**	P	**Pn**	**23 54 17.5**	**+0.9**
DRO	**Drossia**	**2.20**	**355**	P	**Pn**	**23 54 17.5**	**+0.9**
DRO	**Drossia**	**2.20**	**355**	P	**Pb**	**23 54 19.9**	**-0.3**
DRO				AML	AML	23 55 04.1	
	comp=E,10687μm,1.1s						
DRO				AML	AML	23 55 04.6	
	comp=N,10830μm,0.6s						
KLV	**Kalavryta, Ach**	**2.29**	**4**	P	**Pn**	**23 54 19.3**	**+1.4**
KLV	**Kalavryta, Ach**	**2.29**	**4**	P	**Pn**	**23 54 19.3**	**+1.4**
KLV	**Kalavryta, Ach**	**2.29**	**4**	P	**Pb**	**23 54 22.5**	**+0.8**
RLS	**Riolos of Patr**	**2.33**	**350**	P	**Pb**	**23 54 21.6**	**-0.8**
RLS	**Riolos of Patr**	**2.33**	**350**	P	**Pb**	**23 54 21.6**	**-0.8**
RLS	**Riolos of Patr**	**2.33**	**350**	AML	AML	23 55 20.7	
	comp=N,5059μm,1.4s						
RLS				AML	AML	23 55 22.2	
	comp=E,3861μm,1.1s						
THAL	**Thalero**	**2.35**	**14**	P	**Pb**	**23 54 21.3**	**-1.4**
THAL	**Thalero**	**2.35**	**14**	P	**Pb**	**23 54 21.3**	**-1.4**
THAL	**Thalero**	**2.35**	**14**	P	**Pb**	**23 54 22.2**	**-0.4**
THAL				AML	AML	23 55 10.5	
	comp=N,15241μm,0.9s						
THAL				AML	AML	23 55 14.9	
	comp=E,14105μm,1.0s						
LTK	**Loutraki**	**2.40**	**19**	P	**Pb**	**23 54 22.1**	**-1.5**
LTK				S	**Sb**	**23 54 54.6**	**+1.6**
LTK	**Loutraki**	**2.40**	**19**	P	**Pb**	**23 54 21.6**	**-2.0**
LTK				S	**Sb**	**23 54 54.6**	**+1.6**
LTK	**Loutraki**	**2.40**	**19**	P	**Pb**	**23 54 21.6**	**-2.0**
LTK				AML	AML	23 55 12.3	
	comp=N,5147μm,1.1s						
LTK				AML	AML	23 55 14.3	
	comp=E,8070μm,0.7s						
IDI	**Anoyia**	**2.44**	**100**	Pn	**Pn**	**23 54 21.2**	**+1.3**
	comp=E,16nm,0.3s,baz=282,slow=14,SNR=114						
IDI	**Anoyia**	**2.44**	**100**	P	**Pn**	**23 54 20.8**	**+0.9**
IDI	**Anoyia**	**2.44**	**100**	*e*Pn	**Pn**	**23 54 20.0**	**+0.1**
IDI	**Anoyia**	**2.44**	**100**	P	**Pn**	**23 54 20.8**	**+0.9**
IDI	**Anoyia**	**2.44**	**100**	*e*Pn	**Pn**	**23 54 20.0**	**+0.1**
SIVA	**Sivas**	**2.44**	**107**	*e*P	**Pn**	**23 54 20.9**	**+1.0**
SIVA	**Sivas**	**2.44**	**107**	P	**Pn**	**23 54 21.1**	**+1.2**
SIVA	**Sivas**	**2.44**	**107**	P	**Pn**	**23 54 21.2**	**+1.3**
SIVA	**Sivas**	**2.44**	**107**	P	**Pn**	**23 54 21.2**	**+1.3**
SIVA				AML	AML	23 55 23.8	
	comp=E,11527μm,0.9s						
SIVA				AML	AML	23 55 24.2	
	comp=N,7777μm,0.7s						
AXS	**Araxos**	**2.48**	**349**	P	**Pb**	**23 54 23.7**	**-1.2**
AXS	**Araxos**	**2.48**	**349**	P	**Pb**	**23 54 23.7**	**-1.2**
LAKA	**Lakka**	**2.48**	**0**	P	**Pb**	**23 54 23.2**	**-1.8**
LAKA				S	**Sb**	**23 54 56.8**	**+1.6**
LAKA	**Lakka**	**2.48**	**0**	P	**Pb**	**23 54 23.2**	**-1.8**
LAKA	**Lakka**	**2.48**	**0**	P	**Pb**	**23 54 25.3**	**+0.4**
LAKA				AML	AML	23 55 19.1	
	comp=N,4953μm,2.1s						
LAKA				AML	AML	23 55 24.4	
	comp=E,5192μm,0.9s						
KFL	**Anninata**	**2.53**	**339**	P	**Pb**	**23 54 23.6**	**-2.2**
KFL	**Anninata**	**2.53**	**339**	P	**Pb**	**23 54 23.3**	**-2.5**
KFL	**Anninata**	**2.53**	**339**	P	**Pb**	**23 54 23.3**	**-2.5**
KFL				S	**Sb**	**23 54 58.0**	**+1.4**
VLY	**Voula,Athens**	**2.56**	**35**	P	**Pb**	**23 54 23.8**	**-2.5**
VLY				S	**Sb**	**23 54 58.0**	**+0.5**
VLY	**Voula,Athens**	**2.56**	**35**	P	**Pb**	**23 54 23.8**	**-2.5**
VLY				S	**Sb**	**23 54 58.0**	**+0.5**
VLY	**Voula,Athens**	**2.56**	**35**	P	**Pn**	**23 54 22.4**	**+0.8**
VLY				AML	AML	23 55 15.3	
	comp=N,6790μm,0.8s						
VLY				AML	AML	23 55 20.7	
	comp=E,4486μm,0.8s						
RODI	**Rodini**	**2.56**	**359**	P	**Pg**	**23 54 28.1**	**-1.9**
ATH	**Athens Observa**	**2.62**	**32**	P	**Pb**	**23 54 24.9**	**-2.5**
ATH				S	**Sb**	**23 55 00.9**	**+1.6**
ATH	**Athens Observa**	**2.62**	**32**	P	**Pb**	**23 54 24.9**	**-2.5**
KALE	**Kalithea**	**2.63**	**3**	P	**Pb**	**23 54 25.6**	**-2.0**
KALE	**Kalithea**	**2.63**	**3**	P	**Pb**	**23 54 25.6**	**-2.0**
KALE	**Kalithea**	**2.63**	**3**	P	**Pb**	**23 54 28.3**	**+0.7**
VILL	**Villia**	**2.64**	**24**	P	**Pb**	**23 54 25.6**	**-2.1**
VILL	**Villia**	**2.64**	**24**	P	**Pb**	**23 54 25.6**	**-2.1**
ATHU	**Athens Univers**	**2.65**	**33**	P	**Pn**	**23 54 24.9**	**+2.1**
ATHU	**Athens Univers**	**2.65**	**33**	P	**Pn**	**23 54 24.1**	**+1.3**
ATHU	**Athens Univers**	**2.65**	**33**	P	**Pn**	**23 54 24.1**	**+1.3**
ATHU				AML	AML	23 55 19.9	
	comp=N,1713μm,1.2s						
ATHU				AML	AML	23 55 21.9	
	comp=E,1290μm,0.9s						
SERG	**Sergoula**	**2.65**	**2**	P	**Pb**	**23 54 25.1**	**-2.8**
SERG	**Sergoula**	**2.65**	**2**	P	**Pb**	**23 54 25.1**	**-2.8**
VLS	**Valsamata**	**2.65**	**336**	P	**Pn**	**23 54 24.3**	**+1.5**
VLS	**Valsamata**	**2.65**	**336**	P	**Pn**	**23 54 24.3**	**+1.5**
EFP	**Efpalio**	**2.67**	**359**	P	**Pn**	**23 54 24.1**	**+1.1**
EFP	**Efpalio**	**2.67**	**359**	P	**Pn**	**23 54 24.1**	**+1.1**
DSF	**Desfina**	**2.69**	**10**	P	**Pb**	**23 54 26.4**	**-2.1**
DSF	**Desfina**	**2.69**	**10**	P	**Pb**	**23 54 26.1**	**-2.5**
DSF	**Desfina**	**2.69**	**10**	P	**Pb**	**23 54 26.1**	**-2.5**
PTL	**Penteli**	**2.75**	**33**	P	**Pn**	**23 54 26.1**	**+1.9**
PTL	**Penteli**	**2.75**	**33**	P	**Pn**	**23 54 26.1**	**+1.9**
PTL	**Penteli**	**2.75**	**33**	P	**Pn**	**23 54 24.8**	**+0.6**
PTL				AML	AML	23 55 18.8	
	comp=E,3103μm,0.9s						
PTL				AML	AML	23 55 18.8	
	comp=N,2604μm,0.7s						
THR5	**Thira Island,**	**2.83**	**76**	P	**Pn**	**23 54 26.6**	**+1.4**
THR5	**Thira Island,**	**2.83**	**76**	P	**Pn**	**23 54 26.6**	**+1.4**
ANX	**Ano Chora**	**2.83**	**359**	P	**Pb**	**23 54 28.2**	**-2.8**
ANX	**Ano Chora**	**2.83**	**359**	P	**Pb**	**23 54 28.2**	**-2.8**
THR6	**Thira Island,**	**2.85**	**77**	P	**Pn**	**23 54 26.8**	**+1.3**
THR6	**Thira Island,**	**2.85**	**77**	P	**Pn**	**23 54 26.8**	**+1.3**
THR3	**Thira Island,**	**2.87**	**76**	P	**Pn**	**23 54 27.5**	**+1.8**
THR3	**Thira Island,**	**2.87**	**76**	P	**Pn**	**23 54 27.5**	**+1.8**
THT1	**Athinios (Pele**	**2.88**	**76**	P	**Pn**	**23 54 27.3**	**+1.3**
THT1	**Athinios (Pele**	**2.88**	**76**	P	**Pn**	**23 54 27.3**	**+1.3**
THR7	**Fira-Santorini**	**2.89**	**76**	P	**Pn**	**23 54 27.4**	**+1.3**
THR7	**Fira-Santorini**	**2.89**	**76**	P	**Pn**	**23 54 27.4**	**+1.3**
THR2	**Thira island,**	**2.90**	**75**	P	**Pn**	**23 54 27.8**	**+1.6**
THR2	**Thira island,**	**2.90**	**75**	P	**Pn**	**23 54 27.8**	**+1.6**
PDO	**Prodromos**	**2.90**	**348**	P	**Pn**	**23 54 28.3**	**+2.0**
PDO	**Prodromos**	**2.90**	**348**	P	**Pn**	**23 54 28.3**	**+2.0**
PDO	**Prodromos**	**2.90**	**348**	P	**Pb**	**23 54 30.0**	**-2.2**
PDO				AML	AML	23 55 35.6	
	comp=N,4846μm,1.0s						
PDO				AML	AML	23 55 40.0	
	comp=E,3778μm,0.8s						
SANT	**Santorini**	**2.90**	**77**	*e*P	**Pn**	**23 54 27.2**	**+0.9**
SANT	**Santorini**	**2.90**	**77**	*e*Pn	**Pn**	**23 54 26.7**	**+0.4**
SANT	**Santorini**	**2.90**	**77**	*e*P	**Pn**	**23 54 27.2**	**+0.9**
SANT	**Santorini**	**2.90**	**77**	*e*Pn	**Pn**	**23 54 26.7**	**+0.4**
LAST	**Lasithi**	**2.94**	**101**	P	**Pn**	**23 54 28.4**	**+1.6**
LAST	**Lasithi**	**2.94**	**101**	P	**Pn**	**23 54 28.4**	**+1.6**
LAST	**Lasithi**	**2.94**	**101**	P	**Pn**	**23 54 27.9**	**+1.1**
LKR	**Lokris**	**3.01**	**16**	P	**Pn**	**23 54 29.6**	**+1.9**
LKR	**Lokris**	**3.01**	**16**	P	**Pn**	**23 54 29.6**	**+1.9**
LKR	**Lokris**	**3.01**	**16**	P	**Pn**	**23 54 29.8**	**+2.1**
LKR				AML	AML	23 55 28.0	
	comp=E,2293μm,1.4s						
LKR				AML	AML	23 55 38.7	
	comp=N,2230μm,1.2s						
KARY	**Karystos**	**3.02**	**40**	P	**Pn**	**23 54 29.6**	**+1.8**
KARY	**Karystos**	**3.02**	**40**	P	**Pn**	**23 54 29.6**	**+1.8**
KARY	**Karystos**	**3.02**	**40**	P	**Pn**	**23 54 29.9**	**+2.1**
NPS	**Neapolis**	**3.02**	**98**	P	**Pn**	**23 54 29.5**	**+1.6**
NPS	**Neapolis**	**3.02**	**98**	P	**Pn**	**23 54 29.5**	**+1.6**
EREA	**Eretria**	**3.09**	**30**	P	**Pn**	**23 54 31.2**	**+2.3**
EREA	**Eretria**	**3.09**	**30**	P	**Pn**	**23 54 30.7**	**+1.8**
EREA	**Eretria**	**3.09**	**30**	P	**Pn**	**23 54 30.7**	**+1.8**
EVR	**Evrytania**	**3.16**	**358**	P	**Pn**	**23 54 31.2**	**+1.4**
EVR				S	**Sb**	**23 55 13.8**	**-1.0**
EVR	**Evrytania**	**3.16**	**358**	P	**Pn**	**23 54 31.2**	**+1.4**
EVR	**Evrytania**	**3.16**	**358**	P	**Pb**	**23 54 36.6**	**0.0**
EVR				AML	AML	23 55 45.6	
	comp=N,2918μm,1.0s						
APE	**Apeiranthos**	**3.17**	**65**	*e*P	**Pn**	**23 54 31.5**	**+1.6**
APE	**Apeiranthos**	**3.17**	**65**	*d i*P	**Pn**	**23 54 31.3**	**+1.4**
APE	**Apeiranthos**	**3.17**	**65**	*i* P	**Pn**	**23 54 31.3**	**+1.4**
APE	**Apeiranthos**	**3.17**	**65**	P	**Pn**	**23 54 29.0**	**-1.0**
APE				AML	AML	23 55 26.6	
	comp=E,1268μm,0.8s						
APE				AML	AML	23 55 35.3	
	comp=N,1140μm,0.9s						
LKD2	**Lefkada island**	**3.20**	**342**	P	Pb	23 54 33.4	-3.8
LKD2	**Lefkada island**	**3.20**	**342**	P	Pb	23 54 33.4	-3.8
LKD2	**Lefkada island**	**3.20**	**342**	P	**Pb**	**23 54 34.3**	**-2.9**
SMIA	**Simia**	**3.27**	**17**	P	Pb	23 54 34.6	-3.9
SMIA	**Simia**	**3.27**	**17**	P	Pb	23 54 34.6	-3.9
DSL	**Palaion Diasel**	**3.44**	**349**	P	Pb	23 54 37.3	-4.0
DSL	**Palaion Diasel**	**3.44**	**349**	P	Pb	23 54 37.1	-4.2
DSL	**Palaion Diasel**	**3.44**	**349**	P	Pb	23 54 37.1	-4.2
ZKR	**Zakros**	**3.54**	**99**	P	**Pn**	**23 54 36.8**	**+1.8**
ZKR	**Zakros**	**3.54**	**99**	P	**Pn**	**23 54 36.8**	**+1.8**
SKIA	**Skiathos**	**3.61**	**19**	P	Pn	23 54 39.1	+3.1
SKIA	**Skiathos**	**3.61**	**19**	P	Pn	23 54 39.0	+3.0
SKIA	**Skiathos**	**3.61**	**19**	P	Pn	23 54 39.0	+3.0
SKIA				AML	AML	23 55 41.6	
	comp=E,1309μm,1.2s						
SKIA				AML	AML	23 55 54.0	
	comp=N,1520μm,1.2s						
NEO	**Neokhori**	**3.68**	**15**	P	Pn	23 54 40.3	+3.3
NEO	**Neokhori**	**3.68**	**15**	P	**Pn**	**23 54 38.9**	**+1.9**
NEO	**Neokhori**	**3.68**	**15**	P	**Pn**	**23 54 38.9**	**+1.9**
FYTO	**Fytoko, Volos**	**3.73**	**12**	P	Pn	23 54 40.9	+3.3
FYTO	**Fytoko, Volos**	**3.73**	**12**	P	Pn	23 54 40.9	+3.3
XOR	**Xorichti**	**3.73**	**15**	P	Pn	23 54 41.0	+3.3
XOR	**Xorichti**	**3.73**	**15**	P	Pn	23 54 41.0	+3.3
XOR	**Xorichti**	**3.73**	**15**	P	Pn	23 54 41.0	+3.3

AOS	Alonnisos	3.74	24	P	Pn	23 54 40.2	+2.5
AOS	Alonnisos	3.74	24	P	Pn	23 54 40.2	+2.5
THL	Klokotos Trika	3.80	1	P	Pn	23 54 41.5	+2.9
THL	Klokotos Trika	3.80	1	P	Pn	23 54 41.2	+2.6
IGT	Igoumenitsa	3.98	342	eP	Pn	23 54 43.6	+2.5
IGT	Igoumenitsa	3.98	342	P	Pn	23 54 42.8	+1.7
IGT	Igoumenitsa	3.98	342	P	Pn	23 54 42.8	+1.7
IGT	Igoumenitsa	3.98	342	P	Pn	23 54 41.5	+0.4
IGT				AML	AML	23 55 40.9	
	comp=N,806µm,0.8s						
IGT				AML	AML	23 55 46.9	
	comp=E,1006µm,0.7s						
JAN	Janina	3.99	348	P	Pn	23 54 44.7	+3.5
JAN	Janina	3.99	348	P	Pn	23 54 44.0	+2.8
SGD	Sagiada	4.08	341	P	Pn	23 54 44.0	+1.5
SGD	Sagiada	4.08	341	P	Pn	23 54 44.0	+1.5
SGD	Sagiada	4.08	341	P	Pn	23 54 42.9	+0.4
KPRO	Kipourio	4.22	354	P	Pn	23 54 47.7	+3.3
KPRO	Kipourio	4.22	354	P	Pn	23 54 47.7	+3.3
KPRO	Kipourio	4.22	354	P	Pn	23 54 48.9	+4.5
KARP	Karpathos	4.24	91	eP	Pn	23 54 46.6	+1.9
KARP	Karpathos	4.24	91	P	Pn	23 54 46.2	+1.5
KARP	Karpathos	4.24	91	P	Pn	23 54 46.2	+1.5
KEK	Kerkira	4.30	337	P	Pn	23 54 47.0	+1.5
KEK	Kerkira	4.30	337	P	Pn	23 54 47.0	+1.5
LIT	Litokhoron	4.36	5	P	Pn	23 54 49.0	+2.7
LIT	Litokhoron	4.36	5	P	Pn	23 54 49.0	+2.7
SMG	Samos	4.38	62	P	Pn	23 54 48.0	+1.5
SMG	Samos	4.38	62	P	Pn	23 54 48.0	+1.5
PAIG	Paliouri	4.38	18	P	Pn	23 54 49.0	+2.4
PAIG	Paliouri	4.38	18	P	Pn	23 54 47.7	+1.1
PAIG	Paliouri	4.38	18	P	Pn	23 54 47.6	+1.1
BODT	Bodrum	4.51	72	eP	Pn	23 54 50.9	+2.5
BODT	Bodrum	4.51	72	eP	Pn	23 54 50.9	+2.5
KZN	Kozani	4.54	358	P	Pn	23 54 51.7	+2.8
KZN	Kozani	4.54	358	P	Pn	23 54 51.5	+2.6
SIGR	SIGRI	4.64	41	eP	Pn	23 54 53.6	+3.5
SIGR	SIGRI	4.64	41	P	Pn	23 54 52.0	+1.9
SIGR	SIGRI	4.64	41	P	Pn	23 54 52.0	+1.9
NEST	Nestorio	4.71	352	P	Pn	23 54 53.6	+2.5
NEST	Nestorio	4.71	352	P	Pn	23 54 53.6	+2.5
NEST	Nestorio	4.71	352	P	Pn	23 54 54.3	+3.2
PLG	Polygyros	4.76	14	P	Pn	23 54 54.1	+2.3
PLG	Polygyros	4.76	14	P	Pn	23 54 54.1	+2.3
PLG	Polygyros	4.76	14	P	Pn	23 54 52.7	+1.0
BLCB	Balcova	4.84	56	eP	Pn	23 54 55.8	+3.0
BLCB	Balcova	4.84	56	eP	Pn	23 54 55.8	+3.0
OUR	Ouranopolis	4.84	19	eP	Pn	23 54 56.3	+3.4
OUR	Ouranopolis	4.84	19	P	Pn	23 54 55.3	+2.4
OUR	Ouranopolis	4.84	19	P	Pn	23 54 54.0	+1.1
OUR	Ouranopolis	4.84	19	P	Pn	23 54 54.0	+1.1
PRK	Paraskevi	4.89	43	P	Pn	23 54 55.0	+1.5
PRK	Paraskevi	4.89	43	P	Pn	23 54 55.0	+1.5
HORT	Hortiatis	4.92	10	eP	Pn	23 54 56.9	+2.9
HORT	Hortiatis	4.92	10	P	Pn	23 54 55.9	+1.9
HORT	Hortiatis	4.92	10	P	Pn	23 54 55.9	+1.9
HORT	Hortiatis	4.92	10	P	Pn	23 54 54.2	+0.2
THE	Thessaloniki	4.93	9	P	Pn	23 54 56.2	+2.1
THE	Thessaloniki	4.93	9	P	Pn	23 54 56.2	+2.1
IZM	Izmir	5.00	57	eP	Pn	23 54 58.6	+3.5
IZM	Izmir	5.00	57	eP	Pn	23 54 58.6	+3.5
ARG	Arkhangelos	5.02	83	P	Pn	23 54 56.3	+0.9
ARG	Arkhangelos	5.02	83	P	Pn	23 54 56.3	+0.9
FNA	Florina	5.04	355	eP	Pn	23 54 58.5	+2.8
FNA	Florina	5.04	355	P	Pn	23 54 57.9	+2.2
FNA	Florina	5.04	355	P	Pn	23 54 57.9	+2.2
FNA	Florina	5.04	355	P	Pn	23 54 56.5	+0.8
SLUM	Salum	5.05	147	P	Pn	23 54 52.7	-3.0
	baz=150						
SLUM				S	Sn	23 55 49.5	-4.0
	baz=150						
SLUM	Salum	5.05	147	P	Pn	23 54 52.7	-3.0
SLUM				S	Sn	23 55 49.6	-4.0
SOH	Sokhos	5.17	12	P	Pn	23 54 59.7	+2.2
SOH	Sokhos	5.17	12	P	Pn	23 54 59.1	+1.6
SOH	Sokhos	5.17	12	P	Pn	23 54 59.1	+1.6
GRG	Griva	5.20	4	eP	Pn	23 55 00.5	+2.6
GRG	Griva	5.20	4	P	Pn	23 54 59.4	+1.5
GRG	Griva	5.20	4	P	Pn	23 54 59.4	+1.5
GRG	Griva	5.20	4	P	Pn	23 54 59.1	+1.2
AYDB	Zeytinkoy-Aydi	5.24	64	eP	Pn	23 55 01.4	+2.9
AYDB	Zeytinkoy-Aydi	5.24	64	eP	Pn	23 55 01.4	+2.9
BIA	Bitola	5.28	355	P	Pn	23 55 00.9	+2.0
BIA	Bitola	5.28	355	i Pn	Pn	23 55 01.0	+2.1
BIA	Bitola	5.28	355	P	Pn	23 55 00.9	+2.0
YER	Yerkesik	5.28	73	eP	Pn	23 55 01.6	+2.6
YER	Yerkesik	5.28	73	P	Pn	23 55 02.1	+3.1
YER	Yerkesik	5.28	73	P	Pn	23 55 02.1	+3.1
EZN	Ezine	5.34	39	eP	Pn	23 55 03.0	+3.3
EZN	Ezine	5.34	39	eP	Pn	23 55 03.0	+3.3
TIP	Timpagrande	5.36	311	P	Pn	23 55 00.6	+0.5
TIP	Timpagrande	5.36	311	P	Pn	23 55 00.6	+0.5
TIP				eSn	Sn	23 55 59.5	-2.0
TIP	Timpagrande	5.36	311	P	Pn	23 54 58.3	-1.8
TIP	Timpagrande	5.36	311	ePn	Pn	23 55 00.5	+0.5
	comp=E,57nm,0.6s						
TIP				eSn	Sn	23 55 59.5	-2.0
GADA	Gvkgeada	5.41	34	eP	Pn	23 55 04.4	+3.6
OHR	Ohrid	5.42	351	i Pn	Pn	23 55 03.2	+2.2
KNT	Kendrikon	5.45	8	eP	Pn	23 55 04.7	+3.5
KNT	Kendrikon	5.45	8	P	Pn	23 55 04.5	+3.3
KNT	Kendrikon	5.45	8	P	Pn	23 55 02.6	+1.3
KNT	Kendrikon	5.45	8	P	Pn	23 55 02.6	+1.3
CEL	Celeste	5.46	299	ePn	Pn	23 55 01.7	+0.3
	comp=E,74nm,0.8s						
CEL				eSn	Sn	23 56 04.9	+1.1
CEL	Celeste	5.46	299	ePn	Pn	23 55 01.7	+0.3
	comp=E,74nm,0.8s						
CEL				eSn	Sn	23 56 04.9	+1.1
SMTH	Samothraki Isl	5.49	30	P	Pn	23 55 04.4	+2.6
SMTH	Samothraki Isl	5.49	30	P	Pn	23 55 04.4	+2.6
SRS	Serrai	5.50	13	P	Pn	23 55 04.2	+2.2
SRS	Serrai	5.50	13	P	Pn	23 55 04.2	+2.2
SRS	Serrai	5.50	13	P	Pn	23 55 02.4	+0.4
DALY	Dalyan (Mu˜la	5.51	77	eP	Pn	23 55 04.0	+1.9
VAY	Valandovo	5.58	5	P	Pn	23 55 05.2	+2.2
VAY	Valandovo	5.58	5	i Pn	Pn	23 55 05.3	+2.2
VAY	Valandovo	5.58	5	P	Pn	23 55 05.2	+2.2
NVR	Nevrokopi	5.78	14	P	Pn	23 55 07.9	+2.1
NVR	Nevrokopi	5.78	14	P	Pn	23 55 07.9	+2.1
TIR	Tirane	5.82	344	eP	Pn	23 55 07.7	+1.4
TIR				e		23 56 13.6	
TIR				pmax	pmax		
	comp=Z,128nm,0.6s						
TIR	Tirane	5.82	344	eP	Pn	23 55 07.7	+1.4
	comp=Z,128nm,0.6s						
TIR				eS	Sn	23 56 13.6	+1.0
TIR	Tirane	5.82	344	ePn	Pn	23 55 07.7	+1.4
	comp=Z,128nm,0.6s						
TIR				eSn	Sn	23 56 13.6	+1.0
FETY	Fethiye	5.83	79	eP	Pn	23 55 08.4	+1.9
GELI	Tayfur-Gelibol	5.84	36	eP	Pn	23 55 10.6	+3.9
MMB	Musomiste	5.99	13	i P	Pn	23 55 10.4	+1.7
DENT	Denizli	6.02	69	eP	Pn	23 55 11.4	+2.2
KULA	Kula-Manisa	6.02	61	eP	Pn	23 55 12.2	+3.0
WDD	Wied Dalam	6.04	273	ePn	Pn	23 55 09.4	0.0
	comp=Z,152nm,0.7s						
WDD				eSn	Sn	23 56 17.2	-0.9
WDD	Wied Dalam	6.04	273	ePn	Pn	23 55 09.4	0.0
	comp=Z,152nm,0.7s						
WDD				eSn	Sn	23 56 17.2	-0.9
ALN	Alexandroupoli	6.06	31	eP	Pn	23 55 12.3	+2.7
ALN	Alexandroupoli	6.06	31	P	Pn	23 55 12.2	+2.7
ALN	Alexandroupoli	6.06	31	P	Pn	23 55 12.2	+2.7
ERIK	Erikli-Kesan	6.08	35	eP	Pn	23 55 13.0	+3.2
BALB	Balikesir	6.09	49	eP	Pn	23 55 13.3	+3.3
KKB	Krupnik	6.17	8	i P	Pn	23 55 13.0	+1.9
KSL	Kastellorizon	6.20	84	P	Pn	23 55 11.6	+0.1
KSL	Kastellorizon	6.20	84	P	Pn	23 55 11.6	+0.1
SKO	Skopje	6.22	356	P	Pn	23 55 13.1	+1.3
SKO	Skopje	6.22	356	i Pn	Pn	23 55 13.5	+1.7
SKO	Skopje	6.22	356	P	Pn	23 55 13.1	+1.3
GLHS	Glhisar (BURDU	6.24	75	eP	Pn	23 55 14.1	+1.9
RZN	Rozhen	6.30	19	i P	Pn	23 55 17.6	+4.5
VAE	Valguarnera	6.31	288	Pn	Pn	23 55 14.6	+1.5
	comp=Z,3.3nm,0.3s,baz=127,slow=0.4,SNR=17						
VAE				Sn	Sn	23 56 21.9	-2.9
	baz=283,slow=18,SNR=1.6						
NOCI	Noci	6.33	324	P	Pn	23 55 10.2	-3.1
HMAT	Matruh	6.33	136	S	Sn	23 56 19.3	-5.9
	baz=139						
HMAT				AMP		23 56 00.0	
	comp=E,230µm,0.8s,logA/T=5.5,baz=139						
CUC	Castrocucco	6.44	313	ePn	Pn	23 55 15.8	+0.9
	comp=E,52nm,0.8s						
CUC				eSn	Sn	23 56 28.5	+0.5
CUC	Castrocucco	6.44	313	ePn	Pn	23 55 15.8	+0.9
	comp=E,52nm,0.8s						
CUC				eSn	Sn	23 56 28.6	+0.5
KDZ	Kurdzhali	6.48	24	i P	Pn	23 55 16.8	+1.4
ELL	Elmali	6.50	79	eP	Pn	23 55 17.6	+1.8
ULC	Ulcinj	6.55	342	⇑iPn	Pn	23 55 16.1	-0.3
ULC				eSn	Sn	23 56 26.7	-3.9
ULC	Ulcinj	6.55	342	⇑iPn	Pn	23 55 16.1	-0.3
PLD	Plovdiv	6.69	18	i P	Pn	23 55 24.0	+5.7
DRME	Dracevica, Mon	6.77	342	⇓iPn	Pn	23 55 19.5	+0.1
DRME				eSn	Sn	23 56 32.5	-3.6
DRME	Dracevica, Mon	6.77	342	⇓iPn	Pn	23 55 19.5	+0.1
DIM	Dimitrovgrad	6.88	23	i P	Pn	23 55 23.4	+2.6
VTS	Vitosha	6.89	8	⇓iP	Pn	23 55 23.6	+2.4
VTS	Vitosha	6.89	8	P	Pn	23 55 23.6	+2.4
VTS	Vitosha	6.89	8	P	Pn	23 55 23.6	+2.4
VTS	Vitosha	6.89	8	i P	Pn	23 55 23.8	+2.6
BUM	Brajici-Budva	6.96	341	⇑iPn	Pn	23 55 22.0	0.0
BUM				eSn	Sn	23 56 36.6	-4.1
BUM	Brajici-Budva	6.96	341	⇑iPn	Pn	23 55 22.0	0.0
PDG	Podgorica	6.99	343	⇓iPn	Pn	23 55 23.0	+0.7
TTG	Podgorica	6.99	343	⇓iPn	Pn	23 55 23.0	+0.7
TTG				eSn	Sn	23 56 37.3	-4.0
PVY	Plav	7.00	348	ePn	Pn	23 55 23.8	+1.1
PVY				eSn	Sn	23 56 38.8	-3.1
PVY	Plav	7.00	348	ePn	Pn	23 55 23.8	+1.1
ISP	Isparta	7.18	71	P	Pn	23 55 26.6	+1.5
ISP	Isparta	7.18	71	Pn	Pn	23 55 26.5	+1.5
ISP	Isparta	7.18	71	eP	Pn	23 55 26.9	+1.8
ISP				pmax	pmax		
	comp=Z,33nm,0.6s						
ISP	Isparta	7.18	71	eP	Pn	23 55 26.9	+1.8
	comp=Z,33nm,0.6s						
ISP	Isparta	7.18	71	ePn	Pn	23 55 26.9	+1.8
	comp=Z,33nm,0.6s						
CEME	Cevo	7.18	342	ePn	Pn	23 55 24.7	-0.4
CEME				eSn	Sn	23 56 42.0	-4.2
CEME	Cevo	7.18	342	ePn	Pn	23 55 24.7	-0.4
HCY	Herceg Novi	7.20	339	⇑iPn	Pn	23 55 24.6	-0.7
HCY				eSn	Sn	23 56 42.7	-4.0
HCY	Herceg Novi	7.20	339	⇑iPn	Pn	23 55 24.6	-0.7
CLTB	Caltabellotta	7.26	287	ePn	Pn	23 55 26.8	+0.7
	comp=Z,16nm,0.4s						
CLTB				eSn	Sn	23 56 48.7	+0.5
CLTB	Caltabellotta	7.26	287	ePn	Pn	23 55 26.8	+0.7
	comp=Z,16nm,0.4s						
CLTB				eSn	Sn	23 56 48.7	+0.5
BEY	Berane	7.28	348	⇓iPn	Pn	23 55 27.8	+1.3
IVA	Berane	7.28	348	⇓iPn	Pn	23 55 27.8	+1.3
IVA				eSn	Sn	23 56 45.3	-3.5
NKME	Niksic	7.38	343	⇓iPn	Pn	23 55 27.3	-0.5
NKME				eSn	Sn	23 56 47.0	-4.1
NKME	Niksic	7.38	343	⇓iPn	Pn	23 55 27.3	-0.5
NKY	Niksic	7.41	343	⇓iPn	Pn	23 55 28.4	+0.1
NKY				eSn	Sn	23 56 47.8	-4.2
NKY	Niksic	7.41	343	⇓iPn	Pn	23 55 28.4	+0.1
TREB	Trebinje	7.49	339	ePn	Pn	23 55 28.3	-1.0
BRY	Bratogost	7.61	341	⇓iPn	Pn	23 55 30.6	-0.4
BRY				eSn	Sn	23 56 52.2	-4.7
BRY	Bratogost	7.61	341	⇓iPn	Pn	23 55 30.6	-0.4
MPEP	Malo Peshtene	7.71	10	i P	Pn	23 55 34.9	+2.6
UPM	Unac-Piva	7.80	343	⇓iPn	Pn	23 55 34.2	+0.5
UPM				eSn	Sn	23 56 57.3	-4.4
UPM	Unac-Piva	7.80	343	⇓iPn	Pn	23 55 34.2	+0.5
PLE	Pljevlja	7.82	346	⇓iPn	Pn	23 55 35.2	+1.3
PLE				eSn	Sn	23 56 57.7	-4.3
PLE	Pljevlja	7.82	346	⇓iPn	Pn	23 55 35.2	+1.3
STON	Ston	7.83	336	i Pn	Pn	23 55 32.9	-1.1
STON				Sn	Sn	23 56 55.0	-7.1
STON	Ston	7.83	336	i Pn	Pn	23 55 32.8	-1.1
GULT	Gulveren	8.20	53	eP	Pn	23 55 41.1	+2.0
BBLS	Lazići	8.33	347	⇑iPn	Pn	23 55 40.5	-0.4
SVRH	Sivrihisar-ESK	8.44	61	eP	Pn	23 55 44.1	+1.7
PRD	Provadia	8.54	28	i P	Pn	23 55 43.8	+0.2
MDUB	Mudurnu	8.67	54	eP	Pn	23 55 47.6	+2.1
TEKS	Tekeris	8.98	349	ePn	Pn	23 55 49.0	-0.7
MDVR	Moldovita	9.02	359	⇑iP	Pn	23 55 50.1	-0.1
CSS	Mathiatis	9.33	92	eP	Pn	23 55 55.4	+0.9
CSS	Mathiatis	9.33	92	Pn	Pn	23 55 53.1	-1.4
CSS	Mathiatis	9.33	92	ePn	Pn	23 55 54.1	-0.4
	comp=Z,4.1nm,0.6s						
CSS	Mathiatis	9.33	92	ePn	Pn	23 55 54.1	-0.4
	comp=Z,4.1nm,0.6s						
CSS				eSn	Sn	23 57 35.4	-3.5
ANTO	Ankara	9.51	61	eP	Pn	23 55 58.9	+1.9
ANTO				pmax	pmax		
	comp=Z,111nm,1.0s						
ANTO	Ankara	9.51	61	eP	Pn	23 55 58.9	+1.9
	comp=Z,111nm,1.0s						
ANTO	Ankara	9.51	61	ePn	Pn	23 55 58.9	+1.9
	comp=Z,111nm,1.0s						
HNAT	Natroun	9.51	127	P	Pn	23 55 53.6	-3.4
	baz=129						
IKL	Isikli	9.52	84	eP	Pn	23 55 57.9	+0.8
AFSR	Af¯ar-Bala (A	9.56	64	eP	Pn	23 55 59.2	+1.5
SULT	Sultanhani-AKS	9.56	72	eP	Pn	23 55 59.0	+1.2
GZR	Gura Zlata	9.65	3	⇑iP	Pn	23 55 59.8	+0.9
BLY	Banja Luka	9.69	339	ePn	Pn	23 55 59.3	-0.1
LOT	Lotru	9.78	8	⇑iP	Pn	23 56 02.5	+1.8
AYT	Al ‘Ayyat	9.82	125	P	Pn	23 55 57.4	-3.8
	baz=127						
EREN	Erenkoy	9.94	88	eP	Pn	23 56 03.3	+0.4
VOIR		9.95	13	⇑iP	Pn	23 56 04.7	+1.6
UDBI	Udbina	9.96	334	ePn	Pn	23 56 04.5	+1.4
UDBI				Sn	Sn	23 57 49.2	-5.2
UDBI	Udbina	9.96	334	ePn	Pn	23 56 04.5	+1.4
ISR	Istrita	9.98	19	⇑iP	Pn	23 56 06.5	+3.0
KAMT	Kaman	10.01	65	eP	Pn	23 56 05.2	+1.3
BRTR	Keskin Array B	10.06	63	Pn	Pn	23 56 08.1	+3.4
	comp=Z,0.6nm,0.3s,baz=240,slow=13,SNR=61						
KOT	Kottamia	10.13	122	P	Pn	23 56 01.6	-4.0
	baz=124						
MLR	Muntele Rosu	10.18	16	Pn	Pn	23 56 08.4	+2.1
	comp=Z,0.1nm,0.3s,baz=144,slow=23,SNR=10.0						
MLR				LR	LR	00 00 30.5	
	comp=Z,124nm,18.6s,baz=196,slow=41						
MLR	Muntele Rosu	10.18	16	⇑iP	Pn	23 56 08.9	+2.6
MERS	Mersin	10.20	80	eP	Pn	23 56 07.1	+0.6
KEST	Kesra	10.25	274	Pn	Pn	23 56 08.0	+0.7
	comp=Z,0.6nm,0.3s,baz=50,slow=11,SNR=13						
KEST				Sn	Sn	23 57 59.2	-2.6
	comp=Z,0.2nm,0.3s,baz=37,slow=20,SNR=3.5						
KEST				LR	LR	00 00 30.2	
	comp=Z,180nm,21.9s,baz=338,slow=40						
GLL	Jalalah	10.27	124	P	Pn	23 56 03.6	-3.9
	baz=126						
NVLJ	Novalja	10.33	331	ePn	Pn	23 56 07.6	-0.6
NVLJ				Sn	Sn	23 57 56.2	-7.2
NVLJ	Novalja	10.33	331	ePn	Pn	23 56 07.5	-0.6
DOPR	Dopca	10.53	13	⇑iP	Pn	23 56 12.5	+1.6
NBNS	Bani Suef	10.63	129	P	Pn	23 56 09.5	-2.9
	baz=131						
VSL	Villasalto	10.65	294	ePn	Pn	23 56 13.1	+0.5
	comp=Z,5.2nm,0.8s						
VSL				eSn	Sn	23 58 10.9	-0.5
VSL	Villasalto	10.65	294	ePn	Pn	23 56 13.1	+0.5
	comp=Z,5.2nm,0.8s						
VSL				eSn	Sn	23 58 10.9	-0.5
KARA	Karaisali	10.65	78	eP	Pn	23 56 13.6	+1.0
PLOR	Plostina	10.69	18	⇓iP	Pn	23 56 15.6	+2.4
VRI	Vrincioaia	10.72	18	⇓iP	Pn	23 56 15.6	+2.0
SUZ	Suez	10.88	120	P	Pn	23 56 12.3	-3.5
	baz=121						
CORM	Corum	10.93	62	eP	Pn	23 56 17.6	+1.1
PKS6	Bocsa	10.98	351	⇑ePn	Pn	23 56 17.5	+0.4
PKS6	Bocsa	10.98	351	⇑eP	Pn	23 56 17.5	+0.4
DRGR		11.04	3	⇑iP	Pn	23 56 19.4	+1.4
PKS9	Tamasi	11.17	347	ePn	Pn	23 56 18.0	-1.6
CRES	Cresnjev	11.20	336	i Pn	Pn	23 56 19.0	-1.0
CRES				eSn	Sn	23 58 14.9	-10
CRES	Cresnjev	11.20	336	ePn	Pn	23 56 19.0	-1.0
SLTI	Sal’it	11.41	104	Pn	Pn	23 56 19.4	-3.6
SLTI				Sn	Sn	23 58 20.2	-10
MMAI	Mount Meron Ar	11.44	100	Pn	Pn	23 56 20.0	-3.5
	comp=Z,2.0nm,0.3s,baz=284,slow=12,SNR=20						
MMAI				Sn	Sn	23 58 20.8	-10
	comp=Z,1.3nm,0.3s,baz=313,slow=25,SNR=3.5						
KZIT	Kziot	11.47	111	Pn	Pn	23 56 20.1	-3.8
KZIT				Sn	Sn	23 58 20.9	-11
PKS7	Kunszentmiklos	11.47	350	⇓ePn	Pn	23 56 24.1	+0.3
PKS7	Kunszentmiklos	11.47	350	⇓eP	Pn	23 56 24.1	+0.3
CEY	Cerknica	11.48	333	ePn	Pn	23 56 23.5	-0.5
MMLI	Mount Malkishu	11.64	103	Pn	Pn	23 56 22.8	-3.4
MMLI				Sn	Sn	23 58 25.8	-10
LJU	Ljubljana	11.71	334	ePn	Pn	23 56 27.0	0.0
TRI	Trieste	11.72	331	eP	Pn	23 56 26.8	-0.3
TRI				e		23 58 32.3	
TRI				pmax	pmax		
	comp=Z,157nm,0.6s						
TRI	Trieste	11.72	331	eP	Pn	23 56 26.8	-0.3
	comp=Z,157nm,0.6s						
TRI	Trieste	11.72	331	ePn	Pn	23 56 26.8	-0.3
	comp=Z,157nm,0.6s						
TRI				eSn	Sn	23 58 32.3	-5.1
BTCH	Batrach	11.77	84	eP	Pn	23 56 24.9	-3.0
BTCH				eS	Sn	23 58 20.6	-18
BTCH				AML	AML	23 58 56.1	
	comp=E,23nm,0.7s						
BTCH				AML	AML	23 58 56.7	
	comp=N,17nm,0.6s						
BTCH	Batrach	11.77	84	eP	Pn	23 56 24.8	-3.2
BTCH				eS	Sn	23 58 20.5	-18
	comp=N,17nm,0.6s						
BRBR	Barbar	11.77	97	eP	Pn	23 56 22.3	-5.8
BRBR				eS	Sn	23 58 15.9	-23
BRBR				AML	AML	23 58 49.2	
	comp=E,27nm,0.7s						
BRBR				AML	AML	23 58 50.3	
	comp=N,21nm,0.7s						
BRBR	Barbar	11.77	97	eP	Pn	23 56 22.6	-5.5
BRBR				eS	Sn	23 58 15.9	-23
	comp=N,21nm,0.7s						
HMDT	Nahal Hemdat	11.79	103	Pn	Pn	23 56 24.7	-3.5
PKST	Tˆ's	11.86	347	ePn	Pn	23 56 30.4	+1.3
PKST	Tˆ's	11.86	347	eP	Pn	23 56 30.4	+1.3
DRWC	Darouich	11.92	82	eP	Pn	23 56 28.0	-2.1
DRWC				eS	Sn	23 58 25.1	-18
DRWC				AML	AML	23 58 53.1	
	comp=N,3.5nm,0.5s						
DRWC				AML	AML	23 59 04.6	
	comp=E,7.6nm,0.7s						
DRWC	Darouich	11.92	82	eP	Pn	23 56 28.3	-1.8
DRWC				eS	Sn	23 58 25.0	-18
	comp=E,8.0nm,0.7s						
CSKK	Csˆ‡kako	11.92	348	ePn	Pn	23 56 29.4	-0.5
CSKK	Csˆ‡kako	11.92	348	eP	Pn	23 56 29.4	-0.5
PKSG		11.93	348	ePn	Pn	23 56 29.5	-0.5
PKSG		11.93	348	eP	Pn	23 56 29.5	-0.5
DSI	Dead Sea	11.94	107	Pn	Pn	23 56 26.3	-3.9
DSI				Sn	Sn	23 58 32.4	-11
MZDA	Masada	12.03	108	Pn	Pn	23 56 27.2	-4.3
MZDA				Sn	Sn	23 58 34.9	-10
MARH	Ras Al Marh	12.05	94	eP	Pn	23 56 27.9	-4.2
MARH				eS	Sn	23 58 24.1	-22
MARH				AML	AML	23 58 52.4	
	comp=E,16nm,0.7s						
MARH				AML	AML	23 58 54.5	
	comp=N,9.7nm,0.6s						
MARH	Ras Al Marh	12.05	94	eP	Pn	23 56 27.9	-4.2
MARH				eS	Sn	23 58 24.0	-22
	comp=N,10.0nm,0.6s						
SOKA	Soboth	12.09	337	i Pn	Pn	23 56 32.1	-0.1
	comp=N,19nm,1.0s						
BURAR	Bucovina Array	12.10	11	⇑iP	Pn	23 56 34.4	+2.0
OBKA	Obir	12.10	335	i Pn	Pn	23 56 32.6	+0.1
	comp=N,14nm,0.9s						
PRNI	Paran	12.20	113	Pn	Pn	23 56 29.6	-4.2
PRNI				Sn	Sn	23 58 37.4	-12
PSZ	Piszkesteto	12.25	353	⇑ePn	Pn	23 56 34.8	+0.3
PSZ	Piszkesteto	12.25	353	eP	Pn	23 56 34.5	0.0
PSZ				pmax	pmax		
	comp=Z,23nm,0.8s						
PSZ	Piszkesteto	12.25	353	eP	Pn	23 56 34.5	0.0
	comp=Z,23nm,0.8s						
PSZ	Piszkesteto	12.25	353	ePn	Pn	23 56 34.5	0.0
	comp=Z,23nm,0.8s						
TRPA	Tarpa	12.37	2	ePn	Pn	23 56 37.3	+1.2
TRPA	Tarpa	12.37	2	eP	Pn	23 56 37.3	+1.2
HRFI	Mount Harif	12.38	114	Pn	Pn	23 56 32.8	-3.5
HRFI				Sn	Sn	23 58 42.2	-12
ARSA	Arzberg	12.45	339	i Pn	Pn	23 56 36.4	-0.8
	comp=Z,12nm,1.1s						
EIL	Elat	12.51	115	Pn	Pn	23 56 35.0	-3.1
	comp=Z,1.5nm,0.3s,baz=293,slow=2.6,SNR=13						
EIL				Sn	Sn	23 58 41.4	-16
	comp=Z,0.8nm,0.3s,baz=48,slow=15,SNR=2.4						
EIL	Elat	12.51	115	Pn	Pn	23 56 34.5	-3.5
MYKA	Terra Mystica	12.53	333	i Pn	Pn	23 56 38.6	+0.3
	comp=Z,16nm,1.6s						
SOP	Sopron	12.58	343	ePn	Pn	23 56 38.6	-0.3
SOP	Sopron	12.58	343	eP	Pn	23 56 38.6	-0.3
SALA	Sala	12.60	100	eP	Pn	23 56 33.1	-6.4
SALA				eS	Sn	23 58 35.6	-24
SALA				AML	AML	23 59 11.4	
	comp=E,1.5nm,0.5s						
SALA				AML	AML	23 59 22.2	
	comp=N,12nm,0.5s						
SALA	Sala	12.60	100	eP	Pn	23 56 33.1	-6.4
SALA				eS	Sn	23 58 35.6	-24
	comp=N,13nm,0.5s						
ROOS	tl_alroos	12.68	93	eP	Pn	23 56 36.5	-4.0
ROOS				eS	Sn	23 58 38.8	-22
ROOS				AML	AML	23 59 23.3	
	comp=E,16nm,0.6s						
ROOS				AML	AML	23 59 27.7	
	comp=N,18nm,0.7s						
ROOS	tl_alroos	12.68	93	eP	Pn	23 56 36.5	-3.9
ROOS				eS	Sn	23 58 38.8	-22
	comp=N,18nm,0.7s						
KECS	Kecovo	12.76	356	eP	Pn	23 56 41.5	0.0
KECS	Kecovo	12.76	356	eP	Pn	23 56 41.5	0.0
KECS	Kecovo	12.76	356	ePN	Pn	23 56 41.5	0.0
UZH	Uzhgorod	12.87	1	⇓iP	Pn	23 56 44.5	+1.7
UZH	Uzhgorod	12.87	1	i P	Pn	23 56 44.5	+1.7
ASF	Jabal al Asfar	12.91	102	Pn	Pn	23 56 40.1	-3.5
	comp=N,0.2nm,0.3s,baz=270,slow=19,SNR=3.5						
ASF				Sn	Sn	23 59 00.5	-6.3
	comp=N,0.3nm,0.3s,baz=150,slow=20,SNR=2.6						
VYHS	Vyhne	12.94	351	eP	Pn	23 56 42.8	-1.0
VYHS				e		23 59 05.0	
VYHS	Vyhne	12.94	351	ePN	Pn	23 56 42.8	-1.0
VYHS				e		23 56 51.8	
VYHS	Vyhne	12.94	351	eSN	Sn	23 59 05.0	-2.3
CONA	Conrad Observa	12.98	341	i Pn	Pn	23 56 45.0	+0.6
	comp=N,63nm,1.0s						
KBA	Koelnbreinsper	13.02	333	i Pn	Pn	23 56 45.3	+0.2
	comp=N,12nm,0.8s						
ZALF	Zalf	13.02	98	eP	Pn	23 56 39.4	-5.7
ZALF				eS	Sn	23 58 45.5	-24
ZALF				AML	AML	23 59 23.2	
	comp=N,6.8nm,0.6s						
ZALF				AML	AML	23 59 36.8	
	comp=E,8.3nm,0.7s						
ZALF	Zalf	13.02	98	eP	Pn	23 56 39.0	-6.1
ZALF				eS	Sn	23 58 45.5	-24
	comp=E,8.0nm,0.7s						
ABTA	Abfaltersbach	13.07	330	i Pn	Pn	23 56 45.3	-0.4
	comp=E,9.7nm,0.8s						
KOLS	Kolonicke sedl	13.17	1	eP	Pn	23 56 49.1	+2.1
KOLS	Kolonicke sedl	13.17	1	eP	Pn	23 56 49.1	+2.1
KOLS	Kolonicke sedl	13.17	1	ePN	Pn	23 56 49.1	+2.1
SMOL	Smolenice	13.18	347	eP	Pn	23 56 46.2	-0.9
SMOL	Smolenice	13.18	347	eP	Pn	23 56 46.2	-0.9
SMOL	Smolenice	13.18	347	ePN	Pn	23 56 46.2	-0.9
SMOL				e		23 56 58.4	
LANS	Liptovska Anna	13.51	353	eP	Pn	23 56 50.2	-1.5
LANS	Liptovska Anna	13.51	353	ePN	Pn	23 56 50.2	-1.5
LANS				e		23 57 06.4	
STHS	Stebnicka Huta	13.66	358	eP	P	23 56 59.1	-3.4
STHS	Stebnicka Huta	13.66	358	eP	P	23 56 59.1	-3.4
STHS	Stebnicka Huta	13.66	358	ePN	P	23 56 59.1	-3.4
STHS				e		23 57 05.6	
NIE	Niedzica	13.71	355	eP	Pn	23 56 56.8	+2.5
NIE	Niedzica	13.71	355	eP	Pn	23 56 56.8	+2.5
NIE	Niedzica	13.71	355	eP	Pn	23 56 56.8	+2.5
KWP	Kalwaria Pacla	13.88	2	eP	Pn	23 56 59.5	+2.8
KWP	Kalwaria Pacla	13.88	2	eP	Pn	23 56 59.6	+2.9
WATA	Walderalm	13.92	329	i Pn	Pn	23 56 59.8	+2.4
	comp=E,14nm,0.8s						
FETA	Feichten	14.04	327	i P	P	23 57 05.9	-0.9
	comp=E,9.7nm,1.0s						

FETA Feichten 14.04 327 P P 23 57 05.9 -0.9
comp=E,9.7nm,1.0s
VRAC Vranov 14.10 345 Pn Pn 23 56 58.5 -1.3
comp=E,0.4nm,0.3s,baz=185,slow=12,SNR=3.4
VRAC Vranov 14.10 345⇑ *i*P P 23 57 08.4 +1.1
VRAC Vranov 14.10 345⇓ *i*P P 23 57 08.4 +1.1
MOTA Moosalm 14.13 328 *i* Pn Pn 23 57 00.8 +0.6
comp=E,5.6nm,0.8s
LVV L'vov 14.14 6 *e*Pn Pn 23 57 02.8 +2.6
DAVOX Davos/Dischmat 14.26 324 Pn Pn 23 57 03.2 +1.2
comp=E,0.3nm,0.3s,baz=151,slow=18,SNR=7.5
DAVOX Sn Sn 23 59 34.3 -5.5
comp=E,0.3nm,0.3s,baz=143,slow=20,SNR=4.8
TUE Stuetta 14.29 322 *e*Pn Pn 23 57 04.2 +1.6
comp=E,9.2nm,0.7s
TUE Stuetta 14.29 322 *e*Pn Pn 23 57 04.2 +1.6
comp=E,9.3nm,0.7s
TREC Trest 14.34 343 *e*P P 23 57 12.4 +2.4
TREC AMS AMS 00 03 30.0
comp=E,600nm,14.2s
TREC Trest 14.34 343 *e*P P 23 57 12.4 +2.4
TREC Trest 14.34 343 *e*P P 23 57 12.4 +2.4
OKC Ostrava-Krasne 14.35 350 *e*P Pn 23 57 04.2 +1.2
OKC *ep*P P 23 57 11.6 +1.6
OKC Ostrava-Krasne 14.35 350 *e*P Pn 23 57 04.2 +1.2
RETA Reutte 14.38 328 *i* P P 23 57 10.5 0.0
comp=E,4.2nm,1.0s
RETA Reutte 14.38 328 P P 23 57 10.5 0.0
comp=E,4.2nm,1.0s
GERES GERESS Array B 14.42 338 Pn Pn 23 57 02.9 -1.3
comp=E,0.4nm,0.3s,baz=157,slow=12,SNR=26
GERES Sn Sn 23 59 35.7 -7.9
comp=E,0.4nm,0.3s,baz=154,slow=23,SNR=5.4
GERES PcP PcP 00 02 20.4 +1.0
comp=E,0.1nm,0.3s,baz=224,slow=2.6,SNR=2.8
GERES LR LR 00 04 20.9
comp=E,245nm,19.2s,baz=134,slow=44
DAVA Damuels 14.62 326 *i* P P 23 57 12.2 -1.1
comp=E,8.0nm,0.8s
DAVA Damuels 14.62 326 P P 23 57 12.2 -1.1
comp=E,8.0nm,0.8s
KHC Kasperske Hory 14.71 338 *e*P Pn 23 57 08.5 +0.4
KHC *ep*P P 23 57 15.9 +1.7
KHC *e*S Sn 23 59 45.2 -5.5
KHC AMS AMS 00 03 50.0
comp=E,700nm,11.3s
KHC Kasperske Hory 14.71 338 *e*P Pn 23 57 08.5 +0.4
KHC *e* 23 59 45.2
KHC Kasperske Hory 14.71 338 *e*Pn Pn 23 57 08.0 -0.1
comp=E,3.5nm,0.8s
KHC Kasperske Hory 14.71 338 *e*Pn Pn 23 57 08.0 -0.1
comp=E,3.5nm,0.8s
KHC *e*Sn Sn 23 59 45.5 -5.2
ANN Anapa 14.85 48 *e*P Pn 23 57 06.6 -3.3
ANN *e*S Sn 23 59 48.9 -5.0
ANN pmax pmax
comp=Z,82nm,2.0s
BNI Bardonecchia 14.87 313 *e*P Pn 23 57 06.0 -4.3
BNI pmax pmax
comp=Z,16nm,1.1s
BNI Bardonecchia 14.87 313 *e*Pn Pn 23 57 06.0 -4.3
comp=Z,16nm,1.1s
GOPC GO Pecny, Ondr 15.08 342 AMS AMS 00 04 00.0
comp=Z,500nm,10.9s
DPC Dobruska-Polom 15.15 346 *e*P Pn 23 57 13.2 -0.8
DPC *ep*P pP 23 57 21.2 -2.6
DPC AMS AMS 00 04 10.0
comp=Z,500nm,14.0s
DPC Dobruska-Polom 15.15 346 *e*P Pn 23 57 13.2 -0.8
PRU Pruhonice 15.21 341 *e*P Pn 23 57 14.5 -0.3
PRU *ep*P pP 23 57 21.7 -2.8
PRU *ex* x 23 57 33.5
PRU AMS AMS 00 04 10.0
comp=Z,600nm,11.4s
PRU Pruhonice 15.21 341 *e*P Pn 23 57 14.5 -0.3
PRA Prague 15.32 341 *e*P P 23 57 21.3 +0.5
PRA AMS AMS 00 04 10.0
comp=Z,600nm,12.6s
PRA Prague 15.32 341 *e*P P 23 57 21.3 +0.5
PRA Prague 15.32 341 *e*P P 23 57 21.3 +0.5
KSP Ksiaz 15.62 347 *e*P P 23 57 27.8 +3.6
KSP Ksiaz 15.62 347 *e*P P 23 57 27.8 +3.6
KSP Ksiaz 15.62 347 *e*P P 23 57 27.8 +3.6
PVCC Panska Ves 15.71 342 *e*P Pn 23 57 22.5 +1.3
PVCC AMS AMS 00 04 20.0
comp=Z,600nm,13.2s
PVCC Panska Ves 15.71 342 *e*P Pn 23 57 22.5 +1.3
KIEV Kiev 15.83 17 *e*P Pn 23 57 21.1 -1.6
KIEV pmax pmax
comp=Z,18nm,1.0s
KIEV Kiev 15.83 17 *e*Pn Pn 23 57 20.9 -1.8
comp=Z,13nm,0.6s
KIEV *e*S S 00 00 27.1 -4.8
AKASG Malin Array Be 15.84 17 Pn Pn 23 57 20.9 -1.9
comp=Z,1.1nm,0.3s,baz=205,slow=12,SNR=15
AKASG Sn S 00 00 25.7 -6.4
baz=203,slow=19,SNR=6.0
BBS Basel-Blauen 15.89 322 *e*P P 23 57 26.1 -1.2
FELD Feldberg im Sc 15.93 324 *e*P P 23 57 26.3 -1.5
GRFO Grafenberg 15.98 334 *e*P Pn 23 57 26.0 +1.3
GRFO pmax pmax
comp=Z,11nm,0.8s
GRFO Grafenberg 15.98 334 *e*Pn Pn 23 57 26.0 +1.3
comp=Z,11nm,0.8s
GRFO Grafenberg 15.98 334 *e*Pn Pn 23 57 26.0 +1.3
comp=Z,11nm,0.8s
BEL Belsk 16.10 357 *e*P P 23 57 32.1 +2.7
BEL Belsk 16.10 357 *e*P P 23 57 32.2 +2.8
BEL Belsk 16.10 357 *e*P P 23 57 32.2 +2.8
BRG Berggiesshubel 16.18 342 *e*P P 23 57 31.7 +1.3
comp=Z,15nm,1.5s
BRG Berggiesshubel 16.18 342 *e*P P 23 57 31.7 +1.3
BRG pmax pmax
comp=Z,15nm,1.5s
BRG Berggiesshubel 16.18 342 *e*P P 23 57 31.7 +1.3
comp=Z,15nm,1.5s
MOF Molkenrain 16.34 322 *e*P Pn 23 57 29.4 0.0
ECH Echery 16.58 323 *e*P P 23 57 43.6 +8.8
LANF Langenberg 16.81 326 *e*P P 23 57 41.5 +4.1
CLL Collm 16.82 340⇓ *i*P P 23 57 39.5 +2.0
comp=Z,30nm,1.8s
CLL *i* 23 57 47.5
comp=Z,16nm,1.0s
CLL *e*S S 00 00 59.0 +6.7
CLL LmH 00 03 00.0
comp=N,300nm,20.9s
CLL LmH 00 03 00.0
comp=E,800nm,21.0s
CLL LmV 00 05 00.0
comp=Z,300nm,19.2s
CLL Collm 16.82 340⇓ *i*P P 23 57 39.5 +2.0
CLL pmax pmax
comp=Z,30nm,1.8s
CLL Collm 16.82 340 *i* P P 23 57 39.5 +2.0
comp=Z,30nm,1.8s
TOD Tromm 16.85 329 *e*P P 23 57 39.7 +1.9
KTD Kalmit 16.94 327 *e*P P 23 57 42.1 +3.3
LBL Lubilhac 17.06 309 *e*P P 23 57 40.3 +0.1
LBL Lubilhac 17.06 309 *e*P P 23 57 40.3 +0.1
THEF They Montfort 17.17 321 *e*P P 23 57 44.1 +2.8
THEF They Montfort 17.17 321 *e*P P 23 57 44.1 +2.8
PLDF La Plantade 17.18 312 *e*P P 23 57 40.5 -1.1
PLDF La Plantade 17.18 312 *e*P P 23 57 40.5 -1.1
PYM Petit Puy Mans 17.45 311 *e*P P 23 57 44.0 -0.5
PYM Petit Puy Mans 17.45 311 *e*P P 23 57 44.0 -0.5
NEY Neytrino 17.66 59 *e*P P 23 57 47.0 0.0
NEY pmax pmax
comp=Z,3.0nm,1.0s
NEY Neytrino 17.66 59 *e*P P 23 57 47.0 0.0
comp=Z,3.0nm,1.0s
RUP Ruppelstein 17.67 327 *e*P P 23 57 49.5 +2.5
KIV Kislovodsk 17.87 56 *i* P P 23 57 50.2 +1.0
SNR=7.8
KIV Kislovodsk 17.87 56 *e*P P 23 57 49.7 +0.5
KIV *e* 00 01 06.6
KIV pmax pmax
comp=Z,19nm,0.8s
KIV Kislovodsk 17.87 56 *e*Pn P 23 57 49.7 +0.5
comp=Z,19nm,0.8s
KIV Kislovodsk 17.87 56 P P 23 57 50.2 +1.0
SNR=7.8
KIV *e*Sn Sn 00 01 06.6 -0.8
KIV Kislovodsk 17.87 56 *e*Pn P 23 57 49.7 +0.5
comp=Z,19nm,0.8s
KIV *e*Sn Sn 00 01 06.6 -0.8

KBZ Khabaz 17.93 57 P P 23 57 49.6 -0.2
comp=Z,0.8nm,0.3s,baz=252,slow=11,SNR=27
KBZ LR LR 00 05 33.8
comp=Z,219nm,20.1s,baz=239,slow=40
WLF Walferdange 18.06 325 *e*P P 23 57 53.5 +2.4
WLF pmax pmax
comp=Z,18nm,0.9s
WLF Walferdange 18.06 325 *e*P P 23 57 53.5 +2.4
comp=Z,18nm,0.9s
WLF Walferdange 18.06 325 *e*Pn P 23 57 53.5 +2.4
comp=Z,18nm,0.9s
SUW Suwalki 18.27 2 *e*P P 23 57 53.3 -0.2
SUW Suwalki 18.27 2 *e*P P 23 57 53.3 -0.2
SUW Suwalki 18.27 2 *e*P P 23 57 53.3 -0.2
NCK Nalchik 18.34 59 *e*P P 23 57 55.4 +1.1
NCK pmax pmax
comp=Z,11nm,0.8s
NCK Nalchik 18.34 59 *e*P P 23 57 55.4 +1.1
comp=Z,11nm,0.8s
ZEI Tsey 18.36 61 *e*P Pn 23 57 53.9 -0.8
ZEI pmax pmax
comp=Z,11nm,0.6s
ZEI Tsey 18.36 61 *e*P Pn 23 57 53.9 -0.8
comp=Z,11nm,0.6s
GNI Garni 18.48 69 P P 23 57 56.0 0.0
comp=Z,1.5nm,0.3s,baz=292,slow=5.2,SNR=16
GNI Garni 18.48 69 *i* P Pn 23 57 57.4 +1.2
SNR=7.0
GNI Garni 18.48 69 *e*P Pn 23 57 56.8 +0.6
GNI pmax pmax
comp=Z,72nm,0.6s
GNI Garni 18.48 69 P Pn 23 57 57.4 +1.2
SNR=7.0
GOF Gofitskoye 18.51 53*c* *i*P P 23 57 52.1 -4.0
BCLA Clavier 18.98 326 P Pn 23 58 02.5 +0.5
comp=Z,12nm,1.9s
DOU Dourbes 19.09 324 P Pn 23 58 04.6 +1.2
comp=Z,16nm,1.2s
TAM Tamanrasset 19.26 232 *e*P Pn 23 58 06.9 +1.1
TAM pmax pmax
comp=Z,4.0nm,0.8s
TAM Tamanrasset 19.26 232 *e*P Pn 23 58 06.8 +1.1
comp=Z,3.9nm,0.8s
TAM Tamanrasset 19.26 232 *e*P Pn 23 58 06.8 +1.1
comp=Z,3.9nm,0.8s
NACGM Naroch 19.44 8 *e* P 23 58 06.0 -0.2
SNF Seneffe 19.52 325 P Pn 23 58 09.6 +1.2
VSR Storozhevoye 19.79 33 *e*P P 23 58 09.9 -0.2
VSR pmax pmax
comp=Z,10.0nm,0.7s
VSR Storozhevoye 19.79 33 *e*P P 23 58 09.9 -0.2
comp=Z,10.0nm,0.7s
IIGN Ignalina 19.82 7 *e*P P 23 58 10.1 -0.3
IIGN IAmb IAmb 23 58 11.3
comp=Z,16nm,0.7s
IIGN Ignalina 19.82 7 *e*P P 23 58 10.1 -0.3
SNR=40
BSD Bornholm Skovb 19.96 348 *i* P P 23 58 11.4 -0.5
comp=Z,19nm,0.6s
BSD Bornholm Skovb 19.96 348 *i* P P 23 58 11.4 -0.5
BSD pmax pmax
comp=Z,19nm,0.6s
BSD Bornholm Skovb 19.96 348 *i* P P 23 58 11.4 -0.5
comp=Z,19nm,0.6s
ISAL Salakas 20.02 7 *e*P P 23 58 12.2 -0.4
ISAL IAmb IAmb 23 58 13.5
comp=Z,11nm,0.8s
ISAL Salakas 20.02 7 *e*P P 23 58 12.2 -0.4
SNR=40
IZAR Zarasai 20.21 7 *e*P P 23 58 14.4 -0.2
IZAR IAmb IAmb 23 58 24.6
comp=Z,5.2nm,1.1s
IZAR Zarasai 20.21 7 *e*P P 23 58 14.4 -0.2
SNR=35
LPSR Galich'ya Gora 20.69 30 *e*P P 23 58 19.5 -0.4
LPSR pmax pmax
comp=Z,20nm,0.6s
LPSR Galich'ya Gora 20.69 30 *e*P P 23 58 19.5 -0.4
comp=Z,20nm,0.6s
ESDC Sonseca Array 20.85 289 P Pn 23 58 23.1 -1.2
comp=Z,7.3nm,0.6s,baz=87,slow=11,SNR=64
VRH Novokhopyorsk 20.97 36 *e*P P 23 58 22.4 -0.5
VRH pmax pmax
comp=Z,20nm,0.6s
VRH Novokhopyorsk 20.97 36 *e*P P 23 58 22.4 -0.5
comp=Z,20nm,0.6s
COP Copenhagen 20.97 345 *i* P Pn 23 58 24.1 -1.4
comp=Z,11nm,0.8s
COP Copenhagen 20.97 345 *i* P Pn 23 58 24.1 -1.4
COP pmax pmax
comp=Z,11nm,0.8s
COP Copenhagen 20.97 345 *i* P Pn 23 58 24.1 -1.4
comp=Z,11nm,0.8s
PAB San Pablo 21.14 288 *e*P P 23 58 26.3 +1.3
PAB pmax pmax
comp=Z,48nm,1.4s
PAB San Pablo 21.14 288 *e*P P 23 58 26.3 +1.3
comp=Z,48nm,1.4s
PAB San Pablo 21.14 288 *e*P P 23 58 26.3 +1.3
comp=Z,48nm,1.4s
OBN Obninsk 21.82 23 P P 23 58 30.8 -1.2
comp=Z,19nm,0.4s,baz=294,slow=4.4,SNR=7.7
OBN Obninsk 21.82 23⇓ *e*P P 23 58 31.4 -0.6
OBN pmax pmax
comp=Z,74nm,1.7s
OBN Obninsk 21.82 23 *e*P P 23 58 31.4 -0.6
comp=Z,74nm,1.7s
OBN Obninsk 21.82 23 *e*P P 23 58 30.5 -1.5
comp=Z,26nm,0.5s
MDT Midelt 22.13 270 P P 23 58 36.4 +0.8
comp=Z,18nm,0.8s,baz=82,slow=12,SNR=27
MUD Monsted U'grnd 22.45 341 *i* P P 23 58 41.3 +2.6
comp=Z,13nm,0.8s
MUD Monsted U'grnd 22.45 341 *i* P P 23 58 41.3 +2.6
MUD pmax pmax
comp=Z,13nm,0.8s
MUD Monsted U'grnd 22.45 341 *i* P P 23 58 41.3 +2.6
comp=Z,13nm,0.8s
MOS Moscow 22.68 23 *e*P P 23 58 42.3 +1.1
MOS *e* 23 59 08.3
MOS *e*S S 00 02 50.9 +2.4
MOS pmax pmax
comp=Z,42nm,0.7s
MOS Moscow 22.68 23 *e*P P 23 58 42.3 +1.1
comp=Z,42nm,0.7s
VSU Vasula 22.94 6 *e*P P 23 58 43.6 -0.2
VSU pmax pmax
comp=Z,90nm,0.8s
VSU Vasula 22.94 6 *e*P P 23 58 43.6 -0.2
comp=Z,90nm,0.8s
PBRG Braganca 23.11 294 *e*P P 23 58 46.2 +0.3
PBRG Braganca 23.11 294 *e*P P 23 58 46.2 +0.3
PBAR Barrancos 23.25 285 *e*P P 23 58 48.7 +1.4
PBAR Barrancos 23.25 285 *e*P P 23 58 48.7 +1.4
MVO Moncorvo 23.27 292 *e*P P 23 58 47.5 -0.1
comp=Z,43nm,0.8s
MVO Moncorvo 23.27 292 *e*P P 23 58 47.5 -0.1
comp=Z,43nm,0.8s
PMRV Marv??o 23.49 288 *e*P P 23 58 50.8 +1.1
PMRV Marv??o 23.49 288 *e*P P 23 58 50.8 +1.1
PCBR Castelo Branco 23.56 289 *e*P P 23 58 50.9 +0.6
PCBR Castelo Branco 23.56 289 *e*P P 23 58 50.9 +0.6
MTE Manteigas 23.62 290 *e*P P 23 58 51.3 +0.2
MTE Manteigas 23.62 290 *e*P P 23 58 51.3 +0.2
PESTR Estremoz 23.66 286 *e*P P 23 58 50.9 -0.4
PESTR Estremoz 23.66 286 *e*P P 23 58 50.9 -0.4
RAYN Ar Rayn 23.75 114 *e*P P 23 58 53.4 +1.0
comp=Z,5.4nm,0.8s
RAYN Ar Rayn 23.75 114 *e*P P 23 58 53.4 +1.0
comp=Z,5.4nm,0.8s
PVRL Vila Real 23.80 292 *e*P P 23 58 53.6 +0.9
PVRL Vila Real 23.80 292 *e*P P 23 58 53.6 +0.9
PVAQ Vaqueiros 23.84 283 *e*P P 23 58 55.4 +2.3
PVAQ Vaqueiros 23.84 283 *e*P P 23 58 55.4 +2.3
POLO Lamas de Olo 23.86 293 *e*P P 23 58 52.7 -0.7
POLO Lamas de Olo 23.86 293 *e*P P 23 58 52.7 -0.7
PVIS Viseu 23.90 291 *e*P P 23 58 53.7 0.0
PVIS Viseu 23.90 291 *e*P P 23 58 53.7 0.0
PBEJ Beja 23.91 284 *e*P P 23 58 54.1 +0.3
comp=Z,41nm,1.9s
PBEJ Beja 23.91 284 *e*P P 23 58 54.1 +0.3
comp=Z,41nm,1.9s
PCAB Cabril 24.06 293 *e*P P 23 58 55.2 0.0
PCAB Cabril 24.06 293 *e*P P 23 58 55.2 0.0
PMTG Montargil 24.15 287 *e*P P 23 58 56.1 +0.2
PMTG Montargil 24.15 287 *e*P P 23 58 56.1 +0.2

PTOM Tomar 24.28 288 *e*P P 23 58 57.4 +0.2
PTOM Tomar 24.28 288 *e*P P 23 58 57.4 +0.2
PNCL Nicolau / Gran 24.43 285 *e*P P 23 59 00.7 +2.2
PNCL Nicolau / Gran 24.43 285 *e*P P 23 59 00.7 +2.2
HFS Hagfors 24.97 350 P P 23 59 03.2 0.0
comp=Z,5.9nm,0.5s,baz=162,slow=11,SNR=32
KONO Kongsberg 25.23 345 *e*P P 23 59 06.2 +0.7
KONO pmax pmax
comp=Z,89nm,1.6s
KONO Kongsberg 25.23 345 *e*P P 23 59 06.2 +0.7
comp=Z,89nm,1.6s
KONO Kongsberg 25.23 345 *e*P P 23 59 06.2 +0.7
comp=Z,89nm,1.6s
FINES FINESS Array B 25.84 5 P P 23 59 10.9 -0.2
comp=Z,2.5nm,0.5s,baz=155,slow=12,SNR=14
EKA Eskdalemuir Ar 26.07 327 P P 23 59 14.1 +0.9
comp=Z,24nm,0.6s,baz=126,slow=8.9,SNR=111
ESK Eskdalemuir 26.08 326*ce*P P 23 59 16.5 +3.2
ESK Eskdalemuir 26.08 326 *e*P P 23 59 14.4 +1.1
comp=Z,27nm,0.6s
ESK Eskdalemuir 26.08 326 *e*P P 23 59 14.4 +1.1
comp=Z,27nm,0.6s
NB2 NORSAR Subarra 26.22 348 P P 23 59 14.7 +0.2
comp=Z,28nm,1.4s,baz=159,slow=9.3
NB2 NORSAR Subarra 26.22 348 P P 23 59 14.7 +0.2
comp=Z,28nm,1.4s,SNR=9.8
NOA NORSAR Array B 26.22 348 P P 23 59 14.5 0.0
comp=Z,1.9nm,0.6s,baz=156,slow=9.1,SNR=15
NOA LR LR 00 09 54.2
comp=Z,114nm,21.3s,baz=5.0,slow=37
KLMR Klimovskoe 27.52 19 *e*P P 23 59 21.1 -5.0
KLMR *e*S S 00 04 00.0 -6.1
KLMR pmax pmax
comp=Z,14nm,0.9s
GEYT Alibeck 28.91 75 P P 23 59 38.5 -0.4
comp=Z,4.5nm,0.5s,baz=271,slow=8.3,SNR=18
GEYT PcP PcP 00 02 48.5 +0.7
comp=Z,1.1nm,0.6s,baz=241,slow=8.1,SNR=2.9
TORD Torodi Ar. Bea 28.98 224 P P 23 59 40.1 +0.4
comp=Z,7.2nm,0.7s,baz=36,slow=9.9,SNR=55
TORD PcP PcP 00 02 49.1 +0.9
comp=Z,0.8nm,0.7s,baz=52,slow=2.0,SNR=3.9
TORD LR LR 00 11 07.8
comp=Z,140nm,19.9s,baz=25,slow=36
AKTK Aktyubinsk 29.80 49 P P 23 59 45.9 -0.8
AKTO Aktyubinsk 29.80 49 P P 23 59 45.9 -0.8
comp=Z,3.5nm,0.7s,baz=253,slow=7.2,SNR=10.0
ASUD Al Ashush, Dub 30.77 102 P P 23 59 56.1 +0.7
ASUD Al Ashush, Dub 30.77 102 P P 23 59 56.1 +0.7
NAZ Nazwa, Dubai 30.86 101 *i* P P 23 59 56.8 +0.6
SNR=22
NAZ Nazwa, Dubai 30.86 101 P P 23 59 56.8 +0.6
SNR=22
FAQ Al Faqa, Dubai 30.92 101 *i* P P 23 59 56.8 0.0
SNR=8.0
FAQ Al Faqa, Dubai 30.92 101 P P 23 59 56.8 0.0
SNR=8.0
HATD Hatta, Dubai 31.31 101 *i* P P 00 00 00.0 -0.2
SNR=13
HATD Hatta, Dubai 31.31 101 P P 00 00 00.0 -0.2
SNR=13
ASHO Ashiyiah 31.32 101 *i* P P 00 00 00.0 -0.4
SNR=12
ASHO Ashiyiah 31.32 101 P P 00 00 00.0 -0.4
SNR=12
ARU Arti 32.17 38 P P 00 00 06.7 -0.7
comp=Z,3.0nm,0.4s,baz=244,slow=7.8,SNR=9.3
ARU Arti 32.17 38*d* *i*P P 00 00 06.7 -0.7
ARU 00 01 11.6
ARU 00 02 50.7
ARU S S 00 05 19.5 +0.2
ARU SS SnSn 00 07 11.5 +1.4
ARU pmax pmax
comp=Z,14nm,1.7s
ARU Arti 32.17 38 *i* P P 00 00 06.7 -0.7
comp=Z,14nm,1.7s
ARU S S 00 05 19.5 +0.2
ARCES ARCESS Array B 33.89 2 P P 00 00 22.2 -0.1
comp=Z,14nm,0.6s,baz=189,slow=9.3,SNR=78
WSAR Wadi Sarin 34.08 101 P P 00 00 24.5 0.0
comp=Z,5.4nm,0.8s,baz=280,slow=8.9,SNR=4.0
BRVK Borovoye 37.79 47 *e*P P 00 00 56.6 +0.7
BRVK pmax pmax
comp=Z,4.0nm,0.7s
BRVK Borovoye 37.79 47 *e*P P 00 00 56.6 +0.7
comp=Z,4.0nm,0.7s
DBIC Dimbokro 37.98 227 P P 00 00 58.6 +0.7
comp=Z,2.8nm,0.4s,baz=18,slow=9.5,SNR=14
DBIC LR LR 00 18 02.5
comp=Z,132nm,18.9s,baz=36,slow=38
KMBO Kilima Mbogo 39.37 155 P P 00 01 10.3 +0.5
comp=Z,1.1nm,0.7s,baz=331,slow=8.2,SNR=4.7
KMBO Kilima Mbogo 39.37 155*ce*P P 00 01 14.1 +4.3
KMBO pmax pmax
comp=Z,2.0nm,0.9s
AAK Ala-Archa 40.74 64 *e*P P 00 01 20.4 -0.5
AAK pmax pmax
comp=Z,17nm,1.3s
AAK Ala-Archa 40.74 64 *e*P P 00 01 20.4 -0.5
comp=Z,17nm,1.3s
SCO Scoresbysund 41.85 340 *i* P P 00 01 31.5 +2.1
comp=Z,8.5nm,0.7s
SCO Scoresbysund 41.85 340 *i* P P 00 01 31.5 +2.1
SCO pmax pmax
comp=Z,9.0nm,0.7s
SCO Scoresbysund 41.85 340 *i* P P 00 01 31.5 +2.1
comp=Z,9.0nm,0.7s
KSH Kashi 42.41 68 P P 00 01 33.4 -1.2
KSH S S 00 07 43.3 -12
KSH pmax pmax
comp=Z,15nm,0.8s
KSH pmax pmax
comp=Z,150nm,3.6s
KSH LR LR
comp=Z,220nm,7.2s
KSH LR LR
comp=Z,180nm,5.9s
KSH LR LR
comp=Z,130nm,6.4s
DAG Danmarks Havn 44.90 348 *i* P P 00 01 54.3 +0.3
comp=Z,20nm,0.5s
DAG Danmarks Havn 44.90 348 *i* P P 00 01 54.3 +0.3
DAG pmax pmax
comp=Z,21nm,0.5s
NVS Novosibirsk 45.52 45⇓ *i*P P 00 01 59.4 +0.2
NVS pmax pmax
comp=N,4.0nm,0.8s
NVS pmax pmax
comp=E,6.0nm,0.8s
NVS pmax pmax
comp=Z,7.0nm,0.8s
NVS Novosibirsk 45.52 45 *i* P P 00 01 59.4 +0.2
MKAR Makanchi Array 45.63 57 P P 00 01 60.0 -0.3
comp=Z,27nm,0.5s,baz=270,slow=7.5,SNR=264
MKAR Makanchi Array 45.63 57*ce*P P 00 01 59.5 -0.7
MKAR pmax pmax
comp=Z,27nm,0.5s
MKAR Makanchi Array 45.63 57 P P 00 02 00.0 -0.3
ZALV Zalesovo Beam 46.49 46 P P 00 02 05.8 -1.0
comp=Z,3.2nm,0.4s,baz=270,slow=9.3,SNR=26
SUMG Summit 47.49 339 *i* P P 00 02 15.7 +0.8
SUMG Summit 47.49 339 *i* P P 00 02 15.7 +0.8
SUMG Summit 47.49 339 *i* P P 00 02 15.7 +0.8
TLY Talaya 58.10 47 P P 00 03 33.0 -0.1
comp=Z,1.3nm,0.4s,baz=301,slow=7.4,SNR=3.3
TLY Talaya 58.10 47 *e*P P 00 03 33.8 +0.7
TLY pmax pmax
comp=Z,7.0nm,1.4s
TLY Talaya 58.10 47 *e*P P 00 03 33.8 +0.7
comp=Z,7.0nm,1.4s
ZAK Zakamensk 58.30 48 *e*P P 00 03 34.8 +0.1
ZAK pmax pmax
comp=Z,5.0nm,0.8s
ZAK Zakamensk 58.30 48 *e*P P 00 03 34.8 +0.1
comp=Z,5.0nm,0.8s
GTA Gaotai 59.97 61 *e*P P 00 03 46.2 -0.3
GTA pP pP 00 03 50.8 -1.2
GTA sP sP 00 03 53.2 -0.9
GTA pmax pmax
comp=Z,10.0nm,0.9s
LBTB Lobatse 60.54 176 LR LR 00 31 00.5
comp=Z,128nm,18.1s,baz=32,slow=37
SCHQ Schefferville 61.02 319 P P 00 03 54.0 +0.8
comp=Z,4.8nm,0.5s,baz=60,slow=5.5,SNR=18
SCHQ Schefferville 61.02 319 P P 00 03 54.0 +0.8
SONM Songino Array 61.12 50 P P 00 03 53.8 -0.3

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
	comp=Z,6.8nm,0.8s,baz=280,slow=8.5,SNR=20						
SONM				PcP	PcP	00 04 38.3	+1.3
	comp=Z,2.5nm,0.8s,baz=280,slow=4.4,SNR=3.9						
ULN	Ulaanbaatar	61.52	50	eP	P	00 03 56.9	0.0
ULN				pmax	pmax		
	comp=Z,9.0nm,0.8s						
ULN	Ulaanbaatar	61.52	50	eP	P	00 03 56.9	0.0
	comp=Z,9.0nm,0.8s						
TIXI	Tiksi	61.52	20	eP	P	00 03 57.1	+0.8
TIXI				pmax	pmax		
	comp=Z,10.0nm,1.7s						
TIXI	Tiksi	61.52	20	eP	P	00 03 57.1	+0.8
	comp=Z,10.0nm,1.7s						
BOD	Bodaibo	61.58	37	eP	P	00 03 54.3	-2.6
BOD				pmax	pmax		
	comp=Z,5.0nm,0.8s						
RES	Resolute Bay	62.41	344	P	P	00 04 03.6	+1.4
	comp=Z,1.0nm,0.7s,baz=36,slow=9.5,SNR=4.2						
BOSA	Boshof	64.10	177	P	P	00 04 14.5	+0.4
	comp=Z,3.3nm,0.9s,baz=24,slow=10.0,SNR=3.0						
BOSA				LR	LR	00 34 15.0	
	comp=Z,182nm,19.2s,baz=36,slow=38						
YAK	Yakutsk	66.65	29	P	P	00 04 29.8	-0.3
	comp=Z,1.5nm,0.3s,baz=253,slow=19,SNR=3.7						
CMAR	Chiang Mai Arr	69.09	82	P	P	00 04 45.7	-0.5
	comp=Z,0.8nm,0.7s,baz=302,slow=9.2,SNR=5.6						
BILL	Bilibino	73.11	13	eP	P	00 05 10.0	+0.3
BILL				pmax	pmax		
	comp=Z,4.0nm,1.1s						
BILL	Bilibino	73.11	13	eP	P	00 05 10.0	+0.3
	comp=Z,4.0nm,1.1s						
SEY	Seymchan	73.98	21	P	P	00 05 15.9	+1.0
	comp=Z,1.6nm,0.3s,baz=307,slow=3.4,SNR=10						
SEY	Seymchan	73.98	21	eP	P	00 05 16.3	+1.4
INK	Inuvik	74.64	351	P	P	00 05 19.3	+0.6
	comp=Z,4.7nm,1.1s,baz=246,slow=26,SNR=3.8						
KLR	Kul'dur	75.00	40	P	P	00 05 21.3	+0.2
	comp=Z,3.9nm,0.7s,baz=293,slow=6.3,SNR=12						
KLR				LR	LR	00 40 55.9	
	comp=Z,39nm,19.4s,baz=78,slow=38						
MA2	Magadan	76.03	24	P	P	00 05 27.8	+1.0
	comp=Z,8.2nm,0.4s,baz=5.1,slow=7.4,SNR=15						
YKA	Yellowknife Ar	76.05	341	P	P	00 05 27.8	+0.9
	comp=Z,2.9nm,0.6s,baz=33,slow=5.4,SNR=22						
FFC	Flin Flon	77.85	331	eP	P	00 05 38.1	+0.9
FFC				pmax	pmax		
	comp=Z,5.0nm,0.6s						
FFC	Flin Flon	77.85	331	eP	P	00 05 38.1	+0.9
	comp=Z,4.8nm,0.6s						
FFC	Flin Flon	77.85	331	eP	P	00 05 38.1	+0.9
	comp=Z,4.8nm,0.6s						
USRK	Ussuriysk Ar.	78.24	44	P	P	00 05 39.3	-0.2
	comp=Z,3.5nm,0.7s,baz=299,slow=3.8,SNR=10						
ULM	Lac du Bonnet	78.33	325	P	P	00 05 41.0	+1.1
	comp=Z,6.2nm,0.7s,baz=36,slow=5.7,SNR=12						
ILAR	Eielson Array	79.42	355	P	P	00 05 47.0	+1.3
	comp=Z,0.6nm,0.5s,baz=339,slow=3.2,SNR=9.3						
ILAR	Eielson Array	79.42	355	P	P	00 05 47.0	+1.3
ILAR	Eielson Array	79.42	355	P	P	00 05 47.0	+1.3
KSAR	Wonju Array Be	79.95	51	P	P	00 05 49.3	+0.3
KSAR	Wonju Array Be	79.95	51	P	P	00 05 49.3	+0.3
KSAR	Wonju Array Be	79.95	51	P	P	00 05 49.2	+0.3
KSRS	Korea Array	79.97	51	P	P	00 05 49.3	+0.2
	comp=Z,3.0nm,0.6s,baz=308,slow=5.1,SNR=6.7						
KSRS				LR	LR	00 44 36.7	
	comp=Z,50nm,19.9s,baz=305,slow=38						
YSS	Yuzh-Sakhalins	82.04	36	eP	P	00 06 01.8	+1.8
YSS				pmax	pmax		
	comp=Z,33nm,1.7s						
YSS	Yuzh-Sakhalins	82.04	36	eP	P	00 06 01.8	+1.8
	comp=Z,33nm,1.7s						
ECSD	EROS Data Cent	83.18	320	eP	P	00 06 06.9	+0.9
	comp=Z,3.1nm,0.6s						
ECSD	EROS Data Cent	83.18	320	eP	P	00 06 06.9	+0.9
	comp=Z,3.1nm,0.6s						
PETK	Petropavlovsk-	83.52	25	P	P	00 06 06.7	-0.9
	comp=Z,3.2nm,0.8s,baz=298,slow=6.4,SNR=2.5						
BDFB	Brasilia	83.54	246	P	P	00 06 08.8	+0.5
	comp=Z,1.5nm,0.4s,baz=60,slow=6.1,SNR=5.4						
EGMT	Eagleton	86.11	330	eP	P	00 06 21.8	+1.0
	comp=Z,26nm,0.9s						
EGMT	Eagleton	86.11	330	eP	P	00 06 21.8	+1.0
	comp=Z,26nm,0.9s						
JOW	Kunigami	86.73	59	P	P	00 06 24.7	+0.6
	comp=Z,5.9nm,0.6s,baz=287,slow=14						
MJAR	Matsushiro Arr	86.84	46	P	P	00 06 24.0	-0.5
	comp=Z,3.4nm,0.7s,baz=298,slow=5.9,SNR=7.2						
PDAR	Pinedale Array	90.19	327	P	P	00 06 41.1	+0.4
	comp=Z,1.0nm,0.6s,baz=46,slow=3.9,SNR=4.6						
WRA	Warramunga Arr	119.25	94	PKP	PKPdf	00 12 29.2	-0.2
	comp=Z,1.0nm,0.7s,baz=306,slow=1.3,SNR=4.8						
ASAR	Alice Springs	120.73	98	PKP	PKPdf	00 12 32.2	0.0
	comp=Z,1.3nm,0.6s,baz=310,slow=1.7,SNR=10						

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*NIED **03** 23:54:00, 39°.60N×143°.10E, h14km, Mw4.5 Best double couple: $M_0$5.38000×10^{15} NP1:ϕ_s354.00000°, δ29.00000°, λ68.00000°. NP2:ϕ_s199.00000°, δ64.00000°, λ102.00000°.*
*JMA **03** 23:54:25.9±0.2, 39°.62N×143°.11E, h21km±3km, M4.7*
JMA Felt II J1.
*ISCJB **03** 23:54:25.9±1.1, 39°.57N±0°.04×143°.11E±0°.05, h16km±7km, mb4.4/35, MS4.2/7, Error ellipse: s-maj=8.1km s-min=5.4km az=44.3*
*NEIC **03** 23:54:28.9±2.1, 39°.55N×143°.12E, h28km±15km, mb4.5/4, Error ellipse: s-maj=9.2km s-min=6.4km az=110.0*
*IDC **03** 23:54:30.4±2.5, 39°.55N×143°.06E, h37km±21km, mb4.1/31, mb1 4.3/38, mb1mx4.3/49, mbtmp4.4/38, ML3.8/7, MS3.9/8, Ms1 3.9/8, ms1mx3.4/52, Error ellipse: s-maj=13.7km s-min=10.7km az=107.0*
*BJI **03** 23:54:33.0, 40°.50N×142°.60E, h20km, mb4.8/20, mB4.9/6, Ms4.4/7, Ms7 4.4/3*
ISC 03 23:54:25.9±1.6**, 39°.53N**±0°.05×**143°.08E**±0°.05**, h8**km±9km**, n92,** σ1^{s}34/92**, mb4.5**/35**, MS4.2**/7**, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
MIYJ	Miyakonagasawa	0.97	273	P	Pg	23 54 44.3	-0.3
MIYJ				eS	Sg	23 54 57.1	-0.1
JTH	Tanohata	1.02	294	P	Pg	23 54 44.7	-0.8
OFUJ	Ofunato	1.18	248	P	Pg	23 54 48.0	-0.5
JOM	Ohasama	1.38	268	P	Pn	23 54 51.1	-0.4
JOM				eS	Sb	23 55 08.8	-1.0
JKZ	Kuzumaki	1.42	289	P	Pn	23 54 51.2	-0.9
JKZ				S	Sb	23 55 09.4	-1.6
JANG	Nango	1.47	306	P	Pn	23 54 50.6	-2.1
JMK	Ichinoseki	1.56	249	P	Pn	23 54 53.9	+0.1
JMK				S	Sn	23 55 14.0	-0.1
JIO	Ouri	1.72	232	P	Pn	23 54 56.1	0.0
JIO				S	Sn	23 55 18.6	+0.3
JRG	Rokugo	1.90	267	P	Pn	23 54 59.2	+0.7
JTM	Tenmabayashi	1.99	310	P	Pn	23 54 58.9	-0.9
JAH	Hinai	1.99	290	P	Pn	23 55 00.2	+0.4
ERM	Erimo	2.48	1	ePn	Pn	23 55 07.2	+0.7
MJAR	Matsushiro Arr	4.87	234	Pn	Pn	23 55 42.2	+2.8
	17nm,0.3s,baz=40,slow=12,SNR=71						
MJAR				LR	LR	23 57 32.9	
	comp=Z,347nm,20.6s,baz=60,slow=38						
MAJO	Matsushiro	4.87	234	ePn	Pn	23 55 42.4	+3.0
MAT	Matsushiro	4.87	234	P	Pn	23 55 42.1	+2.7
MAT				eS	Sn	23 56 42.7	+6.8
JHJ	Hachijo jima 2	6.93	204	Pn	Pn	23 56 07.8	+0.2
	41nm,0.3s,baz=82,slow=3.6,SNR=5.5						
JHJ				Sn	Sn	23 57 21.5	-5.2
	50nm,0.3s,baz=253,slow=19,SNR=3.5						
USRK	Ussuriysk Ar.	9.50	303	Pn	Pn	23 56 44.5	+1.6
	2.8nm,0.3s,baz=97,slow=15,SNR=44						
USRK				LR	LR	00 00 14.6	
	comp=Z,868nm,18.5s,baz=135,slow=36						
MDJ	Mudanjiang	11.24	301	ePn	Pn	23 57 07.5	+0.9
	62nm,0.9s						
JNU	Nakatsue	11.73	241	Pn	Pn	23 57 15.3	+1.8
	0.4nm,0.3s,baz=60,slow=15,SNR=2.8						
JNU				LR	LR	00 01 59.5	
	comp=Z,577nm,20.9s,baz=5.5,slow=38						
KSRS	Korea Array	12.06	265	Pn	Pn	23 57 21.5	+3.5
	3.7nm,0.3s,baz=84,slow=14,SNR=28						
KSRS				LR	LR	00 01 42.1	
	comp=Z,326nm,18.8s,baz=123,slow=36						
KSAR	Wonju Array Be	12.09	265	Pn	Pn	23 57 21.5	+3.1
CBIJ	Chichi jima	12.42	184	Pn	Pn	23 57 20.6	-2.3
CBIJ				Sn	Sn	23 59 28.9	-13
JCJ	Chichijima	12.42	184	Pn	Pn	23 57 20.6	-2.3
	baz=345,slow=20						
JCJ				Sn	Sn	23 59 28.9	-13
	7.6nm,0.3s,baz=287,slow=19,SNR=3.5						
KLR	Kul'dur	12.62	324	Pn	Pn	23 57 25.0	-0.7
	0.1nm,0.3s,baz=147,slow=14,SNR=5.0						
DL2	Dalian	16.64	275	P	P	23 58 21.6	-0.2
DL2				eS	Sn	00 01 26.7	+2.5
DL2				pmax	pmax		
	comp=Z,32nm,0.9s						
DL2				LR	LR		
	comp=N,620nm,13.6s						
DL2				LR	LR		
	comp=E,350nm,14.7s						
PETK	Petropavlovsk-	16.88	32	Pn	P	23 58 23.9	-0.5
	0.2nm,0.3s,baz=243,slow=12,SNR=3.6						
HIA	Hailar	19.24	308	eP	P	23 58 48.1	-2.3
	14nm,0.5s						
MA2	Magadan	20.65	11	P	P	23 59 06.0	+0.3
	16nm,0.6s,baz=211,slow=9.0,SNR=22						
TIA	Tai'an	20.73	269	eP	P	23 59 06.0	-0.8
TIA				pmax	pmax		
	comp=Z,30nm,1.1s						
TIA				LR	LR		
	comp=N,440nm,15.0s						
TIA				LR	LR		
	comp=E,1μm,15.5s						
TIA				LR	LR		
	comp=Z,1μm,15.5s						
YAK	Yakutsk	23.97	344	P	P	23 59 40.1	-0.3
	comp=Z,1.8nm,0.3s,baz=183,slow=23,SNR=5.1						
SEY	Seymchan	24.10	10	P	P	23 59 41.3	-0.3
	comp=Z,16nm,0.8s,baz=199,slow=7.5,SNR=41						
SONM	Songino Array	27.59	300	P	P	00 00 13.7	+0.1
	comp=Z,5.7nm,0.6s,baz=101,slow=10.0,SNR=21						
SONM				LR	LR	00 11 39.7	
	comp=Z,470nm,19.4s,baz=100,slow=37						
XAN	Xi'an	27.79	269	P	P	00 00 14.5	-0.9
XAN				S	S	00 05 06.8	+8.3
XAN				pmax	pmax		
	comp=Z,16nm,0.8s						
XAN				LR	LR		
	comp=N,260nm,14.1s						
XAN				LR	LR		
	comp=E,350nm,13.7s						
XAN				LR	LR		
	comp=Z,420nm,13.1s						
H11N2	WAKE ISLAND Hy	28.45	127	T	T	00 30 05.0	
	baz=319						
H11N1	WAKE ISLAND Hy	28.46	127	T	T	00 30 07.4	
	baz=319						
H11N3	WAKE ISLAND Hy	28.47	127	T	T	00 30 09.2	
	baz=319						
H11S1	WAKE ISLAND Hy	29.26	129	T	T	00 31 10.9	
	baz=320						
H11S3	WAKE ISLAND Hy	29.26	129	T	T	00 31 10.2	
	baz=320						
H11S2	WAKE ISLAND Hy	29.27	129	T	T	00 31 11.4	
	baz=320						
TLY	Talaya	29.78	307	P	P	00 00 33.0	+0.2
	comp=Z,3.6nm,0.7s,baz=184,slow=6.6,SNR=6.0						
GTA	Gaotai	33.16	284	eP	P	00 01 03.3	+0.4
GTA				pP	sP	00 01 08.5	+2.2
GTA				sP	pP	00 01 11.4	+6.1
GTA				S	S	00 06 19.4	-3.2
GTA				sS	sS	00 06 30.8	+4.2
GTA				SS	SnSn	00 08 20.0	-1.4
GTA				pmax	pmax		
	comp=Z,7.0nm,1.1s						
GTA				pmax	pmax		
	comp=Z,120nm,4.1s						
GTA				LR	LR		
	comp=Z,310nm,14.7s						
GTA				LR	LR		
	comp=Z,530nm,15.2s						
GTA				LR	LR		
	comp=Z,570nm,16.6s						
ZALV	Zalesovo Beam	41.25	310	P	P	00 02 12.2	+1.1
	comp=Z,11nm,0.5s,baz=99,slow=8.5,SNR=20						
ZALV				PcP	PcP	00 04 09.7	-0.1
	comp=Z,2.1nm,0.6s,baz=93,slow=2.6,SNR=3.4						
NRIK	Noril'sk	41.58	334	P	P	00 02 13.3	-0.3
	comp=Z,0.8nm,0.3s,baz=95,slow=11,SNR=5.2						
JAY	Jayapura	41.90	184	P	P	00 02 17.4	+0.5
	comp=Z,0.9nm,0.7s,baz=51,slow=23,SNR=3.5						
CMAR	Chiang Mai Arr	43.42	254	P	P	00 02 29.7	+0.5
	comp=Z,3.0nm,0.6s,baz=40,slow=7.2,SNR=14						
MKAR	Makanchi Array	43.95	300	P	P	00 02 33.5	+0.2
	comp=Z,8.9nm,0.9s,baz=84,slow=9.9,SNR=7.4						
KURK	Kurchatov	45.47	306	eP	P	00 02 44.8	-0.4
	comp=Z,49nm,0.7s						
COLA	College	46.27	33	eP	P	00 02 51.2	-0.2
	comp=Z,3.9nm,0.6s						
ILAR	Eielson Array	46.69	34	P	P	00 02 54.9	+0.2
	comp=Z,3.3nm,0.8s,baz=268,slow=6.1,SNR=30						
TAPN	Taplejung	47.11	273	eP	P	00 03 00.4	+1.6
	comp=Z,30nm,0.9s						
ODAN	Odare	47.60	272	eP	P	00 03 04.7	+2.1
	comp=Z,36nm,0.7s						
GUN	Gumba	48.24	274	eP	P	00 03 07.9	+0.2
	comp=Z,116nm,0.7s						
KKN	Kakani	48.77	275	eP	P	00 03 11.9	+0.3
	comp=Z,62nm,0.6s						
PKIN	Phulchoki	48.78	274	eP	P	00 03 12.4	+0.6
	comp=Z,25nm,0.6s						
GKN	Gorkha	49.16	275	eP	P	00 03 15.3	+0.8
	comp=Z,31nm,0.5s						
KOLN	Koldanda	50.07	275	eP	P	00 03 22.9	+1.4
	comp=Z,30nm,0.7s						
PYUN	Piuthan	50.38	276	eP	P	00 03 24.2	+0.3
	comp=Z,72nm,0.9s						
EKS2	Erkin-Say	50.98	297	eP	P	00 03 28.2	+0.1
	comp=Z,4.0nm,0.7s						
INK	Inuvik	51.57	28	P	P	00 03 32.5	+0.6
	comp=Z,2.2nm,0.5s,baz=303,slow=7.5,SNR=24						
AKTO	Aktyubinsk	58.00	311	P	P	00 04 20.4	+1.5
	comp=Z,6.6nm,0.7s,baz=80,slow=9.5,SNR=9.4						
WRA	Warramunga Arr	59.72	190	P	P	00 04 30.5	-0.6
	comp=Z,5.3nm,0.8s,baz=7.8,slow=7.1,SNR=18						
RES	Resolute Bay	59.86	15	P	P	00 04 31.0	-0.4
	comp=Z,4.0nm,0.6s,baz=326,slow=5.9,SNR=17						
RES	Resolute Bay	59.86	15	eP	P	00 04 30.9	-0.4
	comp=Z,3.3nm,0.6s						
YKA	Yellowknife Ar	61.00	31	P	P	00 04 39.5	+0.2
	comp=Z,1.7nm,0.7s,baz=301,slow=6.5,SNR=27						
ARCES	ARCESS Array B	62.13	339	P	P	00 04 46.5	-0.4
	comp=Z,4.1nm,0.8s,baz=33,slow=6.8,SNR=2.9						
ASAR	Alice Springs	63.45	189	P	P	00 04 56.5	+0.3
	comp=Z,2.9nm,0.8s,baz=12,slow=6.9,SNR=21						
GEYT	Alibeck	63.78	299	P	P	00 04 57.7	-0.8
	comp=Z,2.5nm,0.6s,baz=46,slow=4.7,SNR=6.2						
FINES	FINESS Array B	67.22	332	P	P	00 05 19.7	-0.5
	comp=Z,3.3nm,0.6s,baz=48,slow=5.7,SNR=7.6						
FINES				LR	LR	00 36 34.6	
	comp=Z,147nm,20.2s,baz=45,slow=38						
JMIC	Jan Mayen	67.92	350	LR	LR	00 34 58.5	
	comp=Z,48nm,21.2s,baz=91,slow=36						
KBZ	Khabaz	70.27	311	P	P	00 05 40.0	+0.5
	comp=Z,9.5nm,0.9s,baz=43,slow=4.3,SNR=9.9						
STKA	Stephens Creek	71.06	181	P	P	00 05 44.6	+0.3
	comp=Z,1.8nm,0.9s,baz=24,slow=6.5,SNR=3.6						
NB2	NORSAR Subarra	72.39	338	P	P	00 05 51.6	-0.5
	comp=Z,5.7nm,0.8s,baz=40,slow=6.2						
NOA	NORSAR Array B	72.39	338	P	P	00 05 52.0	-0.2
	comp=Z,3.3nm,0.7s,baz=38,slow=6.0,SNR=11						
NVAR	Mina Array Bea	72.46	55	P	P	00 05 54.5	+1.3
	comp=Z,4.4nm,0.8s,baz=281,slow=6.2,SNR=20						
AKASG	Malin Array Be	73.12	323	P	P	00 05 56.4	-0.2
	comp=Z,1.3nm,0.4s,baz=45,slow=6.4,SNR=14						
PDAR	Pinedale Array	74.99	47	P	P	00 06 08.2	+0.2
	comp=Z,1.6nm,0.7s,baz=258,slow=2.6,SNR=18						
BRTR	Keskin Array B	78.17	312	P	P	00 06 26.3	+0.4
	comp=Z,1.4nm,0.8s,baz=73,slow=4.1,SNR=7.6						
DPC	Dobruska-Polom	79.03	328	eP	P	00 06 33.1	+2.8
DPC				epP	PcP	00 06 38.9	0.0
PRU	Pruhonice	80.03	329	eP	P	00 06 38.0	+2.3
TREC	Trest	80.19	328	eP	P	00 06 38.6	+2.0
KHC	Kasperske Hory	81.09	329	eP	P	00 06 43.2	+1.7
KHC				ex	x	00 06 58.9	
GERES	GERESS Array B	81.27	329	P	P	00 06 41.3	-1.2
	comp=Z,0.7nm,0.6s,baz=39,slow=6.0,SNR=6.9						
SCHQ	Schefferville	82.58	17	P	P	00 06 48.9	-0.3
	comp=Z,4.9nm,0.9s,baz=323,slow=10,SNR=3.5						
DAVOX	Davos/Dischmat	84.45	330	LR	LR	00 49 56.7	
	comp=Z,123nm,18.5s,baz=39,slow=39						
TXAR	Lajitas Array	87.57	53	P	P	00 07 15.0	+0.2
	comp=Z,0.7nm,0.6s,baz=298,slow=3.6,SNR=8.3						
TXAR	Lajitas Array	87.57	53	P	P	00 07 15.1	+0.3
ESDC	Sonseca Array	95.61	335	P	P	00 07 51.7	-0.2
	comp=Z,0.2nm,0.6s,baz=16,slow=4.2,SNR=3.0						
TORD	Torodi Ar. Bea	116.45	317	PKP	PKPdf	00 13 10.6	-0.1
	comp=Z,0.9nm,1.1s,baz=19,slow=2.0,SNR=4.3						
SNAA	Sanae	143.51	197	P	PKPab	00 13 56.5	+0.2
LPAZ	La Paz	144.29	58	PKP	PKPbc	00 14 01.8	-0.1
	comp=Z,1.4nm,0.7s,baz=19,slow=13,SNR=9.8						
VNA2	Neumayer--Watz	145.08	196	P	PKPbc	00 14 01.7	-0.3
	baz=131,slow=2.8						
VNA3	Neumayer Olymp	145.31	195	P	PKPbc	00 14 02.4	-0.4

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*ISCJB **04** 00:13:27.3±1.1, 27°.1N±0°.2×143°.5E±0°.1, h10km, mb3.6/5, Error ellipse: s-maj=23.6km s-min=12.8km az=171.0*
*IDC **04** 00:13:27.5±1.5, 27°.13N×143°.37E, h0km, mb3.6/5, mb1 3.8/5, mb1mx3.4/37, mbtmp3.6/5, Error ellipse: s-maj=32.0km s-min=22.1km az=160.0*
ISC 04 00:13:29.1±1.2**, 27°.1N**±0°.2×**143°.4E**±0°.1**, h10**km**, n6,** σ0^{s}49/7**, mb3.6**/5**, Bonin Islands region**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
JCJ	Chichijima	1.06	269	Pn	Pn	00 13 50.1	+0.2
	68nm,0.3s,baz=274,slow=22,SNR=15						
JCJ				Sn	Sn	00 14 04.2	-0.6
	181nm,0.3s,baz=275,slow=23,SNR=15						
KLR	Kul'dur	23.84	341	P	P	00 18 42.7	+0.4
	0.6nm,0.3s,baz=170,slow=12,SNR=2.6						
WRA	Warramunga Arr	47.59	192	P	P	00 22 05.3	+0.1
	0.6nm,0.3s,baz=12,slow=8.6,SNR=3.3						
MKAR	Makanchi Array	51.27	310	P	P	00 22 33.5	+0.3
	0.2nm,0.5s,baz=87,slow=9.3,SNR=2.6						
YKA	Yellowknife Ar	71.62	29	P	P	00 24 49.9	-0.5
	0.2nm,0.7s,baz=298,slow=5.6,SNR=3.2						
FINES	FINESS Array B	78.39	334	P	P	00 25 29.4	-0.1
	1.5nm,0.9s,baz=73,slow=6.2,SNR=1.5						

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*ISCJB **04** 00:14:04.9±0.7, 33°.81N±0°.09×138°.55E±0°.10, h290km±5km, mb3.0/6, Error ellipse: s-maj=14.3km s-min=12.6km az=165.4*
*IDC **04** 00:14:05.5±1.9, 33°.59N×138°.13E, h271km±18km, mb2.9/6, mb1 3.0/8, mb1mx2.8/43, mbtmp3.5/8, Error ellipse: s-maj=27.5km s-min=18.9km az=79.0*
*JMA **04** 00:14:05.8±0.2, 33°.76N×138°.57E, h280km, M3.2*
ISC 04 00:14:05.8±0.9**, 33°.82N**±0°.10×**138°.53E**±0°.08**, h285**km±7km**, n22,** σ0^{s}98/27**, mb3.0**/6**, Southeast of Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
TK03	Tokai 3	0.58	306	P	Pn	00 14 41.4	-1.3
JKO	Kozu shima	0.62	54	P	Pn	00 14 41.7	-1.3
TK02	Tokai 2	0.66	281	P	Pn	00 14 43.6	+0.8
TTO5	TONANKAI O.B.S	0.80	303	P	Pn	00 14 44.2	+0.8
TTO4	TONANKAI O.B.S	0.85	283	P	Pn	00 14 44.0	+0.5
JIE	Ise	1.62	291	P	Pn	00 14 48.1	-0.1
JNY	Yasuok	1.63	340	P	Pn	00 14 48.9	+0.5
JNY				eS	S	00 15 22.4	+0.2
JYN	Shimob	1.67	0	P	Pn	00 14 49.4	+0.7
BSO4	Boso 4	1.89	52	P	Pn	00 14 50.9	+0.7
BSO4				eS	S	00 15 26.4	+0.9
BSO3	Boso 3	1.91	59	P	Pn	00 14 50.1	0.0
BSO3				eS	S	00 15 26.4	+1.1
JHU	Hanno	2.12	17	P	Pn	00 14 52.7	+0.6
JHU				S	S	00 15 27.1	-1.9
BSO1	Boso 1	2.19	67	P	Pn	00 14 52.0	-0.1
BSO1				S	S	00 15 30.0	+0.9
JAG	Ashikaga	2.70	16	P	Pn	00 14 57.4	-0.1
JAG				eS	S	00 15 36.2	-2.5
MJAR	Matsushiro Arr	2.73	355	P	Pn	00 14 57.8	0.0
	4.0nm,0.3s,baz=172,slow=11,SNR=20						
MAT	Matsushiro	2.73	355	P	Pn	00 14 57.9	+0.2
KLR	Kul'dur	16.20	344	P	Pn	00 17 39.0	+0.4
	0.1nm,0.3s,baz=157,slow=7.7,SNR=3.4						
SONM	Songino Array	27.83	310	P	P	00 19 30.8	+1.4
	0.2nm,0.4s,baz=110,slow=8.3,SNR=2.9						
MKAR	Makanchi Array	43.91	305	P	P	00 21 44.9	+0.1
	0.4nm,0.7s,baz=86,slow=10,SNR=5.0						
ILAR	Eielson Array	53.46	31	P	P	00 23 01.1	+4.4
	0.1nm,0.5s,baz=281,slow=7.2,SNR=2.3						
WRA	Warramunga Arr	53.61	185	P	P	00 22 57.4	-0.9
	0.3nm,0.4s,baz=0.5,slow=8.0,SNR=2.5						
FINES	FINESS Array B	70.54	332	P	P	00 24 49.5	-0.3
	1.0nm,0.8s,baz=64,slow=6.3,SNR=5.5						
AKASG	Malin Array Be	75.37	322	P	P	00 25 18.0	-0.1
	0.2nm,0.3s,baz=52,slow=5.7,SNR=3.0						

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*ISCJB **04** 00:17:24.5±0.6, 8°.75N±0°.03×71°.50W±0°.03, h24km±5km, Error ellipse: s-maj=6.6km s-min=4.2km az=142.0*
*FUNV **04** 00:17:25.0, 8°.75N×71°.54W, h16km, MW2.8*
ISC 04 00:17:24.2±1.2**, 8°.73N**±0°.04×**71°.54W**±0°.03**, h21**km±5km**, n19,** σ1^{s}04/30**, 1C-2D, Venezuela**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
VIGV	El Vigia	0.21	57⇓	eP	Pb	00 17 29.2	-0.9
VIGV				eS	Sb	00 17 33.3	-0.9
SOCV	Socops	0.81	123⇓	eP	Pb	00 17 39.7	+0.1
SOCV				eS	Sn	00 17 51.0	-0.8
SDV	Santo Domingo	0.91	80	eP	Pb	00 17 40.9	-0.6
SDV				eS	Sb	00 17 50.4	-2.9
SDV				i		00 17 53.0	
	comp=Z,81nm,0.3s						
CAPV	Capacho	1.15	222	eP	Pb	00 17 46.3	+0.8
CAPV				eS	Sn	00 18 02.6	+2.2
GRMC	Gramalote, San	1.60	231	eP	Pn	00 17 51.4	0.0
GRMC				eS	Sn	00 18 10.5	-1.1
GRMC				i		00 18 17.1	
	comp=Z,118nm,0.3s						
QARV	Quebrada Arrib	1.78	34⇑	eP	Pn	00 17 54.6	+0.7
QARV				eS	Sn	00 18 16.1	+0.1
PAMC	Pamplona, Colo	1.79	220	eP	Pb	00 17 55.8	-0.8
PAMC				eS	Sb	00 18 18.3	-0.5
PAMC				i		00 18 24.4	
	comp=Z,24nm,0.3s						
OCAC	Ocana	1.82	255	eP	Pb	00 17 56.0	-1.0
OCAC				i		00 18 23.8	
	comp=Z,205nm,0.2s						
VIRV	Villa del Rosa	1.96	334	eP	Pn	00 17 55.9	-0.3
VIRV				eS	Sn	00 18 20.6	+0.4
CURV	Curarigua	2.02	51	eP	Pn	00 17 58.2	+1.1
CURV				eS	Sn	00 18 22.7	+0.9
SANV	Sanarito	2.13	69	eP	Pn	00 17 59.6	+0.9
SANV				eS	Sn	00 18 24.5	0.0
DABV	Dabajuro	2.36	22	eP	Pn	00 18 02.4	+0.6
TEPV	Terepaima	2.63	62	eP	Pn	00 18 05.9	+0.5
ELOV	Elorza	2.67	130	eP	Pn	00 18 06.4	+0.5
BAUV	El Baul	3.47	86	eP	Pn	00 18 18.0	+1.0
BAUV				eS	Sn	00 18 55.6	-1.9
MONV	Montecano	3.56	26	eP	Pn	00 18 18.1	-0.2
TURV	Turiamo	4.03	65	eP	Pn	00 18 24.6	-0.2
MERV	Las Mercedes	5.21	84	eP	Pn	00 18 41.2	+0.2
CUPV	Cœpira	5.83	76	eP	Pn	00 18 49.4	-0.2

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*MAN **04** 00:19:17, 9°.98N×126°.65E, h5km, mb4.3, ML3.2, MS3.0*
*IDC **04** 00:19:20.1±1.8, 9°.69N×124°.99E, h0km, mb3.8/4, mb1 3.9/4, mb1mx3.5/40, mbtmp3.8/4, Error ellipse: s-maj=184.1km s-min=29.2km az=68.0*
*ISCJB **04** 00:19:22.2±1.1, 10°.14N±0°.09×126°.5E±0°.1, h42km, mb3.7/4, Error ellipse: s-maj=17.8km s-min=9.8km az=32.9*
ISC 04 00:19:24.1±1.2**, 10°.15N**±0°.09×**126°.4E**±0°.1**, h42**km**, n7,** σ2^{s}39/9**, mb3.6**/4**, 1C, Philippine Islands region**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
SCPH	Surigao	1.00	248⇑	eP	Pn	00 19 39.9	-1.9
SCPH				eS	Sn	00 19 56.9	+2.3
BUTP	Butuan	1.42	214	eP	Pn	00 19 42.1	-5.4
BUTP				eS	Sn	00 20 04.1	-1.0
BUKP	Musuan	2.63	211	eP	Pn	00 20 01.6	-2.7
BUKP				eS	Sn	00 20 38.3	+3.3
WRA	Warramunga Arr	30.90	165	P	P	00 25 38.5	+1.5
	0.6nm,0.9s,baz=341,slow=10.0,SNR=2.1						
SONM	Songino Array	41.18	339	P	P	00 27 06.4	+1.6
	0.7nm,0.8s,baz=160,slow=9.1,SNR=6.7						
MKAR	Makanchi Array	52.22	323	P	P	00 28 29.9	-1.0
	0.7nm,0.8s,baz=128,slow=8.6,SNR=7.3						
FINES	FINESS Array B	86.07	332	P	P	00 31 59.6	-0.7
	2.3nm,0.9s,baz=78,slow=7.3,SNR=2.2						

ISK 04 00:29:53.8, 35.44N×24.35E, h5km, MD3.5
ISCJB 04 00:29:55.1±0.8, 34.99N±0.06×24.23E±0.04, h45km±7km, Error ellipse: s-maj=9.9km s-min=4.5km az=18.6
ATH 04 00:29:55.2, 35.04N×24.26E, h32km±1km, ML2.9/4, Error ellipse: s-maj=1.7km s-min=1.2km az=219.0
CSEM 04 00:29:55.8±0.3, 35.00N×24.26E, h30km, ML2.9, Error ellipse: s-maj=7.3km s-min=3.3km az=20.0
THE 04 00:29:57.0, 35.06N×24.27E, h24km±1km, ML2.8/5, Error ellipse: s-maj=2.1km s-min=1.0km az=202.0
ISC 04 00:29:56.0±0.7, 35.06N±0.03×24.28E±0.02, h25km±8km, n68, σ0.66/89, Crete

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
GVD	Gavdhos	0.27	215	P	Pb	00 30 02.6	0.0
GVD				S	Sn	00 30 09.1	-0.7
GVD	Gavdhos	0.27	215	P	Pb	00 30 02.6	0.0
GVD				S	Sb	00 30 07.0	-0.1
GVD	Gavdhos	0.27	215	P	Pb	00 30 02.6	0.0
GVD				S	Sb	00 30 07.0	-0.1
GVD				AML	AML	00 30 10.3	
	comp=E,7853µm,0.7s						
GVD				AML	AML	00 30 11.6	
	comp=N,6826µm,0.4s						
VAM	Vamos	0.35	350	P	Pb	00 30 04.0	+0.2
VAM				S	Sn	00 30 11.3	-0.4
VAM	Vamos	0.35	350	P	Pb	00 30 04.0	+0.2
VAM				S	Sn	00 30 11.3	-0.4
SIVA	Sivas	0.44	96	*e*PG	Pb	00 30 05.9	+0.7
SIVA				*e*SG	Sn	00 30 15.1	+1.1
SIVA	Sivas	0.44	96	P	Pb	00 30 05.2	0.0
SIVA				S	Sn	00 30 14.1	+0.2
SIVA	Sivas	0.44	96	P	Pb	00 30 05.2	0.0
SIVA	Sivas	0.44	96	*e*Pg	Pb	00 30 05.9	+0.7
SIVA				S	Sn	00 30 14.1	+0.2
SIVA				*e*Sg	Sn	00 30 15.1	+1.1
SIVA	Sivas	0.44	96	P	Pb	00 30 04.7	-0.5
SIVA				AML	AML	00 30 14.5	
	comp=N,3115µm,0.3s						
SIVA				S	Sn	00 30 14.6	+0.7
SIVA				AML	AML	00 30 15.1	
	comp=E,3610µm,0.3s						
IMMV	Iera Moni Meta	0.46	329	P	Pb	00 30 05.6	-0.1
IMMV				S	Sn	00 30 14.3	-0.3
IMMV	Iera Moni Meta	0.46	329	P	Pb	00 30 05.6	-0.1
IMMV				S	Sn	00 30 14.3	-0.3
IMMV	Iera Moni Meta	0.46	329	P	Pb	00 30 05.3	-0.4
IMMV				S	Sn	00 30 14.4	-0.1
IMMV				AML	AML	00 30 16.5	
	comp=N,2423µm,0.3s						
IMMV				AML	AML	00 30 17.5	
	comp=E,2745µm,0.5s						
IDI	Anoyia	0.55	66	P	Pb	00 30 06.9	-0.2
IDI				S	Sn	00 30 16.2	-0.6
IDI	Anoyia	0.55	66	P	Pb	00 30 06.9	-0.2
IDI				S	Sn	00 30 16.2	-0.6
IACM	Heraklion	0.69	69	P	Pb	00 30 09.5	0.0
IACM	Heraklion	0.69	69	P	Pb	00 30 09.5	0.0
IACM				S	Sn	00 30 21.0	+0.8
IACM	Heraklion	0.69	69	P	Pb	00 30 07.8	-1.7
IACM				AML	AML	00 30 20.9	
	comp=N,5748µm,0.4s						
IACM				S	Sn	00 30 21.1	+0.8
IACM				AML	AML	00 30 25.4	
	comp=E,4144µm,0.4s						
LAST	Lasithi	0.99	84	P	Pb	00 30 14.8	+0.2
LAST				S	Sn	00 30 28.7	+1.0
LAST	Lasithi	0.99	84	P	Pn	00 30 14.3	-0.1
LAST				S	Sn	00 30 28.7	+1.0
LAST	Lasithi	0.99	84	P	Pn	00 30 14.3	-0.1
NPS	Neapolis	1.11	79	P	Pb	00 30 16.6	0.0
NPS				S	Sn	00 30 30.5	-0.1
NPS	Neapolis	1.11	79	P	Pb	00 30 16.6	0.0
NPS				S	Sn	00 30 30.5	-0.1
NPS	Neapolis	1.11	79	P	Pb	00 30 16.7	+0.1
ANKY	Antikythira Is	1.13	315	P	Pb	00 30 17.1	+0.2
ANKY				S	Sb	00 30 31.0	-0.1
ANKY	Antikythira Is	1.13	315	P	Pb	00 30 17.1	+0.2
ANKY				S	Sb	00 30 31.0	-0.1
ANKY	Antikythira Is	1.13	315	P	Pb	00 30 17.3	+0.4
KYTH	Kithira	1.58	321	P	Pn	00 30 23.3	+0.8
KYTH	Kithira	1.58	321	P	Pn	00 30 22.1	-0.4
KYTH	Kithira	1.58	321	P	Pn	00 30 22.1	-0.4
THR5	Thira Island,	1.61	33	*e*PN	Pn	00 30 19.5	-3.4
THR5	Thira Island,	1.61	33	P	Pn	00 30 22.9	+0.1
THR5	Thira Island,	1.61	33	*e*Pn	Pn	00 30 19.5	-3.4
THR5	Thira Island,	1.61	33	P	Pn	00 30 22.9	+0.1
MHLO	Agia Marina, M	1.63	4	P	Pn	00 30 23.9	+0.8
MHLO	Agia Marina, M	1.63	4	P	Pn	00 30 23.9	+0.8
VLI	Veliai	1.98	327	P	Pn	00 30 28.4	+0.5
VLI	Veliai	1.98	327	P	Pn	00 30 28.4	+0.5
VLI	Veliai	1.98	327	P	Pn	00 30 26.0	-1.9
APE	Apeiranthos	2.25	27	*e*PN	Pn	00 30 28.4	-3.3
APE	Apeiranthos	2.25	27	*e*Pn	Pn	00 30 28.4	-3.3
KARP	Karpathos	2.41	78	*e*PN	Pn	00 30 33.4	-0.5
KARP	Karpathos	2.41	78	P	Pn	00 30 34.0	+0.1
KARP	Karpathos	2.41	78	*e*Pn	Pn	00 30 33.4	-0.5
KARP	Karpathos	2.41	78	P	Pn	00 30 34.0	+0.1
KRND	KRANIDI	2.49	339	P	Pn	00 30 35.6	+0.7
KRND	KRANIDI	2.49	339	P	Pn	00 30 35.6	+0.7
DID	Didima	2.58	341	P	Pn	00 30 35.6	-0.6
DID				S	Sn	00 31 07.7	+0.9
DID	Didima	2.58	341	P	Pn	00 30 35.6	-0.6
DID				S	Sn	00 31 07.7	+0.9
VILL	Villia	3.19	346	P	Pn	00 30 45.9	+1.3
VILL	Villia	3.19	346	P	Pn	00 30 45.9	+1.3
KLV	Kalavryta, Ach	3.43	331	P	Pn	00 30 48.0	0.0
KLV	Kalavryta, Ach	3.43	331	P	Pn	00 30 48.0	0.0
DRO	Drossia	3.55	325	P	Pn	00 30 49.3	-0.2
DRO	Drossia	3.55	325	P	Pn	00 30 49.3	-0.2
LAKA	Lakka	3.67	330	P	Pn	00 30 51.2	0.0
LAKA	Lakka	3.67	330	P	Pn	00 30 51.2	0.0
KALE	Kalithea	3.74	333	P	Pn	00 30 52.2	0.0
KALE	Kalithea	3.74	333	P	Pn	00 30 52.2	0.0
YER	Yerkesik	3.85	56	*e*PN	Pn	00 30 52.8	-0.9
YER	Yerkesik	3.85	56	*e*Pn	Pn	00 30 52.8	-0.9
BLCB	Balcova	3.99	33	*e*PN	Pn	00 30 53.6	-2.0
BLCB	Balcova	3.99	33	*e*Pn	Pn	00 30 53.6	-2.0
FETY	Fethiye	4.21	67	*e*PN	Pn	00 30 58.4	-0.2
FETY	Fethiye	4.21	67	P	Pn	00 30 58.5	-0.1
FETY	Fethiye	4.21	67	*e*Pn	Pn	00 30 58.4	-0.2
ELL	Elmali	4.87	68	*e*PN	Pn	00 31 07.3	-0.5
ELL	Elmali	4.87	68	*e*Pn	Pn	00 31 07.3	-0.5

IDC 04 00:33:32.7±1.4, 36.01N×141.37E, h0km, mb3.6/4, mb1 3.7/5, mb1mx3.3/66, mbtmp3.5/5, ML3.0/1, Error ellipse: s-maj=35.0km s-min=30.9km az=41.0
ISCJB 04 00:33:33.8±1.3, 36.02N±0.05×141.38E±0.09, h20km±9km, mb3.6/4, Error ellipse: s-maj=11.9km s-min=7.9km az=176.3
JMA 04 00:33:34.8±0.1, 35.99N×141.30E, h29km±2km, M3.4
ISC 04 00:33:32.6±2.0, 36.02N±0.05×141.35E±0.07, h1km±15km, n13, σ0.58/18, mb3.7/4, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
CHOJ	Chosi	0.51	232	P	Pb	00 33 44.2	-0.1
CHOJ				S	Sb	00 33 51.2	-0.9
JHO	Hitachi	0.86	313	P	Pb	00 33 50.2	-0.1
JHO				*e*S	Sb	00 34 02.3	-0.1
JYT	Yasato	0.96	283	P	Pb	00 33 51.5	-0.4
JYT				S	Sb	00 34 04.1	-1.0
ONAJ	Iwakimizuishiy	1.17	338	P	Pb	00 33 55.8	+0.2
BSO3	Boso 3	1.39	210	P	Pb	00 33 59.0	-0.2
BSO1	Boso 1	1.40	193	P	Pg	00 33 59.6	+0.3
JFK	Kawauchi	1.40	344	P	Pn	00 33 58.1	-1.1
MJAR	Matsushiro Arr	2.59	283	Pn	Pn	00 34 15.6	0.0
	2.8nm,0.3s,baz=90,slow=9.0,SNR=7.0						
MJAR				Sn	Sb	00 34 53.1	+1.0
	4.1nm,0.3s,baz=348,slow=30,SNR=5.5						
MAT	Matsushiro	2.59	283	P	Pn	00 34 15.7	+0.1
MAT				*e*S	Sn	00 34 47.9	+0.1
MKAR	Makanchi Array	44.62	303	P	P	00 41 46.7	+0.3
	0.4nm,0.6s,baz=96,slow=9.4,SNR=5.7						
KURBB	Kurchatov Arra	46.59	309	P	P	00 42 02.3	+0.4
	0.7nm,0.4s,baz=83,slow=7.7,SNR=14						
WRA	Warramunga Arr	56.05	188	P	P	00 43 13.2	+0.1
	1.3nm,0.9s,baz=3.2,slow=7.2,SNR=4.5						
YKA	Yellowknife Ar	64.71	30	P	P	00 44 12.1	+0.2
	0.2nm,0.7s,baz=305,slow=6.6,SNR=4.9						

JMA 04 00:39:43.2±0.1, 37.75N×141.73E, h46km±2km, M3.7, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
JMM	Marumori	0.75	279	P	Pn	00 39 57.6	+0.1
JMM				S	Sn	00 40 08.0	+0.2
JIO	Ouri	0.77	337	P	Pn	00 39 57.6	-0.1
JIO				S	Sn	00 40 08.0	-0.1
JFK	Kawauchi	0.78	241	S	Sn	00 40 08.7	+0.1
ONAJ	Iwakimizuishiy	0.98	229	S	Sn	00 40 13.1	-0.4
JOU	Okura	1.04	306	P	Pn	00 40 01.5	+0.1
JFT	Otama	1.13	259	P	Pn	00 40 03.5	+0.9
JFT				S	Sn	00 40 18.3	+1.3

JMA 04 00:40:09.1, 34.86N×139.24E, h12km±1km, M1.2, Near south coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
KTJJ	Kamata 2	0.16	294	P	Pg	00 40 13.0	+0.2
KTJJ				S	Sg	00 40 15.6	+0.2
JIZS	Izushimoda	0.33	245	P	Pg	00 40 15.9	+0.1
JIZS				S	Sg	00 40 20.8	+0.6
JOD2	Odawara 2	0.42	343	P	Pg	00 40 17.6	+0.1
JOD2				S	Sg	00 40 23.7	+0.6

IDC 04 00:41:27.4±2.5, 18.32S×177.62W, h0km, mb4.0/4, mb1 4.3/4, mb1mx3.8/35, mbtmp4.0/4, Error ellipse: s-maj=232.3km s-min=27.1km az=156.0, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
WRA	Warramunga Arr	45.30	260	P	P	00 49 46.7	-0.7
	0.7nm,0.4s,baz=97,slow=7.7,SNR=2.2						
ASAR	Alice Springs	45.41	255	P	P	00 49 48.5	+0.2
	4.9nm,0.8s,baz=87,slow=8.4,SNR=26						
NVAR	Mina Array Bea	79.20	43	P	P	00 53 35.1	+0.3
	0.2nm,0.3s,baz=216,slow=5.5,SNR=2.5						
TXAR	Lajitas Array	85.58	57	P	P	00 54 08.0	-0.2
	0.7nm,0.8s,baz=235,slow=4.4,SNR=7.7						

NEIC 04 00:45:06.9, 17.60N×93.62W, h112km, MD4.0(MEX), After MEX.
MEX 04 00:45:09.0±0.5, 17.52N×93.66W, h20km±24km, MD4.0, Chiapas

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
PCIG		1.85	167	*e*P	Pn	00 45 38.6	-1.0
PCIG				*e*S	Sn	00 45 58.5	-4.0
PCIG		1.85	167	*e*P	Pn	00 45 36.8	-2.8
PCIG				*e*S	Sn	00 45 58.6	-3.9
CCIG	Comitan	1.91	130	*e*P	Pn	00 45 37.9	-2.7
CCIG				*e*S	Sb	00 46 09.5	+2.8
CCIG	Comitan	1.91	130	*e*P	Pn	00 45 37.9	-2.7
CCIG				*e*S	Sb	00 46 09.5	+2.8
VHO	Vista Hermosa	2.97	262	*e*P	Pn	00 45 52.4	-2.9
VHO				*e*S	Sn	00 46 27.6	-2.9
VHO	Vista Hermosa	2.97	262	*e*P	Pn	00 45 52.4	-2.9
VHO				*e*S	Sn	00 46 27.6	-2.9
JTS	JuntasAbangare	11.09	129	Pn	Pn	00 47 42.0	-4.6
DWPF	Disney Wildern	15.42	45	Pn	Pn	00 48 37.9	-7.5

JMA 04 00:47:20.3±0.3, 37.01N×143.68E, h43km, M3.5, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
JFK	Kawauchi	2.27	280	*e*S	Sn	00 48 24.0	+1.9
JIO	Ouri	2.34	309	P	Pn	00 47 57.4	+1.1
JIO				S	Sn	00 48 24.7	+0.9
JFT	Otama	2.71	282	*e*S	Sn	00 48 35.0	+2.0
JOM	Ohasama	3.10	323	P	Pn	00 48 08.5	+1.9
JOM				*e*S	Sn	00 48 43.4	+1.0
JAG	Ashikaga	3.45	262	P	Pn	00 48 13.0	+1.6
JAG				S	Sn	00 48 51.6	+0.6
JRY	Ryogami san	3.98	257	P	Pn	00 48 20.6	+1.9
MAT	Matsushiro	4.42	266	P	Pn	00 48 27.1	+2.3

JMA 04 00:56:21.3, 36.92N×140.51E, h7km±1km, M2.7, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
ONAJ	Iwakimizuishiy	0.29	52	P	Pg	00 56 27.2	+0.1
ONAJ				S	Sg	00 56 31.5	+0.5
JFK	Kawauchi	0.53	33	P	Pg	00 56 31.5	-0.1
JFK				S	Sg	00 56 38.6	0.0
JFT	Otama	0.61	347	S	Sg	00 56 41.5	+0.4
JMM	Marumori	0.97	13	P	Pg	00 56 39.6	-0.4
JMM				S	Sg	00 56 52.1	-0.5
JOU	Okura	1.45	5	S	Sn	00 57 06.9	-0.3
MAT	Matsushiro	1.89	259	P	Pn	00 56 54.8	+0.8
MAT				S	Sb	00 57 19.6	-0.3

ISCJB 04 00:56:37.3±0.3, 60.73N±0.02×150.45W±0.04, h63km±4km, mb3.4/6, Error ellipse: s-maj=4.3km s-min=3.4km az=154.0
NEIC 04 00:56:39.0, 60.74N×150.49W, h41km, ML3.5(AEIC), After AEIC.
NEIC Felt [II] at Anchorage. Also felt at Sterling.
IDC 04 00:56:39.5±1.1, 60.90N×150.67W, h60km±8km, mb3.2/6, mb1 3.4/9, mb1mx3.1/59, mbtmp3.4/9, Error ellipse: s-maj=17.9km s-min=16.5km az=144.0
ISC 04 00:56:38.5±0.7, 60.73N±0.03×150.46W±0.03, h50km±6km, n74, σ0.87/86, mb3.4/6, Kenai Peninsula

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
SLKM	Skilak Lake	0.25	151	P	Pn	00 56 46.8	-0.5
VOGL	Vogel Lake	0.27	3	P	Pn	00 56 47.4	0.0
FIB	Fire Island	0.46	17	P	Pn	00 56 49.1	-0.2
RC01	Rabbit Creek A	0.51	44	P	Pn	00 56 49.0	-0.9
RC01				S	Sn	00 56 57.2	-0.9
PTE	Portage	0.72	78	P	Pn	00 56 52.3	-0.1
SEW	Seward	0.80	141	P	Pn	00 56 53.2	-0.4
SEW				S	Sn	00 57 04.6	+0.1
SPU	Mount Spurr	0.90	301	P	Pn	00 56 54.0	-1.0
SPCR	Spurr Chakacha	0.98	300	P	Pn	00 56 55.0	-1.0
SPCR				S	Sn	00 57 07.5	-1.3
CKN	Chakachatna No	0.98	302	P	Pn	00 56 55.3	-0.7
BRLK	Bradley Lake	0.99	193	P	Pn	00 56 56.2	+0.1
STLK	Strandline Lak	1.02	320	P	Pn	00 56 56.0	-0.6
CKL	Chakachamna La	1.03	298	P	Pn	00 56 55.9	-0.9
PMR	Palmer	1.08	36	P	Pn	00 56 56.9	-0.5
PMR				S	Sn	00 57 11.3	+0.1
RDJH	Redoubt Jeurge	1.16	264	P	Pn	00 56 57.9	-0.6
RDJH				S	Sn	00 57 13.5	+0.1
HOM	Homer	1.22	209	P	Pn	00 56 59.9	+0.7
NCT	North Crescent	1.23	263	P	Pn	00 56 58.8	-0.6
IVE	Iliamna Volcan	1.46	242	P	Pn	00 57 02.5	0.0
SML	Sawmill	1.50	42	P	Pn	00 57 03.1	0.0
SML				S	Sn	00 57 22.4	+1.0
CUT	Chulitna	1.69	3	P	Pn	00 57 05.7	+0.1
OPT	Oil Point	1.75	233	P	Pn	00 57 06.6	+0.1
SCM	Sheep Creek Mo	1.88	52	P	Pn	00 57 08.5	+0.2
AUW	Augustine West	2.03	229	P	Pn	00 57 11.4	+1.1
VLZ	Valdez	2.06	77	P	Pn	00 57 10.5	-0.1
VLZ				S	Sn	00 57 35.0	0.0
DIV	Divide	2.33	78	P	Pn	00 57 13.9	-0.4
EYAK	Cordova Ski Ar	2.33	92	P	Pn	00 57 13.3	-1.0
PPLA	Purkeypile	2.33	340	P	Pn	00 57 14.9	+0.5
KLU	Klutina	2.34	69	P	Pn	00 57 14.4	-0.1
CDD	Cape Douglas	2.41	223	P	Pn	00 57 16.7	+1.1
FOPK	Fourpeaked Vol	2.49	219	P	Pn	00 57 17.5	+0.8
SVW2	Sparrevohn	2.53	281	P	Pn	00 57 16.6	-0.5
TRF	Thorofare Moun	2.74	2	P	Pn	00 57 20.0	-0.1
DHY	Denali Highway	2.78	30	P	Pn	00 57 20.8	+0.2
RND	Reindeer	2.80	15	P	Pn	00 57 21.1	+0.3
CAST	Castle Rocks	2.81	345	P	Pn	00 57 21.5	+0.5
KTH	Kantishna Hill	2.85	356	*e*Pn	Pn	00 57 22.5	+1.0
KTH				*e*Sn	Sn	00 57 55.5	+1.0
BMRM	Bremner River	2.88	83	P	Pn	00 57 21.0	-0.9
MCK	McKinley	3.10	13	*e*Pn	Pn	00 57 26.1	+1.1
KDAK	Kodiak Island	3.15	201	P	Pn	00 57 40.0	+14
	7.1nm,0.3s,baz=58,slow=6.3,SNR=93						
KDAK				S	Sn	00 58 16.9	+15
	10.0nm,0.3s,baz=312,slow=22,SNR=3.8						
KDAK	Kodiak Island	3.15	201	P	Pn	00 57 24.9	-0.6
PAX	Paxson	3.27	44	P	Pn	00 57 28.2	+0.9
GLB	Gilahina Butte	3.31	75	P	Pn	00 57 27.5	-0.3
BPAW	Bear Paw Mtn.	3.40	356	P	Pn	00 57 28.7	-0.3
KVTA	Katmai Vly 10	3.40	228	P	Pn	00 57 29.7	+0.6
TT01	Tatalina	3.43	312	P	Pn	00 57 29.2	-0.1
TTA	Tatalina	3.44	312	P	Pn	00 57 29.4	-0.2
VRDI	Verde Repeater	3.45	79	P	Pn	00 57 29.1	-0.8
MCARA	McCarthy VSAT	3.68	76	P	Pn	00 57 32.5	-0.3
OHAK	Old Harbor	3.81	204	P	Pn	00 57 33.5	-1.0
WRH	Wood River Hil	3.92	15	P	Pn	00 57 37.0	+1.0
KIAG	Kiagna River	3.97	84	P	Pn	00 57 36.0	-1.0
BALM	Baldy	3.98	82	P	Pn	00 57 36.3	-0.8
ISLE	Juniper Island	4.00	88	P	Pn	00 57 36.0	-1.3
HDA	Harding Lake	4.04	22	P	Pn	00 57 38.9	+1.2
DOT	Dot Lake	4.19	43	*e*Pn	Pn	00 57 40.9	+1.0
BARN	Barnard Glacie	4.31	82	P	Pn	00 57 41.2	-0.5
MLY	Manley	4.33	358	P	Pn	00 57 42.1	+0.4
COLA	College	4.33	15	P	Pn	00 57 42.8	+1.0
MDM	Murphy Dome	4.37	13	P	Pn	00 57 43.4	+1.0
IL1	Eielson Array	4.38	20	P	Pn	00 57 43.3	+0.8
ILAR	Eielson Array	4.38	20	P	Pn	00 57 43.4	+0.9
	3.3nm,0.3s,baz=203,slow=14,SNR=124						
ILAR				S	Sn	00 58 30.4	-1.8
	3.6nm,0.3s,baz=198,slow=21,SNR=7.7						
BCA3	Beaver Creek A	4.73	56	P	Pn	00 57 47.8	+0.6
IM3	Indian Mountai	5.48	346	P	Pn	00 57 58.0	+0.5
EGAK	Eagle	5.90	42	*e*Pn	Pn	00 58 03.7	+0.6
	14nm,0.6s						
COLD	Coldfoot	6.53	1	P	Pn	00 58 12.9	+1.0
BM3	Burnt Mountain	7.19	18	P	Pn	00 58 21.5	+0.6
INK	Inuvik	10.50	36	P	Pn	00 59 06.7	+0.6
	0.1nm,0.3s,baz=264,slow=18,SNR=3.2						
YKA	Yellowknife Ar	17.01	68	P	Pn	01 00 31.8	-0.6
	0.1nm,0.3s,baz=278,slow=9.8,SNR=8.2						
PDAR	Pinedale Array	30.37	108	P	P	01 02 47.5	+1.9
	0.3nm,0.8s,baz=355,slow=5.4,SNR=2.9						
TXAR	Lajitas Array	44.09	114	P	P	01 04 42.4	+0.8
	0.2nm,0.8s,baz=355,slow=9.2,SNR=2.5						
SONM	Songino Array	55.37	307	P	P	01 06 07.3	+0.1
	0.5nm,0.7s,baz=24,slow=10,SNR=3.7						
SONM				pP	pP	01 06 21.8	+0.9
	0.9nm,0.6s,baz=32,slow=7.5,SNR=5.0						
ZALV	Zalesovo Beam	57.52	325	P	P	01 06 20.3	-1.8
	0.5nm,0.5s,baz=37,slow=9.0,SNR=3.6						
ZALV				pP	pP	01 06 36.2	+0.3
	0.3nm,0.4s,baz=23,slow=4.7,SNR=1.6						
KURK	Kurchatov	62.12	327	P	P	01 06 52.0	-1.8
KURK				pP	pP	01 07 08.5	+0.8
KURBB	Kurchatov Arra	62.23	327	P	P	01 06 52.0	-2.6
	0.3nm,0.5s,baz=29,slow=6.7,SNR=5.0						
KURBB				pP	pP	01 07 08.5	+0.1
	0.1nm,0.4s,baz=27,slow=7.0,SNR=1.7						
MKAR	Makanchi Array	64.64	323	P	P	01 07 08.6	-1.9
	0.1nm,0.5s,baz=42,slow=7.4,SNR=5.4						

DJA 04 01:03:04.8±0.5, 10°S±6°×10°8E±°, h10km, M4.4/14, mb4.7/5, MLv4.3/14
IDC 04 01:03:04.7±3.0, 9.92S×107.74E, h0km, mb3.9/5, mb1 4.2/5, mb1mx3.6/42, mbtmp3.9/5, MS2.9/1, Ms1 2.9/1, ms1mx2.5/34, Error ellipse: s-maj=136.3km s-min=20.9km az=52.0
ISCJB 04 01:03:05.1±1.0, 10.12S±0.09×107.63E±0.08, h23km, mb3.7/5, Error ellipse: s-maj=14.8km s-min=7.6km az=36.8
ISC 04 01:03:07.7±1.2, 10.04S±0.09×107.6E±0.1, h23km, n24, σ0.81/25, mb3.7/5, South of Jawa

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
CMJI	Cimerak	2.38	20	P	Pn	01 03 44.7	-0.6
CISI	Cisompet, Garu	2.47	4	P	Pn	01 03 46.1	-0.5
CNJI	Cibinong	2.75	350	P	Pn	01 03 49.2	-1.3
KPJI	Karang Pucung	2.97	26	P	Pn	01 03 54.1	+0.6
LEM	Lembang	3.19	360	Pn	Pb	01 04 02.6	-1.1
	16nm,0.3s,baz=223,slow=9.8,SNR=8.6						
LEM				Sn	Sb	01 04 43.2	+1.0
	36nm,0.3s,baz=340,slow=20,SNR=20						
LEM				LR	LR	01 05 28.0	
	comp=Z,174nm,18.9s,baz=224,slow=47						
LEM	Lembang	3.19	360	P	Pb	01 04 03.8	0.0
SKJI	Sukabumi	3.19	340	P	Pn	01 03 56.3	-0.3
UGM	Wanagama	3.55	54	P	Pn	01 04 01.4	-0.1
CGJI	Cibinong	3.91	330	P	Pn	01 04 06.0	-0.3
PCJI	Pacitan	3.95	63	P	Pn	01 04 07.6	+0.7
TNG	Tangerang	3.96	346	P	Pn	01 04 06.8	-0.3
SMRI	Semarang	4.06	43	P	Pn	01 04 09.2	+0.7
PWJI	Pagerwojo	4.58	64	P	Pn	01 04 15.5	-0.1
GMJI	Gumukmas	6.00	74	P	Pn	01 04 34.8	-0.3
	34nm,1.0s,0.2nm						
JAGI	Jajag, Banyuwa	6.62	77	P	Pn	01 04 43.5	-0.2
	71nm,0.6s,0.4nm						
SRBI	Singaraja	7.73	76	P	Pn	01 04 59.2	+0.3
	31nm,1.0s,0.2nm						
TWSI	Taliwang, Sumb	9.21	83	P	Pn	01 05 19.1	-0.2
	24nm,0.5s						
PLAI	Plampang	10.08	84	P	Pn	01 05 30.3	-0.9
WRA	Warramunga Arr	27.57	114	P	P	01 08 52.2	-1.1
	1.4nm,0.8s,baz=287,slow=11,SNR=4.7						
ASAR	Alice Springs	28.49	122	P	P	01 09 03.7	+2.1
	1.3nm,0.8s,baz=298,slow=9.6,SNR=10						
STKA	Stephens Creek	38.19	130	P	P	01 10 25.4	-0.4
	1.3nm,0.4s,baz=327,slow=8.1,SNR=5.7						
SONM	Songino Array	57.62	359	P	P	01 12 55.6	-0.4
	0.2nm,0.4s,baz=192,slow=7.5,SNR=3.2						
MKAR	Makanchi Array	60.94	340	P	P	01 13 19.4	+0.5
	0.2nm,0.5s,baz=132,slow=7.2,SNR=3.2						
TXAR	Lajitas Array	145.00	52	PKP	PKPab	01 22 42.4	-0.9
	0.3nm,0.8s,baz=222,slow=1.2,SNR=3.4						

IDC 04 01:07:11.5±1.6, 49.53N×156.36E, h0km, mb3.5/6, mb1 3.7/7, mb1mx3.5/39, mbtmp3.5/7, ML2.4/1, MS3.2/2, Ms1 3.2/2, ms1mx2.7/36, Error ellipse: s-maj=48.0km s-min=24.0km az=162.0
MOS 04 01:07:13.9±1.1, 49.40N×156.42E, h33km, mb4.3/2, Error ellipse: s-maj=28.9km s-min=6.4km az=79.9
KRSC 04 01:07:15.3±1.4, 49.65N×157.16E, h16km±26km, ML4.4
ISCJB 04 01:07:17.3±0.8, 49.63N±0.06×156.6E±0.1, h57km, mb3.7/7, MS3.6/1, Error ellipse: s-maj=12.9km s-min=6.0km az=32.1
ISC 04 01:07:19.0±1.1, 49.64N±0.10×156.54E±0.09, h57km, n45, σ1.02/48, mb3.5/7, 1D, Kuril Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
SKR	Severo-Kuril's	1.08	346	*i* P	Pn	01 07 36.5	-1.5
SKR				*e*S	Sn	01 07 51.9	-0.2
SKR	Severo-Kuril's	1.08	346	*i* PN	Pn	01 07 36.0	-2.0
SKR				*i* S	Sn	01 07 51.4	-0.7
SKR				pmax	pmax		
	comp=N,230nm,0.4s						
SKR				pmax	pmax		
	comp=Z,880nm,0.4s						
SKR				pmax	pmax		
	comp=E,240nm,0.2s						
SKR				smax	smax		
	comp=E,2µm,0.5s						
PAU	Pauzhetka	1.84	5	*e*P	Pn	01 07 47.3	-0.9
PAU				*e*S	Sn	01 08 11.0	+0.6
PAU	Pauzhetka	1.84	5	PN	Pn	01 07 47.3	-0.9
PAU				S	Sn	01 08 11.0	+0.6
ASAK	Asacha	2.88	17	*e*P	Pn	01 08 02.4	-0.1
MTVR	Mutnovka	3.03	19	*e*P	Pn	01 08 04.0	-0.6
MTVR				*e*S	Sn	01 08 39.7	0.0
RUS	Russkaya	3.06	23	*e*P	Pn	01 08 03.1	-1.8
RUS				*e*S	Sn	01 08 38.5	-1.8
RUS	Russkaya	3.06	23	PN	Pn	01 08 03.1	-1.8
APC	Apacha	3.32	6	*e*P	Pn	01 08 09.6	+1.3
APC	Apacha	3.32	6	PN	Pn	01 08 09.6	+1.3
KRMR	Karymshinskiy	3.35	17	*e*P	Pn	01 08 08.9	+0.1
KRMR				*e*S	Sn	01 08 48.1	+0.8

Code	Station Name	Δ°	AZ°	Op	ISC	Time	Res
PETK	Petropavlovsk-	3.55	11	Pn	Pn	01 08 11.8	+0.2
	comp=E,1.6nm,0.3s,baz=170,slow=16,SNR=15						
PETK				Sn	Sn	01 09 05.8	+14
	comp=E,1.2nm,0.3s,baz=181,slow=27,SNR=2.6						
PET	Petropavlovsk	3.64	21	⇓ePN	Pn	01 08 14.7	+1.9
DALK	Dalny	3.67	21	eP	Pn	01 08 12.4	-0.8
DALK				eS	Sn	01 08 54.9	-0.3
UGLR	Uglovaya	3.85	21	eP	Pn	01 08 15.9	+0.1
AVH	Avacha	3.88	20	eP	Pn	01 08 16.5	+0.3
AVH	Avacha	3.88	20	PN	Pn	01 08 16.5	+0.3
KOK	Koryaka	3.89	19	eP	Pn	01 08 16.9	+0.6
KOK	Koryaka	3.89	19	PN	Pn	01 08 16.9	+0.6
SMAR	Somma	3.90	20	eP	Pn	01 08 16.2	-0.3
SMAR	Somma	3.90	20	PN	Pn	01 08 16.2	-0.3
SDLR	Sedlovina	3.93	21	eP	Pn	01 08 16.1	-0.8
SDLR				eS	Sn	01 09 01.0	-0.7
SDLR	Sedlovina	3.93	21	PN	Pn	01 08 16.1	-0.8
NLC	Nalytchevo	3.95	25	eP	Pn	01 08 17.4	+0.4
NLC				eS	Sn	01 09 02.3	+0.3
NLC	Nalytchevo	3.95	25	PN	Pn	01 08 17.4	+0.4
KRX	Arik	3.95	19	eP	Pn	01 08 17.7	+0.5
SPN	Mys Shipunski	4.09	31	eP	Pn	01 08 17.7	-1.3
SPN				eS	Sn	01 09 03.3	-2.3
SPN	Mys Shipunski	4.09	31	PN	Pn	01 08 17.7	-1.3
GNL	Ganaly	4.16	12	eP	Pn	01 08 21.0	+1.0
GNL	Ganaly	4.16	12	PN	Pn	01 08 21.0	+1.0
KLR	Kul'dur	16.12	278	LR	LR	01 17 33.3	
	comp=E,50nm,20.5s,baz=98,slow=39						
H11N2	WAKE ISLAND Hy	30.97	161	T	T	01 46 28.0	
	baz=347,slow=77,SNR=6.2						
H11N1	WAKE ISLAND Hy	30.98	161	T	T	01 46 30.7	
	baz=347,slow=77,SNR=3.2						
H11N3	WAKE ISLAND Hy	30.98	161	T	T	01 46 24.0	
	baz=347,slow=77,SNR=8.5						
H11S1	WAKE ISLAND Hy	32.11	162	T	T	01 47 57.9	
	baz=347,slow=76,SNR=18						
H11S3	WAKE ISLAND Hy	32.12	162	T	T	01 47 54.5	
	baz=347,slow=76,SNR=28						
H11S2	WAKE ISLAND Hy	32.13	162	T	T	01 47 55.1	
	baz=347,slow=76,SNR=20						
YKA	Yellowknife Ar	47.24	39	P	P	01 15 46.7	+1.0
	comp=E,0.2nm,0.6s,baz=297,slow=7.4,SNR=4.9						
MKAR	Makanchi Array	47.68	297	P	P	01 15 48.0	-1.5
	comp=E,0.2nm,0.4s,baz=46,slow=4.7,SNR=5.0						
KURK	Kurchatov	47.70	303	P	P	01 15 49.5	0.0
KURK				pmax	pmax		
	comp=Z,1.0nm,0.4s						
KURBB	Kurchatov Arra	47.80	303	P	P	01 15 49.5	-0.8
	comp=Z,0.9nm,0.4s,baz=66,slow=8.9,SNR=4.9						
CMAR	Chiang Mai Arr	55.27	257	P	P	01 16 46.7	+0.3
	comp=Z,0.7nm,0.3s,baz=30,slow=7.6,SNR=5.2						
LPIG	La Paz	73.98	72	LR	LR	01 45 04.0	
	comp=Z,34nm,20.7s,baz=180,slow=31						
TXAR	Lajitas Array	74.11	63	P	P	01 18 50.3	+1.1
	comp=Z,0.2nm,0.6s,baz=308,slow=4.4,SNR=3.2						
BRTR	Keskin Array B	77.80	319	P	P	01 19 10.2	+0.1
	comp=Z,0.3nm,0.5s,baz=63,slow=2.9,SNR=3.6						

*IDC **04** 01:40:02.6±2.4, 36.°26N×141.°29E, h0^{km}, mb3.4/3, mb1 3.5/5, mb1mx3.3/47, mbtmp3.4/5, ML3.2/1, Error ellipse: s-maj=55.5km s-min=29.4km az=50.0*
*ISCJB **04** 01:40:05.4±1.7, 36.°61N±0.°05×141.°25E±0.°10, h20^{km}±9^{km}, mb3.3/3, Error ellipse: s-maj=14.6km s-min=6.7km az=27.7*
*JMA **04** 01:40:06.9±0.1, 36.°62N×141.°14E, h44^{km}±2^{km}, M3.4*
JMA Felt I J1.
ISC 04 01:40:03.1±2.3**, 36.°58N**±0.°06×**141.°32E**±0.°09**, h8**^{km}±12^{km}**, n20, σ1.ˢ14**/20**, mb3.5**/3**, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
JHO	Hitachi	0.61	273	P	Pn	01 40 17.2	-0.8
JHO				S	Sb	01 40 24.5	-0.1
ONAJ	Iwakimizuishiy	0.67	321	P	Pb	01 40 17.8	+0.8
ONAJ				S	Sb	01 40 26.2	-0.2
JFK	Kawauchi	0.86	336	P	Pn	01 40 21.1	-0.4
JFK				S	Sg	01 40 31.1	+0.2
JYT	Yasato	0.98	249	P	Pb	01 40 22.5	+0.3
JYT				S	Sg	01 40 33.6	-0.9
JSB	Shiboa	1.19	289	S	Sb	01 40 39.8	-1.6
JFT	Otama	1.22	320	P	Pg	01 40 26.9	+0.3
JFT				S	Sb	01 40 40.9	-1.5
JMM	Marumori	1.35	342	P	Pb	01 40 28.6	0.0
JMM				S	Sb	01 40 43.9	-2.1
JAG	Ashikaga	1.51	265	P	Pn	01 40 30.1	-0.3
JFY	Yanaizu	1.54	303	P	Pb	01 40 31.8	0.0
MJAR	Matsushiro Arr	2.51	270	Pn	Pn	01 40 45.0	+0.8
	4.8nm,0.3s,baz=88,slow=15,SNR=16						
MJAR				Sn	Sn	01 41 15.1	+0.2
	5.3nm,0.3s,baz=54,slow=21,SNR=4.9						
USRK	Ussuriysk Ar.	10.41	320	Pn	Pn	01 42 37.9	+5.3
	baz=110,slow=11,SNR=6.1						
SONM	Songino Array	27.98	305	P	P	01 45 56.7	+2.4
	0.5nm,0.7s,baz=104,slow=10,SNR=4.6						
H11N2	WAKE ISLAND Hy	27.98	120	T	T	02 15 23.7	
	baz=313,slow=75,SNR=7.7						
H11N1	WAKE ISLAND Hy	27.99	120	T	T	02 15 19.3	
	baz=313,slow=75,SNR=8.0						
H11N3	WAKE ISLAND Hy	28.00	120	T	T	02 15 28.7	
	baz=313,slow=75,SNR=7.3						
H11S1	WAKE ISLAND Hy	28.68	122	T	T	02 16 47.7	
	baz=314,slow=76,SNR=10						
H11S3	WAKE ISLAND Hy	28.68	122	T	T	02 16 33.6	
	baz=314,slow=76,SNR=8.6						
H11S2	WAKE ISLAND Hy	28.70	122	T	T	02 16 50.3	
	baz=314,slow=76,SNR=7.1						
MKAR	Makanchi Array	44.30	302	P	P	01 48 13.8	+0.6
	0.2nm,0.6s,baz=101,slow=7.5,SNR=2.2						
WRA	Warramunga Arr	56.60	188	P	P	01 49 45.1	-1.3
	0.3nm,0.6s,baz=4.2,slow=7.2,SNR=1.8						

KRSC 04 01:43:16.7±0.9**, 52.°42N**×**160.°79E, h6**^{km}±6^{km}**, ML3.7, Off east coast of Kamchatka Peninsula**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
SPN	Mys Shipunski	0.82	326	eP	Pg	01 43 32.7	+0.2
SPN				eS	Sb	01 43 44.7	0.0
DALK	Dalny	1.38	297	eP	Pn	01 43 42.3	-0.2
DALK				eS	Sg	01 44 01.3	+0.3
RUS	Russkaya	1.39	271	eP	Pn	01 43 42.6	0.0
RUS				eS	Sb	01 44 01.2	+0.1
UGLR	Uglovaya	1.43	304	eP	Pn	01 43 43.2	-0.1
PET	Petropavlovsk	1.43	296	eP	Pn	01 43 42.6	-0.6
PET				eS	Sb	01 44 01.7	-0.6
SDLR	Sedlovina	1.44	307	eP	Pn	01 43 43.0	-0.4
SMAR	Somma	1.47	306	eP	Pn	01 43 43.9	0.0
AVH	Avacha	1.50	305	eP	Pn	01 43 44.2	-0.1
KOK	Koryaka	1.57	305	eP	Pn	01 43 45.5	+0.3
KOK				eS	Sg	01 44 06.9	-0.2
MTVR	Mutnovka	1.60	273	eP	Pn	01 43 45.7	+0.1
MTVR				eS	Sb	01 44 07.4	+0.3
KRX	Arik	1.60	307	eP	Pn	01 43 45.3	-0.4
KRMR	Karymshinskiy	1.67	285	eP	Pn	01 43 46.6	+0.1
KRMR				eS	Sb	01 44 08.8	-0.3
ASAK	Asacha	1.77	270	eP	Pn	01 43 48.3	+0.4
ASAK				eS	Sb	01 44 11.6	-0.5
GNL	Ganaly	2.14	308	eP	Pn	01 43 54.2	+1.2
GNL				eS	Sb	01 44 22.3	-0.5
TUMR	Tumrok	2.89	353	eP	Pn	01 44 05.5	+2.1
KMNR	Kamenistaya	3.36	355	eP	Pn	01 44 12.8	+3.1
ZLN	Zelenaya	3.60	0	eP	Pn	01 44 16.4	+3.3
LGNR	Loginova	3.67	359	eS	Sn	01 45 01.7	+3.8
SRKR	Sorokina	4.25	3	eS	Sn	01 45 16.0	+4.2

IDC 04 01:52:16.1±4.4**, 3.°33S**×**99.°89E, h0**^{km}**, mb3.5**/5**, mb1 3.5**/5**, mb1mx3.4**/35**, mbtmp3.5**/5**, Error ellipse: s-maj=184.0km s-min=22.5km az=55.0, Southwest of Sumatera**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
CMAR	Chiang Mai Arr	21.67	358	P	P	01 57 18.0	+9.5
	0.9nm,0.4s,baz=184,slow=9.8,SNR=4.8						
H08S2	Diego Garcia H	27.59	260	T	T	02 27 12.2	
	baz=82,slow=75,SNR=73						
H08S3	Diego Garcia H	27.60	260	T	T	02 27 11.9	
	baz=82,slow=75,SNR=69						
H08S1	Diego Carcia H	27.61	260	T	T	02 27 11.6	
	baz=82,slow=75,SNR=90						
WRA	Warramunga Arr	37.44	119	P	P	01 59 30.5	-1.0
	0.4nm,0.8s,baz=305,slow=9.2,SNR=3.3						
ASAR	Alice Springs	38.58	125	P	P	01 59 41.4	+0.3
	0.2nm,0.6s,baz=307,slow=7.8,SNR=2.8						
SONM	Songino Array	51.27	6	P	P	02 01 22.1	+0.2
	0.6nm,0.6s,baz=180,slow=9.5,SNR=5.8						
MKAR	Makanchi Array	52.27	345	P	P	02 01 28.9	-0.4
	0.4nm,0.6s,baz=154,slow=9.1,SNR=3.7						
ZALV	Zalesovo Beam	58.45	350	P	P	02 02 12.7	-0.9
	0.4nm,0.3s,baz=136,slow=5.1,SNR=3.7						
TXAR	Lajitas Array	145.81	38	PKPbc	PKPab	02 11 58.7	+0.1
	1.0nm,1.0s,baz=328,slow=2.4,SNR=5.4						

*NIED **04** 02:13:00, 38.°50N×142.°00E, h68^{km}, Mw4.5 Best double couple: Mo6.60000×10^{15} NP1:φs40.00000°, δ31.00000°, λ-30.00000°. NP2:φs156.00000°, δ75.00000°, λ-118.00000°.*
JMA 04 02:13:20.8±0.1**, 38.°50N**×**141.°99E, h32**^{km}±1^{km}**, M3.9, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
JIO	Ouri	0.51	265	P	Pb	02 13 31.2	-0.2
JIO				S	Sb	02 13 38.1	-0.6
OFUJ	Ofunato	0.63	337	P	Pb	02 13 32.9	-0.6
JMK	Ichinoseki	0.75	307	P	Pn	02 13 35.0	-0.2
JMK				S	Sb	02 13 45.1	-0.4
JOU	Okura	1.05	263	P	Pn	02 13 39.5	+0.2
JOU				S	Sn	02 13 53.2	+0.3
JOM	Ohasama	1.11	331	P	Pn	02 13 40.4	+0.2
JOM				S	Sn	02 13 54.9	+0.5
JMM	Marumori	1.14	237	P	Pn	02 13 40.3	-0.2
JYK	Kaneyama	1.34	289	P	Pn	02 13 43.8	+0.5
JYK				S	Sb	02 14 01.4	-0.8

*PRU **04** 02:18:07.8, 45.°27N×15.°75E, h0^{km}*
*CSEM **04** 02:18:13.8±0.1, 45.°53N×16.°54E, h2^{km}, ML2.9, Error ellipse: s-maj=4.5km s-min=2.4km az=34.0*
*LJU **04** 02:18:13.6, 45.°47N×16.°47E, h0^{km}, ML2.2*
*BEO **04** 02:18:14.5±1.1, 45.°60N×16.°58E, h10^{km}±5^{km}, M2.7/9*
*VIE **04** 02:18:15.5±1.6, 45.°60N×16.°42E, h11^{km}±9^{km}, mb2.2/5, ml2.5/6, Error ellipse: s-maj=9.9km s-min=4.7km az=115.0*
ISC 04 02:18:13.7±0.9**, 45.°54N**±0.°02×**16.°54E**±0.°02**, h10**^{km}±7^{km}**, n95, σ0.ˢ84**/149**, 8C-7D, Northwestern Balkan Peninsula**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
SISC	Sisak	0.14	240	⇑iPg	Pg	02 18 16.9	+0.1
SISC				Sg	Sg	02 18 19.0	0.0
ZAG	Zagreb	0.48	307	⇑iPg	Pb	02 18 24.1	-0.3
ZAG				eSg	Sb	02 18 31.1	-0.5
MRAK	Mrakovica	0.58	154	ePg	Pg	02 18 24.9	-0.2
MRAK				eSg	Sg	02 18 33.2	+0.4
GCIS	Gornji Cirnik	0.72	297	i Pg	Pg	02 18 27.9	+0.3
GCIS				eSg	Sg	02 18 37.6	+0.6
GCIS	Gornji Cirnik	0.72	297	i Pg	Pg	02 18 27.9	+0.3
GCIS				eSg	Sg	02 18 37.6	+0.6
GOLS	Golise	0.80	307	i Pg	Pb	02 18 29.5	-0.2
	comp=Z,70nm,0.2s						
GOLS	Golise	0.80	307	i Pg	Pb	02 18 29.5	-0.2
	comp=Z,70nm,0.2s						
CRES	Cresnjev	0.81	291	ePg	Pg	02 18 29.3	-0.1
	comp=Z,58nm,0.3s						
CRES	Cresnjev	0.81	291	⇓iPg	Pg	02 18 29.3	-0.1
CRES				eSg	Sg	02 18 40.5	+0.5
BOJS	Bojanci	0.91	268	i Pg	Pg	02 18 30.4	-0.8
	comp=Z,39nm,0.2s						
BOJS	Bojanci	0.91	268	i Pg	Pg	02 18 30.4	-0.8
	comp=Z,39nm,0.2s						
BLY	Banja Luka	0.91	150	ePg	Pg	02 18 30.5	-0.8
BLY				eSg	Sb	02 18 44.8	+0.9
BLY	Banja Luka	0.91	150	⇑iPg	Pg	02 18 30.9	-0.4
BLY				eSg	Sg	02 18 43.5	+0.4
KOGS	Kog	0.93	348	i Pg	Pn	02 18 33.3	+0.3
KOGS				eSg	Sn	02 18 46.7	+0.3
	comp=Z,160nm,0.3s						
KOGS	Kog	0.93	348	i Pg	Pn	02 18 33.3	+0.3
KOGS				eSg	Sn	02 18 46.7	+0.3
	comp=Z,160nm,0.3s						
BEHE	Becsehely	0.94	10	⇓ePn	Pn	02 18 34.4	+1.2
LEGS	Legarje	0.95	296	ePg	Pg	02 18 32.0	0.0
LEGS				eSg	Sb	02 18 44.7	-0.3
LEGS	Legarje	0.95	296	ePg	Pg	02 18 32.0	0.0
LEGS				eSg	Sb	02 18 44.7	-0.3
DOBS	Dobrina	0.97	310	i Pg	Pb	02 18 33.0	+0.4
DOBS				eSg	Sn	02 18 47.2	-0.1
	comp=Z,59nm,0.2s						
DOBS	Dobrina	0.97	310	i Pg	Pb	02 18 33.0	+0.4
DOBS				eSg	Sn	02 18 47.2	-0.1
	comp=Z,59nm,0.2s						
UDBI	Udbina	1.15	209	i Pg	Pg	02 18 33.9	-1.9
UDBI				Sg	Sg	02 18 49.0	-1.8
UDBI	Udbina	1.15	209	i Pg	Pg	02 18 33.9	-1.9
UDBI				Sg	Sg	02 18 49.0	-1.8
GROS	Grobnik	1.17	322	i Pg	Pg	02 18 36.2	-0.1
GROS	Grobnik	1.17	322	i Pg	Pg	02 18 36.2	-0.1
PDKS	Podkum	1.20	296	ePg	Pb	02 18 36.5	-0.1
PDKS	Podkum	1.20	296	ePg	Pb	02 18 36.5	-0.1
VISS	Visnje	1.22	283	eSg	Sn	02 18 53.5	-0.1
	comp=Z,29nm,0.3s						
VISS	Visnje	1.22	283	eSg	Sn	02 18 53.5	-0.1
	comp=Z,29nm,0.3s						
DOB	Doboj	1.37	126	ePg	Pn	02 18 39.3	+0.4
DOB				eSg	Sg	02 18 58.6	+0.9
LJU	Ljubljana	1.50	290	ePg	Pg	02 18 43.1	+0.7
LJU				eSg	Sg	02 19 02.1	+0.2
LJU	Ljubljana	1.50	290	ePg	Pb	02 18 42.1	+0.4
LJU				eSg	Sg	02 19 01.5	-0.4
CEY	Cerknica	1.50	278	ePg	Pn	02 18 41.1	+0.3
CEY				eSg	Sb	02 19 00.9	+0.1
GBAS	Gorenja Brezov	1.52	286	i Pg	Pb	02 18 42.2	+0.1
GBAS				i Sg	Sg	02 19 02.8	+0.1
	comp=Z,25nm,0.3s						
GBAS	Gorenja Brezov	1.52	286	i Pg	Pb	02 18 42.2	+0.1
GBAS				i Sg	Sg	02 19 02.8	+0.1
NVLJ	Novalja	1.53	231	i Pn	Pn	02 18 41.5	+0.3
NVLJ				Sn	Sn	02 19 00.6	-0.7
NVLJ	Novalja	1.53	231	i Pn	Pn	02 18 41.5	+0.3
NVLJ				Sn	Sn	02 19 00.5	-0.7
SOKA	Soboth	1.55	318	⇑ePn	Pn	02 18 41.6	+0.1
	comp=Z,0.4nm,0.2s,SNR=76						
SOKA				⇓eSg	Sn	02 19 01.6	-0.1
SOKA	Soboth	1.55	318	Pn	Pn	02 18 41.6	+0.1
	comp=Z,0.4nm,0.2s,SNR=76						
SOKA				Sg	Sn	02 19 01.6	-0.1
PKS9	Tamasi	1.60	48	ePn	Pn	02 18 42.4	+0.3
OBKA	Obir	1.69	306	⇓ePg	Pg	02 18 46.1	-0.1
	comp=Z,6.3nm,0.3s						
OBKA				⇑eSg	Sb	02 19 06.6	+0.1
	comp=Z,51nm,0.5s						
OBKA	Obir	1.69	306	Pg	Pg	02 18 46.1	-0.1
	comp=Z,6.3nm,0.3s						
OBKA				Sg	Sb	02 19 06.6	+0.1
	comp=Z,51nm,0.5s						
ARSA	Arzberg	1.85	338	⇓ePn	Pn	02 18 46.3	+0.7
	SNR=6.2						
ARSA				i Sg	Sg	02 19 13.5	+0.3
	comp=Z,9.3nm,0.4s						
ARSA	Arzberg	1.85	338	Pn	Pn	02 18 46.3	+0.7
	SNR=6.2						
ARSA				Sg	Sg	02 19 13.5	+0.3
	comp=Z,9.3nm,0.4s						
PKST	T˜'s	2.01	30	⇓ePn	Pn	02 18 48.3	+0.5
BLJ	Bijeljina	2.07	110	ePn	Pb	02 18 50.9	-0.5
BLJ				eSn	Sb	02 19 17.6	+0.4
SABO	M.te Sabotino	2.10	283	ePn	Pn	02 18 50.5	+1.4
SABO				eSn	Sg	02 19 20.5	-0.9
SABO	M.te Sabotino	2.10	283	ePn	Pn	02 18 50.5	+1.4
SABO				eSn	Sg	02 19 20.5	-0.9
DRE	Drenchia	2.12	288	ePn	Pb	02 18 53.0	+0.6
DRE				eSn	Sg	02 19 21.9	0.0
DRE	Drenchia	2.12	288	ePn	Pb	02 18 53.0	+0.6
DRE				eSn	Sg	02 19 21.9	0.0
SOP	Sopron	2.14	0	ePn	Pb	02 18 51.7	-1.0
SOP				eSn	Sn	02 19 15.8	-0.5
CSKK	Csˆ‡kako	2.18	32	ePn	Pn	02 18 51.0	+0.9
HAPS	Han Pijesak,Bl	2.25	129	ePn	Pb	02 18 54.0	-0.5
HAPS				eSn	Sb	02 19 21.5	-1.0
PKSG		2.25	34	ePn	Pn	02 18 51.8	+0.7
FGSL	Fruska Gora	2.34	98	ePg	Pb	02 18 55.9	-0.1
FGSL				eSg	Sg	02 19 28.3	-0.5
FRGS	Fruska Gora	2.34	98	ePg	Pb	02 18 55.9	-0.1
FRGS				eSg	Sg	02 19 28.3	-0.5
ACOM	Acomizza, Ital	2.34	297	ePn	Pb	02 18 56.4	+0.3
ACOM	Acomizza, Ital	2.34	297	ePn	Pb	02 18 56.4	+0.3
TEKS	Tekeris	2.34	114	ePg	Pb	02 18 56.5	+0.5
TEKS				eSg	Sg	02 19 29.0	+0.2
TEKS	Tekeris	2.34	114	ePn	Pb	02 18 55.5	-0.5
TEKS	Tekeris	2.34	114	ePg	Pb	02 18 56.5	+0.5
TEKS				eSg	Sg	02 19 29.0	+0.2
VINO	Villanova	2.39	289	ePn	Pb	02 18 56.1	-0.8
VINO	Villanova	2.39	289	⇑ePn	Pb	02 18 56.1	-0.8
CONA	Conrad Observa	2.44	349	⇑ePn	Pn	02 18 54.8	+1.1
	SNR=7.8						
CONA	Conrad Observa	2.44	349	Pn	Pn	02 18 54.8	+1.1
	SNR=7.8						
BBLS	Lazići	2.64	128	ePn	Pn	02 18 57.1	+0.6
BBLS				eSg	Sg	02 19 38.5	0.0
BBLS	Lazići	2.64	128	ePn	Pn	02 18 57.1	+0.6
BBLS				eSn	Sb	02 19 31.6	-2.1
BBLS				eSg	Sg	02 19 38.5	0.0
ZOU	Zoufplan	2.69	294	ePn	Pb	02 19 00.7	-1.3
CLUD	Cludinico	2.71	291	ePn	Pb	02 19 01.0	-1.4
CLUD	Cludinico	2.71	291	ePn	Pb	02 19 01.0	-1.4
STON	Ston	2.79	162	ePn	Pn	02 19 00.1	+1.6
STON				Sn	Sn	02 19 33.9	+1.5
STON	Ston	2.79	162	ePn	Pn	02 19 00.1	+1.6
STON				eSn	Sn	02 19 33.8	+1.5
STON	Ston	2.79	162	⇓iPn	Pn	02 19 00.1	+1.6
STON				eSn	Sn	02 19 33.8	+1.5
DIVS	Divibare	2.85	119	ePn	Pn	02 19 00.2	+0.8
DIVS				eSg	Sg	02 19 45.2	0.0
DIVS	Divibare	2.85	119	ePn	Pn	02 19 00.2	+0.8
DIVS				eSg	Sg	02 19 45.2	0.0
BRY	Bratogost	3.00	151	ePn	Pn	02 19 03.5	+1.9
SMOL	Smolenice	3.04	11	ePN	Pn	02 19 02.9	+1.0
TRUS	Trudelj	3.05	114	ePn	Pn	02 19 01.8	-0.2
TRUS	Trudelj	3.05	114	ePn	Pn	02 19 01.8	-0.2
TREB	Trebinje	3.11	155	eSn	Sn	02 19 41.4	+1.3
IVAS	Ivanjica	3.24	126	ePn	Pn	02 19 04.9	+0.1
IVAS	Ivanjica	3.24	126	ePn	Pn	02 19 04.9	+0.1
PSZ	Piszkesteto	3.31	43	⇑ePn	Pn	02 19 05.5	-0.3
PSZ				eSn	Sn	02 19 43.6	-1.7
VYHS	Vyhne	3.35	27	ePN	Pn	02 19 07.1	+0.9
VYHS				eSN	Sn	02 19 45.1	-0.9
SJES	Sjenica	3.35	132	ePn	Pn	02 19 07.8	+1.5
HCY	Herceg Novi	3.40	155	ePn	Pn	02 19 08.2	+1.3
HCY				eSn	Sn	02 19 48.5	+1.3
GRUS	Gruza	3.40	118	ePn	Pn	02 19 07.3	+0.4
GRUS	Gruza	3.40	118	ePn	Pn	02 19 07.3	+0.4
PDG	Podgorica	3.67	147	ePn	Pn	02 19 12.7	+2.1
PDG	Podgorica	3.67	147	ePn	Pn	02 19 12.7	+2.1
KHC	Kasperske Hory	4.12	332	ePN	Pn	02 19 18.3	+1.5
KHC				ex	x	02 19 21.2	
KHC				eSN	Sn	02 20 04.5	-0.6
KHC				ex	x	02 20 11.3	
KHC	Kasperske Hory	4.12	332	Pn	Pn	02 19 18.3	+1.5
KHC				Sn	Sn	02 20 04.5	-0.6
BARS	Barje	4.67	124	ePn	Pn	02 19 25.2	+0.9
BARS	Barje	4.67	124	ePn	Pn	02 19 25.2	+0.9
ZAPS	Zavoj	4.92	115	ePn	Pn	02 19 29.5	+1.7
STHS	Stebnicka Huta	5.02	38	ePN	Pn	02 19 28.3	-0.9

*NEIC **04** 02:23:42.6, 43.°56S×172.°76E, h10^{km}, ML4.0(WEL), After WEL.*
NEIC Felt at Christchurch.
WEL 04 02:23:42.5±0.1**, 43.°56S**×**172.°77E, h10**^{km}**, ML4.0**/24**, 6C-9D, Error ellipse: s-maj=1.0km s-min=0.5km az=90.0, South Island**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
CRLZ	Canterbury Las	0.11	259	⇓PG	Pg	02 23 45.1	0.0
CRLZ				SG	Sg	02 23 46.7	-0.3
CRLZ				AML	AML	02 23 47.0	
CRLZ				AML	AML	02 23 47.0	
CRLZ				AML	AML	02 23 47.1	
CRLZ	Canterbury Las	0.11	259	⇓Pg	Pg	02 23 45.1	0.0
CRLZ				Sg	Sg	02 23 46.8	-0.3
MQZ	McQueen's Vall	0.17	209	⇑PG	Pg	02 23 46.4	+0.2
MQZ				AML	AML	02 23 49.1	
MQZ				SG	Sg	02 23 49.2	+0.4
MQZ	McQueen's Vall	0.17	209	⇑Pg	Pg	02 23 46.4	+0.2
MQZ				Sg	Sg	02 23 49.2	+0.4
OXZ	Oxford	0.58	293	⇓P*	Pg	02 23 53.6	-0.2
OXZ				S*	Sg	02 24 01.9	+0.5
OXZ	Oxford	0.58	293	⇓P*	Pg	02 23 53.6	-0.2
OXZ				S*	Sg	02 24 01.9	+0.5
LTZ	Lake Taylor	0.85	335	⇑P*	Pg	02 23 59.2	+0.3
LTZ				S*	Sb	02 24 10.8	-0.3
LTZ				AML	AML	02 24 11.9	
LTZ	Lake Taylor	0.85	335	⇑P*	Pg	02 23 59.2	+0.3
LTZ				S*	Sb	02 24 10.8	-0.3
RPZ	Rata Peaks	1.26	262	⇓P*	Pn	02 24 05.0	-1.2
RPZ				AML	AML	02 24 26.7	
RPZ				AML	AML	02 24 27.0	
RPZ	Rata Peaks	1.26	262	⇓P*	Pn	02 24 05.0	-1.2
KHZ	Kahutara	1.27	27	⇑P*	Pn	02 24 05.2	-1.1
KHZ	Kahutara	1.27	27	ePn	Pn	02 24 05.3	-1.1
KHZ				eS	Sn	02 24 25.5	+2.0
INZ	Inchbonnie	1.28	310	P*	Pn	02 24 05.4	-1.1
WVZ	Waitaha Valley	1.56	287	PN	Pn	02 24 10.1	-0.2
WVZ				AML	AML	02 24 37.3	
WVZ				AML	AML	02 24 43.5	
WVZ	Waitaha Valley	1.56	287	Pn	Pn	02 24 10.1	-0.2
THZ	Tophouse	1.79	3	⇓PN	Pn	02 24 12.3	-1.3
THZ				AML	AML	02 24 51.3	
THZ				AML	AML	02 24 51.8	
THZ	Tophouse	1.79	3	Pn	Pn	02 24 12.3	-1.3
DSZ	Denniston Nort	1.94	338	PN	Pn	02 24 15.4	-0.3
DSZ				AML	AML	02 24 50.1	
DSZ				AML	AML	02 24 50.9	
DSZ	Denniston Nort	1.94	338	Pn	Pn	02 24 15.4	-0.3
BSWZ	Blackbirch Sta	2.01	24	PN	Pn	02 24 15.7	-0.9
BSWZ				AML	AML	02 24 27.5	
BSWZ				AML	AML	02 25 04.1	
BSWZ	Blackbirch Sta	2.01	24	Pn	Pn	02 24 15.7	-0.9
LBZ	Lake Benmore	2.04	245	PN	Pn	02 24 16.3	-0.8
LBZ				AML	AML	02 24 54.8	
LBZ				AML	AML	02 25 01.2	
LBZ	Lake Benmore	2.04	245	Pn	Pn	02 24 16.3	-0.8
ODZ	Otahua Downs	2.13	225	⇓PN	Pn	02 24 17.1	-1.1
ODZ				AML	AML	02 24 55.9	
ODZ				AML	AML	02 24 56.0	
ODZ	Otahua Downs	2.13	225	ePn	Pn	02 24 17.2	-1.1
ODZ				ePg	Pg	02 24 22.9	-0.5
ODZ				eS	Sg	02 24 50.1	-0.9
FOZ	Fox Glacier	2.15	270	PN	Pn	02 24 18.9	+0.4
FOZ				AML	AML	02 24 45.3	
FOZ				AML	AML	02 24 49.3	
FOZ	Fox Glacier	2.15	270	Pn	Pn	02 24 18.9	+0.4
NNZ	Nelson	2.38	11	PN	Pn	02 24 20.9	-0.7
NNZ				AML	AML	02 25 01.1	
NNZ				AML	AML	02 25 14.6	
NNZ	Nelson	2.38	11	Pn	Pn	02 24 20.9	-0.7
SNZO	South Karori	2.66	33	ePn	Pn	02 24 20.5	-5.0
PLWZ	Palliser	2.70	44	PN	Pn	02 24 24.2	-1.9
PLWZ	Palliser	2.70	44	Pn	Pn	02 24 24.2	-1.9
QRZ	Quartz Range	2.73	356	PN	Pn	02 24 25.7	-0.8
QRZ				AML	AML	02 24 36.2	
QRZ				AML	AML	02 25 11.4	
QRZ	Quartz Range	2.73	356	Pn	Pn	02 24 25.7	-0.8
HHSZ	Highcliff Hill	2.80	213	PN	Pn	02 24 27.2	-0.2
HHSZ	Highcliff Hill	2.80	213	Pn	Pn	02 24 27.2	-0.2
MSWZ	Moikau Station	2.82	41	PN	Pn	02 24 25.8	-1.9
MSWZ				AML	AML	02 24 59.7	
MSWZ	Moikau Station	2.82	41	Pn	Pn	02 24 25.8	-1.9
DUWZ	D'Urville Isla	2.88	18	PN	Pn	02 24 28.8	+0.2
DUWZ				AML	AML	02 24 56.8	
DUWZ				AML	AML	02 25 11.6	
DUWZ	D'Urville Isla	2.88	18	Pn	Pn	02 24 28.8	+0.2
JCZ	Jackson Bay	2.93	258	⇓PN	Pn	02 24 28.7	-0.6
JCZ				AML	AML	02 25 22.6	
JCZ				AML	AML	02 25 25.4	
JCZ	Jackson Bay	2.93	258	Pn	Pn	02 24 28.7	-0.6
CAW	Cannon Point	2.98	36	PN	Pn	02 24 28.3	-1.6
CAW				AML	AML	02 25 03.9	

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
CAW				AML	AML	02 25 04.5	
CAW	Cannon Point	2.98	36	Pn	Pn	02 24 28.3	-1.6
WKZ	Wanaka	2.98	243	PN	Pn	02 24 29.3	-0.7
WKZ				AML	AML	02 25 26.4	
WKZ				AML	AML	02 25 31.7	
WKZ	Wanaka	2.98	243	Pn	Pn	02 24 29.3	-0.7
EAZ	Earnscleugh	2.99	235	⇑PN	Pn	02 24 29.1	-1.0
EAZ				AML	AML	02 25 23.2	
EAZ				AML	AML	02 25 23.2	
EAZ				AML	AML	02 25 25.3	
EAZ				AML	AML	02 25 25.3	
EAZ	Earnscleugh	2.99	235	Pn	Pn	02 24 29.1	-1.0
TUZ	Tuapeka	3.28	222	PN	Pn	02 24 33.0	-1.0
TUZ				AML	AML	02 25 29.3	
TUZ				AML	AML	02 25 32.0	
TUZ	Tuapeka	3.28	222	Pn	Pn	02 24 33.0	-0.9
MRZ	Mangatainoka R	3.57	37	PN	Pn	02 24 36.1	-1.9
MRZ				AML	AML	02 25 20.3	
MRZ				AML	AML	02 26 07.0	
MRZ	Mangatainoka R	3.57	37	Pn	Pn	02 24 36.1	-1.9
MLZ	Mavora Lakes	3.79	240	PN	Pn	02 24 39.9	-1.2
MLZ				AML	AML	02 25 51.7	
MLZ				AML	AML	02 25 57.3	
MLZ	Mavora Lakes	3.79	240	Pn	Pn	02 24 39.9	-1.2
BFZ	Birch Farm	3.86	43	PN	Pn	02 24 40.1	-1.9
BFZ	Birch Farm	3.86	43	Pn	Pn	02 24 40.1	-1.9
SYZ	Scrubby Hill	3.94	220	PN	Pn	02 24 43.5	+0.4
SYZ				AML	AML	02 26 05.9	
SYZ				AML	AML	02 26 06.2	
SYZ	Scrubby Hill	3.94	220	Pn	Pn	02 24 43.5	+0.4
WHZ	Wether Hill Ro	4.16	234	PN	Pn	02 24 44.5	-1.5
WHZ				AML	AML	02 26 05.2	
WHZ				AML	AML	02 26 05.5	
WHZ	Wether Hill Ro	4.16	234	ePn	Pn	02 24 45.0	-1.1
WHZ				ePg	Pg	02 25 00.1	-2.0
WHZ				eS	Sg	02 25 55.2	-0.8

IDC 04 02:35:20.8±8.2, 17°.58S×165°.64E, h132km±104km, mb3.5/4, mb1 3.6/5, mb1mx3.4/35, mbtmp3.9/5, ML3.3/1, MS3.7/1, Ms1 3.7/1, ms1mx2.6/24, Error ellipse: s-maj=111.2km s-min=46.7km az=140.0, Vanuatu Islands region

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
DZM	Mont Dzumac	4.53	171	P	Pn	02 36 27.7	0.0
	1.4nm,0.3s,baz=68,slow=13,SNR=4.4						
DZM				S	Sn	02 37 26.4	+6.6
	0.5nm,0.3s,baz=173,slow=19,SNR=1.2						
STKA	Stephens Creek	25.99	232	P	P	02 40 41.0	-0.4
	1.9nm,0.4s,baz=74,slow=11,SNR=4.0						
WRA	Warramunga Arr	29.71	260	P	P	02 41 14.6	0.0
	0.2nm,0.4s,baz=89,slow=9.9,SNR=1.7						
ASAR	Alice Springs	30.27	253	P	P	02 41 19.8	+0.2
	3.4nm,0.6s,baz=82,slow=8.8,SNR=22						
LEM	Lembang	57.52	273	LR	LR	03 11 05.3	
	comp=Z,59nm,18.3s,slow=37						
SONM	Songino Array	83.87	324	P	P	02 47 35.7	0.0
	0.1nm,0.3s,baz=129,slow=3.9,SNR=1.6						

DHMR 04 02:35:53.5±1.6, 12°.07N×43°.93E, h10km±20km, ML3.5, 1C, Western Arabian Peninsula

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
ADEN	Aden	1.25	56	⇑iP	Pg	02 36 17.4	-0.1
ADEN				iS	Sg	02 36 33.8	0.0
ADEN				AML	AML	02 36 43.3	
	comp=E,1μm,0.5s						
UDYN	Al 'Udayn	1.89	1	iP	Pn	02 36 26.9	+0.8
UDYN				iS	Sg	02 36 53.9	-0.4
UDYN				AML	AML	02 37 02.7	
	comp=E,472nm,0.4s						
BDHA	Al Bayda'	2.48	40	iP	Pb	02 36 36.8	-1.6
BDHA				iS	Sb	02 37 10.1	+1.0
BDHA				AML	AML	02 37 16.5	
	comp=N,338nm,0.5s						
DHBB	Dhamar BB	2.53	10	iP	Pn	02 36 36.9	+1.9
DHBB				iS	Sb	02 37 11.2	+0.6
HAJJ	Hajjah	3.62	355	iP	Pn	02 36 51.9	+1.9
HAJJ				iS	Sb	02 37 38.8	-3.2

IDC 04 02:52:09.6±2.0, 83°.85N×0°.78E, h0km, mb3.3/3, mb1 3.7/5, mb1mx3.3/67, mbtmp3.6/5, ML3.4/2, MS3.2/6, Ms1 3.2/6, ms1mx2.8/41, Error ellipse: s-maj=52.3km s-min=21.4km az=61.0, North of Svalbard

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
SPITS	Spitsbergen Ar	6.16	149	Pn	Pn	02 53 39.9	-1.8
	baz=344,slow=9.0,SNR=42						
SPITS				Sn	Sn	02 54 47.2	-5.5
	baz=43,slow=18,SNR=5.6						
SPITS				LR	LR	02 56 08.0	
	comp=Z,84nm,18.3s,baz=10.0,slow=39						
ARCES	ARCESS Array B	15.18	146	Pn	Pn	02 55 43.3	-1.6
	0.2nm,0.3s,baz=354,slow=14,SNR=3.7						
ARCES				LR	LR	03 01 35.5	
	comp=Z,74nm,18.9s,baz=288,slow=37						
ILAR	Eielson Array	30.78	333	P	P	02 58 25.9	-0.3
	0.4nm,0.8s,baz=12,slow=8.2,SNR=5.7						
ZALV	Zalesovo Beam	36.05	87	LR	LR	03 16 03.9	
	comp=Z,31nm,20.0s,baz=134,slow=40						
KURBB	Kurchatov Arra	38.65	95	P	P	02 59 32.4	-1.8
	0.3nm,0.6s,baz=344,slow=8.6,SNR=2.9						
SONM	Songino Array	44.35	68	P	P	03 00 22.7	+1.6
	0.7nm,1.0s,baz=3.4,slow=7.2,SNR=4.2						
BRTR	Keskin Array B	45.35	144	LR	LR	03 20 20.1	
	comp=Z,16nm,18.2s,baz=353,slow=37						
VAE	Valguarnera	46.71	165	LR	LR	03 21 19.0	
	comp=Z,41nm,18.2s,baz=168,slow=37						
PDAR	Pinedale Array	49.83	295	LR	LR	03 22 18.8	
	comp=Z,60nm,18.3s,baz=12,slow=36						

*IDC **04** 02:54:35.5±1.2, 37°.80N×144°.88E, h0km, mb3.9/14, mb1 4.2/18, mb1mx3.9/60, mbtmp4.0/18, ML4.2/3, MS2.9/4, Ms1 2.9/4, ms1mx2.6/40, Error ellipse: s-maj=31.9km s-min=15.8km az=168.0*

*NEIC **04** 02:54:36.4±0.5, 37°.72N×144°.91E, h10km, mb4.4/2, Error ellipse: s-maj=12.0km s-min=7.7km az=138.0*

*ISCJB **04** 02:54:39.0±0.5, 37°.89N±0°.05×144°.60E±0°.04, h33km, mb3.9/16, Error ellipse: s-maj=6.8km s-min=4.1km az=165.7*

*JMA **04** 02:54:39.3±0.2, 37°.94N×144°.59E, h45km, M4.6*

ISC 04 02:54:40.7±0.7, 37°.87N±0°.06×144°.68E±0°.07, h35km, n46, σ1s65/55, mb4.0/16, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
OFUJ	Ofunato	2.66	298	P	Pn	02 55 19.6	-1.4
JIO	Ouri	2.69	283	P	Pn	02 55 20.3	-1.2
JIO				S	Sn	02 55 50.2	-2.6
JMK	Ichinoseki	2.93	293	P	Pn	02 55 23.6	-1.1
JMK				S	Sn	02 55 57.9	-0.7
JTH	Tanohata	3.02	314	P	Pn	02 55 24.3	-1.7
JTH				eS	Sn	02 55 58.3	-2.6
JFK	Kawauchi	3.07	262	P	Pn	02 55 25.1	-1.6
JFK				S	Sn	02 55 59.2	-3.0
JMM	Marumori	3.08	271	P	Pn	02 55 25.6	-1.2
JMM				S	Sn	02 55 59.8	-2.6
JOM	Ohasama	3.10	302	P	Pn	02 55 26.0	-1.1
JOM				S	Sn	02 56 01.3	-1.6
JOU	Okura	3.21	280	P	Pn	02 55 28.1	-0.5
JOU				S	Sn	02 56 03.4	-2.2
JFT	Otama	3.47	265	P	Pn	02 55 32.2	0.0
JFT				S	Sn	02 56 10.8	-1.2
JANG	Nango	3.51	316	P	Pn	02 55 31.0	-1.7
JRG	Rokugo	3.52	297	P	Pn	02 55 32.3	-0.6
JYK	Kaneyama	3.55	288	P	Pn	02 55 33.0	-0.4
JYK				S	Sn	02 56 13.2	-0.9
JTM	Tenmabayashi	4.04	317	P	Pn	02 55 38.6	-1.4
JTM				S	Sn	02 56 22.0	-4.1
ERM	Erimo	4.30	345	ePn	Pn	02 55 41.9	-1.7
ERM				eS	Sn	02 56 24.6	-7.9
JRY	Ryogami san	4.99	250	P	Pn	02 55 52.0	-1.1
MJAR	Matsushiro Arr	5.34	258	Pn	Pn	02 55 58.2	+0.4
	15nm,0.3s,baz=78,slow=15,SNR=102						
MJAR				Sn	Sn	02 56 57.9	-0.2
	1.0nm,0.3s,baz=320,slow=18,SNR=2.2						
MJAR				LR	LR	02 58 22.6	
	comp=Z,157nm,21.8s,baz=65,slow=42						
MAJO	Matsushiro	5.34	258	ePn	Pn	02 55 58.6	+0.7
	91nm,0.6s						
MAJO				eS	Sn	02 56 58.3	+0.2
MAT	Matsushiro	5.34	258	P	Pn	02 55 58.5	+0.6
MAT				S	Sn	02 56 58.4	+0.3
JHJ2	Mitsune	6.19	221	ePn	Pn	02 56 07.8	-1.8
JHJ2				eS	Sn	02 57 10.9	-8.2
JHJ	Hachijo jima 2	6.20	222	Pn	Pn	02 56 08.3	-1.4
	39nm,0.3s,baz=110,slow=21,SNR=7.7						
JHJ				Sn	Sn	02 57 13.7	-5.7
	89nm,0.3s,baz=77,slow=21,SNR=8.1						
CBIJ	Chichi jima	10.95	192	ePn	Pn	02 57 10.1	-4.8
CBIJ				eS	Sn	02 59 03.2	-13
USRK	Ussuriysk Ar.	11.48	307	Pn	Pn	02 57 21.6	-0.4
	0.4nm,0.3s,baz=117,slow=13,SNR=9.7						
USRK				LR	LR	03 01 57.1	
	comp=Z,59nm,19.8s,baz=186,slow=38						
KSRS	Korea Array	13.29	273	Pn	Pn	02 57 48.6	+1.8
	0.2nm,0.3s,baz=86,slow=12,SNR=9.7						
KSRS				LR	LR	03 03 11.4	
	comp=Z,44nm,19.2s,baz=74,slow=38						
KSAR	Wonju Array Be	13.32	273	Pn	Pn	02 57 48.6	+1.4
PETK	Petropavlovsk-	17.71	27	LR	LR	03 07 43.2	
	comp=Z,28nm,18.1s,baz=193,slow=44						
SEY	Seymchan	25.53	8	P	P	03 00 06.1	+0.4
	2.6nm,0.6s,baz=182,slow=6.6,SNR=16						
H11N2	WAKE ISLAND Hy	26.45	127	T	T	03 27 40.8	
	baz=319,slow=74,SNR=12						
H11N1	WAKE ISLAND Hy	26.46	127	T	T	03 27 38.7	
	baz=319,slow=74,SNR=5.3						
H11N3	WAKE ISLAND Hy	26.47	127	T	T	03 27 44.6	
	baz=319,slow=74,SNR=8.6						
SONM	Songino Array	29.51	302	P	P	03 00 44.5	+2.8
	0.7nm,0.6s,baz=100,slow=9.7,SNR=5.5						
ZALV	Zalesovo Beam	43.29	312	P	P	03 02 40.7	+2.0
	0.6nm,0.4s,baz=92,slow=7.0,SNR=2.8						
MKAR	Makanchi Array	45.88	302	P	P	03 03 00.9	+1.3
	0.7nm,0.8s,baz=84,slow=7.8,SNR=5.3						
ILAR	Eielson Array	47.39	33	P	P	03 03 10.3	-0.8
	1.4nm,0.7s,baz=261,slow=6.5,SNR=24						
KURK	Kurchatov	47.47	308	eP	P	03 03 12.6	+0.7
	1.9nm,0.5s						
KURBB	Kurchatov Arra	47.54	308	P	P	03 03 13.5	+1.1
	1.6nm,0.5s,baz=80,slow=8.0,SNR=18						
INK	Inuvik	52.45	28	P	P	03 03 49.1	-0.3
	1.1nm,0.8s,baz=326,slow=4.4,SNR=7.7						
RES	Resolute Bay	61.13	15	eP	P	03 04 50.6	-0.2
	1.2nm,0.5s						
YKA	Yellowknife Ar	61.76	31	P	P	03 04 55.1	-0.2
	0.6nm,0.7s,baz=300,slow=6.5,SNR=13						
FINES	FINESS Array B	69.26	333	P	P	03 05 43.7	-0.1
	2.0nm,0.9s,baz=36,slow=10,SNR=4.3						
NVAR	Mina Array Bea	72.39	55	P	P	03 06 04.2	+0.6
	1.0nm,0.7s,baz=291,slow=6.1,SNR=8.0						
HFS	Hagfors	74.37	337	P	P	03 06 14.9	+0.4
	1.4nm,0.8s,baz=30,slow=9.2,SNR=5.6						
NB2	NORSAR Subarra	74.39	338	P	P	03 06 14.7	0.0
	comp=Z,0.7nm,0.7s,baz=38,slow=5.9						
NOA	NORSAR Array B	74.39	338	P	P	03 06 14.7	0.0
	comp=Z,1.0nm,0.7s,baz=38,slow=5.9,SNR=3.9						
PDAR	Pinedale Array	75.21	47	P	P	03 06 20.1	+0.2
	comp=Z,1.2nm,0.6s,baz=274,slow=2.3,SNR=12						
TXAR	Lajitas Array	87.53	54	P	P	03 07 25.3	0.0
	comp=Z,0.6nm,0.7s,baz=290,slow=2.9,SNR=5.8						
TORD	Torodi Ar. Bea	118.52	318	PKP	PKPdf	03 13 24.4	-0.8
	comp=Z,0.4nm,0.9s,baz=14,slow=2.7,SNR=5.2						

IDC 04 02:57:23.6±2.8, 16°.72S×69°.50W, h162km±15km, mb3.3/2, mb1 3.4/3, mb1mx3.0/35, mbtmp3.7/3, MS3.6/1, Ms1 3.6/1, ms1mx2.8/8, Error ellipse: s-maj=51.3km s-min=31.8km az=22.0, Peru-Bolivia border region

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
LPAZ	La Paz	1.38	72	P	Pn	02 57 54.5	+1.0
	4.0nm,0.3s,baz=238,slow=8.9,SNR=141						
LPAZ				S	Sn	02 58 16.1	-0.3
	1.8nm,0.3s,baz=246,slow=16,SNR=7.2						
SIV	San Ignacio	8.12	86	P	Pn	02 59 18.4	-0.2
	1.0nm,0.3s,baz=264,slow=11,SNR=13						
TXAR	Lajitas Array	56.43	324	LR	LR	03 30 00.7	
	comp=Z,49nm,18.6s,baz=0.0,slow=35						
TORD	Torodi Ar. Bea	76.33	72	P	P	03 08 56.0	+0.6
	0.6nm,0.7s,baz=264,slow=4.3,SNR=11						
YKA	Yellowknife Ar	86.52	341	P	P	03 09 46.8	-1.0
	0.4nm,0.6s,baz=133,slow=4.7,SNR=12						

IDC 04 03:00:33.5±1.8, 7°.56S×124°.12E, h0km, mb3.5/1, mb1 4.1/4, mb1mx3.6/40, mbtmp3.9/4, ML4.1/2, MS3.9/1, Ms1 3.9/1, ms1mx2.5/34, Error ellipse: s-maj=130.1km s-min=26.9km az=64.0, Banda Sea

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
FITZ	Fitzroy Crossi	10.58	172	Pn	Pn	03 03 07.2	+0.7
FITZ				Sn	Sn	03 04 53.1	-13
WRA	Warramunga Arr	15.80	142	Pn	Pn	03 04 17.9	+0.4
	1.0nm,0.3s,baz=315,slow=14,SNR=17						
WRA				Sn	Sn	03 06 59.5	-14
	0.5nm,0.3s,baz=319,slow=24,SNR=4.2						
ASAR	Alice Springs	18.56	151	P	P	03 04 51.4	-0.8
	0.5nm,0.3s,baz=330,slow=12,SNR=21						
CTA	Charters Tower	24.80	122	LR	LR	03 16 18.6	
	comp=Z,267nm,19.8s,baz=258,slow=38						
MKAR	Makanchi Array	65.63	330	P	P	03 11 19.5	0.0
	0.2nm,0.4s,baz=125,slow=7.6,SNR=4.5						

IDC 04 03:01:40.9±2.6, 49°.60S×106°.46E, h0km, mb4.1/2, mb1 4.4/2, mb1mx3.8/32, mbtmp4.1/2, MS3.9/4, Ms1 3.8/4, ms1mx3.3/23, Error ellipse: s-maj=111.5km s-min=30.7km az=101.0, Southeast Indian Ridge

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
H01W2	Cape Leeuwin H	15.73	24	T	T	03 21 04.7	
	baz=199,slow=74,SNR=15						
H01W1	Cape Leeuwin H	15.74	24	T	T	03 21 08.7	
	baz=199,slow=74,SNR=19						
H01W3	Cape Leeuwin H	15.75	24	T	T	03 21 05.9	
	baz=199,slow=74,SNR=21						
STKA	Stephens Creek	31.59	69	LR	LR	03 19 22.9	
	comp=Z,116nm,18.2s,baz=206,slow=34						
ASAR	Alice Springs	33.64	50	LR	LR	03 20 05.7	
	comp=Z,128nm,20.7s,baz=212,slow=33						
VNDA	Vanda	34.76	162	P	P	03 08 32.6	+0.3
	4.1nm,1.0s,baz=293,slow=10.0,SNR=14						
VNDA				LR	LR	03 21 20.1	
	comp=Z,395nm,20.9s,baz=300,slow=34						
WRA	Warramunga Arr	37.01	47	P	P	03 08 52.9	+0.7
	1.1nm,0.6s,baz=213,slow=7.4,SNR=3.3						
BOSA	Boshof	63.31	257	LR	LR	03 34 43.4	
	comp=Z,87nm,18.4s,baz=168,slow=31						
NVAR	Mina Array Bea	146.39	92	PKPbc	PKPdf	03 21 20.8	-1.3
	0.4nm,0.6s,baz=232,slow=4.4,SNR=3.9						
TXAR	Lajitas Array	149.49	120	PKPbc	PKPbc	03 21 31.4	-0.5
	0.2nm,0.7s,baz=216,slow=4.3,SNR=3.3						
YKA	Yellowknife Ar	154.20	44	PKPbc	PKPbc	03 21 42.7	+1.3
	0.1nm,0.4s,baz=280,slow=2.2,SNR=4.8						
YKA				PKPab	PKPab	03 21 53.8	-1.6
	0.3nm,0.8s,baz=282,slow=4.2,SNR=3.4						

*NIED **04** 03:05:00, 36°.60N×141°.10E, h35km, Mw3.6 Best double couple: Mo2.53000×10^14 NP1:φs154.00000°, δ65.00000°, λ-166.00000°. NP2:φs58.00000°, δ77.00000°, λ-26.00000°.*

*IDC **04** 03:05:54.3±1.6, 36°.73N×141°.48E, h0km, mb3.7/7, mb1 3.8/9, mb1mx3.6/54, mbtmp3.7/9, ML3.3/2, MS2.3/1, Ms1 2.3/1, ms1mx2.1/40, Error ellipse: s-maj=43.2km s-min=23.9km az=79.0*

*ISCJB **04** 03:05:57.6±1.1, 36°.63N±0°.04×141°.16E±0°.08, h27km±5km, mb3.6/7, MS2.2/1, Error ellipse: s-maj=10.7km s-min=5.3km az=16.9*

*JMA **04** 03:05:58.6±0.1, 36°.64N×141°.09E, h36km±1km, M3.7*
JMA Felt I J1.

ISC 04 03:05:58.7±1.7, 36°.67N±0°.04×141°.12E±0°.08, h24km±10km, n18, σ1s18/26, mb3.8/7, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
JHO	Hitachi	0.45	262	P	Pb	03 06 07.7	-0.3
JHO				S	Sb	03 06 14.0	-0.3
ONAJ	Iwakimizuishiy	0.50	329	P	Pb	03 06 08.9	0.0
ONAJ				S	Sb	03 06 16.5	+0.7
JFK	Kawauchi	0.72	344	P	Pn	03 06 12.2	-1.3
JFK				S	Sn	03 06 21.9	-1.9
JYT	Yasato	0.87	239	P	Pn	03 06 13.8	-1.6
JYT				S	Sn	03 06 24.4	-2.9
JFT	Otama	1.05	324	P	Pn	03 06 18.1	+0.1
JFT				S	Sn	03 06 31.7	-0.2
JMM	Marumori	1.22	348	P	Pn	03 06 19.9	-0.4
JMM				S	Sn	03 06 35.0	-1.0
JAG	Ashikaga	1.36	260	P	Pn	03 06 21.5	-0.8
JAG				S	Sn	03 06 38.2	-1.4
MJAR	Matsushiro Arr	2.34	268	Pn	Pn	03 06 36.9	+1.1
	5.3nm,0.3s,baz=115,slow=10.0,SNR=23						
MAT	Matsushiro	2.34	268	P	Pn	03 06 36.5	+0.7
MAT				S	Sn	03 07 05.4	+1.5
JHJ	Hachijo jima 2	3.71	198	Pn	Pn	03 06 55.6	+1.1
	7.9nm,0.3s,baz=81,slow=18,SNR=1.8						
JHJ				Sn	Sn	03 07 37.0	-0.6
	17nm,0.3s,baz=79,slow=17,SNR=2.1						
GUMO	Guam	23.23	171	LR	LR	03 22 01.5	
	comp=Z,7.8nm,19.0s,baz=144,slow=42						
SONM	Songino Array	27.79	305	P	P	03 11 47.2	+1.2
	0.2nm,0.4s,baz=95,slow=8.8,SNR=2.8						
ZALV	Zalesovo Beam	41.98	313	P	P	03 13 49.2	+1.5
	0.5nm,0.4s,baz=64,slow=6.6,SNR=3.1						
MKAR	Makanchi Array	44.11	302	P	P	03 14 05.4	+0.4
	0.1nm,0.3s,baz=85,slow=12,SNR=3.6						
WRA	Warramunga Arr	56.67	188	P	P	03 15 40.0	-0.2
	0.7nm,0.5s,baz=5.1,slow=7.5,SNR=6.0						
FINES	FINESS Array B	69.02	332	P	P	03 17 01.3	-0.6
	1.1nm,0.7s,baz=90,slow=7.6,SNR=4.0						
AKASG	Malin Array Be	74.44	322	P	P	03 17 34.8	+0.1
	0.6nm,0.4s,baz=45,slow=6.0,SNR=5.9						
GERES	GERESS Array B	82.89	328	P	P	03 18 21.3	-0.1
	0.5nm,0.7s,baz=21,slow=8.5,SNR=4.4						

IDC 04 03:06:58.6±8.6, 31°.28S×177°.89W, h0km, mb3.4/2, mb1 3.7/2, mb1mx3.5/34, mbtmp3.4/2, Error ellipse: s-maj=372.5km s-min=66.5km az=157.0, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
ASAR	Alice Springs	43.16	268	P	P	03 15 00.9	-0.4
	0.2nm,0.3s,baz=107,slow=7.9,SNR=1.6						
WRA	Warramunga Arr	44.23	273	P	P	03 15 10.1	+0.2
	0.3nm,0.5s,baz=114,slow=7.9,SNR=1.9						
FINES	FINESS Array B	146.00	340	PKPbc	PKPdf	03 26 38.6	-0.2
	2.1nm,1.0s,baz=32,slow=4.7,SNR=2.2						

IDC 04 03:23:36.6±2.6, 37°.36N×141°.24E, h0km, mb3.4/3, mb1 3.5/4, mb1mx3.3/35, mbtmp3.3/4, ML3.3/1, Error ellipse: s-maj=60.8km s-min=30.5km az=62.0, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
MJAR	Matsushiro Arr	2.56	252	Pn	Pn	03 24 19.3	-0.1
	6.8nm,0.3s,baz=44,slow=18,SNR=25						
SONM	Songino Array	27.49	303	P	P	03 29 23.6	-1.1
	0.2nm,0.5s,baz=101,slow=7.5,SNR=3.6						
H11N2	WAKE ISLAND Hy	28.43	121	T	T	03 58 28.6	
	baz=316,slow=75,SNR=5.3						
H11N1	WAKE ISLAND Hy	28.44	121	T	T	03 58 29.3	
	baz=316,slow=75,SNR=6.6						
H11N3	WAKE ISLAND Hy	28.45	121	T	T	03 58 26.3	
	baz=316,slow=75,SNR=6.7						
H11S1	WAKE ISLAND Hy	29.15	123	T	T	03 59 25.3	
	baz=317,slow=76,SNR=5.5						
H11S3	WAKE ISLAND Hy	29.15	123	T	T	03 59 26.7	
	baz=317,slow=76,SNR=7.7						
H11S2	WAKE ISLAND Hy	29.17	123	T	T	03 59 30.0	
	baz=317,slow=76,SNR=5.6						
MKAR	Makanchi Array	43.83	302	P	P	03 31 45.2	+0.8
	0.1nm,0.3s,baz=89,slow=7.8,SNR=6.1						
WRA	Warramunga Arr	57.36	188	P	P	03 33 26.6	-0.1
	0.3nm,0.4s,baz=8.5,slow=9.1,SNR=2.8						

*NIED **04** 03:28:00, 38°.20N×141°.70E, h68km, Mw3.9 Best double couple: Mo9.28000×10^14 NP1:φs257.00000°, δ27.00000°, λ137.00000°. NP2:φs27.00000°, δ72.00000°, λ70.00000°.*

*ISCJB **04** 03:28:45.5±0.6, 38°.17N±0°.04×141°.69E±0°.07, h57km±5km, mb3.9/17, MS3.2/3, Error ellipse: s-maj=9.7km s-min=5.0km az=21.1*

*JMA **04** 03:28:46.2±0.1, 38°.17N×141°.68E, h52km±1km, M3.7*
JMA Felt II J1.

*IDC **04** 03:28:48.2±0.8, 38°.07N×141°.61E, h70km±6km, mb3.6/17, mb1 3.8/21, mb1mx3.6/46, mbtmp3.9/21, MS3.0/6, Ms1 3.0/6, ms1mx2.6/54, Error ellipse: s-maj=16.5km s-min=11.2km az=101.0*

ISC 04 03:28:45.7±0.7, 38°.15N±0°.04×141°.74E±0°.07, h45km±5km, n43, σ0s80/52, mb3.9/17, MS3.3/3, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
JIO	Ouri	0.43	315	P	Pn	03 28 56.4	+0.6
JIO				S	Sn	03 29 03.1	+0.1
JMM	Marumori	0.80	250	P	Pn	03 29 00.6	+0.1
JMM				S	Sn	03 29 11.0	-0.3
JOU	Okura	0.87	285	P	Pn	03 29 01.8	+0.2
JOU				S	Sn	03 29 13.2	0.0
JMK	Ichinoseki	0.90	333	P	Pn	03 29 02.3	+0.4
JMK				S	Sn	03 29 13.2	-0.6
OFUJ	Ofunato	0.93	357	P	Pn	03 29 02.6	+0.2
JFK	Kawauchi	1.04	221	P	Pn	03 29 04.4	+0.6
JFK				S	Sn	03 29 17.2	0.0
JFT	Otama	1.27	241	P	Pn	03 29 07.6	+0.5
JFT				S	Sn	03 29 23.2	+0.2
JYS	Shirataka	1.32	274	P	Pn	03 29 08.1	+0.4
JYS				S	Sn	03 29 24.4	+0.3
JYK	Kaneyama	1.33	306	P	Pn	03 29 07.9	+0.1
JYK				S	Sn	03 29 24.3	+0.1
JOM	Ohasama	1.37	345	P	Pn	03 29 08.8	+0.5
JOM				S	Sn	03 29 25.3	0.0
JRG	Rokugo	1.52	326	P	Pn	03 29 11.1	+0.7
MJAR	Matsushiro Arr	3.23	241	P	Pn	03 29 35.9	+1.9
	3.3nm,0.3s,baz=57,slow=11,SNR=21						
MJAR				LR	LR	03 31 14.8	
	comp=Z,79nm,18.9s,baz=100,slow=47						
MAT	Matsushiro	3.24	241	P	Pn	03 29 35.3	+1.3
MAT				eS	Sn	03 30 12.6	+1.3
JHJ	Hachijo jima 2	5.26	198	P	Pn	03 30 03.8	+2.0
	9.3nm,0.3s,baz=44,slow=11,SNR=1.9						
JHJ				S	Sn	03 30 58.9	-2.3
	20nm,0.3s,baz=58,slow=18,SNR=1.6						
USRK	Ussuriysk Ar.	9.51	313	P	Pn	03 31 01.2	+1.2
	1.0nm,0.3s,baz=123,slow=14,SNR=11						
JNU	Nakatsue	10.16	244	LR	LR	03 35 46.2	
	comp=Z,30nm,19.7s,baz=120,slow=42						
KSRS	Korea Array	10.95	271	P	Pn	03 31 23.1	+3.3
	0.4nm,0.3s,baz=80,slow=14,SNR=3.0						
KSRS				LR	LR	03 35 00.6	
	comp=Z,62nm,18.9s,baz=80,slow=34						
MA2	Magadan	22.21	12	P	P	03 33 39.2	+1.1
	2.1nm,0.3s,baz=219,slow=14,SNR=3.6						
MA2				LR	LR	03 44 30.1	
	comp=Z,28nm,18.3s,baz=128,slow=42						
SEY	Seymchan	25.65	11	P	P	03 34 11.8	+1.0
	0.8nm,0.2s,baz=224,slow=10.0,SNR=3.9						
SONM	Songino Array	27.39	302	P	P	03 34 26.8	-0.2
	0.4nm,0.5s,baz=108,slow=9.4,SNR=4.4						
H11N2	WAKE ISLAND Hy	28.52	123	T	T	04 04 54.6	
	baz=316,slow=75,SNR=57						
H11N1	WAKE ISLAND Hy	28.53	123	T	T	04 04 55.3	
	baz=316,slow=75,SNR=90						
H11N3	WAKE ISLAND Hy	28.54	123	T	T	04 04 56.0	
	baz=316,slow=75,SNR=62						
H11S1	WAKE ISLAND Hy	29.27	125	T	T	04 05 55.6	
	baz=318,slow=76,SNR=59						
H11S3	WAKE ISLAND Hy	29.27	125	T	T	04 05 49.1	
	baz=318,slow=76,SNR=80						
H11S2	WAKE ISLAND Hy	29.28	125	T	T	04 05 52.3	
	baz=318,slow=76,SNR=59						
ZALV	Zalesovo Beam	41.36	311	P	P	03 36 26.6	-0.4
	2.7nm,0.4s,baz=85,slow=7.5,SNR=9.5						

Code	Station Name	Δ°	AZ°	Op	ISC	Time	Res
ZALV				pP	**sP**	**03 36 44.5**	**-0.1**
	2.6nm,0.6s,baz=80,slow=7.6,SNR=6.1						
ZALV				PcP	**PcP**	**03 38 24.3**	**-0.3**
	0.5nm,0.3s,baz=90,slow=2.9,SNR=2.8						
MKAR	**Makanchi Array**	**43.75**	**301**	P	**P**	**03 36 46.3**	**-0.3**
	1.0nm,0.6s,baz=85,slow=10,SNR=12						
MKAR				pP	**sP**	**03 37 04.3**	**+0.1**
	2.5nm,0.7s,baz=87,slow=10,SNR=12						
MKAR				LR	LR	03 55 09.7	
	comp=Z,35nm,20.2s,baz=175,slow=36						
KURBB	**Kurchatov Arra**	**45.53**	**307**	P	**P**	**03 36 59.9**	**-0.8**
	2.0nm,0.3s,baz=82,slow=8.7,SNR=34						
KURBB				pP	**sP**	**03 37 17.3**	**-0.9**
	6.1nm,0.6s,baz=82,slow=8.2,SNR=18						
ILAR	**Eielson Array**	**48.42**	**33**	P	**P**	**03 37 23.3**	**+0.3**
	0.4nm,0.6s,baz=266,slow=6.2,SNR=7.9						
BVAR	**Borovoye Array**	**50.02**	**312**	P	**P**	**03 37 35.1**	**-0.4**
	0.6nm,0.4s,baz=64,slow=7.1,SNR=5.8						
BVAR				pP	**sP**	**03 37 52.5**	**-0.6**
	1.6nm,0.7s,baz=72,slow=9.5,SNR=5.0						
INK	**Inuvik**	**53.28**	**28**	P	**P**	**03 38 00.3**	**+0.8**
	0.9nm,0.7s,baz=278,slow=3.4,SNR=5.2						
WRA	**Warramunga Arr**	**58.20**	**188**	P	**P**	**03 38 34.8**	**-0.5**
	1.1nm,0.5s,baz=4.0,slow=7.2,SNR=7.4						
ASAR	**Alice Springs**	**61.92**	**188**	P	**P**	**03 39 00.5**	**-0.3**
	0.5nm,0.4s,baz=8.2,slow=5.4,SNR=6.8						
YKA	**Yellowknife Ar**	**62.72**	**31**	P	**P**	**03 39 05.6**	**-0.1**
	0.3nm,0.7s,baz=299,slow=6.5,SNR=5.2						
FINES	**FINESS Array B**	**67.95**	**332**	P	**P**	**03 39 38.7**	**-0.8**
	1.6nm,0.7s,baz=79,slow=4.1,SNR=4.2						
FINES				pP	**sP**	**03 39 57.7**	**+0.2**
	1.2nm,0.7s,baz=49,slow=6.3,SNR=2.2						
FINES				LR	LR	04 10 18.8	
	comp=Z,34nm,18.3s,baz=152,slow=37						
NB2	**NORSAR Subarra**	**73.26**	**337**	P	**P**	**03 40 11.2**	**-0.7**
	comp=Z,0.7nm,0.5s,baz=38,slow=5.9						
NOA	**NORSAR Array B**	**73.26**	**337**	P	**P**	**03 40 11.2**	**-0.7**
	comp=Z,0.9nm,0.5s,baz=52,slow=7.1,SNR=7.3						
PDAR	**Pinedale Array**	**76.70**	**46**	P	**P**	**03 40 33.2**	**+0.8**
	comp=Z,0.6nm,0.8s,baz=266,slow=4.0,SNR=4.1						
GERES	**GERESS Array B**	**81.90**	**328**	P	**P**	**03 40 59.7**	**-0.7**
	comp=Z,0.4nm,0.5s,baz=40,slow=7.2,SNR=4.3						
TXAR	**Lajitas Array**	**89.24**	**53**	P	**P**	**03 41 37.8**	**+0.5**
	comp=Z,0.3nm,0.6s,baz=300,slow=3.5,SNR=4.4						
TORD	**Torodi Ar. Bea**	**116.72**	**316**	PKP	**PKPdf**	**03 47 24.3**	**-1.3**
	comp=Z,0.5nm,1.1s,baz=32,slow=2.7,SNR=3.5						
LPAZ	**La Paz**	**145.90**	**59**	PKPbc	**PKPdf**	**03 48 21.0**	**+0.2**
	comp=Z,0.4nm,0.5s,baz=41,slow=9.3,SNR=3.8						

*ISCJB **04** 03:30:28.7±0.5, 51°.52N±0°.03×16°.11E±0°.03, h0km, Error ellipse: s-maj=4.0km s-min=2.8km az=13.1*
*CSEM **04** 03:30:29.8±0.3, 51°.55N×16°.05E, h2km, ML3.0/9, Error ellipse: s-maj=4.9km s-min=4.2km az=101.0*
*VIE **04** 03:30:33.7±0.6, 51°.29N×16°.11E, h0km, mb2.3/3, ML2.5/4, Error ellipse: s-maj=4.8km s-min=4.5km az=111.0, Suspected Mining induced.*
ISC 04 03:30:29.8±0.9**, 51°.58N**±0°.03×**16°.06E**±0°.02**, h0km, n35, σ0s78**/69**, Poland**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
KSP	**Ksiaz**	**0.75**	**168**	*e*Pg	**Pg**	**03 30 44.4**	**+0.2**
KSP				*e*Sg	**Sg**	**03 30 53.7**	**-0.2**
KSP	**Ksiaz**	**0.75**	**168**	*e*Pg	**Pg**	**03 30 44.4**	**+0.2**
KSP				*e*Sg	**Sg**	**03 30 53.7**	**-0.2**
UPC	**Upice**	**1.07**	**181**	*e*PG	**Pg**	**03 30 50.4**	**+0.1**
UPC				*e*SG	**Sg**	**03 31 03.7**	**-0.5**
	comp=Z,32nm,0.3s						
UPC	**Upice**	**1.07**	**181**	Pg	**Pg**	**03 30 50.4**	**+0.1**
UPC				Sg	**Sg**	**03 31 03.7**	**-0.5**
	32nm,0.3s						
DPC	**Dobruska-Polom**	**1.24**	**172**	*e*PG	**Pg**	**03 30 53.1**	**-0.5**
DPC				*e*SG	**Sg**	**03 31 08.5**	**-1.1**
	comp=Z,17nm,0.3s						
DPC	**Dobruska-Polom**	**1.24**	**172**	Pg	**Pg**	**03 30 53.1**	**-0.5**
DPC				Sg	**Sg**	**03 31 08.5**	**-1.1**
	17nm,0.3s						
PVCC	**Panska Ves**	**1.41**	**222**	*e*PG	**Pg**	**03 30 56.8**	**0.0**
PVCC				*e*SG	**Sg**	**03 31 15.2**	**+0.2**
	comp=Z,45nm,0.2s						
PVCC	**Panska Ves**	**1.41**	**222**	Pg	**Pg**	**03 30 56.8**	**0.0**
PVCC				Sg	**Sg**	**03 31 15.2**	**+0.2**
	45nm,0.2s						
BRG	**Berggiesshubel**	**1.50**	**243**	PN	**Pg**	**03 30 58.9**	**+0.3**
BRG				PG	**Pb**	**03 30 59.3**	**+0.7**
BRG				SG	**Sn**	**03 31 19.2**	**+0.9**
	27nm,0.5s						
PRA	**Prague**	**1.83**	**215**	*e*SG	**Sb**	**03 31 27.3**	**-0.2**
PRA	**Prague**	**1.83**	**215**	Sg	**Sb**	**03 31 27.3**	**-0.2**
GOPC	**GO Pecny, Ondr**	**1.85**	**206**	*e*PN	**Pn**	**03 31 03.2**	**+0.4**
GOPC				*e*PG	**Pb**	**03 31 04.7**	**+0.2**
GOPC				*e*SG	**Sb**	**03 31 28.0**	**-0.2**
	comp=Z,7.6nm,0.3s						
GOPC	**GO Pecny, Ondr**	**1.85**	**206**	Pn	**Pn**	**03 31 03.2**	**+0.4**
GOPC	**GO Pecny, Ondr**	**1.85**	**206**	Pg	**Pb**	**03 31 04.7**	**+0.2**
GOPC				Sg	**Sb**	**03 31 28.0**	**-0.2**
	7.6nm,0.3s						
PRU	**Pruhonice**	**1.86**	**212**	*e*PN	**Pn**	**03 31 02.7**	**-0.2**
PRU				*e*PG	**Pb**	**03 31 04.4**	**-0.2**
PRU				*e*SG	**Sb**	**03 31 27.9**	**-0.5**
	comp=Z,13nm,0.4s						
PRU	**Pruhonice**	**1.86**	**212**	Pn	**Pn**	**03 31 02.7**	**-0.2**
CLL	**Collm**	**1.93**	**263**	*i* Pn	**Pn**	**03 31 03.7**	**-0.2**
	comp=Z,6.0nm,0.4s						
CLL				*e*Pg	**Pg**	**03 31 07.0**	**+0.2**
CLL				*i*		03 31 10.6	
CLL				*i* Sg	**Sg**	**03 31 33.4**	**+1.6**
	comp=Z,20nm,0.6s						
OKC	**Ostrava-Krasne**	**2.19**	**142**	*e*PG	**Pb**	**03 31 10.9**	**+0.6**
OKC				*e*SG	**Sb**	**03 31 37.9**	**-0.1**
	comp=Z,25nm,0.6s						
OKC	**Ostrava-Krasne**	**2.19**	**142**	Pg	**Pb**	**03 31 10.9**	**+0.6**
OKC				Sg	**Sb**	**03 31 37.9**	**-0.1**
	comp=Z,25nm,0.6s						
TREC	**Trest**	**2.31**	**189**	*e*PN	**Pn**	**03 31 10.1**	**+0.9**
TREC				*e*PG	**Pb**	**03 31 13.0**	**+0.6**
TREC				*e*SG	**Sb**	**03 31 42.1**	**+0.5**
	comp=Z,7.5nm,0.4s						
TREC	**Trest**	**2.31**	**189**	Pn	**Pn**	**03 31 10.1**	**+0.9**
TREC	**Trest**	**2.31**	**189**	Pg	**Pb**	**03 31 13.0**	**+0.6**
TREC				Sg	**Sb**	**03 31 42.1**	**+0.5**
	comp=Z,7.5nm,0.4s						
OJC	**Ojcow**	**2.73**	**118**	*e*Pg	**Pg**	**03 31 21.8**	**-0.3**
OJC				*e*Sg	**Sg**	**03 31 57.6**	**+0.1**
OJC	**Ojcow**	**2.73**	**118**	*e*Pg	**Pg**	**03 31 21.8**	**-0.3**
OJC				*e*Sg	**Sg**	**03 31 57.6**	**+0.1**
KHC	**Kasperske Hory**	**2.92**	**214**	*e*PN	**Pn**	**03 31 17.5**	**0.0**
KHC				*e*PG	**Pb**	**03 31 23.6**	**+0.9**
KHC				*e*SN	**Sn**	**03 31 53.5**	**+0.2**
KHC				*e*SG	**Sg**	**03 32 02.1**	**-1.4**
	comp=Z,8.0nm,0.5s						
KHC	**Kasperske Hory**	**2.92**	**214**	Pn	**Pn**	**03 31 17.5**	**0.0**
SMOL	**Smolenice**	**3.19**	**163**	*e*PG	**Pg**	**03 31 30.2**	**-0.8**
SMOL				*e*SG	**Sg**	**03 32 12.3**	**0.0**
LANS	**Liptovska Anna**	**3.27**	**137**	*e*PG	**Pg**	**03 31 31.1**	**-1.3**
LANS				*e*SG	**Sg**	**03 32 13.6**	**-1.1**
VYHS	**Vyhne**	**3.57**	**149**	*e*PG	**Pg**	**03 31 37.7**	**-0.5**
VYHS				*e*SG	**Sg**	**03 32 25.0**	**+0.6**
BSD	**Bornholm Skovb**	**3.61**	**350**	*i* P	**Pn**	**03 31 26.9**	**0.0**
BSD				*i* S	**Sn**	**03 32 08.0**	**-2.2**
BSD	**Bornholm Skovb**	**3.61**	**350**	*i* P	**Pn**	**03 31 26.9**	**0.0**
	SNR=100						
CONA	**Conrad Observa**	**3.66**	**182**	Pn	**Pn**	**03 31 28.2**	**+0.5**
	comp=Z,25nm,0.2s						
CONA				Sg	**Sg**	**03 32 24.8**	**-2.4**
	comp=Z,114nm,0.5s						
MOA	**Molln**	**3.91**	**198**	Pn	**Pn**	**03 31 31.4**	**+0.3**
	comp=Z,0.8nm,0.2s						
MOA				Sg	**Sg**	**03 32 34.0**	**-1.3**
	comp=Z,1.6nm,0.3s						
STHS	**Stebnicka Huta**	**3.96**	**121**	*e*PG	**Pg**	**03 31 46.9**	**+1.3**
STHS				*e*SG	**Sg**	**03 32 39.1**	**+2.3**
STHS				*e*LG	Lg	03 32 45.4	
LUNU	**Lund**	**4.35**	**340**	*i* P	**Pn**	**03 31 36.3**	**-0.8**
	SNR=98						

*ISCJB **04** 03:36:12.5±0.8, 51°.53N±0°.04×16°.08E±0°.04, h0km, Error ellipse: s-maj=5.8km s-min=3.7km az=13.6*
*CSEM **04** 03:36:14.4±0.7, 51°.52N×16°.03E, h2km, ML2.8/6, Error ellipse: s-maj=10.4km s-min=7.6km az=15.0*
ISC 04 03:36:15.0±1.3**, 51°.51N**±0°.06×**15°.99E**±0°.03**, h0km, n23, σ0s75**/45**, Poland**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
KSP	**Ksiaz**	**0.69**	**164**	*e*Pg	**Pg**	**03 36 28.0**	**-0.2**
KSP				*e*Sg	**Sg**	**03 36 37.7**	**+0.5**
KSP	**Ksiaz**	**0.69**	**164**	*e*Pg	**Pg**	**03 36 28.0**	**-0.2**
KSP				*e*Sg	**Sg**	**03 36 37.7**	**+0.5**
UPC	**Upice**	**1.00**	**179**	*e*PG	**Pg**	**03 36 34.0**	**-0.2**
UPC				*e*SG	**Sb**	**03 36 47.9**	**-1.0**
	comp=Z,13nm,0.2s						
UPC	**Upice**	**1.00**	**179**	Pg	**Pg**	**03 36 34.0**	**-0.2**
UPC				Sg	**Sb**	**03 36 47.9**	**-1.0**
	13nm,0.2s						
DPC	**Dobruska-Polom**	**1.18**	**170**	*e*PG	**Pg**	**03 36 36.9**	**-0.6**
DPC				*e*SG	**Sg**	**03 36 52.0**	**-0.8**
	comp=Z,5.7nm,0.3s						
DPC	**Dobruska-Polom**	**1.18**	**170**	Pg	**Pg**	**03 36 36.9**	**-0.6**
DPC				Sg	**Sg**	**03 36 52.0**	**-0.8**
	5.7nm,0.3s						
PVCC	**Panska Ves**	**1.33**	**223**	*e*PG	**Pg**	**03 36 40.4**	**-0.1**
PVCC				*e*SG	**Sn**	**03 36 59.4**	**+0.2**
	comp=Z,23nm,0.2s						
PVCC	**Panska Ves**	**1.33**	**223**	Pg	**Pg**	**03 36 40.4**	**-0.1**
PVCC				Sg	**Sn**	**03 36 59.4**	**+0.2**
	23nm,0.2s						
BRG	**Berggiesshubel**	**1.44**	**245**	PN	**Pn**	**03 36 42.3**	**0.0**
BRG				PG	**Pb**	**03 36 43.1**	**+0.5**
BRG				SG	**Sn**	**03 37 02.8**	**+0.9**
	11nm,0.5s						
GOPC	**GO Pecny, Ondr**	**1.77**	**206**	*e*PG	**Pb**	**03 36 48.0**	**-0.3**
GOPC				*e*SG	**Sg**	**03 37 11.7**	**-0.1**
	comp=Z,2.6nm,0.2s						
GOPC	**GO Pecny, Ondr**	**1.77**	**206**	Pg	**Pb**	**03 36 48.0**	**-0.3**
GOPC				Sg	**Sg**	**03 37 11.7**	**-0.1**
	2.6nm,0.2s						
PRU	**Pruhonice**	**1.78**	**212**	*e*PG	**Pb**	**03 36 48.3**	**-0.2**
PRU				*e*SG	**Sg**	**03 37 13.0**	**+0.9**
	comp=Z,5.2nm,0.4s						
PRU	**Pruhonice**	**1.78**	**212**	Pg	**Pb**	**03 36 48.3**	**-0.2**
PRU				Sg	**Sg**	**03 37 13.0**	**+0.9**
	5.2nm,0.4s						
CLL	**Collm**	**1.88**	**265**	*e*Pn	**Pn**	**03 36 47.0**	**-1.4**
CLL				*e*Pg	**Pb**	**03 36 50.0**	**-0.2**
CLL				*i*		03 36 53.1	
CLL				*i* Sg	**Sg**	**03 37 17.1**	**+1.6**
	comp=Z,7.0nm,0.6s						
OKC	**Ostrava-Krasne**	**2.16**	**140**	*e*SG	**Sn**	**03 37 20.4**	**+0.7**
OKC	**Ostrava-Krasne**	**2.16**	**140**	Sg	**Sn**	**03 37 20.4**	**+0.7**
TREC	**Trest**	**2.24**	**189**	*e*PN	**Pn**	**03 36 53.8**	**+0.5**
TREC				*e*PG	**Pb**	**03 36 56.6**	**+0.3**
TREC				*e*SG	**Sg**	**03 37 26.2**	**-0.7**
	comp=Z,4.0nm,0.2s						
TREC	**Trest**	**2.24**	**189**	Pn	**Pn**	**03 36 53.8**	**+0.5**
KHC	**Kasperske Hory**	**2.84**	**214**	*e*PN	**Pn**	**03 37 01.8**	**+0.2**
KHC				*e*PG	**Pg**	**03 37 08.6**	**-0.8**
KHC				*e*SN	**Sn**	**03 37 38.0**	**+1.5**
KHC				*e*SG	**Sg**	**03 37 46.5**	**+0.4**
KHC	**Kasperske Hory**	**2.84**	**214**	Pn	**Pn**	**03 37 01.8**	**+0.2**
LANS	**Liptovska Anna**	**3.24**	**135**	*e*PG	**Pb**	**03 37 14.4**	**+0.9**
VYHS	**Vyhne**	**3.53**	**148**	*e*PG	**Pg**	**03 37 22.9**	**+0.3**
STHS	**Stebnicka Huta**	**3.95**	**120**	*e*PG	**Pg**	**03 37 29.0**	**-1.7**
STHS				*e*SG	**Sg**	**03 38 23.4**	**+1.5**

*DDA **04** 03:44:25.9, 39°.13N×29°.09E, h7km, Ml3.5*
*ISK **04** 03:44:25.9, 39°.13N×29°.10E, h4km, ML3.5*
*CSEM **04** 03:44:26.7±0.1, 39°.13N×29°.14E, h2km, ML3.5, Error ellipse: s-maj=3.1km s-min=2.7km az=58.0*
*THE **04** 03:44:27.1, 39°.17N×29°.50E, h1km±1km, ML3.3/2, Error ellipse: s-maj=2.8km s-min=1.3km az=66.0*
ISC 04 03:44:26.6±1.0**, 39°.13N**±0°.02×**29°.11E**±0°.02**, h8km**±8km**, n180, σ0s97**/209**, 9C-2D, Turkey**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
GDZ	**Gediz**	**0.29**	**98**	*i* P	**Pg**	**03 44 32.7**	**+0.2**
GDZ				*i* S	**Sg**	**03 44 37.1**	**+0.7**
GDZ	**Gediz**	**0.29**	**98**	P	**Pg**	**03 44 32.7**	**+0.2**
GDZ				S	**Sg**	**03 44 37.1**	**+0.7**
DEMI	**Demirci**	**0.32**	**254**	*i* P	**Pg**	**03 44 32.5**	**-0.3**
DEMI				*i* S	**Sg**	**03 44 36.6**	**-0.4**
DEMI	**Demirci**	**0.32**	**254**	P	**Pg**	**03 44 32.5**	**-0.3**
DEMI				S	**Sg**	**03 44 36.7**	**-0.4**
TVSB	**Tavsanli**	**0.42**	**41**	*e*PG	**Pg**	**03 44 34.9**	**0.0**
TVSB				*e*SG	**Sg**	**03 44 40.6**	**+0.2**
TVSB	**Tavsanli**	**0.42**	**41**	*e*Pg	**Pg**	**03 44 34.9**	**0.0**
TVSB				*e*Sg	**Sg**	**03 44 40.7**	**+0.2**
DST	**Dursunbey**	**0.60**	**322**	*e*PG	**Pg**	**03 44 38.2**	**-0.1**
DST	**Dursunbey**	**0.60**	**322**	*e*Pg	**Pg**	**03 44 38.2**	**-0.1**
DURS	**Dursunbey**	**0.68**	**314**	*i* P	**Pg**	**03 44 39.3**	**-0.4**
DURS				*i* S	**Sg**	**03 44 48.9**	**+0.2**
DURS	**Dursunbey**	**0.68**	**314**	P	**Pg**	**03 44 39.3**	**-0.4**
DURS				S	**Sg**	**03 44 48.8**	**+0.2**
KULA	**Kula-Manisa**	**0.71**	**210**	*e*PG	**Pg**	**03 44 39.6**	**-0.6**
KULA	**Kula-Manisa**	**0.71**	**210**	*e*Pg	**Pg**	**03 44 39.6**	**-0.6**
KHAL	**Karahalli**	**0.82**	**158**	*i* P	**Pg**	**03 44 42.2**	**-0.1**
KHAL				*i* S	**Sg**	**03 44 53.2**	**+0.3**
KHAL	**Karahalli**	**0.82**	**158**	P	**Pg**	**03 44 42.2**	**-0.1**
KHAL				S	**Sg**	**03 44 53.2**	**+0.3**
KHL	**Karahalli**	**0.87**	**158**	*e*PG	**Pg**	**03 44 43.3**	**0.0**
KHL	**Karahalli**	**0.87**	**158**	*e*Pg	**Pg**	**03 44 43.3**	**0.0**
ORLT	**Orhaneli**	**0.93**	**350**	*e*PG	**Pg**	**03 44 44.4**	**-0.1**
ORLT	**Orhaneli**	**0.93**	**350**	*e*Pg	**Pg**	**03 44 44.4**	**-0.1**
ULDT	**Uludag**	**1.01**	**1**	*i* P	**Pg**	**03 44 45.4**	**-0.7**
ULDT				*i* S	**Sg**	**03 44 59.3**	**+0.1**
ULDT	**Uludag**	**1.01**	**1**	P	**Pg**	**03 44 45.4**	**-0.7**
ULDT				S	**Sg**	**03 44 59.3**	**+0.1**
AKHS	**Akhisar**	**1.04**	**256**	*i* P	**Pg**	**03 44 46.1**	**-0.4**
AKHS	**Akhisar**	**1.04**	**256**	P	**Pg**	**03 44 46.1**	**-0.4**
AKS	**Akhisar**	**1.04**	**256**	*e*PG	**Pg**	**03 44 46.0**	**-0.5**
AKS	**Akhisar**	**1.04**	**256**	*e*Pg	**Pg**	**03 44 46.0**	**-0.5**
BALB	**Balikesir**	**1.08**	**299**	*e*PG	**Pg**	**03 44 47.2**	**-0.1**
BALB				*e*SG	**Sb**	**03 45 02.1**	**+0.4**
BALB	**Balikesir**	**1.08**	**299**	*e*Pg	**Pg**	**03 44 47.2**	**-0.1**
BALB				*e*Sg	**Sb**	**03 45 02.1**	**+0.4**
AUKUT	**KUTAHYA**	**1.09**	**40**	*i* P	Pg	03 44 41.1	-6.4
AUKUT				*i* S	Sg	03 44 51.8	-10
UZP	**Denizli**	**1.10**	**177**	*i* P	**Pg**	**03 44 47.3**	**-0.4**
AUKIR	**K˜–rka- Seyitg**	**1.12**	**82**	*i* P	**Pn**	**03 44 49.0**	**+0.4**
AUKIR	**K˜–rka- Seyitg**	**1.12**	**82**	P	**Pn**	**03 44 49.0**	**+0.4**
IGD	**Bursa**	**1.14**	**4**	*i* P	**Pg**	**03 44 46.9**	**-1.5**
CAVI	**Cavuskoy**	**1.21**	**28**	*e*PN	**Pn**	**03 44 50.1**	**+0.2**
CAVI	**Cavuskoy**	**1.21**	**28**	*e*Pn	**Pn**	**03 44 50.1**	**+0.2**
IZI	**Iznik**	**1.24**	**13**	*e*PN	**Pb**	**03 44 50.1**	**-0.2**
IZI	**Iznik**	**1.24**	**13**	*e*Pn	**Pb**	**03 44 50.1**	**-0.2**
MDNY	**Mudanya-Bursa**	**1.25**	**352**	*e*PN	**Pn**	**03 44 49.9**	**-0.5**
MDNY	**Mudanya-Bursa**	**1.25**	**352**	*e*Pn	**Pn**	**03 44 49.9**	**-0.5**
SHUT	**Suhut-Afyon**	**1.27**	**117**	*e*PN	**Pg**	**03 44 51.1**	**+0.2**
SHUT	**Suhut-Afyon**	**1.27**	**117**	*e*Pn	**Pg**	**03 44 51.1**	**+0.2**
KCTX	**Karacabey (Bur**	**1.27**	**333**	*e*PN	**Pn**	**03 44 50.3**	**-0.4**
KCTX	**Karacabey (Bur**	**1.27**	**333**	*e*Pn	**Pn**	**03 44 50.3**	**-0.4**
BORA	**Eskisehir**	**1.28**	**54**	*i* P	**Pn**	**03 44 50.8**	**-0.2**
BORA	**Eskisehir**	**1.28**	**54**	P	**Pn**	**03 44 50.8**	**-0.2**
BALY	**Balya**	**1.30**	**298**	*i* P	**Pn**	**03 44 50.6**	**-0.6**
BALY	**Balya**	**1.30**	**298**	P	**Pn**	**03 44 50.6**	**-0.6**
GEMT	**Gemlik**	**1.30**	**3**	*e*PN	**Pn**	**03 44 50.6**	**-0.6**
GEMT	**Gemlik**	**1.30**	**3**	*e*Pn	**Pn**	**03 44 50.6**	**-0.6**
DENT	**Denizli**	**1.38**	**182**	*e*PN	**Pb**	**03 44 52.6**	**0.0**
DENT	**Denizli**	**1.38**	**182**	*e*Pn	**Pb**	**03 44 52.6**	**0.0**
ADVT	**Abdulvahap**	**1.39**	**20**	*e*PN	**Pg**	**03 44 53.3**	**0.0**
ADVT	**Abdulvahap**	**1.39**	**20**	*e*Pn	**Pg**	**03 44 53.3**	**0.0**
ESKT	**Eskisehir**	**1.41**	**73**	*i* P	**Pn**	**03 44 52.6**	**-0.1**
SEYT	**Eskypehyr**	**1.41**	**73**	P	**Pn**	**03 44 52.6**	**-0.1**
ARMT	**Armutlu**	**1.45**	**353**	*e*PN	**Pb**	**03 44 53.8**	**0.0**
ARMT	**Armutlu**	**1.45**	**353**	*e*Pn	**Pb**	**03 44 53.8**	**0.0**
GPA	**Golpazari**	**1.48**	**38**	*e*PN	**Pb**	**03 44 54.5**	**+0.1**
GPA	**Golpazari**	**1.48**	**38**	*e*Pn	**Pb**	**03 44 54.5**	**+0.1**
BOLV	**Bolvadin**	**1.50**	**105**	*i* P	**Pn**	**03 44 54.1**	**+0.2**
BOLV	**Bolvadin**	**1.50**	**105**	P	**Pn**	**03 44 54.1**	**+0.2**
AYDB	**Zeytinkoy-Aydi**	**1.52**	**219**	*e*PN	**Pn**	**03 44 54.5**	**+0.3**
AYDB	**Zeytinkoy-Aydi**	**1.52**	**219**	*e*Pn	**Pn**	**03 44 54.5**	**+0.3**
BNT	**Bandirma**	**1.53**	**324**	*e*PN	**Pb**	**03 44 55.0**	**-0.2**
BNT	**Bandirma**	**1.53**	**324**	*e*Pn	**Pb**	**03 44 55.0**	**-0.2**
EDC	**Edincik**	**1.55**	**322**	*e*PN	**Pn**	**03 44 54.1**	**-0.4**
EDC	**Edincik**	**1.55**	**322**	*e*Pn	**Pn**	**03 44 54.1**	**-0.4**
IZM	**Izmir**	**1.62**	**244**	*e*PN	**Pb**	**03 44 56.3**	**-0.4**
IZM	**Izmir**	**1.62**	**244**	*e*Pn	**Pb**	**03 44 56.3**	**-0.4**
KNL	**Bal˜–kesir**	**1.67**	**314**	*i* P	**Pn**	**03 44 56.7**	**+0.6**
DKL	**Dikili**	**1.71**	**269**	*e*PN	**Pn**	**03 44 57.7**	**+1.0**
DKL	**Dikili**	**1.71**	**269**	*e*Pn	**Pn**	**03 44 57.7**	**+1.0**
ISP	**Isparta**	**1.71**	**139**	*e*PN	**Pn**	**03 44 57.0**	**+0.1**
ISP	**Isparta**	**1.71**	**139**	P	**Pn**	**03 44 55.2**	**-1.7**
ISP				S	**Sn**	**03 45 15.8**	**-3.2**
ISP	**Isparta**	**1.71**	**139**	P	**Pn**	**03 44 55.2**	**-1.7**
ISP	**Isparta**	**1.71**	**139**	*e*Pn	**Pn**	**03 44 57.0**	**+0.1**
ISP				S	**Sn**	**03 45 15.8**	**-3.2**
AYDN	**Tasoluk**	**1.76**	**214**	*i* P	**Pn**	**03 44 56.2**	**-1.2**
AYDN	**Tasoluk**	**1.76**	**214**	P	**Pn**	**03 44 56.2**	**-1.2**
BLCB	**Balcova**	**1.78**	**246**	*e*PN	**Pb**	**03 44 58.8**	**-0.6**
BLCB	**Balcova**	**1.78**	**246**	*e*Pn	**Pb**	**03 44 58.8**	**-0.6**
SPNC	**Sapanca-Adapaz**	**1.81**	**30**	*e*PN	**Pn**	**03 44 58.9**	**+0.8**
SPNC	**Sapanca-Adapaz**	**1.81**	**30**	*e*Pn	**Pn**	**03 44 58.9**	**+0.8**
MRMT	**Marmara Adasi**	**1.88**	**322**	*e*PN	**Pb**	**03 45 00.4**	**-0.7**
MRMT	**Marmara Adasi**	**1.88**	**322**	*e*Pn	**Pb**	**03 45 00.4**	**-0.7**
SVRH	**Sivrihisar-ESK**	**1.90**	**80**	*e*PN	**Pn**	**03 45 00.4**	**+1.0**
SVRH	**Sivrihisar-ESK**	**1.90**	**80**	*e*Pn	**Pn**	**03 45 00.4**	**+1.0**
ISK	**Istanbul-Kandi**	**1.93**	**359**	*e*PN	**Pn**	**03 45 00.8**	**+1.1**
ISK	**Istanbul-Kandi**	**1.93**	**359**	P	**Pn**	**03 44 59.0**	**-0.8**
ISK				S	**Sn**	**03 45 25.1**	**+0.8**
ISK	**Istanbul-Kandi**	**1.93**	**359**	P	**Pn**	**03 44 59.0**	**-0.8**
ISK	**Istanbul-Kandi**	**1.93**	**359**	*e*Pn	**Pn**	**03 45 00.9**	**+1.1**
ISK				S	**Sn**	**03 45 25.1**	**+0.8**
GLHS	**Glhisar (BURDU**	**2.00**	**171**	*e*PN	**Pn**	**03 45 01.5**	**+0.8**
GLHS	**Glhisar (BURDU**	**2.00**	**171**	*e*Pn	**Pn**	**03 45 01.5**	**+0.8**
BCK	**Bucak**	**2.04**	**145**	*e*PN	**Pn**	**03 45 01.3**	**+0.1**
BCK	**Bucak**	**2.04**	**145**	*e*Pn	**Pn**	**03 45 01.3**	**+0.1**
SILT	**Sile**	**2.06**	**11**	*e*PN	**Pn**	**03 45 02.7**	**+1.1**
SILT	**Sile**	**2.06**	**11**	*e*Pn	**Pn**	**03 45 02.7**	**+1.1**
BGKT	**Bogazkoy**	**2.06**	**353**	*e*PN	**Pn**	**03 45 02.9**	**+1.3**
BGKT	**Bogazkoy**	**2.06**	**353**	*e*Pn	**Pn**	**03 45 02.9**	**+1.3**
MDUB	**Mudurnu**	**2.10**	**50**	*e*PN	**Pb**	**03 45 03.8**	**-1.1**
MDUB	**Mudurnu**	**2.10**	**50**	*e*Pn	**Pb**	**03 45 03.8**	**-1.1**
YER	**Yerkesik**	**2.10**	**198**	*e*PN	**Pn**	**03 45 02.9**	**+0.8**
YER	**Yerkesik**	**2.10**	**198**	P	**Pb**	**03 45 05.2**	**+0.3**
YER				S	**Sb**	**03 45 30.8**	**-0.3**
YER	**Yerkesik**	**2.10**	**198**	*e*Pn	**Pn**	**03 45 02.9**	**+0.8**
YER	**Yerkesik**	**2.10**	**198**	P	**Pb**	**03 45 05.2**	**+0.3**
YER				S	**Sb**	**03 45 30.8**	**-0.3**
RKY	**Sarkoy-Tekirda**	**2.15**	**317**	*e*PN	**Pn**	**03 45 04.0**	**+1.2**
RKY	**Sarkoy-Tekirda**	**2.15**	**317**	*e*Pn	**Pn**	**03 45 04.0**	**+1.2**
CTKS	**Kestanelik-??a**	**2.15**	**348**	*e*PN	**Pn**	**03 45 03.3**	**+0.5**
CTKS	**Kestanelik-??a**	**2.15**	**348**	*e*Pn	**Pn**	**03 45 03.3**	**+0.5**
KIZT	**Kizilcal**	**2.18**	**96**	*e*PN	**Pn**	**03 45 03.7**	**+0.5**
KIZT	**Kizilcal**	**2.18**	**96**	*e*Pn	**Pn**	**03 45 03.7**	**+0.5**
PRK	**Paraskevi**	**2.21**	**274**	P	**Pb**	**03 45 07.2**	**+0.5**
PRK				S	**Sg**	**03 45 38.9**	**+1.4**
PRK	**Paraskevi**	**2.21**	**274**	P	**Pb**	**03 45 07.2**	**+0.5**
TKR	**Tekirdag**	**2.21**	**328**	*e*PN	**Pn**	**03 45 04.9**	**+1.3**
TKR	**Tekirdag**	**2.21**	**328**	*e*Pn	**Pn**	**03 45 04.9**	**+1.3**
CRLT	**Corlu**	**2.26**	**333**	*e*PN	**Pn**	**03 45 05.6**	**+1.4**
CRLT	**Corlu**	**2.26**	**333**	*e*Pn	**Pn**	**03 45 05.6**	**+1.4**
EZN	**Ezine**	**2.26**	**289**	*e*PN	**Pn**	**03 45 05.4**	**+1.1**
EZN	**Ezine**	**2.26**	**289**	P	**Pb**	**03 45 08.9**	**+1.2**
EZN	**Ezine**	**2.26**	**289**	*e*Pn	**Pn**	**03 45 05.4**	**+1.1**
EZN	**Ezine**	**2.26**	**289**	P	**Pb**	**03 45 08.9**	**+1.2**
SMG	**Samos**	**2.28**	**232**	P	**Pb**	**03 45 07.9**	**-0.1**
SMG	**Samos**	**2.28**	**232**	P	**Pb**	**03 45 07.9**	**-0.1**
DALY	**Dalyan (Mu˜la**	**2.34**	**189**	*e*PN	**Pn**	**03 45 06.7**	**+1.4**
DALY	**Dalyan (Mu˜la**	**2.34**	**189**	*e*Pn	**Pn**	**03 45 06.7**	**+1.4**
GELI	**Tayfur-Gelibol**	**2.39**	**303**	*e*PN	**Pn**	**03 45 07.0**	**+0.9**
GELI	**Tayfur-Gelibol**	**2.39**	**303**	*e*Pn	**Pn**	**03 45 07.0**	**+0.9**
CTYL	**Yalikoy Yolu**	**2.42**	**345**	*e*PN	**Pn**	**03 45 07.7**	**+1.2**
CTYL	**Yalikoy Yolu**	**2.42**	**345**	*e*Pn	**Pn**	**03 45 07.7**	**+1.2**
ELL	**Elmali**	**2.46**	**165**	*e*PN	**Pn**	**03 45 08.6**	**+1.4**
ELL	**Elmali**	**2.46**	**165**	*e*Pn	**Pn**	**03 45 08.6**	**+1.4**
FETY	**Fethiye**	**2.49**	**180**	*e*PN	**Pn**	**03 45 08.0**	**+0.5**
FETY	**Fethiye**	**2.49**	**180**	P	**Pn**	**03 45 07.9**	**+0.5**
FETY				S	**Sn**	**03 45 40.3**	**+2.2**
FETY	**Fethiye**	**2.49**	**180**	*e*Pn	**Pn**	**03 45 08.0**	**+0.5**
FETY				S	**Sn**	**03 45 40.3**	**+2.2**
CHOS	**Chios island**	**2.50**	**254**	P	**Pb**	**03 45 12.3**	**+0.5**
CHOS				S	**Sg**	**03 45 47.1**	**+0.2**
CHOS	**Chios island**	**2.50**	**254**	P	**Pb**	**03 45 12.3**	**+0.5**
BODT	**Bodrum**	**2.50**	**215**	*e*PN	**Pn**	**03 45 09.0**	**+1.4**
BODT	**Bodrum**	**2.50**	**215**	*e*Pn	**Pn**	**03 45 09.0**	**+1.4**
ERIK	**Erikli-Kesan**	**2.52**	**308**	*e*PN	**Pn**	**03 45 09.0**	**+1.2**
ERIK	**Erikli-Kesan**	**2.52**	**308**	*e*Pn	**Pn**	**03 45 09.0**	**+1.2**
SIGR	**SIGRI**	**2.53**	**273**	*e*PN	**Pn**	**03 45 09.0**	**+1.1**
SIGR	**SIGRI**	**2.53**	**273**	P	**Pb**	**03 45 12.7**	**+0.5**
SIGR				S	**Sg**	**03 45 48.4**	**+0.6**
SIGR	**SIGRI**	**2.53**	**273**	*e*Pn	**Pn**	**03 45 09.0**	**+1.1**
SIGR	**SIGRI**	**2.53**	**273**	P	**Pb**	**03 45 12.7**	**+0.5**
ANTB	**Antalya**	**2.54**	**151**	*e*PN	**Pn**	**03 45 09.2**	**+1.1**
ANTB	**Antalya**	**2.54**	**151**	*e*Pn	**Pn**	**03 45 09.2**	**+1.1**
GADA	**Gvkgeada**	**2.69**	**294**	*e*PN	**Pn**	**03 45 11.4**	**+1.2**
GADA	**Gvkgeada**	**2.69**	**294**	P	**Pb**	**03 45 12.9**	**-2.1**
GADA				S	**Sg**	**03 45 51.7**	**-1.4**
GADA	**Gvkgeada**	**2.69**	**294**	*e*Pn	**Pn**	**03 45 11.4**	**+1.2**
GADA	**Gvkgeada**	**2.69**	**294**	P	**Pb**	**03 45 12.9**	**-2.1**
LADK	**Ladik-KONYA**	**2.71**	**109**	*e*PN	**Pn**	**03 45 11.5**	**+0.9**
LADK	**Ladik-KONYA**	**2.71**	**109**	*e*Pn	**Pn**	**03 45 11.5**	**+0.9**
PHSR	**Pinarhisar**	**2.77**	**335**	*e*PN	**Pn**	**03 45 12.5**	**+1.2**
PHSR	**Pinarhisar**	**2.77**	**335**	*e*Pn	**Pn**	**03 45 12.5**	**+1.2**
ENEZ	**Enez**	**2.78**	**306**	*e*PN	**Pn**	**03 45 12.4**	**+1.0**
ENEZ	**Enez**	**2.78**	**306**	P	**Pb**	**03 45 15.2**	**-1.3**
ENEZ				S	**Sb**	**03 45 52.2**	**+1.5**
ENEZ	**Enez**	**2.78**	**306**	*e*Pn	**Pn**	**03 45 12.4**	**+1.0**
ENEZ	**Enez**	**2.78**	**306**	P	**Pb**	**03 45 15.2**	**-1.3**
LOD	**Lodumlu**	**2.93**	**74**	*e*PN	**Pn**	**03 45 15.1**	**+1.6**
LOD	**Lodumlu**	**2.93**	**74**	*e*Pn	**Pn**	**03 45 15.1**	**+1.6**
ALN	**Alexandroupoli**	**2.94**	**308**	*e*PN	**Pn**	**03 45 15.0**	**+1.4**
ALN	**Alexandroupoli**	**2.94**	**308**	P	**Pn**	**03 45 16.5**	**+2.9**
ALN				S	**Sb**	**03 45 54.3**	**-1.0**
ALN	**Alexandroupoli**	**2.94**	**308**	*e*Pn	**Pn**	**03 45 15.0**	**+1.4**
ALN	**Alexandroupoli**	**2.94**	**308**	P	**Pn**	**03 45 16.5**	**+2.9**
ALN				S	**Sb**	**03 45 54.3**	**-1.0**
KSL	**Kastellorizon**	**3.00**	**173**	P	**Pn**	**03 45 15.1**	**+0.7**
CHBY	**Cihanbeyli**	**3.00**	**99**	*e*PN	**Pn**	**03 45 15.9**	**+1.3**
CHBY	**Cihanbeyli**	**3.00**	**99**	*e*Pn	**Pn**	**03 45 15.9**	**+1.3**
SMTH	**Samothraki Isl**	**3.06**	**297**	P	**Pb**	**03 45 18.8**	**-2.5**
SMTH				S	**Sb**	**03 45 59.3**	**+0.4**
SMTH	**Samothraki Isl**	**3.06**	**297**	P	**Pb**	**03 45 18.8**	**-2.5**
EDRB	**Edirne**	**3.26**	**327**	*e*PN	**Pn**	**03 45 18.4**	**+0.4**
EDRB	**Edirne**	**3.26**	**327**	P	**Pn**	**03 45 18.2**	**+0.2**
EDRB	**Edirne**	**3.26**	**327**	*e*Pn	**Pn**	**03 45 18.4**	**+0.4**
MSAB	**Monastry St. A**	**5.05**	**349**	⇑ *i*P	**Pn**	**03 45 42.4**	**-0.2**
TIRR	**Tirgusor**	**5.35**	**355**	⇑ *i*P	**Pn**	**03 45 46.8**	**+0.1**
VTS	**Vitosha**	**5.65**	**310**	⇑ *i*P	**Pn**	**03 45 51.7**	**+0.7**
CFR	**Carcaliu**	**6.09**	**354**	⇓ *i*P	**Pn**	**03 45 56.7**	**-0.1**
MLR	**Muntele Rosu**	**6.77**	**341**	⇑ *i*P	**Pn**	**03 46 06.4**	**0.0**
PLOR	**Plostina**	**6.96**	**346**	⇑ *i*P	**Pn**	**03 46 09.7**	**+0.9**
VRI	**Vrincioaia**	**6.96**	**346**	⇓ *i*P	**Pn**	**03 46 09.4**	**+0.6**
VOIR		**6.98**	**336**	⇑ *i*P	**Pn**	**03 46 09.5**	**+0.3**
DOPR	**Dopca**	**7.36**	**339**	⇑ *i*P	**Pn**	**03 46 15.0**	**+0.6**
GZR	**Gura Zlata**	**7.82**	**325**	⇑ *i*P	**Pn**	**03 46 19.8**	**-0.9**
BURAR	**Bucovina Array**	**8.94**	**343**	⇑ *i*P	**Pn**	**03 46 36.1**	**0.0**

SJA 04 03:45:29.3±3.1**, 28°.89S×71°.41W, h12km**±69km**, ML3.5, MW3.3, Near coast of central Chile**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
LCO	**Las Campanas**	**0.64**	**101**	*e*P	Pg	03 45 41.9	+0.2
LCO				*e*S	Sb	03 45 51.6	+0.1
AGUA	**GUANDACOL**	**2.62**	**104**	*e*P	Pb	03 46 15.2	-1.1
VCA	**Vinchina**	**2.82**	**88**	*e*P	Pb	03 46 18.2	-1.5
AMOG	**MOGNA**	**3.26**	**130**	*e*P	Pb	03 46 25.4	-1.8
RTLL	**Cerro Villicun**	**3.52**	**134**	*e*P	Pn	03 46 27.6	+3.6
AUSP	**Uspallata**	**3.76**	**153**	*e*P	Pn	03 46 30.7	+3.3
AVFE	**Valle Fertil**	**3.87**	**118**	*e*P	Pn	03 46 30.7	+2.0
AVFE				IAML		03 47 26.2	
	comp=Z,101nm,0.5s						
ACLC	**CERRO LA CRUZ**	**3.94**	**99**	*e*P	Pn	03 46 31.3	+1.5
ACLC				IAML		03 47 32.6	
	comp=Z,84nm,0.3s						
ASAL	**Salagasta**	**4.31**	**150**	*e*P	Pn	03 46 38.7	+3.9
AMAR	**Marayes**	**4.37**	**127**	*e*P	Pn	03 46 35.7	+0.2
ARCO	**CERRO ARCO**	**4.48**	**152**	IAML		03 48 05.7	
	comp=Z,37nm,0.6s						
ACAN	**Cantantal**	**4.97**	**134**	*e*P	Pn	03 46 46.0	+2.2
AHML	**Horco Molle**	**5.77**	**70**	IAML		03 48 35.5	
	comp=Z,8.6nm,0.6s						

*ISCJB **04** 03:45:45.8±0.3, 6°.82N±0°.03×73°.07W±0°.04, h157km±3km, mb3.4/4, Error ellipse: s-maj=7.1km s-min=3.5km az=39.5*
*FUNV **04** 03:45:47.5, 6°.83N×73°.11W, h168km, MW3.6*
*IDC **04** 03:45:47.6±4.2, 6°.70N×73°.13W, h162km±35km, mb3.2/4,*

mb1 3.5/5, mb1mx3.2/22, mbtmp3.7/5, Error ellipse: s-maj=75.1km s-min=37.4km az=87.0

*RSNC **04** 03:45:48.7±0.9, 6°78N×73°13W, h140km±5km, ML3.5*

ISC 04 03:45:46.7±0.8, **6°82N**±0°04×**73°09W**±0°05, **h154**km±6km, **n43**, σ**1s09**/59, **mb3.5**/4, **1C-9D, Northern Colombia**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BTLC	**Betulia, Santa**	**0.20**	**299**	*i* P	**Pn**	**03 46 07.9**	**+0.2**
BARC	**Barichara**	**0.24**	**203**	*i* P	**Pn**	**03 46 07.8**	**-0.1**
BARC				*e*S	**Sn**	**03 46 21.7**	**-2.3**
BARC				*i*		03 46 23.7	
	comp=Z,955nm,0.2s						
GIRC	**Giron, Santand**	**0.28**	**338**	*i* P	**Pn**	**03 46 07.9**	**+0.1**
GIRC				*e*S	**Sn**	**03 46 22.5**	**-1.5**
PAMC	**Pamplona, Colo**	**0.65**	**37**	*e*P	**Pn**	**03 46 10.7**	**+0.8**
PAMC				*e*S	**Sn**	**03 46 27.3**	**-0.3**
PAMC				*i*		03 46 29.8	
	comp=Z,299nm,0.4s						
BRRC	**Barranca, Sant**	**0.68**	**295**⇑	*i*P	**Pn**	**03 46 09.7**	**+0.2**
BRRC				*e*S	**Sn**	**03 46 26.1**	**-0.8**
BRRC				*i*		03 46 31.1	
	comp=Z,1μm,0.1s						
GRMC	**Gramalote, San**	**0.94**	**17**	*i* P	**Pn**	**03 46 13.8**	**+2.3**
GRMC				*e*S	**Sn**	**03 46 32.6**	**+2.0**
GRMC				*i*		03 46 34.4	
	comp=Z,520nm,0.3s						
CAPV	**Capacho**	**1.29**	**36**⇓	*i*P	**Pn**	**03 46 15.9**	**+1.2**
CAPV				*e*S	**Sn**	**03 46 37.0**	**+0.8**
OCAC	**Ocana**	**1.43**	**351**	*i* P	**Pn**	**03 46 16.5**	**+0.5**
OCAC				*e*S	**Sn**	**03 46 37.9**	**-0.6**
OCAC				*i*		03 46 43.8	
	comp=Z,520nm,0.3s						
YOPC	**Yopal, Colombi**	**1.60**	**155**	*i* P	**Pn**	**03 46 18.5**	**+0.8**
YOPC				*e*S	**Sn**	**03 46 40.6**	**-0.9**
YOPC				*i*		03 46 42.9	
	comp=Z,238nm,0.3s						
NORC	**Norcasia**	**2.17**	**235**	*e*P	**Pn**	**03 46 23.9**	**-0.1**
NORC				*e*S	**Sn**	**03 46 51.2**	**-1.6**
CHIC	**Chingaza**	**2.27**	**196**	*e*P	**Pn**	**03 46 25.9**	**+0.3**
CHIC				*e*S	**Sn**	**03 46 54.6**	**-1.0**
CHIC				*i*		03 46 58.6	
	comp=Z,170nm,0.3s						
ROSC	**El Rosal**	**2.32**	**212**	P	**Pn**	**03 46 27.9**	**+1.7**
	comp=Z,31nm,0.3s,baz=102,slow=22,SNR=64						
ROSC				S	**Sn**	**03 46 55.9**	**-0.7**
	comp=Z,36nm,0.3s,baz=39,slow=21,SNR=7.6						
HELC	**Santa Helena**	**2.50**	**256**	*e*P	**Pn**	**03 46 27.9**	**-0.5**
HELC				*e*S	**Sn**	**03 46 59.5**	**-1.0**
HELC				*i*		03 47 07.3	
	comp=Z,211nm,0.6s						
VIGV	**El Vigia**	**2.64**	**40**⇓	*e*P	**Pn**	**03 46 30.4**	**+0.7**
VIGV				*e*S	**Sn**	**03 47 02.1**	**-0.9**
SOCV	**Socops**	**2.65**	**57**⇓	*e*P	**Pn**	**03 46 30.4**	**+0.5**
SOCV				*e*S	**Sn**	**03 47 02.2**	**-1.0**
VILC	**Villavicencio,**	**2.75**	**193**	*e*P	**Pn**	**03 46 31.4**	**0.0**
VILC				*e*S	**Sn**	**03 47 05.1**	**-0.7**
VILC				*i*		03 47 09.7	
	comp=Z,145nm,0.3s						
GUYC	**Guyana, Colomb**	**2.78**	**235**	*e*P	**Pn**	**03 46 32.6**	**+0.6**
GUYC				*i*		03 47 13.3	
	comp=Z,332nm,0.3s						
DBBC	**Dabeiba**	**3.10**	**274**	*e*P	**Pn**	**03 46 36.3**	**+0.7**
TOLC	**Tolima**	**3.14**	**225**	*e*P	**Pn**	**03 46 37.0**	**+0.7**
SDV	**Santo Domingo**	**3.18**	**50**	*e*P	**Pn**	**03 46 37.6**	**+0.9**
SDV				*i*		03 47 19.9	
	comp=Z,68nm,0.7s						
PRAC	**Prado**	**3.57**	**210**	*e*P	**Pn**	**03 46 41.9**	**+0.4**
PRAC				*e*S	**Sn**	**03 47 24.0**	**-0.1**
ELOV	**Elorza**	**3.58**	**87**⇓	*e*P	**Pn**	**03 46 42.2**	**+0.5**
VIRV	**Villa del Rosa**	**3.72**	**10**⇓	*e*P	**Pn**	**03 46 42.9**	**-0.6**
VIRV				*e*S	**Sn**	**03 47 24.1**	**-3.5**
QARV	**Quebrada Arrib**	**4.21**	**37**⇓	*e*P	**Pn**	**03 46 50.4**	**+0.5**
SANV	**Sanarito**	**4.41**	**53**	*e*P	**Pn**	**03 46 52.2**	**-0.3**
CURV	**Curarigua**	**4.43**	**44**	*e*P	**Pn**	**03 46 52.7**	**-0.1**
DABV	**Dabajuro**	**4.74**	**31**	*e*P	**Pn**	**03 46 57.1**	**+0.3**
TEPV	**Terepaima**	**4.96**	**51**⇓	*e*P	**Pn**	**03 46 59.5**	**-0.3**
SIQV	**Siquisique**	**5.00**	**40**⇓	*e*P	**Pn**	**03 46 59.1**	**-1.1**
BAUV	**El Baul**	**5.43**	**67**	*e*P	**Pn**	**03 47 04.3**	**-1.5**
MAPV	**Macapo**	**5.47**	**57**⇓	*e*P	**Pn**	**03 47 06.0**	**-0.4**
POPC	**Popayan, Colom**	**5.55**	**220**	*e*P	**Pn**	**03 47 08.2**	**+0.5**
POPC				*i*		03 47 13.2	
	comp=Z,29nm,0.3s						
MONV	**Montecano**	**5.96**	**31**	*e*P	**Pn**	**03 47 12.2**	**-0.7**
TURV	**Turiamo**	**6.32**	**55**	*e*P	**Pn**	**03 47 16.1**	**-1.6**
MERV	**Las Mercedes**	**7.15**	**70**	*e*P	**Pn**	**03 47 27.2**	**-1.5**
BIRV	**Birongo**	**7.66**	**61**	*e*P	**Pn**	**03 47 34.0**	**-1.5**
CUPV	**Cœpira**	**7.91**	**65**	*e*P	**Pn**	**03 47 37.2**	**-1.7**
TXAR	**Lajitas Array**	**36.49**	**312**	P	**P**	**03 52 38.3**	**+1.0**
	comp=Z,0.3nm,0.5s,baz=126,slow=9.2,SNR=4.6						
ULM	**Lac du Bonnet**	**47.30**	**340**	P	**P**	**03 54 04.2**	**-0.4**
	comp=Z,1.0nm,0.4s,baz=133,slow=6.9,SNR=2.6						
PDAR	**Pinedale Array**	**48.10**	**324**	P	**P**	**03 54 11.9**	**+0.8**
	comp=Z,0.1nm,0.4s,baz=118,slow=9.3,SNR=3.2						
YKA	**Yellowknife Ar**	**63.28**	**340**	P	**P**	**03 55 59.0**	**+0.4**
	comp=Z,0.7nm,0.6s,baz=133,slow=6.6,SNR=16						
TORD	**Torodi Ar. Bea**	**73.71**	**78**	pP	pP	03 57 45.9	+4.0
	comp=Z,0.6nm,0.8s,baz=266,slow=5.3,SNR=2.6						
WRA	**Warramunga Arr**	**150.36**	**241**	PKPbc	**PKPbc**	**04 05 20.3**	**-0.5**
	comp=Z,0.2nm,0.3s,baz=104,slow=3.4,SNR=2.2						

IDC 04 03:45:56.0±11.0, **36°45N**×**141°90E, h0**km, **mb3.7**/2, **mb1 3.6**/3, **mb1mx3.3**/43, **mbtmp3.6**/3, **ML3.3**/1, **MS2.5**/1, **Ms1 2.5**/1, **ms1mx2.0**/47, **Error ellipse: s-maj=187.0km s-min=76.3km az=141.0, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MJAR	**Matsushiro Arr**	**2.98**	**273**	Pn	Pn	03 46 44.3	-0.2
	4.4nm,0.3s,baz=94,slow=12,SNR=17						
MAT	**Matsushiro**	**2.98**	**273**	P	Pn	03 46 47.1	+2.6
MAT				*e*S	Sn	03 47 23.2	+2.3
MAT	**Matsushiro**	**2.98**	**273**	P	Sb	03 47 26.0	-0.8
MAT				S	Sg	03 47 32.8	+1.2
KLR	**Kul'dur**	**14.77**	**333**	LR	LR	03 55 00.3	
	comp=Z,17nm,18.1s,baz=39,slow=37						
SONM	**Songino Array**	**28.44**	**305**	P	P	03 51 51.6	-0.9
	1.0nm,0.7s,baz=105,slow=9.1,SNR=8.4						
MKAR	**Makanchi Array**	**44.76**	**303**	P	P	03 54 12.0	+0.9
	0.6nm,0.7s,baz=86,slow=9.4,SNR=2.9						

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*IDC **04** 03:45:53.7±0.8, 4°40S×101°29E, h0km, mb4.4/19, mb1 4.5/20, mb1mx4.3/47, mbtmp4.4/20, ML4.7/1, MS3.7/9, Ms1 3.7/9, ms1mx3.2/51, Error ellipse: s-maj=29.0km s-min=13.5km az=52.0*

*ISCJB **04** 03:45:55.3±0.5, 4°53S±0°06×101°13E±0°07, h29km, mb4.5/35, MS3.7/11, Error ellipse: s-maj=12.1km s-min=5.1km az=135.8*

*BJI **04** 03:45:56.0, 4°20S×100°60E, h10km, mb4.8/13, mB4.8/6, Ms4.6/5, Ms7 4.4/2*

*NEIC **04** 03:45:56.2±3.0, 4°47S×101°23E, h18km±17km, mb4.8/6, Error ellipse: s-maj=16.6km s-min=5.3km az=48.0*

*DJA **04** 03:45:57.1±0.8, 5°S±11°×10°1E±°, h69km±25km, M4.7/10, mb4.8/4, mB4.9/3, MLv4.8/10, Mw(mB)4.2/3*

ISC 04 03:45:57.5±0.6, **4°47S**±0°08×**101°23E**±0°07, **h29**km, **n74**, σ**1s35**/67, **mb4.5**/35, **MS3.7**/11, **Southern Sumatera**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MASI	**Maura Aman, Be**	**1.66**	**37**	P	**Pb**	**03 46 25.9**	**-1.5**
MNAI	**Manna**	**1.72**	**86**	P	**Pb**	**03 46 26.7**	**-1.8**
MNAI	**Manna**	**1.72**	**86**	*e*Pn	**Pb**	**03 46 26.4**	**-2.1**
MNAI				*e*S	**Sb**	**03 46 53.0**	**+3.3**
PPSI	**Pulau Pagai**	**2.09**	**324**	P	**Pn**	**03 46 30.7**	**+0.1**
LHSI	**Lahat**	**2.37**	**74**	P	**Pb**	**03 46 37.0**	**-2.5**
LWLI	**Liwa**	**2.87**	**101**	P	**Pn**	**03 46 42.4**	**+1.0**
KASI	**Kota Agung**	**3.42**	**108**	P	**Pn**	**03 46 49.4**	**+0.6**
PDSI	**Padang**	**3.62**	**348**	P	**Pn**	**03 46 51.2**	**-0.5**
PPI	**Padang Panjang**	**4.07**	**348**	P	**Pn**	**03 46 58.4**	**+0.5**
CGJI	**Cibinong**	**4.92**	**116**	P	**Pn**	**03 47 08.4**	**-1.2**
PBSI	**Pulau Batu**	**5.29**	**326**	P	**Pn**	**03 47 13.9**	**-0.7**
	188nm,0.7s,2.2nm						
LEM	**Lembang**	**6.77**	**111**	Pn	Pn	03 47 42.9	+7.8
	9.5nm,0.3s,baz=350,slow=21,SNR=3.5						
GSI	**Gunungsitoli**	**6.80**	**327**	P	**Pn**	**03 47 35.0**	**-0.4**
	86nm,0.9s,2μm0.5nm						
GSI	**Gunungsitoli**	**6.80**	**327**	*e*Pn	**Pn**	**03 47 34.6**	**-0.8**
	54nm,0.5s						
GSI				*e*S	**Sn**	**03 48 46.7**	**-5.3**
CISI	**Cisompet, Garu**	**7.23**	**115**	*e*Pn	**Pn**	**03 47 40.4**	**-0.9**
	126nm,0.6s						
CISI				*e*S	**Sn**	**03 48 59.7**	**-2.8**
PSI	**Prapat**	**7.58**	**342**	Pn	**Pn**	**03 47 44.7**	**-1.6**
	13nm,0.3s,baz=345,slow=12,SNR=32						
KCSI	**Kotacane, Aceh**	**8.66**	**336**	P	**Pn**	**03 47 59.7**	**-1.2**
IPM	**Ipoh**	**8.89**	**359**	*e*Pn	**Pn**	**03 48 05.5**	**+1.4**
	18nm,0.9s						
KULM	**Kulim**	**9.71**	**357**	*e*Pn	**Pn**	**03 48 15.8**	**+0.4**
	11nm,0.8s						
SKLT	**Songkhla**	**11.58**	**357**	P	**Pn**	**03 48 41.2**	**+0.3**
	24nm,0.8s						
CHBT	**CHBT**	**17.14**	**4**	P	**P**	**03 49 57.3**	**+0.8**
	26nm,1.0s						
UTHA	**Uthaitani**	**19.98**	**355**	P	**Pn**	**03 50 33.3**	**+3.8**
LOEI	**Loei**	**21.84**	**0**	P	**P**	**03 50 47.4**	**-0.4**
	14nm,0.8s,383nm						
UTTA	**Uttaradit**	**22.08**	**358**	P	**P**	**03 50 50.8**	**+0.4**
	2.8nm,0.9s						
NONG	**Nongkai**	**22.47**	**5**	P	**P**	**03 50 53.4**	**-1.2**
	24nm,0.9s						
MHMT	**Maesarieng**	**22.74**	**352**	P	**P**	**03 50 58.9**	**+1.5**
	16nm,1.0s						
CMAR	**Chiang Mai Arr**	**22.89**	**354**	P	**P**	**03 50 57.6**	**-1.4**
	13nm,0.7s,baz=185,slow=9.2,SNR=39						
CMAR				LR	LR	04 01 41.5	
	comp=Z,180nm,19.9s,baz=186,slow=42						
LAMP	**Lampang**	**22.90**	**356**	P	**P**	**03 51 00.7**	**+1.6**
	7.3nm,0.9s						
CMMT	**Chiang Mai**	**23.25**	**355**	P	**P**	**03 51 02.9**	**+0.3**
	14nm,1.0s						
CHTO	**Chiang Mai**	**23.25**	**354**	P	**P**	**03 51 02.9**	**+0.3**
	60nm,1.1s						
CHTO	**Chiang Mai**	**23.25**	**354**	*e*P	**P**	**03 51 02.7**	**0.0**
	13nm,0.9s						
PALK	**Pallekele**	**23.58**	**300**	LR	LR	03 59 58.9	
	comp=Z,146nm,19.1s,baz=116,slow=36						
CRAI	**Chiangrai**	**24.56**	**358**	P	**P**	**03 51 14.8**	**-0.2**
	8.2nm,1.0s						
FITZ	**Fitzroy Crossi**	**27.45**	**122**	P	**P**	**03 51 41.3**	**+0.1**
	3.9nm,0.8s,baz=288,slow=7.1,SNR=5.7						
FITZ				LR	LR	04 03 59.5	
	comp=Z,98nm,20.1s,baz=312,slow=40						
H08S2	**Diego Garcia H**	**28.75**	**262**	T	T	04 21 46.2	
	baz=85,slow=75,SNR=1664						
H08S3	**Diego Garcia H**	**28.76**	**262**	T	T	04 21 46.8	
	baz=85,slow=75,SNR=1718						
H08S1	**Diego Carcia H**	**28.77**	**262**	T	T	04 21 48.6	
	baz=85,slow=75,SNR=1126						
H01W3	**Cape Leeuwin H**	**32.54**	**160**	T	T	04 26 39.4	
	baz=337,slow=76,SNR=55						
H01W2	**Cape Leeuwin H**	**32.55**	**160**	T	T	04 26 40.8	
	baz=337,slow=76,SNR=60						
H01W1	**Cape Leeuwin H**	**32.55**	**160**	T	T	04 26 42.0	
	baz=337,slow=76,SNR=37						
WRA	**Warramunga Arr**	**35.71**	**118**	P	**P**	**03 52 53.5**	**-0.4**
	3.0nm,0.7s,baz=304,slow=9.1,SNR=16						
WRAB	**Tennant Creek**	**35.72**	**118**	*e*P	**P**	**03 52 54.3**	**+0.3**
	11nm,0.8s						
ASAR	**Alice Springs**	**36.83**	**124**	P	**P**	**03 53 04.0**	**+0.6**
	0.8nm,0.5s,baz=291,slow=7.2,SNR=7.0						
ASAR				PcP	**PcP**	**03 55 26.1**	**+1.0**
	0.7nm,0.6s,baz=293,slow=2.6,SNR=3.8						
ASAR				LR	LR	04 09 54.8	
	comp=Z,64nm,21.1s,baz=298,slow=39						
XAN	**Xi'an**	**38.98**	**10**	P	**P**	**03 53 20.9**	**-0.5**
XAN				pmax	pmax		
	comp=Z,16nm,1.0s						
XAN				LR	LR		
	comp=N,140nm,14.1s						
XAN				LR	LR		
	comp=E,150nm,13.5s						
XAN				LR	LR		
	comp=Z,160nm,15.8s						
GTA	**Gaotai**	**43.68**	**358**	*e*P	**P**	**03 54 01.0**	**+1.0**
GTA				pP	pP	03 54 06.0	-2.7
GTA				sP	sP	03 54 09.4	-2.8
GTA				pmax	pmax		
	comp=Z,8.0nm,0.9s						
GTA				pmax	pmax		
	comp=Z,71nm,4.5s						
GTA				LR	LR		
	comp=N,100nm,16.2s						
GTA				LR	LR		
	comp=E,180nm,18.1s						
STKA	**Stephens Creek**	**46.61**	**131**	P	**P**	**03 54 23.4**	**+0.1**
	2.2nm,0.8s,baz=330,slow=3.3,SNR=5.5						
STKA				LR	LR	04 16 03.9	
	comp=Z,123nm,18.5s,baz=213,slow=39						
KSAR	**Wonju Array Be**	**48.52**	**28**	P	**P**	**03 54 37.4**	**-0.6**
KSRS	**Korea Array**	**48.55**	**28**	P	**P**	**03 54 37.4**	**-0.8**
	6.4nm,0.8s,baz=219,slow=8.1,SNR=17						
JCJ	**Chichijima**	**50.49**	**49**	LR	LR	04 16 19.5	
	comp=Z,177nm,20.8s,baz=184,slow=36						
SONM	**Songino Array**	**52.28**	**4**	P	**P**	**03 55 07.4**	**+1.0**
	15nm,0.8s,baz=184,slow=9.4,SNR=120						
ULN	**Ulaanbaatar**	**52.37**	**5**	*e*P	**P**	**03 55 08.0**	**+1.0**
	12nm,1.0s						
EKS2	**Erkin-Say**	**53.11**	**335**	*e*P	**P**	**03 55 13.7**	**+1.0**
	9.2nm,0.8s						
MJAR	**Matsushiro Arr**	**53.45**	**37**	P	**P**	**03 55 14.3**	**-0.8**
	6.0nm,0.9s,baz=210,slow=7.6,SNR=11						
MKAR	**Makanchi Array**	**53.73**	**344**	P	**P**	**03 55 17.4**	**+0.5**
	6.8nm,0.8s,baz=149,slow=8.5,SNR=60						
USRK	**Ussuriysk Ar.**	**55.77**	**26**	P	**P**	**03 55 32.1**	**+0.3**
	16nm,0.8s,baz=222,slow=5.9,SNR=38						
GEYT	**Alibeck**	**58.12**	**320**	P	**P**	**03 55 49.0**	**+0.4**
	3.3nm,0.4s,baz=106,slow=4.7,SNR=3.5						
KURK	**Kurchatov**	**58.31**	**343**	*e*P	**P**	**03 55 50.0**	**+0.4**
	20nm,0.9s						
ZALV	**Zalesovo Beam**	**59.81**	**349**	P	**P**	**03 56 00.1**	**+0.1**
	8.3nm,0.8s,baz=187,slow=5.1,SNR=31						
ZALV				LR	LR	04 24 28.7	
	comp=Z,50nm,18.8s,baz=64,slow=39						
ATD	**Arta Tunnel**	**60.21**	**286**	LR	LR	04 19 19.6	
	comp=Z,25nm,19.0s,baz=95,slow=33						
ABKAR	**Akbulak array**	**64.38**	**331**	*e*P	**P**	**03 56 30.7**	**-0.1**
	4.7nm,0.6s						
MAW	**Mawson**	**68.22**	**195**	LR	LR	04 20 49.5	
	comp=Z,142nm,20.2s,baz=64,slow=31						
KBZ	**Khabaz**	**70.97**	**319**	P	**P**	**03 57 13.4**	**+1.0**
	3.5nm,0.9s,baz=100,slow=9.8,SNR=3.5						
NRIK	**Noril'sk**	**74.25**	**355**	P	**P**	**03 57 31.3**	**-0.1**
	4.0nm,0.8s,baz=135,slow=4.9,SNR=5.1						
MA2	**Magadan**	**74.77**	**24**	P	**P**	**03 57 35.1**	**+0.5**
	2.9nm,0.3s,baz=174,slow=14,SNR=4.4						
BRTR	**Keskin Array B**	**75.89**	**313**	P	**P**	**03 57 41.4**	**-0.4**
	0.5nm,0.6s,baz=138,slow=8.6,SNR=4.8						
SEY	**Seymchan**	**77.45**	**21**	P	**P**	**03 57 49.7**	**-0.1**
	2.2nm,0.8s,baz=122,slow=3.7,SNR=6.6						
TIXI	**Tiksi**	**78.09**	**9**	*e*P	**P**	**03 57 52.1**	**-1.1**
	2.2nm,0.4s						
FINES	**FINESS Array B**	**86.86**	**332**	P	**P**	**03 58 39.6**	**+0.5**
	3.2nm,1.0s,baz=159,slow=28,SNR=3.7						
GERES	**GERESS Array B**	**91.71**	**319**	P	**P**	**03 59 02.9**	**+0.5**
	0.4nm,0.8s,baz=50,slow=1.5,SNR=3.3						
NVAR	**Mina Array Bea**	**130.68**	**41**	PKP	**PKPdf**	**04 05 08.8**	**+2.3**
	0.2nm,0.3s,baz=266,slow=1.2,SNR=2.5						
WCI	**Wyandotte Cave**	**145.70**	**11**	*e*PKPdf	**PKPab**	**04 05 34.1**	**-0.3**
TXAR	**Lajitas Array**	**145.83**	**41**	PKPbc	**PKPab**	**04 05 36.0**	**+0.8**
	4.9nm,0.8s,baz=274,slow=1.2,SNR=46						
JCT	**Junction City**	**147.40**	**35**	*e*PKPbc	**PKPab**	**04 05 39.9**	**-1.3**
TZTN	**Tazewell**	**147.78**	**7**	*e*PKPbc	**PKPbc**	**04 05 39.3**	**-0.8**

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*DDA **04** 03:46:18.7, 36°67N×36°68E, h21km, Md3.4*

*NSSC **04** 03:46:18.5±0.7, 36°70N×36°65E, h2km±1km, MD1.2, ML2.8*

*ISK **04** 03:46:18.5, 36°69N×36°62E, h5km, MD3.2*

*ISCJB **04** 03:46:19.1±0.4, 36°67N±0°02×36°67E±0°02, h3km±3km, Error ellipse: s-maj=3.6km s-min=2.6km az=33.8*

*CSEM **04** 03:46:19.5±0.1, 36°66N×36°66E, h2km, ML2.8, Error ellipse: s-maj=3.9km s-min=2.9km az=132.0*

ISC 04 03:46:18.4±0.9, **36°68N**±0°02×**36°73E**±0°02, **h4**km±7km, **n67**, σ**0s84**/99, **Jordan-Syria region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DRWC	**Darouich**	**0.07**	**221**	*e*P	**Pg**	**03 46 20.1**	**+0.1**
DRWC				*e*S	**Sg**	**03 46 21.5**	**+0.3**
DRWC				AML	AML	03 46 22.2	
	comp=N,133μm,0.4s						
DRWC				AML	AML	03 46 22.5	
	comp=E,10μm,0.4s						
DRWC	**Darouich**	**0.07**	**221**	*e*P	**Pg**	**03 46 20.1**	**+0.1**
DRWC				*e*S	**Sg**	**03 46 21.5**	**+0.3**
	comp=E,10μm,0.4s						
KUZU	**Kuzuini**	**0.29**	**71**	*i* P	**Pb**	**03 46 25.7**	**-0.7**
KUZU				*i* S	**Sb**	**03 46 31.1**	**-0.6**
KUZU	**Kuzuini**	**0.29**	**71**	P	**Pb**	**03 46 25.7**	**-0.7**
KUZU				S	**Sb**	**03 46 31.1**	**-0.6**
KAMA	**Osmaniye**	**0.51**	**355**	*i* P	**Pg**	**03 46 28.7**	**+0.5**
KAMA				*i* S	**Sg**	**03 46 36.0**	**+1.1**
TAHT	**Tahtakopru-Hat**	**0.53**	**236**	*e*PG	**Pg**	**03 46 28.7**	**+0.1**
TAHT				*e*SG	**Sg**	**03 46 36.5**	**+0.9**
TAHT	**Tahtakopru-Hat**	**0.53**	**236**	*e*Pg	**Pg**	**03 46 28.7**	**+0.1**
TAHT				*e*Sg	**Sg**	**03 46 36.5**	**+0.9**
GAZ	**Gaziantep**	**0.63**	**38**	*e*PG	**Pb**	**03 46 31.9**	**-0.2**
BTCH	**Batrach**	**0.68**	**199**	*e*P	**Pg**	**03 46 32.0**	**+0.6**
BTCH				*e*S	**Sb**	**03 46 41.7**	**-0.9**
BTCH				AML	AML	03 46 49.5	
	comp=E,715nm,0.7s						
BTCH				AML	AML	03 46 50.1	
	comp=N,436nm,0.3s						
BTCH	**Batrach**	**0.68**	**199**	*e*P	**Pg**	**03 46 32.0**	**+0.6**
BTCH				*e*S	**Sb**	**03 46 42.2**	**-0.4**
	comp=N,436nm,0.3s						
AYKD	**Aykdinkavak**	**0.74**	**5**	*i* P	**Pg**	**03 46 33.2**	**+0.6**
AYKD				*i* S	**Sb**	**03 46 44.4**	**-0.1**
YAYL	**Yayladag**	**0.81**	**218**	*i* P	**Pg**	**03 46 34.0**	**-0.1**
YAYL				*i* S	**Sb**	**03 46 46.0**	**-0.7**
YAYL	**Yayladag**	**0.81**	**218**	P	**Pg**	**03 46 34.0**	**-0.1**
YAYL				S	**Sb**	**03 46 46.0**	**-0.7**
KMRS	**Kahramanmaras**	**0.84**	**9**	*e*PG	**Pb**	**03 46 35.4**	**-0.2**
KMRS	**Kahramanmaras**	**0.84**	**9**	*e*Pg	**Pb**	**03 46 35.4**	**-0.2**
CEYT	**Ceyhan**	**0.85**	**293**	*e*PG	**Pg**	**03 46 34.4**	**-0.4**
CEYT	**Ceyhan**	**0.85**	**293**	*e*Pg	**Pg**	**03 46 34.4**	**-0.4**
GZT	**Gaziantep**	**0.95**	**44**	*i* P	**Pn**	**03 46 38.5**	**-0.3**
ARNB	**Al Arnab**	**1.02**	**217**	*e*P	**Pg**	**03 46 38.0**	**+0.1**
ARNB				*e*S	**Sg**	**03 46 51.5**	**+0.4**
ARNB				AML	AML	03 46 56.4	
	comp=N,150nm,0.4s						
ARNB				AML	AML	03 46 57.3	
	comp=E,308nm,0.7s						
ARNB	**Al Arnab**	**1.02**	**217**	*e*P	**Pb**	**03 46 38.5**	**-0.2**
ARNB				*e*S	**Sg**	**03 46 51.6**	**+0.4**
	comp=E,308nm,0.7s						
KOZT	**Kozan**	**1.08**	**318**	*e*PG	**Pg**	**03 46 39.4**	**+0.3**
KOZT	**Kozan**	**1.08**	**318**	*e*Pg	**Pg**	**03 46 39.4**	**+0.3**
KRTS	**Karatas**	**1.09**	**265**	*e*PG	**Pg**	**03 46 39.2**	**-0.2**
KRTS	**Karatas**	**1.09**	**265**	*e*Pg	**Pg**	**03 46 39.2**	**-0.2**
SLNF	**Slenfeh**	**1.16**	**201**	*e*P	**Pg**	**03 46 40.0**	**-0.6**
SLNF				*e*S	**Sb**	**03 46 56.3**	**-0.3**
SLNF				AML	AML	03 46 58.4	
	comp=N,344nm,0.4s						
SLNF				AML	AML	03 47 00.3	
	comp=E,116nm,0.5s						
SLNF	**Slenfeh**	**1.16**	**201**	*e*P	**Pg**	**03 46 39.7**	**-0.9**
SLNF				*e*S	**Sg**	**03 46 55.7**	**+0.1**
	comp=E,116nm,0.5s						
KARA	**Karaisali**	**1.46**	**294**	*e*PN	**Pn**	**03 46 45.2**	**-0.5**
KARA	**Karaisali**	**1.46**	**294**	*e*Pn	**Pn**	**03 46 45.2**	**-0.5**
SURC	**SANLIURFA_SURC**	**1.53**	**82**	*i* P	**Pg**	**03 46 47.7**	**0.0**
SURC				*i* S	**Sg**	**03 47 08.3**	**+0.8**
SURC	**SANLIURFA_SURC**	**1.53**	**82**	P	**Pg**	**03 46 47.7**	**0.0**
SURC				S	**Sg**	**03 47 08.3**	**+0.8**
DED	**Mersin**	**1.57**	**281**	*i* P	**Pn**	**03 46 46.3**	**-1.0**
DED				*i* S	**Sn**	**03 47 06.6**	**-1.5**
GULE	**Gulek**	**1.68**	**292**	*i* S	**Sb**	**03 47 11.5**	**0.0**
GULE				*i* S	**Sg**	**03 47 11.8**	**-0.6**
GULE	**Gulek**	**1.68**	**292**	S	**Sb**	**03 47 11.5**	**0.0**
MERS	**Mersin**	**1.78**	**277**	*e*PN	**Pn**	**03 46 50.6**	**+0.4**
MERS	**Mersin**	**1.78**	**277**	*e*Pn	**Pn**	**03 46 50.6**	**+0.4**
AKCD	**Akcadag**	**1.87**	**30**	*i* P	**Pn**	**03 46 52.0**	**+0.5**
AKCD				*i* S	**Sg**	**03 47 18.6**	**-0.1**
AKCD	**Akcadag**	**1.87**	**30**	P	**Pn**	**03 46 52.0**	**+0.5**
AKCD				S	**Sg**	**03 47 18.5**	**-0.1**
DARE	**Darende-Malaty**	**1.98**	**17**	*e*PN	**Pb**	**03 46 55.2**	**0.0**
DARE	**Darende-Malaty**	**1.98**	**17**	*e*Pn	**Pb**	**03 46 55.2**	**0.0**
CUGUR	**Gurin_S˜VAS**	**2.09**	**12**	*i* P	**Pg**	**03 46 58.0**	**-0.5**
CUGUR	**Gurin_S˜VAS**	**2.09**	**12**	P	**Pg**	**03 46 58.0**	**-0.5**
KIZK	**Mersin**	**2.09**	**265**	*i* P	**Pn**	**03 46 55.1**	**+0.8**
KIZK				*i* S	**Sn**	**03 47 20.5**	**-0.3**
KIZK	**Mersin**	**2.09**	**265**	P	**Pn**	**03 46 55.1**	**+0.8**
KIZK				S	**Sn**	**03 47 20.5**	**-0.3**
KERG	**Konya-Eregli**	**2.21**	**290**	*i* P	**Pn**	**03 46 56.8**	**+0.7**
KERG				*i* S	**Sn**	**03 47 25.4**	**+1.4**
KERG	**Konya-Eregli**	**2.21**	**290**	P	**Pn**	**03 46 56.8**	**+0.7**
KERG				S	**Sn**	**03 47 25.4**	**+1.4**
NIG	**Nigde**	**2.21**	**311**	*e*PN	**Pn**	**03 46 56.9**	**+0.7**
NIG	**Nigde**	**2.21**	**311**	*e*Pn	**Pn**	**03 46 56.9**	**+0.7**
BNN	**Bunyan**	**2.28**	**342**	*e*PN	**Pn**	**03 46 57.9**	**+0.8**
BNN	**Bunyan**	**2.28**	**342**	*e*Pn	**Pn**	**03 46 57.9**	**+0.8**
EREN	**Erenkoy**	**2.37**	**242**	*e*PN	**Pn**	**03 46 59.2**	**+1.1**
EREN	**Erenkoy**	**2.37**	**242**	*e*Pn	**Pn**	**03 46 59.2**	**+1.1**
IKL	**Isikli**	**2.49**	**261**	*e*PN	**Pn**	**03 47 00.0**	**+0.2**
IKL	**Isikli**	**2.49**	**261**	*e*Pn	**Pn**	**03 47 00.0**	**+0.2**
ROOS	**tl_alroos**	**2.54**	**169**	*e*P	**Pn**	**03 47 01.8**	**+1.1**
ROOS				*e*S	**Sn**	**03 47 32.7**	**+0.6**
ROOS				AML	AML	03 47 47.9	
	comp=E,142nm,0.5s						
ROOS				AML	AML	03 47 53.9	
	comp=N,116nm,0.7s						
ROOS	**tl_alroos**	**2.54**	**169**	*e*P	**Pn**	**03 47 01.7**	**+1.1**
ROOS				*e*S	**Sn**	**03 47 32.7**	**+0.6**
	comp=N,116nm,0.7s						
CUALT	**Altinyayla-SIV**	**2.59**	**1**	*i* P	**Pn**	**03 47 02.7**	**+1.4**
CUALT	**Altinyayla-SIV**	**2.59**	**1**	P	**Pn**	**03 47 02.7**	**+1.4**
MARH	**Ras Al Marh**	**2.65**	**184**	*e*P	**Pn**	**03 47 03.2**	**+0.9**
MARH				*e*S	**Sn**	**03 47 35.3**	**+0.2**
MARH				AML	AML	03 47 50.0	
	comp=N,24nm,0.3s						
MARH				AML	AML	03 47 51.7	
	comp=E,42nm,0.6s						
MARH	**Ras Al Marh**	**2.65**	**184**	*e*P	**Pn**	**03 47 03.2**	**+0.9**
MARH				*e*S	**Sn**	**03 47 35.3**	**+0.2**
	comp=E,48nm,0.3s						
DYBB	**Diyarbakir**	**3.00**	**64**	*e*PN	**Pb**	**03 47 10.9**	**-1.7**
DIY	**Diyarbakir**	**3.04**	**65**	*e*Pn	**Pb**	**03 47 10.9**	**-2.4**
PTK	**Pertek**	**3.06**	**43**	*e*PN	**Pb**	**03 47 11.3**	**-2.2**
PTK	**Pertek**	**3.06**	**43**	*e*Pn	**Pb**	**03 47 11.3**	**-2.2**
MAZI	**Mazidag**	**3.07**	**74**	*e*PN	**Pb**	**03 47 12.1**	**-1.7**
MAZI	**Mazidag**	**3.07**	**74**	*e*Pn	**Pb**	**03 47 12.1**	**-1.7**
KBSD	**Kabsdagh**	**3.08**	**83**	*e*P	**Pn**	**03 47 09.4**	**+1.5**
KBSD				*e*S	**Sn**	**03 47 45.6**	**+0.4**
KBSD				AML	AML	03 48 02.4	
	comp=N,83nm,0.3s						
KBSD				AML	AML	03 48 09.2	
	comp=E,55nm,0.4s						
KBSD	**Kabsdagh**	**3.08**	**83**	*e*P	**Pn**	**03 47 09.7**	**+1.8**
KBSD				*e*S	**Sn**	**03 47 45.6**	**+0.4**
	comp=E,55nm,0.4s						

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*IDC **04** 03:56:19.7±0.6, 37°24N×143°13E, h0km, mb4.0/18, mb1 4.2/23, mb1mx4.0/57, mbtmp4.0/23, ML3.7/3, MS3.0/4, Ms1 3.0/4, ms1mx2.6/56, Error ellipse: s-maj=16.3km s-min=14.7km az=118.0*

*ISCJB **04** 03:56:21.1±0.4, 37°22N±0°04×143°08E±0°05, h24km, mb4.1/21, MS2.8/2, Error ellipse: s-maj=6.3km s-min=5.6km az=167.9*

*JMA **04** 03:56:22.6±0.2, 37°38N×143°08E, h46km, M4.1*

*NEIC **04** 03:56:25.8±1.1, 37°25N×143°05E, h42km±10km, mb4.6/2, Error ellipse: s-maj=9.3km s-min=8.0km az=85.0*

ISC 04 03:56:23.2±0.6, **37°26N**±0°06×**143°08E**±0°07, **h24**km, **n52**, σ**1s25**/46, **mb4.0**/21, **Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**1.76**	**274**	P	**Pn**	**03 56 51.4**	**-0.7**
JFK				S	**Sn**	**03 57 12.7**	**-1.1**
JIO	**Ouri**	**1.81**	**312**	P	**Pn**	**03 56 51.3**	**-1.6**
JIO				S	**Sn**	**03 57 12.6**	**-2.5**
ONAJ	**Iwakimizuishiy**	**1.83**	**266**	P	**Pn**	**03 56 52.8**	**-0.3**
ONAJ				S	**Sn**	**03 57 14.4**	**-1.1**
JMM	**Marumori**	**1.91**	**289**	P	**Pn**	**03 56 53.0**	**-1.2**
JHO	**Hitachi**	**2.11**	**253**	P	**Pn**	**03 56 56.8**	**-0.2**
OFUJ	**Ofunato**	**2.13**	**329**	P	**Pn**	**03 56 54.7**	**-2.5**
JFT	**Otama**	**2.20**	**278**	P	**Pn**	**03 56 58.5**	**+0.3**
JOU	**Okura**	**2.21**	**301**	P	**Pn**	**03 56 57.4**	**-0.9**
JMK	**Ichinoseki**	**2.23**	**320**	P	**Pn**	**03 56 57.0**	**-1.6**
JOM	**Ohasama**	**2.62**	**328**	P	**Pn**	**03 57 02.0**	**-1.9**
JYK	**Kaneyama**	**2.71**	**308**	P	**Pn**	**03 57 04.2**	**-1.0**
JAG	**Ashikaga**	**3.02**	**255**	P	**Pn**	**03 57 10.1**	**+0.6**
MJAR	**Matsushiro Arr**	**3.97**	**261**	Pn	**Pn**	**03 57 24.1**	**+1.6**
	5.1nm,0.3s,baz=89,slow=15,SNR=31						
MAJO	**Matsushiro**	**3.97**	**261**	*e*Pn	**Pn**	**03 57 23.6**	**+1.1**
JHJ	**Hachijo jima 2**	**4.93**	**214**	Pn	**Pn**	**03 57 34.2**	**-1.6**
	23nm,0.3s,baz=102,slow=21,SNR=9.8						

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHJ				Sn	Sn	03 58 29.0	-3.1
	30nm,0.3s,baz=14,slow=22,SNR=2.0						
CBIJ	Chichi jima	10.16	185	*e*Pn	Pn	03 58 44.8	-2.7
CBIJ				*e*S	Sn	04 00 30.3	-11
JCJ	Chichijima	10.16	185	Pn	Pn	03 58 44.9	-2.6
	7.8nm,0.3s,baz=296,slow=23,SNR=8.5						
JCJ				Sn	Sn	04 00 30.0	-11
	3.7nm,0.3s,baz=274,slow=21,SNR=3.4						
USRK	Ussuriysk Ar.	10.89	313	Pn	Pn	03 58 56.9	-0.6
	0.1nm,0.3s,baz=114,slow=11,SNR=3.5						
KSRS	Korea Array	12.06	276	Pn	Pn	03 59 15.1	+1.6
	0.2nm,0.3s,baz=87,slow=14,SNR=6.9						
KSRS				LR	LR	04 03 39.4	
	comp=Z,76nm,18.4s,baz=89,slow=36						
KSAR	Wonju Array Be	12.09	275	Pn	Pn	03 59 15.1	+1.1
KLR	Kul'dur	14.51	329	Pn	Pn	03 59 43.1	-3.8
	0.1nm,0.3s,baz=122,slow=13,SNR=3.8						
KLR				LR	LR	04 05 18.2	
	comp=Z,57nm,18.7s,baz=306,slow=37						
MA2	Magadan	22.88	10	LR	LR	04 11 28.7	
	comp=Z,37nm,18.2s,baz=204,slow=40						
YAK	Yakutsk	26.16	346	LR	LR	04 12 35.7	
	comp=Z,25nm,19.0s,baz=104,slow=37						
H11N2	WAKE ISLAND Hy	27.14	123	T	T	04 30 35.9	
	baz=315,slow=75,SNR=3.1						
H11N1	WAKE ISLAND Hy	27.15	124	T	T	04 30 34.5	
	baz=315,slow=75,SNR=4.4						
H11N3	WAKE ISLAND Hy	27.16	123	T	T	04 30 53.5	
	baz=315,slow=75,SNR=2.9						
H11S1	WAKE ISLAND Hy	27.89	126	T	T	04 31 51.4	
	baz=317,slow=76,SNR=5.7						
H11S3	WAKE ISLAND Hy	27.89	126	T	T	04 32 05.0	
	baz=317,slow=76,SNR=4.4						
H11S2	WAKE ISLAND Hy	27.91	126	T	T	04 32 11.7	
	baz=317,slow=76,SNR=3.8						
SONM	Songino Array	28.77	303	P	P	04 02 19.6	+0.7
	2.7nm,0.7s,baz=108,slow=8.5,SNR=23						
ZALV	Zalesovo Beam	42.74	312	P	P	04 04 18.8	+0.5
	2.3nm,0.7s,baz=86,slow=7.1,SNR=9.0						
MKAR	Makanchi Array	45.12	302	P	P	04 04 38.2	+0.7
	2.2nm,0.6s,baz=87,slow=9.9,SNR=25						
KURK	Kurchatov	46.84	308	*e*P	P	04 04 51.0	+0.1
	16nm,0.8s						
KURBB	Kurchatov Arra	46.91	308	P	P	04 04 51.7	+0.3
	5.0nm,0.6s,baz=83,slow=8.0,SNR=53						
ILAR	Eielson Array	48.59	32	P	P	04 05 04.8	+0.5
	1.0nm,0.8s,baz=265,slow=7.0,SNR=10						
BVAR	Borovoye Array	51.40	312	P	P	04 05 25.6	-0.2
	1.1nm,0.7s,baz=73,slow=13,SNR=4.4						
INK	Inuvik	53.58	27	P	P	04 05 42.4	+0.7
	1.7nm,1.1s,baz=159,slow=5.9,SNR=3.1						
WRAB	Tennant Creek	57.48	190	*e*P	P	04 06 10.3	0.0
	4.5nm,0.8s						
WRA	Warramunga Arr	57.49	190	P	P	04 06 10.6	+0.2
	4.5nm,0.7s,baz=9.3,slow=7.4,SNR=24						
ABKAR	Akbulak array	58.80	310	*e*P	P	04 06 19.2	-0.1
	3.2nm,0.7s						
ASAR	Alice Springs	61.21	190	P	P	04 06 36.5	+0.5
	1.7nm,0.8s,baz=9.5,slow=5.7,SNR=14						
RES	Resolute Bay	62.05	15	P	P	04 06 41.1	+0.1
	0.9nm,0.9s,baz=293,slow=7.2,SNR=6.6						
YKA	Yellowknife Ar	62.94	31	P	P	04 06 47.6	+0.4
	0.3nm,0.7s,baz=302,slow=6.7,SNR=6.6						
FINES	FINESS Array B	69.23	333	P	P	04 07 27.2	-0.4
	1.8nm,0.8s,baz=20,slow=6.1,SNR=4.6						
NVAR	Mina Array Bea	73.78	54	P	P	04 07 56.8	+1.0
	1.3nm,0.9s,baz=278,slow=7.2,SNR=7.5						
NB2	NORSAR Subarra	74.48	338	P	P	04 07 59.7	+0.5
	comp=Z,4.1nm,0.7s,baz=40,slow=6.2						
NOA	NORSAR Array B	74.48	338	P	P	04 07 59.8	+0.6
	comp=Z,1.3nm,0.7s,baz=39,slow=5.8,SNR=6.0						
AKASG	Malin Array Be	74.92	323	P	P	04 08 02.8	+0.9
	comp=Z,0.2nm,0.3s,baz=39,slow=6.0,SNR=4.0						
PDAR	Pinedale Array	76.56	46	P	P	04 08 12.0	+0.3
	comp=Z,0.6nm,0.8s,baz=343,slow=1.5,SNR=6.2						
KHC	Kasperske Hory	83.03	329	*e*pP	pP	04 08 57.9	+3.6
GERES	GERESS Array B	83.21	329	P	P	04 08 47.6	+0.2
	comp=Z,0.1nm,0.3s,baz=273,slow=39,SNR=1.6						
TXAR	Lajitas Array	88.92	53	P	P	04 09 16.0	0.0
	comp=Z,0.6nm,0.9s,baz=308,slow=4.4,SNR=4.5						

BUC 04 04:01:55.9±0.3**, 45°.53N×27°.03E, h26**km±4km**, MD2.5**/3**, 20C-8D, Error ellipse: s-maj=4.2km s-min=2.8km az=52.0, Romania**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GRER		0.15	195	⇑*i*P	Pb	04 02 01.1	0.0
GRER		0.15	195	S	Sb	04 02 05.5	+0.8
GRER		0.15	195	⇑*i*P	Pb	04 02 01.1	0.0
GRER				*i* S	Sb	04 02 05.5	+0.8
ODBI	Odobesti	0.24	4	⇑*i*P	Pb	04 02 02.4	+0.3
ODBI	Odobesti	0.24	4	S	Sb	04 02 06.8	+0.4
ODBI	Odobesti	0.24	4	⇑*i*P	Pb	04 02 02.4	+0.3
ODBI				*i* S	Sb	04 02 06.8	+0.4
VRI	Vrincioaia	0.40	328	⇑*i*P	Pb	04 02 03.9	-0.7
VRI	Vrincioaia	0.40	328	⇑*i*P	Pb	04 02 03.9	-0.7
VRI				*i* S	Sb	04 02 11.1	+0.7
PLOR	Plostina	0.42	321	⇑*i*P	Pb	04 02 04.2	-0.7
PLOR	Plostina	0.42	321	⇑*i*P	Pb	04 02 04.2	-0.7
PLOR				*i* S	Sb	04 02 11.6	+0.6
ISR	Istrita	0.53	220	⇓*i*P	Pb	04 02 07.1	+0.4
ISR	Istrita	0.53	220	⇓*i*P	Pb	04 02 07.1	+0.4
ISR				*i* S	Sn	04 02 15.2	-0.9
MLR	Muntele Rosu	0.76	268	⇓*i*P	Pb	04 02 10.7	+0.1
MLR	Muntele Rosu	0.76	268	⇓*i*P	Pb	04 02 10.7	+0.1
MLR				*i* S	Sb	04 02 21.2	+0.5
CFR	Carcaliu	0.85	114	⇑*i*P	Pb	04 02 12.0	-0.1
CFR	Carcaliu	0.85	114	⇑*i*P	Pb	04 02 12.0	-0.1
CFR				*i* S	Sb	04 02 23.4	+0.3
SULR		1.01	213	⇑*i*P	Pb	04 02 14.7	0.0
SULR		1.01	213	⇑*i*P	Pb	04 02 14.7	0.0
TESR	Tescani	1.02	345	⇑*i*P	Pb	04 02 15.6	+0.7
TESR	Tescani	1.02	345	⇑*i*P	Pb	04 02 15.6	+0.7
TESR				*i* S	Sn	04 02 28.4	+0.4
HARR	Harsova	1.05	142	⇑*i*P	Pb	04 02 15.5	+0.1
HARR	Harsova	1.05	142	⇑*i*P	Pb	04 02 15.5	+0.1
DOPR	Dopca	1.23	292	⇑*i*P	Pn	04 02 17.7	+0.2
DOPR	Dopca	1.23	292	⇑*i*P	Pn	04 02 17.7	+0.2
DOPR				*i* S	Sb	04 02 34.2	+0.2
VOIR		1.40	267	⇓*i*P	Pb	04 02 21.0	-0.3
VOIR		1.40	267	⇓*i*P	Pb	04 02 21.0	-0.3
VOIR				*i* S	Sb	04 02 39.1	+0.3
TIRR	Tirgusor	1.45	137	⇑*i*P	Pn	04 02 21.3	+0.9
TIRR	Tirgusor	1.45	137	⇑*i*P	Pn	04 02 21.3	+0.9
TIRR				*i* S	Sb	04 02 40.1	-0.1
MSAB	Monastry St. A	1.54	158	⇓*i*P	Pn	04 02 22.6	+0.9
MSAB	Monastry St. A	1.54	158	⇓*i*P	Pn	04 02 22.6	+0.9
MSAB				*i* S	Sb	04 02 42.3	-0.6

PGC 04 04:15:31.9±1.9**, 48°.91N×129°.30W, h10**km**, ML3.1**/12**, Mw3.7**/12**, 241km southwest of Pt. Hardy, Bc Vancouver Island, Canada Region, Vancouver Island region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
EDB	Eliza Dome	1.72	55	Pn	Pn	04 15 59.5	-2.4
EDB				Sn	Sn	04 16 19.7	-4.2
FHRB	Fair Harbour	1.83	50	Pn	Pn	04 16 01.1	-2.2
FHRB				Sn	Sn	04 16 23.0	-3.5
PHC	Port Hardy	2.17	33	Pn	Pn	04 16 06.2	-1.9
PHC				Sn	Sn	04 16 30.7	-4.3
WOSB	Woss	2.18	54	Pn	Pn	04 16 06.5	-1.8
WOSB				Sn	Sn	04 16 32.4	-2.9
TOFB	Tofino	2.25	82	Sn	Sn	04 16 33.3	-3.5
TLCB	Telegraph Cove	2.29	43	Pn	Pn	04 16 08.2	-1.5
TLCB				Sn	Sn	04 16 33.7	-4.3
GDR	Gold River	2.31	66	Pn	Pn	04 16 07.6	-2.3
BTB	Buttle Lake	2.54	76	Pn	Pn	04 16 11.7	-1.7
SPLB	Strathcona Par	2.58	66	Pn	Pn	04 16 11.9	-1.8
NCRB	Newcastle Ridg	2.59	53	Pn	Pn	04 16 12.8	-1.1
NCRB				Sn	Sn	04 16 42.5	-2.9
B928	Bamfield	2.75	90	Sn	Sn	04 16 45.0	-4.3
MGB	Mount Grey	3.04	86	Pn	Pn	04 16 18.1	-2.1
MGB				Sn	Sn	04 16 52.9	-3.7
PFB	Port Renfrew	3.23	94	Sn	Sn	04 16 57.5	-3.8
TXB	Texada	3.28	74	Pn	Pn	04 16 22.6	-0.8
YOUB	Youbou, Lake C	3.32	88	Pn	Pn	04 16 22.7	-1.3
YOUB				Sn	Sn	04 17 00.3	-3.3
BBB	Bella Bella	3.37	13	Pn	Pn	04 16 23.8	-0.8
BBB				Sn	Sn	04 17 00.4	-4.1
SHB	Sechelt	3.62	77	Pn	Pn	04 16 27.5	-0.6

*NIED **04** 04:30:00, 35°.30N×141°.20E, h23km, Mw4.3 Best double couple: $M_0$2.87000×10^15 NP1:ϕ_s326.00000°, δ41.00000°, λ-175.00000°. NP2:ϕ_s232.00000°, δ86.00000°, λ-49.00000°.*
*IDC **04** 04:30:03.9±0.6, 35°.30N×141°.03E, h0km, mb4.1/24, mb1 4.2/29, mb1mx4.1/61, mbtmp4.1/29, ML3.8/3, MS3.5/19, Ms1 3.5/19, ms1mx3.3/48, Error ellipse: s-maj=16.0km s-min=13.4km az=81.0*
*ISCJB **04** 04:30:06.5±0.7, 35°.25N±0°.03×141°.19E±0°.06, h34km±6km, mb4.2/31, MS3.5/14, Error ellipse: s-maj=8.8km s-min=4.9km az=179.0*
*JMA **04** 04:30:06.9±0.1, 35°.33N×141°.17E, h37km±2km, M4.3*
JMA Felt I J1.
*NEIC **04** 04:30:06.1±3.1, 35°.29N×141°.11E, h15km±19km, mb4.5/7, Error ellipse: s-maj=9.6km s-min=7.3km az=88.0*
NEIC Recorded [1 JMA] in Chiba.
ISC 04 04:30:07.4±1.3**, 35°.28N**±0°.04×**141°.14E**±0°.06**, h26**km±9km**, n69, σ1.19**/62**, mb4.2**/31**, MS3.6**/14**, 2C-4D, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	Chosi	0.48	332	⇓P	Pb	04 30 16.8	-0.6
CHOJ				S	Sb	04 30 23.9	-0.2
BSO1	Boso 1	0.64	192	⇓P	Pb	04 30 20.1	+0.5
KTR	Katsuura	0.69	259	P	Pb	04 30 20.2	-0.6
KTR				S	Sb	04 30 30.7	+0.8
BSO3	Boso 3	0.70	227	⇓P	Pb	04 30 21.3	+0.4
BSO4	Boso 4	0.72	247	⇑P	Pb	04 30 21.6	+0.4
BSO4				X		04 30 33.0	
JCN	Nagara	0.78	281	⇑P	Pn	04 30 22.8	0.0
JYT	Yasato	1.22	321	⇓P	Pn	04 30 29.1	+0.3
JYT				S	Sn	04 30 44.4	-0.1
JIM2	Oshima 3	1.51	249	P	Pn	04 30 31.5	-1.4
JIM2				S	Sn	04 30 48.8	-2.9
JHJ2	Mitsune	2.42	207	*e*Pn	Pn	04 30 44.1	-1.3
JHJ2				*e*S	Sn	04 31 12.8	-1.4
JHJ	Hachijo jima 2	2.43	208	Pn	Pn	04 30 45.9	+0.4
	69nm,0.3s,baz=298,slow=23,SNR=12						
JHJ				Sn	Sn	04 31 12.1	-2.3
	98nm,0.3s,baz=66,slow=23,SNR=6.8						
MJAR	Matsushiro Arr	2.69	299	Pn	Pn	04 30 48.9	-0.2
	17nm,0.3s,baz=293,slow=23,SNR=70						
MJAR				LR	LR	04 31 53.2	
	comp=Z,288nm,21.6s,baz=115,slow=43						
MAJO	Matsushiro	2.69	299	*e*Pn	Pn	04 30 50.6	+1.5
MAT	Matsushiro	2.69	299	P	Pn	04 30 50.1	+1.0
MAT				S	Sb	04 31 29.0	+1.4
ERM	Erimo	6.91	13	*e*Pn	Pn	04 31 46.3	-0.7
ERM				*e*S	Sn	04 33 02.4	-2.3
CBIJ	Chichi jima	8.21	173	Pn	Pn	04 32 04.0	-0.9
JCJ	Chichijima	8.21	173	Pn	Pn	04 32 04.0	-0.9
	13nm,0.3s,baz=275,slow=23,SNR=9.6						
JNU	Nakatsue	8.77	259	Pn	Pn	04 32 15.2	+2.6
	0.3nm,0.3s,baz=200,slow=23,SNR=1.9						
JNU				LR	LR	04 35 53.7	
	comp=Z,125nm,19.6s,baz=115,slow=40						
KSRS	Korea Array	10.88	285	Pn	Pn	04 32 45.0	+3.6
	baz=91,slow=15,SNR=4.4						
KSRS				LR	LR	04 37 05.4	
	comp=Z,286nm,18.2s,baz=104,slow=39						
KSAR	Wonju Array Be	10.90	285	Pn	Pn	04 32 45.0	+3.1
USRK	Ussuriysk Ar.	11.35	324	Pn	Pn	04 32 47.9	+0.1
	0.2nm,0.3s,baz=133,slow=11,SNR=5.4						
USRK				LR	LR	04 37 01.0	
	comp=Z,279nm,18.4s,baz=131,slow=37						
KLR	Kul'dur	15.56	337	Pn	Pn	04 33 42.6	-2.3
	0.2nm,0.3s,baz=147,slow=7.6,SNR=4.7						
KLR				LR	LR	04 39 43.4	
	comp=Z,162nm,19.1s,baz=298,slow=37						
BJT	Baijiatuau	20.30	291	*e*P	P	04 34 39.1	-2.2
	8.0nm,0.4s						
PETK	Petropavlovsk-	21.32	28	LR	LR	04 43 30.0	
	comp=Z,44nm,19.8s,baz=208,slow=38						
MA2	Magadan	25.11	12	P	P	04 35 30.3	+0.4
	9.7nm,0.7s,baz=217,slow=7.4,SNR=13						
MA2				LR	LR	04 46 01.7	
	comp=Z,54nm,18.7s,baz=211,slow=38						
H11N2	WAKE ISLAND Hy	27.49	118	T	T	05 04 56.3	
	baz=310,slow=76,SNR=97						
H11N1	WAKE ISLAND Hy	27.50	118	T	T	05 04 50.0	
	baz=310,slow=76,SNR=77						
H11N3	WAKE ISLAND Hy	27.51	118	T	T	05 04 56.4	
	baz=310,slow=76,SNR=70						
YAK	Yakutsk	27.73	348	LR	LR	04 47 00.0	
	comp=Z,122nm,19.8s,baz=115,slow=37						
H11S3	WAKE ISLAND Hy	28.14	120	T	T	05 05 38.7	
	baz=312,slow=75,SNR=488						
H11S1	WAKE ISLAND Hy	28.14	120	T	T	05 05 37.8	
	baz=312,slow=75,SNR=588						
H11S2	WAKE ISLAND Hy	28.15	120	T	T	05 05 32.0	
	baz=312,slow=75,SNR=456						
SEY	Seymchan	28.55	11	P	P	04 36 01.3	+0.5
	2.4nm,0.6s,baz=202,slow=6.8,SNR=13						
SONM	Songino Array	28.62	307	P	P	04 36 00.4	-1.3
	1.7nm,0.5s,baz=111,slow=9.0,SNR=11						
SONM				LR	LR	04 47 54.1	
	comp=Z,94nm,18.4s,baz=118,slow=38						
TLY	Talaya	31.34	313	LR	LR	04 49 46.1	
	comp=Z,83nm,18.3s,baz=119,slow=38						
TIXI	Tiksi	37.00	354	*e*P	P	04 37 14.9	+0.5
	3.3nm,0.6s						
ZALV	Zalesovo Beam	42.95	314	P	P	04 38 03.2	-0.8
	2.5nm,0.6s,baz=99,slow=7.1,SNR=10						
MKAR	Makanchi Array	44.88	304	P	P	04 38 19.2	-0.5
	1.4nm,0.6s,baz=87,slow=9.9,SNR=14						
MKAR				LR	LR	04 57 48.7	
	comp=Z,84nm,18.1s,baz=86,slow=37						
KURK	Kurchatov	46.85	309	*e*P	P	04 38 34.9	-0.3
	16nm,0.8s						
KURBB	Kurchatov Arra	46.92	309	P	P	04 38 35.1	-0.5
	3.0nm,0.4s,baz=85,slow=7.9,SNR=30						
ILAR	Eielson Array	51.10	32	P	P	04 39 08.1	+0.6
	1.0nm,0.7s,baz=263,slow=5.9,SNR=8.5						
AAK	Ala-Archa	51.14	300	P	P	04 39 09.1	+0.8
	1.6nm,0.5s,baz=107,slow=6.3,SNR=5.4						
BVAR	Borovoye Array	51.60	313	P	P	04 39 11.1	-0.3
	1.0nm,0.6s,baz=105,slow=9.3,SNR=5.0						
KKAR	Karatay Array	53.83	301	*e*P	P	04 39 28.2	+0.2
	0.5nm,0.3s						
WRAB	Tennant Creek	55.28	188	*e*P	P	04 39 38.5	-0.2
	13nm,0.9s						
WRA	Warramunga Arr	55.30	188	P	P	04 39 38.9	+0.1
	5.6nm,0.6s,baz=3.5,slow=7.5,SNR=50						
INK	Inuvik	56.05	27	P	P	04 39 44.1	+0.5
	0.6nm,0.5s,baz=304,slow=5.4,SNR=5.1						
ARU	Arti	57.53	319	P	P	04 39 54.5	+0.1
	4.7nm,0.2s,baz=189,slow=1.8,SNR=5.6						
ABKAR	Akbulak array	58.91	311	*e*P	P	04 40 04.0	-0.1
	2.7nm,0.4s						
ASAR	Alice Springs	59.02	188	P	P	04 40 05.2	+0.1
	1.5nm,0.7s,baz=5.2,slow=7.1,SNR=12						
AKTO	Aktyubinsk	59.69	313	P	P	04 40 09.0	-0.5
	2.3nm,0.6s,baz=69,slow=11,SNR=6.8						
SPITS	Spitsbergen Ar	62.20	349	LR	LR	05 09 44.0	
	comp=Z,47nm,19.1s,baz=65,slow=38						
RES	Resolute Bay	64.35	14	*e*P	P	04 40 41.0	+0.6
	2.5nm,0.7s						
GEYT	Alibeck	64.50	300	LR	LR	05 10 49.0	
	comp=Z,54nm,18.4s,baz=270,slow=38						
YKA	Yellowknife Ar	65.44	30	P	P	04 40 46.6	-1.0
	0.3nm,0.9s,baz=300,slow=6.6,SNR=4.6						
ARCES	ARCESS Array B	65.56	340	P	P	04 40 47.0	-1.4
	3.9nm,0.8s,baz=52,slow=8.1,SNR=4.3						
ARCES				LR	LR	05 12 52.3	
	comp=Z,29nm,19.7s,baz=86,slow=39						
OBN	Obninsk	69.37	324	LR	LR	05 12 02.8	
	comp=Z,35nm,20.7s,baz=91,slow=36						
FINES	FINESS Array B	70.26	332	P	P	04 41 18.4	+0.4
	0.6nm,0.3s,baz=68,slow=5.4,SNR=14						
KVAR	Kislovodsk Arr	71.88	311	LR	LR	05 15 43.9	
	comp=Z,34nm,18.3s,baz=154,slow=38						
GNI	Garni	72.58	307	LR	LR	05 16 12.5	
	comp=Z,26nm,18.9s,baz=50,slow=38						
AKASG	Malin Array Be	75.55	322	P	P	04 41 49.1	-0.4
	1.5nm,0.5s,baz=48,slow=6.0,SNR=11						
NOA	NORSAR Array B	75.72	337	P	P	04 41 50.9	+0.5
	1.3nm,0.7s,baz=40,slow=5.7,SNR=6.0						
NOA				LR	LR	05 18 06.4	
	comp=Z,45nm,20.1s,baz=245,slow=38						
NVAR	Mina Array Bea	76.22	53	P	P	04 41 56.1	+2.2
	0.4nm,0.5s,baz=303,slow=8.0,SNR=4.0						
PDAR	Pinedale Array	79.06	45	P	P	04 42 11.3	+1.6
	0.4nm,0.6s,baz=234,slow=1.9,SNR=5.8						
BRTR	Keskin Array B	79.85	312	P	P	04 42 15.0	+1.1
	0.6nm,0.8s,baz=83,slow=4.1,SNR=3.8						
RAYN	Ar Rayn	81.12	292	*e*P	P	04 42 21.3	+0.4
	3.9nm,0.8s						
GERES	GERESS Array B	84.08	328	P	P	04 42 36.1	+0.2
	0.6nm,0.6s,baz=37,slow=5.3,SNR=6.9						
GERES				LR	LR	05 22 19.8	
	comp=Z,36nm,18.6s,baz=292,slow=37						
TXAR	Lajitas Array	91.37	52	P	P	04 43 12.7	+1.3
	0.5nm,0.8s,baz=270,slow=1.3,SNR=4.5						
TORD	Torodi Ar. Bea	118.40	314	PKP	PKPdf	04 48 53.1	-0.1
	0.2nm,0.5s,baz=58,slow=1.1,SNR=4.9						
LPAZ	La Paz	147.75	62	PKPbc	PKPab	04 49 52.4	-1.1
	1.0nm,0.6s,baz=309,slow=3.0,SNR=7.7						

MAN 04 04:38:37, 13°.61N×120°.14E, h0km**, mb4.0, ML2.8, MS2.5, 2C, Mindoro**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PGP	Puerto Galera	0.80	98	⇑*e*P	Pb	04 38 53.1	-0.6
PGP				*i* S	Sb	04 39 04.1	-1.1
LQP	Lukban	1.45	70	⇑*e*P	Sg	04 39 18.1	-5.5
SJMP	San Jose	1.49	140	*e*P	Pn	04 39 04.7	-0.3
BUSP	Coron	1.60	178	*e*P	Pb	04 39 07.1	-0.4
BUSP				*e*S	Sg	04 39 28.7	+0.1
ENPP	El Nido	2.49	196	*e*P	Pn	04 39 19.4	+0.5

MEX 04 04:41:14.3±0.3**, 14°.37N×92°.08W, h92**km±45km**, MD3.5, Near coast of Chiapas**

IDC 04 04:41:31.0±2.9**, 33°.55S×178°.88W, h0**km**, mb3.8**/2**, mb1 4.1**/3**, mb1mx3.8**/28**, mbtmp3.9**/3**, ML4.1**/1**, MS3.5**/2**, Ms1 3.6**/2**, ms1mx2.8**/33**, Error ellipse: s-maj=68.0km s-min=35.5km az=118.0, South of Kermadec Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
URZ	Urewera	5.72	214	Pn	Pn	04 42 57.2	0.0
	5.5nm,0.3s,baz=261,slow=1.6,SNR=21						
URZ				Sn	Sn	04 44 03.3	-0.3
	3.4nm,0.3s,baz=145,slow=22,SNR=5.6						
DZM	Mont Dzumac	17.27	308	LR	LR	04 51 03.4	
	comp=Z,55nm,18.6s,baz=111,slow=33						
ASAR	Alice Springs	42.30	271	P	P	04 49 27.3	+0.6
	1.0nm,0.8s,baz=105,slow=6.8,SNR=7.2						
WRA	Warramunga Arr	43.57	276	P	P	04 49 36.4	-0.6
	0.9nm,0.5s,baz=116,slow=8.0,SNR=15						
CPUP	Villa Florida	98.60	129	LR	LR	05 33 30.1	
	comp=Z,53nm,18.2s,baz=199,slow=32						
FINES	FINESS Array B	147.80	338	PKPbc	PKPbc	05 01 16.2	-0.8
	1.6nm,0.8s,baz=43,slow=4.7,SNR=9.5						

*NIED **04** 04:43:00, 36°.90N×140°.60E, h5km, Mw4.1 Best double couple: $M_0$1.48000×10^15 NP1:ϕ_s18.00000°, δ27.00000°, λ-110.00000°. NP2:ϕ_s220.00000°, δ64.00000°, λ-80.00000°.*
*ISCJB **04** 04:43:45.9±0.6, 36°.88N±0°.02×140°.74E±0°.04, h16km±4km, mb4.3/33, MS3.3/6, Error ellipse: s-maj=5.7km s-min=3.5km az=31.3*
*IDC **04** 04:43:45.0±0.5, 36°.90N×140°.57E, h0km, mb4.2/20, mb1 4.4/22, mb1mx4.3/42, mbtmp4.3/22, ML3.8/2, MS3.3/8, Ms1 3.3/8, ms1mx2.9/51, Error ellipse: s-maj=15.2km s-min=12.6km az=116.0*
*NEIC **04** 04:43:46.6±2.4, 36°.87N×140°.64E, h11km±15km, mb4.5/4, Error ellipse: s-maj=8.0km s-min=5.7km az=107.0*
*JMA **04** 04:43:46.4, 36°.90N×140°.64E, h5km±1km, M4.3 Broadband fault plane solution: P waves. NP1: ϕ_s217.00000°, δ57.00000°, λ-85.00000°. NP2:ϕ_s28.00000°, δ33.00000°, λ-98.00000°. Principal axes: T Plg12.0000°, Azm303.0000°; N Plg4.0000°, Azm34.0000°; P Plg77.0000°, Azm142.0000°;*
JMA Felt II J1.
*MOS **04** 04:43:47.3±1.3, 36°.88N×140°.76E, h28km, mb4.4/14 Error ellipse: s-maj=10.4km s-min=7.5km az=90.0*
ISC 04 04:43:46.0±1.1**, 36°.90N**±0°.03×**140°.58E**±0°.04**, h6**km±6km**, n86, σ0.94**/89**, mb4.3**/33**, MS3.2**/6**, 14C-3D, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	Iwakimizuishiy	0.27	41	P	Pg	04 43 51.0	-0.2
ONAJ				S	Sg	04 43 54.8	0.0
JHO	Hitachi	0.29	182	⇑P	Pg	04 43 52.1	+0.5
JFK	Kawauchi	0.52	27	P	Pg	04 43 56.1	+0.1
JFK				S	Sg	04 44 03.2	+0.3
JSB	Shiboa	0.53	278	⇑P	Pb	04 43 58.4	+0.6
JSB				S	Sb	04 44 06.8	+1.0
JFT	Otama	0.65	343	⇑P	Pb	04 43 59.4	-0.3
JFT				S	Sb	04 44 08.6	-0.4
JYT	Yasato	0.74	205	⇓P	Pb	04 44 00.8	-0.4
JYT				S	Sb	04 44 10.8	-0.8
JFY	Yanaizu	0.86	306	⇑P	Pb	04 44 03.6	+0.2
JFY				S	Sb	04 44 15.6	+0.3
JMM	Marumori	0.98	10	⇑P	Pg	04 44 04.4	-0.4
JMM				S	Sg	04 44 17.5	0.0
MJAR	Matsushiro Arr	1.94	260	Pn	Pb	04 44 21.0	-0.7
	100nm,0.3s,baz=84,slow=16,SNR=224						
MJAR				Sn	Sb	04 44 45.7	-0.5
	352nm,0.3s,baz=79,slow=40,SNR=25						
MJAR				LR	LR	04 45 23.7	
	comp=Z,381nm,21.2s,baz=75,slow=52						
MAJO	Matsushiro	1.94	260	*c i*P	Pb	04 44 21.0	-0.8
MAJO	Matsushiro	1.94	260	*e*Pn	Pb	04 44 21.3	-0.4
MAJO				*e*S	Sg	04 44 47.9	-0.4
MAT	Matsushiro	1.94	260	P	Pb	04 44 21.1	-0.7
MAT				S	Sg	04 44 47.4	-0.9
JHJ	Hachijo jima 2	3.83	190	Pn	Pn	04 44 46.1	+0.7
	66nm,0.3s,baz=71,slow=18,SNR=6.9						
JHJ				Sn	Sn	04 45 35.0	+4.2
	43nm,0.3s,baz=271,slow=22,SNR=5.6						
JHJ2	Mitsune	3.83	190	Pn	Pn	04 44 46.3	+0.8
JHJ2				*e*S	Sn	04 45 30.1	-0.7
ERM	Erimo	5.48	21	*e*P	Pn	04 45 07.6	-0.6
ERM				*e*S	Sn	04 46 12.1	+0.6
ERM	Erimo	5.48	21	*e*Pn	Pn	04 45 07.6	-0.6
ERM				*e*S	Sn	04 46 12.1	+0.6
YUK	Yuzh-Kuril'sk	8.18	28	*e*P	Pn	04 45 45.8	+0.6
JNU	Nakatsue	8.80	248	Pn	Pn	04 45 54.5	+0.6
	0.6nm,0.3s,baz=43,slow=8.5,SNR=7.3						
USRK	Ussuriysk Ar.	9.79	321	Pn	Pn	04 46 12.5	+5.3
	0.3nm,0.3s,baz=133,slow=13,SNR=20						
USRK				LR	LR	04 49 37.9	
	comp=Z,158nm,19.9s,baz=151,slow=36						
CBIJ	Chichi jima	9.87	172	*e*Pn	Pn	04 46 05.5	-2.9
CBIJ				*e*S	Sn	04 47 49.1	-10
KSRS	Korea Array	10.12	277	Pn	Pn	04 46 17.8	+6.0
	0.3nm,0.3s,baz=92,slow=14,SNR=11						
KSRS				LR	LR	04 49 51.6	
	comp=Z,149nm,20.9s,baz=90,slow=36						
KSAR	Wonju Array Be	10.15	277	P	Pn	04 46 17.8	+5.6
KSAR	Wonju Array Be	10.15	277	Pn	Pn	04 46 17.8	+5.6
YSS	Yuzh-Sakhalins	10.18	8	*e*P	Pn	04 46 12.5	0.0
YSS				pmax	pmax		
	comp=Z,28nm,0.8s						
YSS	Yuzh-Sakhalins	10.18	8	*e*Pn	Pn	04 46 12.5	0.0
	comp=Z,28nm,0.8s						
KLR	Kul'dur	13.90	335	Pn	P	04 47 11.3	-0.5
	comp=Z,0.1nm,0.3s,baz=127,slow=12,SNR=8.4						
KLR				LR	LR	04 52 16.5	
	comp=Z,120nm,18.3s,baz=300,slow=37						
TYV	Tymovskoe	14.04	5	*e*P	Pn	04 47 02.8	-2.5
TYV				pmax	pmax		
	comp=Z,22nm,0.8s						
PETK	Petropavlovsk-	20.14	31	LR	LR	04 55 18.9	
	comp=Z,28nm,20.3s,baz=99,slow=34						
MA2	Magadan	23.63	13	P	P	04 48 58.1	+0.4
	comp=Z,9.9nm,0.6s,baz=219,slow=9.0,SNR=12						
MA2				LR	LR	04 59 00.0	
	comp=Z,45nm,19.1s,baz=176,slow=39						
ULN	Ulaanbaatar	26.88	305	*ce*P	P	04 49 29.7	+2.0
ULN				pmax	pmax		
	comp=Z,4.0nm,1.2s						
SEY	Seymchan	27.05	12	P	P	04 49 29.0	+0.1
	comp=Z,3.1nm,0.6s,baz=212,slow=7.6,SNR=9.4						

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
SEY	**Seymchan**	**27.05**	**12**	*e*P	**P**	**04 49 30.4**	**+1.5**
SONM	**Songino Array**	**27.31**	**304**	P	**P**	**04 49 31.6**	**+0.1**
	comp=Z,3.8nm,0.8s,baz=107,slow=8.6,SNR=16						
H11N2	**WAKE ISLAND Hy**	**28.66**	**119**	T	T	05 19 29.9	
	baz=313,slow=75,SNR=1351						
H11N1	**WAKE ISLAND Hy**	**28.66**	**119**	T	T	05 19 28.0	
	baz=313,slow=75,SNR=1210						
H11N3	**WAKE ISLAND Hy**	**28.68**	**119**	T	T	05 19 28.8	
	baz=313,slow=75,SNR=941						
H11S1	**WAKE ISLAND Hy**	**29.35**	**122**	T	T	05 20 20.5	
	baz=314,slow=75,SNR=2050						
H11S3	**WAKE ISLAND Hy**	**29.35**	**122**	T	T	05 20 20.9	
	baz=314,slow=75,SNR=1758						
H11S2	**WAKE ISLAND Hy**	**29.37**	**122**	T	T	05 20 22.1	
	baz=314,slow=75,SNR=962						
TLY	**Talaya**	**29.92**	**311**	LR	LR	05 02 33.5	
	comp=Z,41nm,18.2s,baz=108,slow=38						
BILL	**Bilibino**	**34.35**	**17⇓**	*e*P	**P**	**04 50 33.3**	**+0.2**
BILL				*e*		04 51 46.1	
BILL				pmax	pmax		
	comp=Z,3.0nm,1.0s						
TIXI	**Tiksi**	**35.35**	**354**	*e*P	**P**	**04 50 42.5**	**+0.8**
TIXI				pmax	pmax		
	comp=Z,5.0nm,1.7s						
ZALV	**Zalesovo Beam**	**41.51**	**312**	P	**P**	**04 51 33.6**	**-0.2**
	comp=Z,3.7nm,0.6s,baz=101,slow=7.4,SNR=14						
ZALV				PcP	**PcP**	**04 53 30.3**	**-0.9**
	comp=Z,1.3nm,0.5s,baz=112,slow=3.3,SNR=5.5						
ZALV				LR	LR	05 09 22.6	
	comp=Z,42nm,18.7s,baz=71,slow=37						
MKAR	**Makanchi Array**	**43.62**	**302**	P	**P**	**04 51 51.1**	**0.0**
	comp=Z,1.5nm,0.6s,baz=88,slow=9.6,SNR=17						
MKAR	**Makanchi Array**	**43.62**	**302**	*ce*P	**P**	**04 51 51.7**	**+0.6**
MKAR				pmax	pmax		
	comp=Z,2.0nm,0.6s						
KURK	**Kurchatov**	**45.49**	**308**	*e*P	**P**	**04 52 05.5**	**-0.4**
KURK				pmax	pmax		
	comp=Z,14nm,0.8s						
KURK	**Kurchatov**	**45.49**	**308**	*e*P	**P**	**04 52 05.5**	**-0.4**
	comp=Z,14nm,0.8s						
ILAR	**Eielson Array**	**49.96**	**32**	P	**P**	**04 52 40.6**	**+0.2**
	comp=Z,0.9nm,0.6s,baz=264,slow=5.6,SNR=14						
ILAR				PcP	**PcP**	**04 53 59.9**	**-0.6**
	comp=Z,0.8nm,0.6s,baz=275,slow=3.1,SNR=5.5						
BRVK	**Borovoye**	**50.23**	**312**	*e*P	**P**	**04 52 43.5**	**+0.9**
BRVK				pmax	pmax		
	comp=Z,4.0nm,0.8s						
INK	**Inuvik**	**54.81**	**27**	*e*P	**P**	**04 53 17.0**	**+0.7**
INK				pmax	pmax		
	comp=Z,4.0nm,1.2s						
INK	**Inuvik**	**54.81**	**27**	*e*P	**P**	**04 53 17.0**	**+0.7**
	comp=Z,3.8nm,1.2s						
ARU	**Arti**	**56.02**	**318**	*d i*P	**P**	**04 53 24.4**	**-0.8**
ARU						04 55 28.6	
ARU				S	**S**	**05 01 11.6**	**-2.2**
ARU				pmax	pmax		
	comp=Z,6.0nm,0.8s						
WRAB	**Tennant Creek**	**56.83**	**187**	*ce*P	**P**	**04 53 30.8**	**-0.5**
WRAB				pmax	pmax		
	comp=Z,37nm,1.7s						
WRAB	**Tennant Creek**	**56.83**	**187**	*e*P	**P**	**04 53 30.4**	**-0.9**
	comp=Z,5.0nm,0.7s						
WRA	**Warramunga Arr**	**56.84**	**187**	P	**P**	**04 53 30.6**	**-0.8**
	comp=Z,4.2nm,0.6s,baz=3.8,slow=7.3,SNR=53						
WRA				PcP	**PcP**	**04 54 27.4**	**+0.4**
	comp=Z,1.7nm,0.8s,baz=3.6,slow=4.5,SNR=3.9						
ABKAR	**Akbulak array**	**57.52**	**310**	*e*P	**P**	**04 53 35.4**	**-0.5**
	comp=Z,6.2nm,0.8s						
ASAR	**Alice Springs**	**60.57**	**187**	P	**P**	**04 53 57.1**	**-0.2**
	comp=Z,3.3nm,0.9s,baz=14,slow=6.6,SNR=22						
RES	**Resolute Bay**	**62.90**	**14**	*e*P	**P**	**04 54 11.8**	**-0.6**
RES				pmax	pmax		
	comp=Z,2.0nm,0.6s						
RES	**Resolute Bay**	**62.90**	**14**	*e*P	**P**	**04 54 11.8**	**-0.6**
	comp=Z,1.5nm,0.6s						
ARCES	**ARCESS Array B**	**63.89**	**339**	P	**P**	**04 54 18.6**	**-0.5**
	comp=Z,5.7nm,1.0s,baz=51,slow=9.6,SNR=7.1						
YKA	**Yellowknife Ar**	**64.26**	**30**	P	**P**	**04 54 21.4**	**-0.1**
	comp=Z,0.9nm,0.8s,baz=304,slow=6.8,SNR=20						
OBN	**Obninsk**	**67.80**	**323⇑**	*e*P	**P**	**04 54 45.4**	**+0.9**
OBN				*e*		04 57 11.5	
OBN				*e*PPP	PPP	04 58 52.8	
OBN				pmax	pmax		
	comp=Z,3.0nm,0.9s						
OBN				MLR	MLR		
	comp=Z,59nm,15.0s						
STKA	**Stephens Creek**	**68.43**	**179**	P	**P**	**04 54 47.9**	**-0.6**
	comp=Z,1.4nm,0.5s,baz=336,slow=8.6,SNR=4.5						
FINES	**FINESS Array B**	**68.62**	**332**	P	**P**	**04 54 49.0**	**-0.5**
	comp=Z,5.2nm,0.8s,baz=76,slow=8.0,SNR=8.8						
FINES	**FINESS Array B**	**68.62**	**332**	*ce*P	**P**	**04 54 49.5**	**0.0**
FINES				pmax	pmax		
	comp=Z,5.0nm,0.9s						
AKASG	**Malin Array Be**	**73.99**	**322**	P	**P**	**04 55 21.9**	**-0.2**
	comp=Z,0.7nm,0.4s,baz=44,slow=5.7,SNR=4.5						
AKASG	**Malin Array Be**	**73.99**	**322**	*ce*P	**P**	**04 55 23.7**	**+1.5**
AKASG				pmax	pmax		
	comp=Z,1.0nm,0.4s						
KIEV	**Kiev**	**74.01**	**322**	*e*P	**P**	**04 55 22.5**	**+0.2**
KIEV				pmax	pmax		
	comp=Z,2.0nm,1.0s						
NB2	**NORSAR Subarra**	**74.05**	**337**	P	**P**	**04 55 21.8**	**-0.6**
	comp=Z,3.2nm,0.8s,baz=41,slow=6.2						
NOA	**NORSAR Array B**	**74.05**	**337**	P	**P**	**04 55 21.5**	**-0.9**
	comp=Z,2.7nm,0.8s,baz=40,slow=5.7,SNR=6.3						
NVAR	**Mina Array Bea**	**75.60**	**53**	P	**P**	**04 55 33.5**	**+1.4**
	comp=Z,1.8nm,0.7s,baz=288,slow=5.6,SNR=15						
PDAR	**Pinedale Array**	**78.23**	**45**	P	**P**	**04 55 47.1**	**+0.3**
	comp=Z,0.5nm,0.5s,baz=251,slow=2.0,SNR=7.7						
BRTR	**Keskin Array B**	**78.44**	**311**	P	**P**	**04 55 48.0**	**+0.1**
	comp=Z,0.7nm,0.6s,baz=60,slow=5.0,SNR=4.9						
BRTR	**Keskin Array B**	**78.44**	**311**	*ce*P	**P**	**04 55 49.7**	**+1.8**
BRTR				pmax	pmax		
	comp=Z,1.0nm,0.6s						
STHS	**Stebnicka Huta**	**78.68**	**325**	*e*P	P	04 55 53.6	+4.7
STHS	**Stebnicka Huta**	**78.68**	**325**	*e*P	P	04 55 53.6	+4.7
ULM	**Lac du Bonnet**	**79.98**	**33**	P	**P**	**04 55 55.4**	**-0.5**
	comp=Z,2.1nm,0.9s,baz=2.0,slow=4.9,SNR=3.6						
CLL	**Collm**	**80.88**	**330**	*e*P	**P**	**04 56 01.0**	**+0.3**
CLL				*e*		04 56 07.0	
CLL	**Collm**	**80.88**	**330**	*e*P	**P**	**04 56 01.0**	**+0.3**
CLL				*e*		04 56 07.0	
PV01	**Paradox Valley**	**81.80**	**48**	*e*P	**P**	**04 56 06.8**	**+0.5**
	comp=Z,126nm,0.6s						
URZ	**Urewera**	**82.04**	**152**	LR	LR	05 30 34.1	
	comp=Z,47nm,18.8s,baz=262,slow=34						
GERES	**GERESS Array B**	**82.47**	**328**	P	**P**	**04 56 09.2**	**-0.2**
	comp=Z,1.0nm,0.5s,baz=40,slow=6.3,SNR=9.6						
ANMO	**Albuquerque**	**85.18**	**49**	*ce*P	**P**	**04 56 24.2**	**+0.6**
ANMO				pmax	pmax		
	comp=Z,2.0nm,0.9s						
TXAR	**Lajitas Array**	**90.73**	**52**	P	**P**	**04 56 51.0**	**+0.8**
	comp=Z,1.5nm,0.6s,baz=296,slow=3.0,SNR=18						
TORD	**Torodi Ar. Bea**	**116.95**	**314**	PKP	**PKPdf**	**05 02 31.7**	**-0.5**
	comp=Z,0.4nm,0.9s,baz=29,slow=2.9,SNR=6.6						
LPAZ	**La Paz**	**147.33**	**59**	PKPbc	**PKPbc**	**05 03 31.2**	**-0.6**
	comp=Z,5.3nm,0.7s,baz=352,slow=1.7,SNR=27						

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*ISCJB **04** 04:45:49.8±0.6, 34°.75S±0°.03×71°.7W±0°.1, h29km±8km, Error ellipse: s-maj=15.0km s-min=4.9km az=4.8*

*GUC **04** 04:45:49.8±0.5, 34°.73S×71°.73W, h38km±2km, ML3.5*

ISC 04 04:45:49.4±1.5**, 34°.74S**±0°.04×**71°.71W**±0°.07**, h18**km±6km**, n18,** σ**1°.05**/25**, Near coast of central Chile**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
CHPI	**Pichilemu**	**0.42**	**325**	*i* P	**Pg**	**04 45 58.4**	**+0.2**
CHPI				*i* S	**Sb**	**04 46 05.5**	**+1.0**
TALC	**Talca**	**0.66**	**175**	*i* P	**Pb**	**04 46 02.4**	**0.0**
TALC				*i* S	**Sb**	**04 46 11.9**	**+0.7**
RCDM	**Rinconada Maip**	**1.46**	**31**	*i* P	**Pn**	**04 46 14.1**	**-0.8**
RCDM				*i* S	**Sn**	**04 46 32.6**	**-0.9**
RCDM				AML	AML	04 46 39.9	
	comp=E,2μm,0.1s						
ANTU	**Antumapu**	**1.47**	**38**	*i* P	**Pn**	**04 46 14.9**	**-0.2**
ANTU				*i* S	**Sn**	**04 46 33.4**	**-0.5**
CLCH	**Cerro Calan**	**1.66**	**36**	*i* P	**Pn**	**04 46 17.3**	**-0.3**
CLCH				*i* S	**Sn**	**04 46 38.0**	**-0.6**
PEL	**Peldehue**	**1.81**	**28**	*i* P	**Pn**	**04 46 19.5**	**-0.2**
PEL				*i* S	**Sn**	**04 46 41.6**	**-0.6**
ROC1	**El Roble**	**1.85**	**18**	*e*P	**Pn**	**04 46 20.5**	**0.0**
ROC1				*e*S	**Sb**	**04 46 45.3**	**-0.5**
ROCH	**El Roble**	**1.86**	**18**	*i* P	**Pn**	**04 46 19.9**	**-0.6**
ROCH				*i* S	**Sn**	**04 46 43.3**	**-0.4**
ROCH				AML	AML	04 46 49.9	
	comp=N,665nm,0.4s						
CCHI	**Chillan**	**1.88**	**189**	*i* P	**Pn**	**04 46 20.2**	**-0.5**
CCHI				*i* S	**Sn**	**04 46 43.5**	**-0.5**
CCHI				AML	AML	04 46 53.4	
	comp=E,521nm,0.3s						
AAGR	**Agrelo**	**2.91**	**56**	*e*P	**Pb**	**04 46 42.4**	**+1.5**
ARCO	**CERRO ARCO**	**2.99**	**51**	*e*P	**Pb**	**04 46 43.1**	**+0.8**
ARCO				*e*S	**Sg**	**04 47 25.2**	**-0.4**
ARCO				IAML		04 47 29.5	
	comp=Z,23nm,0.4s						
AUSP	**Uspallata**	**3.17**	**38**	*e*P	**Pn**	**04 46 40.9**	**+2.2**
ASAL	**Salagasta**	**3.22**	**49**	*e*P	**Pb**	**04 46 43.5**	**-2.5**
RTLS	**Leoncito**	**3.56**	**35**	*e*P	**Pn**	**04 46 46.0**	**+1.9**
AMOG	**MOGNA**	**4.66**	**36**	*e*P	**Pn**	**04 46 59.3**	**+0.4**
AVFE	**Valle Fertil**	**5.42**	**43**	IAML		04 48 22.6	
	comp=Z,19nm,0.7s						
ACLC	**CERRO LA CRUZ**	**6.66**	**39**	IAML		04 48 52.3	
	comp=Z,12nm,3.7s						
VCA	**Vinchina**	**6.69**	**27**	IAML		04 49 03.2	
	comp=Z,13nm,1.0s						

JMA 04 05:14:35.3±0.1**, 38°.59N**×**142°.04E, h26**km±2km**, M3.5, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**0.56**	**256**	P	Pb	05 14 46.3	-0.2
JIO				S	Sb	05 14 53.6	-0.5
OFUJ	**Ofunato**	**0.57**	**329**	P	Pb	05 14 46.5	-0.2
JMK	**Ichinoseki**	**0.74**	**300**	P	Pb	05 14 49.1	-0.4
JMK				S	Sb	05 14 59.3	+0.1
JOM	**Ohasama**	**1.06**	**327**	P	Pn	05 14 54.2	-0.2
JOU	**Okura**	**1.10**	**259**	P	Pn	05 14 55.1	0.0
JOU				S	Sn	05 15 09.2	-0.3
JMM	**Marumori**	**1.22**	**234**	P	Pn	05 14 56.3	-0.3

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*IDC **04** 05:17:26.4±1.5, 19°.32S×167°.77E, h0km, mb4.1/5, mb1 4.3/6, mb1mx3.9/40, mbtmp4.1/6, ML4.0/1, MS3.4/4, Ms1 3.4/4, ms1mx2.9/31, Error ellipse: s-maj=42.6km s-min=24.7km az=134.0*

*ISCJB **04** 05:17:29.3±1.1, 19°.30S±0°.09×167°.6E±0°.2, h26km, mb4.1/7, MS3.3/4, Error ellipse: s-maj=23.9km s-min=11.3km az=13.3*

*NEIC **04** 05:17:32.0±0.8, 19°.36S×167°.69E, h35km, mb4.3/2, Error ellipse: s-maj=18.7km s-min=15.2km az=117.0*

ISC 04 05:17:30.7±1.2**, 19°.3S**±0°.1×**167°.7E**±0°.2**, h26**km**, n11,** σ**0°.39**/9**, mb4.2**/7**, MS3.2**/4**, Vanuatu Islands region**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**2.97**	**203**	Pn	**Pn**	**05 18 15.8**	**-0.5**
	21nm,0.3s,baz=79,slow=18,SNR=267						
DZM				Sn	**Sn**	**05 18 51.2**	**0.0**
	44nm,0.3s,baz=139,slow=23,SNR=25						
AFI	**Afiamalu**	**20.38**	**78**	LR	LR	05 28 10.4	
	comp=Z,76nm,20.0s,baz=226,slow=32						
PMG	**Port Moresby**	**22.19**	**294**	LR	LR	05 29 58.2	
	comp=Z,75nm,18.8s,baz=177,slow=34						
STKA	**Stephens Creek**	**26.58**	**237**	LR	LR	05 32 31.7	
	comp=Z,90nm,18.6s,baz=196,slow=34						
WRAB	**Tennant Creek**	**31.40**	**263**	*e*P	**P**	**05 23 49.5**	**-0.4**
	1.4nm,0.4s						
WRA	**Warramunga Arr**	**31.41**	**263**	P	**P**	**05 23 49.8**	**-0.1**
	0.4nm,0.3s,baz=82,slow=6.4,SNR=12						
ASAR	**Alice Springs**	**31.70**	**256**	P	**P**	**05 23 52.6**	**+0.1**
	1.4nm,0.4s,baz=82,slow=8.4,SNR=18						
ASAR				LR	LR	05 35 28.3	
	comp=Z,111nm,18.0s,baz=128,slow=34						
FITZ	**Fitzroy Crossi**	**39.79**	**265**	P	**P**	**05 25 02.1**	**+0.2**
	3.0nm,0.6s,baz=103,slow=6.8,SNR=7.0						
QSPA	**South Pole Qui**	**70.72**	**180**	*e*P	**P**	**05 28 44.9**	**+0.6**
	4.3nm,1.0s						
SONM	**Songino Array**	**86.43**	**324**	P	**P**	**05 30 10.9**	**-0.1**
	0.6nm,0.8s,baz=134,slow=4.2,SNR=4.8						
NVAR	**Mina Array Bea**	**89.95**	**49**	P	**P**	**05 30 27.8**	**-0.3**
	1.3nm,0.8s,baz=226,slow=7.2,SNR=9.8						

JMA 04 05:47:08.2±0.3**, 36°.46N**×**143°.45E, h48**km**, M3.8, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**2.22**	**288**	P	Pn	05 47 43.9	+1.3
ONAJ				*e*S	Sn	05 48 10.6	+1.7
JFK	**Kawauchi**	**2.25**	**294**	P	Pn	05 47 44.0	+1.0
JFK				*e*S	Sn	05 48 10.7	+1.1
JHO	**Hitachi**	**2.33**	**275**	P	Pn	05 47 44.7	+0.7
JHO				*e*S	Sn	05 48 12.3	+1.0
JMM	**Marumori**	**2.54**	**304**	P	Pn	05 47 48.2	+1.2
JMM				*e*S	Sn	05 48 18.1	+1.4
JYT	**Yasato**	**2.64**	**266**	*e*S	Sn	05 48 19.0	0.0
JFT	**Otama**	**2.71**	**294**	P	Pn	05 47 51.4	+2.2
JFT				*e*S	Sn	05 48 23.3	+2.5
JMK	**Ichinoseki**	**3.05**	**325**	P	Pn	05 47 55.0	+1.1
JMK				*e*S	Sn	05 48 30.2	+1.0

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*IDC **04** 05:58:00.4±1.2, 35°.95N×143°.74E, h0km, mb3.5/5, mb1 3.8/9, mb1mx3.6/39, mbtmp3.7/9, ML3.2/4, Error ellipse: s-maj=30.6km s-min=21.5km az=76.0*

*ISCJB **04** 05:58:03.4±1.0, 35°.82N±0°.07×143°.51E±0°.10, h33km, mb3.5/5, Error ellipse: s-maj=11.8km s-min=10.2km az=27.1*

ISC 04 05:58:05.5±1.2**, 35°.84N**±0°.09×**143°.5E**±0°.1**, h35**km**, n10,** σ**1°.37**/12**, mb3.6**/5**, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
JHJ	**Hachijo jima 2**	**4.12**	**230**	Pn	**Pn**	**05 59 05.2**	**-0.8**
	8.6nm,0.3s,baz=107,slow=19,SNR=1.8						
JHJ				Sn	**Sn**	**05 59 51.5**	**-1.5**
	22nm,0.3s,baz=244,slow=22,SNR=3.1						
MJAR	**Matsushiro Arr**	**4.37**	**281**	Pn	**Pn**	**05 59 08.2**	**-1.2**
	2.3nm,0.3s,baz=106,slow=9.6,SNR=7.4						
MAT	**Matsushiro**	**4.37**	**281**	P	**Pn**	**05 59 08.6**	**-0.8**
MAT				S	**Sn**	**06 00 00.3**	**+1.2**
USRK	**Ussuriysk Ar.**	**12.16**	**317**	Pn	**Pn**	**06 00 55.4**	**-0.8**
	0.2nm,0.3s,baz=124,slow=14,SNR=5.3						
KLR	**Kul'dur**	**15.93**	**331**	Pn	**Pn**	**06 01 46.9**	**0.0**
	0.1nm,0.3s,baz=150,slow=10.0,SNR=5.4						
SONM	**Songino Array**	**29.87**	**305**	P	**P**	**06 04 10.7**	**+0.9**
	0.6nm,0.7s,baz=97,slow=7.4,SNR=2.7						
MKAR	**Makanchi Array**	**46.21**	**303**	P	**P**	**06 06 28.0**	**+1.0**
	0.5nm,0.7s,baz=92,slow=9.3,SNR=4.7						
WRA	**Warramunga Arr**	**56.15**	**190**	P	**P**	**06 07 42.6**	**+0.9**
	1.3nm,0.8s,baz=12,slow=7.4,SNR=6.9						
ASAR	**Alice Springs**	**59.88**	**190**	P	**P**	**06 08 09.8**	**+2.0**
	0.6nm,0.8s,baz=11,slow=4.6,SNR=5.7						
YKA	**Yellowknife Ar**	**63.98**	**30**	P	**P**	**06 08 33.1**	**-1.8**
	0.1nm,0.7s,baz=300,slow=5.5,SNR=4.2						

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*BJI **04** 06:02:07.7, 37°.20N×144°.76E, h36km, mb4.5/33, mB4.8/18, Ms4.5/12, Ms7 4.3/8*

*IDC **04** 06:02:07.7±0.6, 37°.03N×144°.21E, h0km, mb4.2/21, mb1 4.5/27, mb1mx4.4/41, mbtmp4.3/27, ML4.6/5, MS3.1/7, Ms1 3.1/7, ms1mx2.8/63, Error ellipse: s-maj=16.3km s-min=12.7km az=134.0*

*NEIC **04** 06:02:09.3±0.3, 37°.05N×144°.21E, h10km, mb4.7/23, Error ellipse: s-maj=7.0km s-min=5.0km az=143.0*

*MOS **04** 06:02:10.6±0.9, 37°.02N×144°.18E, h29km, mb4.8/24, Error ellipse: s-maj=10.1km s-min=6.4km az=110.0*

*ISCJB **04** 06:02:11.8±0.2, 37°.12N±0°.03×143°.99E±0°.03, h33km, mb4.4/67, MS3.7/4, Error ellipse: s-maj=4.7km s-min=2.9km az=164.0*

*JMA **04** 06:02:12.1±0.2, 37°.19N×143°.97E, h49km, M4.9*

ISC 04 06:02:13.4±0.4**, 37°.12N**±0°.04×**144°.11E**±0°.05**, h35**km**, n179,** σ**1°.49**/193**, mb4.5**/67**, MS3.8**/4**, 7C-6D, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**2.56**	**302**	P	**Pn**	**06 02 50.6**	**-1.8**
JIO				S	**Sn**	**06 03 18.2**	**-4.1**
JFK	**Kawauchi**	**2.60**	**276**	P	**Pn**	**06 02 51.3**	**-1.6**
JFK				*e*S	**Sn**	**06 03 19.6**	**-3.6**
ONAJ	**Iwakimizuishiy**	**2.65**	**271**	P	**Pn**	**06 02 52.0**	**-1.6**
ONAJ				S	**Sn**	**06 03 21.4**	**-3.2**
JMM	**Marumori**	**2.74**	**287**	P	**Pn**	**06 02 53.1**	**-1.8**
JMM				S	**Sn**	**06 03 23.1**	**-3.7**
OFUJ	**Ofunato**	**2.75**	**316**	P	**Pn**	**06 02 52.6**	**-2.3**
JHO	**Hitachi**	**2.89**	**261**	P	**Pn**	**06 02 55.2**	**-1.7**
JMK	**Ichinoseki**	**2.92**	**310**	P	**Pn**	**06 02 55.6**	**-1.7**
CHOJ	**Chosi**	**2.98**	**243**	P	**Pn**	**06 02 57.1**	**-1.1**
JOU	**Okura**	**3.00**	**295**	P	**Pn**	**06 02 57.3**	**-1.2**
JOU				*e*S	**Sn**	**06 03 29.9**	**-3.3**
JFT	**Otama**	**3.04**	**279**	P	**Pn**	**06 02 58.4**	**-0.5**
JFT				S	**Sn**	**06 03 31.6**	**-2.5**
JOM	**Ohasama**	**3.23**	**317**	P	**Pn**	**06 02 59.9**	**-1.7**
JOM				S	**Sn**	**06 03 34.8**	**-4.0**
JYK	**Kaneyama**	**3.46**	**302**	P	**Pn**	**06 03 03.7**	**-1.1**
JYK				S	**Sn**	**06 03 42.1**	**-2.5**
BSO1	**Boso 1**	**3.54**	**227**	P	**Pn**	**06 03 04.3**	**-1.1**
BSO1				*e*S	**Sn**	**06 03 45.7**	**0.0**
JAG	**Ashikaga**	**3.81**	**261**	P	**Pn**	**06 03 08.5**	**-1.0**
JAG				S	**Sn**	**06 03 51.0**	**-2.0**
JANG	**Nango**	**3.83**	**329**	P	**Pn**	**06 03 08.0**	**-1.8**
JANG				S	**Sn**	**06 03 49.0**	**-4.6**
JRY	**Ryogami san**	**4.34**	**257**	P	**Pn**	**06 03 15.7**	**-1.1**
JRY				S	**Sn**	**06 04 03.1**	**-3.1**
JOD2	**Odawara 2**	**4.47**	**247**	P	**Pn**	**06 03 17.5**	**-1.1**
MJAR	**Matsushiro Arr**	**4.77**	**265**	Pn	**Pn**	**06 03 22.8**	**+0.1**
	76nm,0.3s,baz=87,slow=15,SNR=167						
MJAR				Sn	**Sn**	**06 04 16.7**	**-0.2**
	9.6nm,0.3s,baz=91,slow=30,SNR=7.1						
MJAR				LR	LR	06 05 45.0	
	comp=Z,252nm,21.4s,baz=90,slow=45						
MAJO	**Matsushiro**	**4.77**	**265**	*c i*P	**Pn**	**06 03 22.9**	**+0.1**
MAJO	**Matsushiro**	**4.77**	**265**	*e*Pn	**Pn**	**06 03 23.3**	**+0.5**
MAJO				*e*Sn	**Sn**	**06 04 14.3**	**-2.6**
MAT	**Matsushiro**	**4.77**	**265**	P	**Pn**	**06 03 23.1**	**+0.3**
MAT				S	**Sn**	**06 04 16.7**	**-0.2**
ERM	**Erimo**	**4.94**	**352**	*ce*P	**Pn**	**06 03 25.1**	**+0.1**
ERM	**Erimo**	**4.94**	**352**	*e*Pn	**Pn**	**06 03 23.8**	**-1.2**
ERM				*e*Sn	Sn	06 04 15.7	-5.3
JHJ2	**Mitsune**	**5.33**	**223**	*e*Pn	**Pn**	**06 03 28.1**	**-2.3**
JHJ2				*e*Sn	**Sn**	**06 04 26.0**	**-4.6**
JHJ	**Hachijo jima 2**	**5.34**	**223**	Pn	**Pn**	**06 03 27.8**	**-2.8**
	109nm,0.3s,baz=315,slow=16,SNR=13						
JHJ				Sn	**Sn**	**06 04 25.4**	**-5.5**
	262nm,0.3s,baz=218,slow=23,SNR=9.4						
INU	**Inuyama**	**6.00**	**255**	*e*Pn	**Pn**	**06 03 40.7**	**+1.0**
YUK	**Yuzh-Kuril'sk**	**7.03**	**10**	*e*P	Pn	06 03 48.5	-5.2
YUK				pmax	pmax		
	comp=Z,160nm,0.6s						
YUK				pmax	pmax		
	comp=N,95nm,0.5s						
YUK				pmax	pmax		
	comp=E,34nm,0.2s						
SHO	**Shikotan**	**7.05**	**16**	*e*P	Pn	06 03 48.1	-5.9
SHO				pmax	pmax		
	comp=N,90nm,0.5s						
SHO				pmax	pmax		
	comp=E,108nm,0.5s						
SHO				pmax	pmax		
	comp=Z,252nm,0.5s						
KUR	**Kuril'sk**	**8.58**	**18**	*e*P	Pn	06 04 10.6	-4.4
KUR				pmax	pmax		
	comp=Z,125nm,0.5s						
KUR				pmax	pmax		
	comp=N,37nm,0.1s						
KUR				pmax	pmax		
	comp=E,29nm,0.1s						
YSS	**Yuzh-Sakhalins**	**9.88**	**355**	P	Pn	06 04 29.2	-3.5
CBIJ	**Chichi jima**	**10.13**	**190**	*e*Pn	Pn	06 04 31.9	-4.4
CBIJ				*e*Sn	Sn	06 06 17.4	-11
JCJ	**Chichijima**	**10.13**	**190**	Pn	Pn	06 04 31.6	-4.7
	comp=E,19nm,0.3s,baz=286,slow=23,SNR=19						
JCJ				Sn	Sn	06 06 17.2	-12
	comp=E,24nm,0.3s,baz=138,slow=22,SNR=8.4						
JCJ				LR	LR	06 09 14.5	
	comp=E,24nm,18.8s,slow=42						
JNU	**Nakatsue**	**11.55**	**254**	Pn	**Pn**	**06 04 55.1**	**-0.7**
	comp=E,1.2nm,0.3s,baz=60,slow=7.7,SNR=8.9						
JNU				LR	LR	06 08 41.2	
	comp=E,66nm,20.5s,baz=104,slow=34						
JNU	**Nakatsue**	**11.55**	**254**	*e*Pn	**Pn**	**06 04 56.3**	**+0.5**
USRK	**Ussuriysk Ar.**	**11.60**	**311**	Pn	**Pn**	**06 04 57.4**	**+1.0**
	comp=E,0.4nm,0.3s,baz=114,slow=13,SNR=8.3						
USRK				LR	LR	06 09 17.5	
	comp=E,150nm,20.1s,baz=113,slow=37						
KSRS	**Korea Array**	**12.90**	**276**	Pn	**Pn**	**06 05 15.1**	**+1.0**
	comp=E,0.9nm,0.3s,baz=88,slow=14,SNR=13						
KSRS				LR	LR	06 10 19.5	
	comp=E,171nm,18.8s,baz=95,slow=38						
KSAR	**Wonju Array Be**	**12.93**	**276**	P	**Pn**	**06 05 15.1**	**+0.5**
KSAR	**Wonju Array Be**	**12.93**	**276**	Pn	**Pn**	**06 05 15.1**	**+0.5**
TYV	**Tymovskoe**	**13.78**	**356**	*e*P	**Pn**	**06 05 29.0**	**+3.0**
KLR	**Kul'dur**	**15.07**	**327**	Pn	**P**	**06 05 47.1**	**-1.3**
	comp=E,0.4nm,0.3s,baz=137,slow=10,SNR=22						
KLR				LR	LR	06 11 29.6	
	comp=E,103nm,18.8s,baz=256,slow=37						
PETK	**Petropavlovsk-**	**18.59**	**26**	LR	LR	06 15 55.3	
	comp=E,72nm,18.2s,baz=186,slow=44						
NJ2	**Nanjing**	**21.38**	**264**	*e*P	**P**	**06 06 58.4**	**+0.6**
NJ2				pmax	pmax		
	comp=E,6.0nm,0.5s						
TIA	**Tai'an**	**21.65**	**276**	*e*P	**P**	**06 07 00.9**	**+0.2**
TIA				pmax	pmax		
	comp=E,10.0nm,1.1s						
MA2	**Magadan**	**22.88**	**9⇑**	*e*P	**P**	**06 07 13.4**	**-0.1**
HHC	**Hu-ho-hao-te**	**25.49**	**288**	*e*P	**P**	**06 07 40.1**	**+1.7**
HHC				pP	pP	06 07 49.5	+1.2
HHC				sP	sP	06 07 53.4	+0.8
HHC				PP	**PnPn**	**06 08 19.7**	**+5.2**
HHC				S	**S**	**06 12 02.2**	**-1.2**
HHC				pmax	pmax		
	comp=E,20nm,0.9s						
HHC				pmax	pmax		
	comp=E,67nm,8.1s						
HHC				LR	LR		
	comp=E,130nm,15.3s						
HHC				LR	LR		
	comp=E,180nm,15.0s						
WHN	**Wuhan**	**25.51**	**264**	P	**P**	**06 07 41.3**	**+2.8**
SEY	**Seymchan**	**26.33**	**9**	P	**P**	**06 07 46.0**	**+0.3**
	comp=E,3.7nm,0.7s,baz=196,slow=7.1,SNR=28						
SEY	**Seymchan**	**26.33**	**9⇓**	*e*P	**P**	**06 07 45.9**	**+0.3**
H11N2	**WAKE ISLAND Hy**	**26.38**	**125**	T	T	06 34 45.3	
	baz=317,slow=74,SNR=23						
H11N1	**WAKE ISLAND Hy**	**26.39**	**125**	T	T	06 34 39.1	
	baz=317,slow=74,SNR=14						
H11N3	**WAKE ISLAND Hy**	**26.40**	**125**	T	T	06 34 44.4	
	baz=317,slow=74,SNR=16						
YAK	**Yakutsk**	**26.50**	**345**	*e*P	**P**	**06 07 46.7**	**-0.5**
YAK				pmax	pmax		
	comp=Z,12nm,0.4s						
H11S1	**WAKE ISLAND Hy**	**27.14**	**127**	T	T	06 35 41.8	
	baz=318,slow=76,SNR=10						
H11S3	**WAKE ISLAND Hy**	**27.14**	**127**	T	T	06 35 42.1	
	baz=318,slow=76,SNR=7.6						
H11S2	**WAKE ISLAND Hy**	**27.16**	**127**	T	T	06 35 41.3	
	baz=318,slow=76,SNR=9.4						
BOD	**Bodaibo**	**28.64**	**326**	*e*P	**P**	**06 08 04.4**	**-1.9**
BOD				pmax	pmax		
	comp=Z,5.0nm,1.0s						
XAN	**Xi'an**	**28.69**	**274**	P	**P**	**06 08 05.9**	**-1.2**
XAN				pmax	pmax		
	comp=Z,3.0nm,0.6s						
XAN				pmax	pmax		
	comp=Z,80nm,4.5s						
ULN	**Ulaanbaatar**	**29.10**	**303⇑**	*e*P	**P**	**06 08 11.9**	**+1.1**
ULN				pmax	pmax		
	comp=Z,1.0nm,0.9s						
SONM	**Songino Array**	**29.54**	**303**	P	**P**	**06 08 15.7**	**+1.1**
	comp=Z,0.8nm,0.8s,baz=94,slow=7.3,SNR=5.0						
ZAK	**Zakamensk**	**31.92**	**308**	*e*P	**P**	**06 08 35.9**	**+0.4**
ZAK				pmax	pmax		
	comp=Z,1.0nm,1.1s						
LZH	**Lanzhou**	**32.18**	**281**	*e*P	**P**	**06 08 38.4**	**+0.4**
LZH				pP	pP	06 08 48.2	+0.1
LZH				sP	sP	06 08 51.3	-1.1
LZH				pmax	pmax		
	comp=Z,19nm,1.0s						
BILL	**Bilibino**	**33.36**	**15⇑**	*e*P	**P**	**06 08 47.5**	**-0.3**
BILL				*e*SS	SS	06 16 43.7	+13
BILL				pmax	pmax		
	comp=Z,7.0nm,1.0s						
BILL				MLR	MLR		
	comp=Z,52nm,14.0s						
BILL	**Bilibino**	**33.36**	**15**	*e*P	**P**	**06 08 47.3**	**-0.4**
	comp=Z,6.5nm,0.9s						
GYA	**Guiyang**	**33.37**	**262**	P	**P**	**06 08 47.8**	**-0.7**
GYA				pmax	pmax		

comp=Z,10.0nm,0.8s
CD2 Chengdu 33.83 272 P **P** **06 08 51.3 -1.1**
GTA Gaotai 34.60 288 *e*P P 06 09 02.6 +3.5
GTA pP pP 06 09 06.0 -3.2
GTA S **S** **06 14 28.9 +2.8**
GTA sS sS 06 14 45.5 +2.7
GTA pmax pmax
comp=Z,4.0nm,0.9s
GTA pmax pmax
comp=Z,78nm,4.5s
GTA LR LR
comp=Z,120nm,20.0s
GTA LR LR
comp=Z,97nm,16.6s
QIZ Qiongzhong 34.95 248 P **P** **06 09 02.1 0.0**
KMI Kunming 37.11 263 P **P** **06 09 21.4 +0.5**
KMI pmax pmax
comp=Z,15nm,0.7s
KMI pmax pmax
comp=Z,98nm,5.2s
WMQ Urumqi 42.72 297 P **P** **06 10 08.8 +1.7**
WMQ pP pP 06 10 18.0 +0.6
WMQ PP **PP** **06 11 50.1 +3.7**
WMQ PcP **PcP** **06 11 59.1 +0.9**
WMQ sS S 06 16 45.5 +17
WMQ ScS **ScS** **06 20 00.8 -4.6**
WMQ pmax pmax
comp=Z,2.0nm,0.6s
WMQ pmax pmax
comp=Z,75nm,3.6s
ZAA0 Zalesovo Array 43.45 312 *e*P **P** **06 10 12.9 +0.2**
ZALV Zalesovo Beam 43.45 312 P **P** **06 10 12.8 +0.1**
comp=Z,0.8nm,0.3s,baz=76,slow=6.3,SNR=6.1
ZALV PcP **PcP** **06 12 00.3 0.0**
comp=Z,3.6nm,0.5s,baz=92,slow=2.8,SNR=12
CMAR Chiang Mai Arr 43.62 257 P **P** **06 10 13.8 -0.6**
comp=Z,0.4nm,0.3s,baz=192,slow=28,SNR=2.6
MK01 Makanchi Array 45.90 302 *e*P **P** **06 10 31.2 -1.1**
MKAR Makanchi Array 45.90 302 P **P** **06 10 31.4 -1.0**
comp=Z,1.3nm,0.7s,baz=76,slow=10,SNR=7.9
KURK Kurchatov 47.57 308 *e*P **P**
KURK pmax pmax
comp=Z,6.0nm,0.6s
KURK Kurchatov 47.57 308 *e*P **P** **06 10 45.2 -0.1**
comp=Z,6.2nm,0.6s
MDM Murphy Dome 47.69 32 *e*P **P** **06 10 47.0 +0.9**
comp=Z,11nm,1.1s
ILAR Eielson Array 48.26 32 P **P** **06 10 50.2 -0.2**
comp=Z,2.5nm,0.8s,baz=264,slow=6.5,SNR=22
ILB Eielson Array 48.26 32 *e*P **P** **06 10 50.3 -0.2**
VOSK Vostochnaya 51.83 312 *e*P **P** **06 11 17.9 +0.2**
VOSK pmax pmax
comp=Z,3.0nm,0.8s
VOSK Vostochnaya 51.83 312 *e*P **P** **06 11 17.9 +0.2**
comp=Z,2.6nm,0.8s
BRVK Borovoye 52.16 313⇓ *e*P **P** **06 11 20.5 +0.3**
BRVK pmax pmax
comp=Z,11nm,2.5s
ZRNK Zerenda 52.93 313 *e*P **P** **06 11 26.2 +0.3**
ZRNK pmax pmax
comp=Z,9.0nm,1.4s
ZRNK Zerenda 52.93 313 *e*P **P** **06 11 26.2 +0.3**
comp=Z,9.2nm,1.4s
INK Inuvik 53.32 27 P **P** **06 11 28.6 +0.2**
comp=Z,3.4nm,0.6s,baz=302,slow=6.6,SNR=35
DLBC Dease Lake 57.22 39 P **P** **06 11 57.2 +0.4**
comp=Z,2.9nm,0.9s,baz=258,slow=12,SNR=3.3
WRAB Tennant Creek 57.49 191⇓ *e*P **P** **06 11 58.1 -0.9**
WRAB pmax pmax
comp=Z,10.0nm,0.7s
WRAB Tennant Creek 57.49 191 *e*P **P** **06 11 58.5 -0.6**
comp=Z,6.3nm,0.6s
WB2 Warramunga Arr 57.50 191 *e*P **P** **06 11 58.6 -0.5**
comp=Z,68nm,2.0s
WRA Warramunga Arr 57.50 191 P **P** **06 11 58.2 -0.9**
comp=Z,8.1nm,0.6s,baz=11,slow=7.3,SNR=58
ARU Arti 57.72 319 *d i*P **P** **06 12 00.0 -0.3**
ARU S **S** **06 19 57.6 +1.2**
ARU SS **SS** **06 23 46.8 +0.4**
ARU pmax pmax
comp=Z,15nm,1.2s
ARU Arti 57.72 319 *e*P **P** **06 12 00.7 +0.4**
comp=Z,8.0nm,0.6s
ABKAR Akbulak array 59.52 311 *e*P **P** **06 12 13.0 0.0**
comp=Z,2.1nm,0.6s
HYB Hyderabad 60.36 270 *i* P **P** **06 12 20.0 +0.8**
HYB *e* 06 12 32.5
AS01 Alice Springs 61.22 191 *e*P **P** **06 12 24.4 -0.3**
ASAR Alice Springs 61.22 191 P **P** **06 12 24.4 -0.4**
comp=Z,3.1nm,0.7s,baz=12,slow=6.4,SNR=27
RES Resolute Bay 61.97 15 *e*P **P** **06 12 29.0 -0.2**
RES Resolute Bay 61.97 15 *e*P **P** **06 12 29.0 -0.2**
YKA Yellowknife Ar 62.64 31 P **P** **06 12 33.1 -0.7**
comp=Z,0.4nm,0.7s,baz=299,slow=6.4,SNR=11
ARCES ARCESS Array B 64.66 340 P **P** **06 12 46.6 -0.5**
comp=Z,4.0nm,0.8s,baz=32,slow=7.1,SNR=4.8
KLMR Klimovskoe 64.82 328 *e*P P 06 12 43.9 -4.3
KLMR *e* 06 13 17.6
KLMR pmax pmax
comp=Z,15nm,1.4s
OBN Obninsk 69.30 324⇑ *e*P **P** **06 13 17.2 +0.4**
OBN *e* 06 15 49.3
OBN pmax pmax
comp=Z,7.0nm,0.9s
OBN MLR MLR
comp=Z,46nm,16.0s
FINES FINESS Array B 69.73 333 P **P** **06 13 19.1 -0.1**
comp=Z,2.6nm,0.7s,baz=35,slow=12,SNR=7.1
VSR Storozhevoye 70.27 320 *e*P **P** **06 13 22.3 -0.5**
VSR pmax pmax
comp=Z,4.0nm,0.5s
SUMG Summit 70.58 1 *e*P **P** **06 13 25.7 +0.8**
SUMG Summit 70.58 1 *e*P **P** **06 13 25.7 +0.8**
FFC Flin Flon 72.45 34 *e*P **P** **06 13 35.8 -0.1**
FFC pmax pmax
comp=Z,3.0nm,0.8s
FFC Flin Flon 72.45 34 *e*P **P** **06 13 35.8 -0.1**
comp=Z,3.3nm,0.8s
KIV Kislovodsk 72.47 312 *e*P **P** **06 13 38.1 +1.7**
KIV pmax pmax
comp=Z,11nm,0.9s
KBZ Khabaz 72.47 312 P **P** **06 13 38.6 +2.4**
comp=Z,3.8nm,0.8s,baz=82,slow=5.3,SNR=7.1
FCC Fort Churchill 72.94 28 *e*P **P** **06 13 38.2 -0.5**
FCC pmax pmax
comp=Z,1.0nm,0.3s
FCC Fort Churchill 72.94 28 *e*P **P** **06 13 38.2 -0.5**
comp=Z,0.7nm,0.3s
NV01 Mina Array Sit 73.19 54 *e*P **P** **06 13 41.5 +0.5**
NVAR Mina Array Bea 73.19 54 P **P** **06 13 41.8 +0.8**
comp=Z,2.4nm,0.7s,baz=281,slow=6.2,SNR=22
H17A Grant Village 74.47 46 *e*P **P** **06 13 50.7 +2.3**
comp=Z,5.8nm,0.9s
IMW Indian Meadow 74.56 46 *e*P **P** **06 13 50.3 +1.3**
comp=Z,2.1nm,0.8s
NB2 NORSAR Subarra 74.92 338 P **P** **06 13 50.3 -0.1**
comp=Z,1.2nm,0.6s,baz=37,slow=5.9
NOA NORSAR Array B 74.92 338 P **P** **06 13 50.0 -0.3**
comp=Z,3.8nm,0.9s,baz=38,slow=5.8,SNR=5.8
NBO02 NORSAR Array S 75.02 338 *e*P **P** **06 13 48.6 -2.3**
RCWM Renegade Canyo 75.03 56 *e*P **P** **06 13 50.3 -1.2**
AKASG Malin Array Be 75.53 323 P **P** **06 13 54.0 0.0**
comp=Z,3.9nm,0.6s,baz=43,slow=6.0,SNR=21
KIEV Kiev 75.54 323 *e*P **P** **06 13 54.2 +0.1**
KIEV pmax pmax
comp=Z,6.0nm,0.7s
KIEV Kiev 75.54 323 *e*P **P** **06 13 54.2 +0.1**
comp=Z,6.0nm,0.7s
AK11 Malin Array Si 75.57 323 *e*P **P** **06 13 54.3 +0.1**
DUG Dugway, Tooele 75.65 50 *e*P **P** **06 13 55.3 +0.2**
DUG pmax pmax
comp=Z,1.0nm,0.6s
DUG Dugway, Tooele 75.65 50 *e*P **P** **06 13 55.3 +0.2**
comp=Z,1.2nm,0.6s
PD31 Pinedale Array 76.05 47 *e*P **P** **06 13 57.2 -0.2**
PDAR Pinedale Array 76.05 47 P **P** **06 13 57.2 -0.2**
comp=Z,0.8nm,0.7s,baz=276,slow=1.2,SNR=8.3
KWP Kalwaria Pacla 79.30 326 *e*P **P** **06 14 16.1 +1.0**
KWP Kalwaria Pacla 79.30 326 *e*P **P** **06 14 16.1 +1.0**
BUR08 Bucovina Ar. S 79.55 323 *e*P **P** **06 14 17.7 +1.0**
KOLS Kolonicke sedl 80.00 325 *e*P **P** **06 14 20.2 +1.3**
KOLS pmax pmax
comp=Z,6.0nm,1.1s
KOLS Kolonicke sedl 80.00 325 *e*P **P** **06 14 20.2 +1.3**
STHS Stebnicka Huta 80.11 326 *e*P **P** **06 14 20.8 +1.3**
STHS pmax pmax
comp=Z,6.0nm,1.1s
STHS Stebnicka Huta 80.11 326 *e*P **P** **06 14 20.8 +1.3**
OJC Ojcow 80.15 327 *e*P **P** **06 14 20.5 +0.8**
OJC Ojcow 80.15 327 *e*P **P** **06 14 20.2 +0.5**
OJC pmax pmax
comp=Z,23nm,1.2s
OJC Ojcow 80.15 327 *e*P **P** **06 14 20.2 +0.5**
comp=Z,23nm,1.2s
BRTR Keskin Array B 80.39 313 P **P** **06 14 22.8 +1.4**
comp=Z,0.8nm,0.5s,baz=95,slow=2.9,SNR=5.3
BR231 Keskin MP Arra 80.82 313 *e*P **P** **06 14 22.8 -0.9**
LANS Liptovska Anna 81.09 327 *e*P **P** **06 14 26.2 +1.4**
LANS Liptovska Anna 81.09 327 *e*P **P** **06 14 26.2 +1.4**
KECS Kecovo 81.13 326 *e*P **P** **06 14 25.8 +0.8**
KECS pmax pmax
comp=Z,2.0nm,0.7s
KECS Kecovo 81.13 326 *e*P **P** **06 14 25.8 +0.8**
KSP Ksiaz 81.14 330 *e*P **P** **06 14 26.0 +1.0**
KSP Ksiaz 81.14 330 *e*P **P** **06 14 26.0 +1.0**
MORC Moravsky Berou 81.44 328 *e*P **P** **06 14 27.7 +1.0**
MORC pmax pmax
comp=Z,33nm,1.0s
MORC Moravsky Berou 81.44 328 *e*P **P** **06 14 27.7 +1.0**
comp=Z,33nm,1.0s
DPC Dobruska-Polom 81.51 329 *e*P **P** **06 14 28.0 +1.0**
DPC *ex* x 06 14 40.4
DPC Dobruska-Polom 81.51 329 *e*P **P** **06 14 28.0 +1.0**
DPC *e* 06 14 40.4
PSZ Piszkesteto 81.82 326 *e*P **P** **06 14 28.9 +0.2**
PSZ pmax pmax
comp=Z,5.0nm,0.8s
PSZ Piszkesteto 81.82 326 *e*P **P** **06 14 28.9 +0.2**
comp=Z,4.9nm,0.8s
VYHS Vyhne 81.86 327 *e*P **P** **06 14 29.6 +0.7**
VYHS pmax pmax
comp=Z,6.0nm,1.2s
VYHS Vyhne 81.86 327 *e*P **P** **06 14 29.6 +0.7**
BRG Berggiesshubel 82.05 331 *e*P **P** **06 14 30.2 +0.4**
comp=Z,7.0nm,0.8s
BRG Berggiesshubel 82.05 331 *e*P **P** **06 14 30.2 +0.4**
BRG pmax pmax
comp=Z,7.0nm,0.8s
CLL Collm 82.07 331⇓ *i* PKPbc **P** **06 14 29.8 -0.1**
comp=Z,11nm,0.8s
CLL *i* PKPab **pP** **06 14 42.0 +1.1**
comp=Z,7.0nm,0.8s
CLL Collm 82.07 331⇓ *i*P **P** **06 14 29.8 -0.1**
CLL *i* 06 14 42.0
CLL pmax pmax
comp=Z,11nm,0.8s
CLL pmax pmax
comp=Z,7.0nm,0.8s
CLL Collm 82.07 331 *e*P **P** **06 14 30.4 +0.5**
comp=Z,14nm,0.8s
GOPC GO Pecny, Ondr 82.47 330 *e*P **P** **06 14 32.8 +0.7**
GOPC GO Pecny, Ondr 82.47 330 *e*P **P** **06 14 32.8 +0.7**
PRU Pruhonice 82.51 330 *e*P **P** **06 14 33.0 +0.8**
PRU *e*pP **PcP** **06 14 36.3 -1.0**
PRU Pruhonice 82.51 330 *e*P **P** **06 14 33.0 +0.8**
TREC Trest 82.67 329 *e*P **P** **06 14 33.8 +0.7**
TREC Trest 82.67 329 *e*P **P** **06 14 33.8 +0.7**
ANMO Albuquerque 82.86 51⇓ *e*P **P** **06 14 34.5 -0.1**
ANMO pmax pmax
comp=Z,6.0nm,1.7s
KHC Kasperske Hory 83.57 330 *e*P **P** **06 14 38.4 +0.6**
KHC *e*pP **PcP** **06 14 42.1 +0.1**
KHC *ex* x 06 14 50.7
KHC Kasperske Hory 83.57 330 *e*P **P** **06 14 38.4 +0.6**
KHC *e* 06 14 50.7
KHC Kasperske Hory 83.57 330 *e*P **P** **06 14 37.8 0.0**
comp=Z,2.2nm,0.6s
GERES GERESS Array B 83.75 330 P **P** **06 14 39.0 +0.2**
comp=Z,1.6nm,0.6s,baz=34,slow=6.1,SNR=12
VTS Vitosha 84.14 320 *e*P **P** **06 14 42.2 +1.2**
VTS pmax pmax
comp=Z,7.0nm,0.8s
VTS Vitosha 84.14 320 *e*P **P** **06 14 42.2 +1.2**
comp=Z,7.2nm,0.8s
BFO Black Forest 86.26 332 *e*P **P** **06 14 51.5 +0.2**
BFO pmax pmax
comp=Z,34nm,1.9s
BFO Black Forest 86.26 332 *e*P **P** **06 14 51.5 +0.2**
comp=Z,34nm,1.9s
WMOK Wichita Mounta 87.65 47 *e*P **P** **06 14 57.9 -0.5**
WMOK pmax pmax
comp=Z,10.0nm,0.6s
WMOK Wichita Mounta 87.65 47 *e*P **P** **06 14 57.9 -0.5**
comp=Z,9.5nm,0.6s
TX31 Lajitas Ar. Si 88.34 54 *e*P **P** **06 15 01.8 0.0**
TXAR Lajitas Array 88.34 54 P **P** **06 15 00.6 -1.2**
comp=Z,0.8nm,0.6s,baz=315,slow=3.2,SNR=6.6
LPAZ La Paz 144.76 63 PKP **PKPab** **06 21 45.8 -0.8**
comp=Z,0.9nm,0.6s,baz=319,slow=5.1,SNR=4.9

NIED ***04*** *06:12:00,39˚10N×143˚50E,h11km,Mw4.3 Best double couple: M₀3.75000×10¹⁵ NP1:φ₀101.00000°,δ38.00000°, λ-53.00000°. NP2:φ₀237.00000°,δ61.00000°, λ-115.00000°.*
JMA ***04*** *06:12:51.5±0.3,39˚12N×143˚55E,h6km,M4.4*
JMA Felt I J1.
IDC ***04*** *06:12:51.5±0.6,39˚02N×143˚37E,h0km,mb4.3/27, mb1 4.5/30,mb1mx4.3/54,mbtmp4.3/30,ML3.3/2,MS3.6/17, Ms1 3.6/17,ms1mx3.3/59,Error ellipse: s-maj=15.4km s-min=12.7km az=140.0*
ISCJB ***04*** *06:12:53.6±0.2,39˚10N±0˚03×143˚48E±0˚03,h20km, mb4.5/93,MS3.8/24,Error ellipse: s-maj=4.6km s-min=3.0km az=156.9*
MOS ***04*** *06:12:55.1±1.3,39˚20N×143˚43E,h31km,mb4.6/29,Error ellipse: s-maj=8.2km s-min=5.2km az=90.5*
NEIC ***04*** *06:12:57.3±0.7,39˚08N×143˚39E,h35km±7km,mb4.6/38, Error ellipse: s-maj=6.7km s-min=5.2km az=140.0*
ISC 04 06:12:54.8±0.4,39˚09N±0˚04×143˚47E±0˚04,h20km,n204, **σ1ᵍ36/195,mb4.5/93,MS3.8/24,8C-6D,Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MIYJ	**Miyakonagasawa**	**1.37**	**291**	P	**Pn**	**06 13 17.5**	**-1.2**
MIYJ				*e*S	**Sb**	**06 13 36.4**	**-0.3**
OFUJ	**Ofunato**	**1.40**	**270**	P	**Pn**	**06 13 18.4**	**-0.8**
JTH	**Tanohata**	**1.50**	**305**	P	**Pn**	**06 13 19.2**	**-1.3**
JTH				S	**Sb**	**06 13 40.8**	**+0.3**
JOM	**Ohasama**	**1.73**	**283**	P	**Pn**	**06 13 23.4**	**-0.3**
JOM				S	**Sb**	**06 13 46.9**	**-0.3**
JMK	**Ichinoseki**	**1.76**	**266**	P	**Pn**	**06 13 23.9**	**-0.1**
JIC	**Ouri**	**1.78**	**250**	P	**Pn**	**06 13 23.7**	**-0.6**
JANG	**Nango**	**1.98**	**311**	P	**Pn**	**06 13 25.5**	**-1.6**
JRG	**Rokugo**	**2.22**	**279**	P	**Pn**	**06 13 30.6**	**+0.2**
JOU	**Okura**	**2.31**	**253**	P	**Pn**	**06 13 31.8**	**+0.1**
JYK	**Kaneyama**	**2.43**	**267**	P	**Pn**	**06 13 33.6**	**+0.3**
JMM	**Marumori**	**2.43**	**241**	P	**Pn**	**06 13 33.2**	**-0.1**
JAH	**Hinai**	**2.44**	**297**	P	**Pn**	**06 13 33.2**	**-0.3**
ERM	**Erimo**	**2.93**	**355**	*e*P	**Pn**	**06 13 38.9**	**-1.2**
ERM				*e*		06 14 12.5	
ERM	**Erimo**	**2.93**	**355**	*e*Pn	**Pn**	**06 13 38.9**	**-1.2**
ERM				*e*Sn	**Sn**	**06 14 12.5**	**-2.2**
MJAR	**Matsushiro Arr**	**4.88**	**240**	Pn	**Pn**	**06 14 09.2**	**+2.1**
	8.3nm,0.3s,baz=50,slow=11,SNR=123						
MAJO	**Matsushiro**	**4.88**	**240**	*e*P	**Pn**	**06 14 08.5**	**+1.4**
MAJO				*e*		06 15 01.2	
MAJO	**Matsushiro**	**4.88**	**240**	*e*Pn	**Pn**	**06 14 08.5**	**+1.4**
MAJO				*e*Sn	**Sn**	**06 15 01.2**	**-1.7**
MAT	**Matsushiro**	**4.88**	**240**	P	**Pn**	**06 14 09.0**	**+1.9**
MAT				*e*S	**Sn**	**06 15 05.1**	**+2.1**
YUK	**Yuzh-Kuril'sk**	**5.25**	**19**	*e*P	Pn	06 14 08.7	-3.4
YUK				*e*S	Sn	06 15 04.8	-7.2
YUK				pmax	pmax		
	comp=N,43nm,0.4s						
YUK				pmax	pmax		
	comp=Z,268nm,0.4s						
YUK				pmax	pmax		
	comp=E,186nm,0.7s						
SHO	**Shikotan**	**5.40**	**27**	*e*P	Pn	06 14 10.3	-3.8
SHO				*e*S	Sn	06 15 05.9	-10
SHO				pmax	pmax		
	comp=Z,138nm,0.6s						
SHO				pmax	pmax		
	comp=E,118nm,0.4s						
SHO				pmax	pmax		
	comp=N,110nm,0.5s						
INU	**Inuyama**	**6.36**	**236**	*e*Pn	**Pn**	**06 14 29.0**	**+1.7**
JHJ2	**Mitsune**	**6.66**	**207**	*e*Pn	**Pn**	**06 14 31.8**	**+0.4**
JHJ2				*e*Sn	**Sn**	**06 15 44.3**	**-2.4**
JHJ	**Hachijo jima 2**	**6.67**	**208**	Pn	**Pn**	**06 14 32.2**	**+0.7**
	comp=N,19nm,0.3s,baz=127,slow=22,SNR=4.2						
JHJ				Sn	**Sn**	**06 15 41.7**	**-5.2**
	comp=N,47nm,0.3s,baz=244,slow=22,SNR=5.9						
KUR	**Kuril'sk**	**6.95**	**27**	P	**Pn**	**06 14 38.1**	**+2.8**
KUR				*e*S	Sn	06 15 46.9	-6.9
KUR				pmax	pmax		
	comp=Z,39nm,0.8s						
KUR				smax	smax		
	comp=N,70nm,0.5s						
KUR				smax	smax		
	comp=E,120nm,0.5s						
YSS	**Yuzh-Sakhalins**	**7.87**	**356**⇑	*e*P	**Pn**	**06 14 48.1**	**+0.1**
YSS				MLR	MLR		
	comp=Z,600nm,14.0s						
USRK	**Ussuriysk Ar.**	**9.99**	**304**	Pn	Pn	06 15 19.8	+2.8
	comp=Z,1.2nm,0.3s,baz=97,slow=12,SNR=16						
USRK				LR	LR	06 18 58.3	
	comp=Z,414nm,20.0s,baz=112,slow=37						
MDJ	**Mudanjiang**	**11.72**	**303**	P	**Pn**	**06 15 42.1**	**+1.3**
MDJ				S	Sn	06 17 56.5	+5.5
MDJ				pmax	pmax		
	comp=Z,8.0nm,0.6s						
MDJ				pmax	pmax		
	comp=Z,68nm,7.1s						
MDJ				LR	LR		
	comp=N,190nm,15.8s						
MDJ				LR	LR		
	comp=E,680nm,14.2s						
MDJ				LR	LR		
	comp=Z,820nm,13.1s						
TYV	**Tymovskoe**	**11.78**	**357**	*e*P	**Pn**	**06 15 39.5**	**-2.0**
JNU	**Nakatsue**	**11.79**	**244**	Pn	**Pn**	**06 15 41.2**	**-0.6**
	comp=Z,0.3nm,0.3s,baz=41,slow=13,SNR=4.0						
JNU				LR	LR	06 20 32.7	
	comp=Z,138nm,19.9s,baz=116,slow=39						
CBIJ	**Chichi jima**	**12.01**	**186**	*e*Pn	**Pn**	**06 15 43.3**	**-1.5**
CBIJ				Sn	Sn	06 17 50.9	-7.4
JCJ	**Chichijima**	**12.01**	**186**	Pn	Pn	06 15 41.4	-3.5
	comp=Z,7.2nm,0.3s,baz=351,slow=20,SNR=7.7						
JCJ				Sn	Sn	06 17 50.9	-7.4
	comp=Z,4.1nm,0.3s,baz=109,slow=24,SNR=3.8						
KSRS	**Korea Array**	**12.33**	**267**	Pn	Pn	06 15 52.4	+3.3
	comp=Z,0.5nm,0.3s,baz=90,slow=14,SNR=6.7						
KSRS				LR	LR	06 20 17.1	
	comp=Z,290nm,18.4s,baz=94,slow=36						
KSAR	**Wonju Array Be**	**12.36**	**267**	P	Pn	06 15 52.4	+2.9
KSAR	**Wonju Array Be**	**12.36**	**267**	Pn	Pn	06 15 52.4	+2.8
KLR	**Kul'dur**	**13.15**	**324**	Pn	**Pn**	**06 16 02.7**	**+2.4**
	comp=Z,0.2nm,0.3s,baz=126,slow=12,SNR=3.1						
KLR				LR	LR	06 21 20.7	
	comp=Z,276nm,18.6s,baz=128,slow=39						
NKL	**Nikolayevsk**	**14.19**	**353**	*e*P	**Pn**	**06 16 13.8**	**-0.6**
NKL				pmax	pmax		
	comp=N,10.0nm,1.1s						
NKL				pmax	pmax		
	comp=Z,25nm,1.1s						
NKL				MLR	MLR		
	comp=N,200nm,16.0s						
NKL				MLR	MLR		
	comp=Z,450nm,16.0s						
PETK	**Petropavlovsk-**	**17.09**	**30**	P	**Pn**	**06 16 53.1**	**+0.8**
	comp=Z,0.1nm,0.3s,baz=195,slow=11,SNR=4.0						
HIA	**Hailar**	**19.75**	**309**	*e*P	**P**	**06 17 21.5**	**-1.7**
HIA				pmax	pmax		
	comp=Z,10.0nm,0.6s						
HIA	**Hailar**	**19.75**	**309**	*e*P	**P**	**06 17 21.4**	**-1.7**
	comp=Z,9.6nm,0.6s						
MA2	**Magadan**	**21.02**	**10**	P	**P**	**06 17 36.7**	**-0.2**
	comp=Z,14nm,0.7s,baz=216,slow=9.3,SNR=23						
MA2				LR	LR	06 25 42.1	
	comp=Z,52nm,18.4s,baz=180,slow=36						
MA2	**Magadan**	**21.02**	**10**	*e*P	**P**	**06 17 37.1**	**+0.2**
TIA	**Tai'an**	**21.03**	**270**	*e*P	**P**	**06 17 35.9**	**-1.3**
TIA				S	**S**	**06 21 27.6**	**-2.9**
TIA				pmax	pmax		
	comp=Z,10.0nm,1.0s						
TIA				LR	LR		
	comp=N,200nm,11.0s						
TIA				LR	LR		
	comp=E,550nm,14.0s						
TIA				LR	LR		
	comp=Z,490nm,15.0s						
BJI	**Beijing**	**21.04**	**281**	P	**P**	**06 17 37.9**	**+0.7**
BJI				S	**S**	**06 21 31.9**	**+1.4**
BJI				pmax	pmax		
	comp=Z,13nm,0.7s						
BJI				pmax	pmax		
	comp=Z,120nm,4.9s						
BJI				LR	LR		
	comp=N,250nm,12.4s						
BJI				LR	LR		
	comp=E,360nm,15.1s						
BJI				LR	LR		
	comp=Z,180nm,16.3s						
BJT	**Baijiatuau**	**21.05**	**281**	*e*P	**P**	**06 17 38.0**	**+0.7**
BJT				pmax	pmax		
	comp=Z,16nm,0.6s						
BJT	**Baijiatuau**	**21.05**	**281**	*e*P	**P**	**06 17 38.0**	**+0.7**
	comp=Z,16nm,0.6s						
NJ2	**Nanjing**	**21.18**	**258**	*e*P	**P**	**06 17 41.0**	**+2.2**
NJ2				pmax	pmax		
	comp=Z,18nm,0.5s						
HHC	**Hu-ho-hao-te**	**24.45**	**284**	*e*P	**P**	**06 18 12.8**	**+0.5**
HHC				pP	sP	06 18 20.0	-0.9
HHC				sP	pP	06 18 23.3	+5.0
HHC				S	**S**	**06 22 26.7**	**-4.6**
HHC				pmax	pmax		
	comp=Z,21nm,0.9s						
HHC				pmax	pmax		
	comp=Z,110nm,8.1s						
HHC				LR	LR		
	comp=N,160nm,13.5s						
HHC				LR	LR		
	comp=E,390nm,13.9s						
HHC				LR	LR		
	comp=Z,440nm,15.3s						
YAK	**Yakutsk**	**24.47**	**344**	LR	LR	06 27 05.5	
	comp=Z,69nm,19.9s,baz=128,slow=35						
YAK	**Yakutsk**	**24.47**	**344**	*e*P	**P**	**06 18 11.3**	**-0.8**
YAK				*e**PP	**pP**	**06 18 16.1**	**-2.1**
YAK				*e*		06 18 42.2	
YAK				*e*PPP	PPP	06 18 53.3	
YAK				*e*		06 21 48.9	
YAK				*e*S	**S**	**06 22 30.0**	**-1.0**
YAK				*e*SS	**SnSn**	**06 23 14.0**	**-1.6**
YAK				*e*SSS	SSS	06 23 32.0	
YAK				pmax	pmax		
	comp=Z,15nm,0.9s						
YAK				pmax	pmax		
	comp=Z,24nm,0.5s						
YAK				pmax	pmax		
	comp=N,21nm,1.2s						
YAK				pmax	pmax		
	comp=E,92nm,3.3s						
YAK				smax	smax		
	comp=N,125nm,3.3s						
YAK				smax	smax		
	comp=E,157nm,4.4s						
YAK				MLR	MLR		
	comp=Z,230nm,12.0s						
YAK				MLR	MLR		
	comp=N,268nm,15.0s						
YAK				MLR	MLR		
	comp=E,182nm,13.0s						
SEY	**Seymchan**	**24.47**	**10**	P	**P**	**06 18 12.7**	**+0.6**
	comp=E,8.7nm,0.9s,baz=195,slow=9.3,SNR=16						
SEY	**Seymchan**	**24.47**	**10**⇓	*e*P	**P**	**06 18 12.8**	**+0.7**
WHN	**Wuhan**	**25.30**	**259**	P	**P**	**06 18 20.3**	**+0.4**
WHN				pmax	pmax		
	comp=Z,66nm,1.0s						
BOD	**Bodaibo**	**26.73**	**324**	*e*P	**P**	**06 18 31.5**	**-1.1**
BOD				pmax	pmax		
	comp=Z,9.0nm,0.8s						
ULN	**Ulaanbaatar**	**27.63**	**300**	*de*P	**P**	**06 18 41.0**	**+0.1**
ULN				pmax	pmax		
	comp=Z,5.0nm,0.7s						
ULN	**Ulaanbaatar**	**27.63**	**300**	*e*P	**P**	**06 18 41.1**	**+0.1**
	comp=Z,5.4nm,0.7s						
H11N2	**WAKE ISLAND Hy**	**27.95**	**127**	T	T	06 48 02.1	
	baz=319,slow=74,SNR=130						
H11N1	**WAKE ISLAND Hy**	**27.96**	**127**	T	T	06 48 02.9	
	baz=319,slow=74,SNR=125						

H11N3 **WAKE ISLAND Hy 27.96 127** T T 06 47 58.0
baz=319,slow=74,SNR=85
SONA1 **Songino Array 28.06 300** *e*P **P** **06 18 45.5 +0.7**
SONM **Songino Array 28.07 300** P **P** **06 18 45.2 +0.4**
comp=Z,2.9nm,0.6s,baz=92,slow=9.3,SNR=15
XAN **Xi'an 28.09 270** P **P** **06 18 45.5 +0.3**
XAN S **S** **06 23 30.7 +1.6**
XAN SS SnSn 06 25 02.1 +17
XAN pmax pmax
comp=Z,10.0nm,0.6s
XAN pmax pmax
comp=Z,120nm,6.6s
XAN LR LR
comp=N,95nm,10.0s
XAN LR LR
comp=E,190nm,13.5s
XAN LR LR
comp=Z,290nm,13.0s
H11S1 **WAKE ISLAND Hy 28.75 129** T T 06 48 59.2
H11S3 **WAKE ISLAND Hy 28.75 129** T T 06 48 58.4
baz=318,slow=74
H11S2 **WAKE ISLAND Hy 28.77 129** T T 06 49 03.5
baz=251,slow=74
ENH **Enshi 29.16 263** *e*P **P** **06 18 54.2 -0.4**
comp=Z,21nm,0.6s
TLY **Talaya 30.28 308** *e*P P 06 19 08.5 +4.1
TLY pmax pmax
comp=Z,1.0nm,0.4s
TLY MLR MLR
comp=Z,276nm,15.0s
ZAK **Zakamensk 30.34 305** *e*P **P** **06 19 05.0 0.0**
ZAK pmax pmax
comp=Z,4.0nm,1.2s
ZAK pmax pmax
comp=Z,2.0nm,1.4s
LZH **Lanzhou 31.37 277** *e*P **P** **06 19 16.3 +2.0**
LZH pP sP 06 19 23.6 +0.7
LZH sP pP 06 19 27.0 +6.6
LZH pmax pmax
comp=Z,16nm,1.0s
BILL **Bilibino 31.60 16**⇓ *e*P **P** **06 19 15.3 -0.4**
BILL *e* 06 20 18.5
BILL eS **S** **06 24 25.2 +2.0**
BILL pmax pmax
comp=Z,9.0nm,1.2s
BILL MLR MLR
comp=Z,87nm,15.0s
GYA **Guiyang 33.19 259** P **P** **06 19 31.8 +1.5**
GYA pmax pmax
comp=Z,10.0nm,0.8s
CD2 **Chengdu 33.33 268** P **P** **06 19 31.1 -0.3**
CD2 sP sP 06 19 42.1 +2.1
CD2 PP **PP** **06 20 46.6 -0.2**
CD2 S **S** **06 24 50.6 -0.4**
CD2 sS sS 06 25 03.6 +2.4
CD2 SS **SS** **06 27 15.2 +0.3**
CD2 pmax pmax
comp=Z,20nm,0.5s
CD2 LR LR
comp=E,270nm,12.6s
CD2 LR LR
comp=Z,350nm,10.2s
TIXI **Tiksi 33.46 352**⇑ *e*P **P** **06 19 29.7 -2.3**
TIXI pmax pmax
comp=Z,7.0nm,2.5s
GTA **Gaotai 33.56 285** *e*P **P** **06 19 33.6 +0.2**
GTA pP pP 06 19 37.7 -1.9
GTA sP sP 06 19 40.6 -1.4
GTA S **S** **06 24 53.9 -0.8**
GTA sS sS 06 25 01.9 -2.9
GTA SS **SnSn** **06 26 55.8 -1.9**
GTA pmax pmax
comp=Z,6.0nm,1.0s
GTA pmax pmax
comp=Z,68nm,6.3s
GTA LR LR
comp=N,170nm,15.2s
GTA LR LR
comp=E,370nm,18.1s
GTA LR LR
comp=Z,380nm,15.7s
KMI **Kunming 36.90 260** P P 06 20 05.0 +2.6
KMI pmax pmax
comp=Z,16nm,0.8s
KMI pmax pmax
comp=Z,92nm,5.5s
NONG **Nongkai 40.72 251** P **P** **06 20 36.2 +2.0**
comp=Z,46nm,1.6s,comp=Z,20µm
SKNT **Sakolnakorn 40.80 249** P P 06 20 45.0 +10
WMQ **Urumqi 41.40 295** P **P** **06 20 41.2 +1.6**
WMQ pP sP 06 20 48.5 +0.2
WMQ sP pP 06 20 51.7 +5.8
WMQ S **S** **06 26 55.1 +1.7**
WMQ pmax pmax
comp=Z,8.0nm,0.8s
WMQ pmax pmax
comp=Z,37nm,4.0s
WMQ LR LR
comp=N,19nm,15.4s
WMQ LR LR
comp=E,65nm,24.2s
WMQ LR LR
comp=Z,25nm,16.8s
CRAI **Chiangrai 41.45 256** P P 06 20 46.6 +6.3
comp=Z,1µm,1.9s,comp=Z,23µm
ZAA0 **Zalesovo Array 41.77 311** *e*P **P** **06 20 42.4 0.0**
ZALV **Zalesovo Beam 41.77 311** P **P** **06 20 41.7 -0.7**
comp=Z,4.4nm,0.5s,baz=92,slow=7.9,SNR=5.5
ZALV LR LR 06 38 47.8
comp=Z,94nm,18.5s,baz=70,slow=37
NRIK **Noril'sk 42.10 334** LR LR 06 39 47.9
comp=Z,152nm,19.0s,baz=105,slow=38
LOEI **Loei 42.45 252** P P 06 20 51.5 +3.1
comp=Z,9.1nm,1.1s
PHRA **Phrae 42.60 254** P **P** **06 20 51.2 +1.5**
comp=Z,224nm,0.8s
CMAI **Chiengmai2 42.63 256** P P 06 20 59.5 +9.4
comp=Z,85nm,1.1s
TTA **Tatalina 42.80 36** *e*P **P** **06 20 50.3 -0.5**
TTA pmax pmax
comp=Z,35nm,1.8s
TTA **Tatalina 42.80 36** *e*P **P** **06 20 50.3 -0.5**
comp=Z,35nm,1.8s
CHAI **Chaiyaphum 42.95 249** P P 06 20 56.4 +3.9
comp=Z,7.8nm,0.8s,comp=Z,127nm
FAKI **Fak Fak 43.07 197** *e*P **P** **06 20 54.0 +0.6**
comp=Z,9.8nm,0.8s
PBKT **Sadao Pong 43.26 251** P P 06 21 04.7 +10
comp=Z,12nm,0.9s
CMMT **Chiang Mai 43.38 255** P P 06 21 05.3 +9.4
comp=Z,9.9nm,0.8s
CHTO **Chiang Mai 43.38 255** P P 06 21 05.4 +9.5
comp=Z,43nm,1.0s
CHTO **Chiang Mai 43.38 255** *e*P **P** **06 20 56.5 +0.5**
CHTO pmax pmax
comp=Z,7.0nm,0.8s
CHTO **Chiang Mai 43.38 255** *e*P **P** **06 20 56.5 +0.5**
comp=Z,6.9nm,0.8s
CMAR **Chiang Mai Arr 43.59 255** P **P** **06 20 56.5 -1.2**
comp=Z,0.8nm,0.3s,baz=47,slow=6.6,SNR=5.5
CMAR LR LR 06 40 06.5
comp=Z,25nm,20.3s,baz=285,slow=38
MK01 **Makanchi Array 44.43 301** *e*P **P** **06 21 03.9 -0.3**
MK31 **Makanchi Array 44.43 301** *e*P P 06 21 07.7 +3.6
MK31 **Makanchi Array 44.43 301** *e*P P 06 21 07.7 +3.6
MKAR **Makanchi Array 44.43 301** P **P** **06 21 03.8 -0.3**
comp=Z,3.9nm,0.9s,baz=83,slow=10.0,SNR=14
MKAR LR LR 06 40 18.8
comp=Z,124nm,18.7s,baz=80,slow=37
MKAR **Makanchi Array 44.43 301***ce*P **P** **06 21 06.3 +2.2**
MKAR pmax pmax
comp=Z,4.0nm,0.9s
MKAR **Makanchi Array 44.43 301** *e*P P 06 21 07.7 +3.6
KDAK **Kodiak Island 44.49 43***ce*P **P** **06 21 06.9 +2.6**
MAKZ **Makanchi 44.64 301** *e*P **P** **06 21 06.0 +0.2**
MAKZ pmax pmax
comp=Z,5.0nm,1.0s
MAKZ **Makanchi 44.64 301** *e*P **P** **06 21 06.0 +0.2**
comp=Z,5.0nm,1.0s
CHBT **CHBT 44.80 246** P P 06 21 12.4 +5.1
comp=Z,21nm,0.9s
KTH **Kantishna Hill 45.13 35** *e*P **P** **06 21 11.0 +1.4**
comp=Z,26nm,1.1s
MLY **Manley 45.24 33** *e*P **P** **06 21 12.2 +1.9**
comp=Z,34nm,1.8s
KURK **Kurchatov 45.97 307** P **P** **06 21 16.1 -0.1**
KURK pmax pmax
comp=Z,4.0nm,0.5s
KURK **Kurchatov 45.97 307** *e*P **P** **06 21 16.2 0.0**
comp=Z,13nm,1.0s
KURBB **Kurchatov Arra 46.04 307** P **P** **06 21 16.1 -0.7**
comp=Z,4.1nm,0.5s,baz=81,slow=8.2,SNR=34
MDM **Murphy Dome 46.31 33** *e*P **P** **06 21 20.4 +1.7**
comp=Z,15nm,1.0s
COLA **College 46.47 33**⇑ *e*P **P** **06 21 21.6 +1.7**
COLA pmax pmax
comp=Z,4.0nm,1.0s
IL1 **Eielson Array 46.89 33** *e*P **P** **06 21 23.8 +0.6**
ILAR **Eielson Array 46.89 33** P **P** **06 21 23.9 +0.7**
comp=Z,6.7nm,0.7s,baz=263,slow=6.7,SNR=51
ILAR **Eielson Array 46.89 33** P **P** **06 21 24.0 +0.7**
ILB **Eielson Array 46.89 33** *e*P **P** **06 21 23.9 +0.7**
DOT **Dot Lake 48.19 35** *e*P **P** **06 21 32.9 -0.5**
comp=Z,68nm,1.7s
MENT **Mentasta 48.42 36** *e*P **P** **06 21 36.8 +1.6**
comp=Z,8.7nm,0.8s
TRTT **Trang 50.08 243** P P 06 22 03.0 +15
VOSK **Vostochnaya 50.14 311** *e*P **P** **06 21 48.5 +0.1**
VOSK **Vostochnaya 50.14 311** *e*P **P** **06 21 48.5 +0.1**
BVAR **Borovoye Array 50.41 311** P **P** **06 21 49.4 -1.1**
comp=Z,1.2nm,0.5s,baz=76,slow=9.3,SNR=7.9
BRVK **Borovoye 50.46 311**⇑ *e*P **P** **06 21 51.4 +0.5**
BRVK pmax pmax
comp=Z,11nm,2.5s
AAK **Ala-Archa 50.96 298** P P 06 21 54.7 -0.3
comp=Z,0.9nm,0.4s,baz=31,slow=4.2,SNR=3.3
ZRNK **Zerenda 51.23 312** *e*P **P** **06 21 57.1 +0.4**
ZRNK pmax pmax
comp=Z,6.0nm,0.8s
ZRNK **Zerenda 51.23 312** *e*P **P** **06 21 57.1 +0.4**
comp=Z,5.5nm,0.8s
INK **Inuvik 51.81 28** P **P** **06 22 01.4 +0.6**
comp=Z,4.7nm,0.6s,baz=295,slow=5.6,SNR=39
INK **Inuvik 51.81 28** *e*P **P** **06 22 01.9 +1.1**
comp=Z,6.2nm,0.8s
ARU **Arti 55.90 318** P **P** **06 22 31.1 +0.2**
comp=Z,1.5nm,0.3s,baz=76,slow=6.2,SNR=5.7
ARU **Arti 55.90 318***d iP* **P** **06 22 30.8 -0.1**
ARU 06 24 30.2
ARU S **S** **06 30 17.0 -0.2**
ARU SS **SS** **06 33 58.9 -3.6**
ARU pmax pmax
comp=Z,17nm,1.7s
ARU MLR MLR
comp=Z,291nm,17.0s
ARU **Arti 55.90 318** *e*P **P** **06 22 31.2 +0.4**
comp=Z,6.8nm,0.7s
DLBC **Dease Lake 56.01 39** P **P** **06 22 33.7 +2.0**
comp=Z,4.9nm,0.9s,baz=283,slow=13,SNR=5.1
DLBC **Dease Lake 56.01 39** *e*P **P** **06 22 34.1 +2.4**
ABKAR **Akbulak array 57.86 310** *e*P **P** **06 22 44.8 0.0**
comp=Z,2.1nm,0.5s
AKTO **Aktyubinsk 58.51 312** P **P** **06 22 48.6 -0.8**
comp=Z,2.6nm,0.8s,baz=71,slow=11,SNR=7.6
AKTO LR LR 06 48 38.2
comp=Z,30nm,19.0s,baz=63,slow=37
WRAB **Tennant Creek 59.34 190** *e*P **P** **06 22 54.5 -0.8**
WRAB pmax pmax
comp=Z,3.0nm,0.7s
WRAB **Tennant Creek 59.34 190** *e*P **P** **06 22 54.5 -0.8**
comp=Z,3.3nm,0.7s
WRA **Warramunga Arr 59.34 190** P **P** **06 22 54.6 -0.8**
comp=Z,2.7nm,0.5s,baz=7.9,slow=6.9,SNR=50
RES **Resolute Bay 60.20 15** P **P** **06 23 01.1 +0.4**
comp=Z,6.4nm,0.8s,baz=310,slow=7.1,SNR=27
RES **Resolute Bay 60.20 15** *e*P **P** **06 23 01.1 +0.4**
RES pmax pmax
comp=Z,7.0nm,0.8s
RES **Resolute Bay 60.20 15** *e*P **P** **06 23 01.1 +0.4**
comp=Z,7.1nm,0.8s
YKW3 **Yellowknife Ar 61.17 31** *e*P **P** **06 23 08.1 +0.6**
comp=Z,15nm,1.6s
YKA **Yellowknife Ar 61.21 31** P **P** **06 23 08.0 +0.3**
comp=Z,1.5nm,0.6s,baz=303,slow=6.4,SNR=47
YKA **Yellowknife Ar 61.21 31** P **P** **06 23 08.0 +0.3**
YKA **Yellowknife Ar 61.21 31** *e*P **P** **06 23 08.0 +0.3**
YKB5 **Yellowknife Ar 61.21 31** *e*P **P** **06 23 07.3 -0.4**
ARCES **ARCESS Array B 62.64 340** LR LR 06 54 39.6
comp=Z,46nm,18.4s,baz=36,slow=40
ASAR **Alice Springs 63.07 190** P **P** **06 23 20.2 -0.4**
comp=Z,1.4nm,0.8s,baz=11,slow=6.5,SNR=14
ASAR LR LR 06 51 05.2
comp=Z,43nm,20.3s,baz=162,slow=36
OBN **Obninsk 67.41 323**⇓ *e*P **P** **06 23 48.5 0.0**
OBN *e* 06 26 14.9
OBN eS **S** **06 32 43.2 +0.2**
OBN *i* SS **SS** **06 37 06.6 +4.3**
OBN pmax pmax
comp=Z,6.0nm,1.0s
OBN MLR MLR
comp=Z,185nm,15.0s
FINES **FINESS Array B 67.74 333** P **P** **06 23 50.3 -0.2**
comp=Z,2.4nm,0.8s,baz=32,slow=11,SNR=5.5
FINES LR LR 06 57 27.4
comp=Z,71nm,18.6s,baz=32,slow=40
SUMG **Summit 68.62 1** *e*P **P** **06 23 56.9 +0.6**
SUMG pmax pmax
comp=Z,5.0nm,0.6s
SUMG **Summit 68.62 1** *e*P **P** **06 23 56.9 +0.6**
comp=Z,5.1nm,0.6s
MOD **Modoc Plateau 69.22 53** *e*P **P** **06 24 01.7 +1.5**
comp=Z,3.1nm,0.8s
KVAR **Kislovodsk Arr 70.77 311** LR LR 07 00 42.7
comp=Z,53nm,18.8s,baz=179,slow=41
KIV **Kislovodsk 70.78 311** *e*P **P** **06 24 11.7 +2.0**
KIV pmax pmax
comp=Z,13nm,0.9s
KBZ **Khabaz 70.78 311** P **P** **06 24 10.9 +1.3**
comp=Z,3.9nm,0.9s,baz=227,slow=3.7,SNR=3.1
FFC **Flin Flon 71.09 34** *e*P **P** **06 24 12.0 +0.7**
FFC pmax pmax
comp=Z,2.0nm,0.6s
FFC **Flin Flon 71.09 34** *e*P **P** **06 24 11.9 +0.7**
comp=Z,2.2nm,0.6s
FCC **Fort Churchill 71.43 28** *e*P **P** **06 24 13.2 0.0**
FCC pmax pmax
comp=Z,1.0nm,0.4s
FCC **Fort Churchill 71.43 28** *e*P **P** **06 24 13.2 0.0**
comp=Z,0.9nm,0.4s
EGMT **Eagleton 71.66 43** *e*P **P** **06 24 15.9 +1.0**
comp=Z,37nm,1.8s
DLMT **Dillon 71.74 46** *e*P **P** **06 24 17.0 +1.4**
comp=Z,16nm,1.7s
HLID **Hailey 71.79 48** *e*P **P** **06 24 16.4 +0.4**
comp=Z,1.4nm,0.9s
BOZ **Bozeman (W) 72.11 45** *e*P **P** **06 24 19.2 +1.4**
BOZ pmax pmax
comp=Z,4.0nm,0.8s
BOZ **Bozeman (W) 72.11 45** *e*P **P** **06 24 19.2 +1.4**
comp=Z,3.7nm,0.8s
NV01 **Mina Array Sit 72.47 55** *e*P **P** **06 24 21.6 +1.4**
NVAR **Mina Array Bea 72.47 55** P **P** **06 24 21.6 +1.4**
comp=Z,1.9nm,0.8s,baz=284,slow=6.6,SNR=13
NB2 **NORSAR Subarra 72.90 338** P **P** **06 24 21.7 -0.4**
comp=Z,1.7nm,0.6s,baz=38,slow=6.2
NOA **NORSAR Array B 72.90 338** P **P** **06 24 22.2 +0.1**
comp=Z,1.8nm,0.7s,baz=39,slow=6.0,SNR=5.8
NOA LR LR 06 59 36.5
comp=Z,24nm,20.1s,baz=275,slow=38
H17A **Grant Village 73.47 46** *e*P P 06 24 29.1 +3.1
comp=Z,5.3nm,0.9s
AKASG **Malin Array Be 73.65 323** P **P** **06 24 26.2 -0.4**
comp=Z,0.9nm,0.4s,baz=42,slow=6.1,SNR=6.2
KIEV **Kiev 73.66 323**⇓ *e*P **P** **06 24 25.9 -0.8**
KIEV pmax pmax
comp=Z,6.0nm,1.3s
FXWY **Fox Creek 73.69 47** *e*P **P** **06 24 29.1 +1.8**
comp=Z,3.6nm,1.3s
R11A **Troy Canyon, C 74.22 53** *e*P **P** **06 24 31.8 +1.3**
comp=Z,14nm,1.7s
DUG **Dugway, Tooele 74.79 50** *e*P **P** **06 24 35.0 +1.3**
DUG pmax pmax
comp=Z,2.0nm,0.6s
DUG **Dugway, Tooele 74.79 50** *e*P **P** **06 24 35.0 +1.3**
comp=Z,2.0nm,0.6s
TCUT **Toone Canyon 75.05 49** *e*P **P** **06 24 36.8 +1.5**
comp=Z,11nm,1.2s
BW06 **Boulder Array 75.07 47** *e*P **P** **06 24 35.5 +0.1**
PDAR **Pinedale Array 75.07 47** P **P** **06 24 35.8 +0.4**
comp=Z,1.5nm,0.7s,baz=252,slow=2.6,SNR=15
P17A **Butcher Ranch, 76.48 50** *e*P **P** **06 24 45.0 +1.6**
comp=Z,18nm,1.7s
SRU **San Rafael Swe 76.84 50** *e*P **P** **06 24 46.7 +1.2**
SRU pmax pmax
comp=Z,5.0nm,0.8s
SRU **San Rafael Swe 76.84 50** *e*P **P** **06 24 46.7 +1.2**
comp=Z,4.9nm,0.8s
PV10 **Paradox Valley 78.20 50** *e*P **P** **06 24 54.8 +1.6**
BRTR **Keskin Array B 78.69 312** P **P** **06 24 56.1 +0.4**
comp=Z,2.6nm,1.2s,baz=121,slow=5.6,SNR=3.8
BRTR LR LR 07 07 03.2
comp=Z,28nm,18.1s,baz=52,slow=41
BR231 **Keskin MP Arra 79.10 313** *e*P **P** **06 25 00.3 +2.4**
LANS **Liptovska Anna 79.17 326** *e*P **P** **06 24 59.6 +1.6**
LANS **Liptovska Anna 79.17 326** *e*P **P** **06 24 59.6 +1.6**
DPC **Dobruska-Polom 79.56 329** *e*P **P** **06 25 01.3 +1.2**
DPC **Dobruska-Polom 79.56 329** *e*P **P** **06 25 01.3 +1.2**
CLL **Collm 80.10 331** *e*P **P** **06 25 03.0 0.0**
CLL **Collm 80.10 331** *e*P **P** **06 25 03.0 0.0**
RAYN **Ar Rayn 81.36 293** *e*P **P** **06 25 10.2 -0.1**
comp=Z,4.5nm,0.9s
KHC **Kasperske Hory 81.62 329** *e*P **P** **06 25 11.8 +0.6**
KHC **Kasperske Hory 81.62 329** *e*P **P** **06 25 11.8 +0.6**
GERES **GERESS Array B 81.80 329** P **P** **06 25 12.2 -0.1**
comp=Z,0.5nm,0.3s,baz=52,slow=5.2,SNR=6.2
ANMO **Albuquerque 82.03 51**⇑ *e*P **P** **06 25 14.3 +0.5**
ANMO pmax pmax
comp=Z,5.0nm,1.7s
ANMO **Albuquerque 82.03 51** *e*P **P** **06 25 14.9 +1.1**
comp=Z,7.7nm,1.8s
BFO **Black Forest 84.28 332***ce*P **P** **06 25 26.6 +1.6**
TXAR **Lajitas Array 87.59 54** P **P** **06 25 41.9 +0.1**
comp=Z,0.5nm,0.6s,baz=245,slow=2.6,SNR=4.3
QSPA **South Pole Qui 128.83 180** *e*PKPdf **PKPdf** **06 31 55.0 -4.7**
SNAA **Sanae 143.19 197** PKP PKPbc 06 32 22.6 -0.7
LPAZ **La Paz 144.25 59** PKP PKPbc 06 32 28.7 +0.1
comp=Z,2.0nm,0.8s,baz=352,slow=7.1,SNR=3.0
VNA2 **Neumayer--Watz 144.75 196** PKP **PKPab** **06 32 25.5 -2.3**
baz=118,slow=2.5
VNA3 **Neumayer Olymp 144.97 195** PKP **PKPab** **06 32 27.8 -0.8**
VNA1 **Neumayer--Stat 145.14 196** PKP **PKPdf** **06 32 28.9 -0.6**

MEX 04 06:18:13.7±0.3, 14.82N×92.91W, h62km±18km, MD3.5, Near coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
THIG		**0.63**	**81**	*e*P	Pn	06 18 27.4	+0.2
PCIG		**0.94**	**341**	*e*P	Pn	06 18 29.6	-1.4
PCIG				*e*S	Sn	06 18 41.8	-2.0
CCIG	**Comitan**	**1.64**	**27**	*e*P	Pn	06 18 38.8	-1.7
CCIG				*e*S	Sn	06 18 58.5	-2.1

JMA 04 06:22:06.7, 36.83N×140.59E, h7km±1km, M2.8, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JHO	**Hitachi**	**0.22**	**184**	P	Pg	06 22 11.1	0.0
JHO				S	Sg	06 22 14.3	+0.3
ONAJ	**Iwakimizuishiy**	**0.32**	**32**	P	Pg	06 22 13.1	+0.1
ONAJ				S	Sg	06 22 17.6	+0.4
JFK	**Kawauchi**	**0.58**	**23**	P	Pg	06 22 17.7	-0.2
JFK				S	Sg	06 22 25.6	0.0
JFT	**Otama**	**0.72**	**344**	P	Pg	06 22 20.6	+0.1
JFT				S	Sg	06 22 30.3	+0.5
JMM	**Marumori**	**1.05**	**9**	P	Pg	06 22 26.1	-0.7
JMM				S	Sg	06 22 39.7	-0.7
JOU	**Okura**	**1.53**	**2**	P	Pb	06 22 35.4	-0.1
JOU				S	Sg	06 22 55.6	-0.4
MAT	**Matsushiro**	**1.94**	**262**	P	Pn	06 22 40.6	+0.5
MAT				S	Sb	06 23 06.4	-0.3

IDC ***04*** *06:24:53.4±1.6, 13.88N×92.97E, h0km, mb3.7/6, mb1 3.8/7, mb1mx3.6/47, mbtmp3.6/7, ML3.9/1, Error ellipse: s-maj=55.8km s-min=19.7km az=64.0*
ISCJB ***04*** *06:24:56.8±1.0, 14.0N±0.1×93.2E±0.1, h32km, mb3.7/6, Error ellipse: s-maj=17.9km s-min=13.8km az=137.7*
ISC 04 06:24:58.8±1.4, 14.0N±0.2×93.2E±0.2, h32km, n7, σ0.668/8, mb3.6/6, Andaman Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CMAR	**Chiang Mai Arr**	**7.13**	**50**	Pn	**Pn**	**06 26 41.3**	**+0.4**
	0.5nm,0.3s,baz=241,slow=15,SNR=6.0						
CMAR				Sn	**Sn**	06 28 00.2	-0.6
	baz=237,slow=28,SNR=5.3						
MKAR	**Makanchi Array**	**33.97**	**347**	P	**P**	**06 31 39.1**	**-0.2**
	0.7nm,0.8s,baz=175,slow=7.2,SNR=5.6						
SONM	**Songino Array**	**35.51**	**15**	P	**P**	**06 31 53.6**	**+0.8**
	0.3nm,0.5s,baz=187,slow=10,SNR=2.5						
KURBB	**Kurchatov Arra**	**38.44**	**345**	P	**P**	**06 32 16.7**	**-0.8**
	0.6nm,0.7s,baz=161,slow=8.1,SNR=4.8						
ZALV	**Zalesovo Beam**	**40.42**	**352**	P	**P**	**06 32 33.6**	**-0.4**
	0.8nm,0.6s,baz=175,slow=8.2,SNR=3.5						
WRA	**Warramunga Arr**	**52.70**	**129**	P	**P**	**06 34 10.1**	**-0.6**
	0.8nm,0.8s,baz=305,slow=9.7,SNR=8.3						
ASAR	**Alice Springs**	**54.65**	**133**	P	**P**	**06 34 25.2**	**+0.3**
	0.7nm,0.4s,baz=305,slow=6.6,SNR=9.9						

ISCJB ***04*** *06:37:17.8±0.9, 8.42S±0.06×107.16E±0.07, h10km, mb3.5/5, Error ellipse: s-maj=11.6km s-min=7.8km az=143.9*
DJA ***04*** *06:37:21.0±0.4, 8°S±3°×107°E±°, h10km, M4.3/12, MLv4.3/12*
IDC ***04*** *06:37:25.0±1.2, 7.66S×108.70E, h0km, mb3.6/5, mb1 3.8/6, mb1mx3.6/56, mbtmp3.7/6, ML3.5/1, MS3.4/1, Ms1 3.4/1, ms1mx2.6/40, Error ellipse: s-maj=77.2km s-min=14.0km az=42.0*
ISC 04 06:37:19.1±1.1, 8.33S±0.06×107.21E±0.06, h10km, n23, σ1.991/20, mb3.5/5, Jawa

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CISI	**Cisompet, Garu**	**0.97**	**38**	P	**Pg**	**06 37 37.6**	**-0.2**
CISI				S	**Sg**	**06 37 47.8**	**-2.7**
CNJI	**Cibinong**	**1.01**	**356**	P	**Pg**	**06 37 37.8**	**-0.8**
CMJI	**Cimerak**	**1.34**	**66**	P	**Pn**	**06 37 43.7**	**-0.1**
CMJI				S	**Sb**	**06 37 58.3**	**-3.2**
SKJI	**Sukabumi**	**1.46**	**334**	P	**Pn**	**06 37 44.9**	**-0.7**
LEM	**Lembang**	**1.54**	**15**	Pn	**Pg**	**06 37 51.9**	**+3.1**
	98nm,0.3s,baz=90,slow=20,SNR=27						
LEM				Sn	**Sg**	**06 38 10.0**	**+1.2**
	280nm,0.3s,baz=334,slow=20,SNR=26						
LEM				LR	LR	06 38 37.5	
	comp=Z,291nm,19.9s,baz=205,slow=54						
LEM	**Lembang**	**1.54**	**15**	P	**Pg**	**06 37 52.0**	**+3.3**
LEM				S	**Sg**	**06 38 09.8**	**+1.0**
DBJI	**Dramaga**	**1.82**	**345**	P	**Pn**	**06 37 50.8**	**+0.3**
KPJI	**Karang Pucung**	**1.97**	**60**	P	**Pn**	**06 37 53.4**	**+0.9**
CGJI	**Cibinong**	**2.27**	**318**	P	**Pn**	**06 37 56.5**	**-0.2**
PCJI	**Pacitan**	**3.93**	**88**	P	**Pn**	**06 38 21.3**	**+1.8**
NGJI	**Ngawi**	**4.32**	**78**	P	**Pb**	**06 38 35.0**	**-0.1**
PWJI	**Pagerwojo**	**4.56**	**87**	P	**Pn**	**06 38 29.5**	**+1.4**
WSI	**Waingapu**	**13.00**	**97**	P	Pn	06 40 30.7	+6.7
PSI	**Prapat**	**13.80**	**323**	LR	LR	06 46 26.4	
	comp=Z,131nm,18.8s,baz=52,slow=38						
FITZ	**Fitzroy Crossi**	**20.38**	**120**	P	**P**	**06 41 52.9**	**-3.3**
	0.1nm,0.3s,baz=301,slow=12,SNR=2.5						
WRA	**Warramunga Arr**	**28.68**	**117**	P	**P**	**06 43 16.3**	**-0.2**
	0.5nm,0.6s,baz=292,slow=11,SNR=7.3						
ASAR	**Alice Springs**	**29.77**	**124**	P	**P**	**06 43 25.8**	**-0.4**
	0.3nm,0.8s,baz=313,slow=11,SNR=3.1						
H08S2	**Diego Garcia H**	**34.38**	**269**	T	T	07 21 23.4	
	baz=95						
H08S3	**Diego Garcia H**	**34.39**	**269**	T	T	07 21 25.9	
	baz=95						
H08S1	**Diego Garcia H**	**34.40**	**269**	T	T	07 21 22.5	
	baz=95						
STKA	**Stephens Creek**	**39.61**	**131**	P	**P**	**06 44 52.8**	**+1.8**
	4.1nm,0.5s,baz=301,slow=8.0,SNR=14						
MKAR	**Makanchi Array**	**59.20**	**340**	P	P	06 47 26.3	+5.9
	0.3nm,0.7s,baz=155,slow=7.9,SNR=3.4						
KURBB	**Kurchatov Arra**	**63.76**	**340**	P	P	06 47 58.8	+7.7
	0.1nm,0.3s,baz=159,slow=5.5,SNR=5.1						

DJA 04 07:13:54.9±0.4, 3°N±4°×98°E±°, h10km, M3.8/8, MLv3.8/8, Northern Sumatera

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
KCSI	**Kotacane, Aceh**	**0.15**	**349**	P	Pg	07 13 58.9	+0.6

Code	Station Name	Δ°	AZ°	Op	ISC	Time	Res
TPTI		0.63	260	P	Pg	07 14 07.0	-0.1
TSI	Tuntungan	0.77	80	P	Pg	07 14 09.4	-0.5
LHMI	Lhok Sumawe	2.03	335	P	Pg	07 14 34.1	+0.2
GSI	Gunungsitoli	2.06	186	P	Pn	07 14 29.3	-0.4
MNSI	Mandailing Nat	3.12	145	P	Pn	07 14 45.4	+1.3

WEL 04 07:14:55.8±0.3, 38.09S×176.20E, h165km±3km, ML3.5/8, 7C-6D, Error ellipse: s-maj=2.4km s-min=2.1km az=90.0, North Island

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
WPRZ	Whakapapatarin	0.43	184	PN	Pn	07 15 19.3	+0.7
PRRZ	Plateau Road	0.44	160	PN	Pn	07 15 19.0	+0.4
URZ	Urewera	0.74	104	⇓PN	Pn	07 15 19.9	-0.2
URZ				AML	AML	07 15 37.7	
URZ				AML	AML	07 15 38.6	
MRHZ	Matea Rd	0.77	167	⇑PN	Pn	07 15 20.5	+0.1
MWZ	Matawai	1.07	104	PN	Pn	07 15 22.5	-0.1
MWZ				AML	AML	07 15 43.0	
MWZ				AML	AML	07 15 43.6	
RAHZ	Arahi	1.08	140	⇓PN	Pn	07 15 23.1	+0.4
RAHZ				SN	Sn	07 15 43.2	-0.2
KRVZ	Karewarewa	1.10	203	PN	Pn	07 15 23.1	+0.2
BKZ	Black Stump Fm	1.10	168	⇑PN	Pn	07 15 22.8	-0.2
BKZ				SN	Sn	07 15 42.7	-1.1
BKZ				AML	AML	07 15 43.2	
SNGZ	Shannon Statio	1.13	128	PN	Pn	07 15 23.5	+0.3
SNGZ				SN	Sn	07 15 43.2	-1.0
FWVZ	Far West T-bar	1.27	203	PN	Pn	07 15 24.8	+0.2
WHHZ	Waihua	1.28	141	PN	Pn	07 15 24.6	+0.2
WHHZ				SN	Sn	07 15 45.6	-0.9
HAZ	Te Kaha	1.29	76	⇓PN	Pn	07 15 23.9	-0.6
ARHZ	Aropaoanui	1.33	152	PN	Pn	07 15 25.1	+0.3
ARHZ				SN	Sn	07 15 46.6	-0.7
TKGZ	Te Karaka	1.34	106	PN	Pn	07 15 25.3	+0.3
MOVZ	Moawhango	1.36	195	PN	Pn	07 15 24.9	-0.4
RIGZ	Rimuhau	1.38	117	PN	Pn	07 15 25.4	+0.1
RIGZ				SN	Sn	07 15 47.1	-0.9
BHHZ	Black Hill Sta	1.41	184	PN	Pn	07 15 25.4	-0.3
TWGZ	Tauwhareparae	1.41	94	PN	Pn	07 15 25.9	+0.2
KNZ	Kokohu	1.49	129	PN	Pn	07 15 26.2	-0.1
PKGZ	Pakihiroa	1.50	83	PN	Pn	07 15 26.5	0.0
KRHZ	Kereru	1.56	175	PN	Pn	07 15 26.9	-0.2
PUZ	Puketiti	1.62	90	PN	Pn	07 15 27.5	-0.3
CNGZ	Carnagh Statio	1.63	105	PN	Pn	07 15 28.3	+0.5
MHGZ	Mahia Peninsul	1.71	129	PN	Pn	07 15 28.7	+0.1
CKHZ	Cape Kidnapper	1.71	157	PN	Pn	07 15 28.7	0.0
MXZ	Matakaoa Point	1.75	73	PN	Pn	07 15 29.3	+0.2
WMGZ	Waiomatatini S	1.77	82	PN	Pn	07 15 29.1	-0.2
KAHZ	Kahuranaki	1.79	163	PN	Pn	07 15 29.4	-0.1
PNHZ	Pukenui	1.82	180	PN	Pn	07 15 29.2	-0.7
PNHZ				SN	Sn	07 15 54.7	-1.8
TSZ	Takapari Road	1.98	185	⇑PN	Pn	07 15 30.8	-0.8
TSZ				AML	AML	07 15 59.3	
TSZ				AML	AML	07 15 59.6	
WPHZ	Waipukurau	1.98	175	PN	Pn	07 15 30.9	-0.7
PXZ	Pawanui	2.01	165	⇑PN	Pn	07 15 31.3	-0.6
PXZ				AML	AML	07 16 00.7	
DVHZ	Dannevirke	2.21	181	PN	Pn	07 15 33.0	-1.2
POWZ	Post Office Ro	2.33	188	PN	Pn	07 15 34.4	-1.2
ANWZ	Angora Road	2.38	175	⇓PN	Pn	07 15 35.4	-0.8
ANWZ				SN	Sn	07 16 04.9	-2.7
PRWZ	Pori Road	2.47	184	PN	Pn	07 15 36.1	-1.2
BFZ	Birch Farm	2.59	179	PN	Pn	07 15 37.2	-1.6
MRZ	Mangatainoka R	2.62	190	⇑PN	Pn	07 15 37.3	-1.7
MRZ				AML	AML	07 16 10.6	
MRZ				AML	AML	07 16 11.0	
TIWZ	Tintock	2.70	185	⇓PN	Pn	07 15 38.4	-1.7
TIWZ				AML	AML	07 16 12.4	
OGWZ	Otaki Gorge	2.84	196	⇑PN	Pn	07 15 40.0	-1.7
HOWZ	Holdsworth Sta	2.86	190	⇑PN	Pn	07 15 39.9	-2.1
KIW	Kapiti Island	2.95	199	PN	Pn	07 15 41.1	-2.0
KIW				AML	AML	07 16 17.8	
TMWZ	Te Maipa	3.03	184	PN	Pn	07 15 41.9	-2.2
MTW	Mount Morrison	3.12	190	PN	Pn	07 15 42.6	-2.6
CAW	Cannon Point	3.14	196	⇓PN	Pn	07 15 43.3	-2.2
DUWZ	D'Urville Isla	3.23	212	PN	Pn	07 15 44.8	-1.9
TRWZ	Traveller	3.33	187	PN	Pn	07 15 45.3	-2.6
MSWZ	Moikau Station	3.41	192	PN	Pn	07 15 46.1	-2.8
TCW	Tory Channel	3.46	205	PN	Pn	07 15 47.2	-2.2
BHW	Baring Head	3.47	197	PN	Pn	07 15 46.8	-2.8
PLWZ	Palliser	3.56	192	PN	Pn	07 15 47.7	-3.0
THZ	Tophouse	4.46	214	PN	Pn	07 16 00.4	-2.0
KHZ	Kahutara	4.78	204	PN	Pn	07 16 03.4	-3.1

*IDC **04** 07:17:11.0±3.0, 36.03N×141.76E, h0km, mb3.5/3, mb1 3.6/4, mb1mx3.3/63, mbtmp3.4/4, ML3.3/1, MS2.3/1, Ms1 2.3/1, ms1mx1.9/46, Error ellipse: s-maj=82.0km s-min=33.7km az=60.0*
*ISCJB **04** 07:17:15.4±1.3, 35.8N±0.1×141.3E±0.1, h26km, mb3.6/2, MS3.9/1, Error ellipse: s-maj=15.9km s-min=12.8km az=176.8*
*JMA **04** 07:17:19.0±0.1, 35.72N×140.95E, h35km±1km, M3.1*
ISC 04 07:17:17.2±1.7, 35.81N±0.09×141.2E±0.1, h26km, n10, σ0.61/10, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
CHOJ	Chosi	0.29	249	P	Pb	07 17 24.7	+0.6
CHOJ				S	Sb	07 17 28.7	-0.2
JYT	Yasato	0.91	298	P	Pn	07 17 33.5	-0.8
JHO	Hitachi	0.95	328	P	Pb	07 17 35.6	+0.6
MJAR	Matsushiro Arr	2.52	288	Pn	Pn	07 17 57.1	+0.6
	4.2nm,0.3s,baz=95,slow=12,SNR=6.7						
MAT	Matsushiro	2.53	288	P	Pn	07 17 57.1	+0.6
MAT				S	Sn	07 18 26.0	-0.5
KSRS	Korea Array	10.79	283	LR	LR	07 24 32.4	
	comp=Z,12nm,18.2s,baz=153,slow=39						
MKAR	Makanchi Array	44.63	303	P	P	07 25 26.8	-0.6
	0.0nm,0.5s,baz=92,slow=9.7,SNR=4.3						
KURBB	Kurchatov Arra	46.62	309	P	P	07 25 43.1	+0.1
	0.5nm,0.4s,baz=81,slow=7.6,SNR=6.7						
WRA	Warramunga Arr	55.82	188	P	P	07 26 52.1	-0.2
	0.3nm,0.7s,baz=24,slow=6.9,SNR=1.7						
PFO	Pinyon Flats O	79.88	56	LR	LR	07 59 42.1	
	comp=Z,61nm,20.2s,baz=322,slow=32						

*NIED **04** 07:22:00, 37.20N×140.90E, h5km, Mw3.9 Best double couple: $M_0$6.95000×10^14 NP1:ϕ_s102.00000°, δ32.00000°, λ-83.00000°. NP2:ϕ_s274.00000°, δ58.00000°, λ-94.00000°.*
*JMA **04** 07:22:02.0, 37.21N×140.94E, h8km±1km, M3.5*
JMA Felt II J1.
*IDC **04** 07:22:09.4±2.2, 37.21N×140.88E, h69km±21km, mb3.5/14, mb1 3.7/17, mb1mx3.6/53, mbtmp3.8/17, MS3.0/9, Ms1 3.0/9, ms1mx2.8/48, Error ellipse: s-maj=20.5km s-min=14.6km az=134.0*
ISC 04 07:22:02.4±1.0, 37.22N±0.04×140.81E±0.06, h12km±6km, n38, σ0.58/28, mb3.8/14, MS3.2/4, 4C, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
ONAJ	Iwakimizuishiy	0.12	184	⇑P	Pg	07 22 05.4	0.0
JFK	Kawauchi	0.16	20	⇑P	Pg	07 22 05.6	-0.5
JFT	Otama	0.48	309	P	Pb	07 22 13.6	+0.8
JHO	Hitachi	0.64	198	⇑P	Pg	07 22 14.6	-0.1
JHO				S	Sg	07 22 23.7	+0.6
JMM	Marumori	0.65	359	⇑P	Pg	07 22 14.7	-0.3
JMM				S	Sg	07 22 23.7	+0.2
JSB	Shiboa	0.75	251	P	Pn	07 22 18.9	0.0
MJAR	Matsushiro Arr	2.19	253	P	Pb	07 22 42.3	+0.3
	11nm,0.3s,baz=98,slow=16,SNR=50						
MJAR				S	Sg	07 23 11.7	-1.1
	9.7nm,0.3s,baz=83,slow=28,SNR=11						
MJAR				LR	LR	07 23 49.8	
	comp=Z,105nm,20.8s,baz=95,slow=45						
MAT	Matsushiro	2.19	253	P	Pb	07 22 42.4	+0.4
MAT				S	Sg	07 23 12.6	-0.2
JNU	Nakatsue	9.10	246	LR	LR	07 28 09.6	
	comp=Z,116nm,18.1s,baz=115,slow=39						
USRK	Ussuriysk Ar.	9.66	319	P	Pn	07 24 27.2	+6.0
	0.2nm,0.3s,baz=138,slow=13,SNR=5.5						
JCJ	Chichijima	10.16	173	LR	LR	07 28 42.3	
	comp=Z,47nm,19.1s,baz=340,slow=39						
KSRS	Korea Array	10.27	275	P	Pn	07 24 38.4	+8.9
	0.5nm,0.3s,baz=94,slow=14,SNR=7.8						
KLR	Kul'dur	13.69	334	LR	LR	07 30 28.0	
	comp=Z,34nm,18.5s,baz=306,slow=36						
PETK	Petropavlovsk-	19.78	31	P	P	07 26 31.8	-0.5
	1.2nm,0.3s,baz=235,slow=12,SNR=5.5						
PETK				LR	LR	07 33 59.0	
	comp=Z,48nm,18.1s,baz=196,slow=36						
MA2	Magadan	23.28	13	P	P	07 27 10.2	+0.5
	2.3nm,0.6s,baz=215,slow=11,SNR=4.8						
MA2				LR	LR	07 36 44.2	
	comp=Z,29nm,19.2s,baz=210,slow=38						
YAK	Yakutsk	25.79	348	LR	LR	07 38 24.9	
	comp=Z,22nm,20.8s,baz=94,slow=38						
SEY	Seymchan	26.71	12	P	P	07 27 41.7	+0.5
	0.1nm,2.2s,baz=185,slow=6.5,SNR=5.4						
SONM	Songino Array	27.28	304	P	P	07 27 47.3	+0.5
	1.0nm,0.7s,baz=100,slow=7.1,SNR=5.9						
H11N2	WAKE ISLAND Hy	28.66	120	T	T	07 57 45.6	
	baz=314,slow=75,SNR=354						
H11N1	WAKE ISLAND Hy	28.67	120	T	T	07 57 46.2	
	baz=314,slow=75,SNR=360						
H11N3	WAKE ISLAND Hy	28.68	120	T	T	07 57 47.1	
	baz=314,slow=75,SNR=317						
H11S1	WAKE ISLAND Hy	29.37	122	T	T	07 58 37.9	
	baz=315,slow=76,SNR=78						
H11S3	WAKE ISLAND Hy	29.37	122	T	T	07 58 38.0	
	baz=315,slow=76,SNR=69						
H11S2	WAKE ISLAND Hy	29.38	122	T	T	07 58 39.1	
	baz=315,slow=76,SNR=63						
MKAR	Makanchi Array	43.61	302	P	P	07 30 07.2	+0.7
	0.8nm,0.7s,baz=90,slow=8.9,SNR=11						
KURBB	Kurchatov Arra	45.51	308	P	P	07 30 21.8	+0.3
	2.4nm,0.7s,baz=84,slow=8.1,SNR=23						
ILAR	Eielson Array	49.60	32	P	P	07 30 52.5	-0.6
	0.9nm,0.8s,baz=285,slow=5.9,SNR=9.3						
BVAR	Borovoye Array	50.09	312	P	P	07 30 57.1	+0.1
	1.1nm,0.6s,baz=79,slow=7.5,SNR=5.6						
INK	Inuvik	54.44	27	P	P	07 31 29.9	+0.8
	0.6nm,0.6s,baz=326,slow=5.4,SNR=6.1						
WRA	Warramunga Arr	57.18	187	P	P	07 31 48.2	-1.0
	0.6nm,0.5s,baz=3.8,slow=7.3,SNR=14						
ASAR	Alice Springs	60.91	187	LR	LR	07 57 54.5	
	comp=Z,61nm,19.0s,baz=202,slow=35						
YKA	Yellowknife Ar	63.89	30	P	P	07 32 34.4	-0.2
	0.2nm,0.7s,baz=303,slow=7.2,SNR=4.5						
AKASG	Malin Array Be	73.86	322	P	P	07 33 36.3	-0.5
	0.3nm,0.4s,baz=43,slow=5.3,SNR=4.5						
NVAR	Mina Array Bea	75.26	53	P	P	07 33 46.6	+1.1
	1.0nm,0.8s,baz=283,slow=6.2,SNR=5.5						
FRB	Frobisher Bay	76.70	13	LR	LR	08 09 50.9	
	comp=Z,32nm,18.9s,baz=14,slow=37						
PDAR	Pinedale Array	77.88	45	P	P	07 33 60.0	-0.3
	0.4nm,0.7s,baz=211,slow=1.6,SNR=4.5						
TXAR	Lajitas Array	90.39	52	P	P	07 35 03.8	-0.2
	0.4nm,0.5s,baz=327,slow=2.1,SNR=3.4						
LPAZ	La Paz	147.01	59	PKPbc	PKPbc	07 41 46.0	-0.3
	1.3nm,0.7s,baz=23,slow=4.7,SNR=6.6						

*ISCJB **04** 07:24:44.4±0.4, 39.12N±0.02×29.08E±0.03, h4km±5km, Error ellipse: s-maj=4.0km s-min=3.7km az=8.5*
*DDA **04** 07:24:44.5, 39.12N×29.09E, h12km, Md2.6*
*ISK **04** 07:24:44.0, 39.11N×29.10E, h5km, MD2.8*
*CSEM **04** 07:24:44.6±0.1, 39.12N×29.09E, h5km, MD2.6, Error ellipse: s-maj=2.1km s-min=1.8km az=66.0*
ISC 04 07:24:44.5±0.9, 39.13N±0.02×29.08E±0.02, h13km±7km, n48, σ0.36/72, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
DEMI	Demirci	0.29	253	*i* P	Pg	07 24 50.9	+0.3
DEMI				*i* S	Sg	07 24 55.0	+0.2
DEMI	Demirci	0.29	253	P	Pg	07 24 50.9	+0.3
DEMI				S	Sg	07 24 55.0	+0.2
GDZ	Gediz	0.32	97	*i* P	Pg	07 24 51.0	-0.1
GDZ				*i* S	Sg	07 24 55.4	-0.1
GDZ	Gediz	0.32	97	P	Pg	07 24 51.0	-0.1
GDZ				S	Sg	07 24 55.4	-0.1
TVSB	Tavsanli	0.44	43	*e*PG	Pg	07 24 53.0	-0.2
TVSB				*e*SG	Sg	07 24 59.0	-0.1
TVSB	Tavsanli	0.44	43	*e*Pg	Pg	07 24 53.0	-0.2
TVSB				*e*Sg	Sg	07 24 59.0	-0.1
DST	Dursunbey	0.59	323	*e*PG	Pb	07 24 56.6	-0.1
DST	Dursunbey	0.59	323	*e*Pg	Pb	07 24 56.6	-0.1
DURS	Dursunbey	0.66	315	*i* P	Pg	07 24 57.7	+0.3
DURS				*i* S	Sb	07 25 06.9	-0.2
DURS	Dursunbey	0.66	315	P	Pg	07 24 57.7	+0.3
DURS				S	Sb	07 25 06.9	-0.2
KULA	Kula-Manisa	0.70	208	*e*PG	Pg	07 24 57.7	-0.3
KULA				*e*SG	Sg	07 25 07.2	0.0
KULA	Kula-Manisa	0.70	208	*e*Pg	Pg	07 24 57.7	-0.3
KULA				*e*Sg	Sg	07 25 07.2	0.0
KHAL	Karahalli	0.82	157	*i* P	Pg	07 25 00.3	-0.2
KHAL				*i* S	Sb	07 25 11.5	-0.3
KHAL	Karahalli	0.82	157	P	Pg	07 25 00.3	-0.2
KHAL				S	Sb	07 25 11.5	-0.3
KHL	Karahalli	0.88	157	*e*PG	Pb	07 25 01.7	+0.1
KHL				*e*SG	Sb	07 25 13.1	-0.1
KHL	Karahalli	0.88	157	*e*Pg	Pb	07 25 01.7	+0.1
KHL				*e*Sg	Sb	07 25 13.1	-0.1
ORLT	Orhaneli	0.93	351	*e*PG	Pg	07 25 02.0	-0.4
ORLT	Orhaneli	0.93	351	*e*Pg	Pg	07 25 02.0	-0.4
ULDT	Uludag	1.01	3	*i* P	Pg	07 25 04.2	+0.2
ULDT				*i* S	Sg	07 25 17.7	+0.4
ULDT	Uludag	1.01	3	P	Pg	07 25 04.2	+0.2
ULDT				S	Sg	07 25 17.7	+0.4
BALB	Balikesir	1.06	299	*e*PN	Pn	07 25 05.8	+0.8
BALB				*e*SN	Sn	07 25 20.0	+0.5
BALB	Balikesir	1.06	299	*e*Pn	Pn	07 25 05.8	+0.8
BALB				*e*Sn	Sn	07 25 20.0	+0.5
IGD	Bursa	1.14	5	*i* P	Pb	07 25 05.1	-0.9
IGD				*i* S	Sg	07 25 21.4	+0.2
CAVI	Cavuskoy	1.22	29	*e*PN	Pg	07 25 08.4	+0.4
CAVI	Cavuskoy	1.22	29	*e*Pn	Pg	07 25 08.4	+0.4
IZI	Iznik	1.24	14	*e*PN	Pg	07 25 08.4	0.0
IZI	Iznik	1.24	14	*e*Pn	Pg	07 25 08.4	0.0
MDNY	Mudanya-Bursa	1.25	353	*e*PN	Pg	07 25 08.4	0.0
MDNY	Mudanya-Bursa	1.25	353	*e*Pn	Pg	07 25 08.4	0.0
KCTX	Karacabey (Bur	1.26	334	*e*PN	Pg	07 25 09.1	+0.3
KCTX	Karacabey (Bur	1.26	334	*e*Pn	Pg	07 25 09.1	+0.3
BALY	Balya	1.28	299	*i* P	Pg	07 25 09.0	-0.2
BALY				*i* S	Sg	07 25 25.6	-0.3
BALY	Balya	1.28	299	P	Pg	07 25 09.0	-0.2
BALY				S	Sg	07 25 25.6	-0.3
SHUT	Suhut-Afyon	1.29	116	*e*PN	Pn	07 25 08.3	+0.1
SHUT	Suhut-Afyon	1.29	116	*e*Pn	Pn	07 25 08.3	+0.1
BORA	Eskisehir	1.30	54	*i* P	Pg	07 25 09.8	+0.3
BORA				*i* S	Sg	07 25 26.7	+0.2
BORA	Eskisehir	1.30	54	P	Pg	07 25 09.8	+0.3
BORA				S	Sg	07 25 26.7	+0.2
ADVT	Abdulvahap	1.40	21	*e*PN	Pg	07 25 11.5	+0.2
ADVT	Abdulvahap	1.40	21	*e*Pn	Pg	07 25 11.5	+0.2
GONE	Gonen-Balikesi	1.41	311	*e*PN	Pg	07 25 11.4	-0.2
GONE	Gonen-Balikesi	1.41	311	*e*Pn	Pg	07 25 11.4	-0.2
ARMT	Armutlu	1.44	353	*e*PN	Pg	07 25 12.2	0.0
ARMT	Armutlu	1.44	353	*e*Pn	Pg	07 25 12.2	0.0
GULT	Gulveren	1.71	40	*e*PN	Pb	07 25 15.2	-0.5
GULT	Gulveren	1.71	40	*e*Pn	Pb	07 25 15.2	-0.5
RKY	Sarkoy-Tekirda	2.13	317	*e*PN	Pb	07 25 22.1	-0.9
RKY	Sarkoy-Tekirda	2.13	317	*e*Pn	Pb	07 25 22.1	-0.9
SART	Tekirdag	2.13	317	*i* P	Pg	07 25 24.4	-1.0
SART				*i* S	Sg	07 25 52.7	-0.4

*CSEM **04** 07:25:52.5±0.9, 37.56N×44.24E, h2km, MD2.9, Error ellipse: s-maj=17.5km s-min=8.8km az=121.0*
*DDA **04** 07:25:52.0, 37.55N×44.24E, h7km, Md2.9*
*ISK **04** 07:25:53.1, 37.62N×43.99E, h5km, MD2.8*
ISC 04 07:25:53.2±1.8, 37.57N±0.05×44.19E±0.08, h6km±11km, n21, σ1.11/36, Turkey-Iran border region

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
HAKT	HAKKARI	0.39	268	*i* P	Pg	07 26 00.3	-0.5
HAKT				*i* S	Sg	07 26 07.0	+1.1
HAKT	HAKKARI	0.39	268	P	Pg	07 26 00.3	-0.5
HAKT				S	Sg	07 26 07.0	+1.1
CUKT	Cukurca	0.57	236	*e*PG	Pg	07 26 03.5	-0.6
CUKT				*e*SG	Sg	07 26 11.7	+0.2
CUKT	Cukurca	0.57	236	*e*Pg	Pg	07 26 03.5	-0.6
CUKT				*e*Sg	Sg	07 26 11.7	+0.2
TVAN	Van	1.14	327	*i* P	Pg	07 26 14.3	-0.8
TVAN				*i* S	Sn	07 26 31.3	-0.7
TVAN	Van	1.14	327	P	Pg	07 26 14.3	-0.8
TVAN				S	Sn	07 26 31.3	-0.7
GEVA	Gevas	1.16	310	*i* P	Pg	07 26 15.2	-0.4
GEVA				*i* S	Sn	07 26 32.0	-0.5
GEVA	Gevas	1.16	310	P	Pg	07 26 15.1	-0.4
GEVA				S	Sn	07 26 32.0	-0.5
VANB	Van	1.20	328	*e*PN	Pg	07 26 15.1	-1.2
VANB				*e*SN	Sg	07 26 30.8	-1.2
VANB	Van	1.20	328	*e*Pn	Pg	07 26 15.1	-1.2
VANB				*e*Sn	Sg	07 26 30.8	-1.2
SIRN	S˜–rnak	1.42	268	*i* P	Pb	07 26 19.5	-0.6
SIRN				*i* S	Sg	07 26 39.8	+1.1
SIRN	S˜–rnak	1.42	268	P	Pb	07 26 19.5	-0.6
SIRN				S	Sg	07 26 39.8	+1.1
VMUR	Van-Muradiye	1.50	341	*i* P	Pg	07 26 22.1	+0.2
VMUR				*i* S	Sg	07 26 45.5	+4.1
VMUR	Van-Muradiye	1.50	341	P	Pg	07 26 22.1	+0.2
CLDR	Caldiran	1.59	352	*e*PN	Pb	07 26 22.4	-0.7
CLDR	Caldiran	1.59	352	*e*Pn	Pb	07 26 22.4	-0.7
AGRB	Hanur-Agry	2.21	335	*e*PN	Pn	07 26 31.1	+0.6
AGRB	Hanur-Agry	2.21	335	*e*Pn	Pn	07 26 31.2	+0.6
BTMN	Batman	2.34	279	*i* P	Pb	07 26 34.8	-1.0
BTMN				*i* S	Sg	07 27 07.4	-1.0
BTMN	Batman	2.34	279	P	Pb	07 26 34.8	-1.0
MARD	Mardin	2.73	266	*i* P	Pb	07 26 42.6	+0.2
MARD				*i* S	Sb	07 27 17.9	+1.7

NNC 04 07:27:52.9±2.4, 37.48N×71.61E, h160km±41km, mb3.0, mpv3.9, 5C-3D, Error ellipse: s-maj=31.6km s-min=18.5km az=62.0, Afghanistan-Tajikistan border region

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
SFK	Sufi-Kurgan	2.93	30	⇑P	Pn	07 28 39.9	-0.1
	13nm,0.4s						
SFK				⇓S	Sn	07 29 17.0	+0.4
	15nm,0.2s						
MNAS	Manas	5.05	8	⇓P	Pn	07 29 07.5	+0.3
	13nm,0.4s						
MNAS				⇑S	Sn	07 30 06.1	+0.8
	7.0nm,0.4s						
AAK	Ala-Archa	5.60	22	⇑P	Pn	07 29 14.5	-0.1
	6.8nm,0.4s						
AAK				⇓S	Sn	07 30 19.3	+0.8
	16nm,0.7s						
KK31	Karatay Array	5.68	352	P	Pn	07 29 16.3	+0.9
	4.5nm,0.3s,baz=166,slow=12,SNR=82						
KK31				S	Sn	07 30 21.1	+1.0
	3.3nm,0.3s,baz=173,slow=24,SNR=12						
TKM2	Tokmak 2	6.23	28	⇑P	Pn	07 29 22.4	-0.6
	6.7nm,1.1s						
AB31	Akbulak array	14.49	328	P	P	07 31 12.0	-0.6
	1.1nm,0.4s,baz=135,slow=13,SNR=20						
AB31				⇑S	Sn	07 33 45.2	-5.9
	2.8nm,0.7s,baz=153,slow=23,SNR=9.0						

IDC 04 07:31:49.9±11.0, 14.47S×167.43E, h62km±106km, mb3.5/3, mb1 3.8/4, mb1mx3.3/50, mbtmp3.9/4, ML4.3/1, Error ellipse: s-maj=112.4km s-min=49.1km az=167.0, Vanuatu Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
DZM	Mont Dzumac	7.62	187	P	Pn	07 33 38.3	-0.1
	4.1nm,0.3s,baz=34,slow=10,SNR=41						
DZM				S	Sn	07 34 54.9	-8.4
	baz=169,slow=16,SNR=1.7						
STKA	Stephens Creek	29.28	229	P	P	07 37 45.9	-0.6
	0.6nm,0.3s,baz=54,slow=8.1,SNR=5.4						
WRA	Warramunga Arr	32.04	256	P	P	07 38 11.3	+0.2
	0.6nm,0.9s,baz=85,slow=8.4,SNR=5.9						
ASAR	Alice Springs	32.91	249	P	P	07 38 18.8	+0.2
	1.1nm,0.8s,baz=77,slow=9.1,SNR=7.6						
ARCES	ARCESS Array B	120.04	345	PKP	PKPdf	07 50 33.0	-0.1
	1.8nm,0.8s,baz=52,slow=2.0,SNR=5.5						

*IDC **04** 07:37:51.9±2.6, 3.41S×129.05E, h0km, mb4.0/2, mb1 4.1/3, mb1mx3.7/48, mbtmp3.9/3, ML3.6/1, Error ellipse: s-maj=181.5km s-min=29.8km az=69.0*
*ISCJB **04** 07:37:53.8±0.7, 3.34S±0.09×129.57E±0.07, h28km, mb3.9/1, Error ellipse: s-maj=12.8km s-min=10.2km az=15.8*
*DJA **04** 07:37:54.5±0.6, 3°S±9°×13°0E±°, h10km, M3.6/7, MLv3.6/7*
ISC 04 07:37:55.7±1.1, 3.20S±0.08×129.64E±0.07, h28km, n10, σ1.53/9, Seram

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
MSAI	Masohi	0.73	259	P	Pb	07 38 05.6	-4.2
BNDI	Bandanaira	1.34	169	P	Sn	07 38 36.0	+0.6
NLAI	Namlea	2.54	269	P	Pn	07 38 37.2	+2.2
FAKI	Fak Fak	2.62	84	P	Pn	07 38 37.4	+1.3
SWI	Sorong	2.83	35	P	Pn	07 38 40.1	+1.1
LBMI	Labuha	3.33	320	P	Pn	07 38 46.3	+0.4
SANI	Sanana	3.83	287	P	Pn	07 38 53.0	+0.2
WRA	Warramunga Arr	17.26	165	P	Pn	07 41 52.4	-2.4
	0.2nm,0.3s,baz=345,slow=12,SNR=10						
ASAR	Alice Springs	20.76	169	P	P	07 42 34.5	0.0
	9.2nm,0.6s,baz=349,slow=11,SNR=47						
MKAR	Makanchi Array	64.89	326	P	P	07 48 32.1	-0.4
	0.6nm,0.5s,baz=130,slow=6.4,SNR=2.0						

*IDC **04** 07:41:00.5±0.7, 9.96S×107.58E, h0km, mb4.3/13, mb1 4.4/14, mb1mx4.1/49, mbtmp4.3/14, ML4.6/1, MS3.3/3, Ms1 3.4/3, ms1mx2.9/46, Error ellipse: s-maj=28.3km s-min=14.8km az=60.0*
*NEIC **04** 07:41:02.0±0.4, 10.04S×107.55E, h10km, mb4.7/8, Error ellipse: s-maj=10.9km s-min=7.5km az=47.0*
*DJA **04** 07:41:01.4±0.5, 10°S±5°×10°8E±°, h10km, M4.9/19, mb5.0/6, mB5.5/3, MLv4.8/19, Mw(mB)4.9/3*
*ISCJB **04** 07:41:02.0±0.4, 9.97S±0.04×107.60E±0.04, h23km, mb4.3/20, MS3.1/1, Error ellipse: s-maj=6.7km s-min=5.2km az=43.0*
ISC 04 07:41:04.2±0.5, 9.92S±0.06×107.70E±0.06, h23km, n58, σ1.10/58, mb4.4/20, 2C, South of Jawa

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
XMIS	Christmas Isla	2.09	254	*e*Pn	Pn	07 41 32.9	-4.9
XMIS				*e*Sn	Sn	07 41 54.9	-8.3
CMJI	Cimerak	2.25	19	P	Pn	07 41 39.6	-0.4
CISI	Cisompet, Garu	2.35	3	P	Pn	07 41 40.9	-0.6
CISI	Cisompet, Garu	2.35	3	*e*Pn	Pn	07 41 40.7	-0.8
CISI				*e*Sn	Sn	07 42 08.9	-0.7
CNJI	Cibinong	2.65	348	P	Pn	07 41 44.2	-1.4
KPJI	Karang Pucung	2.84	26	P	Pn	07 41 49.6	+1.4
LEM	Lembang	3.07	359	Pn	Pb	07 41 57.8	-0.5
	91nm,0.3s,baz=116,slow=7.5,SNR=24						
LEM				Lg	Lg	07 42 37.8	
	182nm,0.3s,baz=347,slow=20,SNR=20						
LEM				LR	LR	07 43 34.2	
	comp=Z,896nm,19.6s,baz=196,slow=49						
LEM	Lembang	3.07	359	P	Pb	07 41 58.4	+0.1
SKJI	Sukabumi	3.11	339	P	Pn	07 41 51.1	-0.7
UGM	Wanagama	3.43	55	P	Pn	07 41 56.8	+0.5
DBJI	Dramaga	3.47	344	P	Pn	07 41 56.7	-0.2
CGJI	Cibinong	3.83	329	P	Pn	07 42 00.7	-1.1
PCJI	Pacitan	3.84	64	P	Pn	07 42 02.7	+0.8
SMRI	Semarang	3.94	44	P	Pn	07 42 05.3	+2.1
PWJI	Pagerwojo	4.47	65	P	Pn	07 42 11.8	+1.2
NGJI	Ngawi	4.50	56	P	Pn	07 42 10.0	-1.0
GMJI	Gumukmas	5.91	74	P	Pn	07 42 32.4	+2.1
	74nm,0.7s,2µm0.4nm						
JAGI	Jajag, Banyuwa	6.53	78	P	Pn	07 42 40.1	+1.1
	128nm,0.8s,4µm1.2nm						
JAGI	Jajag, Banyuwa	6.53	78	*e*Pn	Pn	07 42 40.1	+1.1
	81nm,0.4s						
JAGI				*e*Sn	Sn	07 43 50.4	-2.5
SRBI	Singaraja	7.64	77	P	Pn	07 42 56.1	+1.9
	52nm,0.7s,0.5nm						
PLAI	Plampang	10.01	85	P	Pn	07 43 27.4	+0.8
KAPI	Kappang	12.90	69	LR	LR	07 49 34.6	
	comp=Z,118nm,19.4s,baz=248,slow=40						
PSI	Prapat	15.36	325	Pn	Pn	07 44 40.5	+0.7
	0.6nm,0.3s,baz=94,slow=18,SNR=2.6						
IPM	Ipoh	15.77	335	*e*Pn	P	07 44 47.7	-1.0
	17nm,0.6s						

FITZ	**Fitzroy Crossi**	**19.20**	**117**	P	**Pn**	**07 45 28.8**	**+1.2**
	1.3nm,0.3s,baz=312,slow=10,SNR=15						
FITZ				S	**Sn**	**07 48 59.7**	**-2.7**
	0.8nm,0.3s,baz=56,slow=8.3,SNR=4.7						
FITZ	**Fitzroy Crossi**	**19.20**	**117**	*e*P	**Pn**	**07 45 29.3**	**+1.6**
FITZ				S	**Sn**	**07 48 59.7**	**-2.7**
WRA	**Warramunga Arr**	**27.56**	**114**	P	**P**	**07 46 49.4**	**-0.3**
	2.8nm,0.8s,baz=285,slow=12,SNR=28						
WRAB	**Tennant Creek**	**27.57**	**114**	*e*P	**P**	**07 46 49.7**	**-0.1**
	1.7nm,0.3s						
ASAR	**Alice Springs**	**28.50**	**122**	P	**P**	**07 46 58.3**	**+0.2**
	1.2nm,0.6s,baz=298,slow=8.7,SNR=11						
ASAR				PcP	**PcP**	**07 50 08.5**	**-1.2**
	0.6nm,0.5s,baz=325,slow=1.5,SNR=5.4						
CMAR	**Chiang Mai Arr**	**29.49**	**343**	P	**P**	**07 47 08.1**	**+1.3**
	0.9nm,0.4s,baz=178,slow=8.8,SNR=5.2						
CMAR				LR	LR	08 00 13.1	
	comp=Z,39nm,18.2s,baz=175,slow=39						
H08S2	**Diego Garcia H**	**34.85**	**271**	T	T	08 25 56.0	
	baz=91						
H08S3	**Diego Garcia H**	**34.87**	**271**	T	T	08 25 54.3	
	baz=91						
H08S1	**Diego Carcia H**	**34.87**	**271**	T	T	08 25 57.6	
	baz=91						
STKA	**Stephens Creek**	**38.22**	**130**	P	**P**	**07 48 22.8**	**+0.3**
	4.1nm,0.5s,baz=316,slow=6.7,SNR=13						
SONM	**Songino Array**	**57.51**	**359**	P	**P**	**07 50 52.1**	**+0.3**
	1.9nm,0.8s,baz=165,slow=7.1,SNR=8.0						
USRK	**Ussuriysk Ar.**	**58.20**	**20**	P	**P**	**07 50 57.0**	**+0.6**
	1.4nm,0.8s,baz=219,slow=8.5,SNR=5.6						
MKAR	**Makanchi Array**	**60.85**	**340**	P	**P**	**07 51 14.7**	**-0.1**
	1.3nm,0.5s,baz=143,slow=6.4,SNR=14						
KLR	**Kul'dur**	**62.58**	**18**	P	**P**	**07 51 25.7**	**-0.6**
	2.6nm,0.7s,baz=235,slow=3.1,SNR=6.1						
MAW	**Mawson**	**64.80**	**197**	P	**P**	**07 51 40.4**	**-0.3**
	2.3nm,0.7s,baz=56,slow=7.0,SNR=4.8						
KURK	**Kurchatov**	**65.46**	**340**	*e*P	**P**	**07 51 46.0**	**+0.8**
	7.4nm,0.9s						
BRVK	**Borovoye**	**70.37**	**337**	*e*P	**P**	**07 52 16.1**	**0.0**
	5.9nm,1.2s						
ABKAR	**Akbulak array**	**72.26**	**329**	*e*P	**P**	**07 52 27.3**	**-0.2**
	4.9nm,0.5s						
SYO	**Syowa Base**	**73.02**	**200**⇑	*i*P	**P**	**07 52 30.8**	**-1.0**
SYO	**Syowa Base**	**73.02**	**200**⇑	*i*pP	**P**	**07 52 33.4**	**+1.6**
MA2	**Magadan**	**77.35**	**21**	P	**P**	**07 52 56.8**	**-0.1**
	2.1nm,0.6s,baz=236,slow=11,SNR=5.2						
ARU	**Arti**	**77.53**	**335**	*e*P	**P**	**07 52 58.3**	**+0.3**
	3.3nm,0.4s						
QSPA	**South Pole Qui**	**80.09**	**180**	*e*P	**P**	**07 53 11.4**	**-0.7**
	10nm,0.9s						
NRIK	**Noril'sk**	**80.31**	**353**	P	**P**	**07 53 12.8**	**-0.1**
	1.6nm,0.3s,baz=159,slow=5.2,SNR=4.6						
SEY	**Seymchan**	**80.31**	**19**	P	**P**	**07 53 13.8**	**+0.8**
	1.1nm,0.5s,baz=225,slow=8.6,SNR=6.5						
TIXI	**Tiksi**	**82.61**	**7**	*e*P	**P**	**07 53 24.9**	**-0.1**
	3.5nm,0.7s						
BRTR	**Keskin Array B**	**84.27**	**312**	P	**P**	**07 53 33.5**	**-1.0**
	1.7nm,0.9s,baz=140,slow=6.0,SNR=7.0						
YKA	**Yellowknife Ar**	**119.33**	**21**	PKP	**PKPdf**	**07 59 51.1**	**-0.2**
	0.4nm,0.8s,baz=320,slow=1.9,SNR=7.5						
NVAR	**Mina Array Bea**	**130.05**	**48**	PKP	**PKPdf**	**08 00 14.4**	**+1.5**
	0.5nm,0.8s,baz=249,slow=1.3,SNR=3.7						
TXAR	**Lajitas Array**	**144.88**	**52**	PKPbc	**PKPdf**	**08 00 40.3**	**+0.1**
	2.3nm,1.0s,baz=289,slow=3.8,SNR=7.9						
BDFB	**Brasilia**	**145.02**	**224**	PKP	**PKPbc**	**08 00 39.8**	**-0.4**
	1.3nm,0.8s,baz=194,slow=5.7,SNR=3.4						
LONY	**Lake Ozonia**	**145.37**	**3**	*e*PKPbc	**PKPdf**	**08 00 40.8**	**+0.3**
SIV	**San Ignacio**	**151.96**	**203**	PKPbc	**PKPbc**	**08 00 58.6**	**+0.1**
	2.2nm,0.8s,baz=108,slow=4.6,SNR=3.6						
SIV	**San Ignacio**	**151.96**	**203**	*e*P	**PKPbc**	**08 00 58.6**	**+0.1**

*ISCJB **04** 07:43:59.8±0.8, 38°.24N±0°.03×142°.13E±0°.07, h37^{km}±7^{km}, mb4.1/17, MS3.4/1, Error ellipse: s-maj=9.3km s-min=4.8km az=11.0*
*JMA **04** 07:44:00.8±0.2, 38°.33N×142°.11E, h41^{km}±3^{km}, M4.1*
JMA Felt II J1.
*NIED **04** 07:44:00, 38°.30N×142°.10E, h35^{km}, Mw4.1 Best double couple: $M_0$1.80000×10^{15} NP1:ϕ_s114.00000°, δ29.00000°, λ-24.00000°. NP2:ϕ_s225.00000°, δ79.00000°, λ-117.00000°.*
*NEIC **04** 07:44:02.8±0.9, 38°.30N×142°.16E, h46^{km}±9^{km}, mb4.7/1, Error ellipse: s-maj=11.9km s-min=7.7km az=117.0*
*IDC **04** 07:44:02.1±0.7, 38°.27N×142°.07E, h39^{km}±6^{km}, mb3.8/16, mb1 4.1/18, mb1mx3.8/55, mbtmp4.1/18, ML3.6/2, MS3.2/7, Ms1 3.2/7, ms1mx2.9/45, Error ellipse: s-maj=17.7km s-min=13.5km az=104.0*
ISC 04 07:44:00.2±0.8**, 38°.24N**±0°.04×**142°.05E**±0°.06**, h27**^{km}±5^{km}**, n47,** σ1^s**04**/48**, mb4.0**/17**, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**0.59**	**292**	P	**Pn**	**07 44 13.1**	**+0.2**
JIO				S	**Sn**	**07 44 21.2**	**-0.4**
OFUJ	**Ofunato**	**0.89**	**341**	P	**Pn**	**07 44 15.8**	**-1.2**
JMK	**Ichinoseki**	**0.96**	**318**	P	**Pn**	**07 44 17.7**	**-0.3**
JMK				S	**Sb**	**07 44 29.4**	**-1.3**
JMM	**Marumori**	**1.06**	**250**	P	**Pb**	**07 44 20.2**	**+0.3**
JMM				S	**Sb**	**07 44 34.4**	**+1.0**
JOU	**Okura**	**1.10**	**277**	P	**Pb**	**07 44 21.0**	**+0.4**
JOU				S	**Sb**	**07 44 35.6**	**+1.1**
JFK	**Kawauchi**	**1.27**	**227**	P	**Pb**	**07 44 23.2**	**-0.4**
JFK				S	**Sn**	**07 44 39.0**	**+0.5**
JOM	**Ohasama**	**1.37**	**335**	P	**Pn**	**07 44 23.2**	**-0.4**
JOM				S	**Sn**	**07 44 39.7**	**-1.1**
MJAR	**Matsushiro Arr**	**3.50**	**242**	Pn	**Pb**	**07 44 58.4**	**-3.1**
	3.2nm,0.3s,baz=57,slow=9.2,SNR=12						
MJAR				LR	LR	07 46 33.4	
	comp=Z,187nm,19.1s,baz=45,slow=43						
MAJO	**Matsushiro**	**3.50**	**242**	*e*Pn	Pn	07 44 56.5	+3.7
MAJO				*e*Sn	**Sn**	**07 45 31.6**	**-1.8**
ERM	**Erimo**	**3.87**	**12**	*e*Pn	**Pn**	**07 44 57.6**	**-0.3**
ERM				*e*Sn	**Sn**	**07 45 43.3**	**+0.9**
JHJ2	**Mitsune**	**5.43**	**200**	*e*Pn	**Pn**	**07 45 20.9**	**+1.5**
JHJ2				*e*Sn	**Sn**	**07 46 21.8**	**+0.8**
JHJ	**Hachijo jima 2**	**5.43**	**201**	Pn	**Pn**	**07 45 20.7**	**+1.3**
	44nm,0.3s,baz=72,slow=5.0,SNR=6.1						
JHJ				Sn	**Sn**	**07 46 21.2**	**+0.3**
	42nm,0.3s,baz=72,slow=20,SNR=4.7						
USRK	**Ussuriysk Ar.**	**9.64**	**311**	Pn	**Pn**	**07 46 19.3**	**+2.2**
	0.8nm,0.3s,baz=120,slow=11,SNR=26						
USRK				LR	LR	07 49 42.9	
	comp=Z,174nm,21.5s,baz=101,slow=35						
JNU	**Nakatsue**	**10.42**	**244**	LR	LR	07 50 52.3	
	comp=Z,83nm,19.2s,baz=114,slow=39						
CBIJ	**Chichi jima**	**11.11**	**179**	Pn	**Pn**	**07 46 35.1**	**-2.3**
CBIJ				Sn	Sn	07 48 31.6	-9.0
JCJ	**Chichijima**	**11.11**	**179**	Pn	**Pn**	**07 46 35.1**	**-2.3**
	baz=274,slow=19						
JCJ				Sn	Sn	07 48 31.6	-9.0
	2.0nm,0.3s,baz=299,slow=19,SNR=2.9						
KSRS	**Korea Array**	**11.20**	**270**	LR	LR	07 50 40.7	
	comp=Z,74nm,20.1s,baz=104,slow=35						
KLR	**Kul'dur**	**13.26**	**329**	LR	LR	07 52 09.7	
	comp=Z,147nm,19.8s,baz=16,slow=37						
JOW	**Kunigami**	**16.23**	**230**	LR	LR	07 52 44.7	
	comp=Z,123nm,20.8s,baz=66,slow=32						
MA2	**Magadan**	**22.07**	**12**	P	**P**	**07 48 52.1**	**-0.7**
	4.0nm,0.6s,baz=206,slow=9.1,SNR=7.2						
MA2	**Magadan**	**22.07**	**12**	*e*P	**P**	**07 48 52.8**	**0.0**
SEY	**Seymchan**	**25.51**	**11**	P	**P**	**07 49 26.9**	**+0.8**
	2.8nm,0.7s,baz=191,slow=4.9,SNR=12						
SONM	**Songino Array**	**27.55**	**302**	P	**P**	**07 49 46.1**	**+1.2**
	1.2nm,0.6s,baz=115,slow=9.2,SNR=8.2						
H11N2	**WAKE ISLAND Hy**	**28.36**	**124**	T	T	08 20 18.5	
	baz=316,slow=75,SNR=780						
H11N1	**WAKE ISLAND Hy**	**28.37**	**124**	T	T	08 20 19.3	
	baz=316,slow=75,SNR=836						
H11N3	**WAKE ISLAND Hy**	**28.38**	**124**	T	T	08 20 20.0	
	baz=316,slow=75,SNR=682						
H11S1	**WAKE ISLAND Hy**	**29.12**	**126**	T	T	08 21 04.2	
	baz=318,slow=76,SNR=400						
H11S3	**WAKE ISLAND Hy**	**29.12**	**126**	T	T	08 20 33.4	
	baz=318,slow=76,SNR=11						
H11S2	**WAKE ISLAND Hy**	**29.13**	**126**	T	T	08 20 34.5	
	baz=318,slow=76,SNR=13						
ZALV	**Zalesovo Beam**	**41.49**	**311**	P	**P**	**07 51 45.1**	**+0.4**
	3.9nm,0.3s,baz=89,slow=7.7,SNR=14						
NRIK	**Noril'sk**	**42.39**	**335**	LR	LR	08 10 25.1	
	comp=Z,49nm,19.2s,baz=119,slow=37						
MKAR	**Makanchi Array**	**43.92**	**301**	P	**P**	**07 52 04.7**	**+0.1**
	1.3nm,0.6s,baz=81,slow=7.2,SNR=6.5						
ILAR	**Eielson Array**	**48.21**	**33**	P	**P**	**07 52 37.6**	**-0.4**
	0.7nm,0.7s,baz=265,slow=5.7,SNR=8.1						
TKM2	**Tokmak 2**	**49.51**	**298**	*e*P	**P**	**07 52 49.6**	**+1.0**
	3.6nm,0.5s						
ABKAR	**Akbulak array**	**57.55**	**310**	*e*P	**P**	**07 53 46.7**	**-0.6**
WRA	**Warramunga Arr**	**58.32**	**189**	P	**P**	**07 53 53.0**	**+0.2**
	0.8nm,0.4s,baz=7.8,slow=7.7,SNR=6.1						
WRA				pP	**sP**	**07 54 04.6**	**+0.1**
	1.9nm,0.6s,baz=5.2,slow=7.2,SNR=6.9						
ASAR	**Alice Springs**	**62.05**	**188**	P	**P**	**07 54 19.1**	**+0.8**
	1.0nm,0.7s,baz=10,slow=6.9,SNR=7.6						
ASAR				pP	**sP**	**07 54 30.7**	**+0.7**
	1.1nm,0.8s,baz=9.4,slow=6.7,SNR=5.1						
YKA	**Yellowknife Ar**	**62.52**	**31**	P	**P**	**07 54 20.8**	**-0.2**
	0.3nm,0.7s,baz=301,slow=6.8,SNR=6.3						
ARCES	**ARCESS Array B**	**63.05**	**339**	P	**P**	**07 54 24.7**	**+0.2**
	4.2nm,0.9s,baz=49,slow=6.1,SNR=3.6						
FINES	**FINESS Array B**	**67.99**	**332**	P	**P**	**07 54 56.2**	**-0.3**
	2.4nm,0.6s,baz=36,slow=8.8,SNR=12						
NB2	**NORSAR Subarra**	**73.27**	**337**	P	**P**	**07 55 28.6**	**-0.2**
	comp=Z,3.0nm,0.9s,baz=40,slow=6.2						
NOA	**NORSAR Array B**	**73.27**	**337**	P	**P**	**07 55 28.2**	**-0.6**
	comp=Z,1.9nm,0.8s,baz=39,slow=6.0,SNR=4.4						
AKASG	**Malin Array Be**	**73.66**	**322**	P	**P**	**07 55 30.9**	**-0.2**
	comp=Z,1.7nm,0.5s,baz=46,slow=6.1,SNR=10.0						
NVAR	**Mina Array Bea**	**73.87**	**54**	P	**P**	**07 55 33.2**	**+0.3**
	comp=Z,1.2nm,0.9s,baz=283,slow=6.3,SNR=5.7						
PDAR	**Pinedale Array**	**76.47**	**46**	P	**P**	**07 55 48.0**	**+0.2**
	comp=Z,0.6nm,0.5s,baz=304,slow=0.8,SNR=12						
PDAR				pP	**PcP**	**07 55 60.0**	**+0.5**
	comp=Z,1.1nm,0.6s,baz=266,slow=2.5,SNR=8.9						
TXAR	**Lajitas Array**	**88.99**	**53**	P	**P**	**07 56 53.4**	**+0.6**
	comp=Z,0.7nm,0.6s,baz=316,slow=3.8,SNR=4.7						
LPAZ	**La Paz**	**145.64**	**59**	PKPbc	**PKPbc**	**08 03 37.5**	**0.0**
	comp=Z,1.2nm,0.5s,baz=16,slow=7.4,SNR=7.2						

*IDC **04** 07:50:44.9±0.9, 48°.55S×87°.05W, h0^{km}, mb4.4/8, mb1 4.6/8, mb1mx4.1/38, mbtmp4.4/8, Error ellipse: s-maj=49.9km s-min=26.2km az=108.0*
*NEIC **04** 07:50:46.0±0.3, 48°.70S×86°.84W, h10^{km}, mb5.0/22, Error ellipse: s-maj=17.0km s-min=10.8km az=101.0*
*ISCJB **04** 07:50:46.5±2.6, 48°.3S±0°.5×86°.9W±0°.4, h10^{km}, mb4.8/30, Error ellipse: s-maj=78.1km s-min=22.1km az=152.0*
ISC 04 07:50:46.6±0.5**, 48°.5S**±0°.1×**87°.1W**±0°.2**, h10**^{km}**, n125,** σ**0**^{s}**94**/127**, mb4.8**/30**, 1C, Southern Pacific Ocean**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LCO	**Las Campanas**	**23.22**	**39**	*e*P	**P**	**07 55 54.3**	**+0.4**
	27nm,1.4s						
LPAZ	**La Paz**	**35.71**	**32**	P	**P**	**07 57 46.0**	**+0.1**
	11nm,1.3s,baz=175,slow=6.1,SNR=16						
ATAH	**Atahualpa**	**41.91**	**13**	P	**P**	**07 58 37.4**	**-0.3**
	5.6nm,0.8s,baz=189,slow=8.8,SNR=4.0						
OTAV	**Otavalo**	**49.15**	**11**	P	P	07 59 28.0	-7.1
	14nm,1.0s						
OTAV				*e*		07 59 34.5	
ROSC	**El Rosal**	**54.31**	**16**	P	**P**	**08 00 14.8**	**+1.3**
	2.2nm,0.5s,baz=141,slow=10,SNR=7.2						
HELC	**Santa Helena**	**55.43**	**14**	*e*P	**P**	**08 00 21.3**	**-0.2**
	33nm,1.6s						
SYO	**Syowa Base**	**56.37**	**160**⇑	*e*sP	**P**	**08 00 28.2**	**+0.9**
SDV	**Santo Domingo**	**58.98**	**19**	P	**P**	**08 00 45.2**	**-1.3**
	2.5nm,0.9s,baz=156,slow=9.1,SNR=3.9						
CMIG	**Matias Romero**	**65.69**	**352**	P	**P**	**08 01 29.8**	**-1.3**
	7.4nm,1.1s,baz=184,slow=3.0,SNR=8.0						
034A	**Hebbronville**	**75.96**	**349**	P	**P**	**08 02 35.8**	**+2.5**
	baz=172						
834A	**Tilden**	**76.99**	**350**	P	**P**	**08 02 41.2**	**+2.0**
	baz=172						
833A	**Chaparral WMA,**	**77.29**	**349**	P	**P**	**08 02 42.3**	**+1.4**
	baz=172						
832A	**Faith Ranch, C**	**77.33**	**348**	P	**P**	**08 02 41.7**	**+0.6**
	baz=171						
735A	**Kenedy**	**77.63**	**350**	P	**P**	**08 02 44.1**	**+1.4**
	baz=173						
633A	**Saathoff Ranch**	**78.38**	**349**	P	**P**	**08 02 48.0**	**+1.1**
	baz=172						
534A	**Blanco**	**78.86**	**350**	P	**P**	**08 02 49.7**	**+0.2**
	baz=172						
LTX	**Lajitas**	**78.92**	**345**	*e*P	**P**	**08 02 50.9**	**+0.9**
TX31	**Lajitas Ar. Si**	**78.92**	**345**	*e*P	**P**	**08 02 50.8**	**+0.8**
TXAR	**Lajitas Array**	**78.92**	**345**	P	**P**	**08 02 50.9**	**+0.9**
	3.4nm,1.0s,baz=168,slow=7.7,SNR=14						
533A	**Kerrville**	**78.97**	**349**	P	**P**	**08 02 51.0**	**+0.8**
	baz=172						
JCT	**Junction City**	**79.47**	**349**	P	**P**	**08 02 53.5**	**+0.6**
	baz=171						
JCT	**Junction City**	**79.47**	**349**	*e*P	**P**	**08 02 53.9**	**+0.9**
	9.5nm,1.0s						
434A	**Burnet**	**79.61**	**350**	P	**P**	**08 02 54.2**	**+0.6**
	baz=172						
433A	**Art**	**79.65**	**350**	P	**P**	**08 02 53.9**	**+0.1**
	baz=172						
338A	**Crockett**	**79.86**	**353**	P	**P**	**08 02 56.4**	**+1.5**
	baz=174						
336A	**Riesel**	**80.03**	**352**	P	**P**	**08 02 56.7**	**+0.8**
	baz=173						
334A	**Lometa**	**80.12**	**350**	P	**P**	**08 02 57.1**	**+0.7**
	baz=172						
333A	**Richland Sprin**	**80.20**	**350**	P	**P**	**08 02 57.1**	**+0.2**
	baz=172						
245A	**Little AP, Sta**	**80.24**	**358**	P	**P**	**08 02 57.7**	**+0.7**
	baz=178						
234A	**Clairette**	**80.78**	**351**	P	**P**	**08 03 00.2**	**+0.3**
	baz=172						
134A	**White-Moore Ra**	**81.33**	**351**	P	**P**	**08 03 04.6**	**+1.8**
	baz=172						
133A	**Hamilton Ranch**	**81.46**	**350**	P	**P**	**08 03 04.7**	**+1.2**
	baz=172						
MNTX	**Cornudas Mount**	**81.53**	**344**	P	**P**	**08 03 02.5**	**-1.4**
	baz=168						
MNTX	**Cornudas Mount**	**81.53**	**344**	*e*P	**P**	**08 03 03.5**	**-0.4**
	6.6nm,1.5s						
GOGA	**Godfrey**	**81.64**	**3**	*e*P	**P**	**08 03 04.7**	**+0.3**
	15nm,1.2s						
319A	**Douglas**	**81.98**	**341**	*e*P	**P**	**08 03 07.7**	**+1.2**
	10nm,1.1s						
X39A	**Fountain Ranch**	**82.91**	**354**	P	**P**	**08 03 11.6**	**+0.5**
	baz=175						
X35A	**Drake**	**83.03**	**352**	P	**P**	**08 03 11.8**	**+0.1**
	baz=173						
X36A	**Centrahoma**	**83.14**	**352**	P	**P**	**08 03 12.6**	**+0.4**
	baz=174						
TUC	**Tucson**	**83.22**	**340**	P	**P**	**08 03 13.8**	**+1.0**
	baz=164						
TUC	**Tucson**	**83.22**	**340**	*e*P	**P**	**08 03 13.9**	**+1.1**
	8.6nm,1.4s						
214A	**Organ Pipe Nat**	**83.36**	**338**	P	**P**	**08 03 14.7**	**+1.2**
	baz=163						
SWET	**Sewanee**	**83.38**	**1**	*e*P	**P**	**08 03 13.5**	**0.0**
	8.5nm,1.1s						
KMSC	**Kings Mountain**	**83.46**	**5**	P	**P**	**08 03 13.8**	**0.0**
	baz=184						
W40A	**Ferguson Farm,**	**83.52**	**355**	P	**P**	**08 03 14.4**	**+0.3**
	baz=176						
W39A	**Magazine**	**83.57**	**354**	P	**P**	**08 03 14.1**	**-0.3**
	baz=175						
WHAR	**Wooly Hollow**	**83.58**	**356**	*e*P	**P**	**08 03 14.5**	**+0.1**
	18nm,1.1s						
X201	**Greenbrier Sit**	**83.58**	**356**	*e*P	**P**	**08 03 14.6**	**+0.1**
	17nm,1.2s						
V38A	**Canehill**	**84.27**	**354**	P	**P**	**08 03 17.9**	**-0.1**
	baz=175						
WVT	**Waverly**	**84.29**	**359**	*e*P	**P**	**08 03 17.7**	**-0.3**
	12nm,1.1s						
V36A	**Jenks**	**84.31**	**353**	P	**P**	**08 03 18.1**	**-0.1**
	baz=174						
V37A	**Hulbert**	**84.34**	**353**	P	**P**	**08 03 18.4**	**0.0**
	baz=174						
TUL1	**Leonard**	**84.42**	**353**	P	**P**	**08 03 19.2**	**+0.4**
	baz=174						
TUL1	**Leonard**	**84.42**	**353**	*e*P	**P**	**08 03 18.4**	**-0.3**
	24nm,1.2s						
V34A	**Guthrie**	**84.50**	**352**	P	**P**	**08 03 19.4**	**+0.2**
	baz=173						
U40A	**Yellville**	**84.67**	**355**	P	**P**	**08 03 19.8**	**-0.2**
	baz=176						
U38A	**Gravette**	**84.84**	**354**	P	**P**	**08 03 20.7**	**-0.2**
	baz=175						
ANMO	**Albuquerque**	**84.88**	**344**	P	**P**	**08 03 22.4**	**+1.0**
	baz=167						
ANMO	**Albuquerque**	**84.88**	**344**	*e*P	**P**	**08 03 22.2**	**+0.9**
	7.7nm,1.2s						
U35A	**Pawnee**	**84.96**	**352**	P	**P**	**08 03 21.9**	**+0.4**
	baz=174						
MONP2	**Monument Peak**	**85.19**	**336**	P	**P**	**08 03 23.9**	**+0.9**
	baz=161						
T39A	**Clever**	**85.36**	**355**	P	**P**	**08 03 23.0**	**-0.5**
	baz=176						
T38A	**Diamond**	**85.43**	**354**	P	**P**	**08 03 24.0**	**+0.1**
	baz=175						
T35A	**Sooner Cattle**	**85.48**	**352**	P	**P**	**08 03 24.8**	**+0.7**
	baz=174						
W18A	**Petrified Fore**	**85.69**	**342**	P	**P**	**08 03 26.9**	**+1.5**
	baz=165						
S40A	**Lebanon**	**85.89**	**356**	P	**P**	**08 03 26.0**	**0.0**
	baz=176						
S38A	**Stockton**	**86.00**	**355**	P	**P**	**08 03 26.1**	**-0.5**
	baz=175						
S39A	**Bolivar**	**86.02**	**355**	P	**P**	**08 03 26.1**	**-0.7**
	baz=176						
BELC	**Belle Mtn. Jos**	**86.12**	**336**	P	**P**	**08 03 28.6**	**+1.1**
	baz=161						
S37A	**Fort Scott**	**86.19**	**354**	P	**P**	**08 03 27.6**	**+0.1**
	baz=175						
S36A	**Lake Cedric, C**	**86.21**	**353**	P	**P**	**08 03 27.5**	**-0.2**
	baz=174						
S35A	**Otter Creek Ra**	**86.22**	**353**	P	**P**	**08 03 28.2**	**+0.5**
	baz=174						
T25A	**Trinidad**	**86.67**	**346**	P	**P**	**08 03 31.8**	**+1.6**
	baz=168						
BFSC	**Mount Baldy Ra**	**86.80**	**335**	P	**P**	**08 03 31.9**	**+1.1**
	baz=160						
R34A	**Isabella, Hill**	**86.92**	**352**	P	**P**	**08 03 31.6**	**+0.4**
	baz=173						
Q38A	**Cooks Store, C**	**87.30**	**355**	P	**P**	**08 03 32.3**	**-0.7**
	baz=176						
SDCO	**Great Sand Dun**	**87.44**	**345**	P	P	08 03 38.3	+4.3
	baz=168						
EDW2	**Edwards Air Fo**	**87.50**	**335**	P	**P**	**08 03 34.4**	**+0.3**
	baz=160						
Q34A	**Chapman**	**87.51**	**352**	P	**P**	**08 03 33.9**	**-0.1**
	baz=173						
GSC	**Goldstone, Bar**	**87.57**	**336**	P	**P**	**08 03 35.7**	**+1.2**
	baz=161						
S22A	**4UR Ranch, Cre**	**87.67**	**344**	P	**P**	**08 03 36.8**	**+1.6**
	baz=167						
P40A	**Paris**	**87.79**	**356**	P	**P**	**08 03 34.7**	**-0.6**
	baz=177						
P38A	**Dawn**	**87.96**	**355**	P	**P**	**08 03 35.0**	**-1.1**
	baz=176						
Q24A	**Divide**	**88.58**	**346**	P	**P**	**08 03 40.7**	**+1.2**
	baz=168						
ISCO	**Idaho Springs**	**89.47**	**346**	P	**P**	**08 03 44.7**	**+1.1**
	baz=168						
ISCO	**Idaho Springs**	**89.47**	**346**	*e*P	**P**	**08 03 44.8**	**+1.1**
	10nm,1.6s						
N23A	**Red Feather La**	**90.59**	**346**	P	**P**	**08 03 50.1**	**+1.3**
	baz=168						
N23A	**Red Feather La**	**90.59**	**346**	*e*P	**P**	**08 03 50.5**	**+1.7**
	17nm,1.4s						
MPU	**Maple Canyon**	**90.81**	**341**	*e*P	**P**	**08 03 50.7**	**+0.9**
	8.6nm,1.2s						
NLU	**North Lily Min**	**90.84**	**341**	*e*P	**P**	**08 03 51.4**	**+1.5**
	11nm,1.3s						
PHWY	**Pilot Hill**	**90.91**	**346**	*e*P	**P**	**08 03 51.2**	**+0.9**
	11nm,1.4s						
NV01	**Mina Array Sit**	**90.91**	**336**	*e*P	**P**	**08 03 50.7**	**+0.4**
NVAR	**Mina Array Bea**	**90.91**	**336**	P	**P**	**08 03 50.7**	**+0.4**
	0.9nm,1.0s,baz=176,slow=5.3,SNR=4.2						
DUG	**Dugway, Tooele**	**91.23**	**341**	P	**P**	**08 03 52.6**	**+0.9**
	baz=163						
DUG	**Dugway, Tooele**	**91.23**	**341**	*e*P	**P**	**08 03 52.5**	**+0.9**
	7.3nm,1.2s						
J32A	**Parkston**	**92.00**	**352**	P	**P**	**08 03 56.9**	**+2.0**
	baz=173						
ECSD	**EROS Data Cent**	**92.26**	**353**	P	**P**	**08 03 55.9**	**-0.2**
	baz=174						
K22A	**Casper**	**92.40**	**346**	P	**P**	**08 03 57.8**	**+0.8**
	baz=167						
K22A	**Casper**	**92.40**	**346**	*e*P	**P**	**08 03 58.2**	**+1.3**
	15nm,1.1s						
BW06	**Boulder Array**	**93.04**	**344**	P	**P**	**08 04 00.3**	**+0.3**
	baz=165						
BW06	**Boulder Array**	**93.04**	**344**	*e*P	**P**	**08 04 00.2**	**+0.2**
PD31	**Pinedale Array**	**93.04**	**344**	*e*P	**P**	**08 04 00.3**	**+0.3**
PDAR	**Pinedale Array**	**93.04**	**344**	P	**P**	**08 03 59.6**	**-0.5**
	2.2nm,1.0s,baz=165,slow=3.7,SNR=9.3						
WVOR	**Wild Horse Val**	**94.75**	**337**	*e*P	**P**	**08 04 09.3**	**+1.5**
	21nm,1.8s						
HLID	**Hailey**	**94.80**	**340**	P	**P**	**08 04 09.2**	**+1.2**
	baz=162						
BOZ	**Bozeman (W)**	**96.21**	**343**	P	P	08 04 18.7	+4.3
	baz=164						
ILAR	**Eielson Array**	**122.12**	**334**	PKP	**PKPdf**	**08 09 38.9**	**-1.2**
	1.1nm,0.8s,baz=181,slow=4.2,SNR=8.5						
ILB	**Eielson Array**	**122.12**	**334**	*e*PKPdf	**PKPdf**	**08 09 40.2**	**+0.1**
GERES	**GERESS Array B**	**130.03**	**58**	PKP	**PKPdf**	**08 09 55.9**	**+0.1**
	0.2nm,0.3s,baz=237,slow=3.3,SNR=3.9						
BR101	**Keskin Array S**	**137.53**	**79**	*e*PKPdf	**PKPdf**	**08 10 09.5**	**-0.8**
BRTR	**Keskin Array B**	**137.53**	**79**	PKP	**PKPdf**	**08 10 09.5**	**-0.8**
	1.4nm,1.0s,baz=205,slow=3.0,SNR=4.1						
SEY	**Seymchan**	**144.96**	**317**	PKPbc	**PKPab**	**08 10 21.7**	**-0.2**
	5.8nm,1.0s,baz=121,slow=4.1,SNR=11						
MAJO	**Matsushiro**	**145.03**	**267**	*e*PKPbc	**PKPbc**	**08 10 21.8**	**-1.2**
MA2	**Magadan**	**145.39**	**311**	PKPbc	**PKPbc**	**08 10 23.1**	**-0.4**
	12nm,1.0s,baz=124,slow=4.2,SNR=12						
HYB	**Hyderabad**	**146.84**	**154**	*i* PKP	**PKPab**	**08 10 30.0**	**-0.3**
CM01	**Chiang Mai Arr**	**149.57**	**191**	*e*PKPbc	**PKPbc**	**08 10 37.5**	**+1.2**
CMAR	**Chiang Mai Arr**	**149.61**	**191**	PKP	**PKPdf**	**08 10 30.8**	**-1.0**
	0.8nm,0.3s,baz=216,slow=21,SNR=3.8						
CMAR				PKPbc	**PKPbc**	**08 10 36.8**	**+0.4**
	baz=226,slow=2.4,SNR=13						
CHTO	**Chiang Mai**	**149.96**	**191**	*e*PKPdf	**PKPdf**	**08 10 31.6**	**-0.7**
CHTO				*e*PKPbc	**PKiKP**	**08 10 38.3**	**+0.2**
CHTO				*e*PKPab	**PKPab**	**08 10 44.6**	**+1.8**
TIXI	**Tiksi**	**151.53**	**337**	*e*PKPdf	**PKPdf**	**08 10 32.8**	**-0.3**
TIXI				*e*PKPbc	**PKPbc**	**08 10 38.5**	**-0.8**
TIXI				*e*PKPab	**PKPab**	**08 10 47.4**	**-0.4**
ABKAR	**Akbulak array**	**158.41**	**76**	*e*PKPdf	**PKPdf**	**08 10 43.3**	**+0.1**
ZAA1	**Zalesovo Array**	**172.57**	**40**	*e*PKPdf	**PKPdf**	**08 10 52.9**	**-1.8**
ZAA0	**Zalesovo Array**	**172.57**	**40**	*e*PKPdf	**PKPdf**	**08 10 52.8**	**-1.9**
ZAA0				*e*PKPdf	PKPdf	08 10 53.5	-1.2
ZALV	**Zalesovo Beam**	**172.57**	**40**	PKP	**PKPdf**	**08 10 52.9**	**-1.8**
	2.0nm,0.9s,baz=293,slow=1.1,SNR=7.2						
MK32	**Makanchi Array**	**172.63**	**100**	*e*PKPdf	**PKPdf**	**08 10 54.2**	**-0.9**
MKAR	**Makanchi Array**	**172.63**	**100**	PKP	**PKPdf**	**08 10 54.2**	**-0.9**
	1.2nm,1.1s,baz=25,slow=1.7,SNR=5.9						

MAN 04 07:50:54, 9°.29N×125°.53E, h29^{km}**, mb4.1, ML2.9, MS2.6, 2C, Mindanao**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BUTP	**Butuan**	**0.33**	**163**	*e*P	Pn	07 51 03.0	+0.2
BUTP				*e*S	Sn	07 51 10.8	+2.1
SCPH	**Surigao**	**0.49**	**356**⇑	*e*P	Pn	07 51 05.5	+0.3
BUKP	**Musuan**	**1.47**	**198**	*e*P	Pb	07 51 23.4	+2.6
BUKP				*e*S	Sb	07 51 39.1	0.0
CTBH	**Cotabato--PC H**	**2.41**	**212**⇑	*i*P	Pn	07 51 31.8	+0.3

*GUC **04** 07:54:27.5±0.4, 45°.45S×76°.72W, h10^{km}, MS4.9, MW5.3*
*ISCJB **04** 07:54:32.0±1.8, 45°.58S±0°.04×76°.61W±0°.04, h10^{km}±10^{km}, mb5.2/93, MS4.9/21, Error ellipse: s-maj=7.4km s-min=4.8km az=14.7*
*IDC **04** 07:54:31.0±0.5, 45°.75S×76°.72W, h0^{km}, mb4.5/20, mb1 4.5/22, mb1mx4.5/35, mbtmp4.4/22, ML4.4/2, MS4.6/13, Ms1 4.6/13, ms1mx4.5/19, Error ellipse: s-maj=21.6km s-min=13.8km az=91.0*
*NEIC **04** 07:54:35.9±2.4, 45°.72S×76°.61W, h27^{km}±16^{km}, mb5.3/82, Error ellipse: s-maj=10.5km s-min=5.4km az=73.0*
*MOS **04** 07:54:35.8±1.2, 45°.70S×76°.65W, h33^{km}, mb5.5/26, Error ellipse: s-maj=25.6km s-min=10.3km az=96.1*
*GCMT **04** 07:54:35.8±0.1, 45°.80S×77°.04W, h12^{km}, MW5.3/119, Moment Tensor Solution. s66,c112; s119,c206; Duration: 1^{s}1 Moment tensor: Scale 10^{17}Nm; M_{rr}-1.12±.02; $M_{\theta\theta}$0.11±.01; $M_{\phi\phi}$1.01±.02; $M_{r\theta}$0.28±.05; $M_{\theta\phi}$-0.20±.01; $M_{\phi r}$-0.52±.05; Best double couple: $M_0$1.23300×10^{17} NP1:ϕ_s341.00000°, δ59.00000°, λ-97.00000°. NP2:ϕ_s174.00000°, δ32.00000°, λ-79.00000°. Principal axes: T 1.1920, Plg14.0000°, Azm76.0000°; N 0.0850, Plg6.0000°, Azm344.0000°; P -1.2750, Plg75.0000°, Azm231.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
*BJI **04** 07:54:37.1, 45°.60S×76°.60W, h30^{km}, mB5.2/13, Ms5.4/13,*

Ms7 5.1/13

ISC 04 07:54:34.5±0.5**, 45.59S**±0.05×**76.65W**±0.05**, h17**km±2km**,**
h17km**:pP-P, n535,** σ1.00/559**, mb5.3**/93**, MS4.9**/21**, 5C-3D,**
Off coast of southern Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
AYCH	**Puerto Aysen**	**2.79**	**87**	IVMs_BB	IVMs_BB	07 55 29.7	
	comp=Z,42µm,38.3s						
AYCH				*e*S	**Sn**	**07 55 51.8**	**+0.3**
COYC	**Coyhaique**	**3.21**	**91**	*e*P	**Pn**	**07 55 21.1**	**-2.9**
COYC				*e*S	**Sn**	**07 56 02.0**	**+0.1**
CHRN	**Cochrane**	**3.26**	**122**	*e*P	**Pn**	**07 55 22.9**	**-1.9**
CHRN				*e*S	**Sn**	**07 56 04.8**	**+1.6**
CHRN	**Cochrane**	**3.26**	**122**	*e*Pn	**Pn**	**07 55 24.8**	**0.0**
FUTA	**Futaleufœ**	**4.20**	**57**	*e*P	Pn	07 55 33.7	-4.0
FUTA				*e*S	**Sn**	**07 56 23.6**	**-2.7**
PLCA	**Paso Flores**	**6.59**	**45**	Pn	**Pn**	**07 56 10.8**	**+0.1**
	comp=Z,0.7nm,0.3s,baz=260,slow=16,SNR=1.9						
PLCA	**Paso Flores**	**6.59**	**45**	*e*S	Sn	07 57 14.4	-11
USHA	**Ushuaia**	**10.63**	**153**	Pn	**Pn**	**07 57 03.4**	**-2.5**
	comp=Z,25nm,0.3s,baz=313,slow=15,SNR=4.2						
TRQA	**Tornquist**	**13.27**	**61**	*e*Pn	**Pn**	**07 57 44.1**	**+2.0**
TRQA				*e*Sn	**Sn**	**08 00 09.4**	**+0.3**
ROC1	**El Roble**	**13.33**	**21**	*e*Pn	**Pn**	**07 57 42.5**	**-0.6**
ROC1				*e*Sn	**Sn**	**08 00 07.4**	**-3.6**
LCO	**Las Campanas**	**17.21**	**18**	*e*Pn	**Pn**	**07 58 34.4**	**+0.1**
	comp=Z,169nm,1.7s						
PMSA	**Palmer Station**	**20.45**	**164**	LR	LR	08 05 17.9	
	comp=Z,579nm,20.6s,baz=303,slow=32						
PB10	**IPOC Station P**	**22.58**	**15**	*e*P	**P**	**07 59 36.0**	**+2.1**
	comp=Z,126nm,1.2s						
PB04	**IPOC Station P**	**23.80**	**15**	*e*P	**P**	**07 59 47.7**	**+1.1**
	comp=Z,293nm,1.6s						
CPUP	**Villa Florida**	**24.67**	**45**	P	**P**	**07 59 55.1**	**+0.8**
	comp=Z,26nm,0.8s,baz=221,slow=9.1,SNR=29						
CPUP	**Villa Florida**	**24.67**	**45**	*e*P	**P**	**07 59 56.9**	**+2.6**
CPUP	**Villa Florida**	**24.67**	**45**	*e*P	**P**	**07 59 56.9**	**+2.6**
PB01	**IPOC Station P**	**25.19**	**16**	*e*P	**P**	**08 00 00.6**	**+1.5**
	comp=Z,222nm,1.9s						
LPAZ	**La Paz**	**30.08**	**16**	P	**P**	**08 00 44.1**	**+0.5**
	comp=Z,0.9nm,0.6s,baz=241,slow=6.8,SNR=5.1						
LPAZ	**La Paz**	**30.08**	**16**	*e*P	**P**	**08 00 44.1**	**+0.5**
LPAZ				pmax	pmax		
	comp=Z,18nm,1.0s						
LPAZ	**La Paz**	**30.08**	**16**	*e*P	**P**	**08 00 44.1**	**+0.5**
	comp=Z,18nm,1.0s						
SPB	**Sao Paulo**	**32.27**	**57**	*e*P	**P**	**08 01 04.5**	**+2.3**
	comp=Z,29nm,1.2s						
SIV	**San Ignacio**	**32.28**	**29**	P	**P**	**08 01 02.5**	**+0.2**
	comp=Z,5.4nm,1.1s,baz=218,slow=11,SNR=5.1						
SIV				LR	LR	08 15 53.4	
	comp=Z,1µm,18.1s,baz=224,slow=40						
SAML	**Samuel**	**38.31**	**22**	*e*P	**P**	**08 01 54.8**	**+0.6**
	comp=Z,61nm,1.1s						
BDFB	**Brasilia**	**38.33**	**48**	P	**P**	**08 01 54.1**	**-0.4**
	comp=Z,14nm,0.9s,baz=197,slow=5.7,SNR=9.1						
BDFB	**Brasilia**	**38.33**	**48**	*e*P	**P**	**08 01 54.9**	**+0.4**
BDFB	**Brasilia**	**38.33**	**48**	*e*P	**P**	**08 01 54.9**	**+0.4**
ATAH	**Atahualpa**	**38.34**	**357**	P	**P**	**08 01 56.5**	**+1.6**
	comp=Z,3.5nm,0.6s,baz=160,slow=8.1,SNR=6.3						
VNA3	**Neumayer Olymp**	**40.31**	**153**	P	**P**	**08 02 09.8**	**-0.5**
VNA2	**Neumayer--Watz**	**41.04**	**152**	P	**P**	**08 02 16.6**	**+0.2**
	baz=298,slow=9.2						
SNAA	**Sanae**	**42.49**	**153**	P	**P**	**08 02 27.7**	**-0.6**
SNAA	**Sanae**	**42.49**	**153**⇑	*e*P	**P**	**08 02 28.2**	**-0.1**
SNAA				pmax	pmax		
	comp=Z,1µm,1.1s						
SNAA	**Sanae**	**42.49**	**153**	*e*P	**P**	**08 02 27.0**	**-1.3**
	comp=Z,7µm,1.7s						
QSPA	**South Pole Qui**	**44.65**	**180**	*e*P	**P**	**08 02 45.4**	**-0.5**
OTAV	**Otavalo**	**45.67**	**357**	*e*P	**P**	**08 02 55.9**	**+1.1**
	comp=Z,55nm,1.4s						
OTAV	**Otavalo**	**45.67**	**357**	*e*P	**P**	**08 02 55.5**	**+0.7**
PTGA	**Pitinga**	**47.04**	**23**	P	**P**	**08 03 05.3**	**+0.3**
	comp=Z,7.4nm,0.7s,baz=198,slow=9.6,SNR=9.4						
PTGA	**Pitinga**	**47.04**	**23**	*e*P	**P**	**08 03 05.6**	**+0.5**
	comp=Z,43nm,1.1s						
NVL	**N'lazarevskaya**	**47.31**	**153**	*e*P	P	08 02 57.8	-8.8
POPC	**Popayan, Colom**	**47.92**	**360**	*e*P	**P**	**08 03 12.1**	**-0.1**
ROSC	**El Rosal**	**50.25**	**3**	P	**P**	**08 03 31.3**	**+1.1**
	comp=Z,1.8nm,0.3s,baz=173,slow=5.3,SNR=7.6						
ROSC				LR	LR	08 23 01.3	
	comp=Z,647nm,18.6s,baz=206,slow=34						
ROSC	**El Rosal**	**50.25**	**3**	*e*P	**P**	**08 03 32.9**	**+2.7**
	comp=Z,45nm,1.7s						
RKT	**Rikitea**	**51.87**	**275**	*e*S	**S**	**08 11 03.2**	**-0.5**
	comp=Z,485nm,25.8s						
RKT				*e*LR	LR	08 18 41.6	
	comp=Z,3µm,27.8s,baz=131						
RKT	**Rikitea**	**51.87**	**275**	*e*LR	LR	08 03 30.2	
	comp=Z,395nm,29.2s						
VNDA	**Vanda**	**52.03**	**194**	P	**P**	**08 03 40.6**	**-1.8**
	comp=Z,3.3nm,0.9s,baz=135,slow=6.7,SNR=11						
VNDA				LR	LR	08 23 31.5	
	comp=Z,290nm,18.5s,baz=132,slow=34						
SDV	**Santo Domingo**	**54.50**	**7**	P	**P**	**08 04 02.8**	**+1.3**
	comp=Z,6.9nm,1.0s,baz=312,slow=7.4,SNR=3.1						
SDV	**Santo Domingo**	**54.50**	**7**	*e*P	**P**	**08 04 03.0**	**+1.6**
	comp=Z,45nm,1.6s						
JTS	**JuntasAbangare**	**56.13**	**350**	P	**P**	**08 04 14.5**	**+1.6**
	comp=Z,9.3nm,1.1s,baz=177,slow=7.6,SNR=6.0						
JTS	**JuntasAbangare**	**56.13**	**350**	*de*P	**P**	**08 04 13.6**	**+0.6**
JTS				pmax	pmax		
	comp=Z,52nm,1.4s						
JTS	**JuntasAbangare**	**56.13**	**350**	*e*P	**P**	**08 04 14.3**	**+1.4**
	comp=Z,58nm,1.3s						
SYO	**Syowa Base**	**56.47**	**157**⇑	*e*pP	pP	08 04 18.0	-2.3
TBI	**Tubuai**	**61.88**	**265**	*e*S	**S**	**08 13 16.3**	**+0.4**
	comp=Z,1µm,28.2s						
TBI				*e*LR	LR	08 23 12.8	
	comp=Z,4µm,27.8s,baz=134						
MAW	**Mawson**	**63.06**	**164**	P	**P**	**08 04 59.0**	**-1.2**
	comp=Z,6.8nm,1.0s,baz=197,slow=8.6,SNR=9.7						
MAW				LR	LR	08 32 31.9	
	comp=Z,558nm,18.9s,baz=228,slow=36						
MAW	**Mawson**	**63.06**	**164**	*e*P	**P**	**08 04 59.4**	**-0.7**
MAW				pmax	pmax		
	comp=Z,11nm,1.4s						
MAW	**Mawson**	**63.06**	**164**	*e*P	**P**	**08 04 59.4**	**-0.7**
	comp=Z,11nm,1.4s						
CCIG	**Comitan**	**63.16**	**343**	*e*P	**P**	**08 05 00.6**	**-1.0**
	comp=Z,26nm,1.2s						
CELP	**Cerrillos**	**64.02**	**11**	*e*P	**P**	**08 05 06.5**	**-0.5**
CMIG	**Matias Romero**	**64.54**	**341**	P	**P**	**08 05 10.1**	**-0.4**
	comp=Z,4.5nm,1.1s,baz=91,slow=4.0,SNR=4.0						
TAOE	**Nuku Hiva Isla**	**65.26**	**283**	*e*LR	LR	08 24 55.1	
	comp=Z,677nm,29.5s						
PPT2	**Papeete2**	**65.76**	**269**	*e*S	**S**	**08 14 04.7**	**+0.2**
	comp=Z,899nm,30.0s						
PPT2	**Papeete2**	**65.76**	**269**	*e*LR	LR	08 24 54.9	
	comp=Z,2µm,26.0s,baz=135						
RAR	**Rarotonga**	**70.45**	**259**	LR	LR	08 30 31.1	
	comp=Z,1µm,18.0s,baz=154,slow=31						
RPZ	**Rata Peaks**	**72.71**	**225**	LR	LR	08 29 55.5	
	comp=Z,1µm,21.1s,baz=92,slow=29						
URZ	**Urewera**	**73.47**	**232**	LR	LR	08 29 60.0	
	comp=Z,164nm,18.6s,baz=156,slow=29						
DWPF	**Disney Wildern**	**73.48**	**356**	*e*P	**P**	**08 06 06.6**	**+0.9**
	comp=Z,92nm,1.2s						
034A	**Hebbronville**	**75.04**	**340**	P	**P**	**08 06 14.2**	**-0.6**
	baz=164						
934A	**Benavides**	**75.52**	**340**	P	**P**	**08 06 17.3**	**-0.3**
	baz=164						
933A	**Laredo**	**75.71**	**339**	P	**P**	**08 06 18.5**	**-0.3**
	baz=164						
645A	**Chauvin**	**75.76**	**347**	P	**P**	**08 06 19.2**	**+0.2**
	baz=170						
835A	**Beeville**	**76.01**	**341**	P	**P**	**08 06 19.8**	**-0.6**
	baz=165						
834A	**Tilden**	**76.03**	**340**	P	**P**	**08 06 21.6**	**+1.1**
	baz=164,SNR=6.1						
546A	**Slidell**	**76.40**	**348**	P	**P**	**08 06 23.3**	**+0.8**
	baz=171						
833A	**Chaparral WMA,**	**76.42**	**339**	P	**P**	**08 06 23.1**	**+0.4**
	baz=164						
832A	**Faith Ranch, C**	**76.53**	**339**	P	**P**	**08 06 23.1**	**-0.3**
	baz=164,SNR=8.1						
735A	**Kenedy**	**76.55**	**341**	P	**P**	**08 06 24.0**	**+0.5**
	baz=165						
733A	**Divot King Ran**	**76.77**	**340**	P	**P**	**08 06 24.4**	**-0.4**
	baz=164						
HPIG		**76.86**	**334**	*e*P	**P**	**08 06 26.7**	**+1.2**
	comp=Z,12nm,0.8s						
636A	**Smothers Creek**	**76.99**	**342**	P	**P**	**08 06 26.1**	**+0.2**
	baz=166						
HKT	**Hockley**	**77.18**	**343**⇑	*i*P	**P**	**08 06 27.4**	**+0.5**
634A	**China Grove, S**	**77.19**	**341**	P	**P**	**08 06 26.7**	**-0.4**
	baz=165						
538A	**Harpers Horsep**	**77.38**	**343**	P	**P**	**08 06 28.0**	**0.0**
	baz=167						
633A	**Saathoff Ranch**	**77.45**	**340**	P	**P**	**08 06 26.1**	**-2.5**
	baz=164,SNR=8.7						
441A	**DeRidder**	**77.45**	**345**	P	**P**	**08 06 29.4**	**+0.9**
	baz=168						
345A	**Thompson Farm,**	**77.50**	**348**	P	**P**	**08 06 28.5**	**-0.2**
	baz=170						
346A	**Big Creek Wild**	**77.50**	**349**	P	**P**	**08 06 28.9**	**+0.2**
	baz=171						
536A	**Bastrop**	**77.56**	**342**	P	**P**	**08 06 29.2**	**+0.1**
	baz=166						
440A	**Kirbyville**	**77.59**	**345**	P	**P**	**08 06 29.6**	**+0.3**
	baz=168						
535A	**Dale**	**77.63**	**342**	P	**P**	**08 06 29.9**	**+0.4**
	baz=165						
343A	**Vidalia**	**77.71**	**347**	P	**P**	**08 06 29.6**	**-0.4**
	baz=169						
344A	**Westbrook Farm**	**77.74**	**348**	P	**P**	**08 06 29.5**	**-0.6**
	baz=170						
BOSA	**Boshof**	**77.77**	**118**	P	**P**	**08 06 30.0**	**-0.8**
	comp=Z,5.1nm,0.9s,baz=298,slow=2.3,SNR=3.0						
BOSA	**Boshof**	**77.77**	**118**	*e*P	**P**	**08 06 30.6**	**-0.2**
BOSA	**Boshof**	**77.77**	**118**	*e*P	**P**	**08 06 30.6**	**-0.2**
439A	**Center Grove,**	**77.79**	**344**	P	**P**	**08 06 30.1**	**-0.2**
	baz=167						
534A	**Blanco**	**77.83**	**341**	P	**P**	**08 06 30.4**	**-0.4**
	baz=165						
342A	**Flagon Creek P**	**77.92**	**346**	P	**P**	**08 06 31.0**	**0.0**
	baz=169						
533A	**Kerrville**	**78.01**	**340**	P	**P**	**08 06 31.5**	**-0.2**
	baz=164						
341A	**Kurthwood**	**78.02**	**346**	P	**P**	**08 06 31.1**	**-0.6**
	baz=168						
436A	**Wall Ranch, Ga**	**78.18**	**342**	P	**P**	**08 06 31.7**	**-0.8**
	baz=166						
245A	**Little AP, Sta**	**78.19**	**349**	P	**P**	**08 06 32.2**	**-0.4**
	baz=171						
340A	**Bronson**	**78.23**	**345**	P	**P**	**08 06 32.0**	**-0.8**
	baz=168						
243A	**Waterproof**	**78.28**	**347**	P	**P**	**08 06 32.3**	**-0.7**
	baz=169						
244A	**Avery, Jackson**	**78.31**	**348**	P	**P**	**08 06 32.4**	**-0.9**
	baz=170						
435B	**Jarrell**	**78.36**	**342**	P	**P**	**08 06 33.3**	**-0.3**
	baz=165						
NHSC	**New Hope**	**78.40**	**357**	*e*P	**P**	**08 06 34.5**	**+0.8**
	comp=Z,155nm,1.3s						
338A	**Crockett**	**78.44**	**344**	P	**P**	**08 06 33.2**	**-0.8**
	baz=167						
VBMS	**Vicksburg**	**78.46**	**348**	P	**P**	**08 06 33.0**	**-1.1**
	baz=170						
LTX	**Lajitas**	**78.51**	**336**	*e*P	**P**	**08 06 34.5**	**-0.1**
LTX	**Lajitas**	**78.51**	**336**	*e*P	**P**	**08 06 34.5**	**-0.1**
TXAR	**Lajitas Array**	**78.51**	**336**	P	**P**	**08 06 34.5**	**-0.1**
	comp=Z,0.6nm,100.0s,baz=157,slow=6.8,SNR=13						
TXAR				LR	LR	08 35 28.1	
	comp=Z,218nm,19.9s,baz=0.0,slow=31						
TX31	**Lajitas Ar. Si**	**78.51**	**336**	*e*P	**P**	**08 06 35.4**	**+0.8**
337A	**Centerville**	**78.52**	**343**	P	**P**	**08 06 33.6**	**-0.8**
	baz=166						
434A	**Burnet**	**78.54**	**341**	P	**P**	**08 06 34.3**	**-0.3**
	baz=165,SNR=7.4						
242A	**Grayson**	**78.56**	**347**	P	**P**	**08 06 34.1**	**-0.6**
	baz=169						
JCT	**Junction City**	**78.58**	**340**	P	**P**	**08 06 33.9**	**-0.9**
	baz=164						
JCT	**Junction City**	**78.58**	**340**	*e*P	**P**	**08 06 35.4**	**+0.5**
JCT				pmax	pmax		
	comp=Z,47nm,1.1s						
JCT	**Junction City**	**78.58**	**340**	*e*P	**P**	**08 06 35.4**	**+0.5**
	comp=Z,47nm,1.1s						
146A	**Union**	**78.67**	**349**	P	**P**	**08 06 34.7**	**-0.6**
	baz=171						
433A	**Art**	**78.67**	**340**	P	**P**	**08 06 35.1**	**-0.3**
	baz=164,SNR=7.4						
NATX	**Nacogdoches**	**78.71**	**344**	P	**P**	**08 06 34.5**	**-1.0**
	baz=167						
145A	**Houston Renfro**	**78.76**	**349**	P	**P**	**08 06 36.0**	**+0.3**
	baz=171						
336A	**Riesel**	**78.78**	**342**	P	**P**	**08 06 35.1**	**-0.8**
	baz=166						
335A	**Moody**	**78.81**	**342**	P	**P**	**08 06 35.2**	**-0.8**
	baz=165						
LRAL	**Lakeview Retre**	**78.82**	**351**	*e*P	**P**	**08 06 36.4**	**+0.4**
	comp=Z,28nm,1.2s						
144A	**Alexander Plac**	**78.85**	**348**	P	**P**	**08 06 36.0**	**-0.2**
	baz=170						
GOGA	**Godfrey**	**78.88**	**354**	*e*P	**P**	**08 06 36.6**	**+0.2**
GOGA				pmax	pmax		
	comp=Z,60nm,1.1s						
GOGA	**Godfrey**	**78.88**	**354**	*e*P	**P**	**08 06 36.6**	**+0.2**
	comp=Z,60nm,1.1s						
239A	**Gary**	**78.92**	**345**	P	**P**	**08 06 36.2**	**-0.4**
	baz=167						
238A	**Jacksonville**	**79.03**	**344**	P	**P**	**08 06 37.1**	**-0.1**
	baz=167						
334A	**Lometa**	**79.03**	**341**	P	**P**	**08 06 37.0**	**-0.3**
	baz=165,SNR=8.7						
143A	**Socs Landing,**	**79.07**	**347**	P	**P**	**08 06 37.7**	**+0.3**
	baz=170						
237A	**Washetta, Mont**	**79.16**	**344**	P	**P**	**08 06 38.2**	**+0.3**
	baz=166						
333A	**Richland Sprin**	**79.20**	**341**	P	**P**	**08 06 37.7**	**-0.5**
	baz=164,SNR=5.7						
141A	**Papa Simpson,**	**79.22**	**346**	P	**P**	**08 06 37.6**	**-0.6**
	baz=168						
236A	**Katherine and**	**79.31**	**343**	P	**P**	**08 06 39.2**	**+0.4**
	baz=166						
140A	**Cam and Jess,**	**79.37**	**346**	P	**P**	**08 06 39.2**	**+0.1**
	baz=168						
WHTX	**Lake Whitney,**	**79.50**	**342**	P	**P**	**08 06 40.0**	**+0.2**
	baz=165						
139A	**Bunkhouse Ranc**	**79.55**	**345**	P	**P**	**08 06 40.0**	**-0.1**
	baz=168						
JSC	**Jenkinsville**	**79.61**	**356**	*e*P	**P**	**08 06 40.6**	**+0.3**
JSC				pmax	pmax		
	comp=Z,32nm,1.2s						
JSC	**Jenkinsville**	**79.61**	**356**	*e*P	**P**	**08 06 40.6**	**+0.3**
	comp=Z,32nm,1.2s						
234A	**Clairette**	**79.66**	**342**	P	**P**	**08 06 40.5**	**-0.1**
	baz=165,SNR=6.8						
138A	**Matatall Enter**	**79.66**	**344**	P	**P**	**08 06 40.6**	**-0.1**
	baz=167						
137A	**Heron Place, G**	**79.73**	**344**	P	**P**	**08 06 40.4**	**-0.6**
	baz=166						
136A	**Ennis**	**79.77**	**343**	P	**P**	**08 06 41.0**	**-0.3**
	baz=166						
Z41A	**Richland Creek**	**79.84**	**346**	P	**P**	**08 06 40.6**	**-0.9**
	baz=169						
233A	**Rising Star**	**79.84**	**341**	P	**P**	**08 06 40.9**	**-0.8**
	baz=164,SNR=6.6						
Z40A	**Long Farm, Mag**	**79.94**	**346**	P	**P**	**08 06 42.4**	**+0.3**
	baz=168						
Z39A	**Irene McRaven,**	**80.06**	**345**	P	**P**	**08 06 43.1**	**+0.3**
	baz=168						
134A	**White-Moore Ra**	**80.19**	**342**	P	**P**	**08 06 43.6**	**0.0**
	baz=165						
Z38A	**Mt. Pleasant**	**80.22**	**344**	P	**P**	**08 06 43.7**	**+0.1**
	baz=167						
Z37A	**Pogue Cattle C**	**80.29**	**344**	P	**P**	**08 06 43.9**	**-0.1**
	baz=167						
WLAR	**White Oak Lake**	**80.31**	**346**	*e*P	**P**	**08 06 44.7**	**+0.6**
	comp=Z,97nm,1.5s						
133A	**Hamilton Ranch**	**80.41**	**341**	P	**P**	**08 06 44.8**	**0.0**
	baz=164						
KMSC	**Kings Mountain**	**80.47**	**356**	P	**P**	**08 06 44.3**	**-0.7**
	baz=177						
Z36A	**Blue Ridge**	**80.52**	**343**	P	**P**	**08 06 45.0**	**-0.3**
	baz=166						
HSIG		**80.54**	**330**	*e*P	**P**	**08 06 47.3**	**+1.8**
	comp=Z,39nm,1.9s						
LBTB	**Lobatse**	**80.55**	**116**	*e*P	**P**	**08 06 45.4**	**-0.6**
LBTB				pmax	pmax		
	comp=Z,48nm,1.3s						
LBTB	**Lobatse**	**80.55**	**116**	*e*P	**P**	**08 06 45.4**	**-0.6**
	comp=Z,48nm,1.3s						
ABTX	**Abilene, Hawle**	**80.60**	**340**	P	**P**	**08 06 45.6**	**-0.2**
	baz=164,SNR=5.7						
ABTX	**Abilene, Hawle**	**80.60**	**340**	*e*P	**P**	**08 06 45.9**	**+0.1**
	comp=Z,40nm,1.1s						
Y40A	**Okolona**	**80.66**	**346**	P	**P**	**08 06 46.1**	**+0.1**
	baz=168						
Y39A	**Lockesburg**	**80.72**	**345**	P	**P**	**08 06 46.5**	**+0.1**
	baz=168						
Z35A	**Perchaven, San**	**80.75**	**343**	P	**P**	**08 06 46.6**	**+0.1**
	baz=166						
Y38A	**Idabel**	**80.83**	**345**	P	**P**	**08 06 47.2**	**+0.3**
	baz=167						
SWET	**Sewanee**	**80.87**	**352**	*e*P	**P**	**08 06 47.5**	**+0.3**
	comp=Z,18nm,1.2s						
Z34A	**Collier Ranch,**	**80.93**	**342**	P	**P**	**08 06 47.3**	**-0.1**
	baz=165						
CPCT	**Cooper Cave**	**80.98**	**354**	*e*P	**P**	**08 06 47.7**	**0.0**
	comp=Z,17nm,1.1s						
Z33A	**Whitaker Ranch**	**81.03**	**341**	P	**P**	**08 06 48.6**	**+0.6**
	baz=164						
X40A	**Basin Creek Fa**	**81.05**	**347**	P	**P**	**08 06 48.2**	**+0.1**
	baz=169						
Y37A	**Hugo**	**81.05**	**344**	P	**P**	**08 06 48.2**	**+0.1**
	baz=167						
Y36A	**Durant**	**81.10**	**344**	P	**P**	**08 06 48.4**	**+0.1**
	baz=166						
TKL	**Tuckaleechee C**	**81.13**	**354**	P	**P**	**08 06 47.3**	**-1.2**
	comp=Z,3.2nm,0.8s,baz=169,slow=6.3,SNR=3.6						
TKL	**Tuckaleechee C**	**81.13**	**354**	*e*P	**P**	**08 06 47.3**	**-1.2**
TKL				pmax	pmax		
	comp=Z,68nm,2.0s						
TKL	**Tuckaleechee C**	**81.13**	**354**	*e*P	**P**	**08 06 47.3**	**-1.2**
	comp=Z,68nm,2.0s						
MIAR	**Mount Ida**	**81.23**	**346**	P	**P**	**08 06 48.8**	**-0.2**
	baz=168						
MIAR	**Mount Ida**	**81.23**	**346**	*e*P	**P**	**08 06 49.7**	**+0.7**
MIAR				pmax	pmax		
	comp=Z,14nm,1.1s						
MIAR	**Mount Ida**	**81.23**	**346**	*e*P	**P**	**08 06 49.7**	**+0.7**
	comp=Z,14nm,1.1s						
MNTX	**Cornudas Mount**	**81.23**	**336**	P	**P**	**08 06 49.0**	**-0.1**
	baz=160						
MNTX	**Cornudas Mount**	**81.23**	**336**	*e*P	**P**	**08 06 48.8**	**-0.3**
MNTX				*e*pP	**sP**	**08 06 56.2**	**-0.7**
Y35A	**Marietta**	**81.26**	**343**	P	**P**	**08 06 49.4**	**+0.2**
	baz=166						
X39A	**Fountain Ranch**	**81.28**	**345**	P	**P**	**08 06 49.3**	**-0.1**
	baz=168,SNR=5.9						
Y34A	**Reagan Ranch,**	**81.46**	**342**	P	**P**	**08 06 49.8**	**-0.5**
	baz=165						
X38A	**Whitesboro**	**81.57**	**345**	P	**P**	**08 06 50.7**	**-0.1**
	baz=167						
X37A	**Clayton**	**81.59**	**344**	P	**P**	**08 06 51.0**	**+0.1**
	baz=167						
Y33A	**Hilltop Ranch,**	**81.69**	**342**	P	**P**	**08 06 51.4**	**-0.2**
	baz=165						
X35A	**Drake**	**81.72**	**343**	P	**P**	**08 06 51.3**	**-0.3**
	baz=166						
WHAR	**Wooly Hollow**	**81.74**	**347**	*e*P	**P**	**08 06 51.6**	**-0.1**
	comp=Z,46nm,1.2s						
X201	**Greenbrier Sit**	**81.76**	**347**	*e*P	**P**	**08 06 51.9**	**+0.1**
	comp=Z,35nm,1.2s						
X36A	**Centrahoma**	**81.76**	**344**	P	**P**	**08 06 51.6**	**-0.3**
	baz=166						
W40A	**Ferguson Farm,**	**81.77**	**346**	P	**P**	**08 06 52.0**	**+0.1**
	baz=168						
W39A	**Magazine**	**81.90**	**346**	P	**P**	**08 06 52.6**	**+0.1**
	baz=168,SNR=8.7						
W38A	**Poteau**	**81.90**	**345**	P	**P**	**08 06 52.9**	**+0.3**
	baz=168						
WVT	**Waverly**	**81.97**	**351**	*e*P	**P**	**08 06 53.0**	**+0.1**
WVT				pmax	pmax		
	comp=Z,61nm,1.4s						
WVT	**Waverly**	**81.97**	**351**	*e*P	**P**	**08 06 53.0**	**+0.1**
	comp=Z,61nm,1.4s						
TZTN	**Tazewell**	**82.00**	**354**	*e*P	**P**	**08 06 54.1**	**+1.1**
	comp=Z,46nm,1.4s						
X34A	**Smith Ranch, M**	**82.09**	**342**	P	**P**	**08 06 54.0**	**+0.4**
	baz=165						
319A	**Douglas**	**82.13**	**332**	*e*P	**P**	**08 06 55.6**	**+1.5**
	comp=Z,45nm,1.2s						
X33A	**Lawton**	**82.18**	**342**	P	**P**	**08 06 53.2**	**-0.9**
	baz=165						
DBIC	**Dimbokro**	**82.20**	**72**	P	**P**	**08 06 55.0**	**+0.4**
	comp=Z,4.5nm,0.9s,baz=256,slow=6.4,SNR=5.4						
DBIC	**Dimbokro**	**82.20**	**72**	*e*P	**P**	**08 06 55.5**	**+0.8**
DBIC				pmax	pmax		
	comp=Z,13nm,1.0s						
DBIC	**Dimbokro**	**82.20**	**72**	*e*P	**P**	**08 06 55.5**	**+0.8**
	comp=Z,13nm,1.0s						
X32A	**Elmer**	**82.24**	**341**	P	**P**	**08 06 53.3**	**-1.1**
	baz=164						
W36A	**Wetumka**	**82.29**	**344**	P	**P**	**08 06 53.4**	**-1.2**
	baz=166						
V40A	**Witts Springs**	**82.33**	**347**	P	**P**	**08 06 54.2**	**-0.7**
	baz=169,SNR=5.7						
W35A	**Tecumseh**	**82.43**	**343**	P	**P**	**08 06 55.2**	**-0.1**
	baz=166						
V39A	**Pettigrew**	**82.50**	**346**	P	**P**	**08 06 55.1**	**-0.6**
	baz=168,SNR=5.6						
MSTX	**Muleshoe**	**82.65**	**338**	P	**P**	**08 06 56.1**	**-0.5**
	baz=162						
MSTX	**Muleshoe**	**82.65**	**338**	*e*P	**P**	**08 06 57.0**	**+0.3**
	comp=Z,29nm,1.1s						
V38A	**Canehill**	**82.65**	**346**	P	**P**	**08 06 56.2**	**-0.3**
	baz=168						
W34A	**Bridge Creek,**	**82.69**	**343**	P	**P**	**08 06 56.9**	**+0.2**
	baz=165						
121A	**Cookes Peak, D**	**82.73**	**334**	P	**P**	**08 06 57.2**	**0.0**
	baz=159						
W33A	**Caddo, Fort Co**	**82.76**	**342**	P	**P**	**08 06 57.5**	**+0.4**
	baz=165						
V37A	**Hulbert**	**82.81**	**345**	P	**P**	**08 06 56.8**	**-0.5**
	baz=167						
V36A	**Jenks**	**82.86**	**344**	P	**P**	**08 06 57.0**	**-0.6**
	baz=166,SNR=7.9						
U40A	**Yellville**	**82.88**	**347**	P	**P**	**08 06 57.0**	**-0.7**
	baz=169,SNR=8.4						
W32A	**Sentinel**	**82.90**	**341**	P	**P**	**08 06 57.8**	**0.0**
	baz=164						
TUL1	**Leonard**	**82.95**	**344**	P	**P**	**08 06 57.6**	**-0.5**
	baz=167,SNR=8.5						
TUL1	**Leonard**	**82.95**	**344**	*e*P	**P**	**08 06 58.0**	**-0.1**
	comp=Z,48nm,1.1s						
U39A	**Green Forest**	**83.00**	**346**	P	**P**	**08 06 57.7**	**-0.6**
	baz=168,SNR=6.0						
V35A	**Meyer Ranch, C**	**83.01**	**344**	P	**P**	**08 06 57.5**	**-0.8**
	baz=166						
U38A	**Gravette**	**83.21**	**346**	P	**P**	**08 06 59.5**	**+0.1**
	baz=168						
V34A	**Guthrie**	**83.22**	**343**	P	**P**	**08 06 59.5**	**0.0**
	baz=166						
V34A	**Guthrie**	**83.22**	**343**	*e*P	**P**	**08 06 59.5**	**0.0**
	comp=Z,39nm,1.0s						
AMTX	**Amarillo**	**83.24**	**339**	P	**P**	**08 06 59.0**	**-0.7**
	baz=163						
U37A	**Salina**	**83.31**	**345**	P	**P**	**08 06 58.7**	**-1.2**
	baz=167						
V33A	**Lossen Ranch,**	**83.36**	**342**	P	**P**	**08 06 59.9**	**-0.3**
	baz=165						
U36A	**Oologah**	**83.41**	**345**	P	**P**	**08 07 00.8**	**+0.4**
	baz=167						
V32A	**Arapaho**	**83.43**	**342**	P	**P**	**08 07 01.4**	**+0.9**
	baz=164						
TUC	**Tucson**	**83.49**	**331**	P	**P**	**08 07 01.6**	**+0.6**
	baz=157						
TUC	**Tucson**	**83.49**	**331**	*e*P	**P**	**08 07 02.2**	**+1.2**
TUC				pmax	pmax		
	comp=Z,10.0nm,1.3s						
TUC	**Tucson**	**83.49**	**331**	*e*P	**P**	**08 07 02.2**	**+1.2**
	comp=Z,9.7nm,1.3s						
U35A	**Pawnee**	**83.58**	**344**	P	**P**	**08 07 00.8**	**-0.5**
	baz=166						
T40A	**Mansfield**	**83.60**	**347**	P	**P**	**08 07 00.6**	**-0.8**
	baz=169						
T39A	**Clever**	**83.61**	**347**	P	**P**	**08 07 01.2**	**-0.2**
	baz=168,SNR=7.8						
SIUC	**Southern Illin**	**83.70**	**350**	*e*P	**P**	**08 07 02.2**	**+0.4**
	comp=Z,47nm,1.0s						
AFI	**Afiamalu**	**83.73**	**257**	LR	LR	08 38 12.1	
	comp=Z,465nm,18.3s,baz=144,slow=31						
T38A	**Diamond**	**83.78**	**346**	P	**P**	**08 07 01.8**	**-0.5**
	baz=168,SNR=5.2						
U34A	**Anderson Ranch**	**83.80**	**343**	P	**P**	**08 07 02.1**	**-0.3**
	baz=166						
U34A	**Anderson Ranch**	**83.80**	**343**	*e*P	**P**	**08 07 03.3**	**+0.9**
	comp=Z,41nm,1.1s						
214A	**Organ Pipe Nat**	**83.87**	**330**	P	**P**	**08 07 03.3**	**+0.4**
	baz=156						
U33A	**Lingo Farm, Me**	**83.92**	**343**	P	**P**	**08 07 02.3**	**-0.7**
	baz=165						
T37A	**Cheneyville 18**	**83.97**	**345**	P	**P**	**08 07 03.1**	**-0.2**
	baz=167,SNR=6.1						
LPM	**Los Pinos Moun**	**84.04**	**335**	*e*P	**P**	**08 07 05.1**	**+1.2**
S40A	**Lebanon**	**84.04**	**347**	P	**P**	**08 07 03.3**	**-0.3**
	baz=169,SNR=7.8						
U32A	**Winter Ranch,**	**84.06**	**342**	P	**P**	**08 07 03.7**	**0.0**

baz=164
T35A Sooner Cattle 84.06 344 P P 08 07 04.0 +0.2
baz=166
T36A Boggs Farm, Ca 84.08 345 P P 08 07 03.4 -0.5
baz=167,SNR=6.4
S39A Bolivar 84.26 347 P P 08 07 03.9 -0.8
baz=168,SNR=12
LAZ Ladron 84.27 335 eP P 08 07 06.5 +1.4
S38A Stockton 84.29 346 P P 08 07 04.4 -0.5
baz=168,SNR=7.8
T34A McClaskey Farm 84.30 344 P P 08 07 04.6 -0.4
baz=166,SNR=6.6
T33A Patterson Ranc 84.57 343 P P 08 07 06.9 +0.5
baz=165
S37A Fort Scott 84.58 346 P P 08 07 05.8 -0.5
baz=167,SNR=5.2
ANMO Albuquerque 84.58 336 P P 08 07 06.7 0.0
baz=160
ANMO Albuquerque 84.58 336 i P P 08 07 06.8 +0.1
ANMO pmax pmax
comp=Z,8.0nm,1.2s
ANMO Albuquerque 84.58 336 eP P 08 07 07.6 +1.0
comp=Z,16nm,1.2s
S36A Lake Cedric, C 84.68 345 P P 08 07 06.8 0.0
baz=167,SNR=6.4
R40A Maddies Statio 84.68 348 P P 08 07 06.7 -0.1
baz=169
S35A Otter Creek Ra 84.77 344 P P 08 07 07.2 -0.1
baz=166
T32A Huddler Ranch, 84.81 342 P P 08 07 07.9 +0.3
baz=165
R39A Chumby, Stover 84.82 347 P P 08 07 06.8 -0.7
baz=169,SNR=10
R38A Fenwick Farm, 84.84 346 P P 08 07 07.0 -0.6
baz=168
BLO Bloomington 84.85 352 eP P 08 07 07.2 -0.5
BLO pmax pmax
comp=Z,42nm,1.0s
BLO Bloomington 84.85 352 eP P 08 07 07.2 -0.5
comp=Z,42nm,1.0s
S34A Willow Spring 84.94 344 P P 08 07 07.7 -0.5
baz=166
S33A Kaszmaul Farm, 85.02 343 P P 08 07 08.2 -0.4
baz=165
R37A Teagarden Farm 85.11 346 P P 08 07 08.4 -0.7
baz=167
R36A Gordon, Harris 85.24 345 P P 08 07 09.4 -0.3
baz=167
X18A Snowflake 85.25 333 eP P 08 07 11.7 +1.6
comp=Z,74nm,1.8s
S32A Newby Ranch, P 85.31 342 P P 08 07 09.1 -0.9
baz=165
Q40A Laux Farm, Aux 85.34 348 P P 08 07 09.8 -0.3
baz=169,SNR=9.3
R35A Emporia Munici 85.37 345 P P 08 07 10.2 -0.2
baz=166
O56A Blue Knob Stat 85.50 359 P P 08 07 10.1 -0.8
baz=179
Q39A Willow Grove F 85.53 347 P P 08 07 10.2 -0.8
baz=169
Q38A Cooks Store, C 85.55 347 P P 08 07 09.8 -1.3
baz=168,SNR=7.7
R34A Isabella, Hill 85.55 344 P P 08 07 11.2 0.0
baz=166
Q37A Longview Farm, 85.60 346 P P 08 07 10.6 -0.8
baz=168
ACSO Alum Creek Sta 85.63 355 eP P 08 07 11.7 +0.2
ACSO epP pP 08 07 17.8 +0.5
X16A Lo Mia Camp, P 85.64 332 eP P 08 07 13.7 +1.7
comp=Z,21nm,1.4s
R33A Olander Ranch, 85.70 343 P P 08 07 10.3 -1.6
baz=165
W18A Petrified Fore 85.73 333 P P 08 07 10.9 -1.5
baz=158
W18A Petrified Fore 85.73 333 eP P 08 07 14.0 +1.6
comp=Z,33nm,1.4s
Y14A Wickenburg 85.73 330 eP P 08 07 13.6 +1.3
comp=Z,132nm,1.8s
SWSC Sam W. Stewart 85.84 328 P P 08 07 12.6 -0.1
baz=154
Q35A Mercer Eighty, 85.86 345 P P 08 07 12.0 -0.7
baz=166
P40A Paris 85.86 348 P P 08 07 12.3 -0.5
baz=169
P39A Salisbury 85.93 348 P P 08 07 12.4 -0.6
baz=169
R32A Long Quarter, 85.96 343 P P 08 07 12.9 -0.4
baz=165
MONP2 Monument Peak 86.03 327 P P 08 07 13.2 -0.8
baz=153
T25A Trinidad 86.08 338 P P 08 07 14.6 +0.5
baz=161
T25A Trinidad 86.08 338 eP P 08 07 15.2 +1.1
comp=Z,64nm,1.4s
Q34A Chapman 86.09 344 P P 08 07 13.7 -0.2
baz=166
Y12C Blythe 86.10 329 P P 08 07 14.1 +0.1
baz=154
SFIN Lafayette 86.10 352 P P 08 07 13.6 -0.2
baz=173
N59A State Game Lan 86.13 1 P P 08 07 13.9 -0.1
baz=181
P38A Dawn 86.18 347 P P 08 07 13.6 -0.7
baz=168
KSU1 Kansas State U 86.20 345 P P 08 07 13.7 -0.7
baz=166
KSU1 Kansas State U 86.20 345 eP P 08 07 14.4 0.0
comp=Z,25nm,1.0s
N54A Moraine State 86.22 357 P P 08 07 13.5 -1.0
baz=178
P37A Lathrop 86.28 346 P P 08 07 14.6 -0.1
baz=166
ODNJ Ogdensburg 86.31 2 eP P 08 07 15.9 +1.0
comp=Z,39nm,1.5s
Q33A Connelly Farm, 86.34 344 P P 08 07 14.5 -0.5
baz=165
O40A La Belle 86.42 348 P P 08 07 14.7 -0.7
baz=169,SNR=6.7
P36A Good Intent, A 86.45 346 P P 08 07 13.9 -1.8
baz=167
Q32A Meitler Ranch, 86.48 343 P P 08 07 15.8 0.0
baz=165
P35A Duane Minner, 86.51 345 P P 08 07 15.9 0.0
baz=166
HDIL Hopedale 86.51 350 P P 08 07 15.6 -0.3
baz=171
HDIL Hopedale 86.51 350 eP P 08 07 16.4 +0.5
comp=Z,22nm,0.8s
CBKS Cedar Bluff 86.55 342 P P 08 07 16.7 +0.5
baz=164
WUAZ Wupatki 86.62 332 P P 08 07 17.6 +0.8
baz=156
WUAZ Wupatki 86.62 332 eP P 08 07 18.3 +1.5
comp=Z,22nm,1.2s
O39A Kirksville 86.65 348 P P 08 07 16.6 +0.1
baz=169
O38A Galt 86.66 347 P P 08 07 15.9 -0.7
baz=168
P34A Walnut Farm, R 86.67 345 P P 08 07 15.7 -1.1
baz=166
PFO Pinyon Flats O 86.69 328 LR LR 08 37 11.5
comp=Z,191nm,20.6s,baz=139,slow=30
PFO Pinyon Flats O 86.69 328 P P 08 07 17.1 0.0
baz=153
PFO Pinyon Flats O 86.69 328 eP P 08 07 18.9 +1.8
PFO pmax pmax
comp=Z,32nm,1.4s
PFO Pinyon Flats O 86.69 328 eP P 08 07 18.9 +1.8
comp=Z,32nm,1.4s
O37A Wolven Farm, M 86.81 347 P P 08 07 16.9 -0.5
baz=168
BELC Belle Mtn. Jos 86.86 328 P P 08 07 17.6 -0.3
baz=154
O36A Bolckow 86.91 346 P P 08 07 17.2 -0.7
baz=167
SCI2 San Clemente I 86.93 326 P P 08 07 17.4 -0.8
baz=152
SDCO Great Sand Dun 86.94 337 P P 08 07 18.1 -0.3
baz=160
SDCO Great Sand Dun 86.94 337 eP P 08 07 19.1 +0.7
comp=Z,12nm,1.4s
MURC Murrieta 86.95 327 P P 08 07 18.1 -0.2
baz=153
W13A Hualapai Mount 87.09 330 eP P 08 07 20.7 +1.6
comp=Z,26nm,1.6s
O34A Beatrice 87.27 345 P P 08 07 19.6 0.0
baz=166
N38A Joes South For 87.28 347 P P 08 07 20.0 +0.4
baz=168
MVCO Mesa Verde 87.28 335 P P 08 07 19.7 -0.3
baz=158
MVCO Mesa Verde 87.28 335 eP P 08 07 20.9 +0.9
comp=Z,19nm,1.4s
MVCO epP sP 08 07 27.9 +0.1
S22A 4UR Ranch, Cre 87.30 336 P P 08 07 20.2 0.0
baz=159
S22A 4UR Ranch, Cre 87.30 336 eP P 08 07 21.5 +1.3
comp=Z,28nm,1.3s
N37A Lee Faris, Mou 87.40 347 P P 08 07 20.0 -0.2
baz=168
KSCO Kaye Shedlock' 87.40 340 P P 08 07 20.3 -0.1
baz=162
KSCO Kaye Shedlock' 87.40 340 eP P 08 07 21.9 +1.4
comp=Z,34nm,1.3s
GMRC Granite Mounta 87.44 329 P P 08 07 20.4 -0.3
baz=154
BFSC Mount Baldy Ra 87.70 327 P P 08 07 22.8 +0.8
baz=153
HEC Hector,Ludlow 87.73 328 P P 08 07 22.3 +0.2
baz=154
N35A Tabor 87.74 346 P P 08 07 22.5 +0.7
baz=167
MWC Mount Wilson 87.84 327 eP P 08 07 24.5 +1.7
MWC pmax pmax
comp=Z,39nm,1.5s
MWC Mount Wilson 87.84 327 eP P 08 07 24.4 +1.7
comp=Z,39nm,1.5s
N34A Lincoln 87.86 345 P P 08 07 23.1 +0.7
baz=166
M38A Pleasantville 87.88 348 P P 08 07 22.5 0.0
baz=168
Q24A Divide 87.99 338 P P 08 07 23.5 0.0
baz=160
Q24A Divide 87.99 338 eP P 08 07 24.4 +1.0
comp=Z,32nm,1.3s
M37A Trindle Farm, 88.00 347 P P 08 07 23.8 +0.7
baz=168
O29A 4D Ranch, Culb 88.04 342 P P 08 07 24.1 +0.7
baz=163
TUQ Turquoise Moun 88.12 329 P P 08 07 24.7 +0.7
baz=154
BLG Laguna Peak, P 88.13 326 P P 08 07 24.7 +0.8
baz=152
PV01 Paradox Valley 88.16 335 eP P 08 07 24.9 +0.7
O28A Krutsinger Ran 88.26 341 P P 08 07 24.6 +0.1
baz=163
GSC Goldstone, Bar 88.32 328 P P 08 07 24.7 -0.1
baz=153
GSC Goldstone, Bar 88.32 328 eP P 08 07 26.5 +1.6
GSC pmax pmax
comp=Z,18nm,1.3s
GSC Goldstone, Bar 88.32 328 eP P 08 07 26.5 +1.6
comp=Z,18nm,1.3s
EDW2 Edwards Air Fo 88.39 327 P P 08 07 26.1 +0.9
baz=152
OSI Osito Audit: C 88.44 326 P P 08 07 25.8 +0.4
baz=152
KNB Kanab 88.46 332 eP P 08 07 27.2 +1.6
KNB pmax pmax
comp=Z,33nm,1.2s
KNB Kanab 88.46 332 eP P 08 07 27.2 +1.6
comp=Z,33nm,1.2s
M34A Aspy Farms, Fr 88.53 345 P P 08 07 26.2 +0.7
baz=166
L38A Oak Wood Farm, 88.56 348 P P 08 07 26.0 +0.4
baz=169
LCMT Little Creek M 88.60 331 eP P 08 07 27.4 +1.1
comp=Z,26nm,1.6s
ACCN Adirondack Com 88.63 2 eP P 08 07 26.9 +0.9
comp=Z,28nm,1.3s
L37A Phoenix Point, 88.66 347 P P 08 07 26.0 -0.2
baz=168
PV09 Paradox Valley 88.66 335 eP P 08 07 27.8 +1.1
SMCO Snowmass 88.68 337 eP P 08 07 28.1 +1.2
comp=Z,43nm,1.6s
M33A Taylor Creek F 88.70 345 P P 08 07 27.4 +1.0
baz=166
N28A Pribbeno Ranch 88.74 341 P P 08 07 26.7 0.0
baz=163
L36A Harm Buss Farm 88.78 347 P P 08 07 26.9 +0.2
baz=168
LRMC Laurel Mtn Rad 88.81 328 P P 08 07 26.8 -0.4
baz=153
M31A Lambtecht Ranc 88.83 343 P P 08 07 27.1 +0.1
baz=165
ISCO Idaho Springs 88.89 338 P P 08 07 27.7 0.0
baz=160
ISCO Idaho Springs 88.89 338 eP P 08 07 28.6 +0.9
ISCO pmax pmax
comp=Z,46nm,1.7s
ISCO Idaho Springs 88.89 338 eP P 08 07 28.6 +0.9
comp=Z,46nm,1.7s
ARVC Arvin 88.93 327 P P 08 07 27.6 -0.1
baz=152
L35A Bielow Farm, R 88.94 346 P P 08 07 27.5 0.0
baz=167
L34A Svendsen Farm, 88.94 345 P P 08 07 27.8 +0.3
baz=166
JFWS Jewell Farm 88.95 350 eP P 08 07 27.8 +0.3
JFWS e*PP sP 08 07 34.5 -0.8
JFWS Jewell Farm 88.95 350 eP P 08 07 27.8 +0.3
JFWS epP sP 08 07 34.5 -0.8
K38A Parkersburg 89.03 348 P P 08 07 27.9 0.0
baz=169
MPMC Manual Prospec 89.25 328 P P 08 07 28.9 -0.5
baz=153
LSZ Lusaka 89.26 111 eP P 08 07 30.3 +0.3
LSZ pmax pmax
comp=Z,38nm,1.8s
LSZ Lusaka 89.26 111 eP P 08 07 30.3 +0.3
comp=Z,38nm,1.8s
ISA Isabella, Lake 89.27 327 P P 08 07 29.0 -0.3
baz=152
K36A Gilmore City 89.27 347 P P 08 07 29.2 +0.2
baz=168
K37A Belmond 89.27 348 P P 08 07 29.6 +0.5
baz=168
M29A Burnside Ranch 89.28 342 P P 08 07 28.9 -0.3
baz=163
L33A Hoskins 89.29 345 P P 08 07 28.6 -0.6
baz=166
FURC Furnace Creek, 89.38 329 P P 08 07 28.8 -0.8
baz=153
DAC Darwin (Calif) 89.48 328 eP P 08 07 31.8 +1.4
DAC pmax pmax
comp=Z,16nm,1.4s
DAC Darwin (Calif) 89.48 328 eP P 08 07 31.8 +1.4
comp=Z,16nm,1.4s
L30A Spencer Herefo 89.56 343 P P 08 07 31.1 +0.6
baz=164
TPNV Topopah Spring 89.58 329 P P 08 07 30.9 0.0
baz=154
TPNV Topopah Spring 89.58 329 eP P 08 07 32.8 +1.9
TPNV pmax pmax
comp=Z,10.0nm,1.0s
TPNV Topopah Spring 89.58 329 eP P 08 07 32.8 +1.9
comp=Z,9.9nm,1.0s
MSU Marysvale 89.61 333 eP P 08 07 32.2 +1.2
MSU Marysvale 89.61 333 eP P 08 07 32.2 +1.2
J38A Wedel Dairy, R 89.64 349 P P 08 07 30.2 -0.5
baz=169
VES Vest, Richgr 89.66 327 P P 08 07 30.8 -0.2
baz=152
L29A Maesberg Ranch 89.83 342 P P 08 07 30.7 -1.0
baz=164
LONY Lake Ozonia 89.85 1 eP P 08 07 31.8 +0.1
LONY epP sP 08 07 39.2 -0.3
O20A White River Ci 89.92 336 P P 08 07 32.5 +0.1
baz=158
O20A White River Ci 89.92 336 eP P 08 07 33.6 +1.2
comp=Z,21nm,1.6s
J36A Seneca 1, Swea 89.93 347 P P 08 07 32.6 +0.5
baz=168
N23A Red Feather La 90.01 338 P P 08 07 32.8 -0.1
baz=160
N23A Red Feather La 90.01 338 eP P 08 07 33.9 +1.0
comp=Z,29nm,1.3s
K31A O'Neill 90.02 344 P P 08 07 32.5 -0.1
baz=165
GRAC Grapevine Rang 90.03 329 P P 08 07 33.3 +0.5
baz=153
P18A Preston Nutter 90.04 335 eP P 08 07 34.5 +1.4
comp=Z,26nm,1.8s
PSUT Pine Spring 90.18 332 eP P 08 07 34.8 +1.1
comp=Z,14nm,1.2s
PHWY Pilot Hill 90.27 339 eP P 08 07 34.5 +0.4
comp=Z,22nm,1.4s
I38A Scanlan Farm, 90.33 349 P P 08 07 33.6 -0.3
baz=169
I37A Lemond, Waseca 90.46 348 P P 08 07 34.5 0.0
baz=168
I36A Fitzsimmons Fa 90.55 348 P P 08 07 35.7 +0.7
baz=168
R11A Troy Canyon, C 90.60 330 P P 08 07 35.8 +0.2
baz=154
R11A Troy Canyon, C 90.60 330 eP P 08 07 37.2 +1.6
comp=Z,16nm,1.4s
ECSD EROS Data Cent 90.69 346 P P 08 07 36.0 +0.3
baz=166
ECSD EROS Data Cent 90.69 346 eP P 08 07 35.0 -0.6
comp=Z,22nm,0.9s
H37A Dierke Farm, C 90.94 348 P P 08 07 37.9 +1.1
baz=169
I33A Coleman 91.03 346 P P 08 07 37.9 +0.7
baz=166
J29A Okreek 91.08 343 P P 08 07 38.7 +1.2
baz=164
H36A Jessenland, He 91.08 348 P P 08 07 39.1 +1.6
baz=168
MLAC Mammoth, Mammo 91.14 328 P P 08 07 38.6 +0.4
baz=152
J28A Allard Ranch, 91.29 342 P P 08 07 39.4 +0.9
baz=163
J27A Elkhorn Farm, 91.29 342 P P 08 07 38.6 0.0
baz=162
TOA0 Torodi Ar. Sit 91.31 73 eP P 08 07 38.5 -0.7
TORD Torodi Ar. Bea 91.31 73 P P 08 07 38.5 -0.7
comp=Z,1.4nm,0.8s,baz=241,slow=5.3,SNR=5.8
TOA1 Torodi Ar. Sit 91.31 73 eP P 08 07 38.5 -0.8
comp=Z,41nm,2.0s
H35A Sunnyside Ranc 91.34 347 P P 08 07 38.5 -0.2
baz=167
DUG Dugway, Tooele 91.35 333 P P 08 07 38.9 -0.1
baz=156
SPMN Marine on St. 91.56 349 P P 08 07 39.3 -0.3
baz=169
NV01 Mina Array Sit 91.64 329 eP P 08 07 41.1 +0.6
NVAR Mina Array Bea 91.64 329 P P 08 07 41.1 +0.6
comp=Z,0.8nm,0.8s,baz=157,slow=5.8,SNR=7.6
G36A St. Michael 91.70 348 P P 08 07 40.7 +0.4
baz=162
TCUT Toone Canyon 91.75 334 eP P 08 07 42.2 +1.2
comp=Z,23nm,1.5s
G35A Watkins 91.80 347 P P 08 07 40.0 -0.7
baz=168
K22A Casper 91.81 338 P P 08 07 41.1 0.0
baz=160
K22A Casper 91.81 338 eP P 08 07 41.5 +0.4
comp=Z,38nm,1.4s
I28A Midland 91.83 343 P P 08 07 40.7 -0.3
baz=163
CMB Columbia Colle 92.08 327 eP P 08 07 44.5 +2.2
CMB pmax pmax
comp=Z,5.0nm,1.1s
CMB Columbia Colle 92.08 327 eP P 08 07 44.5 +2.2
comp=Z,5.3nm,1.1s
I27A Quinn 92.08 342 P P 08 07 41.7 -0.5
baz=162
F36A Milaca 92.28 348 P P 08 07 43.0 0.0
baz=168
F35A Swanville 92.43 348 P P 08 07 42.8 -0.9
baz=168
RSSD Black Hills 92.58 341 P P 08 07 45.5 +0.9
baz=161
PD31 Pinedale Array 92.73 336 eP P 08 07 46.0 +0.6
PDAR Pinedale Array 92.73 336 P P 08 07 45.7 +0.3
comp=Z,0.5nm,0.8s,baz=123,slow=5.5,SNR=3.8
PDAR LR LR 08 43 35.0
comp=Z,176nm,19.9s,baz=182,slow=32
G28A Parade 92.80 343 P P 08 07 45.3 -0.1
baz=163
G27A Dupree 93.31 342 P P 08 07 46.8 -1.0
baz=163
G26A Maurine 93.37 342 P P 08 07 47.4 -0.7
baz=162
G25A Newell 93.45 341 P P 08 07 47.4 -1.1
baz=162
D35A Remer 93.55 348 P P 08 07 48.3 -0.5
baz=168
F27A Lemmon 93.80 343 P P 08 07 49.7 -0.3
baz=162
FLWY Flagg Ranch 94.27 336 eP P 08 07 53.4 +1.0
comp=Z,8.8nm,1.2s
YMR Madison River 94.88 336 eP P 08 07 56.0 +0.8
comp=Z,29nm,1.8s
HLID Hailey 94.90 333 P P 08 07 56.8 +1.5
baz=154
STKA Stephens Creek 95.45 212 LR LR 08 44 50.4
comp=Z,372nm,18.1s,baz=81,slow=32
LAO LASA Array 95.51 340 P P 08 07 57.5 -0.4
baz=160
A33A Warroad 95.56 348 P P 08 07 57.4 -0.6
baz=167
ULM Lac du Bonnet 96.91 348 P P 08 08 02.7 -1.3
comp=Z,1.9nm,0.8s,baz=188,slow=7.3,SNR=3.6
YKA Yellowknife Ar 111.94 342 PKiKP PKiKP 08 13 06.5 -0.8
comp=Z,0.1nm,0.7s,baz=145,slow=3.3,SNR=3.0
YKA PP PP 08 13 50.1 -1.6
comp=Z,0.3nm,0.9s,baz=140,slow=7.9,SNR=4.2
BFO Black Forest 119.30 50 i PKiKP PKPdf 08 13 22.7 +0.7
COCO West Island 122.19 172 i PKiKP PKPdf 08 13 25.7 -2.9
GEA0 GERESS Array S 122.50 52 ePKPdf PKPdf 08 13 28.1 -0.2
GERES GERESS Array B 122.51 52 PKP PKPdf 08 13 28.4 +0.1
comp=Z,0.4nm,0.3s,baz=209,slow=1.4,SNR=6.6
KHC Kasperske Hory 122.60 51 AMS AMS 09 03 40.0
comp=Z,600nm,16.4s
ILAR Eielson Array 122.79 331 PKP PKPdf 08 13 27.4 -0.7
comp=Z,0.8nm,0.7s,baz=167,slow=2.0,SNR=8.7
ILB Eielson Array 122.79 331 ePKPdf PKPdf 08 13 28.9 +0.7
CLL Collm 123.48 49 ePKiKP PKiKP 08 13 30.0 -0.1
comp=Z,8.0nm,1.3s
CLL ⇓i 08 13 36.7
CLL comp=Z,15nm,1.4s LmV 09 04 00.0
comp=Z,600nm,21.0s
CLL Collm 123.48 49 ePKIKP PKiKP 08 13 30.0 -0.1
CLL pmax pmax
comp=Z,8.0nm,1.3s
CLL MLR MLR
comp=Z,600nm,21.0s
PRU Pruhonice 123.59 51 AMS AMS 09 10 10.0
comp=Z,400nm,17.8s
TREC Trest 123.74 52 AMS AMS 09 03 10.0
comp=Z,500nm,20.6s
BRG Berggiesshubel 123.75 50 e(P) PKPdf 08 13 30.5 +0.1
comp=Z,15nm,1.6s
BRG Berggiesshubel 123.75 50 ePKIKP PKPdf 08 13 30.5 +0.1
BRG pmax pmax
comp=Z,15nm,1.6s
PVCC Panska Ves 123.90 50 AMS AMS 09 02 40.0
comp=Z,600nm,18.0s
DPC Dobruska-Polom 124.76 51 AMS AMS 09 04 00.0
comp=Z,400nm,21.5s
NB2 NORSAR Subarra 127.54 38 PKPdf PKPdf 08 13 36.8 -0.6
comp=Z,20nm,1.7s,baz=241,slow=1.9
NB2 NORSAR Subarra 127.54 38 PKPdf PKPdf 08 13 36.8 -0.6
baz=241,slow=1.9
NB200 NORSAR Array S 127.54 38 ePKPdf PKPdf 08 13 37.0 -0.4
NOA NORSAR Array B 127.54 38 PKP PKPdf 08 13 37.0 -0.4
comp=Z,2.0nm,0.9s,baz=238,slow=1.6,SNR=3.6
MLR Muntele Rosu 127.87 60 ePKIKP PKPdf 08 13 38.8 +0.2
MLR Muntele Rosu 127.87 60 ePKPdf PKPdf 08 13 38.8 +0.2
BUR08 Bucovina Ar. S 128.47 58 ePKPdf PKPdf 08 13 42.1 +2.4
BR231 Keskin MP Arra 129.36 70 ePKPdf PKPdf 08 13 42.4 +0.7
BRTR Keskin Array B 129.87 70 PKP PKPdf 08 13 42.0 -0.7
comp=Z,0.5nm,100.0s,baz=213,slow=2.5,SNR=7.8
BR101 Keskin Array S 129.87 70 ePKPdf PKPdf 08 13 42.0 -0.7
BR131 Keskin Array S 129.87 70 ePKPdf PKPdf 08 13 43.1 +0.4
AK11 Malin Array Si 132.16 56 ePKPdf PKPdf 08 13 47.0 +0.5
AKASG Malin Array Be 132.20 56 PKP PKPdf 08 13 44.8 -1.7
comp=Z,1.0nm,0.7s,baz=259,slow=2.6,SNR=7.2
KIV Kislovodsk 137.81 70 i PKIKP PKPdf 08 14 00.4 +3.0
KIV pmax pmax
comp=Z,22nm,1.1s
OBN Obninsk 137.89 52 ⇑i PKIKP PKPdf 08 13 58.8 +1.9
OBN ePPP PPP 08 19 48.3
OBN eSS SS 08 35 35.3 +40
OBN eSSS SSS 08 40 09.6
OBN pmax pmax
comp=Z,42nm,1.8s
KLMR Klimovskoe 140.58 44 ePKIKP PKPdf 08 13 59.0 -2.7
KLMR eSS SS 08 35 21.5 -4.7

Code	Station Name	Δ°	AZ°	Op	ISC	Time	Res
KLMR				pmax	pmax		
	comp=Z,29nm,1.4s						
BILL	Bilibino	141.26	328⇑	ePKIKP	PKPdf	08 14 02.6	-0.2
BILL				e		08 17 10.1	
BILL				pmax	pmax		
	comp=Z,16nm,1.5s						
PETK	Petropavlovsk-	144.57	302	PKP	PKPab	08 14 06.9	-0.8
	comp=Z,3.8nm,0.7s,baz=116,slow=6.6,SNR=3.6						
PEA1	Petropavlovsk-	144.57	302	ePKPdf	PKPab	08 14 06.9	-0.8
HYB	Hyderabad	145.12	136	i PKP	PKPbc	08 14 10.0	-0.7
HYB				e		08 14 16.5	
HYB				ePP	PP	08 17 34.0	+4.7
GEYT	Alibeck	145.78	87	PKPbc	PKPbc	08 14 11.9	-0.3
	comp=Z,8.9nm,0.7s,baz=257,slow=5.2,SNR=8.9						
GEYT				PP	PP	08 17 33.9	-0.1
	comp=Z,2.3nm,0.3s,baz=249,slow=8.4,SNR=3.8						
SEY	Seymchan	147.54	320	PKPbc	PKPdf	08 14 14.8	+1.0
	comp=Z,11nm,0.9s,baz=82,slow=3.9,SNR=27						
SEY	Seymchan	147.54	320⇓	ePKIKP	PKPdf	08 14 14.9	+1.1
MA2	Magadan	148.73	314	PKPbc	PKPbc	08 14 18.6	-1.1
	comp=Z,10nm,0.8s,baz=118,slow=4.8,SNR=16						
YUK	Yuzh-Kuril'sk	150.06	282	ePKIKP	PKPdf	08 14 20.5	+2.1
YUK				pmax	pmax		
	comp=Z,366nm,1.4s						
YUK				pmax	pmax		
	comp=E,139nm,1.2s						
YUK				pmax	pmax		
	comp=N,100nm,1.1s						
ARU	Arti	150.33	52	i PKIKP	PKPbc	08 14 23.6	-0.1
ARU	Arti	150.33	52	ePKPbc	PKPbc	08 14 24.1	+0.3
ABKAR	Akbulak array	150.71	67	ePKPbc	PKPbc	08 14 24.6	-0.3
ABKAR				ePKPab	PKPab	08 14 31.2	-0.7
TIXI	Tiksi	151.17	344	ePKIKP	PKPbc	08 14 23.9	-1.4
TIXI	Tiksi	151.17	344	ePKPbc	PKPbc	08 14 23.9	-1.4
CMAR	Chiang Mai Arr	152.69	171	PKP	PKPdf	08 14 23.4	+0.1
	comp=N,1.0nm,0.4s,baz=202,slow=6.8,SNR=4.7						
CMAR				PKPbc	PKPbc	08 14 29.3	-1.1
	comp=N,2.9nm,0.6s,baz=220,slow=4.0,SNR=11						
QIZ	Qiongzhong	152.97	194	PKPbc	PKPdf	08 14 24.7	+1.0
QIZ				PP	PP	08 18 16.7	+2.4
QIZ				LR	LR		
	comp=N,630nm,28.1s						
QIZ				LR	LR		
	comp=N,640nm,25.4s						
QIZ				LR	LR		
	comp=N,380nm,29.0s						
CHTO	Chiang Mai	153.05	171	ePKIKP	PKPbc	08 14 30.2	-1.0
CHTO				e		08 14 43.1	
CHTO	Chiang Mai	153.05	171	ePKPbc	PKPbc	08 14 30.1	-1.0
CHTO				ePKPab	PKPab	08 14 43.1	+0.7
NRIK	Noril'sk	154.89	13	PKP	PKPdf	08 14 22.4	-2.4
	comp=N,0.8nm,0.3s,baz=63,slow=3.2,SNR=3.1						
NRIK				PKPab	PKPab	08 14 49.0	0.0
	comp=N,0.9nm,0.4s,baz=313,slow=1.2,SNR=5.2						
VOSK	Vostochnaya	157.81	60	ePKIKP	PKPdf	08 14 29.1	-0.1
VOSK				e		08 15 03.1	
VOSK	Vostochnaya	157.81	60	ePKPdf	PKPdf	08 14 29.1	-0.1
VOSK				ePKPab	PKPab	08 15 03.1	+1.0
KSH	Kashi	159.00	97	ePKP	PKPdf	08 14 32.0	+0.8
KSH				esPKP		08 14 46.6	
KSH				SKS	SKSdf	08 21 32.4	-3.5
KSH				AMB	AMB		
	comp=N,150nm,4.1s						
KSH				LR	LR		
	comp=N,2μm,12.6s						
KSH				LR	LR		
	comp=N,690nm,11.8s						
KSH				LR	LR		
	comp=N,200nm,15.6s						
KMI	Kunming	159.57	178	PKP	PKPdf	08 14 32.3	-0.2
GYA	Guiyang	160.72	189	PKP	PKPdf	08 14 33.0	-0.6
GYA				PKPab	PKPab	08 15 17.4	+2.0
GYA				PKS	PKSdf	08 18 05.3	-1.8
GYA				PP	PP	08 19 01.0	+3.8
GYA				AMB	AMB		
	comp=N,130nm,8.3s						
NJ2	Nanjing	161.91	227	ePKP	PKPdf	08 14 36.1	+1.6
KURK	Kurchatov	162.76	64	ePKIKP	PKPdf	08 14 34.9	+0.2
KURK				e		08 15 23.7	
KURK	Kurchatov	162.76	64	ePKPdf	PKPdf	08 14 34.9	+0.2
KURK				ePKPab	PKPab	08 15 23.7	0.0
NVS	Novosibirsk	164.20	47	i PKIKP	PKPdf	08 14 35.5	-0.4
CD2	Chengdu	165.34	181	PKP	PKPdf	08 14 37.7	-0.1
MK32	Makanchi Array	165.37	78	ePKPdf	PKPdf	08 14 35.6	-1.6
MK32				ePKPab	PKPab	08 15 34.1	-1.3
MKAR	Makanchi Array	165.37	78	PKP	PKPdf	08 14 35.6	-1.6
	comp=N,1.5nm,1.0s,baz=343,slow=1.3,SNR=7.7						
MKAR				PKPab	PKPab	08 15 34.1	-1.3
	comp=N,1.1nm,0.8s,baz=258,slow=3.7,SNR=5.2						
MK01	Makanchi Array	165.37	78	ePKPdf	PKPdf	08 14 35.9	-1.3
MK01				ePKPab	PKPab	08 15 34.6	-0.8
ZAA1	Zalesovo Array	165.43	48	ePKPdf	PKPdf	08 14 35.2	-1.8
ZAA1				ePKPab	PKPab	08 15 35.2	-0.2
ZALV	Zalesovo Beam	165.43	48	PKP	PKPdf	08 14 35.2	-1.8
	comp=N,3.4nm,0.9s,baz=261,slow=2.9,SNR=13						
ZALV				PKPab	PKPab	08 15 35.2	-0.2
	comp=N,1.2nm,0.4s,baz=276,slow=5.2,SNR=4.7						
WMQ	Urumqi	168.72	93	PKP	PKPdf	08 14 41.8	+1.9
WMQ				pPKP	pPKPdf	08 14 50.9	+5.1
WMQ				PKPab	PKPab	08 15 50.6	+0.3
WMQ				PKS	PKSdf	08 18 12.5	+0.1
WMQ				PP	PP	08 19 40.6	+0.3
WMQ				SKKS		08 26 22.3	
WMQ				LR	LR		
	comp=N,120nm,22.0s						
WMQ				LR	LR		
	comp=N,140nm,26.0s						
WMQ				LR	LR		
	comp=N,120nm,23.4s						
LZH	Lanzhou	170.49	182	ePKP	PKPdf	08 14 41.6	+0.3
LZH				pPKP	pPKPdf	08 14 50.2	+2.9
LZH				sPKP		08 14 54.9	
LZH				PKPab	PKPab	08 16 03.3	+5.0
LZH				PP	PP	08 19 48.6	+0.6
LZH				SKS	SKSdf	08 21 36.0	-8.0
LZH				SS	SS	08 40 49.4	+1.1
LZH				AMB	AMB		
	comp=N,160nm,6.0s						
LZH				LR	LR		
	comp=N,430nm,18.3s						
LZH				LR	LR		
	comp=N,590nm,20.0s						
LZH				LR	LR		
	comp=N,760nm,20.2s						
HHC	Hu-ho-hao-te	172.35	235	ePKP	PKPdf	08 14 42.0	0.0
HHC				PP	PP	08 19 59.1	+1.0
HHC				SS	SS	08 41 06.6	-1.5
HHC				AMB	AMB		
	comp=N,58nm,7.7s						
HHC				LR	LR		
	comp=N,200nm,15.9s						
HHC				LR	LR		
	comp=N,180nm,15.9s						
HHC				LR	LR		
	comp=N,180nm,18.2s						
GTA	Gaotai	173.29	156	PKP	PKPdf	08 14 42.2	-0.3
GTA				pPKP	pPKPdf	08 14 52.8	+4.4
GTA				sPKP		08 14 56.6	
GTA				PKPab	PKPab	08 16 09.4	-1.2
GTA				PP	PP	08 20 05.3	+3.3
GTA				SKS	SKSdf	08 21 40.3	-4.5
GTA				SKKS	SKKSac	08 26 46.7	-1.3
GTA				SS	SS	08 41 15.2	-0.9
GTA				AMB	AMB		
	comp=N,170nm,7.1s						
GTA				LR	LR		
	comp=N,170nm,19.0s						
GTA				LR	LR		
	comp=N,280nm,21.9s						
GTA				LR	LR		
	comp=N,260nm,20.0s						
ZAK	Zakamensk	175.21	1	ePKIKP	PKPdf	08 14 40.6	-2.1
ZAK				pmax	pmax		
	comp=Z,3.0nm,1.5s						
ULN	Ulaanbaatar	176.59	313	ePKIKP	PKPdf	08 14 42.2	-1.0
ULN	Ulaanbaatar	176.59	313	ePKPdf	PKPdf	08 14 42.2	-1.0
SONA1	Songino Array	176.92	318	ePKPdf	PKPdf	08 14 41.4	-1.9
SONA1				ePKPab	PKPab	08 16 27.0	+0.4
SONA0	Songino Array	176.93	318	ePKPdf	PKPdf	08 14 41.4	-1.9
SONM	Songino Array	176.93	318	PKP	PKPdf	08 14 41.4	-1.9
	comp=Z,0.2nm,0.3s,baz=349,slow=1.5,SNR=5.5						

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*JMA **04** 07:56:02.8±0.3, 36°.33N×143°.63E, h17km, M3.9*
*IDC **04** 07:56:09.7±1.8, 37°.05N×143°.33E, h0km, mb3.4/2, mb1 3.7/3, mb1mx3.3/45, mbtmp3.3/3, ML3.0/1, Error ellipse: s-maj=55.7km s-min=34.5km az=132.0*
ISC 04 07:56:10.5±1.3, 37°.0N±0°.1×143°.22E±0°.07, h10km, n9, σ2^{s}64/13, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
JFK	Kawauchi	1.92	283	S	Sg	07 57 12.6	+0.4
ONAJ	Iwakimizuishiy	1.94	275	P	Pn	07 56 42.5	-1.2
ONAJ				eS	Sb	07 57 12.5	+2.1
JMM	Marumori	2.13	296	P	Pb	07 56 48.0	-1.3
JMM				S	Sg	07 57 20.2	+1.1
JHO	Hitachi	2.16	262	P	Pn	07 56 43.8	-2.7
JHO				S	Sn	07 57 13.9	+0.6
JFT	Otama	2.37	285	S	Sb	07 57 25.2	+2.6
MJAR	Matsushiro Arr	4.05	266	Pn	Pn	07 57 13.9	+1.4
	0.8nm,0.3s,baz=85,slow=11,SNR=5.7						
MAT	Matsushiro	4.05	266	P	Pn	07 57 15.4	+2.8
MAT				eS	Sn	07 57 54.2	-5.8
ILAR	Eielson Array	48.78	32	P	P	08 04 55.0	-0.4
	0.5nm,0.8s,baz=274,slow=7.5,SNR=2.4						
WRA	Warramunga Arr	57.21	190	P	P	08 05 59.3	+1.4
	0.4nm,0.7s,baz=11,slow=7.2,SNR=2.1						

JMA 04 07:57:07.2±0.1, 38°.93N×142°.56E, h27km±2km, M3.6, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
OFUJ	Ofunato	0.71	282	P	Pb	07 57 20.7	-0.3
MIYJ	Miyakonagasawa	0.86	319	P	Pn	07 57 22.8	-0.8
MIYJ				S	Sb	07 57 34.1	-0.7
JMK	Ichinoseki	1.04	272	P	Pn	07 57 25.8	-0.3
JMK				S	Sn	07 57 39.6	-0.2
JOM	Ohasama	1.12	299	P	Pn	07 57 27.2	0.0
JOM				S	Sb	07 57 42.0	-0.2
JKZ	Kuzumaki	1.42	318	P	Pn	07 57 32.1	+0.8
JKZ				S	Sb	07 57 50.0	-0.7
JRG	Rokugo	1.57	288	P	Pb	07 57 35.0	-0.5
JOU	Okura	1.59	250	S	Sn	07 57 53.9	+0.7
JANG	Nango	1.65	331	P	Pn	07 57 35.5	+1.1

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*IDC **04** 08:02:26.9±1.8, 19°.45S×172°.58W, h0km, mb4.4/4, mb1 4.5/7, mb1mx3.9/44, mbtmp4.5/7, ML3.7/3, Error ellipse: s-maj=48.4km s-min=29.9km az=156.0*
*ISCJB **04** 08:02:29.0±0.8, 19°.31S±0°.09×172°.5W±0°.1, h33km, mb4.4/5, Error ellipse: s-maj=15.9km s-min=11.2km az=41.5*
*NEIC **04** 08:02:31.6±0.6, 19°.42S×172°.49W, h35km, mb4.4/3, Error ellipse: s-maj=15.2km s-min=10.0km az=159.0*
ISC 04 08:02:31.5±0.9, 19°.3S±0°.1×172°.5W±0°.1, h35km, n12, σ1^{s}15/13, mb4.5/5, Tonga Islands region

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
AFI	Afiamalu	5.41	7	Pn	Pn	08 03 51.6	+1.7
	2.3nm,0.3s,baz=217,slow=20,SNR=1.9						
AFI				Sn	Sn	08 04 48.8	-2.2
	3.3nm,0.3s,baz=331,slow=19,SNR=1.8						
RAR	Rarotonga	12.08	101	Pn	Pn	08 05 20.9	-0.4
	2.2nm,0.3s,baz=258,slow=9.3,SNR=3.8						
DZM	Mont Dzumac	19.90	258	P	P	08 06 59.8	-0.5
	0.4nm,0.3s,baz=81,slow=18,SNR=6.6						
CTA	Charters Tower	38.78	262	P	P	08 09 52.2	-0.9
	0.0nm,0.2s,baz=68,slow=11,SNR=2.8						
CTAO	Charters Tower	38.78	262	eP	P	08 09 53.5	+0.4
	2.4nm,0.7s						
STKA	Stephens Creek	42.97	244	P	P	08 10 26.6	-0.9
	10μm,100.0s,baz=74,slow=8.3,SNR=4.2						
BBOO	Buckleboo	47.71	243	eP	P	08 11 06.3	+1.2
	6.9nm,1.1s						
ASAR	Alice Springs	49.84	255	P	P	08 11 21.2	-0.3
	4.9nm,0.8s,baz=86,slow=8.5,SNR=35						
WRAB	Tennant Creek	49.90	260	eP	P	08 11 21.4	-0.7
WRA	Warramunga Arr	49.91	260	P	P	08 11 21.7	-0.4
	2.9nm,0.6s,baz=98,slow=8.2,SNR=36						
FITZ	Fitzroy Crossi	58.33	260	eP	P	08 12 24.4	+0.8
	2.3nm,0.6s						
CBIJ	Chichi jima	63.70	315	eP	P	08 13 00.3	+0.6

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*IDC **04** 08:09:39.1±2.7, 36°.14N×141°.28E, h0km, mb3.3/2, mb1 3.5/3, mb1mx3.3/46, mbtmp3.3/3, ML3.2/1, MS3.1/2, Ms1 3.1/2, ms1mx2.5/33, Error ellipse: s-maj=53.9km s-min=30.9km az=48.0*
*ISCJB **04** 08:09:40.1±2.1, 36°.75N±0°.07×141°.4E±0°.1, h21km±10km, mb3.3/2, MS3.2/1, Error ellipse: s-maj=16.6km s-min=10.2km az=32.7*
*JMA **04** 08:09:41.0±0.1, 36°.75N×141°.31E, h46km±2km, M3.4*
ISC 04 08:09:37.5±2.9, 36°.70N±0°.08×141°.6E±0°.1, h6km±14km, n11, σ1^{s}44/13, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
ONAJ	Iwakimizuishiy	0.72	304	P	Pg	08 09 52.2	+0.8
ONAJ				S	Sg	08 10 00.3	-0.5
JHO	Hitachi	0.79	264	P	Pg	08 09 53.2	+0.5
JHO				S	Sg	08 10 02.2	-0.7
JFK	Kawauchi	0.86	321	P	Pg	08 09 54.5	+0.5
JFK				S	Sg	08 10 04.0	-1.1
JFT	Otama	1.27	311	P	Pn	08 10 01.0	-0.8
JFT				S	Sg	08 10 15.1	-3.1
JMM	Marumori	1.31	333	P	Pn	08 10 01.2	-1.2
MJAR	Matsushiro Arr	2.69	268	Pn	Pn	08 10 20.9	-0.5
	5.4nm,0.3s,baz=98,slow=24,SNR=32						
MJAR				Sn	Sn	08 10 53.3	-1.0
	3.7nm,0.3s,baz=80,slow=17,SNR=4.8						
MAT	Matsushiro	2.69	268	P	Pn	08 10 21.4	0.0
MAT				S	Sn	08 10 52.1	-2.2
PETK	Petropavlovsk-	19.93	29	LR	LR	08 21 41.6	
	comp=Z,32nm,21.8s,baz=218,slow=35						
SONM	Songino Array	28.06	304	LR	LR	08 28 15.8	
	comp=Z,60nm,20.1s,baz=171,slow=40						
MKAR	Makanchi Array	44.39	302	P	P	08 17 51.9	+3.1
	0.1nm,0.4s,baz=88,slow=7.1,SNR=1.9						
WRA	Warramunga Arr	56.74	188	P	P	08 19 20.6	-1.7
	0.4nm,0.6s,baz=4.9,slow=7.5,SNR=1.8						

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*NIED **04** 08:10:00, 37°.80N×142°.50E, h35km, Mw4.2 Best double couple: M0 2.44000×10^15 NP1:φs257.00000°, δ57.00000°, λ35.00000°. NP2:φs146.00000°, δ61.00000°, λ142.00000°.*
*ISCJB **04** 08:10:30.9±1.1, 37°.73N±0°.04×142°.59E±0°.08, h39km±10km, mb3.8/15, Error ellipse: s-maj=10.8km s-min=7.3km az=4.9*
*JMA **04** 08:10:31.5±0.3, 37°.81N×142°.53E, h37km, M4.2*
JMA Felt II J1.
*IDC **04** 08:10:32.5±0.6, 37°.72N×142°.67E, h35km±3km, mb3.6/14, mb1 3.8/18, mb1mx3.7/47, mbtmp3.9/18, ML3.5/3, MS3.2/3, Ms1 3.2/3, ms1mx2.8/52, Error ellipse: s-maj=17.1km s-min=13.2km az=127.0*
ISC 04 08:10:31.8±0.6, 37°.74N±0°.05×142°.59E±0°.06, h31km±3km, n41, σ1^{s}55/48, mb3.8/14, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
JIO	Ouri	1.21	307	P	Pn	08 10 51.6	-0.9
JIO				S	Sn	08 11 05.3	-2.5
JFK	Kawauchi	1.41	255	P	Pn	08 10 54.9	-0.4
JFK				S	Sn	08 11 11.8	-1.0
JMM	Marumori	1.43	276	P	Pn	08 10 55.0	-0.4
JMM				S	Sn	08 11 11.5	-1.6
JMK	Ichinoseki	1.62	319	P	Pn	08 10 57.4	-0.7
JMK				eS	Sn	08 11 15.7	-2.2
JOU	Okura	1.64	293	P	Pn	08 10 58.6	+0.2
JFT	Otama	1.80	264	P	Pn	08 11 01.3	+0.7
JFT				S	Sn	08 11 22.7	+0.3
JOM	Ohasama	2.01	330	S	Sn	08 11 26.6	-0.9
JYS	Shirataka	2.05	284	P	Pn	08 11 04.9	+0.9
JYS				S	Sn	08 11 28.7	+0.2
JYK	Kaneyama	2.11	305	P	Pn	08 11 04.6	-0.3
MJAR	Matsushiro Arr	3.69	252	Pn	Pn	08 11 28.2	+1.5
	6.4nm,0.3s,baz=78,slow=13,SNR=13						
MJAR				LR	LR	08 13 09.9	
	comp=Z,304nm,19.1s,baz=95,slow=42						
MAT	Matsushiro	3.70	252	P	Pn	08 11 29.0	+2.3
MAT				S	Sn	08 12 07.0	-2.2
JHJ	Hachijo jima 2	5.14	207	Pn	Pn	08 11 46.6	+0.1
	137nm,0.3s,baz=336,slow=14,SNR=23						
JHJ				Sn	Sn	08 12 41.8	-3.1
	78nm,0.3s,baz=72,slow=20,SNR=3.3						
USRK	Ussuriysk Ar.	10.28	312	Pn	Pn	08 13 01.0	+3.9
	0.4nm,0.3s,baz=115,slow=13,SNR=7.6						
JNU	Nakatsue	10.60	248	Pn	Pn	08 13 02.4	+0.9
	0.3nm,0.3s,baz=63,slow=4.5,SNR=3.7						
JNU				LR	LR	08 17 22.7	
	comp=Z,136nm,18.7s,baz=109,slow=38						
JCJ	Chichijima	10.62	182	Pn	Pn	08 13 00.1	-1.5
	17nm,0.3s,baz=25,slow=16,SNR=18						
JCJ				Sn	Sn	08 14 49.0	-10
	6.9nm,0.3s,baz=197,slow=19,SNR=6.0						
KSRS	Korea Array	11.64	273	Pn	Pn	08 13 19.3	+3.7
	0.1nm,0.3s,baz=92,slow=11,SNR=4.7						
KSRS				LR	LR	08 17 13.9	
	comp=Z,91nm,18.9s,baz=88,slow=34						
KLR	Kul'dur	13.90	329	Pn	Pn	08 13 42.8	-3.7
	0.1nm,0.3s,baz=123,slow=10,SNR=5.3						
MA2	Magadan	22.48	11	P	P	08 15 27.8	-0.4
	9.1nm,0.7s,baz=214,slow=7.2,SNR=6.3						
SEY	Seymchan	25.93	10	P	P	08 16 01.3	+0.5
	9.2nm,0.8s,baz=190,slow=8.3,SNR=14						
H11N2	WAKE ISLAND Hy	27.73	124	T	T	08 45 51.4	
	baz=318						
H11N1	WAKE ISLAND Hy	27.74	124	T	T	08 45 55.5	
	baz=318						
H11N3	WAKE ISLAND Hy	27.75	124	T	T	08 45 55.9	
	baz=318						
SONM	Songino Array	28.18	303	P	P	08 16 22.4	+1.0
	0.6nm,0.5s,baz=89,slow=6.2,SNR=3.7						
H11S1	WAKE ISLAND Hy	28.48	126	T	T	08 46 41.6	
	baz=316,slow=74						
H11S3	WAKE ISLAND Hy	28.48	126	T	T	08 46 50.8	
	baz=316						
H11S2	WAKE ISLAND Hy	28.50	126	T	T	08 46 43.8	
	baz=316,slow=74						
ZALV	Zalesovo Beam	42.14	312	P	P	08 18 21.4	+0.5
	1.2nm,0.3s,baz=87,slow=5.9,SNR=3.3						
ZALV				pP	pP	08 18 31.0	+0.8
	1.4nm,0.3s,baz=50,slow=4.6,SNR=1.8						
MKAR	Makanchi Array	44.54	302	P	P	08 18 41.2	+0.8
	1.2nm,0.8s,baz=86,slow=9.5,SNR=11						
MKAR				pP	sP	08 18 51.6	-2.0
	1.2nm,0.6s,baz=86,slow=7.8,SNR=7.3						
ILAR	Eielson Array	48.40	33	P	P	08 19 10.8	+0.4
	0.3nm,0.6s,baz=260,slow=5.7,SNR=6.5						
ILAR				sP	sP	08 19 25.2	+1.6
	1.7nm,0.7s,baz=263,slow=6.4,SNR=9.7						
INK	Inuvik	53.34	27	P	P	08 19 47.8	+0.3
	0.9nm,0.9s,baz=277,slow=4.6,SNR=3.7						
WRA	Warramunga Arr	57.89	189	P	P	08 20 20.4	-0.3
	0.9nm,0.7s,baz=6.7,slow=7.0,SNR=8.5						
ASAR	Alice Springs	61.62	189	P	P	08 20 47.1	+0.8
	0.3nm,0.7s,baz=12,slow=15,SNR=4.8						
RES	Resolute Bay	61.69	15	P	P	08 20 46.1	0.0
	0.5nm,0.5s,baz=333,slow=6.8,SNR=3.0						
YKA	Yellowknife Ar	62.73	31	P	P	08 20 53.2	-0.1
	0.2nm,0.7s,baz=305,slow=7.0,SNR=4.8						
YKA				sP	sP	08 21 07.7	+1.0
	0.4nm,0.7s,baz=304,slow=6.6,SNR=7.1						
FINES	FINESS Array B	68.62	332	P	P	08 21 30.7	-0.7
	1.6nm,0.8s,baz=66,slow=4.7,SNR=3.4						
FINES				pP	sP	08 21 44.1	-0.8
	2.9nm,0.8s,baz=46,slow=11,SNR=4.2						
NB2	NORSAR Subarra	73.89	338	P	pP	08 22 16.2	+3.0
	comp=Z,1.7nm,0.8s,baz=42,slow=6.2						
NOA	NORSAR Array B	73.89	338	pP	pP	08 22 15.8	+2.6
	comp=Z,1.5nm,0.9s,baz=43,slow=5.5,SNR=3.2						
AKASG	Malin Array Be	74.31	323	P	P	08 22 05.2	-0.6
	comp=Z,0.3nm,0.3s,baz=49,slow=5.6,SNR=4.4						
AKASG				pP	sP	08 22 17.4	-2.0
	comp=Z,1.2nm,0.6s,baz=44,slow=6.1,SNR=3.2						
PDAR	Pinedale Array	76.51	46	P	P	08 22 19.4	+0.5
	comp=Z,0.3nm,0.5s,baz=30,slow=0.9,SNR=4.2						
PDAR				sP	sP	08 22 34.1	+1.6
	comp=Z,0.6nm,0.7s,baz=318,slow=2.0,SNR=5.0						
LPAZ	La Paz	145.53	60	PKPbc	PKPbc	08 30 08.3	+0.2
	comp=Z,1.3nm,0.7s,baz=297,slow=2.3,SNR=8.1						
SIV	San Ignacio	149.92	50	PKPbc	PKPbc	08 30 19.3	0.0
	comp=Z,2.4nm,0.7s,baz=300,slow=2.4,SNR=4.1						

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*ISCJB **04** 08:17:55.0±1.1, 17°.9S±0°.3×178°.3W±0°.2, h590km, mb3.7/10, Error ellipse: s-maj=42.0km s-min=12.0km az=148.9*
*IDC **04** 08:17:55.6±2.0, 17°.96S×178°.21W, h586km±23km, mb3.2/10, mb1 3.4/12, mb1mx3.2/39, mbtmp4.2/12, Error ellipse: s-maj=46.3km s-min=14.5km az=144.0*
ISC 04 08:17:55.6±1.1, 18°.0S±0°.3×178°.2W±0°.2, h590km, n16, σ0^{s}80/18, mb3.8/10, Fiji Islands region

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
AFI	Afiamalu	7.41	58	P	P	08 19 48.7	-0.5
	2.9nm,0.3s,baz=158,slow=9.2,SNR=4.7						
DZM	Mont Dzumac	14.97	252	P	P	08 21 05.1	+1.1
	0.3nm,0.3s,baz=138,slow=16,SNR=2.8						
STKA	Stephens Creek	38.75	241	P	P	08 24 31.1	+0.4
	1.6nm,0.9s,baz=80,slow=11,SNR=4.3						
WRA	Warramunga Arr	44.79	260	P	P	08 25 18.2	-0.2
	1.4nm,0.5s,baz=95,slow=7.2,SNR=47						
ASAR	Alice Springs	44.94	254	P	P	08 25 19.6	+0.1
	4.1nm,0.6s,baz=87,slow=8.8,SNR=54						
ASAR				PcP	PcP	08 26 47.8	-0.2
	0.7nm,0.5s,baz=97,slow=3.9,SNR=6.9						
ASAR				S	S	08 31 14.0	-1.8
	0.7nm,0.7s,baz=87,slow=17,SNR=4.9						
MJAR	Matsushiro Arr	68.08	323	P	P	08 27 57.8	+0.3
	2.3nm,0.6s,baz=157,slow=5.9,SNR=4.0						
PETK	Petropavlovsk-	73.80	345	P	P	08 28 31.5	+0.9
	2.3nm,0.6s,baz=168,slow=8.4,SNR=4.3						
NVAR	Mina Array Bea	79.36	44	P	P	08 29 02.4	+0.8
	0.4nm,0.7s,baz=228,slow=11,SNR=3.0						
SEY	Seymchan	83.89	347	P	P	08 29 23.3	-0.5
	2.0nm,0.4s,baz=145,slow=4.7,SNR=14						
ILAR	Eielson Array	85.93	13	P	P	08 29 33.0	-0.6
	0.7nm,0.4s,baz=219,slow=5.1,SNR=18						
INK	Inuvik	91.92	15	P	P	08 30 00.9	-0.4
	0.8nm,0.7s,baz=189,slow=3.2,SNR=4.4						
YKA	Yellowknife Ar	94.33	25	P	P	08 30 12.1	-0.3
	0.2nm,0.5s,baz=236,slow=4.7,SNR=6.7						
MKAR	Makanchi Array	109.32	314	PKiKP	PKiKP	08 35 18.4	-1.1
	0.2nm,0.4s,baz=17,slow=0.7,SNR=3.0						
BRTR	Keskin Array B	144.97	315	PKP	PKPdf	08 36 27.7	+0.8
	1.0nm,0.4s,baz=114,slow=3.1,SNR=5.8						
MMAI	Mount Meron Ar	146.34	303	PKPbc	PKPbc	08 36 31.5	-0.2
	1.4nm,0.5s,baz=64,slow=3.4,SNR=3.2						
GERES	GERESS Array B	147.74	345	PKPbc	PKPbc	08 36 35.1	+0.3
	0.4nm,0.2s,baz=43,slow=2.5,SNR=4.7						

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*MOS **04** 08:24:02.8±0.9, 49°.34N×156°.17E, h11km, mb4.2/1, Error ellipse: s-maj=69.6km s-min=6.7km az=77.7*
KRSC 04 08:23:54.8±1.6, 48°.90N×156°.36E, h4km±17km, ML4.1, East of Kuril Islands

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
SKR	Severo-Kuril's	1.79	355	eP	Pn	08 24 26.6	+0.1
SKR				eS	Sn	08 24 49.9	+0.3
SKR	Severo-Kuril's	1.79	355	PN	Pn	08 24 26.6	+0.1
SKR				S	Sn	08 24 49.9	+0.3
PAU	Pauzhetka	2.58	6	eP	Pb	08 24 39.9	-1.8
PAU				eS	Sb	08 25 12.7	-1.1
PAU	Pauzhetka	2.58	6	PN	Pb	08 24 39.9	-1.8
PAU				S	Sb	08 25 12.7	-1.1
ASAK	Asacha	3.62	15	eP	Pb	08 24 55.6	-3.8
ASAK	Asacha	3.62	15	PN	Pb	08 24 55.6	-3.8
MTVR	Mutnovka	3.77	17	eP	Pn	08 24 57.8	+4.0
MTVR				eS	Sb	08 25 44.3	-3.7
MTVR	Mutnovka	3.77	17	PN	Pn	08 24 57.8	+4.0
MTVR				S	Sb	08 25 44.3	-3.7
RUS	Russkaya	3.79	20	eP	Pn	08 24 56.5	+2.5
RUS				eS	Sn	08 25 42.6	+3.6
RUS	Russkaya	3.79	20	PN	Pn	08 24 56.5	+2.5
RUS				S	Sn	08 25 42.6	+3.6
KRMR	Karymshinskiy	4.09	15	eP	Pb	08 25 03.3	-4.0
KRMR				eS	Sb	08 25 52.4	-4.6
KRMR	Karymshinskiy	4.09	15	PN	Pb	08 25 03.3	-4.0
KRMR				S	Sb	08 25 52.4	-4.6
DALK	Dalny	4.40	19	eP	Pn	08 25 06.2	+3.8
DALK				eS	Sn	08 25 59.1	+5.1
DALK	Dalny	4.40	19	PN	Pn	08 25 06.2	+3.8
DALK				S	Sn	08 25 59.1	+5.1
UGLR	Uglovaya	4.58	19	eP	Pn	08 25 09.0	+4.0

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
UGLR	Uglovaya	4.58	19	PN	Pn	08 25 09.0	+4.0
AVH	Avacha	4.62	18	eP	Pn	08 25 09.7	+4.3
AVH	Avacha	4.62	18	PN	Pn	08 25 09.7	+4.3
SMAR	Somma	4.63	18	eP	Pn	08 25 09.7	+4.0
SMAR	Somma	4.63	18	PN	Pn	08 25 09.7	+4.0
SDLR	Sedlovina	4.66	19	eP	Pn	08 25 09.0	+2.9
SDLR	Sedlovina	4.66	19	PN	Pn	08 25 09.0	+2.9
KRX	Arik	4.69	17	eP	Pn	08 25 11.0	+4.5
KRX	Arik	4.69	17	PN	Pn	08 25 11.0	+4.5
SPN	Mys Shipunski	4.79	27	eP	Pn	08 25 11.4	+3.6
SPN				eS	Sn	08 26 09.0	+5.3
SPN	Mys Shipunski	4.79	27	PN	Pn	08 25 11.4	+3.6
SPN				S	Sn	08 26 09.0	+5.3
GNL	Ganaly	4.90	11	eP	Pn	08 25 12.5	+3.2
GNL	Ganaly	4.90	11	PN	Pn	08 25 12.5	+3.2

*IDC **04** 08:24:42.0±1.5, 38°.72N×144°.42E, h0km, mb3.7/7, mb1 3.8/8, mb1mx3.5/65, mbtmp3.7/8, ML3.8/1, MS4.1/1, Ms1 4.1/1, ms1mx2.5/50, Error ellipse: s-maj=36.2km s-min=26.8km az=123.0*

*ISCJB **04** 08:24:44.6±1.1, 38°.7N±0°.1×144°.3E±0°.2, h29km, mb3.6/7, MS4.1/1, Error ellipse: s-maj=25.5km s-min=10.3km az=141.6*

ISC 04 08:24:46.5±1.3, 38°.7N±0°.2×144°.3E±0°.2, h29km, n11, σ0.99/10, mb3.6/7, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
MJAR	Matsushiro Arr	5.29	248	Pn	Pn	08 26 04.4	+0.7
	3.1nm,0.3s,baz=35,slow=12,SNR=28						
MAT	Matsushiro	5.29	248	P	Pn	08 26 05.2	+1.5
MAT				eS	Sn	08 27 01.9	-1.8
USRK	Ussuriysk Ar.	10.73	305	Pn	Pn	08 27 12.5	-5.7
	0.2nm,0.3s,baz=113,slow=18,SNR=3.8						
SEY	Seymchan	24.74	9	P	P	08 30 05.3	+0.1
	1.0nm,0.7s,baz=186,slow=7.2,SNR=3.8						
ZALV	Zalesovo Beam	42.50	311	P	P	08 32 39.4	+0.5
	0.4nm,0.3s,baz=111,slow=7.9,SNR=1.4						
MKAR	Makanchi Array	45.18	301	P	P	08 33 00.9	+0.3
	0.6nm,0.8s,baz=74,slow=6.4,SNR=4.5						
KURBB	Kurchatov Arra	46.78	307	P	P	08 33 13.2	+0.1
	1.1nm,0.6s,baz=81,slow=8.0,SNR=5.1						
ILAR	Eielson Array	46.85	33	P	P	08 33 12.9	-0.6
	0.6nm,1.0s,baz=249,slow=7.6,SNR=3.1						
PMG	Port Moresby	47.95	176	LR	LR	08 54 33.4	
	comp=Z,192nm,18.4s,baz=146,slow=37						
WRA	Warramunga Arr	59.09	191	P	P	08 34 44.1	-0.1
	0.4nm,0.6s,baz=11,slow=7.2,SNR=2.2						
AKASG	Malin Array Be	74.34	323	P	P	08 36 20.9	-0.2
	0.6nm,0.5s,baz=40,slow=5.9,SNR=2.1						

*NSSC **04** 08:28:30.1±1.1, 30°.57N×35°.03E, h0km±193km, ML2.0*

*HLW **04** 08:28:33.6, 31°.08N×35°.05E, h12km±9km, Ml3.3*

*CSEM **04** 08:28:34.4±0.2, 30°.90N×34°.98E, h2km, ML2.0, Error ellipse: s-maj=19.2km s-min=5.2km az=119.0*

*ISCJB **04** 08:28:35.3±0.6, 30°.90N±0°.06×35°.0E±0°.1, h8km, Error ellipse: s-maj=17.0km s-min=4.3km az=25.1*

ISC 04 08:28:35.4±1.2, 30°.93N±0°.05×34°.97E±0°.09, h8km, n17, σ0.84/24, Dead Sea region

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
HBST	Basata	1.72	187	P	Pn	08 29 05.7	0.0
	baz=189						
HBST				AMP		08 29 00.0	
	comp=E,300μm,0.3s,logA/T=6.0,baz=189						
HBST				S	Sb	08 29 28.9	-0.2
	baz=189						
HBST	Basata	1.72	187	P	Pn	08 29 05.7	0.0
NUB		1.92	188	P	Pn	08 29 08.8	+0.4
	baz=190						
TCHB	Talchebab	1.93	26	eP	Pn	08 29 08.1	-0.4
TCHB				eS	Sg	08 29 36.0	-1.4
TCHB				AML	AML	08 29 40.7	
	comp=E,90nm,0.3s						
TCHB				AML	AML	08 29 40.8	
	comp=N,43nm,0.3s						
TCHB	Talchebab	1.93	26	eP	Pn	08 29 08.1	-0.4
SUZ	Suez	2.14	240	P	Pn	08 29 11.2	-0.2
	baz=238						
SUZ	Suez	2.14	240	P	Pn	08 29 11.2	-0.2
HDHB	Dhahab	2.23	188	P	Pn	08 29 11.8	-0.7
	baz=190						
HDHB	Dhahab	2.23	188	P	Pn	08 29 11.8	-0.7
SALA	Sala	2.32	40	eP	Pn	08 29 13.8	-0.3
SALA				eS	Sn	08 29 44.2	+1.2
SALA				AML	AML	08 29 55.8	
	comp=N,13nm,0.4s						
SALA				AML	AML	08 30 01.1	
	comp=E,2.2nm,0.3s						
SALA	Sala	2.32	40	eP	Pn	08 29 13.9	-0.3
SALA				eS	Sn	08 29 44.2	+1.2
	comp=E,2.0nm,0.3s						
BRBR	Barbar	2.61	18	eP	Pn	08 29 18.6	+0.6
BRBR				eS	Sb	08 29 53.8	-1.0
BRBR				AML	AML	08 30 00.6	
	comp=E,20nm,0.9s						
BRBR				AML	AML	08 30 04.4	
	comp=N,24nm,0.4s						
BRBR	Barbar	2.61	18	eP	Pn	08 29 19.0	+1.0
TR2	Tor 2	2.76	203	P	Pn	08 29 19.9	0.0
	baz=204						
TR2	Tor 2	2.76	203	P	Pn	08 29 19.9	0.0
ZALF	Zalf	2.83	45	eP	Pn	08 29 20.2	-0.7
ZALF				eS	Sn	08 29 56.7	+1.6
ZALF				AML	AML	08 30 13.1	
	comp=N,8.1nm,0.4s						
ZALF				AML	AML	08 30 16.1	
	comp=E,9.4nm,0.7s						
ZALF	Zalf	2.83	45	eP	Pn	08 29 20.2	-0.7
ZALF				eS	Sn	08 29 56.7	+1.6
	comp=E,9.0nm,0.7s						

IDC 04 08:30:21.3±19.0, 24°.39S×178°.94W, h494km±196km, mb3.5/6, mb1 3.7/6, mb1mx3.3/43, mbtmp4.4/6, Error ellipse: s-maj=149.4km s-min=35.3km az=50.0, South of Fiji Islands

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
CTA	Charters Tower	32.45	271	P	P	08 36 10.4	+0.2
	11nm,0.5s,baz=95,slow=11,SNR=17						
STKA	Stephens Creek	35.44	249	P	P	08 36 35.0	-0.3
	2.9nm,0.6s,baz=99,slow=10,SNR=14						
ASAR	Alice Springs	42.91	261	P	P	08 37 36.0	+0.1
	3.2nm,0.4s,baz=92,slow=6.8,SNR=47						
WRA	Warramunga Arr	43.34	266	P	P	08 37 38.7	-0.6
	5.6nm,0.7s,baz=104,slow=7.9,SNR=44						
FITZ	Fitzroy Crossi	51.76	266	P	P	08 38 42.7	+0.1
	6.9nm,0.8s,baz=145,slow=9.5,SNR=5.9						
VNDA	Vanda	53.98	185	P	P	08 38 57.5	-0.1
	0.6nm,0.8s,baz=17,slow=5.8,SNR=3.5						

*NIED **04** 08:32:00, 37°.20N×141°.70E, h29km, Mw3.6 Best double couple: M0 2.69000×10^14 NP1:φs121.00000°, δ61.00000°, λ179.00000°. NP2:φs212.00000°, δ89.00000°, λ29.00000°.*

*IDC **04** 08:32:53.1±1.1, 37°.18N×141°.77E, h0km, mb3.4/6, mb1 3.6/7, mb1mx3.4/59, mbtmp3.3/7, ML3.1/1, MS4.1/2, Ms1 4.1/2, ms1mx2.7/41, Error ellipse: s-maj=29.8km s-min=24.3km az=106.0*

*ISCJB **04** 08:32:55.8±1.7, 37°.20N±0°.08×141°.77E±0°.09, h30km±10km, mb3.5/6, MS4.1/2, Error ellipse: s-maj=14.5km s-min=10.9km az=40.6*

*JMA **04** 08:32:57.3±0.2, 37°.19N×141°.68E, h39km±3km, M3.8*

ISC 04 08:32:57.9±2.1, 37°.18N±0°.08×141°.63E±0°.09, h32km±13km, n21, σ1.15/19, mb3.5/6, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
JFK	Kawauchi	0.63	287	P	Pb	08 33 10.2	-0.4
JFK				S	Sb	08 33 19.3	0.0
ONAJ	Iwakimizuishiy	0.67	263	P	Pn	08 33 10.8	-0.4
ONAJ				S	Sb	08 33 20.7	+0.4
JMM	Marumori	0.95	316	P	Pn	08 33 14.4	-0.6
JMM				S	Sn	08 33 26.9	-0.6
JHO	Hitachi	1.02	237	P	Pn	08 33 15.6	-0.4
JFT	Otama	1.08	288	P	Pn	08 33 17.7	+0.8
JFT				S	Sn	08 33 32.0	+1.2
MJAR	Matsushiro Arr	2.82	258	Pn	Pn	08 33 42.4	+1.7
	2.9nm,0.3s,baz=115,slow=8.7,SNR=14						
MJAR				Sn	Sb	08 34 21.7	+0.1
	4.9nm,0.3s,baz=354,slow=13,SNR=6.0						
MAT	Matsushiro	2.82	258	P	Pn	08 33 42.7	+2.0
MAT				S	Sn	08 34 10.6	-3.0
H11N2	WAKE ISLAND Hy	28.07	121	T	T	09 08 11.3	
	baz=314,slow=75,SNR=11						
H11N1	WAKE ISLAND Hy	28.08	121	T	T	09 08 08.4	
	baz=314,slow=75,SNR=7.1						
H11N3	WAKE ISLAND Hy	28.09	121	T	T	09 08 15.1	
	baz=314,slow=75,SNR=9.4						
H11S1	WAKE ISLAND Hy	28.79	123	T	T	09 09 06.7	
	baz=316,slow=76,SNR=10						
H11S3	WAKE ISLAND Hy	28.80	123	T	T	09 09 07.4	
	baz=316,slow=76,SNR=6.8						
H11S2	WAKE ISLAND Hy	28.81	123	T	T	09 09 08.6	
	baz=316,slow=76,SNR=7.9						
MKAR	Makanchi Array	44.19	302	P	P	08 41 03.6	-0.1
	0.8nm,0.8s,baz=94,slow=8.3,SNR=6.9						
KURBB	Kurchatov Arra	46.05	308	P	P	08 41 18.6	+0.3
	0.7nm,0.5s,baz=85,slow=7.9,SNR=3.3						
KAPI	Kappang	46.68	211	LR	LR	08 58 22.0	
	comp=Z,157nm,21.2s,baz=151,slow=33						
ILAR	Eielson Array	49.28	32	P	P	08 41 43.5	+0.3
	0.2nm,0.6s,baz=274,slow=6.4,SNR=1.7						
WRA	Warramunga Arr	57.23	188	P	P	08 42 41.9	-0.2
	0.6nm,0.6s,baz=6.5,slow=7.4,SNR=8.1						
ASAR	Alice Springs	60.96	188	P	P	08 43 08.3	+0.4
	0.2nm,0.7s,baz=15,slow=11,SNR=1.8						
YKA	Yellowknife Ar	63.59	30	P	P	08 43 24.9	-0.2
	0.1nm,0.6s,baz=305,slow=7.0,SNR=1.7						
GEYT	Alibeck	63.92	299	LR	LR	09 14 37.2	
	comp=Z,211nm,21.0s,baz=285,slow=39						

*ATH **04** 08:34:05.0, 39°.01N×26°.05E, h23km±1km, ML2.3/4, Error ellipse: s-maj=2.0km s-min=1.0km az=68.0*

*ISK **04** 08:34:04.7, 39°.01N×26°.10E, h3km, MD2.7*

*DDA **04** 08:34:04.9, 39°.05N×26°.02E, h7km, Ml2.8*

*ISCJB **04** 08:34:05.4±0.5, 39°.00N±0°.02×26°.06E±0°.04, h7km±4km, Error ellipse: s-maj=5.1km s-min=3.3km az=164.4*

*CSEM **04** 08:34:05.7±0.1, 39°.00N×26°.06E, h10km, ML2.3, Error ellipse: s-maj=4.2km s-min=3.0km az=72.0*

ISC 04 08:34:05.2±0.9, 39°.00N±0°.02×26°.06E±0°.02, h16km±7km, n60, σ0.47/82, Aegean Sea

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
SIGR	SIGRI	0.27	324	ePG	Pg	08 34 11.2	+0.2
SIGR				eSG	Sb	08 34 15.7	-0.3
SIGR	SIGRI	0.27	324	ePg	Pg	08 34 11.2	+0.2
SIGR	SIGRI	0.27	324	P	Pb	08 34 11.5	-0.1
SIGR				S	Sg	08 34 14.9	-0.1
SIGR				eSg	Sb	08 34 15.7	-0.3
SIGR	SIGRI	0.27	324	P	Pb	08 34 11.5	-0.1
SIGR				S	Sg	08 34 14.9	-0.1
SIGR				AML	AML	08 34 15.8	
	comp=E,1666μm,0.2s						
SIGR				AML	AML	08 34 16.0	
	comp=N,3332μm,0.2s						
PRK	Paraskevi	0.30	33	P	Pg	08 34 11.6	0.0
PRK				S	Sg	08 34 16.3	+0.3
PRK	Paraskevi	0.30	33	P	Pg	08 34 11.6	0.0
PRK				S	Sg	08 34 16.3	+0.3
PRK				AML	AML	08 34 20.9	
	comp=E,766μm,0.3s						
PRK				AML	AML	08 34 21.1	
	comp=N,1703μm,0.5s						
AYVA	Ayvalik	0.58	57	iP	Pg	08 34 16.7	0.0
AYVA				iS	Sg	08 34 24.6	+0.1
AYVA	Ayvalik	0.58	57	P	Pg	08 34 16.7	0.0
AYVA				S	Sg	08 34 24.6	+0.1
CHOS	Chios island	0.61	180	ePG	Pb	08 34 17.4	0.0
CHOS				eSG	Sb	08 34 27.0	+1.3
CHOS	Chios island	0.61	180	P	Pg	08 34 17.0	-0.2
CHOS	Chios island	0.61	180	ePg	Pb	08 34 17.4	0.0
CHOS				S	Sb	08 34 26.1	+0.3
CHOS				eSg	Sb	08 34 27.0	+1.3
CHOS	Chios island	0.61	180	P	Pg	08 34 17.0	-0.2
CHOS				S	Sb	08 34 26.1	+0.3
CHOS				AML	AML	08 34 29.8	
	comp=N,683μm,0.3s						
CHOS				AML	AML	08 34 29.8	
	comp=E,1127μm,0.3s						
DKL	Dikili	0.67	83	ePG	Pg	08 34 18.0	-0.2
DKL	Dikili	0.67	83	ePg	Pg	08 34 18.0	-0.2
URLA	Izmir	0.76	146	iP	Pn	08 34 20.8	-0.5
URLA				iS	Sn	08 34 32.2	-0.2
URLA	Izmir	0.76	146	P	Pn	08 34 20.8	-0.5
URLA				S	Sn	08 34 32.2	-0.2
BOZC	Bozcaada	0.85	360	iP	Pb	08 34 20.8	-0.7
BOZC				iS	Sg	08 34 33.3	+0.5
EZN	Ezine	0.86	14	ePG	Pb	08 34 21.5	-0.2
EZN	Ezine	0.86	14	ePg	Pb	08 34 21.5	-0.2
BLCB	Balcova	0.98	128	ePG	Pb	08 34 23.6	-0.2
BLCB	Balcova	0.98	128	ePg	Pb	08 34 23.6	-0.2
IZM	Izmir	1.11	122	ePN	Pg	08 34 26.8	0.0
IZM	Izmir	1.11	122	ePn	Pg	08 34 26.8	0.0
LIA	Limnos Island	1.13	323	P	Pg	08 34 27.7	+0.7
LIA				S	Sg	08 34 42.2	+0.5
GADA	Gvkgeada	1.20	354	ePN	Pb	08 34 27.6	0.0
GADA	Gvkgeada	1.20	354	ePn	Pb	08 34 27.6	0.0
AKS	Akhisar	1.37	94	ePN	Pb	08 34 30.7	+0.2
AKS	Akhisar	1.37	94	ePn	Pb	08 34 30.7	+0.2
BALY	Balya	1.42	58	iP	Pb	08 34 31.1	-0.2
BALY	Balya	1.42	58	P	Pb	08 34 31.1	-0.2
SMG	Samos	1.42	154	P	Pg	08 34 33.5	+0.9
SMG				S	Sg	08 34 50.5	-0.6
SMG	Samos	1.42	154	P	Pg	08 34 33.5	+0.9
SMG				S	Sg	08 34 50.5	-0.6
SMG				AML	AML	08 34 54.7	
	comp=E,232μm,0.4s						
SMG				AML	AML	08 34 55.4	
	comp=N,174μm,0.4s						
GELI	Tayfur-Gelibol	1.44	13	ePN	Pb	08 34 32.2	+0.6
GELI	Tayfur-Gelibol	1.44	13	ePn	Pb	08 34 32.2	+0.6
SMTH	Samothraki Isl	1.53	345	P	Pb	08 34 33.0	-0.1
SMTH				S	Sb	08 34 52.7	+0.4
SMTH	Samothraki Isl	1.53	345	P	Pb	08 34 33.0	-0.1
SMTH				S	Sb	08 34 52.7	+0.4
BALB	Balikesir	1.55	65	ePN	Pb	08 34 33.6	+0.1
BALB	Balikesir	1.55	65	ePn	Pb	08 34 33.6	+0.1
GONE	Gonen-Balikesi	1.64	50	ePN	Pb	08 34 34.4	-0.6
GONE	Gonen-Balikesi	1.64	50	ePn	Pb	08 34 34.4	-0.6
AOS	Alonnisos	1.70	277	P	Pn	08 34 33.6	-0.6
AOS	Alonnisos	1.70	277	P	Pn	08 34 33.6	-0.6
ERIK	Erikli-Kesan	1.71	12	ePN	Pb	08 34 36.4	+0.2
ERIK	Erikli-Kesan	1.71	12	ePn	Pb	08 34 36.4	+0.2
RKY	Sarkoy-Tekirda	1.90	27	ePN	Pb	08 34 38.9	-0.6
RKY	Sarkoy-Tekirda	1.90	27	ePn	Pb	08 34 38.9	-0.6
ALN	Alexandroupoli	1.90	360	ePN	Pb	08 34 39.6	+0.2
ALN	Alexandroupoli	1.90	360	P	Pn	08 34 37.3	+0.4
ALN	Alexandroupoli	1.90	360	ePn	Pb	08 34 39.6	+0.2
ALN	Alexandroupoli	1.90	360	P	Pn	08 34 37.3	+0.4
SART	Tekirdag	1.90	27	iP	Pb	08 34 38.7	-0.8
SART				iS	Sg	08 35 06.1	-0.3
SART	Tekirdag	1.90	27	P	Pb	08 34 38.7	-0.8
SART				S	Sg	08 35 06.1	-0.3
EDC	Edincik	1.94	45	ePN	Pb	08 34 39.3	-0.8
EDC	Edincik	1.94	45	ePn	Pb	08 34 39.3	-0.8
APE	Apeiranthos	1.97	192	P	Pb	08 34 40.5	-0.1
APE	Apeiranthos	1.97	192	P	Pb	08 34 40.5	-0.1
SKIA	Skiathos	2.02	276	P	Pn	08 34 38.5	-0.1
SKIA	Skiathos	2.02	276	P	Pn	08 34 38.5	-0.1
PAIG	Paliouri	2.06	298	P	Pb	08 34 41.3	-0.9
PAIG	Paliouri	2.06	298	P	Pb	08 34 41.3	-0.9

*IDC **04** 08:36:31.1±1.4, 7°.16S×120°.48E, h543km±14km, mb2.8/3, mb1 3.1/7, mb1mx2.8/52, mbtmp3.8/7, Error ellipse: s-maj=116.1km s-min=15.4km az=56.0*

ISC 04 08:36:32.1±1.3, 6°.9S±0°.6×121°.0E±1°.0, h576km, n7, σ2.90/8, Flores Sea

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
KAPI	Kappang	2.27	326	P	P	08 37 42.5	-3.0
	4.9nm,0.3s,baz=166,slow=2.0,SNR=14						
BATI	Baumata	4.19	142	P	P	08 37 56.8	-0.4
	4.9nm,0.3s,baz=284,slow=24,SNR=8.1						
BATI				S	S	08 39 02.8	-3.9
	2.6nm,0.3s,baz=100,slow=24,SNR=5.5						
FITZ	Fitzroy Crossi	11.99	158	P	P	08 39 08.9	-1.8
	0.4nm,0.3s,baz=329,slow=11,SNR=5.7						
WRA	Warramunga Arr	18.30	136	P	P	08 40 14.1	+2.5
	0.6nm,0.3s,baz=312,slow=8.8,SNR=12						
ASAR	Alice Springs	20.75	145	P	P	08 40 35.5	+1.7
	1.0nm,0.4s,baz=318,slow=8.4,SNR=17						
STKA	Stephens Creek	31.39	145	P	P	08 42 09.3	+2.3
	1.0nm,0.3s,baz=318,slow=8.1,SNR=10						
MKAR	Makanchi Array	63.56	331	P	P	08 46 07.7	+0.7
	0.2nm,0.5s,baz=152,slow=7.0,SNR=5.6						

*NIED **04** 08:38:00, 37°.80N×142°.60E, h35km, Mw5.0 Best double couple: M0 4.15000×10^16 NP1:φs149.00000°, δ57.00000°, λ142.00000°. NP2:φs262.00000°, δ59.00000°, λ40.00000°.*

*JMA **04** 08:38:21.5±0.2, 37°.81N×142°.58E, h40km, M5.0*

JMA Felt II J1.

*BJI **04** 08:38:21.2, 37°.77N×142°.48E, h30km, mb4.8/66, mB5.0/45, Ms4.6/64, Ms7 4.4/59*

*MOS **04** 08:38:22.9±1.1, 38°.19N×142°.39E, h27km, mb5.1/73, MS4.4/25, Error ellipse: s-maj=6.8km s-min=4.5km az=100.1*

*IDC **04** 08:38:22.9±2.9, 37°.76N×142°.51E, h36km±23km, mb4.3/36, mb1 4.5/41, mb1mx4.4/56, mbtmp4.5/41, ML3.9/5, MS4.3/29, Ms1 4.3/29, ms1mx4.2/45, Error ellipse: s-maj=12.9km s-min=9.7km az=107.0*

*ISCJB **04** 08:38:22.4±0.1, 37°.84N±0°.02×142°.52E±0°.02, h33km, mb4.9/190, MS4.5/45, Error ellipse: s-maj=3.3km s-min=2.1km az=167.4*

*NEIC **04** 08:38:24.0±0.2, 37°.82N×142°.40E, h35km, mb5.0/109, Error ellipse: s-maj=6.1km s-min=3.8km az=143.0*

*GCMT **04** 08:38:24.0±0.2, 37°.84N×142°.64E, h30km, MW5.1/103, Moment Tensor Solution. s57,c76; s103,c167; Duration: 0 Moment tensor: Scale 10^16Nm; Mrr4.19±.21; Mθθ-4.66±.14; Mφφ0.46±.14; Mrθ-2.20±.21; Mθφ2.98±.09; Mφr-1.70±.20; Best double couple: M0 6.02200×10^16 NP1:φs267.00000°, δ60.00000°, λ54.00000°. NP2: φs143.00000°, δ46.00000°, λ135.00000°. Principal axes: T 5.8430, Plg58.0000°, Azm125.0000°; N 0.3520, Plg31.0000°, Azm288.0000°; P -6.2010, Plg8.0000°, Azm22.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

ISC 04 08:38:22.3±0.4, 37°.79N±0°.04×142°.70E±0°.03, h31km±2km, h30km:pP-P, n525, σ1.97/544, mb5.0/193, MS4.4/46, 38C-15D, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
JIO	Ouri	1.25	302	P	Pn	08 38 41.9	-1.8
JIO				S	Sn	08 38 56.2	-3.3
JFK	Kawauchi	1.51	254	P	Pn	08 38 45.2	-2.1
JFK				S	Sn	08 39 02.2	-3.7
JMM	Marumori	1.51	273	P	Pn	08 38 45.2	-2.0
JMM				S	Sn	08 39 02.0	-3.8
JMK	Ichinoseki	1.64	315	P	Pn	08 38 47.5	-1.5
JMK				eS	Sn	08 39 06.7	-2.4
JOU	Okura	1.70	290	P	Pn	08 38 48.8	-1.1
JOU				eS	Sn	08 39 07.9	-2.8
JFT	Otama	1.89	262	P	Pn	08 38 51.6	-0.9
JFT				S	Sn	08 39 13.5	-1.8
JOM	Ohasama	2.01	327	P	Pn	08 38 52.8	-1.3
JOM				S	Sn	08 39 15.9	-2.3
JYS	Shirataka	2.12	283	P	Pn	08 38 54.9	-0.8
JYS				S	Sn	08 39 20.0	-1.0
JYK	Kaneyama	2.15	302	P	Pn	08 38 55.0	-1.1
JRG	Rokugo	2.28	315	P	Pn	08 38 56.6	-1.2
JRG				S	Sn	08 39 23.0	-1.8
JFY	Yanaizu	2.41	262	P	Pn	08 38 58.6	-1.0
JFY				eS	Sn	08 39 28.1	+0.1
JAW	Awa shima	2.80	285	P	Pn	08 39 04.5	-0.5
MJAR	Matsushiro Arr	3.79	252	Pn	Pn	08 39 17.4	-1.3
	35nm,0.3s,baz=78,slow=13,SNR=148						
MJAR				LR	LR	08 41 01.9	
	comp=Z,6μm,19.4s,baz=85,slow=44						
MAJO	Matsushiro	3.79	252	eP	Pn	08 39 18.9	+0.2
MAJO				e		08 39 57.0	
MAJO	Matsushiro	3.79	252	ePn	Pn	08 39 18.9	+0.2
MAJO				eSn	Sn	08 39 57.0	-5.3
MAT	Matsushiro	3.79	252	P	Pn	08 39 18.5	-0.2
MAT				S	Sn	08 40 05.0	+2.7
ERM	Erimo	4.24	5c	iP	Pn	08 39 23.3	-1.4
ERM				pmax	pmax		
	comp=Z,246nm,1.0s						
ERM	Erimo	4.24	5	ePn	Pn	08 39 23.4	-1.3
ERM				eSn	Sn	08 40 14.4	+1.3
INU	Inuyama	5.18	244	ePn	Pn	08 39 38.0	+0.3
JHJ2	Mitsune	5.22	208	ePn	Pn	08 39 37.0	-1.3
JHJ2				eSn	Sn	08 40 33.2	-4.3
JHJ	Hachijo jima 2	5.23	208	Pn	Pn	08 39 36.9	-1.5
	comp=Z,704nm,0.3s,baz=151,slow=23,SNR=62						
JHJ				Sn	Sn	08 40 31.7	-6.0
	comp=Z,825nm,0.3s,baz=53,slow=22,SNR=8.6						
JHJ				LR	LR	08 42 02.5	
	comp=Z,5μm,19.6s,baz=66,slow=43						
YUK	Yuzh-Kuril'sk	6.68	20d	iP	Pn	08 39 56.2	-2.1
YUK				iS	Sn	08 41 05.5	-7.9
YUK				pmax	pmax		
	comp=Z,2μm,0.4s						
YUK				pmax	pmax		
	comp=N,296nm,0.2s						
YUK				pmax	pmax		
	comp=E,667nm,0.2s						
YUK				MLR	MLR		
	comp=Z,3μm,11.0s						
YUK				MLR	MLR		
	comp=N,2μm,8.0s						
SHO	Shikotan	6.83	26	eP	Pn	08 39 57.3	-3.1
SHO				iS	Sn	08 41 09.0	-8.1
SHO				pmax	pmax		
	comp=Z,350nm,0.5s						
SHO				pmax	pmax		
	comp=E,271nm,0.4s						
SHO				pmax	pmax		
	comp=N,286nm,0.5s						
KUR	Kuril'sk	8.39	26d	iP	Pn	08 40 21.1	-0.6
KUR				iS	Sn	08 41 48.2	-7.0
KUR				pmax	pmax		
	comp=Z,266nm,0.5s						
KUR				pmax	pmax		
	comp=N,95nm,0.3s						
KUR				pmax	pmax		
	comp=E,207nm,0.6s						
KUR				MLR	MLR		
	comp=E,1μm,14.0s						
KUR				MLR	MLR		
	comp=Z,2μm,14.0s						
KUR				MLR	MLR		
	comp=N,1μm,13.0s						
YSS	Yuzh-Sakhalins	9.16	0κ	iP	Pn	08 40 31.2	-1.1
YSS				eS	Sn	08 42 09.7	-4.5
YSS				pmax	pmax		
	comp=Z,230nm,0.6s						
YSS				pmax	pmax		
	comp=N,200nm,0.7s						
YSS				pmax	pmax		
	comp=E,160nm,0.5s						
YSS				MLR	MLR		
	comp=Z,900nm,15.0s						
YSS				MLR	MLR		
	comp=N,900nm,17.0s						
YSS				MLR	MLR		
	comp=E,800nm,20.0s						
YSS	Yuzh-Sakhalins	9.16	0	ePn	Pn	08 40 31.3	-0.9
YSS				eSn	Sn	08 42 15.0	+0.8
USRK	Ussuriysk Ar.	10.31	312	Pn	Pn	08 40 47.7	-0.4
	comp=E,1.8nm,0.3s,baz=134,slow=14,SNR=17						
USRK				LR	LR	08 44 31.8	
	comp=E,2μm,18.9s,baz=118,slow=36						
CBIJ	Chichi jima	10.67	182	ePn	Pn	08 40 49.6	-3.4
JCJ	Chichijima	10.67	182	Pn	Pn	08 40 49.8	-3.3
	comp=E,34nm,0.3s,baz=301,slow=22,SNR=47						
JCJ				Sn	Sn	08 42 39.9	-12
	comp=E,73nm,0.3s,baz=359,slow=22,SNR=7.9						
JNU	Nakatsue	10.70	248	Pn	Pn	08 40 52.4	-1.2
	comp=E,1.4nm,0.3s,baz=54,slow=5.4,SNR=16						
JNU				LR	LR	08 45 25.2	
	comp=E,2μm,19.9s,baz=64,slow=40						
JNU	Nakatsue	10.70	248	ePn	Pn	08 40 51.4	-2.1

KSRS **Korea Array 11.72 273** Pn **Pn** **08 41 09.3 +1.9**
comp=E,0.4nm,0.3s,baz=92,slow=12,SNR=26
KSRS LR LR 08 45 16.1
comp=E,2μm,20.5s,baz=82,slow=36
KSRS Korea Array 11.72 273 P **Pn** **08 41 09.3 +1.9**
KSRS MLR MLR
comp=Z,2μm,20.5s
KS01 Wonju Array Si 11.74 273 *e*Pn **Pn** **08 41 09.2 +1.5**
KS15 Wonju Array Si 11.75 273 *e*Pn **Pn** **08 41 09.6 +1.8**
MDJ Mudanjiang 11.99 309 P **Pn** **08 41 12.6 +1.6**
MDJ S **Sn** **08 43 23.2 -0.4**
MDJ pmax pmax
comp=Z,18nm,1.1s
MDJ pmax pmax
comp=Z,160nm,6.2s
MDJ LR LR
comp=Z,730nm,13.7s
MDJ LR LR
comp=Z,1μm,16.3s
MDJ LR LR
comp=Z,2μm,19.7s
HABR Khabarovsk 12.04 335 *e*P **Pn** **08 41 08.1 -3.6**
HABR *e*S **Sn** **08 43 19.7 -5.1**
HABR pmax pmax
comp=N,59nm,1.6s
HABR pmax pmax
comp=Z,82nm,1.6s
HABR pmax pmax
comp=E,67nm,1.6s
HABR MLR MLR
comp=Z,890nm,13.0s
TYV Tymovskoe 13.07 360 *e*P Pn 08 41 20.5 -5.2
TYV pmax pmax
comp=Z,48nm,1.0s
TYV MLR MLR
comp=E,6μm,15.0s
TYV MLR MLR
comp=Z,2μm,16.0s
KLR Kul'dur 13.90 329 Pn **Pn** **08 41 34.5 -2.6**
comp=Z,0.8nm,0.3s,baz=127,slow=13,SNR=17
KLR LR LR 08 47 08.6
comp=Z,2μm,18.3s,baz=142,slow=38
CN2 Changchun 14.37 300 *e*P **Pn** **08 41 45.6 +2.1**
CN2 *e*S **Sn** **08 44 22.2 +0.5**
CN2 pmax pmax
comp=Z,10.0nm,0.5s
CN2 pmax pmax
comp=Z,200nm,5.0s
CN2 LR LR
comp=Z,800nm,15.0s
CN2 LR LR
comp=Z,1μm,15.0s
CN2 LR LR
comp=Z,1μm,15.0s
SNY Shenyang 15.23 291 ⇑P **Pn** **08 41 55.4 +0.3**
SNY pmax pmax
comp=Z,190nm,12.0s
SNY LR LR
comp=Z,610nm,20.6s
SNY LR LR
comp=Z,2μm,17.7s
SNY LR LR
comp=Z,3μm,17.5s
NKL Nikolayevsk 15.43 355 *e*P **Pn** **08 41 54.0 -3.5**
NKL *e* 08 44 39.0
NKL pmax pmax
comp=N,110nm,1.8s
NKL pmax pmax
comp=Z,220nm,1.8s
NKL MLR MLR
comp=N,1μm,17.0s
NKL MLR MLR
comp=E,600nm,17.0s
NKL MLR MLR
comp=Z,2μm,17.0s
SKR Severo-Kuril's 16.05 32 *e*P **Pn** **08 42 01.7 -3.9**
SKR pmax pmax
comp=Z,160nm,0.9s
DL2 Dalian 16.57 280 P **Pn** **08 42 11.4 -0.8**
DL2 S **Sn** **08 45 17.4 +2.2**
DL2 pmax pmax
comp=Z,57nm,1.1s
DL2 pmax pmax
comp=Z,240nm,10.6s
DL2 LR LR
comp=Z,950nm,20.4s
DL2 LR LR
comp=Z,1μm,19.7s
PEA0 Petropavlovsk- 18.53 29 *e*P **P** **08 42 35.8 -0.3**
PEA0B Petropavlovsk- 18.53 29 *e*P **Pn** **08 42 37.5 +1.1**
comp=Z,136nm,1.3s
PETK Petropavlovsk- 18.53 29 Pn **P** **08 42 36.1 0.0**
comp=Z,1.1nm,0.3s,baz=198,slow=9.2,SNR=8.1
PETK LR LR 08 50 34.7
comp=Z,644nm,18.7s,baz=221,slow=39
PEA1 Petropavlovsk- 18.53 29 *e*P **P** **08 42 36.1 0.0**
PET Petropavlovsk 18.84 31 *e*P **Pn** **08 42 43.8 +3.6**
PET *e*S **Sn** **08 46 09.1 -0.9**
PET MLR MLR
comp=Z,1μm,18.0s
PET MLR MLR
comp=Z,2μm,15.0s
NJ2 Nanjing 20.35 261 *e*P **P** **08 42 57.2 +1.1**
NJ2 pmax pmax
comp=Z,20nm,0.6s
TIA Tai'an 20.47 273 ⇓P **P** **08 42 55.1 -2.4**
TIA pmax pmax
comp=Z,30nm,1.1s
TIA LR LR
comp=Z,520nm,14.0s
TIA LR LR
comp=Z,730nm,15.5s
TIA LR LR
comp=Z,740nm,18.0s
BJI Beijing 20.73 284 P **P** **08 42 58.6 -1.7**
BJI pmax pmax
comp=Z,12nm,0.9s
BJI pmax pmax
comp=Z,110nm,5.4s
BJI Beijing 20.73 284 P **P** **08 42 59.9 -0.4**
BJI S **S** **08 46 48.6 -1.5**
BJI pmax pmax
comp=Z,12nm,0.8s
BJI pmax pmax
comp=Z,110nm,3.8s
BJI LR LR
comp=Z,520nm,14.3s
BJI LR LR
comp=Z,620nm,14.6s
BJT Baijiatuau 20.74 284 *e*P **P** **08 42 58.6 -1.8**
BJT pmax pmax
comp=Z,39nm,0.8s
BJT Baijiatuau 20.74 284 *e*P **P** **08 42 58.5 -1.8**
comp=Z,39nm,0.8s
MA2 Magadan 22.41 11 P **P** **08 43 18.1 -0.1**
comp=Z,68nm,0.7s,baz=216,slow=8.2,SNR=86
MA2 LR LR 08 53 21.1
comp=Z,678nm,18.4s,baz=229,slow=40
MA2 Magadan 22.41 11 *e*P **P** **08 43 18.0 -0.1**
comp=Z,320nm,0.8s
CLNS Chul'man 22.43 334 *e*P **P** **08 43 21.7 +3.3**
CLNS pmax pmax
comp=Z,24nm,1.0s
CLNS pmax pmax
comp=N,11nm,1.0s
CLNS pmax pmax
comp=E,8.0nm,0.8s
CLNS MLR MLR
comp=Z,915nm,17.0s
CLNS MLR MLR
comp=E,450nm,16.0s
CLNS MLR MLR
comp=N,638nm,14.0s
SSLB Suanglung 23.24 239 *e*P **P** **08 43 27.0 -0.1**
comp=N,51nm,1.0s
TPUB Ta-pu 23.79 239 *e*P **P** **08 43 31.1 -1.3**
comp=N,63nm,0.8s
TWG Pinlang 23.82 237 *e*P **P** **08 43 32.3 -0.3**
comp=N,357nm,1.1s
GUMO Guam 24.18 175 LR LR 08 52 28.6
comp=N,487nm,21.5s,baz=6.0,slow=35
HHC Hu-ho-hao-te 24.21 287 *e*P **P** **08 43 36.4 +0.1**
HHC sP sP 08 43 49.1 +0.2
HHC S **S** **08 47 51.5 -1.3**
HHC pmax pmax
comp=N,29nm,0.9s
HHC pmax pmax
comp=N,65nm,4.1s
HHC LR LR
comp=N,370nm,11.0s
HHC LR LR
comp=N,640nm,16.5s
HHC LR LR
comp=N,820nm,12.4s
WHN Wuhan 24.48 261 ⇓*i*P **P** **08 43 37.8 -0.9**
WHN S **S** **08 47 54.4 -2.6**
WHN pmax pmax
comp=N,86nm,1.0s
WHN LR LR
comp=N,1μm,13.1s
WHN LR LR
comp=N,3μm,13.8s
WHN LR LR
comp=N,4μm,14.6s
CIT Chita 24.86 314 *e*P **P** **08 43 41.3 -0.7**
CIT *e* 08 43 49.1
CIT *e* 08 44 14.2
CIT *e* 08 44 29.1
CIT pmax pmax
comp=Z,151nm,1.1s
YAK Yakutsk 25.57 346 P **P** **08 43 47.2 -1.0**
comp=Z,4.4nm,0.4s,baz=332,slow=22,SNR=11
YAK LR LR 08 54 02.6
comp=Z,699nm,19.7s,baz=158,slow=37
YAK Yakutsk 25.57 346 *e*P **P** **08 43 47.8 -0.4**
YAK *e**PP **pP** **08 43 57.8 +0.7**
YAK *e* 08 44 23.5
YAK *e*S **S** **08 48 13.9 0.0**
YAK *e*SSS SSS 08 49 21.8
YAK pmax pmax
comp=Z,81nm,0.9s
YAK pmax pmax
comp=N,47nm,1.4s
YAK pmax pmax
comp=E,21nm,1.1s
YAK pmax pmax
comp=Z,51nm,1.6s
YAK pmax pmax
comp=N,79nm,1.7s
YAK smax smax
comp=N,131nm,1.4s
YAK smax smax
comp=E,92nm,1.4s
YAK MLR MLR
comp=Z,1μm,17.0s
YAK MLR MLR
comp=N,904nm,20.0s
YAK Yakutsk 25.57 346 *e*P **P** **08 43 47.9 -0.4**
comp=N,87nm,0.7s
SEY Seymchan 25.86 10 P **P** **08 43 52.1 +1.2**
comp=N,52nm,0.8s,baz=193,slow=7.4,SNR=119
SEY Seymchan 25.86 10⇑ *e*P **P** **08 43 52.2 +1.3**
BOD Bodaibo 27.45 326 *e*P **P** **08 44 03.5 -1.8**
BOD pmax pmax
comp=Z,25nm,0.9s
XAN Xi'an 27.52 273 P **P** **08 44 05.0 -1.2**
XAN pP pP 08 44 14.8 -0.3
XAN PcP **PcP** **08 47 20.7 -3.1**
XAN pmax pmax
comp=Z,27nm,0.7s
XAN LR LR
comp=Z,640nm,16.2s
XAN LR LR
comp=Z,260nm,16.5s
XAN LR LR
comp=Z,600nm,14.1s
H11N2 WAKE ISLAND Hy 27.69 124 T T 09 13 22.9
baz=316,slow=75,SNR=1293
H11N1 WAKE ISLAND Hy 27.70 124 T T 09 13 26.9
baz=316,slow=75,SNR=206
H11N3 WAKE ISLAND Hy 27.70 124 T T 09 13 24.2
baz=316,slow=75,SNR=213
ULN Ulaanbaatar 27.79 303⇓ *e*P **P** **08 44 08.8 +0.2**
ULN pmax pmax
comp=Z,14nm,1.2s
ULN Ulaanbaatar 27.79 303 *e*P **P** **08 44 08.6 0.0**
comp=Z,29nm,1.3s
SONA1 Songino Array 28.22 303 *e*P **P** **08 44 12.5 +0.1**
SONA0 Songino Array 28.23 303 *e*P **P** **08 44 12.3 -0.2**
comp=Z,11nm,0.8s
SONM Songino Array 28.23 303 P **P** **08 44 12.3 -0.2**
comp=Z,9.9nm,0.9s,baz=107,slow=9.1,SNR=34
SONM LR LR 08 55 56.0
comp=Z,771nm,18.5s,baz=100,slow=38
SONM Songino Array 28.23 303 P **P** **08 44 12.3 -0.2**
SONM pmax pmax
comp=Z,8.0nm,0.9s
SONM MLR MLR
comp=Z,771nm,18.5s
ENH Enshi 28.42 265 *e*P **P** **08 44 12.9 -1.4**
comp=Z,98nm,1.0s
H11S1 WAKE ISLAND Hy 28.44 126 T T 09 14 10.3
baz=317,slow=76,SNR=141
H11S3 WAKE ISLAND Hy 28.44 126 T T 09 14 20.1
baz=317,slow=76,SNR=211
H11S2 WAKE ISLAND Hy 28.46 126 T T 09 14 26.1
baz=317,slow=76,SNR=182
GZH Guangzhou 29.09 248 P **P** **08 44 15.9 -4.3**
IRK Irkutsk 30.36 311 *e*P **P** **08 44 31.4 +0.2**
IRK pmax pmax
comp=Z,48nm,1.3s
ZAK Zakamensk 30.62 307 *e*P **P** **08 44 32.8 -0.8**
ZAK pmax pmax
comp=Z,11nm,1.2s
TLY Talaya 30.62 310 P **P** **08 44 33.0 -0.5**
comp=Z,4.6nm,0.7s,baz=81,slow=2.8,SNR=4.6
TLY LR LR 08 57 17.5
comp=Z,756nm,19.5s,baz=105,slow=37
TLY Talaya 30.62 310 *e*P **P** **08 44 34.4 +0.9**
TLY *e*S **S** **08 49 36.6 +2.9**
TLY pmax pmax
comp=Z,6.0nm,0.8s
TLY MLR MLR
comp=Z,657nm,14.0s
TLY Talaya 30.62 310 *e*P **P** **08 44 32.7 -0.8**
comp=Z,9.5nm,0.7s
LZH Lanzhou 30.95 279 *e*P **P** **08 44 40.3 +3.5**
LZH pP pP 08 44 47.5 +1.8
LZH sP sP 08 44 53.3 +3.9
LZH PP **PnPn** **08 45 40.5 +2.5**
LZH *e*S **S** **08 49 43.2 +3.8**
LZH sS sS 08 49 56.4 +2.3
LZH SS **SnSn** **08 51 21.0 +0.4**
LZH pmax pmax
comp=Z,51nm,1.1s
LZH pmax pmax
comp=Z,160nm,5.1s
LZH LR LR
comp=Z,610nm,13.4s
LZH LR LR
comp=Z,860nm,13.8s
LZH LR LR
comp=Z,930nm,15.0s
MOY Mondy 32.24 309 *e*P **P** **08 44 48.1 +0.2**
MOY pmax pmax
comp=Z,26nm,2.4s
GYA Guiyang 32.35 260⇑ *i*P **P** **08 44 47.4 -1.8**
GYA pP sP 08 45 00.2 -1.6
GYA PP **PnPn** **08 45 58.6 +2.4**
GYA PcP **PcP** **08 47 39.0 +2.5**
GYA S **S** **08 50 01.2 -0.2**
GYA sS sS 08 50 17.6 +1.5
GYA ScP **ScP** **08 51 19.4 +1.5**
GYA SS **SnSn** **08 51 55.3 +0.5**
GYA ScS **ScS** **08 55 17.0 -0.4**
GYA pmax pmax
comp=Z,50nm,0.8s
GYA pmax pmax
comp=Z,120nm,6.0s
GYA LR LR
comp=Z,540nm,17.4s
GYA LR LR
comp=Z,500nm,18.0s
GYA LR LR
comp=Z,510nm,17.8s
CD2 Chengdu 32.70 270 P **P** **08 44 52.0 0.0**
CD2 sP sP 08 45 05.3 +0.7
CD2 S **S** **08 50 06.0 -0.5**
CD2 sS sS 08 50 21.8 +0.6
CD2 pmax pmax
comp=Z,60nm,0.9s
CD2 pmax pmax
comp=Z,80nm,3.9s
CD2 LR LR
comp=Z,870nm,18.0s
CD2 LR LR
comp=Z,600nm,20.4s
BILL Bilibino 33.02 16*c i*P **P** **08 44 54.6 +0.2**
BILL *e* 08 46 05.1
BILL *e*PPP PPP 08 46 14.8
BILL *e*SS SS 08 52 28.5 -4.7
BILL pmax pmax
comp=Z,24nm,1.7s
BILL MLR MLR
comp=Z,359nm,20.0s
BILL Bilibino 33.02 16 *e*P **P** **08 44 55.1 +0.7**
comp=Z,30nm,1.1s
GTA Gaotai 33.32 286 *e*P **P** **08 44 57.1 -0.4**
GTA pP pP 08 45 08.3 +1.8
GTA sP sP 08 45 13.3 +3.1
GTA S **S** **08 50 13.8 -2.5**
GTA sS sS 08 50 34.7 +3.7
GTA SS **SnSn** **08 52 19.1 +1.0**
GTA pmax pmax
comp=Z,4.0nm,1.0s
GTA pmax pmax
comp=Z,75nm,4.3s
GTA LR LR
comp=Z,460nm,16.6s
GTA LR LR
comp=Z,750nm,17.9s
GTA LR LR
comp=Z,930nm,18.5s
QIZ Qiongzhong 34.17 246 P **P** **08 45 05.9 +1.0**
QIZ S **S** **08 50 30.7 +1.3**
QIZ LR LR
comp=Z,630nm,29.7s
QIZ LR LR
comp=Z,640nm,29.7s
QIZ LR LR
comp=Z,400nm,20.3s
QIZ Qiongzhong 34.17 246 *e*P **P** **08 45 03.1 -1.8**
comp=Z,41nm,1.4s
DAV Davao City (W) 34.30 211 LR LR 08 57 17.4
comp=Z,563nm,21.9s,baz=42,slow=33
TIXI Tiksi 34.67 352⇑ *e*P **P** **08 45 07.6 -1.0**
TIXI pmax pmax
comp=Z,12nm,2.5s
KMI Kunming 36.08 261 P **P** **08 45 22.9 +1.3**
KMI pP pP 08 45 32.6 +2.0
KMI sP sP 08 45 35.9 +1.6
KMI PP **PnPn** **08 46 37.2 -5.9**
KMI S **S** **08 50 58.6 -0.6**
KMI sS sS 08 51 13.6 -0.4
KMI SS **SnSn** **08 53 19.6 -5.9**
KMI pmax pmax
comp=Z,25nm,1.0s
KMI pmax pmax
comp=Z,210nm,4.3s
KMI LR LR
comp=Z,550nm,16.6s
KMI LR LR
comp=Z,720nm,18.1s
KMI LR LR
comp=Z,740nm,18.7s
MYLDM Lahad Datu 39.24 220 *e*P **P** **08 45 45.6 -2.5**
comp=Z,50nm,0.9s
NONG Nongkai 39.72 251 P **P** **08 45 54.4 +2.3**
comp=Z,26nm,1.4s
SKNT Sakolnakorn 39.77 249 P **P** **08 45 56.6 +4.1**
comp=Z,18nm,1.2s,comp=Z,2μm
SWI Sorong 39.89 198 P **P** **08 45 54.2 +0.8**
comp=Z,46nm,0.8s,comp=Z,2μm
WMQ Urumqi 41.41 296 P **P** **08 46 08.3 +2.4**
WMQ pP sP 08 46 17.5 -1.2
WMQ sP pP 08 46 21.3 +6.3
WMQ S **S** **08 52 20.0 +1.1**
WMQ pmax pmax
comp=Z,11nm,0.6s
WMQ pmax pmax
comp=Z,49nm,4.0s
WMQ LR LR
comp=Z,140nm,23.8s
WMQ LR LR
comp=Z,170nm,29.4s
LOEI Loei 41.47 252 P **P** **08 46 05.9 -0.7**
comp=Z,14nm,1.0s
FAKI Fak Fak 41.65 196 P **P** **08 46 11.5 +3.6**
FAKI Fak Fak 41.65 196 *e*P **P** **08 46 08.6 +0.7**
comp=Z,25nm,0.8s
PHRA Phrae 41.66 255 P **P** **08 46 08.8 +0.7**
comp=Z,133nm,1.0s
CMAI Chiengmai2 41.74 257 P **P** **08 46 10.2 +1.2**
comp=Z,14nm,1.0s,comp=Z,570nm
CHAI Chaiyaphum 41.92 250 P P 08 46 16.9 +6.6
comp=Z,7.2nm,1.0s
ZAA1 Zalesovo Array 42.17 312 *e*P **P** **08 46 11.0 -0.8**
ZAA1 *e*PcP **PcP** **08 48 05.2 -0.5**
ZAA0 Zalesovo Array 42.17 312 *e*P **P** **08 46 11.9 +0.1**
ZALV Zalesovo Beam 42.17 312 P **P** **08 46 11.0 -0.8**
comp=Z,4.8nm,0.4s,baz=83,slow=6.1,SNR=14
ZALV PcP **PcP** **08 48 05.2 -0.5**
comp=Z,4.9nm,0.7s,baz=89,slow=2.9,SNR=4.4
ZALV LR LR 09 04 13.8
comp=Z,533nm,19.6s,baz=74,slow=37
PBKT Sadao Pong 42.27 252 P **P** **08 46 15.9 +2.8**
comp=Z,11nm,0.8s
CMMT Chiang Mai 42.46 256 P **P** **08 46 16.2 +1.5**
comp=Z,11nm,1.0s,comp=Z,628nm
CHTO Chiang Mai 42.47 256 P **P** **08 46 16.3 +1.6**
comp=Z,49nm,0.9s
CHTO Chiang Mai 42.47 256 *e*P **P** **08 46 16.8 +2.1**
CHTO pmax pmax
comp=Z,19nm,1.3s
CHTO Chiang Mai 42.47 256 *e*P **P** **08 46 16.8 +2.1**
comp=Z,19nm,1.3s
CMAR Chiang Mai Arr 42.67 256 P **P** **08 46 15.4 -0.9**
comp=Z,1.4nm,0.4s,baz=46,slow=5.9,SNR=7.3
CMAR LR LR 09 06 21.5
comp=Z,391nm,18.2s,baz=55,slow=40
CMAR Chiang Mai Arr 42.67 256 P **P** **08 46 15.5 -0.9**
CMAR pmax pmax
comp=Z,2.0nm,0.4s
CMAR MLR MLR
comp=Z,391nm,18.2s
LUWI Luwuk 42.80 210 *e*P **P** **08 46 16.9 -0.4**
comp=Z,99nm,1.0s
NRIK Noril'sk 43.02 335 P **P** **08 46 18.5 0.0**
comp=Z,3.7nm,0.5s,baz=116,slow=6.6,SNR=6.2
NVS Novosibirsk 43.06 313⇑ *i*P **P** **08 46 19.9 +0.8**
NVS pmax pmax
comp=Z,42nm,1.2s
NVS pmax pmax
comp=N,13nm,1.4s
NVS pmax pmax
comp=E,34nm,1.4s
MHMT Maesarieng 43.62 256 P **P** **08 46 27.1 +3.1**
comp=E,7.6nm,1.0s,comp=E,514nm
TTA Tatalina 44.22 35 *e*P **P** **08 46 30.0 +1.6**
TTA pmax pmax
comp=Z,54nm,2.0s
TTA Tatalina 44.22 35 *e*P **P** **08 46 30.0 +1.6**
comp=Z,54nm,2.0s
SHL Shillong 44.44 269 *e*P P 08 46 38.0 +7.3
SHL *e*S **S** **08 53 06.0 +2.1**
MK01 Makanchi Array 44.59 302 *e*P **P** **08 46 31.6 +0.1**
MK31 Makanchi Array 44.59 302 *e*P **P** **08 46 32.0 +0.5**
MK32 Makanchi Array 44.59 302 *e*P **P** **08 46 31.0 -0.5**
MKAR Makanchi Array 44.59 302 P **P** **08 46 31.0 -0.5**
comp=Z,6.1nm,0.7s,baz=88,slow=9.1,SNR=44
MKAR LR LR 09 05 44.2
comp=Z,233nm,18.3s,baz=63,slow=37
MKAR Makanchi Array 44.59 302 *e*P **P** **08 46 31.9 +0.4**
MKAR Makanchi Array 44.59 302 *e*P **P** **08 46 31.9 +0.4**
MAKZ Makanchi 44.80 302 *e*P **P** **08 46 33.5 +0.3**
MAKZ pmax pmax
comp=Z,18nm,0.9s
MAKZ Makanchi 44.80 302 *e*P **P** **08 46 33.5 +0.3**
comp=Z,18nm,0.9s
SBUM Sibu 44.92 226 *e*P **P** **08 46 35.7 +1.2**
comp=Z,22nm,1.1s
RSO Redoubt South 45.68 39 *e*P **P** **08 46 42.2 +2.0**
KDAK Kodiak Island 45.85 42 P P 08 46 57.3 +16
comp=Z,32nm,0.8s,baz=245,slow=6.4,SNR=12
KDAK Kodiak Island 45.85 42 *i* P **P** **08 46 42.2 +0.9**
CAST Castle Rocks 46.03 35 *e*P **P** **08 46 44.7 +2.1**
comp=Z,11nm,0.8s
KURK Kurchatov 46.27 308 *e*P **P** **08 46 44.3 -0.5**

KURK pmax pmax
comp=Z,3.0nm,0.8s
KURK Kurchatov 46.27 308 *e*P **P 08 46 44.2 -0.5**
comp=Z,3.1nm,0.8s
KURBB Kurchatov Arra 46.35 308 P **P 08 46 44.2 -1.1**
comp=Z,9.5nm,0.4s,baz=83,slow=8.2,SNR=57
BPAW Bear Paw Mtn. 46.53 34 *e*P **P 08 46 48.0 +1.3**
comp=Z,41nm,1.8s
MLY Manley 46.67 32 *e*P **P 08 46 49.6 +1.8**
comp=Z,15nm,0.9s
KSM Kuching 46.81 227 *e*P **P 08 46 50.0 +0.6**
comp=Z,17nm,0.8s
PMG Port Moresby 47.13 174 LR LR 09 04 00.0
comp=Z,195nm,21.1s,baz=6.5,slow=33
PDGK Podgornoye 47.33 298 P **P 08 46 52.4 -0.7**
PDGK pmax pmax
comp=Z,39nm,0.9s
ODAN Odare 47.38 274 *e*P P 08 46 58.9 +4.8
comp=Z,65nm,1.0s
KAPI Kappang 47.63 212 P **P 08 46 54.8 -0.9**
comp=Z,15nm,1.0s,baz=343,slow=167,SNR=2.8
MDM Murphy Dome 47.73 32 *e*P **P 08 46 57.8 +1.8**
comp=Z,26nm,0.9s
SML Sawmill 47.78 37 *e*P **P 08 46 58.0 +1.6**
SML pmax pmax
comp=Z,27nm,0.9s
SML Sawmill 47.78 37 *e*P **P 08 46 58.0 +1.6**
comp=Z,27nm,0.9s
WRH Wood River Hil 47.80 33 *e*P **P 08 46 57.7 +1.2**
comp=Z,9.9nm,0.8s
COLA College 47.90 33⇑ *e*P **P 08 46 59.0 +1.8**
COLA pmax pmax
comp=Z,3.0nm,0.8s
RAMN Ramite 47.97 274 *e*P **P 08 47 02.6 +4.0**
comp=Z,99nm,0.9s
GUN Gumba 48.10 276 *e*P **P 08 47 02.3 +2.6**
comp=Z,174nm,1.0s
IL1 Eielson Array 48.31 33 *e*P **P 08 47 01.3 +0.9**
ILAR Eielson Array 48.31 33 P **P 08 47 01.2 +0.8**
comp=Z,6.5nm,0.6s,baz=262,slow=6.1,SNR=106
ILAR Eielson Array 48.31 33 P **P 08 47 01.2 +0.8**
ILAR pmax pmax
comp=Z,6.0nm,0.6s
ILB Eielson Array 48.31 33 *e*P **P 08 47 01.2 +0.8**
BBKI Banjar Baru 48.50 219 P **P 08 47 02.3 -0.1**
comp=Z,106nm,1.0s
KKN Kakani 48.62 276 *e*P **P 08 47 06.3 +2.7**
comp=Z,47nm,0.7s
DMN Daman 48.84 276 *e*P **P 08 47 08.4 +3.0**
FYU Fort Yukon 48.94 30 *e*P **P 08 47 07.8 +2.6**
comp=Z,97nm,1.8s
KLU Klutina 48.95 37 *e*P **P 08 47 07.2 +1.7**
comp=Z,15nm,0.8s
GKN Gorkha 49.03 276 *e*P **P 08 47 09.1 +2.4**
comp=Z,80nm,0.7s
DOT Dot Lake 49.61 34 *e*P **P 08 47 10.9 +0.5**
comp=Z,119nm,2.0s
HNR Honiara 49.67 157 LR LR 09 06 44.4
comp=Z,446nm,20.1s,baz=328,slow=34
MENT Mentasta 49.83 35 *e*P **P 08 47 14.5 +2.3**
comp=Z,28nm,1.1s
KOLN Koldanda 49.96 277 *e*P **P 08 47 16.9 +3.1**
comp=Z,78nm,1.0s
TKM2 Tokmak 2 50.17 298 P **P 08 47 16.3 +1.1**
TKM2 pmax pmax
comp=Z,26nm,0.8s
TKM2 Tokmak 2 50.17 298 *e*P **P 08 47 16.0 +0.7**
comp=Z,149nm,1.8s
PYUN Piuthan 50.28 277 *e*P **P 08 47 18.9 +2.6**
comp=Z,245nm,1.0s
IPM Ipoh 50.40 239 *e*P **P 08 47 17.1 +0.1**
comp=Z,14nm,0.7s
CHKZ Chkalovo 50.54 313 P **P 08 47 15.6 -2.0**
CHKZ pmax pmax
comp=Z,26nm,1.1s
EGAK Eagle 50.76 32 *e*P **P 08 47 20.1 +1.1**
comp=Z,20nm,1.3s
OTUK Ortayu 50.81 306 P **P 08 47 18.9 -0.9**
OTUK pmax pmax
comp=Z,42nm,1.5s
BVA0 Borovoye Array 50.82 312 P **P 08 47 18.7 -1.0**
BVA0 pmax pmax
comp=Z,20nm,0.9s
BVAR Borovoye Array 50.82 312 P **P 08 47 18.4 -1.4**
comp=Z,2.5nm,0.6s,baz=78,slow=9.2,SNR=13
BRVK Borovoye 50.88 312⇑ *e*P **P 08 47 19.5 -0.6**
BRVK pmax pmax
comp=Z,10.0nm,1.0s
AAK Ala-Archa 51.03 298 P **P 08 47 20.7 -1.0**
comp=Z,4.1nm,0.8s,baz=122,slow=3.1,SNR=6.4
AAK Ala-Archa 51.03 298⇓ *e*P **P 08 47 21.6 -0.1**
AAK pmax pmax
comp=Z,24nm,1.1s
KSH Kashi 51.03 294 *e*P P 08 47 26.6 +4.9
KSH *e*pP sP 08 47 36.1 +1.5
KSH *e*PP **PP 08 49 20.6 +2.4**
KSH S **S 08 54 41.5 +4.4**
KSH pmax pmax
comp=Z,190nm,5.8s
KSH LR LR
comp=Z,570nm,8.6s
KSH LR LR
comp=Z,570nm,9.4s
KSH LR LR
comp=Z,450nm,14.6s
COEN Coen 51.47 179 *e*P **P 08 47 26.0 +1.1**
comp=Z,20nm,0.9s
ZRNK Zerenda 51.65 312 *e*P **P 08 47 25.3 -0.7**
ZRNK pmax pmax
comp=Z,21nm,0.8s
ZRNK Zerenda 51.65 312 *e*P **P 08 47 25.3 -0.7**
comp=Z,21nm,0.8s
MNAS Manas 52.47 299 P **P 08 47 31.9 -0.5**
MNAS pmax pmax
comp=Z,31nm,1.1s
SFK Sufi-Kurgan 52.63 295 P **P 08 47 31.7 -2.0**
SFK pmax pmax
comp=Z,13nm,0.6s
PSI Prapat 53.06 240 P **P 08 47 36.2 -0.7**
comp=Z,5.1nm,0.7s,baz=11,slow=5.6,SNR=9.0
PSI Prapat 53.06 240 *e*P **P 08 47 36.9 0.0**
PSI pmax pmax
comp=Z,17nm,0.9s
PSI Prapat 53.06 240 *e*P **P 08 47 36.9 0.0**
comp=Z,16nm,0.9s
INK Inuvik 53.25 27 P **P 08 47 38.5 +1.0**
comp=Z,2.8nm,0.5s,baz=296,slow=6.4,SNR=34
INK Inuvik 53.25 27 *e*P **P 08 47 38.7 +1.2**
INK pmax pmax
comp=Z,34nm,1.6s
INK Inuvik 53.25 27 *e*P **P 08 47 38.6 +1.2**
comp=Z,34nm,1.6s
GSI Gunungsitoli 55.06 240 *e*P **P 08 47 51.5 0.0**
comp=Z,57nm,0.9s
SVE Sverdlovsk 55.26 319 *e*P **sP 08 48 04.1 -1.2**
SVE pmax pmax
comp=Z,77nm,0.9s
ARU Arti 56.47 318 *d i*P **P 08 48 00.2 -0.8**
ARU 08 50 04.4
ARU S **S 08 55 49.4 -0.5**
ARU SS **SS 08 59 36.5 -0.3**
ARU pmax pmax
comp=Z,17nm,1.2s
ARU MLR MLR
comp=Z,907nm,21.0s
DLBC Dease Lake 57.40 39 *e*P **P 08 48 10.1 +2.4**
comp=Z,15nm,0.8s
FITZ Fitzroy Crossi 57.86 199 P **P 08 48 10.5 -0.7**
comp=Z,3.5nm,0.6s,baz=18,slow=5.9,SNR=7.6
FITZ Fitzroy Crossi 57.86 199 *e*P **P 08 48 11.4 +0.2**
comp=Z,92nm,1.8s
WRAB Tennant Creek 57.95 189 *d i*P **P 08 48 11.2 -0.6**
WRAB pmax pmax
comp=Z,54nm,0.8s
WRAB Tennant Creek 57.95 189 *e*P **P 08 48 11.0 -0.8**
comp=Z,40nm,0.9s
WB2 Warramunga Arr 57.96 189 *e*P **P 08 48 11.0 -0.9**
comp=Z,40nm,0.9s
WR1 Warramunga Arr 57.96 189 *e*P **P 08 48 11.0 -0.9**
comp=Z,32nm,0.8s
WRA Warramunga Arr 57.96 189 P **P 08 48 11.0 -0.9**
comp=Z,18nm,0.8s,baz=6.7,slow=7.2,SNR=158
WRA Warramunga Arr 57.96 189 P **P 08 48 11.0 -0.9**
WRA pmax pmax
comp=Z,18nm,0.8s
AB31 Akbulak array 58.23 310 P **P 08 48 12.1 -1.5**
AB31 pmax pmax
comp=Z,9.0nm,0.6s
ABKAR Akbulak array 58.23 310 *e*P **P 08 48 11.9 -1.6**
comp=Z,7.4nm,0.6s
AKTO Aktyubinsk 58.93 312 P **P 08 48 16.3 -2.1**
AKTO pmax pmax
comp=Z,27nm,0.9s
HYB Hyderabad 59.24 269 *i*P **P 08 48 20.0 -1.1**
RES Resolute Bay 61.61 15 P **P 08 48 36.7 +0.3**
comp=Z,6.8nm,0.8s,baz=305,slow=7.0,SNR=28
RES Resolute Bay 61.61 15 *e*P **P 08 48 36.7 +0.3**
RES pmax pmax
comp=Z,15nm,0.7s
RES Resolute Bay 61.61 15 *e*P **P 08 48 36.7 +0.3**
comp=Z,15nm,0.7s
AS01 Alice Springs 61.68 189 *e*P **P 08 48 36.7 -0.7**
ASAR Alice Springs 61.69 189 P **P 08 48 36.9 -0.6**
comp=Z,6.2nm,0.8s,baz=12,slow=5.9,SNR=45
ASAR LR LR 09 15 53.2
comp=Z,216nm,19.8s,baz=360,slow=36
ASAR PKP2bc 09 17 59.5
comp=Z,0.5nm,0.9s,baz=167,slow=1.6,SNR=4.5
APA Apatity 62.42 336⇓ *i*P **sP 08 48 54.0 -0.9**
APA MLR MLR
comp=Z,1μm,10.0s
YKW3 Yellowknife Ar 62.60 31 *e*P **P 08 48 43.9 +0.7**
comp=Z,21nm,1.7s
YKA Yellowknife Ar 62.64 31 P **P 08 48 43.8 +0.4**
comp=Z,1.4nm,0.7s,baz=304,slow=6.7,SNR=36
YKB5 Yellowknife Ar 62.64 31 *e*P **P 08 48 43.3 -0.1**
ARCES ARCESS Array B 63.65 340 P **P 08 48 49.8 -0.2**
comp=Z,2.6nm,0.8s,baz=48,slow=7.2,SNR=6.2
KLMR Klimovskoe 63.66 328 *e*P **P 08 48 46.9 -3.3**
KLMR *e* 08 51 06.2
KLMR pmax pmax
comp=Z,63nm,1.3s
GEYT Alibeck 64.36 299 P **P 08 48 53.9 -1.4**
comp=Z,2.2nm,0.4s,baz=29,slow=6.8,SNR=3.3
DAG Danmarks Havn 65.11 355 *i*P **P 08 48 59.0 -0.4**
comp=Z,13nm,0.8s
DAG Danmarks Havn 65.11 355 *i*P **P 08 48 59.0 -0.4**
DAG pmax pmax
comp=Z,10.0nm,0.8s
I03D Drain, OR 67.64 51 P **P 08 49 19.0 +2.9**
baz=302
VRH Novokhopyorsk 67.70 318 *e*P **P 08 49 16.8 +0.4**
VRH *e**SP **pP 08 49 27.1 +1.1**
VRH pmax pmax
comp=Z,9.0nm,0.6s
H04A Detroit Lake 67.84 50 *e*P **P 08 49 21.0 +3.5**
comp=Z,11nm,0.8s
OBN Obninsk 68.10 323⇑ *e*P **P 08 49 18.8 0.0**
OBN *e* 08 51 55.1
OBN *e*PPP PPP 08 53 25.0
OBN *e*S **SKiKP 08 59 13.0 +1.3**
OBN pmax pmax
comp=Z,27nm,1.7s
OBN MLR MLR
comp=Z,355nm,16.0s
I04A Tendick Farm, 68.17 51 P **P 08 49 21.1 +1.5**
baz=302
LPSR Galich'ya Gora 68.37 320 *e*P **P 08 49 19.8 -0.8**
LPSR *e**SP **pP 08 49 31.5 +1.3**
LPSR pmax pmax
comp=Z,4.0nm,0.6s
FIA1 FINESS Array S 68.62 333 *e*P **P 08 49 21.8 -0.2**
FIA0 FINESS Array S 68.62 333 *e*P **P 08 49 21.7 -0.3**
FIA0 FINESS Array S 68.62 333 *e*P **P 08 49 21.7 -0.3**
FINES FINESS Array B 68.62 333 P **P 08 49 21.7 -0.3**
comp=Z,9.6nm,0.8s,baz=48,slow=8.5,SNR=14
NEW Newport 68.88 45 P **P 08 49 26.6 +2.6**
baz=304
VSR Storozhevoye 69.03 319 *e*P **P 08 49 24.7 -0.1**
VSR *e**SP **pP 08 49 35.7 +1.4**
VSR pmax pmax
comp=Z,6.0nm,0.5s
J05D Fort Rock, OR 69.16 51 P **P 08 49 27.0 +1.0**
baz=303
M02C Callahan 69.17 53 P **P 08 49 28.2 +2.3**
baz=303
STKA Stephens Creek 69.31 181 P **P 08 49 25.9 -0.7**
comp=Z,2.2nm,0.7s,baz=352,slow=7.0,SNR=6.9
STKA LR LR 09 27 16.7
comp=Z,74nm,18.4s,baz=17,slow=42
STKA Stephens Creek 69.31 181 *e*P **P 08 49 25.8 -0.7**
comp=Z,4.1nm,1.4s
N02D Trinity Center 69.48 54 P **P 08 49 29.5 +1.6**
baz=303
M04C Macdoel 69.60 53 P **P 08 49 30.9 +2.2**
baz=303
SUMG Summit 69.93 0 *i*P **P 08 49 31.3 +0.8**
comp=Z,17nm,0.7s
SUMG Summit 69.93 0 *e*P **P 08 49 31.4 +0.9**
SUMG pmax pmax
comp=Z,17nm,0.7s
SUMG Summit 69.93 0 *e*P **P 08 49 31.4 +0.9**
comp=Z,17nm,0.7s
VSU Vasula 70.32 330⇑ *e*P **P 08 49 32.5 0.0**
VSU pmax pmax
comp=Z,14nm,0.8s
GOF Gofitskoye 70.35 312⇑ *e*P **pP 08 49 44.7 +2.1**
GOF pmax pmax
comp=Z,45nm,0.4s
O03D Paynes Creek 70.43 54 P **P 08 49 35.9 +2.2**
baz=303
MOD Modoc Plateau 70.49 52 *e*P **P 08 49 37.2 +3.1**
comp=Z,17nm,1.6s
SWMT Swartz Lake 71.04 44 *e*P **P 08 49 39.6 +2.2**
ZEI Tsey 71.11 310 *e*P P 08 49 44.0 +6.1
ZEI pmax pmax
comp=Z,45nm,1.1s
KIV Kislovodsk 71.18 311 *e*P P 08 49 43.2 +5.0
KIV pmax pmax
comp=Z,89nm,1.1s
KBZ Khabaz 71.18 311 P **P 08 49 37.2 -0.9**
comp=Z,5.5nm,0.8s,baz=37,slow=6.2,SNR=6.0
WVOR Wild Horse Val 71.23 51 *e*P **P 08 49 41.5 +2.9**
WVOR pmax pmax
comp=Z,5.0nm,0.9s
WVOR Wild Horse Val 71.23 51 *e*P **P 08 49 41.5 +2.9**
comp=Z,5.0nm,0.9s
GNI Garni 72.07 307⇑ *e*P **P 08 49 45.6 +1.9**
GNI pmax pmax
comp=Z,87nm,1.4s
GNI Garni 72.07 307 *e*P **P 08 49 42.7 -1.0**
comp=Z,42nm,1.3s
IZAR Zarasai 72.31 328 *e*P **sP 08 49 57.0 -0.8**
IZAR IAmb IAmb 08 49 58.0
comp=Z,9.8nm,0.7s
ISAL Salakas 72.48 328 *e*P **sP 08 49 58.3 -0.5**
ISAL IAmb IAmb 08 49 59.2
comp=Z,20nm,0.9s
FFC Flin Flon 72.52 33 *e*P **P 08 49 46.6 +0.7**
FFC pmax pmax
comp=Z,13nm,1.0s
FFC Flin Flon 72.52 33 *e*P **P 08 49 46.6 +0.7**
comp=Z,13nm,1.0s
IIGN Ignalina 72.59 328 *e*P **sP 08 49 58.7 -0.8**
IIGN IAmb IAmb 08 49 59.8
comp=Z,18nm,0.9s
CMB Columbia Colle 72.60 55 *e*P **P 08 49 49.9 +3.1**
CMB pmax pmax
comp=Z,8.0nm,1.0s
CMB Columbia Colle 72.60 55 *e*P **P 08 49 49.9 +3.1**
comp=Z,7.8nm,1.0s
NACGM Naroch 72.65 327 *e* sP 08 49 59.0 -0.8
FCC Fort Churchill 72.87 27 *e*P **P 08 49 48.3 +0.4**
FCC pmax pmax
comp=Z,11nm,1.1s
FCC Fort Churchill 72.87 27 *e*P **P 08 49 48.3 +0.4**
comp=Z,11nm,1.1s
EGMT Eagleton 73.03 42 P **P 08 49 49.7 +0.5**
baz=308
EGMT Eagleton 73.03 42 *e*P **P 08 49 50.8 +1.6**
comp=Z,11nm,0.9s
DLMT Dillon 73.09 45 *e*P **P 08 49 53.0 +3.3**
comp=Z,6.5nm,0.8s
HLID Hailey 73.11 48 P **P 08 49 51.1 +1.2**
baz=306
HLID Hailey 73.11 48 *e*P **P 08 49 51.2 +1.3**
BOZ Bozeman (W) 73.46 45 *e*P **P 08 49 55.2 +3.3**
BOZ pmax pmax
comp=Z,7.0nm,0.8s
BOZ Bozeman (W) 73.46 45 *e*P **P 08 49 55.2 +3.3**
comp=Z,7.2nm,0.8s
NC405 NORSAR Array S 73.67 338 *e*P **P 08 49 53.6 +0.9**
NV01 Mina Array Sit 73.72 54 *e*P **P 08 49 54.7 +1.1**
NVAR Mina Array Bea 73.72 54 P **P 08 49 54.7 +1.1**
comp=Z,2.8nm,0.9s,baz=290,slow=6.9,SNR=16
NV11 Mina Array Sit 73.81 54 *e*P **P 08 49 57.4 +3.3**
comp=Z,9.3nm,1.4s
NB201 NORSAR Array S 73.85 338 *e*P **P 08 49 54.7 +1.0**
NB2 NORSAR Subarra 73.88 338 P **P 08 49 53.9 0.0**
comp=Z,38nm,1.0s,baz=40,slow=6.2
NB2 NORSAR Subarra 73.88 338 P **P 08 49 53.9 0.0**
baz=40,slow=6.2
NB200 NORSAR Array S 73.88 338 *e*P **P 08 49 53.6 -0.3**
NOA NORSAR Array B 73.88 338 P **P 08 49 53.6 -0.3**
comp=Z,3.3nm,0.8s,baz=39,slow=5.9,SNR=8.2
NOA LR LR 09 24 58.1
comp=Z,297nm,21.1s,baz=55,slow=38
AKASG Malin Array Be 74.32 323 P **P 08 49 55.7 -0.9**
comp=Z,4.0nm,0.6s,baz=44,slow=6.0,SNR=16
AKASG LR LR 09 25 27.7
comp=Z,506nm,18.4s,baz=45,slow=38
KIEV Kiev 74.33 323⇑ *e*P **P 08 49 56.1 -0.5**
KIEV pmax pmax
comp=Z,8.0nm,0.9s
KIEV Kiev 74.33 323 *e*P **P 08 49 57.1 +0.5**
comp=Z,39nm,1.0s
AK11 Malin Array Si 74.36 323 *e*P **P 08 49 56.1 -0.8**
YMR Madison River 74.43 45 *e*P **P 08 50 00.4 +2.8**
comp=Z,8.0nm,1.1s
SUW Suwalki 74.80 328 *e*P sP 08 50 11.5 -1.0
SUW Suwalki 74.80 328 *e*P sP 08 50 11.5 -1.0
H17A Grant Village 74.81 45 P **P 08 50 02.4 +2.5**
baz=308
H17A Grant Village 74.81 45 *e*P **P 08 50 03.4 +3.5**
comp=Z,9.0nm,0.8s
IMW Indian Meadow 74.92 46 *e*P **P 08 50 02.6 +2.0**
comp=Z,7.0nm,0.8s
FLWY Flagg Ranch 74.94 46 *e*P **P 08 50 04.7 +4.1**
comp=Z,9.9nm,1.0s
RLMT Red Lodge 75.09 44 P **P 08 50 04.3 +2.8**
baz=309
MOOW Moose Ponds 75.12 46 *e*P **P 08 50 05.3 +3.6**
comp=Z,5.8nm,1.1s
HVU Hansel Valley 75.14 49 *e*P **P 08 50 03.1 +1.3**
HVU pmax pmax
comp=Z,8.0nm,1.0s
HVU Hansel Valley 75.14 49 *e*P **P 08 50 03.1 +1.3**
comp=Z,7.9nm,1.0s
GRAC Grapevine Rang 75.16 55 P **P 08 50 04.7 +3.0**
baz=306
LOHW Long Hollow 75.28 46 *e*P **P 08 50 03.8 +1.2**
comp=Z,2.6nm,0.8s
SNOW Snow King Moun 75.29 46 *e*P **P 08 50 05.7 +3.0**
comp=Z,47nm,2.0s
REDW Red Top Meadow 75.30 46 *e*P **P 08 50 02.9 +0.2**
comp=Z,13nm,1.4s
DAC Darwin (Calif) 75.44 55 *e*P **P 08 50 06.1 +2.5**
DAC pmax pmax
comp=Z,4.0nm,0.9s
DAC Darwin (Calif) 75.44 55 *e*P **P 08 50 06.0 +2.5**
comp=Z,4.3nm,0.9s
R11A Troy Canyon, C 75.49 53 P **P 08 50 05.3 +1.5**
baz=307
R11A Troy Canyon, C 75.49 53 *e*P **P 08 50 06.2 +2.3**
comp=Z,16nm,1.6s
SIM Simferopol' 75.50 316 *e*P **P 08 50 04.0 +0.5**
SIM MLR MLR
comp=Z,400nm,19.0s
MPMC Manual Prospec 75.63 56 P **P 08 50 06.7 +1.9**
baz=307
LAO LASA Array 75.73 42 P **P 08 50 05.9 +1.0**
baz=310
LAO LASA Array 75.73 42 *e*P **P 08 50 07.4 +2.5**
comp=Z,32nm,1.5s
LRMC Laurel Mtn Rad 75.85 56 P **P 08 50 07.8 +1.9**
baz=307
TPNV Topopah Spring 75.91 54 P **P 08 50 08.5 +2.3**
baz=307
TPNV Topopah Spring 75.91 54 *e*P **P 08 50 09.5 +3.3**
TPNV Topopah Spring 75.91 54 *e*P **P 08 50 09.5 +3.3**
DUG Dugway, Tooele 76.09 50 P **P 08 50 08.6 +1.5**
baz=306
DUG Dugway, Tooele 76.09 50 *e*P **P 08 50 10.2 +3.0**
DUG pmax pmax
comp=Z,25nm,1.6s
DUG Dugway, Tooele 76.09 50 *e*P **P 08 50 10.2 +3.0**
comp=Z,26nm,1.6s
TCUT Toone Canyon 76.36 48 *e*P **P 08 50 09.7 +0.9**
comp=Z,19nm,1.1s
A26A Wade Farm, Ken 76.39 38 P **P 08 50 09.5 +1.0**
baz=313
BW06 Boulder Array 76.41 46 *e*P **P 08 50 10.5 +1.4**
PD31 Pinedale Array 76.41 46 *e*P **P 08 50 09.5 +0.4**
PDAR Pinedale Array 76.41 46 P **P 08 50 09.5 +0.4**
comp=Z,1.2nm,0.6s,baz=134,slow=0.4,SNR=17
PDAR LR LR 09 20 04.9
comp=Z,100nm,21.4s,baz=334,slow=33
PSUT Pine Spring 76.47 52 *e*P **P 08 50 12.4 +2.9**
comp=Z,5.0nm,0.8s
GSC Goldstone, Bar 76.53 56 P **P 08 50 10.7 +1.0**
baz=307
JLU Jordanelle 76.66 49 *e*P **P 08 50 13.8 +3.3**
comp=Z,6.0nm,0.9s
C26A Wahner Farm, P 77.09 39 P **P 08 50 14.3 +1.8**
baz=313
A28A Rude Farm, Bot 77.24 37 P **P 08 50 14.7 +1.3**
baz=314
BSD Bornholm Skovb 77.26 332 *i*P **P 08 50 15.0 +1.7**
comp=Z,36nm,1.1s
BSD Bornholm Skovb 77.26 332 *e*P **P 08 50 15.0 +1.7**
BSD pmax pmax
comp=Z,36nm,1.1s
E25A Miller Ranch, 77.32 40 P **P 08 50 15.3 +1.4**
baz=312
MSU Marysvale 77.52 51 *e*P **P 08 50 19.1 +3.7**
MSU Marysvale 77.52 51 *e*P **P 08 50 19.1 +3.7**
A29A Manning Farm, 77.72 37 P **P 08 50 16.8 +0.8**
baz=315
LCMT Little Creek M 77.78 53 *e*P **P 08 50 18.1 +1.3**
comp=Z,12nm,1.3s
P17A Butcher Ranch, 77.79 49 *e*P **P 08 50 20.3 +3.5**
comp=Z,15nm,1.1s
P18A Preston Nutter 77.99 49 *e*P **P 08 50 21.2 +3.2**
comp=Z,7.1nm,0.9s
KNB Kanab 78.04 52 *e*P **P 08 50 22.0 +3.8**
KNB pmax pmax
comp=Z,10.0nm,1.2s
KNB Kanab 78.04 52 *e*P **P 08 50 22.0 +3.8**
comp=Z,9.7nm,1.2s
KWP Kalwaria Pacla 78.11 325 *e*P sP 08 50 31.3 -0.1
KWP Kalwaria Pacla 78.11 325 *e*P sP 08 50 31.3 -0.1
A30A Hoffart Farm, 78.14 36 P **P 08 50 19.0 +0.6**
baz=315
SRU San Rafael Swe 78.15 50 *e*P **P 08 50 21.7 +2.9**
SRU pmax pmax
comp=Z,10.0nm,0.8s
SRU San Rafael Swe 78.15 50 *e*P **P 08 50 21.7 +2.9**
comp=Z,9.5nm,0.8s
K22A Casper 78.20 45 P **P 08 50 21.1 +2.1**
baz=311
ULM Lac du Bonnet 78.31 34 P **P 08 50 19.1 -0.1**
comp=Z,4.6nm,0.8s,baz=298,slow=7.0,SNR=8.7
ULM Lac du Bonnet 78.31 34 *e*P **P 08 50 21.2 +1.9**
ULM pmax pmax
comp=Z,16nm,1.3s
ULM Lac du Bonnet 78.31 34 *e*P **P 08 50 21.2 +1.9**
comp=Z,16nm,1.3s
BUR08 Bucovina Ar. S 78.33 322 *e*P **P 08 50 20.1 +0.5**
BURAR Bucovina Array 78.35 322 *i*P **P 08 50 19.4 -0.2**
BURAR Bucovina Array 78.35 322⇑P **P 08 50 19.4 -0.2**
F27A Lemmon 78.45 40 P **P 08 50 22.1 +1.9**
baz=313
B30A Myrvik Farm, E 78.48 36 P **P 08 50 21.9 +1.7**
baz=315
G26A Maurine 78.55 41 P **P 08 50 22.0 +1.3**
baz=313
CFR Carcaliu 78.55 319⇑ *i*P **P 08 50 22.0 +1.3**
CFR Carcaliu 78.55 319⇑P **P 08 50 22.0 +1.3**
RSSD Black Hills 78.58 42 *e*P **P 08 50 23.6 +2.4**
RSSD pmax pmax
comp=Z,6.0nm,0.8s
RSSD Black Hills 78.58 42 *e*P **P 08 50 23.6 +2.4**
comp=Z,5.7nm,0.8s
KOLS Kolonicke sedl 78.80 325 *e*P **P 08 50 24.2 +2.2**
KOLS pmax pmax
comp=Z,12nm,1.1s
KOLS Kolonicke sedl 78.80 325 *e*P **P 08 50 24.2 +2.2**
KOLS *e*pP **sP 08 50 34.8 -0.5**
VRI Vrincioaia 78.81 320⇑ *i*P **P 08 50 23.9 +1.8**
VRI Vrincioaia 78.81 320⇑P **P 08 50 23.9 +1.8**

PLOR	Plostina	78.86	320	⇑iP	P	08 50 26.5	+4.1
PLOR	Plostina	78.86	320	⇑P	P	08 50 26.5	+4.1
STHS	Stebnicka Huta	78.92	325	eP	P	08 50 25.8	+3.1
STHS				pmax	pmax		
	comp=Z,10.0nm,0.9s						
STHS	Stebnicka Huta	78.92	325	eP	P	08 50 25.8	+3.1
STHS				epP	sP	08 50 34.7	-1.2
OJC	Ojcow	78.98	327	eP	sP	08 50 35.8	-0.4
OJC	Ojcow	78.98	327	eP	sP	08 50 35.8	-0.4
UZH	Uzhgorod	79.01	324	eP	P	08 50 27.9	+4.8
UZH				e		08 50 35.9	
UZH				e		08 50 42.7	
BR101	Keskin Array S	79.11	312	eP	P	08 50 22.1	-1.9
BRTR	Keskin Array B	79.11	312	P	P	08 50 22.1	-1.9
	comp=Z,1.7nm,0.9s,baz=59,slow=39,SNR=3.8						
BRTR	Keskin Array B	79.11	312	ceP	P	08 50 26.2	+2.2
BRTR				pmax	pmax		
	comp=Z,3.0nm,1.0s						
I26A	New Underwood	79.27	42	P	P	08 50 25.5	+0.7
	baz=313						
NIE	Niedzica	79.34	326	eP	sP	08 50 38.4	+0.2
NIE	Niedzica	79.34	326	eP	sP	08 50 38.5	+0.2
B32A	Ashes, Strandq	79.35	36	P	P	08 50 25.1	+0.1
	baz=316						
DOPR	Dopca	79.41	321	⇑iP	P	08 50 27.6	+2.2
ISR	Istrita	79.42	320	⇑iP	P	08 50 27.4	+1.9
ISR	Istrita	79.42	320	⇑P	P	08 50 27.4	+1.9
MSAB	Monastry St. A	79.45	318	⇑iP	P	08 50 22.4	-3.2
MLR	Muntele Rosu	79.46	320	⇓iP	P	08 50 27.3	+1.5
MLR	Muntele Rosu	79.46	320	⇓P	P	08 50 27.3	+1.5
MLR	Muntele Rosu	79.46	320	eP	P	08 50 26.8	+0.9
	comp=Z,33nm,1.3s						
PV10	Paradox Valley	79.51	49	eP	P	08 50 27.9	+1.5
BR231	Keskin MP Arra	79.54	313	eP	P	08 50 25.6	-0.8
PV05	Paradox Valley	79.66	50	eP	P	08 50 30.5	+3.2
I27A	Quinn	79.67	42	P	P	08 50 27.6	+0.7
	baz=314						
N23A	Red Feather La	79.68	46	eP	P	08 50 29.8	+2.5
	comp=Z,11nm,1.0s						
AGMN	Agassiz Nation	79.73	35	P	P	08 50 28.7	+1.6
	baz=317						
Y14A	Wickenburg	79.84	55	eP	P	08 50 30.9	+2.9
	comp=Z,22nm,0.8s						
WUAZ	Wupatki	79.89	53	P	P	08 50 31.0	+2.6
	baz=310						
WUAZ	Wupatki	79.89	53	eP	P	08 50 31.8	+3.4
LANS	Liptovska Anna	79.91	326	eP	P	08 50 29.8	+1.7
LANS				e		08 50 40.9	
LANS	Liptovska Anna	79.91	326	eP	P	08 50 29.8	+1.7
LANS				epP	sP	08 50 40.9	-0.4
KECS	Kecovo	79.95	325	eP	P	08 50 29.5	+1.3
KECS				pmax	pmax		
	comp=Z,5.0nm,1.1s						
KECS	Kecovo	79.95	325	eP	P	08 50 29.5	+1.3
KECS				epP	sP	08 50 40.7	-0.8
PV01	Paradox Valley	79.95	49	eP	P	08 50 31.8	+3.0
VOIR		79.95	321	⇑iP	P	08 50 27.1	-1.3
VOIR		79.95	321	⇑P	P	08 50 27.1	-1.3
OKC	Ostrava-Krasne	79.97	327	AMS	AMS	09 29 00.0	
KSP	Ksiaz	79.99	329	eP	sP	08 50 41.1	-0.6
KSP	Ksiaz	79.99	329	eP	sP	08 50 41.2	-0.5
ARR	Arges	80.21	321	⇓iP	P	08 50 31.5	+1.7
SMCO	Snowmass	80.21	48	eP	P	08 50 32.5	+2.1
	comp=Z,32nm,1.9s						
MORC	Moravsky Berou	80.28	327	eP	P	08 50 33.0	+2.9
MORC				pmax	pmax		
	comp=Z,68nm,0.9s						
MORC	Moravsky Berou	80.28	327	eP	P	08 50 33.0	+2.9
	comp=Z,68nm,0.9s						
DPC	Dobruska-Polom	80.36	328	epP	pP	08 50 43.6	+3.4
DPC				ex	x	08 50 52.5	
DPC				AMS	AMS	09 31 00.0	
	comp=Z,500nm,20.2s						
DPC	Dobruska-Polom	80.36	328	eP	pP	08 50 43.6	+3.4
DPC				e		08 50 52.5	
DPC				MLR	MLR		
	comp=Z,500nm,20.2s						
UPC	Upice	80.36	329	epP	pP	08 50 43.4	+3.2
UPC				AMS	AMS	09 31 10.0	
UPC	Upice	80.36	329	eP	pP	08 50 43.4	+3.2
MVCO	Mesa Verde	80.59	50	P	P	08 50 32.9	+0.6
	baz=311						
MVCO	Mesa Verde	80.59	50	eP	P	08 50 35.2	+3.0
	comp=Z,36nm,1.8s						
ISCO	Idaho Springs	80.59	47	eP	P	08 50 34.8	+2.5
ISCO				pmax	pmax		
	comp=Z,3.0nm,1.0s						
ISCO	Idaho Springs	80.59	47	eP	P	08 50 34.8	+2.5
	comp=Z,3.3nm,1.0s						
PSZ	Piszkesteto	80.63	325	eP	P	08 50 33.5	+1.5
PSZ				pmax	pmax		
	comp=Z,38nm,1.1s						
PSZ	Piszkesteto	80.63	325	eP	P	08 50 33.5	+1.5
	comp=Z,38nm,1.1s						
B35A	Bob, Littlefor	80.65	34	P	P	08 50 31.9	-0.2
	baz=318						
VYHS	Vyhne	80.68	326	eP	P	08 50 32.5	+0.3
VYHS				pmax	pmax		
	comp=Z,33nm,2.0s						
VYHS	Vyhne	80.68	326	eP	P	08 50 32.5	+0.3
VYHS				epP	sP	08 50 45.2	-0.2
BRG	Berggiesshubel	80.92	330	eP	P	08 50 35.5	+2.1
	comp=Z,5.5nm,0.9s						
BRG				e		08 50 46.2	
	comp=Z,18nm,1.0s						
	comp=N,460nm,16.4s						
	comp=E,307nm,23.9s						
	comp=Z,643nm,20.6s						
BRG	Berggiesshubel	80.92	330	eP	P	08 50 35.5	+2.1
BRG				e		08 50 46.2	
BRG				pmax	pmax		
	comp=Z,6.0nm,0.9s						
BRG				MLR	MLR		
	comp=N,460nm,16.4s						
BRG				MLR	MLR		
	comp=E,307nm,23.9s						
BRG				MLR	MLR		
	comp=Z,643nm,20.6s						
PVCC	Panska Ves	80.94	329	epP	pP	08 50 46.8	+3.6
PVCC	Panska Ves	80.94	329	eP	pP	08 50 46.8	+3.6
CLL	Collm	80.94	331	i P	P	08 50 35.1	+1.6
	comp=Z,8.0nm,1.0s						
CLL				i		08 50 45.5	
	comp=Z,20nm,0.9s						
CLL				i		08 50 54.2	
CLL				Lm	MLR	09 29 00.0	
	comp=N,400nm,19.0s						
CLL				Lm	MLR	09 29 00.0	
	comp=E,200nm,19.3s						
CLL				Lm	MLR	09 29 00.0	
	comp=Z,400nm,18.0s						
CLL	Collm	80.94	331	i P	P	08 50 35.1	+1.6
CLL				i		08 50 45.5	
CLL				pmax	pmax		
	comp=Z,8.0nm,1.0s						
CLL				MLR	MLR		
	comp=Z,400nm,18.0s						
CLL	Collm	80.94	331	eP	P	08 50 35.6	+2.1
	comp=Z,25nm,1.1s						
VRAC	Vranov	81.04	328	⇑iP	P	08 50 33.8	-0.3
VRAC	Vranov	81.04	328	⇑P	P	08 50 33.8	-0.3
GZR	Gura Zlata	81.11	322	⇑iP	P	08 50 33.9	-0.7
GZR	Gura Zlata	81.11	322	⇑P	P	08 50 33.9	-0.7
S22A	4UR Ranch, Cre	81.24	49	P	P	08 50 37.4	+1.6
	baz=312						
S22A	4UR Ranch, Cre	81.24	49	eP	P	08 50 37.3	+1.5
	comp=Z,6.1nm,0.9s						
RAYN	Ar Rayn	81.31	293	eP	P	08 50 35.0	-1.0
	comp=Z,31nm,1.4s						
GOPC	GO Pecny, Ondr	81.32	329	epP	pP	08 50 48.4	+3.1
GOPC				AMS	AMS	09 29 50.0	
GOPC	GO Pecny, Ondr	81.32	329	eP	pP	08 50 48.4	+3.1
PRU	Pruhonice	81.36	329	eP	P	08 50 38.7	+2.9
PRU				epP	sP	08 50 48.6	-0.5
PRU	Pruhonice	81.36	329	eP	P	08 50 38.7	+2.9
PRU				e		08 50 48.6	
C36A	Pine Crest Far	81.50	34	P	P	08 50 36.3	-0.3
	baz=319						
TREC	Trest	81.51	328	AMS	AMS	09 34 30.0	
	comp=Z,400nm,15.7s						
MDVR	Moldovita	82.07	322	⇓iP	P	08 50 39.3	-0.4
TUC	Tucson	82.31	55	eP	P	08 50 42.2	+1.0
TUC				pmax	pmax		
	comp=Z,4.0nm,1.2s						
TUC	Tucson	82.31	55	eP	P	08 50 42.2	+1.0
	comp=Z,4.4nm,1.2s						
KHC	Kasperske Hory	82.43	329	eP	P	08 50 44.3	+2.8
KHC				epP	sP	08 50 54.6	-0.1
KHC				AMS	AMS	09 32 20.0	
	comp=Z,500nm,19.1s						
KHC	Kasperske Hory	82.43	329	eP	P	08 50 44.3	+2.8
KHC				e		08 50 54.6	
KHC				MLR	MLR		
	comp=Z,500nm,19.1s						
KHC	Kasperske Hory	82.43	329	eP	P	08 50 43.8	+2.4
	comp=Z,5.8nm,0.9s						
GERES	GERESS Array B	82.60	329	P	P	08 50 42.0	-0.5
	comp=Z,2.0nm,0.9s,baz=40,slow=8.0,SNR=4.2						
GERES				LR	LR	09 29 50.3	
	comp=Z,362nm,21.1s,baz=7.5,slow=37						
GERES	GERESS Array B	82.60	329	P	P	08 50 42.0	-0.5
GERES				pmax	pmax		
	comp=Z,1.0nm,0.3s						
GERES				MLR	MLR		
	comp=Z,362nm,21.1s						
GEA0	GERESS Array S	82.61	329	eP	P	08 50 43.4	+0.9
ECSD	EROS Data Cent	82.69	39	eP	P	08 50 43.5	+0.6
	comp=Z,5.7nm,0.8s						
H35A	Sunnyside Ranc	82.86	37	P	P	08 50 44.5	+0.7
	baz=318						
VTS	Vitosha	82.91	320	⇑iP	P	08 50 44.7	+0.5
VTS	Vitosha	82.91	320	⇑P	P	08 50 44.7	+0.5
VTS	Vitosha	82.91	320	eP	P	08 50 45.4	+1.2
	comp=Z,25nm,1.0s						
T25A	Trinidad	83.08	48	P	P	08 50 46.1	+0.8
	baz=313						
T25A	Trinidad	83.08	48	eP	P	08 50 48.1	+2.8
	comp=Z,6.8nm,0.9s						
ANMO	Albuquerque	83.32	51	P	P	08 50 48.5	+1.9
	baz=312						
ANMO	Albuquerque	83.32	51	⇑eP	P	08 50 48.3	+1.7
ANMO				pmax	pmax		
	comp=Z,7.0nm,1.3s						
ANMO	Albuquerque	83.32	51	eP	P	08 50 48.9	+2.3
	comp=Z,10nm,1.3s						
PMOR	Pomariorio Ree	83.55	114	eT	T	10 22 59.9	
	comp=Z,13nm,0.2s						
GROS	Grobnik	83.69	326	eP	pP	08 50 58.8	+0.9
319A	Douglas	83.89	55	eP	P	08 50 52.1	+2.6
	comp=Z,12nm,1.1s						
I37A	Lemond, Waseca	84.05	37	P	P	08 50 50.4	+0.5
	baz=319						
PPT	Papeete	84.07	117	LR	LR	09 24 46.5	
	comp=Z,100nm,20.1s,baz=318,slow=33						
PPT2	Papeete2	84.08	117	eLR	LR	09 17 16.3	
	comp=Z,405nm,24.8s,baz=323						
PPT2	Papeete2	84.08	117	eT	T	10 23 39.3	
	comp=Z,3.5nm,0.3s						
HSIG		84.31	58	eP	P	08 50 53.8	+2.3
	comp=Z,25nm,1.8s						
SCHQ	Schefferville	84.33	17	P	P	08 50 51.2	+0.1
	comp=Z,4.8nm,1.0s,baz=290,slow=4.1,SNR=3.4						
SCHQ				LR	LR	09 28 53.9	
	comp=Z,125nm,21.6s,baz=352,slow=36						
SCHQ	Schefferville	84.33	17	eP	P	08 50 51.6	+0.5
	comp=Z,12nm,0.8s						
VISS	Visnje	84.50	326	i P	pP	08 51 03.0	+1.2
BOJS	Bojanci	84.55	326	i P	pP	08 51 03.5	+1.4
JAVS	Javornik	84.76	327	i P	pP	08 51 03.4	0.0
BFO	Black Forest	85.14	331	i P	P	08 50 58.0	+2.7
MEH	Mehetia	85.34	117	eT	T	10 25 12.8	
	comp=Z,23nm,0.3s						
TAOE	Nuku Hiva Isla	85.37	105	eLR	LR	09 18 01.8	
	comp=Z,332nm,25.7s						
MNTX	Cornudas Mount	86.16	52	P	P	08 51 02.2	+1.5
	baz=313						
MNTX	Cornudas Mount	86.16	52	eP	P	08 51 02.6	+1.8
	comp=Z,22nm,2.0s						
O40A	La Belle	87.74	39	P	P	08 51 09.3	+1.1
	baz=320						
Q39A	Willow Grove F	88.00	40	P	P	08 51 10.0	+0.6
	baz=319						
TBI	Tubuai	88.04	122	eLR	LR	09 18 42.3	
	comp=Z,175nm,23.0s						
TBI	Tubuai	88.04	122	eT	T	10 28 34.4	
	comp=Z,54nm,0.3s						
P40A	Paris	88.10	39	P	P	08 51 09.9	0.0
	baz=320						
T37A	Cheneyville 18	88.42	42	P	P	08 51 13.2	+1.7
	baz=318						
Q40A	Laux Farm, Aux	88.50	40	P	P	08 51 12.3	+0.5
	baz=320						
T38A	Diamond	88.82	42	P	P	08 51 14.7	+1.3
	baz=319						
TUL1	Leonard	88.85	44	eP	P	08 51 15.4	+1.9
	comp=Z,7.1nm,0.8s						
TX31	Lajitas Ar. Si	88.85	53	eP	P	08 51 16.1	+2.2
LTX	Lajitas	88.85	53	eP	P	08 51 14.3	+0.5
LTX	Lajitas	88.85	53	eP	P	08 51 14.3	+0.5
TXAR	Lajitas Array	88.85	53	P	P	08 51 14.3	+0.5
	comp=Z,1.1nm,0.6s,baz=291,slow=3.1,SNR=10						
TXAR				LR	LR	09 27 37.0	
	comp=Z,73nm,20.3s,baz=0.0,slow=33						
R40A	Maddies Statio	88.93	40	P	P	08 51 14.0	+0.1
	baz=320						
T40A	Mansfield	89.67	41	P	P	08 51 19.0	+1.6
	baz=320						
CEL	Celeste	89.85	321	eP	P	08 51 17.7	-0.5
	comp=Z,19nm,0.9s						
233A	Rising Star	89.90	48	P	P	08 51 20.9	+2.3
	baz=316						
V39A	Pettigrew	90.06	43	P	P	08 51 20.9	+1.6
	baz=319						
U40A	Yellville	90.09	42	P	P	08 51 20.1	+0.7
	baz=320						
X38A	Whitesboro	90.29	44	P	P	08 51 21.6	+1.3
	baz=318						
234A	Clairette	90.36	48	P	P	08 51 23.0	+2.3
	baz=316						
JCT	Junction City	90.45	50	eP	P	08 51 23.1	+1.9
JCT	Junction City	90.45	50	eP	P	08 51 23.1	+1.9
433A	Art	90.69	49	P	P	08 51 23.4	+1.2
	baz=316						
334A	Lometa	90.78	48	P	P	08 51 24.2	+1.5
	baz=316						
X39A	Fountain Ranch	90.80	44	P	P	08 51 23.5	+0.8
	baz=319						
MIAR	Mount Ida	91.07	43	P	P	08 51 25.6	+1.6
	baz=319						
MIAR	Mount Ida	91.07	43	eP	P	08 51 26.1	+2.1
MIAR				pmax	pmax		
	comp=Z,14nm,1.0s						
MIAR	Mount Ida	91.07	43	eP	P	08 51 26.1	+2.1
	comp=Z,14nm,1.0s						
KEST	Kesra	95.03	324	LR	LR	09 39 08.5	
	comp=Z,499nm,20.1s,baz=340,slow=38						
ESDC	Sonseca Array	97.05	335	P	P	08 51 51.1	-0.3
	comp=Z,0.2nm,0.3s,baz=21,slow=3.8,SNR=3.9						
ESDC				LR	LR	09 40 15.3	
	comp=Z,220nm,20.7s,baz=50,slow=38						
RKT	Rikitea	98.10	113	eLR	LR	09 24 04.7	
	comp=Z,270nm,25.2s						
TOA1	Torodi Ar. Sit	117.50	316	ePKPdf	PKPdf	08 57 04.0	-1.6
TOA1				ePP	PP	08 58 13.3	-3.4
TORD	Torodi Ar. Bea	117.51	316	PKP	PKPdf	08 57 04.0	-1.6
	comp=Z,0.4nm,0.6s,baz=44,slow=1.3,SNR=4.1						
TORD				PP	PP	08 58 13.3	-3.5
	comp=Z,1.2nm,0.9s,baz=37,slow=6.7,SNR=2.9						
TORD				PKKPbc	PKKPbc	09 07 26.3	-0.5
	comp=Z,0.7nm,0.9s,baz=219,slow=3.4,SNR=2.9						
QSPA	South Pole Qui	127.53	180	ePKPdf	PKPdf	08 57 22.7	-0.5
SYO	Syowa Base	129.34	207	⇑ePdiff	Pdif	08 54 16.6	+2.7
SYO	Syowa Base	129.34	207	⇑epPdiff	pPdif	08 54 26.0	+2.2
SNAA	Sanae	141.77	197	PKP	PKPpre	08 57 44.0	
VNA2	Neumayer--Watz	143.32	196	PKP	PKPbc	08 57 49.4	-0.2
	baz=147,slow=2.9						
VNA3	Neumayer Olymp	143.56	195	PKP	PKPab	08 57 49.4	0.0
LPAZ	La Paz	145.43	60	PKPbc	PKPab	08 57 58.5	-0.1
	comp=Z,6.4nm,0.5s,baz=357,slow=3.7,SNR=38						
PB11	IPOC Station P	146.66	66	ePKPdf	PKPbc	08 58 02.0	+0.4
PB11				ePKPbc	PKiKP	08 58 03.9	-0.4
LCO	Las Campanas	150.90	82	ePKPbc	PKPbc	08 58 12.8	+0.4
PLCA	Paso Flores	154.18	107	PKPbc	PKPbc	08 58 19.6	+0.6
	comp=Z,1.7nm,1.0s,baz=328,slow=13,SNR=5.8						
PLCA				PKPab	PKPab	08 58 33.9	+0.9
	comp=Z,3.5nm,0.7s,baz=276,slow=4.9,SNR=8.4						

*NIED **04** 08:42:00, 37.°80N×142.°60E, h35^{km}, Mw4.8 Best double couple: $M_0$2.06000×10^{16} NP1:ϕ_s259.00000°, δ44.00000°, λ58.00000°. NP2:ϕ_s120.00000°, δ54.00000°, λ117.00000°.*

*BJI **04** 08:42:27.3, 37.°85N×143.°05E, h46^{km}, mb4.7/49, mB4.9/25, Ms4.6/26, Ms7 4.4/25*

*ISCJB **04** 08:42:28.9±0.9, 37.°79N±0.°03×142.°54E±0.°02, h28^{km}±6^{km}, mb4.8/184, MS4.4/6, Error ellipse: s-maj=4.4km s-min=3.1km az=174.4*

*MOS **04** 08:42:29.5±1.2, 37.°91N×142.°58E, h37^{km}, mb5.0/79, Error ellipse: s-maj=8.2km s-min=5.2km az=93.0*

*JMA **04** 08:42:30.0±0.2, 37.°81N×142.°54E, h38^{km}, M4.8*

JMA Felt III J1.

*IDC **04** 08:42:31.7±0.5, 37.°80N×142.°52E, h40^{km}±3^{km}, mb4.5/34, mb1 4.6/37, mb1mx4.5/52, mbtmp4.7/37, ML4.0/3, Error ellipse: s-maj=11.3km s-min=8.8km az=96.0*

*NEIC **04** 08:42:31.7±0.5, 37.°83N×142.°47E, h37^{km}±4^{km}, mb4.9/125, Error ellipse: s-maj=4.1km s-min=3.0km az=138.0*

NEIC Recorded [3 JMA] in Miyagi.

*GCMT **04** 08:42:31.7±0.4, 37.°85N×142.°47E, h31^{km}, MW5.0/71, Moment Tensor Solution. s38,c44; s71,c93; Duration: 0 Moment tensor: Scale 10^{16}Nm; M_{rr}4.53±.25; $M_{\theta\theta}$-3.97±.15; $M_{\phi\phi}$-0.55±.14; $M_{r\theta}$-1.10±.17; $M_{\theta\phi}$0.45±.10; $M_{\phi r}$-1.05±.17; Best double couple: $M_0$4.51500×10^{16} NP1:ϕ_s265.00000°, δ53.00000°, λ75.00000°. NP2: ϕ_s109.00000°, δ40.00000°, λ109.00000°. Principal axes: T 4.8920, Plg76.0000°, Azm123.0000°; N -0.7510, Plg12.0000°, Azm274.0000°; P -4.1380, Plg7.0000°, Azm5.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

ISC 04 08:42:30.2±0.3, **37.°83N**±0.°04×**142.°63E**±0.°04, **h31**^{km}±1^{km}, **h30**^{km}**:pP-P, n402,** σ1^s**42**/480, **mb4.9**/184, **MS4.3**/6, **33C-11D, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
JIO	Ouri	1.18	302	P	Pn	08 42 50.2	-0.4
JIO				S	Sn	08 43 03.9	-1.8
JMM	Marumori	1.45	272	P	Pn	08 42 53.5	-0.8
JMM				S	Sn	08 43 10.2	-2.1
JFK	Kawauchi	1.47	252	P	Pn	08 42 53.4	-1.2
JFK				S	Sn	08 43 10.2	-2.6
JMK	Ichinoseki	1.57	316	P	Pn	08 42 56.0	0.0
JMK				S	Sn	08 43 14.3	-1.0
JOU	Okura	1.64	290	P	Pn	08 42 57.1	+0.2
JOU				eS	Sn	08 43 15.9	-1.1
JFT	Otama	1.84	261	P	Pn	08 42 59.9	+0.1
JFT				S	Sn	08 43 21.3	-0.7
JOM	Ohasama	1.94	328	P	Pn	08 43 01.1	0.0
JOM				eS	Sn	08 43 23.2	-1.3
JYS	Shirataka	2.06	282	P	Pn	08 43 03.1	+0.4
JYS				S	Sn	08 43 28.2	+0.9
JYK	Kaneyama	2.08	302	P	Pn	08 43 03.4	+0.3
JYK				eS	Sn	08 43 28.0	0.0
JRG	Rokugo	2.21	316	P	Pn	08 43 05.5	+0.7
JRG				S	Sn	08 43 32.2	+1.2
JANG	Nango	2.68	342	P	Pn	08 43 10.6	-0.7
JAW	Awa shima	2.73	284	P	Pn	08 43 12.6	+0.6
MJAR	Matsushiro Arr	3.75	251	P	Pn	08 43 26.8	+0.7
	34nm,0.3s,baz=324,slow=8.8,SNR=21						
MAJO	Matsushiro	3.76	251	c iP	Pn	08 43 27.4	+1.3
MAJO	Matsushiro	3.76	251	ePn	Pn	08 43 26.3	+0.2
MAT	Matsushiro	3.76	251	P	Pn	08 43 26.4	+0.3
MAT				S	Sn	08 44 10.8	+1.6
ERM	Erimo	4.20	5	c iP	Pn	08 43 31.4	-0.7
ERM				pmax	pmax		
	comp=Z,358nm,1.0s						
ERM	Erimo	4.20	5	ePn	Pn	08 43 31.6	-0.5
ERM				eSn	Sn	08 44 18.6	-1.4
INU	Inuyama	5.15	243	ePn	Pn	08 43 46.2	+1.1
JHJ2	Mitsune	5.24	207	ePn	Pn	08 43 45.1	-1.3
JHJ2				eSn	Sn	08 44 43.0	-2.8
JHJ	Hachijo jima 2	5.24	207	P	Pn	08 43 45.0	-1.5
	comp=Z,770nm,0.3s,baz=332,slow=15,SNR=29						
JHJ				S	Sn	08 44 40.4	-5.5
	comp=Z,323nm,0.3s,baz=44,slow=22,SNR=6.4						
YUK	Yuzh-Kuril'sk	6.66	21	eP	Pn	08 44 03.8	-2.1
YUK				i S	Sn	08 45 13.9	-6.8
YUK				pmax	pmax		
	comp=Z,1µm,0.2s						
YUK				pmax	pmax		
	comp=N,242nm,0.1s						
YUK				pmax	pmax		
	comp=E,920nm,0.2s						
YUK				MLR	MLR		
	comp=Z,2µm,16.0s						
SHO	Shikotan	6.82	27	d iP	Pn	08 44 05.5	-2.6
SHO				i S	Sn	08 45 17.1	-7.5
SHO				pmax	pmax		
	comp=Z,233nm,0.7s						
SHO				pmax	pmax		
	comp=E,187nm,0.4s						
SHO				pmax	pmax		
	comp=N,219nm,0.3s						
KUR	Kuril'sk	8.37	26	eP	Pn	08 44 28.8	-0.6
KUR				eS	Sn	08 45 57.8	-5.0
KUR				pmax	pmax		
	comp=E,67nm,0.4s						
KUR				pmax	pmax		
	comp=Z,176nm,0.4s						
KUR				pmax	pmax		
	comp=N,56nm,0.2s						
KUR				MLR	MLR		
	comp=Z,1µm,12.0s						
KUR				MLR	MLR		
	comp=N,2µm,7.0s						
KUR				MLR	MLR		
	comp=E,868nm,11.0s						
YSS	Yuzh-Sakhalins	9.12	1	⇑iP	Pn	08 44 39.4	-0.1
YSS				eS	Sn	08 46 18.9	-2.2
YSS				pmax	pmax		
	comp=N,210nm,0.7s						
YSS				pmax	pmax		
	comp=Z,320nm,0.7s						
YSS				MLR	MLR		
	comp=Z,900nm,14.0s						
YSS	Yuzh-Sakhalins	9.12	1	ePn	Pn	08 44 39.5	-0.1
YSS				eSn	Sn	08 46 18.9	-2.2
USRK	Ussuriysk Ar.	10.24	312	P	Pn	08 44 56.0	+1.0
	comp=Z,2.9nm,0.3s,baz=122,slow=14,SNR=26						
JNU	Nakatsue	10.67	247	P	Pn	08 45 01.7	+0.7
	comp=Z,1.1nm,0.3s,baz=44,slow=6.0,SNR=7.6						
JNU	Nakatsue	10.67	247	ePn	Pn	08 45 02.5	+1.6
CBIJ	Chichi jima	10.71	182	ePn	Pn	08 44 58.4	-3.2
JCJ	Chichijima	10.71	182	P	Pn	08 44 58.1	-3.4
	baz=319,slow=9.3						
JCJ				S	Sn	08 46 47.6	-13
	baz=270,slow=20						
KSRS	Korea Array	11.66	273	P	Pn	08 45 16.9	+2.4
	baz=92,slow=13,SNR=5.8						
KSRS				PcP	PcP	08 51 03.8	+0.6
	comp=Z,0.3nm,0.3s,baz=106,slow=1.5,SNR=5.4						
KS15	Wonju Array Si	11.70	273	ePn	Pn	08 45 15.6	+0.6
MDJ	Mudanjiang	11.92	309	P	Pn	08 45 18.8	+0.8
MDJ				pmax	pmax		
	comp=Z,7.0nm,1.2s						
TYV	Tymovskoe	13.03	0	eP	Pn	08 45 30.5	-2.6
TYV				pmax	pmax		
	comp=E,40nm,1.0s						
TYV				pmax	pmax		
	comp=Z,33nm,0.8s						
KLR	Kul'dur	13.84	329	P	Pn	08 45 42.5	-1.6
	comp=Z,1.1nm,0.3s,baz=132,slow=12,SNR=13						
CN2	Changchun	14.30	300	eP	P	08 45 53.9	-3.4
CN2				eS	Sn	08 48 30.8	+2.9
CN2				pmax	pmax		
	comp=Z,10.0nm,0.2s						
CN2				pmax	pmax		
	comp=Z,100nm,3.0s						
CN2				LR	LR		
	comp=Z,600nm,12.0s						
CN2				LR	LR		
	comp=Z,600nm,12.0s						
NKL	Nikolayevsk	15.38	356	eP	Pn	08 46 02.0	-2.8
NKL				pmax	pmax		
	comp=N,28nm,1.0s						
NKL				pmax	pmax		
	comp=Z,43nm,1.0s						
DL2	Dalian	16.50	280	P	Pn	08 46 20.3	+0.9
DL2				pmax	pmax		
	comp=Z,26nm,1.0s						
PEA0	Petropavlovsk-	18.52	30	eP	Pn	08 46 44.1	-0.1
PETK	Petropavlovsk-	18.52	30	P	P	08 46 42.9	-1.0
	comp=Z,0.6nm,0.3s,baz=196,slow=9.2,SNR=6.5						

PETK ScP **ScP** **08 54 36.6 -9.3**
baz=218,slow=7.0,SNR=5.5
PEA1 Petropavlovsk- 18.52 30 *e*P **P** **08 46 42.9 -1.0**
NJ2 Nanjing 20.30 261 *e*P **P** **08 47 04.2 +0.7**
NJ2 pmax pmax
comp=Z,4.0nm,0.5s
MA2 Magadan 22.38 11 P **P** **08 47 26.1 +0.4**
comp=Z,55nm,0.9s,baz=216,slow=9.2,SNR=21
HHC Hu-ho-hao-te 24.15 287 *e*P **P** **08 47 42.7 -0.9**
HHC S **S** **08 51 57.6 -2.1**
HHC pmax pmax
comp=Z,17nm,0.9s
HHC pmax pmax
comp=Z,140nm,3.9s
HHC LR LR
comp=Z,190nm,9.3s
HHC LR LR
comp=Z,280nm,11.3s
HHC LR LR
comp=Z,310nm,10.4s
WHN Wuhan 24.43 261 P **P** **08 47 45.5 -0.6**
WHN pmax pmax
comp=Z,36nm,0.7s
CIT Chita 24.79 314 *e*P **P** **08 47 49.0 -0.3**
CIT *e* 08 47 57.3
CIT *e* 08 48 08.0
CIT *e* 08 48 28.0
CIT pmax pmax
comp=Z,100nm,1.1s
YAK Yakutsk 25.52 346 P **P** **08 47 55.4 -0.2**
comp=Z,4.2nm,0.4s,baz=331,slow=23,SNR=8.7
YAK Yakutsk 25.52 346 *e*P **P** **08 47 55.4 -0.2**
comp=Z,86nm,0.8s
SEY Seymchan 25.83 10 P **P** **08 48 00.1 +1.6**
comp=Z,37nm,0.8s,baz=192,slow=8.0,SNR=22
SEY Seymchan 25.83 10*ce*P **P** **08 48 00.6 +2.1**
XAN Xi'an 27.46 272 P **P** **08 48 12.6 -1.0**
XAN pP sP 08 48 24.6 -1.6
XAN pmax pmax
comp=Z,8.0nm,0.7s
ULN Ulaanbaatar 27.72 303*c i*P **P** **08 48 16.4 +0.5**
ULN pmax pmax
comp=Z,4.0nm,0.7s
ULN Ulaanbaatar 27.72 303 *e*P **P** **08 48 16.8 +0.9**
comp=Z,7.4nm,0.9s
H11N2 WAKE ISLAND Hy 27.76 124 T T 09 17 29.5
baz=312,slow=75
H11N1 WAKE ISLAND Hy 27.77 124 T T 09 17 27.6
baz=312
H11N3 WAKE ISLAND Hy 27.77 124 T T 09 17 34.0
baz=312,slow=75
SONA1 Songino Array 28.15 302 *e*P **P** **08 48 20.4 +0.7**
SONA0 Songino Array 28.16 302 *e*P **P** **08 48 20.1 +0.4**
comp=Z,7.0nm,0.8s
SONA0 *e*PcP **PcP** **08 51 33.5 +0.4**
SONM Songino Array 28.16 302 P **P** **08 48 20.1 +0.4**
comp=Z,4.9nm,0.8s,baz=110,slow=8.7,SNR=7.1
SONM PcP **PcP** **08 51 33.5 +0.4**
comp=Z,1.2nm,0.6s,baz=132,slow=1.9,SNR=2.8
ENH Enshi 28.36 265 *e*P **P** **08 48 21.0 -0.6**
comp=Z,40nm,0.8s
H11S1 WAKE ISLAND Hy 28.51 126 T T 09 18 25.2
baz=317,slow=76,SNR=17
H11S3 WAKE ISLAND Hy 28.51 126 T T 09 18 16.1
baz=317,slow=76,SNR=0.7
H11S2 WAKE ISLAND Hy 28.53 126 T T 09 18 26.5
baz=317,slow=76,SNR=24
ZAK Zakamensk 30.55 307 *e*P **P** **08 48 41.3 +0.4**
ZAK pmax pmax
comp=Z,10.0nm,0.9s
TLY Talaya 30.55 310 P **P** **08 48 41.9 +1.1**
comp=Z,3.0nm,0.5s,baz=124,slow=3.5,SNR=4.1
TLY Talaya 30.55 310 *e*P **P** **08 48 41.8 +1.0**
TLY pmax pmax
comp=Z,1.0nm,0.3s
LZH Lanzhou 30.89 279 *e*P **P** **08 48 43.3 -0.9**
LZH pP pP 08 48 53.4 +0.3
LZH sP sP 08 48 59.1 +2.3
LZH pmax pmax
comp=Z,21nm,1.0s
MOY Mondy 32.17 309 *e*P **P** **08 48 56.5 +1.3**
GYA Guiyang 32.31 260⇑ *i*P **P** **08 48 56.8 +0.2**
GYA pP sP 08 49 10.0 +0.7
GYA PP **PnPn** **08 50 06.3 +2.8**
GYA PcP **PcP** **08 51 46.8 +2.5**
GYA S **S** **08 54 07.2 -1.3**
GYA sS sS 08 54 27.5 +4.2
GYA ScP **ScP** **08 55 25.0 -0.6**
GYA SS **SnSn** **08 56 01.9 +0.3**
GYA ScS **ScS** **08 59 23.4 -1.6**
GYA pmax pmax
comp=Z,50nm,0.8s
GYA pmax pmax
comp=Z,120nm,6.2s
GYA LR LR
comp=Z,520nm,17.8s
GYA LR LR
comp=Z,480nm,18.0s
GYA LR LR
comp=Z,510nm,17.9s
CD2 Chengdu 32.64 270 P **P** **08 48 58.1 -1.3**
CD2 pmax pmax
comp=Z,20nm,0.4s
BILL Bilibino 32.99 16*de*P **P** **08 49 04.0 +2.0**
BILL *e* 08 50 06.5
BILL pmax pmax
comp=Z,13nm,1.4s
BILL MLR MLR
comp=Z,282nm,18.0s
BILL Bilibino 32.99 16 *e*P **P** **08 49 04.4 +2.4**
comp=Z,16nm,1.1s
GTA Gaotai 33.26 286 P **P** **08 49 05.1 +0.2**
GTA pP sP 08 49 17.4 -0.1
GTA sP pP 08 49 22.7 +8.9
GTA PcP **PcP** **08 51 47.6 +0.9**
GTA S **S** **08 54 20.5 -2.7**
GTA sS sS 08 54 41.4 +3.5
GTA PcS **PcS** **08 55 33.1 +0.7**
GTA pmax pmax
comp=Z,10.0nm,1.1s
GTA pmax pmax
comp=Z,67nm,5.6s
GTA LR LR
comp=Z,310nm,15.2s
GTA LR LR
comp=Z,440nm,17.6s
GTA LR LR
comp=Z,450nm,18.1s
TIXI Tiksi 34.62 352*c i*P **P** **08 49 15.9 -0.2**
TIXI Tiksi 34.62 352 *e*P **P** **08 49 16.2 +0.1**
comp=Z,9.1nm,0.8s
KMI Kunming 36.04 261 P **P** **08 49 30.3 +1.2**
KMI pmax pmax
comp=Z,16nm,1.1s
KMI pmax pmax
comp=Z,180nm,5.1s
WMQ Urumqi 41.35 296 P **P** **08 50 13.6 +0.3**
WMQ sP sP 08 50 31.4 +5.3
WMQ S **S** **08 56 25.5 -0.3**
WMQ SS **SS** **08 59 24.5 -5.4**
WMQ ScS **ScS** **09 00 12.5 -2.4**
WMQ pmax pmax
comp=Z,10.0nm,0.6s
WMQ pmax pmax
comp=Z,50nm,5.4s
FAKI Fak Fak 41.67 196 *e*P **P** **08 50 17.0 +1.0**
comp=Z,17nm,1.0s
ZAA0 Zalesovo Array 42.10 312 *e*P **P** **08 50 19.2 0.0**
ZAA1 Zalesovo Array 42.10 312 *e*P **P** **08 50 19.0 -0.2**
ZAA1 *e*PcP **PcP** **08 52 13.3 -0.1**
ZALV Zalesovo Beam 42.10 312 P **P** **08 50 19.0 -0.2**
comp=Z,9.2nm,0.8s,baz=86,slow=6.7,SNR=11
ZALV PcP **PcP** **08 52 13.3 -0.1**
comp=Z,11nm,0.7s,baz=90,slow=2.9,SNR=8.3
CMAR Chiang Mai Arr 42.63 255 P **P** **08 50 23.4 -0.5**
comp=Z,2.1nm,0.3s,baz=44,slow=6.8,SNR=5.7
CMAR PcP **PcP** **08 52 16.6 +0.9**
comp=Z,2.2nm,0.7s,baz=16,slow=2.3,SNR=7.7
NRIK Noril'sk 42.95 335 PcP **PcP** **08 52 16.8 +0.8**
comp=Z,3.0nm,0.5s,baz=101,slow=5.2,SNR=3.5
NVS Novosibirsk 42.99 313 *e*P **P** **08 50 23.7 -2.7**
NVS *e*S **S** **08 56 46.3 -3.3**
NVS pmax pmax
comp=N,8.0nm,1.3s
NVS pmax pmax
comp=E,19nm,1.3s
NVS pmax pmax
comp=Z,28nm,1.3s
NVS smax smax
comp=N,17nm,2.0s
NVS smax smax
comp=E,28nm,2.0s
MK01 Makanchi Array 44.52 302 *e*P **P** **08 50 38.8 -0.1**
MK32 Makanchi Array 44.52 302 *e*P **P** **08 50 38.4 -0.5**
MKAR Makanchi Array 44.52 302 P **P** **08 50 38.4 -0.5**
comp=E,4.4nm,0.6s,baz=83,slow=10,SNR=9.7
MKAR Makanchi Array 44.52 302*ce*P **P** **08 50 38.7 -0.2**
MKAR pmax pmax
comp=Z,4.0nm,0.6s
MKAR Makanchi Array 44.52 302 *e*P **P** **08 50 39.0 +0.1**
MAKZ Makanchi 44.73 302 *e*P **P** **08 50 40.7 +0.2**
MAKZ pmax pmax
comp=Z,12nm,1.1s
MAKZ Makanchi 44.73 302 *e*P **P** **08 50 40.7 +0.2**
comp=Z,12nm,1.1s
KDAK Kodiak Island 45.86 42 P P 08 51 04.8 +16
comp=Z,35nm,0.7s,baz=276,slow=4.6,SNR=16
KDAK Kodiak Island 45.86 42 *i*P **P** **08 50 50.2 +0.9**
CAST Castle Rocks 46.02 35 *e*P **P** **08 50 52.8 +2.3**
comp=Z,79nm,2.0s
CAST *e*pP **sP** **08 51 08.6 +5.2**
KURK Kurchatov 46.20 308 P **P** **08 50 52.3 +0.2**
KURK *PP **sP** **08 51 04.2 -0.8**
KURK 08 52 27.1
KURK pmax pmax
comp=Z,20nm,0.6s
KURK pmax pmax
comp=Z,38nm,0.7s
KURK pmax pmax
comp=Z,3.0nm,0.7s
KURK Kurchatov 46.20 308 *e*P **P** **08 50 51.8 -0.3**
comp=Z,41nm,0.8s
KURK *e*PcP **PcP** **08 52 27.1 -0.3**
KURBB Kurchatov Arra 46.28 308 P **P** **08 50 52.3 -0.4**
comp=Z,20nm,0.6s,baz=81,slow=7.9,SNR=30
KURBB pP **sP** **08 51 04.2 -1.3**
comp=Z,38nm,0.7s,baz=82,slow=8.0,SNR=17
KURBB PcP **PcP** **08 52 27.1 -0.5**
comp=Z,3.4nm,0.7s,baz=93,slow=3.1,SNR=5.3
BPAW Bear Paw Mtn. 46.53 34 *e*P **P** **08 50 56.1 +1.6**
comp=Z,27nm,1.9s
MLY Manley 46.66 32 *e*P **P** **08 50 57.8 +2.3**
comp=Z,9.7nm,0.7s
KAPI Kappang 47.64 212 P **P** **08 51 04.2 +0.6**
comp=Z,9.4nm,0.8s,baz=90,slow=6.1,SNR=3.5
KAPI Kappang 47.64 212 *e*P **P** **08 51 04.2 +0.6**
comp=Z,50nm,1.4s
MDM Murphy Dome 47.73 33 *e*P **P** **08 51 05.7 +1.9**
comp=Z,18nm,1.0s
WRH Wood River Hil 47.79 33 *e*P **P** **08 51 05.9 +1.6**
comp=Z,23nm,0.8s
COLA College 47.89 33*c i*P **P** **08 51 06.4 +1.4**
COLA pmax pmax
comp=Z,6.0nm,0.9s
DHY Denali Highway 48.16 35 *e*P **P** **08 51 08.8 +1.5**
DHY *e*PcP **PcP** **08 52 36.1 +1.8**
HDA Harding Lake 48.29 33 *e*P **P** **08 51 09.1 +0.9**
comp=Z,41nm,1.8s
IL1 Eielson Array 48.30 33 *e*P **P** **08 51 08.7 +0.4**
ILAR Eielson Array 48.30 33 P **P** **08 51 09.2 +0.9**
comp=Z,6.9nm,0.6s,baz=263,slow=6.1,SNR=44
ILB Eielson Array 48.30 33 *e*P **P** **08 51 09.2 +0.9**
DIV Divide 49.06 38 *e*P **P** **08 51 15.1 +0.9**
comp=Z,64nm,1.5s
DOT Dot Lake 49.60 34 *e*P **P** **08 51 19.3 +1.0**
comp=Z,20nm,0.9s
MENT Mentasta 49.83 35 *e*P **P** **08 51 21.8 +1.8**
comp=Z,14nm,1.1s
TKM2 Tokmak 2 50.10 298 *e*P **P** **08 51 23.3 +0.7**
TKM2 pmax pmax
comp=Z,71nm,1.7s
TKM2 Tokmak 2 50.10 298 *e*P **P** **08 51 23.3 +0.7**
comp=Z,71nm,1.7s
VOSK Vostochnaya 50.47 312 *e*P **P** **08 51 24.9 -0.1**
VOSK pmax pmax
comp=Z,11nm,0.8s
VOSK Vostochnaya 50.47 312 *e*P **P** **08 51 24.9 -0.1**
comp=Z,11nm,0.8s
BVAR Borovoye Array 50.75 312 P **P** **08 51 27.0 -0.1**
comp=Z,4.6nm,0.5s,baz=69,slow=7.8,SNR=9.1
BVAR pP **sP** **08 51 39.2 -0.8**
comp=Z,5.9nm,0.5s,baz=77,slow=7.3,SNR=8.3
BVAR PcP **PcP** **08 52 43.0 -0.8**
comp=Z,8.6nm,0.7s,baz=82,slow=4.3,SNR=8.2
BRVK Borovoye 50.81 312*c i*P **P** **08 51 27.3 -0.2**
BRVK pmax pmax
comp=Z,10.0nm,1.0s
BRVK Borovoye 50.81 312 *e*P **P** **08 51 27.2 -0.2**
comp=Z,7.8nm,0.7s
AAK Ala-Archa 50.96 298 *i*P **P** **08 51 28.5 -0.6**
AAK pmax pmax
comp=Z,30nm,1.6s
KSH Kashi 50.96 294 P **P** **08 51 33.1 +4.1**
KSH *e*pP sP 08 51 45.6 +3.6
KSH *e*ScP **ScP** **08 56 39.6 +0.6**
KSH S **S** **08 58 47.3 +3.3**
KSH pmax pmax
comp=Z,130nm,3.9s
KSH LR LR
comp=Z,2μm,13.1s
KSH LR LR
comp=Z,520nm,12.2s
KSH LR LR
comp=Z,520nm,14.1s
ZRNK Zerenda 51.58 312 *e*P **P** **08 51 33.3 0.0**
ZRNK pmax pmax
comp=Z,13nm,0.9s
ZRNK Zerenda 51.58 312 *e*P **P** **08 51 33.3 0.0**
comp=Z,13nm,0.9s
PSI Prapat 53.03 240 P **P** **08 51 44.7 +0.1**
comp=Z,2.6nm,0.4s,baz=343,slow=1.8,SNR=4.5
PSI Prapat 53.03 240 *e*P **P** **08 51 44.8 +0.1**
PSI pmax pmax
comp=Z,7.0nm,0.9s
PSI Prapat 53.03 240 *e*P **P** **08 51 44.8 +0.2**
comp=Z,7.1nm,0.9s
INK Inuvik 53.24 27 P **P** **08 51 46.8 +1.5**
comp=Z,3.5nm,0.5s,baz=300,slow=7.2,SNR=14
INK Inuvik 53.24 27 *e*P **P** **08 51 46.8 +1.5**
comp=Z,10nm,1.0s
KKAR Karatay Array 53.56 300 *e*P **P** **08 51 48.3 +0.1**
KKAR Karatay Array 53.56 300 *e*P **P** **08 51 48.3 +0.1**
GSI Gunungsitoli 55.04 240 *e*P **P** **08 51 59.9 +0.8**
comp=Z,20nm,0.8s
ARU Arti 56.40 318*d i*P **P** **08 52 08.2 -0.2**
ARU S **S** **08 59 58.1 +1.2**
ARU SS **SS** **09 03 46.1 +2.5**
ARU pmax pmax
comp=Z,28nm,1.2s
ARU Arti 56.40 318 *e*P **P** **08 52 08.4 0.0**
comp=Z,39nm,1.1s
DLBC Dease Lake 57.40 39 *e*P **P** **08 52 17.9 +2.3**
comp=Z,26nm,1.2s
FITZ Fitzroy Crossi 57.89 199 P **P** **08 52 19.4 +0.2**
comp=Z,4.7nm,0.7s,baz=19,slow=7.4,SNR=4.3
FITZ Fitzroy Crossi 57.89 199 *e*P **P** **08 52 19.7 +0.5**
comp=Z,49nm,1.8s
WRAB Tennant Creek 57.98 189*c i*P **P** **08 52 18.9 -1.0**
WRAB pmax pmax
comp=Z,25nm,0.7s
WRAB Tennant Creek 57.98 189 *e*P **P** **08 52 19.6 -0.3**
comp=Z,21nm,0.9s
WB2 Warramunga Arr 57.99 189 *e*P **P** **08 52 19.3 -0.7**
comp=Z,22nm,0.8s
WR1 Warramunga Arr 57.99 189 *e*P **P** **08 52 19.1 -0.9**
comp=Z,21nm,0.8s
WRA Warramunga Arr 57.99 189 P **P** **08 52 19.1 -0.9**
comp=Z,19nm,0.8s,baz=7.4,slow=7.3,SNR=29
WRA pP **sP** **08 52 31.5 -1.5**
comp=Z,17nm,0.9s,baz=7.4,slow=7.2,SNR=14
WRA Warramunga Arr 57.99 189 P **P** **08 52 19.1 -0.9**
WRA *PP **sP** **08 52 31.5 -1.5**
WRA pmax pmax
comp=Z,19nm,0.8s
WRA pmax pmax
comp=Z,19nm,0.9s
ABKAR Akbulak array 58.16 310 *e*P **P** **08 52 20.5 -0.4**
HYB Hyderabad 59.19 269 *i*P **P** **08 52 28.0 -0.6**
RES Resolute Bay 61.59 15 P **P** **08 52 44.5 +0.5**
comp=Z,12nm,0.8s,baz=315,slow=6.3,SNR=17
RES Resolute Bay 61.59 15 *e*P **P** **08 52 44.5 +0.5**
comp=Z,13nm,0.9s
AS01 Alice Springs 61.71 189 *e*P **P** **08 52 45.1 -0.4**
AS31 Alice Springs 61.72 189 *e*P **P** **08 52 45.9 +0.3**
comp=Z,2.2nm,0.8s
ASAR Alice Springs 61.72 189 P **P** **08 52 45.0 -0.6**
comp=Z,6.0nm,0.8s,baz=11,slow=6.7,SNR=16
ASAR pP **sP** **08 52 57.9 -0.8**
comp=Z,5.8nm,0.7s,baz=15,slow=7.1,SNR=12
ASAR PKP2bc 09 22 06.5
comp=Z,1.3nm,1.0s,baz=182,slow=2.8,SNR=6.0
YKW3 Yellowknife Ar 62.59 31 *e*P **P** **08 52 51.8 +0.8**
comp=Z,21nm,1.6s
YKA Yellowknife Ar 62.63 31 P **P** **08 52 51.7 +0.4**
comp=Z,3.2nm,0.7s,baz=303,slow=6.7,SNR=20
YKA PKP2bc 09 21 56.7
comp=Z,0.5nm,1.1s,baz=101,slow=2.0,SNR=4.6
YKB5 Yellowknife Ar 62.63 31 *e*P **P** **08 52 50.7 -0.6**
ARCES ARCESS Array B 63.59 340 P **P** **08 52 57.6 +0.1**
comp=Z,5.3nm,0.9s,baz=54,slow=9.1,SNR=7.0
KLMR Klimovskoe 63.60 328 *e*P P 08 53 05.3 +7.6
KLMR pmax pmax
comp=Z,32nm,1.3s
DZM Mont Dzumac 63.66 155 P **P** **08 52 59.9 +1.3**
comp=Z,15nm,1.0s,baz=257,slow=18,SNR=3.0
GEYT Alibeck 64.29 299 P **P** **08 53 02.5 -0.3**
comp=Z,8.7nm,0.7s,baz=29,slow=3.4,SNR=8.5
DAG Danmarks Havn 65.06 355 *i*P **P** **08 53 07.0 0.0**
comp=Z,9.7nm,0.8s
DAG Danmarks Havn 65.06 355 *i*P **P** **08 53 07.0 0.0**
DAG pmax pmax
comp=Z,7.0nm,0.8s
VRH Novokhopyorsk 67.63 318 *e*P **P** **08 53 21.6 -2.3**
VRH *e*SP **pP** **08 53 34.5 +1.1**
VRH pmax pmax
comp=Z,10.0nm,0.5s
H04A Detroit Lake 67.85 50 *e*P **P** **08 53 26.9 +1.5**
comp=Z,12nm,0.9s
OBN Obninsk 68.03 323⇓ *e*P **P** **08 53 26.4 +0.1**
OBN *e* 08 55 53.6
OBN *e*PPP PPP 08 57 31.2
OBN pmax pmax
comp=Z,17nm,1.2s
OBN MLR MLR
comp=Z,360nm,16.0s
LPSR Galich'ya Gora 68.31 320 *e*P **P** **08 53 27.7 -0.4**
LPSR *e*SP **pP** **08 53 38.4 +0.7**
LPSR pmax pmax
comp=Z,10.0nm,0.8s
C09A Chrisman Ranch 68.49 46 *e*P **P** **08 53 30.8 +1.4**
comp=Z,15nm,1.1s
FIA1 FINESS Array S 68.55 332 *e*P **P** **08 53 29.8 +0.3**
FIA1 *e*pP **sP** **08 53 41.6 -1.1**
FIA0 FINESS Array S 68.56 332 *e*P **P** **08 53 29.7 +0.2**
FIA0 FINESS Array S 68.56 332 *e*P **P** **08 53 29.7 +0.2**
FINES FINESS Array B 68.56 332 P **P** **08 53 29.7 +0.2**
comp=Z,14nm,0.7s,baz=52,slow=7.5,SNR=20
FINES pP **sP** **08 53 41.1 -1.6**
comp=Z,15nm,0.8s,baz=57,slow=7.0,SNR=10
NEW Newport 68.88 45 *e*P **P** **08 53 33.3 +1.4**
NEW pmax pmax
comp=Z,7.0nm,1.1s
NEW Newport 68.88 45 *e*P **P** **08 53 33.2 +1.4**
comp=Z,7.4nm,1.1s
VSR Storozhevoye 68.97 319 *e*P **P** **08 53 31.7 -0.5**
VSR *e*SP **pP** **08 53 42.4 +0.6**
VSR pmax pmax
comp=Z,10.0nm,0.6s
YBH Yreka Blue Hor 69.09 53 *e*P **P** **08 53 35.6 +2.2**
YBH pmax pmax
comp=Z,10.0nm,1.2s
YBH Yreka Blue Hor 69.09 53 *e*P **P** **08 53 35.6 +2.2**
comp=Z,9.8nm,1.2s
STKA Stephens Creek 69.36 181 P **P** **08 53 34.0 -0.7**
comp=Z,4.1nm,0.8s,baz=324,slow=8.4,SNR=5.0
K05A Summer Lake 69.69 51 *e*P **P** **08 53 39.2 +2.0**
comp=Z,24nm,1.0s
K05A *e*pP **sP** **08 53 49.6 -0.7**
SUMG Summit 69.89 0 *i*P **P** **08 53 37.7 -0.4**
comp=Z,10nm,0.8s
SUMG Summit 69.89 0 *i*P **P** **08 53 37.7 -0.4**
SUMG pmax pmax
comp=Z,10.0nm,0.8s
WALA Waterton Lakes 70.20 43 *e*P **P** **08 53 41.2 +1.1**
comp=Z,11nm,0.9s
VSU Vasula 70.25 330⇑ *e*P **P** **08 53 40.8 +0.8**
VSU pmax pmax
comp=Z,34nm,1.1s
MOD Modoc Plateau 70.51 52 *e*P **P** **08 53 43.4 +1.3**
comp=Z,5.5nm,0.8s
BMO Blue Mountains 70.68 48 *e*P **P** **08 53 44.1 +1.0**
BMO pmax pmax
comp=Z,9.0nm,1.2s
BMO Blue Mountains 70.68 48 *e*P **P** **08 53 44.1 +1.0**
comp=Z,8.8nm,1.2s
KIV Kislovodsk 71.11 311 *e*P **P** **08 53 47.4 +1.7**
KIV pmax pmax
comp=Z,27nm,0.9s
KIV Kislovodsk 71.11 311 *e*P **P** **08 53 47.0 +1.4**
comp=Z,34nm,0.9s
KIV *e*pP **sP** **08 53 59.1 +0.2**
KBZ Khabaz 71.11 311 P **P** **08 53 45.8 +0.2**
comp=Z,14nm,0.8s,baz=62,slow=4.6,SNR=11
WVOR Wild Horse Val 71.24 51 *e*P **P** **08 53 47.9 +1.3**
WVOR pmax pmax
comp=Z,10.0nm,1.3s
WVOR Wild Horse Val 71.24 51 *e*P **P** **08 53 47.9 +1.3**
comp=Z,10nm,1.3s
SCO Scoresbysund 71.41 355 *i*P **P** **08 53 47.5 +0.6**
comp=Z,5.3nm,1.1s
SCO Scoresbysund 71.41 355 *e*P **P** **08 53 47.5 +0.6**
SCO pmax pmax
comp=Z,5.0nm,1.1s
NEY Neytrino 71.49 311⇓ *e*P **P** **08 53 49.2 +1.1**
NEY pmax pmax
comp=Z,4.0nm,1.0s
UOSS Minazif 72.48 288 *e*P **P** **08 53 54.0 -0.1**
comp=Z,1.0nm,1.1s
FFC Flin Flon 72.51 33 *e*P **P** **08 53 54.3 +0.5**
FFC pmax pmax
comp=Z,15nm,0.8s
FFC Flin Flon 72.51 33 *e*P **P** **08 53 54.3 +0.5**
comp=Z,15nm,0.8s
CMB Columbia Colle 72.62 55 *e*P **P** **08 53 55.9 +1.1**
CMB pmax pmax
comp=Z,12nm,1.3s
CMB Columbia Colle 72.62 55 *e*P **P** **08 53 55.9 +1.1**
comp=Z,12nm,1.3s
FCC Fort Churchill 72.85 27 *e*P **P** **08 53 56.0 +0.3**
FCC pmax pmax
comp=Z,10.0nm,0.8s
FCC Fort Churchill 72.85 27 *e*P **P** **08 53 56.0 +0.3**
comp=Z,10.0nm,0.6s
EGMT Eagleton 73.03 42 *e*P **P** **08 53 58.3 +1.2**
comp=Z,12nm,0.9s
DLMT Dillon 73.09 45 *e*P **P** **08 53 59.0 +1.4**
comp=Z,13nm,0.4s
HLID Hailey 73.12 48 *e*P **P** **08 53 59.2 +1.4**
comp=Z,5.2nm,1.0s
BOZ Bozeman (W) 73.47 45 *e*P **P** **08 54 01.4 +1.6**
BOZ pmax pmax
comp=Z,10.0nm,1.0s
BOZ Bozeman (W) 73.47 45 *e*P **P** **08 54 01.4 +1.6**
comp=Z,10.0nm,1.0s
NV01 Mina Array Sit 73.74 54 *e*P **P** **08 54 02.8 +1.2**
NVAR Mina Array Bea 73.74 54 P **P** **08 54 03.0 +1.4**
comp=Z,4.3nm,0.8s,baz=290,slow=5.7,SNR=16
NC204 NORSAR Array S 73.77 338 *e*P **P** **08 54 01.4 +0.3**
NB201 NORSAR Array S 73.79 338 *e*P **P** **08 54 01.6 +0.4**
NB2 NORSAR Subarra 73.82 338 P **P** **08 54 01.4 0.0**
comp=Z,20nm,1.1s,baz=40,slow=6.2
NB2 NORSAR Subarra 73.82 338 P **P** **08 54 01.4 0.0**
baz=40,slow=6.2
NB200 NORSAR Array S 73.82 338 *e*P **P** **08 54 01.5 0.0**
NOA NORSAR Array B 73.82 338 P **P** **08 54 01.5 0.0**
comp=Z,8.9nm,0.8s,baz=38,slow=5.8,SNR=14
NOA pP **sP** **08 54 13.9 -0.7**
comp=Z,4.8nm,0.7s,baz=39,slow=5.8,SNR=5.8
NV11 Mina Array Sit 73.83 54 *e*P **P** **08 54 03.7 +1.6**
comp=Z,18nm,1.5s
AKASG Malin Array Be 74.25 323 P **P** **08 54 03.8 -0.3**
comp=Z,8.6nm,0.6s,baz=44,slow=6.0,SNR=30
AKASG pP **sP** **08 54 15.9 -1.3**
comp=Z,5.2nm,0.6s,baz=45,slow=6.1,SNR=7.6
AKASG Malin Array Be 74.25 323 P **P** **08 54 03.8 -0.3**
AKASG *PP **sP** **08 54 16.0 -1.3**
AKASG pmax pmax

comp=Z,12nm,0.6s
AKASG pmax pmax
AKBB Malin Array Si 74.25 323 *e*P **P 08 54 03.8 -0.3**
comp=Z,5.0nm,0.6s
AKBB *e**PP **sP 08 54 16.7 -0.6**
AKBB pmax pmax
comp=Z,20nm,0.9s
AKBB Malin Array Si 74.25 323 *e*P **P 08 54 03.8 -0.3**
comp=Z,20nm,0.9s
AKBB *ep*P **sP 08 54 16.6 -0.6**
KIEV Kiev 74.27 323 ⇑*i*P **P 08 54 03.7 -0.4**
KIEV pmax pmax
comp=Z,24nm,1.0s
KIEV Kiev 74.27 323 *e*P **P 08 54 03.8 -0.4**
comp=Z,20nm,0.9s
AK11 Malin Array Si 74.30 323 *e*P **P 08 54 04.0 -0.3**
AK11 *ep*P **sP 08 54 16.6 -0.9**
YMR Madison River 74.44 45 *e*P **P 08 54 07.5 +1.9**
comp=Z,60nm,0.4s
YFT Old Faithful 74.64 45 *e*P **P 08 54 09.9 +3.1**
comp=Z,8.9nm,0.9s
H17A Grant Village 74.82 45 *e*P **P 08 54 10.9 +3.0**
comp=Z,14nm,0.8s
IMW Indian Meadow 74.93 46 *e*P **P 08 54 10.4 +1.9**
comp=Z,10nm,0.9s
FLWY Flagg Ranch 74.95 46 *e*P **P 08 54 11.0 +2.5**
comp=Z,30nm,1.5s
RLMT Red Lodge 75.10 44 *e*P **P 08 54 11.1 +1.7**
comp=Z,11nm,1.4s
MOOW Moose Ponds 75.13 46 *e*P **P 08 54 11.7 +2.1**
comp=Z,8.6nm,1.1s
HVU Hansel Valley 75.16 48 *e*P **P 08 54 11.3 +1.5**
HVU pmax pmax
comp=Z,7.0nm,1.0s
HVU Hansel Valley 75.16 48 *e*P **P 08 54 11.3 +1.5**
comp=Z,7.0nm,1.0s
ABL Mount Abel 75.22 57 *e*P **P 08 54 07.7 -2.6**
SNOW Snow King Moun 75.30 46 *e*P **P 08 54 12.5 +1.9**
comp=Z,5.5nm,0.8s
REDW Red Top Meadow 75.31 46 *e*P **P 08 54 12.5 +1.9**
comp=Z,14nm,1.2s
DAC Darwin (Calif) 75.46 55 *e*P **P 08 54 12.8 +1.2**
DAC pmax pmax
comp=Z,13nm,1.4s
DAC Darwin (Calif) 75.46 55 *e*P **P 08 54 12.8 +1.2**
comp=Z,13nm,1.4s
R11A Troy Canyon, C 75.51 53 *e*P **P 08 54 13.1 +1.2**
comp=Z,25nm,1.6s
BGU Big Grassy Mou 75.53 49 *e*P **P 08 54 13.6 +1.8**
comp=Z,3.4nm,0.9s
AHID Auburn Hatcher 75.53 47 *e*P **P 08 54 13.4 +1.5**
comp=Z,6.2nm,0.8s
DGMT Dagmar 75.61 39 *e*P **P 08 54 12.8 +0.7**
comp=Z,14nm,0.8s
LAO LASA Array 75.74 41 *e*P **P 08 54 14.4 +1.6**
comp=Z,84nm,2.0s
TPNV Topopah Spring 75.93 54 *e*P **P 08 54 15.2 +1.0**
TPNV pmax pmax
comp=Z,8.0nm,0.9s
TPNV Topopah Spring 75.93 54 *e*P **P 08 54 15.2 +1.0**
comp=Z,8.1nm,0.9s
DUG Dugway, Tooele 76.10 50 *e*P **P 08 54 16.7 +1.5**
DUG pmax pmax
comp=Z,7.0nm,0.8s
DUG Dugway, Tooele 76.10 50 *e*P **P 08 54 16.7 +1.5**
comp=Z,7.3nm,0.8s
TCUT Toone Canyon 76.38 48 *e*P **P 08 54 18.0 +1.2**
comp=Z,56nm,1.8s
BW06 Boulder Array 76.42 46 *e*P **P 08 54 17.7 +0.7**
PD31 Pinedale Array 76.42 46 *e*P **P 08 54 17.6 +0.6**
PDAR Pinedale Array 76.42 46 P **P 08 54 17.6 +0.6**
comp=Z,3.6nm,0.6s,baz=262,slow=2.0,SNR=23
PSUT Pine Spring 76.48 52 *e*P **P 08 54 19.1 +1.6**
comp=Z,10.0nm,1.2s
JLU Jordanelle 76.67 49 *e*P **P 08 54 19.6 +1.2**
comp=Z,6.9nm,1.1s
NLU North Lily Min 76.70 50 *e*P **P 08 54 20.2 +1.6**
comp=Z,5.2nm,0.9s
MPU Maple Canyon 76.93 49 *e*P **P 08 54 21.5 +1.7**
comp=Z,14nm,1.2s
BSD Bornholm Skovb 77.19 332 *i* P **P 08 54 20.9 +0.1**
comp=Z,16nm,0.9s
BSD Bornholm Skovb 77.19 332 *i* P **P 08 54 20.9 +0.1**
BSD pmax pmax
comp=Z,16nm0.9s
MSU Marysvale 77.53 51 *e*P **P 08 54 25.3 +2.0**
MSU Marysvale 77.53 51 *e*P **P 08 54 25.3 +2.0**
TMUT Trail Mountain 77.63 50 *e*P **P 08 54 25.6 +1.6**
comp=Z,17nm,1.6s
CRY Cary Ranch 77.64 57 *e*P **P 08 54 27.6 +3.8**
PFO Pinyon Flats O 77.80 57 *e*P **P 08 54 26.0 +1.2**
PFO pmax pmax
comp=Z,8.0nm,1.2s
PFO Pinyon Flats O 77.80 57 *e*P **P 08 54 26.0 +1.2**
comp=Z,8.2nm,1.2s
LCMT Little Creek M 77.80 53 *e*P **P 08 54 26.3 +1.6**
comp=Z,6.9nm,0.9s
P17A Butcher Ranch, 77.80 49 *e*P **P 08 54 26.5 +1.8**
comp=Z,29nm,1.4s
DANC Danby, Needles 77.88 56 *e*P **P 08 54 22.6 -2.5**
P18A Preston Nutter 78.00 49 *e*P **P 08 54 27.6 +1.6**
comp=Z,20nm,1.6s
KNB Kanab 78.06 52 *e*P **P 08 54 28.2 +2.0**
KNB pmax pmax
comp=Z,30nm,1.6s
KNB Kanab 78.06 52 *e*P **P 08 54 28.2 +2.0**
comp=Z,30nm,1.6s
SRU San Rafael Swe 78.16 50 *e*P **P 08 54 28.3 +1.5**
SRU pmax pmax
comp=Z,9.0nm,0.8s
SRU San Rafael Swe 78.16 50 *e*P **P 08 54 28.3 +1.5**
comp=Z,9.1nm,0.8s
BURAR Bucovina Array 78.28 322 ⇑*i*P **P 08 54 27.6 +0.4**
BURAR Bucovina Array 78.28 322 ⇑⇑P **P 08 54 27.6 +0.4**
ULM Lac du Bonnet 78.31 34 P **P 08 54 27.2 +0.1**
comp=Z,5.6nm,0.8s,baz=306,slow=6.1,SNR=9.4
ULM Lac du Bonnet 78.31 34 *e*P **P 08 54 27.5 +0.4**
ULM pmax pmax
comp=Z,35nm,1.9s
ULM Lac du Bonnet 78.31 34 *e*P **P 08 54 27.5 +0.4**
comp=Z,35nm,1.9s
CFR Carcaliu 78.48 319 ⇑*i*P **P 08 54 27.6 -0.6**
CFR Carcaliu 78.48 319 ⇑⇑P **P 08 54 27.6 -0.6**
W13A Hualapai Mount 78.57 54 *e*P **P 08 54 30.2 +1.1**
comp=Z,4.4nm,1.0s
RSSD Black Hills 78.59 42 *e*P **P 08 54 29.8 +0.7**
RSSD pmax pmax
comp=Z,6.0nm,0.8s
RSSD Black Hills 78.59 42 *e*P **P 08 54 29.8 +0.7**
comp=Z,5.5nm,0.8s
KOLS Kolonicke sedl 78.74 325 *e*P **P 08 54 30.2 +0.6**
KOLS *e* 08 54 41.5
KOLS Kolonicke sedl 78.74 325 *e*P **P 08 54 30.2 +0.6**
KOLS *ep*P **sP 08 54 41.5 -1.3**
VRI Vrincioaia 78.74 320 ⇑*i*P **P 08 54 30.2 +0.6**
VRI Vrincioaia 78.74 320 ⇑⇑P **P 08 54 30.2 +0.6**
PLOR Plostina 78.79 320 ⇑*i*P **P 08 54 29.3 -0.6**
PLOR Plostina 78.79 320 ⇑⇑P **P 08 54 29.3 -0.6**
TIRR Tirgusor 78.83 318 *e*P **P 08 54 30.4 +0.3**
TIRR *e**PP **sP 08 54 44.6 +1.2**
TIRR pmax pmax
comp=Z,32nm,1.3s
TIRR Tirgusor 78.83 318 *e*P **P 08 54 30.4 +0.3**
comp=Z,32nm,1.3s
TIRR *ep*P **sP 08 54 44.6 +1.2**
STHS Stebnicka Huta 78.86 325 *e*P **P 08 54 30.6 +0.4**
STHS pmax pmax
comp=Z,6.0nm,0.9s
STHS Stebnicka Huta 78.86 325 *e*P **P 08 54 30.6 +0.4**
OJC Ojcow 78.91 327 *e*P **P 08 54 31.2 +0.8**
OJC Ojcow 78.91 327 *e*P **P 08 54 31.3 +0.8**
OJC *e**PP **sP 08 54 43.8 0.0**
OJC pmax pmax
comp=Z,33nm,1.2s
OJC Ojcow 78.91 327 *e*P **P 08 54 31.3 +0.8**
comp=Z,32nm,1.2s
OJC *ep*P **sP 08 54 43.8 0.0**
BR101 Keskin Array S 79.04 312 *e*P **P 08 54 31.3 -0.3**
BRTR Keskin Array B 79.04 312 P **P 08 54 31.3 -0.3**
comp=Z,4.0nm,1.0s,baz=101,slow=4.0,SNR=8.0
BRTR pP **sP 08 54 43.7 -1.1**
comp=Z,1.4nm,0.5s,baz=90,slow=3.7,SNR=4.3
NIE Niedzica 79.28 326 *e*P **P 08 54 33.7 +1.2**
NIE Niedzica 79.28 326 *e*P **P 08 54 33.7 +1.2**
DOPR Dopca 79.34 321 ⇑*i*P **P 08 54 34.0 +1.1**
ISR Istrita 79.35 320 ⇑*i*P **P 08 54 33.9 +0.9**
ISR Istrita 79.35 320 ⇑P **P 08 54 33.9 +0.9**
MSAB Monastry St. A 79.39 318 ⇑*i*P **P 08 54 33.9 +0.8**
PV09 Paradox Valley 79.39 49 *e*P **P 08 54 35.1 +1.4**
BR231 Keskin MP Arra 79.47 313 *e*P **P 08 54 32.5 -1.3**
PV10 Paradox Valley 79.52 49 *e*P **P 08 54 36.0 +1.6**
PV05 Paradox Valley 79.68 50 *e*P **P 08 54 36.5 +1.3**
N23A Red Feather La 79.69 46 *e*P **P 08 54 36.5 +1.3**
comp=Z,9.9nm,0.9s
AGMN Agassiz Nation 79.73 35 *e*P **P 08 54 35.1 +0.2**
comp=Z,6.8nm,0.7s
LANS Liptovska Anna 79.84 326 *e*P **P 08 54 36.4 +0.8**
LANS Liptovska Anna 79.84 326 *e*P **P 08 54 36.4 +0.8**
Y14A Wickenburg 79.86 55 *e*P **P 08 54 37.1 +1.1**
comp=Z,23nm,0.8s
KECS Kecovo 79.88 325 *e*P **P 08 54 35.9 +0.1**
KECS pmax pmax
comp=Z,3.0nm,1.2s
KECS Kecovo 79.88 325 *e*P **P 08 54 35.9 +0.1**
VOIR 79.88 321 ⇑*i*P **P 08 54 36.7 +0.7**
VOIR 79.88 321 ⇑⇑P **P 08 54 36.7 +0.7**
WUAZ Wupatki 79.91 53 *e*P **P 08 54 38.0 +1.6**
comp=Z,11nm,1.0s
PV01 Paradox Valley 79.96 49 *e*P **P 08 54 37.9 +1.2**
113A Mohawk Valley, 80.09 56 *e*P **P 08 54 38.5 +1.3**
comp=Z,9.0nm,1.3s
ARR Arges 80.14 321 ⇓*i*P **P 08 54 37.5 +0.2**
MORC Moravsky Berou 80.21 327 *e*P **P 08 54 38.4 +0.8**
MORC *e**PP **sP 08 54 51.0 +0.1**
MORC pmax pmax
comp=Z,40nm,1.0s
MORC Moravsky Berou 80.21 327 *e*P **P 08 54 38.4 +0.8**
comp=Z,40nm,1.0s
MORC *ep*P **sP 08 54 51.0 +0.1**
SMCO Snowmass 80.23 48 *e*P **P 08 54 39.8 +1.5**
comp=Z,18nm,1.8s
DPC Dobruska-Polom 80.29 328 *e*P **P 08 54 38.7 +0.7**
DPC *ep*P **sP 08 54 51.0 -0.3**
DPC Dobruska-Polom 80.29 328 *e*P **P 08 54 38.7 +0.7**
DPC *e* 08 54 51.0
PSZ Piszkesteto 80.56 325 *e*P **P 08 54 40.5 +0.9**
PSZ pmax pmax
comp=Z,16nm,1.0s
PSZ Piszkesteto 80.56 325 *e*P **P 08 54 40.5 +0.9**
comp=Z,16nm,1.0s
X16A Lo Mia Camp, P 80.56 54 *e*P **P 08 54 42.0 +2.0**
comp=Z,8.2nm,1.0s
ISCO Idaho Springs 80.60 46 *e*P **P 08 54 41.9 +1.6**
ISCO pmax pmax
comp=Z,8.0nm,1.4s
ISCO Idaho Springs 80.60 46 *e*P **P 08 54 41.9 +1.6**
comp=Z,8.0nm,1.4s
MVCO Mesa Verde 80.60 50 *e*P **P 08 54 41.7 +1.5**
comp=Z,28nm,1.8s
VYHS Vyhne 80.61 326 *e*P **P 08 54 40.3 +0.6**
VYHS pmax pmax
comp=Z,6.0nm,1.0s
VYHS Vyhne 80.61 326 *e*P **P 08 54 40.3 +0.6**
VYHS *ep*P **sP 08 54 53.3 +0.3**
BRG Berggiesshubel 80.85 330 *e*P **P 08 54 41.3 +0.4**
comp=Z,7.1nm,1.0s
BRG *i* 08 54 53.1
comp=Z,14nm,1.4s
BRG Berggiesshubel 80.85 330 *e*P **P 08 54 41.3 +0.4**
BRG *i* 08 54 53.1
BRG pmax pmax
comp=Z,7.0nm,1.0s
BRG pmax pmax
comp=Z,15nm,1.4s
BRG Berggiesshubel 80.85 330 *e* **P 08 54 41.4 +0.4**
comp=Z,7.1nm,1.0s
CLL Collm 80.88 331 ⇑*i*P **P 08 54 40.8 -0.3**
comp=Z,16nm,1.2s
CLL *i* 08 54 53.6
CLL *e* 08 54 59.0
CLL Collm 80.88 331 ⇑*i*P **P 08 54 40.8 -0.3**
CLL *i* 08 54 53.6
CLL pmax pmax
comp=Z,16nm,1.2s
CLL Collm 80.88 331 *e*P **P 08 54 41.2 +0.1**
comp=Z,18nm,1.1s
CLL *ep*P **sP 08 54 54.4 0.0**
VRAC Vranov 80.97 328 ⇓*i*P **P 08 54 41.2 -0.4**
VRAC Vranov 80.97 328 ⇓P **P 08 54 41.2 -0.4**
GZR Gura Zlata 81.04 322 ⇑*i*P **P 08 54 42.0 -0.2**
GZR Gura Zlata 81.04 322 ⇑P **P 08 54 42.0 -0.2**
RAYN Ar Rayn 81.24 293 *e*P **P 08 54 43.3 -0.2**
comp=Z,8.9nm,0.9s
S22A 4UR Ranch, Cre 81.25 49 *e*P **P 08 54 45.6 +1.9**
comp=Z,5.5nm,1.0s
BZS Buzias 81.44 323 ⇑*i*P **P 08 54 43.7 -0.5**
BZS Buzias 81.44 323 ⇑P **P 08 54 43.7 -0.5**
MDVR Moldovita 82.00 322 ⇓*i*P **P 08 54 46.6 -0.6**
SDCO Great Sand Dun 82.04 48 *e*P **P 08 54 49.4 +1.5**
comp=Z,4.3nm,1.0s
TUC Tucson 82.33 55 *e*P **P 08 54 50.2 +1.0**
TUC pmax pmax
comp=Z,5.0nm,1.0s
TUC Tucson 82.33 55 *e*P **P 08 54 50.2 +1.0**
comp=Z,4.6nm,1.0s
KHC Kasperske Hory 82.36 329 *e*P **P 08 54 49.3 +0.3**
KHC *ep*P **sP 08 55 01.4 -0.9**
KHC Kasperske Hory 82.36 329 *e*P **P 08 54 49.6 +0.6**
KHC *e**PP **sP 08 55 01.8 -0.5**
KHC pmax pmax
comp=Z,8.0nm,1.5s
KHC Kasperske Hory 82.36 329 *e*P **P 08 54 49.5 +0.6**
comp=Z,8.2nm,1.5s
KHC *ep*P **sP 08 55 01.8 -0.5**
GERES GERESS Array B 82.54 329 P **P 08 54 49.8 -0.3**
comp=Z,1.4nm,0.5s,baz=23,slow=4.4,SNR=5.8
GEA0 GERESS Array S 82.54 329 *e*P **P 08 54 49.9 -0.1**
ECSD EROS Data Cent 82.69 39 *e*P **P 08 54 51.3 +0.5**
comp=Z,10nm,0.8s
VTS Vitosha 82.84 320 ⇓*i*P **P 08 54 52.8 +1.0**
VTS Vitosha 82.84 320 *e*P **P 08 54 52.5 +0.7**
VTS *e**PP **sP 08 55 05.4 +0.3**
VTS pmax pmax
comp=Z,11nm,0.8s
VTS Vitosha 82.84 320 *e*P **P 08 54 52.5 +0.7**
comp=Z,11nm,0.8s
VTS *ep*P **sP 08 55 05.3 +0.3**
T25A Trinidad 83.09 48 *e*P **P 08 54 54.7 +1.5**
comp=Z,7.7nm,0.8s
LAZ Ladron 83.28 51 *e*P **P 08 54 55.9 +1.6**
ANMO Albuquerque 83.34 51 ⇓*i*P **P 08 54 56.1 +1.6**
ANMO pmax pmax
comp=Z,17nm,1.7s
ANMO Albuquerque 83.34 51 *e*P **P 08 54 56.2 +1.7**
comp=Z,15nm,1.3s
319A Douglas 83.91 55 *e*P **P 08 54 58.8 +1.3**
comp=Z,13nm,1.0s
SCHQ Schefferville 84.30 17 P **P 08 54 59.4 +0.5**
comp=Z,6.4nm,0.8s,baz=299,slow=6.9,SNR=5.4
HSIG 84.34 58 *e*P **P 08 55 00.6 +1.1**
comp=Z,9.8nm,1.1s
BFO Black Forest 85.07 331 *i* P **P 08 55 03.1 +0.2**
BFO Black Forest 85.07 331 *e*P **P 08 55 02.8 -0.1**
comp=Z,14nm,1.1s
KSU1 Kansas State U 86.07 42 *e*P **P 08 55 08.3 +0.3**
comp=Z,14nm,0.8s
MNTX Cornudas Mount 86.18 52 *e*P **P 08 55 09.8 +1.0**
comp=Z,4.9nm,1.0s
V34A Guthrie 87.95 45 *e*P **P 08 55 18.2 +1.0**
comp=Z,13nm,0.9s
LTX Lajitas 88.87 53 *e*P **P 08 55 22.0 +0.2**
LTX Lajitas 88.87 53 *e*P **P 08 55 22.0 +0.2**
TX31 Lajitas Ar. Si 88.87 53 *e*P **P 08 55 22.7 +0.9**
TXAR Lajitas Array 88.87 53 P **P 08 55 22.0 +0.2**
comp=Z,3.1nm,0.7s,baz=305,slow=3.3,SNR=14
HPIG 89.21 56 *e*P **P 08 55 24.7 +1.1**
comp=Z,5.2nm,0.8s
LMQ La Malbaie 90.05 22 *e*P **P 08 55 27.6 +0.7**
comp=Z,21nm,1.3s
JCT Junction City 90.47 50 *e*P **P 08 55 29.8 +0.6**
JCT pmax pmax
comp=Z,5.0nm,0.8s
JCT Junction City 90.47 50 *e*P **P 08 55 29.8 +0.6**
comp=Z,5.1nm,0.8s
WHTX Lake Whitney, 90.78 47 *e*P **P 08 55 31.7 +1.2**
comp=Z,23nm,0.9s
MIAR Mount Ida 91.08 43 *e*P **P 08 55 32.6 +0.7**
MIAR pmax pmax
comp=Z,13nm,0.8s
MIAR Mount Ida 91.08 43 *e*P **P 08 55 32.5 +0.7**
comp=Z,13nm,0.8s
X201 Greenbrier Sit 91.17 42 *e*P **P 08 55 32.5 +0.3**
comp=Z,9.8nm,0.8s
WHAR Wooly Hollow 91.21 42 *e*P **P 08 55 33.0 +0.5**
comp=Z,13nm,0.8s
ZAIG Zacatecas 94.11 57 *e*P **P 08 55 48.1 +1.7**
comp=Z,8.2nm,1.0s
SWET Sewanee 94.50 38 *e*P **P 08 55 47.7 0.0**
comp=Z,2.6nm,1.0s
VNDA Vanda 115.69 175 PKP **PKPdf 09 01 07.5 -0.6**
comp=Z,1.2nm,0.7s,baz=332,slow=3.8,SNR=7.2
TOA1 Torodi Ar. Sit 117.44 316 *e*PKPdf **PKPdf 09 01 12.4 -1.0**
TOA1 *e*PP **PP 09 02 23.2 -1.0**
TOA0 Torodi Ar. Sit 117.44 316 *e*PKPdf **PKPdf 09 01 12.2 -1.1**
TORD Torodi Ar. Bea 117.44 316 PKP **PKPdf 09 01 12.4 -1.0**
comp=Z,0.7nm,0.6s,baz=33,slow=1.1,SNR=5.8
TORD PP **PP 09 02 23.2 -1.0**
comp=Z,0.9nm,1.0s,baz=44,slow=5.5,SNR=4.0
TORD PKKPbc **PKKPbc 09 11 36.7 +1.8**
comp=Z,0.9nm,0.9s,baz=214,slow=3.3,SNR=3.7
TORD PKKP **PKKPdf 09 12 01.1 -0.6**
comp=Z,0.6nm,0.9s,baz=215,slow=7.0,SNR=3.1
MAW Mawson 120.68 206 PKP **PKPdf 09 01 18.0 +0.2**
comp=Z,1.7nm,0.7s,baz=20,slow=8.8,SNR=4.0
MAW Mawson 120.68 206 *e*PKIKP **PKPdf 09 01 18.3 +0.5**
MAW Mawson 120.68 206 *e*PKPdf **PKPdf 09 01 18.3 +0.5**
SDV Santo Domingo 124.09 41 *e*PKPdf **PKPdf 09 01 26.1 -0.3**
DBIC Dimbokro 126.35 318 PKP **PKPdf 09 01 30.0 -0.5**
comp=Z,2.3nm,0.6s,baz=6.5,slow=1.7,SNR=6.3
QSPA South Pole Qui 127.57 180 *e*PKPdf **PKPdf 09 01 31.1 -0.1**
SNAA Sanae 141.79 197 PKP PKPpre 09 01 51.5
VNA2 Neumayer--Watz 143.35 196 PKP PKPbc 09 01 57.4 -0.2
baz=104,slow=2.0
VNA3 Neumayer Olymp 143.58 195 PKP PKPab 09 01 57.7 +0.4
VNA1 Neumayer--Stat 143.75 196 PKP PKPbc 09 01 59.9 +1.3
LPAZ La Paz 145.46 60 PKPbc **PKPdf 09 02 06.5 +0.1**
comp=Z,20nm,0.8s,baz=347,slow=4.5,SNR=41
PB11 IPOC Station P 146.69 66 *e*PKPdf **PKPbc 09 02 08.9 -0.6**
PB01 IPOC Station P 147.62 68 *e*PKPdf **PKPdf 09 02 10.7 +1.5**
LCO Las Campanas 150.95 82 *e*PKPbc **PKPbc 09 02 21.0 +0.6**
PLCA Paso Flores 154.24 107 PKP **PKPdf 09 02 18.1 -0.7**
comp=Z,4.0nm,1.1s,baz=259,slow=5.2,SNR=2.9
PLCA PKPab **PKPab 09 02 42.0 +0.9**
comp=Z,4.8nm,0.8s,baz=256,slow=3.0,SNR=9.7
BDFB Brasilia 155.98 26 PKPab **PKPab 09 02 50.0 +1.0**
comp=Z,2.7nm,0.6s,baz=9.9,slow=6.9,SNR=3.8
BDFB Brasilia 155.98 26 PKP2 **PKPab 09 02 50.0 +1.0**
BDFB pmax pmax
comp=Z,3.0nm,0.6s
CPUP Villa Florida 159.62 62 PKPab **PKPab 09 03 04.1 -0.4**
comp=Z,6.5nm,1.1s,baz=326,slow=3.7,SNR=3.9

*ISCJB **04** 08:49:40.7±0.5, 1°.87N±0°.06×127°.52E±0°.09, h112km, mb4.6/10, Error ellipse: s-maj=12.6km s-min=8.7km az=10.1*
*NEIC **04** 08:49:45.0±0.8, 1°.80N×127°.49E, h139km±7km, mb4.9/5, Error ellipse: s-maj=15.4km s-min=7.5km az=71.0*
*IDC **04** 08:49:46.1±7.2, 1°.77N×127°.40E, h147km±63km, mb4.1/6, mb1 4.1/8, mb1mx3.6/44, mbtmp4.5/8, Error ellipse: s-maj=57.6km s-min=15.3km az=59.0*

ISC 04 08:49:42.6±0.7, 1°.84N±0°.09×127°.6E±0°.1, h112km, n19, σ0s95/20, mb4.6/10, Halmahera

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
TNTI	**Ternate**	**1.08**	**190**	*e*Pn		Pn	08 50 08.8	+4.0
TNTI				*e*Sn		Sn	08 50 27.6	+6.0
KAPI	**Kappang**	**10.36**	**229**	P		**Pn**	**08 52 10.0**	**+1.9**
	3.2nm,0.3s,baz=10,slow=7.9,SNR=7.3							
KAPI				S		**Sn**	**08 54 00.8**	**-1.4**
	2.2nm,0.3s,baz=98,slow=22,SNR=6.5							
KAPI	**Kappang**	**10.36**	**229**	*e*Pn		**Pn**	**08 52 09.5**	**+1.5**
KAPI				*e*Sn		**Sn**	**08 54 02.1**	**-0.2**
FITZ	**Fitzroy Crossi**	**19.91**	**185**	P		**P**	**08 54 05.2**	**-0.2**
	0.7nm,0.3s,baz=13,slow=10,SNR=5.7							
FITZ	**Fitzroy Crossi**	**19.91**	**185**	*e*P		**P**	**08 54 05.2**	**-0.2**
	3.6nm,0.4s							
WRAB	**Tennant Creek**	**22.64**	**163**	*e*P		**P**	**08 54 34.1**	**-0.3**
WRA	**Warramunga Arr**	**22.65**	**163**	P		**P**	**08 54 34.2**	**-0.3**
	12nm,0.5s,baz=344,slow=11,SNR=35							
ASAR	**Alice Springs**	**26.09**	**167**	P		**P**	**08 55 05.8**	**-0.2**
	3.3nm,0.3s,baz=344,slow=7.5,SNR=30							
CTAO	**Charters Tower**	**28.48**	**141**	*e*P		**P**	**08 55 27.6**	**+0.2**
	20nm,1.1s							
ENH	**Enshi**	**33.07**	**331**	*e*P		**P**	**08 56 07.8**	**+0.1**
	21nm,0.8s							
BBOO	**Buckleboo**	**35.39**	**168**	*e*P		**P**	**08 56 27.4**	**-0.3**
	8.7nm,0.3s							
MAJO	**Matsushiro**	**35.91**	**15**	*e*P		**P**	**08 56 33.1**	**+1.0**
MAT	**Matsushiro**	**35.91**	**15**	P		**P**	**08 56 33.0**	**+0.9**
STKA	**Stephens Creek**	**36.08**	**159**	P		**P**	**08 56 34.0**	**+0.4**
	4.1nm,0.4s,baz=345,slow=6.6,SNR=12							
MKAR	**Makanchi Array**	**59.57**	**326**	P		**P**	**08 59 34.1**	**-0.4**
	1.8nm,0.5s,baz=114,slow=7.5,SNR=7.6							
KURBB	**Kurchatov Arra**	**63.77**	**328**	P		**P**	**09 00 01.8**	**-0.8**
	2.6nm,0.6s,baz=129,slow=6.0,SNR=7.6							
KURK	**Kurchatov**	**63.77**	**328**	*e*P		**P**	**09 00 01.2**	**-1.4**
	6.7nm,0.4s							
VNDA	**Vanda**	**81.46**	**173**	P		**P**	**09 01 46.3**	**-0.5**
	1.8nm,0.6s,baz=316,slow=6.4,SNR=13							
TORD	**Torodi Ar. Bea**	**124.28**	**287**	PKP		**PKPdf**	**09 08 27.9**	**-1.4**
	0.4nm,0.4s,baz=100,slow=1.8,SNR=6.4							

*NIED **04** 08:50:00, 37°.80N×142°.50E, h32km, Mw4.4 Best double couple: M0 4.25000×10^15 NP1:φ,δ 260.00000°, 65.00000°, λ 71.00000°. NP2:φ,δ 105.00000°, 26.00000°, λ 108.00000°.*
*JMA **04** 08:50:08.3±0.2, 37°.84N×142°.54E, h43km, M4.3*
JMA Felt II J1.
*IDC **04** 08:50:09.8±0.5, 37°.77N×142°.47E, h43km±3km, mb4.0/19, mb1 4.3/24, mb1mx4.1/49, mbtmp4.3/24, ML3.5/3, MS3.5/6, Ms1 3.5/6, ms1mx3.3/39, Error ellipse: s-maj=12.9km s-min=10.8km az=109.0*
*NEIC **04** 08:50:09.0±0.3, 37°.81N×142°.53E, h35km, mb4.4/9, Error ellipse: s-maj=7.9km s-min=5.7km az=127.0*

ISC 04 08:50:07.7±0.5, 37°.73N±0°.04×142°.63E±0°.05, h30km±2km, h29km:pP-P, n72, σ1s71/95, mb4.4/27, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**1.24**	**306**	P		**Pn**	**08 50 28.2**	**-0.8**
JIO				S		**Sn**	**08 50 41.8**	**-2.9**
JFK	**Kawauchi**	**1.44**	**256**	P		**Pn**	**08 50 31.6**	**-0.2**
JFK				*e*S		**Sn**	**08 50 48.2**	**-1.5**
JMM	**Marumori**	**1.46**	**276**	P		**Pn**	**08 50 31.8**	**-0.2**
JMM				S		**Sn**	**08 50 48.4**	**-1.7**
JMK	**Ichinoseki**	**1.65**	**318**	P		**Pn**	**08 50 33.8**	**-0.8**
JMK				*e*S		**Sn**	**08 50 52.2**	**-2.5**
JOU	**Okura**	**1.68**	**293**	P		**Pn**	**08 50 35.1**	**+0.1**
JFT	**Otama**	**1.83**	**264**	P		**Pn**	**08 50 38.2**	**+1.1**
JFT				S		**Sn**	**08 50 59.7**	**+0.4**
JOM	**Ohasama**	**2.03**	**329**	P		**Pn**	**08 50 39.1**	**-0.8**
JOM				*e*S		**Sn**	**08 51 02.1**	**-2.1**
JYS	**Shirataka**	**2.08**	**284**	P		**Pn**	**08 50 41.2**	**+0.6**
JYS				S		**Sn**	**08 51 04.9**	**-0.6**
JYK	**Kaneyama**	**2.14**	**304**	P		**Pn**	**08 50 41.2**	**-0.2**
JRG	**Rokugo**	**2.28**	**317**	P		**Pn**	**08 50 42.8**	**-0.5**
JRG				S		**Sn**	**08 51 09.5**	**-0.9**
JANG	**Nango**	**2.78**	**342**	P		**Pn**	**08 50 48.7**	**-1.4**
JAG	**Ashikaga**	**2.85**	**244**	P		**Pn**	**08 50 52.4**	**+1.2**
JAG				S		**Sn**	**08 51 25.2**	**+0.7**
MJAR	**Matsushiro Arr**	**3.72**	**253**	P		**Pn**	**08 51 04.7**	**+1.5**
	8.6nm,0.3s,baz=52,slow=27,SNR=27							
MJAR				LR		LR	08 52 47.6	
	comp=Z,787nm,19.5s,baz=95,slow=44							
MAJO	**Matsushiro**	**3.73**	**253**	*e*Pn		**Pn**	**08 51 01.4**	**-1.8**
MAJO				*e*Sn		**Sn**	**08 51 43.8**	**-2.3**
MAT	**Matsushiro**	**3.73**	**253**	P		**Pn**	**08 51 04.8**	**+1.6**
MAT				S		**Sb**	**08 51 52.3**	**-5.1**
ERM	**Erimo**	**4.30**	**5**	*e*Pn		**Pn**	**08 51 09.8**	**-1.2**
ERM				*e*Sn		**Sn**	**08 51 56.7**	**-3.5**
JHJ2	**Mitsune**	**5.15**	**207**	*e*Pn		**Pn**	**08 51 23.4**	**+0.7**
JHJ2				*e*Sn		**Sn**	**08 52 20.3**	**-0.8**
JHJ	**Hachijo jima 2**	**5.15**	**208**	P		**Pn**	**08 51 23.5**	**+0.7**
	135nm,0.3s,baz=316,slow=15,SNR=16							
JHJ				S		**Sn**	**08 52 18.1**	**-3.2**
	164nm,0.3s,baz=54,slow=24,SNR=8.5							
JHJ				LR		LR	08 53 35.8	
	comp=Z,495nm,18.4s,baz=108,slow=40							
ASAJ	**Asahikawa**	**6.38**	**360**	*e*Pn		**Pn**	**08 51 38.2**	**-1.4**
YSS	**Yuzh-Sakhalins**	**9.22**	**1**	*e*Pn		**Pn**	**08 52 17.9**	**-0.7**

	62nm,0.6s						
YSS				*e*Sn	Sn	08 53 55.7	-5.4
USRK	Ussuriysk Ar.	10.31	312	P	Pn	08 52 34.3	+0.8
	1.5nm,0.3s,baz=112,slow=13,SNR=19						
USRK				LR	LR	08 55 45.0	
	comp=Z,156nm,19.0s,baz=113,slow=33						
CBIJ	Chichi jima	10.61	182	*e*Pn	Pn	08 52 35.6	-2.0
	31nm,0.4s						
CBIJ				*e*Sn	Sn	08 54 27.7	-7.8
JCJ	Chichijima	10.61	182	P	Pn	08 52 36.2	-1.5
	25nm,0.3s,baz=290,slow=23,SNR=21						
JCJ				S	Sn	08 54 26.9	-8.5
	9.2nm,0.3s,baz=319,slow=19,SNR=4.6						
JNU	Nakatsue	10.63	248	LR	LR	08 57 20.6	
	comp=Z,283nm,19.6s,baz=122,slow=41						
KSRS	Korea Array	11.67	273	P	Pn	08 52 55.3	+3.2
	0.3nm,0.3s,baz=87,slow=13,SNR=10						
KSRS				LR	LR	08 57 02.2	
	comp=Z,215nm,18.2s,baz=75,slow=36						
KSAR	Wonju Array Be	11.70	273	P	Pn	08 52 55.3	+2.7
KLR	Kul'dur	13.93	329	P	Pn	08 53 21.2	-1.7
	0.4nm,0.3s,baz=131,slow=12,SNR=11						
KLR				LR	LR	08 58 46.9	
	comp=Z,352nm,19.1s,baz=116,slow=37						
PETK	Petropavlovsk-	18.60	29	P	P	08 54 22.3	-0.1
	baz=197,slow=13,SNR=3.0						
MA2	Magadan	22.48	11	P	P	08 55 04.5	+0.2
	16nm,0.8s,baz=211,slow=8.3,SNR=22						
MA2	Magadan	22.48	11	*e*P	P	08 55 04.3	-0.1
SEY	Seymchan	25.93	10	P	P	08 55 38.3	+1.4
	8.4nm,0.6s,baz=191,slow=6.9,SNR=28						
H11N2	WAKE ISLAND Hy	27.70	124	T	T	09 25 04.1	
	baz=311,slow=75						
H11N1	WAKE ISLAND Hy	27.71	124	T	T	09 25 06.3	
	baz=311						
H11N3	WAKE ISLAND Hy	27.72	124	T	T	09 25 05.8	
	baz=311,slow=75						
SONM	Songino Array	28.21	303	P	P	08 55 58.8	+1.0
	1.0nm,0.6s,baz=104,slow=6.1,SNR=3.8						
H11S1	WAKE ISLAND Hy	28.45	126	T	T	09 26 07.3	
	baz=317,slow=76,SNR=38						
H11S3	WAKE ISLAND Hy	28.45	126	T	T	09 26 06.3	
	baz=317,slow=76,SNR=20						
H11S2	WAKE ISLAND Hy	28.47	126	T	T	09 26 12.4	
	baz=317,slow=76,SNR=45						
ZALV	Zalesovo Beam	42.17	312	P	P	08 57 57.1	-0.2
	1.5nm,0.5s,baz=76,slow=6.3,SNR=7.0						
ZALV				PcP	PcP	08 59 51.4	+0.2
	2.7nm,0.6s,baz=94,slow=2.6,SNR=6.0						
CMAR	Chiang Mai Arr	42.61	256	PcP	PcP	08 59 53.9	+0.6
	0.7nm,0.3s,baz=29,slow=2.1,SNR=4.5						
KDAK	Kodiak Island	45.94	42	P	P	08 58 43.2	+16
	11nm,0.6s,baz=236,slow=4.7,SNR=6.4						
KURK	Kurchatov	46.27	308	*e*P	P	08 58 29.4	-0.8
KURK				pP	sP	08 58 41.6	-1.0
KURBB	Kurchatov Arra	46.34	308	P	P	08 58 30.4	-0.4
	4.9nm,0.6s,baz=81,slow=8.0,SNR=9.7						
KURBB				pP	sP	08 58 41.6	-1.6
	13nm,0.7s,baz=82,slow=7.9,SNR=19						
ILAR	Eielson Array	48.39	33	P	P	08 58 46.9	+0.4
	2.4nm,0.6s,baz=263,slow=5.9,SNR=38						
ILAR				pP	sP	08 59 00.3	+1.3
	1.6nm,0.7s,baz=268,slow=6.5,SNR=6.8						
ILAR				PcP	PcP	09 00 12.4	-0.1
	0.5nm,0.6s,baz=267,slow=4.0,SNR=3.2						
TKM2	Tokmak 2	50.15	298	*e*P	P	08 59 03.9	+3.3
	1.7nm,0.5s						
BVAR	Borovoye Array	50.82	312	P	P	08 59 04.6	-0.6
	0.0nm,100.0s,baz=65,slow=7.3,SNR=4.4						
BVAR				pP	pP	08 59 15.7	+1.6
	2.1nm,0.5s,baz=92,slow=6.0,SNR=6.0						
BVAR				PcP	PcP	09 00 22.2	+0.5
	2.2nm,0.6s,baz=90,slow=4.4,SNR=4.7						
INK	Inuvik	53.33	27	P	P	08 59 24.4	+0.9
	0.9nm,0.5s,baz=301,slow=8.1,SNR=13						
DLBC	Dease Lake	57.48	39	*e*P	P	08 59 54.9	+1.2
	2.6nm,0.5s						
WRAB	Tennant Creek	57.88	189	*e*P	P	08 59 57.4	+0.6
	4.7nm,0.7s						
WRA	Warramunga Arr	57.89	189	P	P	08 59 57.2	+0.3
	6.1nm,0.7s,baz=8.6,slow=7.3,SNR=34						
WRA				pP	sP	09 00 08.7	-0.8
	6.0nm,0.8s,baz=7.8,slow=7.2,SNR=10						
ABKAR	Akbulak array	58.23	310	*e*P	P	08 59 58.7	-0.3
	3.9nm,0.7s						
ASAR	Alice Springs	61.62	189	P	P	09 00 23.0	+0.5
	0.6nm,25.4s,baz=12,slow=6.7,SNR=20						
ASAR				pP	sP	09 00 35.8	+0.7
	baz=13,slow=6.6,SNR=9.7						
YKA	Yellowknife Ar	62.72	31	P	P	09 00 29.9	+0.5
	1.0nm,0.6s,baz=304,slow=6.7,SNR=20						
YKA				pP	sP	09 00 42.4	+0.4
	0.6nm,0.6s,baz=301,slow=6.3,SNR=8.8						
ARCES	ARCESS Array B	63.69	340	P	P	09 00 36.0	+0.2
	12nm,1.1s,baz=48,slow=9.8,SNR=4.0						
FINES	FINESS Array B	68.65	333	P	P	09 01 07.1	-0.5
	5.5nm,0.9s,baz=46,slow=8.2,SNR=8.9						
KBZ	Khabaz	71.18	311	P	P	09 01 24.1	+0.6
	3.9nm,0.9s,baz=333,slow=4.5,SNR=4.5						
FFC	Flin Flon	72.60	33	*e*P	P	09 01 32.9	+1.0
	3.4nm,0.7s						
FCC	Fort Churchill	72.94	27	*e*P	P	09 01 34.2	+0.4
	1.4nm,0.4s						
HLID	Hailey	73.19	48	*e*P	P	09 01 37.0	+1.2
	1.6nm,0.9s						
NVAR	Mina Array Bea	73.80	54	P	P	09 01 40.5	+0.9
	1.4nm,0.8s,baz=289,slow=5.6,SNR=9.7						
NVAR				pP	PcP	09 01 54.0	-1.1
	baz=272,slow=7.0,SNR=6.9						
NB2	NORSAR Subarra	73.92	338	P	P	09 01 39.3	-0.3
	comp=Z,6.7nm,0.9s,baz=38,slow=6.2						
NOA	NORSAR Array B	73.92	338	P	P	09 01 38.5	-1.2
	comp=Z,1.8nm,0.7s,baz=40,slow=5.8,SNR=6.3						
NOA				pP	sP	09 01 52.5	+0.1
	comp=Z,4.7nm,0.9s,baz=39,slow=5.8,SNR=8.6						
AKASG	Malin Array Be	74.33	323	P	P	09 01 41.9	-0.3
	comp=Z,4.5nm,100.0s,baz=44,slow=6.1,SNR=11						
AKASG				pP	sP	09 01 54.9	0.0
	comp=Z,2.0nm,0.5s,baz=44,slow=6.1,SNR=5.0						
DUG	Dugway, Tooele	76.17	50	*e*P	P	09 01 53.5	+0.4
	comp=Z,1.3nm,0.5s						
PDAR	Pinedale Array	76.49	46	P	P	09 01 55.5	+0.5
	comp=Z,1.2nm,0.6s,baz=271,slow=1.8,SNR=17						
PDAR				pP	sP	09 02 08.9	+1.1
	comp=Z,1.0nm,0.6s,baz=263,slow=1.6,SNR=7.0						
ULM	Lac du Bonnet	78.39	34	P	P	09 02 05.5	+0.3
	comp=Z,1.4nm,0.5s,baz=259,slow=7.3,SNR=4.2						
WUAZ	Wupatki	79.97	53	*e*P	P	09 02 16.1	+1.7
	comp=Z,1.0nm,0.5s						
TXAR	Lajitas Array	88.93	53	P	P	09 03 00.3	+0.7
	comp=Z,0.8nm,0.6s,baz=292,slow=3.4,SNR=7.5						
TORD	Torodi Ar. Bea	117.51	316	PKP	PKPdf	09 08 50.2	-0.9
	comp=Z,0.3nm,0.5s,baz=19,slow=1.8,SNR=3.2						
LPAZ	La Paz	145.51	60	PKPbc	PKPab	09 09 44.6	+0.2
	comp=Z,6.3nm,0.8s,baz=329,slow=2.8,SNR=15						
LCO	Las Campanas	150.96	82	*e*PKPdf	PKPdf	09 09 52.5	+0.2
LCO				*e*PKPbc	PKiKP	09 09 59.3	+0.7
PLCA	Paso Flores	154.21	107	PKPab	PKPab	09 10 20.8	+2.1
	baz=258,slow=3.9,SNR=4.6						

*IDC **04** 08:55:43.9±3.1, 37°.63N×141°.74E, h0km, mb3.4/2, mb1 3.5/3, mb1mx3.2/34, mbtmp3.2/3, ML3.0/1, Error ellipse: s-maj=68.4km s-min=40.6km az=55.0*
*ISCJB **04** 08:55:47.9±1.1, 37°.36N±0°.04×141°.49E±0°.07, h21km±6km, mb3.4/2, Error ellipse: s-maj=10.1km s-min=5.7km az=18.1*
*JMA **04** 08:55:50.4±0.1, 37°.39N×141°.33E, h30km±1km, M3.6*
JMA Felt II J1.

ISC 04 08:55:49.3±1.8, **37°.37N**±0°.04×**141°.39E**±0°.10, **h28**km±11km, **n13**, σ1ˢ02/22, **Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	Kawauchi	0.41	269	P	Pb	08 55 58.6	+0.3
JFK				S	Sb	08 56 03.9	-0.5
ONAJ	Iwakimizuishiy	0.55	240	P	Pb	08 56 00.7	+0.3
ONAJ				S	Sb	08 56 07.9	-0.1
JMM	Marumori	0.68	316	P	Pb	08 56 02.5	-0.2
JMM				S	Sb	08 56 11.0	-0.8
JFT	Otama	0.85	280	P	Pb	08 56 05.9	+0.4
JFT				S	Sn	08 56 16.7	-0.3
JHO	Hitachi	1.01	221	P	Pn	08 56 07.4	-0.1
JHO				S	Sn	08 56 19.1	-1.7
JIO	Ouri	1.08	358	P	Pn	08 56 08.6	+0.1
JIO				S	Sn	08 56 21.8	-0.7
JOU	Okura	1.15	330	P	Pn	08 56 10.3	+0.8
JOU				S	Sb	08 56 25.1	+0.1
JFY	Yanaizu	1.34	272	P	Pb	08 56 13.4	-0.4
JFY				S	Sb	08 56 30.8	+0.1
JYS	Shirataka	1.35	309	P	Pb	08 56 13.6	-0.3
JYS				S	Sb	08 56 30.8	0.0
MJAR	Matsushiro Arr	2.68	253	Pn	Pn	08 56 33.0	+2.4
	2.0nm,0.3s,baz=82,slow=16,SNR=6.6						
MAT	Matsushiro	2.68	253	S	Sb	08 57 06.7	-2.4
MKAR	Makanchi Array	43.92	302	P	P	09 03 53.0	-0.5
	0.3nm,0.6s,baz=88,slow=9.1,SNR=2.3						
WRA	Warramunga Arr	57.40	188	P	P	09 05 36.1	+0.9
	0.4nm,0.5s,baz=4.7,slow=7.4,SNR=5.7						

IDC 04 09:10:37.5±1.4, **45°.59N**×**150°.09E**, **h0**km, **mb3.6**/3, **mb1 3.8**/3, **mb1mx3.4**/34, **mbtmp3.6**/3, **MS4.1**/1, **Ms1 4.1**/1, **ms1mx2.9**/55, **Error ellipse: s-maj=47.0km s-min=33.2km az=108.0, Kuril Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MKAR	Makanchi Array	45.60	297	P	P	09 18 59.1	-0.2
	0.6nm,0.8s,baz=76,slow=7.7,SNR=5.1						
YKA	Yellowknife Ar	53.10	35	P	P	09 19 56.0	-0.2
	0.2nm,0.7s,baz=296,slow=7.0,SNR=4.5						
AKTO	Aktyubinsk	57.92	311	LR	LR	09 45 11.0	
	comp=Z,142nm,19.1s,slow=36						
WRA	Warramunga Arr	66.77	196	P	P	09 21 30.8	+0.1
	1.0nm,0.6s,baz=9.7,slow=7.2,SNR=10						

JMA 04 09:11:24.8±0.2, **38°.39N**×**143°.78E**, **h19**km, **M3.5**, **Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	Ofunato	1.79	293	P	Pn	09 11 55.5	+0.8
JIO	Ouri	1.91	273	P	Pn	09 11 57.2	+0.9
JIO				S	Sn	09 12 20.5	+0.7
JMK	Ichinoseki	2.08	286	*e*S	Sb	09 12 25.8	-1.6
JTH	Tanohata	2.15	317	P	Pn	09 12 00.6	+1.0
JOM	Ohasama	2.22	300	P	Pn	09 12 01.9	+1.3
JMM	Marumori	2.41	258	S	Sn	09 12 31.8	-0.4
JOU	Okura	2.45	270	P	Pn	09 12 05.2	+1.4
JOU				S	Sn	09 12 35.0	+1.8
JRG	Rokugo	2.65	293	P	Pn	09 12 08.5	+2.0
JRG				*e*S	Sb	09 12 41.2	-2.7
JYK	Kaneyama	2.73	282	P	Pn	09 12 09.5	+1.9
JYK				*e*S	Sn	09 12 42.6	+2.5
JFT	Otama	2.86	253	S	Sn	09 12 44.2	+0.9

*IDC **04** 09:24:54.9±1.0, 37°.39N×142°.21E, h0km, mb3.7/8, mb1 3.8/11, mb1mx3.6/50, mbtmp3.7/11, ML3.1/3, Error ellipse: s-maj=25.7km s-min=17.8km az=92.0*
*JMA **04** 09:24:58.0±0.3, 37°.44N×142°.10E, h33km±5km, M4.2*

ISC 04 09:24:56.9±3.6, **37°.43N**±0°.05×**142°.12E**±0°.07, **h14**km±22km, **n19**, σ1ˢ73/28, **mb3.7**/8, **Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	Kawauchi	1.00	267	P	Pb	09 25 15.6	-0.4
JFK				S	Sb	09 25 28.1	-0.9
ONAJ	Iwakimizuishiy	1.10	253	P	Pb	09 25 17.2	-0.6
ONAJ				S	Sb	09 25 30.6	-1.5
JMM	Marumori	1.14	293	P	Pn	09 25 17.6	-0.9
JMM				S	Sb	09 25 31.5	-1.7
JIO	Ouri	1.20	329	P	Pn	09 25 18.0	-1.2
JIO				S	Sb	09 25 32.0	-2.7
JFT	Otama	1.43	274	P	Pn	09 25 22.7	+0.3
JFT				S	Sn	09 25 40.5	-0.4
JHO	Hitachi	1.49	237	P	Pn	09 25 22.3	-0.9
JHO				S	Sn	09 25 39.5	-2.9
JOU	Okura	1.49	310	P	Pn	09 25 23.1	-0.2
JOU				S	Sn	09 25 41.2	-1.3
MJAR	Matsushiro Arr	3.26	255	Pn	Pn	09 25 49.0	+1.4
	2.6nm,0.3s,baz=78,slow=15,SNR=19						
MAT	Matsushiro	3.26	256	P	Pn	09 25 49.0	+1.4
MAT				S	Sn	09 26 30.2	+4.0
JHJ	Hachijo jima 2	4.70	205	Pn	Pn	09 26 08.0	+0.6
	19nm,0.3s,baz=36,slow=14,SNR=2.7						
JHJ				Sn	Sn	09 26 58.0	-3.8
	11nm,0.3s,baz=67,slow=18,SNR=3.2						
USRK	Ussuriysk Ar.	10.23	315	Pn	Pn	09 27 25.9	+2.6
	0.2nm,0.3s,baz=126,slow=14,SNR=4.0						
SEY	Seymchan	26.30	11	P	P	09 30 32.8	+1.0
	0.3nm,0.3s,baz=252,slow=20,SNR=2.8						
SONM	Songino Array	28.04	303	P	P	09 30 48.2	+0.4
	0.9nm,0.6s,baz=104,slow=9.9,SNR=6.5						
MKAR	Makanchi Array	44.39	302	P	P	09 33 07.4	+0.5
	0.8nm,0.6s,baz=88,slow=8.8,SNR=9.9						
KURBB	Kurchatov Arra	46.21	308	P	P	09 33 21.4	+0.1
	2.1nm,0.6s,baz=83,slow=7.9,SNR=15						
WRA	Warramunga Arr	57.53	189	P	P	09 34 45.2	-0.7
	0.3nm,0.5s,baz=7.2,slow=7.1,SNR=7.1						
ASAR	Alice Springs	61.26	189	P	P	09 35 12.1	+0.4
	0.3nm,0.8s,baz=19,slow=5.9,SNR=4.2						
YKA	Yellowknife Ar	63.19	30	P	P	09 35 24.6	+0.5
	0.1nm,0.5s,baz=298,slow=5.5,SNR=3.2						
FINES	FINESS Array B	68.73	332	P	P	09 35 59.9	0.0
	0.6nm,0.7s,baz=35,slow=10,SNR=5.1						

*IDC **04** 09:29:24.7±1.3, 37°.24N×141°.44E, h0km, mb3.4/5, mb1 3.6/7, mb1mx3.4/48, mbtmp3.5/7, ML3.6/2, MS4.2/1, Ms1 4.2/1, ms1mx2.7/54, Error ellipse: s-maj=28.1km s-min=24.1km az=109.0*
*ISCJB **04** 09:29:26.3±1.0, 37°.19N±0°.03×141°.49E±0°.06, h23km±6km, mb3.5/5, MS4.2/1, Error ellipse: s-maj=8.6km s-min=5.2km az=18.2*
*JMA **04** 09:29:29.1±0.1, 37°.22N×141°.30E, h35km±1km, M4.0*
JMA Felt II J1.

ISC 04 09:29:27.6±1.0, **37°.23N**±0°.04×**141°.39E**±0°.05, **h20**km±3km, **n25**, σ0ˢ87/32, **mb3.5**/5, **Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	Kawauchi	0.44	289	P	Pn	09 29 37.6	-1.2
JFK				S	Sb	09 29 43.4	+0.5
ONAJ	Iwakimizuishiy	0.49	256	P	Pb	09 29 38.3	+0.7
ONAJ				S	Sb	09 29 44.7	+0.3
JMM	Marumori	0.80	323	P	Pg	09 29 43.1	-0.2
JMM				S	Sb	09 29 53.1	-0.1
JFT	Otama	0.89	289	P	Pn	09 29 45.0	-0.1
JFT				S	Sg	09 29 56.0	-0.8
JHO	Hitachi	0.90	227	P	Pb	09 29 43.8	-0.8
JHO				S	Sb	09 29 54.4	-1.8
JSB	Shiboa	1.21	258	P	Pb	09 29 50.0	+0.2
JSB				*e*S	Sn	09 30 05.2	0.0
JIO	Ouri	1.23	358	P	Pb	09 29 49.8	-0.3
JIO				S	Sb	09 30 04.4	-1.1
JOU	Okura	1.28	333	P	Pb	09 29 51.1	+0.1
JOU				*e*S	Sn	09 30 07.0	+0.1
JFY	Yanaizu	1.36	278	P	Pb	09 29 51.9	-0.5
JFY				S	Sb	09 30 09.0	-0.3
MJAR	Matsushiro Arr	2.64	256	Pn	Pn	09 30 10.2	+1.0
	8.4nm,0.3s,baz=80,slow=16,SNR=51						
MJAR				Sn	Sb	09 30 44.5	-1.8
	6.4nm,0.3s,baz=82,slow=27,SNR=5.8						
MAT	Matsushiro	2.64	256	P	Pn	09 30 10.2	+1.0
MAT				S	Sn	09 30 42.4	+1.7
JHJ	Hachijo jima 2	4.30	198	Pn	Pn	09 30 33.0	+1.0
	9.8nm,0.3s,baz=328,slow=22,SNR=2.9						
JHJ				Sn	Sn	09 31 20.5	-1.1
	12nm,0.3s,baz=49,slow=20,SNR=3.9						
SONM	Songino Array	27.66	304	P	P	09 35 14.6	+0.4
	0.4nm,0.6s,baz=94,slow=9.1,SNR=2.3						
H11N2	WAKE ISLAND Hy	28.26	121	T	T	10 04 59.7	
	baz=314,slow=76,SNR=18						
H11N1	WAKE ISLAND Hy	28.27	121	T	T	10 05 00.1	
	baz=314,slow=76,SNR=15						
H11N3	WAKE ISLAND Hy	28.28	121	T	T	10 04 58.9	
	baz=314,slow=76,SNR=10						
H11S1	WAKE ISLAND Hy	28.98	123	T	T	10 05 53.2	
	baz=316,slow=76,SNR=11						
H11S3	WAKE ISLAND Hy	28.98	123	T	T	10 05 49.9	
	baz=316,slow=76,SNR=8.9						
H11S2	WAKE ISLAND Hy	28.99	123	T	T	10 05 54.7	
	baz=316,slow=76,SNR=10						
MKAR	Makanchi Array	44.00	302	P	P	09 37 33.3	-0.3
	0.1nm,0.3s,baz=91,slow=7.9,SNR=3.0						
MKAR				pP	sP	09 37 42.1	-0.1
	0.7nm,0.7s,baz=92,slow=10,SNR=6.5						
KURBB	Kurchatov Arra	45.87	308	P	P	09 37 48.2	-0.2
	0.5nm,0.5s,baz=82,slow=7.8,SNR=4.2						
KURBB				pP	sP	09 37 57.3	+0.3
	1.2nm,0.4s,baz=83,slow=8.1,SNR=8.1						
KAPI	Kappang	46.62	210	LR	LR	09 55 20.0	
	comp=Z,266nm,21.6s,baz=330,slow=33						
ILAR	Eielson Array	49.34	32	P	P	09 38 16.2	+1.1
	0.1nm,100.0s,baz=265,slow=7.2,SNR=4.1						
WRA	Warramunga Arr	57.25	188	P	P	09 39 13.2	-0.5
	0.3nm,0.6s,baz=6.7,slow=7.3,SNR=5.4						
GEYT	Alibeck	63.73	299	P	P	09 39 58.2	+0.2
	3.7nm,1.4s,baz=87,slow=7.8,SNR=4.6						

BEO 04 09:35:01.8±1.3, **44°.40N**×**18°.24E**, **h0**km, **M1.4**/4, **Northwestern Balkan Peninsula**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HAPS	Han Pijesak,Bl	0.60	121	*e*Pg	Pg	09 35 12.6	-0.7
TEKS	Tekeris	0.94	80	*e*Pg	Pg	09 35 18.0	-1.7
TEKS				*e*Sg	Sg	09 35 32.6	+0.8
BBLS	Lazići	0.99	122	*e*Pg	Pg	09 35 20.1	-0.7
BBLS				*e*Sg	Sg	09 35 34.2	+0.5
DIVS	Divibare	1.29	103	*e*Sg	Sg	09 35 42.4	-1.0
TRUS	Trudelj	1.56	96	*e*Pg	Pn	09 35 30.1	-0.8
TRUS				*e*Sg	Sn	09 35 51.0	-0.8

*NIED **04** 09:39:00, 37°.10N×142°.00E, h17km, Mw5.0 Best double couple: M0 4.20000×10¹⁶ NP1:φs 234.00000°, δ62.00000°, λ5.00000°. NP2:φs 142.00000°, δ85.00000°, λ152.00000°.*
*IDC **04** 09:39:06.8±0.4, 37°.00N×142°.16E, h0km, mb4.6/37, mb1 4.7/44, mb1mx4.7/60, mbtmp4.6/44, ML3.6/5, MS4.4/32, Ms1 4.4/32, ms1mx4.2/48, Error ellipse: s-maj=11.9km s-min=10.4km az=131.0*
*BJI **04** 09:39:07.8, 36°.94N×141°.93E, h12km, mb4.7/65, mB5.2/47, Ms5.0/74, Ms7 4.9/68*
*JMA **04** 09:39:08.1±0.3, 37°.07N×142°.02E, h29km±5km, M5.2*
JMA Felt I J1.
*ISCJB **04** 09:39:09.2±0.1, 37°.08N±0°.02×142°.04E±0°.02, h22km, mb4.9/232, MS4.6/48, Error ellipse: s-maj=3.5km s-min=2.0km az=173.6*
*MOS **04** 09:39:11.4±1.2, 37°.04N×142°.00E, h40km, mb5.1/99, MS4.6/25, Error ellipse: s-maj=6.5km s-min=4.9km az=105.4*
*GCMT **04** 09:39:12.9±0.2, 37°.12N×142°.11E, h18km±1km, MW5.1/108, Moment Tensor Solution. s45,c58; s108,c181; Duration: 0 Moment tensor: Scale 10^{16}Nm; M_{rr}1.26±.13; $M_{\theta\theta}$-4.55±.12; $M_{\phi\phi}$3.29±.10; $M_{r\theta}$0.44±.23; $M_{\theta\phi}$1.94±.09; $M_{\phi r}$-1.79±.29; Best double couple: $M_0$4.84700×10^{16} NP1:ϕ_s145.00000°, δ77.00000°, λ155.00000°. NP2:ϕ_s241.00000°, δ65.00000°, λ14.00000°. Principal axes: T 4.5770, Plg27.0000°, Azm101.0000°; N 0.5410, Plg62.0000°, Azm299.0000°; P -5.1180, Plg8.0000°, Azm195.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
*NEIC **04** 09:39:12.8±0.1, 37°.05N×142°.05E, h35km, mb5.1/157 Error ellipse: s-maj=4.6km s-min=2.9km az=157.0*

ISC 04 09:39:07.8±0.6, **36°.99N**±0°.03×**142°.11E**±0°.03, **h6**km±3km, **n700**, σ1ˢ71/718, **mb5.0**/232, **MS4.6**/50, **26C-18D**, **Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	Kawauchi	1.05	291	⇑P	Pg	09 39 25.3	-2.8
JFK				S	Sg	09 39 38.1	-3.6
ONAJ	Iwakimizuishiy	1.05	276	P	Pg	09 39 25.7	-2.4
ONAJ				*e*S	Sg	09 39 38.6	-3.1
JHO	Hitachi	1.29	253	P	Pg	09 39 29.5	-3.1
JMM	Marumori	1.36	310	P	Pn	09 39 30.0	-3.4
JMM				*e*S	Sg	09 39 45.5	-6.1
JFT	Otama	1.51	291	P	Pn	09 39 33.1	-2.3
JFT				*e*S	Sn	09 39 51.7	-3.7
JIO	Ouri	1.58	338	P	Pn	09 39 33.8	-2.5
JIO				*e*S	Sn	09 39 51.3	-5.8
JOU	Okura	1.79	321	P	Pn	09 39 37.4	-1.8
JOU				*e*S	Sn	09 39 58.0	-4.3
JFY	Yanaizu	1.96	283	P	Pn	09 39 39.9	-1.8
JFY				*e*S	Sn	09 40 03.9	-2.7
JYS	Shirataka	2.03	308	P	Pn	09 39 41.0	-1.6
JMK	Ichinoseki	2.08	341	P	Pn	09 39 42.3	-0.9
JMK				*e*S	Sn	09 40 04.7	-4.7
MJAR	Matsushiro Arr	3.16	263	Pn	Pn	09 39 57.5	-0.7
	20nm,0.3s,baz=88,slow=15,SNR=44						
MJAR				LR	LR	09 41 20.0	
	comp=Z,12µm,18.0s,baz=80,slow=42						
MAJO	Matsushiro	3.16	263	*d i*P	Pn	09 39 57.5	-0.7
MAJO	Matsushiro	3.16	263	*e*Pn	Pn	09 39 58.0	-0.2
MAT	Matsushiro	3.16	263	P	Pn	09 39 57.4	-0.8
MAT				S	Sn	09 40 34.2	-2.1
JHJ2	Mitsune	4.30	207	*e*Pn	Pn	09 40 15.1	+1.3
JHJ	Hachijo jima 2	4.31	207	Pn	Pn	09 40 14.1	+0.2
	305nm,0.3s,baz=67,slow=8.3,SNR=41						
JHJ				Sn	Sn	09 41 02.3	-2.2
	200nm,0.3s,baz=90,slow=20,SNR=4.2						
JHJ				LR	LR	09 42 17.9	
	comp=Z,6µm,19.1s,baz=38,slow=44						
INU	Inuyama	4.43	250	*e*Pn	Pn	09 40 16.5	+0.9
ERM	Erimo	5.08	9	*c e*P	Pn	09 40 22.5	-2.0
ERM				pmax	pmax		
	comp=Z,196nm,1.7s						
ERM	Erimo	5.08	9	*e*Pn	Pn	09 40 23.5	-1.0
YUK	Yuzh-Kuril'sk	7.59	21	*d i*P	Pn	09 40 55.3	-3.6
YUK				pmax	pmax		
	comp=Z,313nm,0.6s						
YUK				pmax	pmax		
	comp=E,88nm,0.3s						
YUK				pmax	pmax		
	comp=N,317nm,0.5s						
YUK				MLR	MLR		
	comp=Z,2µm,15.0s						
YUK				MLR	MLR		
	comp=N,2µm,11.0s						
SHO	Shikotan	7.75	26	*c i*P	Pn	09 40 58.0	-3.2
SHO				pmax	pmax		
	comp=Z,203nm,0.5s						
SHO				pmax	pmax		
	comp=E,88nm,0.6s						
SHO				pmax	pmax		
	comp=N,100nm,0.4s						
KUR	Kuril'sk	9.31	26	*c i*P	Pn	09 41 19.3	-3.1
KUR				pmax	pmax		
	comp=N,36nm,0.5s						
KUR				pmax	pmax		
	comp=E,59nm,0.5s						
KUR				pmax	pmax		
	comp=Z,135nm,0.5s						
KUR				MLR	MLR		
	comp=Z,3µm,11.0s						
KUR				MLR	MLR		
	comp=N,3µm,12.0s						
CBIJ	Chichi jima	9.87	180	*e*Pn	Pn	09 41 28.6	-1.6
CBIJ				Sn	Sn	09 43 14.2	-7.1
JCJ	Chichijima	9.87	180	Pn	Pn	09 41 28.5	-1.7
	comp=N,21nm,0.3s,baz=272,slow=22,SNR=16						
JCJ				Sn	Sn	09 43 14.2	-7.2
	comp=N,14nm,0.3s,baz=286,slow=20,SNR=3.9						
YSS	Yuzh-Sakhalins	9.97	3	*e*P	Pn	09 41 30.2	-1.3
YSS				*e*S	Sn	09 43 18.0	-5.6
YSS				pmax	pmax		
	comp=Z,30nm,0.7s						
YSS				MLR	MLR		
	comp=Z,2µm,12.0s						
YSS	Yuzh-Sakhalins	9.97	3	*e*Pn	Pn	09 41 30.3	-1.3
JNU	Nakatsue	9.98	251	Pn	Pn	09 41 33.7	+1.9
	comp=Z,0.4nm,0.3s,baz=62,slow=6.7,SNR=7.3						
JNU				LR	LR	09 45 55.9	
	comp=Z,3µm,18.7s,baz=62,slow=41						
JNU	Nakatsue	9.98	251	*e*Pn	Pn	09 41 34.9	+3.1
USRK	Ussuriysk Ar.	10.53	316	Pn	Pn	09 41 42.0	+2.8
	comp=Z,0.8nm,0.3s,baz=131,slow=14,SNR=26						
USRK				LR	LR	09 45 18.0	
	comp=Z,3µm,18.8s,baz=123,slow=35						
KSRS	Korea Array	11.32	277	Pn	Pn	09 41 52.9	+2.8
	comp=Z,0.2nm,0.3s,baz=89,slow=13,SNR=23						
KSRS				LR	LR	09 46 03.3	
	comp=Z,4µm,18.3s,baz=74,slow=37						
KS01	Wonju Array Si	11.34	277	*e*Pn	Pn	09 41 55.1	+4.7

KS15 **Wonju Array Si** 11.35 277 *e*Pn **Pn** 09 41 54.4 +3.9
KSAR **Wonju Array Be** 11.35 277 P **Pn** 09 41 52.9 +2.4
KSAR **Wonju Array Be** 11.35 277 Pn **Pn** 09 41 52.9 +2.4
MDJ **Mudanjiang** 12.15 313 P **Pn** 09 42 03.3 +1.9
MDJ S **Sn** 09 44 19.1 +1.9
MDJ pmax pmax
comp=Z,7.0nm,1.4s
MDJ pmax pmax
comp=Z,230nm,5.9s
MDJ LR LR
comp=Z,4μm,18.3s
MDJ LR LR
comp=Z,2μm,17.4s
MDJ LR LR
comp=Z,3μm,13.8s
MDJ **Mudanjiang** 12.15 313 *e*Pn **Pn** 09 42 04.1 +2.7
comp=Z,62nm,1.2s
TYV **Tymovskoe** 13.87 1 *e*P **Pn** 09 42 25.0 +0.1
TYV pmax pmax
comp=Z,19nm,0.6s
TYV MLR MLR
comp=N,4μm,12.0s
TYV MLR MLR
comp=Z,4μm,15.0s
KLR **Kul'dur** 14.36 332 Pn **Pn** 09 42 33.4 +1.8
comp=Z,0.5nm,0.3s,baz=126,slow=13,SNR=10.0
CN2 **Changchun** 14.39 303 *e*P **P** 09 42 35.8 -3.3
CN2 *e*S **Sn** 09 45 14.7 +2.9
CN2 pmax pmax
comp=Z,10.0nm,0.8s
CN2 pmax pmax
comp=Z,200nm,9.0s
CN2 LR LR
comp=Z,3μm,13.0s
CN2 LR LR
comp=Z,2μm,13.0s
CN2 LR LR
comp=Z,2μm,14.0s
SNY **Shenyang** 15.11 294 ⇑P **P** 09 42 54.0 +6.9
SNY S Sn 09 44 50.5 -39
NKL **Nikolayevsk** 16.19 357 *e*P **Pn** 09 42 50.0 -5.7
NKL pmax pmax
comp=Z,20nm,1.0s
NKL MLR MLR
comp=N,2μm,16.0s
NKL MLR MLR
comp=E,3μm,16.0s
NKL MLR MLR
comp=Z,3μm,16.0s
DL2 **Dalian** 16.27 283 P **Pn** 09 42 57.5 +0.6
DL2 S **Sn** 09 45 58.8 +1.2
DL2 pmax pmax
comp=Z,42nm,1.1s
DL2 pmax pmax
comp=Z,500nm,7.7s
DL2 LR LR
comp=Z,2μm,11.3s
DL2 LR LR
comp=Z,2μm,13.4s
DL2 LR LR
comp=Z,3μm,13.9s
SKR **Severo-Kuril's** 16.97 32 *e*P Pn 09 42 55.5 -10
SKR pmax pmax
comp=Z,800nm,1.5s
SKR MLR MLR
comp=N,4μm,14.0s
SKR MLR MLR
comp=E,5μm,14.0s
SKR MLR MLR
comp=Z,5μm,14.0s
PEA0 **Petropavlovsk-** 19.45 29 *e*P **P** 09 43 34.0 -0.9
PETK **Petropavlovsk-** 19.45 29 P **P** 09 43 34.2 -0.7
comp=Z,0.6nm,0.3s,baz=198,slow=9.3,SNR=11
PETK LR LR 09 51 05.1
comp=Z,770nm,20.2s,baz=214,slow=37
PET **Petropavlovsk** 19.77 31 *e*P **Pn** 09 43 41.8 +2.0
PET *e*S **S** 09 47 17.2 -4.1
PET MLR MLR
comp=Z,2μm,15.0s
PET MLR MLR
comp=Z,2μm,12.0s
NJ2 **Nanjing** 19.77 262 *e*P **Pn** 09 43 39.9 -0.1
NJ2 pmax pmax
comp=Z,9.0nm,0.5s
TIA **Tai'an** 20.06 275 ⇓P **P** 09 43 40.4 -1.4
TIA pmax pmax
comp=Z,30nm,1.2s
TIA LR LR
comp=Z,2μm,13.1s
TIA LR LR
comp=Z,4μm,15.5s
TIA LR LR
comp=Z,4μm,17.0s
HIA **Hailar** 20.33 314 *e*P **P** 09 43 43.5 -1.1
HIA pmax pmax
comp=Z,19nm,0.9s
HIA **Hailar** 20.33 314 *e*P **P** 09 43 43.5 -1.1
comp=Z,19nm,0.9s
BJI **Beijing** 20.50 286 P **P** 09 43 46.6 +0.2
BJI S **S** 09 47 37.5 +1.4
BJI pmax pmax
comp=Z,14nm,1.2s
BJI pmax pmax
comp=Z,230nm,4.2s
BJI LR LR
comp=Z,2μm,13.3s
BJI LR LR
comp=Z,2μm,12.8s
BJI LR LR
comp=Z,920nm,13.3s
BJT **Baijiatuau** 20.50 286 *e*P **P** 09 43 46.8 +0.3
BJT pmax pmax
comp=Z,19nm,0.7s
BJT **Baijiatuau** 20.50 286 *e*P **P** 09 43 46.8 +0.3
comp=Z,18nm,0.7s
CLNS **Chul'man** 22.95 335 *e*P **P** 09 44 19.4 +6.7
CLNS *e**PP sP 09 44 28.0 +13
CLNS *e* 09 44 44.0
CLNS *e* 09 48 09.1
CLNS *e*S **S** 09 48 24.5 +1.4
CLNS *e*SS **SnSn** 09 49 06.7 +12
CLNS pmax pmax
comp=Z,28nm,0.9s
CLNS pmax pmax
comp=N,16nm,0.8s
CLNS pmax pmax
comp=E,13nm,1.0s
CLNS pmax pmax
comp=E,19nm,1.0s
CLNS pmax pmax
comp=Z,21nm,1.0s
CLNS pmax pmax
comp=N,9.0nm,0.8s
CLNS smax smax
comp=E,877nm,12.3s
CLNS smax smax
comp=N,362nm,11.0s
CLNS MLR MLR
comp=N,1μm,15.0s
CLNS MLR MLR
comp=Z,1μm,14.0s
CLNS MLR MLR
comp=E,1μm,13.0s
MA2 **Magadan** 23.28 11 P **P** 09 44 15.0 -1.0
comp=E,31nm,1.1s,baz=216,slow=9.3,SNR=21
MA2 **Magadan** 23.28 11 P **P** 09 44 15.0 -1.0
MA2 pmax pmax
comp=Z,14nm,0.6s
QZH **Quanzhou** 23.40 246 *e*P **P** 09 44 12.5 -5.0
QZH *e*S S 09 48 15.2 -16
QZH LR LR
comp=Z,2μm,14.5s
QZH LR LR
comp=Z,3μm,11.2s
QZH LR LR
comp=Z,4μm,14.0s
WHN **Wuhan** 23.91 263 P **P** 09 44 23.8 +1.4
WHN S S 09 48 27.5 -12
WHN LR LR
comp=Z,4μm,12.7s
WHN LR LR
comp=Z,5μm,12.7s
WHN LR LR
comp=Z,8μm,13.0s
HHC **Hu-ho-hao-te** 24.01 289 *e*P **P** 09 44 24.7 +1.2
HHC PP **PnPn** 09 44 55.1 +3.3
HHC S **S** 09 48 37.1 -3.8
HHC pmax pmax
comp=Z,24nm,0.9s
HHC pmax pmax
comp=Z,140nm,3.6s
HHC LR LR
comp=Z,380nm,9.0s
HHC LR LR
comp=Z,2μm,11.4s
HHC LR LR
comp=Z,2μm,11.8s
CIT **Chita** 25.09 316 *e*P **P** 09 44 32.6 -0.5
CIT *e* 09 44 41.9
CIT *e* 09 44 49.1
CIT *e* 09 45 22.1
CIT pmax pmax
comp=Z,156nm,1.4s
YAK **Yakutsk** 26.23 347 P **P** 09 44 43.5 +0.2
comp=Z,5.1nm,0.5s,baz=239,slow=8.7,SNR=8.4
YAK LR LR 09 54 58.9
comp=Z,1μm,20.0s,baz=162,slow=36
YAK **Yakutsk** 26.23 347 *e*P **P** 09 44 43.7 +0.4
YAK *e**PP **sP** 09 44 49.3 +3.4
YAK *e*PPP PPP 09 45 28.6
YAK *e* 09 48 10.3
YAK *e*S **S** 09 49 16.7 +1.0
YAK *e*SSS SSS 09 50 30.4
YAK pmax pmax
comp=Z,37nm,0.6s
YAK pmax pmax
comp=N,13nm,1.1s
YAK pmax pmax
comp=Z,140nm,1.7s
YAK pmax pmax
comp=N,150nm,1.8s
YAK pmax pmax
comp=E,109nm,3.0s
YAK smax smax
comp=N,973nm,3.8s
YAK smax smax
comp=E,181nm,2.5s
YAK MLR MLR
comp=Z,2μm,14.0s
YAK MLR MLR
comp=N,2μm,14.0s
YAK MLR MLR
comp=E,416nm,17.0s
YAK **Yakutsk** 26.23 347 *e*P **P** 09 44 44.4 +1.2
comp=E,68nm,0.8s
SEY **Seymchan** 26.73 10 P **P** 09 44 48.1 +0.3
comp=E,38nm,1.2s,baz=197,slow=8.1,SNR=23
XAN **Xi'an** 27.10 274 P **P** 09 44 50.3 -1.1
XAN pP sP 09 44 56.8 +2.8
XAN S **S** 09 49 34.1 +4.1
XAN pmax pmax
comp=E,12nm,0.7s
XAN LR LR
comp=E,2μm,15.6s
XAN LR LR
comp=E,1μm,16.5s
XAN LR LR
comp=E,2μm,15.6s
H11N2 **WAKE ISLAND Hy** 27.65 122 T T 10 13 51.7
baz=314,slow=75,SNR=707
H11N1 **WAKE ISLAND Hy** 27.66 122 T T 10 13 53.4
baz=314,slow=75,SNR=639
H11N3 **WAKE ISLAND Hy** 27.67 122 T T 10 13 54.4
baz=314,slow=75,SNR=656
ULN **Ulaanbaatar** 27.84 304⇑*e*P **P** 09 44 57.9 -0.2
ULN pmax pmax
comp=Z,22nm,1.7s
ULN **Ulaanbaatar** 27.84 304 *e*P **P** 09 44 58.2 +0.1
comp=Z,11nm,0.7s
BOD **Bodaibo** 27.86 327 *e*P **P** 09 44 57.1 -0.9
BOD pmax pmax
comp=Z,21nm,0.8s
ENH **Enshi** 27.88 266 *e*P **P** 09 44 57.7 -0.8
comp=Z,74nm,0.9s
SONA1 **Songino Array** 28.27 304 *e*P **P** 09 45 01.7 -0.2
SONM **Songino Array** 28.27 304 P **P** 09 45 01.8 -0.1
comp=Z,21nm,1.0s,baz=103,slow=9.7,SNR=18
SONM LR LR 09 56 18.9
comp=Z,649nm,18.4s,baz=96,slow=36
SONM **Songino Array** 28.27 304 P **P** 09 45 01.8 -0.1
SONM pmax pmax
comp=Z,16nm,0.9s
SONM MLR MLR
comp=Z,649nm,18.4s
H11S1 **WAKE ISLAND Hy** 28.37 124 T T 10 14 49.1
baz=316,slow=76,SNR=567
H11S3 **WAKE ISLAND Hy** 28.37 124 T T 10 14 48.0
baz=316,slow=76,SNR=491
H11S2 **WAKE ISLAND Hy** 28.39 124 T T 10 14 49.1
baz=316,slow=76,SNR=124
LZH **Lanzhou** 30.62 280 *e*P **P** 09 45 23.4 +0.5
LZH pP sP 09 45 28.9 +3.4
LZH sP pP 09 45 31.7 +6.9
LZH PP **PnPn** 09 46 18.1 -3.9
LZH *e*S **S** 09 50 23.5 -2.1
LZH sS sS 09 50 36.0 +7.3
LZH SS **SnSn** 09 52 01.0 -1.2
LZH pmax pmax
comp=Z,64nm,1.1s
LZH pmax pmax
comp=Z,190nm,4.8s
LZH LR LR
comp=Z,2μm,13.3s
LZH LR LR
comp=Z,3μm,14.9s
LZH LR LR
comp=Z,4μm,16.2s
ZAK **Zakamensk** 30.73 308 *e*P **P** 09 45 22.5 -1.2
ZAK pmax pmax
comp=Z,18nm,1.2s
TLY **Talaya** 30.78 311 P **P** 09 45 24.0 0.0
comp=Z,9.0nm,0.7s,baz=100,slow=6.1,SNR=14
TLY **Talaya** 30.78 311 *e*P **P** 09 45 24.2 +0.2
TLY *e*S **S** 09 50 32.0 +4.5
TLY pmax pmax
comp=Z,17nm,0.9s
TLY MLR MLR
comp=Z,1μm,17.0s
GYA **Guiyang** 31.76 261⇑*i*P **P** 09 45 34.8 +1.8
GYA PcP **PcP** 09 48 27.0 +2.6
GYA S **S** 09 50 42.3 -1.2
GYA ScP **ScP** 09 52 08.4 +0.2
GYA SS **SnSn** 09 52 32.9 +2.8
GYA ScS **ScS** 09 56 05.2 -1.4
GYA pmax pmax
comp=Z,50nm,0.8s
GYA pmax pmax
comp=Z,120nm,6.2s
GYA LR LR
comp=Z,560nm,17.8s
GYA LR LR
comp=Z,520nm,18.0s
GYA LR LR
comp=Z,530nm,17.9s
CD2 **Chengdu** 32.23 271 P **P** 09 45 36.3 -0.7
CD2 sP sP 09 45 44.4 +4.8
CD2 S **S** 09 50 48.9 -1.7
CD2 sS sS 09 50 58.6 +4.9
CD2 pmax pmax
comp=Z,40nm,0.6s
CD2 pmax pmax
comp=Z,220nm,7.4s
CD2 LR LR
comp=Z,3μm,18.0s
CD2 LR LR
comp=Z,3μm,18.0s
MOY **Mondy** 32.39 310 *e*P **P** 09 45 38.0 -0.3
MOY pmax pmax
comp=Z,31nm,2.2s
GTA **Gaotai** 33.11 287 *e*P **P** 09 45 48.8 +4.1
GTA pP sP 09 45 54.6 +7.3
GTA sP pP 09 45 57.6 +11
GTA S **S** 09 51 06.0 +1.7
GTA sS sS 09 51 16.3 +9.0
GTA pmax pmax
comp=Z,7.0nm,0.9s
GTA pmax pmax
comp=Z,130nm,4.7s
GTA LR LR
comp=Z,1μm,18.1s
GTA LR LR
comp=Z,730nm,18.1s
GTA LR LR
comp=Z,1μm,15.2s
DAV **Davao City (W)** 33.38 211 LR LR 09 59 33.7
comp=Z,716nm,19.3s,baz=54,slow=37
QIZ **Qiongzhong** 33.42 246 P **P** 09 45 49.7 +2.3
QIZ S **S** 09 51 12.1 +2.9
QIZ LR LR
comp=Z,960nm,15.6s
QIZ LR LR
comp=Z,810nm,18.8s
QIZ LR LR
comp=Z,970nm,21.9s
BILL **Bilibino** 33.91 16*d* *i*P **P** 09 45 50.3 -0.9
BILL *e* 09 47 04.2
BILL *e*S **S** 09 51 21.3 +5.4
BILL pmax pmax
comp=Z,33nm,1.2s
BILL MLR MLR
comp=Z,734nm,19.0s
BILL **Bilibino** 33.91 16 *e*P **P** 09 45 50.2 -1.0
comp=Z,46nm,1.4s
TIXI **Tiksi** 35.40 353⇑*e*P **P** 09 46 03.0 -1.0
TIXI pmax pmax
comp=Z,7.0nm,1.2s
KMI **Kunming** 35.51 262 P **P** 09 46 06.0 +0.3
KMI pP sP 09 46 12.7 +4.4
KMI sP pP 09 46 15.2 +7.6
KMI PP **PP** 09 47 29.1 +2.9
KMI S **S** 09 51 35.4 -6.3
KMI sS sS 09 51 47.6 +2.8
KMI pmax pmax
comp=Z,28nm,1.3s
KMI pmax pmax
comp=Z,190nm,4.0s
KMI LR LR
comp=Z,2μm,16.4s
KMI LR LR
comp=Z,1μm,13.6s
KMI LR LR
comp=Z,1μm,15.3s
MYLDM **Lahad Datu** 38.33 220 *e*P **P** 09 46 32.1 +2.5
comp=Z,60nm,1.2s
PANO **Nakornpanom** 38.47 249 P **P** 09 46 33.1 +2.4
comp=Z,16nm,1.5s
NONG **Nongkai** 39.02 252 P **P** 09 46 36.3 +0.9
comp=Z,45nm,0.8s
CRAI **Chiangrai** 39.91 257 P **P** 09 46 45.1 +2.3
comp=Z,14nm,1.3s
FAKI **Fak Fak** 40.76 195 *e*P **P** 09 46 51.2 +1.5
comp=Z,19nm,0.8s
LOEI **Loei** 40.79 253 P **P** 09 46 47.7 -2.4
comp=Z,13nm,1.6s
PHRA **Phrae** 41.00 255 P **P** 09 46 52.6 +0.8
comp=Z,278nm,1.0s
UTTA **Uttaradit** 41.19 254 P P 09 47 00.2 +6.8
comp=Z,2.7nm,0.7s,comp=Z,51nm
CHAI **Chaiyaphum** 41.22 250 P **P** 09 46 57.2 +3.6
comp=Z,5.0nm,0.9s,comp=Z,96nm
WMQ **Urumqi** 41.35 297 P **P** 09 46 56.4 +1.8
WMQ pP sP 09 47 01.8 +4.6
WMQ sP pP 09 47 04.0 +7.6
WMQ S **S** 09 53 10.5 +1.0
WMQ SS **SS** 09 56 07.5 -5.3
WMQ ScS **ScS** 09 56 57.0 -2.2
WMQ pmax pmax
comp=Z,8.0nm,2.0s
WMQ pmax pmax
comp=Z,250nm,4.0s
WMQ LR LR
comp=Z,1μm,16.4s
WMQ LR LR
comp=Z,400nm,22.2s
WMQ LR LR
comp=Z,310nm,22.2s
PBKT **Sadao Pong** 41.58 252 P **P** 09 46 59.4 +2.9
comp=Z,14nm,1.7s
CMMT **Chiang Mai** 41.82 256 P P 09 47 04.9 +6.3
comp=Z,23nm,1.6s
CHTO **Chiang Mai** 41.82 256 P P 09 47 04.9 +6.3
comp=Z,39nm,2.3s,comp=Z,1μm
CMAR **Chiang Mai Arr** 42.02 256 P **P** 09 47 00.7 +0.5
comp=Z,1.2nm,0.4s,baz=50,slow=5.3,SNR=8.3
CMAR LR LR 10 06 25.9
comp=Z,674nm,19.0s,baz=49,slow=39
CM01 **Chiang Mai Arr** 42.03 256 *e*P **P** 09 46 59.8 -0.5
ZAA0 **Zalesovo Array** 42.35 312 *e*P **P** 09 47 01.9 -0.6
ZAA0 *e*P **P** 09 47 02.6 +0.1
ZALV **Zalesovo Beam** 42.35 312 P **P** 09 47 02.4 -0.1
comp=Z,15nm,0.7s,baz=79,slow=7.5,SNR=10
ZALV LR LR 10 04 13.2
comp=Z,469nm,18.1s,baz=78,slow=36
ZALV **Zalesovo Beam** 42.35 312 P **P** 09 47 02.4 -0.1
ZALV pmax pmax
comp=Z,16nm,0.8s
ZALV MLR MLR
comp=Z,469nm,18.1s
LSA **Lhasa** 42.77 276 *e*P **P** 09 47 07.6 +0.9
LSA pmax pmax
comp=Z,23nm,1.0s
LSA **Lhasa** 42.77 276 *e*P **P** 09 47 07.6 +0.9
comp=Z,23nm,1.0s
NVS **Novosibirsk** 43.27 314⇓*i*P **P** 09 47 13.0 +3.1
NVS *e* 09 49 01.5
NVS *e*S **S** 09 53 40.4 +3.1
NVS pmax pmax
comp=N,9.0nm,1.2s
NVS pmax pmax
comp=Z,31nm,1.2s
NVS pmax pmax
comp=E,28nm,1.4s
NVS smax smax
comp=N,12nm,1.8s
NVS smax smax
comp=E,20nm,2.0s
NRIK **Noril'sk** 43.54 335 LR LR 10 07 24.1
comp=E,686nm,18.7s,baz=106,slow=39
KHLT **Khaolaem Dam** 44.47 252 P P 09 47 29.8 +10
MK01 **Makanchi Array** 44.61 302 *e*P **P** 09 47 19.6 -1.3
MK31 **Makanchi Array** 44.61 302 *e*P **P** 09 47 21.4 +0.5
MK31 **Makanchi Array** 44.61 302 *e*P **P** 09 47 21.4 +0.5
MKAR **Makanchi Array** 44.61 302 P **P** 09 47 20.9 0.0
comp=E,5.0nm,0.6s,baz=86,slow=9.5,SNR=29
MKAR LR LR 10 07 24.7
comp=E,375nm,18.3s,baz=88,slow=38
MKAR **Makanchi Array** 44.61 302 *i* P **P** 09 47 20.8 -0.1
MKAR pmax pmax
comp=Z,5.0nm,0.6s
MKAR **Makanchi Array** 44.61 302 *e*P **P** 09 47 21.4 +0.5
MAKZ **Makanchi** 44.82 302 *e*P **P** 09 47 22.7 +0.2
MAKZ pmax pmax
comp=Z,13nm,0.8s
MAKZ **Makanchi** 44.82 302 *e*P **P** 09 47 22.7 +0.2
comp=Z,13nm,0.8s
TT01 **Tatalina** 45.13 35 *e*P **P** 09 47 24.8 +0.1
TTA **Tatalina** 45.14 35 *e*P **P** 09 47 25.4 +0.5
TTA pmax pmax
comp=Z,15nm,1.1s
TTA **Tatalina** 45.14 35 *e*P **P** 09 47 25.4 +0.5
comp=Z,15nm,1.1s
SVW2 **Sparrevohn** 45.22 37 *e*P **P** 09 47 26.8 +1.3
comp=Z,45nm,1.0s
KSM **Kuching** 45.93 227 *e*P **P** 09 47 32.4 +0.8
comp=Z,18nm,0.9s
KURK **Kurchatov** 46.40 308 *e*P **P** 09 47 33.6 -1.3
KURK pmax pmax
comp=Z,59nm,1.1s
KURK **Kurchatov** 46.40 308 *e*P **P** 09 47 33.6 -1.3
comp=Z,59nm,1.1s
KURBB **Kurchatov Arra** 46.47 308 P **P** 09 47 34.8 -0.6
comp=Z,9.9nm,0.6s,baz=85,slow=8.1,SNR=29
TAPN **Taplejung** 46.50 274 *e*P **P** 09 47 36.8 +0.4
comp=Z,16nm,0.4s
RSO **Redoubt South** 46.59 38 *e*P **P** 09 47 37.2 +0.7
KDAK **Kodiak Island** 46.76 42 *e*P **P** 09 47 37.7 +0.1
KDAK pmax pmax
comp=Z,172nm,1.5s
KDAK **Kodiak Island** 46.76 42 *e*P **P** 09 47 37.6 +0.1
comp=Z,172nm,1.5s
PPLA **Purkeypile** 46.88 35 *e*P **P** 09 47 40.0 +1.3
comp=Z,80nm,1.4s
SPU **Mount Spurr** 46.93 37 *e*P **P** 09 47 39.9 +0.9
CAST **Castle Rocks** 46.95 34 *e*P **P** 09 47 39.7 +0.6
comp=Z,21nm,1.0s
ODAN **Odare** 46.97 274 *e*P **P** 09 47 39.6 -0.4
comp=Z,46nm,0.9s
PDGK **Podgornoye** 47.29 298 P **P** 09 47 42.6 +0.7

BPAW **Bear Paw Mtn.** 47.45 33 *e*P P 09 47 43.8 +0.7
comp=Z,24nm,1.2s
KTH **Kantishna Hill** 47.47 34 *e*P P 09 47 44.0 +0.8
comp=Z,59nm,1.1s
RAMN **Ramite** 47.56 275 *e*P P 09 47 44.6 0.0
comp=Z,78nm,0.8s
MLY **Manley** 47.59 32 *e*P P 09 47 45.1 +1.0
comp=Z,40nm,1.0s
GUN **Gumba** 47.71 276 *e*P P 09 47 46.3 +0.4
TRF **Thorofare Moun** 47.76 34 *e*P P 09 47 46.4 +0.8
comp=Z,24nm,1.1s
COLD **Coldfoot** 47.92 29 *e*P P 09 47 47.8 +1.3
comp=Z,10nm,1.2s
RC01 **Rabbit Creek A** 48.06 37 *e*P P 09 47 48.1 +0.4
comp=Z,59nm,1.1s
SURT **Suratani** 48.07 246 P P 09 47 50.3 +2.0
comp=Z,8.4nm,1.1s,comp=Z,450nm
TRTT **Trang** 48.18 244 P P 09 47 52.9 +3.7
comp=Z,14nm,1.2s
KKN **Kakani** 48.24 276 *e*P P 09 47 50.1 +0.2
PKIN **Phulchoki** 48.24 276 *e*P P 09 47 50.6 +0.7
comp=Z,20nm,0.7s
KRAB **Krabi** 48.27 245 P P 09 47 52.8 +2.9
comp=Z,28nm,0.7s
PMR **Palmer** 48.33 37 *e*P P 09 47 49.5 -0.2
PMR pmax pmax
comp=Z,65nm,1.2s
PMR **Palmer** 48.33 37 *e*P P 09 47 49.5 -0.2
comp=Z,65nm,1.2s
MCK **McKinley** 48.36 34 *e*P P 09 47 50.1 +0.1
MCK pmax pmax
comp=Z,29nm,1.0s
MCK **McKinley** 48.36 34 *e*P P 09 47 50.1 +0.1
comp=Z,29nm,1.0s
RND **Reindeer** 48.40 34 *e*P P 09 47 50.3 -0.1
RND pmax pmax
comp=Z,52nm,1.1s
RND **Reindeer** 48.40 34 *e*P P 09 47 50.3 -0.1
comp=Z,52nm,1.1s
MDM **Murphy Dome** 48.66 32 *e*P P 09 47 53.1 +0.8
comp=Z,69nm,1.0s
SML **Sawmill** 48.70 36 *e*P P 09 47 53.0 +0.3
SML pmax pmax
comp=Z,30nm,0.8s
SML **Sawmill** 48.70 36 *e*P P 09 47 53.0 +0.3
comp=Z,30nm,0.8s
WRH **Wood River Hil** 48.72 33 *e*P P 09 47 52.8 +0.1
comp=Z,13nm,0.8s
COLA **College** 48.82 32*d i*P P 09 47 53.5 +0.1
COLA pmax pmax
comp=Z,13nm,0.9s
COLA **College** 48.82 32 *e*P P 09 47 54.0 +0.6
comp=Z,43nm,1.1s
CCB **Clear Creek Bu** 48.84 33 *e*P P 09 47 53.6 0.0
comp=Z,20nm,1.4s
DHY **Denali Highway** 49.08 35 *e*P P 09 47 55.8 +0.1
comp=Z,28nm,1.2s
PKDT **Phuket** 49.12 245 P P 09 48 04.2 +7.8
comp=Z,37nm,1.0s,comp=Z,5μm
SCM **Sheep Creek Mo** 49.17 36 *e*P P 09 47 57.2 +0.8
SCM pmax pmax
comp=Z,70nm,1.1s
SCM **Sheep Creek Mo** 49.17 36 *e*P P 09 47 57.2 +0.8
comp=Z,70nm,1.1s
HDA **Harding Lake** 49.22 33 *e*P P 09 47 56.2 -0.3
comp=Z,46nm,1.1s
IL1 **Eielson Array** 49.23 32 *e*P P 09 47 55.8 -0.8
ILAR **Eielson Array** 49.23 32 P P 09 47 56.0 -0.6
comp=Z,18nm,0.9s,baz=266,slow=5.5,SNR=92
ILAR LR LR 10 10 53.4
comp=Z,268nm,18.9s,baz=286,slow=39
ILB **Eielson Array** 49.23 32 *e*P P 09 47 56.3 -0.4
SOEI **Soe** 49.43 203 *e*P P 09 47 55.2 -3.6
comp=Z,144nm,0.9s
KOLN **Koldanda** 49.59 277 *e*P P 09 48 00.5 +0.3
comp=Z,78nm,1.1s
IPM **Ipoh** 49.60 239 *e*P P 09 48 00.2 +0.2
comp=Z,50nm,1.7s
FYU **Fort Yukon** 49.87 30 *e*P P 09 48 03.0 +1.5
comp=Z,50nm,1.1s
KLU **Klutina** 49.87 37 *e*P P 09 48 02.2 +0.6
comp=Z,61nm,1.2s
PYUN **Piuthan** 49.93 278 *e*P P 09 48 03.0 +0.3
comp=Z,95nm,0.9s
PAX **Paxson** 49.95 35 *e*P P 09 48 03.2 +0.9
PAX pmax pmax
comp=Z,69nm,1.8s
PAX **Paxson** 49.95 35 *e*P P 09 48 03.2 +0.9
comp=Z,69nm,1.8s
DIV **Divide** 49.97 37 *e*P P 09 48 03.2 +0.8
comp=Z,93nm,1.2s
TKM2 **Tokmak 2** 50.14 299 *e*P P 09 48 05.6 +1.4
TKM2 pmax pmax
comp=Z,77nm,1.4s
TKM2 **Tokmak 2** 50.14 299 *e*P P 09 48 05.5 +1.4
comp=Z,78nm,1.4s
DOT **Dot Lake** 50.53 34 *e*P P 09 48 06.1 -0.6
comp=Z,54nm,1.1s
BMRM **Bremner River** 50.56 37 *e*P P 09 48 07.7 +0.9
comp=Z,184nm,1.8s
RAGM **Ragged Mountai** 50.59 38 *e*P P 09 48 08.3 +1.2
comp=Z,370nm,2.0s
VOSK **Vostochnaya** 50.72 312 P P 09 48 08.3 +0.1
VOSK pmax pmax
comp=Z,13nm,0.9s
CHKZ **Chkalovo** 50.75 313 P P 09 48 06.3 -2.0
CHKZ pmax pmax
comp=Z,9.0nm,0.8s
MENT **Mentasta** 50.75 35 *e*P P 09 48 08.8 +0.5
comp=Z,40nm,1.1s
FRU **Bishkek** 50.85 299 *e*P P 09 48 10.0 +0.6
KSH **Kashi** 50.93 294 *e*P P 09 48 15.0 +4.9
KSH *e*pP sP 09 48 20.9 +8.1
KSH *e*ScP **ScP** 09 53 22.2 -1.0
KSH S **S** 09 55 31.0 +3.8
KSH pmax pmax
comp=Z,100nm,3.4s
KSH LR LR
comp=Z,2μm,15.4s
KSH LR LR
comp=Z,700nm,7.8s
KSH LR LR
comp=Z,1μm,15.4s
AAK **Ala-Archa** 51.00 299 P P 09 48 11.7 +1.1
comp=Z,2.9nm,0.5s,baz=109,slow=4.4,SNR=7.3
AAK **Ala-Archa** 51.00 299 *e*P P 09 48 11.8 +1.2
AAK pmax pmax
comp=Z,8.0nm,0.9s
AAK **Ala-Archa** 51.00 299 *e*P P 09 48 11.8 +1.2
comp=Z,7.6nm,0.9s
AAK *e*P **sP** 09 48 15.2 +1.9
BVA0 **Borovoye Array** 51.01 312 P P 09 48 09.1 -1.3
BVAR **Borovoye Array** 51.01 312 P P 09 48 09.9 -0.4
comp=Z,1.4nm,0.5s,baz=76,slow=9.0,SNR=8.0
BRVK **Borovoye** 51.07 313*d i*P P 09 48 12.0 +1.2
BRVK pmax pmax
comp=Z,9.0nm,1.2s
BRVK **Borovoye** 51.07 313 *e*P P 09 48 12.3 +1.5
comp=Z,9.1nm,0.7s
EGAK **Eagle** 51.68 32 *e*P P 09 48 15.0 -0.1
comp=Z,48nm,1.6s
PSI **Prapat** 52.25 240 *e*P P 09 48 21.0 +0.8
PSI pmax pmax
comp=Z,11nm,0.8s
PSI **Prapat** 52.25 240 *e*P P 09 48 21.0 +0.8
comp=Z,11nm,0.8s
DAWY **Dawson** 52.53 33 *e*P P 09 48 22.8 +1.2
comp=Z,25nm,1.6s
SFK **Sufi-Kurgan** 52.55 296 P P 09 48 22.2 -0.2
SFK pmax pmax
comp=Z,1.0nm,0.2s
KK31 **Karatay Array** 53.63 300 *i* P P 09 48 30.4 +0.4
KK31 pmax pmax
comp=Z,7.0nm,0.9s
KKAR **Karatay Array** 53.63 300 *e*P P 09 48 33.5 +3.5
KKAR **Karatay Array** 53.63 300 *e*P P 09 48 33.5 +3.5
INK **Inuvik** 54.17 27 P P 09 48 33.5 0.0
comp=Z,14nm,0.7s,baz=294,slow=7.2,SNR=77
INK **Inuvik** 54.17 27 *e*P P 09 48 33.6 +0.1
comp=Z,49nm,1.3s
GSI **Gunungsitoli** 54.26 240 *e*P P 09 48 36.0 +1.1
comp=Z,50nm,0.8s
SKAG **Skagway** 55.39 38 *e*P P 09 48 44.5 +2.1
comp=Z,36nm,1.4s
ARU **Arti** 56.76 319 P P 09 48 52.3 0.0
comp=Z,8.6nm,0.5s,baz=78,slow=5.8,SNR=14
ARU **Arti** 56.76 319*d i*P P 09 48 51.7 -0.6
ARU 09 49 43.7
ARU 09 50 56.8
ARU S **S** 09 56 42.5 -2.9
ARU SS **SS** 10 00 30.5 -2.2
ARU pmax pmax
comp=Z,48nm,1.7s
ARU MLR MLR
comp=Z,864nm,19.0s
ARU **Arti** 56.76 319 *e*P P 09 48 54.6 +2.3
comp=Z,18nm,0.8s
WRAB **Tennant Creek** 57.09 189⇑*e*P P 09 48 54.5 -0.5
WRAB pmax pmax
comp=Z,52nm,1.7s
WRAB **Tennant Creek** 57.09 189 *e*P P 09 48 55.4 +0.4
comp=Z,69nm,1.9s
WB2 **Warramunga Arr** 57.10 189 *e*P P 09 48 55.2 +0.2
comp=Z,66nm,1.8s
WRA **Warramunga Arr** 57.10 189 P P 09 48 55.1 0.0
comp=Z,8.3nm,0.6s,baz=7.2,slow=7.3,SNR=94
WRA LR LR 10 13 40.3
comp=Z,150nm,19.3s,baz=250,slow=36
DLBC **Dease Lake** 58.31 38 P P 09 49 03.0 -0.4
comp=Z,20nm,1.1s,baz=284,slow=9.0,SNR=10.0
DLBC **Dease Lake** 58.31 38 *e*P P 09 49 05.0 +1.6
comp=Z,29nm,1.1s
AB31 **Akbulak array** 58.39 310 *i* P P 09 49 02.9 -1.0
AB31 pmax pmax
comp=Z,10.0nm,0.7s
ABKAR **Akbulak array** 58.39 310 *e*P P 09 49 02.9 -1.1
HYB **Hyderabad** 58.76 269 *i* P P 09 49 08.0 +1.0
AKTO **Aktyubinsk** 59.12 312 P P 09 49 09.3 +0.3
comp=Z,3.3nm,0.6s,baz=76,slow=4.7,SNR=7.2
AS01 **Alice Springs** 60.82 189 *e*P P 09 49 21.1 +0.3
AS31 **Alice Springs** 60.83 189 *e*P P 09 49 21.5 +0.6
comp=Z,2.8nm,0.6s
ASAR **Alice Springs** 60.83 189 P P 09 49 21.2 +0.3
comp=Z,4.1nm,0.7s,baz=16,slow=6.0,SNR=58
ASAR LR LR 10 13 31.7
comp=Z,209nm,21.8s,baz=6.0,slow=34
RES **Resolute Bay** 62.50 15 P P 09 49 30.6 -1.0
comp=Z,7.9nm,0.8s,baz=331,slow=3.1,SNR=22
RES **Resolute Bay** 62.50 15 *e*P P 09 49 30.8 -0.8
RES pmax pmax
comp=Z,20nm,1.1s
RES **Resolute Bay** 62.50 15 *e*P P 09 49 30.8 -0.8
comp=Z,20nm,1.1s
APA **Apatity** 62.95 336⇑*i*P P 09 49 38.0 +3.3
YKW3 **Yellowknife Ar** 63.53 30 *e*P P 09 49 38.3 -0.3
comp=Z,21nm,1.2s
YKA **Yellowknife Ar** 63.56 30 P P 09 49 38.1 -0.7
comp=Z,7.8nm,1.0s,baz=297,slow=6.3,SNR=60
YKB5 **Yellowknife Ar** 63.56 30 *e*P P 09 49 38.4 -0.4
KLMR **Klimovskoe** 64.09 328 *e*P P 09 49 41.5 -0.8
KLMR *e* 09 52 02.7
KLMR pmax pmax
comp=Z,15nm,1.1s
ARCES **ARCESS Array B** 64.23 340 P P 09 49 44.6 +1.5
comp=Z,4.3nm,0.8s,baz=40,slow=6.3,SNR=10.0
ARCES LR LR 10 23 09.5
comp=Z,537nm,18.9s,baz=50,slow=41
ARCES **ARCESS Array B** 64.23 340 P P 09 49 44.7 +1.5
ARCES pmax pmax
comp=Z,5.0nm,0.8s
ARCES MLR MLR
comp=Z,537nm,18.9s
GEYT **Alibeck** 64.34 299 P P 09 49 44.2 -0.2
comp=Z,3.7nm,0.5s,baz=38,slow=7.5,SNR=4.6
GEYT LR LR 10 18 29.2
comp=Z,179nm,18.1s,baz=55,slow=37
DAG **Danmarks Havn** 65.86 355 *i* P P 09 49 53.9 +0.3
comp=Z,4.4nm,0.9s
DAG **Danmarks Havn** 65.86 355 *e*P P 09 49 53.9 +0.3
DAG pmax pmax
comp=Z,4.0nm,0.9s
A04D **Lummi Island** 66.36 46 P P 09 49 56.7 -0.6
baz=300
B05A **Bryant** 66.94 46 P P 09 50 00.1 -0.8
baz=300
G03D **McMinnville, O** 67.78 50 P P 09 50 06.8 +0.4
baz=301
OBN **Obninsk** 68.46 323⇑*e*P P 09 50 12.2 +1.8
OBN *i* 09 50 32.9
OBN *e* 09 52 44.5
OBN *i* S **S** 09 59 08.0 -4.4
OBN pmax pmax
comp=Z,10.0nm,0.9s
OBN MLR MLR
comp=Z,440nm,17.0s
I03D **Drain, OR** 68.50 51 P P 09 50 11.7 +0.8
baz=301
STKA **Stephens Creek** 68.51 180 P P 09 50 10.6 -0.3
comp=Z,2.5nm,0.6s,baz=356,slow=3.6,SNR=8.2
STKA LR LR 10 28 26.1
comp=Z,124nm,18.0s,baz=7.2,slow=43
LPSR **Galich'ya Gora** 68.69 320 *e*P P 09 50 10.9 -1.0
LPSR pmax pmax
comp=Z,10.0nm,0.6s
LPSR MLR MLR
comp=Z,1μm,16.0s
H04A **Detroit Lake** 68.71 50 *e*P P 09 50 13.2 +0.9
comp=Z,44nm,1.4s
G05D **Wamic, OR** 68.95 49 P P 09 50 14.8 +1.1
baz=302
I04A **Tendick Farm,** 69.03 51 P P 09 50 15.2 +0.8
baz=302
FIA1 **FINESS Array S** 69.11 332 *e*P P 09 50 14.3 -0.1
FIA1 *e*P P 09 50 14.7 +0.4
FINES **FINESS Array B** 69.11 332 P P 09 50 14.0 -0.4
comp=Z,13nm,0.8s,baz=69,slow=12,SNR=23
FINES LR LR 10 24 39.2
comp=Z,432nm,19.1s,baz=34,slow=40
FINES **FINESS Array B** 69.11 332 P P 09 50 14.0 -0.4
FINES pmax pmax
comp=Z,13nm,0.8s
FINES MLR MLR
comp=Z,432nm,19.1s
L02D **Cave Junction,** 69.14 53 P P 09 50 14.2 -0.7
baz=302
VSR **Storozhevoye** 69.33 319 *e*P P 09 50 14.9 -1.0
VSR pmax pmax
comp=Z,5.0nm,0.6s
VSR MLR MLR
comp=Z,1μm,15.0s
I05D **Terrebonne, OR** 69.41 50 P P 09 50 16.7 +0.1
baz=302
NEW **Newport** 69.77 44 P P 09 50 18.9 +0.2
comp=Z,3.0nm,0.8s,baz=295,slow=8.9,SNR=3.8
NEW **Newport** 69.77 44 P P 09 50 18.7 -0.1
baz=303
NEW **Newport** 69.77 44 *e*P P 09 50 19.3 +0.5
NEW pmax pmax
comp=Z,20nm,1.5s
NEW **Newport** 69.77 44 *e*P P 09 50 19.3 +0.5
comp=Z,20nm,1.5s
YBH **Yreka Blue Hor** 69.93 53 P P 09 50 21.1 +1.2
comp=Z,8.6nm,1.2s,baz=317,slow=2.2,SNR=5.8
YBH **Yreka Blue Hor** 69.93 53 *e*P P 09 50 21.3 +1.3
comp=Z,17nm,1.3s
M02C **Callahan** 70.02 53 P P 09 50 20.3 -0.2
baz=302
J05D **Fort Rock, OR** 70.03 51 P P 09 50 21.1 +0.5
baz=302
K04D **Chiloquin, OR** 70.06 51 P P 09 50 21.1 +0.4
baz=302
N02D **Trinity Center** 70.33 53 P P 09 50 22.3 -0.2
baz=302
M04C **Macdoel** 70.45 52 P P 09 50 23.2 0.0
baz=302
K05A **Summer Lake** 70.54 51 *e*P P 09 50 25.3 +1.5
comp=Z,48nm,1.3s
SUMG **Summit** 70.73 0 *i* P P 09 50 25.1 +0.4
comp=Z,12nm,1.1s
SUMG **Summit** 70.73 0 *e*P P 09 50 24.9 +0.3
SUMG pmax pmax
comp=Z,25nm,1.4s
SUMG **Summit** 70.73 0 *e*P P 09 50 24.9 +0.3
comp=Z,25nm,1.4s
WALA **Waterton Lakes** 71.09 42 *e*P P 09 50 27.4 +0.4
comp=Z,32nm,1.5s
ZEI **Tsey** 71.25 310 *e*P P 09 50 29.9 +1.7
ZEI pmax pmax
comp=Z,16nm,0.9s
O03D **Paynes Creek** 71.28 53 P P 09 50 28.4 +0.2
baz=303
KBZ **Khabaz** 71.35 311 P P 09 50 28.8 +0.4
comp=Z,7.9nm,0.8s,baz=73,slow=8.0,SNR=4.0
KBZ LR LR 10 24 29.4
comp=Z,406nm,18.1s,baz=48,slow=38
KIV **Kislovodsk** 71.35 311 *e*P P 09 50 30.4 +1.8
KIV pmax pmax
comp=Z,17nm,0.9s
KIV **Kislovodsk** 71.35 311 *e*P P 09 50 29.8 +1.2
MOD **Modoc Plateau** 71.36 51 *e*P P 09 50 29.5 +0.8
comp=Z,16nm,1.3s
BMO **Blue Mountains** 71.55 47 *e*P P 09 50 30.1 +0.4
BMO pmax pmax
comp=Z,10.0nm,1.0s
BMO **Blue Mountains** 71.55 47 *e*P P 09 50 30.1 +0.4
comp=Z,9.7nm,1.0s
SWMT **Swartz Lake** 71.94 44 *e*P P 09 50 32.7 +0.6
WVOR **Wild Horse Val** 72.09 50 *e*P P 09 50 34.0 +0.9
WVOR pmax pmax
comp=Z,22nm,1.4s
WVOR **Wild Horse Val** 72.09 50 *e*P P 09 50 34.0 +0.9
comp=Z,22nm,1.4s
GNI **Garni** 72.18 307⇓*e*P P 09 50 33.1 -0.6
GNI pmax pmax
comp=Z,151nm,1.9s
SCO **Scoresbysund** 72.21 354 *i* P P 09 50 33.5 +0.4
comp=Z,28nm,1.8s
SCO **Scoresbysund** 72.21 354 *e*P P 09 50 33.5 +0.4
SCO pmax pmax
comp=Z,28nm,1.8s
MSO **Missoula** 72.36 44 P P 09 50 34.2 -0.4
baz=306
MSO **Missoula** 72.36 44 *e*P P 09 50 34.7 +0.1
comp=Z,8.8nm,1.1s
AFDM **Forest Hills D** 72.55 54 *e*P P 09 50 36.8 +1.0
comp=Z,16nm,1.4s
NACGM **Naroch** 73.06 327 *e* P 09 50 40.0 +1.5
NACGM *e*LR LR 10 24 44.0
MFID **Camas Ranch** 73.24 48 *e*P P 09 50 40.4 +0.5
comp=Z,10nm,0.9s
NWAO **Narrogin (SRO)** 73.33 202 P P 09 50 39.5 -0.6
comp=Z,6.4nm,0.7s,baz=93,slow=1.2,SNR=4.4
FFC **Flin Flon** 73.44 33 *e*P P 09 50 40.7 0.0
FFC pmax pmax
comp=Z,35nm,1.3s
FFC **Flin Flon** 73.44 33 *e*P P 09 50 40.7 0.0
comp=Z,35nm,1.3s
CMB **Columbia Colle** 73.44 55 *e*P P 09 50 41.4 +0.3
CMB pmax pmax
comp=Z,15nm,1.1s
CMB **Columbia Colle** 73.44 55 *e*P P 09 50 41.4 +0.3
comp=Z,15nm,1.1s
FCC **Fort Churchill** 73.79 27 *e*P P 09 50 42.4 -0.2
FCC pmax pmax
comp=Z,35nm,1.3s
FCC **Fort Churchill** 73.79 27 *e*P P 09 50 42.4 -0.2
comp=Z,34nm,1.3s
WAKR **Walker** 73.79 54 *e*P P 09 50 44.6 +1.3
EGMT **Eagleton** 73.93 42 P P 09 50 43.4 -0.4
baz=308,SNR=6.5
EGMT **Eagleton** 73.93 42 *e*P P 09 50 44.1 +0.2
comp=Z,12nm,0.9s
ANN **Anapa** 73.96 314 *e*P P 09 50 39.0 -4.9
ANN pmax pmax
comp=Z,56nm,1.2s
ANN MLR MLR
comp=E,282nm,17.0s
ANN MLR MLR
comp=N,210nm,17.0s
ANN MLR MLR
comp=Z,465nm,17.0s
DLMT **Dillon** 73.98 45 *e*P P 09 50 44.9 +0.6
comp=Z,70nm,1.7s
HLID **Hailey** 73.99 47 P P 09 50 44.5 +0.1
baz=306
HLID **Hailey** 73.99 47 *e*P P 09 50 45.2 +0.8
comp=Z,14nm,1.3s
BMN **Battle Mountai** 74.10 51 *e*P P 09 50 45.8 +0.7
BMN pmax pmax
comp=Z,15nm,1.1s
BMN **Battle Mountai** 74.10 51 *e*P P 09 50 45.8 +0.7
comp=Z,15nm,1.1s
NC405 **NORSAR Array S** 74.23 337 *e*P P 09 50 46.6 +1.4
BOZ **Bozeman (W)** 74.35 44 P P 09 50 46.3 -0.1
baz=307,SNR=14
BOZ **Bozeman (W)** 74.35 44 *e*P P 09 50 47.2 +0.8
BOZ pmax pmax
comp=Z,19nm,1.2s
BOZ **Bozeman (W)** 74.35 44 *e*P P 09 50 47.2 +0.8
comp=Z,18nm,1.2s
NC204 **NORSAR Array S** 74.39 338 *e*P P 09 50 47.5 +1.2
NB2 **NORSAR Subarra** 74.44 338 P P 09 50 45.6 -0.9
comp=Z,8.3nm,0.8s,baz=40,slow=6.2
NOA **NORSAR Array B** 74.44 338 P P 09 50 45.1 -1.4
comp=Z,8.9nm,0.9s,baz=39,slow=5.8,SNR=12
NOA LR LR 10 29 37.4
comp=Z,477nm,18.2s,baz=85,slow=41
NBO02 **NORSAR Array S** 74.54 338 *e*P P 09 50 49.1 +2.0
NV01 **Mina Array Sit** 74.57 53 *e*P P 09 50 48.4 +0.5
NVAR **Mina Array Bea** 74.57 53 P P 09 50 48.5 +0.6
comp=Z,10nm,1.1s,baz=287,slow=6.2,SNR=35
NVAR LR LR 10 16 20.4
comp=Z,212nm,21.8s,baz=304,slow=30
NV11 **Mina Array Sit** 74.66 53 *e*P P 09 50 49.3 +0.9
comp=Z,24nm,1.4s
AKASG **Malin Array Be** 74.67 323 P P 09 50 47.0 -1.0
comp=Z,5.2nm,0.5s,baz=44,slow=6.0,SNR=18
AKASG LR LR 10 28 17.3
comp=Z,338nm,18.9s,baz=50,slow=40
AKASG **Malin Array Be** 74.67 323 P P 09 50 47.0 -1.0
AKASG pmax pmax
comp=Z,5.0nm,0.5s
AKASG MLR MLR
comp=Z,338nm,18.9s
AKBB **Malin Array Si** 74.67 323 *e*P P 09 50 48.4 +0.4
AKBB pmax pmax
comp=Z,10.0nm,0.6s
AKBB **Malin Array Si** 74.67 323 *e*P P 09 50 48.4 +0.4
comp=Z,10nm,0.6s
MLAC **Mammoth, Mammo** 74.68 54 P P 09 50 48.6 0.0
baz=305
KIEV **Kiev** 74.68 323⇓*e*P P 09 50 47.4 -0.6
KIEV pmax pmax
comp=Z,11nm,0.8s
KIEV **Kiev** 74.68 323 *e*P P 09 50 47.8 -0.2
comp=Z,9.9nm,0.6s
AK11 **Malin Array Si** 74.71 323 *e*P P 09 50 47.4 -0.8
ELK **Elko** 75.15 50 *e*P P 09 50 52.3 +1.0
ELK pmax pmax
comp=Z,15nm,1.6s
ELK **Elko** 75.15 50 *e*P P 09 50 52.3 +1.0
comp=Z,15nm,1.6s
RCTC **Rector, Farmer** 75.17 56 P P 09 50 51.0 -0.1
baz=305
YMR **Madison River** 75.32 45 *e*P P 09 50 53.3 +1.2
comp=Z,12nm,0.8s
YNR **Norris Junctio** 75.45 45 *e*P P 09 50 55.2 +2.3
comp=Z,28nm,1.5s
YFT **Old Faithful** 75.53 45 *e*P P 09 50 56.5 +3.1
comp=Z,45nm,1.7s
PKM **Mcpherson Peak** 75.60 57 P P 09 50 54.4 +0.5
baz=305
H17A **Grant Village** 75.71 45 P P 09 50 55.9 +1.5
baz=308
H17A **Grant Village** 75.71 45 *e*P P 09 50 56.9 +2.4
comp=Z,28nm,1.2s
SIM **Simferopol'** 75.75 316 *e*P P 09 50 58.8 +4.5
SIM *e*S S 10 01 17.0 +41
SIM pmax pmax
comp=Z,15nm,0.9s
SIM MLR MLR
comp=Z,300nm,13.0s
IMW **Indian Meadow** 75.81 46 *e*P P 09 50 56.0 +1.0
comp=Z,111nm,0.8s
FLWY **Flagg Ranch** 75.83 45 *e*P P 09 50 56.9 +1.8
comp=Z,63nm,1.7s
RLMT **Red Lodge** 75.99 44 P P 09 50 56.3 +0.3
baz=309,SNR=6.8
RLMT **Red Lodge** 75.99 44 *e*P P 09 50 56.8 +0.8
comp=Z,7.7nm,0.9s
GRAC **Grapevine Rang** 76.00 54 P P 09 50 55.6 -0.4
baz=306
MOOW **Moose Ponds** 76.01 46 *e*P P 09 50 57.3 +1.2
comp=Z,19nm,1.4s
HVU **Hansel Valley** 76.02 48 *e*P P 09 50 57.2 +1.0
HVU pmax pmax
comp=Z,13nm,1.2s
HVU **Hansel Valley** 76.02 48 *e*P P 09 50 57.2 +1.0
comp=Z,13nm,1.2s
ISA **Isabella, Lake** 76.05 56 P P 09 50 55.8 -0.5
baz=306

ISA Isabella, Lake 76.05 56 *e*P P 09 50 56.2 -0.1
ISA pmax pmax
comp=Z,12nm,1.0s
ISA Isabella, Lake 76.05 56 *e*P P 09 50 56.2 -0.1
comp=Z,12nm,1.0s
ARVC Arvin 76.12 56 P P 09 50 56.6 0.0
baz=306
LOHW Long Hollow 76.17 46 *e*P P 09 50 58.4 +1.3
comp=Z,14nm,1.4s
SNOW Snow King Moun 76.18 46 *e*P P 09 50 58.3 +1.2
comp=Z,10nm,1.1s
REDW Red Top Meadow 76.19 46 *e*P P 09 50 58.2 +1.1
comp=Z,18nm,1.3s
SCZ2 Santa Cruz Isl 76.24 58 P P 09 50 57.2 -0.2
baz=306
DAC Darwin (Calif) 76.27 55 *e*P P 09 50 58.2 +0.5
DAC pmax pmax
comp=Z,11nm,1.2s
DAC Darwin (Calif) 76.27 55 *e*P P 09 50 58.2 +0.5
comp=Z,11nm,1.2s
R11A Troy Canyon, C 76.35 52 P P 09 50 58.4 +0.3
baz=307,SNR=19
R11A Troy Canyon, C 76.35 52 *e*P P 09 50 58.5 +0.3
comp=Z,21nm,1.3s
BGU Big Grassy Mou 76.39 49 *e*P P 09 50 58.6 +0.4
comp=Z,29nm,2.0s
AHID Auburn Hatcher 76.41 46 *e*P P 09 50 59.1 +0.7
comp=Z,20nm,1.5s
MPMC Manual Prospec 76.47 55 P P 09 50 58.5 -0.3
baz=306,SNR=11
OSI Osito Audit: C 76.49 57 P P 09 50 59.1 +0.3
baz=306
DGMT Dagmar 76.52 39 P P 09 50 58.2 -0.5
baz=311
DGMT Dagmar 76.52 39 *e*P P 09 50 58.9 +0.2
comp=Z,94nm,2.0s
FURC Furnace Creek, 76.64 54 P P 09 50 59.4 -0.1
baz=306,SNR=6.7
LAO LASA Array 76.64 41 P P 09 50 59.6 +0.2
baz=310
LAO LASA Array 76.64 41 *e*P P 09 51 00.8 +1.3
comp=Z,29nm,1.3s
LRMC Laurel Mtn Rad 76.68 56 P P 09 50 59.6 -0.3
baz=306
A25A Svangstu Ranch 76.75 38 P P 09 50 59.2 -0.8
baz=312
TPNV Topopah Spring 76.75 54 P P 09 51 00.2 -0.2
baz=306,SNR=11
TPNV Topopah Spring 76.75 54 *e*P P 09 51 01.1 +0.7
TPNV pmax pmax
comp=Z,47nm,1.6s
TPNV Topopah Spring 76.75 54 *e*P P 09 51 01.1 +0.7
comp=Z,47nm,1.6s
EDW2 Edwards Air Fo 76.83 56 P P 09 51 00.7 0.0
baz=306,SNR=9.1
DUG Dugway, Tooele 76.96 49 P P 09 51 01.5 +0.1
baz=308,SNR=12
DUG Dugway, Tooele 76.96 49 *e*P P 09 51 02.5 +1.0
DUG pmax pmax
comp=Z,16nm,1.1s
DUG Dugway, Tooele 76.96 49 *e*P P 09 51 02.5 +1.0
comp=Z,16nm,1.1s
MWC Mount Wilson 77.17 57 *e*P P 09 51 03.5 +0.7
MWC pmax pmax
comp=Z,30nm,1.4s
MWC Mount Wilson 77.17 57 *e*P P 09 51 03.5 +0.7
comp=Z,30nm,1.4s
TCUT Toone Canyon 77.24 48 *e*P P 09 51 04.2 +1.0
comp=Z,22nm,0.9s
BW06 Boulder Array 77.30 46 P P 09 51 02.8 -0.6
baz=309,SNR=7.4
BW06 Boulder Array 77.30 46 *e*P P 09 51 02.2 -1.2
BW06 *e*P P 09 51 03.1 -0.3
PD31 Pinedale Array 77.30 46 *e*P P 09 51 03.5 0.0
PDAR Pinedale Array 77.30 46 P P 09 51 03.1 -0.3
comp=Z,1.7nm,0.6s,baz=259,slow=2.4,SNR=13
A26A Wade Farm, Ken 77.31 37 P P 09 51 02.5 -0.6
baz=313
PSUT Pine Spring 77.33 51 *e*P P 09 51 04.5 +0.9
comp=Z,20nm,1.3s
SHOC Shoshone, Teco 77.36 55 P P 09 51 03.8 +0.2
baz=307
GSC Goldstone, Bar 77.36 55 P P 09 51 03.5 -0.3
baz=307
GSC Goldstone, Bar 77.36 55 *e*P P 09 51 03.7 0.0
GSC pmax pmax
comp=Z,25nm,1.5s
GSC Goldstone, Bar 77.36 55 *e*P P 09 51 03.7 0.0
comp=Z,25nm,1.5s
BFSC Mount Baldy Ra 77.43 57 P P 09 51 03.6 -0.6
baz=306,SNR=5.9
JLU Jordanelle 77.53 48 *e*P P 09 51 05.8 +1.0
comp=Z,15nm,1.3s
NLU North Lily Min 77.56 49 *e*P P 09 51 05.8 +0.9
comp=Z,10nm,1.1s
BSD Bornholm Skovb 77.74 332 *i* P P 09 51 07.4 +2.1
comp=Z,10nm,0.7s
BSD Bornholm Skovb 77.74 332 *e*P P 09 51 07.4 +2.1
BSD pmax pmax
comp=Z,10.0nm,0.7s
D25A Fairfield 77.84 39 P P 09 51 06.1 -0.1
baz=312
TUQ Turquoise Moun 77.86 55 P P 09 51 07.0 +0.4
baz=307
BBRC Big Bear Solar 77.90 56 P P 09 51 07.5 +0.5
baz=307
HEC Hector,Ludlow 77.95 55 P P 09 51 06.9 -0.2
baz=307,SNR=8.3
C26A Wahner Farm, P 78.00 38 P P 09 51 07.5 +0.5
baz=313
MURC Murrieta 78.11 57 P P 09 51 07.1 -0.8
baz=307
A28A Rude Farm, Bot 78.15 37 P P 09 51 06.7 -1.2
baz=314
E25A Miller Ranch, 78.23 40 P P 09 51 07.8 -0.6
baz=312,SNR=5.7
D26A Manning 78.37 39 P P 09 51 08.5 -0.5
baz=313
C27A Sayler Ranch, 78.37 38 P P 09 51 08.2 -0.9
baz=313
MSU Marysvale 78.38 50 *e*P P 09 51 10.9 +1.4
MSU Marysvale 78.38 50 *e*P P 09 51 10.9 +1.4
B28A Dugan Ranch, T 78.42 37 P P 09 51 08.9 -0.4
baz=314
GMRC Granite Mounta 78.43 55 P P 09 51 09.5 -0.2
baz=307,SNR=6.4
KWP Kalwaria Pacla 78.49 325 *e*P P 09 51 09.5 -0.1
KWP Kalwaria Pacla 78.49 325 *e*P P 09 51 09.6 -0.1
TMUT Trail Mountain 78.49 49 *e*P P 09 51 11.4 +1.2
comp=Z,24nm,1.5s
F25A Bowman 78.59 40 P P 09 51 09.8 -0.6
baz=312
PFO Pinyon Flats O 78.60 57 P P 09 51 10.4 -0.3
baz=307,SNR=5.8
PFO Pinyon Flats O 78.60 57 *e*P P 09 51 11.4 +0.7
PFO pmax pmax
comp=Z,26nm,1.4s
PFO Pinyon Flats O 78.60 57 *e*P P 09 51 11.4 +0.7
comp=Z,26nm,1.4s
LCMT Little Creek M 78.64 52 *e*P P 09 51 12.0 +1.1
comp=Z,22nm,1.2s
A29A Manning Farm, 78.64 36 P P 09 51 10.2 -0.3
baz=314,SNR=8.1
P17A Butcher Ranch, 78.66 49 *e*P P 09 51 12.1 +1.1
comp=Z,28nm,1.2s
BELC Belle Mtn. Jos 78.67 56 P P 09 51 09.8 -1.3
baz=307
BUR08 Bucovina Ar. S 78.68 322 *e*P P 09 51 11.7 +0.9
BURAR Bucovina Array 78.69 322⇑*i*P P 09 51 14.1 +3.2
BURAR Bucovina Array 78.69 322 ⇑P P 09 51 14.1 +3.2
TESR Tescani 78.72 321⇑*i*P P 09 51 15.5 +4.5
E26A Carlson Angus 78.73 40 P P 09 51 10.8 -0.3
baz=313
P18A Preston Nutter 78.86 49 *e*P P 09 51 13.4 +1.1
comp=Z,32nm,1.6s
B29A Wagenman Farm, 78.90 37 P P 09 51 11.4 -0.5
baz=314
KNB Kanab 78.90 52 *e*P P 09 51 11.1 -1.3
KNB pmax pmax
comp=Z,46nm,1.4s
KNB Kanab 78.90 52 *e*P P 09 51 11.1 -1.3
comp=Z,46nm,1.4s
C28A Hausauer Farms 78.92 38 P P 09 51 11.7 -0.4
baz=314
BAR Barrett 79.01 57 *e*P P 09 51 13.5 +0.7
comp=Z,29nm,1.4s
SRU San Rafael Swe 79.02 49 *e*P P 09 51 13.8 +0.8
SRU pmax pmax
comp=Z,21nm,1.2s
SRU San Rafael Swe 79.02 49 *e*P P 09 51 13.8 +0.8
comp=Z,20nm,1.2s
F26A Lodgepole 79.05 40 P P 09 51 12.4 -0.4
baz=313
MONP2 Monument Peak 79.05 57 P P 09 51 12.8 -0.5
baz=307
A30A Hoffart Farm, 79.06 36 P P 09 51 12.3 -0.5
baz=315,SNR=6.0
K22A Casper 79.09 44 P P 09 51 13.0 -0.3
baz=311
K22A Casper 79.09 44 *e*P P 09 51 13.8 +0.4
comp=Z,25nm,1.4s
G25A Newell 79.10 41 P P 09 51 12.6 -0.6
baz=312
VRI Vrincioaia 79.12 320⇑*i*P P 09 51 18.5 +5.3
VRI Vrincioaia 79.12 320 ⇑P P 09 51 18.5 +5.3
MMU Miners Mountai 79.12 50 *e*P P 09 51 14.7 +1.0
PLOR Plostina 79.17 320⇓*i*P P 09 51 19.9 +6.4
PLOR Plostina 79.17 320 ⇓P P 09 51 19.9 +6.4
KOLS Kolonicke sedl 79.18 324 *e*P P 09 51 16.5 +3.0
KOLS pmax pmax
comp=Z,8.0nm,1.1s
KOLS Kolonicke sedl 79.18 324 *e*P P 09 51 16.5 +3.0
E27A Carson 79.22 39 P P 09 51 12.3 -1.4
baz=313
ULM Lac du Bonnet 79.23 34 P P 09 51 12.8 -0.9
comp=Z,9.8nm,1.2s,baz=278,slow=8.6,SNR=3.8
ULM LR LR 10 26 34.8
comp=Z,83nm,20.7s,baz=326,slow=36
ULM Lac du Bonnet 79.23 34 *e*P P 09 51 13.0 -0.7
comp=Z,56nm,1.9s
BC3 Big Chuckawall 79.24 56 P P 09 51 13.4 -0.8
baz=308
BR131 Keskin Array S 79.29 312 *e*P P 09 51 14.4 0.0
BRTR Keskin Array B 79.29 312 P P 09 51 15.2 +0.8
comp=Z,3.1nm,1.0s,baz=90,slow=3.7,SNR=11
BRTR LR LR 10 31 37.3
comp=Z,162nm,18.5s,baz=39,slow=40
STHS Stebnicka Huta 79.31 325 *e*P P 09 51 17.5 +3.3
STHS pmax pmax
comp=Z,6.0nm,0.9s
STHS Stebnicka Huta 79.31 325 *e*P P 09 51 17.5 +3.3
F27A Lemmon 79.36 40 P P 09 51 13.8 -0.8
baz=313
OJC Ojcow 79.38 326 *e*P P 09 51 14.4 -0.1
OJC pmax pmax
comp=Z,15nm,0.9s
OJC Ojcow 79.38 326 *e*P P 09 51 14.4 -0.1
comp=Z,15nm,0.9s
H25A Fruitdale 79.39 41 P P 09 51 14.4 -0.3
baz=312
B30A Myrvik Farm, E 79.39 36 P P 09 51 14.1 -0.5
baz=315
W13A Hualapai Mount 79.39 54 *e*P P 09 51 15.8 +0.7
comp=Z,13nm,1.3s
IBP Imperial Bould 79.42 57 P P 09 51 14.9 -0.3
baz=307
SWSC Sam W. Stewart 79.44 57 P P 09 51 15.0 -0.1
baz=307
G26A Maurine 79.46 40 P P 09 51 14.8 -0.3
baz=313,SNR=6.7
RSSD Black Hills 79.49 42 P P 09 51 14.0 -1.5
baz=312
RSSD Black Hills 79.49 42 *e*P P 09 51 15.6 +0.1
RSSD pmax pmax
comp=Z,16nm,1.5s
RSSD Black Hills 79.49 42 *e*P P 09 51 15.6 +0.1
comp=Z,16nm,1.5s
U15A North Rim 79.60 52 *e*P P 09 51 17.7 +1.4
comp=Z,26nm,1.3s
PDMCI Parker Dam,Lak 79.71 55 P P 09 51 16.7 +0.1
baz=308
I25A Rochford 79.72 42 P P 09 51 16.1 -0.6
baz=312
ISR Istrita 79.72 320⇓*i*P P 09 51 21.5 +5.0
ISR Istrita 79.72 320 ⇓P P 09 51 21.5 +5.0
B31A Greenbush Farm 79.73 36 P P 09 51 15.6 -0.9
baz=316
BR231 Keskin MP Arra 79.73 312 *e*P P 09 51 14.5 -2.2
DOPR Dopca 79.73 321⇑*i*P P 09 51 21.4 +4.9
O20A White River Ci 79.73 47 P P 09 51 16.6 -0.3
baz=310
O20A White River Ci 79.73 47 *e*P P 09 51 17.3 +0.4
comp=Z,14nm,1.0s
MSAB Monastry St. A 79.74 318⇑*i*P P 09 51 21.6 +5.1
G27A Dupree 79.75 40 P P 09 51 15.9 -0.8
baz=313,SNR=7.0
MLR Muntele Rosu 79.78 320⇑*i*P P 09 51 21.8 +4.9
MLR Muntele Rosu 79.78 320 ⇑P P 09 51 21.8 +4.9
Y12C Blythe 79.80 55 P P 09 51 17.8 +0.7
baz=308
H26A Fairpoint 79.83 41 P P 09 51 16.6 -0.6
baz=313
C30A Mose, Pekin 79.85 37 P P 09 51 16.7 -0.4
baz=315
A32A Rocking H Ranc 79.91 35 P P 09 51 16.8 -0.6
baz=316
F28A McLaughlin 80.00 39 P P 09 51 17.6 -0.4
baz=314
GLA Glamis 80.03 56 P P 09 51 18.8 +0.4
baz=308
J25A Sunshine Ranch 80.10 42 P P 09 51 18.1 -0.6
baz=312
D30A Buchanan 80.14 37 P P 09 51 18.0 -0.7
baz=315
C31A Landman Farms, 80.14 36 P P 09 51 18.0 -0.7
baz=316
I26A New Underwood 80.18 42 P P 09 51 18.3 -0.7
baz=313
H27A Howes 80.18 41 P P 09 51 18.3 -0.7
baz=313,SNR=6.8
PV09 Paradox Valley 80.25 49 *e*P P 09 51 20.9 +1.0
VOIR 80.27 320⇑*i*P P 09 51 19.0 -0.5
VOIR 80.27 320 ⇑P P 09 51 19.0 -0.5
B32A Ashes, Strandq 80.27 35 P P 09 51 18.6 -0.8
baz=316
LANS Liptovska Anna 80.31 326 *e*P P 09 51 24.2 +4.6
LANS Liptovska Anna 80.31 326 *e*P P 09 51 24.2 +4.6
KECS Kecovo 80.33 325 *e*P P 09 51 21.8 +2.1
KECS pmax pmax
comp=Z,3.0nm,1.3s
KECS Kecovo 80.33 325 *e*P P 09 51 21.8 +2.1
PV10 Paradox Valley 80.38 49 *e*P P 09 51 22.2 +1.7
A33A Warroad 80.40 34 P P 09 51 19.2 -0.9
baz=317
KSP Ksiaz 80.43 329 *e*P P 09 51 23.8 +3.6
KSP Ksiaz 80.43 329 *e*P P 09 51 23.9 +3.7
G28A Parade 80.48 40 P P 09 51 20.1 -0.6
baz=314
E30A Jud 80.49 38 P P 09 51 20.4 -0.2
baz=315
ARR Arges 80.53 321⇑*i*P P 09 51 25.3 +4.4
PV05 Paradox Valley 80.54 49 *e*P P 09 51 22.5 +1.2
J26A Sides Ranch, S 80.55 42 P P 09 51 20.4 -0.7
baz=313
N23A Red Feather La 80.57 45 P P 09 51 21.5 +0.1
baz=311,SNR=7.6
N23A Red Feather La 80.57 45 *e*P P 09 51 22.4 +0.9
comp=Z,19nm,1.2s
I27A Quinn 80.58 41 P P 09 51 20.6 -0.6
baz=313,SNR=12
PHWY Pilot Hill 80.58 45 *e*P P 09 51 22.6 +1.1
comp=Z,28nm,1.6s
AGMN Agassiz Nation 80.65 35 P P 09 51 21.0 -0.4
baz=317
AGMN Agassiz Nation 80.65 35 *e*P P 09 51 20.8 -0.7
comp=Z,42nm,1.9s
MORC Moravsky Berou 80.70 327 *e*P P 09 51 23.6 +1.9
MORC pmax pmax
comp=Z,26nm,0.9s
MORC Moravsky Berou 80.70 327 *e*P P 09 51 23.6 +1.9
comp=Z,26nm,0.9s
H28A Mission Ridge 80.70 40 P P 09 51 21.4 -0.4
baz=314
WUAZ Wupatki 80.75 52 P P 09 51 22.6 +0.2
baz=309,SNR=11
WUAZ Wupatki 80.75 52 *e*P P 09 51 23.6 +1.2
comp=Z,23nm,1.1s
DPC Dobruska-Polom 80.79 328 *e*P P 09 51 23.2 +1.0
DPC Dobruska-Polom 80.79 328 *e*P P 09 51 23.2 +1.0
B33A Robert and Kas 80.80 35 P P 09 51 21.7 -0.5
baz=317
PV01 Paradox Valley 80.82 49 *e*P P 09 51 23.6 +0.8
113A Mohawk Valley, 80.90 56 *e*P P 09 51 24.4 +1.4
comp=Z,11nm,1.0s
E31A Nome 80.95 37 P P 09 51 22.0 -1.0
baz=316
PSZ Piszkesteto 81.01 325 *e*P P 09 51 26.0 +2.5
PSZ pmax pmax
comp=Z,20nm,1.4s
PSZ Piszkesteto 81.01 325 *e*P P 09 51 26.0 +2.5
comp=Z,20nm,1.4s
B34A Aery, Baudette 81.07 34 P P 09 51 22.7 -0.9
baz=318
VYHS Vyhne 81.07 326 *e*P P 09 51 26.3 +2.6
VYHS pmax pmax
comp=Z,16nm,1.9s
VYHS Vyhne 81.07 326 *e*P P 09 51 26.3 +2.6
C33A Trail 81.08 35 P P 09 51 23.1 -0.7
baz=317
I28A Midland 81.09 41 P P 09 51 23.0 -0.9
baz=314,SNR=11
SMCO Snowmass 81.10 47 *e*P P 09 51 25.3 +0.8
comp=Z,21nm,1.4s
H29A Onida 81.15 40 P P 09 51 24.1 0.0
baz=314
J27A Elkhorn Farm, 81.16 42 P P 09 51 24.4 0.0
baz=313
RAYN Ar Rayn 81.19 293 *e*P P 09 51 25.7 +0.9
comp=Z,7.4nm,1.0s
F31A Hecla 81.27 38 P P 09 51 24.3 -0.4
baz=315
G30A Faulkton 81.34 39 P P 09 51 24.3 -0.9
baz=315
BRG Berggiesshubel 81.37 330 *e*P P 09 51 26.9 +1.7
comp=Z,10nm,1.4s
BRG Berggiesshubel 81.37 330 *e*P P 09 51 26.9 +1.7
BRG pmax pmax
comp=Z,10.0nm,1.4s
BRG MLR MLR
comp=N,674nm,12.1s
BRG MLR MLR
comp=E,534nm,14.2s
BRG MLR MLR
comp=Z,626nm,16.2s
X16A Lo Mia Camp, P 81.39 53 *e*P P 09 51 27.2 +1.3
comp=Z,16nm,1.2s
CLL Collm 81.41 330 *i* P P 09 51 25.4 0.0
comp=Z,11nm,1.0s
CLL *e* 09 51 34.0
CLL *e* 09 51 39.0
CLL *e*S S 10 01 41.0 +4.2
CLL *e*(SS) 10 07 36.0
CLL Collm 81.41 330 *i* P P 09 51 25.4 0.0
CLL *e* 09 51 34.0
CLL *e*S S 10 01 41.0 +4.2
CLL pmax pmax
comp=Z,11nm,1.0s
CLL Collm 81.41 330 *e*P P 09 51 26.1 +0.8
comp=Z,9.9nm,0.9s
GZR Gura Zlata 81.44 322⇓*i*P P 09 51 29.9 +4.1
GZR Gura Zlata 81.44 322 ⇓P P 09 51 29.9 +4.1
J28A Allard Ranch, 81.45 41 P P 09 51 25.5 -0.3
baz=314
VRAC Vranov 81.46 327⇑*i*P P 09 51 27.5 +1.8
VRAC Vranov 81.46 327 ⇑P P 09 51 27.5 +1.8
MVCO Mesa Verde 81.46 50 P P 09 51 26.0 -0.2
baz=310
MVCO Mesa Verde 81.46 50 *e*P P 09 51 27.1 +0.9
comp=Z,23nm,1.4s
ISCO Idaho Springs 81.48 46 P P 09 51 26.1 -0.4
baz=312
ISCO Idaho Springs 81.48 46 *e*P P 09 51 27.2 +0.8
ISCO pmax pmax
comp=Z,8.0nm,1.0s
ISCO Idaho Springs 81.48 46 *e*P P 09 51 27.2 +0.8
comp=Z,7.6nm,1.0s
I29A Vivian Onida 81.52 40 P P 09 51 25.5 -0.7
baz=314
B35A Bob, Littlefor 81.57 34 P P 09 51 25.6 -0.7
baz=318
K28A Ten Mile Ranch 81.87 42 P P 09 51 28.0 -0.1
baz=314
E33A Westby DABS, E 81.89 36 P P 09 51 27.9 -0.2
baz=317
214A Organ Pipe Nat 82.04 56 P P 09 51 29.5 +0.4
baz=309
S22A 4UR Ranch, Cre 82.12 48 P P 09 51 30.1 +0.3
baz=311,SNR=8.6
S22A 4UR Ranch, Cre 82.12 48 *e*P P 09 51 30.9 +1.2
comp=Z,22nm,1.4s
F33A 5 Mile Ranch, 82.23 37 P P 09 51 29.7 -0.2
baz=317
X18A Snowflake 82.28 52 *e*P P 09 51 31.5 +1.0
MDVR Moldovita 82.41 322⇑*i*P P 09 51 30.9 0.0
C36A Pine Crest Far 82.42 34 P P 09 51 30.1 -0.7
baz=319
D36A Goodland 82.71 34 P P 09 51 31.2 -1.1
baz=319
C37A Embarrass 82.73 34 P P 09 51 31.8 -0.6
baz=319
K30A Basset 82.83 41 P P 09 51 32.4 -0.7
baz=315
KHC Kasperske Hory 82.87 329 *e*P P 09 51 35.5 +2.3
KHC *e*pP PcP 09 51 44.8 +6.8
KHC Kasperske Hory 82.87 329 *e*P P 09 51 35.5 +2.3
KHC *e* 09 51 44.8
KHC Kasperske Hory 82.87 329 *e*P P 09 51 35.7 +2.5
comp=Z,2.9nm,0.8s
SDCO Great Sand Dun 82.91 48 P P 09 51 33.6 -0.3
baz=312
SDCO Great Sand Dun 82.91 48 *e*P P 09 51 34.8 +0.8
comp=Z,9.2nm,1.3s
GEC2 GERESS Array S 83.04 329 *e*P P 09 51 34.1 0.0
GEC2 pmax pmax
comp=Z,7.0nm,1.2s
GEC2 GERESS Array S 83.04 329 *e*P P 09 51 34.1 0.0
comp=Z,6.9nm,1.2s
GERES GERESS Array B 83.04 329 P P 09 51 33.9 -0.2
comp=Z,2.2nm,0.7s,baz=35,slow=4.9,SNR=13
GERES LR LR 10 32 32.3
comp=Z,343nm,19.9s,baz=24,slow=39
D37A Cotton 83.06 34 P P 09 51 33.3 -0.8
baz=319
C38A Sawbill Land. 83.14 33 P P 09 51 33.7 -0.9
baz=320
TUC Tucson 83.15 55 P P 09 51 35.3 +0.3
baz=310
TUC Tucson 83.15 55 *e*P P 09 51 35.6 +0.6
TUC pmax pmax
comp=Z,18nm,1.5s
TUC Tucson 83.15 55 *e*P P 09 51 35.6 +0.6
comp=Z,18nm,1.5s
VTS Vitosha 83.21 319⇓*i*P P 09 51 36.1 +0.9
VTS Vitosha 83.21 319 ⇓P P 09 51 36.1 +0.9
VTS Vitosha 83.21 319 *e*P P 09 51 35.3 +0.1
comp=Z,4.4nm,0.8s
K31A O'Neill 83.31 40 P P 09 51 35.5 -0.1
baz=315
GRFO Grafenberg 83.38 330 *e*P P 09 51 32.5 -3.3
GRFO pmax pmax
comp=Z,29nm,0.9s
GRFO Grafenberg 83.38 330 *e*P P 09 51 32.5 -3.3
comp=Z,29nm,0.9s
ECSD EROS Data Cent 83.60 39 P P 09 51 36.6 -0.4
baz=317
ECSD EROS Data Cent 83.60 39 *e*P P 09 51 36.7 -0.4
comp=Z,38nm,1.6s
PMOR Pomariorio Ree 83.65 114 *e*T T 11 23 45.7
comp=Z,13nm,0.2s
H35A Sunnyside Ranc 83.77 37 P P 09 51 37.7 -0.2
baz=318
T25A Trinidad 83.96 47 P P 09 51 39.0 -0.2
baz=313
T25A Trinidad 83.96 47 *e*P P 09 51 40.0 +0.8
comp=Z,31nm,1.5s
GROS Grobnik 84.09 326 *i* P P 09 51 42.9 +3.4
PPT Papeete 84.12 117 LR LR 10 26 31.1
comp=Z,84nm,19.0s,baz=318,slow=34
LAZ Ladron 84.12 51 *e*P P 09 51 41.3 +1.2
PPT2 Papeete2 84.13 117 *e*LR LR 10 17 56.8
comp=Z,535nm,30.0s,baz=306
PPT2 Papeete2 84.13 117 *e*T T 11 24 23.3
comp=Z,3.2nm,0.3s
ANMO Albuquerque 84.19 50 P P 09 51 40.7 +0.3
baz=312
ANMO Albuquerque 84.19 50 *e*P P 09 51 41.5 +1.1
ANMO pmax pmax
comp=Z,25nm,1.4s
ANMO Albuquerque 84.19 50 *e*P P 09 51 41.5 +1.1
comp=Z,25nm,1.4s

SPMN Marine on St. 84.34 36 P **P** 09 51 40.5 -0.2
baz=319
319A Douglas 84.73 54 *e*P **P** 09 51 44.0 +0.8
comp=Z,29nm,1.3s
H37A Dierke Farm, C 84.77 36 P **P** 09 51 43.3 +0.4
baz=319
BOJS Bojanci 84.94 326 *i* P **P** 09 51 44.3 +0.5
121A Cookes Peak, D 84.94 53 P **P** 09 51 44.0 -0.2
baz=311
121A Cookes Peak, D 84.94 53 *e*P **P** 09 51 44.5 +0.2
comp=Z,29nm,1.4s
I37A Lemond, Waseca 84.97 37 P **P** 09 51 43.8 -0.1
baz=319
HSIG 85.14 57 *e*P **P** 09 51 45.7 +0.7
comp=Z,17nm,1.3s
JAVS Javornik 85.17 326 *i* P **P** 09 51 45.9 +0.8
SCHQ Schefferville 85.22 16 P **P** 09 51 44.6 -0.4
comp=Z,4.0nm,1.0s,baz=263,slow=17,SNR=2.6
SCHQ LR LR 10 30 42.9
comp=Z,146nm,21.1s,baz=0.0,slow=36
MEH Mehetia 85.40 116 *e*T T 11 25 57.5
comp=Z,18nm,0.3s
J37A Redenius Farm, 85.42 37 P **P** 09 51 45.9 -0.3
baz=319
I38A Scanlan Farm, 85.45 36 P **P** 09 51 45.5 -0.8
baz=319
K36A Gilmore City 85.48 38 P **P** 09 51 45.5 -1.1
baz=318
BFO Black Forest 85.61 331 *e*P **P** 09 51 49.2 +2.1
BFO pmax pmax
comp=Z,10.0nm,0.9s
BFO Black Forest 85.61 331 *e*P **P** 09 51 49.2 +2.1
comp=Z,9.7nm,0.9s
TAOE Nuku Hiva Isla 85.62 104 *e*LR LR 10 18 44.7
comp=Z,518nm,24.3s
K37A Belmond 85.79 38 P **P** 09 51 46.2 -1.8
baz=319
M36A Felix, Anita 86.18 39 P **P** 09 51 48.2 -1.8
baz=318
Q34A Chapman 86.92 42 P **P** 09 51 53.3 -0.4
baz=317
M38A Pleasantville 87.02 38 P **P** 09 51 52.9 -1.2
baz=319
MNTX Cornudas Mount 87.02 52 P **P** 09 51 53.8 -0.6
baz=312
MNTX Cornudas Mount 87.02 52 *e*P **P** 09 51 54.0 -0.3
comp=Z,8.8nm,1.4s
T32A Huddler Ranch, 87.09 44 P **P** 09 51 53.9 -0.7
baz=316
P36A Good Intent, A 87.33 41 P **P** 09 51 55.2 -0.4
baz=318
Q35A Mercer Eighty, 87.45 42 P **P** 09 51 55.9 -0.4
baz=317
O37A Wolven Farm, M 87.47 40 P **P** 09 51 56.0 -0.3
baz=318
T33A Patterson Ranc 87.54 44 P **P** 09 51 56.3 -0.4
baz=316
TBI Tubuai 88.03 121 *e*LR LR 10 19 50.3
comp=Z,363nm,26.2s,baz=315
TBI Tubuai 88.03 121 *e*T T 11 29 16.0
comp=Z,49nm,0.3s
V32A Arapaho 88.06 45 P **P** 09 51 58.5 -0.8
baz=316
U33A Lingo Farm, Me 88.08 44 P **P** 09 51 59.0 -0.3
baz=316
R36A Gordon, Harris 88.13 42 P **P** 09 51 59.3 -0.2
baz=318
S35A Otter Creek Ra 88.16 43 P **P** 09 51 59.5 -0.2
baz=317
T34A McClaskey Farm 88.17 44 P **P** 09 51 59.6 -0.2
baz=317
P38A Dawn 88.19 40 P **P** 09 51 59.5 -0.3
baz=319
VLDQ Val d'Or 88.22 25 *e*P **P** 09 51 59.2 -0.6
comp=Z,50nm,1.7s
U34A Anderson Ranch 88.40 44 P **P** 09 52 01.0 +0.2
baz=316
R37A Teagarden Farm 88.49 41 P **P** 09 52 01.2 -0.1
baz=318
S36A Lake Cedric, C 88.52 42 P **P** 09 52 01.6 +0.2
baz=318
W33A Caddo, Fort Co 88.79 46 P **P** 09 52 02.2 -0.5
baz=316
V34A Guthrie 88.84 45 P **P** 09 52 02.3 -0.7
baz=316
T36A Boggs Farm, Ca 88.85 43 P **P** 09 52 02.8 -0.2
baz=317
U35A Pawnee 88.89 44 P **P** 09 52 02.5 -0.7
baz=317
S37A Fort Scott 88.90 42 P **P** 09 52 02.8 -0.4
baz=318
Q39A Willow Grove F 88.91 40 P **P** 09 52 02.1 -1.1
baz=319
P40A Paris 89.01 39 P **P** 09 52 03.2 -0.4
baz=320
R38A Fenwick Farm, 89.07 41 P **P** 09 52 02.2 -1.8
baz=319
Q40A Laux Farm, Aux 89.41 39 P **P** 09 52 05.2 -0.3
baz=320
R39A Chumby, Stover 89.43 40 P **P** 09 52 04.5 -1.2
baz=319
S38A Stockton 89.49 41 P **P** 09 52 04.7 -1.2
baz=319
X34A Smith Ranch, M 89.55 46 P **P** 09 52 05.9 -0.4
baz=316
HDIL Hopedale 89.57 37 P **P** 09 52 06.2 -0.1
baz=321
TX31 Lajitas Ar. Si 89.70 53 *e*P **P** 09 52 07.1 -0.1
TX31 *e*P **P** 09 52 08.2 +0.9
TXAR Lajitas Array 89.70 53 P **P** 09 52 07.0 -0.2
comp=Z,6.2nm,1.1s,baz=270,slow=2.5,SNR=17
TXAR LR LR 10 26 06.5
comp=Z,176nm,21.9s,baz=0.0,slow=31
T38A Diamond 89.73 42 P **P** 09 52 06.6 -0.5
baz=318
TUL1 Leonard 89.75 43 P **P** 09 52 07.0 -0.2
baz=318
S39A Bolivar 89.75 41 P **P** 09 52 06.2 -1.0
baz=319
V36A Jenks 89.75 44 P **P** 09 52 06.8 -0.4
baz=317
R40A Maddies Statio 89.84 40 P **P** 09 52 06.9 -0.7
baz=320
HPIG 90.03 56 *e*P **P** 09 52 09.6 +0.7
comp=Z,4.8nm,1.0s
W36A Wetumka 90.07 44 P **P** 09 52 09.0 +0.3
baz=317
U38A Gravette 90.12 42 P **P** 09 52 08.1 -0.8
baz=318
V37A Hulbert 90.12 43 P **P** 09 52 08.8 -0.2
baz=318
T39A Clever 90.22 41 P **P** 09 52 08.9 -0.5
baz=319
S40A Lebanon 90.25 40 P **P** 09 52 09.4 -0.1
baz=319
X36A Centrahoma 90.41 45 P **P** 09 52 10.1 -0.2
baz=317
V38A Canehill 90.54 43 P **P** 09 52 10.9 0.0
baz=318
U39A Green Forest 90.65 42 P **P** 09 52 10.9 -0.5
baz=319
SFIN Lafayette 90.74 35 P **P** 09 52 11.3 -0.4
baz=323
233A Rising Star 90.78 48 P **P** 09 52 11.8 -0.3
baz=316
V39A Pettigrew 90.97 42 P **P** 09 52 12.3 -0.7
baz=319
U40A Yellville 91.00 41 P **P** 09 52 12.7 -0.4
baz=319
X38A Whitesboro 91.19 44 P **P** 09 52 13.6 -0.3
baz=318
333A Richland Sprin 91.22 49 P **P** 09 52 14.1 0.0
baz=316
234A Clairette 91.24 48 P **P** 09 52 14.4 +0.2
baz=316
W39A Magazine 91.37 43 P **P** 09 52 13.9 -0.8
baz=319
433A Art 91.56 49 P **P** 09 52 15.6 -0.2
baz=316
WHTX Lake Whitney, 91.65 47 P **P** 09 52 15.7 -0.4
baz=316
WHTX Lake Whitney, 91.65 47 *e*P **P** 09 52 17.2 +1.1
334A Lometa 91.66 48 P **P** 09 52 15.9 -0.3
baz=316
X39A Fountain Ranch 91.70 43 P **P** 09 52 16.4 0.0
baz=318
MIAR Mount Ida 91.97 43 P **P** 09 52 17.0 -0.6
baz=319
MIAR Mount Ida 91.97 43 *e*P **P** 09 52 17.6 +0.1
MIAR pmax pmax
comp=Z,50nm,1.9s
MIAR Mount Ida 91.97 43 *e*P **P** 09 52 17.6 +0.1
comp=Z,50nm,1.9s
434A Burnet 92.01 48 P **P** 09 52 16.8 -1.0
baz=316
534A Blanco 92.45 49 P **P** 09 52 20.1 +0.2
baz=316
734A La Parita Cree 93.24 50 P **P** 09 52 22.4 -1.1
baz=316
N54A Moraine State 93.36 31 P **P** 09 52 23.8 0.0
baz=328
933A Laredo 93.67 51 P **P** 09 52 25.6 +0.1
baz=315
636A Smothers Creek 93.70 49 P **P** 09 52 25.9 +0.4
baz=317
KEST Kerr 95.39 323 LR LR 10 38 30.9
comp=Z,81nm,21.2s,baz=342,slow=37
ESDC Sonseca Array 97.57 334 LR LR 10 40 38.1
comp=Z,315nm,20.3s,baz=30,slow=38
RKT Rikitea 98.22 113 *e*LR LR 10 24 34.7
comp=Z,376nm,25.8s,baz=325
TORD Torodi Ar. Bea 117.75 315 PKP **PKPdf** 09 57 54.6 -1.0
comp=Z,0.4nm,0.8s,baz=357,slow=1.8,SNR=3.1
TORD PP **PP** 09 59 03.8 -4.0
comp=Z,1.1nm,0.8s,baz=36,slow=7.2,SNR=5.4
SDV Santo Domingo 125.00 41 PKP **PKPdf** 09 58 09.1 -0.7
comp=Z,4.0nm,0.9s,baz=344,slow=7.4,SNR=3.0
DBIC Dimbokro 126.70 318 PKP **PKPdf** 09 58 12.7 -0.1
comp=Z,1.9nm,0.8s,baz=18,slow=6.4,SNR=2.4
VNA2 Neumayer--Watz 142.43 196 PKP PKPpre 09 58 36.9
baz=122,slow=3.8
VNA3 Neumayer Olymp 142.67 195 PKP PKPpre 09 58 37.7
VNA1 Neumayer--Stat 142.83 196 PKP PKPpre 09 58 34.4
LPAZ La Paz 146.23 60 PKPbc **PKPdf** 09 58 49.9 +0.5
comp=Z,13nm,1.1s,baz=345,slow=4.7,SNR=25

*ISCJB **04** 09:56:26.2±0.8, 15°.98N±0°.06×94°.03W±0°.06, h89km±6km, mb3.5/3, Error ellipse: s-maj=10.7km s-min=8.4km az=34.5*
*IDC **04** 09:56:27.0±2.2, 15°.97N×94°.01W, h79km±15km, mb3.4/3, mb1 3.8/5, mb1mx3.3/42, mbtmp3.9/5, Error ellipse: s-maj=27.7km s-min=14.5km az=18.0*
*MEX **04** 09:56:27.8±0.5, 15°.91N×94°.15W, h69km±13km, MD4.1*
*NEIC **04** 09:56:31.3, 16°.01N×93°.77W, h83km, MD4.1(MEX), After MEX.*

ISC 04 09:56:27.0±1.1, 15°.96N±0°.06×94°.02W±0°.06, h82km±9km, n19, σ1°.50/32, mb3.4/3, Near coast of Oaxaca

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PCIG		**0.81**	**108**	*e*P	**Pn**	**09 56 43.9**	**-0.1**
PCIG				*e*S	**Sn**	**09 56 56.4**	**-0.3**
PCIG		**0.81**	**108**	*e*P	**Pn**	**09 56 43.9**	**-0.1**
PCIG				*e*S	**Sn**	**09 56 56.4**	**-0.3**
TGIG		**1.19**	**47**	*e*P	**Pn**	**09 56 49.2**	**+0.6**
TGIG				*e*S	**Sn**	**09 57 04.0**	**-0.7**
TGIG		**1.19**	**47**	*e*P	**Pn**	**09 56 49.2**	**+0.6**
TGIG				*e*S	**Sn**	**09 57 04.9**	**+0.2**
TGBT	**Tuxtla Gutierr**	**1.21**	**48**	*e*P	**Pn**	**09 56 49.6**	**+0.8**
TGBT				*e*S	**Sn**	**09 57 05.5**	**+0.4**
CMIG	**Matias Romero**	**1.40**	**324**	P	**Pn**	**09 56 50.6**	**-0.5**
	23nm,0.3s,baz=145,slow=9.7,SNR=754						
CMIG				S	**Sn**	**09 57 08.8**	**-0.5**
	99nm,0.3s,baz=147,slow=23,SNR=93						
CCIG	**Comitan**	**1.84**	**80**	*e*P	**Pn**	**09 56 57.9**	**+0.8**
CCIG				*i* S	**Sn**	**09 57 15.5**	**-4.4**
CCIG	**Comitan**	**1.84**	**80**	*e*P	**Pn**	**09 56 57.9**	**+0.8**
CCIG				*i* S	**Sn**	**09 57 21.7**	**+1.8**
THIG		**1.99**	**121**	*e*P	**Pn**	**09 56 59.2**	**+0.3**
THIG		**1.99**	**121**	*e*P	**Pn**	**09 56 59.2**	**+0.3**
SCIG	**Sabancuy**	**4.04**	**42**	*e*P	**Pn**	**09 57 26.9**	**+0.4**
SCIG				*i* S	**Sn**	**09 58 11.0**	**-1.6**
SCIG	**Sabancuy**	**4.04**	**42**	*e*P	**Pn**	**09 57 26.9**	**+0.4**
SCIG				*i* S	**Sn**	**09 58 14.0**	**+1.4**
TEIG	**Tepich**	**6.92**	**51**	P	**Pn**	**09 58 05.7**	**-0.1**
	1.6nm,0.3s,baz=270,slow=20,SNR=85						
TEIG				S	**Sn**	**09 59 22.8**	**-0.3**
	0.1nm,0.3s,baz=214,slow=12,SNR=2.8						
TEIG	**Tepich**	**6.92**	**51**	*e*P	**Pn**	**09 58 04.8**	**-1.0**
TEIG				*e*S	**Sn**	**09 59 18.4**	**-4.7**
TEIG	**Tepich**	**6.92**	**51**	*e*P	**Pn**	**09 58 04.8**	**-1.0**
TEIG				*e*S	**Sn**	**09 59 25.4**	**+2.3**
JTS	**JuntasAbangare**	**10.47**	**121**	P	**Pn**	**09 58 54.6**	**+0.2**
	2.4nm,0.3s,baz=304,slow=19,SNR=13						
NVAR	**Mina Array Bea**	**30.93**	**321**	P	**P**	**10 02 37.5**	**+1.1**
	0.5nm,0.6s,baz=148,slow=11,SNR=5.1						
YKA	**Yellowknife Ar**	**48.69**	**347**	P	**P**	**10 05 02.3**	**-0.5**
	0.1nm,0.5s,baz=151,slow=7.3,SNR=7.0						
ARCES	**ARCESS Array B**	**84.89**	**18**	P	**P**	**10 08 52.6**	**0.0**
	2.4nm,0.8s,baz=307,slow=6.2,SNR=3.9						

IDC 04 09:58:04.7±8.6, 32°.53S×179°.40W, h321km±97km, mb3.3/2, mb1 3.5/3, mb1mx3.1/44, mbtmp4.0/3, Error ellipse: s-maj=112.7km s-min=46.4km az=179.0, South of Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
URZ	**Urewera**	**6.38**	**206**	P	Pn	09 59 40.1	+1.2
	1.9nm,0.3s,baz=107,slow=7.6,SNR=11						
URZ				S	S	10 00 54.2	-1.0
	1.7nm,0.3s,baz=242,slow=4.3,SNR=2.7						
ASAR	**Alice Springs**	**41.85**	**270**	P	P	10 05 24.6	+0.2
	0.5nm,0.3s,baz=107,slow=7.7,SNR=11						
WRA	**Warramunga Arr**	**43.04**	**275**	P	P	10 05 33.4	-0.4
	1.3nm,0.3s,baz=111,slow=8.0,SNR=9.5						
FINES	**FINESS Array B**	**146.70**	**338**	PKPbc	PKPbc	10 17 07.1	-1.0
	1.8nm,0.8s,baz=41,slow=4.4,SNR=4.7						

*ISCJB **04** 10:04:31.6±1.0, 10°.03S±0°.08×107°.64E±0°.08, h23km, mb3.9/5, MS3.1/1, Error ellipse: s-maj=14.4km s-min=8.1km az=137.8*
*DJA **04** 10:04:33.1±0.6, 10°.5±6°×10°.7E±°, h51km±31km, M4.7/16, mb4.8/6, MLv4.6/16*
*IDC **04** 10:04:44.0±4.8, 9°.68S×108°.14E, h100km±32km, mb3.7/5, mb1 3.8/7, mb1mx3.5/43, mbtmp4.1/7, MS3.4/3, Ms1 3.4/3, ms1mx3.0/41, Error ellipse: s-maj=103.3km s-min=15.8km az=53.0*

ISC 04 10:04:34.1±1.3, 9°.97S±0°.09×107°.7E±0°.1, h23km, n23, σ0°.78/21, mb4.0/5, South of Jawa

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CMJI	**Cimerak**	**2.30**	**19**	P	**Pn**	**10 05 09.8**	**-0.8**
CISI	**Cisompet, Garu**	**2.40**	**3**	P	**Pn**	**10 05 11.2**	**-0.9**
CNJI	**Cibinong**	**2.70**	**348**	P	**Pn**	**10 05 14.8**	**-1.3**
KPJI	**Karang Pucung**	**2.90**	**25**	P	**Pn**	**10 05 19.8**	**+1.0**
LEM	**Lembang**	**3.12**	**359**	P	**Pb**	**10 05 28.4**	**-0.7**
	32nm,0.3s,baz=100,slow=6.1,SNR=41						
LEM				S	**Sb**	**10 06 08.0**	**+1.1**
	74nm,0.3s,baz=345,slow=20,SNR=26						
LEM				LR	LR	10 07 05.9	
	comp=Z,850nm,20.1s,baz=214,slow=49						
LEM	**Lembang**	**3.12**	**359**	P	**Pb**	**10 05 28.6**	**-0.5**
SKJI	**Sasubumi**	**3.15**	**339**	P	**Pn**	**10 05 22.3**	**0.0**
UGM	**Wanagama**	**3.48**	**54**	P	**Pn**	**10 05 27.0**	**+0.2**
DBJI	**Dramaga**	**3.52**	**345**	P	Pb	10 05 31.7	-4.0
CGJI	**Cibinong**	**3.87**	**329**	P	Pn	10 05 28.7	-3.5
PCJI	**Pacitan**	**3.88**	**63**	P	**Pn**	**10 05 33.5**	**+1.2**
PWJI	**Pagerwojo**	**4.51**	**65**	P	**Pn**	**10 05 41.7**	**+0.7**
GMJI	**Gumukmas**	**5.94**	**74**	P	**Pn**	**10 06 01.1**	**+0.5**
	64nm,1.4s,0.3nm						
SRBI	**Singaraja**	**7.67**	**76**	P	**Pn**	**10 06 25.2**	**+0.7**
	48nm,0.8s,0.2nm						
TWSI	**Taliwang, Sumb**	**9.16**	**83**	P	**Pn**	**10 06 44.2**	**-0.8**
	47nm,0.9s						
PLAI	**Plampang**	**10.03**	**84**	P	**Pn**	**10 06 56.0**	**-0.8**
FITZ	**Fitzroy Crossi**	**19.19**	**117**	P	**Pn**	**10 08 57.4**	**-0.1**
	0.2nm,0.3s,baz=298,slow=8.5,SNR=7.0						
FITZ				S	Sn	10 12 15.0	-17
	0.2nm,0.3s,baz=3.5,slow=19,SNR=3.0						
FITZ				LR	LR	10 16 31.7	
	comp=Z,123nm,20.1s,baz=7.0,slow=37						
WRA	**Warramunga Arr**	**27.56**	**114**	P	**P**	**10 10 18.8**	**-0.8**
	1.9nm,0.8s,baz=286,slow=11,SNR=10.0						
ASAR	**Alice Springs**	**28.49**	**122**	P	**P**	**10 10 28.5**	**+0.6**
	1.6nm,0.8s,baz=303,slow=9.4,SNR=13						
CMAR	**Chiang Mai Arr**	**29.54**	**343**	LR	LR	10 25 21.8	
	comp=Z,44nm,18.8s,baz=95,slow=42						
STKA	**Stephens Creek**	**38.20**	**130**	P	**P**	**10 11 52.2**	**0.0**
	1.9nm,0.7s,baz=311,slow=6.2,SNR=5.2						
SONM	**Songino Array**	**57.56**	**359**	P	**P**	**10 14 22.0**	**0.0**
	0.8nm,0.5s,baz=176,slow=6.2,SNR=5.7						
MKAR	**Makanchi Array**	**60.89**	**340**	P	**P**	**10 14 44.9**	**-0.1**
	0.8nm,0.5s,baz=143,slow=8.2,SNR=9.3						

IDC 04 10:09:56.5±4.2, 35°.32N×141°.70E, h0km, mb3.6/3, mb1 3.7/4, mb1mx3.4/41, mbtmp3.4/4, ML3.0/1, Error ellipse: s-maj=129.6km s-min=26.5km az=57.0, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MJAR	**Matsushiro Arr**	**3.08**	**294**	Pn	Pn	10 10 46.5	0.0
	1.8nm,0.3s,baz=110,slow=7.8,SNR=14						
MAT	**Matsushiro**	**3.08**	**294**	P	Pn	10 10 46.3	-0.2
MAT				*e*S	Sg	10 11 41.1	+5.4
MKAR	**Makanchi Array**	**45.24**	**304**	P	P	10 18 15.2	-0.3
	0.3nm,0.8s,baz=77,slow=8.9,SNR=3.7						
WRA	**Warramunga Arr**	**55.40**	**188**	P	P	10 19 32.2	-0.4
	1.5nm,0.8s,baz=5.0,slow=7.5,SNR=12						
ASAR	**Alice Springs**	**59.13**	**188**	P	P	10 19 59.3	+0.4
	0.2nm,0.4s,baz=14,slow=9.3,SNR=4.1						

*IDC **04** 10:11:23.9±0.7, 37°.17N×144°.39E, h0km, mb3.8/11, mb1 4.1/15, mb1mx3.9/41, mbtmp4.0/15, ML4.2/3, MS3.5/5, Ms1 3.5/5, ms1mx2.9/46, Error ellipse: s-maj=21.5km s-min=15.6km az=112.0*
*ISCJB **04** 10:11:25.4±0.5, 37°.02N±0°.06×144°.43E±0°.08, h26km, mb3.9/13, MS3.8/3, Error ellipse: s-maj=9.7km s-min=8.5km az=39.7*
*NEIC **04** 10:11:28.3±0.8, 37°.23N×144°.38E, h35km, mb4.2/1, Error ellipse: s-maj=16.3km s-min=12.8km az=108.0*

ISC 04 10:11:27.0±0.6, 37°.17N±0°.07×144°.30E±0°.08, h26km, n35, σ1°.95/27, mb3.9/13, MS3.8/3, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ERM	**Erimo**	**4.92**	**350**	*e*Pn	**Pn**	**10 12 36.4**	**-2.8**
MJAR	**Matsushiro Arr**	**4.92**	**265**	Pn	**Pn**	**10 12 40.7**	**+1.4**
	6.3nm,0.3s,baz=89,slow=15,SNR=22						
MAJO	**Matsushiro**	**4.92**	**265**	*e*Pn	**Pn**	**10 12 41.0**	**+1.7**
MAT	**Matsushiro**	**4.92**	**265**	P	**Pn**	**10 12 40.9**	**+1.6**
MAT				*e*S	**Sn**	**10 13 33.5**	**-1.9**
JHJ2	**Mitsune**	**5.46**	**224**	*e*Pn	**Pn**	**10 12 47.2**	**+0.5**
JHJ	**Hachijo jima 2**	**5.48**	**224**	Pn	**Pn**	**10 12 47.6**	**+0.7**
	32nm,0.3s,baz=74,slow=16,SNR=5.0						
JHJ				Sn	**Sn**	**10 13 44.6**	**-4.4**
	31nm,0.3s,baz=72,slow=20,SNR=2.5						
CBIJ	**Chichi jima**	**10.20**	**191**	Pn	**Pn**	**10 13 49.6**	**-2.1**
CBIJ				Sn	Sn	10 15 34.6	-11
JCJ	**Chichijima**	**10.20**	**191**	Pn	**Pn**	**10 13 49.6**	**-2.1**
	2.5nm,0.3s,baz=283,slow=22,SNR=4.9						
JCJ				Sn	Sn	10 15 34.6	-11
	3.3nm,0.3s,baz=90,slow=20,SNR=3.2						
USRK	**Ussuriysk Ar.**	**11.68**	**311**	Pn	**Pn**	**10 14 11.8**	**-0.1**
	0.4nm,0.3s,baz=105,slow=14,SNR=6.9						
USRK				LR	LR	10 18 35.4	
	comp=Z,147nm,18.1s,baz=164,slow=37						
KSRS	**Korea Array**	**13.04**	**276**	Pn	Pn	10 14 35.1	+4.6
	0.1nm,0.3s,baz=84,slow=13,SNR=4.0						
KSAR	**Wonju Array Be**	**13.07**	**276**	Pn	Pn	10 14 35.1	+4.1
KLR	**Kul'dur**	**15.11**	**327**	Pn	**Pn**	**10 14 55.4**	**-3.2**
	0.1nm,0.3s,baz=93,slow=17,SNR=4.3						
KLR				LR	LR	10 21 14.1	
	comp=Z,45nm,19.6s,baz=122,slow=39						
SEY	**Seymchan**	**26.27**	**8**	P	**P**	**10 16 55.5**	**-4.3**
	1.0nm,0.3s,baz=239,slow=15,SNR=7.2						
H11N2	**WAKE ISLAND Hy 26.29**	**125**		T	T	10 43 57.6	
	baz=317,slow=76,SNR=29						
H11N1	**WAKE ISLAND Hy 26.29**	**125**		T	T	10 43 58.1	
	baz=317,slow=76,SNR=14						
H11N3	**WAKE ISLAND Hy 26.30**	**125**		T	T	10 43 56.5	
	baz=317,slow=76,SNR=19						
H11S1	**WAKE ISLAND Hy 27.05**	**127**		T	T	10 45 14.3	
	baz=312,slow=75,SNR=14						
H11S3	**WAKE ISLAND Hy 27.05**	**127**		T	T	10 45 15.0	
	baz=312,slow=75,SNR=19						
H11S2	**WAKE ISLAND Hy 27.07**	**127**		T	T	10 45 16.7	
	baz=312,slow=75,SNR=14						
SONM	**Songino Array**	**29.63**	**303**	P	**P**	**10 17 32.0**	**+1.8**
	0.2nm,1.1s,baz=94,slow=7.4,SNR=2.6						
ZALV	**Zalesovo Beam**	**43.53**	**312**	P	**P**	**10 19 29.4**	**+1.2**
	0.5nm,0.3s,baz=75,slow=7.2,SNR=1.7						
MKAR	**Makanchi Array**	**46.00**	**302**	P	**P**	**10 19 48.5**	**+0.5**
	0.3nm,0.7s,baz=95,slow=7.2,SNR=2.7						
KURK	**Kurchatov**	**47.66**	**308**	*e*P	**P**	**10 20 01.8**	**+0.9**
	4.4nm,0.6s						
ILAR	**Eielson Array**	**48.15**	**32**	P	**P**	**10 20 05.2**	**+0.8**
	1.2nm,0.9s,baz=270,slow=6.7,SNR=9.9						
BVAR	**Borovoye Array**	**52.18**	**313**	LR	LR	10 43 15.6	
	comp=Z,89nm,20.4s,baz=254,slow=37						
INK	**Inuvik**	**53.21**	**27**	P	**P**	**10 20 43.2**	**+0.7**
	1.1nm,0.9s,baz=302,slow=5.5,SNR=5.8						
CTA	**Charters Tower**	**56.98**	**178**	P	**P**	**10 21 11.4**	**+1.2**
	9.9nm,1.0s,baz=315,slow=4.3,SNR=2.8						
WRAB	**Tennant Creek**	**57.56**	**191**	*e*P	**P**	**10 21 14.6**	**+0.2**
WRA	**Warramunga Arr**	**57.57**	**191**	P	**P**	**10 21 15.3**	**+0.8**
	2.6nm,0.5s,baz=9.5,slow=7.0,SNR=28						
WRA				LR	LR	10 44 43.3	
	comp=Z,70nm,20.6s,baz=160,slow=35						
ABKAR	**Akbulak array**	**59.61**	**311**	*e*P	**P**	**10 21 30.1**	**+1.7**
	1.1nm,0.6s						
ASAR	**Alice Springs**	**61.30**	**191**	P	**P**	**10 21 41.4**	**+1.2**
	0.6nm,0.6s,baz=6.9,slow=6.8,SNR=9.9						
YKA	**Yellowknife Ar**	**62.52**	**31**	P	**P**	**10 21 47.8**	**-0.1**
	0.2nm,0.8s,baz=296,slow=6.3,SNR=5.1						
NVAR	**Mina Array Bea**	**73.05**	**55**	P	**P**	**10 22 56.4**	**+1.4**
	0.6nm,0.7s,baz=275,slow=5.1,SNR=5.3						
TXAR	**Lajitas Array**	**88.19**	**54**	P	**P**	**10 24 16.7**	**+0.7**
	0.0nm,0.1s,baz=305,slow=5.4,SNR=4.7						
ATD	**Arta Tunnel**	**92.06**	**286**	LR	LR	11 07 49.9	
	comp=Z,41nm,21.8s,baz=50,slow=37						

JMA 04 10:12:31.4, 36°.94N×140°.52E, h7km±1km, M2.9, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.28**	**54**	P	Pg	10 12 37.1	+0.2
ONAJ				S	Sg	10 12 41.1	+0.6
JHO	**Hitachi**	**0.33**	**173**	P	Pg	10 12 37.9	0.0
JFK	**Kawauchi**	**0.51**	**34**	P	Pg	10 12 41.3	0.0
JFK				S	Sg	10 12 48.3	+0.3
JFT	**Otama**	**0.59**	**346**	S	Sg	10 12 50.7	0.0
JMM	**Marumori**	**0.95**	**13**	P	Pg	10 12 49.3	-0.3
JMM				S	Sg	10 13 01.4	-0.6
MAT	**Matsushiro**	**1.90**	**259**	P	Pb	10 13 06.6	+0.2
MAT				S	Sb	10 13 30.2	-0.1

*MAN **04** 10:24:26, 4°.34N×125°.87E, h96km, mb4.7, ML3.5, MS3.5*
*ISCJB **04** 10:24:27.1±0.5, 4°.16N±0°.03×125°.59E±0°.09, h100km, mb4.0/8, Error ellipse: s-maj=12.2km s-min=4.6km az=174.7*
*IDC **04** 10:24:27.8±2.2, 4°.21N×125°.78E, h82km±18km, mb3.9/9, mb1 4.1/9, mb1mx3.6/45, mbtmp4.2/9, MS3.1/4, Ms1 3.1/4, ms1mx2.7/41, Error ellipse: s-maj=38.7km s-min=13.3km az=71.0*
*DJA **04** 10:24:36.2±1.0, 4°.1N±29°.5×12°.6E±°, h39km±30km, M4.6/4, mB5.1/2, mb4.7/2, MLv4.5/4, Mw(mB)4.4/2*

ISC 04 10:24:28.9±0.6, 4°.18N±0°.04×125°.71E±0°.09, h100km, n25, σ2°.60/31, mb3.9/8, 1C, Talaud Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SGSI	**Sangihe**	**0.52**	**200**	P	Pn	10 24 40.2	-4.7
SGSI				S	**Sn**	**10 24 50.5**	**-6.3**
MATI	**Mati**	**2.80**	**11**	*e*P	**Pn**	**10 25 08.4**	**-3.6**
MATI				*e*S	**Sn**	**10 25 38.9**	**-6.3**
DAV	**Davao City (W)**	**2.87**	**357**	S	**Sn**	**10 25 47.5**	**+0.6**
	85nm,0.3s,baz=233,slow=10,SNR=5.8						
DAV				LR	LR	10 26 26.3	
	comp=Z,348nm,21.0s,baz=170,slow=42						
DMPH	**Davao City--Mi**	**2.89**	**356**	*e*S	**Sn**	**10 25 48.5**	**+1.2**
CTBH	**Cotabato--PC H**	**3.35**	**334**	*i* P	**Pn**	**10 25 17.5**	**-1.9**
CTBH				*i* S	**Sn**	**10 25 55.9**	**-2.5**
BUKP	**Musuan**	**3.73**	**350**	*e*P	**Pn**	**10 25 23.2**	**-1.3**
TNTI	**Ternate**	**3.77**	**154**	P	Pn	10 25 20.6	-4.4

PAGZ	Pagadian	4.32	328	eP	Pn	10 25 30.2	-2.2
LBMI	Labuha	5.11	159	P	Pn	10 25 42.1	-1.1
MRSI	Marisa	5.26	226	P	Pn	10 25 44.7	-0.5
MRSI				S	Sn	10 26 40.5	-4.2
LUWI	Luwuk	5.96	210	P	Pn	10 25 56.8	+2.1
SANI	Sanana	6.20	177	P	Pn	10 25 57.0	-0.9
	40nm,0.7s,2μm0.2nm						
APSI	Ampana	6.49	219	P	Pn	10 26 04.5	+2.7
NLAI	Namlea	7.50	169	P	Pn	10 26 13.5	-2.1
GUMO	Guam	21.09	62	LR	LR	10 36 01.3	
	comp=Z,34nm,19.9s,baz=181,slow=33						
FITZ	Fitzroy Crossi	22.14	180	P	P	10 29 16.5	-0.1
	10μm,100.0s,baz=5.4,slow=12,SNR=12						
WRA	Warramunga Arr	25.43	161	P	P	10 29 47.8	+0.3
	16nm,0.8s,baz=340,slow=10.0,SNR=37						
WRA				ScP	ScP	10 36 51.1	+3.4
	0.4nm,0.6s,baz=337,slow=2.8,SNR=4.5						
ASAR	Alice Springs	28.81	164	P	P	10 30 18.3	+0.6
	1.6nm,0.6s,baz=347,slow=8.8,SNR=29						
ASAR				PcP	PcP	10 33 26.9	+1.5
	0.9nm,0.6s,baz=349,slow=2.4,SNR=7.7						
ASAR				ScP	ScP	10 37 00.5	+2.6
	0.6nm,0.9s,baz=1.3,slow=4.0,SNR=4.5						
CMAR	Chiang Mai Arr	29.77	301	P	P	10 30 28.5	+2.2
	1.9nm,0.7s,baz=114,slow=7.2,SNR=15						
CMAR				pP	pP	10 30 45.2	-3.5
	1.8nm,0.7s,baz=110,slow=7.8,SNR=3.9						
CMAR				LR	LR	10 43 14.9	
	comp=Z,15nm,19.3s,baz=185,slow=38						
KSRS	Korea Array	33.18	3	P	P	10 30 56.4	+0.5
	0.8nm,0.6s,baz=172,slow=9.5,SNR=4.0						
STKA	Stephens Creek	38.92	158	P	P	10 31 46.1	+1.1
	9.8nm,0.7s,baz=328,slow=8.4,SNR=25						
STKA				PcP	PcP	10 33 54.7	+0.8
	2.4nm,0.8s,baz=348,slow=15,SNR=3.0						
KLR	Kul'dur	45.18	6	P	P	10 32 36.3	+0.6
	1.1nm,0.6s,baz=221,slow=8.2,SNR=5.2						
TLY	Talaya	50.79	342	LR	LR	10 55 11.0	
	comp=Z,47nm,19.7s,baz=162,slow=36						
MKAR	Makanchi Array	56.61	326	P	P	10 34 00.8	-0.6
	0.5nm,0.5s,baz=119,slow=8.6,SNR=5.5						
MKAR				ScP	ScP	10 38 48.4	+1.1
	0.9nm,0.7s,baz=125,slow=4.3,SNR=7.7						
VNDA	Vanda	84.00	173	P	P	10 36 48.9	+1.2
	0.5nm,0.6s,baz=318,slow=5.4,SNR=7.4						

IDC 04 10:29:37.6±3.3, 37°.92N×144°.52E, h0km, mb3.6/2, mb1 3.8/3, mb1mx3.4/40, mbtmp3.6/3, ML3.8/1, Error ellipse: s-maj=74.5km s-min=41.3km az=56.0, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
MJAR	Matsushiro Arr	5.22	257	Pn	Pn	10 30 57.0	+0.2
	3.6nm,0.3s,baz=74,slow=10,SNR=19						
MAT	Matsushiro	5.22	257	P	Pn	10 30 56.8	-0.1
MAT				eS	Sn	10 31 53.0	-4.8
MKAR	Makanchi Array	45.74	302	P	P	10 38 00.4	-0.1
	0.4nm,0.7s,baz=82,slow=9.6,SNR=3.9						
WRA	Warramunga Arr	58.34	191	P	P	10 39 34.3	-0.2
	0.8nm,0.7s,baz=10.0,slow=7.0,SNR=4.0						

*ISCJB **04** 10:35:42.6±0.9, 38°.37N±0°.07×142°.34E±0°.07, h24km, mb3.7/5, Error ellipse: s-maj=10.1km s-min=7.7km az=160.3*
*JMA **04** 10:35:46.9±0.1, 38°.48N×142°.12E, h38km±2km, M3.7*
JMA Felt I J1.
*IDC **04** 10:35:48.3±4.4, 38°.50N×142°.43E, h62km±37km, mb3.4/6, mb1 3.5/8, mb1mx3.2/44, mbtmp3.6/8, ML2.1/1, Error ellipse: s-maj=42.5km s-min=25.3km az=93.0*
ISC 04 10:35:46.3±1.2, 38°.55N±0°.06×142°.21E±0°.09, h24km, n16, σ2s.35/22, mb3.6/5, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
OFUJ	Ofunato	0.68	321	P	Pn	10 36 00.3	-0.1
JIO	Ouri	0.69	262	P	Pb	10 35 58.9	-0.7
JIO				eS	Sb	10 36 07.1	-1.6
JMK	Ichinoseki	0.87	298	P	Pb	10 36 02.6	-0.2
JOM	Ohasama	1.17	322	P	Pb	10 36 07.6	-0.2
JOM				eS	Sn	10 36 23.3	+1.0
JOU	Okura	1.23	262	P	Pn	10 36 07.0	-1.0
JOU				eS	Sn	10 36 21.4	-2.5
JMM	Marumori	1.31	239	eS	Sn	10 36 23.1	-2.8
JYK	Kaneyama	1.50	285	P	Pn	10 36 11.2	-0.5
JYK				eS	Sn	10 36 29.2	-1.2
MJAR	Matsushiro Arr	3.76	239	P	Pn	10 36 45.7	+2.8
	baz=35,slow=13,SNR=1.6						
MAT	Matsushiro	3.76	239	P	Pn	10 36 45.4	+2.5
MAT				S	Sn	10 37 30.2	+3.8
USRK	Ussuriysk Ar.	9.53	310	P	Pn	10 38 04.9	+2.9
	0.2nm,0.3s,baz=134,slow=12,SNR=5.6						
SEY	Seymchan	25.18	11	P	P	10 41 07.5	-2.0
	1.1nm,0.7s,baz=210,slow=20,SNR=7.3						
ZALV	Zalesovo Beam	41.38	311	P	P	10 43 28.6	-1.7
	0.0nm,0.1s,baz=87,slow=6.5,SNR=2.8						
MKAR	Makanchi Array	43.87	301	P	P	10 43 50.1	-0.6
	0.3nm,0.5s,baz=90,slow=7.2,SNR=3.4						
MKAR				pP	sP	10 44 05.1	+4.2
	0.8nm,0.6s,baz=83,slow=11,SNR=6.8						
KURBB	Kurchatov Arra	45.58	307	P	P	10 44 02.7	-1.5
	1.9nm,0.6s,baz=81,slow=8.2,SNR=8.8						
KURBB				pP	sP	10 44 18.8	+4.3
	1.9nm,0.6s,baz=82,slow=8.4,SNR=6.8						
WRA	Warramunga Arr	58.65	189	P	P	10 45 38.7	-3.0
	0.2nm,0.4s,baz=6.5,slow=7.3,SNR=3.2						
NOA	NORSAR Array B	73.03	337	P	P	10 47 12.9	-0.9
	1.3nm,0.8s,baz=42,slow=8.1,SNR=3.0						

*NIED **04** 10:37:00, 38°.20N×141°.70E, h50km, Mw4.1 Best double couple: $M_0$1.36000×10^15 NP1:ϕ_s212.00000°, δ26.00000°, λ99.00000°. NP2:ϕ_s22.00000°, δ65.00000°, λ86.00000°.*
*ISCJB **04** 10:37:25.2±0.6, 38°.16N±0°.04×141°.70E±0°.07, h59km±5km, mb4.0/22, MS2.9/1, Error ellipse: s-maj=9.6km s-min=5.6km az=17.6*
*JMA **04** 10:37:25.8±0.1, 38°.16N×141°.69E, h50km±1km, M4.2*
JMA Felt II J1.
*IDC **04** 10:37:28.2±0.8, 38°.14N×141°.62E, h72km±5km, mb3.7/22, mb1 3.9/26, mb1mx3.8/46, mbtmp4.1/26, MS3.1/4, Ms1 3.1/4, ms1mx2.7/40, Error ellipse: s-maj=14.8km s-min=12.5km az=109.0*
ISC 04 10:37:25.5±0.6, 38°.15N±0°.04×141°.71E±0°.06, h47km±3km, n49, σ0s.86/62, mb4.1/22, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
JIO	Ouri	0.42	317	P	Pn	10 37 36.1	+0.5
JIO				eS	Sn	10 37 42.9	+0.1
JMM	Marumori	0.78	249	P	Pn	10 37 40.2	0.0
JMM				S	Sn	10 37 50.7	-0.1
JOU	Okura	0.85	285	P	Pn	10 37 41.6	+0.4
JOU				S	Sn	10 37 53.0	+0.3
JMK	Ichinoseki	0.89	334	P	Pn	10 37 42.1	+0.4
JMK				S	Sn	10 37 53.3	-0.2
JFK	Kawauchi	1.02	221	P	Pn	10 37 43.9	+0.4
JFK				S	Sn	10 37 56.6	-0.2
JFT	Otama	1.26	240	P	Pn	10 37 47.6	+0.9
JFT				S	Sn	10 38 02.9	+0.4
JYS	Shirataka	1.30	274	P	Pn	10 37 47.8	+0.5
JYS				eS	Sn	10 38 04.2	+0.7
JYK	Kaneyama	1.31	306	P	Pn	10 37 48.0	+0.6
JYK				eS	Sn	10 38 04.1	+0.4
JOM	Ohasama	1.36	346	P	Pn	10 37 48.7	+0.6
JRG	Rokugo	1.50	326	P	Pn	10 37 50.9	+0.9
JYA	Atsumi	1.63	286	P	Pn	10 37 52.3	+0.5
JFY	Yanaizu	1.75	246	P	Pn	10 37 54.5	+1.0
JFY				eS	Sn	10 38 15.6	+0.9
MJAR	Matsushiro Arr	3.22	241	P	Pn	10 38 15.5	+1.9
	2.5nm,0.3s,baz=57,slow=12,SNR=12						
MAT	Matsushiro	3.22	241	P	Pn	10 38 15.5	+1.9
MAT				S	Sn	10 38 57.2	+6.5
JHJ	Hachijo jima 2	5.26	198	P	Pn	10 38 43.2	+1.7
	14nm,0.3s,baz=79,slow=19,SNR=2.5						
JHJ				S	Sn	10 39 38.8	-2.1
	9.7nm,0.3s,baz=51,slow=14,SNR=2.8						
USRK	Ussuriysk Ar.	9.50	313	P	Pn	10 39 40.9	+1.3
	1.1nm,0.3s,baz=122,slow=18,SNR=21						
USRK				LR	LR	10 43 07.9	
	comp=Z,110nm,18.5s,baz=172,slow=36						
JNU	Nakatsue	10.14	244	LR	LR	10 44 14.8	
	comp=Z,98nm,19.2s,baz=124,slow=40						
KSRS	Korea Array	10.94	271	P	Pn	10 40 03.2	+3.9
	0.2nm,0.3s,baz=77,slow=14,SNR=5.4						
KLR	Kul'dur	13.20	330	P	P	10 40 34.6	-4.3
	0.1nm,0.3s,baz=141,slow=14,SNR=2.0						
KLR				LR	LR	10 45 05.3	
	comp=Z,84nm,20.7s,baz=158,slow=35						
MA2	Magadan	22.22	12	P	P	10 42 19.1	+1.3
	5.2nm,0.6s,baz=209,slow=9.7,SNR=16						
MA2				LR	LR	10 49 54.5	
	comp=Z,49nm,21.5s,baz=196,slow=34						
SEY	Seymchan	25.65	11	P	P	10 42 51.6	+1.2
	1.3nm,0.7s,baz=193,slow=7.7,SNR=10						
SONM	Songino Array	27.38	302	P	P	10 43 06.8	+0.4
	0.8nm,0.5s,baz=87,slow=5.0,SNR=5.9						
SONM				pP	sP	10 43 23.7	-0.6
	1.0nm,0.7s,baz=100,slow=10,SNR=3.5						
H11N2	WAKE ISLAND Hy	28.53	123	T	T	11 13 32.0	
	baz=316,slow=75,SNR=57						
H11N1	WAKE ISLAND Hy	28.54	123	T	T	11 13 33.9	
	baz=316,slow=75,SNR=91						
H11N3	WAKE ISLAND Hy	28.55	123	T	T	11 13 35.5	
	baz=316,slow=75,SNR=70						
H11S1	WAKE ISLAND Hy	29.28	125	T	T	11 14 29.1	
	baz=317,slow=76,SNR=26						
H11S3	WAKE ISLAND Hy	29.29	125	T	T	11 14 31.6	
	baz=317,slow=76,SNR=123						
H11S2	WAKE ISLAND Hy	29.30	125	T	T	11 14 31.5	
	baz=317,slow=76,SNR=28						
ZALV	Zalesovo Beam	41.35	311	P	P	10 45 06.2	-0.3
	3.9nm,0.5s,baz=83,slow=6.6,SNR=16						
ZALV				pP	sP	10 45 23.7	-1.1
	4.7nm,0.7s,baz=93,slow=5.9,SNR=8.1						
ZALV				PcP	PcP	10 47 02.6	-1.4
	0.7nm,0.4s,baz=78,slow=1.5,SNR=3.4						
MKAR	Makanchi Array	43.74	301	P	P	10 45 25.6	-0.4
	2.0nm,0.6s,baz=86,slow=9.6,SNR=18						
MKAR				pP	sP	10 45 43.6	-0.7
	4.5nm,0.7s,baz=86,slow=9.5,SNR=18						
KURBB	Kurchatov Arra	45.51	307	P	P	10 45 39.7	-0.4
	5.4nm,0.7s,baz=82,slow=8.3,SNR=30						
KURBB				pP	sP	10 45 57.4	-1.0
	15nm,0.7s,baz=83,slow=8.4,SNR=23						
ILAR	Eielson Array	48.43	33	P	P	10 46 02.8	+0.1
	0.9nm,0.7s,baz=269,slow=5.7,SNR=8.5						
BVAR	Borovoye Array	50.00	312	P	P	10 46 14.4	-0.5
	1.1nm,0.5s,baz=68,slow=7.6,SNR=7.3						
BVAR				pP	sP	10 46 32.7	-0.7
	2.6nm,0.6s,baz=70,slow=8.7,SNR=6.5						
BVAR				PcP	PcP	10 47 33.6	-0.6
	1.0nm,0.5s,baz=72,slow=4.8,SNR=3.7						
AAK	Ala-Archa	50.18	298	P	P	10 46 16.5	-0.1
	1.1nm,0.6s,baz=22,slow=19,SNR=3.1						
AAK				pP	sP	10 46 34.5	-0.5
	2.1nm,0.6s,baz=74,slow=6.6,SNR=3.6						
INK	Inuvik	53.29	28	P	P	10 46 39.6	+0.5
	1.0nm,0.6s,baz=311,slow=6.5,SNR=8.5						
WRA	Warramunga Arr	58.20	188	P	P	10 47 14.7	-0.1
	1.3nm,0.5s,baz=5.3,slow=7.0,SNR=30						
WRA				pP	pP	10 47 28.9	+0.9
	2.1nm,0.9s,baz=5.6,slow=7.4,SNR=6.4						
ASAR	Alice Springs	61.92	188	P	P	10 47 40.1	-0.2
	1.2nm,0.6s,baz=7.3,slow=4.7,SNR=15						
YKA	Yellowknife Ar	62.73	30	P	P	10 47 45.2	0.0
	0.1nm,0.6s,baz=301,slow=6.7,SNR=7.0						
YKA				pP	pP	10 48 00.1	+1.5
	0.3nm,0.7s,baz=302,slow=6.4,SNR=4.7						
ARCES	ARCESS Array B	63.04	339	P	P	10 47 47.0	-0.3
	5.9nm,1.0s,baz=46,slow=6.9,SNR=7.5						
FINES	FINESS Array B	67.94	332	P	P	10 48 18.6	-0.4
	2.7nm,0.7s,baz=46,slow=11,SNR=6.4						
FINES				pP	sP	10 48 37.0	-0.8
	1.3nm,0.7s,baz=59,slow=3.7,SNR=2.0						
NB2	NORSAR Subarra	73.25	337	P	P	10 48 51.0	-0.4
	comp=Z,1.8nm,0.6s,baz=39,slow=6.2						
NOA	NORSAR Array B	73.25	337	P	P	10 48 51.1	-0.4
	comp=Z,2.4nm,0.8s,baz=40,slow=5.8,SNR=7.6						
AKASG	Malin Array Be	73.56	322	P	P	10 48 52.8	-0.5
	comp=Z,1.4nm,0.4s,baz=45,slow=6.1,SNR=6.6						
NVAR	Mina Array Bea	74.13	54	P	P	10 48 57.7	+0.5
	comp=Z,0.4nm,0.7s,baz=242,slow=9.4,SNR=3.7						
PDAR	Pinedale Array	76.72	46	P	P	10 49 12.7	+0.7
	comp=Z,0.5nm,0.6s,baz=260,slow=2.4,SNR=6.6						
PDAR				pP	pP	10 49 27.3	+1.6
	comp=Z,0.3nm,0.5s,baz=333,slow=1.7,SNR=3.5						
BRTR	Keskin Array B	78.29	312	P	P	10 49 20.2	-0.5
	comp=Z,0.5nm,0.6s,baz=64,slow=3.4,SNR=2.8						
GERES	GERESS Array B	81.89	328	P	P	10 49 38.8	-1.1
	comp=Z,0.8nm,0.8s,baz=121,slow=4.9,SNR=3.3						
TXAR	Lajitas Array	89.25	53	P	P	10 50 16.6	-0.2
	comp=Z,0.5nm,0.6s,baz=324,slow=4.5,SNR=3.1						
LPAZ	La Paz	145.92	59	PKPbc	PKPbc	10 57 00.8	-0.2
	comp=Z,1.1nm,0.6s,baz=207,slow=1.1,SNR=5.6						

*ISCJB **04** 10:55:37.8±0.8, 15°.4S±0°.3×175°.2W±0°.1, h262km, mb3.7/9, Error ellipse: s-maj=43.0km s-min=10.1km az=156.9*
*IDC **04** 10:55:38.6±1.2, 15°.56S×175°.00W, h261km±12km, mb3.5/9, mb1 3.8/10, mb1mx3.5/26, mbtmp4.1/10, Error ellipse: s-maj=38.6km s-min=12.3km az=149.0*
ISC 04 10:55:38.6±0.8, 15°.6S±0°.3×175°.0W±0°.2, h262km, n15, σ0s.58/18, mb3.8/9, Tonga Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
AFI	Afiamalu	3.54	63	P	Pn	10 56 38.5	+0.6
	10nm,0.3s,baz=192,slow=3.2,SNR=18						
AFI				S	S	10 57 24.3	-0.6
	24nm,0.3s,baz=259,slow=19,SNR=9.3						
STKA	Stephens Creek	42.61	240	P	P	11 03 09.6	0.0
	1.9nm,0.9s,baz=99,slow=12,SNR=3.2						
WRA	Warramunga Arr	48.29	257	P	P	11 03 54.0	-0.1
	0.9nm,0.7s,baz=90,slow=8.4,SNR=25						
WRA				PcP	PcP	11 05 16.4	-0.3
	0.5nm,0.5s,baz=93,slow=3.5,SNR=4.4						
ASAR	Alice Springs	48.58	252	P	P	11 03 56.5	+0.2
	2.6nm,0.6s,baz=87,slow=8.0,SNR=41						
ASAR				PcP	PcP	11 05 17.8	+0.1
	0.6nm,0.4s,baz=102,slow=4.0,SNR=5.3						
PETK	Petropavlovsk-	72.32	343	P	P	11 06 35.8	+0.1
	2.8nm,0.7s,baz=167,slow=8.9,SNR=2.8						
NVAR	Mina Array Bea	75.50	43	P	P	11 06 55.2	+0.6
	3.2nm,0.7s,baz=226,slow=9.3,SNR=27						
TXAR	Lajitas Array	82.00	57	P	P	11 07 30.7	+0.7
	1.3nm,1.0s,baz=243,slow=5.5,SNR=4.8						
ILAR	Eielson Array	82.91	12	P	P	11 07 33.0	-0.7
	1.1nm,0.5s,baz=226,slow=5.5,SNR=26						
PDAR	Pinedale Array	83.43	42	P	P	11 07 37.2	+0.1
	2.1nm,0.6s,baz=214,slow=3.5,SNR=23						
YKA	Yellowknife Ar	90.87	24	P	P	11 08 11.4	-0.7
	0.3nm,0.7s,baz=237,slow=4.8,SNR=9.2						
ARCES	ARCESS Array B	124.54	351	PKP	PKPdf	11 14 05.5	-0.7
	5.1nm,0.9s,baz=350,slow=3.7,SNR=10						
FINES	FINESS Array B	131.75	347	PKP	PKPdf	11 14 20.0	-0.1
	0.6nm,0.5s,baz=46,slow=4.0,SNR=4.5						
BRTR	Keskin Array B	145.28	320	PKPbc	PKPdf	11 14 45.8	+0.2
	2.3nm,0.7s,baz=102,slow=3.3,SNR=11						
GERES	GERESS Array B	146.05	350	PKPbc	PKPdf	11 14 47.5	+1.0
	0.7nm,0.4s,baz=52,slow=3.5,SNR=2.8						
TORD	Torodi Ar. Bea	176.01	127	PKPab	PKPab	11 16 58.3	-0.9
	0.5nm,0.7s,baz=259,slow=4.7,SNR=3.1						

*ISCJB **04** 10:56:13.6±1.0, 22°.52S±0°.06×68°.2W±0°.2, h173km±12km, mb3.5/2, Error ellipse: s-maj=26.3km s-min=9.2km az=4.6*
*GUC **04** 10:56:13.2±0.5, 22°.51S×68°.18W, h167km±6km, ML3.9*
*IDC **04** 10:56:15.0±3.3, 22°.49S×68°.04W, h169km±32km, mb3.4/2, mb1 3.5/4, mb1mx3.2/22, mbtmp3.8/4, Error ellipse: s-maj=50.5km s-min=29.3km az=95.0*
ISC 04 10:56:14.2±1.4, 22°.51S±0°.07×68°.2W±0°.2, h167km±14km, n13, σ0s.64/21, 6C, Northern Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
PB09	IPOC Station P	1.22	306	⇑iP	Pn	10 56 42.6	0.0
PB09				i S	Sn	10 57 04.3	-0.1
PB09				AML	AML	10 57 06.7	
	comp=E,2μm,0.4s						
PB06	IPOC Station P	1.30	261	⇑iP	Pn	10 56 42.8	-0.5
PB06				i S	Sn	10 57 06.1	+0.4
PB07	IPOC Station P	1.77	296	⇑iP	Pn	10 56 48.3	+0.3
PB07				i S	Sn	10 57 14.4	+0.3
PB07				AML	AML	10 57 15.7	
	comp=N,928nm,0.3s						
PB04	IPOC Station P	1.83	275	⇑iP	Pn	10 56 48.8	+0.1
PB04				i S	Sn	10 57 15.8	+0.5
PB01	IPOC Station P	1.90	320	eP	Pn	10 56 49.3	-0.1
PB01				i S	Sn	10 57 16.9	+0.3
PB10	IPOC Station P	2.40	245	eP	Pn	10 56 55.1	+0.1
PB10				AML	AML	10 57 31.1	
	comp=N,347nm,0.3s						
PATCX	Punta Patache	2.49	312	⇑iP	Pn	10 56 56.1	0.0
PATCX				i S	Sn	10 57 29.3	+0.7
PATCX				AML	AML	10 57 33.3	
	comp=N,389nm,0.4s						
PSGC	Pisagua	3.42	328	eP	Pn	10 57 06.2	-1.4
PSGC				eS	Sn	10 57 47.8	-1.4
PB13	IPOC Station P	4.34	343	⇑iP	Pn	10 57 20.2	+0.4
PB13				eS	Sn	10 58 11.3	+0.2
LPAZ	La Paz	6.19	0	P	Pn	10 57 44.8	+0.5
	comp=N,1.7nm,0.3s,baz=173,slow=4.3,SNR=38						
PLCA	Paso Flores	18.27	186	P	Pn	11 00 16.3	-0.9
	comp=N,0.1nm,0.3s,baz=33,slow=13,SNR=3.0						
TORD	Torodi Ar. Bea	77.06	70	P	P	11 07 49.3	0.0
	comp=N,1.4nm,0.5s,baz=256,slow=5.3,SNR=19						
YKA	Yellowknife Ar	92.36	340	P	P	11 09 05.6	+0.5
	comp=N,0.2nm,0.8s,baz=143,slow=5.3,SNR=4.9						

IDC 04 11:13:37.6±1.9, 12°.73N×145°.27E, h0km, mb3.3/3, mb1 3.6/3, mb1mx3.3/48, mbtmp3.3/3, Error ellipse: s-maj=315.8km s-min=29.3km az=111.0, South of Mariana Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
WRA	Warramunga Arr	34.21	199	P	P	11 20 25.9	+0.7
	0.9nm,0.9s,baz=21,slow=9.6,SNR=7.1						
ASAR	Alice Springs	37.85	197	P	P	11 20 55.6	-0.8
	0.2nm,0.9s,baz=19,slow=12,SNR=3.8						
YKA	Yellowknife Ar	83.43	27	P	P	11 26 06.8	0.0
	0.1nm,0.4s,baz=283,slow=5.1,SNR=3.2						

WEL 04 11:21:52.0±0.1, 43°.62S×172°.74E, h8km, ML3.3/7, 1C, Error ellipse: s-maj=1.1km s-min=1.0km az=0.0, South Island

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
CRLZ	Canterbury Las	0.09	297	⇑PG	Pg	11 21 54.3	+0.1
CRLZ				SG	Sg	11 21 55.7	+0.1
CRLZ				AML	AML	11 21 56.0	
CRLZ				AML	AML	11 21 56.5	
CRLZ				AML	AML	11 21 56.5	
OXZ	Oxford	0.58	300	P*	Pg	11 22 03.2	-0.1
LTZ	Lake Taylor	0.90	338	P*	Pg	11 22 09.0	-0.3
LTZ				S*	Sg	11 22 20.9	0.0
LTZ				AML	AML	11 22 21.7	
RPZ	Rata Peaks	1.22	265	P*	Pb	11 22 14.3	-1.1
RPZ				AML	AML	11 22 33.8	
RPZ				AML	AML	11 22 37.8	
INZ	Inchbonnie	1.30	313	P*	Pn	11 22 16.1	-0.4
WVZ	Waitaha Valley	1.56	290	PN	Pn	11 22 19.9	-0.1
THZ	Tophouse	1.86	4	PN	Pn	11 22 24.3	0.0
THZ				AML	AML	11 22 56.2	
THZ				AML	AML	11 23 37.5	
LBZ	Lake Benmore	2.00	246	AML	AML	11 23 01.6	
ODZ	Otahua Downs	2.07	226	PN	Pn	11 22 26.2	-0.9
ODZ				AML	AML	11 24 57.1	
ODZ				AML	AML	11 24 57.1	
EAZ	Earnscleugh	2.94	235	PN	Pn	11 22 38.6	-0.4
EAZ				AML	AML	11 23 27.5	
TUZ	Tuapeka	3.22	222	PN	Pn	11 22 42.5	-0.3

*ISCJB **04** 11:27:29.2±0.9, 39°.7N±0°.1×143°.7E±0°.1, h11km, mb3.9/9, MS4.2/1, Error ellipse: s-maj=19.0km s-min=10.5km az=40.2*
*IDC **04** 11:27:29.5±1.3, 39°.72N×143°.63E, h0km, mb3.9/10, mb1 4.0/12, mb1mx3.8/45, mbtmp3.9/12, ML3.4/2, MS4.1/1, Ms1 4.1/1, ms1mx2.8/62, Error ellipse: s-maj=30.1km s-min=20.7km az=123.0*
ISC 04 11:27:31.0±1.1, 39°.7N±0°.1×143°.8E±0°.1, h11km, n22, σ1s.07/16, mb4.0/9, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
MJAR	Matsushiro Arr	5.42	236	Pn	Pn	11 28 51.6	-0.2
	1.2nm,0.3s,baz=42,slow=11,SNR=15						
MJAR				LR	LR	11 30 55.7	
	comp=Z,84nm,19.6s,baz=60,slow=39						
MAT	Matsushiro	5.43	236	P	Pn	11 28 50.9	-0.9
MAT				eS	Sb	11 30 12.4	+1.5
USRK	Ussuriysk Ar.	9.89	301	Pn	Pn	11 29 53.9	+0.9
	0.3nm,0.3s,baz=97,slow=14,SNR=10						
KSRS	Korea Array	12.64	265	Pn	Pn	11 30 31.2	+0.7
	0.2nm,0.3s,baz=84,slow=13,SNR=4.4						
MA2	Magadan	20.38	10	P	P	11 32 09.0	+1.5
	3.5nm,0.5s,baz=211,slow=9.4,SNR=15						
SEY	Seymchan	23.83	10	P	P	11 32 44.3	+0.5
	2.6nm,0.6s,baz=185,slow=7.4,SNR=12						
SONM	Songino Array	28.00	299	P	P	11 33 20.4	-1.4
	1.3nm,0.7s,baz=93,slow=8.8,SNR=7.1						
H11N2	WAKE ISLAND Hy	28.10	128	T	T	12 03 08.1	
	baz=318,slow=75,SNR=20						
H11N1	WAKE ISLAND Hy	28.11	128	T	T	12 03 05.3	
	baz=318,slow=75,SNR=22						
H11N3	WAKE ISLAND Hy	28.12	128	T	T	12 03 07.0	
	baz=318,slow=75,SNR=24						
H11S1	WAKE ISLAND Hy	28.93	130	T	T	12 04 10.3	
	baz=324						
H11S3	WAKE ISLAND Hy	28.93	130	T	T	12 04 10.9	
	baz=324						
H11S2	WAKE ISLAND Hy	28.95	130	T	T	12 04 09.8	
	baz=324						
ZALV	Zalesovo Beam	41.58	310	P	P	11 35 17.8	-0.7
	1.8nm,0.5s,baz=96,slow=8.2,SNR=7.9						
KURBB	Kurchatov Arra	45.90	306	P	P	11 35 52.0	-1.3
	1.1nm,0.2s,baz=80,slow=8.7,SNR=7.0						
ILAR	Eielson Array	46.24	34	P	P	11 35 56.6	+0.8
	0.4nm,0.7s,baz=274,slow=5.5,SNR=4.1						
BVAR	Borovoye Array	50.21	311	P	P	11 36 26.1	-0.6
	1.1nm,0.5s,baz=79,slow=8.0,SNR=6.5						
FITZ	Fitzroy Crossi	59.95	200	LR	LR	12 02 09.2	
	comp=Z,168nm,21.0s,baz=304,slow=35						
WRA	Warramunga Arr	59.98	190	P	P	11 37 37.5	0.0
	0.5nm,0.8s,baz=6.9,slow=7.1,SNR=5.0						
FINES	FINESS Array B	67.33	333	P	P	11 38 24.0	-1.5
	0.4nm,0.4s,baz=21,slow=12,SNR=3.5						
NB2	NORSAR Subarra	72.45	338	P	P	11 38 57.6	+0.5
	comp=Z,1.0nm,0.8s,baz=41,slow=5.9						
NOA	NORSAR Array B	72.45	338	P	P	11 38 57.2	+0.1
	comp=Z,0.5nm,0.6s,baz=40,slow=6.0,SNR=4.3						

*KNET **04** 11:28:09.2±0.4, 42°.19N×74°.39E, h17km±2km, ml2.6, Error ellipse: s-maj=3.8km s-min=2.4km az=167.0*
*KRNET **04** 11:28:09.3±0.1, 42°.18N×74°.39E, h20km, mb2.9*
*SOME **04** 11:28:10.2, 42°.18N×74°.35E, h10km*
ISC 04 11:28:09.2±0.9, 42°.18N±0°.02×74°.38E±0°.01, h18km±8km, n47, σ0s.97/94, 56C-17D, Kyrgyzstan

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
UCH	Uchtor	0.11	64	⇑iP	Pb	11 28 13.3	+1.0
	baz=63						
UCH				⇑iS	Sb	11 28 15.9	+1.8
	baz=63						
UCH	Uchtor	0.11	64	⇑iP	Pb	11 28 13.2	+1.0
	baz=77						
UCH				⇑iS	Sb	11 28 15.8	+1.6
	baz=77						
UCH	Uchtor	0.11	64	⇑P	Pb	11 28 13.3	+1.0
	490nm,0.1s						
UCH				⇑S	Sb	11 28 16.0	+1.8
	2μm,0.2s						
ARLS	Aral	0.32	188	⇑eP	Pg	11 28 16.3	+0.1
	baz=189						
ARLS				⇑iS	Sg	11 28 20.8	-0.2
	baz=189						
AAK	Ala-Archa	0.46	10	⇑iP	Pb	11 28 19.1	+0.1
	baz=10.0						
AAK				⇑iS	Sb	11 28 25.6	0.0
	baz=10.0						
AAK	Ala-Archa	0.46	10	⇑iP	Pb	11 28 18.9	-0.1
	baz=9.0						
AAK				⇑iS	Sb	11 28 25.5	0.0
	baz=9.0						
AAK	Ala-Archa	0.46	10	⇓P	Pb	11 28 19.1	+0.1

Code	Station Name	Δ°	AZ°	Phase Op	Phase ISC	Time h m s	Res ISC
	172nm,0.1s						
AAK				⇑S	Sb	11 28 25.8	+0.2
	405nm,0.2s						
AML	Almayashu	0.51	265	⇑iP	Pg	11 28 19.8	+0.1
	baz=265						
AML				⇑iS	Sb	11 28 27.4	+0.2
	baz=265						
AML	Almayashu	0.51	265	⇑iP	Pg	11 28 19.9	+0.2
	baz=262						
AML				⇑iS	Sg	11 28 27.2	+0.5
	baz=262						
AML	Almayashu	0.51	265	⇓P	Pg	11 28 20.0	+0.3
	55nm,0.1s						
AML				⇑S	Sg	11 28 27.2	+0.5
	534nm,0.2s						
KBK	Karagaybulak	0.64	41	⇑iP	Pg	11 28 21.8	-0.1
	baz=41						
KBK				⇑iS	Sb	11 28 30.6	+0.1
	baz=41						
KBK	Karagaybulak	0.64	41	⇑iP	Pg	11 28 21.9	0.0
	baz=42						
KBK				⇑iS	Sg	11 28 30.0	-0.4
	baz=42						
KBK	Karagaybulak	0.64	41	⇓P	Pb	11 28 22.1	+0.2
	48nm,0.1s						
KBK				⇓S	Sb	11 28 31.1	+0.6
	274nm,0.1s						
KZA	Kyzart	0.65	99	⇑iP	Pg	11 28 22.2	-0.1
	baz=99						
KZA				⇑iS	Sb	11 28 31.3	+0.1
	baz=99						
KZA	Kyzart	0.65	99	⇑iP	Pg	11 28 22.2	-0.1
	baz=101						
KZA				⇑iS	Sb	11 28 31.3	+0.1
	baz=101						
KZA	Kyzart	0.65	99	⇓P	Pg	11 28 22.3	+0.1
	23nm,0.1s						
KZA				⇓S	Sb	11 28 31.4	+0.1
	288nm,0.2s						
EKS2	Erkin-Say	0.66	317	⇑iP	Pb	11 28 22.5	+0.3
	baz=318						
EKS2				⇑iS	Sb	11 28 31.7	+0.6
	baz=318						
EKS2	Erkin-Say	0.66	317	⇑iP	Pg	11 28 22.3	0.0
	baz=316						
EKS2				⇑iS	Sb	11 28 31.6	+0.5
	baz=316						
EKS2	Erkin-Say	0.66	317	⇓P	Pb	11 28 22.6	+0.4
	27nm,0.2s						
EKS2				⇓S	Sb	11 28 32.0	+0.9
	35nm,0.1s						
CHMS	Chumysh	0.86	18	⇑iP	Pg	11 28 26.0	-0.1
	baz=18						
CHMS				⇑iS	Sg	11 28 37.6	+0.1
	baz=18						
CHMS	Chumysh	0.86	18	⇑iP	Pg	11 28 25.9	-0.1
	baz=18						
CHMS				⇑iS	Sg	11 28 37.3	-0.2
	baz=18						
CHMS	Chumysh	0.86	18	⇑P	Pg	11 28 26.0	-0.1
	21nm,0.1s						
CHMS				⇑S	Sg	11 28 37.7	+0.1
	102nm,0.3s						
MRKS	Merke	1.02	304	eP	Pn	11 28 29.0	+0.2
	34nm,0.1s						
MRKS				eS	Sg	11 28 42.6	0.0
	88nm,0.3s						
USP	Ospenovka	1.09	5	⇑iP	Pn	11 28 29.9	+0.2
	baz=4.0						
USP				⇑iS	Sg	11 28 44.6	-0.1
	baz=4.0						
USP	Ospenovka	1.09	5	⇑iP	Pn	11 28 29.8	+0.1
	baz=4.0						
USP				⇑iS	Sn	11 28 44.4	+0.1
	baz=4.0						
USP	Ospenovka	1.09	5	⇓P	Pn	11 28 30.1	+0.5
	24nm,0.2s						
USP				⇑S	Sg	11 28 44.8	+0.1
	209nm,0.3s						
TKM2	Tokmak 2	1.17	50	⇓iP	Pb	11 28 31.2	+0.2
	baz=50						
TKM2				⇓iS	Sn	11 28 46.4	0.0
	baz=50						
TKM2	Tokmak 2	1.17	50	⇓iP	Pb	11 28 31.1	+0.1
	baz=51						
TKM2				⇓iS	Sb	11 28 45.9	+0.1
	baz=51						
TKM2	Tokmak 2	1.17	50	⇑P	Pg	11 28 31.4	-0.4
	24nm,0.1s						
TKM2				⇑S	Sn	11 28 46.5	0.0
	60nm,0.1s						
BOOM	Boomskoye usch	1.20	74	⇓eP	Pn	11 28 31.5	+0.3
	baz=76						
BOOM				⇓eS	Sg	11 28 48.2	+0.1
	baz=76						
BMNS	Besmoynak	1.33	45	eP	Pg	11 28 35.0	+0.1
	7.7nm,0.3s						
BMNS				eS	Sg	11 28 52.9	+0.6
	16nm,0.1s						
NRN	Naryn	1.42	121	⇑eP	Pb	11 28 35.8	+0.4
	baz=123						
NRN				⇑eS	Sg	11 28 55.2	-0.1
	baz=123						
MNAS	Manas	1.43	283	⇑eP	Pg	11 28 36.6	-0.1
	baz=282						
MNAS				⇑eS	Sg	11 28 55.3	0.0
	baz=282						
KST	Kastek	1.45	53	⇓iP	Pg	11 28 37.1	-0.1
	5.4nm,0.4s						
KST				⇑iS	Sg	11 28 56.0	-0.2
	40nm,0.2s						
DGS	Degeres	1.48	44	eP	Pg	11 28 37.6	-0.1
	11nm,0.5s						
DGS				eS	Sg	11 28 57.0	0.0
	21nm,0.2s						
MTBS	Maitube	1.79	57	eP	Pg	11 28 42.9	-0.7
	15nm,0.3s						
MTBS				eS	Sg	11 29 06.3	-0.4
	45nm,0.3s						
ARK	Arkit	1.84	259	⇑eP	Pb	11 28 43.6	+1.2
	baz=257						
ARK				⇑eS	Sg	11 29 08.0	-0.6
	baz=257						
TNSS	Tian-Shan	2.08	65	eP	Pg	11 28 48.9	-0.3
	32nm,0.3s						
TNSS				eS	Sg	11 29 17.6	+1.3
	44nm,0.6s						
KDJ	Kajisay	2.08	90	⇑eP	Pb	11 28 46.7	+0.1
	baz=91						
KDJ				⇑iS	Sb	11 29 13.7	+1.5
	baz=91						
MDOK	Medeo	2.20	63	⇑iP	Pg	11 28 50.5	-1.0
	25nm,0.3s						
MDOK				⇓iS	Sg	11 29 19.7	-0.3
	26nm,0.5s						
KUU	Kurty	2.23	39	⇑iP	Pb	11 28 50.1	+1.0
	28nm,0.3s						
KUU				eS	Sg	11 29 19.2	-1.9
	65nm,0.3s						
SFK	Sufi-Kurgan	2.26	197	⇑eP	Pb	11 28 50.2	+0.5
	baz=198						
SFK				⇑eS	Sg	11 29 20.2	-1.9
	baz=198						
KTBS	Karatobe	2.28	47	eP	Pg	11 28 51.9	-1.1
	7.7nm,0.2s						
KTBS				eS	Sg	11 29 21.4	-1.2
	18nm,0.3s						
CHKK	Chushkaly	2.56	48	eP	Pb	11 28 55.8	+1.2
	7.9nm,0.6s						
CHKK				eS	Sg	11 29 28.8	-2.6
	94nm,0.4s						
IUG	Iuzhnay	3.23	271	eP	Pg	11 29 09.5	-1.7
	12nm,0.3s						
IUG				eS	Sg	11 29 52.2	-0.9
	39nm,0.4s						
ARXS	Arharly	3.24	50	eP	Pb	11 29 07.6	+1.4
	6.1nm,0.3s						
ARXS				eS	Sb	11 29 49.3	+3.9
	22nm,0.2s						
BRLS	Borolday	3.53	281	eP	Pb	11 29 13.7	+2.6
	0.7nm,0.4s						
BRLS				eS	Sg	11 29 58.9	-3.6
	2.4nm,0.4s						

*CSEM **04** 11:30:37.9±1.2, 59.27N×27.67E, h1km, ML1.9, Error ellipse: s-maj=25.2km s-min=10.1km az=103.0, Mining explosion.*

HEL 04 11:30:39.3±0.2, 59.26N×27.63E, h0km, ML1.9, Explosion, Baltic States-Belarus-Northwestern Russia

Code	Station Name	Δ°	AZ°	Phase Op	Phase ISC	Time h m s	Res ISC
VSU	Vasula	0.92	211	eP	Pg	11 30 55.8	-1.1
VSU				eS	Sg	11 31 07.7	-1.2
VSU	Vasula	0.92	211	eP	Pg	11 30 56.1	-0.8
	SNR=90						
VSU				eS	Sg	11 31 06.4	-2.5
	99nm,0.9s,SNR=90						
VSU				Sg	Sb	11 31 07.7	-3.2
VJF	Virojoki	1.29	358	eP	Pg	11 31 02.0	-2.0
VJF				eSB	Sg	11 31 19.0	-1.6
VJF	Virojoki	1.29	358	Pg	Pg	11 31 02.1	-1.8
VJF				Sb	Sg	11 31 19.3	-1.3
PVF	Pernaja	1.57	326	ePG	Pn	11 31 07.5	-0.8
PVF				MSG		11 31 26.2	
	comp=Z,8.3nm,0.2s						
PVF				eSG	Sn	11 31 28.1	-1.2
PVF	Pernaja	1.57	326	Pg	Pn	11 31 07.5	-0.9
PVF				Sg	Sn	11 31 28.1	-1.2
MEF	Metsahovi	1.90	302	ePG	Pn	11 31 13.5	+0.6
MEF				eSG	Sn	11 31 38.2	+0.7
MEF				MSG		11 31 39.3	
	comp=Z,4.3nm,0.1s						
MEF	Metsahovi	1.90	302	Pg	Pn	11 31 13.4	+0.5
MEF	Metsahovi	1.90	302	eP	Pn	11 31 13.7	+0.8
	SNR=68						
MEF				eS	Sn	11 31 38.2	+0.7
	comp=Z,24nm,0.2s,SNR=68						
MTSE	Matsula	2.05	256	ePB	Pn	11 31 15.7	+0.8
MTSE				eSG	Sb	11 31 42.8	-0.4
MTSE	Matsula	2.05	256	Pg	Pn	11 31 15.6	+0.7
MTSE	Matsula	2.05	256	eP	Pn	11 31 16.0	+1.1
	SNR=68						
MTSE				Sg	Sb	11 31 42.8	-0.4
FIA0	FINESS Array S	2.33	341	eP	Pn	11 31 18.3	-0.4
FIA0				ePB	Pb	11 31 19.8	-2.3
FIA0				eSB	Sn	11 31 48.7	+0.7
FIA0				eSG	Sb	11 31 51.3	0.0
FIA0				MSG		11 31 52.2	
	comp=Z,3.3nm,0.2s						
FIA0	FINESS Array S	2.33	341	Pb	Pn	11 31 18.2	-0.6
FIA0				Sg	Sn	11 31 48.7	+0.7
KEF	Keuruu	3.22	336	eP	Pn	11 31 31.9	+0.8
KEF				MSG		11 32 13.9	
	comp=Z,2.5nm,0.2s						
KEF				eSG	Sb	11 32 18.1	+1.1
KEF	Keuruu	3.22	336	Pb	Pn	11 31 32.2	+1.2
SLIT	Slitere, Latvi	3.25	242	eSB	Sb	11 32 17.2	-0.5
RAF	Rauma	3.42	304	eP	Pn	11 31 34.9	+1.0
RAF	Rauma	3.42	304	Pn	Pn	11 31 34.8	+1.0
RAF				eS	Sn	11 32 16.4	+1.3
	comp=Z,5.1nm,0.7s,SNR=46						
AAL	Aland	3.97	287	eSG	Sb	11 32 42.3	+3.7
VAF	Ylistaro	4.49	330	eP	Pn	11 31 49.8	+1.3
VAF	Ylistaro	4.49	330	Pn	Pn	11 31 50.1	+1.6

*BJI **04** 11:31:39.0, 29.75N×80.85E, h10km, mb5.4/84, mB5.4/56, Ms5.5/90, Ms7 5.2/86*

*ISCJB **04** 11:31:40.2±0.5, 29.73N±0.02×80.79E±0.01, h17km±3km, mb5.6/321, MS5.1/239, Error ellipse: s-maj=2.7km s-min=1.6km az=22.7*

*NDI **04** 11:31:40.9±2.6, 29.59N×80.88E, h9km±7km, ML5.5, mb5.6(NEIC)*

*MOS **04** 11:31:40.7±1.0, 29.71N×80.80E, h22km, mb5.8/106, MS5.1/76, Error ellipse: s-maj=5.5km s-min=3.3km az=115.7*

*DMN **04** 11:31:41.1±0.3, 29.89N×80.63E, h10km, Ml6.0/6, Error ellipse: s-maj=13.3km s-min=6.2km az=32.0*

*IDC **04** 11:31:42.3±1.5, 29.63N×80.82E, h24km±8km, mb5.1/41, mb1 5.2/44, mb1mx5.2/49, mbtmp5.3/44, ML5.2/3, MS4.9/47, Ms1 4.9/47, ms1mx4.8/61, Error ellipse: s-maj=10.1km s-min=8.7km az=9.0*

*GCMT **04** 11:31:42.3±0.1, 29.43N×80.71E, h19km, MW5.4/118, Moment Tensor Solution. s100,c151; s118,c240; Duration: 1s2 Moment tensor: Scale 10^{17}Nm; M_{rr}1.07±.02; $M_{\theta\theta}$-0.97±.02; $M_{\phi\phi}$-0.09±.02; $M_{r\theta}$1.02±.04; $M_{\theta\phi}$0.59±.01; $M_{\phi r}$0.09±.04; Best double couple: $M_0$1.56200×10^{17} NP1:ϕ_s96.00000°, δ67.00000°, λ70.00000°. NP2:ϕ_s318.00000°, δ30.00000°, λ128.00000°. Principal axes: T 1.5540, Plg63.0000°, Azm334.0000°; N 0.0210, Plg18.0000°, Azm104.0000°; P -1.5700, Plg19.0000°, Azm201.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface/mantle waves, cutoff=50s.*

*NEIC **04** 11:31:43.0±1.1, 29.70N×80.75E, h26km±7km, mb5.6/153, MS5.1/148, MW5.3 Error ellipse: s-maj=3.7km s-min=2.3km az=211.0 Best double couple: NP1: ϕ_s98.00000°, δ46.00000°, λ69.00000°. NP2:ϕ_s307.00000°, δ48.00000°, λ111.00000°. Principal axes: T 1.0400, Plg75.0000°, Azm290.0000°; N -0.0700, Plg15.0000°, Azm113.0000°; P -0.9700, Plg1.0000°, Azm23.0000°;*

NEIC Slight damage in western Nepal and in parts of Uttarakhand and Uttar Pradesh, India. Felt at Amargadhi, Nepalganj and as far as Gorkha. Nepal. Felt [IV] at Dehra Dun and Mohali; [III] at Chandigarh, Delhi, Ghaziabad, Gurgaon, Lucknow, New Delhi, Noida, Roorkee and Shimla; [II] at Alipur, India. Felt widely in northern India as far as Ghazipur, Jabalpur and Jaipur. Also felt at Lahore, Pakistan.

ISC 04 11:31:41.1±0.3, 29.63N±0.03×80.73E±0.02, h17km±1km, h17km:pP-P, n1139, σ1s94/1238, mb5.6/341, MS5.1/241, 122C-21D, Nepal-India border region

Code	Station Name	Δ°	AZ°	Phase Op	Phase ISC	Time h m s	Res ISC
LGTI	Lohaghat	0.46	247	eP	Pn	11 31 55.2	+2.4
LGTI				eS	Sn	11 32 05.3	+4.8
DDI	Dehra Dun	2.42	287	eP	Pb	11 32 23.5	-0.7
DDI				eS	Sb	11 32 53.8	-0.1
DDI				IAML		11 33 02.4	
	comp=N,124μm,0.2s						
DDI				IAML		11 33 03.7	
	comp=E,77μm,0.4s						
PYUN	Piuthan	2.50	127	ePn	Pn	11 32 23.1	+1.9
PYUN				eSn	Sb	11 32 54.8	-1.4
	comp=E,24μm,0.8s						
PYUN	Piuthan	2.50	127	Pn	Pn	11 32 23.1	+1.9
PYUN				Sn	Sb	11 32 54.8	-1.4
BISR	Bishrakh	3.06	251	eP	Pn	11 32 29.5	+0.7
BISR				eP	Pn	11 32 29.5	+0.7
BISR				eS	Sn	11 33 07.3	+2.3
KOLN	Koldanda	3.13	126	ePn	Pn	11 32 32.1	+2.3
KOLN				eSn	Sn	11 33 09.8	+2.9
	comp=E,38μm,1.0s						
KOLN	Koldanda	3.13	126	Pn	Pn	11 32 32.1	+2.3
KOLN				Sn	Sn	11 33 09.8	+2.9
NDI	New Delhi	3.21	254	eP	Pn	11 32 30.5	-0.3
NDI				eS	Sn	11 33 06.0	-2.7
AYAN	Aya Nagar	3.35	251	eP	Pn	11 32 34.3	+1.6
AYAN				eP	Pb	11 32 35.3	-4.8
AYAN				eS	Sn	11 33 14.8	+2.7
KKR	Kurukshetra	3.41	277	eP	Pn	11 32 35.1	+1.6
KKR				eP	Pb	11 32 36.1	-5.0
SMLA	Simla	3.42	297	iP	Pn	11 32 36.6	+2.9
SMLA				eS	Sb	11 33 18.6	-4.0
SMLA				IAML		11 33 33.9	
	comp=E,59μm,0.7s						
SMLA				IAML		11 33 34.9	
	comp=N,65μm,0.1s						
BHGR	Bahadurgarh	3.44	255	eP	Pn	11 32 36.1	+2.2
BHGR				eP	Pn	11 32 36.1	+2.2
SONA	Sohna	3.48	248	eP	Pn	11 32 36.4	+2.0
SONA				eP	Pb	11 32 37.4	-4.8
SONA				eS	Sn	11 33 18.6	+3.4
SONA				eS	Sb	11 33 19.6	-4.6
SONA				eS	Sb	11 33 19.6	-4.6
SONA				AML	AML	11 33 38.6	
	comp=E,12μm,0.6s						
SONA				AML	AML	11 33 39.1	
	comp=N,10μm,0.7s						
SDNR	Sundarnagar	3.74	301	eP	Pn	11 32 41.6	+3.5
GKN	Gorkha	3.79	114	ePn	Pn	11 32 40.8	+1.9
GKN				eSn	Sn	11 33 25.0	+1.8
GKN	Gorkha	3.79	114	Pn	Pn	11 32 40.8	+1.9
GKN				Sn	Sn	11 33 25.0	+1.8
RTK	Rohtak	3.81	262	eP	Pn	11 32 41.4	+2.4
RTK				eP	Pn	11 32 41.4	+2.4
KUDL	Kundal	4.00	249	eP	Pn	11 32 43.4	+1.8
KUDL				eP	Pn	11 32 43.4	+1.8
KUDL				eS	Sn	11 33 30.4	+2.3
KUDL				eS	Sn	11 33 30.4	+2.3
KUDL				eS	Sn	11 33 30.5	+2.3
KUDL				AML	AML	11 33 57.3	
	comp=E,8μm,0.7s						
KUDL				AML	AML	11 34 01.4	
	comp=N,5μm,0.3s						
DMN	Daman	4.34	117	ePn	Pn	11 32 48.2	+1.7
DMN				eSn	Sn	11 33 38.4	+1.5
	comp=N,6μm,0.7s						
DMN	Daman	4.34	117	Pn	Pn	11 32 48.2	+1.7
DMN				Sn	Sn	11 33 38.4	+1.5
JWA	Jwalamukhi	4.39	302	eP	Pn	11 32 48.0	+1.0
JWA				eS	Sn	11 33 39.0	+1.3
KKN	Kakani	4.40	113	ePn	Pn	11 32 48.9	+1.6
KKN				eSn	Sn	11 33 38.6	+0.4
PKIN	Phulchoki	4.58	115	ePn	Pn	11 32 51.2	+1.3
KHET	Khetri	4.59	251	eP	Pn	11 32 52.2	+2.6
KHET				eP	Pn	11 32 52.2	+2.6
KHET				eS	Sn	11 33 44.9	+2.3
KHET				eS	Sn	11 33 44.9	+2.3
DHRM	DHARAMSHALA	4.62	306	eP	Pn	11 32 52.8	+2.5
DHRM				eS	Sn	11 33 45.6	+2.0
DHRM				IAML		11 34 12.9	
	comp=N,25μm,0.4s						
DHRM				IAML		11 34 15.5	
	comp=E,28μm,0.8s						
GUN	Gumba	4.83	109	ePn	Pn	11 32 55.0	+1.6
THN	Thein Dam	5.13	304	⇑iP	Pn	11 32 58.8	+1.7
THN				ex	Sn	11 33 53.0	-2.9
RAMN	Ramite	5.82	116	ePn	Pn	11 33 08.0	+1.1
RAMN				eSn	Sn	11 34 12.3	-1.1
	comp=E,7μm,0.4s						
ODAN	Odare	6.49	114	ePn	Pn	11 33 17.3	+1.2
ODAN				eSn	Sn	11 34 27.2	-2.6
	comp=E,7μm,0.6s						
TAPN	Taplejung	6.55	109	ePn	Pn	11 33 17.7	+0.8
TAPN				eSn	Sn	11 34 29.6	-1.8
	comp=E,3μm,0.5s						
BHPL	Bhopal	7.01	206	eP	Pn	11 33 22.8	-0.3
BHPL				eS	Sn	11 34 38.9	-3.6
BHPL				IAML		11 35 36.2	
	comp=N,5μm,1.8s						
BHPL				IAML		11 35 38.1	
	comp=E,6μm,1.6s						
SARP	Sargodha	7.30	290	P	Pn	11 33 27.4	+0.5
BOK	Bokaro	7.42	140	eP	Pn	11 33 28.9	+0.3
BOK				ex	Sn	11 34 48.2	-4.1
BOK				IAML		11 35 45.6	
	comp=E,3μm,0.6s						
BOK				IAML		11 35 51.7	
	comp=N,2μm,0.9s						
CHCP	Chirah Chowk	7.53	304	P	Pn	11 33 31.4	+1.3
THW	Thamme Wali	8.32	295	P	Pn	11 33 41.3	+0.3
CEP	Cherat	8.60	301	P	Pn	11 33 44.7	-0.2
LSA	Lhasa	9.07	87	P	Pn	11 33 53.9	+2.3
LSA				pmax	pmax		
	comp=N,100nm,1.0s						
LSA	Lhasa	9.07	87	eP	Pn	11 33 53.7	+2.1
LSA	Lhasa	9.07	87	ePn	Pn	11 33 53.7	+2.1
JASL	Jaisalmer	9.07	255	eP	Pn	11 33 52.1	+0.8
KSH	Kashi	10.61	340	P	Pn	11 34 09.1	-3.4
KSH				esP		11 34 14.8	
KSH				ePP	PnPn	11 34 17.5	-2.8
KSH				S	Sn	11 36 03.4	-7.6
KSH				pmax	pmax		
	comp=N,190nm,0.9s						
KSH				LR	LR		
	comp=N,8μm,8.0s						
KSH				LR	LR		
	comp=N,7μm,4.6s						
KSH				LR	LR		
	comp=N,14μm,9.2s						
SHL	Shillong	10.69	110	eP	Pn	11 34 11.8	-1.8
SHL				ex	Sn	11 36 04.0	-8.9
RPR	Rampur	10.80	187	ePn	Pn	11 34 14.6	-0.4
RPR				IAmb	IAmb	11 34 31.4	
	comp=Z,474nm,0.8s						
RPR				Sn	Sn	11 36 09.4	-6.1
RPR				IVMs_BB	IVMs_BB	11 38 34.0	
	comp=Z,23μm,10.6s						
SRSP	Sriramsagar	10.87	192	ePn	Pn	11 34 13.5	-2.5
SRSP				IAmb	IAmb	11 34 28.1	
	comp=Z,438nm,0.8s						
SRSP				Sn	Sn	11 36 09.7	-7.5
SRSP				IVMs_BB	IVMs_BB	11 37 36.1	
	comp=Z,38μm,3.7s						
KBL	Kabul	11.05	299	eP	Pn	11 34 18.5	-0.1
KBL	Kabul	11.05	299	ePn	Pn	11 34 18.5	-0.1
CHLP	Challavanipeta	11.48	164	ePn	Pn	11 34 21.9	-2.3
CHLP				IAmb	IAmb	11 34 25.6	
	comp=Z,147nm,0.6s						
CHLP				Sn	Sn	11 36 26.2	-5.9
CHLP				IVMs_BB	IVMs_BB	11 37 58.3	
	comp=Z,32μm,3.8s						
SFK	Sufi-Kurgan	11.94	332	P	Pn	11 34 28.9	-1.8
SFK				pmax	pmax		
	comp=Z,151nm,1.1s						
VIS	Vishakhapatnam	12.09	168	iP	Pn	11 34 30.4	-2.2
VIS				iS	Sn	11 36 36.4	-11
VIS				iS	Sn	11 36 36.4	-11
KLRI	Killari	12.11	199	ePn	Pn	11 34 29.9	-3.1
KLRI				IAmb	IAmb	11 34 36.4	
	comp=Z,1μm,0.9s						
KLRI				Sn	Sn	11 36 36.4	-11
KLRI				IVMs_BB	IVMs_BB	11 39 26.6	
	comp=Z,40μm,9.8s						
HYBB	Hyderabad (bro	12.31	190	ePn	Pn	11 34 32.4	-3.4
HYBB				IAmb	IAmb	11 34 40.8	
	comp=Z,682nm,1.2s						
HYBB				Sn	Sn	11 36 43.0	-10
HYBB				IVMs_BB	IVMs_BB	11 39 28.1	
	comp=Z,22μm,11.0s						
HYB	Hyderabad	12.32	190	iP	Pn	11 34 32.0	-3.8
	comp=Z,650nm,1.0s						
HYB				eS	Sn	11 36 40.0	-13
HYB				LR	LR	11 39 28.0	
	comp=Z,68nm,10.0s						
HYB	Hyderabad	12.32	190	ex	Pn	11 34 33.4	-2.4
HYB				eS	Sn	11 36 42.3	-10
HYB				IAML		11 39 01.4	
	comp=E,870nm,0.9s						
HYB				IAML		11 39 06.7	
	comp=N,472nm,2.1s						
PVM	Polavaram	12.35	176	ePn	Pn	11 34 32.5	-3.7
PVM				IAmb	IAmb	11 34 48.3	
	comp=Z,214nm,0.6s						
PVM				Sn	Sn	11 36 44.1	-9.3
PVM				IVMs_BB	IVMs_BB	11 39 25.4	
	comp=Z,13μm,14.4s						
POO	Poona	12.70	211	ex	Pn	11 34 39.1	-1.9
POO				eS	Sn	11 36 52.6	-10
POO				IAML		11 38 51.1	
	comp=E,2μm,1.5s						
POO				IAML		11 38 55.4	
	comp=N,1μm,3.9s						
SHLS	Shalkode	13.52	357	iP	Pn	11 34 52.2	-0.1
	comp=N,1μm,0.8s						
SHLS				eS	Sn	11 37 21.0	-1.2
SHLS				LRM	MLR	11 40 41.3	
	comp=N,2μm,13.2s						
UZB	Uzynbulak	13.56	355	⇓iP	Pn	11 34 51.8	-1.0
	comp=N,3μm,1.0s						
UZB				iS	Sn	11 37 20.8	-2.3
UZB				LRM	MLR	11 40 35.0	
	comp=N,4μm,11.9s						
SRLM	Srisailam	13.57	188	ePn	Pn	11 34 48.8	-4.1
SRLM				IAmb	IAmb	11 34 51.6	
	comp=Z,572nm,0.8s						
SRLM				Sn	Sn	11 37 10.8	-13
SRLM				IVMs_BB	IVMs_BB	11 40 14.8	
	comp=Z,22μm,10.2s						
PDGK	Podgornoye	13.71	356	P	Pn	11 34 53.0	-1.6
PDGK				pmax	pmax		
	comp=Z,242nm,0.8s						
ADKI	Addanki	13.73	183	ePn	Pn	11 34 51.4	-3.8
ADKI				IAmb	IAmb	11 35 08.7	
	comp=Z,313nm,0.9s						
ADKI				Sn	Sn	11 37 18.2	-9.1

ADKI IVMsBB 11 40 18.0
comp=Z,13µm,9.3s
MDOK Medeo 13.83 349 *i* P **Pn** **11 34 56.3 -0.2**
comp=Z,2µm,0.9s
MDOK *e*S **Sn** **11 37 28.0 -1.6**
MDOK LRM MLR 11 40 45.5
comp=Z,10µm,13.6s
TKM2 Tokmak 2 13.89 344 P **Pn** **11 34 57.4 0.0**
TKM2 pmax pmax
comp=Z,110nm,1.4s
TKM2 Tokmak 2 13.89 344 *e*Pn **Pn** **11 34 56.5 -0.8**
AAK Ala-Archa 13.92 341 Pn **Pn** **11 34 55.6 -2.0**
comp=Z,6.4nm,0.3s,baz=150,slow=12,SNR=32
AAK Sn **Sn** **11 37 25.9 -5.9**
baz=26,slow=16,SNR=4.1
AAK LR LR 11 41 05.6
comp=Z,14µm,18.7s,baz=142,slow=40
AAK Ala-Archa 13.92 341 *e*P **Pn** **11 34 56.3 -1.4**
AAK 11 37 25.9
AAK Ala-Archa 13.92 341 *e*Pn **Pn** **11 34 56.3 -1.4**
AAK Sn **Sn** **11 37 25.9 -5.9**
AAK Ala-Archa 13.92 341 Pn **Pn** **11 34 55.9 -1.7**
SNR=26
AAA Alma-Ata 13.95 348 *e*P P 11 35 14.7 +8.7
AAA pmax pmax
comp=Z,2µm,3.4s
AAA MLR MLR
comp=Z,25µm,13.0s
AAA Alma-Ata 13.95 348 *e*P **Pn** **11 34 57.7 -0.3**
comp=Z,782nm,1.2s
AAA *e*S **Sn** **11 37 32.1 -0.4**
AAA LRM MLR 11 40 43.4
comp=Z,9µm,11.6s
FRU Bishkek 14.07 341 *e*P **Pn** **11 34 59.0 -0.6**
FRU *e*S **Sn** **11 37 30.0 -5.2**
EKS2 Erkin-Say 14.16 339 *e*P **Pn** **11 35 00.1 -0.8**
EKS2 Erkin-Say 14.16 339 *e*Pn **Pn** **11 35 00.1 -0.8**
RCLA Racherla 14.20 187 *e*Pn Pn 11 34 56.5 -5.0
RCLA IAmb IAmb 11 35 12.7
comp=Z,180nm,0.7s
RCLA Sn Sn 11 37 26.3 -12
RCLA IVMs_BB IVMs_BB 11 39 21.0
comp=Z,24µm,4.3s
MNAS Manas 14.44 335 P Pn 11 34 59.7 -5.2
MNAS pmax pmax
comp=Z,106nm,1.0s
URV Uravakonda 14.96 193 *e*Pn Pn 11 35 06.5 -5.3
URV IAmb IAmb 11 35 15.2
comp=Z,312nm,0.9s
URV Sn Sn 11 37 43.4 -14
IUG Iuzhnay 15.19 328 *i* P **Pn** **11 35 10.5 -4.4**
comp=Z,5µm,0.9s
IUG *e*S **Sn** **11 37 56.3 -6.4**
IUG LRM MLR 11 41 42.9
comp=Z,3µm,8.2s
WMQ Urumqi 15.22 20 P **Pn** **11 35 13.7 -1.5**
WMQ pP P 11 35 20.8 +0.7
WMQ PP **sP** **11 35 26.5 -0.8**
WMQ S **Sn** **11 38 00.8 -2.6**
WMQ SS **S** **11 38 18.2 -1.9**
WMQ PcP **PcP** **11 40 19.3 -1.6**
WMQ pmax pmax
comp=Z,17nm,0.8s
WMQ pmax pmax
comp=Z,470nm,4.6s
WMQ LR LR
comp=Z,6µm,14.6s
WMQ LR LR
comp=Z,3µm,10.0s
WMQ LR LR
comp=Z,4µm,18.4s
GOA Goa 15.44 206 *ex* **Pn** **11 35 13.0 -5.2**
GOA *ex* **Sn** **11 37 58.4 -10**
KK31 Karatay Array 15.75 331 *i* P **Pn** **11 35 19.1 -3.0**
KK31 pmax pmax
comp=Z,127nm,0.8s
SKHT Srikalahasti 15.84 184 *e*Pn **Pn** **11 35 19.3 -4.0**
SKHT IAmb IAmb 11 35 34.1
comp=Z,109nm,0.9s
SKHT Sn Sn 11 38 04.5 -14
SKHT IVMs_BB IVMs_BB 11 41 25.9
comp=Z,11µm,16.7s
MK01 Makanchi Array 17.16 4 *e*Pn **Pn** **11 35 37.7 -2.3**
MAKZ Makanchi 17.18 3 *e*P **Pn** **11 35 38.4 -1.9**
MAKZ pmax pmax
comp=Z,533nm,1.4s
MAKZ Makanchi 17.18 3 *e*Pn **Pn** **11 35 38.4 -1.9**
comp=Z,533nm,1.4s
MK31 Makanchi Array 17.18 4 *e*P **Pn** **11 35 39.5 -0.8**
MK31 Makanchi Array 17.18 4 *e*Pn **Pn** **11 35 39.5 -0.8**
MKAR Makanchi Array 17.18 4 P **Pn** **11 35 38.9 -1.4**
comp=Z,11nm,0.3s,baz=184,slow=12,SNR=66
MKAR LR LR 11 43 15.9
comp=Z,6µm,19.4s,baz=184,slow=40
MKAR PKiKP **PKiKP** **11 48 14.0 -2.1**
comp=Z,0.2nm,0.3s,baz=223,slow=1.6,SNR=4.8
MKAR Makanchi Array 17.18 4 *e*P **Pn** **11 35 39.5 -0.8**
MKAR Makanchi Array 17.18 4 *e*Pn **Pn** **11 35 39.5 -0.8**
MKAR PKiKP **PKiKP** **11 48 14.0 -2.1**
ZSN Zaisan 18.02 8⇑ *i*P **Pn** **11 35 50.0 -0.7**
comp=Z,426nm,0.9s
ZSN *i* S **Sn** **11 39 09.3 -1.9**
ZSN LRM MLR 11 44 06.0
comp=Z,8µm,12.9s
GTA Gaotai 18.48 53 ⇑P **P** **11 35 54.0 -2.3**
GTA pP Pn 11 35 57.7 +1.3
GTA sP pP 11 36 01.1 -0.1
GTA S **S** **11 39 24.9 -1.8**
GTA sS sS 11 39 30.0 -4.5
GTA PcS **PcS** **11 44 00.6 -2.3**
GTA ScS **ScS** **11 47 39.2 -2.7**
GTA pmax pmax
comp=Z,37nm,1.2s
GTA pmax pmax
comp=Z,850nm,6.1s
GTA LR LR
comp=Z,8µm,14.9s
GTA LR LR
comp=Z,8µm,10.4s
GTA LR LR
comp=Z,6µm,11.9s
CMAI Chiengmai2 19.21 116 P **Pn** **11 36 05.1 -0.3**
comp=Z,103nm,1.2s,comp=Z,1µm
MHMT Maesarieng 19.40 122 P **Pn** **11 36 07.2 -0.3**
comp=Z,93nm,1.2s,comp=Z,957nm
OTUK Ortayu 19.68 343 P **P** **11 36 07.6 -1.7**
OTUK pmax pmax
comp=Z,245nm,0.9s
CHTO Chiang Mai 19.77 119 P **Pn** **11 36 11.7 -0.3**
comp=Z,675nm,1.0s,comp=Z,9µm
CHTO Chiang Mai 19.77 119 *e*P **P** **11 36 11.1 +0.7**
CHTO pmax pmax
comp=Z,82nm,0.6s
CHTO Chiang Mai 19.77 119 *e*P **P** **11 36 11.1 +0.7**
comp=Z,82nm,0.6s
CHTO Chiang Mai 19.77 119 P **P** **11 36 10.2 -0.2**
SNR=46
CMMT Chiang Mai 19.77 119 P **Pn** **11 36 11.6 -0.4**
comp=Z,151nm,1.2s,comp=Z,2µm
CD2 Chengdu 19.93 81 P **P** **11 36 12.3 +0.1**
CD2 sP pP 11 36 17.6 +0.5
CD2 PP **PnPn** **11 36 33.7 +5.7**
CD2 S **S** **11 39 49.0 -6.9**
CD2 sS sS 11 40 02.5 -1.2
CD2 SS **SnSn** **11 40 19.1 +7.1**
CD2 pmax pmax
comp=Z,310nm,0.9s
CD2 pmax pmax
comp=Z,1µm,8.0s
CD2 LR LR
comp=Z,12µm,14.4s
CD2 LR LR
comp=Z,10µm,11.4s
CM31 Chiang Mai Arr 19.98 120 *e*P **Pn** **11 36 14.2 -0.3**
CMAR Chiang Mai Arr 19.98 120 P **Pn** **11 36 13.8 -0.7**
comp=Z,2.8nm,0.3s,baz=301,slow=12,SNR=190
CMAR S **S** **11 39 47.5 -9.4**
comp=Z,0.2nm,0.3s,baz=301,slow=12,SNR=2.5
CMAR PcP **PcP** **11 40 28.9 0.0**
comp=Z,0.3nm,0.3s,baz=295,slow=2.5,SNR=6.2
CMAR ScP **ScP** **11 44 04.7 +0.2**
comp=Z,0.2nm,0.3s,baz=281,slow=3.6,SNR=4.5
CMAR LR LR 11 45 13.5
comp=Z,2µm,21.1s,baz=281,slow=41
CMAR PKiKP **PKiKP** **11 48 17.7 -0.3**
comp=Z,0.2nm,0.3s,baz=277,slow=1.7,SNR=4.4
CM01 Chiang Mai Arr 20.01 120 *e*P **P** **11 36 12.5 -0.6**
KMI Kunming 20.05 98 P **P** **11 36 14.5 +0.8**
KMI pP pP 11 36 19.3 +0.7
KMI sP sP 11 36 20.9 0.0
KMI PP **PnPn** **11 36 35.9 +6.1**
KMI S **S** **11 39 53.9 -4.7**
KMI sS Sn 11 40 00.9 +0.1
KMI SS **SnSn** **11 40 22.6 +7.4**
KMI pmax pmax
comp=Z,240nm,0.9s
KMI pmax pmax
comp=Z,1µm,9.6s
KMI LR LR
comp=Z,4µm,12.2s
KMI LR LR
comp=Z,3µm,11.5s
KMI LR LR
comp=Z,3µm,13.2s
CRAI Chiangrai 20.10 113 P **P** **11 36 14.0 0.0**
comp=Z,111nm,1.5s,comp=Z,1µm
LZH Lanzhou 20.44 66 ⇑P **P** **11 36 17.8 0.0**
LZH pP pP 11 36 21.8 -0.9
LZH sP sP 11 36 24.5 -0.5
LZH PP **PnPn** **11 36 39.2 +4.2**
LZH S S 11 39 54.6 -11
LZH sS Sn 11 40 07.0 -2.9
LZH SS **SnSn** **11 40 32.5 +8.0**
LZH pmax pmax
comp=Z,210nm,1.2s
LZH pmax pmax
comp=Z,990nm,4.7s
LZH LR LR
comp=Z,10µm,12.3s
LZH LR LR
comp=Z,17µm,12.5s
LZH LR LR
comp=Z,19µm,14.2s
LAMP Lampang 20.46 118 P Pn 11 36 19.3 -0.9
comp=Z,63nm,1.0s,comp=Z,528nm
GEYT Alibeck 20.50 300 LR LR 11 45 26.7
comp=Z,3µm,20.8s,baz=140,slow=40
WBK Wadi Bani Khal 20.73 255 P Pn 11 36 24.8 +1.5
SNR=53
WBK Wadi Bani Khal 20.73 255 P Pn 11 36 24.8 +1.5
SNR=53
SEM Semipalatinsk 20.76 359⇑ *i*P **P** **11 36 20.7 -0.2**
comp=Z,2µm,1.1s
SEM *e*S **S** **11 40 11.5 -0.5**
SEM LRM MLR 11 45 38.3
comp=Z,2µm,11.7s
WSAR Wadi Sarin 20.77 257 P Pn 11 36 24.1 +0.4
comp=Z,108nm,0.9s,baz=103,slow=10,SNR=55
WSAR S **S** **11 40 09.7 -2.9**
comp=Z,34nm,0.8s,baz=279,slow=18,SNR=5.2
WSAR LR LR 11 45 41.1
comp=Z,2µm,20.9s,baz=95,slow=40
PHRA Phrae 20.94 118 P **P** **11 36 23.4 +0.3**
comp=Z,1µm,0.9s,comp=Z,32µm
KURBB Kurchatov Arra 21.04 356 P **P** **11 36 23.5 -0.4**
comp=Z,403nm,0.9s,baz=182,slow=10,SNR=331
KURBB S **S** **11 40 13.4 -4.0**
comp=Z,14nm,0.8s,baz=177,slow=18,SNR=4.7
KURBB PcP **PcP** **11 40 31.3 +1.0**
comp=Z,8.6nm,0.7s,baz=192,slow=2.1,SNR=3.9
KURBB PKiKP **PKiKP** **11 48 16.6 -1.0**
comp=Z,0.6nm,0.7s,baz=223,slow=0.9,SNR=8.4
BIDO Bidbid 21.09 259 P **P** **11 36 27.7 +2.9**
SNR=18
BIDO Bidbid 21.09 259 P **P** **11 36 27.7 +2.9**
SNR=18
KURK Kurchatov 21.12 356 *e*P **P** **11 36 24.8 -0.1**
KURK S **S** **11 40 13.4 -5.7**
KURK 11 40 31.3
KURK pmax pmax
comp=Z,722nm,0.9s
KURK MLR MLR
comp=Z,9µm,21.0s
KURK Kurchatov 21.12 356 *e*P **P** **11 36 24.8 -0.1**
comp=Z,722nm,0.9s
KURK S **S** **11 40 13.4 -5.7**
KURK PcP **PcP** **11 40 31.3 +0.8**
KURK PKiKP **PKiKP** **11 48 16.6 -1.0**
KURK LR LR
comp=Z,9µm,21.0s
KURK Kurchatov 21.12 356 P **P** **11 36 24.8 -0.1**
SNR=171
NANT Nan 21.13 116 P **P** **11 36 25.7 +0.5**
comp=Z,52nm,0.9s,comp=Z,377nm
SMDO Samad 21.33 257 pP pP 11 36 30.8 -1.7
SNR=30
SMDO Samad 21.33 257 P pP 11 36 30.8 -1.7
SNR=30
JMDO Jabal Madar 21.56 256 pP pP 11 36 33.5 -1.3
SNR=41
JMDO Jabal Madar 21.56 256 P pP 11 36 33.5 -1.3
SNR=41
UTTA Uttaradit 21.63 119 P **P** **11 36 31.8 +1.3**
comp=Z,86nm,0.9s,comp=Z,716nm
HOQ Hoqain 21.77 259 pP pP 11 36 36.2 -0.8
SNR=34
HOQ Hoqain 21.77 259 P pP 11 36 36.2 -0.8
SNR=34
PHIT Phitsanulok 21.86 120 P **P** **11 36 34.7 +1.7**
comp=Z,150nm,0.9s,comp=Z,1µm
BANOM Banah 21.92 266 *i* P **P** **11 36 35.6 +1.9**
SNR=26
BANOM Banah 21.92 266 P **P** **11 36 35.5 +1.8**
SNR=17
BANOM Banah 21.92 266 P **P** **11 36 35.5 +1.8**
SNR=17
KHLT Khaolaem Dam 22.12 128 P **P** **11 36 37.0 +1.2**
comp=Z,90nm,1.0s,comp=Z,782nm
BSY Bisya 22.18 258 pP pP 11 36 41.0 -0.5
SNR=36
BSY Bisya 22.18 258 P pP 11 36 41.0 -0.5
SNR=36
PALK Pallekele 22.24 180 P **P** **11 36 37.9 +0.7**
comp=Z,16nm,0.7s,baz=93,slow=17,SNR=12
PALK Pallekele 22.24 180 *e*P **P** **11 36 39.3 +2.2**
comp=Z,115nm,1.0s
PALK Pallekele 22.24 180 P **P** **11 36 38.2 +1.1**
SNR=18
UOSS Minazif 22.27 264 *e*P **P** **11 36 39.4 +2.0**
comp=Z,12nm,1.1s
LOEI Loei 22.31 118 P **P** **11 36 41.4 +3.5**
comp=Z,148nm,1.3s,comp=Z,2µm
HATD Hatta, Dubai 22.37 264 *i* P **P** **11 36 41.6 +3.0**
SNR=16
ASHO Ashiyiah 22.48 263 *i* P **P** **11 36 43.5 +3.7**
SNR=62
ASHO Ashiyiah 22.48 263 pP pP 11 36 43.6 -1.1
SNR=88
ASHO Ashiyiah 22.48 263 P **pP** **11 36 43.6 -1.1**
SNR=88
ASHO P pP 11 36 43.6 -1.1
SNR=88
ARQ Araqi 22.53 260 pP pP 11 36 44.2 -1.1
SNR=67
ARQ Araqi 22.53 260 P pP 11 36 44.2 -1.1
SNR=67
PBKT Sadao Pong 22.66 121 P **P** **11 36 42.9 +1.3**
comp=Z,264nm,1.2s,comp=Z,3µm
NAZ Nazwa, Dubai 22.73 264 *i* P **P** **11 36 45.7 +3.4**
SNR=33
SRDT SRDT 22.80 128 P **P** **11 36 43.8 +0.8**
comp=Z,611nm,1.4s,comp=Z,8µm
FAQ Al Faqa, Dubai 22.86 264 *i* P **P** **11 36 47.2 +3.5**
SNR=24
GYA Guiyang 23.09 92⇑ *i*P **P** **11 36 44.8 -1.4**
GYA PcP **PcP** **11 40 37.6 +2.5**
GYA S **S** **11 40 53.6 -3.2**
GYA SS **SnSn** **11 41 37.5 +7.8**
GYA ScP **ScP** **11 44 14.0 +1.8**
GYA pmax pmax
comp=Z,160nm,0.9s
GYA pmax pmax
comp=Z,520nm,8.7s
GYA LR LR
comp=Z,1µm,13.0s
GYA LR LR
comp=Z,3µm,13.0s
GYA LR LR
comp=Z,4µm,12.7s
ASUD Al Ashush, Dub 23.13 264 *i* P **P** **11 36 50.2 +3.8**
SNR=16
NONG Nongkai 23.47 114 P **P** **11 36 49.5 -0.4**
comp=Z,61nm,1.0s
CHAI Chaiyaphum 23.84 120 P **P** **11 36 54.9 +1.4**
comp=Z,175nm,0.9s,comp=Z,1µm
VOSK Vostochnaya 24.17 345 P **P** **11 36 56.0 -0.3**
VOSK pmax pmax
comp=Z,279nm,1.4s
KHON Khomkaen 24.20 118 P **P** **11 36 58.4 +1.5**
comp=Z,111nm,0.8s,comp=Z,1µm
XAN Xi'an 24.32 72 P **P** **11 36 57.1 -0.8**
XAN S **S** **11 41 14.4 -1.9**
XAN pmax pmax
comp=Z,130nm,0.9s
XAN pmax pmax
comp=Z,520nm,6.0s
XAN LR LR
comp=Z,6µm,16.3s
XAN LR LR
comp=Z,2µm,15.3s
XAN LR LR
comp=Z,5µm,10.8s
ZAA0 Zalesovo Array 24.48 6 *e*P **P** **11 36 58.9 -0.3**
ZAA0 *e*P **pP** **11 36 59.0 -5.4**
ZALV Zalesovo Beam 24.48 6 P **P** **11 36 59.1 0.0**
comp=Z,48nm,0.6s,baz=195,slow=11,SNR=138
ZALV LR LR 11 48 18.5
comp=Z,3µm,18.8s,baz=189,slow=41
ZALV Zalesovo Beam 24.48 6 P **P** **11 36 59.1 0.0**
ZALV pmax pmax
comp=Z,52nm,0.6s
ZALV MLR MLR
comp=Z,3µm,18.8s
BVA0 Borovoye Array 24.58 345 P **P** **11 36 59.5 -0.6**
BVA0 pmax pmax
comp=Z,250nm,1.3s
BVAR Borovoye Array 24.58 345 P **P** **11 37 00.5 +0.4**
comp=Z,78nm,0.8s,baz=146,slow=8.2,SNR=132
BVAR S **S** **11 41 22.0 +1.9**
comp=Z,11nm,0.9s,baz=144,slow=13,SNR=1.8
BVAR LR LR 11 47 34.4
comp=Z,7µm,21.3s,baz=158,slow=39
BRVK Borovoye 24.64 345*c* *i*P **P** **11 37 01.0 +0.5**
BRVK pmax pmax
comp=Z,240nm,1.7s
BRVK MLR MLR
comp=Z,10µm,16.0s
BRVK Borovoye 24.64 345 *e*P **P** **11 37 00.2 -0.3**
comp=Z,107nm,0.8s
BRVK LR LR
comp=Z,12µm,20.0s
BRVK Borovoye 24.64 345 P **P** **11 37 01.1 +0.6**
SNR=45
BRVK Borovoye 24.64 345 P **P** **11 37 01.1 +0.6**
SNR=45
SKNT Sakolnakorn 24.73 115 P **P** **11 37 01.7 -0.1**
comp=Z,236nm,1.0s
ZRNK Zerenda 24.85 343 P **P** **11 37 00.8 -1.7**
ZRNK pmax pmax
comp=Z,340nm,1.2s
ENH Enshi 24.90 81 *e*P **P** **11 37 03.5 +0.3**
comp=Z,152nm,0.6s
ENH LR LR
comp=Z,5µm,21.0s
PANO Nakornpanom 25.14 114 P **P** **11 37 05.4 0.0**
comp=Z,418nm,1.0s,comp=Z,4µm
CHKZ Chkalovo 25.14 346 P **P** **11 37 04.9 -0.1**
CHKZ pmax pmax
comp=Z,379nm,0.9s
AB31 Akbulak array 25.19 327 *i* P **P** **11 37 06.4 +0.8**
AB31 pmax pmax
comp=Z,218nm,1.0s
ABKAR Akbulak array 25.19 327 *e*P **P** **11 37 07.0 +1.4**
NVS Novosibirsk 25.26 3⇑ *i*P **P** **11 37 05.8 -0.3**
NVS *i* S **S** **11 41 34.4 +3.5**
NVS pmax pmax
comp=Z,105nm,0.9s
NVS pmax pmax
comp=N,45nm,0.5s
NVS pmax pmax
comp=E,10.0nm,0.2s
NVS smax smax
comp=N,366nm,2.2s
NVS smax smax
comp=E,37nm,1.3s
CHBT CHBT 26.14 125 P **P** **11 37 16.2 +1.7**
comp=E,102nm,1.1s,comp=E,1µm
BTO Baotou 26.23 57 *e*P **P** **11 37 16.9 +1.6**
SURT Suratani 26.64 137 P **P** **11 37 21.2 +2.3**
comp=E,59nm,1.2s,comp=E,874nm
MOY Mondy 26.68 29 *e*P **P** **11 37 20.7 +1.5**
MOY pmax pmax
comp=Z,124nm,2.1s
ZAK Zakamensk 26.80 33 *e*P **P** **11 37 20.8 +0.6**
ZAK pmax pmax
comp=Z,57nm,0.9s
SONM Songino Array 26.85 40 P **P** **11 37 22.4 +1.6**
comp=Z,43nm,0.8s,baz=232,slow=8.8,SNR=179
SONM PcP **PcP** **11 40 43.5 +0.5**
comp=Z,5.8nm,0.8s,baz=235,slow=3.2,SNR=3.4
SONA1 Songino Array 26.86 40 *e*P **P** **11 37 21.6 +0.7**
AKTO Aktyubinsk 26.91 327 P **P** **11 37 22.1 +1.0**
comp=Z,100nm,0.9s,baz=128,slow=8.6,SNR=94
AKTO LR LR 11 49 00.2
comp=Z,9µm,19.0s,baz=137,slow=38
RBK Rabkut 27.07 249 pP **P** **11 37 24.8 +1.9**
SNR=8.7
RBK Rabkut 27.07 249 P **P** **11 37 24.8 +1.9**
SNR=8.7
PKDT Phuket 27.22 139 P **P** **11 37 27.0 +2.8**
comp=Z,80nm,1.3s,comp=Z,13µm
ULN Ulaanbaatar 27.24 41*c* *i*P **P** **11 37 25.3 +1.0**
ULN pmax pmax
comp=Z,116nm,1.7s
ULN MLR MLR
comp=Z,3µm,16.0s
ULN Ulaanbaatar 27.24 41 *e*P **P** **11 37 25.4 +1.0**
comp=Z,61nm,1.0s
ULN LR LR
comp=Z,6µm,19.0s
ULN Ulaanbaatar 27.24 41 pP **P** **11 37 25.8 +1.5**
SNR=43
ULN Ulaanbaatar 27.24 41 P **P** **11 37 25.8 +1.5**
SNR=43
HHC Hu-ho-hao-te 27.43 58 *e*P **P** **11 37 27.2 +1.2**
HHC pP pP 11 37 31.9 +0.6
HHC PP **PnPn** **11 38 15.6 +5.1**
HHC S **S** **11 42 03.8 -1.9**
HHC sS sS 11 42 16.2 +1.7
HHC pmax pmax
comp=Z,43nm,1.4s
HHC LR LR
comp=Z,4µm,9.8s
HHC LR LR
comp=Z,4µm,12.9s
HHC LR LR
comp=Z,4µm,14.0s
KRAB Krabi 27.46 137 P **P** **11 37 28.8 +2.4**
comp=Z,108nm,1.0s,comp=Z,9µm
TIY Taiyuan 27.49 65 *e*P **P** **11 37 27.8 +1.2**
TIY S **S** **11 42 03.0 -3.8**
TIY pmax pmax
comp=Z,130nm,0.6s
TIY LR LR
comp=Z,4µm,9.4s
TIY LR LR
comp=Z,6µm,10.2s
TIY LR LR
comp=Z,7µm,11.8s
KRAR Krasnoyarsk 27.75 15*d* *i*P **P** **11 37 28.3 -0.3**
KRAR pmax pmax
comp=Z,129nm,1.4s
KRAR MLR MLR
comp=Z,8µm,17.0s
TLY Talaya 27.85 31 P **P** **11 37 30.7 +1.2**
comp=Z,7.5nm,0.7s,baz=224,slow=9.3,SNR=26
TLY LR LR 11 49 59.7
comp=Z,2µm,21.1s,baz=247,slow=40
TLY Talaya 27.85 31*c* *i*P **P** **11 37 30.8 +1.2**
TLY *e*S **S** **11 42 14.5 +2.5**
TLY pmax pmax
comp=Z,84nm,2.1s
TLY MLR MLR
comp=Z,4µm,18.0s
TLY Talaya 27.85 31 P **P** **11 37 30.7 +1.2**
TLY *e*P **P** **11 37 30.8 +1.2**
ABTO Aybut 27.89 250 pP **P** **11 37 32.5 +2.2**
SNR=21
ABTO Aybut 27.89 250 P **P** **11 37 32.5 +2.2**

SNR=21
TRTT Trang 28.06 137 P **P** **11 37 33.5 +1.8**
comp=Z,148nm,1.1s,comp=Z,2µm
QIZ Qiongzhong 28.48 105 P **P** **11 37 36.1 +0.6**
QIZ S **S** **11 42 24.5 +2.1**
QIZ sS **sS** **11 42 30.2 -1.0**
QIZ LR LR
comp=Z,860nm,18.8s
QIZ Qiongzhong 28.48 105 PFAKE 11 37 50.0 +15
QIZ LR LR
comp=Z,879nm,19.0s
IRK Irkutsk 28.52 31 *e*P **P** **11 37 36.1 +0.6**
IRK pmax pmax
comp=Z,107nm,1.8s
LHMI Lhok Sumawe 28.70 145 P **P** **11 37 39.3 +1.9**
WHN Wuhan 29.05 80 ⇑P **P** **11 37 41.4 +1.0**
WHN S **S** **11 42 29.6 -1.6**
WHN pmax pmax
comp=Z,180nm,0.9s
WHN pmax pmax
comp=Z,780nm,11.8s
WHN LR LR
comp=Z,15µm,13.8s
WHN LR LR
comp=Z,7µm,13.8s
WHN LR LR
comp=Z,12µm,11.6s
SKLT Songkhla 29.14 136 P **P** **11 37 43.2 +1.8**
comp=Z,43nm,0.8s
GZH Guangzhou 29.88 95 P **P** **11 37 46.4 -1.4**
GZH PP **PnPn** **11 38 43.2 -0.8**
GZH S **S** **11 42 42.4 -1.9**
GZH pmax pmax
comp=Z,670nm,3.5s
MCO Taipa Grande 30.39 96 P **P** **11 37 54.0 +1.5**
TPTI 30.52 146 P **P** **11 37 54.1 +0.6**
comp=Z,61nm,1.2s,comp=Z,948nm
KCSI Kotacane, Aceh 30.58 145 P **P** **11 37 57.6 +3.5**
SVE Sverdlovsk 30.64 338*d* *i*P **P** **11 37 55.4 +1.1**
SVE pmax pmax
comp=Z,140nm,1.5s
SVE MLR MLR
comp=Z,6µm,14.0s
KULM Kulim 30.66 138 ⇓P **P** **11 37 57.2 +2.3**
KULM Kulim 30.66 138 *e*P **P** **11 37 56.8 +2.0**
comp=Z,82nm,1.1s
KULM LR LR
comp=Z,2µm,21.0s
BJT Baijiatuau 30.71 61 *e*P **P** **11 37 56.3 +1.2**
BJT pmax pmax
comp=Z,63nm,0.8s
BJT MLR MLR
comp=Z,6µm,20.0s
BJT Baijiatuau 30.71 61 *e*P **P** **11 37 56.3 +1.2**
comp=Z,63nm,0.8s
BJT LR LR
comp=Z,6µm,20.0s
BJI Beijing 30.71 61 P **P** **11 37 56.3 +1.2**
BJI S **S** **11 42 58.5 +1.3**
BJI pmax pmax
comp=Z,83nm,0.9s
BJI pmax pmax
comp=Z,500nm,3.6s
BJI LR LR
comp=Z,4µm,18.4s
BJI LR LR
comp=Z,4µm,16.1s
BJI LR LR
comp=Z,4µm,21.1s
HKC Hong Kong Obse 30.86 96 P **P** **11 37 58.0 +1.4**
ARU Arti 31.03 336 P **P** **11 37 58.8 +1.1**
comp=Z,23nm,0.6s,baz=120,slow=5.1,SNR=58
ARU LR LR 11 51 19.7
comp=Z,4µm,18.7s,baz=134,slow=38
ARU Arti 31.03 336*c* *i*P **P** **11 37 58.7 +1.0**
ARU 11 39 00.8
ARU PPP PPP 11 39 09.4
ARU 11 40 47.8
ARU S **S** **11 43 05.3 +3.6**
ARU SS **SnSn** **11 44 49.9 +7.2**
ARU SSS SSS 11 45 03.9
ARU pmax pmax
comp=Z,201nm,1.7s
ARU MLR MLR
comp=Z,4µm,17.0s
ARU Arti 31.03 336 *e*P **P** **11 37 58.8 +1.1**
comp=Z,120nm,1.1s
TIA Tai'an 31.12 68 ⇑P **P** **11 37 59.1 +0.3**
TIA S **S** **11 43 11.2 +7.6**
TIA pmax pmax
comp=Z,60nm,1.1s
TIA pmax pmax
comp=Z,310nm,7.0s
TIA LR LR
comp=Z,3µm,20.0s
TIA LR LR
comp=Z,4µm,15.0s
TIA LR LR
comp=Z,5µm,13.0s
GNI Garni 31.14 299 *i* P **P** **11 38 01.5 +2.3**
SNR=19
GNI Garni 31.14 299*c* *i*P **P** **11 38 01.4 +2.3**
GNI MLR MLR
comp=Z,4µm,16.0s
GNI Garni 31.14 299 *e*P **P** **11 38 01.8 +2.7**
comp=Z,379nm,1.4s
GNI LR LR
comp=Z,1µm,20.0s
GNI Garni 31.14 299 pP **P** **11 38 01.6 +2.6**
SNR=32
GNI Garni 31.14 299 P **P** **11 38 01.6 +2.6**
SNR=32
TBLG Delisi 31.41 302 P **P** **11 38 04.5 +3.2**
TBLG Delisi 31.41 302 P **P** **11 38 04.5 +3.2**
IPM Ipoh 31.54 139 *e*P **P** **11 38 03.2 +0.7**
comp=Z,84nm,0.7s
IPM LR LR
comp=Z,2µm,21.0s
GUDG Gudauri 31.75 304 P **P** **11 38 03.0 -1.5**
PSI Prapat 31.78 144 LR LR 11 53 39.9
comp=Z,1µm,18.1s,baz=318,slow=41
PSI Prapat 31.78 144 *e*P **P** **11 38 05.9 +1.0**
PSI *e* 11 40 56.6
PSI pmax pmax
comp=Z,23nm,0.8s
PSI Prapat 31.78 144 *e*P **P** **11 38 05.9 +1.0**
comp=Z,22nm,0.8s
PSI *e*PcP **PcP** **11 40 56.6 +0.6**
RAYN Ar Rayn 32.00 267 *e*P **P** **11 38 08.0 +1.3**
comp=Z,87nm,1.1s
RAYN LR LR
comp=Z,1µm,19.0s
ZEI Tsey 32.23 304 *e*P **P** **11 38 10.2 +1.5**
ZEI pmax pmax
comp=Z,591nm,1.2s
AKH Akhalkalaki 32.27 302 P **P** **11 38 11.7 +2.6**
AKH Akhalkalaki 32.27 302 *i*P P 11 38 20.2 +11
AKH Akhalkalaki 32.27 302 P **P** **11 38 11.7 +2.6**
GSI Gunungsitoli 32.41 147 P **P** **11 38 13.3 +3.1**
comp=Z,214nm,1.0s,comp=Z,3µm
GSI Gunungsitoli 32.41 147 *e*P **P** **11 38 13.0 +2.8**
comp=Z,209nm,1.0s
GSI *e*S **S** **11 43 25.1 +1.0**
GSI LR LR
comp=Z,2µm,20.0s
NCK Nalchik 32.60 305*de*P **P** **11 38 13.1 +1.4**
NCK pmax pmax
comp=Z,108nm,1.0s
NCK MLR MLR
comp=Z,2µm,15.0s
NJ2 Nanjing 32.71 76 *e*P **P** **11 38 13.1 +0.3**
NJ2 pP **pP** **11 38 17.1 -1.0**
NJ2 S **S** **11 43 30.6 +2.0**
NJ2 sS **sS** **11 43 35.8 -1.6**
NJ2 pmax pmax
comp=Z,32nm,0.6s
NJ2 pmax pmax
comp=Z,290nm,6.0s
NJ2 LR LR
comp=Z,1µm,13.0s
NJ2 LR LR
comp=Z,3µm,13.0s
NJ2 LR LR
comp=Z,3µm,16.3s
CIT Chita 32.98 38 *e*P **P** **11 38 14.5 -0.5**
CIT *e* 11 38 26.4
CIT *e* 11 39 19.5
CIT pmax pmax
comp=Z,121nm,1.7s
KBZ Khabaz 33.14 306 P **P** **11 38 17.1 +0.8**
comp=Z,33nm,0.8s,baz=141,slow=7.1,SNR=33
KBZ LR LR 11 55 00.1
comp=Z,2µm,18.3s,baz=99,slow=42
NEY Neytrino 33.17 305*de*P **P** **11 38 19.8 +2.9**
NEY pmax pmax
comp=Z,17nm,1.0s
KIV Kislovodsk 33.34 306 *i* P **P** **11 38 19.7 +1.4**
SNR=8.8
KIV Kislovodsk 33.34 306 *e*P **P** **11 38 19.8 +1.4**
KIV *e* 11 39 30.4
KIV *e*S **S** **11 43 39.6 +1.3**
KIV pmax pmax
comp=Z,67nm,1.0s
KIV pmax pmax
comp=Z,63nm,3.4s
KIV MLR MLR
comp=Z,2µm,15.0s
KIV Kislovodsk 33.34 306 *e*P **P** **11 38 20.1 +1.8**
comp=Z,95nm,1.2s
KIV LR LR
comp=Z,800nm,19.0s
KIV Kislovodsk 33.34 306 pP **P** **11 38 19.7 +1.4**
SNR=9.5
KIV Kislovodsk 33.34 306 P **P** **11 38 19.7 +1.4**
SNR=9.5
KIV P **P** **11 38 19.7 +1.4**
SNR=9.5
CHVG Ch'k'valeri 33.53 304 P **P** **11 38 23.1 +3.3**
CHVG Ch'k'valeri 33.53 304 ⇑*i*P **P** **11 38 22.9 +3.1**
MNSI Mandailing Nat 33.83 145 P **P** **11 38 23.9 +1.3**
comp=Z,82nm,1.0s,comp=Z,1µm
QZH Quanzhou 33.87 89 P **P** **11 38 25.9 +3.0**
QZH S **S** **11 43 44.7 -1.9**
QZH LR LR
comp=Z,1µm,12.3s
QZH LR LR
comp=Z,4µm,9.6s
QZH LR LR
comp=Z,5µm,13.6s
PBSI Pulau Batu 33.93 147 P **P** **11 38 26.7 +3.2**
comp=Z,279nm,1.1s,comp=Z,4µm
DL2 Dalian 34.80 64 P **P** **11 38 31.3 +0.4**
DL2 PP **PnPn** **11 39 44.4 -2.8**
DL2 S **S** **11 44 02.6 +1.9**
DL2 pmax pmax
comp=Z,150nm,0.8s
DL2 pmax pmax
comp=Z,290nm,6.1s
DL2 LR LR
comp=Z,2µm,12.9s
DL2 LR LR
comp=Z,6µm,13.9s
DL2 LR LR
comp=Z,9µm,13.9s
SSE Sheshan 34.81 77 P **P** **11 38 32.4 +1.4**
SSE pP **sP** **11 38 38.2 -0.3**
SSE S **S** **11 44 01.2 +0.2**
SSE sS **sS** **11 44 10.1 +0.3**
SSE pmax pmax
comp=Z,76nm,0.8s
SSE pmax pmax
comp=Z,280nm,4.9s
SSE LR LR
comp=Z,4µm,23.1s
SSE LR LR
comp=Z,980nm,23.1s
SSE LR LR
comp=Z,3µm,16.6s
BKNI Bangkinang 34.98 143 P **P** **11 38 34.3 +1.7**
comp=Z,518nm,1.0s,comp=Z,5µm
BKNI Bangkinang 34.98 143 *e*P **P** **11 38 34.3 +1.7**
comp=Z,344nm,0.8s
BKNI LR LR
comp=Z,1µm,20.0s
PPI Padang Panjang 35.32 144 P **P** **11 38 36.7 +1.2**
comp=Z,109nm,1.0s,comp=Z,1µm
MYKOM Kota Tinggi 35.35 137 *e*P **P** **11 38 36.9 +1.1**
comp=Z,95nm,0.8s
MYKOM LR LR
comp=Z,2µm,19.0s
SOC Sochi 35.38 305*c* *i*P **P** **11 38 36.7 +0.9**
SOC *e* 11 39 54.5
SOC *e*S **S** **11 44 09.8 +0.2**
SOC *e*SS **SnSn** **11 46 19.3 -9.3**
SOC pmax pmax
comp=Z,97nm,1.2s
SOC MLR MLR
comp=Z,1µm,13.0s
HIA Hailar 35.43 45 *e*P **P** **11 38 37.2 +1.0**
HIA pmax pmax
comp=Z,31nm,0.8s
HIA MLR MLR
comp=Z,4µm,21.0s
HIA Hailar 35.43 45 *e*P **P** **11 38 37.2 +1.0**
comp=Z,31nm,0.8s
HIA LR LR
comp=Z,4µm,21.0s
KSRV Kasrt alli 35.44 291 *i* P **P** **11 38 38.4 +2.0**
PDSI Padang 35.74 145 P **P** **11 38 40.2 +1.0**
comp=Z,112nm,0.9s,comp=Z,6µm
VRH Novokhopyorsk 36.10 318 *e*P **P** **11 38 42.5 +0.6**
VRH *e**SP **pP** **11 38 47.9 +0.6**
VRH *e*S **S** **11 44 18.9 -1.5**
VRH pmax pmax
comp=Z,170nm,1.0s
VRH smax smax
comp=N,840nm,4.7s
VRH MLR MLR
comp=Z,2µm,13.0s
TPUB Ta-pu 36.14 90 *e*P **P** **11 38 43.9 +1.3**
comp=Z,51nm,0.8s
SSLB Suanglung 36.27 89 *e*P **P** **11 38 46.0 +2.3**
comp=Z,47nm,1.0s
SSLB LR LR
comp=Z,2µm,18.0s
AKCD Akcadag 36.28 295 *i* P **P** **11 38 46.2 +2.5**
YHNB Yeheng 36.37 88 PFAKE 11 39 00.0 +15
YHNB LR LR
comp=Z,3µm,18.0s
TATO Taipei 36.38 87 PFAKE 11 39 00.0 +15
TATO LR LR
comp=Z,2µm,18.0s
BOD Bodaibo 36.39 30 ⇓*i*P **P** **11 38 44.3 +0.1**
BOD pmax pmax
comp=Z,40nm,1.7s
TPRI Tanjung Pinang 36.45 137 P **P** **11 38 47.1 +1.9**
SNY Shenyang 36.50 59 ⇑P **P** **11 38 45.5 +0.1**
SNY PP **PP** **11 40 08.8 +0.3**
SNY S **S** **11 44 24.5 -2.2**
SNY sS **sS** **11 44 39.3 +3.7**
SNY pmax pmax
comp=Z,130nm,0.8s
SNY pmax pmax
comp=Z,610nm,5.3s
SNY LR LR
comp=Z,6µm,19.2s
SNY LR LR
comp=Z,920nm,15.9s
SNY LR LR
comp=Z,4µm,17.2s
DAMY Dhamar 36.67 254 *e*P **P** **11 38 51.1 +3.7**
comp=Z,36nm,0.8s
DAMY LR LR
comp=Z,1µm,20.0s
TWG Pinlang 36.68 91 *e*P **P** **11 38 50.5 +3.3**
comp=Z,448nm,0.9s
YULB Yu-li 36.69 90 *e*P **P** **11 38 49.4 +2.1**
comp=Z,92nm,0.8s
NACB Ninganchiao 36.71 89 *e*P **P** **11 38 49.8 +2.4**
comp=Z,98nm,0.9s
NACB LR LR
comp=Z,3µm,18.0s
H08N2 Diego Garcia H 36.95 196 P P 11 39 11.7 +23
baz=354,slow=7.2,SNR=3.4
ROOS tl_alroos 36.95 288 *i* P **P** **11 38 52.6 +3.1**
H08N1 Diego Garcia H 36.96 196 P P 11 39 11.8 +23
baz=354,slow=7.2,SNR=3.5
H08N3 Diego Garcia H 36.97 196 P P 11 39 12.5 +23
baz=354,slow=7.2,SNR=3.7
RABH Abou Rabah 37.00 289 *i* P **P** **11 38 52.1 +2.3**
ZALF Zalf 37.04 286 *i* P **P** **11 38 53.5 +3.3**
ANN Anapa 37.20 306 *e*P **P** **11 38 51.8 +0.5**
ANN *e**PP **sP** **11 38 58.0 -0.9**
ANN *e* 11 40 18.5
ANN *e*PPP PPP 11 40 35.5
ANN *e*S **S** **11 44 38.1 +0.8**
ANN pmax pmax
comp=N,34nm,1.1s
ANN pmax pmax
comp=Z,149nm,1.1s
ANN pmax pmax
comp=E,54nm,1.1s
ANN MLR MLR
comp=N,2µm,14.0s
ANN MLR MLR
comp=Z,2µm,14.0s
ANN MLR MLR
comp=E,2µm,14.0s
BTCH Batrach 37.49 292 *i* P **P** **11 38 55.5 +1.4**
ASF Jabal al Asfar 37.51 285 LR LR 11 57 20.9
comp=E,2µm,18.3s,slow=41
CUSAR Sarkisla-SIVAS 37.60 297 *i* P **P** **11 38 51.9 -3.2**
VSR Storozhevoye 37.62 317 *e*P **P** **11 38 55.2 +0.4**
VSR *e**SP **pP** **11 39 00.8 +0.6**
VSR *e*S **S** **11 44 42.5 -1.0**
VSR pmax pmax
comp=Z,270nm,1.2s
VSR smax smax
comp=N,1µm,5.4s
VSR MLR MLR
comp=Z,3µm,16.0s
MARH Ras Al Marh 37.63 288 *i* P **P** **11 38 57.7 +2.2**
BIDA Albida 37.68 290 *i* P **P** **11 38 57.2 +1.6**
DGAR Diego Garcia 37.68 194 PFAKE 11 39 10.0 +14
DGAR LR LR
comp=Z,2µm,18.0s
SLNF Slenfeh 37.71 291 *i* P **P** **11 38 56.2 +0.2**
VORR Voronezh 37.74 318 ⇓*i*P **P** **11 38 56.0 +0.2**
VORR pmax pmax
comp=Z,500nm,1.6s
TOTH TOTAH 37.75 287 *i* P **P** **11 38 58.7 +2.5**
YAYL Yayladag 37.78 292 *i* P **P** **11 38 57.6 +1.0**
ARNB Al Arnab 37.90 291 *i* P **P** **11 38 58.2 +0.7**
JMBI JAMBI 38.02 141 P **P** **11 39 01.7 +3.1**
CN2 Changchun 38.08 56 *e*P **P** **11 38 58.8 0.0**
CN2 *e*sP sP 11 39 06.0 -0.3
CN2 *e*S **S** **11 44 48.1 -2.6**
CN2 pmax pmax
comp=Z,20nm,0.7s
CN2 pmax pmax
comp=Z,400nm,4.0s
CN2 LR LR
comp=Z,2µm,12.0s
CN2 LR LR
comp=Z,5µm,12.0s
CN2 LR LR
comp=Z,6µm,13.0s
BRBR Barbar 38.14 287 *i* P **P** **11 39 01.9 +2.2**
LPSR Galich'ya Gora 38.22 319 *e*P **P** **11 39 00.8 +1.0**
LPSR *e*S **S** **11 44 51.2 -1.4**
LPSR pmax pmax
comp=Z,290nm,1.2s
LPSR smax smax
comp=N,220nm,1.9s
MASI Maura Aman, Be 38.55 144 P **P** **11 39 03.9 +0.9**
comp=N,268nm,0.8s
COAL Corum-Alaca 38.59 299 *i* P **P** **11 39 04.4 +1.1**
MMAI Mount Meron Ar 38.64 287 LR LR 11 56 57.2
comp=N,1µm,19.2s,baz=85,slow=39
BOYT Boyabat 38.70 300 *i* P **P** **11 39 04.3 +0.2**
INCN Inchon 38.74 66 *e*P **P** **11 39 04.6 +0.1**
comp=N,108nm,0.9s
INCN LR LR
comp=Z,3µm,20.0s
DED Mersin 38.78 293 *i* P **P** **11 39 06.1 +1.3**
KIZK Mersin 39.34 293 *i* P **P** **11 39 10.3 +0.8**
AKSY AKSARAY - Alti 39.54 296 *i* P **P** **11 39 12.1 +0.9**
PHNC Paralimni 39.55 290 P **P** **11 39 11.8 +0.6**
SIM Simferopol' 39.55 306*d* *i*P **P** **11 39 12.7 +1.5**
SIM *e* 11 40 40.0
SIM *e*S **S** **11 45 16.0 +3.0**
SIM *e*SS **SS** **11 47 57.0 -11**
SIM pmax pmax
comp=Z,152nm,1.2s
ILGA Ilgaz 39.58 300 *i* P **P** **11 39 11.1 -0.6**
EIL Elat 39.58 282 LR LR 11 58 34.6
comp=Z,2µm,18.4s,baz=93,slow=41
BR131 Keskin Array S 39.62 298 *e*P **P** **11 39 12.8 +0.8**
BRTR Keskin Array B 39.62 298 P **P** **11 39 12.4 +0.5**
comp=Z,71nm,1.0s,baz=111,slow=6.8,SNR=153
BRTR LR LR 11 57 52.2
comp=Z,564nm,19.9s,baz=84,slow=40
BRTR Keskin Array B 39.62 298*ce*P **P** **11 39 12.6 +0.6**
BRTR pmax pmax
comp=Z,71nm,1.0s
KSM Kuching 39.69 129 *e*P **P** **11 39 14.1 +1.5**
comp=Z,25nm,0.7s
KSM *e*PcP **PcP** **11 41 20.9 +1.7**
KSM LR LR
comp=Z,1µm,21.0s
PMBI Palembang 39.72 140 P **P** **11 39 14.8 +2.0**
comp=Z,989nm,0.9s,comp=Z,20µm
KS15 Wonju Array Si 39.73 66 *e*P **P** **11 39 13.1 +0.4**
KSAR Wonju Array Be 39.73 66 P **P** **11 39 12.4 -0.3**
KSAR 11 41 19.0
KSAR Wonju Array Be 39.73 66 P **P** **11 39 12.4 -0.3**
KSAR PcP **PcP** **11 41 19.0 -0.1**
KS01 Wonju Array Si 39.74 66 *e*P **P** **11 39 11.5 -1.3**
KS01 *e*PcP **PcP** **11 41 18.9 -0.2**
KSRS Korea Array 39.77 66 P **P** **11 39 12.4 -0.6**
comp=Z,33nm,0.7s,baz=273,slow=8.8,SNR=83
KSRS PcP **PcP** **11 41 19.0 -0.1**
comp=Z,8.0nm,0.7s,baz=276,slow=2.2,SNR=7.4
KSRS ScP **ScP** **11 45 04.3 -2.9**
baz=267,slow=4.6,SNR=6.0
KSRS LR LR 11 57 01.8
comp=Z,832nm,19.8s,baz=274,slow=38
KSRS Korea Array 39.77 66 P **P** **11 39 12.4 -0.6**
KSRS 11 41 19.0
KSRS pmax pmax
comp=Z,32nm,0.7s
KSRS MLR MLR
comp=Z,832nm,19.8s
ELDT Eldivan 39.79 299 *i* P **P** **11 39 14.4 +1.0**
LHSI Lahat 39.80 143 P **P** **11 39 13.4 0.0**
PPBI Pangkal Pinang 39.87 138 P **P** **11 39 15.5 +1.4**
NRIK Noril'sk 39.95 4 P **P** **11 39 14.1 +0.1**
comp=Z,33nm,0.9s,baz=182,slow=6.3,SNR=45
NRIK LR LR 11 57 50.7
comp=Z,4µm,18.4s,baz=195,slow=39
MOS Moscow 40.08 323 *e*P **P** **11 39 13.9 -1.4**
MOS *e* 11 40 46.5
MOS *e* 11 41 19.7
MOS *e*S **S** **11 45 15.4 -5.1**
MOS pmax pmax
comp=Z,800nm,2.0s
MOS pmax pmax
comp=Z,385nm,1.6s
MOS MLR MLR
comp=Z,4µm,15.0s
MOS MLR MLR
comp=N,1µm,16.0s
MOS MLR MLR
comp=E,4µm,17.0s
CSS Mathiatis 40.13 290 *e*P **P** **11 39 16.6 +0.5**
comp=E,11nm,0.9s
CSS LR LR
comp=Z,300nm,19.0s
BR231 Keskin MP Arra 40.29 298 *e*P **P** **11 39 13.8 -3.7**
SBUM Sibu 40.30 126 ⇓P **P** **11 39 19.6 +1.9**
SBUM Sibu 40.30 126 *e*P **P** **11 39 19.1 +1.4**
SBUM pmax pmax
comp=Z,49nm,0.9s
SBUM LR LR
comp=Z,900nm,20.0s
OBN Obninsk 40.41 322 P **P** **11 39 18.7 +0.6**
comp=Z,194nm,1.0s,baz=105,slow=2.9,SNR=46
OBN Obninsk 40.41 322*c* *i*P **P** **11 39 18.9 +0.8**
OBN *e* 11 40 50.0
OBN *i*S **S** **11 45 18.9 -6.5**
OBN *e*SS SnSn 11 48 52.0 +22
OBN pmax pmax
comp=Z,340nm,1.2s
OBN MLR MLR
comp=Z,3µm,15.0s
OBN Obninsk 40.41 322 *e*P **P** **11 39 19.1 +1.0**
comp=Z,223nm,0.9s
OBN LR LR

comp=Z,2µm,19.0s
SZAC Souni 40.52 290 P **P** **11 39 21.1 +1.8**
LQP Lukban 40.66 103 *e*P **P** **11 39 21.7 +0.7**
KMER Konya-Meram 40.67 295 *i* P **P** **11 39 22.0 +1.3**
ALFC Alefka 40.70 291 P **P** **11 39 21.7 +0.8**
KDHN Kadinhani 40.83 296 *i* P **P** **11 39 21.2 -0.8**
KKM Kota Kinabalu 40.84 118 *e*P **P** **11 39 23.8 +1.6**
comp=Z,104nm,1.0s
KKM LR LR
comp=Z,966nm,19.0s
AKMC Akamas 40.94 291 P **P** **11 39 24.1 +1.3**
PPCY Paphos 40.94 290 P **P** **11 39 24.3 +1.6**
CLNS Chul'man 41.05 36 *e*P **P** **11 39 23.4 0.0**
CLNS pmax pmax
comp=Z,44nm,0.9s
CLNS pmax pmax
comp=E,36nm,1.1s
CLNS pmax pmax
comp=N,17nm,0.9s
LWLI Liwa 41.08 143 P **P** **11 39 23.7 -0.5**
MDJ Mudanjiang 41.12 55 P **P** **11 39 24.2 +0.1**
MDJ PP **PP** **11 40 58.0 -1.0**
MDJ S **S** **11 45 36.1 -0.2**
MDJ SS **SS** **11 48 35.4 -3.5**
MDJ pmax pmax
comp=N,48nm,1.1s
MDJ pmax pmax
comp=N,290nm,5.9s
MDJ LR LR
comp=N,460nm,10.7s
MDJ LR LR
comp=N,3µm,11.6s
MDJ LR LR
comp=N,4µm,10.3s
MDJ Mudanjiang 41.12 55 *e*P **P** **11 39 24.3 +0.1**
comp=N,31nm,0.8s
MDJ LR LR
comp=Z,2µm,20.0s
KLMR Klimovskoe 41.45 331 *e*P **P** **11 39 23.6 -3.0**
KLMR *e**PP **pP** **11 39 32.9 +0.9**
KLMR *e* 11 40 59.2
KLMR *e*S **S** **11 45 34.9 -5.9**
KLMR pmax pmax
comp=Z,347nm,1.5s
KLMR MLR MLR
comp=Z,3µm,12.0s
STKI Sintang 41.51 130 P **P** **11 39 29.6 +2.0**
BOLV Bolvadin 41.74 296 *i* P **P** **11 39 29.5 +0.1**
KASI Kota Agung 41.74 143 P **P** **11 39 27.1 -2.4**
comp=Z,169nm,0.7s
SAHE Sakarya_HENDEK 41.74 299 *i* P **P** **11 39 30.4 +1.0**
JOW Kunigami 41.76 82 P **P** **11 39 28.7 -0.9**
comp=Z,178nm,0.7s,baz=293,slow=7.1,SNR=22
JOW LR LR 11 58 18.2
comp=Z,1µm,20.8s,baz=302,slow=38
JOW Kunigami 41.76 82 *e*P **P** **11 39 29.3 -0.3**
comp=Z,138nm,0.6s
ESKT Eskisehir 41.78 297 *i* P **P** **11 39 30.4 +0.7**
BAGO Egridir - ISPA 41.91 295 *i* P **P** **11 39 28.9 -1.9**
KORT Korkueli 42.33 294 *i* P **P** **11 39 35.0 +0.7**
JNU Nakatsue 42.63 72 P **P** **11 39 36.0 -0.8**
comp=Z,26nm,0.8s,baz=291,slow=4.7,SNR=7.4
JNU LR LR 11 58 39.8
comp=Z,2µm,18.7s,baz=296,slow=38
USRK Ussuriysk Ar. 42.81 56 P **P** **11 39 38.2 +0.3**
comp=Z,30nm,0.8s,baz=265,slow=8.3,SNR=67
USRK LR LR 11 57 55.7
comp=Z,1µm,18.6s,baz=257,slow=37
GDZ Gediz 42.86 297 *i* P **P** **11 39 39.4 +0.8**
KHAL Karahalli 42.90 296 *i* P **P** **11 39 39.2 +0.3**
AKAS Kas 43.01 293 *i* P **P** **11 39 38.7 -1.1**
IGD Bursa 43.02 299 *i* P **P** **11 39 37.7 -2.0**
KLR Kul'dur 43.08 48 P **P** **11 39 40.0 0.0**
comp=Z,11nm,0.3s,baz=272,slow=9.0,SNR=78
KLR LR LR 11 59 17.3
comp=Z,3µm,18.8s,baz=262,slow=38
MYLDM Lahad Datu 43.15 117 *e*P **P** **11 39 41.9 +0.9**
comp=Z,60nm,1.0s
CGJI Cibinong 43.29 142 P **P** **11 39 38.9 -3.2**
comp=Z,142nm,0.7s,comp=Z,2µm
KIS Kishinev 43.43 308⇑ *i*P **P** **11 39 44.0 +1.1**
comp=Z,400nm,1.5s
KIS *e*S **S** **11 46 10.0 -0.3**
KIS *i* ScS **SS** **11 49 30.0 +5.6**
KIS LRM MLR 12 01 08.0
comp=Z,2µm,16.0s
KIS Kishinev 43.43 308α *i*P **P** **11 39 44.0 +1.1**
KIS *e* 11 39 50.0
KIS *e*S **S** **11 46 10.0 -0.3**
KIS pmax pmax
comp=Z,400nm,1.5s
KIS pmax pmax
comp=Z,900nm,2.0s
KIS MLR MLR
comp=Z,2µm,15.0s
KIS MLR MLR
comp=N,700nm,16.0s
KIS MLR MLR
comp=E,600nm,16.0s
KIS MLR MLR
comp=Z,2µm,16.0s
MANR Mangalia 43.44 304⇑ *i*P **P** **11 39 45.0 +2.0**
DEMI Demirci 43.46 297 *i* P **P** **11 39 43.9 +0.6**
KULA Kula-Manisa 43.54 296 P **P** **11 39 44.6 +0.6**
KULA Kula-Manisa 43.54 296 P **P** **11 39 44.6 +0.6**
TIRR Tirgusor 43.58 305⇑ *i*P **P** **11 39 45.2 +1.1**
TIRR Tirgusor 43.58 305 *e*P **P** **11 39 45.0 +0.9**
TIRR pmax pmax
comp=Z,154nm,1.3s
TIRR Tirgusor 43.58 305 *e*P **P** **11 39 45.0 +0.9**
comp=Z,154nm,1.3s
AKASG Malin Array Be 43.60 314 P **P** **11 39 44.5 +0.3**
comp=Z,36nm,0.8s,baz=78,slow=6.6,SNR=202
AKASG PP **PP** **11 41 25.7 +0.1**
comp=Z,19nm,0.9s,baz=87,slow=7.5,SNR=5.0
AKASG ScP **ScP** **11 45 20.6 -1.7**
comp=Z,0.5nm,0.4s,baz=94,slow=3.3,SNR=4.0
AKASG LR LR 12 00 52.7
comp=Z,1µm,20.2s,baz=110,slow=40
AKASG Malin Array Be 43.60 314 P **P** **11 39 44.5 +0.3**
AKASG 11 41 25.7
AKASG pmax pmax
comp=Z,90nm,1.0s
AKASG pmax pmax
comp=Z,19nm,0.9s
AKASG pmax pmax
comp=N,1.0nm,0.4s
AKASG MLR MLR
comp=Z,1µm,20.3s
KIEV Kiev 43.60 314 *e*P **P** **11 39 44.4 +0.1**
KIEV pmax pmax
comp=Z,93nm,0.9s
KIEV MLR MLR
comp=Z,1µm,20.0s
KIEV Kiev 43.60 314 *e*P **P** **11 39 44.4 +0.1**
comp=Z,93nm,0.9s
KIEV LR LR
comp=Z,1µm,20.0s
DURS Dursunbey 43.61 298 *i* P **P** **11 39 45.1 +0.6**
AK11 Malin Array Si 43.63 314 *e*P **P** **11 39 44.0 -0.5**
PBKI Pangkalan Bun 43.70 132 P **P** **11 39 47.3 +1.9**
comp=Z,234nm,1.1s
PSN Preselentsi 43.73 304 *i* P **P** **11 39 46.5 +1.2**
TMCR Tamitsa 43.74 335 *e*P **P** **11 39 47.1 +2.0**
TMCR pmax pmax
comp=Z,340nm,1.1s
TURN Turunc 43.74 294 *i* P **P** **11 39 48.7 +3.1**
LEOM Leova 43.78 308⇑ *i*P **P** **11 39 46.7 +1.0**
CFR Carcaliu 43.80 306⇑ *i*P **P** **11 39 47.0 +1.1**
DBJI Dramaga 43.81 141 P **P** **11 39 44.5 -1.8**
SORM Soroca 43.84 310⇑ *i*P **P** **11 39 47.5 +1.3**
HARR Harsova 43.93 305⇑ *i*P **P** **11 39 48.9 +2.0**
MSAB Monastry St. A 43.99 304⇑ *i*P **P** **11 39 49.0 +1.6**
AKHS Akhisar 44.17 297 *i* P **P** **11 39 49.5 +0.5**
AYDN Tasoluk 44.23 295 *i* P **P** **11 39 49.1 -0.5**
PRD Provadia 44.30 303 *i* P **P** **11 39 50.6 +0.7**
COCO West Island 44.38 157 PFAKE 11 40 00.0 +9.2
COCO LR LR
comp=Z,2µm,19.0s
LEM Lembang 44.52 140 LR LR 12 03 02.8
comp=Z,799nm,19.2s,baz=300,slow=42
ODBI Odobesti 44.58 307⇑ *i*P **P** **11 39 55.8 +3.7**
MTKI Muara Teweh, K 44.58 127 P **P** **11 39 54.6 +2.1**
PGOR Pogoanele 44.61 305⇑ *i*P **P** **11 39 55.8 +3.4**
BDRM Kayabasi 44.64 294 *i* P **P** **11 39 53.2 +0.4**

GCAM G?zelcaml? 44.74 295 *i* P **P** **11 39 54.3 +0.8**
VRI Vrincioaia 44.81 307⇑ *i*P **P** **11 39 56.0 +2.0**
PLOR Plostina 44.87 307⇑ *i*P **P** **11 39 56.6 +2.1**
TESR Tescani 44.89 308⇑ *i*P **P** **11 39 55.8 +1.2**
JMB Yambol 44.91 302 *i* P **P** **11 39 56.7 +1.9**
ISR Istrita 44.92 306⇑ *i*P **P** **11 39 57.8 +2.8**
KARP Karpathos 45.06 292 P **P** **11 39 57.4 +1.2**
KARP Karpathos 45.06 292 *e*P **P** **11 39 57.2 +1.0**
comp=Z,247nm,1.0s
MICGM Minsk 45.07 319⇑ *e*P **P** **11 39 55.0 -0.9**
MICGM PM 11 39 57.0
comp=Z,0.3nm,1.2s
MICGM PM 11 39 57.0
comp=E,0.5nm,1.2s
MICGM *e*PP **PP** **11 41 42.0 +0.8**
MICGM *e*PPP PPP 11 42 18.0
MICGM *e*S **S** **11 46 32.0 -2.0**
MICGM *e*LR LR 11 58 26.0
MICGM LRM MLR 11 59 58.0
comp=Z,6.1nm,13.0s
MICGM LRM MLR 12 00 03.0
comp=E,4.0nm,14.0s
MNK Minsk 45.07 319⇑ *e*P **P** **11 39 55.0 -0.9**
MNK *e* 11 41 42.0
MNK *e*PPP PPP 11 42 18.0
MNK *e*S **S** **11 46 32.0 -2.0**
MNK pmax pmax
comp=E,470nm,1.2s
MNK pmax pmax
comp=Z,280nm,1.2s
MNK MLR MLR
comp=Z,6µm,13.0s
MNK MLR MLR
comp=E,4µm,14.0s
SULR 45.12 305⇑ *i*P **P** **11 39 59.6 +3.1**
HABR Khabarovsk 45.17 50 *e*P **P** **11 39 54.7 -2.1**
HABR *e**PP **pP** **11 40 00.9 -1.3**
HABR *e**SP **sP** **11 40 03.4 -1.0**
HABR *e* 11 41 35.3
HABR *e*PPP PPP 11 42 18.0
HABR *e*S **S** **11 46 33.1 -2.4**
HABR *e* 11 46 43.8
HABR *e* 11 49 50.4
HABR *e*SS SnSn 11 50 41.3 +17
HABR pmax pmax
comp=Z,32nm,0.9s
HABR MLR MLR
comp=Z,2µm,17.0s
PUL Pulkovo 45.17 327*de*P **P** **11 39 58.4 +1.8**
PUL pmax pmax
comp=Z,221nm,0.6s
PUL MLR MLR
comp=Z,4µm,18.0s
CISI Cisompet, Garu 45.23 141 P **P** **11 39 58.2 +0.5**
CISI Cisompet, Garu 45.23 141 *e*P **P** **11 39 54.0 -3.7**
comp=Z,58nm,0.7s
YAK Yakutsk 45.31 30 P **P** **11 39 58.0 +0.3**
comp=Z,7.3nm,0.4s,baz=246,slow=19,SNR=24
YAK Yakutsk 45.31 30 *e*P **P** **11 39 57.7 0.0**
YAK *e**PP **pP** **11 40 02.4 -0.7**
YAK *e* 11 41 36.5
YAK *e* 11 41 42.9
YAK *e*S **S** **11 46 36.1 -1.1**
YAK *e*SS **ScS** **11 49 43.4 -10**
YAK pmax pmax
comp=Z,41nm,0.6s
YAK pmax pmax
comp=N,6.0nm,0.8s
YAK pmax pmax
comp=E,23nm,1.2s
YAK pmax pmax
comp=Z,60nm,2.2s
YAK pmax pmax
comp=N,71nm,2.8s
YAK pmax pmax
comp=E,131nm,3.2s
YAK smax smax
comp=N,526nm,2.2s
YAK smax smax
comp=E,119nm,2.3s
YAK MLR MLR
comp=Z,2µm,16.0s
YAK MLR MLR
comp=N,848nm,18.0s
YAK MLR MLR
comp=E,2µm,17.0s
YAK Yakutsk 45.31 30 *e*P **P** **11 39 57.5 -0.2**
comp=E,106nm,0.6s
YAK LR LR
comp=Z,2µm,21.0s
MLR Muntele Rosu 45.35 306⇑ *i*P **P** **11 40 00.9 +2.4**
MLR Muntele Rosu 45.35 306 *e*P **P** **11 40 00.7 +2.2**
MLR pmax pmax
comp=Z,510nm,1.1s
MLR Muntele Rosu 45.35 306 *e*P **P** **11 40 00.7 +2.2**
comp=Z,510nm,1.1s
ALN Alexandroupoli 45.39 300 P **P** **11 39 59.8 +1.2**
ALN Alexandroupoli 45.39 300 P **P** **11 39 59.8 +1.2**
ALN Alexandroupoli 45.39 300 P **P** **11 39 59.8 +1.2**
KPJI Karang Pucung 45.67 139 P **P** **11 39 59.6 -1.5**
comp=Z,114nm,0.6s
DOPR Dopca 45.75 307⇑ *i*P **P** **11 40 03.1 +1.6**
ZIMR 45.77 304⇑ *i*P **P** **11 40 04.8 +3.2**
NACGM Naroch 45.77 319 *e*P **P** **11 40 02.0 +0.5**
NACGM PM 11 40 03.0
comp=Z,0.2nm,1.0s
NACGM *e*PP **PP** **11 41 52.0 +3.4**
NACGM *e*S **S** **11 46 46.0 +1.8**
NACGM *e*SS **SS** **11 50 10.0 +1.7**
NACGM *e*LQ LQ 11 57 10.0
NACGM *e*LR LR 11 59 52.0
NACGM LRM MLR 12 02 14.0
comp=Z,4.7nm,16.0s
SMTH Samothraki Isl 45.81 299 P **P** **11 40 02.9 +0.9**
SMTH Samothraki Isl 45.81 299 P **P** **11 40 02.9 +0.9**
PVL Pavlikeni 45.81 303 *i* P **P** **11 40 03.7 +1.8**
BURAR Bucovina Array 45.91 309⇑ *i*P **P** **11 40 04.3 +1.4**
BUR08 Bucovina Ar. S 45.93 309 *e*P **P** **11 40 04.2 +1.2**
MTUR Matau 45.97 306⇑ *i*P **P** **11 40 05.3 +2.0**
VOIR 45.98 306⇓ *i*P **P** **11 40 04.7 +1.3**
HUMR Humele 46.03 305⇓ *i*P **P** **11 40 06.1 +2.4**
LIA Limnos Island 46.12 298 P **P** **11 40 05.7 +1.3**
LIA Limnos Island 46.12 298 P **P** **11 40 05.7 +1.3**
UWJI Ujung Watu 46.12 136 P **P** **11 40 05.6 +0.9**
comp=Z,284nm,0.9s,comp=Z,2µm
APE Apeiranthos 46.16 294*c* *i*P **P** **11 40 05.2 +0.3**
APE pmax pmax
comp=Z,139nm,1.0s
APE MLR MLR
comp=Z,425nm,17.0s
IIGN Ignalina 46.17 320 *e*P **P** **11 40 05.7 +1.0**
IIGN IAmb IAmb 11 40 20.3
comp=Z,45nm,0.8s
BKB Balikpapan 46.21 125 P **P** **11 40 07.2 +1.8**
comp=Z,276nm,0.8s,comp=Z,3µm
IZAR Zarasai 46.24 320 *e*P **P** **11 40 06.2 +1.0**
IZAR IAmb IAmb 11 40 23.9
comp=Z,65nm,0.6s
ISAL Salakas 46.27 320 *e*P **P** **11 40 06.4 +1.0**
ISAL IAmb IAmb 11 40 13.1
comp=Z,64nm,1.2s
ARR Arges 46.27 306⇑ *i*P **P** **11 40 07.1 +1.4**
SANT Santorini 46.31 293 *e*P **P** **11 40 06.6 +0.5**
comp=Z,260nm,1.0s
SANT LR LR
comp=Z,327nm,20.0s
PLD Plovdiv 46.32 301 *i* P **P** **11 40 07.0 +1.0**
SMRI Semarang 46.32 137 P **P** **11 40 09.7 +3.4**
comp=Z,166nm,0.9s
SMRI Semarang 46.32 137 *e*P **P** **11 40 06.9 +0.6**
comp=Z,105nm,0.7s
BBKI Banjar Baru 46.36 129 P **P** **11 40 08.1 +1.5**
comp=Z,391nm,0.8s,comp=Z,4µm
LAST Lasithi 46.48 292 P **P** **11 40 09.0 +1.5**
LAST Lasithi 46.48 292 *e*P **P** **11 40 08.9 +1.4**
comp=Z,487nm,1.1s
ARCR ARCALIA 46.48 308⇑ *i*P **P** **11 40 09.5 +2.3**
XMIS Christmas Isla 46.55 145 *e*P **P** **11 40 07.7 -0.4**
comp=Z,155nm,0.8s
VSU Vasula 46.57 324*ce*P **P** **11 40 07.8 +0.1**
VSU pmax pmax
comp=Z,441nm,1.7s
VSU MLR MLR
comp=Z,9µm,16.0s
LVV L'vov 46.81 312*d* *i*P **P** **11 40 10.0 +0.2**

LVV *e*S **S** **11 46 59.0 -0.2**
LVV MLR MLR
comp=Z,500nm,13.0s
LVZ Lovozero 46.86 338*c* *i*P **P** **11 40 10.2 +0.3**
LVZ pmax pmax
comp=Z,281nm,1.2s
LVZ MLR MLR
comp=Z,3µm,15.0s
LVZ Lovozero 46.86 338 *e*P **P** **11 40 10.4 +0.5**
comp=Z,208nm,1.0s
LVZ LR LR
comp=Z,1µm,22.0s
LOT Lotru 46.88 306⇑ *i*P **P** **11 40 11.5 +1.0**
IDI Anoyia 46.94 292 *e*P **P** **11 40 11.4 +0.4**
comp=Z,102nm,1.0s
CJR Cluj-Napoca 47.00 308⇑ *i*P **P** **11 40 13.5 +2.2**
NVR Nevrokopi 47.00 300 P **P** **11 40 12.4 +1.0**
NVR Nevrokopi 47.00 300 P **P** **11 40 12.4 +1.0**
BMR Baia Mare 47.08 309⇑ *i*P **P** **11 40 14.6 +2.7**
MMB Musomiste 47.08 301 *i* P **P** **11 40 12.7 +0.7**
APA Apatity 47.10 337⇓ *i*P **P** **11 40 12.8 +1.1**
APA pmax pmax
comp=Z,104nm,1.2s
KBKI Kotabaru 47.15 128 P **P** **11 40 14.8 +2.1**
comp=Z,199nm,1.0s,comp=Z,2µm
NGJI Ngawi 47.18 136 P **P** **11 40 16.3 +3.3**
PAIG Paliouri 47.27 299 P **P** **11 40 14.6 +1.2**
PAIG Paliouri 47.27 299 P **P** **11 40 14.6 +1.2**
PAIG Paliouri 47.27 299 P **P** **11 40 14.6 +1.2**
INU Inuyama 47.29 68 *e*P **P** **11 40 13.8 +0.1**
comp=Z,187nm,1.9s
SRE Strehaia 47.30 305⇑ *i*P **P** **11 40 15.5 +1.9**
VTS Vitosha 47.40 302⇑ *i*P **P** **11 40 16.1 +1.4**
VTS Vitosha 47.40 302 P **P** **11 40 15.9 +1.3**
VTS Vitosha 47.40 302 *e*P **P** **11 40 16.0 +1.4**
VTS pmax pmax
comp=Z,156nm,1.1s
VTS Vitosha 47.40 302 *i* P **P** **11 40 15.6 +1.0**
VTS Vitosha 47.40 302 *e*P **P** **11 40 15.9 +1.3**
comp=Z,156nm,1.1s
VLY Voula,Athens 47.42 296 P **P** **11 40 15.3 +0.6**
VLY Voula,Athens 47.42 296 P **P** **11 40 15.3 +0.6**
VAM Vamos 47.47 292 P **P** **11 40 17.3 +2.2**
VAM Vamos 47.47 292 P **P** **11 40 17.3 +2.2**
VAM Vamos 47.47 292 P **P** **11 40 17.3 +2.2**
DEV Deva 47.48 307⇑ *i*P **P** **11 40 17.1 +2.1**
SKI Skiathos 47.51 298 P **P** **11 40 15.9 +0.5**
GZR Gura Zlata 47.58 306⇑ *i*P **P** **11 40 16.9 +1.0**
DRGR 47.61 308⇑ *i*P **P** **11 40 17.7 +1.6**
IMMV Iera Moni Meta 47.64 292 P **P** **11 40 17.9 +1.5**
KWP Kalwaria Pacla 47.66 312 *e*P **P** **11 40 17.9 +1.5**
KWP Kalwaria Pacla 47.66 312 *e*P **P** **11 40 18.0 +1.5**
FIA1 FINESS Array S 47.67 328 *e*P **P** **11 40 16.2 0.0**
FIA1 *e*P **pP** **11 40 16.9 -4.8**
FINES FINESS Array B 47.67 328 P **P** **11 40 16.8 +0.5**
comp=Z,58nm,0.8s,baz=101,slow=9.9,SNR=88
FINES LR LR 12 01 41.5
comp=Z,7µm,18.8s,baz=104,slow=38
FINES FINESS Array B 47.67 328 P **P** **11 40 16.8 +0.5**
FINES pmax pmax
comp=Z,58nm,0.8s
FINES MLR MLR
comp=Z,7µm,18.8s
XOR Xorichti 47.70 298 P **P** **11 40 17.2 +0.3**
XOR Xorichti 47.70 298 P **P** **11 40 17.2 +0.3**
DAV Davao City (W) 47.72 109 PFAKE 11 40 30.0 +13
DAV LR LR
comp=Z,460nm,19.0s
SUW Suwalki 47.72 318 *e*P **P** **11 40 17.2 +0.5**
SUW Suwalki 47.72 318 *e*P **P** **11 40 17.2 +0.5**
TRPA Tarpa 47.73 310⇓ *e*P **P** **11 40 18.6 +1.7**
KNT Kendrikon 47.74 300 P **P** **11 40 17.8 +0.7**
KNT Kendrikon 47.74 300 P **P** **11 40 17.8 +0.7**
KNT Kendrikon 47.74 300 P **P** **11 40 17.8 +0.7**
SMIA Simia 47.75 297 P **P** **11 40 18.3 +1.1**
UZH Uzhgorod 47.90 310 *e*P **P** **11 40 18.9 +0.7**
UZH *e* 11 40 22.9
UZH *e* 11 42 09.7
UZH *e*S **S** **11 47 12.1 -2.7**
UZH MLR MLR
comp=Z,2µm,16.8s
DID Didima 47.91 295 P **P** **11 40 17.5 -1.0**
DID Didima 47.91 295 P **P** **11 40 17.5 -1.0**
KOLS Kolonicke sedl 47.92 311 *e*P **P** **11 40 19.7 +1.3**
KOLS pmax pmax
comp=Z,46nm,1.3s
KOLS Kolonicke sedl 47.92 311 *e*P **P** **11 40 19.7 +1.3**
VAY Valandovo 47.97 301 *i* P **P** **11 40 19.4 +0.5**
MAJO Matsushiro 48.05 66*d* *i*P **P** **11 40 19.6 0.0**
MAJO pmax pmax
comp=Z,119nm,1.0s
MAJO MLR MLR
comp=Z,5µm,17.0s
MAJO Matsushiro 48.05 66 *e*P **P** **11 40 19.1 -0.5**
comp=Z,41nm,1.3s
MAJO LR LR
comp=Z,1µm,22.0s
MAT Matsushiro 48.05 66 P **P** **11 40 18.4 -1.2**
MAT S S 11 47 06.0 -11
MJAR Matsushiro Arr 48.05 66 P **P** **11 40 18.5 -1.0**
comp=Z,11nm,1.0s,baz=281,slow=9.5,SNR=23
MJAR PcP **PcP** **11 41 47.8 +0.4**
comp=Z,6.2nm,0.7s,baz=279,slow=3.6,SNR=6.0
MJAR ScP **ScP** **11 45 39.0 -2.1**
comp=Z,2.8nm,0.9s,baz=274,slow=5.9,SNR=5.4
MJAR LR LR 12 02 50.4
comp=Z,832nm,18.1s,baz=300,slow=39
LTK Loutraki 48.05 296 P **P** **11 40 19.3 -0.3**
LTK Loutraki 48.05 296 P **P** **11 40 19.3 -0.3**
ANKY Antikythira Is 48.12 293 P **P** **11 40 20.9 +0.8**
ANKY Antikythira Is 48.12 293 P **P** **11 40 20.9 +0.8**
GRG Griva 48.13 300 P **P** **11 40 21.2 +1.0**
GRG Griva 48.13 300 P **P** **11 40 21.2 +1.0**
GRG Griva 48.13 300 P **P** **11 40 21.2 +1.0**
LIT Litokhoron 48.16 299 P **P** **11 40 21.2 +0.8**
LIT Litokhoron 48.16 299 P **P** **11 40 21.2 +0.8**
LIT Litokhoron 48.16 299 P **P** **11 40 21.2 +0.8**
KYTH Kithira 48.25 294 P **P** **11 40 21.4 +0.2**
KYTH Kithira 48.25 294 P **P** **11 40 21.4 +0.2**
VLI Veliai 48.27 294 P **P** **11 40 20.5 -0.7**
VLI Veliai 48.27 294 P **P** **11 40 20.5 -0.7**
SIRR Siria 48.34 307⇑ *i*P **P** **11 40 23.9 +2.2**
MDVR Moldovita 48.36 305⇑ *i*P **P** **11 40 23.5 +1.6**
BZS Buzias 48.39 306⇑ *i*P **P** **11 40 23.5 +1.4**
THL Klokotos Trika 48.58 298 P **P** **11 40 23.3 -0.3**
VLX Vlachokerasia 48.60 295 P **P** **11 40 23.1 -0.9**
VLX Vlachokerasia 48.60 295 P **P** **11 40 23.1 -0.9**
STHS Stebnicka Huta 48.61 311 *e*P **P** **11 40 24.8 +1.1**
STHS pmax pmax
comp=Z,18nm,1.0s
STHS Stebnicka Huta 48.61 311 *e*P **P** **11 40 24.8 +1.1**
KALE Kalithea 48.64 297 P **P** **11 40 23.5 -0.7**
KALE Kalithea 48.64 297 P **P** **11 40 23.5 -0.7**
KLV Kalavryta, Ach 48.68 296 P **P** **11 40 24.4 -0.1**
KLV Kalavryta, Ach 48.68 296 P **P** **11 40 24.4 -0.1**
SERG Sergoula 48.70 297 P **P** **11 40 23.9 -0.7**
SKO Skopje 48.75 301 *i* P **P** **11 40 25.4 +0.4**
MRSI Marisa 48.77 119 P **P** **11 40 26.2 +0.8**
comp=Z,210nm,0.8s
ANX Ano Chora 48.78 297 P **P** **11 40 25.1 -0.2**
LAKA Lakka 48.79 297 P **P** **11 40 24.8 -0.5**
LAKA Lakka 48.79 297 P **P** **11 40 24.8 -0.5**
EVR Evrytania 48.83 297 P **P** **11 40 25.8 +0.1**
EVR Evrytania 48.83 297 P **P** **11 40 25.8 +0.1**
BEL Belsk 48.98 315 *e*P **P** **11 40 27.5 +1.1**
BEL Belsk 48.98 315 *e*P **P** **11 40 27.6 +1.1**
ITM Ithomi 48.99 295 P **P** **11 40 26.6 -0.2**
ITM Ithomi 48.99 295 P **P** **11 40 26.6 -0.2**
KPRO Kipourio 49.03 299 P **P** **11 40 27.4 +0.2**
NKL Nikolayevsk 49.06 44 *i* P **P** **11 40 26.0 -1.1**
NKL *e* 11 47 33.0
NKL pmax pmax
comp=N,22nm,1.0s
NKL pmax pmax
comp=E,26nm,1.0s
NKL pmax pmax
comp=Z,200nm,1.0s
NKL pmax pmax
comp=Z,500nm,8.0s
NKL MLR MLR
comp=E,2µm,12.0s
NKL MLR MLR
comp=Z,4µm,12.0s

KECS **Kecovo** 49.10 310 eP P 11 40 28.8 +1.3
KECS pmax pmax
comp=Z,12nm,1.2s
KECS **Kecovo** 49.10 310 eP P 11 40 28.8 +1.3
PYL **PYLOS** 49.18 295 P P 11 40 27.3 -1.0
PYL **PYLOS** 49.18 295 P P 11 40 27.3 -1.0
NEST **Nestorio** 49.22 299 P P 11 40 28.9 +0.3
ABJI **Asem Bagus** 49.22 134 P P 11 40 29.2 +0.5
comp=Z,247nm,0.8s
NIE **Niedzica** 49.23 311 eP P 11 40 30.4 +2.0
NIE **Niedzica** 49.23 311 eP P 11 40 30.5 +2.0
TIXI **Tiksi** 49.42 18 c iP P 11 40 29.0 -0.6
TIXI pmax pmax
comp=Z,179nm,1.7s
TIXI MLR MLR
comp=Z,6μm,18.0s
TIXI **Tiksi** 49.42 18 eP P 11 40 28.9 -0.6
comp=Z,373nm,1.8s
TIXI LR LR
comp=Z,7μm,20.0s
APSI **Ampana** 49.45 120 P P 11 40 33.4 +2.8
comp=Z,92nm,1.1s
PSZ **Piszkesteto** 49.51 309⇑ eP P 11 40 32.3 +1.6
PSZ **Piszkesteto** 49.51 309 eP P 11 40 32.1 +1.4
PSZ pmax pmax
comp=Z,105nm,1.2s
PSZ MLR MLR
comp=Z,1μm,21.0s
PSZ **Piszkesteto** 49.51 309 eP P 11 40 32.1 +1.4
comp=Z,105nm,1.2s
PSZ LR LR
comp=Z,1μm,21.0s
KLNR **Kaliningrad** 49.51 318 eP P 11 40 30.9 +0.4
KLNR pmax pmax
comp=Z,115nm,0.9s
TTSI **Tana Toraja** 49.54 124 P P 11 40 32.4 +1.2
comp=Z,116nm,0.9s,comp=Z,1μm
OJC **Ojcow** 49.56 312 eP P 11 40 32.0 +1.0
OJC **Ojcow** 49.56 312 eP P 11 40 32.0 +1.0
OJC **Ojcow** 49.56 312 eP P 11 40 31.9 +0.9
comp=Z,229nm,1.9s
JAGI **Jajag, Banyuwa** 49.69 134 P P 11 40 34.2 +1.9
JAGI **Jajag, Banyuwa** 49.69 134 eP P 11 40 30.8 -1.5
comp=Z,42nm,0.7s
LKD2 **Lefkada island** 49.73 297 P P 11 40 32.5 0.0
LKD2 **Lefkada island** 49.73 297 P P 11 40 32.5 0.0
KFL **Anninata** 49.74 297 P P 11 40 32.6 +0.1
LANS **Liptovska Anna** 49.77 311 eP P 11 40 34.4 +1.7
LANS **Liptovska Anna** 49.77 311 eP P 11 40 34.4 +1.7
PVY **Plav** 49.79 302 eP P 11 40 33.2 +0.2
IVA **Berane** 49.81 303 eP P 11 40 33.8 +0.7
TIR **Tirane** 49.99 301 eP P 11 40 34.5 +0.1
TIR pmax pmax
comp=Z,71nm,0.9s
TIR MLR MLR
comp=Z,826nm,19.0s
TIR **Tirane** 49.99 301 eP P 11 40 34.5 +0.1
comp=Z,71nm,0.9s
TIR LR LR
comp=Z,826nm,19.0s
PKS2 **Kecel** 50.02 308⇑ eP P 11 40 36.0 +1.5
PKS7 **Kunszentmiklos** 50.03 308⇓ eP P 11 40 36.2 +1.6
SRBI **Singaraja** 50.06 133 P P 11 40 35.4 +0.2
comp=Z,148nm,1.0s
BUD **Budapest** 50.11 309⇑ eP P 11 40 36.1 +0.9
PLE **Pljevlja** 50.13 303⇑ iP P 11 40 36.3 +0.7
SPSI **Sidrap Palu** 50.14 125 P P 11 40 36.1 +0.3
comp=Z,42nm,0.9s,comp=Z,870nm
KEV **Kevo** 50.18 339 eP P 11 40 37.3 +1.9
KEV **Kevo** 50.18 339 eP P 11 40 36.1 +0.8
KEV pmax pmax
comp=Z,105nm,1.1s
KEV MLR MLR
comp=Z,4μm,19.0s
KEV **Kevo** 50.18 339 eP P 11 40 36.1 +0.8
comp=Z,105nm,1.1s
KEV LR LR
comp=Z,4μm,19.0s
TYV **Tymovskoe** 50.20 47 eP P 11 40 37.5 +1.7
TYV pmax pmax
comp=Z,26nm,1.0s
TYV MLR MLR
comp=E,4μm,15.0s
TYV MLR MLR
comp=Z,4μm,12.0s
VYHS **Vyhne** 50.20 310 eP P 11 40 36.8 +0.9
VYHS pmax pmax
comp=Z,44nm,1.4s
VYHS **Vyhne** 50.20 310 eP P 11 40 36.8 +0.9
TTG **Podgorica** 50.32 302⇑ iP P 11 40 37.0 +0.1
YSS **Yuzh-Sakhalins** 50.35 52⇓ eP P 11 40 36.9 -0.1
YSS pmax pmax
comp=Z,30nm,1.5s
YSS **Yuzh-Sakhalins** 50.35 52 eP P 11 40 37.8 +0.8
comp=Z,179nm,2.0s
YSS LR LR
comp=Z,202nm,21.0s
ULC **Ulcinj** 50.38 302⇑ iP P 11 40 36.8 -0.6
DRME **Dracevica, Mon** 50.40 302⇑ iP P 11 40 37.4 -0.1
NKY **Niksic** 50.47 303⇑ iP P 11 40 38.7 +0.5
UPM **Unac-Piva** 50.50 303⇑ iP P 11 40 39.1 +0.7
NKME **Niksic** 50.51 303⇑ iP P 11 40 38.6 +0.3
PKSG 50.54 309⇑ eP P 11 40 39.2 +0.7
CEME **Cevo** 50.56 302⇑ iP P 11 40 38.7 -0.1
ARA0 **ARCESS Array S** 50.57 338 eP P 11 40 39.3 +0.9
ARCES **ARCESS Array B** 50.57 338 P P 11 40 39.3 +0.9
comp=Z,74nm,0.8s,baz=100,slow=7.2,SNR=204
ARCES LR LR 12 04 13.3
comp=Z,889nm,19.0s,baz=111,slow=39
ARE0 **ARCESS Array S** 50.57 338 eP P 11 40 39.5 +1.1
ARE0 IAmb IAmb 11 40 41.0
comp=Z,168nm,1.1s
ARE0 **ARCESS Array S** 50.57 338 eP P 11 40 39.5 +1.1
comp=Z,155nm,1.0s
BUM **Brajici-Budva** 50.60 302⇑ iP P 11 40 39.3 +0.2
OKC **Ostrava-Krasne** 50.62 312 eP P 11 40 40.2 +1.2
OKC ePP PP 11 42 35.6 +0.8
OKC AMS AMS 12 08 10.0
comp=Z,700nm,11.6s
OKC **Ostrava-Krasne** 50.62 312 eP P 11 40 40.2 +1.2
OKC e 11 42 35.6
OKC MLR MLR
comp=Z,700nm,11.6s
CSKK **Cs˙ákako** 50.63 309⇑ eP P 11 40 40.2 +1.1
PKS9 **Tamasi** 50.66 308⇑ eP P 11 40 41.0 +1.6
PKST **T˜'s** 50.79 309⇑ eP P 11 40 40.8 +0.4
HEF **Hetta** 50.80 336 eP P 11 40 40.5 +0.5
BRY **Bratogost** 50.80 303⇑ iP P 11 40 41.0 +0.4
KAPI **Kappang** 50.86 126 eP P 11 40 40.9 -0.3
comp=Z,94nm,1.1s
KAPI LR LR
comp=Z,645nm,19.0s
HCY **Herceg Novi** 50.88 302⇑ iP P 11 40 41.1 0.0
MORC **Moravsky Berou** 51.02 312 eP P 11 40 43.4 +1.3
MORC pmax pmax
comp=Z,352nm,1.2s
MORC **Moravsky Berou** 51.02 312 eP P 11 40 43.4 +1.3
comp=Z,352nm,1.2s
ERM **Erimo** 51.08 58 d iP P 11 40 42.3 -0.2
ERM pmax pmax
comp=Z,120nm,1.9s
ERM MLR MLR
comp=Z,1μm,16.0s
ERM **Erimo** 51.08 58 eP P 11 40 42.1 -0.4
comp=Z,49nm,0.8s
ERM LR LR
comp=Z,1μm,19.0s
KTK1 **Kautokeino** 51.14 337 eP P 11 40 43.5 +0.8
KTK1 IAmb IAmb 11 40 44.7
comp=Z,64nm,0.7s
KMBO **Kilima Mbogo** 51.53 241 P P 11 40 48.1 +1.5
comp=Z,15nm,0.9s,baz=44,slow=8.7,SNR=22
KMBO LR LR 12 01 54.8
comp=Z,853nm,20.0s,baz=80,slow=35
KMBO **Kilima Mbogo** 51.53 241 c eP P 11 40 48.5 +1.9
KMBO pmax pmax
comp=Z,15nm,0.9s
KMBO **Kilima Mbogo** 51.53 241 eP P 11 40 47.5 +0.9
comp=Z,36nm,1.2s
KMBO P P 11 40 48.1 +1.5
HAMF **Hammerfest** 51.56 339 eP P 11 40 47.0 +1.2
HAMF IAmb IAmb 11 40 48.5
comp=Z,178nm,0.9s
TWSI **Taliwang, Sumb** 51.63 132 P P 11 40 44.0 -3.0
comp=Z,23nm,1.0s

VRAC **Vranov** 51.65 311 LR LR 12 05 59.1
comp=Z,552nm,19.5s,baz=72,slow=40
VRAC **Vranov** 51.65 311⇑ iP P 11 40 48.0 +1.2
BEHE **Becsehely** 51.71 308⇑ eP P 11 40 48.8 +1.6
SOP **Sopron** 51.76 309⇑ eP P 11 40 48.7 +1.1
DPC **Dobruska-Polom** 51.78 313 eP P 11 40 49.3 +1.5
DPC epP sP 11 40 55.1 -0.4
DPC esP pP 11 41 02.5 +9.1
DPC eP PP 11 42 48.9 +3.5
DPC eS S 11 48 09.2 +0.1
DPC AMS AMS 12 05 00.0
comp=Z,1μm,10.8s
DPC **Dobruska-Polom** 51.78 313 eP P 11 40 49.3 +1.5
DPC e 11 40 55.1
DPC e 11 41 02.5
DPC e 11 42 48.9
DPC eS S 11 48 09.2 +0.1
DPC MLR MLR
comp=Z,1μm,10.8s
KSP **Ksiaz** 51.79 313 eP P 11 40 49.0 +1.2
KSP **Ksiaz** 51.79 313 eP P 11 40 49.0 +1.2
KIF **Kilpisjarvi** 51.97 337 eP P 11 40 49.6 +0.8
UPC **Upice** 51.98 313 eP P 11 40 50.4 +1.2
UPC epP sP 11 40 55.9 -1.0
UPC eP PP 11 42 50.1 +3.0
UPC AMS AMS 12 06 00.0
comp=Z,1μm,14.7s
UPC **Upice** 51.98 313 eP P 11 40 50.4 +1.2
UPC e 11 40 55.9
UPC e 11 42 50.1
UPC MLR MLR
comp=Z,1μm,14.7s
CONA **Conrad Observa** 52.22 310 i P P 11 40 52.3 +1.2
comp=Z,883nm,1.2s,SNR=91
PLAI **Plampang** 52.28 131 P P 11 40 52.1 +0.3
comp=Z,52nm,1.4s
TREC **Trest** 52.37 311 ePP PP 11 42 53.9 +3.2
TREC AMS AMS 12 06 10.0
comp=Z,1μm,13.0s
ARSA **Arzberg** 52.50 309 i P P 11 40 54.2 +1.0
comp=Z,77nm,1.2s,SNR=22
GROS **Grobnik** 52.58 308 i P P 11 40 54.8 +0.9
BSD **Bornholm Skovb** 52.59 319⇑ iP P 11 40 53.0 -0.6
comp=Z,48nm,0.9s
BSD **Bornholm Skovb** 52.59 319⇑ iP P 11 40 53.0 -0.6
BSD pmax pmax
comp=Z,48nm,0.9s
TIP **Timpagrande** 52.67 299 P P 11 40 54.9 +0.3
TIP **Timpagrande** 52.67 299 eP P 11 40 54.9 +0.3
comp=Z,112nm,1.3s
TIP LR LR
comp=Z,374nm,19.0s
CRES **Cresnjev** 52.68 307 eP P 11 40 55.6 +1.2
YUK **Yuzh-Kuril'sk** 52.79 55 eP P 11 40 53.1 -2.2
YUK e 11 42 56.5
YUK eS S 11 48 15.9 -6.9
YUK 11 50 37.5
YUK SSS SSS 11 53 47.5
YUK pmax pmax
comp=E,272nm,1.0s
YUK pmax pmax
comp=Z,382nm,1.0s
YUK pmax pmax
comp=N,215nm,1.1s
YUK pmax pmax
comp=Z,553nm,4.2s
YUK MLR MLR
comp=Z,1μm,16.0s
YUK MLR MLR
comp=N,799nm,15.0s
YUK MLR MLR
comp=E,921nm,14.0s
TRO **Tromso** 52.79 337 eP P 11 40 55.7 +0.8
TRO IAmb IAmb 11 40 57.0
comp=Z,93nm,1.0s
GOPC **GO Pecny, Ondr** 52.79 312 eP P 11 40 56.5 +1.2
GOPC epP pP 11 41 01.4 +0.6
GOPC esP sP 11 41 10.3 +7.3
GOPC eP PP 11 42 58.3 +3.8
GOPC eS S 11 48 23.8 +1.0
GOPC AMS AMS 12 05 40.0
comp=Z,1μm,12.2s
GOPC **GO Pecny, Ondr** 52.79 312 eP P 11 40 56.5 +1.2
GOPC e 11 41 01.4
GOPC e 11 41 10.3
GOPC e 11 42 58.3
GOPC eS S 11 48 23.8 +1.0
GOPC MLR MLR
comp=Z,1μm,12.2s
BOJS **Bojanci** 52.86 307 i P P 11 40 56.9 +1.1
SOKA **Soboth** 52.88 308 i P P 11 40 57.4 +1.3
comp=Z,163nm,1.2s,SNR=84
PVCC **Panska Ves** 52.90 313 eP P 11 40 57.2 +1.2
PVCC epP sP 11 41 03.0 -0.7
PVCC eP PP 11 42 58.8 +3.4
PVCC AMS AMS 12 05 40.0
comp=Z,1μm,12.8s
PVCC **Panska Ves** 52.90 313 eP P 11 40 57.2 +1.2
PVCC e 11 41 03.0
PVCC e 11 42 58.8
PVCC MLR MLR
comp=Z,1μm,12.8s
PRU **Pruhonice** 52.95 312 eP P 11 40 57.7 +1.3
PRU epP sP 11 41 03.7 -0.4
PRU eS S 11 48 24.9 0.0
PRU AMS AMS 12 05 50.0
comp=Z,1μm,13.6s
PRU **Pruhonice** 52.95 312 eP P 11 40 57.7 +1.3
PRU e 11 41 03.7
PRU eS S 11 48 24.9 0.0
PRU MLR MLR
comp=Z,1μm,13.6s
PDKS **Podkum** 52.97 307 eP P 11 40 58.0 +1.2
PRA **Prague** 53.01 312 eP P 11 40 58.4 +1.6
PRA AMS AMS 12 06 40.0
comp=Z,1μm,13.5s
PRA **Prague** 53.01 312 eP P 11 40 58.4 +1.6
PRA MLR MLR
comp=Z,1μm,13.5s
VISS **Visnje** 53.11 307 i P P 11 40 58.7 +1.1
OBKA **Obir** 53.23 308 i P P 11 41 00.1 +1.4
comp=Z,114nm,1.1s,SNR=40
CUC **Castrocucco** 53.24 300 eP P 11 40 59.3 +0.5
comp=Z,74nm,1.1s
CUC LR LR
comp=Z,522nm,21.0s
BRG **Berggiesshubel** 53.28 313⇑ iP P 11 40 59.9 +1.1
comp=Z,91nm,1.0s
BRG PP PP 11 43 01.0 +2.2
BRG S S 11 48 35.0 +5.7
comp=N,1μm,20.4s
comp=E,1μm,16.2s
comp=Z,1μm,17.3s
BRG **Berggiesshubel** 53.28 313⇑ iP P 11 40 59.9 +1.1
BRG 11 43 01.0
BRG S S 11 48 35.0 +5.7
BRG pmax pmax
comp=Z,91nm,1.0s
BRG MLR MLR
comp=N,1μm,20.4s
BRG MLR MLR
comp=E,1μm,16.2s
BRG MLR MLR
comp=Z,1μm,17.3s
MOA **Molln** 53.29 310 i P P 11 40 59.8 +0.8
comp=Z,84nm,1.1s,SNR=28
LJU **Ljubljana** 53.30 307 eP P 11 41 00.5 +1.4
HFS **Hagfors** 53.43 325 LR LR 12 05 01.5
comp=Z,5μm,18.0s,baz=91,slow=37
SANI **Sanana** 53.49 118 P P 11 41 01.9 +1.1
comp=Z,74nm,1.0s
CEL **Celeste** 53.51 298 eP P 11 41 01.8 +1.0
comp=Z,177nm,1.2s
CEL LR LR
comp=Z,208nm,19.0s
RGN **Rugen** 53.51 318 eP P 11 41 02.1 +1.7
comp=Z,93nm,0.7s
CBIJ **Chichi jima** 53.58 77 eP P 11 41 02.6 +1.2
comp=Z,73nm,0.9s
GEC2 **GERESS Array S** 53.58 311 eP P 11 41 02.1 +0.9
GEC2 pmax pmax
comp=Z,62nm,1.4s
GEC2 **GERESS Array S** 53.58 311 eP P 11 41 02.1 +0.9
comp=Z,62nm,1.4s
GERES **GERESS Array B** 53.58 311 P P 11 41 02.0 +0.8
comp=Z,8.1nm,0.7s,baz=88,slow=6.8,SNR=28
GERES LR LR 12 07 08.0
comp=Z,559nm,19.4s,baz=66,slow=40
GERES **GERESS Array B** 53.58 311 P P 11 41 02.0 +0.8
GERES pmax pmax
comp=Z,8.0nm,0.7s
GERES MLR MLR
comp=Z,559nm,19.4s
JCJ **Chichijima** 53.58 77 LR LR 12 05 43.2
comp=Z,356nm,18.2s,baz=266,slow=38
HOPEN **Hopen** 53.61 346 eP P 11 41 02.0 +1.1
HOPEN IAmb IAmb 11 41 02.3
comp=Z,306nm,1.4s
KHC **Kasperske Hory** 53.63 311 eP P 11 41 02.3 +0.8
KHC epP pP 11 41 06.2 -0.9
KHC eS S 11 48 35.0 +0.7
KHC AMS AMS 12 07 50.0
comp=Z,1μm,12.9s
KHC **Kasperske Hory** 53.63 311 eP P 11 41 02.3 +0.8
KHC e 11 41 06.2
KHC eS S 11 48 35.0 +0.7
KHC MLR MLR
comp=Z,1μm,12.9s
KHC **Kasperske Hory** 53.63 311 eP P 11 41 01.8 +0.2
comp=Z,20nm,1.2s
JAVS **Javornik** 53.64 307 i P P 11 41 02.4 +0.7
MOR8 **Moi Rana** 53.72 333 eP P 11 41 01.7 -0.2
MOR8 IAmb IAmb 11 41 03.2
comp=Z,88nm,1.3s
LBMI **Labuha** 53.78 115 P P 11 41 02.3 -0.7
comp=Z,99nm,1.3s,comp=Z,1μm
CLL **Collm** 53.84 314⇑ iP P 11 41 03.2 +0.3
comp=Z,90nm,1.5s
CLL i 11 41 16.5
CLL ePP PP 11 43 05.0 +1.1
CLL eS S 11 48 36.0 -1.0
CLL eSS SS 11 52 30.0 +12
CLL e 11 53 24.0
CLL Lmax 12 06 00.0
CLL **Collm** 53.84 314⇑ iP P 11 41 03.2 +0.3
CLL i 11 41 16.5
CLL eS S 11 48 36.0 -1.0
CLL pmax pmax
comp=Z,90nm,1.5s
CLL **Collm** 53.84 314 eP P 11 41 03.3 +0.3
comp=Z,45nm,1.0s
MYKA **Terra Mystica** 53.84 308 i P P 11 41 03.9 +0.8
comp=Z,36nm,1.2s,SNR=13
TRI **Trieste** 53.87 307 eP P 11 41 02.9 -0.3
TRI pmax pmax
comp=Z,86nm,1.1s
TRI **Trieste** 53.87 307 eP P 11 41 02.9 -0.3
comp=Z,86nm,1.1s
KBA **Koelnbreinsper** 53.99 309 i P P 11 41 04.9 +0.6
comp=Z,40nm,1.1s,SNR=18
COP **Copenhagen** 54.01 319 i P P 11 41 04.5 +0.5
COP **Copenhagen** 54.01 319 eP P 11 41 04.5 +0.5
BJO **Bjornoya** 54.18 343 eP P 11 41 06.1 +1.1
BJO IAmb IAmb 11 41 07.3
comp=Z,294nm,1.2s
KONS **Konsvik** 54.30 333 eP P 11 41 06.7 +0.7
KONS IAmb IAmb 11 41 07.9
comp=Z,153nm,1.3s
STOK **Stokkvaagen** 54.32 333 eP P 11 41 06.6 +0.5
LOF **Lofoten** 54.37 335 eP P 11 41 06.5 0.0
LOF IAmb IAmb 11 41 08.4
comp=Z,71nm,0.6s
NC405 **NORSAR Array S** 54.45 326 eP P 11 41 07.9 +0.6
NC602 **NORSAR Array S** 54.52 326 eP P 11 41 07.9 +0.1
NC602 IAmb IAmb 11 41 09.4
comp=Z,60nm,1.3s
NC602 **NORSAR Array S** 54.52 326 eP P 11 41 08.2 +0.5
NSS **Namsos** 54.56 330 eP P 11 41 10.1 +2.2
NSS IAmb IAmb 11 41 20.6
comp=Z,205nm,2.0s
ABTA **Abfaltersbach** 54.60 308 i P P 11 41 08.6 -0.1
comp=Z,49nm,1.0s,SNR=20
NC303 **NORSAR Array S** 54.62 326 eP P 11 41 09.1 +0.6
NB201 **NORSAR Array S** 54.66 326 eP P 11 41 09.1 +0.4
NB2 **NORSAR Subarra** 54.69 326 P P 11 41 08.9 -0.2
comp=Z,56nm,1.0s,baz=92,slow=7.4
NB2 **NORSAR Subarra** 54.69 326 P P 11 41 08.9 -0.2
baz=92,slow=7.4
NOA **NORSAR Array B** 54.69 326 P P 11 41 08.8 -0.2
comp=Z,29nm,1.0s,baz=92,slow=7.2,SNR=39
NOA LR LR 12 05 49.7
comp=Z,4μm,19.0s,baz=105,slow=37
NOA **NORSAR Array B** 54.69 326 P P 11 41 08.9 -0.2
NOA pmax pmax
comp=Z,30nm,1.0s
NOA MLR MLR
comp=Z,4μm,19.0s
NAO01 **NORSAR Array S** 54.85 326 eP P 11 41 10.8 +0.7
NBO02 **NORSAR Array S** 54.87 326 eP P 11 41 10.3 0.0
NBO00 **NORSAR Array S** 54.91 326 eP P 11 41 10.8 +0.3
NC204 **NORSAR Array S** 54.92 326 eP P 11 41 10.8 +0.1
MA2 **Magadan** 54.92 36 P P 11 41 10.8 +0.1
comp=Z,29nm,0.8s,baz=298,slow=7.8,SNR=59
MA2 **Magadan** 54.92 36 P P 11 41 10.8 +0.1
MA2 LR LR
comp=Z,4μm,20.0s
NLAI **Namlea** 55.09 118 P P 11 41 17.1 +4.6
WDD **Wied Dalam** 55.09 295 PFAKE 11 41 30.0 +18
WDD LR LR
comp=Z,333nm,19.0s
GRFO **Grafenberg** 55.11 312 eP P 11 41 13.4 +1.2
GRFO pmax pmax
comp=Z,206nm,1.5s
GRFO **Grafenberg** 55.11 312 eP P 11 41 13.4 +1.2
comp=Z,206nm,1.5s
WTTA **Wattenberg** 55.13 309 i P P 11 41 12.6 0.0
comp=Z,83nm,1.1s,SNR=20
WATA **Walderalm** 55.16 309 i P P 11 41 12.7 -0.1
SNR=8.1
MOTA **Moosalm** 55.48 309 i P P 11 41 15.9 +0.9
SNR=28
KONO **Kongsberg** 55.48 324 eP P 11 41 14.9 +0.2
KONO IAmb IAmb 11 41 16.6
comp=Z,96nm,1.3s
KONO **Kongsberg** 55.48 324 eP P 11 41 14.8 +0.2
KONO pmax pmax
comp=Z,95nm,1.4s
KONO MLR MLR
comp=Z,4μm,19.0s
KONO **Kongsberg** 55.48 324 eP P 11 41 14.8 +0.2
comp=Z,95nm,1.4s
KONO LR LR
comp=Z,4μm,19.0s
RETA **Reutte** 55.69 310 i P P 11 41 16.6 +0.2
comp=Z,48nm,0.7s,SNR=31
CLTB **Caltabellotta** 55.72 297 eP P 11 41 17.3 +0.4
comp=Z,50nm,1.0s
CLTB LR LR
comp=Z,201nm,19.0s
SEY **Seymchan** 55.76 32 P P 11 41 16.4 -0.2
comp=Z,19nm,0.4s,baz=254,slow=5.9,SNR=110
SEY **Seymchan** 55.76 32⇑ eP P 11 41 16.8 +0.2
FETA **Feichten** 55.77 309 i P P 11 41 17.2 0.0
comp=Z,94nm,1.1s,SNR=36
HSPB **Hornsund (broa** 55.82 346 eP P 11 41 18.5 +1.6
HSPB IAmb IAmb 11 41 19.2
comp=Z,43nm,1.0s
HSPB **Hornsund (broa** 55.82 346 eP P 11 41 25.4 +8.5
HSPB e 11 51 04.8
HSPB MLR MLR
comp=Z,2μm,18.9s
RER **Riviere de l'E** 55.93 208 PFAKE 11 41 30.0 +12
RER LR LR
comp=Z,2μm,20.0s
SPA0 **Spitsbergen Ar** 56.02 347 eP P 11 41 18.8 +0.5
SPA0 IAmb IAmb 11 41 20.7
comp=Z,167nm,1.3s
SPA0 **Spitsbergen Ar** 56.02 347 eP P 11 41 18.9 +0.5
FUORN **Ofenpass-Fuorn** 56.15 309 eP P 11 41 20.7 +0.7
comp=Z,60nm,1.2s
DAVA **Damuels** 56.31 309 i P P 11 41 21.3 +0.2
comp=Z,177nm,1.1s,SNR=47
DAVOX **Davos/Dischmat** 56.39 309 LR LR 12 09 22.6
comp=Z,561nm,18.9s,baz=76,slow=40
VLC **Villacollemand** 56.48 306 PFAKE 11 41 30.0 +7.9
VLC LR LR
comp=Z,322nm,19.0s
STU **Stuttgart** 56.55 311 eP P 11 41 23.8 +1.3
STU pmax pmax
comp=Z,130nm,1.3s

STU **Stuttgart** 56.55 311 *e*P **P** 11 41 23.8 +1.3
comp=Z,130nm,1.3s
MSAI **Masohi** 56.57 117 P **P** 11 41 23.1 0.0
comp=Z,16nm,0.9s,comp=Z,1µm
SNART **Snartemo** 56.76 323 *e*P **P** 11 41 24.8 +1.0
SNART IAmb IAmb 11 41 26.2
comp=Z,96nm,1.4s
TUE **Stuetta** 56.80 308 *e*P **P** 11 41 24.6 0.0
comp=Z,30nm,0.8s
TUE LR LR
comp=Z,1µm,19.0s
SWI **Sorong** 56.90 113 P **P** 11 41 25.4 -0.1
comp=Z,56nm,1.2s
KBS **Kingsbay** 57.08 348 *e*P **P** 11 41 25.7 -0.1
KBS IAmb IAmb 11 41 32.7
comp=Z,29nm,0.7s
KBS **Kingsbay** 57.08 348 PFAKE 11 41 40.0 +14
KBS LR LR
comp=Z,4µm,20.0s
HYA **Hoyanger** 57.13 326 *e*P **P** 11 41 27.6 +1.2
HYA IAmb IAmb 11 41 35.4
comp=E,148nm,1.9s
BFO **Black Forest** 57.18 311 *i*P **P** 11 41 27.5 +0.5
BFO **Black Forest** 57.18 311 *e*P **P** 11 41 27.2 +0.2
comp=E,21nm,1.1s
BFO LR LR
comp=Z,443nm,20.0s
SOEI **Soe** 57.36 126 P **P** 11 41 27.5 -1.3
comp=Z,216nm,1.0s,comp=Z,2µm
SOEI **Soe** 57.36 126 *e*P **P** 11 41 26.6 -2.2
comp=Z,180nm,0.9s
LANF **Langenberg** 57.42 312⇑*e*P **P** 11 41 29.8 +1.1
BER **Bergen** 57.59 325 *e*P **P** 11 41 29.2 -0.4
BER IAmb IAmb 11 41 35.3
comp=Z,88nm,1.2s
ASK **Askoy** 57.66 325 *e*P **P** 11 41 30.9 +0.8
ASK IAmb IAmb 11 41 36.0
comp=Z,112nm,1.6s
ECH **Echery** 57.97 311⇑*e*P **P** 11 41 33.0 +0.4
MOF **Molkenrain** 58.05 310⇑*e*P **P** 11 41 33.9 +0.6
ABPO **Ambohimpanom** 58.16 218 *e*P **P** 11 41 35.1 +0.8
ABPO pmax pmax
comp=Z,36nm,1.2s
ABPO MLR MLR
comp=Z,874nm,19.0s
ABPO **Ambohimpanom** 58.16 218 *e*P **P** 11 41 35.1 +0.8
comp=Z,36nm,1.2s
ABPO LR LR
comp=Z,874nm,19.0s
VSL **Villasalto** 58.20 300 *e*P **P** 11 41 34.2 -0.1
comp=Z,86nm,1.1s
VSL LR LR
comp=Z,292nm,19.0s
SENIN **Lac Senin/Sane** 58.21 309 *e*P **P** 11 41 35.1 +0.6
comp=Z,192nm,1.3s
LOMF **Lomont** 58.34 310⇑*e*P **P** 11 41 35.5 +0.2
WLF **Walferdange** 58.38 313 *e*P **P** 11 41 37.0 +1.6
WLF pmax pmax
comp=Z,114nm,1.3s
WLF MLR MLR
comp=Z,612nm,21.0s
WLF **Walferdange** 58.38 313 *e*P **P** 11 41 37.0 +1.6
comp=Z,114nm,1.3s
WLF LR LR
comp=Z,612nm,21.0s
AUTN **L'Aution** 58.60 306 *e*P **P** 11 41 39.1 +1.8
OG01 **Vacheresse** 58.64 309 *e*P **P** 11 41 38.2 +0.8
LUCF **Luceram** 58.68 306 *e*P **P** 11 41 38.2 +0.5
REVF **Revere** 58.70 306⇑*e*P **P** 11 41 38.2 +0.4
THEF **They Montfort** 58.74 311⇑*e*P **P** 11 41 38.5 +0.5
MVIF **Mont Vial** 58.82 306⇑*e*P **P** 11 41 39.5 +0.8
BNI **Bardonecchia** 58.90 307 *e*P P 11 41 29.8 -9.5
BNI pmax pmax
comp=Z,94nm,1.0s
BNI MLR MLR
comp=Z,705nm,20.0s
BNI **Bardonecchia** 58.90 307 *e*P P 11 41 29.8 -9.5
comp=Z,94nm,1.0s
BNI LR LR
comp=Z,705nm,20.0s
FAKI **Fak Fak** 58.92 114 P **P** 11 41 38.6 -1.1
comp=Z,34nm,1.2s
FAKI **Fak Fak** 58.92 114 *e*P **P** 11 41 38.9 -0.8
comp=Z,78nm,1.5s
CALN **Calern** 59.03 306⇑*e*P **P** 11 41 40.8 +0.6
KEST **Kesra** 59.20 296 P **P** 11 41 42.1 +0.7
comp=Z,74nm,1.1s,baz=356,slow=1.4,SNR=52
KEST LR LR 12 11 37.1
comp=Z,224nm,20.6s,baz=24,slow=40
KEST **Kesra** 59.20 296 *e*P **P** 11 41 42.2 +0.8
comp=Z,97nm,1.0s
GDM **Grand'Maison** 59.26 308⇑*e*P **P** 11 41 42.2 +0.4
PEA0 **Petropavlovsk-** 59.29 43 *e*P **P** 11 41 41.5 -0.2
PETK **Petropavlovsk-** 59.29 43 P **P** 11 41 40.5 -1.2
comp=Z,15nm,0.7s,baz=255,slow=4.2,SNR=20
PETK LR LR 12 09 09.4
comp=Z,2µm,18.5s,baz=280,slow=38
GRN **Grenoble** 59.51 308⇑*e*P **P** 11 41 44.3 +0.9
PET **Petropavlovsk** 59.87 43 PFAKE 11 42 00.0 +14
PET LR LR
comp=Z,3µm,20.0s
SSB **Saint Sauveur** 60.33 308⇑*e*P **P** 11 41 49.5 +0.5
SSB **Saint Sauveur** 60.33 308 *e*P **P** 11 41 49.3 +0.3
SSB pmax pmax
comp=Z,80nm,1.1s
SSB MLR MLR
comp=Z,299nm,19.0s
SSB **Saint Sauveur** 60.33 308 *e*P **P** 11 41 49.3 +0.3
comp=Z,80nm,1.1s
SSB LR LR
comp=Z,299nm,19.0s
CMAH **Djebel Manchou** 60.44 298 P **P** 11 41 50.7 +0.7
ABSA **Djebel Ababsia** 60.50 297 P **P** 11 41 51.1 +0.7
PLDF **La Plantade** 60.79 309⇑*e*P **P** 11 41 52.7 +0.5
CAEH **'Ain El Ouahch** 60.84 298 P **P** 11 41 52.0 -0.6
CKFL **Kef-Lekhel** 61.05 298 P **P** 11 41 54.6 +0.4
AGO **Saint Agoulin** 61.11 309⇑*e*P **P** 11 41 55.0 +0.7
LBL **Lubilhac** 61.23 308⇑*e*P **P** 11 41 55.9 +0.7
BILL **Bilibino** 61.24 25*c* *i*P **P** 11 41 55.1 +0.3
BILL *e* 11 44 14.1
BILL pmax pmax
comp=Z,79nm,1.7s
BILL MLR MLR
comp=Z,2µm,16.0s
BILL **Bilibino** 61.24 25 *e*P **P** 11 41 54.9 +0.2
comp=Z,47nm,1.1s
BILL LR LR
comp=Z,680nm,20.0s
PYM **Petit Puy Mans** 61.26 309⇑*e*P **P** 11 41 55.9 +0.5
SAUI **Saumlaki** 61.32 119 P **P** 11 41 58.6 +2.5
SAUI **Saumlaki** 61.32 119 *e*P **P** 11 41 57.2 +1.1
comp=Z,407nm,1.6s
DFRA **Djebel Bou Aff** 61.65 298 P **P** 11 41 58.9 +0.6
CKHR **Kef el Ahmar** 62.09 297 P **P** 11 42 03.0 +1.8
SET **Setif** 62.12 298 P **P** 11 42 04.0 +2.6
LRDF **Laroque-de-Fa** 62.31 306⇑*e*P **P** 11 42 03.2 +0.8
CWF **Charnwood Fore** 62.37 317 *e*P **P** 11 42 02.4 -0.2
comp=Z,15nm,0.8s
FILF **Fillols** 62.40 305⇑*e*P **P** 11 42 04.0 +0.9
AKF **Akfadou** 62.63 298 P **P** 11 42 05.3 +0.4
VALF **Valcebollere** 62.83 305⇑*e*P **P** 11 42 06.9 +0.8
ESK **Eskdalemuir** 62.86 320 *i*P **P** 11 42 06.5 +0.6
ESK **Eskdalemuir** 62.86 320 *e*P **P** 11 42 06.4 +0.5
comp=Z,55nm,1.1s
ESK LR LR
comp=Z,1µm,19.0s
MBWA **Marble Bar** 62.93 139 *e*P **P** 11 42 08.1 +1.4
comp=Z,70nm,1.4s
MBWA LR LR
comp=Z,558nm,20.0s
ATAF **Djebel Tarf** 63.09 298 P **P** 11 42 07.4 -0.5
SALF **Salau** 63.31 306⇑*e*P **P** 11 42 08.9 -0.3
DAG **Danmarks Havn** 63.52 345⇑*i*P **P** 11 42 09.8 -0.1
DAG **Danmarks Havn** 63.52 345⇑*i*P **P** 11 42 09.8 -0.1
ADJB **Djebel Djouab** 63.65 298 P **P** 11 42 11.5 -0.1
ABA **Alger-Bouzarea** 63.75 299 P **P** 11 42 10.9 -1.2
EMHD **Djebel Mahouad** 64.00 298 P **P** 11 42 15.3 +1.4
VIEF **Viey** 64.10 306⇑*e*P **P** 11 42 15.1 +0.7
REYF **Montagne du Re** 64.33 307⇑*e*P **P** 11 42 16.9 +1.0
MTN **Manton Dam** 64.37 124 *e*P **P** 11 42 15.9 -0.4
comp=Z,35nm,1.2s
ATE **Arette** 64.54 307 *e*P **P** 11 42 18.4 +1.2
EBNR **Beni Rached** 65.06 299 P **P** 11 42 22.5 +1.8
EANR **'Ain N'Sour** 65.50 299 P **P** 11 42 24.5 +0.9
ETRT **Tiaret** 65.54 298 P **P** 11 42 25.0 +1.0

OKGL **Djebel Kef Gue** 65.82 299 P **P** 11 42 27.5 +1.8
OJGS **Djebel Guires** 65.92 298 P **P** 11 42 28.0 +1.6
OJBR **Djebel Berber** 66.20 299 P **P** 11 42 29.0 +0.8
SCO **Scoresbysund** 66.48 339 *i*P **P** 11 42 30.2 +1.0
comp=Z,95nm,1.5s
SCO **Scoresbysund** 66.48 339 *i*P **P** 11 42 30.2 +1.0
SCO pmax pmax
comp=Z,95nm,1.5s
ODJA **Bouhanifia** 66.67 298 P **P** 11 42 28.0 -3.1
TAM **Tamanrasset** 66.76 284 *e*P **P** 11 42 31.6 -0.4
TAM pmax pmax
comp=Z,56nm,1.6s
TAM MLR MLR
comp=Z,755nm,19.0s
TAM **Tamanrasset** 66.76 284 *e*P **P** 11 42 31.6 -0.4
comp=Z,56nm,1.6s
TAM LR LR
comp=Z,755nm,19.0s
OTSS **Djebel Tessala** 67.18 299 P P 11 42 26.0 -8.5
LSZ **Lusaka** 67.52 236 PFAKE 11 42 50.0 +13
LSZ LR LR
comp=Z,686nm,20.0s
OLHC **Oulhaca** 67.67 299 P P 11 42 28.0 -9.5
ES19 **SONSECA Array** 67.92 304 *e*P **P** 11 42 39.6 +0.5
ESDC **Sonseca Array** 67.98 304 P **P** 11 42 39.8 +0.4
comp=Z,40nm,0.8s,baz=58,slow=7.0,SNR=126
ESDC LR LR 12 18 03.7
comp=Z,161nm,19.1s,baz=80,slow=41
ESLA **Sonseca Array** 67.98 304 *e*P **P** 11 42 39.9 +0.5
comp=Z,128nm,1.3s
PAB **San Pablo** 68.31 304 *e*P **P** 11 42 42.1 +0.6
PAB pmax pmax
comp=Z,135nm,1.2s
PAB MLR MLR
comp=Z,161nm,22.0s
PAB **San Pablo** 68.31 304 *e*P **P** 11 42 42.1 +0.6
comp=Z,135nm,1.2s
PAB LR LR
comp=Z,161nm,22.0s
BORG **Borgarnes** 68.51 333 *i*P **P** 11 42 45.7 +3.6
BORG **Borgarnes** 68.51 333 PFAKE 11 42 50.0 +7.9
BORG LR LR
comp=Z,3µm,19.0s
PBRG **Braganca** 69.18 307 *e*P **P** 11 42 47.5 +0.7
comp=Z,73nm,1.7s
MVO **Moncorvo** 69.62 306 *e*P **P** 11 42 50.4 +0.8
comp=Z,124nm,1.1s
MVO *e*S **S** 11 52 01.3 +4.0
SUMG **Summit** 70.06 344⇑*i*P **P** 11 42 52.7 +0.6
comp=Z,139nm,1.2s
SUMG **Summit** 70.06 344⇑*i*P **P** 11 42 52.7 +0.6
SUMG pmax pmax
comp=Z,140nm,1.2s
SUMG **Summit** 70.06 344 *e*P **P** 11 42 52.3 +0.2
comp=Z,138nm,1.2s
PVRL **Vila Real** 70.06 307 *e*P **P** 11 42 52.7 +0.4
comp=Z,86nm,1.8s
POLO **Lamas de Olo** 70.08 307 *e*P **P** 11 42 53.1 +0.7
comp=Z,33nm,1.2s
PCAB **Cabril** 70.11 307 *e*P **P** 11 42 53.1 +0.5
comp=Z,147nm,1.5s
PGAV **Gavieira, Arco** 70.18 308 *e*P **P** 11 42 53.8 +0.7
comp=Z,96nm,1.6s
MTE **Manteigas** 70.27 306 *e*P **P** 11 42 54.5 +0.9
comp=Z,168nm,1.2s
MTE *e*S **S** 11 52 10.9 +6.0
MTE **Manteigas** 70.27 306 *e*P **P** 11 42 54.0 +0.4
comp=Z,134nm,1.2s
PVIS **Viseu** 70.40 306 *e*P **P** 11 42 55.2 +0.9
comp=Z,123nm,1.1s
PCBR **Castelo Branco** 70.44 305 *e*P **P** 11 42 55.4 +0.9
comp=Z,65nm,1.2s
PMRV **Marv??o** 70.53 305 *e*P **P** 11 42 56.1 +0.9
comp=Z,71nm,1.6s
PBAR **Barrancos** 70.76 303 *e*P **P** 11 42 57.3 +0.8
comp=Z,408nm,1.2s
PBAR *e*S **S** 11 52 14.0 +3.4
PESTR **Estremoz** 70.89 304 *e*P **P** 11 42 57.8 +0.4
comp=Z,67nm,1.2s
PESTR *e*S **S** 11 52 17.4 +5.3
GAMB **Gambell** 71.10 27 *e*P **P** 11 42 59.3 +1.2
comp=Z,8.9nm,0.9s
NWAO **Narrogin (SRO)** 71.19 148 *e*P **P** 11 42 57.6 -1.4
NWAO pmax pmax
comp=Z,78nm,1.0s
NWAO MLR MLR
comp=Z,792nm,19.0s
NWAO **Narrogin (SRO)** 71.19 148 *e*P **P** 11 42 57.6 -1.4
comp=Z,78nm,1.0s
NWAO LR LR
comp=Z,792nm,19.0s
PTOM **Tomar** 71.19 305 *e*P **P** 11 43 00.2 +1.1
comp=Z,223nm,1.1s
PMTG **Montargil** 71.27 305 *e*P **P** 11 43 00.2 +0.6
comp=Z,86nm,1.6s
PMTG *e*S **S** 11 52 17.4 +1.0
EVO **Evora** 71.33 304 *e*P **P** 11 43 00.8 +0.8
comp=Z,146nm,1.2s
WRA **Warramunga Arr** 71.39 127 P **P** 11 42 59.6 -0.9
comp=Z,47nm,0.6s,baz=321,slow=6.1,SNR=516
WRA PKP2bc 12 10 49.4
comp=Z,1.3nm,1.0s,baz=129,slow=3.1,SNR=4.6
WRA LR LR 12 22 10.8
comp=Z,170nm,18.2s,baz=180,slow=42
WRA **Warramunga Arr** 71.39 127 P **P** 11 42 59.6 -0.9
WRA pmax pmax
comp=Z,50nm,0.6s
WRAB **Tennant Creek** 71.39 127⇑*e*P **P** 11 42 59.8 -0.7
WRAB pmax pmax
comp=Z,335nm,1.2s
WRAB **Tennant Creek** 71.39 127 *e*P **P** 11 43 00.1 -0.4
comp=Z,88nm,0.8s
WRAB LR LR
comp=Z,400nm,19.0s
WB2 **Warramunga Arr** 71.39 127 *e*P **P** 11 42 60.0 -0.6
comp=Z,101nm,0.9s
PBEJ **Beja** 71.42 304 *e*P **P** 11 43 01.1 +0.5
comp=Z,127nm,1.1s
PVAQ **Vaqueiros** 71.56 303 *e*P **P** 11 43 02.1 +0.7
comp=Z,169nm,1.2s
PVAQ *e*S **S** 11 52 24.7 +4.9
PCVE **Castro Verde** 71.70 303 *e*P **P** 11 43 02.9 +0.6
comp=Z,76nm,1.3s
PCVE *e*S **S** 11 52 27.0 +5.5
MESJ **Messejana** 71.75 304 *e*P **P** 11 43 03.4 +0.8
MESJ AMb AMB 11 43 05.0
comp=Z,121nm,1.0s
MESJ **Messejana** 71.75 304 *e*P **P** 11 43 03.4 +0.8
comp=Z,122nm,1.1s
MESJ **Messejana** 71.75 304 *e*P **P** 11 43 03.3 +0.8
PBDV **Barranco-do-Ve** 71.78 303 *e*P **P** 11 43 03.7 +0.9
comp=Z,246nm,1.2s
PACT **Alcochete** 71.83 305 *e*P **P** 11 43 03.4 +0.5
comp=Z,402nm,1.5s
PNCL **Nicolau / Gran** 71.87 304 *e*P **P** 11 43 04.2 +1.0
comp=Z,112nm,1.1s
PNCL *e*S **S** 11 52 28.3 +5.0
PMAFR **Mafra** 72.07 305 *e*P **P** 11 43 05.0 +0.6
comp=Z,249nm,2.1s
PMAFR *e*S **S** 11 52 29.8 +4.1
LIS **Lisbon** 72.07 305 *e*P **P** 11 43 05.3 +0.8
LIS AMb AMB 11 43 07.3
comp=Z,177nm,1.0s
LIS **Lisbon** 72.07 305 *e*P **P** 11 43 05.2 +0.8
PTEO **Sao Teotonio** 72.24 303 *e*P **P** 11 43 06.2 +0.8
comp=Z,190nm,1.2s
MORF **Marmelete** 72.28 303 *e*P **P** 11 43 06.4 +0.5
MORF AMb AMB 11 43 08.9
comp=Z,99nm,1.4s
MORF **Marmelete** 72.28 303 *e*P **P** 11 43 06.0 +0.2
comp=Z,100nm,1.6s
MORF *e*S **S** 11 52 32.3 +4.1
MORF **Marmelete** 72.28 303 *e*P **P** 11 43 06.3 +0.5
KULLO **Kullorsuaq** 72.49 349⇑*i*P **P** 11 43 06.4 +0.1
comp=Z,138nm,0.8s
KULLO **Kullorsuaq** 72.49 349⇑*i*P **P** 11 43 06.4 +0.1
KULLO pmax pmax
comp=Z,140nm,0.8s
AS31 **Alice Springs** 73.61 130 *e*P **P** 11 43 13.0 -0.7
comp=Z,12nm,0.7s
ASAR **Alice Springs** 73.61 130 P **P** 11 43 12.9 -0.7
ASAR PKiKP **PKiKP** 11 49 09.9 -0.6
comp=Z,0.8nm,0.5s,baz=300,slow=2.0,SNR=4.6
ASAR LR LR 12 17 09.7
comp=Z,245nm,21.7s,baz=300,slow=37

ASAR **Alice Springs** 73.61 130 P **P** 11 43 13.0 -0.7
ASAR pmax pmax
comp=Z,38nm,0.7s
AS01 **Alice Springs** 73.64 130 *e*P **P** 11 43 12.9 -0.9
TOA0 **Torodi Ar. Sit** 74.19 276 *e*P **P** 11 43 17.3 0.0
TORD **Torodi Ar. Bea** 74.19 276 P **P** 11 43 17.2 0.0
comp=Z,30nm,0.9s,baz=63,slow=3.5,SNR=101
TORD LR LR 12 20 16.5
comp=Z,758nm,18.3s,baz=70,slow=39
PMG **Port Moresby** 74.71 110*d* *i*P **P** 11 43 21.4 +1.1
PMG pmax pmax
comp=Z,180nm,1.0s
PMG MLR MLR
comp=Z,754nm,18.0s
PMG **Port Moresby** 74.71 110 *e*P **P** 11 43 21.3 +1.1
comp=Z,52nm,0.9s
PMG LR LR
comp=Z,330nm,20.0s
LBTB **Lobatse** 75.83 230 *e*P **P** 11 43 27.0 +0.4
LBTB pmax pmax
comp=Z,86nm,0.9s
LBTB **Lobatse** 75.83 230 *e*P **P** 11 43 27.0 +0.4
comp=Z,86nm,0.9s
PATS **Pohnpei** 75.87 90 *e*P **P** 11 43 27.9 +0.8
comp=Z,399nm,1.1s
RES **Resolute Bay** 75.91 359 *e*P **P** 11 43 26.1 -0.1
RES pmax pmax
comp=Z,29nm,1.1s
RES **Resolute Bay** 75.91 359 *e*P **P** 11 43 26.1 -0.1
comp=Z,29nm,1.1s
RABL **Rabaul** 76.07 103 *e*P **P** 11 43 30.1 +1.9
comp=Z,70nm,0.6s
COLD **Coldfoot** 76.15 18 *e*P **P** 11 43 27.9 +0.2
comp=Z,35nm,1.0s
SFJD **Kangerlussuaq** 76.93 342⇑*i*P **P** 11 43 30.6 -1.5
comp=Z,72nm,0.9s
SFJD **Kangerlussuaq** 76.93 342⇑*i*P **P** 11 43 30.6 -1.5
SFJD pmax pmax
comp=Z,72nm,0.9s
SFJD **Kangerlussuaq** 76.93 342 *e*P **P** 11 43 32.0 -0.1
comp=Z,264nm,1.6s
SFJD LR LR
comp=Z,885nm,20.0s
TTA **Tatalina** 77.36 23 *e*P **P** 11 43 35.3 +0.6
TTA pmax pmax
comp=Z,56nm,1.4s
TTA **Tatalina** 77.36 23 *e*P **P** 11 43 35.3 +0.6
comp=Z,56nm,1.4s
TT01 **Tatalina** 77.37 23 *e*P **P** 11 43 35.2 +0.6
MLY **Manley** 77.58 20 *e*P **P** 11 43 36.2 +0.3
comp=Z,33nm,1.0s
TSUM **Tsumeb** 77.83 240 *e*P **P** 11 43 39.0 +1.0
comp=Z,44nm,1.2s
TSUM LR LR
comp=Z,1µm,20.0s
FYU **Fort Yukon** 77.95 17 *e*P **P** 11 43 39.2 +1.4
comp=Z,150nm,1.3s
BPAW **Bear Paw Mtn.** 78.17 21 *e*P **P** 11 43 39.3 +0.1
comp=Z,67nm,1.5s
CAST **Castle Rocks** 78.32 21 *e*P **P** 11 43 40.2 +0.3
comp=Z,60nm,0.8s
MDM **Murphy Dome** 78.36 19 *e*P **P** 11 43 40.2 0.0
comp=Z,82nm,1.3s
BOSA **Boshof** 78.49 228 P **P** 11 43 41.9 +0.4
comp=Z,24nm,0.8s,baz=43,slow=4.8,SNR=24
BOSA LR LR 12 17 23.7
comp=Z,984nm,18.3s,baz=54,slow=35
BOSA **Boshof** 78.49 228 *e*P **P** 11 43 41.6 +0.1
comp=Z,68nm,1.1s
COLA **College** 78.53 19*c* *e*P **P** 11 43 40.9 -0.2
COLA pmax pmax
comp=Z,40nm,1.3s
COLA MLR MLR
comp=Z,2µm,20.0s
COLA **College** 78.53 19 *e*P **P** 11 43 41.5 +0.5
comp=Z,136nm,1.5s
COLA LR LR
comp=Z,2µm,20.0s
KTH **Kantishna Hill** 78.59 21 *e*P **P** 11 43 41.8 +0.2
comp=Z,93nm,1.7s
PPLA **Purkeypile** 78.65 22 *e*P **P** 11 43 42.9 +0.9
comp=Z,142nm,1.8s
CCB **Clear Creek Bu** 78.72 19 *e*P **P** 11 43 41.7 -0.4
comp=Z,86nm,1.8s
SVW2 **Sparrevohn** 78.74 24 *e*P **P** 11 43 44.0 +1.7
comp=Z,165nm,2.0s
WRH **Wood River Hil** 78.77 19 *e*P **P** 11 43 42.0 -0.4
comp=Z,18nm,1.0s
IL1 **Eielson Array** 78.88 19 *e*P **P** 11 43 41.9 -1.1
ILAR **Eielson Array** 78.88 19 P **P** 11 43 42.4 -0.7
comp=Z,13nm,0.9s,baz=311,slow=4.3,SNR=64
ILAR PP **PP** 11 46 39.5 -1.5
comp=Z,3.5nm,0.8s,baz=309,slow=7.1,SNR=4.8
ILAR PKKPbc **PKKPbc** 12 02 34.4 -2.8
comp=Z,0.4nm,0.7s,baz=182,slow=2.6,SNR=6.7
ILAR LR LR 12 24 03.4
comp=Z,1µm,18.4s,baz=336,slow=40
ILB **Eielson Array** 78.88 19 *e*P **P** 11 43 42.5 -0.6
MCK **McKinley** 79.06 20 *e*P **P** 11 43 44.4 +0.3
MCK pmax pmax
comp=Z,36nm,1.3s
MCK **McKinley** 79.06 20 *e*P **P** 11 43 44.4 +0.3
comp=Z,36nm,1.3s
INK **Inuvik** 79.11 12 LR LR 12 22 16.1
comp=Z,682nm,20.6s,baz=310,slow=38
INK **Inuvik** 79.11 12 *e*P **P** 11 43 44.1 0.0
INK pmax pmax
comp=Z,67nm,1.0s
INK **Inuvik** 79.11 12 *e*P **P** 11 43 44.1 0.0
comp=Z,67nm,1.0s
RND **Reindeer** 79.33 20 *e*P **P** 11 43 45.1 -0.5
RND pmax pmax
comp=Z,103nm,1.8s
RND **Reindeer** 79.33 20 *e*P **P** 11 43 45.1 -0.5
comp=Z,103nm,1.8s
NRS **Narsarsuaq** 79.56 337 *i*P **P** 11 43 46.0 -0.8
NRS **Narsarsuaq** 79.56 337 *e*P **P** 11 43 46.0 -0.8
SPU **Mount Spurr** 79.92 23 *e*P **P** 11 43 49.4 +0.6
DHY **Denali Highway** 80.02 20 *e*P **P** 11 43 49.3 -0.2
comp=Z,114nm,1.9s
CTAO **Charters Tower** 80.15 120 *e*P **P** 11 43 51.6 +1.0
CTAO pmax pmax
comp=Z,69nm,0.8s
CTAO MLR MLR
comp=Z,428nm,19.0s
CTAO **Charters Tower** 80.15 120 *e*P **P** 11 43 51.6 +1.0
comp=Z,69nm,0.8s
CTAO LR LR
comp=Z,428nm,19.0s
EGAK **Eagle** 80.41 17 *e*P **P** 11 43 51.2 -0.1
comp=Z,64nm,1.3s
EGAK LR LR
comp=Z,1µm,20.0s
DOT **Dot Lake** 80.54 19 *e*P **P** 11 43 52.0 -0.1
comp=Z,75nm,0.9s
PMR **Palmer** 80.59 22 *e*P **P** 11 43 52.4 +0.1
PMR pmax pmax
comp=Z,80nm,1.6s
PMR **Palmer** 80.59 22 *e*P **P** 11 43 52.4 +0.1
comp=Z,80nm,1.6s
PAX **Paxson** 80.67 20 *e*P **P** 11 43 53.1 +0.2
PAX pmax pmax
comp=Z,43nm,1.4s
PAX **Paxson** 80.67 20 *e*P **P** 11 43 53.1 +0.2
comp=Z,43nm,1.4s
SML **Sawmill** 80.68 21 *e*P **P** 11 43 53.3 +0.4
SML pmax pmax
comp=Z,57nm,1.0s
SML **Sawmill** 80.68 21 *e*P **P** 11 43 53.3 +0.4
comp=Z,57nm,1.0s
RC01 **Rabbit Creek A** 80.76 22 *e*P **P** 11 43 53.5 +0.2
comp=Z,61nm,1.2s
SCM **Sheep Creek Mo** 80.98 21 *e*P **P** 11 43 55.8 +1.2
SCM pmax pmax
comp=Z,229nm,1.9s
SCM **Sheep Creek Mo** 80.98 21 *e*P **P** 11 43 55.8 +1.2
comp=Z,229nm,1.9s
MENT **Mentasta** 81.19 19 *e*P **P** 11 43 56.5 +0.9
comp=Z,22nm,1.1s
BBOO **Buckleboo** 81.27 136 *e*P **P** 11 43 55.4 -0.9
comp=Z,54nm,1.0s
DAWY **Dawson** 81.43 17 *e*P **P** 11 43 56.5 -0.3
comp=Z,84nm,1.4s
KLU **Klutina** 81.67 21 *e*P **P** 11 43 59.8 +1.5
comp=Z,77nm,1.6s
DIV **Divide** 82.00 21 *e*P **P** 11 44 01.4 +1.5
comp=Z,79nm,1.4s

KDAK **Kodiak Island** 82.15 26 *i* P P 11 44 01.1 +0.5
OHAK **Old Harbor** 82.27 26 *e*P P 11 44 01.4 +0.1
comp=Z,93nm,1.3s
EYAK **Cordova Ski Ar** 82.46 21 *e*P P 11 44 04.2 +2.0
comp=Z,58nm,1.0s
BMRM **Bremner River** 82.48 20 *e*P P 11 44 03.1 +0.6
comp=Z,52nm,1.0s
DBIC **Dimbokro** 82.92 274 P P 11 44 06.0 +0.6
comp=Z,41nm,1.0s,baz=50,slow=5.8,SNR=24
DBIC LR LR 12 23 26.2
comp=Z,704nm,19.4s,baz=43,slow=37
DBIC **Dimbokro** 82.92 274 *e*P P 11 44 06.2 +0.8
DBIC pmax pmax
comp=Z,64nm,1.1s
DBIC **Dimbokro** 82.92 274 *e*P P 11 44 06.2 +0.8
comp=Z,64nm,1.1s
KIC **Kosan Boka** 82.97 273 *e*P P 11 44 05.1 -0.6
comp=Z,215nm,1.3s
TIC **Toumodi** 83.07 274 *e*P P 11 44 06.7 +0.4
LIC **Lamto** 83.28 273 *e*P P 11 44 08.2 +0.9
comp=Z,67nm,1.3s
SUR **Sutherland** 83.85 227 *e*P P 11 44 11.0 +1.0
SUR LR LR
comp=Z,3μm,20.0s
CMLA **Cha da Macela** 83.87 310 *i* P P 11 44 12.2 +2.2
STKA **Stephens Creek** 84.14 132 P P 11 44 10.8 -0.4
comp=Z,13nm,0.5s,baz=312,slow=6.4,SNR=22
STKA LR LR 12 24 50.6
comp=Z,322nm,22.0s,baz=296,slow=38
STKA **Stephens Creek** 84.14 132 *e*P P 11 44 10.5 -0.8
comp=Z,16nm,1.6s
HNR **Honiara** 85.38 103 *e*P P 11 44 19.8 +1.9
HNR pmax pmax
comp=Z,167nm,1.0s
HNR MLR MLR
comp=Z,332nm,20.0s
HNR **Honiara** 85.38 103 *e*P P 11 44 19.8 +1.9
comp=Z,167nm,1.0s
HNR LR LR
comp=Z,332nm,20.0s
SKAG **Skagway** 86.36 18 *e*P P 11 44 23.2 +1.2
comp=Z,86nm,1.1s
EIDS **Eidsvold** 86.83 121 *e*P P 11 44 24.9 0.0
comp=Z,63nm,1.1s
YKA **Yellowknife Ar** 87.38 7 P P 11 44 26.0 -0.9
comp=Z,14nm,0.8s,baz=342,slow=4.9,SNR=162
YKA PKKPbc PKKPbc 12 02 15.3 -2.3
comp=Z,1.3nm,0.7s,baz=163,slow=2.3,SNR=28
YKA PKP2bc 12 09 49.9
comp=Z,0.0nm,0.3s,baz=265,slow=3.6,SNR=4.1
YKA PKPPKP P'P'df 12 10 21.1 -8.5
comp=Z,0.6nm,0.8s,baz=156,slow=2.3,SNR=12
YKB5 **Yellowknife Ar** 87.38 7 *e*P P 11 44 25.3 -1.7
DLBC **Dease Lake** 88.58 16 *e*P P 11 44 33.9 +1.0
comp=Z,39nm,1.1s
CAN **Canberra** 91.12 131 PFAKE 11 45 00.0 +15
CAN LR LR
comp=Z,686nm,21.0s
SCHQ **Schefferville** 91.38 342 P P 11 44 46.0 +0.1
comp=Z,6.3nm,0.6s,baz=49,slow=9.5,SNR=5.0
SCHQ LR LR 12 26 53.5
comp=Z,550nm,21.6s,baz=29,slow=36
SCHQ **Schefferville** 91.38 342 *e*P P 11 44 46.7 +0.8
comp=Z,42nm,1.4s
FCC **Fort Churchill** 91.84 357 *e*P P 11 44 48.1 +0.2
FCC pmax pmax
comp=Z,115nm,2.0s
FCC **Fort Churchill** 91.84 357 *e*P P 11 44 48.1 +0.2
comp=Z,115nm,2.0s
FFC **Flin Flon** 95.96 2 *e*P P 11 45 07.4 +0.4
FFC pmax pmax
comp=Z,29nm,1.5s
FFC MLR MLR
comp=Z,795nm,20.0s
FFC **Flin Flon** 95.96 2 *e*P P 11 45 07.4 +0.4
comp=Z,29nm,1.5s
FFC LR LR
comp=Z,795nm,20.0s
MAW **Mawson** 97.86 187 P P 11 45 14.7 -0.2
comp=Z,2.5nm,0.7s,baz=91,slow=20,SNR=4.5
MAW LR LR 12 24 42.9
comp=Z,748nm,18.2s,baz=50,slow=32
MAW **Mawson** 97.86 187 P P 11 45 14.7 -0.2
MAW pmax pmax
comp=Z,6.0nm,0.9s
CASY **Casey** 98.29 168 PFAKE 11 45 30.0 +13
CASY LR LR
comp=Z,263nm,20.0s
NLWA **Neilton Lookou** 100.20 17 PFAKE 11 45 40.0 +14
NLWA LR LR
comp=Z,490nm,19.0s
PKME **Peaks-Kenny Pk** 100.63 339 PFAKE 11 45 40.0 +12
PKME LR LR
comp=Z,726nm,19.0s
NEW **Newport** 100.83 12 PFAKE 11 45 40.0 +11
NEW LR LR
comp=Z,769nm,20.0s
DGMT **Dagmar** 102.13 3 *e*P Pdif 11 45 43.7 +8.9
DGMT LR LR
comp=Z,1μm,19.0s
EGMT **Eagleton** 102.13 7 PFAKE 11 45 50.0 +15
EGMT LR LR
comp=Z,673nm,20.0s
HAWA **Hanford** 102.14 14 PFAKE 11 45 50.0 +15
HAWA LR LR
comp=Z,506nm,20.0s
AGMN **Agassiz Nation** 102.37 358 PFAKE 11 45 50.0 +14
AGMN LR LR
comp=Z,2μm,20.0s
EYMN **Ely** 102.47 355 PFAKE 11 45 50.0 +14
EYMN LR LR
comp=Z,1μm,20.0s
LONY **Lake Ozonia** 102.75 342 PFAKE 11 45 50.0 +12
LONY LR LR
comp=Z,591nm,19.0s
NCB **Newcomb** 103.25 342 PFAKE 11 45 50.0 +10
NCB LR LR
comp=Z,901nm,22.0s
LAO **LASA Array** 103.78 5 PFAKE 11 45 50.0 +7.8
LAO LR LR
comp=Z,666nm,19.0s
COWI **Conover** 104.07 353 PFAKE 11 45 50.0 +6.5
COWI LR LR
comp=Z,1μm,20.0s
BMO **Blue Mountains** 104.07 13 PFAKE 11 46 00.0 +16
BMO LR LR
comp=Z,683nm,19.0s
BOZ **Bozeman (W)** 104.25 9 PFAKE 11 46 00.0 +16
BOZ LR LR
comp=Z,731nm,19.0s
GLMI **Grayling** 104.71 349 PFAKE 11 46 00.0 +14
GLMI LR LR
comp=Z,926nm,19.0s
RLMT **Red Lodge** 105.05 7 *e*PKiKP PKiKP 11 50 00.8 -1.9
RLMT LR LR
comp=Z,1μm,19.0s
BINY **Binghamton** 105.37 342 PFAKE 11 50 10.0
BINY LR LR
comp=Z,1μm,21.0s
LKWY **Lake** 105.47 8 PFAKE 11 50 20.0
LKWY LR LR
comp=Z,1μm,21.0s
HLID **Hailey** 105.86 11 PFAKE 11 50 20.0
HLID LR LR
comp=Z,323nm,22.0s
WVOR **Wild Horse Val** 106.11 15 PFAKE 11 50 20.0
WVOR LR LR
comp=Z,611nm,21.0s
ECSD **EROS Data Cent** 106.96 358 *e*PP PP 11 50 21.6 +0.4
ECSD LR LR
comp=Z,1μm,21.0s
AAM **Ann Arbor** 107.00 348 PFAKE 11 50 20.0
AAM LR LR
comp=Z,1μm,19.0s
JFWS **Jewell Farm** 107.34 353 PFAKE 11 50 20.0
JFWS LR LR
comp=Z,1μm,20.0s
BW06 **Boulder Array** 107.34 8 *e*PKiKP PKiKP 11 50 06.5 -0.5
BW06 LR LR
comp=Z,1μm,19.0s
PD31 **Pinedale Array** 107.34 8 *e*PKiKP PKiKP 11 50 06.9 -0.1
PDAR **Pinedale Array** 107.34 8 Pdiff Pdif 11 45 59.6 +1.2
comp=Z,0.2nm,0.6s,baz=2.7,slow=5.7,SNR=3.4
PDAR PKiKP PKiKP 11 50 07.1 +0.1
comp=Z,2.3nm,0.7s,baz=47,slow=2.4,SNR=13
PDAR PKKPbc PKKPbc 12 01 20.9 -2.2
comp=Z,0.4nm,0.5s,baz=120,slow=5.2,SNR=7.1
SCIA **State Center** 108.60 355 PFAKE 11 50 20.0
SCIA LR LR
comp=Z,1μm,21.0s
ACSO **Alum Creek Sta** 108.87 347 PFAKE 11 50 20.0
ACSO LR LR
comp=Z,852nm,22.0s
DUG **Dugway, Tooele** 109.40 11 PFAKE 11 50 20.0
DUG LR LR
comp=Z,659nm,21.0s
CBN **Corbin Frederi** 109.48 342 PFAKE 11 50 20.0
CBN LR LR
comp=Z,755nm,19.0s
HDIL **Hopedale** 109.56 352 PFAKE 11 50 20.0
HDIL LR LR
comp=Z,1μm,19.0s
OGNE **Ogallala** 109.74 2 PFAKE 11 50 20.0
OGNE LR LR
comp=Z,582nm,19.0s
NV01 **Mina Array Sit** 110.00 16 *e*PKiKP PKiKP 11 50 13.7 +1.6
NVAR **Mina Array Bea** 110.00 16 Pdiff Pdif 11 46 12.5 +2.2
comp=Z,0.3nm,0.7s,baz=348,slow=3.9,SNR=2.8
NVAR PKiKP PKiKP 11 50 12.6 +0.5
comp=Z,1.3nm,0.7s,baz=316,slow=1.7,SNR=10
NVAR PKKPbc PKKPbc 12 01 13.9 -0.6
comp=Z,0.4nm,0.7s,baz=182,slow=6.0,SNR=4.0
ISCO **Idaho Springs** 110.68 5 PFAKE 11 50 30.0
ISCO LR LR
comp=Z,669nm,21.0s
BLA **Blacksburg** 111.20 344 PFAKE 11 50 30.0
BLA LR LR
comp=Z,951nm,20.0s
KSU1 **Kansas State U** 111.58 358 PFAKE 11 50 30.0
KSU1 LR LR
comp=Z,1μm,21.0s
CBKS **Cedar Bluff** 111.91 0 PFAKE 11 50 30.0
CBKS LR LR
comp=Z,901nm,19.0s
DAC **Darwin (Calif)** 112.22 16 *e*PKiKP PKiKP 11 50 18.2 +1.8
S22A **4UR Ranch, Cre** 112.61 6 *e*PKiKP PKiKP 11 50 18.4 +1.2
SDCO **Great Sand Dun** 112.73 5 PFAKE 11 50 30.0
SDCO LR LR
comp=Z,1μm,19.0s
S39A **Bolivar** 112.80 355 P PKiKP 11 50 17.0 -0.2
baz=5.6
MVCO **Mesa Verde** 112.95 8 PFAKE 11 50 30.0
MVCO LR LR
comp=Z,1μm,19.0s
WUAZ **Wupatki** 114.21 11 PFAKE 11 50 30.0 +10
WUAZ LR LR
comp=Z,703nm,20.0s
PFO **Pinyon Flats O** 115.03 16 PFAKE 11 50 30.0 +8.3
PFO LR LR
comp=Z,601nm,21.0s
NHSC **New Hope** 115.04 342 PFAKE 11 50 30.0 +8.5
NHSC LR LR
comp=Z,904nm,19.0s
ANMO **Albuquerque** 115.42 7 *e*PKIKP PKPdf 11 50 23.0 +0.5
ANMO MLR MLR
comp=Z,800nm,22.0s
ANMO **Albuquerque** 115.42 7 *e*PKiKP PKPdf 11 50 22.9 +0.5
ANMO LR LR
comp=Z,800nm,22.0s
W38A **Poteau** 115.49 356 P PKPdf 11 50 22.2 -0.1
baz=4.5
GOGA **Godfrey** 115.54 345 PFAKE 11 50 30.0 +7.5
GOGA LR LR
comp=Z,1μm,20.0s
SNAA **Sanae** 115.83 200 PKP PKPdf 11 50 21.9 +0.1
MIAR **Mount Ida** 115.95 355 P PKPdf 11 50 23.3 +0.1
baz=5.5
MIAR **Mount Ida** 115.95 355 *e*PKIKP PKPdf 11 50 24.3 +1.0
MIAR MLR MLR
comp=Z,1μm,20.0s
MIAR **Mount Ida** 115.95 355 *e*PKPdf PKPdf 11 50 24.2 +1.0
MIAR LR LR
comp=Z,1μm,20.0s
RCBR **Riachuelo** 115.97 278 PFAKE 11 50 40.0 +16
RCBR LR LR
comp=Z,451nm,20.0s
WMOK **Wichita Mounta** 115.98 360 PFAKE 11 50 40.0 +17
WMOK LR LR
comp=Z,880nm,20.0s
X39A **Fountain Ranch** 116.02 355 P PKPdf 11 50 23.7 +0.3
baz=4.9
X35A **Drake** 116.28 358 P PKPdf 11 50 23.4 -0.5
baz=2.2
VNDA **Vanda** 116.80 166 PKP PKPdf 11 50 22.6 -0.8
comp=Z,2.0nm,0.7s,baz=303,slow=1.9,SNR=12
VNDA PKKPbc PKKPab 12 00 48.2 -3.6
comp=Z,0.7nm,0.8s,baz=114,slow=6.8,SNR=3.6
VNDA **Vanda** 116.80 166 *e*PKPdf PKPdf 11 50 23.8 +0.3
VNA2 **Neumayer--Watz** 117.07 202 PKP PKPdf 11 50 24.5 +0.4
baz=37,slow=4.1
VNA1 **Neumayer--Stat** 117.30 202 PKP PKPdf 11 50 26.6 +2.1
214A **Organ Pipe Nat** 117.42 13 P PKPdf 11 50 27.5 +1.3
baz=347
TUC **Tucson** 117.44 11 P PKPdf 11 50 27.1 +0.8
baz=349
TUC **Tucson** 117.44 11 *e*PKIKP PKPdf 11 50 27.2 +0.9
TUC MLR MLR
comp=Z,728nm,20.0s
TUC **Tucson** 117.44 11 *e*PKPdf PKPdf 11 50 27.2 +0.9
TUC LR LR
comp=Z,728nm,20.0s
121A **Cookes Peak, D** 117.66 8 P PKPdf 11 50 27.5 +0.7
baz=352
121A **Cookes Peak, D** 117.66 8 *e*PKPdf PKPdf 11 50 27.5 +0.7
VNA3 **Neumayer Olymp** 117.86 201 PKP PKPdf 11 50 25.8 +0.1
SBA **Scott Base** 117.90 166 PFAKE 11 50 40.0 +14
SBA LR LR
comp=Z,1μm,22.0s
BRAL **Brewton** 118.43 348 PFAKE 11 50 40.0 +12
BRAL LR LR
comp=Z,1μm,19.0s
MNTX **Cornudas Mount** 118.74 6 P PKPdf 11 50 29.1 +0.4
baz=354
MNTX **Cornudas Mount** 118.74 6 *e*PKPdf PKPdf 11 50 29.2 +0.5
MNTX LR LR
comp=Z,668nm,19.0s
NATX **Nacogdoches** 118.79 356 PFAKE 11 50 40.0 +11
NATX LR LR
comp=Z,1μm,20.0s
333A **Richland Sprin** 119.38 360 P PKPdf 11 50 29.0 -1.0
baz=0.3
QSPA **South Pole Qui** 119.43 180 *e*PKPdf PKPdf 11 50 28.9 0.0
QSPA LR LR
comp=Z,1μm,20.0s
434A **Burnet** 119.89 359 P PKPdf 11 50 30.3 -0.7
baz=1.0
433A **Art** 119.95 360 P PKPdf 11 50 30.7 -0.4
baz=0.1
JCT **Junction City** 120.22 1 P PKPdf 11 50 31.2 -0.4
baz=359
JCT **Junction City** 120.22 1 *e*PKIKP PKPdf 11 50 31.7 +0.1
JCT MLR MLR
comp=Z,612nm,22.0s
JCT **Junction City** 120.22 1 *e*PKPdf PKPdf 11 50 31.7 +0.1
JCT LR LR
comp=Z,612nm,22.0s
533A **Kerrville** 120.63 360 P PKPdf 11 50 32.1 -0.3
baz=0.2
ANWB **Willy Bob** 120.69 318 PFAKE 11 50 40.0 +7.3
ANWB LR LR
comp=Z,341nm,19.0s
TX31 **Lajitas Ar. Si** 121.22 4 *e*PKPdf PKPdf 11 50 33.8 +0.1
TX31 *e*PKPdf PKPdf 11 50 34.1 +0.5
TXAR **Lajitas Array** 121.22 4 PKP PKPdf 11 50 33.4 -0.3
comp=Z,3.0nm,0.6s,baz=256,slow=0.8,SNR=14
TXAR PKKPbc PKKPbc 12 00 35.1 -0.2
comp=Z,1.0nm,0.8s,baz=179,slow=7.2,SNR=3.5
633A **Saathoff Ranch** 121.24 360 P PKPdf 11 50 34.7 +1.1
baz=0.1
733A **Divot King Ran** 121.98 0 P PKPdf 11 50 35.6 +0.6
baz=360
833A **Chaparral WMA,** 122.38 0 P PKPdf 11 50 36.8 +1.0
baz=360
835A **Beeville** 122.39 358 P PKPdf 11 50 36.4 +0.6
baz=1.4
832A **Faith Ranch, C** 122.41 1 P PKPdf 11 50 36.8 +1.0
baz=359
FDF **Fort de France** 122.58 315 PFAKE 11 50 50.0 +14
FDF LR LR
comp=Z,407nm,22.0s
SJG **San Juan** 122.79 322 PFAKE 11 50 50.0 +13
SJG LR LR
comp=Z,485nm,20.0s
933A **Laredo** 123.08 0 P PKPdf 11 50 37.6 +0.5
baz=360
HPIG 123.43 7 *e*PKPdf PKPdf 11 50 38.7 +0.6
034A **Hebbronville** 123.63 359 P PKPdf 11 50 39.1 +0.9
baz=0.6
SDDR **Presa de Saban** 124.65 327 PFAKE 11 50 50.0 +10
SDDR LR LR
comp=Z,501nm,20.0s
GRGR **Grenville** 124.87 313 PFAKE 11 50 50.0 +9.2
GRGR LR LR
comp=Z,324nm,19.0s
GTBY **Guantanamo Bay** 125.51 332 PFAKE 11 50 50.0 +8.1
GTBY LR LR
comp=Z,209nm,19.0s
ZAIG **Zacatecas** 127.81 4 *e*PKPdf PKPdf 11 50 48.1 +1.4
MTDJ **Mount Denham** 128.01 333 PFAKE 11 51 00.0 +13
MTDJ LR LR
comp=Z,359nm,20.0s
TEIG **Tepich** 129.32 347 PKP PKPdf 11 50 50.5 +1.3
comp=Z,0.6nm,0.7s,baz=87,slow=23,SNR=5.8
TEIG **Tepich** 129.32 347 *e*PKPdf PKPdf 11 50 51.3 +2.1
TEIG LR LR
comp=Z,18nm,21.0s
BDFB **Brasilia** 131.05 275 PKP PKPdf 11 50 53.8 +1.1
comp=Z,3.9nm,0.5s,baz=28,slow=2.9,SNR=6.8
BDFB SKPbc SKPbc 11 54 15.9 -0.5
comp=Z,14nm,1.0s,baz=98,slow=2.8,SNR=6.8
BDFB SKP 11 54 28.1
comp=Z,2.4nm,0.6s,baz=102,slow=5.8,SNR=3.1
BDFB **Brasilia** 131.05 275 *e*PKPdf PKPdf 11 50 54.8 +2.1
PPT2 **Papeete2** 132.70 87 *e*LR LR 11 53 42.5
comp=Z,177nm,25.5s
PPT2 **Papeete2** 132.70 87 *e*LR LR 12 33 17.6
comp=Z,216nm,23.5s
SDV **Santo Domingo** 132.82 320 PKP PKPdf 11 50 55.3 -0.9
comp=Z,6.4nm,0.8s,baz=66,slow=2.1,SNR=8.3
SDV SKPbc SKPbc 11 54 20.8 -2.1
comp=Z,12nm,0.9s,baz=154,slow=1.7,SNR=7.6
SDV **Santo Domingo** 132.82 320 *e*PKPdf PKPdf 11 50 56.2 -0.1
SDV LR LR
comp=Z,331nm,21.0s
SDV **Santo Domingo** 132.82 320 *e*P PKPdf 11 50 54.7 -1.6
PTGA **Pitinga** 132.84 300 PKP PKPdf 11 50 54.6 -1.5
comp=Z,3.3nm,0.5s,baz=57,slow=5.4,SNR=4.8
PTGA **Pitinga** 132.84 300 PKP PKPdf 11 50 54.6 -1.5
PTGA LR LR
comp=Z,39μm,20.0s
CMIG **Matias Romero** 133.36 354 PKP PKPdf 11 50 56.1 -0.9
comp=Z,4.0nm,0.8s,baz=13,slow=5.8,SNR=4.5
CMIG SKPbc SKPbc 11 54 22.5 -1.9
comp=Z,5.0nm,1.1s,baz=330,slow=7.2,SNR=4.0
SPB **Sao Paulo** 133.57 265 PFAKE 11 51 10.0 +13
SPB LR LR
comp=Z,402nm,20.0s
OCAC **Ocana** 134.82 322 *e*P PKPdf 11 50 59.8 -0.2
TBI **Tubuai** 134.92 94 *e*LR LR 11 50 53.4
comp=Z,197nm,28.2s
TBI **Tubuai** 134.92 94 *e*LR LR 12 34 15.8
comp=Z,277nm,24.5s
MOTC **Monteria, Cord** 135.56 326 *e*P PKPdf 11 51 02.0 +0.9
BRRC **Barranca, Sant** 135.98 322 *e*P PKPdf 11 51 02.0 +0.1
TAOE **Nuku Hiva Isla** 136.54 70 *e*LR LR 12 34 49.4
comp=Z,404nm,23.1s
BCIP **Isla Barro Col** 137.13 331 PFAKE 11 51 20.0 +16
BCIP LR LR
comp=Z,340nm,22.0s
BCIP **Isla Barro Col** 137.13 331 *e*P PKPdf 11 51 03.1 -0.9
DBBC **Dabeiba** 137.35 325 *e*P PKPdf 11 51 06.0 +1.4
NORC **Norcasia** 137.89 322 *e*P PKPdf 11 51 04.8 -0.7
JTS **JuntasAbangare** 137.98 339 PFAKE 11 51 20.0 +14
JTS LR LR
comp=Z,564nm,21.0s
CHIC **Chingaza** 138.04 320 *e*P PKPdf 11 51 05.4 -0.9
ROSC **El Rosal** 138.20 321 PKhKP PKPpre 11 50 59.3
comp=Z,6.8nm,0.4s,baz=114,slow=20,SNR=4.7
ROSC **El Rosal** 138.20 321 *e*PKPpre PKPpre 11 51 01.8
GUYC **Guyana, Colomb** 138.45 323 *e*P PKPpre 11 51 03.7
TOLC **Tolima** 138.95 322 *e*P PKPpre 11 51 03.1
SAML **Samuel** 140.46 294 *e*PKPpre PKPpre 11 51 05.5
SAML *e*PKPdf PKPdf 11 51 11.0 +0.9
SAML LR LR
comp=Z,343nm,20.0s
FLOC **Florencia** 141.62 320 *e*P PKPdf 11 51 12.2 -0.1
GRGC **Isla de Gorgon** 141.78 324 *e*P PKPdf 11 51 12.8 +0.2
CRUC **La Cruz** 142.35 322 *e*P PKPpre 11 51 09.9
SIV **San Ignacio** 142.44 283 PKhKP PKPpre 11 51 08.8
comp=Z,2.7nm,0.8s,baz=37,slow=3.9,SNR=2.6
SIV SKPbc SKPbc 11 54 47.9 -2.8
comp=Z,3.9nm,0.8s,baz=67,slow=7.7,SNR=3.3
CPUP **Villa Florida** 142.96 265 PKhKP PKPpre 11 51 10.4
comp=Z,5.2nm,0.7s,baz=50,slow=3.5,SNR=12
CPUP SKPbc SKPbc 11 54 50.1 -1.5
comp=Z,5.9nm,0.9s,baz=38,slow=3.4,SNR=3.9
CPUP SKPab SKiKP 11 55 06.7 +14
comp=Z,2.4nm,0.8s,baz=139,slow=5.9,SNR=2.7
CPUP **Villa Florida** 142.96 265 *e*PKIKP PKPpre 11 51 12.0
CPUP **Villa Florida** 142.96 265 *e*PKPpre PKPpre 11 51 12.0
CMBC **Cumbal** 143.35 322 *e*P PKPbc 11 51 13.9 +1.0
OTAV **Otavalo** 144.27 323 *e*PKPdf PKPbc 11 51 15.9 +0.2
OTAV LR LR
comp=Z,270nm,20.0s
OTAV **Otavalo** 144.27 323 *e*P PKPdf 11 51 16.7 -0.8
RKT **Rikitea** 147.45 87 *e*LR LR 11 51 45.1
comp=Z,205nm,26.8s
RKT **Rikitea** 147.45 87 *e*LR LR 12 40 12.2
comp=Z,415nm,26.5s
TRQA **Tornquist** 148.07 245 PFAKE 11 51 30.0 +1.3
TRQA LR LR
comp=Z,471nm,19.0s
LPAZ **La Paz** 148.51 288 PKPbc PKPdf 11 51 25.8 +1.0
comp=Z,31nm,1.0s,baz=34,slow=5.1,SNR=21
LPAZ **La Paz** 148.51 288 *e*PKIKP PKPdf 11 51 25.3 +0.6
LPAZ **La Paz** 148.51 288 *e*PKPdf PKPdf 11 51 25.3 +0.6
PAYG **Puerto Ayora** 149.96 342 *e*PKPdf PKPdf 11 51 27.1 +0.7
ATAH **Atahualpa** 150.23 315 PKP PKPdf 11 51 29.1 +1.8
comp=Z,29nm,1.1s,baz=206,slow=15,SNR=4.5
ATAH PKPbc PKiKP 11 51 34.3 +1.0
comp=Z,40nm,1.0s,baz=41,slow=9.2,SNR=20
PB01 **IPOC Station P** 151.82 281 *e*PKPbc PKPbc 11 51 36.9 +1.4
NNA **Nana** 152.75 305 *e*PKIKP PKPdf 11 51 30.0 -0.6
NNA *e* 11 51 39.4
NNA MLR MLR
comp=Z,246nm,19.0s
NNA **Nana** 152.75 305 *e*PKPdf PKPdf 11 51 30.0 -0.6
NNA *e*PKPbc PKiKP 11 51 39.4 +1.4
NNA LR LR
comp=Z,246nm,19.0s
PLCA **Paso Flores** 154.15 237 PKP PKPdf 11 51 32.6 +0.6
comp=Z,9.4nm,1.1s,baz=114,slow=14,SNR=6.3
PLCA PKPbc PKPbc 11 51 39.8 -0.4
comp=Z,6.2nm,0.8s,baz=12,slow=2.8,SNR=12
PLCA **Paso Flores** 154.15 237 *e*PKPdf PKPdf 11 51 34.5 +2.5
PLCA *e*PKPbc PKPbc 11 51 39.7 -0.4
LCO **Las Campanas** 155.10 264 *e*PKPdf PKPdf 11 51 35.6 +1.7
LCO LR LR
comp=Z,597nm,19.0s

NIED ***04*** *11:46:00,36˚.20N×140˚.00E,h41km,Mw4.0 Best double couple: M₀1.25000×10¹⁵ NP1:ϕs298.00000°,δ25.00000°, λ-177.00000°. NP2:ϕs206.00000°,δ89.00000°, λ-65.00000°.*

ISCJB ***04*** *11:46:23.5±0.4,36˚.10N±0˚.03×140˚.05E±0˚.05,h60km±3km, mb4.1/19, Error ellipse: s-maj=6.7km s-min=4.9km az=5.0*

NEIC ***04*** *11:46:23.8±0.8,36˚.06N×139˚.98E,h48km±8km,mb4.3/2, Error ellipse: s-maj=10.5km s-min=6.4km az=60.0*

NEIC Recorded [3 JMA] in Ibaraki and Tochigi.

JMA ***04*** *11:46:24.9±0.1,36˚.14N×140˚.01E,h49km±1km,M4.1 Broadband fault plane solution: P waves. NP1: ϕs24.00000°,δ78.00000°,λ80.00000°. NP2:ϕs243.00000°, δ15.00000°,λ128.00000°. Principal axes: T Plg56.0000°, Azm282.0000°; N Plg9.0000°, Azm26.0000°; P Plg32.0000°, Azm122.0000°;*

JMA Felt III J1.

IDC ***04*** *11:46:24.5±1.8,36˚.08N×139˚.94E,h52km±16km,mb3.8/19, mb1 4.0/21,mb1mx3.8/67,mbtmp4.1/21,ML2.8/1,MS4.1/4, Ms1 4.1/4,ms1mx3.2/57 Error ellipse: s-maj=17.6km s-min=9.7km az=74.0*

ISC 04 11:46:24.4±0.8, 36.09N±0.04×140.02E±0.05, h52km±6km, n56, σ0.80/59, mb4.1/19, MS4.1/4, 2C-7D, Near east coast

of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JYT	**Yasato**	**0.20**	**45**	⇑P	**Pn**	**11 46 33.0**	**0.0**
JYT				S	**Sn**	**11 46 38.6**	**-0.5**
JAG	**Ashikaga**	**0.57**	**307**	⇓P	**Pn**	**11 46 36.6**	**0.0**
JAG				S	**Sn**	**11 46 44.7**	**-0.7**
JRY	**Ryogami san**	**0.91**	**266**	⇓P	**Pn**	**11 46 41.4**	**+0.5**
JRY				S	**Sn**	**11 46 53.5**	**+0.4**
JKT	**Katashina**	**0.92**	**318**	⇓P	**Pn**	**11 46 40.9**	**-0.3**
JKT				S	**Sn**	**11 46 53.4**	**-0.1**
JOD2	**Odawara 2**	**1.11**	**223**	P	**Pn**	**11 46 45.2**	**+1.5**
JOD2				S	**Sn**	**11 46 59.4**	**+1.4**
JYN	**Shimob**	**1.33**	**244**	P	**Pn**	**11 46 48.4**	**+1.7**
BSO3	**Boso 3**	**1.34**	**162**	⇓P	**Pn**	**11 46 47.6**	**+1.1**
JFY	**Yanaizu**	**1.34**	**349**	⇓P	**Pn**	**11 46 46.9**	**+0.1**
JFY				S	**Sn**	**11 47 03.7**	**+0.1**
JHK	**Hiroka**	**1.41**	**326**	⇓P	**Pn**	**11 46 47.9**	**+0.2**
JFK	**Kawauchi**	**1.45**	**28**	⇑P	**Pn**	**11 46 47.8**	**-0.5**
JFT	**Otama**	**1.45**	**10**	⇓P	**Pn**	**11 46 48.3**	**0.0**
JFT				S	**Sn**	**11 47 06.3**	**+0.1**
MJAR	**Matsushiro Arr**	**1.53**	**288**	P	**Pn**	**11 46 48.5**	**-0.9**
	159nm,0.3s,baz=88,slow=9.0,SNR=1097						
MJAR				LR	LR	11 47 37.3	
	comp=Z,280nm,18.0s,baz=140,slow=50						
MAJO	**Matsushiro**	**1.53**	**288**	*e*Pn	**Pn**	**11 46 49.5**	**+0.2**
MAT	**Matsushiro**	**1.53**	**288**	P	**Pn**	**11 46 49.0**	**-0.3**
MAT				*e*S	**Sn**	**11 47 08.1**	**0.0**
JHJ	**Hachijo jima 2**	**2.96**	**184**	P	**Pn**	**11 47 09.5**	**+0.6**
	117nm,0.3s,baz=151,slow=23,SNR=28						
JHJ				S	**Sn**	**11 47 43.5**	**+0.3**
	142nm,0.3s,baz=52,slow=24,SNR=10						
JHJ2	**Mitsune**	**2.97**	**183**	*e*Pn	**Pn**	**11 47 09.1**	**+0.1**
JNU	**Nakatsue**	**8.09**	**251**	P	**Pn**	**11 48 17.4**	**-1.9**
	0.1nm,0.3s,baz=56,slow=11,SNR=5.8						
CBIJ	**Chichi jima**	**9.15**	**168**	P	**Pn**	**11 48 31.4**	**-2.4**
CBIJ				S	Sn	11 50 07.0	-8.3
JCJ	**Chichijima**	**9.15**	**168**	P	**Pn**	**11 48 31.4**	**-2.4**
	baz=271,slow=19						
JCJ				S	Sn	11 50 07.0	-8.3
	2.2nm,0.3s,baz=301,slow=19,SNR=2.8						
KSRS	**Korea Array**	**9.80**	**282**	P	Pn	11 48 47.4	+4.8
	0.8nm,0.3s,baz=93,slow=14,SNR=14						
KSAR	**Wonju Array Be**	**9.83**	**282**	P	Pn	11 48 47.4	+4.4
USRK	**Ussuriysk Ar.**	**10.17**	**325**	P	Pn	11 48 51.8	+4.3
	0.5nm,0.3s,baz=137,slow=13,SNR=10						
MA2	**Magadan**	**24.52**	**13**	P	**P**	**11 51 39.7**	**+1.0**
	1.7nm,0.5s,baz=214,slow=12,SNR=6.1						
MA2	**Magadan**	**24.52**	**13**	*e*P	**P**	**11 51 38.7**	**0.0**
	7.0nm,0.6s						
MA2				P	**P**	**11 51 39.7**	**+1.0**
SONM	**Songino Array**	**27.41**	**306**	P	**P**	**11 52 04.3**	**-0.7**
	0.8nm,0.5s,baz=117,slow=8.5,SNR=6.6						
H11N2	**WAKE ISLAND Hy**	**28.67**	**117**	T	T	12 22 25.7	
	baz=313,slow=75,SNR=46						
H11N1	**WAKE ISLAND Hy**	**28.68**	**117**	T	T	12 22 27.4	
	baz=313,slow=75,SNR=49						
H11N3	**WAKE ISLAND Hy**	**28.69**	**117**	T	T	12 22 25.0	
	baz=313,slow=75,SNR=45						
H11S1	**WAKE ISLAND Hy**	**29.33**	**120**	T	T	12 23 15.7	
	baz=314,slow=76,SNR=119						
H11S3	**WAKE ISLAND Hy**	**29.33**	**120**	T	T	12 23 12.9	
	baz=314,slow=76,SNR=82						
H11S2	**WAKE ISLAND Hy**	**29.35**	**120**	T	T	12 23 15.2	
	baz=314,slow=76,SNR=82						
ZALV	**Zalesovo Beam**	**41.73**	**313**	P	**P**	**11 54 07.8**	**-0.2**
	2.0nm,0.5s,baz=101,slow=5.9,SNR=6.7						
ZALV				PcP	**PcP**	**11 56 02.8**	**-0.8**
	1.8nm,0.6s,baz=90,slow=2.1,SNR=5.8						
MKAR	**Makanchi Array**	**43.68**	**303**	P	**P**	**11 54 23.8**	**-0.2**
	3.0nm,0.7s,baz=90,slow=10,SNR=17						
KURK	**Kurchatov**	**45.64**	**309**	*e*P	**P**	**11 54 39.2**	**-0.2**
KURK				P	**P**	**11 54 39.7**	**+0.3**
KURK				PcP	**PcP**	**11 56 16.4**	**-0.4**
KURBB	**Kurchatov Arra**	**45.70**	**309**	P	**P**	**11 54 39.7**	**-0.3**
	4.7nm,0.7s,baz=85,slow=8.1,SNR=23						
KURBB				PcP	**PcP**	**11 56 16.4**	**-0.7**
	0.4nm,0.2s,baz=84,slow=4.7,SNR=4.1						
AAK	**Ala-Archa**	**49.95**	**299**	LR	LR	12 19 04.3	
	comp=Z,144nm,19.6s,baz=250,slow=39						
BVAR	**Borovoye Array**	**50.38**	**313**	P	**P**	**11 55 16.9**	**+0.8**
	0.2nm,100.0s,baz=100,slow=7.2,SNR=9.2						
BVAR				PcP	**PcP**	**11 56 33.7**	**-0.2**
	1.1nm,0.7s,baz=54,slow=2.5,SNR=4.8						
ILAR	**Eielson Array**	**50.90**	**32**	P	**P**	**11 55 19.4**	**-0.4**
	1.2nm,0.8s,baz=273,slow=5.8,SNR=9.3						
FITZ	**Fitzroy Crossi**	**55.58**	**197**	P	**P**	**11 55 54.7**	**0.0**
	1.8nm,0.5s,baz=351,slow=7.1,SNR=5.3						
INK	**Inuvik**	**55.74**	**27**	P	**P**	**11 55 55.4**	**+0.2**
	1.0nm,0.5s,baz=318,slow=8.4,SNR=8.1						
WRA	**Warramunga Arr**	**55.98**	**186**	P	**P**	**11 55 57.5**	**+0.1**
	1.6nm,0.5s,baz=0.6,slow=7.6,SNR=26						
WRA				PcP	**PcP**	**11 56 56.0**	**+0.6**
	0.8nm,0.7s,baz=0.0,slow=4.3,SNR=3.2						
ARU	**Arti**	**56.33**	**319**	LR	LR	12 20 44.6	
	comp=Z,134nm,18.3s,baz=130,slow=37						
ABKAR	**Akbulak array**	**57.69**	**310**	*e*P	**P**	**11 56 09.1**	**-0.3**
	1.3nm,0.4s						
AKTO	**Aktyubinsk**	**58.47**	**312**	LR	LR	12 20 31.9	
	comp=Z,149nm,19.2s,slow=35						
ASAR	**Alice Springs**	**59.71**	**186**	P	**P**	**11 56 23.9**	**+0.3**
	0.8nm,0.7s,baz=18,slow=13,SNR=13						
ARCES	**ARCESS Array B**	**64.48**	**339**	P	**P**	**11 56 55.6**	**+0.5**
	7.2nm,1.0s,baz=44,slow=9.2,SNR=4.5						
YKA	**Yellowknife Ar**	**65.19**	**30**	P	**P**	**11 56 59.8**	**+0.1**
	0.5nm,0.7s,baz=306,slow=6.7,SNR=9.1						
FINES	**FINESS Array B**	**69.12**	**332**	P	**P**	**11 57 24.1**	**-0.6**
	1.1nm,0.6s,baz=72,slow=6.2,SNR=4.8						
AKASG	**Malin Array Be**	**74.35**	**322**	P	**P**	**11 57 55.8**	**-0.5**
	0.6nm,0.3s,baz=51,slow=5.4,SNR=6.2						
HFS	**Hagfors**	**74.48**	**335**	P	**P**	**11 57 56.5**	**-0.3**
	1.4nm,0.6s,baz=32,slow=3.7,SNR=5.5						
NB2	**NORSAR Subarra**	**74.62**	**337**	P	**P**	**11 57 57.1**	**-0.6**
	comp=Z,2.2nm,0.7s,baz=41,slow=5.9						
NOA	**NORSAR Array B**	**74.62**	**337**	P	**P**	**11 57 57.4**	**-0.3**
	comp=Z,1.4nm,0.5s,baz=40,slow=5.8,SNR=5.8						
NVAR	**Mina Array Bea**	**76.46**	**52**	P	**P**	**11 58 09.8**	**+1.0**
	comp=Z,0.5nm,0.6s,baz=289,slow=5.1,SNR=5.5						
RAR	**Rarotonga**	**80.53**	**125**	LR	LR	12 25 30.6	
	comp=Z,136nm,21.6s,baz=118,slow=29						
TXAR	**Lajitas Array**	**91.59**	**52**	P	**P**	**11 59 26.9**	**+1.0**
	comp=Z,0.6nm,0.6s,baz=358,slow=2.7,SNR=2.5						
TORD	**Torodi Ar. Bea**	**117.18**	**313**	PKP	**PKPdf**	**12 05 03.3**	**-1.0**
	comp=Z,0.2nm,0.4s,baz=14,slow=0.8,SNR=3.4						

IDC 04 11:48:02.0±26.0**, 0°.99N×120°.75E, h0km, mb3.9**/3**, mb1 4.0**/4**, mb1mx3.5**/57**, mbtmp3.9**/4**, ML3.7**/1**, Error ellipse: s-maj=452.4km s-min=76.5km az=139.0, Minahassa Peninsula, Sulawesi**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KAPI	**Kappang**	**6.05**	**189**	Pn	Pn	11 49 31.4	-1.3
	1.9nm,0.3s,baz=5.2,slow=12,SNR=4.2						
WRA	**Warramunga Arr**	**24.71**	**148**	P	P	11 53 25.7	+0.5
	1.1nm,0.4s,baz=335,slow=9.7,SNR=24						
ASAR	**Alice Springs**	**27.65**	**153**	P	P	11 53 52.3	+0.6
	0.6nm,0.4s,baz=336,slow=8.1,SNR=19						
STKA	**Stephens Creek**	**38.19**	**151**	P	P	11 55 22.6	-1.0
	1.1nm,0.5s,baz=323,slow=8.5,SNR=5.4						

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*ISCJB **04** 11:53:31.3±1.9, 24°.77N±0°.05×122°.51E±0°.03, h12km±16km, Error ellipse: s-maj=9.4km s-min=4.1km az=13.2*
*TAP **04** 11:53:31.3, 24°.80N×122°.50E, h21km, ML2.8, C*
*JMA **04** 11:53:31.3±0.2, 24°.71N×122°.48E, h8km±5km*
ISC 04 11:53:31.1±1.1**, 24°.76N**±0°.06×**122°.51E**±0°.03**, h14**km±9km**, n13, σ0s.28**/26**, 1D, Taiwan region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TWB1	**Santiao Chiao**	**0.53**	**298**	*i* P	**Pg**	**11 53 41.7**	**+0.1**
	baz=294						
TWB1				*i* S	**Sg**	**11 53 48.8**	**0.0**
	baz=294						
YOJ	**Yonaguni jima**	**0.54**	**123**	P	**Pg**	**11 53 41.8**	**0.0**
YOJ				S	**Sg**	**11 53 49.1**	**0.0**
TWC	**Suao**	**0.62**	**256**	P	**Pg**	**11 53 43.1**	**-0.1**
	baz=252						
TWC				*e*S	**Sg**	**11 53 51.3**	**-0.1**
	baz=252						
NWF	**Wu-fen Shan**	**0.73**	**295**	P	**Pb**	**11 53 45.6**	**0.0**
	baz=292						
NWF				*e*S	**Sb**	**11 53 55.3**	**-0.2**
	baz=292						
TWE	**Neicheng**	**0.77**	**267**	P	**Pb**	**11 53 46.1**	**-0.1**
	baz=264						
TWE				*e*S	**Sg**	**11 53 56.0**	**0.0**
	baz=264						
ENA	**Nanau**	**0.77**	**245**	⇓P	**Pg**	**11 53 46.1**	**0.0**
	baz=254						
ENA				*e*S	**Sb**	**11 53 56.8**	**+0.2**
	baz=254						
ENTT	**Nioudou**	**0.86**	**262**	*e*P	**Pb**	**11 53 47.8**	**-0.1**
	baz=247						
ENTT				*e*S	**Sg**	**11 53 59.2**	**0.0**
	baz=247						
NSK	**Sanguang**	**1.05**	**266**	P	**Pb**	**11 53 50.8**	**-0.2**
	baz=263						
NSK				S	**Sb**	**11 54 04.2**	**-0.4**
	baz=263						
NNS	**Nan Shan**	**1.08**	**253**	*e*P	**Pb**	**11 53 51.5**	**-0.1**
	baz=250						
NNS				*e*S	**Sb**	**11 54 05.8**	**+0.1**
	baz=250						
IRIF	**Iriomote-Funau**	**1.19**	**110**	P	**Pg**	**11 53 53.9**	**-0.1**
IRIF				*e*S	**Sn**	**11 54 09.1**	**-0.1**
WHF	**Hehuan Shan**	**1.29**	**242**	P	**Pb**	**11 53 55.5**	**+0.2**
	baz=248						
WHF				*e*S	**Sb**	**11 54 10.9**	**-0.9**
	baz=248						
ESL	**Shilin**	**1.36**	**226**	*e*P	**Pb**	**11 53 56.4**	**+0.1**
	baz=223						
ESL				*e*S	**Sn**	**11 54 13.4**	**0.0**
	baz=223						
NSTT	**Nanjuang**	**1.38**	**265**	*e*P	**Pn**	**11 53 56.0**	**+0.2**
	baz=263						
NSTT				*e*S	**Sb**	**11 54 14.6**	**+0.6**
	baz=263						

IDC 04 11:54:47.3±2.2**, 6°.77S×129°.59E, h0km, mb3.5**/1**, mb1 3.8**/4**, mb1mx3.5**/38**, mbtmp3.6**/4**, ML3.7**/3**, Error ellipse: s-maj=86.1km s-min=29.0km az=76.0, Banda Sea**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**11.90**	**199**	Pn	Pn	11 57 39.3	+0.9
	0.3nm,0.3s,baz=19,slow=16,SNR=7.2						
FITZ				Sn	Sn	11 59 36.2	-16
	0.8nm,0.3s,baz=286,slow=21,SNR=6.4						
WRA	**Warramunga Arr**	**13.88**	**161**	Pn	Pn	11 58 05.1	-0.4
	0.4nm,0.3s,baz=339,slow=13,SNR=14						
WRA				Sn	Sn	12 00 23.6	-17
	1.0nm,0.3s,baz=337,slow=23,SNR=14						
ASAR	**Alice Springs**	**17.30**	**167**	P	Pn	11 58 50.0	-0.5
	0.4nm,0.3s,baz=340,slow=10,SNR=22						
ASAR				S	Sn	12 01 48.8	-15
	0.3nm,0.3s,baz=346,slow=24,SNR=6.5						
MKAR	**Makanchi Array**	**67.81**	**327**	P	P	12 05 47.2	0.0
	0.3nm,0.5s,baz=110,slow=7.7,SNR=4.3						

DDA 04 12:00:02.4, 36°.96N×34°.81E, h8km, Md2.4, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DED	**Mersin**	**0.01**	**304**	*i* P	Pg	12 00 03.1	-0.6
DED				*i* S	Sg	12 00 05.8	+1.1
GULE	**Gulek**	**0.33**	**356**	*i* S	Sg	12 00 11.7	-1.6
KERG	**Konya-Eregli**	**0.71**	**310**	*i* P	Pg	12 00 15.2	-0.9
KERG				*i* S	Sb	12 00 27.5	+0.3

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*NSSP **04** 12:15:59.5, 41°.35N×45°.98E, h10km, Ms3.1*
*ISCJB **04** 12:16:02.9±0.5, 41°.34N±0°.02×46°.05E±0°.03, h23km±5km, Error ellipse: s-maj=4.0km s-min=3.7km az=42.8*
*CSEM **04** 12:16:02.8±0.5, 41°.32N×46°.06E, h26km±5km, ML3.2, Error ellipse: s-maj=4.6km s-min=4.0km az=45.0*
*TIF **04** 12:16:02.5, 41°.44N×46°.04E, h29km±1km*
*MOS **04** 12:16:03.3±0.8, 41°.41N×46°.01E, h22km, mb4.1/1, Error ellipse: s-maj=10.3km s-min=7.1km az=94.8*
ISC 04 12:16:02.5±1.0**, 41°.34N**±0°.02×**46°.04E**±0°.02**, h22**km±13km**, n54, σ0s.90**/93**, 7C-7D, Eastern Caucasus**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DGRG	**David-gareji**	**0.51**	**282**	P	**Pn**	**12 16 14.0**	**-0.6**
DGRG				S	**Sn**	**12 16 23.0**	**+0.4**
DGRG	**David-gareji**	**0.51**	**282**	PG	**Pn**	**12 16 13.9**	**-0.6**
DGRG				S	**Sn**	**12 16 23.0**	**+0.4**
DGRG	**David-gareji**	**0.51**	**282**	Pg	**Pn**	**12 16 13.9**	**-0.6**
DGRG				S	**Sn**	**12 16 23.0**	**+0.4**
SEAG	**Tbilisi Sea**	**1.02**	**295**	P	**Pb**	**12 16 21.1**	**-0.3**
SEAG				S	**Sb**	**12 16 34.0**	**-0.4**
SEAG	**Tbilisi Sea**	**1.02**	**295**	P	**Pb**	**12 16 21.1**	**-0.3**
SEAG				S	**Sb**	**12 16 34.0**	**-0.4**
TBLG	**Delisi**	**1.05**	**292**	P	**Pb**	**12 16 22.3**	**+0.3**
TBLG				S	**Sn**	**12 16 36.1**	**+0.3**
TBLG	**Delisi**	**1.05**	**292**	PG	**Pb**	**12 16 22.2**	**+0.3**
TBLG				S	**Sn**	**12 16 36.1**	**+0.3**
TBLG	**Delisi**	**1.05**	**292**	Pg	**Pb**	**12 16 22.2**	**+0.3**
TBLG				S	**Sn**	**12 16 36.1**	**+0.3**
VADZ	**Vardenis**	**1.19**	**191**	*e*P	**Pb**	**12 16 24.0**	**-0.5**
VADZ				⇑S	**Sn**	**12 16 41.0**	**+1.4**
VADZ	**Vardenis**	**1.19**	**191**	P	**Pb**	**12 16 24.0**	**-0.5**
VADZ				S	**Sn**	**12 16 41.0**	**+1.4**
KZR	**Kazreti**	**1.22**	**272**	P	**Pn**	**12 16 22.9**	**-1.3**
KZR				S	**Sb**	**12 16 39.7**	**-0.6**
KZR	**Kazreti**	**1.22**	**272**	P	**Pn**	**12 16 22.9**	**-1.3**
KZR				S	**Sb**	**12 16 39.7**	**-0.6**
DUS	**Dusheti**	**1.25**	**307**	P	**Pn**	**12 16 24.4**	**-0.2**
DUS				S	**Sb**	**12 16 41.4**	**+0.4**
DUS	**Dusheti**	**1.25**	**307**	PG	**Pn**	**12 16 24.4**	**-0.2**
DUS				S	**Sb**	**12 16 41.4**	**+0.4**
DUS	**Dusheti**	**1.25**	**307**	P	**Pn**	**12 16 24.4**	**-0.2**
DUS				S	**Sb**	**12 16 41.4**	**+0.4**
GNBR	**Gunib**	**1.25**	**33**	⇑*i*PG	**Pn**	**12 16 24.6**	**-0.1**
GNBR				*i* S	**Sn**	**12 16 40.8**	**-0.1**
GNBR	**Gunib**	**1.25**	**33**	*i* Pg	**Pn**	**12 16 24.6**	**-0.1**
GNBR				*i* Sg	**Sn**	**12 16 40.8**	**-0.1**
AKT	**Akhty**	**1.28**	**83**	⇑*i*PG	**Pb**	**12 16 25.8**	**-0.2**
AKT				*e*S	**Sb**	**12 16 42.7**	**+0.6**
AKT	**Akhty**	**1.28**	**83**	*i* Pg	**Pb**	**12 16 25.8**	**-0.2**
AKT				*e*Sg	**Sb**	**12 16 42.7**	**+0.6**
MTKZ	**Martakert**	**1.29**	**152**	⇓*i*P	**Pn**	**12 16 23.5**	**-1.6**
MTKZ				⇓*i*S	**Sn**	**12 16 42.2**	**+0.5**
MTKZ	**Martakert**	**1.29**	**152**	⇓P	**Pn**	**12 16 23.5**	**-1.6**
MTKZ				S	**Sn**	**12 16 42.2**	**+0.5**
XNZR	**Khunzakh**	**1.30**	**22**	*e*PG	**Pn**	**12 16 25.0**	**-0.4**
XNZR				*i* S	**Sn**	**12 16 42.0**	**-0.2**
XNZR	**Khunzakh**	**1.30**	**22**	*e*Pg	**Pn**	**12 16 25.0**	**-0.4**
XNZR				*i* Sg	**Sn**	**12 16 42.0**	**-0.2**
BTLR	**Botlikh**	**1.33**	**6**	*e*PG	**Pn**	**12 16 26.0**	**+0.3**
BTLR				*i* S	**Sb**	**12 16 43.9**	**+0.5**
BTLR	**Botlikh**	**1.33**	**6**	*e*Pg	**Pn**	**12 16 26.0**	**+0.3**
BTLR				*i* Sg	**Sb**	**12 16 43.9**	**+0.5**
ARKR	**Arakani**	**1.45**	**29**	*e*PG	**Pb**	**12 16 28.0**	**-0.8**
ARKR				*e*S	**Sb**	**12 16 47.0**	**+0.2**
ARKR	**Arakani**	**1.45**	**29**	*e*Pg	**Pb**	**12 16 28.0**	**-0.8**
ARKR				*e*Sg	**Sb**	**12 16 47.0**	**+0.2**
URKR	**Urkarakh**	**1.45**	**55**	*e*PG	**Pb**	**12 16 28.0**	**-0.9**
URKR				*e*S	**Sb**	**12 16 49.0**	**+2.1**
URKR	**Urkarakh**	**1.45**	**55**	*e*Pg	**Pb**	**12 16 28.0**	**-0.9**
GNI	**Garni**	**1.55**	**220**	⇑*i*P	**Pb**	**12 16 31.8**	**+1.3**
GNI				⇓*i*S	**Sb**	**12 16 54.0**	**+4.3**
GNI	**Garni**	**1.55**	**220**	⇑P	**Pb**	**12 16 31.8**	**+1.3**
GUDG	**Gudauri**	**1.62**	**314**	P	**Pn**	**12 16 30.1**	**+0.3**
GUDG				S	**Sn**	**12 16 50.7**	**+0.6**
GUDG	**Gudauri**	**1.62**	**314**	P	**Pn**	**12 16 30.1**	**+0.3**
GUDG				S	**Sn**	**12 16 50.7**	**+0.6**
KRNR	**Karanay**	**1.62**	**23**	*e*PG	**Pn**	**12 16 30.0**	**+0.2**
KRNR	**Karanay**	**1.62**	**23**	*e*Pg	**Pn**	**12 16 30.0**	**+0.2**
STKZ		**1.62**	**160**	⇓*i*P	**Pn**	**12 16 28.5**	**-1.3**
STKZ				⇓*i*S	**Sn**	**12 16 49.2**	**-0.8**
STKZ		**1.62**	**160**	⇓P	**Pn**	**12 16 28.5**	**-1.3**
STKZ				S	**Sn**	**12 16 49.2**	**-0.8**
DBC	**Dubki**	**1.78**	**19**	⇑*i*PN	**Pb**	**12 16 35.0**	**+0.6**
DBC				*i* S	**Sb**	**12 16 57.8**	**+1.5**
DBC				pmax	pmax		
	comp=Z,20nm,0.5s						
GRS	**Goris**	**1.85**	**173**	*e*P	**Pb**	**12 16 36.0**	**+0.2**
GROC	**Groznyy**	**1.87**	**355**	*e*PN	**Pn**	**12 16 33.2**	**+0.1**
GROC	**Groznyy**	**1.87**	**355**	*e*Pn	**Pn**	**12 16 33.2**	**+0.1**
AKH	**Akhalkalaki**	**1.92**	**273**	P	**Pb**	**12 16 36.2**	**-0.6**
AKH				S	**Sb**	**12 16 59.4**	**-1.0**
AKH	**Akhalkalaki**	**1.92**	**273**	PN	**Pb**	**12 16 36.2**	**-0.6**
AKH	**Akhalkalaki**	**1.92**	**273**	P	**Pb**	**12 16 36.2**	**-0.6**
AKH				S	**Sb**	**12 16 59.4**	**-1.0**
LACR	**Lac**	**1.97**	**319**	⇑*i*PN	**Pn**	**12 16 35.0**	**+0.4**
LACR	**Lac**	**1.97**	**319**	*i* Pn	**Pn**	**12 16 35.0**	**+0.4**
VLKR	**Vladikavkaz**	**1.98**	**330**	*e*PN	**Pn**	**12 16 34.7**	**0.0**
VLKR	**Vladikavkaz**	**1.98**	**330**	*e*Pn	**Pn**	**12 16 34.7**	**0.0**
ZEI	**Tsey**	**2.15**	**313**	*e*PN	**Pn**	**12 16 37.6**	**+0.5**
ZEI	**Tsey**	**2.15**	**313**	*e*Pn	**Pn**	**12 16 37.6**	**+0.5**
ARNR	**Ardon**	**2.25**	**325**	*e*PN	**Pn**	**12 16 39.0**	**+0.6**
ARNR				*e*S	**Sn**	**12 17 06.9**	**+1.5**
ARNR	**Ardon**	**2.25**	**325**	*e*Pn	**Pn**	**12 16 39.0**	**+0.6**
ARNR				*e*Sn	**Sn**	**12 17 06.9**	**+1.5**
KORR	**Kora**	**2.27**	**321**	*e*PN	**Pb**	**12 16 41.2**	**-1.7**
KORR				*e*S	**Sb**	**12 17 09.8**	**-0.8**
KORR	**Kora**	**2.27**	**321**	*e*Pn	**Pb**	**12 16 41.2**	**-1.7**

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*ISCJB **04** 12:26:48.2±0.5, 62°.93N±0°.02×143°.43W±0°.04, h9km±4km, Error ellipse: s-maj=3.6km s-min=2.6km az=31.6*
*NEIC **04** 12:26:49.4, 62°.92N×143°.61W, h11km, ML3.2(AEIC), After AEIC.*
NEIC Felt at Tok.
*PGC **04** 12:26:49.5±0.0, 62°.84N×143°.66W, h5km, ML3.4/10, 236km Ene of Valdez, Ak Central Alaska*
ISC 04 12:26:49.0±0.8**, 62°.93N**±0°.03×**143°.64W**±0°.02**, h15**km±5km**, n71, σ1s.59**/91**, Central Alaska**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MENT	**Mentasta**	**0.04**	**284**	P	**Pg**	**12 26 51.7**	**0.0**
MENT				S	**Sg**	**12 26 53.7**	**+0.1**
DOT	**Dot Lake**	**0.75**	**346**	P	**Pb**	**12 27 04.7**	**+0.9**
DOT				S	**Sb**	**12 27 15.0**	**+1.2**
DOT	**Dot Lake**	**0.75**	**346**	P	**Pb**	**12 27 04.6**	**+0.8**
DOT				S	**Sb**	**12 27 14.9**	**+1.1**
PAX	**Paxson**	**0.84**	**274**	P	**Pg**	**12 27 04.4**	**-0.9**
PAX				S	**Sg**	**12 27 15.4**	**-0.8**
PAX	**Paxson**	**0.84**	**274**	P	**Pg**	**12 27 04.3**	**-0.9**
PAX				S	**Sg**	**12 27 15.4**	**-0.8**
BCA3	**Beaver Creek A**	**0.86**	**80**	P	**Pg**	**12 27 04.9**	**-0.8**
BCA3				S	**Sg**	**12 27 16.5**	**-0.5**
PS10	**TAPS Pump St10**	**1.08**	**298**	P	**Pb**	**12 27 09.2**	**-0.3**
PS11	**TAPS Pump St11**	**1.20**	**226**	P	**Pn**	**12 27 11.0**	**-0.4**
PS11				S	**Sb**	**12 27 28.0**	**+1.1**
BVCY	**Beaver Creek**	**1.38**	**111**	Pn	**Pn**	**12 27 13.9**	**0.0**
BVCY				Sg	**Sb**	**12 27 32.5**	**+0.4**
GLB	**Gilahina Butte**	**1.50**	**183**	P	**Pn**	**12 27 14.7**	**-0.7**
MCARA	**McCarthy VSAT**	**1.58**	**169**	P	**Pn**	**12 27 16.5**	**0.0**
MCARA				S	**Sn**	**12 27 36.6**	**-0.1**
PS12	**TAPS Pump St12**	**1.62**	**206**	P	**Pn**	**12 27 16.8**	**-0.3**
YUK1	**Sand Pete Hill**	**1.64**	**117**	Pn	**Pn**	**12 27 17.4**	**-0.1**
YUK1				Sg	**Sn**	**12 27 39.5**	**+1.1**
DHY	**Denali Highway**	**1.71**	**277**	P	**Pn**	**12 27 19.6**	**+1.1**
VRDI	**Verde Repeater**	**1.71**	**177**	P	**Pn**	**12 27 18.7**	**+0.2**
VRDI				S	**Sn**	**12 27 40.9**	**+0.7**
YUK2	**White River**	**1.74**	**130**	Pn	**Pn**	**12 27 18.9**	**+0.1**
YUK2				Sg	**Sn**	**12 27 41.9**	**+1.2**
KLU	**Klutina**	**1.79**	**218**	P	**Pn**	**12 27 20.0**	**+0.4**
YUK3	**Moose Creek**	**1.88**	**127**	Pn	**Pn**	**12 27 21.1**	**+0.2**
YUK3				Sg	**Sb**	**12 27 46.3**	**-0.4**
BALM	**Baldy**	**2.00**	**162**	Pn	**Pn**	**12 27 23.5**	**+1.2**
BALM				Sg	**Sb**	**12 27 49.8**	**-0.1**
BALM	**Baldy**	**2.00**	**162**	P	**Pn**	**12 27 23.6**	**+1.2**
BMRM	**Bremner River**	**2.02**	**193**	P	**Pn**	**12 27 22.4**	**-0.2**
SCM	**Sheep Creek Mo**	**2.04**	**239**	P	**Pn**	**12 27 23.9**	**+1.0**
DIV	**Divide**	**2.07**	**210**	Pn	**Pn**	**12 27 23.7**	**+0.4**
DIV				Sg	**Sn**	**12 27 49.9**	**+1.1**
DIV	**Divide**	**2.07**	**210**	P	**Pn**	**12 27 23.6**	**+0.4**
HDA	**Harding Lake**	**2.09**	**317**	P	**Pn**	**12 27 25.0**	**+1.4**
BARN	**Barnard Glacie**	**2.10**	**153**	P	**Pn**	**12 27 24.8**	**+1.0**
KIAG	**Kiagna River**	**2.10**	**163**	P	**Pn**	**12 27 25.3**	**+1.4**
PS08	**TAPS Pump Stn8**	**2.15**	**320**	P	**Pn**	**12 27 25.2**	**+0.9**
EGAK	**Eagle**	**2.16**	**30**	P	**Pn**	**12 27 26.0**	**+1.5**
DAWY	**Dawson**	**2.22**	**57**	Pn	**Pn**	**12 27 26.4**	**+1.0**
DAWY				Sg	**Sg**	**12 27 59.8**	**-0.6**
DAWY	**Dawson**	**2.22**	**57**	P	**Pn**	**12 27 26.2**	**+0.8**
IL1	**Eielson Array**	**2.34**	**324**	P	**Pn**	**12 27 27.6**	**+0.6**
RND	**Reindeer**	**2.41**	**284**	P	**Pb**	**12 27 31.1**	**-1.1**
ISLE	**Juniper Island**	**2.42**	**165**	P	**Pn**	**12 27 30.2**	**+2.0**
SML	**Sawmill**	**2.46**	**245**	P	**Pn**	**12 27 30.6**	**+2.0**
KHIT	**Khitrov Hills**	**2.50**	**176**	P	**Pn**	**12 27 30.8**	**+1.5**
WRH	**Wood River Hil**	**2.51**	**310**	P	**Pn**	**12 27 30.7**	**+1.4**
MCK	**McKinley**	**2.52**	**291**	P	**Pn**	**12 27 32.5**	**+3.0**
CCB	**Clear Creek Bu**	**2.53**	**315**	P	**Pn**	**12 27 30.0**	**+0.5**
BAGL	**Bagley Icefiel**	**2.56**	**162**	P	**Pn**	**12 27 32.2**	**+2.3**
EYAK	**Cordova Ski Ar**	**2.59**	**204**	P	**Pn**	**12 27 32.6**	**+2.3**
COLA	**College**	**2.70**	**318**	*e*Pn	**Pn**	**12 27 33.3**	**+1.5**
MDM	**Murphy Dome**	**2.87**	**317**	P	**Pn**	**12 27 34.9**	**+0.6**
PMR	**Palmer**	**2.90**	**245**	P	**Pn**	**12 27 37.0**	**+2.5**
TRF	**Thorofare Moun**	**3.06**	**283**	*e*Pn	Pn	12 27 40.4	+3.4
YUK6	**Outpost Mounta**	**3.19**	**126**	Pn	**Pn**	**12 27 38.9**	**0.0**
YUK6				Sg	**Sg**	**12 28 28.2**	**-3.3**
YUK5	**Granite Creek**	**3.27**	**121**	Pn	**Pn**	**12 27 40.0**	**+0.1**
YUK5				Sg	**Sb**	**12 28 30.0**	**+3.6**
KTH	**Kantishna Hill**	**3.35**	**284**	P	**Pn**	**12 27 43.8**	**+2.9**
RC01	**Rabbit Creek A**	**3.42**	**240**	P	**Pn**	**12 27 44.4**	**+2.6**
BPAW	**Bear Paw Mtn.**	**3.49**	**293**	P	**Pn**	**12 27 44.3**	**+1.5**
YUK7	**Dusty Glacier**	**3.56**	**130**	Pn	**Pn**	**12 27 44.5**	**+0.6**
HYT	**Haines Junctio**	**3.59**	**123**	Pn	**Pn**	**12 27 44.2**	**-0.1**
HYT				Pg	**Pb**	**12 27 53.7**	**+1.4**
HYT				Sg	**Sb**	**12 28 40.0**	**+4.2**
FYU	**Fort Yukon**	**3.71**	**350**	P	**Pn**	**12 27 47.8**	**+2.0**
MLY	**Manley**	**3.77**	**307**	P	**Pn**	**12 27 48.0**	**+1.3**
PPLA	**Purkeypile**	**3.91**	**273**	*e*Pn	Pn	12 27 52.4	+3.8
BM3	**Burnt Mountain**	**4.53**	**355**	P	**Pn**	**12 27 59.1**	**+2.1**
WHY	**Whitehorse**	**4.74**	**115**	Pn	**Pn**	**12 28 00.3**	**+0.3**
WHY				Sg	**Sg**	**12 29 15.4**	**-5.7**
WHY	**Whitehorse**	**4.74**	**115**	P	**Pn**	**12 28 00.2**	**+0.1**
PLBC	**Pleasant Camp**	**4.95**	**131**	Pn	**Pn**	**12 28 04.2**	**+1.4**
COLD	**Coldfoot**	**5.13**	**330**	Pn	**Pn**	**12 28 07.2**	**+2.0**
COLD				Sg	**Sg**	**12 29 28.4**	**-5.0**
COLD	**Coldfoot**	**5.13**	**330**	*e*Pn	**Pn**	**12 28 07.3**	**+2.0**
	9.3nm,0.6s						
INK	**Inuvik**	**6.83**	**33**	Pn	**Pn**	**12 28 29.3**	**+0.8**
INK				Sn	**Sn**	**12 29 44.4**	**-1.3**
DLBC	**Dease Lake**	**8.05**	**118**	Pn	**Pn**	**12 28 45.6**	**+0.2**
DLBC				Sg	Sg	12 30 58.9	-8.2
SMPN	**Simpson Lake**	**8.79**	**46**	Pn	**Pn**	**12 28 56.5**	**+1.1**
FNBB	**Fort Nelson**	**10.81**	**103**	Sg		12 32 24.6	
KUKN	**Kugluktuk,NWT**	**12.79**	**55**	Pn	**Pn**	**12 29 49.6**	**-0.4**
YKR1	**Yellowknife Ar**	**13.12**	**79**	Pn	**Pn**	**12 29 54.0**	**-0.6**
YKR6	**Yellowknife Ar**	**13.23**	**79**	Pn	**Pn**	**12 29 54.9**	**-1.2**
YKW3	**Yellowknife Ar**	**13.26**	**79**	Pn	**Pn**	**12 29 55.7**	**-0.7**
YKR8	**Yellowknife Ar**	**13.28**	**79**	Pn	**Pn**	**12 29 55.8**	**-1.0**
YKR9	**Yellowknife Ar**	**13.30**	**79**	Pn	**Pn**	**12 29 56.7**	**-0.3**

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*IDC **04** 12:31:55.6±1.6, 39°.94N×143°.12E, h0km, mb3.6/6, mb1 3.7/7, mb1mx3.4/48, mbtmp3.6/7, ML3.1/1, MS3.3/1, Ms1 3.3/1, ms1mx2.5/53, Error ellipse: s-maj=38.9km s-min=24.2km az=88.0*
*ISCJB **04** 12:31:56.7±1.0, 39°.99N±0°.08×143°.19E±0°.09, h12km, mb3.5/6, Error ellipse: s-maj=13.4km s-min=8.1km az=144.7*
*NIED **04** 12:32:00, 40°.00N×143°.00E, h8km, Mw3.9 Best double couple: M0 7.32000×10^14 NP1:φs220.00000°, δ4.00000°, λ90.00000°. NP2:φs39.00000°, δ86.00000°, λ90.00000°.*
*JMA **04** 12:32:00.0±0.2, 40°.04N×142°.95E, h18km±2km, M3.7*
ISC 04 12:31:58.1±1.2**, 40°.00N**±0°.08×**143°.05E**±0°.09**, h12km, n24, σ0s.91**/19**, mb3.6**/6**, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JTH	**Tanohata**	**0.92**	**267**	P	**Pg**	**12 32 15.9**	**+0.1**
JTH				*e*S	**Sg**	**12 32 27.2**	**-0.6**
MIYJ	**Miyakonagasawa**	**1.04**	**247**	P	**Pb**	**12 32 18.4**	**+0.4**
MIYJ				*e*S	**Sb**	**12 32 31.9**	**+0.3**
JANG	**Nango**	**1.24**	**288**	P	**Pn**	**12 32 20.7**	**-0.5**
JKZ	**Kuzumaki**	**1.32**	**270**	P	**Pn**	**12 32 22.4**	**-0.1**
JOM	**Ohasama**	**1.46**	**250**	P	**Pn**	**12 32 24.8**	**+0.6**
JTM	**Tenmabayashi**	**1.71**	**298**	P	**Pn**	**12 32 28.6**	**+0.9**
JMK	**Ichinoseki**	**1.76**	**234**	P	**Pn**	**12 32 29.9**	**+1.5**
JAH	**Hinai**	**1.86**	**277**	P	**Pn**	**12 32 31.0**	**+1.1**
JRG	**Rokugo**	**1.96**	**253**	P	**Pb**	**12 32 33.7**	**0.0**
JOT	**Ohata**	**2.06**	**313**	P	**Pn**	**12 32 34.1**	**+1.6**
MJAR	**Matsushiro Arr**	**5.14**	**229**	Pn	**Pn**	**12 33 15.9**	**+1.0**

Code	Station Name	Δ°	AZ°	Op	ISC	Time	Res
	0.7nm,0.3s,baz=44,slow=15,SNR=8.2						
JOW	**Kunigami**	**17.98**	**228**	LR	LR	12 42 27.5	
	comp=Z,90nm,20.6s,baz=115,slow=35						
SEY	**Seymchan**	**23.64**	**11**	P	**P**	**12 37 09.4**	**+0.5**
	2.8nm,1.1s,baz=188,slow=14,SNR=7.8						
SONM	**Songino Array**	**27.34**	**299**	P	**P**	**12 37 43.4**	**+0.4**
	0.3nm,0.5s,baz=97,slow=9.4,SNR=3.1						
H11N2	**WAKE ISLAND Hy**	**28.75**	**128**	T	T	13 08 10.9	
	baz=318,slow=75,SNR=35						
H11N1	**WAKE ISLAND Hy**	**28.76**	**128**	T	T	13 08 08.6	
	baz=318,slow=75,SNR=28						
H11N3	**WAKE ISLAND Hy**	**28.77**	**128**	T	T	13 08 09.7	
	baz=318,slow=75,SNR=25						
H11S1	**WAKE ISLAND Hy**	**29.57**	**130**	T	T	13 09 13.1	
	baz=322,slow=75,SNR=3.7						
H11S3	**WAKE ISLAND Hy**	**29.57**	**130**	T	T	13 09 12.0	
	baz=322,slow=75,SNR=3.7						
H11S2	**WAKE ISLAND Hy**	**29.59**	**130**	T	T	13 09 12.0	
	baz=322,slow=75,SNR=4.2						
ZALV	**Zalesovo Beam**	**40.94**	**310**	P	**P**	**12 39 39.9**	**-0.3**
	0.5nm,0.3s,baz=69,slow=8.3,SNR=3.7						
MKAR	**Makanchi Array**	**43.70**	**300**	P	**P**	**12 40 01.4**	**-1.4**
	0.5nm,0.7s,baz=91,slow=8.9,SNR=4.8						
KURBB	**Kurchatov Arra**	**45.25**	**306**	P	**P**	**12 40 15.2**	**+0.1**
	1.0nm,0.5s,baz=81,slow=9.0,SNR=4.3						
WRA	**Warramunga Arr**	**60.18**	**189**	P	**P**	**12 42 04.4**	**-1.4**
	0.3nm,0.7s,baz=6.1,slow=7.1,SNR=3.7						

*ISCJB **04** 12:43:10.5±0.9, 24.°86N±0.°06×122.°40E±0.°04, h4km±7km, Error ellipse: s-maj=9.4km s-min=5.8km az=5.7*
*JMA **04** 12:43:10.6±0.2, 24.°82N×122.°38E, h7km*
*TAP **04** 12:43:11.4, 24.°86N×122.°29E, h5km, ML2.6, D*
ISC 04 12:43:10.4±1.3**, 24.°88N**±0.°06×**122.°41E**±0.°04**, h15**km±11km**, n11,** σ**0.s15**/20**, 2C, Taiwan region**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
TWB1	**Santiao Chiao**	**0.41**	**289**	⇑P	**Pg**	**12 43 18.6**	**+0.1**
	baz=298						
TWB1				S	**Sg**	**12 43 24.0**	**0.0**
	baz=298						
TWC	**Suao**	**0.58**	**242**	P	**Pg**	**12 43 21.7**	**0.0**
	baz=237						
TWC				S	**Sg**	**12 43 29.5**	**0.0**
	baz=237						
NWF	**Wu-fen Shan**	**0.60**	**289**	P	**Pb**	**12 43 22.8**	**+0.1**
	baz=294						
NWF				*i* S	**Sb**	**12 43 30.9**	**-0.2**
	baz=294						
JYNG	**Yonagunijimaku**	**0.65**	**131**	P	**Pg**	**12 43 23.1**	**+0.1**
TWE	**Neicheng**	**0.69**	**257**	*e*P	**Pb**	**12 43 24.2**	**0.0**
	baz=255						
TWE				*e*S	**Sg**	**12 43 32.8**	**-0.3**
	baz=255						
ENA	**Nanau**	**0.76**	**234**	*e*P	**Pg**	**12 43 25.0**	**-0.1**
	baz=229						
ENA				*e*S	**Sg**	**12 43 35.1**	**0.0**
	baz=229						
ENTT	**Nioudou**	**0.81**	**253**	*e*P	**Pb**	**12 43 26.5**	**+0.4**
	baz=251						
ENTT				*e*S	**Sb**	**12 43 36.9**	**0.0**
	baz=251						
NSK	**Sanguang**	**0.98**	**258**	P	**Pb**	**12 43 29.1**	**0.0**
	baz=257						
NSK				S	**Sg**	**12 43 42.1**	**-0.1**
	baz=257						
NNS	**Nan Shan**	**1.04**	**245**	⇑P	**Pb**	**12 43 30.3**	**+0.1**
	baz=243						
NNS				*e*S	**Sg**	**12 43 44.1**	**0.0**
	baz=243						
WHF	**Hehuan Shan**	**1.27**	**235**	*e*P	**Pb**	**12 43 34.5**	**+0.1**
	baz=232						
WHF				*e*S	**Sn**	**12 43 51.2**	**0.0**
	baz=232						
IRIF	**Iriomote-Funau**	**1.32**	**114**	P	**Pg**	**12 43 35.6**	**-0.1**

IDC 04 12:43:23.7±3.0**, 53.°62N**×**88.°02E, h0**km**, mb1 3.4**/2**, mb1mx3.0**/51**, mbtmp3.4**/2**, ML3.2**/2**, 2D, Error ellipse: s-maj=30.0km s-min=17.4km az=49.0, Southwestern Siberia**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
I46RU	**ZALESOVO INFRA**	**1.93**	**281**	*i*		12 55 50.0	
	baz=97,slow=339,SNR=1.5						
ZALV	**Zalesovo Beam**	**1.93**	**281**	Pn	Pn	12 43 57.6	-0.1
	4.7nm,0.3s,baz=100,slow=15,SNR=30						
ZALV				Lg	Lg	12 44 24.3	
	15nm,0.3s,baz=102,slow=23,SNR=16						
KURBB	**Kurchatov Arra**	**6.57**	**247**	Pn	Pn	12 45 02.1	+0.6
	0.3nm,0.3s,baz=62,slow=14,SNR=16						
KURBB				Lg	Lg	12 46 53.2	
	0.1nm,0.3s,baz=63,slow=30,SNR=5.7						
MK31	**Makanchi Array**	**7.76**	**211**	⇓Pn	Pn	12 45 19.5	+1.8
	0.4nm,0.3s,baz=29,slow=14,SNR=3.6						
MK31				Pg	Pb	12 45 38.9	-0.1
	0.5nm,0.3s,baz=30,slow=14,SNR=6.4						
MK31				⇓Lg	Lg	12 47 03.3	
	0.2nm,0.2s,baz=27,slow=28,SNR=2.6						
MKAR	**Makanchi Array**	**7.76**	**211**	Pn	Pn	12 45 18.8	+1.1
	0.5nm,0.3s,baz=28,slow=14,SNR=24						
MKAR				Lg	Lg	12 47 26.6	
	0.2nm,0.3s,baz=40,slow=27,SNR=4.0						

*IDC **04** 12:46:29.3±1.6, 38.°63N×144.°52E, h0km, mb3.4/3, mb1 3.6/5, mb1mx3.4/45, mbtmp3.5/5, ML3.0/2, Error ellipse: s-maj=34.0km s-min=31.4km az=107.0*
*ISCJB **04** 12:46:31.4±1.3, 38.°7N±0.°1×144.°4E±0.°2, h29km, mb3.4/3, Error ellipse: s-maj=22.3km s-min=17.1km az=135.9*
ISC 04 12:46:33.6±1.4**, 38.°6N**±0.°2×**144.°4E**±0.°2**, h29**km**, n8,** σ**1.s02**/7**, mb3.3**/3**, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
MJAR	**Matsushiro Arr**	**5.37**	**249**	Pn	**Pn**	**12 47 51.7**	**-0.2**
	2.3nm,0.3s,baz=59,slow=11,SNR=24						
MAT	**Matsushiro**	**5.37**	**249**	P	**Pn**	**12 47 51.9**	**0.0**
MAT				*e*S	Sn	12 48 44.1	-8.7
USRK	**Ussuriysk Ar.**	**10.88**	**305**	Pn	**Pn**	**12 49 07.0**	**-0.3**
	0.2nm,0.3s,baz=97,slow=16,SNR=4.3						
SONM	**Songino Array**	**28.95**	**301**	P	**P**	**12 52 32.1**	**+1.6**
	0.2nm,0.3s,baz=88,slow=8.2,SNR=2.8						
ZALV	**Zalesovo Beam**	**42.64**	**311**	pP	pP	12 54 34.2	-1.7
	1.0nm,0.5s,baz=92,slow=9.1,SNR=3.1						
MKAR	**Makanchi Array**	**45.32**	**301**	P	**P**	**12 54 47.7**	**-1.2**
	0.2nm,0.6s,baz=86,slow=7.2,SNR=2.8						
INK	**Inuvik**	**51.86**	**28**	P	**P**	**12 55 38.7**	**-0.1**
	baz=310,slow=4.2,SNR=3.7						
WRA	**Warramunga Arr**	**59.03**	**191**	P	**P**	**12 56 30.9**	**0.0**
	0.5nm,0.7s,baz=13,slow=7.5,SNR=3.7						

DJA 04 12:47:51.9±0.6**, 10.°S**±3.°×**10.°8E**±.°**, h71**km±24km**, M3.9**/11**, mb4.2**/1**, MLv3.8**/11**, South of Jawa**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
CMJI	**Cimerak**	**2.28**	**20**	P	Pn	12 48 27.3	0.0
CMJI				S	Sn	12 48 55.9	+1.5
CISI	**Cisompet, Garu**	**2.37**	**3**	P	Pn	12 48 28.7	0.0
CISI				S	Sn	12 48 58.3	+1.4
CNJI	**Cibinong**	**2.67**	**348**	P	Pn	12 48 33.2	+0.6
CNJI				S	Sn	12 49 04.9	+1.0
KPJI	**Karang Pucung**	**2.88**	**26**	P	Pn	12 48 35.9	+0.5
KPJI				S	Sn	12 49 09.9	+1.0
LEM	**Lembang**	**3.09**	**359**	P	Pn	12 48 39.3	+0.7
CGJI	**Cibinong**	**3.84**	**329**	P	Pn	12 48 49.0	+0.4
CGJI				S	Sn	12 49 33.8	+1.2
PCJI	**Pacitan**	**3.87**	**64**	P	Pn	12 48 49.2	+0.1
PCJI				S	Sn	12 49 34.0	+0.6
JAGI	**Jajag, Banyuwa**	**6.56**	**78**	P	Pn	12 49 25.7	-0.2

IDC 04 12:50:41.7±7.6**, 30.°70S**×**178.°40W, h0**km**, mb3.3**/2**, mb1 3.6**/2**, mb1mx3.5**/24**, mbtmp3.3**/2**, MS3.3**/1**, Ms1 3.3**/1**, ms1mx3.0**/10**, Error ellipse: s-maj=312.9km s-min=61.4km az=156.0, Kermadec Islands**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
ASAR	**Alice Springs**	**42.75**	**267**	P	P	12 58 41.2	+0.1
	0.2nm,0.6s,baz=116,slow=8.0,SNR=3.0						
WRA	**Warramunga Arr**	**43.77**	**273**	P	P	12 58 48.9	-0.4
	0.7nm,1.0s,baz=111,slow=8.1,SNR=8.4						
JAY	**Jayapura**	**47.73**	**298**	LR	LR	13 18 20.4	
	comp=Z,34nm,20.2s,slow=35						
FINES	**FINESS Array B**	**145.31**	**340**	PKPbc	PKPbc	13 10 19.7	-0.8
	0.7nm,0.8s,baz=45,slow=2.2,SNR=3.7						

JMA 04 12:55:39.8±0.1**, 36.°04N**×**139.°93E, h44**km±1km**, M1.2, Eastern Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
JYT	**Yasato**	**0.28**	**49**	P	Pn	12 55 48.2	0.0
JYT				S	Sn	12 55 53.9	-0.3
JAG	**Ashikaga**	**0.54**	**315**	P	Pn	12 55 51.3	0.0
JAG				S	Sn	12 55 59.3	-0.2
JHU	**Hanno**	**0.56**	**251**	*e*S	Sn	12 55 59.5	-0.3
JRY	**Ryogami san**	**0.83**	**269**	P	Pn	12 55 55.1	-0.1
JRY				S	Sn	12 56 05.9	-0.5

IDC 04 12:56:30.0±1.1**, 36.°85N**×**142.°10E, h0**km**, mb3.3**/5**, mb1 3.4**/6**, mb1mx3.3**/44**, mbtmp3.2**/6**, ML2.6**/1**, Error ellipse: s-maj=30.3km s-min=24.0km az=77.0, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
MJAR	**Matsushiro Arr**	**3.14**	**266**	Pn	Pn	12 57 19.5	-1.2
	0.8nm,0.3s,baz=93,slow=9.8,SNR=6.5						
SONM	**Songino Array**	**28.34**	**304**	P	P	13 02 26.4	+0.8
	0.2nm,0.3s,baz=87,slow=7.8,SNR=2.2						
MKAR	**Makanchi Array**	**44.68**	**302**	P	P	13 04 44.1	-0.5
	0.2nm,0.5s,baz=92,slow=8.0,SNR=3.0						
WRA	**Warramunga Arr**	**56.96**	**189**	P	P	13 06 16.6	-0.5
	0.3nm,0.6s,baz=3.6,slow=7.2,SNR=4.1						
ASAR	**Alice Springs**	**60.68**	**189**	P	P	13 06 43.6	+0.5
	0.1nm,0.5s,baz=19,slow=11,SNR=7.7						
YKA	**Yellowknife Ar**	**63.69**	**30**	P	P	13 07 02.6	-0.2
	0.2nm,0.9s,baz=289,slow=5.3,SNR=4.3						

*IDC **04** 12:56:52.5±2.2, 37.°22N×141.°62E, h0km, mb3.4/4, mb1 3.6/6, mb1mx3.3/46, mbtmp3.5/6, ML3.5/2, Error ellipse: s-maj=54.6km s-min=25.7km az=67.0*
*ISCJB **04** 12:56:58.8±1.0, 37.°06N±0.°04×141.°3E±0.°1, h51km±6km, mb3.4/4, Error ellipse: s-maj=14.4km s-min=6.9km az=7.1*
*JMA **04** 12:57:00.6±0.1, 37.°11N×141.°13E, h50km±1km, M3.6*
JMA Felt II J1.
*NIED **04** 12:57:00, 37.°10N×141.°10E, h32km, Mw3.5 Best double couple: $M_0$1.99000×10^14 NP1:ϕ_s234.00000°, δ40.00000°, λ167.00000°. NP2:ϕ_s334.00000°, δ82.00000°, λ51.00000°.*
ISC 04 12:56:59.6±1.5**, 37.°07N**±0.°04×**141.°3E**±0.°1**, h42**km±11km**, n20,** σ**0.s74**/22**, mb3.4**/4**, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.38**	**275**	P	**Pn**	**12 57 09.4**	**+0.5**
ONAJ				S	**Sn**	**12 57 15.6**	**+0.1**
JFK	**Kawauchi**	**0.43**	**313**	P	**Pn**	**12 57 09.8**	**+0.2**
JFK				S	**Sn**	**12 57 16.2**	**-0.5**
JHO	**Hitachi**	**0.72**	**231**	P	**Pn**	**12 57 13.5**	**+0.1**
JHO				S	**Sn**	**12 57 22.6**	**-0.7**
JFT	**Otama**	**0.87**	**301**	P	**Pn**	**12 57 15.9**	**+0.5**
JFT				S	**Sn**	**12 57 26.4**	**-0.5**
JMM	**Marumori**	**0.88**	**335**	P	**Pn**	**12 57 15.5**	**0.0**
JMM				S	**Sn**	**12 57 26.3**	**-0.9**
JFY	**Yanaizu**	**1.29**	**286**	P	**Pn**	**12 57 21.2**	**0.0**
JOU	**Okura**	**1.38**	**340**	P	**Pn**	**12 57 23.3**	**+0.9**
JOU				S	**Sn**	**12 57 39.1**	**-0.4**
MJAR	**Matsushiro Arr**	**2.51**	**259**	Pn	**Pn**	**12 57 38.3**	**+0.4**
	4.4nm,0.3s,baz=80,slow=15,SNR=19						
MAT	**Matsushiro**	**2.51**	**259**	P	**Pn**	**12 57 38.7**	**+0.8**
MAT				*e*S	**Sn**	**12 58 07.8**	**+0.5**
JHJ	**Hachijo jima 2**	**4.12**	**198**	Pn	**Pn**	**12 58 01.2**	**+1.2**
	10nm,0.3s,baz=30,slow=11,SNR=3.7						
JHJ				Sn	**Sn**	**12 58 45.1**	**-1.9**
	13nm,0.3s,baz=66,slow=20,SNR=2.7						
H11N2	**WAKE ISLAND Hy**	**28.26**	**121**	T	T	13 32 42.7	
	baz=317						
H11N1	**WAKE ISLAND Hy**	**28.27**	**121**	T	T	13 32 42.1	
	baz=317						
H11N3	**WAKE ISLAND Hy**	**28.28**	**121**	T	T	13 32 42.1	
	baz=317						
H11S1	**WAKE ISLAND Hy**	**28.98**	**123**	T	T	13 33 33.6	
	baz=314						
H11S3	**WAKE ISLAND Hy**	**28.98**	**123**	T	T	13 33 35.9	
	baz=314						
H11S2	**WAKE ISLAND Hy**	**28.99**	**123**	T	T	13 33 35.9	
	baz=314						
ZALV	**Zalesovo Beam**	**41.81**	**312**	P	**P**	**13 04 44.7**	**-0.2**
	0.6nm,0.3s,baz=93,slow=7.1,SNR=2.8						
MKAR	**Makanchi Array**	**44.00**	**302**	P	**P**	**13 05 02.4**	**-0.4**
	0.3nm,0.6s,baz=87,slow=8.1,SNR=3.2						
WRA	**Warramunga Arr**	**57.08**	**188**	P	**P**	**13 06 41.4**	**-0.2**
	0.4nm,0.9s,baz=5.1,slow=7.3,SNR=5.9						
ASAR	**Alice Springs**	**60.81**	**188**	P	**P**	**13 07 08.0**	**+0.6**
	0.2nm,0.7s,baz=2.2,slow=4.7,SNR=3.5						

JMA 04 13:04:46.6±0.1**, 39.°78N**×**142.°11E, h26**km±2km**, M0.8, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
JTH	**Tanohata**	**0.25**	**310**	P	Pb	13 04 52.9	-0.1
JTH				S	Sb	13 04 57.3	0.0
MIYJ	**Miyakonagasawa**	**0.30**	**228**	P	Pb	13 04 53.6	-0.1
MIYJ				S	Sb	13 04 58.6	0.0
JKZ	**Kuzumaki**	**0.63**	**289**	P	Pb	13 04 58.7	-0.4
JKZ				S	Sb	13 05 07.0	-0.7

IDC 04 13:05:02.5±2.3**, 39.°17N**×**142.°99E, h0**km**, mb3.6**/4**, mb1 3.6**/5**, mb1mx3.3**/50**, mbtmp3.5**/5**, ML3.1**/1**, Error ellipse: s-maj=65.8km s-min=26.2km az=67.0, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
MJAR	**Matsushiro Arr**	**4.60**	**237**	Pn	Pn	13 06 13.2	-0.2
	1.0nm,0.3s,baz=34,slow=13,SNR=9.8						
H11N2	**WAKE ISLAND Hy**	**28.29**	**126**	T	T	13 41 25.0	
	baz=317,slow=75,SNR=28						
H11N1	**WAKE ISLAND Hy**	**28.30**	**126**	T	T	13 41 24.8	
	baz=317,slow=75,SNR=27						
H11N3	**WAKE ISLAND Hy**	**28.31**	**126**	T	T	13 41 28.0	
	baz=317,slow=75,SNR=23						
H11S1	**WAKE ISLAND Hy**	**29.09**	**128**	T	T	13 42 25.2	
	baz=318,slow=76,SNR=3.6						
H11S3	**WAKE ISLAND Hy**	**29.09**	**128**	T	T	13 42 29.6	
	baz=318,slow=76,SNR=4.4						
H11S2	**WAKE ISLAND Hy**	**29.11**	**128**	T	T	13 42 28.3	
	baz=318,slow=76,SNR=5.0						
ZALV	**Zalesovo Beam**	**41.43**	**311**	P	P	13 12 50.0	-0.6
	0.7nm,0.2s,baz=97,slow=7.4,SNR=4.1						
MKAR	**Makanchi Array**	**44.07**	**301**	P	P	13 13 12.6	+0.4
	0.4nm,0.7s,baz=79,slow=8.8,SNR=3.7						
WRA	**Warramunga Arr**	**59.35**	**189**	P	P	13 15 06.2	-0.3
	0.3nm,0.4s,baz=6.5,slow=7.2,SNR=11						
ASAR	**Alice Springs**	**63.08**	**189**	P	P	13 15 32.0	+0.3
	0.2nm,0.7s,baz=15,slow=9.8,SNR=4.8						

*NIED **04** 13:11:00, 39.°10N×143.°00E, h20km, Mw4.8 Best double couple: $M_0$2.02000×10^16 NP1:ϕ_s174.00000°, δ15.00000°, λ56.00000°. NP2:ϕ_s29.00000°, δ77.00000°, λ99.00000°.*
*JMA **04** 13:11:27.0±0.1, 39.°13N×142.°96E, h21km±2km, M4.8*
JMA Felt I J1.
*ISCJB **04** 13:11:28.3±0.8, 39.°21N±0.°03×142.°87E±0.°03, h31km±5km, mb4.8/129, MS4.5/53, Error ellipse: s-maj=5.1km s-min=3.2km az=143.1*
*MOS **04** 13:11:28.5±0.9, 39.°28N×142.°85E, h30km, mb5.1/42, MS4.2/8, Error ellipse: s-maj=7.6km s-min=4.6km az=101.5*
*BJI **04** 13:11:29.9, 39.°20N×142.°50E, h35km, mb4.9/67, mB5.0/46, Ms4.6/65, Ms7 4.5/63*
*NEIC **04** 13:11:31.2±0.3, 39.°24N×142.°75E, h40km±2km, mb4.9/48, Error ellipse: s-maj=5.4km s-min=3.4km az=144.0*
*IDC **04** 13:11:31.6±1.8, 39.°15N×142.°86E, h45km±16km, mb4.3/40, mb1 4.4/47, mb1mx4.3/58, mbtmp4.5/47, ML3.7/6, MS4.3/41, Ms1 4.3/41, ms1mx4.2/56, Error ellipse: s-maj=12.9km s-min=10.9km az=123.0*
ISC 04 13:11:29.3±0.6**, 39.°25N**±0.°04×**142.°81E**±0.°04**, h27**km±3km**, h27**km**:pP-P, n336,** σ**1.s35**/351**, mb4.8**/132**, MS4.5**/53**, 23C-17D, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
MIYJ	**Miyakonagasawa**	**0.83**	**293**	P	**Pn**	**13 11 45.1**	**-0.2**
MIYJ				*e*S	**Sn**	**13 11 58.1**	**+1.4**
OFUJ	**Ofunato**	**0.91**	**260**	P	**Pn**	**13 11 45.6**	**-0.6**
OFUJ				*e*S	**Sb**	**13 11 58.9**	**+0.8**
JTH	**Tanohata**	**1.00**	**313**	P	**Pb**	**13 11 48.1**	**0.0**
JOM	**Ohasama**	**1.20**	**281**	P	**Pn**	**13 11 50.8**	**+0.5**
JOM				S	**Sb**	**13 12 07.8**	**+1.3**
JMK	**Ichinoseki**	**1.27**	**257**	P	**Pn**	**13 11 51.2**	**-0.1**
JMK				*e*S	**Sb**	**13 12 08.4**	**-0.2**
JIO	**Ouri**	**1.39**	**236**	P	**Pn**	**13 11 51.8**	**-1.1**
JIO				*e*S	**Sn**	**13 12 10.5**	**+0.1**
JANG	**Nango**	**1.50**	**319**	P	**Pn**	**13 11 55.4**	**+0.9**
JANG				*e*S	**Sb**	**13 12 16.2**	**+1.0**
JRG	**Rokugo**	**1.70**	**276**	P	**Pn**	**13 11 58.4**	**+1.3**
JOU	**Okura**	**1.90**	**243**	P	**Pn**	**13 12 00.0**	**+0.1**
JOU				*e*S	**Sn**	**13 12 24.3**	**+1.4**
JAH	**Hinai**	**1.92**	**300**	P	**Pn**	**13 12 02.1**	**+1.9**
JYK	**Kaneyama**	**1.94**	**261**	P	**Pn**	**13 12 01.4**	**+1.0**
JMM	**Marumori**	**2.10**	**230**	P	**Pn**	**13 12 02.3**	**-0.4**
ERM	**Erimo**	**2.77**	**5**	*d i*P	**Pn**	**13 12 12.0**	**+0.1**
ERM				pmax	pmax		
	comp=Z,92nm,1.0s						
ERM	**Erimo**	**2.77**	**5**	*e*Pn	**Pn**	**13 12 12.4**	**+0.5**
MJAR	**Matsushiro Arr**	**4.54**	**235**	P	**Pn**	**13 12 37.8**	**+1.6**
	comp=Z,10nm,0.3s,baz=43,slow=12,SNR=168						
MJAR				LR	LR	13 14 29.9	
	comp=Z,3μm,20.2s,baz=60,slow=40						
MAJO	**Matsushiro**	**4.54**	**235**	*c i*P	**Pn**	**13 12 38.2**	**+2.0**
MAJO	**Matsushiro**	**4.54**	**235**	*e*Pn	**Pn**	**13 12 38.1**	**+1.9**
MAT	**Matsushiro**	**4.54**	**235**	P	**Pn**	**13 12 37.8**	**+1.6**
MAT				*e*S	**Sb**	**13 13 37.8**	**-4.6**
YUK	**Yuzh-Kuril'sk**	**5.30**	**25**	*d i*P	**Pn**	**13 12 45.3**	**-1.3**
YUK				*e*S	**Sn**	**13 13 42.1**	**-4.6**
YUK				pmax	pmax		
	comp=Z,351nm,0.6s						
YUK				pmax	pmax		
	comp=N,334nm,0.5s						
YUK				pmax	pmax		
	comp=E,70nm,0.2s						
YUK				MLR	MLR		
	comp=Z,1μm,13.0s						
SHO	**Shikotan**	**5.51**	**32**	*c i*P	**Pn**	**13 12 47.3**	**-2.2**
SHO				*e*S	Sn	13 13 45.2	-6.8
SHO				pmax	pmax		
	comp=Z,123nm,0.5s						
SHO				pmax	pmax		
	comp=N,31nm,0.3s						
SHO				pmax	pmax		
	comp=E,56nm,0.3s						
INU	**Inuyama**	**6.04**	**232**	*e*Pn	**Pn**	**13 12 58.0**	**+1.2**
JHJ2	**Mitsune**	**6.59**	**202**	*e*Pn	**Pn**	**13 13 04.7**	**+0.4**
JHJ	**Hachijo jima 2**	**6.59**	**203**	P	**Pn**	**13 13 04.5**	**+0.2**
	comp=E,24nm,0.3s,baz=35,slow=22,SNR=5.8						
JHJ				S	Sn	13 14 10.7	-7.9
	comp=E,31nm,0.3s,baz=41,slow=16,SNR=3.0						
JHJ				LR	LR	13 15 59.0	
	comp=E,1μm,20.1s,baz=74,slow=41						
KUR	**Kuril'sk**	**7.05**	**30**	*c i*P	**Pn**	**13 13 11.0**	**+0.3**
KUR				*e*S	**Sn**	**13 14 25.3**	**-4.7**
KUR				pmax	pmax		
	comp=N,30nm,0.4s						
KUR				pmax	pmax		
	comp=E,33nm,0.4s						
KUR				pmax	pmax		
	comp=Z,69nm,0.4s						
YSS	**Yuzh-Sakhalins**	**7.70**	**360**	⇓*e*P	**Pn**	**13 13 20.7**	**+1.1**
YSS				*e*S	**Sn**	**13 14 46.5**	**+0.7**
YSS				pmax	pmax		
	comp=Z,20nm,0.9s						
YSS				MLR	MLR		
	comp=Z,700nm,17.0s						
YSS	**Yuzh-Sakhalins**	**7.70**	**360**	*e*Pn	**Pn**	**13 13 18.5**	**-1.1**
USRK	**Ussuriysk Ar.**	**9.48**	**305**	P	Pn	13 13 47.6	+3.6
	comp=Z,1.2nm,0.3s,baz=115,slow=14,SNR=65						
USRK				LR	LR	13 17 18.6	
	comp=Z,4μm,19.1s,baz=107,slow=36						
HABR	**Khabarovsk**	**10.78**	**331**	*e*P	Pn	13 13 58.2	-3.6
HABR				*e*S	Sn	13 15 54.9	-6.5
HABR				pmax	pmax		
	comp=E,25nm,1.4s						
HABR				pmax	pmax		
	comp=N,11nm,1.4s						
HABR				pmax	pmax		
	comp=Z,17nm,1.4s						
HABR				MLR	MLR		
	comp=Z,1μm,12.0s						
MDJ	**Mudanjiang**	**11.21**	**303**	P	**Pn**	**13 14 08.1**	**+0.5**
MDJ				S	**Sn**	**13 16 10.8**	**-1.2**
MDJ				PcP	**PcP**	**13 20 03.2**	**+1.0**
MDJ				ScP	**ScP**	**13 23 33.3**	**+0.4**
MDJ				PcS	**PcS**	**13 23 37.8**	**+1.9**
MDJ				ScS	**ScS**	**13 27 08.2**	**+0.1**
MDJ				pmax	pmax		
	comp=Z,11nm,1.5s						
MDJ				pmax	pmax		
	comp=Z,260nm,5.5s						
MDJ				LR	LR		
	comp=Z,870nm,17.8s						
MDJ				LR	LR		
	comp=Z,2μm,17.5s						
MDJ				LR	LR		
	comp=Z,3μm,18.7s						
MDJ	**Mudanjiang**	**11.21**	**303**	*e*Pn	Pn	13 14 03.8	-3.8
JNU	**Nakatsue**	**11.41**	**241**	P	**Pn**	**13 14 11.3**	**+0.7**
	comp=Z,0.4nm,0.3s,baz=78,slow=20,SNR=4.6						
JNU				LR	LR	13 18 58.6	
	comp=Z,3μm,19.1s,baz=56,slow=39						
TYV	**Tymovskoe**	**11.61**	**360**	*e*P	**Pn**	**13 14 13.8**	**+0.7**
TYV				pmax	pmax		
	comp=Z,13nm,0.8s						
TYV				MLR	MLR		
	comp=N,2μm,18.0s						
TYV				MLR	MLR		
	comp=Z,2μm,15.0s						
KSRS	**Korea Array**	**11.83**	**266**	P	**Pn**	**13 14 19.1**	**+3.0**
	comp=Z,0.4nm,0.3s,baz=83,slow=13,SNR=17						
KSRS				LR	LR	13 18 36.1	
	comp=Z,2μm,18.6s,baz=83,slow=36						
KS01	**Wonju Array Si**	**11.85**	**266**	*e*Pn	**Pn**	**13 14 16.3**	**-0.1**
KS15	**Wonju Array Si**	**11.86**	**266**	*e*Pn	**Pn**	**13 14 17.4**	**+0.8**
KSAR	**Wonju Array Be**	**11.86**	**266**	P	**Pn**	**13 14 19.1**	**+2.5**
KSAR	**Wonju Array Be**	**11.86**	**266**	P	**Pn**	**13 14 19.1**	**+2.5**
CBIJ	**Chichi jima**	**12.13**	**183**	*e*Pn	Pn	13 14 15.9	-4.4
KLR	**Kul'dur**	**12.73**	**325**	P	**Pn**	**13 14 30.1**	**+1.7**
	comp=Z,0.2nm,0.3s,baz=137,slow=13,SNR=21						
KLR				LR	LR	13 19 34.6	
	comp=Z,2μm,18.5s,baz=137,slow=38						
CN2	**Changchun**	**13.78**	**295**	*e*P	**P**	**13 14 49.0**	**-1.9**
CN2				*e*S	**Sn**	**13 17 14.5**	**-0.2**
CN2				pmax	pmax		
	comp=Z,10.0nm,0.9s						
CN2				pmax	pmax		
	comp=Z,200nm,3.0s						
CN2				LR	LR		
	comp=N,1μm,16.0s						
CN2				LR	LR		
	comp=E,1μm,16.0s						
CN2				LR	LR		
	comp=Z,2μm,16.0s						
NKL	**Nikolayevsk**	**13.98**	**355**	*e*P	**Pn**	**13 14 46.0**	**+0.6**
NKL				pmax	pmax		
	comp=N,22nm,1.0s						
NKL				pmax	pmax		
	comp=Z,38nm,1.0s						
NKL				MLR	MLR		
	comp=N,1μm,17.0s						
NKL				MLR	MLR		
	comp=E,800nm,17.0s						
NKL				MLR	MLR		
	comp=Z,1μm,17.0s						
NKL				MLR	MLR		
	comp=Z,400nm,16.0s						
PETK	**Petropavlovsk-**	**17.22**	**32**	P	**P**	**13 15 29.7**	**+0.6**
	comp=Z,0.1nm,0.3s,baz=239,slow=17,SNR=3.9						
PETK				LR	LR	13 22 41.1	
	comp=Z,222nm,18.3s,baz=218,slow=39						
HIA	**Hailar**	**19.25**	**309**	*e*P	**P**	**13 15 50.0**	**-1.5**

HIA pmax pmax
comp=Z,46nm,1.0s
HIA Hailar 19.25 309 *e*P **P 13 15 50.0 -1.5**
comp=Z,46nm,1.0s
BJI Beijing 20.51 281 P **P 13 16 03.4 -1.8**
BJI S **S 13 19 52.0 -1.2**
BJI pmax pmax
comp=Z,24nm,1.4s
BJI pmax pmax
comp=Z,180nm,3.5s
BJI LR LR
comp=Z,440nm,12.7s
BJI LR LR
comp=Z,1μm,16.2s
BJI LR LR
comp=Z,740nm,22.5s
BJT Baijiatuau 20.51 281 *e*P **P 13 16 03.3 -2.0**
BJT pmax pmax
comp=Z,34nm,1.1s
BJT Baijiatuau 20.51 281 *e*P **P 13 16 03.3 -2.0**
comp=Z,34nm,1.1s
TIA Tai'an 20.52 270 ⇓P **P 13 16 03.7 -1.7**
TIA pmax pmax
comp=Z,30nm,1.4s
TIA LR LR
comp=Z,360nm,12.0s
TIA LR LR
comp=Z,1μm,17.0s
TIA LR LR
comp=Z,1μm,15.0s
NJ2 Nanjing 20.72 257 *e*P **P 13 16 07.8 +0.3**
NJ2 pmax pmax
comp=Z,8.0nm,0.6s
MA2 Magadan 20.96 11 P **P 13 16 11.0 +1.0**
comp=Z,62nm,0.8s,baz=221,slow=8.9,SNR=168
MA2 LR LR 13 24 56.0
comp=Z,421nm,19.3s,baz=222,slow=38
MA2 Magadan 20.96 11 *e*P **P 13 16 10.6 +0.6**
MA2 pmax pmax
comp=Z,217nm,0.8s
MA2 Magadan 20.96 11 *e*P **P 13 16 10.6 +0.6**
comp=Z,217nm,0.8s
CLNS Chul'man 21.17 332 *e*P **P 13 16 12.8 +0.5**
CLNS pmax pmax
comp=E,13nm,1.1s
CLNS pmax pmax
comp=Z,34nm,1.0s
CLNS pmax pmax
comp=N,36nm,1.0s
HHC Hu-ho-hao-te 23.91 284 *e*P **P 13 16 38.9 -2.1**
HHC S **S 13 20 54.6 -1.1**
HHC pmax pmax
comp=N,20nm,0.8s
HHC pmax pmax
comp=N,150nm,4.3s
HHC LR LR
comp=N,290nm,12.2s
HHC LR LR
comp=N,1μm,15.9s
HHC LR LR
comp=N,2μm,16.5s
CIT Chita 23.93 312 *e*P **P 13 16 42.4 +1.5**
CIT *e* 13 16 52.5
CIT *e* 13 17 12.8
CIT pmax pmax
comp=Z,245nm,1.3s
YAK Yakutsk 24.18 345 P **P 13 16 42.8 -0.3**
comp=Z,2.1nm,0.3s,baz=334,slow=21,SNR=14
YAK LR LR 13 27 29.3
comp=Z,460nm,18.8s,baz=152,slow=39
YAK Yakutsk 24.18 345 *e*P **P 13 16 42.1 -1.0**
YAK *e**PP **pP 13 16 47.9 -3.2**
YAK *e*PPP PPP 13 17 17.4
YAK *e* 13 20 27.8
YAK *e*S **S 13 20 54.1 -5.3**
YAK *e*SSS SSS 13 21 44.4
YAK pmax pmax
comp=Z,57nm,0.8s
YAK pmax pmax
comp=N,30nm,1.0s
YAK pmax pmax
comp=E,12nm,1.0s
YAK pmax pmax
comp=Z,60nm,1.0s
YAK pmax pmax
comp=N,34nm,1.3s
YAK pmax pmax
comp=E,36nm,1.0s
YAK smax smax
comp=N,178nm,3.9s
YAK smax smax
comp=E,144nm,3.6s
YAK MLR MLR
comp=Z,864nm,15.0s
YAK MLR MLR
comp=N,646nm,16.0s
YAK MLR MLR
comp=E,291nm,17.0s
YAK Yakutsk 24.18 345 *e*P **P 13 16 41.5 -1.6**
comp=E,98nm,0.9s
SEY Seymchan 24.41 11 P **P 13 16 46.0 +0.9**
comp=E,25nm,0.8s,baz=192,slow=8.1,SNR=121
SEY Seymchan 24.41 11⇑ *e*P **P 13 16 47.0 +1.9**
WHN Wuhan 24.83 258 P **P 13 16 49.3 0.0**
WHN pmax pmax
comp=E,72nm,0.6s
WHN LR LR
comp=E,2μm,12.6s
WHN LR LR
comp=E,3μm,13.4s
WHN LR LR
comp=E,3μm,13.8s
QZH Quanzhou 24.89 242 *e*P **P 13 16 47.3 -2.5**
QZH S S 13 21 01.2 -10
QZH LR LR
comp=E,2μm,10.0s
QZH LR LR
comp=E,2μm,12.5s
QZH LR LR
comp=E,2μm,13.0s
GUMO Guam 25.62 175 LR LR 13 25 42.7
comp=E,317nm,21.7s,baz=16,slow=33
BOD Bodaibo 26.31 324⇓ *i*P **P 13 17 02.4 0.0**
BOD pmax pmax
comp=Z,36nm,1.1s
ULN Ulaanbaatar 27.11 300 *e*P **P 13 17 10.0 +0.1**
ULN pmax pmax
comp=Z,12nm,0.9s
ULN Ulaanbaatar 27.11 300 *e*P **P 13 17 10.0 +0.1**
comp=Z,12nm,0.9s
SONA1 Songino Array 27.54 300 *e*P **P 13 17 13.5 -0.3**
SONM Songino Array 27.55 300 P **P 13 17 15.0 +1.2**
comp=Z,8.3nm,0.8s,baz=93,slow=9.1,SNR=45
SONM LR LR 13 28 41.2
comp=Z,1μm,19.2s,baz=100,slow=37
XAN Xi'an 27.58 270 P **P 13 17 14.2 0.0**
XAN pmax pmax
comp=Z,13nm,1.2s
XAN pmax pmax
comp=Z,120nm,7.1s
XAN LR LR
comp=Z,530nm,18.9s
XAN LR LR
comp=Z,660nm,18.9s
XAN LR LR
comp=Z,580nm,18.9s
H11N2 WAKE ISLAND Hy 28.45 126 T T 13 47 13.0
baz=325
H11N1 WAKE ISLAND Hy 28.46 126 T T 13 47 08.7
baz=325,slow=74
H11N3 WAKE ISLAND Hy 28.47 126 T T 13 47 08.8
baz=325,slow=74
ENH Enshi 28.68 262 *e*P **P 13 17 22.5 -1.5**
comp=Z,40nm,0.9s
H11S1 WAKE ISLAND Hy 29.25 128 T T 13 48 04.2
baz=318,slow=76,SNR=22
H11S3 WAKE ISLAND Hy 29.25 128 T T 13 48 04.2
baz=318,slow=76,SNR=33
H11S2 WAKE ISLAND Hy 29.26 128 T T 13 48 04.2
baz=318,slow=76,SNR=26
IRK Irkutsk 29.50 309 *e*P **P 13 17 30.2 -0.8**
IRK pmax pmax
comp=Z,48nm,1.6s
TLY Talaya 29.78 308 P **P 13 17 34.8 +1.2**
comp=Z,4.4nm,0.6s,baz=117,slow=7.5,SNR=6.3
TLY LR LR 13 30 14.6
comp=Z,1μm,18.3s,baz=102,slow=38
TLY Talaya 29.78 308 *e*P **P 13 17 35.1 +1.6**
TLY pmax pmax
comp=Z,26nm,1.1s
TLY MLR MLR
comp=Z,1μm,18.0s
ZAK Zakamensk 29.83 305 *e*P **P 13 17 34.3 +0.2**
ZAK pmax pmax
comp=Z,27nm,1.3s
LZH Lanzhou 30.85 277 *e*P **P 13 17 44.6 +1.3**
LZH pP sP 13 17 55.8 +1.1
LZH sP pP 13 18 01.2 +10
LZH *e*S **S 13 22 41.4 -4.1**
LZH sS sS 13 22 57.0 -1.7
LZH SS **SnSn 13 24 25.0 -0.5**
LZH pmax pmax
comp=Z,54nm,1.1s
LZH pmax pmax
comp=Z,160nm,4.4s
LZH LR LR
comp=Z,1μm,15.0s
LZH LR LR
comp=Z,830nm,13.9s
LZH LR LR
comp=Z,1μm,15.2s
MOY Mondy 31.41 307 *e*P **P 13 17 49.2 +1.1**
MOY pmax pmax
comp=Z,36nm,2.5s
BILL Bilibino 31.59 17⇓ *e*P **P 13 17 50.0 +0.7**
BILL *e* 13 18 54.5
BILL *e*PPP PPP 13 19 06.2
BILL *e*S S 13 23 03.5 +7.4
BILL pmax pmax
comp=Z,7.0nm,1.1s
BILL MLR MLR
comp=Z,308nm,16.0s
BILL Bilibino 31.59 17 *e*P **P 13 17 49.5 +0.3**
comp=Z,7.4nm,0.9s
GYA Guiyang 32.72 258⇑ *i*P **P 13 17 59.2 -0.6**
GYA pP sP 13 18 11.0 -0.2
GYA PP **PnPn 13 19 09.8 +1.6**
GYA PcP **PcP 13 20 46.2 +1.2**
GYA S **S 13 23 12.2 -2.6**
GYA sS sS 13 23 31.0 +2.9
GYA ScP **ScP 13 24 26.6 -0.4**
GYA SS **SnSn 13 25 10.4 -0.8**
GYA ScS **ScS 13 28 24.8 -2.2**
GYA pmax pmax
comp=Z,60nm,0.8s
GYA pmax pmax
comp=Z,120nm,6.2s
GYA LR LR
comp=Z,560nm,17.8s
GYA LR LR
comp=Z,520nm,18.0s
GYA LR LR
comp=Z,530nm,17.9s
CD2 Chengdu 32.82 267 P **P 13 18 00.1 -0.5**
CD2 sP sP 13 18 15.9 +4.0
CD2 PP **PP 13 19 14.4 -0.5**
CD2 PcP **PcP 13 20 45.0 -0.1**
CD2 S **S 13 23 14.3 -1.9**
CD2 sS sS 13 23 33.0 +3.5
CD2 pmax pmax
comp=Z,30nm,1.0s
CD2 pmax pmax
comp=Z,80nm,4.3s
CD2 LR LR
comp=Z,820nm,15.6s
CD2 LR LR
comp=Z,1μm,14.4s
GTA Gaotai 33.03 284 P **P 13 18 03.0 +0.6**
GTA pP sP 13 18 12.9 -0.8
GTA sP pP 13 18 16.9 +6.5
GTA PcP **PcP 13 20 46.6 +1.0**
GTA S **S 13 23 19.3 -0.1**
GTA sS sS 13 23 35.1 +2.4
GTA PcS **PcS 13 24 31.8 +0.6**
GTA SS **SnSn 13 25 20.2 +1.9**
GTA pmax pmax
comp=Z,27nm,1.1s
GTA pmax pmax
comp=Z,120nm,4.1s
GTA LR LR
comp=Z,560nm,17.6s
GTA LR LR
comp=Z,2μm,18.1s
GTA LR LR
comp=Z,2μm,18.5s
TIXI Tiksi 33.24 352⇓ *e*P **P 13 18 03.9 +0.3**
TIXI pmax pmax
comp=Z,6.0nm,1.0s
TIXI Tiksi 33.24 352 *e*P **P 13 18 03.2 -0.5**
comp=Z,7.5nm,1.1s
QIZ Qiongzhong 34.87 244 P **P 13 18 18.8 +0.5**
QIZ S **S 13 23 48.7 +0.9**
QIZ LR LR
comp=Z,450nm,17.5s
QIZ LR LR
comp=Z,490nm,15.5s
QIZ LR LR
comp=Z,920nm,15.5s
KMI Kunming 36.42 259 P **P 13 18 32.0 +0.1**
KMI pP sP 13 18 43.3 0.0
KMI sP pP 13 18 48.0 +8.0
KMI PP **PP 13 19 56.3 +1.4**
KMI S **S 13 24 08.8 -3.3**
KMI sS sS 13 24 28.8 +3.4
KMI SS **SnSn 13 26 34.8 -6.2**
KMI pmax pmax
comp=Z,68nm,1.1s
KMI pmax pmax
comp=Z,160nm,5.2s
KMI LR LR
comp=Z,560nm,16.2s
KMI LR LR
comp=Z,690nm,16.0s
KMI LR LR
comp=Z,800nm,17.8s
KRAR Krasnoyarsk 36.67 314⇑ *i*P **P 13 18 33.3 -0.1**
KRAR pmax pmax
comp=Z,37nm,1.0s
NONG Nongkai 40.29 250 P **P 13 19 04.7 +0.5**
comp=Z,30nm,1.4s
WMQ Urumqi 40.87 295 P **P 13 19 10.0 +1.1**
WMQ pP sP 13 19 21.0 +0.7
WMQ S **S 13 25 17.5 -1.0**
WMQ pmax pmax
comp=Z,22nm,1.0s
WMQ pmax pmax
comp=Z,110nm,4.3s
WMQ LR LR
comp=Z,96nm,15.8s
WMQ LR LR
comp=Z,130nm,19.0s
WMQ LR LR
comp=Z,130nm,17.4s
CRAI Chiangrai 41.00 255 P **P 13 19 10.2 +0.1**
comp=Z,21nm,0.7s,comp=Z,1μm
ZAA0 Zalesovo Array 41.28 311 *e*P **P 13 19 11.8 -0.2**
ZALV Zalesovo Beam 41.28 311 P **P 13 19 12.0 0.0**
comp=Z,10nm,0.7s,baz=86,slow=6.5,SNR=42
ZALV PcP **PcP 13 21 10.8 +0.5**
comp=Z,5.7nm,0.8s,baz=94,slow=4.5,SNR=4.0
ZALV LR LR 13 37 08.1
comp=Z,1μm,18.7s,baz=69,slow=37
NRIK Noril'sk 41.74 334 P **P 13 19 16.0 +0.5**
comp=Z,4.2nm,0.7s,baz=112,slow=7.1,SNR=7.2
NRIK LR LR 13 37 46.8
comp=Z,1μm,19.6s,baz=112,slow=38
LOEI Loei 42.02 251 P **P 13 19 16.0 -2.5**
comp=Z,162nm,1.2s
NVS Novosibirsk 42.14 312 *i*P **P 13 19 19.3 +0.3**
PHRA Phrae 42.16 253 P **P 13 19 20.2 +0.6**
comp=Z,175nm,0.9s
CMAI Chiengmai2 42.17 256 P **P 13 19 20.7 +0.8**
comp=Z,16nm,0.8s,comp=Z,1μm
UTTA Uttaradit 42.39 252 P **P 13 19 22.7 +1.2**
comp=Z,4.8nm,1.1s,comp=Z,76nm
CHAI Chaiyaphum 42.53 249 P **P 13 19 22.6 0.0**
comp=Z,7.2nm,1.1s,comp=Z,81nm
LAMP Lampang 42.59 254 P **P 13 19 24.4 +1.3**
comp=Z,8.0nm,0.9s
PBKT Sadao Pong 42.83 250 P **P 13 19 25.4 +0.3**
comp=Z,17nm,1.2s
CMMT Chiang Mai 42.92 255 P **P 13 19 26.1 +0.3**
comp=Z,17nm,1.1s
CHTO Chiang Mai 42.93 255 P **P 13 19 26.1 +0.2**
comp=Z,76nm,1.1s
CHTO Chiang Mai 42.93 255 *e*P **P 13 19 25.3 -0.6**
CHTO pmax pmax
comp=Z,16nm,1.0s
CHTO Chiang Mai 42.93 255 *e*P **P 13 19 25.3 -0.6**
comp=Z,16nm,1.0s
LSA Lhasa 43.14 274 *e*P **P 13 19 28.6 +0.5**
LSA pmax pmax
comp=Z,19nm,1.2s
LSA Lhasa 43.14 274 *e*P **P 13 19 28.6 +0.5**
comp=Z,19nm,1.2s
CMAR Chiang Mai Arr 43.14 254 P **P 13 19 27.9 +0.3**
comp=Z,3.4nm,0.8s,baz=48,slow=6.5,SNR=22
CMAR LR LR 13 39 17.1
comp=Z,136nm,18.8s,baz=58,slow=39
CM01 Chiang Mai Arr 43.16 254 *e*P **P 13 19 27.6 -0.1**
MK01 Makanchi Array 43.91 300 *e*P **P 13 19 33.8 +0.2**
MK31 Makanchi Array 43.91 300 *e*P **P 13 19 33.8 +0.2**
MK31 Makanchi Array 43.91 300 *e*P **P 13 19 33.8 +0.2**
MKAR Makanchi Array 43.91 300 P **P 13 19 34.1 +0.5**
comp=Z,22nm,0.8s,baz=84,slow=8.6,SNR=166
MKAR LR LR 13 38 39.5
comp=Z,730nm,19.8s,baz=65,slow=37
MKAR Makanchi Array 43.91 300 *e*P **P 13 19 33.9 +0.3**
MHMT Maesarieng 44.07 255 P **P 13 19 36.2 +1.1**
comp=Z,13nm,1.3s
MAKZ Makanchi 44.12 301 *e*P **P 13 19 35.4 +0.2**
MAKZ pmax pmax
comp=Z,33nm,1.0s
MAKZ Makanchi 44.12 301 *e*P **P 13 19 35.4 +0.2**
comp=Z,33nm,1.0s
CHBT CHBT 44.41 245 P **P 13 19 38.5 +0.8**
comp=Z,29nm,1.1s
CAST Castle Rocks 44.78 35 *e*P **P 13 19 42.4 +2.1**
comp=Z,14nm,1.2s
KTH Kantishna Hill 45.30 35 *e*P **P 13 19 45.7 +1.3**
comp=Z,21nm,1.1s
MLY Manley 45.39 33 *e*P **P 13 19 46.6 +1.5**
comp=Z,8.5nm,1.1s
KURK Kurchatov 45.47 307 P **P 13 19 46.8 +1.0**
KURK pmax pmax
comp=Z,56nm,0.9s
KURK Kurchatov 45.47 307 *e*P **P 13 19 45.8 0.0**
comp=Z,63nm,0.9s
KURBB Kurchatov Arra 45.54 306 P **P 13 19 46.8 +0.4**
comp=Z,56nm,0.9s,baz=82,slow=8.2,SNR=209
SRDT SRDT 45.63 249 P **P 13 19 48.6 +1.1**
comp=Z,40nm,1.4s,comp=Z,16μm
COLD Coldfoot 45.68 30 *e*sP P 13 20 03.2 +16
MCK McKinley 46.18 35 *e*P P 13 20 03.5 +12
MCK McKinley 46.18 35 *e*pP pP 13 20 03.5 +3.9
MDM Murphy Dome 46.46 33 *e*P **P 13 19 54.9 +1.4**
comp=Z,14nm,1.0s
COLA College 46.62 33⇑ *e*P **P 13 19 55.9 +1.2**
COLA pmax pmax
comp=Z,3.0nm,1.0s
TAPN Taplejung 46.91 273 *e*P **P 13 19 58.2 +0.3**
comp=Z,58nm,1.3s
IL1 Eielson Array 47.04 33 *e*P **P 13 19 58.4 +0.5**
ILAR Eielson Array 47.04 33 P **P 13 19 58.5 +0.5**
comp=Z,3.6nm,0.8s,baz=266,slow=6.2,SNR=27
ILB Eielson Array 47.04 33 *e*P **P 13 19 58.9 +0.9**
ODAN Odare 47.40 272 *e*P **P 13 20 01.9 +0.3**
comp=Z,81nm,1.2s
KLU Klutina 47.74 38 *e*pP pP 13 20 16.1 +4.2
RAMN Ramite 47.97 273 *e*P **P 13 20 06.3 +0.2**
comp=Z,103nm,1.1s
GUN Gumba 48.06 274 *e*P **P 13 20 07.3 +0.4**
comp=Z,113nm,1.0s
PMG Port Moresby 48.58 174 LR LR 13 36 33.6
comp=Z,81nm,20.7s,baz=352,slow=31
KKN Kakani 48.58 275 *e*P **P 13 20 11.2 +0.5**
comp=Z,65nm,0.8s
MENT Mentasta 48.59 36 *e*P **P 13 20 11.2 +1.1**
comp=Z,28nm,1.4s
DMN Daman 48.80 275 *e*P **P 13 20 12.9 +0.4**
EGAK Eagle 49.48 33 *e*pP pP 13 20 28.7 +3.5
SURT Suratani 49.52 244 P **P 13 20 19.1 +1.4**
comp=Z,6.8nm,1.5s
TKM2 Tokmak 2 49.57 297 *e*P **P 13 20 19.0 +0.9**
TKM2 pmax pmax
comp=Z,62nm,1.0s
TKM2 Tokmak 2 49.57 297 *e*P **P 13 20 19.0 +0.9**
comp=Z,62nm,1.0s
TRTT Trang 49.69 243 P **P 13 20 21.1 +2.0**
comp=Z,22nm,0.9s
KRAB Krabi 49.76 243 P **P 13 20 20.5 +0.9**
comp=Z,24nm,0.8s,comp=Z,350nm
KOLN Koldanda 49.89 276 *e*P **P 13 20 21.1 +0.4**
comp=Z,80nm,1.1s
BVAR Borovoye Array 49.92 311 LR LR 13 42 26.1
comp=Z,422nm,19.5s,baz=72,slow=37
BRVK Borovoye 49.98 311 *e*P **P 13 20 21.3 +0.5**
BRVK pmax pmax
comp=Z,34nm,1.0s
BRVK Borovoye 49.98 311 *e*P **P 13 20 21.3 +0.5**
comp=Z,34nm,1.0s
PYUN Piuthan 50.20 276 *e*P **P 13 20 23.5 +0.4**
comp=Z,226nm,1.0s
AAK Ala-Archa 50.44 297 LR LR 13 42 53.2
comp=Z,430nm,19.0s,baz=66,slow=37
AAK Ala-Archa 50.44 297⇓ *e*P **P 13 20 23.6 -1.0**
AAK pmax pmax
comp=Z,26nm,1.1s
AAK Ala-Archa 50.44 297 *e*P **P 13 20 25.4 +0.8**
comp=Z,24nm,1.2s
KSH Kashi 50.54 293 *e*P P 13 20 30.3 +4.9
KSH *e*sP sP 13 20 48.1 +11
KSH *e*PP PP 13 22 27.8 +6.7
KSH S **S 13 27 42.7 +4.8**
KSH pmax pmax
comp=Z,150nm,2.9s
KSH LR LR
comp=Z,970nm,9.9s
KSH LR LR
comp=Z,1μm,13.1s
KSH LR LR
comp=Z,620nm,17.7s
PKDT Phuket 50.59 244 P **P 13 20 27.2 +1.3**
comp=Z,32nm,0.7s
EKS2 Erkin-Say 50.92 297 *e*P **P 13 20 28.7 +0.5**
EKS2 pmax pmax
comp=Z,19nm,0.9s
EKS2 Erkin-Say 50.92 297 *e*P **P 13 20 28.7 +0.5**
comp=Z,19nm,0.9s
HNR Honiara 50.99 158 LR LR 13 40 16.2
comp=Z,232nm,21.4s,baz=338,slow=34
IPM Ipoh 51.24 238 *e*P **P 13 20 30.2 -0.6**
comp=Z,22nm,1.3s
INK Inuvik 51.91 28 P **P 13 20 36.7 +1.7**
comp=Z,2.9nm,0.8s,baz=303,slow=7.6,SNR=11
INK Inuvik 51.91 28 *e*P **P 13 20 36.3 +1.2**
INK Inuvik 51.91 28 *e*P **P 13 20 36.3 +1.2**
KKAR Karatay Array 52.99 299 *e*P **P 13 20 43.7 +0.2**
KKAR Karatay Array 52.99 299 *e*P **P 13 20 43.6 +0.2**
SVE Sverdlovsk 54.23 318⇑ *e*P **P 13 20 54.0 +1.7**
SVE pmax pmax
comp=Z,48nm,0.9s
SVE MLR MLR
comp=Z,2μm,17.0s
ARU Arti 55.45 318 P **P 13 21 02.1 +1.0**
comp=Z,14nm,0.8s,baz=75,slow=4.6,SNR=27
ARU Arti 55.45 318*c i*P **P 13 21 01.6 +0.4**
ARU 13 22 01.0
ARU 13 23 02.4
ARU S **S 13 28 44.7 +0.7**
ARU SS **SS 13 32 22.1 -6.2**
ARU pmax pmax
comp=Z,48nm,1.2s
ARU MLR MLR
comp=Z,1μm,17.0s
ARU Arti 55.45 318 *e*P **P 13 21 01.5 +0.4**
comp=Z,62nm,0.9s
DLBC Dease Lake 56.21 39 P **P 13 21 06.7 0.0**
comp=Z,0.7nm,0.7s,baz=266,slow=5.4,SNR=3.0
ABKAR Akbulak array 57.37 309 *e*P **P 13 21 14.9 -0.1**
KBL Kabul 57.67 290 *e*P **P 13 21 16.7 -0.8**
KBL pmax pmax
comp=Z,44nm,1.2s
KBL Kabul 57.67 290 *e*P **P 13 21 16.7 -0.8**
comp=Z,44nm,1.2s
AKTO Aktyubinsk 58.03 311 P **P 13 21 20.1 +0.5**
comp=Z,7.1nm,0.8s,baz=72,slow=12,SNR=17
AKTO LR LR 13 47 42.5

comp=Z,480nm,18.7s,baz=65,slow=37
HYB Hyderabad 59.38 268 *i* P **P 13 21 30.0 +0.6**
HYB *e* 13 21 40.5
WRAB Tennant Creek 59.40 189‖ *e*P **P 13 21 27.7 -1.7**
WRAB pmax pmax
comp=Z,22nm,1.2s
WB2 Warramunga Arr 59.41 189 *e*P **P 13 21 27.9 -1.6**
comp=Z,18nm,1.1s
WRA Warramunga Arr 59.41 189 P **P 13 21 27.8 -1.6**
comp=Z,2.8nm,0.7s,baz=7.8,slow=6.9,SNR=24
RES Resolute Bay 60.18 15 P **P 13 21 34.4 +0.3**
comp=Z,6.9nm,0.9s,baz=314,slow=7.1,SNR=23
RES Resolute Bay 60.18 15 *e*P **P 13 21 34.4 +0.3**
RES pmax pmax
comp=Z,11nm,1.0s
RES Resolute Bay 60.18 15 *e*P **P 13 21 34.4 +0.3**
comp=Z,10nm,1.0s
YKA Yellowknife Ar 61.34 31 P **P 13 21 42.9 +0.7**
comp=Z,0.8nm,0.7s,baz=302,slow=6.6,SNR=18
YKB5 Yellowknife Ar 61.34 31 *e*P **P 13 21 41.5 -0.7**
ARCES ARCESS Array B 62.31 339 P **P 13 21 49.0 +0.4**
comp=Z,4.6nm,1.0s,baz=38,slow=6.1,SNR=3.9
ARCES LR LR 13 53 52.2
comp=Z,235nm,18.1s,baz=51,slow=41
ARCES ARCESS Array B 62.31 339 P **P 13 21 49.0 +0.4**
KLMR Klimovskoe 62.48 328 *e*P **P 13 21 46.8 -3.0**
KLMR *e**PP **pP** 13 21 56.0 -2.3
KLMR *e* 13 22 26.4
KLMR *e* 13 24 05.1
KLMR pmax pmax
comp=Z,20nm,1.2s
AS01 Alice Springs 63.13 189 *e*P **P 13 21 53.4 -1.1**
AS31 Alice Springs 63.14 189 *e*P **P 13 21 53.6 -1.0**
comp=Z,1.4nm,0.8s
ASAR Alice Springs 63.14 189 P **P 13 21 53.9 -0.8**
comp=Z,1.3nm,0.8s,baz=18,slow=7.7,SNR=13
ASAR LR LR 13 48 20.5
comp=Z,146nm,22.0s,baz=41,slow=35
DAG Danmarks Havn 63.66 355⇑ *i*P **P 13 21 57.7 +0.3**
comp=Z,11nm,1.0s
DAG Danmarks Havn 63.66 355⇑ *i*P **P 13 21 57.7 +0.3**
DAG pmax pmax
comp=Z,11nm,1.0s
GEYT Alibeck 63.74 299 P **P 13 21 59.3 +0.7**
comp=Z,11nm,1.0s,baz=46,slow=4.3,SNR=14
GEYT LR LR 13 54 23.5
comp=Z,128nm,18.9s,baz=70,slow=40
MOS Moscow 66.13 323 *e*P **P 13 22 11.6 -2.2**
VRH Novokhopyorsk 66.68 318 *e*P **P 13 22 16.7 -0.7**
VRH *e**SP **pP** 13 22 25.9 -0.1
VRH pmax pmax
comp=Z,10.0nm,0.7s
OBN Obninsk 66.98 323⇑ *e*P **P 13 22 19.5 +0.3**
OBN *i* 13 22 31.1
OBN *e*PPP PPP 13 26 27.0
OBN *i* S S 13 31 35.1 +24
OBN *i* SS **SS 13 35 23.4 -5.2**
OBN pmax pmax
comp=Z,36nm,2.5s
OBN MLR MLR
comp=Z,501nm,15.0s
LPSR Galich'ya Gora 67.31 320 *e*P **P 13 22 21.5 +0.1**
LPSR *e**SP **pP** 13 22 31.4 +1.4
LPSR pmax pmax
comp=Z,10.0nm,0.8s
FIA1 FINESS Array S 67.37 332 *e*P **P 13 22 20.8 -0.8**
FINES FINESS Array B 67.37 332 P **P 13 22 22.1 +0.5**
comp=Z,5.1nm,0.8s,baz=46,slow=8.2,SNR=10
FINES LR LR 13 54 14.5
comp=Z,610nm,19.3s,baz=36,slow=38
FINES FINESS Array B 67.37 332 *i*P **P 13 22 21.7 +0.1**
FINES pmax pmax
comp=Z,5.0nm,0.9s
VSR Storozhevoye 67.99 319 *e*P **P 13 22 25.4 -0.3**
VSR *e**SP **pP** 13 22 35.7 +1.4
VSR pmax pmax
comp=Z,10.0nm,0.7s
SUMG Summit 68.47 0 *i*P **P 13 22 29.8 +0.9**
comp=Z,18nm,0.9s
SUMG Summit 68.47 0 *i*P **P 13 22 29.8 +0.9**
SUMG pmax pmax
comp=Z,18nm,0.9s
SUMG Summit 68.47 0 *e*P **P 13 22 29.6 +0.8**
comp=Z,14nm,1.0s
MOD Modoc Plateau 69.52 52 *e*P **P 13 22 37.3 +1.6**
comp=Z,16nm,1.7s
SWMT Swartz Lake 69.93 45 *e*P **P 13 22 40.0 +2.0**
SCO Scoresbysund 70.02 355 *i*P **P 13 22 39.0 +1.0**
comp=Z,5.6nm,1.1s
SCO Scoresbysund 70.02 355 *e*P **P 13 22 39.0 +1.0**
SCO pmax pmax
comp=Z,6.0nm,1.1s
KVAR Kislovodsk Arr 70.28 311 P **P 13 22 41.4 +1.1**
comp=Z,30nm,1.1s,baz=81,slow=22,SNR=6.9
KVAR LR LR 13 56 20.3
comp=Z,280nm,19.2s,baz=40,slow=38
KIV Kislovodsk 70.29 311 *e*P **P 13 22 41.5 +1.3**
KIV pmax pmax
comp=Z,45nm,1.1s
KIV Kislovodsk 70.29 311 *e*P **P 13 22 40.8 +0.5**
comp=Z,78nm,1.1s
KBZ Khabaz 70.30 311 P **P 13 22 41.6 +1.5**
comp=Z,10nm,1.0s,baz=319,slow=1.0,SNR=8.6
KBZ LR LR 13 58 34.6
comp=Z,336nm,18.2s,baz=44,slow=40
NEY Neytrino 70.68 310⇑ *e*P **P 13 22 43.7 +0.9**
NEY pmax pmax
comp=Z,7.0nm,1.8s
STKA Stephens Creek 70.78 181 P **P 13 22 42.9 -0.1**
comp=Z,2.5nm,1.1s,baz=116,slow=23,SNR=2.3
FFC Flin Flon 71.25 34 *e*P **P 13 22 45.5 -0.3**
FFC pmax pmax
comp=Z,17nm,1.4s
FFC Flin Flon 71.25 34 *e*P **P 13 22 45.5 -0.3**
comp=Z,17nm,1.4s
GNI Garni 71.27 307 P **P 13 22 48.3 +1.9**
comp=Z,2.1nm,0.3s,baz=238,slow=20,SNR=2.1
GNI Garni 71.27 307⇑ *e*P **P 13 22 47.6 +1.3**
GNI pmax pmax
comp=Z,61nm,1.3s
AKH Akhalkalaki 71.30 308⇓ *i*P **P 13 22 46.5 0.0**
WSAR Wadi Sarin 71.36 285 LR LR 13 57 03.6
comp=Z,115nm,19.4s,baz=99,slow=38
CHVG Ch'k'valeri 71.37 310⇑ *i*P P 13 22 58.6 +12
NACGM Naroch 71.48 327 *e* **P 13 22 47.0 -0.1**
FCC Fort Churchill 71.53 27 *e*P **P 13 22 47.5 +0.2**
FCC pmax pmax
comp=Z,9.0nm,1.1s
FCC Fort Churchill 71.53 27 *e*P **P 13 22 47.5 +0.2**
comp=Z,9.1nm,1.1s
BANOM Banah 71.55 289 *i*P **P 13 22 48.6 +0.5**
SNR=7.2
HLID Hailey 72.06 48 *e*P **P 13 22 52.5 +1.4**
UOSS Minazif 72.18 288 *e*P **P 13 22 51.7 -0.2**
comp=Z,1.5nm,1.0s
HATD Hatta, Dubai 72.30 288 *i*P **P 13 22 53.0 +0.4**
SNR=6.2
ASHO Ashiyiah 72.44 288 *i*P **P 13 22 53.7 +0.2**
SNR=7.5
NC204 NORSAR Array S 72.51 338 *e*P **P 13 22 52.9 -0.4**
HFS Hagfors 72.52 336 P **P 13 22 53.9 +0.6**
comp=Z,6.5nm,0.8s,baz=64,slow=6.8,SNR=9.1
HFS LR LR 13 57 29.6
comp=Z,289nm,19.1s,baz=26,slow=38
NB2 NORSAR Subarra 72.57 338 P **P 13 22 53.9 +0.3**
comp=Z,13nm,1.0s,baz=38,slow=6.2
NOA NORSAR Array B 72.57 338 P **P 13 22 54.2 +0.6**
comp=Z,7.3nm,0.9s,baz=39,slow=6.0,SNR=16
NOA LR LR 14 00 02.9
comp=Z,216nm,18.3s,baz=20,slow=40
NBO02 NORSAR Array S 72.66 338 *e*P **P 13 22 52.9 -1.3**
NV01 Mina Array Sit 72.79 54 *e*P **P 13 22 55.3 -0.2**
NVAR Mina Array Bea 72.79 54 P **P 13 22 56.6 +1.0**
comp=Z,0.8nm,0.7s,baz=282,slow=5.6,SNR=6.9
AKASG Malin Array Be 73.22 323 P **P 13 22 58.0 +0.5**
comp=Z,2.2nm,0.5s,baz=42,slow=6.2,SNR=21
AKASG LR LR 13 58 33.1
comp=Z,222nm,19.2s,baz=30,slow=38
KIEV Kiev 73.23 323⇑ *e*P **P 13 22 57.6 0.0**
KIEV pmax pmax
comp=Z,9.0nm,1.0s
KIEV Kiev 73.23 323 *e*P **P 13 22 56.2 -1.5**
comp=Z,8.1nm,0.8s
AK11 Malin Array Si 73.26 323 *e*P **P 13 22 55.8 -2.0**
H17A Grant Village 73.73 46 *e*P **P 13 23 01.7 +0.7**
comp=Z,9.2nm,1.1s

BW06 Boulder Array 75.33 47 *e*P **P 13 23 10.9 +0.5**
PDAR Pinedale Array 75.33 47 P **P 13 23 10.5 +0.1**
comp=Z,0.6nm,0.5s,baz=277,slow=1.0,SNR=8.1
BORG Borgarnes 75.59 353 P **P 13 23 11.0 -0.1**
comp=Z,9.2nm,0.8s,baz=22,slow=14,SNR=2.6
P17A Butcher Ranch, 76.77 50 *e*P **P 13 23 19.9 +1.3**
comp=Z,11nm,1.3s
LCMT Little Creek M 76.82 53 *e*P **P 13 23 20.1 +1.3**
comp=Z,3.3nm,0.9s
KWP Kalwaria Pacla 76.97 325 *e*P **P 13 23 20.7 +1.5**
KWP Kalwaria Pacla 76.97 325 *e*P **P 13 23 20.8 +1.5**
ULM Lac du Bonnet 77.05 34 P **P 13 23 20.2 +0.5**
comp=Z,0.7nm,0.3s,baz=82,slow=7.1,SNR=2.5
SRU San Rafael Swe 77.13 50 *e*P **P 13 23 21.4 +0.8**
SRU pmax pmax
comp=Z,8.0nm,0.9s
SRU San Rafael Swe 77.13 50 *e*P **P 13 23 21.4 +0.8**
comp=Z,8.2nm,0.9s
BURAR Bucovina Array 77.25 322⇑ *i*P **P 13 23 21.8 +0.8**
BURAR Bucovina Array 77.25 322⇑ *i*P **P 13 23 21.8 +0.8**
CFR Carcaliu 77.51 319⇑ *i*P **P 13 23 23.5 +1.2**
CFR Carcaliu 77.51 319⇑ P **P 13 23 23.5 +1.2**
KOLS Kolonicke sedl 77.67 324 *e*P **P 13 23 24.0 +0.8**
KOLS Kolonicke sedl 77.67 324 *e*P **P 13 23 24.0 +0.8**
STHS Stebnicka Huta 77.78 325 *e*P **P 13 23 25.5 +1.7**
STHS Stebnicka Huta 77.78 325 *e*P **P 13 23 25.5 +1.7**
OJC Ojcow 77.81 327 *e*P **P 13 23 25.2 +1.3**
OJC Ojcow 77.81 327 *e*P **P 13 23 25.2 +1.3**
OJC Ojcow 77.81 327 *e*P **P 13 23 24.4 +0.5**
comp=Z,14nm,1.0s
BRTR Keskin Array B 78.20 312 P **P 13 23 27.0 +0.5**
comp=Z,2.5nm,0.9s,baz=69,slow=4.6,SNR=10
BRTR LR LR 14 03 18.0
comp=Z,185nm,18.5s,baz=46,slow=40
BRTR Keskin Array B 78.20 312 *i*P **P 13 23 27.3 +0.8**
BRTR pmax pmax
comp=Z,2.0nm,0.9s
ISR Istrita 78.36 320⇓ *i*P **P 13 23 28.9 +1.7**
ISR Istrita 78.36 320⇓ P **P 13 23 28.9 +1.7**
MLR Muntele Rosu 78.40 320 LR LR 14 01 30.1
comp=Z,123nm,18.6s,baz=46,slow=38
MSAB Monastry St. A 78.43 318⇓ *i*P **P 13 23 29.0 +1.6**
PV10 Paradox Valley 78.49 50 *e*P **P 13 23 29.6 +1.3**
N23A Red Feather La 78.60 46 *e*P **P 13 23 29.1 +0.3**
comp=Z,20nm,1.4s
BR231 Keskin MP Arra 78.62 312 *e*P **P 13 23 27.4 -1.4**
LANS Liptovska Anna 78.75 326 *e*P **P 13 23 29.9 +0.7**
LANS Liptovska Anna 78.75 326 *e*P **P 13 23 29.9 +0.7**
WUAZ Wupatki 78.94 53 *e*P **P 13 23 32.1 +1.5**
comp=Z,4.9nm,1.0s
MORC Moravsky Berou 79.10 327 *e*P **P 13 23 30.7 -0.4**
MORC pmax pmax
comp=Z,33nm,1.0s
MORC Moravsky Berou 79.10 327 *e*P **P 13 23 30.7 -0.4**
comp=Z,33nm,1.0s
ARR Arges 79.14 321⇓ *i*P **P 13 23 33.3 +1.9**
DPC Dobruska-Polom 79.16 328 *e*P **P 13 23 32.9 +1.4**
DPC Dobruska-Polom 79.16 328 *e*P **P 13 23 32.9 +1.4**
VYHS Vyhne 79.52 326 *e*P **P 13 23 34.6 +1.2**
VYHS Vyhne 79.52 326 *e*P **P 13 23 34.6 +1.2**
BRG Berggiesshubel 79.70 330 *e*P **P 13 23 35.3 +1.0**
comp=Z,11nm,1.2s
comp=N,343nm,16.4s
comp=E,257nm,22.8s
comp=Z,502nm,15.6s
BRG Berggiesshubel 79.70 330 *e*P **P 13 23 35.3 +1.0**
BRG pmax pmax
comp=Z,11nm,1.2s
BRG MLR MLR
comp=N,343nm,16.4s
BRG MLR MLR
comp=E,257nm,22.8s
BRG MLR MLR
comp=Z,502nm,15.6s
CLL Collm 79.72 331 *i*P **P 13 23 34.8 +0.4**
comp=Z,15nm,1.0s
CLL *i* 13 23 46.1
CLL *e* 13 23 52.0
CLL Collm 79.72 331 *i*P **P 13 23 34.8 +0.4**
CLL *i* 13 23 46.1
CLL pmax pmax
comp=Z,15nm,1.0s
CLL Collm 79.72 331 *e*P **P 13 23 33.4 -1.0**
comp=Z,17nm,1.0s
VRAC Vranov 79.85 328 LR LR 14 02 01.0
comp=Z,468nm,19.4s,baz=38,slow=38
VRAC Vranov 79.85 328⇓ *i*P **P 13 23 36.8 +1.6**
VRAC Vranov 79.85 328⇓ P **P 13 23 36.8 +1.6**
GZR Gura Zlata 80.02 322⇑ *i*P **P 13 23 36.8 +0.6**
GZR Gura Zlata 80.02 322⇑ P **P 13 23 36.8 +0.6**
PRU Pruhonice 80.16 329 *e*P **P 13 23 37.8 +1.0**
PRU Pruhonice 80.16 329 *e*P **P 13 23 37.8 +1.0**
MDVR Moldovita 80.98 322⇓ *i*P **P 13 23 42.1 +0.7**
KHC Kasperske Hory 81.22 329 *e*P **P 13 23 43.4 +0.8**
KHC *e*pP **sP 13 23 54.3 -0.2**
KHC Kasperske Hory 81.22 329 *e*P **P 13 23 43.4 +0.8**
KHC *e* 13 23 54.3
KHC Kasperske Hory 81.22 329 *e*P **P 13 23 42.5 0.0**
comp=Z,2.5nm,0.9s
CONA Conrad Observa 81.23 327 *i*PcP **P 13 23 44.4 +1.6**
comp=Z,7.2nm,1.1s
GERES GERESS Array B 81.40 329 P **P 13 23 44.0 +0.4**
comp=Z,0.9nm,0.5s,baz=23,slow=5.3,SNR=6.9
GERES LR LR 14 02 56.5
comp=Z,307nm,19.2s,baz=34,slow=38
GERES GERESS Array B 81.40 329 P **P 13 23 44.0 +0.4**
MMAI Mount Meron Ar 81.57 306 P **P 13 23 45.0 +0.2**
comp=Z,2.7nm,0.6s,baz=65,slow=6.8,SNR=5.3
VTS Vitosha 81.86 320 *e*P **P 13 23 45.9 -0.3**
VTS pmax pmax
comp=Z,8.0nm,0.9s
VTS Vitosha 81.86 320 *e*P **P 13 23 45.9 -0.3**
comp=Z,7.9nm,0.9s
ANMO Albuquerque 82.33 51⇑ *e*P P 13 23 52.2 +3.3
ANMO pmax pmax
comp=Z,1.0nm,1.1s
SOKA Soboth 82.56 327 *i*P **P 13 23 50.7 +1.0**
comp=Z,13nm,1.1s
SCHQ Schefferville 82.90 17 LR LR 14 05 25.1
comp=Z,101nm,18.5s,baz=17,slow=39
KBA Koelnbreinsper 82.95 328 *i*PcP **P 13 23 52.9 +1.0**
comp=Z,8.6nm,1.1s
MOTA Moosalm 83.64 329 *i*PcP **P 13 23 57.3 +1.9**
RETA Reutte 83.66 330 *i*PcP **P 13 23 56.4 +1.0**
comp=Z,13nm,1.0s
BFO Black Forest 83.90 331 *i*P **P 13 23 58.0 +1.5**
BFO Black Forest 83.90 331 *e*P **P 13 23 56.3 -0.3**
comp=Z,32nm,0.6s
PMOR Pomariorio Ree 84.08 115 *e*T T 14 56 34.1
comp=Z,6.1nm,0.2s
EIL Elat 84.08 304 P **P 13 23 57.5 -0.3**
comp=Z,5.3nm,0.8s,baz=96,slow=5.0,SNR=4.6
DAVA Damuels 84.17 330 *i*P **P 13 23 58.1 0.0**
comp=Z,22nm,1.1s
DAVOX Davos/Dischmat 84.59 330 LR LR 14 06 27.8
comp=Z,196nm,19.9s,baz=82,slow=39
PPT2 Papeete2 84.67 118 *e*LR LR 13 50 35.1
comp=Z,380nm,22.5s,baz=317
TUE Stuetta 85.05 330 *e*P **P 13 24 02.6 0.0**
comp=Z,12nm,1.3s
SENIN Lac Senin/Sane 85.93 331 *e*P **P 13 24 06.9 -0.1**
comp=Z,11nm,1.3s
IDI Anoyia 86.28 314 P **P 13 24 08.2 -0.5**
comp=Z,16nm,1.1s,baz=35,slow=16,SNR=2.4
IDI LR LR 14 07 31.3
comp=Z,83nm,18.4s,baz=74,slow=39
TXAR Lajitas Array 87.90 53 P **P 13 24 16.5 -0.3**
comp=Z,1.1nm,1.1s,baz=301,slow=2.5,SNR=4.2
TBI Tubuai 88.73 122 *e*LR LR 13 52 00.7
comp=Z,237nm,23.0s,baz=310
TBI Tubuai 88.73 122 *e*T T 15 02 21.5
comp=Z,12nm,0.3s
ATD Arta Tunnel 90.38 285 LR LR 14 09 23.7
comp=Z,116nm,19.5s,baz=72,slow=38
KEST Kesra 93.91 324 LR LR 14 11 18.0
comp=Z,201nm,18.5s,baz=304,slow=38
ESDC Sonseca Array 95.77 335 P **P 13 24 53.1 +0.1**
comp=Z,0.2nm,0.3s,baz=24,slow=3.9,SNR=4.5
ESDC LR LR 14 13 06.9
comp=Z,114nm,18.2s,baz=355,slow=38
RKT Rikitea 98.58 113 *e*LR LR 13 56 51.5
comp=Z,254nm,22.5s
TORD Torodi Ar. Bea 116.51 317 PKP **PKPdf 13 30 10.9 -0.2**
comp=Z,0.2nm,0.5s,baz=28,slow=2.2,SNR=3.4
NNA Nana 135.64 63 *i* PKIKP **PKPdf 13 30 50.3 +2.7**
VNA2 Neumayer--Watz 144.75 196 PKP **PKPab 13 31 01.2 -0.1**
baz=131,slow=1.6
VNA3 Neumayer Olymp 144.99 195 PKP PKPbc 13 31 01.5 -0.7

*IASPEI **04** 13:11:51.5±0.9, 41.69N±0.02×14.89E±0.02, h24km±5km, Error ellipse: s-maj=3.8km s-min=2.8km az=26.0, GT5 selection from ISC bulletin GT5 identified by Bond¨jr and McLaughlin (2009) selection criteria Bond¨jr and McLaughlin, A new ground truth data set for seismic studies, Seism. Res. Let., 80, 465-472, 2009*
*ISCJB **04** 13:11:51.7±0.2, 41.69N±0.02×14.87E±0.03, h24km±3km, Error ellipse: s-maj=4.0km s-min=2.9km az=42.0*
*CSEM **04** 13:11:51.9±0.1, 41.64N×14.85E, h20km, ML3.6/11, Error ellipse: s-maj=3.2km s-min=2.8km az=13.0*
*ROM **04** 13:11:51.0±0.1, 41.69N×14.90E, h26km±2km, MI3.4/26, Error ellipse: s-maj=2.3km s-min=1.3km az=37.0*

ISC 04 13:11:51.6±0.9, 41.67N±0.02×14.88E±0.02, h23km±5km, n84, σ1°913/112, Southern Italy

Code	Station Name	Δ°	AZ°	Phase	ID Op	ID ISC	Time h m s	Res ISC
CIGN	**Sant'Elia a Pi**	**0.03**	**138**	Pg	**Pb**	**Pb**	**13 11 54.9**	**-0.8**
CIGN				Sg	**Sb**	**Sb**	**13 11 57.8**	**-0.6**
	8µm,0.5s							
CIGN	**Sant'Elia a Pi**	**0.03**	**138**	Pg	**Pb**	**Pb**	**13 11 54.9**	**-0.8**
CIGN				Sg	**Sb**	**Sb**	**13 11 57.8**	**-0.6**
	8µm,0.5s							
BSSO	**Busso**	**0.25**	**240**	Pg	**Pb**	**Pb**	**13 11 58.2**	**+0.3**
BSSO				Sg	**Sb**	**Sb**	**13 12 03.3**	**+1.1**
	4µm,0.5s							
BSSO	**Busso**	**0.25**	**240**	Pg	**Pb**	**Pb**	**13 11 58.2**	**+0.3**
BSSO				Sg	**Sb**	**Sb**	**13 12 03.3**	**+1.1**
	4µm,0.5s							
TRIV	**Trivento**	**0.27**	**291**	Pg		**Pb**	**13 11 58.2**	**+0.1**
TRIV				Sg		**Sn**	**13 12 03.6**	**-1.9**
	2µm,0.6s							
TRIV	**Trivento**	**0.27**	**291**	Pg		**Pb**	**13 11 58.2**	**+0.1**
TRIV				Sg		**Sn**	**13 12 03.6**	**-1.9**
	2µm,0.6s							
FRES	**Fresagrandinar**	**0.34**	**332**	Pg		**Pb**	**13 11 58.8**	**-0.4**
FRES				Sg		**Sb**	**13 12 04.7**	**+0.4**
	4µm,0.5s							
FRES	**Fresagrandinar**	**0.34**	**332**	Pg		**Pb**	**13 11 58.8**	**-0.4**
FRES				Sg		**Sb**	**13 12 04.7**	**+0.4**
	4µm,0.5s							
MOCO	**Biccari - m.te**	**0.37**	**146**	Pg		**Pb**	**13 11 59.6**	**0.0**
MOCO				Sg		**Sn**	**13 12 06.3**	**-1.8**
	1µm,0.6s							
PTRJ	**Pietraroja**	**0.41**	**221**	Pg		**Pb**	**13 11 59.9**	**-0.4**
PTRJ				Sg		**Sb**	**13 12 06.9**	**+0.7**
	4µm,0.4s							
PTRJ	**Pietraroja**	**0.41**	**221**	Pg		**Pb**	**13 11 59.9**	**-0.4**
PTRJ				Sg		**Sb**	**13 12 06.9**	**+0.7**
	4µm,0.4s							
IPES	**Pescosannita**	**0.44**	**185**	Pg		**Pb**	**13 12 00.9**	**+0.1**
PSB1	**Pescosannita**	**0.45**	**187**	Pg		**Pb**	**13 12 00.9**	**-0.1**
PSB1				Sg		**Sb**	**13 12 08.3**	**+0.9**
	2µm,0.8s							
PSB1	**Pescosannita**	**0.45**	**187**	Pg		**Pb**	**13 12 00.9**	**-0.1**
PSB1				Sg		**Sb**	**13 12 08.3**	**+0.9**
	2µm,0.8s							
MIDA	**Miranda**	**0.47**	**266**	Pg		**Pb**	**13 12 01.1**	**-0.3**
MIDA				Sg		**Sb**	**13 12 08.8**	**+0.8**
	2µm,0.5s							
MIDA	**Miranda**	**0.47**	**266**	Pg		**Pb**	**13 12 01.1**	**-0.3**
MIDA				Sg		**Sb**	**13 12 08.8**	**+0.8**
	2µm,0.5s							
RNI2	**Rionero Sannit**	**0.55**	**273**	Pg		**Pb**	**13 12 02.4**	**-0.3**
RNI2				Sg		**Sn**	**13 12 11.7**	**-0.8**
	1µm,0.4s							
RNI2	**Rionero Sannit**	**0.55**	**273**	Pg		**Pb**	**13 12 02.4**	**-0.3**
RNI2				Sg		**Sn**	**13 12 11.7**	**-0.8**
	1µm,0.4s							
MRB1	**Monte Rocchett**	**0.55**	**173**	Pg		**Pb**	**13 12 02.7**	**0.0**
	3µm,0.4s							
MRB1	**Monte Rocchett**	**0.55**	**173**	Pg		**Pb**	**13 12 02.7**	**0.0**
	3µm,0.4s							
VAGA	**Valle Agricola**	**0.55**	**242**	Pg		**Pb**	**13 12 02.5**	**-0.2**
	3µm,0.5s							
VAGA	**Valle Agricola**	**0.55**	**242**	Pg		**Pb**	**13 12 02.5**	**-0.2**
	3µm,0.5s							
SGTA	**Sant Agata di**	**0.65**	**146**	Pg		**Pb**	**13 12 03.8**	**-0.5**
	1µm,0.5s							
SGTA	**Sant Agata di**	**0.65**	**146**	Pg		**Pb**	**13 12 03.8**	**-0.5**
	1µm,0.5s							
SGRT	**San Giovanni R**	**0.65**	**82**	Pg		**Pb**	**13 12 03.2**	**-1.2**
SGRT				Sg		**Sn**	**13 12 13.4**	**-1.7**
	1µm,0.5s							
SGRT	**San Giovanni R**	**0.65**	**82**	Pg		**Pb**	**13 12 03.2**	**-1.2**
SGRT				Sg		**Sn**	**13 12 13.4**	**-1.7**
	1µm,0.5s							
CERA	**Filignano**	**0.65**	**264**	Pg		**Pb**	**13 12 04.0**	**-0.4**
	5µm,0.8s							
CERA	**Filignano**	**0.65**	**264**	Pg		**Pb**	**13 12 04.0**	**-0.4**
	5µm,0.8s							
CAFR	**Castel Frentan**	**0.68**	**324**	Pg		**Pn**	**13 12 04.6**	**-1.3**
	5µm,0.4s							
CAFR	**Castel Frentan**	**0.68**	**324**	Pg		**Pn**	**13 12 04.6**	**-1.3**
	5µm,0.4s							
PAOL	**Paolisi**	**0.68**	**200**	Pg		**Pb**	**13 12 04.7**	**-0.2**
	2µm,0.4s							
PAOL	**Paolisi**	**0.68**	**200**	Pg		**Pb**	**13 12 04.7**	**-0.2**
	2µm,0.4s							
CAFE	**Carife**	**0.70**	**157**	Pg		**Pb**	**13 12 04.8**	**-0.4**
CAFE				Sg		**Sn**	**13 12 15.6**	**-0.6**
	2µm,0.4s							
CAFE	**Carife**	**0.70**	**157**	Pg		**Pb**	**13 12 04.8**	**-0.4**
CAFE				Sg		**Sn**	**13 12 15.6**	**-0.6**
	2µm,0.4s							
MSAG	**Monte S. Angel**	**0.77**	**87**	Pg		**Pb**	**13 12 05.8**	**-0.6**
	2µm,0.5s							
MSAG	**Monte S. Angel**	**0.77**	**87**	Pg		**Pb**	**13 12 05.8**	**-0.6**
	2µm,0.5s							
SNAL	**S. Angelo Dei**	**0.79**	**162**	Pg		**Pb**	**13 12 05.8**	**-0.9**
	2µm,0.6s							
SNAL	**S. Angelo Dei**	**0.79**	**162**	Pg		**Pb**	**13 12 05.8**	**-0.9**
	2µm,0.6s							
MS1	**Monte Sant'Ang**	**0.79**	**87**	*i* Pg		**Pn**	**13 12 06.5**	**-0.9**
MS1				Sg		**Sn**	**13 12 18.7**	**+0.1**
INTR	**Introdacqua**	**0.81**	**295**	Pg		**Pb**	**13 12 06.2**	**-0.8**
	1µm,0.5s							
INTR	**Introdacqua**	**0.81**	**295**	Pg		**Pb**	**13 12 06.2**	**-0.8**
	1µm,0.5s							
POFI	**Posta Fibreno**	**0.88**	**273**	Pg		**Pb**	**13 12 07.4**	**-0.8**
	543nm,0.5s							
POFI	**Posta Fibreno**	**0.88**	**273**	Pg		**Pb**	**13 12 07.4**	**-0.8**
	543nm,0.5s							
VULT	**Monte Vulture**	**0.91**	**142**	Pg		**Pn**	**13 12 08.0**	**-1.0**
	3µm,0.5s							
VULT	**Monte Vulture**	**0.91**	**142**	Pg		**Pn**	**13 12 08.0**	**-1.0**
	3µm,0.5s							
MCRV	**Calabrutti - M**	**0.92**	**166**	Pg		**Pn**	**13 12 07.9**	**-1.3**
	2µm,0.7s							
MCRV	**Calabrutti - M**	**0.92**	**166**	Pg		**Pn**	**13 12 07.9**	**-1.3**
	2µm,0.7s							
VVLD	**Villa Vallelon**	**0.96**	**282**	Pg		**Pn**	**13 12 08.6**	**-1.2**
	504nm,0.5s							
VVLD	**Villa Vallelon**	**0.96**	**282**	Pg		**Pn**	**13 12 08.6**	**-1.2**
	504nm,0.5s							
VCEL	**Villa Celiera**	**1.06**	**313**	Pg		**Pn**	**13 12 10.4**	**-0.7**
	822nm,0.4s							
VCEL	**Villa Celiera**	**1.06**	**313**	Pg		**Pn**	**13 12 10.4**	**-0.7**
	822nm,0.4s							
PALZ	**Palazzo San Ge**	**1.09**	**132**	Pg		**Pb**	**13 12 12.1**	**+0.3**
	2µm,0.7s							
PALZ	**Palazzo San Ge**	**1.09**	**132**	Pg		**Pb**	**13 12 12.1**	**+0.3**
	2µm,0.7s							
MRVN	**Minervino Murg**	**1.16**	**121**	Pg		**Pb**	**13 12 12.7**	**-0.3**
	289nm,0.4s							
MRVN	**Minervino Murg**	**1.16**	**121**	Pg		**Pb**	**13 12 12.7**	**-0.3**
	289nm,0.4s							
CDT	**Castel del Mon**	**1.20**	**119**	*i* Pg		**Pb**	**13 12 13.3**	**-0.4**
CDT				Sg		**Sb**	**13 12 30.5**	**+1.7**
SG1	**Sgolgore (BA)**	**1.59**	**121**	*i* Pg		**Pb**	**13 12 19.0**	**-1.3**
SG1				Sg		**Sb**	**13 12 42.5**	**+2.5**
BAI	**Bari**	**1.60**	**110**	*e*Pg		**Pb**	**13 12 19.2**	**-1.3**
BAI				Sg		**Sb**	**13 12 43.5**	**+3.1**
TAR1	**Taranto**	**2.15**	**121**	*e*Pn		**Pb**	**13 12 27.0**	**+1.1**
STON	**Ston**	**2.41**	**59**	*e*Pn		**Pb**	**13 12 32.1**	**-2.1**
STON						Sn	**13 13 00.8**	**-2.7**
STON	**Ston**	**2.41**	**59**	*e*Pn		**Pb**	**13 12 32.1**	**-2.1**
STON						Sn	**13 13 00.8**	**-2.7**
TREB	**Trebinje**	**2.78**	**67**	*e*Pn		**Pn**	**13 12 35.7**	**+1.0**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
HCY	**Herceg Novi**	**2.80**	**73**	*e*Pn	**Pn**	**13 12 34.8**	**-0.1**
NVLJ	**Novalja**	**2.89**	**360**	*e*Pn	**Pn**	**13 12 37.5**	**+1.3**
NVLJ				Sn	**Sn**	**13 13 11.2**	**+1.0**
NVLJ	**Novalja**	**2.89**	**360**	*e*Pn	**Pn**	**13 12 37.4**	**+1.3**
NVLJ				Sn	**Sn**	**13 13 11.1**	**+1.0**
UDBI	**Udbina**	**2.93**	**12**	*e*Pn	**Pn**	**13 12 38.2**	**+1.5**
UDBI				Sn	**Sn**	**13 13 12.9**	**+1.6**
UDBI	**Udbina**	**2.93**	**12**	*e*Pn	**Pn**	**13 12 38.2**	**+1.5**
UDBI				Sn	**Sn**	**13 13 12.8**	**+1.6**
BRY	**Bratogost**	**2.98**	**64**	*e*Pn	**Pn**	**13 12 39.4**	**+1.9**
DRME	**Dracevica, Mon**	**3.25**	**79**	*e*Pn	**Pn**	**13 12 42.7**	**+1.6**
PDG	**Podgorica**	**3.34**	**75**	*e*Pn	Pn	13 12 44.5	+2.1
BOJS	**Bojanci**	**3.84**	**4**	*i*	**Pn**	**13 12 50.9**	**+1.6**
BOJS				*i*		13 12 54.3	
BOJS				*i* Sn	**Sn**	**13 13 35.1**	**+1.5**
SKDS	**Skadanscina**	**3.92**	**351**	*i* Pn	**Pn**	**13 12 50.8**	**+0.4**
SKDS				*i* Sn	**Sn**	**13 13 35.9**	**+0.2**
SKDS	**Skadanscina**	**3.92**	**351**	Pn	**Pn**	**13 12 50.8**	**+0.4**
SKDS				*i* Sn	**Sn**	**13 13 35.9**	**+0.2**
BBLS	**Lazići**	**3.99**	**55**	*e*Pn	Pn	13 12 54.2	+2.9
IVAS	**Ivanjica**	**4.33**	**62**	*i* Pn	Pn	13 12 58.4	+2.4
DIVS	**Divibare**	**4.47**	**55**	*i* Pn	Pn	13 13 00.0	+2.0
TRUS	**Trudelj**	**4.79**	**56**	*i* Pn	**Pn**	**13 13 02.1**	**-0.2**
GRUS	**Gruza**	**4.83**	**61**	*i* Pn	**Pn**	**13 13 04.7**	**+1.9**
OBKA	**Obir**	**4.84**	**357**	*i* Pn	Pn	13 13 05.6	+2.5
	1.7nm,0.2s						
OBKA				*i* Sn	**Sn**	**13 14 00.1**	**+1.6**
	9.6nm,0.3s						
OBKA	**Obir**	**4.84**	**357**	Pn	Pn	13 13 05.6	+2.5
	1.7nm,0.2s						
OBKA				Sn	**Sn**	**13 14 00.1**	**+1.6**
	9.6nm,0.3s						
SELS	**Selova**	**4.87**	**69**	*i* Pn	**Pn**	**13 13 04.6**	**+1.2**
BARS	**Barje**	**5.27**	**75**	*i* Pn	**Pn**	**13 13 10.2**	**+1.3**
MOA	**Molln**	**6.19**	**356**	*i* Pn	Pn	13 13 23.9	+2.3
	0.7nm,0.1s						
MOA	**Molln**	**6.19**	**356**	Pn	Pn	13 13 23.9	+2.3
	0.7nm,0.1s						

*NIED **04** 13:17:00, 36°.80N×141°.10E, h11km, Mw3.7 Best double couple: M0 4.01000×10^14 NP1:φs177.00000°, δ45.00000°, λ-106.00000°. NP2:φs19.00000°, δ47.00000°, λ-75.00000°.*
*ISCJB **04** 13:17:43.8±1.0, 36°.74N±0°.04×141°.12E±0°.07, h24km±6km, mb3.8/16, Error ellipse: s-maj=10.0km s-min=5.3km az=22.1*
*JMA **04** 13:17:44.6, 36°.75N×141°.06E, h28km±1km, M3.9*
JMA Felt II J1.
*IDC **04** 13:17:48.5±2.0, 36°.74N×140°.97E, h47km±21km, mb3.6/16, mb1 3.8/18, mb1mx3.6/52, mbtmp3.8/18, ML3.6/2, Error ellipse: s-maj=19.8km s-min=12.4km az=88.0*
ISC 04 13:17:46.0±1.1**, 36°.80N**±0°.04×**140°.94E**±0°.07**, h26**km±7km**, n32,** σ1s.26/36**, mb3.9**/16**, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.32**	**339**	P	**Pb**	**13 17 53.2**	**-0.3**
ONAJ				S	**Sb**	**13 17 59.2**	**+0.6**
JHO	**Hitachi**	**0.36**	**237**	P	**Pb**	**13 17 53.4**	**-0.6**
JHO				S	**Sb**	**13 17 59.6**	**+0.2**
JFK	**Kawauchi**	**0.56**	**355**	P	**Pb**	**13 17 56.4**	**-1.0**
JFK				S	**Sb**	**13 18 04.8**	**-0.3**
JYT	**Yasato**	**0.83**	**227**	P	**Pb**	**13 18 00.5**	**-1.4**
JYT				S	**Sb**	**13 18 11.6**	**-1.1**
JSB	**Shiboa**	**0.84**	**282**	P	**Pn**	**13 18 02.6**	**+0.4**
JSB				S	**Sn**	**13 18 15.6**	**+1.9**
JFT	**Otama**	**0.86**	**326**	P	**Pn**	**13 18 02.6**	**+0.1**
JFT				*e*S	**Sn**	**13 18 14.2**	**-0.1**
MJAR	**Matsushiro Arr**	**2.21**	**264**	P	**Pn**	**13 18 22.8**	**+1.7**
	12nm,0.3s,baz=74,slow=11,SNR=39						
MJAR				S	**Sn**	**13 18 43.4**	**-4.2**
	13nm,0.3s,baz=74,slow=17,SNR=15						
MAT	**Matsushiro**	**2.21**	**264**	P	**Pn**	**13 18 22.3**	**+1.2**
MAT				*e*S	**Sn**	**13 18 50.7**	**+3.0**
JHJ	**Hachijo jima 2**	**3.80**	**195**	P	**Pn**	**13 18 45.3**	**+2.5**
	19nm,0.3s,baz=33,slow=7.2,SNR=3.3						
JHJ				S	**Sn**	**13 19 26.4**	**-0.3**
	19nm,0.3s,baz=73,slow=19,SNR=3.4						
MA2	**Magadan**	**23.66**	**12**	P	**P**	**13 22 55.1**	**-0.1**
	2.5nm,0.7s,baz=214,slow=10,SNR=8.4						
SEY	**Seymchan**	**27.09**	**11**	P	**P**	**13 23 25.8**	**-0.5**
	0.8nm,0.7s,baz=176,slow=6.1,SNR=4.3						
SONM	**Songino Array**	**27.60**	**304**	P	**P**	**13 23 31.9**	**+0.6**
	0.6nm,0.8s,baz=97,slow=11,SNR=3.3						
H11N2	**WAKE ISLAND Hy**	**28.36**	**120**	T	T	13 53 03.3	
	baz=313,slow=75,SNR=154						
H11N1	**WAKE ISLAND Hy**	**28.37**	**120**	T	T	13 53 06.2	
	baz=313,slow=75,SNR=147						
H11N3	**WAKE ISLAND Hy**	**28.38**	**120**	T	T	13 53 10.5	
	baz=313,slow=75,SNR=148						
H11S1	**WAKE ISLAND Hy**	**29.05**	**122**	T	T	13 53 58.5	
	baz=314,slow=75,SNR=176						
H11S3	**WAKE ISLAND Hy**	**29.06**	**122**	T	T	13 53 58.3	
	baz=314,slow=75,SNR=228						
H11S2	**WAKE ISLAND Hy**	**29.07**	**122**	T	T	13 54 22.2	
	baz=314,slow=75,SNR=163						
ZALV	**Zalesovo Beam**	**41.79**	**313**	P	**P**	**13 25 33.6**	**+0.5**
	1.6nm,0.7s,baz=101,slow=7.7,SNR=4.7						
ZALV				PcP	**PcP**	**13 27 28.6**	**-0.3**
	0.9nm,0.6s,baz=116,slow=3.4,SNR=3.8						
MKAR	**Makanchi Array**	**43.92**	**302**	P	**P**	**13 25 51.2**	**+0.7**
	0.7nm,0.6s,baz=89,slow=9.5,SNR=7.1						
KURBB	**Kurchatov Arra**	**45.85**	**308**	P	**P**	**13 26 05.7**	**-0.1**
	1.6nm,0.7s,baz=84,slow=8.3,SNR=6.9						
ILAR	**Eielson Array**	**49.89**	**32**	P	**P**	**13 26 37.6**	**+0.6**
	0.6nm,0.8s,baz=276,slow=5.9,SNR=5.8						
INK	**Inuvik**	**54.76**	**27**	P	**P**	**13 27 13.0**	**+0.1**
	1.2nm,0.7s,baz=279,slow=1.4,SNR=6.1						
WRA	**Warramunga Arr**	**56.78**	**187**	P	**P**	**13 27 26.8**	**-1.2**
	1.8nm,0.5s,baz=5.1,slow=7.4,SNR=42						
ASAR	**Alice Springs**	**60.51**	**187**	P	**P**	**13 27 53.1**	**-0.8**
	0.7nm,0.7s,baz=11,slow=4.1,SNR=8.7						
YKA	**Yellowknife Ar**	**64.20**	**30**	P	**P**	**13 28 18.5**	**+0.4**
	0.3nm,0.7s,baz=301,slow=6.8,SNR=4.7						
STKA	**Stephens Creek**	**68.33**	**179**	P	**P**	**13 28 44.4**	**-0.4**
	0.9nm,0.5s,baz=6.3,slow=9.2,SNR=2.7						
FINES	**FINESS Array B**	**68.84**	**332**	P	**P**	**13 28 47.9**	**0.0**
	1.2nm,0.7s,baz=55,slow=5.3,SNR=3.8						
AKASG	**Malin Array Be**	**74.25**	**322**	P	**P**	**13 29 20.4**	**-0.2**
	0.6nm,0.4s,baz=47,slow=5.8,SNR=3.6						
NVAR	**Mina Array Bea**	**75.43**	**53**	P	**P**	**13 29 27.7**	**-0.2**
	0.6nm,0.7s,baz=316,slow=6.2,SNR=4.7						
PDAR	**Pinedale Array**	**78.10**	**45**	P	**P**	**13 29 43.1**	**+0.2**
	0.3nm,0.6s,baz=253,slow=2.5,SNR=3.9						
LPAZ	**La Paz**	**147.13**	**59**	PKPbc	**PKPbc**	**13 37 27.7**	**-0.3**
	1.0nm,0.6s,baz=27,slow=4.5,SNR=4.0						

*ATH **04** 13:20:33.8, 37°.02N×26°.52E, h29km±1km, ML2.5/5, Error ellipse: s-maj=2.0km s-min=1.3km az=64.0*
*ISCJB **04** 13:20:34.7±0.6, 36°.97N±0°.03×26°.51E±0°.04, h19km±7km, Error ellipse: s-maj=5.9km s-min=4.9km az=152.1*
*DDA **04** 13:20:34.1, 36°.97N×26°.55E, h7km, Md2.8*
*CSEM **04** 13:20:34.1±0.2, 36°.99N×26°.51E, h10km, ML2.5, Error ellipse: s-maj=4.9km s-min=4.2km az=157.0*
ISC 04 13:20:33.8±1.1**, 36°.94N**±0°.03×**26°.50E**±0°.02**, h30**km±13km**, n34,** σ1s.08/52**, Dodecanese Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
NIS1	**Nisyros Isl.**	**0.64**	**122**	P	**Pn**	**13 20 47.5**	**+0.7**
NIS1	**Nisyros Isl.**	**0.64**	**122**	P	**Pn**	**13 20 47.5**	**+0.7**
NIS1				AML	AML	13 21 00.6	
	comp=N,791μm,0.3s						
NIS1				AML	AML	13 21 06.4	
	comp=E,1014μm,0.3s						
BDRM	**Kayabasi**	**0.76**	**80**	*i* P	**Pn**	**13 20 48.2**	**-0.3**
BDRM				*i* S	**Sn**	**13 20 59.0**	**0.0**
BDRM	**Kayabasi**	**0.76**	**80**	P	**Pn**	**13 20 48.2**	**-0.3**
BDRM				S	**Sn**	**13 20 59.0**	**0.0**
APE	**Apeiranthos**	**0.79**	**280**	P	**Pn**	**13 20 49.2**	**+0.3**
APE				S	**Sn**	**13 21 00.2**	**+0.5**
APE	**Apeiranthos**	**0.79**	**280**	P	**Pn**	**13 20 49.2**	**+0.3**
APE				S	**Sn**	**13 21 00.2**	**+0.5**
APE				AML	AML	13 21 03.0	
	comp=N,887μm,0.5s						
APE				AML	AML	13 21 05.3	
	comp=E,450μm,0.4s						
SMG	**Samos**	**0.81**	**19**	P	**Pb**	**13 20 48.7**	**-0.7**
SMG				S	**Sb**	**13 20 59.3**	**-0.8**
SMG	**Samos**	**0.81**	**19**	P	**Pb**	**13 20 48.7**	**-0.7**
SMG				S	**Sb**	**13 20 59.3**	**-0.8**
SMG				AML	AML	13 21 02.1	
	comp=N,2807μm,0.3s						
SMG				AML	AML	13 21 03.4	
	comp=E,1733μm,0.2s						
GCAM	**G?zelcaml?**	**0.96**	**37**	*i* P	**Pn**	**13 20 52.1**	**+1.0**
GCAM				*i* S	**Sn**	**13 21 04.9**	**+1.1**
GCAM	**G?zelcaml?**	**0.96**	**37**	P	**Pn**	**13 20 52.1**	**+1.0**
GCAM				S	**Sn**	**13 21 04.9**	**+1.1**
AYDN	**Tasoluk**	**1.31**	**56**	*i* P	**Pb**	**13 20 57.3**	**-0.6**
AYDN				*i* S	**Sb**	**13 21 15.4**	**+1.0**
AYDN	**Tasoluk**	**1.31**	**56**	P	**Pb**	**13 20 57.3**	**-0.6**
AYDN				S	**Sb**	**13 21 15.4**	**+1.0**
URLA	**Izmir**	**1.42**	**3**	*i* P	**Pb**	**13 21 01.1**	**+1.5**
URLA				*i* S	**Sb**	**13 21 19.1**	**+1.7**
URLA	**Izmir**	**1.42**	**3**	P	**Pb**	**13 21 01.1**	**+1.5**
URLA				S	**Sb**	**13 21 19.1**	**+1.7**
CHOS	**Chios island**	**1.49**	**346**	P	**Pn**	**13 20 58.6**	**0.0**
CHOS				S	**Sb**	**13 21 18.6**	**-0.8**
CHOS	**Chios island**	**1.49**	**346**	P	**Pn**	**13 20 58.6**	**0.0**
CHOS				S	**Sb**	**13 21 18.6**	**-0.8**
KARP	**Karpathos**	**1.49**	**159**	P	**Pb**	**13 21 00.8**	**0.0**
KARP	**Karpathos**	**1.49**	**159**	P	**Pb**	**13 21 00.8**	**0.0**
KARP				AML	AML	13 21 29.2	
	comp=E,318μm,0.5s						
KARP				AML	AML	13 21 30.8	
	comp=N,302μm,0.7s						
SERI	**Serifos**	**1.63**	**278**	P	**Pb**	**13 21 02.9**	**-0.3**
SERI				S	**Sb**	**13 21 24.3**	**+0.9**
SERI	**Serifos**	**1.63**	**278**	P	**Pb**	**13 21 02.9**	**-0.3**
SERI				S	**Sb**	**13 21 24.3**	**+0.9**
SERI				AML	AML	13 21 28.7	
	comp=N,100μm,0.3s						
SERI				AML	AML	13 21 31.8	
	comp=E,108μm,0.3s						
TURN	**Turunc**	**1.69**	**92**	*i* P	**Pn**	**13 20 59.5**	**-1.7**
TURN				*i* S	**Sn**	**13 21 20.7**	**-1.0**
TURN	**Turunc**	**1.69**	**92**	P	**Pn**	**13 20 59.5**	**-1.7**
TURN				S	**Sn**	**13 21 20.7**	**-1.0**
MHLO	**Agia Marina, M**	**1.70**	**262**	P	**Pb**	**13 21 04.8**	**+0.3**
MHLO	**Agia Marina, M**	**1.70**	**262**	P	**Pb**	**13 21 04.8**	**+0.3**
ZKR	**Zakros**	**1.84**	**187**	P	**Pb**	**13 21 06.7**	**0.0**
ZKR	**Zakros**	**1.84**	**187**	P	**Pb**	**13 21 06.7**	**0.0**
LAST	**Lasithi**	**1.96**	**205**	P	**Pb**	**13 21 08.6**	**-0.3**
LAST	**Lasithi**	**1.96**	**205**	P	**Pb**	**13 21 08.6**	**-0.3**
KARY	**Karystos**	**1.97**	**304**	P	**Pb**	**13 21 06.6**	**-2.4**
KARY	**Karystos**	**1.97**	**304**	P	**Pb**	**13 21 06.6**	**-2.4**
SIGR	**SIGRI**	**2.32**	**348**	P	**Pn**	**13 21 10.4**	**+0.5**
SIGR	**SIGRI**	**2.32**	**348**	P	**Pn**	**13 21 10.4**	**+0.5**
VLY	**Voula,Athens**	**2.34**	**294**	P	**Pb**	**13 21 12.9**	**-2.4**
VLY	**Voula,Athens**	**2.34**	**294**	P	**Pb**	**13 21 12.9**	**-2.4**

*ISCJB **04** 13:40:22.9±1.0, 38°.08N±0°.05×144°.04E±0°.09, h35km, mb3.8/4, Error ellipse: s-maj=9.9km s-min=7.4km az=171.8*
*JMA **04** 13:40:24.1±0.3, 38°.12N×143°.92E, h31km, M3.9*
*IDC **04** 13:40:27.2±2.4, 37°.03N×143°.19E, h0km, mb3.6/4, mb1 3.8/5, mb1mx3.4/48, mbtmp3.6/5, ML3.6/1, MS2.5/1, Ms1 2.5/1, ms1mx2.2/39, Error ellipse: s-maj=68.4km s-min=24.3km az=62.0*
ISC 04 13:40:23.5±1.5**, 37°.96N**±0°.07×**144°.03E**±0°.10**, h35**km**, n21,** σ2s.03/22**, mb3.8**/4**, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**2.16**	**302**	P	**Pn**	**13 40 57.2**	**+0.2**
JIO	**Ouri**	**2.17**	**284**	P	**Pn**	**13 40 57.7**	**+0.6**
JIO				S	**Sn**	**13 41 21.6**	**-1.1**
JMK	**Ichinoseki**	**2.42**	**295**	P	**Pn**	**13 41 01.1**	**+0.6**
JMM	**Marumori**	**2.56**	**269**	P	**Pn**	**13 41 03.2**	**+0.7**
JMM				S	**Sn**	**13 41 32.4**	**0.0**
JFK	**Kawauchi**	**2.57**	**258**	P	**Pn**	**13 41 01.4**	**-1.3**
JOM	**Ohasama**	**2.62**	**306**	P	**Pn**	**13 41 03.7**	**+0.4**
JOM				S	**Sn**	**13 41 33.5**	**-0.3**
JOU	**Okura**	**2.68**	**280**	P	**Pn**	**13 41 05.8**	**+1.6**
JFT	**Otama**	**2.96**	**262**	P	**Pn**	**13 41 09.7**	**+1.7**
JRG	**Rokugo**	**3.02**	**299**	P	**Pn**	**13 41 09.9**	**+1.1**
JYK	**Kaneyama**	**3.03**	**289**	P	**Pn**	**13 41 10.2**	**+1.2**
JANG	**Nango**	**3.10**	**322**	S	**Sn**	**13 41 45.5**	**-0.2**
JTM	**Tenmabayashi**	**3.63**	**322**	S	**Sn**	**13 41 56.8**	**-2.1**
JNBK	**Urakawa-nobuka**	**4.42**	**348**	P	**Pn**	**13 41 28.5**	**+0.4**
JNBK				S	**Sn**	**13 42 15.8**	**-2.5**
JCH	**Churui**	**4.67**	**354**	S	**Sn**	**13 42 20.6**	**-3.9**
MJAR	**Matsushiro Arr**	**4.85**	**255**	Pn	**Pn**	**13 41 29.6**	**-4.5**
	4.2nm,0.3s,baz=83,slow=22,SNR=33						
MAT	**Matsushiro**	**4.85**	**255**	P	**Pn**	**13 41 30.6**	**-3.5**
JNU	**Nakatsue**	**11.75**	**250**	LR	LR	13 47 27.1	
	comp=Z,25nm,20.0s,baz=288,slow=39						
MKAR	**Makanchi Array**	**45.39**	**302**	P	P	13 48 46.8	+8.3
	0.2nm,0.6s,baz=91,slow=10,SNR=2.7						
KURBB	**Kurchatov Arra**	**47.07**	**308**	P	P	13 49 00.7	+9.1
	0.6nm,0.4s,baz=81,slow=8.3,SNR=3.0						
WRA	**Warramunga Arr**	**58.31**	**191**	P	**P**	**13 50 16.3**	**+1.3**
	2.1nm,0.6s,baz=9.4,slow=7.0,SNR=22						
ASAR	**Alice Springs**	**62.04**	**191**	P	**P**	**13 50 42.9**	**+2.5**
	0.5nm,0.8s,baz=3.0,slow=7.2,SNR=7.6						

*IDC **04** 13:42:38.7±2.0, 29°.62N×81°.33E, h0km, mb3.6/7, mb1 3.8/8, mb1mx3.5/56, mbtmp3.7/8, ML3.5/1, MS3.7/4, Ms1 3.7/4, ms1mx3.0/50, Error ellipse: s-maj=98.0km s-min=19.9km az=65.0*
*ISCJB **04** 13:42:39.3±0.7, 29°.51N±0°.07×80°.89E±0°.05, h17km, mb3.6/8, MS3.7/4, Error ellipse: s-maj=11.2km s-min=5.0km az=154.3*
*NDI **04** 13:42:43.0±2.3, 29°.52N×80°.80E, h10km, ML3.1*
ISC 04 13:42:41.1±0.9**, 29°.55N**±0°.08×**80°.93E**±0°.06**, h17**km**, n27,** σ2s.11/30**, mb3.6**/8**, MS3.7**/4**, Nepal-India border region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LGTI	**Lohaghat**	**0.60**	**261**	*e*PG	**Pn**	**13 42 56.9**	**+2.0**
LGTI				*e*SG	**Sn**	**13 43 05.3**	**+1.1**
KALG	**Kalgarh**	**1.90**	**269**	*e*P	Pn	13 43 01.2	-11
KALG				*e*S	Sn	13 43 22.0	-14
BISR	**Bishrakh**	**3.21**	**253**	*e*x	**Sn**	**13 44 14.1**	**+5.6**
NDI	**New Delhi**	**3.36**	**256**	*e*x	**Pn**	**13 43 31.0**	**-1.8**
NDI				*e*S	**Sn**	**13 44 10.5**	**-1.8**
AYAN	**Aya Nagar**	**3.50**	**253**	*e*P	**Pn**	**13 43 36.0**	**+1.4**
AYAN				*e*S	**Sn**	**13 44 13.8**	**-1.8**
BHGR	**Bahadurgarh**	**3.59**	**257**	*e*P	**Pn**	**13 43 36.1**	**+0.1**
BHGR				*e*S	**Sn**	**13 44 16.3**	**-1.7**
KKR	**Kurukshetra**	**3.60**	**278**	*e*x	**Sb**	**13 44 28.7**	**+1.1**
SONA	**Sohna**	**3.61**	**250**	*e*P	**Pn**	**13 43 38.7**	**+2.4**
SONA				*e*S	**Sn**	**13 44 17.1**	**-1.4**
SONA				IAML		13 44 39.2	
	comp=E,100nm,0.5s						
SONA				IAML		13 44 39.4	
	comp=N,83nm,0.3s						
SMLA	**Simla**	**3.61**	**297**	*i* P	**Pn**	**13 43 37.9**	**+1.6**
SMLA				*e*S	**Sn**	**13 44 18.0**	**-0.5**
SMLA				IAML		13 44 34.8	
	comp=N,174nm,0.2s						
SMLA				IAML		13 44 36.4	
	comp=E,227nm,0.3s						
SDNR	**Sundarnagar**	**3.93**	**301**	*e*x	**Pb**	**13 43 53.0**	**+3.0**
RTK	**Rohtak**	**3.98**	**264**	*e*x	**Sb**	**13 44 35.0**	**-3.6**
KUDL	**Kundal**	**4.14**	**251**	*e*P	**Pn**	**13 43 44.4**	**+0.9**
KUDL				*e*P	Pb	13 43 44.5	-8.9
KUDL				*e*S	**Sn**	**13 44 29.6**	**-1.9**
KUDL				IAML		13 44 57.4	
	comp=E,31nm,0.2s						
KUDL				IAML		13 44 58.0	
	comp=N,37nm,0.1s						
KHET	**Khetri**	**4.73**	**253**	*e*P	**Pn**	**13 43 52.4**	**+0.7**
KHET				*e*S	**Sn**	**13 44 44.5**	**-1.7**
KHET				IAML		13 45 15.5	
	comp=E,17nm,0.4s						
KHET				IAML		13 45 16.1	
	comp=N,28nm,0.6s						
THN	**Thein Dam**	**5.32**	**304**	*e*x	Pb	13 44 11.0	-2.6
THN				*e*x	**Sb**	**13 45 12.8**	**-4.4**
MKAR	**Makanchi Array**	**17.25**	**3**	P	**Pn**	**13 46 39.1**	**-2.1**
	comp=N,0.2nm,0.3s,baz=183,slow=11,SNR=15						
KURBB	**Kurchatov Arra**	**21.13**	**356**	P	**P**	**13 47 24.3**	**-0.6**
	comp=N,2.9nm,0.8s,baz=182,slow=11,SNR=15						
ZALV	**Zalesovo Beam**	**24.55**	**6**	P	**P**	**13 47 59.5**	**-0.2**
	comp=N,1.8nm,0.5s,baz=192,slow=10,SNR=8.0						
BVAR	**Borovoye Array**	**24.70**	**345**	P	**P**	**13 48 01.8**	**+0.6**
	comp=N,0.6nm,0.5s,baz=149,slow=11,SNR=4.2						
SONM	**Songino Array**	**26.80**	**40**	P	**P**	**13 48 21.1**	**+0.8**
	comp=N,0.5nm,0.5s,baz=227,slow=10,SNR=4.3						
ARU	**Arti**	**31.17**	**336**	LR	LR	14 02 12.0	
	comp=N,90nm,18.4s,baz=218,slow=38						
KLR	**Kul'dur**	**43.00**	**48**	LR	LR	14 11 13.9	
	comp=N,50nm,18.4s,baz=106,slow=40						
JHJ	**Hachijo jima 2**	**49.83**	**70**	LR	LR	14 13 27.8	
	comp=N,165nm,18.2s,baz=136,slow=37						
ARCES	**ARCESS Array B**	**50.71**	**338**	P	**P**	**13 51 40.0**	**+0.6**
	comp=N,3.1nm,0.9s,baz=110,slow=10,SNR=5.7						
KMBO	**Kilima Mbogo**	**51.65**	**242**	LR	LR	14 14 11.8	
	comp=N,94nm,18.5s,baz=86,slow=36						
WRA	**Warramunga Arr**	**71.20**	**127**	P	**P**	**13 53 58.0**	**-1.3**
	comp=N,0.4nm,0.6s,baz=327,slow=6.0,SNR=3.0						
ASAR	**Alice Springs**	**73.43**	**130**	P	**P**	**13 54 12.1**	**-0.5**
	comp=N,0.4nm,1.0s,baz=315,slow=6.3,SNR=5.8						
YKA	**Yellowknife Ar**	**87.43**	**7**	P	**P**	**13 55 27.2**	**0.0**
	comp=N,0.1nm,0.4s,baz=342,slow=5.7,SNR=3.4						

JMA 04 13:42:44.1±0.3**, 38°.12N**×**142°.57E, h2**km±4km**, M3.9, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**1.02**	**290**	P	Pg	13 43 03.6	0.0
JIO				S	Sb	13 43 17.9	-0.3
OFUJ	**Ofunato**	**1.19**	**324**	P	Pg	13 43 06.8	-0.1
JMK	**Ichinoseki**	**1.35**	**309**	P	Pn	13 43 09.7	-0.2
JOU	**Okura**	**1.52**	**280**	P	Pn	13 43 12.0	-0.3
MIYJ	**Miyakonagasawa**	**1.57**	**338**	P	Pn	13 43 12.8	-0.2
JOM	**Ohasama**	**1.68**	**324**	P	Pn	13 43 15.1	+0.6
JFT	**Otama**	**1.87**	**252**	P	Pn	13 43 17.1	0.0
JYK	**Kaneyama**	**1.91**	**295**	P	Pn	13 43 18.4	+0.7

*IDC **04** 13:48:23.4±1.1, 36°.57N×143°.36E, h0km, mb3.8/8, mb1 3.9/11, mb1mx3.6/56, mbtmp3.9/11, ML3.4/2, MS3.0/1, Ms1 3.0/1, ms1mx2.3/37, Error ellipse: s-maj=28.0km s-min=19.1km az=72.0*
*ISCJB **04** 13:48:26.5±0.7, 36°.6N±0°.1×143°.29E±0°.08, h33km, mb4.0/10, Error ellipse: s-maj=14.5km s-min=9.4km az=0.2*
*NEIC **04** 13:48:27.9±7.0, 36°.60N×143°.33E, h30km±48km, mb4.9/2, Error ellipse: s-maj=25.9km s-min=13.3km az=81.0*
ISC 04 13:48:28.6±1.0**, 36°.6N**±0°.2×**143°.31E**±0°.10**, h35**km**, n18,** σ0s.93/18**, mb3.9**/10**, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MJAR	**Matsushiro Arr**	**4.10**	**271**	Pn	**Pn**	**13 49 28.2**	**-0.6**
	3.5nm,0.3s,baz=74,slow=10,SNR=38						
MAJO	**Matsushiro**	**4.10**	**271**	*e*Pn	**Pn**	**13 49 28.5**	**-0.4**
MAT	**Matsushiro**	**4.10**	**271**	P	**Pn**	**13 49 28.1**	**-0.7**
MAT				*e*S	**Sn**	**13 50 15.4**	**-0.2**
KSRS	**Korea Array**	**12.32**	**279**	Pn	**Pn**	**13 51 22.3**	**+0.8**
	0.1nm,0.3s,baz=91,slow=14,SNR=4.6						
KSAR	**Wonju Array Be**	**12.36**	**278**	Pn	**Pn**	**13 51 22.3**	**+0.3**
KLR	**Kul'dur**	**15.17**	**330**	LR	LR	13 58 05.1	
	comp=Z,50nm,18.1s,baz=85,slow=38						
JOW	**Kunigami**	**16.06**	**237**	Pn	**Pn**	**13 52 12.9**	**+1.1**
	baz=30,slow=14						
SONM	**Songino Array**	**29.28**	**304**	P	**P**	**13 54 26.1**	**-1.5**
	1.0nm,0.8s,baz=93,slow=7.8,SNR=5.6						
ZALV	**Zalesovo Beam**	**43.32**	**313**	P	**P**	**13 56 27.2**	**+0.3**
	0.5nm,0.3s,baz=87,slow=5.9,SNR=2.4						
MKAR	**Makanchi Array**	**45.63**	**303**	P	**P**	**13 56 44.6**	**-0.8**
	0.9nm,0.8s,baz=87,slow=8.7,SNR=7.2						
KURK	**Kurchatov**	**47.39**	**309**	P	**P**	**13 57 00.9**	**+1.8**
KURBB	**Kurchatov Arra**	**47.46**	**309**	P	**P**	**13 57 00.9**	**+1.2**
	1.3nm,0.4s,baz=82,slow=7.6,SNR=4.8						
BVAR	**Borovoye Array**	**51.98**	**313**	P	**P**	**13 57 35.3**	**+1.3**
	0.3nm,0.4s,baz=70,slow=5.2,SNR=2.0						
INK	**Inuvik**	**54.08**	**27**	P	**P**	**13 57 49.6**	**+0.4**
	0.4nm,0.6s,baz=300,slow=6.9,SNR=2.3						
WRAB	**Tennant Creek**	**56.87**	**190**	*e*P	**P**	**13 58 09.7**	**-0.2**
	3.1nm,0.8s						
WRA	**Warramunga Arr**	**56.88**	**190**	P	**P**	**13 58 09.9**	**-0.1**
	1.9nm,0.6s,baz=8.0,slow=7.1,SNR=25						
ASAR	**Alice Springs**	**60.60**	**190**	P	**P**	**13 58 35.3**	**-0.5**
	0.7nm,0.6s,baz=4.1,slow=7.1,SNR=28						
PHWY	**Pilot Hill**	**80.17**	**45**	*e*P	**P**	**14 00 35.2**	**-0.5**
	26nm,0.8s						

IDC 04 13:55:27.2±6.0**, 16°.27S**×**74°.16W, h0**km**, mb3.7**/2**, mb1 4.0**/3**, mb1mx3.6**/22**, mbtmp3.7**/3**, ML3.5**/1**, MS3.2**/2**, Ms1 3.2**/2**, ms1mx2.9**/23**, Error ellipse: s-maj=214.1km s-min=30.6km az=19.0, Near coast of Peru**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LPAZ	**La Paz**	**5.79**	**91**	Pn	Pn	13 56 55.2	+0.3
	0.7nm,0.3s,baz=271,slow=8.9,SNR=25						
LPAZ				Sn	Sn	13 58 03.5	+1.1
	baz=212,slow=13,SNR=3.3						
LPAZ				LR	LR	13 59 28.2	
	comp=Z,44nm,18.6s,baz=282,slow=42						
TXAR	**Lajitas Array**	**53.55**	**328**	P	P	14 04 50.0	0.0
	0.2nm,0.4s,baz=120,slow=5.3,SNR=3.6						
TORD	**Torodi Ar. Bea**	**80.46**	**73**	P	P	14 07 41.5	-0.1
	1.2nm,0.8s,baz=250,slow=5.1,SNR=5.3						
AFI	**Afiamalu**	**93.28**	**255**	LR	LR	14 40 19.1	
	comp=Z,71nm,21.8s,baz=111,slow=29						

IDC 04 14:12:00.5±3.1**, 36°.54N**×**143°.36E, h0**km**, mb3.3**/3**, mb1 3.5**/4**, mb1mx3.3**/35**, mbtmp3.3**/4**, ML3.0**/1**, Error ellipse: s-maj=85.2km s-min=30.1km az=56.0, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MJAR	**Matsushiro Arr**	**4.15**	**272**	Pn	Pn	14 13 04.8	-0.3
	0.9nm,0.3s,baz=87,slow=14,SNR=5.8						
MKAR	**Makanchi Array**	**45.70**	**303**	P	P	14 20 23.1	-0.1
	0.2nm,0.7s,baz=88,slow=10,SNR=2.3						
WRA	**Warramunga Arr**	**56.81**	**190**	P	P	14 21 46.0	-0.7
	0.2nm,0.4s,baz=7.4,slow=7.0,SNR=5.6						
ASAR	**Alice Springs**	**60.54**	**190**	P	P	14 22 13.1	+0.5
	0.2nm,0.6s,baz=3.0,slow=6.5,SNR=6.2						

*ISCJB **04** 14:22:00.2±0.5, 15°.7S±0°.1×173°.86W±0°.09, h94km, mb4.4/16, Error ellipse: s-maj=18.9km s-min=7.0km az=142.8*
*IDC **04** 14:22:02.2±2.4, 15°.74S×173°.92W, h95km±22km, mb3.9/10, mb1 4.1/12, mb1mx3.9/31, mbtmp4.2/12, Error ellipse: s-maj=28.4km s-min=14.1km az=134.0*
*NEIC **04** 14:22:02.8±0.8, 15°.69S×173°.91W, h101km±7km, mb4.8/6, Error ellipse: s-maj=13.3km s-min=6.4km az=143.0*
ISC 04 14:22:01.9±0.6**, 15°.7S**±0°.1×**173°.9W**±0°.1**, h94**km**, n37,** σ0s.83/32**, mb4.5**/16**, Tonga Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AFI	**Afiamalu**	**2.68**	**49**	P	**Pn**	**14 22 44.8**	**+1.5**
	101nm,0.3s,baz=191,slow=2.8,SNR=267						
AFI				S	**Sn**	**14 23 12.9**	**-2.3**
	306nm,0.3s,baz=47,slow=22,SNR=22						
MSVF	**Nonsavu**	**8.02**	**254**	*e*Pn	**Pn**	**14 23 55.9**	**+0.1**
	35nm,1.3s						
DZM	**Mont Dzumac**	**19.68**	**248**	P	**P**	**14 26 24.4**	**+0.5**
	0.4nm,0.3s,baz=114,slow=20,SNR=4.4						
URZ	**Urewera**	**23.84**	**198**	P	**P**	**14 27 05.9**	**-0.6**
	7.2nm,0.5s,baz=53,slow=20,SNR=4.6						
URZ	**Urewera**	**23.84**	**198**	*e*P	**P**	**14 27 07.6**	**+1.2**
EIDS	**Eidsvold**	**34.13**	**248**	*e*P	**P**	**14 28 37.3**	**-0.7**
ARMA	**Armidale**	**34.82**	**239**	*e*P	**P**	**14 28 43.9**	**-0.1**
CTAO	**Charters Tower**	**38.16**	**257**	*e*P	**P**	**14 29 12.6**	**+0.2**
H11S2	**WAKE ISLAND Hy**	**39.00**	**330**	T	T	15 10 31.5	
	baz=146,slow=75,SNR=8.1						
H11S3	**WAKE ISLAND Hy**	**39.02**	**330**	T	T	15 10 25.0	
	baz=146,slow=75,SNR=8.5						
H11S1	**WAKE ISLAND Hy**	**39.02**	**330**	T	T	15 10 29.1	
	baz=146,slow=75,SNR=8.2						
COEN	**Coen**	**41.53**	**267**	*e*P	**P**	**14 29 41.1**	**+0.6**
	18nm,0.9s						
STKA	**Stephens Creek**	**43.51**	**240**	P	**P**	**14 29 55.6**	**-0.8**
	4.6nm,0.5s,baz=85,slow=10,SNR=19						
JAY	**Jayapura**	**46.62**	**282**	P	**P**	**14 30 21.2**	**-0.1**
	3.3nm,1.0s,baz=159,slow=21,SNR=4.1						
WRAB	**Tennant Creek**	**49.35**	**257**	*e*P	**P**	**14 30 41.1**	**-1.1**
	9.5nm,0.9s						

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
WRA	Warramunga Arr	49.36	257	P	P	14 30 41.0	-1.3
	4.6nm,0.5s,baz=96,slow=6.1,SNR=78						
ASAR	Alice Springs	49.61	252	P	P	14 30 43.0	-1.1
	62nm,0.6s,baz=89,slow=7.5,SNR=768						
SOEI	Soe	60.48	268	eP	P	14 32 03.2	+0.6
	22nm,0.8s						
MBWA	Marble Bar	62.86	254	eP	P	14 32 17.3	-1.1
	3.6nm,0.4s						
SBA	Scott Base	62.91	185	eP	P	14 32 17.2	-0.6
VNDA	Vanda	63.03	186	P	P	14 32 19.3	+0.7
	0.7nm,0.8s,baz=5.1,slow=4.8,SNR=3.5						
H06S1	SOCORRO T	70.73	63	T	T	15 50 38.0	
	SNR=12						
PETK	Petropavlovsk-	72.79	342	P	P	14 33 20.2	+0.3
	6.3nm,0.8s,baz=124,slow=9.2,SNR=6.5						
COLA	College	82.74	11	eP	P	14 34 14.5	-0.4
	7.1nm,1.1s						
PDAR	Pinedale Array	82.78	42	P	P	14 34 16.2	+0.3
	0.4nm,0.7s,baz=186,slow=4.5,SNR=4.2						
ILAR	Eielson Array	82.83	11	P	P	14 34 15.4	0.0
	1.3nm,0.6s,baz=230,slow=6.2,SNR=29						
YKA	Yellowknife Ar	90.55	24	P	P	14 34 53.2	+0.1
	0.1nm,0.3s,baz=242,slow=5.2,SNR=3.4						
CMAR	Chiang Mai Arr	92.30	288	P	P	14 35 03.5	+1.2
	1.7nm,0.9s,baz=86,slow=3.0,SNR=11						
ARCES	ARCESS Array B	124.85	352	PKP	PKPdf	14 40 49.7	-0.6
	2.5nm,0.7s,baz=338,slow=1.3,SNR=8.1						
FINES	FINESS Array B	132.14	347	PKP	PKPdf	14 41 04.0	-0.3
	1.2nm,0.7s,baz=48,slow=2.8,SNR=5.0						
DPC	Dobruska-Polom	144.47	349	ePKP	PKPbc	14 41 26.3	+0.2
KMBO	Kilima Mbogo	145.02	244	PKP	PKPbc	14 41 29.1	0.0
	1.6nm,0.6s,baz=144,slow=3.4,SNR=4.9						
KMBO	Kilima Mbogo	145.02	244	ePKPbc	PKPdf	14 41 30.1	+0.4
PRU	Pruhonice	145.13	351	ePKP	PKPbc	14 41 28.0	-0.1
KHC	Kasperske Hory	146.11	351	ePKP	PKPbc	14 41 31.5	+0.3
BRTR	Keskin Array B	146.12	320	PKPbc	PKPbc	14 41 31.7	0.0
	6.7nm,0.9s,baz=85,slow=2.3,SNR=28						
GERES	GERESS Array B	146.37	351	PKPbc	PKPbc	14 41 32.2	+0.1
	1.1nm,0.7s,baz=46,slow=3.9,SNR=8.2						

IDC 04 14:24:58.1±61.0, 16°87S×179°64E, h0km, mb4.3/3, mb1 4.5/3, mb1mx3.8/30, mbtmp4.3/3, Error ellipse: s-maj=1100.0km s-min=142.7km az=77.0, Fiji Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
STKA	Stephens Creek	37.52	239	P	P	14 32 14.1	+0.1
	3.2nm,0.5s,baz=91,slow=7.7,SNR=11						
WRA	Warramunga Arr	43.00	259	P	P	14 32 59.6	0.0
	0.4nm,0.4s,baz=93,slow=7.8,SNR=8.4						
ASAR	Alice Springs	43.29	253	P	P	14 33 01.6	-0.4
	8.3nm,0.6s,baz=89,slow=7.9,SNR=18						

*ISCJB **04** 14:38:21.8±1.0, 38°36N±0°04×142°31E±0°09, h44km±10km, mb3.7/7, MS3.0/1, Error ellipse: s-maj=12.3km s-min=5.6km az=18.3*
*JMA **04** 14:38:22.1±0.1, 38°39N×142°29E, h40km±2km, M4.0*
*IDC **04** 14:38:23.1±1.0, 38°33N×142°23E, h38km±7km, mb3.5/7, mb1 3.7/9, mb1mx3.4/44, mbtmp3.7/9, ML2.6/2, MS3.0/3, Ms1 3.0/3, ms1mx2.5/29, Error ellipse: s-maj=23.2km s-min=16.2km az=108.0*
ISC 04 14:38:21.5±0.9, 38°34N±0°04×142°27E±0°06, h25km±4km, n31, σ0s89/36, mb3.6/7, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
JIO	Ouri	0.73	279	P	Pn	14 38 36.2	0.0
JIO				S	Sn	14 38 45.9	-0.7
OFUJ	Ofunato	0.88	327	P	Pb	14 38 37.6	-0.4
OFUJ				eS	Sb	14 38 48.5	-0.8
JMK	Ichinoseki	1.02	307	P	Pn	14 38 40.1	-0.1
JMM	Marumori	1.26	248	P	Pn	14 38 43.5	+0.1
JMM				eS	Sn	14 38 59.7	+0.1
JOU	Okura	1.27	272	P	Pb	14 38 44.3	-0.3
JOU				S	Sb	14 39 00.3	-0.2
MIYJ	Miyakonagasawa	1.28	344	P	Pn	14 38 43.2	-0.6
MIYJ				eS	Sn	14 38 58.7	-1.4
JOM	Ohasama	1.36	326	P	Pn	14 38 45.1	+0.2
JOM				eS	Sn	14 39 01.8	-0.4
JFK	Kawauchi	1.48	229	P	Pn	14 38 46.5	+0.1
JFK				eS	Sn	14 39 03.7	-1.2
JYK	Kaneyama	1.61	292	P	Pn	14 38 48.9	+0.7
JYK				eS	Sn	14 39 08.7	+0.6
JFT	Otama	1.74	242	P	Pb	14 38 51.5	-1.2
JYS	Shirataka	1.74	267	P	Pn	14 38 50.9	+0.8
JYS				eS	Sn	14 39 12.4	+0.9
JKZ	Kuzumaki	1.80	336	P	Pn	14 38 51.8	+0.9
JKZ				eS	Sn	14 39 13.0	+0.1
MJAR	Matsushiro Arr	3.70	242	Pn	Pn	14 39 19.0	+1.9
	0.9nm,0.3s,baz=61,slow=10,SNR=4.2						
MAT	Matsushiro	3.70	242	P	Pn	14 39 20.8	+3.8
MAT				eS	Sb	14 40 10.3	-0.3
USRK	Ussuriysk Ar.	9.70	310	Pn	Pn	14 40 41.7	+2.4
	0.2nm,0.3s,baz=125,slow=14,SNR=9.4						
KSRS	Korea Array	11.38	270	LR	LR	14 44 46.4	
	comp=Z,41nm,18.8s,baz=182,slow=34						
KLR	Kul'dur	13.26	329	LR	LR	14 46 07.4	
	comp=Z,66nm,19.5s,baz=198,slow=35						
MA2	Magadan	21.93	12	P	P	14 43 12.1	-0.6
	0.8nm,0.3s,baz=213,slow=10.0,SNR=6.7						
SEY	Seymchan	25.38	11	P	P	14 43 46.0	-0.3
	0.9nm,0.7s,baz=224,slow=6.1,SNR=6.3						
SEY				pP	sP	14 43 57.8	+0.9
	1.8nm,0.8s,baz=201,slow=7.1,SNR=5.4						
SONM	Songino Array	27.65	302	LR	LR	14 54 26.2	
	comp=Z,35nm,18.2s,baz=154,slow=35						
H11N2	WAKE ISLAND Hy	28.27	124	T	T	15 14 34.4	
	baz=313,SNR=36						
H11N1	WAKE ISLAND Hy	28.28	124	T	T	15 14 41.2	
	baz=313,slow=74,SNR=15						
H11N3	WAKE ISLAND Hy	28.29	124	T	T	15 14 38.6	
	baz=313,slow=74,SNR=20						
H11S1	WAKE ISLAND Hy	29.04	126	T	T	15 15 32.5	
	baz=318,slow=76,SNR=9.3						
H11S3	WAKE ISLAND Hy	29.04	126	T	T	15 15 32.5	
	baz=318,slow=76,SNR=7.8						
H11S2	WAKE ISLAND Hy	29.05	126	T	T	15 15 33.5	
	baz=318,slow=76,SNR=6.5						
ZALV	Zalesovo Beam	41.55	311	P	P	14 46 06.4	-0.2
	0.6nm,0.3s,baz=102,slow=6.5,SNR=2.7						
ZALV				pP	sP	14 46 16.3	-1.1
	1.9nm,0.8s,baz=95,slow=6.3,SNR=2.5						
MKAR	Makanchi Array	44.02	301	P	P	14 46 27.0	+0.2
	0.5nm,0.7s,baz=83,slow=10.0,SNR=5.8						
MKAR				pP	sP	14 46 36.8	-0.8
	1.6nm,0.8s,baz=84,slow=9.3,SNR=12						
ILAR	Eielson Array	48.03	33	P	P	14 46 59.0	+0.9
	0.4nm,0.8s,baz=262,slow=6.3,SNR=3.6						
ILAR				pP	sP	14 47 10.1	+1.2
	0.6nm,0.7s,baz=271,slow=6.4,SNR=3.8						
WRA	Warramunga Arr	58.45	189	P	P	14 48 14.7	-0.5
	1.8nm,0.7s,baz=7.2,slow=7.0,SNR=16						
ASAR	Alice Springs	62.18	189	P	P	14 48 40.5	-0.2
	0.8nm,0.7s,baz=4.8,slow=5.4,SNR=16						

DJA 04 14:54:30.0±0.5, 3°S±4°×13°0E±°, h59km±10km, M3.7/5, mb4.4/1, MLv3.3/5, Seram

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
MSAI	Masohi	1.04	242	P	Pn	14 54 47.9	-0.7
MSAI				S	Sn	14 55 03.1	+0.7
FAKI	Fak Fak	2.40	92	P	Pn	14 55 07.4	+0.5
FAKI				S	Sn	14 55 36.5	+1.4
SWI	Sorong	2.42	36	P	Pn	14 55 07.5	+0.2
SWI				S	Sn	14 55 36.9	+1.1
NLAI	Namlea	2.77	262	P	Pn	14 55 12.1	+0.1
NLAI				S	Sn	14 55 45.9	+1.6
LBMI	Labuha	3.22	313	P	Pn	14 55 18.7	+0.6
LBMI				S	Sn	14 55 56.5	+1.3
APSI	Ampana	8.42	283	P	Pn	14 56 29.6	+0.2
APSI				S	Sn	14 58 05.7	+2.6

*ISCJB **04** 14:55:30.7±0.7, 39°00N±0°05×32°79E±0°08, h0km, Error ellipse: s-maj=10.0km s-min=4.1km az=34.4*
*CSEM **04** 14:55:30.1±0.3, 39°03N×32°73E, h2km, MD2.7, Error ellipse: s-maj=8.8km s-min=4.8km az=120.0, Suspected Mining explosion.*
*DDA **04** 14:55:30.5, 39°06N×32°76E, h7km, Md2.7, Suspected Mining explosion.*
ISC 04 14:55:28.5±1.0, 38°98N±0°05×32°64E±0°06, h0km, n14, σ0s55/22, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
KKUL	Konya-Kulu	0.29	48	i P	Pg	14 55 33.7	-0.4
KKUL				i S	Sg	14 55 37.8	-0.1
KKUL	Konya-Kulu	0.29	48	P	Pg	14 55 33.7	-0.4
KKUL				S	Sg	14 55 37.8	-0.1
CHBY	Cihanbeyli	0.44	153	ePG	Pb	14 55 38.9	-0.3
CHBY	Cihanbeyli	0.44	153	ePg	Pb	14 55 38.9	-0.3
AFSR	Af¯ar-Bala (A	0.58	35	ePG	Pg	14 55 39.4	-0.2
AFSR				eSG	Sg	14 55 47.1	0.0
AFSR	Af¯ar-Bala (A	0.58	35	ePg	Pg	14 55 39.4	-0.2
AFSR				eSg	Sg	14 55 47.1	0.0
KDHN	Kadinhani	0.61	222	i P	Pn	14 55 44.2	-0.4
KDHN				i S	Sn	14 55 56.0	+0.8
KDHN	Kadinhani	0.61	222	P	Pn	14 55 44.2	-0.4
SERE	Sereflikochisa	0.72	92	ePG	Pg	14 55 42.9	+0.5
SERE	Sereflikochisa	0.72	92	ePg	Pg	14 55 42.9	+0.5
CDAG	Cicekdag	1.49	64	i P	Pn	14 55 56.3	-0.4
CDAG				i S	Sn	14 56 17.1	+0.2
CDAG	Cicekdag	1.49	64	P	Pn	14 55 56.3	-0.4
CDAG				S	Sn	14 56 17.1	+0.2
ELDT	Eldivan	1.63	22	i P	Pn	14 55 58.8	+0.1
ELDT				i S	Sg	14 56 22.7	+1.8
ELDT	Eldivan	1.63	22	P	Pn	14 55 58.8	+0.1

*ISCJB **04** 15:07:08.2±0.6, 36°93N±0°03×36°57E±0°05, h0km, Error ellipse: s-maj=5.4km s-min=4.2km az=13.3*
*CSEM **04** 15:07:08.2±0.4, 36°93N×36°58E, h1km, MD2.6, Error ellipse: s-maj=12.5km s-min=8.7km az=75.0, Suspected Mining explosion.*
*DDA **04** 15:07:08.8, 36°95N×36°62E, h7km, Md2.6, Suspected Mining explosion.*
ISC 04 15:07:04.3±1.0, 36°92N±0°03×36°51E±0°05, h0km, n13, σ0s71/21, Jordan-Syria region

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
KAMA	Osmaniye	0.30	26	i P	Pb	15 07 13.5	+0.8
KAMA				i S	Sb	15 07 16.9	-1.3
KUZU	Kuzuini	0.48	107	i P	Pb	15 07 16.5	+0.8
KUZU				i S	Sb	15 07 22.7	-0.6
KUZU	Kuzuini	0.48	107	P	Pb	15 07 16.5	+0.8
AYKD	Aykdinkavak	0.55	26	i P	Pb	15 07 18.4	+1.4
AYKD				i S	Sb	15 07 24.7	-0.8
TAHT	Tahtakopru-Hat	0.60	206	ePG	Pn	15 07 20.1	0.0
TAHT				eSG	Sn	15 07 30.3	-0.2
TAHT	Tahtakopru-Hat	0.60	206	ePg	Pn	15 07 20.1	0.0
TAHT				eSg	Sn	15 07 30.3	-0.2
KMRS	Kahramanmaras	0.67	28	ePG	Pg	15 07 16.6	-0.6
KMRS	Kahramanmaras	0.67	28	ePg	Pg	15 07 16.6	-0.6
ANDN	Andirin	0.68	349	i P	Pn	15 07 21.4	+0.1
ANDN				i S	Sn	15 07 32.3	-0.3
ANDN	Andirin	0.68	349	P	Pn	15 07 21.4	+0.1
ANDN				S	Sn	15 07 32.3	-0.3
KOZT	Kozan	0.78	316	ePG	Pn	15 07 23.3	+0.6
KOZT	Kozan	0.78	316	ePg	Pn	15 07 23.3	+0.6
GZT	Gaziantep	0.95	62	i P	Pn	15 07 25.9	+0.7
GZT				i S	Sn	15 07 39.2	-0.3

*ISCJB **04** 15:14:13.5±0.5, 7°9S±0°1×108°32E±0°03, h105km±6km, mb3.5/6, Error ellipse: s-maj=17.5km s-min=4.6km az=9.2*
*DJA **04** 15:14:15.0±0.3, 8°S±3°×10°8E±°, h84km±3km, M4.3/21, mb4.5/3, MLv4.2/21*
*IDC **04** 15:14:17.4±0.8, 7°27S×108°50E, h155km±14km, mb3.3/6, mb1 3.4/6, mb1mx3.1/39, mbtmp3.7/6, MS3.4/1, Ms1 3.4/1, ms1mx2.6/18, Error ellipse: s-maj=77.8km s-min=14.7km az=47.0*
ISC 04 15:14:14.5±1.0, 7°8S±0°1×108°32E±0°04, h99km±7km, n22, σ0s89/28, mb3.6/6, Jawa

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
CMJI	Cimerak	0.13	76	P	Pn	15 14 28.7	+0.4
CMJI				S	Sn	15 14 38.3	-0.3
CISI	Cisompet, Garu	0.57	297	P	Pn	15 14 31.2	+0.5
CISI				S	Sn	15 14 42.4	-0.4
KPJI	Karang Pucung	0.77	51	P	Pn	15 14 32.6	+0.2
KPJI				S	Sn	15 14 45.5	-0.3
LEM	Lembang	1.21	324	P	Pn	15 14 43.5	+6.1
	36nm,0.3s,baz=154,slow=12,SNR=23						
LEM				S	Sn	15 15 02.1	+7.6
	25nm,0.3s,baz=29,slow=18,SNR=6.9						
LEM	Lembang	1.21	324	P	Pn	15 14 37.7	+0.4
CNJI	Cibinong	1.29	293	P	Pn	15 14 38.9	+0.8
CNJI				S	Sn	15 14 56.6	+0.7
SKJI	Sukabumi	1.93	295	P	Pn	15 14 46.5	+0.4
SKJI				S	Sn	15 15 10.7	+0.5
DBJI	Dramaga	2.00	309	P	Pn	15 14 47.4	+0.3
UGM	Wanagama	2.18	93	P	Pn	15 14 49.3	-0.1
UGM				S	Sn	15 15 16.2	+0.1
PCJI	Pacitan	2.85	98	P	Pn	15 14 58.6	+0.4
CGJI	Cibinong	2.87	294	P	Pn	15 14 59.4	+0.9
UWJI	Ujung Watu	2.95	62	P	Pn	15 14 59.4	-0.1
UWJI				S	Sn	15 15 35.2	+0.9
PWJI	Pagerwojo	3.45	94	P	Pn	15 15 06.6	+0.3
PWJI				S	Sn	15 15 47.9	+1.6
GMJI	Gumukmas	5.09	95	P	Pn	15 15 29.7	+1.3
	33nm,2.0s,0.2nm						
GMJI				S	Sn	15 16 27.1	+1.1
	33nm,2.0s,0.2nm						
JAGI	Jajag, Banyuwa	5.81	97	P	Pn	15 15 39.2	+1.0
	47nm,1.2s,0.3nm						
JAGI				S	Sn	15 16 45.0	+1.5
	47nm,1.2s,0.3nm						
MNAI	Manna	6.35	302	P	Pn	15 15 45.7	+0.2
CMAR	Chiang Mai Arr	27.70	341	P	P	15 19 47.5	-6.1
	0.4nm,0.7s,baz=185,slow=10.0,SNR=3.9						
WRA	Warramunga Arr	27.93	118	P	P	15 19 53.6	-2.1
	0.5nm,0.4s,baz=292,slow=12,SNR=10						
WRA				LR	LR	15 31 58.7	
	comp=Z,72nm,21.1s,baz=315,slow=38						
ASAR	Alice Springs	29.15	126	P	P	15 20 05.7	-0.9
	0.5nm,0.6s,baz=304,slow=8.2,SNR=13						
STKA	Stephens Creek	39.12	132	P	P	15 21 32.4	-0.2
	1.8nm,0.7s,baz=298,slow=8.5,SNR=5.4						
MKAR	Makanchi Array	59.10	339	P	P	15 23 58.2	-6.3
	0.5nm,0.8s,baz=144,slow=7.8,SNR=3.6						
BRTR	Keskin Array B	83.35	312	P	P	15 26 25.9	-5.1
	1.2nm,0.8s,baz=138,slow=7.1,SNR=5.8						

*NIED **04** 15:20:00, 37°70N×142°10E, h50km, Mw3.5 Best double couple: M0 2.15000×10^14 NP1:φs232.00000°, δ30.00000°, λ9.00000°. NP2:φs134.00000°, δ85.00000°, λ120.00000°.*
*IDC **04** 15:20:52.0±7.8, 37°02N×142°77E, h0km, mb3.5/2, mb1 3.7/3, mb1mx3.3/35, mbtmp3.4/3, ML3.3/1, MS2.6/1, Ms1 2.6/1, ms1mx2.1/42, Error ellipse: s-maj=164.4km s-min=46.6km az=26.0*
*JMA **04** 15:20:55.7±0.2, 37°73N×142°10E, h25km, M3.5*
*ISCJB **04** 15:20:56.4±1.7, 37°77N±0°06×142°1E±0°1, h21km, mb3.6/2, Error ellipse: s-maj=14.6km s-min=8.2km az=19.6*
ISC 04 15:20:51.5±1.7, 37°61N±0°06×142°26E±0°10, h21km, n12, σ1s40/16, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
JIO	Ouri	1.11	320	P	Pb	15 21 13.0	+1.0
JIO				S	Sb	15 21 24.6	-1.4
JFK	Kawauchi	1.13	258	P	Pb	15 21 14.4	+2.1
JFK				eS	Sn	15 21 27.9	+0.9
JMM	Marumori	1.19	283	P	Pb	15 21 14.7	+1.3
JMM				eS	Sb	15 21 28.1	-0.2
JOU	Okura	1.47	301	P	Pb	15 21 18.9	+0.8
JFT	Otama	1.53	267	P	Pb	15 21 20.9	+1.7
JMK	Ichinoseki	1.57	329	P	Pb	15 21 20.1	+0.3
JYS	Shirataka	1.84	290	P	Pb	15 21 24.4	0.0
JYK	Kaneyama	1.99	312	P	Pb	15 21 25.9	-1.0
MJAR	Matsushiro Arr	3.41	253	Pn	Pb	15 21 49.9	-1.3
	2.7nm,0.3s,baz=80,slow=16,SNR=11						
MJAR				LR	LR	15 23 20.7	
	comp=Z,69nm,18.3s,baz=60,slow=41						
MAT	Matsushiro	3.41	253	P	Pb	15 21 48.6	-2.7
MAT				eS	Sb	15 22 31.1	-1.2
WRA	Warramunga Arr	57.73	189	P	P	15 30 40.5	-0.3
	0.6nm,0.5s,baz=6.3,slow=7.3,SNR=23						
ASAR	Alice Springs	61.45	189	P	P	15 31 07.3	+0.8
	0.2nm,0.7s,baz=15,slow=9.7,SNR=3.0						

GUC 04 15:24:23.1±0.7, 35°07S×72°38W, h20km±4km, ML3.5, 1C, Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
TALC	Talca	0.69	118⇑	i P	Pb	15 24 36.3	-0.1
TALC				i S	Sb	15 24 45.4	-0.1
CHPI	Pichilemu	0.75	24	eP	Pb	15 24 36.9	-0.5
CHPI				i S	Sb	15 24 47.2	+0.1
NICH	Los Niches	0.94	86	eP	Pb	15 24 40.1	-0.6
NICH				i S	Sn	15 24 53.5	-0.6
RCDM	Rinconada Maip	2.05	40	eP	Pn	15 24 57.2	+0.8
CLCH	Cerro Calan	2.26	43	eP	Pn	15 25 01.2	+1.8
CLCH				i S	Sb	15 25 30.3	-0.6
CLCH				AML	AML	15 25 37.7	
	comp=E,508nm,0.6s						
PEL	Peldehue	2.38	37	eP	Pb	15 25 03.4	-2.0
PEL				eS	Sb	15 25 33.4	-0.9
PEL				AML	AML	15 25 42.9	
	comp=E,255nm,0.5s						
ROCH	El Roble	2.38	29	eP	Pn	15 25 02.5	+1.3

*IDC **04** 15:25:11.6±3.3, 35°99N×141°15E, h0km, mb3.3/3, mb1 3.4/4, mb1mx3.2/32, mbtmp3.2/4, ML2.9/1, Error ellipse: s-maj=92.4km s-min=26.8km az=54.0*
*ISCJB **04** 15:25:15.0±1.2, 35°97N±0°07×141°1E±0°1, h31km, mb3.4/3, Error ellipse: s-maj=13.7km s-min=8.1km az=147.1*
*JMA **04** 15:25:17.2±0.1, 35°87N×140°87E, h39km±1km, M2.6*
ISC 04 15:25:16.6±1.5, 35°90N±0°06×141°0E±0°1, h31km, n9, σ0s82/12, mb3.5/3, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
CHOJ	Chosi	0.22	206	P	Pn	15 25 23.8	-0.1
CHOJ				eS	Sn	15 25 28.9	+0.5
JYT	Yasato	0.71	297	P	Pn	15 25 29.7	-0.9
JYT				eS	Sb	15 25 39.2	-1.0
JHO	Hitachi	0.78	335	P	Pb	15 25 31.7	-0.1
BSO4	Boso 4	1.05	210	P	Pb	15 25 35.7	-0.5
MJAR	Matsushiro Arr	2.33	287	Pn	Pn	15 25 53.6	+0.7
	2.7nm,0.3s,baz=103,slow=9.2,SNR=17						
MAT	Matsushiro	2.33	287	P	Pn	15 25 53.7	+0.8
MAT				eS	Sn	15 26 21.7	+1.2
MKAR	Makanchi Array	44.43	303	P	P	15 33 24.1	-0.5
	0.3nm,0.4s,baz=87,slow=9.2,SNR=7.4						
WRA	Warramunga Arr	55.90	188	P	P	15 34 52.5	+0.9
	0.2nm,0.3s,baz=1.5,slow=7.6,SNR=5.7						
ASAR	Alice Springs	59.62	188	P	P	15 35 17.7	-0.1
	0.2nm,0.8s,baz=22,slow=10,SNR=3.4						

MEX 04 15:28:44.9±0.5, 16°39N×99°68W, h4km, MD3.7, Near coast of Guerrero

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
ACX	Acapulco	0.50	340	eP	Pg	15 28 55.2	+0.6
ACX				eS	Sg	15 29 02.1	+0.9
ACP2	Acapulco	0.52	338	eP	Pg	15 28 54.5	-0.4
ACP2				eS	Sg	15 29 02.5	+0.9
CAIG	El Cayaco	0.86	319	eP	Pg	15 28 59.8	-1.6
CAIG				eS	Sg	15 29 11.1	-1.5
PNIG	Pinotepa	1.49	90	eP	Pn	15 29 05.5	-7.0
PNIG				eS	Sn	15 29 20.8	-12
HMTT	Tlapaneco	1.76	37	eP	Pn	15 29 13.7	-2.6

JMA 04 15:34:48.3±0.1, 36°36N×141°01E, h43km±1km, M2.3, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
JHO	Hitachi	0.43	305	S	Sn	15 35 05.3	-0.1

IDC 04 15:35:05.8±3.7, 35°88N×141°63E, h0km, mb3.3/3, mb1 3.5/3, mb1mx3.2/42, mbtmp3.3/3, ML2.3/1, Error ellipse: s-maj=107.7km s-min=27.2km az=54.0, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
MJAR	Matsushiro Arr	2.84	285	Pn	Pn	15 35 51.5	-0.9
	0.5nm,0.3s,baz=91,slow=12,SNR=3.2						
MKAR	Makanchi Array	44.89	303	P	P	15 43 22.0	0.0
	0.2nm,0.6s,baz=80,slow=12,SNR=2.2						
WRA	Warramunga Arr	55.94	188	P	P	15 44 45.8	+0.1
	0.3nm,0.4s,baz=8.1,slow=7.0,SNR=5.5						
ASAR	Alice Springs	59.67	188	P	P	15 45 11.8	-0.2
	0.2nm,0.4s,baz=4.5,slow=7.2,SNR=12						

JMA 04 15:36:24.5, 36°67N×140°61E, h4km±1km, M2.5, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
JHO	Hitachi	0.07	209	P	Pg	15 36 26.1	+0.1
JHO				eS	Sg	15 36 27.1	+0.1
ONAJ	Iwakimizuishiy	0.46	19	P	Pg	15 36 33.7	+0.4
ONAJ				S	Sg	15 36 40.0	+0.7
JYT	Yasato	0.55	217	P	Pg	15 36 35.1	0.0
JYT				eS	Sg	15 36 42.9	+0.6
MAT	Matsushiro	1.94	267	P	Pn	15 36 58.3	+0.1
MAT				S	Sn	15 37 23.7	+0.7

*ISK **04** 15:37:52.7, 36°49N×28°80E, h8km, MD3.1, ML3.1*
*ATH **04** 15:37:52.5, 36°52N×28°80E, h18km±1km, ML2.7/3, Error ellipse: s-maj=2.4km s-min=1.2km az=192.0*
*ISCJB **04** 15:37:53.2±0.5, 36°49N±0°02×28°78E±0°02, h5km±4km, Error ellipse: s-maj=4.0km s-min=3.1km az=166.0*
*CSEM **04** 15:37:53.3±0.1, 36°47N×28°82E, h8km, MD3.1, Error ellipse: s-maj=3.1km s-min=2.3km az=172.0*
*DDA **04** 15:37:53.1, 36°47N×28°76E, h22km, Md3.3*
ISC 04 15:37:53.2±1.1, 36°48N±0°02×28°78E±0°02, h4km±9km, n68, σ0s74/101, Dodecanese Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
FETY	Fethiye	0.29	58	ePG	Pg	15 37 58.6	-0.3
FETY				eSG	Sg	15 38 02.9	+0.1
FETY	Fethiye	0.29	58	ePg	Pg	15 37 58.6	-0.3
FETY				eSg	Sg	15 38 02.9	+0.1
DALY	Dalyan (Mu˜la	0.35	344	ePG	Pg	15 37 59.8	-0.2
DALY				eSG	Sg	15 38 05.4	+0.8
DALY	Dalyan (Mu˜la	0.35	344	ePg	Pg	15 37 59.8	-0.2
DALY				eSg	Sg	15 38 05.4	+0.8
TURN	Turunc	0.41	340	i P	Pb	15 38 03.0	-0.2
TURN				i S	Sb	15 38 11.1	+1.3
TURN	Turunc	0.41	340	P	Pb	15 38 03.0	-0.2
TURN				S	Sb	15 38 11.1	+1.3
ARG	Arkhangelos	0.59	243	P	Pg	15 38 04.8	+0.3
ARG				S	Sb	15 38 14.4	-0.3
AKAS	Kas	0.71	110	i P	Pg	15 38 06.4	-0.5
AKAS				i S	Sb	15 38 18.6	+0.1
AKAS	Kas	0.71	110	P	Pg	15 38 06.4	-0.5
AKAS				S	Sb	15 38 18.6	+0.1
KSL	Kastellorizon	0.73	117	P	Pg	15 38 06.3	-1.0
KSL				S	Sb	15 38 18.0	-0.9
KSL				AML	AML	15 38 24.4	
	comp=N,823µm,1.0s						
KSL				AML	AML	15 38 26.9	
	comp=E,950µm,0.4s						
YER	Yerkesik	0.76	329	ePG	Pg	15 38 07.9	0.0
YER				eSG	Sb	15 38 19.1	-0.8
YER	Yerkesik	0.76	329	ePg	Pg	15 38 07.9	0.0
YER				eSg	Sb	15 38 19.1	-0.8
GLHS	Glhisar (BURDU	0.89	40	ePG	Pg	15 38 09.8	-0.5
GLHS				eSG	Sb	15 38 22.4	-1.2
GLHS	Glhisar (BURDU	0.89	40	ePg	Pg	15 38 09.8	-0.5
GLHS				eSg	Sb	15 38 22.4	-1.2
ELL	Elmali	0.95	73	ePG	Pg	15 38 10.7	-0.8
ELL	Elmali	0.95	73	ePg	Pg	15 38 10.7	-0.8

Code	Station Name	Δ°	AZ°	Op	ISC	Time	Res
GOLH	Golhisar	0.98	40	*i* P	Pg	15 38 11.4	-0.7
GOLH				*i* S	Sb	15 38 26.5	+0.2
GOLH	Golhisar	0.98	40	P	Pg	15 38 11.4	-0.7
GOLH				S	Sb	15 38 26.5	+0.2
BDRM	Kayabasi	1.22	299	*i* P	Pb	15 38 16.8	-0.1
BDRM				*i* S	Sn	15 38 33.8	-0.2
BDRM	Kayabasi	1.22	299	P	Pb	15 38 16.8	-0.1
BDRM				S	Sn	15 38 33.8	-0.2
DENT	Denizli	1.29	9	*e*PN	Pg	15 38 17.3	-0.6
DENT	Denizli	1.29	9	*e*Pn	Pg	15 38 17.3	-0.6
NIS1	Nisyros Isl.	1.29	276	*e*PN	Pg	15 38 17.8	-0.2
NIS1	Nisyros Isl.	1.29	276	P	Pg	15 38 17.2	-0.8
NIS1	Nisyros Isl.	1.29	276	*e*Pn	Pg	15 38 17.8	-0.2
NIS1				S	Sb	15 38 35.1	0.0
NIS1	Nisyros Isl.	1.29	276	P	Pg	15 38 17.2	-0.8
NIS1				S	Sb	15 38 35.1	0.0
NIS1				AML	AML	15 38 41.7	
	comp=N,1967μm,0.5s						
NIS1				AML	AML	15 38 43.7	
	comp=E,2288μm,0.6s						
BODT	Bodrum	1.31	297	*e*PN	Pn	15 38 18.4	0.0
BODT	Bodrum	1.31	297	*e*Pn	Pn	15 38 18.4	0.0
KORT	Korkueli	1.37	67	*i* P	Pb	15 38 20.0	+0.5
KORT				*i* S	Sn	15 38 41.9	+4.0
KORT	Korkueli	1.37	67	P	Pb	15 38 20.0	+0.5
AYDN	Tasoluk	1.38	329	*i* P	Pn	15 38 19.1	-0.2
AYDN				*i* S	Sn	15 38 38.2	+0.2
AYDN	Tasoluk	1.38	329	P	Pn	15 38 19.1	-0.2
AYDN				S	Sn	15 38 38.2	+0.2
UZP	Denizli	1.58	11	*i* P	Pg	15 38 23.3	-0.2
UZP				*i* S	Sn	15 38 43.2	+0.1
KARP	Karpathos	1.61	235	*e*PN	Pn	15 38 22.5	+0.1
KARP	Karpathos	1.61	235	*e*Pn	Pn	15 38 22.5	+0.1
KARP				S	Sg	15 38 44.9	0.0
KARP	Karpathos	1.61	235	P	Pn	15 38 22.6	+0.2
KARP				S	Sg	15 38 44.9	0.0
KARP				AML	AML	15 38 50.9	
	comp=E,382μm,0.7s						
KARP				AML	AML	15 38 51.3	
	comp=N,370μm,0.5s						
AYDB	Zeytinkoy-Aydi	1.62	334	*e*PN	Pn	15 38 22.6	-0.2
AYDB	Zeytinkoy-Aydi	1.62	334	*e*Pn	Pn	15 38 22.6	-0.2
GCAM	G?zelcaml?	1.73	315	*i* P	Pn	15 38 24.0	-0.1
GCAM				*i* S	Sn	15 38 45.2	-1.4
GCAM	G?zelcaml?	1.73	315	P	Pn	15 38 24.0	-0.1
GCAM				S	Sn	15 38 45.2	-1.4
BCK	Bucak	1.75	55	*e*PN	Pn	15 38 23.7	-0.7
BCK	Bucak	1.75	55	*e*Pn	Pn	15 38 23.7	-0.7
KHL	Karahalli	1.93	18	*e*PN	Pn	15 38 26.2	-0.7
KHL	Karahalli	1.93	18	*e*Pn	Pn	15 38 26.3	-0.7
KHAL	Karahalli	1.97	17	*i* P	Pn	15 38 27.2	-0.3
KHAL				*i* S	Sn	15 38 53.1	+0.4
KHAL	Karahalli	1.97	17	P	Pn	15 38 27.2	-0.3
KHAL				S	Sn	15 38 53.1	+0.4
SMG	Samos	1.98	309	P	Pn	15 38 27.5	0.0
SMG				S	Sn	15 38 51.5	-1.2
SMG	Samos	1.98	309	P	Pn	15 38 27.5	0.0
SMG				S	Sn	15 38 51.5	-1.2
KULA	Kula-Manisa	2.03	357	*e*PN	Pn	15 38 28.1	-0.2
KULA	Kula-Manisa	2.03	357	*e*Pn	Pn	15 38 28.1	-0.2
BAGO	Egridir - ISPA	2.20	46	*i* P	Pn	15 38 31.9	+1.3
BAGO				*i* S	Sb	15 39 00.2	-1.2
BLCB	Balcova	2.35	325	*e*PN	Pn	15 38 32.8	+0.2
BLCB	Balcova	2.35	325	*e*Pn	Pn	15 38 32.8	+0.2
AKS	Akhisar	2.51	343	*e*PN	Pn	15 38 34.9	+0.1
AKS	Akhisar	2.51	343	*e*Pn	Pn	15 38 34.9	+0.1
NPS	Neapolis	2.84	246	P	Pn	15 38 39.7	+0.3
NPS	Neapolis	2.84	246	P	Pn	15 38 39.6	+0.3
CHOS	Chios island	2.88	312	*e*PN	Pn	15 38 40.4	+0.4
CHOS	Chios island	2.88	312	P	Pn	15 38 40.4	+0.4
CHOS	Chios island	2.88	312	P	Pn	15 38 40.4	+0.4
LAST	Lasithi	2.99	245	P	Pn	15 38 42.2	+0.8
LAST	Lasithi	2.99	245	P	Pn	15 38 42.2	+0.8
TVSB	Tavsanli	3.01	10	*e*PN	Pn	15 38 41.8	0.0
TVSB	Tavsanli	3.01	10	*e*Pn	Pn	15 38 41.8	0.0
GELI	Tayfur-Gelibol	4.31	336	*e*PN	Pn	15 39 00.4	+0.9
GELI	Tayfur-Gelibol	4.31	336	*e*Pn	Pn	15 39 00.4	+0.9
GADA	Gvkgeada	4.34	329	*e*PN	Pn	15 39 01.0	+1.0
GADA	Gvkgeada	4.34	329	*e*Pn	Pn	15 39 01.0	+1.0

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*DDA **04** 15:40:05.7, 36°.45N×28°.73E, h7^{km}, Md3.0*
*CSEM **04** 15:40:06.0±0.6, 36°.47N×28°.79E, h2^{km}, MD3.0, Error ellipse: s-maj=15.4km s-min=6.4km az=24.0*
ISC 04 15:40:05.2±1.4**, 36°.51N**±0°.07×**28°.82E**±0°.04**, h17**^{km}±8^{km}**, n14,** σ0^{s}98/24**, Dodecanese Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FETY	Fethiye	0.25	59	*e*PG	Pg	15 40 10.8	0.0
FETY				*e*SG	Sb	15 40 15.8	+0.7
FETY	Fethiye	0.25	59	*e*Pg	Pg	15 40 10.8	0.0
FETY				*e*Sg	Sb	15 40 15.9	+0.7
DALY	Dalyan (Mu˜la	0.34	336	*e*PG	Pg	15 40 12.3	0.0
DALY	Dalyan (Mu˜la	0.34	336	*e*Pg	Pg	15 40 12.3	0.0
TURN	Turunc	0.40	334	*i* P	Pn	15 40 15.7	-0.5
TURN				*i* S	Sn	15 40 24.0	+0.6
TURN	Turunc	0.40	334	P	Pn	15 40 15.7	-0.5
TURN				S	Sn	15 40 24.0	+0.6
AKAS	Kas	0.69	113	*i* P	Pg	15 40 19.2	+0.4
AKAS				*i* S	Sn	15 40 31.2	+0.6
AKAS	Kas	0.69	113	P	Pg	15 40 19.2	+0.4
AKAS				S	Sn	15 40 31.2	+0.6
YER	Yerkesik	0.76	325	*e*PG	Pb	15 40 17.9	-2.1
YER	Yerkesik	0.76	325	*e*Pg	Pb	15 40 17.9	-2.1
BDRM	Kayabasi	1.24	297	*i* P	Pg	15 40 29.5	+0.4
BDRM				*i* S	Sn	15 40 44.8	+0.8
BDRM	Kayabasi	1.24	297	P	Pg	15 40 29.5	+0.4
BDRM				S	Sn	15 40 44.8	+0.8
AYDN	Tasoluk	1.38	327	*i* P	Pg	15 40 32.3	+0.6
AYDN				*i* S	Sg	15 40 51.2	+1.5
AYDN	Tasoluk	1.38	327	P	Pg	15 40 32.3	+0.6
AYDN				S	Sg	15 40 51.2	+1.5

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*NIED **04** 15:47:00, 37°.60N×141°.50E, h50^{km}, Mw4.0 Best double couple: M$_0$1.31000×10^{15} NP1:φ$_s$208.00000°, δ19.00000°, λ98.00000°. NP2:φ$_s$19.00000°, δ71.00000°, λ87.00000°.*
*ISCJB **04** 15:47:03.9±0.7, 37°.55N±0°.03×141°.60E±0°.07, h55^{km}±5^{km}, mb4.2/22, MS3.2/2, Error ellipse: s-maj=9.6km s-min=5.2km az=5.5*
*JMA **04** 15:47:05.6±0.1, 37°.60N×141°.49E, h47^{km}±2^{km}, M4.0*
JMA Felt II J1.
*NEIC **04** 15:47:06.3±0.5, 37°.53N×141°.60E, h61^{km}±5^{km}, mb4.6/4, Error ellipse: s-maj=8.5km s-min=6.3km az=107.0*
*IDC **04** 15:47:06.0±0.6, 37°.57N×141°.53E, h55^{km}±6^{km}, mb3.8/18, mb1 3.9/23, mb1mx3.7/70, mbtmp4.1/23, MS3.0/8, Ms1 3.0/8, ms1mx2.8/47, Error ellipse: s-maj=15.8km s-min=9.6km az=106.0*
ISC 04 15:47:05.5±0.7**, 37°.58N**±0°.04×**141°.59E**±0°.06**, h51**^{km}±6^{km}**, n55,** σ**1^{s}14**/58**, mb4.2**/22**, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	Kawauchi	0.61	249	P	Pn	15 47 17.3	-0.9
JFK				S	Sn	15 47 25.1	-2.3
JMM	Marumori	0.69	294	P	Pn	15 47 18.2	-1.0
JMM				S	Sn	15 47 27.2	-1.9
ONAJ	Iwakimizuishiy	0.79	233	P	Pn	15 47 19.8	-0.8
ONAJ				S	Sn	15 47 29.5	-2.1
JIO	Ouri	0.89	348	P	Pn	15 47 21.3	-0.5
JIO				S	Sn	15 47 32.1	-1.7
JFT	Otama	1.00	267	P	Pn	15 47 23.0	-0.3
JFT				S	Sn	15 47 35.2	-1.2
JOU	Okura	1.07	317	P	Pn	15 47 23.4	-0.9
JOU				S	Sn	15 47 37.2	-0.9
JYS	Shirataka	1.36	298	P	Pn	15 47 27.5	-0.7
MJAR	Matsushiro Arr	2.90	250	P	Pn	15 47 49.7	+0.5
	6.7nm,0.3s,baz=56,slow=11,SNR=36						
MJAR				LR	LR	15 49 11.8	
	comp=Z,241nm,20.0s,baz=75,slow=44						
MAJO	Matsushiro	2.90	250	*e*Pn	Pn	15 47 49.9	+0.7
MAT	Matsushiro	2.90	250	P	Pn	15 47 49.7	+0.5
MAT				*e*S	Sn	15 48 26.6	+3.8
ERM	Erimo	4.59	15	*e*Pn	Pn	15 48 13.4	+1.1
JHJ2	Mitsune	4.69	199	*e*Pn	Pn	15 48 14.7	+0.9
JHJ	Hachijo jima 2	4.69	199	P	Pn	15 48 13.8	0.0
	14nm,0.3s,baz=101,slow=16,SNR=3.6						
JHJ				S	Sn	15 49 06.5	-0.4
	39nm,0.3s,baz=66,slow=20,SNR=4.9						
JNU	Nakatsue	9.81	246	LR	LR	15 53 34.1	
	comp=Z,120nm,18.9s,baz=348,slow=40						
USRK	Ussuriysk Ar.	9.82	315	P	Pn	15 49 25.1	+1.1
	0.4nm,0.3s,baz=130,slow=16,SNR=10						
USRK				LR	LR	15 52 46.3	
	comp=Z,84nm,20.7s,baz=97,slow=35						
CBIJ	Chichi jima	10.47	177	*e*Pn	Pn	15 49 31.3	-1.7
CBIJ				S	Sn	15 51 20.6	-8.2
JCJ	Chichijima	10.47	177	P	Pn	15 49 30.8	-2.2
	baz=315,slow=20						
JCJ				S	Sn	15 51 20.6	-8.2
	8.5nm,0.3s,baz=89,slow=24,SNR=7.5						
KSRS	Korea Array	10.86	273	P	Pn	15 49 39.9	+1.6
	0.2nm,0.3s,baz=91,slow=13,SNR=11						
KSRS				LR	LR	15 53 29.5	
	comp=Z,65nm,19.6s,baz=76,slow=35						
KSAR	Wonju Array Be	10.89	273	P	Pn	15 49 39.9	+1.2
MDJ	Mudanjiang	11.45	312	*e*Pn	Pn	15 49 50.0	+3.7
KLR	Kul'dur	13.65	332	P	Pn	15 50 18.1	+1.8
	0.1nm,0.3s,baz=180,slow=17,SNR=2.4						
KLR				LR	LR	15 54 57.8	
	comp=Z,59nm,18.6s,baz=114,slow=35						
PETK	Petropavlovsk-	19.14	31	LR	LR	15 58 15.9	
	comp=Z,33nm,18.2s,baz=234,slow=35						
MA2	Magadan	22.79	12	P	P	15 52 02.9	-0.7
	1.5nm,0.4s,baz=216,slow=7.8,SNR=7.4						
MA2	Magadan	22.79	12	*e*P	P	15 52 03.2	-0.3
SEY	Seymchan	26.23	11	P	P	15 52 35.9	+0.6
	2.7nm,0.8s,baz=197,slow=8.0,SNR=13						
ENH	Enshi	27.52	264	*e*P	P	15 52 46.4	-1.0
	16nm,0.9s						
SONM	Songino Array	27.60	303	P	P	15 52 47.1	-0.9
	2.6nm,0.7s,baz=100,slow=9.3,SNR=17						
SONM				LR	LR	16 03 02.1	
	comp=Z,22nm,18.9s,baz=60,slow=35						
H11N1	WAKE ISLAND Hy	28.32	122	T	T	16 23 08.4	
	baz=314,slow=74,SNR=408						
H11N3	WAKE ISLAND Hy	28.33	122	T	T	16 23 08.6	
	baz=199,slow=74,SNR=516						
H11S1	WAKE ISLAND Hy	29.04	124	T	T	16 24 08.8	
	baz=316,slow=76,SNR=351						
H11S3	WAKE ISLAND Hy	29.05	124	T	T	16 24 09.9	
	baz=316,slow=76,SNR=304						
H11S2	WAKE ISLAND Hy	29.06	124	T	T	16 24 03.1	
	baz=316,slow=76,SNR=180						
ZALV	Zalesovo Beam	41.65	312	P	P	15 54 48.9	+0.2
	3.0nm,0.5s,baz=91,slow=7.4,SNR=13						
MKAR	Makanchi Array	43.95	302	P	P	15 55 07.4	0.0
	4.3nm,0.9s,baz=89,slow=9.9,SNR=36						
KURK	Kurchatov	45.71	308	*e*P	P	15 55 20.7	-0.6
	12nm,0.7s						
KURBB	Kurchatov Arra	45.78	308	P	P	15 55 21.6	-0.2
	6.3nm,0.7s,baz=83,slow=8.2,SNR=19						
ILAR	Eielson Array	48.96	33	P	P	15 55 47.4	+1.0
	0.6nm,0.8s,baz=272,slow=6.0,SNR=6.0						
ILAR				pP	pP	15 56 01.8	+1.7
	0.8nm,0.7s,baz=272,slow=6.9,SNR=5.2						
TKM2	Tokmak 2	49.49	298	*e*P	P	15 55 51.1	+0.1
BVAR	Borovoye Array	50.31	312	P	P	15 55 56.7	-0.2
	1.1nm,0.6s,baz=79,slow=7.7,SNR=7.9						
BVAR				PcP	PcP	15 57 14.5	-0.4
	0.7nm,0.5s,baz=90,slow=4.9,SNR=3.6						
BRVK	Borovoye	50.36	312	*e*P	P	15 55 56.1	-1.2
	2.6nm,0.8s						
INK	Inuvik	53.84	27	P	P	15 56 24.2	+1.5
	1.8nm,0.9s,baz=308,slow=7.0,SNR=6.5						
WRAB	Tennant Creek	57.61	188	*e*P	P	15 56 50.7	+0.3
WRA	Warramunga Arr	57.62	188	P	P	15 56 50.6	+0.2
	1.2nm,0.6s,baz=5.1,slow=7.1,SNR=18						
WRA				pP	pP	15 57 04.5	0.0
	1.4nm,0.5s,baz=6.2,slow=7.4,SNR=6.9						
ABKAR	Akbulak array	57.70	310	*e*P	P	15 56 49.7	-1.0
	2.9nm,0.5s						
ASAR	Alice Springs	61.35	188	P	P	15 57 16.2	+0.2
	0.3nm,0.7s,baz=1.2,slow=5.9,SNR=9.1						
ASAR				pP	pP	15 57 31.4	+1.2
	1.0nm,0.8s,baz=9.8,slow=6.9,SNR=7.5						
RES	Resolute Bay	62.03	15	P	P	15 57 19.2	-0.8
	1.2nm,0.8s,baz=321,slow=6.2,SNR=5.5						
YKA	Yellowknife Ar	63.26	30	P	P	15 57 28.8	+0.4
	0.4nm,0.7s,baz=304,slow=6.8,SNR=8.0						
YKA				pP	pP	15 57 42.9	+0.3
	0.3nm,0.6s,baz=303,slow=6.6,SNR=3.7						
GEYT	Alibeck	63.69	299	P	P	15 57 31.6	-0.2
	0.9nm,0.4s,baz=57,slow=5.5,SNR=3.7						
FINES	FINESS Array B	68.39	332	P	P	15 58 01.4	-0.1
	3.9nm,0.7s,baz=38,slow=8.4,SNR=15						
KBZ	Khabaz	70.65	311	P	P	15 58 15.8	+0.1
	3.4nm,0.9s,baz=21,slow=2.5,SNR=4.5						
NB2	NORSAR Subarra	73.73	337	P	P	15 58 33.7	-0.1
	comp=Z,0.7nm,0.5s,baz=37,slow=6.2						
NOA	NORSAR Array B	73.73	337	P	P	15 58 33.0	-0.8
	comp=Z,1.7nm,0.8s,baz=40,slow=5.7,SNR=5.3						
AKASG	Malin Array Be	73.95	322	P	P	15 58 35.0	-0.3
	comp=Z,1.8nm,0.5s,baz=45,slow=6.0,SNR=18						
PDAR	Pinedale Array	77.18	46	pP	pP	15 59 10.3	+1.5
	comp=Z,0.6nm,0.6s,baz=250,slow=2.4,SNR=6.1						
EIL	Elat	84.20	303	LR	LR	16 43 28.5	
	comp=Z,28nm,18.2s,baz=47,slow=40						

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*ISK **04** 15:51:41.6, 36°.39N×28°.68E, h4^{km}, MD2.8*
*CSEM **04** 15:51:43.5±0.6, 36°.41N×28°.76E, h10^{km}, MD2.8, Error ellipse: s-maj=15.0km s-min=6.6km az=27.0*
*DDA **04** 15:51:44.0, 36°.49N×28°.79E, h7^{km}, Md2.8*
ISC 04 15:51:43.3±1.2**, 36°.47N**±0°.06×**28°.78E**±0°.04**, h18**^{km}±4^{km}**, n20,** σ**0^{s}78**/32**, Dodecanese Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FETY	Fethiye	0.29	55	*e*PG	Pb	15 51 50.2	+0.2
FETY	Fethiye	0.29	55	*e*Pg	Pb	15 51 50.2	+0.2
DALY	Dalyan (Mu˜la	0.36	343	*e*PG	Pg	15 51 50.5	-0.4
DALY				*e*SG	Sb	15 51 57.1	+0.5
DALY	Dalyan (Mu˜la	0.36	343	*e*Pg	Pg	15 51 50.5	-0.4
DALY				*e*Sg	Sb	15 51 57.1	+0.5
TURN	Turunc	0.43	340	*i* P	Pn	15 51 53.9	-0.6
TURN				*i* S	Sn	15 52 02.0	+0.1
TURN	Turunc	0.43	340	P	Pn	15 51 53.9	-0.6
TURN				S	Sn	15 52 02.0	+0.1
AKAS	Kas	0.70	109	*i* P	Pn	15 51 57.4	-1.1
AKAS				*i* S	Sn	15 52 08.6	-0.3
AKAS	Kas	0.70	109	P	Pn	15 51 57.4	-1.1
AKAS				S	Sn	15 52 08.6	-0.3
YER	Yerkesik	0.78	329	*e*PG	Pb	15 51 57.6	-0.7
YER				*e*SG	Sg	15 52 09.4	+0.6
YER	Yerkesik	0.78	329	*e*Pg	Pb	15 51 57.6	-0.7
YER				*e*Sg	Sg	15 52 09.4	+0.6
ELL	Elmali	0.95	73	*e*PG	Pg	15 52 02.5	+0.8
ELL	Elmali	0.95	73	*e*Pg	Pg	15 52 02.5	+0.8
BDRM	Kayabasi	1.23	299	*i* P	Pg	15 52 08.5	+1.4
BDRM				*i* S	Sg	15 52 24.4	+1.2
BDRM	Kayabasi	1.23	299	P	Pg	15 52 08.5	+1.4
BDRM				S	Sg	15 52 24.4	+1.2
BODT	Bodrum	1.32	297	*e*PN	Pb	15 52 06.8	-0.8
BODT	Bodrum	1.32	297	*e*Pn	Pb	15 52 06.8	-0.8
AYDN	Tasoluk	1.39	329	*i* P	Pg	15 52 10.1	0.0
AYDN				*i* S	Sg	15 52 29.0	+0.6
AYDN	Tasoluk	1.39	329	P	Pg	15 52 10.1	0.0
AYDN				S	Sg	15 52 29.0	+0.6
AYDB	Zeytinkoy-Aydi	1.64	334	*e*PN	Pb	15 52 12.5	-0.5
AYDB	Zeytinkoy-Aydi	1.64	334	*e*Pn	Pb	15 52 12.5	-0.5

IDC 04 15:52:21.0±3.7**, 13°.24S**×**165°.72E, h0**^{km}**, mb3.8**/3**, mb1 3.8**/4**, mb1mx3.5**/43**, mbtmp3.9**/4**, ML4.4**/1**, MS3.1**/2**, Ms1 3.1**/2**, ms1mx2.7**/37**, Error ellipse: s-maj=78.6km s-min=41.7km az=95.0, Vanuatu Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HNR	Honiara	6.81	303	Pn	Pn	15 54 01.7	-0.5
	7.1nm,0.3s,baz=203,slow=7.8,SNR=6.3						
PMG	Port Moresby	18.59	280	LR	LR	16 03 40.5	
	comp=Z,77nm,18.4s,baz=152,slow=36						
AFI	Afiamalu	21.89	94	LR	LR	16 04 08.6	
	comp=Z,41nm,20.6s,baz=84,slow=32						
STKA	Stephens Creek	28.87	226	P	P	15 58 20.4	-1.1
	1.1nm,0.7s,baz=63,slow=11,SNR=2.8						
ASAR	Alice Springs	31.84	246	P	P	15 58 49.0	+1.1
	0.5nm,0.7s,baz=68,slow=9.3,SNR=7.7						
MKAR	Makanchi Array	95.09	317	P	P	16 05 46.1	0.0
	0.2nm,0.7s,baz=93,slow=6.0,SNR=3.1						

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*NIED **04** 16:09:00, 35°.10N×141°.30E, h26^{km}, Mw4.1 Best double couple: M$_0$1.77000×10^{15} NP1:φ$_s$20.00000°, δ41.00000°, λ93.00000°. NP2:φ$_s$195.00000°, δ49.00000°, λ87.00000°.*
*JMA **04** 16:09:00.2±0.2, 35°.06N×141°.33E, h38^{km}±4^{km}, M3.7*
*ISCJB **04** 16:09:01.9±0.5, 34°.96N±0°.04×141°.18E±0°.06, h48^{km}, mb3.9/17, MS3.3/4, Error ellipse: s-maj=6.9km s-min=6.2km az=173.7*
*IDC **04** 16:09:04.0±2.1, 35°.01N×141°.13E, h46^{km}±20^{km}, mb3.7/16, mb1 3.9/20, mb1mx3.7/46, mbtmp3.9/20, ML3.1/4, MS3.3/9, Ms1 3.3/9, ms1mx3.0/51, Error ellipse: s-maj=18.3km s-min=12.2km az=97.0*
ISC 04 16:09:03.6±0.6**, 34°.92N**±0°.06×**141°.15E**±0°.08**, h48**^{km}**, n38,** σ**1^{s}17**/33**, mb3.9**/17**, MS3.3**/4**, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BSO1	Boso 1	0.30	208	P	Pn	16 09 10.6	-1.3
BSO3	Boso 3	0.54	258	P	Pn	16 09 14.1	-0.8
BSO4	Boso 4	0.67	276	P	Pn	16 09 15.9	-0.9
KTR	Katsuura	0.72	289	P	Pn	16 09 15.7	-1.8
KTR				*e*S	Sn	16 09 26.9	-0.7
CHOJ	Chosi	0.82	343	P	Pn	16 09 14.1	-4.7
JHJ	Hachijo jima 2	2.12	213	P	Pn	16 09 37.1	+0.5
	56nm,0.3s,baz=96,slow=24,SNR=9.3						
JHJ				S	Sn	16 10 02.0	+0.2
	104nm,0.3s,baz=236,slow=20,SNR=6.8						
MJAR	Matsushiro Arr	2.89	305	P	Pn	16 09 46.5	-0.7
	7.9nm,0.3s,baz=104,slow=7.4,SNR=38						
MJAR				LR	LR	16 10 58.9	
	comp=Z,200nm,20.1s,baz=125,slow=41						
MAT	Matsushiro	2.89	305	P	Pn	16 09 48.1	+1.0
MAT				S	Sn	16 10 20.2	-0.5
JCJ	Chichijima	7.85	173	P	Pn	16 10 53.9	-1.3
	baz=270,slow=13						
JCJ				S	Sn	16 12 18.3	-4.4
	baz=274,slow=19						
JNU	Nakatsue	8.71	261	LR	LR	16 15 05.2	
	comp=Z,217nm,19.1s,baz=307,slow=42						
KSRS	Korea Array	10.98	287	P	Pn	16 11 39.2	+1.2
	0.1nm,0.3s,baz=101,slow=13,SNR=3.0						
KSRS				LR	LR	16 16 09.1	
	comp=Z,171nm,20.0s,baz=109,slow=39						
USRK	Ussuriysk Ar.	11.65	325	P	Pn	16 11 46.6	-0.5
	0.1nm,0.3s,baz=113,slow=15,SNR=3.3						
USRK				LR	LR	16 16 06.2	
	comp=Z,113nm,19.6s,baz=144,slow=36						
KLR	Kul'dur	15.89	337	LR	LR	16 18 59.6	
	comp=Z,122nm,18.4s,baz=113,slow=38						
MA2	Magadan	25.46	11	P	P	16 14 25.9	-0.9
	4.5nm,0.7s,baz=211,slow=7.5,SNR=25						
MA2				LR	LR	16 23 59.4	
	comp=Z,38nm,20.2s,baz=237,slow=35						
H11N2	WAKE ISLAND Hy	27.32	117	T	T	16 43 15.7	
	baz=309,slow=75,SNR=88						
H11N1	WAKE ISLAND Hy	27.32	117	T	T	16 43 21.5	
	baz=309,slow=75,SNR=68						
H11N3	WAKE ISLAND Hy	27.34	117	T	T	16 43 17.1	
	baz=309,slow=75,SNR=75						
H11S3	WAKE ISLAND Hy	27.95	119	T	T	16 44 11.0	
	baz=312,slow=76,SNR=120						
H11S1	WAKE ISLAND Hy	27.95	119	T	T	16 44 05.3	
	baz=312,slow=76,SNR=126						
H11S2	WAKE ISLAND Hy	27.97	119	T	T	16 44 12.4	
	baz=312,slow=76,SNR=86						
SONM	Songino Array	28.84	307	P	P	16 14 57.3	-0.1
	0.5nm,0.5s,baz=105,slow=8.7,SNR=3.8						
SONM				LR	LR	16 26 59.2	
	comp=Z,67nm,19.0s,baz=97,slow=37						
SEY	Seymchan	28.90	11	P	P	16 14 57.0	-0.6
	0.9nm,0.8s,baz=231,slow=6.1,SNR=6.1						
CMAR	Chiang Mai Arr	40.79	257	P	P	16 16 40.1	-0.3
	0.3nm,0.6s,baz=48,slow=8.6,SNR=4.3						
ZALV	Zalesovo Beam	43.20	314	P	P	16 16 58.6	-1.0
	0.9nm,0.3s,baz=86,slow=6.4,SNR=4.8						
MKAR	Makanchi Array	45.09	304	P	P	16 17 15.7	+0.8
	0.8nm,0.6s,baz=90,slow=9.3,SNR=13						
MKAR				LR	LR	16 38 02.6	
	comp=Z,38nm,18.6s,baz=104,slow=39						
ILAR	Eielson Array	51.40	31	P	P	16 18 03.5	+0.3
	1.6nm,0.8s,baz=266,slow=6.2,SNR=16						
BVAR	Borovoye Array	51.85	314	P	P	16 18 07.3	+0.5
	0.5nm,0.4s,baz=104,slow=4.8,SNR=3.1						
WRA	Warramunga Arr	54.94	188	P	P	16 18 30.9	+1.2
	9.2nm,0.7s,baz=4.4,slow=7.3,SNR=87						
INK	Inuvik	56.37	26	P	P	16 18 39.5	+0.1
	1.1nm,0.6s,baz=288,slow=6.5,SNR=7.0						
ASAR	Alice Springs	58.67	188	P	P	16 18 57.5	+1.4
	1.4nm,0.5s,baz=1.8,slow=7.7,SNR=48						
YKA	Yellowknife Ar	65.74	30	P	P	16 19 43.4	+0.4
	1.0nm,0.7s,baz=298,slow=6.4,SNR=19						
STKA	Stephens Creek	66.44	180	P	P	16 19 49.0	+1.2
	1.4nm,0.6s,baz=343,slow=5.0,SNR=7.2						
FINES	FINESS Array B	70.58	333	P	P	16 20 13.3	0.0
	1.6nm,0.9s,baz=82,slow=13,SNR=3.4						
NB2	NORSAR Subarra	76.05	337	P	P	16 20 46.3	+0.7
	comp=Z,1.4nm,0.7s,baz=39,slow=5.6						
NOA	NORSAR Array B	76.05	337	P	P	16 20 45.2	-0.4
	comp=Z,0.9nm,0.7s,baz=41,slow=5.6,SNR=3.7						
NOA				LR	LR	16 57 32.2	
	comp=Z,25nm,20.5s,baz=340,slow=38						
NVAR	Mina Array Bea	76.43	53	P	P	16 20 49.2	+0.7
	comp=Z,1.5nm,0.7s,baz=284,slow=6.0,SNR=12						
PDAR	Pinedale Array	79.30	45	P	P	16 21 04.5	+0.1
	comp=Z,0.7nm,0.6s,baz=290,slow=1.7,SNR=11						
LPAZ	La Paz	147.91	62	PKPbc	PKPbc	16 28 45.1	+0.4
	comp=Z,0.9nm,0.6s,baz=22,slow=12,SNR=4.3						

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*IDC **04** 16:15:12.1±2.8, 38°.41N×142°.38E, h0^{km}, mb3.4/3, mb1 3.3/4, mb1mx3.1/49, mbtmp3.3/4, ML2.9/1, Error ellipse: s-maj=67.4km s-min=34.3km az=69.0*
*JMA **04** 16:15:21.1±0.1, 38°.18N×141°.67E, h51^{km}±1^{km}, M3.4*
ISC 04 16:15:19.5±2.0**, 38°.16N**±0°.04×**141°.8E**±0°.1**, h31**^{km}±11^{km}**, n19,** σ**1^{s}17**/22**, mb3.6**/3**, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	Ouri	0.46	310	P	Pn	16 15 31.2	+1.3
JIO				S	Sn	16 15 38.0	+1.0
JMM	Marumori	0.84	250	P	Pb	16 15 35.5	-0.2
JMM				S	Sb	16 15 45.9	-0.8
JMK	Ichinoseki	0.91	330	P	Pb	16 15 37.1	+0.4
JMK				S	Sb	16 15 48.2	-0.3
JOU	Okura	0.91	283	P	Pb	16 15 36.8	0.0
JOU				S	Sb	16 15 48.1	-0.6
JFK	Kawauchi	1.08	223	P	Pb	16 15 39.4	-0.3
JFK				S	Sn	16 15 52.2	-0.3
JFT	Otama	1.32	241	P	Pb	16 15 43.0	-0.7
JFT				S	Sn	16 15 58.7	+0.3
JYK	Kaneyama	1.35	304	P	Pn	16 15 42.9	+0.6
JYK				*e*S	Sn	16 15 59.2	0.0
JYS	Shirataka	1.36	273	P	Pn	16 15 43.0	+0.6
JYS				*e*S	Sn	16 15 59.3	-0.1
MJAR	Matsushiro Arr	3.28	242	Pn	Pn	16 16 11.8	+2.9
	1.0nm,0.3s,baz=56,slow=10,SNR=7.0						
MAT	Matsushiro	3.29	242	P	Pn	16 16 11.7	+2.8
MAT				*e*S	Sb	16 16 56.6	-0.1
H11N2	WAKE ISLAND Hy	28.49	123	T	T	16 51 26.3	
	baz=316,slow=76,SNR=16						
H11N1	WAKE ISLAND Hy	28.50	123	T	T	16 51 24.9	
	baz=316,slow=76,SNR=27						
H11N3	WAKE ISLAND Hy	28.51	123	T	T	16 51 32.2	
	baz=316,slow=76,SNR=20						
H11S1	WAKE ISLAND Hy	29.24	125	T	T	16 52 23.9	
	baz=317,slow=76,SNR=19						
H11S3	WAKE ISLAND Hy	29.24	125	T	T	16 52 23.2	
	baz=317,slow=76,SNR=21						
H11S2	WAKE ISLAND Hy	29.26	125	T	T	16 52 24.3	
	baz=317,slow=76,SNR=22						
MKAR	Makanchi Array	43.78	301	P	P	16 23 21.1	-1.1
	0.3nm,0.6s,baz=82,slow=8.5,SNR=3.7						
KURBB	Kurchatov Arra	45.55	307	P	P	16 23 35.3	-0.9
	0.5nm,0.3s,baz=79,slow=8.2,SNR=4.2						
ASAR	Alice Springs	61.95	188	P	P	16 25 35.7	-0.7
	0.6nm,1.2s,baz=15,slow=7.7,SNR=4.1						

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*IDC **04** 16:21:17.1±1.5, 3°.18S×135°.39E, h0^{km}, mb3.6/2, mb1 3.9/3, mb1mx3.3/43, mbtmp3.7/3, ML3.3/2, Error ellipse: s-maj=39.0km s-min=29.3km az=76.0*
*DJA **04** 16:21:26.5±2.0, 4°S±4°×13°6E±°, h27^{km}±23^{km}, M4.2/7,*

mB4.8/1, mb4.3/5, MLv4.2/7, Mw(mB)4.1/1

ISC 04 16:21:23.4±1.0**, 3°.42S**±0°.09×**135°.34E**±0°.06**, h22km, n11, σ3s.06**/10**, Irian Jaya region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KMPI	**Kaimana, Papua**	**1.65**	**262**	P	Pb	16 21 57.4	+4.3
KMPI				S	**Sb**	**16 22 19.1**	**+5.7**
RKPI	**Ransiki, Papua**	**2.22**	**329**	P	**Pb**	**16 22 04.1**	**+1.2**
FAKI	**Fak Fak**	**3.12**	**279**	P	**Pb**	**16 22 16.5**	**-1.8**
FAKI				S	**Sb**	**16 22 57.2**	**+1.2**
SWI	**Sorong**	**4.80**	**302**	P	Pn	16 22 39.1	+4.7
	35nm,0.7s,1μm0.3nm						
SWI				S	**Sb**	**16 23 41.3**	**-3.0**
	35nm,0.7s,1μm0.3nm						
GENI	**Genyem**	**4.89**	**80**	P	**Pn**	**16 22 37.2**	**+1.5**
GENI				S	**Sn**	**16 23 34.0**	**+2.3**
JAY	**Jayapura**	**5.43**	**81**	Pn	**Pn**	**16 22 40.5**	**-2.7**
	0.1nm,0.3s,baz=163,slow=19,SNR=3.2						
NLAI	**Namlea**	**8.23**	**271**	P	Pn	16 23 25.6	+4.1
	13nm,0.6s						
SANI	**Sanana**	**9.44**	**278**	P	Pn	16 23 43.0	+4.9
	18nm,1.4s						
WRA	**Warramunga Arr**	**16.45**	**183**	Pn	**Pn**	**16 25 11.2**	**-1.8**
	0.2nm,0.3s,baz=8.7,slow=13,SNR=9.9						
WRA				Sn	Sn	16 27 59.2	-16
	0.2nm,0.3s,baz=8.4,slow=22,SNR=4.7						
ASAR	**Alice Springs**	**20.18**	**184**	P	**P**	**16 25 56.4**	**-0.2**
	4.7nm,0.7s,baz=7.4,slow=11,SNR=61						
ASAR				S	S	16 29 32.0	-10
	0.4nm,0.6s,baz=3.4,slow=29,SNR=4.1						
MKAR	**Makanchi Array**	**68.33**	**324**	P	P	16 32 18.9	-4.1
	0.2nm,0.6s,baz=107,slow=7.7,SNR=3.3						

*JMA **04** 16:31:40.9±0.2, 43°.48N×147°.21E, h40km±4km, M3.3*
*SKHL **04** 16:31:41.4±0.5, 43°.55N×147°.29E, h45km±4km, mb4.3/3*

ISC 04 16:31:39.8±4.0**, 43°.5N**±0°.2×**147°.4E**±0°.2**, h52km**±30km**, n12, σ0s.25**/8**, Kuril Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SHO	**Shikotan**	**0.51**	**312**	*i* P	**Pn**	**16 31 51.5**	**+0.2**
SHO				AMB	AMB	16 31 51.9	
	730nm,0.2s						
SHO				AMB	AMB	16 31 51.9	
	890nm,0.2s						
SHO				AMB	AMB	16 31 51.9	
	300nm,0.2s						
SHO				*i* S	**Sn**	**16 31 59.4**	**-0.2**
SHO				A	A	16 31 59.8	
	870nm,0.2s						
SHO				A	A	16 31 59.8	
	790nm,0.2s						
NEM2	**Nemuro 2**	**1.18**	**263**	P	Pn	16 32 00.0	0.0
NEM2				*e*S	Sn	16 32 13.9	-1.1
YUK	**Yuzh-Kuril'sk**	**1.19**	**296**	*i* P	Pn	16 32 00.1	-0.1
YUK				AMB	AMB	16 32 01.9	
	40nm,0.2s						
YUK				AMB	AMB	16 32 01.9	
	90nm,0.2s						
YUK				*i* S	Sn	16 32 14.1	-1.2
YUK				A	A	16 32 15.6	
	460nm,0.4s						
YUK				A	A	16 32 15.6	
	330nm,0.4s						
JRA	**Rausu**	**1.67**	**285**	P	Pn	16 32 07.3	+0.7
JRA				*e*S	**Sn**	**16 32 26.8**	**-0.1**
KUR	**Kuril'sk**	**1.75**	**12**	*e*P	Pn	16 32 08.6	+0.9
KUR				AMB	AMB	16 32 10.4	
	11nm,0.1s						
KUR				*i* S	**Sn**	**16 32 28.6**	**-0.2**
KUR				A	A	16 32 30.3	
	70nm,0.1s						
KUR				A	A	16 32 30.3	
	20nm,0.1s						
JNK	**Nakash**	**1.92**	**273**	P	Pn	16 32 10.3	+0.3
JNK				*e*S	Sn	16 32 31.8	-1.1
JAK	**Akkeshi**	**2.01**	**256**	P	Pn	16 32 11.7	+0.4
JAK				*e*S	**Sn**	**16 32 34.9**	**-0.3**
JTKR	**Abashiri--Toko**	**2.54**	**281**	P	Pn	16 32 19.7	+1.2
JAR	**Ashorobuto**	**2.62**	**266**	P	Pn	16 32 20.9	+1.2
JAR				*e*S	**Sn**	**16 32 50.3**	**+0.1**
JOB	**Onbets**	**2.65**	**258**	P	Pn	16 32 20.8	+0.8
JOB				*e*S	**Sn**	**16 32 50.8**	**0.0**
JCH	**Churui**	**3.06**	**254**	*e*S	**Sn**	**16 33 00.9**	**-0.2**
YSS	**Yuzh-Sakhalins**	**4.72**	**318**	*e*P	Pn	16 32 50.5	+2.1

GUC 04 16:32:31.3±0.3**, 24°.04S×69°.43W, h68km**±11km**, ML3.5, 5C-1D, Northern Chile**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PB14	**IPOC Station P**	**1.06**	**237**	⇑*i*P	Pn	16 32 51.4	+0.6
PB14				*i* S	Sn	16 33 06.7	+1.5
PB14				AML	AML	16 33 07.5	
	comp=N,1μm,0.3s						
PB10	**IPOC Station P**	**1.16**	**297**	⇑*i*P	Pn	16 32 52.1	+0.4
PB10				*i* S	Sn	16 33 07.8	+0.8
PB06	**IPOC Station P**	**1.34**	**354**	⇓*i*P	Pn	16 32 54.8	+0.6
PB06				*i* S	Sn	16 33 12.8	+1.4
PB06				AML	AML	16 33 13.3	
	comp=E,2μm,0.3s						
PB04	**IPOC Station P**	**1.83**	**339**	⇑*i*P	Pn	16 33 00.5	-0.3
PB04				*i* S	Sn	16 33 21.9	-1.1
PB04				AML	AML	16 33 29.6	
	comp=N,508nm,0.3s						
PB09	**IPOC Station P**	**2.24**	**5**	⇑*i*P	Pn	16 33 07.5	+1.1
PB09				*e*S	Sn	16 33 34.7	+1.5
PB07	**IPOC Station P**	**2.34**	**350**	⇑*i*P	Pn	16 33 07.4	-0.4
PB07				*e*S	Sn	16 33 33.3	-2.3
PB07				AML	AML	16 33 47.7	
	comp=E,306nm,0.6s						

*IDC **04** 16:33:28.9±3.2, 29°.32N×80°.05E, h0km, mb3.3/4, mb1 3.5/5, mb1mx3.2/60, mbtmp3.4/5, ML3.6/1, Error ellipse: s-maj=151.4km s-min=22.2km az=68.0*

ISC 04 16:33:33.7±1.2**, 29°.6N**±0°.1×**80°.87E**±0°.09**, h17km, n8, σ1s.09**/12**, mb3.4**/4**, Nepal-India border region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LGTI	**Lohaghat**	**0.56**	**256**	*e*PG	**Pn**	**16 33 47.6**	**+0.6**
LGTI				*e*SG	**Sn**	**16 33 57.2**	**+1.3**
NDI	**New Delhi**	**3.32**	**255**	*e*P	**Pb**	**16 34 32.0**	**-0.2**
NDI				*e*S	**Sn**	**16 35 02.0**	**-2.1**
SMLA	**Simla**	**3.55**	**297**	*i* P	**Pn**	**16 34 28.8**	**+0.7**
SMLA				*i* S	**Sn**	**16 35 09.6**	**-0.1**
SMLA				*i* S	**Sn**	**16 35 10.3**	**+0.6**
SMLA				AML	AML	16 35 11.2	
	comp=N,305nm,0.3s						
SMLA				AML	AML	16 35 11.2	
	comp=E,560nm,0.2s						
MKAR	**Makanchi Array**	**17.21**	**3**	P	**P**	**16 37 35.2**	**+0.3**
	comp=E,0.2nm,0.3s,baz=179,slow=9.9,SNR=13						
KURBB	**Kurchatov Arra**	**21.09**	**356**	P	**P**	**16 38 16.9**	**-0.2**
	comp=E,0.8nm,0.5s,baz=181,slow=11,SNR=8.0						
BVAR	**Borovoye Array**	**24.65**	**345**	P	**P**	**16 38 51.7**	**-1.7**
	comp=E,0.2nm,0.4s,baz=159,slow=8.5,SNR=3.4						
WRA	**Warramunga Arr**	**71.26**	**127**	P	**P**	**16 44 52.8**	**+0.4**
	comp=E,0.4nm,0.7s,baz=321,slow=6.0,SNR=5.2						
ASAR	**Alice Springs**	**73.49**	**130**	P	**P**	**16 45 06.0**	**+0.3**
	comp=E,0.1nm,0.3s,baz=314,slow=6.1,SNR=11						

*IDC **04** 16:37:17.8±0.9, 27°.47N×143°.02E, h0km, mb3.9/13, mb1 4.0/16, mb1mx3.8/53, mbtmp3.9/16, ML3.3/3, MS2.8/1, Ms1 2.8/1, ms1mx2.2/54, Error ellipse: s-maj=22.2km s-min=15.7km az=96.0*
*ISCJB **04** 16:37:19.5±0.8, 27°.48N±0°.07×143°.1E±0°.1, h27km, mb4.0/16, Error ellipse: s-maj=16.4km s-min=10.4km az=2.4*
*NEIC **04** 16:37:21.4±2.6, 27°.46N×143°.00E, h24km±16km, mb4.6/3, Error ellipse: s-maj=21.4km s-min=9.2km az=82.0*

ISC 04 16:37:22.1±1.0**, 27°.52N**±0°.10×**142°.9E**±0°.1**, h27km, n24, σ0s.83**/25**, mb4.3**/16**, Bonin Islands region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CBIJ	**Chichi jima**	**0.77**	**237**	*e*Pg	**Pb**	**16 37 37.2**	**+0.2**
CBIJ				Pn	**Pn**	**16 37 37.5**	**+0.3**
JCJ	**Chichijima**	**0.77**	**237**	Pn	**Pn**	**16 37 37.5**	**+0.3**
	123nm,0.3s,baz=294,slow=16,SNR=82						
MJAR	**Matsushiro Arr**	**9.84**	**337**	Pn	**Pn**	**16 39 40.6**	**-1.1**
	0.7nm,0.3s,baz=157,slow=10,SNR=5.1						
KSRS	**Korea Array**	**16.05**	**312**	Pn	**P**	**16 41 08.3**	**-0.6**
	0.2nm,0.3s,baz=108,slow=12,SNR=5.8						
KSRS				LR	LR	16 47 30.9	
	comp=Z,29nm,18.5s,baz=143,slow=38						
KSAR	**Wonju Array Be**	**16.07**	**312**	Pn	**P**	**16 41 08.3**	**-0.9**
USRK	**Ussuriysk Ar.**	**18.82**	**335**	P	**P**	**16 41 38.9**	**-0.7**
	0.2nm,0.3s,baz=141,slow=10,SNR=4.0						
KLR	**Kul'dur**	**23.33**	**341**	P	**P**	**16 42 29.3**	**+1.4**
	0.8nm,0.4s,baz=148,slow=11,SNR=4.9						
SONM	**Songino Array**	**34.86**	**315**	P	**P**	**16 44 11.7**	**+0.6**
	0.4nm,0.6s,baz=131,slow=10,SNR=4.2						
CMAR	**Chiang Mai Arr**	**41.29**	**267**	P	**P**	**16 45 05.1**	**-0.4**
	0.5nm,0.3s,baz=64,slow=8.4,SNR=4.5						
WRAB	**Tennant Creek**	**47.90**	**191**	*e*P	**P**	**16 45 57.5**	**-0.6**
	8.3nm,1.2s						
WRA	**Warramunga Arr**	**47.91**	**191**	P	**P**	**16 45 57.5**	**-0.7**
	3.5nm,0.9s,baz=9.8,slow=8.3,SNR=9.7						
ZALV	**Zalesovo Beam**	**49.59**	**319**	P	**P**	**16 46 11.1**	**+0.3**
	1.2nm,0.3s,baz=101,slow=6.2,SNR=7.9						
MKAR	**Makanchi Array**	**50.71**	**309**	P	**P**	**16 46 18.4**	**-1.0**
	0.6nm,0.7s,baz=87,slow=9.6,SNR=6.9						
ASAR	**Alice Springs**	**51.63**	**191**	P	**P**	**16 46 25.5**	**-0.9**
	0.2nm,0.5s,baz=7.5,slow=6.9,SNR=8.7						
KURK	**Kurchatov**	**53.15**	**314**	*e*P	**P**	**16 46 37.2**	**-0.2**
	8.5nm,0.8s						
KURBB	**Kurchatov Arra**	**53.21**	**314**	P	**P**	**16 46 38.0**	**+0.2**
	3.5nm,0.8s,baz=92,slow=7.1,SNR=11						
BVAR	**Borovoye Array**	**58.17**	**317**	P	**P**	**16 47 15.1**	**+1.6**
	1.5nm,0.5s,baz=91,slow=8.0,SNR=19						
BRVK	**Borovoye**	**58.23**	**317**	*e*P	**P**	**16 47 15.3**	**+1.4**
ABKAR	**Akbulak array**	**65.26**	**314**	*e*P	**P**	**16 48 01.7**	**+0.4**
	1.5nm,0.6s						
AKTO	**Aktyubinsk**	**66.18**	**316**	P	**P**	**16 48 08.5**	**+1.3**
	1.5nm,0.7s,baz=35,slow=5.0,SNR=4.7						
YKA	**Yellowknife Ar**	**71.46**	**29**	P	**P**	**16 48 40.2**	**+0.4**
	0.4nm,0.7s,baz=307,slow=3.9,SNR=8.0						
FINES	**FINESS Array B**	**77.85**	**334**	P	**P**	**16 49 16.7**	**-0.2**
	0.5nm,0.4s,baz=71,slow=4.9,SNR=7.2						
KBZ	**Khabaz**	**78.19**	**313**	P	**P**	**16 49 19.4**	**+0.3**
	2.9nm,0.9s,baz=120,slow=6.5,SNR=4.4						
LPAZ	**La Paz**	**149.19**	**75**	PKPbc	**PKPbc**	**16 57 09.6**	**0.0**
	0.6nm,0.5s,baz=262,slow=7.1,SNR=2.4						

MEX 04 16:40:44.1±0.3**, 14°.47N×92°.80W, h48km**±78km**, MD3.7, Near coast of Chiapas**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PCIG		**1.29**	**342**	*e*P	Pn	16 41 04.1	-1.7
PCIG				*e*S	Sn	16 41 19.8	-2.1
TGIG		**2.32**	**352**	*e*P	Pn	16 41 25.7	+5.8
TGIG				*e*S	Sn	16 41 51.4	+4.2

*ISK **04** 16:46:29.0, 35°.12N×30°.96E, h5km, MD3.6*
*CSEM **04** 16:46:32.6±0.4, 35°.21N×30°.99E, h10km, MD3.3, Error ellipse: s-maj=11.7km s-min=5.4km az=15.0*
*NIC **04** 16:46:33.6±0.1, 35°.63N×31°.08E, h16km, ML3.3*
*ISCJB **04** 16:46:34.2±0.7, 35°.25N±0°.06×30°.97E±0°.05, h45km, Error ellipse: s-maj=8.8km s-min=5.0km az=17.2*
*DDA **04** 16:47:35.6, 35°.62N×31°.19E, h12km, Md3.3*

ISC 04 16:46:35.2±1.4**, 35°.21N**±0°.06×**30°.98E**±0°.04**, h45km, n32, σ0s.91**/43**, Eastern Mediterranean Sea**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AKMC	**Akamas**	**1.12**	**99**	P	**Pn**	**16 46 54.6**	**+0.1**
	baz=300						
AKMC	**Akamas**	**1.12**	**99**	P	**Pn**	**16 46 54.6**	**+0.1**
PPCY	**Paphos**	**1.17**	**106**	P	**Pn**	**16 46 55.9**	**+0.8**
	baz=305						
PPCY	**Paphos**	**1.17**	**106**	P	**Pn**	**16 46 55.9**	**+0.8**
ALFC	**Alefka**	**1.33**	**92**	P	**Pn**	**16 46 56.7**	**-0.7**
	baz=291						
ALFC				S	**Sn**	**16 47 14.4**	**+0.5**
ALFC	**Alefka**	**1.33**	**92**	P	**Pn**	**16 46 56.7**	**-0.7**
ALFC				S	**Sn**	**16 47 14.4**	**+0.5**
GAZI	**Gazipasa**	**1.50**	**46**	*i* P	**Pn**	**16 46 57.5**	**-2.1**
GAZI				*i* S	**Sn**	**16 47 16.1**	**-1.8**
GAZI	**Gazipasa**	**1.50**	**46**	S	**Sn**	**16 47 16.1**	**-1.8**
LEF	**Lefka**	**1.57**	**93**	*e*PN	**Pn**	**16 46 58.7**	**-1.9**
LEF				*e*SN	**Sn**	**16 47 20.6**	**+0.8**
LEF	**Lefka**	**1.57**	**93**	*e*Pn	**Pn**	**16 46 58.7**	**-1.9**
LEF				*e*Sn	**Sn**	**16 47 20.6**	**+0.8**
CSS	**Mathiatis**	**1.95**	**97**	*e*PN	**Pn**	**16 47 04.6**	**-1.2**
CSS	**Mathiatis**	**1.95**	**97**	*e*Pn	**Pn**	**16 47 04.6**	**-1.2**
IKL	**Isikli**	**2.43**	**64**	*e*PN	**Pn**	**16 47 11.9**	**-0.5**
IKL	**Isikli**	**2.43**	**64**	*e*Pn	**Pn**	**16 47 11.9**	**-0.5**
KIZK	**Mersin**	**2.87**	**63**	*i* P	**Pn**	**16 47 18.6**	**+0.2**
KIZK				*i* S	**Sn**	**16 47 52.1**	**+0.4**
KIZK	**Mersin**	**2.87**	**63**	P	**Pn**	**16 47 18.6**	**+0.2**
KIZK				S	**Sn**	**16 47 52.1**	**+0.4**
KARP	**Karpathos**	**3.13**	**277**	*e*PN	**Pn**	**16 47 21.3**	**-0.8**
KARP	**Karpathos**	**3.13**	**277**	*e*Pn	**Pn**	**16 47 21.3**	**-0.8**
MERS	**Mersin**	**3.32**	**59**	*e*PN	**Pn**	**16 47 25.0**	**+0.4**
MERS	**Mersin**	**3.32**	**59**	*e*Pn	**Pn**	**16 47 25.0**	**+0.4**
KERG	**Konya-Eregli**	**3.36**	**48**	*i* P	**Pn**	**16 47 26.2**	**+0.9**
KERG				*i* S	**Sn**	**16 48 04.4**	**+0.4**
KERG	**Konya-Eregli**	**3.36**	**48**	P	**Pn**	**16 47 26.2**	**+0.9**
KERG				S	**Sn**	**16 48 04.4**	**+0.3**
KHAL	**Karahalli**	**3.37**	**340**	*i* P	**Pn**	**16 47 26.3**	**+0.8**
KHAL				*i* S	**Sn**	**16 48 03.8**	**-0.4**
KHAL	**Karahalli**	**3.37**	**340**	P	**Pn**	**16 47 26.3**	**+0.9**
KHAL				S	**Sn**	**16 48 03.8**	**-0.5**
BODT	**Bodrum**	**3.50**	**303**	*e*PN	**Pn**	**16 47 27.2**	**+0.1**
BODT	**Bodrum**	**3.50**	**303**	*e*Pn	**Pn**	**16 47 27.2**	**+0.1**
AYDB	**Zeytinkoy-Aydi**	**3.69**	**319**	*e*PN	**Pn**	**16 47 30.6**	**+0.8**
AYDB	**Zeytinkoy-Aydi**	**3.69**	**319**	*e*Pn	**Pn**	**16 47 30.6**	**+0.8**
KARA	**Karaisali**	**3.88**	**57**	*e*PN	**Pn**	**16 47 32.7**	**+0.4**
KARA	**Karaisali**	**3.88**	**57**	*e*Pn	**Pn**	**16 47 32.7**	**+0.4**
TAHT	**Tahtakopru-Hat**	**4.39**	**73**	*e*PN	**Pn**	**16 47 40.0**	**+0.7**
TAHT	**Tahtakopru-Hat**	**4.39**	**73**	*e*Pn	**Pn**	**16 47 40.0**	**+0.7**

CASC 04 16:46:59.2±1.3**, 13°.53N×90°.16W, h72km**±13km**, MD3.9, ML3.9, 3C-7D, Near coast of Guatemala**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CUS1	**Cusmapa**	**0.44**	**28**	*e*P	Pn	16 47 11.8	0.0
CUS1				*e*S	Sn	16 47 21.6	+0.6
MONT	**Ecomontaæa**	**0.60**	**56**	⇑*e*P	Pn	16 47 13.9	+0.4
SBLS	**San Blas**	**0.61**	**59**	*e*P	Pn	16 47 14.0	+0.4
SBLS				*e*S	Sn	16 47 24.9	+0.7
RTR	**El Retiro**	**0.62**	**53**	⇓*e*P	Pn	16 47 14.2	+0.6
SNJE	**San Jose**	**0.64**	**58**	⇓*e*P	Pn	16 47 14.4	+0.5
SNJE				*e*S	Sn	16 47 25.2	+0.6
RBDL	**Robledal**	**0.74**	**38**	⇓*i*P	Pn	16 47 15.4	+0.4
COLS	**Colinas**	**0.85**	**80**	*e*P	Pn	16 47 16.6	+0.5
COLS				*e*S	Sn	16 47 29.5	+0.9
BOQS	**Boqueron**	**0.88**	**76**	⇑*e*P	Pn	16 47 16.8	+0.2
BOQS				*e*S	Sn	16 47 30.8	+1.3
SNET	**Serv Nac Est T**	**0.92**	**80**	*e*P	Pn	16 47 16.8	-0.1
SNET				*e*S	Sn	16 47 30.7	+0.6
SNET				AML	AML	16 47 33.0	
	comp=Z,3μm,0.2s						
LFU	**La Fuente**	**1.04**	**78**	⇓*e*P	Pn	16 47 18.5	+0.1
LFRS	**El Faro**	**1.07**	**85**	⇓*e*P	Pn	16 47 18.9	+0.1
LFRS				*e*S	Sn	16 47 33.3	-0.2
LBRS	**Las Brisas**	**1.10**	**79**	⇓*e*P	Pn	16 47 19.4	+0.1
LBRS				*e*S	Sn	16 47 35.9	+1.7
SNVI	**San Vicente**	**1.29**	**86**	*e*P	Pn	16 47 21.3	-0.4
SNVI				*e*S	Sn	16 47 40.0	+1.5
TECA	**Tecapa**	**1.61**	**91**	*e*P	Pn	16 47 25.8	-0.1
TECA				*e*S	Sn	16 47 47.9	+1.8
PACA	**Pacayal**	**1.79**	**92**	⇑*e*P	Pn	16 47 28.2	+0.1
PACA				*e*S	Sn	16 47 51.1	+0.9
LCY	**Lacayo**	**1.82**	**93**	*e*P	Pn	16 47 29.0	+0.5
VSM	**San Miguel**	**1.84**	**93**	*e*P	Pn	16 47 29.4	+0.4
CSGN	**Cosiguina Volc**	**2.59**	**102**	*e*P	Pn	16 47 38.5	-0.5
CSGN				*e*S	Sn	16 48 08.3	-1.2
TGUH	**Tegucigalpa,Un**	**2.85**	**79**	⇓*e*P	Pn	16 47 42.7	+0.3
MOMN	**Momotombo**	**3.70**	**107**	*e*P	Pn	16 47 52.9	-1.2
COPN	**Copaltepe**	**3.73**	**111**	*e*P	Pn	16 47 53.7	-0.7
JCR	**Jicaral**	**6.15**	**126**	*e*P	Pn	16 48 29.0	+1.5
CGA2	**Cerro Gallo 2**	**6.58**	**121**	*e*P	Pn	16 48 35.8	+2.3
QCR	**Quepos**	**7.15**	**124**	*e*P	Pn	16 48 43.1	+1.9
URSC	**Urasca**	**7.25**	**120**	*e*P	Pn	16 48 44.1	+1.4
URSC				*e*S	Sn	16 49 57.4	-6.2
BUS	**Buena Vista**	**7.41**	**121**	*e*P	Pn	16 48 47.0	+1.9
BUS				*e*S	Sn	16 50 03.9	-4.1

*NIED **04** 16:52:00, 38°.80N×142°.90E, h5km, Mw4.0 Best double couple: M0 1.09000×10^15 NP1:φs135.00000°, δ28.00000°, λ-74.00000°. NP2:φs297.00000°, δ63.00000°, λ-98.00000°.*
*JMA **04** 16:52:34.1±0.2, 38°.81N×142°.88E, h17km±3km, M3.9*
*IDC **04** 16:52:40.3±3.1, 38°.77N×142°.86E, h66km±28km, mb3.6/11, mb1 3.7/14, mb1mx3.5/51, mbtmp3.9/14, ML3.2/3, MS3.0/4, Ms1 3.0/4, ms1mx2.6/49, Error ellipse: s-maj=24.4km s-min=14.9km az=95.0*

ISC 04 16:52:34.0±3.7**, 38°.84N**±0°.05×**142°.84E**±0°.07**, h11km**±23km**, n39, σ0s.86**/35**, mb4.0**/11**, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**0.94**	**285**	P	**Pb**	**16 52 52.6**	**+0.3**
OFUJ				*e*S	**Sb**	**16 53 05.2**	**+0.4**
MIYJ	**Miyakonagasawa**	**1.08**	**313**	P	**Pn**	**16 52 54.4**	**-0.6**
MIYJ				S	**Sb**	**16 53 09.4**	**+0.6**
JIO	**Ouri**	**1.23**	**252**	P	**Pn**	**16 52 56.3**	**-0.7**
JIO				*e*S	**Sb**	**16 53 12.7**	**-0.3**
JMK	**Ichinoseki**	**1.27**	**276**	P	**Pn**	**16 52 57.5**	**-0.1**
JMK				*e*S	**Sn**	**16 53 14.4**	**-0.2**
JOM	**Ohasama**	**1.36**	**298**	P	**Pn**	**16 52 58.8**	**0.0**
JOM				S	**Sb**	**16 53 17.2**	**+0.5**
JKZ	**Kuzumaki**	**1.63**	**315**	P	**Pb**	**16 53 03.7**	**-0.4**
JKZ				S	**Sb**	**16 53 25.3**	**+0.6**
JOU	**Okura**	**1.77**	**255**	P	**Pb**	**16 53 05.8**	**-0.6**
JOU				S	**Sb**	**16 53 28.5**	**-0.1**
JRG	**Rokugo**	**1.80**	**289**	P	**Pb**	**16 53 06.2**	**-0.8**
JRG				S	**Sb**	**16 53 30.7**	**+1.2**
JANG	**Nango**	**1.84**	**327**	P	**Pn**	**16 53 06.0**	**+0.5**
JANG				S	**Sb**	**16 53 30.6**	**-0.1**
JMM	**Marumori**	**1.88**	**239**	P	**Pn**	**16 53 06.4**	**+0.4**
JYK	**Kaneyama**	**1.94**	**273**	P	**Pb**	**16 53 08.6**	**-0.6**
JFK	**Kawauchi**	**2.14**	**227**	P	**Pn**	**16 53 09.9**	**+0.3**
JYS	**Shirataka**	**2.26**	**255**	P	**Pb**	**16 53 13.5**	**-1.3**
JFT	**Otama**	**2.37**	**237**	P	**Pn**	**16 53 14.4**	**+1.6**
MJAR	**Matsushiro Arr**	**4.33**	**239**	P	**Pn**	**16 53 42.5**	**+2.8**
	1.8nm,0.3s,baz=56,slow=12,SNR=30						
MJAR				LR	LR	16 55 25.3	
	comp=Z,194nm,19.8s,baz=40,slow=38						
MAT	**Matsushiro**	**4.33**	**239**	P	Pn	16 53 42.9	+3.2
MAT				*e*S	Sn	16 54 35.7	+5.5
USRK	**Ussuriysk Ar.**	**9.74**	**307**	P	Pn	16 55 00.9	+7.0
	0.0nm,0.3s,baz=108,slow=14,SNR=3.6						
JNU	**Nakatsue**	**11.24**	**243**	LR	LR	16 59 45.2	
	comp=Z,81nm,20.9s,baz=320,slow=38						
KSRS	**Korea Array**	**11.83**	**268**	P	Pn	16 55 27.4	+4.9
	0.2nm,0.3s,baz=86,slow=13,SNR=4.3						
KLR	**Kul'dur**	**13.08**	**326**	P	P	16 55 45.7	-4.2
	0.1nm,0.3s,baz=133,slow=14,SNR=3.8						
PETK	**Petropavlovsk-**	**17.56**	**31**	LR	LR	17 02 38.7	
	comp=Z,32nm,21.8s,baz=190,slow=34						
MA2	**Magadan**	**21.36**	**11**	P	**P**	**16 57 21.4**	**+0.4**
	3.2nm,0.7s,baz=212,slow=9.2,SNR=17						
YAK	**Yakutsk**	**24.59**	**345**	LR	LR	17 08 11.1	
	comp=Z,41nm,18.1s,baz=176,slow=38						
SEY	**Seymchan**	**24.81**	**10**	P	**P**	**16 57 56.9**	**+1.2**
	2.2nm,0.8s,baz=73,slow=23,SNR=13						
SONM	**Songino Array**	**27.77**	**301**	P	**P**	**16 58 23.0**	**+0.3**
	0.9nm,0.7s,baz=97,slow=8.4,SNR=7.3						
H11N2	**WAKE ISLAND Hy**	**28.19**	**126**	T	T	17 27 48.2	
	baz=318,slow=75,SNR=64						
H11N1	**WAKE ISLAND Hy**	**28.20**	**126**	T	T	17 27 45.9	
	baz=318,slow=75,SNR=41						
H11N3	**WAKE ISLAND Hy**	**28.21**	**126**	T	T	17 27 50.8	
	baz=318,slow=75,SNR=57						
H11S1	**WAKE ISLAND Hy**	**28.98**	**128**	T	T	17 28 48.2	
	baz=320,slow=76,SNR=6.7						
H11S3	**WAKE ISLAND Hy**	**28.98**	**128**	T	T	17 28 46.8	
	baz=320,slow=76,SNR=8.0						
H11S2	**WAKE ISLAND Hy**	**29.00**	**128**	T	T	17 28 51.8	
	baz=320,slow=76,SNR=4.7						
ZALV	**Zalesovo Beam**	**41.56**	**311**	P	**P**	**17 00 21.7**	**+0.4**
	0.9nm,0.3s,baz=114,slow=6.5,SNR=2.9						
MKAR	**Makanchi Array**	**44.14**	**301**	P	**P**	**17 00 42.5**	**+0.1**
	0.8nm,0.8s,baz=88,slow=8.6,SNR=9.4						
KURBB	**Kurchatov Arra**	**45.80**	**307**	P	**P**	**17 00 55.4**	**-0.1**
	1.4nm,0.2s,baz=82,slow=8.2,SNR=8.3						
ILAR	**Eielson Array**	**47.37**	**33**	P	**P**	**17 01 08.0**	**+0.4**
	0.6nm,1.0s,baz=278,slow=6.1,SNR=4.2						
WRA	**Warramunga Arr**	**59.01**	**189**	P	**P**	**17 02 32.0**	**-1.7**
	2.8nm,0.8s,baz=5.5,slow=7.3,SNR=12						
ASAR	**Alice Springs**	**62.74**	**189**	P	**P**	**17 02 58.8**	**-0.3**
	0.9nm,0.7s,baz=12,slow=6.1,SNR=15						
FINES	**FINESS Array B**	**67.74**	**332**	P	**P**	**17 03 30.8**	**-0.3**
	1.0nm,0.8s,baz=55,slow=12,SNR=2.4						
AKASG	**Malin Array Be**	**73.55**	**323**	P	**P**	**17 04 06.2**	**-0.5**
	0.8nm,0.5s,baz=43,slow=6.9,SNR=5.6						

*IDC **04** 16:55:30.7±1.0, 18°.97S×173°.41W, h0km, mb4.2/11, mb1 4.4/12, mb1mx4.2/32, mbtmp4.2/12, ML3.7/1, MS3.9/9, Ms1 3.9/9, ms1mx3.6/40, Error ellipse: s-maj=42.3km s-min=18.4km az=139.0*
*ISCJB **04** 16:55:32.7±0.6, 19°.2S±0°.1×173°.3W±0°.1, h28km, mb4.7/27, MS4.0/8, Error ellipse: s-maj=24.3km s-min=9.6km az=141.7*
*NEIC **04** 16:55:33.9±0.5, 19°.53S×172°.97W, h35km, mb5.0/11, Error ellipse: s-maj=21.1km s-min=8.9km az=161.0*

ISC 04 16:55:35.1±0.8**, 19°.1S**±0°.2×**173°.3W**±0°.2**, h28km, n77, σ1s.55**/67**, mb4.9**/27**, MS3.9**/8**, 8C-5D, Tonga Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AFI	**Afiamalu**	**5.35**	**16**	Pn	Pn	16 56 44.6	-8.7
	4.4nm,0.3s,baz=190,slow=7.6,SNR=10						
AFI				Sn	Sn	16 57 35.3	-19
	18nm,0.3s,baz=289,slow=22,SNR=9.1						
MSVF	**Nonsavu**	**8.31**	**278**	*e*Pn	Pn	16 57 40.3	+6.4
RAR	**Rarotonga**	**12.89**	**102**	Pn	Pn	16 58 30.5	-5.9
	8.7nm,0.3s,baz=246,slow=9.2,SNR=9.9						
RAR				LR	LR	17 02 42.2	
	comp=Z,283nm,18.5s,baz=282,slow=33						
RAR	**Rarotonga**	**12.89**	**102**	*e*Pn	Pn	16 58 29.9	-6.5
DZM	**Mont Dzumac**	**19.19**	**258**	P	**P**	**16 59 55.8**	**-1.1**
	0.3nm,0.3s,baz=80,slow=18,SNR=7.7						
DZM				LR	LR	17 06 33.9	
	comp=Z,561nm,18.5s,baz=93,slow=35						
URZ	**Urewera**	**20.84**	**202**	P	**P**	**17 00 15.3**	**+0.6**
	10nm,0.7s,baz=180,slow=9.1,SNR=3.4						
PAE	**Paea**	**22.56**	**90**	*e*T	T	17 23 28.8	
	4.3nm,0.3s						
PPT2	**Papeete2**	**22.57**	**90**	*e*LQ	LQ	17 04 47.5	
	293nm,24.0s						
PPT2				*e*LR	LR	17 05 52.5	
	383nm,25.5s						
PPT	**Papeete**	**22.58**	**90**	LR	LR	17 07 35.7	
	comp=Z,173nm,18.5s,baz=264,slow=32						
TBI	**Tubuai**	**22.62**	**105**	*e*LR	LR	17 05 45.2	
	286nm,29.8s						
RKT	**Rikitea**	**35.92**	**103**	*e*LR	LR	17 11 54.3	
	189nm,24.8s						
STKA	**Stephens Creek**	**42.37**	**243**	P	**P**	**17 03 26.2**	**-1.0**
	2.9nm,0.8s,baz=80,slow=10,SNR=4.1						
STKA				LR	LR	17 19 33.0	
	comp=Z,156nm,18.0s,baz=36,slow=34						
AS01	**Alice Springs**	**49.10**	**255**	*e*P	**P**	**17 04 19.0**	**-1.5**
AS31	**Alice Springs**	**49.15**	**255**	*e*P	**P**	**17 04 20.2**	**-0.6**
	3.3nm,0.8s						
ASAR	**Alice Springs**	**49.15**	**255**	P	**P**	**17 04 20.2**	**-0.6**
	13nm,0.7s,baz=95,slow=8.0,SNR=117						
ASAR				LR	LR	17 24 52.5	
	comp=Z,206nm,18.3s,baz=102,slow=36						
WB2	**Warramunga Arr**	**49.17**	**260**	*e*P	**P**	**17 04 19.6**	**-1.5**
	7.6nm,0.8s						
WRAB	**Tennant Creek**	**49.18**	**260**	*e*P	**P**	**17 04 20.0**	**-1.1**
	8.0nm,0.8s						
WRA	**Warramunga Arr**	**49.18**	**260**	P	**P**	**17 04 19.5**	**-1.6**
	3.9nm,0.7s,baz=94,slow=6.2,SNR=21						
VNDA	**Vanda**	**59.74**	**186**	LR	LR	17 28 46.1	
	comp=Z,80nm,18.6s,baz=310,slow=33						
PETK	**Petropavlovsk-**	**76.15**	**342**	P	**P**	**17 07 20.0**	**-0.2**
	2.9nm,0.9s,baz=129,slow=14,SNR=2.7						
IRM	**Iron Mountain**	**76.58**	**46**	*e*P	P	17 07 20.4	-2.8
NV01	**Mina Array Sit**	**77.01**	**41**	*e*P	P	17 07 22.4	-3.4
NVAR	**Mina Array Bea**	**77.01**	**41**	P	**P**	**17 07 25.0**	**-0.7**
	0.3nm,0.5s,baz=205,slow=6.6,SNR=3.7						
NVAR				LR	LR	17 35 39.1	

	comp=Z,84nm,18.3s,baz=262,slow=31						
KSM	**Kuching**	**77.63**	**276**	eP	**P**	**17 07 30.5**	**+1.0**
	18nm,0.9s						
KSRS	**Korea Array**	**78.85**	**316**	P	**P**	**17 07 34.6**	**-1.1**
	1.8nm,0.9s,baz=130,slow=5.8,SNR=5.3						
KSAR	**Wonju Array Be**	**78.87**	**316**	P	**P**	**17 07 34.6**	**-1.2**
NJ2	**Nanjing**	**82.46**	**308**	eP	**P**	**17 07 55.9**	**+0.7**
NJ2				pmax	pmax		
	comp=Z,7.0nm,0.5s						
QIZ	**Qiongzhong**	**84.36**	**292**	P	**P**	**17 08 06.2**	**+0.9**
QIZ				pP	**sP**	**17 08 20.4**	**+2.9**
QIZ				S	**S**	**17 18 31.7**	**+1.8**
QIZ				pmax	pmax		
	comp=Z,88nm,4.3s						
PDAR	**Pinedale Array**	**84.95**	**42**	P	**P**	**17 08 07.4**	**-0.6**
	0.5nm,0.7s,baz=204,slow=3.3,SNR=4.8						
WRH	**Wood River Hil**	**85.54**	**11**	eP	**P**	**17 08 09.1**	**-1.1**
	11nm,1.0s						
CCB	**Clear Creek Bu**	**85.75**	**11**	eP	**P**	**17 08 10.0**	**-1.1**
	6.7nm,0.9s						
COLA	**College**	**85.95**	**11**	eP	**P**	**17 08 11.5**	**-0.6**
	16nm,0.9s						
MDM	**Murphy Dome**	**85.96**	**10**	eP	**P**	**17 08 11.5**	**-0.7**
	11nm,1.2s						
ILAR	**Eielson Array**	**86.03**	**11**	P	**P**	**17 08 11.4**	**-1.2**
	1.5nm,0.9s,baz=223,slow=5.9,SNR=10						
ILB	**Eielson Array**	**86.03**	**11**	eP	**P**	**17 08 13.3**	**+0.7**
IL1	**Eielson Array**	**86.03**	**11**	eP	**P**	**17 08 11.5**	**-1.1**
DAWY	**Dawson**	**86.95**	**14**	eP	**P**	**17 08 17.0**	**-0.2**
	6.9nm,1.0s						
PLCA	**Paso Flores**	**86.98**	**132**	LR	LR	17 39 28.7	
	comp=Z,42nm,21.8s,baz=213,slow=30						
EGAK	**Eagle**	**87.17**	**13**	eP	**P**	**17 08 17.3**	**-0.9**
	29nm,1.7s						
BILL	**Bilibino**	**88.16**	**352**	eP	**P**	**17 08 22.6**	**-0.2**
	13nm,1.5s						
SYO	**Syowa Base**	**89.02**	**191**	⇑epP	P	17 08 32.2	+5.1
GYA	**Guiyang**	**89.84**	**298**	P	**P**	**17 08 32.2**	**+0.3**
GYA				pmax	pmax		
	comp=Z,10.0nm,1.0s						
HHC	**Hu-ho-hao-te**	**91.58**	**313**	eP	**P**	**17 08 40.0**	**+0.4**
HHC				S	**S**	**17 19 36.0**	**-2.1**
HHC				pmax	pmax		
	comp=Z,25nm,1.0s						
HHC				pmax	pmax		
	comp=Z,63nm,5.3s						
HHC				LR	LR		
	comp=N,120nm,14.8s						
HHC				LR	LR		
	comp=E,110nm,13.6s						
HHC				LR	LR		
	comp=Z,78nm,13.6s						
KMI	**Kunming**	**92.69**	**296**	P	**P**	**17 08 46.1**	**+0.8**
KMI				pmax	pmax		
	comp=Z,11nm,0.6s						
YKA	**Yellowknife Ar**	**93.43**	**23**	P	**P**	**17 08 47.5**	**0.0**
	0.1nm,0.4s,baz=242,slow=4.8,SNR=2.8						
CD2	**Chengdu**	**93.79**	**301**	P	**P**	**17 08 49.0**	**-1.0**
CD2				pmax	pmax		
	comp=Z,11nm,0.5s						
CM01	**Chiang Mai Arr**	**93.82**	**288**	eP	**P**	**17 08 51.5**	**+1.2**
CMAR	**Chiang Mai Arr**	**93.84**	**288**	P	**P**	**17 08 50.6**	**+0.2**
	1.2nm,0.8s,baz=106,slow=2.5,SNR=9.6						
CMAR				LR	LR	17 49 44.1	
	comp=Z,26nm,18.8s,baz=50,slow=35						
LZH	**Lanzhou**	**95.47**	**306**	eP	**P**	**17 08 57.5**	**-0.2**
LZH				pP	sP	17 09 14.4	+4.4
LZH				sP	pP	17 09 21.0	+14
LZH				pmax	pmax		
	comp=Z,19nm,1.0s						
WMQ	**Urumqi**	**109.35**	**311**	ePKP	**PKiKP**	**17 13 58.6**	**-4.3**
KSH	**Kashi**	**117.70**	**305**	ePKP	**PKPdf**	**17 14 20.5**	**+1.5**
KSH				ePP	PP	17 15 43.1	+11
KSH				AMB	AMB		
	comp=Z,79nm,4.8s						
KSH				LR	LR		
	comp=E,120nm,5.3s						
KSH				LR	LR		
	comp=Z,150nm,4.7s						
AKASG	**Malin Array Be**	**143.74**	**336**	PKP	PKPbc	17 15 05.2	+0.2
	0.2nm,0.3s,baz=34,slow=3.6,SNR=4.6						
CLL	**Collm**	**147.46**	**353**	⇑iP	**PKPbc**	**17 15 17.0**	**+0.7**
	comp=Z,10.0nm,1.0s						
CLL				i		17 15 28.1	
CLL				i		17 15 31.6	
	comp=Z,28nm,1.2s						
CLL				i		17 15 35.3	
CLL				i		17 15 38.4	
BRG	**Berggiesshubel**	**147.77**	**351**	eP	**PKPab**	**17 15 18.6**	**-0.9**
	comp=Z,16nm,1.5s						
BRG				e		17 15 33.6	
	comp=Z,14nm,1.3s						
BURAR	**Bucovina Array**	**147.78**	**336**	⇑iP	**PKPab**	**17 15 19.3**	**-0.5**
DPC	**Dobruska-Polom**	**147.88**	**348**	ePKP	**PKPab**	**17 15 19.4**	**-0.6**
DPC				epPKP	**pPKPdf**	**17 15 26.4**	**+2.5**
DPC				ex	x	17 15 33.9	
PVCC	**Panska Ves**	**148.01**	**350**	ePKP	**PKPab**	**17 15 19.6**	**-0.9**
PRU	**Pruhonice**	**148.54**	**350**	ePKP	**PKPbc**	**17 15 20.8**	**+1.6**
PRU				epPKP	pPKP	17 15 35.1	
VRI	**Vrincioaia**	**148.58**	**333**	⇓iP	**PKPab**	**17 15 27.3**	**+4.3**
BRTR	**Keskin Array B**	**148.99**	**317**	PKPbc	**PKPbc**	**17 15 20.9**	**0.0**
	comp=Z,3.1nm,0.9s,baz=143,slow=2.4,SNR=14						
DOPR	**Dopca**	**149.06**	**334**	⇓iP	**PKPbc**	**17 15 22.8**	**+2.1**
MLR	**Muntele Rosu**	**149.21**	**333**	⇑iP	**PKPbc**	**17 15 22.5**	**+1.2**
DRGR		**149.40**	**338**	⇑iP	**PKPbc**	**17 15 22.5**	**+0.9**
KHC	**Kasperske Hory**	**149.52**	**351**	ePKP	**PKPbc**	**17 15 23.0**	**+1.2**
KHC				epPKP	**pPKPdf**	**17 15 27.7**	**+1.1**
KHC				esPKP		17 15 38.1	
VOIR		**149.63**	**334**	⇑iP	**PKPbc**	**17 15 23.8**	**+1.6**
GERES	**GERESS Array B**	**149.78**	**351**	PKPbc	**PKPbc**	**17 15 23.8**	**+1.3**
	comp=Z,2.0nm,1.1s,baz=31,slow=3.1,SNR=8.7						
ARR	**Arges**	**149.86**	**334**	⇑iP	**PKPbc**	**17 15 24.9**	**+2.1**
SIRR	**Siria**	**150.22**	**339**	⇓iP	**PKPbc**	**17 15 21.4**	**-2.1**
CONA	**Conrad Observa**	**150.28**	**348**	i PKiKP	**PKiKP**	**17 15 24.7**	**+0.1**
	comp=Z,6.4nm,1.2s						
GZR	**Gura Zlata**	**150.57**	**337**	⇓iP	**PKPbc**	**17 15 25.5**	**+1.0**
RETA	**Reutte**	**151.48**	**354**	i PKPbc	**PKPbc**	**17 15 24.9**	**-1.7**
	comp=Z,13nm,1.2s						
MDVR	**Moldovita**	**151.48**	**337**	⇓iP	**PKPbc**	**17 15 28.2**	**+1.6**
KBA	**Koelnbreinsper**	**151.55**	**350**	i PKPdf	**PKPdf**	**17 15 17.9**	**-2.8**
	comp=Z,6.3nm,1.9s						
DAVA	**Damuels**	**151.75**	**355**	i PKPbc	**PKPbc**	**17 15 24.8**	**-2.5**
FETA	**Feichten**	**151.94**	**354**	i PKPbc	**PKPdf**	**17 15 24.6**	**+3.4**
ABTA	**Abfaltersbach**	**152.00**	**351**	i pPKPdf	**PKPbc**	**17 15 28.6**	**+0.8**
	comp=Z,7.2nm,1.3s						
VTS	**Vitosha**	**152.71**	**333**	⇑iP	**PKPbc**	**17 15 31.4**	**+1.8**

IDC 04 17:01:00.0±50.0**,19°.11S**×**178°.74W,h0**km**,mb4.0**/3**, mb1 4.2**/3**,mb1mx3.6**/33**,mbtmp4.0**/3**,Error ellipse: s-maj=920.4km s-min=155.2km az=81.0,Fiji Islands region**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
STKA	**Stephens Creek**	**37.79**	**242**	P	P	17 08 17.9	-0.3
	0.9nm,0.5s,baz=84,slow=10,SNR=3.9						
WRA	**Warramunga Arr**	**44.12**	**261**	P	P	17 09 10.7	+0.1
	0.8nm,0.3s,baz=96,slow=7.6,SNR=22						
ASAR	**Alice Springs**	**44.18**	**255**	P	P	17 09 10.8	-0.3
	1.7nm,0.7s,baz=89,slow=8.4,SNR=28						

*NIED **04** 17:01:00,37°.80N×143°.40E,h14km,Mw3.7 Best double couple: Mo3.62000×10^14 NP1:φs41.00000°,δ63.00000°, λ-13.00000°. NP2:φs137.00000°,δ78.00000°, λ-153.00000°.*

JMA 04 17:01:28.0±0.3**,37°.84N**×**143°.44E,h34**km**,M3.5,Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
JIO	**Ouri**	**1.76**	**291**	P	Pn	17 01 57.0	+1.0
JIO				S	Sn	17 02 18.6	+1.4
OFUJ	**Ofunato**	**1.86**	**312**	P	Pn	17 01 59.2	+1.7
JOU	**Okura**	**2.25**	**284**	P	Pn	17 02 04.6	+1.7
JOU				S	Sn	17 02 31.1	+1.6
JOM	**Ohasama**	**2.34**	**315**	S	Sn	17 02 34.6	+2.9

*JMA **04** 17:01:48.0,36°.85N×140°.55E,h9km±1km,M2.8*
*IDC **04** 17:01:49.1±6.9,36°.08N×140°.60E,h94km±47km,mb3.1/3, mb1 3.3/3,mb1mx2.9/44,mbtmp3.4/3,Error ellipse: s-maj=82.7km s-min=27.9km az=60.0*

ISC 04 17:01:46.4±1.0**,36°.83N**±0°.04×**140°.63E**±0°.06**,h29**km±8km**, n11,**σ**0s.60**/16**,mb3.4**/3**,Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
JHO	**Hitachi**	**0.22**	**193**	P	**Pb**	**17 01 52.9**	**+0.2**
JHO				S	**Sb**	**17 01 56.3**	**-0.8**
ONAJ	**Iwakimizuishiy**	**0.31**	**26**	P	**Pb**	**17 01 54.3**	**+0.4**
ONAJ				S	**Sb**	**17 01 58.8**	**-0.3**
JFK	**Kawauchi**	**0.57**	**20**	P	**Pn**	**17 01 58.9**	**+0.3**
JSB	**Shiboa**	**0.59**	**284**	P	**Pb**	**17 01 58.6**	**+0.4**
JSB				S	**Sb**	**17 02 06.0**	**-0.3**
JYT	**Yasato**	**0.69**	**211**	P	**Pn**	**17 02 00.9**	**+0.7**
JYT				S	**Sn**	**17 02 10.5**	**+0.6**
JFT	**Otama**	**0.73**	**341**	P	**Pn**	**17 02 01.2**	**+0.5**
JFT				S	**Sb**	**17 02 10.4**	**+0.1**
MJAR	**Matsushiro Arr**	**1.97**	**262**	P	**Pb**	**17 02 21.1**	**-0.4**
	4.4nm,0.3s,baz=85,slow=16,SNR=32						
MJAR				S	**Sb**	**17 02 45.6**	**0.0**
	4.8nm,0.3s,baz=77,slow=33,SNR=12						
MAT	**Matsushiro**	**1.97**	**262**	P	**Pb**	**17 02 21.0**	**-0.5**
MAT				S	**Sb**	**17 02 46.4**	**+0.8**
MKAR	**Makanchi Array**	**43.70**	**302**	P	**P**	**17 09 47.6**	**-1.0**
	0.4nm,0.8s,baz=79,slow=8.3,SNR=3.1						
WRA	**Warramunga Arr**	**56.77**	**187**	P	P	17 11 17.3	-10
	0.7nm,0.9s,baz=8.8,slow=7.0,SNR=3.6						
ASAR	**Alice Springs**	**60.50**	**187**	P	P	17 11 45.0	-8.7
	0.3nm,0.9s,baz=12,slow=9.7,SNR=3.3						

*KRNET **04** 17:14:34.2±0.1,42°.73N×77°.81E,mb3.4*
*SOME **04** 17:14:36.1,42°.87N×77°.68E,h15km*
ISC 04 17:14:35.6±1.1**,42°.94N**±0°.05×**77°.65E**±0°.02**,h11**km±10km**, n17,**σ**0s.49**/34**,15C-5D,Lake Issyk-Kul region**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
MDOK	**Medeo**	**0.49**	**297**	⇑iP	**Pb**	**17 14 46.5**	**+0.1**
	2.9nm,0.2s						
MDOK				⇓iS	**Sb**	**17 14 54.1**	**+0.3**
	36nm,0.4s						
TNSS	**Tian-Shan**	**0.53**	**281**	eP	**Pb**	**17 14 47.0**	**-0.1**
	3.1nm,0.4s						
TNSS				⇓iS	**Sb**	**17 14 54.8**	**-0.2**
	5.4nm,0.3s						
SATY	**Saty**	**0.57**	**78**	⇓iP	**Pg**	**17 14 46.8**	**+0.1**
	16nm,0.1s						
SATY				eS	**Sg**	**17 14 54.6**	**+0.3**
	27nm,0.1s						
ZHN	**Zhinishke**	**0.62**	**68**	eP	**Pg**	**17 14 47.8**	**+0.1**
	10nm,0.1s						
ZHN				eS	**Sg**	**17 14 56.3**	**+0.4**
	55nm,0.3s						
KURS	**Kuram**	**0.67**	**35**	⇑iP	**Pb**	**17 14 49.3**	**-0.1**
	2.5nm,0.8s						
KURS				⇑iS	**Sb**	**17 14 58.9**	**+0.2**
	3.1nm,0.2s						
MTBS	**Maitube**	**0.91**	**282**	eP	**Pb**	**17 14 53.8**	**+0.2**
	6.2nm,0.2s						
MTBS				eS	**Sb**	**17 15 06.2**	**+0.4**
	12nm,0.4s						
KPKS	**Kokpek**	**0.92**	**55**	eP	**Pg**	**17 14 53.5**	**+0.1**
	8.8nm,0.1s						
KPKS				eS	**Sb**	**17 15 05.8**	**-0.3**
	7.6nm,0.3s						
UZB	**Uzynbulak**	**1.03**	**78**	eP	**Pg**	**17 14 54.9**	**-0.6**
	3.9nm,0.1s						
UZB				eS	**Sg**	**17 15 08.5**	**-0.4**
	11nm,0.2s						
CHKK	**Chushkaly**	**1.04**	**333**	eP	**Pn**	**17 14 56.3**	**0.0**
	1.1nm,0.1s						
CHKK				eS	**Sn**	**17 15 10.8**	**-0.1**
	9.3nm,0.3s						
ULHL	**Ulahol**	**1.25**	**237**	⇑iP	**Pn**	**17 14 59.2**	**-0.1**
	baz=248						
ULHL				⇑iS	**Sb**	**17 15 15.8**	**+0.2**
	baz=248						
PDGK	**Podgornoye**	**1.40**	**73**	⇑iP	**Pn**	**17 15 01.5**	**+0.4**
	baz=63						
PDGK				⇑iS	**Sn**	**17 15 19.4**	**-0.2**
	baz=63						
SHLS	**Shalkode**	**1.65**	**82**	eP	**Pn**	**17 15 05.1**	**+0.2**
	1.6nm,0.2s						
SHLS				eS	**Sn**	**17 15 26.3**	**+0.1**
	11nm,0.5s						
KZA	**Kyzart**	**1.97**	**245**	⇑iP	**Pb**	**17 15 11.5**	**-0.3**
	baz=252						
KZA				⇑eS	**Sg**	**17 15 39.2**	**+0.1**
	baz=252						
KBK	**Karagaybulak**	**2.01**	**263**	⇑iP	**Pg**	**17 15 13.8**	**-0.3**
	baz=269						
KBK				⇑iS	**Sg**	**17 15 41.9**	**+1.7**
	baz=269						
DJR	**Jarkent**	**2.09**	**47**	⇓iP	**Pb**	**17 15 13.9**	**+0.3**
	2.4nm,0.5s						
DJR				⇓iS	**Sg**	**17 15 41.9**	**-0.8**
	4.2nm,0.4s						
USP	**Ospenovka**	**2.33**	**279**	⇑iP	**Pb**	**17 15 18.0**	**+0.3**
	baz=284						
USP				⇑iS	**Sg**	**17 15 50.2**	**-0.2**
	baz=284						
AAK	**Ala-Archa**	**2.34**	**264**	⇑iP	**Pb**	**17 15 18.1**	**+0.1**
	baz=269						
AAK				⇑iS	**Sg**	**17 15 49.6**	**-1.3**
	baz=269						

WEL 04 17:22:27.4±0.6**,35°.36S**×**177°.82E,h219**km±13km**,ML3.8**/5**, 1D,Error ellipse: s-maj=13.1km s-min=9.0km az=0.0, Off east coast of North Island**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
HAZ	**Te Kaha**	**2.39**	**181**	⇓PN	Pn	17 23 12.2	+0.9
HAZ				SN	S	17 23 45.2	-0.3
WMGZ	**Waiomatatini S**	**2.50**	**169**	PN	Pn	17 23 12.5	0.0
WMGZ				SN	S	17 23 47.5	-0.2
PUZ	**Puketiti**	**2.73**	**173**	PN	Pn	17 23 14.5	-0.5
TWGZ	**Tauwhareparae**	**2.82**	**177**	PN	Pn	17 23 16.2	+0.2
TWGZ				SN	S	17 23 54.1	+0.1
URZ	**Urewera**	**2.95**	**191**	PN	Pn	17 23 17.8	+0.4
URZ				AML	AML	17 23 58.5	
MWZ	**Matawai**	**2.98**	**184**	PN	Pn	17 23 18.2	+0.4
TKGZ	**Te Karaka**	**3.08**	**180**	PN	Pn	17 23 18.9	+0.1
CNGZ	**Carnagh Statio**	**3.13**	**174**	PN	Pn	17 23 20.1	+0.5
RIGZ	**Rimuhau**	**3.34**	**181**	PN	Pn	17 23 20.9	-1.1
SNGZ	**Shannon Statio**	**3.44**	**186**	PN	Pn	17 23 23.2	+0.1
RAHZ	**Arahi**	**3.60**	**189**	PN	Pn	17 23 24.7	-0.3
KNZ	**Kokohu**	**3.66**	**182**	PN	Pn	17 23 24.2	-1.5
WHHZ	**Waihua**	**3.74**	**187**	PN	Pn	17 23 26.4	-0.3
BKZ	**Black Stump Fm**	**3.94**	**195**	PN	Pn	17 23 28.5	-0.8
ARHZ	**Aropaoanui**	**3.95**	**189**	PN	Pn	17 23 28.1	-1.2
BHHZ	**Black Hill Sta**	**4.35**	**198**	PN	Pn	17 23 33.0	-1.2
KRHZ	**Kereru**	**4.43**	**195**	PN	Pn	17 23 33.7	-1.4
TSZ	**Takapari Road**	**4.92**	**197**	PN	Pn	17 23 38.8	-2.4
TIWZ	**Tintock**	**5.62**	**195**	PN	Pn	17 23 47.1	-2.9

*NIED **04** 17:27:00,39°.20N×142°.40E,h53km,Mw4.4 Best double couple: Mo4.06000×10^15 NP1:φs346.00000°,δ32.00000°, λ-26.00000°. NP2:φs99.00000°,δ76.00000°, λ-120.00000°.*
*ISCJB **04** 17:27:03.5±1.5,39°.16N±0°.06×142°.52E±0°.09,h31km±7km, mb3.5/2,Error ellipse: s-maj=12.3km s-min=9.6km az=177.4*
*JMA **04** 17:27:05.1±0.1,39°.21N×142°.45E,h32km±1km,M3.6*
JMA Felt I J1.
ISC 04 17:27:04.9±2.5**,39°.21N**±0°.07×**142°.4E**±0°.1**,h33**km±13km**, n9,**σ**0s.41**/15**,Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
MIYJ	**Miyakonagasawa**	**0.59**	**309**	P	**Pn**	**17 27 17.0**	**0.0**
MIYJ				S	**Sb**	**17 27 25.1**	**0.0**
OFUJ	**Ofunato**	**0.59**	**257**	P	**Pn**	**17 27 17.2**	**+0.1**
OFUJ				eS	**Sb**	**17 27 25.5**	**+0.2**
JTH	**Tanohata**	**0.84**	**330**	P	**Pb**	**17 27 20.9**	**-0.2**
JOM	**Ohasama**	**0.91**	**287**	P	**Pb**	**17 27 22.2**	**0.0**
JOM				S	**Sb**	**17 27 34.5**	**+0.5**
JMK	**Ichinoseki**	**0.96**	**255**	P	**Pb**	**17 27 22.8**	**-0.4**
JMK				S	**Sb**	**17 27 35.8**	**+0.2**
JIO	**Ouri**	**1.12**	**228**	P	**Pn**	**17 27 24.4**	**0.0**
JIO				S	**Sn**	**17 27 38.1**	**-0.6**
JKZ	**Kuzumaki**	**1.14**	**313**	P	**Pb**	**17 27 25.9**	**-0.2**
JKZ				S	**Sb**	**17 27 40.6**	**0.0**
WRA	**Warramunga Arr**	**59.33**	**189**	P	**P**	**17 37 03.3**	**-0.4**
	0.3nm,0.4s,baz=6.9,slow=7.1,SNR=3.0						
ASAR	**Alice Springs**	**63.05**	**189**	P	**P**	**17 37 29.8**	**+0.8**
	0.3nm,0.9s,baz=16,slow=7.8,SNR=3.2						

*ISCJB **04** 17:27:39.1±1.0,36°.72N±0°.06×140°.62E±0°.09,h10km, Error ellipse: s-maj=11.9km s-min=5.9km az=34.0*
*JMA **04** 17:27:39.6,36°.73N×140°.59E,h6km±1km,M2.2*
JMA Felt I J1.
*IDC **04** 17:27:39.6±4.8,36°.65N×140°.20E,h176km±42km,mb2.9/2, mb1 3.2/2,mb1mx2.6/60,mbtmp3.4/2,Error ellipse: s-maj=86.9km s-min=33.8km az=90.0*
ISC 04 17:27:39.4±1.3**,36°.72N**±0°.06×**140°.59E**±0°.09**,h10**km**,n4, σ0s.50**/8**,Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
JHO	**Hitachi**	**0.11**	**188**	P	**Pg**	**17 27 42.1**	**-0.1**
JHO				S	**Sg**	**17 27 43.9**	**-0.2**
ONAJ	**Iwakimizuishiy**	**0.41**	**24**	P	**Pg**	**17 27 47.4**	**-0.2**
ONAJ				S	**Sg**	**17 27 53.2**	**+0.1**
MJAR	**Matsushiro Arr**	**1.92**	**265**	P	**Pn**	**17 28 12.4**	**+0.2**
	2.1nm,0.3s,baz=81,slow=11,SNR=15						
MJAR				S	**Sn**	**17 28 36.9**	**+0.4**
	2.8nm,0.3s,baz=85,slow=30,SNR=13						
MAT	**Matsushiro**	**1.92**	**265**	P	**Pn**	**17 28 12.8**	**+0.6**
MAT				eS	**Sb**	**17 28 37.9**	**-0.8**

*IDC **04** 17:27:47.4±1.5,9°.67S×160°.77E,h0km,mb3.8/6, mb1 4.0/6,mb1mx3.7/39,mbtmp3.8/6,MS3.5/11, Ms1 3.5/11,ms1mx3.2/48,Error ellipse: s-maj=32.5km s-min=20.9km az=165.0*
*ISCJB **04** 17:27:54.7±1.0,9°.5S±0°.2×160°.7E±0°.1,h58km,mb3.7/7, MS3.4/9,Error ellipse: s-maj=22.5km s-min=14.0km az=160.1*
ISC 04 17:27:56.8±1.2**,9°.5S**±0°.2×**160°.6E**±0°.1**,h58**km**,n18, σ1s.69**/9**,mb3.6**/7**,MS3.4**/9**,Bougainville-Solomon Islands region**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
HNR	**Honiara**	**0.66**	**272**	Pn	Pn	17 28 06.1	-4.3
	167nm,0.3s,baz=180,slow=5.5,SNR=134						
HNR				Sn	**Sn**	**17 28 20.9**	**+0.4**
	456nm,0.3s,baz=0.0,slow=20,SNR=44						
HNR	**Honiara**	**0.66**	**272**	i P	Pn	17 28 06.0	-4.5
HNR				i S	**Sn**	**17 28 20.5**	**+0.1**
PMG	**Port Moresby**	**13.28**	**269**	LR	LR	17 35 44.9	
	comp=Z,463nm,21.6s,baz=97,slow=36						
DZM	**Mont Dzumac**	**13.74**	**157**	LR	LR	17 35 45.7	
	comp=Z,205nm,18.3s,baz=340,slow=36						
AFI	**Afiamalu**	**27.38**	**102**	LR	LR	17 42 28.2	
	comp=Z,148nm,18.0s,baz=307,slow=32						
WRA	**Warramunga Arr**	**27.43**	**245**	P	**P**	**17 33 33.8**	**-3.6**
	1.7nm,1.0s,baz=75,slow=9.5,SNR=3.8						
GUMO	**Guam**	**27.72**	**325**	LR	LR	17 44 10.9	
	comp=Z,92nm,21.2s,baz=122,slow=35						
STKA	**Stephens Creek**	**28.44**	**216**	P	**P**	**17 33 47.5**	**+1.2**
	2.9nm,1.0s,baz=6.3,slow=9.6,SNR=4.0						
ASAR	**Alice Springs**	**29.17**	**238**	P	**P**	**17 33 52.5**	**-0.3**
	0.6nm,0.9s,baz=63,slow=10,SNR=7.1						
ASAR				LR	LR	17 45 20.3	
	comp=Z,151nm,18.3s,baz=107,slow=36						
RPZ	**Rata Peaks**	**35.32**	**167**	LR	LR	17 46 58.2	
	comp=Z,73nm,18.2s,baz=330,slow=33						
RAR	**Rarotonga**	**39.83**	**112**	LR	LR	17 48 55.7	
	comp=Z,112nm,21.9s,baz=268,slow=32						
KAPI	**Kappang**	**40.76**	**273**	LR	LR	17 53 18.9	
	comp=Z,36nm,18.8s,baz=123,slow=37						
PPT	**Papeete**	**48.98**	**105**	LR	LR	17 53 38.0	
	comp=Z,38nm,18.9s,baz=272,slow=32						
KSRS	**Korea Array**	**55.81**	**329**	LR	LR	17 59 11.0	
	comp=Z,23nm,21.1s,baz=130,slow=34						
USRK	**Ussuriysk Ar.**	**59.37**	**336**	P	**P**	**17 37 54.0**	**+1.0**
	1.4nm,0.8s,baz=120,slow=8.5,SNR=3.3						
MA2	**Magadan**	**69.25**	**355**	P	**P**	**17 38 57.0**	**-0.4**
	0.9nm,0.3s,baz=145,slow=5.4,SNR=7.4						
MA2				LR	LR	18 06 07.8	
	comp=Z,16nm,21.1s,baz=158,slow=33						
SONM	**Songino Array**	**74.45**	**325**	P	**P**	**17 39 29.5**	**+0.5**
	0.3nm,0.6s,baz=135,slow=5.8,SNR=2.3						
ILAR	**Eielson Array**	**83.69**	**20**	P	**P**	**17 40 18.2**	**-0.7**
	0.3nm,0.7s,baz=243,slow=4.0,SNR=3.3						

IDC 04 17:42:17.6±3.1**,8°.33S**×**123°.84E,h179**km±30km**,mb3.0**/1**, mb1 3.3**/4**,mb1mx2.9**/43**,mbtmp3.7**/4**,Error ellipse: s-maj=104.3km s-min=15.4km az=59.0,Flores region**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
BATI	**Baumata**	**1.88**	**185**	P	Pn	17 42 53.6	+0.2
	8.4nm,0.3s,baz=307,slow=24,SNR=13						
BATI				S	Sn	17 43 23.7	+2.5
	15nm,0.3s,baz=280,slow=22,SNR=13						
FITZ	**Fitzroy Crossi**	**9.88**	**170**	P	Pn	17 44 33.9	-1.7
	0.4nm,0.3s,baz=355,slow=11,SNR=9.1						
FITZ				S	Sn	17 46 17.2	-8.4
	0.4nm,0.3s,baz=264,slow=19,SNR=4.3						
WRA	**Warramunga Arr**	**15.38**	**140**	P	Pn	17 45 45.9	+0.3
	0.4nm,0.3s,baz=312,slow=14,SNR=17						
WRA				S	Sn	17 48 26.9	-11
	0.1nm,0.3s,baz=317,slow=28,SNR=4.5						
ASAR	**Alice Springs**	**18.05**	**149**	P	Pn	17 46 17.1	-0.4
	0.2nm,0.3s,baz=330,slow=12,SNR=26						
ASAR				S	S	17 49 33.8	+0.5
	0.0nm,0.3s,baz=314,slow=22,SNR=3.7						
MKAR	**Makanchi Array**	**66.15**	**330**	P	P	17 52 45.7	-0.2
	0.7nm,1.1s,baz=126,slow=8.1,SNR=4.9						

IDC 04 17:43:43.2±5.6**,20°.21S**×**176°.36W,h0**km**,mb4.1**/3**, mb1 4.3**/3**,mb1mx3.6**/50**,mbtmp4.1**/3**,Error ellipse: s-maj=246.2km s-min=90.3km az=158.0,Fiji Islands region**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
CTA	**Charters Tower**	**35.05**	**264**	P	P	17 50 39.9	+1.8
	2.2nm,0.3s,baz=90,slow=9.7,SNR=5.2						
ASAR	**Alice Springs**	**46.09**	**256**	P	P	17 52 08.5	-0.9
	1.3nm,0.5s,baz=92,slow=8.2,SNR=28						
WRA	**Warramunga Arr**	**46.17**	**261**	P	P	17 52 09.0	-1.0
	0.7nm,0.3s,baz=97,slow=7.4,SNR=22						
AKASG	**Malin Array Be**	**143.49**	**333**	PKP	PKPdf	18 03 19.8	+0.2
	0.7nm,0.4s,baz=41,slow=4.0,SNR=5.1						

JMA 04 17:45:03.4,36°.82N×**140°.53E,h5**km±1km**,M3.4,3C-2D Broadband fault plane solution: P waves. NP1:** φs206.00000°**,**δ75.00000°**,**λ-78.00000°. **NP2:** φs347.00000°**,**δ19.00000°**,**λ-127.00000°. **Principal axes:** T Plg29.0000°, Azm287.0000°**;** N Plg11.0000°, Azm23.0000°**;** P Plg58.0000°, Azm132.0000°**; Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
JHO	**Hitachi**	**0.21**	**171**	⇓P	Pg	17 45 07.7	+0.2
JHO				S	Sg	17 45 10.7	+0.4
ONAJ	**Iwakimizuishiy**	**0.35**	**37**	⇑P	Pg	17 45 10.3	0.0
ONAJ				S	Sg	17 45 15.4	+0.4
JSB	**Shiboa**	**0.51**	**287**	⇑P	Pg	17 45 13.9	+0.7
JSB				S	Sb	17 45 21.4	-1.2
JFK	**Kawauchi**	**0.61**	**27**	⇑P	Pg	17 45 14.8	-0.4
JYT	**Yasato**	**0.65**	**205**	⇓P	Pg	17 45 15.8	-0.1
MAT	**Matsushiro**	**1.89**	**262**	P	Pn	17 45 36.2	-0.1
MAT				eS	Sn	17 46 00.5	0.0

*NIED **04** 17:45:00,36°.30N×141°.20E,h32km,Mw4.0 Best double couple: Mo1.10000×10^15 NP1:φs187.00000°,δ48.00000°, λ49.00000°. NP2:φs59.00000°,δ56.00000°,λ126.00000°.*
*ISCJB **04** 17:45:08.8±0.4,36°.15N±0°.04×141°.57E±0°.06,h26km, mb4.0/32,MS3.8/1,Error ellipse: s-maj=7.0km s-min=5.0km az=30.1*
*MOS **04** 17:45:08.6±1.2,36°.04N×141°.56E,h29km,mb4.5/13,Error ellipse: s-maj=10.8km s-min=7.4km az=117.8*

*JMA **04** 17:45:13.2±0.2, 36°.25N×141°.20E, h49km, M3.8*
*NEIC **04** 17:45:14.2±1.0, 36°.01N×141°.31E, h55km±9km, mb4.5/5, Error ellipse: s-maj=10.7km s-min=8.6km az=60.0*
*IDC **04** 17:45:14.4±2.2, 35°.99N×141°.28E, h55km±20km, mb3.7/19, mb1 3.9/22, mb1mx3.8/58, mbtmp4.0/22, ML4.3/2, MS3.0/2, Ms1 3.0/2, ms1mx2.5/62, Error ellipse: s-maj=15.1km s-min=14.8km az=23.0*
ISC 04 17:45:10.6±0.5**, 36°.09N**±0°.05×**141°.52E**±0°.07**, h26**km**, n74, σ1s.50**/72**, mb4.1**/32**, 6C-7D, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.66**	**234**	P	**Pn**	**17 45 25.2**	**+1.0**
CHOJ				eS	**Sn**	**17 45 34.5**	**+0.7**
MJAR	**Matsushiro Arr**	**2.71**	**281**	P	**Pn**	**17 45 52.3**	**-0.2**
	27nm,0.3s,baz=112,slow=8.7,SNR=38						
MJAR				S	**Sn**	**17 46 23.0**	**-1.5**
	24nm,0.3s,baz=86,slow=18,SNR=5.9						
MJAR				LR	LR	17 47 12.4	
	comp=Z,180nm,19.5s,baz=140,slow=47						
MAJO	**Matsushiro**	**2.71**	**281**	c iP	**Pn**	**17 45 52.6**	**+0.1**
MAJO	**Matsushiro**	**2.71**	**281**	ePn	**Pn**	**17 45 52.9**	**+0.4**
JHJ	**Hachijo jima 2**	**3.29**	**206**	P	Pb	17 46 04.5	-3.8
	18nm,0.3s,baz=228,slow=14,SNR=3.6						
JHJ				S	**Sn**	**17 46 40.8**	**+2.0**
	45nm,0.3s,baz=95,slow=22,SNR=8.6						
ERM	**Erimo**	**6.05**	**12**	⇓eP	**Pn**	**17 46 39.7**	**+1.4**
YUK	**Yuzh-Kuril'sk**	**8.60**	**21**	⇑eP	Pn	17 47 09.1	-4.2
SHO	**Shikotan**	**8.77**	**26**	P	**Pn**	**17 47 14.0**	**-1.6**
CBIJ	**Chichi jima**	**8.98**	**176**	P	**Pn**	**17 47 20.1**	**+1.5**
CBIJ				S	**Sn**	**17 48 55.5**	**-3.4**
JCJ	**Chichijima**	**8.98**	**176**	P	**Pn**	**17 47 20.1**	**+1.5**
	6.1nm,0.3s,baz=303,slow=22,SNR=5.3						
JCJ				S	**Sn**	**17 48 55.5**	**-3.5**
	baz=285,slow=20						
USRK	**Ussuriysk Ar.**	**10.89**	**321**	P	**Pn**	**17 47 47.1**	**+2.4**
	0.4nm,0.3s,baz=125,slow=12,SNR=9.1						
YSS	**Yuzh-Sakhalins**	**10.89**	**4**	eP	**Pn**	**17 47 42.8**	**-1.9**
YSS				pmax	pmax		
	comp=Z,76nm,1.7s						
KSRS	**Korea Array**	**10.99**	**281**	P	**Pn**	**17 47 49.1**	**+3.1**
	comp=Z,0.2nm,0.3s,baz=93,slow=14,SNR=9.1						
KSAR	**Wonju Array Be**	**11.02**	**281**	P	**Pn**	**17 47 49.2**	**+2.7**
KSAR	**Wonju Array Be**	**11.02**	**281**	P	**Pn**	**17 47 49.1**	**+2.7**
MDJ	**Mudanjiang**	**12.45**	**317**	eP	**Pn**	**17 48 08.2**	**+2.2**
KLR	**Kul'dur**	**14.95**	**334**	LR	LR	17 54 10.7	
	comp=Z,86nm,18.6s,baz=112,slow=36						
HIA	**Hailar**	**20.64**	**316**	eP	**P**	**17 49 47.4**	**-0.6**
HIA	**Hailar**	**20.64**	**316**	eP	**P**	**17 49 47.4**	**-0.6**
MA2	**Magadan**	**24.26**	**11**	P	**P**	**17 50 26.6**	**+1.3**
	comp=Z,3.6nm,0.7s,baz=216,slow=8.5,SNR=10						
MA2	**Magadan**	**24.26**	**11**	eP	**P**	**17 50 25.3**	**0.0**
	comp=Z,46nm,1.3s						
YAK	**Yakutsk**	**27.01**	**348**	eP	**P**	**17 50 49.0**	**-1.1**
YAK				pmax	pmax		
	comp=Z,15nm,1.1s						
YAK				pmax	pmax		
	comp=N,10.0nm,1.3s						
ENH	**Enshi**	**27.35**	**267**	eP	**P**	**17 50 52.9**	**-0.7**
H11N2	**WAKE ISLAND Hy**	**27.60**	**119**	T	T	18 20 45.9	
	baz=312,slow=75,SNR=33						
H11N1	**WAKE ISLAND Hy**	**27.61**	**119**	T	T	18 20 46.5	
	baz=312,slow=75,SNR=48						
H11N3	**WAKE ISLAND Hy**	**27.62**	**119**	T	T	18 20 47.2	
	baz=312,slow=75,SNR=42						
SEY	**Seymchan**	**27.70**	**11**	P	**P**	**17 50 59.8**	**+3.5**
	comp=N,5.6nm,1.1s,baz=192,slow=10,SNR=11						
SEY	**Seymchan**	**27.70**	**11**	⇓eP	**P**	**17 50 58.7**	**+2.4**
ULN	**Ulaanbaatar**	**27.96**	**306**	⇑eP	**P**	**17 50 58.9**	**-0.1**
ULN				pmax	pmax		
	comp=Z,1.0nm,0.9s						
H11S1	**WAKE ISLAND Hy**	**28.29**	**122**	T	T	18 21 36.0	
	baz=314,slow=76,SNR=193						
H11S3	**WAKE ISLAND Hy**	**28.29**	**122**	T	T	18 21 35.6	
	baz=314,slow=76,SNR=118						
H11S2	**WAKE ISLAND Hy**	**28.30**	**122**	T	T	18 21 37.1	
	baz=314,slow=76,SNR=90						
SONM	**Songino Array**	**28.39**	**305**	P	**P**	**17 51 02.6**	**-0.2**
	comp=Z,2.4nm,0.8s,baz=107,slow=8.4,SNR=9.8						
TLY	**Talaya**	**31.02**	**312**	eP	**P**	**17 51 26.1**	**+0.2**
TLY				pmax	pmax		
	comp=Z,2.0nm,0.6s						
BILL	**Bilibino**	**34.91**	**16**	⇓eP	**P**	**17 52 00.4**	**+0.8**
BILL				e		17 53 15.4	
BILL				pmax	pmax		
	comp=Z,3.0nm,1.3s						
KRAR	**Krasnoyarsk**	**38.21**	**317**	⇓eP	**P**	**17 52 27.2**	**-0.7**
KRAR				pmax	pmax		
	comp=Z,7.0nm,0.9s						
CMAR	**Chiang Mai Arr**	**41.35**	**256**	P	**P**	**17 52 54.7**	**+0.2**
	comp=Z,0.3nm,0.7s,baz=50,slow=8.4,SNR=3.1						
ZALV	**Zalesovo Beam**	**42.62**	**313**	P	**P**	**17 53 03.9**	**-0.5**
	comp=Z,2.2nm,0.6s,baz=90,slow=7.3,SNR=4.6						
MKAR	**Makanchi Array**	**44.70**	**303**	P	**P**	**17 53 20.9**	**-0.4**
	comp=Z,1.4nm,0.8s,baz=88,slow=9.0,SNR=15						
KURK	**Kurchatov**	**46.59**	**309**	eP	**P**	**17 53 35.2**	**-0.9**
KURK				pmax	pmax		
	comp=Z,14nm,0.8s						
KURK	**Kurchatov**	**46.59**	**309**	eP	**P**	**17 53 35.2**	**-0.9**
	comp=Z,14nm,0.8s						
RAMN	**Ramite**	**47.16**	**275**	eP	**P**	**17 53 41.2**	**-0.1**
	comp=Z,20nm,0.9s						
GUN	**Gumba**	**47.34**	**277**	eP	**P**	**17 53 43.4**	**+0.7**
	comp=Z,22nm,1.0s						
GKN	**Gorkha**	**48.30**	**277**	eP	**P**	**17 53 49.9**	**-0.1**
	comp=Z,27nm,0.9s						
KOLN	**Koldanda**	**49.23**	**278**	eP	**P**	**17 53 57.9**	**+0.7**
	comp=Z,9.6nm,0.9s						
PYUN	**Piuthan**	**49.58**	**278**	eP	**P**	**17 54 00.1**	**+0.3**
ILAR	**Eielson Array**	**50.25**	**32**	P	**P**	**17 54 05.5**	**+1.4**
	comp=Z,2.6nm,0.9s,baz=264,slow=5.9,SNR=16						
BVAR	**Borovoye Array**	**51.27**	**313**	P	**P**	**17 54 10.9**	**-1.1**
	comp=Z,1.3nm,0.9s,baz=90,slow=7.2,SNR=6.0						
BRVK	**Borovoye**	**51.33**	**313**	⇓eP	**P**	**17 54 13.3**	**+0.9**
BRVK				pmax	pmax		
	comp=Z,5.0nm,2.5s						
BRVK	**Borovoye**	**51.33**	**313**	P	**P**	**17 54 12.6**	**+0.2**
KKAR	**Karatay Array**	**53.67**	**301**	eP	**P**	**17 54 30.3**	**+0.3**
KKAR				pmax	pmax		
	comp=Z,4.0nm,0.9s						
KKAR	**Karatay Array**	**53.67**	**301**	eP	**P**	**17 54 30.3**	**+0.3**
	comp=Z,4.1nm,0.9s						
INK	**Inuvik**	**55.19**	**27**	P	**P**	**17 54 41.8**	**+1.3**
	comp=Z,1.1nm,0.7s,baz=322,slow=1.6,SNR=4.9						
WRA	**Warramunga Arr**	**56.14**	**188**	P	**P**	**17 54 47.2**	**-0.7**
	comp=Z,1.0nm,0.8s,baz=4.9,slow=7.4,SNR=4.9						
ARU	**Arti**	**57.12**	**319**	c iP	**P**	**17 54 53.9**	**-0.7**
ARU				S	**S**	**18 02 45.4**	**-2.5**
ARU				SS	**SS**	**18 06 33.0**	**-3.4**
ARU				pmax	pmax		
	comp=Z,15nm,2.5s						
ARU	**Arti**	**57.12**	**319**	eP	**P**	**17 54 53.8**	**-0.7**
	comp=Z,2.8nm,0.8s						
ABKAR	**Akbulak array**	**58.62**	**311**	eP	**P**	**17 55 04.2**	**-1.0**
	comp=Z,1.0nm,0.5s						
ASAR	**Alice Springs**	**59.87**	**188**	P	**P**	**17 55 12.7**	**-1.4**
	comp=Z,0.5nm,0.8s,baz=18,slow=6.2,SNR=6.0						
YKA	**Yellowknife Ar**	**64.58**	**30**	P	**P**	**17 55 45.7**	**+0.6**
	comp=Z,0.6nm,0.8s,baz=303,slow=6.8,SNR=10						
OBN	**Obninsk**	**68.90**	**323**	⇓eP	**P**	**17 56 10.0**	**-2.8**
OBN				e		17 58 42.2	
OBN				ePPP	PPP	18 00 26.6	
OBN				pmax	pmax		
	comp=Z,5.0nm,1.1s						
OBN				MLR	MLR		
	comp=Z,46nm,17.0s						
FINES	**FINESS Array B**	**69.69**	**332**	P	**P**	**17 56 17.1**	**-0.5**
	comp=Z,2.0nm,0.8s,baz=29,slow=8.8,SNR=3.6						
NEY	**Neytrino**	**71.95**	**311**	⇑eP	**P**	**17 56 31.5**	**-0.4**
NEY				pmax	pmax		
	comp=Z,2.0nm,1.1s						
NB2	**NORSAR Subarra**	**75.09**	**337**	P	**P**	**17 56 49.8**	**-0.1**
	comp=Z,1.0nm,0.6s,baz=41,slow=6.2						
NOA	**NORSAR Array B**	**75.09**	**337**	P	**P**	**17 56 49.7**	**-0.2**
	comp=Z,1.5nm,0.7s,baz=40,slow=5.9,SNR=4.0						
AKASG	**Malin Array Be**	**75.10**	**322**	P	**P**	**17 56 49.3**	**-0.7**
	comp=Z,1.3nm,0.4s,baz=47,slow=6.1,SNR=21						
KIEV	**Kiev**	**75.11**	**322**	⇓eP	**P**	**17 56 49.6**	**-0.5**
KIEV				pmax	pmax		
	comp=Z,3.0nm,0.9s						
NVAR	**Mina Array Bea**	**75.48**	**53**	P	**P**	**17 56 55.4**	**+2.6**
	comp=Z,1.2nm,0.7s,baz=303,slow=5.1,SNR=7.9						
PDAR	**Pinedale Array**	**78.27**	**45**	P	**P**	**17 57 10.2**	**+1.7**
	comp=Z,0.8nm,0.6s,baz=221,slow=1.6,SNR=9.1						
BRTR	**Keskin Array B**	**79.54**	**312**	P	**P**	**17 57 16.7**	**+1.4**
	comp=Z,1.4nm,1.0s,baz=112,slow=3.3,SNR=5.5						
BRTR	**Keskin Array B**	**79.54**	**312**	c eP	**P**	**17 57 15.3**	**0.0**
BRTR				pmax	pmax		
	comp=Z,1.0nm,1.0s						
CLL	**Collm**	**81.96**	**330**	eP	**P**	**17 57 28.0**	**+0.2**
CLL				i		17 57 38.6	
CLL	**Collm**	**81.96**	**330**	eP	**P**	**17 57 28.0**	**+0.2**
CLL				i		17 57 38.6	
GERES	**GERESS Array B**	**83.56**	**328**	P	**P**	**17 57 36.2**	**-0.1**
	comp=Z,0.3nm,0.5s,baz=20,slow=4.3,SNR=4.1						
LPAZ	**La Paz**	**147.09**	**61**	PKPbc	**PKPab**	**18 04 53.2**	**-0.7**
	comp=Z,1.0nm,0.5s,baz=259,slow=4.9,SNR=3.6						

IDC 04 17:49:53.5±3.3**, 11°.73N**×**87°.23W, h0**km**, mb3.3**/3**, mb1 3.7**/4**, mb1mx3.5**/39**, mbtmp3.3**/4**, ML2.8**/1**, Error ellipse: s-maj=164.7km s-min=22.2km az=42.0, Near coast of Nicaragua**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
JTS	**JuntasAbangare**	**2.66**	**122**	Pn	Pn	17 50 38.7	+1.1
	1.7nm,0.3s,baz=140,slow=23,SNR=5.2						
JTS				Sn	Sn	17 51 09.9	-0.8
	17nm,0.3s,baz=242,slow=17,SNR=7.7						
TXAR	**Lajitas Array**	**23.26**	**321**	P	P	17 55 03.2	+0.3
	0.6nm,0.5s,baz=138,slow=11,SNR=3.8						
PDAR	**Pinedale Array**	**36.50**	**332**	P	P	17 57 00.6	-0.3
	0.3nm,0.7s,baz=126,slow=10,SNR=3.3						
YKA	**Yellowknife Ar**	**54.36**	**345**	P	P	17 59 21.8	0.0
	0.4nm,0.9s,baz=145,slow=7.4,SNR=3.9						
CMAR	**Chiang Mai Arr**	**149.39**	**348**	PKPbc	PKPbc	18 09 44.6	-0.9
	0.7nm,0.8s,baz=344,slow=3.3,SNR=6.2						

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*CSEM **04** 17:53:18.0±4.9, 33°.26N×45°.98E, h10km, ML3.3, Error ellipse: s-maj=117.1km s-min=31.6km az=81.0*
*ISN **04** 17:53:19.6±1.9, 33°.20N×46°.35E, h3km±7km, ML3.3*
*TEH **04** 17:53:22.6, 33°.08N×46°.29E, h10km, ML3.3*
ISC 04 17:53:23.7±3.7**, 33°.2N**±0°.1×**46°.5E**±0°.2**, h10**km**, n17, σ0s.92**/15**, Iran-Iraq border region**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
IBDR	**Badra**	**0.44**	**262**	i Pg	Pg	17 53 28.0	-4.4
IBDR				eSg	Sg	17 53 33.0	-5.3
IDHR	**Dehrash**	**1.52**	**358**	eAMB	AMB	17 53 54.4	
	comp=Z,11μm,0.1s						
BHD	**Baghdad**	**1.74**	**274**	ePn	Pn	17 53 50.0	-4.0
BHD				i Sn	Sn	17 54 11.0	-5.2
SNGE	**Sanandaj**	**2.05**	**21**	ePg	**Pn**	**17 53 58.0**	**-0.5**
NSR	**Nassriya**	**2.17**	**187**	ePn	Pn	17 53 56.0	-3.9
NSR				i Sn	Sn	17 54 23.0	-3.9
KHMZ	**Khomeyn**	**2.98**	**78**	ePn	**Pn**	**17 54 11.0**	**-0.3**
ASAO	**Ashtian**	**3.27**	**64**	ePn	**Pn**	**17 54 14.1**	**-1.2**
ASAO				eSg	**Sn**	**17 54 52.8**	**-1.6**
IRAZ	**Razeghan**	**3.64**	**51**	ePn	**Pn**	**17 54 21.1**	**+0.8**
IRAZ				eAMB	AMB	17 54 30.1	
	comp=Z,626nm,0.2s						
IRAZ				eSn	**Sn**	**17 55 04.3**	**+0.9**
IRAZ	**Razeghan**	**3.64**	**51**	ePn	**Pn**	**17 54 21.1**	**+0.8**
IRAZ				eSn	**Sn**	**17 55 04.3**	**+0.9**
IPIR	**Pirpir**	**3.76**	**96**	ePn	**Pn**	**17 54 23.0**	**+0.9**
IPIR				eAMB	AMB	17 55 14.4	
	comp=Z,332nm,0.3s						
IPIR	**Pirpir**	**3.76**	**96**	ePn	**Pn**	**17 54 23.0**	**+0.9**
IKLH	**Kolahrood**	**4.30**	**87**	ePn	**Pn**	**17 54 29.7**	**+0.3**
IKLH				eAMB	AMB	17 55 40.5	
	comp=Z,211nm,0.2s						
IKLH	**Kolahrood**	**4.30**	**87**	ePn	**Pn**	**17 54 29.7**	**+0.3**
IGAR	**Gharneh**	**4.77**	**98**	ePn	**Pn**	**17 54 35.4**	**-0.4**
IGAR				eAMB	AMB	17 54 39.9	
	comp=Z,134nm,0.1s						
IZEF	**Zefreh**	**4.94**	**92**	ePn	**Pn**	**17 54 37.7**	**-0.6**
IZEF				eAMB	AMB	17 56 03.6	
	comp=Z,90nm,0.4s						
IZEF	**Zefreh**	**4.94**	**92**	ePn	**Pn**	**17 54 37.7**	**-0.6**
RTB	**Rutbah**	**5.16**	**270**	i pn	Pn	17 54 37.0	-4.1
RTB				i Sn	Sn	17 55 31.0	-10

IDC 04 17:54:15.4±1.6**, 33°.93N**×**135°.92E, h0**km**, mb3.6**/3**, mb1 3.7**/5**, mb1mx3.3**/67**, mbtmp3.6**/5**, ML3.4**/2**, Error ellipse: s-maj=52.0km s-min=23.9km az=112.0, Near south coast of western Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
MJAR	**Matsushiro Arr**	**3.21**	**35**	Pn	Pn	17 55 08.1	+1.0
	3.0nm,0.3s,baz=151,slow=12,SNR=23						
MJAR				Sn	Sn	17 55 32.5	-14
	1.4nm,0.3s,baz=40,slow=12,SNR=6.0						
JHJ	**Hachijo jima 2**	**3.33**	**103**	Pn	Pn	17 55 08.8	+0.1
	12nm,0.3s,baz=246,slow=20,SNR=4.6						
JHJ				Sn	Sn	17 55 32.0	-17
	23nm,0.3s,baz=49,slow=18,SNR=5.5						
WRA	**Warramunga Arr**	**53.59**	**182**	P	P	18 03 38.1	-0.2
	0.4nm,0.5s,baz=0.9,slow=7.6,SNR=6.0						
ASAR	**Alice Springs**	**57.31**	**182**	P	P	18 04 05.2	+0.1
	0.4nm,1.1s,baz=0.4,slow=6.1,SNR=7.2						
INK	**Inuvik**	**59.15**	**26**	P	P	18 04 17.0	-0.5
	0.7nm,0.5s,baz=275,slow=5.3,SNR=4.2						

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*IDC **04** 17:56:39.8±1.1, 12°.48N×86°.42W, h0km, mb3.9/7, mb1 4.2/8, mb1mx3.8/46, mbtmp3.9/8, ML3.2/1, MS3.6/11, Ms1 3.6/11, ms1mx3.3/43, Error ellipse: s-maj=74.5km s-min=16.2km az=54.0*
*CASC **04** 17:56:40.8±3.3, 11°.50N×87°.51W, h44km±380km, MD4.4, ML3.4, mb4.7(NEIC)*
*ISCJB **04** 17:56:41.5±0.6, 11°.51N±0°.05×87°.42W±0°.05, h56km±4km, mb4.4/19, MS3.6/11, Error ellipse: s-maj=10.2km s-min=3.8km az=44.6*
*NEIC **04** 17:56:43.3±1.6, 11°.64N×87°.32W, h40km±15km, mb4.7/13, Error ellipse: s-maj=24.2km s-min=10.3km az=49.0*
ISC 04 17:56:42.5±1.3**, 11°.56N**±0°.06×**87°.48W**±0°.07**, h44**km±13km**, n196, σ1s.28**/185**, mb4.5**/19**, MS3.5**/11**, Near coast of Nicaragua**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
CNGN	**Cerro Negro**	**1.21**	**39**	eP	**Pn**	**17 57 02.0**	**-1.0**
CNGN				eS	**Sn**	**17 57 20.5**	**+2.3**
MGAN	**Managua**	**1.34**	**64**	eP	**Pn**	**17 57 02.6**	**-2.2**
MGAN				eS	**Sn**	**17 57 22.6**	**+1.2**
MGAN				AML	AML	17 57 28.8	
	comp=N,620nm,0.4s						
CSGN	**Cosiguina Volc**	**1.41**	**357**	eP	**Pn**	**17 57 05.5**	**-0.4**
ESTN	**Estel**	**1.88**	**35**	eP	**Pn**	**17 57 11.9**	**-0.4**
BOAB	**BOACO BROADBAN**	**1.98**	**63**	eP	**Pn**	**17 57 11.6**	**-2.0**
VSM	**San Miguel**	**2.02**	**337**	eP	**Pn**	**17 57 14.7**	**+0.3**
VSM				eS	**Sn**	**17 57 36.9**	**-1.6**
LCY	**Lacayo**	**2.02**	**337**	eP	**Pn**	**17 57 13.8**	**-0.5**
LCY				eS	**Sn**	**17 57 35.7**	**-2.7**
PACA	**Pacayal**	**2.07**	**337**	eP	**Pn**	**17 57 14.7**	**-0.3**
TECA	**Tecapa**	**2.17**	**333**	eP	**Pn**	**17 57 15.6**	**-0.8**
LFRS	**El Faro**	**2.57**	**323**	eP	**Pn**	**17 57 21.2**	**-0.6**
JTS	**JuntasAbangare**	**2.78**	**117**	Pn	**Pn**	**17 57 23.8**	**-0.8**
	comp=N,4.9nm,0.3s,baz=105,slow=21,SNR=17						
JTS				Sn	**Sn**	**17 57 55.0**	**-2.0**
	comp=N,57nm,0.3s,baz=232,slow=18,SNR=10						
JTS				LR	LR	17 57 57.5	
	comp=N,94nm,21.9s,baz=291,slow=30						
BOQS	**Boqueron**	**2.79**	**321**	eP	**Pn**	**17 57 23.9**	**-1.0**
JCR	**Jicaral**	**2.88**	**126**	eP	**Pn**	**17 57 24.8**	**-1.2**
JCR				eS	**Sn**	**17 57 55.7**	**-3.7**
CGA2	**Cerro Gallo 2**	**3.33**	**117**	eP	**Pn**	**17 57 32.3**	**0.0**
CGA2				eS	**Sn**	**17 58 09.1**	**-1.6**
QCR	**Quepos**	**3.88**	**123**	eP	**Pn**	**17 57 39.5**	**-0.2**
QCR				eS	**Sn**	**17 58 22.5**	**-1.7**
URSC	**Urasca**	**4.02**	**115**	eP	**Pn**	**17 57 43.6**	**+1.8**
URSC				eS	**Sn**	**17 58 30.9**	**+3.2**
BUS	**Buena Vista**	**4.16**	**118**	eP	**Pn**	**17 57 45.3**	**+1.4**
BUS				eS	**Sn**	**17 58 30.8**	**-0.8**
CMIG	**Matias Romero**	**9.04**	**308**	Pn	**Pn**	**17 58 52.5**	**+1.9**
	comp=N,0.8nm,0.3s,baz=124,slow=9.5,SNR=8.4						
035Z	**Hargill**	**17.88**	**328**	P	**P**	**18 00 50.7**	**+2.5**
	baz=144						
035A	**Encino**	**18.28**	**328**	P	**Pn**	**18 00 54.8**	**+1.9**
	baz=144						
034A	**Hebbronville**	**18.68**	**327**	P	**Pn**	**18 00 59.6**	**+1.7**
	baz=143,SNR=6.6						
934A	**Benavides**	**19.03**	**329**	P	**Pn**	**18 01 03.4**	**+1.4**
	baz=144						
444A	**Pine Grove**	**19.30**	**351**	P	**Pn**	**18 01 06.4**	**+1.2**
	baz=170						
933A	**Laredo**	**19.44**	**327**	P	**P**	**18 01 07.2**	**+1.8**
	baz=143						
834A	**Tilden**	**19.48**	**329**	P	**P**	**18 01 08.1**	**+2.3**
	baz=145						
538A	**Harpers Horsep**	**20.01**	**339**	P	**Pn**	**18 01 14.2**	**+0.6**
	baz=156						
344A	**Westbrook Farm**	**20.03**	**352**	P	**Pn**	**18 01 14.1**	**+0.3**
	baz=170						
833A	**Chaparral WMA,**	**20.07**	**328**	P	**P**	**18 01 13.6**	**+1.4**
	baz=144,SNR=7.5						
TIGA	**Tifton**	**20.11**	**10**	P	**Pn**	**18 01 14.2**	**-0.5**
	baz=191						
TIGA	**Tifton**	**20.11**	**10**	eP	**Pn**	**18 01 14.4**	**-0.4**
	comp=N,40nm,0.8s						
537A	**Green Hill Far**	**20.18**	**337**	P	**P**	**18 01 15.8**	**+2.3**
	baz=154						
342A	**Flagon Creek P**	**20.23**	**348**	P	Pn	18 01 16.4	+0.2
	baz=166						
733A	**Divot King Ran**	**20.34**	**329**	P	**P**	**18 01 16.5**	**+1.4**
	baz=144						
832A	**Faith Ranch, C**	**20.34**	**327**	P	**P**	**18 01 16.7**	**+1.4**
	baz=142						
341A	**Kurthwood**	**20.37**	**346**	P	Pn	18 01 17.9	0.0
	baz=163						
246A	**Jackson Lee, B**	**20.42**	**356**	P	**P**	**18 01 17.3**	**+1.3**
	baz=175						
536A	**Bastrop**	**20.47**	**336**	P	**P**	**18 01 18.2**	**+1.6**
	baz=152						
245A	**Little AP, Sta**	**20.50**	**354**	P	**P**	**18 01 18.7**	**+1.8**
	baz=173						
340A	**Bronson**	**20.63**	**344**	P	Pn	18 01 20.9	0.0
	baz=162						
ATAH	**Atahualpa**	**20.65**	**154**	LR	LR	18 08 17.3	
	comp=N,147nm,19.7s,baz=344,slow=33						
633A	**Saathoff Ranch**	**20.89**	**330**	P	**P**	**18 01 21.9**	**+0.8**
	baz=146						
534A	**Blanco**	**21.03**	**333**	P	**P**	**18 01 23.1**	**+0.4**
	baz=148						
NATX	**Nacogdoches**	**21.17**	**343**	P	**P**	**18 01 25.5**	**+1.4**
	baz=160						
533A	**Kerrville**	**21.33**	**331**	P	**P**	**18 01 26.4**	**+0.5**
	baz=147						
239A	**Gary**	**21.36**	**343**	P	**P**	**18 01 28.1**	**+1.9**
	baz=160						
LRAL	**Lakeview Retre**	**21.38**	**1**	eP	**P**	**18 01 27.5**	**+1.1**
	comp=N,23nm,0.8s						
141A	**Papa Simpson,**	**21.54**	**347**	P	**P**	**18 01 29.5**	**+1.5**
	baz=165						
336A	**Riesel**	**21.55**	**338**	P	**P**	**18 01 29.7**	**+1.4**
	baz=154						
SJG	**San Juan**	**21.61**	**70**	LR	LR	18 09 09.5	
	comp=N,98nm,18.5s,baz=228,slow=37						
434A	**Burnet**	**21.62**	**334**	P	**P**	**18 01 30.7**	**+1.7**
	baz=150						
JCT	**Junction City**	**22.03**	**331**	P	**P**	**18 01 34.4**	**+1.0**
	baz=146						
334A	**Lometa**	**22.05**	**335**	P	**P**	**18 01 36.3**	**+2.7**
	baz=150						
GOGA	**Godfrey**	**22.06**	**9**	eP	**P**	**18 01 34.6**	**+1.0**
	comp=N,16nm,1.0s						
138A	**Matatall Enter**	**22.14**	**343**	P	**P**	**18 01 36.9**	**+2.3**
	baz=160						
Z40A	**Long Farm, Mag**	**22.27**	**347**	P	**P**	**18 01 38.2**	**+2.2**
	baz=164						
137A	**Heron Place, G**	**22.28**	**341**	P	**P**	**18 01 38.3**	**+2.2**
	baz=158						
WHTX	**Lake Whitney,**	**22.32**	**337**	P	**P**	**18 01 38.4**	**+1.8**
	baz=153						
333A	**Richland Sprin**	**22.37**	**333**	P	**P**	**18 01 38.5**	**+1.5**
	baz=149						
Z39A	**Irene McRaven,**	**22.44**	**345**	P	**P**	**18 01 39.6**	**+1.9**
	baz=162						
233A	**Rising Star**	**22.93**	**334**	P	**P**	**18 01 43.3**	**+0.4**
	baz=150						
Y40A	**Okolona**	**22.97**	**348**	P	**P**	**18 01 44.2**	**+0.9**
	baz=165						
Y39A	**Lockesburg**	**23.09**	**346**	P	**P**	**18 01 44.6**	**+0.2**
	baz=163						
TXAR	**Lajitas Array**	**23.25**	**322**	P	**P**	**18 01 47.6**	**+1.3**
	comp=N,3.5nm,0.7s,baz=135,slow=9.7,SNR=11						
X40A	**Basin Creek Fa**	**23.34**	**349**	P	**P**	**18 01 46.8**	**-0.2**
	baz=166						
Y37A	**Hugo**	**23.53**	**343**	P	**P**	**18 01 49.6**	**+0.8**
	baz=159						
MIAR	**Mount Ida**	**23.55**	**347**	P	**P**	**18 01 48.8**	**-0.1**
	baz=164						
MIAR	**Mount Ida**	**23.55**	**347**	eP	**P**	**18 01 48.8**	**-0.1**
	comp=N,17nm,0.9s						
X39A	**Fountain Ranch**	**23.64**	**346**	P	**P**	**18 01 50.0**	**+0.2**
	baz=163						
Y36A	**Durant**	**23.65**	**341**	P	**P**	**18 01 50.4**	**+0.5**
	baz=158						
ABTX	**Abilene, Hawle**	**23.77**	**334**	P	**P**	**18 01 52.2**	**+1.1**
	baz=149						
Y35A	**Marietta**	**23.90**	**340**	P	**P**	**18 01 53.1**	**+0.8**
	baz=156						
X38A	**Whitesboro**	**23.96**	**345**	P	**P**	**18 01 54.0**	**+1.1**
	baz=162,SNR=9.1						
X37A	**Clayton**	**24.03**	**344**	P	**P**	**18 01 54.8**	**+1.4**
	baz=160,SNR=12						
W40A	**Ferguson Farm,**	**24.07**	**349**	P	**P**	**18 01 54.2**	**+0.4**
	baz=166						
KMSC	**Kings Mountain**	**24.13**	**12**	P	**P**	**18 01 52.9**	**-1.5**
	baz=194						
Y34A	**Reagan Ranch,**	**24.20**	**339**	P	**P**	**18 01 55.4**	**+0.4**
	baz=154						
W39A	**Magazine**	**24.22**	**347**	P	**P**	**18 01 55.3**	**+0.1**
	baz=164						
W38A	**Poteau**	**24.27**	**346**	P	**P**	**18 01 56.7**	**+1.1**
	baz=163,SNR=10						
X36A	**Centrahoma**	**24.30**	**342**	P	**P**	**18 01 57.3**	**+1.4**
	baz=158,SNR=8.3						
X35A	**Drake**	**24.33**	**341**	P	**P**	**18 01 58.7**	**+2.5**
	baz=157						
W37B	**Quinton**	**24.57**	**344**	P	**P**	**18 01 59.6**	**+1.2**
	baz=161,SNR=9.0						
V40A	**Witts Springs**	**24.62**	**350**	P	**P**	**18 01 58.9**	**0.0**
	baz=167						
W36A	**Wetumka**	**24.79**	**343**	P	**P**	**18 02 01.2**	**+0.9**
	baz=159						
X34A	**Smith Ranch, M**	**24.80**	**339**	P	**P**	**18 02 01.7**	**+1.2**
	baz=155						
V39A	**Pettigrew**	**24.81**	**348**	P	**P**	**18 02 01.5**	**+0.8**
	baz=165,SNR=10						
X33A	**Lawton**	**24.99**	**338**	P	**P**	**18 02 03.0**	**+0.8**
	baz=153						
V38A	**Canehill**	**25.00**	**347**	P	**P**	**18 02 02.1**	**-0.2**
	baz=163						
U40A	**Yellville**	**25.16**	**350**	P	**P**	**18 02 03.4**	**-0.3**
	baz=167,SNR=6.6						
V37A	**Hulbert**	**25.19**	**345**	P	**P**	**18 02 04.6**	**+0.6**
	baz=162,SNR=5.7						
V36A	**Jenks**	**25.31**	**344**	P	**P**	**18 02 06.6**	**+1.5**
	baz=160,SNR=11						
W34A	**Bridge Creek,**	**25.36**	**340**	P	**P**	**18 02 07.0**	**+1.4**
	baz=156						
W34A	**Bridge Creek,**	**25.36**	**340**	eP	**P**	**18 02 08.0**	**+2.4**
	comp=N,55nm,1.0s						
TUL1	**Leonard**	**25.39**	**344**	P	**P**	**18 02 07.1**	**+1.3**
	baz=160,SNR=9.8						
TUL1	**Leonard**	**25.39**	**344**	eP	**P**	**18 02 06.2**	**+0.4**
	comp=N,55nm,0.9s						
U38A	**Gravette**	**25.55**	**347**	P	**P**	**18 02 07.2**	**-0.1**
	baz=164						
U37A	**Salina**	**25.68**	**346**	P	**P**	**18 02 08.4**	**-0.1**
	baz=162						
V34A	**Guthrie**	**25.82**	**341**	P	**P**	**18 02 10.3**	**+0.6**
	baz=157						
U36A	**Oologah**	**25.83**	**345**	P	**P**	**18 02 10.0**	**+0.2**
	baz=161						
T40A	**Mansfield**	**25.88**	**351**	P	**P**	**18 02 10.1**	**-0.2**
	baz=168						
T39A	**Clever**	**25.91**	**349**	P	**P**	**18 02 10.4**	**-0.1**
	baz=166						
MNTX	**Cornudas Mount**	**25.98**	**323**	P	**P**	**18 02 11.6**	**+0.4**
	baz=136						
V33A	**Lossen Ranch,**	**26.07**	**340**	P	**P**	**18 02 13.2**	**+1.3**
	baz=155						
T38A	**Diamond**	**26.10**	**348**	P	**P**	**18 02 12.5**	**+0.3**
	baz=164						
S40A	**Lebanon**	**26.32**	**351**	P	**P**	**18 02 14.3**	**0.0**
	baz=168						
T37A	**Cheneyville 18**	**26.32**	**346**	P	**P**	**18 02 14.2**	**-0.1**
	baz=163						

Code	Station Name	Δ°	AZ°	Op	ISC	Time	Res
MSTX	**Muleshoe**	**26.32**	**330**	P	**P**	**18 02 14.6**	**+0.2**
	baz=144						
MSTX	**Muleshoe**	**26.32**	**330**	*e*P	**P**	**18 02 15.0**	**+0.5**
	comp=N,18nm,1.0s						
U34A	**Anderson Ranch**	**26.38**	**342**	P	**P**	**18 02 15.2**	**+0.4**
	baz=157						
T36A	**Boggs Farm, Ca**	**26.50**	**345**	P	**P**	**18 02 15.9**	**0.0**
	baz=161						
S39A	**Bolivar**	**26.55**	**350**	P	**P**	**18 02 15.9**	**-0.4**
	baz=167,SNR=12						
S38A	**Stockton**	**26.60**	**349**	P	**P**	**18 02 15.6**	**-1.2**
	baz=166						
S37A	**Fort Scott**	**26.91**	**347**	P	**P**	**18 02 19.2**	**-0.4**
	baz=164						
R40A	**Maddies Statio**	**26.96**	**352**	P	**P**	**18 02 18.9**	**-1.1**
	baz=169						
S36A	**Lake Cedric, C**	**27.05**	**346**	P	**P**	**18 02 20.1**	**-0.8**
	baz=162						
R39A	**Chumby, Stover**	**27.11**	**350**	P	**P**	**18 02 20.3**	**-1.0**
	baz=168						
R38A	**Fenwick Farm,**	**27.14**	**349**	P	**P**	**18 02 20.7**	**-0.8**
	baz=166						
S35A	**Otter Creek Ra**	**27.20**	**345**	P	**P**	**18 02 21.2**	**-0.9**
	baz=160						
Q39A	**Willow Grove F**	**27.81**	**351**	P	**P**	**18 02 26.7**	**-0.9**
	baz=168						
P38A	**Dawn**	**28.47**	**350**	P	**P**	**18 02 32.3**	**-1.2**
	baz=167						
P37A	**Lathrop**	**28.58**	**349**	P	**P**	**18 02 33.9**	**-0.5**
	baz=166						
HDIL	**Hopedale**	**28.93**	**357**	P	**P**	**18 02 35.4**	**-2.1**
	baz=176						
PTGA	**Pitinga**	**29.93**	**112**	LR	LR	18 16 58.0	
	comp=N,56nm,19.5s,baz=240,slow=42						
M38A	**Pleasantville**	**30.17**	**351**	P	**P**	**18 02 47.4**	**-1.1**
	baz=168						
L35A	**Bielow Farm, R**	**31.25**	**348**	P	P	18 02 54.1	-3.9
	baz=164						
K38A	**Parkersburg**	**31.32**	**352**	P	**P**	**18 02 57.2**	**-1.4**
	baz=170						
SAML	**Samuel**	**31.60**	**129**	*e*P	**P**	**18 03 01.6**	**+0.2**
	comp=N,4.0nm,0.8s						
J38A	**Wedel Dairy, R**	**31.94**	**353**	P	**P**	**18 03 02.4**	**-1.7**
	baz=170						
I38A	**Scanlan Farm,**	**32.64**	**354**	P	**P**	**18 03 08.7**	**-1.5**
	baz=171						
ECSD	**EROS Data Cent**	**33.02**	**348**	P	**P**	**18 03 12.4**	**-1.2**
	baz=163						
ECSD	**EROS Data Cent**	**33.02**	**348**	*e*P	**P**	**18 03 12.6**	**-1.0**
	comp=N,6.5nm,0.8s						
H36A	**Jessenland, He**	**33.37**	**352**	P	**P**	**18 03 15.3**	**-1.3**
	baz=168						
H35A	**Sunnyside Ranc**	**33.62**	**351**	P	**P**	**18 03 17.3**	**-1.5**
	baz=167						
LPAZ	**La Paz**	**33.64**	**145**	LR	LR	18 17 43.1	
	comp=N,74nm,20.3s,baz=325,slow=37						
SPMN	**Marine on St.**	**33.86**	**353**	P	**P**	**18 03 19.3**	**-1.5**
	baz=170						
SADO	**Sadowa**	**33.86**	**11**	LR	LR	18 17 52.2	
	comp=N,72nm,18.2s,baz=234,slow=39						
J28A	**Allard Ranch,**	**33.92**	**342**	P	**P**	**18 03 20.1**	**-1.4**
	baz=155						
H32A	**Carlson Farm,**	**33.93**	**347**	P	**P**	**18 03 20.3**	**-1.2**
	baz=162						
MONP2	**Monument Peak**	**33.99**	**313**	P	P	18 03 19.6	-2.8
	baz=122						
BELC	**Belle Mtn. Jos**	**34.30**	**315**	P	P	18 03 21.9	-3.1
	baz=124						
G33A	**Ortonville**	**34.39**	**349**	P	**P**	**18 03 24.3**	**-1.2**
	baz=164						
F36A	**Milaca**	**34.57**	**353**	P	**P**	**18 03 25.2**	**-1.8**
	baz=169						
G32A	**Webster**	**34.66**	**348**	P	**P**	**18 03 26.4**	**-1.4**
	baz=162						
F35A	**Swanville**	**34.72**	**351**	P	**P**	**18 03 27.0**	**-1.2**
	baz=168						
G30A	**Faulkton**	**34.92**	**346**	P	**P**	**18 03 29.0**	**-1.0**
	baz=160						
F33A	**5 Mile Ranch,**	**34.98**	**349**	P	**P**	**18 03 29.7**	**-0.8**
	baz=165						
E36A	**McGregor**	**35.19**	**353**	P	**P**	**18 03 30.4**	**-1.9**
	baz=170						
H27A	**Howes**	**35.27**	**342**	P	**P**	**18 03 33.8**	**+0.7**
	baz=154						
E35A	**Pequot Lakes**	**35.38**	**352**	P	**P**	**18 03 33.1**	**-0.8**
	baz=168						
G27A	**Dupree**	**35.90**	**343**	P	**P**	**18 03 38.1**	**-0.4**
	baz=155						
G26A	**Maurine**	**36.02**	**342**	P	**P**	**18 03 39.8**	**+0.3**
	baz=154						
E30A	**Jud**	**36.15**	**347**	P	**P**	**18 03 39.6**	**-1.0**
	baz=161						
C36A	**Pine Crest Far**	**36.37**	**354**	P	**P**	**18 03 41.3**	**-1.1**
	baz=171						
SNCC	**San Nicolas Is**	**36.42**	**311**	P	P	18 03 39.5	-3.5
	baz=119						
C35A	**Jirik Farms, M**	**36.44**	**353**	P	**P**	**18 03 41.2**	**-1.8**
	baz=169						
BW06	**Boulder Array**	**36.55**	**332**	P	**P**	**18 03 43.2**	**-1.1**
	baz=142						
PDAR	**Pinedale Array**	**36.55**	**332**	P	**P**	**18 03 44.9**	**+0.6**
	comp=N,0.8nm,0.7s,baz=116,slow=10,SNR=9.1						
D30A	**Buchanan**	**36.69**	**347**	P	**P**	**18 03 44.8**	**-0.5**
	baz=161,SNR=6.7						
D29A	**Pettibone, Tap**	**36.84**	**346**	P	**P**	**18 03 44.8**	**-1.7**
	baz=160						
B35A	**Bob, Littlefor**	**37.06**	**353**	P	**P**	**18 03 47.2**	**-1.0**
	baz=170						
C31A	**Landman Farms,**	**37.13**	**349**	P	**P**	**18 03 47.8**	**-1.2**
	baz=163						
C30A	**Mose, Pekin**	**37.20**	**348**	P	**P**	**18 03 48.5**	**-1.0**
	baz=162						
D28A	**Regan**	**37.20**	**345**	P	**P**	**18 03 48.6**	**-1.0**
	baz=158						
AGMN	**Agassiz Nation**	**37.29**	**351**	P	**P**	**18 03 48.8**	**-1.5**
	baz=166						
AGMN	**Agassiz Nation**	**37.29**	**351**	*e*P	**P**	**18 03 49.5**	**-0.7**
	comp=N,7.1nm,0.9s						
B34A	**Aery, Baudette**	**37.30**	**352**	P	**P**	**18 03 48.5**	**-1.8**
	baz=168						
D27A	**Center**	**37.37**	**344**	P	**P**	**18 03 50.7**	**-0.2**
	baz=157						
B32A	**Ashes, Strandq**	**37.50**	**350**	P	**P**	**18 03 51.2**	**-0.8**
	baz=165,SNR=5.6						
D26A	**Manning**	**37.55**	**343**	P	**P**	**18 03 51.4**	**-1.1**
	baz=155						
MDND	**Maddock**	**37.58**	**347**	P	**P**	**18 03 52.0**	**-0.8**
	baz=160						
MDND	**Maddock**	**37.58**	**347**	*e*P	**P**	**18 03 51.9**	**-0.9**
	comp=N,32nm,1.0s						
REDW	**Red Top Meadow**	**37.60**	**332**	*e*P	**P**	**18 03 54.3**	**+1.0**
	comp=N,5.6nm,0.7s						
A33A	**Warroad**	**37.84**	**351**	P	**P**	**18 03 53.7**	**-1.3**
	baz=167,SNR=7.9						
B30A	**Myrvik Farm, E**	**37.88**	**348**	P	**P**	**18 03 54.2**	**-1.1**
	baz=162						
A32A	**Rocking H Ranc**	**37.99**	**350**	P	**P**	**18 03 54.9**	**-1.3**
	baz=165						
B29A	**Wagenman Farm,**	**38.11**	**347**	P	**P**	**18 03 57.2**	**0.0**
	baz=161						
C26A	**Wahner Farm, P**	**38.18**	**344**	P	**P**	**18 03 57.5**	**-0.3**
	baz=156						
RLMT	**Red Lodge**	**38.30**	**335**	P	**P**	**18 03 58.4**	**-0.7**
	baz=144						
B28A	**Dugan Ranch, T**	**38.32**	**346**	P	**P**	**18 03 58.6**	**-0.4**
	baz=159						
A30A	**Hoffart Farm,**	**38.34**	**348**	P	**P**	**18 03 57.0**	**-2.2**
	baz=162						
NVAR	**Mina Array Bea**	**38.36**	**320**	P	P	18 04 03.5	+3.8
	comp=N,0.8nm,0.8s,baz=124,slow=7.5,SNR=5.4						
NVAR				LR	LR	18 23 44.1	
	comp=N,93nm,18.4s,baz=116,slow=42						
A29A	**Manning Farm,**	**38.52**	**348**	P	**P**	**18 04 00.0**	**-0.6**
	baz=161,SNR=6.5						
ULM	**Lac du Bonnet**	**39.20**	**351**	P	P	18 04 03.4	-2.9
	comp=N,6.9nm,1.0s,baz=182,slow=6.7,SNR=8.1						
ULM				LR	LR	18 20 26.2	
	comp=N,63nm,18.4s,baz=260,slow=37						
DGMT	**Dagmar**	**39.36**	**342**	P	**P**	**18 04 06.9**	**-0.8**
	baz=153						
MSO	**Missoula**	**41.66**	**333**	P	**P**	**18 04 25.1**	**-1.7**
	baz=139						
SCHQ	**Schefferville**	**46.14**	**16**	LR	LR	18 24 09.6	
	comp=N,135nm,18.9s,baz=44,slow=37						
B05A	**Bryant**	**46.61**	**329**	P	P	18 05 04.2	-2.1
	baz=130						
BDFB	**Brasilia**	**47.50**	**124**	P	**P**	**18 05 14.2**	**+0.4**
	comp=N,5.2nm,0.5s,baz=283,slow=8.2,SNR=9.8						
BDFB				LR	LR	18 25 51.5	
	comp=N,122nm,19.1s,baz=262,slow=37						
CPUP	**Villa Florida**	**47.72**	**142**	LR	LR	18 25 19.4	
	comp=N,72nm,18.0s,baz=278,slow=36						
YKA	**Yellowknife Ar**	**54.46**	**345**	P	**P**	**18 06 04.6**	**-0.7**
	comp=N,0.7nm,0.8s,baz=140,slow=7.4,SNR=12						
ILAR	**Eielson Array**	**66.82**	**336**	P	**P**	**18 07 29.6**	**+0.1**
	comp=N,0.5nm,0.9s,baz=115,slow=5.3,SNR=4.3						
TIXI	**Tiksi**	**93.51**	**349**	*e*P	P	18 09 57.0	+3.7
	comp=N,4.3nm,0.9s						
NRIK	**Noril'sk**	**99.23**	**2**	LR	LR	18 56 33.3	
	comp=N,38nm,18.6s,baz=106,slow=37						
ASAR	**Alice Springs**	**138.91**	**247**	PKhKP	PKPpre	18 16 07.8	
	comp=N,0.4nm,0.8s,baz=95,slow=2.3,SNR=3.8						
WRA	**Warramunga Arr**	**138.99**	**253**	PKP	PKPdf	18 16 12.5	+7.2
	comp=N,0.7nm,0.7s,baz=95,slow=1.8,SNR=5.2						
CHTO	**Chiang Mai**	**149.16**	**348**	*e*PKPbc	**PKPbc**	**18 16 27.7**	**+0.6**
CMAR	**Chiang Mai Arr**	**149.51**	**348**	PKPbc	**PKPbc**	**18 16 29.8**	**+1.8**
	comp=N,3.8nm,0.8s,baz=346,slow=3.1,SNR=34						

IDC ***04*** *17:59:53.0±0.6, 12.°05N×125.°76E, h0km, mb4.1/20, mb1 4.2/20, mb1mx4.0/57, mbtmp4.1/20, MS3.1/4, Ms1 3.2/4, ms1mx2.7/53, Error ellipse: s-maj=26.5km s-min=14.1km az=69.0*
ISCJB ***04*** *17:59:56.1±0.4, 12.°22N±0.°03×125.°84E±0.°05, h28km, mb4.2/35, MS3.0/4, Error ellipse: s-maj=6.4km s-min=4.6km az=11.3*
MAN ***04*** *17:59:56, 12.°20N×125.°84E, h29km, mb5.1, ML4.0, MS4.2*
NEIC ***04*** *18:00:00.4±3.7, 12.°02N×125.°73E, h55km±35km, mb4.5/7, Error ellipse: s-maj=15.5km s-min=7.5km az=67.0*
DJA ***04*** *18:00:07.7±2.2, 12°N±11°×12°6E±1°1, h125km±20km, M4.4/17, mB5.3/1, mb4.4/17, Mw(mB)4.8/1*
ISC 04 17:59:57.7±0.5**, 12.°16N**±0.°05×**125.°83E**±0.°07**, h28km, n83, σ1s12**/77**, mb4.3**/35**, MS3.0**/4**, 3C-3D, Samar**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
PLP	**Palo**	**1.29**	**220**	⇑*e*P	**Pn**	**18 00 17.6**	**-2.3**
PLP				*i* S	**Sn**	**18 00 36.0**	**-0.3**
OCLP	**Ormoc**	**1.63**	**227**	*e*P	**Pn**	**18 00 24.3**	**-0.2**
MSLP	**Maasin**	**2.23**	**205**	*e*P	**Pn**	**18 00 33.3**	**+0.5**
LLP	**Lapu-Lapu**	**2.59**	**225**	⇑*e*P	**Pn**	**18 00 37.2**	**-0.6**
LLP				*i* S	**Sn**	**18 01 09.5**	**+1.1**
AUQP	**San Andres**	**3.29**	**291**	*e*P	**Pn**	**18 00 48.5**	**+1.1**
GQP	**Guinayangan**	**3.72**	**298**	⇓*e*P	**Pn**	**18 00 52.6**	**-0.8**
GQP				*e*S	**Sn**	**18 01 35.5**	**-0.8**
OTRP	**Odiongan**	**3.73**	**273**	*e*P	**Pn**	**18 00 55.1**	**+1.6**
BOAC	**Boac**	**4.09**	**289**	*e*P	**Pn**	**18 00 58.4**	**-0.1**
BOAC				*e*S	Sn	18 01 29.0	-17
BUKP	**Musuan**	**4.32**	**190**	*e*P	**Pn**	**18 01 02.3**	**+0.7**
LQP	**Lukban**	**4.61**	**295**	⇓*e*P	**Pn**	**18 01 06.1**	**+0.3**
SJMP	**San Jose**	**4.61**	**274**	*e*P	Pn	18 01 08.5	+2.9
CUYO	**Cuyo Island**	**4.89**	**255**	*e*P	**Pn**	**18 01 10.7**	**+1.3**
CTBH	**Cotabato--PC H**	**5.15**	**198**	⇑*i*P	**Pn**	**18 01 15.1**	**+2.1**
BUSP	**Coron**	**5.51**	**269**	*e*P	**Pn**	**18 01 18.4**	**+0.4**
ENPP	**El Nido**	**6.34**	**262**	*e*P	**Pn**	**18 01 31.5**	**+2.1**
BCPH	**Baguio City Da**	**6.59**	**310**	⇓*e*P	Pn	18 01 29.2	-3.9
PCI	**Palu**	**14.28**	**205**	P	**P**	**18 03 24.7**	**-0.4**
	47nm,1.2s						
NLAI	**Namlea**	**15.35**	**175**	P	**P**	**18 03 38.6**	**+1.6**
	28nm,0.9s						
TTSI	**Tana Toraja**	**16.24**	**202**	P	**P**	**18 03 48.0**	**+1.1**
	37nm,0.7s,2µm						
SPSI	**Sidrap Palu**	**17.11**	**201**	P	**P**	**18 03 58.8**	**+2.2**
	29nm,0.8s						
STKI	**Sintang**	**18.64**	**231**	P	**Pn**	**18 04 15.8**	**+2.0**
	11nm,1.3s						
UBPT	**Khong Chiam**	**20.02**	**281**	P	**Pn**	**18 04 29.6**	**-0.8**
	17nm,1.1s						
JNU	**Nakatsue**	**21.37**	**12**	LR	LR	18 14 01.4	
	comp=Z,31nm,18.6s,baz=284,slow=40						
SOEI	**Soe**	**21.83**	**184**	P	**P**	**18 04 49.2**	**+1.0**
	37nm,0.8s						
SOEI	**Soe**	**21.83**	**184**	*e*P	**P**	**18 04 48.6**	**+0.4**
	20nm,0.6s						
NONG	**Nongkai**	**22.66**	**288**	P	**P**	**18 04 55.7**	**-1.3**
	41nm,1.2s,3µm						
CHBT	**CHBT**	**22.95**	**274**	P	P	18 05 07.5	+7.4
	8.9nm,1.1s						
CHAI	**Chaiyaphum**	**23.42**	**282**	P	**P**	**18 05 03.1**	**-1.7**
	4.2nm,0.9s						
ENH	**Enshi**	**23.54**	**322**	*e*P	**P**	**18 05 06.1**	**+0.2**
NGJI	**Ngawi**	**24.09**	**217**	P	**P**	**18 05 13.3**	**+2.2**
	69nm,1.1s						
PBKT	**Sadao Pong**	**24.47**	**283**	P	**P**	**18 05 14.5**	**-0.1**
	13nm,1.1s						
NANT	**Nan**	**25.08**	**288**	P	**P**	**18 05 19.0**	**-1.2**
	3.7nm,0.9s						
KSAR	**Wonju Array Be**	**25.24**	**4**	P	**P**	**18 05 21.2**	**-0.1**
KSRS	**Korea Array**	**25.26**	**4**	P	**P**	**18 05 21.2**	**-0.2**
	2.0nm,0.8s,baz=182,slow=12,SNR=7.0						
PHRA	**Phrae**	**25.46**	**287**	P	**P**	**18 05 23.0**	**-0.6**
	325nm,1.2s						
SUKH	**Sukhothai**	**25.86**	**285**	P	**P**	**18 05 27.6**	**+0.4**
	3.8nm,1.0s						
CMAR	**Chiang Mai Arr**	**26.66**	**287**	P	**P**	**18 05 34.1**	**-0.4**
	3.5nm,0.9s,baz=95,slow=8.0,SNR=22						
CMAR				PcP	**PcP**	**18 08 58.6**	**+0.6**
	0.5nm,0.6s,baz=128,slow=1.5,SNR=4.7						
CMAR				LR	LR	18 15 46.5	
	comp=Z,55nm,18.2s,baz=152,slow=36						
CMMT	**Chiang Mai**	**26.71**	**288**	P	**P**	**18 05 35.8**	**+0.8**
MJAR	**Matsushiro Arr**	**26.71**	**23**	LR	LR	18 15 14.3	
	comp=Z,45nm,19.9s,baz=195,slow=34						
CHTO	**Chiang Mai**	**26.72**	**288**	P	**P**	**18 05 35.9**	**+0.9**
	29nm,1.1s						
CHTO	**Chiang Mai**	**26.72**	**288**	*e*P	**P**	**18 05 33.6**	**-1.4**
	3.7nm,1.0s						
USRK	**Ussuriysk Ar.**	**32.36**	**8**	LR	LR	18 19 12.0	
	comp=Z,28nm,21.2s,baz=54,slow=36						
WRAB	**Tennant Creek**	**32.98**	**165**	*e*P	**P**	**18 06 29.2**	**-1.2**
WRA	**Warramunga Arr**	**32.98**	**165**	P	**P**	**18 06 27.9**	**-2.6**
	1.0nm,0.9s,baz=345,slow=9.3,SNR=4.6						
WRA				PcP	**PcP**	**18 09 13.8**	**-0.4**
	0.5nm,0.7s,baz=347,slow=3.6,SNR=4.9						
ASAR	**Alice Springs**	**36.47**	**167**	P	**P**	**18 06 58.9**	**-1.7**
	1.1nm,0.6s,baz=348,slow=7.6,SNR=39						
ASAR				PcP	**PcP**	**18 09 23.5**	**-0.8**
	1.0nm,0.7s,baz=350,slow=2.7,SNR=7.6						
LSA	**Lhasa**	**36.60**	**304**	*e*P	**P**	**18 07 02.7**	**+0.5**
	5.7nm,0.7s						
TAPN	**Taplejung**	**38.75**	**299**	*e*P	**P**	**18 07 19.6**	**-0.6**
	18nm,0.9s						
ODAN	**Odare**	**38.90**	**298**	*e*P	**P**	**18 07 20.8**	**-0.6**
	32nm,0.7s						
ULN	**Ulaanbaatar**	**38.91**	**340**	*e*P	**P**	**18 07 23.6**	**+2.5**
	3.2nm,0.8s						
SONM	**Songino Array**	**39.11**	**339**	P	**P**	**18 07 22.2**	**-0.5**
	0.8nm,0.7s,baz=151,slow=8.6,SNR=7.1						
RAMN	**Ramite**	**39.60**	**298**	*e*P	**P**	**18 07 26.9**	**-0.4**
	22nm,0.7s						
H11S3	**WAKE ISLAND Hy**	**39.84**	**76**	T	T	18 50 34.2	
	baz=293,slow=74,SNR=9.3						
H11S1	**WAKE ISLAND Hy**	**39.85**	**76**	T	T	18 50 54.2	
	baz=293,slow=74,SNR=5.3						
H11S2	**WAKE ISLAND Hy**	**39.86**	**76**	T	T	18 50 35.9	
	baz=293,slow=74,SNR=6.5						
H11N1	**WAKE ISLAND Hy**	**40.11**	**74**	T	T	18 50 49.9	
	baz=266,slow=75,SNR=17						
H11N2	**WAKE ISLAND Hy**	**40.12**	**74**	T	T	18 50 43.5	
	baz=266,slow=75,SNR=12						
H11N3	**WAKE ISLAND Hy**	**40.13**	**74**	T	T	18 50 38.8	
	baz=266,slow=75,SNR=12						
GUN	**Gumba**	**40.46**	**299**	*e*P	**P**	**18 07 34.0**	**-0.6**
	43nm,0.8s						
KKN	**Kakani**	**40.94**	**298**	*e*P	**P**	**18 07 37.3**	**-1.1**
	27nm,1.0s						
GKN	**Gorkha**	**41.55**	**299**	*e*P	**P**	**18 07 42.0**	**-1.3**
KOLN	**Koldanda**	**42.39**	**298**	*e*P	**P**	**18 07 49.4**	**-0.8**
	26nm,0.9s						
PYUN	**Piuthan**	**42.99**	**298**	*e*P	**P**	**18 07 54.5**	**-0.6**
	66nm,1.0s						
NWAO	**Narrogin (SRO)**	**45.58**	**190**	*e*P	**P**	**18 08 13.3**	**-2.1**
STKA	**Stephens Creek**	**46.32**	**161**	P	**P**	**18 08 20.8**	**-0.4**
	4.8nm,1.0s,baz=338,slow=10,SNR=5.3						
PETK	**Petropavlovsk-**	**48.11**	**25**	P	**P**	**18 08 36.2**	**+1.2**
	3.0nm,0.8s,baz=211,slow=8.1,SNR=4.3						
MKAR	**Makanchi Array**	**50.27**	**322**	P	**P**	**18 08 52.3**	**+0.6**
	6.6nm,0.8s,baz=116,slow=8.6,SNR=39						
ZALV	**Zalesovo Beam**	**52.77**	**331**	P	**P**	**18 09 09.4**	**-0.8**
	0.7nm,0.3s,baz=139,slow=6.8,SNR=3.8						
KURK	**Kurchatov**	**54.28**	**325**	P	**P**	**18 09 21.8**	**+0.5**
KURBB	**Kurchatov Arra**	**54.28**	**325**	P	**P**	**18 09 21.8**	**+0.4**
	7.9nm,0.7s,baz=124,slow=7.4,SNR=54						
KKAR	**Karatay Array**	**56.63**	**314**	*e*P	**P**	**18 09 38.4**	**0.0**
	3.1nm,0.7s						
BRVK	**Borovoye**	**59.95**	**325**	*e*P	**P**	**18 10 01.6**	**+0.2**
	7.7nm,0.8s						
GEYT	**Alibeck**	**65.08**	**306**	P	**P**	**18 10 36.0**	**0.0**
	1.4nm,0.7s,baz=108,slow=3.2,SNR=5.7						
ABKAR	**Akbulak array**	**65.17**	**319**	*e*P	**P**	**18 10 36.1**	**-0.2**
	2.7nm,0.6s						
AKTO	**Aktyubinsk**	**66.61**	**320**	P	**P**	**18 10 45.5**	**-0.1**
	1.8nm,0.7s,baz=97,slow=8.3,SNR=4.3						
ILAR	**Eielson Array**	**77.94**	**26**	P	**P**	**18 11 53.1**	**+0.1**
	0.5nm,0.7s,baz=240,slow=6.2,SNR=4.4						
ARCES	**ARCESS Array B**	**82.28**	**340**	P	**P**	**18 12 16.6**	**+0.2**
	4.1nm,0.9s,baz=79,slow=4.7,SNR=9.5						
INK	**Inuvik**	**82.70**	**22**	P	**P**	**18 12 19.3**	**+0.8**
	1.5nm,1.0s,baz=254,slow=3.8,SNR=4.1						
BRTR	**Keskin Array B**	**84.01**	**309**	P	**P**	**18 12 24.9**	**-1.2**
	0.8nm,0.7s,baz=112,slow=5.0,SNR=5.4						
FINES	**FINESS Array B**	**84.03**	**332**	P	**P**	**18 12 25.4**	**0.0**
	7.6nm,0.9s,baz=75,slow=5.9,SNR=13						
AKASG	**Malin Array Be**	**84.83**	**321**	P	**P**	**18 12 29.2**	**-0.6**
	1.2nm,0.6s,baz=63,slow=5.0,SNR=8.8						
NB2	**NORSAR Subarra**	**90.88**	**334**	P	**P**	**18 12 57.7**	**-1.0**
	comp=Z,3.0nm,1.0s,baz=63,slow=4.8						
NOA	**NORSAR Array B**	**90.88**	**334**	P	**P**	**18 12 57.6**	**-1.1**
	comp=Z,0.4nm,0.6s,baz=108,slow=4.2,SNR=2.9						
YKA	**Yellowknife Ar**	**92.22**	**24**	P	**P**	**18 13 06.4**	**+1.7**
	comp=Z,0.2nm,0.7s,baz=303,slow=4.3,SNR=2.8						

NNC ***04*** *18:02:58.5±9.1, 39.°45N×77.°07E, h0km, mb3.6, mpv3.2, Error ellipse: s-maj=83.5km s-min=31.5km az=154.0*
KRNET ***04*** *18:03:00.3±0.1, 39.°37N×77.°07E, mb3.0*
ISC 04 18:03:02.5±2.7**, 39.°2N**±0.°1×**77.°15E**±0.°09**, h25km, n10, σ1s76**/15**, 13C-6D, Southern Xinjiang**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
NRN	**Naryn**	**2.37**	**338**	⇑*e*P	**Pn**	**18 03 40.4**	**+0.3**
	baz=338						
NRN				⇑*e*S	**Sn**	**18 04 09.8**	**+1.3**
	baz=338						
KDJ	**Kajisay**	**2.89**	**0**	⇑*e*P	**Pn**	**18 03 48.3**	**+1.1**
	baz=2.0						
KDJ				⇑*e*S	**Sn**	**18 04 23.2**	**+1.9**
	baz=2.0						
SFK	**Sufi-Kurgan**	**2.92**	**287**	⇑*e*P	**Pn**	**18 03 48.8**	**+1.1**
	baz=284						
SFK				⇑*e*S	**Sn**	**18 04 24.9**	**+2.8**
	baz=284						
SFK	**Sufi-Kurgan**	**2.92**	**287**	⇓Pg	**Pn**	**18 03 48.2**	**+0.5**
	3.0nm,0.3s						
SFK				⇓Lg	Lg	18 04 29.3	
	18nm,0.5s						
BOOM	**Boomskoye usch**	**3.38**	**345**	⇑*e*P	**Pn**	**18 03 54.6**	**+0.7**
	baz=345						
BOOM				⇑*e*S	**Sn**	**18 04 34.4**	**+1.1**
	baz=345						
PRZ	**Przheval'sk**	**3.38**	**16**	⇑*e*P	**Pn**	**18 03 55.2**	**+1.3**
	baz=18						
PRZ				⇑*e*S	**Sn**	**18 04 34.6**	**+1.4**
	baz=18						
ARLS	**Aral**	**3.40**	**321**	⇓*e*P	**Pn**	**18 03 54.9**	**+0.8**
	baz=321						
ARLS				⇓*e*S	**Sn**	**18 04 34.6**	**+0.9**
	baz=321						
PDGK	**Podgornoye**	**4.45**	**22**	⇑Pg	**Pb**	**18 04 17.7**	**-2.2**
	7.9nm,1.1s						
PDGK				⇓Lg	Lg	18 05 16.3	
	18nm,0.9s						
MNAS	**Manas**	**4.79**	**314**	⇑Pg	**Pb**	**18 04 22.8**	**-3.1**
	4.3nm,1.2s						
MNAS				⇑Lg	Lg	18 05 26.6	
	9.4nm,0.8s						
KK31	**Karatay Array**	**6.33**	**310**	⇓Lg	Lg	18 06 13.6	
	1.4nm,0.6s,baz=119,slow=30,SNR=2.5						

IDC ***04*** *18:03:42.3±14.0, 30.°13S×178.°07E, h0km, mb3.9/3, mb1 4.1/4, mb1mx3.8/43, mbtmp4.0/4, ML4.3/1, Error ellipse: s-maj=274.3km s-min=43.7km az=64.0*
ISC 04 18:03:58.6±1.5**, 31.°28S**±0.°07×**176.°7E**±0.°2**, h35km, n31, σ1s57**/26**, mb3.9**/3**, North of New Zealand**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
HAZ	**Te Kaha**	**6.52**	**172**	PN	Pn	18 05 34.9	+2.9
HAZ				SN	**Sn**	**18 06 44.5**	**-0.6**
WMGZ	**Waiomatatini S**	**6.68**	**168**	PN	**Pn**	**18 05 35.2**	**+1.1**
PUZ	**Puketiti**	**6.90**	**169**	PN	**Pn**	**18 05 37.0**	**-0.2**
PUZ				SN	Sn	18 06 48.0	-6.4
TWGZ	**Tauwhareparae**	**6.96**	**171**	PN	Pn	18 05 40.1	+2.0
TWGZ				SN	**Sn**	**18 06 52.9**	**-3.1**
URZ	**Urewera**	**6.97**	**177**	Pn	Pn	18 05 42.0	+3.8
	4.3nm,0.3s,baz=6.3,slow=10.0,SNR=28						
URZ				Sn	**Sn**	**18 06 56.3**	**+0.2**
	3.7nm,0.3s,baz=61,slow=22,SNR=10						
URZ	**Urewera**	**6.97**	**177**	*e*PN	**Pn**	**18 05 39.4**	**+1.3**
MWZ	**Matawai**	**7.07**	**174**	PN	Pn	18 05 41.8	+2.2
MWZ				SN	**Sn**	**18 06 55.5**	**-3.2**
TKGZ	**Te Karaka**	**7.20**	**173**	*e*PN	Pn	18 05 38.2	-3.1
CNGZ	**Carnagh Statio**	**7.29**	**170**	*e*PN	Pn	18 05 38.9	-3.7
RIGZ	**Rimuhau**	**7.46**	**173**	*e*PN	**Pn**	**18 05 42.3**	**-2.6**
SNGZ	**Shannon Statio**	**7.50**	**176**	PN	**Pn**	**18 05 47.1**	**+1.6**
RAHZ	**Arahi**	**7.62**	**178**	PN	**Pn**	**18 05 49.0**	**+1.8**
KNZ	**Kokohu**	**7.76**	**174**	PN	**Pn**	**18 05 47.6**	**-1.4**
BKZ	**Black Stump Fm**	**7.87**	**181**	PN	Pn	18 05 52.9	+2.3
ARHZ	**Aropaoanui**	**7.97**	**178**	PN	**Pn**	**18 05 53.3**	**+1.5**
WNVZ	**Wahianoa**	**8.07**	**186**	PN	Pn	18 05 58.0	+4.5
BHHZ	**Black Hill Sta**	**8.20**	**183**	PN	Pn	18 05 57.6	+2.5
KRHZ	**Kereru**	**8.34**	**182**	PN	**Pn**	**18 05 58.4**	**+1.3**
PNHZ	**Pukenui**	**8.62**	**182**	PN	**Pn**	**18 06 00.9**	**+0.1**
TSZ	**Takapari Road**	**8.77**	**184**	PN	**Pn**	**18 06 03.5**	**+0.5**
PRWZ	**Pori Road**	**9.27**	**183**	PN	**Pn**	**18 06 09.5**	**-0.2**
MRZ	**Mangatainoka R**	**9.40**	**185**	*e*PN	**Pn**	**18 06 11.0**	**-0.5**
MRZ				*e*SN	Sn	18 07 50.9	-5.0
TIWZ	**Tintock**	**9.49**	**184**	PN	**Pn**	**18 06 11.4**	**-1.4**
OGWZ	**Otaki Gorge**	**9.59**	**187**	PN	**Pn**	**18 06 14.1**	**0.0**
KIW	**Kapiti Island**	**9.66**	**188**	*e*PN	**Pn**	**18 06 15.8**	**+0.7**
CAW	**Cannon Point**	**9.89**	**187**	PN	**Pn**	**18 06 17.2**	**-1.0**
TUWZ	**Tuamarina**	**10.36**	**191**	*e*PN	**Pn**	**18 06 25.3**	**+0.6**
THZ	**Tophouse**	**10.88**	**195**	PN	Pn	18 06 34.5	+2.7
THZ				*e*SN	**Sn**	**18 08 33.7**	**+1.3**
STKA	**Stephens Creek**	**29.81**	**260**	P	**P**	**18 10 03.8**	**+1.5**
	1.4nm,0.6s,baz=107,slow=11,SNR=2.9						
ASAR	**Alice Springs**	**38.51**	**271**	P	**P**	**18 11 16.2**	**-1.5**
	0.5nm,0.6s,baz=105,slow=7.4,SNR=12						
WRA	**Warramunga Arr**	**39.59**	**276**	P	**P**	**18 11 24.7**	**-2.0**
	1.0nm,0.4s,baz=114,slow=7.8,SNR=9.9						

IDC ***04*** *18:16:14.4±1.9, 10.°24S×106.°59E, h0km, mb3.5/5, mb1 3.6/6, mb1mx3.4/37, mbtmp3.6/6, ML4.1/1, MS2.7/1, Ms1 2.7/1, ms1mx2.3/32, Error ellipse: s-maj=65.8km s-min=26.8km az=54.0*
DJA ***04*** *18:16:17.8±0.5, 10°S±3°×10°7E±°, h72km±19km, M4.0/9, mb4.2/1, MLv3.9/9*
ISC 04 18:16:18.5±1.3**, 9.°88S**±0.°08×**107.°41E**±0.°07**, h23km, n14, σ1s43**/21**, mb3.4**/5**, South of Jawa**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
CMJI	**Cimerak**	**2.32**	**26**	P	**Pn**	**18 16 53.6**	**-1.7**
CMJI				S	**Sn**	**18 17 23.4**	**+0.3**
CISI	**Cisompet, Garu**	**2.34**	**10**	P	**Pn**	**18 16 54.3**	**-1.3**
CISI				S	**Sb**	**18 17 24.8**	**-3.8**
CNJI	**Cibinong**	**2.57**	**354**	P	**Pn**	**18 16 57.4**	**-1.3**
CNJI				S	**Sn**	**18 17 30.0**	**+0.8**
KPJI	**Karang Pucung**	**2.94**	**31**	P	**Pn**	**18 17 03.8**	**0.0**
KPJI				S	**Sn**	**18 17 39.6**	**+1.1**
LEM	**Lembang**	**3.04**	**4**	Pn	**Pb**	**18 17 12.6**	**+0.6**
	17nm,0.3s,baz=64,slow=11,SNR=23						
LEM				Sn	**Sb**	**18 17 50.9**	**+2.1**
	9.3nm,0.3s,baz=338,slow=19,SNR=11						
LEM				LR	LR	18 18 56.1	
	comp=Z,114nm,19.8s,baz=21,slow=46						
LEM	**Lembang**	**3.04**	**4**	P	**Pb**	**18 17 12.8**	**+0.8**
LEM				S	**Sn**	**18 17 42.2**	**+1.1**
CGJI	**Cibinong**	**3.66**	**332**	P	**Pn**	**18 17 12.5**	**-1.3**
CGJI				S	**Sn**	**18 17 55.9**	**-0.4**
PWJI	**Pagerwojo**	**4.71**	**67**	P	**Pn**	**18 17 26.4**	**-1.8**
JAGI	**Jajag, Banyuwa**	**6.80**	**79**	P	**Pn**	**18 17 55.8**	**-1.1**
JAGI				S	**Sn**	**18 19 14.6**	**+0.9**
ASAR	**Alice Springs**	**28.76**	**122**	P	P	18 22 18.6	+4.0

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
	0.3nm,0.7s,baz=296,slow=8.8,SNR=6.1						
CMAR	Chiang Mai Arr	29.37	343	P	P	18 22 20.2	+0.2
	0.2nm,0.5s,baz=173,slow=8.1,SNR=3.8						
SONM	Songino Array	57.47	359	P	P	18 26 06.1	+0.4
	0.3nm,0.7s,baz=176,slow=7.4,SNR=3.7						
MKAR	Makanchi Array	60.72	340	P	P	18 26 28.3	+0.1
	0.4nm,0.5s,baz=142,slow=7.5,SNR=15						
BVAR	Borovoye Array	70.16	337	P	P	18 27 29.5	+0.4
	0.5nm,0.8s,baz=151,slow=6.3,SNR=6.0						

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*BJI **04** 18:20:43.8, 59.°00N×153.°30W, h70km, mb4.8/35, mB4.9/26, Ms5.0/9, Ms7 4.7/9*

*MOS **04** 18:20:45.3±0.8, 59.°03N×153.°40W, h72km, mb4.9/32, Error ellipse: s-maj=12.5km s-min=5.0km az=84.1*

*ISCJB **04** 18:20:46.1±0.2, 58.°98N±0.°02×153.°14W±0.°04, h83km±1km, mb4.6/82, Error ellipse: s-maj=4.2km s-min=2.5km az=143.7*

*IDC **04** 18:20:47.8±1.9, 59.°19N×153.°35W, h75km±15km, mb4.2/25, mb1 4.4/29, mb1mx4.2/50, mbtmp4.5/29, MS3.3/14, Ms1 3.3/14, ms1mx3.1/43, Error ellipse: s-maj=16.1km s-min=10.5km az=178.0*

*NEIC **04** 18:20:48.3, 58.°92N×153.°13W, h69km, mb4.6/21, ML4.5(AEIC), After AEIC.*

NEIC Felt [II] at Homer. Also felt at Anchor Point and Ninilchik.

ISC 04 18:20:46.4±0.5**, 58.°98N**±0.°03×**153.°17W**±0.°03**, h71**km±3km**, h70**km**:pP-P, n302,** σ1.s19/329**, mb4.6**/82**, 33C-6D, Kodiak Island region**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
CDD	Cape Douglas	0.25	259	P	Pn	18 20 58.7	+1.2
FOPK	Fourpeaked Vol	0.27	216	P	Pn	18 20 58.6	+1.0
FOSS	Fourpeaked Sta	0.32	237	P	Pn	18 20 59.3	+1.4
AUI	Augustine Isla	0.38	340	P	Pn	18 21 00.1	+1.8
AUE	Augustine Isla	0.40	345	P	Pn	18 21 00.5	+2.0
AUW	Augustine West	0.42	339	P	Pn	18 21 00.6	+1.9
AUL	Augustine Lava	0.43	342	P	Pn	18 21 00.6	+1.9
AUL				S	Sn	18 21 10.0	+2.2
MCNL	McNeil River	0.64	290	P	Pn	18 21 02.1	+1.3
OPT	Oil Point	0.68	358	P	Pn	18 21 03.1	+1.9
KAHG	Katmai Hook Gl	0.86	237	P	Pn	18 21 04.5	+1.1
ILS	Iliamna Low So	0.98	3	P	Pn	18 21 06.2	+1.4
KAHC	Katmai Hardscr	1.01	252	P	Pn	18 21 06.1	+0.9
KAWH	Katmai	1.04	236	P	Pn	18 21 06.3	+0.8
HOM	Homer	1.04	48	P	Pn	18 21 07.5	+2.1
HOM				S	Sn	18 21 22.0	+2.4
IVE	Iliamna Volcan	1.05	4	P	Pn	18 21 07.0	+1.4
KAKN	Katmai Knife C	1.20	236	P	Pn	18 21 08.3	+0.8
KAKN				S	Sn	18 21 24.6	+1.2
KDAK	Kodiak Island	1.24	165	P	Pn	18 21 23.5	+16
	193nm,0.3s,baz=49,slow=5.8,SNR=1889						
KDAK				S	Sn	18 21 38.9	+15
	248nm,0.3s,baz=127,slow=20,SNR=28						
KDAK				LR	LR	18 21 47.8	
	comp=Z,856nm,20.7s,baz=324,slow=41						
KDAK	Kodiak Island	1.24	165	P	Pn	18 21 08.6	+0.7
KDAK				S	Sn	18 21 23.7	-0.3
KDAK	Kodiak Island	1.24	165	P	Pn	18 21 08.6	+0.7
KDAK				S	Sn	18 21 23.7	-0.3
KDAK				S		18 21 39.0	
KVTA	Katmai Vly 10	1.26	243	P	Pn	18 21 09.3	+1.0
KABR	Katmai Barrier	1.27	229	P	Pn	18 21 09.1	+0.7
KABU	Katmai Buttres	1.31	238	P	Pn	18 21 10.3	+1.3
KABU				S	Sn	18 21 27.9	+1.9
BRLK	Bradley Lake	1.41	55	P	Pn	18 21 11.2	+1.0
BRLK				S	Sn	18 21 28.8	+0.5
KELA	Mount Kelaz	1.44	249	P	Pn	18 21 11.7	+1.0
NCT	North Crescent	1.59	4	P	Pn	18 21 14.5	+1.8
RDJH	Redoubt Jeurge	1.63	6	P	Pn	18 21 15.0	+1.8
RDJH				S	Sn	18 21 35.6	+2.1
OHAK	Old Harbor	1.76	182	P	Pn	18 21 15.1	+0.3
OHAK				S	Sn	18 21 35.0	-1.4
PLK3	Peulik 3	2.08	233	P	Pn	18 21 20.3	+1.1
SLKM	Skilak Lake	2.14	43	P	Pn	18 21 20.9	+0.9
SLKM	Skilak Lake	2.14	43	P	Pn	18 21 20.9	+0.9
PLK1	Peulik 1	2.16	238	P	Pn	18 21 21.5	+1.4
PLK5	Peulik 5	2.18	245	P	Pn	18 21 22.1	+1.7
SEW	Seward	2.21	58	P	Pn	18 21 21.2	+0.4
CKL	Chakachamna La	2.27	10	P	Pn	18 21 23.7	+1.9
SPU	Mount Spurr	2.28	14	P	Pn	18 21 23.8	+1.9
SPCR	Spurr Chakacha	2.28	12	P	Pn	18 21 23.8	+1.9
SPCR				S	Sn	18 21 50.6	+1.5
CKN	Chakachatna No	2.31	12	P	Pn	18 21 24.4	+2.2
SVW2	Sparrevohn	2.45	331	P	Pn	18 21 25.5	+1.5
VOGL	Vogel Lake	2.45	33	P	Pn	18 21 26.9	+2.8
STLK	Strandline Lak	2.62	14	P	Pn	18 21 28.5	+2.0
FIB	Fire Island	2.66	33	P	Pn	18 21 29.3	+2.4
FIB	Fire Island	2.66	33	P	Pn	18 21 29.3	+2.4
RC01	Rabbit Creek A	2.73	38	P	Pn	18 21 29.3	+1.4
RC01				S	Sn	18 22 00.8	+1.0
PTE	Portage	2.82	46	P	Pn	18 21 30.3	+1.2
PMR	Palmer	3.31	36	P	Pn	18 21 36.5	+0.8
PMR	Palmer	3.31	36	P	Pn	18 21 36.5	+0.8
SML	Sawmill	3.72	38	P	Pn	18 21 42.1	+0.7
SML				S	Sn	18 22 22.7	-1.3
SML	Sawmill	3.72	38	P	Pn	18 21 42.1	+0.7
SML				S	Sn	18 22 22.7	-1.3
CUT	Chulitna	3.72	21	P	Pn	18 21 42.9	+1.5
CHGN	Chignik	3.89	229	P	Pn	18 21 44.2	+0.6
PPLA	Purkeypile	3.96	7	P	Pn	18 21 47.1	+2.3
VMT	TAPS Tl Valdez	4.01	55	P	Pn	18 21 45.7	+0.4
VLZ	Valdez	4.05	55	P	Pn	18 21 46.2	+0.3
EYAK	Cordova Ski Ar	4.07	64	P	Pn	18 21 46.2	+0.1
SCM	Sheep Creek Mo	4.08	43	P	Pn	18 21 47.1	+0.8
SCM	Sheep Creek Mo	4.08	43	P	Pn	18 21 47.0	+0.8
TT01	Tatalina	4.18	342	P	Pn	18 21 49.2	+1.6
TTA	Tatalina	4.20	342	P	Pn	18 21 49.7	+1.7
TTA	Tatalina	4.20	342	P	Pn	18 21 49.7	+1.7
DIV	Divide	4.29	57	*e*Pn	Pn	18 21 49.4	+0.2
HUR	Hurricane	4.37	22	P	Pn	18 21 52.0	+1.8
KLU	Klutina	4.41	52	P	Pn	18 21 51.5	+0.7
CAST	Castle Rocks	4.49	6	P	Pn	18 21 53.5	+1.6
RAGM	Ragged Mountai	4.53	68	P	Pn	18 21 53.0	+0.6
TRF	Thorofare Moun	4.70	16	P	Pn	18 21 56.2	+1.4
KTH	Kantishna Hill	4.72	12	P	Pn	18 21 56.5	+1.5
BMRM	Bremner River	4.75	61	P	Pn	18 21 55.3	-0.1
NICHA	Nichawak Mount	4.84	71	P	Pn	18 21 57.5	+0.8
SUCK	Suckling Hills	4.91	73	P	Pn	18 21 58.5	+0.9
RND	Reindeer	4.91	23	P	Pn	18 21 58.8	+1.2
RND	Reindeer	4.91	23	P	Pn	18 21 58.8	+1.2
DHY	Denali Highway	4.99	32	P	Pn	18 21 59.5	+0.8
GRIN	Grindle Hills	5.17	71	P	Pn	18 22 01.8	+0.7
MCK	McKinley	5.19	21	P	Pn	18 22 02.9	+1.5
MCK	McKinley	5.19	21	P	Pn	18 22 02.9	+1.5
KHIT	Khitrov Hills	5.24	69	P	Pn	18 22 02.6	+0.5
BPAW	Bear Paw Mtn.	5.25	11	P	Pn	18 22 03.2	+1.0
GLB	Gilahina Butte	5.28	58	P	Pn	18 22 02.8	+0.1
VRDI	Verde Repeater	5.36	61	P	Pn	18 22 04.0	+0.1
SDPT	Sand Point	5.39	231	P	Pn	18 22 05.5	+1.4
KULT	Kultieth River	5.46	72	P	Pn	18 22 05.9	+0.8
PAX	Paxson	5.49	40	P	Pn	18 22 06.5	+1.0
PAX	Paxson	5.49	40	P	Pn	18 22 06.5	+1.0
MCARA	McCarthy VSAT	5.61	60	P	Pn	18 22 07.5	+0.3
ISLE	Juniper Island	5.71	69	P	Pn	18 22 09.1	+0.5
KIAG	Kiagna River	5.77	66	P	Pn	18 22 09.8	+0.3
BAGL	Bagley Icefiel	5.81	70	P	Pn	18 22 10.8	+1.0
BALM	Baldy	5.81	65	P	Pn	18 22 10.1	+0.1
BALM	Baldy	5.81	65	P	Pn	18 22 10.1	+0.1
MESA	MESA	5.83	73	P	Pn	18 22 11.3	+0.9
PS4A	Pavlof South-4	5.96	236	P	Pn	18 22 13.4	+1.5
WRH	Wood River Hil	6.02	21	P	Pn	18 22 13.0	+0.3
MENT	Mentasta	6.08	45	P	Pn	18 22 13.9	+0.3
BARN	Barnard Glacie	6.14	65	P	Pn	18 22 15.1	+0.6
RKAV	Rock Avalanche	6.14	72	P	Pn	18 22 16.0	+1.4
MLY	Manley	6.18	10	P	Pn	18 22 16.0	+1.0
HDA	Harding Lake	6.20	26	P	Pn	18 22 15.8	+0.6
CCB	Clear Creek Bu	6.23	22	P	Pn	18 22 15.5	-0.1
TABL	Table Mountain	6.26	71	P	Pn	18 22 17.4	+1.1
PS08	TAPS Pump Stn8	6.34	26	P	Pn	18 22 17.6	+0.4
SAMH	Samovar Hills	6.41	74	P	Pn	18 22 19.6	+1.5
DOT	Dot Lake	6.42	39	P	Pn	18 22 18.3	+0.2
COLA	College	6.43	21	*c i*P	Pn	18 22 18.8	+0.6
COLA	College	6.43	21	P	Pn	18 22 19.1	+0.9
MDM	Murphy Dome	6.44	19	P	Pn	18 22 18.9	+0.4
ILAR	Eielson Array	6.53	24	P	Pn	18 22 20.1	+0.5
	18nm,0.3s,baz=208,slow=14,SNR=546						
ILAR				S	Sn	18 23 29.6	-2.9
	43nm,0.3s,baz=292,slow=23,SNR=12						
ILAR				LR	LR	18 25 15.5	
	comp=Z,173nm,21.5s,baz=210,slow=42						
IL1	Eielson Array	6.53	24	P	Pn	18 22 19.8	+0.2
BCA3	Beaver Creek A	6.88	49	P	Pn	18 22 25.3	+0.7
IM3	Indian Mountai	7.04	358	P	Pn	18 22 28.4	+1.7
EGAK	Eagle	8.12	39	P	Pn	18 22 41.5	+0.2
DAWY	Dawson	8.32	46	P	Pn	18 22 45.0	+0.8
COLD	Coldfoot	8.39	8	*e*Pn	Pn	18 22 45.6	+0.5
FYU	Fort Yukon	8.43	22	P	Pn	18 22 45.6	0.0
PLBC	Pleasant Camp	8.63	80	P	Pn	18 22 49.1	+0.7
UNV	Unalaska Valle	8.99	241	P	Pn	18 22 53.4	0.0
SKAG	Skagway	9.16	79	*e*Pn	Pn	18 22 55.4	-0.2
	64nm,0.8s						
BM3	Burnt Mountain	9.30	21	P	Pn	18 22 57.0	-0.6
WHY	Whitehorse	9.36	72	P	Pn	18 22 59.1	+0.6
GAMB	Gambell	10.09	306	*e*Pn	Pn	18 23 10.3	+2.1
	97nm,1.3s						
WRAK	Wrangell Islan	11.42	94	*e*Pn	Pn	18 23 22.8	-3.6
	36nm,0.8s						
DLBC	Dease Lake	12.03	83	P	Pn	18 23 36.5	+1.7
	7.2nm,0.3s,baz=234,slow=12,SNR=73						
DLBC				S	Sn	18 25 43.2	-3.9
	1.3nm,0.3s,baz=180,slow=18,SNR=5.6						
DLBC				LR	LR	18 28 31.5	
	comp=Z,49nm,19.0s,baz=266,slow=38						
INK	Inuvik	12.72	35	P	Pn	18 23 44.5	+0.5
	0.9nm,0.3s,baz=221,slow=12,SNR=121						
INK				LR	LR	18 28 35.9	
	comp=Z,167nm,20.2s,baz=210,slow=37						
YKA	Yellowknife Ar	18.98	63	P	Pn	18 25 02.8	-0.2
	2.7nm,0.3s,baz=276,slow=9.9,SNR=444						
YKA				PcP	PcP	18 29 24.2	+0.3
	0.2nm,0.3s,baz=284,slow=1.7,SNR=9.8						
YKA				ScP	ScP	18 32 52.9	-0.1
	0.0nm,0.3s,baz=289,slow=2.4,SNR=8.0						
BILL	Bilibino	19.84	314	*c i*P	P	18 25 11.6	+0.5
BILL				pmax	pmax		
	comp=Z,70nm,0.8s						
BILL				MLR	MLR		
	comp=Z,107nm,21.0s						
BILL	Bilibino	19.84	314	*e*P	P	18 25 11.5	+0.5
	comp=Z,50nm,0.6s						
NEW	Newport	23.62	101	LR	LR	18 33 20.5	
	comp=Z,116nm,21.1s,baz=214,slow=32						
SEY	Seymchan	26.05	302	P	P	18 26 12.0	-0.5
	comp=Z,19nm,0.9s,baz=82,slow=6.6,SNR=88						
SEY	Seymchan	26.05	302⇑	*e*P	P	18 26 12.1	-0.4
RES	Resolute Bay	26.23	31	P	P	18 26 14.7	+0.7
	comp=Z,5.3nm,0.8s,baz=260,slow=11,SNR=20						
PETK	Petropavlovsk-	27.52	279	P	P	18 26 26.0	+0.1
	comp=Z,4.3nm,0.8s,baz=72,slow=9.3,SNR=6.8						
PETK	Petropavlovsk-	27.52	279	P	P	18 26 26.0	+0.1
MA2	Magadan	27.93	296	P	P	18 26 30.0	+0.6
	comp=Z,58nm,0.9s,baz=90,slow=10,SNR=142						
MA2				LR	LR	18 37 50.4	
	comp=Z,57nm,19.4s,baz=100,slow=37						
FCC	Fort Churchill	29.69	65	*e*P	P	18 26 46.3	+1.3
FCC				pmax	pmax		
	comp=Z,4.0nm,0.5s						
FCC	Fort Churchill	29.69	65	*e*P	P	18 26 46.3	+1.3
	comp=Z,3.7nm,0.5s						
FLWY	Flagg Ranch	29.73	101	*e*P	P	18 26 48.9	+3.1
	comp=Z,13nm,0.9s						
IMW	Indian Meadow	29.74	102	*e*P	P	18 26 49.1	+3.0
	comp=Z,4.2nm,0.6s						
LOHW	Long Hollow	30.11	102	*e*P	P	18 26 52.4	+3.2
	comp=Z,6.5nm,1.1s						
NVAR	Mina Array Bea	30.32	117	P	P	18 26 53.3	+2.2
	comp=Z,0.7nm,0.7s,baz=317,slow=9.9,SNR=4.1						
NVAR				PcP	PcP	18 29 50.6	+1.1
	comp=Z,1.2nm,0.7s,baz=313,slow=1.8,SNR=7.2						
PDAR	Pinedale Array	31.25	102	P	P	18 27 01.5	+2.2
	comp=Z,0.9nm,0.7s,baz=315,slow=5.1,SNR=10						
PDAR				LR	LR	18 38 05.2	
	comp=Z,50nm,19.9s,baz=318,slow=33						
TIXI	Tiksi	32.26	325	*e*P	P	18 27 06.4	-1.2
TIXI				pmax	pmax		
	comp=Z,6.0nm,0.6s						
TIXI	Tiksi	32.26	325	*e*P	P	18 27 06.4	-1.2
	comp=Z,6.2nm,0.6s						
RSSD	Black Hills	33.12	95	*e*P	P	18 27 18.2	+2.6
RSSD				pmax	pmax		
	comp=Z,5.0nm,0.5s						
RSSD	Black Hills	33.12	95	*e*P	P	18 27 18.2	+2.6
	comp=Z,4.9nm,0.5s						
ULM	Lac du Bonnet	33.33	79	P	P	18 27 18.6	+1.5
	comp=Z,3.8nm,0.8s,baz=310,slow=8.5,SNR=7.0						
ULM				LR	LR	18 41 31.4	
	comp=Z,46nm,21.8s,baz=250,slow=37						
PV01	Paradox Valley	35.23	106	*e*P	P	18 27 36.5	+2.6
	comp=Z,126nm,0.5s						
YAK	Yakutsk	36.03	309	LR	LR	18 42 42.1	
	comp=Z,60nm,21.2s,baz=84,slow=37						
YAK	Yakutsk	36.03	309	*c i*P	P	18 27 39.4	-0.8
YAK				*e**PP	pP	18 27 57.9	+0.5
YAK				*e*		18 29 02.2	
YAK				*i*		18 30 04.4	
YAK				*e*S	S	18 33 10.9	-2.6
YAK				*e*		18 37 46.4	
YAK				pmax	pmax		
	comp=Z,53nm,0.7s						
YAK				pmax	pmax		
	comp=N,5.0nm,0.9s						
YAK				pmax	pmax		
	comp=E,18nm,0.9s						
YAK				pmax	pmax		
	comp=Z,103nm,4.8s						
YAK				pmax	pmax		
	comp=N,30nm,2.8s						
YAK				pmax	pmax		
	comp=E,47nm,2.8s						
YAK				smax	smax		
	comp=E,20nm,1.8s						
YAK				smax	smax		
	comp=N,41nm,2.9s						
KUR	Kuril'sk	37.44	275⇑	*e*P	P	18 27 52.2	-0.1
YSS	Yuzh-Sakhalins	38.89	281	P	P	18 27 57.0	-7.5
SUMG	Summit	41.37	24	*i* P	P	18 28 25.5	+0.3
	comp=N,14nm,0.7s						
SUMG	Summit	41.37	24	*i* P	P	18 28 25.5	+0.3
SUMG				pmax	pmax		
	comp=Z,14nm,0.7s						
SUMG	Summit	41.37	24	*e*P	P	18 28 25.4	+0.1
	comp=Z,7.0nm,0.6s						
DAG	Danmarks Havn	41.51	14	*i* P	P	18 28 24.6	-1.2
	comp=Z,11nm,0.4s						
DAG	Danmarks Havn	41.51	14	*i* P	P	18 28 24.6	-1.2
DAG				pmax	pmax		
	comp=Z,9.0nm,0.4s						
HABR	Khabarovsk	41.73	288	*c e*P	P	18 28 25.7	-2.2
HABR				*e**PP	pP	18 28 43.0	-2.4
HABR				*e**SP	sP	18 28 51.3	-2.3
HABR				*e*		18 30 03.1	
HABR				*e*		18 30 21.1	
HABR				*e*S	S	18 34 37.4	-2.0
HABR				*e**SS	sS	18 35 07.4	-1.8
HABR				*e*SS	SS	18 37 45.9	-1.1
HABR				*e*		18 38 21.3	
HABR				pmax	pmax		
	comp=E,35nm,1.8s						
HABR				pmax	pmax		
	comp=N,12nm,1.8s						
HABR				pmax	pmax		
	comp=Z,40nm,1.8s						
HABR				MLR	MLR		
	comp=Z,33nm,16.0s						
ERM	Erimo	42.13	275⇑	*e*P	P	18 28 31.7	+0.4
ERM				pmax	pmax		
	comp=Z,22nm,1.0s						
SPITS	Spitsbergen Ar	42.94	3	P	P	18 28 36.5	-1.0
	comp=Z,1.9nm,0.4s,baz=26,slow=5.9,SNR=33						
SCHQ	Schefferville	44.20	56	LR	LR	18 49 07.8	
	comp=Z,69nm,18.2s,baz=28,slow=38						
TXAR	Lajitas Array	44.72	109	LR	LR	18 46 51.9	
	comp=Z,32nm,18.0s,baz=0.0,slow=35						
NRIK	Noril'sk	44.78	334	P	P	18 28 51.7	-0.5
	comp=Z,19nm,0.7s,baz=52,slow=8.4,SNR=18						
BOD	Bodaibo	44.85	311	*e*P	P	18 28 51.5	-1.4
BOD				pmax	pmax		
	comp=Z,16nm,0.9s						
JCT	Junction City	45.69	105	*e*P	P	18 29 02.2	+2.2
JCT				pmax	pmax		
	comp=Z,25nm,0.8s						
JCT	Junction City	45.69	105	*e*P	P	18 29 02.2	+2.2
	comp=Z,25nm,0.8s						
USRK	Ussuriysk Ar.	46.23	286	P	P	18 29 03.1	-1.0
	comp=Z,4.2nm,0.7s,baz=50,slow=9.0,SNR=9.1						
USRK				PcP	PcP	18 30 38.0	-0.4
	comp=Z,1.6nm,0.6s,baz=37,slow=3.6,SNR=5.3						
USRK				LR	LR	18 50 20.5	
	comp=Z,30nm,18.3s,baz=118,slow=38						
SCO	Scoresbysund	46.29	20	*i* P	P	18 29 04.8	+0.7
SCO	Scoresbysund	46.29	20	*i* P	P	18 29 04.8	+0.7
MJAR	Matsushiro Arr	48.76	274	P	P	18 29 24.3	+0.5
	comp=Z,1.5nm,0.7s,baz=2.7,slow=8.2,SNR=4.9						
MAJO	Matsushiro	48.76	274⇑	*i*P	P	18 29 22.9	-0.9
MAJO				pmax	pmax		
	comp=Z,47nm,0.9s						
CN2	Changchun	49.74	290	*e*P	P	18 29 31.2	+0.1
CN2				pmax	pmax		
	comp=Z,50nm,0.8s						
ARCES	ARCESS Array B	51.78	1	P	P	18 29 45.4	-0.7
	comp=Z,6.6nm,1.1s,baz=2.9,slow=6.7,SNR=10						
ARCES				PcP	PcP	18 30 58.7	+0.5
	comp=Z,7.0nm,0.8s,baz=358,slow=4.5,SNR=7.4						
KSRS	Korea Array	53.32	283	P	P	18 29 58.1	+0.3
	comp=Z,5.7nm,0.8s,baz=38,slow=6.7,SNR=23						
KSRS				PcP	PcP	18 31 04.8	+0.3
	comp=Z,2.8nm,0.9s,baz=27,slow=4.2,SNR=4.9						
KSAR	Wonju Array Be	53.35	283	P	P	18 29 58.2	+0.1
KSAR						18 31 04.8	
KSAR	Wonju Array Be	53.35	283	P	P	18 29 58.1	+0.1
KSAR				PcP	PcP	18 31 04.8	+0.2
TLY	Talaya	53.43	311	*e*P	P	18 29 58.2	-0.3
TLY				pmax	pmax		
	comp=Z,4.0nm,0.9s						
KRAR	Krasnoyarsk	53.87	321⇓	*e*P	P	18 29 59.0	-2.6
KRAR				pmax	pmax		
	comp=Z,18nm,1.0s						
ZAK	Zakamensk	54.59	310	*e*P	P	18 30 03.7	-3.4
ZAK				*e*		18 31 08.4	
ZAK				pmax	pmax		
	comp=Z,4.0nm,0.9s						
ZAK				pmax	pmax		
	comp=Z,4.0nm,1.1s						
ULN	Ulaanbaatar	55.02	306	*c e*P	P	18 30 09.7	-0.6
ULN				pmax	pmax		
	comp=Z,5.0nm,1.0s						
ULN	Ulaanbaatar	55.02	306	*e*P	P	18 30 09.3	-1.1
	comp=Z,4.4nm,0.8s						
SONM	Songino Array	55.32	306	P	P	18 30 12.7	+0.3
	comp=Z,6.0nm,0.7s,baz=40,slow=6.5,SNR=56						
SONM				PcP	PcP	18 31 12.8	+0.6
	comp=Z,5.2nm,0.8s,baz=54,slow=2.0,SNR=9.6						
SONM				ScP	ScP	18 35 04.6	+0.3
	comp=Z,0.6nm,0.8s,baz=39,slow=4.3,SNR=4.1						
SONM				LR	LR	18 55 01.7	
	comp=Z,48nm,20.8s,baz=94,slow=37						
NVS	Novosibirsk	57.86	325	*i* P	P	18 30 28.7	-1.4
ZALV	Zalesovo Beam	58.15	324	P	P	18 30 31.3	-0.9
	comp=Z,5.7nm,0.5s,baz=30,slow=6.8,SNR=19						
ZALV	Zalesovo Beam	58.15	324	*i* P	P	18 30 31.6	-0.6
ZALV				pmax	pmax		
	comp=Z,6.0nm,0.5s						
NB2	NORSAR Subarra	59.70	9	P	P	18 30 42.5	-0.4
	comp=Z,2.7nm,0.9s,baz=353,slow=6.9						
NOA	NORSAR Array B	59.70	9	P	P	18 30 42.4	-0.4
	comp=Z,5.2nm,0.9s,baz=351,slow=6.8,SNR=11						
NOA				LR	LR	18 56 30.2	
	comp=Z,15nm,20.4s,baz=340,slow=36						
FINES	FINESS Array B	59.91	0	P	P	18 30 43.5	-0.7
	comp=Z,5.7nm,0.8s,baz=5.6,slow=7.1,SNR=21						
FINES				PcP	PcP	18 31 29.6	-0.2
	comp=Z,1.7nm,0.7s,baz=354,slow=4.2,SNR=4.2						
FINES	FINESS Array B	59.91	0	*i* P	P	18 30 43.7	-0.5
FINES				pmax	pmax		
	comp=Z,6.0nm,0.8s						
KLMR	Klimovskoe	60.09	353	*e*P	P	18 30 44.1	-1.4
KLMR				pmax	pmax		
	comp=Z,11nm,0.8s						
NJ2	Nanjing	62.14	286	*e*P	P	18 31 03.3	+3.6
NJ2				pmax	pmax		
	comp=Z,9.0nm,0.6s						
ARU	Arti	62.19	341	*e*P	P	18 30 57.9	-1.8
ARU				pmax	pmax		
	comp=Z,3.0nm,0.5s						
ARU	Arti	62.19	341	*e*P	P	18 30 57.9	-1.8
	comp=Z,3.1nm,0.5s						
BRVK	Borovoye	62.93	332⇓	*e*P	P	18 31 03.5	-1.2
BRVK				pmax	pmax		
	comp=Z,5.0nm,0.6s						
BRVK	Borovoye	62.93	332	*e*P	P	18 31 03.0	-1.7
	comp=Z,5.3nm,0.8s						
GTA	Gaotai	64.94	305	*e*P	P	18 31 17.1	-1.2
GTA				pP	pP	18 31 33.1	-3.9
GTA				sP	sP	18 31 41.4	-3.5
GTA				pmax	pmax		
	comp=Z,3.0nm,1.1s						
MKAR	Makanchi Array	65.18	321	P	P	18 31 18.0	-1.6
	comp=Z,1.5nm,0.6s,baz=35,slow=4.8,SNR=22						
MKAR	Makanchi Array	65.18	321	P	P	18 31 18.0	-1.6
WMQ	Urumqi	65.94	316	P	P	18 31 24.8	+0.2
WMQ				pP	sP	18 31 47.7	-3.5
WMQ				sP	PcP	18 31 53.6	-1.2
WMQ				S	PnS	18 40 09.6	-26
WMQ				pmax	pmax		
	comp=Z,3.0nm,0.8s						
WMQ				pmax	pmax		
	comp=Z,95nm,5.2s						
OBN	Obninsk	65.99	354⇑	*e*P	P	18 31 24.1	-0.5
OBN				*e*		18 33 51.6	
OBN				*i* S	S	18 40 34.2	+28
OBN				pmax	pmax		
	comp=Z,6.0nm,0.8s						
OBN				MLR	MLR		
	comp=Z,34nm,16.0s						
SUW	Suwalki	67.33	2	*e*P	PcP	18 32 00.0	-0.3
CLL	Collm	69.50	9⇑	*i*P	P	18 31 46.5	-0.2
	comp=Z,6.0nm,0.9s						
CLL				*i*		18 32 01.5	
CLL	Collm	69.50	9⇑	*i*P	P	18 31 46.5	-0.2
CLL				*i*		18 32 01.5	
CLL				pmax	pmax		
	comp=Z,6.0nm,0.9s						
BRG	Berggiesshubel	70.01	9	*e*P	P	18 31 50.1	+0.3
	comp=Z,9.6nm,1.0s						
BRG	Berggiesshubel	70.01	9	*e*P	P	18 31 50.1	+0.3
BRG				pmax	pmax		
	comp=Z,10.0nm,1.0s						
KSP	Ksiaz	70.20	7	*e*P	P	18 31 51.7	+0.6
KSP	Ksiaz	70.20	7	*e*P	P	18 31 51.7	+0.6
CD2	Chengdu	70.33	297	P	P	18 31 52.4	+0.2
CD2				pmax	pmax		
	comp=Z,1.0nm,0.6s						
PVCC	Panska Ves	70.40	8	*e*P	P	18 31 52.8	+0.6
PVCC	Panska Ves	70.40	8	*e*P	P	18 31 52.8	+0.6
UPC	Upice	70.52	7	*e*P	P	18 31 53.4	+0.4
UPC	Upice	70.52	7	*e*P	P	18 31 53.4	+0.4
AKASG	Malin Array Be	70.66	358	P	P	18 31 52.3	-1.6
	comp=Z,4.6nm,0.6s,baz=4.2,slow=6.3,SNR=24						
KIEV	Kiev	70.67	358	*d i*P	P	18 31 52.9	-1.0
KIEV				pmax	pmax		
	comp=Z,5.0nm,0.9s						
KIEV	Kiev	70.67	358	*e*P	P	18 31 52.2	-1.7
	comp=Z,9.4nm,1.0s						
DPC	Dobruska-Polom	70.69	7	*e*P	P	18 31 54.8	+0.7
DPC				*e*x	x	18 32 04.6	
DPC				*e*pP	PcP	18 32 15.6	+0.9
DPC	Dobruska-Polom	70.69	7	*e*P	P	18 31 54.8	+0.7
DPC				*e*		18 32 15.6	
PRA	Prague	70.84	8	*e*P	P	18 31 55.4	+0.5
PRA	Prague	70.84	8	*e*P	P	18 31 55.4	+0.5
PRU	Pruhonice	70.93	8	*e*P	P	18 31 56.0	+0.5
PRU	Pruhonice	70.93	8	*e*P	P	18 31 56.0	+0.5
GRFO	Grafenberg	70.94	11	*e*P	P	18 31 56.0	+0.4
GRFO				pmax	pmax		
	comp=Z,7.0nm,0.9s						
GRFO	Grafenberg	70.94	11	*e*P	P	18 31 56.0	+0.4
	comp=Z,7.4nm,0.9s						
LANF	Langenberg	71.28	13	*e*P	P	18 31 58.1	+0.4
OKC	Ostrava-Krasne	71.31	6	*e*P	P	18 31 58.0	+0.2
OKC	Ostrava-Krasne	71.31	6	*e*P	P	18 31 58.0	+0.2
AAK	Ala-Archa	71.34	325⇑	*e*P	P	18 31 58.2	-0.2
AAK				pmax	pmax		
	comp=Z,12nm,1.2s						
KHC	Kasperske Hory	71.71	9	*e*P	P	18 32 01.0	+0.7
KHC	Kasperske Hory	71.71	9	*e*P	P	18 32 01.0	+0.7
KHC				pmax	pmax		
	comp=Z,12nm,1.4s						
KHC	Kasperske Hory	71.71	9	*e*P	P	18 32 01.0	+0.7
	comp=Z,12nm,1.4s						

Code	Station Name	Δ°	AZ°	Op	ISC	Time	Res
VRAC	**Vranov**	**71.75**	**7⇑**	*i*P	**P**	**18 32 00.9**	**+0.4**
THEF	**They Montfort**	**71.80**	**15⇑**	*e*P	**P**	**18 32 01.2**	**+0.4**
STHS	**Stebnicka Huta**	**71.87**	**4**	*e*P	**P**	**18 32 02.0**	**+0.8**
STHS				pmax	pmax		
	comp=Z,7.0nm,0.7s						
STHS	**Stebnicka Huta**	**71.87**	**4**	*e*P	**P**	**18 32 02.0**	**+0.8**
ECH	**Echery**	**71.95**	**14**	*e*P	**P**	**18 32 02.0**	**+0.3**
BFO	**Black Forest**	**71.98**	**13**	*i* P	**P**	**18 32 02.7**	**+0.8**
GERES	**GERESS Array B**	**72.00**	**9**	P	**P**	**18 32 02.2**	**+0.1**
	comp=Z,3.8nm,0.7s,baz=352,slow=4.7,SNR=30						
MOF	**Molkenrain**	**72.31**	**14**	*e*P	**P**	**18 32 04.0**	**0.0**
KOLS	**Kolonicke sedl**	**72.39**	**3**	*e*P	**P**	**18 32 05.0**	**+0.7**
KOLS	**Kolonicke sedl**	**72.39**	**3**	*e*P	**P**	**18 32 05.0**	**+0.7**
VYHS	**Vyhne**	**72.69**	**6**	*e*P	**P**	**18 32 06.4**	**+0.3**
VYHS				pmax	pmax		
	comp=Z,5.0nm,0.9s						
VYHS	**Vyhne**	**72.69**	**6**	*e*P	**P**	**18 32 06.4**	**+0.3**
LOMF	**Lomont**	**72.77**	**14**	*e*P	**P**	**18 32 05.9**	**-0.7**
KECS	**Kecovo**	**72.78**	**4**	*e*P	**P**	**18 32 06.9**	**+0.3**
KECS				pmax	pmax		
	comp=Z,5.0nm,0.8s						
KECS	**Kecovo**	**72.78**	**4**	*e*P	**P**	**18 32 06.9**	**+0.3**
KECS				*e*		18 32 12.3	
MOA	**Molln**	**73.04**	**9**	*i* P	**P**	**18 32 08.3**	**+0.1**
	comp=Z,10nm,1.6s						
CONA	**Conrad Observa**	**73.08**	**8**	*i* P	**P**	**18 32 08.7**	**+0.3**
	comp=Z,8.0nm,0.7s,SNR=6.3						
DAVA	**Damuels**	**73.18**	**12**	*i* P	**P**	**18 32 10.1**	**+0.9**
	comp=Z,3.5nm,0.6s						
MOTA	**Moosalm**	**73.25**	**11**	*i* P	**P**	**18 32 11.2**	**+1.5**
	SNR=7.1						
WATA	**Walderalm**	**73.31**	**11**	*i* P	**P**	**18 32 10.6**	**+0.7**
	SNR=7.9						
WTTA	**Wattenberg**	**73.39**	**11**	*i* P	**P**	**18 32 11.1**	**+0.7**
	comp=Z,15nm,0.8s,SNR=6.5						
AGO	**Saint Agoulin**	**73.53**	**17⇑**	*e*P	**P**	**18 32 12.8**	**+1.7**
FETA	**Feichten**	**73.54**	**11**	*i* P	**P**	**18 32 12.2**	**+0.9**
	comp=Z,18nm,1.0s,SNR=6.1						
PLDF	**La Plantade**	**73.68**	**17⇑**	*e*P	**P**	**18 32 13.8**	**+1.8**
KBA	**Koelnbreinsper**	**73.73**	**10**	*i* P	**P**	**18 32 13.3**	**+0.9**
	comp=Z,14nm,0.5s,SNR=16						
KBA	**Koelnbreinsper**	**73.73**	**10**	*i* P	**P**	**18 32 13.3**	**+0.9**
	comp=Z,14nm,0.5s,SNR=16						
KSH	**Kashi**	**73.74**	**322**	P	**P**	**18 32 15.0**	**+2.4**
KSH				*e*sP	sP	18 32 43.8	+4.4
KSH				S	**S**	**18 41 36.8**	**-0.9**
KSH				pmax	pmax		
	comp=Z,6.0nm,0.7s						
KSH				pmax	pmax		
	comp=Z,83nm,3.6s						
BURAR	**Bucovina Array**	**73.76**	**1⇓**	*i*P	**P**	**18 32 12.1**	**-0.4**
PYM	**Petit Puy Mans**	**73.80**	**17⇑**	*e*P	**P**	**18 32 14.2**	**+1.4**
TUE	**Stuetta**	**73.93**	**12**	*e*P	**P**	**18 32 14.5**	**+0.9**
	comp=Z,17nm,0.7s						
ABTA	**Abfaltersbach**	**73.98**	**10**	*i* P	**P**	**18 32 14.0**	**+0.2**
	comp=Z,8.8nm,1.1s						
SOKA	**Soboth**	**74.26**	**8**	*i* P	**P**	**18 32 15.9**	**+0.5**
	comp=Z,4.6nm,0.5s,SNR=8.1						
SOKA	**Soboth**	**74.26**	**8**	*i* P	**P**	**18 32 15.9**	**+0.5**
	comp=Z,4.6nm,0.5s,SNR=8.1						
ARCR	**ARCALIA**	**74.28**	**2⇑**	*i*P	**P**	**18 32 14.6**	**-0.8**
LBL	**Lubilhac**	**74.34**	**17⇑**	*e*P	**P**	**18 32 17.5**	**+1.6**
OBKA	**Obir**	**74.39**	**9**	*i* P	**P**	**18 32 16.5**	**+0.3**
	comp=Z,28nm,0.5s,SNR=23						
SIRR	**Siria**	**75.03**	**4⇑**	*i*P	**P**	**18 32 20.4**	**+0.6**
DOPR	**Dopca**	**75.41**	**1⇑**	*i*P	**P**	**18 32 23.1**	**+1.1**
GOF	**Gofitskoye**	**75.47**	**348⇓**	*i*P	**P**	**18 32 22.1**	**-0.2**
GOF				pmax	pmax		
	comp=Z,15nm,0.6s						
PLOR	**Plostina**	**75.53**	**0⇑**	*i*P	**P**	**18 32 23.3**	**+0.6**
BZS	**Buzias**	**75.68**	**4⇑**	*i*P	**P**	**18 32 23.9**	**+0.4**
KMI	**Kunming**	**75.70**	**295**	P	**P**	**18 32 26.6**	**+2.4**
KMI				pmax	pmax		
	comp=Z,16nm,0.5s						
KMI				pmax	pmax		
	comp=Z,130nm,6.3s						
MLR	**Muntele Rosu**	**75.89**	**1⇑**	*i*P	**P**	**18 32 26.0**	**+1.1**
GZR	**Gura Zlata**	**75.94**	**3⇑**	*i*P	**P**	**18 32 25.1**	**0.0**
ARR	**Arges**	**76.00**	**2⇑**	*i*P	**P**	**18 32 25.9**	**+0.5**
CFR	**Carcaliu**	**76.20**	**359⇑**	*i*P	**P**	**18 32 26.1**	**-0.3**
MDVR	**Moldovita**	**76.52**	**4⇑**	*i*P	**P**	**18 32 28.6**	**+0.3**
KBZ	**Khabaz**	**76.80**	**348**	P	**P**	**18 32 30.4**	**+0.6**
	comp=Z,2.8nm,0.8s,baz=326,slow=4.6,SNR=6.7						
LSA	**Lhasa**	**76.91**	**306**	*e*P	**P**	**18 32 31.4**	**+0.1**
LSA				pmax	pmax		
	comp=Z,7.0nm,0.8s						
LSA	**Lhasa**	**76.91**	**306**	*e*P	**P**	**18 32 31.4**	**+0.1**
	comp=Z,7.4nm,0.8s						
NCK	**Nalchik**	**76.95**	**348⇑**	*i*P	**P**	**18 32 31.2**	**+0.4**
NCK				pmax	pmax		
	comp=Z,13nm,1.1s						
MSAB	**Monastry St. A**	**77.29**	**359⇑**	*i*P	**P**	**18 32 32.1**	**-0.5**
QIZ	**Qiongzhong**	**77.43**	**286**	P	**P**	**18 32 36.2**	**+2.4**
QIZ				pP	**pP**	**18 32 54.0**	**+1.1**
QIZ				S	**S**	**18 42 22.4**	**+3.7**
QIZ				pmax	pmax		
	comp=Z,14nm,1.9s						
ESDC	**Sonseca Array**	**78.43**	**24**	P	**P**	**18 32 39.9**	**+0.7**
	comp=Z,6.6nm,0.9s,baz=343,slow=5.5,SNR=22						
VTS	**Vitosha**	**78.75**	**3⇓**	*i*P	**P**	**18 32 40.4**	**-0.5**
GEYT	**Alibeck**	**80.00**	**335**	P	**P**	**18 32 46.8**	**-0.9**
	comp=Z,2.3nm,0.6s,baz=322,slow=4.3,SNR=5.3						
GEYT				LR	LR	19 13 32.0	
	comp=Z,37nm,18.9s,baz=180,slow=40						
GNI	**Garni**	**80.12**	**346⇑**	*e*P	**P**	**18 32 48.4**	**0.0**
GNI				pmax	pmax		
	comp=Z,37nm,1.2s						
TAPN	**Taplejung**	**80.40**	**308**	*e*P	**P**	**18 32 49.9**	**-0.4**
	comp=Z,28nm,0.7s						
GUN	**Gumba**	**80.64**	**310**	*e*P	**P**	**18 32 51.4**	**-0.3**
	comp=Z,28nm,0.9s						
CUC	**Castrocucco**	**80.97**	**9**	*e*P	**P**	**18 32 51.6**	**-1.2**
	comp=Z,4.4nm,0.9s						
ODAN	**Odare**	**80.97**	**308**	*e*P	**P**	**18 32 52.6**	**-0.7**
	comp=Z,14nm,0.8s						
KKN	**Kakani**	**80.99**	**310**	*e*P	**P**	**18 32 52.9**	**-0.4**
	comp=Z,10nm,0.5s						
GKN	**Gorkha**	**81.05**	**311**	*e*P	**P**	**18 32 53.0**	**-0.6**
	comp=Z,25nm,0.8s						
PKIN	**Phulchoki**	**81.13**	**310**	*e*P	**P**	**18 32 54.1**	**-0.1**
	comp=Z,5.1nm,0.6s						
RAMN	**Ramite**	**81.21**	**309**	*e*P	**P**	**18 32 53.8**	**-0.7**
	comp=Z,42nm,0.7s						
DMN	**Daman**	**81.22**	**310**	*e*P	**P**	**18 32 54.2**	**-0.4**
	comp=Z,17nm,0.7s						
BRTR	**Keskin Array B**	**81.49**	**355**	P	**P**	**18 32 55.3**	**-0.4**
	comp=Z,2.6nm,0.9s,baz=6.8,slow=1.4,SNR=11						
BRTR	**Keskin Array B**	**81.49**	**355**	*ce*P	**P**	**18 32 55.7**	**-0.1**
BRTR				pmax	pmax		
	comp=Z,2.0nm,0.9s						
PYUN	**Piuthan**	**81.60**	**312**	*e*P	**P**	**18 32 56.0**	**-0.6**
	comp=Z,48nm,0.7s						
KOLN	**Koldanda**	**81.66**	**311**	*e*P	**P**	**18 32 56.3**	**-0.6**
	comp=Z,22nm,0.8s						
TIP	**Timpagrande**	**81.84**	**8**	*e*P	**P**	**18 32 57.0**	**-0.5**
	comp=Z,3.9nm,0.6s						
CLTB	**Caltabellotta**	**83.13**	**11**	*e*P	**P**	**18 33 04.2**	**0.0**
	comp=Z,5.1nm,0.5s						
CMAR	**Chiang Mai Arr**	**83.21**	**295**	P	**P**	**18 33 04.0**	**-0.8**
	comp=Z,2.3nm,0.7s,baz=16,slow=5.8,SNR=20						
KEST	**Kesra**	**84.53**	**14**	P	**P**	**18 33 11.8**	**+0.5**
	comp=Z,30nm,0.8s,baz=299,slow=2.6,SNR=49						
QSPA	**South Pole Qui**	**148.77**	**180**	*e*PKPbc	**PKPbc**	**18 40 24.1**	**+0.1**

SKHL 04 18:26:14.0±0.7**,52°.05N**×**142°.63E,h10**km**,mb4.3**/5**, Sakhalin Island**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
TYV	**Tymovskoe**	**1.19**	**179**	*e*Pg	Pg	18 26 38.0	+1.2
TYV				AMB	AMB	18 26 42.0	
	44nm,0.8s						
TYV				*e*Sg	Sn	18 26 55.3	+2.5
TYV				A	A	18 26 56.8	
	220nm,0.8s						
NKL	**Nikolayevsk**	**1.62**	**314**	*e*Pg	Pg	18 26 46.8	+1.7
NKL				AMB	AMB	18 26 48.0	
	19nm,0.3s						
NKL				AMB	AMB	18 26 48.0	
	17nm,0.3s						
NKL				AMB	AMB	18 26 48.0	
	38nm,0.3s						
NKL				*e*Sg	Sg	18 27 09.3	+3.2
NKL				A	A	18 27 10.3	
	58nm,0.4s						
NKL				A	A	18 27 10.3	
	34nm,0.4s						
UGL	**Uglegorsk**	**3.00**	**187**	*e*P	Pn	18 27 02.0	+0.5
YSS	**Yuzh-Sakhalins**	**5.10**	**179**	*e*Pg	Pg	18 27 56.1	+4.4
EKMR	**Ekimchan**	**5.99**	**284**	*e*Pg	Pg	18 28 11.8	+3.1
EKMR				AMB	AMB	18 28 12.0	
	14nm,0.5s						
BMKR	**Bomnak**	**8.66**	**293**	*e*P	Pn	18 28 18.7	-0.6
BMKR				AMB	AMB	18 28 19.1	
	30nm,0.6s						
YASR	**Yasnyy**	**8.99**	**284**	*e*P	Pn	18 28 27.0	+3.2
YASR				AMB	AMB	18 28 27.8	
	8.0nm,0.6s						
YASR				AMB	AMB	18 28 27.8	
	12nm,0.6s						
KROS	**Kirovskiy**	**9.69**	**290**	*e*P	Pn	18 28 32.1	-1.2
KROS				AMB	AMB	18 28 32.2	
	11nm,0.8s						

IDC 04 18:32:08.3±1.9**,16°.66S**×**178°.25W,h0**km**,mb4.2**/5**, mb1 4.5**/5**,mb1mx3.8**/35**,mbtmp4.2**/5**,Error ellipse: s-maj=150.9km s-min=23.1km az=149.0,Fiji Islands region**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
STKA	**Stephens Creek**	**39.38**	**240**	P	P	18 39 40.5	+0.6
	2.3nm,0.4s,baz=85,slow=10.0,SNR=16						
WRA	**Warramunga Arr**	**45.02**	**258**	P	P	18 40 25.5	-0.6
	1.5nm,0.6s,baz=96,slow=7.7,SNR=47						
ASAR	**Alice Springs**	**45.29**	**253**	P	P	18 40 27.9	-0.4
	11nm,0.4s,baz=88,slow=8.1,SNR=213						
NVAR	**Mina Array Bea**	**78.42**	**44**	P	P	18 44 13.1	+1.7
	0.4nm,0.7s,baz=215,slow=7.6,SNR=3.6						
PDAR	**Pinedale Array**	**86.34**	**43**	P	P	18 44 51.3	-1.5
	0.2nm,0.5s,baz=220,slow=5.4,SNR=3.1						

*IDC **04** 18:33:54.3±2.7, 36°.70N×142°.20E, h0km, mb3.6/4, mb1 3.8/5, mb1mx3.4/39, mbtmp3.6/5, ML3.7/1, MS2.6/2, Ms1 2.6/2, ms1mx2.3/47, Error ellipse: s-maj=75.2km s-min=26.5km az=57.0*

*JMA **04** 18:34:00.2±0.2, 36°.63N×141°.80E, h37km±3km, M3.4*

ISC 04 18:33:57.6±2.4**,36°.68N**±0°.06×**141°.87E**±0°.09**,h12**km±13km**, n21,**σ**0s.88**/20**,mb3.6**/4**,Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.95**	**296**	P	**Pn**	**18 34 17.3**	**+0.5**
JHO	**Hitachi**	**1.04**	**266**	P	**Pb**	**18 34 17.6**	**0.0**
JHO				*e*S	**Sb**	**18 34 30.6**	**-0.7**
JFK	**Kawauchi**	**1.05**	**311**	P	**Pn**	**18 34 18.6**	**+0.5**
JMM	**Marumori**	**1.46**	**324**	P	**Pb**	**18 34 24.5**	**-0.2**
JMM				S	**Sb**	**18 34 43.2**	**+0.1**
JFT	**Otama**	**1.48**	**305**	P	**Pg**	**18 34 25.7**	**-0.3**
JFT				*e*S	**Sn**	**18 34 42.6**	**-0.7**
JIO	**Ouri**	**1.81**	**347**	P	**Pn**	**18 34 30.0**	**+1.4**
JIO				*e*S	**Sn**	**18 34 51.4**	**-0.1**
JOU	**Okura**	**1.93**	**331**	P	**Pb**	**18 34 32.6**	**-0.2**
JOU				*e*S	**Sb**	**18 34 56.4**	**-0.4**
MJAR	**Matsushiro Arr**	**2.94**	**268**	Pn	**Pn**	**18 34 45.7**	**+1.5**
	8.7nm,0.3s,baz=100,slow=9.8,SNR=106						
MJAR				Sn	**Sn**	**18 35 20.0**	**+0.5**
	3.8nm,0.3s,baz=81,slow=16,SNR=5.3						
MJAR				LR	LR	18 36 10.0	
	comp=Z,99nm,18.1s,baz=100,slow=43						
MAT	**Matsushiro**	**2.95**	**268**	P	**Pn**	**18 34 46.1**	**+1.9**
MAT				S	**Sn**	**18 35 18.9**	**-0.6**
USRK	**Ussuriysk Ar.**	**10.62**	**318**	Pn	Pn	18 36 37.6	+8.1
	0.2nm,0.3s,baz=119,slow=15,SNR=6.2						
KSRS	**Korea Array**	**11.17**	**278**	LR	LR	18 40 06.1	
	comp=Z,20nm,18.0s,baz=98,slow=32						
H11N2	**WAKE ISLAND Hy**	**27.66**	**121**	T	T	19 09 07.1	
	baz=313,slow=75,SNR=8.4						
H11N1	**WAKE ISLAND Hy**	**27.66**	**121**	T	T	19 09 06.6	
	baz=313,slow=75,SNR=7.7						
H11N3	**WAKE ISLAND Hy**	**27.68**	**121**	T	T	19 08 53.0	
	baz=313,slow=75,SNR=6.3						
SONM	**Songino Array**	**28.28**	**304**	P	**P**	**18 39 51.4**	**+0.5**
	1.2nm,0.8s,baz=100,slow=8.0,SNR=9.6						
H11S1	**WAKE ISLAND Hy**	**28.36**	**123**	T	T	19 09 58.8	
	baz=315,slow=76,SNR=4.1						
H11S3	**WAKE ISLAND Hy**	**28.37**	**123**	T	T	19 10 02.1	
	baz=315,slow=76,SNR=5.3						
H11S2	**WAKE ISLAND Hy**	**28.38**	**123**	T	T	19 09 53.4	
	baz=315,slow=76,SNR=4.5						
MKAR	**Makanchi Array**	**44.61**	**302**	P	**P**	**18 42 09.9**	**+0.2**
	0.4nm,0.7s,baz=93,slow=8.8,SNR=4.5						
WRA	**Warramunga Arr**	**56.77**	**188**	P	**P**	**18 43 40.4**	**-1.1**
	0.7nm,0.9s,baz=5.6,slow=7.3,SNR=4.3						
ASAR	**Alice Springs**	**60.49**	**188**	P	**P**	**18 44 06.5**	**-1.0**
	0.4nm,0.8s,baz=10,slow=6.6,SNR=4.0						

*IDC **04** 18:36:44.0±3.1, 2°.26N×96°.18E, h0km, mb3.7/4, mb1 3.8/5, mb1mx3.4/41, mbtmp3.7/5, ML3.4/1, Error ellipse: s-maj=108.9km s-min=26.8km az=60.0*

*ISCJB **04** 18:36:45.8±1.0, 2°.30N±0°.07×95°.97E±0°.07, h25km, mb3.8/4, Error ellipse: s-maj=11.0km s-min=9.3km az=145.8*

*DJA **04** 18:36:45.6±1.1, 2°N±4°×9°6E±°, h10km, M3.8/6, mb4.2/2, MLv3.6/6*

ISC 04 18:36:47.7±1.2**,2°.33N**±0°.07×**96°.1E**±0°.1**,h25**km**,n11, σ0s.68**/11**,mb3.9**/4**,Northern Sumatera**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
TPTI		**1.39**	**48**	P	**Pn**	**18 37 10.8**	**-0.8**
TPTI				S	**Sb**	**18 37 31.2**	**+0.7**
GSI	**Gunungsitoli**	**1.76**	**125**	P	**Pn**	**18 37 16.7**	**0.0**
GSI				S	**Sb**	**18 37 41.5**	**+0.4**
KCSI	**Kotacane, Aceh**	**2.02**	**54**	P	**Pn**	**18 37 21.1**	**+0.9**
KCSI				S	**Sb**	**18 37 48.0**	**-0.5**
CMAR	**Chiang Mai Arr**	**16.26**	**10**	Pn	**P**	**18 40 36.9**	**-0.7**
	0.1nm,0.3s,baz=198,slow=11,SNR=10						
H01W3	**Cape Leeuwin H**	**40.69**	**157**	T	T	19 27 38.0	
	baz=332						
H01W2	**Cape Leeuwin H**	**40.70**	**157**	T	T	19 27 39.3	
	baz=332						
H01W1	**Cape Leeuwin H**	**40.70**	**157**	T	T	19 27 38.7	
	baz=332						
WRA	**Warramunga Arr**	**43.53**	**122**	P	**P**	**18 44 49.2**	**-0.6**
	0.2nm,0.4s,baz=302,slow=9.1,SNR=2.4						
MKAR	**Makanchi Array**	**45.90**	**347**	P	**P**	**18 45 08.9**	**+0.7**
	1.2nm,0.6s,baz=161,slow=8.2,SNR=18						
SONM	**Songino Array**	**46.19**	**10**	P	**P**	**18 45 10.7**	**0.0**
	0.8nm,0.5s,baz=190,slow=9.4,SNR=9.8						
ZALV	**Zalesovo Beam**	**52.29**	**352**	P	**P**	**18 45 57.4**	**+0.4**
	1.2nm,0.4s,baz=165,slow=6.0,SNR=4.4						

*NIED **04** 18:46:00, 36°.00N×141°.20E, h11km, Mw3.5 Best double couple: $M_0$2.22000×10^{14} NP1:φs149.00000°, δ55.00000°, λ137.00000°. NP2:φs267.00000°, δ56.00000°, λ44.00000°.*

*ISCJB **04** 18:46:32.7±1.8, 35°.97N±0°.07×141°.35E±0°.09, h9km±10km, mb3.6/4, MS4.0/3, Error ellipse: s-maj=13.3km s-min=10.1km az=135.3*

*JMA **04** 18:46:35.5±0.1, 35°.96N×141°.16E, h25km±2km, M3.9*

JMA Felt I J1.

*IDC **04** 18:46:36.7±3.7, 35°.43N×140°.53E, h0km, mb3.7/4, mb1 3.7/5, mb1mx3.4/35, mbtmp3.6/5, ML3.1/1, MS3.7/2, Ms1 3.7/2, ms1mx2.6/46, Error ellipse: s-maj=130.4km s-min=24.3km az=61.0*

ISC 04 18:46:36.5±1.5**,35°.96N**±0°.06×**141°.1E**±0°.1**,h21**km±3km**, n19,σ1s.02**/13**,mb3.6**/4**,MS4.1**/3**,Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.32**	**216**	P	**Pb**	**18 46 43.2**	**-0.3**
CHOJ				*e*S	**Sb**	**18 46 48.9**	**+0.6**
JHO	**Hitachi**	**0.77**	**327**	P	**Pb**	**18 46 50.3**	**-1.0**
JHO				S	**Sb**	**18 47 01.7**	**+0.3**
JYT	**Yasato**	**0.77**	**290**	P	**Pb**	**18 46 50.3**	**-1.0**
JYT				S	**Sn**	**18 47 02.5**	**-0.6**
BSO3	**Boso 3**	**1.25**	**202**	P	**Pb**	**18 46 58.1**	**-1.1**
MJAR	**Matsushiro Arr**	**2.40**	**285**	Pn	**Pn**	**18 47 14.8**	**+0.2**
	6.0nm,0.3s,baz=106,slow=8.1,SNR=60						
MJAR				Sn	**Sb**	**18 47 49.4**	**+1.2**
	9.2nm,0.3s,baz=91,slow=32,SNR=8.5						
MJAR				LR	LR	18 48 15.1	
	comp=Z,38nm,19.5s,baz=170,slow=46						
MAT	**Matsushiro**	**2.40**	**285**	P	**Pn**	**18 47 14.6**	**0.0**
MAT				*e*S	**Sb**	**18 47 47.9**	**-0.3**
H11N2	**WAKE ISLAND Hy**	**27.84**	**119**	T	T	19 21 33.4	
	baz=312,slow=75,SNR=47						
H11N1	**WAKE ISLAND Hy**	**27.85**	**119**	T	T	19 22 00.8	
	baz=312,slow=75,SNR=52						
H11N3	**WAKE ISLAND Hy**	**27.86**	**119**	T	T	19 21 29.8	
	baz=312,slow=75,SNR=47						
SONM	**Songino Array**	**28.18**	**306**	P	P	18 52 29.8	+2.3
	0.4nm,0.4s,baz=104,slow=9.9,SNR=4.1						
H11S1	**WAKE ISLAND Hy**	**28.52**	**121**	T	T	19 22 28.6	
	baz=313,slow=76,SNR=50						
H11S3	**WAKE ISLAND Hy**	**28.52**	**121**	T	T	19 22 19.7	
	baz=313,slow=76,SNR=36						
H11S2	**WAKE ISLAND Hy**	**28.53**	**121**	T	T	19 22 16.3	
	baz=313,slow=76,SNR=30						
ZALV	**Zalesovo Beam**	**42.45**	**313**	P	P	18 54 34.3	+4.7
	1.1nm,0.3s,baz=76,slow=6.1,SNR=3.2						
MKAR	**Makanchi Array**	**44.48**	**303**	P	**P**	**18 54 47.9**	**+1.8**
	0.3nm,0.6s,baz=84,slow=7.1,SNR=3.8						
AAK	**Ala-Archa**	**50.78**	**299**	LR	LR	19 19 41.0	
	comp=Z,41nm,19.9s,baz=8.5,slow=39						
CTA	**Charters Tower**	**55.96**	**174**	LR	LR	19 19 41.9	
	comp=Z,154nm,20.4s,baz=56,slow=36						
WRA	**Warramunga Arr**	**55.96**	**188**	P	**P**	**18 56 12.6**	**-0.7**
	0.3nm,0.3s,baz=4.6,slow=7.1,SNR=15						
RAR	**Rarotonga**	**79.75**	**126**	LR	LR	19 26 17.2	
	comp=Z,301nm,20.5s,baz=118,slow=30						

*ISK **04** 19:10:16.2, 41°.15N×34°.28E, h3km, MD2.7*

*ISCJB **04** 19:10:17.1±0.6, 41°.17N±0°.04×34°.26E±0°.04, h0km, Error ellipse: s-maj=7.1km s-min=3.1km az=150.6*

*CSEM **04** 19:10:17.2±0.2, 41°.17N×34°.25E, h1km, MD2.7, Error ellipse: s-maj=5.1km s-min=2.5km az=149.0, Suspected Mining explosion.*

*DDA **04** 19:10:17.1, 41°.16N×34°.23E, h7km, Md2.7, Suspected Mining explosion.*

ISC 04 19:10:16.3±0.9**,41°.22N**±0°.05×**34°.30E**±0°.04**,h0**km**,n18, σ0s.40**/32**,Turkey**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
TOS	**Tosya**	**0.28**	**229**	*e*PG	**Pg**	**19 10 21.6**	**0.0**
TOS				*e*SG	**Sg**	**19 10 25.4**	**+0.2**
TOS	**Tosya**	**0.28**	**229**	*e*Pg	**Pg**	**19 10 21.6**	**0.0**
TOS				*e*Sg	**Sg**	**19 10 25.4**	**+0.2**
BYBT	**Boyabat**	**0.43**	**55**	*e*PG	**Pb**	**19 10 26.5**	**-0.3**
BYBT				*e*SG	**Sb**	**19 10 34.1**	**+0.3**
BYBT	**Boyabat**	**0.43**	**55**	*e*Pg	**Pb**	**19 10 26.5**	**-0.3**
BYBT				*e*Sg	**Sb**	**19 10 34.1**	**+0.3**
ILGA	**Ilgaz**	**0.47**	**249**	*i* P	**Pg**	**19 10 25.2**	**-0.1**
ILGA				*i* S	**Sg**	**19 10 31.7**	**+0.3**
ILGA	**Ilgaz**	**0.47**	**249**	P	**Pg**	**19 10 25.2**	**-0.1**
ILGA				S	**Sg**	**19 10 31.7**	**+0.3**
BOYT	**Boyabat**	**0.50**	**66**	*i* P	**Pb**	**19 10 28.2**	**+0.3**
BOYT				*i* S	**Sb**	**19 10 34.9**	**-0.9**
BOYT	**Boyabat**	**0.50**	**66**	P	**Pb**	**19 10 28.2**	**+0.3**
BOYT				S	**Sb**	**19 10 34.9**	**-0.9**
DIKM	**Dikmen**	**0.84**	**59**	*e*PG	**Pb**	**19 10 34.0**	**+0.3**
DIKM	**Dikmen**	**0.84**	**59**	*e*Pg	**Pb**	**19 10 34.0**	**+0.3**
ELDT	**Eldivan**	**0.98**	**223**	*i* P	**Pg**	**19 10 35.3**	**+0.2**
ELDT				*i* S	**Sg**	**19 10 47.5**	**-0.4**
ELDT	**Eldivan**	**0.98**	**223**	P	**Pg**	**19 10 35.3**	**+0.2**
ELDT				S	**Sg**	**19 10 47.5**	**-0.4**
CORM	**Corum**	**1.07**	**166**	*e*PG	**Pg**	**19 10 36.2**	**-0.6**
CORM	**Corum**	**1.07**	**166**	*e*Pg	**Pg**	**19 10 36.2**	**-0.6**
HAVZ	**Havza**	**1.08**	**97**	*i* P	**Pn**	**19 10 38.5**	**-0.2**
HAVZ				*i* S	**Sn**	**19 10 55.0**	**+0.6**
HAVZ	**Havza**	**1.08**	**97**	P	**Pn**	**19 10 38.5**	**-0.2**
HAVZ				S	**Sn**	**19 10 55.0**	**+0.6**
COAL	**Corum-Alaca**	**1.10**	**151**	*i* P	**Pg**	**19 10 37.6**	**+0.4**
COAL				*i* S	**Sb**	**19 10 53.0**	**-0.1**
COAL	**Corum-Alaca**	**1.10**	**151**	P	**Pg**	**19 10 37.7**	**+0.4**
COAL				S	**Sb**	**19 10 53.0**	**-0.1**

*NIED **04** 19:14:00, 38°.80N×142°.00E, h38km, Mw3.7 Best double couple: $M_0$3.48000×10^{14} NP1:φs99.00000°, δ24.00000°, λ-47.00000°. NP2:φs233.00000°, δ73.00000°, λ-107.00000°.*

*ISCJB **04** 19:14:34.6±1.1, 38°.77N±0°.05×142°.0E±0°.1, h48km±8km, mb3.8/9, Error ellipse: s-maj=15.1km s-min=7.7km az=4.8*

*JMA **04** 19:14:35.1±0.1, 38°.81N×142°.00E, h41km±1km, M3.8*

JMA Felt III J1.

*IDC **04** 19:14:38.8±3.3, 38°.70N×141°.91E, h70km±29km, mb3.5/9, mb1 3.7/11, mb1mx3.4/45, mbtmp3.8/11, Error ellipse: s-maj=26.7km s-min=17.0km az=86.0*

ISC 04 19:14:34.7±2.2**,38°.76N**±0°.06×**142°.0E**±0°.1**,h31**km±14km**, n19,σ0s.97**/25**,mb3.9**/9**,Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**0.42**	**320**	P	**Pn**	**19 14 44.4**	**-0.2**
JIO	**Ouri**	**0.61**	**240**	P	**Pn**	**19 14 47.3**	**+0.2**
JIO				S	**Sb**	**19 14 55.4**	**+0.2**
JMK	**Ichinoseki**	**0.65**	**288**	P	**Pn**	**19 14 47.7**	**-0.1**
JMK				S	**Sb**	**19 14 56.1**	**-0.4**
JOM	**Ohasama**	**0.91**	**322**	P	**Pn**	**19 14 51.0**	**-0.4**
JOM				S	**Sn**	**19 15 02.5**	**-0.9**
JOU	**Okura**	**1.13**	**250**	P	**Pb**	**19 14 55.3**	**-0.4**
JOU				*e*S	**Sb**	**19 15 10.2**	**+0.1**
JRG	**Rokugo**	**1.25**	**301**	P	**Pn**	**19 14 56.0**	**0.0**
JRG				S	**Sn**	**19 15 12.0**	**+0.1**
JYK	**Kaneyama**	**1.31**	**278**	P	**Pn**	**19 14 56.9**	**+0.1**
JMM	**Marumori**	**1.31**	**228**	P	**Pn**	**19 14 57.0**	**+0.2**
JMM				*e*S	**Sn**	**19 15 13.3**	**0.0**
MJAR	**Matsushiro Arr**	**3.75**	**235**	P	**Pn**	**19 15 33.2**	**+2.9**
	1.4nm,0.3s,baz=38,slow=11,SNR=9.6						
USRK	**Ussuriysk Ar.**	**9.28**	**309**	P	**Pn**	**19 16 48.5**	**+2.2**
	0.6nm,0.3s,baz=116,slow=15,SNR=10						
SEY	**Seymchan**	**25.01**	**11**	P	**P**	**19 19 56.8**	**+1.3**
	0.8nm,0.6s,baz=188,slow=6.3,SNR=6.4						
ZALV	**Zalesovo Beam**	**41.13**	**311**	P	**P**	**19 22 15.4**	**-0.2**
	1.2nm,0.4s,baz=82,slow=11,SNR=4.0						
MKAR	**Makanchi Array**	**43.63**	**301**	P	**P**	**19 22 35.6**	**-0.6**
	0.9nm,0.5s,baz=88,slow=11,SNR=20						
KURBB	**Kurchatov Arra**	**45.34**	**307**	P	**P**	**19 22 48.8**	**-0.8**
	1.2nm,0.4s,baz=81,slow=8.1,SNR=10.0						
ILAR	**Eielson Array**	**47.79**	**33**	P	**P**	**19 23 09.1**	**+0.4**
	0.6nm,0.7s,baz=263,slow=5.8,SNR=6.9						
BVAR	**Borovoye Array**	**49.78**	**311**	P	**P**	**19 23 23.5**	**-0.6**
	0.6nm,0.5s,baz=73,slow=8.0,SNR=7.1						
WRA	**Warramunga Arr**	**58.83**	**188**	P	**P**	**19 24 29.4**	**-0.9**
	0.6nm,0.5s,baz=7.0,slow=6.8,SNR=12						
ASAR	**Alice Springs**	**62.56**	**188**	P	**P**	**19 24 54.7**	**-0.9**
	0.5nm,0.9s,baz=8.7,slow=6.7,SNR=5.0						
KBZ	**Khabaz**	**70.15**	**310**	P	**P**	**19 25 44.3**	**+0.3**
	1.6nm,0.9s,baz=352,slow=7.1,SNR=2.7						

*IDC **04** 19:17:49.2±0.6, 37°.71N×144°.09E, h0km, mb4.1/20, mb1 4.3/25, mb1mx4.1/46, mbtmp4.1/25, ML3.3/5, MS3.2/12, Ms1 3.2/12, ms1mx3.0/53, Error ellipse: s-maj=16.8km s-min=13.2km az=130.0*

*NEIC **04** 19:17:51.4±3.4, 37°.74N×144°.12E, h14km±20km, mb4.6/4, Error ellipse: s-maj=10.7km s-min=6.5km az=130.0*

*ISCJB **04** 19:17:52.4±0.4, 37°.74N±0°.05×143°.96E±0°.04, h33km, mb4.2/30, MS3.3/10, Error ellipse: s-maj=7.2km s-min=3.9km az=159.5*

*MOS **04** 19:17:52.6±1.2, 37°.79N×144°.09E, h38km, mb4.6/8, Error ellipse: s-maj=10.1km s-min=6.9km az=97.6*

*JMA **04** 19:17:53.2±0.3, 37°.76N×143°.87E, h42km, M4.8*

ISC 04 19:17:54.2±0.6**,37°.70N**±0°.06×**144°.03E**±0°.06**,h35**km**,n82, σ1s.50**/77**,mb4.2**/30**,MS3.3**/10**,4C-3D,Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**2.25**	**290**	P	**Pn**	**19 18 27.0**	**-1.8**
JIO				S	**Sn**	**19 18 52.7**	**-2.6**
OFUJ	**Ofunato**	**2.31**	**307**	P	**Pn**	**19 18 27.8**	**-1.9**
JFK	**Kawauchi**	**2.53**	**263**	P	**Pn**	**19 18 31.8**	**-1.0**
JFK				S	**Sn**	**19 18 59.7**	**-2.7**
JMM	**Marumori**	**2.57**	**275**	P	**Pn**	**19 18 32.1**	**-1.2**
JMM				S	**Sn**	**19 19 00.5**	**-2.8**
ONAJ	**Iwakimizuishiy**	**2.64**	**258**	P	**Pn**	**19 18 33.1**	**-1.2**

Code	Station Name	Δ°	AZ°	Op	ISC	Time	Res
ONAJ				S	Sn	19 19 02.3	-2.9
JFT	Otama	2.94	268	S	Sn	19 19 10.8	-1.6
JYK	Kaneyama	3.13	294	P	Pn	19 18 40.2	-0.8
JYK				eS	Sn	19 19 15.8	-1.4
ERM	Erimo	4.36	351 c	iP	Pn	19 18 55.2	-2.7
ERM				pmax	pmax		
	comp=Z,54nm,1.2s						
ERM	Erimo	4.36	351	ePn	Pn	19 18 55.1	-2.8
MJAR	Matsushiro Arr	4.79	258	Pn	Pn	19 19 04.1	+0.3
	comp=Z,3.3nm,0.3s,baz=83,slow=14,SNR=9.1						
MJAR				Sn	Sn	19 19 56.7	-1.5
	comp=Z,2.5nm,0.3s,baz=48,slow=24,SNR=4.1						
MAJO	Matsushiro	4.79	258	eP	Pn	19 19 04.0	+0.1
MAJO	Matsushiro	4.79	258	ePn	Pn	19 19 04.0	+0.1
MAT	Matsushiro	4.79	258	P	Pn	19 19 04.0	+0.1
MAT				S	Sn	19 19 55.1	-3.1
JHJ	Hachijo jima 2	5.74	218	Pn	Pn	19 19 15.3	-1.5
	comp=Z,17nm,0.3s,baz=72,slow=20,SNR=2.4						
JHJ				Sn	Sn	19 20 17.2	-4.2
	comp=Z,56nm,0.3s,baz=73,slow=22,SNR=6.6						
YUK	Yuzh-Kuril'sk	6.48	12	eP	Pn	19 19 22.3	-4.7
YUK				pmax	pmax		
	comp=Z,133nm,0.8s						
YUK				pmax	pmax		
	comp=E,71nm,0.5s						
YUK				pmax	pmax		
	comp=N,38nm,0.2s						
SHO	Shikotan	6.52	18	eP	Pn	19 19 22.2	-5.3
SHO				pmax	pmax		
	comp=Z,263nm,0.6s						
SHO				pmax	pmax		
	comp=N,39nm,0.4s						
SHO				pmax	pmax		
	comp=E,109nm,0.4s						
KUR	Kuril'sk	8.06	20	eP	Pn	19 19 45.9	-2.7
KUR				eS	Sn	19 21 09.5	-9.0
KUR				pmax	pmax		
	comp=Z,22nm,0.5s						
KUR				smax	smax		
	comp=N,42nm,0.6s						
KUR				smax	smax		
	comp=E,28nm,0.6s						
CBIJ	Chichi jima	10.69	189	Pn	Pn	19 20 19.7	-5.1
CBIJ				Sn	Sn	19 22 11.4	-12
JCJ	Chichijima	10.69	189	Pn	Pn	19 20 19.7	-5.1
	comp=E,7.4nm,0.3s,baz=79,slow=16,SNR=7.4						
JCJ				Sn	Sn	19 22 11.4	-12
	comp=E,19nm,0.3s,baz=303,slow=22,SNR=7.4						
USRK	Ussuriysk Ar.	11.18	309	Pn	Pn	19 20 31.3	-0.1
	comp=E,0.3nm,0.3s,baz=110,slow=13,SNR=12						
USRK				LR	LR	19 24 32.5	
	comp=E,141nm,19.9s,baz=131,slow=36						
KSRS	Korea Array	12.78	274	Pn	Pn	19 20 55.8	+2.5
	comp=E,0.2nm,0.3s,baz=84,slow=13,SNR=4.9						
KSRS				LR	LR	19 25 23.1	
	comp=E,47nm,18.0s,baz=56,slow=35						
KSAR	Wonju Array Be	12.81	274	P	Pn	19 20 55.8	+2.0
KSAR	Wonju Array Be	12.81	274	Pn	Pn	19 20 55.8	+2.0
MDJ	Mudanjiang	12.88	307	eP	Pn	19 20 54.5	-0.2
	comp=E,7.8nm,0.8s						
TYV	Tymovskoe	13.20	356	eP	Pn	19 20 57.0	-1.9
KLR	Kul'dur	14.55	326	Pn	Pn	19 21 16.1	-1.3
	comp=E,0.2nm,0.3s,baz=132,slow=13,SNR=8.8						
KLR				LR	LR	19 26 43.7	
	comp=E,81nm,20.5s,baz=116,slow=37						
PETK	Petropavlovsk-	18.10	27	P	Pn	19 22 02.2	-0.5
	comp=E,0.2nm,0.3s,baz=209,slow=12,SNR=3.9						
PETK				LR	LR	19 28 18.2	
	comp=E,40nm,21.7s,baz=217,slow=35						
MA2	Magadan	22.32	9	P	P	19 22 48.0	-0.5
	comp=E,7.0nm,1.0s,baz=217,slow=8.5,SNR=12						
MA2				LR	LR	19 32 43.7	
	comp=E,23nm,19.2s,baz=212,slow=40						
MA2	Magadan	22.32	9	P	P	19 22 48.0	-0.5
SEY	Seymchan	25.78	9	P	P	19 23 21.6	+0.2
	comp=E,8.4nm,0.8s,baz=193,slow=7.4,SNR=46						
SEY	Seymchan	25.78	9⥥	eP	P	19 23 21.8	+0.4
YAK	Yakutsk	25.93	345	LR	LR	19 34 14.4	
	comp=E,86nm,19.0s,baz=155,slow=38						
YAK	Yakutsk	25.93	345	eP	P	19 23 20.7	-2.1
YAK				pmax	pmax		
	comp=Z,6.0nm,0.4s						
H11N2	WAKE ISLAND Hy	26.77	126	T	T	19 50 47.6	
	baz=317,slow=76,SNR=224						
H11N1	WAKE ISLAND Hy	26.77	126	T	T	19 50 50.7	
	baz=317,slow=76,SNR=277						
H11N3	WAKE ISLAND Hy	26.78	126	T	T	19 50 49.0	
	baz=317,slow=76,SNR=210						
H11S1	WAKE ISLAND Hy	27.54	128	T	T	19 51 46.7	
	baz=318,slow=76,SNR=174						
H11S3	WAKE ISLAND Hy	27.54	128	T	T	19 51 50.4	
	baz=318,slow=76,SNR=295						
H11S2	WAKE ISLAND Hy	27.56	128	T	T	19 51 51.5	
	baz=318,slow=76,SNR=184						
BOD	Bodaibo	28.12	325	eP	P	19 23 41.5	-1.0
BOD				pmax	pmax		
	comp=Z,4.0nm,1.4s						
ULN	Ulaanbaatar	28.73	303	eP	P	19 23 49.8	+1.5
ULN				pmax	pmax		
	comp=Z,9.0nm,1.3s						
ULN	Ulaanbaatar	28.73	303	eP	P	19 23 49.8	+1.5
	comp=Z,8.8nm,1.3s						
SONM	Songino Array	29.17	302	P	P	19 23 52.2	+0.1
	comp=Z,0.4nm,0.6s,baz=98,slow=8.1,SNR=2.9						
SONM				LR	LR	19 35 29.1	
	comp=Z,52nm,18.6s,baz=103,slow=36						
TLY	Talaya	31.50	309	LR	LR	19 37 18.4	
	comp=Z,54nm,19.7s,baz=98,slow=37						
ZAK	Zakamensk	31.52	307	eP	P	19 24 14.8	+2.0
ZAK				pmax	pmax		
	comp=Z,2.0nm,1.2s						
BILL	Bilibino	32.82	15⥥	eP	P	19 24 22.8	-1.1
BILL				e		19 25 30.7	
BILL				pmax	pmax		
	comp=Z,10.0nm,2.5s						
BILL				MLR	MLR		
	comp=Z,42nm,13.0s						
DAV	Davao City (W)	34.79	213	LR	LR	19 39 54.5	
	comp=Z,13nm,18.5s,baz=152,slow=38						
ZALV	Zalesovo Beam	43.02	312	P	P	19 25 49.6	-0.4
	comp=Z,0.6nm,0.3s,baz=81,slow=4.7,SNR=3.8						
ZALV				PcP	PcP	19 27 40.0	+0.3
	comp=Z,1.0nm,0.3s,baz=160,slow=1.1,SNR=3.8						
NRIK	Noril'sk	43.55	335	LR	LR	19 44 56.7	
	comp=Z,106nm,19.6s,baz=117,slow=37						
CMAR	Chiang Mai Arr	43.68	257	P	P	19 25 57.9	+2.1
	comp=Z,0.7nm,0.8s,baz=56,slow=6.6,SNR=7.2						
KDAK	Kodiak Island	45.21	42	i P	P	19 26 07.1	-0.4
MKAR	Makanchi Array	45.53	302	P	P	19 26 10.8	+0.5
	comp=Z,1.3nm,0.7s,baz=86,slow=9.6,SNR=18						
KURK	Kurchatov	47.16	308	eP	P	19 26 23.3	+0.3
KURK				pmax	pmax		
	comp=Z,11nm,0.8s						
KURK	Kurchatov	47.16	308	eP	P	19 26 23.3	+0.3
	comp=Z,11nm,0.8s						
KURBB	Kurchatov Arra	47.24	308	P	P	19 26 24.0	+0.4
	comp=Z,2.4nm,0.5s,baz=81,slow=7.9,SNR=11						
ILAR	Eielson Array	47.81	33	P	P	19 26 27.8	0.0
	comp=Z,5.6nm,0.7s,baz=265,slow=6.6,SNR=51						
BVAR	Borovoye Array	51.67	312	P	P	19 26 57.7	+0.4
	comp=Z,0.9nm,0.7s,baz=73,slow=11,SNR=5.6						
INK	Inuvik	52.84	28	P	P	19 27 06.2	+0.4
	comp=Z,1.8nm,0.5s,baz=302,slow=4.2,SNR=10						
ARU	Arti	57.24	319 d	iP	P	19 27 38.0	+0.3
ARU				S	S	19 35 34.4	+3.5
ARU				SS	SS	19 39 22.0	+2.3
ARU				pmax	pmax		
	comp=Z,12nm,1.7s						
WRAB	Tennant Creek	58.04	191 c	eP	P	19 27 44.0	+0.3
WRAB				pmax	pmax		
	comp=Z,33nm,1.2s						
WRAB	Tennant Creek	58.04	191	eP	P	19 27 43.2	-0.5
	comp=Z,8.6nm,0.8s						
WRA	Warramunga Arr	58.05	191	P	P	19 27 43.6	-0.2
	comp=Z,6.9nm,0.7s,baz=11,slow=7.2,SNR=43						
WRA	Warramunga Arr	58.05	191	i P	P	19 27 43.5	-0.2
WRA				pmax	pmax		
	comp=Z,6.0nm,0.7s						
ABKAR	Akbulak array	59.10	311	eP	P	19 27 51.2	+0.4
	comp=Z,0.5nm,0.6s						
ASAR	Alice Springs	61.78	191	P	P	19 28 09.7	+0.4
	comp=Z,2.1nm,0.7s,baz=14,slow=7.5,SNR=21						
YKA	Yellowknife Ar	62.18	31	P	P	19 28 11.5	0.0
	comp=Z,1.0nm,0.6s,baz=302,slow=6.6,SNR=20						
GEYT	Alibeck	65.33	300	P	P	19 28 33.6	+0.9
	comp=Z,1.6nm,0.7s,baz=5.7,slow=3.0,SNR=4.9						
OBN	Obninsk	68.80	324⥣	eP	P	19 28 55.0	+0.6
OBN				e		19 31 27.4	
OBN				ePPP	PPP	19 33 06.9	
OBN				pmax	pmax		
	comp=Z,5.0nm,1.0s						
OBN				MLR	MLR		
	comp=Z,52nm,16.0s						
FINES	FINESS Array B	69.18	333	P	P	19 28 57.0	+0.3
	comp=Z,2.9nm,0.7s,baz=41,slow=6.1,SNR=8.3						
FINES				LR	LR	20 01 02.9	
	comp=Z,46nm,20.4s,baz=136,slow=38						
FINES	FINESS Array B	69.18	333	P	P	19 28 57.0	+0.3
TBLG	Delisi	72.06	309	P	P	19 29 23.7	+9.0
TBLG	Delisi	72.06	309	P	P	19 29 23.7	+9.0
NVAR	Mina Array Bea	72.91	55	P	P	19 29 20.7	+0.6
	comp=Z,1.8nm,0.8s,baz=284,slow=6.0,SNR=11						
NOA	NORSAR Array B	74.36	338	P	P	19 29 27.8	-0.2
	comp=Z,1.4nm,0.8s,baz=40,slow=5.7,SNR=4.6						
NOA				LR	LR	20 06 55.3	
	comp=Z,21nm,19.0s,baz=300,slow=40						
AKASG	Malin Array Be	75.03	323	P	P	19 29 31.7	-0.2
	comp=Z,1.8nm,0.6s,baz=44,slow=6.1,SNR=9.6						
KIEV	Kiev	75.04	323⥣	eP	P	19 29 32.3	+0.3
PDAR	Pinedale Array	75.70	47	P	P	19 29 36.6	+0.4
	comp=Z,1.2nm,0.6s,baz=274,slow=1.7,SNR=13						
KOLS	Kolonicke sedl	79.49	325	eP	P	19 29 56.9	-0.1
KOLS	Kolonicke sedl	79.49	325	eP	P	19 29 56.9	-0.1
CLL	Collm	81.53	331	eP	P	19 30 09.0	+1.1
CLL				e		19 30 14.0	
CLL				i		19 30 22.8	
CLL	Collm	81.53	331	eP	P	19 30 09.0	+1.1
GERES	GERESS Array B	83.22	330	P	P	19 30 17.1	+0.2
	comp=Z,0.6nm,0.5s,baz=31,slow=5.9,SNR=5.5						

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*NIED **04** 19:30:00, 35.°80N×140.°20E, h62km, Mw4.3 Best double couple: M0 3.24000×10^15 NP1:φs179.00000°, δ27.00000°, λ85.00000°. NP2:φs4.00000°, δ63.00000°, λ92.00000°.*
*NEIC **04** 19:30:23.9±0.8, 35.°64N×140.°10E, h61km±6km, mb4.4/4, Error ellipse: s-maj=8.6km s-min=5.9km az=82.0*
NEIC Recorded [2 JMA] in Chiba, Ibaraki, Kanagawa, Saitama and Tokyo.
*ISCJB **04** 19:30:24.2±0.3, 35.°71N±0.°03×140.°08E±0.°05, h77km±2km, mb4.0/31, Error ellipse: s-maj=6.6km s-min=4.4km az=161.7*
*JMA **04** 19:30:24.7±0.2, 35.°81N×140.°12E, h67km±2km, M3.9 Broadband fault plane solution: P waves. NP1: φs2.00000°, δ68.00000°, λ87.00000°. NP2:φs190.00000°, δ22.00000°, λ98.00000°. Principal axes: T Plg67.0000°, Azm266.0000°; N Plg3.0000°, Azm3.0000°; P Plg23.0000°, Azm94.0000°;*
JMA Felt II J1.
*IDC **04** 19:30:25.6±1.2, 35.°64N×140.°02E, h73km±12km, mb3.8/27, mb1 3.9/30, mb1mx3.8/55, mbtmp4.1/30, MS3.1/6, Ms1 3.1/6, ms1mx2.8/41 Error ellipse: s-maj=14.9km s-min=8.5km az=79.0*
ISC 04 19:30:25.4±0.7, 35.°74N±0.°03×140.°07E±0.°04, h71km±6km, n76, σ0.s92/77, mb4.2/31, 3C-5D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TOK	Tokyo	0.26	259 ⥥	P	Pn	19 30 36.8	+0.5
JCN	Nagara	0.34	161 ⥣	P	Pn	19 30 36.8	-0.1
JCN				S	Sn	19 30 46.5	+1.1
JYT	Yasato	0.50	12 ⥣	P	Pn	19 30 36.6	-1.7
JYT				S	Sn	19 30 45.3	-2.5
JAG	Ashikaga	0.85	324 ⥥	P	Pn	19 30 41.3	-0.8
JOD2	Odawara 2	0.93	240 ⥥	P	Pn	19 30 42.7	-0.4
JOD2				S	Sn	19 30 55.9	-0.3
JRY	Ryogami san	0.98	287 ⥥	P	Pn	19 30 44.1	+0.3
BSO3	Boso 3	1.00	159 ⥣	P	Pn	19 30 42.9	-0.8
BSO3				S	Sn	19 30 57.9	+0.5
JIM2	Oshima 3	1.14	207	P	Pn	19 30 44.7	-1.1
JIM2				S	Sn	19 31 00.0	-1.0
JKT	Katashina	1.22	328	P	Pn	19 30 46.2	-0.7
JKT				eS	Sn	19 31 02.9	0.0
BSO1	Boso 1	1.31	145	P	Pn	19 30 46.6	-0.9
BSO1				S	Sn	19 31 04.3	+0.2
JIZS	Izushimoda	1.41	224 ⥥	P	Pn	19 30 48.8	-0.4
JIZS				S	Sn	19 31 06.6	-0.4
MJAR	Matsushiro Arr	1.70	299	P	Pn	19 30 53.2	+0.1
	48nm,0.3s,baz=100,slow=13,SNR=561						
MJAR				LR	LR	19 31 33.7	
	comp=Z,415nm,19.2s,baz=125,slow=40						
MAJO	Matsushiro	1.71	299	ePn	Pn	19 30 53.0	-0.2
MAT	Matsushiro	1.71	299	P	Pn	19 30 53.5	+0.3
MAT				eS	Sn	19 31 12.2	-2.0
JHJ	Hachijo jima 2	2.62	185	P	Pn	19 31 04.8	-0.8
	180nm,0.3s,baz=116,slow=5.8,SNR=19						
JHJ				S	Sn	19 31 34.5	-1.8
	266nm,0.3s,baz=124,slow=23,SNR=12						
JHJ2	Mitsune	2.63	185	ePn	Pn	19 31 05.5	0.0
JNU	Nakatsue	8.03	254	P	Pn	19 32 19.0	-0.3
	0.3nm,0.3s,baz=204,slow=19,SNR=3.0						
JNU	Nakatsue	8.03	254	ePn	Pn	19 32 17.6	-1.7
CBIJ	Chichi jima	8.80	168	P	Pn	19 32 26.2	-3.8
CBIJ				S	Sn	19 33 58.8	-8.8
JCJ	Chichijima	8.80	168	P	Pn	19 32 26.2	-3.8
	baz=270,slow=18						
JCJ				S	Sn	19 33 58.8	-8.8
	baz=73,slow=19						
KSRS	Korea Array	9.91	284	P	Pn	19 32 48.4	+3.4
	0.4nm,0.3s,baz=98,slow=14,SNR=12						
KSRS				LR	LR	19 36 30.0	
	comp=Z,147nm,20.0s,baz=104,slow=37						
KSAR	Wonju Array Be	9.94	283	P	Pn	19 32 48.4	+3.0
USRK	Ussuriysk Ar.	10.47	326	P	Pn	19 32 54.8	+2.2
	0.3nm,0.3s,baz=148,slow=15,SNR=8.0						
MDJ	Mudanjiang	11.94	321	Pn	Pn	19 33 13.7	+1.1
KLR	Kul'dur	14.80	338	P	Pn	19 33 48.7	-2.0
	0.2nm,0.3s,baz=221,slow=19,SNR=3.6						
TPUB	Ta-pu	20.92	239	eP	P	19 35 01.2	-1.1
PETK	Petropavlovsk-	21.35	30	LR	LR	19 43 26.8	
	comp=Z,30nm,18.6s,baz=226,slow=36						
MA2	Magadan	24.85	13	P	P	19 35 41.2	+0.2
	5.3nm,0.5s,baz=216,slow=7.9,SNR=14						
ENH	Enshi	26.16	267	eP	P	19 35 52.2	-0.9
	9.5nm,0.5s						
YAK	Yakutsk	27.12	349	P	P	19 36 01.6	+0.3
	0.7nm,0.3s,baz=109,slow=18,SNR=3.9						
SONM	Songino Array	27.64	306	P	P	19 36 05.4	-1.0
	0.8nm,0.8s,baz=117,slow=9.7,SNR=5.3						
SONM				PcP	PcP	19 39 22.3	+0.2
	0.4nm,0.6s,baz=139,slow=2.8,SNR=3.6						
SONM				LR	LR	19 45 59.5	
	comp=Z,47nm,21.7s,baz=113,slow=34						
SEY	Seymchan	28.28	12	P	P	19 36 14.4	+2.7
	0.3nm,0.3s,baz=143,slow=20,SNR=2.5						
H11N2	WAKE ISLAND Hy	28.48	117	T	T	20 05 43.4	
	baz=309,slow=75,SNR=37						
H11N1	WAKE ISLAND Hy	28.48	117	T	T	20 06 02.3	
	baz=309,slow=75,SNR=34						
H11N3	WAKE ISLAND Hy	28.49	117	T	T	20 05 47.8	
	baz=309,slow=75,SNR=40						
H11S1	WAKE ISLAND Hy	29.13	119	T	T	20 06 23.1	
	baz=311,slow=75,SNR=37						
H11S3	WAKE ISLAND Hy	29.13	119	T	T	20 06 31.1	
	baz=311,slow=75,SNR=28						
H11S2	WAKE ISLAND Hy	29.14	119	T	T	20 06 31.6	
	baz=311,slow=75,SNR=23						
TLY	Talaya	30.39	313	LR	LR	19 48 03.0	
	comp=Z,36nm,18.9s,baz=90,slow=35						
CMAR	Chiang Mai Arr	40.12	256	P	P	19 37 54.0	-0.4
	0.7nm,0.3s,baz=58,slow=7.4,SNR=4.6						
LSA	Lhasa	41.25	276	eP	P	19 38 04.9	+0.7
	5.3nm,1.0s						
ZALV	Zalesovo Beam	42.00	313	P	P	19 38 09.5	+0.1
	2.9nm,0.4s,baz=120,slow=8.8,SNR=10						
ZALV				PcP	PcP	19 40 03.2	0.0
	0.8nm,0.3s,baz=64,slow=3.4,SNR=3.6						
MKAR	Makanchi Array	43.90	303	P	P	19 38 25.1	+0.2
	1.6nm,0.5s,baz=82,slow=9.6,SNR=36						
MKAR				PcP	PcP	19 40 09.4	-0.5
	0.2nm,0.4s,baz=71,slow=4.1,SNR=4.5						
MKAR				LR	LR	19 56 08.9	
	comp=Z,26nm,20.1s,baz=74,slow=35						
NRIK	Noril'sk	44.00	336	P	P	19 38 25.2	-0.1
	2.9nm,0.7s,baz=45,slow=7.1,SNR=5.6						
TAPN	Taplejung	44.95	275	eP	P	19 38 34.0	+0.1
ODAN	Odare	45.41	274	eP	P	19 38 37.5	0.0
	7.2nm,0.7s						
KURK	Kurchatov	45.89	309	eP	P	19 38 40.2	-0.4
	21nm,0.8s						
KURBB	Kurchatov Arra	45.95	309	P	P	19 38 41.2	+0.1
	4.0nm,0.5s,baz=85,slow=8.0,SNR=22						
RAMN	Ramite	46.02	275	eP	P	19 38 42.4	+0.1
	21nm,0.7s						
KKN	Kakani	46.74	276	eP	P	19 38 48.4	+0.5
GKN	Gorkha	47.17	277	eP	P	19 38 51.3	+0.1
	26nm,1.1s						
KOLN	Koldanda	48.11	277	eP	P	19 38 58.9	+0.4
PYUN	Piuthan	48.46	278	eP	P	19 39 02.0	+0.8
AAK	Ala-Archa	50.16	299	P	P	19 39 14.4	+0.5
	2.1nm,0.9s,baz=95,slow=6.3,SNR=3.7						
BVAR	Borovoye Array	50.65	313	P	P	19 39 17.5	+0.3
	0.8nm,0.5s,baz=72,slow=9.4,SNR=7.2						
BRVK	Borovoye	50.70	313	eP	P	19 39 16.8	-0.8
ILAR	Eielson Array	51.17	32	P	P	19 39 20.5	-0.5
	0.5nm,0.7s,baz=269,slow=7.2,SNR=6.2						
KKAR	Karatay Array	52.84	301	eP	P	19 39 34.8	+1.1
FITZ	Fitzroy Crossi	55.26	197	P	P	19 39 50.0	-1.4
	7.1nm,0.9s,baz=19,slow=8.4,SNR=4.5						
WRAB	Tennant Creek	55.63	187	eP	P	19 39 53.1	-1.0
WRA	Warramunga Arr	55.64	187	P	P	19 39 53.4	-0.8
	2.9nm,0.4s,baz=0.4,slow=7.5,SNR=16						
INK	Inuvik	56.03	27	P	P	19 39 56.8	+0.4
	0.3nm,0.4s,baz=262,slow=15,SNR=3.8						
ARU	Arti	56.61	319	P	P	19 40 00.8	+0.1
	3.6nm,0.5s,baz=89,slow=5.6,SNR=9.3						
ABKAR	Akbulak array	57.95	310	eP	P	19 40 10.1	-0.1
	1.1nm,0.4s						
AKTO	Aktyubinsk	58.73	312	P	P	19 40 16.3	+0.6
	0.8nm,0.5s,baz=76,slow=12,SNR=4.0						
ASAR	Alice Springs	59.37	187	P	P	19 40 20.1	-0.2
	0.9nm,0.4s,baz=358,slow=6.2,SNR=23						
GEYT	Alibeck	63.51	299	P	P	19 40 47.9	-0.4
	0.8nm,0.4s,baz=74,slow=5.3,SNR=3.9						
ARCES	ARCESS Array B	64.82	339	P	P	19 40 56.6	+0.3
	3.7nm,0.9s,baz=61,slow=8.5,SNR=4.1						
YKA	Yellowknife Ar	65.47	29	P	P	19 41 00.7	+0.2
	0.2nm,0.6s,baz=303,slow=6.5,SNR=3.2						
FINES	FINESS Array B	69.45	332	P	P	19 41 25.8	+0.1
	2.1nm,0.7s,baz=106,slow=5.8,SNR=12						
AKASG	Malin Array Be	74.65	322	P	P	19 41 57.0	0.0
	1.4nm,0.4s,baz=48,slow=6.0,SNR=16						
NOA	NORSAR Array B	74.95	337	P	P	19 41 58.8	+0.2
	2.3nm,0.9s,baz=41,slow=5.8,SNR=4.3						
NVAR	Mina Array Bea	76.64	52	P	P	19 42 10.4	+1.5
	0.5nm,0.8s,baz=0.0,slow=4.5,SNR=3.3						
BRTR	Keskin Array B	78.89	311	P	P	19 42 20.0	-1.3
	8.8nm,1.4s,baz=32,slow=4.8,SNR=5.7						
BRTR				LR	LR	20 21 46.9	
	comp=Z,14nm,18.6s,baz=60,slow=39						
GERES	GERESS Array B	83.23	328	P	P	19 42 45.2	+1.1
	0.2nm,0.3s,baz=55,slow=8.5,SNR=4.6						
TORD	Torodi Ar. Bea	117.45	313	PKP	PKPdf	19 49 03.3	-0.3
	0.2nm,0.5s,baz=330,slow=0.7,SNR=2.9						

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*IDC **04** 19:31:40.2±2.2, 2.°97S×128.°12E, h0km, mb3.4/2, mb1 3.7/3, mb1mx3.3/43, mbtmp3.5/3, ML3.6/1, Error ellipse: s-maj=188.1km s-min=26.1km az=67.0*
*ISCJB **04** 19:31:50.0±1.0, 3.°44S±0.°04×128.°87E±0.°03, h12km±6km, mb3.4/1, Error ellipse: s-maj=7.4km s-min=5.6km az=18.3*
*DJA **04** 19:31:50.3±0.3, 3˚S±3˚×12˚9E±˚, h10km±2km, M3.6/9, MLv3.6/9*
ISC 04 19:31:50.4±1.2, 3.°46S±0.°06×128.°87E±0.°04, h11km±7km, n10, σ0.s68/16, Seram

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MSAI	Masohi	0.13	28	P	Pg	19 31 53.5	0.0
MSAI				S	Sg	19 31 56.0	+0.2
BNDI	Bandanaira	1.48	136	P	Pn	19 32 17.3	+0.4
BNDI				S	Sn	19 32 36.5	+0.3
NLAI	Namlea	1.78	277	P	Pn	19 32 21.2	+0.2
NLAI				S	Sn	19 32 44.3	+0.6
LBMI	Labuha	3.12	334	P	Pn	19 32 39.2	-0.3
LBMI				S	Sn	19 33 16.8	0.0
SANI	Sanana	3.20	296	P	Pn	19 32 40.9	+0.3
SANI				S	Sn	19 33 19.7	+0.9
FAKI	Fak Fak	3.42	81	P	Pn	19 32 43.8	+0.2
FAKI				S	Sn	19 33 25.0	+0.8
SWI	Sorong	3.52	43	P	Pn	19 32 44.7	-0.3
SWI				S	Sn	19 33 27.4	+0.8
WRA	Warramunga Arr	17.23	162	P	Pn	19 35 51.2	+0.1
	0.2nm,0.3s,baz=343,slow=12,SNR=7.4						
ASAR	Alice Springs	20.67	167	P	P	19 36 28.9	-1.5
	0.9nm,0.5s,baz=348,slow=11,SNR=18						
MKAR	Makanchi Array	64.67	326	P	P	19 42 14.5	-14
	0.3nm,0.8s,baz=108,slow=9.3,SNR=2.5						

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*DDA **04** 19:33:15.2, 38.°77N×40.°02E, h6km, Md2.8*
*ISK **04** 19:33:15.0, 38.°80N×39.°94E, h25km, MD2.6*
*CSEM **04** 19:33:16.3±0.4, 38.°67N×39.°83E, h10km, MD2.6, Error ellipse: s-maj=10.7km s-min=6.9km az=51.0*
ISC 04 19:33:15.4±1.3, 38.°71N±0.°04×39.°93E±0.°03, h3km±13km, n16, σ1.s00/25, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PTK	Pertek	0.46	294	ePG	Pg	19 33 24.7	+0.5
PTK				eSG	Sb	19 33 32.1	-1.3
PTK	Pertek	0.46	294	ePg	Pg	19 33 24.7	+0.5
PTK				eSg	Sb	19 33 32.1	-1.3
BINT	Bingol	0.47	69	ePg	Pb	19 33 27.9	+1.5
TNCL	Tunceli-Merkez	0.51	324	i P	Pg	19 33 25.3	+0.2
TNCL				i S	Sg	19 33 32.9	+1.2
TNCL	Tunceli-Merkez	0.51	324	P	Pg	19 33 25.3	+0.2
TNCL				S	Sg	19 33 32.9	+1.2
BNGB	Bingˆ¶l	0.65	64	ePG	Pg	19 33 27.9	-0.1
ELZG	Elazig	0.77	254	i P	Pg	19 33 29.6	-0.5
ELZG				i S	Sn	19 33 46.6	+1.3
ELZG	Elazig	0.77	254	P	Pg	19 33 29.6	-0.5
ELZG				S	Sn	19 33 46.6	+1.3
DIYA	Diyarbakir	0.80	169	i P	Pb	19 33 31.8	-0.1
DIYA				i S	Sb	19 33 43.8	+0.7
DIYA	Diyarbakir	0.80	169	P	Pb	19 33 31.8	-0.1
DIYA				S	Sb	19 33 43.8	+0.7
ERZN	Erzincan	0.89	350	ePG	Pg	19 33 31.1	-1.4
ERZN				eSG	Sg	19 33 42.7	-1.4
BNGL	BINGOL	0.99	75	i P	Pg	19 33 32.6	-1.7
BNGL				i S	Sg	19 33 47.0	-0.2
EZC	Erzincan	1.13	337	ePg	Pb	19 33 31.1	-6.6
EZC				eSg	Sg	19 33 42.7	-9.2
MAZI	Mazidag	1.31	162	ePN	Pn	19 33 39.5	-1.2
MAZI	Mazidag	1.31	162	ePn	Pn	19 33 39.5	-1.2
MARD	Mardin	1.55	154	i P	Pn	19 33 44.1	+0.2
MARD				i S	Sn	19 34 04.4	-0.1

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*IDC **04** 19:33:26.9±2.5, 36.°03N×141.°14E, h0km, mb3.4/3, mb1 3.7/6, mb1mx3.3/55, mbtmp3.7/6, ML3.9/3, Error ellipse: s-maj=62.8km s-min=23.2km az=61.0*
*ISCJB **04** 19:33:37.7±0.8, 35.°68N±0.°05×140.°15E±0.°08, h76km±5km, mb3.4/3, Error ellipse: s-maj=12.4km s-min=6.4km az=152.7*
*JMA **04** 19:33:37.9±0.2, 35.°73N×140.°22E, h65km±2km, M2.9*
ISC 04 19:33:38.9±1.1, 35.°67N±0.°05×140.°16E±0.°07, h70km±8km, n17, σ1.s08/23, mb3.4/3, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JCN	Nagara	0.25	173	P	Pn	19 33 49.4	-0.4
JCN				S	Sn	19 33 58.6	+1.0
TOK	Tokyo	0.33	274	P	Pn	19 33 50.4	+0.2
BSO3	Boso 3	0.91	162	P	Pn	19 33 55.3	-0.7
BSO3				S	Sn	19 34 09.9	+1.2
JAG	Ashikaga	0.95	323	P	Pn	19 33 55.8	-1.0
JAG				S	Sn	19 34 08.2	-1.9
JOD2	Odawara 2	0.97	246	P	Pn	19 33 56.3	-0.7
JOD2				S	Sn	19 34 09.3	-1.1
JRY	Ryogami san	1.08	289	P	Pn	19 33 58.4	-0.1
JIM2	Oshima 3	1.12	213	P	Pn	19 33 57.9	-1.1
JKT	Katashina	1.32	326	P	Pn	19 34 00.8	-0.8
JYN	Shimob	1.33	263	P	Pn	19 34 01.4	-0.3
JYN				S	Sn	19 34 19.1	+0.3
JIZS	Izushimoda	1.42	228	P	Pn	19 34 02.1	-0.7
MJAR	Matsushiro Arr	1.81	299	Pn	Pn	19 34 07.4	-0.6
	7.5nm,0.3s,baz=102,slow=14,SNR=10						
MAT	Matsushiro	1.81	299	P	Pn	19 34 08.3	+0.3

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
MAT				S	Sn	19 34 33.1	+3.0
JHJ	Hachijo jima 2	2.56	187	Pn	Pn	19 34 18.0	-0.2
	28nm,0.3s,baz=114,slow=20,SNR=8.2						
JHJ				Sn	Sn	19 34 48.0	-0.2
	20nm,0.3s,baz=253,slow=19,SNR=3.6						
JCJ	Chichijima	8.72	168	Pn	Pn	19 35 36.5	-5.8
	6.4nm,0.3s,baz=292,slow=19,SNR=3.1						
MKAR	Makanchi Array	44.00	303	P	P	19 41 39.5	+0.2
	0.3nm,0.8s,baz=93,slow=10,SNR=3.3						
WRA	Warramunga Arr	55.58	187	P	P	19 43 06.8	-0.6
	0.4nm,0.5s,baz=2.5,slow=7.4,SNR=6.2						
ASAR	Alice Springs	59.31	187	P	P	19 43 34.4	+0.8
	0.2nm,0.6s,baz=14,slow=8.2,SNR=2.7						

*NIED **04** 19:34:00, 37˚.80N×141˚.60E, h56km, Mw4.0 Best double couple: M0 1.17000×10^15 NP1:φs178.00000°, δ37.00000°, λ84.00000°. NP2:φs5.00000°, δ54.00000°, λ94.00000°.*
*IDC **04** 19:34:03.9±1.6, 37˚.89N×142˚.52E, h0km, mb3.9/4, mb1 3.9/7, mb1mx3.4/54, mbtmp3.7/7, ML2.8/2, Error ellipse: s-maj=43.2km s-min=24.9km az=73.0*
*ISCJB **04** 19:34:12.5±0.9, 37˚.77N±0˚.04×141˚.7E±0˚.1, h63km±7km, mb3.9/4, Error ellipse: s-maj=13.6km s-min=5.8km az=12.9*
*JMA **04** 19:34:13.5, 37˚.79N×141˚.62E, h54km±1km, M3.9*
JMA Felt I J1.
ISC 04 19:34:13.5±1.5**, 37˚.77N**±0˚.05×**141˚.7E**±0˚.1**, h55**km±12km**, n25, σ1s12**/29**, mb3.9**/4**, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
JMM	Marumori	0.72	278	P	Pn	19 34 27.1	-0.6
JMM				S	Sn	19 34 36.8	-1.2
JIO	Ouri	0.74	339	P	Pn	19 34 27.6	-0.3
JIO				S	Sn	19 34 37.5	-0.9
JFK	Kawauchi	0.76	239	P	Pn	19 34 27.9	-0.4
JFK				S	Sn	19 34 38.3	-0.8
ONAJ	Iwakimizuishiy	0.97	227	P	Pn	19 34 30.6	-0.4
ONAJ				S	Sn	19 34 43.0	-1.0
JOU	Okura	1.01	307	P	Pn	19 34 30.9	-0.5
JOU				S	Sn	19 34 43.9	-0.8
JFT	Otama	1.10	257	P	Pn	19 34 32.9	+0.2
JFT				S	Sn	19 34 47.0	0.0
JMK	Ichinoseki	1.24	343	P	Pn	19 34 34.5	0.0
JMK				S	Sn	19 34 49.8	-0.4
JYS	Shirataka	1.36	290	P	Pn	19 34 36.0	-0.2
JYK	Kaneyama	1.55	318	P	Pn	19 34 38.6	-0.2
JYK				eS	Sn	19 34 57.4	-0.5
JFY	Yanaizu	1.62	258	P	Pn	19 34 39.6	-0.1
JOM	Ohasama	1.73	350	P	Pn	19 34 41.7	+0.5
JOM				S	Sn	19 35 02.3	+0.1
JYA	Atsumi	1.76	298	P	Pn	19 34 41.4	-0.2
JYA				eS	Sn	19 35 01.0	-1.9
MJAR	Matsushiro Arr	3.04	247	Pn	Pn	19 35 01.9	+2.8
	baz=54,slow=10,SNR=2.2						
USRK	Ussuriysk Ar.	9.75	314	Pn	Pn	19 36 32.6	+1.7
	0.2nm,0.3s,baz=118,slow=13,SNR=5.9						
KSRS	Korea Array	10.93	273	Pn	Pn	19 36 50.0	+3.0
	0.3nm,0.3s,baz=79,slow=13,SNR=3.6						
H11N2	WAKE ISLAND Hy	28.34	122	T	T	20 10 23.0	
	baz=315,slow=75,SNR=4.5						
H11N1	WAKE ISLAND Hy	28.35	122	T	T	20 10 24.2	
	baz=315,slow=75,SNR=7.0						
H11N3	WAKE ISLAND Hy	28.36	122	T	T	20 10 24.8	
	baz=315,slow=75,SNR=6.4						
H11S1	WAKE ISLAND Hy	29.08	124	T	T	20 11 18.9	
	baz=317,slow=76,SNR=19						
H11S3	WAKE ISLAND Hy	29.08	124	T	T	20 11 19.1	
	baz=317,slow=76,SNR=28						
H11S2	WAKE ISLAND Hy	29.10	124	T	T	20 11 21.2	
	baz=317,slow=76,SNR=20						
WRA	Warramunga Arr	57.82	188	P	P	19 43 58.6	-0.6
	1.7nm,0.8s,baz=5.0,slow=7.3,SNR=6.6						
ASAR	Alice Springs	61.55	188	P	P	19 44 24.6	-0.3
	0.6nm,0.8s,baz=13,slow=6.3,SNR=4.8						
FINES	FINESS Array B	68.27	332	P	P	19 45 07.7	-0.4
	1.3nm,0.9s,baz=45,slow=6.1,SNR=4.1						
AKASG	Malin Array Be	73.85	322	P	P	19 45 41.2	-0.8
	0.3nm,0.4s,baz=47,slow=5.6,SNR=3.7						

*NIED **04** 19:43:00, 28˚.00N×139˚.80E, h500km, Mw4.3 Best double couple: M0 3.52000×10^15 NP1:φs16.00000°, δ48.00000°, λ173.00000°. NP2:φs110.00000°, δ85.00000°, λ42.00000°.*
*BJI **04** 19:43:42.3, 27˚.56N×139˚.77E, h533km, mb4.6/17, mB4.8/10*
*ISCJB **04** 19:43:44.8±0.3, 27˚.88N±0˚.03×139˚.45E±0˚.05, h507km, mb4.2/43, Error ellipse: s-maj=5.6km s-min=4.0km az=8.0*
*IDC **04** 19:43:45.4±0.5, 27˚.86N×139˚.50E, h510km±5km, mb3.6/28, mb1 3.8/36, mb1mx3.6/52, mbtmp4.6/36, Error ellipse: s-maj=10.3km s-min=6.3km az=86.0*
*JMA **04** 19:43:46.5±0.3, 28˚.04N×139˚.84E, h519km±5km, M4.5*
ISC 04 19:43:45.2±0.4**, 27˚.89N**±0˚.05×**139˚.49E**±0˚.07**, h507**km**, n79, σ1s29**/98**, mb4.3**/43**, Bonin Islands region**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
CBIJ	Chichi jima	2.52	108	P	P	19 44 55.0	+1.2
CBIJ				eS	S	19 45 49.4	-0.1
JCJ	Chichijima	2.52	108	P	P	19 44 55.1	+1.3
	35nm,0.3s,baz=9.0,slow=13,SNR=58						
JCJ				S	S	19 45 48.6	-0.8
	68nm,0.3s,baz=75,slow=23,SNR=15						
JHHJ	Haha-jima-NKT	2.70	117	P	P	19 44 56.8	+1.9
JHHJ				S	S	19 45 52.6	+1.1
JHCJ	Hachijojimakas	5.17	3	P	P	19 45 14.9	+0.9
JHCJ				S	S	19 46 24.9	-1.7
JHJ2	Mitsune	5.21	3	P	P	19 45 16.1	+1.8
JHJ2				eS	S	19 46 26.6	-0.6
JHJ	Hachijo jima 2	5.21	3	P	P	19 45 16.3	+1.9
	41nm,0.3s,baz=79,slow=23,SNR=6.3						
JWZ	Kozaga	6.49	331	P	P	19 45 29.3	+2.8
BSO1	Boso 1	6.86	10	P	P	19 45 31.9	+2.4
JIE	Ise	6.90	340	P	P	19 45 33.6	+3.1
JIE				S	S	19 46 58.6	+1.7
BSO3	Boso 3	6.94	7	P	P	19 45 32.7	+2.1
BSO3				eS	S	19 46 55.8	-1.3
HMMJ	Hamamatsu 2	7.10	348	P	P	19 45 34.1	+1.6
HMMJ				eS	S	19 47 00.3	-0.3
BSO4	Boso 4	7.11	6	P	P	19 45 34.3	+1.8
BSO4				S	S	19 46 59.2	-1.3
JAO	Obara	7.59	346	P	P	19 45 39.6	+2.1
JAO				S	S	19 47 09.7	0.0
JYT	Yasato	8.33	4	P	P	19 45 45.4	+0.4
JYT				S	S	19 47 19.8	-3.6
MJAR	Matsushiro Arr	8.69	353	P	P	19 45 48.9	+0.1
	2.2nm,0.3s,baz=172,slow=11,SNR=33						
MAT	Matsushiro	8.69	353	P	P	19 45 49.0	+0.2
MAT				S	S	19 47 27.9	-2.5
JNU	Nakatsue	9.07	307	P	P	19 45 54.9	+2.0
	1.4nm,0.3s,baz=104,slow=5.2,SNR=10.0						
JOW	Kunigami	10.03	267	P	P	19 46 04.9	+1.9
	2.6nm,0.3s,baz=112,slow=4.7,SNR=4.7						
KSRS	Korea Array	13.62	317	P	P	19 46 40.5	-0.2
	0.4nm,0.3s,baz=132,slow=10,SNR=9.6						
GUMO	Guam	15.09	160	P	P	19 46 57.9	+1.4
	4.3nm,0.3s,baz=198,slow=9.8,SNR=4.5						
USRK	Ussuriysk Ar.	17.35	342	P	P	19 47 19.8	+0.7
	2.9nm,0.3s,baz=158,slow=9.9,SNR=121						
MDJ	Mudanjiang	18.48	337	P	P	19 47 30.5	+1.1
MDJ				pmax	pmax		
	comp=Z,14nm,0.8s						
MDJ				pmax	pmax		
	comp=Z,100nm,4.4s						
WHN	Wuhan	22.09	283	P	P	19 48 03.0	+0.6
KLR	Kul'dur	22.12	346	P	P	19 48 03.1	+0.7
	7.9nm,0.6s,baz=158,slow=7.7,SNR=38						
SONM	Songino Array	32.49	317	P	P	19 49 33.7	+0.2
	1.9nm,0.6s,baz=122,slow=7.9,SNR=20						
SONM				ScP	ScP	19 54 59.1	-1.9
	2.8nm,0.9s,baz=144,slow=3.7,SNR=18						
MA2	Magadan	32.61	11	P	P	19 49 35.0	+0.9
	22nm,0.8s,baz=207,slow=7.4,SNR=45						
GTA	Gaotai	34.71	300	eP	P	19 49 52.2	-0.2
GTA				pmax	pmax		
	comp=Z,3.0nm,1.1s						
NONG	Nongkai	34.75	262	P	P	19 49 53.4	+0.6
	60nm,0.9s						
YAK	Yakutsk	34.76	352	P	P	19 49 51.9	-0.2
	0.9nm,0.4s,baz=331,slow=21,SNR=5.9						
KHON	Khomkaen	35.73	259	P	P	19 50 02.7	+1.7
	8.6nm,0.8s						
TLY	Talaya	35.82	321	P	P	19 50 02.0	+0.7
	2.4nm,0.5s,baz=98,slow=9.3,SNR=3.7						
SEY	Seymchan	36.05	10	P	P	19 50 03.8	+0.9
	9.7nm,0.9s,baz=196,slow=7.1,SNR=45						
CRAI	Chiangrai	36.41	267	P	P	19 50 06.1	-0.5
	62nm,1.0s						
CHAI	Chaiyaphum	36.65	259	P	P	19 50 08.5	-0.1
	19nm,0.8s						
PHRA	Phrae	37.15	264	P	P	19 50 12.9	+0.2
	97nm,1.3s						
UTTA	Uttaradit	37.15	263	P	P	19 50 12.7	0.0
	6.5nm,0.8s						
PBKT	Sadao Pong	37.25	261	P	P	19 50 13.9	+0.4
	22nm,1.0s						
SRAK	Srakaew	37.44	256	P	P	19 50 11.5	-3.6
	173nm,0.8s						
CHBT	CHBT	37.79	254	P	P	19 50 18.5	+0.5
	19nm,0.9s						
PMG	Port Moresby	37.81	168	P	P	19 50 18.1	0.0
	2.6nm,0.3s,baz=98,slow=14,SNR=3.8						
KAPI	Kappang	37.86	213	P	P	19 50 18.8	+0.3
	7.3nm,0.4s,baz=49,slow=8.8,SNR=3.9						
NAYO	Nakonayok	37.92	257	P	P	19 50 19.5	+0.5
	143nm,1.2s						
CMMT	Chiang Mai	38.16	265	P	P	19 50 20.8	-0.2
	17nm,1.1s						
CHTO	Chiang Mai	38.16	265	P	P	19 50 20.8	-0.2
	73nm,1.2s						
CMAR	Chiang Mai Arr	38.30	265	P	P	19 50 22.2	+0.1
	3.4nm,0.8s,baz=67,slow=6.0,SNR=29						
PHET	Kaeng Krachan	40.03	256	P	P	19 50 37.3	+1.2
BATI	Baumata	40.86	204	P	P	19 50 42.6	-0.2
	13nm,0.6s,baz=99,slow=24,SNR=4.1						
TAPN	Taplejung	45.60	282	eP	P	19 51 20.2	+0.2
	11nm,0.8s						
ODAN	Odare	45.99	281	eP	P	19 51 23.2	+0.3
RAMN	Ramite	46.65	282	eP	P	19 51 28.2	+0.2
	22nm,0.8s						
GUN	Gumba	47.05	283	eP	P	19 51 31.7	+0.6
	16nm,0.4s						
ZALV	Zalesovo Beam	47.32	319	P	P	19 51 31.9	-0.3
	3.9nm,0.4s,baz=98,slow=6.5,SNR=16						
ZALV				ScP	ScP	19 55 55.9	-2.8
	4.5nm,0.8s,baz=130,slow=4.8,SNR=9.7						
KKN	Kakani	47.59	283	eP	P	19 51 35.1	0.0
	15nm,0.8s						
WRA	Warramunga Arr	47.81	187	P	P	19 51 36.3	-0.2
	10nm,0.6s,baz=7.1,slow=8.1,SNR=158						
WRA				PcP	PcP	19 52 55.7	+0.1
	0.9nm,0.6s,baz=356,slow=3.4,SNR=4.7						
WRA				ScP	ScP	19 55 59.5	-1.7
	1.1nm,0.8s,baz=356,slow=4.5,SNR=8.0						
WRA				S	S	19 57 51.0	-4.6
	1.6nm,0.9s,baz=3.1,slow=13,SNR=6.2						
GKN	Gorkha	48.10	284	eP	P	19 51 38.7	-0.1
MKAR	Makanchi Array	48.12	309	P	P	19 51 38.4	-0.1
	1.8nm,0.4s,baz=87,slow=10.0,SNR=72						
MKAR				ScP	ScP	19 55 59.6	-2.7
	1.4nm,0.7s,baz=78,slow=5.7,SNR=10						
KOLN	Koldanda	49.04	284	eP	P	19 51 46.1	+0.2
PYUN	Piuthan	49.49	284	eP	P	19 51 49.5	+0.3
	13nm,0.4s						
NRIK	Noril'sk	51.04	339	P	P	19 51 59.5	-0.1
	13nm,0.6s,baz=112,slow=9.2,SNR=15						
ASAR	Alice Springs	51.54	187	P	P	19 52 03.6	-0.2
	3.8nm,0.6s,baz=1.8,slow=6.9,SNR=132						
ASAR				PcP	PcP	19 53 09.9	+0.6
	1.5nm,0.8s,baz=4.1,slow=4.4,SNR=6.8						
ASAR				ScP	ScP	19 56 15.8	-1.4
	0.3nm,0.7s,baz=0.0,slow=4.6,SNR=4.1						
ASAR				S	S	19 58 43.8	-2.5
	0.4nm,0.9s,baz=18,slow=19,SNR=3.6						
KDAK	Kodiak Island	55.17	37	P	P	19 52 44.8	+16
	5.2nm,0.4s,baz=217,slow=2.0,SNR=12						
ILAR	Eielson Array	58.17	29	P	P	19 52 49.4	-0.3
	1.4nm,0.6s,baz=285,slow=8.4,SNR=19						
STKA	Stephens Creek	59.47	178	P	P	19 52 58.8	-0.1
	4.8nm,0.7s,baz=349,slow=8.5,SNR=12						
INK	Inuvik	63.30	25	P	P	19 53 23.6	+0.1
	2.2nm,0.5s,baz=308,slow=6.6,SNR=16						
RES	Resolute Bay	71.84	13	P	P	19 54 16.2	+0.5
	7.8nm,0.7s,baz=326,slow=5.4,SNR=43						
ARCES	ARCESS Array B	72.00	340	P	P	19 54 16.7	-0.1
	5.2nm,0.5s,baz=67,slow=8.4,SNR=42						
YKA	Yellowknife Ar	72.57	28	P	P	19 54 20.2	+0.1
	4.1nm,0.7s,baz=296,slow=5.8,SNR=62						
KBZ	Khabaz	75.71	312	P	P	19 54 38.4	+0.1
	1.7nm,1.0s,baz=232,slow=1.7,SNR=4.6						
FINES	FINESS Array B	76.17	333	P	P	19 54 39.9	-0.6
	5.8nm,0.4s,baz=66,slow=5.4,SNR=72						
YBH	Yreka Blue Hor	77.36	49	P	P	19 54 48.4	+0.7
	0.5nm,0.4s,baz=106,slow=9.1,SNR=4.9						
AKASG	Malin Array Be	80.55	323	P	P	19 55 03.5	-0.8
	0.4nm,0.4s,baz=51,slow=5.2,SNR=9.4						
NVAR	Mina Array Bea	81.89	51	P	P	19 55 12.7	+1.0
	1.5nm,0.7s,baz=283,slow=6.1,SNR=10						
NVAR				pP	pP	19 57 02.9	+1.0
	0.2nm,0.5s,baz=292,slow=6.5,SNR=2.8						
NB2	NORSAR Subarra	81.97	337	P	P	19 55 09.8	-1.6
	comp=Z,3.7nm,0.7s,baz=46,slow=5.1						
NOA	NORSAR Array B	81.97	337	P	P	19 55 10.3	-1.1
	comp=Z,3.8nm,0.6s,baz=48,slow=4.9,SNR=16						
BRTR	Keskin Array B	83.70	312	P	P	19 55 19.6	-1.1
	comp=Z,0.6nm,0.7s,baz=79,slow=2.6,SNR=3.9						
PDAR	Pinedale Array	85.31	44	P	P	19 55 28.7	0.0
	comp=Z,0.5nm,0.3s,baz=308,slow=4.4,SNR=2.5						
CLL	Collm	88.17	330	eP	P	19 55 41.0	-0.7
CLL				e		19 55 45.0	
TORD	Torodi Ar. Bea	122.24	309	PKP	PKPdf	20 01 41.9	-1.1
	comp=Z,0.2nm,0.8s,baz=91,slow=0.3,SNR=3.3						
PLCA	Paso Flores	152.22	125	PKPbc	PKPbc	20 02 44.0	+0.6
	comp=Z,2.1nm,0.8s,baz=291,slow=6.2,SNR=3.9						

*ISCJB **04** 19:50:00.9±0.7, 36˚.66N±0˚.03×140˚.76E±0˚.06, h15km±5km, mb3.8/19, Error ellipse: s-maj=7.9km s-min=4.4km az=20.6*
*NIED **04** 19:50:00, 36˚.70N×140˚.60E, h5km, Mw3.8 Best double couple: M0 5.45000×10^14 NP1:φs339.00000°, δ29.00000°, λ-77.00000°. NP2:φs144.00000°, δ62.00000°, λ-97.00000°.*
*NEIC **04** 19:50:01.2±5.2, 36˚.71N×140˚.66E, h5km±33km, mb4.4/3, Error ellipse: s-maj=12.4km s-min=9.6km az=66.0*
*JMA **04** 19:50:02.3, 36˚.72N×140˚.63E, h4km±1km, M3.8*
JMA Felt II J1.
*IDC **04** 19:50:05.2±5.5, 36˚.67N×140˚.68E, h33km±44km, mb3.6/16, mb1 3.8/17, mb1mx3.6/43, mbtmp3.8/17, ML4.2/1, MS2.8/1, Ms1 2.8/1, ms1mx2.2/50, Error ellipse: s-maj=20.0km s-min=17.0km az=96.0*
ISC 04 19:50:01.8±0.9**, 36˚.71N**±0˚.03×**140˚.64E**±0˚.06**, h11**km±6km**, n38, σ0s90**/38**, mb3.8**/19**, 4C, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
JHO	Hitachi	0.11	211	⇑P	Pg	19 50 04.8	+0.1
JHO				S	Sg	19 50 06.7	0.0
ONAJ	Iwakimizuishiy	0.41	18	⇑P	Pg	19 50 10.3	+0.3
ONAJ				S	Sg	19 50 15.7	+0.2
JYT	Yasato	0.60	217	⇑P	Pg	19 50 13.8	+0.4
JYT				S	Sb	19 50 22.6	-0.2
JSB	Shiboa	0.63	295	P	Pb	19 50 15.0	0.0
JSB				S	Sb	19 50 24.2	+0.3
JFK	Kawauchi	0.68	16	⇑P	Pg	19 50 15.1	0.0
JFK				S	Sg	19 50 24.1	0.0
JFT	Otama	0.84	343	P	Pb	19 50 18.5	-0.1
JFT				S	Sg	19 50 29.3	+0.1
MJAR	Matsushiro Arr	1.96	266	Pn	Pn	19 50 36.2	+1.1
	29nm,0.3s,baz=87,slow=15,SNR=61						
MJAR				Sn	Sb	19 51 02.0	-0.1
	78nm,0.3s,baz=87,slow=28,SNR=25						
MAJO	Matsushiro	1.96	266	ePn	Pn	19 50 34.5	-0.7
MAT	Matsushiro	1.96	266	P	Pn	19 50 32.2	-2.9
JHJ	Hachijo jima 2	3.65	191	Pn	Pb	19 51 02.8	-3.6
	21nm,0.3s,baz=248,slow=19,SNR=2.9						
JHJ				Sn	Sn	19 51 42.1	+0.8
	28nm,0.3s,baz=54,slow=19,SNR=3.6						
JHJ				LR	LR	19 52 04.7	
	comp=Z,134nm,18.8s,baz=244,slow=33						
CBIJ	Chichi jima	9.67	172	Pn	Pn	19 52 20.4	-0.6
JCJ	Chichijima	9.67	172	Pn	Pn	19 52 20.4	-0.6
	2.2nm,0.3s,baz=294,slow=20,SNR=2.0						
USRK	Ussuriysk Ar.	9.97	321	Pn	Pn	19 52 29.6	+4.6
	baz=140,slow=11,SNR=4.2						
MA2	Magadan	23.81	13	P	P	19 55 14.7	+0.2
	1.6nm,0.3s,baz=216,slow=5.1,SNR=3.8						
SEY	Seymchan	27.23	12	P	P	19 55 46.3	+0.7
	0.9nm,0.7s,baz=200,slow=4.7,SNR=4.4						
SONM	Songino Array	27.46	305	P	P	19 55 47.9	-0.1
	1.1nm,0.7s,baz=107,slow=8.5,SNR=7.3						
H11N2	WAKE ISLAND Hy	28.52	119	T	T	20 25 41.6	
	baz=312,slow=75,SNR=55						
H11N1	WAKE ISLAND Hy	28.53	119	T	T	20 25 42.1	
	baz=312,slow=75,SNR=66						
H11N3	WAKE ISLAND Hy	28.54	119	T	T	20 25 42.9	
	baz=312,slow=75,SNR=54						
H11S1	WAKE ISLAND Hy	29.21	121	T	T	20 26 34.0	
	baz=314,slow=76,SNR=220						
H11S3	WAKE ISLAND Hy	29.21	121	T	T	20 26 34.0	
	baz=314,slow=76,SNR=116						
H11S2	WAKE ISLAND Hy	29.23	121	T	T	20 26 35.2	
	baz=314,slow=76,SNR=111						
ZALV	Zalesovo Beam	41.68	313	P	P	19 57 50.9	+0.6
	2.3nm,0.6s,baz=77,slow=6.5,SNR=6.2						
MKAR	Makanchi Array	43.77	302	P	P	19 58 08.0	+0.7
	0.4nm,0.8s,baz=90,slow=9.5,SNR=3.7						
KURK	Kurchatov	45.65	308	eP	P	19 58 22.1	-0.1
	7.8nm,0.8s						
ILAR	Eielson Array	50.10	32	P	P	19 58 57.8	+1.2
	0.4nm,0.8s,baz=258,slow=6.4,SNR=3.9						
BRVK	Borovoye	50.39	312	eP	P	19 58 58.7	-0.2
	1.6nm,0.9s						
INK	Inuvik	54.96	27	P	P	19 59 34.1	+1.6
	0.4nm,0.6s,baz=319,slow=5.5,SNR=2.8						
WRAB	Tennant Creek	56.65	187	P	P	19 59 47.5	+2.4
	5.0nm,1.0s						
WRA	Warramunga Arr	56.66	187	P	P	19 59 45.3	+0.2
	1.1nm,0.8s,baz=4.8,slow=7.4,SNR=5.7						
ASAR	Alice Springs	60.38	187	P	P	20 00 11.1	-0.1
	0.6nm,0.7s,baz=10,slow=8.2,SNR=5.8						
RES	Resolute Bay	63.07	14	P	P	20 00 28.2	-0.4
	0.2nm,0.4s,baz=311,slow=11,SNR=3.6						
YKA	Yellowknife Ar	64.40	30	P	P	20 00 36.2	-1.4
	0.2nm,0.5s,baz=304,slow=7.2,SNR=2.9						
FINES	FINESS Array B	68.81	332	P	P	20 01 05.9	+0.1
	1.4nm,0.9s,baz=51,slow=13,SNR=3.8						
NOA	NORSAR Array B	74.25	337	P	P	20 01 38.8	+0.2
	0.9nm,0.8s,baz=40,slow=5.7,SNR=2.7						
NVAR	Mina Array Bea	75.68	53	P	P	20 01 47.9	+0.3
	0.4nm,0.5s,baz=298,slow=6.0,SNR=3.3						
GERES	GERESS Array B	82.66	328	P	P	20 02 25.2	-0.2
	0.3nm,0.4s,baz=31,slow=6.2,SNR=4.2						
TXAR	Lajitas Array	90.81	52	P	P	20 03 04.3	-1.3
	0.6nm,0.7s,baz=311,slow=8.2,SNR=2.7						

JMA 04 19:52:21.9, 36˚.71N×140˚.63E, h6km±1km, M2.5, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
JHO	Hitachi	0.11	206	P	Pg	19 52 24.4	+0.1
JHO				S	Sg	19 52 26.1	+0.2
ONAJ	Iwakimizuishiy	0.41	19	P	Pg	19 52 30.0	+0.1
ONAJ				S	Sg	19 52 35.7	+0.3
JRY	Ryogami san	1.56	244	P	Pn	19 52 49.3	-0.9
MAT	Matsushiro	1.96	266	P	Pn	19 52 56.4	+0.8
MAT				S	Sb	19 53 22.2	-0.4

*NIED **04** 19:53:00, 35˚.90N×140˚.90E, h50km, Mw4.1 Best double couple: M0 1.41000×10^15 NP1:φs162.00000°, δ17.00000°, λ92.00000°. NP2:φs339.00000°, δ73.00000°, λ89.00000°.*
*IDC **04** 19:53:09.3±0.6, 35˚.84N×140˚.91E, h0km, mb3.9/18, mb1 4.1/22, mb1mx4.0/40, mbtmp3.9/22, ML3.3/3, MS3.2/8, Ms1 3.2/8, ms1mx2.8/57, Error ellipse: s-maj=17.9km s-min=15.1km az=99.0*
*ISCJB **04** 19:53:12.2±0.4, 35˚.88N±0˚.04×141˚.00E±0˚.06, h31km, mb4.0/22, MS3.1/5, Error ellipse: s-maj=6.9km s-min=5.4km az=156.7*
*JMA **04** 19:53:15.0±0.1, 35˚.90N×140˚.86E, h39km±1km, M3.7*
*NEIC **04** 19:53:16.8±1.0, 35˚.86N×140˚.83E, h54km±8km, mb4.3/4, Error ellipse: s-maj=10.8km s-min=7.6km az=82.0*
ISC 04 19:53:14.2±0.6**, 35˚.90N**±0˚.04×**140˚.93E**±0˚.07**, h31**km**, n54, σ1s03**/48**, mb4.0**/22**, MS3.4**/5**, 3C-1D, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
CHOJ	Chosi	0.20	197	⇓P	Pn	19 53 22.0	+0.9
CHOJ				S	Sn	19 53 27.1	+1.7
JYT	Yasato	0.68	299	⇑P	Pb	19 53 27.4	-0.3
JYT				eS	Sb	19 53 35.9	-0.9
JHO	Hitachi	0.77	338	⇑P	Pb	19 53 29.1	0.0
BSO3	Boso 3	1.15	198	⇑P	Pb	19 53 34.9	-0.4
JAG	Ashikaga	1.31	294	P	Pn	19 53 36.2	-0.1
MJAR	Matsushiro Arr	2.29	287	Pn	Pn	19 53 50.1	+0.2
	24nm,0.3s,baz=99,slow=9.6,SNR=22						
MJAR				LR	LR	19 54 51.4	
	comp=Z,281nm,19.1s,baz=105,slow=45						
MAJO	Matsushiro	2.29	287	ePn	Pn	19 53 51.1	+1.1
MAT	Matsushiro	2.29	287	P	Pn	19 53 50.9	+1.0
MAT				eS	Sn	19 54 14.6	-2.5
JHJ2	Mitsune	2.93	199	ePn	Pn	19 54 00.2	+1.6
JHJ	Hachijo jima 2	2.93	199	Pn	Pn	19 53 59.3	+0.7
	34nm,0.3s,baz=86,slow=22,SNR=6.0						
JHJ				Sn	Sn	19 54 33.8	+1.1
	76nm,0.3s,baz=97,slow=22,SNR=6.0						
JNU	Nakatsue	8.75	254	Pn	Pn	19 55 18.7	+0.2
	0.2nm,0.3s,baz=131,slow=20,SNR=2.0						
JNU				LR	LR	19 59 00.8	
	comp=Z,200nm,20.4s,baz=120,slow=40						
CBIJ	Chichi jima	8.84	173	ePn	Pn	19 55 17.9	-1.9
CBIJ				Sn	Sn	19 56 49.8	-8.6
JCJ	Chichijima	8.84	173	Pn	Pn	19 55 17.9	-2.0
	14nm,0.3s,baz=295,slow=23,SNR=12						
JCJ				Sn	Sn	19 56 49.8	-8.6
	3.9nm,0.3s,baz=282,slow=20,SNR=2.9						
KSRS	Korea Array	10.56	282	Pn	Pn	19 55 47.4	+4.1
	0.3nm,0.3s,baz=100,slow=14,SNR=6.6						
KSRS				Sn	Sn	19 57 41.6	+1.0
	0.3nm,0.3s,baz=296,slow=34,SNR=3.9						
KSRS				LR	LR	19 59 29.9	
	comp=Z,83nm,20.6s,baz=96,slow=36						
KSAR	Wonju Array Be	10.59	282	Pn	Pn	19 55 47.4	+3.6
KSAR				Sn	Sn	19 57 41.6	+0.3
USRK	Ussuriysk Ar.	10.75	323	Pn	Pn	19 55 49.0	+3.1
	0.2nm,0.3s,baz=119,slow=12,SNR=7.0						
KLR	Kul'dur	14.93	336	Pn	Pn	19 56 44.0	+1.1
	0.2nm,0.3s,baz=251,slow=6.8,SNR=5.0						
PETK	Petropavlovsk-	20.86	29	LR	LR	20 07 11.6	
	comp=Z,20nm,18.6s,baz=219,slow=40						
YAK	Yakutsk	27.10	348	LR	LR	20 10 40.3	
	comp=Z,26nm,18.8s,baz=112,slow=39						
H11N2	WAKE ISLAND Hy	27.93	118	T	T	20 28 00.6	
	baz=311,slow=75,SNR=37						
H11N1	WAKE ISLAND Hy	27.93	118	T	T	20 28 02.9	
	baz=311,slow=75,SNR=36						
H11N3	WAKE ISLAND Hy	27.94	118	T	T	20 28 09.5	
	baz=311,slow=75,SNR=32						
SEY	Seymchan	27.98	11	P	P	19 59 01.9	+0.2
	0.3nm,0.3s,baz=90,slow=20,SNR=2.6						
SONM	Songino Array	28.12	306	P	P	19 59 02.3	-1.1
	1.2nm,0.5s,baz=104,slow=8.5,SNR=9.0						
H11S1	WAKE ISLAND Hy	28.59	120	T	T	20 28 57.1	
	baz=312,slow=75,SNR=58						
H11S3	WAKE ISLAND Hy	28.59	121	T	T	20 28 57.2	
	baz=312,slow=75,SNR=46						
H11S2	WAKE ISLAND Hy	28.61	120	T	T	20 28 58.5	
	baz=312,slow=75,SNR=46						
CMAR	Chiang Mai Arr	40.84	256	P	P	20 00 53.5	+0.3
	0.6nm,0.9s,baz=42,slow=8.5,SNR=2.8						
CMAR				LR	LR	20 19 48.6	
	comp=Z,53nm,18.3s,baz=150,slow=39						
ZALV	Zalesovo Beam	42.40	313	P	P	20 01 05.4	-0.1
	1.7nm,0.4s,baz=104,slow=6.3,SNR=5.6						
MKAR	Makanchi Array	44.40	303	P	P	20 01 21.9	0.0
	4.3nm,0.6s,baz=89,slow=9.7,SNR=59						
TKM2	Tokmak 2	49.84	299	eP	P	20 02 04.7	+0.1
ILAR	Eielson Array	50.66	32	P	P	20 02 11.0	+0.8
	0.9nm,0.6s,baz=268,slow=6.1,SNR=12						
AAK	Ala-Archa	50.69	299	LR	LR	20 24 37.3	
	comp=Z,36nm,19.1s,baz=52,slow=37						
PSI	Prapat	50.88	239	LR	LR	20 24 51.8	
	comp=Z,43nm,18.9s,slow=37						
BRVK	Borovoye	51.11	313	eP	P	20 02 13.3	-0.4
	1.1nm,0.5s						
KKAR	Karatay Array	53.36	301	eP	P	20 02 29.9	-0.7

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
	1.2nm,0.6s						
INK	Inuvik	55.57	27	P	P	20 02 47.3	+1.1
	1.2nm,0.5s,baz=310,slow=8.6,SNR=11						
WRA	Warramunga Arr	55.88	187	P	P	20 02 48.0	-1.1
	0.9nm,0.5s,baz=6.0,slow=7.4,SNR=12						
ARU	Arti	56.96	319	eP	P	20 02 55.7	-0.6
	4.6nm,0.6s						
ABKAR	Akbulak array	58.38	311	eP	P	20 03 05.7	-0.7
	2.1nm,0.4s						
ASAR	Alice Springs	59.61	187	P	P	20 03 14.4	-0.7
	0.5nm,0.6s,baz=2.0,slow=7.6,SNR=11						
GEYT	Alibeck	64.05	299	P	P	20 03 45.3	+0.3
	1.2nm,0.8s,baz=55,slow=5.5,SNR=4.2						
ARCES	ARCESS Array B	64.92	339	P	P	20 03 50.5	+0.2
	2.4nm,0.9s,baz=47,slow=8.9,SNR=5.3						
YKA	Yellowknife Ar	64.98	30	P	P	20 03 51.1	+0.4
	0.3nm,0.5s,baz=302,slow=6.6,SNR=5.0						
FINES	FINESS Array B	69.64	332	P	P	20 04 20.0	-0.1
	1.4nm,0.7s,baz=35,slow=7.0,SNR=5.0						
KBZ	Khabaz	71.35	311	P	P	20 04 31.4	+0.5
	2.3nm,0.9s,baz=206,slow=18,SNR=2.4						
AKASG	Malin Array Be	74.96	322	P	P	20 04 51.5	-0.6
	0.7nm,0.5s,baz=47,slow=5.9,SNR=8.2						
NB2	NORSAR Subarra	75.08	337	P	P	20 04 52.4	-0.3
	comp=Z,2.0nm,0.8s,baz=38,slow=6.2						
NOA	NORSAR Array B	75.08	337	P	P	20 04 52.1	-0.7
	comp=Z,0.9nm,0.8s,baz=20,slow=5.2,SNR=3.5						
BRTR	Keskin Array B	79.31	311	P	P	20 05 16.5	-0.5
	comp=Z,1.1nm,0.9s,baz=81,slow=7.6,SNR=4.7						
GERES	GERESS Array B	83.47	328	P	P	20 05 38.2	-0.6
	comp=Z,0.2nm,0.4s,baz=44,slow=5.8,SNR=3.1						
TORD	Torodi Ar. Bea	117.85	314	PKP	PKPdf	20 11 57.1	-1.0
	comp=Z,0.3nm,0.6s,baz=12,slow=2.1,SNR=3.6						
DBIC	Dimbokro	126.84	316	PKP	PKPdf	20 12 14.9	-0.5
	comp=Z,9.7nm,1.2s,baz=135,slow=4.3,SNR=2.5						
LPAZ	La Paz	147.60	61	PKPbc	PKPbc	20 12 57.7	+1.0
	comp=Z,1.0nm,0.6s,baz=292,slow=7.6,SNR=3.6						

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*JMA **04** 20:02:10.7±0.3, 43°.77N×148°.17E, h3km, M3.6*
*SKHL **04** 20:02:12.8±0.6, 43°.96N×148°.34E, h38km±1km, mb4.3/3*
ISC 04 20:02:10.3±3.0**, 44°.00N**±0°.09×**148°.3E**±0°.1**, h11**km±12km**, n12,** σ1s.26/20**, Kuril Islands**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
SHO	Shikotan	1.07	263	eP	Pg	20 02 30.8	0.0
SHO				AMB	AMB	20 02 34.7	
	150nm,0.6s						
SHO				eS	Sg	20 02 44.6	-0.1
SHO				A	A	20 02 46.3	
	450nm,0.5s						
SHO				A	A	20 02 46.3	
	1μm,0.5s						
KUR	Kuril'sk	1.27	346	eP	Pb	20 02 33.6	-0.6
KUR				AMB	AMB	20 02 35.2	
	950nm,0.4s						
KUR				AMB	AMB	20 02 35.2	
	100nm,0.4s						
KUR				AMB	AMB	20 02 35.2	
	150nm,0.4s						
KUR				eS	Sb	20 02 49.4	-1.2
KUR				A	A	20 02 54.3	
	380nm,0.8s						
KUR				A	A	20 02 54.3	
	440nm,0.8s						
YUK	Yuzh-Kuril'sk	1.76	272	i P	Pn	20 02 41.1	+0.4
YUK				AMB	AMB	20 02 44.3	
	160nm,0.6s						
YUK				i S	Sn	20 03 01.8	-1.3
YUK				A	A	20 03 04.8	
	500nm,0.6s						
NEM2	Nemuro 2	1.96	252	P	Pn	20 02 43.3	-0.1
NEM2				eS	Sn	20 03 06.8	-1.2
JRA	Rausu	2.29	270	P	Pn	20 02 49.3	+1.3
JRA				eS	Sn	20 03 17.7	+1.4
JNK	Nakash	2.62	262	P	Pn	20 02 53.1	+0.5
JNK				eS	Sn	20 03 24.7	+0.2
JAK	Akkeshi	2.81	250	P	Pn	20 02 55.5	+0.4
JAK				eS	Sn	20 03 26.9	-2.0
JTKR	Abashiri--Toko	3.17	271	P	Pn	20 03 01.5	+1.4
JAR	Ashorobuto	3.36	259	P	Pn	20 03 04.0	+1.3
JCH	Churui	3.86	251	P	Pn	20 03 11.3	+1.7
JNBK	Urakawa-nobuka	4.41	249	P	Pn	20 03 18.5	+1.4
JNBK				eS	Sn	20 04 08.8	+0.4
YSS	Yuzh-Sakhalins	4.89	309	eP	Pn	20 03 25.6	+1.9

IDC 04 20:08:29.0±1.7**, 6°.93S**×**129°.01E, h0**km**, mb3.7**/2**, mb1 3.8**/5**, mb1mx3.4**/51**, mbtmp3.7**/5**, ML3.5**/2**, Error ellipse: s-maj=81.6km s-min=25.4km az=76.0, Banda Sea**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
BATI	Baumata	6.21	238	Pn	Pn	20 10 08.3	+6.3
	3.1nm,0.3s,baz=287,slow=24,SNR=9.2						
BATI				Sn	Sn	20 11 13.3	-0.5
	7.4nm,0.3s,baz=272,slow=24,SNR=8.2						
FITZ	Fitzroy Crossi	11.58	196	Pn	Pn	20 11 15.0	-0.6
	baz=17,slow=12						
FITZ				Sn	Sn	20 13 11.5	-14
	baz=97,slow=8.1,SNR=1.8						
WRA	Warramunga Arr	13.93	159	Pn	Pn	20 11 47.5	-0.3
	0.4nm,0.3s,baz=338,slow=12,SNR=11						
WRA				Sn	Sn	20 14 07.8	-16
	1.3nm,0.3s,baz=333,slow=19,SNR=9.3						
ASAR	Alice Springs	17.29	165	P	P	20 12 32.8	-0.8
	0.1nm,0.3s,baz=342,slow=9.3,SNR=5.0						
ASAR				S	Sn	20 15 29.6	-16
	0.3nm,0.3s,baz=326,slow=16,SNR=6.1						
MKAR	Makanchi Array	67.63	327	P	P	20 19 27.9	+0.1
	0.3nm,0.4s,baz=120,slow=8.0,SNR=11						
KURBB	Kurchatov Arra	71.94	329	P	P	20 19 54.1	-0.1
	0.5nm,0.6s,baz=133,slow=5.4,SNR=3.8						

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*KRSC **04** 20:11:40.5±1.9, 55°.35N×166°.54E, h40km±12km, ML4.4*
*IDC **04** 20:11:41.3±1.0, 55°.56N×166°.33E, h0km, mb3.8/11, mb1 4.0/12, mb1mx3.7/63, mbtmp3.8/12, ML3.3/1, MS2.9/7, Ms1 2.9/7, ms1mx2.6/54, Error ellipse: s-maj=31.1km s-min=15.2km az=167.0*
*ISCJB **04** 20:11:42.2±0.4, 55°.37N±0°.03×166°.43E±0°.05, h20km, mb3.8/12, MS2.9/4, Error ellipse: s-maj=5.2km s-min=3.4km az=149.9*
*MOS **04** 20:11:44.1±1.3, 55°.38N×166°.40E, h38km, mb4.1/9, Error ellipse: s-maj=10.9km s-min=7.9km az=165.6*
ISC 04 20:11:43.8±0.7**, 55°.39N**±0°.05×**166°.47E**±0°.06**, h20**km**, n85,** σ1s.36/115**, mb3.7**/12**, MS2.8**/5**, Komandorsky Islands region**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
BKI	Bering	0.34	237	eP	Pb	20 11 50.0	-1.1
BKI				eS	Sb	20 11 55.6	-0.4
BKI	Bering	0.34	237	PN	Pb	20 11 50.0	-1.1
KBTR	Krutoberegovo	2.22	293	eP	Pn	20 12 16.1	-3.3
KBTR				eS	Sn	20 12 42.9	-3.3
KBTR	Krutoberegovo	2.22	293	PN	Pn	20 12 16.1	-3.3
KBTR				S	Sn	20 12 42.9	-3.3
SMKR	Semkarok	3.05	295	eP	Pn	20 12 29.2	-1.7
SMKR				eS	Sn	20 13 04.9	-2.0
SMKR	Semkarok	3.05	295	PN	Pn	20 12 29.2	-1.7
SMKR				S	Sn	20 13 04.9	-2.0
BDR	Baidarnaya	3.18	294	eP	Pn	20 12 31.8	-0.9
BDR				eS	Sn	20 13 10.1	0.0
SRKR	Sorokina	3.23	295	eP	Pn	20 12 32.3	-1.1
SRKR				eS	Sn	20 13 11.3	0.0
SRKR	Sorokina	3.23	295	PN	Pn	20 12 32.3	-1.1
SRKR				S	Sn	20 13 11.3	0.0
ZLN	Zelenaya	3.27	283	eP	Pn	20 12 34.0	+0.1
ZLN				eS	Sn	20 13 14.0	+1.8
ZLN	Zelenaya	3.27	283	PN	Pn	20 12 34.0	+0.1
ZLN				S	Sn	20 13 14.0	+1.8
CIRR	Tsirk	3.31	285	eP	Pn	20 12 35.4	+0.8
CIRR				eS	Sn	20 13 16.6	+3.2
CIRR	Tsirk	3.31	285	PN	Pn	20 12 35.4	+0.8
CIRR				S	Sn	20 13 16.6	+3.2
LGNR	Loginova	3.34	284	eP	Pn	20 12 36.2	+1.1
LGNR	Loginova	3.34	284	PN	Pn	20 12 36.2	+1.1
KLY	Klyuchi	3.41	288	eP	Pn	20 12 33.3	-2.4
KLY				eS	Sn	20 13 13.3	-2.2
BZMR	Bezymyannaya	3.43	282	eP	Pn	20 12 36.7	+0.5
BZWR	Bezymyannyi-We	3.43	282	eP	Pn	20 12 36.7	+0.5
KRSR	Krestovskiy	3.43	286	eP	Pn	20 12 35.1	-1.1
KRSR	Krestovskiy	3.43	286	PN	Pn	20 12 35.1	-1.1
TUMD	Tumrok D	3.48	269	eP	Pn	20 12 36.8	+0.1
TUMD				eS	Sn	20 13 17.5	+0.3
KIRR	Kirishev	3.52	282	eP	Pn	20 12 37.0	-0.3
KIRR				eS	Sn	20 13 18.6	+0.2
KZV	Kizimen	3.54	268	eP	Pn	20 12 37.7	-0.1
KMNR	Kamenistaya	3.56	278	eP	Pn	20 12 38.1	+0.2
KMNR				eS	Sn	20 13 21.5	+2.2
KMNR	Kamenistaya	3.56	278	PN	Pn	20 12 38.1	+0.2
KMNR				S	Sn	20 13 21.5	+2.2
KPT	Kopyto	3.58	282	eP	Pn	20 12 38.7	+0.5
KPT				eS	Sn	20 13 22.0	+2.0
KPT	Kopyto	3.58	282	PN	Pn	20 12 38.7	+0.5
KPT				S	Sn	20 13 22.0	+2.0
TUMR	Tumrok	3.61	271	eP	Pn	20 12 38.9	+0.3
TUMR				eS	Sn	20 13 21.9	+1.2
TUMR	Tumrok	3.61	271	PN	Pn	20 12 38.9	+0.3
TUMR				S	Sn	20 13 21.9	+1.2
KOZ	Kozyrevsk	3.79	283	eP	Pn	20 12 43.5	+2.5
KOZ				eS	Sn	20 13 28.5	+3.6
KOZ	Kozyrevsk	3.79	283	PN	Pn	20 12 43.5	+2.5
KOZ				S	Sn	20 13 28.5	+3.6
SPN	Mys Shipunski	4.42	241	eP	Pn	20 12 48.9	-0.8
SPN				eS	Sn	20 13 37.7	-2.8
SPN	Mys Shipunski	4.42	241	PN	Pn	20 12 48.9	-0.8
ESO	Esso	4.43	280	eP	Pn	20 12 50.5	+0.7
ESO				eS	Sn	20 13 40.1	-0.7
ESO	Esso	4.43	280	PN	Pn	20 12 50.5	+0.7
ESO				S	Sn	20 13 40.1	-0.7
NLC	Nalytchevo	4.73	245	eP	Pn	20 12 53.7	-0.1
NLC				eS	Sn	20 13 46.2	-1.8
NLC	Nalytchevo	4.73	245	PN	Pn	20 12 53.7	-0.1
SDLR	Sedlovina	4.92	248	eP	Pn	20 12 56.8	+0.2
SDLR				eS	Sn	20 13 53.7	+0.8
SDLR	Sedlovina	4.92	248	PN	Pn	20 12 56.8	+0.2
SDLR				S	Sn	20 13 53.7	+0.8
SMAR	Somma	4.97	248	eP	Pn	20 12 57.8	+0.5
SMAR				eS	Sn	20 13 54.0	-0.3
SMAR	Somma	4.97	248	PN	Pn	20 12 57.8	+0.5
SMAR				S	Sn	20 13 54.0	-0.3
UGLR	Uglovaya	4.98	247	eP	Pn	20 12 57.7	+0.3
UGLR				eS	Sn	20 13 55.6	+1.1
AVH	Avacha	5.00	248	eP	Pn	20 12 58.4	+0.7
AVH				eS	Sn	20 13 54.4	-0.5
AVH	Avacha	5.00	248	PN	Pn	20 12 58.4	+0.7
AVH				S	Sn	20 13 54.4	-0.5
KRX	Arik	5.00	249	eP	Pn	20 12 58.3	+0.5
KRX				eS	Sn	20 13 53.8	-1.2
KOK	Koryaka	5.04	249	eP	Pn	20 12 59.1	+0.8
KOK				eS	Sn	20 13 54.7	-1.2
KOK	Koryaka	5.04	249	PN	Pn	20 12 59.1	+0.8
TILK	Tilichiki	5.07	358	eP	Pn	20 12 58.6	0.0
DALK	Dalny	5.11	246	eP	Pn	20 12 59.2	+0.2
DALK				eS	Sn	20 13 55.5	-1.8
PET	Petropavlovsk	5.16	246	eP	Pn	20 13 00.3	+0.5
PET				eS	Sn	20 13 58.1	-0.6
PET	Petropavlovsk	5.16	246	ePN	Pn	20 13 00.3	+0.5
PET				pmax	pmax		
	comp=Z,44nm,0.3s						
GNL	Ganaly	5.25	255	eP	Pn	20 13 02.1	+1.0
GNL	Ganaly	5.25	255	PN	Pn	20 13 02.1	+1.0
KRMR	Karymshinskiy	5.54	246	eP	Pn	20 13 05.8	+0.9
KRMR				eS	Sn	20 14 07.7	-0.2
RUS	Russkaya	5.56	241	eP	Pn	20 13 05.4	+0.2
RUS				eS	Sn	20 14 07.0	-1.4
RUS				eS	Sb	20 14 07.1	-19
RUS	Russkaya	5.56	241	PN	Pn	20 13 05.4	+0.2
PETK	Petropavlovsk-	5.63	250	Pn	Pn	20 13 06.8	+0.6
	comp=Z,4.4nm,0.3s,baz=74,slow=19,SNR=44						
PETK				Sn	Sn	20 14 12.2	+2.0
	comp=Z,3.8nm,0.3s,baz=142,slow=3.6,SNR=9.2						
PETK				LR	LR	20 15 31.9	
	comp=Z,90nm,19.3s,baz=75,slow=41						
MTVR	Mutnovka	5.69	243	eP	Pn	20 13 07.8	+0.5
MTVR				eS	Sn	20 14 10.6	-1.4
ASAK	Asacha	5.89	243	eP	Pn	20 13 11.3	+1.4
APC	Apacha	6.00	250	eP	Pn	20 13 13.3	+2.0
APC				eS	Sn	20 14 20.2	+0.8
APC	Apacha	6.00	250	PN	Pn	20 13 13.3	+2.0
KMSK	Kamenskaya	7.10	359	eP	Pn	20 13 26.8	+0.5
MA2	Magadan	9.43	303	LR	LR	20 17 04.7	
	comp=Z,24nm,18.6s,baz=154,slow=35						
YAK	Yakutsk	20.00	304	LR	LR	20 23 26.7	
	comp=Z,34nm,19.0s,baz=82,slow=36						
KLR	Kul'dur	21.93	268	LR	LR	20 25 00.4	
	comp=Z,32nm,18.6s,baz=112,slow=36						
ILAR	Eielson Array	24.51	49	P	P	20 17 01.1	-0.3
	comp=Z,4.4nm,0.9s,baz=261,slow=8.2,SNR=28						
INK	Inuvik	29.73	40	P	P	20 17 48.4	+0.4
	comp=Z,1.0nm,0.8s,baz=244,slow=12,SNR=3.8						
KSRS	Korea Array	31.52	252	LR	LR	20 29 43.7	
	comp=Z,16nm,21.6s,baz=130,slow=34						
H11N2	WAKE ISLAND Hy	35.60	179	T	T	20 56 01.1	
	baz=0.2,slow=76,SNR=89						
H11N3	WAKE ISLAND Hy	35.62	179	T	T	20 56 02.1	
	baz=0.2,slow=76,SNR=62						
H11N1	WAKE ISLAND Hy	35.62	179	T	T	20 56 04.8	
	baz=0.2,slow=76,SNR=65						
H11S1	WAKE ISLAND Hy	36.82	180	T	T	20 57 34.9	
	baz=2.7,slow=74						
H11S3	WAKE ISLAND Hy	36.83	180	T	T	20 57 30.1	
	baz=2.7						
H11S2	WAKE ISLAND Hy	36.84	180	T	T	20 57 36.2	
	baz=2.7,slow=74						
SONM	Songino Array	37.00	284	P	P	20 18 52.5	+0.8
	comp=Z,0.8nm,0.7s,baz=58,slow=8.6,SNR=7.3						
YKA	Yellowknife Ar	38.90	47	P	P	20 19 07.9	+0.5
	comp=Z,0.9nm,0.8s,baz=297,slow=8.1,SNR=8.6						
SPITS	Spitsbergen Ar	45.44	352	P	P	20 20 00.8	+0.2
	comp=Z,3.8nm,0.8s,baz=64,slow=9.8,SNR=10						
YBH	Yreka Blue Hor	46.77	76	LR	LR	20 38 36.9	
	comp=Z,37nm,18.2s,baz=331,slow=34						
KURK	Kurchatov	49.64	304	P	P	20 20 33.0	-0.5
KURK				pmax	pmax		
	comp=Z,1.0nm,0.4s						
KURBB	Kurchatov Arra	49.75	303	P	P	20 20 33.0	-1.3
	comp=Z,0.5nm,0.5s,baz=56,slow=8.1,SNR=6.6						
MKAR	Makanchi Array	50.47	298	P	P	20 20 38.4	-1.5
	comp=Z,0.4nm,0.5s,baz=48,slow=6.2,SNR=6.2						
MKAR				LR	LR	20 45 36.4	
	comp=Z,12nm,18.9s,baz=26,slow=40						
NVAR	Mina Array Bea	51.49	76	P	P	20 20 49.1	+1.2
	comp=Z,0.5nm,0.7s,baz=309,slow=9.0,SNR=3.4						
BVAR	Borovoye Array	51.83	310	P	P	20 20 48.2	-1.8
	comp=Z,0.9nm,0.8s,baz=46,slow=6.4,SNR=5.0						
TXAR	Lajitas Array	66.33	72	P	P	20 22 31.0	+0.1
	comp=Z,1.3nm,0.6s,baz=323,slow=6.2,SNR=6.6						
WRA	Warramunga Arr	79.86	211	P	P	20 23 52.2	+1.6
	comp=Z,0.6nm,0.9s,baz=22,slow=6.1,SNR=2.8						

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*IDC **04** 20:23:18.7±0.9, 25°.77S×70°.73W, h0km, mb4.1/6, mb1 4.1/9, mb1mx3.9/35, mbtmp4.0/9, ML3.5/3, MS3.3/3, Ms1 3.3/3, ms1mx3.0/25, Error ellipse: s-maj=39.9km s-min=21.7km az=118.0*
*ISCJB **04** 20:23:21.1±0.8, 25°.73S±0°.04×71°.3W±0°.1, h33km, mb4.0/6, MS4.3/2, Error ellipse: s-maj=13.0km s-min=5.0km az=3.7*
*GUC **04** 20:23:22.4±0.7, 25°.77S×71°.19W, h47km±999km, ML4.0*
ISC 04 20:23:22.6±0.8**, 25°.70S**±0°.05×**71°.39W**±0°.10**, h35**km**, n36,** σ1s.81/30**, mb4.0**/6**, 1C-1D, Off coast of northern Chile**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
CPCH	Copiapo	1.89	151⇑	iP	Pn	20 23 51.3	-1.2
CPCH				i S	Sn	20 24 12.4	-2.7
ANCH	Antofagasta	2.20	24⇓	iP	Pn	20 23 56.8	+0.1
ANCH				i S	Sn	20 24 21.8	-0.9
ANCH				AML	AML	20 24 36.0	
	comp=N,1μm,1.2s						
VACH	Vallenar	2.92	169	eP	Pn	20 24 05.7	-0.8
VACH				i S	Sn	20 24 38.1	-2.3
VCA	Vinchina	4.14	138	eP	Pn	20 24 24.3	+0.7
VCA				eS	Sn	20 25 15.6	+4.6
VCA				IAML		20 25 27.3	
	comp=Z,369nm,0.9s						
AGUA	GUANDACOL	4.56	146	eP	Pn	20 24 29.8	+0.5
FSA	Cafayete	4.89	96	eP	Pn	20 24 34.0	+0.1
ACLC	CERRO LA CRUZ	5.41	134	IAML		20 25 47.6	
	comp=Z,153nm,0.4s						
AHML	Horco Molle	5.55	103	eP	Pn	20 24 43.9	+1.1
CYA	Choya	5.68	120	eP	Pn	20 24 44.2	-0.3
AZAP	Zapla	5.93	77	eP	Pn	20 24 48.4	+0.2
AVFE	Valle Fertil	6.04	146	IAML		20 26 04.7	
	comp=Z,202nm,0.8s						
RTLL	Cerro Villicun	6.17	156	eP	Pn	20 24 51.2	-0.1
RTLS	Leoncito	6.35	164	eP	Pn	20 24 54.6	+0.7
RTCV	Cerro Valdivia	6.63	158	eP	Pn	20 24 57.3	-0.3
ROCH	El Roble	7.25	177	eP	Pn	20 25 04.7	-1.6
ACAN	Cantantal	7.51	152	eP	Pn	20 25 10.1	+0.4
LPAZ	La Paz	9.85	19	Pn	Pn	20 25 42.3	-0.1
	comp=Z,0.2nm,0.3s,baz=180,slow=2.0,SNR=3.4						
LPAZ				LR	LR	20 29 51.2	
	comp=Z,90nm,21.9s,baz=216,slow=40						
CPUP	Villa Florida	12.66	96	LR	LR	20 31 26.9	
	comp=Z,108nm,18.1s,baz=242,slow=40						
SIV	San Ignacio	13.65	47	Pn	Pn	20 26 28.8	-5.0
	comp=Z,0.4nm,0.3s,baz=226,slow=4.7,SNR=3.9						
PLCA	Paso Flores	15.01	178	Pn	Pn	20 26 52.6	+0.4
	comp=Z,0.0nm,0.3s,baz=218,slow=19,SNR=2.2						
BDFB	Brasilia	24.02	70	P	P	20 28 29.8	-4.8
	comp=Z,1.9nm,0.5s,baz=245,slow=17,SNR=3.1						
H06E1	SOCORRO T-PHAS	58.59	315	T	T	21 37 16.8	
ANMO	Albuquerque	68.86	330	LR	LR	21 00 17.8	
	comp=Z,672nm,19.9s,baz=31,slow=32						
DBIC	Dimbokro	72.12	73	P	P	20 34 42.1	-1.9
	comp=Z,1.3nm,0.6s,baz=180,slow=13,SNR=3.3						
VNDA	Vanda	72.33	191	P	P	20 34 46.9	+2.6
	comp=Z,1.7nm,1.0s,baz=139,slow=2.8,SNR=4.5						
PFO	Pinyon Flats O	72.89	322	LR	LR	21 04 09.1	
	comp=Z,47nm,18.1s,baz=119,slow=33						
TORD	Torodi Ar. Bea	80.90	71	P	P	20 35 32.5	-1.2
	comp=Z,3.0nm,0.6s,baz=265,slow=5.0,SNR=45						
MAW	Mawson	80.96	164	P	P	20 35 33.7	+0.6
	comp=Z,1.4nm,0.5s,baz=203,slow=7.7,SNR=5.0						
YKA	Yellowknife Ar	94.40	341	P	P	20 36 41.0	+2.7
	comp=Z,0.5nm,0.8s,baz=141,slow=4.9,SNR=4.1						
ASAR	Alice Springs	125.15	209	PKP	PKPdf	20 42 21.4	+1.3
	comp=Z,0.4nm,0.8s,baz=164,slow=3.7,SNR=3.3						
H11S2	WAKE ISLAND Hy	126.05	275	T	T	23 01 50.2	
	baz=108,slow=75,SNR=29						
H11S1	WAKE ISLAND Hy	126.06	275	T	T	23 01 49.7	
	baz=108,slow=75,SNR=25						
H11S3	WAKE ISLAND Hy	126.06	275	T	T	23 01 49.5	
	baz=108,slow=75,SNR=25						
WRA	Warramunga Arr	128.19	211	PKP	PKPdf	20 42 26.5	+0.5
	comp=Z,0.8nm,0.8s,baz=166,slow=1.5,SNR=4.7						
ZALV	Zalesovo Beam	146.71	26	PKPbc	PKPab	20 43 00.9	-0.7
	comp=Z,3.3nm,0.6s,baz=310,slow=3.9,SNR=9.5						
MKAR	Makanchi Array	150.35	38	PKPbc	PKPbc	20 43 11.4	+1.2
	comp=Z,1.1nm,0.6s,baz=323,slow=2.3,SNR=15						

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*NEIC **04** 20:27:03.3, 17°.43N×94°.78W, h139km, MD4.1(MEX), After MEX.*
MEX 04 20:27:03.7±0.7**, 17°.42N**×**94°.80W, h132**km±20km**, MD4.1, Chiapas**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
TGIG		1.73	112	i P	Pn	20 27 33.1	-1.4
TGIG				eS	Sn	20 27 56.3	-1.9
TGIG		1.73	112	i P	Pn	20 27 33.1	-1.4
TGIG				eS	Sn	20 27 56.3	-1.9
TGBT	Tuxtla Gutierr	1.76	111	eP	Pn	20 27 33.4	-1.5
TGBT				eS	Sn	20 27 57.2	-1.5
OXBJ	Oaxaca	1.87	259	eP	Pn	20 27 35.7	-0.8
OXBJ				eS	Sn	20 27 59.5	-1.9
VHO	Vista Hermosa	1.88	260	eP	Pn	20 27 36.0	-0.5
VHO				eS	Sn	20 28 03.3	+1.7
VHO	Vista Hermosa	1.88	260	eP	Pn	20 27 36.0	-0.5
VHO				eS	Sn	20 28 00.8	-0.8
HUIG	Huatulco	2.07	218	eP	Pn	20 27 36.6	-2.1
HUIG				eP	Pn	20 27 36.6	-2.1
HUIG	Huatulco	2.07	218	eP	Pn	20 27 36.6	-2.1
PCIG		2.28	138	i P	Pn	20 27 40.8	-0.4
PCIG				eS	Sn	20 28 09.3	-0.8
PCIG		2.28	138	i P	Pn	20 27 40.8	-0.4
PCIG				eS	Sn	20 28 09.3	-0.8
TPIG	Tehuac#an	2.63	293	i P	Pn	20 27 44.5	-1.4
TPIG				eS	Sn	20 28 16.6	-1.6
TPIG	Tehuac#an	2.63	293	i P	Pn	20 27 44.5	-1.4
TPIG				eS	Sn	20 28 16.6	-1.6
CCIG	Comitan	2.79	114	eP	Pn	20 27 45.3	-2.5
CCIG				eS	Sn	20 28 20.8	-1.1
CCIG	Comitan	2.79	114	eP	Pn	20 27 46.0	-1.9
CCIG				eS	Sn	20 28 20.8	-1.1

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*JMA **04** 20:32:27.0±0.7, 43°.69N×148°.18E, h13km, M3.1*
*SKHL **04** 20:32:27.5±0.6, 43°.93N×148°.34E, h25km±1km, mb3.8/1*
ISC 04 20:32:25.4±3.1**, 43°.99N**±0°.10×**148°.3E**±0°.1**, h7**km±13km**, n10,** σ0s.95/17**, East of Kuril Islands**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
SHO	Shikotan	1.08	264	eP	Pg	20 32 46.1	0.0
SHO				AMB	AMB	20 32 47.0	
	20nm,0.2s						
SHO				i S	Sg	20 33 00.4	+0.4
SHO				A	A	20 33 01.4	
	360nm,0.4s						
SHO				A	A	20 33 01.4	
	180nm,0.4s						
KUR	Kuril'sk	1.29	346	eP	Pg	20 32 49.7	-0.4
KUR				eS	Sg	20 33 05.9	-0.9
KUR				A	A	20 33 08.1	
	170nm,0.4s						
KUR				A	A	20 33 08.1	
	70nm,0.4s						
YUK	Yuzh-Kuril'sk	1.77	272	eP	Pn	20 32 56.4	0.0
YUK				eS	Sn	20 33 18.2	-0.9
YUK				A	A	20 33 21.6	
	100nm,0.5s						
YUK				A	A	20 33 21.6	
	140nm,0.5s						
NEM2	Nemuro 2	1.96	252	P	Pn	20 32 58.7	-0.4
JRA	Rausu	2.30	270	P	Pn	20 33 04.6	+0.9
JRA				eS	Sn	20 33 32.4	+0.1
JNK	Nakash	2.63	262	P	Pn	20 33 08.5	+0.2
JNK				eS	Sn	20 33 40.1	-0.4
JAR	Ashorobuto	3.37	260	eS	Sn	20 33 57.5	-1.1
JCH	Churui	3.87	251	P	Pn	20 33 25.9	+0.7
JCH				eS	Sn	20 34 09.5	-1.3
JNBK	Urakawa-nobuka	4.41	249	P	Pn	20 33 33.9	+1.2
JNBK				eS	Sn	20 34 24.1	-0.2
YSS	Yuzh-Sakhalins	4.91	309	eP	Pn	20 33 41.5	+2.0

IDC 04 20:35:39.3±2.0**, 2°.20N**×**127°.32E, h0**km**, mb3.5**/4**, mb1 3.7**/4**, mb1mx3.4**/43**, mbtmp3.5**/4**, Error ellipse: s-maj=163.2km s-min=25.5km az=66.0, Northern Molucca Sea**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
WRA	Warramunga Arr	23.06	163	P	P	20 40 47.1	+0.6
	1.1nm,0.6s,baz=340,slow=10,SNR=11						
ASAR	Alice Springs	26.50	166	P	P	20 41 19.3	+0.7
	0.3nm,0.5s,baz=356,slow=8.0,SNR=11						
STKA	Stephens Creek	36.50	159	P	P	20 42 44.6	-1.8
	0.8nm,0.6s,baz=324,slow=8.7,SNR=3.6						
MKAR	Makanchi Array	59.14	326	P	P	20 45 42.2	+0.2
	0.1nm,0.4s,baz=109,slow=7.1,SNR=4.1						

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*NIED **04** 20:43:00, 36°.30N×140°.90E, h35km, Mw4.4 Best double couple: $M_0$4.70000×10^15 NP1:ϕ_s162.00000°, δ7.00000°, λ46.00000°. NP2:ϕ_s26.00000°, δ85.00000°, λ95.00000°.*
*IDC **04** 20:43:52.7±0.5, 36°.29N×140°.91E, h0km, mb4.3/24, mb1 4.4/29, mb1mx4.3/43, mbtmp4.3/29, ML3.4/4, MS3.6/17, Ms1 3.6/17, ms1mx3.4/30, Error ellipse: s-maj=14.4km s-min=11.6km az=107.0*
*ISCJB **04** 20:43:55.2±0.7, 36°.29N±0°.03×141°.04E±0°.04, h31km±4km, mb4.4/55, MS3.7/15, Error ellipse: s-maj=6.0km s-min=4.5km az=29.7*
*MOS **04** 20:43:55.2±1.1, 36°.32N×141°.03E, h30km, mb4.8/20, Error ellipse: s-maj=8.8km s-min=5.8km az=108.9*
*NEIC **04** 20:43:56.9±1.9, 36°.28N×140°.90E, h28km±13km, mb4.6/17, Error ellipse: s-maj=7.8km s-min=6.0km az=81.0*
NEIC Recorded [4 JMA] in Ibaraki.
*BJI **04** 20:43:56.3, 36°.09N×140°.83E, h40km, mb4.7/29, mB4.8/15, Ms3.9/4, Ms7 3.9/6*

JMA 04 20:43:57.0±0.1, 36°.30N×140°.92E, h41km±1km, M4.3
JMA Felt IV J1.

ISC 04 20:43:56.3±0.7, 36°.29N±0°.04×140°.98E±0°.05, h25km±4km, n149, σ1s.20/140, mb4.5/55, MS3.6/15, 11C-4D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHO	Hitachi	0.46	314	P	Pb	20 44 06.4	+0.5
JHO				S	Sb	20 44 12.8	+0.4
JYT	Yasato	0.64	265	P	Pb	20 44 09.0	+0.2
JYT				S	Sb	20 44 17.0	-0.3
ONAJ	Iwakimizuishiy	0.82	350	P	Pb	20 44 11.5	-0.5
ONAJ				S	Sb	20 44 21.6	-1.1
JFK	Kawauchi	1.08	356	P	Pn	20 44 14.8	-1.1
JFK				S	Sn	20 44 27.5	-2.5
JAG	Ashikaga	1.24	277	P	Pn	20 44 17.6	-0.4
JAG				S	Sn	20 44 32.2	-1.7
JFT	Otama	1.33	337	P	Pn	20 44 19.8	+0.5
JFT				S	Sn	20 44 36.0	-0.2
MJAR	Matsushiro Arr	2.25	277	Pn	Pn	20 44 31.7	-0.2
	43nm,0.3s,baz=115,slow=8.9,SNR=406						
MJAR				Sn	Sn	20 45 00.5	+1.6
	86nm,0.3s,baz=85,slow=24,SNR=11						
MAJO	Matsushiro	2.25	277c	iP	Pn	20 44 33.0	+1.1
MAJO	Matsushiro	2.25	277	ePn	Pn	20 44 32.9	+1.0
MAT	Matsushiro	2.25	277	P	Pn	20 44 32.6	+0.7
MAT				S	Sb	20 45 01.4	-2.2
JHJ2	Mitsune	3.31	197	eP	Pn	20 44 48.2	+1.7
JHJ	Hachijo jima 2	3.31	198	Pn	Pn	20 44 47.0	+0.5
	20nm,0.3s,baz=107,slow=19,SNR=3.2						
JHJ				Sn	Sn	20 45 28.2	+3.2
	81nm,0.3s,baz=242,slow=22,SNR=7.0						
JHJ				LR	LR	20 46 06.7	
	comp=Z,380nm,20.2s,baz=159,slow=41						
ERM	Erimo	5.96	16c	iP	Pn	20 45 23.3	+0.4
YUK	Yuzh-Kuril'sk	8.59	24	eP	Pn	20 46 02.0	+3.1
YUK				eS	Sn	20 47 32.2	-2.8
YUK				pmax	pmax		
	comp=Z,113nm,0.8s						
YUK				pmax	pmax		
	comp=N,52nm,0.5s						
YUK				pmax	pmax		
	comp=E,58nm,0.4s						
SHO	Shikotan	8.80	29	eP	Pn	20 46 01.7	-0.1
SHO				eS	Sn	20 47 32.2	-7.9
SHO				pmax	pmax		
	comp=Z,36nm,0.6s						
SHO				pmax	pmax		
	comp=N,33nm,0.7s						
SHO				pmax	pmax		
	comp=E,11nm,0.7s						
JNU	Nakatsue	8.89	252	Pn	Pn	20 46 01.1	-2.1
	comp=E,0.2nm,0.3s,baz=300,slow=8.1,SNR=2.2						
JNU				LR	LR	20 49 48.1	
	comp=E,569nm,19.1s,baz=106,slow=40						
CBIJ	Chichi jima	9.22	173	Pn	Pn	20 46 06.7	-1.0
CBIJ				Sn	Sn	20 47 46.5	-4.1
JCJ	Chichijima	9.22	173	Pn	Pn	20 46 06.7	-1.0
	comp=E,19nm,0.3s,baz=345,slow=23,SNR=11						
JCJ				Sn	Sn	20 47 46.5	-4.1
	comp=E,17nm,0.3s,baz=289,slow=23,SNR=7.0						
JCJ				LR	LR	20 48 50.1	
	comp=E,483nm,21.1s,baz=330,slow=32						
KUR	Kuril'sk	10.35	28	eP	Pn	20 46 23.8	+0.8
KUR				eS	Sn	20 48 11.4	-6.7
USRK	Ussuriysk Ar.	10.46	322	Pn	Pn	20 46 27.3	+2.7
	comp=E,1.0nm,0.3s,baz=135,slow=13,SNR=23						
USRK				LR	LR	20 50 12.6	
	comp=E,386nm,19.1s,baz=126,slow=36						
KSRS	Korea Array	10.53	280	Pn	Pn	20 46 30.1	+4.6
	comp=E,0.3nm,0.3s,baz=93,slow=14,SNR=11						
KSRS				LR	LR	20 50 21.3	
	comp=E,300nm,21.4s,baz=80,slow=37						
KSAR	Wonju Array Be	10.55	280	P	Pn	20 46 30.1	+4.2
KSAR	Wonju Array Be	10.55	280	Pn	Pn	20 46 30.1	+4.2
YSS	Yuzh-Sakhalins	10.74	7⇑	eP	Pn	20 46 21.8	-6.6
MDJ	Mudanjiang	12.01	317	P	Pn	20 46 50.7	+5.0
MDJ				pmax	pmax		
	comp=E,10.0nm,1.1s						
MDJ				pmax	pmax		
	comp=E,39nm,3.1s						
MDJ				LR	LR		
	comp=E,240nm,14.8s						
MDJ				LR	LR		
	comp=E,130nm,13.4s						
MDJ				LR	LR		
	comp=E,330nm,18.2s						
MDJ	Mudanjiang	12.01	317	eP	Pn	20 46 46.8	+1.1
	comp=E,9.1nm,0.8s						
KLR	Kul'dur	14.59	335	Pn	Pn	20 47 19.7	-1.2
	comp=E,0.1nm,0.3s,baz=285,slow=20,SNR=3.5						
KLR				LR	LR	20 52 52.8	
	comp=E,238nm,19.4s,baz=114,slow=37						
TYV	Tymovskoe	14.62	4	eP	Pn	20 47 20.8	-0.6
TYV				pmax	pmax		
	comp=Z,20nm,0.8s						
TYV				MLR	MLR		
	comp=Z,500nm,14.0s						
SKR	Severo-Kuril's	18.05	32⇑	eP	P	20 48 12.5	+7.1
TIA	Tai'an	19.23	277	⇓P	P	20 48 17.6	-1.0
TIA				pmax	pmax		
	comp=Z,30nm,0.8s						
BJT	Baijiatuau	19.84	288	eP	P	20 48 24.5	-0.8
BJT				pmax	pmax		
	comp=Z,21nm,1.0s						
BJT	Baijiatuau	19.84	288	eP	P	20 48 24.5	-0.8
	comp=Z,21nm,1.0s						
WHN	Wuhan	22.92	263	P	P	20 48 58.0	-0.3
WHN				pmax	pmax		
	comp=Z,29nm,0.6s						
MA2	Magadan	24.16	12	P	P	20 49 10.2	+0.1
	comp=Z,3.4nm,0.4s,baz=219,slow=7.2,SNR=9.5						
MA2				LR	LR	21 00 18.9	
	comp=Z,77nm,18.3s,baz=176,slow=41						
MA2	Magadan	24.16	12	eP	P	20 49 10.2	+0.1
MA2				pmax	pmax		
	comp=Z,46nm,1.0s						
MA2	Magadan	24.16	12	eP	P	20 49 10.2	+0.1
	comp=Z,46nm,1.0s						
XAN	Xi'an	26.24	275	P	P	20 49 28.5	-0.9
XAN				pmax	pmax		
	comp=Z,8.0nm,0.7s						
XAN				pmax	pmax		
	comp=Z,99nm,5.4s						
XAN				LR	LR		
	comp=Z,530nm,18.9s						
XAN				LR	LR		
	comp=Z,580nm,18.9s						
YAK	Yakutsk	26.72	348	LR	LR	21 00 08.3	
	comp=Z,115nm,20.2s,baz=150,slow=36						
YAK	Yakutsk	26.72	348	eP	P	20 49 31.9	-1.4
YAK				pmax	pmax		
	comp=Z,20nm,1.0s						
YAK				pmax	pmax		
	comp=N,12nm,1.2s						
ENH	Enshi	26.93	266	eP	P	20 49 34.5	-1.1
	comp=N,22nm,0.8s						
ULN	Ulaanbaatar	27.49	306⇑	eP	P	20 49 40.3	-0.4
ULN				pmax	pmax		
	comp=Z,4.0nm,1.0s						
ULN	Ulaanbaatar	27.49	306	eP	P	20 49 39.9	-0.8
	comp=Z,3.9nm,0.9s						
SEY	Seymchan	27.59	11	P	P	20 49 43.0	+1.9
	comp=Z,12nm,0.9s,baz=200,slow=7.7,SNR=41						
SEY	Seymchan	27.59	11⇓	eP	P	20 49 45.2	+4.1
SONM	Songino Array	27.92	305	P	P	20 49 43.8	-0.6
	comp=Z,3.1nm,0.8s,baz=103,slow=9.2,SNR=26						
SONM				PcP	PcP	20 53 00.2	+0.7
	comp=Z,0.1nm,0.4s,baz=115,slow=2.8,SNR=4.0						
SONM				LR	LR	21 01 08.8	
	comp=Z,152nm,19.9s,baz=73,slow=37						
BOD	Bodaibo	27.98	329	eP	P	20 49 43.8	-0.9
BOD				pmax	pmax		
	comp=Z,15nm,0.8s						
H11N2	WAKE ISLAND Hy	28.08	119	T	T	21 18 59.1	
	baz=312,slow=75,SNR=81						
H11N1	WAKE ISLAND Hy	28.09	119	T	T	21 19 05.5	
	baz=312,slow=75,SNR=111						
H11N3	WAKE ISLAND Hy	28.10	119	T	T	21 19 11.4	
	baz=312,slow=75,SNR=58						
H11S1	WAKE ISLAND Hy	28.76	121	T	T	21 19 58.3	
	baz=314,slow=76,SNR=368						
H11S3	WAKE ISLAND Hy	28.76	121	T	T	21 19 57.2	
	baz=314,slow=76,SNR=239						
H11S2	WAKE ISLAND Hy	28.78	121	T	T	21 20 04.3	
	baz=314,slow=76,SNR=225						
ZAK	Zakamensk	30.46	309	eP	P	20 50 01.4	-5.6
ZAK				pmax	pmax		
	comp=Z,2.0nm,1.0s						
TLY	Talaya	30.56	312	LR	LR	21 03 00.2	
	comp=Z,102nm,19.5s,baz=90,slow=38						
TLY	Talaya	30.56	312	eP	P	20 50 07.6	-0.1
TLY				pmax	pmax		
	comp=Z,4.0nm,1.1s						
TLY				MLR	MLR		
	comp=Z,136nm,18.0s						
GYA	Guiyang	30.75	261⇑	iP	P	20 50 08.5	-1.3
GYA				pmax	pmax		
	comp=Z,20nm,0.8s						
GTA	Gaotai	32.45	288	eP	P	20 50 23.3	-1.3
GTA				pP	pP	20 50 32.6	+0.5
GTA				sP	sP	20 50 37.0	+1.8
GTA				pmax	pmax		
	comp=Z,2.0nm,1.1s						
BILL	Bilibino	34.84	16⇑	eP	P	20 50 45.9	+1.0
BILL				e		20 51 56.2	
BILL				pmax	pmax		
	comp=Z,2.0nm,0.9s						
BILL				MLR	MLR		
	comp=Z,67nm,17.0s						
TIXI	Tiksi	35.99	354⇑	eP	P	20 50 53.7	-1.0
TIXI				pmax	pmax		
	comp=Z,14nm,2.5s						
TIXI	Tiksi	35.99	354	eP	P	20 50 53.5	-1.2
	comp=Z,2.1nm,0.7s						
CMAR	Chiang Mai Arr	40.97	256	P	P	20 51 37.4	+0.2
	comp=Z,0.7nm,0.7s,baz=42,slow=6.5,SNR=7.0						
CMAR				LR	LR	21 09 12.7	
	comp=Z,70nm,18.9s,baz=47,slow=37						
LSA	Lhasa	41.93	276	eP	P	20 51 46.1	+0.6
LSA				pmax	pmax		
	comp=Z,7.0nm,1.0s						
LSA	Lhasa	41.93	276	eP	P	20 51 46.1	+0.6
	comp=Z,7.1nm,1.0s						
ZALV	Zalesovo Beam	42.16	313	P	P	20 51 46.5	0.0
	comp=Z,16nm,0.8s,baz=91,slow=6.5,SNR=37						
ZALV				LR	LR	21 10 00.3	
	comp=Z,49nm,18.0s,baz=18,slow=37						
NVS	Novosibirsk	43.10	314	iP	P	20 51 54.1	0.0
NRIK	Noril'sk	43.80	336	P	P	20 51 59.3	-0.2
	comp=Z,1.3nm,0.3s,baz=136,slow=6.4,SNR=5.4						
NRIK				LR	LR	21 11 08.0	
	comp=Z,82nm,18.3s,baz=112,slow=37						
MKAR	Makanchi Array	44.22	303	P	P	20 52 03.4	+0.1
	comp=Z,9.4nm,0.9s,baz=90,slow=9.8,SNR=76						
MKAR				PcP	PcP	20 53 48.2	+0.6
	comp=Z,1.1nm,0.7s,baz=83,slow=5.5,SNR=3.5						
TAPN	Taplejung	45.65	274	eP	P	20 52 15.3	+0.1
	comp=Z,7.4nm,0.6s						
ODAN	Odare	46.11	274	eP	P	20 52 18.9	+0.1
	comp=Z,7.6nm,0.6s						
KURK	Kurchatov	46.12	309	eP	P	20 52 17.5	-0.7
KURK				pmax	pmax		
	comp=Z,20nm,0.7s						
KURK	Kurchatov	46.12	309	eP	P	20 52 17.5	-0.7
	comp=Z,20nm,0.7s						
RAMN	Ramite	46.71	275	eP	P	20 52 23.5	0.0
	comp=Z,38nm,0.9s						
GUN	Gumba	46.88	276	eP	P	20 52 25.4	+0.4
KKN	Kakani	47.41	276	eP	P	20 52 29.3	+0.3
	comp=Z,35nm,0.9s						
GKN	Gorkha	47.84	277	eP	P	20 52 32.3	+0.1
	comp=Z,69nm,1.0s						
KOLN	Koldanda	48.77	277	eP	P	20 52 39.8	+0.3
	comp=Z,21nm,0.9s						
PYUN	Piuthan	49.12	278	eP	P	20 52 42.7	+0.5
	comp=Z,104nm,1.1s						
TKM2	Tokmak 2	49.68	299	eP	P	20 52 46.8	+0.6
TKM2				pmax	pmax		
	comp=Z,5.0nm,0.6s						
TKM2	Tokmak 2	49.68	299	eP	P	20 52 46.8	+0.6
	comp=Z,5.1nm,0.6s						
ILAR	Eielson Array	50.31	32	P	P	20 52 51.5	+1.1
	comp=Z,1.0nm,0.7s,baz=268,slow=6.1,SNR=12						
KSH	Kashi	50.39	294	P	P	20 52 55.5	+3.9
KSH				pmax	pmax		
	comp=Z,6.0nm,0.6s						
KSH				pmax	pmax		
	comp=Z,60nm,5.7s						
AAK	Ala-Archa	50.54	299d	iP	P	20 52 53.2	+0.5
AAK				pmax	pmax		
	comp=Z,6.0nm,0.9s						
BRVK	Borovoye	50.87	313d	iP	P	20 52 55.0	+0.2
BRVK				pmax	pmax		
	comp=Z,15nm,2.5s						
BRVK	Borovoye	50.87	313	eP	P	20 52 55.3	+0.5
	comp=Z,3.6nm,0.8s						
GSI	Gunungsitoli	53.12	239	eP	P	20 53 12.5	+0.5
	comp=Z,7.3nm,0.6s						
KKAR	Karatay Array	53.20	300	eP	P	20 53 12.2	-0.1
KKAR				pmax	pmax		
	comp=Z,6.0nm,0.9s						
KKAR	Karatay Array	53.20	300	eP	P	20 53 12.2	-0.1
	comp=Z,6.1nm,0.9s						
INK	Inuvik	55.21	27	P	P	20 53 28.3	+1.8
	comp=Z,1.8nm,0.7s,baz=305,slow=6.2,SNR=12						
SVE	Sverdlovsk	55.48	319	eP	P	20 53 28.8	+0.2
SVE				pmax	pmax		
	comp=Z,22nm,0.9s						
WRA	Warramunga Arr	56.28	188	P	P	20 53 34.7	-0.1
	comp=Z,1.8nm,0.6s,baz=6.3,slow=7.3,SNR=20						
ARU	Arti	56.69	319	LR	LR	21 19 48.4	
	comp=Z,47nm,19.8s,baz=102,slow=38						
ARU	Arti	56.69	319c	iP	P	20 53 37.0	-0.3
ARU				S	S	21 01 20.1	-8.0
ARU				pmax	pmax		
	comp=Z,23nm,0.8s						
ARU	Arti	56.69	319	eP	P	20 53 36.7	-0.6
	comp=Z,23nm,0.9s						
HYB	Hyderabad	57.83	269	iP	P	20 53 46.0	0.0
ABKAR	Akbulak array	58.15	310	eP	P	20 53 47.3	-0.4
	comp=Z,9.1nm,0.8s						
ASAR	Alice Springs	60.00	187	P	P	20 54 01.1	+0.3
	comp=Z,1.9nm,0.7s,baz=12,slow=7.8,SNR=19						
RES	Resolute Bay	63.41	14	P	P	20 54 23.5	+0.4
	comp=Z,3.3nm,0.8s,baz=322,slow=6.3,SNR=16						
GEYT	Alibeck	63.89	299	P	P	20 54 27.1	+0.2
	comp=Z,2.9nm,0.8s,baz=79,slow=3.2,SNR=7.3						
ARCES	ARCESS Array B	64.57	339	P	P	20 54 30.7	-0.2
	comp=Z,2.4nm,0.7s,baz=66,slow=7.2,SNR=6.6						
YKA	Yellowknife Ar	64.63	30	P	P	20 54 30.3	-1.0
	comp=Z,0.6nm,0.7s,baz=304,slow=6.8,SNR=13						
STKA	Stephens Creek	67.81	179	P	P	20 54 52.1	+0.1
	comp=Z,1.3nm,0.7s,baz=348,slow=10,SNR=3.8						
STKA				LR	LR	21 27 09.3	
	comp=Z,43nm,18.4s,baz=206,slow=38						
OBN	Obninsk	68.48	323c	eP	P	20 54 55.6	-0.4
OBN				e		20 57 25.2	
OBN				ePPP	PPP	20 59 03.1	
OBN				eS	S	21 04 00.8	+4.7
OBN				eSS	SS	21 08 20.3	+1.0
OBN				pmax	pmax		
	comp=Z,7.0nm,0.5s						
OBN				MLR	MLR		
	comp=Z,52nm,14.0s						
LPSR	Galich'ya Gora	68.65	320	eP	P	20 54 56.6	-0.5
LPSR				pmax	pmax		
	comp=Z,10.0nm,1.0s						
VSR	Storozhevoye	69.26	319	eP	P	20 54 59.7	-1.3
FINES	FINESS Array B	69.31	332	P	P	20 55 01.1	+0.1
	comp=Z,7.6nm,0.8s,baz=58,slow=7.5,SNR=22						
KBZ	Khabaz	71.12	311	P	P	20 55 12.6	+0.1
	comp=Z,6.0nm,0.9s,baz=76,slow=2.5,SNR=8.4						
KBZ				LR	LR	21 28 33.1	
	comp=Z,62nm,18.8s,baz=78,slow=38						
KIV	Kislovodsk	71.13	311	eP	P	20 55 14.3	+1.6
KIV				pmax	pmax		
	comp=Z,10.0nm,1.1s						
KIV				MLR	MLR		
	comp=Z,37nm,17.0s						
KIV	Kislovodsk	71.13	311	eP	P	20 55 13.8	+1.1
	comp=Z,7.0nm,0.8s						
AKASG	Malin Array Be	74.67	322	P	P	20 55 33.0	-0.3
	comp=Z,4.9nm,0.7s,baz=46,slow=5.9,SNR=25						
KIEV	Kiev	74.68	322	eP	P	20 55 33.2	-0.3
KIEV				pmax	pmax		
	comp=Z,3.0nm,0.6s						
KIEV	Kiev	74.68	322	eP	P	20 55 33.2	-0.3
	comp=Z,3.3nm,0.6s						
NB2	NORSAR Subarra	74.74	337	P	P	20 55 33.9	+0.2
	comp=Z,5.7nm,0.8s,baz=40,slow=6.2						
NOA	NORSAR Array B	74.74	337	P	P	20 55 33.6	-0.1
	comp=Z,4.4nm,0.8s,baz=40,slow=5.8,SNR=13						
NVAR	Mina Array Bea	75.72	53	P	P	20 55 41.5	+1.6
	comp=Z,0.7nm,0.7s,baz=294,slow=4.5,SNR=4.9						
PDAR	Pinedale Array	78.44	45	P	P	20 55 56.1	+0.9
	comp=Z,0.4nm,0.6s,baz=354,slow=1.5,SNR=4.1						
KWP	Kalwaria Pacla	78.53	324	eP	P	20 55 56.3	+1.0
KWP	Kalwaria Pacla	78.53	324	eP	P	20 55 56.3	+1.0
BRTR	Keskin Array B	79.08	311	P	P	20 55 59.0	+0.3
	comp=Z,2.4nm,1.0s,baz=122,slow=4.0,SNR=9.5						
BRTR	Keskin Array B	79.08	311	P	P	20 55 59.0	+0.3
KOLS	Kolonicke sedl	79.22	324	eP	P	20 56 08.1	+9.0
KOLS	Kolonicke sedl	79.22	324	e	P	20 56 08.1	+9.0
OJC	Ojcow	79.46	326	eP	P	20 56 01.1	+0.7
OJC	Ojcow	79.46	326	eP	P	20 56 01.2	+0.8
KECS	Kecovo	80.38	324	eP	P	20 56 11.9	+6.5
KECS	Kecovo	80.38	324	e	P	20 56 11.9	+6.5
RAYN	Ar Rayn	80.61	292	eP	P	20 56 07.0	-0.1
	comp=Z,16nm,1.4s						
DPC	Dobruska-Polom	80.90	328	eP	P	20 56 09.0	+0.8
DPC	Dobruska-Polom	80.90	328	eP	P	20 56 09.0	+0.8
VYHS	Vyhne	81.14	325	eP	P	20 56 20.8	+11
VYHS	Vyhne	81.14	325	e	P	20 56 20.8	+11
BRG	Berggiesshubel	81.51	329	ePKP	P	20 56 11.6	+0.3
	comp=Z,8.3nm,1.1s						
BRG	Berggiesshubel	81.51	329	eP	P	20 56 11.6	+0.3
BRG				pmax	pmax		
	comp=Z,8.0nm,1.1s						
PVCC	Panska Ves	81.51	329	eP	P	20 56 12.3	+0.9
PVCC				epP	sP	20 56 23.5	+1.1
PVCC	Panska Ves	81.51	329	eP	P	20 56 12.3	+0.9
PVCC				e		20 56 23.5	
CLL	Collm	81.57	330	iP	P	20 56 11.6	0.0
	comp=Z,7.0nm,0.8s						
CLL				i		20 56 22.8	
CLL				i		20 56 26.4	
CLL				i		20 56 33.7	
CLL	Collm	81.57	330	iP	P	20 56 11.6	0.0
CLL				i		20 56 22.8	
CLL				pmax	pmax		
	comp=Z,7.0nm,0.8s						
PRU	Pruhonice	81.93	328	eP	P	20 56 14.0	+0.4
PRU				epP	sP	20 56 25.5	+0.8
PRU	Pruhonice	81.93	328	eP	P	20 56 14.0	+0.4
PRU				e		20 56 25.5	
KHC	Kasperske Hory	82.99	328	eP	P	20 56 19.9	+0.7
KHC				epP	sP	20 56 30.6	+0.3
KHC	Kasperske Hory	82.99	328	eP	P	20 56 19.9	+0.7
KHC				e		20 56 30.6	
KHC	Kasperske Hory	82.99	328	eP	P	20 56 19.7	+0.5
	comp=Z,0.5nm,0.8s						
GERES	GERESS Array B	83.16	328	P	P	20 56 20.1	0.0
	comp=Z,1.1nm,0.6s,baz=36,slow=5.4,SNR=11						
PMOR	Pomariorio Ree	84.21	113	eT	T	22 28 57.0	
	comp=Z,4.8nm,0.2s						
PPT	Papeete	84.62	116	LR	LR	21 30 18.8	
	comp=Z,79nm,18.9s,baz=288,slow=33						
PPT2	Papeete2	84.63	116	eLR	LR	21 23 02.8	
	comp=Z,67nm,22.0s						
ANMO	Albuquerque	85.33	50⇑	eP	P	20 56 45.8	+14
ANMO				pmax	pmax		
	comp=Z,4.0nm,1.2s						
TBI	Tubuai	88.45	121	eLR	LR	21 24 59.7	
	comp=Z,105nm,28.0s						
TORD	Torodi Ar. Bea	117.60	314	PKP	PKPdf	21 02 39.7	-0.9
	comp=Z,0.4nm,0.7s,baz=11,slow=1.6,SNR=4.1						
LPAZ	La Paz	147.37	60	PKPbc	PKPbc	21 03 39.4	+0.4
	comp=Z,1.0nm,0.5s,baz=291,slow=3.6,SNR=4.7						

KRSC 04 20:50:41.5±2.0, 55°.33N×166°.47E, h39km±12km, ML4.3
ISCJB 04 20:50:42.5±0.6, 55°.34N±0°.04×166°.45E±0°.06, h20km, mb3.6/6, Error ellipse: s-maj=6.4km s-min=4.4km az=155.8
IDC 04 20:50:42.1±1.6, 55°.69N×166°.29E, h0km, mb3.7/6, mb1 3.9/7, mb1mx3.5/45, mbtmp3.7/7, ML3.2/1, Error ellipse: s-maj=63.0km s-min=17.8km az=162.0
MOS 04 20:50:43.9±0.9, 55°.39N×166°.42E, h33km, mb4.2/2, Error ellipse: s-maj=12.7km s-min=8.5km az=162.6

ISC 04 20:50:44.0±0.9, 55°.41N±0°.05×166°.44E±0°.06, h20km, n65, σ1s.29/85, mb3.6/6, Komandorsky Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BKI	Bering	0.34	232	eP	Pb	20 50 50.2	-1.1
BKI				eS	Sb	20 50 55.7	-0.5
BKI	Bering	0.34	232	PN	Pb	20 50 50.2	-1.1
BKI				S	Sb	20 50 55.7	-0.5
KBTR	Krutoberegovo	2.19	293	eP	Pn	20 51 16.4	-2.8
KBTR				eS	Sn	20 51 43.6	-2.1
KBTR	Krutoberegovo	2.19	293	PN	Pn	20 51 16.4	-2.8
KBTR				S	Sn	20 51 43.6	-2.1
SMKR	Semkarok	3.03	295	eP	Pn	20 51 29.9	-0.9
SMKR	Semkarok	3.03	295	PN	Pn	20 51 29.9	-0.9
BDR	Baidarnaya	3.16	294	eP	Pn	20 51 32.5	-0.1
SRKR	Sorokina	3.21	295	eP	Pn	20 51 32.5	-0.7
SRKR	Sorokina	3.21	295	PN	Pn	20 51 32.5	-0.7
ZLN	Zelenaya	3.25	283	eP	Pn	20 51 33.7	-0.1
ZLN				eS	Sn	20 52 13.0	+1.2
ZLN	Zelenaya	3.25	283	PN	Pn	20 51 33.7	-0.1
ZLN				S	Sn	20 52 13.0	+1.2
CIRR	Tsirk	3.29	285	eP	Pn	20 51 34.9	+0.4
CIRR				eS	Sn	20 52 13.7	+0.7
CIRR	Tsirk	3.29	285	PN	Pn	20 51 34.9	+0.4
CIRR				S	Sn	20 52 13.7	+0.7
LGNR	Loginova	3.32	284	eP	Pn	20 51 35.9	+0.9
LGNR				eS	Sn	20 52 16.0	+2.1
LGNR	Loginova	3.32	284	PN	Pn	20 51 35.9	+0.9
LGNR				S	Sn	20 52 16.0	+2.1
KLY	Klyuchi	3.38	288	eS	Sn	20 52 14.9	-0.2
BZMR	Bezymyannaya	3.41	281	eP	Pn	20 51 36.8	+0.7
KRSR	Krestovskiy	3.41	286	eP	Pn	20 51 35.3	-0.8
KRSR	Krestovskiy	3.41	286	PN	Pn	20 51 35.3	-0.8
TUMD	Tumrok D	3.46	269	eP	Pn	20 51 37.0	+0.3
TUMD				eS	Sn	20 52 17.5	+0.5
KIRR	Kirishev	3.49	281	eP	Pn	20 51 38.9	+1.6
KIRR				eS	Sn	20 52 20.1	+2.1
KMNR	Kamenistaya	3.54	278	eP	Pn	20 51 38.9	+1.1
KMNR				eS	Sn	20 52 21.4	+2.4
KMNR	Kamenistaya	3.54	278	PN	Pn	20 51 38.9	+1.1
KMNR				S	Sn	20 52 21.4	+2.4
KPT	Kopyto	3.56	281	eP	Pn	20 51 39.0	+0.9
KPT	Kopyto	3.56	281	PN	Pn	20 51 39.0	+0.9
TUMR	Tumrok	3.60	270	eP	Pn	20 51 39.7	+1.1
TUMR				eS	Sn	20 52 21.6	+1.1
TUMR	Tumrok	3.60	270	PN	Pn	20 51 39.7	+1.1
TUMR				S	Sn	20 52 21.6	+1.1
SPN	Mys Shipunski	4.42	241	eP	Pn	20 51 49.2	-0.6
SPN				eS	Sn	20 52 37.5	-3.1
SPN	Mys Shipunski	4.42	241	PN	Pn	20 51 49.2	-0.6
NLC	Nalytchevo	4.72	245	eP	Pn	20 51 54.1	+0.1
NLC				eS	Sn	20 52 46.0	-2.1
NLC	Nalytchevo	4.72	245	PN	Pn	20 51 54.1	+0.1
SDLR	Sedlovina	4.91	247	eP	Pn	20 51 57.4	+0.7
SDLR				eS	Sn	20 52 53.6	+0.7
SDLR	Sedlovina	4.91	247	PN	Pn	20 51 57.4	+0.7
SDLR				S	Sn	20 52 53.6	+0.7
SMAR	Somma	4.96	247	eP	Pn	20 51 57.9	+0.4
SMAR				eS	Sn	20 52 54.0	-0.3
SMAR	Somma	4.96	247	PN	Pn	20 51 57.9	+0.4
UGLR	Uglovaya	4.98	247	eP	Pn	20 51 58.2	+0.6
UGLR				eS	Sn	20 52 55.5	+1.0
AVH	Avacha	4.99	248	eP	Pn	20 51 58.6	+0.8
AVH				eS	Sn	20 52 56.2	+1.3
AVH	Avacha	4.99	248	PN	Pn	20 51 58.6	+0.8
AVH				S	Sn	20 52 56.2	+1.3
KRX	Arik	5.00	249	eP	Pn	20 51 58.6	+0.7
KOK	Koryaka	5.04	248	eP	Pn	20 51 59.3	+0.9
KOK				eS	Sn	20 52 55.7	-0.2
KOK	Koryaka	5.04	248	PN	Pn	20 51 59.3	+0.9
DALK	Dalny	5.10	245	eP	Pn	20 51 59.9	+0.7
DALK				eS	Sn	20 52 55.9	-1.5
PET	Petropavlovsk	5.16	246	ePN	Pn	20 51 53.6	-6.3
PET				pmax	pmax		
	comp=Z,28nm,0.5s						
GNL	Ganaly	5.24	254	eP	Pn	20 52 02.3	+1.1
GNL	Ganaly	5.24	254	PN	Pn	20 52 02.3	+1.1
KRMR	Karymshinskiy	5.53	246	eP	Pn	20 52 05.9	+0.9
KRMR				eS	Sn	20 53 07.6	-0.4
RUS	Russkaya	5.55	241	eP	Pn	20 52 05.5	+0.1
RUS				eS	Sn	20 53 06.3	-2.2
RUS	Russkaya	5.55	241	PN	Pn	20 52 05.5	+0.1

PETK	Petropavlovsk-	5.62	249	Pn	Pn	20 52 07.2	+0.9
	comp=Z,3.6nm,0.3s,baz=72,slow=14,SNR=25						
PETK				Sn	Sn	20 53 14.7	+4.5
	comp=Z,3.3nm,0.3s,baz=0.3,slow=27,SNR=10.0						
MTVR	Mutnovka	5.69	242	eP	Pn	20 52 07.6	+0.2
MTVR				eS	Sn	20 53 11.2	-1.0
ASAK	Asacha	5.89	242	eP	Pn	20 52 11.8	+1.7
APC	Apacha	5.99	249	eP	Pn	20 52 13.8	+2.4
APC	Apacha	5.99	249	PN	Pn	20 52 13.8	+2.4
ILAR	Eielson Array	24.51	49	P	P	20 56 01.4	-0.1
	comp=Z,3.6nm,1.0s,baz=252,slow=8.6,SNR=13						
INK	Inuvik	29.72	41	P	P	20 56 48.3	+0.2
	comp=Z,0.4nm,0.4s,baz=195,slow=16,SNR=4.3						
H11N2	WAKE ISLAND Hy	35.63	179	T	T	21 34 59.0	
	baz=2.4						
H11N3	WAKE ISLAND Hy	35.64	179	T	T	21 35 04.8	
	baz=2.4						
H11N1	WAKE ISLAND Hy	35.64	179	T	T	21 35 04.8	
	baz=2.4						
H11S1	WAKE ISLAND Hy	36.84	180	T	T	21 36 31.1	
	baz=353						
H11S3	WAKE ISLAND Hy	36.85	180	T	T	21 36 28.5	
	baz=353						
H11S2	WAKE ISLAND Hy	36.86	180	T	T	21 36 37.0	
	baz=353						
SONM	Songino Array	36.98	284	P	P	20 57 52.3	+0.6
	comp=Z,0.6nm,0.7s,baz=67,slow=8.0,SNR=5.9						
YKA	Yellowknife Ar	38.90	47	P	P	20 58 08.2	+0.6
	comp=Z,0.6nm,0.8s,baz=297,slow=8.1,SNR=4.6						
MKAR	Makanchi Array	50.44	298	P	P	20 59 38.6	-1.2
	comp=Z,0.2nm,0.4s,baz=57,slow=5.9,SNR=5.0						
TXAR	Lajitas Array	66.34	72	P	P	21 01 32.3	+1.2
	comp=Z,0.8nm,0.5s,baz=298,slow=4.2,SNR=6.7						

MAN 04 20:54:21, 11°.27N×122°.64E, h10km, mb4.2, ML3.1, MS2.8, 1C-2D, Panay

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RCP	Roxas	0.30	20	⇑eP	Pb	20 54 28.3	-0.2
RCP				eS	Sb	20 54 33.5	-0.1
KALP	Kalibo	0.50	324	⇓iP	Pg	20 54 31.2	+0.4
KALP				eS	Sb	20 54 39.1	-0.1
GUIM	Jordan	0.65	184	eP	Pb	20 54 34.2	-0.2
GUIM				eS	Sb	20 54 44.0	+0.6
LLP	Lapu-Lapu	1.61	126	⇓iP	Pn	20 54 49.5	-0.1
LLP				i S	Sn	20 55 10.6	+0.1
CUYO	Cuyo Island	1.64	255	eP	Pn	20 54 50.5	+0.5
CUYO				eS	Sn	20 55 11.6	+0.3
OCLP	Ormoc	1.95	96	eP	Pn	20 54 54.9	+0.7
ENPP	El Nido	3.15	269	eP	Pn	20 55 11.7	+1.0

*IDC **04** 20:54:36.7±1.7, 55°.64N×166°.29E, h0km, mb3.5/6, mb1 3.7/7, mb1mx3.4/52, mbtmp3.5/7, ML3.0/1, MS2.8/1, Ms1 2.8/1, ms1mx2.4/36, Error ellipse: s-maj=60.5km s-min=18.0km az=166.0*
*ISCJB **04** 20:54:38.2±0.6, 55°.45N±0°.04×166°.22E±0°.06, h20km, mb3.5/6, Error ellipse: s-maj=5.5km s-min=4.8km az=148.7*
*KRSC **04** 20:54:38.6±2.3, 55°.33N×166°.08E, h34km±13km, ML4.1*
*MOS **04** 20:54:39.3±1.8, 55°.39N×166°.36E, h38km, mb4.1/1, Error ellipse: s-maj=12.7km s-min=8.6km az=166.5*
ISC 04 20:54:39.2±0.9, 55°.50N±0°.05×166°.21E±0°.06, h20km, n64, $\sigma 1^{s}50$/78, mb3.4/6, Komandorsky Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BKI	Bering	0.33	205	eP	Pb	20 54 44.6	-1.6
BKI				eS	Sb	20 54 50.2	-0.8
BKI	Bering	0.33	205	PN	Pb	20 54 44.6	-1.6
KBTR	Krutoberegovo	2.04	292	eP	Pn	20 55 11.8	-0.5
KBTR				eS	Sn	20 55 35.7	-1.5
KBTR	Krutoberegovo	2.04	292	PN	Pn	20 55 11.8	-0.5
KBTR				S	Sn	20 55 35.7	-1.5
SMKR	Semkarok	2.88	294	eP	Pn	20 55 24.5	+0.6
SMKR				eS	Sn	20 55 57.8	-0.1
SMKR	Semkarok	2.88	294	PN	Pn	20 55 24.5	+0.6
SMKR				S	Sn	20 55 57.8	-0.1
BDR	Baidarnaya	3.00	293	eP	Pn	20 55 25.0	-0.7
BDR				eS	Sn	20 56 04.2	+3.1
SRKR	Sorokina	3.06	294	eP	Pn	20 55 27.2	+0.9
SRKR	Sorokina	3.06	294	PN	Pn	20 55 27.2	+0.9
ZLN	Zelenaya	3.10	282	eP	Pn	20 55 28.1	+1.1
ZLN				eS	Sn	20 56 02.8	-0.7
ZLN	Zelenaya	3.10	282	PN	Pn	20 55 28.1	+1.1
CIRR	Tsirk	3.15	284	eP	Pn	20 55 28.8	+1.2
CIRR				eS	Sn	20 56 05.3	+0.7
CIRR	Tsirk	3.15	284	PN	Pn	20 55 28.8	+1.2
CIRR				S	Sn	20 56 05.3	+0.7
LGNR	Loginova	3.17	283	eP	Pb	20 55 32.0	-2.9
LGNR	Loginova	3.17	283	PN	Pb	20 55 32.0	-2.9
KLY	Klyuchi	3.23	287	eS	Sn	20 56 09.1	+2.5
KRSR	Krestovskiy	3.26	285	eP	Pn	20 55 30.2	+1.0
KRSR	Krestovskiy	3.26	285	PN	Pn	20 55 30.2	+1.0
BZMR	Bezymyannaya	3.27	280	eP	Pn	20 55 31.5	+2.2
TUMD	Tumrok D	3.33	267	eP	Pn	20 55 31.5	+1.4
TUMD				eS	Sn	20 56 10.4	+1.3
KIRR	Kirishev	3.35	280	eP	Pn	20 55 31.7	+1.2
KMNR	Kamenistaya	3.40	277	eP	Pn	20 55 33.3	+2.2
KMNR				eS	Sn	20 56 12.6	+1.8
KMNR	Kamenistaya	3.40	277	PN	Pn	20 55 33.3	+2.2
KMNR				S	Sn	20 56 12.6	+1.8
KPT	Kopyto	3.42	280	eP	Pn	20 55 34.7	+3.3
KPT	Kopyto	3.42	280	PN	Pn	20 55 34.7	+3.3
TUMR	Tumrok	3.47	269	eP	Pn	20 55 33.4	+1.4
TUMR				eS	Sn	20 56 12.3	-0.2
TUMR	Tumrok	3.47	269	PN	Pn	20 55 33.4	+1.4
KII	Karymskiy	4.18	252	eP	Pn	20 55 45.1	+3.3
KII	Karymskiy	4.18	252	PN	Pn	20 55 45.1	+3.3
SPN	Mys Shipunski	4.35	239	eP	Pn	20 55 44.8	+0.8
SPN				eS	Sn	20 56 32.0	-2.1
SPN	Mys Shipunski	4.35	239	PN	Pn	20 55 44.8	+0.8
NLC	Nalytchevo	4.65	243	eS	Sn	20 56 40.4	-1.0
SDLR	Sedlovina	4.83	246	eP	Pn	20 55 51.9	+1.2
SDLR				eS	Sn	20 56 47.4	+1.4
SDLR	Sedlovina	4.83	246	PN	Pn	20 55 51.9	+1.2
SDLR				S	Sn	20 56 47.4	+1.4
SMAR	Somma	4.88	246	eP	Pn	20 55 51.8	+0.3
SMAR				eS	Sn	20 56 44.0	-3.4
SMAR	Somma	4.88	246	PN	Pn	20 55 51.8	+0.3
UGLR	Uglovaya	4.89	245	eP	Pn	20 55 53.2	+1.6
AVH	Avacha	4.91	246	eP	Pn	20 55 53.3	+1.5
AVH				eS	Sn	20 56 49.3	+1.3
AVH	Avacha	4.91	246	PN	Pn	20 55 53.3	+1.5
AVH				S	Sn	20 56 49.3	+1.3
KRX	Arik	4.91	247	eP	Pn	20 55 53.2	+1.3
KRX				eS	Sn	20 56 47.7	-0.4
KOK	Koryaka	4.95	247	eP	Pn	20 55 53.6	+1.2
KOK				eS	Sn	20 56 49.1	+0.1
KOK	Koryaka	4.95	247	PN	Pn	20 55 53.6	+1.2
DALK	Dalny	5.02	244	eP	Pn	20 55 54.4	+1.1
DALK				eS	Sn	20 56 50.1	-0.5
PET	Petropavlovsk	5.08	244	ePN	Pn	20 56 00.0	+6.0
PET				pmax	pmax		
	comp=Z,28nm,0.5s						
GNL	Ganaly	5.14	253	eP	Pn	20 55 55.0	0.0
GNL				eS	Sn	20 56 50.7	-3.0
GNL	Ganaly	5.14	253	PN	Pn	20 55 55.0	0.0
KRMR	Karymshinskiy	5.45	244	eP	Pn	20 56 00.3	+1.2
KRMR				eS	Sn	20 57 00.3	-0.8
RUS	Russkaya	5.48	239	eP	Pn	20 55 59.9	+0.3
RUS	Russkaya	5.48	239	PN	Pn	20 55 59.9	+0.3
PETK	Petropavlovsk-	5.53	248	Pn	Pn	20 56 01.4	+1.1
	comp=Z,2.1nm,0.3s,baz=71,slow=15,SNR=18						
PETK				Sn	Sn	20 57 07.3	+4.1
	comp=Z,1.9nm,0.3s,baz=70,slow=13,SNR=6.9						
PETK				LR	LR	20 58 18.8	
	comp=Z,99nm,20.0s,baz=50,slow=40						
ASAK	Asacha	5.82	241	eP	Pn	20 56 06.2	+1.9
ILAR	Eielson Array	24.55	49	P	P	20 59 56.6	-0.5
	comp=Z,1.5nm,1.0s,baz=255,slow=7.7,SNR=7.7						
H11N2	WAKE ISLAND Hy	35.71	179	T	T	21 38 53.9	
	baz=360,slow=74						
H11N3	WAKE ISLAND Hy	35.73	179	T	T	21 38 54.5	
	baz=360						
H11N1	WAKE ISLAND Hy	35.73	179	T	T	21 38 56.1	
	baz=360,slow=74						
SONM	Songino Array	36.83	284	P	P	21 01 48.2	+2.6
	comp=Z,0.4nm,0.8s,baz=53,slow=9.2,SNR=4.0						
H11S1	WAKE ISLAND Hy	36.93	179	T	T	21 40 27.0	
	baz=10.0						
H11S3	WAKE ISLAND Hy	36.94	179	T	T	21 40 24.7	
	baz=10.0						
H11S2	WAKE ISLAND Hy	36.95	179	T	T	21 40 28.6	
	baz=10.0						
YKA	Yellowknife Ar	38.93	47	P	P	21 02 02.9	-0.2
	comp=Z,0.4nm,0.8s,baz=294,slow=7.7,SNR=3.7						
KURK	Kurchatov	49.46	303	P	P	21 03 28.2	+0.7
KURBB	Kurchatov Arra	49.56	303	P	P	21 03 28.2	-0.1
	comp=Z,0.3nm,0.3s,baz=54,slow=9.3,SNR=6.4						
MKAR	Makanchi Array	50.29	297	P	P	21 03 33.2	-0.6
	comp=Z,0.2nm,0.6s,baz=44,slow=6.4,SNR=3.6						
TXAR	Lajitas Array	66.44	72	P	P	21 05 26.9	0.0
	comp=Z,0.6nm,0.5s,baz=315,slow=4.7,SNR=4.8						

*ISCJB **04** 20:56:16.1±0.4, 6°.82N±0°.03×73°.05W±0°.04, h161km±4km, mb3.3/3, Error ellipse: s-maj=7.4km s-min=3.3km az=41.0*
*FUNV **04** 20:56:17.7, 6°.83N×73°.14W, h171km, MW3.5*
*IDC **04** 20:56:17.1±0.8, 6°.77N×73°.00W, h163km±11km, mb3.1/3, mb1 3.6/5, mb1mx3.2/40, mbtmp3.8/5, Error ellipse: s-maj=36.7km s-min=8.2km az=131.0*
*RSNC **04** 20:56:18.7±0.8, 6°.77N×73°.09W, h148km±5km, ML3.5*
ISC 04 20:56:16.7±0.8, 6°.82N±0°.04×73°.04W±0°.04, h161km±6km, n33, $\sigma 1^{s}28$/55, mb3.2/3, 2C, Northern Colombia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BARC	Barichara	0.27	212	i P	Pn	20 56 38.8	+0.1
BARC				eS	Sn	20 56 53.4	-2.2
BARC				i		20 56 55.6	
	comp=Z,513nm,0.3s						
GIRC	Giron, Santand	0.30	329	eP	Pn	20 56 38.9	+0.2
GIRC				eS	Sn	20 56 54.6	-1.0
BRRC	Barranca, Sant	0.73	293	eP	Pn	20 56 40.8	+0.3
BRRC				eS	Sn	20 56 57.9	-0.8
BRRC				i		20 57 00.1	
	comp=Z,426nm,0.1s						
CAPV	Capacho	1.26	35	⇑iP	Pn	20 56 46.7	+1.6
CAPV				eS	Sn	20 57 07.9	+1.1
OCAC	Ocana	1.43	349	eP	Pn	20 56 47.2	+0.6
OCAC				eS	Sn	20 57 09.9	+0.2
OCAC				i		20 57 17.9	
	comp=Z,310nm,0.3s						
YOPC	Yopal, Colombi	1.58	157	i P	Pn	20 56 49.3	+1.2
YOPC				i		20 56 50.7	
	comp=Z,210nm,0.7s						
YOPC				eS	Sn	20 57 11.2	-1.1
NORC	Norcasia	2.21	236	eP	Pn	20 56 54.6	-0.4
NORC				eS	Sn	20 57 22.3	-2.2
CHIC	Chingaza	2.29	198	eP	Pn	20 56 56.5	+0.2
CHIC				eS	Sn	20 57 25.9	-0.9
CHIC				i		20 57 35.1	
	comp=Z,179nm,0.6s						
ROSC	El Rosal	2.35	213	P	Pn	20 56 58.5	+1.6
	comp=Z,42nm,0.3s,baz=75,slow=10,SNR=35						
ROSC				S	Sn	20 57 28.1	+0.1
	comp=Z,47nm,0.3s,baz=95,slow=20,SNR=8.5						
HELC	Santa Helena	2.55	256	eP	Pn	20 56 59.8	+0.5
HELC				eS	Sn	20 57 31.8	-0.6
HELC				i		20 57 37.5	
	comp=Z,148nm,0.6s						
VIGV	El Vigia	2.60	39	eP	Pn	20 57 01.1	+1.5
VIGV				eS	Sn	20 57 31.9	-1.0
SOCV	Socops	2.60	56	eP	Pn	20 57 01.0	+1.3
SOCV				eS	Sn	20 57 33.3	+0.3
VILC	Villavicencio,	2.77	194	eP	Pn	20 57 01.7	-0.2
VILC				eS	Sn	20 57 35.1	-1.7
VILC				i		20 57 46.9	
	comp=Z,121nm,0.5s						
GUYC	Guyana, Colomb	2.83	236	eP	Pn	20 57 03.2	+0.3
GUYC				eS	Sn	20 57 37.7	-0.8
GUYC				i		20 57 46.4	
	comp=Z,383nm,0.4s						
SDV	Santo Domingo	3.14	49	P	Pn	20 57 08.0	+1.5
	comp=Z,46nm,0.3s,baz=221,slow=4.8,SNR=105						
SDV				S	Sn	20 57 45.9	+0.7
	comp=Z,12nm,0.3s,baz=74,slow=20,SNR=8.1						
SDV	Santo Domingo	3.14	49	⇑iP	Pn	20 57 08.0	+1.5
SDV				i		20 57 09.3	
	comp=Z,108nm,0.4s						
DBBC	Dabeiba	3.15	274	eP	Pn	20 57 06.6	+0.1
TOLC	Tolima	3.18	226	eP	Pn	20 57 07.4	+0.3
TOLC				eS	Sn	20 57 45.0	-1.1
PRAC	Prado	3.59	211	eP	Pn	20 57 12.0	-0.1
PRAC				eS	Sn	20 57 54.2	-1.0
VIRV	Villa del Rosa	3.71	10	eP	Pn	20 57 13.5	0.0
VIRV				eS	Sn	20 57 55.0	-2.8
QARV	Quebrada Arrib	4.18	36	eP	Pn	20 57 20.7	+1.0
QARV				eS	Sn	20 58 06.7	-2.1
SANV	Sanarito	4.37	52	eP	Pn	20 57 22.8	+0.6
CURV	Curarigua	4.39	44	eP	Pn	20 57 23.3	+0.8
CURV				eS	Sn	20 58 11.2	-2.6
TEPV	Terepaima	4.92	50	eP	Pn	20 57 30.1	+0.8
SIQV	Siquisique	4.96	40	eP	Pn	20 57 29.7	-0.1
SIQV				eS	Sn	20 58 23.6	-3.6
BAUV	El Baul	5.38	67	eP	Pn	20 57 34.8	-0.5
BAUV				eS	Sn	20 58 34.0	-2.8
MAPV	Macapo	5.43	56	eP	Pn	20 57 36.5	+0.5
CUPV	Cœpira	7.86	65	eP	Pn	20 58 07.8	-0.5
TXAR	Lajitas Array	36.52	312	P	P	21 03 07.8	+0.9
	comp=Z,0.3nm,0.6s,baz=123,slow=9.9,SNR=2.8						
PDAR	Pinedale Array	48.12	324	P	P	21 04 40.6	0.0
	comp=Z,0.3nm,0.6s,baz=128,slow=12,SNR=3.1						
YKA	Yellowknife Ar	63.29	340	P	P	21 06 28.9	+0.9
	comp=Z,0.8nm,0.6s,baz=132,slow=6.7,SNR=21						
ASAR	Alice Springs	149.18	234	PKPbc	PKPbc	21 15 46.7	-0.3
	comp=Z,0.2nm,0.5s,baz=126,slow=4.7,SNR=3.2						
WRA	Warramunga Arr	150.41	241	PKPbc	PKPbc	21 15 49.7	-0.4
	comp=Z,0.1nm,0.4s,baz=106,slow=2.9,SNR=4.2						

*IDC **04** 20:58:04.2±1.1, 37°.52N×144°.18E, h0km, mb3.8/8, mb1 3.9/9, mb1mx3.6/48, mbtmp3.8/9, ML3.5/1, MS2.7/2, Ms1 2.7/2, ms1mx2.3/35, Error ellipse: s-maj=28.8km s-min=20.7km az=78.0*
*ISCJB **04** 20:58:07.1±0.9, 37°.4N±0°.1×144°.2E±0°.1, h33km, mb3.8/8, Error ellipse: s-maj=16.7km s-min=11.5km az=159.9*
ISC 04 20:58:09.6±1.2, 37°.6N±0°.1×144°.2E±0°.1, h35km, n11, $\sigma 1^{s}03$/11, mb3.8/8, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MJAR	Matsushiro Arr	4.87	259	Pn	Pn	20 59 20.6	+0.3
	2.2nm,0.3s,baz=82,slow=15,SNR=13						
MJAR				Sn	Sn	21 00 16.0	+0.6
	0.9nm,0.3s,baz=101,slow=7.5,SNR=2.8						
MJAR				LR	LR	21 01 29.4	
	comp=Z,46nm,18.6s,baz=95,slow=42						
USRK	Ussuriysk Ar.	11.30	309	LR	LR	21 04 55.7	
	comp=Z,56nm,19.5s,baz=84,slow=36						
KLR	Kul'dur	14.67	326	Pn	P	21 01 38.2	-2.0
	0.1nm,0.3s,baz=132,slow=8.4,SNR=4.7						
SONM	Songino Array	29.29	303	P	P	21 04 09.1	+0.5
	0.3nm,0.5s,baz=78,slow=9.8,SNR=3.7						
MKAR	Makanchi Array	45.66	302	P	P	21 06 27.2	+0.5
	0.6nm,0.7s,baz=88,slow=7.9,SNR=5.6						
KURBB	Kurchatov Arra	47.36	308	P	P	21 06 39.9	0.0
	1.0nm,0.3s,baz=82,slow=8.5,SNR=5.8						
ILAR	Eielson Array	47.84	33	P	P	21 06 44.7	+1.3
	0.2nm,0.5s,baz=270,slow=5.4,SNR=3.1						
ARU	Arti	57.36	319	P	P	21 07 54.0	0.0
	0.6nm,0.5s,baz=63,slow=9.0,SNR=4.4						
WRA	Warramunga Arr	57.99	191	P	P	21 07 58.3	-0.4
	2.2nm,0.9s,baz=15,slow=7.9,SNR=13						
ASAR	Alice Springs	61.71	191	P	P	21 08 23.1	-1.2
	0.1nm,0.5s,baz=6.1,slow=7.0,SNR=3.4						
FINES	FINESS Array B	69.30	333	P	P	21 09 13.2	+0.3
	2.8nm,1.1s,baz=28,slow=6.3,SNR=2.8						

JMA 04 21:02:31.6±0.3, 38°.29N×144°.56E, h37km, M3.9, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	Ofunato	2.40	290	P	Pn	21 03 09.9	+1.7
JIO	Ouri	2.53	275	P	Pn	21 03 11.7	+1.6
JIO				eS	Sn	21 03 40.7	+1.1
JTH	Tanohata	2.67	309	P	Pn	21 03 13.4	+1.4
JTH				eS	Sn	21 03 44.5	+1.5
JMK	Ichinoseki	2.70	285	P	Pn	21 03 14.3	+1.9
JMK				S	Sn	21 03 46.4	+2.6
JOM	Ohasama	2.81	296	P	Pn	21 03 15.9	+2.0
JOM				eS	Sn	21 03 49.2	+2.6
JMM	Marumori	3.00	263	P	Pn	21 03 18.2	+1.6
JMM				eS	Sn	21 03 53.1	+1.8
JFK	Kawauchi	3.06	254	P	Pn	21 03 17.8	+0.4
JOU	Okura	3.06	273	P	Pn	21 03 19.7	+2.2
JOU				S	Sn	21 03 55.4	+2.5
JANG	Nango	3.15	312	P	Pn	21 03 20.9	+2.3
JRG	Rokugo	3.26	291	P	Pn	21 03 22.9	+2.8
JYK	Kaneyama	3.35	282	P	Pn	21 03 24.0	+2.6
JFT	Otama	3.43	258	P	Pn	21 03 25.0	+2.5
JTM	Tenmabayashi	3.67	314	S	Sn	21 04 08.6	+0.7
MAT	Matsushiro	5.35	253	P	Pn	21 03 52.2	+3.3

*JMA **04** 21:13:23.8±0.5, 36°.77N×142°.56E, h67km, M3.4*
*ISCJB **04** 21:13:24.3±1.1, 36°.86N±0°.08×142°.35E±0°.10, h10km, mb3.5/4, Error ellipse: s-maj=12.8km s-min=10.7km az=145.2*
*IDC **04** 21:13:26.0±1.6, 37°.11N×142°.06E, h0km, mb3.6/4, mb1 3.7/5, mb1mx3.4/32, mbtmp3.5/5, ML3.4/1, MS2.5/1, Ms1 2.5/1, ms1mx2.1/37, Error ellipse: s-maj=34.7km s-min=31.3km az=153.0*
ISC 04 21:13:26.6±1.2, 36°.89N±0°.07×142°.13E±0°.09, h10km, n18, $\sigma 1^{s}45$/18, mb3.5/4, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	Iwakimizuishiy	1.09	282	P	Pn	21 13 48.4	+0.5
JFK	Kawauchi	1.11	296	P	Pn	21 13 48.6	+0.4
JHO	Hitachi	1.28	258	P	Pn	21 13 50.1	-0.4
JMM	Marumori	1.45	313	P	Pn	21 13 51.9	-0.9
JFT	Otama	1.56	294	P	Pb	21 13 56.1	+0.5
CHOJ	Chosi	1.56	221	P	Pn	21 13 52.4	-2.0
JAG	Ashikaga	2.20	259	P	Pn	21 14 03.6	+0.4
JYK	Kaneyama	2.46	326	P	Pn	21 14 06.4	-0.4
JRY	Ryogami san	2.74	253	P	Pn	21 14 10.7	0.0
MJAR	Matsushiro Arr	3.17	265	Pn	Pn	21 14 17.7	+1.2
	4.9nm,0.3s,baz=91,slow=9.1,SNR=30						
MAT	Matsushiro	3.17	265	P	Pn	21 14 18.5	+2.0
MAT				S	Sb	21 14 59.5	-2.2
MAT	Matsushiro	3.17	265	P	Pn	21 14 18.5	+2.0
JYN	Shimob	3.21	246	P	Pn	21 14 17.7	+0.5
KSRS	Korea Array	11.35	277	LR	LR	21 20 20.7	
	comp=Z,27nm,20.5s,baz=88,slow=37						
SONM	Songino Array	28.34	304	P	P	21 19 21.3	+0.6
	1.6nm,0.8s,baz=97,slow=8.8,SNR=11						
MKAR	Makanchi Array	44.68	302	P	P	21 21 37.1	-2.4
	0.4nm,0.5s,baz=92,slow=9.6,SNR=5.3						
ILAR	Eielson Array	49.31	32	P	P	21 22 15.4	0.0
	0.3nm,0.6s,baz=262,slow=6.2,SNR=4.7						
WRA	Warramunga Arr	57.00	189	P	P	21 23 14.7	+2.3
	0.2nm,0.7s,baz=3.5,slow=7.5,SNR=2.8						

WEL 04 21:15:02.8±0.3, 38°.40S×175°.51E, h259km±2km, ML3.9/13, 8C-15D, Error ellipse: s-maj=3.2km s-min=2.7km az=0.0, North Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TWVZ	Taurewa	0.68	184	PN	Pn	21 15 37.6	+0.1
KRVZ	Karewarewa	0.70	171	PN	Pn	21 15 37.8	+0.2
WTVZ	West Tongariro	0.72	175	PN	Pn	21 15 37.8	+0.2
NGZ	Ngauruhoe	0.78	174	PN	Pn	21 15 38.1	+0.1
MRHZ	Matea Rd	0.84	122	⇓PN	Pn	21 15 38.0	-0.1
MRHZ				SN	S	21 16 04.6	-1.2
FWVZ	Far West T-bar	0.86	177	PN	Pn	21 15 38.4	0.0
TUVZ	Tukino	0.88	172	PN	Pn	21 15 38.5	+0.1
PKVZ	Pokaka	0.90	188	PN	Pn	21 15 38.3	-0.1
TRVZ	Turoa	0.90	178	PN	Pn	21 15 38.6	0.0
WNVZ	Wahianoa	0.93	176	PN	Pn	21 15 38.7	+0.1
MTVZ	Mangateitei	0.99	182	PN	Pn	21 15 38.7	-0.1
MOVZ	Moawhango	1.03	169	⇑PN	Pn	21 15 38.7	-0.3
BKZ	Black Stump Fm	1.09	135	⇓PN	Pn	21 15 39.4	+0.1
BKZ				SN	S	21 16 07.3	-0.9
BKZ				AML	AML	21 16 08.9	
BHHZ	Black Hill Sta	1.17	158	⇑PN	Pn	21 15 39.7	-0.2
URZ	Urewera	1.27	84	⇓PN	Pn	21 15 39.8	-0.6
URZ				SN	S	21 16 08.8	-1.2
URZ				AML	AML	21 16 10.2	
RAHZ	Arahi	1.34	113	⇓PN	Pn	21 15 41.4	+0.5
NEZ	North Egmont	1.40	231	PN	Pn	21 15 41.2	-0.2
KRHZ	Kereru	1.42	152	⇑PN	Pn	21 15 41.2	-0.2
KRHZ				SN	S	21 16 10.9	-1.0
WAZ	Wanganui	1.42	196	⇑PN	Pn	21 15 41.0	-0.3
ARHZ	Aropaoanui	1.45	127	PN	Pn	21 15 42.0	+0.4
ARHZ				SN	S	21 16 12.3	+0.1
SNGZ	Shannon Statio	1.49	106	⇓PN	Pn	21 15 42.2	+0.2
SNGZ				SN	S	21 16 12.6	-0.2
RAGZ	Rawiri	1.50	94	⇓PN	Pn	21 15 42.2	+0.1
RAGZ				SN	S	21 16 12.7	-0.4
WHHZ	Waihua	1.51	117	PN	Pn	21 15 42.3	+0.3
WHHZ				SN	S	21 16 13.1	0.0
MWZ	Matawai	1.59	88	⇓PN	Pn	21 15 42.6	-0.2
MWZ				SN	S	21 16 13.0	-1.2
MWZ				AML	AML	21 16 13.4	
PNHZ	Pukenui	1.61	161	PN	Pn	21 15 42.2	-0.6
PNHZ				SN	S	21 16 14.1	-0.3
TSZ	Takapari Road	1.70	168	PN	Pn	21 15 42.8	-0.7
TSZ				AML	AML	21 16 15.5	
TSZ				AML	AML	21 16 16.1	
CKHZ	Cape Kidnapper	1.76	136	ePN	Pn	21 15 44.1	+0.1
KAHZ	Kahuranaki	1.76	143	PN	Pn	21 15 44.1	+0.1
RIGZ	Rimuhau	1.80	101	PN	Pn	21 15 44.5	+0.2
KNZ	Kokohu	1.81	111	⇓PN	Pn	21 15 44.1	-0.2
KNZ				AML	AML	21 18 21.5	
KNZ				AML	AML	21 18 25.0	
WPHZ	Waipukurau	1.82	157	PN	Pn	21 15 44.1	-0.3
WPHZ				SN	S	21 16 16.3	-1.1
HAZ	Te Kaha	1.91	71	⇓PN	Pn	21 15 44.1	-1.2
PRGZ	Paritu Road	1.94	106	PN	Pn	21 15 44.9	-0.6
TWGZ	Tauwhareparae	1.96	84	PN	Pn	21 15 45.8	+0.1
DVHZ	Dannevirke	1.97	165	PN	Pn	21 15 44.6	-1.2
DVHZ				SN	S	21 16 17.3	-2.5
POWZ	Post Office Ro	2.00	174	PN	Pn	21 15 44.7	-1.3
MHGZ	Mahia Peninsul	2.02	113	PN	Pn	21 15 46.0	-0.2
PRHZ	Porangahau	2.06	155	PN	Pn	21 15 45.8	-0.8
PRHZ				SN	S	21 16 20.0	-1.3
PKGZ	Pakihiroa	2.09	77	PN	Pn	21 15 46.6	-0.3
CNGZ	Carnagh Statio	2.12	93	PN	Pn	21 15 47.3	+0.1
PRWZ	Pori Road	2.19	171	PN	Pn	21 15 46.5	-1.2
PUZ	Puketiti	2.19	82	⇓PN	Pn	21 15 47.3	-0.6
ANWZ	Angora Road	2.19	160	PN	Pn	21 15 46.9	-0.9
ANWZ				SN	S	21 16 21.6	-1.7
MRZ	Mangatainoka R	2.26	179	⇓PN	Pn	21 15 46.7	-1.7
MRZ				AML	AML	21 16 22.4	
MRZ				AML	AML	21 16 23.8	
BFZ	Birch Farm	2.35	166	⇑PN	Pn	21 15 47.7	-1.5
BFZ				SN	S	21 16 23.0	-3.0
WMGZ	Waiomatatini S	2.37	77	PN	Pn	21 15 49.1	-0.4
TIWZ	Tintock	2.39	173	PN	Pn	21 15 47.8	-1.8
TIWZ				AML	AML	21 16 25.9	
TIWZ				AML	AML	21 16 32.7	
OGWZ	Otaki Gorge	2.43	186	PN	Pn	21 15 48.2	-1.8
OGWZ				SN	S	21 16 24.4	-3.0
HOWZ	Holdsworth Sta	2.50	180	PN	Pn	21 15 48.5	-2.2
KIW	Kapiti Island	2.50	190	PN	Pn	21 15 48.5	-2.2
KIW				AML	AML	21 16 28.4	
KIW				AML	AML	21 16 29.3	
CPWZ	Castlepoint	2.57	168	PN	Pn	21 15 49.4	-1.9
DUWZ	D'Urville Isla	2.69	206	⇑PN	Pn	21 15 50.4	-2.2
TMWZ	Te Maipa	2.72	174	PN	Pn	21 15 51.0	-1.9
CAW	Cannon Point	2.73	187	PN	Pn	21 15 50.7	-2.3
CAW				AML	AML	21 16 31.1	
CAW				AML	AML	21 16 34.1	
MTW	Mount Morrison	2.76	180	PN	Pn	21 15 50.8	-2.4
MTW				AML	AML	21 16 31.2	
MTW				AML	AML	21 16 31.4	
TCW	Tory Channel	2.96	198	PN	Pn	21 15 53.0	-2.4
TCW				AML	AML	21 16 34.0	
TCW				AML	AML	21 16 35.7	
PAWZ	Paruwai Farm	2.98	181	PN	Pn	21 15 53.1	-2.5
TRWZ	Traveller	3.00	177	PN	Pn	21 15 53.8	-2.0
MSWZ	Moikau Station	3.02	184	PN	Pn	21 15 53.4	-2.6
MSWZ				AML	AML	21 16 36.4	
PLWZ	Palliser	3.17	183	PN	Pn	21 15 54.9	-2.8
NNZ	Nelson	3.26	209	⇑PN	Pn	21 15 55.7	-2.8
TUWZ	Tuamarina	3.26	201	PN	Pn	21 15 56.0	-2.5
QRZ	Quartz Range	3.34	223	PN	Pn	21 15 55.8	-3.7
BSWZ	Blackbirch Sta	3.54	200	PN	Pn	21 15 59.2	-2.5

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
THZ	**Tophouse**	**3.91**	**210**	⇓PN	Pn	21 16 02.8	-3.2
THZ				SN	S	21 16 50.7	-5.6
KHZ	**Kahutara**	**4.29**	**200**	PN	Pn	21 16 07.1	-3.1
DSZ	**Denniston Nort**	**4.39**	**219**	⇓PN	Pn	21 16 07.3	-4.2
LTZ	**Lake Taylor**	**5.02**	**208**	PN	Pn	21 16 15.0	-4.2
INZ	**Inchbonnie**	**5.31**	**214**	PN	Pn	21 16 18.3	-4.3
OXZ	**Oxford**	**5.58**	**207**	⇑PN	Pn	21 16 21.0	-4.9
MQZ	**McQueen's Vall**	**5.72**	**201**	⇓PN	Pn	21 16 22.7	-4.9
WVZ	**Waitaha Valley**	**5.91**	**216**	PN	Pn	21 16 25.3	-4.6
RPZ	**Rata Peaks**	**6.29**	**211**	PN	Pn	21 16 29.7	-4.9
FOZ	**Fox Glacier**	**6.70**	**218**	PN	Pn	21 16 34.3	-5.4
LBZ	**Lake Benmore**	**7.20**	**212**	PN	Pn	21 16 40.9	-5.0
ODZ	**Otahua Downs**	**7.57**	**207**	⇓PN	Pn	21 16 46.8	-3.8

*IDC **04** 21:21:59.6±1.9, 36.°82N×140.°60E, h0km, mb3.4/2, mb1 3.6/2, mb1mx3.1/31, mbtmp3.4/2, Error ellipse: s-maj=27.7km s-min=19.8km az=11.0*
*ISCJB **04** 21:22:01.8±0.8, 36.°94N±0.°04×140.°58E±0.°07, h10km, mb3.1/2, Error ellipse: s-maj=9.0km s-min=5.0km az=32.3*
*JMA **04** 21:22:02.1, 36.°94N×140.°54E, h6km±1km, M3.2 Broadband fault plane solution: P waves. NP1: φs215.00000°, δ55.00000°, λ-101.00000°. NP2: φs54.00000°, δ37.00000°, λ-75.00000°. Principal axes: T Plg9.0000°, Azm313.0000°; N Plg9.0000°, Azm222.0000°; P Plg77.0000°, Azm88.0000°;*
ISC 04 21:22:01.7±1.0, **36.°94N**±0.°04×**140.°56E**±0.°06, **h10**km, **n9**, σ**0.s73**/13, **4C-1D, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.25**	**49**	⇑P	**Pg**	**21 22 07.5**	**+0.6**
JHO	**Hitachi**	**0.33**	**179**	⇑P	**Pg**	**21 22 08.6**	**+0.4**
JFK	**Kawauchi**	**0.50**	**30**	⇓P	**Pg**	**21 22 11.7**	**+0.2**
JFK				S	**Sg**	**21 22 18.7**	**+0.7**
JFT	**Otama**	**0.61**	**343**	⇑P	**Pg**	**21 22 13.8**	**+0.3**
JFT				S	**Sg**	**21 22 22.0**	**+0.5**
JMM	**Marumori**	**0.95**	**11**	⇑P	**Pg**	**21 22 19.5**	**-0.5**
JMM				S	**Sg**	**21 22 32.4**	**+0.1**
MJAR	**Matsushiro Arr**	**1.93**	**259**	Pn	**Pn**	**21 22 35.3**	**+0.7**
	8.9nm,0.3s,baz=80,slow=16,SNR=32						
MJAR				Lg	Lg	21 22 59.9	
	14nm,0.3s,baz=83,slow=30,SNR=19						
MAT	**Matsushiro**	**1.93**	**259**	P	**Pn**	**21 22 35.7**	**+1.1**
MAT				S	**Sb**	**21 23 01.1**	**0.0**
SONM	**Songino Array**	**27.27**	**304**	P	**P**	**21 27 45.8**	**-0.5**
	0.2nm,0.5s,baz=97,slow=10,SNR=2.0						
WRA	**Warramunga Arr**	**56.88**	**187**	P	**P**	**21 31 45.3**	**-1.4**
	0.2nm,0.6s,baz=4.1,slow=7.6,SNR=2.9						

*ISCJB **04** 21:23:57.0±0.8, 6.°81N±0.°04×73.°09W±0.°05, h147km±7km, Error ellipse: s-maj=8.6km s-min=4.5km az=35.8*
*FUNV **04** 21:23:57.6, 6.°37N×72.°48W, h1km, MW2.9*
*RSNC **04** 21:23:59.2±0.7, 6.°79N×73.°14W, h139km±6km, ML2.9*
ISC 04 21:23:56.5±1.5, **6.°81N**±0.°04×**73.°05W**±0.°05, **h155**km±10km, **n16**, σ**1.s28**/28, **1D, Northern Colombia**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
BARC	**Barichara**	**0.25**	**211**	*i* P	**Pn**	**21 24 18.0**	**+0.2**
BARC				*e*S	**Sn**	**21 24 32.4**	**-1.6**
BARC				*i*		21 24 36.0	
	comp=Z,242nm,0.5s						
BRRC	**Barranca, Sant**	**0.72**	**295**	*e*P	**Pn**	**21 24 19.9**	**+0.3**
BRRC				*e*S	**Sn**	**21 24 36.5**	**-0.8**
BRRC				*i*		21 24 37.8	
	comp=Z,182nm,0.3s						
CAPV	**Capacho**	**1.28**	**35**	⇓*i*P	**Pn**	**21 24 26.2**	**+1.7**
CAPV				*e*S	**Sn**	**21 24 46.4**	**+0.4**
OCAC	**Ocana**	**1.45**	**349**	*e*P	**Pn**	**21 24 26.8**	**+0.8**
OCAC				*e*S	**Sn**	**21 24 48.3**	**-0.5**
OCAC				*i*		21 24 56.3	
	comp=Z,113nm,0.5s						
YOPC	**Yopal, Colombi**	**1.57**	**156**	*e*P	**Pn**	**21 24 28.7**	**+1.4**
YOPC				*e*S	**Sn**	**21 24 51.9**	**+0.9**
YOPC				*i*		21 24 53.2	
	comp=Z,52nm,0.4s						
NORC	**Norcasia**	**2.19**	**236**	*e*P	**Pn**	**21 24 34.0**	**-0.2**
NORC				*e*S	**Sn**	**21 25 01.4**	**-1.8**
CHIC	**Chingaza**	**2.27**	**197**	*e*P	**Pn**	**21 24 36.3**	**+0.9**
CHIC				*e*S	**Sn**	**21 25 04.6**	**-0.9**
CHIC				*i*		21 25 08.9	
	comp=Z,31nm,0.5s						
HELC	**Santa Helena**	**2.54**	**256**	*e*P	**Pn**	**21 24 39.9**	**+1.3**
HELC				*e*S	**Sn**	**21 25 09.8**	**-1.3**
HELC				*i*		21 25 17.3	
	comp=Z,52nm,0.3s						
VIGV	**El Vigia**	**2.62**	**40**	*e*P	**Pn**	**21 24 40.7**	**+1.3**
VIGV				*e*S	**Sn**	**21 25 13.4**	**+0.8**
SOCV	**Socops**	**2.63**	**56**	*e*S	**Sn**	**21 25 09.2**	**-3.4**
VILC	**Villavicencio,**	**2.75**	**193**	*e*S	**Sn**	**21 25 15.4**	**-0.2**
VILC				*i*		21 25 26.9	
	comp=Z,27nm,0.3s						
GUYC	**Guyana, Colomb**	**2.81**	**236**	*e*P	**Pn**	**21 24 43.2**	**+1.1**
GUYC				*e*S	**Sn**	**21 25 16.9**	**-0.4**
GUYC				*i*		21 25 22.9	
	comp=Z,69nm,0.4s						
DBBC	**Dabeiba**	**3.14**	**274**	*i* P	**Pn**	**21 24 46.7**	**+0.8**
PRAC	**Prado**	**3.57**	**211**	*e*P	**Pn**	**21 24 51.9**	**+0.5**
PRAC				*e*S	**Sn**	**21 25 33.7**	**-0.4**
PRAC				*i*		21 25 43.8	
	comp=Z,68nm,0.2s						
CURV	**Curarigua**	**4.42**	**44**	*e*P	**Pn**	**21 25 03.7**	**+1.3**
CURV				*e*S	**Sn**	**21 25 53.1**	**-0.7**
BAUV	**El Baul**	**5.40**	**67**	*e*P	**Pn**	**21 25 13.7**	**-1.6**
BAUV				*e*S	Sn	21 26 09.8	-7.0

CASC 04 21:30:18.3±4.6, **11.°43N**×**87.°56W**, **h0**km±70km, **MD3.9, ML3.0, Near coast of Nicaragua**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
COPN	**Copaltepe**	**1.20**	**52**	*e*P	Pg	21 30 38.7	-2.7
CNGN	**Cerro Negro**	**1.35**	**38**	*e*P	Pg	21 30 43.4	-0.9
CNGN				*e*S	Sn	21 31 05.4	+2.1
CNGN				AML	AML	21 31 10.8	
	comp=N,268nm,0.3s						
MOMN	**Momotombo**	**1.39**	**46**	*e*P	Pg	21 30 41.5	-3.5
BOAB	**BOACO BROADBAN**	**2.11**	**61**	*e*P	Pn	21 30 46.6	-8.3
URSC	**Urasca**	**4.04**	**113**	*e*P	Pn	21 31 24.3	+2.7
URSC				*e*S	Sn	21 32 10.0	+0.2
BUS	**Buena Vista**	**4.17**	**116**	*e*P	Pn	21 31 25.9	+2.2

*ISK **04** 21:30:47.9, 38.°45N×31.°83E, h4km, MD2.5*
*DDA **04** 21:30:48.9, 38.°38N×31.°81E, h7km, Md2.8*
*CSEM **04** 21:30:48.6±0.2, 38.°42N×31.°80E, h2km, MD2.8, Error ellipse: s-maj=6.5km s-min=4.4km az=33.0*
ISC 04 21:30:48.4±1.0, **38.°41N**±0.°03×**31.°77E**±0.°04, **h12**km±12km, **n18**, σ**0.s85**/30, **Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
KDHN	**Kadinhani**	**0.29**	**67**	*i* P	**Pg**	**21 30 54.3**	**-0.1**
KDHN				*i* S	**Sg**	**21 30 59.1**	**+0.6**
KDHN	**Kadinhani**	**0.29**	**67**	P	**Pg**	**21 30 54.3**	**-0.1**
KDHN				S	**Sg**	**21 30 59.1**	**+0.6**
KIZT	**Kizilcal**	**0.48**	**10**	*e*PG	**Pg**	**21 30 56.8**	**-1.0**
KIZT				*e*SG	**Sg**	**21 31 03.6**	**-0.7**
KIZT	**Kizilcal**	**0.48**	**10**	*e*Pg	**Pg**	**21 30 56.8**	**-1.0**
KIZT				*e*Sg	**Sg**	**21 31 03.6**	**-0.7**
LADK	**Ladik-KONYA**	**0.51**	**114**	*e*PG	**Pg**	**21 30 58.1**	**-0.2**
LADK				*e*SG	**Sg**	**21 31 05.5**	**+0.4**
LADK	**Ladik-KONYA**	**0.51**	**114**	*e*Pg	**Pg**	**21 30 58.1**	**-0.2**
LADK				*e*Sg	**Sg**	**21 31 05.5**	**+0.4**
BOLV	**Bolvadin**	**0.72**	**296**	*i* P	**Pb**	**21 31 02.9**	**0.0**
BOLV				*i* S	**Sb**	**21 31 12.9**	**+0.1**
BOLV	**Bolvadin**	**0.72**	**296**	P	**Pb**	**21 31 02.9**	**0.0**
BOLV				S	**Sb**	**21 31 12.9**	**+0.1**
KMER	**Konya-Meram**	**0.79**	**143**	*i* P	**Pg**	**21 31 03.7**	**+0.1**
KMER				*i* S	**Sg**	**21 31 14.0**	**0.0**
KMER	**Konya-Meram**	**0.79**	**143**	P	**Pg**	**21 31 03.7**	**+0.1**
KMER				S	**Sg**	**21 31 14.0**	**0.0**
BAGO	**Egridir - ISPA**	**0.88**	**242**	*e*P	**Pn**	**21 31 06.5**	**-0.1**
BAGO				*i* S	**Sn**	**21 31 19.0**	**-0.4**
SHUT	**Suhut-Afyon**	**0.97**	**279**	*e*PG	**Pn**	**21 31 07.8**	**-0.2**
SHUT	**Suhut-Afyon**	**0.97**	**279**	*e*Pg	**Pn**	**21 31 07.8**	**-0.2**
ESKT	**Eskisehir**	**1.33**	**327**	*i* P	**Sg**	**21 31 33.6**	**+2.5**
AFSR	**Af¯ar-Bala (A**	**1.45**	**44**	*e*PN	**Pb**	**21 31 14.9**	**-0.5**
AFSR	**Af¯ar-Bala (A**	**1.45**	**44**	*e*Pn	**Pb**	**21 31 14.9**	**-0.5**
BBAL	**Bala**	**1.55**	**42**	*i* P	**Pg**	**21 31 18.4**	**+0.3**
BBAL				*i* S	**Sg**	**21 31 40.9**	**+2.7**
BBAL	**Bala**	**1.55**	**42**	P	**Pg**	**21 31 18.4**	**+0.3**

*ISCJB **04** 21:34:35.0±0.7, 38.°32N±0.°05×39.°35E±0.°05, h3km±9km, Error ellipse: s-maj=9.2km s-min=4.2km az=37.7*
*DDA **04** 21:34:34.7, 38.°31N×39.°32E, h8km, Md2.9*
*CSEM **04** 21:34:35.2±0.3, 38.°33N×39.°33E, h2km, MD2.9, Error ellipse: s-maj=8.1km s-min=5.5km az=39.0*
ISC 04 21:34:34.2±1.4, **38.°40N**±0.°04×**39.°35E**±0.°03, **h9**km±12km, **n14**, σ**1.s06**/28, **Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
ELZG	**Elazig**	**0.30**	**289**	*i* P	**Pb**	**21 34 41.4**	**-0.6**
ELZG				*i* S	**Sb**	**21 34 46.6**	**-0.5**
ELZG	**Elazig**	**0.30**	**289**	P	**Pb**	**21 34 41.4**	**-0.6**
ELZG				S	**Sb**	**21 34 46.7**	**-0.5**
PTK	**Pertek**	**0.49**	**4**	*e*PG	**Pn**	**21 34 46.0**	**-1.7**
PTK				*e*SG	**Sb**	**21 34 55.3**	**+2.7**
PTK	**Pertek**	**0.49**	**4**	*e*Pg	**Pn**	**21 34 46.0**	**-1.7**
PTK				*e*Sg	**Sb**	**21 34 55.3**	**+2.7**
DIYA	**Diyarbakir**	**0.77**	**128**	*i* P	**Pb**	**21 34 49.6**	**-0.3**
DIYA				*i* S	**Sb**	**21 34 59.8**	**-0.7**
DIYA	**Diyarbakir**	**0.77**	**128**	P	**Pb**	**21 34 49.6**	**-0.3**
DIYA				S	**Sb**	**21 34 59.8**	**-0.7**
AKCD	**Akcadag**	**1.13**	**265**	*i* P	**Pb**	**21 34 55.3**	**-0.7**
AKCD				*i* S	**Sb**	**21 35 11.2**	**+0.3**
AKCD	**Akcadag**	**1.13**	**265**	P	**Pb**	**21 34 55.3**	**-0.7**
AKCD				S	**Sb**	**21 35 11.2**	**+0.3**
MAZI	**Mazidag**	**1.28**	**137**	*e*PG	**Pb**	**21 34 58.4**	**-0.2**
MAZI				*e*SG	**Sg**	**21 35 15.5**	**+0.2**
MAZI	**Mazidag**	**1.28**	**137**	*e*Pg	**Pb**	**21 34 58.4**	**-0.2**
MAZI				*e*Sg	**Sg**	**21 35 15.5**	**+0.2**
MARD	**Mardin**	**1.57**	**133**	*i* P	**Pn**	**21 35 02.4**	**0.0**
MARD				*i* S	**Sn**	**21 35 22.7**	**-0.2**
SURC	**SANLIURFA_SURC**	**1.63**	**201**	*i* P	**Pg**	**21 35 05.5**	**0.0**
SURC				*i* S	**Sn**	**21 35 25.2**	**+0.9**
SURC	**SANLIURFA_SURC**	**1.63**	**201**	P	**Pg**	**21 35 05.5**	**0.0**
SURC				S	**Sn**	**21 35 25.2**	**+0.9**
AYKD	**Aykdinkavak**	**2.24**	**245**	*e*P	**Pn**	**21 35 12.0**	**+0.4**
AYKD				*i* S	**Sg**	**21 35 47.5**	**+1.2**

*IDC **04** 21:36:58.1±0.8, 36.°77N×140.°67E, h0km, mb3.8/13, mb1 4.0/13, mb1mx3.8/34, mbtmp3.8/13, MS2.6/3, Ms1 2.6/3, ms1mx2.4/51, Error ellipse: s-maj=19.2km s-min=14.0km az=162.0*
*ISCJB **04** 21:36:59.3±0.6, 36.°69N±0.°03×140.°74E±0.°05, h20km±3km, mb4.1/21, MS2.5/1, Error ellipse: s-maj=7.3km s-min=4.0km az=34.3*
*NEIC **04** 21:36:59.6±3.9, 36.°82N×140.°69E, h9km±24km, mb4.7/10, Error ellipse: s-maj=9.5km s-min=6.5km az=87.0*
*NIED **04** 21:37:00, 36.°70N×140.°60E, h5km, Mw3.8 Best double couple: M0 5.85000×10^14 NP1:φs342.00000°, δ26.00000°, λ-74.00000°. NP2:φs145.00000°, δ66.00000°, λ-97.00000°.*
*JMA **04** 21:37:00.5, 36.°72N×140.°63E, h5km±1km, M3.8 Broadband fault plane solution: P waves. NP1: φs133.00000°, δ55.00000°, λ-100.00000°. NP2: φs330.00000°, δ36.00000°, λ-75.00000°. Principal axes: T Plg10.0000°, Azm230.0000°; N Plg9.0000°, Azm138.0000°; P Plg77.0000°, Azm8.0000°;*
JMA Felt II J1.
ISC 04 21:36:59.5±1.1, **36.°77N**±0.°04×**140.°61E**±0.°04, **h8**km±7km, **n56**, σ**0.s90**/56, **mb4.2**/21, **5C-1D, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
JHO	**Hitachi**	**0.17**	**193**	⇑P	**Pg**	**21 37 03.0**	**+0.1**
JHO				S	**Sg**	**21 37 04.9**	**-0.4**
ONAJ	**Iwakimizuishiy**	**0.36**	**24**	⇑P	**Pb**	**21 37 08.4**	**+0.2**
ONAJ				S	**Sb**	**21 37 14.1**	**0.0**
JSB	**Shiboa**	**0.59**	**290**	P	**Pb**	**21 37 13.0**	**+0.9**
JSB				S	**Sb**	**21 37 22.0**	**+1.4**
JFK	**Kawauchi**	**0.63**	**19**	⇑P	**Pb**	**21 37 13.2**	**+0.4**
JFK				S	**Sb**	**21 37 22.2**	**+0.4**
JYT	**Yasato**	**0.64**	**212**	⇑P	**Pg**	**21 37 11.9**	**+0.1**
JYT				S	**Sg**	**21 37 20.4**	**+0.2**
JFT	**Otama**	**0.78**	**344**	⇓P	**Pn**	**21 37 16.4**	**-0.4**
JFT				S	**Sb**	**21 37 27.5**	**+1.5**
JAG	**Ashikaga**	**1.00**	**250**	⇑P	**Pg**	**21 37 18.4**	**-0.2**
JAG				S	**Sg**	**21 37 31.6**	**0.0**
MJAR	**Matsushiro Arr**	**1.95**	**264**	Pn	**Pn**	**21 37 33.8**	**+0.9**
	42nm,0.3s,baz=84,slow=11,SNR=242						
MJAR				Lg	Lg	21 37 59.8	
	59nm,0.3s,baz=86,slow=28,SNR=7.9						
MJAR				LR	LR	21 38 25.0	
	comp=Z,98nm,21.0s,baz=115,slow=44						
MAJO	**Matsushiro**	**1.95**	**264**	*e*Pn	**Pb**	**21 37 34.6**	**-0.6**
MAJO				*e*Sn	**Sn**	**21 37 58.5**	**+1.0**
MAT	**Matsushiro**	**1.95**	**264**	P	**Pb**	**21 37 34.6**	**-0.6**
MAT				S	**Sb**	**21 38 00.8**	**+1.1**
INU	**Inuyama**	**3.24**	**245**	*e*Pn	**Pn**	**21 37 52.9**	**+2.2**
INU				*e*Sn	**Sn**	**21 38 28.7**	**-0.7**
JHJ	**Hachijo jima 2**	**3.71**	**191**	Sn	**Sn**	**21 38 42.1**	**+1.2**
	12nm,0.3s,baz=57,slow=22,SNR=2.9						
ERM	**Erimo**	**5.59**	**20**	*e*Pn	**Pn**	**21 38 25.6**	**+2.7**
ERM				*e*Sn	**Sn**	**21 39 26.9**	**-0.5**
ASAJ	**Asahikawa**	**7.49**	**11**	*e*Pn	Pn	21 38 44.6	-4.3
JNU	**Nakatsue**	**8.78**	**248**	LR	LR	21 42 52.6	
	comp=Z,38nm,18.9s,baz=127,slow=40						
KSRS	**Korea Array**	**10.16**	**278**	LR	LR	21 43 17.1	
	comp=Z,22nm,19.1s,baz=105,slow=37						
MDJ	**Mudanjiang**	**11.46**	**317**	*e*Pn	**Pn**	**21 39 41.7**	**-1.6**
PETK	**Petropavlovsk-**	**20.24**	**31**	LR	LR	21 48 08.3	
	comp=Z,22nm,19.9s,baz=137,slow=33						
YHNB	**Yeheng**	**20.43**	**239**	*e*P	**P**	**21 41 34.1**	**-3.2**
	105nm,1.5s						
SONA1	**Songino Array**	**27.40**	**305**	*e*P	**P**	**21 42 44.6**	**-0.9**
SONA0	**Songino Array**	**27.40**	**305**	*e*P	**P**	**21 42 45.6**	**+0.1**
	1.9nm,0.9s						
SONM	**Songino Array**	**27.40**	**305**	P	**P**	**21 42 45.6**	**+0.1**
	1.2nm,0.7s,baz=102,slow=8.9,SNR=6.8						
H11N2	**WAKE ISLAND Hy**	**28.57**	**119**	T	T	22 12 39.8	
	baz=312,slow=75,SNR=122						
H11N1	**WAKE ISLAND Hy**	**28.58**	**119**	T	T	22 12 40.4	
	baz=312,slow=75,SNR=220						
H11N3	**WAKE ISLAND Hy**	**28.59**	**119**	T	T	22 12 41.2	
	baz=312,slow=75,SNR=161						
H11S1	**WAKE ISLAND Hy**	**29.26**	**121**	T	T	22 13 32.5	
	baz=314,slow=76,SNR=519						
H11S3	**WAKE ISLAND Hy**	**29.26**	**121**	T	T	22 13 32.6	
	baz=314,slow=76,SNR=307						
H11S2	**WAKE ISLAND Hy**	**29.28**	**121**	T	T	22 13 34.7	
	baz=314,slow=76,SNR=306						
ZAA0	**Zalesovo Array**	**41.62**	**313**	*e*P	**P**	**21 44 48.8**	**+1.0**
ZAA1	**Zalesovo Array**	**41.62**	**313**	*e*P	**P**	**21 44 48.1**	**+0.3**
ZALV	**Zalesovo Beam**	**41.62**	**313**	P	**P**	**21 44 48.1**	**+0.3**
	2.1nm,0.5s,baz=96,slow=7.4,SNR=7.6						
MK32	**Makanchi Array**	**43.72**	**302**	*e*P	**P**	**21 45 05.6**	**+0.6**
MKAR	**Makanchi Array**	**43.72**	**302**	P	**P**	**21 45 05.6**	**+0.6**
	0.5nm,0.8s,baz=88,slow=8.5,SNR=5.0						
KURK	**Kurchatov**	**45.59**	**308**	*e*P	**P**	**21 45 20.2**	**+0.4**
	3.7nm,0.7s						
ILAR	**Eielson Array**	**50.06**	**32**	P	**P**	**21 45 54.3**	**0.0**
	0.4nm,0.7s,baz=281,slow=6.1,SNR=3.6						
ILB	**Eielson Array**	**50.06**	**32**	*e*P	**P**	**21 45 54.3**	**0.0**
ZRNK	**Zerenda**	**51.11**	**312**	*e*P	**P**	**21 46 02.9**	**+0.5**
	2.6nm,0.8s						
INK	**Inuvik**	**54.91**	**27**	P	**P**	**21 46 30.0**	**-0.2**
	1.0nm,0.8s,baz=274,slow=6.6,SNR=4.4						
INK	**Inuvik**	**54.91**	**27**	*e*P	**P**	**21 46 30.0**	**-0.2**
	13nm,1.7s						
WB2	**Warramunga Arr**	**56.72**	**187**	*e*P	**P**	**21 46 44.1**	**+0.5**
	42nm,1.8s						
WR1	**Warramunga Arr**	**56.72**	**187**	*e*P	**P**	**21 46 43.3**	**-0.4**
	48nm,1.9s						
WRA	**Warramunga Arr**	**56.72**	**187**	P	**P**	**21 46 43.3**	**-0.4**
	1.7nm,0.8s,baz=4.3,slow=7.3,SNR=13						
AS31	**Alice Springs**	**60.44**	**187**	*e*P	**P**	**21 47 09.6**	**0.0**
	5.8nm,1.8s						
ASAR	**Alice Springs**	**60.45**	**187**	P	**P**	**21 47 09.6**	**0.0**
	1.1nm,0.8s,baz=14,slow=7.7,SNR=9.7						
YKA	**Yellowknife Ar**	**64.36**	**30**	P	**P**	**21 47 34.5**	**-0.9**
	0.3nm,0.6s,baz=305,slow=7.0,SNR=6.0						
YKB5	**Yellowknife Ar**	**64.36**	**30**	*e*P	**P**	**21 47 34.5**	**-0.9**
FIA0	**FINESS Array S**	**68.75**	**332**	*e*P	**P**	**21 48 03.5**	**+0.1**
FINES	**FINESS Array B**	**68.75**	**332**	P	**P**	**21 48 03.5**	**+0.1**
	1.2nm,0.7s,baz=66,slow=6.5,SNR=4.3						
AKASG	**Malin Array Be**	**74.11**	**322**	P	**P**	**21 48 36.0**	**0.0**
	0.4nm,0.3s,baz=50,slow=6.2,SNR=5.4						
AKBB	**Malin Array Si**	**74.11**	**322**	*e*P	**P**	**21 48 36.0**	**0.0**
	6.0nm,0.6s						
NB200	**NORSAR Array S**	**74.18**	**337**	*e*P	**P**	**21 48 36.0**	**-0.3**
NOA	**NORSAR Array B**	**74.18**	**337**	P	**P**	**21 48 36.0**	**-0.3**
	0.9nm,0.7s,baz=41,slow=5.8,SNR=3.7						
PD31	**Pinedale Array**	**78.31**	**45**	*e*P	**P**	**21 49 00.8**	**+0.4**
PDAR	**Pinedale Array**	**78.31**	**45**	P	**P**	**21 49 00.8**	**+0.4**
	0.3nm,0.6s,baz=344,slow=2.9,SNR=4.3						
GERES	**GERESS Array B**	**82.59**	**328**	P	**P**	**21 49 23.4**	**+0.2**
	0.5nm,0.5s,baz=26,slow=6.2,SNR=5.2						
ABTX	**Abilene, Hawle**	**90.94**	**47**	*e*P	P	21 50 07.8	+3.7
	12nm,0.4s						

*CSEM **04** 21:42:11.1±0.9, 39.°25N×27.°42E, h2km, MD2.7, Error ellipse: s-maj=18.5km s-min=5.5km az=146.0*
*DDA **04** 21:42:12.3, 39.°67N×27.°08E, h7km, Md2.7*
ISC 04 21:42:12.7±1.1, **39.°58N**±0.°07×**27.°16E**±0.°07, **h10**km, **n10**, σ**0.s49**/9, **Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
BALY	**Balya**	**0.39**	**65**	*i* P	**Pg**	**21 42 20.7**	**+0.3**
BALY				*i* S	**Sb**	**21 42 27.5**	**-0.3**
BALY	**Balya**	**0.39**	**65**	P	**Pg**	**21 42 20.7**	**+0.3**
BALY				S	**Sb**	**21 42 27.5**	**-0.3**
AYVA	**Ayvalik**	**0.45**	**234**	*i* P	**Pb**	**21 42 22.2**	**-0.5**
AYVA				*i* S	**Sg**	**21 42 28.0**	**+0.5**
AYVA	**Ayvalik**	**0.45**	**234**	P	**Pb**	**21 42 22.2**	**-0.5**
AYVA				S	**Sg**	**21 42 28.0**	**+0.5**
GELI	**Tayfur-Gelibol**	**0.98**	**327**	*e*PG	Pn	21 42 37.4	+4.9
GELI				*e*SG	**Sg**	**21 42 44.5**	**+0.2**
GELI	**Tayfur-Gelibol**	**0.98**	**327**	*e*Pg	Pn	21 42 37.4	+4.9
ENEZ	**Enez**	**1.40**	**327**	*e*PG	Pg	21 42 45.0	+5.6
ENEZ	**Enez**	**1.40**	**327**	*e*Pg	Pg	21 42 45.0	+5.6
ALN	**Alexandroupoli**	**1.57**	**327**	*e*PG	Pg	21 42 48.8	+5.9
ALN	**Alexandroupoli**	**1.57**	**327**	*e*Pg	Pg	21 42 48.8	+5.9

MAN 04 21:43:42, 13.°44N×120.°43E, h20km, mb3.7, ML2.5, MS2.0, Mindoro

*NIED **04** 21:52:00, 38.°30N×141.°90E, h47km, Mw4.2 Best double couple: M0 2.03000×10^15 NP1:φs202.00000°, δ22.00000°, λ98.00000°. NP2:φs13.00000°, δ68.00000°, λ87.00000°.*
*BJI **04** 21:52:44.2, 37.°64N×142.°55E, h20km, mb4.4/20, mB4.8/7, Ms4.5/1*
*ISCJB **04** 21:52:54.5±0.6, 38.°25N±0.°03×141.°94E±0.°06, h51km±4km, mb4.3/36, MS3.3/5, Error ellipse: s-maj=7.7km s-min=4.3km az=21.3*
*NEIC **04** 21:52:55.9±0.7, 38.°25N×141.°87E, h48km±6km, mb4.7/12, Error ellipse: s-maj=7.9km s-min=5.1km az=117.0*
*JMA **04** 21:52:55.9±0.1, 38.°31N×141.°86E, h49km±1km, M4.1*
JMA Felt II J1.
*IDC **04** 21:52:56.6±0.5, 38.°29N×141.°85E, h53km±4km, mb3.8/25, mb1 4.0/30, mb1mx3.9/47, mbtmp4.1/30, MS3.3/11, Ms1 3.3/11, ms1mx3.0/54, Error ellipse: s-maj=14.0km s-min=9.0km az=108.0*
ISC 04 21:52:56.3±0.6, **38.°27N**±0.°04×**141.°91E**±0.°05, **h51**km±5km, **n107**, σ**0.s88**/114, **mb4.3**/36, **MS3.4**/5, **3C-3D, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
JIO	**Ouri**	**0.48**	**293**	P	**Pn**	**21 53 06.3**	**-1.0**
JIO				S	**Sn**	**21 53 13.3**	**-1.8**
OFUJ	**Ofunato**	**0.83**	**347**	P	**Pn**	**21 53 10.6**	**-1.2**
JMK	**Ichinoseki**	**0.87**	**322**	P	**Pn**	**21 53 11.3**	**-0.9**
JMK				S	**Sn**	**21 53 22.3**	**-1.6**
JMM	**Marumori**	**0.96**	**246**	P	**Pn**	**21 53 12.7**	**-0.8**
JMM				*e*S	**Sn**	**21 53 24.0**	**-2.2**
JOU	**Okura**	**0.98**	**276**	P	**Pn**	**21 53 13.3**	**-0.5**
JOU				S	**Sn**	**21 53 26.1**	**-0.6**
JFK	**Kawauchi**	**1.22**	**223**	P	**Pn**	**21 53 16.4**	**-0.5**
JFK				S	**Sn**	**21 53 31.0**	**-1.3**
JOM	**Ohasama**	**1.29**	**338**	P	**Pn**	**21 53 17.3**	**-0.7**
JYK	**Kaneyama**	**1.38**	**299**	P	**Pn**	**21 53 18.5**	**-0.6**
JFT	**Otama**	**1.45**	**239**	P	**Pn**	**21 53 20.2**	**+0.1**
JYS	**Shirataka**	**1.45**	**269**	P	**Pn**	**21 53 19.8**	**-0.3**
JYS				*e*S	**Sn**	**21 53 38.1**	**+0.1**
JRG	**Rokugo**	**1.50**	**319**	P	**Pn**	**21 53 20.2**	**-0.6**
MJAR	**Matsushiro Arr**	**3.41**	**241**	P	**Pn**	**21 53 47.8**	**+0.8**
	9.7nm,0.3s,baz=52,slow=10,SNR=52						
MJAR				LR	LR	21 55 21.5	
	comp=Z,325nm,20.2s,baz=60,slow=43						
MAJO	**Matsushiro**	**3.41**	**241**	*e*Pn	**Pn**	**21 53 48.6**	**+1.6**
MAT	**Matsushiro**	**3.41**	**241**	P	**Pn**	**21 53 48.5**	**+1.5**
MAT				*e*S	**Sn**	**21 54 26.2**	**0.0**
ERM	**Erimo**	**3.86**	**14**	*e*Pn	**Pn**	**21 53 53.0**	**-0.1**
ERM				*e*Sn	**Sn**	**21 54 36.2**	**-1.0**
INU	**Inuyama**	**4.89**	**235**	*e*Pn	**Pn**	**21 54 06.0**	**-1.2**
JHJ2	**Mitsune**	**5.42**	**199**	*e*Pn	**Pn**	**21 54 12.8**	**-1.6**
JHJ2				*e*Sn	**Sn**	**21 55 12.0**	**-3.5**
JHJ	**Hachijo jima 2**	**5.42**	**199**	P	**Pn**	**21 54 15.4**	**+0.9**
	16nm,0.3s,baz=316,slow=23,SNR=8.2						
JHJ				S	**Sn**	**21 55 14.6**	**-1.0**
	30nm,0.3s,baz=307,slow=20,SNR=3.9						
USRK	**Ussuriysk Ar.**	**9.53**	**312**	P	**Pn**	**21 55 11.3**	**+0.6**
	2.0nm,0.3s,baz=122,slow=13,SNR=30						
USRK				LR	LR	21 58 39.5	
	comp=Z,92nm,18.8s,baz=149,slow=36						
JNU	**Nakatsue**	**10.33**	**244**	P	**Pn**	**21 55 23.2**	**+1.4**
	0.4nm,0.3s,baz=51,slow=4.9,SNR=4.5						
JNU				LR	LR	21 59 42.9	
	comp=Z,155nm,21.0s,baz=311,slow=39						
JNU	**Nakatsue**	**10.33**	**244**	*e*Pn	**Pn**	**21 55 19.5**	**-2.3**
KSRS	**Korea Array**	**11.09**	**270**	P	Pn	21 55 35.4	+3.3
	0.5nm,0.3s,baz=81,slow=14,SNR=4.8						
KSRS				LR	LR	21 59 27.9	
	comp=Z,114nm,18.8s,baz=90,slow=35						
KS01	**Wonju Array Si**	**11.11**	**270**	*e*Pn	**Pn**	**21 55 32.6**	**+0.3**
KS15	**Wonju Array Si**	**11.12**	**270**	*e*Pn	**Pn**	**21 55 35.4**	**+2.9**
MDJ	**Mudanjiang**	**11.20**	**308**	P	Pn	21 55 38.5	+4.9
MDJ				pmax	pmax		
	comp=Z,11nm,1.3s						
MDJ				pmax	pmax		
	comp=Z,120nm,5.8s						
MDJ	**Mudanjiang**	**11.20**	**308**	*e*Pn	Pn	21 55 38.1	+4.5
KLR	**Kul'dur**	**13.18**	**330**	P	**Pn**	**21 56 00.2**	**-0.2**
	0.2nm,0.3s,baz=150,slow=14,SNR=3.4						
KLR				LR	LR	22 00 58.0	
	comp=Z,100nm,18.1s,baz=118,slow=37						
JOW	**Kunigami**	**16.17**	**229**	LR	LR	22 01 57.8	
	comp=Z,258nm,20.1s,baz=234,slow=34						
MA2	**Magadan**	**22.07**	**12**	P	**P**	**21 57 46.7**	**+0.1**
	6.0nm,0.5s,baz=212,slow=13,SNR=8.2						
YHNB	**Yeheng**	**22.08**	**238**	*e*P	**P**	**21 57 45.1**	**-2.0**
	159nm,1.7s						
SEY	**Seymchan**	**25.51**	**11**	P	**P**	**21 58 20.2**	**+0.7**
	1.4nm,0.5s,baz=174,slow=5.5,SNR=9.5						
XAN	**Xi'an**	**26.88**	**271**	P	**P**	**21 58 31.4**	**-1.0**
XAN				pmax	pmax		
	comp=Z,6.0nm,0.6s						
SONA0	**Songino Array**	**27.44**	**302**	*e*P	**P**	**21 58 36.6**	**-0.7**
	2.3nm,1.0s						
SONM	**Songino Array**	**27.44**	**302**	P	**P**	**21 58 36.6**	**-0.7**
	0.7nm,0.4s,baz=97,slow=9.4,SNR=4.0						
ENH	**Enshi**	**27.85**	**263**	*e*P	**P**	**21 58 41.1**	**+0.1**
	19nm,0.8s						
H11N2	**WAKE ISLAND Hy**	**28.47**	**123**	T	T	22 28 58.6	
	baz=316,slow=75,SNR=2533						
H11N1	**WAKE ISLAND Hy**	**28.48**	**123**	T	T	22 28 59.3	
	baz=316,slow=75,SNR=2835						
H11N3	**WAKE ISLAND Hy**	**28.49**	**123**	T	T	22 29 00.0	
	baz=316,slow=75,SNR=1663						
H11S1	**WAKE ISLAND Hy**	**29.23**	**125**	T	T	22 30 00.6	
	baz=318,slow=76,SNR=1490						
H11S3	**WAKE ISLAND Hy**	**29.23**	**125**	T	T	22 30 00.4	
	baz=318,slow=76,SNR=1623						
H11S2	**WAKE ISLAND Hy**	**29.24**	**125**	T	T	22 30 01.8	
	baz=318,slow=76,SNR=1587						
TLY	**Talaya**	**29.84**	**309**	LR	LR	22 10 39.6	
	comp=Z,45nm,19.4s,baz=90,slow=36						
LZH	**Lanzhou**	**30.27**	**278**	*e*P	**P**	**21 59 02.9**	**+0.3**
LZH				pP	pP	21 59 08.3	-7.3
LZH				sP	sP	21 59 11.1	-11
LZH				pmax	pmax		

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
	comp=Z,17nm,1.0s						
ATKA	Atka Island	33.36	51	eP	P	21 59 28.7	-0.6
	118nm,1.2s						
ZAA0	Zalesovo Array	41.38	311	eP	P	22 00 36.5	-0.7
ZAA1	Zalesovo Array	41.38	311	eP	P	22 00 36.9	-0.3
ZAA1				ePcP	PcP	22 02 34.3	-0.2
ZALV	Zalesovo Beam	41.38	311	P	P	22 00 36.9	-0.3
	4.9nm,0.5s,baz=85,slow=8.0,SNR=12						
ZALV				PcP	PcP	22 02 34.3	-0.2
	0.7nm,0.3s,baz=96,slow=2.9,SNR=3.3						
CM31	Chiang Mai Arr	42.20	254	eP	P	22 00 44.3	0.0
CMAR	Chiang Mai Arr	42.20	254	P	P	22 00 44.3	0.0
	0.7nm,0.6s,baz=45,slow=4.3,SNR=6.0						
CMAR				LR	LR	22 18 25.0	
	comp=Z,18nm,21.8s,baz=185,slow=36						
MK01	Makanchi Array	43.80	301	eP	P	22 00 56.7	-0.3
MK32	Makanchi Array	43.81	301	eP	P	22 00 56.7	-0.3
MKAR	Makanchi Array	43.81	301	P	P	22 00 56.7	-0.3
	3.9nm,0.7s,baz=86,slow=9.8,SNR=43						
MAKZ	Makanchi	44.01	301	eP	P	22 00 58.6	0.0
	3.7nm,0.8s						
KURK	Kurchatov	45.49	307	eP	P	22 01 10.4	+0.2
KURK				ePcP	PcP	22 02 48.1	-0.3
KURBB	Kurchatov Arra	45.56	307	P	P	22 01 10.4	-0.4
	12nm,0.8s,baz=83,slow=8.2,SNR=88						
KURBB				PcP	PcP	22 02 48.1	-0.5
	0.8nm,0.8s,baz=96,slow=3.6,SNR=3.6						
TAPN	Taplejung	46.26	273	eP	P	22 01 17.9	+0.9
	9.5nm,0.8s						
ODAN	Odare	46.74	273	eP	P	22 01 21.2	+0.5
	7.8nm,0.6s						
RAMN	Ramite	47.31	273	eP	P	22 01 25.3	+0.1
	25nm,0.9s						
GUN	Gumba	47.43	275	eP	P	22 01 26.7	+0.4
	18nm,0.6s						
KKN	Kakani	47.96	275	eP	P	22 01 30.5	+0.3
	25nm,0.8s						
ILAR	Eielson Array	48.25	33	P	P	22 01 31.9	+0.3
	0.5nm,0.6s,baz=272,slow=5.8,SNR=6.0						
ILAR				pP	pP	22 01 46.0	+0.7
	1.0nm,0.6s,baz=265,slow=6.2,SNR=6.3						
ILB	Eielson Array	48.25	33	eP	P	22 01 31.9	+0.3
GKN	Gorkha	48.36	276	eP	P	22 01 33.2	0.0
	33nm,1.0s						
KOLN	Koldanda	49.28	276	eP	P	22 01 40.5	+0.1
	16nm,0.9s						
PYUN	Piuthan	49.61	277	eP	P	22 01 43.2	+0.4
BVAR	Borovoye Array	50.04	312	P	P	22 01 45.0	-0.5
	1.4nm,0.6s,baz=71,slow=8.4,SNR=12						
BVAR				PcP	PcP	22 03 04.3	-0.4
	1.6nm,0.5s,baz=97,slow=3.2,SNR=8.2						
INK	Inuvik	53.11	28	P	P	22 02 08.3	+0.1
	1.5nm,1.0s,baz=274,slow=4.7,SNR=3.4						
INK	Inuvik	53.11	28	eP	P	22 02 08.3	+0.1
	10nm,1.6s						
AKTO	Aktyubinsk	58.15	312	P	P	22 02 44.4	-0.2
	2.3nm,0.9s,baz=61,slow=10,SNR=5.0						
WB2	Warramunga Arr	58.33	188	eP	P	22 02 46.2	+0.1
	51nm,1.8s						
WR1	Warramunga Arr	58.34	188	eP	P	22 02 46.2	+0.1
	62nm,1.9s						
WRA	Warramunga Arr	58.34	188	P	P	22 02 46.2	+0.1
	2.9nm,0.5s,baz=5.7,slow=7.1,SNR=26						
WRA				pP	pP	22 03 00.3	+0.2
	3.7nm,0.7s,baz=4.9,slow=7.3,SNR=9.0						
RES	Resolute Bay	61.31	15	P	P	22 03 05.7	-0.3
	1.4nm,0.5s,baz=320,slow=5.1,SNR=14						
RES	Resolute Bay	61.31	15	eP	P	22 03 05.7	-0.3
	14nm,2.0s						
AS31	Alice Springs	62.06	188	eP	P	22 03 11.7	+0.1
	1.0nm,0.9s						
ASAR	Alice Springs	62.06	188	P	P	22 03 11.7	+0.1
	1.1nm,0.5s,baz=12,slow=4.7,SNR=15						
ASAR				pP	pP	22 03 28.0	+2.2
	1.3nm,0.6s,baz=16,slow=5.2,SNR=7.4						
YKA	Yellowknife Ar	62.55	31	P	P	22 03 14.5	+0.1
	0.4nm,0.7s,baz=303,slow=7.0,SNR=7.9						
YKA				pP	pP	22 03 29.2	+0.7
	0.3nm,0.5s,baz=299,slow=5.9,SNR=4.6						
YKB5	Yellowknife Ar	62.55	31	eP	P	22 03 14.5	+0.1
ARCES	ARCESS Array B	62.98	339	P	P	22 03 17.1	-0.1
	3.6nm,0.9s,baz=48,slow=7.4,SNR=12						
ARCES				LR	LR	22 36 34.5	
	comp=Z,30nm,19.3s,baz=100,slow=42						
FIA0	FINESS Array S	67.91	332	eP	P	22 03 48.8	-0.3
FINES	FINESS Array B	67.91	332	P	P	22 03 48.8	-0.3
	3.5nm,0.6s,baz=37,slow=9.4,SNR=11						
STKA	Stephens Creek	69.79	180	P	P	22 04 01.7	+0.7
	1.4nm,0.7s,baz=330,slow=8.0,SNR=3.8						
STKA	Stephens Creek	69.79	180	eP	P	22 04 01.7	+0.7
	4.4nm,1.6s						
KBZ	Khabaz	70.40	311	P	P	22 04 05.0	+0.2
	3.5nm,1.0s,baz=72,slow=6.4,SNR=3.7						
GNI	Garni	71.28	307	LR	LR	22 36 49.0	
	comp=Z,38nm,18.1s,baz=67,slow=37						
NB2	NORSAR Subarra	73.20	337	P	P	22 04 21.3	-0.1
	comp=Z,5.5nm,0.8s,baz=40,slow=6.2						
NB200	NORSAR Array S	73.20	337	eP	P	22 04 21.4	0.0
NOA	NORSAR Array B	73.20	337	P	P	22 04 21.4	0.0
	comp=Z,3.5nm,0.7s,baz=39,slow=5.9,SNR=10						
NOA				LR	LR	22 39 15.3	
	comp=Z,22nm,20.2s,baz=355,slow=38						
AKASG	Malin Array Be	73.56	322	P	P	22 04 23.3	-0.3
	comp=Z,1.7nm,0.4s,baz=45,slow=6.0,SNR=19						
AKBB	Malin Array Si	73.56	322	eP	P	22 04 23.3	-0.3
	comp=Z,6.5nm,0.8s						
NVAR	Mina Array Bea	73.94	54	pP	pP	22 04 42.1	+1.2
	comp=Z,1.0nm,0.8s,baz=294,slow=7.2,SNR=6.0						
PD31	Pinedale Array	76.53	46	eP	P	22 04 41.9	+0.6
PDAR	Pinedale Array	76.53	46	P	P	22 04 41.9	+0.6
	comp=Z,0.3nm,0.5s,baz=300,slow=0.7,SNR=6.0						
PDAR				pP	pP	22 04 56.1	+0.4
	comp=Z,1.0nm,0.6s,baz=279,slow=2.0,SNR=7.1						
EFOR	EFORIE	78.26	317⇑	iP	P	22 05 00.1	+10
BR101	Keskin Array S	78.33	312	eP	P	22 04 51.3	+0.1
BRTR	Keskin Array B	78.33	312	P	P	22 04 51.3	+0.1
	comp=Z,0.6nm,0.5s,baz=98,slow=3.1,SNR=5.7						
ARR	Arges	79.44	320⇓	iP	P	22 04 58.9	+1.7
GZR	Gura Zlata	80.35	321⇑	iP	P	22 05 02.2	+0.2
PRU	Pruhonice	80.63	329	eP	P	22 05 04.2	+0.8
BZS	Buzias	80.75	322⇓	iP	P	22 05 04.2	+0.1
MDVR	Moldovita	81.31	321⇑	iP	P	22 05 07.0	-0.2
KHC	Kasperske Hory	81.70	329	eP	P	22 05 09.8	+0.7
GERES	GERESS Array B	81.87	328	P	P	22 05 10.0	-0.1
	comp=Z,0.7nm,0.5s,baz=39,slow=5.2,SNR=8.0						
VTS	Vitosha	82.14	319⇓	iP	P	22 05 12.6	+0.9
LTX	Lajitas	89.06	53	eP	P	22 05 47.0	+0.7
TXAR	Lajitas Array	89.06	53	P	P	22 05 47.0	+0.7
	comp=Z,0.3nm,0.5s,baz=270,slow=1.3,SNR=4.2						
TXAR				pP	pP	22 06 01.1	+0.1
	comp=Z,0.9nm,0.6s,baz=296,slow=3.1,SNR=6.6						
LPAZ	La Paz	145.72	59	PKPbc	PKPbc	22 12 30.7	0.0
	comp=Z,0.8nm,0.7s,baz=334,slow=4.5,SNR=4.8						
LPAZ				pPKPbc	pPKPbc	22 12 45.0	-0.9
	comp=Z,1.9nm,0.7s,baz=0.3,slow=6.9,SNR=5.0						

*ISK **04** 22:02:19.6, 36°.51N×28°.81E, h2km, MD2.8*
*ISCJB **04** 22:02:20.3±0.9, 36°.48N±0°.05×28°.79E±0°.04, h3km±6km, Error ellipse: s-maj=9.1km s-min=4.5km az=25.1*
*DDA **04** 22:02:20.4, 36°.50N×28°.78E, h7km, Md3.0*
*CSEM **04** 22:02:20.6±0.4, 36°.49N×28°.82E, h5km, MD2.8, Error ellipse: s-maj=8.8km s-min=4.1km az=19.0*
ISC 04 22:02:20.5±1.3, **36°.50N**±0°.04×**28°.80E**±0°.03, **h1**km±11km, **n28**, σ0s.**78**/46, **Dodecanese Islands**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
FETY	Fethiye	0.27	59	ePG	Pg	22 02 25.5	-0.1
FETY	Fethiye	0.27	59	ePg	Pg	22 02 25.5	-0.1
DALY	Dalyan (Mu˜la	0.34	340	ePG	Pg	22 02 27.1	0.0
DALY				eSG	Sg	22 02 32.6	+1.1
DALY	Dalyan (Mu˜la	0.34	340	ePg	Pg	22 02 27.1	0.0
DALY				eSg	Sg	22 02 32.6	+1.1
TURN	Turunc	0.41	337	iP	Pb	22 02 30.4	-0.2
TURN				iS	Sb	22 02 38.2	+0.9
TURN	Turunc	0.41	337	P	Pb	22 02 30.4	-0.2
TURN				S	Sb	22 02 38.2	+0.9
AKAS	Kas	0.70	112	iP	Pg	22 02 33.6	-0.3
AKAS				iS	Sb	22 02 45.3	-0.5
AKAS	Kas	0.70	112	P	Pg	22 02 33.6	-0.3
AKAS				S	Sb	22 02 45.3	-0.5
YER	Yerkesik	0.76	327	ePG	Pg	22 02 35.1	0.0
YER				eSG	Sb	22 02 46.6	-1.0
YER	Yerkesik	0.76	327	ePg	Pg	22 02 35.1	0.0
YER				eSg	Sb	22 02 46.6	-1.0
GLHS	Glhisar (BURDU	0.86	40	ePG	Pg	22 02 36.8	-0.3
GLHS	Glhisar (BURDU	0.86	40	ePg	Pg	22 02 36.8	-0.3
ELL	Elmali	0.93	74	ePG	Pg	22 02 38.3	0.0
ELL	Elmali	0.93	74	ePg	Pg	22 02 38.3	0.0
GOLH	Golhisar	0.96	39	iP	Pg	22 02 37.5	-1.4
GOLH				iS	Sb	22 02 53.5	+0.3
GOLH	Golhisar	0.96	39	P	Pg	22 02 37.5	-1.4
GOLH				S	Sb	22 02 53.5	+0.3
BDRM	Kayabasi	1.23	298	iP	Pg	22 02 44.4	+0.3
BDRM				iS	Sg	22 03 00.1	+0.1
BDRM	Kayabasi	1.23	298	P	Pg	22 02 44.4	+0.3
BDRM				S	Sg	22 03 00.1	+0.1
BODT	Bodrum	1.32	296	ePN	Pn	22 02 45.8	-0.4
BODT	Bodrum	1.32	296	ePn	Pn	22 02 45.8	-0.4
KORT	Korkueli	1.34	68	iP	Pg	22 02 46.9	+0.7
KORT				iS	Sn	22 03 06.9	+1.7
KORT	Korkueli	1.34	68	P	Pg	22 02 46.9	+0.7
KORT				S	Sn	22 03 06.9	+1.7
AYDN	Tasoluk	1.38	328	iP	Pn	22 02 46.5	-0.5
AYDN				iS	Sb	22 03 03.8	-1.5
AYDN	Tasoluk	1.38	328	P	Pn	22 02 46.5	-0.5
AYDN				S	Sb	22 03 03.8	-1.5
AYDB	Zeytinkoy-Aydi	1.62	334	ePN	Pn	22 02 50.0	-0.4
AYDB	Zeytinkoy-Aydi	1.62	334	ePn	Pn	22 02 50.0	-0.4
KHAL	Karahalli	1.95	16	iP	Pn	22 02 53.9	-1.0
KHAL				iS	Sn	22 03 20.3	+0.2
KHAL	Karahalli	1.95	16	P	Pn	22 02 53.9	-1.0
KHAL				S	Sn	22 03 20.3	+0.2

*ISK **04** 22:09:36.9, 36°.88N×29°.02E, h5km, MD2.5*
*ISCJB **04** 22:09:37.4±1.1, 36°.47N±0°.06×28°.78E±0°.05, h1km±8km, Error ellipse: s-maj=9.9km s-min=5.5km az=22.5*
*CSEM **04** 22:09:37.3±0.6, 36°.46N×28°.79E, h2km, MD2.5, Error ellipse: s-maj=12.0km s-min=6.2km az=17.0*
*DDA **04** 22:09:37.3, 36°.48N×28°.79E, h7km, Md2.7*
ISC 04 22:09:36.9±1.2, **36°.49N**±0°.05×**28°.81E**±0°.03, **h18**km±7km, **n18**, σ0s.**88**/32, **Dodecanese Islands**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
FETY	Fethiye	0.27	57	ePG	Pb	22 09 43.0	-0.2
FETY				eSG	Sg	22 09 47.5	+0.6
FETY	Fethiye	0.27	57	ePg	Pb	22 09 43.0	-0.2
FETY				eSg	Sg	22 09 47.5	+0.6
DALY	Dalyan (Mu˜la	0.35	340	ePG	Pg	22 09 44.0	-0.2
DALY				eSG	Sg	22 09 49.5	+0.3
DALY	Dalyan (Mu˜la	0.35	340	ePg	Pg	22 09 44.0	-0.2
DALY				eSg	Sg	22 09 49.5	+0.3
TURN	Turunc	0.42	337	iP	Pn	22 09 47.3	-0.7
TURN				iS	Sn	22 09 55.3	0.0
TURN	Turunc	0.42	337	P	Pn	22 09 47.3	-0.7
TURN				S	Sn	22 09 55.3	0.0
AKAS	Kas	0.69	111	iP	Pg	22 09 51.0	+0.5
AKAS				iS	Sn	22 10 02.8	+0.4
AKAS	Kas	0.69	111	P	Pg	22 09 51.0	+0.5
AKAS				S	Sn	22 10 02.8	+0.4
YER	Yerkesik	0.77	327	ePG	Pb	22 09 50.7	-1.1
YER	Yerkesik	0.77	327	ePg	Pb	22 09 50.7	-1.1
ELL	Elmali	0.93	73	ePG	Pb	22 09 52.1	-2.3
GOLH	Golhisar	0.96	39	iP	Pg	22 09 55.8	+0.2
GOLH				iS	Sn	22 10 10.5	+1.6
GOLH	Golhisar	0.96	39	P	Pg	22 09 55.8	+0.2
GOLH				S	Sn	22 10 10.5	+1.6
BDRM	Kayabasi	1.23	298	iP	Pg	22 10 01.2	+0.5
BDRM				iS	Sg	22 10 18.2	+1.3
BDRM	Kayabasi	1.23	298	P	Pg	22 10 01.2	+0.5
BDRM				S	Sg	22 10 18.2	+1.3
AYDN	Tasoluk	1.38	328	iP	Pg	22 10 03.9	+0.3
AYDN				iS	Sg	22 10 22.6	+1.0
AYDN	Tasoluk	1.38	328	P	Pg	22 10 03.9	+0.3
AYDN				S	Sg	22 10 22.6	+1.0
AYDB	Zeytinkoy-Aydi	1.63	334	ePN	Pn	22 10 04.6	-0.2

*NIED **04** 22:13:00, 37°.20N×141°.60E, h20km, Mw3.6 Best double couple: Mo3.15000×10^14 NP1:φs160.00000°, δ21.00000°, λ-139.00000°. NP2:φs31.00000°, δ76.00000°, λ-74.00000°.*
*IDC **04** 22:13:27.7±2.2, 37°.22N×141°.99E, h0km, mb3.7/4, mb1 3.8/6, mb1mx3.4/59, mbtmp3.7/6, ML3.7/2, MS3.0/2, Ms1 3.0/2, ms1mx2.5/41, Error ellipse: s-maj=42.8km s-min=27.2km az=74.0*
*ISCJB **04** 22:13:32.5±0.9, 37°.12N±0°.04×141°.70E±0°.07, h35km, mb3.6/4, MS3.2/1, Error ellipse: s-maj=8.3km s-min=5.7km az=177.2*
*JMA **04** 22:13:33.3±0.2, 37°.15N×141°.62E, h45km±2km, M3.5*
ISC 04 22:13:33.8±1.2, **37°.17N**±0°.05×**141°.69E**±0°.08, **h35**km, **n16**, σ1s.**64**/24, **mb3.6**/4, **Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
JFK	Kawauchi	0.68	287	P	Pn	22 13 45.9	-1.1
JFK				S	Sn	22 13 54.6	-1.9
ONAJ	Iwakimizuishiy	0.72	265	P	Pn	22 13 46.3	-1.3
ONAJ				S	Sn	22 13 55.6	-1.8
JMM	Marumori	1.00	314	P	Pn	22 13 50.4	-0.9
JMM				eS	Sn	22 14 03.0	-1.2
JHO	Hitachi	1.06	239	P	Pn	22 13 50.7	-1.5
JHO				S	Sn	22 14 03.6	-2.1
JFT	Otama	1.14	288	P	Pn	22 13 53.2	-0.1
JFT				S	Sn	22 14 07.5	-0.1
JIO	Ouri	1.31	348	P	Pn	22 13 55.1	-0.5
JOU	Okura	1.45	326	P	Pn	22 13 58.0	+0.5
JOU				S	Sn	22 14 15.8	+0.5
JFY	Yanaizu	1.60	279	P	Pn	22 13 59.8	+0.1
MJAR	Matsushiro Arr	2.87	258	Pn	Pn	22 14 17.2	+0.1
	3.6nm,0.3s,baz=85,slow=15,SNR=12						
MJAR				Sn	Sn	22 14 55.8	+5.5
	7.7nm,0.3s,baz=84,slow=25,SNR=8.6						
MJAR				LR	LR	22 15 41.4	
	comp=Z,118nm,19.4s,baz=100,slow=43						
MAT	Matsushiro	2.87	258	P	Pn	22 14 18.3	+1.3
MAT				S	Sn	22 14 50.6	+0.3
JHJ	Hachijo jima 2	4.33	202	Pn	Pn	22 14 37.5	+0.3
	26nm,0.3s,baz=50,slow=14,SNR=3.7						
JHJ				Sn	Sn	22 15 26.4	-0.1
	75nm,0.3s,baz=53,slow=20,SNR=7.9						
SONM	Songino Array	27.90	304	P	P	22 19 22.6	+2.2
	0.4nm,0.4s,baz=78,slow=7.5,SNR=2.4						
ZALV	Zalesovo Beam	41.99	312	LR	LR	22 40 51.7	
	comp=Z,31nm,19.1s,baz=50,slow=39						
MKAR	Makanchi Array	44.24	302	P	P	22 21 39.3	-0.4
	0.6nm,0.7s,baz=78,slow=8.1,SNR=8.7						
KURBB	Kurchatov Arra	46.09	308	P	P	22 21 53.6	-0.6
	0.7nm,0.7s,baz=84,slow=8.2,SNR=6.8						
WRA	Warramunga Arr	57.23	188	P	P	22 23 17.3	-0.4
	0.5nm,0.6s,baz=6.7,slow=7.3,SNR=3.4						

*IDC **04** 22:13:54.1±0.8, 35°.35N×142°.95E, h0km, mb3.8/10, mb1 4.1/11, mb1mx3.8/58, mbtmp3.8/11, ML2.5/1, MS3.0/4, Ms1 3.0/4, ms1mx2.5/43, Error ellipse: s-maj=28.1km s-min=18.5km az=107.0*
*ISCJB **04** 22:13:59.9±0.7, 35°.4N±0°.1×142°.8E±0°.2, h59km, mb3.8/10, MS3.6/1, Error ellipse: s-maj=18.9km s-min=16.8km az=178.7*
ISC 04 22:14:02.0±1.0, **35°.4N**±0°.2×**142°.9E**±0°.2, **h59**km, **n15**, σ0s.**39**/10, **mb3.8**/10, **Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
JNU	Nakatsue	10.19	261	LR	LR	22 20 49.5	
	comp=Z,42nm,20.2s,baz=124,slow=41						
USRK	Ussuriysk Ar.	12.17	320	Pn	Pn	22 16 49.0	-3.4
	0.3nm,0.3s,baz=129,slow=13,SNR=5.3						
KSRS	Korea Array	12.24	284	LR	LR	22 21 04.0	
	comp=Z,46nm,19.1s,baz=72,slow=35						
KLR	Kul'dur	16.10	333	LR	LR	22 23 41.3	
	comp=Z,29nm,18.2s,baz=112,slow=36						
SONM	Songino Array	29.72	306	P	P	22 20 02.9	+0.4
	0.8nm,0.5s,baz=99,slow=8.9,SNR=2.5						
MKAR	Makanchi Array	46.03	304	P	P	22 22 19.2	-0.4
	0.3nm,0.6s,baz=89,slow=8.9,SNR=3.1						
ILAR	Eielson Array	50.28	32	P	P	22 22 51.9	-0.1
	1.0nm,0.8s,baz=268,slow=6.3,SNR=8.2						
INK	Inuvik	55.34	27	P	P	22 23 29.4	+0.2
	1.1nm,0.6s,baz=303,slow=6.4,SNR=11						
WRA	Warramunga Arr	55.59	190	P	P	22 23 32.0	+0.4
	3.0nm,0.9s,baz=6.4,slow=7.4,SNR=11						
ASAR	Alice Springs	59.32	190	P	P	22 23 57.4	-0.5
	0.8nm,0.6s,baz=13,slow=7.5,SNR=11						
RES	Resolute Bay	63.92	14	P	P	22 24 28.2	+0.1
	0.8nm,0.6s,baz=312,slow=8.1,SNR=8.0						
YKA	Yellowknife Ar	64.65	30	P	P	22 24 32.7	-0.4
	0.1nm,0.4s,baz=300,slow=7.0,SNR=5.3						
FINES	FINESS Array B	70.85	333	LR	LR	22 58 04.1	
	comp=Z,30nm,18.5s,baz=263,slow=37						
NVAR	Mina Array Bea	75.03	53	P	P	22 25 37.8	+0.2
	0.9nm,0.8s,baz=285,slow=7.2,SNR=5.0						
PDAR	Pinedale Array	77.98	46	P	P	22 25 54.4	+0.2
	0.4nm,0.6s,baz=316,slow=1.7,SNR=3.5						

*IDC **04** 22:15:45.6±4.5, 49°.99N×27°.61W, h0km, mb3.9/5, mb1 3.8/6, mb1mx3.4/67, mbtmp3.7/6, MS3.2/9, Ms1 3.2/9, ms1mx2.9/47, Error ellipse: s-maj=109.2km s-min=31.3km az=81.0*
ISC 04 22:15:47.5±4.0, **50°.0N**±0°.2×**27°.5W**±0°.6, **h10**km, **n14**, σ0s.**61**/6, **mb4.0**/5, **MS3.1**/9, **Northern Mid-Atlantic Ridge**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
ESDC	Sonseca Array	19.54	113	P	P	22 20 14.7	-0.5
	baz=308,slow=10.0,SNR=2.5						
SFJD	Kangerlussuaq	20.69	334	LR	LR	22 27 22.9	
	comp=Z,56nm,19.0s,baz=238,slow=34						
NOA	NORSAR Array B	24.19	48	LR	LR	22 29 35.1	
	comp=Z,46nm,18.1s,baz=0.0,slow=34						
HFS	Hagfors	25.29	51	LR	LR	22 29 23.5	
	comp=Z,61nm,19.6s,baz=296,slow=32						
GERES	GERESS Array B	26.60	76	LR	LR	22 31 13.4	
	comp=Z,47nm,18.5s,baz=296,slow=35						
VRAC	Vranov	28.26	74	LR	LR	22 33 08.1	
	comp=Z,47nm,18.2s,baz=310,slow=37						
FINES	FINESS Array B	31.37	48	P	P	22 22 08.7	+0.7
	1.7nm,0.7s,baz=278,slow=9.7,SNR=4.3						
MLR	Muntele Rosu	35.59	76	LR	LR	22 37 05.0	
	comp=Z,8.6nm,18.8s,baz=16,slow=36						
TORD	Torodi Ar. Bea	43.81	137	P	P	22 23 53.9	+0.3
	0.8nm,0.6s,baz=338,slow=7.3,SNR=6.6						
TORD				LR	LR	22 41 04.2	
	comp=Z,36nm,19.4s,baz=145,slow=35						
DBIC	Dimbokro	47.15	149	LR	LR	22 41 29.9	
	comp=Z,24nm,21.8s,baz=138,slow=33						
BVAR	Borovoye Array	56.30	46	P	P	22 25 27.9	-0.1
	1.4nm,0.9s,baz=303,slow=6.7,SNR=5.1						
TXAR	Lajitas Array	59.53	280	LR	LR	22 50 02.1	
	comp=Z,38nm,18.1s,baz=0.0,slow=35						
KURBB	Kurchatov Arra	61.65	44	P	P	22 26 04.7	-0.4
	0.5nm,0.3s,baz=321,slow=7.2,SNR=8.3						
MKAR	Makanchi Array	66.14	45	P	P	22 26 34.3	-0.4
	1.6nm,1.0s,baz=328,slow=5.6,SNR=8.1						

*ISK **04** 22:16:08.8, 40°.09N×28°.23E, h4km, MD2.6*
*ISCJB **04** 22:16:09.3±0.5, 40°.12N±0°.03×28°.18E±0°.04, h4km±7km, Error ellipse: s-maj=5.2km s-min=5.2km az=18.7*
*CSEM **04** 22:16:09.6±0.2, 40°.12N×28°.22E, h10km, MD2.6, Error ellipse: s-maj=4.7km s-min=3.9km az=96.0*
*DDA **04** 22:16:09.4, 40°.12N×28°.15E, h8km, Md2.7*
ISC 04 22:16:09.5±0.9, **40°.11N**±0°.03×**28°.21E**±0°.03, **h12**km±8km, **n23**, σ0s.**47**/32, **Turkey**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
KCTX	Karacabey (Bur	0.19	37	ePG	Pg	22 16 13.8	+0.2
KCTX				eSG	Sg	22 16 16.7	+0.1
KCTX	Karacabey (Bur	0.19	37	ePg	Pg	22 16 13.8	+0.2
KCTX				eSg	Sg	22 16 16.7	+0.1
EDC	Edincik	0.35	312	ePG	Pg	22 16 16.6	+0.1
EDC	Edincik	0.35	312	ePg	Pg	22 16 16.6	+0.1
BALB	Balikesir	0.54	208	ePG	Pg	22 16 20.1	+0.2
BALB	Balikesir	0.54	208	ePg	Pg	22 16 20.1	+0.2
KNL	Bal˜–kesir	0.55	287	iP	Pg	22 16 18.8	-1.3
KNL				iS	Sg	22 16 26.6	-0.7
DURS	Dursunbey	0.55	158	iP	Pb	22 16 20.9	-0.2
DURS				iS	Sb	22 16 28.9	-0.1
DURS	Dursunbey	0.55	158	P	Pb	22 16 20.9	-0.2
DURS				S	Sb	22 16 28.9	-0.1
MDNY	Mudanya-Bursa	0.58	63	ePG	Pg	22 16 20.4	-0.3
MDNY	Mudanya-Bursa	0.58	63	ePg	Pg	22 16 20.4	-0.3
BALY	Balya	0.59	231	iP	Pg	22 16 20.6	-0.3
BALY				iS	Sg	22 16 28.6	-0.1
BALY	Balya	0.59	231	P	Pg	22 16 20.6	-0.3
BALY				S	Sg	22 16 28.5	-0.1
DST	Dursunbey	0.60	148	ePG	Pg	22 16 20.4	-0.7
DST	Dursunbey	0.60	148	ePg	Pg	22 16 20.4	-0.7
DEMI	Demirci	1.14	160	iP	Pn	22 16 32.1	+0.8
DEMI				iS	Sn	22 16 47.4	+0.5
DEMI	Demirci	1.14	160	P	Pn	22 16 32.1	+0.8
DEMI				S	Sn	22 16 47.4	+0.5
CTKS	Kestanelik-??a	1.15	11	ePN	Pn	22 16 31.4	+0.1
CTKS	Kestanelik-??a	1.15	11	ePn	Pn	22 16 31.4	+0.1
TVSB	Tavsanli	1.17	124	ePN	Pb	22 16 31.3	-0.4
TVSB	Tavsanli	1.17	124	ePn	Pb	22 16 31.3	-0.4
GELI	Tayfur-Gelibol	1.36	283	ePN	Pg	22 16 35.8	+0.3
GELI	Tayfur-Gelibol	1.36	283	ePn	Pg	22 16 35.8	+0.3

*ISCJB **04** 22:20:39.7±0.6, 38°.63N±0°.03×31°.15E±0°.04, h1km±7km, Error ellipse: s-maj=5.2km s-min=4.8km az=9.0*
*DDA **04** 22:20:39.2, 38°.62N×31°.15E, h7km, Md2.8*
*CSEM **04** 22:20:39.5±0.3, 38°.58N×31°.11E, h2km, MD2.8, Error ellipse: s-maj=6.7km s-min=4.4km az=176.0*
*ISK **04** 22:20:39.4, 38°.53N×31°.11E, h7km, MD2.5*
ISC 04 22:20:38.5±1.3, **38°.57N**±0°.04×**31°.18E**±0°.03, **h3**km±12km, **n21**, σ0s.**56**/36, **1C**, **Turkey**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
BOLV	Bolvadin	0.24	310⇑	iP	Pg	22 20 43.2	+0.1
BOLV				iS	Sg	22 20 46.5	+0.3
BOLV	Bolvadin	0.24	310	P	Pg	22 20 43.2	+0.1
BOLV				S	Sg	22 20 46.5	+0.3
SHUT	Suhut-Afyon	0.49	268	ePG	Pg	22 20 48.3	+0.3
SHUT				eSG	Sg	22 20 54.9	+0.4
SHUT	Suhut-Afyon	0.49	268	ePg	Pg	22 20 48.3	+0.3
SHUT				eSg	Sg	22 20 54.9	+0.4
KIZT	Kizilcal	0.63	60	ePG	Pn	22 20 53.4	-1.1
KIZT	Kizilcal	0.63	60	ePg	Pn	22 20 53.4	-1.1
BAGO	Egridir - ISPA	0.66	208	eP	Pb	22 20 52.5	-0.1
BAGO				iS	Sn	22 21 05.0	-0.7
KDHN	Kadinhani	0.73	93	iP	Pb	22 20 54.2	+0.2
KDHN				iS	Sb	22 21 05.2	+0.6
KDHN	Kadinhani	0.73	93	P	Pb	22 20 54.2	+0.2
KDHN				S	Sb	22 21 05.2	+0.6
AUKIR	K˜–rka- Seyitg	0.87	325	iP	Pg	22 20 55.4	+0.1
AUKIR				iS	Sg	22 21 06.5	-0.1
AUKIR	K˜–rka- Seyitg	0.87	325	P	Pg	22 20 55.4	+0.1
AUKIR				S	Sg	22 21 06.5	-0.1
SVRH	Sivrihisar-ESK	0.92	17	ePG	Pn	22 20 58.5	0.0
SVRH	Sivrihisar-ESK	0.92	17	ePg	Pn	22 20 58.5	0.0
ESKT	Eskisehir	0.98	345	iP	Pg	22 20 57.2	-0.3
ESKT				iS	Sg	22 21 10.3	+0.1
SEYT	Eskypehyr	0.98	345	P	Pg	22 20 57.2	-0.3
SEYT				S	Sg	22 21 10.3	+0.1
KHAL	Karahalli	1.34	262	iP	Pn	22 21 03.3	-1.0
KHAL				iS	Sn	22 21 23.9	+1.2
KHAL	Karahalli	1.34	262	P	Pn	22 21 03.3	-1.0
KHAL				S	Sn	22 21 23.9	+1.2
BORA	Eskisehir	1.43	337	iP	Pn	22 21 05.0	-0.5
BORA				iS	Sg	22 21 24.3	-0.1
BORA	Eskisehir	1.43	337	P	Pn	22 21 05.0	-0.5
BORA				S	Sg	22 21 24.3	-0.1
TVSB	Tavsanli	1.60	304	ePN	Pb	22 21 08.5	-0.4
TVSB	Tavsanli	1.60	304	ePn	Pb	22 21 08.5	-0.4

MEX 04 22:37:27.0±0.4, **16°.37N**×**99°.57W**, **h18**km, **MD3.9**, **Near coast of Guerrero**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
ACX	Acapulco	0.57	331	eP	Pg	22 37 36.6	-1.8
ACX				eS	Sg	22 37 43.8	-2.3
ACP2	Acapulco	0.59	328	eP	Pg	22 37 36.8	-1.9
ACP2				eS	Sg	22 37 44.6	-2.0
CAIG	El Cayaco	0.95	315	eP	Pb	22 37 42.1	-2.9
CAIG				eS	Sb	22 37 53.3	-4.0
PNIG	Pinotepa	1.38	89	eP	Pn	22 37 48.0	-3.5

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
PNIG				*i* S	Sn	22 38 08.7	-0.5
TLIG	**Tlapa**	**1.52**	**39**	*e*P	Pn	22 37 50.3	-3.1
TLIG				*i* S	Sn	22 38 13.3	+0.4
ARIG	**Puente Sto Nin**	**2.04**	**339**	*e*P	Pn	22 37 58.9	-1.7
ARIG				*i* S	Sb	22 38 28.4	-0.3
ZIIG	**Zihuatanejo**	**2.19**	**304**	*e*P	Pn	22 37 45.4	-17
YAIG	**Yautepec**	**2.52**	**11**	*e*P	Pn	22 38 08.9	+1.6
YAIG				*i* S	Sb	22 38 40.9	-1.8
VHO	**Vista Hermosa**	**2.80**	**75**	*e*P	Pb	22 38 16.9	+0.2

*IDC **04** 22:41:10.7±0.9, 26°.87N×143°.81E, h0km, mb3.9/13, mb1 4.1/16, mb1mx3.9/47, mbtmp3.8/16, ML3.2/3, Error ellipse: s-maj=23.6km s-min=16.7km az=6.0*
*ISCJB **04** 22:41:13.7±0.5, 26°.85N±0°.08×143°.84E±0°.05, h33km, mb4.2/21, Error ellipse: s-maj=11.0km s-min=6.8km az=2.7*
*NEIC **04** 22:41:15.7±0.5, 26°.81N×143°.73E, h35km, mb4.5/5, Error ellipse: s-maj=11.3km s-min=10.5km az=147.0*
ISC 04 22:41:15.6±0.7**, 26°.8N**±0°.1×**143°.76E**±0°.08**, h35km, n37, σ1s.12**/39**, mb4.0**/21**, Bonin Islands region**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
CBIJ	**Chichi jima**	**1.43**	**281**	*e*Pn	**Pn**	**22 41 39.0**	**0.0**
CBIJ				*e*Sn	**Sn**	**22 41 57.8**	**+1.1**
JCJ	**Chichijima**	**1.43**	**281**	Pn	**Pn**	**22 41 39.0**	**0.0**
	25nm,0.3s,baz=100,slow=23,SNR=7.3						
JCJ				Sn	**Sn**	**22 41 57.8**	**+1.1**
	247nm,0.3s,baz=270,slow=20,SNR=28						
MJAR	**Matsushiro Arr**	**10.77**	**335**	Pn	**Pn**	**22 43 45.6**	**-1.8**
	0.6nm,0.3s,baz=164,slow=12,SNR=6.0						
KSRS	**Korea Array**	**17.06**	**312**	P	**P**	**22 45 11.8**	**-1.1**
	0.2nm,0.3s,baz=120,slow=11,SNR=3.5						
KSAR	**Wonju Array Be**	**17.08**	**312**	P	**Pn**	**22 45 11.8**	**+0.1**
USRK	**Ussuriysk Ar.**	**19.76**	**334**	P	**P**	**22 45 42.3**	**-0.3**
	0.1nm,0.3s,baz=140,slow=11,SNR=2.0						
KLR	**Kul'dur**	**24.22**	**341**	P	**P**	**22 46 29.0**	**0.0**
	1.4nm,0.5s,baz=136,slow=8.9,SNR=7.5						
KKM	**Kota Kinabalu**	**33.40**	**237**	*e*P	**P**	**22 47 48.3**	**-2.9**
	33nm,1.2s						
ULN	**Ulaanbaatar**	**35.48**	**316**	*e*P	**P**	**22 48 06.4**	**-2.5**
	9.7nm,2.0s						
SONA0	**Songino Array**	**35.88**	**316**	*e*P	**P**	**22 48 12.4**	**+0.1**
	1.5nm,1.0s						
SONA1	**Songino Array**	**35.88**	**316**	*e*P	**P**	**22 48 10.2**	**-2.1**
SONM	**Songino Array**	**35.88**	**316**	P	**P**	**22 48 12.4**	**+0.1**
	0.8nm,0.7s,baz=132,slow=8.6,SNR=2.4						
KSM	**Kuching**	**40.82**	**237**	*e*P	**P**	**22 48 52.6**	**-1.5**
	15nm,1.3s						
WR1	**Warramunga Arr**	**47.39**	**192**	*e*P	**P**	**22 49 46.9**	**+0.3**
	44nm,1.9s						
WRA	**Warramunga Arr**	**47.39**	**192**	P	**P**	**22 49 46.9**	**+0.3**
	1.7nm,0.8s,baz=12,slow=8.7,SNR=4.8						
FITZ	**Fitzroy Crossi**	**48.00**	**203**	*e*P	**P**	**22 49 51.9**	**+0.5**
	74nm,1.9s						
MK01	**Makanchi Array**	**51.72**	**310**	*e*P	**P**	**22 50 21.2**	**+1.8**
MK32	**Makanchi Array**	**51.72**	**310**	*e*P	**P**	**22 50 19.9**	**+0.5**
MKAR	**Makanchi Array**	**51.72**	**310**	P	**P**	**22 50 19.9**	**+0.5**
	0.7nm,0.4s,baz=90,slow=8.8,SNR=23						
MAKZ	**Makanchi**	**51.94**	**310**	*e*P	**P**	**22 50 22.7**	**+1.7**
	7.9nm,1.6s						
NRIK	**Noril'sk**	**53.41**	**338**	P	**P**	**22 50 31.7**	**+0.2**
	0.9nm,0.5s,baz=124,slow=7.3,SNR=3.6						
HDA	**Harding Lake**	**57.21**	**29**	*e*P	**P**	**22 50 59.1**	**+0.2**
	18nm,1.3s						
ILAR	**Eielson Array**	**57.27**	**28**	P	**P**	**22 50 58.5**	**-0.9**
	0.8nm,0.9s,baz=250,slow=6.2,SNR=6.1						
ILB	**Eielson Array**	**57.27**	**28**	*e*P	**P**	**22 50 58.5**	**-0.9**
KKAR	**Karatay Array**	**60.37**	**306**	*e*P	**P**	**22 51 23.4**	**+2.0**
INK	**Inuvik**	**62.69**	**25**	P	**P**	**22 51 36.8**	**+0.3**
	0.7nm,0.4s,baz=272,slow=5.1,SNR=7.7						
INK	**Inuvik**	**62.69**	**25**	*e*P	**P**	**22 51 36.8**	**+0.3**
	18nm,1.9s						
YKA	**Yellowknife Ar**	**71.70**	**29**	P	**P**	**22 52 33.6**	**-0.1**
	0.5nm,0.6s,baz=292,slow=5.9,SNR=11						
YKB5	**Yellowknife Ar**	**71.70**	**29**	*e*P	**P**	**22 52 33.6**	**-0.1**
FIA0	**FINESS Array S**	**78.80**	**334**	*e*P	**P**	**22 53 15.5**	**+1.0**
FINES	**FINESS Array B**	**78.80**	**334**	P	**P**	**22 53 15.5**	**+1.0**
	0.5nm,0.4s,baz=60,slow=8.2,SNR=7.3						
KBZ	**Khabaz**	**79.21**	**314**	P	**P**	**22 53 17.9**	**+0.8**
	2.2nm,0.8s,baz=68,slow=5.4,SNR=3.8						
NV01	**Mina Array Sit**	**79.57**	**52**	*e*P	**P**	**22 53 19.9**	**+0.3**
NVAR	**Mina Array Bea**	**79.57**	**52**	P	**P**	**22 53 19.9**	**+0.3**
	0.9nm,0.7s,baz=281,slow=5.3,SNR=6.5						
PDAR	**Pinedale Array**	**83.41**	**45**	P	**P**	**22 53 40.3**	**+0.5**
	0.5nm,0.8s,baz=302,slow=1.7,SNR=3.7						
BRTR	**Keskin Array B**	**87.20**	**314**	P	**P**	**22 53 58.7**	**0.0**
	0.5nm,0.5s,baz=108,slow=4.7,SNR=3.1						
LPAZ	**La Paz**	**148.62**	**77**	PKPbc	**PKPbc**	**23 01 01.1**	**+0.7**
	1.9nm,0.7s,baz=305,slow=0.8,SNR=8.3						

*NIED **04** 22:49:00, 38°.40N×144°.40E, h5km, Mw3.9 Best double couple: Mo7.79000×10^14 NP1:φs5.00000°, δ24.00000°, λ-84.00000°. NP2:φs179.00000°, δ66.00000°, λ-93.00000°.*
*IDC **04** 22:49:18.1±0.8, 38°.22N×144°.76E, h0km, mb3.8/10, mb1 4.0/13, mb1mx3.8/43, mbtmp3.9/13, ML3.5/3, MS3.0/6, Ms1 3.0/6, ms1mx2.7/49, Error ellipse: s-maj=23.0km s-min=17.8km az=116.0*
*ISCJB **04** 22:49:20.0±0.3, 38°.27N±0°.03×144°.64E±0°.04, h26km, mb4.5/23, MS3.4/2, Error ellipse: s-maj=5.0km s-min=4.1km az=155.7*
*NEIC **04** 22:49:20.1±3.0, 38°.24N×144°.76E, h14km±19km, mb4.5/8, Error ellipse: s-maj=7.8km s-min=5.6km az=114.0*
*JMA **04** 22:49:22.3±0.3, 38°.38N×144°.44E, h22km, M4.6*
ISC 04 22:49:21.6±0.5**, 38°.26N**±0°.05×**144°.68E**±0°.06**, h26km, n61, σ1s.54**/71**, mb4.2**/23**, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**2.50**	**290**	P	**Pn**	**22 49 59.8**	**-0.7**
JIO	**Ouri**	**2.63**	**275**	P	**Pn**	**22 50 01.7**	**-0.6**
JIO				S	**Sn**	**22 50 30.6**	**-2.7**
JMK	**Ichinoseki**	**2.80**	**285**	P	**Pn**	**22 50 04.3**	**-0.4**
JMK				S	**Sn**	**22 50 35.5**	**-2.1**
JOM	**Ohasama**	**2.91**	**296**	P	**Pn**	**22 50 05.9**	**-0.3**
JOM				S	**Sn**	**22 50 39.1**	**-1.3**
JYK	**Kaneyama**	**3.45**	**282**	P	**Pn**	**22 50 14.0**	**+0.3**
JYK				S	**Sn**	**22 50 52.9**	**-0.8**
JFT	**Otama**	**3.52**	**259**	P	**Pn**	**22 50 15.1**	**+0.6**
JFT				S	**Sn**	**22 50 54.0**	**-1.3**
ERM	**Erimo**	**3.93**	**343**	*e*Pn	**Pn**	**22 50 20.0**	**-0.2**
ERM				*e*Sn	**Sn**	**22 51 03.5**	**-2.1**
JOT	**Ohata**	**4.19**	**319**	P	**Pn**	**22 50 24.2**	**+0.4**
JOT				*e*S	**Sn**	**22 51 07.8**	**-4.1**
JCH	**Churui**	**4.47**	**347**	P	**Pn**	**22 50 26.5**	**-1.1**
JCH				S	**Sn**	**22 51 14.8**	**-4.0**
JKB	**Kayabe**	**4.58**	**324**	P	**Pn**	**22 50 30.0**	**+0.8**
JKB				S	Sn	22 51 16.1	-5.4
BSO1	**Boso 1**	**4.67**	**221**	S	**Sn**	**22 51 20.7**	**-2.3**
JRY	**Ryogami san**	**5.13**	**246**	P	**Pn**	**22 50 36.7**	**-0.1**
JRY				S	**Sn**	**22 51 30.8**	**-4.3**
NEM2	**Nemuro 2**	**5.17**	**9**	P	**Pn**	**22 50 34.1**	**-3.1**
NEM2				S	Sn	22 51 27.8	-8.2
JOD2	**Odawara 2**	**5.39**	**238**	P	**Pn**	**22 50 40.4**	**0.0**
JOD2				S	**Sn**	**22 51 36.6**	**-5.0**
MJAR	**Matsushiro Arr**	**5.43**	**254**	Pn	**Pn**	**22 50 41.6**	**+0.7**
	3.1nm,0.3s,baz=85,slow=15,SNR=14						
MJAR				LR	LR	22 52 52.3	
	comp=Z,101nm,21.2s,baz=115,slow=39						
MAJO	**Matsushiro**	**5.43**	**254**	*e*Pn	**Pn**	**22 50 42.6**	**+1.7**
MAT	**Matsushiro**	**5.43**	**254**	P	**Pn**	**22 50 42.4**	**+1.5**
MAT				S	**Sn**	**22 51 42.8**	**+0.3**
JOSM	**Okushiri--Mats**	**5.52**	**315**	P	**Pn**	**22 50 43.0**	**+0.9**
JTKR	**Abashiri--Toko**	**5.74**	**354**	P	**Pn**	**22 50 43.5**	**-1.6**
JTKR				S	Sn	22 51 44.1	-5.9
JHR	**Hokuryu**	**5.92**	**339**	P	**Pn**	**22 50 48.5**	**+0.9**
JHR				S	**Sn**	**22 51 53.7**	**-0.8**
JHJ2	**Mitsune**	**6.48**	**219**	*e*Pn	**Pn**	**22 50 54.7**	**-0.6**
JHJ2				*e*Sn	Sn	22 51 56.6	-12
JHJ	**Hachijo jima 2**	**6.49**	**219**	Pn	**Pn**	**22 50 55.0**	**-0.4**
	13nm,0.3s,baz=43,slow=18,SNR=3.3						
JHJ				Sn	Sn	22 51 59.9	-8.8
	15nm,0.3s,baz=90,slow=20,SNR=1.9						
USRK	**Ussuriysk Ar.**	**11.25**	**306**	Pn	**Pn**	**22 52 01.8**	**+1.2**
	0.3nm,0.3s,baz=110,slow=14,SNR=7.9						
JNU	**Nakatsue**	**12.33**	**250**	LR	LR	22 57 12.3	
	comp=Z,58nm,18.9s,baz=116,slow=38						
KSRS	**Korea Array**	**13.27**	**272**	LR	LR	22 56 41.6	
	comp=Z,43nm,22.0s,baz=10.0,slow=33						
KLR	**Kul'dur**	**14.39**	**324**	LR	LR	22 58 10.5	
	comp=Z,31nm,18.8s,baz=111,slow=37						
NIKH	**Nikolski High**	**35.02**	**50**	*e*P	**P**	**22 56 08.8**	**-3.0**
	191nm,1.2s						
GAMB	**Gambell**	**36.33**	**31**	*e*P	**P**	**22 56 22.1**	**-0.8**
	25nm,1.8s						
ZAA1	**Zalesovo Array**	**43.03**	**311**	*e*P	**P**	**22 57 19.2**	**+0.5**
ZAA1				*e*PcP	**PcP**	**22 59 09.2**	**+0.7**
ZALV	**Zalesovo Beam**	**43.03**	**311**	P	**P**	**22 57 19.2**	**+0.5**
	1.2nm,0.6s,baz=78,slow=9.4,SNR=3.9						
ZALV				PcP	**PcP**	**22 59 09.2**	**+0.7**
	0.6nm,0.3s,baz=93,slow=2.9,SNR=2.3						
KDAK	**Kodiak Island**	**44.45**	**43**	*e*P	**P**	**22 57 29.9**	**-0.1**
	157nm,2.0s						
MK01	**Makanchi Array**	**45.68**	**302**	*e*P	**P**	**22 57 41.3**	**+1.2**
MK31	**Makanchi Array**	**45.68**	**302**	*e*P	**P**	**22 57 39.6**	**-0.4**
MK32	**Makanchi Array**	**45.68**	**302**	*e*P	**P**	**22 57 41.1**	**+1.0**
MKAR	**Makanchi Array**	**45.68**	**302**	P	**P**	**22 57 41.1**	**+1.0**
	1.2nm,0.7s,baz=86,slow=9.6,SNR=16						
MKAR				LR	LR	23 19 03.4	
	comp=Z,23nm,18.1s,baz=160,slow=39						
MKAR	**Makanchi Array**	**45.68**	**302**	*e*P	**P**	**22 57 39.6**	**-0.5**
MAKZ	**Makanchi**	**45.88**	**302**	*e*P	**P**	**22 57 42.8**	**+1.1**
	1.9nm,1.0s						
SML	**Sawmill**	**46.47**	**37**	*e*P	**P**	**22 57 45.6**	**-0.4**
	44nm,1.8s						
ILAR	**Eielson Array**	**47.07**	**33**	P	**P**	**22 57 51.0**	**+0.3**
	0.3nm,0.7s,baz=258,slow=7.0,SNR=4.3						
MMRI	**Maumere**	**51.13**	**209**	*e*P	**P**	**22 58 20.2**	**-2.1**
	37nm,1.1s						
INK	**Inuvik**	**52.11**	**28**	P	**P**	**22 58 30.1**	**+1.1**
	1.3nm,1.0s,baz=293,slow=8.0,SNR=3.8						
INK	**Inuvik**	**52.11**	**28**	*e*P	**P**	**22 58 30.1**	**+1.1**
	15nm,1.8s						
ZRNK	**Zerenda**	**52.50**	**312**	*e*P	**P**	**22 58 33.8**	**+1.6**
	2.3nm,0.9s						
EKS2	**Erkin-Say**	**52.68**	**299**	*e*P	**P**	**22 58 33.8**	**0.0**
	13nm,1.9s						
WB2	**Warramunga Arr**	**58.70**	**191**	*e*P	**P**	**22 59 16.6**	**-0.3**
	36nm,1.8s						
WR1	**Warramunga Arr**	**58.70**	**191**	*e*P	**P**	**22 59 17.1**	**+0.1**
	49nm,1.9s						
WRA	**Warramunga Arr**	**58.70**	**191**	P	**P**	**22 59 17.0**	**+0.1**
	1.1nm,0.7s,baz=11,slow=6.9,SNR=4.6						
RES	**Resolute Bay**	**60.76**	**15**	*e*P	**P**	**22 59 31.4**	**+1.0**
	9.5nm,1.7s						
YKA	**Yellowknife Ar**	**61.44**	**31**	P	**P**	**22 59 35.9**	**+0.7**
	0.3nm,0.7s,baz=300,slow=7.0,SNR=7.0						
YKB5	**Yellowknife Ar**	**61.44**	**31**	*e*P	**P**	**22 59 35.9**	**+0.7**
AS31	**Alice Springs**	**62.42**	**191**	*e*P	**P**	**22 59 42.9**	**+0.6**
	1.2nm,1.0s						
ASAR	**Alice Springs**	**62.42**	**191**	P	**P**	**22 59 42.9**	**+0.6**
	0.3nm,0.6s,baz=8.6,slow=6.8,SNR=3.3						
FIA0	**FINESS Array S**	**68.92**	**333**	*e*P	**P**	**23 00 24.8**	**+1.0**
FINES	**FINESS Array B**	**68.92**	**333**	P	**P**	**23 00 24.8**	**+1.0**
	1.4nm,0.7s,baz=47,slow=10,SNR=4.3						
KBZ	**Khabaz**	**72.05**	**312**	P	**P**	**23 00 44.1**	**+0.9**
	2.5nm,0.8s,baz=45,slow=3.2,SNR=4.4						
NPI	**North Pocatell**	**73.59**	**49**	*e*P	**P**	**23 00 52.5**	**-0.2**
VRAC	**Vranov**	**81.47**	**329**	LR	LR	23 43 06.2	
	comp=Z,31nm,18.2s,baz=271,slow=40						
SCIA	**State Center**	**84.38**	**39**	*e*P	**P**	**23 01 51.9**	**+0.4**
	200nm,1.4s						
LTX	**Lajitas**	**87.31**	**54**	*e*P	**P**	**23 02 07.1**	**+0.7**
TXAR	**Lajitas Array**	**87.31**	**54**	P	**P**	**23 02 07.1**	**+0.6**
	0.3nm,0.7s,baz=342,slow=2.1,SNR=3.3						
TORD	**Torodi Ar. Bea**	**118.23**	**318**	PKP	**PKPdf**	**23 08 06.8**	**-0.1**
	0.5nm,1.2s,baz=328,slow=2.3,SNR=4.2						

*IDC **04** 22:51:31.1±1.8, 2°.13N×96°.13E, h0km, mb4.0/7, mb1 4.1/8, mb1mx3.7/43, mbtmp4.0/8, Error ellipse: s-maj=67.7km s-min=25.9km az=53.0*
*ISCJB **04** 22:51:34.8±0.7, 2°.31N±0°.05×96°.16E±0°.05, h28km, mb4.0/7, Error ellipse: s-maj=8.2km s-min=6.6km az=44.0*
*DJA **04** 22:51:40.0±0.9, 2°N±3°×9°6E±°, h26km±14km, M3.8/8, MLv3.8/8*
ISC 04 22:51:36.7±1.0**, 2°.33N**±0°.06×**96°.21E**±0°.10**, h28km, n20, σ0s.70**/19**, mb4.1**/7**, Northern Sumatera**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
TPTI		**1.34**	**46**	P	**Pn**	**22 51 59.3**	**-0.2**
TPTI				S	**Sn**	**22 52 16.5**	**+0.1**
GSI	**Gunungsitoli**	**1.70**	**127**	P	**Pn**	**22 52 05.3**	**+0.8**
GSI				S	**Sn**	**22 52 25.5**	**+0.1**
KCSI	**Kotacane, Aceh**	**1.96**	**53**	P	**Pn**	**22 52 08.8**	**+0.7**
KCSI				S	**Sn**	**22 52 31.7**	**0.0**
TSI	**Tuntungan**	**2.62**	**64**	P	**Pn**	**22 52 17.8**	**+0.6**
TSI				S	**Sn**	**22 52 47.5**	**-0.6**
MNSI	**Mandailing Nat**	**3.70**	**114**	P	**Pn**	**22 52 32.2**	**+0.2**
MNSI				S	**Sn**	**22 53 14.6**	**0.0**
BKNI	**Bangkinang**	**5.22**	**112**	P	**Pn**	**22 52 54.0**	**+1.0**
CMAR	**Chiang Mai Arr**	**16.25**	**9**	Pn	**Pn**	**22 55 24.3**	**+1.2**
	baz=195,slow=12,SNR=4.5						
H08S2	**Diego Garcia H**	**25.65**	**247**	T	T	23 23 30.8	
	baz=68,slow=76,SNR=477						
H08S3	**Diego Garcia H**	**25.65**	**247**	T	T	23 23 35.5	
	baz=68,slow=76,SNR=434						
H08S1	**Diego Carcia H**	**25.67**	**247**	T	T	23 23 36.7	
	baz=68,slow=76,SNR=515						
H01W3	**Cape Leeuwin H**	**40.66**	**157**	T	T	23 42 15.0	
	baz=332,slow=76,SNR=35						
H01W2	**Cape Leeuwin H**	**40.67**	**157**	T	T	23 42 17.6	
	baz=332,slow=76,SNR=33						
H01W1	**Cape Leeuwin H**	**40.68**	**157**	T	T	23 42 15.2	
	baz=332,slow=76,SNR=29						
WRA	**Warramunga Arr**	**43.47**	**122**	P	**P**	**22 59 36.1**	**-1.7**
	0.7nm,0.9s,baz=303,slow=9.1,SNR=3.2						
MKAR	**Makanchi Array**	**45.92**	**347**	P	**P**	**22 59 57.0**	**+0.1**
	1.0nm,0.4s,baz=158,slow=9.3,SNR=32						
ZALV	**Zalesovo Beam**	**52.30**	**352**	P	**P**	**23 00 45.2**	**-0.4**
	2.6nm,0.5s,baz=170,slow=8.1,SNR=7.0						
BVAR	**Borovoye Array**	**54.87**	**341**	P	**P**	**23 01 04.4**	**-0.1**
	0.9nm,0.6s,baz=140,slow=8.9,SNR=6.1						
KLR	**Kul'dur**	**55.70**	**27**	P	**P**	**23 01 10.9**	**+0.3**
	0.5nm,0.3s,baz=276,slow=8.1,SNR=3.7						
FINES	**FINESS Array B**	**78.55**	**333**	P	**P**	**23 03 35.3**	**0.0**
	1.1nm,0.6s,baz=116,slow=4.4,SNR=3.7						
ARCES	**ARCESS Array B**	**81.15**	**340**	P	**P**	**23 03 49.1**	**-0.2**
	1.3nm,0.7s,baz=101,slow=4.9,SNR=7.8						

*ISCJB **04** 22:54:40.9±0.5, 40°.34N±0°.03×25°.67E±0°.04, h9km±5km, Error ellipse: s-maj=5.7km s-min=4.4km az=176.9*
*CSEM **04** 22:54:40.5±0.3, 40°.33N×25°.67E, h15km, ML1.3, Error ellipse: s-maj=7.8km s-min=5.7km az=117.0*
*ATH **04** 22:54:40.7, 40°.34N×25°.68E, h14km±5km, ML1.3/1, Error ellipse: s-maj=5.2km s-min=1.0km az=309.0*
*DDA **04** 22:54:42.3, 40°.33N×25°.80E, h7km, Md2.5*
ISC 04 22:54:40.9±1.1**, 40°.34N**±0°.03×**25°.68E**±0°.03**, h19km**±2km**, n16, σ0s.66**/27**, Aegean Sea**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
SMTH	**Samothraki Isl**	**0.18**	**321**	P	**Pb**	**22 54 45.1**	**+0.4**
SMTH				S	**Sb**	**22 54 47.1**	**0.0**
SMTH	**Samothraki Isl**	**0.18**	**321**	P	**Pb**	**22 54 45.1**	**+0.4**
SMTH				S	**Sb**	**22 54 47.1**	**0.0**
SMTH				AML	AML	22 54 47.6	
	comp=E,336μm,0.2s						
SMTH				AML	AML	22 54 47.6	
	comp=N,493μm,0.1s						
BOZC	**Bozcaada**	**0.57**	**150**	*i* P	**Pb**	**22 54 52.6**	**+0.4**
BOZC				*i* S	**Sg**	**22 55 00.5**	**+0.5**
LIA	**Limnos Island**	**0.58**	**221**	P	**Pb**	**22 54 52.6**	**+0.2**
LIA				S	**Sg**	**22 55 00.9**	**+0.7**
ALN	**Alexandroupoli**	**0.63**	**26**	P	**Pg**	**22 54 53.7**	**+0.3**
ALN				S	**Sb**	**22 55 01.5**	**-0.1**
ALN	**Alexandroupoli**	**0.63**	**26**	P	**Pg**	**22 54 53.7**	**+0.3**
ALN				S	**Sb**	**22 55 01.5**	**-0.1**
KESN	**Edirne-Kesan**	**0.91**	**57**	*i* P	**Pb**	**22 54 58.6**	**+0.3**
KESN				*i* S	**Sg**	**22 55 10.9**	**+0.1**
KESN	**Edirne-Kesan**	**0.91**	**57**	P	**Pb**	**22 54 58.6**	**+0.3**
KESN				S	**Sg**	**22 55 10.9**	**+0.1**
KAVA	**Kavala**	**1.10**	**307**	P	**Pb**	**22 55 01.8**	**+0.4**
KAVA				S	**Sn**	**22 55 16.8**	**+0.6**
KAVA	**Kavala**	**1.10**	**307**	P	**Pb**	**22 55 01.8**	**+0.4**
SIGR	**SIGRI**	**1.13**	**173**	P	**Pn**	**22 55 00.4**	**-1.4**
SIGR				S	**Sg**	**22 55 18.2**	**+0.6**
SIGR	**SIGRI**	**1.13**	**173**	P	**Pn**	**22 55 00.4**	**-1.4**
SIGR				S	**Sg**	**22 55 18.2**	**+0.6**
PRK	**Paraskevi**	**1.18**	**157**	P	**Pn**	**22 55 01.9**	**-0.5**
PRK	**Paraskevi**	**1.18**	**157**	P	**Pn**	**22 55 01.9**	**-0.5**
OUR	**Ouranopolis**	**1.30**	**271**	P	**Pn**	**22 55 02.8**	**-1.2**
OUR	**Ouranopolis**	**1.30**	**271**	P	**Pn**	**22 55 02.8**	**-1.2**

JMA 04 22:55:46.4±0.3**, 38°.42N**×**144°.21E, h0km, M3.5, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**2.09**	**289**	P	Pn	22 56 23.4	+0.7
JIO	**Ouri**	**2.25**	**272**	S	Sn	22 56 54.2	+1.0
JTH	**Tanohata**	**2.37**	**310**	*e*S	Sb	22 56 58.5	-1.3
JOM	**Ohasama**	**2.51**	**296**	P	Pn	22 56 29.6	+1.2
JMM	**Marumori**	**2.75**	**259**	S	Sn	22 57 06.5	+0.8
JOU	**Okura**	**2.79**	**270**	S	Sn	22 57 08.8	+2.2
JFT	**Otama**	**3.19**	**255**	S	Sn	22 57 17.3	+0.7

*NIED **04** 23:08:00, 35°.50N×141°.90E, h5km, Mw4.0 Best double couple: Mo1.29000×10^15 NP1:φs133.00000°, δ8.00000°, λ-45.00000°. NP2:φs268.00000°, δ84.00000°, λ-96.00000°.*
*IDC **04** 23:08:12.5±0.8, 35°.43N×141°.77E, h0km, mb3.7/13, mb1 3.9/14, mb1mx3.7/50, mbtmp3.7/14, ML3.2/1, MS2.7/1, Ms1 2.7/1, ms1mx2.2/41, Error ellipse: s-maj=22.2km s-min=19.8km az=105.0*
*JMA **04** 23:08:15.6±0.2, 35°.49N×141°.85E, h51km±3km, M3.6*
*ISCJB **04** 23:08:16.7±1.1, 35°.47N±0°.04×141°.77E±0°.09, h41km±10km, mb3.7/13, Error ellipse: s-maj=11.6km s-min=7.2km az=4.5*
ISC 04 23:08:16.2±2.1**, 35°.46N**±0°.05×**141°.77E**±0°.08**, h23km**±14km**, n30, σ0s.45**/33**, mb3.7**/13**, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.79**	**289**	P	**Pb**	**23 08 31.4**	**+0.2**
CHOJ				*e*S	**Sn**	**23 08 42.4**	**-0.5**
BSO1	**Boso 1**	**1.03**	**219**	P	**Pn**	**23 08 34.7**	**-0.1**
BSO1				S	**Sn**	**23 08 48.7**	**+0.5**
BSO3	**Boso 3**	**1.22**	**238**	P	**Pb**	**23 08 38.1**	**-0.4**
BSO3				S	**Sb**	**23 08 54.2**	**+0.4**
BSO4	**Boso 4**	**1.26**	**249**	P	**Pb**	**23 08 38.9**	**-0.4**
JIM2	**Oshima 3**	**2.06**	**250**	P	**Pn**	**23 08 49.0**	**-0.4**
JIM2				*e*S	**Sn**	**23 09 14.5**	**+0.2**
JAG	**Ashikaga**	**2.12**	**298**	P	**Pn**	**23 08 49.4**	**-0.8**
JOD2	**Odawara 2**	**2.20**	**266**	P	**Pn**	**23 08 51.3**	**-0.1**
JOD2				*e*S	**Sn**	**23 09 18.4**	**+0.5**
JFT	**Otama**	**2.36**	**331**	P	**Pn**	**23 08 53.6**	**0.0**
JFT				*e*S	**Sn**	**23 09 21.4**	**-0.5**
JRY	**Ryogami san**	**2.40**	**284**	P	**Pn**	**23 08 55.0**	**+0.8**
JKT	**Katashina**	**2.43**	**303**	P	**Pn**	**23 08 54.8**	**+0.2**
JYN	**Shimob**	**2.64**	**272**	P	**Pn**	**23 08 57.7**	**+0.3**
MJAR	**Matsushiro Arr**	**3.09**	**292**	Pn	**Pn**	**23 09 03.5**	**-0.1**
	2.8nm,0.3s,baz=117,slow=8.6,SNR=8.8						
MAT	**Matsushiro**	**3.09**	**292**	P	**Pn**	**23 09 04.6**	**+1.0**
MAT				*e*S	**Sn**	**23 09 39.5**	**-0.3**
KLR	**Kul'dur**	**15.61**	**335**	LR	LR	23 17 56.1	
	comp=Z,26nm,19.8s,baz=108,slow=37						
H11S1	**WAKE ISLAND Hy**	**27.78**	**121**	T	T	23 43 09.4	
	baz=312,slow=76,SNR=12						
H11S3	**WAKE ISLAND Hy**	**27.78**	**121**	T	T	23 43 11.6	
	baz=312,slow=76,SNR=13						
H11S2	**WAKE ISLAND Hy**	**27.80**	**121**	T	T	23 43 13.0	
	baz=312,slow=76,SNR=11						
ZALV	**Zalesovo Beam**	**43.20**	**314**	P	**P**	**23 16 15.3**	**+0.2**
	0.7nm,0.3s,baz=79,slow=7.7,SNR=3.6						
MKAR	**Makanchi Array**	**45.22**	**303**	P	**P**	**23 16 31.3**	**-0.2**
	0.4nm,0.7s,baz=85,slow=11,SNR=6.8						
ILAR	**Eielson Array**	**50.68**	**32**	P	**P**	**23 17 13.5**	**+0.1**
	0.6nm,0.8s,baz=284,slow=6.1,SNR=5.9						
WRA	**Warramunga Arr**	**55.54**	**188**	P	**P**	**23 17 49.1**	**-0.5**
	1.2nm,0.5s,baz=6.1,slow=7.6,SNR=3.7						
INK	**Inuvik**	**55.66**	**27**	P	**P**	**23 17 50.2**	**+0.2**
	0.9nm,1.0s,baz=310,slow=8.7,SNR=5.0						
ASAR	**Alice Springs**	**59.27**	**188**	P	**P**	**23 18 15.9**	**-0.1**
	0.5nm,0.5s,baz=4.6,slow=5.8,SNR=3.7						
YKA	**Yellowknife Ar**	**65.03**	**30**	P	**P**	**23 18 54.4**	**+0.3**
	0.6nm,0.9s,baz=300,slow=6.4,SNR=8.5						
FINES	**FINESS Array B**	**70.35**	**333**	P	**P**	**23 19 27.7**	**+0.1**
	0.9nm,0.9s,baz=69,slow=7.6,SNR=4.2						
NVAR	**Mina Array Bea**	**75.70**	**53**	P	**P**	**23 19 60.0**	**-0.1**
	0.5nm,0.7s,baz=262,slow=4.0,SNR=4.4						
AKASG	**Malin Array Be**	**75.72**	**323**	P	**P**	**23 19 59.2**	**-0.5**
	0.2nm,0.3s,baz=47,slow=8.2,SNR=5.0						
NOA	**NORSAR Array B**	**75.75**	**338**	P	**P**	**23 19 59.2**	**-0.5**
	0.4nm,0.6s,baz=39,slow=5.6,SNR=2.6						
PDAR	**Pinedale Array**	**78.56**	**45**	P	**P**	**23 20 16.7**	**+0.5**
	0.4nm,0.7s,baz=318,slow=2.0,SNR=4.0						
TXAR	**Lajitas Array**	**90.85**	**53**	P	**P**	**23 21 18.6**	**+0.4**
	0.3nm,0.7s,baz=318,slow=5.4,SNR=3.8						

*DJA **04** 23:11:00.4±0.8, 10°S±4°×11°4E±°, h16km±8km, M4.7/22, mB5.3/1, mb4.6/6, MLv4.7/22, Mw(mB)4.8/1*
*ISCJB **04** 23:11:03.5±0.6, 9°.34S±0°.06×114°.00E±0°.03, h77km±4km, mb4.3/24, Error ellipse: s-maj=10.9km s-min=4.4km az=15.4*
*NEIC **04** 23:11:04.0±0.3, 9°.25S×114°.01E, mb4.6/13, Error ellipse: s-maj=10.4km s-min=4.5km az=210.0*
NEIC Felt [II] at Nusadua.
*IDC **04** 23:11:04.3±1.0, 9°.22S×114°.13E, h63km±8km, mb4.1/14, mb1 4.2/16, mb1mx3.8/47, mbtmp4.4/16, MS3.0/5, Ms1 3.0/5, ms1mx2.9/29, Error ellipse: s-maj=18.9km s-min=10.6km az=48.0*
ISC 04 23:11:04.2±0.7**, 9°.42S**±0°.06×**114°.00E**±0°.04**, h69km**±6km**, h68km:pP-P, n93, σ1s.19**/103**, mb4.5**/24**, 2D, South of Jawa**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
JAGI	**Jajag, Banyuwa**	**0.96**	**9**	P	**Pn**	**23 11 20.3**	**-1.8**
JAGI				S	**Sn**	**23 11 38.3**	**+2.9**
JAGI	**Jajag, Banyuwa**	**0.96**	**9**	*e*Pn	**Pn**	**23 11 19.6**	**-2.6**
GMJI	**Gumukmas**	**1.26**	**334**	P	**Pn**	**23 11 25.0**	**-1.1**
IGBI	**Denpasar**	**1.28**	**62**	P	**Pn**	**23 11 24.5**	**-1.8**
DNP	**Denpasar**	**1.41**	**58**	P	**Pn**	**23 11 27.1**	**-0.8**
DNP				S	**Sn**	**23 11 47.5**	**+1.7**
ABJI	**Asem Bagus**	**1.63**	**8**	P	**Pn**	**23 11 31.9**	**+1.0**
KMMI	**Kalianget**	**2.35**	**359**	P	**Pn**	**23 11 41.8**	**+1.1**
PWJI	**Pagerwojo**	**2.58**	**302**	P	**Pn**	**23 11 41.7**	**-1.9**
PWJI				S	**Sn**	**23 12 13.8**	**-0.1**
TWSI	**Taliwang, Sumb**	**2.93**	**77**	P	**Pn**	**23 11 47.6**	**-0.9**
PCJI	**Pacitan**	**3.04**	**293**	P	**Pn**	**23 11 49.2**	**-0.8**
NGJI	**Ngawi**	**3.23**	**309**	P	**Pn**	**23 11 52.8**	**+0.2**
WOJI	**Wonogiri, Jawa**	**3.42**	**297**	P	**Pn**	**23 11 54.4**	**-0.8**
UGM	**Wanagama**	**3.75**	**293**	P	**Pn**	**23 11 58.4**	**-1.3**
UGM				S	**Sn**	**23 12 44.9**	**+2.3**
UGM	**Wanagama**	**3.75**	**293**	*e*Pn	**Pn**	**23 12 01.0**	**+1.3**
PLAI	**Plampang**	**3.78**	**81**	P	**Pn**	**23 11 58.9**	**-1.2**
PLAI				S	**Sn**	**23 12 44.8**	**+1.4**
KPJI	**Karang Pucung**	**5.42**	**292**	P	**Pn**	**23 12 21.4**	**-1.2**
	47nm,0.4s,0.5nm						
BBKI	**Banjar Baru**	**5.98**	**8**	P	**Pn**	**23 12 31.7**	**+1.5**
	98nm,0.9s,0.4nm						
CISI	**Cisompet, Garu**	**6.39**	**286**	P	**Pn**	**23 12 35.4**	**-0.4**
	122nm,0.5s,3μm0.7nm						
CISI	**Cisompet, Garu**	**6.39**	**286**	*e*Pn	**Pn**	**23 12 36.5**	**+0.7**
KBKI	**Kotabaru**	**6.45**	**20**	P	**Pn**	**23 12 38.0**	**+1.3**
	31nm,1.1s,0.1nm						
LEM	**Lembang**	**6.82**	**292**	P	Pn	23 12 49.8	+8.0
	baz=127,slow=20,SNR=2.2						
LEM				S	Sn	23 14 08.9	+11
	4.2nm,0.3s,baz=342,slow=18,SNR=4.2						
LEM				LR	LR	23 15 51.9	
	comp=Z,69nm,19.9s,baz=217,slow=42						
KAPI	**Kappang**	**7.19**	**53**	P	**Pn**	**23 12 45.8**	**-1.0**
	7.8nm,0.3s,baz=235,slow=12,SNR=17						
KAPI				S	**Sn**	**23 14 03.4**	**-3.7**
	3.4nm,0.3s,baz=4.8,slow=22,SNR=4.9						
BATI	**Baumata**	**9.56**	**95**	P	**Pn**	**23 13 19.7**	**+0.5**
	baz=270,slow=20						
BATI				S	Sn	23 14 56.3	-8.8
	baz=287,slow=20						
SOEI	**Soe**	**10.13**	**93**	*e*Pn	**Pn**	**23 13 28.8**	**+1.7**
FITZ	**Fitzroy Crossi**	**14.22**	**129**	P	Pn	23 14 18.2	-4.1
	0.5nm,0.3s,baz=311,slow=11,SNR=8.4						
FITZ				S	Sn	23 16 46.4	-12
	1.1nm,0.3s,baz=184,slow=19,SNR=5.8						
MTN	**Manton Dam**	**17.15**	**103**	*e*Pn	**P**	**23 15 02.0**	**+1.8**
	167nm,1.9s						
SAUI	**Saumlaki**	**17.16**	**87**	*e*Pn	**P**	**23 15 00.1**	**-0.3**
	113nm,0.6s						

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
FAKI	Fak Fak	19.25	72	eP	P	23 15 21.2	-2.2
	38nm,1.0s						
DAV	Davao City (W)	20.04	36	LR	LR	23 24 50.7	
	comp=Z,45nm,19.7s,baz=354,slow=42						
WR1	Warramunga Arr	22.26	120	eP	P	23 15 56.2	+0.5
WR1				epP	pP	23 16 09.9	-0.4
WR1				ePcP	PcP	23 19 51.1	+1.3
WR1				eS	S	23 19 57.5	+0.9
WRA	Warramunga Arr	22.26	120	P	P	23 15 56.2	+0.5
	0.9nm,0.3s,baz=294,slow=12,SNR=5.2						
WRA				pP	pP	23 16 09.9	-0.4
	9.3nm,0.7s,baz=296,slow=11,SNR=11						
WRA				PcP	PcP	23 19 51.1	+1.3
	0.7nm,0.6s,baz=307,slow=2.2,SNR=2.7						
WRA				S	S	23 19 57.5	+0.9
	0.7nm,0.4s,baz=282,slow=23,SNR=3.2						
WRAB	Tennant Creek	22.26	120	ePcP	PcP	23 19 49.8	0.0
WB2	Warramunga Arr	22.27	120	eP	P	23 15 58.8	+3.0
	9.6nm,0.7s						
AS31	Alice Springs	23.72	129	eP	P	23 16 10.5	+0.2
AS31				epP	pP	23 16 25.9	-0.1
AS31				ePcP	PcP	23 19 54.0	+1.2
AS31				eS	S	23 20 30.9	+10
ASAR	Alice Springs	23.72	129	P	P	23 16 10.5	+0.2
	4.0nm,0.5s,baz=301,slow=9.0,SNR=37						
ASAR				pP	pP	23 16 25.9	-0.1
	7.7nm,0.6s,baz=306,slow=9.3,SNR=17						
ASAR				PcP	PcP	23 19 54.0	+1.2
	1.1nm,0.5s,baz=333,slow=1.9,SNR=7.3						
ASAR				S	S	23 20 30.9	+10
	0.9nm,0.7s,baz=300,slow=22,SNR=3.7						
AS01	Alice Springs	23.75	129	epP	pP	23 16 24.9	-1.4
CM31	Chiang Mai Arr	31.43	332	eP	P	23 17 19.4	+0.2
CM31				ePcP	PcP	23 20 13.1	+1.7
CMAR	Chiang Mai Arr	31.43	332	P	P	23 17 19.4	+0.2
	1.4nm,0.8s,baz=164,slow=8.1,SNR=9.3						
CMAR				PcP	PcP	23 20 13.1	+1.7
	0.8nm,0.6s,baz=188,slow=3.1,SNR=4.9						
CMAR				LR	LR	23 30 18.4	
	comp=Z,18nm,18.8s,baz=150,slow=37						
STKA	Stephens Creek	33.96	135	P	P	23 17 42.3	+1.0
	2.3nm,0.4s,baz=317,slow=7.8,SNR=17						
STKA				pP	pP	23 17 57.1	-0.8
	6.7nm,0.5s,baz=320,slow=7.6,SNR=8.6						
H08S2	Diego Garcia H	41.07	269	T	T	00 02 45.3	
	baz=95,slow=75,SNR=7.5						
H08S3	Diego Garcia H	41.08	269	T	T	00 02 50.0	
	baz=95						
H08S1	Diego Carcia H	41.08	269	T	T	00 02 48.7	
	baz=95,slow=75,SNR=9.1						
ODAN	Odare	44.35	325	eP	P	23 19 08.1	-0.1
	9.3nm,0.4s						
TAPN	Taplejung	44.56	326	eP	P	23 19 10.1	+0.2
	12nm,0.6s						
LSA	Lhasa	44.69	331	eP	P	23 19 13.6	+2.5
	3.2nm,0.5s						
RAMN	Ramite	44.87	324	eP	P	23 19 12.0	-0.4
	5.5nm,0.4s						
GUN	Gumba	46.02	325	eP	P	23 19 21.2	-0.3
	28nm,0.4s						
DMN	Daman	46.24	324	eP	P	23 19 22.8	-0.4
	18nm,0.4s						
GKN	Gorkha	46.81	324	eP	P	23 19 27.0	-0.5
	15nm,0.4s						
KOLN	Koldanda	47.25	322	eP	P	23 19 30.5	-0.5
	19nm,0.6s						
PYUN	Piuthan	47.86	322	eP	P	23 19 35.9	+0.2
	10nm,0.5s						
KSRS	Korea Array	48.42	15	LR	LR	23 41 50.9	
	comp=Z,18nm,18.9s,baz=164,slow=38						
MJAR	Matsushiro Arr	51.07	25	P	P	23 19 57.2	-2.6
	0.6nm,0.3s,baz=188,slow=7.4,SNR=3.0						
MJAR				LR	LR	23 43 59.7	
	comp=Z,25nm,18.2s,baz=100,slow=39						
USRK	Ussuriysk Ar.	55.81	16	P	P	23 20 32.7	-1.6
	2.4nm,0.5s,baz=177,slow=8.4,SNR=7.8						
ULN	Ulaanbaatar	57.36	354	eP	P	23 20 45.3	-0.2
	3.7nm,0.9s						
SONA0	Songino Array	57.40	354	eP	P	23 20 44.7	-1.0
	3.7nm,0.7s						
SONA0				ePcP	PcP	23 21 39.2	+0.3
SONM	Songino Array	57.40	354	P	P	23 20 44.7	-1.0
	2.8nm,0.4s,baz=177,slow=7.9,SNR=7.3						
SONM				PcP	PcP	23 21 39.2	+0.3
	1.3nm,0.5s,baz=181,slow=3.7,SNR=2.7						
MK01	Makanchi Array	62.68	336	eP	P	23 21 21.3	-0.5
MK32	Makanchi Array	62.70	336	eP	P	23 21 21.7	-0.2
MKAR	Makanchi Array	62.70	336	P	P	23 21 21.7	-0.2
	3.5nm,0.5s,baz=151,slow=7.2,SNR=72						
TKM2	Tokmak 2	62.76	329	eP	P	23 21 22.7	0.0
	7.2nm,0.9s						
MAKZ	Makanchi	62.84	336	eP	P	23 21 22.6	-0.3
	10nm,1.7s						
AAK	Ala-Archa	63.12	328	eP	P	23 21 25.4	+0.4
	5.2nm,0.8s						
EKS2	Erkin-Say	63.52	328	eP	P	23 21 28.4	+0.8
	7.4nm,0.9s						
ZAA0	Zalesovo Array	67.79	342	eP	P	23 21 53.5	-1.1
ZALV	Zalesovo Beam	67.79	342	P	P	23 21 53.6	-1.0
	1.8nm,0.3s,baz=178,slow=3.9,SNR=8.4						
ZAA1	Zalesovo Array	67.79	342	eP	P	23 21 53.6	-1.0
GEYT	Alibeck	70.24	316	P	P	23 22 11.0	+0.7
	6.8nm,0.7s,baz=145,slow=5.4,SNR=19						
ZRNK	Zerenda	72.98	333	eP	P	23 22 26.2	-0.2
	4.9nm,0.6s						
ABKAR	Akbulak array	75.13	327	eP	P	23 22 39.2	+0.3
SYO	Syowa Base	75.68	201⇓	eX	P	23 22 39.6	-2.2
SYO	Syowa Base	75.68	201⇓	esP	sP	23 23 10.0	+2.1
SEY	Seymchan	77.92	17	P	P	23 22 54.1	-0.4
	1.7nm,0.3s,baz=242,slow=5.8,SNR=10						
NRIK	Noril'sk	80.70	351	P	P	23 23 09.3	-0.2
	0.9nm,0.4s,baz=120,slow=7.0,SNR=4.0						
TIXI	Tiksi	81.50	5	eP	P	23 23 12.1	-1.5
	6.7nm,0.9s						
BR101	Keskin Array S	88.63	310	eP	P	23 23 50.2	0.0
BRTR	Keskin Array B	88.63	310	P	P	23 23 50.2	0.0
	1.4nm,0.8s,baz=118,slow=7.1,SNR=8.5						
BR231	Keskin MP Arra	89.30	310	eP	P	23 23 51.6	-1.7
FIA0	FINESS Array S	97.20	331	eP	P	23 24 29.1	+0.1
FINES	FINESS Array B	97.20	331	P	P	23 24 29.1	+0.1
	0.9nm,0.5s,baz=125,slow=3.0,SNR=6.2						
TORD	Torodi Ar. Bea	113.67	280	PKiKP	PKiKP	23 29 36.7	+0.8
	0.2nm,0.5s,baz=47,slow=2.0,SNR=5.5						
TOA1	Torodi Ar. Sit	113.67	280	ePKiKP	PKiKP	23 29 36.7	+0.8
YKA	Yellowknife Ar	116.55	23	PKP	PKPdf	23 29 40.3	+0.3
	0.5nm,0.5s,baz=322,slow=1.6,SNR=13						
YKB5	Yellowknife Ar	116.55	23	ePKPdf	PKPdf	23 29 40.3	+0.3
NV01	Mina Array Sit	125.07	49	ePKPdf	PKPdf	23 29 58.0	+0.5
NVAR	Mina Array Bea	125.07	49	PKP	PKPdf	23 29 58.0	+0.5
	0.6nm,0.7s,baz=242,slow=3.9,SNR=3.3						
MCMT	McKenzie Canyo	126.47	40	ePKPdf	PKPdf	23 30 00.2	+0.2
PD31	Pinedale Array	129.54	41	ePKPdf	PKPdf	23 30 06.1	+0.2
PDAR	Pinedale Array	129.54	41	PKP	PKPdf	23 30 06.1	+0.2
	0.2nm,0.5s,baz=121,slow=3.5,SNR=4.1						
LTX	Lajitas	139.58	55	ePKPpre	PKPpre	23 30 17.9	
TXAR	Lajitas Array	139.58	55	PKhKP	PKPpre	23 30 17.9	
	0.4nm,0.7s,baz=261,slow=0.7,SNR=4.9						
ACSO	Alum Creek Sta	145.80	23	ePKPdf	PKPab	23 30 37.0	+0.5
WCI	Wyandotte Cave	146.00	29	ePKPdf	PKPab	23 30 37.5	+0.2

*ISCJB **04** 23:20:18.7±1.6, 38°.04N±0°.08×143°.1E±0°.1, h18km, mb3.6/2, Error ellipse: s-maj=16.2km s-min=11.4km az=163.1*
*JMA **04** 23:20:19.0±0.3, 38°.17N×142°.97E, h5km±4km, M3.5*
*IDC **04** 23:20:20.2±3.1, 37°.48N×143°.33E, h0km, mb3.6/2, mb1 3.7/3, mb1mx3.3/49, mbtmp3.4/3, ML2.8/1, Error ellipse: s-maj=76.0km s-min=37.3km az=55.0*
ISC 04 23:20:18.7±2.2**, 38°.3N**±0°.1×**143°.1E**±0°.2**, h18**km**, n10,** σ$1^{s}15$/10**, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
OFUJ	Ofunato	1.42	306	P	Pb	23 20 44.5	-0.1
JIO	Ouri	1.42	279	P	Pn	23 20 43.5	-0.1
JIO				eS	Sn	23 21 00.8	-1.0
JMK	Ichinoseki	1.66	296	P	Pb	23 20 47.9	-0.8
JMM	Marumori	1.89	259	P	Pn	23 20 49.8	-0.2
JOM	Ohasama	1.89	311	P	Pb	23 20 52.2	-0.4
JOU	Okura	1.95	274	P	Pn	23 20 52.0	+1.1
JANG	Nango	2.47	330	eS	Sb	23 21 33.6	+1.0
MJAR	Matsushiro Arr	4.27	248	Pn	Pn	23 21 25.0	+2.2
	0.6nm,0.3s,baz=62,slow=11,SNR=3.3						
MKAR	Makanchi Array	44.64	301	P	P	23 28 38.6	+8.5
	0.5nm,0.8s,baz=86,slow=7.9,SNR=5.0						
WRA	Warramunga Arr	58.47	190	P	P	23 30 12.9	-0.7
	0.7nm,0.8s,baz=8.9,slow=7.0,SNR=3.4						

*IDC **04** 23:22:40.2±2.9, 38°.66N×141°.92E, h0km, mb3.2/2, mb1 3.5/3, mb1mx3.2/43, mbtmp3.2/3, ML3.4/1, Error ellipse: s-maj=69.3km s-min=36.4km az=66.0*
*ISCJB **04** 23:22:58.8±1.4, 36°.77N±0°.06×141°.3E±0°.1, h35km, mb3.3/2, Error ellipse: s-maj=14.1km s-min=8.2km az=7.8*
*JMA **04** 23:23:01.1±0.1, 36°.84N×141°.04E, h50km±1km, M2.9*
ISC 04 23:22:59.3±1.8**, 36°.79N**±0°.07×**141°.2E**±0°.1**, h35**km**, n11,** σ$0^{s}58$/14**, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
ONAJ	Iwakimizuishiy	0.47	312	P	Pn	23 23 10.3	+0.7
ONAJ				S	Sn	23 23 16.7	-0.1
JHO	Hitachi	0.57	252	P	Pn	23 23 11.6	+0.7
JHO				S	Sn	23 23 18.8	-0.2
JFK	Kawauchi	0.65	333	P	Pn	23 23 12.5	+0.4
JFK				S	Sn	23 23 20.5	-0.6
JFT	Otama	1.03	316	P	Pn	23 23 17.9	+0.7
JFT				S	Sn	23 23 29.7	-0.7
JMM	Marumori	1.14	342	P	Pn	23 23 19.3	+0.6
JFY	Yanaizu	1.37	297	P	Pn	23 23 22.4	+0.4
JAG	Ashikaga	1.48	256	P	Pn	23 23 23.7	+0.3
JKT	Katashina	1.60	270	P	Pn	23 23 25.2	+0.1
MJAR	Matsushiro Arr	2.45	265	Pn	Pn	23 23 37.4	+0.7
	3.5nm,0.3s,baz=68,slow=9.5,SNR=10						
MKAR	Makanchi Array	44.13	302	P	P	23 30 46.0	-18
	0.1nm,0.5s,baz=68,slow=8.0,SNR=2.0						
WRA	Warramunga Arr	56.80	188	P	P	23 32 39.6	-0.4
	0.3nm,0.3s,baz=5.4,slow=7.1,SNR=2.5						

*IDC **04** 23:27:13.1±6.2, 35°.33N×10°.98E, h0km, mb3.7/4, mb1 3.7/6, mb1mx3.4/42, mbtmp3.6/6, ML3.5/2, MS2.7/1, Ms1 2.7/1, ms1mx2.2/41, Error ellipse: s-maj=111.9km s-min=39.5km az=40.0*
ISC 04 23:27:12.4±4.7**, 35°.1N**±0°.4×**10°.7E**±0°.4**, h10**km**, n7,** σ$1^{s}09$/6**, mb3.6**/4**, Tunisia**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
VAE	Valguarnera	3.78	51	LR	LR	23 29 55.5	
	comp=Z,107nm,18.4s,baz=152,slow=47						
GERES	GERESS Array B	13.87	8	Pn	Pn	23 30 29.1	+0.1
	0.2nm,0.3s,baz=162,slow=13,SNR=8.1						
BRTR	Keskin Array B	18.74	69	P	Pn	23 31 32.0	+0.1
	0.1nm,0.3s,baz=267,slow=9.8,SNR=5.3						
HFS	Hagfors	25.09	3	P	P	23 32 36.8	0.0
	0.6nm,0.3s,baz=170,slow=10,SNR=6.1						
NOA	NORSAR Array B	25.92	1	P	P	23 32 46.1	+1.6
	0.5nm,0.7s,baz=160,slow=9.1,SNR=3.0						
ARCES	ARCESS Array B	35.41	9	P	P	23 34 07.0	-1.0
	4.5nm,1.1s,baz=190,slow=9.7,SNR=3.8						
MKAR	Makanchi Array	53.53	54	P	P	23 36 33.2	+0.1
	0.2nm,0.4s,baz=284,slow=7.2,SNR=9.9						

*IDC **04** 23:38:25.7±3.0, 38°.42N×144°.24E, h0km, mb3.4/2, mb1 3.5/3, mb1mx3.3/31, mbtmp3.3/3, ML3.3/1, Error ellipse: s-maj=73.6km s-min=37.1km az=60.0*
*JMA **04** 23:38:36.2±0.3, 38°.58N×143°.07E, h35km, M3.5*
ISC 04 23:38:23.4±2.3**, 38°.39N**±0°.07×**143°.6E**±0°.1**, h15**km**, n16,** σ$1^{s}63$/19**, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
OFUJ	Ofunato	1.66	295	P	Pg	23 38 57.4	+2.1
JIO	Ouri	1.77	273	P	Pg	23 38 59.4	+2.0
JIO				eS	Sn	23 39 15.3	-0.4
JMK	Ichinoseki	1.95	288	P	Pg	23 39 01.7	+0.9
JTH	Tanohata	2.06	319	P	Pg	23 39 03.5	+0.7
JOM	Ohasama	2.10	302	P	Pg	23 39 03.9	+0.2
JOM				eS	Sn	23 39 24.5	+0.6
JMM	Marumori	2.27	258	P	Pg	23 39 07.4	+0.4
JOU	Okura	2.31	270	P	Pg	23 39 07.6	-0.1
JOU				eS	Sn	23 39 30.1	+1.0
JFK	Kawauchi	2.39	246	P	Pg	23 39 09.5	+0.3
JRG	Rokugo	2.53	294	P	Pg	23 39 10.2	-1.6
JYK	Kaneyama	2.59	283	P	Pg	23 39 11.6	-1.5
JFT	Otama	2.72	252	P	Pg	23 39 15.2	-0.4
JCH	Churui	4.23	358	P	Pb	23 39 35.6	-1.8
JCH				S	Sn	23 40 19.0	+2.7
JRY	Ryogami san	4.43	239	P	Pb	23 39 39.3	-1.7
JRY				eS	Sn	23 40 24.9	+3.4
MJAR	Matsushiro Arr	4.67	248	Pn	Pb	23 39 43.9	-1.1
	1.2nm,0.3s,baz=80,slow=13,SNR=4.6						
MKAR	Makanchi Array	44.88	301	P	P	23 46 45.0	+7.8
	0.3nm,0.4s,baz=84,slow=8.3,SNR=8.1						
WRA	Warramunga Arr	58.67	190	P	P	23 48 25.6	+5.5
	0.3nm,0.5s,baz=7.2,slow=7.0,SNR=2.4						

*NEIC **04** 23:41:49.2, 36°.53S×176°.56E, h206km, MG4.3(WEL), After WEL.*
WEL 04 23:41:49.4±0.3**, 36°.54S**×**176°.57E, h205**km±6km**, ML4.3**/20**, 4C-7D, Error ellipse: s-maj=6.0km s-min=5.7km az=0.0, Off east coast of North Island**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
HAZ	Te Kaha	1.55	142	PN	Pn	23 42 24.2	+0.2
HAZ				SN	S	23 42 50.8	+0.1
MXZ	Matakaoa Point	1.72	127	⇑PN	Pn	23 42 25.6	+0.1
MXZ				AML	AML	23 42 55.8	
MXZ				AML	AML	23 42 55.9	
MXZ	Matakaoa Point	1.72	127	Pn	Pn	23 42 25.6	+0.1
URZ	Urewera	1.77	166	⇓PN	Pn	23 42 26.2	+0.2
URZ				AML	AML	23 42 59.5	
URZ				AML	AML	23 43 01.2	
URZ	Urewera	1.77	166	Pn	Pn	23 42 26.2	+0.2
PKGZ	Pakihiroa	1.81	139	⇓PN	Pn	23 42 26.5	+0.1
PKGZ				SN	S	23 42 54.4	-0.5
MWZ	Matawai	1.95	157	PN	Pn	23 42 27.7	-0.1
MWZ				AML	AML	23 42 59.5	
MWZ				AML	AML	23 43 10.3	
MWZ	Matawai	1.95	157	Pn	Pn	23 42 27.7	-0.1
WMGZ	Waiomatatini S	1.95	131	⇓PN	Pn	23 42 27.5	-0.2
WMGZ				SN	S	23 42 56.8	-0.5
WMGZ	Waiomatatini S	1.95	131	Pn	Pn	23 42 27.5	-0.2
WMGZ				Sn	S	23 42 56.8	-0.5
TWGZ	Tauwhareparae	1.98	146	⇓PN	Pn	23 42 28.2	+0.1
TWGZ				SN	S	23 42 58.5	+0.5
TWGZ	Tauwhareparae	1.98	146	Pn	Pn	23 42 28.2	+0.1
TWGZ				Sn	S	23 42 58.5	+0.5
PUZ	Puketiti	2.04	139	⇓PN	Pn	23 42 28.0	-0.7
PUZ				AML	AML	23 42 57.4	
PUZ				AML	AML	23 43 07.1	
PUZ	Puketiti	2.04	139	Pn	Pn	23 42 28.0	-0.7
SNGZ	Shannon Statio	2.32	165	PN	Pn	23 42 31.1	-0.5
SNGZ	Shannon Statio	2.32	165	Pn	Pn	23 42 31.1	-0.5
CNGZ	Carnagh Statio	2.34	147	PN	Pn	23 42 31.1	-0.7
CNGZ	Carnagh Statio	2.34	147	Pn	Pn	23 42 31.1	-0.7
RIGZ	Rimuhau	2.36	157	PN	Pn	23 42 31.3	-0.8
RIGZ				SN	S	23 43 03.8	-1.2
RAHZ	Arahi	2.41	170	PN	Pn	23 42 32.3	-0.3
RAHZ	Arahi	2.41	170	Pn	Pn	23 42 32.3	-0.3
WHHZ	Waihua	2.59	168	PN	Pn	23 42 33.7	-0.8
WHHZ				SN	S	23 43 07.7	-1.7
BKZ	Black Stump Fm	2.62	181	PN	Pn	23 42 34.0	-1.0
BKZ				SN	S	23 43 08.4	-1.8
BKZ				AML	AML	23 43 11.4	
BKZ	Black Stump Fm	2.62	181	Pn	Pn	23 42 34.0	-1.0
BKZ				Sn	S	23 43 08.4	-1.8
KNZ	Kokohu	2.63	161	PN	Pn	23 42 33.4	-1.6
KNZ				SN	S	23 43 06.7	-3.5
KNZ				AML	AML	23 43 12.6	
KNZ	Kokohu	2.63	161	Pn	Pn	23 42 33.4	-1.6
KNZ				Sn	S	23 43 06.7	-3.5
TWVZ	Taurewa	2.68	199	PN	Pn	23 42 36.6	+0.8
TWVZ	Taurewa	2.68	199	Pn	Pn	23 42 36.6	+0.8
WTVZ	West Tongariro	2.69	196	PN	Pn	23 42 36.4	+0.6
WTVZ	West Tongariro	2.69	196	Pn	Pn	23 42 36.4	+0.6
OTVZ	Oturere	2.71	195	PN	Pn	23 42 36.7	+0.5
OTVZ	Oturere	2.71	195	Pn	Pn	23 42 36.7	+0.5
ARHZ	Aropaoanui	2.74	173	PN	Pn	23 42 35.2	-1.0
ARHZ				SN	S	23 43 11.4	-1.1
ARHZ	Aropaoanui	2.74	173	Pn	Pn	23 42 35.2	-1.0
ARHZ				Sn	S	23 43 11.4	-1.1
NGZ	Ngauruhoe	2.74	196	PN	Pn	23 42 37.1	+0.7
NGZ	Ngauruhoe	2.74	196	Pn	Pn	23 42 37.1	+0.7
MHGZ	Mahia Peninsul	2.81	158	PN	Pn	23 42 35.6	-1.5
MHGZ	Mahia Peninsul	2.81	158	Pn	Pn	23 42 35.6	-1.5
TUVZ	Tukino	2.82	195	PN	Pn	23 42 37.3	0.0
TUVZ	Tukino	2.82	195	Pn	Pn	23 42 37.4	0.0
FWVZ	Far West T-bar	2.83	196	PN	Pn	23 42 37.5	0.0
FWVZ	Far West T-bar	2.83	196	Pn	Pn	23 42 37.5	0.0
WHVZ	Whangaehu Hut	2.84	196	PN	Pn	23 42 37.4	-0.3
WHVZ	Whangaehu Hut	2.84	196	Pn	Pn	23 42 37.4	-0.3
TRVZ	Turoa	2.87	196	PN	Pn	23 42 38.2	+0.2
TRVZ	Turoa	2.87	196	Pn	Pn	23 42 38.2	+0.2
WNVZ	Wahianoa	2.89	195	⇓PN	Pn	23 42 38.0	-0.1
WNVZ	Wahianoa	2.89	195	Pn	Pn	23 42 38.0	-0.1
PKVZ	Pokaka	2.91	199	PN	Pn	23 42 38.7	+0.4
PKVZ	Pokaka	2.91	199	Pn	Pn	23 42 38.7	+0.4
MOVZ	Moawhango	2.93	192	PN	Pn	23 42 37.7	-0.9
MOVZ	Moawhango	2.93	192	Pn	Pn	23 42 37.7	-0.9
VRZ	Vera Road	2.95	209	⇑PN	Pn	23 42 40.8	+2.1
VRZ	Vera Road	2.95	209	Pn	Pn	23 42 40.8	+2.1
MTVZ	Mangateitei	2.97	197	PN	Pn	23 42 39.0	0.0
MTVZ	Mangateitei	2.97	197	Pn	Pn	23 42 39.0	0.0
BHHZ	Black Hill Sta	2.97	188	PN	Pn	23 42 37.8	-1.2
BHHZ	Black Hill Sta	2.97	188	Pn	Pn	23 42 37.8	-1.2
KRHZ	Kereru	3.10	183	PN	Pn	23 42 38.7	-1.8
CKHZ	Cape Kidnapper	3.14	173	PN	Pn	23 42 38.8	-2.1
CKHZ	Cape Kidnapper	3.14	173	Pn	Pn	23 42 38.8	-2.1
KAHZ	Kahuranaki	3.26	176	⇓PN	Pn	23 42 40.3	-2.0
KAHZ	Kahuranaki	3.26	176	Pn	Pn	23 42 40.3	-2.0
PNHZ	Pukenui	3.38	185	PN	Pn	23 42 41.4	-2.5
PNHZ	Pukenui	3.38	185	Pn	Pn	23 42 41.4	-2.5
WAZ	Wanganui	3.44	201	PN	Pn	23 42 44.2	-0.4
WAZ	Wanganui	3.44	201	Pn	Pn	23 42 44.2	-0.4
PXZ	Pawanui	3.49	176	PN	Pn	23 42 42.1	-2.9
PXZ				AML	AML	23 43 24.6	
PXZ				AML	AML	23 43 25.4	
PXZ				AML	AML	23 43 27.6	
PXZ				AML	AML	23 43 28.9	
PXZ	Pawanui	3.49	176	Pn	Pn	23 42 42.1	-2.9
WPHZ	Waipukurau	3.52	182	PN	Pn	23 42 42.8	-2.7
WPHZ	Waipukurau	3.52	182	Pn	Pn	23 42 42.8	-2.7
TSZ	Takapari Road	3.54	188	AML	AML	23 43 30.7	
TSZ				AML	AML	23 43 31.4	
PRHZ	Porangahau	3.72	179	PN	Pn	23 42 44.6	-3.3
PRHZ	Porangahau	3.72	179	Pn	Pn	23 42 44.6	-3.3
DVHZ	Dannevirke	3.77	185	PN	Pn	23 42 45.3	-3.2
DVHZ				SN	S	23 43 29.3	-5.1
DVHZ	Dannevirke	3.77	185	Pn	Pn	23 42 45.3	-3.2
DVHZ				Sn	S	23 43 29.4	-5.1
POWZ	Post Office Ro	3.90	189	PN	Pn	23 42 47.0	-3.0
POWZ	Post Office Ro	3.90	189	Pn	Pn	23 42 47.0	-3.0
ANWZ	Angora Road	3.91	181	PN	Pn	23 42 47.1	-3.1
ANWZ				SN	S	23 43 33.1	-4.6
PRWZ	Pori Road	4.04	186	PN	Pn	23 42 47.9	-3.8
PRWZ	Pori Road	4.04	186	Pn	Pn	23 42 47.9	-3.8
BFZ	Birch Farm	4.14	183	PN	Pn	23 42 49.5	-3.6
BFZ				AML	AML	23 43 44.4	
BFZ				AML	AML	23 43 44.4	
BFZ				AML	AML	23 44 29.2	
BFZ				AML	AML	23 44 29.2	
BFZ	Birch Farm	4.14	183	Pn	Pn	23 42 49.5	-3.6
MRZ	Mangatainoka R	4.19	190	⇑PN	Pn	23 42 49.9	-3.8
MRZ				SN	S	23 43 39.0	-4.8
MRZ				AML	AML	23 43 44.4	
MRZ	Mangatainoka R	4.19	190	Pn	Pn	23 42 49.9	-3.8
MRZ				Sn	S	23 43 39.0	-4.8
TIWZ	Tintock	4.26	187	PN	Pn	23 42 51.1	-3.5
TIWZ				AML	AML	23 43 44.3	
TIWZ				AML	AML	23 43 45.4	
TIWZ	Tintock	4.26	187	Pn	Pn	23 42 51.1	-3.5
CPWZ	Castlepoint	4.37	184	PN	Pn	23 42 52.5	-3.4
CPWZ	Castlepoint	4.37	184	Pn	Pn	23 42 52.5	-3.4
OGWZ	Otaki Gorge	4.41	194	PN	Pn	23 42 52.8	-3.5
OGWZ	Otaki Gorge	4.41	194	Pn	Pn	23 42 52.9	-3.5
HOWZ	Holdsworth Sta	4.43	190	PN	Pn	23 42 52.6	-4.1
HOWZ	Holdsworth Sta	4.43	190	Pn	Pn	23 42 52.6	-4.1
KIW	Kapiti Island	4.50	196	PN	Pn	23 42 54.0	-3.6
KIW				AML	AML	23 43 50.6	
KIW				AML	AML	23 43 50.8	
KIW	Kapiti Island	4.50	196	Pn	Pn	23 42 54.0	-3.6
TMWZ	Te Maipa	4.59	186	PN	Pn	23 42 54.7	-4.0
TMWZ	Te Maipa	4.59	186	Pn	Pn	23 42 54.7	-4.0
MTW	Mount Morrison	4.69	190	PN	Pn	23 42 55.3	-4.6
MTW				AML	AML	23 43 53.1	
MTW				AML	AML	23 43 53.7	
MTW	Mount Morrison	4.69	190	Pn	Pn	23 42 55.3	-4.6
CAW	Cannon Point	4.71	194	PN	Pn	23 42 55.9	-4.3
CAW				AML	AML	23 43 54.3	
CAW				AML	AML	23 43 56.2	
CAW	Cannon Point	4.71	194	Pn	Pn	23 42 55.9	-4.3
DUWZ	D'Urville Isla	4.73	205	PN	Pn	23 42 57.2	-3.3
DUWZ	D'Urville Isla	4.73	205	Pn	Pn	23 42 57.2	-3.3
TRWZ	Traveller	4.90	188	PN	Pn	23 42 58.1	-4.5
TRWZ				AML	AML	23 43 53.6	
TRWZ	Traveller	4.90	188	Pn	Pn	23 42 58.1	-4.5
PAWZ	Paruwai Farm	4.92	190	PN	Pn	23 42 58.1	-4.7
PAWZ				AML	AML	23 43 58.6	
PAWZ				AML	AML	23 44 02.4	
PAWZ	Paruwai Farm	4.92	190	Pn	Pn	23 42 58.1	-4.7
MSWZ	Moikau Station	4.98	192	PN	Pn	23 42 58.6	-5.0
MSWZ				SN	S	23 43 53.7	-8.1
MSWZ				AML	AML	23 43 58.5	
MSWZ	Moikau Station	4.98	192	Pn	Pn	23 42 58.6	-5.0
MSWZ				Sn	S	23 43 53.7	-8.1
TCW	Tory Channel	4.99	200	PN	Pn	23 42 60.0	-3.8
TCW				AML	AML	23 43 59.1	
TCW				AML	AML	23 44 01.2	
PLWZ	Palliser	5.12	191	PN	Pn	23 43 00.5	-5.0
PLWZ	Palliser	5.12	191	Pn	Pn	23 43 00.5	-5.0
NNZ	Nelson	5.29	207	PN	Pn	23 43 03.6	-3.9
NNZ	Nelson	5.29	207	Pn	Pn	23 43 03.6	-3.9
TUWZ	Tuamarina	5.29	202	⇑PN	Pn	23 43 03.4	-4.2
TUWZ				AML	AML	23 44 06.2	
TUWZ				AML	AML	23 44 08.9	
TUWZ	Tuamarina	5.29	202	Pn	Pn	23 43 03.4	-4.2
QRZ	Quartz Range	5.32	215	PN	Pn	23 43 04.7	-3.2
QRZ	Quartz Range	5.32	215	Pn	Pn	23 43 04.8	-3.2
BSWZ	Blackbirch Sta	5.58	201	PN	Pn	23 43 07.1	-4.1
BSWZ				AML	AML	23 44 13.8	
BSWZ				AML	AML	23 44 26.6	
BSWZ	Blackbirch Sta	5.58	201	Pn	Pn	23 43 07.2	-4.1
THZ	Tophouse	5.94	208	PN	Pn	23 43 11.6	-4.4
THZ	Tophouse	5.94	208	Pn	Pn	23 43 11.6	-4.4
LTZ	Lake Taylor	7.06	207	PN	Pn	23 43 24.4	-6.0
LTZ	Lake Taylor	7.06	207	Pn	Pn	23 43 24.4	-6.0
INZ	Inchbonnie	7.33	211	PN	Pn	23 43 28.8	-5.1
OXZ	Oxford	7.62	206	PN	Pn	23 43 31.4	-6.2
OXZ	Oxford	7.62	206	Pn	Pn	23 43 31.4	-6.2
MQZ	McQueen's Vall	7.76	202	PN	Pn	23 43 32.8	-6.6
MQZ	McQueen's Vall	7.76	202	Pn	Pn	23 43 32.8	-6.6
WVZ	Waitaha Valley	7.92	213	PN	Pn	23 43 36.3	-5.2
WVZ	Waitaha Valley	7.92	213	Pn	Pn	23 43 36.3	-5.2
RPZ	Rata Peaks	8.32	209	PN	Pn	23 43 40.6	-6.1
RPZ	Rata Peaks	8.32	209	Pn	Pn	23 43 40.6	-6.1
FOZ	Fox Glacier	8.69	214	PN	Pn	23 43 45.2	-6.3
FOZ	Fox Glacier	8.69	214	Pn	Pn	23 43 45.2	-6.3
LBZ	Lake Benmore	9.22	210	PN	Pn	23 43 52.2	-6.2
LBZ	Lake Benmore	9.22	210	Pn	Pn	23 43 52.2	-6.2
JCZ	Jackson Bay	9.59	216	PN	Pn	23 43 57.7	-5.5
JCZ	Jackson Bay	9.59	216	Pn	Pn	23 43 57.7	-5.5
ODZ	Otahua Downs	9.61	206	PN	Pn	23 43 57.6	-5.8
ODZ	Otahua Downs	9.61	206	Pn	Pn	23 43 57.6	-5.8
WKZ	Wanaka	10.06	212	PN	Pn	23 44 02.7	-6.7
WKZ	Wanaka	10.06	212	Pn	Pn	23 44 02.7	-6.7

*SCB **04** 23:57:11.2±0.6, 24°.12S×67°.46W, h148km, Ml3.7/2, Error ellipse: s-maj=14.1km s-min=10.7km az=36.0*
*SJA **04** 23:57:13.6±0.4, 24°.21S×67°.19W, h192km±10km, ML3.6, MW3.6*
*ISCJB **04** 23:57:14.7±0.3, 24°.24S±0°.03×67°.14W±0°.05, h181km, mb4.2/28, Error ellipse: s-maj=6.4km s-min=4.3km az=158.0*
*IDC **04** 23:57:15.2±1.9, 24°.12S×66°.97W, h173km±15km, mb3.7/12, mb1 4.0/16, mb1mx3.9/27, mbtmp4.3/16, Error ellipse: s-maj=18.1km s-min=12.7km az=61.0*
*NEIC **04** 23:57:16.6±1.1, 24°.27S×66°.88W, h181km±10km, mb4.4/20, Error ellipse: s-maj=12.3km s-min=9.9km az=209.0*

ISC 04 23:57:15.4±0.4, 24°.18S±0°.05×67°.17W±0°.06, h181km, n73, σ1s.69/78, mb4.2/28, 2C, Chile-Argentina border region

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
SLA	San Lorenzo	1.61	110	eP	Pn	23 57 48.9	+0.2
SLA				eS	Sn	23 58 14.5	0.0
SLA				IAML		23 58 14.7	
	comp=Z,738nm,0.9s						
HJA	Humahuaca	1.88	59	eP	Pn	23 57 52.1	+0.4
AZAP	Zapla	1.92	92	eP	Pn	23 57 52.1	+0.2
AZAP				IAML		23 58 21.9	
	comp=Z,305nm,0.9s						
FSA	Cafayete	2.20	151	eP	Pn	23 57 54.4	-0.6
ASTB	Santa Barbara	2.49	85	eP	Pn	23 57 58.0	-0.2
YJA	Yavi	2.51	38	eP	Pn	23 57 59.2	+0.5
YJA				IAML		23 58 39.5	
	comp=Z,86nm,1.1s						
AHML	Horco Molle	3.08	148	eP	Pn	23 58 04.3	-0.8
AHML				IAML		23 58 45.6	
	comp=Z,62nm,0.8s						
MOCB	Mochara	3.24	26	⇑iPn	Pn	23 58 07.9	+0.4
MOCB				⇑iSn	Sn	23 58 49.5	+1.4
	comp=Z,103nm,0.7s						
PB04	IPOC Station P	3.30	303	ePn	Pn	23 58 07.8	-0.3
PB04				eSn	Sn	23 58 46.6	-2.5
PB01	IPOC Station P	3.79	325	ePn	Pn	23 58 13.6	-0.4
PB01				eSn	Sn	23 58 55.2	-4.6
CYA	Choya	4.42	164	eP	Pn	23 58 21.1	-0.8
ACLC	CERRO LA CRUZ	5.23	178	IAML		23 59 30.7	
	comp=Z,29nm,1.0s						
LCO	Las Campanas	5.76	213	ePn	Pn	23 58 36.5	-3.1
LCO				eSn	Sn	23 59 31.1	-15
AVFE	Valle Fertil	6.46	182	IAML		23 59 58.6	
	comp=Z,16nm,0.9s						
BBOJ	La Paz, Jacaqu	7.23	352	ePn	Pn	23 58 59.3	+0.1
BBOE	La Paz, Chanca	7.37	354	ePn	Pn	23 59 01.6	+0.6
BBOD	La Paz, Gloria	7.62	350	ePn	Pn	23 59 05.2	+0.8
LPAZ	La Paz	7.90	353	P	Pn	23 59 08.2	+0.1
	comp=Z,8.6nm,0.3s,baz=168,slow=9.0,SNR=152						
LPAZ				S	Sn	00 00 35.6	-1.6
	comp=Z,0.7nm,0.3s,baz=306,slow=19,SNR=5.0						
LPAZ	La Paz	7.90	353	ePn	Pn	23 59 07.9	-0.2
LPAZ				eSn	Sn	00 00 33.4	-3.8
LPAZ	La Paz	7.90	353	ePn	Pn	23 59 08.4	+0.3
LPAZ				eSn	Sn	00 00 27.1	-10
BBOB	La Paz, Bander	8.05	353	ePn	Pn	23 59 09.7	-0.2
BBOB				eSn	Sn	00 00 37.7	-2.8
	comp=Z,14nm,0.5s						
CPUP	Villa Florida	9.16	106	P	Pn	23 59 21.9	-2.1
	comp=Z,0.3nm,0.3s,baz=288,slow=12,SNR=6.2						
CPUP	Villa Florida	9.16	106	ePn	Pn	23 59 22.0	-2.0
TRQA	Tornquist	14.53	163	ePn	Pn	00 00 29.9	-2.7
SAML	Samuel	15.62	15	ePn	P	00 00 45.2	-1.2
	comp=Z,5.8nm,0.8s						
PLCA	Paso Flores	16.75	189	P	Pn	00 01 00.0	+0.3
	comp=Z,0.3nm,0.3s,baz=26,slow=13,SNR=7.8						
PLCA	Paso Flores	16.75	189	eP	P	00 00 58.2	-0.6
	comp=Z,12nm,0.6s						
SPB	Sao Paulo	18.06	92	eP	Pn	00 01 12.5	-2.7
	comp=Z,23nm,0.8s						
BDFB	Brasilia	19.89	68	P	P	00 01 32.1	-1.1
	comp=Z,3.1nm,0.3s,baz=241,slow=10.0,SNR=145						
BDFB	Brasilia	19.89	68	eP	P	00 01 32.4	-0.8
	comp=Z,174nm,0.9s						
PTGA	Pitinga	24.33	18	P	P	00 02 15.8	-0.8
	comp=Z,1.7nm,0.4s,baz=166,slow=10,SNR=4.6						
PTGA	Pitinga	24.33	18	eP	P	00 02 15.3	-1.4
	comp=Z,13nm,1.4s						
RCBR	Riachuelo	35.14	64	eP	P	00 03 51.9	-0.2
	comp=Z,17nm,1.1s						
STVI	Saint Thomas	42.33	3	eP	P	00 04 49.7	-1.9
	comp=Z,44nm,1.2s						
VNA3	Neumayer Olymp	57.03	161	P	P	00 06 41.5	-0.5
VNA2	Neumayer--Watz	57.60	160	P	P	00 06 46.4	+0.4
	baz=290,slow=7.9						
SNAA	Sanae	59.23	161	P	P	00 06 57.4	+0.1
TXAR	Lajitas Array	63.73	325	P	P	00 07 28.7	+0.6
	comp=Z,0.8nm,0.8s,baz=150,slow=8.6,SNR=6.9						
PBMO	Poplar Bluff	64.48	339	eP	P	00 07 35.8	+3.2
	comp=Z,64nm,1.3s						
QSPA	South Pole Qui	66.03	180	eP	P	00 07 43.0	+0.6
	comp=Z,23nm,0.8s						
MNTX	Cornudas Mount	66.50	325	eP	P	00 07 46.7	+0.9
	comp=Z,3.7nm,1.0s						
MSTX	Muleshoe	67.01	328	eP	P	00 07 50.0	+0.9
	comp=Z,11nm,1.0s						
DBIC	Dimbokro	68.00	72	P	P	00 07 54.8	-0.7
	comp=Z,4.1nm,0.9s,baz=229,slow=7.8,SNR=4.1						
ANMO	Albuquerque	69.61	326	eP	P	00 08 07.7	+2.4
	comp=Z,3.4nm,0.9s						
SDCO	Great Sand Dun	71.36	329	eP	P	00 08 18.4	+2.4
	comp=Z,2.9nm,0.9s						
WUAZ	Wupatki	72.63	323	eP	P	00 08 26.4	+3.0
	comp=Z,29nm,2.0s						
SMCO	Snowmass	73.20	329	eP	P	00 08 29.4	+2.5
	comp=Z,20nm,2.0s						
DNR	Dunn Ranch,Anz	74.25	319	eP	P	00 08 38.7	+5.8
VNDA	Vanda	74.50	190	P	P	00 08 35.1	+1.7
	comp=Z,1.1nm,0.8s,baz=132,slow=4.2,SNR=5.6						
KNB	Kanab	74.53	324	eP	P	00 08 37.7	+3.3
	comp=Z,7.4nm,0.9s						
SRU	San Rafael Swe	74.89	326	eP	P	00 08 38.8	+2.3
	comp=Z,4.7nm,0.8s						
P18A	Preston Nutter	75.14	327	eP	P	00 08 40.4	+2.4
	comp=Z,4.6nm,0.8s						
TPNV	Topopah Spring	76.38	321	eP	P	00 08 48.0	+3.0
	comp=Z,3.0nm,0.9s						
TOA0	Torodi Ar. Sit	76.77	69	eP	P	00 08 46.6	-0.9
TORD	Torodi Ar. Bea	76.77	69	P	P	00 08 46.7	-0.8
	comp=Z,5.2nm,0.9s,baz=246,slow=5.2,SNR=36						
DUG	Dugway, Tooele	76.87	326	eP	P	00 08 50.2	+2.6
	comp=Z,6.1nm,1.3s						
PDAR	Pinedale Array	77.22	329	P	P	00 08 50.9	+1.3
	comp=Z,0.4nm,0.6s,baz=140,slow=6.8,SNR=4.3						
ULM	Lac du Bonnet	78.35	342	P	P	00 08 55.8	+0.4
	comp=Z,4.2nm,0.9s,baz=170,slow=4.9,SNR=4.5						
NVAR	Mina Array Bea	78.58	321	P	P	00 08 58.5	+1.3
	comp=Z,0.8nm,0.7s,baz=138,slow=8.2,SNR=6.2						
HLID	Hailey	80.16	327	eP	P	00 09 08.4	+2.8
MCMT	McKenzie Canyo	80.34	329	eP	P	00 09 09.4	+2.9
BOSA	Boshof	80.79	117	P	P	00 09 09.3	-0.1
	comp=Z,4.6nm,0.5s,baz=258,slow=3.4,SNR=19						
MAW	Mawson	81.31	163	P	P	00 09 11.9	+0.8
	comp=Z,3.4nm,0.6s,baz=201,slow=8.6,SNR=10						
FCC	Fort Churchill	85.60	346	eP	P	00 09 34.3	+1.5
	comp=Z,4.1nm,0.8s						
ESDC	Sonseca Array	86.63	44	P	P	00 09 39.7	+1.1
	comp=Z,0.2nm,0.3s,baz=225,slow=4.0,SNR=4.6						
ES19	SONSECA Array	86.69	44	eP	P	00 09 40.2	+1.4
YKA	Yellowknife Ar	94.24	340	P	P	00 10 14.0	+0.6
	comp=Z,0.8nm,0.6s,baz=130,slow=4.5,SNR=26						
ASAR	Alice Springs	128.23	205	PKP	PKPdf	00 16 01.3	+0.3
	comp=Z,1.2nm,0.5s,baz=137,slow=1.8,SNR=14						
WRA	Warramunga Arr	131.40	207	PKP	PKPdf	00 16 07.4	+0.4
	comp=Z,1.0nm,0.4s,baz=158,slow=1.7,SNR=9.2						
ZALV	Zalesovo Beam	143.62	28	PKP	PKPdf	00 16 27.2	-1.1
	comp=Z,1.5nm,0.5s,baz=305,slow=3.2,SNR=6.9						
MKAR	Makanchi Array	146.76	40	PKPbc	PKPbc	00 16 35.4	-0.7
	comp=Z,2.2nm,0.5s,baz=301,slow=2.4,SNR=36						
MKAR				SKPbc	SKiKP	00 19 58.8	+1.2
	comp=Z,0.4nm,0.7s,baz=309,slow=2.9,SNR=3.9						
KLR	Kul'dur	150.92	334	PKPbc	PKPbc	00 16 47.0	+0.6
	comp=Z,2.7nm,0.7s,baz=40,slow=3.0,SNR=11						
CMAR	Chiang Mai Arr	165.86	111	PKPab	PKPab	00 17 59.5	-0.6
	comp=Z,1.1nm,0.3s,baz=256,slow=5.8,SNR=6.1						

IDC 05 00:00:22.4±10.0, 22°.73S×176°.22W, h374km±109km, mb3.3/5, mb1 3.5/5, mb1mx3.1/40, mbtmp4.0/5, Error ellipse: s-maj=123.0km s-min=35.6km az=155.0, South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
CTA	Charters Tower	34.98	267	P	P	00 06 41.9	+0.8
	3.2nm,0.4s,baz=91,slow=11,SNR=6.1						
STKA	Stephens Creek	38.38	247	P	P	00 07 08.0	-1.3
	1.5nm,0.3s,baz=13,slow=20,SNR=2.9						
ASAR	Alice Springs	45.66	259	P	P	00 08 07.3	-0.4
	0.4nm,0.3s,baz=91,slow=7.7,SNR=6.5						
WRA	Warramunga Arr	45.97	264	P	P	00 08 10.0	-0.1
	1.6nm,0.5s,baz=98,slow=8.2,SNR=7.7						
NVAR	Mina Array Bea	81.53	42	P	P	00 11 59.5	0.0
	0.2nm,0.6s,baz=238,slow=6.2,SNR=2.6						
BRTR	Keskin Array B	149.55	311	PKPbc	PKPbc	00 19 28.2	-0.4
	0.5nm,0.8s,baz=27,slow=9.7,SNR=3.0						

*IDC **05** 00:07:16.9±1.5, 36°.22N×142°.01E, h0km, mb3.4/4, mb1 3.6/5, mb1mx3.4/42, mbtmp3.4/5, ML3.5/1, Error ellipse: s-maj=36.1km s-min=32.7km az=49.0*
*ISCJB **05** 00:07:18.1±1.1, 36°.21N±0°.10×142°.04E±0°.09, h23km, mb3.5/4, Error ellipse: s-maj=14.6km s-min=9.4km az=153.5*
*JMA **05** 00:07:19.9±0.2, 36°.21N×141°.87E, h66km±4km, M3.2*
ISC 05 00:07:20.2±1.3, 36°.22N±0°.10×142°.0E±0°.1, h23km, n16, σ1s.19/12, mb3.5/4, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
CHOJ	Chosi	1.03	240	P	Pn	00 07 38.0	-1.2
CHOJ				eS	Sb	00 07 51.8	-0.6
JHO	Hitachi	1.19	290	P	Pn	00 07 39.7	-1.7
ONAJ	Iwakimizuishiy	1.29	314	P	Pn	00 07 41.4	-1.4
JRY	Ryogami san	2.48	266	P	Pn	00 07 58.1	-1.1
MJAR	Matsushiro Arr	3.04	277	Pn	Pn	00 08 07.5	+0.5
	6.3nm,0.3s,baz=102,slow=9.3,SNR=38						
MAT	Matsushiro	3.05	277	P	Pn	00 08 07.3	+0.3
MAT				S	Sn	00 08 44.3	+1.6
H11N2	WAKE ISLAND Hy	27.35	120	T	T	00 41 54.2	
	baz=312,slow=75,SNR=5.7						
H11N1	WAKE ISLAND Hy	27.36	120	T	T	00 41 44.7	
	baz=312,slow=75,SNR=4.2						
H11N3	WAKE ISLAND Hy	27.37	120	T	T	00 41 44.7	
	baz=312,slow=75,SNR=4.4						
H11S1	WAKE ISLAND Hy	28.05	122	T	T	00 42 33.8	
	baz=314,slow=75,SNR=7.6						
H11S3	WAKE ISLAND Hy	28.05	122	T	T	00 42 32.2	
	baz=314,slow=75,SNR=5.8						
H11S2	WAKE ISLAND Hy	28.07	122	T	T	00 42 33.5	
	baz=314,slow=75,SNR=6.4						
ZALV	Zalesovo Beam	42.79	313	P	P	00 15 14.9	-0.9
	0.4nm,0.4s,baz=105,slow=17,SNR=2.1						
MKAR	Makanchi Array	44.93	303	P	P	00 15 34.0	+0.8
	0.5nm,0.7s,baz=87,slow=10,SNR=7.5						
WRA	Warramunga Arr	56.32	189	P	P	00 16 59.4	+0.2
	0.2nm,0.3s,baz=4.3,slow=7.2,SNR=4.0						
YKA	Yellowknife Ar	64.29	30	P	P	00 17 53.9	+0.6
	0.2nm,0.8s,baz=292,slow=6.6,SNR=3.2						

WEL 05 00:09:49.1±0.3, 39°.25S×179°.45E, h33km, ML3.5/11, Error ellipse: s-maj=2.4km s-min=1.9km az=90.0, Off east coast of North Island

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
MHGZ	Mahia Peninsul	1.21	274	PN	Pn	00 10 08.5	-1.1
MHGZ				SN	Sn	00 10 23.5	-1.3
KNZ	Kokohu	1.40	279	PN	Pn	00 10 11.5	-0.8
KNZ				SN	Sn	00 10 28.2	-1.4
RIGZ	Rimuhau	1.43	292	PN	Pn	00 10 12.3	-0.4
RIGZ				SN	Sn	00 10 30.0	-0.3
WMGZ	Waiomatatini S	1.65	330	PN	Pn	00 10 15.0	-0.7
WMGZ				SN	Sn	00 10 34.5	-1.2
SNGZ	Shannon Statio	1.71	285	PN	Pn	00 10 16.2	-0.4
SNGZ				SN	Sn	00 10 36.5	-0.8
WHHZ	Waihua	1.73	275	PN	Pn	00 10 16.4	-0.4
WHHZ				SN	Sn	00 10 37.5	-0.4
PKGZ	Pakihiroa	1.74	321	PN	Pn	00 10 16.5	-0.5
PKGZ				SN	Sn	00 10 36.9	-1.1
MWZ	Matawai	1.76	301	PN	Pn	00 10 16.6	-0.7
MWZ				SN	Sn	00 10 36.0	-2.6
ARHZ	Aropaoanui	1.91	269	PN	Pn	00 10 19.1	-0.1
ARHZ				SN	Sn	00 10 41.1	-1.1
URZ	Urewera	2.08	298	PN	Pn	00 10 21.6	0.0
URZ				SN	Sn	00 10 45.6	-0.8
PXZ	Pawanui	2.15	248	PN	Pn	00 10 20.6	-1.9
PXZ				SN	Sn	00 10 45.6	-2.4
BKZ	Black Stump Fm	2.30	271	PN	Pn	00 10 24.0	-0.8
BKZ				SN	Sn	00 10 49.6	-2.3
PRHZ	Porangahau	2.40	244	PN	Pn	00 10 23.7	-2.3
KRHZ	Kereru	2.42	260	PN	Pn	00 10 25.3	-1.0
KRHZ				SN	Sn	00 10 52.4	-2.4
ANWZ	Angora Road	2.59	241	PN	Pn	00 10 25.9	-2.7
ANWZ				SN	Sn	00 10 55.7	-3.3
PNHZ	Pukenui	2.60	254	PN	Pn	00 10 27.3	-1.5
TSZ	Takapari Road	2.81	252	PN	Pn	00 10 30.1	-1.6
TSZ				SN	Sn	00 11 01.4	-3.1
BFZ	Birch Farm	2.85	239	PN	Pn	00 10 29.1	-3.0
BFZ				SN	Sn	00 11 00.9	-4.4
BFZ				AML	AML	00 11 42.3	
PRWZ	Pori Road	2.98	243	PN	Pn	00 10 31.9	-2.1
WNVZ	Wahianoa	2.99	267	PN	Pn	00 10 32.5	-1.8
POWZ	Post Office Ro	3.06	247	PN	Pn	00 10 33.3	-1.8
POWZ				SN	Sn	00 11 08.3	-2.2
TIWZ	Tintock	3.13	240	PN	Pn	00 10 33.6	-2.5
MRZ	Mangatainoka R	3.29	243	PN	Pn	00 10 35.7	-2.6
MRZ				AML	AML	00 11 12.3	
MRZ				AML	AML	00 12 39.4	
HOWZ	Holdsworth Sta	3.44	240	PN	Pn	00 10 37.0	-3.3
MTW	Mount Morrison	3.57	237	PN	Pn	00 10 38.3	-3.9
MTW				SN	Sn	00 11 18.2	-5.0
TCW	Tory Channel	4.42	242	AML	AML	00 10 51.3	

*IDC **05** 00:16:08.9±0.7, 35°.91N×142°.34E, h0km, mb3.7/13, mb1 4.0/15, mb1mx3.7/47, mbtmp3.7/15, ML3.7/2, Error ellipse: s-maj=20.9km s-min=16.8km az=126.0*
*ISCJB **05** 00:16:10.1±0.5, 35°.97N±0°.06×142°.42E±0°.06, h18km, mb3.8/14, Error ellipse: s-maj=8.3km s-min=6.9km az=170.7*
*JMA **05** 00:16:12.4±0.2, 36°.01N×142°.29E, h71km, M3.3*
ISC 05 00:16:12.1±0.7, 35°.99N±0°.06×142°.40E±0°.08, h18km, n32, σ1s.09/27, mb3.8/14, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
CHOJ	Chosi	1.28	258	P	Pn	00 16 33.9	-1.1
BSO1	Boso 1	1.77	221	P	Pn	00 16 40.8	-0.4
JFK	Kawauchi	1.84	319	S	Sn	00 17 03.6	-2.0
JFT	Otama	2.25	313	P	Pn	00 16 48.0	-0.4
JAG	Ashikaga	2.42	281	P	Pn	00 16 49.6	-1.1
JOD2	Odawara 2	2.79	256	P	Pn	00 16 55.1	-0.7
JMK	Ichinoseki	3.10	343	P	Pn	00 16 59.0	-1.1
JYN	Shimob	3.17	262	P	Pn	00 17 00.8	-0.3
MJAR	Matsushiro Arr	3.43	281	Pn	Pn	00 17 04.4	-0.2
	3.3nm,0.3s,baz=329,slow=19,SNR=7.1						
MAT	Matsushiro	3.43	281	P	Pn	00 17 04.4	-0.2
MAT				eS	Sn	00 17 46.2	+1.4
JHJ	Hachijo jima 2	3.58	218	Pn	Pn	00 17 06.1	-0.6
	33nm,0.3s,baz=84,slow=18,SNR=2.6						
H11N2	WAKE ISLAND Hy	26.93	120	T	T	00 49 53.8	
	baz=312,slow=75,SNR=30						
H11N1	WAKE ISLAND Hy	26.94	120	T	T	00 49 54.9	
	baz=312,slow=75,SNR=28						
H11N3	WAKE ISLAND Hy	26.95	120	T	T	00 49 51.1	
	baz=312,slow=75,SNR=24						
H11S1	WAKE ISLAND Hy	27.63	123	T	T	00 50 44.8	
	baz=314,slow=76,SNR=32						
H11S3	WAKE ISLAND Hy	27.63	123	T	T	00 50 46.9	
	baz=314,slow=76,SNR=32						
H11S2	WAKE ISLAND Hy	27.64	123	T	T	00 50 45.1	
	baz=314,slow=76,SNR=39						
SONM	Songino Array	29.03	305	P	P	00 22 13.8	+2.7
	1.3nm,0.6s,baz=112,slow=9.5,SNR=2.9						
ZALV	Zalesovo Beam	43.20	313	P	P	00 24 11.9	+0.2
	0.6nm,0.4s,baz=90,slow=7.2,SNR=3.1						
MKAR	Makanchi Array	45.35	303	P	P	00 24 29.0	-0.1
	0.8nm,0.6s,baz=83,slow=9.4,SNR=9.2						
KURBB	Kurchatov Arra	47.27	309	P	P	00 24 42.5	-1.5
	0.7nm,0.3s,baz=83,slow=8.2,SNR=6.7						
ILAR	Eielson Array	49.96	32	P	P	00 25 04.7	+0.1
	0.5nm,0.7s,baz=264,slow=6.1,SNR=2.8						
INK	Inuvik	54.96	27	P	P	00 25 41.8	+0.3
	0.6nm,0.6s,baz=310,slow=6.6,SNR=7.5						
WRA	Warramunga Arr	56.15	189	P	P	00 25 49.0	-1.6
	0.6nm,0.3s,baz=6.6,slow=7.1,SNR=5.2						
ASAR	Alice Springs	59.87	189	P	P	00 26 15.2	-1.5
	0.4nm,0.4s,baz=2.9,slow=6.5,SNR=6.8						
RES	Resolute Bay	63.41	14	P	P	00 26 39.3	-0.6
	2.2nm,1.2s,baz=297,slow=7.9,SNR=2.4						
YKA	Yellowknife Ar	64.31	30	P	P	00 26 47.1	+1.0
	0.4nm,0.9s,baz=302,slow=6.2,SNR=3.5						
NVAR	Mina Array Bea	74.98	53	P	P	00 27 53.3	+0.7
	0.8nm,0.8s,baz=280,slow=6.6,SNR=5.2						
NOA	NORSAR Array B	75.45	338	P	P	00 27 54.2	-0.4
	0.6nm,0.8s,baz=66,slow=4.4,SNR=2.7						
PDAR	Pinedale Array	77.83	46	P	P	00 28 08.9	+0.3
	0.5nm,0.6s,baz=256,slow=2.2,SNR=7.2						
TXAR	Lajitas Array	90.12	53	P	P	00 29 11.9	+0.5
	0.4nm,0.8s,baz=288,slow=4.7,SNR=3.6						
LPAZ	La Paz	146.51	62	PKPbc	PKPab	00 35 54.5	+0.1
	0.8nm,0.6s,baz=185,slow=4.3,SNR=3.3						

*ISCJB **05** 00:16:30.3±0.6, 26°.42S±0°.04×27°.36E±0°.04, h10km±4km, mb3.8/2, Error ellipse: s-maj=7.5km s-min=5.6km az=44.0*
*IDC **05** 00:16:30.3±3.8, 26°.26S×26°.97E, h0km, mb3.7/2, mb1 3.5/3, mb1mx3.3/30, mbtmp3.5/3, ML2.4/1, Error ellipse: s-maj=80.4km s-min=16.5km az=106.0*
*PRE **05** 00:16:30.4±2.0, 26°.42S×27°.34E, h2km, ML2.4*
ISC 05 00:16:30.5±1.0, 26°.42S±0°.04×27°.34E±0°.05, h6km±8km, n10, σ0s.99/18, South Africa

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
WDLM	Western Deep L	0.07	95	eP	Pg	00 16 32.6	+0.2
WDLM				eS	Sg	00 16 33.2	-0.6
WDLM				AML	AML	00 16 33.5	
	comp=Z,8μm,0.3s						
KLOF	Kloof	0.25	74	eP	Pg	00 16 36.0	+0.5
KLOF				eS	Sg	00 16 38.6	-0.2
KLOF				AML	AML	00 16 39.6	
	comp=Z,848nm,0.1s						
PRYS	Parys	0.51	178	eP	Pg	00 16 40.5	+0.2
PRYS				eS	Sg	00 16 46.5	-0.4
PRYS				AML	AML	00 16 52.2	
	comp=Z,167nm,0.6s						
KSR	Koster	0.69	325	eP	Pb	00 16 44.5	-0.5
KSR				eS	Sg	00 16 52.7	-0.2
KSR				AML	AML	00 16 58.5	
	comp=Z,32nm,0.1s						
ERPM	east rand prop	0.81	85	eP	Pg	00 16 46.4	+0.3
ERPM				eS	Sg	00 16 56.0	-0.7
ERPM				AML	AML	00 17 03.8	
	comp=Z,27nm,0.2s						
SWZ	Schweizer	1.95	247	eP	Pb	00 17 06.4	-0.1
SWZ				eS	Sn	00 17 29.8	+0.6
SWZ				AML	AML	00 17 31.6	
	comp=Z,91nm,0.3s						
BOSA	Boshof	2.87	220	Pn	Pn	00 17 17.5	+0.6
	comp=Z,0.4nm,0.3s,baz=38,slow=12,SNR=36						
BOSA				Pg	Pb	00 17 22.0	-0.2
	comp=Z,1.0nm,0.3s,baz=39,slow=15,SNR=14						
BOSA				Sn	Sn	00 17 51.3	-0.5
	comp=Z,1.0nm,0.3s,baz=105,slow=15,SNR=3.5						
BOSA				Lg	Lg	00 17 58.4	
	comp=Z,5.0nm,0.3s,baz=317,slow=15,SNR=18						
UPI	Upington	5.75	249	eP	Pn	00 17 58.1	+1.7
UPI				eS	Sn	00 18 59.9	-2.9
UPI				AML	AML	00 19 06.7	
	comp=Z,6.9nm,0.6s						
DBIC	Dimbokro	45.35	312	P	P	00 24 45.9	-4.0
	comp=Z,3.5nm,1.1s,baz=184,slow=16,SNR=3.3						
TORD	Torodi Ar. Bea	46.57	325	P	P	00 24 59.3	-0.1
	comp=Z,0.3nm,0.6s,baz=136,slow=6.7,SNR=4.4						

*ATH **05** 00:22:05.2, 37°.13N×29°.04E, h10km±3km, ML2.8/2, Error ellipse: s-maj=3.6km s-min=1.3km az=139.0*
*ISCJB **05** 00:22:06.7±0.6, 37°.07N±0°.02×29°.07E±0°.03, h7km±4km, Error ellipse: s-maj=4.0km s-min=2.9km az=44.3*
*CSEM **05** 00:22:06.7±0.1, 37°.07N×29°.12E, h10km, ML3.0, Error ellipse: s-maj=3.3km s-min=2.9km az=127.0*
*DDA **05** 00:22:06.0, 37°.06N×29°.06E, h7km, Md3.2*
*THE **05** 00:22:06.4, 37°.02N×29°.10E, h0km, ML3.0/3, Error ellipse: s-maj=1.9km s-min=0.5km az=43.0*
ISC 05 00:22:06.4±1.2, 37°.10N±0°.02×29°.07E±0°.02, h4km±10km, n57, σ1s.00/94, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
GOLH	Golhisar	0.41	70	i P	Pg	00 22 14.0	-0.5
GOLH				i S	Sb	00 22 21.7	-1.5
GOLH	Golhisar	0.41	70	P	Pg	00 22 14.0	-0.5
GOLH				S	Sb	00 22 21.7	-1.5
TURN	Turunc	0.44	239	i P	Pn	00 22 19.5	-0.1
TURN				i S	Sb	00 22 29.9	+6.2
TURN	Turunc	0.44	239	P	Pn	00 22 19.5	-0.1
FETY	Fethiye	0.46	179	P	Pg	00 22 14.5	-0.8
FETY				S	Sg	00 22 21.3	0.0
FETY	Fethiye	0.46	179	P	Pg	00 22 14.5	-0.8
FETY				S	Sg	00 22 21.3	0.0
YER	Yerkesik	0.63	274	P	Pb	00 22 19.9	-0.2
YER				S	Sb	00 22 30.4	+1.0
YER	Yerkesik	0.63	274	P	Pb	00 22 19.9	-0.2
YER				S	Sb	00 22 30.4	+1.0
UZP	Denizli	0.94	5	i P	Pg	00 22 24.0	-0.4
UZP				i S	Sn	00 22 40.0	-0.6
AKAS	Kas	0.96	153	i P	Pg	00 22 24.0	-0.9
AKAS				i S	Sn	00 22 43.2	+2.0
AKAS	Kas	0.96	153	P	Pg	00 22 24.0	-0.9
KORT	Korkueli	1.03	95	i P	Pb	00 22 26.6	-0.3
KORT				i S	Sn	00 22 41.9	-0.8
KORT	Korkueli	1.03	95	P	Pb	00 22 26.6	-0.3
KORT				S	Sn	00 22 41.9	-0.8
KSL	Kastellorizon	1.03	156	P	Pg	00 22 25.5	-0.7
KSL				S	Sg	00 22 39.9	+0.4
KSL	Kastellorizon	1.03	156	P	Pg	00 22 25.3	-0.9
KSL				S	Sb	00 22 40.9	+0.2
KSL				AML	AML	00 22 47.1	
	comp=E,836μm,0.7s						
KSL				AML	AML	00 22 47.2	
	comp=N,617μm,0.4s						
AYDN	Tasoluk	1.10	301	i P	Pb	00 22 27.8	-0.4
AYDN				i S	Sn	00 22 44.5	-0.1
AYDN	Tasoluk	1.10	301	P	Pb	00 22 27.8	-0.4
AYDN				S	Sn	00 22 44.5	-0.1
ARG	Arkhangelos	1.16	221	P	Pg	00 22 27.5	-1.2
ARG				S	Sb	00 22 44.8	+0.2
ARG	Arkhangelos	1.16	221	P	Pg	00 22 27.5	-1.2
ARG				S	Sb	00 22 44.8	+0.2
BDRM	Kayabasi	1.30	269	i P	Pg	00 22 30.7	-0.7
BDRM				i S	Sn	00 22 49.2	-0.2
BDRM	Kayabasi	1.30	269	P	Pg	00 22 30.7	-0.7
BDRM				S	Sn	00 22 49.2	-0.2
KHAL	Karahalli	1.31	14	i P	Pb	00 22 31.3	-0.5
KHAL				i S	Sn	00 22 50.3	+0.5
KHAL	Karahalli	1.31	14	P	Pb	00 22 31.3	-0.5
KHAL				S	Sn	00 22 50.3	+0.5
BODT	Bodrum	1.41	269	P	Pn	00 22 32.2	-0.8
BODT				S	Sn	00 22 52.2	+0.2
BODT	Bodrum	1.41	269	P	Pn	00 22 32.2	-0.8
BODT				S	Sn	00 22 52.2	+0.2
NIS1	Nisyros Isl.	1.60	253	P	Pn	00 22 34.7	-0.9
NIS1				S	Sn	00 22 56.5	-0.2
NIS1	Nisyros Isl.	1.60	253	P	Pn	00 22 34.7	-0.9
NIS1				S	Sn	00 22 56.5	-0.2
BAGO	Egridir - ISPA	1.63	56	i P	Pg	00 22 37.4	-0.3
BAGO				i S	Sg	00 23 03.0	+4.2
SMG	Samos	1.88	290	P	Pn	00 22 39.7	+0.2
SMG	Samos	1.88	290	P	Pn	00 22 39.7	+0.2
DEMI	Demirci	1.96	352	i P	Pn	00 22 40.2	-0.5
DEMI				i S	Sn	00 23 05.8	0.0
DEMI	Demirci	1.96	352	P	Pn	00 22 40.2	-0.5
DEMI				S	Sn	00 23 05.8	0.0
GDZ	Gediz	2.02	9	i P	Pn	00 22 41.0	-0.4
GDZ				i S	Sn	00 23 06.8	-0.3
GDZ	Gediz	2.02	9	P	Pn	00 22 41.0	-0.4
GDZ				S	Sn	00 23 06.8	-0.3
KARP	Karpathos	2.19	226	P	Pn	00 22 44.1	+0.5
KARP	Karpathos	2.19	226	P	Pn	00 22 44.1	+0.5
BOLV	Bolvadin	2.20	42	i P	Pn	00 22 44.4	+0.5
BOLV				i S	Sb	00 23 14.3	-0.2
BOLV	Bolvadin	2.20	42	P	Pn	00 22 44.4	+0.5
DURS	Dursunbey	2.54	350	i P	Pn	00 22 48.4	-0.2
DURS				i S	Sn	00 23 19.1	-1.0
DURS	Dursunbey	2.54	350	P	Pn	00 22 48.4	-0.2
DURS				S	Sn	00 23 19.1	-1.0
ZKR	Zakros	3.04	230	P	Pn	00 22 54.8	-0.6
ZKR				S	Sn	00 23 33.4	+1.1
ZKR	Zakros	3.04	230	P	Pn	00 22 54.9	-0.6
ZKR				S	Sn	00 23 33.4	+1.1
PRK	Paraskevi	3.08	315	P	Pn	00 22 55.6	-0.3
PRK	Paraskevi	3.08	315	P	Pn	00 22 55.6	-0.3
NPS	Neapolis	3.34	238	P	Pn	00 23 00.2	+0.6
NPS	Neapolis	3.34	238	P	Pn	00 23 00.2	+0.6
LAST	Lasithi	3.49	237	P	Pn	00 23 02.6	+0.9
LAST				S	Sn	00 23 42.8	-0.7

LAST	Lasithi	3.49	237	P	Pn	00 23 02.6	+0.9
IDI	Anoyia	3.83	243	P	Pn	00 23 06.8	+0.4
IDI				S	Sn	00 23 50.6	-1.3
IDI	Anoyia	3.83	243	P	Pn	00 23 06.8	+0.4
IDI				S	Sn	00 23 50.6	-1.3
IDI				AML	AML	00 23 55.3	
	comp=N,90μm,1.2s						
IDI				AML	AML	00 24 00.0	
	comp=E,68μm,1.4s						
SIVA	Sivas	4.03	240	P	Pn	00 23 11.7	+2.7
SIVA	Sivas	4.03	240	P	Pn	00 23 11.7	+2.7
VAM	Vamos	4.29	248	P	Pn	00 23 13.3	+0.8
SMTH	Samothraki Isl	4.36	322	P	Pn	00 23 14.1	+0.6
SMTH	Samothraki Isl	4.36	322	P	Pn	00 23 14.2	+0.6
IMMV	Iera Moni Meta	4.43	250	P	Pn	00 23 17.2	+2.8
IMMV	Iera Moni Meta	4.43	250	P	Pn	00 23 17.2	+2.8

*ISCJB **05** 00:26:41.8±0.2, 62°.48N±0°.02×148°.25W±0°.04, h68km±3km, mb3.8/19, Error ellipse: s-maj=3.2km s-min=2.9km az=176.3*

*NEIC **05** 00:26:43.0, 62°.47N×148°.23W, h40km, mb4.2/2, ML4.1(AEIC), After AEIC.*

NEIC Felt [II] at Eagle River. Also felt at Anchorage, Chugiak, Palmer and Talkeetna.

*IDC **05** 00:26:43.1±0.5, 62°.58N×148°.58W, h58km±3km, mb3.6/18, mb1 3.8/22, mb1mx3.6/40, mbtmp3.8/22, MS2.8/1, Ms1 3.0/1, ms1mx2.4/48, Error ellipse: s-maj=10.8km s-min=9.6km az=91.0*

ISC 05 00:26:43.1±0.4**, 62°.50N**±0°.03×**148°.31W**±0°.04**, h59**km±3km**, h58**km**:pP-P, n120,** σ0s93/140**, mb4.0**/19**, Central Alaska**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DHY	Denali Highway	0.72	37	P	Pn	00 26 56.9	-0.8
DHY				S	Sn	00 27 07.7	-0.6
HUR	Hurricane	0.77	309	P	Pn	00 26 57.7	-0.5
SCM	Sheep Creek Mo	0.82	145	P	Pn	00 26 57.2	-1.5
SCM				S	Sn	00 27 09.4	-0.9
CUT	Chulitna	0.92	265	P	Pn	00 26 59.4	-0.5
RND	Reindeer	0.94	345	P	Pn	00 27 00.1	-0.2
RND				S	Sn	00 27 12.9	-0.2
MCK	McKinley	1.27	347	P	Pn	00 27 05.0	+0.4
MCK				S	Sn	00 27 21.3	+0.6
TRF	Thorofare Moun	1.31	317	P	Pn	00 27 05.2	-0.1
PS11	TAPS Pump St11	1.39	107	P	Pn	00 27 06.6	+0.3
PS10	TAPS Pump St10	1.48	50	P	Pn	00 27 08.0	+0.4
KLU	Klutina	1.52	131	P	Pn	00 27 07.2	-0.8
KLU				S	Sn	00 27 27.1	+0.3
KTH	Kantishna Hill	1.59	313	P	Pn	00 27 09.3	+0.4
FIB	Fire Island	1.61	214	P	Pn	00 27 10.0	+0.9
VLZ	Valdez	1.67	145	P	Pn	00 27 08.6	-1.3
PTE	Portage	1.68	192	P	Pn	00 27 10.2	+0.1
VMT	TAPS Tl Valdez	1.70	146	P	Pn	00 27 09.2	-1.2
PS12	TAPS Pump St12	1.82	123	P	Pn	00 27 11.5	-0.6
STLK	Strandline Lak	1.94	240	P	Pn	00 27 14.1	+0.4
CAST	Castle Rocks	1.95	300	P	Pn	00 27 13.8	0.0
WRH	Wood River Hil	1.98	3	P	Pn	00 27 14.1	-0.1
BPAW	Bear Paw Mtn.	2.01	324	P	Pn	00 27 14.6	0.0
PS08	TAPS Pump Stn8	2.15	17	P	Pn	00 27 17.2	+0.6
MENT	Mentasta	2.16	76	P	Pn	00 27 16.8	+0.1
SLKM	Skilak Lake	2.20	205	P	Pn	00 27 17.3	0.0
SPU	Mount Spurr	2.21	235	P	Pn	00 27 17.8	+0.3
CKN	Chakachatna No	2.24	237	P	Pn	00 27 18.5	+0.8
SPCR	Spurr Chakacha	2.26	236	P	Pn	00 27 18.4	+0.3
CHUM	Lake Minchumin	2.28	309	P	Pn	00 27 18.5	+0.2
EYAK	Cordova Ski Ar	2.31	147	P	Pn	00 27 18.1	-0.6
CKL	Chakachamna La	2.31	237	P	Pn	00 27 19.2	+0.3
BMRM	Bremner River	2.34	129	P	Pn	00 27 17.5	-1.7
ILAR	Eielson Array	2.36	15	P	Pn	00 27 19.6	+0.1
	61nm,0.3s,baz=197,slow=14,SNR=343						
ILAR				S	Sn	00 27 47.8	+0.5
	114nm,0.3s,baz=201,slow=22,SNR=15						
ILAR				LR	LR	00 28 29.1	
	comp=Z,242nm,21.7s,baz=313,slow=46						
IL1	Eielson Array	2.37	15	P	Pn	00 27 19.8	+0.4
GLB	Gilahina Butte	2.38	115	P	Pn	00 27 19.2	-0.5
COLA	College	2.39	5	P	Pn	00 27 20.4	+0.7
MDM	Murphy Dome	2.47	1	P	Pn	00 27 20.9	+0.1
MDM				S	Sn	00 27 48.3	-1.5
VRDI	Verde Repeater	2.63	117	P	Pn	00 27 22.5	-0.8
MCARA	McCarthy VSAT	2.74	112	P	Pn	00 27 24.5	-0.1
RAGM	Ragged Mountai	2.75	139	*e*Pn	Pn	00 27 23.9	-0.8
RDJH	Redoubt Jeurge	2.88	230	P	Pn	00 27 26.8	+0.2
NCT	North Crescent	2.95	231	P	Pn	00 27 28.1	+0.6
RSO	Redoubt South	2.96	228	*e*Pn	Pn	00 27 28.4	+0.7
BRLK	Bradley Lake	3.02	206	P	Pn	00 27 28.5	+0.1
BCA3	Beaver Creek A	3.05	76	P	Pn	00 27 28.8	-0.1
NICHA	Nichawak Mount	3.09	135	P	Pn	00 27 28.4	-0.9
KHIT	Khitrov Hills	3.19	128	P	Pn	00 27 29.4	-1.4
BALM	Baldy	3.19	115	P	Pn	00 27 29.9	-1.0
KIAG	Kiagna River	3.25	117	P	Pn	00 27 30.5	-1.2
GRIN	Grindle Hills	3.28	131	P	Pn	00 27 30.7	-1.3
INE	Iliamna NE	3.35	225	P	Pn	00 27 33.9	+0.8
ILW	Iliamna West	3.38	226	P	Pn	00 27 33.9	+0.5
PS06	TAPS Pump Stn6	3.42	350	P	Pn	00 27 34.3	+0.4
ISLE	Juniper Island	3.44	121	P	Pn	00 27 32.7	-1.5
BARN	Barnard Glacie	3.48	112	P	Pn	00 27 34.5	-0.3
BARK	Barkley Ridge	3.50	124	P	Pn	00 27 34.2	-0.9
KULT	Kultieth River	3.52	128	P	Pn	00 27 34.2	-1.0
TT01	Tatalina	3.57	280	P	Pn	00 27 35.5	-0.4
BAGL	Bagley Icefiel	3.60	121	P	Pn	00 27 35.0	-1.4
OPT	Oil Point	3.73	222	P	Pn	00 27 38.6	+0.6
SVW2	Sparrevohn	3.73	251	P	Pn	00 27 37.6	-0.5
MESA	MESA	3.85	124	P	Pn	00 27 38.8	-1.2
EGAK	Eagle	3.92	51	P	Pn	00 27 41.2	+0.5
AUE	Augustine Isla	4.00	220	P	Pn	00 27 42.4	+0.6
AUL	Augustine Lava	4.00	221	P	Pn	00 27 42.4	+0.5
RKAV	Rock Avalanche	4.01	120	P	Pn	00 27 41.2	-0.9
TABL	Table Mountain	4.01	118	P	Pn	00 27 40.7	-1.5
AUW	Augustine West	4.03	221	P	Pn	00 27 42.8	+0.7
AUI	Augustine Isla	4.04	220	P	Pn	00 27 43.1	+0.8
IM3	Indian Mountai	4.22	328	P	Pn	00 27 45.0	+0.2
FYU	Fort Yukon	4.29	17	P	Pn	00 27 46.9	+1.1
DAWY	Dawson	4.32	65	P	Pn	00 27 46.5	+0.3
SAMH	Samovar Hills	4.34	120	P	Pn	00 27 46.1	-0.4
CDD	Cape Douglas	4.44	219	P	Pn	00 27 48.0	+0.2
PS05	TAPS Pump Stn5	4.44	348	P	Pn	00 27 48.6	+0.8
MCNL	McNeil River	4.45	224	P	Pn	00 27 47.7	-0.1
FOPK	Fourpeaked Vol	4.54	216	P	Pn	00 27 49.0	-0.1
KAHC	Katmai Hardscr	5.08	223	P	Pn	00 27 56.2	-0.5
BM3	Burnt Mountain	5.18	16	P	Pn	00 27 58.8	+0.8
KDAK	Kodiak Island	5.19	206	*e*Pn	Pn	00 28 02.6	+4.5
KAWH	Katmai	5.23	221	P	Pn	00 27 58.7	0.0
KAKN	Katmai Knife C	5.38	221	P	Pn	00 28 00.3	-0.5
KVTA	Katmai Vly 10	5.39	223	P	Pn	00 28 00.7	-0.1
KABU	Katmai Buttres	5.47	222	P	Pn	00 28 01.9	-0.2
KELA	Mount Kelaz	5.49	225	P	Pn	00 28 02.0	-0.2
KABR	Katmai Barrier	5.49	220	P	Pn	00 28 01.0	-1.2
OHAK	Old Harbor	5.86	208	*e*Pn	Pn	00 28 12.9	+5.7
PLK4	Peulik 4	6.33	223	P	Pn	00 28 14.2	+0.5
PLBC	Pleasant Camp	6.57	112	P	Pn	00 28 16.2	-0.7
WHY	Whitehorse	6.67	100	P	Pn	00 28 17.3	-1.2
INK	Inuvik	8.46	40	P	Pn	00 28 42.8	+0.1
	1.3nm,0.3s,baz=239,slow=19,SNR=57						
INK				S	Sn	00 30 14.8	-1.8
	2.8nm,0.3s,baz=163,slow=16,SNR=11						
INK	Inuvik	8.46	40	P	Pn	00 28 43.3	+0.5
DLBC	Dease Lake	9.89	106	P	Pn	00 29 02.3	-0.1
	1.1nm,0.3s,baz=294,slow=8.3,SNR=10						
GAMB	Gambell	10.64	287	*e*Pn	Pn	00 29 14.3	+1.9
YKA	Yellowknife Ar	15.47	75	P	Pn	00 30 17.6	+0.4
	0.1nm,0.3s,baz=284,slow=13,SNR=7.6						
RES	Resolute Bay	21.96	35	P	P	00 31 32.2	+0.9
	0.7nm,0.7s,baz=248,slow=12,SNR=5.2						
RES	Resolute Bay	21.96	35	*e*P	P	00 31 36.9	+5.6
	2.9nm,0.8s						
NEW	Newport	22.44	115	P	P	00 31 38.7	+1.9
	1.7nm,0.8s,baz=252,slow=23,SNR=2.3						
NEW				pP	pP	00 31 50.0	+0.3
	3.6nm,0.7s,baz=327,slow=11,SNR=6.0						
NEW				sP	sP	00 31 59.0	+1.9
	3.9nm,1.0s,baz=310,slow=6.6,SNR=3.7						
NEW	Newport	22.44	115	P	P	00 31 38.7	+1.9
NEW				*e*pP	pP	00 31 50.7	+0.9
NEW				*e*sP	sP	00 31 59.4	+2.3
SEY	Seymchan	26.36	298	P	P	00 32 12.3	-0.9
	1.3nm,0.5s,baz=66,slow=7.5,SNR=4.2						
SEY				sP	sP	00 32 34.1	-0.4
	1.5nm,0.4s,baz=55,slow=9.0,SNR=4.5						
PDAR	Pinedale Array	30.03	113	P	P	00 32 47.5	+1.2
	0.2nm,0.6s,baz=302,slow=8.4,SNR=2.9						
PDAR				pP	pP	00 33 02.1	+1.2
	0.6nm,0.9s,baz=319,slow=5.9,SNR=5.9						
EML	El Monte Cty P	35.73	131	*e*P	P	00 33 35.3	-0.5
EML				*e*ScP	ScP	00 39 43.0	-0.1
SWSC	Sam W. Stewart	36.05	130	*e*P	P	00 33 40.4	+1.9
KLR	Kul'dur	43.77	291	P	P	00 34 41.4	-1.0
	1.3nm,0.6s,baz=58,slow=8.3,SNR=5.6						
TXAR	Lajitas Array	43.94	118	P	P	00 34 44.5	+0.4
	0.4nm,0.6s,baz=333,slow=7.2,SNR=3.4						
TXAR				pP	pP	00 35 00.8	+1.6
	0.6nm,0.6s,baz=333,slow=6.6,SNR=5.4						
TXAR				sP	sP	00 35 08.4	+2.5
	0.5nm,0.7s,baz=336,slow=2.7,SNR=4.2						
ARCES	ARCESS Array B	48.17	3	P	P	00 35 15.3	-1.4
	1.2nm,0.5s,baz=357,slow=7.9,SNR=9.1						
ARCES				pP	pP	00 35 31.1	-0.9
	1.8nm,0.7s,baz=1.9,slow=7.3,SNR=5.2						
MJAR	Matsushiro Arr	50.85	275	P	P	00 35 37.9	+0.4
	0.6nm,0.3s,baz=24,slow=9.3,SNR=4.2						
FINES	FINESS Array B	56.30	3	P	P	00 36 16.1	-0.8
	2.0nm,0.9s,baz=345,slow=6.5,SNR=3.8						
ZALV	Zalesovo Beam	56.64	326	P	P	00 36 18.6	-1.0
	1.0nm,0.4s,baz=15,slow=6.8,SNR=4.9						
BVAR	Borovoye Array	60.85	334	P	P	00 36 47.9	-0.9
	1.2nm,0.5s,baz=43,slow=8.1,SNR=12						
BVAR				sP	sP	00 37 09.6	-1.5
	4.0nm,0.9s,baz=40,slow=5.8,SNR=10						
ZRNK	Zerenda	61.19	335	*e*P	P	00 36 50.0	-1.1
	5.5nm,1.1s						
MKAR	Makanchi Array	63.82	324	P	P	00 37 07.3	-1.4
	1.2nm,0.5s,baz=46,slow=6.4,SNR=17						
MKAR				sP	sP	00 37 28.8	-2.5
	0.8nm,0.6s,baz=54,slow=6.3,SNR=4.8						
MK01	Makanchi Array	63.84	324	*e*P	P	00 37 10.6	+1.7
AKTO	Aktyubinsk	65.48	342	P	P	00 37 18.9	-0.6
	1.2nm,0.5s,baz=31,slow=7.7,SNR=5.0						
ABKAR	Akbulak array	66.34	340	*e*P	P	00 37 24.4	-0.6
AKASG	Malin Array Be	67.12	2	P	P	00 37 28.9	-1.0
	0.6nm,0.5s,baz=357,slow=6.9,SNR=5.4						
AKASG				pP	pP	00 37 44.9	-1.1
	0.7nm,0.3s,baz=2.3,slow=6.3,SNR=5.6						
GERES	GERESS Array B	68.08	13	P	P	00 37 35.9	-0.2
	0.1nm,0.3s,baz=354,slow=16,SNR=2.7						
GERES				pP	pP	00 37 51.2	-0.9
	0.4nm,0.7s,baz=0.0,slow=4.0,SNR=4.1						
ES19	SONSECA Array	74.20	28	*e*P	P	00 38 14.0	+0.8
ESDC	Sonseca Array	74.21	28	P	P	00 38 14.4	+1.1
	1.3nm,0.7s,baz=340,slow=6.4,SNR=7.0						
ESDC				pP	pP	00 38 29.2	-0.3
	1.2nm,0.6s,baz=344,slow=6.2,SNR=6.7						
GEYT	Alibeck	77.67	339	P	P	00 38 32.9	-0.1
	0.8nm,0.5s,baz=317,slow=6.1,SNR=2.9						
CMAR	Chiang Mai Arr	83.78	298	P	P	00 39 05.1	-0.7
	0.6nm,0.3s,baz=7.6,slow=5.8,SNR=7.2						
BOSA	Boshof	145.84	10	PKPbc	PKPdf	00 46 14.9	+0.3
	2.9nm,1.0s,baz=328,slow=4.7,SNR=6.8						
BOSA				pPKPbc	pPKPbc	00 46 31.9	-0.4
	6.6nm,1.0s,baz=34,slow=2.1,SNR=5.5						

*NIED **05** 00:36:00, 37°.70N×142°.00E, h29km, Mw3.5 Best double couple: Mo1.91000×10¹⁴ NP1:φs348.00000°, δ31.00000°, λ-105.00000°. NP2:φs186.00000°, δ60.00000°, λ-81.00000°.*

*IDC **05** 00:36:51.1±1.1, 37°.75N×142°.05E, h0km, mb3.4/4, mb1 3.7/5, mb1mx3.5/31, mbtmp3.4/5, ML3.3/1, MS2.3/1, Ms1 2.3/1, ms1mx2.0/40, Error ellipse: s-maj=37.0km s-min=26.1km az=134.0*

*JMA **05** 00:36:53.8±0.2, 37°.75N×141°.95E, h30km±4km, M3.9*

ISC 05 00:36:52.7±2.2**, 37°.74N**±0°.05×**141°.92E**±0°.10**, h12**km±12km**, n13,** σ1s01/19**, mb3.4**/4**, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	Ouri	0.84	328	P	Pb	00 37 09.2	-0.1
JIO				*e*S	Sg	00 37 19.4	-0.6
JMM	Marumori	0.90	278	P	Pb	00 37 10.8	+0.5
JMM				S	Sg	00 37 22.2	+0.3
JFK	Kawauchi	0.92	246	P	Pb	00 37 11.0	+0.4
JFK				S	Sg	00 37 22.8	+0.5
ONAJ	Iwakimizuishiy	1.10	235	P	Pg	00 37 13.6	-0.3
ONAJ				*e*S	Sg	00 37 27.4	-0.8
JOU	Okura	1.17	302	P	Pg	00 37 15.0	-0.2
JOU				S	Sg	00 37 29.8	-0.7
JFT	Otama	1.28	260	P	Pg	00 37 17.2	-0.1
JHO	Hitachi	1.56	224	P	Pn	00 37 19.7	-0.7
MJAR	Matsushiro Arr	3.20	249	Pn	Pn	00 37 44.9	+2.0
	3.1nm,0.3s,baz=84,slow=16,SNR=12						
MJAR				LR	LR	00 39 26.9	
	comp=Z,43nm,18.6s,baz=10.0,slow=48						
MAT	Matsushiro	3.20	249	P	Pn	00 37 44.4	+1.5
MAT				*e*S	Sn	00 38 18.6	-2.4
MKAR	Makanchi Array	44.09	302	P	P	00 45 01.1	+0.4
	0.2nm,0.5s,baz=86,slow=11,SNR=5.3						
WRA	Warramunga Arr	57.82	188	P	P	00 46 44.1	0.0
	0.6nm,0.5s,baz=4.6,slow=6.9,SNR=3.0						
YKA	Yellowknife Ar	62.99	30	P	P	00 47 18.9	-0.1
	0.2nm,0.9s,baz=304,slow=6.2,SNR=2.8						
TXAR	Lajitas Array	89.37	53	P	P	00 49 49.7	+0.1
	0.2nm,0.6s,baz=318,slow=5.3,SNR=2.4						

*ISCJB **05** 00:43:12.9±0.2, 24°.60N±0°.02×122°.86E±0°.01, h92km±2km, mb4.0/13, Error ellipse: s-maj=3.7km s-min=1.8km az=164.5*

*NEIC **05** 00:43:13.5±0.5, 24°.68N×122°.85E, h84km±5km, mb4.7/6, Error ellipse: s-maj=9.0km s-min=7.0km az=153.0*

NEIC Recorded [1 TAP] in Hualien, Taichung, Taitung and Yilan.

*JMA **05** 00:43:13.6±0.1, 24°.50N×122°.82E, h86km±1km, M3.5*

*TAP **05** 00:43:14.5, 24°.54N×122°.83E, h80km, ML4.8, B*

*IDC **05** 00:43:14.7±3.4, 24°.75N×122°.87E, h91km±33km, mb3.3/8, mb1 3.5/9, mb1mx3.3/35, mbtmp3.8/9, MS4.0/1, Ms1 4.0/1, ms1mx2.6/28, Error ellipse: s-maj=22.8km s-min=17.1km az=88.0*

ISC 05 00:43:13.2±0.7**, 24°.55N**±0°.03×**122°.85E**±0°.02**, h87**km±5km**, n128,** σ1s56/207**, mb3.7**/13**, 9C-22D, Taiwan region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JYNG	Yonagunijimaku	0.12	138	P	Pn	00 43 25.8	+0.2
JYNG				S	Sn	00 43 35.0	+0.2
YOJ	Yonaguni jima	0.17	120	P	Pn	00 43 26.3	+0.6
YOJ				S	Sn	00 43 35.3	+0.3
YOJ	Yonaguni jima	0.17	120	⇓*i*P	Pn	00 43 26.4	+0.6
	baz=123						
YOJ				*i* S	Sn	00 43 35.1	+0.1
	baz=123						
YOJ	Yonaguni jima	0.17	120	*e*Pn	Pn	00 43 26.3	+0.6
YOJ				*e*Sn	Sn	00 43 33.4	-1.6
IRIF	Iriomote-Funau	0.82	104	P	Pn	00 43 31.5	+0.8
IRIF				S	Sn	00 43 44.7	+0.9
TWB1	Santiao Chiao	0.91	301	⇑*i*P	Pn	00 43 32.5	+0.8
	baz=295						
TWB1				*i* S	Sn	00 43 45.3	-0.3
	baz=295						
TWC	Suao	0.92	274	⇓*i*P	Pn	00 43 32.4	+0.7
	baz=280						
TWC				S	Sn	00 43 44.9	-0.8
	baz=280						
HATJ	Hateruma jima	0.99	119	P	Pn	00 43 33.8	+1.2
HATJ				*e*S	Sn	00 43 48.4	+1.2
ENA	Nanau	1.02	264	*e*P	Pn	00 43 33.7	+0.8
	baz=263						
ENA				*e*S	Sn	00 43 47.9	+0.2
	baz=263						
ILA	Ilan	1.03	283	*e*P	Pn	00 43 33.9	+0.8
	baz=282						
ILA				*e*S	Sn	00 43 48.2	+0.3
	baz=282						
EHP	Heping Village	1.04	257	*e*P	Pn	00 43 33.5	+0.4
	baz=257						
TWE	Neicheng	1.09	279	⇑*i*P	Pn	00 43 34.8	+1.0
	baz=279						
TWE				*e*S	Sn	00 43 49.0	-0.3
	baz=279						
JKRS	Kuro-shima	1.10	106	P	Pn	00 43 35.0	+1.2
JKRS				*e*S	Sn	00 43 50.7	+1.4
NWF	Wu-fen Shan	1.11	298	⇑*i*P	Pn	00 43 35.4	+1.4
	baz=290						
NWF				*i* S	Sn	00 43 49.9	+0.2
	baz=290						
ENTT	Nioudou	1.18	275	⇑P	Pn	00 43 35.9	+1.1
	baz=274						
ENTT				*e*S	Sn	00 43 51.2	+0.1
	baz=274						
JIJ	Ishigaki jima	1.19	98	P	Pn	00 43 35.3	+0.4
JIJ				S	Sn	00 43 51.3	0.0
NACB	Ninganchiao	1.21	252	*e*Pn	Pn	00 43 34.9	-0.2
NACB				*e*Sn	Sn	00 43 48.9	-2.8
TWA	Mucha	1.23	291	⇑P	Pn	00 43 36.8	+1.3
	baz=282						
TWA				*e*S	Sn	00 43 52.1	-0.2
	baz=282						
TWD	Chiawan	1.24	248	⇓*i*P	Pn	00 43 36.0	+0.5
	baz=247						
TWD				S	Sn	00 43 51.8	-0.5
	baz=247						
HWA	Hwalien	1.27	244	⇓*i*P	Pn	00 43 36.6	+0.7
	baz=243						
HWA				*e*S	Sn	00 43 52.4	-0.7
	baz=243						
PCYT	Pengchaiyu	1.29	327	⇑*i*P	Pn	00 43 38.0	+1.8
	baz=321						
TAP1	Taipei	1.31	292	P	Pn	00 43 37.1	+0.8
	baz=281						
TAP1				*i* S	Sn	00 43 54.1	+0.3
	baz=281						
TATO	Taipei	1.31	289	*e*Pn	Pn	00 43 37.5	+1.0
TATO				*e*Sn	Sn	00 43 53.9	-0.2
TAP	Taipei	1.32	292	*e*P	Pn	00 43 37.2	+0.6
	baz=281						
TAP				S	Sn	00 43 54.2	0.0
	baz=281						
JISG	Ishigakijimahi	1.33	88	P	Pn	00 43 37.4	+0.8
JISG				S	Sn	00 43 54.9	+0.6
TWY	Chenhua	1.35	303	P	Pn	00 43 38.4	+1.5
	baz=295						
TWY				*i* S	Sn	00 43 56.3	+1.4
	baz=295						
YHNB	Yeheng	1.35	276	*e*Pn	Pn	00 43 38.3	+1.3
YHNB				*e*Sn	Sn	00 43 55.0	0.0
NNS	Nan Shan	1.35	266	*e*P	Pn	00 43 38.0	+0.9
	baz=256						
NNS				*e*S	Sn	00 43 54.6	-0.5
	baz=256						
NSK	Sanguang	1.37	276	⇑*i*P	Pn	00 43 38.7	+1.5
	baz=275						
NSK				*e*S	Sn	00 43 55.5	+0.2
	baz=275						
ESF	Shoufeng Towns	1.40	242	*e*P	Pn	00 43 38.5	+0.9
	baz=236						
ESF				*e*S	Sn	00 43 56.1	+0.2
	baz=236						
TEGC	Jichi Village	1.46	236	*e*P	Pn	00 43 39.5	+1.2
	baz=228						
TEGC				*e*S	Sn	00 43 57.6	+0.3
	baz=228						
ESL	Shilin	1.49	241	⇓*i*P	Pn	00 43 38.9	+0.3
	baz=240						
ESL				*e*S	Sn	00 43 57.0	-0.9
	baz=240						
WHF	Hehuan Shan	1.50	255	⇓P	Pn	00 43 40.0	+0.7
	baz=254						
WHF				*e*S	Sn	00 43 57.6	-1.3
	baz=254						
TWT	Tachien	1.56	260	*e*P	Pn	00 43 41.4	+1.7
	baz=259						
TWT				S	Sn	00 44 00.3	+0.5
	baz=259						
NCU	National Centr	1.57	286	*e*P	Pn	00 43 40.6	+0.9
	baz=285						
NCU				*e*S	Sn	00 44 00.6	+0.7
	baz=285						
JTJ	Tarama	1.69	86	P	Pn	00 43 42.3	+1.1
JTJ				S	Sn	00 44 02.9	+0.5
NSTT	Nanjuang	1.69	273	⇑P	Pn	00 43 42.6	+1.4
	baz=272						
NSTT				*e*S	Sn	00 44 03.0	+0.5
	baz=272						
HSN	Hsinchu	1.73	279	*e*P	Pn	00 43 42.1	+0.3
	baz=279						
HSN				*e*S	Sn	00 44 02.8	-0.7
	baz=279						
EHY	Hungye	1.74	234	*e*P	Pn	00 43 42.2	+0.3
	baz=241						
WDT	Danda	1.76	244	⇓*i*P	Pn	00 43 43.4	+0.9
	baz=243						
WDT				*e*S	Sn	00 44 03.9	-0.7
	baz=243						
YULB	Yu-li	1.83	231	*e*Pn	Pn	00 43 42.9	-0.2
YULB				*e*Sn	Sn	00 44 01.2	-4.6
TWF1	Yuli	1.85	231	⇓*i*P	Pn	00 43 44.1	+0.7
	baz=239						
TWF1				*e*S	Sn	00 44 05.1	-1.3
	baz=239						
SSLB	Suanglung	1.89	247	*e*Pn	Pn	00 43 44.6	+0.7
SSLB				*e*Sn	Sn	00 44 06.5	-0.8
SMLT	Sun Moon Lake	1.90	250	⇓*i*P	Pn	00 43 45.7	+1.6
	baz=244						
SMLT				*e*S	Sn	00 44 07.8	+0.1
	baz=244						
TWQ1	Liyutan	1.91	265	⇑P	Pn	00 43 45.6	+1.6
	baz=263						
TWQ1				*e*S	Sn	00 44 08.3	+0.7
	baz=263						
NSY	Sanyi	1.91	267	*e*P	Pn	00 43 45.8	+1.7
	baz=265						
NSY				*e*S	Sn	00 44 08.7	+1.0
	baz=265						
TYC	Yuchr	1.93	251	⇓P	Pn	00 43 45.9	+1.5
	baz=244						
TYC				*e*S	Sn	00 44 08.6	+0.4
	baz=244						
CHKT	Chengkung	1.98	224	*i* P	Pn	00 43 45.0	0.0
	baz=222						
CHKT				*e*S	Sn	00 44 07.0	-2.4
	baz=222						
TCU	Taichung	2.03	259	*e*P	Pn	00 43 47.7	+2.1
	baz=269						
TCU				*e*S	Sn	00 44 12.2	+1.8
	baz=269						
YUS	Yu-Shan	2.03	239	⇓*i*P	Pn	00 43 47.7	+1.5
	baz=231						
YUS				*e*S	Sn	00 44 10.6	-0.7
	baz=231						
WNT	Mingjian	2.09	252	*e*P	Pn	00 43 49.2	+2.7
	baz=250						
WNT				S	Sn	00 44 13.9	+2.0
	baz=250						
JIRB	Irabujima	2.13	82	P	Pn	00 43 47.9	+0.9
JIRB				S	Sn	00 44 13.1	+0.3
ALS	Alishan	2.14	242	⇓P	Pn	00 43 49.2	+1.8
	baz=235						
ALS				*e*S	Sn	00 44 13.7	+0.2
	baz=235						
ELDTW	Lidau	2.16	232	⇓*i*P	Pn	00 43 48.0	+0.5
	baz=225						
ELDTW				*e*S	Sn	00 44 11.7	-2.0
	baz=225						
CHN5	Tsauling	2.20	245	P	Pn	00 43 50.0	+2.0
	baz=236						
CHN5				S	Sn	00 44 16.7	+2.0
	baz=236						
JIKM	Ikemajima	2.21	80	P	Pn	00 43 49.5	+1.5
JIKM				S	Sn	00 44 16.7	+2.0
JMJ	Miyako jima 2	2.23	83	P	Pn	00 43 49.0	+0.6
JMJ				*e*S	Sn	00 44 15.9	+0.6
WGK	Gukeng	2.26	248	*e*P	Pn	00 43 51.0	+2.2
	baz=247						
WGK				*e*S	Sn	00 44 18.4	+2.4
	baz=247						
JOGS	Gusukube	2.33	84	P	Pn	00 43 51.2	+1.5
JOGS				*e*S	Sn	00 44 18.7	+1.1
STYT	Tauyuan	2.36	235	⇓*i*P	Pn	00 43 52.1	+2.0
	baz=229						
STYT				*e*S	Sn	00 44 19.4	+0.9
	baz=229						
TWG	Pinlang	2.37	224	⇓P	Pn	00 43 50.4	+0.2
	baz=230						
TWG				*e*S	Sn	00 44 17.2	-1.4
	baz=230						
TWG	Pinlang	2.37	224	*e*Pn	Pn	00 43 50.1	-0.1
TWG				*e*Sn	Sn	00 44 13.3	-5.3
TTN	Taitung	2.37	222	*e*P	Pn	00 43 50.6	+0.3
	baz=220						
TTN				*e*S	Sn	00 44 18.3	-0.3
	baz=220						

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
TPUB	**Ta-pu**	**2.38**	**239**	*e*Pn	**Pn**	**00 43 52.3**	**+1.9**
CHN4	**Tsaushan**	**2.39**	**241**	P	**Pn**	**00 43 52.9**	**+2.5**
	baz=232						
CHN4				S	**Sn**	**00 44 21.5**	**+2.5**
	baz=232						
CHN2	**Minshiung**	**2.40**	**246**	*e*P	**Pn**	**00 43 53.1**	**+2.5**
	baz=238						
CHN2				*e*S	**Sn**	**00 44 22.6**	**+3.4**
	baz=238						
WTP	**Ta-pu**	**2.42**	**238**	P	**Pn**	**00 43 53.1**	**+2.1**
	baz=237						
WTP				*e*S	**Sn**	**00 44 21.5**	**+1.6**
	baz=237						
WTCT	**Ta-ch'eng**	**2.44**	**254**	*e*P	**Pn**	**00 43 51.0**	**-0.2**
	baz=253						
WTCT				*e*S	**Sn**	**00 44 20.6**	**+0.2**
	baz=253						
CHY	**Chiayi**	**2.45**	**245**	*e*P	**Pn**	**00 43 54.1**	**+2.7**
	baz=257						
CHY				*e*S	**Sn**	**00 44 23.7**	**+3.1**
	baz=257						
TWK	**Hsinying**	**2.51**	**240**	⇓P	**Pn**	**00 43 54.2**	**+2.1**
	baz=238						
TWK				*e*S	**Sn**	**00 44 23.6**	**+1.6**
	baz=238						
CHN1	**Nanshi**	**2.52**	**238**	⇓P	**Pn**	**00 43 54.4**	**+2.1**
	baz=237						
CHN1				*e*S	**Sn**	**00 44 23.7**	**+1.4**
	baz=237						
SGST	**Jiashian**	**2.54**	**235**	⇓*i*P	**Pn**	**00 43 55.0**	**+2.5**
	baz=234						
SGST				S	**Sn**	**00 44 24.7**	**+2.0**
	baz=234						
WSF	**Szhu**	**2.57**	**250**	*e*P	**Pn**	**00 43 54.0**	**+1.2**
	baz=260						
ECL	**Taimali**	**2.61**	**222**	*e*P	**Pn**	**00 43 53.4**	**0.0**
	baz=221						
ECL				*e*S	**Sn**	**00 44 22.6**	**-1.7**
	baz=221						
CHN8	**Yiju**	**2.70**	**244**	*e*P	**Pn**	**00 43 54.9**	**+0.4**
	baz=233						
CHN8				*e*S	**Sn**	**00 44 27.6**	**+1.2**
	baz=233						
CHN3	**Shinhua**	**2.71**	**238**	*e*P	**Pn**	**00 43 57.8**	**+3.0**
	baz=247						
CHN3				*e*S	**Sn**	**00 44 30.7**	**+4.1**
	baz=247						
SSD	**Sandimen**	**2.71**	**229**	*e*P	**Pn**	**00 43 56.6**	**+1.8**
	baz=226						
SSD				*e*S	**Sn**	**00 44 28.2**	**+1.4**
	baz=226						
LAY	**Lan-yu**	**2.77**	**206**	⇓*i*P	**Pn**	**00 43 55.0**	**-0.5**
	baz=199						
LAY				*e*S	**Sn**	**00 44 24.8**	**-3.4**
	baz=199						
SCLT	**Jiali**	**2.79**	**241**	*e*P	**Pn**	**00 43 57.7**	**+1.9**
	baz=240						
SCLT				*e*S	**Sn**	**00 44 31.1**	**+2.4**
	baz=240						
TWM1	**Shoushan**	**2.81**	**233**	*e*P	Pn	00 43 59.3	+3.2
	baz=232						
TWM1				*e*S	**Sn**	**00 44 33.3**	**+4.1**
	baz=232						
SGLT	**Jiouru**	**2.82**	**231**	*e*P	**Pn**	**00 43 59.2**	**+2.9**
	baz=229						
SGLT				*e*S	**Sn**	**00 44 34.2**	**+4.7**
	baz=229						
TAW	**Tawu**	**2.82**	**220**	*e*P	**Pn**	**00 43 56.4**	**+0.1**
	baz=224						
TAW				*e*S	**Sn**	**00 44 27.2**	**-2.2**
	baz=224						
EAST	**Anshuo**	**2.83**	**221**	⇓*i*P	**Pn**	**00 43 56.8**	**+0.3**
	baz=224						
EAST				*e*S	**Sn**	**00 44 28.2**	**-1.5**
	baz=224						
TAI1	**Yung-k'ang**	**2.83**	**239**	*e*P	**Pn**	**00 43 58.0**	**+1.6**
	baz=238						
SCZT	**Fangliau**	**2.98**	**224**	*e*P	**Pn**	**00 43 59.9**	**+1.5**
	baz=220						
SCZT				*e*S	**Sn**	**00 44 35.2**	**+2.0**
	baz=220						
TWP	**Hsiaoliuchiu**	**3.17**	**227**	*e*P	Pn	00 44 05.9	+5.0
	baz=227						
PNG	**Penghu**	**3.17**	**253**	*e*P	**Pn**	**00 44 00.3**	**-0.6**
	baz=252						
TSEB	**Hengchuen, Pin**	**3.19**	**215**	*e*P	**Pn**	**00 44 01.9**	**+0.7**
	baz=222						
HEN	**Hengchun**	**3.19**	**218**	*e*P	**Pn**	**00 44 03.3**	**+2.0**
	baz=218						
WDGT	**Dungji**	**3.19**	**247**	*e*P	**Pn**	**00 44 01.9**	**+0.7**
	baz=245						
WDGT				*e*S	**Sn**	**00 44 36.3**	**-2.0**
	baz=245						
TWK1	**Hengchun**	**3.20**	**216**	*e*P	**Pn**	**00 44 02.0**	**+0.6**
	baz=215						
TWK1				*e*S	**Sn**	**00 44 38.8**	**+0.2**
	baz=215						
QZH	**Quanzhou**	**3.90**	**277**	⇓*i*Pn	**Pn**	**00 44 08.6**	**-2.2**
QZH				Sn	**Sn**	**00 44 49.5**	**-5.9**
QZH				smax	smax		
	comp=N,270nm,0.3s						
QZH				smax	smax		
	comp=E,250nm,0.4s						
JKE	**Kume jima 2**	**3.97**	**63**	P	**Pn**	**00 44 13.0**	**+1.2**
KNM	**Kinmen**	**4.03**	**269**	*e*P	**Pn**	**00 44 14.0**	**+1.4**
	baz=268						
JAGN	**Aguni-jima**	**4.46**	**62**	*e*S	**Sn**	**00 45 09.0**	**0.0**
JNTH	**Nagotoyohara**	**5.07**	**66**	P	**Pn**	**00 44 26.9**	**+0.2**
JIH	**Iheya**	**5.23**	**61**	P	**Pn**	**00 44 29.4**	**+0.5**
JOW	**Kunigami**	**5.39**	**64**	P	**Pn**	**00 44 31.0**	**-0.2**
	comp=E,15nm,0.3s,baz=142,slow=27,SNR=16						
JOW				S	**Sn**	**00 45 31.7**	**-0.2**
	comp=E,10nm,0.3s,baz=126,slow=26,SNR=4.6						
JOW	**Kunigami**	**5.39**	**64**	P	**Pn**	**00 44 30.9**	**-0.2**
JOW				*e*S	**Sn**	**00 45 31.4**	**-0.5**
JOW	**Kunigami**	**5.39**	**64**	⇓*e*P	**Pn**	**00 44 31.0**	**-0.2**
	baz=62						
JOKE	**Okinoerabujima**	**5.86**	**60**	P	**Pn**	**00 44 36.7**	**-0.8**
JTK	**Tokunoshima**	**6.36**	**58**	P	**Pn**	**00 44 43.7**	**-0.6**
JTK				*e*S	**Sn**	**00 45 51.9**	**-3.5**
JAMN	**Amaminishikomi**	**6.76**	**56**	P	**Pn**	**00 44 48.5**	**-1.2**
JAMN				S	**Sn**	**00 46 02.9**	**-2.3**
JAM	**Amami Oshima**	**7.17**	**56**	P	**Pn**	**00 44 54.1**	**-1.2**
KSAR	**Wonju Array Be**	**13.56**	**17**	P	**P**	**00 46 26.9**	**-0.9**
KSRS	**Korea Array**	**13.58**	**17**	P	**P**	**00 46 26.9**	**-1.1**
	comp=E,2.0nm,0.3s,baz=196,slow=12,SNR=20						
JCJ	**Chichijima**	**17.59**	**78**	LR	LR	00 51 47.8	
	comp=E,529nm,21.1s,baz=260,slow=29						
USRK	**Ussuriysk Ar.**	**20.98**	**19**	P	**P**	**00 47 49.5**	**+0.3**
	comp=E,2.1nm,0.6s,baz=192,slow=11,SNR=6.6						
CM31	**Chiang Mai Arr**	**23.04**	**259**	*e*P	**P**	**00 48 12.9**	**+1.7**
CMAR	**Chiang Mai Arr**	**23.04**	**259**	P	**P**	**00 48 12.9**	**+1.7**
	comp=E,1.3nm,0.5s,baz=45,slow=9.0,SNR=8.0						
KLR	**Kul'dur**	**25.61**	**14**	P	**P**	**00 48 32.9**	**-1.3**
	comp=E,1.4nm,0.5s,baz=194,slow=8.6,SNR=6.5						
PEA0B	**Petropavlovsk-**	**38.72**	**33**	*e*P	**P**	**00 50 27.6**	**-1.0**
	comp=E,41nm,1.4s						
MK01	**Makanchi Array**	**39.14**	**315**	*e*P	**P**	**00 50 31.3**	**-0.9**
MK32	**Makanchi Array**	**39.15**	**315**	*e*P	**P**	**00 50 32.3**	**0.0**
MKAR	**Makanchi Array**	**39.15**	**315**	P	**P**	**00 50 32.3**	**0.0**
	comp=E,0.2nm,0.4s,baz=96,slow=11,SNR=7.4						
H11N2	**WAKE ISLAND Hy**	**40.95**	**88**	T	T	01 36 47.4	
	SNR=4.1						
H11S3	**WAKE ISLAND Hy**	**41.09**	**90**	T	T	01 36 59.1	
	baz=284,slow=74,SNR=5.7						
H11S1	**WAKE ISLAND Hy**	**41.10**	**90**	T	T	01 37 03.7	
	baz=161,slow=74,SNR=4.3						
AAK	**Ala-Archa**	**43.51**	**307**	*e*P	**P**	**00 51 07.5**	**-0.7**
	comp=E,2.2nm,0.9s						
WRA	**Warramunga Arr**	**45.61**	**165**	P	**P**	**00 51 26.7**	**+1.8**
	comp=E,0.4nm,0.5s,baz=349,slow=8.5,SNR=2.9						
WB2	**Warramunga Arr**	**45.61**	**165**	*e*P	**P**	**00 51 26.5**	**+1.6**
	comp=E,50nm,1.9s						
ASAR	**Alice Springs**	**49.11**	**167**	P	P	00 51 55.3	+3.3
	comp=E,0.2nm,0.5s,baz=311,slow=38,SNR=3.2						
ZRNK	**Zerenda**	**49.16**	**320**	*e*P	**P**	**00 51 51.4**	**-0.7**
	comp=E,6.1nm,1.9s						
TT01	**Tatalina**	**64.43**	**30**	*e*P	**P**	**00 53 40.0**	**0.0**
TTA	**Tatalina**	**64.43**	**30**	*e*P	**P**	**00 53 39.8**	**-0.3**
	comp=E,22nm,1.8s						
MLY	**Manley**	**66.53**	**28**	*e*P	**P**	**00 53 53.5**	**0.0**
	comp=E,12nm,1.7s						
FINES	**FINESS Array B**	**71.90**	**330**	P	**P**	**00 54 26.4**	**-0.3**
	comp=E,0.4nm,0.4s,baz=35,slow=7.0,SNR=4.2						
YKA	**Yellowknife Ar**	**82.04**	**23**	P	**P**	**00 55 23.7**	**+0.2**
	comp=E,0.3nm,0.5s,baz=305,slow=5.3,SNR=15						

*ISCJB **05** 00:50:40.7±0.6, 39°.10N±0°.04×26°.50E±0°.04, h8km±5km, Error ellipse: s-maj=6.6km s-min=5.1km az=8.6*
*DDA **05** 00:50:40.8, 39°.11N×26°.57E, h7km, Md2.8*
*ISK **05** 00:50:40.4, 39°.15N×26°.53E, h6km, MD2.7*
*CSEM **05** 00:50:41.0±0.2, 39°.13N×26°.52E, h10km, MD2.7, Error ellipse: s-maj=3.8km s-min=3.7km az=52.0*
ISC 05 00:50:40.8±1.0**, 39°.14N**±0°.03×**26°.51E**±0°.03**, h13**km±8km**, n27, σ0ˢ47**/36**, Turkey**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
AYVA	**Ayvalik**	**0.21**	**39**	*i* P	**Pg**	**00 50 45.7**	**+0.2**
AYVA				*i* S	**Sb**	**00 50 50.2**	**-0.2**
AYVA	**Ayvalik**	**0.21**	**39**	P	**Pg**	**00 50 45.7**	**+0.2**
AYVA				S	**Sb**	**00 50 50.2**	**-0.2**
DKL	**Dikili**	**0.31**	**103**	*e*PG	**Pg**	**00 50 46.8**	**-0.4**
DKL				*e*SG	**Sg**	**00 50 51.7**	**+0.2**
DKL	**Dikili**	**0.31**	**103**	*e*Pg	**Pg**	**00 50 46.8**	**-0.4**
DKL				*e*Sg	**Sg**	**00 50 51.7**	**+0.2**
SIGR	**SIGRI**	**0.52**	**278**	*e*PG	**Pg**	**00 50 51.1**	**+0.1**
SIGR				*e*SG	**Sb**	**00 50 58.7**	**-0.4**
SIGR	**SIGRI**	**0.52**	**278**	*e*Pg	**Pg**	**00 50 51.1**	**+0.1**
SIGR				*e*Sg	**Sb**	**00 50 58.7**	**-0.4**
EZN	**Ezine**	**0.70**	**348**	*e*PG	**Pg**	**00 50 54.3**	**-0.1**
EZN	**Ezine**	**0.70**	**348**	*e*Pg	**Pg**	**00 50 54.3**	**-0.1**
BOZC	**Bozcaada**	**0.79**	**333**	*i* P	**Pb**	**00 50 56.2**	**-0.1**
BOZC				*i* S	**Sn**	**00 51 08.6**	**-0.6**
CHOS	**Chios island**	**0.84**	**206**	*e*PG	**Pb**	**00 50 57.2**	**0.0**
CHOS	**Chios island**	**0.84**	**206**	*e*Pg	**Pb**	**00 50 57.2**	**0.0**
BLCB	**Balcova**	**0.86**	**151**	*e*PG	**Pg**	**00 50 57.3**	**-0.1**
BLCB	**Balcova**	**0.86**	**151**	*e*Pg	**Pg**	**00 50 57.3**	**-0.1**
BALY	**Balya**	**1.04**	**55**	*i* P	**Pn**	**00 51 01.1**	**-0.1**
BALY				*i* S	**Sn**	**00 51 17.1**	**+1.5**
BALY	**Balya**	**1.04**	**55**	P	**Pn**	**00 51 01.1**	**-0.1**
BALY				S	**Sn**	**00 51 17.1**	**+1.5**
BALB	**Balikesir**	**1.17**	**64**	*e*PN	**Pb**	**00 51 02.3**	**-0.5**
BALB	**Balikesir**	**1.17**	**64**	*e*Pn	**Pb**	**00 51 02.3**	**-0.5**
GELI	**Tayfur-Gelibol**	**1.25**	**359**	*e*PN	**Pg**	**00 51 04.8**	**-0.1**
GELI	**Tayfur-Gelibol**	**1.25**	**359**	*e*Pn	**Pg**	**00 51 04.8**	**-0.1**
KRBG	**Karabiga-Canak**	**1.39**	**26**	*e*PN	**Pb**	**00 51 06.6**	**0.0**
KRBG	**Karabiga-Canak**	**1.39**	**26**	*e*Pn	**Pb**	**00 51 06.6**	**0.0**
ERIK	**Erikli-Kesan**	**1.53**	**360**	*e*PN	**Pb**	**00 51 08.7**	**-0.2**
ERIK	**Erikli-Kesan**	**1.53**	**360**	*e*Pn	**Pb**	**00 51 08.7**	**-0.2**
AYDB	**Zeytinkoy-Aydi**	**1.61**	**137**	*e*PN	**Pb**	**00 51 10.2**	**-0.2**
AYDB	**Zeytinkoy-Aydi**	**1.61**	**137**	*e*Pn	**Pb**	**00 51 10.2**	**-0.2**
RKY	**Sarkoy-Tekirda**	**1.62**	**18**	*e*PN	**Pb**	**00 51 10.1**	**-0.6**
RKY	**Sarkoy-Tekirda**	**1.62**	**18**	*e*Pn	**Pb**	**00 51 10.1**	**-0.6**

CASC 05 00:55:51.0±3.3**, 11°.64N**×**87°.34W, h40**km±631km**, MD3.9, Near coast of Nicaragua**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
COPN	**Copaltepe**	**0.90**	**54**	*e*P	Pn	00 56 06.0	-1.2
COPN				*e*S	Sn	00 56 18.9	-0.2
TEL3	**Telica 3**	**1.04**	**27**	*e*P	Pn	00 56 11.1	+1.9
CNGN	**Cerro Negro**	**1.06**	**36**	*e*P	Pn	00 56 11.0	+1.6
CNGN				*e*S	Sn	00 56 23.0	+0.1
CSGN	**Cosiguina Volc**	**1.34**	**351**	*e*P	Pn	00 56 14.1	+0.7
CSGN				*e*P	Pn	00 56 14.1	+0.7
PACA	**Pacayal**	**2.06**	**332**	*e*P	Pn	00 56 22.0	-1.2
PACA				*e*S	Sn	00 56 48.4	+0.7
TECA	**Tecapa**	**2.17**	**328**	*e*P	Pn	00 56 24.6	-0.2
TECA				*e*S	Sn	00 56 51.3	+0.9
JCR	**Jicaral**	**2.82**	**129**	*e*S	Sn	00 57 05.5	-0.9
CGA2	**Cerro Gallo 2**	**3.25**	**120**	*e*P	Pn	00 56 42.3	+2.7
CGA2				*e*S	Sn	00 57 18.3	+1.1
URSC	**Urasca**	**3.93**	**117**	*e*S	Sn	00 57 36.5	+2.5
BUS	**Buena Vista**	**4.08**	**120**	*e*P	Pn	00 56 53.3	+2.0
BUS				*e*S	Sn	00 57 38.0	-0.1

*IDC **05** 00:59:07.8±0.7, 1°.97N×102°.16W, h0km, mb4.5/17, mb1 4.6/19, mb1mx4.4/40, mbtmp4.5/19, ML3.4/2, MS4.5/20, Ms1 4.5/20, ms1mx4.4/28, Error ellipse: s-maj=26.1km s-min=13.5km az=51.0*
*ISCJB **05** 00:59:09.3±0.4, 2°.17N±0°.05×101°.81W±0°.05, h10km, mb4.7/111, MS4.4/19, Error ellipse: s-maj=8.6km s-min=5.0km az=40.5*
*NEIC **05** 00:59:09.8±0.3, 1°.94N×101°.98W, h10km, mb4.8/104, Error ellipse: s-maj=8.4km s-min=4.4km az=53.0*
*GCMT **05** 00:59:09.8±0.2, 1°.92N×102°.23W, h12km, MW5.2/96, Moment Tensor Solution. s65,c92; s96,c152; Duration: 1ˢ0 Moment tensor: Scale 10^{17}Nm; M_{rr}-0.16±.02; $M_{\theta\theta}$-0.66±.01; $M_{\phi\phi}$0.82±.02; $M_{r\theta}$-0.09±.04; $M_{\theta\phi}$0.39±.01; $M_{\phi r}$-0.03±.04; Best double couple: $M_0$0.84500×10^{17} NP1:ϕ_s58.00000°, δ86.00000°, λ-7.00000°. NP2: ϕ_s149.00000°, δ83.00000°, λ-176.00000°. Principal axes: T 0.9190, Plg2.0000°, Azm104.0000°; N -0.1470, Plg82.0000°, Azm211.0000°; P -0.7710, Plg8.0000°, Azm14.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
ISC 05 00:59:10.4±0.5**, 2°.04N**±0°.08×**101°.98W**±0°.08**, h10**km**, n446, σ1ˢ14**/424**, mb4.7**/111**, MS4.4**/19**, 1D, Galapagos Triple Junction region**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
PAYG	**Puerto Ayora**	**12.00**	**103**	*e*Pn	**Pn**	**01 02 02.0**	**+0.4**
CMIG	**Matias Romero**	**16.50**	**25**	Pn	**Pn**	**01 03 03.7**	**+1.6**
	0.1nm,0.3s,baz=204,slow=12,SNR=9.8						
CMIG				LR	LR	01 07 55.1	
	comp=Z,5μm,18.7s,baz=196,slow=32						
CCIG	**Comitan**	**17.15**	**34**	*e*Pn	**P**	**01 03 15.1**	**+3.0**
	51nm,1.3s						
JTS	**JuntasAbangare**	**18.79**	**63**	P	**Pn**	**01 03 32.7**	**+2.1**
	0.2nm,0.3s,baz=233,slow=7.3,SNR=8.3						
JTS				LR	LR	01 08 38.8	
	comp=Z,2μm,19.1s,baz=244,slow=30						
JTS	**JuntasAbangare**	**18.79**	**63**	*e*P	**P**	**01 03 30.2**	**0.0**
	85nm,1.4s						
ZAIG	**Zacatecas**	**20.61**	**358**	*e*P	Pn	01 03 52.6	+0.1
	27nm,1.3s						
TEIG	**Tepich**	**22.49**	**36**	LR	LR	01 11 37.7	
	comp=Z,74nm,20.6s,baz=200,slow=33						
BCIP	**Isla Barro Col**	**23.13**	**71**	*e*P	**P**	**01 04 17.4**	**+0.5**
LPIG	**La Paz**	**23.36**	**340**	P	**P**	**01 04 19.9**	**+0.7**
	35nm,0.3s,baz=285,slow=2.6,SNR=3.5						
LPIG				LR	LR	01 11 10.3	
	comp=Z,439nm,20.7s,baz=172,slow=31						
OTAV	**Otavalo**	**23.59**	**94**	*e*P	**P**	**01 04 21.7**	**-0.4**
	95nm,1.3s						
OTAV	**Otavalo**	**23.59**	**94**	*e*P	**P**	**01 04 22.2**	**+0.1**
HPIG		**25.00**	**352**	*e*P	**P**	**01 04 34.5**	**-0.3**
	27nm,1.4s						
ATAH	**Atahualpa**	**25.24**	**111**	P	**P**	**01 04 38.9**	**+1.6**
	76nm,1.3s,baz=291,slow=9.3,SNR=23						
ATAH				LR	LR	01 12 05.8	
	comp=Z,3μm,20.9s,baz=303,slow=31						
POPC	**Popayan, Colom**	**25.29**	**88**	*e*P	**P**	**01 04 38.6**	**+1.1**
933A	**Laredo**	**25.56**	**6**	P	**P**	**01 04 40.0**	**+0.5**
	baz=186						
834A	**Tilden**	**26.14**	**7**	P	**P**	**01 04 45.1**	**+0.2**
	baz=188						
832A	**Faith Ranch, C**	**26.16**	**4**	P	**P**	**01 04 45.2**	**+0.1**
	baz=184						
833A	**Chaparral WMA,**	**26.25**	**5**	P	**P**	**01 04 46.0**	**+0.2**
	baz=186						
FLOC	**Florencia**	**26.31**	**91**	*e*P	**P**	**01 04 50.1**	**+3.4**
733A	**Divot King Ran**	**26.65**	**5**	P	**P**	**01 04 50.0**	**+0.5**
	baz=186						
HELC	**Santa Helena**	**26.69**	**80**	*e*P	**P**	**01 04 49.4**	**-1.1**
MOTC	**Monteria, Cord**	**27.02**	**75**	*e*P	**P**	**01 04 51.6**	**-1.4**
LTX	**Lajitas**	**27.19**	**357**	*e*P	**P**	**01 04 54.1**	**-0.3**
LTX				*e*PcP	**PcP**	**01 08 15.8**	**+1.0**
TX31	**Lajitas Ar. Si**	**27.19**	**357**	*e*P	**P**	**01 04 54.5**	**+0.1**
TXAR	**Lajitas Array**	**27.19**	**357**	P	**P**	**01 04 54.1**	**-0.3**
	4.1nm,0.9s,baz=179,slow=11,SNR=15						
TXAR				PcP	**PcP**	**01 08 15.8**	**+1.0**
	0.6nm,0.8s,baz=174,slow=6.3,SNR=4.0						
TXAR				LR	LR	01 14 47.3	
	comp=Z,2μm,20.4s,baz=0.0,slow=34						
633A	**Saathoff Ranch**	**27.39**	**5**	P	**P**	**01 04 56.1**	**0.0**
	baz=186						
636A	**Smothers Creek**	**27.68**	**9**	P	**P**	**01 04 59.0**	**+0.3**
	baz=190						
ROSC	**El Rosal**	**27.74**	**84**	LR	LR	01 14 14.0	
	comp=Z,1μm,21.6s,baz=268,slow=32						
533A	**Kerrville**	**28.02**	**5**	P	**P**	**01 05 01.7**	**-0.1**
	baz=186						
534A	**Blanco**	**28.03**	**6**	P	**P**	**01 05 01.7**	**-0.2**
	baz=187						
JCT	**Junction City**	**28.36**	**4**	P	**P**	**01 05 04.7**	**-0.1**
	baz=184						
JCT	**Junction City**	**28.36**	**4**	*e*P	**P**	**01 05 04.5**	**-0.3**
	22nm,1.1s						
433A	**Art**	**28.69**	**5**	P	**P**	**01 05 07.6**	**-0.1**
	baz=186						
434A	**Burnet**	**28.83**	**7**	P	**P**	**01 05 09.0**	**0.0**
	baz=188						
438A	**Sam Houston St**	**29.21**	**12**	P	**P**	**01 05 12.2**	**-0.1**
	baz=193						
333A	**Richland Sprin**	**29.26**	**5**	P	**P**	**01 05 12.5**	**-0.3**
	baz=186						
645A	**Chauvin**	**29.33**	**21**	P	**P**	**01 05 14.9**	**+1.5**
	baz=204						
334A	**Lometa**	**29.35**	**7**	P	**P**	**01 05 13.1**	**-0.4**
	baz=188						
MNTX	**Cornudas Mount**	**29.67**	**354**	P	**P**	**01 05 15.3**	**-1.1**
	baz=173,SNR=6.1						
MNTX	**Cornudas Mount**	**29.67**	**354**	*e*P	**P**	**01 05 16.1**	**-0.4**
	9.1nm,1.2s						
233A	**Rising Star**	**29.96**	**5**	P	**P**	**01 05 18.9**	**-0.1**
	baz=186						
237A	**Washetta, Mont**	**30.36**	**10**	P	**P**	**01 05 22.6**	**+0.1**
	baz=192						
ABTX	**Abilene, Hawle**	**30.50**	**4**	P	**P**	**01 05 23.5**	**-0.3**
	baz=184						
ABTX	**Abilene, Hawle**	**30.50**	**4**	*e*P	**P**	**01 05 23.2**	**-0.6**
	22nm,0.9s						
133A	**Hamilton Ranch**	**30.54**	**5**	P	**P**	**01 05 24.0**	**-0.1**
	baz=186						
342A	**Flagon Creek P**	**30.57**	**16**	P	**P**	**01 05 24.7**	**+0.4**
	baz=199						
134A	**White-Moore Ra**	**30.59**	**6**	P	**P**	**01 05 24.2**	**-0.3**
	baz=188						
121A	**Cookes Peak, D**	**30.82**	**350**	*e*P	**P**	**01 05 26.6**	**-0.2**
	12nm,1.2s						
Z33A	**Whitaker Ranch**	**31.23**	**5**	P	**P**	**01 05 29.4**	**-0.7**
	baz=186,SNR=8.5						
TUC	**Tucson**	**31.23**	**346**	P	**P**	**01 05 29.9**	**-0.4**
	baz=163						
TUC	**Tucson**	**31.23**	**346**	*e*P	**P**	**01 05 29.7**	**-0.5**
	11nm,1.2s						
Z35A	**Perchaven, San**	**31.44**	**8**	P	**P**	**01 05 32.2**	**+0.2**
	baz=189						
140A	**Cam and Jess,**	**31.45**	**14**	P	**P**	**01 05 32.6**	**+0.5**
	baz=196						
214A	**Organ Pipe Nat**	**31.46**	**342**	P	**P**	**01 05 33.0**	**+0.7**
	baz=159						
244A	**Avery, Jackson**	**31.68**	**18**	P	**P**	**01 05 34.7**	**+0.5**
	baz=202						
MSTX	**Muleshoe**	**31.77**	**359**	P	**P**	**01 05 34.4**	**-0.7**
	baz=178						
MSTX	**Muleshoe**	**31.77**	**359**	*e*P	**P**	**01 05 34.8**	**-0.2**
	23nm,1.3s						
SDV	**Santo Domingo**	**31.91**	**76**	P	**P**	**01 05 37.6**	**+0.8**
	9.0nm,0.8s,baz=259,slow=9.4,SNR=8.1						
SDV	**Santo Domingo**	**31.91**	**76**	*e*P	**P**	**01 05 37.5**	**+0.8**
	24nm,1.1s						
Y33A	**Hilltop Ranch,**	**31.95**	**5**	P	**P**	**01 05 36.4**	**-0.1**
	baz=186						
Y34A	**Reagan Ranch,**	**31.99**	**7**	P	**P**	**01 05 36.0**	**-0.9**
	baz=188						
Y35A	**Marietta**	**32.03**	**8**	P	**P**	**01 05 37.1**	**-0.1**
	baz=189						
143A	**Socs Landing,**	**32.08**	**17**	P	**P**	**01 05 38.0**	**+0.4**
	baz=200						
Y36A	**Durant**	**32.14**	**9**	P	**P**	**01 05 37.8**	**-0.3**
	baz=191						
X32A	**Elmer**	**32.31**	**4**	P	**P**	**01 05 39.1**	**-0.6**
	baz=185,SNR=8.1						
X33A	**Lawton**	**32.49**	**5**	P	**P**	**01 05 41.1**	**-0.2**
	baz=186						
X35A	**Drake**	**32.53**	**8**	P	**P**	**01 05 41.3**	**-0.3**
	baz=189						
LAZ	**Ladron**	**32.55**	**352**	*e*P	**P**	**01 05 42.9**	**+0.9**
X34A	**Smith Ranch, M**	**32.62**	**6**	P	**P**	**01 05 42.0**	**-0.4**
	baz=188						
WMOK	**Wichita Mounta**	**32.66**	**5**	*e*P	**P**	**01 05 42.8**	**0.0**
	19nm,1.7s						
AMTX	**Amarillo**	**32.67**	**0**	P	**P**	**01 05 42.5**	**-0.5**
	baz=180						
AMTX	**Amarillo**	**32.67**	**0**	*e*P	**P**	**01 05 43.7**	**+0.7**
	14nm,1.0s						
X36A	**Centrahoma**	**32.78**	**9**	P	**P**	**01 05 43.8**	**0.0**
	baz=190						
X37A	**Clayton**	**32.96**	**10**	P	**P**	**01 05 45.2**	**-0.2**
	baz=192						
ANMO	**Albuquerque**	**33.00**	**353**	LR	LR	01 18 12.9	
	comp=Z,742nm,19.0s,baz=180,slow=35						
ANMO	**Albuquerque**	**33.00**	**353**	P	**P**	**01 05 45.5**	**-0.5**
	baz=172						
ANMO	**Albuquerque**	**33.00**	**353**	*e*P	**P**	**01 05 46.3**	**+0.3**
	7.7nm,1.1s						
W32A	**Sentinel**	**33.01**	**4**	P	**P**	**01 05 45.5**	**-0.4**
	baz=185						
W33A	**Caddo, Fort Co**	**33.10**	**5**	P	**P**	**01 05 45.9**	**-0.7**
	baz=186						
GLA	**Glamis**	**33.12**	**340**	P	**P**	**01 05 47.2**	**+0.3**
	baz=156						
GLA	**Glamis**	**33.12**	**340**	*e*P	**P**	**01 05 47.4**	**+0.5**
	24nm,1.2s						
X39A	**Fountain Ranch**	**33.12**	**12**	P	**P**	**01 05 46.4**	**-0.4**
	baz=194						
X38A	**Whitesboro**	**33.14**	**11**	P	**P**	**01 05 46.4**	**-0.5**
	baz=193						
MIAR	**Mount Ida**	**33.27**	**13**	P	**P**	**01 05 47.4**	**-0.7**
	baz=195,SNR=7.6						
MIAR	**Mount Ida**	**33.27**	**13**	*e*P	**P**	**01 05 48.4**	**+0.3**
	38nm,1.4s						
W35A	**Tecumseh**	**33.28**	**8**	P	**P**	**01 05 47.7**	**-0.5**
	baz=189						
W36A	**Wetumka**	**33.36**	**9**	P	**P**	**01 05 48.9**	**+0.1**
	baz=190						
Y14A	**Wickenburg**	**33.37**	**343**	*e*P	**P**	**01 05 49.9**	**+0.9**
	44nm,1.3s						
X40A	**Basin Creek Fa**	**33.39**	**14**	P	**P**	**01 05 49.1**	**0.0**
	baz=197						
W37B	**Quinton**	**33.49**	**10**	P	**P**	**01 05 49.6**	**-0.4**
	baz=192						
MONP2	**Monument Peak**	**33.55**	**338**	P	**P**	**01 05 51.6**	**+0.8**
	baz=153						
Y12C	**Blythe**	**33.66**	**341**	P	**P**	**01 05 52.0**	**+0.5**
	baz=157						
Y12C	**Blythe**	**33.66**	**341**	*e*P	**P**	**01 05 54.3**	**+2.8**
	14nm,1.4s						
W18A	**Petrified Fore**	**33.69**	**348**	P	**P**	**01 05 51.6**	**-0.4**
	baz=166						
V33A	**Lossen Ranch,**	**33.78**	**5**	P	**P**	**01 05 52.3**	**-0.2**
	baz=187						
W39A	**Magazine**	**33.85**	**12**	P	**P**	**01 05 52.8**	**-0.4**
	baz=195						
V34A	**Guthrie**	**33.88**	**7**	P	**P**	**01 05 53.2**	**-0.2**
	baz=188						
V34A	**Guthrie**	**33.88**	**7**	*e*P	**P**	**01 05 53.0**	**-0.3**
	42nm,1.3s						
BC3	**Big Chuckawall**	**33.88**	**340**	P	**P**	**01 05 53.7**	**+0.1**
	baz=155						
V35A	**Meyer Ranch, C**	**33.89**	**8**	P	**P**	**01 05 53.1**	**-0.4**
	baz=189						
W40A	**Ferguson Farm,**	**34.01**	**13**	P	**P**	**01 05 54.3**	**-0.2**
	baz=196						
V36A	**Jenks**	**34.04**	**9**	P	**P**	**01 05 54.4**	**-0.3**
	baz=191						
PDMCI	**Parker Dam,Lak**	**34.04**	**342**	P	**P**	**01 05 55.1**	**+0.3**
	baz=158						
TUL1	**Leonard**	**34.18**	**9**	P	**P**	**01 05 55.5**	**-0.5**
	baz=191						
TUL1	**Leonard**	**34.18**	**9**	*e*P	**P**	**01 05 56.8**	**+0.8**
	28nm,1.3s						
PFO	**Pinyon Flats O**	**34.20**	**338**	LR	LR	01 16 13.1	
	comp=Z,467nm,19.6s,baz=146,slow=30						
PFO	**Pinyon Flats O**	**34.20**	**338**	P	**P**	**01 05 56.8**	**+0.4**
	baz=154						
PFO	**Pinyon Flats O**	**34.20**	**338**	*e*P	**P**	**01 05 56.2**	**-0.2**
	22nm,1.4s						
IRM	**Iron Mountain**	**34.24**	**340**	P	**P**	**01 05 57.1**	**+0.6**
	baz=156						
V37A	**Hulbert**	**34.26**	**10**	P	**P**	**01 05 55.9**	**-0.8**
	baz=192						
X201	**Greenbrier Sit**	**34.27**	**14**	*e*P	**P**	**01 05 57.8**	**+1.1**
	29nm,1.5s						
U32A	**Winter Ranch,**	**34.28**	**4**	P	**P**	**01 05 56.2**	**-0.7**
	baz=185						
WHAR	**Wooly Hollow**	**34.28**	**14**	*e*P	**P**	**01 05 57.5**	**+0.6**
	28nm,1.5s						

V38A	Canehill baz=193	34.38	11	P		P	01 05 57.2	-0.5
BELC	Belle Mtn. Jos baz=155	34.39	339	P		P	01 05 58.0	0.0
WUAZ	Wupatki baz=163	34.43	346	P		P	01 05 58.1	-0.2
WUAZ	Wupatki 15nm,1.1s	34.43	346	eP		P	01 05 58.0	-0.4
U34A	Anderson Ranch baz=188	34.47	6	P		P	01 05 57.6	-0.8
U34A	Anderson Ranch 35nm,1.1s	34.47	6	eP		P	01 05 58.7	+0.2
MURC	Murrieta baz=152	34.48	337	P		P	01 05 59.1	+0.4
U35A	Pawnee baz=189	34.50	7	P		P	01 05 58.0	-0.8
V39A	Pettigrew baz=195	34.50	12	P		P	01 05 58.5	-0.4
BBSC	Beaumont Base	34.68	338	eP		P	01 06 02.5	+2.1
CIS	Catalina Islan baz=150	34.79	336	P		P	01 06 01.5	+0.2
HHAR	Hobbs 19nm,1.4s	34.87	11	eP		P	01 06 02.5	+0.6
U38A	Gravette baz=193	34.94	11	P		P	01 06 01.9	-0.7
GMRC	Granite Mounta baz=156	34.98	340	P		P	01 06 03.2	+0.1
T25A	Trinidad baz=176	35.00	357	P		P	01 06 02.5	-0.8
T25A	Trinidad 63nm,1.8s	35.00	357	eP		P	01 06 03.4	+0.1
T33A	Patterson Ranc baz=186	35.04	5	P		P	01 06 02.2	-1.2
U39A	Green Forest baz=195	35.06	12	P		P	01 06 03.0	-0.6
T35A	Sooner Cattle baz=189	35.07	8	P		P	01 06 02.3	-1.3
T32A	Huddler Ranch, baz=185	35.08	4	P		P	01 06 02.8	-1.0
T34A	McClaskey Farm baz=188	35.09	7	P		P	01 06 03.0	-0.9
U40A	Yellville baz=196	35.17	13	P		P	01 06 04.1	-0.4
BFSC	Mount Baldy Ra baz=152	35.22	337	P		P	01 06 05.2	0.0
HEC	Hector,Ludlow baz=155	35.25	339	P		P	01 06 05.9	+0.5
T36A	Boggs Farm, Ca baz=190	35.30	8	P		P	01 06 05.0	-0.7
MVCO	Mesa Verde baz=169	35.51	351	P		P	01 06 07.1	-0.7
MVCO	Mesa Verde 13nm,1.1s	35.51	351	eP		P	01 06 07.7	0.0
T37A	Cheneyville 18 baz=192	35.51	10	P		P	01 06 06.8	-0.6
T38A	Diamond baz=193	35.53	11	P		P	01 06 07.2	-0.5
S32A	Newby Ranch, P baz=185	35.59	4	P		P	01 06 07.8	-0.4
TUQ	Turquoise Moun baz=156	35.66	340	P		P	01 06 09.1	+0.2
SDCO	Great Sand Dun 13nm,1.5s	35.68	355	eP		P	01 06 12.3	+3.1
T39A	Clever baz=195	35.70	12	P		P	01 06 08.6	-0.5
S22A	4UR Ranch, Cre baz=172,SNR=9.5	35.81	353	P		P	01 06 09.7	-0.7
S22A	4UR Ranch, Cre 20nm,1.4s	35.81	353	eP		P	01 06 10.3	0.0
GSC	Goldstone, Bar baz=154	35.85	339	P		P	01 06 10.7	+0.2
GSC	Goldstone, Bar 21nm,1.3s	35.85	339	eP		P	01 06 11.1	+0.6
FOXC	Fox Airport	35.89	337	eP		P	01 06 12.2	+1.3
EDW2	Edwards Air Fo baz=152	35.91	337	P		P	01 06 11.6	+0.6
S36A	Lake Cedric, C baz=191	35.99	9	P		P	01 06 10.9	-0.7
T40A	Mansfield baz=196	36.01	13	P		P	01 06 11.5	-0.2
S37A	Fort Scott baz=192	36.15	10	P		P	01 06 12.1	-0.8
S38A	Stockton baz=194	36.18	11	P		P	01 06 12.8	-0.5
SHOC	Shoshone, Teco baz=155	36.20	340	P		P	01 06 13.6	+0.1
KNB	Kanab 22nm,1.3s	36.21	345	eP		P	01 06 14.4	+0.7
R33A	Olander Ranch, baz=187	36.28	5	P		P	01 06 13.7	-0.4
LCMT	Little Creek M 13nm,1.3s	36.32	345	eP		P	01 06 15.1	+0.6
LRMC	Laurel Mtn Rad baz=153,SNR=6.9	36.33	338	P		P	01 06 14.8	+0.2
R32A	Long Quarter, baz=185	36.33	4	P		P	01 06 13.6	-0.9
R34A	Isabella, Hill baz=188	36.34	6	P		P	01 06 13.7	-0.9
S39A	Bolivar baz=195,SNR=5.7	36.36	12	P		P	01 06 14.3	-0.4
WVT	Waverly 13nm,0.9s	36.36	19	eP		P	01 06 14.0	-0.7
PV01	Paradox Valley	36.42	351	eP		P	01 06 16.0	+0.4
S40A	Lebanon baz=196	36.44	13	P		P	01 06 15.1	-0.4
PV05	Paradox Valley	36.45	351	eP		P	01 06 16.3	+0.5
ARVC	Arvin baz=151	36.46	336	P		P	01 06 16.6	+1.0
R35A	Emporia Munici baz=190	36.49	8	P		P	01 06 15.6	-0.3
R36A	Gordon, Harris baz=191	36.59	9	P		P	01 06 16.5	-0.2
CBKS	Cedar Bluff baz=184	36.65	3	P		P	01 06 17.1	-0.2
PKM	Mcpherson Peak baz=149	36.67	335	P		P	01 06 18.6	+1.0
R37A	Teagarden Farm baz=192	36.69	9	P		P	01 06 17.2	-0.3
R38A	Fenwick Farm, baz=194	36.72	11	P		P	01 06 17.6	-0.2
PV04	Paradox Valley	36.73	351	eP		P	01 06 18.3	+0.2
PV10	Paradox Valley	36.73	351	eP		P	01 06 17.4	-0.9
MPMC	Manual Prospec baz=154,SNR=12	36.77	339	P		P	01 06 18.6	0.0
ISA	Isabella, Lake baz=152	36.79	337	P		P	01 06 19.5	+1.0
ISA	Isabella, Lake 12nm,0.6s	36.79	337	eP		P	01 06 21.3	+2.8
PV09	Paradox Valley	36.87	351	eP		P	01 06 21.6	+2.2
Q32A	Meitler Ranch, baz=186	36.91	4	P		P	01 06 18.7	-0.7
FURC	Furnace Creek, baz=155	36.92	340	P		P	01 06 20.0	+0.6
Q33A	Connelly Farm, baz=187	36.98	5	P		P	01 06 19.4	-0.6
CPCT	Cooper Cave 53nm,1.9s	36.98	24	eP		P	01 06 20.4	+0.3
Q34A	Chapman baz=188	36.99	7	P		P	01 06 19.5	-0.6
R39A	Chumby, Stover baz=195	37.02	12	P		P	01 06 19.9	-0.4
Q35A	Mercer Eighty, baz=190	37.04	8	P		P	01 06 19.9	-0.7
TPNV	Topopah Spring baz=156	37.15	341	P		P	01 06 21.8	+0.1
TPNV	Topopah Spring 12nm,1.3s	37.15	341	eP		P	01 06 22.1	+0.4
R40A	Maddies Statio baz=196	37.16	13	P		P	01 06 21.0	-0.5
KSU1	Kansas State U baz=189	37.21	7	P		P	01 06 21.5	-0.4
KSU1	Kansas State U 33nm,1.3s	37.21	7	eP		P	01 06 22.9	+0.9
SMCO	Snowmass 12nm,1.3s	37.24	354	eP		P	01 06 23.9	+1.2
CWC	Cottonwood Cre baz=153	37.33	338	P		P	01 06 23.7	+0.5
P31A	Stockton baz=184	37.38	3	P		P	01 06 23.2	-0.2
SIUC	Southern Illin 94nm,1.7s	37.39	17	eP		P	01 06 23.7	+0.3
P33A	Williams Farm, baz=187	37.42	5	P		P	01 06 23.4	-0.4
TKL	Tuckaleechee C comp=Z,471nm,19.5s,baz=186,slow=36	37.47	25	LR		LR	01 21 23.8	
MSU	Marysvale	37.48	347	eP		P	01 06 27.8	+3.3
Q38A	Cooks Store, C baz=194	37.53	11	P		P	01 06 24.4	-0.3
P32A	Huiting Farm, baz=186	37.53	4	P		P	01 06 24.6	-0.1
GRAC	Grapevine Rang baz=154	37.57	340	P		P	01 06 25.4	+0.3
P34A	Walnut Farm, R baz=188	37.62	7	P		P	01 06 25.1	-0.4
SRU	San Rafael Swe 20nm,1.5s	37.71	349	eP		P	01 06 29.4	+2.9
Q39A	Willow Grove F baz=195	37.73	11	P		P	01 06 26.4	0.0
Q40A	Laux Farm, Aux baz=196	37.87	13	P		P	01 06 27.5	-0.1
P36A	Good Intent, A baz=191	37.91	9	P		P	01 06 27.4	-0.4
PSUT	Pine Spring 6.8nm,1.0s	37.91	345	eP		P	01 06 28.5	+0.3
P37A	Lathrop baz=192	38.01	10	P		P	01 06 28.1	-0.6
TMUT	Trail Mountain 18nm,1.2s	38.02	348	eP		P	01 06 29.9	+0.7
O33A	Hebron baz=187	38.07	5	P		P	01 06 28.8	-0.4
LPAZ	La Paz 14nm,1.1s,baz=293,slow=6.6,SNR=20	38.07	120	P		P	01 06 30.2	0.0
LPAZ	comp=Z,649nm,19.6s,baz=318,slow=34			LR		LR	01 20 31.9	
LPAZ	La Paz 28nm,1.0s	38.07	120	eP		P	01 06 30.2	0.0
P17A	Butcher Ranch, 21nm,1.5s	38.10	349	eP		P	01 06 30.9	+1.1
KMSC	Kings Mountain baz=215	38.12	28	P		P	01 06 30.1	+0.4
P18A	Preston Nutter 10nm,1.1s	38.16	350	eP		P	01 06 31.2	+0.8
P38A	Dawn baz=194	38.19	11	P		P	01 06 29.5	-0.7
P39A	Salisbury baz=195	38.20	12	P		P	01 06 29.7	-0.6
R11A	Troy Canyon, C baz=158,SNR=9.3	38.22	343	P		P	01 06 30.7	-0.1
R11A	Troy Canyon, C 11nm,1.3s	38.22	343	eP		P	01 06 30.8	-0.1
O34A	Beatrice baz=188	38.27	7	P		P	01 06 29.9	-1.0
O20A	White River Ci baz=170	38.34	352	P		P	01 06 30.8	-0.9
O20A	White River Ci 22nm,1.3s	38.34	352	eP		P	01 06 32.3	+0.5
P40A	Paris baz=196	38.39	12	P		P	01 06 31.1	-0.8
PB11	IPOC Station P 29nm,0.9s	38.42	126	eP		P	01 06 32.3	-0.3
OGNE	Ogallala baz=180	38.73	360	P		P	01 06 34.5	-0.4
OGNE	Ogallala 40nm,1.0s	38.73	360	eP		P	01 06 35.3	+0.4
MPU	Maple Canyon 21nm,1.5s	38.80	348	eP		P	01 06 36.6	+0.9
NLU	North Lily Min 17nm,1.6s	38.84	348	eP		P	01 06 38.3	+2.4
N23A	Red Feather La baz=174	38.84	355	P		P	01 06 35.6	-0.4
N23A	Red Feather La 26nm,1.1s	38.84	355	eP		P	01 06 36.5	+0.4
N34A	Lincoln baz=189	38.93	7	P		P	01 06 35.6	-0.9
O39A	Kirksville baz=195	38.99	11	P		P	01 06 36.5	-0.4
O40A	La Belle baz=196	39.00	12	P		P	01 06 36.5	-0.5
N35A	Tabor baz=190	39.06	8	P		P	01 06 36.9	-0.6
NV01	Mina Array Sit	39.18	340	eP		P	01 06 39.5	+0.6
NV01				eP	cP	cP	01 08 53.2	+5.0
NVAR	Mina Array Bea 3.5nm,0.9s,baz=158,slow=8.0,SNR=15	39.18	340	P		P	01 06 39.5	+0.6
NVAR	1.2nm,0.9s,baz=183,slow=4.8,SNR=4.0			P	cP	cP	01 08 53.2	+5.0
NVAR	comp=Z,286nm,19.2s,baz=165,slow=32			LR		LR	01 19 51.3	
PB01	IPOC Station P 17nm,1.0s	39.21	127	eP		P	01 06 39.4	+0.2
DUG	Dugway, Tooele baz=163	39.23	347	P		P	01 06 38.6	-0.5
DUG	Dugway, Tooele 19nm,1.4s	39.23	347	eP		P	01 06 39.9	+0.8
JLU	Jordanelle 12nm,1.4s	39.33	349	eP		P	01 06 41.4	+1.3
TAOE	Nuku Hiva Isla 2µm,25.0s	39.56	254	eLR		LR	01 17 13.6	
N39A	Derby Farms, D baz=195	39.60	11	P		P	01 06 41.2	-0.8
CMB	Columbia Colle 22nm,1.6s	39.60	337	eP		P	01 06 42.4	+0.2
WAKR	Walker	39.65	338	eP		P	01 06 44.5	+1.7
TCUT	Toone Canyon 27nm,1.4s	39.82	349	eP		P	01 06 45.7	+1.5
M37A	Trindle Farm, baz=192	39.83	9	P		P	01 06 42.9	-1.1
L29A	Maesberg Ranch baz=182	39.87	2	P		P	01 06 43.5	-0.9
BGU	Big Grassy Mou 16nm,1.5s	39.98	347	eP		P	01 06 46.6	+1.3
M38A	Pleasantville baz=194	39.99	10	P		P	01 06 44.6	-0.7
HDIL	Hopedale baz=200	40.02	15	P		P	01 06 45.2	-0.4
L34A	Svendsen Farm, baz=189	40.06	6	P		P	01 06 45.3	-0.6
BDM	Black Diamond	40.13	335	eP		P	01 06 41.9	-4.7
SAML	Samuel 29nm,1.0s	40.17	106	eP		P	01 06 46.2	-1.1
L35A	Bielow Farm, R baz=190	40.31	7	P		P	01 06 47.0	-0.9
HWUT	Hardware Ranch 16nm,1.2s	40.32	349	eP		P	01 06 48.0	-0.2
ELK	Elko 14nm,1.6s	40.35	344	eP		P	01 06 51.1	+2.5
SFIN	Lafayette baz=203	40.47	18	P		P	01 06 49.3	0.0
AFDM	Forest Hills D 39nm,2.0s	40.62	337	eP		P	01 06 53.5	+2.9
K22A	Casper 22nm,1.4s	40.63	355	eP		P	01 06 53.7	+2.9
RKT	Rikitea 3µm,29.0s	40.73	230	eLQ		LQ	01 16 18.4	
RKT	Rikitea 4.2nm,0.3s	40.73	230	eT		T	01 49 41.2	
K35A	Storm Lake baz=190	40.95	8	P		P	01 06 52.2	-1.0
K36A	Gilmore City baz=191	40.98	8	P		P	01 06 53.0	-0.4
J26A	Sides Ranch, S baz=178	41.10	359	P		P	01 06 53.7	-0.8
BW06	Boulder Array baz=168,SNR=13	41.11	352	P		P	01 06 53.9	-0.9
BW06	Boulder Array 17nm,1.0s	41.11	352	eP		P	01 06 54.0	-0.8
PD31	Pinedale Array	41.11	352	eP		P	01 06 53.9	-0.9
PD31				eP	cP	cP	01 08 56.0	+1.7
PDAR	Pinedale Array 5.1nm,0.9s,baz=162,slow=6.2,SNR=27	41.11	352	P		P	01 06 53.9	-0.9
PDAR	1.1nm,0.8s,baz=124,slow=2.7,SNR=3.8			P	cP	cP	01 08 56.0	+1.7
PDAR	comp=Z,365nm,18.7s,baz=188,slow=35			LR		LR	01 23 17.6	
J25A	Sunshine Ranch baz=177	41.20	358	P		P	01 06 54.8	-0.6
J28A	Allard Ranch, baz=181	41.21	1	P		P	01 06 54.8	-0.6
J33A	Davis baz=188	41.34	6	P		P	01 06 55.7	-0.7
ORV	Oroville 9.7nm,0.9s	41.35	337	eP		P	01 06 59.4	+2.8
J36A	Seneca 1, Swea baz=191	41.67	8	P		P	01 06 58.8	-0.3
I30A	Oacoma baz=184	41.75	3	P		P	01 06 59.3	-0.5
J37A	Redenius Farm, baz=193	41.77	9	P		P	01 06 58.8	-1.2
I28A	Midland baz=181	41.78	1	P		P	01 06 59.0	-1.0
ECSD	EROS Data Cent baz=188,SNR=10	41.78	6	P		P	01 06 58.5	-1.5
ECSD	EROS Data Cent 14nm,1.0s	41.78	6	eP		P	01 06 58.8	-1.2
I29A	Vivian Onida baz=182	41.83	2	P		P	01 06 59.9	-0.5
I25A	Rochford baz=177	41.83	358	P		P	01 07 00.0	-0.6
I27A	Quinn baz=180	41.85	360	P		P	01 07 00.1	-0.6
REDW	Red Top Meadow 18nm,1.4s	41.90	350	eP		P	01 07 01.1	-0.2
RSSD	Black Hills baz=177	41.94	358	P		P	01 07 00.6	-1.0
RSSD	Black Hills 9.0nm,1.0s	41.94	358	eP		P	01 07 01.1	-0.5
J38A	Wedel Dairy, R baz=194	41.96	10	P		P	01 07 00.9	-0.6
JFWS	Jewell Farm 19nm,0.8s	42.02	13	eP		P	01 07 02.3	+0.3
I33A	Coleman baz=188	42.08	6	P		P	01 07 01.5	-1.0
PTGA	Pitinga 11nm,0.9s	42.09	93	eP		P	01 07 02.1	-1.0
LOHW	Long Hollow 13nm,1.3s	42.10	351	eP		P	01 07 02.5	-0.4
FXWY	Fox Creek 7.1nm,1.1s	42.19	350	eP		P	01 07 04.0	+0.3
MOOW	Moose Ponds 8.0nm,1.2s	42.25	351	eP		P	01 07 03.7	-0.5
I36A	Fitzsimmons Fa baz=192	42.39	9	P		P	01 07 04.5	-0.5
H27A	Howes baz=180	42.41	360	P		P	01 07 04.3	-1.0
H25A	Fruitdale baz=178	42.42	358	P		P	01 07 04.6	-0.7
H29A	Onida baz=183	42.43	2	P		P	01 07 04.7	-0.7
H28A	Mission Ridge baz=181	42.46	1	P		P	01 07 05.0	-0.6
H32A	Carlson Farm, baz=187,SNR=10	42.47	5	P		P	01 07 04.1	-1.6
I37A	Lemond, Waseca baz=193	42.48	9	P		P	01 07 04.5	-1.2
FLWY	Flagg Ranch 17nm,1.1s	42.57	351	eP		P	01 07 07.2	+0.4
I38A	Scanlan Farm, baz=194	42.69	10	P		P	01 07 06.4	-1.0
H33A	Prehn Over Nor baz=188	42.71	6	P		P	01 07 06.5	-1.1
H34A	Spellman Lake, baz=189	42.80	7	P		P	01 07 07.7	-0.6
HLID	Hailey baz=162	42.80	347	P		P	01 07 08.2	-0.3
HLID	Hailey 6.3nm,1.0s	42.80	347	eP		P	01 07 08.9	+0.4
H17A	Grant Village baz=167	42.86	351	P		P	01 07 07.9	-1.2
G28A	Parade baz=182	42.86	1	P		P	01 07 07.2	-1.7
WVOR	Wild Horse Val 30nm,1.5s	42.90	342	eP		P	01 07 09.5	+0.2
H35A	Sunnyside Ranc baz=190	42.94	7	P		P	01 07 08.1	-1.4
H36A	Jessenland, He baz=192	42.95	8	P		P	01 07 08.8	-0.7
MOD	Modoc Plateau 33nm,1.8s	42.97	340	eP		P	01 07 11.8	+1.9
G30A	Faulkton baz=184	42.98	3	P		P	01 07 08.9	-0.9
G25A	Newell baz=178	42.99	359	P		P	01 07 09.2	-0.8
MFID	Camas Ranch 8.3nm,1.1s	43.00	345	eP		P	01 07 10.2	0.0
LCO	Las Campanas 37nm,1.4s	43.02	138	eP		P	01 07 09.1	-1.6
N02D	Trinity Center baz=149	43.04	337	P		P	01 07 10.7	+0.3
G26A	Maurine baz=179,SNR=9.3	43.08	359	P		P	01 07 09.3	-1.3
H37A	Dierke Farm, C baz=193	43.11	9	P		P	01 07 09.8	-1.1
G27A	Dupree baz=180	43.16	0	P		P	01 07 10.2	-1.1
YMR	Madison River 17nm,1.4s	43.19	351	eP		P	01 07 14.8	+3.1
G32A	Webster baz=186	43.21	5	P		P	01 07 10.7	-1.0
G33A	Ortonville baz=188	43.25	6	P		P	01 07 10.8	-1.1
M04C	Macdoel baz=150	43.41	338	P		P	01 07 13.3	-0.2
M02C	Callahan baz=149	43.46	337	P		P	01 07 13.4	-0.4
N54A	Moraine State baz=213	43.54	24	P		P	01 07 14.4	+0.1
O56A	Blue Knob Stat baz=215	43.57	26	P		P	01 07 13.9	-0.7
G36A	St. Michael baz=192	43.62	8	P		P	01 07 13.4	-1.5
F27A	Lemmon baz=180	43.65	360	P		P	01 07 13.9	-1.4
F29A	Eureka baz=183	43.65	2	P		P	01 07 13.9	-1.3
MCMT	McKenzie Canyo	43.67	349	eP		P	01 07 15.7	0.0
F30A	Leola baz=184	43.69	3	P		P	01 07 14.4	-1.1
SPMN	Marine on St. baz=193	43.76	9	P		P	01 07 14.3	-1.7
SPMN	Marine on St. 15nm,0.9s	43.76	9	eP		P	01 07 14.6	-1.5
K05A	Summer Lake 45nm,1.4s	43.90	340	eP		P	01 07 20.6	+3.1
F33A	5 Mile Ranch, baz=188	43.90	6	P		P	01 07 15.5	-1.7
F35A	Swanville baz=191	44.12	7	P		P	01 07 17.8	-1.1
SSPA	Standing Stone 41nm,1.5s	44.17	26	eP		P	01 07 19.3	-0.1
E27A	Carson baz=181	44.21	0	P		P	01 07 18.6	-1.1
BOZ	Bozeman (W) 11nm,0.6s	44.25	350	eP		P	01 07 24.6	+4.4
E26A	Carlson Angus baz=179	44.25	360	P		P	01 07 19.0	-1.0
F36A	Milaca baz=192	44.27	8	P		P	01 07 19.1	-1.1
E28A	Huff baz=182	44.37	1	P		P	01 07 19.8	-1.1
E33A	Westby DABS, E baz=188	44.59	6	P		P	01 07 21.7	-1.0
LAO	LASA Array baz=174	44.62	356	P		P	01 07 21.6	-1.4
E34A	Wadena baz=190	44.69	7	P		P	01 07 22.7	-0.8
D26A	Manning baz=179	44.81	360	P		P	01 07 23.7	-0.8
D29A	Pettibone, Tap baz=183	44.89	2	P		P	01 07 24.1	-1.0
D27A	Center baz=181	44.89	0	P		P	01 07 23.8	-1.3
D25A	Fairfield baz=178	44.94	359	P		P	01 07 24.9	-0.7
E36A	McGregor baz=192	44.95	9	P		P	01 07 24.9	-0.7
D30A	Buchanan baz=184	44.97	3	P		P	01 07 25.3	-0.5
D28A	Regan baz=182	44.99	1	P		P	01 07 24.4	-1.5
D33A	AnnSam, Waubun baz=189	45.23	6	P		P	01 07 26.5	-1.3
D34A	Park Rapids baz=190	45.25	7	P		P	01 07 26.8	-1.2
N59A	State Game Lan baz=218	45.36	28	P		P	01 07 29.3	+0.3
D35A	Remer baz=191	45.39	8	P		P	01 07 28.0	-1.0
C30A	Mose, Pekin baz=185	45.58	3	P		P	01 07 30.5	-0.1
C26A	Wahner Farm, P baz=180	45.60	360	P		P	01 07 30.0	-0.8
D37A	Cotton baz=193	45.70	9	P		P	01 07 29.7	-1.8
C31A	Landman Farms, baz=186	45.72	4	P		P	01 07 30.8	-0.9
C34A	RKJ Ranch, Bem baz=190	45.84	7	P		P	01 07 31.6	-1.1
C35A	Jirik Farms, M baz=191	46.01	8	P		P	01 07 32.9	-1.0
B27A	Peters Farms, baz=181	46.19	1	P		P	01 07 34.8	-0.6
C36A	Pine Crest Far baz=193	46.22	9	P		P	01 07 34.7	-0.9
B28A	Dugan Ranch, T	46.25	1	P		P	01 07 34.7	-1.2

Code	Station Name	Δ°	AZ°	Op	ISC	Time	Res
	baz=182						
DGMT	Dagmar	46.29	358	P	P	01 07 35.1	-1.1
	baz=177						
DGMT	Dagmar	46.29	358	eP	P	01 07 35.5	-0.7
	20nm,1.1s						
C37A	Embarrass	46.29	9	P	P	01 07 35.5	-0.7
	baz=194						
B29A	Wagenman Farm,	46.30	2	P	P	01 07 35.3	-0.9
	baz=184						
B30A	Myrvik Farm, E	46.34	3	P	P	01 07 35.6	-0.9
	baz=185						
AGMN	Agassiz Nation	46.38	6	P	P	01 07 36.3	-0.6
	baz=188						
AGMN	Agassiz Nation	46.38	6	eP	P	01 07 36.0	-0.9
	14nm,1.0s						
B32A	Ashes, Strandq	46.41	5	P	P	01 07 36.5	-0.6
	baz=188						
C38A	Sawbill Land.	46.43	10	P	P	01 07 36.3	-1.0
	baz=195						
EYMN	Ely	46.62	10	P	P	01 07 37.6	-1.1
	baz=194						
EYMN	Ely	46.62	10	eP	P	01 07 37.7	-1.1
	25nm,0.9s						
NEWO	Newport DOGAMI	46.67	338	eP	P	01 07 34.8	-4.4
A26A	Wade Farm, Ken	46.68	360	P	P	01 07 37.8	-1.4
	baz=180						
B35A	Bob, Littlefor	46.69	8	P	P	01 07 37.7	-1.5
	baz=191						
B34A	Aery, Baudette	46.69	7	P	P	01 07 38.0	-1.3
	baz=190						
A28A	Rude Farm, Bot	46.71	2	P	P	01 07 38.2	-1.3
	baz=182						
A25A	Svangstu Ranch	46.73	359	P	P	01 07 38.3	-1.3
	baz=178						
A29A	Manning Farm,	46.76	2	P	P	01 07 38.6	-1.3
	baz=184						
A30A	Hoffart Farm,	46.83	3	P	P	01 07 38.7	-1.7
	baz=185						
A33A	Warroad	47.06	6	P	P	01 07 41.1	-1.1
	baz=189						
NEW	Newport	47.86	346	eP	P	01 07 50.3	+1.8
	7.3nm,1.0s						
ULM	Lac du Bonnet	48.31	5	P	P	01 07 51.0	-0.9
	10nm,0.9s,baz=184,slow=8.1,SNR=7.5						
ULM				LR	LR	01 27 57.1	
	comp=Z,745nm,18.4s,baz=193,slow=36						
ULM	Lac du Bonnet	48.31	5	eP	P	01 07 50.0	-1.9
	23nm,1.2s						
PPT	Papeete	50.79	245	LR	LR	01 24 05.9	
	comp=Z,376nm,18.0s,baz=21,slow=30						
PPT2	Papeete2	50.79	245	eS	S	01 15 28.9	+1.2
	153nm,26.9s						
PPT2				eLQ	LQ	01 20 27.4	
	1μm,27.0s						
PPT2				eLR	LR	01 22 33.2	
	1μm,25.8s,baz=70						
CPUP	Villa Florida	51.51	126	P	P	01 08 15.4	-1.1
	2.9nm,0.9s,baz=323,slow=7.0,SNR=3.8						
TBI	Tubuai	52.65	238	eLQ	LQ	01 20 42.8	
	495nm,28.5s						
TBI				eLR	LR	01 23 35.8	
	402nm,27.5s,baz=64						
BDFB	Brasilia	56.15	110	P	P	01 08 50.2	-0.7
	11nm,1.1s,baz=268,slow=10,SNR=9.3						
BDFB				LR	LR	01 31 30.9	
	comp=Z,2μm,20.1s,baz=277,slow=34						
BDFB	Brasilia	56.15	110	eP	P	01 08 50.2	-0.7
	26nm,1.0s						
FCC	Fort Churchill	56.90	5	eP	P	01 08 53.7	-1.6
	10nm,1.0s						
SCHQ	Schefferville	59.89	23	P	P	01 09 15.2	-1.2
	4.1nm,1.0s,baz=246,slow=2.7,SNR=3.0						
SCHQ				LR	LR	01 35 39.4	
	comp=Z,580nm,18.4s,baz=220,slow=36						
SCHQ	Schefferville	59.89	23	eP	P	01 09 15.2	-1.2
	22nm,1.2s						
DLBC	Dease Lake	60.39	343	P	P	01 09 21.7	+1.9
	3.8nm,0.8s,baz=124,slow=6.9,SNR=3.6						
DLBC	Dease Lake	60.39	343	eP	P	01 09 21.7	+1.9
	16nm,1.4s						
YKA	Yellowknife Ar	61.04	353	P	P	01 09 21.7	-2.3
	2.2nm,0.9s,baz=161,slow=6.4,SNR=14						
YKB5	Yellowknife Ar	61.04	353	eP	P	01 09 21.7	-2.3
YKW3	Yellowknife Ar	61.11	353	eP	P	01 09 22.4	-2.0
	6.9nm,1.2s						
FRB	Frobisher Bay	66.26	16	P	P	01 09 58.4	0.0
	8.7nm,0.9s,baz=213,slow=7.8,SNR=5.5						
SML	Sawmill	68.98	338	eP	P	01 10 17.4	+1.6
	71nm,1.6s						
INK	Inuvik	69.54	348	P	P	01 10 19.1	+0.1
	2.3nm,0.9s,baz=126,slow=5.2,SNR=7.1						
INK				LR	LR	01 41 17.7	
	comp=Z,437nm,19.4s,baz=126,slow=36						
INK	Inuvik	69.54	348	eP	P	01 10 19.1	+0.1
	8.2nm,1.1s						
RND	Reindeer	70.18	340	eP	P	01 10 25.2	+2.0
	16nm,1.1s						
IL1	Eielson Array	70.41	341	eP	P	01 10 22.0	-2.5
ILAR	Eielson Array	70.41	341	P	P	01 10 23.0	-1.5
	2.0nm,0.8s,baz=150,slow=4.5,SNR=15						
ILB	Eielson Array	70.41	341	eP	P	01 10 23.0	-1.5
CAST	Castle Rocks	71.34	339	eP	P	01 10 31.4	+1.3
	17nm,1.3s						
MLY	Manley	71.84	340	eP	P	01 10 32.8	-0.4
	11nm,1.0s						
RES	Resolute Bay	72.68	2	P	P	01 10 35.7	-2.2
	0.9nm,0.8s,baz=186,slow=12,SNR=5.9						
RES	Resolute Bay	72.68	2	eP	P	01 10 35.7	-2.2
	6.4nm,1.1s						
COLD	Coldfoot	73.03	342	eP	P	01 10 44.8	+4.6
	6.9nm,1.0s						
SUMG	Summit	80.33	16	P	P	01 11 20.7	-1.1
	9.2nm,1.0s						
H11N3	WAKE ISLAND Hy	90.37	290	T	T	02 51 59.9	
	baz=80,slow=74,SNR=6.4						
H11N1	WAKE ISLAND Hy	90.39	290	T	T	02 52 01.8	
	baz=72,slow=74,SNR=6.9						
H11S2	WAKE ISLAND Hy	90.61	288	T	T	02 52 17.7	
	baz=87,slow=75,SNR=11						
H11S1	WAKE ISLAND Hy	90.61	288	T	T	02 52 17.5	
	baz=87,slow=75,SNR=10						
H11S3	WAKE ISLAND Hy	90.63	288	T	T	02 52 16.0	
	baz=87,slow=75,SNR=11						
VNDA	Vanda	93.32	193	LR	LR	01 46 13.1	
	comp=Z,212nm,18.5s,baz=110,slow=30						
SEY	Seymchan	95.27	334	P	P	01 12 34.5	+0.2
	0.5nm,0.2s,baz=177,slow=8.3,SNR=4.1						
DBIC	Dimbokro	96.83	83	LR	LR	01 52 59.9	
	comp=Z,131nm,18.8s,baz=252,slow=33						
NOA	NORSAR Array B	99.24	27	LR	LR	01 55 19.2	
	comp=Z,156nm,21.6s,baz=295,slow=34						
SYO	Syowa Base	108.37	166⇓	eP	Pdif	01 13 42.6	+10
AS01	Alice Springs	121.84	243	ePKPdf	PKPdf	01 18 07.6	+1.8
AS31	Alice Springs	121.88	243	ePKPdf	PKPdf	01 18 04.8	-1.1
ASAR	Alice Springs	121.88	243	PKP	PKPdf	01 18 04.8	-1.1
	1.1nm,0.8s,baz=87,slow=2.6,SNR=6.5						
WR1	Warramunga Arr	122.24	248	ePKPdf	PKPdf	01 18 05.4	-1.2
WRA	Warramunga Arr	122.24	248	PKP	PKPdf	01 18 05.4	-1.2
	1.5nm,0.9s,baz=90,slow=1.2,SNR=6.4						
ZAA1	Zalesovo Array	123.91	355	ePKPdf	PKPdf	01 18 07.2	-1.6
ZALV	Zalesovo Beam	123.92	355	PKP	PKPdf	01 18 07.2	-1.6
	0.6nm,0.3s,baz=324,slow=1.4,SNR=4.3						
AKTO	Aktyubinsk	124.98	15	PKP	PKPdf	01 18 10.4	-0.6
	0.5nm,0.7s,baz=313,slow=11,SNR=2.5						
ABKAR	Akbulak array	126.56	15	ePKPdf	PKPdf	01 18 12.6	-1.5
KURK	Kurchatov	127.44	360	ePKPdf	PKPdf	01 18 15.4	-0.3
KURBB	Kurchatov Arra	127.53	360	PKP	PKPdf	01 18 15.4	-0.5
	0.7nm,0.8s						
MK32	Makanchi Array	131.22	356	ePKPdf	PKPdf	01 18 20.4	-2.7
MKAR	Makanchi Array	131.22	356	PKP	PKPdf	01 18 20.4	-2.7
	0.4nm,0.9s,baz=124,slow=48,SNR=3.3						
MK01	Makanchi Array	131.25	356	ePKPdf	PKPdf	01 18 26.7	+3.6
SBUM	Sibu	145.52	277	ePKPdf	PKPab	01 18 52.8	+2.4
UOSS	Minazif	145.83	37	ePKPdf	PKPbc	01 18 50.8	0.0
CHTO	Chiang Mai	150.79	316	ePKPbc	PKPbc	01 19 05.4	+1.3
CM31	Chiang Mai Arr	151.04	316	ePKPbc	PKPbc	01 19 02.9	-1.8
CMAR	Chiang Mai Arr	151.04	316	PKPbc	PKPbc	01 19 02.9	-1.8
	7.0nm,1.0s,baz=356,slow=1.4,SNR=13						

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*NDI **05** 01:00:40.3±2.6, 29°.52N×81°.00E, h10km, ML3.2*
*IDC **05** 01:00:42.5±3.5, 29°.90N×80°.61E, h0km, mb3.6/7, mb1 3.8/9, mb1mx3.5/62, mbtmp3.7/9, ML3.7/2, MS3.0/1, Ms1 3.0/1, ms1mx2.3/43, Error ellipse: s-maj=63.6km s-min=42.6km az=12.0*
*ISCJB **05** 01:00:44.6±0.8, 29°.99N±0°.07×80°.50E±0°.08, h23km, mb3.6/6, MS2.9/1, Error ellipse: s-maj=14.2km s-min=4.9km az=135.3*
ISC 05 01:00:46.0±0.9**, 29°.96N**±0°.06×**80°.49E**±0°.07**, h23**km**, n21, σ1s.18**/26**, mb3.6**/6**, Nepal-India border region**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
LGTI	Lohaghat	0.55	203	eP	Pb	01 00 55.8	-1.1
LGTI				eS	Sn	01 01 06.3	-0.5
KALG	Kalgarh	1.58	254	eP	Pn	01 01 01.4	-11
KALG				eS	Sn	01 01 25.0	-7.1
BISR	Bishrakh	3.00	243	ex	Pb	01 01 44.0	+5.3
SMLA	Simla	3.10	293	eP	Pb	01 01 37.6	-2.7
SMLA				iS	Sb	01 02 18.1	+0.5
SMLA				iS	Sn	01 02 18.9	+9.2
SMLA				IAML		01 02 34.8	
	comp=N,220nm,0.0s						
SMLA				IAML		01 02 35.5	
	comp=E,207nm,1.3s						
NDI	New Delhi	3.13	247	ex	Pn	01 01 31.5	-2.4
NDI				eS	Sn	01 02 11.5	+1.0
KKR	Kurukshetra	3.18	271	eS	Sb	01 02 19.7	-0.5
AYAN	Aya Nagar	3.29	244	eP	Pn	01 01 36.0	-0.1
AYAN				eP	Pn	01 01 36.0	-0.1
AYAN				eS	Sn	01 02 15.8	+1.4
SDNR	Sundarnagar	3.40	298	eP	Pb	01 01 57.0	+12
SDNR				eS	Sb	01 02 45.0	+19
RTK	Rohtak	3.67	256	eS	Sn	01 02 26.2	+2.4
KUDL	Kundal	3.94	244	eP	Pn	01 01 44.3	-0.7
KUDL				eP	Pn	01 01 44.5	-0.5
KUDL				eS	Sn	01 02 31.0	+0.5
KUDL				IAML		01 03 01.1	
	comp=E,48nm,0.3s						
KUDL				IAML		01 03 01.3	
	comp=N,64nm,0.4s						
KHET	Khetri	4.51	247	eP	Pn	01 01 53.2	+0.3
KHET				eP	Pn	01 01 53.2	+0.3
KHET				eS	Sn	01 02 45.9	+1.2
KHET				IAML		01 03 14.0	
	comp=E,27nm,0.3s						
KHET				IAML		01 03 14.8	
	comp=N,29nm,0.6s						
AAK	Ala-Archa	13.54	341	Pn	Pn	01 03 57.4	+0.8
	comp=N,0.1nm,0.3s,baz=139,slow=16,SNR=3.2						
MKAR	Makanchi Array	16.87	4	Pn	Pn	01 04 39.0	-1.5
	comp=N,0.6nm,0.3s,baz=180,slow=11,SNR=33						
KURBB	Kurchatov Arra	20.69	356	P	P	01 05 24.7	+0.4
	comp=N,2.7nm,0.8s,baz=181,slow=11,SNR=17						
ZALV	Zalesovo Beam	24.18	6	P	P	01 06 00.6	+0.2
	comp=N,2.2nm,0.5s,baz=195,slow=10.0,SNR=10						
BVAR	Borovoye Array	24.21	345	P	P	01 06 01.2	+0.5
	comp=N,0.4nm,0.5s,baz=150,slow=12,SNR=5.0						
SONM	Songino Array	26.73	41	P	P	01 06 23.4	-0.4
	comp=N,0.6nm,0.5s,baz=254,slow=8.9,SNR=2.3						
TLY	Talaya	27.67	32	LR	LR	01 16 47.3	
	comp=N,29nm,20.1s,baz=360,slow=35						
FINES	FINESS Array B	47.28	328	P	P	01 09 18.0	+0.8
	comp=N,0.6nm,0.7s,baz=98,slow=8.5,SNR=3.4						
ARCES	ARCESS Array B	50.19	338	P	P	01 09 40.0	+0.5
	comp=N,3.8nm,1.0s,baz=99,slow=7.9,SNR=8.7						
YKA	Yellowknife Ar	87.08	7	P	P	01 13 30.5	+1.1
	comp=N,0.1nm,0.4s,baz=337,slow=5.0,SNR=2.9						

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*IDC **05** 01:05:51.3±3.0, 15°.54S×173°.84W, h46km±27km, mb3.8/9, mb1 4.2/10, mb1mx3.8/47, mbtmp4.1/10, ML4.4/1, Error ellipse: s-maj=36.2km s-min=16.9km az=142.0*
*ISCJB **05** 01:05:55.0±0.7, 15°.5S±0°.2×174°.0W±0°.2, h94km, mb3.9/9, Error ellipse: s-maj=39.8km s-min=17.5km az=140.3*
ISC 05 01:05:56.3±0.7**, 15°.5S**±0°.2×**173°.9W**±0°.2**, h94**km**, n14, σ0s.95**/14**, mb3.8**/9**, Tonga Islands**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
AFI	Afiamalu	2.61	52	P	Pn	01 06 30.5	-6.4
	79nm,0.3s,baz=78,slow=1.6,SNR=72						
AFI				S	Sn	01 06 56.3	-12
	122nm,0.3s,baz=106,slow=20,SNR=20						
WRA	Warramunga Arr	49.35	257	P	P	01 14 36.1	-0.4
	1.5nm,0.6s,baz=94,slow=7.8,SNR=9.5						
ASAR	Alice Springs	49.61	252	P	P	01 14 38.5	0.0
	14nm,0.6s,baz=88,slow=7.9,SNR=122						
VNDA	Vanda	63.19	186	P	P	01 16 15.1	+1.1
	0.9nm,0.7s,baz=359,slow=6.1,SNR=4.9						
YBH	Yreka Blue Hor	74.00	37	P	P	01 17 22.6	+0.7
	1.8nm,0.8s,baz=140,slow=20,SNR=4.7						
NVAR	Mina Array Bea	74.75	42	P	P	01 17 27.0	+0.5
	1.7nm,0.7s,baz=227,slow=10,SNR=16						
TXAR	Lajitas Array	81.09	56	P	P	01 18 02.1	+0.4
	0.6nm,0.7s,baz=219,slow=9.1,SNR=5.1						
ILAR	Eielson Array	82.67	11	P	P	01 18 08.8	-0.2
	0.6nm,0.7s,baz=232,slow=6.4,SNR=8.5						
PDAR	Pinedale Array	82.69	42	P	P	01 18 10.1	+0.1
	0.7nm,0.6s,baz=213,slow=4.0,SNR=8.9						
YKA	Yellowknife Ar	90.42	24	P	P	01 18 47.1	+0.2
	0.6nm,0.9s,baz=242,slow=4.4,SNR=9.1						
KMBO	Kilima Mbogo	145.04	245	PKPbc	PKPdf	01 25 24.9	+0.8
	0.5nm,0.2s,baz=68,slow=9.7,SNR=3.7						
BRTR	Keskin Array B	145.96	320	PKPbc	PKPab	01 25 26.1	-0.2
	2.4nm,0.7s,baz=106,slow=2.4,SNR=17						
GERES	GERESS Array B	146.21	351	PKPbc	PKPbc	01 25 25.6	-0.4
	0.2nm,0.3s,baz=4.1,slow=1.9,SNR=5.3						
TORD	Torodi Ar. Bea	175.11	119	PKP	PKPdf	01 25 55.3	-0.9
	0.7nm,1.0s,baz=242,slow=2.5,SNR=3.2						
TORD				PKPab	PKPab	01 27 29.8	-2.4
	0.8nm,1.1s,baz=264,slow=4.2,SNR=3.1						

IDC 05 01:14:31.3±5.4**, 5°.93S**×**145°.87E, h155**km±61km**, mb3.0**/3**, mb1 3.1**/5**, mb1mx3.0**/30**, mbtmp3.4**/5**, Error ellipse: s-maj=61.6km s-min=29.7km az=134.0, Eastern New Guinea region**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
PMG	Port Moresby	3.69	160	P	Pn	01 15 27.5	-0.1
	3.4nm,0.3s,baz=32,slow=8.4,SNR=9.5						
PMG				S	Sn	01 16 12.0	+0.5
	25nm,0.3s,baz=114,slow=21,SNR=37						
WRA	Warramunga Arr	17.88	218	P	P	01 18 29.1	+0.1
	0.2nm,0.3s,baz=37,slow=12,SNR=3.1						
ASAR	Alice Springs	21.07	212	P	P	01 19 03.4	0.0
	0.3nm,0.6s,baz=48,slow=8.1,SNR=3.2						
MKAR	Makanchi Array	76.73	321	P	P	01 26 05.5	0.0
	0.4nm,0.5s,baz=94,slow=9.4,SNR=7.1						
ILAR	Eielson Array	85.86	23	P	P	01 26 53.2	0.0
	0.4nm,0.7s,baz=249,slow=4.5,SNR=5.7						
TORD	Torodi Ar. Bea	143.98	284	PKP	PKPdf	01 33 48.6	-0.8
	0.2nm,0.8s,baz=61,slow=1.9,SNR=5.3						

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*JMA **05** 01:14:46.4±0.3, 37°.15N×143°.42E, h11km, M3.4*
*IDC **05** 01:14:52.8±1.4, 37°.04N×142°.94E, h0km, mb3.3/3, mb1 3.5/4, mb1mx3.3/44, mbtmp3.2/4, ML3.1/1, Error ellipse: s-maj=37.5km s-min=30.6km az=130.0*
ISC 05 01:14:48.3±3.4**, 37°.15N**±0°.09×**143°.3E**±0°.2**, h10**km**, n13, σ1s.00**/17**, mb3.3**/3**, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
JFK	Kawauchi	1.97	277	S	Sn	01 15 47.0	+0.4
ONAJ	Iwakimizuishiy	2.02	270	P	Pn	01 15 22.6	0.0
ONAJ				S	Sn	01 15 48.0	+0.1
JIO	Ouri	2.04	310	P	Pn	01 15 22.2	-0.5
JIO				S	Sn	01 15 48.5	+0.2
JMM	Marumori	2.14	290	P	Pn	01 15 23.8	-0.3
JMM				S	Sb	01 15 52.2	-1.6
JFT	Otama	2.42	280	S	Sn	01 15 59.3	+1.8
JOM	Ohasama	2.82	326	P	Pn	01 15 33.8	+0.3
JOM				S	Sn	01 16 07.0	-0.5
JYK	Kaneyama	2.94	308	P	Pn	01 15 35.3	+0.2
JYK				S	Sn	01 16 12.6	+2.2
JAG	Ashikaga	3.19	258	P	Pn	01 15 38.1	-0.5
JAG				S	Sn	01 16 18.0	+1.3
JRY	Ryogami san	3.74	254	P	Pn	01 15 45.6	-0.5
JRY				S	Sn	01 16 30.5	+0.3
MJAR	Matsushiro Arr	4.15	263	Pn	Pn	01 15 52.2	+0.4
	1.3nm,0.3s,baz=88,slow=15,SNR=4.6						
MKAR	Makanchi Array	45.36	302	P	P	01 23 11.0	+4.4
	0.1nm,0.5s,baz=77,slow=7.7,SNR=2.4						
ILAR	Eielson Array	48.58	32	P	P	01 23 39.4	+7.8
	0.2nm,0.7s,baz=271,slow=7.1,SNR=2.9						
WRA	Warramunga Arr	57.41	190	P	P	01 24 42.0	+4.9
	0.5nm,0.9s,baz=10,slow=5.9,SNR=5.1						

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*IDC **05** 01:20:14.5±3.0, 39°.30N×143°.16E, h0km, mb3.3/2, mb1 3.5/3, mb1mx3.2/36, mbtmp3.3/3, ML3.1/1, MS2.3/1, Ms1 2.3/1, ms1mx2.2/23, Error ellipse: s-maj=71.3km s-min=36.9km az=66.0*
*ISCJB **05** 01:20:20.9±2.0, 39°.04N±0°.05×142°.4E±0°.1, h28km±10km, mb3.3/2, Error ellipse: s-maj=18.1km s-min=7.9km az=2.1*
*JMA **05** 01:20:22.7±0.1, 39°.10N×142°.34E, h32km±1km, M3.3*
ISC 05 01:20:20.3±2.0**, 39°.05N**±0°.06×**142°.4E**±0°.2**, h20**km±10km**, n10, σ0s.44**/15**, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
OFUJ	Ofunato	0.60	273	P	Pn	01 20 33.4	-0.3
MIYJ	Miyakonagasawa	0.72	318	P	Pb	01 20 34.6	+0.5
MIYJ				S	Sb	01 20 43.1	-0.4
JMK	Ichinoseki	0.96	265	P	Pn	01 20 39.0	+0.5
JMK				S	Sb	01 20 50.5	+0.1
JOM	Ohasama	0.99	296	P	Pn	01 20 39.3	+0.3
JOM				S	Sb	01 20 51.6	+0.3
JIO	Ouri	1.04	236	P	Pn	01 20 40.2	+0.5
JIO				S	Sb	01 20 52.1	-0.6
JKZ	Kuzumaki	1.27	318	P	Pb	01 20 43.4	-0.2
JKZ				S	Sn	01 20 58.8	-0.6
JANG	Nango	1.51	332	P	Pb	01 20 47.5	0.0
JANG				S	Sn	01 21 05.3	+0.2
MJAR	Matsushiro Arr	4.18	235	Pn	Pb	01 21 27.9	-5.3
	0.7nm,0.3s,baz=41,slow=11,SNR=9.3						
MJAR				LR	LR	01 23 14.2	
	comp=Z,38nm,20.4s,baz=30,slow=38						
MKAR	Makanchi Array	43.77	301	P	P	01 28 24.4	+0.1
	0.3nm,0.7s,baz=80,slow=9.8,SNR=3.4						
WRA	Warramunga Arr	59.17	189	P	P	01 30 19.4	-0.3
	0.4nm,0.7s,baz=5.3,slow=7.4,SNR=2.5						

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*NIED **05** 01:29:00, 39°.70N×142°.00E, h50km, Mw4.8 Best double couple: M0 1.71000×10^16 NP1:φs171.00000°, δ20.00000°, λ57.00000°. NP2:φs26.00000°, δ73.00000°, λ101.00000°.*
*ISCJB **05** 01:29:10.6±0.4, 39°.67N±0°.03×142°.08E±0°.04, h56km±2km, mb4.6/108, MS4.2/19, Error ellipse: s-maj=5.9km s-min=3.5km az=32.0*
*JMA **05** 01:29:10.8, 39°.67N×142°.14E, h48km±1km, M4.7*
JMA Felt III J1.
*MOS **05** 01:29:11.8±0.9, 39°.86N×141°.77E, h54km, mb4.9/45, MS4.3/6, Error ellipse: s-maj=8.2km s-min=5.1km az=108.0*
*IDC **05** 01:29:13.7±1.9, 39°.63N×142°.04E, h71km±17km, mb4.0/28, mb1 4.2/33, mb1mx4.1/43, mbtmp4.4/33, MS3.9/16, Ms1 4.0/16, ms1mx3.8/34, Error ellipse: s-maj=13.9km s-min=10.5km az=100.0*
*NEIC **05** 01:29:14.0±0.7, 39°.71N×142°.04E, h74km±5km, mb4.8/25, Error ellipse: s-maj=7.9km s-min=5.4km az=128.0*
NEIC Recorded [3 JMA] in Iwate.
ISC 05 01:29:11.2±0.5**, 39°.68N**±0°.04×**142°.11E**±0°.05**, h49**km±3km**, n265, σ1s.78**/288**, mb4.7**/112**, MS4.2**/23**, 34C-1D, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
MIYJ	Miyakonagasawa	0.24	246	P	Pn	01 29 19.4	-0.4
MIYJ				eS	Sn	01 29 25.3	-0.5
JTH	Tanohata	0.32	325	P	Pn	01 29 20.2	-0.3
JTH				S	Sn	01 29 26.6	-0.4
JOM	Ohasama	0.66	252	P	Pn	01 29 24.4	0.0
JOM				S	Sn	01 29 34.1	+0.2
JKZ	Kuzumaki	0.67	297	P	Pn	01 29 24.6	0.0
JKZ				S	Sn	01 29 34.3	0.0
OFUJ	Ofunato	0.69	210	P	Pn	01 29 24.1	-0.6
JMK	Ichinoseki	1.00	224	P	Pn	01 29 28.6	-0.3
JMK				S	Sn	01 29 41.6	-0.3
ERM	Erimo	2.47	18	eP	Pn	01 29 49.4	+0.5
ERM				eS	Sn	01 30 23.2	+5.4
ERM	Erimo	2.47	18	ePn	Pn	01 29 49.4	+0.5
ERM				eS	Sn	01 30 23.2	+5.4
MJAR	Matsushiro Arr	4.39	226	P	Pn	01 30 17.9	+2.6
	9.6nm,0.3s,baz=29,slow=12,SNR=288						
MJAR				LR	LR	01 31 55.4	
	comp=Z,621nm,21.4s,baz=60,slow=38						
MAJO	Matsushiro	4.39	226	eP	Pn	01 30 17.5	+2.2
MAJO				eS	Sn	01 31 04.5	-0.6
MAJO	Matsushiro	4.39	226	ePn	Pn	01 30 17.5	+2.2
MAJO				eS	Sn	01 31 04.5	-0.6
MAT	Matsushiro	4.39	226	P	Pn	01 30 18.2	+2.9
MAT				S	Sn	01 31 10.6	+5.5
YUK	Yuzh-Kuril'sk	5.18	32	P	Pn	01 30 29.5	+3.4
YUK				eS	Sn	01 31 20.1	-4.4
SHO	Shikotan	5.48	39	eP	Pn	01 30 33.2	+3.0
SHO				pmax	pmax		
	comp=Z,104nm,0.7s						
INU	Inuyama	5.92	225	ePn	Pn	01 30 38.3	+2.0
INU				eSn	Sn	01 31 42.3	-0.4
JHJ	Hachijo jima 2	6.81	197	P	Pn	01 30 49.4	+0.9
	comp=Z,13nm,0.3s,baz=339,slow=22,SNR=5.0						
JHJ				S	Sn	01 32 05.8	+1.2
	comp=Z,82nm,0.3s,baz=79,slow=22,SNR=5.4						
KUR	Kuril'sk	7.00	36	P	Pn	01 30 55.6	+4.6
KUR				eS	Sn	01 32 04.9	-4.2
KUR				pmax	pmax		
	comp=Z,70nm,0.4s						
KUR				pmax	pmax		
	comp=E,40nm,0.1s						
KUR				pmax	pmax		
	comp=N,33nm,0.2s						
YSS	Yuzh-Sakhalins	7.29	4	eP	Pn	01 30 56.2	+1.2
YSS				eS	Sn	01 32 19.7	+3.4
YSS				pmax	pmax		
	comp=Z,20nm,1.0s						
YSS				MLR	MLR		
	comp=Z,400nm,17.0s						
USRK	Ussuriysk Ar.	8.79	304	P	Pn	01 31 18.6	+3.0
	comp=Z,1.5nm,0.3s,baz=111,slow=14,SNR=56						
USRK				LR	LR	01 34 26.4	
	comp=Z,1μm,21.6s,baz=114,slow=36						
MDJ	Mudanjiang	10.52	302	P	Pn	01 31 43.0	+3.8
MDJ				S	Sn	01 33 44.5	+9.0
MDJ				pmax	pmax		
	comp=Z,64nm,0.9s						
MDJ				pmax	pmax		
	comp=Z,290nm,5.8s						
MDJ				LR	LR		
	comp=N,430nm,22.7s						
MDJ				LR	LR		
	comp=E,870nm,17.8s						
MDJ				LR	LR		
	comp=Z,1μm,19.4s						
MDJ	Mudanjiang	10.52	302	ePn	Pn	01 31 40.9	+1.7
JNU	Nakatsue	11.16	238	P	Pn	01 31 49.8	+1.7
	comp=Z,0.7nm,0.3s,baz=45,slow=14,SNR=3.9						
TYV	Tymovskoe	11.19	2	eP	Pn	01 31 45.0	-3.4
KSRS	Korea Array	11.32	263	P	Pn	01 31 54.7	+4.4
	comp=Z,3.0nm,0.3s,baz=72,slow=14,SNR=15						
KSRS				S	Sn	01 34 01.8	+6.5
	comp=Z,0.8nm,0.3s,baz=86,slow=40,SNR=4.2						
KSRS				LR	LR	01 35 51.2	
	comp=Z,496nm,20.7s,baz=79,slow=35						
KS01	Wonju Array Si	11.34	263	ePn	Pn	01 31 54.9	+4.4
KS15	Wonju Array Si	11.36	263	ePn	Pn	01 31 54.7	+4.0
KSAR	Wonju Array Be	11.36	263	P	Pn	01 31 54.7	+4.0
KSAR				S	Sn	01 34 01.8	+5.7
KSAR	Wonju Array Be	11.36	263	P	Pn	01 31 54.7	+4.0
KSAR				S	Sn	01 34 01.8	+5.7
KLR	Kul'dur	12.07	326	P	Pn	01 32 02.7	+2.3
	comp=Z,0.2nm,0.3s,baz=127,slow=12,SNR=7.9						
KLR				LR	LR	01 36 42.8	
	comp=Z,769nm,18.8s,baz=140,slow=37						
CN2	Changchun	13.10	294	eP	Pn	01 32 16.9	+2.4
CN2				pmax	pmax		
	comp=Z,10.0nm,0.5s						
CN2				pmax	pmax		
	comp=Z,200nm,4.0s						
CN2				LR	LR		
	comp=N,400nm,14.0s						
CN2				LR	LR		
	comp=E,600nm,14.0s						
CN2				LR	LR		
	comp=Z,700nm,16.0s						
NKL	Nikolayevsk	13.51	356	eP	Pn	01 32 17.0	-3.0
DL2	Dalian	15.88	274	P	Pn	01 32 51.9	+0.7
DL2				sP	sP	01 33 09.0	-2.6
DL2				eS	Sn	01 35 47.5	+1.4

DL2 pmax pmax
comp=Z,52nm,1.2s
DL2 pmax pmax
comp=Z,220nm,6.4s
DL2 LR LR
comp=N,340nm,15.6s
DL2 LR LR
comp=E,490nm,18.3s
DL2 LR LR
comp=Z,590nm,24.5s
PETK Petropavlovsk- 17.16 33 LR LR 01 40 39.5
comp=Z,107nm,18.1s,baz=195,slow=40
HIA Hailar 18.56 308 *eP* **P 01 33 22.7 -1.1**
HIA pmax pmax
comp=Z,14nm,1.0s
HIA Hailar 18.56 308 *eP* **P 01 33 22.7 -1.1**
comp=Z,14nm,1.0s
BJI Beijing 19.89 279 P **P 01 33 36.4 -2.0**
BJI S **S 01 37 17.1 -2.5**
BJI pmax pmax
comp=Z,24nm,0.9s
BJI pmax pmax
comp=Z,110nm,3.6s
BJI LR LR
comp=N,250nm,12.5s
BJI LR LR
comp=E,330nm,17.3s
BJI LR LR
comp=Z,500nm,28.6s
BJT Baijiatuau 19.90 279 *eP* **P 01 33 36.8 -1.7**
BJT pmax pmax
comp=Z,25nm,1.0s
BJT Baijiatuau 19.90 279 *eP* **P 01 33 36.8 -1.7**
comp=Z,25nm,1.0s
TIA Tai'an 19.98 268 ⇓P **P 01 33 38.6 -0.9**
TIA S **S 01 37 19.2 -2.3**
TIA pmax pmax
comp=Z,30nm,1.1s
TIA LR LR
comp=N,250nm,13.1s
TIA LR LR
comp=E,670nm,14.7s
TIA LR LR
comp=Z,680nm,13.9s
NJ2 Nanjing 20.29 255 *eP* Pn 01 33 44.7 -0.4
NJ2 pmax pmax
comp=Z,58nm,1.1s
CLNS Chul'man 20.54 332 *eP* **P 01 33 43.4 -2.0**
CLNS pmax pmax
comp=Z,20nm,0.9s
CLNS pmax pmax
comp=N,15nm,1.4s
CLNS pmax pmax
comp=E,9.0nm,1.1s
MA2 Magadan 20.66 13 P **P 01 33 46.6 +0.1**
comp=E,11nm,0.7s,baz=226,slow=11,SNR=13
MA2 Magadan 20.66 13 *eP* **P 01 33 45.8 -0.7**
comp=E,63nm,0.8s
HHC Hu-ho-hao-te 23.28 283 *eP* **P 01 34 13.6 -1.0**
HHC pP pP 01 34 25.0 -1.5
HHC sP sP 01 34 30.7 -1.8
HHC S **S 01 38 16.3 -7.1**
HHC pmax pmax
comp=Z,26nm,0.9s
HHC pmax pmax
comp=Z,120nm,8.3s
HHC LR LR
comp=N,210nm,14.1s
HHC LR LR
comp=E,440nm,15.1s
HHC LR LR
comp=Z,570nm,17.7s
YAK Yakutsk 23.63 345 P **P 01 34 18.0 +0.4**
comp=Z,5.6nm,0.5s,baz=344,slow=22,SNR=6.1
YAK Yakutsk 23.63 345 *eP* **P 01 34 16.6 -1.0**
YAK pmax pmax
comp=N,34nm,1.3s
YAK pmax pmax
comp=Z,40nm,0.9s
SEY Seymchan 24.10 12 P **P 01 34 23.1 +1.3**
comp=Z,21nm,1.0s,baz=194,slow=7.6,SNR=49
SEY Seymchan 24.10 12⇑ *eP* **P 01 34 22.9 +1.1**
WHN Wuhan 24.39 257 P **P 01 34 23.6 -1.2**
WHN S S 01 39 10.4 +29
WHN LR LR
comp=Z,890nm,14.0s
BOD Bodaibo 25.64 324 *eP* **P 01 34 35.0 -0.9**
BOD pmax pmax
comp=Z,16nm,1.0s
ULN Ulaanbaatar 26.42 300*c iP* **P 01 34 43.1 -0.2**
ULN pmax pmax
comp=Z,12nm,1.2s
ULN Ulaanbaatar 26.42 300 *eP* **P 01 34 43.0 -0.2**
comp=Z,10nm,1.1s
SONA1 Songino Array 26.86 300 *eP* **P 01 34 46.9 -0.3**
SONM Songino Array 26.86 299 P **P 01 34 47.3 +0.1**
comp=Z,2.8nm,0.6s,baz=102,slow=9.4,SNR=14
SONM LR LR 01 45 58.5
comp=Z,606nm,18.3s,baz=74,slow=37
XAN Xi'an 27.04 268 P **P 01 34 48.2 -0.7**
XAN S S 01 39 57.2 +34
XAN pmax pmax
comp=Z,8.0nm,1.0s
XAN pmax pmax
comp=Z,88nm,5.8s
XAN LR LR
comp=N,260nm,16.3s
XAN LR LR
comp=Z,310nm,27.5s
ENH Enshi 28.20 261 *eP* **P 01 34 58.4 -0.8**
comp=Z,37nm,1.1s
TLY Talaya 29.09 307 P **P 01 35 07.7 +0.8**
comp=Z,2.9nm,0.5s,baz=109,slow=7.0,SNR=8.2
TLY Talaya 29.09 307 *eP* **P 01 35 07.3 +0.4**
TLY pmax pmax
comp=Z,17nm,1.0s
TLY MLR MLR
comp=Z,383nm,20.0s
TLY Talaya 29.09 307 *eP* **P 01 35 06.3 -0.6**
comp=Z,23nm,1.4s
ZAK Zakamensk 29.14 304 *eP* **P 01 35 06.1 -1.4**
ZAK pmax pmax
comp=Z,14nm,1.2s
H11N2 WAKE ISLAND Hy 29.14 126 T T 02 05 45.0
baz=318,slow=75,SNR=2123
H11N1 WAKE ISLAND Hy 29.15 126 T T 02 05 41.7
baz=318,slow=75,SNR=3290
H11N3 WAKE ISLAND Hy 29.16 126 T T 02 05 46.3
baz=318,slow=75,SNR=3867
H11S1 WAKE ISLAND Hy 29.94 128 T T 02 06 47.5
baz=319,slow=76,SNR=581
H11S3 WAKE ISLAND Hy 29.94 128 T T 02 06 43.3
baz=319,slow=76,SNR=672
H11S2 WAKE ISLAND Hy 29.96 128 T T 02 06 48.8
baz=319,slow=76,SNR=500
MOY Mondy 30.72 307 *eP* **P 01 35 21.6 +0.1**
MOY pmax pmax
comp=Z,27nm,1.6s
BILL Bilibino 31.34 17⇑ *eP* **P 01 35 27.4 +0.8**
BILL *i* 01 35 40.7
BILL *e* 01 36 34.0
BILL *eS* S 01 40 19.5 -11
BILL pmax pmax
comp=Z,8.0nm,2.5s
GYA Guiyang 32.28 257⇑ *iP* **P 01 35 34.1 -1.3**
GYA pP pP 01 35 48.6 +0.4
GYA sP sP 01 35 55.0 +1.0
GYA PcP **PcP 01 38 25.2 +2.5**
GYA S **S 01 40 44.6 -1.1**
GYA sS sS 01 41 05.4 -1.8
GYA ScP **ScP 01 42 04.0 +1.8**
GYA Guiyang 32.28 257 ScS ScS 01 46 01.3 -0.3
GYA pmax pmax
comp=Z,30nm,1.0s
CD2 Chengdu 32.30 266 P **P 01 35 34.1 -1.4**
CD2 pmax pmax
comp=Z,2.0nm,0.5s
GTA Gaotai 32.40 283 *eP* **P 01 35 37.4 +1.1**
GTA pP pP 01 35 48.4 -0.7
GTA sP sP 01 35 53.4 -1.5
GTA S **S 01 40 48.8 +1.5**
GTA sS sS 01 41 07.5 -1.3
GTA SS **SnSn 01 42 46.9 +3.7**
GTA pmax pmax
comp=Z,3.0nm,1.1s
GTA pmax pmax
comp=Z,75nm,6.2s
GTA LR LR
comp=N,230nm,18.5s
GTA LR LR
comp=E,560nm,18.1s
GTA LR LR
comp=Z,670nm,18.5s
TIXI Tiksi 32.74 352⇑ *eP* **P 01 35 38.9 +0.1**
TIXI pmax pmax
comp=Z,5.0nm,0.7s
TIXI Tiksi 32.74 352 *eP* **P 01 35 38.0 -0.8**
comp=Z,4.7nm,0.7s
QIZ Qiongzhong 34.57 243 P **P 01 35 56.7 +1.5**
QIZ sP **sP 01 36 12.5 -1.4**
QIZ PP **PP 01 37 14.7 +0.5**
QIZ S **S 01 41 22.1 +1.2**
QIZ sS **sS 01 41 41.5 -1.0**
QIZ pmax pmax
comp=Z,21nm,2.1s
QIZ LR LR
comp=N,140nm,27.8s
QIZ LR LR
comp=Z,240nm,19.0s
KMI Kunming 35.97 258 P **P 01 36 09.0 +1.5**
KMI pmax pmax
comp=Z,25nm,0.9s
KMI pmax pmax
comp=Z,120nm,4.0s
NONG Nongkai 39.93 249 P **P 01 36 41.1 +0.4**
comp=Z,26nm,1.3s
SKNT Sakolnakorn 40.05 247 P **P 01 36 42.5 +0.8**
comp=Z,14nm,1.1s,comp=Z,6μm
WMQ Urumqi 40.19 294 P **P 01 36 43.0 +0.3**
WMQ pP pP 01 36 54.8 -1.0
WMQ sP sP 01 36 59.5 -2.0
WMQ PP **PnPn 01 38 20.0 +0.4**
WMQ S **S 01 42 45.2 -0.9**
WMQ SS **SS 01 45 39.1 -6.1**
WMQ pmax pmax
comp=Z,10.0nm,1.0s
WMQ LR LR
comp=N,32nm,22.8s
WMQ LR LR
comp=E,71nm,34.2s
WMQ LR LR
comp=Z,84nm,31.4s
ZAA0 Zalesovo Array 40.58 310 *eP* **P 01 36 45.1 -0.6**
ZALV Zalesovo Beam 40.58 310 P **P 01 36 45.5 -0.3**
comp=Z,9.1nm,0.4s,baz=88,slow=7.1,SNR=32
ZALV PcP **PcP 01 38 46.9 -0.1**
comp=Z,2.1nm,0.4s,baz=95,slow=3.1,SNR=4.9
NRIK Noril'sk 41.12 334 P **P 01 36 49.9 -0.1**
comp=Z,1.7nm,0.3s,baz=92,slow=7.3,SNR=5.5
NRIK LR LR 01 54 45.6
comp=Z,484nm,20.9s,baz=73,slow=37
NVS Novosibirsk 41.45 312 *eP* **P 01 36 53.0 +0.2**
NVS *e* 01 37 05.8
NVS pmax pmax
comp=Z,5.0nm,0.4s
NVS pmax pmax
comp=N,1.0nm,0.3s
NVS pmax pmax
comp=E,7.0nm,0.6s
LOEI Loei 41.64 250 P **P 01 36 52.2 -2.6**
comp=E,8.7nm,1.5s
PHRA Phrae 41.77 252 P **P 01 36 56.0 +0.2**
comp=E,119nm,0.9s,comp=E,19μm
CHAI Chaiyaphum 42.18 247 P **P 01 36 59.3 +0.1**
comp=E,6.0nm,1.0s,comp=E,101nm
PBKT Sadao Pong 42.47 249 P **P 01 37 01.9 +0.4**
comp=E,6.8nm,1.1s
CMMT Chiang Mai 42.52 253 P **P 01 37 02.2 +0.2**
comp=E,13nm,1.0s
CHTO Chiang Mai 42.52 253 P **P 01 37 02.3 +0.3**
comp=E,38nm,1.2s
CHTO Chiang Mai 42.52 253 *eP* **P 01 37 01.6 -0.4**
CHTO pmax pmax
comp=Z,13nm,1.1s
CHTO Chiang Mai 42.52 253 *eP* **P 01 37 01.6 -0.4**
comp=Z,13nm,1.1s
CMAR Chiang Mai Arr 42.74 253 P **P 01 37 04.1 +0.3**
comp=Z,2.0nm,0.7s,baz=46,slow=5.8,SNR=11
CMAR PcP **PcP 01 38 54.7 0.0**
comp=Z,0.9nm,0.4s,baz=12,slow=3.1,SNR=3.5
CMAR LR LR 01 55 43.9
comp=Z,72nm,18.2s,baz=29,slow=37
CM01 Chiang Mai Arr 42.75 253 *eP* **P 01 37 03.7 -0.1**
SUKH Sukhothai 42.85 251 P **P 01 37 05.2 +0.6**
comp=Z,5.1nm,0.9s,comp=Z,142nm
MRSI Marisa 43.14 210 P **P 01 37 08.4 +1.5**
comp=Z,43nm,1.2s
MK01 Makanchi Array 43.23 300 *eP* **P 01 37 07.0 -0.4**
MK31 Makanchi Array 43.23 300 *eP* **P 01 37 06.7 -0.7**
MK31 pmax pmax
comp=Z,6.0nm,0.6s
MKAR Makanchi Array 43.23 300 P **P 01 37 07.1 -0.4**
comp=Z,9.4nm,0.8s,baz=84,slow=9.2,SNR=76
MKAR PcP **PcP 01 38 56.1 +0.2**
comp=Z,1.5nm,0.8s,baz=94,slow=3.6,SNR=2.7
MKAR LR LR 01 55 57.6
comp=Z,271nm,19.4s,baz=38,slow=37
MKAR Makanchi Array 43.23 300*ceP* **P 01 37 07.0 -0.4**
MKAR pmax pmax
comp=Z,8.0nm,0.7s
MAKZ Makanchi 43.43 300 *eP* **P 01 37 08.8 -0.3**
MAKZ pmax pmax
comp=Z,11nm,0.9s
MAKZ Makanchi 43.43 300 *eP* **P 01 37 08.8 -0.3**
comp=Z,11nm,0.9s
NAYO Nakonayok 43.72 246 P **P 01 37 12.4 +0.7**
comp=Z,55nm,1.3s
SANI Sanana 44.08 204 P **P 01 37 16.5 +2.0**
comp=Z,21nm,1.0s
CHBT CHBT 44.10 244 P **P 01 37 16.6 +1.9**
comp=Z,24nm,1.3s,comp=Z,4μm
APSI Ampana 44.52 210 P **P 01 37 17.3 -0.8**
comp=Z,29nm,1.2s
KURK Kurchatov 44.77 306 *eP* **P 01 37 18.9 -0.8**
KURK pmax pmax
comp=Z,29nm,1.0s
KURK Kurchatov 44.77 306 *eP* **P 01 37 18.9 -0.8**
comp=Z,29nm,1.0s
KDAK Kodiak Island 44.79 44 LR LR 01 53 30.5
comp=Z,105nm,21.3s,baz=207,slow=32
PDGK Podgornoye 46.07 296 P **P 01 37 28.6 -1.4**
PDGK pmax pmax
comp=Z,14nm,1.3s
TAPN Taplejung 46.35 272 *eP* **P 01 37 32.5 -0.4**
comp=Z,11nm,0.5s
MDM Murphy Dome 46.40 33 *eP* **P 01 37 35.2 +2.8**
comp=Z,33nm,1.9s
ODAN Odare 46.84 271 *eP* **P 01 37 36.6 0.0**
comp=Z,36nm,1.0s
ILAR Eielson Array 46.98 34 P **P 01 37 37.7 +0.7**
comp=Z,2.0nm,0.7s,baz=265,slow=6.2,SNR=20
ILB Eielson Array 46.98 34 *eP* **P 01 37 37.6 +0.6**
RAMN Ramite 47.41 272 *eP* **P 01 37 41.0 0.0**
comp=Z,127nm,1.1s
GUN Gumba 47.48 274 *eP* **P 01 37 41.7 -0.1**
comp=Z,78nm,0.8s
KKN Kakani 48.01 274 *eP* **P 01 37 45.6 0.0**
comp=Z,40nm,0.7s
PKIN Phulchoki 48.02 274 *eP* **P 01 37 45.3 -0.5**
DMN Daman 48.23 274 *eP* **P 01 37 47.3 -0.1**
comp=Z,46nm,1.0s
GKN Gorkha 48.40 274 *eP* **P 01 37 48.4 -0.2**
comp=Z,54nm,1.0s
TKM2 Tokmak 2 48.89 297 *eP* **P 01 37 51.8 -0.5**
TKM2 pmax pmax
comp=Z,23nm,1.1s
TKM2 Tokmak 2 48.89 297 *eP* **P 01 37 51.8 -0.5**
comp=Z,23nm,1.1s
CHKZ Chkalovo 48.94 312 P **P 01 37 50.4 -1.8**
CHKZ pmax pmax
comp=Z,7.0nm,0.7s
VOSK Vostochnaya 48.96 310 P **P 01 37 51.2 -1.2**
VOSK pmax pmax
comp=Z,11nm,1.1s
KAPI Kappang 49.02 210 *eP* **P 01 37 53.3 +0.1**
comp=Z,19nm,1.1s
SURT Suratani 49.22 244 P **P 01 37 55.7 +0.9**
comp=Z,6.0nm,1.1s
BVA0 Borovoye Array 49.23 311 *iP* **P 01 37 52.9 -1.6**
BVA0 pmax pmax
comp=Z,5.0nm,0.8s
BRVK Borovoye 49.28 311*ceP* **P 01 37 54.7 -0.1**
BRVK pmax pmax
comp=Z,13nm,1.7s
BRVK Borovoye 49.28 311 *eP* **P 01 37 54.2 -0.6**
comp=Z,2.7nm,0.4s
KOLN Koldanda 49.31 275 *eP* **P 01 37 55.6 0.0**
comp=Z,64nm,1.0s
FRU Bishkek 49.60 297 *eP* **P 01 37 57.0 -0.5**
FRU *e* 01 38 16.0
PYUN Piuthan 49.62 276 *eP* **P 01 37 58.0 0.0**
comp=Z,115nm,1.1s
AAK Ala-Archa 49.76 297⇑ *eP* **P 01 37 58.3 -0.5**
AAK pmax pmax
comp=Z,21nm,1.2s
AAK Ala-Archa 49.76 297 *eP* **P 01 37 58.5 -0.3**
comp=Z,16nm,1.4s
KSH Kashi 49.87 292 *eP* **P 01 38 03.8 +4.1**
ZRNK Zerenda 50.06 311 P **P 01 37 58.9 -1.8**
ZRNK pmax pmax
comp=Z,15nm,1.0s
EKS2 Erkin-Say 50.24 297 *eP* **P 01 38 02.2 -0.2**
EKS2 pmax pmax
comp=Z,2.0nm,0.6s
EKS2 Erkin-Say 50.24 297 *eP* **P 01 38 02.2 -0.2**
comp=Z,2.3nm,0.6s
PKDT Phuket 50.30 243 P **P 01 38 04.0 +1.0**
comp=Z,30nm,1.0s
MNAS Manas 51.18 297 P **P 01 38 08.6 -0.9**
MNAS pmax pmax
comp=Z,14nm,0.7s
INK Inuvik 51.80 28 P **P 01 38 14.6 +1.1**
comp=Z,4.0nm,0.8s,baz=310,slow=8.0,SNR=11
INK LR LR 02 00 57.2
comp=Z,74nm,21.6s,baz=284,slow=37
INK Inuvik 51.80 28 *eP* **P 01 38 14.2 +0.7**
KK31 Karatay Array 52.31 299 *i P* **P 01 38 16.9 -0.9**
KK31 pmax pmax
comp=Z,6.0nm,0.8s
KKAR Karatay Array 52.31 299 *eP* **P 01 38 17.1 -0.7**
KKAR pmax pmax
comp=Z,6.0nm,0.7s
KKAR Karatay Array 52.31 299 *eP* **P 01 38 17.1 -0.7**
comp=Z,6.5nm,0.7s
SVE Sverdlovsk 53.55 317 *eP* **P 01 38 27.7 +1.0**
SVE pmax pmax
comp=Z,29nm,0.8s
ARU Arti 54.76 317*c iP* **P 01 38 35.2 -0.3**
ARU 01 39 36.8
ARU S **S 01 46 11.9 -0.4**
ARU SS **SS 01 49 48.5 -6.8**
ARU pmax pmax
comp=Z,34nm,1.0s
ARU MLR MLR
comp=Z,425nm,21.0s
ARU Arti 54.76 317 *eP* **P 01 38 34.9 -0.6**
comp=Z,30nm,0.9s
PWJI Pagerwojo 55.13 218 P **P 01 38 39.9 +1.3**
comp=Z,34nm,1.7s
GSI Gunungsitoli 55.64 238 P **P 01 38 43.4 +1.1**
comp=Z,29nm,1.3s
MDSI Maura Dua 56.12 228 P **P 01 38 45.6 -0.1**
comp=Z,13nm,1.3s
AB31 Akbulak array 56.68 309 *eP* **P 01 38 48.4 -0.9**
AB31 pmax pmax
comp=Z,7.0nm,0.5s
ABKAR Akbulak array 56.68 309 *eP* **P 01 38 48.7 -0.6**
comp=Z,12nm,0.6s
AKTO Aktyubinsk 57.34 311 P **P 01 38 52.5 -1.5**
AKTO pmax pmax
comp=Z,9.0nm,0.9s
WRAB Tennant Creek 59.74 188*ceP* P 01 39 20.4 +9.5
WRAB pmax pmax
comp=Z,22nm,1.2s
WRA Warramunga Arr 59.75 188 P **P 01 39 10.1 -0.9**
comp=Z,5.2nm,0.9s,baz=5.1,slow=7.0,SNR=15
RES Resolute Bay 59.91 15 *eP* **P 01 39 11.3 -0.2**
RES pmax pmax
comp=Z,5.0nm,0.9s
RES Resolute Bay 59.91 15 *eP* **P 01 39 11.3 -0.2**
comp=Z,4.9nm,0.9s
YKA Yellowknife Ar 61.26 31 P **P 01 39 20.9 0.0**
comp=Z,0.5nm,0.6s,baz=300,slow=6.8,SNR=10
ARCES ARCESS Array B 61.72 339 P **P 01 39 23.9 +0.1**
comp=Z,2.1nm,0.7s,baz=58,slow=9.2,SNR=8.0
ARCES ARCESS Array B 61.72 339 P **P 01 39 24.0 +0.1**
KLMR Klimovskoe 61.83 327 *eP* **P 01 39 22.3 -2.4**
KLMR 01 40 03.4
KLMR pmax pmax
comp=Z,31nm,1.3s
GEYT Alibeck 63.05 298 P **P 01 39 33.2 -0.2**
comp=Z,5.3nm,0.8s,baz=20,slow=4.7,SNR=12
DAG Danmarks Havn 63.19 355 *i P* **P 01 39 33.6 0.0**
comp=Z,3.3nm,0.9s
DAG Danmarks Havn 63.19 355 *i P* **P 01 39 33.6 0.0**
DAG pmax pmax
comp=Z,3.0nm,0.9s
ASAR Alice Springs 63.48 188 P **P 01 39 35.4 -0.8**
comp=Z,2.9nm,0.9s,baz=7.6,slow=6.3,SNR=19
VRH Novokhopyorsk 66.00 317 *eP* **P 01 39 50.8 -1.5**
VRH pmax pmax
comp=Z,10.0nm,0.8s
OBN Obninsk 66.31 323*ceP* **P 01 39 53.8 -0.4**
OBN *e* 01 40 22.5
OBN *eS* **S 01 48 45.6 +5.7**
OBN pmax pmax
comp=Z,39nm,2.5s
OBN MLR MLR
comp=Z,183nm,16.0s
LPSR Galich'ya Gora 66.63 320 *eP* **P 01 39 55.5 -0.8**
LPSR pmax pmax
comp=Z,10.0nm,0.9s
FINES FINESS Array B 66.74 332 P **P 01 39 56.5 -0.3**
comp=Z,7.5nm,0.7s,baz=43,slow=8.9,SNR=28
VSR Storozhevoye 67.31 318 *eP* **P 01 39 59.7 -1.0**
VSR pmax pmax
comp=Z,20nm,1.3s
SUMG Summit 68.05 0 *i P* **P 01 40 06.8 +1.4**
comp=Z,7.0nm,0.9s
SUMG Summit 68.05 0 *eP* **P 01 40 06.8 +1.4**
SUMG pmax pmax
comp=Z,7.0nm,0.9s
GOF Gofitskoye 68.75 311⇑ *iP* **P 01 40 09.6 -0.2**
GOF pmax pmax
comp=Z,38nm,0.9s
NCK Nalchik 69.33 310⇑ *eP* **P 01 40 14.0 +0.6**
NCK pmax pmax
comp=Z,12nm,1.1s
ZEI Tsey 69.55 309 *eP* **P 01 40 13.0 -2.1**
ZEI pmax pmax
comp=Z,19nm,1.0s
KIV Kislovodsk 69.60 311 *i P* **P 01 40 15.8 +0.6**
SNR=10
KIV Kislovodsk 69.60 311 *eP* **P 01 40 15.8 +0.6**
KIV pmax pmax
comp=Z,43nm,1.1s
KIV MLR MLR
comp=Z,128nm,17.0s
KIV Kislovodsk 69.60 311 *eP* **P 01 40 15.8 +0.6**
comp=Z,42nm,1.0s
KBZ Khabaz 69.61 310 P **P 01 40 15.8 +0.7**
comp=Z,11nm,1.0s,baz=187,slow=4.9,SNR=9.8
KBZ LR LR 02 13 17.5
comp=Z,146nm,21.5s,baz=352,slow=38
NEY Neytrino 69.99 310⇑ *eP* **P 01 40 19.5 +1.8**
NEY pmax pmax
comp=Z,1.0nm,1.0s
AKH Akhalkalaki 70.61 308⇑ *iP* **P 01 40 22.9 +1.4**
AKH Akhalkalaki 70.61 308 P **P 01 40 22.9 +1.4**
HATD Hatta, Dubai 71.65 287 *i P* **P 01 40 28.1 +0.2**
SNR=9.9
ASHO Ashiyiah 71.79 287 *i P* **P 01 40 28.6 -0.2**
SNR=8.7
NB2 NORSAR Subarra 71.96 337 P **P 01 40 28.7 -0.5**
comp=Z,10nm,0.9s,baz=38,slow=6.2
NOA NORSAR Array B 71.96 337 P **P 01 40 28.8 -0.4**
comp=Z,5.0nm,0.8s,baz=38,slow=6.0,SNR=15
NOA LR LR 02 14 48.0
comp=Z,92nm,21.3s,baz=20,slow=38
ANN Anapa 72.10 314 *eP* **P 01 40 26.9 -3.3**
ANN pmax pmax
comp=Z,32nm,0.9s
ANN MLR MLR
comp=Z,308nm,20.0s
ASUD Al Ashush, Dub 72.36 288 *i P* **P 01 40 32.7 +0.6**
SNR=6.2
AKASG Malin Array Be 72.55 322 P **P 01 40 32.2 -0.5**
comp=Z,3.8nm,0.5s,baz=42,slow=6.2,SNR=27
KIEV Kiev 72.56 322 *eP* **P 01 40 32.1 -0.7**

KIEV				pmax	pmax		
	comp=Z,8.0nm,0.8s						
KIEV	Kiev	72.56	322	eP	P	01 40 32.1	-0.7
	comp=Z,8.1nm,0.8s						
NVAR	Mina Array Bea	72.98	54	P	P	01 40 36.9	+1.0
	comp=Z,0.4nm,0.6s,baz=53,slow=27,SNR=3.9						
PDAR	Pinedale Array	75.44	46	P	P	01 40 50.8	+0.6
	comp=Z,0.6nm,0.6s,baz=224,slow=2.7,SNR=8.2						
BURAR	Bucovina Array	76.58	322⇑	iP	P	01 40 56.4	0.0
TESR	Tescani	76.66	320⇑	iP	P	01 40 56.6	-0.1
CFR	Carcaliu	76.83	318⇑	iP	P	01 40 58.2	+0.5
VRI	Vrincioaia	77.07	320⇑	iP	P	01 41 01.1	+2.0
PLOR	Plostina	77.12	320⇑	iP	P	01 41 00.3	+0.9
ARCR	ARCALIA	77.37	322⇑	iP	P	01 41 01.8	+1.1
BRTR	Keskin Array B	77.51	311	P	P	01 41 01.9	0.0
	comp=Z,1.0nm,0.5s,baz=116,slow=2.9,SNR=9.0						
DOPR	Dopca	77.66	320⇑	iP	P	01 41 04.2	+1.8
MLR	Muntele Rosu	77.72	320⇑	iP	P	01 41 03.9	+1.0
MSAB	Monastry St. A	77.75	318⇑	iP	P	01 41 04.2	+1.4
OKC	Ostrava-Krasne	78.14	327	eP	P	01 41 05.3	+0.4
OKC	Ostrava-Krasne	78.14	327	eP	P	01 41 05.3	+0.4
VOIR		78.21	320⇑	iP	P	01 41 06.4	+0.9
DRGR		78.36	322⇑	iP	P	01 41 07.3	+1.0
ARR	Arges	78.46	320⇑	iP	P	01 41 07.9	+1.0
DPC	Dobruska-Polom	78.51	328	eP	P	01 41 07.6	+0.6
DPC				epP	sP	01 41 27.2	+0.5
DPC	Dobruska-Polom	78.51	328	eP	P	01 41 07.6	+0.6
DPC				e		01 41 27.2	
VYHS	Vyhne	78.86	325	eP	P	01 41 09.8	+0.9
VYHS				pmax	pmax		
	comp=Z,4.0nm,1.3s						
VYHS	Vyhne	78.86	325	eP	P	01 41 09.8	+0.9
BRG	Berggiesshubel	79.06	330	eP	P	01 41 10.0	+0.1
	comp=Z,4.4nm,0.9s						
BRG	Berggiesshubel	79.06	330	eP	P	01 41 10.0	+0.1
BRG				pmax	pmax		
	comp=Z,4.0nm,0.9s						
CLL	Collm	79.08	330⇑	iP	P	01 41 09.8	-0.2
	comp=Z,14nm,1.4s						
CLL				e		01 41 20.0	
CLL				e		01 41 30.0	
CLL				Lm	MLR	01 54 00.0	
	comp=Z,200nm,21.5s						
CLL				Lm	MLR	02 17 00.0	
	comp=Z,100nm,19.9s						
CLL	Collm	79.08	330⇑	iP	P	01 41 09.8	-0.2
CLL				e		01 41 20.0	
CLL				e		01 41 30.0	
CLL				pmax	pmax		
	comp=Z,14nm,1.4s						
PVCC	Panska Ves	79.08	329	eP	P	01 41 11.3	+1.2
PVCC	Panska Ves	79.08	329	eP	P	01 41 11.3	+1.2
VRAC	Vranov	79.20	327⇑	iP	P	01 41 11.3	+0.5
GZR	Gura Zlata	79.35	321⇑	iP	P	01 41 12.7	+1.0
GOPC	GO Pecny, Ondr	79.47	328	eP	P	01 41 13.3	+1.0
GOPC	GO Pecny, Ondr	79.47	328	eP	P	01 41 13.3	+1.0
PRA	Prague	79.49	329	eP	P	01 41 12.4	+0.1
PRA	Prague	79.49	329	eP	P	01 41 12.4	+0.1
PRU	Pruhonice	79.51	329	eP	P	01 41 13.0	+0.5
PRU	Pruhonice	79.51	329	eP	P	01 41 13.0	+0.5
TREC	Trest	79.67	328	eP	P	01 41 13.4	0.0
TREC	Trest	79.67	328	eP	P	01 41 13.4	0.0
BZS	Buzias	79.74	322⇑	iP	P	01 41 13.2	-0.6
RAYN	Ar Rayn	80.16	292	eP	P	01 41 15.8	-0.6
	comp=Z,11nm,1.3s						
MDVR	Moldovita	80.31	321⇑	iP	P	01 41 17.5	+0.6
CONA	Conrad Observa	80.58	327	i P	P	01 41 18.9	+0.6
CONA				i P	P	01 41 19.1	+0.8
	comp=Z,1.6nm,0.8s						
KHC	Kasperske Hory	80.58	329	eP	P	01 41 18.8	+0.5
KHC	Kasperske Hory	80.58	329	eP	P	01 41 18.8	+0.5
KHC	Kasperske Hory	80.58	329	eP	P	01 41 18.3	+0.1
	comp=Z,3.2nm,1.1s						
GERES	GERESS Array B	80.75	328	P	P	01 41 19.2	0.0
	comp=Z,1.3nm,0.6s,baz=31,slow=6.2,SNR=13						
GERES				LR	LR	02 20 15.1	
	comp=Z,151nm,19.4s,baz=358,slow=38						
GRFO	Grafenberg	81.06	330	eP	P	01 41 21.4	+0.7
GRFO				pmax	pmax		
	comp=Z,16nm,1.2s						
GRFO	Grafenberg	81.06	330	eP	P	01 41 21.4	+0.7
	comp=Z,16nm,1.2s						
VTS	Vitosha	81.18	319⇑	iP	P	01 41 23.2	+1.5
MOA	Molln	81.31	327	i P	P	01 41 23.3	+1.2
SOKA	Soboth	81.91	326	i P	P	01 41 25.9	+0.5
	comp=Z,16nm,1.3s						
SOKA				i PcP	P	01 41 26.3	+0.9
	comp=Z,16nm,1.4s						
KBA	Koelnbreinsper	82.30	327	i PcP	P	01 41 28.3	+0.7
	comp=Z,8.8nm,0.9s						
ANMO	Albuquerque	82.48	50	i P	P	01 41 30.8	+2.0
ANMO				pmax	pmax		
	comp=Z,8.0nm,2.4s						
SCHQ	Schefferville	82.65	16	P	P	01 41 29.2	+0.1
	comp=Z,6.6nm,1.1s,baz=96,slow=18,SNR=2.7						
WATA	Walderalm	82.82	329	i PcP	P	01 41 31.3	+1.0
RETA	Reutte	83.02	329	i PcP	PcP	01 41 31.8	-4.0
	comp=Z,12nm,1.2s						
RETA				i PcP	P	01 41 32.3	+1.1
	comp=Z,12nm,1.1s						
BFO	Black Forest	83.27	331	i P	P	01 41 33.8	+1.4
FETA	Feichten	83.41	329	i PcP	P	01 41 33.5	+0.2
	comp=Z,7.0nm,1.0s						
DAVA	Damuels	83.53	330	i P	P	01 41 33.0	-0.9
	comp=Z,11nm,1.1s						
DAVOX	Davos/Dischmat	83.94	329	P	P	01 41 36.8	+0.7
	comp=Z,6.6nm,1.0s						
PPT	Papeete	85.34	117	LR	LR	02 10 43.0	
	comp=Z,60nm,21.8s,baz=4.5,slow=29						
PPT2	Papeete2	85.36	117	eLR	LR	02 08 41.4	
	comp=Z,198nm,22.8s						
TAOE	Nuku Hiva Isla	86.29	105	eLR	LR	02 09 00.6	
	comp=Z,196nm,32.0s						
MEH	Mehetia	86.59	116	eT	T	03 17 22.7	
	comp=Z,56nm,0.2s						
TXAR	Lajitas Array	88.08	53	P	P	01 41 57.7	+1.0
	comp=Z,0.3nm,0.6s,baz=287,slow=2.2,SNR=4.2						
TBI	Tubuai	89.42	121	eLR	LR	02 10 40.0	
	comp=Z,146nm,23.8s						
H06E1	SOCORRO T-PHAS	90.57	65	T	T	03 23 06.8	
	SNR=5.7						
ESDC	Sonseca Array	95.16	334	P	P	01 42 27.7	-1.6
	comp=Z,0.1nm,0.3s,baz=21,slow=4.3,SNR=3.7						
ESDC				LR	LR	02 30 32.4	
	comp=Z,76nm,18.1s,baz=20,slow=39						
RKT	Rikitea	99.25	112	eLR	LR	02 15 12.1	
	comp=Z,176nm,30.0s						
SNAA	Sanae	143.43	198	PKP	PKPab	01 48 36.0	+0.7
VNA2	Neumayer--Watz	145.00	197	PKP	PKPbc	01 48 40.2	-1.0
	baz=99,slow=2.3						
VNA3	Neumayer Olymp	145.25	196	PKP	PKPbc	01 48 37.1	-4.9
VNA1	Neumayer--Stat	145.40	197	PKP	PKPab	01 48 42.9	+0.3
SIV	San Ignacio	148.92	47	PKPbc	PKPbc	01 48 54.1	+0.1
	comp=Z,2.8nm,0.6s,baz=278,slow=2.4,SNR=4.6						

*IDC **05** 01:37:40.0±1.6, 1°.73N×102°.43W, h0km, mb4.0/8, mb1 4.2/9, mb1mx3.9/36, mbtmp3.9/9, ML3.4/1, MS4.0/14, Ms1 4.0/14, ms1mx3.8/25, Error ellipse: s-maj=58.3km s-min=17.9km az=51.0*

*NEIC **05** 01:37:41.2±1.1, 1°.67N×102°.43W, h10km, mb4.6/2, Error ellipse: s-maj=32.0km s-min=13.3km az=51.0*

ISC 05 01:37:41.8±1.5**, 1°.9N**±0°.2×**102°.3W**±0°.3**, h10**km**, n27, σ1ˢ35**/13**, mb4.1**/11**, MS3.9**/12**, Galapagos Triple Junction region**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
CMIG	Matias Romero	16.79	25	Pn	P	01 41 40.7	+1.3
	0.1nm,0.3s,baz=253,slow=10,SNR=4.8						
CMIG				LR	LR	01 46 28.6	
	comp=Z,1µm,19.0s,baz=192,slow=31						
JTS	JuntasAbangare	19.13	63	LR	LR	01 47 11.5	
	comp=Z,406nm,18.8s,baz=244,slow=30						
LPIG	La Paz	23.45	341	LR	LR	01 49 15.1	
	comp=Z,61nm,18.2s,baz=11,slow=30						
OTAV	Otavalo	23.86	94	eP	P	01 42 56.3	+0.1
	28nm,1.3s						
ATAH	Atahualpa	25.44	111	P	P	01 43 13.2	+2.7
	10nm,1.0s,baz=281,slow=10,SNR=6.8						
ATAH				LR	LR	01 50 38.9	
	comp=Z,658nm,20.7s,baz=287,slow=30						
TXAR	Lajitas Array	27.36	357	P	P	01 43 28.0	+0.7
	1.6nm,0.9s,baz=173,slow=11,SNR=6.0						
ROSC	El Rosal	28.05	83	LR	LR	01 52 35.7	
	comp=Z,234nm,19.8s,baz=254,slow=32						
LPAZ	La Paz	38.23	119	P	P	01 45 02.8	-0.3
	3.0nm,0.8s,baz=295,slow=7.9,SNR=8.6						
LPAZ				LR	LR	01 58 30.2	
	comp=Z,446nm,21.6s,baz=316,slow=33						
TAOE	Nuku Hiva Isla	39.23	254	eLR	LR	01 55 45.8	
	448nm,25.7s						
NVAR	Mina Array Bea	39.25	340	P	P	01 45 12.1	+1.2
	0.2nm,0.2s,baz=163,slow=11,SNR=4.1						
NVAR				LR	LR	01 57 15.9	
	comp=Z,137nm,19.5s,baz=224,slow=30						
RKT	Rikitea	40.39	230	eLQ	LQ	01 54 51.5	
	637nm,30.5s						
RKT	Rikitea	40.39	230	eT	T	02 28 15.1	
	1.8nm,0.3s						
SAML	Samuel	40.40	106	eP	P	01 45 19.7	-0.8
	10nm,1.0s						
PDAR	Pinedale Array	41.25	352	P	P	01 45 27.6	+0.2
	2.2nm,0.9s,baz=161,slow=6.9,SNR=15						
PDAR				LR	LR	01 59 51.1	
	comp=Z,118nm,21.8s,baz=179,slow=32						
ULM	Lac du Bonnet	48.52	5	P	P	01 46 22.7	-2.2
	1.2nm,0.5s,baz=335,slow=0.9,SNR=3.7						
ULM				LR	LR	02 04 49.4	
	comp=Z,156nm,18.8s,baz=248,slow=34						
TVO	Taravao	50.22	245	eT	T	02 40 30.6	
	0.7nm,0.2s						
PPT2	Papeete2	50.45	245	eLQ	LQ	01 59 02.5	
	454nm,26.8s						
PPT2				eLR	LR	02 01 04.3	
	209nm,27.0s						
BDFB	Brasilia	56.36	110	P	P	01 47 22.8	-1.0
	3.4nm,0.8s,baz=273,slow=7.6,SNR=4.6						
BDFB				LR	LR	02 10 03.7	
	comp=Z,336nm,19.9s,baz=230,slow=34						
SCHQ	Schefferville	60.17	23	LR	LR	02 14 04.4	
	comp=Z,158nm,19.2s,baz=323,slow=36						
YKA	Yellowknife Ar	61.20	353	P	P	01 47 56.5	0.0
	0.6nm,1.1s,baz=164,slow=6.6,SNR=5.5						
ILAR	Eielson Array	70.49	341	P	P	01 48 56.0	-0.4
	0.8nm,0.9s,baz=160,slow=5.7,SNR=7.3						
ILAR				LR	LR	02 20 09.4	
	comp=Z,119nm,18.2s,baz=170,slow=36						
H11S2	WAKE ISLAND Hy	90.40	288	T	T	03 30 49.6	
	baz=87,slow=75,SNR=9.3						
H11S1	WAKE ISLAND Hy	90.40	288	T	T	03 30 52.6	
	baz=87,slow=75,SNR=10						
H11S3	WAKE ISLAND Hy	90.41	288	T	T	03 30 53.4	
	baz=87,slow=75,SNR=10						
PETK	Petropavlovsk-	94.55	323	LR	LR	02 24 50.2	
	comp=Z,38nm,21.1s,baz=67,slow=30						
NOA	NORSAR Array B	99.54	27	LR	LR	02 34 04.3	
	comp=Z,36nm,21.7s,baz=335,slow=34						
CMAR	Chiang Mai Arr	150.97	315	PKPbc	PKPbc	01 57 36.8	+0.8
	1.1nm,0.3s,baz=312,slow=1.3,SNR=5.0						

CASC 05 01:47:32.3±2.3**, 12°.16N**×**87°.78W, h35**km±999km**, MD3.5, ML3.2, Near coast of Nicaragua**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
CSGN	Cosiguina Volc	0.84	15	eP	Pn	01 47 48.5	+0.7
CSGN				eS	Sn	01 48 00.8	+1.8
CRIN	San Cristobal	0.89	53	AML	AML	01 48 09.6	
	comp=N,586nm,0.4s						
CNGN	Cerro Negro	1.11	72	eP	Pn	01 47 52.1	+0.7
COPN	Copaltepe	1.16	89	eP	Pn	01 47 50.8	-1.2
COPN				eS	Sn	01 48 06.6	-0.1
PACA	Pacayal	1.41	338	eP	Pn	01 47 55.7	+0.1
PACA				eS	Sn	01 48 13.1	+0.1
TECA	Tecapa	1.50	332	eP	Pn	01 47 57.6	+0.7
LFRS	El Faro	1.92	319	eP	Pn	01 48 02.9	+0.2
LFRS				eS	Sn	01 48 26.0	+0.4

*ISCJB **05** 01:55:08.6±1.0, 36°.18N±0°.04×141°.94E±0°.08, h10km, mb3.5/3, Error ellipse: s-maj=9.4km s-min=5.9km az=176.8*

*JMA **05** 01:55:09.6±0.2, 36°.19N×141°.99E, h61km, M3.3*

*IDC **05** 01:55:12.6±11.0, 36°.69N×141°.72E, h0km, mb3.7/3, mb1 3.7/4, mb1mx3.4/34, mbtmp3.6/4, ML3.5/1, Error ellipse: s-maj=225.2km s-min=46.1km az=153.0*

ISC 05 01:55:09.9±1.5**, 36°.20N**±0°.05×**141°.91E**±0°.09**, h10**km**, n15, σ1ˢ07**/23**, mb3.6**/3**, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
CHOJ	Chosi	0.99	240	P	Pg	01 55 28.5	-0.3
CHOJ				S	Sb	01 55 43.5	+1.4
JHO	Hitachi	1.16	291	P	Pn	01 55 30.6	-1.5
ONAJ	Iwakimizuishiy	1.27	316	P	Pn	01 55 32.2	-1.5
ONAJ				S	Sb	01 55 50.6	+0.2
JFK	Kawauchi	1.43	325	P	Pn	01 55 34.8	-1.2
BSO1	Boso 1	1.72	207	P	Pn	01 55 38.2	-1.1
BSO1				S	Sn	01 56 00.9	-0.2
BSO3	Boso 3	1.80	220	P	Pn	01 55 39.9	-0.8
JFT	Otama	1.82	317	P	Pn	01 55 41.0	-0.3
JFT				S	Sn	01 56 05.0	+0.5
JMM	Marumori	1.89	332	P	Pn	01 55 41.6	-0.6
JAG	Ashikaga	2.00	277	P	Pn	01 55 42.8	-0.9
JAG				S	Sn	01 56 07.7	-1.1
JRY	Ryogami san	2.44	267	P	Pn	01 55 49.0	-0.8
JRY				S	Sn	01 56 19.2	-0.6
MJAR	Matsushiro Arr	3.01	278	Pn	Pn	01 55 58.2	+0.7
	7.4nm,0.3s,baz=109,slow=8.6,SNR=53						
MJAR				Sn	Sn	01 56 34.8	+1.1
	1.9nm,0.3s,baz=38,slow=31,SNR=4.2						
MAT	Matsushiro	3.01	278	P	Pn	01 55 57.8	+0.2
MAT				S	Sn	01 56 31.5	-2.2
SONM	Songino Array	28.59	305	P	P	02 01 06.3	+0.1
	0.4nm,0.5s,baz=94,slow=8.7,SNR=3.6						
ZALV	Zalesovo Beam	42.77	313	P	P	02 03 07.8	+0.4
	0.4nm,0.3s,baz=93,slow=5.8,SNR=2.7						
MKAR	Makanchi Array	44.91	303	P	P	02 03 26.1	+1.4
	0.6nm,0.6s,baz=88,slow=11,SNR=8.7						

CASC 05 01:58:02.5±3.4**, 10°.38N**×**86°.42W, h35**km±999km**, MD4.0, 1D, Off coast of Costa Rica**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
JCR	Jicaral	1.39	112	eP	Pn	01 58 23.8	-1.7
JCR				eS	Sn	01 58 40.7	-2.0
COPN	Copaltepe	1.79	355⇓	eP	Pn	01 58 30.0	-1.0
COPN				eS	Sn	01 58 51.3	-1.2
CGA2	Cerro Gallo 2	1.96	101	eP	Pn	01 58 34.2	+0.9
CGA2				eS	Sn	01 58 58.1	+1.4
URSC	Urasca	2.66	102	eP	Pn	01 58 45.3	+2.3
URSC				eS	Sn	01 59 15.9	+1.8
BUS	Buena Vista	2.75	107	eP	Pn	01 58 44.7	+0.2
BUS				eS	Sn	01 59 17.3	+0.6
PACA	Pacayal	3.59	329	eP	Pn	01 58 57.6	+1.8
PACA				eS	Sn	01 59 37.5	+0.5
TGUH	Tegucigalpa,Un	3.75	347	eP	Pn	01 58 59.0	+1.2
LFRS	El Faro	4.13	322	eP	Pn	01 59 04.5	+1.3
LFRS				eS	Sn	01 59 51.5	+1.2

*CSEM **05** 02:05:48.9±0.1, 37°.86N×27°.30E, h5km, MD2.7, Error ellipse: s-maj=3.3km s-min=2.2km az=68.0*

*DDA **05** 02:05:48.3, 37°.89N×27°.36E, h5km, Md2.7*

*ISK **05** 02:05:48.4, 37°.88N×27°.33E, h4km, MD2.5*

ISC 05 02:05:49.2±1.0**, 37°.86N**±0°.02×**27°.31E**±0°.03**, h6**km±10km**, n24, σ0ˢ42**/38**, Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
GCAM	G?zelcaml?	0.17	201	i P	Pg	02 05 52.3	-0.3
GCAM				i S	Sg	02 05 55.2	+0.3
GCAM	G?zelcaml?	0.17	201	P	Pg	02 05 52.3	-0.3
GCAM				S	Sg	02 05 55.2	+0.3
AYDB	Zeytinkoy-Aydi	0.47	79	ePG	Pg	02 05 58.0	-0.2
AYDB				eSG	Sg	02 06 04.8	+0.4
AYDB	Zeytinkoy-Aydi	0.47	79	ePg	Pg	02 05 58.0	-0.2
AYDB				eSg	Sg	02 06 04.8	+0.4
AYDN	Tasoluk	0.49	114	i P	Pg	02 05 58.7	0.0
AYDN				i S	Sg	02 06 05.2	+0.1
AYDN	Tasoluk	0.49	114	P	Pg	02 05 58.7	0.0
AYDN				S	Sg	02 06 05.2	+0.1
IZM	Izmir	0.54	356	ePG	Pg	02 05 59.0	-0.6
IZM				eSG	Sg	02 06 07.2	+0.6
IZM	Izmir	0.54	356	ePg	Pg	02 05 59.0	-0.6
IZM				eSg	Sg	02 06 07.2	+0.6
BLCB	Balcova	0.57	338	ePG	Pg	02 05 59.6	-0.5
BLCB				eSG	Sg	02 06 08.0	+0.5
BLCB	Balcova	0.57	338	ePg	Pg	02 05 59.6	-0.5
BLCB				eSg	Sg	02 06 08.0	+0.5
BODT	Bodrum	0.80	180	ePG	Pb	02 06 05.0	-0.4
BODT	Bodrum	0.80	180	ePg	Pb	02 06 05.0	-0.4
BDRM	Kayabasi	0.80	172	i P	Pg	02 06 04.0	-0.5
BDRM				i S	Sb	02 06 17.3	+0.8
BDRM	Kayabasi	0.80	172	P	Pg	02 06 04.0	-0.5
YER	Yerkesik	1.06	133	ePG	Pg	02 06 09.1	-0.4
YER	Yerkesik	1.06	133	ePg	Pg	02 06 09.1	-0.4
CHOS	Chios island	1.12	298	ePN	Pb	02 06 10.9	-0.1
CHOS	Chios island	1.12	298	ePn	Pb	02 06 10.9	-0.1
DKL	Dikili	1.25	345	ePN	Pb	02 06 13.0	-0.1
DKL	Dikili	1.25	345	ePn	Pb	02 06 13.0	-0.1
DEMI	Demirci	1.62	43	i P	Pb	02 06 19.1	-0.4
DEMI				i S	Sn	02 06 39.2	-0.2
DEMI	Demirci	1.62	43	P	Pb	02 06 19.1	-0.4
DEMI				S	Sn	02 06 39.2	-0.2
DURS	Dursunbey	1.96	27	i P	Pn	02 06 23.4	+0.4
DURS				i S	Sg	02 06 51.8	-0.4
DURS	Dursunbey	1.96	27	P	Pn	02 06 23.4	+0.4

*ISCJB **05** 02:11:16.5±2.4, 34°.32S±0°.04×71°.9W±0°.1, h6km±14km, Error ellipse: s-maj=17.4km s-min=4.7km az=13.8*

*GUC **05** 02:11:17.1±0.6, 34°.32S×71°.89W, h22km±6km, ML3.6*

ISC 05 02:11:15.3±2.8**, 34°.34S**±0°.06×**72°.0W**±0°.1**, h11**km±15km**, n17, σ1ˢ44**/21**, 1D, Near coast of central Chile**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
NICH	Los Niches	0.92	136	i P	Pg	02 11 33.1	+0.1
NICH				i S	Sg	02 11 45.1	+0.1
NICH				AML	AML	02 11 50.2	
	comp=E,4µm,0.7s						
TALC	Talca	1.10	164	i P	Pn	02 11 36.5	0.0
TALC				i S	Sb	02 11 51.4	+0.8
TALC				AML	AML	02 11 58.8	
	comp=E,2µm,0.4s						
CLCH	Cerro Calan	1.54	53	i P	Pn	02 11 42.7	-0.1
CLCH				i S	Sn	02 12 01.8	-1.1
CLCH				AML	AML	02 12 05.8	
	comp=N,2µm,0.5s						
ROCH	El Roble	1.60	32	i P	Pn	02 11 42.9	-0.8
ROCH				i S	Sn	02 12 03.8	-0.7
PEL	Peldehue	1.63	43	i P	Pn	02 11 43.9	0.0
PEL				i S	Sn	02 12 03.8	-1.1
CCHI	Chillan	2.26	181	i P	Pb	02 11 55.3	-0.7
CCHI				i S	Sb	02 12 24.3	+0.4
CCHI				AML	AML	02 12 31.6	
	comp=E,683nm,0.5s						
AAGR	Agrelo	2.93	66	eP	Pb	02 12 06.2	-1.5
ARCO	CERRO ARCO	2.97	61	eP	Pb	02 12 07.2	-1.1
ARCO				IAML		02 12 59.8	
	comp=Z,70nm,0.5s						
AUSP	Uspallata	3.05	47⇓	eP	Pb	02 12 08.9	-0.8
AUSP				eS	Sb	02 12 48.1	+1.1
ASAL	Salagasta	3.17	57	eP	Pb	02 12 09.9	-1.8
RTLS	Leoncito	3.41	43	eP	Pn	02 12 11.7	+3.1
RTCV	Cerro Valdivia	3.82	51	eP	Pn	02 12 17.6	+3.5
RTLL	Cerro Villicun	4.23	46	eP	Pn	02 12 21.3	+1.6
AMOG	MOGNA	4.51	42	eP	Pn	02 12 25.2	+1.7
AMAR	Marayes	4.88	55	eP	Pn	02 12 31.3	+2.7
AVFE	Valle Fertil	5.32	48	IAML		02 14 07.2	
	comp=Z,18nm,0.5s						
VCA	Vinchina	6.46	31	IAML		02 14 29.3	
	comp=Z,28nm,0.5s						

*NIED **05** 02:17:00, 37°.40N×144°.00E, h5km, Mw3.9 Best double couple: $M_0$8.86000×10^{14} NP1:ϕ_s70.00000°, δ26.00000°, λ-94.00000°. NP2:ϕ_s255.00000°, δ64.00000°, λ-88.00000°.*

*IDC **05** 02:17:17.5±0.8, 37°.25N×144°.27E, h0km, mb3.7/10, mb1 4.0/11, mb1mx3.8/33, mbtmp3.7/11, ML3.5/1, MS3.1/3, Ms1 3.1/3, ms1mx2.7/37, Error ellipse: s-maj=25.8km s-min=17.4km az=125.0*

*ISCJB **05** 02:17:21.0±0.6, 37°.34N±0°.05×144°.09E±0°.04, h33km, mb3.7/10, MS3.3/1, Error ellipse: s-maj=7.4km s-min=5.0km az=178.9*

*JMA **05** 02:17:22.3±0.3, 37°.36N×144°.02E, h55km, M3.8*

ISC 05 02:17:23.0±0.8**, 37°.35N**±0°.06×**144°.11E**±0°.07**, h35**km**, n31, σ1ˢ28**/36**, mb3.8**/10**, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
JIO	Ouri	2.44	298	P	Pn	02 18 00.2	-0.1
JIO				eS	Sn	02 18 27.0	-2.0
JFK	Kawauchi	2.58	271	P	Pn	02 18 01.6	-0.6
ONAJ	Iwakimizuishiy	2.65	266	P	Pn	02 18 02.6	-0.7
ONAJ				eS	Sn	02 18 32.7	-1.5
JMM	Marumori	2.68	282	P	Pn	02 18 02.6	-1.0
JMM				eS	Sn	02 18 33.8	-1.0
JMK	Ichinoseki	2.78	306	P	Pn	02 18 04.9	-0.1
JMK				S	Sn	02 18 36.8	-0.5
JOU	Okura	2.91	291	P	Pn	02 18 07.0	+0.3
JOU				eS	Sn	02 18 41.3	+0.9
JFT	Otama	3.00	274	P	Pn	02 18 08.3	+0.2
JFT				eS	Sn	02 18 41.8	-1.1
JOM	Ohasama	3.06	315	P	Pn	02 18 08.6	-0.2
JOM				eS	Sn	02 18 42.6	-1.6
JYK	Kaneyama	3.34	299	P	Pn	02 18 12.7	0.0
JANG	Nango	3.63	327	P	Pn	02 18 15.9	-0.8
JANG				eS	Sn	02 18 55.8	-2.5
JAG	Ashikaga	3.84	257	P	Pn	02 18 18.6	-1.0
JAG				eS	Sn	02 19 01.8	-1.7
JRY	Ryogami san	4.39	254	P	Pn	02 18 26.6	-0.6
JRY				eS	Sn	02 19 14.2	-2.9
MJAR	Matsushiro Arr	4.79	262	Pn	Pn	02 18 33.5	+0.8
	2.0nm,0.3s,baz=84,slow=15,SNR=10						
MJAR				Sn	Sn	02 19 30.2	+3.3
	0.5nm,0.3s,baz=94,slow=27,SNR=5.4						
MAT	Matsushiro	4.79	262	P	Pn	02 18 33.8	+1.1
JHJ	Hachijo jima 2	5.51	221	LR	LR	02 21 20.7	
	comp=Z,52nm,19.7s,baz=320,slow=44						
USRK	Ussuriysk Ar.	11.45	310	LR	LR	02 24 59.9	
	comp=Z,116nm,18.8s,baz=64,slow=40						
KLR	Kul'dur	14.87	327	Pn	P	02 20 57.5	+1.6
	0.1nm,0.3s,baz=126,slow=10,SNR=5.1						
SEY	Seymchan	26.11	9	P	P	02 22 54.3	+1.1
	1.3nm,0.3s,baz=190,slow=7.9,SNR=12						
YAK	Yakutsk	26.28	345	LR	LR	02 33 58.2	
	comp=Z,80nm,19.4s,baz=96,slow=38						
H11N2	WAKE ISLAND Hy	26.52	125	T	T	02 50 17.7	
	baz=317,slow=76,SNR=23						
H11N1	WAKE ISLAND Hy	26.53	125	T	T	02 49 56.8	
	baz=317,slow=76,SNR=9.1						
H11N3	WAKE ISLAND Hy	26.54	125	T	T	02 49 49.8	
	baz=317,slow=76,SNR=15						
MKAR	Makanchi Array	45.77	302	P	P	02 25 41.8	+0.8
	0.4nm,0.7s,baz=95,slow=7.3,SNR=3.5						
ILAR	Eielson Array	48.07	33	P	P	02 25 58.3	-0.4
	1.5nm,0.8s,baz=264,slow=6.5,SNR=14						
INK	Inuvik	53.12	27	P	P	02 26 37.1	+0.5
	1.1nm,0.7s,baz=271,slow=7.5,SNR=3.6						
WRA	Warramunga Arr	57.73	191	P	P	02 27 09.1	-1.2
	1.0nm,0.7s,baz=11,slow=7.4,SNR=4.4						
ASAR	Alice Springs	61.45	191	P	P	02 27 35.7	-0.2
	0.3nm,0.7s,baz=26,slow=8.7,SNR=2.9						
YKA	Yellowknife Ar	62.44	31	P	P	02 27 41.1	-1.0
	0.2nm,0.8s,baz=294,slow=6.3,SNR=3.6						
NVAR	Mina Array Bea	73.06	54	P	P	02 28 50.3	+0.5
	1.0nm,0.8s,baz=289,slow=6.6,SNR=8.0						
AKASG	Malin Array Be	75.34	323	P	P	02 29 03.0	+0.5
	0.2nm,0.3s,baz=45,slow=5.5,SNR=3.3						
TXAR	Lajitas Array	88.21	54	P	P	02 30 10.3	-0.5
	0.4nm,0.9s,baz=319,slow=2.6,SNR=2.8						

*NIED **05** 02:20:00, 37°.10N×142°.70E, h11km, Mw4.0 Best double couple: $M_0$1.01000×10^{15} NP1:ϕ_s10.00000°, δ45.00000°, λ-77.00000°. NP2:ϕ_s172.00000°, δ46.00000°, λ-103.00000°.*

*IDC **05** 02:20:04.0±0.7, 37°.01N×142°.71E, h0km, mb3.8/14, mb1 4.1/17, mb1mx3.9/35, mbtmp3.9/17, ML3.8/2, MS3.1/2, Ms1 3.1/2, ms1mx2.6/36, Error ellipse: s-maj=20.5km s-min=16.3km az=142.0*

*JMA **05** 02:20:05.1±0.3, 37°.06N×142°.66E, h24km±5km, M4.0*
*NEIC **05** 02:20:07.5±3.5, 37°.08N×142°.69E, h21km±24km, mb4.3/1, Error ellipse: s-maj=15.2km s-min=8.9km az=128.0*
ISC 05 02:20:05.0±3.0**, 37°.07N**±0°.04×**142°.59E**±0°.06**, h6**km±18km**, n42,** σ**1.s11**/46**, mb3.9**/16**, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**1.40**	**283**	P	**Pn**	**02 20 30.5**	**-0.7**
JFK				S	**Sg**	**02 20 48.8**	**-1.4**
ONAJ	**Iwakimizuishiy**	**1.44**	**272**	P	**Pn**	**02 20 30.9**	**-0.8**
JMM	**Marumori**	**1.64**	**300**	P	**Pn**	**02 20 33.9**	**-0.5**
JMM				S	**Sn**	**02 20 54.8**	**-1.1**
JIO	**Ouri**	**1.70**	**325**	P	**Pn**	**02 20 34.8**	**-0.5**
JIO				*e*S	**Sn**	**02 20 56.7**	**-0.6**
JFT	**Otama**	**1.85**	**285**	P	**Pn**	**02 20 37.6**	**+0.2**
JFT				S	**Sn**	**02 21 01.3**	**+0.1**
JOU	**Okura**	**2.00**	**311**	P	**Pn**	**02 20 39.9**	**+0.4**
JOU				*e*S	**Sn**	**02 21 05.5**	**+0.6**
JMK	**Ichinoseki**	**2.17**	**330**	P	**Pn**	**02 20 41.6**	**-0.1**
JMK				S	**Sn**	**02 21 08.3**	**-0.7**
JYK	**Kaneyama**	**2.56**	**317**	P	**Pn**	**02 20 47.3**	**+0.3**
JYK				*e*S	**Sn**	**02 21 19.4**	**+0.9**
JAG	**Ashikaga**	**2.60**	**257**	P	**Pn**	**02 20 47.8**	**+0.1**
JAG				*e*S	**Sn**	**02 21 19.0**	**-0.6**
JOM	**Ohasama**	**2.61**	**337**	P	**Pn**	**02 20 47.7**	**-0.1**
JOM				*e*S	**Sn**	**02 21 19.1**	**-0.7**
BSO1	**Boso 1**	**2.74**	**209**	P	**Pn**	**02 20 49.4**	**+0.3**
BSO1				*e*S	**Sn**	**02 21 22.5**	**+0.2**
MJAR	**Matsushiro Arr**	**3.56**	**263**	Pn	**Pn**	**02 21 02.4**	**+1.6**
	26nm,0.3s,baz=90,slow=15,SNR=51						
MAJO	**Matsushiro**	**3.56**	**263**	*e*Pn	**Pn**	**02 21 02.4**	**+1.5**
MAT	**Matsushiro**	**3.56**	**263**	P	**Pn**	**02 21 02.3**	**+1.4**
MAT				S	**Sn**	**02 21 40.9**	**-2.4**
JHJ	**Hachijo jima 2**	**4.56**	**211**	Sn	**Sn**	**02 22 05.8**	**-2.2**
	34nm,0.3s,baz=119,slow=23,SNR=5.6						
ERM	**Erimo**	**4.96**	**5**	*e*Pn	**Pn**	**02 21 19.0**	**-1.1**
ERM				*e*S	**Sn**	**02 22 15.6**	**-2.1**
JNU	**Nakatsue**	**10.37**	**251**	Pn	**Pn**	**02 22 36.5**	**+2.0**
	0.4nm,0.3s,baz=88,slow=11,SNR=3.8						
JNU				LR	LR	02 27 02.3	
	comp=Z,104nm,18.9s,baz=120,slow=40						
USRK	**Ussuriysk Ar.**	**10.75**	**315**	Pn	Pn	02 22 44.0	+4.5
	0.3nm,0.3s,baz=147,slow=40,SNR=3.4						
KSRS	**Korea Array**	**11.70**	**276**	Pn	Pn	02 22 55.9	+3.4
	baz=92,slow=13,SNR=8.0						
KSRS				LR	LR	02 27 25.1	
	comp=Z,85nm,18.0s,baz=62,slow=37						
KSAR	**Wonju Array Be**	**11.73**	**276**	Pn	**Pn**	**02 22 55.9**	**+3.0**
SEY	**Seymchan**	**26.59**	**10**	P	**P**	**02 25 44.1**	**+0.4**
	0.7nm,0.3s,baz=5.5,slow=23,SNR=4.3						
H11N2	**WAKE ISLAND Hy**	**27.36**	**122**	T	T	02 54 45.3	
	baz=314,slow=75,SNR=20						
H11N1	**WAKE ISLAND Hy**	**27.37**	**123**	T	T	02 54 42.6	
	baz=314,slow=75,SNR=17						
H11N3	**WAKE ISLAND Hy**	**27.38**	**122**	T	T	02 54 43.4	
	baz=314,slow=75,SNR=19						
H11S1	**WAKE ISLAND Hy**	**28.09**	**125**	T	T	02 55 39.9	
	baz=316,slow=76,SNR=13						
H11S3	**WAKE ISLAND Hy**	**28.09**	**125**	T	T	02 55 38.2	
	baz=316,slow=76,SNR=11						
H11S2	**WAKE ISLAND Hy**	**28.11**	**125**	T	T	02 55 39.7	
	baz=316,slow=76,SNR=11						
SONM	**Songino Array**	**28.55**	**304**	P	**P**	**02 26 02.8**	**+1.1**
	1.7nm,0.8s,baz=97,slow=8.5,SNR=7.4						
ZALV	**Zalesovo Beam**	**42.59**	**312**	P	**P**	**02 28 02.1**	**+0.5**
	0.6nm,0.4s,baz=108,slow=9.5,SNR=3.9						
MKAR	**Makanchi Array**	**44.90**	**302**	P	**P**	**02 28 21.1**	**+0.7**
	1.5nm,0.7s,baz=90,slow=9.6,SNR=9.2						
KURK	**Kurchatov**	**46.65**	**308**	*e*P	**P**	**02 28 33.3**	**-0.8**
	13nm,0.8s						
ILAR	**Eielson Array**	**48.96**	**32**	P	**P**	**02 28 51.6**	**-0.2**
	1.4nm,0.7s,baz=264,slow=6.7,SNR=12						
INK	**Inuvik**	**53.93**	**27**	P	**P**	**02 29 28.9**	**0.0**
	0.6nm,0.5s,baz=287,slow=4.4,SNR=4.1						
WRA	**Warramunga Arr**	**57.23**	**189**	P	**P**	**02 29 52.3**	**-1.0**
	0.8nm,0.3s,baz=11,slow=7.4,SNR=4.6						
ASAR	**Alice Springs**	**60.96**	**189**	P	**P**	**02 30 18.4**	**-0.7**
	0.8nm,0.8s,baz=12,slow=5.4,SNR=7.1						
RES	**Resolute Bay**	**62.33**	**15**	*e*P	**P**	**02 30 27.3**	**-0.4**
	1.1nm,0.4s						
YKA	**Yellowknife Ar**	**63.30**	**30**	P	**P**	**02 30 34.0**	**-0.4**
	0.2nm,0.8s,baz=270,slow=7.1,SNR=3.9						
FINES	**FINESS Array B**	**69.22**	**333**	P	**P**	**02 31 11.9**	**-0.5**
	2.4nm,0.9s,baz=264,slow=35,SNR=4.7						
NVAR	**Mina Array Bea**	**74.21**	**54**	P	**P**	**02 31 44.6**	**+1.5**
	0.1nm,0.5s,baz=271,slow=6.8,SNR=4.6						
NOA	**NORSAR Array B**	**74.52**	**338**	P	**P**	**02 31 43.5**	**-0.7**
	1.6nm,0.9s,baz=31,slow=4.6,SNR=3.4						
PDAR	**Pinedale Array**	**76.97**	**46**	P	**P**	**02 31 58.8**	**0.0**
	0.5nm,0.6s,baz=356,slow=4.5,SNR=3.5						
TXAR	**Lajitas Array**	**89.35**	**53**	P	**P**	**02 33 02.9**	**0.0**
	0.4nm,0.7s,baz=298,slow=3.1,SNR=5.0						

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*IDC **05** 02:35:14.6±0.9, 37°.83N×144°.21E, h0km, mb3.7/6, mb1 3.9/7, mb1mx3.6/34, mbtmp3.7/7, ML3.9/1, Error ellipse: s-maj=35.3km s-min=19.7km az=110.0*
*ISCJB **05** 02:35:17.4±0.7, 38°.07N±0°.04×143°.99E±0°.05, h33km, mb3.6/6, Error ellipse: s-maj=7.0km s-min=5.2km az=139.4*
*JMA **05** 02:35:18.4±0.3, 38°.07N×143°.94E, h37km, M4.1*
ISC 05 02:35:19.8±1.0**, 38°.05N**±0°.06×**143°.98E**±0°.07**, h35**km**, n24,** σ**1.s44**/28**, mb3.5**/6**, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**2.08**	**300**	P	**Pn**	**02 35 51.9**	**-0.3**
JIO	**Ouri**	**2.11**	**282**	P	**Pn**	**02 35 52.0**	**-0.6**
JIO				*e*S	**Sn**	**02 36 16.2**	**-1.4**
JMK	**Ichinoseki**	**2.34**	**293**	P	**Pn**	**02 35 55.5**	**-0.3**
JMM	**Marumori**	**2.52**	**267**	P	**Pn**	**02 35 57.5**	**-0.8**
JMM				*e*S	**Sn**	**02 36 26.0**	**-1.9**
JFK	**Kawauchi**	**2.56**	**255**	*e*S	**Sn**	**02 36 25.5**	**-3.2**
JOU	**Okura**	**2.63**	**278**	*e*S	**Sn**	**02 36 29.4**	**-1.1**
JFT	**Otama**	**2.94**	**261**	*e*S	**Sn**	**02 36 37.4**	**-0.6**
JRG	**Rokugo**	**2.94**	**298**	*e*S	**Sn**	**02 36 39.0**	**+0.9**
JYK	**Kaneyama**	**2.97**	**288**	P	**Pn**	**02 36 05.2**	**+0.8**
JYK				*e*S	**Sn**	**02 36 39.1**	**+0.3**
JTM	**Tenmabayashi**	**3.54**	**321**	S	**Sn**	**02 36 52.3**	**-0.6**
JNBK	**Urakawa-nobuka**	**4.33**	**348**	P	**Pn**	**02 36 22.4**	**-0.7**
JNBK				*e*S	**Sn**	**02 37 11.0**	**-1.2**
JKB	**Kayabe**	**4.45**	**330**	P	**Pn**	**02 36 25.3**	**+0.6**
JKB				S	**Sn**	**02 37 12.7**	**-2.5**
JCH	**Churui**	**4.58**	**354**	P	**Pn**	**02 36 25.5**	**-1.1**
JCH				*e*S	**Sn**	**02 37 15.9**	**-2.6**
MJAR	**Matsushiro Arr**	**4.84**	**254**	Pn	**Pn**	**02 36 30.8**	**+0.6**
	4.7nm,0.3s,baz=86,slow=14,SNR=12						
MAT	**Matsushiro**	**4.84**	**254**	P	**Pn**	**02 36 30.5**	**+0.3**
MAT				*e*S	**Sn**	**02 37 24.3**	**-0.8**
SEY	**Seymchan**	**25.43**	**9**	P	**P**	**02 40 47.0**	**+3.1**
	0.5nm,0.3s,baz=252,slow=18,SNR=4.9						
H11N2	**WAKE ISLAND Hy**	**27.01**	**126**	T	T	03 08 57.2	
	baz=320,slow=74,SNR=3.6						
H11N3	**WAKE ISLAND Hy**	**27.02**	**126**	T	T	03 09 01.9	
	baz=314,slow=74,SNR=3.0						
MKAR	**Makanchi Array**	**45.31**	**302**	P	**P**	**02 43 35.3**	**+1.2**
	0.2nm,0.8s,baz=81,slow=8.7,SNR=4.2						
ILAR	**Eielson Array**	**47.54**	**33**	P	**P**	**02 43 52.2**	**+0.8**
	0.5nm,0.9s,baz=279,slow=5.7,SNR=4.3						
WRA	**Warramunga Arr**	**58.40**	**191**	P	**P**	**02 45 10.7**	**-1.1**
	4.4nm,0.7s,baz=10,slow=7.2,SNR=14						
YKA	**Yellowknife Ar**	**61.89**	**31**	P	**P**	**02 45 35.0**	**-0.3**
	0.1nm,0.6s,baz=303,slow=6.8,SNR=4.1						
ASAR	**Alice Springs**	**62.12**	**190**	P	**P**	**02 45 36.1**	**-1.2**
	0.7nm,0.6s,baz=10,slow=15,SNR=9.4						
H06E1	**SOCORRO T-PHAS**	**89.91**	**66**	T	T	04 27 17.9	
	SNR=12						

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*ISCJB **05** 02:38:17.3±1.1, 36°.42N±0°.07×140°.67E±0°.07, h57km±5km, mb3.4/3, Error ellipse: s-maj=13.1km s-min=7.2km az=140.9*
*JMA **05** 02:38:18.3±0.1, 36°.43N×140°.60E, h53km±1km, M3.1*
JMA Felt I J1.
*IDC **05** 02:38:18.7±7.2, 36°.30N×140°.67E, h67km±57km, mb3.3/3, mb1 3.3/3, mb1mx3.0/34, mbtmp3.6/3, Error ellipse: s-maj=125.6km s-min=53.6km az=10.0*
ISC 05 02:38:17.7±1.6**, 36°.41N**±0°.09×**140°.69E**±0°.09**, h52**km±8km**, n13,** σ**0.s54**/22**, mb3.3**/3**, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHO	**Hitachi**	**0.22**	**335**	P	**Pn**	**02 38 26.9**	**+0.5**
JHO				S	**Sn**	**02 38 32.7**	**+0.1**
JYT	**Yasato**	**0.44**	**245**	P	**Pn**	**02 38 28.5**	**+0.2**
JYT				S	**Sn**	**02 38 35.5**	**-0.5**
ONAJ	**Iwakimizuishiy**	**0.69**	**8**	P	**Pn**	**02 38 31.7**	**+0.2**
ONAJ				S	**Sn**	**02 38 41.2**	**-0.3**
JSB	**Shiboa**	**0.83**	**312**	P	**Pn**	**02 38 33.2**	**0.0**
JSB				S	**Sn**	**02 38 44.2**	**-0.4**
JFK	**Kawauchi**	**0.96**	**9**	P	**Pn**	**02 38 35.2**	**+0.2**
JAG	**Ashikaga**	**0.99**	**271**	P	**Pn**	**02 38 35.4**	**0.0**
JAG				S	**Sn**	**02 38 47.2**	**-1.2**
JFT	**Otama**	**1.14**	**346**	P	**Pn**	**02 38 37.9**	**+0.5**
JFT				S	**Sn**	**02 38 51.7**	**-0.2**
JKT	**Katashina**	**1.21**	**287**	P	**Pn**	**02 38 38.8**	**+0.4**
JKT				S	**Sn**	**02 38 53.5**	**-0.2**
MJAR	**Matsushiro Arr**	**2.00**	**274**	P	**Pn**	**02 38 49.8**	**+0.7**
	3.8nm,0.3s,baz=98,slow=9.1,SNR=26						
MJAR				S	**Sn**	**02 39 14.0**	**+1.1**
	6.6nm,0.3s,baz=240,slow=27,SNR=7.9						
MAT	**Matsushiro**	**2.00**	**274**	P	**Pn**	**02 38 49.6**	**+0.5**
MAT				S	**Sn**	**02 39 12.8**	**-0.2**
SONM	**Songino Array**	**27.65**	**305**	P	**P**	**02 44 00.1**	**-0.6**
	0.4nm,0.6s,baz=100,slow=7.9,SNR=3.2						
ZALV	**Zalesovo Beam**	**41.90**	**313**	P	**P**	**02 46 02.7**	**-0.1**
	1.2nm,0.6s,baz=105,slow=5.8,SNR=4.6						
MKAR	**Makanchi Array**	**43.95**	**303**	P	**P**	**02 46 19.9**	**+0.3**
	0.4nm,0.7s,baz=92,slow=10,SNR=3.6						

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*IDC **05** 02:46:28.6±10.0, 2°.70N×79°.77W, h0km, mb3.4/2, mb1 3.7/3, mb1mx3.3/27, mbtmp3.5/3, ML2.2/1, Error ellipse: s-maj=259.3km s-min=35.0km az=178.0*
*ISCJB **05** 02:46:29.7±1.2, 2°.64N±0°.07×79°.49W±0°.09, h21km, mb3.4/2, Error ellipse: s-maj=13.5km s-min=9.3km az=146.1*
*RSNC **05** 02:46:32.9±0.6, 2°.64N×79°.31W, h13km±5km, ML2.8*
ISC 05 02:46:31.0±1.3**, 2°.61N**±0°.09×**79°.4W**±0°.1**, h21**km**, n7,** σ**0.s71**/8**, 1C, South of Panama**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TUMC	**Tumaco**	**1.04**	**139**⇑	*i*P	**Pb**	**02 46 50.0**	**-0.2**
TUMC				*e*S	**Sn**	**02 47 04.2**	**0.0**
TUMC				*i*		02 47 10.6	
	comp=Z,218nm,0.3s						
GRGC	**Isla de Gorgon**	**1.30**	**73**	*e*P	**Pn**	**02 46 53.8**	**-0.1**
GRGC				*i*		02 46 54.6	
	comp=Z,62nm,0.1s						
GRGC				*e*S	**Sn**	**02 47 10.0**	**-0.7**
MALC	**Bahia Malaga**	**2.49**	**56**	*e*P	**Pn**	**02 47 11.3**	**+1.0**
MALC				*i*		02 47 12.1	
	comp=Z,27nm,0.3s						
POPC	**Popayan, Colom**	**2.73**	**91**	*e*P	**Pn**	**02 47 14.7**	**+0.8**
POPC				*i*		02 47 21.1	
	comp=Z,103nm,0.3s						
ROSC	**El Rosal**	**5.54**	**66**	Pn	Pn	02 47 56.7	+4.1
	comp=Z,1.5nm,0.3s,baz=334,slow=16,SNR=3.8						
ROSC				Sn	Sb	02 49 06.4	-7.0
	comp=Z,0.7nm,0.3s,baz=187,slow=23,SNR=4.1						
YKA	**Yellowknife Ar**	**65.22**	**343**	P	**P**	**02 57 10.0**	**-0.6**
	comp=Z,0.3nm,0.7s,baz=138,slow=5.9,SNR=8.3						
ILAR	**Eielson Array**	**78.17**	**336**	P	**P**	**02 58 28.8**	**+0.2**
	comp=Z,0.3nm,0.8s,baz=123,slow=2.5,SNR=3.2						

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*NIED **05** 02:57:00, 38°.20N×141°.70E, h59km, Mw4.3 Best double couple: M0 2.79000×10^15 NP1:φs166.00000°, δ46.00000°, λ48.00000°. NP2:φs39.00000°, δ57.00000°, λ125.00000°.*
*ISCJB **05** 02:57:13.5±0.7, 38°.19N±0°.04×141°.73E±0°.08, h64km±5km, mb3.9/19, Error ellipse: s-maj=11.4km s-min=5.8km az=18.6*
*JMA **05** 02:57:14.3±0.1, 38°.19N×141°.70E, h58km±1km, M4.1*
JMA Felt II J1.
*IDC **05** 02:57:17.9±2.4, 38°.17N×141°.60E, h90km±21km, mb3.6/19, mb1 3.8/22, mb1mx3.8/36, mbtmp3.9/22, MS3.2/11, Ms1 3.2/11, ms1mx3.0/43, Error ellipse: s-maj=17.2km s-min=13.5km az=110.0*
ISC 05 02:57:14.0±1.1**, 38°.21N**±0°.05×**141°.75E**±0°.09**, h54**km±9km**, n46,** σ**1.s06**/45**, mb4.0**/19**, MS3.4**/6**, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**0.40**	**309**	P	**Pn**	**02 57 25.0**	**+0.6**
JIO				S	**Sn**	**02 57 32.3**	**+0.4**
JMM	**Marumori**	**0.82**	**246**	P	**Pn**	**02 57 29.3**	**-0.2**
JMM				S	**Sn**	**02 57 40.6**	**-0.3**
JMK	**Ichinoseki**	**0.85**	**331**	P	**Pn**	**02 57 30.5**	**+0.6**
JMK				S	**Sn**	**02 57 42.0**	**+0.5**
JOU	**Okura**	**0.87**	**281**	P	**Pn**	**02 57 30.3**	**+0.2**
JOU				S	**Sn**	**02 57 42.1**	**+0.2**
JFK	**Kawauchi**	**1.08**	**220**	P	**Pn**	**02 57 33.2**	**+0.2**
JFK				S	**Sn**	**02 57 46.7**	**-0.4**
JYK	**Kaneyama**	**1.30**	**304**	P	**Pn**	**02 57 36.2**	**+0.3**
JYK				S	**Sn**	**02 57 53.2**	**+1.0**
JFT	**Otama**	**1.31**	**239**	P	**Pn**	**02 57 36.5**	**+0.5**
JFT				S	**Sn**	**02 57 52.5**	**0.0**
JOM	**Ohasama**	**1.31**	**345**	P	**Pn**	**02 57 37.1**	**+1.0**
JOM				S	**Sn**	**02 57 53.5**	**+0.9**
JYS	**Shirataka**	**1.32**	**271**	P	**Pn**	**02 57 36.5**	**+0.3**
JYS				S	**Sn**	**02 57 53.5**	**+0.7**
JRG	**Rokugo**	**1.47**	**324**	P	**Pn**	**02 57 39.1**	**+0.9**
MJAR	**Matsushiro Arr**	**3.27**	**241**	P	**Pn**	**02 58 04.4**	**+1.5**
	4.8nm,0.3s,baz=55,slow=11,SNR=41						
MJAR				S	Sn	02 58 46.0	+5.5
	7.0nm,0.3s,baz=83,slow=28,SNR=6.7						
MJAR				LR	LR	02 59 40.0	
	comp=Z,308nm,21.1s,baz=65,slow=45						
MAT	**Matsushiro**	**3.27**	**241**	P	**Pn**	**02 58 04.4**	**+1.6**
MAT				S	**Sn**	**02 58 45.3**	**+4.8**
JHJ	**Hachijo jima 2**	**5.32**	**198**	LR	LR	03 00 51.0	
	comp=Z,181nm,19.5s,baz=278,slow=41						
USRK	**Ussuriysk Ar.**	**9.48**	**312**	P	Pn	02 59 31.9	+4.1
	0.7nm,0.3s,baz=125,slow=14,SNR=8.0						
JNU	**Nakatsue**	**10.19**	**243**	LR	LR	03 03 51.2	
	comp=Z,170nm,20.4s,baz=113,slow=39						
KSRS	**Korea Array**	**10.96**	**270**	P	Pn	02 59 51.5	+3.4
	0.2nm,0.3s,baz=88,slow=14,SNR=7.4						
KSRS				LR	LR	03 03 38.2	
	comp=Z,87nm,21.8s,baz=80,slow=35						
KLR	**Kul'dur**	**13.16**	**330**	P	**Pn**	**03 00 16.7**	**-1.4**
	baz=206,slow=5.1,SNR=2.1						
KLR				LR	LR	03 05 16.6	
	comp=Z,76nm,20.4s,baz=148,slow=36						
MA2	**Magadan**	**22.15**	**12**	P	**P**	**03 02 06.1**	**+1.0**
	3.8nm,0.5s,baz=217,slow=10,SNR=7.0						
SEY	**Seymchan**	**25.59**	**11**	P	**P**	**03 02 39.4**	**+1.6**
	3.0nm,0.7s,baz=201,slow=7.5,SNR=11						
SONM	**Songino Array**	**27.37**	**302**	P	**P**	**03 02 54.3**	**+0.2**
	0.8nm,0.8s,baz=116,slow=10,SNR=4.6						
H11N2	**WAKE ISLAND Hy**	**28.54**	**123**	T	T	03 33 23.8	
	baz=316,slow=76,SNR=125						
H11N1	**WAKE ISLAND Hy**	**28.55**	**123**	T	T	03 33 24.4	
	baz=316,slow=76,SNR=236						
H11N3	**WAKE ISLAND Hy**	**28.56**	**123**	T	T	03 33 25.1	
	baz=316,slow=76,SNR=153						
H11S1	**WAKE ISLAND Hy**	**29.30**	**125**	T	T	03 34 21.0	
	baz=317,slow=76,SNR=99						
H11S3	**WAKE ISLAND Hy**	**29.30**	**125**	T	T	03 34 16.2	
	baz=317,slow=76,SNR=109						
H11S2	**WAKE ISLAND Hy**	**29.31**	**125**	T	T	03 34 28.5	
	baz=317,slow=76,SNR=27						
ZALV	**Zalesovo Beam**	**41.33**	**311**	P	**P**	**03 04 53.7**	**-0.5**
	2.2nm,0.5s,baz=92,slow=8.4,SNR=7.2						
MKAR	**Makanchi Array**	**43.73**	**301**	P	**P**	**03 05 13.6**	**-0.2**
	0.6nm,0.6s,baz=83,slow=9.7,SNR=7.0						
ILAR	**Eielson Array**	**48.37**	**33**	P	**P**	**03 05 50.4**	**+0.4**
	1.0nm,0.7s,baz=263,slow=5.9,SNR=17						
HNR	**Honiara**	**50.35**	**156**	LR	LR	03 22 54.8	
	comp=Z,22nm,20.7s,baz=42,slow=30						
INK	**Inuvik**	**53.23**	**28**	P	**P**	**03 06 26.7**	**+0.2**
	1.4nm,0.5s,baz=304,slow=6.2,SNR=18						
WRA	**Warramunga Arr**	**58.26**	**188**	P	**P**	**03 07 02.3**	**-0.7**
	1.8nm,0.4s,baz=5.6,slow=7.0,SNR=9.6						
ASAR	**Alice Springs**	**61.98**	**188**	P	**P**	**03 07 28.1**	**-0.4**
	0.7nm,0.5s,baz=359,slow=4.0,SNR=11						
ASAR				LR	LR	03 36 13.8	
	comp=Z,27nm,18.2s,baz=106,slow=38						
YKA	**Yellowknife Ar**	**62.66**	**31**	P	**P**	**03 07 32.6**	**0.0**
	0.3nm,0.5s,baz=299,slow=5.7,SNR=14						
ARCES	**ARCESS Array B**	**62.99**	**339**	P	**P**	**03 07 34.4**	**-0.3**
	2.1nm,0.8s,baz=53,slow=6.7,SNR=6.3						
ARCES				LR	LR	03 38 12.0	
	comp=Z,32nm,18.9s,baz=84,slow=39						
FINES	**FINESS Array B**	**67.90**	**332**	P	**P**	**03 08 05.8**	**-0.7**
	1.7nm,0.7s,baz=46,slow=8.2,SNR=5.8						
NB2	**NORSAR Subarra**	**73.21**	**337**	P	**P**	**03 08 38.3**	**-0.6**
	comp=Z,1.0nm,0.5s,baz=40,slow=6.2						
NOA	**NORSAR Array B**	**73.21**	**337**	P	**P**	**03 08 38.6**	**-0.2**
	comp=Z,1.2nm,0.5s,baz=52,slow=7.1,SNR=10						
NOA				LR	LR	03 44 42.8	
	comp=Z,16nm,19.1s,baz=95,slow=39						
AKASG	**Malin Array Be**	**73.53**	**322**	P	**P**	**03 08 40.0**	**-0.9**
	comp=Z,1.2nm,0.5s,baz=45,slow=5.6,SNR=9.6						
AKASG				LR	LR	03 44 34.3	
	comp=Z,22nm,18.3s,baz=320,slow=39						
NVAR	**Mina Array Bea**	**74.08**	**54**	P	**P**	**03 08 45.7**	**+1.1**
	comp=Z,0.3nm,0.6s,baz=297,slow=6.5,SNR=3.7						
PDAR	**Pinedale Array**	**76.66**	**46**	P	**P**	**03 09 00.0**	**+0.6**
	comp=Z,0.6nm,0.5s,baz=317,slow=0.7,SNR=15						
BRTR	**Keskin Array B**	**78.27**	**312**	P	**P**	**03 09 08.1**	**-0.3**
	comp=Z,0.5nm,0.7s,baz=104,slow=3.1,SNR=4.3						
GERES	**GERESS Array B**	**81.86**	**328**	P	**P**	**03 09 27.1**	**-0.4**
	comp=Z,0.5nm,0.6s,baz=46,slow=5.8,SNR=4.8						
GERES				LR	LR	03 50 46.7	
	comp=Z,19nm,21.8s,baz=327,slow=39						
TXAR	**Lajitas Array**	**89.20**	**53**	P	**P**	**03 10 04.8**	**+0.5**
	comp=Z,0.5nm,0.5s,baz=290,slow=2.9,SNR=17						
TORD	**Torodi Ar. Bea**	**116.69**	**316**	PKP	**PKPdf**	**03 15 51.3**	**-1.4**
	comp=Z,0.2nm,0.4s,baz=359,slow=2.1,SNR=7.4						
LPAZ	**La Paz**	**145.87**	**58**	PKPbc	**PKPbc**	**03 16 48.7**	**+0.2**
	comp=Z,1.5nm,0.5s,baz=57,slow=3.0,SNR=11						

JMA 05 03:05:27.5±0.1**, 36°.72N**×**141°.09E, h45**km±1km**, M3.2, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHO	**Hitachi**	**0.43**	**256**	P	Pn	03 05 37.5	-0.1
JHO				*e*S	Sn	03 05 44.5	-0.3
ONAJ	**Iwakimizuishiy**	**0.45**	**329**	P	Pn	03 05 37.5	-0.4
ONAJ				*e*S	Sn	03 05 44.5	-0.7
JFK	**Kawauchi**	**0.67**	**345**	P	Pn	03 05 40.2	-0.5
JFK				S	Sn	03 05 49.2	-1.0
JFT	**Otama**	**1.00**	**323**	P	Pn	03 05 46.0	+0.9
JFT				S	Sn	03 05 58.9	+0.8
JMM	**Marumori**	**1.17**	**348**	P	Pn	03 05 47.1	-0.3
JMM				S	Sn	03 06 01.8	-0.4
MAT	**Matsushiro**	**2.33**	**266**	P	Pn	03 06 05.4	+2.1
MAT				S	Sn	03 06 33.2	+2.5

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*DJA **05** 03:06:44.3±0.5, 10°S±4°×10°7E±°, h10km, M4.2/14, mb4.3/2, MLv4.1/14*
*ISCJB **05** 03:06:47.9±1.3, 9°.6S±0°.1×107°.68E±0°.08, h23km, mb3.7/4, Error ellipse: s-maj=18.9km s-min=7.5km az=32.2*
*IDC **05** 03:06:55.3±5.1, 7°.54S×110°.15E, h0km, mb3.7/4, mb1 3.8/4, mb1mx3.4/54, mbtmp3.7/4, Error ellipse: s-maj=401.5km s-min=23.2km az=53.0*
ISC 05 03:06:50.4±1.6**, 9°.4S**±0°.1×**107°.73E**±0°.09**, h23**km**, n16,** σ**1.s23**/14**, mb3.8**/4**, South of Jawa**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CMJI	**Cimerak**	**1.78**	**24**	P	**Pb**	**03 07 21.4**	**-0.9**
CISI	**Cisompet, Garu**	**1.86**	**3**	P	**Pb**	**03 07 22.4**	**-1.3**
CNJI	**Cibinong**	**2.18**	**344**	P	**Pn**	**03 07 25.5**	**+0.2**
KPJI	**Karang Pucung**	**2.39**	**30**	P	**Pb**	**03 07 31.6**	**-1.2**
DBJI	**Dramaga**	**3.01**	**341**	P	**Pn**	**03 07 36.1**	**-0.7**
UGM	**Wanagama**	**3.14**	**62**	P	**Pn**	**03 07 40.3**	**+1.7**
CGJI	**Cibinong**	**3.44**	**324**	P	**Pn**	**03 07 42.1**	**-0.6**
CGJI				S	**Sn**	**03 08 25.1**	**+2.3**
PCJI	**Pacitan**	**3.62**	**71**	P	**Pn**	**03 07 45.6**	**+0.5**
PWJI	**Pagerwojo**	**4.26**	**71**	P	**Pn**	**03 07 53.9**	**0.0**
JAGI	**Jajag, Banyuwa**	**6.42**	**82**	P	**Pn**	**03 08 22.5**	**-1.1**
	39nm,1.8s,0.2nm						
SRBI	**Singaraja**	**7.52**	**80**	P	**Pn**	**03 08 38.8**	**+0.1**
ASAR	**Alice Springs**	**28.74**	**123**	P	**P**	**03 12 46.0**	**-0.4**
	0.3nm,0.5s,baz=297,slow=9.0,SNR=4.9						
STKA	**Stephens Creek**	**38.51**	**130**	P	P	03 14 16.4	+5.2
	2.3nm,0.8s,baz=322,slow=3.9,SNR=2.9						
MKAR	**Makanchi Array**	**60.40**	**340**	P	P	03 17 00.1	+2.3
	0.5nm,0.4s,baz=158,slow=8.7,SNR=9.8						
KURBB	**Kurchatov Arra**	**64.96**	**340**	P	P	03 17 31.1	+2.9
	0.3nm,0.5s,baz=154,slow=5.4,SNR=3.9						
TXAR	**Lajitas Array**	**144.56**	**52**	PKP	**PKPdf**	**03 26 27.2**	**+1.3**
	0.1nm,0.6s,baz=132,slow=5.4,SNR=2.4						

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*IDC **05** 03:14:45.1±1.6, 5°.88S×145°.89E, h114km±16km, mb3.6/13, mb1 3.7/15, mb1mx3.6/41, mbtmp3.9/15, Error ellipse: s-maj=20.3km s-min=11.5km az=59.0*
ISC 05 03:14:36.1±0.7**, 5°.79S**±0°.07×**146°.2E**±0°.1**, h32**km**, n20,** σ**1.s47**/20**, mb4.0**/13**, Eastern New Guinea region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**3.71**	**166**	P	**Pb**	**03 15 42.2**	**+1.2**
	37nm,0.3s,baz=326,slow=7.2,SNR=60						
PMG				S	**Sb**	**03 16 24.3**	**-1.3**
	47nm,0.3s,baz=342,slow=9.0,SNR=10						
JAY	**Jayapura**	**6.39**	**300**	P	Pn	03 16 14.2	+6.1
	0.1nm,0.3s,baz=76,slow=22,SNR=3.1						
JAY				S	**Sn**	**03 17 22.9**	**+2.8**
	0.1nm,0.3s,baz=24,slow=24,SNR=2.1						
CTA	**Charters Tower**	**14.22**	**180**	P	**P**	**03 18 04.8**	**+2.6**
	0.4nm,0.3s,baz=13,slow=17,SNR=3.1						
WRA	**Warramunga Arr**	**18.21**	**218**	P	**Pn**	**03 18 46.3**	**-0.2**
	0.4nm,0.3s,baz=11,slow=11,SNR=4.2						
ASAR	**Alice Springs**	**21.37**	**212**	P	**P**	**03 19 20.7**	**-0.3**
	0.4nm,0.6s,baz=41,slow=8.3,SNR=6.6						
FITZ	**Fitzroy Crossi**	**23.53**	**237**	P	**P**	**03 19 41.3**	**-2.4**
	2.7nm,0.5s,baz=47,slow=9.8,SNR=5.8						
KSRS	**Korea Array**	**46.28**	**340**	P	**P**	**03 22 58.5**	**-0.1**
	0.7nm,0.5s,baz=148,slow=7.2,SNR=3.6						
USRK	**Ussuriysk Ar.**	**51.38**	**347**	P	**P**	**03 23 38.1**	**+0.3**
	1.6nm,0.6s,baz=130,slow=7.0,SNR=4.2						
CMAR	**Chiang Mai Arr**	**52.47**	**298**	P	**P**	**03 23 45.8**	**-0.5**
	2.4nm,0.5s,baz=124,slow=6.0,SNR=14						
KLR	**Kul'dur**	**56.23**	**349**	P	**P**	**03 24 13.6**	**+0.5**
	1.2nm,0.6s,baz=292,slow=0.6,SNR=4.8						
PETK	**Petropavlovsk-**	**59.47**	**8**	P	**P**	**03 24 37.5**	**+1.7**
	1.4nm,0.6s,baz=174,slow=6.8,SNR=4.7						
SONM	**Songino Array**	**63.84**	**331**	P	**P**	**03 25 05.3**	**-0.3**
	0.7nm,0.7s,baz=183,slow=3.0,SNR=3.7						
VNDA	**Vanda**	**72.17**	**176**	P	P	03 26 01.7	+4.4
	0.8nm,0.6s,baz=357,slow=6.6,SNR=7.1						
MKAR	**Makanchi Array**	**76.84**	**321**	P	**P**	**03 26 23.9**	**-1.0**
	1.0nm,0.5s,baz=102,slow=7.4,SNR=12						
ZALV	**Zalesovo Beam**	**78.42**	**328**	P	**P**	**03 26 31.7**	**-1.9**
	0.4nm,0.3s,baz=24,slow=9.8,SNR=2.8						
KURBB	**Kurchatov Arra**	**80.60**	**323**	P	**P**	**03 26 44.0**	**-1.5**
	0.8nm,0.6s,baz=104,slow=7.2,SNR=6.0						
ILAR	**Eielson Array**	**85.59**	**23**	P	**P**	**03 27 10.5**	**-0.5**
	1.1nm,0.7s,baz=251,slow=5.2,SNR=11						
YKA	**Yellowknife Ar**	**99.34**	**28**	P	**Pdif**	**03 28 15.6**	**+0.7**
	0.1nm,0.6s,baz=268,slow=4.4,SNR=2.6						
TORD	**Torodi Ar. Bea**	**144.29**	**284**	PKP	**PKPab**	**03 34 06.8**	**-1.2**
	0.7nm,0.4s,baz=74,slow=3.2,SNR=24						
DBIC	**Dimbokro**	**151.24**	**273**	PKPbc	**PKPbc**	**03 34 26.6**	**-0.8**
	1.9nm,0.5s,baz=100,slow=2.4,SNR=11						

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*IDC **05** 03:16:31.4±3.3, 17°.33S×178°.34W, h435km±32km, mb3.3/13, mb1 3.5/13, mb1mx3.3/35, mbtmp4.1/13, Error ellipse: s-maj=26.5km s-min=15.4km az=128.0*
*ISCJB **05** 03:16:40.2±0.6, 17°.4S±0°.1×178°.6W±0°.2, h547km, mb3.6/13, Error ellipse: s-maj=20.8km s-min=14.5km az=28.0*
ISC 05 03:16:41.0±0.7**, 17°.4S**±0°.1×**178°.5W**±0°.2**, h547**km**, n19,** σ**0.s75**/20**, mb3.7**/13**, Fiji Islands region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
STKA	**Stephens Creek**	**38.79**	**241**	P	**P**	**03 23 18.3**	**-0.9**
	1.3nm,0.5s,baz=113,slow=14,SNR=3.2						
WRA	**Warramunga Arr**	**44.62**	**259**	P	**P**	**03 24 06.4**	**+1.1**
	0.4nm,0.3s,baz=91,slow=7.1,SNR=2.8						
ASAR	**Alice Springs**	**44.83**	**254**	P	**P**	**03 24 05.9**	**-1.1**
	2.0nm,0.5s,baz=88,slow=7.9,SNR=21						
ASAR				PcP	**PcP**	**03 25 38.0**	**+0.9**
	0.7nm,0.6s,baz=111,slow=3.5,SNR=3.7						
ASAR				ScP	ScP	03 28 49.2	+12
	0.4nm,0.8s,baz=93,slow=3.8,SNR=3.2						
MJAR	**Matsushiro Arr**	**67.42**	**323**	P	**P**	**03 26 42.6**	**+0.1**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
	1.8nm,0.6s,baz=155,slow=6.4,SNR=5.8						
PETK	Petropavlovsk-	73.14	345	P	P	03 27 16.3	+0.3
	2.0nm,0.6s,baz=140,slow=7.2,SNR=3.6						
KSRS	Korea Array	74.24	318	P	P	03 27 23.0	+0.5
	1.1nm,0.9s,baz=127,slow=6.1,SNR=4.3						
NVAR	Mina Array Bea	79.12	44	P	P	03 27 50.2	+0.7
	0.4nm,0.6s,baz=227,slow=8.4,SNR=4.3						
MA2	Magadan	80.66	345	P	P	03 27 56.7	0.0
	2.5nm,0.3s,baz=208,slow=15,SNR=2.4						
SEY	Seymchan	83.24	347	P	P	03 28 10.3	+0.5
	3.0nm,0.6s,baz=146,slow=6.3,SNR=18						
MAW	Mawson	84.32	200	P	P	03 28 16.0	+0.8
	1.2nm,0.6s,baz=149,slow=8.4,SNR=4.4						
ILAR	Eielson Array	85.40	13	P	P	03 28 19.6	-0.7
	0.4nm,0.4s,baz=224,slow=5.3,SNR=11						
PDAR	Pinedale Array	87.05	43	P	P	03 28 29.1	+0.1
	0.2nm,0.6s,baz=228,slow=7.8,SNR=2.8						
SNAA	Sanae	91.12	179	P	P	03 28 47.0	-0.3
VNA3	Neumayer Olymp	91.27	176	P	P	03 28 46.6	-1.2
VNA2	Neumayer--Watz	91.71	177	P	P	03 28 50.0	+0.1
	baz=274,slow=0.5						
YKA	Yellowknife Ar	93.90	25	P	P	03 28 59.1	-0.8
	0.3nm,0.6s,baz=239,slow=4.4,SNR=9.5						
BRTR	Keskin Array B	144.34	315	PKP	PKPab	03 35 16.1	+0.3
	0.4nm,0.6s,baz=109,slow=2.8,SNR=4.4						
GERES	GERESS Array B	147.08	345	PKPbc	PKPab	03 35 25.5	-0.6
	0.2nm,0.4s,baz=20,slow=3.1,SNR=3.0						
TORD	Torodi Ar. Bea	175.79	183	PKPab	PKPab	03 37 32.3	+0.8
	0.3nm,0.6s,baz=194,slow=5.1,SNR=4.5						

IDC 05 03:16:45.8±7.6**,10°.10N×64°.18E,h0^{km},mb3.5**/6**, mb1 3.6**/6**,mb1mx3.3**/51**,mbtmp3.5**/6**,MS2.9**/1**,Ms1 2.9**/1**, ms1mx2.5**/33**,Error ellipse: s-maj=204.4km s-min=31.4km az=144.0,Arabian Sea**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
MKAR	Makanchi Array	39.68	20	P	P	03 24 19.6	0.0
	0.3nm,0.7s,baz=209,slow=9.7,SNR=3.7						
MKAR				LR	LR	03 40 14.9	
	comp=Z,17nm,20.5s,baz=10.0,slow=36						
KURBB	Kurchatov Arra	42.10	14	P	P	03 24 37.5	-2.0
	0.2nm,0.6s,baz=210,slow=8.7,SNR=2.9						
BVAR	Borovoye Array	43.10	5	P	P	03 24 47.8	+0.2
	0.6nm,0.5s,baz=243,slow=42,SNR=3.0						
ZALV	Zalesovo Beam	46.74	17	P	P	03 25 17.7	+1.1
	0.7nm,0.4s,baz=215,slow=12,SNR=2.4						
TORD	Torodi Ar. Bea	61.15	279	P	P	03 27 02.3	-0.3
	0.6nm,1.1s,baz=81,slow=1.9,SNR=3.1						
NOA	NORSAR Array B	63.84	334	P	P	03 27 20.6	+0.7
	1.1nm,0.8s,baz=113,slow=7.7,SNR=3.5						

*ISCJB **05** 03:32:47.2±1.9,37°.70N±0°.05×141°.99E±0°.08,h4^{km}±15^{km}, mb3.5/4,Error ellipse: s-maj=12.1km s-min=6.3km az=25.9*
*JMA **05** 03:32:48.1±0.2,37°.66N×142°.01E,h23^{km}±3^{km},M3.3*
*IDC **05** 03:32:49.5±1.2,36°.88N×142°.79E,h0^{km},mb3.5/4, mb1 3.6/5,mb1mx3.4/38,mbtmp3.4/5,ML2.8/1,Error ellipse: s-maj=28.2km s-min=25.2km az=102.0*
ISC 05 03:32:48.0±2.1**,37°.66N**±0°.05×**141°.92E**±0°.08**,h18^{km}**±11^{km}**, n22,**σ**0^{s}96**/24**,mb3.5**/4**,Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
JFK	Kawauchi	0.88	251	P	Pn	03 33 05.5	0.0
JFK				eS	Sn	03 33 17.8	-0.1
JIO	Ouri	0.91	331	P	Pb	03 33 05.4	+0.2
JIO				S	Sg	03 33 17.4	-0.2
JMM	Marumori	0.91	283	P	Pn	03 33 06.1	+0.1
JMM				S	Sn	03 33 18.7	0.0
ONAJ	Iwakimizuishiy	1.05	238	P	Pb	03 33 08.0	+0.3
ONAJ				S	Sg	03 33 21.9	-0.3
JOU	Okura	1.21	306	P	Pb	03 33 10.9	+0.5
JOU				S	Sg	03 33 27.2	-0.1
JFT	Otama	1.26	264	P	Pg	03 33 12.2	-0.2
JFT				S	Sg	03 33 29.2	+0.3
JMK	Ichinoseki	1.40	337	P	Pn	03 33 12.8	+0.2
JYS	Shirataka	1.56	291	P	Pb	03 33 16.7	+0.2
JYS				S	Sg	03 33 38.3	-0.2
JYK	Kaneyama	1.75	316	P	Pb	03 33 19.1	-0.5
JOM	Ohasama	1.87	345	P	Pn	03 33 19.9	+0.7
JOM				eS	Sn	03 33 42.3	-0.1
MJAR	Matsushiro Arr	3.17	250	Pn	Pb	03 33 46.3	+2.5
	0.8nm,0.3s,baz=76,slow=16,SNR=8.0						
MJAR				Sn	Sg	03 34 31.2	+1.4
	0.8nm,0.3s,baz=84,slow=27,SNR=4.8						
MAT	Matsushiro	3.17	250	P	Pb	03 33 40.9	-2.9
MAT				eS	Sb	03 34 21.7	-0.4
SONM	Songino Array	27.77	303	P	P	03 38 50.0	+14
	0.4nm,0.8s,baz=111,slow=3.2,SNR=2.4						
H11N2	WAKE ISLAND Hy	28.14	122	T	T	04 07 41.0	
	baz=316,slow=76,SNR=31						
H11N1	WAKE ISLAND Hy	28.14	123	T	T	04 08 00.7	
	baz=316,slow=76,SNR=17						
H11N3	WAKE ISLAND Hy	28.15	122	T	T	04 07 45.7	
	baz=316,slow=76,SNR=26						
H11S1	WAKE ISLAND Hy	28.88	125	T	T	04 09 01.8	
	baz=317,slow=76,SNR=17						
H11S3	WAKE ISLAND Hy	28.88	125	T	T	04 08 59.6	
	baz=317,slow=76,SNR=20						
H11S2	WAKE ISLAND Hy	28.89	125	T	T	04 09 01.0	
	baz=317,slow=76,SNR=19						
WRA	Warramunga Arr	57.74	188	P	P	03 42 37.4	-0.4
	0.6nm,0.3s,baz=6.4,slow=7.4,SNR=4.4						
ASAR	Alice Springs	61.47	188	P	P	03 43 03.6	+0.1
	0.4nm,0.7s,baz=13,slow=6.6,SNR=6.0						
YKA	Yellowknife Ar	63.06	30	P	P	03 43 19.9	+6.1
	0.1nm,0.3s,baz=300,slow=7.0,SNR=3.9						

JMA 05 03:35:23.7±0.2**,39°.68N×143°.36E,h47^{km},M3.6,Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
JTH	Tanohata	1.18	283	P	Pn	03 35 44.4	+0.6
MIYJ	Miyakonagasawa	1.19	266	P	Pn	03 35 44.0	0.0
MIYJ				S	Sn	03 35 59.4	+0.3
OFUJ	Ofunato	1.44	246	P	Pn	03 35 47.6	+0.3
JANG	Nango	1.58	297	P	Pn	03 35 49.9	+0.7
JANG				S	Sn	03 36 08.3	-0.1
JKZ	Kuzumaki	1.59	282	P	Pn	03 35 50.5	+1.0
JKZ				S	Sn	03 36 09.4	+0.5
JOM	Ohasama	1.61	263	P	Pn	03 35 50.6	+0.9
JOM				S	Sn	03 36 10.3	+1.0
JMK	Ichinoseki	1.81	247	P	Pn	03 35 52.8	+0.4
JMK				S	Sn	03 36 14.2	0.0
JIO	Ouri	1.99	233	P	Pn	03 35 54.4	-0.4
JIO				S	Sn	03 36 16.6	-1.9
JTM	Tenmabayashi	2.07	303	P	Pn	03 35 57.0	+1.0
JTM				S	Sn	03 36 21.2	+0.6
JRG	Rokugo	2.13	263	P	Pn	03 35 57.8	+1.1
JRG				S	Sn	03 36 23.1	+1.2
JAH	Hinai	2.15	285	P	Pn	03 35 58.4	+1.3
JAH				S	Sn	03 36 24.0	+1.4
JEM	Erimo	2.34	356	P	Pn	03 36 00.0	+0.4
JEM				eS	Sn	03 36 26.8	-0.3
MAT	Matsushiro	5.13	234	P	Pn	03 36 38.7	+0.7
MAT				eS	Sn	03 37 28.3	-7.6

*MAN **05** 03:42:47,7°.97N×124°.93E,h1^{km},mb4.7,ML3.5,MS3.5*
MAN INTENSITY III - VALENCIA BUKIDNON; INTENSITY II - MALAYBALAY BUKIDNON.
*ISCJB **05** 03:42:48.5±0.4,7°.89N±0°.03×125°.03E±0°.06,h14^{km}, mb3.8/9,MS3.1/6,Error ellipse: s-maj=8.8km s-min=4.6km az=173.3*
*IDC **05** 03:42:52.6±2.5,7°.82N×125°.13E,h33^{km}±18^{km},mb3.7/9, mb1 3.9/9,mb1mx3.6/37,mbtmp3.9/9,MS3.2/7,Ms1 3.2/7, ms1mx2.9/46,Error ellipse: s-maj=48.3km s-min=15.8km az=78.0*
ISC 05 03:42:48.4±0.7**,7°.89N**±0°.03×**125°.00E**±0°.04**,h14^{km},n28,** σ**1^{s}66**/22**,mb3.9**/9**,MS3.0**/6**,5C-2D,Mindanao**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
KCP	Kidapawan	0.88	174⇑	iP	Pg	03 43 03.8	-1.7
KCP				i S	Sn	03 43 17.9	-1.1
DMPH	Davao City--Mi	0.94	148⇓	iP	Pn	03 43 08.9	+1.6
DMPH				i S	Sn	03 43 27.2	+6.5
DAV	Davao City (W)	0.99	145	Pg	Pn	03 43 08.2	+0.2
	244nm,0.3s,baz=35,slow=2.9,SNR=13						
DAV				Lg	Lg	03 43 23.4	
	561nm,0.3s,baz=307,slow=22,SNR=15						
CTBH	Cotabato--PC H	1.00	229⇑	eP	Pn	03 43 07.5	-0.6
BUTP	Butuan	1.23	30	eP	Pg	03 43 11.7	-0.6
BIPH	Bislig	1.38	78⇑	iP	Pg	03 43 13.2	-1.7
BIPH				i S	Sg	03 43 35.7	+2.8
MATI	Mati	1.56	127	eP	Pg	03 43 17.6	-0.8
PAGZ	Pagadian	1.61	269	eP	Pg	03 43 18.9	-0.5
SCPH	Surigao	1.94	14⇓	eP	Pn	03 43 19.7	-1.3
LLP	Lapu-Lapu	2.62	337	eP	Pn	03 43 31.0	+0.6
LLP				eS	Sb	03 44 08.8	+1.5
PLP	Palo	3.25	360⇑	eP	Pn	03 43 40.1	+1.0
PLP				i S	Sb	03 44 20.6	-4.9
RCP	Roxas	4.27	329⇑	eP	Pn	03 43 54.5	+1.4
KAPI	Kappang	13.85	202	LR	LR	03 52 10.7	
	comp=Z,61nm,19.1s,baz=103,slow=40						
JNU	Nakatsue	25.69	11	LR	LR	03 57 22.4	
	comp=Z,38nm,20.7s,baz=258,slow=34						
FITZ	Fitzroy Crossi	25.83	179	P	P	03 48 19.9	+0.4
	6.7nm,1.0s,baz=26,slow=6.0,SNR=4.2						
CMAR	Chiang Mai Arr	27.42	295	LR	LR	04 01 52.5	
	comp=Z,53nm,18.2s,baz=127,slow=41						
PMG	Port Moresby	27.97	127	LR	LR	04 01 19.0	
	comp=Z,46nm,19.0s,baz=180,slow=40						
WRA	Warramunga Arr	29.14	162	P	P	03 48 50.2	+0.9
	0.9nm,0.8s,baz=345,slow=9.0,SNR=3.7						
KSRS	Korea Array	29.55	5	LR	LR	03 59 20.5	
	comp=Z,25nm,21.4s,baz=202,slow=33						
MJAR	Matsushiro Arr	30.96	21	LR	LR	04 00 29.3	
	comp=Z,16nm,21.6s,baz=110,slow=34						
ASAR	Alice Springs	32.55	165	P	P	03 49 19.4	+0.1
	0.8nm,0.5s,baz=340,slow=6.8,SNR=15						
USRK	Ussuriysk Ar.	36.68	8	P	P	03 49 57.6	+2.8
	2.7nm,0.9s,baz=185,slow=8.6,SNR=5.0						
STKA	Stephens Creek	42.60	159	P	P	03 50 44.8	+0.5
	3.4nm,0.9s,baz=320,slow=22,SNR=4.0						
MKAR	Makanchi Array	53.19	324	P	P	03 52 09.3	+3.1
	0.7nm,0.6s,baz=121,slow=7.7,SNR=6.3						
ZALV	Zalesovo Beam	56.13	333	P	P	03 52 30.4	+3.0
	0.5nm,0.3s,baz=116,slow=9.9,SNR=2.5						
URZ	Urewera	66.74	137	LR	LR	04 23 41.5	
	comp=Z,135nm,19.2s,baz=88,slow=37						
ILAR	Eielson Array	82.11	26	P	P	03 55 08.2	-0.2
	0.2nm,0.7s,baz=246,slow=4.4,SNR=3.3						
YKA	Yellowknife Ar	96.43	24	P	P	03 56 17.5	+0.5
	0.2nm,0.8s,baz=300,slow=5.0,SNR=4.3						

JMA 05 03:44:36.4±0.1**,38°.29N×142°.36E,h30^{km}**±3^{km}**,M2.5, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
JIO	Ouri	0.81	282	P	Pn	03 44 51.3	-0.5
JIO				S	Sb	03 45 01.9	-0.7
OFUJ	Ofunato	0.96	326	P	Pn	03 44 53.8	0.0
JMK	Ichinoseki	1.11	307	P	Pn	03 44 56.4	+0.5
MIYJ	Miyakonagasawa	1.35	342	P	Pn	03 44 59.6	+0.4
MIYJ				eS	Sn	03 45 16.4	+0.2
JOM	Ohasama	1.45	325	S	Sb	03 45 19.8	-0.9
JYK	Kaneyama	1.69	292	P	Pn	03 45 04.6	+0.7
MAT	Matsushiro	3.74	243	P	Pn	03 45 30.9	-1.2
MAT				S	Sn	03 46 08.4	-6.7

*JMA **05** 03:46:38.7±0.3,36°.19N×141°.88E,h73^{km}±5^{km},M2.8*
*IDC **05** 03:46:53.1±5.0,36°.32N×140°.84E,h74^{km}±43^{km},mb3.0/3, mb1 3.3/4,mb1mx3.0/39,mbtmp3.2/4,ML2.8/1,Error ellipse: s-maj=51.2km s-min=31.6km az=76.0*
ISC 05 03:46:47.0±1.1**,36°.31N**±0°.06×**141°.0E**±0°.1**,h26^{km},n9,** σ**1^{s}58**/9**,mb3.4**/3**,Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
JHO	Hitachi	0.47	309	P	Pn	03 46 58.8	+0.7
CHOJ	Chosi	0.62	193	P	Pb	03 46 57.1	-2.2
CHOJ				eS	Sn	03 47 10.8	+1.5
ONAJ	Iwakimizuishiy	0.81	347	P	Pb	03 47 00.7	-1.8
BSO3	Boso 3	1.57	196	P	Pn	03 47 09.0	-3.9
MJAR	Matsushiro Arr	2.28	277	P	Pb	03 47 26.3	-1.3
	3.3nm,0.3s,baz=93,slow=9.6,SNR=16						
MAT	Matsushiro	2.29	277	P	Pb	03 47 26.2	-1.4
MAT				S	Sb	03 48 05.4	+10
MKAR	Makanchi Array	44.24	303	P	P	03 54 53.9	-0.2
	0.3nm,0.6s,baz=99,slow=8.9,SNR=3.0						
WRA	Warramunga Arr	56.31	188	P	P	03 56 26.1	+0.6
	0.4nm,0.3s,baz=3.7,slow=8.5,SNR=3.0						
TXAR	Lajitas Array	90.81	52	P	P	03 59 49.0	+0.7
	0.1nm,0.5s,baz=289,slow=2.8,SNR=3.5						

*JMA **05** 03:47:48.2±0.3,36°.22N×141°.89E,h59^{km},M3.1*
*ISCJB **05** 03:47:54.8±1.1,36°.19N±0°.07×141°.3E±0°.1,h31^{km}, mb3.4/3,Error ellipse: s-maj=16.3km s-min=9.6km az=172.6*
*IDC **05** 03:48:03.2±4.0,36°.22N×140°.68E,h85^{km}±37^{km},mb2.9/4, mb1 3.2/4,mb1mx3.0/36,mbtmp3.2/4,Error ellipse: s-maj=40.1km s-min=26.8km az=99.0*
ISC 05 03:47:57.1±1.0**,36°.22N**±0°.06×**141°.16E**±0°.09**,h31^{km},n9,** σ**1^{s}91**/11**,mb3.4**/3**,Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
CHOJ	Chosi	0.57	205	P	Pb	03 48 06.1	-2.6
CHOJ				S	Sn	03 48 20.0	+2.6
JHO	Hitachi	0.61	309	P	Pb	03 48 07.9	-1.5
ONAJ	Iwakimizuishiy	0.92	342	P	Pn	03 48 09.7	-4.3
ONAJ				eS	Sn	03 48 26.1	-0.2
MJAR	Matsushiro Arr	2.40	278	P	Pn	03 48 35.2	+0.9
	4.9nm,0.3s,baz=86,slow=9.5,SNR=11						
MAT	Matsushiro	2.40	279	P	Pn	03 48 35.3	+1.0
MAT				S	Sb	03 49 10.1	+1.2
MKAR	Makanchi Array	44.38	303	P	P	03 56 02.2	-2.4
	0.3nm,0.6s,baz=88,slow=8.7,SNR=3.7						
WRA	Warramunga Arr	56.23	188	P	P	03 57 33.9	-0.5
	0.2nm,0.3s,baz=5.2,slow=7.5,SNR=2.4						
YKA	Yellowknife Ar	64.61	30	P	P	03 58 32.1	+1.0
	0.0nm,0.3s,baz=301,slow=7.2,SNR=3.4						
TXAR	Lajitas Array	90.78	52	P	P	04 00 59.4	+1.8
	0.2nm,0.9s,baz=277,slow=1.5,SNR=2.0						

IDC 05 04:01:38.9±3.5**,36°.56N×143°.78E,h0^{km},mb3.1**/3**, mb1 3.4**/4**,mb1mx3.3**/44**,mbtmp3.1**/4**,ML3.1**/1**,Error ellipse: s-maj=117.1km s-min=29.8km az=173.0,Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
MJAR	Matsushiro Arr	4.49	271	Pn	Pn	04 02 47.4	-0.7
	1.0nm,0.3s,baz=91,slow=8.3,SNR=9.8						
MAT	Matsushiro	4.49	271	P	Pn	04 02 47.4	-0.7
MAT				eS	Sn	04 03 36.8	-4.2
H11N2	WAKE ISLAND Hy	26.29	123	T	T	04 34 46.2	
	SNR=4.5						
H11N1	WAKE ISLAND Hy	26.29	123	T	T	04 34 39.9	
H11N3	WAKE ISLAND Hy	26.30	123	T	T	04 34 39.9	
H11S1	WAKE ISLAND Hy	27.02	126	T	T	04 35 33.9	
H11S3	WAKE ISLAND Hy	27.02	126	T	T	04 35 33.9	
H11S2	WAKE ISLAND Hy	27.04	126	T	T	04 35 33.9	
MKAR	Makanchi Array	45.98	303	P	P	04 10 03.7	0.0
	0.4nm,0.8s,baz=82,slow=10,SNR=3.4						
YKA	Yellowknife Ar	63.26	31	P	P	04 12 08.7	-0.2
	0.1nm,0.6s,baz=301,slow=6.7,SNR=4.0						
TXAR	Lajitas Array	88.89	54	P	P	04 14 35.5	+0.1
	0.1nm,0.6s,baz=329,slow=3.2,SNR=2.1						

JMA 05 04:05:51.4±0.2**,38°.34N×142°.26E,h37^{km}**±3^{km}**,M3.7, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
JIO	Ouri	0.72	279	P	Pn	04 06 05.3	+0.2
JIO				S	Sn	04 06 14.8	-0.1
OFUJ	Ofunato	0.87	328	P	Pn	04 06 07.2	+0.1
JMK	Ichinoseki	1.02	307	P	Pn	04 06 09.6	+0.5
JMM	Marumori	1.25	248	P	Pn	04 06 12.5	+0.2
JMM				eS	Sn	04 06 27.7	-0.2
JOU	Okura	1.25	272	P	Pn	04 06 13.7	+1.3
JOU				S	Sn	04 06 29.2	+1.2
JOM	Ohasama	1.36	327	P	Pn	04 06 15.1	+1.3
JFK	Kawauchi	1.47	229	P	Pn	04 06 15.0	-0.3
JFK				S	Sn	04 06 32.1	-1.1
MAT	Matsushiro	3.69	242	P	Pn	04 06 49.4	+3.5
MAT				eS	Sn	04 07 31.4	+3.3

*CSEM **05** 04:07:52.1±1.1,75°.91N×7°.69E,h10^{km},ML3.2,Error ellipse: s-maj=28.4km s-min=11.7km az=72.0*
*NAO **05** 04:07:54.9±2.5,75°.84N×9°.45E,ML3.2*
*BER **05** 04:07:55.8±2.3,75°.94N×8°.10E,h10^{km},MD2.3,ML2.1, ML3.2(NAO)*
ISC 05 04:07:56.0±3.0**,76°.10N**±0°.05×**10°.47E**±0°.10**,h16^{km}**±19^{km}**, n24,**σ**1^{s}37**/30**,Svalbard region**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
HSPB	Hornsund (broa	1.49	50	eP	Pg	04 08 28.2	+3.5
HSPB				eS	Sg	04 08 52.8	+8.7
HSPB				IAML		04 08 54.4	
	comp=Z,10nm,0.3s						
HSPB	Hornsund (broa	1.49	50	eP	Pg	04 08 28.2	+3.5
	SNR=50						
HSPB				Lg	Lg	04 08 52.3	
HSP	Hornsund	1.50	50	Pn	Pg	04 08 28.2	+3.3
HSP				Lg	Lg	04 08 52.3	
BRBA	Barentsburg A	2.15	21	Pn	Pb	04 08 34.9	+0.5
SPA0	Spitsbergen Ar	2.47	29	Pn	Pb	04 08 40.7	+0.7
	baz=216,slow=14						
SPA0				Sn	Sg	04 09 14.1	-1.3
	baz=231,slow=28						
SPA0	Spitsbergen Ar	2.47	29	Pn	Pb	04 08 40.7	+0.7
	baz=216,slow=14						
SPA0				Sn	Sg	04 09 14.1	-1.3
	baz=231,slow=28						
SPA0	Spitsbergen Ar	2.47	29	Pn	Pb	04 08 40.7	+0.7
	SNR=17						
SPA0				Sn	Sg	04 09 14.1	-1.3
	SNR=4.6						
BJO1	Bjornoya	2.70	122	Pg	Pb	04 08 44.9	+1.1
BJO1				Sn	Sb	04 09 16.8	+0.1
BJO	Bjornoya	2.74	121	eP	Pb	04 08 44.5	+0.1
BJO				eS	Sb	04 09 17.4	-0.2
BJO				IAML		04 09 21.6	
	comp=Z,18nm,0.3s						
BJO	Bjornoya	2.74	121	eP	Pb	04 08 44.5	+0.1
	SNR=50						
BJO	Bjornoya	2.74	121	Pg	Pb	04 08 44.9	+0.4
BJO				eS	Sb	04 09 17.5	-0.2
	SNR=50						
KBS	Kingsbay	2.86	6	Pn	Pn	04 08 41.5	+0.6
KBS	Kingsbay	2.86	6	eP	Pn	04 08 42.0	+1.1
KBS				IAML		04 09 21.8	
	comp=Z,11nm,0.5s						
KBS	Kingsbay	2.86	6	Pn	Pn	04 08 41.5	+0.6
KBS	Kingsbay	2.86	6	i P	Pn	04 08 41.9	+1.1
	SNR=49						
KBS				i S	Sb	04 09 19.1	-2.2
	SNR=49						
HOPEN	Hopen	3.48	76	Pn	Pb	04 08 56.3	-0.8
HOPEN				Sn	Sb	04 09 41.3	+2.3
HOPEN	Hopen	3.48	76	eP	Pb	04 08 56.7	-0.4
HOPEN				eS	Sb	04 09 41.3	+2.3
HOPEN				IAML		04 09 45.1	
	comp=Z,24nm,0.2s						
HOPEN	Hopen	3.48	76	Pn	Pb	04 08 56.3	-0.8
HOPEN	Hopen	3.48	76	eP	Pb	04 08 56.7	-0.4
	SNR=49						
ARA0	ARCESS Array S	7.92	139	Sn	Sn	04 11 16.4	-2.9
	baz=332,slow=22						
ARA0	ARCESS Array S	7.92	139	S	Sn	04 11 16.4	-2.9
	baz=332,slow=22						
APA0	Apatity Array	10.93	129	Pn	Pn	04 10 32.7	+1.2
	baz=316,slow=10						
APA0	Apatity Array	10.93	129	P	Pn	04 10 32.7	+1.2
	baz=316,slow=10						
APA0	Apatity Array	10.93	129	P	Pn	04 10 32.7	+1.2
	SNR=47						

*ISCJB **05** 04:10:05.7±0.4,17°.66S±0°.03×178°.57W±0°.02, h544^{km}±5^{km},mb5.0/316,Error ellipse: s-maj=4.6km s-min=2.8km az=159.0*
*GCMT **05** 04:10:07.2±0.2,17°.68S×178°.39W,h568^{km}±1^{km}, MW5.7/103,Moment Tensor Solution. s103,c172; s54,c54; Duration: 1^{s}7 Moment tensor: Scale 10^{17}Nm; M_{rr}0.57±.05; $M_{\theta\theta}$-0.22±.09; $M_{\phi\phi}$-0.35±.08; $M_{r\theta}$-0.52±.08; $M_{\theta\phi}$0.31±.07; $M_{\phi r}$-4.21±.07; Best double couple: $M_0$4.27600×10^{17} NP1:ϕ_s186.00000°,δ87.00000°, λ94.00000°. NP2:ϕ_s310.00000°,δ5.00000°,λ34.00000°. Principal axes: T 4.4240, Plg48.0000°, Azm101.0000°; N -0.2960, Plg4.0000°, Azm6.0000°; P -4.1270, Plg42.0000°, Azm272.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to mantle waves, cutoff=125s.*
*MOS **05** 04:10:07.6±1.0,17°.56S×178°.60W,h559^{km},mb4.9/43 Error ellipse: s-maj=8.2km s-min=7.0km az=52.0*
*NEIC **05** 04:10:07.2±0.1,17°.66S×178°.60W,mb5.0/229,MW5.8, Error ellipse: s-maj=4.0km s-min=2.5km az=145.0, Moment Tensor Solution. s23 Moment tensor: Scale 10^{17}Nm; M_{rr}0.31; $M_{\theta\theta}$1.63; $M_{\phi\phi}$-1.94; $M_{r\theta}$-0.90; $M_{\theta\phi}$1.21; $M_{\phi r}$-4.88; Best double couple: $M_0$5.40000×10^{17} NP1: ϕ_s195.00000°,δ86.00000°,λ111.00000°. NP2: ϕ_s294.00000°,δ21.00000°,λ10.00000°. Principal axes: T 4.8500, Plg45.0000°, Azm126.0000°; N 0.9900, Plg21.0000°, Azm13.0000°; P -5.8400, Plg38.0000°, Azm266.0000°;*
*IDC **05** 04:10:08.0±0.4,17°.64S×178°.56W,h556^{km}±4^{km},mb4.6/33, mb1 4.7/35,mb1mx4.7/37,mbtmp5.5/35 Error ellipse: s-maj=8.2km s-min=7.0km az=160.0*
*BJI **05** 04:10:09.3,17°.30S×178°.90W,h560^{km},mb5.0/63, mB5.2/43*
ISC 05 04:10:07.3±0.2**,17°.64S**±0°.04×**178°.53W**±0°.03**, h552^{km}**±2^{km}**,h553^{km}:pP-P,n1221,**σ**1^{s}19**/1351**,mb5.0**/314**, 36C-84D,Fiji Islands region**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
MSVF	Nonsavu	3.26	268	eP	P	04 11 26.0	+1.8
MSVF				eS	S	04 12 19.4	-7.5
MSVF	Nonsavu	3.26	268	eP	P	04 11 26.0	+1.8
MSVF				eS	S	04 12 19.4	-7.5
AFI	Afiamalu	7.49	61	P	P	04 11 57.1	-3.0
	101nm,0.3s,baz=23,slow=1.1,SNR=57						
AFI				S	S	04 13 30.9	-1.7
	12nm,0.3s,baz=27,slow=16,SNR=3.3						
NIUE	Niue	8.29	101	P	P	04 12 07.6	-0.4
	baz=8.2,SNR=98						
FUNA	Funafuti	9.32	346	eP	P	04 12 18.4	0.0
FUNA				eS	S	04 14 03.1	-3.0
DZM	Mont Dzumac	14.80	250	P	P	04 13 13.8	-1.1
	18nm,0.3s,baz=74,slow=11,SNR=154						
DZM				S	S	04 15 49.4	+0.1
	baz=328,slow=21,SNR=4.1						
DZM				ScP	ScP	04 20 30.6	+3.5
	0.5nm,0.3s,baz=33,slow=17,SNR=11						
NFK	Norfolk Island	16.81	225	P	P	04 13 36.1	+2.0
	baz=17,SNR=5.9						
RAR	Rarotonga	18.05	104	P	P	04 13 45.3	-0.2
	7.2nm,0.3s,baz=250,slow=6.4,SNR=25						
RAR				ScP	ScP	04 20 34.7	+1.3
	0.8nm,0.3s,baz=240,slow=5.3,SNR=3.7						
RAR	Rarotonga	18.05	104	eP	P	04 13 45.1	-0.4
RAR				pmax	pmax		
	comp=Z,177nm,1.0s						
RAR	Rarotonga	18.05	104	eP	P	04 13 45.1	-0.4
	comp=Z,177nm,1.0s						
RAR				ScP	ScP	04 20 34.7	+1.3
OUZ	Omahuta	18.86	200	eP	P	04 13 53.4	+0.7
	comp=Z,134nm,1.0s						
TARA	Tarawa	20.67	335	eP	P	04 14 08.3	-1.1
	comp=Z,462nm,1.3s						
URZ	Urewera	20.89	190	P	P	04 14 08.5	-2.6
	comp=Z,54nm,0.5s,baz=80,slow=2.2,SNR=29						
URZ				S	S	04 17 28.5	+0.2
	comp=Z,40nm,0.7s,baz=192,slow=20,SNR=4.8						
URZ				ScP	ScP	04 20 41.1	+1.3
	comp=Z,12nm,0.8s,baz=306,slow=11,SNR=2.9						
URZ	Urewera	20.89	190	eP	P	04 14 08.6	-2.6
	comp=Z,88nm,0.8s						
URZ				eS	S	04 17 23.1	-5.2
URZ				ScP	ScP	04 20 41.1	+1.3

BKZ **Black Stump Fm** 21.88 190 *e*P P 04 14 18.0 -2.1
comp=Z,25nm,0.8s
HNR **Honiara** 22.44 289 P P 04 14 27.4 +2.1
comp=Z,297nm,0.7s,baz=172,slow=1.8,SNR=14
HNR S S 04 17 59.4 +6.1
comp=Z,120nm,0.4s,baz=12,slow=6.3,SNR=5.5
HNR **Honiara** 22.44 289 *e*P P 04 14 24.0 -1.3
HNR **Honiara** 22.44 289 *e*P P 04 14 23.8 -1.6
comp=Z,326nm,0.8s
HNR S S 04 17 59.4 +6.1
THZ **Tophouse** 25.14 195 *e*P P 04 14 48.4 -0.6
comp=Z,75nm,1.1s
THZ *e*S S 04 18 33.0 -2.2
KHZ **Kahutara** 25.61 194 *e*P P 04 14 51.5 -1.5
comp=Z,70nm,0.9s
KHZ *e*S S 04 18 37.1 -5.2
LTZ **Lake Taylor** 26.25 195 *e*P P 04 14 57.9 -0.9
comp=Z,60nm,0.6s
OXZ **Oxford** 26.82 195 *e*P P 04 15 02.0 -1.8
comp=Z,159nm,0.9s
RPZ **Rata Peaks** 27.45 197 P P 04 15 08.9 -0.3
comp=Z,25nm,0.7s,baz=290,slow=1.5,SNR=10
RPZ S S 04 19 11.0 -0.2
comp=Z,35nm,1.0s,baz=94,slow=8.6,SNR=3.4
RPZ **Rata Peaks** 27.45 197 *e*P P 04 15 07.3 -1.9
comp=Z,125nm,1.6s
RPZ S S 04 19 11.0 -0.2
PAE **Paea** 27.58 94⇑ *i*P P 04 15 10.5 -0.2
comp=Z,70nm,1.5s
PAE *e*ScP ScP 04 20 59.4 +0.5
comp=Z,8.2nm,1.0s
PPT2 **Papeete2** 27.59 94⇑ *i*P P 04 15 10.9 0.0
comp=Z,218nm,1.3s
PPT2 *e*ScP ScP 04 20 59.5 +0.4
comp=Z,78nm,1.3s
PPT **Papeete** 27.59 94 P P 04 15 11.0 +0.1
comp=Z,120nm,0.5s,baz=38,slow=4.0,SNR=24
PPT ScP ScP 04 21 02.7 +3.7
comp=Z,104nm,1.2s,baz=52,slow=2.7,SNR=3.6
PPT **Papeete** 27.59 94 *e*P P 04 15 10.6 -0.2
PPT **Papeete** 27.59 94 *e*P P 04 15 10.6 -0.2
PPT *e*pP pP 04 16 39.5 -1.0
PPT ScP ScP 04 21 02.7 +3.7
FOZ **Fox Glacier** 27.63 198 *e*P P 04 15 09.9 -0.9
comp=Z,175nm,0.7s
FOZ *e*pP pP 04 16 39.4 -1.1
TBI **Tubuai** 27.79 107⇑ *i*P P 04 15 12.7 +0.2
comp=Z,222nm,0.8s
TIAR **Tiarei** 27.81 94⇑ *i*P P 04 15 12.7 -0.1
comp=Z,56nm,0.8s
TVO **Taravao** 27.88 95⇑ *i*P P 04 15 13.4 0.0
comp=Z,34nm,0.8s
LBZ **Lake Benmore** 28.30 197 *e*P P 04 15 14.4 -2.3
comp=Z,72nm,1.0s
LBZ *e*pP pP 04 16 45.4 -1.2
MEH **Mehetia** 29.00 95 *e*P P 04 15 22.8 -0.3
comp=Z,31nm,1.0s
WKZ **Wanaka** 29.05 198 *e*P P 04 15 21.9 -1.3
comp=Z,99nm,0.8s
WKZ *e*S S 04 19 28.8 -7.3
EIDS **Eidsvold** 29.25 249 P P 04 15 24.8 -0.4
baz=29,SNR=38
EIDS **Eidsvold** 29.25 249 *e*P P 04 15 24.8 -0.4
comp=Z,207nm,0.8s
MLZ **Mavora Lakes** 29.81 199 *e*P P 04 15 29.8 0.0
comp=Z,227nm,0.8s
ARMA **Armidale** 29.98 239 P P 04 15 32.3 +0.8
baz=30,SNR=191
ARMA **Armidale** 29.98 239 *e*P P 04 15 32.3 +0.8
comp=Z,233nm,0.6s
DCZ **Deep Cove** 30.21 200 *e*P P 04 15 32.6 -0.5
comp=Z,76nm,1.0s
WHZ **Wether Hill Ro** 30.34 199 *e*P P 04 15 34.2 0.0
comp=Z,169nm,1.0s
MGCD **Mangrove Creek** 31.35 235 P P 04 15 44.0 +0.8
baz=31,SNR=52
RMQ **Roma** 31.50 248 P P 04 15 45.0 +0.5
baz=32,SNR=123
CTA **Charters Tower** 33.38 260 P P 04 16 00.2 -0.3
comp=Z,136nm,0.6s,baz=91,slow=10,SNR=123
CTA PcP PcP 04 18 25.9 0.0
comp=Z,24nm,0.9s,baz=13,slow=12,SNR=3.2
CTA ScP ScP 04 21 21.0 +2.7
comp=Z,48nm,1.0s,baz=351,slow=2.6,SNR=10
CTAO **Charters Tower** 33.38 260 *e*P P 04 16 00.1 -0.4
CTAO pmax pmax
comp=Z,154nm,0.7s
CTAO **Charters Tower** 33.38 260 *e*P P 04 16 00.1 -0.4
comp=Z,154nm,0.7s
CNB **Canberra Magne** 33.50 232 P P 04 16 02.2 +0.8
baz=34,SNR=155
CAN **Canberra** 33.77 232 *e*P P 04 16 03.8 +0.1
CAN pmax pmax
comp=Z,156nm,0.8s
CAN **Canberra** 33.77 232 *e*P P 04 16 03.8 +0.1
comp=Z,156nm,0.8s
YNG **Young** 33.85 234 P P 04 16 04.8 +0.5
baz=34,SNR=20
PMG **Port Moresby** 34.30 279 P P 04 16 09.3 +1.0
comp=Z,605nm,0.8s,baz=75,slow=5.9,SNR=147
PMG ScP ScP 04 21 22.5 +0.9
comp=Z,14nm,0.8s,baz=272,slow=3.2,SNR=3.1
PMG **Port Moresby** 34.30 279 *d i*P P 04 16 09.1 +0.8
PMG pmax pmax
comp=Z,2μm,0.8s
PMG **Port Moresby** 34.30 279 *e*P P 04 16 09.3 +1.0
comp=Z,614nm,0.8s
PMG ScP ScP 04 21 22.5 +0.9
CMSA **Cobar Meteorol** 35.18 240 P P 04 16 15.7 +0.2
baz=35,SNR=435
MTSU **Mount Surprise** 35.32 263 P P 04 16 16.6 -0.2
baz=35,SNR=135
QLP **Quilpie** 35.52 249 P P 04 16 18.2 -0.1
baz=36,SNR=77
MANU **Manus Island** 36.89 291 *e*P P 04 16 30.8 +1.0
comp=Z,294nm,0.8s
COEN **Coen** 36.99 270 P P 04 16 31.1 +0.5
baz=37,SNR=201
COEN **Coen** 36.99 270 *e*P P 04 16 31.1 +0.5
comp=Z,270nm,0.8s
TOO **Toolangi** 37.25 230 P P 04 16 33.1 +0.6
baz=37,SNR=107
MOO **Moorlands** 38.21 222 P P 04 16 40.5 +0.4
baz=38,SNR=25
TAOE **Nuku Hiva Isla** 38.30 82 *e*P P 04 16 39.6 -1.8
comp=Z,293nm,1.1s
TAOE **Nuku Hiva Isla** 38.30 82 *e*P P 04 16 41.5 +0.1
comp=Z,225nm,1.2s
TAU **Tasmania Unive** 38.36 222 *e*P P 04 16 41.5 +0.1
TAU pmax pmax
comp=Z,150nm,0.9s
TAU **Tasmania Unive** 38.36 222 *e*P P 04 16 40.5 -0.9
comp=Z,151nm,0.9s
STKA **Stephens Creek** 38.66 241 P P 04 16 44.6 +0.6
comp=Z,231nm,0.6s,baz=90,slow=9.5,SNR=576
STKA PcP PcP 04 18 37.9 -3.9
comp=Z,18nm,0.7s,baz=61,slow=11,SNR=3.1
STKA ScP ScP 04 21 40.6 +2.9
comp=Z,22nm,0.9s,baz=44,slow=4.2,SNR=4.9
STKA **Stephens Creek** 38.66 241 P P 04 16 44.6 +0.6
baz=39,SNR=374
STKA **Stephens Creek** 38.66 241 *e*P P 04 16 44.7 +0.7
STKA 04 18 37.9
STKA pmax pmax
comp=Z,59nm,0.7s
STKA **Stephens Creek** 38.66 241 *e*P P 04 16 44.6 +0.7
comp=Z,59nm,0.7s
STKA PcP PcP 04 18 37.9 -3.9
STKA ScP ScP 04 21 40.6 +2.9
WAKE **Wake Island** 39.47 338 *e*P P 04 16 50.0 -0.6
comp=Z,251nm,1.2s
QIS **Mount Isa** 39.59 259 P P 04 16 50.7 -1.0
baz=40,SNR=16
ARPS **Mount Arapiles** 39.72 233 P P 04 16 52.5 +0.1
baz=40,SNR=34
H11N3 **WAKE ISLAND Hy** 39.78 338 P P 04 16 52.6 -0.3
baz=181,slow=11,SNR=4.0
H11N1 **WAKE ISLAND Hy** 39.78 338 P P 04 16 53.3 +0.4
baz=181,slow=11,SNR=5.0
H11N2 **WAKE ISLAND Hy** 39.80 338 P P 04 16 52.8 -0.2
baz=181,slow=11,SNR=3.1
MMPI **Merauke** 40.97 277 P P 04 17 03.6 +0.9
comp=Z,1μm,0.8s,comp=Z,23μm
RKT **Rikitea** 41.08 105⇑ *i*P P 04 17 03.8 +0.3
comp=Z,93nm,1.0s
HTT **Hallett** 41.18 239 P P 04 17 04.7 +0.5
baz=41,SNR=321

JAY **Jayapura** 42.72 286 ScP ScP 04 21 55.5 +1.3
comp=Z,1.6nm,0.8s,baz=110,slow=22,SNR=3.5
JAY S S 04 23 04.0 +3.2
comp=Z,0.3nm,0.3s,baz=64,slow=23,SNR=8.3
JAY **Jayapura** 42.72 286 P P 04 17 17.3 +0.7
comp=Z,366nm,0.8s,comp=Z,4μm
GENI **Genyem** 43.18 286 P P 04 17 21.1 +1.0
comp=Z,884nm,0.9s,comp=Z,10μm
BBOO **Buckleboo** 43.43 241 P P 04 17 21.9 +0.1
baz=44,SNR=729
BBOO **Buckleboo** 43.43 241 *e*P P 04 17 21.8 -0.1
comp=Z,486nm,0.6s
WB2 **Warramunga Arr** 44.55 259 *e*P P 04 17 29.6 -1.0
comp=Z,178nm,0.6s
WB2 *e*PcP PcP 04 19 02.0 +0.2
WRAB **Tennant Creek** 44.56 259 *d i*P P 04 17 29.6 -1.1
WRAB pmax pmax
comp=Z,416nm,0.8s
WRA **Warramunga Arr** 44.57 259 P P 04 17 30.1 -0.7
comp=Z,95nm,0.5s,baz=93,slow=7.0,SNR=216
WRA PcP PcP 04 19 02.0 +0.2
comp=Z,22nm,0.8s,baz=92,slow=4.0,SNR=7.4
WRA PP PP 04 19 26.0 +0.9
comp=Z,13nm,0.9s,baz=95,slow=8.9,SNR=3.3
WRA ScP ScP 04 22 03.8 +2.1
comp=Z,22nm,0.8s,baz=88,slow=4.1,SNR=12
WRA S S 04 23 26.3 -0.5
comp=Z,6.4nm,0.8s,baz=98,slow=13,SNR=4.6
AS01 **Alice Springs** 44.71 254 *e*P P 04 17 31.2 -0.7
AS01 *e*PcP PcP 04 19 02.1 -0.2
AS31 **Alice Springs** 44.75 254 *e*P P 04 17 32.0 -0.2
comp=Z,328nm,0.8s
ASAR **Alice Springs** 44.75 254 P P 04 17 31.9 -0.2
comp=Z,1μm,0.6s,baz=88,slow=8.2,SNR=8218
ASAR PcP PcP 04 19 02.5 -0.1
comp=Z,33nm,0.8s,baz=112,slow=3.3,SNR=6.5
ASAR ScP ScP 04 22 04.8 +2.3
comp=Z,23nm,0.8s,baz=101,slow=4.1,SNR=14
ASAR S S 04 23 27.1 -2.3
comp=Z,18nm,0.9s,baz=91,slow=15,SNR=14
KDU **Kakadu** 47.45 269 P P 04 17 52.2 -0.5
baz=48,SNR=44
GUMO **Guam** 47.62 308 *e*P P 04 17 53.9 0.0
GUMO pmax pmax
comp=Z,1μm,1.3s
GUMO **Guam** 47.62 308 *e*P P 04 17 53.7 -0.2
comp=Z,998nm,1.3s
MTN **Manton Dam** 48.69 268 P P 04 18 01.1 -0.8
baz=49,SNR=62
MTN **Manton Dam** 48.69 268 *e*P P 04 18 01.1 -0.8
comp=Z,238nm,0.9s
KMPI **Kaimana, Papua** 48.79 281 P P 04 18 03.4 +0.7
comp=Z,412nm,0.9s,comp=Z,5μm
WRKA **Warakurna** 49.82 252 P P 04 18 10.0 -0.2
baz=50,SNR=1000
FAKI **Fak Fak** 50.41 281 P P 04 18 14.5 -0.1
comp=Z,111nm,1.4s,comp=Z,2μm
FAKI **Fak Fak** 50.41 281 *e*P P 04 18 13.3 -1.4
comp=Z,178nm,1.3s
SWI **Sorong** 52.07 283 P P 04 18 27.0 +0.4
comp=Z,1μm,0.8s,comp=Z,9μm
PALU **Palau** 52.63 294 P P 04 18 31.9 +1.3
baz=53,SNR=4.6
FITZ **Fitzroy Crossi** 52.96 260 ScP ScP 04 22 38.3 +0.8
comp=Z,5.4nm,0.7s,baz=140,slow=7.9,SNR=3.1
FITZ S S 04 25 24.0 +2.5
comp=Z,5.3nm,0.8s,baz=140,slow=23,SNR=3.9
FITZ **Fitzroy Crossi** 52.96 260 *e*P P 04 18 32.8 -0.1
comp=Z,103nm,1.0s
FITZ ScP ScP 04 22 38.3 +0.8
FITZ S S 04 25 24.0 +2.5
MSAI **Masohi** 53.38 279 P P 04 18 35.8 -0.2
comp=Z,67nm,0.7s,comp=Z,1μm
NLAI **Namlea** 55.14 279 P P 04 18 48.4 0.0
comp=Z,319nm,0.9s,comp=Z,5μm
LBMI **Labuha** 55.65 282 P P 04 18 52.5 +0.6
comp=Z,327nm,0.8s,comp=Z,4μm
SOEI **Soe** 55.95 270 P P 04 18 55.4 +1.3
comp=Z,872nm,1.2s,comp=Z,9μm
SOEI **Soe** 55.95 270 *e*P P 04 18 55.5 +1.3
comp=Z,659nm,0.9s
TNTI **Ternate** 56.29 283 P P 04 18 56.7 +0.4
comp=Z,660nm,1.2s,comp=Z,7μm
TNTI **Ternate** 56.29 283 *e*P P 04 18 56.4 +0.1
comp=Z,477nm,0.9s
SANI **Sanana** 56.58 279 P P 04 18 59.7 +1.4
MBWA **Marble Bar** 58.03 256 *e*P P 04 19 07.0 -1.0
comp=Z,171nm,0.8s
MBWA **Marble Bar** 58.03 256 P P 04 19 07.5 -0.6
SNR=6.1
MMRI **Maumere** 58.18 271 *e*P P 04 19 08.0 -1.2
comp=Z,197nm,0.6s
NWAO **Narrogin (SRO)** 59.23 242 *e*P P 04 19 15.6 -0.4
NWAO pmax pmax
comp=Z,316nm,1.6s
NWAO **Narrogin (SRO)** 59.23 242 *e*P P 04 19 15.6 -0.4
comp=Z,316nm,1.6s
NWAO **Narrogin (SRO)** 59.23 242 P P 04 19 15.3 -0.7
SNR=6.2
LUWI **Luwuk** 59.95 279 *e*P P 04 19 21.5 +0.5
comp=Z,355nm,1.0s
SBA **Scott Base** 60.68 184 *e*P P 04 19 27.0 +2.2
SBA pmax pmax
comp=Z,39nm,0.8s
SBA **Scott Base** 60.68 184 *e*P P 04 19 26.9 +2.2
comp=Z,39nm,0.8s
VNDA **Vanda** 60.70 185 P P 04 19 26.1 +1.2
comp=Z,15nm,0.7s,baz=356,slow=7.4,SNR=69
VNDA PcP PcP 04 20 03.8 +1.5
comp=Z,8.9nm,0.9s,baz=122,slow=3.3,SNR=3.8
VNDA ScP ScP 04 23 13.3 +2.7
comp=Z,3.9nm,0.8s,baz=344,slow=3.7,SNR=4.1
VNDA **Vanda** 60.70 185 *e*P P 04 19 26.1 +1.1
comp=Z,16nm,0.8s
VNDA PcP PcP 04 20 03.8 +1.5
VNDA ScP ScP 04 23 13.3 +2.7
KAPI **Kappang** 61.56 274 *e*P P 04 19 30.4 -1.3
comp=Z,62nm,0.7s
KAPI **Kappang** 61.56 274 P P 04 19 31.6 0.0
SNR=5.4
CTBH **Cotabato--PC H** 61.67 289⇓ *i*P P 04 19 32.6 +0.3
H01W1 **Cape Leeuwin H** 61.72 239 P P 04 19 33.7 +1.6
H01W3 **Cape Leeuwin H** 61.73 239 P P 04 19 34.1 +1.9
baz=37,slow=74,SNR=11
H01W2 **Cape Leeuwin H** 61.73 239 P P 04 19 35.3 +3.1
baz=337,slow=74,SNR=11
JAGI **Jajag, Banyuwa** 65.93 268 *e*P P 04 19 57.8 -1.7
comp=Z,402nm,0.9s
MYLDM **Lahad Datu** 66.13 284 *e*P P 04 20 02.6 +1.8
comp=Z,217nm,1.3s
CASY **Casey** 66.33 205 *e*P P 04 20 01.2 +0.2
comp=Z,108nm,0.9s
INU **Inuyama** 67.48 322 *e*P P 04 20 07.6 -1.0
comp=Z,220nm,1.0s
MJAR **Matsushiro Arr** 67.62 323 P P 04 20 09.1 -0.4
comp=Z,25nm,0.5s,baz=154,slow=5.9,SNR=33
MJAR PcP PcP 04 20 32.4 +0.8
comp=Z,5.2nm,0.7s,baz=153,slow=5.4,SNR=2.4
MAJO **Matsushiro** 67.62 323 *d i*P P 04 20 09.1 -0.4
MAJO pmax pmax
comp=Z,162nm,1.0s
MAJO **Matsushiro** 67.62 323 *e*P P 04 20 07.9 -1.6
comp=Z,40nm,0.6s
KKM **Kota Kinabalu** 68.56 284 *e*P P 04 20 16.0 +0.2
comp=Z,95nm,0.6s
UGM **Wanagama** 69.54 268 *e*P P 04 20 20.7 -0.9
comp=Z,375nm,0.5s
SMRI **Semarang** 69.85 269 *e*P P 04 20 27.2 +3.8
comp=Z,286nm,0.9s
JNU **Nakatsue** 69.86 316 P P 04 20 23.4 +0.3
comp=Z,15nm,0.7s,baz=169,slow=1.0,SNR=9.2
JNU **Nakatsue** 69.86 316 *e*P P 04 20 22.9 -0.2
comp=Z,36nm,1.0s
YOJ **Yonaguni jima** 70.70 305 *e*P P 04 20 27.9 -0.2
YOJ pmax pmax
comp=Z,149nm,0.6s
YOJ **Yonaguni jima** 70.70 305 *e*P P 04 20 27.9 -0.2
comp=Z,149nm,0.6s
SBUM **Sibu** 71.05 279 *e*P P 04 20 31.0 +0.6
comp=Z,53nm,0.9s
YULB **Yu-li** 71.53 303 *e*P P 04 20 32.4 -0.6
comp=Z,27nm,0.8s
NACB **Ninganchiao** 71.67 304 *e*P P 04 20 32.9 -0.9
comp=Z,131nm,1.1s
SSLB **Suanglung** 71.99 303 *e*P P 04 20 34.5 -1.3
comp=Z,39nm,0.6s
TPUB **Ta-pu** 72.02 302 *e*P P 04 20 34.6 -1.3
comp=Z,94nm,0.7s

YHNB **Yeheng** 72.09 304 *e*P P 04 20 35.3 -1.0
comp=Z,86nm,1.1s
CISI **Cisompet, Garu** 72.22 268 *e*P P 04 20 35.5 -1.9
comp=Z,285nm,0.9s
QSPA **South Pole Qui** 72.41 180 *e*P P 04 20 38.1 +0.5
KSM **Kuching** 72.53 277 *e*P P 04 20 39.2 +0.1
comp=Z,276nm,0.9s
LEM **Lembang** 72.61 268 P P 04 20 45.4 +5.6
comp=Z,404nm,0.8s
YSS **Yuzh-Sakhalins** 73.12 333 *e*P P 04 20 43.0 +1.3
YSS pmax pmax
comp=Z,30nm,0.5s
YSS **Yuzh-Sakhalins** 73.12 333 *e*P P 04 20 41.8 +0.1
comp=Z,29nm,0.5s
MIR **Mirnyy** 73.36 205 *i*P P 04 20 44.0 +1.2
MIR pmax pmax
comp=Z,14nm,1.2s
PEA0 **Petropavlovsk-** 73.39 345 *e*P P 04 20 42.9 -0.2
PEA0B **Petropavlovsk-** 73.39 345 *e*P P 04 20 43.0 -0.1
comp=Z,21nm,0.8s
PETK **Petropavlovsk-** 73.39 345 P P 04 20 42.9 -0.2
comp=Z,14nm,0.6s,baz=146,slow=9.0,SNR=26
XMIS **Christmas Isla** 73.49 264 *e*P P 04 20 44.8 +0.3
comp=Z,149nm,1.0s
KSRS **Korea Array** 74.42 318 P P 04 20 50.2 +1.0
comp=Z,8.5nm,0.6s,baz=131,slow=6.2,SNR=27
KSRS S S 04 29 38.0 -1.8
comp=Z,0.6nm,0.3s,baz=27,slow=22,SNR=2.4
QZH **Quanzhou** 74.43 303⇓ *i*P P 04 20 47.8 -1.8
QZH sP sP 04 23 41.3 -0.8
QZH S S 04 29 41.4 +1.0
QZH pmax pmax
comp=Z,280nm,1.2s
QZH pmax pmax
comp=Z,1μm,4.9s
KS15 **Wonju Array Si** 74.44 318 *e*P P 04 20 50.0 +0.7
KSAR **Wonju Array Be** 74.44 318 P P 04 20 50.3 +0.9
KSAR S S 04 29 38.0 -2.0
KSAR **Wonju Array Be** 74.44 318 P P 04 20 50.2 +0.9
KSAR S S 04 29 38.0 -2.0
KS01 **Wonju Array Si** 74.46 318 *e*P P 04 20 49.5 0.0
H06S1 **SOCORRO T** 75.61 65 P P 04 20 57.1 +0.8
H06E1 **SOCORRO T-PHAS** 75.65 65 P P 04 20 58.0 +1.4
SNR=7.8
VLA **Vladivostok** 75.67 325 *de*P P 04 20 56.8 +0.7
VLA pmax pmax
comp=Z,33nm,0.9s
SNCC **San Nicolas Is** 75.69 48 P P 04 20 57.1 +0.6
baz=237
SCZ2 **Santa Cruz Isl** 76.02 47 P P 04 20 58.9 +0.6
baz=237
SBC **Santa Barbara** 76.20 47 P P 04 21 00.1 +0.9
baz=237
TYV **Tymovskoe** 76.24 336 *e*P P 04 20 58.2 -0.9
TYV pmax pmax
comp=Z,14nm,0.5s
SCI2 **San Clemente I** 76.25 49 P P 04 20 59.9 +0.3
baz=238
SAO **San Andreas Ge** 76.31 44 *e*P P 04 21 00.7 +0.9
SAO pmax pmax
comp=Z,53nm,0.9s
SAO **San Andreas Ge** 76.31 44 *e*P P 04 21 00.7 +0.9
comp=Z,53nm,0.9s
USRK **Ussuriysk Ar.** 76.33 326 P P 04 21 01.0 +1.3
comp=Z,5.9nm,0.5s,baz=103,slow=6.2,SNR=20
USRK S S 04 30 00.6 +0.6
comp=Z,1.7nm,0.6s,baz=135,slow=46,SNR=2.6
PKM **Mcpherson Peak** 76.38 46 P P 04 21 01.1 +0.6
baz=237
SMMC **Simmler** 76.48 46 P P 04 21 02.1 +1.2
baz=237
HOPS **Hopland Field** 76.55 41 *e*P P 04 21 01.1 0.0
comp=Z,35nm,1.1s
CIS **Catalina Islan** 76.56 48 P P 04 21 01.7 +0.4
baz=238
FMP **Fort Macarthur** 76.81 48 P P 04 21 03.7 +1.1
baz=238
KMRM **Mail Ridge** 76.89 40 *e*P P 04 21 03.6 +0.6
comp=Z,84nm,0.9s
OSI **Osito Audit: C** 76.98 47 P P 04 21 04.4 +0.8
baz=238
OSI **Osito Audit: C** 76.98 47 *e*P P 04 21 04.1 +0.4
comp=Z,58nm,1.4s
DECC **Green Verdugo** 77.07 48 P P 04 21 04.2 +0.1
baz=238
PASC **Pasadena Art C** 77.13 48 *e*P P 04 21 03.9 -0.5
comp=Z,26nm,0.6s
ARVC **Arvin** 77.18 47 P P 04 21 05.4 +0.7
baz=238,SNR=9.9
MWC **Mount Wilson** 77.25 48 *e*P P 04 21 05.7 +0.4
MWC pmax pmax
comp=Z,43nm,0.6s
MWC **Mount Wilson** 77.25 48 *e*P P 04 21 05.7 +0.4
comp=Z,43nm,0.6s
KHMM **Horse Mountain** 77.26 39 *e*P P 04 21 04.1 -1.0
comp=Z,41nm,1.1s
BAR **Barrett** 77.44 50 *e*P P 04 21 06.6 +0.5
comp=Z,21nm,1.0s
MURC **Murrieta** 77.53 49 P P 04 21 07.2 +0.6
baz=239,SNR=11
BFSC **Mount Baldy Ra** 77.53 48 P P 04 21 07.0 +0.2
baz=238,SNR=17
RCTC **Rector, Farmer** 77.53 45 P P 04 21 06.9 +0.4
baz=237
EDW2 **Edwards Air Fo** 77.64 47 P P 04 21 07.8 +0.6
baz=238,SNR=48
NJ2 **Nanjing** 77.68 309 *e*P P 04 21 07.9 +0.5
NJ2 pmax pmax
comp=Z,41nm,1.4s
ISA **Isabella, Lake** 77.72 46 P P 04 21 08.4 +0.7
baz=238,SNR=28
ISA **Isabella, Lake** 77.72 46 *e*P P 04 21 08.3 +0.7
ISA pmax pmax
comp=Z,52nm,0.9s
ISA **Isabella, Lake** 77.72 46 *e*P P 04 21 08.3 +0.7
comp=Z,52nm,0.9s
HABR **Khabarovsk** 77.72 330 *e*P P 04 21 06.4 -0.8
HABR *e* 04 21 13.5
HABR *e**PP **pP** 04 23 04.1 +0.1
HABR *e**SP **sP** 04 24 01.8 +1.2
HABR *e* 04 24 11.5
HABR *e*PPP PPP 04 26 04.0
HABR *e*S **S** 04 30 13.4 -1.1
HABR *e* 04 30 33.4
HABR *e*SS **SS** 04 35 30.5 -0.4
HABR *e*SSS SSS 04 39 00.6
HABR pmax pmax
comp=Z,57nm,1.0s
HABR pmax pmax
comp=Z,34nm,0.8s
HABR pmax pmax
comp=Z,11nm,0.7s
HABR pmax pmax
comp=E,16nm,0.8s
HABR MLR MLR
comp=Z,128nm,17.0s
CMB **Columbia Colle** 77.72 43 *e*P P 04 21 08.0 +0.4
CMB **Columbia Colle** 77.72 43 *e*P P 04 21 07.8 +0.2
comp=Z,106nm,0.8s
MONP2 **Monument Peak** 77.73 50 P P 04 21 08.5 +0.6
baz=240,SNR=37
MNAI **Manna** 77.75 269 *e*P P 04 21 07.2 -1.0
comp=Z,332nm,0.6s
WDC **Whiskeytown Da** 77.81 40 *e*P P 04 21 08.6 +0.7
WDC pmax pmax
comp=Z,28nm,1.3s
WDC **Whiskeytown Da** 77.81 40 *e*P P 04 21 08.6 +0.7
comp=Z,28nm,1.3s
IBP **Imperial Bould** 77.85 50 P P 04 21 09.3 +0.8
baz=240,SNR=22
AFDM **Forest Hills D** 77.86 42 *e*P P 04 21 08.8 +0.5
comp=Z,41nm,1.0s
ORV **Oroville** 77.87 42 *e*P P 04 21 08.7 +0.5
ORV pmax pmax
comp=Z,26nm,0.9s
ORV **Oroville** 77.87 42 *e*P P 04 21 08.7 +0.5
comp=Z,26nm,0.9s
MDJ **Mudanjiang** 77.90 325 P P 04 21 09.5 +1.2
MDJ pP pP 04 23 07.2 +2.0
MDJ sP sP 04 24 05.8 +4.0
MDJ S **S** 04 30 18.9 +2.3
MDJ pmax pmax
comp=Z,50nm,0.8s
MDJ pmax pmax
comp=Z,260nm,5.6s
MDJ **Mudanjiang** 77.90 325 *e*P P 04 21 09.4 +1.1

comp=Z,44nm,0.8s
N02D Trinity Center 77.95 40 P P 04 21 09.7 +1.0
baz=234,SNR=9.9
PFO Pinyon Flats O 78.07 49 P P 04 21 10.1 +0.4
comp=Z,14nm,0.9s,baz=277,slow=4.3,SNR=11
PFO pP pP 04 23 09.3 +2.8
comp=Z,1.8nm,0.8s,baz=224,slow=6.4,SNR=4.2
PFO Pinyon Flats O 78.07 49 P P 04 21 10.1 +0.4
baz=239,SNR=12
PFO Pinyon Flats O 78.07 49 *e*P P 04 21 10.2 +0.6
PFO *PP pP 04 23 09.4 +2.8
PFO pmax pmax
comp=Z,17nm,1.0s
PFO Pinyon Flats O 78.07 49 *e*P P 04 21 10.2 +0.6
comp=Z,17nm,1.0s
PFO pP pP 04 23 09.3 +2.8
BBRC Big Bear Solar 78.07 48 P P 04 21 09.8 +0.1
baz=239
M02C Callahan 78.10 39 P P 04 21 10.7 +1.1
baz=234,SNR=11
O03D Paynes Creek 78.11 41 P P 04 21 09.8 +0.2
baz=234,SNR=15
L02D Cave Junction, 78.11 38 P P 04 21 10.5 +1.0
baz=233
LRMC Laurel Mtn Rad 78.17 47 P P 04 21 10.8 +0.6
baz=238,SNR=13
KDAK Kodiak Island 78.17 14 *i* P P 04 21 10.3 +0.9
SWSC Sam W. Stewart 78.21 50 P P 04 21 10.9 +0.7
baz=240,SNR=16
RRX Edison Barstow 78.33 48 P P 04 21 11.4 +0.5
baz=239
YBH Yreka Blue Hor 78.39 39 P P 04 21 12.1 +0.9
comp=Z,28nm,1.0s,baz=190,slow=2.1,SNR=41
YBH pP pP 04 23 11.2 +3.0
comp=Z,5.4nm,1.0s,baz=123,slow=4.3,SNR=3.4
YBH Yreka Blue Hor 78.39 39 *e*P P 04 21 12.2 +1.1
YBH *PP pP 04 23 11.2 +3.0
YBH pmax pmax
comp=Z,21nm,0.8s
YBH Yreka Blue Hor 78.39 39 *e*P P 04 21 12.2 +1.1
comp=Z,21nm,0.8s
YBH pP pP 04 23 11.2 +3.0
CWC Cottonwood Cre 78.40 46 P P 04 21 12.0 +0.6
baz=238
LPIG La Paz 78.41 60 P P 04 21 12.7 +1.2
comp=Z,34nm,0.8s,baz=350,slow=2.8,SNR=5.3
MLAC Mammoth, Mammo 78.53 44 P P 04 21 12.7 +0.6
baz=237,SNR=29
BELC Belle Mtn. Jos 78.59 49 P P 04 21 13.2 +0.8
baz=240,SNR=25
MPMC Manual Prospec 78.60 46 P P 04 21 13.0 +0.4
baz=238,SNR=32
WAKR Walker 78.61 43 *e*P P 04 21 13.3 +0.9
TIN Tinemaha, Big 78.62 45 P P 04 21 13.2 +0.7
baz=238,SNR=7.4
GSC Goldstone, Bar 78.69 47 P P 04 21 13.4 +0.5
baz=239,SNR=15
GSC Goldstone, Bar 78.69 47 *e*P P 04 21 13.4 +0.5
GSC pmax pmax
comp=Z,14nm,0.9s
GSC Goldstone, Bar 78.69 47 *e*P P 04 21 13.4 +0.5
comp=Z,14nm,0.9s
MYKOM Kota Tinggi 78.75 276 *e*P P 04 21 13.8 +0.2
comp=Z,74nm,1.0s
HUMO Hull Mountain 78.77 38 *e*P P 04 21 13.8 +0.8
HEC Hector,Ludlow 78.78 48 P P 04 21 13.8 +0.5
baz=239,SNR=19
NKL Nikolayevsk 78.79 336 *i* P P 04 21 12.3 -0.5
NKL pmax pmax
comp=Z,20nm,0.7s
BC3 Big Chuckawall 78.81 49 P P 04 21 14.4 +0.8
baz=240,SNR=11
M04C Macdoel 78.95 40 P P 04 21 14.7 +0.5
baz=234,SNR=12
GLA Glamis 78.97 50 P P 04 21 15.5 +1.1
baz=240,SNR=15
GLA Glamis 78.97 50 *e*P P 04 21 15.6 +1.2
GLA Glamis 78.97 50 *e*P P 04 21 15.3 +1.0
comp=Z,42nm,1.0s
GRAC Grapevine Rang 79.18 46 P P 04 21 16.1 +0.8
baz=238,SNR=56
I03D Drain, OR 79.19 37 P P 04 21 16.0 +0.8
baz=233
GMRC Granite Mounta 79.23 48 P P 04 21 16.2 +0.4
baz=240,SNR=12
QIZ Qiongzhong 79.24 294 P P 04 21 13.1 -2.9
QIZ pP pP 04 23 12.9 -0.5
QIZ S S 04 30 35.9 +4.4
QIZ pmax pmax
comp=Z,22nm,1.9s
FURC Furnace Creek, 79.25 46 P P 04 21 16.2 +0.6
baz=239,SNR=19
IRM Iron Mountain 79.29 49 P P 04 21 16.9 +0.9
baz=240,SNR=20
NV01 Mina Array Sit 79.31 44 *e*P P 04 21 16.1 -0.2
NVAR Mina Array Bea 79.31 44 P P 04 21 16.9 +0.6
comp=Z,44nm,1.0s,baz=228,slow=7.7,SNR=178
NVAR pP pP 04 23 15.2 +1.5
comp=Z,2.6nm,0.9s,baz=223,slow=9.8,SNR=3.6
NVAR PP PP 04 24 27.0 +0.4
comp=Z,2.2nm,1.1s,baz=225,slow=11,SNR=2.8
DL2 Dalian 79.31 317 ⇓P P 04 21 16.6 +0.7
DL2 pP pP 04 23 14.5 +1.1
DL2 sP sP 04 24 12.1 +2.3
DL2 S S 04 30 35.4 +3.9
DL2 pmax pmax
comp=Z,46nm,0.7s
DL2 pmax pmax
comp=Z,260nm,4.5s
SHOC Shoshone, Teco 79.36 47 P P 04 21 17.0 +0.6
baz=239,SNR=11
TUQ Turquoise Moun 79.37 48 P P 04 21 17.1 +0.6
baz=239,SNR=28
NV11 Mina Array Sit 79.41 44 *e*P P 04 21 17.4 +0.7
comp=Z,48nm,1.1s
K04D Chiloquin, OR 79.49 39 P P 04 21 17.7 +0.7
baz=234
Y12C Blythe 79.53 50 P P 04 21 17.9 +0.7
baz=241,SNR=12
Y12C Blythe 79.53 50 *e*P P 04 21 18.4 +1.1
comp=Z,23nm,0.8s
113A Mohawk Valley, 79.61 51 *e*P P 04 21 18.6 +1.0
comp=Z,31nm,1.1s
SNY Shenyang 79.71 320 ⇓P P 04 21 18.2 +0.3
SNY pP pP 04 23 15.0 -0.5
SNY sP sP 04 24 18.3 +6.4
SNY S S 04 30 40.6 +5.2
SNY pmax pmax
comp=Z,24nm,2.4s
SNY pmax pmax
comp=Z,280nm,7.4s
CN2 Changchun 79.74 322 ⇓P P 04 21 18.5 +0.4
CN2 *e*pP pP 04 23 17.1 +1.4
CN2 *e*S S 04 30 36.8 +1.1
CN2 pmax pmax
comp=Z,50nm,1.1s
CN2 pmax pmax
comp=Z,300nm,3.0s
LDFC Landfair 79.77 48 *e*P P 04 21 19.8 +1.2
comp=Z,93nm,0.9s
I04A Tendick Farm, 79.79 38 P P 04 21 18.9 +0.4
baz=234,SNR=6.0
KLR Kul'dur 79.82 329 P P 04 21 19.1 +0.7
comp=Z,8.1nm,0.8s,baz=101,slow=4.3,SNR=16
KLR pP pP 04 23 18.8 +2.8
comp=Z,1.6nm,0.8s,baz=145,slow=4.1,SNR=3.2
TPNV Topopah Spring 79.92 46 P P 04 21 20.1 +0.7
baz=239,SNR=23
TPNV Topopah Spring 79.92 46 *e*P P 04 21 20.1 +0.7
TPNV pmax pmax
comp=Z,17nm,0.8s
TPNV Topopah Spring 79.92 46 *e*P P 04 21 20.1 +0.7
comp=Z,17nm,0.8s
214A Organ Pipe Nat 79.94 52 P P 04 21 20.5 +1.0
baz=242
MOD Modoc Plateau 79.96 40 *e*P P 04 21 20.0 +0.5
comp=Z,68nm,1.3s
NEE2 Needles Airpor 79.97 49 P P 04 21 20.4 +0.9
baz=240
HSIG 80.03 55 *e*P P 04 21 20.6 +0.7
comp=Z,23nm,1.0s
K05A Summer Lake 80.07 39 *e*P P 04 21 21.1 +1.0
comp=Z,94nm,1.2s
PDMCI Parker Dam,Lak 80.08 49 P P 04 21 20.9 +0.8
baz=241,SNR=13
G03D McMinnville, O 80.15 36 P P 04 21 20.4 +0.2
baz=233

J05D Fort Rock, OR 80.19 39 P P 04 21 21.5 +0.9
baz=234,SNR=43
BRLK Bradley Lake 80.34 14 *e*P P 04 21 20.9 0.0
comp=Z,62nm,1.2s
WHN Wuhan 80.35 306 ⇓P P 04 21 22.2 +0.6
WHN pmax pmax
comp=Z,74nm,1.0s
H04A Detroit Lake 80.45 37 *e*P P 04 21 21.9 +0.1
comp=Z,53nm,1.4s
RSO Redoubt South 80.57 13 *e*P P 04 21 22.2 0.0
W13A Hualapai Mount 80.65 49 *e*P P 04 21 24.2 +0.8
comp=Z,18nm,1.1s
W13A *epP pP 04 23 22.2 +1.0
Y14A Wickenburg 80.73 50 *e*P P 04 21 24.4 +0.8
comp=Z,83nm,0.9s
I05D Terrebonne, OR 80.74 38 P P 04 21 23.8 +0.4
baz=234,SNR=7.6
E03A Lebam 80.80 35 *e*P P 04 21 24.6 +1.1
comp=Z,79nm,1.0s
F04D Rainier, OR 80.82 36 P P 04 21 24.5 +0.8
baz=233
MA2 Magadan 80.91 345 *i* P P 04 21 22.8 -1.0
TIA Tai'an 80.98 312 ⇓P P 04 21 25.1 +0.4
TIA pmax pmax
comp=Z,20nm,1.1s
F04A Amboy 81.06 36 *e*P P 04 21 25.6 +0.7
comp=Z,46nm,1.1s
R11A Troy Canyon, C 81.09 45 P P 04 21 25.9 +0.4
baz=238,SNR=35
R11A Troy Canyon, C 81.09 45 *e*P P 04 21 25.8 +0.3
comp=Z,18nm,1.1s
NLWA Neilton Lookou 81.16 34 *e*P P 04 21 26.5 +1.1
comp=Z,44nm,1.1s
G05D Wamic, OR 81.28 37 P P 04 21 26.7 +0.6
baz=234
WVOR Wild Horse Val 81.28 40 *e*P P 04 21 26.9 +0.6
WVOR pmax pmax
comp=Z,66nm,1.0s
WVOR Wild Horse Val 81.28 40 *e*P P 04 21 26.9 +0.6
comp=Z,66nm,1.0s
GAMB Gambell 81.33 3 *e*P P 04 21 26.4 +0.7
comp=Z,14nm,0.7s
SPU Mount Spurr 81.37 13 *e*P P 04 21 25.6 -0.6
TUC Tucson 81.63 52 P P 04 21 29.8 +1.5
baz=243
TUC Tucson 81.63 52 *e*P P 04 21 29.7 +1.5
TUC pmax pmax
comp=Z,46nm,0.9s
TUC Tucson 81.63 52 *e*P P 04 21 29.7 +1.4
comp=Z,46nm,0.9s
G06A Carlson Farm, 81.67 37 *e*P P 04 21 28.8 +0.7
comp=Z,17nm,0.8s
LON Longmire 81.89 35 *e*P P 04 21 29.5 +0.3
LON pmax pmax
comp=Z,13nm,1.1s
LON Longmire 81.89 35 *e*P P 04 21 29.5 +0.3
comp=Z,13nm,1.1s
LCMT Little Creek M 82.03 47 *e*P P 04 21 31.1 +0.8
comp=Z,94nm,0.9s
D05A Enumclaw 82.05 35 *e*P P 04 21 31.1 +1.2
comp=Z,70nm,1.2s
X16A Lo Mia Camp, P 82.10 50 *e*P P 04 21 31.9 +1.2
comp=Z,75nm,1.0s
TT01 Tatalina 82.21 10 *e*P P 04 21 30.5 +0.1
TTA Tatalina 82.23 10 *e*P P 04 21 31.1 +0.5
TTA pmax pmax
comp=Z,17nm,0.9s
TTA Tatalina 82.23 10 *e*P P 04 21 31.1 +0.5
comp=Z,17nm,0.9s
IPM Ipoh 82.27 277 *e*P P 04 21 31.9 0.0
comp=Z,132nm,0.9s
KNB Kanab 82.33 47 *e*P P 04 21 32.9 +1.1
KNB pmax pmax
comp=Z,57nm,1.2s
KNB Kanab 82.33 47 *e*P P 04 21 32.9 +1.1
comp=Z,57nm,1.2s
PSUT Pine Spring 82.36 46 *e*P P 04 21 32.5 +0.5
comp=Z,44nm,1.2s
319A Douglas 82.36 54 *e*P P 04 21 33.6 +1.6
comp=Z,95nm,1.0s
PMR Palmer 82.37 14 *e*P P 04 21 30.8 -0.4
PMR pmax pmax
comp=Z,14nm,0.6s
PMR Palmer 82.37 14 *e*P P 04 21 30.8 -0.4
comp=Z,14nm,0.6s
U15A North Rim 82.43 48 *e*P P 04 21 33.8 +1.3
comp=Z,71nm,0.8s
ELK Elko 82.54 43 *e*P P 04 21 33.5 +0.6
ELK pmax pmax
comp=Z,25nm,0.8s
ELK Elko 82.54 43 *e*P P 04 21 33.5 +0.6
comp=Z,25nm,0.8s
A04D Lummi Island 82.59 34 P P 04 21 33.9 +1.4
baz=233
B05A Bryant 82.64 34 P P 04 21 33.3 +0.5
baz=233,SNR=9.6
WUAZ Wupatki 82.66 49 P P 04 21 34.9 +1.4
baz=242
WUAZ Wupatki 82.66 49 *e*P P 04 21 34.5 +0.9
comp=Z,67nm,1.0s
SML Sawmill 82.74 14 *e*P P 04 21 33.4 +0.3
SML pmax pmax
comp=Z,24nm,1.2s
SML Sawmill 82.74 14 *e*P P 04 21 33.4 +0.3
comp=Z,24nm,1.2s
DIV Divide 82.77 15 *e*P P 04 21 33.1 -0.2
comp=Z,30nm,0.8s
KULM Kulim 82.88 278 *e*P P 04 21 35.4 +0.5
comp=Z,66nm,1.0s
PKCU Pink Cliffs 82.89 47 *e*P P 04 21 36.7 +1.8
comp=Z,43nm,1.0s
PPLA Purkeypile 82.90 12 *e*P P 04 21 33.0 -1.0
comp=Z,72nm,2.0s
BMRM Bremner River 82.93 16 *e*P P 04 21 34.0 -0.1
comp=Z,20nm,0.7s
HAWA Hanford 82.96 37 *e*P P 04 21 35.1 +0.6
comp=Z,35nm,0.8s
SCM Sheep Creek Mo 83.00 14 *e*P P 04 21 34.2 -0.3
SCM pmax pmax
comp=Z,52nm,0.8s
SCM Sheep Creek Mo 83.00 14 *e*P P 04 21 34.2 -0.3
comp=Z,52nm,0.8s
KLU Klutina 83.05 15 *e*P P 04 21 34.1 -0.6
comp=Z,17nm,1.2s
C06D Leavenworth 83.08 35 P P 04 21 35.5 +0.4
baz=234
B06A Marblemount 83.11 34 *e*P P 04 21 35.1 -0.1
comp=Z,16nm,0.9s
X18A Snowflake 83.25 51 *e*P P 04 21 37.1 +0.6
comp=Z,31nm,1.1s
MTPU Mount Pierson 83.27 47 *e*P P 04 21 38.0 +1.2
comp=Z,55nm,1.1s
CAST Castle Rocks 83.39 12 *e*P P 04 21 34.8 -1.5
comp=Z,39nm,0.9s
HPIG 83.39 59 *e*P P 04 21 38.4 +1.0
comp=Z,17nm,0.8s
BMO Blue Mountains 83.41 39 *e*P P 04 21 36.5 -0.4
BMO *e*PP pP 04 23 34.4 -1.5
BMO pmax pmax
comp=Z,12nm,0.9s
BMO Blue Mountains 83.41 39 *e*P P 04 21 36.5 -0.4
comp=Z,12nm,0.9s
BMO *epP pP 04 23 34.4 -1.5
SEY Seymchan 83.49 347 *d* P P 04 21 36.3 -0.5
MSU Marysvale 83.50 46 *e*P P 04 21 38.8 +1.1
MSU Marysvale 83.50 46 *e*P P 04 21 38.8 +1.1
SKLT Songkhla 83.50 280 P P 04 21 39.1 +1.1
comp=Z,165nm,0.9s,comp=Z,2µm
BJT Baijiatuau 83.51 315 *e*P P 04 21 38.0 +0.6
BJT pmax pmax
comp=Z,46nm,1.0s
BJT Baijiatuau 83.51 315 *e*P P 04 21 38.0 +0.6
comp=Z,46nm,1.0s
BJI Beijing 83.51 315 P P 04 21 38.0 +0.6
BJI pP pP 04 23 37.0 +0.6
BJI S S 04 31 05.5 -8.1
BJI pmax pmax
comp=Z,50nm,1.3s
BJI pmax pmax
comp=Z,600nm,4.4s
MFID Camas Ranch 83.55 41 *e*P P 04 21 38.2 +0.5
comp=Z,46nm,1.1s
SKNT Sakolnakorn 83.67 290 P P 04 21 38.8 +0.1
comp=Z,160nm,1.2s
W18A Petrified Fore 83.67 50 P P 04 21 38.5 -0.1
baz=243
D08A Wollman Farm, 83.68 36 *e*P P 04 21 38.6 +0.5

comp=Z,26nm,0.8s
CHBT CHBT 83.73 285 P P 04 21 39.6 +0.6
comp=Z,131nm,1.0s,comp=Z,4µm
KTH Kantishna Hill 83.74 12 *e*P P 04 21 37.0 -1.1
comp=Z,28nm,0.9s
PSI Prapat 83.74 275 P P 04 21 38.6 -0.7
comp=Z,99nm,0.7s,baz=124,slow=4.0,SNR=103
PSI pP pP 04 23 38.0 -0.4
comp=Z,3.2nm,0.6s,baz=138,slow=12,SNR=4.5
PSI PP PP 04 25 01.9 -0.9
comp=Z,9.6nm,0.8s,baz=111,slow=6.2,SNR=6.9
PSI Prapat 83.74 275 *e*P P 04 21 38.1 -1.2
comp=Z,123nm,0.9s
PSI pP pP 04 23 38.0 -0.4
PSI PP PP 04 25 01.9 -0.9
TRF Thorofare Moun 83.78 12 *e*P P 04 21 37.6 -0.8
comp=Z,48nm,0.9s
DUG Dugway, Tooele 83.87 45 P P 04 21 39.6 +0.2
baz=241
DUG Dugway, Tooele 83.87 45 *e*P P 04 21 39.6 +0.2
DUG pmax pmax
comp=Z,9.0nm,0.9s
DUG Dugway, Tooele 83.87 45 *e*P P 04 21 39.6 +0.2
comp=Z,9.4nm,0.9s
121A Cookes Peak, D 84.01 53 P P 04 21 41.2 +0.9
baz=245,SNR=17
ENH Enshi 84.02 304 *e*P P 04 21 41.2 +0.9
comp=Z,226nm,1.3s
RND Reindeer 84.03 13 *e*P P 04 21 39.2 -0.4
RND pmax pmax
comp=Z,44nm,0.8s
RND Reindeer 84.03 13 *e*P P 04 21 39.2 -0.4
comp=Z,44nm,0.8s
F10A Beach Ranch, E 84.06 38 *e*P P 04 21 40.1 0.0
comp=Z,43nm,0.9s
DHY Denali Highway 84.07 14 *e*P P 04 21 39.5 -0.4
comp=Z,14nm,1.0s
MAW Mawson 84.07 200 P P 04 21 40.1 +0.5
comp=Z,49nm,0.8s,baz=126,slow=6.5,SNR=100
MAW Mawson 84.07 200 P P 04 21 40.2 +0.5
baz=84,SNR=31
MAW Mawson 84.07 200 *e*P P 04 21 40.2 +0.5
MAW pmax pmax
comp=Z,12nm,0.8s
MAW Mawson 84.07 200 *e*P P 04 21 40.2 +0.5
comp=Z,12nm,0.8s
BGU Big Grassy Mou 84.08 44 *e*P P 04 21 41.1 +0.6
comp=Z,5.4nm,0.9s
PMSA Palmer Station 84.10 157 P P 04 21 41.2 +1.3
comp=Z,44nm,0.9s
B08A Colville Reser 84.19 35 *e*P P 04 21 40.4 -0.2
comp=Z,31nm,1.1s
BPAW Bear Paw Mtn. 84.22 12 *e*P P 04 21 38.9 -1.5
comp=Z,21nm,1.5s
MCK McKinley 84.31 13 *e*P P 04 21 40.3 -0.5
MCK pmax pmax
comp=Z,34nm,1.0s
MCK McKinley 84.31 13 *e*P P 04 21 40.3 -0.5
comp=Z,34nm,1.0s
ZAIG Zacatecas 84.40 64 *e*P P 04 21 44.2 +1.7
comp=Z,34nm,1.0s
PAX Paxson 84.42 15 *e*P P 04 21 40.9 -0.6
PAX pmax pmax
comp=Z,15nm,1.0s
PAX Paxson 84.42 15 *e*P P 04 21 40.9 -0.6
comp=Z,15nm,1.0s
C09A Chrisman Ranch 84.46 36 *e*P P 04 21 42.2 +0.2
comp=Z,26nm,1.0s
MOIG Morelia 84.49 67 *e*P P 04 21 44.1 +1.1
comp=Z,62nm,1.0s
KHON Khomkaen 84.49 289 P P 04 21 43.7 +1.0
comp=Z,22nm,1.0s
SKAG Skagway 84.49 21 *e*P P 04 21 43.4 +1.7
comp=Z,47nm,1.4s
HLID Hailey 84.50 41 P P 04 21 43.2 +0.7
baz=240
HLID Hailey 84.50 41 *e*P P 04 21 43.2 +0.7
comp=Z,26nm,0.9s
HLID *epP pP 04 23 42.1 +0.2
TMUT Trail Mountain 84.53 46 *e*P P 04 21 43.4 +0.5
comp=Z,40nm,1.2s
GSI Gunungsitoli 84.57 273 *e*P P 04 21 44.2 +1.0
comp=Z,246nm,1.0s
MPU Maple Canyon 84.58 45 *e*P P 04 21 43.4 +0.5
comp=Z,11nm,1.0s
TRTT Trang 84.59 280 P P 04 21 44.3 +1.0
comp=Z,171nm,0.9s,comp=Z,2µm
HVU Hansel Valley 84.67 43 *e*P P 04 21 43.5 +0.2
HVU pmax pmax
comp=Z,11nm,0.8s
HVU Hansel Valley 84.67 43 *e*P P 04 21 43.5 +0.2
comp=Z,11nm,0.8s
NONG Nongkai 84.79 291 P P 04 21 44.7 +0.5
comp=Z,55nm,1.1s,comp=Z,14µm
GYA Guiyang 84.80 300 P P 04 21 44.0 -0.3
GYA pP pP 04 23 47.2 +3.5
GYA sP sP 04 24 43.0 +3.3
GYA PP PP 04 25 13.6 +2.5
GYA SKS SKSac 04 31 12.3 -4.1
GYA S SKKSac 04 31 25.5 +1.2
GYA pmax pmax
comp=Z,40nm,1.0s
GYA pmax pmax
comp=Z,160nm,6.9s
CTU Camp Tracy 84.82 45 *e*P P 04 21 44.0 -0.1
comp=Z,17nm,1.0s
MENT Mentasta 84.82 15 *e*P P 04 21 43.1 -0.3
comp=Z,12nm,0.7s
SRU San Rafael Swe 84.92 46 *e*P P 04 21 44.7 +0.1
SRU pmax pmax
comp=Z,26nm,1.1s
SRU San Rafael Swe 84.92 46 *e*P P 04 21 44.7 +0.1
comp=Z,26nm,1.1s
P17A Butcher Ranch, 84.94 46 *e*P P 04 21 45.0 +0.3
comp=Z,8.4nm,0.8s
JLU Jordanelle 84.98 45 *e*P P 04 21 45.3 +0.3
comp=Z,14nm,1.1s
TIY Taiyuan 85.00 312 *e*P P 04 21 46.0 +1.1
TIY S S 04 31 18.6 -10
TIY pmax pmax
comp=Z,37nm,0.6s
CHAI Chaiyaphum 85.10 288 P P 04 21 45.9 +0.2
comp=Z,15nm,0.9s,comp=Z,2µm
MLY Manley 85.10 11 *e*P P 04 21 43.2 -1.5
comp=Z,13nm,1.2s
PATY Pattaya 85.13 285 P P 04 21 47.5 +1.6
comp=Z,23nm,0.9s
WRH Wood River Hil 85.14 13 *e*P P 04 21 44.0 -0.8
comp=Z,42nm,1.2s
NAYO Nakonayok 85.17 287 P P 04 21 47.1 +1.0
comp=Z,39nm,1.2s,comp=Z,610nm
KRAB Krabi 85.17 280 P P 04 21 47.7 +1.5
comp=Z,86nm,0.9s
TCUT Toone Canyon 85.25 44 *e*P P 04 21 45.7 -0.6
comp=Z,47nm,1.1s
LAZ Ladron 85.28 52 *e*P P 04 21 47.3 +0.7
HDA Harding Lake 85.33 13 *e*P P 04 21 45.2 -0.5
comp=Z,16nm,0.8s
HDA *epP pP 04 23 44.3 -1.2
DOT Dot Lake 85.34 15 *e*P P 04 21 45.7 -0.2
comp=Z,45nm,0.8s
DOT *epP pP 04 23 43.4 -2.2
P18A Preston Nutter 85.35 46 *e*P P 04 21 47.0 +0.1
comp=Z,23nm,1.5s
CCB Clear Creek Bu 85.35 13 *e*P P 04 21 45.0 -0.8
comp=Z,33nm,1.3s
NEW Newport 85.36 36 P P 04 21 46.9 +0.6
baz=237,SNR=14
NEW Newport 85.36 36 *e*P P 04 21 46.3 -0.1
NEW pmax pmax
comp=Z,30nm,1.3s
NEW Newport 85.36 36 *e*P P 04 21 46.2 -0.1
comp=Z,30nm,1.3s
HWUT Hardware Ranch 85.38 44 *e*P P 04 21 46.5 -0.3
comp=Z,24nm,1.4s
PV05 Paradox Valley 85.45 48 *e*P P 04 21 48.1 +0.9
MVCO Mesa Verde 85.49 49 P P 04 21 47.7 +0.2
baz=244
MVCO Mesa Verde 85.49 49 *e*P P 04 21 47.7 +0.2
comp=Z,13nm,1.1s
MNTX Cornudas Mount 85.52 55 P P 04 21 48.4 +0.9
baz=246
MNTX Cornudas Mount 85.52 55 *e*P P 04 21 48.4 +0.9
comp=Z,24nm,0.9s
MDM Murphy Dome 85.53 12 *e*P P 04 21 45.8 -0.9
comp=Z,16nm,1.0s
MDM *epP pP 04 23 45.0 -1.6

COLA College 85.54 13 *e*P P 04 21 45.8 -0.9
COLA pmax pmax
comp=Z,29nm,1.2s
COLA College 85.54 13 *e*P P 04 21 46.5 -0.2
comp=Z,55nm,1.4s
BNM Barren Site 85.56 52 *e*P P 04 21 48.7 +0.7
PV09 Paradox Valley 85.61 47 *e*P P 04 21 48.6 +0.5
PV10 Paradox Valley 85.62 48 *e*P P 04 21 48.1 0.0
LPM Los Pinos Moun 85.63 52 *e*P P 04 21 48.7 +0.5
DLBC Dease Lake 85.63 23 *e*P P 04 21 47.6 +0.2
comp=Z,15nm,1.0s
ILAR Eielson Array 85.65 13 P P 04 21 46.4 -0.9
comp=Z,4.3nm,0.5s,baz=221,slow=5.1,SNR=58
ILAR pP pP 04 23 47.4 +0.2
comp=Z,3.7nm,1.0s,baz=227,slow=6.5,SNR=5.0
ILAR PKKP PKKPdf 04 39 45.0 +3.3
comp=Z,0.6nm,0.7s,baz=342,slow=2.2,SNR=5.7
ILB Eielson Array 85.65 13 *e*P P 04 21 45.9 -1.5
IL1 Eielson Array 85.65 13 *e*P P 04 21 46.1 -1.3
PV01 Paradox Valley 85.84 48 *e*P P 04 21 49.4 +0.2
PKDT Phuket 85.88 280 P P 04 21 50.7 +1.2
comp=Z,97nm,1.2s,comp=Z,6µm
TX31 Lajitas Ar. Si 85.95 58 *e*P P 04 21 50.7 +1.0
TXAR Lajitas Array 85.95 58 P P 04 21 51.1 +1.5
comp=Z,50nm,0.9s,baz=226,slow=5.5,SNR=332
TXAR pP pP 04 23 51.5 +1.9
comp=Z,0.9nm,0.7s,baz=221,slow=7.4,SNR=3.3
TXAR PKKPbc PKKPbc 04 39 46.6 -0.2
comp=Z,0.8nm,0.8s,baz=151,slow=2.9,SNR=3.5
XAN Xi'an 86.00 307 P P 04 21 50.5 +0.7
XAN pP pP 04 23 50.4 +0.7
XAN sP sP 04 24 47.9 +2.4
XAN SKS SKSac 04 31 23.1 -0.2
XAN pmax pmax
comp=Z,77nm,1.1s
XAN pmax pmax
comp=Z,230nm,4.3s
ANMO Albuquerque 86.02 52 P P 04 21 50.4 +0.4
baz=245
ANMO Albuquerque 86.02 52 *c i*P P 04 21 50.4 +0.4
ANMO pmax pmax
comp=Z,36nm,1.2s
ANMO Albuquerque 86.02 52 *e*P P 04 21 50.5 +0.4
comp=Z,41nm,1.2s
ANMO *e*pP pP 04 23 48.8 -1.2
TLIG Tlapa 86.09 70 *e*P P 04 21 50.8 +0.2
comp=Z,30nm,0.9s
BILL Bilibino 86.16 354 *d i*P P 04 21 49.0 -0.6
BILL *i* *PP pP 04 23 48.9 -0.8
BILL *e* 04 25 20.9
BILL pmax pmax
comp=Z,34nm,1.8s
BILL Bilibino 86.16 354 *e*P P 04 21 49.2 -0.4
comp=Z,9.2nm,0.7s
BILL *e*pP pP 04 23 49.8 +0.1
AHID Auburn Hatcher 86.23 43 *e*P P 04 21 51.1 +0.2
comp=Z,24nm,1.0s
PBKT Sadao Pong 86.24 289 P P 04 21 52.1 +1.0
comp=Z,44nm,1.0s,comp=Z,989nm
PHET Kaeng Krachan 86.27 285 P P 04 21 52.8 +1.5
comp=Z,50nm,0.9s,comp=Z,382nm
MSO Missoula 86.45 38 P P 04 21 51.9 +0.2
baz=240,SNR=13
MSO Missoula 86.45 38 *e*P P 04 21 50.9 -0.7
comp=Z,20nm,1.3s
MSO *e*pP pP 04 23 49.1 -2.6
BSMT Bassoo Peak 86.47 37 P P 04 21 51.5 -0.3
DLMT Dillon 86.53 40 *e*P P 04 21 52.7 +0.6
comp=Z,32nm,1.1s
REDW Red Top Meadow 86.67 43 *e*P P 04 21 53.4 +0.5
comp=Z,51nm,1.0s
JTMT Jette 86.71 38 *e*P P 04 21 52.2 -0.8
SWMT Swartz Lake 86.76 38 *e*P P 04 21 52.2 -0.9
SNOW Snow King Moun 86.78 42 *e*P P 04 21 53.9 +0.4
comp=Z,62nm,1.0s
USHA Ushuaia 86.78 147 P P 04 21 53.6 +0.6
comp=Z,120nm,0.8s,baz=211,slow=4.8,SNR=13
DAWY Dawson 86.86 16 *e*P P 04 21 52.9 -0.2
comp=Z,9.9nm,1.0s
IMW Indian Meadow 86.87 42 *e*P P 04 21 54.3 +0.3
comp=Z,44nm,0.9s
S22A 4UR Ranch, Cre 86.92 49 P P 04 21 55.2 +0.9
baz=245
S22A 4UR Ranch, Cre 86.92 49 *e*P P 04 21 54.6 +0.2
comp=Z,19nm,0.8s
S22A *e*pP pP 04 23 54.0 -0.6
MOOW Moose Ponds 86.92 42 *e*P P 04 21 54.6 +0.5
comp=Z,14nm,1.0s
YBMT Yellow Bay 86.93 38 *e*P P 04 21 53.4 -0.5
PHIT Phitsanulok 86.94 289 P P 04 21 55.8 +1.3
comp=Z,32nm,0.8s
LOHW Long Hollow 86.95 42 *e*P P 04 21 54.2 0.0
comp=Z,30nm,1.3s
O20A White River Ci 86.95 46 P P 04 21 54.8 +0.5
baz=244
O20A White River Ci 86.95 46 *e*P P 04 21 54.5 +0.2
comp=Z,26nm,1.0s
EGAK Eagle 86.99 15 *e*P P 04 21 52.3 -1.3
comp=Z,29nm,1.6s
EGAK *e*pP pP 04 23 54.5 +0.5
HHC Hu-ho-hao-te 87.00 314 *e*P P 04 21 55.5 +1.1
HHC pP pP 04 23 54.1 -0.6
HHC sP sP 04 24 47.9 -2.5
HHC pmax pmax
comp=Z,38nm,0.9s
HHC pmax pmax
comp=Z,220nm,9.7s
UTTA Uttaradit 87.00 290 P P 04 21 55.9 +1.2
comp=Z,9.7nm,1.0s,comp=Z,96nm
FLWY Flagg Ranch 87.11 42 *e*P P 04 21 55.8 +0.8
comp=Z,36nm,0.8s
COLD Coldfoot 87.17 11 *e*P P 04 21 54.5 +0.1
comp=Z,16nm,1.0s
YFT Old Faithful 87.19 42 *e*P P 04 21 57.4 +2.0
comp=Z,27nm,0.9s
YMR Madison River 87.21 41 *e*P P 04 21 56.3 +0.8
comp=Z,48nm,1.2s
NANT Nan 87.22 291 P P 04 21 56.3 +0.5
comp=Z,7.5nm,0.9s,comp=Z,102nm
BW06 Boulder Array 87.24 43 P P 04 21 55.9 +0.3
baz=243
BW06 Boulder Array 87.24 43 *e*P P 04 21 55.5 -0.2
comp=Z,51nm,1.3s
PD31 Pinedale Array 87.24 43 *e*P P 04 21 55.6 0.0
PDAR Pinedale Array 87.24 43 P P 04 21 55.6 0.0
comp=Z,16nm,0.5s,baz=208,slow=3.1,SNR=200
PDAR pP pP 04 23 57.5 +1.5
comp=Z,1.5nm,0.8s,baz=210,slow=4.0,SNR=3.7
PDAR PP PP 04 25 29.2 -1.0
comp=Z,2.1nm,1.0s,baz=242,slow=9.5,SNR=3.9
PDAR PKKPbc PKKPbc 04 39 43.4 -1.2
comp=Z,0.9nm,0.8s,baz=77,slow=3.2,SNR=4.9
BOZ Bozeman (W) 87.26 40 P P 04 21 56.2 +0.6
baz=241,SNR=7.3
BOZ Bozeman (W) 87.26 40 *e*P P 04 21 55.3 -0.2
BOZ pmax pmax
comp=Z,15nm,0.8s
BOZ Bozeman (W) 87.26 40 *e*P P 04 21 55.3 -0.2
comp=Z,15nm,0.8s
H17A Grant Village 87.33 42 P P 04 21 58.0 +1.9
baz=242
H17A Grant Village 87.33 42 *e*P P 04 21 58.0 +1.9
comp=Z,40nm,1.0s
YNR Norris Junctio 87.41 41 *e*P P 04 21 57.8 +1.4
comp=Z,15nm,1.0s
YNR *e*pP pP 04 23 52.0 -4.9
SMCO Snowmass 87.42 48 *e*P P 04 21 57.2 +0.4
comp=Z,20nm,0.9s
PHRA Phrae 87.55 290 P P 04 21 58.1 +0.8
comp=Z,156nm,1.3s
FYU Fort Yukon 87.55 13 *e*P P 04 21 55.5 -0.6
comp=Z,57nm,1.9s
WALA Waterton Lakes 87.59 37 *e*P P 04 21 57.1 +0.1
comp=Z,18nm,1.0s
KMI Kunming 87.61 297 P P 04 21 58.7 +1.0
KMI pP pP 04 24 01.5 +3.3
KMI sP sP 04 24 57.2 +3.3
KMI PP PP 04 25 33.0 -0.5
KMI S S 04 31 51.7 -2.1
KMI pmax pmax
comp=Z,48nm,1.2s
KMI pmax pmax
comp=Z,290nm,5.0s
SUKH Sukhothai 87.75 289 P P 04 21 59.2 +1.0
comp=Z,11nm,0.9s
SDCO Great Sand Dun 87.88 49 P P 04 21 58.8 0.0
baz=246,SNR=14
SDCO Great Sand Dun 87.88 49 *e*P P 04 21 59.0 +0.2
comp=Z,8.2nm,0.9s
SDCO *e*pP pP 04 23 58.2 -1.2
CRAI Chiangrai 87.99 292 P P 04 21 59.3 -0.1
comp=Z,12nm,1.6s,comp=Z,815nm
LAMP Lampang 88.09 290 P P 04 22 01.1 +1.3
comp=Z,15nm,1.0s,comp=Z,229nm
MSTX Muleshoe 88.43 54 P P 04 22 01.5 +0.3
baz=248
MSTX Muleshoe 88.43 54 *e*P P 04 22 01.1 -0.2
comp=Z,57nm,1.1s
MSTX *e*pP pP 04 24 00.5 -1.6
T25A Trinidad 88.43 50 P P 04 22 02.1 +0.8
baz=246,SNR=11
T25A Trinidad 88.43 50 *e*P P 04 22 01.6 +0.3
comp=Z,15nm,1.0s
RLMT Red Lodge 88.49 41 P P 04 22 02.2 +0.8
baz=243,SNR=5.7
832A Faith Ranch, C 88.58 60 P P 04 22 02.6 +0.7
baz=249,SNR=33
Q24A Divide 88.63 48 P P 04 22 02.9 +0.6
baz=246,SNR=7.1
Q24A Divide 88.63 48 *e*P P 04 22 02.7 +0.4
comp=Z,17nm,1.1s
CM01 Chiang Mai Arr 88.66 290 *e*P P 04 22 03.5 +1.0
CMAR Chiang Mai Arr 88.68 290 P P 04 22 03.9 +1.3
comp=Z,28nm,0.9s,baz=108,slow=2.9,SNR=117
CMAR pP pP 04 24 06.7 +3.2
comp=Z,1.6nm,0.5s,baz=107,slow=3.6,SNR=5.2
CMAR PP PP 04 25 41.8 -0.1
comp=Z,2.0nm,0.7s,baz=125,slow=7.7,SNR=3.6
CMAR PKKPbc PKKPbc 04 39 40.6 +0.9
comp=Z,2.4nm,0.5s,baz=285,slow=4.8,SNR=8.6
CMMT Chiang Mai 88.80 290 P P 04 22 03.7 +0.6
comp=Z,40nm,1.0s,comp=Z,838nm
CHTO Chiang Mai 88.80 290 P P 04 22 03.9 +0.8
comp=Z,179nm,1.0s,comp=Z,3µm
CHTO Chiang Mai 88.80 290 *e*P P 04 22 04.1 +0.9
CHTO pmax pmax
comp=Z,32nm,0.9s
CHTO Chiang Mai 88.80 290 *e*P P 04 22 04.1 +0.9
comp=Z,32nm,0.9s
CHTO Chiang Mai 88.80 290 P P 04 22 04.3 +1.2
SNR=18
CD2 Chengdu 88.83 303 P P 04 22 03.2 +0.1
CD2 pP pP 04 24 05.8 +1.8
CD2 sP sP 04 25 02.9 +3.4
CD2 PP PP 04 25 42.5 -0.3
CD2 SKS SKSac 04 31 39.7 -0.5
CD2 S ScS 04 32 09.5 +1.8
CD2 SS SS 04 38 14.6 +0.6
CD2 pmax pmax
comp=Z,30nm,0.9s
CD2 pmax pmax
comp=Z,2µm,7.8s
N23A Red Feather La 88.86 46 P P 04 22 04.0 +0.7
baz=245,SNR=19
N23A Red Feather La 88.86 46 *e*P P 04 22 03.3 0.0
comp=Z,53nm,1.2s
933A Laredo 88.92 61 P P 04 22 04.3 +0.8
baz=250,SNR=13
833A Chaparral WMA, 89.07 60 P P 04 22 04.9 +0.7
baz=249,SNR=15
CMAI Chiengmai2 89.07 291 P P 04 22 05.4 +0.8
comp=Z,39nm,1.2s
K22A Casper 89.20 45 P P 04 22 04.7 0.0
baz=245,SNR=6.4
K22A Casper 89.20 45 *e*P P 04 22 04.6 -0.1
comp=Z,15nm,0.7s
034A Hebbronville 89.22 61 P P 04 22 06.7 +1.8
baz=250
YAK Yakutsk 89.28 338 P P 04 22 03.3 -1.1
comp=Z,1.4nm,0.2s,baz=359,slow=22,SNR=2.1
733A Divot King Ran 89.29 60 P P 04 22 05.8 +0.6
baz=249,SNR=11
PHWY Pilot Hill 89.36 46 *e*P P 04 22 05.8 +0.1
comp=Z,25nm,0.6s
SYO Syowa Base 89.39 193 *e*P P 04 22 03.0 -1.9
SYO Syowa Base 89.39 193 *i*PcP P 04 22 04.0 -0.9
JCT Junction City 89.49 58 P P 04 22 06.4 +0.2
baz=249,SNR=12
JCT Junction City 89.49 58 *e*P P 04 22 05.8 -0.4
JCT *e*PP pP 04 24 04.4 -2.8
JCT pmax pmax
comp=Z,36nm,1.0s
JCT Junction City 89.49 58 *e*P P 04 22 05.8 -0.4
comp=Z,36nm,1.0s
JCT *e*pP pP 04 24 04.4 -2.8
MHMT Maesarieng 89.50 289 P P 04 22 07.8 +1.4
comp=Z,18nm,1.2s
EGMT Eagleton 89.51 39 P P 04 22 06.2 +0.3
baz=243
EGMT Eagleton 89.51 39 *e*P P 04 22 05.8 -0.1
comp=Z,11nm,1.0s
035Z Hargill 89.53 62 P P 04 22 07.6 +1.3
baz=250
934A Benavides 89.54 61 P P 04 22 08.2 +1.8
baz=250
AMTX Amarillo 89.61 53 P P 04 22 06.5 -0.2
baz=248
AMTX Amarillo 89.61 53 *e*P P 04 22 06.8 +0.2
comp=Z,36nm,1.1s
633A Saathoff Ranch 89.64 59 P P 04 22 08.0 +1.2
baz=250,SNR=36
035A Encino 89.67 62 P P 04 22 08.5 +1.5
baz=250
834A Tilden 89.70 60 P P 04 22 08.5 +1.4
baz=250
734A La Parita Cree 89.94 60 P P 04 22 09.0 +0.8
baz=250,SNR=6.8
533A Kerrville 89.97 58 P P 04 22 08.9 +0.6
baz=250,SNR=31
433A Art 90.16 58 P P 04 22 09.5 +0.2
baz=250,SNR=56
634A China Grove, S 90.29 59 P P 04 22 10.8 +0.9
baz=250
ABTX Abilene, Hawle 90.37 56 P P 04 22 10.5 +0.2
baz=249,SNR=48
ABTX Abilene, Hawle 90.37 56 *e*P P 04 22 10.4 +0.2
comp=Z,63nm,0.9s
ABTX *e*pP pP 04 24 12.1 +0.7
534A Blanco 90.41 59 P P 04 22 11.0 +0.6
baz=250,SNR=51
333A Richland Sprin 90.44 57 P P 04 22 10.5 0.0
baz=250,SNR=22
KSCO Kaye Shedlock' 90.45 49 P P 04 22 11.0 +0.5
baz=248
KSCO Kaye Shedlock' 90.45 49 *e*P P 04 22 10.8 +0.3
comp=Z,48nm,1.6s
735A Kenedy 90.56 60 P P 04 22 12.0 +0.9
baz=250
LZH Lanzhou 90.64 308 ⇓P P 04 22 12.7 +1.2
LZH pP pP 04 24 17.2 +4.5
LZH PP PP 04 25 56.1 -0.9
LZH SKS SKSac 04 31 46.0 -4.6
LZH S S 04 32 16.4 -4.4
LZH pmax pmax
comp=Z,79nm,1.2s
LZH pmax pmax
comp=Z,190nm,4.3s
233A Rising Star 90.75 57 P P 04 22 12.3 +0.4
baz=250,SNR=32
635A Leesville 90.77 59 P P 04 22 12.7 +0.7
baz=250,SNR=15
434A Burnet 90.85 58 P P 04 22 12.5 +0.1
baz=250,SNR=39
SNAA Sanae 90.87 179 P P 04 22 11.5 -0.3
SNAA Sanae 90.87 179 *d i*P P 04 22 11.0 -0.8
SNAA pmax pmax
comp=Z,1µm,0.8s
SNAA Sanae 90.87 179 *e*P P 04 22 11.2 -0.6
comp=Z,2µm,0.7s
133A Hamilton Ranch 90.94 56 P P 04 22 12.8 0.0
baz=250,SNR=18
VNA3 Neumayer Olymp 91.01 176 P P 04 22 12.4 0.0
334A Lometa 91.05 58 P P 04 22 13.7 +0.3
baz=250,SNR=36
LAO LASA Array 91.09 41 P P 04 22 14.1 +0.9
baz=245,SNR=19
LAO LASA Array 91.09 41 *e*P P 04 22 14.4 +1.2
comp=Z,37nm,0.8s
535A Dale 91.15 59 P P 04 22 14.7 +0.9
baz=250,SNR=7.2
736A Circle Diamond 91.20 60 P P 04 22 15.8 +1.8
baz=250
X32A Elmer 91.28 54 P P 04 22 14.3 0.0
baz=250,SNR=28
Z33A Whitaker Ranch 91.30 56 P P 04 22 14.7 +0.3
baz=250,SNR=26
J25A Sunshine Ranch 91.32 45 P P 04 22 14.6 +0.2
baz=247
234A Clairette 91.36 57 P P 04 22 15.0 +0.2
baz=250,SNR=14
636A Smothers Creek 91.39 60 P P 04 22 16.4 +1.6
baz=250,SNR=9.2
435B Jarrell 91.39 58 P P 04 22 15.3 +0.5
baz=250
VNA2 Neumayer--Watz 91.45 177 P P 04 22 14.5 +0.1
baz=157,slow=3.5
RSSD Black Hills 91.45 44 P P 04 22 15.6 +0.4
baz=247
RSSD Black Hills 91.45 44 *e*P P 04 22 15.0 -0.1
RSSD pmax pmax
comp=Z,28nm,0.9s
RSSD Black Hills 91.45 44 *e*P P 04 22 15.0 -0.1
comp=Z,28nm,0.9s
O28A Krutsinger Ran 91.48 48 P P 04 22 16.0 +0.8
baz=248
CCIG Comitan 91.51 74 *e*P P 04 22 16.2 +0.3
comp=Z,19nm,1.1s
NVL N'lazarevskaya 91.53 183 *e*P P 04 22 14.5 -0.2
W32A Sentinel 91.56 54 P P 04 22 15.9 +0.3
baz=250
536A Bastrop 91.58 59 P P 04 22 16.8 +1.1
baz=251,SNR=8.3
134A White-Moore Ra 91.59 56 P P 04 22 15.9 +0.1
baz=250,SNR=9.3
PLCA Paso Flores 91.60 134 P P 04 22 16.9 +1.0
comp=Z,14nm,0.8s,baz=249,slow=4.7,SNR=38
PLCA Paso Flores 91.60 134 *e*P P 04 22 16.7 +0.8
comp=Z,19nm,0.8s
OGNE Ogallala 91.60 47 P P 04 22 16.0 +0.2
baz=248
I25A Rochford 91.61 44 P P 04 22 15.9 +0.1
baz=247,SNR=12
Y33A Hilltop Ranch, 91.65 55 P P 04 22 16.2 +0.2
baz=250,SNR=10
INK Inuvik 91.66 15 P P 04 22 14.8 -0.4
comp=Z,13nm,0.9s,baz=214,slow=5.5,SNR=36
INK PKKP PKKPdf 04 39 30.8 -0.3
comp=Z,1.0nm,0.7s,baz=5.7,slow=5.3,SNR=5.4
INK Inuvik 91.66 15 *e*P P 04 22 14.8 -0.4
INK pmax pmax
comp=Z,21nm,1.1s
INK Inuvik 91.66 15 *e*P P 04 22 14.8 -0.4
comp=Z,21nm,1.1s
INK PKKP PKKPdf 04 39 30.8 -0.3
335A Moody 91.68 58 P P 04 22 16.3 +0.1
baz=250,SNR=7.3
J26A Sides Ranch, S 91.78 45 P P 04 22 16.4 -0.1
baz=247,SNR=7.7
WMOK Wichita Mounta 91.78 54 *e*P P 04 22 16.2 -0.5
WMOK pmax pmax
comp=Z,9.0nm,1.1s
WMOK Wichita Mounta 91.78 54 *e*P P 04 22 16.2 -0.5
comp=Z,9.3nm,1.1s
N28A Pribbeno Ranch 91.86 48 P P 04 22 17.0 +0.1
baz=248,SNR=9.0
WHTX Lake Whitney, 91.90 57 P P 04 22 16.8 -0.4
baz=250
WHTX Lake Whitney, 91.90 57 *e*P P 04 22 17.3 +0.1
comp=Z,14nm,0.8s
V32A Arapaho 91.92 53 P P 04 22 17.1 -0.2
baz=250,SNR=7.9
X33A Lawton 91.93 54 P P 04 22 17.0 -0.3
baz=250,SNR=11
H25A Fruitdale 91.94 44 P P 04 22 17.5 +0.4
baz=247,SNR=13
637A Eagle Lake 91.97 60 P P 04 22 18.8 +1.3
baz=251
Z34A Collier Ranch, 91.99 56 P P 04 22 18.1 +0.5
baz=250
436A Wall Ranch, Ga 92.03 58 P P 04 22 18.2 +0.5
baz=251
135A Vickery Place, 92.12 57 P P 04 22 18.5 +0.2
baz=250
W33A Caddo, Fort Co 92.17 54 P P 04 22 18.9 +0.6
baz=250,SNR=10
U32A Winter Ranch, 92.18 53 P P 04 22 18.7 +0.2
baz=250,SNR=11
537A Green Hill Far 92.19 59 P P 04 22 19.0 +0.4
baz=251,SNR=5.5
I26A New Underwood 92.20 44 P P 04 22 18.6 +0.2
baz=248
M28A Bar X Bar Ranc 92.23 47 P P 04 22 18.5 -0.2
baz=248
G25A Newell 92.28 43 P P 04 22 18.9 +0.1
baz=247,SNR=6.1
Y34A Reagan Ranch, 92.31 55 P P 04 22 19.0 -0.1
baz=250,SNR=7.5
X34A Smith Ranch, M 92.47 55 P P 04 22 20.2 +0.4
baz=250,SNR=9.7
CBKS Cedar Bluff 92.48 50 P P 04 22 20.2 +0.4
baz=249,SNR=5.6
CBKS Cedar Bluff 92.48 50 *e*P P 04 22 19.9 +0.2
CBKS pmax pmax
comp=Z,29nm,1.0s
CBKS Cedar Bluff 92.48 50 *e*P P 04 22 19.9 +0.2
comp=Z,29nm,1.0s
H26A Fairpoint 92.48 44 P P 04 22 19.9 +0.2
baz=248,SNR=10
J27A Elkhorn Farm, 92.48 45 P P 04 22 20.2 +0.5
baz=248,SNR=14
Z35A Perchaven, San 92.50 56 P P 04 22 20.0 0.0
baz=251,SNR=6.1
T32A Huddler Ranch, 92.51 52 P P 04 22 20.2 +0.2
baz=250,SNR=9.3
V33A Lossen Ranch, 92.53 53 P P 04 22 20.1 +0.1
baz=250,SNR=7.7
F25A Bowman 92.54 42 P P 04 22 20.4 +0.5
baz=247,SNR=6.2
N29A Votaw Ranch, W 92.55 48 P P 04 22 19.9 -0.2
baz=249
437A Phantom Ranch, 92.58 59 P P 04 22 21.1 +0.8
baz=251
236A Katherine and 92.64 57 P P 04 22 20.7 +0.1
baz=251,SNR=7.1
S32A Newby Ranch, P 92.68 51 P P 04 22 21.1 +0.4
baz=250
K28A Ten Mile Ranch 92.72 46 P P 04 22 21.2 +0.4
baz=248,SNR=6.5
M29A Burnside Ranch 92.73 47 P P 04 22 21.1 +0.2
baz=249,SNR=5.3
W34A Bridge Creek, 92.73 54 P P 04 22 21.3 +0.3
baz=250
W34A Bridge Creek, 92.73 54 *e*P P 04 22 20.9 -0.1
comp=Z,28nm,1.3s
I27A Quinn 92.75 45 P P 04 22 20.6 -0.3
baz=248
E25A Miller Ranch, 92.79 42 P P 04 22 21.6 +0.5
baz=247,SNR=5.9
136A Ennis 92.80 57 P P 04 22 21.3 0.0
baz=251,SNR=6.1
G26A Maurine 92.85 43 P P 04 22 21.6 +0.2
baz=248,SNR=7.4
Y35A Marietta 92.86 55 P P 04 22 21.7 +0.2
baz=251
U33A Lingo Farm, Me 92.87 53 P P 04 22 21.3 -0.3
baz=250
ULN Ulaanbaatar 92.88 320 *d i*P P 04 22 21.1 -0.4
ULN pmax pmax
comp=Z,21nm,1.2s
ULN Ulaanbaatar 92.88 320 *e*P P 04 22 21.4 -0.1
comp=Z,22nm,1.2s
ULN Ulaanbaatar 92.88 320 P P 04 22 21.5 0.0
SNR=7.0
337A Centerville 92.94 58 P P 04 22 22.0 +0.1
baz=251,SNR=6.2
H27A Howes 92.95 44 P P 04 22 22.0 +0.2
baz=248,SNR=5.9
P31A Stockton 92.99 50 P P 04 22 21.7 -0.3
baz=250
T33A Patterson Ranc 92.99 52 P P 04 22 22.2 +0.1
baz=250
F26A Lodgepole 93.02 43 P P 04 22 23.1 +1.0
baz=248,SNR=7.0
DGMT Dagmar 93.06 40 P P 04 22 22.7 +0.5
baz=247,SNR=14
DGMT Dagmar 93.06 40 *e*P P 04 22 22.0 -0.2
comp=Z,64nm,0.9s
J28A Allard Ranch, 93.07 45 P P 04 22 22.5 +0.2
baz=249,SNR=6.3
X35A Drake 93.07 55 P P 04 22 22.7 +0.1
baz=251

438A	**Sam Houston St** baz=251	93.09	59	P		P		04 22 24.4	+1.7
D25A	**Fairfield** baz=247,SNR=10	93.09	41	P		P		04 22 22.8	+0.4
R32A	**Long Quarter,** baz=250,SNR=41	93.10	51	P		P		04 22 22.9	+0.3
V34A	**Guthrie** baz=251	93.12	53	P		P		04 22 22.6	-0.2
Z36A	**Blue Ridge** baz=251,SNR=6.6	93.13	56	P		P		04 22 23.1	+0.2
237A	**Washetta, Mont** baz=251	93.22	58	P		P		04 22 24.1	+0.8
O31A	**Woolen Ranch,** baz=250	93.24	49	P		P		04 22 23.7	+0.4
SONA1	**Songino Array**	93.27	319	*e*P		P		04 22 22.9	-0.5
SONM	**Songino Array**	93.27	319	P		P		04 22 23.4	+0.1
	comp=Z,2.4nm,0.5s,baz=130,slow=5.8,SNR=15								
SONM				pP		pP		04 24 26.6	+1.9
	comp=Z,0.3nm,0.3s,baz=318,slow=2.0,SNR=2.2								
SONM				PP		PP		04 26 10.1	-6.9
	comp=Z,0.8nm,0.6s,baz=32,slow=8.7,SNR=2.8								
U34A	**Anderson Ranch** baz=251,SNR=6.2	93.31	53	P		P		04 22 23.5	0.0
U34A	**Anderson Ranch** comp=Z,22nm,0.9s	93.31	53	*e*P		P		04 22 23.4	-0.2
G27A	**Dupree** baz=248,SNR=7.8	93.32	43	P		P		04 22 23.4	0.0
I28A	**Midland** baz=249,SNR=6.4	93.32	45	P		P		04 22 23.6	+0.1
S33A	**Kaszmaul Farm,** baz=250	93.34	52	P		P		04 22 24.1	+0.4
C25A	**Freed Ranch, W** baz=248	93.35	41	P		P		04 22 24.0	+0.5
BOD	**Bodaibo**	93.37	330	*e*P		P		04 22 22.3	-1.0
BOD				pmax		pmax			
	comp=Z,5.0nm,1.9s								
E26A	**Carlson Angus** baz=248,SNR=8.8	93.38	42	P		P		04 22 24.5	+0.8
W35A	**Tecumseh** baz=251,SNR=5.7	93.40	54	P		P		04 22 24.2	+0.2
Q32A	**Meitler Ranch,** baz=250,SNR=20	93.40	50	P		P		04 22 24.1	+0.1
338A	**Crockett** baz=252	93.42	58	P		P		04 22 25.1	+0.9
F27A	**Lemmon** baz=248,SNR=11	93.44	43	P		P		04 22 24.4	+0.4
Y36A	**Durant** baz=251,SNR=15	93.45	56	P		P		04 22 24.6	+0.4
K29A	**Lazy Trails An** baz=249	93.46	46	P		P		04 22 25.6	+1.5
P32A	**Huiting Farm,** baz=250	93.58	50	P		P		04 22 24.7	-0.1
L30A	**Spencer Herefo** baz=250	93.59	47	P		P		04 22 24.9	+0.1
R33A	**Olander Ranch,** baz=250,SNR=13	93.60	51	P		P		04 22 25.2	+0.4
D26A	**Manning** baz=248,SNR=12	93.61	42	P		P		04 22 24.9	+0.2
X36A	**Centrahoma** baz=251	93.61	55	P		P		04 22 25.0	0.0
B25A	**Knox Farm, Ray** baz=248,SNR=6.7	93.62	40	P		P		04 22 25.2	+0.5
V35A	**Meyer Ranch, C** baz=251	93.62	54	P		P		04 22 25.3	+0.3
H28A	**Mission Ridge** baz=249	93.66	44	P		P		04 22 24.7	-0.3
J29A	**Okreek** baz=249,SNR=8.6	93.68	46	P		P		04 22 25.0	-0.1
N31A	**Bailey Ranch,** baz=250	93.74	48	P		P		04 22 26.0	+0.5
Z37A	**Pogue Cattle C** baz=251	93.75	56	P		P		04 22 26.6	+1.0
T34A	**McClaskey Farm** baz=251,SNR=7.6	93.77	52	P		P		04 22 25.6	0.0
238A	**Jacksonville** baz=252	93.78	58	P		P		04 22 27.6	+1.8
G28A	**Parade** baz=249	93.88	44	P		P		04 22 25.5	-0.5
W36A	**Wetumka** baz=251	93.89	54	P		P		04 22 26.3	0.0
M31A	**Lambtecht Ranc** baz=250,SNR=12	93.90	48	P		P		04 22 26.9	+0.7
U35A	**Pawnee** baz=251	93.90	53	P		P		04 22 25.5	-0.8
A25A	**Svangstu Ranch** baz=248	93.91	40	P		P		04 22 25.8	-0.3
I29A	**Vivian Onida** baz=249	93.91	45	P		P		04 22 26.1	-0.1
K30A	**Basset** baz=250,SNR=10	93.91	47	P		P		04 22 26.6	+0.4
Q33A	**Connelly Farm,** baz=251,SNR=21	93.94	50	P		P		04 22 26.5	+0.1
E27A	**Carson** baz=249,SNR=7.2	93.94	42	P		P		04 22 26.5	+0.2
Y37A	**Hugo** baz=252,SNR=8.1	94.00	56	P		P		04 22 26.4	-0.4
138A	**Matatall Enter** baz=252	94.01	57	P		P		04 22 28.1	+1.3
O32A	**Brockman Farm,** baz=250	94.03	49	P		P		04 22 27.1	+0.3
S34A	**Willow Spring** baz=251,SNR=6.9	94.05	52	P		P		04 22 26.9	0.0
C26A	**Wahner Farm, P** baz=248,SNR=11	94.12	41	P		P		04 22 26.9	-0.1
YKA	**Yellowknife Ar**	94.14	25	P		P		04 22 26.0	-0.6
	comp=Z,8.2nm,0.9s,baz=246,slow=4.4,SNR=93								
YKA				pP		pP		04 24 31.9	+3.8
	comp=Z,0.6nm,0.8s,baz=244,slow=4.4,SNR=4.0								
YKA				PKiKP		PKiKP		04 27 09.2	+2.4
	comp=Z,0.3nm,0.8s,baz=258,slow=1.7,SNR=6.4								
YKA				PKKP		PKKPdf		04 39 23.0	-3.4
	comp=Z,0.5nm,0.7s,baz=36,slow=2.5,SNR=8.2								
YKB5	**Yellowknife Ar**	94.14	25	*e*P		P		04 22 26.0	-0.7
R34A	**Isabella, Hill** baz=251,SNR=11	94.14	51	P		P		04 22 27.4	+0.1
YKW3	**Yellowknife Ar** comp=Z,8.2nm,0.9s	94.17	25	*e*P		P		04 22 26.1	-0.7
P33A	**Williams Farm,** baz=251,SNR=17	94.18	50	P		P		04 22 27.6	+0.1
H29A	**Onida** baz=249,SNR=6.1	94.19	45	P		P		04 22 27.2	-0.2
N32A	**Stulken Farm,** baz=250	94.19	49	P		P		04 22 27.8	+0.3
D27A	**Center** baz=249	94.22	42	P		P		04 22 26.9	-0.6
J30A	**Dallas** baz=250,SNR=8.0	94.22	46	P		P		04 22 27.7	+0.1
T35A	**Sooner Cattle** baz=251,SNR=5.9	94.25	53	P		P		04 22 27.9	0.0
L31A	**Butterfield Fa** baz=250	94.28	47	P		P		04 22 28.2	+0.3
V36A	**Jenks** baz=251	94.32	54	P		P		04 22 28.5	+0.3
X37A	**Clayton** baz=252	94.39	55	P		P		04 22 28.5	0.0
C27A	**Sayler Ranch,** baz=249	94.45	41	P		P		04 22 29.2	+0.7
I30A	**Oacoma** baz=250	94.47	45	P		P		04 22 28.2	-0.5
O33A	**Hebron** baz=251	94.47	49	P		P		04 22 29.3	+0.5
TUL1	**Leonard** baz=252	94.48	54	P		P		04 22 29.2	+0.3
K31A	**O'Neill** baz=250,SNR=6.9	94.49	47	P		P		04 22 28.9	+0.1
BGNE	**Belgrade** baz=250,SNR=15	94.51	48	P		P		04 22 29.5	+0.5
BGNE	**Belgrade** comp=Z,90nm,0.9s	94.51	48	*e*P		P		04 22 29.6	+0.7
W37B	**Quinton** baz=252,SNR=5.4	94.51	55	P		P		04 22 28.9	-0.1
A26A	**Wade Farm, Ken** baz=248,SNR=6.2	94.55	40	P		P		04 22 29.1	+0.2
E28A	**Huff** baz=249	94.56	43	P		P		04 22 28.5	-0.5
Q34A	**Chapman** baz=251,SNR=15	94.57	51	P		P		04 22 29.6	+0.4
139A	**Bunkhouse Ranc** baz=252	94.57	57	P		P		04 22 29.1	-0.3
G29A	**Hoven** baz=250	94.58	44	P		P		04 22 28.7	-0.4
S35A	**Otter Creek Ra** baz=251,SNR=5.5	94.64	52	P		P		04 22 29.6	+0.1
J31A	**Geddes** baz=250	94.73	46	P		P		04 22 29.1	-0.8
T36A	**Boggs Farm, Ca** baz=252	94.77	53	P		P		04 22 30.4	+0.2
GTA	**Gaotai**	94.77	310	P		P		04 22 30.4	+0.1
GTA				pP		pP		04 24 33.9	+2.0
GTA				sP		sP		04 25 28.0	+0.8
GTA				SKS		**SKSac**		**04 32 14.2**	**+1.3**
GTA				S		**S**		**04 32 54.6**	**-2.1**
GTA				sS		sS		04 36 30.2	-5.3
GTA				pmax		pmax			
	comp=Z,9.0nm,1.3s								
GTA				pmax		pmax			
	comp=Z,100nm,4.9s								
L32A	**Elgin** baz=251,SNR=5.2	94.81	48	P		P		04 22 30.3	0.0
X38A	**Whitesboro** baz=252	94.84	55	P		P		04 22 30.4	-0.2
B27A	**Peters Farms,** baz=249	94.85	41	P		P		04 22 31.0	+0.7
P34A	**Walnut Farm, R** baz=251,SNR=19	94.86	50	P		P		04 22 30.8	+0.2
F29A	**Eureka** baz=250	94.86	43	P		P		04 22 30.4	-0.1
KSU1	**Kansas State U** baz=251,SNR=14	94.87	51	P		P		04 22 30.7	+0.1
KSU1	**Kansas State U** comp=Z,37nm,0.8s	94.87	51	*e*P		P		04 22 30.6	+0.1
R35A	**Emporia Munici** baz=252	94.93	51	P		P		04 22 31.3	+0.4
SUSD	**Miller** baz=250	94.97	45	P		P		04 22 30.6	-0.4
V37A	**Hulbert** baz=252	94.97	54	P		P		04 22 30.6	-0.5
G30A	**Faulkton** baz=250	95.07	44	P		P		04 22 30.4	-1.0
U37A	**Salina** baz=252	95.15	54	P		P		04 22 32.3	+0.4
O34A	**Beatrice** baz=251	95.16	50	P		P		04 22 32.2	+0.4
S36A	**Lake Cedric, C** baz=252	95.20	52	P		P		04 22 32.6	+0.5
W38A	**Poteau** baz=252	95.20	55	P		P		04 22 32.4	+0.2
Q35A	**Mercer Eighty,** baz=252	95.22	51	P		P		04 22 32.3	+0.1
M33A	**Taylor Creek F** baz=251,SNR=5.1	95.24	48	P		P		04 22 32.0	-0.2
H31A	**Wolsey** baz=251	95.30	45	P		P		04 22 32.1	-0.4
J32A	**Parkston** baz=251	95.37	46	P		P		04 22 31.9	-0.9
B28A	**Dugan Ranch, T** baz=250	95.43	41	P		P		04 22 32.9	0.0
P35A	**Duane Minner,** baz=252,SNR=5.8	95.44	50	P		P		04 22 33.4	+0.2
R36A	**Gordon, Harris** baz=252,SNR=6.9	95.45	52	P		P		04 22 32.9	-0.3
N34A	**Lincoln** baz=252,SNR=5.5	95.50	49	P		P		04 22 33.7	+0.2
T37A	**Cheneyville 18** baz=252,SNR=8.6	95.52	53	P		P		04 22 33.5	-0.1
V38A	**Canehill** baz=252,SNR=7.5	95.53	54	P		P		04 22 33.2	-0.4
A28A	**Rude Farm, Bot** baz=250	95.65	40	P		P		04 22 33.4	-0.5
M34A	**Aspy Farms, Fr** baz=252,SNR=6.8	95.65	48	P		P		04 22 34.4	+0.3
Q36A	**Arnold C. Orve** baz=252,SNR=5.9	95.68	51	P		P		04 22 34.7	+0.4
E30A	**Jud** baz=250	95.69	43	P		P		04 22 33.6	-0.6
K33A	**Hardington** baz=251	95.71	47	P		P		04 22 34.5	+0.1
U38A	**Gravette** baz=252	95.72	54	P		P		04 22 34.8	+0.3
G31A	**Conde** baz=251	95.73	44	P		P		04 22 34.4	0.0
O35A	**Humboldt** baz=252,SNR=6.0	95.75	50	P		P		04 22 35.1	+0.6
S37A	**Fort Scott** baz=252,SNR=5.7	95.78	52	P		P		04 22 35.6	+0.9
MIAR	**Mount Ida** baz=253	95.78	56	P		P		04 22 34.4	-0.5
W39A	**Magazine** baz=253	95.81	55	P		P		04 22 35.0	+0.1
I32A	**Karley and Nic** baz=251	95.84	46	P		P		04 22 34.2	-0.7
F31A	**Hecla** baz=251	95.91	44	P		P		04 22 34.5	-0.6
L34A	**Svendsen Farm,** baz=252	95.95	48	P		P		04 22 35.0	-0.4
R37A	**Teagarden Farm** baz=252	95.95	52	P		P		04 22 35.8	+0.3
J33A	**Davis** baz=252,SNR=7.0	95.96	47	P		P		04 22 35.8	+0.4
T38A	**Diamond** baz=252,SNR=8.0	95.97	53	P		P		04 22 36.1	+0.5
D30A	**Buchanan** baz=251	95.99	43	P		P		04 22 34.9	-0.6
H32A	**Carlson Farm,** baz=251,SNR=19	96.01	45	P		P		04 22 35.2	-0.4
P36A	**Good Intent, A** baz=252,SNR=15	96.07	50	P		P		04 22 35.9	-0.1
ZAK	**Zakamensk**	96.11	321	*e*P		P		04 22 35.1	-0.9
ZAK				pmax		pmax			
	comp=Z,3.0nm,1.1s								
ZAK				pmax		pmax			
	comp=Z,4.0nm,1.3s								
V39A	**Pettigrew** baz=253	96.11	54	P		P		04 22 36.3	0.0
N35A	**Tabor** baz=252	96.13	49	P		P		04 22 36.9	+0.7
G32A	**Webster** baz=251	96.21	45	Pdiff		P		04 22 36.2	-0.3
M35A	**Neola** baz=252	96.28	49	Pdiff		P		04 22 37.2	+0.3
A29A	**Manning Farm,** baz=250	96.29	41	Pdiff		P		04 22 36.6	-0.2
I33A	**Coleman** baz=252	96.30	46	Pdiff		P		04 22 36.6	-0.3
ECSD	**EROS Data Cent** baz=252	96.33	46	Pdiff		P		04 22 37.1	0.0
ECSD	**EROS Data Cent** comp=Z,8.8nm,0.6s	96.33	46	*e*P		P		04 22 35.6	-1.5
TLY	**Talaya**	96.34	322	PKKP		PKKPbc		04 39 19.6	-1.9
	comp=Z,3.4nm,0.9s,baz=300,slow=17,SNR=3.3								
X40A	**Basin Creek Fa** baz=253	96.35	56	Pdiff		P		04 22 37.5	+0.1
K34A	**Le Mars** baz=252	96.37	47	Pdiff		P		04 22 37.2	-0.1
E31A	**Nome** baz=251	96.37	43	Pdiff		P		04 22 36.8	-0.4
W40A	**Ferguson Farm,** baz=253	96.37	55	Pdiff		P		04 22 37.4	-0.1
O36A	**Bolckow** baz=252	96.40	50	Pdiff		P		04 22 37.6	+0.2
Q37A	**Longview Farm,** baz=253	96.40	51	Pdiff		P		04 22 37.6	+0.1
U39A	**Green Forest** baz=253	96.40	54	Pdiff		P		04 22 37.0	-0.6
JTS	**JuntasAbangare** comp=Z,6.6nm,0.8s,baz=339,slow=6.1,SNR=5.1	96.43	81	P		P		04 22 39.1	+0.9
JTS				pP		pP		04 24 39.4	-0.5
	comp=Z,2.6nm,0.7s,baz=240,slow=7.0,SNR=2.8								
JTS				PP		PP		04 26 44.2	+2.5
	comp=Z,4.2nm,0.9s,baz=11,slow=19,SNR=5.7								
S38A	**Stockton** baz=253	96.44	53	Pdiff		P		04 22 37.9	+0.2
H33A	**Prehn Over Nor** baz=252	96.54	45	Pdiff		P		04 22 37.8	-0.2
L35A	**Bielow Farm, R** baz=252	96.58	48	Pdiff		P		04 22 38.1	-0.2
R38A	**Fenwick Farm,** baz=253	96.61	52	Pdiff		P		04 22 39.0	+0.6
J34A	**George** baz=252	96.65	47	Pdiff		P		04 22 38.0	-0.5
T39A	**Clever** baz=253	96.67	53	Pdiff		P		04 22 38.8	0.0
P37A	**Lathrop** baz=253	96.69	51	Pdiff		P		04 22 39.4	+0.6
V40A	**Witts Springs** baz=253	96.74	55	Pdiff		P		04 22 39.0	-0.2
C31A	**Landman Farms,** baz=251	96.87	42	Pdiff		P		04 22 39.0	-0.3
A30A	**Hoffart Farm,** baz=251	96.88	41	Pdiff		P		04 22 38.6	-0.8
U40A	**Yellville** baz=253	96.88	54	Pdiff		P		04 22 39.5	-0.3
S39A	**Bolivar** baz=253	96.90	53	Pdiff		P		04 22 39.6	-0.2
G33A	**Ortonville** baz=252	96.91	45	Pdiff		P		04 22 39.4	-0.2
I34A	**Hadley** baz=252	96.94	46	Pdiff		P		04 22 39.7	-0.1
K35A	**Storm Lake** baz=252	96.98	48	Pdiff		P		04 22 40.0	0.0
O37A	**Wolven Farm, M** baz=253	97.01	50	Pdiff		P		04 22 40.3	+0.1
Q38A	**Cooks Store, C** baz=253	97.05	51	Pdiff		P		04 22 40.3	-0.1
N37A	**Lee Faris, Mou** baz=253	97.14	50	Pdiff		P		04 22 40.7	-0.1
H34A	**Spellman Lake,** baz=252	97.19	46	Pdiff		P		04 22 40.9	0.0
L36A	**Harm Buss Farm** baz=253	97.20	48	Pdiff		P		04 22 41.2	+0.2
F33A	**5 Mile Ranch,** baz=252	97.20	44	Pdiff		Pdif		04 22 40.9	0.0
R39A	**Chumby, Stover** baz=253	97.30	52	Pdiff		P		04 22 42.3	+0.8
P38A	**Dawn** baz=253	97.30	51	Pdiff		Pdif		04 22 41.5	0.0
445A	**Amite** baz=254	97.31	60	Pdiff		Pdif		04 22 41.5	-0.3
T40A	**Mansfield** baz=254	97.36	53	Pdiff		Pdif		04 22 41.9	0.0
244A	**Avery, Jackson** baz=254	97.39	59	Pdiff		P		04 22 43.0	+1.0
M37A	**Trindle Farm,** baz=253	97.43	49	Pdiff		P		04 22 42.7	+0.7
ATAH	**Atahualpa** comp=Z,4.4nm,0.6s,baz=317,slow=4.1,SNR=2.1	97.43	100	P		Pdif		04 22 42.2	-1.0
ATAH				pP		pP		04 24 47.0	+2.0
	comp=Z,3.5nm,0.6s,baz=242,slow=5.7,SNR=3.0								
G34A	**Benson** baz=253	97.46	45	Pdiff		P		04 22 42.3	+0.2
O38A	**Galt** baz=253	97.49	50	Pdiff		P		04 22 42.8	+0.5
I35A	**Creekview Farm** baz=253	97.50	46	Pdiff		P		04 22 42.4	+0.1
S40A	**Lebanon** baz=254	97.50	53	Pdiff		P		04 22 43.2	+0.8
K36A	**Gilmore City** baz=253	97.51	48	Pdiff		P		04 22 43.1	+0.7
Q39A	**Willow Grove F** baz=254	97.55	52	Pdiff		P		04 22 42.8	+0.2
J36A	**Seneca 1, Swea** baz=253	97.79	47	Pdiff		Pdif		04 22 43.0	-0.6
B32A	**Ashes, Strandq** baz=252	97.82	42	Pdiff		Pdif		04 22 42.9	-0.7
P39A	**Salisbury** baz=254	97.84	51	Pdiff		P		04 22 44.0	+0.1
H35A	**Sunnyside Ranc** baz=253	97.85	46	Pdiff		Pdif		04 22 43.7	-0.1
N38A	**Joes South For** baz=254	97.85	50	Pdiff		Pdif		04 22 43.8	-0.1
L37A	**Phoenix Point,** baz=253	97.86	48	Pdiff		P		04 22 44.1	+0.2
R40A	**Maddies Statio** baz=254	97.87	52	Pdiff		Pdif		04 22 43.8	-0.3
A32A	**Rocking H Ranc** baz=252	98.00	41	Pdiff		Pdif		04 22 44.2	-0.2
M38A	**Pleasantville** baz=254	98.06	49	Pdiff		Pdif		04 22 44.6	-0.2
K37A	**Belmond** baz=252	98.12	48	Pdiff		P		04 22 45.2	0.0
E34A	**Wadena** baz=253	98.15	44	Pdiff		Pdif		04 22 44.8	-0.3
O39A	**Kirksville** baz=254	98.21	50	Pdiff		P		04 22 45.8	+0.2
Q40A	**Laux Farm, Aux** baz=254	98.21	52	Pdiff		P		04 22 46.4	+0.8
I36A	**Fitzsimmons Fa** baz=254	98.21	47	Pdiff		P		04 22 45.6	+0.1
G35A	**Watkins** baz=253	98.23	45	Pdiff		Pdif		04 22 45.2	-0.3
D34A	**Park Rapids** baz=253	98.30	43	Pdiff		Pdif		04 22 45.5	-0.3
J37A	**Redenius Farm,** baz=254	98.33	47	Pdiff		Pdif		04 22 45.6	-0.4
F35A	**Swanville** baz=253	98.35	45	Pdiff		Pdif		04 22 46.0	-0.1
P40A	**Paris** baz=254	98.38	51	Pdiff		P		04 22 46.9	+0.5
N39A	**Derby Farms, D** baz=254	98.41	50	Pdiff		P		04 22 46.8	+0.3
L38A	**Oak Wood Farm,** baz=254	98.43	49	Pdiff		P		04 22 46.9	+0.4
I37A	**Lemond, Waseca** baz=254	98.64	47	Pdiff		Pdif		04 22 46.6	-0.8
O40A	**La Belle** baz=254	98.67	51	Pdiff		P		04 22 48.2	+0.5
A33A	**Warroad** baz=253	98.70	41	Pdiff		Pdif		04 22 47.2	-0.3
G36A	**St. Michael** baz=254	98.73	45	Pdiff		Pdif		04 22 47.3	-0.5
ULM	**Lac du Bonnet** comp=Z,4.3nm,1.1s,baz=225,slow=2.6,SNR=4.5	98.78	40	P		Pdif		04 22 46.5	-1.3
B34A	**Aery, Baudette** baz=254	99.05	42	Pdiff		**Pdif**		04 22 48.9	-0.1
F36A	**Milaca** baz=254	99.06	45	Pdiff		**Pdif**		04 22 49.0	-0.2
C35A	**Jirik Farms, M** baz=254	99.26	43	Pdiff		**Pdif**		04 22 49.9	-0.2
SPMN	**Marine on St.** baz=254	99.38	46	Pdiff		**Pdif**		04 22 50.1	-0.5
I38A	**Scanlan Farm,** baz=255	99.39	47	Pdiff		**Pdif**		04 22 51.0	+0.3
B35A	**Bob, Littlefor** baz=254	99.60	42	Pdiff		**Pdif**		04 22 51.0	-0.5
D36A	**Goodland** baz=255	99.65	44	Pdiff		**Pdif**		04 22 51.1	-0.7
EYMN	**Ely** baz=256	100.94	43	Pdiff		**Pdif**		04 22 57.3	-0.2
LPAZ	**La Paz** comp=Z,0.8nm,0.6s,baz=42,slow=8.3,SNR=3.8	103.61	112	PKKP		PKKPbc		04 39 01.0	+0.2
ZAA0	**Zalesovo Array**	107.95	322	*e*Pdif		**Pdif**		04 23 27.8	-0.7
ZALV	**Zalesovo Beam**	107.95	322	PKiKP		PKiKP		04 27 31.6	-0.5
	comp=Z,2.6nm,0.6s,baz=156,slow=1.6,SNR=11								
ZALV				PP		PP		04 28 08.4	+2.7
	comp=Z,1.2nm,0.7s,baz=82,slow=5.5,SNR=4.9								
ZALV				PKKPbc		PKKPbc		04 38 45.8	-2.0
	comp=Z,1.1nm,0.4s,baz=252,slow=4.3,SNR=4.9								
MK01	**Makanchi Array**	108.86	314	*e*Pdif		**Pdif**		04 23 31.8	-1.0
MKAR	**Makanchi Array**	108.86	314	Pdiff		**Pdif**		04 23 34.7	+1.9
	comp=Z,0.7nm,0.6s,baz=92,slow=5.8,SNR=7.4								
MKAR				PKiKP		PKiKP		04 27 32.9	-1.2
	comp=Z,2.9nm,0.5s,baz=197,slow=0.8,SNR=29								
MKAR				PP		PP		04 28 11.7	-0.9
	comp=Z,1.3nm,0.8s,baz=96,slow=7.4,SNR=3.9								
MKAR				PKKPbc		PKKPbc		04 38 43.4	-1.3
	comp=Z,3.1nm,0.8s,baz=264,slow=3.3,SNR=13								
MKAR				PKKP		PKKPab		04 38 56.8	-1.0
	comp=Z,1.6nm,0.8s,baz=275,slow=4.4,SNR=5.0								
KURK	**Kurchatov**	111.55	318	PKiKP		PKiKP		04 27 38.8	-0.2
KURK								04 28 30.8	
KURK	**Kurchatov**	111.55	318	PKiKP		PKiKP		04 27 38.8	-0.2
KURK				PP		PP		04 28 30.8	-0.6
KURBB	**Kurchatov Arra** comp=Z,4.3nm,0.7s,baz=96,slow=1.8,SNR=25	111.60	318	PKiKP		PKiKP		04 27 38.8	-0.3
KURBB				PP		PP		04 28 30.8	-1.0
	comp=Z,0.8nm,0.3s,baz=98,slow=6.6,SNR=4.9								
KSH	**Kashi**	112.83	306	*e*PKP		PKiKP		04 27 41.3	-0.7
KSH				PP		PP		04 28 40.9	0.0
KSH				sPKP				04 30 40.3	
KSH				SKS		SKSdf		04 34 02.8	+0.8
KSH				AMB		AMB			
	comp=Z,120nm,6.0s								
FRU	**Bishkek**	114.04	310	*e*PKiKP		PKiKP		04 27 42.0	-2.1
AAK	**Ala-Archa**	114.12	309	PKP		PKPdf		04 27 43.4	-1.0
	comp=Z,2.0nm,0.6s,baz=186,slow=3.6,SNR=6.4								
EKS2	**Erkin-Say**	114.65	309	*e*PKiKP		PKPdf		04 27 44.3	-1.1
EKS2	**Erkin-Say**	114.65	309	*e*PKPdf		PKPdf		04 27 44.3	-1.1
BRVK	**Borovoye**	116.62	321	*c i*PKiKP		PKPdf		04 27 48.0	-0.6
BRVK				pmax		pmax			
	comp=Z,7.0nm,0.7s								
BRVK	**Borovoye**	116.62	321	*e*PKPdf		PKPdf		04 27 48.1	-0.6
SCHQ	**Schefferville**	116.72	37	PKP		PKPdf		04 27 48.3	-0.5
	comp=Z,3.3nm,0.9s,baz=225,slow=12,SNR=3.1								
PTGA	**Pitinga**	116.88	100	PKP		PKPdf		04 27 49.7	-0.6
	comp=Z,5.6nm,0.7s,baz=315,slow=7.7,SNR=6.1								
ZRNK	**Zerenda**	117.40	321	*e*PKiKP		PKPdf		04 27 49.2	-1.0
ZRNK	**Zerenda**	117.40	321	*e*PKPdf		PKPdf		04 27 49.2	-1.0
DAG	**Danmarks Havn** comp=Z,4.8nm,0.8s	119.95	5	*i* P		PKPdf		04 27 52.5	-1.9
DAG	**Danmarks Havn**	119.95	5	*i* PKiKP		PKPdf		04 27 52.5	-1.9
DAG				pmax		pmax			
	comp=Z,4.0nm,0.8s								
SFJD	**Kangerlussuaq**	120.48	21	*i* P		PKPdf		04 27 54.7	-0.9

SFJD	Kangerlussuaq	120.48	21	iPKIKP	PKPdf	04 27 54.7	-0.9
SUMG	Summit	120.50	13	iP	PKPdf	04 27 56.3	+0.2
	comp=Z,10nm,1.0s						
SUMG	Summit	120.50	13	iPKIKP	PKPdf	04 27 56.3	+0.2
SUMG				pmax	pmax		
	comp=Z,10.0nm,1.0s						
SUMG	Summit	120.50	13	ePKPdf	PKPdf	04 27 56.1	0.0
BDFB	Brasilia	121.08	121	PKP	PKPdf	04 27 58.0	-0.5
	comp=Z,4.8nm,0.7s,baz=228,slow=1.8,SNR=7.1						
BDFB				SKP		04 30 43.8	
	comp=Z,3.8nm,0.8s,baz=218,slow=2.8,SNR=4.7						
BDFB				PKKPbc	PKKPbc	04 38 02.2	-0.9
	comp=Z,2.1nm,0.5s,baz=61,slow=5.4,SNR=5.5						
BDFB	Brasilia	121.08	121	PKIKP	PKPdf	04 27 58.0	-0.5
ARU	Arti	122.56	326	PKP	PKPdf	04 27 59.7	-0.3
	comp=Z,7.8nm,0.2s,baz=126,slow=0.9,SNR=21						
ARU				PP	PP	04 29 46.6	+0.1
	comp=Z,7.1nm,0.2s,baz=72,slow=11,SNR=4.2						
ARU	Arti	122.56	326	iPKIKP	PKPdf	04 27 59.3	-0.6
ARU						04 29 47.3	
ARU						04 34 17.8	
ARU				SS	SS	04 45 45.5	0.0
ARU	Arti	122.56	326	ePKPdf	PKPdf	04 27 59.3	-0.6
ARU				ePP	PP	04 29 42.0	-4.5
ABKAR	Akbulak array	123.66	318	ePKPdf	PKPdf	04 28 01.8	-0.4
AKTO	Aktyubinsk	124.59	320	PKP	PKPdf	04 28 03.9	-0.2
	comp=Z,8.3nm,0.9s,baz=72,slow=2.0,SNR=26						
SCO	Scoresbysund	125.29	9	iP	PKPdf	04 28 04.8	0.0
	comp=Z,9.8nm,0.9s						
SCO	Scoresbysund	125.29	9	iPKIKP	PKPdf	04 28 04.8	0.0
SCO				pmax	pmax		
	comp=Z,10.0nm,0.9s						
ARA0	ARCESS Array S	126.03	350	ePKPdf	PKPdf	04 28 06.0	-0.2
ARCES	ARCESS Array B	126.03	350	PKP	PKPdf	04 28 06.1	-0.2
	comp=Z,12nm,0.8s,baz=80,slow=1.7,SNR=20						
ARCES				PKKPab	PKKPab	04 37 41.9	0.0
	comp=Z,1.6nm,0.6s,baz=206,slow=5.3,SNR=6.3						
APA	Apatity	126.06	345	ePKIKP	PKPdf	04 28 06.6	+0.3
APA				MLR	MLR		
	comp=Z,900nm,24.0s						
WSAR	Wadi Sarin	126.43	286	PKP	PKPdf	04 28 08.2	-0.1
	comp=Z,1.7nm,0.4s,baz=318,slow=4.2,SNR=3.1						
GEYT	Alibeck	126.79	304	PKP	PKPdf	04 28 08.9	+0.2
	comp=Z,15nm,0.9s,baz=270,slow=1.5,SNR=8.1						
GEYT				pPKP	PP	04 30 13.6	-1.5
	comp=Z,2.1nm,0.4s,baz=315,slow=0.8,SNR=2.7						
GEYT				PKKP	PKKPdf	04 38 22.4	-2.1
	comp=Z,4.2nm,0.3s,baz=43,slow=30,SNR=3.9						
SUR	Sutherland	126.93	201	ePKPdf	PKPdf	04 28 10.3	+0.9
BOSA	Boshof	128.59	207	PKP	PKPdf	04 28 13.7	+1.1
	comp=Z,12nm,0.8s,baz=142,slow=0.8,SNR=13						
BOSA				PP	PP	04 30 27.5	+2.0
	comp=Z,10.0nm,0.9s,baz=152,slow=7.3,SNR=8.3						
BOSA	Boshof	128.59	207	ePKPdf	PKPdf	04 28 12.7	0.0
BOSA				PP	PP	04 30 27.5	+2.0
BANOM	Banah	128.72	289	iP	PP	04 30 39.2	+11
	SNR=8.0						
UOSS	Minazif	128.76	288	ePKPdf	PKPdf	04 28 11.7	-1.1
HATD	Hatta, Dubai	128.82	288	iP	PP	04 30 42.4	+14
	SNR=8.2						
ASHO	Ashiyiah	128.88	288	P	PP	04 30 42.1	+13
KLMR	Klimovskoe	129.07	337	ePKIKP	PKPdf	04 28 09.8	-2.4
KLMR				e		04 30 38.5	
KLMR				pmax	pmax		
	comp=Z,30nm,1.5s						
NAZ	Nazwa, Dubai	129.26	288	iP	SKPab	04 30 43.9	+0.1
	SNR=6.0						
FAQ	Al Faqa, Dubai	129.31	288	iP	SKPab	04 30 44.1	+0.1
	SNR=5.4						
ASUD	Al Ashush, Dub	129.54	288	iP	SKPab	04 30 45.6	+0.6
	SNR=12						
LBTB	Lobatse	131.52	210	ePKIKP	PKPdf	04 28 17.4	-0.8
LBTB	Lobatse	131.52	210	ePKPdf	PKPdf	04 28 17.4	-0.8
FIA1	FINESS Array S	132.90	344	ePKPdf	PKPdf	04 28 19.0	-0.5
FIA1				ePKPdf	PKPdf	04 28 19.4	-0.1
FINES	FINESS Array B	132.90	344	PKhKP	PKPpre	04 28 05.5	
	comp=Z,0.7nm,0.6s,baz=23,slow=6.2,SNR=3.6						
FINES				PKP	PKPdf	04 28 19.2	-0.2
	comp=Z,3.4nm,0.5s,baz=92,slow=2.7,SNR=15						
FINES				SKPbc	SKPab	04 30 57.2	-0.9
	comp=Z,14nm,0.9s,baz=57,slow=7.0,SNR=13						
VRH	Novokhopyorsk	133.79	326	ePKIKP	PKPdf	04 28 21.1	-0.3
VRH				e		04 30 59.2	
VRH				pmax	pmax		
	comp=Z,10.0nm,0.5s						
OBN	Obninsk	134.01	333	⇓iPKIKP	PKPdf	04 28 23.0	+1.3
OBN				i		04 31 00.9	
OBN				pmax	pmax		
	comp=Z,14nm,0.5s						
LPSR	Galich'ya Gora	134.46	329	ePKIKP	PKPdf	04 28 21.8	-0.9
LPSR				e		04 31 02.2	
LPSR				pmax	pmax		
	comp=Z,10.0nm,0.8s						
VSR	Storozhevoye	135.13	327	ePKIKP	PKPdf	04 28 23.4	-0.6
VSR				e		04 31 03.6	
VSR				pmax	pmax		
	comp=Z,20nm,1.3s						
DGRG	David-gareji	135.65	312	P	SKPbc	04 30 58.7	-6.5
GUDG	Gudauri	135.94	313	P	SKPbc	04 31 07.6	+1.3
NB2	NORSAR Subarra	136.10	353	PKP	PKPpre	04 28 16.5	
	comp=Z,11nm,1.4s,baz=16,slow=3.2						
NOA	NORSAR Array B	136.10	353	PKhKP	PKPpre	04 28 18.6	
	comp=Z,1.1nm,0.8s,baz=19,slow=2.8,SNR=4.3						
NOA				PKP	PKPdf	04 28 26.4	+0.8
	comp=Z,1.7nm,0.6s,baz=13,slow=4.1,SNR=8.4						
NOA				SKPbc	SKiKP	04 31 08.7	-2.5
	comp=Z,3.6nm,0.9s,baz=8.8,slow=4.1,SNR=6.1						
ZEI	Tsey	136.22	314	iPKIKP	PKPdf	04 28 25.1	-1.5
ZEI				pmax	pmax		
	comp=Z,31nm,1.3s						
GNI	Garni	136.52	310	⇓iPKIKP	PKPdf	04 28 29.8	+2.7
GNI				pmax	pmax		
	comp=Z,74nm,1.7s						
KBZ	Khabaz	136.53	316	PKP	PKPdf	04 28 25.9	-0.9
	comp=Z,3.6nm,0.9s,baz=236,slow=8.4,SNR=4.0						
KBZ				SKP		04 31 09.5	
	comp=Z,9.9nm,1.0s,baz=344,slow=1.5,SNR=6.1						
KIV	Kislovodsk	136.58	316	ePKIKP	PKPdf	04 28 26.1	-0.9
KIV				pmax	pmax		
	comp=Z,14nm,0.9s						
KIV	Kislovodsk	136.58	316	ePKPdf	PKPdf	04 28 26.8	-0.3
NEY	Neytrino	136.84	315	⇑iPKIKP	PKPdf	04 28 28.2	+0.5
AKH	Akhalkalaki	137.00	312	⇓iP	PKPdf	04 28 27.4	-0.6
NACGM	Naroch	138.05	338	e	PKPdf	04 28 28.0	-1.2
NACGM	Naroch	138.05	338	e	SKPbc	04 31 13.0	+1.3
TSUM	Tsumeb	140.11	204	ePKPpre	PKPpre	04 28 30.2	
KMBO	Kilima Mbogo	140.13	246	PKhKP	PKPpre	04 28 29.1	
	comp=Z,4.1nm,0.8s,baz=68,slow=6.5,SNR=13						
KMBO				SKPbc	SKiKP	04 31 21.6	+0.3
	comp=Z,14nm,0.9s,baz=5.3,slow=1.6,SNR=13						
AKASG	Malin Array Be	140.27	332	PKhKP	PKPpre	04 28 25.8	
	comp=Z,2.2nm,0.4s,baz=42,slow=4.2,SNR=18						
AKASG				PKP	PKPdf	04 28 33.1	-0.3
	comp=Z,3.8nm,0.6s,baz=42,slow=3.4,SNR=9.2						
AKASG				SKPbc	SKPbc	04 31 18.9	+1.1
	comp=Z,6.0nm,0.8s,baz=36,slow=3.3,SNR=7.7						
AKASG				SKKPbc	SKKPbc	04 39 50.6	-0.8
	comp=Z,1.9nm,0.8s,baz=229,slow=3.9,SNR=6.7						
AKBB	Malin Array Si	140.27	332	ePKHKP	PKPpre	04 28 25.7	
AKBB				e		04 28 33.0	
AKBB	Malin Array Si	140.27	332	ePKPpre	PKPpre	04 28 25.7	
AKBB				ePKPdf	PKPdf	04 28 33.0	-0.4
KIEV	Kiev	140.28	332	ePKHKP	PKPpre	04 28 26.7	
KIEV				e		04 28 31.8	
KIEV	Kiev	140.28	332	ePKPpre	PKPpre	04 28 26.7	
KIEV				ePKPdf	PKPdf	04 28 31.8	-1.6
AK11	Malin Array Si	140.31	332	ePKPpre	PKPpre	04 28 26.3	
AK11				ePKPdf	PKPdf	04 28 32.7	-0.8
BEL	Belsk	142.61	340	ePKP	PKPdf	04 28 35.1	-2.4
BEL	Belsk	142.61	340	ePKIKP	PKPdf	04 28 35.1	-2.4
BOYT	Boyabat	142.84	317	iP	PKPdf	04 28 36.8	-1.6
CUSAR	Sarkisla-SIVAS	142.86	313	⇓iP	PKPdf	04 28 37.0	-1.7
LVV	L'vov	143.12	336	c iPKIKP	PKPab	04 28 36.0	-0.3
LVV						04 30 45.0	
AYKD	Aykdinkavak	143.28	310	⇓iP	PKPbc	04 28 37.6	-0.1
COAL	Corum-Alaca	143.35	315	⇓iP	PKPbc	04 28 37.9	0.0
KAMA	Osmaniye	143.47	309	⇓iP	PKPbc	04 28 38.3	0.0
ANDN	Andirin	143.55	310	⇓iP	PKPbc	04 28 38.8	+0.2
DRWC	Darouich	143.69	308	iP	PKPbc	04 28 39.2	+0.1
LEOM	Leova	143.71	328	⇑iP	PKPab	04 28 38.6	0.0
LEOM	Leova	143.71	328	⇑PKIKP	PKPab	04 28 38.6	0.0
KWP	Kalwaria Pacla	143.78	337	ePKP	PKPab	04 28 38.9	+0.1
KWP	Kalwaria Pacla	143.78	337	ePKIKP	PKPab	04 28 38.9	+0.1
RABH	Abou Rabah	144.03	305	iP	PKPab	04 28 40.4	+0.1

BTCH	Batrach	144.06	308	iP	PKPbc	04 28 40.0	-0.2
CDAG	Cicekdag	144.06	314	⇓iP	PKPbc	04 28 40.0	-0.2
AVNS	Nevsehir-Avano	144.11	313	⇓iP	PKPbc	04 28 40.0	-0.3
WLF1	Llynfaes	144.13	6	eP	PKPbc	04 28 38.7	-1.0
WPM1	Penmaenmawr	144.21	6	eP	PKPbc	04 28 39.3	-0.7
ELDT	Eldivan	144.28	316	⇓iP	PKPdf	04 28 41.0	-0.1
WRDH	Warideh	144.28	307	iP	PKPdf	04 28 41.1	0.0
TLCR		144.28	326	⇓iP	PKPab	04 28 40.8	0.0
TLCR		144.28	326	⇓PKIKP	PKPab	04 28 40.8	0.0
YLL	Llanberis	144.30	6	eP	PKPbc	04 28 39.1	-1.1
BUR08	Bucovina Ar. S	144.31	332	ePKPbc	PKPbc	04 28 40.0	-0.6
OJC	Ojcow	144.32	340	ePKP	PKPbc	04 28 40.3	-0.2
OJC	Ojcow	144.32	340	ePKIKP	PKPbc	04 28 40.4	-0.1
OJC	Ojcow	144.32	340	ePKPbc	PKPbc	04 28 40.0	-0.5
YAYL	Yayladag	144.32	308	⇓iP	PKPbc	04 28 40.7	-0.4
BURAR	Bucovina Array	144.32	332	⇓iP	PKPab	04 28 41.1	0.0
BURAR	Bucovina Array	144.32	332	⇓PKIKP	PKPab	04 28 41.1	0.0
ZALF	Zalf	144.38	302	iP	PKPab	04 28 41.6	-0.1
SLNF	Slenfeh	144.39	307	iP	PKPbc	04 28 41.1	-0.2
TESR	Tescani	144.47	330	⇑iP	PKPdf	04 28 40.9	-0.1
ARNB	Al Arnab	144.49	308	iP	PKPbc	04 28 41.5	0.0
STHS	Stebnicka Huta	144.50	338	ePKIKP	PKPdf	04 28 41.0	0.0
STHS	Stebnicka Huta	144.50	338	ePKP	PKPdf	04 28 41.0	0.0
BR131	Keskin Array S	144.51	315	ePKPdf	PKPdf	04 28 41.1	-0.4
BRTR	Keskin Array B	144.51	315	PKP	PKPdf	04 28 41.4	-0.1
	comp=Z,40nm,0.9s,baz=125,slow=3.5,SNR=104						
BRTR				SKPbc	SKiKP	04 31 30.0	+0.6
	comp=Z,5.0nm,0.9s,baz=150,slow=2.7,SNR=4.4						
BRTR				PKKP	PKKPdf	04 37 47.8	-2.6
	comp=Z,1.0nm,0.7s,baz=118,slow=4.9,SNR=3.9						
BRTR				SKKPbc	SKKPbc	04 39 33.6	-0.4
	comp=Z,2.9nm,0.8s,baz=208,slow=4.9,SNR=9.8						
KOLS	Kolonicke sedl	144.51	336	ePKIKP	PKPab	04 28 41.5	-0.1
KOLS	Kolonicke sedl	144.51	336	ePKP	PKPab	04 28 41.5	-0.1
BIDA	Albida	144.52	306	iP	PKPbc	04 28 41.8	+0.1
FOEL	Foel Wylfa	144.63	5	eP	PKPdf	04 28 40.1	-0.9
CFR	Carcaliu	144.65	327	⇓iP	PKPdf	04 28 41.4	+0.1
CFR	Carcaliu	144.65	327	⇓PKIKP	PKPdf	04 28 41.4	+0.1
MARH	Ras Al Marh	144.72	304	eP	PKPbc	04 28 42.5	-0.1
PETR	Petresti	144.74	328	⇓iP	PKPab	04 28 43.9	+1.3
UZH	Uzhgorod	144.75	336	⇑iPKIKP	PKPdf	04 28 41.5	+0.1
UZH				e		04 30 51.1	
KSP	Ksiaz	144.82	344	ePKP	PKPab	04 28 42.5	-0.2
KSP	Ksiaz	144.82	344	ePKIKP	PKPab	04 28 42.5	-0.2
NIE	Niedzica	144.83	339	ePKP	PKPab	04 28 42.7	-0.1
NIE	Niedzica	144.83	339	ePKIKP	PKPab	04 28 42.8	-0.1
VRI	Vrincioaia	144.89	329	⇓iP	PKPbc	04 28 42.7	+0.3
VRI	Vrincioaia	144.89	329	⇓PKIKP	PKPbc	04 28 42.7	+0.3
CWF	Charnwood Fore	144.91	3	eP	PKPdf	04 28 41.7	+0.2
CWF	Charnwood Fore	144.91	3	ePKPdf	PKPdf	04 28 41.8	+0.3
DED	Mersin	144.93	310	⇓iP	PKPdf	04 28 42.3	+0.2
AKSY	AKSARAY - Alti	144.94	313	⇓iP	PKPdf	04 28 42.3	+0.2
PLOR	Plostina	144.94	329	⇓iP	PKPbc	04 28 42.6	+0.1
PLOR	Plostina	144.94	329	⇓PKIKP	PKPbc	04 28 42.6	+0.1
BBAL	Bala	144.95	315	⇓iP	PKPbc	04 28 43.0	+0.1
TOTH	TOTAH	144.97	303	iP	PKPbc	04 28 43.5	+0.4
TIRR	Tirgusor	144.98	326	⇑iP	PKPab	04 28 43.2	-0.3
TIRR	Tirgusor	144.98	326	⇑PKIKP	PKPab	04 28 43.2	-0.3
TIRR	Tirgusor	144.98	326	ePKPdf	PKPdf	04 28 42.0	+0.2
BCAM	Yenicaga	144.99	318	⇓iP	PKPbc	04 28 42.8	-0.1
ANTO	Ankara	145.01	316	ePKIKP	PKPdf	04 28 42.1	-0.1
ANTO	Ankara	145.01	316	ePKPdf	PKPdf	04 28 42.1	-0.1
BMR	Baia Mare	145.02	334	⇓iP	PKPab	04 28 43.3	-0.3
BMR	Baia Mare	145.02	334	⇓PKIKP	PKPab	04 28 43.3	-0.3
HLM1	Long Mynd	145.03	5	eP	PKPdf	04 28 41.5	-0.3
BR231	Keskin MP Arra	145.03	316	ePKPdf	PKPdf	04 28 41.6	-0.7
BR231				ePKPdf	PKPbc	04 28 41.9	-1.2
HARR	Harsova	145.08	326	⇑iP	PKPbc	04 28 42.8	-0.1
HARR	Harsova	145.08	326	⇑PKIKP	PKPbc	04 28 42.8	-0.1
ARCR	ARCALIA	145.11	332	⇑iP	PKPab	04 28 44.0	0.0
EFOR	EFORIE	145.11	325	⇓iP	PKPdf	04 28 41.9	-0.2
CLL	Collm	145.18	347	⇑iPKPbc	PKPbc	04 28 42.7	-0.3
	comp=Z,78nm,0.9s						
CLL				i		04 28 44.8	
CLL				epPKPbc	pPKPbc	04 30 56.0	+5.9
CLL				i		04 31 32.4	
CLL				ePPP	PPP	04 35 23.0	
CLL				eSS	SS	04 50 15.0	+1.8
CLL				esSS		04 53 39.0	
CLL				eSSS	SSS	04 55 48.0	
CLL	Collm	145.18	347	⇑iPKIKP	PKPbc	04 28 42.7	-0.3
CLL				pmax	pmax		
	comp=Z,78nm,0.9s						
CLL	Collm	145.18	347	ePKPdf	PKPbc	04 28 42.6	-0.3
OKC	Ostrava-Krasne	145.18	341	ePKP	PKPbc	04 28 42.6	-0.5
OKC	Ostrava-Krasne	145.18	341	ePKIKP	PKPbc	04 28 42.6	-0.5
UPC	Upice	145.20	344	ePKP	PKPbc	04 28 42.9	-0.2
UPC				eSS	SS	04 50 16.2	+2.5
UPC	Upice	145.20	344	ePKIKP	PKPbc	04 28 42.9	-0.2
UPC				eSS	SS	04 50 16.2	+2.5
KERG	Konya-Eregli	145.23	311	⇓iP	PKPdf	04 28 42.7	-0.1
DPC	Dobruska-Polom	145.26	343	ePKP	PKPbc	04 28 42.9	-0.5
DPC				epPKP	pPKPdf	04 30 52.7	+1.0
DPC	Dobruska-Polom	145.26	343	ePKIKP	PKPbc	04 28 42.9	-0.5
DPC				e		04 30 52.7	
KKUL	Konya-Kulu	145.27	315	⇓iP	PKPbc	04 28 43.9	0.0
MANR	Mangalia	145.30	325	⇑iP	PKPbc	04 28 44.2	+0.6
BRBR	Barbar	145.34	304	iP	PKPbc	04 28 44.8	+0.4
LANS	Liptovska Anna	145.35	339	ePKP2	PKPab	04 28 44.7	-0.2
LANS	Liptovska Anna	145.35	339	ePKP	PKPab	04 28 44.7	-0.2
BRG	Berggiesshubel	145.38	346	ePKP	PKPbc	04 28 43.1	-0.5
	comp=Z,39nm,0.9s						
BRG				epPKP	pPKPdf	04 30 54.8	+2.9
	comp=Z,5.4nm,1.7s						
BRG				SS	SS	04 50 02.0	-14
BRG	Berggiesshubel	145.38	346	ePKIKP	PKPbc	04 28 43.1	-0.5
BRG				e		04 30 54.8	
BRG				pmax	pmax		
	comp=Z,39nm,0.9s						
BRG				pmax	pmax		
	comp=Z,5.0nm,1.7s						
MORC	Moravsky Berou	145.42	342	ePKIKP	PKPdf	04 28 42.8	+0.2
MORC	Moravsky Berou	145.42	342	ePKPdf	PKPdf	04 28 42.8	+0.2
DOPR	Dopca	145.47	330	⇑iP	PKPbc	04 28 44.2	+0.1
WTSB	Winterswijk	145.49	354	ePKP	PKPdf	04 28 42.9	+0.4
ISR	Istrita	145.51	328	⇓iP	PKPbc	04 28 44.7	+0.4
ISR	Istrita	145.51	328	⇓PKP2	PKPbc	04 28 44.7	+0.4
MCH1	Michaelchurch	145.54	5	eP	PKPbc	04 28 43.9	-0.1
MSAB	Monastry St. A	145.54	326	⇑iP	PKPbc	04 28 44.7	+0.4
MLR	Muntele Rosu	145.54	329	⇓iP	PKPbc	04 28 44.1	-0.4
MLR	Muntele Rosu	145.54	329	⇓PKIKP	PKPbc	04 28 44.1	-0.4
MLR	Muntele Rosu	145.54	329	ePKPdf	PKPdf	04 28 41.6	-1.5
PVCC	Panska Ves	145.55	345	ePKP	PKPdf	04 28 43.4	+0.7
PVCC				ex	x	04 28 48.5	
PVCC				epPKP	pPKPdf	04 30 55.2	+3.0
PVCC	Panska Ves	145.55	345	ePKIKP	PKPdf	04 28 43.4	+0.7
PVCC				e		04 30 55.2	
KECS	Kecovo	145.55	337	ePKP2	PKPab	04 28 45.0	-0.7
KECS	Kecovo	145.55	337	ePKP	PKPab	04 28 45.0	-0.7
KIZK	Mersin	145.61	310	⇓iP	PKPbc	04 28 44.3	-0.4
SSW	Stow on the Wo	145.65	4	eP	PKPbc	04 28 44.1	-0.2
MONM	Monmouth	145.71	5	eP	PKPbc	04 28 43.7	-0.8
CJR	Cluj-Napoca	145.73	333	⇓iP	PKPbc	04 28 45.4	+0.6
CJR	Cluj-Napoca	145.73	333	⇓PKP2	PKPbc	04 28 45.4	+0.6
BTAS	Taskesti	145.81	318	⇓iP	PKPbc	04 28 44.7	-0.5
SULR		145.96	328	⇓iP	PKPbc	04 28 46.3	+0.8
VOIR		146.02	330	⇑iP	PKPbc	04 28 45.0	-0.7
VOIR		146.02	330	⇑PKIKP	PKPbc	04 28 45.0	-0.7
DRGR		146.05	334	⇑iP	PKPbc	04 28 46.2	+0.4
DRGR		146.05	334	⇑PKP2	PKPbc	04 28 46.2	+0.4
PRU	Pruhonice	146.06	345	ePKP	PKPdf	04 28 43.9	+0.3
PRU				ex	x	04 28 45.8	
PRU				ex	x	04 28 48.8	
PRU				epPKP	pPKPdf	04 30 54.8	+1.7
PRU				eSS	SS	04 50 23.6	+0.4
PRU	Pruhonice	146.06	345	ePKIKP	PKPdf	04 28 43.9	+0.3
PRU				e		04 28 45.8	
PRU				e		04 30 54.8	
PRU				eSS	SS	04 50 23.6	+0.4
GOPC	GO Pecny, Ondr	146.06	345	ePKP	PKPdf	04 28 43.7	+0.1
GOPC				ex	x	04 28 46.0	
GOPC	GO Pecny, Ondr	146.06	345	ePKIKP	PKPdf	04 28 43.7	+0.1
GOPC				e		04 28 46.0	
VRAC	Vranov	146.12	342	⇑iP	PKPdf	04 28 42.5	-1.2
VRAC	Vranov	146.12	342	⇑PKIKP	PKPdf	04 28 42.6	-1.2
VYHS	Vyhne	146.13	339	ePKP2	PKPbc	04 28 46.2	+0.4
VYHS	Vyhne	146.13	339	ePKP	PKPbc	04 28 46.2	+0.4
BATH	Bath	146.14	4	eP	PKPbc	04 28 45.5	-0.3
MTUR	Matau	146.16	329	⇑iP	PKPab	04 28 48.7	+0.4
MTUR	Matau	146.16	329	⇑PKP2	PKPab	04 28 48.7	+0.4

PSZ	Piszkesteto	146.24	338	ePKP2	PKPbc	04 28 46.4	+0.1
PSZ	Piszkesteto	146.24	338	ePKPbc	PKPbc	04 28 46.4	+0.1
ARR	Arges	146.27	330	⇓iP	PKPbc	04 28 45.3	-1.1
PHNC	Paralimni	146.28	307	P	PKPbc	04 28 45.8	-0.9
WOL	Wolverton	146.34	3	eP	PKPbc	04 28 46.3	0.0
PRD	Provadia	146.36	325	eP	PKPbc	04 28 47.1	+0.5
TREC	Trest	146.44	343	ePKP	PKPdf	04 28 44.7	+0.4
TREC				ex	x	04 28 46.8	
TREC	Trest	146.44	343	ePKIKP	PKPdf	04 28 44.7	+0.4
TREC				e		04 28 46.8	
ESKT	Eskisehir	146.47	317	iP	PKPdf	04 28 43.2	-1.6
BORA	Eskisehir	146.53	317	⇓iP	PKPbc	04 28 47.0	-0.4
SMOL	Smolenice	146.57	341	ePKP2	PKPab	04 28 48.8	-0.9
SMOL	Smolenice	146.57	341	ePKP	PKPab	04 28 48.8	-0.9
LOT	Lotru	146.61	331	⇓iP	PKPbc	04 28 46.8	-0.6
HUMR	Humele	146.71	329	⇑iP	PKPbc	04 28 48.1	+0.6
BEBN	Eben Emael	146.75	355	PKPbc	PKPbc	04 28 48.0	+0.6
HGN	Heimansgroeve	146.76	355	ePKP	PKPbc	04 28 47.2	-0.2
BOLV	Bolvadin	146.82	315	⇓iP	PKPbc	04 28 47.9	-0.3
CSS	Mathiatis	146.82	308	P	PKPbc	04 28 47.8	-0.4
CSS	Mathiatis	146.82	308	P	PKPbc	04 28 47.7	-0.4
CSS	Mathiatis	146.82	308	ePKPbc	PKPbc	04 28 47.9	-0.4
HMNX	Herstmonceux	146.84	1	eP	PKPbc	04 28 47.2	-0.4
SIRR	Siria	146.91	334	⇓iP	PKPbc	04 28 48.5	+0.5
MEM	Membach	146.91	355	PKPbc	PKPbc	04 28 48.4	+0.6
GRFO	Grafenberg	147.07	348	ePKP2	PKPbc	04 28 48.8	+0.4
GRFO	Grafenberg	147.07	348	ePKPbc	PKPbc	04 28 48.8	+0.4
KHC	Kasperske Hory	147.09	345	ePKP	PKPdf	04 28 45.5	+0.1
KHC				ex	x	04 28 48.8	
KHC				ex	x	04 28 53.3	
KHC				epPKP	pPKPdf	04 30 58.6	+3.7
KHC				eSS	SS	04 50 35.0	+0.2
KHC	Kasperske Hory	147.09	345	ePKIKP	PKPdf	04 28 45.5	+0.1
KHC				e		04 28 53.3	
KHC				eSS	SS	04 50 35.0	+0.2
KHC	Kasperske Hory	147.09	345	ePKPdf	PKPdf	04 28 45.4	+0.1
KHC				ePKPbc	PKPbc	04 28 49.0	+0.5
GZR	Gura Zlata	147.11	332	⇑iP	PKPbc	04 28 47.3	-1.4
SZH	Strazhica	147.11	326	eP	PKPbc	04 28 48.4	-0.2
IGD	Bursa	147.11	319	⇓iP	PKPbc	04 28 47.2	-1.6
SNF	Seneffe	147.13	357	PKPbc	PKPbc	04 28 49.1	+0.7
ZIMR		147.13	327	⇓iP	PKPbc	04 28 49.7	+1.0
ZIMR		147.13	327	⇓PKP2	PKPbc	04 28 49.7	+1.0
BCLA	Clavier	147.15	355	PKPbc	PKPbc	04 28 47.8	-0.7
ULDT	Uludag	147.22	319	⇓iP	PKPbc	04 28 49.0	-0.3
SZAC	Souni	147.25	308	P	PKPbc	04 28 49.0	-0.3
JMB	Yambol	147.29	324	eP	PKPbc	04 28 49.2	+0.1
ALFC	Alefka	147.30	308	P	PKPbc	04 28 49.0	-0.4
BAGO	Egridir - ISPA	147.30	314	⇓iP	PKPbc	04 28 48.9	-0.6
GEC2	GERESS Array S	147.32	345	ePKIKP	PKPdf	04 28 45.6	-0.2
GEC2	GERESS Array S	147.32	345	ePKPdf	PKPdf	04 28 45.6	-0.2
GEC2				ePKPbc	PKPbc	04 28 49.1	0.0
GERES	GERESS Array B	147.32	345	PKP	PKPdf	04 28 45.7	-0.1
	comp=Z,18nm,0.6s,baz=0.0,slow=0.5,SNR=24						
GERES				PKPbc	PKPbc	04 28 49.2	0.0
	comp=Z,18nm,0.6s,baz=26,slow=3.0,SNR=108						
GERES				pPKPbc	pPKPbc	04 30 59.2	+2.6
	comp=Z,0.9nm,0.7s,baz=48,slow=2.0,SNR=3.4						
BZS	Buzias	147.44	333	⇓iP	PKPdf	04 28 45.9	-0.1
BZS	Buzias	147.44	333	⇓PKIKP	PKPdf	04 28 45.9	-0.1
DOU	Dourbes	147.53	356	PKPbc	PKPbc	04 28 50.1	+0.6
AKMC	Akamas	147.55	308	P	PKPbc	04 28 48.9	-1.2
GDZ	Gediz	147.60	317	⇓iP	PKPbc	04 28 49.7	-0.6
EDRB	Edirne	147.61	323	P	PKPbc	04 28 48.5	-1.5
WLF	Walferdange	147.83	354	PKPbc	PKPbc	04 28 51.5	+1.2
WLF	Walferdange	147.83	354	ePKPdf	PKPdf	04 28 47.8	+1.3
WLF				ePKPbc	PKPbc	04 28 51.0	+0.7
DURS	Dursunbey	147.95	319	⇓iP	PKPbc	04 28 50.4	-0.7
KHAL	Karahalli	147.98	316	⇓iP	PKPbc	04 28 50.7	-0.5
MDVR	Moldovita	148.06	332	⇓iP	PKPbc	04 28 51.9	+0.8
SART	Tekirdag	148.09	321	⇓iP	PKPbc	04 28 50.7	-0.7
KORT	Korkueli	148.09	313	⇓iP	PKPbc	04 28 50.9	-0.7
KNL	Bal˜–kesir	148.14	320	⇓iP	PKPdf	04 28 49.0	+1.6
DIM	Dimitrovgrad	148.15	325	eP	PKPbc	04 28 51.5	+0.2
MPEP	Malo Peshtene	148.18	328	eP	PKPbc	04 28 51.6	+0.2
UZP	Denizli	148.37	316	⇓iP	PKPbc	04 28 52.3	+0.1
JSA	Saint Aubin	148.39	5	eP	PKPbc	04 28 50.6	-1.1
KDZ	Kurdzhali	148.49	324	eP	PKPbc	04 28 51.9	-0.3
PGB	Panagyurishte	148.54	327	eP	PKPbc	04 28 52.0	-0.4
ALN	Alexandroupoli	148.63	323	P	PKPbc	04 28 51.0	-1.5
AKHS	Akhisar	148.79	318	⇓iP	PKPbc	04 28 52.5	-0.5
RZN	Rozhen	148.85	325	eP	PKPbc	04 28 52.6	-0.7
BFO	Black Forest	148.88	351	ePKPdf	PKPdf	04 28 49.1	+0.8
BFO				ePKPbc	PKPbc	04 28 53.5	+0.5
AKAS	Kas	148.99	312	⇓iP	PKPbc	04 28 52.7	-1.1
GROS	Grobnik	149.00	341	ePKPbc	PKPbc	04 28 52.6	-0.7
VTS	Vitosha	149.00	328	⇑iP	PKPbc	04 28 53.9	+0.3
VTS	Vitosha	149.00	328	P	PKPbc	04 28 53.5	-0.1
VTS	Vitosha	149.00	328	ePKHKP	PKPdf	04 28 48.7	-0.2
VTS				e		04 29 00.4	
VTS	Vitosha	149.00	328	eP	PKPbc	04 28 53.3	-0.3
VTS	Vitosha	149.00	328	ePKPdf	PKPdf	04 28 48.6	-0.2
VTS				ePKPbc	PKPbc	04 28 53.6	-0.1
VTS				ePKPab	PKPab	04 29 00.4	+0.4
SMTH	Samothraki Isl	149.20	323	P	PKPbc	04 28 52.6	-1.4
TURN	Turunc	149.37	314	⇓iP	PKPbc	04 28 55.1	+0.7
KAVA	Kavala	149.43	324	P	PKPbc	04 28 54.1	-0.4
AYDN	Tasoluk	149.43	316	⇓iP	PKPbc	04 28 54.9	+0.2
MMB	Musomiste	149.45	326	eP	PKPbc	04 28 54.0	-0.6
NVR	Nevrokopi	149.54	326	P	PKPbc	04 28 54.3	-0.5
KKB	Krupnik	149.59	327	eP	PKPbc	04 28 54.0	-0.9
LJU	Ljubljana	149.67	342	iPKPbc	PKPbc	04 28 54.8	-0.2
LIA	Limnos Island	149.78	322	P	PKPbc	04 28 54.7	-0.6
GCAM	G?zelcaml?	149.84	317	⇓iP	PKPbc	04 28 55.3	-0.3
BOJS	Bojanci	149.93	340	iPKPbc	PKPbc	04 28 55.7	+0.2
ASCN	Ascension	150.16	147	ePKPdf	PKPdf	04 28 50.5	-0.8
ASCN				ePKPbc	PKiKP	04 28 57.6	0.0
H10N3	ASCENSION HYDR	150.17	147	PKPbc	PKPbc	04 28 58.9	+2.2
	baz=78,slow=75,SNR=6.1						
H10N1	ASCENSION HYDR	150.18	147	PKPbc	PKPbc	04 28 58.1	+1.4
	baz=78,slow=75,SNR=5.3						
H10N2	ASCENSION HYDR	150.19	147	PKPbc	PKPbc	04 28 59.5	+2.8
	baz=78,slow=75,SNR=4.1						
FUORN	Ofenpass-Fuorn	150.20	348	ePKPdf	PKPdf	04 28 50.4	-0.3
FUORN				ePKPbc	PKiKP	04 28 57.1	+0.1
VAY	Valandovo	150.25	327	iPKP	PKPbc	04 28 56.0	-0.4
SKO	Skopje	150.34	329	iPKP	PKPbc	04 28 57.0	+0.4
TUE	Stuetta	150.52	349	ePKPdf	PKPdf	04 28 50.9	-0.3
TUE				ePKPbc	PKPbc	04 28 57.4	+0.2
SENIN	Lac Senin/Sane	150.95	352	ePKPdf	PKPdf	04 28 51.6	-0.3
SENIN				ePKPbc	PKPbc	04 28 57.9	-0.3
BIA	Bitola	151.11	328	ePKP	PKPbc	04 28 57.7	-0.8
FNA	Florina	151.26	327	P	PKPbc	04 28 58.1	-0.7
OHR	Ohrid	151.31	329	iPKP	PKPbc	04 28 59.0	0.0
TIR	Tirane	151.58	330	ePKIKP	PKPdf	04 28 52.7	0.0
TIR				e		04 29 11.3	
TIR	Tirane	151.58	330	ePKPdf	PKPdf	04 28 52.7	0.0
TIR				ePKPbc	PKPbc	04 28 58.8	-0.7
TIR				ePKPab	PKPab	04 29 11.3	+0.7
NEST	Nestorio	151.70	327	P	PKPbc	04 28 59.2	-0.7
THL	Klokotos Trika	151.80	325	P	PKPbc	04 28 57.1	-2.9
VILL	Villia	152.01	321	P	PKPbc	04 28 59.1	-1.5
LTK	Loutraki	152.31	321	P	PKPbc	04 28 59.6	-1.6
SSB	Saint Sauveur	152.32	355	ePKIKP	PKPdf	04 28 55.8	+2.1
SSB	Saint Sauveur	152.32	355	ePKPdf	PKPdf	04 28 55.8	+2.1
SSB				ePKPbc	PKiKP	04 29 01.3	+0.1
BNI	Bardonecchia	152.32	352	ePKIKP	PKPbc	04 28 58.3	-2.9
BNI	Bardonecchia	152.32	352	ePKPbc	PKPbc	04 28 58.3	-2.9
LAST	Lasithi	152.42	314	ePKPbc	PKPbc	04 29 01.6	-0.1
DID	Didima	152.48	320	P	PKPbc	04 28 59.8	-1.8
ANX	Ano Chora	152.53	324	P	PKPdf	04 28 54.9	+0.6
KALE	Kalithea	152.54	323	P	PKPbc	04 29 00.7	-1.1
LAKA	Lakka	152.74	323	P	PKPbc	04 29 02.3	+0.1
KLV	Kalavryta, Ach	152.77	322	P	PKPdf	04 28 54.8	+0.2
PDO	Prodromos	152.94	324	P	PKPdf	04 28 54.4	-0.3
RLS	Riolos of Patr	153.16	323	P	PKPbc	04 29 03.2	+0.2
TIP	Timpagrande	154.75	331	ePKPdf	PKPdf	04 28 57.2	-0.1
TIP				ePKPab	PKPab	04 29 24.3	0.0
PBRG	Braganca	154.91	15	ePKPdf	PKPdf	04 28 58.0	+0.6
PBRG	Braganca	154.91	15	ePKPab	PKPab	04 29 25.1	+0.3
POLO	Lamas de Olo	155.04	17	iP	PKPdf	04 29 07.3	+10
POLO	Lamas de Olo	155.04	17	ePKPab	PKPab	04 29 26.4	+0.9
PVRL	Vila Real	155.16	17	ePKPab	PKPab	04 29 27.1	+1.2
MVO	Moncorvo	155.44	16	ePKPdf	PKPdf	04 28 57.0	-1.2
MVO				iP	PKPdf	04 29 07.8	+10
MVO	Moncorvo	155.44	16	ePKPab	PKPab	04 29 27.7	+0.5
PVIS	Viseu	155.63	17	ePKPab	PKPab	04 29 28.1	+0.1
MTE	Manteigas	156.02	17	ePKPdf	PKPdf	04 28 59.4	+0.4
MTE	Manteigas	156.02	17	ePKPab	PKPab	04 29 30.9	+1.2
PCBR	Castelo Branco	156.56	18	ePKPdf	PKPdf	04 29 00.1	+0.5

PCBR	Castelo Branco	156.56	18	ePKPab	PKPab	04 29 32.7	+0.8
PMRV	Marv??o	156.96	18	ePKPdf	PKPdf	04 29 01.2	+1.1
PMRV	Marv??o	156.96	18	ePKPab	PKPab	04 29 34.1	+0.4
PMTG	Montargil	157.04	20	ePKPdf	PKPdf	04 29 00.0	-0.2
PMTG	Montargil	157.04	20	ePKPab	PKPab	04 29 34.1	0.0
PESTR	Estremoz	157.42	19	ePKPab	PKPab	04 29 35.8	0.0
ES19	SONSECA Array	157.53	11	ePKPdf	PKPdf	04 29 00.8	0.0
ES19				ePKPab	PKPab	04 29 36.4	+0.2
ESDC	Sonseca Array	157.54	11	PKP	PKPdf	04 29 00.7	-0.2
	comp=Z,0.4nm,0.5s,baz=356,slow=2.6,SNR=8.3						
ESDC				PKPab	PKPab	04 29 36.0	-0.3
	comp=Z,0.6nm,0.4s,baz=338,slow=4.1,SNR=8.2						
PNCL	Nicolau / Gran	157.80	21	ePKPab	PKPab	04 29 38.0	+0.6
PBEJ	Beja	158.10	20	ePKPab	PKPab	04 29 40.5	+1.8
MESJ	Messejana	158.15	21	ePKPdf	PKPdf	04 29 02.9	+1.3
MESJ	Messejana	158.15	21	ePKPab	PKPab	04 29 39.6	+0.7
PBAR	Barrancos	158.22	18	ePKPdf	PKPdf	04 29 02.8	+1.1
PBAR	Barrancos	158.22	18	ePKPab	PKPab	04 29 40.3	+1.1
PVAQ	Vaqueiros	158.72	21	ePKPab	PKPab	04 29 41.9	+0.5
KEST	Kesra	160.67	340	PKP	PKPdf	04 29 03.9	-0.8
	comp=Z,3.6nm,0.9s,baz=40,slow=14,SNR=4.4						
KEST				PKPab	PKPab	04 29 50.0	-0.1
	comp=Z,4.5nm,0.6s,baz=353,slow=0.6,SNR=12						
KEST	Kesra	160.67	340	ePKPdf	PKPdf	04 29 03.6	-1.0
KEST				ePKPab	PKPab	04 29 50.3	+0.2
LIC	Lamto	167.00	150	ePKIKP	PKPdf	04 29 09.4	-1.4
	comp=Z,93nm,2.2s						
KIC	Kosan Boka	167.25	151	ePKIKP	PKPdf	04 29 09.5	-1.5
	comp=Z,29nm,0.8s						
TIC	Toumodi	167.37	149	ePKIKP	PKPdf	04 29 10.0	-1.1
DBIC	Dimbokro	167.47	150	PKP	PKPdf	04 29 09.5	-1.7
	comp=Z,8.9nm,0.8s,baz=153,slow=1.3,SNR=11						
DBIC				PKPab	PKPab	04 30 20.6	+0.2
	comp=Z,10.0nm,0.7s,baz=181,slow=6.6,SNR=8.8						
DBIC	Dimbokro	167.47	150	ePKIKP	PKPdf	04 29 09.7	-1.5
DBIC				e		04 30 19.5	
DBIC	Dimbokro	167.47	150	ePKPdf	PKPdf	04 29 09.7	-1.5
DBIC				ePKPab	PKPab	04 30 19.5	-1.0
TAM	Tamanrasset	173.62	324	ePKIKP	PKPdf	04 29 14.7	+0.3
TAM				e		04 30 48.2	
TAM	Tamanrasset	173.62	324	ePKPdf	PKPdf	04 29 14.7	+0.3
TAM				ePKPab	PKPab	04 30 48.2	+0.4
TOA0	Torodi Ar. Sit	175.53	183	ePKPdf	PKPdf	04 29 13.3	-1.6
TOA0				ePKPdf	PKPdf	04 29 13.7	-1.2
TOA0				ePKPab	PKPab	04 30 54.9	-1.1
TORD	Torodi Ar. Bea	175.53	183	PKP	PKPdf	04 29 13.9	-1.0
	comp=Z,11nm,0.8s,baz=334,slow=0.9,SNR=55						
TORD				PKPab	PKPab	04 30 56.1	0.0
	comp=Z,6.4nm,0.7s,baz=177,slow=4.4,SNR=13						
TORD				PP	PP	04 34 48.9	+1.2
	comp=Z,2.7nm,0.7s,baz=172,slow=4.5,SNR=6.8						

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*ISK **05** 04:12:11.3, 39°.40N×26°.33E, h9km, MD2.7*
*CSEM **05** 04:12:12.1±0.1, 39°.41N×26°.31E, h10km, ML1.7, Error ellipse: s-maj=1.9km s-min=1.6km az=94.0*
*ISCJB **05** 04:12:12.1±0.4, 39°.42N±0°.02×26°.30E±0°.03, h6km±4km, Error ellipse: s-maj=4.1km s-min=3.4km az=161.9*
*DDA **05** 04:12:12.1, 39°.46N×26°.32E, h6km, Md3.0*
*THE **05** 04:12:12.6, 39°.44N×26°.25E, h3km±1km, ML1.9/4, Error ellipse: s-maj=1.2km s-min=0.3km az=216.0*
*ATH **05** 04:12:12.2, 39°.43N×26°.29E, h12km±5km, ML1.7/2, Error ellipse: s-maj=5.3km s-min=1.0km az=163.0*
ISC 05 04:12:11.8±1.0, **39°.40N**±0°.02×**26°.27E**±0°.02, **h13**km±8km, **n54**, σ**0.37**/88, **Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
PRK	Paraskevi	0.15	179	P	Pb	04 12 16.4	-0.1
PRK				S	Sb	04 12 19.4	-0.1
PRK	Paraskevi	0.15	179	P	Pb	04 12 16.4	-0.1
PRK				S	Sb	04 12 19.5	-0.1
PRK	Paraskevi	0.15	179	P	Pb	04 12 16.4	-0.1
PRK				S	Sb	04 12 19.4	-0.1
PRK				AML	AML	04 12 19.5	
	comp=N,2394μm,0.3s						
PRK				AML	AML	04 12 21.0	
	comp=E,1410μm,0.3s						
AYVA	Ayvalik	0.34	105	i P	Pg	04 12 19.0	+0.3
AYVA				i S	Sb	04 12 24.3	-0.8
AYVA	Ayvalik	0.34	105	P	Pg	04 12 19.0	+0.3
AYVA				S	Sb	04 12 24.3	-0.8
SIGR	SIGRI	0.37	240	ePG	Pb	04 12 19.9	-0.3
SIGR				eSG	Sb	04 12 26.1	+0.2
SIGR	SIGRI	0.37	240	P	Pb	04 12 20.1	-0.1
SIGR				S	Sb	04 12 25.7	-0.2
SIGR	SIGRI	0.37	240	P	Pb	04 12 20.1	-0.1
SIGR				S	Sb	04 12 25.5	-0.4
SIGR				eSg	Sb	04 12 26.1	+0.2
SIGR	SIGRI	0.37	240	P	Pb	04 12 19.9	-0.3
SIGR				S	Sb	04 12 25.5	-0.4
SIGR				AML	AML	04 12 25.9	
	comp=N,335μm,0.4s						
SIGR				AML	AML	04 12 27.2	
	comp=E,227μm,0.3s						
EZN	Ezine	0.43	6	ePG	Pg	04 12 20.4	0.0
EZN				eSG	Sg	04 12 26.3	+0.1
EZN	Ezine	0.43	6	P	Pg	04 12 20.4	0.0
EZN				S	Sg	04 12 26.3	+0.1
EZN	Ezine	0.43	6	P	Pg	04 12 20.4	0.0
EZN				S	Sg	04 12 26.3	+0.1
BOZC	Bozcaada	0.48	340	i P	Pg	04 12 21.1	-0.1
BOZC				i S	Sg	04 12 27.5	-0.1
DKL	Dikili	0.59	123	ePG	Pg	04 12 22.3	-1.0
DKL	Dikili	0.59	123	ePg	Pg	04 12 22.3	-1.0
GADA	Gvkgeada	0.84	340	ePG	Pg	04 12 28.1	-0.1
GADA	Gvkgeada	0.84	340	P	Pg	04 12 28.1	-0.1
GADA				S	Sb	04 12 39.5	-0.1
GADA	Gvkgeada	0.84	340	P	Pg	04 12 28.1	-0.1
GADA				S	Sb	04 12 39.5	-0.1
LIA	Limnos Island	0.98	301	P	Pg	04 12 30.8	+0.1
LIA				S	Sn	04 12 44.6	-0.4
LIA	Limnos Island	0.98	301	P	Pn	04 12 31.0	-0.2
LIA				S	Sn	04 12 44.5	-0.4
GELI	Tayfur-Gelibol	1.01	9	ePG	Pb	04 12 30.8	-0.5
GELI	Tayfur-Gelibol	1.01	9	ePg	Pb	04 12 30.8	-0.5
CHOS	Chios island	1.02	189	ePG	Pn	04 12 31.9	-0.1
CHOS	Chios island	1.02	189	P	Pn	04 12 32.5	+0.5
CHOS				S	Sn	04 12 47.8	+1.6
CHOS	Chios island	1.02	189	ePg	Pn	04 12 31.9	-0.1
CHOS	Chios island	1.02	189	P	Pn	04 12 32.4	+0.5
CHOS				S	Sn	04 12 46.5	+0.3
CHOS	Chios island	1.02	189	P	Pn	04 12 32.4	+0.5
CHOS				S	Sn	04 12 46.5	+0.3
BALY	Balya	1.10	71	i P	Pb	04 12 32.7	-0.1
BALY				i S	Sb	04 12 47.1	0.0
BALY	Balya	1.10	71	P	Pb	04 12 32.7	-0.1
BALY				S	Sb	04 12 47.1	0.0
SMTH	Samothraki Isl	1.22	332	P	Pn	04 12 34.6	0.0
SMTH				S	Sg	04 12 51.2	+0.2
SMTH	Samothraki Isl	1.22	332	P	Pn	04 12 34.6	0.0
SMTH				S	Sg	04 12 51.2	+0.2
SMTH	Samothraki Isl	1.22	332	P	Pn	04 12 34.3	-0.2
SMTH				S	Sg	04 12 51.4	+0.3
KRBG	Karabiga-Canak	1.27	38	ePN	Pn	04 12 35.4	+0.1
KRBG	Karabiga-Canak	1.27	38	ePn	Pn	04 12 35.4	+0.1
ERIK	Erikli-Kesan	1.29	8	ePN	Pn	04 12 35.4	-0.2
ERIK	Erikli-Kesan	1.29	8	ePn	Pn	04 12 35.4	-0.2
ENEZ	Enez	1.34	356	ePN	Pb	04 12 37.0	+0.2
ENEZ	Enez	1.34	356	P	Pb	04 12 36.7	-0.2
ENEZ				S	Sg	04 12 55.1	0.0
ENEZ	Enez	1.34	356	P	Pb	04 12 36.7	-0.2
ENEZ	Enez	1.34	356	ePn	Pb	04 12 37.0	+0.2
ENEZ				S	Sg	04 12 55.1	0.0
KESN	Edirne-Kesan	1.46	12	i P	Pb	04 12 39.4	+0.3
KESN				i S	Sn	04 12 57.3	-0.3
KESN	Edirne-Kesan	1.46	12	P	Pb	04 12 39.4	+0.3
KESN				S	Sn	04 12 57.3	-0.3
RKY	Sarkoy-Tekirda	1.47	28	ePN	Pn	04 12 38.1	0.0
RKY	Sarkoy-Tekirda	1.47	28	ePn	Pn	04 12 38.1	0.0
SART	Tekirdag	1.47	28	i P	Pn	04 12 38.5	+0.4
SART				i S	Sb	04 12 58.2	+0.5
SART	Tekirdag	1.47	28	P	Pn	04 12 38.5	+0.4
SART				S	Sb	04 12 58.2	+0.5
ALN	Alexandroupoli	1.51	354	ePN	Pn	04 12 39.0	+0.4
ALN	Alexandroupoli	1.51	354	ePn	Pn	04 12 39.0	+0.4
MRMT	Marmara Adasi	1.58	40	ePN	Pn	04 12 39.7	0.0
MRMT	Marmara Adasi	1.58	40	ePn	Pn	04 12 39.7	0.0
DURS	Dursunbey	1.72	82	i P	Pn	04 12 42.2	+0.6
DURS				i S	Sn	04 13 03.5	0.0
DURS	Dursunbey	1.72	82	P	Pn	04 12 42.2	+0.6
DURS				S	Sn	04 13 03.5	0.0
KCTX	Karacabey (Bur	1.83	61	ePN	Pn	04 12 43.2	+0.2
KCTX	Karacabey (Bur	1.83	61	ePn	Pn	04 12 43.2	+0.2

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*ISCJB **05** 04:18:18.8±0.7, 36°.48N±0°.04×28°.80E±0°.03, h7km±4km, Error ellipse: s-maj=6.8km s-min=4.4km az=19.8*
*DDA **05** 04:18:18.3, 36°.47N×28°.76E, h7km, Md3.1*
*ISK **05** 04:18:18.5, 36°.49N×28°.83E, h10km, MD3.0*
*CSEM **05** 04:18:19.1±0.2, 36°.49N×28°.83E, h10km, MD3.0, Error ellipse: s-maj=4.7km s-min=3.0km az=9.0*
ISC 05 04:18:19.4±1.0, **36°.52N**±0°.03×**28°.82E**±0°.02, **h11**km±8km, **n40**, σ**0.94**/61, **Dodecanese Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
FETY	Fethiye	0.24	62	ePG	Pg	04 18 23.9	-0.5
FETY				eSG	Sg	04 18 28.4	+0.6
FETY	Fethiye	0.24	62	ePg	Pg	04 18 23.9	-0.5
FETY				eSg	Sg	04 18 28.4	+0.6
DALY	Dalyan (Mu˜la	0.33	336	ePG	Pg	04 18 25.5	-0.4
DALY				eSG	Sb	04 18 31.5	-1.0
DALY	Dalyan (Mu˜la	0.33	336	ePg	Pg	04 18 25.5	-0.4
DALY				eSg	Sb	04 18 31.5	-1.0
TURN	Turunc	0.39	334	i P	Pb	04 18 28.4	0.0
TURN				i S	Sb	04 18 37.0	+2.6
TURN	Turunc	0.39	334	P	Pb	04 18 28.4	0.0
TURN				S	Sb	04 18 37.0	+2.6
AKAS	Kas	0.70	114	i P	Pg	04 18 31.8	-1.1
AKAS				i S	Sb	04 18 43.5	+0.2
AKAS	Kas	0.70	114	P	Pg	04 18 31.8	-1.1
AKAS				S	Sb	04 18 43.5	+0.2
YER	Yerkesik	0.75	325	ePG	Pg	04 18 33.9	0.0
YER				eSG	Sb	04 18 45.1	+0.4
YER	Yerkesik	0.75	325	ePg	Pg	04 18 33.9	0.0
YER				eSg	Sb	04 18 45.2	+0.4
GLHS	Glhisar (BURDU	0.83	40	ePG	Pb	04 18 35.6	-0.4
GLHS	Glhisar (BURDU	0.83	40	ePg	Pb	04 18 35.6	-0.4
ELL	Elmali	0.90	75	ePG	Pg	04 18 36.5	-0.4
ELL	Elmali	0.90	75	ePg	Pg	04 18 36.5	-0.4
GOLH	Golhisar	0.93	40	i P	Pg	04 18 36.8	-0.6
GOLH				i S	Sn	04 18 52.1	+0.2
GOLH	Golhisar	0.93	40	P	Pg	04 18 36.8	-0.6
GOLH				S	Sn	04 18 52.1	+0.2
BDRM	Kayabasi	1.23	297	i P	Pn	04 18 42.0	-0.6
BDRM				i S	Sb	04 18 58.6	0.0
BDRM	Kayabasi	1.23	297	P	Pn	04 18 42.0	-0.6
BDRM				S	Sb	04 18 58.6	0.0
DENT	Denizli	1.24	8	ePN	Pn	04 18 42.0	-0.8
DENT	Denizli	1.24	8	ePn	Pn	04 18 42.0	-0.8
KORT	Korkueli	1.32	68	i P	Pg	04 18 44.7	0.0
KORT				i S	Sg	04 19 06.6	+4.7
KORT	Korkueli	1.32	68	P	Pg	04 18 44.7	0.0
NIS1	Nisyros Isl.	1.32	274	ePN	Pb	04 18 44.2	-0.1
NIS1	Nisyros Isl.	1.32	274	ePn	Pb	04 18 44.2	-0.1
BODT	Bodrum	1.33	294	ePN	Pn	04 18 43.8	-0.1
BODT	Bodrum	1.33	294	ePn	Pn	04 18 43.8	-0.1
AYDN	Tasoluk	1.36	327	i P	Pb	04 18 44.9	-0.1
AYDN				i S	Sg	04 19 02.9	-0.4
AYDN	Tasoluk	1.36	327	P	Pb	04 18 44.9	-0.1
AYDN				S	Sg	04 19 02.9	-0.4
AYDB	Zeytinkoy-Aydi	1.60	333	ePN	Pn	04 18 48.1	+0.3
AYDB	Zeytinkoy-Aydi	1.60	333	ePn	Pn	04 18 48.1	+0.3
KARP	Karpathos	1.66	235	ePN	Pn	04 18 48.5	+0.1
KARP	Karpathos	1.66	235	ePn	Pn	04 18 48.6	+0.1
GCAM	G?zelcaml?	1.73	313	i P	Pn	04 18 49.6	+0.2
GCAM				i S	Sb	04 19 12.6	-0.3
GCAM	G?zelcaml?	1.73	313	P	Pn	04 18 49.6	+0.2
GCAM				S	Sb	04 19 12.6	-0.3
KHL	Karahalli	1.88	17	ePN	Pb	04 18 52.6	-1.3
KHL	Karahalli	1.88	17	ePn	Pb	04 18 52.6	-1.3
KHAL	Karahalli	1.92	16	i P	Pn	04 18 52.1	-0.1
KHAL				i S	Sb	04 19 18.1	-0.5
KHAL	Karahalli	1.92	16	P	Pn	04 18 52.1	-0.1
KHAL				S	Sb	04 19 18.1	-0.5
KULA	Kula-Manisa	1.99	356	ePN	Pn	04 18 52.8	-0.3
KULA	Kula-Manisa	1.99	356	ePn	Pn	04 18 52.8	-0.3

IDC 05 04:18:44.4±9.3, **18°.31S**×**177°.59E**, **h0**km, **mb4.1**/3, **mb1 4.5**/3, **mb1mx3.8**/48, **mbtmp4.1**/3, **MS4.5**/1, **Ms1 4.5**/1, **ms1mx3.0**/39, **Error ellipse: s-maj=419.3km s-min=37.5km az=145.0**, **Fiji Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
WRA	Warramunga Arr	40.82	260	P	P	04 26 27.7	-0.4
	3.2nm,1.0s,baz=98,slow=6.5,SNR=6.2						
ASAR	Alice Springs	41.02	255	P	P	04 26 29.8	0.0
	4.9nm,0.9s,baz=82,slow=6.9,SNR=6.8						
DAV	Davao City (W)	57.17	291	LR	LR	04 52 24.0	
	comp=Z,383nm,20.2s,baz=260,slow=35						
ILAR	Eielson Array	87.17	14	P	P	04 31 32.1	+0.1
	0.9nm,1.0s,baz=232,slow=7.0,SNR=5.8						

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*ISCJB **05** 04:18:46.9±0.4, 19°.61S±0°.04×69°.18W±0°.07, h102km±4km, mb4.0/11, Error ellipse: s-maj=10.5km s-min=6.0km az=14.7*
*IDC **05** 04:18:49.7±0.7, 19°.49S×69°.02W, h107km±4km, mb3.9/10, mb1 4.0/12, mb1mx3.8/33, mbtmp4.3/12, Error ellipse: s-maj=20.6km s-min=14.5km az=30.0*
*NEIC **05** 04:18:49.0, 19°.69S×69°.38W, h97km, mb4.2/1, After GUC.*
*GUC **05** 04:18:49.3±0.3, 19°.69S×69°.38W, h97km±3km, ML4.3*
*SCB **05** 04:18:54.6±0.4, 19°.16S×68°.67W, h100km, Ml3.6/2, Error ellipse: s-maj=15.4km s-min=4.4km az=67.0*
ISC 05 04:18:48.6±0.5, **19°.65S**±0°.05×**69°.22W**±0°.07, **h101**km±5km, **n37**, σ**1.58**/47, **mb4.0**/11, **9C-1D**, **Northern Chile**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
PB11	IPOC Station P	0.42	255⇓	iP	Pn	04 19 03.9	-0.3
PB11				i S	Sn	04 19 14.9	-0.9
PSGC	Pisagua	0.85	274⇑	iP	Pn	04 19 06.9	-0.8
PSGC				i S	Sn	04 19 20.2	-1.8
PSGC				AML	AML	04 19 21.6	
	comp=E,14μm,0.4s						
HMBC	Humberstone	0.88	225⇑	iP	Pn	04 19 07.6	-0.4
HMBC				i S	Sn	04 19 21.2	-1.4
HMBC				AML	AML	04 19 22.8	
	comp=E,21μm,0.5s						
PB01	IPOC Station P	1.41	190⇑	iP	Pn	04 19 14.1	+0.2
PB01				i S	Sn	04 19 33.2	+0.2
PB01				AML	AML	04 19 34.4	
	comp=E,4μm,0.4s						
BBOD	La Paz, Gloria	3.06	11⇑	iPn	Pn	04 19 38.4	+2.7
BBOD				eSn	Sn	04 20 09.7	-2.2
	comp=E,270nm,0.8s						
BBOE	La Paz, Chanca	3.06	23⇑	iPn	Pn	04 19 38.5	+2.8
LPAZ	La Paz	3.50	17	P	Pn	04 19 44.6	+2.8
	comp=E,3.3nm,0.3s,baz=181,slow=3.8,SNR=99						
LPAZ				S	Sn	04 20 23.1	+0.4
	comp=E,4.8nm,0.3s,baz=254,slow=7.1,SNR=5.1						
LPAZ	La Paz	3.50	17⇑	iPn	Pn	04 19 44.5	+2.8
LPAZ				eSn	Sn	04 20 19.4	-3.3
BBOB	La Paz, Bander	3.64	17⇑	iPn	Pn	04 19 46.0	+2.5
BBOB				eSn	Sn	04 20 22.6	-3.3
	comp=E,38nm,0.4s						
MOCB	Mochara	3.72	116⇑	iP	Pn	04 19 49.1	+4.7
SIV	San Ignacio	8.57	66	P	Pn	04 20 48.5	-1.5
	comp=E,4.9nm,0.3s,baz=264,slow=12,SNR=92						
SIV	San Ignacio	8.57	66⇑	iP	Pn	04 20 48.5	-1.5
LCO	Las Campanas	9.41	188	ePn	Pn	04 20 58.4	-3.2
SAML	Samuel	12.14	30	ePn	Pn	04 21 37.3	-0.9
CPUP	Villa Florida	12.81	123	P	Pn	04 21 46.4	-0.6
	comp=E,0.3nm,0.3s,baz=326,slow=8.6,SNR=5.6						
TRQA	Tornquist	19.39	163	eP	P	04 23 07.1	+0.5
	comp=E,11nm,0.8s						
BDFB	Brasilia	20.60	82	P	P	04 23 18.3	-1.6
	comp=E,11nm,0.5s,baz=247,slow=10,SNR=20						
PTGA	Pitinga	20.88	27	P	P	04 23 20.9	-1.9
	comp=E,9.8nm,0.5s,baz=203,slow=12,SNR=21						
PLCA	Paso Flores	21.04	183	P	P	04 23 27.7	+3.3
	comp=E,7.5nm,0.9s,baz=36,slow=13,SNR=4.2						
SDV	Santo Domingo	28.39	357	P	P	04 24 34.7	+0.8
	comp=E,1.4nm,0.4s,baz=261,slow=3.6,SNR=3.8						
RCBR	Riachuelo	35.19	71	eP	P	04 25 34.0	+0.7
	comp=E,8.5nm,0.6s						
TEIG	Tepich	43.81	334	P	P	04 26 44.6	0.0
	comp=E,0.2nm,0.4s,baz=87,slow=24,SNR=2.8						
TXAR	Lajitas Array	58.95	325	P	P	04 28 37.5	-0.1
	comp=E,0.3nm,0.6s,baz=148,slow=7.0,SNR=3.7						
DBIC	Dimbokro	68.50	74	P	P	04 29 39.9	-0.8
	comp=E,6.9nm,1.0s,baz=212,slow=6.0,SNR=4.5						
DBIC				pP	pP	04 30 06.4	+0.3
	comp=E,2.4nm,0.5s,baz=202,slow=3.9,SNR=5.9						
PDAR	Pinedale Array	72.37	330	P	P	04 30 03.8	-0.1
	comp=E,0.2nm,0.5s,baz=129,slow=6.1,SNR=4.2						
ULM	Lac du Bonnet	73.48	343	P	P	04 30 08.8	-1.0
	comp=E,3.3nm,0.6s,baz=149,slow=6.0,SNR=13						
ULM				pP	pP	04 30 36.6	+0.9
	comp=E,1.2nm,0.6s,baz=167,slow=6.0,SNR=2.9						
NVAR	Mina Array Bea	73.87	322	P	P	04 30 13.5	+0.8
	comp=E,1.0nm,0.8s,baz=156,slow=6.6,SNR=8.8						
NVAR				pP	pP	04 30 40.8	+2.2
	comp=E,0.2nm,0.5s,baz=120,slow=5.3,SNR=2.9						
TORD	Torodi Ar. Bea	77.02	71	P	P	04 30 29.8	-1.2
	comp=E,1.8nm,0.5s,baz=250,slow=5.4,SNR=33						
YKA	Yellowknife Ar	89.36	341	P	P	04 31 33.1	-0.2
	comp=E,7.3nm,0.7s,baz=130,slow=4.7,SNR=147						
YKA				pP	pP	04 32 00.6	+0.8
	comp=E,0.8nm,0.5s,baz=129,slow=5.0,SNR=10.0						
ASAR	Alice Springs	131.40	209	PKP	PKPdf	04 37 49.8	-0.2
	comp=E,0.6nm,0.5s,baz=125,slow=1.7,SNR=4.8						
WRA	Warramunga Arr	134.38	212	PKP	PKPdf	04 37 55.3	-0.4
	comp=E,1.0nm,0.6s,baz=162,slow=1.6,SNR=3.9						
ZALV	Zalesovo Beam	140.40	24	PKP	PKPdf	04 38 05.4	-0.3
	comp=E,0.8nm,0.5s,baz=255,slow=4.5,SNR=3.9						
MKAR	Makanchi Array	144.30	34	PKP	PKPbc	04 38 12.1	+0.7
	comp=E,0.5nm,0.5s,baz=311,slow=4.5,SNR=4.8						
KLR	Kul'dur	146.03	335	PKPbc	PKPdf	04 38 16.6	+0.9
	comp=E,2.3nm,0.5s,baz=56,slow=3.0,SNR=7.5						
USRK	Ussuriysk Ar.	149.79	329	PKPbc	PKPbc	04 38 27.4	+0.5
	comp=E,3.3nm,0.7s,baz=76,slow=4.7,SNR=6.1						
MJAR	Matsushiro Arr	150.67	311	PKPbc	PKPbc	04 38 29.6	+0.3
	comp=E,2.7nm,0.6s,baz=84,slow=1.7,SNR=5.3						
SONM	Songino Array	151.66	6	PKPbc	PKPbc	04 38 31.8	+0.5
	comp=E,3.9nm,0.6s,baz=314,slow=1.2,SNR=13						
SONM				pPKPbc	pPKPbc	04 39 00.1	+1.1
	comp=E,2.7nm,0.8s,baz=320,slow=1.3,SNR=7.0						

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*NIED **05** 04:25:00, 38°.90N×142°.60E, h47km, Mw4.7 Best double couple: M0 1.19000×10^16 NP1:φs 90.00000°, δ45.00000°, λ106.00000°. NP2:φs 248.00000°, δ47.00000°, λ75.00000°.*
*BJI **05** 04:25:25.2, 38°.74N×142°.72E, h40km, mb4.6/44, mB4.9/26, Ms4.3/22, Ms7 4.1/22*
*MOS **05** 04:25:27.7±0.8, 39°.09N×142°.44E, h40km, mb4.9/45, Error ellipse: s-maj=8.2km s-min=5.0km az=93.0*
*JMA **05** 04:25:27.7±0.1, 38°.90N×142°.55E, h42km±2km, M4.6*
JMA Felt III J1.
*ISCJB **05** 04:25:28.3±0.5, 38°.93N±0°.03×142°.43E±0°.04, h51km±3km, mb4.6/132, MS3.8/14, Error ellipse: s-maj=5.6km s-min=3.7km az=137.7*
*NEIC **05** 04:25:29.8±0.6, 38°.89N×142°.40E, h52km±5km, mb4.7/78, Error ellipse: s-maj=5.1km s-min=3.5km az=142.0*
NEIC Recorded [3 JMA] in Miyagi.
*IDC **05** 04:25:31.9±2.4, 38°.86N×142°.42E, h75km±22km, mb4.1/31, mb1 4.3/34, mb1mx4.2/55, mbtmp4.4/34, MS3.7/16, Ms1 3.8/16, ms1mx3.5/55, Error ellipse: s-maj=13.5km s-min=10.6km az=121.0*
ISC 05 04:25:27.7±0.6, **38°.86N**±0°.04×**142°.64E**±0°.04, **h41**km±4km, **n284**, σ**1.71**/300, **mb4.7**/132, **MS3.8**/14, **2C-10D**, **Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
OFUJ	Ofunato	0.79	286	P	Pn	04 25 41.4	-1.0
MIYJ	Miyakonagasawa	0.96	319	P	Pn	04 25 43.7	-1.0
MIYJ				S	Sn	04 25 55.2	-1.9
JIO	Ouri	1.09	248	P	Pn	04 25 45.6	-0.9
JIO				eS	Sn	04 25 58.6	-1.7
JMK	Ichinoseki	1.11	275	P	Pn	04 25 46.2	-0.6
JMK				S	Sn	04 25 59.7	-1.2
JOM	Ohasama	1.21	301	P	Pn	04 25 47.6	-0.6
JOM				S	Sn	04 26 02.1	-1.3
JOU	Okura	1.62	253	P	Pn	04 25 53.9	0.0
JRG	Rokugo	1.65	290	P	Pn	04 25 53.9	-0.3
JANG	Nango	1.74	330	P	Pn	04 25 54.7	-0.8
JMM	Marumori	1.76	236	P	Pn	04 25 55.1	-0.6
JYK	Kaneyama	1.78	273	P	Pn	04 25 55.8	-0.2
JFT	Otama	2.26	234	P	Pn	04 26 03.0	+0.5
JFT				S	Sn	04 26 29.7	+0.6
ERM	Erimo	3.17	7	eP	Pn	04 26 14.7	-0.4
ERM				eS	Sn	04 26 54.1	+2.4
ERM	Erimo	3.17	7	ePn	Pn	04 26 14.7	-0.4
ERM				eS	Sn	04 26 54.1	+2.4
MAJO	Matsushiro	4.21	238d	iP	Pn	04 26 30.7	+1.3
MAJO	Matsushiro	4.21	238	ePn	Pn	04 26 31.0	+1.6
MAT	Matsushiro	4.21	238	P	Pn	04 26 30.9	+1.5
MAT				eS	Sn	04 27 16.3	-1.0
MJAR	Matsushiro Arr	4.21	238	P	Pn	04 26 31.6	+2.2
	16nm,0.3s,baz=39,slow=12,SNR=88						
MJAR				LR	LR	04 28 21.5	
	comp=Z,1μm,19.9s,baz=70,slow=42						
INU	Inuyama	5.70	234	ePn	Pn	04 26 50.3	+0.5
YUK	Yuzh-Kuril'sk	5.71	24⇑	iP	Pn	04 26 51.1	+1.2
YUK				eS	Sn	04 27 51.2	-2.9
YUK				pmax	pmax		
	comp=Z,413nm,0.5s						
YUK				pmax	pmax		
	comp=E,174nm,0.3s						
YUK				pmax	pmax		
	comp=N,202nm,0.2s						
SHO	Shikotan	5.91	31⇓	iP	Pn	04 26 50.7	-2.0
SHO				i S	Sn	04 27 52.1	-7.0
SHO				pmax	pmax		
	comp=N,102nm,0.7s						
SHO				pmax	pmax		
	comp=Z,264nm,0.7s						
SHO				pmax	pmax		
	comp=E,167nm,0.6s						
JHJ	Hachijo jima 2	6.18	203	P	Pn	04 26 54.9	-1.6
	comp=E,56nm,0.3s,baz=324,slow=23,SNR=25						
JHJ				S	Sn	04 28 01.1	-4.7
	comp=E,68nm,0.3s,baz=70,slow=22,SNR=7.5						
JHJ				LR	LR	04 29 44.8	
	comp=E,615nm,21.3s,baz=83,slow=41						
KUR	Kuril'sk	7.46	30	eP	Pn	04 27 15.0	+1.1
KUR				eS	Sn	04 28 34.1	-3.0
YSS	Yuzh-Sakhalins	8.09	1	eP	Pn	04 27 23.0	+0.4
YSS				eS	Sn	04 28 49.7	-2.9
YSS				pmax	pmax		
	comp=Z,70nm,0.9s						
YSS	Yuzh-Sakhalins	8.09	1	ePn	Pn	04 27 22.9	+0.4
YSS				eS	Sn	04 28 53.2	+0.6
VLA	Vladivostok	9.18	301⇓	eP	Pn	04 27 38.7	+1.3
USRK	Ussuriysk Ar.	9.60	307	P	Pn	04 27 45.0	+1.8
	comp=Z,0.7nm,0.3s,baz=115,slow=14,SNR=34						
USRK				LR	LR	04 31 09.2	
	comp=Z,545nm,21.2s,baz=144,slow=36						
JNU	Nakatsue	11.11	243	P	Pn	04 28 06.1	+2.1
	comp=Z,0.3nm,0.3s,baz=86,slow=7.2,SNR=4.1						
JNU				LR	LR	04 33 09.0	
	comp=Z,237nm,19.5s,baz=118,slow=42						
MDJ	Mudanjiang	11.31	305	P	Pn	04 28 12.4	+5.7
MDJ				pmax	pmax		
	comp=Z,32nm,0.8s						
MDJ				pmax	pmax		
	comp=Z,88nm,5.7s						
MDJ	Mudanjiang	11.31	305	ePn	Pn	04 28 06.9	+0.3
	comp=Z,24nm,0.8s						
KSRS	Korea Array	11.67	268	P	Pn	04 28 09.7	-2.0
	comp=Z,0.4nm,0.3s,baz=122,slow=40,SNR=7.0						
KSRS				LR	LR	04 32 29.2	
	comp=Z,270nm,18.5s,baz=107,slow=36						
KSAR	Wonju Array Be	11.71	268	P	Pn	04 28 09.7	-2.4
KSAR	Wonju Array Be	11.71	268	P	Pn	04 28 09.7	-2.4
TYV	Tymovskoe	12.00	0	eP	Pn	04 28 16.0	0.0
TYV				pmax	pmax		
	comp=Z,31nm,0.8s						
TYV				MLR	MLR		
	comp=N,1μm,18.0s						
TYV				MLR	MLR		
	comp=Z,2μm,20.0s						
KLR	Kul'dur	12.98	327	P	Pn	04 28 28.4	-1.0
	comp=Z,0.3nm,0.3s,baz=134,slow=12,SNR=14						
KLR				LR	LR	04 33 20.0	
	comp=Z,500nm,20.6s,baz=136,slow=36						
CN2	Changchun	13.82	296	eP	Pn	04 28 42.2	+1.2
CN2				pmax	pmax		
	comp=Z,10.0nm,0.6s						
CN2				pmax	pmax		

comp=Z,200nm,3.0s
NKL Nikolayevsk 14.36 355 *e*P **Pn 04 28 45.5 -2.6**
NKL pmax pmax
comp=N,17nm,1.0s
NKL pmax pmax
comp=Z,26nm,1.0s
NKL MLR MLR
comp=E,500nm,16.0s
NKL MLR MLR
comp=Z,500nm,16.0s
DL2 Dalian 16.36 277 P **P 04 29 16.4 -0.3**
DL2 sP **sP 04 29 30.5 -1.4**
DL2 *e*S **Sn 04 32 14.9 +0.1**
DL2 pmax pmax
comp=Z,24nm,1.0s
DL2 LR LR
comp=Z,250nm,15.6s
DL2 LR LR
comp=Z,330nm,18.8s
DL2 LR LR
comp=Z,400nm,16.1s
PETK Petropavlovsk- 17.62 31 LR LR 04 36 50.9
comp=Z,106nm,19.0s,baz=238,slow=38
NJ2 Nanjing 20.50 258 *e*P **P 04 30 00.5 -1.7**
NJ2 pmax pmax
comp=Z,11nm,0.6s
MA2 Magadan 21.37 11 P **P 04 30 12.2 +0.8**
comp=Z,43nm,0.8s,baz=216,slow=9.0,SNR=63
MA2 ScP **ScP 04 37 44.6 -2.8**
comp=Z,1.6nm,0.3s,baz=186,slow=8.8,SNR=4.1
MA2 LR LR 04 40 02.9
comp=Z,112nm,19.0s,baz=190,slow=41
MA2 Magadan 21.37 11 *e*P **P 04 30 12.0 +0.7**
comp=Z,185nm,0.8s
MA2 ScP **ScP 04 37 44.6 -2.8**
CLNS Chul'man 21.45 333 *e*P **P 04 30 11.0 -1.3**
CLNS pmax pmax
comp=Z,25nm,0.9s
CLNS pmax pmax
comp=N,21nm,1.0s
CLNS pmax pmax
comp=E,6.0nm,0.9s
HHC Hu-ho-hao-te 23.88 285 *e*P **P 04 30 36.4 -1.1**
HHC pP pP 04 30 47.9 -0.5
HHC sP sP 04 30 53.9 +0.5
HHC PP **PnPn 04 31 10.4 +3.7**
HHC S **S 04 34 44.1 -6.8**
HHC pmax pmax
comp=E,13nm,0.9s
HHC pmax pmax
comp=E,140nm,8.2s
HHC LR LR
comp=E,200nm,11.0s
HHC LR LR
comp=E,160nm,11.2s
HHC LR LR
comp=E,130nm,14.7s
YAK Yakutsk 24.53 345 P **P 04 30 42.9 -0.1**
comp=E,5.2nm,0.5s,baz=327,slow=21,SNR=8.1
YAK Yakutsk 24.53 345 *e*P **P 04 30 42.6 -0.4**
YAK *e*S **S 04 34 56.6 -4.0**
YAK pmax pmax
comp=Z,47nm,1.0s
YAK pmax pmax
comp=N,27nm,1.1s
YAK pmax pmax
comp=E,13nm,1.2s
YAK smax smax
comp=E,178nm,2.9s
YAK smax smax
comp=N,263nm,2.8s
YAK Yakutsk 24.53 345 *e*P **P 04 30 42.9 -0.1**
comp=N,53nm,0.6s
SEY Seymchan 24.82 11 P **P 04 30 47.9 +2.2**
comp=N,22nm,0.7s,baz=195,slow=7.6,SNR=82
BOD Bodaibo 26.55 325 *e*P **P 04 31 00.6 -0.8**
BOD pmax pmax
comp=Z,11nm,0.9s
ULN Ulaanbaatar 27.19 301⇑ *e*P **P 04 31 07.3 -0.2**
ULN pmax pmax
comp=Z,3.0nm,0.9s
XAN Xi'an 27.45 270 P **P 04 31 11.7 +1.9**
XAN pmax pmax
comp=Z,6.0nm,1.2s
SONA1 Songino Array 27.62 301 *e*P **P 04 31 10.3 -1.0**
SONM Songino Array 27.63 301 P **P 04 31 11.4 0.0**
comp=Z,3.4nm,0.7s,baz=94,slow=8.9,SNR=11
SONM PcP **PcP 04 34 23.1 -4.8**
comp=Z,0.3nm,0.5s,baz=163,slow=37,SNR=2.1
SONM LR LR 04 42 30.1
comp=Z,147nm,21.8s,baz=82,slow=37
H11N2 WAKE ISLAND Hy 28.33 125 T T 05 01 48.5
baz=317,slow=76,SNR=960
H11N1 WAKE ISLAND Hy 28.34 125 T T 05 01 48.6
baz=317,slow=76,SNR=1204
H11N3 WAKE ISLAND Hy 28.35 125 T T 05 01 49.3
baz=317,slow=76,SNR=1100
H11S1 WAKE ISLAND Hy 29.12 127 T T 05 02 44.4
baz=318,slow=76,SNR=369
H11S3 WAKE ISLAND Hy 29.12 127 T T 05 02 48.7
baz=318,slow=76,SNR=22
H11S2 WAKE ISLAND Hy 29.13 127 T T 05 02 49.6
baz=318,slow=76,SNR=22
TLY Talaya 29.91 308 P **P 04 31 31.7 +0.2**
comp=Z,10nm,0.9s,baz=292,slow=21,SNR=6.0
TLY Talaya 29.91 308 *e*P **P 04 31 31.7 +0.2**
TLY pmax pmax
comp=Z,8.0nm,0.8s
TLY MLR MLR
comp=Z,165nm,15.0s
ZAK Zakamensk 29.95 306 *e*P **P 04 31 31.2 -0.7**
ZAK pmax pmax
comp=Z,6.0nm,0.9s
LZH Lanzhou 30.76 277 *e*P **P 04 31 40.1 +0.7**
LZH pP pP 04 31 52.4 +1.9
LZH sP sP 04 31 57.3 +1.9
LZH pmax pmax
comp=Z,13nm,1.0s
MOY Mondy 31.54 308 *e*P **P 04 31 45.9 -0.1**
BILL Bilibino 32.00 17⇓ *e*P **P 04 31 49.4 -0.3**
BILL *i* 04 32 03.0
BILL *e* 04 32 56.6
BILL pmax pmax
comp=Z,5.0nm,0.8s
BILL MLR MLR
comp=Z,89nm,15.0s
BILL Bilibino 32.00 17 *e*P **P 04 31 49.7 0.0**
GYA Guiyang 32.51 258 P **P 04 31 54.6 -0.2**
GYA pmax pmax
comp=Z,10.0nm,0.9s
CD2 Chengdu 32.67 268 P **P 04 31 54.3 -1.8**
CD2 pmax pmax
comp=Z,1.0nm,0.5s
GTA Gaotai 32.99 285 *e*P **P 04 32 03.1 +4.2**
GTA pP pP 04 32 12.5 +2.4
GTA sP sP 04 32 16.6 +1.6
GTA PcP **PcP 04 34 42.9 +0.8**
GTA S **S 04 37 20.1 +5.5**
GTA sS sS 04 37 35.1 +1.9
GTA pmax pmax
comp=Z,4.0nm,1.0s
GTA pmax pmax
comp=Z,68nm,5.0s
GTA LR LR
comp=Z,190nm,17.1s
GTA LR LR
comp=Z,250nm,17.6s
GTA LR LR
comp=Z,320nm,15.7s
QIZ Qiongzhong 34.58 245 P **P 04 32 14.6 +1.9**
KMI Kunming 36.22 260 P **P 04 32 27.0 0.0**
KMI pmax pmax
comp=Z,12nm,1.2s
KMI pmax pmax
comp=Z,110nm,6.0s
WMQ Urumqi 40.91 295 P **P 04 33 06.5 +0.5**
WMQ pP pP 04 33 18.9 +1.5
WMQ sP sP 04 33 23.2 +1.0
WMQ PP **PnPn 04 34 45.0 -0.1**
WMQ S **S 04 39 14.0 -0.8**
WMQ SS **SS 04 42 11.8 -5.3**
WMQ ScS **ScS 04 43 06.4 -0.9**
WMQ pmax pmax
comp=Z,7.0nm,0.8s
WMQ pmax pmax
comp=Z,33nm,6.2s
WMQ LR LR
comp=Z,51nm,22.6s
WMQ LR LR
comp=Z,54nm,26.8s
WMQ LR LR
comp=Z,35nm,24.0s
ZAA0 Zalesovo Array 41.43 311 *e*P **P 04 33 09.7 -0.3**
ZALV Zalesovo Beam 41.43 311 P **P 04 33 10.2 +0.2**
comp=Z,7.2nm,0.8s,baz=86,slow=8.5,SNR=15
ZALV PcP **PcP 04 35 02.6 -4.6**
comp=Z,1.4nm,0.4s,baz=106,slow=12,SNR=2.8
ZALV LR LR 04 50 50.3
comp=Z,99nm,21.0s,baz=72,slow=37
NRIK Noril'sk 42.03 334 P **P 04 33 14.2 -0.6**
comp=Z,1.8nm,0.5s,baz=118,slow=15,SNR=4.1
NRIK LR LR 04 51 44.6
comp=Z,261nm,20.8s,baz=120,slow=38
CMAR Chiang Mai Arr 42.91 254 P **P 04 33 22.6 +0.1**
comp=Z,1.1nm,0.3s,baz=36,slow=6.3,SNR=4.2
CMAR LR LR 04 51 52.5
comp=Z,350nm,18.0s,baz=185,slow=37
MK01 Makanchi Array 43.99 301 *e*P **P 04 33 30.4 -0.6**
MK31 Makanchi Array 43.99 301 *e*P **P 04 33 30.2 -0.8**
MK31 Makanchi Array 43.99 301 *e*P **P 04 33 30.2 -0.8**
MKAR Makanchi Array 43.99 301 P **P 04 33 30.8 -0.2**
comp=Z,9.3nm,0.9s,baz=85,slow=10,SNR=15
MKAR Makanchi Array 43.99 301 *e*P **P 04 33 30.2 -0.8**
MAKZ Makanchi 44.20 301 *e*P **P 04 33 32.6 0.0**
MAKZ pmax pmax
comp=Z,9.0nm,0.8s
MAKZ Makanchi 44.20 301 *e*P **P 04 33 32.6 0.0**
comp=Z,9.4nm,0.8s
KDAK Kodiak Island 45.10 43 LR LR 04 49 53.0
comp=Z,89nm,21.8s,baz=266,slow=32
PPLA Purkeypile 45.12 36 *e*P **P 04 33 43.0 +3.2**
comp=Z,31nm,1.3s
CAST Castle Rocks 45.17 35 *e*P **P 04 33 42.4 +2.2**
comp=Z,9.3nm,0.8s
SPU Mount Spurr 45.20 38 *e*P **P 04 33 41.6 +1.2**
KURK Kurchatov 45.59 307 P **P 04 33 43.5 -0.1**
KURK pmax pmax
comp=Z,9.0nm,0.7s
KURK Kurchatov 45.59 307 *e*P **P 04 33 42.8 -0.7**
comp=Z,20nm,0.8s
KURBB Kurchatov Arra 45.66 307 P **P 04 33 43.5 -0.7**
comp=Z,8.5nm,0.7s,baz=81,slow=8.2,SNR=29
BPAW Bear Paw Mtn. 45.67 34 *e*P **P 04 33 46.3 +2.3**
comp=Z,16nm,1.3s
KTH Kashna Hill 45.70 35 *e*P **P 04 33 46.2 +1.9**
comp=Z,18nm,0.9s
MLY Manley 45.79 33 *e*P **P 04 33 47.2 +2.2**
comp=Z,10.0nm,0.9s
TRF Thorofare Moun 45.98 35 *e*P **P 04 33 49.7 +3.0**
comp=Z,163nm,2.3s
COLD Coldfoot 46.09 30 *e*P **P 04 33 48.8 +1.6**
MCK McKinley 46.58 35 *e*P **P 04 33 51.9 +0.7**
MCK pmax pmax
comp=Z,13nm,0.9s
MCK McKinley 46.58 35 *e*P **P 04 33 51.9 +0.7**
comp=Z,13nm,0.9s
RND Reindeer 46.63 35 *e*P **P 04 33 52.9 +1.3**
RND pmax pmax
comp=Z,36nm,1.5s
RND Reindeer 46.63 35 *e*P **P 04 33 52.9 +1.3**
comp=Z,36nm,1.5s
MDM Murphy Dome 46.86 33 *e*P **P 04 33 55.6 +2.2**
comp=Z,21nm,1.1s
WRH Wood River Hil 46.93 34 *e*P **P 04 33 55.4 +1.6**
comp=Z,8.2nm,0.8s
SML Sawmill 46.95 37 *e*P **P 04 33 55.3 +1.1**
SML pmax pmax
comp=Z,12nm,0.8s
SML Sawmill 46.95 37 *e*P **P 04 33 55.3 +1.1**
comp=Z,12nm,0.8s
COLA College 47.02 33⇓ *e*P **P 04 33 56.6 +2.0**
COLA pmax pmax
comp=Z,6.0nm,1.0s
COLA College 47.02 33 *e*P **P 04 33 55.5 +0.9**
comp=Z,8.0nm,0.8s
CCB Clear Creek Bu 47.05 33 *e*P **P 04 33 56.8 +2.0**
comp=Z,11nm,1.3s
HDA Harding Lake 47.43 34 *e*P **P 04 33 59.0 +1.2**
comp=Z,9.3nm,0.8s
IL1 Eielson Array 47.44 33 *e*P **P 04 33 58.5 +0.7**
ILAR Eielson Array 47.44 33 P **P 04 33 59.1 +1.3**
comp=Z,6.7nm,0.7s,baz=269,slow=6.4,SNR=63
ILB Eielson Array 47.44 33 *e*P **P 04 33 59.1 +1.3**
FYU Fort Yukon 48.05 31 *e*P **P 04 34 05.3 +2.8**
comp=Z,58nm,1.6s
KLU Klutina 48.13 38 *e*P **P 04 34 04.3 +1.0**
DIV Divide 48.24 38 *e*P **P 04 34 05.4 +1.2**
comp=Z,17nm,1.0s
DOT Dot Lake 48.75 35 *e*P **P 04 34 09.2 +1.2**
comp=Z,18nm,1.0s
BMRM Bremner River 48.82 38 *e*P **P 04 34 10.1 +1.4**
MENT Mentasta 48.98 36 *e*P **P 04 34 12.1 +2.3**
comp=Z,17nm,1.3s
TKM2 Tokmak 2 49.63 297 *e*P **P 04 34 15.3 0.0**
TKM2 pmax pmax
comp=Z,7.0nm,0.8s
TKM2 Tokmak 2 49.63 297 *e*P **P 04 34 15.3 0.0**
comp=Z,7.4nm,0.8s
EGAK Eagle 49.88 33 *e*P **P 04 34 17.9 +1.3**
comp=Z,43nm,1.9s
BRVK Borovoye 50.13 311⇓ *e*P **P 04 34 19.7 +1.0**
BRVK pmax pmax
comp=Z,3.0nm,0.9s
BRVK Borovoye 50.13 311 *e*P **P 04 34 18.8 +0.1**
comp=Z,6.9nm,0.8s
AAK Ala-Archa 50.49 297 P **P 04 34 24.3 +2.5**
comp=Z,1.2nm,0.3s,baz=154,slow=9.6,SNR=5.1
AAK LR LR 04 55 46.2
comp=Z,92nm,19.1s,baz=264,slow=36
AAK Ala-Archa 50.49 297⇓ *e*P **P 04 34 23.6 +1.8**
AAK pmax pmax
comp=Z,7.0nm,0.9s
AAK Ala-Archa 50.49 297 *e*P **P 04 34 21.7 -0.1**
comp=Z,3.1nm,0.9s
KSH Kashi 50.56 293 *e*P **P 04 34 25.1 +2.8**
DAWY Dawson 50.74 34 *e*P **P 04 34 25.1 +1.9**
comp=Z,0.5nm,0.6s
ZRNK Zerenda 50.91 312 *e*P **P 04 34 24.5 0.0**
ZRNK pmax pmax
comp=Z,7.0nm,0.8s
ZRNK Zerenda 50.91 312 *e*P **P 04 34 24.5 0.0**
comp=Z,6.6nm,0.8s
EKS2 Erkin-Say 50.98 298 *e*P **P 04 34 25.7 +0.3**
EKS2 pmax pmax
comp=Z,3.0nm,0.6s
EKS2 Erkin-Say 50.98 298 *e*P **P 04 34 25.7 +0.3**
comp=Z,2.5nm,0.6s
INK Inuvik 52.32 28 P **P 04 34 36.3 +1.5**
comp=Z,2.4nm,0.5s,baz=281,slow=6.6,SNR=17
INK Inuvik 52.32 28 *e*P **P 04 34 36.4 +1.5**
INK pmax pmax
comp=Z,6.0nm,0.9s
INK Inuvik 52.32 28 *e*P **P 04 34 36.4 +1.5**
comp=Z,6.3nm,0.9s
PSI Prapat 53.56 239 P **P 04 34 44.8 0.0**
comp=Z,2.7nm,0.7s,baz=4.9,slow=6.4,SNR=4.2
PSI Prapat 53.56 239 *e*P **P 04 34 44.4 -0.4**
GSI Gunungsitoli 55.57 239 *e*P **P 04 34 59.4 +0.1**
ARU Arti 55.64 318*d i*P **P 04 34 59.3 0.0**
ARU S **S 04 42 44.5 +2.3**
ARU SS **SS 04 46 29.7 +2.5**
ARU pmax pmax
comp=Z,10.0nm,1.2s
DLBC Dease Lake 56.59 39 P **P 04 35 08.1 +2.0**
comp=Z,3.5nm,1.0s,baz=291,slow=5.3,SNR=3.3
ABKAR Akbulak array 57.51 310 *e*P **P 04 35 12.1 -0.6**
FITZ Fitzroy Crossi 58.86 199 P **P 04 35 22.5 +0.2**
comp=Z,2.4nm,0.7s,baz=12,slow=9.7,SNR=3.4
WRAB Tennant Creek 59.00 189*de*P **P 04 35 23.1 -0.1**
WRAB pmax pmax
comp=Z,20nm,0.9s
WRAB Tennant Creek 59.00 189 *e*P **P 04 35 22.2 -1.0**
comp=Z,12nm,0.8s
WB2 Warramunga Arr 59.01 189 *e*P **P 04 35 22.9 -0.4**
comp=Z,12nm,0.9s
WRA Warramunga Arr 59.01 189 P **P 04 35 22.9 -0.5**
comp=Z,8.2nm,0.7s,baz=7.7,slow=7.1,SNR=34
RES Resolute Bay 60.59 15 P **P 04 35 34.0 +0.4**
comp=Z,6.0nm,0.8s,baz=312,slow=6.9,SNR=27
RES Resolute Bay 60.59 15 P **P 04 35 34.0 +0.4**
RES pmax pmax
comp=Z,6.0nm,0.8s
RES Resolute Bay 60.59 15 *e*P **P 04 35 33.8 +0.3**
comp=Z,10.0nm,0.8s
YKA Yellowknife Ar 61.74 31 P **P 04 35 42.1 +0.6**
comp=Z,2.1nm,0.8s,baz=303,slow=6.7,SNR=35
YKB5 Yellowknife Ar 61.74 31 *e*P **P 04 35 40.4 -1.1**
ARCES ARCESS Array B 62.63 339 P **P 04 35 49.9 +2.5**
comp=Z,5.4nm,1.0s,baz=322,slow=23,SNR=3.6
ARCES LR LR 05 06 34.2
comp=Z,71nm,19.6s,baz=60,slow=39
AS01 Alice Springs 62.73 189 *e*P **P 04 35 47.6 -0.9**
AS31 Alice Springs 62.73 189 *e*P **P 04 35 48.6 0.0**
KLMR Klimovskoe 62.73 328 *e*P **P 04 35 45.1 -3.1**
KLMR *e* 04 36 24.3
KLMR pmax pmax
comp=Z,16nm,1.8s
ASAR Alice Springs 62.73 189 P **P 04 35 48.5 -0.1**
comp=Z,3.2nm,0.8s,baz=9.7,slow=5.8,SNR=33
GEYT Alibeck 63.80 299 P **P 04 35 55.4 -0.4**
comp=Z,2.4nm,0.4s,baz=27,slow=1.7,SNR=2.9
B08A Colville Reser 66.87 46 *e*P **P 04 36 17.0 +1.6**
comp=Z,10nm,1.3s
VRH Novokhopyorsk 66.88 318 *e*P **P 04 36 15.6 +0.3**
VRH pmax pmax
comp=Z,10.0nm,1.4s
LPSR Galich'ya Gora 67.52 320 *e*P **P 04 36 19.4 0.0**
LPSR pmax pmax
comp=Z,8.0nm,0.7s
AFI Afiamalu 67.58 131 LR LR 04 58 13.7
comp=Z,67nm,20.9s,baz=331,slow=29
FIA1 FINESS Array S 67.65 332 *e*P **P 04 36 19.9 -0.2**
FINES FINESS Array B 67.65 332 P **P 04 36 19.7 -0.3**
comp=Z,3.4nm,0.8s,baz=29,slow=4.4,SNR=6.0
C09A Chrisman Ranch 67.77 46 *e*P **P 04 36 22.8 +1.7**
comp=Z,12nm,1.0s
NEW Newport 68.15 45 *e*P **P 04 36 25.2 +1.7**
NEW pmax pmax
comp=Z,7.0nm,1.1s
NEW Newport 68.15 45 *e*P **P 04 36 25.2 +1.7**
comp=Z,7.1nm,1.1s
VSR Storozhevoye 68.20 319 *e*P **P 04 36 22.1 -1.6**
VSR pmax pmax
comp=Z,5.0nm,0.6s
YBH Yreka Blue Hor 68.47 53 P **P 04 36 28.2 +2.5**
comp=Z,3.9nm,0.9s,baz=355,slow=2.5,SNR=7.0
SUMG Summit 68.86 0 *e*P **P 04 36 28.6 +0.7**
SUMG pmax pmax
comp=Z,13nm,1.0s
SUMG Summit 68.86 0 *e*P **P 04 36 28.6 +0.7**
comp=Z,13nm,1.0s
K05A Summer Lake 69.05 52 *e*P **P 04 36 32.0 +2.6**
comp=Z,22nm,1.1s
WALA Waterton Lakes 69.44 43 *e*P **P 04 36 33.2 +1.6**
comp=Z,27nm,2.0s
MOD Modoc Plateau 69.87 52 *e*P **P 04 36 35.0 +0.6**
comp=Z,3.3nm,0.8s
SWMT Swartz Lake 70.30 44 *e*P **P 04 36 38.6 +1.7**
ZEI Tsey 70.39 309 *e*P P 04 36 49.0 +11
ZEI pmax pmax
comp=Z,10.0nm,0.8s
KIV Kislovodsk 70.44 311 *e*P **P 04 36 38.0 +0.2**
KIV pmax pmax
comp=Z,16nm,1.1s
KIV Kislovodsk 70.44 311 *e*P **P 04 36 38.5 +0.7**
comp=Z,5.9nm,0.6s
KBZ Khabaz 70.45 311 P **P 04 36 38.1 +0.4**
comp=Z,7.6nm,1.1s,baz=45,slow=12,SNR=4.2
WVOR Wild Horse Val 70.58 51 *e*P **P 04 36 40.8 +2.0**
WVOR Wild Horse Val 70.58 51 *e*P **P 04 36 40.8 +2.0**
FFC Flin Flon 71.65 34 *e*P **P 04 36 45.8 +1.0**
FFC pmax pmax
comp=Z,8.0nm,1.0s
FFC Flin Flon 71.65 34 *e*P **P 04 36 45.8 +1.0**
comp=Z,8.2nm,1.0s
HLID Hailey 72.42 48 *e*P **P 04 36 51.8 +1.9**
comp=Z,7.0nm,1.4s
NB2 NORSAR Subarra 72.87 338 P **P 04 36 51.6 -0.5**
comp=Z,1.5nm,0.8s,baz=39,slow=6.2
NOA NORSAR Array B 72.87 338 P **P 04 36 51.9 -0.2**
comp=Z,2.3nm,0.8s,baz=39,slow=6.0,SNR=7.1
NV01 Mina Array Sit 73.13 54 *e*P **P 04 36 55.7 +1.5**
NVAR Mina Array Bea 73.13 54 P **P 04 36 56.1 +1.9**
comp=Z,4.2nm,0.9s,baz=286,slow=6.1,SNR=21
NV11 Mina Array Sit 73.22 54 *e*P **P 04 36 56.5 +1.8**
comp=Z,8.9nm,1.3s
AKASG Malin Array Be 73.44 322 P **P 04 36 55.0 -0.5**
comp=Z,1.0nm,0.3s,baz=42,slow=5.9,SNR=12
KIEV Kiev 73.45 322 *e*P **P 04 36 54.8 -0.8**
KIEV pmax pmax
comp=Z,4.0nm,0.8s
KIEV Kiev 73.45 322 *e*P **P 04 36 54.8 -0.8**
comp=Z,4.2nm,0.8s
AK11 Malin Array Si 73.48 323 *e*P **P 04 36 55.4 -0.4**
FLWY Flagg Ranch 74.22 46 *e*P **P 04 37 03.9 +3.3**
comp=Z,13nm,1.4s
MOOW Moose Ponds 74.41 46 *e*P **P 04 37 03.9 +2.3**
comp=Z,5.0nm,1.2s
R11A Troy Canyon, C 74.88 53 *e*P **P 04 37 06.2 +1.8**
comp=Z,11nm,1.3s
HWUT Hardware Ranch 75.29 48 *e*P **P 04 37 08.7 +1.9**
comp=Z,8.5nm,1.1s
TPNV Topopah Spring 75.32 54 *e*P **P 04 37 08.7 +1.8**
TPNV *e* 04 37 24.0
TPNV pmax pmax
comp=Z,9.0nm,1.1s
TPNV Topopah Spring 75.32 54 *e*P **P 04 37 08.7 +1.8**
comp=Z,9.2nm,1.1s
TPNV *e*PcP **sP 04 37 24.0 +0.2**
DUG Dugway, Tooele 75.43 50 *e*P **P 04 37 09.3 +1.8**
DUG pmax pmax
comp=Z,9.0nm,1.0s
DUG Dugway, Tooele 75.43 50 *e*P **P 04 37 09.3 +1.8**
comp=Z,8.7nm,1.0s
BW06 Boulder Array 75.70 46 *e*P **P 04 37 10.3 +1.2**
PD31 Pinedale Array 75.70 46 *e*P **P 04 37 10.3 +1.2**
PDAR Pinedale Array 75.70 46 P **P 04 37 09.9 +0.8**
comp=Z,1.5nm,0.7s,baz=261,slow=2.6,SNR=14
PSUT Pine Spring 75.84 52 *e*P **P 04 37 11.7 +1.8**
comp=Z,5.7nm,1.0s
GSC Goldstone, Bar 75.97 56 *e*P **P 04 37 12.0 +1.4**
GSC pmax pmax
comp=Z,4.0nm,1.1s
GSC Goldstone, Bar 75.97 56 *e*P **P 04 37 12.0 +1.4**
comp=Z,4.4nm,1.1s
JLU Jordanelle 75.99 49 *e*P **P 04 37 13.3 +2.5**
comp=Z,16nm,1.7s
NLU North Lily Min 76.03 50 *e*P **P 04 37 12.9 +1.9**
comp=Z,5.8nm,1.0s
MSU Marysvale 76.87 51 *e*P **P 04 37 18.2 +2.4**
MSU Marysvale 76.87 51 *e*P **P 04 37 18.2 +2.4**
TMUT Trail Mountain 76.96 50 *e*P **P 04 37 18.3 +1.9**
comp=Z,6.6nm,1.2s
P17A Butcher Ranch, 77.13 50 *e*P **P 04 37 18.9 +1.7**
comp=Z,12nm,1.0s
LCMT Little Creek M 77.17 53 *e*P **P 04 37 19.6 +2.2**
comp=Z,11nm,1.1s
P18A Preston Nutter 77.32 49 *e*P **P 04 37 20.8 +2.4**
comp=Z,9.0nm,1.3s
KNB Kanab 77.42 53 *e*P **P 04 37 21.3 +2.4**
KNB pmax pmax
comp=Z,12nm,1.3s
KNB Kanab 77.42 53 *e*P **P 04 37 21.3 +2.4**
comp=Z,12nm,1.3s
ULM Lac du Bonnet 77.45 34 P **P 04 37 18.9 +0.3**
comp=Z,1.8nm,0.7s,baz=349,slow=2.9,SNR=3.3
SRU San Rafael Swe 77.49 50 *e*P **P 04 37 20.6 +1.4**
SRU pmax pmax
comp=Z,9.0nm,0.9s
SRU San Rafael Swe 77.49 50 *e*P **P 04 37 20.6 +1.4**
comp=Z,8.6nm,0.9s
RSSD Black Hills 77.83 43 *e*P **P 04 37 22.1 +1.0**
RSSD pmax pmax
comp=Z,3.0nm,0.6s
RSSD Black Hills 77.83 43 *e*P **P 04 37 22.1 +1.0**
comp=Z,2.5nm,0.6s
KOLS Kolonicke sedl 77.91 324 *e*P **P 04 37 21.1 0.0**
KOLS Kolonicke sedl 77.91 324 *e*P **P 04 37 21.1 0.0**
W13A Hualapai Mount 77.97 55 *e*P **P 04 37 23.6 +1.6**
STHS Stebnicka Huta 78.02 325 *e*P **P 04 37 24.1 +2.3**
STHS Stebnicka Huta 78.02 325 *e*P **P 04 37 24.1 +2.3**
OJC Ojcow 78.06 327 *e*P **P 04 37 21.8 -0.1**
OJC Ojcow 78.06 327 *e*P **P 04 37 21.8 -0.1**
BRTR Keskin Array B 78.36 312 P **P 04 37 23.4 -0.6**
comp=Z,0.9nm,0.8s,baz=39,slow=8.0,SNR=3.4
PV10 Paradox Valley 78.85 50 *e*P **P 04 37 28.6 +1.8**
N23A Red Feather La 78.97 46 *e*P **P 04 37 29.9 +2.5**
comp=Z,14nm,1.3s
LANS Liptovska Anna 79.00 326 *e*P **P 04 37 27.7 +0.5**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
LANS	Liptovska Anna	79.00	326	eP	P	04 37 27.7	+0.5
PV05	Paradox Valley	79.00	50	eP	P	04 37 29.6	+1.9
Y14A	Wickenburg	79.26	55	eP	P	04 37 30.6	+1.7
	comp=Z,20nm,0.8s						
WUAZ	Wupatki	79.28	53	eP	P	04 37 31.2	+2.0
	comp=Z,8.9nm,1.0s						
PV01	Paradox Valley	79.28	49	eP	P	04 37 30.9	+1.7
MORC	Moravsky Berou	79.35	327	eP	P	04 37 29.8	+0.7
MORC				pmax	pmax		
	comp=Z,18nm,1.0s						
MORC	Moravsky Berou	79.35	327	eP	P	04 37 29.8	+0.7
	comp=Z,18nm,1.0s						
DPC	Dobruska-Polom	79.42	328	eP	P	04 37 30.2	+0.7
DPC				epP	pP	04 37 44.1	+2.3
DPC	Dobruska-Polom	79.42	328	eP	P	04 37 30.2	+0.7
DPC				e		04 37 44.1	
SMCO	Snowmass	79.53	48	eP	P	04 37 32.4	+1.7
	comp=Z,10nm,1.4s						
VYHS	Vyhne	79.77	326	eP	P	04 37 31.8	+0.4
VYHS	Vyhne	79.77	326	eP	P	04 37 31.8	+0.4
MVCO	Mesa Verde	79.93	50	eP	P	04 37 34.6	+1.8
	comp=Z,4.7nm,0.9s						
X16A	Lo Mia Camp, P	79.95	54	eP	P	04 37 35.0	+2.1
	comp=Z,8.1nm,1.1s						
CLL	Collm	79.99	331	i P	P	04 37 32.2	-0.3
	comp=Z,5.0nm,0.8s						
CLL				i		04 37 45.8	
CLL	Collm	79.99	331	i P	P	04 37 32.2	-0.3
CLL				i		04 37 45.8	
CLL				pmax	pmax		
	comp=Z,5.0nm,0.8s						
S22A	4UR Ranch, Cre	80.57	49	eP	P	04 37 38.4	+2.2
	comp=Z,5.7nm,1.1s						
SDCO	Great Sand Dun	81.34	48	eP	P	04 37 41.5	+1.1
	comp=Z,3.7nm,1.4s						
CONA	Conrad Observa	81.48	327	i P	P	04 37 36.3	-4.4
	comp=Z,5.3nm,0.8s						
KHC	Kasperske Hory	81.49	329	eP	P	04 37 40.8	+0.2
KHC				epP	pP	04 37 54.3	+1.4
KHC	Kasperske Hory	81.49	329	eP	P	04 37 40.8	+0.2
KHC				e		04 37 54.3	
KHC	Kasperske Hory	81.49	329	eP	P	04 37 40.5	0.0
	comp=Z,1.6nm,0.8s						
GERES	GERESS Array B	81.66	329	P	P	04 37 41.1	-0.5
	comp=Z,0.5nm,0.7s,baz=32,slow=7.8,SNR=6.5						
TUC	Tucson	81.73	55	eP	P	04 37 43.9	+1.7
TUC				pmax	pmax		
	comp=Z,4.0nm,1.0s						
TUC	Tucson	81.73	55	eP	P	04 37 43.9	+1.7
	comp=Z,3.7nm,1.0s						
ECSD	EROS Data Cent	81.89	39	eP	P	04 37 43.5	+0.7
	comp=Z,22nm,1.6s						
VTS	Vitosha	82.06	320	eP	P	04 37 44.1	+0.2
VTS				pmax	pmax		
	comp=Z,5.0nm,0.8s						
VTS	Vitosha	82.06	320	eP	P	04 37 44.1	+0.2
	comp=Z,5.2nm,0.8s						
LAZ	Ladron	82.63	51	eP	P	04 37 49.3	+2.2
ANMO	Albuquerque	82.68	51	⇓eP	P	04 37 49.2	+1.9
ANMO				pmax	pmax		
	comp=Z,4.0nm,1.1s						
SOKA	Soboth	82.81	327	i P	P	04 37 48.0	+0.3
	comp=Z,11nm,1.1s						
KBA	Koelnbreinsper	83.21	328	i P	P	04 37 50.5	+0.7
	comp=Z,5.5nm,0.8s						
MOTA	Moosalm	83.91	329	i PcP	P	04 37 54.4	+1.1
RETA	Reutte	83.93	329	i P	P	04 37 52.9	-0.5
	comp=Z,15nm,1.3s						
RETA				i P	PcP	04 37 53.8	-3.5
	comp=Z,16nm,1.4s						
PMOR	Pomariorio Ree	84.04	115	eT	T	06 11 21.4	
	comp=Z,20nm,0.2s						
BFO	Black Forest	84.18	331	i P	P	04 37 55.9	+1.4
BFO	Black Forest	84.18	331	eP	P	04 37 55.4	+0.9
	comp=Z,12nm,1.3s						
FETA	Feichten	84.32	329	i P	P	04 37 54.5	-1.0
	comp=Z,6.5nm,1.0s						
DAVA	Damuels	84.44	330	i P	P	04 37 56.2	+0.2
	comp=Z,7.4nm,0.8s						
PPT2	Papeete2	84.61	118	eLR	LR	05 05 01.2	
	comp=Z,159nm,25.8s						
PPT2	Papeete2	84.61	118	eT	T	06 12 04.3	
	comp=Z,3.5nm,0.3s						
FUORN	Ofenpass-Fuorn	84.83	329	eP	P	04 37 58.5	+0.3
	comp=Z,9.4nm,0.8s						
MNTX	Cornudas Mount	85.54	52	eP	P	04 38 03.0	+1.3
TAOE	Nuku Hiva Isla	85.69	105	eLR	LR	05 05 30.1	
	comp=Z,98nm,23.0s						
MEH	Mehetia	85.86	117	eT	T	06 13 37.0	
	comp=Z,29nm,0.3s						
TX31	Lajitas Ar. Si	88.24	53	eP	P	04 38 16.1	+1.1
TXAR	Lajitas Array	88.25	53	P	P	04 38 15.6	+0.6
	comp=Z,1.2nm,0.7s,baz=288,slow=3.3,SNR=15						
ABTX	Abilene, Hawle	88.35	48	eP	P	04 38 17.1	+1.8
	comp=Z,9.3nm,1.1s						
TORD	Torodi Ar. Bea	116.70	317	PKP	PKPdf	04 44 06.8	-1.2
	comp=Z,0.7nm,1.0s,baz=158,slow=32,SNR=3.1						
SNAA	Sanae	142.78	197	PKP	PKPpre	04 44 50.3	
VNA2	Neumayer--Watz	144.34	196	PKP	PKPbc	04 44 56.7	+0.1
	baz=104,slow=2.2						
VNA3	Neumayer Olymp	144.58	195	PKP	PKPab	04 44 57.2	0.0
VNA1	Neumayer--Stat	144.74	196	PKP	PKPdf	04 44 58.6	-0.1
LPAZ	La Paz	144.93	59	PKPbc	PKPbc	04 45 01.3	+0.5
	comp=Z,2.6nm,0.9s,baz=7.7,slow=6.7,SNR=9.2						
PLCA	Paso Flores	154.51	105	PKPbc	PKPbc	04 45 24.5	+0.8
	comp=Z,2.1nm,0.8s,baz=329,slow=5.6,SNR=4.8						

*ISCJB **05** 04:31:09.9±0.4, 6°.88N±0°.03×73°.10W±0°.04, h157km±4km, mb2.9/2, Error ellipse: s-maj=7.4km s-min=3.8km az=37.8*
*FUNV **05** 04:31:10.0, 6°.76N×73°.25W, h160km, MW3.6*
*IDC **05** 04:31:11.3±7.5, 6°.82N×72°.92W, h165km±149km, mb2.7/2, mb1 3.1/3, mb1mx2.9/33, mbtmp3.2/3, ML2.1/1, Error ellipse: s-maj=195.1km s-min=77.6km az=172.0*
*RSNC **05** 04:31:12.2±0.7, 6°.83N×73°.17W, h146km±3km, ML3.3*

ISC 05 04:31:10.8±0.9**, 6°.88N**±0°.04×**73°.11W**±0°.05**, h154**km±6km**, n34, σ1s.00**/52**, 1C-1D, Northern Colombia**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
BTLC	Betulia, Santa	0.16	283	i P	Pn	04 31 31.9	+0.1
BTLC				eS	Sn	04 31 46.5	-1.2
GIRC	Giron, Santand	0.21	337	i P	Pn	04 31 31.8	0.0
GIRC				eS	Sn	04 31 47.1	-0.7
BARC	Barichara	0.30	194	i P	Pn	04 31 31.9	-0.3
BARC				eS	Sn	04 31 46.9	-1.5
BARC				i		04 31 47.9	
	comp=Z,620nm,0.2s						
PAMC	Pamplona, Colo	0.61	42	i P	Pn	04 31 34.8	+1.0
PAMC				eS	Sn	04 31 51.3	0.0
BRRC	Barranca, Sant	0.64	291	⇑i P	Pn	04 31 33.3	0.0
BRRC				i		04 31 33.8	
	comp=Z,668nm,0.3s						
BRRC				eS	Sn	04 31 50.1	-0.4
CAPV	Capacho	1.26	39	⇓eP	Pn	04 31 39.7	+1.2
CAPV				eS	Sn	04 32 00.7	+1.0
OCAC	Ocana	1.36	351	eP	Pn	04 31 40.1	+0.6
OCAC				eS	Sn	04 32 01.9	+0.4
OCAC				i		04 32 09.6	
	comp=Z,272nm,0.2s						
YOPC	Yopal, Colombi	1.67	156	i P	Pn	04 31 43.0	+0.4
YOPC				eS	Sn	04 32 06.5	-0.4
YOPC				i		04 32 10.5	
	comp=Z,109nm,0.4s						
NORC	Norcasia	2.19	233	eP	Pn	04 31 47.5	-0.9
CHIC	Chingaza	2.32	195	eP	Pn	04 31 50.2	-0.2
CHIC				eS	Sn	04 32 19.7	-1.2
CHIC				i		04 32 24.1	
	comp=Z,74nm,0.7s						
ROSC	El Rosal	2.36	211	P	Pn	04 31 52.3	+1.5
	comp=Z,8.4nm,0.3s,baz=123,slow=1.0,SNR=49						
ROSC				S	Sn	04 32 24.9	+3.3
	comp=Z,9.2nm,0.3s,baz=92,slow=15,SNR=9.8						
HELC	Santa Helena	2.50	254	eP	Pn	04 31 52.5	+0.1
HELC				i		04 32 30.0	
	comp=Z,124nm,0.5s						
VIGV	El Vigia	2.60	42	eP	Pn	04 31 54.3	+0.9
VIGV				eS	Sn	04 32 26.3	-0.1
SOCV	Socops	2.63	58	eP	Pn	04 31 54.4	+0.6
SOCV				eS	Sn	04 32 26.9	0.0
GUYC	Guyana, Colomb	2.80	234	eP	Pn	04 31 56.5	+0.1
GUYC				eS	Sn	04 32 29.4	-2.1
GUYC				i		04 32 37.2	
	comp=Z,144nm,0.3s						
VILC	Villavicencio,	2.81	192	eP	Pn	04 31 55.9	-0.3
VILC				eS	Sn	04 32 29.8	-1.4
VILC				i		04 32 33.5	
	comp=Z,78nm,0.4s						
DBBC	Dabeiba	3.08	273	eP	Pn	04 31 59.3	-0.1
SDV	Santo Domingo	3.16	51	eP	Pn	04 32 01.5	+1.0
SDV				i		04 32 42.2	
	comp=Z,46nm,0.5s						
ELOV	Elorza	3.60	88	eP	Pn	04 32 06.5	+0.5
PRAC	Prado	3.61	209	eP	Pn	04 32 05.7	-0.5
VIRV	Villa del Rosa	3.66	11	eP	Pn	04 32 06.6	-0.3
VIRV				eS	Sn	04 32 48.6	-1.8
QARV	Quebrada Arrib	4.18	38	eP	Pn	04 32 14.2	+0.7
QARV				eS	Sn	04 33 01.8	-0.6
SANV	Sanarito	4.39	53	eP	Pn	04 32 16.5	+0.1
SANV				eS	Sn	04 33 06.3	-1.2
CURV	Curarigua	4.40	45	eP	Pn	04 32 16.6	+0.1
CURV				eS	Sn	04 33 06.0	-1.7
DABV	Dabajuro	4.70	31	eP	Pn	04 32 20.8	+0.4
TEPV	Terepaima	4.94	51	eP	Pn	04 32 23.3	-0.2
BAUV	El Baul	5.42	67	eP	Pn	04 32 28.9	-1.0
MAPV	Macapo	5.46	57	eP	Pn	04 32 30.0	-0.4
MONV	Montecano	5.92	31	eP	Pn	04 32 35.8	-0.7
TURV	Turiamo	6.30	55	eP	Pn	04 32 40.9	-0.7
MERV	Las Mercedes	7.14	70	eP	Pn	04 32 52.2	-0.6
CUPV	Cœpira	7.90	66	eP	Pn	04 33 01.3	-1.7
TXAR	Lajitas Array	36.43	312	P	P	04 38 01.8	+0.9
	comp=Z,0.2nm,0.5s,baz=135,slow=13,SNR=2.9						
YKA	Yellowknife Ar	63.21	340	P	P	04 41 22.5	+0.2
	comp=Z,0.1nm,0.6s,baz=134,slow=6.4,SNR=5.7						

JMA 05 04:32:11.9, 36°.67N×140°.56E, h5km±1km**, M2.8, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
JHO	Hitachi	0.06	173	P	Pg	04 32 13.5	+0.2
JHO				eS	Sg	04 32 14.5	+0.2
ONAJ	Iwakimizuishiy	0.47	24	P	Pg	04 32 21.0	0.0
ONAJ				S	Sg	04 32 27.8	+0.6
JYT	Yasato	0.53	214	P	Pg	04 32 22.1	0.0
JYT				S	Sg	04 32 29.1	+0.1
JSB	Shiboa	0.59	300	P	Pg	04 32 23.8	+0.5

*NIED **05** 04:32:00, 36°.20N×140°.00E, h44km, Mw4.0 Best double couple: $M_0$1.30000×10^{15} NP1:ϕ_s302.00000°, δ77.00000°, λ-177.00000°. NP2:ϕ_s211.00000°, δ87.00000°, λ-13.00000°.*
*ISCJB **05** 04:32:28.4±0.5, 36°.14N±0°.04×140°.04E±0°.05, h59km±3km, mb3.9/18, Error ellipse: s-maj=7.5km s-min=4.8km az=138.1*
*JMA **05** 04:32:29.3±0.1, 36°.13N×140°.03E, h49km±1km, M3.8 Broadband fault plane solution: P waves. NP1: ϕ_s42.00000°, δ75.00000°, λ89.00000°. NP2:ϕ_s226.00000°, δ15.00000°, λ93.00000°. Principal axes: T Plg60.0000°, Azm311.0000°; N Plg1.0000°, Azm43.0000°; P Plg30.0000°, Azm133.0000°;*
JMA Felt III J1.
*NEIC **05** 04:32:30.3±2.2, 36°.17N×139°.88E, h58km±13km, mb4.1/3 Error ellipse: s-maj=28.6km s-min=11.1km az=165.0*
NEIC Recorded [3 JMA] in Ibaraki.
*IDC **05** 04:32:31.1±1.9, 36°.12N×139°.92E, h70km±19km, mb3.5/12, mb1 3.8/14, mb1mx3.6/55, mbtmp3.9/14, Error ellipse: s-maj=29.0km s-min=19.2km az=19.0*

ISC 05 04:32:28.9±0.8**, 36°.13N**±0°.05×**140°.03E**±0°.04**, h49**km±6km**, n40, σ1s.06**/47**, mb3.9**/18**, 2C-3D, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
JYT	Yasato	0.17	54	⇑P	Pn	04 32 37.4	+0.5
JYT				S	Sn	04 32 42.8	+0.2
JAG	Ashikaga	0.55	303	⇓P	Pn	04 32 41.1	+0.4
JAG				S	Sn	04 32 49.2	0.0
JHO	Hitachi	0.65	42	⇑P	Pn	04 32 41.9	-0.1
JHO				S	Sn	04 32 50.7	-0.7
JKT	Katashina	0.89	316	⇓P	Pn	04 32 45.4	+0.1
JKT				S	Sn	04 32 57.9	+0.7
JRY	Ryogami san	0.92	263	⇓P	Pn	04 32 45.9	+0.4
JRY				S	Sn	04 32 58.0	+0.3
JOD2	Odawara 2	1.15	222	P	Pn	04 32 49.7	+1.0
JOD2				S	Sn	04 33 04.1	+0.7
JFY	Yanaizu	1.30	349	P	Pn	04 32 51.5	+0.8
JFY				S	Sn	04 33 08.2	+1.2
JFT	Otama	1.41	10	P	Pn	04 32 52.8	+0.6
JFT				S	Sn	04 33 11.1	+1.5
JFK	Kawauchi	1.41	29	P	Pn	04 32 52.4	+0.2
JFK				S	Sn	04 33 09.5	-0.2
MJAR	Matsushiro Arr	1.52	286	P	Pn	04 32 54.9	+1.1
	77nm,0.3s,baz=87,slow=9.2,SNR=313						
MAJO	Matsushiro	1.52	286	ePn	Pn	04 32 53.8	0.0
MAJO				eS	Sn	04 33 03.2	-9.2
MAT	Matsushiro	1.52	286	P	Pn	04 32 54.7	+0.9
MAT				S	Sn	04 33 13.8	+1.3
JHJ	Hachijo jima 2	3.01	184	P	Pn	04 33 15.9	+1.8
	105nm,0.3s,baz=123,slow=23,SNR=6.3						
ERM	Erimo	6.36	22	ePn	Pn	04 34 01.7	+1.7
ERM				eS	Sn	04 35 13.6	+2.3
KSRS	Korea Array	9.80	281	P	Pn	04 34 51.9	+4.8
	0.4nm,0.3s,baz=96,slow=14,SNR=8.1						
USRK	Ussuriysk Ar.	10.13	325	P	Pn	04 34 52.3	+0.6
	0.3nm,0.3s,baz=141,slow=43,SNR=3.5						
KLR	Kul'dur	14.42	338	P	Pn	04 35 48.2	-1.9
	0.2nm,0.3s,baz=17,slow=13,SNR=3.5						
SONM	Songino Array	27.38	306	P	P	04 38 10.0	+0.3
	0.5nm,0.3s,baz=18,slow=30,SNR=3.7						
SEY	Seymchan	27.90	12	P	P	04 38 17.1	+3.1
	0.7nm,0.2s,baz=204,slow=6.8,SNR=4.8						
H11N2	WAKE ISLAND Hy	28.68	117	T	T	05 08 32.6	
	baz=313,slow=75,SNR=19						
H11N1	WAKE ISLAND Hy	28.69	118	T	T	05 08 33.3	
	baz=313,slow=75,SNR=26						
H11N3	WAKE ISLAND Hy	28.70	117	T	T	05 08 32.8	
	baz=313,slow=75,SNR=20						
PBKT	Sadao Pong	39.71	251	P	P	04 39 55.0	-1.7
	20nm,1.7s,4μm						
ZALV	Zalesovo Beam	41.71	313	P	P	04 40 12.5	-0.2
	1.3nm,0.5s,baz=92,slow=7.8,SNR=4.1						
MKAR	Makanchi Array	43.66	303	P	P	04 40 28.5	-0.2
	1.7nm,0.7s,baz=89,slow=10,SNR=12						
KURK	Kurchatov	45.62	309	eP	P	04 40 43.6	-0.6
	9.4nm,0.7s						
TKM2	Tokmak 2	49.08	299	eP	P	04 41 11.9	+0.4
	2.1nm,0.7s						
AAK	Ala-Archa	49.94	299	eP	P	04 41 17.7	-0.3
	1.3nm,0.8s						
ILAR	Eielson Array	50.85	32	P	P	04 41 24.6	+0.2
	0.9nm,0.8s,baz=271,slow=5.8,SNR=9.1						
INK	Inuvik	55.70	27	P	P	04 42 00.6	+0.7
	0.8nm,0.5s,baz=301,slow=5.3,SNR=6.8						
ABKAR	Akbulak array	57.67	310	P	P	04 42 13.6	-0.6
	0.7nm,0.5s						
YKA	Yellowknife Ar	65.15	30	P	P	04 43 04.2	-0.1
	0.4nm,0.7s,baz=306,slow=6.7,SNR=6.2						
FINES	FINESS Array B	69.09	332	P	P	04 43 28.8	-0.6
	2.0nm,0.9s,baz=202,slow=31,SNR=3.7						
AKASG	Malin Array Be	74.32	322	P	P	04 43 60.0	-1.1
	0.3nm,0.4s,baz=49,slow=6.1,SNR=8.2						
NB2	NORSAR Subarra	74.58	337	P	P	04 44 01.6	-0.8
	comp=Z,1.2nm,0.6s,baz=41,slow=6.2						
NOA	NORSAR Array B	74.58	337	P	P	04 44 01.6	-0.8
	comp=Z,1.2nm,0.6s,baz=41,slow=5.9,SNR=5.0						
NVAR	Mina Array Bea	76.42	52	P	P	04 44 14.6	+0.9
	comp=Z,0.5nm,0.6s,baz=283,slow=4.2,SNR=4.3						
PDAR	Pinedale Array	79.09	45	P	P	04 44 27.8	-0.7
	comp=Z,0.3nm,0.7s,baz=21,slow=4.9,SNR=3.0						
TXAR	Lajitas Array	91.56	52	P	P	04 45 32.1	+1.3
	comp=Z,0.2nm,0.5s,baz=279,slow=2.7,SNR=3.7						
TORD	Torodi Ar. Bea	117.16	313	PKP	PKPdf	04 51 08.4	-0.8
	comp=Z,0.1nm,0.5s,baz=85,slow=0.1,SNR=5.0						

*MOS **05** 04:34:39.4±1.1, 6°.81S×106°.24E, h33km, mb5.4/38, Error ellipse: s-maj=10.8km s-min=5.1km az=116.1*
*BJI **05** 04:34:41.0, 7°.00S×106°.20E, h43km, mb4.9/52, mB5.0/40, Ms4.7/34, Ms7 4.4/34*
*IDC **05** 04:34:42.0±1.3, 6°.89S×106°.23E, h40km±10km, mb4.8/47, mb1 4.8/48, mb1mx4.8/61, mbtmp5.0/48, ML4.2/1, MS4.1/27, Ms1 4.1/27, ms1mx4.0/41, Error ellipse: s-maj=11.4km s-min=8.8km az=74.0*
*DJA **05** 04:34:43.4±0.2, 7°S±2°×10°6E±°, h50km±3km, M5.2/87, mb5.3/87, mB5.6/56, MLv5.6/39, Mw(mB)5.1/56*
*ISCJB **05** 04:34:44.9±0.3, 7°.02S±0°.03×106°.15E±0°.02, h84km±2km, mb5.0/138, Error ellipse: s-maj=5.5km s-min=2.6km az=32.9*
*KLM **05** 04:34:46.6, 7°.19S×106°.00E, h101km, mb5.3, MS5.8*
*GCMT **05** 04:34:46.3±0.2, 7°.35S×106°.01E, h55km±1km, MW5.2/82, Moment Tensor Solution. s67,c96; s82,c129; Duration: 0 Moment tensor: Scale 10^{16}Nm; M_{rr}5.70±.24; $M_{\theta\theta}$-4.24±.19; $M_{\phi\phi}$-1.46±.23; $M_{r\theta}$2.68±.15; $M_{\theta\phi}$4.56±.14; $M_{\phi r}$-0.75±.17; Best double couple: $M_0$7.25600×10^{16} NP1:ϕ_s115.00000°, δ57.00000°, λ76.00000°. NP2: ϕ_s320.00000°, δ36.00000°, λ111.00000°. Principal axes: T 6.4010, Plg74.0000°, Azm347.0000°; N 1.7100, Plg12.0000°, Azm123.0000°; P -8.1110, Plg11.0000°, Azm215.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
*NEIC **05** 04:34:46.3±0.7, 6°.93S×106°.22E, h83km±5km, mb5.2/50 Error ellipse: s-maj=6.8km s-min=3.7km az=223.0*
NEIC Felt [III] at Banten, Cianjur and Sukabumi; [II] at Bogor and Jakarta. Also felt at Bandung, Cilegon, Curug, Karawang, Palabuhanratu, Serpong and Tangerang.

ISC 05 04:34:44.1±0.6**, 7°.13S**±0°.03×**106°.06E**±0°.03**, h64**km±4km**, n709, σ1s.60**/730**, mb5.2**/142**, 38C-28D, Jawa**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
SKJI	Sukabumi	0.51	76	P	Pn	04 34 54.8	-1.7
CGJI	Cibinong	0.63	325	P	Pn	04 34 57.9	0.0
CGJI				S	Sn	04 35 08.7	+0.8
DBJI	Dramaga	0.89	50	P	Pn	04 35 01.4	+0.4
DBJI				S	Sn	04 35 21.0	+7.5
SBJI	Serang	1.01	4	P	Pn	04 35 03.6	+1.1
SBJI				S	Sn	04 35 19.4	+3.3
CBJI	Citeko	1.05	48	P	Pn	04 35 01.7	-1.4
CBJI				S	Sn	04 35 19.7	+2.6
CNJI	Cibinong	1.07	99	P	Pn	04 35 00.9	-2.4
CNJI				S	Sn	04 35 19.3	+1.8
TNG	Tangerang	1.12	31	P	Pn	04 35 05.1	+1.2
TNG				P	Pn	04 35 05.0	+1.2
TNG				S	Sn	04 35 24.9	+6.3
LEM	Lembang	1.57	79	P	Pn	04 35 15.8	+5.7
	12μm,0.8s,baz=198,slow=6.4,SNR=397						
LEM	Lembang	1.57	79	LR	LR	04 35 54.2	
	comp=Z,12μm,18.9s,baz=262,slow=52						
LEM	Lembang	1.57	79	P	Pn	04 35 15.7	+5.6
LEM				S	Sn	04 35 34.0	+4.4
CISI	Cisompet, Garu	1.79	104	P	Pn	04 35 11.0	-1.9
CISI	Cisompet, Garu	1.79	104	ePn	Pn	04 35 10.8	-2.0
CISI				eS	Sn	04 35 31.7	-3.0
BLSI	Bandar Lampung	1.93	335	P	Pn	04 35 16.3	+1.5
BLSI				S	Sn	04 35 42.9	+4.8
KASI	Kota Agung	2.23	316	P	Pn	04 35 20.4	+1.6
KASI				S	Sn	04 35 48.1	+2.8
JCJI	Jatiwangi	2.28	74	P	Pn	04 35 19.0	-0.5
CMJI	Cimerak	2.45	105	P	Pn	04 35 19.7	-2.1
CMJI				S	Sn	04 35 53.6	+2.9
KLI	Kotabumi	2.55	332	P	Pn	04 35 25.7	+2.5
KLSI		2.77	331	P	Pn	04 35 26.0	-0.1
KPJI	Karang Pucung	2.85	94	P	Pn	04 35 27.4	+0.1
KPJI				S	Sn	04 36 04.6	+4.1
LWLI	Liwa	2.90	316	P	Pn	04 35 30.6	+2.6
LWLI				S	Sn	04 36 04.6	+2.9
XMIS	Christmas Isla	3.35	187	ePn	Pn	04 35 28.1	-6.0
XMIS				eS	Sn	04 36 03.3	-9.4
MNAI	Manna	4.14	312	P	Pn	04 35 46.2	+1.3
MNAI	Manna	4.14	312	ePn	Pn	04 35 46.5	+1.6
LHSI	Lahat	4.14	322	P	Pn	04 35 47.7	+2.7
SMRI	Semarang	4.35	89	ePn	Pn	04 35 52.5	+4.8
PMBI	Palembang	4.37	343	P	Pn	04 35 51.7	+3.6
UGM	Wanagama	4.49	100	P	Pn	04 35 48.6	-1.1
UGM	Wanagama	4.49	100	ePn	Pn	04 35 49.1	-0.6
WOJI	Wonogiri, Jawa	4.87	99	P	Pn	04 35 56.3	+1.4
UWJI	Ujung Watu	4.90	82	P	Pn	04 35 57.5	+2.2
	778nm,0.9s,10μm3.4nm						
PPBI	Pangkal Pinang	4.94	1	P	Pn	04 35 58.3	+2.4
	403nm,1.1s,10μm2.1nm						
NGJI	Ngawi	5.36	93	P	Pn	04 36 04.3	+2.7
	477nm,0.9s,5μm3.3nm						
MASI	Maura Aman, Be	5.50	316	P	Pn	04 36 05.3	+1.8
	2μm,0.8s,18μm11nm						
PWJI	Pagerwojo	5.76	99	P	Pn	04 36 06.4	-0.7
	554nm,0.8s,5μm2.8nm						
JMBI	JAMBI	5.97	336	P	Pn	04 36 13.1	+3.1
	2μm,0.8s,17μm5.9nm						
PBKI	Pangkalan Bun	7.11	52	P	Pn	04 36 26.9	+1.3
	461nm,1.1s,2.7nm						
GMJI	Gumukmas	7.40	99	P	Pn	04 36 31.3	+1.7
	214nm,1.1s,2μm0.7nm						
PPSI	Pulau Pagai	7.43	305	P	Pn	04 36 29.4	-0.6
	2μm,0.7s,20μm9.1nm						
RGRI	Rengat	7.70	331	P	Pn	04 36 35.8	+2.2
	559nm,0.6s,99μm9.5nm						
SDSI	Sungai Dareh	7.70	323	P	Pn	04 36 35.0	+1.3
KMMI	Kalianget	7.84	90	P	Pn	04 36 36.9	+1.3
	165nm,1.1s,2μm0.6nm						
JAGI	Jajag, Banyuwa	8.12	100	P	Pn	04 36 41.2	+1.7
	269nm,0.8s,5μm						
JAGI	Jajag, Banyuwa	8.12	100	ePn	Pn	04 36 41.1	+1.7
JAGI				eS	Sn	04 38 06.5	-3.4
ABJI	Asem Bagus	8.13	95	P	Pn	04 36 44.0	+4.5
	978nm,0.9s,7μm						
TPRI	Tanjung Pinang	8.14	349	P	Pn	04 36 42.8	+3.1
PDSI	Padang	8.33	318	P	Pn	04 36 41.1	-1.2
	67nm,1.0s						
PPI	Padang Panjang	8.71	319	P	Pn	04 36 46.2	-1.3
	98nm,0.9s,926nm						
BKNI	Bangkinang	8.95	326	P	Pn	04 36 52.6	+1.9
	185nm,1.0s,2μm						
STKI	Sintang	8.96	37	P	Pn	04 36 53.4	+2.5
	157nm,1.0s,23μm						
SRBI	Singaraja	9.12	97	P	Pn	04 36 54.5	+1.4
	192nm,0.7s,2μm						
MYKOM	Kota Tinggi	9.13	346	⇓P	Pn	04 36 57.1	+3.9
MYKOM	Kota Tinggi	9.13	346	ePn	Pn	04 36 55.6	+2.3
BBKI	Banjar Baru	9.47	68	P	Pn	04 37 00.6	+2.7
	154nm,1.8s,4μm						
KGM	Kluang	9.49	343	⇑P	Pn	04 37 01.4	+3.3
KSM	Kuching	9.54	27	ePn	Pn	04 37 00.2	+1.4
MNSI	Mandailing Nat	10.19	320	P	Pn	04 37 08.1	+0.4
	90nm,0.6s,10μm						
COCO	West Island	10.39	240	eP	Pn	04 37 09.3	-1.2
COCO				pmax	pmax		
	comp=Z,3μm,0.9s						
COCO	West Island	10.39	240	ePn	Pn	04 37 09.3	-1.2
	comp=Z,3μm,0.9s						
COCO				eS	Sn	04 38 54.8	-11
PBSI	Pulau Batu	10.47	312	P	Pn	04 37 08.9	-2.7
	comp=Z,304nm,0.9s,comp=Z,5μm						
MTKI	Muara Teweh, K	10.74	55	P	Pn	04 37 18.3	+3.0
KBKI	Kotabaru	10.76	70	P	Pn	04 37 17.8	+2.3
	comp=Z,130nm,1.0s,comp=Z,4μm						
TWSI	Taliwang, Sumb	10.84	99	P	Pn	04 37 16.2	-0.3
	comp=Z,76nm,0.6s						
SBUM	Sibu	11.33	33	⇓P	Pn	04 37 27.2	+3.9
SBUM	Sibu	11.33	33	ePn	Pn	04 37 26.1	+2.8
PLAI	Plampang	11.72	99	P	Pn	04 37 27.0	-1.7
	comp=Z,163nm,0.9s,comp=Z,1μm						
GSI	Gunungsitoli	11.91	314	P	Pn	04 37 27.1	-4.2
	comp=Z,416nm,0.7s,comp=Z,4μm						
GSI	Gunungsitoli	11.91	314	ePn	Pn	04 37 27.2	-4.1
GSI				eS	Sn	04 39 32.5	-10
PSI	Prapat	12.17	324	P	Pn	04 37 30.6	-4.3
	comp=Z,1.6nm,0.3s,baz=156,slow=10.0,SNR=13						
IPM	Ipoh	12.58	336	⇑P	Pn	04 37 41.7	+1.2
IPM	Ipoh	12.58	336	ePn	Pn	04 37 41.3	+0.9
KTGM	Kuala Trenggan	12.72	347	⇑P	Pn	04 37 44.4	+2.1
KCSI	Kotacane, Aceh	13.44	322	P	Pn	04 37 48.2	-3.8
	comp=Z,38nm,0.7s						
KULM	Kulim	13.47	336	ePn	Pn	04 37 50.0	-2.5
	comp=Z,14nm,0.9s						
TPTI		13.61	319	P	Pn	04 37 50.4	-3.9
	comp=Z,53nm,0.8s						
KAPI	Kappang	13.77	82	P	Pn	04 37 55.7	-0.9
	comp=Z,1.4nm,0.3s,baz=61,slow=23,SNR=3.3						
KAPI				LR	LR	04 43 56.5	
	comp=Z,1μm,19.6s,baz=271,slow=41						
SPSI	Sidrap Palu	14.00	78	P	Pn	04 38 02.1	+2.6
	comp=Z,46nm,1.0s						

TTSI	**Tana Toraja**	**14.29**	**74**	P	**P**	**04 38 07.3**	**-1.4**
	comp=Z,65nm,1.7s,comp=Z,2µm						
BASI	**Baing, Sumba**	**14.67**	**103**	P	**Pn**	**04 38 09.8**	**+1.5**
	comp=Z,461nm,1.3s,comp=Z,5µm						
EDFI	**Ende, Flores**	**15.56**	**97**	P	**Pn**	**04 38 20.2**	**+0.3**
	comp=Z,112nm,0.6s,comp=Z,9µm						
MMRI	**Maumere**	**16.09**	**96**	P	**P**	**04 38 27.9**	**-0.8**
	comp=Z,304nm,0.8s						
MMRI	**Maumere**	**16.09**	**96**	*e*Pn	**Pn**	**04 38 25.5**	**-1.0**
	comp=Z,218nm,0.7s						
TRTT	**Trang**	**16.17**	**337**	P	**Pn**	**04 38 25.9**	**-1.6**
	comp=Z,38nm,1.1s,comp=Z,1µm						
KKM	**Kota Kinabalu**	**16.55**	**38**	⇓P	**P**	**04 38 34.8**	**+0.9**
KKM	**Kota Kinabalu**	**16.55**	**38**	*e*Pn	**P**	**04 38 33.9**	**0.0**
	comp=Z,143nm,1.0s						
APSI	**Ampana**	**16.73**	**69**	P	**P**	**04 38 37.1**	**+1.4**
	comp=Z,164nm,2.0s,comp=Z,2µm						
GIRL	**Giralia**	**17.31**	**154**	P	**Pn**	**04 38 39.3**	**-2.3**
	baz=17,SNR=19						
MYLDM	**Lahad Datu**	**17.43**	**46**	⇑P	**P**	**04 38 45.1**	**+1.7**
MRSI	**Marisa**	**17.55**	**65**	P	**P**	**04 38 47.2**	**+2.3**
	comp=Z,69nm,1.0s						
KDM	**Kudat**	**17.61**	**38**	⇓P	**P**	**04 38 45.9**	**+0.4**
BATI	**Baumata**	**17.66**	**101**	P	**P**	**04 38 46.5**	**+0.4**
BATI				S	**S**	**04 42 09.8**	**+3.8**
	comp=Z,4.6nm,0.3s,baz=94,slow=23,SNR=3.5						
BATI				LR	LR	04 47 05.8	
	comp=Z,427nm,19.1s,baz=295,slow=42						
BATI	**Baumata**	**17.66**	**101**	P	**P**	**04 38 46.7**	**+0.5**
	comp=Z,118nm,1.1s,comp=Z,1µm						
LUWI	**Luwuk**	**17.72**	**71**	P	**P**	**04 38 50.0**	**+3.2**
	comp=Z,118nm,1.2s,comp=Z,3µm						
LUWI	**Luwuk**	**17.72**	**71**	*e*Pn	**P**	**04 38 47.5**	**+0.7**
	comp=Z,130nm,1.1s						
SOEI	**Soe**	**18.19**	**100**	P	**P**	**04 38 51.6**	**-0.5**
	comp=Z,391nm,1.0s,comp=Z,4µm						
SOEI	**Soe**	**18.19**	**100**	*e*Pn	**P**	**04 38 50.0**	**-2.1**
	comp=Z,281nm,0.8s						
SOEI				*e*S	**Sn**	**04 42 13.7**	**-1.6**
CMBY	**CAMPBELL BAY**	**18.55**	**319**	*e*P	**Pn**	**04 38 56.6**	**0.0**
MBWA	**Marble Bar**	**19.21**	**138**	*e*P	**P**	**04 39 03.2**	**+0.1**
	comp=Z,22nm,0.6s						
SANI	**Sanana**	**20.49**	**77**	P	**P**	**04 39 18.2**	**+1.2**
	comp=Z,54nm,0.8s,comp=Z,637nm						
PATY	**Pattaya**	**20.58**	**345**	P	Pn	04 39 20.8	0.0
	comp=Z,14nm,0.7s						
PHET	**Kaeng Krachan**	**20.91**	**342**	P	Pn	04 39 25.8	+1.1
	comp=Z,14nm,0.9s,comp=Z,131nm						
NLAI	**Namlea**	**21.30**	**81**	P	**P**	**04 39 27.7**	**+1.9**
	comp=Z,112nm,0.5s,comp=Z,1µm						
FITZ	**Fitzroy Crossi**	**21.97**	**122**	P	**P**	**04 39 33.1**	**+0.2**
	comp=Z,47nm,0.8s,baz=288,slow=6.5,SNR=37						
FITZ				LR	LR	04 47 46.9	
	comp=Z,356nm,21.2s,baz=314,slow=36						
FITZ	**Fitzroy Crossi**	**21.97**	**122**	P	**P**	**04 39 32.7**	**-0.1**
	baz=22,SNR=18						
FITZ	**Fitzroy Crossi**	**21.97**	**122**	*e*P	**P**	**04 39 32.4**	**-0.5**
	comp=Z,54nm,0.8s						
UBPT	**Khong Chiam**	**22.28**	**358**	P	**P**	**04 39 42.0**	**+5.9**
	comp=Z,40nm,1.4s						
LBMI	**Labuha**	**22.33**	**74**	P	**P**	**04 39 38.8**	**+2.0**
	comp=Z,162nm,1.1s,comp=Z,2µm						
TNTI	**Ternate**	**22.66**	**71**	P	**P**	**04 39 40.3**	**0.0**
	comp=Z,504nm,1.2s,comp=Z,6µm						
TNTI	**Ternate**	**22.66**	**71**	*e*P	**P**	**04 39 40.0**	**-0.3**
	comp=Z,448nm,1.0s						
DGPR	**DIGLIPUR**	**24.03**	**327**	*e*P	**P**	**04 39 51.8**	**-1.5**
DGPR				IAmb	IAmb	04 39 52.4	
DAV	**Davao City (W)**	**24.04**	**54**	P	**P**	**04 39 55.1**	**+1.6**
	comp=Z,232nm,0.4s,baz=99,slow=4.0,SNR=6.1						
PHIT	**Phitsanulok**	**24.80**	**347**	P	**P**	**04 40 02.1**	**+1.8**
	comp=Z,27nm,0.8s						
NONG	**Nongkai**	**25.20**	**353**	P	**P**	**04 40 02.5**	**-1.5**
	comp=Z,33nm,1.0s						
SUKH	**Sukhothai**	**25.27**	**345**	P	**P**	**04 40 03.6**	**-1.0**
	comp=Z,8.5nm,0.9s,comp=Z,132nm						
UTTA	**Uttaradit**	**25.31**	**348**	P	**P**	**04 40 04.0**	**-0.9**
	comp=Z,6.4nm,0.7s,comp=Z,198nm						
MTN	**Manton Dam**	**25.32**	**105**	*e*P	**P**	**04 40 04.3**	**-0.9**
	comp=Z,87nm,1.1s						
SWI	**Sorong**	**25.88**	**77**	P	**P**	**04 40 09.0**	**-1.3**
	comp=Z,210nm,0.8s,comp=Z,1µm						
PHRA	**Phrae**	**26.11**	**347**	P	**P**	**04 40 11.1**	**-1.1**
	comp=Z,159nm,1.1s						
QIZ	**Qiongzhong**	**26.26**	**8**	P	**P**	**04 40 14.5**	**+0.9**
QIZ				S	**S**	**04 44 44.5**	**+2.8**
QIZ				LR	LR		
	comp=Z,910nm,21.8s						
QIZ				LR	LR		
	comp=Z,600nm,18.6s						
QIZ				LR	LR		
	comp=Z,1µm,21.0s						
LAMP	**Lampang**	**26.27**	**346**	P	**P**	**04 40 13.0**	**-0.7**
	comp=Z,7.1nm,0.9s						
CM01	**Chiang Mai Arr**	**26.34**	**345**	*e*P	**P**	**04 40 12.2**	**-2.1**
CM01				*e*S	S	04 44 56.1	+13
CMAR	**Chiang Mai Arr**	**26.38**	**345**	P	**P**	**04 40 13.0**	**-1.7**
	comp=Z,5.9nm,0.8s,baz=180,slow=8.5,SNR=23						
CMAR				PcP	**PcP**	**04 43 40.5**	**+1.3**
	comp=Z,6.0nm,0.8s,baz=203,slow=3.4,SNR=7.5						
CMAR				ScP	**ScP**	**04 47 15.6**	**+1.9**
	comp=Z,0.9nm,0.3s,baz=203,slow=3.9,SNR=4.1						
KLBR	**Kellerberrin**	**26.67**	**157**	P	**P**	**04 40 17.3**	**+0.1**
	baz=27,SNR=6.4						
CMMT	**Chiang Mai**	**26.72**	**345**	P	**P**	**04 40 16.6**	**-1.1**
	comp=Z,12nm,0.9s,comp=Z,413nm						
CHTO	**Chiang Mai**	**26.72**	**345**	P	**P**	**04 40 16.7**	**-1.0**
	comp=Z,54nm,0.9s						
CHTO	**Chiang Mai**	**26.72**	**345**	*e*P	**P**	**04 40 15.5**	**-2.2**
CHTO				pmax	pmax		
	comp=Z,9.0nm,0.8s						
CHTO	**Chiang Mai**	**26.72**	**345**	*e*P	**P**	**04 40 15.5**	**-2.2**
	comp=Z,9.1nm,0.8s						
NWAO	**Narrogin (SRO)**	**27.68**	**159**	P	**P**	**04 40 26.8**	**+0.5**
	comp=Z,13nm,1.0s,baz=134,slow=0.1,SNR=3.5						
NWAO	**Narrogin (SRO)**	**27.68**	**159**	*e*P	**P**	**04 40 26.9**	**+0.6**
WRKA	**Warakurna**	**27.73**	**132**	P	**P**	**04 40 26.6**	**-0.2**
	baz=28,SNR=12						
CRAI	**Chiangrai**	**27.76**	**348**	P	**P**	**04 40 25.3**	**-1.7**
	comp=Z,8.9nm,0.9s						
KMBL	**Kambalda**	**28.28**	**151**	P	**P**	**04 40 31.2**	**-0.4**
	baz=28,SNR=7.9						
H01W3	**Cape Leeuwin H**	**28.60**	**166**	T	T	05 11 00.4	
	baz=345,slow=76,SNR=421						
H01W1	**Cape Leeuwin H**	**28.61**	**166**	T	T	05 11 00.7	
	baz=345,slow=76,SNR=274						
H01W2	**Cape Leeuwin H**	**28.61**	**166**	T	T	05 11 08.5	
	baz=345,slow=76,SNR=398						
WRA	**Warramunga Arr**	**30.23**	**118**	P	**P**	**04 40 48.5**	**-0.6**
	comp=Z,48nm,0.9s,baz=293,slow=10,SNR=57						
WRA				PcP	**PcP**	**04 43 49.1**	**+0.4**
	comp=Z,2.6nm,0.5s,baz=304,slow=2.2,SNR=4.7						
WRA				LR	LR	04 53 32.4	
	comp=Z,305nm,21.8s,baz=275,slow=37						
WRAB	**Tennant Creek**	**30.24**	**118***c*	*i*P	**P**	**04 40 48.7**	**-0.4**
WRAB				pmax	pmax		
	comp=Z,237nm,1.2s						
WRAB	**Tennant Creek**	**30.24**	**118**	*e*P	**P**	**04 40 48.8**	**-0.3**
	comp=Z,94nm,1.1s						
WB2	**Warramunga Arr**	**30.24**	**118**	*e*P	**P**	**04 40 49.3**	**+0.1**
	comp=Z,87nm,1.1s						
ASAR	**Alice Springs**	**31.37**	**125**	P	**P**	**04 40 58.9**	**-0.2**
	comp=Z,25nm,1.0s,baz=302,slow=8.1,SNR=89						
ASAR				PcP	**PcP**	**04 43 52.0**	**+0.3**
	comp=Z,4.7nm,0.8s,baz=315,slow=3.3,SNR=8.7						
ASAR				ScP	**ScP**	**04 47 30.4**	**+0.9**
	comp=Z,1.8nm,0.9s,baz=289,slow=3.8,SNR=5.8						
ASAR				LR	LR	04 53 21.1	
	comp=Z,407nm,21.7s,baz=304,slow=36						
AS31	**Alice Springs**	**31.37**	**125**	*e*P	**P**	**04 40 59.2**	**+0.1**
	comp=Z,12nm,1.2s						
AS01	**Alice Springs**	**31.41**	**125**	*e*P	**P**	**04 40 58.4**	**-1.1**
KMI	**Kunming**	**32.22**	**354**	P	**P**	**04 41 09.3**	**+2.6**
KMI				pP	pP	04 41 21.1	-1.3
KMI				sP	sP	04 41 26.2	-3.7
KMI				PP	**PnPn**	**04 42 17.6**	**+2.5**
KMI				S	**S**	**04 46 18.0**	**+2.4**
KMI				SS	**SnSn**	**04 48 11.7**	**-0.9**
KMI				pmax	pmax		
	comp=Z,16nm,1.3s						
KMI				pmax	pmax		
	comp=Z,93nm,4.8s						
KMI				LR	LR		
	comp=Z,500nm,10.6s						
KMI				LR	LR		
	comp=Z,380nm,11.4s						
KMI				LR	LR		

	comp=Z,480nm,17.3s						
MDRS	**Chennai**	**32.57**	**308**	*e*P	**P**	**04 41 10.9**	**+1.3**
TRD	**Trivandrum**	**32.91**	**298**	*e*P	**P**	**04 41 12.8**	**+0.2**
H08S2	**Diego Garcia H**	**33.29**	**267**	T	T	05 16 39.2	
	baz=91,slow=76,SNR=220						
H08S3	**Diego Garcia H**	**33.30**	**267**	T	T	05 16 40.0	
	baz=91,slow=76,SNR=201						
H08S1	**Diego Carcia H**	**33.31**	**267**	T	T	05 16 40.7	
	baz=91,slow=76,SNR=236						
VIS	**Vishakhapatnam**	**33.38**	**318**	*e*P	**P**	**04 41 17.2**	**+0.6**
GYA	**Guiyang**	**33.40**	**1**	⇑*i*P	**P**	**04 41 18.5**	**+1.7**
GYA				pP	pP	04 41 31.0	-1.5
GYA				PP	**PP**	**04 42 32.3**	**-1.2**
GYA				PcP	**PcP**	**04 43 59.8**	**+2.5**
GYA				S	**S**	**04 46 37.5**	**+3.9**
GYA				sS	sS	04 46 57.5	-2.9
GYA				ScP	**ScP**	**04 47 39.0**	**+2.7**
GYA				ScS	**ScS**	**04 51 39.7**	**+2.2**
GYA				pmax	pmax		
	comp=Z,60nm,0.8s						
GYA				pmax	pmax		
	comp=Z,140nm,6.2s						
GYA				LR	LR		
	comp=Z,580nm,17.9s						
GYA				LR	LR		
	comp=Z,510nm,18.2s						
GYA				LR	LR		
	comp=Z,550nm,18.4s						
GENI	**Genyem**	**34.27**	**84**	P	**P**	**04 41 22.7**	**-1.8**
	comp=Z,79nm,1.1s						
JAY	**Jayapura**	**34.81**	**84**	P	**P**	**04 41 27.6**	**-1.6**
	comp=Z,47nm,0.8s,comp=Z,949nm						
QIS	**Mount Isa**	**35.10**	**116**	P	**P**	**04 41 31.7**	**0.0**
	baz=35,SNR=36						
BOK	**Bokaro**	**36.51**	**328**	*e*P	**P**	**04 41 42.6**	**-1.0**
BOK				IAmb	IAmb	04 41 45.2	
	comp=Z,36nm,1.1s						
HYB	**Hyderabad**	**36.52**	**312**	⇑*i*P	**P**	**04 41 44.0**	**+0.2**
HYB				*e*		04 41 57.0	
HYB	**Hyderabad**	**36.52**	**312**	*e*P	**P**	**04 41 43.8**	**0.0**
COEN	**Coen**	**37.07**	**104**	*e*P	**P**	**04 41 47.2**	**-1.3**
	comp=Z,46nm,0.8s						
ENH	**Enshi**	**37.34**	**5**	*e*P	**P**	**04 41 49.1**	**-1.4**
	comp=Z,10nm,0.8s						
BBOO	**Buckleboo**	**37.79**	**137**	*e*P	**P**	**04 41 54.1**	**-0.2**
	comp=Z,14nm,1.0s						
CD2	**Chengdu**	**37.89**	**357**	P	**P**	**04 41 55.1**	**-0.1**
CD2				sP	pP	04 42 12.1	+1.0
CD2				PP	**PP**	**04 43 22.6**	**-0.4**
CD2				PcP	**PcP**	**04 44 09.5**	**-0.8**
CD2				S	**S**	**04 47 45.3**	**+3.1**
CD2				sS	sS	04 48 05.4	-3.9
CD2				pmax	pmax		
	comp=Z,11nm,0.7s						
ODAN	**Odare**	**38.33**	**333**	*e*P	**P**	**04 41 57.1**	**-2.1**
	comp=Z,44nm,0.6s						
TAPN	**Taplejung**	**38.61**	**333**	*e*P	**P**	**04 42 00.1**	**-1.5**
	comp=Z,66nm,0.8s						
RAMN	**Ramite**	**38.78**	**332**	*e*P	**P**	**04 42 01.3**	**-1.7**
	comp=Z,26nm,0.6s						
MTSU	**Mount Surprise**	**38.81**	**110**	P	**P**	**04 42 03.4**	**+0.2**
	baz=39,SNR=16						
LSA	**Lhasa**	**39.33**	**339**	P	**P**	**04 42 06.1**	**-1.7**
LSA				pmax	pmax		
	comp=Z,9.0nm,1.1s						
LSA	**Lhasa**	**39.33**	**339**	*e*P	**P**	**04 42 06.7**	**-1.1**
LSA				pmax	pmax		
	comp=Z,18nm,0.8s						
LSA	**Lhasa**	**39.33**	**339**	*e*P	**P**	**04 42 06.7**	**-1.1**
	comp=Z,18nm,0.8s						
JIRN	**Jiri**	**39.57**	**332**	*e*P	**P**	**04 42 08.0**	**-1.7**
PKIN	**Phulchoki**	**39.88**	**331**	*e*P	**P**	**04 42 10.7**	**-1.5**
	comp=Z,11nm,0.5s						
GUN	**Gumba**	**39.93**	**332**	*e*P	**P**	**04 42 10.9**	**-1.8**
	comp=Z,69nm,0.7s						
JOW	**Kunigami**	**40.05**	**32**	LR	LR	04 58 38.4	
	comp=Z,236nm,21.3s,baz=234,slow=36						
DMN	**Daman**	**40.05**	**330**	*e*P	**P**	**04 42 11.7**	**-1.8**
	comp=Z,37nm,0.9s						
KKN	**Kakani**	**40.11**	**331**	*e*P	**P**	**04 42 12.3**	**-1.7**
	comp=Z,34nm,0.8s						
GKN	**Gorkha**	**40.60**	**330**	*e*P	**P**	**04 42 16.4**	**-1.6**
	comp=Z,40nm,0.4s						
PMG	**Port Moresby**	**40.72**	**96***d*	*i*P	**P**	**04 42 19.0**	**0.0**
PMG				pmax	pmax		
	comp=Z,378nm,1.0s						
PMG	**Port Moresby**	**40.72**	**96**	*e*P	**P**	**04 42 18.5**	**-0.5**
	comp=Z,67nm,0.7s						
POO	**Poona**	**40.74**	**309**	*e*P	**P**	**04 42 18.8**	**-0.4**
NJ2	**Nanjing**	**40.83**	**17**	*e*P	**P**	**04 42 18.1**	**-1.5**
NJ2				pmax	pmax		
	comp=Z,13nm,0.6s						
KOLN	**Koldanda**	**40.94**	**329**	*e*P	**P**	**04 42 19.2**	**-1.6**
	comp=Z,99nm,0.7s						
CTA	**Charters Tower**	**41.01**	**112**	LR	LR	04 58 04.3	
	comp=Z,183nm,21.7s,baz=264,slow=34						
CTAO	**Charters Tower**	**41.01**	**112**	*e*P	**P**	**04 42 21.6**	**+0.2**
CTAO	**Charters Tower**	**41.01**	**112**	*e*P	**P**	**04 42 21.6**	**+0.2**
XAN	**Xi'an**	**41.04**	**4**	P	**P**	**04 42 19.5**	**-1.8**
XAN				pP	pP	04 42 32.1	-5.3
XAN				S	**S**	**04 48 37.0**	**+7.7**
XAN				pmax	pmax		
	comp=Z,15nm,0.8s						
XAN				pmax	pmax		
	comp=Z,230nm,4.3s						
XAN				LR	LR		
	comp=Z,700nm,21.4s						
XAN				LR	LR		
	comp=Z,390nm,21.2s						
XAN				LR	LR		
	comp=Z,1µm,18.2s						
BHPL	**Bhopal**	**41.17**	**318**	*e*P	**P**	**04 42 22.2**	**-0.5**
BHPL				IAmb	IAmb	04 42 23.6	
	comp=Z,86nm,1.1s						
STKA	**Stephens Creek**	**41.25**	**131**	P	**P**	**04 42 23.7**	**+0.5**
	comp=Z,22nm,0.6s,baz=313,slow=7.1,SNR=76						
STKA				PcP	**PcP**	**04 44 21.7**	**+0.6**
	comp=Z,17nm,0.9s,baz=294,slow=9.0,SNR=3.0						
STKA				LR	LR	05 00 32.6	
	comp=Z,346nm,20.7s,baz=304,slow=38						
STKA	**Stephens Creek**	**41.25**	**131**	P	**P**	**04 42 23.4**	**+0.3**
	baz=41,SNR=71						
STKA	**Stephens Creek**	**41.25**	**131**	*e*P	**P**	**04 42 23.3**	**+0.2**
STKA						04 44 21.7	
STKA				pmax	pmax		
	comp=Z,12nm,1.1s						
STKA	**Stephens Creek**	**41.25**	**131**	*e*P	**P**	**04 42 23.3**	**+0.2**
	comp=Z,12nm,1.1s						
STKA				PcP	**PcP**	**04 44 21.7**	**+0.6**
MANU	**Manus Island**	**41.46**	**85**	*e*P	**P**	**04 42 24.4**	**-0.7**
	comp=Z,34nm,0.8s						
PYUN	**Piuthan**	**41.52**	**329**	*e*P	**P**	**04 42 24.1**	**-1.5**
	comp=Z,122nm,0.9s						
LZH	**Lanzhou**	**43.04**	**357**	*e*P	**P**	**04 42 37.0**	**-0.8**
LZH				pP	pP	04 42 48.0	-6.0
LZH				sP	sP	04 42 52.1	-9.3
LZH				PP	**PP**	**04 44 15.0**	**-3.9**
LZH				*e*S	**S**	**04 49 00.2**	**+1.1**
LZH				sS	sS	04 49 23.7	-2.8
LZH				SS	SS	04 52 01.4	-12
LZH				pmax	pmax		
	comp=Z,37nm,1.1s						
LZH				pmax	pmax		
	comp=Z,140nm,4.4s						
LZH				LR	LR		
	comp=Z,510nm,14.0s						
LZH				LR	LR		
	comp=Z,450nm,14.6s						
LZH				LR	LR		
	comp=Z,630nm,15.6s						
GUMO	**Guam**	**43.69**	**62**	LR	LR	05 02 39.4	
	comp=Z,76nm,20.8s,baz=266,slow=39						
TIA	**Tai'an**	**44.35**	**13**	⇓P	**P**	**04 42 46.4**	**-1.7**
TIA				pmax	pmax		
	comp=Z,10.0nm,0.9s						
BISR	**Bishrakh**	**44.97**	**323**	*e*P	**P**	**04 42 49.4**	**-3.8**
AYAN	**Aya Nagar**	**45.09**	**323**	*e*P	**P**	**04 42 52.9**	**-1.2**
NDI	**New Delhi**	**45.18**	**323**	*e*P	P	04 42 50.0	-4.9
NDI				*e*S	**S**	**04 49 25.0**	**-5.2**
KUDL	**Kundal**	**45.23**	**322**	*e*P	**P**	**04 42 53.5**	**-1.7**
BHGR	**Bahadurgarh**	**45.35**	**323**	*e*P	**P**	**04 42 55.8**	**-0.4**
KHET	**Khetri**	**45.60**	**321**	*e*P	**P**	**04 42 56.9**	**-1.2**
RTK	**Rohtak**	**45.92**	**323**	*e*P	**P**	**04 42 59.4**	**-1.3**
DDI	**Dehra Dun**	**45.92**	**326**	*e*P	**P**	**04 42 58.8**	**-1.9**
KKR	**Kurukshetra**	**46.36**	**324**	*e*P	**P**	**04 43 03.5**	**-0.7**

GTA	**Gaotai**	**46.67**	**353**	⇑P	**P**	**04 43 05.3**	**-1.2**
GTA				pP	pP	04 43 18.3	-4.6
GTA				sP	sP	04 43 23.3	-7.0
GTA				PcP	**PcP**	**04 44 39.7**	**+0.3**
GTA				ScP	**ScP**	**04 48 27.6**	**0.0**
GTA				S	**S**	**04 49 51.4**	**0.0**
GTA				sS	sS	04 50 13.6	-5.6
GTA				ScS	**ScS**	**04 52 52.8**	**-2.8**
GTA				SS	**SS**	**04 53 11.7**	**-6.9**
GTA				pmax	pmax		
	comp=Z,19nm,1.1s						
GTA				pmax	pmax		
	comp=Z,95nm,4.6s						
GTA				LR	LR		
	comp=Z,280nm,19.5s						
GTA				LR	LR		
	comp=Z,320nm,17.6s						
GTA				LR	LR		
	comp=Z,570nm,20.4s						
SMLA	**Simla**	**47.03**	**326**	*e*P	**P**	**04 43 07.0**	**-2.3**
SMLA				IAmb	IAmb	04 43 08.7	
	comp=Z,31nm,0.9s						
BJI	**Beijing**	**47.86**	**10**	P	**P**	**04 43 14.0**	**-1.6**
BJI				pmax	pmax		
	comp=Z,12nm,0.9s						
BJI				LR	LR		
	comp=Z,4µm,20.1s						
BJI				LR	LR		
	comp=Z,4µm,27.8s						
BJI				LR	LR		
	comp=Z,5µm,26.4s						
HHC	**Hu-ho-hao-te**	**48.01**	**6**	*e*P	**P**	**04 43 18.8**	**+1.9**
HHC				pP	pP	04 43 31.5	-1.9
HHC				sP	sP	04 43 36.7	-4.0
HHC				PP	**PP**	**04 45 11.0**	**+1.3**
HHC				S	**S**	**04 50 13.8**	**+3.4**
HHC				sS	sS	04 50 34.9	-3.4
HHC				pmax	pmax		
	comp=Z,11nm,0.9s						
HHC				pmax	pmax		
	comp=Z,140nm,8.0s						
HHC				LR	LR		
	comp=Z,250nm,16.2s						
HHC				LR	LR		
	comp=Z,290nm,15.4s						
HHC				LR	LR		
	comp=Z,250nm,19.1s						
JASL	**Jaisalmer**	**48.02**	**316**	*e*P	**P**	**04 43 17.4**	**+0.2**
DL2	**Dalian**	**48.03**	**16**	*e*P	P	04 43 23.2	+6.3
DL2				PcP	**PcP**	**04 44 43.7**	**-0.4**
DL2				*e*S	S	04 50 21.5	+11
DHRM	**DHARAMSHALA**	**48.36**	**326**	*e*P	**P**	**04 43 18.8**	**-1.1**
DHRM				IAmb	IAmb	04 43 20.1	
	comp=Z,34nm,0.5s						
KSAR	**Wonju Array Be**	**48.81**	**23**	P	**P**	**04 43 22.4**	**-0.6**
KSAR						04 44 47.2	
KSAR	**Wonju Array Be**	**48.81**	**23**	P	**P**	**04 43 22.4**	**-0.6**
KSAR				PcP	**PcP**	**04 44 47.2**	**+0.3**
KSRS	**Korea Array**	**48.83**	**23**	P	**P**	**04 43 22.4**	**-0.8**
	comp=Z,6.8nm,0.8s,baz=218,slow=8.6,SNR=17						
KSRS				PcP	**PcP**	**04 44 47.2**	**+0.2**
	comp=Z,13nm,0.9s,baz=206,slow=3.3,SNR=17						
KSRS				LR	LR	05 04 54.8	
	comp=Z,107nm,20.5s,baz=224,slow=37						
KS01	**Wonju Array Si**	**48.84**	**23**	*e*P	**P**	**04 43 23.2**	**0.0**
JHJ	**Hachijo jima 2**	**51.27**	**37**	LR	LR	05 04 01.3	
	comp=Z,166nm,22.0s,baz=226,slow=34						
WMQ	**Urumqi**	**53.37**	**343**	P	**P**	**04 43 56.2**	**-1.0**
WMQ				pP	pP	04 44 10.5	-3.4
WMQ				sP	sP	04 44 14.4	-6.8
WMQ				PcP	**PcP**	**04 45 03.1**	**-0.7**
WMQ				S	**S**	**04 51 26.9**	**+2.3**
WMQ				sS	sS	04 51 45.5	-7.3
WMQ				ScS	**ScS**	**04 53 37.0**	**-4.0**
WMQ				pmax	pmax		
	comp=Z,9.0nm,0.8s						
WMQ				pmax	pmax		
	comp=Z,33nm,6.0s						
WMQ				LR	LR		
	comp=Z,100nm,21.8s						
WMQ				LR	LR		
	comp=Z,100nm,26.8s						
WMQ				LR	LR		
	comp=Z,78nm,25.2s						
CN2	**Changchun**	**53.65**	**17**	*e*P	**P**	**04 43 57.7**	**-1.4**
CN2				*e*pP	pP	04 44 08.6	-7.2
CN2				*e*sP	sP	04 44 15.6	-7.5
CN2				PcP	**PcP**	**04 45 04.6**	**-0.2**
CN2				pmax	pmax		
	comp=Z,30nm,0.8s						
CN2				pmax	pmax		
	comp=Z,200nm,3.0s						
CN2				LR	LR		
	comp=Z,300nm,17.0s						
CN2				LR	LR		
	comp=Z,300nm,17.0s						
CN2				LR	LR		
	comp=Z,300nm,18.0s						
KSH	**Kashi**	**54.13**	**331**	P	**P**	**04 44 00.3**	**-2.6**
KSH				sP	pP	04 44 18.4	-1.2
KSH				PcP	**PcP**	**04 45 06.8**	**-0.1**
KSH				PP	**PP**	**04 46 03.7**	**-1.5**
KSH				PcS	**PcS**	**04 49 04.0**	**-2.4**
KSH				S	**S**	**04 51 29.3**	**-5.7**
KSH				pmax	pmax		
	comp=Z,17nm,1.3s						
KSH				pmax	pmax		
	comp=Z,140nm,4.8s						
KSH				LR	LR		
	comp=Z,93nm,5.3s						
KSH				LR	LR		
	comp=Z,120nm,4.4s						
KSH				LR	LR		
	comp=Z,170nm,6.0s						
KBL	**Kabul**	**54.24**	**322**	*e*P	**P**	**04 44 02.9**	**-0.9**
KBL				pmax	pmax		
	comp=Z,55nm,0.8s						
KBL	**Kabul**	**54.24**	**322**	*e*P	**P**	**04 44 02.9**	**-0.9**
	comp=Z,55nm,0.8s						
SONM	**Songino Array**	**54.73**	**0**	P	**P**	**04 44 06.0**	**-1.1**
	comp=Z,6.5nm,0.6s,baz=172,slow=8.9,SNR=36						
SONM				PcP	**PcP**	**04 45 08.8**	**-0.2**
	comp=Z,31nm,0.9s,baz=178,slow=4.1,SNR=22						
SONM				LR	LR	05 09 31.6	
	comp=Z,691nm,20.7s,baz=184,slow=38						
SONA1	**Songino Array**	**54.74**	**0**	*e*P	**P**	**04 44 06.0**	**-1.2**
ULN	**Ulaanbaatar**	**54.77**	**1***c*	*i*P	**P**	**04 44 06.0**	**-1.4**
ULN				pmax	pmax		
	comp=Z,8.0nm,0.7s						
ULN	**Ulaanbaatar**	**54.77**	**1**	*e*P	**P**	**04 44 06.2**	**-1.2**
	comp=Z,18nm,0.8s						
ULN				*e*PcP	**PcP**	**04 45 08.3**	**-0.9**
ULN	**Ulaanbaatar**	**54.77**	**1**	P	**P**	**04 44 06.5**	**-0.8**
	SNR=5.2						
SFK	**Sufi-Kurgan**	**55.71**	**330**	P	**P**	**04 44 12.7**	**-1.7**
SFK				pmax	pmax		
	comp=Z,24nm,0.9s						
PDGK	**Podgornoye**	**55.72**	**337**	P	**P**	**04 44 11.4**	**-2.7**
PDGK				pmax	pmax		
	comp=Z,10.0nm,0.7s						
BIDO	**Bidbid**	**55.85**	**305**	P	**P**	**04 44 17.3**	**+1.8**
	SNR=10						
USRK	**Ussuriysk Ar.**	**56.20**	**22**	P	**P**	**04 44 16.1**	**-1.5**
	comp=Z,3.4nm,0.6s,baz=195,slow=4.5,SNR=10.0						
USRK				PcP	**PcP**	**04 45 13.8**	**-0.8**
	comp=Z,6.2nm,0.8s,baz=191,slow=5.2,SNR=4.8						
USRK				LR	LR	05 10 22.6	
	comp=Z,111nm,19.2s,baz=207,slow=38						
BSY	**Bisya**	**56.27**	**303**	P	**P**	**04 44 20.1**	**+1.6**
	SNR=6.4						
HOQ	**Hoqain**	**56.55**	**304**	P	**P**	**04 44 22.4**	**+1.9**
	SNR=9.0						
RBK	**Rabkut**	**56.77**	**296**	P	**P**	**04 44 24.7**	**+2.6**
	SNR=12						
TKM2	**Tokmak 2**	**57.00**	**334**	*e*P	**P**	**04 44 21.7**	**-1.8**
TKM2				pmax	pmax		
	comp=Z,30nm,1.1s						
TKM2	**Tokmak 2**	**57.00**	**334**	*e*P	**P**	**04 44 21.7**	**-1.8**
	comp=Z,30nm,1.1s						
AAK	**Ala-Archa**	**57.27**	**333***c*	*e*P	**P**	**04 44 24.3**	**-1.1**
AAK				pmax	pmax		
	comp=Z,17nm,1.0s						
AAK	**Ala-Archa**	**57.27**	**333**	*e*P	**P**	**04 44 23.7**	**-1.7**
	comp=Z,16nm,0.9s						
ZAK	**Zakamensk**	**57.33**	**358**	*e*P	**P**	**04 44 23.0**	**-2.6**

ZAK pmax pmax
comp=Z,4.0nm,0.9s
FRU Bishkek 57.37 333 *e*P **P** 04 44 24.0 -1.9
FRU *e* 04 45 16.0
ABTO Aybut 57.53 296 P **P** 04 44 28.4 +0.9
SNR=33
EKS2 Erkin-Say 57.62 332 *e*P **P** 04 44 26.4 -1.4
EKS2 pmax pmax
comp=Z,24nm,0.9s
EKS2 Erkin-Say 57.62 332 *e*P **P** 04 44 26.4 -1.4
comp=Z,24nm,0.9s
MK01 Makanchi Array 57.68 341 *e*P **P** 04 44 25.8 -2.2
MK31 Makanchi Array 57.70 341 *e*P **P** 04 44 26.5 -1.7
MK31 Makanchi Array 57.70 341 *e*P **P** 04 44 26.5 -1.7
MKAR Makanchi Array 57.70 341 P **P** 04 44 26.1 -2.1
comp=Z,4.4nm,0.4s,baz=153,slow=8.3,SNR=104
MKAR PcP **PcP** 04 45 19.7 -0.8
comp=Z,4.6nm,0.7s,baz=146,slow=6.7,SNR=2.5
MKAR ScP **ScP** 04 49 18.4 +3.3
comp=Z,0.6nm,0.7s,baz=132,slow=8.5,SNR=3.4
MKAR LR LR 05 12 29.5
comp=Z,266nm,22.0s,baz=156,slow=39
MKAR Makanchi Array 57.70 341 *e*P **P** 04 44 26.5 -1.7
MKAR PcP **PcP** 04 45 19.7 -0.8
MKAR ScP **ScP** 04 49 18.4 +3.3
MAKZ Makanchi 57.82 341 *e*P **P** 04 44 26.7 -2.3
MAKZ pmax pmax
comp=Z,35nm,2.0s
MAKZ Makanchi 57.82 341 *e*P **P** 04 44 26.7 -2.3
comp=Z,35nm,2.0s
UOSS Minazif 58.06 305 *e*P **P** 04 44 32.0 +0.9
comp=Z,2.7nm,1.3s
ASHO Ashiyiah 58.06 305 *i* P **P** 04 44 31.8 +0.6
SNR=13
ASHO Ashiyiah 58.06 305 P **P** 04 44 32.7 +1.5
SNR=5.7
HATD Hatta, Dubai 58.07 305 *i* P **P** 04 44 32.0 +0.9
SNR=10
MNAS Manas 58.08 331 P **P** 04 44 29.6 -1.5
MNAS pmax pmax
comp=Z,33nm,0.8s
ABPO Ambohimpanom 58.28 252 *e*P **P** 04 44 34.4 +1.5
ABPO pmax pmax
comp=Z,14nm,1.0s
ABPO Ambohimpanom 58.28 252 *e*P **P** 04 44 34.4 +1.5
comp=Z,14nm,1.0s
FAQ Al Faqa, Dubai 58.47 305 *i* P **P** 04 44 34.9 +0.9
SNR=22
NAZ Nazwa, Dubai 58.52 305 *i* P **P** 04 44 35.0 +0.8
SNR=12
TLY Talaya 58.62 358 P **P** 04 44 34.1 -0.3
comp=Z,1.2nm,0.4s,baz=189,slow=8.8,SNR=4.3
TLY PcP **PcP** 04 45 24.9 +0.9
comp=Z,2.7nm,0.6s,baz=200,slow=4.6,SNR=6.6
ASUD Al Ashush, Dub 58.63 304 *i* P **P** 04 44 36.4 +1.4
SNR=5.8
MOY Mondy 58.73 356 *e*P **P** 04 44 34.3 -1.0
KK31 Karatay Array 59.51 330 P **P** 04 44 39.3 -1.5
KK31 pmax pmax
comp=Z,5.0nm,1.0s
KKAR Karatay Array 59.51 330 *e*P **P** 04 44 39.1 -1.7
KKAR pmax pmax
comp=Z,1.0nm,0.6s
KKAR Karatay Array 59.51 330 *e*P **P** 04 44 39.1 -1.7
comp=Z,1.2nm,0.6s
KLR Kul'dur 60.46 19 P **P** 04 44 45.3 -1.8
comp=Z,6.0nm,0.9s,baz=241,slow=4.6,SNR=22
KLR PcP **PcP** 04 45 30.9 -0.5
comp=Z,11nm,0.8s,baz=230,slow=4.8,SNR=9.5
KLR LR LR 05 10 57.9
comp=Z,140nm,21.8s,baz=216,slow=36
KLR PKP2bc 05 14 16.9
comp=Z,0.3nm,0.5s,baz=219,slow=13,SNR=1.9
HABR Khabarovsk 60.95 22 *e*P P 04 44 56.3 +5.8
HABR *e* 04 45 29.7
HABR *e* 04 47 00.1
HABR *e*S **S** 04 53 00.6 -3.2
HABR *e* 04 53 14.2
HABR *e* 04 53 18.2
HABR *e* 04 54 35.0
HABR *e*SS **SS** 04 57 01.6 -2.8
HABR pmax pmax
comp=Z,34nm,1.1s
HABR pmax pmax
comp=N,15nm,1.1s
HABR MLR MLR
comp=Z,189nm,18.0s
KURK Kurchatov 62.31 341 *e*P **P** 04 44 57.8 -1.8
KURK pmax pmax
comp=Z,31nm,1.1s
KURK Kurchatov 62.31 341 *e*P **P** 04 44 57.8 -1.8
comp=Z,31nm,1.1s
KURK Kurchatov 62.31 341 P **P** 04 44 58.3 -1.3
SNR=9.5
OTUK Ortayu 62.62 335 P **P** 04 45 00.8 -0.9
OTUK pmax pmax
comp=Z,35nm,1.0s
YSS Yuzh-Sakhalins 62.92 27⇑ *i*P **P** 04 45 02.7 -1.0
GEYT Alibeck 63.25 319 P **P** 04 45 06.2 0.0
comp=Z,31nm,0.8s,baz=145,slow=5.4,SNR=27
GEYT PP **PP** 04 47 20.4 -5.7
comp=Z,3.5nm,0.3s,baz=221,slow=36,SNR=2.9
GEYT LR LR 05 16 26.6
comp=Z,152nm,19.5s,baz=100,slow=40
ZAA0 Zalesovo Beam 63.43 346 *e*P **P** 04 45 05.0 -1.9
ZALV Zalesovo Beam 63.43 346 P **P** 04 45 05.0 -2.0
comp=Z,4.5nm,0.5s,baz=144,slow=3.3,SNR=19
ZALV PKP2bc 05 14 08.2
comp=Z,0.4nm,0.3s,baz=321,slow=1.9,SNR=3.9
ZALV LR LR 05 14 50.1
comp=Z,244nm,18.6s,baz=211,slow=38
ZALV Zalesovo Beam 63.43 346 P **P** 04 45 05.0 -2.0
NVS Novosibirsk 64.63 346 *e*P **P** 04 45 12.5 -2.3
DAMY Dhamar 64.84 290 *e*P **P** 04 45 19.2 +1.8
comp=Z,61nm,1.0s
BOD Bodaibo 65.05 5 *e*P **P** 04 45 15.7 -1.8
BOD pmax pmax
comp=Z,9.0nm,0.9s
RAYN Ar Rayn 66.50 299 *e*P **P** 04 45 28.0 +0.4
comp=Z,39nm,1.1s
NKL Nikolayevsk 66.83 22 *e*P **P** 04 45 26.5 -2.5
NKL pmax pmax
comp=Z,17nm,0.9s
MAW Mawson 66.97 197 P **P** 04 45 31.3 +1.6
comp=Z,5.7nm,0.6s,baz=53,slow=5.1,SNR=20
MAW LR LR 05 08 07.3
comp=Z,159nm,21.3s,baz=60,slow=30
MAW PKP2bc 05 13 58.4
comp=Z,4.1nm,0.8s,baz=283,slow=8.1,SNR=7.9
MAW Mawson 66.97 197 *e*P **P** 04 45 31.5 +1.8
MAW Mawson 66.97 197 *e*P **P** 04 45 31.5 +1.8
RPZ Rata Peaks 67.10 134 *e*P **P** 04 45 32.4 +1.3
comp=Z,66nm,1.0s
BVAR Borovoye Array 67.13 338 P **P** 04 45 29.5 -1.5
comp=Z,28nm,0.8s
BRVK Borovoye 67.20 337*c i*P **P** 04 45 30.6 -0.8
BRVK pmax pmax
comp=Z,41nm,1.2s
BRVK Borovoye 67.20 337 *e*P **P** 04 45 29.6 -1.7
comp=Z,26nm,0.8s
CHKZ Chkalovo 67.55 338 P **P** 04 45 32.6 -1.0
CHKZ pmax pmax
comp=Z,54nm,0.9s
KMBO Kilima Mbogo 68.84 272 P **P** 04 45 44.5 +1.7
comp=Z,7.2nm,1.0s,baz=58,slow=8.2,SNR=12
KMBO LR LR 05 10 25.5
comp=Z,378nm,21.9s,baz=99,slow=31
KMBO PKP2bc 05 13 52.4
comp=Z,0.6nm,0.3s,baz=204,slow=6.5,SNR=3.1
KMBO Kilima Mbogo 68.84 272 *e*P **P** 04 45 43.9 +1.1
comp=Z,11nm,1.1s
AB31 Akbulak array 69.05 330 P **P** 04 45 42.4 -0.7
AB31 pmax pmax
comp=Z,157nm,1.0s
ABKAR Akbulak array 69.05 330 *e*P **P** 04 45 42.0 -1.0
comp=Z,17nm,0.4s
BKZ Black Stump Fm 70.37 129 *e*P **P** 04 45 52.2 +0.6
comp=Z,48nm,0.8s
AKTO Aktyubinsk 70.77 330 P **P** 04 45 53.0 -0.6
comp=Z,16nm,0.6s,baz=124,slow=7.5,SNR=42
AKTO Aktyubinsk 70.77 330 P **P** 04 45 53.0 -0.6
YAK Yakutsk 71.34 12 P **P** 04 45 54.4 -2.4
comp=Z,3.0nm,0.3s,baz=27,slow=18,SNR=6.1
YAK LR LR 05 20 34.2
comp=Z,126nm,18.1s,baz=282,slow=39
YAK Yakutsk 71.34 12 *e*P **P** 04 45 55.3 -1.5
YAK pmax pmax
comp=Z,37nm,0.8s
YAK Yakutsk 71.34 12 *e*P **P** 04 45 54.7 -2.1
comp=Z,52nm,0.8s
GNI Garni 73.39 315 P **P** 04 46 10.6 +0.8
comp=Z,24nm,1.0s,baz=155,slow=3.3,SNR=6.4
GNI Garni 73.39 315 P **P** 04 46 09.7 0.0
GNI Garni 73.39 315*d i*P **P** 04 46 10.5 +0.8
GNI pmax pmax
comp=Z,124nm,1.0s
GNI Garni 73.39 315 *e*P **P** 04 46 09.3 -0.4
comp=Z,30nm,1.1s
DGRG David-gareji 73.51 317 P **P** 04 46 11.5 +1.2
DGRG David-gareji 73.51 317 P **P** 04 46 11.5 +1.2
SVE Sverdlovsk 73.75 336*i*‖ *i*P **P** 04 46 11.4 +0.2
SVE pmax pmax
comp=Z,119nm,1.1s
TBLG Delisi 74.06 317 P **P** 04 46 15.3 +1.9
TBLG Delisi 74.06 317 P **P** 04 46 15.3 +1.9
PETK Petropavlovsk- 74.16 29 P **P** 04 46 12.2 -1.6
comp=Z,4.6nm,0.8s,baz=206,slow=5.8,SNR=7.6
DUS Dusheti 74.24 317 P P 04 46 19.9 +5.4
DUS Dusheti 74.24 317 P P 04 46 19.9 +5.4
ARU Arti 74.34 335 P **P** 04 46 14.4 -0.3
comp=Z,10nm,0.2s,baz=118,slow=2.9,SNR=52
ARU Arti 74.34 335*c i*P **P** 04 46 14.1 -0.6
ARU S **S** 04 55 48.5 +4.6
ARU SS **SS** 05 00 32.1 +0.8
ARU pmax pmax
comp=Z,133nm,1.7s
ARU Arti 74.34 335 *e*P **P** 04 46 14.1 -0.6
comp=Z,70nm,1.0s
GUDG Gudauri 74.55 318 P **P** 04 46 17.9 +1.4
SYO Syowa Base 75.06 200⇑ *e*P **P** 04 46 18.6 -0.1
SYO Syowa Base 75.06 200‖ *e*PcP **PcP** 04 46 31.0 -1.1
ZEI Tsey 75.07 318 *e*P **P** 04 46 19.2 -0.3
ZEI pmax pmax
comp=Z,62nm,0.8s
MA2 Magadan 75.36 22 P **P** 04 46 19.7 -0.8
comp=Z,3.3nm,0.4s,baz=242,slow=6.3,SNR=8.9
MA2 LR LR 05 19 56.9
comp=Z,62nm,21.6s,baz=269,slow=36
MA2 Magadan 75.36 22 *e*P **P** 04 46 18.9 -1.6
MA2 pmax pmax
comp=Z,28nm,0.8s
MA2 Magadan 75.36 22 *e*P **P** 04 46 18.9 -1.6
comp=Z,28nm,0.8s
NCK Nalchik 75.57 318‖ *e*P **P** 04 46 22.8 +0.7
NCK pmax pmax
comp=Z,46nm,0.9s
MATP Matopo 75.92 251 P **P** 04 46 26.2 +1.5
comp=Z,18nm,0.8s,baz=100,slow=5.6,SNR=28
VNDA Vanda 76.01 169 P **P** 04 46 25.0 +1.0
comp=Z,12nm,0.8s,baz=309,slow=5.6,SNR=54
VNDA LR LR 05 16 07.0
comp=Z,96nm,21.0s,baz=328,slow=33
VNDA Vanda 76.01 169 *e*P **P** 04 46 25.2 +1.2
VNDA Vanda 76.01 169 *e*P **P** 04 46 25.2 +1.2
NEY Neytrino 76.05 318⇑ *e*P **P** 04 46 26.9 +1.9
NEY pmax pmax
comp=Z,8.0nm,0.9s
KBZ Khabaz 76.13 318 P **P** 04 46 25.6 +0.4
comp=Z,52nm,0.9s,baz=131,slow=4.3,SNR=48
CHVG Ch'k'valeri 76.26 317⇑ *i*P **P** 04 46 26.0 -0.1
KVAR Kislovodsk Arr 76.35 318 P **P** 04 46 26.6 0.0
comp=Z,32nm,0.9s,baz=253,slow=5.4,SNR=8.3
KIV Kislovodsk 76.36 318 P **P** 04 46 26.8 +0.1
KIV Kislovodsk 76.36 318 *e*P **P** 04 46 26.7 +0.1
KIV pmax pmax
comp=Z,46nm,1.1s
KIV MLR MLR
comp=Z,64nm,18.0s
KIV Kislovodsk 76.36 318 *e*P **P** 04 46 26.9 +0.2
comp=Z,29nm,0.8s
ASF Jabal al Asfar 76.47 305 P **P** 04 46 29.2 +1.7
comp=Z,33nm,0.8s,baz=83,slow=4.3,SNR=38
LSZ Lusaka 76.50 256 P **P** 04 46 29.6 +1.5
comp=Z,11nm,0.8s,baz=100,slow=5.0,SNR=22
LSZ Lusaka 76.50 256 *e*P **P** 04 46 29.5 +1.4
LSZ pmax pmax
comp=Z,16nm,1.0s
LSZ Lusaka 76.50 256 *e*P **P** 04 46 29.5 +1.4
comp=Z,16nm,1.0s
SBA Scott Base 77.09 169 *e*P **P** 04 46 32.1 +2.0
SBA pmax pmax
comp=Z,11nm,0.8s
SBA Scott Base 77.09 169 *e*P **P** 04 46 32.1 +2.0
comp=Z,11nm,0.8s
EIL Elat 77.36 302 P **P** 04 46 33.6 +1.1
comp=Z,38nm,0.8s,baz=104,slow=4.0,SNR=23
NRIK Noril'sk 77.37 353 P **P** 04 46 31.4 -0.3
comp=Z,17nm,0.4s,baz=153,slow=5.1,SNR=35
NRIK LR LR 05 24 23.3
comp=Z,258nm,19.5s,baz=142,slow=39
MMAI Mount Meron Ar 77.92 306 P **P** 04 46 37.5 +1.8
comp=Z,27nm,0.7s,baz=93,slow=8.6,SNR=25
SEY Seymchan 78.24 20 P **P** 04 46 35.5 -1.1
comp=Z,2.7nm,0.6s,baz=204,slow=11,SNR=16
SEY Seymchan 78.24 20⇑ *e*P **P** 04 46 35.1 -1.5
LBTB Lobatse 78.40 246 P **P** 04 46 40.4 +1.8
comp=Z,10nm,0.8s,baz=107,slow=6.9,SNR=9.7
LBTB Lobatse 78.40 246 *e*P **P** 04 46 40.4 +1.8
LBTB pmax pmax
comp=Z,13nm,0.9s
LBTB Lobatse 78.40 246 *e*P **P** 04 46 40.4 +1.8
comp=Z,13nm,0.9s
BOSA Boshof 78.57 242 P **P** 04 46 40.8 +1.3
comp=Z,4.8nm,0.7s,baz=102,slow=6.1,SNR=6.3
BOSA LR LR 05 16 43.1
comp=Z,159nm,18.9s,baz=79,slow=32
BOSA Boshof 78.57 242 *e*P **P** 04 46 41.2 +1.7
BOSA Boshof 78.57 242 *e*P **P** 04 46 41.1 +1.7
VRH Novokhopyorsk 79.95 325 *e*P **P** 04 46 45.3 -0.9
VRH pmax pmax
comp=Z,50nm,0.7s
CSS Mathiatis 80.12 307 P **P** 04 46 48.7 +1.1
CSS Mathiatis 80.12 307 P **P** 04 46 48.3 +0.7
CSS Mathiatis 80.12 307 *e*P **P** 04 46 48.1 +0.5
comp=Z,29nm,1.0s
SZAC Souni 80.42 307 P **P** 04 46 50.2 +1.0
ALFC Alefka 80.75 307 P **P** 04 46 51.7 +0.7
AKMC Akamas 80.93 307 P **P** 04 46 52.2 +0.3
BR131 Keskin Array S 81.22 312 *e*P **P** 04 46 53.4 -0.2
BRTR Keskin Array B 81.22 312 P **P** 04 46 53.4 -0.2
comp=Z,27nm,0.8s,baz=134,slow=7.1,SNR=135
BRTR PP **PP** 04 49 59.5 -0.3
comp=Z,2.0nm,1.0s,baz=105,slow=9.4,SNR=4.6
VSR Storozhevoye 81.43 324 *e*P **P** 04 46 52.8 -1.4
VSR pmax pmax
comp=Z,80nm,0.8s
BR231 Keskin MP Arra 81.89 312 *e*P **P** 04 46 57.9 +0.8
LPSR Galich'ya Gora 82.10 325 *e*P **P** 04 46 57.5 -0.1
LPSR pmax pmax
comp=Z,130nm,2.2s
SUR Sutherland 82.23 238 P **P** 04 47 02.0 +2.9
comp=Z,0.9nm,0.9s,baz=93,slow=9.1,SNR=7.3
SIM Simferopol' 82.44 317 *e*P **P** 04 47 00.0 +0.4
SIM S **S** 04 57 10.0 -1.1
SIM pmax pmax
comp=Z,39nm,0.7s
QSPA South Pole Qui 82.86 180 *e*P **P** 04 47 01.7 +0.1
comp=Z,51nm,0.9s
MOS Moscow 84.00 328 *e*P **P** 04 47 06.1 -1.3
MOS pmax pmax
comp=Z,83nm,0.9s
OBN Obninsk 84.33 327 P **P** 04 47 09.1 +0.1
comp=Z,52nm,0.6s,baz=99,slow=5.0,SNR=12
OBN Obninsk 84.33 327*c i*P **P** 04 47 09.0 -0.1
OBN *e*S **S** 04 57 29.1 -0.6
OBN pmax pmax
comp=Z,59nm,0.7s
OBN MLR MLR
comp=Z,137nm,21.0s
OBN Obninsk 84.33 327 *e*P **P** 04 47 08.5 -0.6
comp=Z,61nm,0.8s
KLMR Klimovskoe 85.08 333 *e*P **P** 04 47 08.2 -4.5
KLMR *e*PP **PcP** 04 47 18.3 +2.5
KLMR *e* 04 50 25.7
KLMR pmax pmax
comp=Z,183nm,1.3s
KARP Karpathos 85.16 307 *e*P **P** 04 47 14.1 +0.3
comp=Z,74nm,0.9s
BILL Bilibino 85.92 19⇑ *e*P **P** 04 47 15.7 -1.1
BILL *i* 04 47 26.7
BILL pmax pmax
comp=Z,2.0nm,1.0s
BILL MLR MLR
comp=Z,116nm,18.0s
BILL Bilibino 85.92 19 *e*P **P** 04 47 15.1 -1.7
TLCR 86.12 316⇑ *i*P **P** 04 47 19.5 +1.3
TIRR Tirgusor 86.22 315‖ *i*P **P** 04 47 19.6 +0.8
TIRR Tirgusor 86.22 315 *e*P **P** 04 47 19.3 +0.5
TIRR pmax pmax
comp=Z,21nm,0.8s
TIRR Tirgusor 86.22 315 *e*P **P** 04 47 19.3 +0.5
comp=Z,21nm,0.8s
TSUM Tsumeb 86.26 251 P **P** 04 47 21.4 +1.7
comp=Z,10nm,0.9s,baz=54,slow=2.1,SNR=9.6
LAST Lasithi 86.43 306 *e*P **P** 04 47 21.2 +1.1
MSAB Monastry St. A 86.55 315‖ *i*P **P** 04 47 21.3 +0.9
CFR Carcaliu 86.58 316⇑ *i*P **P** 04 47 20.9 +0.4
HARR Harsova 86.61 316‖ *i*P **P** 04 47 21.6 +0.9
LEOM Leova 86.81 317‖ *i*P **P** 04 47 22.8 +1.2
IDI Anoyia 86.92 306 P **P** 04 47 23.1 +0.6
comp=Z,29nm,0.9s,baz=99,slow=7.6,SNR=6.6
IDI Anoyia 86.92 306 *e*P **P** 04 47 23.3 +0.8
SORM Soroca 87.14 319⇑ *i*P **P** 04 47 23.1 -0.1
AKASG Malin Array Be 87.22 322 P **P** 04 47 22.8 -0.8
comp=Z,13nm,0.9s,baz=88,slow=4.7,SNR=50
AKASG PP **PP** 04 50 47.4 -0.8
comp=Z,4.7nm,0.8s,baz=93,slow=6.5,SNR=11
AKASG Malin Array Be 87.22 322*ce*P **P** 04 47 22.7 -0.8
AKASG pmax pmax
comp=Z,12nm,0.8s
AKBB Malin Array Si 87.22 322 *e*P **P** 04 47 23.0 -0.5
AKBB Malin Array Si 87.22 322 *e*P **P** 04 47 23.0 -0.5
KIEV Kiev 87.23 322 *e*P **P** 04 47 22.7 -0.8
KIEV pmax pmax
comp=Z,21nm,1.1s
KIEV Kiev 87.23 322 *e*P **P** 04 47 22.7 -0.8
comp=Z,21nm,1.1s
AK11 Malin Array Si 87.25 322 *e*P **P** 04 47 23.2 -0.4
PGOR Pogoanele 87.32 316‖ *i*P **P** 04 47 27.3 +3.2
PETR Petresti 87.33 317⇑ *i*P **P** 04 47 25.7 +1.6
GRER 87.43 316⇑ *i*P **P** 04 47 24.7 +0.1
ODBI Odobesti 87.46 317⇑ *i*P **P** 04 47 25.8 +1.1
ISR Istrita 87.67 316‖ *i*P **P** 04 47 26.5 +0.6
VRI Vrincioaia 87.70 317‖ *i*P **P** 04 47 27.4 +1.4
PLOR Plostina 87.75 317‖ *i*P **P** 04 47 27.1 +0.9
SULR 87.77 315⇑ *i*P **P** 04 47 27.6 +1.3
TESR Tescani 87.90 317⇑ *i*P **P** 04 47 27.7 +0.8
MLR Muntele Rosu 88.16 316 P **P** 04 47 29.1 +0.8
comp=Z,8.8nm,1.0s,baz=93,slow=2.0,SNR=35
MLR PP **PP** 04 50 59.7 +3.6
comp=Z,1.1nm,0.8s,baz=75,slow=8.0,SNR=3.3
MLR Muntele Rosu 88.16 316⇑ *i*P **P** 04 47 29.1 +0.8
PRAR RASCA 88.36 318⇑ *i*P **P** 04 47 29.2 +0.1
DID Didima 88.64 308 P **P** 04 47 29.6 -1.0
DOPR Dopca 88.64 316⇑ *i*P **P** 04 47 30.9 +0.5
MTUR Matau 88.71 316⇑ *i*P **P** 04 47 31.3 +0.4
VLI Veliai 88.74 307 P **P** 04 47 30.9 -0.2
VOIR 88.77 316‖ *i*P **P** 04 47 31.4 +0.3
ARR Arges 89.04 316‖ *i*P **P** 04 47 33.3 +0.9
BURAR Bucovina Array 89.08 318⇑ *i*P **P** 04 47 33.7 +1.1
BUR08 Bucovina Ar. S 89.10 318 *e*P **P** 04 47 34.0 +1.4
SNAA Sanae 89.12 197 P **P** 04 47 34.3 +2.0
SNAA Sanae 89.12 197‖ *e*P **P** 04 47 34.5 +2.2
SNAA Sanae 89.12 197 *e*P **P** 04 47 33.7 +1.5
comp=Z,314nm,0.8s
VLX Vlachokerasia 89.29 308 P **P** 04 47 34.0 +0.2
VTS Vitosha 89.54 313⇑ *i*P **P** 04 47 35.2 +0.3
VTS Vitosha 89.54 313 P **P** 04 47 35.2 +0.3
VTS Vitosha 89.54 313 *e*P **P** 04 47 35.4 +0.5
VTS Vitosha 89.54 313 *e*P **P** 04 47 35.4 +0.5
ARCR ARCALIA 89.56 317⇑ *i*P **P** 04 47 34.7 0.0
KLV Kalavryta, Ach 89.58 308 P **P** 04 47 35.3 +0.2
LIT Litokhoron 89.65 310 P **P** 04 47 35.2 -0.1
LOT Lotru 89.65 316‖ *i*P **P** 04 47 35.5 +0.2
NACGM Naroch 89.66 325 *e* **P** 04 47 34.0 -0.9
LVZ Lovozero 89.68 339‖ *e*P **P** 04 47 33.8 -1.0
LVZ pmax pmax
comp=Z,54nm,1.7s
LVZ Lovozero 89.68 339 *e*P **P** 04 47 33.6 -1.3
comp=Z,17nm,1.0s
LAKA Lakka 89.74 308 P **P** 04 47 35.5 -0.3
THL Klokotos Trika 89.93 310 P **P** 04 47 35.7 -0.8
APA Apatity 90.02 339⇑ *i*P **P** 04 47 35.0 -1.3
APA MLR MLR
comp=Z,400nm,11.0s
DEV Deva 90.33 316⇑ *i*P **P** 04 47 39.1 +0.8
GZR Gura Zlata 90.33 316⇑ *i*P **P** 04 47 39.9 +1.5
PDO Prodromos 90.41 309 P **P** 04 47 39.9 +1.0
DSL Palaion Diasel 90.56 309 P **P** 04 47 40.5 +0.9
DRGR 90.61 317‖ *i*P **P** 04 47 40.3 +0.6
VNA2 Neumayer--Watz 90.77 198 P **P** 04 47 42.5 +2.6
baz=77,slow=2.8
NEST Nestorio 90.79 310 P **P** 04 47 41.9 +1.2
MDVR Moldovita 90.97 315‖ *i*P **P** 04 47 42.2 +0.8
VNA1 Neumayer--Stat 91.14 198 P **P** 04 47 44.1 +2.5
BZS Buzias 91.17 316‖ *i*P **P** 04 47 43.3 +1.1
SIRR Siria 91.24 316‖ *i*P **P** 04 47 42.3 -0.3
KOLS Kolonicke sedl 91.26 319 *e*P **P** 04 47 43.6 +1.0
KOLS pmax pmax
comp=Z,16nm,1.1s
KOLS Kolonicke sedl 91.26 319 *e*P **P** 04 47 43.6 +1.0
SGD Sagiada 91.29 310 P **P** 04 47 43.6 +0.7
VNA3 Neumayer Olymp 91.30 197 P **P** 04 47 42.9 +0.6
FIA1 FINESS Array S 91.45 332 *e*P **P** 04 47 42.7 -0.4
FINES FINESS Array B 91.45 332 P **P** 04 47 42.8 -0.3
comp=Z,13nm,0.8s,baz=96,slow=6.7,SNR=37
FINES LR LR 05 33 13.6
comp=Z,178nm,21.9s,baz=101,slow=38
STHS Stebnicka Huta 92.00 319 *e*P **P** 04 47 46.9 +0.9
STHS pmax pmax
comp=Z,6.0nm,1.1s
STHS Stebnicka Huta 92.00 319 *e*P **P** 04 47 46.9 +0.9
GAMB Gambell 92.92 26 *e*P **P** 04 47 47.9 -1.9
comp=Z,22nm,1.3s
ARA0 ARCESS Array S 93.34 340 *e*P **P** 04 47 50.9 -0.8
ARCES ARCESS Array B 93.34 340 P **P** 04 47 50.9 -0.9
comp=Z,21nm,1.0s,baz=113,slow=4.3,SNR=19
ARCES LR LR 05 33 59.5
comp=Z,138nm,19.9s,baz=100,slow=38
VYHS Vyhne 93.45 318 *e*P **P** 04 47 53.4 +0.7
VYHS Vyhne 93.45 318 *e*P **P** 04 47 53.4 +0.7
TREC Trest 95.73 319 *e*PP PP 04 51 54.5 -1.0
PRU Pruhonice 96.39 320 *e*PP PP 04 51 59.7 -0.8
BRG Berggiesshubel 96.82 320 *e*P **PP** 04 52 01.1 -2.7
comp=Z,18nm,2.0s
BRG Berggiesshubel 96.82 320 *e*P **PP** 04 52 01.1 -2.7
comp=Z,18nm,2.0s
SPA0 Spitsbergen Ar 96.87 348 *e*P **P** 04 48 06.8 -1.0
SPITS Spitsbergen Ar 96.87 348 P **P** 04 48 05.7 -2.0
comp=Z,21nm,0.8s
GERES GERESS Array B 96.87 318 P **P** 04 48 08.7 +0.2
comp=Z,0.7nm,0.8s,baz=117,slow=7.6,SNR=6.3
HFS Hagfors 97.31 330 P **P** 04 48 09.2 -0.9
comp=Z,4.3nm,0.8s,baz=116,slow=3.4,SNR=8.0
NORA Norsar Array B 98.54 331 P **P** 04 48 14.8 -0.8
comp=Z,1.8nm,0.9s,baz=90,slow=4.4,SNR=3.3
NOA LR LR 05 37 32.4
comp=Z,97nm,21.7s,baz=65,slow=38
TBI Tubuai 100.33 115 *e*LR LR 05 21 18.3
comp=Z,158nm,38.0s
PPT2 Papeete2 101.40 110 *e*LR LR 05 21 37.9
comp=Z,158nm,23.8s
ILAR Eielson Array 103.66 25 Pdiff **Pdif** 04 48 38.4 +0.1
comp=Z,0.6nm,1.1s,baz=223,slow=3.6,SNR=2.4
ILAR PKKPbc **PKKPbc** 05 04 32.4 -0.5
comp=Z,0.5nm,0.9s,baz=79,slow=1.5,SNR=5.7
TORD Torodi Ar. Bea 105.53 282 PKiKP **PKiKP** 04 53 01.6 +0.6
comp=Z,0.6nm,0.6s,baz=92,slow=1.6,SNR=4.6
INK Inuvik 107.54 20 PKKPbc PKKPbc 05 04 19.5 -1.5
comp=Z,1.1nm,0.7s,baz=72,slow=4.3,SNR=5.3
TAOE Nuku Hiva Isla 112.13 103 *e*LR LR 05 26 36.0
comp=Z,106nm,26.5s
YKA Yellowknife Ar 117.31 20 PKP **PKPdf** 04 53 21.1 -0.8
comp=Z,1.1nm,0.7s,baz=356,slow=0.9,SNR=23
YKA PKKPbc **PKKPbc** 05 03 46.8 -1.4
comp=Z,0.5nm,0.7s,baz=123,slow=4.2,SNR=11
YKA PKKP **PKKPdf** 05 04 15.2 -0.1
comp=Z,0.5nm,0.9s,baz=124,slow=4.3,SNR=3.9
M02C Callahan 124.89 44 P **PKPdf** 04 53 37.9 +0.6
baz=294
J05D Fort Rock, OR 125.15 41 P **PKPdf** 04 53 39.0 +1.1
baz=297
N02D Trinity Center 125.16 44 P **PKPdf** 04 53 38.5 +0.7
baz=294
M04C Macdoel 125.41 43 P **PKPdf** 04 53 39.1 +0.7
baz=296

O03D	**Paynes Creek**	**126.06**	**45**	P	**PKPdf**	**04 53 39.3**	**-0.3**
	baz=295						
MSO	**Missoula**	**127.71**	**34**	P	**PKPdf**	**04 53 42.5**	**-0.1**
	baz=306						
MFID	**Camas Ranch**	**128.52**	**38**	*e*PKPdf	**PKPdf**	**04 53 45.3**	**+1.0**
EGMT	**Eagleton**	**129.17**	**30**	P	**PKPdf**	**04 53 45.5**	**+0.2**
	baz=312						
HLID	**Hailey**	**129.31**	**38**	P	**PKPdf**	**04 53 47.3**	**+1.5**
	baz=304						
NVAR	**Mina Array Bea**	**129.31**	**45**	PKP	**PKPdf**	**04 53 47.2**	**+1.2**
	comp=Z,2.4nm,0.8s,baz=256,slow=2.5,SNR=14						
NVAR				SKPbc	SKPbc	04 57 05.5	+3.2
	comp=Z,0.8nm,0.7s,baz=287,slow=4.7,SNR=3.9						
PKM	**Mcpherson Peak**	**129.66**	**50**	P	**PKPdf**	**04 53 48.4**	**+1.7**
	baz=292						
CWC	**Cottonwood Cre**	**130.33**	**47**	P	**PKPdf**	**04 53 49.4**	**+1.4**
	baz=295						
MPMC	**Manual Prospec**	**130.93**	**48**	P	**PKPdf**	**04 53 50.7**	**+1.5**
	baz=295						
LRMC	**Laurel Mtn Rad**	**131.03**	**48**	P	**PKPdf**	**04 53 50.9**	**+1.6**
	baz=295						
H17A	**Grant Village**	**131.06**	**35**	P	**PKPdf**	**04 53 51.9**	**+2.6**
	baz=308						
R11A	**Troy Canyon, C**	**131.24**	**44**	P	**PKPdf**	**04 53 51.3**	**+1.6**
	baz=299						
GSC	**Goldstone, Bar**	**131.75**	**48**	P	**PKPdf**	**04 53 52.1**	**+1.5**
	baz=295						
LAO	**LASA Array**	**131.84**	**30**	P	**PKPdf**	**04 53 51.6**	**+1.2**
	baz=315						
SCHQ	**Schefferville**	**132.09**	**354**	PKP	**PKPdf**	**04 53 50.6**	**+0.1**
	comp=Z,4.0nm,0.7s,baz=2.2,slow=2.7,SNR=7.6						
SCHQ				SKPbc	**SKPab**	**04 57 12.2**	**-0.2**
	comp=Z,7.8nm,0.8s,baz=326,slow=1.6,SNR=9.9						
A26A	**Wade Farm, Ken**	**132.09**	**25**	P	**PKPdf**	**04 53 51.7**	**+1.0**
	baz=321						
DUG	**Dugway, Tooele**	**132.15**	**40**	P	**PKPdf**	**04 53 52.1**	**+0.8**
	baz=303						
PLCA	**Paso Flores**	**132.27**	**183**	PKP	**PKPdf**	**04 53 52.4**	**+0.9**
	comp=Z,1.3nm,0.7s,baz=228,slow=21,SNR=3.3						
PLCA				SKPbc	**SKPab**	**04 57 16.5**	**+2.8**
	comp=Z,1.5nm,0.9s,baz=179,slow=3.1,SNR=3.4						
BW06	**Boulder Array**	**132.65**	**36**	P	**PKPdf**	**04 53 53.6**	**+1.3**
	baz=308						
PDAR	**Pinedale Array**	**132.65**	**36**	PKP	**PKPdf**	**04 53 53.0**	**+0.8**
	comp=Z,1.5nm,0.7s,baz=162,slow=2.2,SNR=11						
PDAR				SKPbc	**SKPbc**	**04 57 14.7**	**+0.6**
	comp=Z,2.5nm,1.0s,baz=285,slow=2.3,SNR=8.2						
GMRC	**Granite Mounta**	**132.82**	**48**	P	**PKPdf**	**04 53 53.8**	**+1.2**
	baz=296						
ULM	**Lac du Bonnet**	**133.28**	**19**	PKP	**PKPdf**	**04 53 53.8**	**+0.9**
	comp=Z,5.8nm,0.8s,baz=315,slow=5.3,SNR=9.4						
ULM				SKPbc	**SKPbc**	**04 57 15.6**	**0.0**
	comp=Z,4.7nm,0.8s,baz=349,slow=5.3,SNR=8.2						
IRM	**Iron Mountain**	**133.47**	**49**	P	**PKPdf**	**04 53 55.1**	**+1.3**
	baz=296						
E26A	**Carlson Angus**	**133.77**	**27**	P	**PKPdf**	**04 53 54.7**	**+0.7**
	baz=319						
F26A	**Lodgepole**	**134.14**	**28**	P	**PKPdf**	**04 53 55.3**	**+0.6**
	baz=318						
E27A	**Carson**	**134.20**	**27**	P	**PKPdf**	**04 53 55.4**	**+0.6**
	baz=320						
K22A	**Casper**	**134.44**	**34**	P	**PKPdf**	**04 53 56.3**	**+0.8**
	baz=312						
B32A	**Ashes, Strandq**	**134.63**	**21**	P	**PKPdf**	**04 53 56.1**	**+0.6**
	baz=328						
C31A	**Landman Farms,**	**134.70**	**23**	P	**PKPdf**	**04 53 56.5**	**+0.8**
	baz=326						
RSSD	**Black Hills**	**134.74**	**31**	P	**PKPdf**	**04 53 56.3**	**+0.2**
	baz=316						
RSSD	**Black Hills**	**134.74**	**31**	*e*PKIKP	**PKPdf**	**04 53 55.9**	**-0.3**
RSSD	**Black Hills**	**134.74**	**31**	*e*PKPdf	**PKPdf**	**04 53 55.9**	**-0.3**
G27A	**Dupree**	**134.84**	**28**	P	**PKPdf**	**04 53 56.5**	**+0.4**
	baz=319						
I25A	**Rochford**	**134.97**	**30**	P	**PKPdf**	**04 53 55.6**	**-0.9**
	baz=316						
O20A	**White River Ci**	**135.04**	**38**	P	**PKPdf**	**04 53 57.1**	**+0.3**
	baz=308						
O20A	**White River Ci**	**135.04**	**38**	*e*PKPdf	**PKPdf**	**04 53 55.9**	**-0.9**
B33A	**Robert and Kas**	**135.07**	**20**	P	**PKPdf**	**04 53 56.4**	**+0.1**
	baz=329						
G28A	**Parade**	**135.53**	**27**	P	**PKPdf**	**04 53 56.8**	**-0.6**
	baz=320						
J28A	**Allard Ranch,**	**136.63**	**29**	P	**PKPdf**	**04 53 59.0**	**-0.4**
	baz=318						
F36A	**Milaca**	**137.87**	**20**	P	**PKPdf**	**04 54 03.3**	**+1.7**
	baz=330						
ANMO	**Albuquerque**	**139.26**	**43**	P	**PKPdf**	**04 54 05.7**	**+1.0**
	baz=305						
ANMO	**Albuquerque**	**139.26**	**43**⇓	*i*PKIKP	**PKPdf**	**04 54 05.8**	**+1.0**
ANMO				pmax	pmax		
	comp=Z,8.0nm,1.7s						
I37A	**Lemond, Waseca**	**139.51**	**22**	P	**PKPdf**	**04 54 06.6**	**+1.9**
	baz=329						
BGNE	**Belgrade**	**139.65**	**28**	P	**PKPdf**	**04 54 06.9**	**+1.8**
	baz=321						
121A	**Cookes Peak, D**	**139.66**	**47**	*e*PKPdf	**PKPdf**	**04 54 06.9**	**+1.4**
P32A	**Huiting Farm,**	**140.79**	**31**	P	PKPpre	04 54 00.9	
	baz=319						
Q32A	**Meitler Ranch,**	**141.29**	**31**	P	PKPpre	04 54 02.1	
	baz=319						
O34A	**Beatrice**	**141.29**	**28**	P	PKPpre	04 54 02.0	
	baz=322						
P33A	**Williams Farm,**	**141.39**	**30**	P	PKPpre	04 54 02.0	
	baz=320						
R32A	**Long Quarter,**	**141.64**	**32**	P	PKPpre	04 54 03.7	
	baz=318						
Q33A	**Connelly Farm,**	**141.66**	**31**	P	PKPpre	04 54 03.4	
	baz=320						
MNTX	**Cornudas Mount**	**141.83**	**46**	P	PKPpre	04 54 05.0	
	baz=303						
MNTX	**Cornudas Mount**	**141.83**	**46**	*e*PKPdf	PKPpre	04 54 04.9	
R33A	**Olander Ranch,**	**142.10**	**31**	P	PKPpre	04 54 04.8	
	baz=319						
Q34A	**Chapman**	**142.16**	**30**	P	PKPpre	04 54 04.5	
	baz=321						
KSU1	**Kansas State U**	**142.18**	**29**	P	PKPpre	04 54 05.1	
	baz=321						
KSU1	**Kansas State U**	**142.18**	**29**	*e*PKPdf	PKPpre	04 54 05.0	
T32A	**Huddler Ranch,**	**142.43**	**34**	P	PKPpre	04 54 06.2	
	baz=317						
O37A	**Wolven Farm, M**	**142.46**	**26**	P	PKPpre	04 54 05.6	
	baz=326						
R34A	**Isabella, Hill**	**142.48**	**31**	P	PKPpre	04 54 05.7	
	baz=320						
N39A	**Derby Farms, D**	**142.54**	**23**	P	PKPpre	04 54 05.5	
	baz=329						
Q35A	**Mercer Eighty,**	**142.65**	**29**	P	PKPpre	04 54 06.6	
	baz=322						
P37A	**Lathrop**	**142.84**	**26**	P	PKPpre	04 54 06.5	
	baz=325						
T33A	**Patterson Ranc**	**142.87**	**33**	P	PKPpre	04 54 07.4	
	baz=318						
U32A	**Winter Ranch,**	**142.97**	**35**	P	PKPpre	04 54 08.0	
	baz=316						
R35A	**Emporia Munici**	**142.99**	**30**	P	PKPpre	04 54 07.6	
	baz=321						
S34A	**Willow Spring**	**143.01**	**31**	P	PKPpre	04 54 07.5	
	baz=320						
CPUP	**Villa Florida**	**143.03**	**205**	PKhKP	PKPpre	04 54 09.3	
	comp=Z,12nm,1.1s,baz=160,slow=2.2,SNR=8.6						
O39A	**Kirksville**	**143.05**	**24**	P	PKPpre	04 54 07.4	
	baz=328						
P38A	**Dawn**	**143.17**	**26**	P	PKPbc	04 54 07.8	-0.6
	baz=326						
R36A	**Gordon, Harris**	**143.33**	**29**	P	PKPab	04 54 07.7	+0.1
	baz=322						
Q37A	**Longview Farm,**	**143.38**	**27**	P	PKPab	04 54 08.0	+0.1
	baz=324						
S35A	**Otter Creek Ra**	**143.43**	**30**	P	PKPab	04 54 08.1	0.0
	baz=321						
O40A	**La Belle**	**143.43**	**23**	P	PKPab	04 54 08.1	+0.1
	baz=329						
T34A	**McClaskey Farm**	**143.48**	**32**	P	PKPab	04 54 08.5	+0.2
	baz=319						
P39A	**Salisbury**	**143.61**	**25**	P	PKPab	04 54 08.3	-0.5
	baz=327						
R37A	**Teagarden Farm**	**143.66**	**28**	P	PKPab	04 54 08.3	-0.7
	baz=323						
Q38A	**Cooks Store, C**	**143.68**	**26**	P	PKPab	04 54 08.8	-0.2
	baz=326						
W32A	**Sentinel**	**143.71**	**36**	P	PKPbc	04 54 10.6	+0.4
	baz=314						
U34A	**Anderson Ranch**	**143.73**	**33**	P	PKPab	04 54 09.4	+0.1
	baz=318						
U34A	**Anderson Ranch**	**143.73**	**33**	*e*PKPdf	PKPab	04 54 09.5	+0.2
S36A	**Lake Cedric, C**	**143.76**	**30**	P	PKPab	04 54 09.1	-0.2
	baz=322						
P40A	**Paris**	**143.87**	**24**	P	PKPab	04 54 09.4	-0.3
	baz=328						
Q39A	**Willow Grove F**	**143.89**	**26**	P	PKPab	04 54 09.5	-0.4
	baz=327						
T35A	**Sooner Cattle**	**143.92**	**31**	P	PKPab	04 54 09.9	-0.2
	baz=320						
LCO	**Las Campanas**	**143.93**	**185**	*e*PKPdf	**PKPdf**	**04 54 13.3**	**-0.1**
HDIL	**Hopedale**	**144.00**	**20**	P	PKPab	04 54 09.8	-0.4
	baz=333						
HDIL	**Hopedale**	**144.00**	**20**	*e*PKPdf	PKPab	04 54 09.4	-0.8
S37A	**Fort Scott**	**144.10**	**29**	P	**PKPab**	**04 54 10.2**	**-0.5**
	baz=323						
T36A	**Boggs Farm, Ca**	**144.13**	**31**	P	**PKPab**	**04 54 10.6**	**-0.2**
	baz=321						
W33A	**Caddo, Fort Co**	**144.14**	**36**	P	PKPbc	04 54 11.6	+0.2
	baz=315						
X32A	**Elmer**	**144.17**	**37**	P	**PKPab**	**04 54 10.8**	**-0.2**
	baz=314						
R38A	**Fenwick Farm,**	**144.19**	**27**	P	**PKPab**	**04 54 09.6**	**-1.4**
	baz=325						
V34A	**Guthrie**	**144.19**	**34**	P	**PKPab**	**04 54 11.1**	**0.0**
	baz=317						
V34A	**Guthrie**	**144.19**	**34**	*e*PKPdf	**PKPab**	**04 54 10.7**	**-0.4**
U35A	**Pawnee**	**144.21**	**32**	P	**PKPab**	**04 54 10.8**	**-0.3**
	baz=319						
WMOK	**Wichita Mounta**	**144.25**	**36**	*e*PKIKP	**PKPab**	**04 54 11.0**	**-0.4**
WMOK	**Wichita Mounta**	**144.25**	**36**	*e*PKPdf	**PKPab**	**04 54 11.0**	**-0.4**
Q40A	**Laux Farm, Aux**	**144.31**	**25**	P	**PKPab**	**04 54 10.9**	**-0.5**
	baz=328						
TXAR	**Lajitas Array**	**144.35**	**48**	PKP	PKPbc	04 54 12.9	+0.6
	comp=Z,8.8nm,0.6s,baz=287,slow=0.9,SNR=78						
TXAR				SKP		04 57 48.6	
	comp=Z,0.5nm,0.5s,baz=315,slow=0.2,SNR=5.0						
TXAR	**Lajitas Array**	**144.35**	**48**	PKIKP	PKPbc	04 54 13.0	+0.7
R39A	**Chumby, Stover**	**144.47**	**26**	P	**PKPab**	**04 54 11.2**	**-0.9**
	baz=326						
W34A	**Bridge Creek,**	**144.48**	**35**	P	**PKPab**	**04 54 12.1**	**-0.1**
	baz=316						
W34A	**Bridge Creek,**	**144.48**	**35**	*e*PKPdf	**PKPab**	**04 54 12.3**	**+0.1**
X33A	**Lawton**	**144.56**	**36**	P	**PKPab**	**04 54 11.7**	**-0.8**
	baz=315						
T37A	**Cheneyville 18**	**144.56**	**30**	P	**PKPab**	**04 54 11.7**	**-0.7**
	baz=322						
V35A	**Meyer Ranch, C**	**144.61**	**33**	P	**PKPab**	**04 54 12.2**	**-0.4**
	baz=318						
S38A	**Stockton**	**144.64**	**28**	P	**PKPab**	**04 54 11.5**	**-1.2**
	baz=324						
U36A	**Oologah**	**144.72**	**31**	P	**PKPab**	**04 54 12.6**	**-0.4**
	baz=320						
R40A	**Maddies Statio**	**144.82**	**25**	P	**PKPab**	**04 54 12.6**	**-0.7**
	baz=327						
Y33A	**Hilltop Ranch,**	**144.85**	**37**	P	**PKPab**	**04 54 12.8**	**-0.8**
	baz=314						
S39A	**Bolivar**	**144.86**	**27**	P	**PKPab**	**04 54 12.4**	**-1.1**
	baz=325						
SFIN	**Lafayette**	**144.86**	**18**	P	**PKPab**	**04 54 12.8**	**-0.5**
	baz=337						
SFIN	**Lafayette**	**144.86**	**18**	*e*PKPdf	**PKPab**	**04 54 12.9**	**-0.5**
X34A	**Smith Ranch, M**	**144.90**	**36**	P	**PKPab**	**04 54 13.6**	**-0.2**
	baz=316						
T38A	**Diamond**	**144.93**	**29**	P	**PKPab**	**04 54 13.0**	**-0.8**
	baz=323						
U37A	**Salina**	**145.02**	**31**	P	**PKPbc**	**04 54 13.5**	**-0.7**
	baz=321						
BINY	**Binghamton**	**145.03**	**3**	*e*PKPdf	**PKPbc**	**04 54 13.3**	**-0.7**
W35A	**Tecumseh**	**145.04**	**34**	P	**PKPbc**	**04 54 13.6**	**-0.6**
	baz=318						
TUL1	**Leonard**	**145.06**	**32**	P	**PKPbc**	**04 54 13.6**	**-0.7**
	baz=320						
TUL1	**Leonard**	**145.06**	**32**	*e*PKPdf	**PKPbc**	**04 54 13.4**	**-0.8**
V36A	**Jenks**	**145.07**	**32**	P	**PKPbc**	**04 54 13.9**	**-0.4**
	baz=320						
ABTX	**Abilene, Hawle**	**145.16**	**40**	P	**PKPab**	**04 54 14.8**	**0.0**
	baz=311						
ABTX	**Abilene, Hawle**	**145.16**	**40**	*e*PKPbc	**PKPbc**	**04 54 14.7**	**-0.1**
Z33A	**Whitaker Ranch**	**145.26**	**38**	P	**PKPbc**	**04 54 14.9**	**-0.1**
	baz=313						
S40A	**Lebanon**	**145.30**	**26**	P	**PKPbc**	**04 54 14.1**	**-0.9**
	baz=326						
U38A	**Gravette**	**145.36**	**30**	P	**PKPbc**	**04 54 14.3**	**-0.9**
	baz=322						
T39A	**Clever**	**145.38**	**28**	P	**PKPbc**	**04 54 14.5**	**-0.8**
	baz=324						
M54A	**Oil Creek Stat**	**145.39**	**8**	P	**PKPbc**	**04 54 14.4**	**-0.8**
	baz=350						
Y34A	**Reagan Ranch,**	**145.40**	**36**	P	**PKPbc**	**04 54 15.2**	**-0.2**
	baz=315						
W36A	**Wetumka**	**145.41**	**33**	P	**PKPbc**	**04 54 14.7**	**-0.6**
	baz=319						
V37A	**Hulbert**	**145.42**	**31**	P	**PKPbc**	**04 54 14.7**	**-0.7**
	baz=321						
X35A	**Drake**	**145.54**	**35**	P	**PKPdf**	**04 54 15.2**	**-0.5**
	baz=317						
133A	**Hamilton Ranch**	**145.63**	**39**	P	**PKPbc**	**04 54 16.3**	**+0.2**
	baz=312						
T40A	**Mansfield**	**145.66**	**27**	P	**PKPdf**	**04 54 15.0**	**-0.8**
	baz=326						
Z34A	**Collier Ranch,**	**145.72**	**37**	P	**PKPdf**	**04 54 16.1**	**+0.1**
	baz=314						
X36A	**Centrahoma**	**145.76**	**34**	P	**PKPdf**	**04 54 16.0**	**0.0**
	baz=318						
BDFB	**Brasilia**	**145.77**	**228**	PKPbc	**PKPab**	**04 54 18.6**	**+1.0**
	comp=Z,19nm,0.7s,baz=154,slow=3.7,SNR=41						
W37B	**Quinton**	**145.84**	**32**	P	**PKPdf**	**04 54 16.3**	**+0.1**
	baz=320						
U39A	**Green Forest**	**145.85**	**29**	P	**PKPdf**	**04 54 15.6**	**-0.6**
	baz=324						
Y35A	**Marietta**	**145.86**	**36**	P	**PKPdf**	**04 54 16.2**	**0.0**
	baz=316						
N54A	**Moraine State**	**145.88**	**8**	P	**PKPdf**	**04 54 16.0**	**-0.1**
	baz=349						
233A	**Rising Star**	**146.03**	**40**	P	**PKPbc**	**04 54 17.7**	**+0.3**
	baz=312						
ACSO	**Alum Creek Sta**	**146.06**	**12**	*e*PKPbc	**PKPbc**	**04 54 17.0**	**-0.3**
Z35A	**Perchaven, San**	**146.14**	**36**	P	**PKPbc**	**04 54 17.4**	**-0.4**
	baz=315						
U40A	**Yellville**	**146.16**	**28**	P	**PKPdf**	**04 54 16.7**	**+0.1**
	baz=325						
134A	**White-Moore Ra**	**146.17**	**38**	P	**PKPbc**	**04 54 18.1**	**+0.3**
	baz=313						
V39A	**Pettigrew**	**146.20**	**30**	P	**PKPdf**	**04 54 16.9**	**0.0**
	baz=323						
X37A	**Clayton**	**146.28**	**33**	P	**PKPdf**	**04 54 17.5**	**+0.6**
	baz=319						
Y36A	**Durant**	**146.29**	**35**	P	**PKPbc**	**04 54 17.6**	**-0.5**
	baz=317						
N59A	**State Game Lan**	**146.32**	**3**	P	**PKPbc**	**04 54 17.7**	**-0.3**
	baz=356						
W38A	**Poteau**	**146.37**	**31**	P	**PKPdf**	**04 54 17.2**	**+0.2**
	baz=321						
JCT	**Junction City**	**146.42**	**43**	P	**PKPbc**	**04 54 18.4**	**-0.3**
	baz=309						
JCT	**Junction City**	**146.42**	**43**	*e*PKP2	**PKPdf**	**04 54 18.0**	**+0.7**
JCT	**Junction City**	**146.42**	**43**	*e*PKPdf	**PKPdf**	**04 54 17.9**	**+0.7**
JCT				*e*PKPbc	**PKPbc**	**04 54 19.0**	**+0.3**
333A	**Richland Sprin**	**146.43**	**41**	P	**PKPbc**	**04 54 18.4**	**-0.3**
	baz=311						
SSPA	**Standing Stone**	**146.45**	**5**	*e*PKPbc	**PKPbc**	**04 54 17.8**	**-0.6**
X38A	**Whitesboro**	**146.51**	**32**	P	**PKPbc**	**04 54 18.3**	**-0.5**
	baz=320						
234A	**Clairette**	**146.52**	**39**	P	**PKPbc**	**04 54 18.7**	**-0.2**
	baz=313						
135A	**Vickery Place,**	**146.59**	**38**	P	**PKPbc**	**04 54 19.1**	**0.0**
	baz=314						
Y37A	**Hugo**	**146.61**	**34**	P	**PKPbc**	**04 54 18.7**	**-0.3**
	baz=318						
V40A	**Witts Springs**	**146.62**	**29**	P	**PKPdf**	**04 54 18.1**	**+0.6**
	baz=324						
W39A	**Magazine**	**146.64**	**30**	P	**PKPdf**	**04 54 18.3**	**+0.8**
	baz=322						
Z36A	**Blue Ridge**	**146.66**	**36**	P	**PKPbc**	**04 54 18.7**	**-0.6**
	baz=316						
433A	**Art**	**146.72**	**42**	P	**PKPbc**	**04 54 19.0**	**-0.6**
	baz=310						
O56A	**Blue Knob Stat**	**146.75**	**6**	P	**PKPbc**	**04 54 18.7**	**-0.7**
	baz=351						
334A	**Lometa**	**146.91**	**40**	P	**PKPbc**	**04 54 19.3**	**-0.7**
	baz=312						
WHTX	**Lake Whitney,**	**146.95**	**38**	P	**PKPbc**	**04 54 19.9**	**-0.2**
	baz=314						
WHTX	**Lake Whitney,**	**146.95**	**38**	*e*PKPbc	**PKPdf**	**04 54 19.0**	**+0.9**
WHTX				*e*PKPab	**PKPbc**	**04 54 20.7**	**+0.6**
W40A	**Ferguson Farm,**	**147.00**	**30**	P	**PKPbc**	**04 54 19.4**	**-0.7**
	baz=323						
X39A	**Fountain Ranch**	**147.01**	**32**	P	**PKPbc**	**04 54 19.9**	**-0.3**
	baz=321						
WCI	**Wyandotte Cave**	**147.08**	**18**	*e*PKP2	**PKPbc**	**04 54 19.9**	**-0.4**
WCI	**Wyandotte Cave**	**147.08**	**18**	*e*PKPbc	**PKPbc**	**04 54 19.9**	**-0.4**
Y38A	**Idabel**	**147.13**	**33**	P	**PKPbc**	**04 54 19.7**	**-0.9**
	baz=320						
136A	**Ennis**	**147.18**	**37**	P	**PKPbc**	**04 54 20.3**	**-0.4**
	baz=315						
Z37A	**Pogue Cattle C**	**147.18**	**35**	P	**PKPbc**	**04 54 20.6**	**-0.1**
	baz=318						
533A	**Kerrville**	**147.19**	**43**	P	**PKPbc**	**04 54 20.7**	**-0.2**
	baz=309						
434A	**Burnet**	**147.23**	**41**	P	**PKPbc**	**04 54 20.5**	**-0.5**
	baz=311						
MIAR	**Mount Ida**	**147.26**	**31**	P	**PKPbc**	**04 54 20.5**	**-0.4**
	baz=322						
MIAR	**Mount Ida**	**147.26**	**31**	*e*PKP2	**PKPbc**	**04 54 20.6**	**-0.3**
MIAR	**Mount Ida**	**147.26**	**31**	*e*PKPbc	**PKPbc**	**04 54 20.6**	**-0.3**
335A	**Moody**	**147.45**	**39**	P	**PKPbc**	**04 54 21.2**	**-0.4**
	baz=313						
Y39A	**Lockesburg**	**147.46**	**32**	P	**PKPbc**	**04 54 21.0**	**-0.5**
	baz=321						
633A	**Saathoff Ranch**	**147.48**	**44**	P	**PKPbc**	**04 54 22.0**	**+0.3**
	baz=308						
Z38A	**Mt. Pleasant**	**147.50**	**34**	P	**PKPbc**	**04 54 21.3**	**-0.3**
	baz=319						
236A	**Katherine and**	**147.51**	**37**	P	**PKPbc**	**04 54 21.7**	**+0.1**
	baz=315						
137A	**Heron Place, G**	**147.54**	**36**	P	**PKPbc**	**04 54 22.1**	**+0.4**
	baz=317						
534A	**Blanco**	**147.60**	**42**	P	**PKPbc**	**04 54 21.8**	**-0.2**
	baz=310						
832A	**Faith Ranch, C**	**147.62**	**46**	P	**PKPbc**	**04 54 22.3**	**+0.2**
	baz=306						
X40A	**Basin Creek Fa**	**147.68**	**30**	P	**PKPbc**	**04 54 22.2**	**+0.2**
	baz=323						
435B	**Jarrell**	**147.69**	**40**	P	**PKPbc**	**04 54 21.4**	**-0.8**
	baz=312						
336A	**Riesel**	**147.75**	**39**	P	**PKPbc**	**04 54 22.5**	**+0.2**
	baz=314						
Y40A	**Okolona**	**147.83**	**31**	P	**PKPbc**	**04 54 21.6**	**-0.8**
	baz=322						
733A	**Divot King Ran**	**147.85**	**45**	P	**PKPbc**	**04 54 21.3**	**-1.4**
	baz=307						
237A	**Washetta, Mont**	**147.94**	**37**	P	**PKPbc**	**04 54 22.2**	**-0.6**
	baz=316						
833A	**Chaparral WMA,**	**148.01**	**46**	P	**PKPbc**	**04 54 22.0**	**-1.1**
	baz=307						
535A	**Dale**	**148.19**	**41**	P	**PKPbc**	**04 54 22.3**	**-1.3**
	baz=311						
734A	**La Parita Cree**	**148.28**	**44**	P	**PKPbc**	**04 54 22.7**	**-1.1**
	baz=308						
Z40A	**Long Farm, Mag**	**148.35**	**32**	P	**PKPbc**	**04 54 24.1**	**+0.3**
	baz=321						
337A	**Centerville**	**148.38**	**38**	P	**PKPbc**	**04 54 25.1**	**+1.1**
	baz=315						
635A	**Leesville**	**148.47**	**42**	P	**PKPbc**	**04 54 25.0**	**+0.7**
	baz=310						
933A	**Laredo**	**148.51**	**47**	P	**PKPbc**	**04 54 25.8**	**+1.3**
	baz=306						
338A	**Crockett**	**148.70**	**37**	P	**PKPbc**	**04 54 25.4**	**+0.6**
	baz=316						
239A	**Gary**	**148.71**	**35**	P	**PKPbc**	**04 54 25.5**	**+0.7**
	baz=318						
140A	**Cam and Jess,**	**148.74**	**33**	P	**PKPbc**	**04 54 25.2**	**+0.3**
	baz=320						
735A	**Kenedy**	**148.79**	**43**	P	**PKPbc**	**04 54 26.4**	**+1.3**
	baz=309						
636A	**Smothers Creek**	**148.89**	**42**	P	**PKPbc**	**04 54 27.0**	**+1.7**
	baz=311						
537A	**Green Hill Far**	**148.97**	**40**	P	**PKPbc**	**04 54 26.8**	**+1.3**
	baz=313						
934A	**Benavides**	**149.06**	**46**	P	**PKPbc**	**04 54 27.5**	**+1.6**
	baz=307						
240A	**Hunter Patters**	**149.09**	**34**	P	**PKPbc**	**04 54 25.9**	**+0.1**
	baz=319						
835A	**Beeville**	**149.13**	**44**	P	**PKPbc**	**04 54 27.8**	**+1.9**
	baz=309						
736A	**Circle Diamond**	**149.22**	**42**	P	**PKPbc**	**04 54 28.4**	**+2.3**
	baz=311						
OXF	**Oxford**	**149.24**	**26**	*e*PKP2	**PKPbc**	**04 54 25.4**	**-0.7**
OXF	**Oxford**	**149.24**	**26**	*e*PKPbc	**PKPbc**	**04 54 25.4**	**-0.7**
OXF				*e*PKPab	**PKPab**	**04 54 30.2**	**-0.4**
034A	**Hebbronville**	**149.26**	**47**	P	**PKPbc**	**04 54 28.1**	**+1.8**
	baz=306						
HKT	**Hockley**	**149.36**	**39**	*e*PKP2	**PKPbc**	**04 54 27.1**	**+0.7**
HKT	**Hockley**	**149.36**	**39**	*e*PKPbc	**PKPbc**	**04 54 27.1**	**+0.7**
TZTN	**Tazewell**	**149.44**	**15**	*e*PKPbc	**PKPbc**	**04 54 26.0**	**-0.5**
BLA	**Blacksburg**	**149.48**	**10**	*e*PKP2	**PKPbc**	**04 54 26.1**	**-0.6**
BLA	**Blacksburg**	**149.48**	**10**	*e*PKPbc	**PKPbc**	**04 54 26.1**	**-0.6**
144A	**Alexander Plac**	**150.36**	**29**	P	**PKPbc**	**04 54 29.9**	**+1.1**
	baz=325						
PB04	**IPOC Station P**	**150.48**	**187**	*e*P	**PKPdf**	**04 54 25.3**	**+0.9**
VBMS	**Vicksburg**	**150.65**	**30**	P	**PKPbc**	**04 54 30.0**	**+0.4**
	baz=325						
244A	**Avery, Jackson**	**150.71**	**30**	P	**PKPbc**	**04 54 30.4**	**+0.7**
	baz=324						
146A	**Union**	**150.99**	**27**	P	**PKPbc**	**04 54 30.8**	**+0.4**
	baz=328						
PB07	**IPOC Station P**	**151.05**	**188**	*e*P	**PKPdf**	**04 54 26.5**	**+1.3**
245A	**Little AP, Sta**	**151.10**	**29**	P	**PKPbc**	**04 54 31.3**	**+0.7**
	baz=326						
KMSC	**Kings Mountain**	**151.31**	**13**	P	**PKPbc**	**04 54 30.9**	**-0.1**
	baz=344						
KMSC	**Kings Mountain**	**151.31**	**13**	*e*PKPbc	**PKPbc**	**04 54 30.7**	**-0.4**
KMSC				*e*PKPab	**PKPab**	**04 54 37.7**	**-1.3**
LRAL	**Lakeview Retre**	**151.52**	**23**	*e*PKPbc	**PKPbc**	**04 54 30.9**	**-0.7**
LRAL				*e*PKPab	**PKPab**	**04 54 39.4**	**-0.6**
345A	**Thompson Farm,**	**151.63**	**30**	P	**PKPbc**	**04 54 32.4**	**+0.6**
	baz=325						
PB01	**IPOC Station P**	**151.66**	**189**	*e*P	**PKPbc**	**04 54 33.0**	**+0.6**
346A	**Big Creek Wild**	**151.84**	**29**	P	**PKPbc**	**04 54 32.3**	**0.0**
	baz=326						
GOGA	**Godfrey**	**152.40**	**17**	*e*PKIKP	**PKPbc**	**04 54 33.3**	**-0.2**
GOGA				*e*		04 54 42.5	
GOGA	**Godfrey**	**152.40**	**17**	*e*PKPbc	**PKPbc**	**04 54 33.3**	**-0.2**
GOGA				*e*PKPab	**PKPab**	**04 54 42.5**	**-1.1**
SIV	**San Ignacio**	**153.73**	**209**	PKP	**PKPdf**	**04 54 31.2**	**+2.1**
	comp=Z,2.1nm,0.7s,baz=284,slow=3.2,SNR=3.1						
SIV				PKPbc	**PKiKP**	**04 54 38.1**	**+1.0**
	comp=Z,7.0nm,0.9s,baz=143,slow=2.5,SNR=9.8						
SIV				PKPab	**PKPab**	**04 54 51.6**	**+1.8**
	comp=Z,5.5nm,0.7s,baz=152,slow=5.1,SNR=7.3						
LPAZ	**La Paz**	**156.03**	**194**	PKP	**PKPdf**	**04 54 32.7**	**-0.3**
	comp=Z,4.5nm,1.2s,baz=273,slow=2.8,SNR=8.5						
LPAZ				PKPab	**PKPab**	**04 55 03.5**	**+3.2**
	comp=Z,1.7nm,0.7s,baz=98,slow=2.8,SNR=7.2						
SDV	**Santo Domingo**	**176.29**	**298**	PKPab	**PKPab**	**04 56 27.6**	**-1.6**
	comp=Z,5.6nm,0.9s,baz=90,slow=3.7,SNR=6.5						

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*ISCJB **05** 04:41:53.8±0.2, 60°.10N±0°.02×152°.69W±0°.05, h108km±2km, mb3.7/12, Error ellipse: s-maj=4.5km s-min=2.7km az=42.8*

*NEIC **05** 04:41:56.1, 60°.08N×152°.73W, h95km, MG3.6(AEIC), After AEIC.*

NEIC Felt [II] at Homer.

*IDC **05** 04:41:57.6±3.7, 60°.34N×152°.77W, h114km±32km, mb3.5/12, mb1 3.7/16, mb1mx3.4/77, mbtmp3.9/16, Error ellipse: s-maj=28.6km s-min=12.0km az=39.0*

ISC 05 04:41:55.4±0.7, **60°.11N**±0°.03×**152°.75W**±0°.04, **h101**km±5km, **n106**, σ1s.**33**/128, **mb3.7**/12, **Southern Alaska**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
IVE	**Iliamna Volcan**	**0.16**	**236**	P	**Pn**	**04 42 09.1**	**-0.6**
INE	**Iliamna NE**	**0.16**	**254**	P	**Pn**	**04 42 09.3**	**-0.5**
ILW	**Iliamna West**	**0.20**	**256**	P	**Pn**	**04 42 09.2**	**-0.7**
REF	**Redoubt East F**	**0.38**	**3**	P	**Pn**	**04 42 10.4**	**-0.4**
REF				S	**Sn**	**04 42 21.8**	**-0.5**
NCT	**North Crescent**	**0.47**	**349**	P	**Pn**	**04 42 10.7**	**-0.5**
RDJH	**Redoubt Jeurge**	**0.49**	**357**	P	**Pn**	**04 42 10.9**	**-0.5**
RDJH				S	**Sn**	**04 42 22.9**	**-0.3**
OPT	**Oil Point**	**0.52**	**208**	P	**Pn**	**04 42 11.1**	**-0.4**
HOM	**Homer**	**0.72**	**128**	P	**Pn**	**04 42 13.1**	**+0.1**
PDB	**Pedro Bay**	**0.79**	**247**	P	**Pn**	**04 42 13.1**	**-0.7**
AUL	**Augustine Lava**	**0.81**	**206**	P	**Pn**	**04 42 13.6**	**-0.3**
AUL				S	**Sn**	**04 42 27.4**	**-0.4**
AUE	**Augustine Isla**	**0.81**	**203**	P	**Pn**	**04 42 13.5**	**-0.5**
AUW	**Augustine West**	**0.82**	**207**	P	**Pn**	**04 42 13.8**	**-0.3**
AUI	**Augustine Isla**	**0.85**	**204**	P	**Pn**	**04 42 13.8**	**-0.5**
AUI				S	**Sn**	**04 42 27.4**	**-1.1**
BRLK	**Bradley Lake**	**1.00**	**109**	P	**Pn**	**04 42 15.3**	**-0.6**
BRLK				S	**Sn**	**04 42 30.9**	**-0.4**
CKL	**Chakachamna La**	**1.11**	**10**	P	**Pn**	**04 42 17.1**	**-0.1**
SPCR	**Spurr Chakacha**	**1.13**	**13**	P	**Pn**	**04 42 17.1**	**-0.3**
SPCR				S	**Sn**	**04 42 33.9**	**-0.1**
SPU	**Mount Spurr**	**1.13**	**17**	P	**Pn**	**04 42 17.2**	**-0.2**

CKN	Chakachatna No	1.16	14	P	Pn	04 42 17.7	+0.1
MCNL	McNeil River	1.23	222	P	Pn	04 42 17.7	-0.7
CDD	Cape Douglas	1.27	201	P	Pn	04 42 18.2	-0.8
SLKM	Skilak Lake	1.32	71	P	Pn	04 42 19.0	-0.5
FOSS	Fourpeaked Sta	1.40	201	P	Pn	04 42 19.9	-0.6
FOPK	Fourpeaked Vol	1.40	196	P	Pn	04 42 19.4	-1.1
VOGL	Vogel Lake	1.45	51	P	Pn	04 42 22.5	+1.4
STLK	Strandline Lak	1.47	17	P	Pn	04 42 21.5	+0.2
SEW	Seward	1.65	89	P	Pn	04 42 22.7	-0.9
SEW				S	Sn	04 42 43.4	-1.6
FIB	Fire Island	1.65	49	P	Pn	04 42 24.9	+1.3
SVW2	Sparrevohn	1.71	307	P	Pn	04 42 23.3	-1.0
RC01	Rabbit Creek A	1.78	55	ePn	Pn	04 42 25.1	-0.1
RC01				eS	Sn	04 42 47.1	-0.8
KAHC	Katmai Hardscr	1.86	219	P	Pn	04 42 25.8	-0.6
PTE	Portage	1.99	66	P	Pn	04 42 27.3	-0.5
KAWH	Katmai	2.02	212	P	Pn	04 42 27.8	-0.5
KVTA	Katmai Vly 10	2.17	218	P	Pn	04 42 29.8	-0.4
KAKN	Katmai Knife C	2.17	214	P	Pn	04 42 29.9	-0.4
KAKN				S	Sn	04 42 55.1	-1.8
KABU	Katmai Buttres	2.26	216	P	Pn	04 42 31.3	-0.1
KELA	Mount Kelaz	2.27	224	P	Pn	04 42 30.9	-0.6
KABR	Katmai Barrier	2.29	211	P	Pn	04 42 31.7	-0.1
PMR	Palmer	2.31	48	ePn	Pn	04 42 31.2	-0.8
PMR				eS	Sn	04 42 59.0	-1.1
KDAK	Kodiak Island	2.33	178	P	Pn	04 42 45.7	+13
	52nm,0.3s,baz=34,slow=8.5,SNR=408						
KDAK				S	Sn	04 43 12.4	+12
	89nm,0.3s,baz=22,slow=17,SNR=26						
KDAK	Kodiak Island	2.33	178	ePn	Pn	04 42 30.8	-1.5
KDAK				eS	Sn	04 42 58.6	-2.0
ANCK	Angle Creek	2.38	218	P	Pn	04 42 32.7	-0.3
CNTC	Contact Creek	2.45	222	P	Pn	04 42 33.5	-0.5
CUT	Chulitna	2.60	26	P	Pn	04 42 35.9	+0.1
SML	Sawmill	2.75	50	ePn	Pn	04 42 37.1	-0.7
SML				eS	Sn	04 43 12.5	+2.1
PPLA	Purkeypile	2.81	5	P	Pn	04 42 39.5	+0.7
OHAK	Old Harbor	2.91	186	P	Pn	04 42 37.9	-1.9
PLK5	Peulik 5	3.00	227	P	Pn	04 42 41.0	-0.1
PLK1	Peulik 1	3.06	223	P	Pn	04 42 41.7	-0.2
SCM	Sheep Creek Mo	3.16	54	P	Pn	04 42 42.5	-0.8
TT01	Tatalina	3.22	332	P	Pn	04 42 43.3	-0.7
TTA	Tatalina	3.23	333	P	Pn	04 42 43.5	-0.8
CAST	Castle Rocks	3.34	5	P	Pn	04 42 46.0	+0.3
TRF	Thorofare Moun	3.55	18	P	Pn	04 42 48.3	-0.4
KTH	Kantishna Hill	3.56	13	ePn	Pn	04 42 48.7	-0.1
KTH				eS	Sn	04 43 24.1	-5.9
DIV	Divide	3.59	70	ePn	Pn	04 42 47.4	-1.6
DIV				eS	Sn	04 43 27.9	-2.7
KLU	Klutina	3.62	65	P	Pn	04 42 48.3	-1.3
KLU				S	Sn	04 43 28.7	-2.7
DHY	Denali Highway	3.93	38	P	Pn	04 42 53.5	-0.3
MCK	McKinley	4.06	25	ePn	Pn	04 42 55.6	+0.2
BPAW	Bear Paw Mtn.	4.09	11	ePn	Pn	04 42 55.2	-0.6
BMRM	Bremner River	4.12	74	P	Pn	04 42 54.1	-2.0
NICHA	Nichawak Mount	4.39	85	P	Pn	04 42 57.7	-2.1
PAX	Paxson	4.51	47	ePn	Pn	04 43 01.2	-0.4
PAX				eS	Sn	04 43 50.3	-2.6
GLB	Gilahina Butte	4.58	69	P	Pn	04 43 01.0	-1.5
VRDI	Verde Repeater	4.71	72	P	Pn	04 43 02.5	-1.8
CHGN	Chignik	4.85	221	ePn	Pn	04 43 05.5	-0.5
CHGN				eS	Sn	04 43 57.9	-3.0
WRH	Wood River Hil	4.89	24	P	Pn	04 43 05.5	-1.0
MCARA	McCarthy VSAT	4.94	71	P	Pn	04 43 05.9	-1.3
MLY	Manley	5.03	10	P	Pn	04 43 07.9	-0.6
HDA	Harding Lake	5.10	30	P	Pn	04 43 09.1	-0.2
CCB	Clear Creek Bu	5.10	25	P	Pn	04 43 08.5	-0.9
ISLE	Juniper Island	5.19	80	P	Pn	04 43 08.8	-1.9
KIAG	Kiagna River	5.20	76	P	Pn	04 43 09.5	-1.4
BALM	Baldy	5.22	75	P	Pn	04 43 09.3	-1.7
PS08	TAPS Pump Stn8	5.24	29	P	Pn	04 43 10.9	-0.3
COLA	College	5.29	23	ePn	Pn	04 43 11.8	-0.1
COLA				eS	Sn	04 44 06.4	-5.1
MDM	Murphy Dome	5.30	21	P	Pn	04 43 11.5	-0.6
IL1	Eielson Array	5.41	28	P	Pn	04 43 13.2	-0.5
ILAR	Eielson Array	5.41	28	P	Pn	04 43 13.1	-0.5
	6.0nm,0.3s,baz=212,slow=13,SNR=201						
ILAR				S	Sn	04 44 11.5	-3.0
	2.8nm,0.3s,baz=211,slow=21,SNR=7.3						
DOT	Dot Lake	5.43	45	P	Pn	04 43 13.3	-0.6
BARN	Barnard Glacie	5.55	75	P	Pn	04 43 14.2	-1.4
IM3	Indian Mountai	5.92	356	P	Pn	04 43 20.8	+0.3
BCA3	Beaver Creek A	6.01	56	P	Pn	04 43 21.2	-0.6
EGAK	Eagle	7.12	44	P	Pn	04 43 35.9	-0.9
COLD	Coldfoot	7.24	8	ePn	Pn	04 43 38.5	+0.2
	5.2nm,0.6s						
DAWY	Dawson	7.42	52	P	Pn	04 43 40.4	-0.4
BM3	Burnt Mountain	8.17	23	P	Pn	04 43 49.5	-1.6
SKAG	Skagway	8.81	87	ePn	Pn	04 43 60.0	+0.3
	14nm,0.6s						
SKAG				eS	Sn	04 45 38.4	+1.3
INK	Inuvik	11.68	37	P	Pn	04 44 39.1	+0.6
	0.2nm,0.3s,baz=251,slow=16,SNR=7.9						
DLBC	Dease Lake	11.73	88	P	Pn	04 44 41.9	+2.6
	3.0nm,0.3s,baz=267,slow=6.7,SNR=41						
DLBC				S	Sn	04 46 47.6	-0.5
	1.5nm,0.3s,baz=130,slow=26,SNR=7.0						
DLBC	Dease Lake	11.73	88	ePn	Pn	04 44 39.9	+0.6
	9.1nm,0.4s						
DLBC				eS	Sn	04 46 47.0	-1.1
YKA	Yellowknife Ar	18.29	66	P	P	04 46 01.3	+0.3
	0.2nm,0.3s,baz=276,slow=9.9,SNR=51						
YKA				PcP	PcP	04 50 27.2	-0.9
	0.0nm,0.3s,baz=304,slow=1.7,SNR=4.6						
NEW	Newport	23.66	104	P	P	04 46 59.6	+2.2
	2.7nm,0.8s,baz=296,slow=11,SNR=4.0						
RES	Resolute Bay	25.15	32	P	P	04 47 11.8	+1.2
	0.5nm,0.6s,baz=284,slow=4.9,SNR=4.0						
YBH	Yreka Blue Hor	26.04	121	P	P	04 47 21.7	+2.6
	2.3nm,1.0s,baz=159,slow=9.2,SNR=3.0						
NVAR	Mina Array Bea	30.66	119	P	P	04 48 01.7	+1.3
	0.7nm,0.8s,baz=295,slow=7.4,SNR=5.8						
PDAR	Pinedale Array	31.30	104	P	P	04 48 07.3	+1.4
	0.8nm,0.8s,baz=298,slow=4.8,SNR=6.1						
TXAR	Lajitas Array	44.90	111	P	P	04 50 01.1	+1.2
	0.5nm,0.7s,baz=334,slow=8.3,SNR=5.2						
KSRS	Korea Array	53.28	283	P	P	04 51 04.0	+0.5
	1.2nm,0.5s,baz=37,slow=7.2,SNR=5.4						
KSAR	Wonju Array Be	53.31	283	P	P	04 51 04.0	+0.3
SONM	Songino Array	54.83	306	P	P	04 51 15.5	+0.7
	2.4nm,0.7s,baz=52,slow=7.4,SNR=8.6						
ZALV	Zalesovo Beam	57.36	324	P	P	04 51 31.8	-0.8
	1.3nm,0.4s,baz=23,slow=5.2,SNR=4.5						
KURK	Kurchatov	62.01	326	P	P	04 52 04.0	-0.4
BVAR	Borovoye Array	62.03	332	P	P	04 52 03.3	-1.3
	1.1nm,0.6s,baz=77,slow=4.7,SNR=4.1						
KURBB	Kurchatov Arra	62.12	326	P	P	04 52 04.0	-1.1
	1.1nm,0.7s,baz=28,slow=5.9,SNR=3.6						
MKAR	Makanchi Array	64.43	321	P	P	04 52 19.4	-1.1
	0.2nm,0.6s,baz=50,slow=9.6,SNR=2.6						
BOSA	Boshof	148.48	3	PKPbc	PKPbc	05 01 28.6	-1.4
	1.3nm,0.5s,baz=304,slow=1.8,SNR=5.8						

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*IDC **05** 04:42:27.4±0.7, 35°.70N×143°.51E, h0km, mb3.9/15, mb1 4.1/18, mb1mx3.9/66, mbtmp4.0/18, ML3.8/3, MS3.0/1, Ms1 3.0/1, ms1mx2.5/43, Error ellipse: s-maj=18.2km s-min=15.8km az=142.0*

*ISCJB **05** 04:42:30.4±0.6, 35°.66N±0°.07×143°.41E±0°.06, h33km, mb4.2/19, Error ellipse: s-maj=10.4km s-min=6.6km az=157.3*

*NEIC **05** 04:42:31.0±3.2, 35°.71N×143°.50E, h23km±22km, mb4.1/1, Error ellipse: s-maj=11.8km s-min=9.1km az=142.0*

ISC 05 04:42:32.5±0.7**, 35°.7N**±0°.1×**143°.44E**±0°.08**, h35km, n36, σ0^{s}71**/30**, mb4.0**/19**, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
JHJ	Hachijo jima 2	3.95	231	Pn	Pn	04 43 29.9	-0.6
	34nm,0.3s,baz=13,slow=19,SNR=7.6						
JHJ				Sn	Sn	04 44 14.8	-0.8
	78nm,0.3s,baz=46,slow=22,SNR=13						
MJAR	Matsushiro Arr	4.33	283	Pn	Pn	04 43 35.7	-0.1
	6.2nm,0.3s,baz=100,slow=9.4,SNR=50						
MJAR				LR	LR	04 45 26.3	
	comp=Z,205nm,20.3s,baz=105,slow=41						
MAJO	Matsushiro	4.33	283	eP	Pn	04 43 35.5	-0.3
MAJO	Matsushiro	4.33	283	ePn	Pn	04 43 35.7	0.0
MAJO				eS	Sn	04 44 24.3	-0.7
MAT	Matsushiro	4.33	283	P	Pn	04 43 34.7	-1.1
MAT				eS	Sn	04 44 14.1	-11
ERM	Erimo	6.34	358	ePn	Pn	04 43 58.3	-5.1
ERM				eS	Sn	04 44 59.3	-15
KSRS	Korea Array	12.61	283	Pn	Pn	04 45 30.0	+0.8
	0.3nm,0.3s,baz=232,slow=6.2,SNR=2.9						
KSAR	Wonju Array Be	12.64	283	Pn	Pn	04 45 30.0	+0.4
PETK	Petropavlovsk-	20.13	26	P	P	04 47 01.4	-1.8
	0.7nm,0.3s,baz=12,slow=16,SNR=3.6						
H11N2	WAKE ISLAND Hy	26.04	121	T	T	05 15 22.1	
	baz=314,slow=75,SNR=8.3						
H11N1	WAKE ISLAND Hy	26.05	121	T	T	05 15 25.0	
	baz=314,slow=75,SNR=9.4						
H11N3	WAKE ISLAND Hy	26.06	121	T	T	05 15 24.2	
	baz=314,slow=75,SNR=5.7						
H11S1	WAKE ISLAND Hy	26.74	124	T	T	05 16 17.9	
	baz=316,slow=76,SNR=8.1						
H11S3	WAKE ISLAND Hy	26.74	124	T	T	05 16 18.1	
	baz=316,slow=76,SNR=8.4						
H11S2	WAKE ISLAND Hy	26.76	124	T	T	05 16 18.1	
	baz=316,slow=76,SNR=8.5						
SEY	Seymchan	27.85	9	P	P	04 48 18.8	+0.4
	1.7nm,0.6s,baz=181,slow=13,SNR=2.1						
SONM	Songino Array	29.91	306	P	P	04 48 38.0	+1.0
	0.6nm,0.5s,baz=92,slow=4.5,SNR=3.2						
ZALV	Zalesovo Beam	44.04	313	P	P	04 50 37.1	+0.6
	2.3nm,0.8s,baz=98,slow=6.9,SNR=4.1						
MKAR	Makanchi Array	46.23	304	P	P	04 51 00.3	+6.2
	0.9nm,0.7s,baz=85,slow=11,SNR=5.0						
KURK	Kurchatov	48.06	309	eP	P	04 51 08.6	+0.3
	10nm,0.7s						
KURBB	Kurchatov Arra	48.13	309	P	P	04 51 09.0	+0.2
	3.6nm,0.8s,baz=82,slow=7.9,SNR=18						
ILAR	Eielson Array	49.78	32	P	P	04 51 21.2	-0.1
	1.0nm,0.9s,baz=270,slow=5.9,SNR=7.3						
BVAR	Borovoye Array	52.70	313	P	P	04 51 43.7	+0.4
	1.0nm,0.6s,baz=79,slow=7.7,SNR=5.0						
INK	Inuvik	54.86	27	P	P	04 51 58.5	-0.3
	0.6nm,0.7s,baz=277,slow=5.8,SNR=4.3						
WRA	Warramunga Arr	55.97	190	P	P	04 52 08.3	+1.0
	1.7nm,0.7s,baz=9.2,slow=7.4,SNR=6.6						
ARU	Arti	58.47	320	P	P	04 52 24.2	-0.4
	7.7nm,0.2s,baz=65,slow=8.7,SNR=2.7						
ASAR	Alice Springs	59.70	190	P	P	04 52 33.8	+0.3
	1.1nm,0.7s,baz=8.6,slow=5.3,SNR=8.0						
ABKAR	Akbulak array	60.07	311	eP	P	04 52 35.9	0.0
	0.7nm,0.5s						
AKTO	Aktyubinsk	60.80	313	P	P	04 52 40.6	-0.2
	1.3nm,0.6s,baz=131,slow=1.0,SNR=3.5						
YKA	Yellowknife Ar	64.16	30	P	P	04 53 02.5	-0.5
	0.5nm,0.8s,baz=298,slow=6.8,SNR=8.6						
FINES	FINESS Array B	70.78	333	P	P	04 53 44.5	-0.3
	165nm,1.1s,baz=332,slow=37,SNR=2.6						
NVAR	Mina Array Bea	74.49	54	P	P	04 54 08.5	+0.9
	1.1nm,0.6s,baz=301,slow=6.2,SNR=8.3						
NOA	NORSAR Array B	76.07	338	P	P	04 54 17.1	+1.1
	1.1nm,0.7s,baz=39,slow=5.7,SNR=3.4						
PDAR	Pinedale Array	77.44	46	P	P	04 54 24.6	+0.1
	0.8nm,0.5s,baz=298,slow=1.0,SNR=5.9						
TORD	Torodi Ar. Bea	119.45	316	PKP	PKPdf	05 01 17.8	-1.1
	1.0nm,1.1s,baz=270,slow=3.0,SNR=3.2						
LPAZ	La Paz	145.90	64	PKPbc	PKPbc	05 02 09.3	-0.2
	0.7nm,0.7s,baz=56,slow=6.9,SNR=3.1						

IDC 05 04:46:10.2±1.4**, 38°.56N**×**143°.28E, h0km, mb3.6**/4**, mb1 3.8**/5**, mb1mx3.4**/63**, mbtmp3.5**/5**, ML3.2**/1**, Error ellipse: s-maj=34.2km s-min=28.3km az=108.0, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
MJAR	Matsushiro Arr	4.50	245	Pn	Pn	04 47 18.2	-1.5
	1.2nm,0.3s,baz=42,slow=11,SNR=7.2						
MKAR	Makanchi Array	44.58	301	P	P	04 54 23.9	0.0
	0.3nm,0.7s,baz=83,slow=12,SNR=3.3						
KURBB	Kurchatov Arra	46.25	307	P	P	04 54 37.3	+0.2
	0.4nm,0.4s,baz=78,slow=8.4,SNR=2.9						
ILAR	Eielson Array	47.42	33	P	P	04 54 45.5	-0.5
	0.8nm,0.8s,baz=266,slow=5.4,SNR=5.7						
WRA	Warramunga Arr	58.79	190	P	P	04 56 10.4	+0.2
	0.5nm,0.4s,baz=5.9,slow=7.0,SNR=2.9						

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*ISCJB **05** 04:48:35.3±1.0, 5°.35S±0°.08×147°.2E±0°.2, h170km, mb3.5/5, Error ellipse: s-maj=28.7km s-min=11.3km az=4.4*

*IDC **05** 04:48:37.5±3.7, 5°.51S×147°.44E, h187km±42km, mb3.4/5, mb1 3.6/7, mb1mx3.3/42, mbtmp3.8/7, Error ellipse: s-maj=58.1km s-min=23.1km az=134.0*

ISC 05 04:48:36.3±1.0**, 5°.34S**±0°.10×**147°.3E**±0°.2**, h170km, n8, σ1^{s}19**/9**, mb3.4**/5**, Eastern New Guinea region**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
PMG	Port Moresby	4.04	181	P	Pn	04 49 39.1	+1.4
	4.0nm,0.3s,baz=4.5,slow=6.2,SNR=4.0						
PMG				S	Sn	04 50 24.2	-1.4
	20nm,0.3s,baz=202,slow=22,SNR=13						
WRA	Warramunga Arr	19.20	220	P	P	04 52 46.8	-0.6
	1.7nm,0.3s,baz=44,slow=11,SNR=18						
ASAR	Alice Springs	22.31	214	P	P	04 53 19.4	-0.6
	2.9nm,0.8s,baz=47,slow=9.1,SNR=18						
FITZ	Fitzroy Crossi	24.64	237	P	P	04 53 42.3	+0.9
	6.6nm,0.5s,baz=56,slow=9.0,SNR=20						
MKAR	Makanchi Array	77.16	320	P	P	05 00 11.6	+0.2
	0.1nm,0.4s,baz=93,slow=8.7,SNR=1.9						
ILAR	Eielson Array	84.78	23	P	P	05 00 50.2	-1.0
	0.4nm,0.7s,baz=257,slow=6.0,SNR=4.3						
YKA	Yellowknife Ar	98.47	28	P	P	05 01 55.7	+0.8
	0.1nm,0.8s,baz=275,slow=4.9,SNR=2.8						
TORD	Torodi Ar. Bea	145.18	285	PKPbc	PKPbc	05 07 53.6	-1.1
	0.4nm,0.5s,baz=62,slow=3.4,SNR=11						

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*CSEM **05** 04:56:45.5±1.1, 36°.23N×28°.57E, h2km, MD2.6, Error ellipse: s-maj=28.1km s-min=8.8km az=36.0*

*DDA **05** 04:56:46.5, 36°.33N×28°.62E, h7km, Md2.6*

*ISCJB **05** 04:56:48.2±1.5, 36°.43N±0°.08×28°.88E±0°.08, h14km, Error ellipse: s-maj=13.2km s-min=7.2km az=28.1*

ISC 05 04:56:47.7±1.7**, 36°.42N**±0°.09×**28°.82E**±0°.07**, h14km, n10, σ0^{s}76**/17**, Dodecanese Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
FETY	Fethiye	0.30	44	ePG	Pg	04 56 53.2	-0.9
FETY				eSG	Sg	04 56 57.8	-0.5
FETY	Fethiye	0.30	44	ePg	Pg	04 56 53.2	-0.9
TURN	Turunc	0.49	339	i P	Pb	04 56 58.4	+0.3
TURN				i S	Sb	04 57 06.0	+0.9
TURN	Turunc	0.49	339	P	Pb	04 56 58.4	+0.3
TURN				S	Sb	04 57 06.0	+0.9
AKAS	Kas	0.66	106	i P	Pb	04 57 01.0	0.0
AKAS				i S	Sn	04 57 13.9	+1.0
AKAS	Kas	0.66	106	P	Pb	04 57 01.0	0.0
AKAS				S	Sn	04 57 13.9	+1.0
YER	Yerkesik	0.84	329	ePG	Pg	04 57 02.9	-1.1
YER	Yerkesik	0.84	329	ePg	Pg	04 57 02.9	-1.1
AYDN	Tasoluk	1.45	329	i P	Pb	04 57 14.7	+0.1
AYDN				i S	Sb	04 57 33.4	+0.4
AYDN	Tasoluk	1.45	329	P	Pb	04 57 14.7	+0.1
AYDN				S	Sb	04 57 33.4	+0.4

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*IDC **05** 04:57:25.3±2.0, 20°.09S×178°.02W, h548km±23km, mb3.4/12, mb1 3.6/14, mb1mx3.4/33, mbtmp4.3/14, Error ellipse: s-maj=19.0km s-min=13.0km az=137.0*

*ISCJB **05** 04:57:26.0±0.5, 20°.1S±0°.1×178°.1W±0°.1, h569km, mb3.7/12, Error ellipse: s-maj=16.3km s-min=12.8km az=20.5*

ISC 05 04:57:26.7±0.6**, 20°.1S**±0°.1×**177°.9W**±0°.1**, h569km, n26, σ1^{s}09**/27**, mb3.8**/12**, 1D, Fiji Islands region**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
AFI	Afiamalu	8.49	45	P	P	04 59 27.5	-2.5
	4.0nm,0.3s,baz=273,slow=21,SNR=3.0						
URZ	Urewera	18.62	192	P	P	05 01 07.4	-1.7
	4.8nm,0.3s,baz=288,slow=3.2,SNR=14						
ASAR	Alice Springs	44.69	256	P	P	05 04 49.4	-0.6
	3.2nm,0.6s,baz=88,slow=8.4,SNR=33						
ASAR				PcP	PcP	05 06 19.9	-0.2
	0.6nm,0.6s,baz=100,slow=4.7,SNR=4.1						
ASAR				S	S	05 10 44.4	-1.5
	0.5nm,0.6s,baz=83,slow=16,SNR=4.2						
WRA	Warramunga Arr	44.73	262	P	P	05 04 49.4	-1.0
	2.8nm,0.3s,baz=98,slow=8.2,SNR=18						
VNDA	Vanda	58.34	185	P	P	05 06 28.3	+1.0
	0.9nm,0.6s,baz=346,slow=7.6,SNR=7.0						
MJAR	Matsushiro Arr	69.91	324	P	P	05 07 41.4	+0.2
	1.6nm,0.4s,baz=154,slow=6.0,SNR=4.5						
USRK	Ussuriysk Ar.	78.66	326	P	P	05 08 31.6	+1.4
	2.7nm,0.7s,baz=155,slow=2.8,SNR=5.9						
KLR	Kul'dur	82.20	329	P	P	05 08 49.5	+0.9
	1.0nm,0.7s,baz=60,slow=2.9,SNR=4.4						
SEY	Seymchan	85.98	347	P	P	05 09 06.8	0.0
	3.0nm,0.6s,baz=137,slow=5.8,SNR=15						
TXAR	Lajitas Array	86.77	57	P	P	05 09 13.3	+1.9
	0.5nm,0.6s,baz=224,slow=6.5,SNR=5.7						
ILAR	Eielson Array	87.89	13	P	P	05 09 15.0	-0.7
	1.4nm,0.8s,baz=216,slow=5.3,SNR=13						
SNAA	Sanae	88.43	178	P	P	05 09 19.7	+1.2
VNA3	Neumayer Olymp	88.56	176	P	P	05 09 18.7	-0.3
PDAR	Pinedale Array	88.61	43	P	P	05 09 20.5	+0.6
	0.6nm,0.6s,baz=210,slow=2.3,SNR=6.8						
VNA2	Neumayer--Watz	89.00	177	P	P	05 09 20.6	-0.4
	baz=216,slow=3.6						
VNA1	Neumayer--Stat	89.23	177	P	P	05 09 22.8	+0.8
CMAR	Chiang Mai Arr	90.04	290	P	P	05 09 28.5	+1.7
	0.9nm,0.4s,baz=117,slow=3.0,SNR=10						
YKA	Yellowknife Ar	96.10	25	P	P	05 09 53.4	0.0
	0.1nm,0.6s,baz=242,slow=4.7,SNR=3.9						
MKAR	Makanchi Array	110.96	314	PKiKP	PKiKP	05 14 54.9	-0.9
	0.3nm,0.6s,baz=68,slow=1.7,SNR=3.3						
ARCES	ARCESS Array B	128.52	350	PKP	PKPdf	05 15 28.6	-0.1
	1.8nm,0.8s,baz=336,slow=2.7,SNR=4.4						
FINES	FINESS Array B	135.39	344	PKP	PKPdf	05 15 40.6	-1.2
	0.7nm,0.7s,baz=126,slow=5.5,SNR=4.1						
AKASG	Malin Array Be	142.68	331	PKhKP	PKPpre	05 15 51.8	
	1.5nm,0.4s,baz=41,slow=4.4,SNR=23						
BRTR	Keskin Array B	146.61	313	PKPbc	PKPbc	05 16 05.2	-0.2
	1.2nm,0.6s,baz=156,slow=4.6,SNR=5.8						
CLL	Collm	147.67	347 ⇓	iPKP	PKPbc	05 16 07.8	+0.3
	comp=Z,7.0nm,0.6s						
GERES	GERESS Array B	149.81	345	PKPbc	PKPbc	05 16 13.2	+0.2
	comp=Z,1.0nm,0.6s,baz=48,slow=2.0,SNR=7.8						
TORD	Torodi Ar. Bea	173.10	177	PKPab	PKPab	05 18 03.1	0.0
	comp=Z,0.1nm,0.4s,baz=188,slow=4.3,SNR=2.7						

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*IDC **05** 04:58:27.1±0.9, 36°.02N×142°.20E, h0km, mb3.5/10, mb1 3.8/11, mb1mx3.7/34, mbtmp3.5/11, ML3.6/1, Error ellipse: s-maj=26.1km s-min=21.3km az=146.0*

*ISCJB **05** 04:58:29.0±0.5, 36°.15N±0°.04×142°.20E±0°.06, h23km, mb3.5/10, Error ellipse: s-maj=6.9km s-min=5.8km az=43.4*

*JMA **05** 04:58:29.5±0.2, 36°.17N×142°.18E, h69km, M3.5*

ISC 05 04:58:30.9±0.7**, 36°.17N**±0°.05×**142°.15E**±0°.08**, h23km, n30, σ1^{s}00**/27**, mb3.5**/10**, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
CHOJ	Chosi	1.15	246	P	Pn	04 58 50.3	-1.2
CHOJ				eS	Sn	04 59 06.7	+0.2
JHO	Hitachi	1.35	290	P	Pn	04 58 53.0	-1.3
ONAJ	Iwakimizuishiy	1.43	311	P	Pn	04 58 53.8	-1.7
JFK	Kawauchi	1.57	320	P	Pn	04 58 56.2	-1.3
JFK				S	Sn	04 59 16.1	-1.1
BSO1	Boso 1	1.79	213	P	Pn	04 58 59.0	-0.9
BSO1				S	Sn	04 59 21.9	+0.3
BSO3	Boso 3	1.91	225	P	Pn	04 59 00.7	-1.1
JFT	Otama	1.98	313	P	Pn	04 59 02.9	-0.2
JMM	Marumori	2.01	328	P	Pn	04 59 02.2	-1.2
JAG	Ashikaga	2.19	277	P	Pn	04 59 05.0	-0.9
JRY	Ryogami san	2.63	268	P	Pn	04 59 10.8	-1.3
JOD2	Odawara 2	2.65	251	P	Pn	04 59 11.8	-0.4
MJAR	Matsushiro Arr	3.20	278	Pn	Pn	04 59 19.4	-0.4
	6.6nm,0.3s,baz=207,slow=15,SNR=18						
MAT	Matsushiro	3.21	278	P	Pn	04 59 20.0	+0.1
MAT				eS	Sn	04 59 58.9	+1.5
USRK	Ussuriysk Ar.	11.16	319	Pn	Pn	05 01 17.7	+8.7
	0.2nm,0.3s,baz=106,slow=12,SNR=4.1						
H11N2	WAKE ISLAND Hy	27.20	120	T	T	05 32 45.4	
	baz=313,slow=75,SNR=12						
H11N1	WAKE ISLAND Hy	27.21	120	T	T	05 32 48.5	
	baz=313,slow=75,SNR=8.9						
H11N3	WAKE ISLAND Hy	27.22	120	T	T	05 32 49.1	
	baz=313,slow=75,SNR=9.2						
H11S1	WAKE ISLAND Hy	27.89	123	T	T	05 33 38.6	
	baz=314,slow=76,SNR=7.2						
H11S3	WAKE ISLAND Hy	27.89	123	T	T	05 33 36.6	
	baz=314,slow=76,SNR=7.3						
H11S2	WAKE ISLAND Hy	27.91	123	T	T	05 33 36.9	
	baz=314,slow=76,SNR=8.1						
SONM	Songino Array	28.76	305	P	P	05 04 27.5	+0.7
	0.7nm,0.7s,baz=108,slow=8.6,SNR=3.6						
MKAR	Makanchi Array	45.08	303	P	P	05 06 45.5	+0.4
	0.7nm,0.7s,baz=90,slow=9.5,SNR=9.4						
ILAR	Eielson Array	49.91	32	P	P	05 07 22.2	-0.1
	0.3nm,0.7s,baz=257,slow=6.7,SNR=3.6						
INK	Inuvik	54.89	27	P	P	05 08 00.0	+0.9
	0.6nm,0.5s,baz=300,slow=7.0,SNR=6.3						
WRA	Warramunga Arr	56.29	189	P	P	05 08 08.5	-1.2
	0.6nm,0.5s,baz=7.0,slow=7.6,SNR=3.2						
ASAR	Alice Springs	60.02	189	P	P	05 08 34.4	-1.4
	0.3nm,0.5s,baz=3.8,slow=6.9,SNR=2.9						
YKA	Yellowknife Ar	64.26	30	P	P	05 09 03.8	0.0
	0.3nm,0.7s,baz=300,slow=6.7,SNR=8.0						
NVAR	Mina Array Bea	75.03	53	P	P	05 10 11.8	+0.8
	0.4nm,0.7s,baz=256,slow=6.0,SNR=3.2						
PDAR	Pinedale Array	77.85	46	P	P	05 10 27.5	+0.6
	0.2nm,0.6s,baz=308,slow=7.3,SNR=2.6						
TXAR	Lajitas Array	90.17	53	P	P	05 11 30.1	+0.4
	0.1nm,0.6s,baz=215,slow=35,SNR=2.5						

IDC 05 04:59:15.3±4.0**, 29°.36S**×**177°.58W, h0km, mb3.9**/3**, mb1 4.1**/3**, mb1mx3.7**/28**, mbtmp3.9**/3**, Error ellipse: s-maj=213.6km s-min=45.3km az=157.0, Kermadec Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
STKA	Stephens Creek	35.08	255	P	P	05 06 10.0	-0.2
	1.0nm,0.6s,baz=67,slow=7.7,SNR=2.7						
ASAR	Alice Springs	43.54	266	P	P	05 07 20.9	-0.2
	0.3nm,0.3s,baz=101,slow=8.6,SNR=4.1						
WRA	Warramunga Arr	44.43	271	P	P	05 07 28.4	+0.1
	1.2nm,0.3s,baz=111,slow=7.9,SNR=3.6						
FINES	FINESS Array B	144.29	341	PKP	PKPbc	05 18 51.4	+0.5
	1.5nm,0.4s,baz=52,slow=3.6,SNR=15						
AKASG	Malin Array Be	150.69	324	PKPbc	PKPbc	05 19 09.0	-0.1
	0.3nm,0.5s,baz=39,slow=3.3,SNR=3.8						

JMA 05 05:08:27.1±0.2**, 37°.09N**×**143°.65E, h43km, M3.5, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
JFK	Kawauchi	2.23	278	S	Sn	05 09 29.5	+1.5
JIO	Ouri	2.28	307	P	Pn	05 09 03.5	+1.3
JIO				S	Sn	05 09 30.3	+1.3
ONAJ	Iwakimizuishiy	2.28	271	P	Pn	05 09 03.6	+1.3
ONAJ				S	Sn	05 09 30.3	+1.1
JMM	Marumori	2.40	290	P	Pn	05 09 05.3	+1.4
JMM				eS	Sn	05 09 33.9	+1.8
JHO	Hitachi	2.52	260	S	Sn	05 09 36.6	+1.7
OFUJ	Ofunato	2.53	322	P	Pn	05 09 06.4	+0.8
JFT	Otama	2.68	280	S	Sn	05 09 41.5	+2.6
JOU	Okura	2.69	299	S	Sn	05 09 41.6	+2.4
JOM	Ohasama	3.02	323	P	Pn	05 09 14.2	+1.8
JOM				eS	Sn	05 09 48.3	+1.1
JYK	Kaneyama	3.18	306	P	Pn	05 09 16.5	+2.0
JYK				eS	Sn	05 09 54.1	+2.9
MAT	Matsushiro	4.40	265	P	Pn	05 09 33.4	+2.0
MAT				eS	Sn	05 10 24.9	+3.5

IDC 05 05:20:38.8±2.9**, 36°.72N**×**143°.60E, h0km, mb3.6**/4**, mb1 3.7**/5**, mb1mx3.4**/41**, mbtmp3.5**/5**, ML3.2**/1**, MS3.1**/1**, Ms1 3.1**/1**, ms1mx2.3**/60**, Error ellipse: s-maj=82.9km s-min=26.9km az=58.0, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
MJAR	Matsushiro Arr	4.34	269	Pn	Pn	05 21 45.7	-0.3
	1.4nm,0.3s,baz=45,slow=18,SNR=7.1						
MAT	Matsushiro	4.34	269	P	Pn	05 21 44.1	-1.9
MAT				S	Sn	05 22 31.3	-6.0
JCJ	Chichijima	9.67	188	LR	LR	05 26 54.0	
	comp=Z,106nm,21.2s,slow=39						
SONM	Songino Array	29.41	304	P	P	05 26 43.2	-0.7

Code	Station Name	Δ°	AZ°	Op	ISC	Time	Res
	0.5nm,0.7s,baz=79,slow=7.6,SNR=3.0						
MKAR	Makanchi Array	45.76	303	P	P	05 29 02.6	+0.7
	0.4nm,0.7s,baz=88,slow=14,SNR=4.4						
WRA	Warramunga Arr	57.03	190	P	P	05 30 26.3	-0.2
	0.7nm,0.4s,baz=12,slow=7.4,SNR=4.6						
ASAR	Alice Springs	60.75	190	P	P	05 30 52.3	0.0
	0.4nm,0.7s,baz=12,slow=6.4,SNR=4.5						

MAN 05 05:25:55,7°.86N×124°.99E,h1km,mb4.6,ML3.5,MS3.3, 1C-1D,Mindanao

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BUKP	Musuan	0.08	75	eP	Pg	05 25 55.4	-1.1
BUKP				eS	Sg	05 25 57.5	-0.1
DMPH	Davao City--Mi	0.93	146	eP	Pg	05 26 13.2	+0.4
DMPH				eS	Sn	05 26 30.8	+1.6
CTBH	Cotabato--PC H	0.97	229⇓	iP	Pg	05 26 14.0	+0.4
CTBH				i S	Sn	05 26 30.3	+0.1
BIPH	Bislig	1.40	77⇑	iP	Pn	05 26 20.7	-0.9
BIPH				i S	Sg	05 26 39.4	-0.6
PAGZ	Pagadian	1.59	270	eP	Pn	05 26 24.7	+0.4
PAGZ				eS	Sn	05 26 41.7	-3.8

IDC 05 05:26:02.9±0.9,59°.82S×26°.25W,h0km,mb4.1/5, mb1 4.2/5,mb1mx3.8/24,mbtmp4.1/5,MS3.6/1,Ms1 3.7/1, ms1mx3.0/20,Error ellipse: s-maj=44.7km s-min=25.0km az=6.0

ISCJB 05 05:26:06.8±0.8,59°.8S±0°.1×26°.2W±0°.3,h35km,mb4.1/5, MS3.6/1,Error ellipse: s-maj=25.0km s-min=11.4km az=148.9

ISC 05 05:26:08.3±0.7,59°.7S±0°.1×26°.3W±0°.2,h35km,n22, σ0s.97/17,mb4.1/5,South Sandwich Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
VNA1	Neumayer--Stat	13.24	153	P	Pn	05 29 14.5	+1.1
VNA3	Neumayer Olymp	13.39	156	P	Pn	05 29 15.4	-0.1
VNA2	Neumayer--Watz	13.64	153	P	Pn	05 29 18.6	-0.3
	baz=313,slow=15						
SNAA	Sanae	15.22	151	P	Pn	05 29 40.3	0.0
PLCA	Paso Flores	33.28	285	P	P	05 32 42.0	-0.3
	1.2nm,0.8s,baz=224,slow=22,SNR=2.9						
H10S2	ASCENSION HYDR	51.40	15	T	T	06 30 54.1	
	baz=188,slow=74,SNR=3.4						
H10S3	ASCENSION HYDR	51.41	15	T	T	06 30 51.7	
	baz=188,slow=74,SNR=3.3						
H10S1	ASCENSION HYDR	51.42	15	T	T	06 30 55.8	
	baz=188,slow=74,SNR=4.1						
H10N1	ASCENSION HYDR	52.52	15	T	T	06 32 08.9	
H10N3	ASCENSION HYDR	52.52	15	T	T	06 32 08.9	
H10N2	ASCENSION HYDR	52.54	15	T	T	06 32 08.9	
LPAZ	La Paz	52.94	307	P	P	05 35 22.6	+1.0
	0.8nm,0.4s,baz=70,slow=3.8,SNR=8.6						
LPAZ				LR	LR	06 00 41.7	
	comp=Z,57nm,18.7s,baz=166,slow=39						
MATP	Matopo	55.01	69	P	P	05 35 36.2	0.0
	2.0nm,0.7s,baz=345,slow=21,SNR=3.2						
TORD	Torodi Ar. Bea	76.04	28	P	P	05 37 52.5	+0.8
	1.4nm,0.4s,baz=199,slow=6.4,SNR=26						
ASAR	Alice Springs	95.34	162	P	P	05 39 29.4	+0.7
	0.5nm,0.6s,baz=178,slow=4.4,SNR=4.3						
FINES	FINESS Array B	127.39	29	PKP	PKPdf	05 45 07.7	+0.1
	0.8nm,0.7s,baz=183,slow=36,SNR=2.9						
ARCES	ARCESS Array B	134.16	23	PKP	PKPdf	05 45 21.4	+1.1
	3.0nm,0.9s,baz=217,slow=3.5,SNR=5.3						
KURBB	Kurchatov Arra	138.32	68	PKP	PKPdf	05 45 26.4	-2.1
	0.2nm,0.4s,baz=219,slow=1.2,SNR=2.1						
YKA	Yellowknife Ar	139.18	315	PKP	PKPdf	05 45 29.7	+0.1
	0.4nm,0.6s,baz=126,slow=2.4,SNR=14						
INK	Inuvik	148.89	317	PKPbc	PKPbc	05 45 49.9	-0.5
	0.8nm,0.6s,baz=102,slow=3.8,SNR=5.1						
SONM	Songino Array	150.27	92	PKP	PKPdf	05 45 48.0	-1.4
	0.7nm,0.8s,baz=202,slow=3.2,SNR=2.4						
SONM				PKPbc	PKPbc	05 45 54.5	-0.1
	0.5nm,0.6s,baz=160,slow=4.7,SNR=4.5						
ILAR	Eielson Array	152.81	306	PKPbc	PKPbc	05 45 58.5	-1.3
	0.2nm,0.4s,baz=113,slow=1.8,SNR=4.1						

ISCJB 05 05:32:46.7±0.5,27°.15N±0°.05×62°.50E±0°.06,h10km, mb4.0/18,Error ellipse: s-maj=8.8km s-min=5.0km az=42.8

IDC 05 05:32:47.1±1.1,27°.25N×62°.35E,h0km,mb4.0/16, mb1 4.1/19,mb1mx3.8/67,mbtmp4.0/19,ML3.9/3,Error ellipse: s-maj=21.5km s-min=17.8km az=155.0

CSEM 05 05:32:49.2±1.1,27°.09N×62°.66E,h20km,ML3.7,Error ellipse: s-maj=28.3km s-min=9.3km az=111.0

TEH 05 05:32:54.3,27°.18N×62°.43E,h36km,ML3.9

THR 05 05:32:55.9±0.6,27°.06N×61°.83E,h14km±12km,ML3.8

OMAN 05 05:32:57.2,27°.49N×62°.28E,h25km

DSN 05 05:33:04.9±1.7,26°.38N×61°.54E,h15km,ML3.9,Error ellipse: s-maj=36.8km s-min=12.6km az=175.0

ISC 05 05:32:48.2±0.6,27°.10N±0°.04×62°.33E±0°.06,h10km,n80, σ2s.58/85,mb4.0/18,Southern Iran

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHBR	Chabahar	2.24	228	ePn	Pb	05 33 29.8	+1.0
CHBR	Chabahar	2.24	228	ePN5	Pb	05 33 29.8	+1.0
CHBR				eSg	Sb	05 33 55.4	-1.2
CHBR				AML	AML	05 33 57.6	
	comp=N,580nm,0.3s						
CHBR	Chabahar	2.24	228	ePn	Pb	05 33 29.8	+1.0
CHBR				eSg	Sb	05 33 55.6	-1.0
ZHSF	Zahedan	2.85	332	ePn	Pb	05 33 40.8	+1.5
ZHSF	Zahedan	2.85	332	ePn	Pb	05 33 40.8	+1.5
NIAN	Nian	4.91	277	ePn	Pn	05 34 08.0	+5.8
NIAN	Nian	4.91	277	ePn	Pn	05 34 08.0	+5.8
CHMN	Cheshme madani	5.04	304	ePn	Pn	05 34 07.0	+2.8
CHMN	Cheshme madani	5.04	304	ePn	Pn	05 34 07.0	+2.8
WSAR	Wadi Sarin	5.11	222	Pn	Pn	05 34 08.5	+3.7
	comp=N,0.6nm,0.3s,baz=90,slow=7.5,SNR=5.7						
WSAR				Sn	Sn	05 35 00.0	-3.8
	comp=N,8.8nm,0.3s,baz=224,slow=19,SNR=20						
IBND	Bandar-abas	5.17	275	eSn	Sn	05 35 05.0	-0.4
IBND	Bandar-abas	5.17	275	eSn	Sn	05 35 05.0	-0.4
WBK	Wadi Bani Khal	5.42	215	Pn	Pn	05 34 10.7	+1.6
	SNR=8.3						
WBK				S	Sn	05 35 07.9	-3.7
	SNR=13						
WBK	Wadi Bani Khal	5.42	215	P	Pn	05 34 10.7	+1.6
	SNR=8.3						
WBK				S	Sn	05 35 07.9	-3.7
	SNR=13						
WBK	Wadi Bani Khal	5.42	215	Pn	Pn	05 34 10.7	+1.6
	SNR=8.3						
BNDS	Bandar-Abbas	5.49	274	ePn	Pn	05 34 13.7	+3.4
BNDS				AML	AML	05 35 17.9	
	comp=N,98nm,0.5s						
BNDS	Bandar-Abbas	5.49	274	ePn	Pn	05 34 13.7	+3.4
BANOM	Banah	5.53	259	i P	Pn	05 34 14.2	+3.4
	SNR=39						
BANOM				S	Sn	05 35 11.5	-2.9
BANOM	Banah	5.53	259	P	Pn	05 34 14.1	+3.4
	SNR=39						
BANOM	Banah	5.53	259	P	Pn	05 34 14.2	+3.4
	SNR=39						
BANOM	Banah	5.53	259	Pn	Pn	05 34 14.2	+3.4
	SNR=39						
NGRK	Negar Kerman	5.55	298	ePn	Pn	05 34 16.4	+5.2
NGRK	Negar Kerman	5.55	298	ePn	Pn	05 34 16.4	+5.2
KRBR	Kerman	5.68	302	ePn	Pn	05 34 17.5	+4.5
IDAH	Dahanechah	6.01	340	ePn	Pn	05 34 19.0	+1.5
IDAH				eAMB	AMB	05 34 20.4	
	comp=Z,420nm,0.1s						
IDAH	Dahanechah	6.01	340	ePn	Pn	05 34 19.0	+1.5
HATD	Hatta, Dubai	6.03	249	i P	Pn	05 34 20.3	+2.8
	SNR=10						
HATD				S	Sn	05 35 20.4	-6.1
HATD	Hatta, Dubai	6.03	249	P	Pn	05 34 20.3	+2.8
	SNR=10						
IKOO	Kooshah	6.04	332	ePn	Pn	05 34 19.3	+1.4
IKOO				eAMB	AMB	05 34 19.7	
	comp=Z,763nm,0.1s						
IKOO	Kooshah	6.04	332	ePn	Pn	05 34 19.3	+1.4
KHGB	Koh Gabri	6.09	304	ePn	Pn	05 34 22.8	+4.3
KHGB	Koh Gabri	6.09	304	ePn	Pn	05 34 22.8	+4.3
ASHO	Ashiyiah	6.14	248	i P	Pn	05 34 21.9	+2.7
	SNR=14						
ASHO	Ashiyiah	6.14	248	P	Pn	05 34 21.8	+2.7
	SNR=24						
ASHO	Ashiyiah	6.14	248	P	Pn	05 34 21.8	+2.7
	SNR=24						
ASHO	Ashiyiah	6.14	248	Pn	Pn	05 34 21.8	+2.7
	SNR=24						
ARQ	Araqi	6.46	236	P	Pn	05 34 29.7	+6.2
ARQ				S	Sn	05 35 39.8	+2.4
ARQ	Araqi	6.46	236	P	Pn	05 34 29.7	+6.2
ARQ				S	Sn	05 35 39.8	+2.4
IMON	Monand	6.49	340	ePn	Pn	05 34 25.6	+1.5
IMON				eAMB	AMB	05 34 28.2	
	comp=Z,492nm,0.1s						
IMON	Monand	6.49	340	ePn	Pn	05 34 25.6	+1.5
FAQ	Al Faqa, Dubai	6.51	250	i P	Pn	05 34 28.5	+4.4
	SNR=6.1						
FAQ	Al Faqa, Dubai	6.51	250	P	Pn	05 34 28.5	+4.4
	SNR=6.1						
ITEG	Tejag	6.56	333	ePn	Pn	05 34 26.4	+1.5
ITEG				eAMB	AMB	05 34 28.4	
	comp=Z,292nm,0.2s						
ITEG	Tejag	6.56	333	ePn	Pn	05 34 26.4	+1.5
ASUD	Al Ashush, Dub	6.78	250	P	Pn	05 34 32.5	+4.7
ASUD	Al Ashush, Dub	6.78	250	P	Pn	05 34 32.5	+4.7
GHIR	Ghir-Karzin	8.37	280	ePn	Pn	05 34 53.1	+3.3
GHIR	Ghir-Karzin	8.37	280	ePn	Pn	05 34 53.1	+3.3
IPAR	Pars	8.62	291	ePn	Pn	05 34 56.3	+3.0
IPAR				eSn	Sn	05 36 27.0	-3.7
IPAR				eAMB	AMB	05 36 30.1	
	comp=Z,153nm,0.2s						
IPAR	Pars	8.62	291	ePn	Pn	05 34 56.3	+3.0
IMYA	Miami	9.40	349	ePn	Pn	05 35 05.9	+1.9
IMYA	Miami	9.40	349	ePn	Pn	05 35 05.9	+1.9
IKAZ	Kazeroun	9.61	289	ePn	Pn	05 35 07.9	+0.9
IKAZ				eSn	Sn	05 36 49.6	-5.7
IKAZ				eAMB	AMB	05 36 56.2	
	comp=Z,803nm,0.2s						
IKAZ	Kazeroun	9.61	289	ePn	Pn	05 35 07.9	+0.9
IPAY	Payeh	9.74	344	ePn	Pn	05 35 10.2	+1.6
IPAY	Payeh	9.74	344	ePn	Pn	05 35 10.2	+1.6
THW	Thamme Wali	9.94	53	P	Pn	05 35 10.1	-1.0
GEYT	Alibeck	11.36	343	Pn	Pn	05 35 30.1	-0.6
	comp=Z,5.8nm,0.3s,baz=248,slow=16,SNR=3.7						
AAK	Ala-Archa	18.40	30	P	Pn	05 37 03.4	-0.2
	comp=Z,0.4nm,0.3s,baz=200,slow=6.1,SNR=7.3						
KBZ	Khabaz	22.85	322	P	P	05 37 53.5	+2.0
	comp=Z,3.9nm,0.8s,baz=134,slow=9.5,SNR=5.8						
AKTO	Aktyubinsk	23.53	353	P	P	05 37 56.7	-1.8
	comp=Z,2.2nm,0.5s,baz=170,slow=9.5,SNR=9.1						
MKAR	Makanchi Array	25.18	33	P	P	05 38 13.8	0.0
	comp=Z,0.5nm,0.5s,baz=210,slow=9.6,SNR=8.1						
KURBB	Kurchatov Arra	26.54	23	P	P	05 38 25.1	-0.9
	comp=Z,1.5nm,0.7s,baz=219,slow=9.0,SNR=19						
BVAR	Borovoye Array	26.58	11	P	P	05 38 25.3	-1.1
	comp=Z,0.8nm,0.3s,baz=198,slow=9.3,SNR=7.4						
BRTR	Keskin Array B	26.93	305	P	P	05 38 28.2	-1.7
	comp=Z,0.9nm,0.6s,baz=51,slow=18,SNR=3.4						
ZALV	Zalesovo Beam	31.53	26	P	P	05 39 08.8	-1.6
	comp=Z,0.7nm,0.4s,baz=234,slow=12,SNR=3.6						
AKASG	Malin Array Be	34.46	322	P	P	05 39 35.7	-0.3
	comp=Z,0.7nm,0.3s,baz=122,slow=8.3,SNR=12						
KOLS	Kolonicke sedl	37.76	316	eP	P	05 40 05.8	+1.5
FINES	FINESS Array B	42.03	335	P	P	05 40 39.1	-0.5
	comp=Z,8.4nm,0.4s,baz=132,slow=9.0,SNR=120						
PSI	Prapat	42.53	118	P	P	05 40 45.3	+0.9
	comp=Z,3.3nm,0.8s,baz=323,slow=9.4,SNR=5.7						
GERES	GERESS Array B	43.16	314	P	P	05 40 49.6	+0.4
	comp=Z,1.8nm,0.6s,baz=106,slow=8.5,SNR=16						
CLL	Collm	44.16	317	i P	P	05 40 57.9	+0.9
	comp=Z,17nm,1.1s						
HFS	Hagfors	46.59	329	P	P	05 41 15.9	-0.3
	comp=Z,2.2nm,0.4s,baz=117,slow=8.5,SNR=17						
ARCES	ARCESS Array B	47.53	343	P	P	05 41 22.8	-0.6
	comp=Z,2.7nm,0.7s,baz=146,slow=9.1,SNR=21						
NB2	NORSAR Subarra	48.07	329	P	P	05 41 26.3	-1.4
	comp=Z,0.9nm,0.5s,baz=111,slow=7.9						
NB2	NORSAR Subarra	48.07	329	P	P	05 41 26.3	-1.4
	comp=Z,0.9nm,0.5s,SNR=3.5						
NOA	NORSAR Array B	48.07	329	P	P	05 41 26.6	-1.2
	comp=Z,0.8nm,0.5s,baz=110,slow=7.6,SNR=3.5						
ESDC	Sonseca Array	55.62	301	P	P	05 42 24.1	-0.3
	comp=Z,0.4nm,0.4s,baz=65,slow=6.3,SNR=3.6						
TORD	Torodi Ar. Bea	58.12	269	P	P	05 42 42.5	+0.1
	comp=Z,0.8nm,0.5s,baz=62,slow=6.7,SNR=10						
YKA	Yellowknife Ar	90.68	359	P	P	05 45 51.0	+0.1
	comp=Z,0.2nm,0.6s,baz=357,slow=5.3,SNR=5.8						

NIED 05 05:35:00,36°.20N×143°.20E,h8km,Mw3.9 Best double couple: M₀7.55000×10¹⁴ NP1:φs8.00000°,δ26.00000°, λ-124.00000°. NP2:φs225.00000°,δ68.00000°, λ-74.00000°.

IDC 05 05:35:13.8±0.7,35°.92N×143°.52E,h0km,mb3.8/12, mb1 4.0/15,mb1mx3.8/69,mbtmp3.8/15,ML4.0/2,MS2.7/3, Ms1 2.7/3,ms1mx2.5/47,Error ellipse: s-maj=19.6km s-min=18.5km az=111.0

JMA 05 05:35:16.8±0.3,36°.21N×143°.23E,h53km,M3.5

ISCJB 05 05:35:17.0±0.6,35°.86N±0°.06×143°.18E±0°.07,h33km, mb3.8/12,Error ellipse: s-maj=9.3km s-min=7.9km az=172.2

ISC 05 05:35:18.1±0.9,36°.01N±0°.07×143°.23E±0°.09,h35km,n30, σ1s.84/15,mb3.7/12,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHO	Hitachi	2.23	286	P	Pn	05 35 51.6	-1.0
JHO				eS	Sn	05 36 17.2	-1.7
BSO1	Boso 1	2.29	234	P	Pn	05 35 54.0	+1.2
JAG	Ashikaga	3.08	279	P	Pn	05 36 04.2	-0.1
JMK	Ichinoseki	3.34	332	P	Pn	05 36 05.6	-2.2
JHJ	Hachijo jima 2	4.05	226	Pn	Pn	05 36 16.8	-0.8
	47nm,0.3s,baz=95,slow=22,SNR=2.7						
JHJ				Sn	Sn	05 36 59.8	-4.0
	114nm,0.3s,baz=56,slow=16,SNR=5.5						
MJAR	Matsushiro Arr	4.09	279	Pn	Pn	05 36 19.0	+0.9
	3.6nm,0.3s,baz=110,slow=9.2,SNR=18						
MJAR				LR	LR	05 38 08.5	
	comp=Z,76nm,19.5s,baz=120,slow=41						
MAT	Matsushiro	4.09	279	P	Pn	05 36 19.0	+0.8
MAT				S	Sn	05 36 28.9	-36
JNU	Nakatsue	10.58	258	LR	LR	05 41 57.2	
	comp=Z,45nm,19.4s,baz=116,slow=37						
USRK	Ussuriysk Ar.	11.86	317	Pn	Pn	05 38 08.8	+4.1
	0.2nm,0.3s,baz=110,slow=11,SNR=5.0						
KSRS	Korea Array	12.37	281	LR	LR	05 42 40.7	
	comp=Z,36nm,18.6s,baz=35,slow=35						
KLR	Kul'dur	15.65	331	Pn	P	05 39 02.8	+3.1
	0.2nm,0.3s,baz=134,slow=13,SNR=3.7						
H11N2	WAKE ISLAND Hy	26.37	122	T	T	06 08 14.8	
	baz=313,slow=75,SNR=17						
H11N1	WAKE ISLAND Hy	26.38	122	T	T	06 08 14.1	
	baz=313,slow=75,SNR=15						
H11N3	WAKE ISLAND Hy	26.39	122	T	T	06 08 16.3	
	baz=313,slow=75,SNR=13						
H11S1	WAKE ISLAND Hy	27.08	124	T	T	06 09 04.1	
	baz=316,slow=76,SNR=16						
H11S3	WAKE ISLAND Hy	27.08	124	T	T	06 09 04.4	
	baz=316,slow=76,SNR=13						
H11S2	WAKE ISLAND Hy	27.09	124	T	T	06 09 08.9	
	baz=316,slow=76,SNR=12						
SONM	Songino Array	29.57	305	P	P	05 41 23.4	+3.8
	1.0nm,0.7s,baz=95,slow=6.8,SNR=4.2						
MKAR	Makanchi Array	45.90	303	P	P	05 43 40.8	+3.7
	0.8nm,0.8s,baz=86,slow=10,SNR=8.5						
KURBB	Kurchatov Arra	47.78	309	P	P	05 43 53.3	+1.6
	1.5nm,0.9s,baz=83,slow=7.9,SNR=5.0						
ILAR	Eielson Array	49.58	32	P	P	05 44 04.7	-0.7
	0.2nm,0.6s,baz=262,slow=5.8,SNR=4.3						
CTA	Charters Tower	55.87	177	P	P	05 44 52.7	+0.5
	7.7nm,1.0s,baz=84,slow=23,SNR=3.3						
WRA	Warramunga Arr	56.28	190	P	P	05 44 55.4	+0.1
	2.0nm,0.7s,baz=13,slow=7.3,SNR=5.5						
ASAR	Alice Springs	60.01	190	P	P	05 45 22.4	+1.2
	1.4nm,0.8s,baz=8.6,slow=7.6,SNR=5.3						
YKA	Yellowknife Ar	63.95	30	P	P	05 45 47.1	-0.2
	0.1nm,0.7s,baz=300,slow=6.7,SNR=3.6						
NVAR	Mina Array Bea	74.42	54	P	P	05 46 54.0	+1.1
	0.7nm,0.8s,baz=293,slow=7.3,SNR=5.9						
AKASG	Malin Array Be	75.99	323	P	P	05 47 04.1	+2.7
	0.2nm,0.4s,baz=89,slow=27,SNR=2.6						
PDAR	Pinedale Array	77.33	46	P	P	05 47 10.0	+0.6
	0.2nm,0.5s,baz=236,slow=2.7,SNR=3.0						
TXAR	Lajitas Array	89.57	53	P	P	05 48 13.0	+0.7
	0.4nm,0.6s,baz=304,slow=4.4,SNR=4.1						
LPAZ	La Paz	145.90	63	PKPbc	PKPab	05 54 55.4	-0.2
	1.0nm,0.6s,baz=66,slow=1.7,SNR=6.5						

ISCJB 05 05:37:58.7±0.4,3°.54N±0°.05×128°.89E±0°.07,h33km, mb4.1/20,Error ellipse: s-maj=10.1km s-min=6.0km az=19.1

IDC 05 05:38:05.7±2.6,3°.39N×128°.68E,h83km±23km,mb3.8/18, mb1 3.9/20,mb1mx3.7/58,mbtmp4.2/20,Error ellipse: s-maj=26.0km s-min=10.6km az=74.0

NEIC 05 05:38:05.9±1.2,3°.35N×128°.67E,h86km±11km,mb4.5/2, Error ellipse: s-maj=16.1km s-min=6.6km az=78.0

DJA 05 05:38:08.5±2.3,3°N±16°×12°8E±1°5,h10km,M4.8/7, mb5.0/6,mB5.3/4,MLv4.8/7,Mw(mB)4.8/4

ISC 05 05:38:00.8±0.6,3°.49N±0°.07×128°.94E±0°.10,h35km,n43, σ1s.22/36,mb4.0/19,2C,North of Halmahera

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TNTI	Ternate	3.12	210	P	Pn	05 38 47.8	+0.2
TNTI	Ternate	3.12	210	ePn	Pn	05 38 48.5	+0.9
SGSI	Sangihe	3.41	273	P	Pn	05 38 50.6	-0.9
LBMI	Labuha	4.34	199	P	Pn	05 39 11.0	+6.6
DAV	Davao City (W)	4.88	317	P	Pn	05 39 17.2	+5.4
	68nm,0.3s,baz=60,slow=18,SNR=2.4						
DAV				S	Sn	05 40 10.8	+3.7
	40nm,0.3s,baz=264,slow=17,SNR=4.3						
BIPH	Bislig	5.32	331⇑	iP	Pn	05 39 17.3	-0.5
BIPH	Bislig	5.32	331⇑	iP	Sn	05 40 10.2	-7.7
SANI	Sanana	6.24	208	P	Pn	05 39 32.4	+1.9
	66nm,0.7s,1μm0.3nm						
MRSI	Marisa	7.60	247	P	Pn	05 39 49.6	+0.4
	542nm,0.6s,5μm1.9nm						
LUWI	Luwuk	7.63	234	P	Pn	05 39 50.9	+1.4
	102nm,1.0s,0.6nm						
LUWI	Luwuk	7.63	234	ePn	Pn	05 39 50.5	+1.0
	64nm,0.4s						
APSI	Ampana	8.49	239	P	Pn	05 40 03.2	+1.8
	112nm,0.5s,1μm0.5nm						
TTSI	Tana Toraja	11.19	235	P	Pn	05 40 37.4	-0.9
KAPI	Kappang	12.47	227	P	Pn	05 40 56.5	+0.6
	2.2nm,0.3s,baz=335,slow=12,SNR=5.7						
FITZ	Fitzroy Crossi	21.70	189	P	P	05 42 47.9	-1.0
	2.2nm,0.5s,baz=54,slow=5.4,SNR=5.6						
WRAB	Tennant Creek	23.88	167	eP	P	05 43 11.4	+0.1
	44nm,2.0s						
WRA	Warramunga Arr	23.88	167	P	P	05 43 10.9	-0.5
	1.4nm,0.6s,baz=348,slow=10,SNR=5.8						
ASAR	Alice Springs	27.42	170	P	P	05 43 42.6	-0.9
	0.3nm,0.4s,baz=351,slow=9.5,SNR=5.3						
ASAR				PcP	PcP	05 47 01.4	-0.5
	0.6nm,0.4s,baz=349,slow=2.0,SNR=6.8						
CMAR	Chiang Mai Arr	32.90	299	P	P	05 44 31.8	-0.2
	0.7nm,0.3s,baz=117,slow=7.0,SNR=4.4						
MJAR	Matsushiro Arr	33.98	13	P	P	05 44 42.6	+1.4
	0.9nm,0.4s,baz=189,slow=14,SNR=3.9						
STKA	Stephens Creek	37.17	162	P	P	05 45 08.2	-0.4
	5.4nm,0.8s,baz=337,slow=9.5,SNR=8.8						
H11S3	WAKE ISLAND Hy	39.82	65	T	T	06 28 58.5	
	baz=253,slow=74,SNR=15						
H11S1	WAKE ISLAND Hy	39.84	65	T	T	06 28 59.6	
	baz=253,slow=74,SNR=12						
H11S2	WAKE ISLAND Hy	39.84	65	T	T	06 28 59.5	
	baz=253,slow=74,SNR=17						
H11N2	WAKE ISLAND Hy	40.39	63	T	T	06 27 36.6	
	SNR=4.9						
USRK	Ussuriysk Ar.	40.63	3	P	P	05 45 36.7	-0.7
	1.8nm,0.7s,baz=150,slow=40,SNR=3.7						
KLR	Kul'dur	45.64	3	P	P	05 46 18.5	+0.7
	0.9nm,0.4s,baz=195,slow=2.6,SNR=4.0						
SONM	Songino Array	48.26	340	P	P	05 46 37.6	-0.8
	0.7nm,0.5s,baz=152,slow=9.8,SNR=2.9						
PETK	Petropavlovsk-	54.85	21	P	P	05 47 29.5	+2.0
	2.9nm,0.6s,baz=188,slow=6.7,SNR=5.2						
MKAR	Makanchi Array	59.02	324	P	P	05 47 56.5	-0.8
	3.8nm,0.4s,baz=113,slow=7.9,SNR=86						
ZALV	Zalesovo Beam	61.81	332	P	P	05 48 14.3	-1.8
	1.0nm,0.5s,baz=101,slow=6.2,SNR=5.3						
KURK	Kurchatov	63.14	327	P	P	05 48 23.9	-1.1
KURBB	Kurchatov Arra	63.14	327	P	P	05 48 23.9	-1.1
	6.3nm,0.5s,baz=128,slow=6.2,SNR=72						
BVAR	Borovoye Array	68.73	326	P	P	05 48 59.8	-1.2
	2.4nm,0.6s,baz=134,slow=11,SNR=9.8						
AKTO	Aktyubinsk	75.22	321	P	P	05 49 38.6	-1.3
	1.1nm,0.5s,baz=95,slow=8.5,SNR=3.5						
COLD	Coldfoot	83.26	23	eP	P	05 50 23.1	-0.4
	2.9nm,0.6s						
ILAR	Eielson Array	84.38	25	P	P	05 50 29.1	-0.2
	0.5nm,0.6s,baz=241,slow=4.7,SNR=6.4						
RES	Resolute Bay	97.65	11	P	Pdif	05 51 32.2	+0.8
	0.6nm,0.7s,baz=305,slow=9.8,SNR=3.8						
YKA	Yellowknife Ar	98.80	25	P	P	05 51 36.7	-0.1
	0.2nm,0.7s,baz=298,slow=4.7,SNR=6.0						
TXAR	Lajitas Array	119.99	53	PKP	PKPdf	05 56 48.8	+0.2
	0.3nm,0.7s,baz=117,slow=1.7,SNR=3.3						
TORD	Torodi Ar. Bea	125.08	289	PKP	PKPdf	05 56 57.8	-0.8
	0.7nm,0.7s,baz=30,slow=2.3,SNR=4.2						
PLCA	Paso Flores	138.97	157	PKhKP	PKPpre	05 57 18.7	
	1.0nm,0.6s,baz=67,slow=20,SNR=3.5						
LPAZ	La Paz	158.95	128	PKPab	PKPab	05 58 34.6	+1.4
	0.7nm,0.7s,baz=228,slow=4.5,SNR=3.4						

IDC 05 05:41:58.0±0.5,2°.92N×126°.99E,h0km,mb4.3/22, mb1 4.4/23,mb1mx4.2/48,mbtmp4.3/23,ML4.8/1,MS3.8/11, Ms1 3.8/11,ms1mx3.4/51,Error ellipse: s-maj=29.0km s-min=11.2km az=80.0

NEIC 05 05:41:59.4±0.4,2°.95N×127°.08E,h10km,mb4.7/7,Error ellipse: s-maj=15.6km s-min=7.0km az=77.0

ISCJB 05 05:42:03.1±0.4,2°.97N±0°.04×127°.23E±0°.07,h49km, mb4.4/29,MS3.8/11,Error ellipse: s-maj=9.6km s-min=5.5km az=175.6

DJA 05 05:42:03.0±0.7,3°N±6°×12°7E±°,h10km,M4.6/17, mb4.7/17,mB5.4/7,MLv4.4/9,Mw(mB)4.8/7

ISC 05 05:42:04.7±0.5,2°.93N±0°.06×127°.24E±0°.08,h49km,n54, σ1s.37/47,mb4.4/28,MS3.8/11,1C,Northern Molucca Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SGSI	Sangihe	1.87	294	P	Pn	05 42 30.8	-3.5
TNTI	Ternate	2.15	177	P	Pn	05 42 39.6	+1.4
TNTI	Ternate	2.15	177	ePn	Pn	05 42 37.5	-0.7
LBMI	Labuha	3.55	176	P	Pn	05 42 59.9	+2.4
DAV	Davao City (W)	4.43	338	Pn	Pn	05 43 05.3	-4.2
	49nm,0.3s,baz=160,slow=0.5,SNR=2.2						
DAV				Sn	Sn	05 44 01.7	+1.9
	105nm,0.3s,baz=40,slow=6.1,SNR=3.7						
SANI	Sanana	5.10	194	P	Pn	05 43 19.2	+0.5
	31nm,0.8s,0.1nm						
SWI	Sorong	5.51	133	P	Pn	05 43 28.4	+4.1
	51nm,0.6s,0.2nm						
MRSI	Marisa	5.83	245	P	Pn	05 43 29.8	+1.1
	82nm,0.9s,4μm0.3nm						
APSI	Ampana	6.77	236	P	Pn	05 43 44.2	+2.6
	119nm,1.6s,2μm0.5nm						
TTSI	Tana Toraja	9.50	231	P	Pn	05 44 20.8	+1.8
	32nm,1.7s,1μm						
PLAI	Plampang	15.02	219	P	P	05 45 40.0	+1.5
	101nm,0.8s,1μm						
TWSI	Taliwang, Sumb	15.52	222	P	P	05 45 44.7	+0.6
	49nm,1.2s,1μm						
STKI	Sintang	16.01	260	P	P	05 45 50.5	+0.9
	32nm,1.4s						
KSM	Kuching	16.98	265	eP	Pn	05 45 57.1	-1.9
	20nm,0.8s						
FITZ	Fitzroy Crossi	20.96	184	P	P	05 46 43.2	-0.6
	7.8nm,0.7s,baz=9.5,slow=7.3,SNR=11						
FITZ	Fitzroy Crossi	20.96	184	eP	P	05 46 42.7	-1.1
	7.5nm,0.7s						
FITZ				P	P	05 46 43.2	-0.6
LEM	Lembang	21.85	244	P	P	05 47 01.3	+7.6
	20nm,0.5s,baz=320,slow=14,SNR=5.0						
LEM	Lembang	21.85	244	P	P	05 47 04.3	+11
	339nm,0.8s						
TPRI	Tanjung Pinang	22.79	265	P	P	05 47 05.0	+1.5
	184nm,0.7s,204μm						
PMG	Port Moresby	23.33	122	LR	LR	05 59 37.2	
	comp=Z,320nm,18.4s,baz=286,slow=45						
WRAB	Tennant Creek	23.77	163	eP	P	05 47 12.1	-0.8
	21nm,0.9s						
WRA	Warramunga Arr	23.78	163	P	P	05 47 12.3	-0.7
	9.5nm,0.4s,baz=340,slow=10,SNR=19						
ASAR	Alice Springs	27.22	167	P	P	05 47 43.4	-0.9
	3.0nm,0.6s,baz=354,slow=7.1,SNR=15						
PSI	Prapat	28.28	270	LR	LR	06 01 30.6	
	comp=Z,168nm,18.7s,baz=92,slow=42						
CMAR	Chiang Mai Arr	31.71	301	P	P	05 48 21.4	-2.8
	0.8nm,0.4s,baz=116,slow=6.5,SNR=5.6						

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
KSAR	Wonju Array Be	34.35	1	P	P	05 48 46.2	-0.7
KSRS	Korea Array	34.36	1	P	P	05 48 46.2	-0.8
	1.3nm,0.5s,baz=181,slow=11,SNR=8.6						
NWAO	Narrogin (SRO)	36.90	194	P	P	05 49 08.8	-0.1
	7.6nm,0.5s,baz=195,slow=0.1,SNR=8.2						
STKA	Stephens Creek	37.21	160	P	P	05 49 11.3	-0.1
	13nm,0.7s,baz=334,slow=9.4,SNR=11						
STKA				PcP	PcP	05 51 31.4	+0.7
	2.9nm,0.6s,baz=316,slow=4.9,SNR=4.1						
STKA				LR	LR	06 07 02.5	
	comp=Z,99nm,18.2s,baz=349,slow=40						
USRK	Ussuriysk Ar.	41.31	5	P	P	05 49 44.8	-0.7
	2.2nm,0.7s,baz=153,slow=6.4,SNR=9.0						
H11S3	WAKE ISLAND Hy	41.59	65	T	T	06 34 12.8	
	baz=253,slow=75,SNR=12						
H11S2	WAKE ISLAND Hy	41.61	65	T	T	06 34 21.1	
	baz=253,slow=75,SNR=13						
H11S1	WAKE ISLAND Hy	41.61	65	T	T	06 34 18.0	
	baz=253,slow=75,SNR=11						
ULN	Ulaanbaatar	48.03	342	*e*P	P	05 50 39.2	-0.1
	9.1nm,1.3s						
SONM	Songino Array	48.21	341	P	P	05 50 40.2	-0.4
	1.9nm,0.8s,baz=156,slow=8.4,SNR=5.0						
SONM				PcP	PcP	05 52 09.1	+1.9
	1.3nm,1.0s,baz=82,slow=3.1,SNR=2.4						
PETK	Petropavlovsk-	55.98	22	P	P	05 51 39.3	+1.2
	1.7nm,0.6s,baz=202,slow=5.9,SNR=3.8						
PETK				LR	LR	06 16 57.7	
	comp=Z,34nm,19.3s,baz=225,slow=37						
MKAR	Makanchi Array	58.50	325	P	P	05 51 53.7	-2.3
	1.6nm,0.5s,baz=120,slow=7.7,SNR=23						
MKAR				LR	LR	06 18 58.9	
	comp=Z,136nm,19.9s,baz=105,slow=38						
ZALV	Zalesovo Beam	61.53	333	P	P	05 52 16.5	-0.1
	1.7nm,0.6s,baz=118,slow=4.8,SNR=6.5						
ZALV				LR	LR	06 20 40.0	
	comp=Z,60nm,19.2s,baz=162,slow=38						
KURK	Kurchatov	62.68	328	*e*P	P	05 52 22.1	-2.3
	11nm,0.6s						
SEY	Seymchan	62.69	13	P	P	05 52 25.9	+1.6
	0.6nm,0.3s,baz=207,slow=8.6,SNR=5.2						
NRIK	Noril'sk	71.32	346	P	P	05 53 19.9	+0.9
	3.0nm,0.6s,baz=106,slow=4.8,SNR=3.6						
NRIK				LR	LR	06 28 44.8	
	comp=Z,120nm,18.5s,baz=92,slow=39						
AKTO	Aktyubinsk	74.60	322	P	P	05 53 38.6	-0.1
	1.5nm,0.7s,baz=120,slow=8.6,SNR=4.6						
ARU	Arti	75.88	328	*e*P	P	05 53 44.9	-1.0
	6.7nm,0.9s						
VNDA	Vanda	82.58	173	P	P	05 54 22.7	+0.6
	1.0nm,0.6s,baz=320,slow=7.0,SNR=5.3						
MAW	Mawson	83.19	200	P	P	05 54 25.4	0.0
	1.7nm,0.9s,baz=151,slow=12,SNR=2.9						
COLD	Coldfoot	84.43	23	*e*P	P	05 54 33.3	+1.5
	5.6nm,1.2s						
ILAR	Eielson Array	85.60	25	P	P	05 54 38.3	+0.6
	0.4nm,0.9s,baz=193,slow=5.9,SNR=2.9						
ASF	Jabal al Asfar	88.75	302	P	P	05 54 51.5	-2.3
	2.0nm,0.7s,baz=287,slow=4.2,SNR=3.0						
EIL	Elat	90.56	300	LR	LR	06 43 44.3	
	comp=Z,27nm,18.3s,baz=64,slow=41						
BRTR	Keskin Array B	90.92	310	P	P	05 55 05.1	+1.3
	0.8nm,0.8s,baz=155,slow=4.1,SNR=3.4						
BRTR				LR	LR	06 43 31.3	
	comp=Z,21nm,18.3s,baz=82,slow=41						
ARCES	ARCESS Array B	91.37	340	P	P	05 55 03.2	-1.9
	6.0nm,1.1s,baz=15,slow=5.3,SNR=4.8						
ARCES				LR	LR	06 41 56.4	
	comp=Z,48nm,19.3s,baz=94,slow=39						
SYO	Syowa Base	91.87	201⇑	*e*P	P	05 55 06.0	-1.3
FINES	FINESS Array B	92.77	332	P	P	05 55 12.0	+0.4
	0.4nm,0.6s,baz=172,slow=27,SNR=2.5						
FINES				LR	LR	06 39 07.7	
	comp=Z,92nm,19.1s,baz=26,slow=37						
TORD	Torodi Ar. Bea	123.65	288	PKP	PKPdf	06 00 57.6	-0.4
	0.6nm,0.7s,baz=121,slow=37,SNR=3.9						

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*IDC **05** 05:53:46.8±3.6, 36.°52N×143.°82E, h0km, mb3.6/6, mb1 3.7/9, mb1mx3.5/51, mbtmp3.6/9, ML3.0/3, Error ellipse: s-maj=84.6km s-min=21.6km az=167.0*
*JMA **05** 05:53:50.3±0.2, 36.°65N×143.°56E, h56km, M3.4*
*ISCJB **05** 05:53:51.1±1.0, 36.°8N±0.°1×143.°62E±0.°06, h33km, mb3.6/6, Error ellipse: s-maj=15.5km s-min=7.5km az=0.9*
ISC 05 05:53:53.8±1.4**, 36.°8N**±0.°2×**143.°60E**±0.°09**, h35**km**, n14, σ1.s32**/17**, mb3.6**/6**, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
JFK	Kawauchi	2.24	285	P	Pn	05 54 26.4	-2.1
JFK				*e*S	Sn	05 54 53.2	-1.7
JIO	Ouri	2.41	313	*e*S	Sn	05 54 59.2	+0.2
JMM	Marumori	2.46	296	P	Pn	05 54 30.0	-1.4
JMM				S	Sn	05 54 59.9	-0.4
JFT	Otama	2.69	286	*e*S	Sn	05 55 05.3	-0.7
MJAR	Matsushiro Arr	4.34	268	Pn	Pn	05 54 56.1	-1.2
	1.7nm,0.3s,baz=91,slow=8.6,SNR=17						
MJAR				Sn	Sn	05 55 48.8	+2.1
	0.6nm,0.3s,baz=90,slow=29,SNR=4.5						
MAT	Matsushiro	4.34	268	P	Pn	05 54 56.0	-1.3
USRK	Ussuriysk Ar.	11.49	313	Pn	Pn	05 56 36.6	+1.3
	0.2nm,0.3s,baz=143,slow=45,SNR=3.2						
KSRS	Korea Array	12.53	278	Pn	Pn	05 56 49.8	+0.3
	0.2nm,0.3s,baz=321,slow=40,SNR=2.7						
SEY	Seymchan	26.68	9	P	P	05 59 29.4	+0.2
	0.7nm,0.2s,baz=177,slow=23,SNR=4.5						
SONM	Songino Array	29.35	304	P	P	05 59 55.3	+1.9
	0.5nm,0.6s,baz=54,slow=7.3,SNR=3.2						
MKAR	Makanchi Array	45.70	303	P	P	06 02 11.0	-0.3
	0.8nm,0.8s,baz=99,slow=7.5,SNR=3.6						
ILAR	Eielson Array	48.73	32	P	P	06 02 33.8	-0.7
	0.4nm,0.7s,baz=265,slow=6.9,SNR=4.2						
YKA	Yellowknife Ar	63.09	31	P	P	06 04 16.9	-0.4
	0.2nm,0.7s,baz=298,slow=6.8,SNR=4.5						
AKASG	Malin Array Be	75.52	323	P	P	06 05 34.8	+0.4
	0.4nm,0.6s,baz=40,slow=5.6,SNR=2.6						

IDC 05 05:57:05.7±1.8**, 2.°62N**×**125.°51E, h0**km**, mb3.8**/4**, mb1 4.0**/4**, mb1mx3.6**/44**, mbtmp3.8**/4**, Error ellipse: s-maj=189.9km s-min=23.1km az=64.0, Talaud Islands**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
WRA	Warramunga Arr	24.04	159	P	P	06 02 22.8	+0.1
	2.7nm,0.7s,baz=338,slow=11,SNR=15						
ASAR	Alice Springs	27.38	163	P	P	06 02 53.9	+1.0
	0.5nm,0.5s,baz=336,slow=6.5,SNR=6.1						
STKA	Stephens Creek	37.56	157	P	P	06 04 21.2	-0.7
	6.1nm,0.8s,baz=342,slow=7.8,SNR=13						
MKAR	Makanchi Array	57.78	326	P	P	06 06 58.4	-0.3
	0.3nm,0.6s,baz=124,slow=8.3,SNR=3.0						

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*GII **05** 06:11:21.8±0.0, 35.°62N×25.°56E, h15km±1km, MD3.4/2*
*ISCJB **05** 06:11:50.0±0.3, 35.°51N±0.°03×26.°66E±0.°02, h87km±5km, Error ellipse: s-maj=4.4km s-min=2.9km az=164.7*
*ATH **05** 06:11:52.0, 35.°66N×26.°58E, h63km±3km, ML2.8/14, Error ellipse: s-maj=3.9km s-min=0.9km az=146.0*
*CSEM **05** 06:11:52.9±0.1, 35.°60N×26.°60E, h60km, ML2.9, Error ellipse: s-maj=4.1km s-min=2.4km az=161.0*
*THE **05** 06:11:53.9, 35.°64N×26.°57E, h51km±3km, ML2.9/12, Error ellipse: s-maj=3.1km s-min=0.5km az=156.0*
*HLW **05** 06:12:01.4, 34.°49N×27.°03E, h22km±9km, Ml3.4*
ISC 05 06:11:52.6±1.2**, 35.°61N**±0.°03×**26.°60E**±0.°02**, h65**km±8km**, n115, σ0.s85**/160**, Crete**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
KARP	Karpathos	0.46	98	P	Pn	06 12 04.6	0.0
KARP				S	Sn	06 12 13.1	-0.3
KARP	Karpathos	0.46	98	P	Pn	06 12 04.6	0.0
KARP				S	Sn	06 12 12.4	-1.0
KARP	Karpathos	0.46	98	P	Pn	06 12 04.8	+0.1
KARP				S	Sn	06 12 12.4	-1.0
KARP				AML	AML	06 12 13.6	
	comp=N,3467μm,0.2s						
KARP				AML	AML	06 12 13.8	
	comp=E,4578μm,0.1s						
ZKR	Zakros	0.58	212	P	Pn	06 12 06.6	+0.7
ZKR				S	Sn	06 12 15.1	-0.5
ZKR	Zakros	0.58	212	P	Pn	06 12 06.6	+0.7
ZKR				S	Sn	06 12 15.1	-0.5
ZKR	Zakros	0.58	212	P	Pn	06 12 07.4	+1.5
ZKR				AML	AML	06 12 17.3	
	comp=E,2697μm,0.3s						
ZKR				S	Sn	06 12 17.3	+1.8
ZKR				AML	AML	06 12 17.9	
	comp=N,1372μm,0.7s						
NPS	Neapolis	0.88	247	P	Pn	06 12 09.3	0.0
NPS				S	Sn	06 12 21.2	-0.5
NPS	Neapolis	0.88	247	P	Pn	06 12 09.3	0.0
NPS				S	Sn	06 12 21.2	-0.5
NPS	Neapolis	0.88	247	P	Pn	06 12 09.2	-0.1
NPS				S	Sn	06 12 20.8	-0.8
NPS				AML	AML	06 12 22.2	
	comp=N,1152μm,0.2s						
NPS				AML	AML	06 12 23.6	
	comp=E,1283μm,0.3s						
LAST	Lasithi	1.02	244	P	Pn	06 12 11.5	+0.3
LAST				S	Sn	06 12 24.6	-0.3
LAST	Lasithi	1.02	244	P	Pn	06 12 11.5	+0.3
LAST				S	Sn	06 12 24.6	-0.3
LAST	Lasithi	1.02	244	P	Pn	06 12 11.4	+0.2
NISR	Nisiros	1.09	23	P	Pn	06 12 12.4	+0.4
NISR				S	Sn	06 12 26.0	-0.4
NISR	Nisiros	1.09	23	P	Pn	06 12 12.4	+0.4
NISR				S	Sn	06 12 26.0	-0.4
NISR				AML	AML	06 12 28.1	
	comp=E,1793μm,0.2s						
NISR				AML	AML	06 12 28.8	
	comp=N,1300μm,0.3s						
NIS1	Nisyros Isl.	1.10	25	P	Pn	06 12 12.4	+0.3
NIS1				S	Sn	06 12 26.5	-0.1
NIS1	Nisyros Isl.	1.10	25	P	Pn	06 12 12.4	+0.3
NIS1				S	Sn	06 12 26.5	-0.1
NIS1	Nisyros Isl.	1.10	25	P	Pn	06 12 12.9	+0.8
SANT	Santorini	1.20	310	P	Pn	06 12 13.6	+0.2
SANT				S	Sn	06 12 28.4	-0.6
SANT	Santorini	1.20	310	P	Pn	06 12 13.6	+0.2
SANT				S	Sn	06 12 28.4	-0.6
SANT	Santorini	1.20	310	P	Pn	06 12 13.7	+0.2
SANT				S	Sn	06 12 28.4	-0.6
SANT				AML	AML	06 12 28.7	
	comp=N,1506μm,0.2s						
SANT				AML	AML	06 12 29.4	
	comp=E,3011μm,0.3s						
THT1	Athinios (Pele	1.23	310	P	Pn	06 12 13.7	0.0
THT1				S	Sn	06 12 28.7	-0.8
THT1	Athinios (Pele	1.23	310	P	Pn	06 12 13.7	0.0
THT1				S	Sn	06 12 28.7	-0.8
THR6	Thira Island,	1.23	308	P	Pn	06 12 14.0	+0.2
THR6	Thira Island,	1.23	308	P	Pn	06 12 14.0	+0.2
THR3	Thira Island,	1.26	310	P	Pn	06 12 14.3	+0.1
THR3	Thira Island,	1.26	310	P	Pn	06 12 14.3	+0.1
THR2	Thira island,	1.26	312	P	Pn	06 12 14.4	+0.2
THR2	Thira island,	1.26	312	P	Pn	06 12 14.4	+0.2
IACM	Heraklion	1.28	257	P	Pn	06 12 16.1	+1.6
IACM	Heraklion	1.28	257	P	Pn	06 12 16.1	+1.6
CMBO	Columbo, Santo	1.29	312	P	Pn	06 12 15.0	+0.4
CMBO				S	Sn	06 12 30.6	-0.6
CMBO	Columbo, Santo	1.29	312	P	Pn	06 12 15.0	+0.4
CMBO				S	Sn	06 12 30.6	-0.6
CMBO	Columbo, Santo	1.29	312	P	Pn	06 12 15.0	+0.4
CMBO				S	Sn	06 12 30.8	-0.4
CMBO				AML	AML	06 12 31.4	
	comp=E,2484μm,0.2s						
CMBO				AML	AML	06 12 31.7	
	comp=N,2211μm,0.2s						
THR5	Thira Island,	1.30	309	P	Pn	06 12 15.0	+0.3
THR5	Thira Island,	1.30	309	P	Pn	06 12 15.0	+0.3
ARG	Arkhangelos	1.38	64	P	Pn	06 12 16.2	+0.4
ARG				S	Sn	06 12 33.3	+0.1
ARG	Arkhangelos	1.38	64	P	Pn	06 12 16.2	+0.4
ARG				S	Sn	06 12 33.3	+0.1
IDI	Anoyia	1.43	258	P	Pn	06 12 16.9	+0.4
IDI				S	Sn	06 12 34.3	-0.3
IDI	Anoyia	1.43	258	P	Pn	06 12 16.9	+0.4
IDI				S	Sn	06 12 34.3	-0.3
IDI	Anoyia	1.43	258	P	Pn	06 12 16.3	-0.3
IDI				S	Sn	06 12 33.5	-1.1
IDI				AML	AML	06 12 35.5	
	comp=N,262μm,0.2s						
IDI				AML	AML	06 12 36.9	
	comp=E,418μm,0.3s						
SIVA	Sivas	1.58	249	P	Pn	06 12 20.1	+1.7
SIVA	Sivas	1.58	249	P	Pn	06 12 20.1	+1.7
BDRM	Kayabasi	1.60	25	*i* P	Pn	06 12 16.5	-2.3
BDRM				*i* S	Sn	06 12 38.6	0.0
BDRM	Kayabasi	1.60	25	P	Pn	06 12 16.5	-2.3
BDRM				S	Sn	06 12 38.6	0.0
APE	Apeiranthos	1.69	330	P	Pn	06 12 20.1	+0.1
APE				S	Sn	06 12 40.3	-0.5
APE	Apeiranthos	1.69	330	P	Pn	06 12 20.1	+0.1
APE				S	Sn	06 12 40.3	-0.5
APE	Apeiranthos	1.69	330	P	Pn	06 12 20.1	+0.1
APE				S	Sn	06 12 40.6	-0.2
APE				AML	AML	06 12 41.3	
	comp=E,534μm,0.2s						
APE				AML	AML	06 12 41.3	
	comp=N,828μm,0.2s						
VAM	Vamos	1.97	265	P	Pn	06 12 23.0	-0.7
YER	Yerkesik	2.04	41	P	Pn	06 12 25.7	+1.0
YER				S	Sn	06 12 49.6	+0.4
YER	Yerkesik	2.04	41	P	Pn	06 12 25.7	+1.0
YER				S	Sn	06 12 49.6	+0.4
TURN	Turunc	2.05	52	*i* P	Pn	06 12 21.1	-3.7
TURN				*i* S	Sn	06 12 41.7	-7.7
TURN	Turunc	2.05	52	P	Pn	06 12 21.1	-3.7
MHLO	Agia Marina, M	2.08	302	P	Pn	06 12 24.0	-1.2
MHLO				S	Sn	06 12 50.2	+0.1
MHLO	Agia Marina, M	2.08	302	P	Pn	06 12 24.0	-1.2
MHLO				S	Sn	06 12 50.2	+0.1
MHLO				AML	AML	06 12 53.7	
	comp=E,422μm,0.5s						
MHLO				AML	AML	06 12 54.7	
	comp=N,331μm,0.3s						
IMMV	Iera Moni Meta	2.14	267	P	Pn	06 12 26.7	+0.7
IMMV				S	Sn	06 12 51.7	+0.2
IMMV	Iera Moni Meta	2.14	267	P	Pn	06 12 26.7	+0.7
IMMV				S	Sn	06 12 51.7	+0.2
IMMV	Iera Moni Meta	2.14	267	P	Pn	06 12 27.2	+1.2
IMMV				S	Sn	06 12 51.6	0.0
IMMV				AML	AML	06 12 52.6	
	comp=N,138μm,0.2s						
IMMV				AML	AML	06 12 54.0	
	comp=E,136μm,0.5s						
GVD	Gavdhos	2.19	250	P	Pn	06 12 27.9	+1.1
GVD				S	Sn	06 12 52.5	-0.4
GVD	Gavdhos	2.19	250	P	Pn	06 12 27.9	+1.1
GVD				S	Sn	06 12 52.5	-0.4
GVD	Gavdhos	2.19	250	P	Pn	06 12 28.1	+1.4
GVD				S	Sn	06 12 53.9	+1.1
GVD				AML	AML	06 12 57.6	
	comp=N,237μm,0.3s						
GVD				AML	AML	06 12 58.6	
	comp=E,153μm,0.2s						
FETY	Fethiye	2.26	62	P	Pn	06 12 28.0	+0.4
FETY				S	Sn	06 12 55.6	+1.2
FETY	Fethiye	2.26	62	P	Pn	06 12 28.0	+0.4
FETY				S	Sn	06 12 55.6	+1.2
AYDN	Tasoluk	2.29	26	*i* P	Pn	06 12 28.9	+0.7
AYDN				*i* S	Sn	06 12 55.2	-0.1
AYDN	Tasoluk	2.29	26	P	Pn	06 12 28.9	+0.7
AYDN				S	Sn	06 12 55.2	-0.1
SERI	Serifos	2.30	313	P	Pn	06 12 28.6	+0.3
SERI				S	Sn	06 12 54.0	-1.6
SERI	Serifos	2.30	313	P	Pn	06 12 28.6	+0.3
SERI				S	Sn	06 12 54.0	-1.6
SERI				AML	AML	06 12 55.2	
	comp=E,95μm,0.2s						
SERI				AML	AML	06 12 56.3	
	comp=N,66μm,0.2s						
KSL	Kastellorizon	2.48	77	P	Pn	06 12 30.8	+0.1
KSL	Kastellorizon	2.48	77	P	Pn	06 12 30.8	+0.1
KSL	Kastellorizon	2.48	77	P	Pn	06 12 29.9	-0.8
AKAS	Kas	2.52	75	*i* P	Pn	06 12 31.3	0.0
AKAS				*i* S	Sn	06 13 00.0	-0.9
AKAS	Kas	2.52	75	P	Pn	06 12 31.3	0.0
AKAS				S	Sn	06 13 00.0	-0.9
ANKY	Antikythira Is	2.69	276	P	Pn	06 12 33.4	-0.2
ANKY	Antikythira Is	2.69	276	P	Pn	06 12 33.4	-0.2
ANKY	Antikythira Is	2.69	276	P	Pn	06 12 33.2	-0.4
CHOS	Chios island	2.81	351	P	Pn	06 12 34.5	-0.7
CHOS	Chios island	2.81	351	P	Pn	06 12 34.5	-0.7
GOLH	Golhisar	2.89	55	*i* P	Pn	06 12 37.5	+1.2
GOLH				*i* S	Sn	06 13 10.5	+0.5
GOLH	Golhisar	2.89	55	P	Pn	06 12 37.5	+1.2
GOLH				S	Sn	06 13 10.5	+0.5
KYTH	Kithira	2.97	284	P	Pn	06 12 37.1	-0.2
KYTH				S	Sn	06 13 11.5	-0.3
KYTH	Kithira	2.97	284	P	Pn	06 12 37.1	-0.2
VLI	Veliai	3.16	292	P	Pn	06 12 40.0	+0.1
VLI				S	Sn	06 13 15.5	-1.0
VLI	Veliai	3.16	292	P	Pn	06 12 40.0	+0.1
VLI				S	Sn	06 13 15.5	-1.0
VLI	Veliai	3.16	292	P	Pn	06 12 40.1	+0.2
VLI				S	Sn	06 13 15.5	-1.0
VLI				AML	AML	06 13 18.5	
	comp=E,52μm,0.3s						
VLI				AML	AML	06 13 18.8	
	comp=N,71μm,0.4s						
DID	Didima	3.30	306	P	Pn	06 12 43.0	+1.1
DID				S	Sn	06 13 19.6	-0.4
DID	Didima	3.30	306	P	Pn	06 12 43.0	+1.1
DID				S	Sn	06 13 19.6	-0.4
DID	Didima	3.30	306	P	Pn	06 12 43.0	+1.1
DID				S	Sn	06 13 19.5	-0.4
DID				AML	AML	06 13 24.8	
	comp=E,31μm,0.4s						
DID				AML	AML	06 13 25.6	
	comp=N,28μm,0.4s						
KORT	Korkueli	3.33	64	*i* P	Pn	06 12 43.4	+1.0
KORT				*i* S	Sn	06 13 20.6	-0.3
KORT	Korkueli	3.33	64	P	Pn	06 12 43.4	+1.0
KORT				S	Sn	06 13 20.6	-0.3
KHAL	Karahalli	3.60	39	*i* P	Pn	06 12 46.0	0.0
KHAL				*i* S	Sn	06 13 26.0	-1.3
KHAL	Karahalli	3.60	39	P	Pn	06 12 46.0	0.0
KHAL				S	Sn	06 13 26.0	-1.3
VILL	Villia	3.67	315	P	Pn	06 12 47.9	+1.0
VIL2	Platees	3.72	315	P	Pn	06 12 47.9	+0.3
VLX	Vlachokerasia	3.83	299	P	Pn	06 12 50.6	+1.5
VLX	Vlachokerasia	3.83	299	P	Pn	06 12 50.6	+1.5
SLUM	Salum	4.27	196	P	Pn	06 12 53.0	-2.1
	baz=208						
SLUM	Salum	4.27	196	P	Pn	06 12 53.0	-2.1
SKIA	Skiathos	4.34	326	P	Pn	06 12 58.7	+2.7
SKIA	Skiathos	4.34	326	P	Pn	06 12 58.7	+2.7
CSS	Mathiatis	5.54	95	Pn	Pn	06 12 55.5	-17
CSS				Sn	Sn	06 14 07.8	-7.1
SWA2		6.42	189	P	Pn	06 13 21.4	-3.2
	baz=195						
SWA2				AMP		06 14 00.0	
	comp=E,40μm,0.2s,logA/T=5.2,baz=195						
SWA2				S	Sn	06 14 19.7	-17
	baz=195						
HNAT	Natroun	6.86	149	P	Pn	06 13 25.8	-4.7
	baz=146						
GLL	Jalalah	7.40	143	P	Pn	06 13 34.2	-3.8
	baz=139						
MMA0	Mount Meron ar	7.73	107	Pn	Pn	06 13 24.5	-18
MMA0				Sn	Sn	06 15 02.1	-6.5
SLTI	Sal'it	7.78	113	Sn	Sn	06 15 01.6	-8.1
SUZ	Suez	7.79	136	P	Pn	06 13 40.2	-3.0
	baz=131						
KSDI	Kefar Szold	7.87	105	Sn	Sn	06 15 05.2	-6.6
MMLI	Mount Malkishu	7.98	111	Sn	Sn	06 15 07.3	-7.3
KZIT	Kziot	8.04	123	Sn	Sn	06 15 06.7	-9.4
HMDT	Nahal Hemdat	8.14	112	Sn	Sn	06 15 11.8	-6.7
DSI	Dead Sea	8.36	116	Sn	Sn	06 15 16.1	-7.8
ZFRI	Zfri	8.79	123	Sn	Sn	06 15 24.8	-10
PRNI	Paran	8.79	124	Pn	Pn	06 13 37.9	-19
PRNI				Sn	Sn	06 15 24.6	-10
MBRI	Mt Berech	9.09	127	Sn	Sn	06 15 32.7	-9.3
EIL	Elat	9.20	128	Sn	Sn	06 15 34.7	-10
HKAT	Jabal Katrina	9.45	136	P	Pn	06 14 01.7	-4.4
	baz=133						

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*ISCJB **05** 06:18:02.0±0.4, 3.°43N±0.°05×126.°94E±0.°08, h48km, mb4.2/16, MS3.5/13, Error ellipse: s-maj=12.4km s-min=7.3km az=165.2*
*NEIC **05** 06:18:03.9±2.0, 3.°38N×126.°93E, h53km±19km, mb4.7/1, Error ellipse: s-maj=26.1km s-min=10.6km az=69.0*
*DJA **05** 06:18:05.8±0.5, 3.°N±5.°×12.°7E±.°, h10km, M4.5/7, mb4.7/6, mB5.5/3, MLv4.4/7, Mw(mB)4.9/3*
*IDC **05** 06:18:06.6±3.1, 3.°28N×126.°69E, h75km±29km, mb3.9/14, mb1 4.1/15, mb1mx3.8/50, mbtmp4.2/15, MS3.5/13, Ms1 3.5/13, ms1mx3.3/43, Error ellipse: s-maj=34.9km s-min=11.4km az=75.0*
ISC 05 06:18:03.4±0.6**, 3.°41N**±0.°07×**127.°0E**±0.°1**, h48**km**, n40, σ1.s07**/23**, mb4.1**/16**, MS3.6**/13**, 2D, Talaud Islands**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
SGSI	Sangihe	1.52	281	P	Pn	06 18 23.3	-4.8
TNTI	Ternate	2.64	172	P	Pn	06 18 49.4	+5.9
TNTI	Ternate	2.64	172	*e*Pn	Pn	06 18 42.9	-0.6
DAV	Davao City (W)	3.91	339	P	Pn	06 19 05.6	+4.6
	119nm,0.3s,baz=210,slow=9.2,SNR=4.4						
DAV				S	Sn	06 19 54.6	+8.9
	131nm,0.3s,baz=89,slow=23,SNR=3.6						
CTBH	Cotabato--PC H	4.69	324⇓	*i*P	Pn	06 19 11.9	+0.2
SANI	Sanana	5.52	191	P	Pn	06 19 38.5	+15
MRSI	Marisa	5.85	240	P	Pn	06 19 27.9	+0.3
	73nm,0.8s,4μm0.2nm						
SWI	Sorong	5.99	135	P	Pn	06 19 32.5	+2.9
	47nm,1.0s						
LUWI	Luwuk	6.13	224	P	Pn	06 19 35.9	+4.5
	118nm,0.9s						
LUWI	Luwuk	6.13	224	Pn	Pn	06 19 32.0	+0.6
	101nm,0.8s						
APSI	Ampana	6.87	231	P	Pn	06 19 45.5	+3.9
	155nm,1.0s,1μm0.5nm						
TTSI	Tana Toraja	9.64	228	P	Pn	06 20 24.7	+5.2
GUMO	Guam	20.33	59	LR	LR	06 29 21.2	
	comp=Z,54nm,21.8s,baz=252,slow=33						
FITZ	Fitzroy Crossi	21.41	184	P	P	06 22 48.4	+1.0
	8.1nm,0.9s,baz=44,slow=4.0,SNR=5.7						
WRAB	Tennant Creek	24.29	163	*e*P	P	06 23 15.2	-1.3
	21nm,0.8s						
WRA	Warramunga Arr	24.29	163	P	P	06 23 16.6	+0.1
	19nm,0.9s,baz=342,slow=10,SNR=31						
ASAR	Alice Springs	27.73	166	P	P	06 23 46.5	-1.0
	1.7nm,0.7s,baz=349,slow=7.4,SNR=13						
ASAR				LR	LR	06 34 47.7	
	comp=Z,123nm,20.1s,baz=8.0,slow=36						
CMAR	Chiang Mai Arr	31.29	301	P	P	06 24 17.6	-1.5
	0.9nm,0.3s,baz=124,slow=7.3,SNR=5.6						
KSRS	Korea Array	33.90	1	LR	LR	06 41 30.5	
	comp=Z,25nm,18.1s,baz=180,slow=41						
STKA	Stephens Creek	37.73	160	P	P	06 25 14.6	0.0
	12nm,0.7s,baz=336,slow=8.1,SNR=21						
STKA				LR	LR	06 44 17.3	
	comp=Z,106nm,18.0s,baz=2.7,slow=42						
BJT	Baijiatuau	37.75	346	*e*P	P	06 25 13.6	-1.1
USRK	Ussuriysk Ar.	40.86	5	P	P	06 25 41.8	+1.2
	1.9nm,0.8s,baz=186,slow=7.4,SNR=5.0						
KLR	Kul'dur	45.84	4	P	P	06 26 21.6	+1.0
	2.1nm,0.9s,baz=255,slow=1.5,SNR=5.8						
SONM	Songino Array	47.70	341	P	P	06 26 36.0	+0.6
	1.2nm,0.6s,baz=147,slow=10,SNR=4.9						
SONM				LR	LR	06 48 59.4	
	comp=Z,62nm,19.4s,baz=31,slow=39						
SONM	Songino Array	47.70	341	P	P	06 26 36.0	+0.6
MKAR	Makanchi Array	57.98	325	P	P	06 27 49.5	-1.7
	1.2nm,0.5s,baz=114,slow=8.5,SNR=16						
MKAR				LR	LR	06 54 20.6	
	comp=Z,105nm,20.1s,baz=56,slow=38						
YAK	Yakutsk	58.52	1	LR	LR	06 56 42.7	
	comp=Z,31nm,18.0s,baz=270,slow=40						
AAK	Ala-Archa	60.79	318	LR	LR	06 57 09.2	
	comp=Z,23nm,21.6s,baz=55,slow=39						
ZALV	Zalesovo Beam	61.01	333	P	P	06 28 12.6	+0.8
	0.6nm,0.4s,baz=116,slow=6.8,SNR=3.5						
ZALV				LR	LR	06 58 36.4	
	comp=Z,58nm,18.4s,baz=82,slow=40						
KURK	Kurchatov	62.17	327	*e*P	P	06 28 18.5	-1.3
	8.4nm,0.7s						
SEY	Seymchan	62.28	13	P	P	06 28 22.8	+2.5
	0.5nm,0.3s,baz=225,slow=9.8,SNR=3.2						
NRIK	Noril'sk	70.81	346	P	P	06 29 16.1	+1.6
	1.4nm,0.3s,baz=166,slow=3.4,SNR=4.1						
NRIK				LR	LR	07 04 55.4	
	comp=Z,71nm,18.1s,baz=134,slow=40						
VNDA	Vanda	83.07	173	P	P	06 30 24.9	+1.5
	1.0nm,1.0s,baz=348,slow=4.1,SNR=4.1						
KBZ	Khabaz	83.41	313	LR	LR	07 12 09.8	
	comp=Z,26nm,20.0s,baz=48,slow=39						

Code	Station Name	Δ°	AZ°	Op	ISC	Time	Res
BRTR	Keskin Array B	90.45	310	LR	LR	07 18 52.2	
	comp=Z,14nm,18.6s,baz=76,slow=40						
ARCES	ARCESS Array B	90.85	340	P	P	06 31 00.1	-1.3
	1.7nm,0.9s,baz=56,slow=7.4,SNR=3.5						
SYO	Syowa Base	92.23	201⇓	epP	pP	06 31 25.0	+3.1
NOA	NORSAR Array B	99.20	334	LR	LR	07 19 37.2	
	comp=Z,40nm,19.9s,baz=80,slow=37						
TXAR	Lajitas Array	121.56	52	PKP	PKPdf	06 36 52.3	-0.3
	1.1nm,1.1s,baz=35,slow=4.6,SNR=3.9						
TORD	Torodi Ar. Bea	123.30	288	PKP	PKPdf	06 36 56.1	-0.1
	0.1nm,0.3s,baz=128,slow=37,SNR=2.7						

*KRSC **05** 06:20:12.7±1.2, 50.°97N×158.°29E, h42km±20km, ML4.3*
*MOS **05** 06:20:12.0±0.6, 50.°80N×158.°16E, h38km, mb4.4/1, Error ellipse: s-maj=31.0km s-min=6.9km az=86.0*
*IDC **05** 06:20:19.7±1.2, 51.°55N×157.°46E, h0km, mb3.4/4, mb1 3.7/6, mb1mx3.5/53, mbtmp3.5/6, ML3.5/2, Error ellipse: s-maj=32.8km s-min=20.9km az=103.0*
ISC 05 06:20:14.1±2.4**, 51.°20N**±0.°09×**158.°41E**±0.°08**, h1**km±12km**, n37, σ0ˢ87**/46**, mb3.4**/4**, 1D, Near east coast of Kamchatka Peninsula**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
ASAK	Asacha	1.23	345	eP	Pg	06 20 37.8	+0.2
ASAK				eS	Sn	06 20 55.3	-0.4
RUS	Russkaya	1.24	3	iP	Pg	06 20 38.0	+0.1
RUS	Russkaya	1.24	3	PN	Pg	06 20 38.0	+0.1
MTVR	Mutnovka	1.29	354	eP	Pg	06 20 39.1	+0.2
MTVR				eS	Sn	06 20 57.8	+0.3
SKR	Severo-Kuril's	1.54	251	eP	Pn	06 20 36.1	-6.5
SKR	Severo-Kuril's	1.54	251⇓	iPN	Pn	06 20 34.7	-7.9
SKR				pmax	pmax		
	comp=Z,130nm,0.5s						
SKR				pmax	pmax		
	comp=N,50nm,0.3s						
SKR				pmax	pmax		
	comp=E,100nm,0.3s						
SKR				pmax	pmax		
	comp=N,1μm,0.3s						
SKR				pmax	pmax		
	comp=Z,1μm,0.3s						
KRMR	Karymshinskiy	1.64	354	eP	Pn	06 20 44.4	+0.3
KRMR				eS	Sg	06 21 08.3	+1.4
PET	Petropavlovsk	1.83	5	iP	Pb	06 20 47.5	-0.9
PET				eS	Sb	06 21 11.5	-0.3
PET	Petropavlovsk	1.83	5	ePN	Pn	06 20 47.2	+0.5
PET				eS	Sb	06 21 11.6	-0.3
PET				pmax	pmax		
	comp=Z,72nm,0.6s						
PET				smax	smax		
	comp=N,323nm,0.6s						
PET				smax	smax		
	comp=E,283nm,0.5s						
DALK	Dalny	1.85	7	eP	Pn	06 20 47.2	+0.3
DALK				eS	Sb	06 21 12.3	0.0
APC	Apacha	1.89	336	eP	Pn	06 20 47.2	-0.3
APC				eS	Sn	06 21 12.0	0.0
APC	Apacha	1.89	336	PN	Pn	06 20 47.2	-0.3
APC				S	Sn	06 21 12.0	0.0
PETK	Petropavlovsk-	1.96	347	Pn	Pn	06 20 48.6	+0.1
	comp=E,14nm,0.3s,baz=163,slow=17,SNR=82						
PETK				Sn	Sg	06 21 17.6	+0.5
	comp=E,7.0nm,0.3s,baz=145,slow=18,SNR=7.5						
UGLR	Uglovaya	2.03	7	eP	Pn	06 20 50.3	+0.8
UGLR				eS	Sg	06 21 18.8	-0.5
AVH	Avacha	2.08	6	eP	Pb	06 20 51.3	-1.4
AVH	Avacha	2.08	6	PN	Pb	06 20 51.3	-1.4
SMAR	Somma	2.08	7	iP	Pb	06 20 51.4	-1.4
SMAR				eS	Sb	06 21 19.7	+0.5
SMAR	Somma	2.08	7	PN	Pb	06 20 51.4	-1.4
SMAR				S	Sb	06 21 19.7	+0.5
KOK	Koryaka	2.10	4	eP	Pb	06 20 52.1	-1.0
KOK	Koryaka	2.10	4	PN	Pb	06 20 52.1	-1.0
SDLR	Sedlovina	2.10	8	iP	Pn	06 20 51.1	+0.5
SDLR	Sedlovina	2.10	8	PN	Pn	06 20 51.1	+0.5
SPN	Mys Shipunski	2.15	27	iP	Pb	06 20 52.3	-1.5
SPN				eS	Sb	06 21 20.3	-0.6
SPN	Mys Shipunski	2.15	27	PN	Pb	06 20 52.3	-1.5
SPN				S	Sb	06 21 20.3	-0.6
KRX	Arik	2.17	4	eP	Pb	06 20 52.7	-1.5
KRX				eS	Sb	06 21 21.6	-0.1
GNL	Ganaly	2.52	354	iP	Pn	06 20 57.0	+0.8
GNL				eS	Sb	06 21 30.7	-0.9
GNL	Ganaly	2.52	354	PN	Pn	06 20 57.0	+0.8
GNL				S	Sb	06 21 30.7	-0.9
KMNR	Kamenistaya	4.70	13	eP	Pn	06 21 30.6	+4.5
KMNR	Kamenistaya	4.70	13	PN	Pn	06 21 30.6	+4.5
KBTR	Krutoberegovo	5.66	26	eP	Pn	06 21 40.7	+1.4
KBTR	Krutoberegovo	5.66	26	PN	Pn	06 21 40.7	+1.4
SEY	Seymchan	12.20	347	Pn	Pn	06 23 10.1	+1.2
	comp=E,0.4nm,0.3s,baz=5.4,slow=19,SNR=4.7						
KLR	Kul'dur	17.14	274	Pn	Pn	06 24 14.8	+0.1
	comp=E,0.1nm,0.3s,baz=23,slow=7.7,SNR=3.2						
INK	Inuvik	36.01	36	P	P	06 27 24.1	+7.9
	comp=E,0.5nm,0.6s,baz=271,slow=5.8,SNR=3.9						
YKA	Yellowknife Ar	45.27	41	P	P	06 28 40.6	+7.9
	comp=E,0.3nm,0.8s,baz=298,slow=7.5,SNR=5.9						
TXAR	Lajitas Array	72.36	65	P	P	06 31 48.4	+6.7
	comp=E,0.1nm,0.6s,baz=280,slow=5.4,SNR=2.4						
WRA	Warramunga Arr	73.92	204	P	P	06 31 57.0	+6.3
	comp=E,0.3nm,0.4s,baz=15,slow=6.2,SNR=3.4						

JMA 05 06:20:30.1±0.2**, 38.°29N×144.°37E, h11**km**, M3.9, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
OFUJ	Ofunato	2.26	291	P	Pn	06 21 08.3	+1.0
JIO	Ouri	2.38	275	P	Pn	06 21 09.9	+0.9
JIO				S	Sn	06 21 38.9	+0.7
JTH	Tanohata	2.55	311	P	Pn	06 21 12.4	+1.0
JTH				eS	Sn	06 21 43.6	+1.1
JMK	Ichinoseki	2.55	286	P	Pn	06 21 12.7	+1.3
JMK				eS	Sn	06 21 43.9	+1.4
JOM	Ohasama	2.68	297	P	Pn	06 21 14.6	+1.5
JOM				S	Sn	06 21 47.7	+2.2
JMM	Marumori	2.85	263	S	Sn	06 21 49.8	-0.1
JOU	Okura	2.92	273	S	Sn	06 21 53.1	+1.6
JRG	Rokugo	3.12	292	P	Pn	06 21 21.2	+2.0
JRG				S	Sn	06 21 59.4	+2.9
JYK	Kaneyama	3.20	283	P	Pn	06 21 22.0	+1.6
JYK				eS	Sn	06 22 00.8	+2.2

*CSEM **05** 06:31:57.3±0.8, 32.°67N×49.°06E, h2km, ML3.2, Error ellipse: s-maj=32.8km s-min=10.2km az=18.0*
*TEH **05** 06:31:57.8, 32.°51N×49.°01E, h6km, ML3.2*
*IDC **05** 06:32:15.0±9.2, 32.°87N×48.°52E, h164km±88km, mb3.0/4, mb1 3.1/5, mb1mx2.8/43, mbtmp3.5/5, Error ellipse: s-maj=51.1km s-min=28.6km az=156.0*
ISC 05 06:31:58.1±1.1**, 32.°6N**±0.°1×**48.°98E**±0.°04**, h23**km**, n21, σ1ˢ94**/24**, mb3.5**/4**, Western Iran**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
IKMR	Kamar-syah	1.07	332	ePg	Pn	06 32 15.8	-1.9
IKMR	Kamar-syah	1.07	332	ePg	Pn	06 32 15.8	-1.9
IKFM	Kafar-mosalman	1.34	316	ePn	Pb	06 32 23.7	+1.1
IKFM	Kafar-mosalman	1.34	316	ePn	Pb	06 32 23.7	+1.1
IKLH	Kolahrood	2.31	70	ePn	Pb	06 32 37.2	-2.1
IKLH				eSg	Sb	06 33 09.3	+1.8
IKLH				eAMB	AMB	06 33 26.3	
	comp=Z,918nm,0.2s						
IKLH	Kolahrood	2.31	70	ePn	Pb	06 32 37.2	-2.1
IKLH				eSg	Sb	06 33 09.3	+1.8
QAM	Ghamsar	2.38	59	ePn	Pb	06 32 40.1	-0.3
QAM				eSg	Sb	06 33 12.8	+3.3
QAM				eAMB	AMB	06 33 18.4	
	comp=Z,2μm,0.2s						
IGAR	Gharneh	2.60	93	ePn	Pn	06 32 40.1	+1.2
IGAR				eAMB	AMB	06 33 25.6	
	comp=Z,667nm,0.2s						
IGHG	Ghaleghazi	2.67	312	ePn	Pn	06 32 42.5	+2.6
IGHG				eAMB	AMB	06 33 33.1	
	comp=E,2μm,0.3s						
IGHG	Ghaleghazi	2.67	312	ePn	Pn	06 32 42.5	+2.6
IZEF	Zefreh	2.85	82	ePn	Pn	06 32 44.0	+1.7
IZEF				eSg	Sb	06 33 25.5	+2.7
IZEF				eAMB	AMB	06 33 28.9	
	comp=Z,420nm,0.3s						
IZEF	Zefreh	2.85	82	ePn	Pn	06 32 44.0	+1.7
IZEF				eSg	Sb	06 33 25.5	+2.7
IRAM	Ramesheh	2.99	104	ePn	Pn	06 32 44.5	+0.3
IRAM				eAMB	AMB	06 33 45.2	
	comp=Z,354nm,0.3s						
IRAM	Ramesheh	2.99	104	ePn	Pn	06 32 44.5	+0.3
IDHR	Dehrash	3.03	315	eAMB	AMB	06 33 29.0	
	comp=Z,1μm,0.1s						
BRTR	Keskin Array B	14.29	304	P	P	06 35 24.0	-2.1
	comp=Z,0.1nm,0.3s,baz=126,slow=14,SNR=5.7						
MKAR	Makanchi Array	29.07	51	P	P	06 38 00.8	+4.1
	comp=Z,0.2nm,0.6s,baz=242,slow=8.0,SNR=2.4						
FINES	FINESS Array B	32.48	340	P	P	06 38 26.3	-0.2
	comp=Z,0.4nm,0.4s,baz=146,slow=15,SNR=3.2						
NB2	NORSAR Subarra	37.54	331	P	P	06 39 08.6	-1.6
	comp=Z,0.2nm,0.2s,baz=124,slow=8.6						
NOA	NORSAR Array B	37.54	331	P	P	06 39 08.7	-1.5
	comp=Z,0.7nm,0.6s,baz=125,slow=8.6,SNR=4.1						
TORD	Torodi Ar. Bea	47.23	257	P	P	06 40 29.4	-0.1
	comp=Z,0.2nm,0.6s,baz=60,slow=8.5,SNR=3.1						

*CSEM **05** 06:33:28.3±0.6, 32.°40N×48.°95E, h15km, ML3.3, Error ellipse: s-maj=14.4km s-min=13.7km az=161.0*
*ISN **05** 06:33:50.6±2.2, 31.°90N×44.°83E, h0km±14km, ML3.2*
TEH 05 06:33:28.8, 32.°33N×48.°95E, h13km**, ML3.3, Western Iran**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
SHGR	Shooshtar-Gavs	0.26	210	ePg	Pg	06 33 34.0	-0.3
SHGR	Shooshtar-Gavs	0.26	210	ePg	Pg	06 33 34.0	-0.3
IKMR	Kamar-syah	1.28	338	ePn	Pn	06 33 47.7	-4.6
IKMR	Kamar-syah	1.28	338	ePn	Pn	06 33 47.7	-4.6
IKFM	Kafar-mosalman	1.51	322	ePg	Pn	06 33 55.7	+0.2
IKFM	Kafar-mosalman	1.51	322	ePg	Pn	06 33 55.7	+0.2
KHMZ	Khomeyn	1.64	31	ePn	Pn	06 33 57.1	-0.4
KHMZ	Khomeyn	1.64	31	ePg	Pn	06 33 57.1	-0.4
ASAO	Ashtian	2.38	22	ePn	Pn	06 34 07.4	-0.4
ASAO	Ashtian	2.38	22	ePn	Pn	06 34 07.4	-0.4
ASAO				eSg	Sb	06 34 41.5	+0.4
IKLH	Kolahrood	2.42	65	eSg	Sb	06 34 41.1	-1.1
IKLH				ePn	Pn	06 34 08.0	-0.3
IKLH				eAMB	AMB	06 34 56.9	
	comp=Z,763nm,0.2s						
QAM	Ghamsar	2.53	55	ePn	Pn	06 34 11.2	+1.5
QAM				eAMB	AMB	06 34 49.2	
	comp=Z,2μm,0.2s						
IGAR	Gharneh	2.62	88	ePn	Pn	06 34 13.0	+2.1
IGAR				eAMB	AMB	06 34 56.5	
	comp=Z,821nm,0.3s						
IBDR	Badra	2.66	288	ePN4		06 34 19.5	
IBDR				eSN4		06 34 38.5	
NSR	Nassriya	2.74	242	ePn	Pb	06 34 18.0	+0.4
NSR				eSN4		06 34 39.0	
GHVR	GHOM	2.90	42	ePn	Pn	06 34 14.7	0.0
GHVR	GHOM	2.90	42	ePn	Pn	06 34 14.7	0.0
IZEF	Zefreh	2.90	78	ePn	Pn	06 34 14.9	0.0
IZEF				eAMB	AMB	06 34 60.0	
	comp=Z,384nm,0.3s						
IZEF	Zefreh	2.90	78	ePn	Pn	06 34 14.9	0.0
SNGE	Sanandaj	3.06	335	ePn	Pn	06 34 17.4	+0.4
SNGE	Sanandaj	3.06	335	ePn	Pn	06 34 17.4	+0.4
IDHR	Dehrash	3.19	318	ePn	Pn	06 34 18.0	-0.8
IDHR				eAMB	AMB	06 34 59.7	
	comp=Z,1μm,0.1s						
IDHR	Dehrash	3.19	318	ePn	Pn	06 34 18.0	-0.8
IKRK	Kirkuk	4.91	310	ePN4		06 34 47.6	
IKRK				eSN4		06 35 27.0	

IDC 05 06:33:35.6±11.0**, 49.°57N×149.°58E, h410**km±156km**, mb2.8**/4**, mb1 3.1**/6**, mb1mx2.7**/61**, mbtmp3.6**/6**, Error ellipse: s-maj=215.0km s-min=21.4km az=124.0, Northwest of Kuril Islands**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
MA2	Magadan	10.05	3	P	P	06 35 53.8	+0.6
	0.4nm,0.3s,baz=208,slow=10,SNR=4.0						
SEY	Seymchan	13.49	5	P	P	06 36 31.6	+0.7
	0.3nm,0.3s,baz=171,slow=9.3,SNR=5.0						
YKA	Yellowknife Ar	50.09	37	P	P	06 41 49.2	-1.1
	0.2nm,0.5s,baz=302,slow=7.0,SNR=9.7						
PDAR	Pinedale Array	64.96	53	P	P	06 43 33.2	0.0
	0.2nm,0.5s,baz=290,slow=2.7,SNR=2.9						
ASAR	Alice Springs	74.23	195	P	P	06 44 28.8	-0.1
	1.2nm,0.8s,baz=18,slow=4.7,SNR=9.8						
TXAR	Lajitas Array	78.11	59	P	P	06 44 51.9	+1.2
	0.2nm,0.7s,baz=320,slow=2.7,SNR=2.8						

*NIED **05** 06:34:00, 37.°00N×141.°20E, h23km, Mw3.8 Best double couple: $M_0$5.87000×10^14 NP1:ϕ_s98.00000°, δ64.00000°, λ-23.00000°. NP2:ϕ_s199.00000°, δ69.00000°, λ-152.00000°.*
*ISCJB **05** 06:34:10.7±0.6, 37.°00N±0.°06×141.°14E±0.°07, h35km, mb3.6/17, Error ellipse: s-maj=9.6km s-min=7.0km az=146.1*
*JMA **05** 06:34:10.1±0.1, 37.°00N×141.°17E, h32km±1km, M4.0*
JMA Felt II J1.
*IDC **05** 06:34:14.5±3.1, 37.°01N×141.°07E, h52km±28km, mb3.4/15, mb1 3.6/18, mb1mx3.5/58, mbtmp3.7/18, ML3.3/2, Error ellipse: s-maj=20.0km s-min=16.9km az=113.0*
ISC 05 06:34:12.3±0.7**, 37.°02N**±0.°07×**141.°10E**±0.°09**, h35**km**, n32, σ1ˢ20**/23**, mb3.7**/17**, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
ONAJ	Iwakimizuishiy	0.25	288	P	Pn	06 34 17.8	-1.9
ONAJ				S	Sn	06 34 22.9	-1.9
JFK	Kawauchi	0.39	333	P	Pn	06 34 19.2	-2.2
JHO	Hitachi	0.59	226	P	Pn	06 34 21.9	-2.3
JHO				S	Sn	06 34 30.3	-2.3
JFT	Otama	0.78	309	P	Pn	06 34 26.2	-0.7
JSB	Shiboa	0.94	267	P	Pn	06 34 29.3	+0.2
MJAR	Matsushiro Arr	2.37	259	P	Pn	06 34 49.6	+0.9
	6.1nm,0.3s,baz=83,slow=16,SNR=23						
MAT	Matsushiro	2.37	259	P	Pn	06 34 50.0	+1.3
MAT				S	Sn	06 35 22.3	+5.8
USRK	Ussuriysk Ar.	9.96	319	P	Pn	06 36 35.1	+2.2
	0.1nm,0.3s,baz=124,slow=13,SNR=7.4						
KSRS	Korea Array	10.52	276	P	Pn	06 36 44.0	+3.6
	0.2nm,0.3s,baz=90,slow=14,SNR=6.9						
MA2	Magadan	23.42	12	P	P	06 39 25.1	+7.2
	1.6nm,0.5s,baz=220,slow=7.5,SNR=5.1						
SEY	Seymchan	26.85	11	P	P	06 39 57.1	+7.9
	2.4nm,1.0s,baz=196,slow=11,SNR=7.1						
SONM	Songino Array	27.58	304	P	P	06 39 56.6	+0.5
	0.4nm,0.5s,baz=103,slow=6.4,SNR=2.8						
H11N2	WAKE ISLAND Hy	28.36	120	T	T	07 09 52.3	
	baz=313,slow=75,SNR=97						
H11N1	WAKE ISLAND Hy	28.37	120	T	T	07 09 52.9	
	baz=313,slow=75,SNR=119						
H11N3	WAKE ISLAND Hy	28.38	120	T	T	07 09 53.6	
	baz=313,slow=75,SNR=115						
H11S1	WAKE ISLAND Hy	29.07	122	T	T	07 10 56.8	
	baz=314,slow=75,SNR=64						
H11S3	WAKE ISLAND Hy	29.07	122	T	T	07 10 56.8	
	baz=314,slow=75,SNR=71						
H11S2	WAKE ISLAND Hy	29.08	122	T	T	07 10 56.2	
	baz=314,slow=75,SNR=67						
CMAR	Chiang Mai Arr	41.25	255	P	P	06 41 54.3	+0.2
	0.8nm,0.4s,baz=38,slow=33,SNR=3.1						
ZALV	Zalesovo Beam	41.73	312	P	P	06 41 57.8	+0.1
	0.7nm,0.4s,baz=91,slow=6.5,SNR=4.5						
MKAR	Makanchi Array	43.91	302	P	P	06 42 15.5	0.0
	0.7nm,0.7s,baz=87,slow=11,SNR=8.8						
KURBB	Kurchatov Arra	45.81	308	P	P	06 42 30.8	+0.4
	0.9nm,0.7s,baz=84,slow=8.3,SNR=12						
ILAR	Eielson Array	49.64	32	P	P	06 42 59.8	-0.2
	0.7nm,0.8s,baz=262,slow=6.9,SNR=7.0						
INK	Inuvik	54.51	27	P	P	06 43 37.0	+0.9
	0.4nm,0.5s,baz=278,slow=5.9,SNR=4.2						
WRA	Warramunga Arr	57.02	188	P	P	06 43 54.6	+0.1
	0.6nm,0.9s,baz=4.8,slow=7.3,SNR=4.9						
ASAR	Alice Springs	60.74	188	P	P	06 44 20.8	+0.4
	0.2nm,0.5s,baz=48,slow=30,SNR=3.3						
ARCES	ARCESS Array B	63.92	339	P	P	06 44 42.3	+1.2
	2.3nm,0.8s,baz=18,slow=5.1,SNR=2.4						
YKA	Yellowknife Ar	63.94	30	P	P	06 44 41.2	-0.2
	0.2nm,0.7s,baz=305,slow=6.8,SNR=5.3						
FINES	FINESS Array B	68.71	332	P	P	06 45 11.8	-0.1
	1.1nm,0.9s,baz=152,slow=32,SNR=2.6						
NVAR	Mina Array Bea	75.20	53	P	P	06 45 52.1	+0.6
	0.6nm,0.9s,baz=280,slow=8.9,SNR=3.1						
PDAR	Pinedale Array	77.85	45	P	P	06 46 08.0	+1.5
	0.1nm,0.3s,baz=314,slow=28,SNR=2.5						
TXAR	Lajitas Array	90.33	52	P	P	06 47 10.1	0.0
	0.2nm,0.8s,baz=316,slow=3.5,SNR=3.6						

*NEIC **05** 06:34:30.2, 19.°10N×66.°52W, h17km, MD3.5(RSPR), After RSPR.*
RSPR 05 06:34:30.2, 19.°10N×66.°52W, h17km±3km**, MD3.5**/12**, 15C-14D, Puerto Rico region**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
AOPR	Arecibo Observ	0.79	197⇑	eP	Pb	06 34 43.5	-2.0
AOPR				eS	Sb	06 34 53.9	-1.9
AOPR	Arecibo Observ	0.79	197⇑	eP	Pb	06 34 43.5	-1.9
AOPR	Arecibo Observ	0.79	197⇑	eP	Pb	06 34 43.5	-2.0
AOPR				eS	Sb	06 34 53.9	-1.9
AGPR	Aguadilla, PR	0.85	222⇓	eP	Pb	06 34 44.5	-2.0
AGPR	Aguadilla, PR	0.85	222	eS	Sb	06 34 55.2	-2.3
AGPR	Aguadilla, PR	0.85	222⇓	eP	Pb	06 34 44.5	-2.0
AGPR				eS	Sb	06 34 55.2	-2.3
LRS	Lares	0.86	201⇑	iP	Pb	06 34 44.4	-2.4
LRS				eS	Sb	06 34 55.5	-2.6
LRS	Lares	0.86	201	iPu	Pb	06 34 44.4	-2.4
CELP	Cerrillos	1.02	183⇑	eP	Pb	06 34 46.9	-2.6
CELP				eS	Sb	06 35 00.1	-2.6
CELP	Cerrillos	1.02	183⇑	eP	Pb	06 34 46.9	-2.6
CBYP	Canovanas	1.03	143⇑	eP	Pb	06 34 46.9	-2.8
CBYP	Canovanas	1.03	143	eS	Sb	06 34 59.9	-3.1
CBYP	Canovanas	1.03	143⇑	eP	Pb	06 34 46.9	-2.8
CBYP				eS	Sb	06 34 59.9	-3.1
SJG	San Juan	1.04	161⇓	eP	Pb	06 34 47.2	-2.6
SJG	San Juan	1.04	161⇓	eP	Pb	06 34 47.2	-2.6
SJG				eS	Sb	06 34 59.5	-3.7
SJG	San Juan	1.04	161⇓	eP	Pb	06 34 47.2	-2.6
OBIP	Obispado Ponce	1.06	185⇑	eP	Pb	06 34 47.7	-2.4
OBIP	Obispado Ponce	1.06	185	eS	Sb	06 35 00.5	-3.1
OBIP	Obispado Ponce	1.06	185⇑	eP	Pb	06 34 47.7	-2.4
OBIP				eS	Sb	06 35 00.5	-3.1
MPR	Mayaguez	1.07	214⇑	eP	Pb	06 34 47.7	-2.5
MPR	Mayaguez	1.07	214	eS	Sb	06 35 01.2	-2.6
MPR	Mayaguez	1.07	214⇑	eP	Pb	06 34 47.7	-2.5
MPR				eS	Sb	06 35 01.2	-2.6
LSP	Las Mesas	1.07	211⇓	eP	Pb	06 34 47.6	-2.7
LSP	Las Mesas	1.07	211⇓	eP	Pb	06 34 47.6	-2.7
HUMP	Col San Antoni	1.14	146⇓	eP	Pn	06 34 48.7	-2.8
HUMP	Col San Antoni	1.14	146⇑	eP	Pn	06 34 48.6	-2.8
HUMP				eS	Sb	06 35 03.1	-3.0
HUMP	Col San Antoni	1.14	146⇑	eP	Pn	06 34 48.6	-2.8
HUMP				eS	Sb	06 35 03.0	-3.1
IDE	Isla Desecheo	1.16	232⇓	iP	Pn	06 34 48.6	-2.9
IDE	Isla Desecheo	1.16	232	eS	Sb	06 35 03.6	-2.8
IDE	Isla Desecheo	1.16	232⇓	iP	Pn	06 34 48.6	-2.9
IDE				eS	Sb	06 35 03.6	-2.8
GBPR	Guanica, Bosqu	1.17	197⇑	eP	Pn	06 34 49.5	-2.4
GBPR	Guanica, Bosqu	1.17	197	eS	Sb	06 35 05.5	-1.4
GBPR	Guanica, Bosqu	1.17	197⇑	eP	Pn	06 34 49.5	-2.4
GBPR				eS	Sb	06 35 05.5	-1.4
CRPR	Cabo Rojo, PR	1.23	207⇓	eP	Pn	06 34 49.9	-2.7
CRPR	Cabo Rojo, PR	1.23	207	eS	Sb	06 35 05.6	-2.9
CRPR	Cabo Rojo, PR	1.23	207⇓	eP	Pn	06 34 49.9	-2.7
CRPR				eS	Sb	06 35 05.6	-2.9
STVI	Saint Thomas	1.66	117⇓	eP	Pn	06 34 56.1	-2.4
STVI	Saint Thomas	1.66	117	eS	Sn	06 35 15.6	-3.7
STVI	Saint Thomas	1.66	117⇓	eP	Pn	06 34 56.1	-2.4
STVI				eS	Sn	06 35 15.6	-3.7
SDDR	Presa de Saban	4.52	269	ePn	Pn	06 35 36.9	-1.1

*ISCJB **05** 06:38:44.8±0.7, 18.°3S±0.°2×177.°9W±0.°1, h650km, mb3.8/14, Error ellipse: s-maj=22.9km s-min=11.4km az=143.3*
*IDC **05** 06:38:46.2±2.2, 18.°29S×177.°89W, h649km±28km, mb3.4/15, mb1 3.6/16, mb1mx3.4/40, mbtmp4.3/16, Error ellipse: s-maj=24.9km s-min=12.4km az=152.0*
ISC 05 06:38:46.1±0.7**, 18.°3S**±0.°2×**177.°8W**±0.°1**, h650**km**, n26, σ1ˢ08**/28**, mb3.9**/14**, Fiji Islands region**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
DZM	Mont Dzumac	15.25	253	P	P	06 41 55.9	+1.1
	0.5nm,0.3s,baz=118,slow=22,SNR=5.6						
URZ	Urewera	20.38	192	P	P	06 42 39.9	-1.0
	12nm,0.8s,baz=223,slow=2.8,SNR=4.8						
STKA	Stephens Creek	38.94	242	P	P	06 45 20.8	+1.6
	1.0nm,0.4s,baz=357,slow=5.5,SNR=2.9						
JAY	Jayapura	43.56	286	P	P	06 45 55.6	-0.1
	0.5nm,0.4s,baz=233,slow=24,SNR=3.5						
WRA	Warramunga Arr	45.12	260	P	P	06 46 06.8	-0.7
	2.8nm,0.3s,baz=96,slow=7.6,SNR=54						
WRA				PcP	PcP	06 47 34.2	+0.6
	1.3nm,0.9s,baz=84,slow=3.5,SNR=5.1						
ASAR	Alice Springs	45.23	255	P	P	06 46 08.1	-0.3
	4.8nm,0.6s,baz=90,slow=7.9,SNR=44						
ASAR				PcP	PcP	06 47 34.1	+0.2
	1.3nm,0.8s,baz=101,slow=3.9,SNR=6.8						
ASAR				S	S	06 52 02.1	-1.3
	1.1nm,0.8s,baz=89,slow=15,SNR=7.2						
PETK	Petropavlovsk-	74.20	345	P	P	06 49 17.9	-0.5
	2.5nm,0.7s,baz=315,slow=27,SNR=5.5						
NVAR	Mina Array Bea	79.31	44	P	P	06 49 47.8	+1.0
	2.1nm,0.8s,baz=226,slow=9.0,SNR=18						
MA2	Magadan	81.72	344	P	P	06 49 58.8	+0.5
	1.7nm,0.2s,baz=137,slow=7.6,SNR=4.0						
SEY	Seymchan	84.28	347	P	P	06 50 10.3	-0.6
	2.5nm,0.7s,baz=155,slow=6.1,SNR=15						
TXAR	Lajitas Array	85.73	57	P	P	06 50 20.4	+1.5
	5.6nm,0.9s,baz=223,slow=6.1,SNR=38						
ILAR	Eielson Array	86.14	13	P	P	06 50 18.8	-1.1
	1.5nm,0.9s,baz=232,slow=4.7,SNR=8.4						
PDAR	Pinedale Array	87.24	43	P	P	06 50 26.1	+0.3
	1.1nm,0.7s,baz=215,slow=2.6,SNR=13						
CMAR	Chiang Mai Arr	89.55	290	P	P	06 50 38.3	+1.5
	1.0nm,0.4s,baz=114,slow=3.5,SNR=4.8						
INK	Inuvik	92.11	15	P	P	06 50 46.3	-1.1
	1.4nm,0.8s,baz=180,slow=4.6,SNR=5.6						
YKA	Yellowknife Ar	94.45	25	P	P	06 50 57.8	-0.4
	0.9nm,0.9s,baz=244,slow=4.6,SNR=10						
MKAR	Makanchi Array	109.81	314	PKiKP	PKiKP	06 56 02.8	-2.4
	0.2nm,0.5s,baz=215,slow=1.8,SNR=2.9						
ARCES	ARCESS Array B	126.79	350	PKP	PKPdf	06 56 37.4	+0.3
	3.5nm,1.0s,baz=323,slow=1.8,SNR=6.1						
FINES	FINESS Array B	133.71	344	PKP	PKPdf	06 56 51.7	+1.5
	0.8nm,0.6s,baz=20,slow=4.4,SNR=3.3						
AKASG	Malin Array Be	141.16	333	PKhKP	PKPpre	06 56 59.5	
	0.2nm,0.3s,baz=40,slow=3.8,SNR=3.7						
BRTR	Keskin Array B	145.46	315	PKPbc	PKPbc	06 57 13.7	-0.3
	2.4nm,0.8s,baz=90,slow=2.5,SNR=7.7						
CLL	Collm	145.96	348	ePKP	PKPbc	06 57 14.0	-0.7
	comp=Z,12nm,0.8s						
MLR	Muntele Rosu	146.45	329	PKPbc	PKPbc	06 57 16.5	0.0
	comp=Z,0.7nm,0.8s,baz=244,slow=14,SNR=3.6						
GERES	GERESS Array B	148.13	346	PKPbc	PKPbc	06 57 20.8	+0.1
	comp=Z,1.8nm,0.6s,baz=38,slow=2.4,SNR=14						
DAVOX	Davos/Dischmat	150.89	349	PKPbc	PKPbc	06 57 27.6	+0.2
	comp=Z,6.7nm,0.8s,baz=360,slow=3.4,SNR=6.6						
TORD	Torodi Ar. Bea	174.86	175	PKP	PKPdf	06 57 41.9	-2.0
	comp=Z,0.8nm,0.9s,baz=201,slow=2.9,SNR=3.3						

*ISCJB **05** 06:41:00.8±0.8, 32.°29N±0.°07×48.°80E±0.°06, h23km, mb3.4/5, Error ellipse: s-maj=11.1km s-min=6.7km az=17.5*
*CSEM **05** 06:41:00.9±0.6, 32.°36N×48.°95E, h8km±6km, ML3.1, Error ellipse: s-maj=11.7km s-min=5.7km az=17.0*
*TEH **05** 06:41:01.1, 32.°34N×48.°90E, h8km, ML3.1*
*IDC **05** 06:41:10.8±8.0, 34.°41N×48.°66E, h0km, mb3.5/5, mb1 3.6/6, mb1mx3.3/47, mbtmp3.4/6, ML3.0/1, Error ellipse: s-maj=193.8km s-min=23.8km az=4.0*
ISC 05 06:41:01.6±0.8**, 32.°31N**±0.°06×**48.°84E**±0.°05**, h23**km**, n27, σ1ˢ36**/29**, mb3.7**/5**, Western Iran**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
SHGR	Shooshtar-Gavs	0.20	189	ePg	Pb	06 41 06.7	-0.4
IKFM	Kafar-mosalman	1.47	326	ePn	Pb	06 41 28.3	+0.1
IKFM	Kafar-mosalman	1.47	326	ePn	Pb	06 41 28.3	+0.1
KHMZ	Khomeyn	1.71	33	ePg	Pn	06 41 28.9	-1.2
IPIR	Pirpir	1.77	77	ePn	Pn	06 41 31.2	+0.1

Code	Station Name	Δ°	AZ°	Op	ISC	Time	Res
IPIR				eSg	Sb	06 41 54.8	-0.7
IPIR				eAMB	AMB	06 42 05.9	
	comp=Z,2µm,0.3s						
IPIR	Pirpir	1.77	77	ePn	Pn	06 41 31.2	+0.1
IPIR				eSg	Sb	06 41 54.8	-0.7
ASAO	Ashtian	2.44	24	ePn	Pn	06 41 40.2	-0.1
IKLH	Kolahrood	2.52	66	ePn	Pn	06 41 41.0	-0.3
IKLH				eAMB	AMB	06 42 32.5	
	comp=Z,494nm,0.3s						
IKLH	Kolahrood	2.52	66	ePn	Pn	06 41 41.0	-0.3
QAM	Ghamsar	2.62	56	ePn	Pn	06 41 43.5	+0.8
QAM				eAMB	AMB	06 42 28.3	
	comp=Z,1µm,0.0s						
IGAR	Gharneh	2.71	87	ePn	Pn	06 41 44.3	+0.3
IGAR				eAMB	AMB	06 42 32.7	
	comp=Z,385nm,0.1s						
IZEF	Zefreh	3.00	78	ePn	Pn	06 41 48.1	+0.1
IZEF				eAMB	AMB	06 42 39.0	
	comp=Z,241nm,0.3s						
IZEF	Zefreh	3.00	78	ePn	Pn	06 41 48.1	+0.1
SNGE	Sanandaj	3.04	336	ePn	Pn	06 41 50.1	+1.6
IRAM	Ramesheh	3.05	98	ePn	Pn	06 41 49.4	+0.8
IRAM				eAMB	AMB	06 42 48.5	
	comp=Z,287nm,0.3s						
IRAM	Ramesheh	3.05	98	ePn	Pn	06 41 49.4	+0.8
IDHR	Dehrash	3.14	320	ePn	Pn	06 41 50.7	+0.8
IDHR				eAMB	AMB	06 42 32.0	
	comp=Z,718nm,0.1s						
IDHR	Dehrash	3.14	320	ePn	Pn	06 41 50.7	+0.8
IRAZ	Razeghan	3.22	16	ePn	Pn	06 41 51.4	+0.5
IRAZ				eAMB	AMB	06 42 48.6	
	comp=Z,448nm,0.3s						
IRAZ	Razeghan	3.22	16	ePn	Pn	06 41 51.4	+0.5
NASN	Na'in	3.39	81	ePn	Pn	06 41 52.4	-0.9
BRTR	Keskin Array B	14.34	305	Pn	Pn	06 44 21.6	-1.8
	comp=Z,0.1nm,0.3s,baz=124,slow=13,SNR=2.4						
KURBB	Kurchatov Arra	28.52	41	P	P	06 46 53.8	-1.3
	comp=Z,0.1nm,0.3s,baz=249,slow=9.6,SNR=2.9						
MKAR	Makanchi Array	29.32	51	P	P	06 47 06.1	+3.8
	comp=Z,0.1nm,0.5s,baz=250,slow=7.5,SNR=2.2						
GERES	GERESS Array B	31.04	312	P	P	06 47 16.8	-0.8
	comp=Z,0.3nm,0.2s,baz=102,slow=4.4,SNR=3.9						
NOA	NORSAR Array B	37.71	331	P	P	06 48 12.7	-2.4
	comp=Z,1.0nm,0.8s,baz=120,slow=8.3,SNR=3.4						
SONM	Songino Array	45.64	53	P	P	06 49 23.8	+3.4
	comp=Z,0.5nm,0.5s,baz=294,slow=11,SNR=2.3						

ISCJB ***05*** *06:42:48.6±0.4, 5°.47N±0°.04×74°.14W±0°.04, h72km±5km, mb3.2/5, Error ellipse: s-maj=6.6km s-min=5.6km az=32.4*
IDC ***05*** *06:42:48.5±1.0, 5°.49N×74°.14W, h59km±8km, mb3.2/5, mb1 3.3/6, mb1mx3.1/31, mbtmp3.5/6, Error ellipse: s-maj=24.2km s-min=12.0km az=119.0*
RSNC ***05*** *06:42:49.9±1.0, 5°.46N×74°.15W, h27km±9km, ML3.6*
ISC 05 06:42:49.1±0.9**, 5°.46N**±0°.04×**74°.16W**±0°.04**, h64**km±9km**,**
n21, σ**0s.81**/28**, mb3.2**/5**, Colombia**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
ROSC	El Rosal	0.63	195	P	Pn	06 43 02.9	-0.4
	66nm,0.3s,baz=51,slow=5.3,SNR=385						
ROSC				S	Sn	06 43 14.8	+1.2
	400nm,0.3s,baz=1.1,slow=23,SNR=32						
NORC	Norcasia	0.72	278	eP	Pn	06 43 03.2	-0.6
NORC				eS	Sn	06 43 13.9	-0.8
CHIC	Chingaza	0.93	153	eP	Pn	06 43 06.3	-0.4
CHIC				eS	Sn	06 43 18.7	-1.0
CHIC				i		06 43 23.6	
	comp=Z,1µm,0.3s						
GUYC	Guyana, Colomb	1.25	259	eP	Pn	06 43 12.1	+1.1
GUYC				eS	Sn	06 43 28.6	+1.3
GUYC				i		06 43 30.7	
	comp=Z,683nm,0.2s						
VILC	Villavicencio,	1.41	161	eP	Pn	06 43 14.1	+1.2
VILC				i		06 43 36.9	
	comp=Z,810nm,0.4s						
BARC	Barichara	1.49	41	eP	Pn	06 43 14.2	+0.2
BARC				eS	Sn	06 43 33.6	+1.0
BARC				i		06 43 41.2	
	comp=Z,1µm,0.6s						
HELC	Santa Helena	1.55	298	eP	Pn	06 43 15.1	+0.3
HELC				eS	Sn	06 43 35.0	+0.7
HELC				i		06 43 39.4	
	comp=Z,333nm,0.3s						
BRRC	Barranca, Sant	1.70	15	eP	Pn	06 43 16.2	-0.3
BRRC				i		06 43 49.1	
	comp=Z,445nm,0.1s						
BTLC	Betulia, Santa	1.70	31	eP	Pn	06 43 17.4	+0.6
YOPC	Yopal, Colombi	1.73	93	eP	Pn	06 43 18.1	+1.0
YOPC				i		06 43 47.9	
	comp=Z,440nm,0.5s						
GIRC	Giron, Santand	1.87	31	eP	Pn	06 43 19.5	+0.4
PRAC	Prado	1.88	203	eP	Pn	06 43 18.8	-0.2
PAMC	Pamplona, Colo	2.37	38	eP	Pn	06 43 26.3	+0.3
OCAC	Ocana	2.89	17	eP	Pn	06 43 32.9	0.0
OCAC				i		06 44 30.3	
	comp=Z,279nm,0.5s						
SDV	Santo Domingo	4.88	46	P	Pn	06 44 00.8	+0.6
	comp=Z,2.2nm,0.3s,baz=191,slow=2.8,SNR=24						
SDV				S	Sn	06 44 54.6	-0.9
	comp=Z,4.7nm,0.3s,baz=210,slow=21,SNR=5.9						
LPAZ	La Paz	22.41	165	P	P	06 47 43.4	+0.1
	comp=Z,0.2nm,0.5s,baz=356,slow=16,SNR=1.7						
SIV	San Ignacio	24.94	149	P	P	06 48 07.7	+1.1
	comp=Z,1.5nm,0.6s,baz=316,slow=7.9,SNR=3.7						
BDFB	Brasilia	33.31	129	P	P	06 49 21.2	0.0
	comp=Z,1.1nm,0.6s,baz=79,slow=10,SNR=2.0						
YKA	Yellowknife Ar	64.19	340	P	P	06 53 17.0	+0.2
	comp=Z,0.1nm,0.3s,baz=130,slow=6.3,SNR=6.6						
TORD	Torodi Ar. Bea	75.03	78	P	P	06 54 23.2	-1.3
	comp=Z,0.2nm,0.7s,baz=256,slow=5.8,SNR=2.2						
WRA	Warramunga Arr	148.77	240	PKPbc	PKPbc	07 02 29.9	-0.4
	comp=Z,0.3nm,0.4s,baz=115,slow=2.5,SNR=3.7						

NIED ***05*** *06:44:00, 36°.20N×143°.20E, h8km, Mw4.0 Best double couple: Mo1.08000×10^15 NP1:φs26.00000°, δ24.00000°, λ-90.00000°. NP2:φs205.00000°, δ66.00000°, λ-90.00000°.*
IDC ***05*** *06:44:19.3±0.7, 36°.02N×143°.40E, h0km, mb3.8/13, mb1 4.0/18, mb1mx3.9/49, mbtmp3.9/18, ML3.7/4, MS2.8/2, Ms1 2.8/2, ms1mx2.4/49, Error ellipse: s-maj=18.0km s-min=15.1km az=159.0*
JMA ***05*** *06:44:22.5±0.2, 36°.19N×143°.22E, h71km, M3.6*
NEIC ***05*** *06:44:24.3±0.5, 35°.95N×143°.32E, h35km, mb4.3/2, Error ellipse: s-maj=12.0km s-min=8.7km az=168.0*
ISC 05 06:44:23.7±3.0**, 36°.15N**±0°.05×**143°.24E**±0°.04**, h28**km±22km**,**
n48, σ**1s.47**/52**, mb4.0**/16**, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
CHOJ	Chosi	1.98	258	P	Pn	06 44 54.7	-0.7
ONAJ	Iwakimizuishiy	2.18	296	P	Pn	06 44 56.9	-1.2
ONAJ				eS	Sn	06 45 22.4	-1.8
JHO	Hitachi	2.20	283	P	Pn	06 44 57.0	-1.4
JHO				eS	Sn	06 45 22.8	-1.9
JFK	Kawauchi	2.25	303	P	Pn	06 44 57.6	-1.5
JFK				eS	Sn	06 45 24.2	-1.7
BSO1	Boso 1	2.38	232	P	Pn	06 44 59.5	-0.8
BSO1				eS	Sn	06 45 28.2	0.0
JFT	Otama	2.69	301	P	Pn	06 45 04.6	-0.6
JFT				eS	Sn	06 45 36.0	-0.9
JAG	Ashikaga	3.07	276	P	Pn	06 45 09.6	-0.7
JAG				eS	Sn	06 45 43.9	-2.2
JMK	Ichinoseki	3.22	331	P	Pn	06 45 10.7	-1.7
JMK				eS	Sn	06 45 46.7	-3.1
JOD2	Odawara 2	3.49	256	P	Pn	06 45 15.6	-0.6
JOD2				S	Sn	06 45 55.7	-0.8
JRY	Ryogami san	3.51	269	P	Pn	06 45 15.6	-0.9
JYK	Kaneyama	3.58	321	P	Pn	06 45 16.5	-0.9
JYK				eS	Sn	06 45 57.2	-1.6
JOM	Ohasama	3.65	336	P	Pn	06 45 16.5	-1.9
JOM				eS	Sn	06 45 57.7	-2.8
JYN	Shimob	3.87	262	P	Pn	06 45 22.0	+0.6
JYN				eS	Sn	06 46 05.9	0.0
JAW	Awa shima	3.92	307	P	Pn	06 45 22.8	+0.8
MJAR	Matsushiro Arr	4.08	277	Pn	Pn	06 45 24.6	+0.4
	9.1nm,0.3s,baz=106,slow=9.5,SNR=45						
MJAR				Sn	Sn	06 46 13.5	+2.5
	0.8nm,0.3s,baz=187,slow=40,SNR=2.8						
MAJO	Matsushiro	4.08	277	ePn	Pn	06 45 24.5	+0.2
MAT	Matsushiro	4.08	277	P	Pn	06 45 24.3	+0.1
MAT				eS	Sn	06 46 10.2	-0.8
MAT	Matsushiro	4.08	277	P	Pn	06 45 24.4	+0.2
JHJ	Hachijo jima 2	4.16	224	Pn	Pn	06 45 24.2	-1.1
	20nm,0.3s,baz=39,slow=22,SNR=5.8						
JHJ				Sn	Sn	06 46 08.7	-4.2
	41nm,0.3s,baz=16,slow=23,SNR=4.1						
ERM	Erimo	5.85	359	ePn	Pn	06 45 51.3	+2.7
JNU	Nakatsue	10.62	257	Pn	Pn	06 46 54.4	+0.3
	0.3nm,0.3s,baz=82,slow=9.9,SNR=2.8						
JNU				LR	LR	06 51 36.9	
	comp=Z,50nm,18.6s,baz=128,slow=41						
USRK	Ussuriysk Ar.	11.76	317	Pn	Pn	06 47 11.4	+1.9
	0.2nm,0.3s,baz=127,slow=12,SNR=6.5						
KSRS	Korea Array	12.34	281	Pn	Pn	06 47 19.6	+2.1
	0.3nm,0.3s,baz=84,slow=13,SNR=5.1						
KSRS				LR	LR	06 52 01.0	
	comp=Z,36nm,20.6s,baz=79,slow=37						
KSAR	Wonju Array Be	12.38	281	Pn	Pn	06 47 19.6	+1.6
KLR	Kul'dur	15.53	331	Pn	P	06 48 05.9	+1.1
	0.1nm,0.3s,baz=142,slow=12,SNR=5.7						
H11N2	WAKE ISLAND Hy	26.44	122	T	T	07 17 19.2	
	baz=314,slow=75,SNR=16						
H11N1	WAKE ISLAND Hy	26.45	122	T	T	07 17 21.0	
	baz=314,slow=75,SNR=15						
H11N3	WAKE ISLAND Hy	26.46	122	T	T	07 17 20.6	
	baz=314,slow=75,SNR=11						
H11S1	WAKE ISLAND Hy	27.15	124	T	T	07 18 16.3	
	baz=316,slow=75,SNR=14						
H11S3	WAKE ISLAND Hy	27.15	124	T	T	07 18 10.7	
	baz=316,slow=75,SNR=8.7						
H11S2	WAKE ISLAND Hy	27.17	124	T	T	07 18 12.6	
	baz=316,slow=75,SNR=11						
SONM	Songino Array	29.49	305	P	P	06 50 27.2	+1.7
	2.2nm,0.6s,baz=108,slow=9.8,SNR=6.6						
ZALV	Zalesovo Beam	43.59	313	P	P	06 52 25.7	+0.6
	0.4nm,0.3s,baz=51,slow=7.8,SNR=2.8						
MKAR	Makanchi Array	45.83	303	P	P	06 52 43.7	+0.6
	0.7nm,0.7s,baz=82,slow=10,SNR=4.8						
KURK	Kurchatov	47.63	309	eP	P	06 52 57.5	+0.4
	5.0nm,0.7s						
KURK				P	P	06 52 58.0	+0.9
KURBB	Kurchatov Arra	47.70	309	P	P	06 52 58.0	+0.4
	1.1nm,0.7s,baz=83,slow=8.0,SNR=12						
ILAR	Eielson Array	49.46	32	P	P	06 53 10.6	-0.4
	0.7nm,0.7s,baz=263,slow=5.9,SNR=7.9						
BVAR	Borovoye Array	52.24	313	P	P	06 53 37.7	+5.6
	0.8nm,0.5s,baz=87,slow=8.3,SNR=4.7						
INK	Inuvik	54.50	27	P	P	06 53 49.1	+0.7
	0.4nm,0.6s,baz=307,slow=6.4,SNR=4.2						
WRA	Warramunga Arr	56.42	190	P	P	06 54 01.7	-1.1
	2.9nm,0.8s,baz=11,slow=7.2,SNR=14						
ABKAR	Akbulak array	59.62	311	eP	P	06 54 25.1	+0.1
	0.9nm,0.8s						
ASAR	Alice Springs	60.15	190	P	P	06 54 27.9	-0.9
	1.5nm,0.8s,baz=14,slow=7.0,SNR=14						
YKA	Yellowknife Ar	63.83	30	P	P	06 54 52.6	-0.5
	0.3nm,0.7s,baz=301,slow=6.7,SNR=6.8						
NVAR	Mina Array Bea	74.33	54	P	P	06 55 59.5	+0.5
	1.2nm,0.8s,baz=282,slow=5.7,SNR=9.8						
AKASG	Malin Array Be	75.88	323	P	P	06 56 10.2	+2.8
	0.9nm,0.4s,baz=45,slow=6.3,SNR=4.5						
PDAR	Pinedale Array	77.23	46	P	P	06 56 15.2	-0.3
	0.6nm,0.6s,baz=259,slow=2.5,SNR=6.5						
TXAR	Lajitas Array	89.48	53	P	P	06 57 18.7	+0.2
	0.5nm,0.6s,baz=320,slow=4.5,SNR=7.2						
LPAZ	La Paz	145.83	63	PKPbc	PKPdf	07 04 00.7	-0.3
	2.1nm,0.7s,baz=321,slow=1.7,SNR=11						

ISCJB ***05*** *07:05:25.7±0.1, 44°.71N±0°.01×112°.05W±0°.02, h10km, mb4.3/29, MS3.8/11, Error ellipse: s-maj=1.8km s-min=1.5km az=39.5*
BJI ***05*** *07:05:25.0, 44°.60N×112°.10W, h12km, mb4.8/5, mB4.9/3*
IDC ***05*** *07:05:25.5±0.4, 44°.63N×112°.07W, h0km, mb4.1/14, mb1 4.3/22, mb1mx4.0/63, mbtmp4.1/22, ML3.4/6, MS3.7/20, Ms1 3.7/20, ms1mx3.5/70, Error ellipse: s-maj=9.4km s-min=6.0km az=51.0*
NEIC ***05*** *07:05:26.0, 44°.61N×112°.09W, h12km, mb4.5/20, MW4.4, ML4.4(BUT), Moment Tensor Solution. s69 Moment tensor: Scale 10^15Nm; Mrr-0.38; Mθθ3.99; Mφφ-3.61; Mrθ0.70; Mθφ2.03; Mφr-1.05; Best double couple: Mo4.50000×10^15 NP1:φs300.00000°, δ82.00000°, λ-15.00000°. NP2:φs32.00000°, δ75.00000°, λ-172.00000°. Principal axes: T 4.5400, Plg5.0000°, Azm347.0000°; N -0.0700, Plg73.0000°, Azm94.0000°; P -4.4700, Plg16.0000°, Azm255.0000°; After BUT.*
NEIC Felt [III] at Lima and [II] at Bozeman, Butte, Dillon and Helena. Also felt at Anaconda, Corvallis, Hamilton, Missoula, Stevensville, Sula, Twin Bridges, West Yellowstone and Whitehall. Felt [II] at Ashton, Dubois, Rexburg and Saint Anthony, Idaho. Also felt at Challis, Idaho Falls, Ketchum, Monteview, North Fork, Spencer, Swan Valley and Victor. Felt at Brigham City, Utah.
GCMT ***05*** *07:05:26.0±0.5, 44°.69N×112°.05W, h12km, MW4.6/129, Moment Tensor Solution. s129,c188; Duration: 0 Moment tensor: Scale 10^16Nm; Mrr-0.17±.04; Mθθ0.78±.04; Mφφ-0.61±.04; Mrθ0.04±.13; Mθφ0.31±.03; Mφr-0.37±.12; Best double couple: Mo0.86200×10^16 NP1:φs36.00000°, δ73.00000°, λ-158.00000°. NP2: φs299.00000°, δ69.00000°, λ-19.00000°. Principal axes: T 0.8510, Plg3.0000°, Azm167.0000°; N 0.0210, Plg62.0000°, Azm72.0000°; P -0.8730, Plg28.0000°, Azm259.0000°; nsta1 refers to body waves. nsta2 refers to surface waves, cutoff=50s.*
ISC 05 07:05:27.0±0.4**, 44°.66N**±0°.02×**112°.03W**±0°.02**, h10**km**,**
n288, σ**1s.29**/280**, mb4.5**/29**, MS3.7**/11**, Eastern Idaho**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
YHB	Horse Butte	0.60	81	ePg	Pg	07 05 38.2	-0.6
YMC	Maple Creek	0.74	82	ePg	Pg	07 05 40.8	-0.6
YMR	Madison River	0.76	89	ePg	Pb	07 05 41.3	-1.3
YMR				eSg	Sb	07 05 53.1	0.0
MCID	Moose Creek	0.77	127	ePg	Pg	07 05 41.2	-0.7
DLMT	Dillon	0.81	331	ePg	Pg	07 05 42.0	-0.7
YPM	Purple Mountai	0.83	90	ePg	Pb	07 05 42.5	-1.2
YHH	Holmes Hill	0.85	81	ePg	Pb	07 05 42.9	-1.2
YFT	Old Faithful	0.88	103	ePg	Pb	07 05 43.6	-1.0
YPP	Pitchstone Pla	0.96	113	ePg	Pg	07 05 44.9	-0.6
YNR	Norris Junctio	0.97	86	ePg	Pb	07 05 45.0	-1.1
YML	Mary Lake	0.99	93	ePg	Pb	07 05 45.6	-0.9
YMV	Mammoth Vault	1.01	71	ePg	Pb	07 05 45.8	-0.9
BOZ	Bozeman (W)	1.03	16	P	Pg	07 05 44.7	-2.2
	baz=198						
BOZ				S	Sg	07 05 58.4	-1.9
	baz=198						
BOZ	Bozeman (W)	1.03	16	ePg	Pg	07 05 45.8	-1.1
BOZ				eSg	Sg	07 05 58.4	-1.9
YLT	Little Thumb C	1.06	102	ePg	Pb	07 05 46.8	-0.8
H17A	Grant Village	1.07	104	P	Pn	07 05 47.4	-1.0
	baz=282						
IMW	Indian Meadow	1.09	134	ePg	Pg	07 05 46.4	-1.7
IMW				eSg	Sg	07 06 00.3	-2.0
FLWY	Flagg Ranch	1.12	121	ePg	Pg	07 05 47.4	-1.1
LKWY	Lake	1.17	94	ePn	Pn	07 05 49.5	-0.2
YJC	Joseph's Coat	1.21	85	ePg	Pb	07 05 49.2	-0.9
YTP	The Promontory	1.28	101	ePg	Pn	07 05 50.3	-0.9
MOOW	Moose Ponds	1.30	134	ePg	Pn	07 05 49.9	-1.5
MOOW				eSg	Sb	07 06 06.5	-1.9
YMP	Mirror Lake Pl	1.34	86	ePn	Pn	07 05 51.2	-0.9
LOHW	Long Hollow	1.47	135	ePn	Pn	07 05 52.9	-0.8
SNOW	Snow King Moun	1.51	142	ePn	Pn	07 05 53.4	-0.9
REDW	Red Top Meadow	1.55	146	ePn	Pn	07 05 54.1	-0.8
AHID	Auburn Hatcher	2.01	160	ePn	Pn	07 06 00.8	-0.4
AHID				eSn	Sb	07 06 29.1	+0.2
RLMT	Red Lodge	2.02	76	P	Pb	07 06 02.7	-1.3
	baz=257						
RLMT	Red Lodge	2.02	76	ePn	Pg	07 06 04.8	-1.0
HLID	Hailey	2.03	238	Pb	Pn	07 06 00.4	-1.1
	baz=57						
HLID				Sb	Sn	07 06 27.5	+0.4
	baz=57						
HLID	Hailey	2.03	238	ePn	Pn	07 06 01.3	-0.2
HLID				eSn	Sb	07 06 28.5	-1.1
BEI	Bear River Ran	2.55	176	ePn	Pn	07 06 08.5	0.0
MSO	Missoula	2.55	329	Pb	Pn	07 06 07.8	-0.8
	baz=149						
MSO				Sg	Sg	07 06 46.0	-2.9
	baz=149						
MSO	Missoula	2.55	329	ePn	Pn	07 06 08.5	0.0
MSO				ePg	Pg	07 06 14.3	-1.6
MSO				eSn	Sb	07 06 45.4	+1.0
BW06	Boulder Array	2.61	136	P	Pn	07 06 10.1	+0.7
	baz=316						
BW06				S	Sb	07 06 46.2	+0.1
	baz=316						
BW06	Boulder Array	2.61	136	ePn	Pn	07 06 10.7	+1.3
BW06				eSn	Sb	07 06 47.1	+1.0
PD31	Pinedale Array	2.61	136	ePn	Pb	07 06 11.2	-2.8
PD31				eSn	Sb	07 06 47.2	+1.0
PDAR	Pinedale Array	2.61	136	Pn	Pn	07 06 10.2	+0.8
	88nm,0.3s,baz=307,slow=15,SNR=975						
PDAR				Lg	Lg	07 06 47.4	
	107nm,0.3s,baz=338,slow=38,SNR=8.5						
PDAR				LR	LR	07 06 47.5	
	comp=Z,360nm,19.5s,baz=158,slow=32						
PDAR	Pinedale Array	2.61	136	Pn	Pn	07 06 10.2	+0.8
PDAR				Lg	Lg	07 06 47.4	
MLI	Malad Range	2.63	182	ePn	Pn	07 06 09.7	-0.1
PTU	Portage	2.73	185	ePn	Pn	07 06 11.1	-0.1
BMUT	Black Mountain	2.76	168	ePn	Pn	07 06 11.6	+0.1
HDU	Hyde Park	2.86	176	ePn	Pn	07 06 12.9	+0.1
HVU	Hansel Valley	2.93	191	ePn	Pn	07 06 14.9	+1.1
HVU				eSn	Sb	07 06 55.2	-0.1
MTUT	Morton Thiokol	2.96	186	ePn	Pn	07 06 14.3	+0.1
MFID	Camas Ranch	3.00	247	ePn	Pn	07 06 13.9	-0.9
MFID				eSg	Sb	07 06 58.7	+1.2
WVUT	Wellsville	3.05	179	ePn	Pn	07 06 15.6	+0.1
HONU	Honeyville	3.05	178	ePn	Pn	07 06 15.5	0.0
RSUT	Red Spur Mount	3.05	171	ePn	Pn	07 06 15.7	0.0
HWUT	Hardware Ranch	3.07	173	ePn	Pn	07 06 16.1	+0.4
LTU	Little Mountai	3.07	183	ePn	Pn	07 06 15.8	+0.1
SWMT	Swartz Lake	3.16	335	ePn	Pn	07 06 16.6	-0.4
MCU	Monte Cristo P	3.22	173	ePn	Pn	07 06 18.0	+0.1
GZU	Grizzly Peak	3.23	179	ePn	Pn	07 06 18.1	+0.1
EPU	East Promontor	3.28	185	ePn	Pn	07 06 18.7	+0.2
SPUT	South Promonto	3.36	185	ePn	Pn	07 06 20.1	+0.4
JTMT	Jette	3.46	334	ePn	Pn	07 06 21.2	+0.1
YBMT	Yellow Bay	3.49	338	ePn	Pn	07 06 21.8	+0.4
TCUT	Toone Canyon	3.57	172	ePn	Pn	07 06 24.7	+2.0
NAIU	Northern Antel	3.64	182	ePn	Pn	07 06 23.9	+0.3
EGMT	Eagleton	3.72	24	P	Pn	07 06 25.2	+0.7
	baz=206						
EGMT				S	Sn	07 07 10.0	+1.6
	baz=206						
EGMT	Eagleton	3.72	24	ePn	Pn	07 06 25.4	+0.8
EGMT				ePg	Pg	07 06 36.8	-1.5
BLMT	Blacktail Moun	3.72	335	ePn	Pn	07 06 24.8	+0.1
BLMT				ePg	Pg	07 06 37.7	-0.7
BSMT	Bassoo Peak	3.72	330	P	Pn	07 06 24.6	-0.1
BMO	Blue Mountains	3.76	275	ePn	Pn	07 06 24.5	-0.7
BMO				ePg	Pg	07 06 36.2	-2.8
SNUT	Stansbury Nort	3.79	185	ePn	Pn	07 06 25.9	+0.3
N16A	Rees Ranch, Co	3.79	173	ePn	Pn	07 06 26.1	+0.4
BGU	Big Grassy Mou	3.80	191	ePn	Pn	07 06 26.8	+1.0
RBU	Red Butte Cany	3.88	177	ePn	Pn	07 06 27.3	+0.4
F10A	Beach Ranch, E	3.89	292	P	Pn	07 06 26.9	0.0
CTU	Camp Tracy	3.97	177	ePn	Pn	07 06 29.1	+1.0
HTU	Hoyt Peak	4.03	171	ePn	Pn	07 06 29.4	+0.4
KLJ	Keetly	4.05	173	ePn	Pn	07 06 29.7	+0.5
HLJ	Hailstone	4.07	173	ePn	Pn	07 06 30.0	+0.5
JLU	Jordanelle	4.08	174	ePn	Pn	07 06 31.3	+1.7
GMU	Granite Mounta	4.08	177	ePn	Pn	07 06 30.2	+0.5
DCU	Deer Creek Res	4.26	175	ePn	Pn	07 06 32.6	+0.5
DAU	Daniels Canyon	4.28	172	ePn	Pn	07 06 33.0	+0.4
K22A	Casper	4.47	115	ePn	Pn	07 06 37.8	+2.8
DUG	Dugway, Tooele	4.50	188	P	Pn	07 06 35.4	+0.1
	baz=6.7						
DUG				Sb	Sb	07 07 43.8	+3.3
	baz=6.7						
DUG	Dugway, Tooele	4.50	188	ePn	Pn	07 06 36.7	+1.3
LAO	LASA Array	4.55	61	P	Pn	07 06 37.1	+1.1
	baz=245						
LAO	LASA Array	4.55	61	ePn	Pn	07 06 37.3	+1.3
ELK	Elko	4.57	212	Pn	Pb	07 06 41.6	-5.8
	15nm,0.3s,baz=313,slow=0.0,SNR=9.1						
ELK				Sn	Sn	07 07 32.1	+2.5
	7.6nm,0.3s,baz=236,slow=0.0,SNR=2.5						
ELK				Lg	Lg	07 07 41.9	
	26nm,0.3s,baz=28,slow=0.0,SNR=8.0						
ELK	Elko	4.57	212	ePn	Pn	07 06 36.6	+0.2
ELK				Sn	Sn	07 07 32.1	+2.5
ELK				Lg	Lg	07 07 41.9	
WALA	Waterton Lakes	4.59	344	ePn	Pn	07 06 37.0	+0.5
MPU	Maple Canyon	4.65	176	ePn	Pn	07 06 38.5	+1.0
NLU	North Lily Min	4.70	180	ePn	Pn	07 06 39.0	+0.8
NEW	Newport	5.04	318	Pn	Pn	07 06 42.2	-0.4
	23nm,0.3s,baz=138,slow=11,SNR=197						
NEW				Pg	Pg	07 07 00.4	-3.1
	24nm,0.3s,baz=122,slow=14,SNR=14						
NEW				Sn	Sn	07 07 39.9	-1.0
	48nm,0.3s,baz=269,slow=22,SNR=8.3						
NEW				Lg	Lg	07 08 02.8	
	244nm,0.3s,baz=59,slow=22,SNR=16						
NEW				LR	LR	07 09 00.7	
	comp=Z,624nm,21.8s,baz=134,slow=43						
NEW	Newport	5.04	318	P	Pn	07 06 42.0	-0.6
	baz=135						
P18A	Preston Nutter	5.20	165	ePn	Pn	07 06 47.1	+2.0
P17A	Butcher Ranch,	5.27	169	ePn	Pn	07 06 47.8	+1.8
WVOR	Wild Horse Val	5.29	247	ePn	Pn	07 06 45.9	-0.3
O20A	White River Ci	5.32	147	P	Pn	07 06 48.5	+1.8
	baz=329						
O20A	White River Ci	5.32	147	ePn	Pn	07 06 48.6	+1.8
C09A	Chrisman Ranch	5.35	308	ePn	Pn	07 06 46.5	-0.4
D08A	Wollman Farm,	5.38	299	ePn	Pn	07 06 47.2	-0.1
TMUT	Trail Mountain	5.39	173	ePn	Pn	07 06 48.6	+0.8
OT3	Othello 3	5.43	294	P	Pn	07 06 48.2	+0.2
H2OWA	Water	5.47	291	P	Pn	07 06 48.6	0.0
MJ2	May Junction 2	5.48	293	P	Pn	07 06 49.4	+0.7
HAWA	Hanford	5.55	291	ePn	Pn	07 06 49.8	+0.2
LOCW	Locke Island	5.58	294	P	Pn	07 06 50.2	+0.2
CRF	Corfu	5.58	295	P	Pn	07 06 50.1	0.0
JBO	Jordan Butte	5.59	281	P	Pn	07 06 49.7	-0.5
RSW	Rattlesnake Hi	5.59	291	P	Pn	07 06 50.6	+0.4
SNIWA	Snively Ranch	5.65	291	P	Pn	07 06 51.0	-0.1
SRU	San Rafael Swe	5.66	168	ePn	Pn	07 06 53.0	+1.7
GBB	Gable Butte	5.67	293	P	Pn	07 06 51.4	+0.1
RSSD	Black Hills	5.76	93	ePn	Pn	07 06 57.2	+4.5
MDW	Midway	5.76	293	P	Pn	07 06 52.6	+0.1
N23A	Red Feather La	5.85	128	ePn	Pn	07 06 56.9	+2.8
PHWY	Pilot Hill	5.87	123	ePn	Pn	07 06 56.6	+2.2
H25A	Fruitdale	6.02	87	P	Pn	07 06 57.7	+1.5
	baz=273						
MXC	Moxie City	6.10	291	P	Pn	07 06 58.0	+0.7
G06A	Carlson Farm,	6.13	278	ePn	Pn	07 06 57.5	-0.2
MSU	Marysvale	6.14	181	ePn	Pn	07 07 00.0	+2.0
F25A	Bowman	6.18	75	P	Pn	07 06 59.1	+0.7
	baz=261						
B08A	Colville Reser	6.25	309	ePn	Pn	07 06 58.8	-0.5
PSUT	Pine Spring	6.27	193	ePn	Pn	07 07 03.1	+3.4
E25A	Miller Ranch,	6.33	70	P	Pn	07 07 01.5	+1.0
	baz=256						
EBG	Ellensburg	6.38	294	P	Pn	07 07 01.2	+0.1
ETW	Entiat	6.47	300	ePn	Pn	07 07 02.6	+0.1
MMU	Miners Mountai	6.48	175	ePn	Pn	07 07 03.9	+1.2
PV09	Paradox Valley	6.53	160	ePn	Pn	07 07 04.4	+1.0
LTY	Liberty	6.56	296	ePn	Pn	07 07 02.9	-0.7
DGMT	Dagmar	6.61	52	P	Pn	07 07 06.0	+1.7
	baz=238						
DGMT	Dagmar	6.61	52	ePn	Pn	07 07 06.2	+1.9
G05D	Wamic, OR	6.61	278	P	Pn	07 07 04.4	+0.1
	baz=92						
MOD	Modoc Plateau	6.63	248	ePn	Pn	07 07 06.1	+1.4
SMCO	Snowmass	6.65	144	ePn	Pn	07 07 07.3	+2.2
I05D	Terrebonne, OR	6.66	271	P	Pn	07 07 04.8	-0.2
	baz=84						
PV10	Paradox Valley	6.67	159	ePn	Pn	07 07 08.1	+2.8
PV04	Paradox Valley	6.68	158	ePn	Pn	07 07 06.3	+0.9
PV04				eSg	Sg	07 08 56.0	-5.5
K05A	Summer Lake	6.71	256	ePn	Pn	07 07 06.6	+0.9
F26A	Lodgepole	6.72	76	P	Pn	07 07 06.4	+0.7
	baz=263						
G26A	Maurine	6.72	81	P	Pn	07 07 07.3	+1.5
	baz=268						
J05D	Fort Rock, OR	6.78	262	P	Pn	07 07 07.8	+1.1
	baz=76						
C25A	Freed Ranch, W	6.82	60	P	Pn	07 07 09.7	+2.7
	baz=246						
R11A	Troy Canyon, C	6.84	204	ePn	Pn	07 07 11.5	+3.9
PV05	Paradox Valley	6.93	160	ePn	Pn	07 07 10.4	+1.6
E26A	Carlson Angus	6.96	72	P	Pn	07 07 10.0	+0.9
	baz=258						

PV01 Paradox Valley 7.02 157 ePn Pn 07 07 11.2 +1.2
H27A Howes 7.10 87 P Pn 07 07 13.8 +2.8
baz=273
D26A Manning 7.11 67 P Pn 07 07 11.7 +0.6
baz=254
LON Longmire 7.16 290 ePn Pn 07 07 11.9 +0.1
GPW Glacier Peak 7.18 302 ePn Pn 07 07 12.8 +0.5
G27A Dupree 7.20 81 P Pn 07 07 14.0 +1.7
baz=268
PKCU Pink Cliffs 7.21 182 ePn Pn 07 07 18.5 +5.7
H04A Detroit Lake 7.24 274 ePn Pn 07 07 13.9 +1.0
D05A Enumclaw 7.39 294 ePn Pn 07 07 15.0 +0.1
F04A Amboy 7.43 284 ePn Pn 07 07 17.4 +1.8
I04A Tendick Farm, 7.50 267 P Pn 07 07 16.8 +0.2
baz=80
RPW Rockport 7.55 303 ePn Pn 07 07 18.4 +1.1
E27A Carson 7.56 73 P Pn 07 07 17.5 +0.2
baz=260
B06A Marblemount 7.57 304 ePn Pn 07 07 17.4 +0.1
C26A Wahner Farm, P 7.58 62 P Pn 07 07 19.2 +1.6
baz=249
KNB Kanab 7.66 185 ePn Pn 07 07 22.3 +3.6
Q24A Divide 7.67 136 ePn Pn 07 07 21.5 +2.4
Q24A ePg Pg 07 07 46.3 -7.5
LCMT Little Creek M 7.69 187 ePn Pn 07 07 21.8 +2.6
NV11 Mina Array Sit 7.73 219 ePn Pn 07 07 23.4 +3.6
NV01 Mina Array Sit 7.80 219 ePn Pn 07 07 23.4 +2.7
NVAR Mina Array Bea 7.80 219 Pn Pn 07 07 22.6 +1.9
0.3nm,0.3s,baz=33,slow=12,SNR=58
NVAR Pg Pb 07 07 41.3 -1.1
2.3nm,0.3s,baz=41,slow=18,SNR=15
NVAR Lg Lg 07 09 28.9
2.1nm,0.3s,baz=174,slow=32,SNR=4.0
NVAR LR LR 07 10 49.0
comp=Z,286nm,21.1s,baz=38,slow=42
I28A Midland 7.82 91 P Pn 07 07 23.1 +2.3
baz=278
B05A Bryant 7.83 301 P Pn 07 07 21.0 +0.1
baz=114
J28A Allard Ranch, 7.88 95 P Pn 07 07 25.2 +3.6
baz=282
MVCO Mesa Verde 7.91 159 P Pn 07 07 23.1 +0.9
baz=341
S22A 4UR Ranch, Cre 7.94 149 P Pn 07 07 23.9 +1.2
baz=332
S22A 4UR Ranch, Cre 7.94 149 ePn Pn 07 07 24.1 +1.4
G03D McMinnville, O 7.99 278 P Pn 07 07 23.2 0.0
baz=90
F28A McLaughlin 8.02 78 P Pn 07 07 23.7 +0.2
baz=265
COR Corvallis 8.04 273 ePn Pn 07 07 24.9 +1.0
A26A Wade Farm, Ken 8.06 55 P Pn 07 07 24.8 +0.6
baz=242
HUMO Hull Mountain 8.19 259 ePn Pn 07 07 26.2 +0.3
I03D Drain, OR 8.19 267 P Pn 07 07 26.9 +1.0
baz=80
F03A Seaside 8.23 283 ePn Pn 07 07 28.4 +2.0
OGNE Ogallala 8.23 113 ePn Pn 07 07 29.8 +3.2
OGNE ePg Pg 07 07 58.7 -5.9
E03A Lebam 8.30 287 ePn Pn 07 07 29.3 +1.9
YBH Yreka Blue Hor 8.33 253 Pn Pn 07 07 31.0 +3.1
0.2nm,0.3s,baz=64,slow=18,SNR=6.5
YBH LR LR 07 11 03.4
comp=Z,681nm,19.1s,baz=58,slow=41
YBH Yreka Blue Hor 8.33 253 ePn Pn 07 07 28.0 +0.1
TPNV Topopah Spring 8.34 204 ePn Pn 07 07 28.8 +0.7
SDCO Great Sand Dun 8.48 142 P Pn 07 07 31.5 +1.4
baz=326
NLWA Neilton Lookou 8.68 293 ePn Pn 07 07 34.5 +1.9
N28A Pribbeno Ranch 8.69 114 P Pn 07 07 35.0 +2.1
baz=300
ORV Oroville 8.69 237 ePn Pn 07 07 33.6 +0.9
F29A Eureka 8.69 78 P Pn 07 07 33.8 +1.0
baz=266
WDC Whiskeytown Da 8.75 246 ePn Pn 07 07 36.0 +2.4
AFDM Forest Hills D 8.78 233 ePn Pn 07 07 35.0 +1.0
PGC Sidney 8.81 301 ePn Pn 07 07 34.4 0.0
KSCO Kaye Shedlock' 9.00 126 ePn Pn 07 07 38.3 +1.1
CMB Columbia Colle 9.12 226 ePn Pn 07 07 39.2 +0.5
A28A Rude Farm, Bot 9.12 58 P Pn 07 07 39.4 +0.7
baz=246
WUAZ Wupatki 9.14 177 P Pn 07 07 41.9 +2.7
baz=357
WUAZ Wupatki 9.14 177 ePn Pn 07 07 42.0 +2.8
T25A Trinidad 9.47 140 ePn Pn 07 07 46.7 +3.0
JCC Jacoby Creek, 9.62 251 ePn Pn 07 07 47.9 +2.4
W18A Petrified Fore 9.69 169 ePn Pn 07 07 49.1 +2.4
X18A Snowflake 10.24 170 ePn Pn 07 07 54.4 +0.2
ANMO Albuquerque 10.60 154 Pn Pn 07 07 59.6 +0.5
0.1nm,0.3s,baz=333,slow=14,SNR=4.0
ANMO LR LR 07 12 29.3
comp=Z,305nm,18.9s,baz=320,slow=40
ANMO Albuquerque 10.60 154 ePn Pn 07 07 59.9 +0.7
Y14A Wickenburg 10.73 184 ePn Pn 07 08 02.4 +1.6
LAZ Ladron 10.91 158 ePn Pn 07 08 07.0 +3.6
ECSD EROS Data Cent 11.11 89 P Pn 07 08 06.8 +0.9
baz=280
ECSD EROS Data Cent 11.11 89 ePn Pn 07 08 06.7 +0.7
A32A Rocking H Ranc 11.47 63 P Pn 07 08 09.7 -1.1
baz=254
PFO Pinyon Flats O 11.55 199 LR LR 07 13 04.5
comp=Z,219nm,21.2s,baz=14,slow=40
PFO Pinyon Flats O 11.55 199 ePn Pn 07 08 12.3 +0.2
D33A AnnSam, Waubun 11.55 72 P Pn 07 08 11.2 -0.8
baz=263
AGMN Agassiz Nation 11.73 66 ePn Pn 07 08 13.6 -0.8
BORC Borrego Spring 11.87 198 ePn Pn 07 08 16.6 +0.3
B33A Robert and Kas 11.90 67 P Pn 07 08 15.9 -0.8
baz=258
E34A Wadena 11.96 75 P Pn 07 08 18.1 +0.6
baz=267
FFC Flin Flon 11.98 29 ePn Pn 07 08 15.6 -2.1
D34A Park Rapids 11.99 72 P Pn 07 08 17.8 -0.1
baz=264
C34A RKJ Ranch, Bem 12.25 70 P Pn 07 08 20.2 -1.2
baz=262
DPP Dos Picos Cty 12.25 200 ePn Pn 07 08 27.4 +5.9
ULM Lac du Bonnet 12.28 57 Pn Pn 07 08 20.6 -1.2
0.8nm,0.3s,baz=247,slow=11,SNR=12
ULM Lg Lg 07 11 47.4
2.4nm,0.3s,baz=344,slow=17,SNR=9.4
ULM LR LR 07 12 07.8
comp=Z,103nm,21.5s,baz=277,slow=33
B34A Aery, Baudette 12.56 66 P Pn 07 08 24.7 -1.0
baz=259
D35A Remer 12.77 73 P Pn 07 08 26.6 -1.9
baz=266
C35A Jirik Farms, M 12.88 70 P Pn 07 08 27.7 -2.4
baz=263
BBB Bella Bella 13.05 311 LR LR 07 12 55.9
comp=Z,272nm,18.6s,baz=76,slow=34
F36A Milaca 13.10 78 P Pn 07 08 32.9 -0.1
baz=271
B35A Bob, Littlefor 13.14 67 P Pn 07 08 32.2 -1.4
baz=260
MNTX Cornudas Mount 13.95 156 ePn Pn 07 08 47.7 +3.0
ABTX Abilene, Hawle 15.41 137 P Pn 07 09 05.5 +1.0
baz=325
ABTX Abilene, Hawle 15.41 137 ePn Pn 07 09 05.5 +1.0
27nm,1.2s
R39A Chumby, Stover 15.57 107 P P 07 09 11.4 +0.6
baz=300
V37A Hulbert 15.57 118 P P 07 09 11.0 +0.2
baz=309
133A Hamilton Ranch 15.78 135 P Pn 07 09 09.1 -0.2
baz=323
HHAR Hobbs 16.09 115 ePn Pn 07 09 13.7 +0.5
20nm,1.6s
134A White-Moore Ra 16.23 133 P P 07 09 16.7 -1.6
baz=322
233A Rising Star 16.26 136 P P 07 09 16.5 -2.1
baz=324
TX31 Lajitas Ar. Si 16.67 154 ePn P 07 09 21.7 -1.5
TXAR Lajitas Array 16.68 154 Pn P 07 09 22.4 -0.9
0.1nm,0.3s,baz=342,slow=7.9,SNR=12
TXAR LR LR 07 16 06.6
comp=Z,288nm,20.6s,baz=0.0,slow=38
333A Richland Sprin 16.79 138 P Pn 07 09 22.1 -0.1
baz=326
JCT Junction City 17.13 142 ePn P 07 09 27.2 -1.0
24nm,1.3s
334A Lometa 17.15 136 P P 07 09 27.2 -1.2
baz=325
DLBC Dease Lake 17.68 328 Pn P 07 09 35.2 +1.1
0.2nm,0.3s,baz=138,slow=9.9,SNR=14
DLBC Lg Lg 07 14 42.1
0.1nm,0.3s,baz=353,slow=19,SNR=3.0
DLBC Dease Lake 17.68 328 ePn P 07 09 36.4 +2.3
54nm,1.3s
DLBC Lg Lg 07 14 42.1
FCC Fort Churchill 17.89 32 ePn P 07 09 36.2 -0.1
35nm,1.7s
YKA Yellowknife Ar 17.93 356 Pn Pn 07 09 32.5 -3.7
0.3nm,0.3s,baz=174,slow=12,SNR=75
YKA Lg Lg 07 14 41.3
0.1nm,0.3s,baz=168,slow=28,SNR=3.3
YKB5 Yellowknife Ar 17.93 356 ePn Pn 07 09 33.2 -3.0
YKW3 Yellowknife Ar 18.00 356 ePn Pn 07 09 34.1 -2.9
26nm,1.2s
WCI Wyandotte Cave 20.29 99 eP P 07 10 02.9 +0.1
9.5nm,0.7s
LPIG La Paz 20.55 176 LR LR 07 18 08.9
comp=Z,242nm,19.1s,baz=358,slow=37
SADO Sadowa 23.29 78 LR LR 07 19 19.7
comp=Z,161nm,21.3s,baz=314,slow=36
TKL Tuckaleechee C 23.30 103 LR LR 07 20 16.0
comp=Z,212nm,21.0s,baz=306,slow=38
DAWY Dawson 24.79 331 eP P 07 10 49.6 +0.8
16nm,1.4s
INK Inuvik 26.21 342 P P 07 11 02.0 +0.5
2.2nm,1.0s,baz=165,slow=8.3,SNR=2.6
INK LR LR 07 22 29.7
comp=Z,303nm,20.6s,baz=130,slow=39
INK Inuvik 26.21 342 eP P 07 11 03.0 +1.5
29nm,1.8s
PAX Paxson 26.47 326 eP P 07 11 05.9 +1.8
14nm,1.4s
IL1 Eielson Array 27.89 328 eP P 07 11 17.7 +1.1
ILAR Eielson Array 27.89 328 P P 07 11 18.5 +1.8
2.8nm,0.7s,baz=126,slow=8.4,SNR=41
ILAR LR LR 07 22 45.8
comp=Z,247nm,20.2s,baz=130,slow=37
ILB Eielson Array 27.89 328 eP P 07 11 18.6 +1.9
RND Reindeer 28.04 325 eP P 07 11 20.9 +2.8
40nm,1.8s
KDAK Kodiak Island 28.12 312 LR LR 07 20 53.6
comp=Z,194nm,19.0s,baz=123,slow=33
CCB Clear Creek Bu 28.17 328 eP P 07 11 21.2 +2.0
12nm,1.2s
WRH Wood River Hil 28.20 327 eP P 07 11 22.4 +2.9
9.9nm,1.1s
MCK McKinley 28.21 326 eP P 07 11 22.4 +2.8
12nm,1.0s
MDM Murphy Dome 28.48 328 eP P 07 11 23.9 +1.9
10nm,0.9s
TRF Thorofare Moun 28.64 325 eP P 07 11 26.3 +2.7
50nm,1.9s
BPAW Bear Paw Mtn. 29.18 326 eP P 07 11 30.5 +2.2
6.7nm,0.8s
MLY Manley 29.47 327 eP P 07 11 33.1 +2.3
4.5nm,0.9s
SCHQ Schefferville 30.43 54 LR LR 07 23 53.5
comp=Z,331nm,20.6s,baz=34,slow=36
TT01 Tatalina 30.92 322 eP P 07 11 45.5 +1.9
TTA Tatalina 30.93 322 eP P 07 11 45.6 +1.8
8.8nm,1.0s
RES Resolute Bay 31.07 9 P P 07 11 46.0 +1.2
2.7nm,1.2s,baz=185,slow=11,SNR=5.5
SEY Seymchan 53.76 326 P P 07 14 50.2 +1.1
3.2nm,0.7s,baz=97,slow=11,SNR=8.7
MA2 Magadan 56.12 323 P P 07 15 07.2 +1.1
6.6nm,0.7s,baz=94,slow=8.0,SNR=14
MA2 LR LR 07 39 18.5
comp=Z,54nm,19.8s,baz=79,slow=36
PETK Petropavlovsk- 56.16 313 P P 07 15 07.8 +1.2
1.4nm,0.5s,baz=86,slow=10,SNR=3.1
TIXI Tiksi 56.33 341 eP P 07 15 08.0 +0.6
6.3nm,1.4s
ARCES ARCESS Array B 61.93 16 P P 07 15 46.6 +0.3
3.1nm,1.0s,baz=318,slow=6.6,SNR=3.2
ARCES LR LR 07 42 14.7
comp=Z,48nm,21.0s,baz=298,slow=36
NRIK Noril'sk 65.40 352 P P 07 16 09.6 +0.3
1.4nm,0.6s,baz=28,slow=6.7,SNR=3.8
FINES FINESS Array B 68.96 20 P P 07 16 31.9 0.0
1.0nm,0.7s,baz=331,slow=11,SNR=3.3
LPAZ La Paz 72.63 136 P P 07 16 55.8 +0.3
1.0nm,0.5s,baz=300,slow=2.3,SNR=6.7
AKASG Malin Array Be 79.24 24 P P 07 17 31.3 -0.8
0.2nm,0.2s,baz=336,slow=5.0,SNR=3.4
ZALV Zalesovo Beam 80.72 350 P P 07 17 39.6 -0.5
0.9nm,0.5s,baz=5.7,slow=6.0,SNR=3.8
BRVK Borovoye 82.64 359 eP P 07 17 50.6 +0.3
BVAR Borovoye Array 82.67 359 P P 07 17 50.8 +0.4
1.7nm,0.7s,baz=6.8,slow=3.7,SNR=10
ABKAR Akbulak array 86.21 5 eP P 07 18 09.8 +1.5
HHC Hu-ho-hao-te 86.31 328 eP P 07 18 10.5 +1.3
HHC PP PP 07 21 32.0 +2.7
HHC S S 07 28 44.4 -0.3
HHC pmax pmax
comp=Z,10.0nm,0.8s
HHC pmax pmax
comp=Z,67nm,9.2s
MKAR Makanchi Array 88.06 350 P P 07 18 16.7 -0.8
0.4nm,0.7s,baz=335,slow=5.4,SNR=5.5
WMQ Urumqi 90.17 346 eP P 07 18 30.8 +3.3
WMQ pmax pmax
comp=Z,2.0nm,0.6s
WMQ pmax pmax
comp=Z,46nm,5.8s
IDI Anoyia 91.35 34 LR LR 08 01 35.6
comp=Z,48nm,18.8s,baz=276,slow=37
CD2 Chengdu 98.02 329 P P 07 19 00.7 -3.0
CD2 pmax pmax
comp=Z,1.0nm,0.5s
ASF Jabal al Asfar 98.47 26 LR LR 08 04 52.6
comp=Z,78nm,21.6s,baz=188,slow=36
WRA Warramunga Arr 120.44 271 PKP PKPdf 07 24 19.6 +0.8
0.7nm,0.7s,baz=45,slow=2.1,SNR=6.0
ASAR Alice Springs 123.12 268 PKP PKPdf 07 24 24.1 +0.1
0.7nm,0.8s,baz=45,slow=2.1,SNR=4.6

IDC 05 07:07:49.2±10.0**, 8.°00S**×**115.°62E, h262**km±111km**, mb3.1**/5**, mb1 3.2**/6**, mb1mx3.0**/41**, mbtmp3.7**/6**, Error ellipse: s-maj=111.2km s-min=25.2km az=58.0, Bali region**

Code Station Name Δ° AZ° Phase ID Op ISC Time h m s Res ISC
FITZ Fitzroy Crossi 13.99 137 P P 07 10 57.8 +0.5
0.2nm,0.3s,baz=315,slow=14,SNR=2.9
FITZ S S 07 13 27.9 -4.0
0.3nm,0.3s,baz=182,slow=20,SNR=4.8
WRA Warramunga Arr 21.67 125 P P 07 12 18.5 -0.9
1.5nm,0.4s,baz=301,slow=12,SNR=7.1
ASAR Alice Springs 23.45 134 P P 07 12 36.4 +0.8
1.3nm,0.6s,baz=306,slow=8.9,SNR=21
STKA Stephens Creek 33.89 138 P P 07 14 07.9 +0.2
1.3nm,0.7s,baz=337,slow=15,SNR=3.0
SONM Songino Array 56.19 353 P P 07 17 02.4 +0.1
0.6nm,0.5s,baz=153,slow=7.7,SNR=3.0
MKAR Makanchi Array 62.09 335 P P 07 17 42.1 -0.4
0.2nm,0.4s,baz=153,slow=6.3,SNR=6.0

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*VIE **05** 07:14:25.8±0.4, 47.°66N×13.°71E, h1km±8km, mb2.7/15, ml3.1/15, Error ellipse: s-maj=5.0km s-min=3.0km az=169.0, felt 4 ems98 at Altaussee / Styria*
*IPEC **05** 07:14:26.1±0.1, 47.°61N×13.°76E, h2km, ML3.1/9, Error ellipse: s-maj=0.7km s-min=0.5km az=117.0*
*CSEM **05** 07:14:26.4±0.1, 47.°66N×13.°77E, h2km, ML3.5/15, Error ellipse: s-maj=2.8km s-min=2.5km az=127.0*
*BGR **05** 07:14:28.3±0.2, 47.°67N×13.°73E, h10km, ML3.2/22, Error ellipse: s-maj=3.3km s-min=3.3km az=66.0*
BGR Felt IV EMS.
*PRU **05** 07:14:29.4, 47.°80N×13.°80E, h0km*
ISC 05 07:14:26.3±1.1**, 47.°66N**±0.°01×**13.°77E**±0.°02**, h4**km±9km**, n89,** σ1**°**04/153**, Austria**

Code Station Name Δ° AZ° Phase ID Op ISC Time h m s Res ISC
MOA Molln 0.39 60 i Pg Pg 07 14 33.9 +0.2
MOA eSg Sg 07 14 39.7 +0.9
158nm,0.4s
MOA Molln 0.39 60 Pg Pg 07 14 33.9 +0.2
MOA Sg Sg 07 14 39.7 +0.9
158nm,0.4s
MOA Molln 0.39 60 ePg Pg 07 14 34.0 +0.2
KBA Koelnbreinsper 0.65 207 ePg Pg 07 14 38.4 -0.3
43nm,0.3s,SNR=35
KBA eSg Sg 07 14 47.3 +0.1
181nm,0.3s
KBA Koelnbreinsper 0.65 207 Pg Pg 07 14 38.4 -0.3
43nm,0.3s,SNR=35
KBA Sg Sg 07 14 47.3 +0.1
181nm,0.3s
KBA Koelnbreinsper 0.65 207 ePg Pg 07 14 38.4 -0.3
KBA eSg Sg 07 14 47.5 +0.4
RJOB Jochberg 0.66 277 Pg Pg 07 14 38.6 -0.4
RJOB Jochberg 0.66 277 ePg Pg 07 14 38.6 -0.4
MYKA Terra Mystica 1.03 185 ePg Pg 07 14 46.2 +0.1
SNR=7.2
MYKA eSg Sb 07 15 00.1 -0.6
25nm,0.4s
MYKA Terra Mystica 1.03 185 Pg Pg 07 14 46.2 +0.1
SNR=7.2
MYKA Sg Sb 07 15 00.1 -0.6
25nm,0.4s
GEC2 GERESS Array S 1.19 358 Pn Pg 07 14 49.2 +0.1
GEC2 GERESS Array S 1.19 358 Pg Pg 07 14 50.3 +1.2
GEC2 Sg Sn 07 15 06.7 +0.2
GEC2 GERESS Array S 1.19 358 ePn Pg 07 14 49.2 +0.1
GEC2 ePg Pg 07 14 50.3 +1.2
GEC2 eSg Sn 07 15 06.7 +0.2
ABTA Abfaltersbach 1.25 224 ePg Pn 07 14 49.6 -1.1
SNR=17
ABTA Sg Sn 07 15 07.4 -0.6
217nm,0.9s
ABTA Abfaltersbach 1.25 224 Pg Pn 07 14 49.6 -1.1
SNR=17
ABTA Sg Sn 07 15 07.4 -0.6
217nm,0.9s
ARSA Arzberg 1.26 108 ePg Pg 07 14 50.6 +0.2
SNR=25
ARSA eSg Sn 07 15 09.3 +1.2
168nm,0.7s
ARSA Arzberg 1.26 108 Pn Pb 07 14 50.3 -0.3
ARSA Arzberg 1.26 108 P Pg 07 14 50.6 +0.2
SNR=25
ARSA Sg Sn 07 15 09.3 +1.2
168nm,0.7s
ARSA Arzberg 1.26 108 ePn Pb 07 14 50.3 -0.3
ARSA eSg Sn 07 15 12.1 +4.0
OBKA Obir 1.27 155 ePg Pn 07 14 50.4 -0.5
SNR=26
OBKA Obir 1.27 155 Pb Pn 07 14 50.4 -0.5
SNR=26
OBKA Sg Sn 07 15 09.2 +0.8
OBKA Obir 1.27 155 ePn Pn 07 14 50.4 -0.5
OBKA eSg Sn 07 15 09.2 +0.8
SOKA Soboth 1.31 138 ePg Pn 07 14 50.8 -0.6
SNR=25
SOKA Soboth 1.31 138 P Pn 07 14 50.8 -0.6
SNR=25
KHC Kasperske Hory 1.48 355 ePG Pg 07 14 54.4 -0.2
KHC eSG Sg 07 15 14.7 +0.9
comp=Z,112nm,0.6s
KHC Kasperske Hory 1.48 355 Pg Pg 07 14 54.4 -0.2
KHC Sg Sg 07 15 14.7 +0.9
112nm,0.6s
WTTA Wattenberg 1.50 255 ePg Pg 07 14 54.7 -0.3
SNR=20
WTTA Wattenberg 1.50 255 Pn Pb 07 14 54.3 -0.5
WTTA Wattenberg 1.50 255 ePn Pb 07 14 54.3 -0.5
WTTA eSg Sg 07 15 17.6 +3.1
WATA Walderalm 1.52 259 ePg Pb 07 14 54.4 -0.7
SNR=12
WET Wettzell 1.60 339 Pn Pb 07 14 55.8 -0.6
WET Sg Sg 07 15 18.6 +0.9
WET Wettzell 1.60 339 ePn Pb 07 14 55.8 -0.6
WET eSg Sg 07 15 18.6 +0.9
FUR Furstenfeldbru 1.75 288 Pg Pg 07 14 59.6 -0.2
FUR Sg Sg 07 15 23.9 +1.4
FUR Furstenfeldbru 1.75 288 ePg Pg 07 14 59.6 -0.2
FUR eSg Sg 07 15 23.9 +1.4
MOTA Moosalm 1.83 261 ePg Pb 07 15 00.4 0.0
SNR=21
GRC3 Grafenberg Arr 1.91 311 Pn Pb 07 15 01.5 -0.2
GRC3 Sg Sg 07 15 27.2 -0.4
GRC3 Grafenberg Arr 1.91 311 ePn Pb 07 15 01.5 -0.2
GRC3 eSg Sg 07 15 27.2 -0.4
TREC Trest 2.00 34 ePN Pn 07 15 01.5 +0.7
TREC Trest 2.00 34 Pn Pn 07 15 01.5 +0.7
TREC Sg Sb 07 15 29.1 +0.7
46nm,0.3s
GRC2 Grafenberg Arr 2.00 308 Sg Sg 07 15 30.3 -0.4
GRC2 Grafenberg Arr 2.00 308 eSg Sg 07 15 30.3 -0.4
FETA Feichten 2.16 254 Pg Pb 07 15 06.4 +0.3
11nm,0.3s,SNR=7.1
FETA Sg Sg 07 15 35.7 -0.1
32nm,0.6s
FETA Feichten 2.16 254 Pn Pb 07 15 06.4 +0.3
11nm,0.3s,SNR=7.1
FETA Sg Sg 07 15 35.7 -0.1
32nm,0.6s
KRUC Moravsky 2.24 50 ePn Pn 07 15 04.5 +0.3
KRUC eSn Sb 07 15 34.4 -1.1
89nm,0.8s
GOPC GO Pecny, Ondr 2.35 16 ePN Pn 07 15 06.5 +0.7
GOPC ePG Pg 07 15 11.9 +0.5
GOPC eSN Sb 07 15 38.2 -0.5
46nm,0.5s
GOPC GO Pecny, Ondr 2.35 16 Sg Sb 07 15 38.2 -0.5
46nm,0.5s
PRU Pruhonice 2.39 12 ePN Pb 07 15 07.7 -2.1
PRU ePG Pg 07 15 13.5 +1.5
PRU eSN Sb 07 15 39.1 -0.5
21nm,0.4s
PRU Pruhonice 2.39 12 Sg Sb 07 15 39.1 -0.5
21nm,0.4s
PRA Prague 2.45 10 eSN Sg 07 15 44.2 -0.8
59nm,0.5s
PRA Prague 2.45 10 Sg Sg 07 15 44.2 -0.8
59nm,0.5s
VRAC Vranov 2.50 48 ePn Pn 07 15 08.3 +0.5
VRAC eSn Sb 07 15 40.9 -2.0
40nm,0.5s
MANZ Manzenberg 2.57 335 Pn Pn 07 15 10.1 +1.3
MANZ Sg Sg 07 15 47.8 -1.2
MANZ Manzenberg 2.57 335 ePn Pn 07 15 10.1 +1.3
MANZ eSg Sg 07 15 47.8 -1.2
SMOL Smolenice 2.60 69 ePN Pb 07 15 14.6 +1.2
GRA1 Grafenberg Arr 2.64 321 Pg Pg 07 15 17.6 +0.7
GRA1 Sg Sg 07 15 50.5 -0.7
GRF Grafenberg Arr 2.64 321 ePg Pg 07 15 17.6 +0.7
GRF eSg Sg 07 15 50.5 -0.7
DAVA Damuels 2.66 263 ePg Pg 07 15 16.3 -1.0
12nm,0.2s,SNR=6.4
DAVA Sg Sg 07 15 52.8 +1.0
53nm,0.5s
DAVA Damuels 2.66 263 Pg Pg 07 15 16.5 -0.8
DAVA Sg Sg 07 15 52.8 +1.0
53nm,0.5s
DAVA Damuels 2.66 263 ePg Pg 07 15 16.5 -0.8
DAVA eSg Sg 07 15 52.8 +1.0
NKC Novy Kostel 2.72 342 ePN Pn 07 15 11.1 +0.3
NKC ePG Pg 07 15 17.5 -0.9
NKC eSN Sg 07 15 51.9 -1.7
45nm,0.4s
NKC Novy Kostel 2.72 342 Pn Pn 07 15 11.1 +0.3
NKC Sg Sg 07 15 51.9 -1.7
45nm,0.4s
TANN Tannenbergstha 2.89 343 Pn Pn 07 15 13.8 +0.7
TANN Sg Sg 07 15 58.0 -1.1
TANN Tannenbergstha 2.89 343 ePn Pn 07 15 13.8 +0.7
TANN eSg Sg 07 15 58.0 -1.1
PVCC Panska Ves 2.92 10 eSN Sg 07 15 57.5 -2.5
76nm,0.4s
PVCC Panska Ves 2.92 10 Sg Sg 07 15 57.5 -2.5
76nm,0.4s
PLONS Plons/SG 3.04 260 Pn Pn 07 15 16.6 +1.3
PLONS Sg Sg 07 16 03.6 -0.4
PLONS Plons/SG 3.04 260 ePn Pn 07 15 16.6 +1.3
PLONS eSg Sg 07 16 03.6 -0.4
DPC Dobruska-Polom 3.17 31 ex x 07 15 24.8
DPC eSN Sn 07 15 57.0 +1.6
DPC ex x 07 16 06.0
DPC Dobruska-Polom 3.17 31 Sg Sg 07 16 06.0 -2.2
UPC Upice 3.21 27 ePG Pg 07 15 26.7 -1.1
UPC eSN Sn 07 15 57.4 +1.2
UPC ex x 07 16 07.4
UPC Upice 3.21 27 Sg Sg 07 16 07.4 -1.9
BRG Berggiesshubel 3.22 2 PN Pn 07 15 17.7 +0.1
BRG PG Pb 07 15 25.5 +1.5
BRG SN Sn 07 15 53.9 -2.5

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
BRG				SG	**Sg**	**07 16 10.0**	**+0.3**
	53nm,0.9s						
FBE	**Freiberg**	**3.28**	**355**	Pn	**Pn**	**07 15 18.8**	**+0.4**
FBE	**Freiberg**	**3.28**	**355**	*e*Pn	**Pn**	**07 15 18.8**	**+0.4**
MORC	**Moravsky Berou**	**3.28**	**48**	*e*Pn	**Pn**	**07 15 19.0**	**+0.6**
MORC				*e*Sg	**Sg**	**07 16 09.9**	**-1.6**
	85nm,1.0s						
MOX	**Moxa**	**3.31**	**335**	Pn	**Pn**	**07 15 18.8**	**0.0**
MOX				Sg	**Sg**	**07 16 12.7**	**+0.3**
MOX	**Moxa**	**3.31**	**335**	*e*Pn	**Pn**	**07 15 18.8**	**0.0**
MOX				*e*Sg	**Sg**	**07 16 12.7**	**+0.3**
VYHS	**Vyhne**	**3.50**	**74**	*e*PN	Pn	07 15 24.4	+2.9
VYHS				*e*		07 15 30.6	
VYHS				*e*		07 16 15.4	
VYHS				*e*LG	Lg	07 16 35.0	
SLE	**Schleitheim**	**3.56**	**274**	Pn	**Pn**	**07 15 22.3**	**-0.1**
SLE				Sg	**Sg**	**07 16 18.9**	**-1.8**
SLE	**Schleitheim**	**3.56**	**274**	*e*Pn	**Pn**	**07 15 22.3**	**-0.1**
SLE				*e*Sg	**Sg**	**07 16 18.9**	**-1.8**
OKC	**Ostrava-Krasne**	**3.62**	**51**	Sg	**Sg**	**07 16 20.9**	**-1.8**
CLL	**Collm**	**3.69**	**352**	*e*Pn	**Pn**	**07 15 25.0**	**+1.0**
CLL				*e*Sn	**Sn**	**07 16 08.0**	**+0.1**
CLL				*e*Sg	**Sg**	**07 16 25.0**	**+0.4**
	comp=Z,61nm,1.3s						
CLL	**Collm**	**3.69**	**352**	Pn	**Pn**	**07 15 25.2**	**+1.2**
CLL				Sg	**Sg**	**07 16 23.7**	**-0.9**
CLL	**Collm**	**3.69**	**352**	*e*Pn	**Pn**	**07 15 25.2**	**+1.2**
CLL				*e*Sg	**Sg**	**07 16 23.7**	**-0.9**
BFO	**Black Forest**	**3.71**	**282**	Pn	**Pn**	**07 15 24.5**	**+0.1**
BFO	**Black Forest**	**3.71**	**282**	Pg	**Pg**	**07 15 39.6**	**+2.2**
BFO				Sg	**Sg**	**07 16 26.1**	**+0.6**
BFO	**Black Forest**	**3.71**	**282**	*e*Pn	**Pn**	**07 15 24.5**	**+0.1**
BFO				*e*Pg	**Pg**	**07 15 39.6**	**+2.2**
BFO				*e*Sg	**Sg**	**07 16 26.1**	**+0.6**
BALST	**Balsthal**	**4.13**	**268**	Pn	**Pn**	**07 15 30.3**	**+0.1**
BALST	**Balsthal**	**4.13**	**268**	*e*Pn	**Pn**	**07 15 30.3**	**+0.1**

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*IDC **05** 07:19:44.8±1.7, 37.°60N×141.°70E, h0km, mb3.7/6, mb1 3.7/7, mb1mx3.5/40, mbtmp3.6/7, ML2.9/1, MS2.3/2, Ms1 2.3/2, ms1mx2.1/75, Error ellipse: s-maj=47.2km s-min=26.8km az=77.0*

*JMA **05** 07:19:52.3±0.1, 37.°50N×141.°37E, h49km±1km, M3.4*

ISC 05 07:19:48.2±1.9**, 37.°46N**±0.°05×**141.°61E**±0.°09**, h11**km±10km**, n22,** σ1.s**50**/19**, mb3.8**/6**, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**0.59**	**261**	P	**Pb**	**07 20 02.6**	**+2.0**
JFK				S	**Sb**	**07 20 09.8**	**+0.8**
ONAJ	**Iwakimizuishiy**	**0.74**	**241**	P	**Pb**	**07 20 04.8**	**+1.7**
ONAJ				S	**Sb**	**07 20 13.4**	**+0.2**
JMM	**Marumori**	**0.76**	**302**	P	**Pb**	**07 20 04.6**	**+1.1**
JMM				S	**Sb**	**07 20 13.5**	**-0.4**
JFT	**Otama**	**1.01**	**274**	P	**Pg**	**07 20 08.3**	**+0.6**
JFT				S	**Sb**	**07 20 19.8**	**-1.3**
JIO	**Ouri**	**1.01**	**349**	P	**Pg**	**07 20 09.1**	**+1.3**
JIO				S	**Sg**	**07 20 20.9**	**-0.1**
JOU	**Okura**	**1.17**	**321**	P	**Pg**	**07 20 10.4**	**-0.4**
JOU				S	**Sg**	**07 20 23.9**	**-2.2**
JHO	**Hitachi**	**1.19**	**225**	P	**Pb**	**07 20 11.0**	**+0.3**
JHO				S	**Sg**	**07 20 24.1**	**-2.3**
MJAR	**Matsushiro Arr**	**2.87**	**252**	Pn	**Pn**	**07 20 34.8**	**+0.8**
	1.8nm,0.3s,baz=58,slow=8.8,SNR=6.0						
MJAR				LR	LR	07 21 55.8	
	comp=Z,46nm,21.5s,baz=105,slow=44						
MAT	**Matsushiro**	**2.87**	**252**	P	**Pn**	**07 20 34.7**	**+0.7**
MAT				S	**Sn**	**07 21 10.1**	**+1.6**
JNU	**Nakatsue**	**9.78**	**247**	LR	LR	07 25 27.8	
	comp=Z,23nm,18.5s,baz=116,slow=35						
SONM	**Songino Array**	**27.68**	**303**	P	**P**	**07 25 33.8**	**-2.5**
	0.4nm,0.5s,baz=91,slow=7.6,SNR=3.0						
H11N2	**WAKE ISLAND Hy**	**28.24**	**122**	T	T	07 56 05.5	
	baz=315,slow=75,SNR=17						
H11N1	**WAKE ISLAND Hy**	**28.24**	**122**	T	T	07 56 02.1	
	baz=315,slow=75,SNR=20						
H11N3	**WAKE ISLAND Hy**	**28.25**	**122**	T	T	07 55 54.5	
	baz=315,slow=75,SNR=22						
H11S1	**WAKE ISLAND Hy**	**28.96**	**124**	T	T	07 56 57.3	
	baz=316,slow=75,SNR=15						
H11S3	**WAKE ISLAND Hy**	**28.96**	**124**	T	T	07 56 51.0	
	baz=316,slow=75,SNR=11						
H11S2	**WAKE ISLAND Hy**	**28.98**	**124**	T	T	07 56 57.5	
	baz=316,slow=75,SNR=11						
ZALV	**Zalesovo Beam**	**41.74**	**312**	P	P	07 27 34.3	-2.8
	0.6nm,0.3s,baz=55,slow=7.6,SNR=2.7						
MKAR	**Makanchi Array**	**44.02**	**302**	P	P	07 27 53.1	-2.6
	1.0nm,0.9s,baz=82,slow=8.8,SNR=9.1						
WRA	**Warramunga Arr**	**57.50**	**188**	P	P	07 29 36.4	-1.1
	0.3nm,0.4s,baz=4.2,slow=7.4,SNR=7.2						
FINES	**FINESS Array B**	**68.51**	**332**	P	P	07 30 48.2	-2.0
	0.5nm,0.5s,baz=42,slow=13,SNR=2.9						
AKASG	**Malin Array Be**	**74.06**	**322**	P	**P**	**07 31 23.1**	**-0.9**
	0.8nm,0.4s,baz=50,slow=24,SNR=8.3						

IDC 05 07:31:23.4±3.4**, 35.°22N**×**142.°57E, h0**km**, mb3.3**/3**, mb1 3.3**/4**, mb1mx3.2**/66**, mbtmp3.2**/4**, ML3.3**/1**, MS1.5**/1**, Ms1 1.5**/1**, ms1mx1.4**/34**, Error ellipse: s-maj=109.8km s-min=28.8km az=61.0, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
MJAR	**Matsushiro Arr**	**3.78**	**292**	Pn	Pn	07 32 22.8	-0.1
	2.3nm,0.3s,baz=104,slow=9.8,SNR=9.2						
MJAR				LR	LR	07 33 23.1	
	comp=Z,6.7nm,21.6s,baz=95,slow=32						
MAT	**Matsushiro**	**3.78**	**292**	P	Pn	07 32 21.7	-1.3
MAT				S	Sn	07 33 02.5	-5.7
MKAR	**Makanchi Array**	**45.89**	**304**	P	P	07 39 46.2	-1.4
	0.2nm,0.6s,baz=94,slow=9.3,SNR=3.1						
KURBB	**Kurchatov Arra**	**47.86**	**309**	P	P	07 40 03.9	+1.0
	0.3nm,0.6s,baz=82,slow=7.6,SNR=3.7						
ASAR	**Alice Springs**	**59.14**	**189**	P	P	07 41 25.9	0.0
	0.2nm,0.5s,baz=15,slow=8.8,SNR=3.3						

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*IDC **05** 07:32:08.9±0.8, 35.°43N×141.°81E, h0km, mb3.5/9, mb1 3.7/10, mb1mx3.5/67, mbtmp3.5/10, ML3.0/1, MS3.0/1, Ms1 3.0/1, ms1mx2.5/62, Error ellipse: s-maj=24.8km s-min=19.5km az=100.0*

*ISCJB **05** 07:32:10.5±0.6, 35.°45N±0.°06×141.°93E±0.°07, h22km, mb3.5/9, Error ellipse: s-maj=9.6km s-min=7.0km az=145.2*

*JMA **05** 07:32:10.1±0.2, 35.°53N×141.°98E, h45km, M3.2*

ISC 05 07:32:12.4±0.8**, 35.°45N**±0.°07×**141.°79E**±0.°08**, h22**km**, n21,** σ**0.s65**/16**, mb3.8**/9**, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.80**	**289**	P	**Pb**	**07 32 27.1**	**-0.5**
CHOJ				S	**Sn**	**07 32 39.3**	**-0.2**
BSO1	**Boso 1**	**1.03**	**220**	P	**Pn**	**07 32 30.5**	**-0.6**
BSO1				S	**Sn**	**07 32 46.2**	**+1.7**
BSO3	**Boso 3**	**1.23**	**239**	P	**Pb**	**07 32 34.4**	**-0.3**
BSO4	**Boso 4**	**1.27**	**249**	P	**Pn**	**07 32 34.7**	**0.0**
MJAR	**Matsushiro Arr**	**3.10**	**292**	Pn	**Pn**	**07 33 00.9**	**+0.9**
	1.8nm,0.3s,baz=118,slow=8.9,SNR=4.4						
JNU	**Nakatsue**	**9.32**	**259**	LR	LR	07 38 37.3	
	comp=Z,75nm,18.3s,baz=117,slow=42						
MA2	**Magadan**	**24.85**	**11**	P	**P**	**07 37 32.8**	**-0.1**
	0.9nm,0.3s,baz=183,slow=16,SNR=2.8						
H11N2	**WAKE ISLAND Hy**	**27.10**	**119**	T	T	08 06 16.5	
	baz=311,slow=75,SNR=18						
H11N1	**WAKE ISLAND Hy**	**27.11**	**119**	T	T	08 06 18.0	
	baz=311,slow=75,SNR=22						
H11N3	**WAKE ISLAND Hy**	**27.12**	**119**	T	T	08 06 18.8	
	baz=311,slow=75,SNR=18						
H11S1	**WAKE ISLAND Hy**	**27.77**	**121**	T	T	08 07 04.5	
	baz=312,slow=76,SNR=18						
H11S3	**WAKE ISLAND Hy**	**27.77**	**121**	T	T	08 07 07.1	
	baz=312,slow=76,SNR=16						
H11S2	**WAKE ISLAND Hy**	**27.78**	**121**	T	T	08 07 07.0	
	baz=312,slow=76,SNR=10						
MKAR	**Makanchi Array**	**45.23**	**304**	P	**P**	**07 40 28.0**	**+0.1**
	0.3nm,0.8s,baz=80,slow=10,SNR=2.7						
KURBB	**Kurchatov Arra**	**47.23**	**309**	P	**P**	**07 40 43.1**	**-0.4**
	0.9nm,0.6s,baz=82,slow=7.5,SNR=8.4						
ILAR	**Eielson Array**	**50.68**	**32**	P	**P**	**07 41 09.8**	**0.0**
	0.3nm,0.8s,baz=246,slow=6.5,SNR=3.2						
WRA	**Warramunga Arr**	**55.53**	**189**	P	**P**	**07 41 45.4**	**-0.6**
	0.4nm,0.4s,baz=6.5,slow=7.6,SNR=4.2						
ASAR	**Alice Springs**	**59.26**	**188**	P	**P**	**07 42 12.6**	**+0.3**
	0.3nm,0.4s,baz=352,slow=7.7,SNR=6.4						
YKA	**Yellowknife Ar**	**65.03**	**30**	P	**P**	**07 42 51.1**	**+0.6**
	0.2nm,0.8s,baz=294,slow=6.2,SNR=3.9						
FINES	**FINESS Array B**	**70.36**	**333**	P	**P**	**07 43 23.7**	**-0.4**
	1.0nm,0.9s,baz=286,slow=9.7,SNR=2.5						
NVAR	**Mina Array Bea**	**75.70**	**53**	P	**P**	**07 43 56.5**	**+0.1**
	0.3nm,0.7s,baz=248,slow=6.5,SNR=3.6						

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*IDC **05** 07:35:18.0±9.0, 36.°06N×72.°19E, h35km±49km, mb3.7/4, mb1 3.7/11, mb1mx3.4/69, mbtmp3.8/11, ML3.6/6, Error ellipse: s-maj=78.2km s-min=29.4km az=164.0*

*NNC **05** 07:35:35.5±1.6, 37.°46N×71.°44E, h159km±29km, mb2.5, mpv3.2, Error ellipse: s-maj=21.7km s-min=12.2km az=66.0*

ISC 05 07:35:39.8±1.7**, 37.°7N**±0.°1×**71.°47E**±0.°10**, h142**km**, n17,** σ**1.s52**/20**, mb3.8**/3**, 6C-4D, Afghanistan-Tajikistan border region**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
SFK	**Sufi-Kurgan**	**2.83**	**34**	⇑P	**Pn**	**07 36 23.1**	**-1.8**
	2.3nm,0.3s						
SFK				⇑S	**Sn**	**07 37 01.7**	**+2.1**
	19nm,0.4s						
MNAS	**Manas**	**4.88**	**9**	⇑P	**Pn**	**07 36 50.1**	**-1.4**
	1.4nm,0.4s						
MNAS				⇑S	**Sn**	**07 37 48.7**	**+1.3**
	3.9nm,0.4s						
AAK	**Ala-Archa**	**5.47**	**24**	Pn	**Pn**	**07 36 58.4**	**-1.0**
	1.8nm,0.3s,baz=162,slow=6.4,SNR=21						
AAK				Sn	**Sn**	**07 38 02.4**	**+0.8**
	0.7nm,0.3s,baz=319,slow=21,SNR=8.7						
AAK	**Ala-Archa**	**5.47**	**24**	⇑P	**Pn**	**07 36 57.9**	**-1.6**
	1.4nm,0.3s						
AAK				⇓S	**Sn**	**07 38 02.8**	**+1.2**
	7.7nm,0.8s						
KK31	**Karatay Array**	**5.48**	**353**	P	**Pn**	**07 36 58.3**	**-1.0**
	1.2nm,0.3s,baz=186,slow=14,SNR=21						
KK31				⇓S	**Sn**	**07 38 03.3**	**+1.8**
	1.7nm,0.4s,baz=176,slow=22,SNR=5.7						
GEYT	**Alibeck**	**10.57**	**275**	Pn	Pn	07 37 60.0	-7.5
	1.0nm,0.3s,baz=120,slow=8.7,SNR=6.4						
GEYT				Sn	Sn	07 39 55.8	-8.4
	0.7nm,0.3s,baz=231,slow=40,SNR=3.1						
MKAR	**Makanchi Array**	**12.13**	**38**	Pn	Pn	07 38 22.4	-5.5
	0.1nm,0.3s,baz=228,slow=13,SNR=6.7						
KURBB	**Kurchatov Arra**	**13.90**	**19**	Pn	**Pn**	**07 38 49.5**	**-1.0**
	0.0nm,0.3s,baz=205,slow=10,SNR=2.5						
AB31	**Akbulak array**	**14.27**	**328**	⇓P	**Pn**	**07 38 52.9**	**-2.3**
	0.4nm,0.6s,baz=159,slow=12,SNR=6.4						
AB31				⇑S	**Sn**	**07 41 31.8**	**-1.3**
	0.8nm,0.6s						
BVAR	**Borovoye Array**	**15.37**	**358**	Pn	**P**	**07 39 10.9**	**+0.5**
	0.3nm,0.3s,baz=154,slow=8.9,SNR=6.4						
AKTO	**Aktyubinsk**	**15.98**	**327**	Pn	**P**	**07 39 19.4**	**+2.2**
	0.5nm,0.3s,baz=123,slow=11,SNR=9.9						
AKTO	**Aktyubinsk**	**15.98**	**327**	⇓P	**Pn**	**07 39 15.0**	**-1.5**
	1.5nm,0.5s						
ZALV	**Zalesovo Beam**	**18.70**	**25**	P	**P**	**07 39 46.8**	**-0.2**
	0.5nm,0.3s,baz=226,slow=9.9,SNR=3.8						
ARU	**Arti**	**20.66**	**339**	P	Pn	07 40 13.0	+1.0
	3.3nm,0.2s,baz=265,slow=7.5,SNR=2.3						
ARCES	**ARCESS Array B**	**40.21**	**337**	P	**P**	**07 43 03.2**	**+1.3**
	2.5nm,0.9s,baz=124,slow=10,SNR=5.0						
HFS	**Hagfors**	**42.39**	**321**	P	**P**	**07 43 21.0**	**+1.2**
	2.3nm,1.0s,baz=92,slow=13,SNR=3.9						
YKA	**Yellowknife Ar**	**80.06**	**3**	P	**P**	**07 47 33.1**	**-0.1**
	0.1nm,0.5s,baz=351,slow=5.4,SNR=5.8						

IDC 05 07:38:04.5±1.9**, 8.°94S**×**128.°27E, h0**km**, mb3.5**/1**, mb1 3.5**/4**, mb1mx3.3**/46**, mbtmp3.3**/4**, ML3.4**/3**, Error ellipse: s-maj=62.8km s-min=23.4km az=74.0, Timor Sea**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**9.46**	**195**	Pn	Pn	07 40 23.1	+0.9
	0.4nm,0.3s,baz=20,slow=13,SNR=6.3						
FITZ				Sn	Sn	07 42 11.1	+1.7
	0.7nm,0.3s,baz=302,slow=18,SNR=5.0						
WRA	**Warramunga Arr**	**12.42**	**152**	Pn	Pn	07 41 01.4	-1.3
	0.2nm,0.3s,baz=324,slow=13,SNR=5.5						
WRA				Sn	Sn	07 43 25.1	+3.2
	0.5nm,0.3s,baz=329,slow=22,SNR=7.1						
ASAR	**Alice Springs**	**15.61**	**160**	Pn	Pn	07 41 44.9	-1.2
	0.1nm,0.3s,baz=333,slow=9.6,SNR=3.9						
ASAR				Sn	Sn	07 44 42.0	+2.2
	0.2nm,0.3s,baz=319,slow=20,SNR=5.5						
MKAR	**Makanchi Array**	**68.92**	**328**	P	P	07 49 11.5	+0.1
	0.3nm,0.6s,baz=128,slow=6.8,SNR=4.7						

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*IDC **05** 07:46:16.2±0.4, 2.°98N×127.°06E, h0km, mb4.8/37, mb1 4.8/38, mb1mx4.8/51, mbtmp4.8/38, ML5.0/1, MS5.1/15, Ms1 5.1/15, ms1mx4.8/49, Error ellipse: s-maj=19.2km s-min=9.3km az=78.0*

*BJI **05** 07:46:17.5, 3.°10N×127.°10E, h11km, mb4.9/69, mB5.3/63, Ms5.5/81, Ms7 5.3/76*

*GCMT **05** 07:46:18.5±0.1, 3.°11N×127.°14E, h14km, MW5.6/126, Moment Tensor Solution. s110,c195; s126,c261; Duration: 1.s5 Moment tensor: Scale 10^{17}Nm; M_{rr}-0.10±.03; $M_{\theta\theta}$1.13±.03; $M_{\phi\phi}$-1.03±.04; $M_{r\theta}$1.31±.14; $M_{\theta\phi}$-2.25±.04; $M_{\phi r}$0.80±.10; Best double couple: $M_0$2.91500×10^{17} NP1:ϕ_s258.00000°, δ83.00000°, λ-150.00000°. NP2:ϕ_s165.00000°, δ61.00000°, λ-7.00000°. Principal axes: T 2.7340, Plg15.0000°, Azm28.0000°; N 0.3660, Plg60.0000°, Azm270.0000°; P -3.0960, Plg25.0000°, Azm125.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface/mantle waves, cutoff=50s.*

*NEIC **05** 07:46:18.5±0.2, 3.°05N×127.°08E, h11km, mb5.3/87, MW5.4 Error ellipse: s-maj=5.4km s-min=3.9km az=79.0, Moment Tensor Solution. s23 Moment tensor: Scale 10^{17}Nm; M_{rr}-0.01; $M_{\theta\theta}$0.86; $M_{\phi\phi}$-0.86; $M_{r\theta}$1.49; $M_{\theta\phi}$0.15; $M_{\phi r}$0.64; Best double couple: $M_0$1.80000×10^{17} NP1: ϕ_s140.00000°, δ24.00000°, λ-7.00000°. NP2:ϕ_s236.00000°, δ87.00000°, λ-114.00000°. Principal axes: T 2.0700, Plg38.0000°, Azm347.0000°; N -0.6100, Plg24.0000°, Azm237.0000°; P -1.4600, Plg43.0000°, Azm123.0000°;*

*MOS **05** 07:46:19.5±1.2, 3.°00N×126.°96E, h33km, mb5.5/59, MS5.3/12 Error ellipse: s-maj=9.8km s-min=4.8km az=110.7*

*ISCJB **05** 07:46:20.0±0.8, 3.°13N±0.°02×127.°16E±0.°02, h30km±5km, mb5.1/196, MS5.3/51, Error ellipse: s-maj=3.9km s-min=3.1km az=174.2*

*KLM **05** 07:46:21.3, 3.°18N×127.°36E, h45km, mb5.4, MS6.2*

*DJA **05** 07:46:26.1±0.3, 3°N±2°×12°7E±°, h41km±4km, M5.4/84, mb5.1/84, mB5.8/59, MLv5.2/14, Mw(mB)5.3/59, Mwp5.8/11*

ISC 05 07:46:21.3±0.6**, 3.°04N**±0.°03×**127.°18E**±0.°04**, h29**km±3km**, n471,** σ**1.s79**/486**, mb5.2**/196**, MS5.3**/55**, 26C-8D, Talaud Islands**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
SGSI	**Sangihe**	**1.76**	**291**	P	**Pn**	**07 46 50.8**	**+0.8**
SGSI				S	**Sb**	**07 47 15.2**	**+0.4**
TNTI	**Ternate**	**2.27**	**175**	P	**Pn**	**07 46 57.7**	**+0.9**
TNTI				S	**Sb**	**07 47 27.2**	**-2.0**
TNTI	**Ternate**	**2.27**	**175**	*e*Pn	**Pn**	**07 46 56.8**	**0.0**
LBMI	**Labuha**	**3.67**	**175**	P	Pn	07 47 19.3	+3.1
LBMI				S	**Sn**	**07 48 01.6**	**+3.0**
MATI	**Mati**	**3.98**	**347**	*e*P	**Pn**	**07 47 23.1**	**+2.6**
DAV	**Davao City (W)**	**4.30**	**338**	Pn	**Pn**	**07 47 25.4**	**+0.5**
	91nm,0.3s,baz=126,slow=9.0,SNR=5.1						
DAV				Sn	**Sn**	**07 48 15.4**	**+1.2**
	92nm,0.3s,baz=155,slow=19,SNR=4.6						
DAV	**Davao City (W)**	**4.30**	**338**	*e*Pn	**Pn**	**07 47 24.9**	**-0.1**
DAV				Sn	**Sn**	**07 48 15.4**	**+1.2**
DAV	**Davao City (W)**	**4.30**	**338**	P	**Pn**	**07 47 26.5**	**+1.6**
	SNR=17						
DAV	**Davao City (W)**	**4.30**	**338**	Pn	**Pn**	**07 47 26.5**	**+1.6**
	SNR=17						
CTBH	**Cotabato--PC H**	**5.07**	**325**	⇑*i*P	**Pn**	**07 47 38.1**	**+2.7**
SANI	**Sanana**	**5.20**	**193**	P	**Pn**	**07 47 38.4**	**+1.2**
	148nm,1.1s,8μm43μm1.0nm						
SANI				S	**Sn**	**07 48 39.1**	**+2.9**
	148nm,1.1s,8μm43μm1.0nm						
BUKP	**Musuan**	**5.24**	**336**	*e*P	**Pn**	**07 47 40.0**	**+2.1**
SWI	**Sorong**	**5.63**	**133**	P	**Pn**	**07 47 45.5**	**+2.3**
	202nm,1.1s,7μm1.0nm						
SWI				S	**Sn**	**07 48 51.0**	**+4.1**
	202nm,1.1s,7μm1.0nm						
MRSI	**Marisa**	**5.82**	**244**	P	**Pn**	**07 47 47.3**	**+1.5**
	399nm,1.2s,8μm1.5nm						
MRSI				S	**Sn**	**07 48 54.1**	**+2.5**
	399nm,1.2s,8μm1.5nm						
LUWI	**Luwuk**	**5.99**	**227**	P	**Pn**	**07 47 50.7**	**+2.6**
	657nm,2.1s,14μm33μm3.4nm						
LUWI				S	**Sn**	**07 48 58.4**	**+2.7**
	657nm,2.1s,14μm33μm3.4nm						
BUTP	**Butuan**	**6.09**	**345**	*e*P	Pn	07 47 53.9	+4.4
PAGZ	**Pagadian**	**6.09**	**322**	*e*P	**Pn**	**07 47 51.4**	**+2.0**
NLAI	**Namlea**	**6.24**	**181**	P	Pn	07 47 54.6	+3.1
	169nm,1.0s,4μm0.7nm						
NLAI				S	**Sn**	**07 49 02.7**	**+0.7**
	169nm,1.0s,4μm0.7nm						
MSAI	**Masohi**	**6.58**	**165**	P	Pn	07 47 59.7	+3.4
	67nm,1.8s,2μm13μm0.3nm						
APSI	**Ampana**	**6.78**	**235**	P	Pn	07 48 01.8	+2.9
	843nm,1.4s,14μm18μm2.9nm						
FAKI	**Fak Fak**	**7.80**	**139**	P	Pn	07 48 16.5	+3.6
	132nm,1.4s,5μm55μm1.0nm						
FAKI	**Fak Fak**	**7.80**	**139**	*e*Pn	**Pn**	**07 48 15.2**	**+2.2**
PLP	**Palo**	**8.36**	**345**	⇑*e*P	Pn	07 48 25.3	+4.6
MYLDM	**Lahad Datu**	**8.91**	**284**	⇑P	Pn	07 48 32.4	+4.2
TTSI	**Tana Toraja**	**9.52**	**231**	P	Pn	07 48 39.6	+3.0
	209nm,2.2s,4μm						
RCP	**Roxas**	**9.53**	**333**	⇑*e*P	Pn	07 48 41.0	+4.2
SPSI	**Sidrap Palu**	**10.16**	**227**	P	**Pn**	**07 48 47.3**	**+1.9**
	69nm,2.0s,2μm						
KAPI	**Kappang**	**10.91**	**223**	Pn	Pn	07 48 43.2	-12
	3.6nm,0.3s,baz=245,slow=22,SNR=9.7						
BKB	**Balikpapan**	**11.13**	**248**	P	**Pn**	**07 49 01.0**	**+2.3**
	153nm,1.2s,4μm						
KKM	**Kota Kinabalu**	**11.33**	**286**	*e*Pn	**Pn**	**07 49 00.9**	**-0.5**
KBKI	**Kotabaru**	**12.68**	**240**	P	**Pn**	**07 49 22.2**	**+2.3**
	105nm,1.3s,3μm						
SOEI	**Soe**	**13.04**	**193**	P	Pn	07 49 28.9	+4.0
	202nm,1.2s,6μm						
BATI	**Baumata**	**13.62**	**195**	Pn	**P**	**07 49 38.4**	**-2.9**
	1.6nm,0.3s,baz=86,slow=24,SNR=2.2						
BBKI	**Banjar Baru**	**13.92**	**242**	P	**Pn**	**07 49 38.4**	**+1.6**
	110nm,1.3s,7μm						
GENI	**Genyem**	**14.14**	**113**	P	P	07 49 44.0	-3.1
	244nm,1.8s,8μm						
WSI	**Waingapu**	**14.37**	**208**	P	**Pn**	**07 49 40.2**	**-2.7**
	1μm,0.5s						
JAY	**Jayapura**	**14.61**	**112**	Pn	**P**	**07 49 54.3**	**+2.0**
	0.1nm,0.3s,baz=286,slow=23,SNR=7.9						
JAY	**Jayapura**	**14.61**	**112**	P	**P**	**07 49 50.3**	**-2.0**
	71nm,1.5s,2μm						
BCPH	**Baguio City Da**	**14.76**	**334**	⇓*e*P	Pn	07 49 39.8	-8.5
PLAI	**Plampang**	**15.06**	**218**	P	**Pn**	**07 49 55.0**	**+2.7**
	400nm,1.5s,8μm						
TWSI	**Taliwang, Sumb**	**15.57**	**221**	P	**P**	**07 50 01.6**	**-1.3**
	455nm,1.1s,6μm						
STKI	**Sintang**	**15.97**	**260**	P	**P**	**07 50 07.7**	**+0.3**
	154nm,1.3s						
MTN	**Manton Dam**	**16.27**	**166**	*e*Pn	**P**	**07 50 09.8**	**-0.9**
	91nm,1.1s						
KMMI	**Kalianget**	**16.56**	**233**	P	**P**	**07 50 15.9**	**+1.9**
	154nm,1.3s,3μm						
ABJI	**Asem Bagus**	**16.81**	**230**	P	**P**	**07 50 18.5**	**+1.8**
	163nm,1.2s,4μm						
KSM	**Kuching**	**16.93**	**265**	⇓P	**P**	**07 50 17.4**	**-0.6**
KSM	**Kuching**	**16.93**	**265**	*e*Pn	**Pn**	**07 50 17.1**	**+0.9**
	97nm,1.0s						
JAGI	**Jajag, Banyuwa**	**17.31**	**229**	P	**P**	**07 50 22.6**	**+0.4**
	226nm,1.1s,4μm						
JAGI	**Jajag, Banyuwa**	**17.31**	**229**	*e*P	**Pn**	**07 50 21.2**	**+0.2**
	270nm,1.1s						
GMJI	**Gumukmas**	**17.72**	**231**	P	**P**	**07 50 29.9**	**+3.1**
	167nm,1.1s,2μm14μm						
NGJI	**Ngawi**	**18.79**	**237**	P	**Pn**	**07 50 41.9**	**+2.7**
	78nm,1.0s,4μm						
PWJI	**Pagerwojo**	**18.87**	**234**	P	**P**	**07 50 39.3**	**-0.1**
	62nm,1.2s,2μm						
SMRI	**Semarang**	**19.48**	**239**	*e*P	**P**	**07 50 46.8**	**+0.6**
	187nm,1.2s						
TWG	**Pinlang**	**20.53**	**344**	*e*P	**P**	**07 50 56.3**	**-1.3**
	155nm,0.7s						
KPJI	**Karang Pucung**	**20.92**	**240**	P	Pn	07 51 04.1	-0.4
	83nm,1.3s						
YULB	**Yu-li**	**21.01**	**345**	*e*P	**P**	**07 51 01.6**	**-1.2**
	60nm,1.2s						
FITZ	**Fitzroy Crossi**	**21.07**	**184**	P	**P**	**07 51 01.3**	**-2.1**
	21nm,0.9s,baz=28,slow=9.3,SNR=20						
FITZ	**Fitzroy Crossi**	**21.07**	**184**	P	**P**	**07 51 01.7**	**-1.6**
	baz=21,SNR=10						
FITZ	**Fitzroy Crossi**	**21.07**	**184**	*e*P	**P**	**07 51 01.3**	**-2.1**
	291nm,1.9s						
TPUB	**Ta-pu**	**21.11**	**343**	*e*P	**P**	**07 51 02.0**	**-1.8**
	91nm,0.8s						
SSLB	**Suanglung**	**21.48**	**344**	*e*P	**P**	**07 51 06.5**	**-1.3**
	60nm,1.0s						
PPBI	**Pangkal Pinang**	**21.66**	**256**	P	**P**	**07 51 13.9**	**+4.1**
	50nm,1.1s,48μm						
LEM	**Lembang**	**21.85**	**243**	P	P	07 51 22.0	+10
	76nm,0.8s,baz=57,slow=11,SNR=7.1						
LEM	**Lembang**	**21.85**	**243**	P	**P**	**07 51 14.6**	**+2.6**
	1μm,1.1s						
LEM	**Lembang**	**21.85**	**243**	P	P	07 51 22.0	+10
CISI	**Cisompet, Garu**	**22.00**	**241**	P	**P**	**07 51 16.1**	**+2.6**
	113nm,1.2s						
CISI	**Cisompet, Garu**	**22.00**	**241**	*e*P	**P**	**07 51 13.7**	**+0.2**
	156nm,1.2s						
YHNB	**Yeheng**	**22.22**	**346**	*e*P	**P**	**07 51 15.0**	**-0.8**
	88nm,1.1s						
CBJI	**Citeko**	**22.37**	**245**	P	**P**	**07 51 20.7**	**+3.3**
	685nm,1.1s,15μm						
CNJI	**Cibinong**	**22.49**	**243**	P	**P**	**07 51 19.5**	**+0.7**
	146nm,1.1s,8μm						
DBJI	**Dramaga**	**22.51**	**245**	P	**P**	**07 51 20.8**	**+1.8**
	270nm,1.3s						
TPRI	**Tanjung Pinang**	**22.73**	**265**	P	**P**	**07 51 25.1**	**+3.8**
	79nm,1.1s,86μm20μm						
DSRI	**Dabo**	**22.86**	**262**	P	**P**	**07 51 25.3**	**+2.7**
	152nm,1.7s,4μm						
SBJI	**Serang**	**22.90**	**247**	P	**P**	**07 51 25.4**	**+2.3**
	368nm,1.2s						
HKC	**Hong Kong Obse**	**22.93**	**328**	⇑P	P	07 51 31.0	+7.8
COEN	**Coen**	**23.18**	**137**	P	**P**	**07 51 27.6**	**+1.8**
	baz=23,SNR=4.8						
COEN	**Coen**	**23.18**	**137**	*e*P	**P**	**07 51 26.3**	**+0.5**
	66nm,1.3s						
QIZ	**Qiongzhong**	**23.23**	**314**	P	P	07 51 21.6	-4.8
QIZ				S	**S**	**07 55 39.1**	**+2.3**
QIZ				sS	sS	07 55 46.3	-4.4
QIZ				LR	LR		
	comp=N,8μm,17.8s						
QIZ				LR	LR		
	comp=E,5μm,20.5s						
QIZ				LR	LR		
	comp=Z,10μm,22.6s						
QZH	**Quanzhou**	**23.29**	**340**	⇑*i*P	**P**	**07 51 23.5**	**-3.4**
QZH				S	**S**	**07 55 34.9**	**-2.7**
QZH				LR	LR		
	comp=N,11μm,15.2s						
QZH				LR	LR		
	comp=E,2μm,10.6s						
QZH				LR	LR		
	comp=Z,31μm,23.4s						
MYKOM	**Kota Tinggi**	**23.34**	**267**	*e*P	**P**	**07 51 27.1**	**-0.4**
	62nm,1.1s						
PMG	**Port Moresby**	**23.44**	**122**	LR	LR	08 01 43.8	
	comp=Z,10μm,20.1s,baz=298,slow=40						
PMG	**Port Moresby**	**23.44**	**122**	*e*P	**P**	**07 51 28.6**	**+0.1**
PMG				pmax	pmax		
	comp=Z,40nm,1.1s						
PMG	**Port Moresby**	**23.44**	**122**	*e*P	**P**	**07 51 28.6**	**+0.1**
	comp=Z,40nm,1.1s						
BLSI	**Bandar Lampung**	**23.45**	**249**	P	**P**	**07 51 31.3**	**+2.7**
	comp=Z,196nm,1.1s						
CGJI	**Cibinong**	**23.50**	**246**	P	**P**	**07 51 30.2**	**+1.2**
	comp=Z,313nm,1.2s,comp=Z,3μm						
KLI	**Kotabumi**	**23.64**	**251**	P	**P**	**07 51 32.2**	**+1.8**
	comp=Z,238nm,1.3s						
WRAB	**Tennant Creek**	**23.90**	**163**	*d i*P	**P**	**07 51 29.7**	**-3.1**
WRAB	**Tennant Creek**	**23.90**	**163**	*e*P	**P**	**07 51 30.2**	**-2.6**
	comp=Z,140nm,0.9s						
WRA	**Warramunga Arr**	**23.90**	**163**	P	**P**	**07 51 29.8**	**-3.1**
	comp=Z,90nm,0.8s,baz=342,slow=10,SNR=95						
WRA				S	**S**	**07 55 52.0**	**+4.5**
	comp=Z,5.8nm,1.0s,baz=350,slow=16,SNR=4.8						

WB2 **Warramunga Arr** 23.91 163 *e*P P 07 51 30.3 -2.6
comp=Z,150nm,0.9s
JMBI **JAMBI** 23.98 259 P P 07 51 37.1 +3.5
comp=Z,505nm,1.3s
GZH **Guangzhou** 24.01 327 P P 07 51 34.1 +0.3
GZH pmax pmax
comp=Z,750nm,4.4s
KASI **Kota Agung** 24.20 249 P P 07 51 38.1 +2.4
comp=Z,235nm,1.3s,comp=Z,3µm
LWLI **Liwa** 24.44 251 P P 07 51 40.4 +2.4
comp=Z,95nm,1.2s,comp=Z,13µm
UBPT **Khong Chiam** 24.60 301 P P 07 51 38.5 -0.8
comp=Z,59nm,2.3s,comp=Z,2µm
LHSI **Lahat** 24.60 254 P P 07 51 42.7 +3.3
comp=Z,76nm,1.3s,comp=Z,8µm
MBWA **Marble Bar** 25.14 197 *e*P P 07 51 42.8 -1.3
comp=Z,676nm,1.8s
MBWA **Marble Bar** 25.14 197 P P 07 51 42.8 -1.3
SNR=11
MBWA P P 07 51 42.8 -1.3
SNR=11
MBWA **Marble Bar** 25.14 197 P P 07 51 42.8 -1.3
SNR=11
XMIS **Christmas Isla** 25.29 238 *e*P P 07 51 44.0 -1.6
comp=Z,108nm,1.1s
IPM **Ipoh** 26.13 274 *e*P P 07 51 52.5 -0.8
comp=Z,131nm,1.9s
CHBT **CHBT** 26.40 293 P P 07 51 56.3 +0.6
comp=Z,73nm,1.4s,comp=Z,3µm
QIS **Mount Isa** 26.43 153 P P 07 51 56.3 +0.4
baz=26,SNR=14
KULM **Kulim** 26.55 276 *e*P P 07 51 56.2 -0.8
comp=Z,58nm,1.4s
SKNT **Sakolnakorn** 26.66 303 P P 07 52 00.6 +2.7
comp=Z,33nm,1.3s
PDSI **Padang** 26.99 262 P P 07 52 04.3 +3.3
comp=Z,16nm,1.1s,comp=Z,10µm
PPI **Padang Panjang** 26.99 263 P P 07 52 04.5 +3.5
comp=Z,22nm,0.7s,comp=Z,903nm
AS31 **Alice Springs** 27.34 166 *e*P P 07 52 01.9 -2.2
comp=Z,7.1nm,0.8s
ASAR **Alice Springs** 27.35 166 P P 07 52 01.4 -2.6
comp=Z,11nm,0.8s,baz=336,slow=5.8,SNR=41
ASAR S S 07 56 54.5 +12
comp=Z,2.4nm,0.9s,baz=340,slow=18,SNR=4.5
KHON **Khomkaen** 27.35 300 P P 07 52 06.9 +2.7
comp=Z,16nm,1.2s
MNSI **Mandailing Nat** 27.67 266 P P 07 52 09.5 +2.4
comp=Z,27nm,1.1s,comp=Z,3µm
NONG **Nongkai** 27.88 304 P P 07 52 11.7 +2.8
comp=Z,16nm,1.0s
CHAI **Chaiyaphum** 27.89 299 P P 07 52 15.2 +6.2
comp=Z,6.3nm,1.1s
PSI **Prapat** 28.22 270 P P 07 52 10.6 -1.5
comp=Z,3.7nm,0.7s,baz=93,slow=9.6,SNR=5.3
PSI **Prapat** 28.22 270 *e*P P 07 52 10.4 -1.7
PSI pmax pmax
comp=Z,62nm,1.7s
PSI **Prapat** 28.22 270 *e*P P 07 52 10.4 -1.7
comp=Z,62nm,1.7s
SSE **Sheshan** 28.47 349 *e*P P 07 52 13.0 -1.0
SSE pP pP 07 52 17.7 -4.8
SSE S **S** **07 56 59.5 -0.2**
SSE sS sS 07 57 05.8 -8.0
SSE pmax pmax
comp=Z,16nm,0.6s
SSE pmax pmax
comp=Z,470nm,8.2s
SSE LR LR
comp=Z,5µm,21.8s
SSE LR LR
comp=Z,2µm,21.8s
SSE LR LR
comp=Z,7µm,22.7s
GIRL **Giralia** 28.49 206 P P 07 52 14.0 -0.2
baz=28,SNR=3.5
SURT **Suratani** 28.82 283 P P 07 52 18.7 +1.4
comp=Z,8.9nm,1.5s,comp=Z,193nm
PHET **Kaeng Krachan** 28.95 291 P P 07 52 22.1 +3.6
comp=Z,5.2nm,1.1s,comp=Z,141nm
PBSI **Pulau Batu** 29.05 264 P P 07 52 21.9 +2.5
comp=Z,61nm,1.5s
PBKT **Sadao Pong** 29.05 299 P P 07 52 19.9 +0.6
comp=Z,22nm,1.0s
PKDT **Phuket** 29.10 281 P P 07 52 21.8 +2.0
comp=Z,23nm,1.1s
KCSI **Kotacane, Aceh** 29.36 272 P P 07 52 25.0 +2.8
comp=Z,18nm,1.5s
GSI **Gunungsitoli** 29.63 267 *e*P P 07 52 23.0 -1.5
comp=Z,42nm,1.0s
CTA **Charters Tower** 29.65 142 P P 07 52 24.9 +0.2
comp=Z,5.1nm,1.0s,baz=288,slow=12,SNR=2.9
SRDT **SRDT** 29.88 294 P P 07 52 27.3 +0.6
comp=Z,78nm,1.6s,comp=Z,17µm
NJ2 **Nanjing** 29.90 346 *e*P P 07 52 26.6 -0.1
NJ2 S **S** 07 57 17.9 -4.3
NJ2 pmax pmax
comp=Z,17nm,1.1s
NJ2 LR LR
comp=Z,4µm,14.1s
NJ2 LR LR
comp=Z,2µm,22.2s
NJ2 LR LR
comp=Z,2µm,23.3s
WHN **Wuhan** 29.92 337 P P 07 52 29.1 +2.2
WHN S **S** 07 57 20.3 -2.3
WHN LR LR
comp=Z,13µm,15.7s
WHN LR LR
comp=Z,9µm,19.9s
WHN LR LR
comp=Z,40µm,22.3s
JNU **Nakatsue** 30.12 6 P P 07 52 27.7 -1.0
comp=Z,31nm,0.9s,baz=175,slow=9.2,SNR=10
JNU **Nakatsue** 30.12 6 *e*P P 07 52 27.5 -1.2
comp=Z,64nm,1.0s
GYA **Guiyang** 30.48 322⇑*i*P P 07 52 31.8 -0.2
GYA PP **PnPn** 07 53 33.0 +1.6
GYA PcP **PcP** 07 55 32.2 +1.1
GYA S **S** 07 57 33.6 +1.8
GYA ScP **ScP** 07 59 14.4 +2.7
GYA ScS **ScS** 08 03 07.8 -0.3
GYA pmax pmax
comp=Z,60nm,0.8s
GYA pmax pmax
comp=Z,160nm,6.2s
GYA LR LR
comp=Z,780nm,17.8s
GYA LR LR
comp=Z,610nm,18.0s
GYA LR LR
comp=Z,750nm,18.2s
PHRA **Phrae** 30.53 302 P P 07 52 32.0 -0.4
comp=Z,146nm,1.2s,comp=Z,26µm
CRAI **Chiangrai** 31.23 305 P P 07 52 44.0 +5.4
comp=Z,10nm,1.7s
CM01 **Chiang Mai Arr** 31.57 301 *e*P P 07 52 40.4 -1.2
CMAR **Chiang Mai Arr** 31.60 301 P P 07 52 40.3 -1.6
comp=Z,5.7nm,0.8s,baz=117,slow=7.2,SNR=14
CMMT **Chiang Mai** 31.75 302 P P 07 52 44.0 +0.7
comp=Z,18nm,1.3s
CHTO **Chiang Mai** 31.76 302 P P 07 52 44.1 +0.8
comp=Z,80nm,1.3s,comp=Z,2µm
CHTO **Chiang Mai** 31.76 302 *e*P P 07 52 42.3 -1.0
CHTO pmax pmax
comp=Z,26nm,1.3s
CHTO **Chiang Mai** 31.76 302 *e*P P 07 52 42.3 -1.0
comp=Z,26nm,1.3s
CHTO **Chiang Mai** 31.76 302 P P 07 52 44.1 +0.8
SNR=9.7
CHTO P P 07 52 44.1 +0.8
SNR=9.7
CHTO **Chiang Mai** 31.76 302 P P 07 52 44.1 +0.8
SNR=9.7
ENH **Enshi** 31.84 330 *e*P P 07 52 43.7 -0.2
comp=Z,41nm,1.1s
CMAI **Chiengmai2** 32.18 304 P P 07 52 50.6 +3.5
comp=Z,16nm,1.0s,comp=Z,3µm
KMI **Kunming** 32.18 315 P P 07 52 48.5 +1.4
KMI pP pP 07 52 52.1 -3.6
KMI sP sP 07 52 53.6 -5.6
KMI PP **PnPn** **07 53 55.3 +1.7**
KMI S **S** **07 57 59.9 +1.3**
KMI sS sS 07 58 05.3 -7.3
KMI SS **SnSn** **07 59 50.3 -0.2**
KMI pmax pmax
comp=Z,19nm,0.8s
KMI LR LR
comp=Z,760nm,18.1s
KMI LR LR
comp=Z,1µm,20.0s
KMI LR LR
comp=Z,1µm,21.3s
MHMT **Maesarieng** 32.36 300 P P 07 52 54.0 +5.5
comp=Z,14nm,1.1s
INU **Inuyama** 33.41 15 *e*P P 07 52 58.1 +0.6
comp=Z,33nm,1.2s
MORW **Morawa** 33.67 198 P P 07 52 59.2 -0.7
baz=33,SNR=6.9
QLP **Quilpie** 33.75 152 P P 07 52 59.6 -1.0
baz=34,SNR=5.9
KS15 **Wonju Array Si** 34.24 1 *e*P P 07 53 05.1 +0.5
KSAR **Wonju Array Be** 34.24 1 P P 07 53 04.3 -0.4
KSAR 07 55 43.3
KSAR **Wonju Array Be** 34.24 1 P P 07 53 04.3 -0.4
KSAR PcP **PcP** 07 55 43.3 +2.3
KSRS **Korea Array** 34.25 1 P P 07 53 04.3 -0.5
comp=Z,11nm,1.0s,baz=178,slow=9.6,SNR=32
KSRS PcP **PcP** 07 55 43.3 +2.3
comp=Z,1.8nm,0.5s,baz=240,slow=2.5,SNR=5.5
KS01 **Wonju Array Si** 34.27 1 *e*P P 07 53 03.9 -1.1
TIA **Tai'an** 34.29 345 ⇓P P 07 53 06.1 +1.0
TIA S **S** 07 58 32.9 +2.3
TIA pmax pmax
comp=Z,20nm,1.0s
TIA pmax pmax
comp=Z,490nm,5.8s
TIA LR LR
comp=Z,4µm,19.2s
TIA LR LR
comp=Z,3µm,22.4s
TIA LR LR
comp=Z,5µm,18.6s
KMBL **Kambalda** 34.59 188 P P 07 53 06.0 -1.8
baz=34,SNR=19
MAJO **Matsushiro** 34.85 16 *e*P P 07 53 08.3 -1.8
MAJO pmax pmax
comp=Z,54nm,1.4s
MAJO **Matsushiro** 34.85 16 *e*P P 07 53 08.2 -1.8
comp=Z,54nm,1.4s
MJAR **Matsushiro Arr** 34.85 16 P P 07 53 08.9 -1.2
comp=Z,4.1nm,0.8s,baz=197,slow=7.5,SNR=9.9
MJAR PcP PcP 07 55 49.3 +6.5
comp=Z,0.7nm,0.3s,baz=150,slow=1.7,SNR=5.5
MJAR LR LR 08 06 22.5
comp=Z,6µm,21.5s,baz=190,slow=34
BLDU **Ballidu** 34.93 196 P P 07 53 09.4 -1.4
baz=35,SNR=8.4
XAN **Xi'an** 35.23 333 P P 07 53 11.9 -1.4
XAN PP **PnPn** 07 54 32.2 +0.5
XAN S **S** 07 58 42.6 -2.6
XAN pmax pmax
comp=Z,15nm,0.8s
XAN pmax pmax
comp=Z,370nm,8.9s
XAN LR LR
comp=Z,6µm,26.1s
XAN LR LR
comp=Z,9µm,34.0s
XAN LR LR
comp=Z,8µm,32.8s
CD2 **Chengdu** 35.46 324 P P 07 53 14.0 -1.4
CD2 sP pP 07 53 19.5 -4.5
CD2 S **S** **07 58 49.8 +0.9**
CD2 sS sS 07 58 56.3 -6.7
CD2 pmax pmax
comp=Z,40nm,0.9s
CD2 pmax pmax
comp=Z,500nm,6.1s
CD2 LR LR
comp=Z,8µm,20.4s
CD2 LR LR
comp=Z,8µm,20.4s
KLBR **Kellerberrin** 35.59 194 P P 07 53 14.6 -1.8
baz=35,SNR=7.9
DL2 **Dalian** 36.05 353 ⇑P P 07 53 21.2 +0.9
DL2 S S 07 59 02.4 +4.8
DL2 pmax pmax
comp=Z,67nm,1.3s
DL2 pmax pmax
comp=Z,880nm,9.0s
DL2 LR LR
comp=Z,4µm,19.6s
DL2 LR LR
comp=Z,5µm,21.2s
DL2 LR LR
comp=Z,5µm,20.9s
BBOO **Buckleboo** 36.64 167 P P 07 53 23.3 -2.1
baz=36,SNR=15
BBOO **Buckleboo** 36.64 167 *e*P P 07 53 25.5 +0.1
comp=Z,242nm,1.8s
NWAO **Narrogin (SRO)** 36.99 194 P P 07 53 26.8 -1.6
comp=Z,25nm,1.0s,baz=274,slow=0.1,SNR=6.6
NWAO **Narrogin (SRO)** 36.99 194 P P 07 53 27.0 -1.4
baz=37,SNR=4.6
NWAO **Narrogin (SRO)** 36.99 194 *e*P P 07 53 27.6 -0.8
comp=Z,63nm,1.2s
TIY **Taiyuan** 37.06 340 *e*P P 07 53 30.0 +1.0
TIY S **S** **07 59 14.8 +1.6**
TIY pmax pmax
comp=Z,270nm,4.5s
TIY LR LR
comp=Z,5µm,21.8s
TIY LR LR
comp=Z,3µm,19.8s
TIY LR LR
comp=Z,7µm,22.1s
STKA **Stephens Creek** 37.34 160 P P 07 53 29.4 -1.8
comp=Z,57nm,0.9s,baz=336,slow=7.9,SNR=66
STKA PcP **PcP** 07 55 49.8 -0.4
comp=Z,4.7nm,0.6s,baz=328,slow=6.1,SNR=3.3
STKA LR LR 08 12 01.9
comp=Z,3µm,18.2s,baz=336,slow=41
STKA **Stephens Creek** 37.34 160 P P 07 53 30.0 -1.3
baz=37,SNR=50
STKA **Stephens Creek** 37.34 160 P P 07 53 29.5 -1.8
STKA 07 55 49.8
STKA pmax pmax
comp=Z,57nm,0.9s
STKA pmax pmax
comp=Z,5.0nm,0.6s
STKA MLR MLR
comp=Z,3µm,18.2s
STKA **Stephens Creek** 37.34 160 *e*P P 07 53 29.7 -1.7
comp=Z,15nm,0.9s
STKA PcP **PcP** 07 55 49.8 -0.4
HTT **Hallett** 37.94 164 P P 07 53 36.1 -0.4
baz=38,SNR=4.7
BJT **Baijiatuau** 38.13 346 *e*P P 07 53 37.7 -0.3
BJT pmax pmax
comp=Z,136nm,1.3s
BJT **Baijiatuau** 38.13 346 *e*P P 07 53 37.7 -0.3
comp=Z,136nm,1.3s
CMSA **Cobar Meteorol** 38.64 154 P P 07 53 43.0 +0.6
baz=38,SNR=11
RKGY **Rocky Gully** 38.66 194 P P 07 53 42.2 -0.3
baz=38,SNR=6.5
SNY **Shenyang** 38.75 356 ⇑P P 07 53 43.6 +0.5
SNY S **S** **07 59 42.7 +4.2**
SNY pmax pmax
comp=Z,34nm,1.5s
SNY pmax pmax
comp=Z,550nm,3.5s
SNY LR LR
comp=Z,3µm,27.5s
SNY LR LR
comp=Z,4µm,19.5s
SNY LR LR
comp=Z,6µm,31.4s
LZH **Lanzhou** 39.32 330 *e*P P 07 53 49.0 +0.8
LZH pP pP 07 53 53.5 -3.3
LZH sP sP 07 53 57.0 -3.3
LZH PP **PnPn** **07 55 22.0 +0.4**
LZH *e*S **S** **07 59 50.1 +2.5**
LZH sS sS 07 59 58.4 -3.5
LZH SS **SS** **08 02 36.2 -5.7**
LZH pmax pmax
comp=Z,40nm,1.1s
LZH pmax pmax
comp=Z,320nm,4.7s
LZH LR LR
comp=Z,6µm,17.7s
LZH LR LR
comp=Z,8µm,17.9s
LZH LR LR
comp=Z,8µm,18.6s
HHC **Hu-ho-hao-te** 40.19 342 *e*P P 07 53 56.2 +0.9
HHC pP pP 07 54 01.8 -2.1
HHC sP sP 07 54 05.1 -2.3
HHC PP **PnPn** **07 55 32.8 +1.1**
HHC S S 08 00 06.2 +5.8
HHC pmax pmax
comp=Z,26nm,0.9s
HHC pmax pmax
comp=Z,430nm,9.0s
HHC LR LR
comp=Z,3µm,17.8s
HHC LR LR
comp=Z,3µm,18.2s
HHC LR LR
comp=Z,4µm,17.7s
CN2 **Changchun** 40.62 358 *e*P P 07 53 58.8 +0.2
CN2 *e*S **S** **08 00 08.7 +2.2**
CN2 SS **SS** **08 03 07.4 +0.1**
CN2 pmax pmax
comp=Z,20nm,1.0s
CN2 pmax pmax
comp=Z,700nm,9.0s
CN2 LR LR
comp=Z,2µm,21.0s
CN2 LR LR
comp=Z,4µm,21.0s
CN2 LR LR
comp=Z,2µm,19.0s
ARMA **Armidale** 40.65 147 P P 07 53 59.2 -0.1
baz=40,SNR=9.1
ARMA **Armidale** 40.65 147 *e*P P 07 53 59.1 -0.1
comp=Z,44nm,1.0s
USRK **Ussuriysk Ar.** 41.20 5 P P 07 54 03.7 +0.2
comp=Z,9.5nm,0.8s,baz=189,slow=6.8,SNR=28
MDJ **Mudanjiang** 41.46 3 P P 07 54 06.3 +0.7
MDJ S **S** **08 00 21.4 +2.4**
MDJ pmax pmax
comp=Z,42nm,1.0s
MDJ pmax pmax
comp=Z,700nm,10.3s
MDJ LR LR
comp=Z,2µm,30.6s
MDJ LR LR
comp=Z,3µm,28.2s
MDJ LR LR
comp=Z,5µm,23.5s
MDJ **Mudanjiang** 41.46 3 *e*P P 07 54 06.2 +0.7
comp=Z,73nm,1.3s
H11S3 **WAKE ISLAND Hy** 41.60 65 T T 08 38 40.5
baz=253,slow=75,SNR=186
H11S1 **WAKE ISLAND Hy** 41.62 65 T T 08 38 37.1
baz=253,slow=75,SNR=77
H11S2 **WAKE ISLAND Hy** 41.62 65 T T 08 38 40.9
baz=253,slow=75,SNR=123
ARPS **Mount Arapiles** 41.90 162 P P 07 54 09.6 +0.3
baz=42,SNR=17
H11N1 **WAKE ISLAND Hy** 42.15 64 T T 08 39 49.8
baz=250,slow=75,SNR=8.7
H11N2 **WAKE ISLAND Hy** 42.16 64 T T 08 39 36.5
baz=250,slow=75,SNR=5.9
H11N3 **WAKE ISLAND Hy** 42.17 64 T T 08 39 51.1
baz=250,slow=75,SNR=12
LSA **Lhasa** 43.22 312 P P 07 54 19.8 -1.0
LSA **Lhasa** 43.22 312 *e*P P 07 54 19.1 -1.6
LSA pmax pmax
comp=Z,197nm,2.0s
LSA **Lhasa** 43.22 312 *e*P P 07 54 19.1 -1.6
comp=Z,197nm,2.0s
CAN **Canberra** 43.30 154 *e*P P 07 54 19.6 -1.2
CAN pmax pmax
comp=Z,59nm,1.3s
CAN **Canberra** 43.30 154 *e*P P 07 54 19.6 -1.2
comp=Z,59nm,1.3s
GTA **Gaotai** 43.91 329 *e*P P 07 54 24.9 -0.8
GTA pP pP 07 54 29.2 -5.3
GTA sP sP 07 54 31.9 -6.1
GTA PcP **PcP** **07 56 11.6 0.0**
GTA S **S** **08 00 55.6 0.0**
GTA sS sS 08 01 03.3 -6.6
GTA SS SS 08 04 05.1 -7.6
GTA pmax pmax
comp=Z,5.0nm,1.0s
GTA pmax pmax
comp=Z,190nm,5.7s
GTA LR LR
comp=Z,6µm,21.6s
GTA LR LR
comp=Z,7µm,20.6s
GTA LR LR
comp=Z,7µm,22.8s
YUK **Yuzh-Kuril'sk** 44.04 19*c*⇑*i*P P 07 54 26.6 +0.1
YUK *i*S S 08 01 02.9 +5.9
YUK pmax pmax
comp=Z,701nm,5.0s
YUK MLR MLR
comp=E,2µm,21.0s
YUK MLR MLR
comp=Z,3µm,21.0s
YUK MLR MLR
comp=N,915nm,18.0s
RAMN **Ramite** 45.51 306 *e*P P 07 54 37.6 -1.2
HABR **Khabarovsk** 45.76 7*c*e P P **07 54 39.9 -0.2**
HABR *e* 07 56 14.0
HABR *e*PPP PPP 07 57 04.6
HABR *e*S **S** **08 01 21.5 -0.3**
HABR *e* 08 01 27.0
HABR *e* 08 04 32.6
HABR *e*SSS SSS 08 05 37.3
HABR MLR MLR
comp=Z,2µm,17.0s
KUR **Kuril'sk** 45.78 20 *e*P P 07 54 40.3 0.0
KUR *i*S **S** **08 01 23.9 +1.8**
KUR pmax pmax
comp=Z,143nm,1.8s
KUR MLR MLR
comp=N,3µm,19.0s
KUR MLR MLR
comp=E,857nm,19.0s
KUR MLR MLR
comp=Z,2µm,19.0s
YSS **Yuzh-Sakhalins** 45.78 15⇑*i*P P 07 54 40.6 +0.3
YSS *e*S **S** **08 01 23.0 +0.9**
YSS pmax pmax
comp=Z,30nm,1.6s
YSS MLR MLR
comp=Z,4µm,20.0s
YSS MLR MLR
comp=N,2µm,17.0s
YSS MLR MLR
comp=E,1µm,19.0s
YSS **Yuzh-Sakhalins** 45.78 15 *e*P P 07 54 39.7 -0.6
comp=E,56nm,1.2s
JIRN **Jiri** 46.13 306 *e*P P 07 54 42.8 -1.1
comp=E,0.2nm,0.3s
KLR **Kul'dur** 46.18 4 P P 07 54 43.0 -0.4
comp=E,29nm,1.2s,baz=193,slow=4.9,SNR=24
GUN **Gumba** 46.49 306 *e*P P 07 54 45.8 -0.9
HIA **Hailar** 46.49 353 *e*P P 07 54 46.0 +0.1
HIA pmax pmax
comp=Z,174nm,2.0s
HIA **Hailar** 46.49 353 *e*P P 07 54 46.0 +0.1
comp=Z,174nm,2.0s
PKIN **Phulchoki** 46.74 306 *e*P P 07 54 46.9 -1.7
comp=Z,85nm,1.5s
KKN **Kakani** 46.92 306 *e*P P 07 54 48.6 -1.3
DMN **Daman** 46.99 306 *e*P P 07 54 48.1 -2.4
comp=Z,73nm,1.0s
GKN **Gorkha** 47.53 306 *e*P P 07 54 53.1 -1.5
ULN **Ulaanbaatar** 47.91 342*c* *i*P P 07 54 54.5 -2.6
ULN pmax pmax
comp=Z,48nm,1.7s
ULN **Ulaanbaatar** 47.91 342 *e*P P 07 54 57.1 -0.1
comp=Z,30nm,1.1s
ULN **Ulaanbaatar** 47.91 342 P P 07 54 56.8 -0.3
SNR=15
ULN P P 07 54 56.8 -0.3
SNR=15
ULN **Ulaanbaatar** 47.91 342 P P 07 54 56.8 -0.3
SNR=15
SONM **Songino Array** 48.09 341 P P 07 54 58.0 -0.6
comp=Z,3.5nm,0.6s,baz=153,slow=7.6,SNR=21
SONM PcP **PcP** 07 56 29.8 +3.8
comp=Z,4.6nm,1.0s,baz=145,slow=3.3,SNR=2.7
SONA1 **Songino Array** 48.09 341 *e*P P 07 54 58.0 -0.6

KOLN	Koldanda	48.28	305	eP	P	07 54 57.9	-2.5
	comp=Z,331nm,1.4s						
PYUN	Piuthan	48.90	305	eP	P	07 55 02.7	-2.6
	comp=Z,244nm,1.2s						
TYV	Tymovskoe	49.41	13	eP	P	07 55 10.0	+1.6
TYV				eS	S	08 02 14.0	+0.5
TYV				pmax	pmax		
	comp=Z,40nm,1.2s						
TYV				pmax	pmax		
	comp=Z,1µm,6.0s						
TYV				smax	smax		
	comp=E,2µm,12.0s						
HYB	Hyderabad	49.77	290	i P	P	07 55 10.0	-1.8
HYB				eS	S	08 02 18.0	-1.7
NKL	Nikolayevsk	51.18	10	eP	P	07 55 19.0	-2.7
NKL				e		08 02 42.0	
NKL				pmax	pmax		
	comp=N,39nm,1.5s						
NKL				pmax	pmax		
	comp=Z,130nm,1.5s						
NKL				pmax	pmax		
	comp=Z,1µm,13.0s						
ZAK	Zakamensk	51.31	341	eP	P	07 55 23.6	+0.6
ZAK				pmax	pmax		
	comp=Z,9.0nm,1.5s						
TLY	Talaya	52.32	342	P	P	07 55 30.6	+0.3
	comp=Z,4.7nm,0.7s,baz=173,slow=7.3,SNR=17						
TLY	Talaya	52.32	342c	i P	P	07 55 30.7	+0.3
TLY				eS	S	08 02 55.2	+1.3
TLY				pmax	pmax		
	comp=Z,51nm,1.9s						
TLY				MLR	MLR		
	comp=Z,4µm,18.0s						
TLY	Talaya	52.32	342	eP	P	07 55 30.1	-0.2
	comp=Z,72nm,1.6s						
IRK	Irkutsk	52.61	342	eP	P	07 55 31.7	-0.8
IRK				pmax	pmax		
	comp=Z,78nm,1.8s						
MOY	Mondy	53.17	340	eP	P	07 55 37.5	+0.7
MOY				pmax	pmax		
	comp=Z,122nm,2.2s						
SKR	Severo-Kuril's	53.37	23	eP	P	07 55 35.0	-3.1
SKR				e		07 56 46.0	
SKR				pmax	pmax		
	comp=Z,1µm,4.0s						
SKR				MLR	MLR		
	comp=N,2µm,20.0s						
SKR				MLR	MLR		
	comp=E,1µm,20.0s						
SKR				MLR	MLR		
	comp=Z,2µm,20.0s						
WMQ	Urumqi	53.54	325	P	P	07 55 39.0	-0.6
WMQ				pP	pP	07 55 42.3	-6.2
WMQ				sP	sP	07 55 47.6	-4.4
WMQ				PcP	PcP	07 56 48.7	+2.5
WMQ				PP	PP	07 57 41.4	+1.0
WMQ				S	S	08 03 08.4	-2.5
WMQ				sS	sS	08 03 17.1	-8.5
WMQ				ScS	ScS	08 05 28.7	+1.4
WMQ				SS	SS	08 06 48.8	-2.8
WMQ				pmax	pmax		
	comp=Z,4.0nm,0.8s						
WMQ				pmax	pmax		
	comp=Z,75nm,4.0s						
WMQ				LR	LR		
	comp=Z,5µm,16.4s						
WMQ				LR	LR		
	comp=Z,2µm,24.6s						
WMQ				LR	LR		
	comp=Z,4µm,24.6s						
NDI	New Delhi	53.87	304	eP	P	07 55 36.0	-6.2
MSVF	Nonsavu	54.22	114	eP	P	07 55 46.2	+1.2
MSVF				pmax	pmax		
	comp=Z,40nm,1.1s						
MSVF	Nonsavu	54.22	114	eP	P	07 55 46.2	+1.2
	comp=Z,40nm,1.1s						
BOD	Bodaibo	55.60	352	eP	P	07 55 53.5	-0.7
BOD				pmax	pmax		
	comp=Z,49nm,1.5s						
PEA0	Petropavlovsk-	55.90	22	eP	P	07 55 57.6	+1.1
PETK	Petropavlovsk-	55.90	22	P	P	07 55 56.6	+0.1
	comp=Z,12nm,0.8s,baz=190,slow=6.0,SNR=14						
PET	Petropavlovsk	56.19	22	eP	P	07 56 06.7	+8.2
PET				eS	S	08 03 52.3	+6.4
PET				pmax	pmax		
	comp=Z,500nm,13.1s						
PET				MLR	MLR		
	comp=Z,2µm,22.0s						
PET				MLR	MLR		
	comp=Z,1µm,15.0s						
SHLS	Shalkode	57.89	321	eP	P	07 56 07.7	-3.4
	comp=Z,49nm,1.0s						
SHLS				eS	S	08 04 06.3	-3.0
SHLS				LRM	MLR	08 23 31.3	
	comp=Z,166nm,14.5s						
PDGK	Podgornoye	58.23	321	P	P	07 56 10.7	-2.4
PDGK				pmax	pmax		
	comp=Z,11nm,0.9s						
MK01	Makanchi Array	58.35	325	eP	P	07 56 12.0	-1.9
MK31	Makanchi Array	58.37	325	eP	P	07 56 12.6	-1.5
MK31	Makanchi Array	58.37	325	eP	P	07 56 12.6	-1.5
MKAR	Makanchi Array	58.37	325	P	P	07 56 12.3	-1.8
	comp=Z,5.0nm,0.5s,baz=122,slow=8.4,SNR=38						
MKAR				LR	LR	08 23 55.3	
	comp=Z,2µm,19.6s,baz=110,slow=39						
MKAR	Makanchi Array	58.37	325	eP	P	07 56 12.6	-1.5
UZB	Uzynbulak	58.43	320	eP	P	07 56 12.7	-2.1
	comp=Z,41nm,1.0s						
UZB				eS	S	08 04 15.4	-0.9
UZB				LRM	MLR	08 23 31.5	
	comp=Z,516nm,15.5s						
MAKZ	Makanchi	58.56	325	eP	P	07 56 13.8	-1.6
MAKZ				pmax	pmax		
	comp=Z,17nm,1.0s						
MAKZ	Makanchi	58.56	325	eP	P	07 56 13.8	-1.6
	comp=Z,17nm,1.0s						
SATY	Saty	58.78	320	i P	P	07 56 15.7	-1.5
	comp=Z,215nm,0.9s						
SATY				eS	S	08 04 17.6	-3.2
SATY				LR	LR	08 21 51.2	
	comp=Z,677nm,19.2s						
KSH	Kashi	58.84	315	eP	P	07 56 17.6	0.0
KSH				sP	pP	07 56 24.8	-1.8
KSH				PP	PP	07 58 30.0	+2.0
KSH				PcS	PcS	08 01 06.4	-2.4
KSH				S	S	08 04 19.5	-2.1
KSH				pmax	pmax		
	comp=Z,15nm,1.1s						
KSH				pmax	pmax		
	comp=Z,160nm,4.7s						
KSH				LR	LR		
	comp=Z,1µm,14.0s						
KSH				LR	LR		
	comp=Z,2µm,17.1s						
KSH				LR	LR		
	comp=Z,4µm,23.0s						
YAK	Yakutsk	58.88	1	P	P	07 56 18.5	+1.3
	comp=Z,2.4nm,0.3s,baz=173,slow=23,SNR=3.5						
YAK	Yakutsk	58.88	1	eP	P	07 56 17.3	+0.1
YAK				e*PP	pP	07 56 26.4	+0.2
YAK				e		07 57 06.9	
YAK				e		07 58 26.9	
YAK				ePPP	PPP	07 59 50.0	
YAK				eS	S	08 04 20.0	-1.0
YAK				e*SS	sS	08 04 35.8	0.0
YAK				e		08 06 02.8	
YAK				pmax	pmax		
	comp=Z,36nm,0.9s						
YAK				pmax	pmax		
	comp=E,6.0nm,0.9s						
YAK				pmax	pmax		
	comp=N,24nm,1.5s						
YAK				pmax	pmax		
	comp=Z,102nm,2.8s						
YAK				smax	smax		
	comp=E,538nm,6.0s						
YAK				smax	smax		
	comp=N,977nm,6.8s						
YAK				MLR	MLR		
	comp=Z,4µm,20.0s						
YAK				MLR	MLR		
	comp=N,3µm,21.0s						
YAK				MLR	MLR		
	comp=E,1µm,18.0s						
YAK	Yakutsk	58.88	1	eP	P	07 56 18.2	+1.0
	comp=E,60nm,0.8s						

MA2	Magadan	59.26	14	eP	P	07 56 20.3	+0.3
MA2				pmax	pmax		
	comp=Z,237nm,1.4s						
MA2	Magadan	59.26	14	eP	P	07 56 20.3	+0.3
	comp=Z,237nm,1.4s						
KRAR	Krasnoyarsk	59.54	338	eP	P	07 56 20.6	-1.4
KRAR				pmax	pmax		
	comp=Z,25nm,0.9s						
MDOK	Medeo	59.71	319	eP	P	07 56 20.0	-3.6
	comp=Z,33nm,1.0s						
MDOK				eS	S	08 04 29.6	-3.2
MDOK				LR	LR	08 22 23.4	
	comp=Z,794nm,19.6s						
AAA	Alma-Ata	59.83	320	i P	P	07 56 38.0	+14
AAA				i S	S	08 04 40.4	+6.3
AAA				pmax	pmax		
	comp=Z,500nm,3.5s						
AAA				smax	smax		
	comp=E,1µm,9.2s						
KUU	Kurty	60.50	320	eP	P	07 56 27.1	-1.8
	comp=E,154nm,0.9s						
KUU				eS	S	08 04 40.7	-2.0
KUU				LRM	MLR	08 25 34.7	
	comp=E,1µm,18.7s						
TKM2	Tokmak 2	60.55	319	eP	P	07 56 27.9	-1.6
TKM2				pmax	pmax		
	comp=Z,8.0nm,1.0s						
TKM2	Tokmak 2	60.55	319	eP	P	07 56 27.9	-1.6
	comp=Z,7.7nm,1.0s						
SFK	Sufi-Kurgan	60.78	315	P	P	07 56 28.7	-2.4
SFK				pmax	pmax		
	comp=Z,6.0nm,0.6s						
RPZ	Rata Peaks	60.95	145	LR	LR	08 23 56.6	
	comp=Z,2µm,19.3s,baz=308,slow=37						
AAK	Ala-Archa	61.16	318	P	P	07 56 33.5	-0.1
	comp=Z,1.5nm,0.7s,baz=129,slow=6.7,SNR=6.8						
AAK	Ala-Archa	61.16	318	i P	P	07 56 31.3	-2.3
AAK				pmax	pmax		
	comp=Z,7.0nm,1.2s						
AAK	Ala-Archa	61.16	318	eP	P	07 56 33.6	0.0
	comp=Z,23nm,1.6s						
FRU	Bishkek	61.16	318	eP	P	07 56 34.0	+0.6
FRU				eS	S	08 04 51.0	-0.2
FRU				e		08 05 14.0	
FRU				pmax	pmax		
	comp=Z,150nm,3.0s						
ZAA0	Zalesovo Array	61.40	333	eP	P	07 56 32.6	-2.1
ZALV	Zalesovo Beam	61.40	333	P	P	07 56 33.4	-1.3
	comp=Z,4.8nm,0.7s,baz=130,slow=6.7,SNR=16						
EKS2	Erkin-Say	61.65	318	eP	P	07 56 35.6	-1.2
EKS2				pmax	pmax		
	comp=Z,21nm,1.5s						
EKS2	Erkin-Say	61.65	318	eP	P	07 56 35.6	-1.2
	comp=Z,21nm,1.5s						
URZ	Urewera	61.74	137	LR	LR	08 25 16.5	
	comp=Z,4µm,19.0s,baz=319,slow=38						
KBL	Kabul	62.29	308	eP	P	07 56 39.0	-2.4
KBL				pmax	pmax		
	comp=Z,16nm,1.0s						
KBL	Kabul	62.29	308	eP	P	07 56 39.0	-2.4
	comp=Z,16nm,1.0s						
MNAS	Manas	62.44	317	P	P	07 56 40.2	-2.0
MNAS				pmax	pmax		
	comp=Z,7.0nm,1.1s						
KURBB	Kurchatov Arra	62.55	327	P	P	07 56 40.9	-1.6
	comp=Z,20nm,0.8s,baz=126,slow=5.9,SNR=25						
KURK	Kurchatov	62.55	328	eP	P	07 56 40.5	-2.0
KURK				pmax	pmax		
	comp=Z,31nm,0.8s						
KURK	Kurchatov	62.55	328	eP	P	07 56 40.5	-2.0
	comp=Z,31nm,0.8s						
KURK	Kurchatov	62.55	328	P	P	07 56 40.5	-2.0
	SNR=15						
KURK				P	P	07 56 40.5	-2.0
	SNR=15						
KURK	Kurchatov	62.55	328	P	P	07 56 40.5	-2.0
	SNR=15						
SEY	Seymchan	62.60	13⇓	iP	P	07 56 43.4	+0.8
NVS	Novosibirsk	62.68	333⇑	iP	P	07 56 42.1	-1.2
NVS				pmax	pmax		
	comp=Z,18nm,0.9s						
NVS				pmax	pmax		
	comp=N,13nm,1.1s						
NVS				pmax	pmax		
	comp=E,7.0nm,0.5s						
AFI	Afiamalu	62.82	107	LR	LR	08 21 01.2	
	comp=E,2µm,21.0s,baz=290,slow=33						
IUG	Iuzhnay	64.01	316	eP	P	07 56 50.1	-2.5
	comp=E,128nm,0.9s						
IUG				LR	LR	08 26 16.1	
	comp=E,1µm,19.3s						
KK31	Karatay Array	64.03	317	i P	P	07 56 50.3	-2.2
KK31				pmax	pmax		
	comp=Z,1.0nm,0.5s						
KKAR	Karatay Array	64.03	317	eP	P	07 56 51.0	-1.6
KKAR	Karatay Array	64.03	317	eP	P	07 56 51.0	-1.6
BVA0	Borovoye Array	68.13	327	P	P	07 57 16.2	-2.5
BVA0				pmax	pmax		
	comp=Z,7.0nm,0.9s						
BVAR	Borovoye Array	68.13	327	P	P	07 57 17.3	-1.4
	comp=Z,3.9nm,0.6s,baz=121,slow=11,SNR=16						
BRVK	Borovoye	68.21	327	eP	P	07 57 17.0	-2.1
BRVK				pmax	pmax		
	comp=Z,82nm,1.7s						
BRVK	Borovoye	68.21	327	eP	P	07 57 17.0	-2.1
	comp=Z,82nm,1.7s						
BRVK	Borovoye	68.21	327	P	P	07 57 17.6	-1.5
	SNR=10						
BRVK				P	P	07 57 17.6	-1.5
	SNR=10						
BRVK	Borovoye	68.21	327	P	P	07 57 17.6	-1.5
	SNR=10						
CHKZ	Chkalovo	68.30	328	P	P	07 57 17.8	-1.8
CHKZ				pmax	pmax		
	comp=Z,15nm,1.3s						
TIXI	Tiksi	68.52	1⇑	iP	P	07 57 19.0	-1.7
TIXI				pmax	pmax		
	comp=Z,24nm,1.7s						
TIXI	Tiksi	68.52	1	eP	P	07 57 20.1	-0.6
	comp=Z,37nm,1.5s						
ZRNK	Zerenda	68.86	327	P	P	07 57 21.3	-1.9
ZRNK				pmax	pmax		
	comp=Z,33nm,1.4s						
BILL	Bilibino	70.10	15	eP	P	07 57 30.3	-0.2
BILL				i		07 57 55.3	
BILL				eS	S	08 06 42.7	+3.3
BILL				pmax	pmax		
	comp=Z,6.0nm,1.3s						
BILL				MLR	MLR		
	comp=Z,4µm,21.0s						
BILL	Bilibino	70.10	15	eP	P	07 57 31.1	+0.6
	comp=Z,18nm,1.3s						
CASY	Casey	70.19	187	eP	P	07 57 32.3	+1.2
	comp=Z,40nm,1.3s						
NRIK	Noril'sk	71.20	346	P	P	07 57 36.3	-0.9
	comp=Z,10nm,0.8s,baz=146,slow=3.1,SNR=12						
NRIK				LR	LR	08 32 55.0	
	comp=Z,3µm,19.5s,baz=148,slow=39						
MRIV	Mauritius Mete	72.10	248	eP	P	07 57 43.4	-0.2
ABKAR	Akbulak array	72.96	321	eP	P	07 57 46.6	-1.6
MIR	Mirnyy	73.60	194	i P	P	07 57 55.0	+3.5
MIR				pmax	pmax		
	comp=Z,8.0nm,1.5s						
AKTO	Aktyubinsk	74.47	322	P	P	07 57 55.9	-1.2
	comp=Z,9.4nm,0.8s,baz=80,slow=9.5,SNR=18						
AKTO	Aktyubinsk	74.47	322	P	P	07 57 55.5	-1.5
AKTO				pmax	pmax		
	comp=Z,35nm,1.2s						
SVE	Sverdlovsk	74.78	328⇓	eP	P	07 57 57.7	-0.9
SVE				eS	S	08 07 30.0	-3.3
SVE				pmax	pmax		
	comp=Z,69nm,1.4s						
GAMB	Gambell	74.84	24	eP	P	07 57 60.0	+1.1
	comp=Z,105nm,2.0s						
RAR	Rarotonga	75.36	113	LR	LR	08 28 22.6	
	comp=Z,726nm,20.6s,baz=277,slow=34						
ARU	Arti	75.75	328	P	P	07 58 02.5	-1.8
	comp=Z,6.8nm,0.4s,baz=91,slow=3.3,SNR=16						
ARU	Arti	75.75	328d	iP	P	07 58 02.4	-1.8
ARU						08 00 49.0	
ARU				S	S	08 07 47.0	+2.9
ARU				pmax	pmax		
	comp=Z,40nm,1.2s						
ARU				MLR	MLR		
	comp=Z,1µm,26.0s						
ARU	Arti	75.75	328	eP	P	07 58 02.1	-2.2

	comp=Z,112nm,1.8s						
SVW2	Sparrevohn	81.19	29	eP	P	07 58 35.0	+0.8
	comp=Z,24nm,1.3s						
TT01	Tatalina	81.30	27	eP	P	07 58 35.5	+0.8
TTA	Tatalina	81.31	27	eP	P	07 58 34.3	-0.6
TTA				pmax	pmax		
	comp=Z,53nm,1.7s						
TTA	Tatalina	81.31	27	eP	P	07 58 34.3	-0.6
	comp=Z,52nm,1.7s						
ABPO	Ambohimpanom	81.50	250	eP	P	07 58 35.5	-1.4
ABPO				pmax	pmax		
	comp=Z,18nm,1.1s						
ABPO	Ambohimpanom	81.50	250	eP	P	07 58 35.5	-1.4
	comp=Z,18nm,1.1s						
DGRG	David-gareji	81.85	311	P	P	07 58 40.3	+2.1
DGRG	David-gareji	81.85	311	P	P	07 58 40.3	+2.1
GNI	Garni	82.26	310	P	P	07 58 41.4	+0.9
	comp=Z,3.0nm,0.3s,baz=74,slow=7.7,SNR=3.5						
GNI	Garni	82.26	310	eP	P	07 58 38.3	-2.2
GNI				pmax	pmax		
	comp=Z,128nm,1.5s						
TBLG	Delisi	82.34	312	P	P	07 58 42.2	+1.5
TBLG	Delisi	82.34	312	P	P	07 58 42.2	+1.5
VNDA	Vanda	82.69	173	P	P	07 58 41.9	+0.1
	comp=Z,8.0nm,0.8s,baz=315,slow=5.9,SNR=20						
VNDA	Vanda	82.69	173	eP	P	07 58 41.3	-0.5
VNDA				pmax	pmax		
	comp=Z,23nm,1.2s						
VNDA	Vanda	82.69	173	eP	P	07 58 41.3	-0.5
	comp=Z,23nm,1.2s						
SPU	Mount Spurr	82.89	29	eP	P	07 58 43.5	+0.4
ZEI	Tsey	83.00	313	eP	P	07 58 43.7	-0.7
ZEI				pmax	pmax		
	comp=Z,153nm,1.4s						
PPLA	Purkeypile	83.03	27	eP	P	07 58 45.8	+1.8
	comp=Z,188nm,2.0s						
CAST	Castle Rocks	83.14	27	eP	P	07 58 46.1	+1.7
	comp=Z,102nm,1.8s						
NCK	Nalchik	83.26	313	eP	P	07 58 44.0	-1.4
NCK				pmax	pmax		
	comp=Z,16nm,0.7s						
AKH	Akhalkalaki	83.26	311	P	P	07 58 47.7	+2.0
AKH	Akhalkalaki	83.26	311⇑	iP	P	07 58 45.8	+0.1
AKH	Akhalkalaki	83.26	311	P	P	07 58 47.7	+2.0
MAW	Mawson	83.27	200	P	P	07 58 45.5	+0.6
	comp=Z,21nm,1.3s,baz=58,slow=5.5,SNR=10						
MAW	Mawson	83.27	200	P	P	07 58 44.7	-0.1
	baz=83,SNR=7.6						
MAW	Mawson	83.27	200	eP	P	07 58 45.7	+0.9
	comp=Z,10.0nm,1.5s						
SBA	Scott Base	83.60	172	eP	P	07 58 48.6	+2.2
SBA				pmax	pmax		
	comp=Z,71nm,1.8s						
SBA	Scott Base	83.60	172	eP	P	07 58 48.6	+2.2
	comp=Z,70nm,1.8s						
KTH	Kantishna Hill	83.68	26	eP	P	07 58 48.4	+1.2
	comp=Z,40nm,1.2s						
BPAW	Bear Paw Mtn.	83.70	26	eP	P	07 58 48.1	+0.8
	comp=Z,55nm,1.5s						
GOF	Gofitskoye	83.71	315⇑	eP	P	07 58 51.0	+3.3
GOF				pmax	pmax		
	comp=Z,35nm,0.6s						
KBZ	Khabaz	83.77	313	P	P	07 58 47.8	-0.2
	comp=Z,7.2nm,1.2s,baz=76,slow=9.0,SNR=3.2						
NEY	Neytrino	83.89	313	eP	P	07 58 46.3	-2.6
NEY				pmax	pmax		
	comp=Z,3.0nm,1.0s						
MLY	Manley	83.91	25	eP	P	07 58 48.9	+0.6
	comp=Z,30nm,1.3s						
KIV	Kislovodsk	83.93	314	eP	P	07 58 48.6	-0.4
KIV				eS	S	08 09 11.0	-0.2
KIV				pmax	pmax		
	comp=Z,15nm,1.1s						
TRF	Thorofare Moun	83.95	27	eP	P	07 58 49.8	+1.1
	comp=Z,32nm,1.1s						
RC01	Rabbit Creek A	84.00	29	eP	P	07 58 49.0	+0.2
	comp=Z,68nm,1.4s						
PMR	Palmer	84.33	29	eP	P	07 58 51.6	+1.1
PMR				pmax	pmax		
	comp=Z,71nm,1.4s						
PMR	Palmer	84.33	29	eP	P	07 58 51.5	+1.1
	comp=Z,71nm,1.4s						
COLD	Coldfoot	84.35	23	eP	P	07 58 52.1	+1.6
	comp=Z,19nm,1.0s						
PPT	Papeete	84.48	108	LR	LR	08 35 07.4	
	comp=Z,732nm,18.7s,baz=268,slow=35						
PPT2	Papeete2	84.48	108	eS	S	08 09 12.4	-5.1
	comp=Z,2µm,34.8s						
PPT2	Papeete2	84.48	108	eLQ	LQ	08 21 55.4	
	comp=Z,2µm,30.8s						
PPT2				eLR	LR	08 25 30.5	
	comp=Z,5µm,29.5s						
MCK	McKinley	84.58	26	eP	P	07 58 52.3	+0.6
MCK				pmax	pmax		
	comp=Z,61nm,1.4s						
MCK	McKinley	84.58	26	eP	P	07 58 52.3	+0.6
	comp=Z,60nm,1.4s						
RND	Reindeer	84.59	27	eP	P	07 58 51.7	-0.2
RND				pmax	pmax		
	comp=Z,27nm,1.4s						
RND	Reindeer	84.59	27	eP	P	07 58 51.7	-0.2
	comp=Z,27nm,1.4s						
SML	Sawmill	84.72	28	eP	P	07 58 52.8	+0.3
SML				pmax	pmax		
	comp=Z,45nm,1.0s						
SML	Sawmill	84.72	28	eP	P	07 58 52.8	+0.3
	comp=Z,45nm,1.0s						
VRH	Novokhopyorsk	84.79	321	eP	P	07 58 51.4	-1.6
VRH				pmax	pmax		
	comp=Z,70nm,1.1s						
MDM	Murphy Dome	84.97	25	eP	P	07 58 54.1	+0.4
	comp=Z,14nm,1.3s						
WRH	Wood River Hil	85.00	26	eP	P	07 58 54.1	+0.3
	comp=Z,24nm,1.4s						
TBI	Tubuai	85.11	114	eS	S	08 09 18.2	-5.2
	comp=Z,1µm,29.0s						
TBI	Tubuai	85.11	114	eLQ	LQ	08 22 12.2	
	comp=Z,2µm,38.5s						
TBI				eLR	LR	08 25 53.0	
	comp=Z,3µm,26.2s						
CCB	Clear Creek Bu	85.13	25	eP	P	07 58 54.9	+0.5
	comp=Z,15nm,1.2s						
SCM	Sheep Creek Mo	85.20	28	eP	P	07 58 56.0	+1.0
SCM				pmax	pmax		
	comp=Z,60nm,1.2s						
SCM	Sheep Creek Mo	85.20	28	eP	P	07 58 56.0	+1.0
	comp=Z,60nm,1.2s						
IL1	Eielson Array	85.53	25	eP	P	07 58 54.7	-1.7
ILAR	Eielson Array	85.53	25	P	P	07 58 57.6	+1.1
	comp=Z,1.4nm,0.9s,baz=244,slow=5.8,SNR=8.1						
KLU	Klutina	85.86	29	eP	P	07 58 59.0	+0.7
	comp=Z,31nm,1.4s						
DIV	Divide	85.93	29	eP	P	07 58 59.4	+0.8
	comp=Z,72nm,1.3s						
SOC	Sochi	86.08	313	eP	P	07 58 59.7	+0.1
SOC				eS	S	08 09 24.7	-7.5
SOC				eSS	SS	08 15 12.0	+1.2
SOC				eSSS	SSS	08 18 37.8	
SOC				pmax	pmax		
	comp=Z,36nm,0.7s						
PAX	Paxson	86.10	27	eP	P	07 59 00.4	+0.9
PAX				pmax	pmax		
	comp=Z,52nm,1.8s						
PAX	Paxson	86.10	27	eP	P	07 59 00.4	+0.9
	comp=Z,52nm,1.8s						
KLMR	Klimovskoe	86.22	331	eP	P	07 58 57.3	-2.6
KLMR				eS	S	08 09 22.6	-10
KLMR				pmax	pmax		
	comp=Z,26nm,1.3s						
VSR	Storozhevoye	86.40	321	eP	P	07 58 59.4	-1.6
VSR				eS	S	08 09 25.4	-10
VSR				pmax	pmax		
	comp=Z,40nm,1.1s						
VSR				smax	smax		
	comp=E,460nm,11.0s						
BMRM	Bremner River	86.49	29	eP	P	07 59 01.7	+0.4
	comp=E,46nm,1.4s						
LPSR	Galich'ya Gora	86.54	322	eP	P	07 59 02.2	+0.5
LPSR				eS	S	08 09 34.5	-1.8
LPSR				pmax	pmax		
	comp=Z,30nm,0.9s						
LPSR				smax	smax		
	comp=N,660nm,5.5s						
KSRV	Kasrt alli	86.75	306	eP	P	07 59 02.3	-0.8
MOS	Moscow	87.25	326	eP	P	07 59 07.0	+1.9
MOS				pmax	pmax		

Code	Station Name	Δ°	AZ°	Op	ISC	Time	Res
	comp=Z,102nm,1.4s						
ANN	**Anapa**	**87.69**	**315**	*e*P	P	07 59 03.6	-3.8
ANN				*e*S	S	08 09 30.1	-18
ANN				pmax	pmax		
	comp=Z,42nm,1.2s						
OBN	**Obninsk**	**87.88**	**325**	P	**P**	**07 59 09.0**	**+1.0**
	comp=Z,24nm,0.4s,baz=68,slow=6.1,SNR=8.0						
OBN	**Obninsk**	**87.88**	**325**	⇑*i*P	**P**	**07 59 08.3**	**+0.2**
OBN				*i* S	**S**	**08 09 50.8**	**+1.7**
OBN				pmax	pmax		
	comp=Z,66nm,1.2s						
APA	**Apatity**	**88.65**	**337**	⇓*i*P	P	07 59 26.0	+14
DAWY	**Dawson**	**88.79**	**26**	*e*P	**P**	**07 59 13.4**	**+1.0**
	comp=Z,8.8nm,1.1s						
MARH	**Ras Al Marh**	**88.89**	**304**	*e*P	**P**	**07 59 12.9**	**-0.9**
TOTH	**TOTAH**	**88.97**	**303**	*e*P	**P**	**07 59 14.4**	**+0.6**
BIDA	**Albida**	**88.97**	**305**	*e*P	**P**	**07 59 12.5**	**-1.4**
SLNF	**Slenfeh**	**89.03**	**305**	*e*P	P	07 59 10.9	-3.3
ARNB	**Al Arnab**	**89.21**	**306**	*e*P	**P**	**07 59 12.5**	**-2.5**
BRBR	**Barbar**	**89.37**	**303**	*e*P	**P**	**07 59 16.0**	**+0.1**
KMBO	**Kilima Mbogo**	**89.98**	**269**	P	**P**	**07 59 21.6**	**+2.4**
	comp=Z,9.6nm,1.0s,baz=40,slow=5.3,SNR=10.0						
KMBO	**Kilima Mbogo**	**89.98**	**269**	*e*P	**P**	**07 59 18.8**	**-0.4**
KMBO				pmax	pmax		
	comp=Z,80nm,1.9s						
KMBO	**Kilima Mbogo**	**89.98**	**269**	*e*P	**P**	**07 59 18.8**	**-0.4**
	comp=Z,80nm,1.9s						
SIM	**Simferopol'**	**90.04**	**315**	*e*P	P	07 59 23.0	+4.5
SIM				*e*S	**S**	**08 10 07.0**	**-2.9**
SIM				pmax	pmax		
	comp=Z,150nm,9.4s						
INK	**Inuvik**	**90.63**	**22**	*e*P	**P**	**07 59 21.2**	**+0.4**
INK				pmax	pmax		
	comp=Z,14nm,1.5s						
INK	**Inuvik**	**90.63**	**22**	*e*P	**P**	**07 59 21.1**	**+0.4**
	comp=Z,14nm,1.5s						
BR131	**Keskin Array S**	**90.80**	**310**	*e*P	**P**	**07 59 21.2**	**-1.1**
BRTR	**Keskin Array B**	**90.80**	**310**	P	**P**	**07 59 22.1**	**-0.2**
	comp=Z,4.5nm,0.9s,baz=108,slow=4.0,SNR=12						
BRTR				LR	LR	08 45 32.8	
	comp=Z,338nm,21.4s,baz=74,slow=39						
SPITS	**Spitsbergen Ar**	**91.23**	**349**	P	**P**	**07 59 24.0**	**+0.5**
	comp=Z,3.1nm,0.8s,baz=207,slow=6.2,SNR=2.8						
SPITS	**Spitsbergen Ar**	**91.23**	**349**	P	**P**	**07 59 24.0**	**+0.5**
ARCES	**ARCESS Array B**	**91.24**	**340**	P	**P**	**07 59 22.9**	**-0.7**
	comp=Z,4.7nm,0.8s,baz=62,slow=5.8,SNR=13						
CSS	**Mathiatis**	**91.43**	**305**	*e*P	**P**	**07 59 24.8**	**-0.5**
	comp=Z,11nm,1.4s						
BR231	**Keskin MP Arra**	**91.45**	**310**	*e*P	**P**	**07 59 23.0**	**-2.4**
HSPB	**Hornsund (broa**	**91.83**	**348**	*e*P	P	07 59 34.7	+8.5
HSPB				*e*PS	**PS**	**08 11 38.7**	**+0.4**
SYO	**Syowa Base**	**91.95**	**201**	⇑*e*P	**P**	**07 59 26.2**	**-0.6**
FIA1	**FINESS Array S**	**92.64**	**332**	*e*P	**P**	**07 59 29.6**	**-0.6**
FINES	**FINESS Array B**	**92.64**	**332**	P	**P**	**07 59 29.3**	**-0.9**
	comp=Z,2.6nm,1.0s,baz=129,slow=2.7,SNR=3.9						
FINES				LR	LR	08 45 04.9	
	comp=Z,1μm,18.9s,baz=80,slow=38						
AKASG	**Malin Array Be**	**92.70**	**321**	P	**P**	**07 59 29.5**	**-1.2**
	comp=Z,1.5nm,0.7s,baz=71,slow=4.1,SNR=8.0						
KIEV	**Kiev**	**92.71**	**321**	*e*P	**P**	**07 59 29.1**	**-1.7**
KIEV				pmax	pmax		
	comp=Z,3.0nm,0.9s						
TAOE	**Nuku Hiva Isla**	**93.10**	**99**	*e*LR	LR	08 29 35.4	
	comp=Z,4μm,22.1s						
KIS	**Kishinev**	**93.49**	**317**	*e*P	P	07 59 25.0	-9.5
KIS				LRM	MLR	08 46 24.0	
	comp=Z,3μm,24.0s						
KIS	**Kishinev**	**93.49**	**317**	*e*P	P	07 59 25.0	-9.5
KIS				*e*		08 10 10.0	
KIS				*e*		08 10 40.0	
VRI	**Vrincioaia**	**95.09**	**316**	⇑*i*P	**P**	**07 59 44.2**	**+2.3**
VRI	**Vrincioaia**	**95.09**	**316**	⇑P	**P**	**07 59 44.2**	**+2.3**
MLR	**Muntele Rosu**	**95.70**	**316**	P	**P**	**07 59 44.2**	**-0.7**
	comp=Z,0.9nm,0.8s,baz=338,slow=22,SNR=5.5						
MLR				LR	LR	08 49 09.1	
	comp=Z,506nm,21.2s,baz=66,slow=39						
MLR	**Muntele Rosu**	**95.70**	**316**	⇑*i*P	**P**	**07 59 44.1**	**-0.7**
MLR	**Muntele Rosu**	**95.70**	**316**	*e*P	**P**	**07 59 44.1**	**-0.7**
	comp=Z,44nm,1.7s						
BURAR	**Bucovina Array**	**95.81**	**318**	⇑*i*P	**P**	**07 59 45.5**	**+0.3**
BURAR	**Bucovina Array**	**95.81**	**318**	⇑P	**P**	**07 59 45.5**	**+0.3**
ARR	**Arges**	**96.63**	**316**	⇑*i*P	**P**	**07 59 46.9**	**-2.1**
KOLS	**Kolonicke sedl**	**97.45**	**320**	*e*P	Pdif	07 59 56.7	+4.1
KOLS	**Kolonicke sedl**	**97.45**	**320**	*e*P	Pdif	07 59 56.7	+4.1
UZH	**Uzhgorod**	**97.51**	**320**	*e*P	Pdif	07 59 54.3	+1.5
UZH				*e*		08 03 54.3	
UZH				*e*		08 10 24.3	
UZH				*i* S	**S**	**08 11 13.5**	**-2.2**
UZH				*e*SP	**SP**	**08 12 34.5**	**-3.0**
UZH				*e*SSS	SSS	08 21 31.9	
STHS	**Stebnicka Huta**	**98.00**	**321**	*e*P	Pdif	07 59 57.6	+2.6
STHS	**Stebnicka Huta**	**98.00**	**321**	*e*P	Pdif	07 59 57.5	+2.5
IDI	**Anoyia**	**98.25**	**306**	LR	LR	08 51 53.3	
	comp=Z,214nm,21.1s,baz=78,slow=40						
RES	**Resolute Bay**	**98.40**	**10**	*e*P	Pdif	07 59 57.1	+0.9
RES				pmax	pmax		
	comp=Z,19nm,1.9s						
RES	**Resolute Bay**	**98.40**	**10**	*e*P	Pdif	07 59 57.1	+0.9
	comp=Z,19nm,1.9s						
RKT	**Rikitea**	**98.41**	**113**	*e*SKSac	**SKSac**	**08 10 30.1**	**-3.7**
	comp=Z,746nm,32.2s						
RKT				*e*SP	**SP**	**08 12 44.5**	**-4.1**
	comp=Z,494nm,34.0s						
RKT	**Rikitea**	**98.41**	**113**	*e*LR	LR	08 32 04.3	
	comp=Z,3μm,27.5s						
HFS	**Hagfors**	**98.83**	**332**	LR	LR	08 49 48.3	
	comp=Z,1μm,18.7s,baz=72,slow=39						
NOA	**NORSAR Array B**	**99.59**	**334**	P	**Pdif**	**07 59 58.4**	**-3.5**
	comp=Z,1.0nm,0.8s,baz=152,slow=22,SNR=2.4						
OKC	**Ostrava-Krasne**	**99.82**	**322**	AMS	AMS	08 54 20.0	
	comp=Z,1μm,16.3s						
YKA	**Yellowknife Ar**	**99.93**	**25**	P	**Pdif**	**08 00 04.0**	**+0.8**
	comp=Z,0.4nm,1.0s,baz=290,slow=4.5,SNR=4.9						
DPC	**Dobruska-Polom**	**100.79**	**322**	AMS	AMS	08 50 40.0	
	comp=Z,1μm,19.5s						
UPC	**Upice**	**100.93**	**323**	*e*SKS	**SKSac**	**08 10 49.7**	**+4.4**
UPC				*e*SDIF	**Sdif**	**08 11 44.7**	**+0.2**
UPC				AMS	AMS	08 58 50.0	
	comp=Z,2μm,19.3s						
TREC	**Trest**	**101.64**	**322**	AMS	AMS	08 49 40.0	
	comp=Z,1μm,22.4s						
PVCC	**Panska Ves**	**101.80**	**323**	AMS	AMS	08 51 30.0	
	comp=Z,2μm,21.5s						
GOPC	**GO Pecny, Ondr**	**101.87**	**322**	*e*SKS	**SKSac**	**08 10 53.9**	**+4.0**
GOPC				*e*SDIF	**Sdif**	**08 11 57.6**	**+5.2**
GOPC				AMS	AMS	08 59 20.0	
	comp=Z,2μm,18.8s						
PRU	**Pruhonice**	**101.99**	**322**	*e*SKS	**SKSac**	**08 10 54.5**	**+4.1**
PRU				*e*SDIF	**Sdif**	**08 11 59.0**	**+5.7**
PRU				AMS	AMS	08 51 20.0	
	comp=Z,2μm,21.8s						
BRG	**Berggiesshubel**	**102.05**	**323**	*e*P	**Pdif**	**08 00 12.0**	**-1.0**
	comp=Z,7.1nm,1.1s						
BRG	**Berggiesshubel**	**102.05**	**323**	*e*P	**Pdif**	**08 00 12.0**	**-1.0**
BRG				pmax	pmax		
	comp=Z,7.0nm,1.2s						
CLL	**Collm**	**102.45**	**324**	*e*PP	PP	08 04 30.0	+2.6
CLL				*e*		08 05 54.0	
CLL				*e*PPPP		08 08 30.0	
CLL				*e*SKSac	SKSac	08 11 00.0	+7.5
CLL				*e*Sdif	**Sdif**	**08 12 03.0**	**+5.9**
CLL				*e*PS	PS	08 13 31.0	-3.5
CLL				*e*PPS	PPS	08 14 33.0	
CLL				*e*SS	SS	08 19 24.0	+21
CLL				*e*SSS	SSS	08 23 30.0	
CLL				*e*		08 24 36.0	
CLL				Lm	MLR	08 53 00.0	
	comp=Z,2μm,21.5s						
KHC	**Kasperske Hory**	**102.87**	**322**	*e*SKS	**SKSac**	**08 10 58.3**	**+3.6**
KHC				*e*SDIF	**Sdif**	**08 12 06.0**	**+5.1**
KHC				AMS	AMS	08 56 50.0	
	comp=Z,1μm,19.8s						
GERES	**GERESS Array B**	**102.90**	**322**	P	**Pdif**	**08 00 16.0**	**-0.9**
	comp=Z,0.2nm,0.2s,baz=173,slow=34,SNR=2.2						
GERES	**GERESS Array B**	**102.90**	**322**	P	**Pdif**	**08 00 16.0**	**-0.9**
NKC	**Novy Kostel**	**103.17**	**323**	AMS	AMS	08 50 50.0	
	comp=Z,2μm,18.9s						
NVAR	**Mina Array Bea**	**107.03**	**48**	PP	PP	08 04 58.1	-4.0
	comp=Z,0.2nm,0.3s,baz=214,slow=32,SNR=4.7						
MNTX	**Cornudas Mount**	**119.33**	**51**	*e*PKPdf	**PKPdf**	**08 05 09.8**	**+1.2**
TXAR	**Lajitas Array**	**121.66**	**53**	PKP	**PKPdf**	**08 05 16.1**	**+2.9**
	comp=Z,0.5nm,0.8s,baz=350,slow=1.4,SNR=3.3						
TOA0	**Torodi Ar. Sit**	**123.55**	**288**	*e*PKPdf	**PKPdf**	**08 05 16.4**	**-0.7**
TORD	**Torodi Ar. Bea**	**123.55**	**288**	PKP	**PKPdf**	**08 05 17.3**	**+0.2**
	comp=Z,3.6nm,0.9s,baz=55,slow=1.8,SNR=13						
JCT	**Junction City**	**124.16**	**50**	*e*PKIKP	**PKPdf**	**08 05 17.9**	**-0.1**
JCT	**Junction City**	**124.16**	**50**	*e*PKPdf	**PKPdf**	**08 05 17.9**	**-0.1**
PLCA	**Paso Flores**	**139.21**	**159**	PKP	**PKPdf**	**08 05 45.5**	**-0.6**
	comp=Z,2.8nm,1.0s,baz=168,slow=12,SNR=2.6						
TRQA	**Tornquist**	**144.16**	**168**	*e*PKPdf	**PKPdf**	**08 05 54.8**	**-0.1**
JTS	**JuntasAbangare**	**145.38**	**67**	*e*PKP2	**PKPab**	**08 05 58.1**	**+0.4**
JTS	**JuntasAbangare**	**145.38**	**67**	*e*PKPdf	**PKPab**	**08 05 58.1**	**+0.4**
LCO	**Las Campanas**	**149.08**	**148**	*e*PKPbc	**PKPbc**	**08 06 09.5**	**+1.5**
LPAZ	**La Paz**	**160.00**	**132**	PKP	**PKPdf**	**08 06 20.7**	**+1.1**
	comp=Z,6.4nm,1.3s,baz=294,slow=2.1,SNR=6.9						
LPAZ	**La Paz**	**160.00**	**132**	*e*PKIKP	**PKPdf**	**08 06 19.9**	**+0.3**
LPAZ	**La Paz**	**160.00**	**132**	*e*PKPdf	**PKPdf**	**08 06 19.9**	**+0.3**
BDFB	**Brasilia**	**166.62**	**200**	PKP	PKPdf	08 06 29.8	+4.6
	comp=Z,0.9nm,0.5s,baz=126,slow=7.7,SNR=3.1						
SAML	**Samuel**	**168.15**	**120**	*e*PKPdf	**PKPdf**	**08 06 25.5**	**-0.8**

IDC ***05*** *07:53:27.2±0.6, 2°.92N×126°.89E, h0km, mb4.4/18, mb1 4.5/18, mb1mx4.3/48, mbtmp4.4/18, Error ellipse: s-maj=30.7km s-min=12.1km az=77.0*
NEIC ***05*** *07:53:28.8±0.2, 2°.95N×126°.87E, h10km, mb4.7/15, Error ellipse: s-maj=13.3km s-min=4.9km az=75.0*
DJA ***05*** *07:53:28.1±0.6, 3°N±4°×12°8E±°, h10km, M4.8/12, mB6.6/1, mb4.7/12, MLv4.8/11, Mw(mB)6.4/1*
ISCJB ***05*** *07:53:32.0±0.3, 3°.07N±0°.04×127°.17E±0°.05, h44km, mb4.5/31, Error ellipse: s-maj=7.6km s-min=4.8km az=160.9*
ISC 05 07:53:33.8±0.4**, 3°.03N**±0°.06×**127°.16E**±0°.07**, h44km, n62, σ1s.42/57, mb4.5/29, 1C, Talaud Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
SGSI	**Sangihe**	**1.75**	**292**	P	**Pn**	**07 54 00.1**	**-1.6**
SGSI				S	**Sn**	**07 54 26.8**	**+3.9**
TNTI	**Ternate**	**2.25**	**175**	P	**Pn**	**07 54 07.9**	**-0.7**
TNTI				S	Sn	07 54 46.4	+11
TNTI	**Ternate**	**2.25**	**175**	*e*Pn	**Pn**	**07 54 06.7**	**-2.0**
LBMI	**Labuha**	**3.66**	**175**	P	**Pn**	**07 54 28.5**	**+0.5**
SANI	**Sanana**	**5.18**	**193**	P	**Pn**	**07 54 50.3**	**+1.4**
	39nm,0.9s,0.3nm						
SANI				S	Sn	07 56 01.6	+14
	39nm,0.9s,0.3nm						
SWI	**Sorong**	**5.64**	**133**	P	**Pn**	**07 54 55.7**	**+0.6**
	58nm,0.8s,0.6nm						
SWI				S	**Sn**	**07 56 01.4**	**+2.8**
	58nm,0.8s,0.6nm						
MRSI	**Marisa**	**5.80**	**244**	P	**Pn**	**07 54 57.9**	**+0.5**
	83nm,0.6s,0.6nm						
LUWI	**Luwuk**	**5.97**	**227**	P	Pn	07 55 03.4	+3.7
	105nm,0.9s,0.6nm						
NLAI	**Namlea**	**6.23**	**181**	P	**Pn**	**07 55 04.2**	**+0.9**
	39nm,0.8s,0.2nm						
APSI	**Ampana**	**6.76**	**235**	P	Pn	07 55 14.9	+4.4
	113nm,1.2s,0.5nm						
FAKI	**Fak Fak**	**7.80**	**139**	*e*Pn	**Pn**	**07 55 26.0**	**+1.2**
TTSI	**Tana Toraja**	**9.50**	**231**	P	Pn	07 55 54.0	+5.8
	28nm,1.5s						
PLAI	**Plampang**	**15.04**	**218**	P	**P**	**07 57 08.8**	**+0.6**
	98nm,1.5s						
TWSI	**Taliwang, Sumb**	**15.55**	**221**	P	**P**	**07 57 16.0**	**+2.2**
	81nm,1.1s						
STKI	**Sintang**	**15.95**	**260**	P	**P**	**07 57 18.3**	**0.0**
	37nm,1.1s,26μm						
KSM	**Kuching**	**16.91**	**265**	*e*P	**Pn**	**07 57 27.3**	**-0.1**
	14nm,0.7s						
FITZ	**Fitzroy Crossi**	**21.05**	**184**	P	**P**	**07 58 12.3**	**-2.0**
	4.5nm,0.6s,baz=18,slow=6.3,SNR=8.4						
FITZ	**Fitzroy Crossi**	**21.05**	**184**	*e*P	**P**	**07 58 11.8**	**-2.4**
	27nm,1.1s						
WRAB	**Tennant Creek**	**23.89**	**163**	*e*P	**P**	**07 58 41.3**	**-2.3**
WRA	**Warramunga Arr**	**23.90**	**163**	P	**P**	**07 58 41.6**	**-2.0**
	8.1nm,0.5s,baz=337,slow=10,SNR=50						
ASAR	**Alice Springs**	**27.34**	**166**	P	**P**	**07 59 13.2**	**-1.6**
	2.7nm,0.7s,baz=350,slow=7.1,SNR=26						
ASAR				PcP	**PcP**	**08 02 33.5**	**0.0**
	1.5nm,0.8s,baz=321,slow=2.2,SNR=5.6						
JNU	**Nakatsue**	**30.14**	**6**	*e*P	**P**	**07 59 39.5**	**-0.1**
	5.8nm,0.9s						
CMAR	**Chiang Mai Arr**	**31.59**	**301**	P	**P**	**07 59 51.9**	**-0.8**
	1.8nm,0.3s,baz=114,slow=6.9,SNR=4.4						
CMAR				PcP	**PcP**	**08 02 48.4**	**+3.9**
	0.5nm,0.3s,baz=161,slow=2.8,SNR=4.2						
KSAR	**Wonju Array Be**	**34.25**	**1**	P	**P**	**08 00 15.8**	**+0.3**
KSRS	**Korea Array**	**34.26**	**1**	P	**P**	**08 00 15.8**	**+0.2**
	5.8nm,0.9s,baz=179,slow=11,SNR=15						
NWAO	**Narrogin (SRO)**	**36.98**	**194**	*e*P	**P**	**08 00 37.6**	**-1.5**
	7.5nm,0.7s						
STKA	**Stephens Creek**	**37.33**	**160**	P	**P**	**08 00 41.3**	**-0.8**
	8.6nm,0.7s,baz=335,slow=7.6,SNR=14						
STKA				PcP	**PcP**	**08 03 01.2**	**+0.5**
	2.1nm,0.4s,baz=331,slow=5.6,SNR=3.9						
BJT	**Baijiatuau**	**38.14**	**346**	*e*P	**P**	**08 00 48.9**	**+0.1**
	18nm,0.8s						
ARMA	**Armidale**	**40.65**	**147**	*e*P	**P**	**08 01 10.0**	**0.0**
	17nm,0.9s						
USRK	**Ussuriysk Ar.**	**41.22**	**5**	P	**P**	**08 01 14.5**	**+0.2**
	9.5nm,0.9s,baz=186,slow=6.7,SNR=14						
H11S3	**WAKE ISLAND Hy**	**41.62**	**65**	T	T	08 45 45.6	
	baz=253,slow=74,SNR=24						
H11S2	**WAKE ISLAND Hy**	**41.64**	**65**	T	T	08 45 44.2	
	baz=253,slow=74,SNR=16						
H11S1	**WAKE ISLAND Hy**	**41.64**	**65**	T	T	08 45 41.4	
	baz=253,slow=74,SNR=13						
H11N1	**WAKE ISLAND Hy**	**42.17**	**64**	T	T	08 46 25.8	
H11N2	**WAKE ISLAND Hy**	**42.18**	**64**	T	T	08 46 25.8	
H11N3	**WAKE ISLAND Hy**	**42.19**	**64**	T	T	08 46 25.8	
KLR	**Kul'dur**	**46.19**	**4**	P	**P**	**08 01 54.4**	**+0.2**
	6.0nm,0.9s,baz=209,slow=5.0,SNR=12						
ULN	**Ulaanbaatar**	**47.91**	**342**	*e*P	**P**	**08 02 08.3**	**+0.4**
	5.6nm,0.9s						
SONM	**Songino Array**	**48.09**	**341**	P	**P**	**08 02 09.2**	**-0.1**
	1.8nm,0.8s,baz=145,slow=8.0,SNR=6.3						
TLY	**Talaya**	**52.32**	**342**	*e*P	**P**	**08 02 41.0**	**0.0**
PETK	**Petropavlovsk-**	**55.91**	**22**	P	**P**	**08 03 08.1**	**+0.9**
	4.1nm,0.6s,baz=196,slow=3.7,SNR=5.2						
MKAR	**Makanchi Array**	**58.37**	**325**	P	**P**	**08 03 23.4**	**-1.3**
	3.3nm,0.6s,baz=123,slow=8.5,SNR=28						
MA2	**Magadan**	**59.27**	**14**	*e*P	**P**	**08 03 31.4**	**+0.7**
	17nm,0.8s						
ZALV	**Zalesovo Beam**	**61.40**	**333**	P	**P**	**08 03 44.2**	**-1.1**
	0.9nm,0.3s,baz=143,slow=6.0,SNR=5.1						
KURK	**Kurchatov**	**62.55**	**328**	*e*P	**P**	**08 03 51.6**	**-1.5**
KKAR	**Karatay Array**	**64.03**	**317**	*e*P	**P**	**08 04 01.7**	**-1.4**
	1.1nm,0.4s						
BRVK	**Borovoye**	**68.21**	**327**	*e*P	**P**	**08 04 27.7**	**-2.0**
	4.5nm,0.8s						
TIXI	**Tiksi**	**68.53**	**1**	*e*P	**P**	**08 04 31.0**	**-0.4**
	2.4nm,0.5s						
NRIK	**Noril'sk**	**71.20**	**346**	P	**P**	**08 04 47.7**	**-0.2**
	3.6nm,0.7s,baz=141,slow=7.1,SNR=6.8						
AKTO	**Aktyubinsk**	**74.47**	**322**	P	**P**	**08 05 06.8**	**-0.7**
	3.7nm,0.6s,baz=98,slow=8.2,SNR=5.6						
ARU	**Arti**	**75.75**	**328**	P	**P**	**08 05 13.7**	**-1.1**
	3.6nm,0.2s,baz=103,slow=2.8,SNR=12						
ARU	**Arti**	**75.75**	**328**	*e*P	**P**	**08 05 13.5**	**-1.3**
	12nm,0.8s						
VNDA	**Vanda**	**82.69**	**173**	P	**P**	**08 05 52.0**	**-0.2**
	0.8nm,0.5s,baz=319,slow=7.7,SNR=9.0						
PMR	**Palmer**	**84.35**	**29**	*e*P	**P**	**08 06 01.4**	**+0.3**
	14nm,1.0s						
MCK	**McKinley**	**84.59**	**26**	*e*P	**P**	**08 06 02.8**	**+0.4**
	4.2nm,0.8s						
ILAR	**Eielson Array**	**85.54**	**25**	P	**P**	**08 06 08.2**	**+1.2**
	0.5nm,0.6s,baz=240,slow=7.8,SNR=6.0						
SYO	**Syowa Base**	**91.94**	**201**	⇑*e*P	**P**	**08 06 37.6**	**+0.4**
QSPA	**South Pole Qui**	**92.94**	**180**	*e*P	**P**	**08 06 42.5**	**+0.3**
	18nm,1.2s						
RES	**Resolute Bay**	**98.42**	**10**	P	Pdif	08 07 08.6	+1.8
	0.7nm,0.8s,baz=357,slow=6.1,SNR=4.2						
YKA	**Yellowknife Ar**	**99.95**	**25**	P	**Pdif**	**08 07 16.5**	**+2.6**
	0.3nm,0.8s,baz=298,slow=4.7,SNR=3.4						
TXAR	**Lajitas Array**	**121.68**	**53**	PKP	**PKPdf**	**08 12 25.1**	**+1.4**
	0.2nm,0.5s,baz=337,slow=2.1,SNR=2.3						
TORD	**Torodi Ar. Bea**	**123.54**	**288**	PKP	**PKPdf**	**08 12 27.3**	**-0.2**
	1.3nm,0.9s,baz=51,slow=2.0,SNR=5.6						

NNC 05 07:57:27.1±2.0**, 38°.68N**×**69°.86E, h0km, mb3.7, mpv3.3, 9C-3D, Error ellipse: s-maj=14.6km s-min=11.5km az=34.0, Tajikistan**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
SFK	**Sufi-Kurgan**	**3.12**	**64**	⇑Pg	Pb	07 58 23.0	-0.5
	7.7nm,0.5s						
SFK				⇑Lg	Lg	07 59 05.6	
	40nm,0.6s						
MNAS	**Manas**	**4.30**	**27**	⇑Pn	Pn	07 58 34.2	+0.3
	5.4nm,0.6s						
MNAS				⇑Sn	Sn	07 59 26.5	+1.7
	5.0nm,0.4s						
MNAS				⇓Lg	Lg	07 59 44.2	
	12nm,1.1s						
KK31	**Karatay Array**	**4.44**	**6**	⇑Pn	Pn	07 58 35.9	+0.2
	0.6nm,0.3s,baz=194,slow=8.7,SNR=9.1						
KK31				⇓Pg	Pb	07 58 46.6	+0.6
	2.8nm,0.4s,baz=191,slow=16,SNR=7.9						
KK31				⇑Sn	Sn	07 59 28.6	+0.4
	4.4nm,0.7s,baz=186,slow=27,SNR=4.6						
KK31				⇑Lg	Lg	07 59 48.9	
	4.5nm,0.5s,baz=186,slow=27,SNR=4.6						
AAK	**Ala-Archa**	**5.29**	**40**	⇓Pn	Pn	07 58 49.1	+1.6
	12nm,1.4s						
AAK				⇑Sn	Sn	07 59 51.1	+1.9
	5.9nm,0.8s						
AAK				⇑Lg	Lg	08 00 14.9	
	5.9nm,0.7s						

SKHL 05 08:18:11.4±0.6**, 44°.90N**×**149°.32E, h39km, mb4.7**/3**, Kuril Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
KUR	**Kuril'sk**	**1.08**	**288**	*e*P	Pn	08 18 29.2	-0.8
KUR				AMB	AMB	08 18 30.2	
	90nm,0.1s						
KUR				*i* S	Sn	08 18 42.5	-1.3
KUR				A	A	08 18 43.3	
	430nm,0.2s						
KUR				A	A	08 18 43.3	
	950nm,0.2s						
SHO	**Shikotan**	**2.06**	**241**	*i* P	Pn	08 18 42.8	-0.7
SHO				AMB	AMB	08 18 47.3	
	50nm,0.2s						
SHO				*i* S	Sn	08 19 06.8	-1.1
SHO				A	A	08 19 11.2	
	400nm,0.3s						
SHO				A	A	08 19 11.2	
	90nm,0.3s						
YUK	**Yuzh-Kuril'sk**	**2.62**	**252**	*i* P	Pn	08 18 51.7	+0.5
YUK				AMB	AMB	08 18 55.9	
	40nm,0.4s						
YUK				AMB	AMB	08 18 55.9	
	50nm,0.4s						
YUK				AMB	AMB	08 18 55.9	
	180nm,0.4s						
YUK				*i* S	Sn	08 19 21.5	-0.2
YUK				A	A	08 19 26.7	
	200nm,0.4s						
YUK				A	A	08 19 26.7	
	280nm,0.4s						
YSS	**Yuzh-Sakhalins**	**5.02**	**296**	*e*P	Pn	08 19 25.4	+1.3
TYV	**Tymovskoe**	**7.46**	**325**	*e*P	Pn	08 19 59.7	+2.2

IDC 05 08:23:44.4±13.0**, 37°.77N**×**143°.96E, h0km, mb3.8**/2**, mb1 3.9**/3**, mb1mx3.4**/27**, mbtmp3.7**/3**, ML3.2**/1**, MS4.3**/1**, Ms1 4.3**/1**, ms1mx3.4**/55**, Error ellipse: s-maj=278.5km s-min=52.1km az=17.0, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
MJAR	**Matsushiro Arr**	**4.76**	**257**	Pn	Pn	08 24 57.1	-0.3
	0.9nm,0.3s,baz=74,slow=12,SNR=12						
MAT	**Matsushiro**	**4.76**	**257**	P	Pn	08 24 58.1	+0.7
TLY	**Talaya**	**31.41**	**309**	LR	LR	08 44 53.9	
	comp=Z,468nm,18.8s,baz=162,slow=40						
WRA	**Warramunga Arr**	**58.11**	**191**	P	P	08 33 39.5	-0.2
	1.0nm,0.6s,baz=7.6,slow=7.0,SNR=7.5						
ASAR	**Alice Springs**	**61.84**	**190**	P	P	08 34 05.4	+0.1
	0.3nm,0.6s,baz=16,slow=7.9,SNR=3.0						

JMA 05 08:38:52.5±0.1**, 39°.25N**×**142°.59E, h25km**±1km**, M2.8, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
JMK	**Ichinoseki**	**1.11**	**255**	P	Pn	08 39 12.3	-0.1
JMK				S	Sb	08 39 27.1	+0.2
JKZ	**Kuzumaki**	**1.22**	**307**	P	Pn	08 39 14.2	+0.2
JKZ				S	Sb	08 39 30.1	-0.1
JANG	**Nango**	**1.39**	**324**	*e*S	Sn	08 39 34.3	+0.3
MAT	**Matsushiro**	**4.39**	**233**	P	Pb	08 40 03.6	-5.4
MAT				*e*S	Sb	08 41 02.8	+1.2

DDA ***05*** *08:39:09.3, 36°.39N×28°.69E, h7km, Md2.7*
CSEM ***05*** *08:39:10.8±0.6, 36°.49N×28°.80E, h2km, MD2.7, Error ellipse: s-maj=19.8km s-min=5.1km az=35.0*
ISCJB ***05*** *08:39:11.1±1.3, 36°.48N±0°.08×28°.84E±0°.07, h14km, Error ellipse: s-maj=13.4km s-min=5.8km az=30.1*
ISC 05 08:39:09.4±1.6**, 36°.38N**±0°.10×**28°.81E**±0°.06**, h14km, n12, σ0s.79**/19**, Dodecanese Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
FETY	**Fethiye**	**0.34**	**41**	*e*PG	**Pg**	**08 39 15.8**	**-0.5**
FETY				*e*SG	**Sg**	**08 39 20.2**	**-0.8**
FETY	**Fethiye**	**0.34**	**41**	*e*Pg	**Pg**	**08 39 15.8**	**-0.5**
DALY	**Dalyan (Mu˜la**	**0.45**	**344**	*e*PG	**Pg**	**08 39 17.7**	**-0.7**
DALY	**Dalyan (Mu˜la**	**0.45**	**344**	*e*Pg	**Pg**	**08 39 17.7**	**-0.7**
TURN	**Turunc**	**0.52**	**341**	*i* P	**Pg**	**08 39 19.0**	**-0.6**
TURN				*i* S	**Sb**	**08 39 28.8**	**+1.2**
TURN	**Turunc**	**0.52**	**341**	P	**Pg**	**08 39 19.0**	**-0.6**
TURN				S	**Sb**	**08 39 28.8**	**+1.2**
AKAS	**Kas**	**0.66**	**103**	*i* P	**Pn**	**08 39 24.0**	**-0.4**
AKAS				*i* S	**Sn**	**08 39 35.7**	**+1.0**
AKAS	**Kas**	**0.66**	**103**	P	**Pn**	**08 39 24.0**	**-0.4**
AKAS				S	**Sn**	**08 39 35.7**	**+1.0**
YER	**Yerkesik**	**0.86**	**331**	*e*PG	**Pg**	**08 39 25.5**	**-0.6**
YER	**Yerkesik**	**0.86**	**331**	*e*Pg	**Pg**	**08 39 25.5**	**-0.6**
AYDN	**Tasoluk**	**1.48**	**330**	*i* P	**Pb**	**08 39 36.7**	**0.0**
AYDN				*i* S	**Sb**	**08 39 56.1**	**+0.7**
AYDN	**Tasoluk**	**1.48**	**330**	P	**Pb**	**08 39 36.7**	**0.0**
AYDN				S	**Sb**	**08 39 56.1**	**+0.7**

JMA ***05*** *08:45:09.5±0.6, 21°.78N×121°.90E, h0km, M3.9*
TAP ***05*** *08:45:12.2, 21°.71N×121°.85E, h2km, ML3.2, D*
ISC 05 08:45:10.1±1.9**, 21°.69N**±0°.07×**121°.97E**±0°.04**, h2km**±11km**, n32, σ0s.96**/57**, Taiwan region**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
LAY	**Lan-yu**	**0.53**	**312**	*i* P	**Pg**	**08 45 21.2**	**+1.0**
	baz=320						
LAY				*i* S	**Sb**	**08 45 28.0**	**-2.2**
	baz=320						
TSEB	**Hengchuen, Pin**	**1.02**	**282**	*e*P	**Pg**	**08 45 29.5**	**-0.1**
	baz=281						
TWK1	**Hengchun**	**1.11**	**284**	P	**Pb**	**08 45 32.4**	**+0.3**
	baz=283						
TWK1				*e*S	**Sn**	**08 45 47.4**	**-1.3**
	baz=283						
HEN	**Hengchun**	**1.19**	**286**	*e*P	**Pn**	**08 45 35.2**	**+1.4**
	baz=285						
HEN				S	**Sn**	**08 45 49.4**	**-1.1**
	baz=285						
EAST	**Anshuo**	**1.25**	**304**	*e*P	**Pg**	**08 45 34.2**	**+0.1**
	baz=306						
EAST				*e*S	**Sb**	**08 45 49.8**	**-1.4**
	baz=306						
TWG	**Pinlang**	**1.40**	**324**	*e*P	**Pg**	**08 45 36.4**	**-0.6**
	baz=327						
TWG				*e*S	**Sn**	**08 45 56.2**	**+0.3**
	baz=327						
SCZT	**Fangliau**	**1.43**	**299**	*e*P	**Pg**	**08 45 37.5**	**0.0**
	baz=300						
SCZT				S	**Sb**	**08 45 55.3**	**-0.9**
	baz=300						
SSD	**Sandimen**	**1.63**	**311**	P	**Pn**	**08 45 40.3**	**+0.5**
	baz=312						
SSD				*e*S	**Sg**	**08 46 02.3**	**-0.2**
	baz=312						
ELDTW	**Lidau**	**1.74**	**330**	*e*P	**Pn**	**08 45 43.0**	**+1.5**
	baz=332						
TWF1	**Yuli**	**1.77**	**340**	*e*P	**Pn**	**08 45 41.2**	**-0.6**
	baz=342						
TWF1				*e*S	**Sg**	**08 46 06.9**	**-0.2**

	baz=342						
TWM1	Shoushan	1.83	309	eP	Pb	08 45 44.0	-0.3
	baz=310						
TWM1				eS	Sg	08 46 08.1	-0.8
	baz=310						
STYT	Tauyuan	1.85	323	eP	Pn	08 45 43.1	+0.1
	baz=325						
STYT				S	Sb	08 46 08.1	-0.3
	baz=325						
SGST	Jiashian	1.89	318	eP	Pb	08 45 45.2	-0.2
	baz=319						
SGST				eS	Sg	08 46 09.6	-1.3
	baz=319						
WTP	Ta-pu	2.00	321	eP	Pb	08 45 47.8	+0.6
	baz=323						
WTP				eS	Sb	08 46 11.6	-1.0
	baz=323						
CHN1	Nanshi	2.00	318	eP	Pb	08 45 47.9	+0.6
	baz=320						
CHN1				eS	Sb	08 46 12.6	-0.1
	baz=320						
YUS	Yu-Shan	2.03	333	eP	Pn	08 45 47.4	+1.6
	baz=335						
YUS				eS	Sn	08 46 12.8	+0.8
	baz=335						
TWK	Hsinying	2.09	319	eP	Pn	08 45 47.2	+0.9
	baz=321						
TWK				eS	Sb	08 46 15.5	+0.3
	baz=321						
CHN4	Tsaushan	2.09	323	P	Pb	08 45 49.2	+0.4
	baz=324						
CHN4				eS	Sb	08 46 15.5	+0.2
	baz=324						
ALS	Alishan	2.11	330	eP	Pn	08 45 48.2	+1.4
	baz=331						
ALS				eS	Sn	08 46 14.5	+0.7
	baz=331						
ESL	Shilin	2.18	347	eP	Pn	08 45 48.1	+0.7
	baz=349						
WDT	Danda	2.20	340	eP	Pn	08 45 49.8	+1.8
	baz=342						
WDT				eS	Sn	08 46 17.2	+1.2
	baz=342						
CHN5	Tsauling	2.25	328	eP	Pn	08 45 50.7	+2.3
	baz=330						
CHN5				eS	Sb	08 46 19.4	-0.4
	baz=330						
TYC	Yuchr	2.44	335	eP	Pn	08 45 52.3	+1.4
	baz=337						
TYC				eS	Sn	08 46 21.6	+0.3
	baz=337						
WHF	Hehuan Shan	2.53	345	eP	Pb	08 45 56.2	-0.4
	baz=347						
WHF				eS	Sn	08 46 23.3	-1.1
	baz=347						
HATJ	Hateruma jima	2.91	35	S	Sn	08 46 33.2	+0.3
YOJ	Yonaguni jima	2.92	19	S	Sn	08 46 32.9	-0.5
NSK	Sanguang	3.03	349	eP	Pn	08 46 02.5	+3.3
	baz=351						
NSK				eS	Sn	08 46 35.9	-0.2
	baz=351						
IRIF	Iriomote-Funau	3.10	31	P	Pn	08 46 01.3	+1.3
JKRS	Kuro-shima	3.16	36	P	Pn	08 46 01.9	+1.0
JKRS				eS	Sn	08 46 39.3	+0.1
JIJ	Ishigaki jima	3.33	36	P	Pn	08 46 03.9	+0.6
JIJ				S	Sn	08 46 42.2	-1.3
JISG	Ishigakijimahi	3.60	36	P	Pn	08 46 07.3	+0.3
JISG				S	Sn	08 46 49.7	-0.5
JTJ	Tarama	3.87	40	P	Pn	08 46 11.5	+0.8
JTJ				S	Sn	08 46 55.9	-0.9

*IDC **05** 08:57:44.4±0.5, 2°.95N×127°.18E, h0^{km}, mb4.3/21, mb1 4.4/21, mb1mx4.2/59, mbtmp4.4/21, MS4.1/10, Ms1 4.1/10, ms1mx3.6/58, Error ellipse: s-maj=30.6km s-min=9.6km az=79.0*

*NEIC **05** 08:57:46.6±0.3, 3°.01N×127°.02E, h10^{km}, mb4.7/14, Error ellipse: s-maj=14.7km s-min=6.7km az=77.0*

*ISCJB **05** 08:57:49.2±0.3, 3°.07N±0°.04×127°.27E±0°.06, h44^{km}, mb4.4/31, MS4.1/10, Error ellipse: s-maj=8.2km s-min=5.9km az=164.5*

*DJA **05** 08:57:49.7±1.0, 3°N±10°×12°7E±°, h10^{km}, M4.5/9, mb4.5/5, mB5.1/4, mB5.1/4, MLv4.5/9, Mw(mB)4.4/4, Mw(mB)4.4/4*

*BJI **05** 08:57:52.0, 3°.10N×127°.30E, h60^{km}, mb4.7/10, mB5.1/5, Ms7 4.3/1*

ISC 05 08:57:51.1±0.5**, 2°.99N**±0°.07×**127°.10E**±0°.09**, h44**^{km}**, n56,** σ1^s**06**/47**, mb4.5**/30**, MS4.1**/10**, Northern Molucca Sea**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SGSI	Sangihe	1.71	294	P	Pn	08 58 18.0	-0.5
SGSI				S	Sn	08 58 41.7	+2.5
TNTI	Ternate	2.22	173	P	Pn	08 58 26.7	+1.2
TNTI	Ternate	2.22	173	ePn	Pn	08 58 26.0	+0.6
LBMI	Labuha	3.63	174	P	Pn	08 58 49.6	+4.8
SANI	Sanana	5.13	193	P	Pn	08 59 10.1	+4.7
	44nm,1.2s,911nm0.2nm						
SWI	Sorong	5.65	133	P	Pn	08 59 16.2	+3.6
	51nm,1.2s,1μm0.2nm						
MRSI	Marisa	5.73	244	P	Pn	08 59 17.7	+4.0
	74nm,1.2s,2μm0.3nm						
APSI	Ampana	6.69	235	P	Pn	08 59 32.2	+5.4
FAKI	Fak Fak	7.81	139	ePn	Pn	08 59 44.5	+2.3
KSM	Kuching	16.84	265	eP	Pn	09 01 42.5	-1.5
	31nm,1.1s						
FITZ	Fitzroy Crossi	21.01	184	P	P	09 02 30.2	-0.9
	5.3nm,0.8s,baz=16,slow=5.8,SNR=5.5						
FITZ	Fitzroy Crossi	21.01	184	eP	P	09 02 30.5	-0.5
	32nm,1.3s						
LEM	Lembang	21.75	243	LR	LR	09 12 52.0	
	comp=Z,387nm,18.0s,baz=48,slow=42						
PMG	Port Moresby	23.48	122	LR	LR	09 13 01.0	
	comp=Z,950nm,21.2s,baz=296,slow=39						
WRAB	Tennant Creek	23.87	163	eP	P	09 02 59.6	-1.1
	22nm,0.9s						
WRA	Warramunga Arr	23.87	163	P	P	09 02 58.9	-1.8
	9.6nm,0.7s,baz=339,slow=10,SNR=45						
WRA				S	S	09 07 16.0	+2.0
	2.8nm,1.0s,baz=350,slow=17,SNR=5.3						
MBWA	Marble Bar	25.06	196	eP	P	09 03 12.1	+0.6
	61nm,1.3s						
ASAR	Alice Springs	27.31	166	P	P	09 03 31.2	-0.7
	1.5nm,0.7s,baz=348,slow=6.7,SNR=29						
ASAR				PcP	PcP	09 06 51.0	+0.2
	0.7nm,0.7s,baz=335,slow=2.4,SNR=4.9						
JNU	Nakatsue	30.18	6	P	P	09 03 55.9	-1.5
	17nm,1.0s,baz=187,slow=3.8,SNR=5.7						
JNU	Nakatsue	30.18	6	eP	P	09 03 56.3	-1.1
	15nm,1.2s						
CMAR	Chiang Mai Arr	31.56	301	PcP	PcP	09 07 03.0	+1.3
	0.8nm,0.3s,baz=132,slow=3.8,SNR=4.5						
KSAR	Wonju Array Be	34.30	1	P	P	09 04 33.0	-0.3
KSRS	Korea Array	34.31	1	P	P	09 04 33.0	-0.4
	5.3nm,1.0s,baz=181,slow=10,SNR=17						
MJAR	Matsushiro Arr	34.93	16	P	P	09 04 38.0	-0.8
	8.1nm,1.4s,baz=183,slow=9.3,SNR=4.9						
STKA	Stephens Creek	37.31	159	P	P	09 04 58.4	-0.9
	8.3nm,0.8s,baz=331,slow=8.0,SNR=16						
STKA				PcP	PcP	09 07 18.1	+0.1
	1.5nm,0.6s,baz=26,slow=1.4,SNR=4.2						
BJT	Baijiatuau	38.17	346	eP	P	09 05 06.2	-0.2
	16nm,0.9s						
USRK	Ussuriysk Ar.	41.27	5	P	P	09 05 31.9	-0.1
	6.5nm,1.0s,baz=181,slow=7.4,SNR=9.1						
MDJ	Mudanjiang	41.51	3	eP	P	09 05 35.4	+1.4
	15nm,1.0s						
KLR	Kul'dur	46.24	4	P	P	09 06 12.4	+0.5
	4.3nm,1.0s,baz=193,slow=6.6,SNR=6.1						
ULN	Ulaanbaatar	47.93	342	eP	P	09 06 27.0	+1.7
	15nm,1.1s						
SONM	Songino Array	48.11	341	P	P	09 06 27.0	+0.3
	1.3nm,0.7s,baz=165,slow=11,SNR=4.6						
PETK	Petropavlovsk-	55.98	22	P	P	09 07 25.0	0.0
	3.1nm,0.8s,baz=157,slow=4.8,SNR=4.3						
MKAR	Makanchi Array	58.37	325	P	P	09 07 41.4	-0.7
	1.3nm,0.5s,baz=121,slow=7.4,SNR=15						
YAK	Yakutsk	58.93	1	LR	LR	09 35 08.2	
	comp=Z,137nm,21.9s,baz=205,slow=38						
MA2	Magadan	59.33	14	P	P	09 07 47.8	-0.7
	1.1nm,0.3s,baz=330,slow=20						
MA2	Magadan	59.33	14	eP	P	09 07 49.5	+1.1
	26nm,1.1s						
RPZ	Rata Peaks	60.95	145	P	P	09 07 58.1	-1.7
	22nm,1.0s,baz=284,slow=15,SNR=3.2						
ZALV	Zalesovo Beam	61.41	333	P	P	09 08 02.5	-0.3
	1.1nm,0.6s,baz=130,slow=6.5,SNR=4.5						
ZALV				LR	LR	09 37 25.4	
	comp=Z,121nm,19.9s,baz=225,slow=39						
KURK	Kurchatov	62.56	328	eP	P	09 08 09.5	-1.0
	9.8nm,0.6s						
SEY	Seymchan	62.67	13	P	P	09 08 10.3	-0.6
	3.0nm,0.8s,baz=163,slow=19						
KKAR	Karatay Array	64.02	317	eP	P	09 08 19.6	-0.8
	0.8nm,0.3s						
BVAR	Borovoye Array	68.14	327	P	P	09 08 46.3	-0.3
	2.2nm,0.9s,baz=120,slow=8.8,SNR=10						
BRVK	Borovoye	68.21	327	eP	P	09 08 46.6	-0.4
	9.3nm,1.3s						
TIXI	Tiksi	68.57	1	eP	P	09 08 49.3	+0.3
	1.6nm,0.5s						
NRIK	Noril'sk	71.23	346	P	P	09 09 06.5	+1.2
	1.8nm,0.3s,baz=159,slow=3.5,SNR=4.8						
AKTO	Aktyubinsk	74.46	322	P	P	09 09 25.2	+0.3
	3.5nm,0.7s,baz=100,slow=9.0,SNR=12						
ARU	Arti	75.75	328	P	P	09 09 32.3	+0.1
	2.8nm,0.3s,baz=89,slow=5.4,SNR=5.6						
ARU				LR	LR	09 46 37.7	
	comp=Z,107nm,18.1s,baz=139,slow=39						
ARU	Arti	75.75	328	eP	P	09 09 32.0	-0.2
	3.9nm,0.6s						
VNDA	Vanda	82.65	173	P	P	09 10 09.4	0.0
	1.0nm,0.8s,baz=7.1,slow=8.1,SNR=3.2						
ATD	Arta Tunnel	83.78	281	LR	LR	09 46 46.1	
	comp=Z,111nm,20.7s,slow=35						
PPT	Papeete	84.54	108	LR	LR	09 43 28.0	
	comp=Z,42nm,19.3s,baz=296,slow=32						
EIL	Elat	90.40	300	LR	LR	09 55 36.6	
	comp=Z,35nm,19.7s,baz=78,slow=38						
FINES	FINESS Array B	92.65	332	LR	LR	09 57 48.4	
	comp=Z,213nm,18.1s,baz=20,slow=39						
NOA	NORSAR Array B	99.61	334	LR	LR	10 02 06.6	
	comp=Z,110nm,19.1s,baz=70,slow=39						
YKA	Yellowknife Ar	100.02	25	P	Pdif	09 11 29.8	-1.7
	0.2nm,1.0s,baz=300,slow=4.9,SNR=3.0						
TORD	Torodi Ar. Bea	123.50	288	PKP	PKPdf	09 16 44.5	-0.2
	0.6nm,0.6s,baz=46,slow=2.2,SNR=4.2						

JMA 05 09:07:37.0, 36°.81N×140°.57E, h7^{km}±1^{km}, M2.9, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHO	Hitachi	0.20	180	P	Pg	09 07 41.0	0.0
JHO				S	Sg	09 07 43.9	+0.2
ONAJ	Iwakimizuishiy	0.34	32	P	Pg	09 07 43.8	0.0
ONAJ				eS	Sg	09 07 48.8	+0.5
JSB	Shiboa	0.55	287	P	Pg	09 07 48.1	+0.6
JSB				eS	Sb	09 07 55.8	-1.1
MAT	Matsushiro	1.92	263	P	Pn	09 08 10.7	+0.6
MAT				S	Sb	09 08 36.0	-0.5

*NIED **05** 09:08:00, 36°.80N×140°.60E, h5^{km}, Mw4.3 Best double couple: Mo3.43000×10^{15} NP1:φs311.00000°, δ24.00000°, λ-134.00000°. NP2:φs178.00000°, δ73.00000°, λ-73.00000°.*

*ISCJB **05** 09:08:49.2±0.6, 36°.75N±0°.03×140°.48E±0°.04, h17^{km}±4^{km}, mb4.3/52, MS4.2/7, Error ellipse: s-maj=4.9km s-min=4.7km az=148.6*

*JMA **05** 09:08:49.2, 36°.81N×140°.57E, h7^{km}±1^{km}, M4.4 Broadband fault plane solution: P waves. NP1: φs182.00000°, δ60.00000°, λ-74.00000°. NP2: φs331.00000°, δ33.00000°, λ-116.00000°. Principal axes: T Plg14.0000°, Azm260.0000°; N Plg14.0000°, Azm354.0000°; P Plg70.0000°, Azm127.0000°;*

JMA Felt III J1.

*IDC **05** 09:08:52.7±3.0, 36°.79N×140°.37E, h33^{km}±23^{km}, mb3.9/24, mb1 4.0/29, mb1mx3.9/60, mbtmp4.0/29, ML3.0/3, MS4.2/5, Ms1 4.2/5, ms1mx3.4/67 Error ellipse: s-maj=14.7km s-min=12.7km az=111.0*

*NEIC **05** 09:08:53.7±0.6, 36°.76N×140°.41E, h38^{km}±6^{km}, mb4.5/25, Error ellipse: s-maj=6.2km s-min=5.6km az=133.0*

NEIC Felt at Narita. Recorded [3 JMA] in Ibaraki.

ISC 05 09:08:50.0±0.9**, 36°.77N**±0°.04×**140°.53E**±0°.04**, h13**^{km}±6^{km}**, n100,** σ1^s**23**/95**, mb4.4**/52**, MS4.2**/7**, 3C, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHO	Hitachi	0.16	169	⇑P	Pg	09 08 53.2	-0.7
JHO				S	Sg	09 08 56.1	-0.4
ONAJ	Iwakimizuishiy	0.39	33	⇑P	Pg	09 08 56.0	-1.9
JSB	Shiboa	0.53	292	⇑P	Pg	09 09 00.4	+0.1
JSB				eS	Sb	09 09 08.0	-0.6
MJAR	Matsushiro Arr	1.88	264	Pn	Pn	09 09 22.1	+0.3
	123nm,0.3s,baz=92,slow=14,SNR=235						
MJAR				Lg	Lg	09 09 47.2	
	123nm,0.3s,baz=85,slow=27,SNR=14						
MJAR				LR	LR	09 10 24.2	
	comp=Z,839nm,19.2s,baz=110,slow=53						
MAJO	Matsushiro	1.88	264	ePn	Pn	09 09 22.7	+0.9
MAJO				eSn	Sn	09 09 44.2	-1.3
MAT	Matsushiro	1.88	264	P	Pn	09 09 22.4	+0.6
MAT				S	Sb	09 09 49.3	+1.7
INU	Inuyama	3.18	245	ePn	Pn	09 09 41.9	+2.2
JHJ	Hachijo jima 2	3.69	190	Pn	Pn	09 09 47.1	+0.3
	27nm,0.3s,baz=326,slow=22,SNR=10						
JHJ				Sn	Sn	09 10 31.3	+1.2
	65nm,0.3s,baz=75,slow=24,SNR=5.6						
JHJ2	Mitsune	3.70	189	ePn	Pn	09 09 47.3	+0.5
JHJ2				eSn	Sn	09 10 27.6	-2.6
ERM	Erimo	5.62	20	ePn	Pn	09 10 13.8	+0.6
ERM				eSn	Sn	09 11 19.3	+1.9
JNU	Nakatsue	8.72	248	Pn	Pn	09 10 56.7	+0.9
	0.2nm,0.3s,baz=163,slow=19,SNR=3.2						
JNU	Nakatsue	8.72	248	ePn	Pn	09 10 56.0	+0.2
CBIJ	Chichi jima	9.75	171	ePn	Pn	09 11 10.4	+0.5
USRK	Ussuriysk Ar.	9.86	321	Pn	Pn	09 11 11.8	+0.4
	0.1nm,0.3s,baz=134,slow=12,SNR=2.0						
KSRS	Korea Array	10.09	278	Pn	Pn	09 11 15.4	+0.9
	0.2nm,0.3s,baz=92,slow=14,SNR=4.8						
KS01	Wonju Array Si	10.12	278	ePn	Pn	09 11 20.1	+5.3
KS15	Wonju Array Si	10.12	278	ePn	Pn	09 11 21.3	+6.4
KSAR	Wonju Array Be	10.12	278	Pn	Pn	09 11 15.4	+0.5
YSS	Yuzh-Sakhalins	10.31	9	ePn	Pn	09 11 19.6	+2.1
KLR	Kul'dur	14.00	336	Pn	Pn	09 12 09.7	+1.8
	0.0nm,0.3s,baz=139,slow=20,SNR=1.8						
NJ2	Nanjing	18.48	262	eP	P	09 13 04.6	-1.0
NJ2				pmax	pmax		
	comp=Z,13nm,0.6s						
PETK	Petropavlovsk-	20.27	31	P	Pn	09 13 27.2	+0.1
	comp=Z,1.1nm,0.3s,baz=173,slow=2.9,SNR=6.7						
HHC	Hu-ho-hao-te	22.89	289	eP	P	09 13 52.6	-0.8
HHC				pP	sP	09 14 04.0	+5.2
HHC				sP	pP	09 14 09.9	+13
HHC				S	S	09 17 54.5	-8.3
HHC				pmax	pmax		
	comp=Z,17nm,0.9s						
HHC				pmax	pmax		
	comp=Z,140nm,9.4s						
HHC				LR	LR		
	comp=N,430nm,14.7s						
HHC				LR	LR		
	comp=E,470nm,15.9s						
HHC				LR	LR		
	comp=Z,390nm,14.9s						
MA2	Magadan	23.76	13	P	P	09 14 01.6	-0.2
	comp=Z,6.9nm,0.9s,baz=228,slow=8.2,SNR=9.8						
MA2	Magadan	23.76	13	eP	P	09 14 01.3	-0.5
	comp=Z,42nm,1.1s						
XAN	Xi'an	25.85	273	P	P	09 14 21.3	+0.1
XAN				pmax	pmax		
	comp=Z,4.0nm,1.1s						
SEY	Seymchan	27.19	12	P	P	09 14 32.6	-0.3
	comp=Z,4.7nm,0.9s,baz=204,slow=8.0,SNR=15						
SONA1	Songino Array	27.34	305	eP	P	09 14 34.4	-0.3
SONM	Songino Array	27.35	305	P	P	09 14 33.7	-1.1
	comp=Z,2.2nm,0.8s,baz=105,slow=9.5,SNR=9.7						
H11N2	WAKE ISLAND Hy	28.63	119	T	T	09 44 31.5	
	baz=312,slow=75,SNR=2085						
H11N1	WAKE ISLAND Hy	28.64	119	T	T	09 44 31.3	
	baz=312,slow=75,SNR=2327						
H11N3	WAKE ISLAND Hy	28.65	119	T	T	09 44 32.1	
	baz=312,slow=75,SNR=1641						
H11S1	WAKE ISLAND Hy	29.32	121	T	T	09 45 22.1	
	baz=314,slow=76,SNR=5358						
H11S3	WAKE ISLAND Hy	29.32	121	T	T	09 45 23.9	
	baz=314,slow=76,SNR=3342						
H11S2	WAKE ISLAND Hy	29.34	121	T	T	09 45 25.1	
	baz=314,slow=76,SNR=4408						
LZH	Lanzhou	29.41	280	eP	P	09 14 53.0	-0.3
LZH				pP	sP	09 15 02.3	+3.4
LZH				sP	pP	09 15 05.7	+8.4
LZH				pmax	pmax		
	comp=Z,14nm,1.0s						
CD2	Chengdu	30.96	270	P	P	09 15 05.1	-1.8
CD2				pmax	pmax		
	comp=Z,1.0nm,0.6s						
KMI	Kunming	34.22	261	P	P	09 15 36.0	+0.3
KMI				pmax	pmax		
	comp=Z,21nm,0.7s						
KMI				pmax	pmax		
	comp=Z,210nm,7.0s						
GAMB	Gambell	39.31	31	eP	P	09 16 24.4	+6.1
	comp=Z,10nm,0.3s						
WMQ	Urumqi	40.33	297	eP	P	09 16 28.5	+1.4
WMQ				sP	sP	09 16 42.8	+10
WMQ				PP	PnPn	09 18 05.6	+2.1
WMQ				S	S	09 22 33.7	-0.8
WMQ				SS	SS	09 25 28.5	-4.4
WMQ	Urumqi	40.33	297	ScS	ScS	09 26 30.0	-3.2
WMQ				pmax	pmax		
	comp=Z,2.0nm,1.0s						
WMQ				LR	LR		
	comp=N,370nm,23.2s						
WMQ				LR	LR		
	comp=E,250nm,21.0s						
WMQ				LR	LR		
	comp=Z,200nm,21.0s						
ZAA0	Zalesovo Array	41.57	313	eP	P	09 16 37.0	-0.1
ZALV	Zalesovo Beam	41.57	313	P	P	09 16 36.0	-1.1
	comp=Z,1.5nm,0.6s,baz=92,slow=6.5,SNR=5.2						
MK01	Makanchi Array	43.65	302	eP	P	09 16 54.0	-0.2
MK31	Makanchi Array	43.66	302	eP	P	09 16 54.2	-0.1
MKAR	Makanchi Array	43.66	302	P	P	09 16 53.2	-1.0
	comp=Z,1.0nm,0.7s,baz=91,slow=10,SNR=10.0						
MKAR				LR	LR	09 37 35.6	
	comp=Z,328nm,21.1s,baz=96,slow=40						
MKAR	Makanchi Array	43.66	302	eP	P	09 16 54.2	-0.1
KURK	Kurchatov	45.54	308	eP	P	09 17 09.1	0.0
	comp=Z,6.9nm,0.9s						
KURBB	Kurchatov Arra	45.60	308	P	P	09 17 08.2	-1.5
	comp=Z,3.9nm,0.7s,baz=84,slow=8.4,SNR=22						
TKM2	Tokmak 2	49.13	298	eP	P	09 17 37.8	+0.3
	comp=Z,16nm,1.4s						
AAK	Ala-Archa	49.99	298	P	P	09 17 41.6	-2.5
	comp=Z,1.9nm,0.8s,baz=144,slow=3.0,SNR=4.5						
ILAR	Eielson Array	50.09	32	P	P	09 17 43.1	-1.2
	comp=Z,1.6nm,0.9s,baz=264,slow=5.3,SNR=9.5						
BVAR	Borovoye Array	50.22	312	P	P	09 17 43.9	-1.5
	comp=Z,1.2nm,0.7s,baz=76,slow=6.3,SNR=7.7						
KKAR	Karatay Array	52.64	300	eP	P	09 18 06.2	+2.4
INK	Inuvik	54.94	27	P	P	09 18 20.1	0.0
	comp=Z,1.3nm,0.8s,baz=303,slow=9.8,SNR=5.8						
WRAB	Tennant Creek	56.70	187	eP	P	09 18 32.4	-0.8
	comp=Z,5.4nm,0.9s						
WRA	Warramunga Arr	56.71	187	P	P	09 18 32.1	-1.2
	comp=Z,4.0nm,0.8s,baz=2.6,slow=7.4,SNR=26						
ABKAR	Akbulak array	57.56	310	eP	P	09 18 38.1	-1.1
	comp=Z,2.3nm,0.7s						
AKTO	Aktyubinsk	58.32	312	P	P	09 18 43.5	-1.0
	comp=Z,1.2nm,0.8s,baz=75,slow=6.7,SNR=4.6						
DLBC	Dease Lake	59.27	38	P	P	09 18 51.4	+0.4
	comp=Z,2.5nm,0.8s,baz=304,slow=6.3,SNR=2.9						
AS01	Alice Springs	60.43	187	eP	P	09 18 58.6	-0.6
ASAR	Alice Springs	60.44	187	P	P	09 18 59.1	-0.1
	comp=Z,2.2nm,0.9s,baz=10,slow=6.3,SNR=15						
GEYT	Alibeck	63.34	299	LR	LR	09 47 04.3	
	comp=Z,217nm,20.0s,baz=100,slow=36						
YKA	Yellowknife Ar	64.39	30	P	P	09 19 24.3	-0.9
	comp=Z,0.6nm,0.7s,baz=303,slow=6.5,SNR=14						
FINES	FINESS Array B	68.71	332	P	P	09 19 51.4	-1.5
	comp=Z,1.9nm,0.8s,baz=36,slow=7.1,SNR=4.7						
KBZ	Khabaz	70.53	310	LR	LR	09 55 00.7	
	comp=Z,102nm,21.0s,baz=72,slow=39						
KVAR	Kislovodsk Arr	70.53	311	LR	LR	09 53 27.1	
	comp=Z,191nm,20.6s,slow=38						
AKASG	Malin Array Be	74.07	322	P	P	09 20 23.7	-1.8
	comp=Z,0.4nm,0.3s,baz=44,slow=5.7,SNR=7.3						
FCC	Fort Churchill	74.55	26	eP	P	09 20 28.5	+0.4
	comp=Z,3.2nm,1.1s						
CMB	Columbia Colle	74.60	54	eP	P	09 20 29.2	+0.3
	comp=Z,3.6nm,0.9s						
HLID	Hailey	75.07	47	eP	P	09 20 31.1	-0.5
	comp=Z,1.0nm,0.8s						
NV01	Mina Array Sit	75.71	53	eP	P	09 20 36.5	+1.0
NVAR	Mina Array Bea	75.71	53	P	P	09 20 35.7	+0.2
	comp=Z,2.9nm,0.8s,baz=293,slow=5.9,SNR=26						
R11A	Troy Canyon, C	77.48	51	eP	P	09 20 46.2	+0.7
	comp=Z,4.7nm,1.0s						
TPNV	Topopah Spring	77.90	53	eP	P	09 20 48.7	+0.9
	comp=Z,5.7nm,1.0s						
HWUT	Hardware Ranch	77.93	47	eP	P	09 20 48.6	+0.8
	comp=Z,5.9nm,1.3s						
DUG	Dugway, Tooele	78.06	49	eP	P	09 20 49.4	+0.8
	comp=Z,2.8nm,0.7s						
PDAR	Pinedale Array	78.35	45	P	P	09 20 50.5	+0.2
	comp=Z,0.8nm,0.7s,baz=284,slow=1.5,SNR=9.5						
PSUT	Pine Spring	78.45	50	eP	P	09 20 52.1	+1.3
	comp=Z,22nm,1.9s						
BRTR	Keskin Array B	78.49	311	P	P	09 20 51.9	+0.8
	comp=Z,0.7nm,0.7s,baz=164,slow=4.9,SNR=3.9						
NLU	North Lily Min	78.65	48	eP	P	09 20 53.1	+1.1
	comp=Z,3.0nm,1.0s						
STHS	Stebnicka Huta	78.76	324	eP	P	09 20 54.7	+2.5
MPU	Maple Canyon	78.88	48	eP	P	09 20 54.3	+1.1
	comp=Z,8.1nm,1.3s						
P17A	Butcher Ranch,	79.76	48	eP	P	09 20 59.2	+1.2
	comp=Z,5.3nm,0.9s						
LCMT	Little Creek M	79.77	51	eP	P	09 20 59.1	+1.1
	comp=Z,3.4nm,0.9s						
KNB	Kanab	80.03	51	eP	P	09 21 01.0	+1.5
	comp=Z,5.6nm,1.0s						
ULM	Lac du Bonnet	80.11	33	P	P	09 21 00.6	+1.2
	comp=Z,2.1nm,0.8s,baz=85,slow=2.7,SNR=3.0						
SRU	San Rafael Swe	80.12	48	eP	P	09 21 00.8	+0.9
	comp=Z,5.7nm,0.8s						
PV05	Paradox Valley	81.63	48	eP	P	09 21 09.3	+1.1
Y14A	Wickenburg	81.83	54	eP	P	09 21 09.6	+0.6
	comp=Z,58nm,1.8s						
WUAZ	Wupatki	81.88	52	eP	P	09 21 10.7	+1.3
	comp=Z,5.2nm,0.9s						
PV01	Paradox Valley	81.92	48	eP	P	09 21 10.5	+0.9
S22A	4UR Ranch, Cre	83.20	47	eP	P	09 21 18.3	+1.9
	comp=Z,5.6nm,1.2s						
X18A	Snowflake	83.41	52	eP	P	09 21 18.9	+1.5
	comp=Z,19nm,1.9s						
ANMO	Albuquerque	85.30	49	P	P	09 21 27.9	+0.9
	comp=Z,1.8nm,0.9s,baz=307,slow=4.1,SNR=5.7						
ANMO	Albuquerque	85.30	49	eP	P	09 21 28.5	+1.5
	comp=Z,3.8nm,1.1s						
TX31	Lajitas Ar. Si	90.84	52	eP	P	09 21 54.0	+0.5
TXAR	Lajitas Array	90.84	52	P	P	09 21 53.8	+0.3
	comp=Z,1.4nm,0.8s,baz=293,slow=3.2,SNR=11						
TKL	Tuckaleechee C	97.01	35	LR	LR	10 08 52.0	
	comp=Z,128nm,19.9s,baz=157,slow=37						
LPAZ	La Paz	147.44	59	PKPbc	PKPbc	09 28 34.7	-0.1
	comp=Z,2.1nm,0.7s,baz=341,slow=3.6,SNR=8.9						

IDC 05 09:17:01.9±3.3**, 54°.48N×87°.17E, h0**^{km}**, mb1 3.1**/2**, mb1mx2.9**/60**, mbtmp3.1**/2**, ML2.9**/2**, Error ellipse: s-maj=30.5km s-min=19.1km az=45.0, Southwestern Siberia**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
I46RU	ZALESOVO INFRA	1.48	250	i		09 26 10.0	
	baz=72,slow=330,SNR=3.2						
ZALV	Zalesovo Beam	1.48	250	Pg	Pn	09 17 27.4	-2.4
	2.6nm,0.3s,baz=66,slow=16,SNR=19						
ZALV				Lg	Lg	09 17 49.0	
	2.4nm,0.3s,baz=65,slow=28,SNR=9.0						
KURBB	Kurchatov Arra	6.53	237	Pn	Pn	09 18 40.0	+0.9
	0.1nm,0.3s,baz=54,slow=13,SNR=6.9						
MKAR	Makanchi Array	8.29	204	Pn	Pn	09 19 04.5	+1.1
	0.3nm,0.3s,baz=24,slow=12,SNR=11						

*IDC **05** 09:17:51.1±1.3, 11°.93N×86°.75W, h0^{km}, mb3.8/10, mb1 4.0/12, mb1mx3.8/42, mbtmp3.8/12, ML3.6/2, Error ellipse: s-maj=39.9km s-min=19.2km az=45.0*

*ISCJB **05** 09:17:53.4±0.7, 11°.35N±0°.06×87°.23W±0°.06, h49^{km},*

mb3.8/10, Error ellipse: s-maj=11.3km s-min=5.1km az=41.4

*CASC **05** 09:17:56.7±2.7, 11°.55N×87°.02W, h70km±43km, MD4.5, ML3.8*

ISC 05 09:17:55.2±0.8**, 11°.46N**±0°.07×**87°.11W**±0°.08**, h49km, n31, σ1ˢ.18**/31**, mb3.8**/10**, Near coast of Nicaragua**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
TISN	**Laguna Tiscapa**	**1.07**	**50**	*e*P	**Pn**	**09 18 14.8**	**+0.9**
MGAN	**Managua**	**1.09**	**51**	*e*P	**Pn**	**09 18 15.0**	**+0.9**
CNGN	**Cerro Negro**	**1.11**	**21**	*e*P	**Pn**	**09 18 15.1**	**+0.6**
TEL3	**Telica 3**	**1.14**	**13**	*e*P	**Pn**	**09 18 15.4**	**+0.6**
CRIN	**San Cristobal**	**1.24**	**3**	*e*P	**Pn**	**09 18 16.9**	**+0.7**
CRIN				AML	AML	09 18 49.2	
	comp=E,2μm,0.6s						
CSGN	**Cosiguina Volc**	**1.57**	**344**	*e*P	**Pn**	**09 18 20.8**	**0.0**
BOAB	**BOACO BROADBAN**	**1.72**	**55**	*e*P	**Pn**	**09 18 23.3**	**+0.6**
ESTN	**Estel**	**1.79**	**24**	*e*P	**Pn**	**09 18 24.8**	**+1.1**
VCR	**Vista de Mar**	**1.96**	**132**	*e*P	Pn	09 18 31.6	+5.4
VCR				*e*S	Sn	09 19 06.0	+16
VSM	**San Miguel**	**2.27**	**330**	*e*P	**Pn**	**09 18 31.1**	**+0.7**
JTS	**JuntasAbangare**	**2.42**	**118**	Pn	**Pn**	**09 18 32.2**	**0.0**
	comp=E,3.4nm,0.3s,baz=106,slow=22,SNR=30						
JTS				Sn	**Sn**	**09 19 02.1**	**+1.4**
	comp=E,20nm,0.3s,baz=274,slow=14,SNR=6.4						
JTS	**JuntasAbangare**	**2.42**	**118**	*e*P	**Pn**	**09 18 32.0**	**-0.3**
JCR	**Jicaral**	**2.53**	**129**	*e*P	Pn	09 18 42.0	+8.1
TGUH	**Tegucigalpa,Un**	**2.59**	**357**	*e*P	**Pn**	**09 18 35.9**	**+1.3**
ESPN	**Las Esperanzas**	**2.85**	**75**	*e*P	**Pn**	**09 18 39.1**	**+1.0**
QCR	**Quepos**	**3.53**	**125**	*e*P	**Pn**	**09 18 47.9**	**+0.3**
URSC	**Urasca**	**3.65**	**116**	*e*P	**Pn**	**09 18 51.4**	**+2.0**
BUS	**Buena Vista**	**3.80**	**120**	*e*P	**Pn**	**09 18 52.6**	**+0.9**
BUS				*e*S	**Sn**	**09 19 34.0**	**-1.3**
CMIG	**Matias Romero**	**9.39**	**308**	Pn	**Pn**	**09 20 07.7**	**-0.2**
	comp=E,2.0nm,0.3s,baz=137,slow=9.7,SNR=17						
TXAR	**Lajitas Array**	**23.55**	**321**	P	**P**	**09 23 03.0**	**+1.5**
	comp=E,1.8nm,0.7s,baz=135,slow=9.7,SNR=17						
TKL	**Tuckaleechee C**	**24.28**	**7**	P	**P**	**09 23 07.1**	**-0.8**
	comp=E,4.5nm,0.6s,baz=190,slow=11,SNR=7.7						
PDAR	**Pinedale Array**	**36.80**	**332**	P	**P**	**09 24 58.1**	**-0.5**
	comp=E,0.6nm,0.6s,baz=114,slow=9.4,SNR=6.1						
NVAR	**Mina Array Bea**	**38.67**	**319**	P	**P**	**09 25 15.9**	**+1.5**
	comp=E,0.3nm,0.7s,baz=103,slow=7.5,SNR=3.5						
ULM	**Lac du Bonnet**	**39.35**	**351**	P	**P**	**09 25 18.8**	**-0.9**
	comp=E,2.6nm,0.6s,baz=156,slow=6.5,SNR=5.5						
SCHQ	**Schefferville**	**46.13**	**16**	P	**P**	**09 26 12.9**	**-1.7**
	comp=E,2.8nm,0.9s,baz=213,slow=5.2,SNR=9.0						
FRB	**Frobisher Bay**	**53.84**	**10**	P	**P**	**09 27 10.4**	**-2.4**
	comp=E,0.7nm,0.4s,baz=198,slow=6.6,SNR=3.8						
YKA	**Yellowknife Ar**	**54.65**	**345**	P	**P**	**09 27 18.7**	**-0.1**
	comp=E,0.6nm,0.7s,baz=137,slow=7.6,SNR=24						
YKA				PcP	**PcP**	**09 28 22.3**	**+1.1**
	comp=E,0.1nm,0.5s,baz=144,slow=4.2,SNR=6.2						
RES	**Resolute Bay**	**63.36**	**358**	P	**P**	**09 28 17.8**	**-1.1**
	comp=E,0.5nm,0.7s,baz=199,slow=7.3,SNR=4.7						
ILAR	**Eielson Array**	**67.06**	**336**	P	**P**	**09 28 43.6**	**+0.5**
	comp=E,0.3nm,0.7s,baz=145,slow=4.3,SNR=4.2						
WRA	**Warramunga Arr**	**139.31**	**253**	PKP	PKPdf	09 37 23.2	+5.3
	comp=E,0.4nm,0.6s,baz=90,slow=2.5,SNR=6.9						
CMAR	**Chiang Mai Arr**	**149.68**	**349**	PKPbc	**PKPbc**	**09 37 42.7**	**+2.2**
	comp=E,0.7nm,0.4s,baz=348,slow=4.1,SNR=4.1						

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*ISCJB **05** 09:24:03.2±0.7, 37°.6N±0°.1×144°.8E±0°.1, h33km, mb3.4/6, Error ellipse: s-maj=18.5km s-min=8.8km az=153.4*

*IDC **05** 09:24:05.5±0.8, 37°.67N×144°.68E, h33km±6km, mb3.2/6, mb1 3.6/8, mb1mx3.3/62, mbtmp3.5/8, ML3.7/2, Error ellipse: s-maj=42.4km s-min=14.7km az=116.0*

ISC 05 09:24:05.3±0.8**, 37°.5N**±0°.1×**144°.8E**±0°.1**, h35km, n12, σ1ˢ.38**/14**, mb3.4**/6**, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
MJAR	**Matsushiro Arr**	**5.38**	**262**	Pn	**Pn**	**09 25 22.2**	**-0.7**
	2.8nm,0.3s,baz=86,slow=14,SNR=9.5						
MAT	**Matsushiro**	**5.38**	**262**	P	**Pn**	**09 25 22.4**	**-0.6**
MAT				S	**Sn**	**09 26 25.7**	**+2.0**
JHJ	**Hachijo jima 2**	**6.02**	**225**	Pn	**Pn**	**09 25 31.9**	**+0.1**
	5.4nm,0.3s,baz=225,slow=2.9,SNR=2.7						
JHJ				Sn	**Sn**	**09 26 36.5**	**-3.0**
	36nm,0.3s,baz=82,slow=24,SNR=6.8						
SEY	**Seymchan**	**25.86**	**8**	P	**P**	**09 29 32.5**	**-0.7**
	0.2nm,0.3s,baz=73,slow=19,SNR=3.0						
H11N2	**WAKE ISLAND Hy**	**26.16**	**127**	T	T	09 56 44.9	
	baz=318,slow=74,SNR=3.1						
H11N1	**WAKE ISLAND Hy**	**26.17**	**127**	T	T	09 56 49.6	
	baz=318,slow=74,SNR=4.1						
H11N3	**WAKE ISLAND Hy**	**26.18**	**127**	T	T	09 56 48.0	
	baz=318,slow=74,SNR=3.6						
ILAR	**Eielson Array**	**47.62**	**33**	P	**P**	**09 32 36.5**	**-0.9**
	0.4nm,0.7s,baz=254,slow=6.9,SNR=4.3						
ILAR				pP	**pP**	**09 32 47.5**	**-0.4**
	1.0nm,0.6s,baz=259,slow=6.5,SNR=6.2						
WRA	**Warramunga Arr**	**58.00**	**192**	P	**P**	**09 33 55.5**	**+1.0**
	0.8nm,0.5s,baz=11,slow=7.1,SNR=15						
WRA				pP	**pP**	**09 34 05.9**	**+0.8**
	0.6nm,0.5s,baz=11,slow=7.2,SNR=3.5						
ASAR	**Alice Springs**	**61.72**	**191**	P	**P**	**09 34 21.5**	**+1.5**
	0.2nm,0.7s,baz=13,slow=5.8,SNR=2.7						
YKA	**Yellowknife Ar**	**62.01**	**31**	P	**P**	**09 34 21.8**	**+0.3**
	0.2nm,0.7s,baz=302,slow=6.9,SNR=4.5						
YKA				pP	**pP**	**09 34 31.3**	**-0.9**
	0.3nm,0.7s,baz=298,slow=6.2,SNR=6.1						
PDAR	**Pinedale Array**	**75.37**	**47**	P	**P**	**09 35 46.2**	**+0.8**
	0.2nm,0.6s,baz=224,slow=2.5,SNR=2.6						

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*BUC **05** 09:24:26.2±0.7, 45°.04N×22°.34E, h3km, MD2.6/3, Error ellipse: s-maj=7.6km s-min=4.3km az=324.0*

*BEO **05** 09:24:26.7±0.4, 44°.98N×22°.30E, h0km, M1.7/6*

ISC 05 09:24:25.4±1.1**, 45°.00N**±0°.02×**22°.37E**±0°.02**, h9**km±11km**, n32, σ0ˢ.62**/47**, 10C-10D, Romania**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
GZR	**Gura Zlata**	**0.49**	**36**	⇓*i*P	**Pg**	**09 24 35.4**	**+0.5**
GZR	**Gura Zlata**	**0.49**	**36**	S	**Sb**	**09 24 43.0**	**-0.5**
GZR	**Gura Zlata**	**0.49**	**36**	⇓*i*P	**Pg**	**09 24 35.4**	**+0.5**
GZR				*i* S	**Sb**	**09 24 43.0**	**-0.5**
MDVR	**Moldovita**	**0.51**	**245**	⇓*i*P	**Pb**	**09 24 36.8**	**+0.2**
MDVR	**Moldovita**	**0.51**	**245**	⇓*i*P	**Pb**	**09 24 36.8**	**+0.2**
MDVR				*i* S	**Sb**	**09 24 44.3**	**+0.1**
KUBS	**Kucevo**	**0.77**	**220**	*e*Pg	**Pg**	**09 24 40.2**	**+0.1**
KUBS				*e*Sg	**Sg**	**09 24 50.0**	**-0.1**
BZS	**Buzias**	**0.81**	**320**	⇑*i*P	**Pb**	**09 24 41.6**	**-0.2**
BZS	**Buzias**	**0.81**	**320**	⇑*i*P	**Pb**	**09 24 41.6**	**-0.2**
BZS				*i* S	**Sb**	**09 24 53.3**	**+0.5**
BZS	**Buzias**	**0.81**	**320**	*e*Pg	**Pb**	**09 24 41.5**	**-0.2**
BZS				*e*Sg	**Sg**	**09 24 51.9**	**+0.2**
LOT	**Lotru**	**1.09**	**65**	⇑*i*P	**Pn**	**09 24 46.9**	**0.0**
LOT	**Lotru**	**1.09**	**65**	⇑*i*P	**Pn**	**09 24 46.9**	**0.0**
LOT				*i* S	**Sn**	**09 25 03.0**	**+0.8**
SIRR	**Siria**	**1.36**	**339**	⇑*i*P	**Pg**	**09 24 51.9**	**+0.4**
SIRR	**Siria**	**1.36**	**339**	⇑*i*P	**Pg**	**09 24 51.9**	**+0.4**
SIRR				*i* S	**Sg**	**09 25 09.1**	**-0.1**
TRUS	**Trudelj**	**1.60**	**242**	*e*Pg	**Pn**	**09 24 53.6**	**-0.3**
TRUS				*e*Sg	**Sb**	**09 25 15.5**	**+0.1**
GRUS	**Gruza**	**1.62**	**227**	*e*Pg	**Pn**	**09 24 54.5**	**+0.3**
GRUS				*e*Sg	**Sg**	**09 25 17.9**	**+0.4**
ARR	**Arges**	**1.64**	**76**	⇓*i*P	**Pg**	**09 24 57.2**	**+0.3**
ARR	**Arges**	**1.64**	**76**	⇓*i*P	**Pg**	**09 24 57.2**	**+0.3**
ARR				*i* S	**Sg**	**09 25 19.8**	**+1.6**
ZAPS	**Zavoj**	**1.73**	**174**	*e*Pg	**Pb**	**09 24 57.6**	**+0.2**
ZAPS				*e*Sg	**Sg**	**09 25 20.8**	**-0.3**
DRGR		**1.81**	**7**	⇑*i*P	**Pg**	**09 24 59.9**	**-0.1**
DRGR		**1.81**	**7**	⇑*i*P	**Pg**	**09 24 59.9**	**-0.1**
DRGR				*i* S	**Sg**	**09 25 23.1**	**-0.4**
DRGR		**1.81**	**7**	*e*Pn	**Pg**	**09 25 00.0**	**-0.1**
DRGR				*e*Sn	**Sg**	**09 25 22.8**	**-0.7**
CJR	**Cluj-Napoca**	**1.92**	**26**	⇓*i*P	**Pb**	**09 25 00.5**	**-0.1**
CJR	**Cluj-Napoca**	**1.92**	**26**	⇓*i*P	**Pb**	**09 25 00.5**	**-0.1**
DIVS	**Divibare**	**1.92**	**243**	*e*Pg	**Pb**	**09 25 00.0**	**-0.7**
VOIR		**1.94**	**76**	⇓*i*P	**Pb**	**09 25 01.8**	**+0.8**
VOIR		**1.94**	**76**	⇓*i*P	**Pb**	**09 25 01.8**	**+0.8**
VOIR				*i* S	**Sg**	**09 25 27.1**	**-0.8**
TEKS	**Tekeris**	**2.07**	**258**	*e*Pg	**Pb**	**09 25 02.2**	**-1.0**
IVAS	**Ivanjica**	**2.13**	**229**	*e*Pg	**Pb**	**09 25 04.3**	**+0.1**
BARS	**Barje**	**2.22**	**191**	*e*Pn	**Pb**	**09 25 05.1**	**-0.5**
BARS				*e*Sg	**Sg**	**09 25 35.7**	**-0.9**
BBLS	**Lazići**	**2.41**	**243**	*e*Pg	**Pb**	**09 25 08.7**	**-0.2**
MLR	**Muntele Rosu**	**2.57**	**78**	⇑*i*P	**Pb**	**09 25 10.1**	**-1.7**
MLR	**Muntele Rosu**	**2.57**	**78**	⇑*i*P	**Pb**	**09 25 10.1**	**-1.7**

IDC 05 09:24:56.0±2.0**, 2°.44N**×**125°.86E, h0km, mb3.4**/3**, mb1 3.7**/3**, mb1mx3.3**/57**, mbtmp3.4**/3**, Error ellipse: s-maj=183.8km s-min=24.5km az=65.0, Talaud Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**23.75**	**160**	P	P	09 30 09.4	-0.8
	1.1nm,0.5s,baz=338,slow=10,SNR=12						
ASAR	**Alice Springs**	**27.10**	**164**	P	P	09 30 41.6	+0.8
	0.3nm,0.5s,baz=339,slow=7.5,SNR=4.2						
MKAR	**Makanchi Array**	**58.12**	**326**	P	P	09 34 51.4	-0.1
	0.1nm,0.5s,baz=124,slow=8.3,SNR=3.6						

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*IDC **05** 09:30:01.2±1.3, 36°.74N×140°.60E, h0km, mb3.5/4, mb1 4.0/4, mb1mx3.4/67, mbtmp3.5/4, MS3.1/1, Ms1 3.1/1, ms1mx2.5/58, Error ellipse: s-maj=34.3km s-min=14.4km az=169.0*

*ISCJB **05** 09:30:02.2±0.6, 36°.76N±0°.04×140°.63E±0°.07, h13km±4km, mb3.5/4, Error ellipse: s-maj=10.1km s-min=4.9km az=31.2*

*JMA **05** 09:30:02.7, 36°.78N×140°.57E, h7km±1km, M3.4*
Broadband fault plane solution: P waves. NP1: ϕ_s327.00000°, δ50.00000°, λ-103.00000°. NP2: ϕ_s167.00000°, δ42.00000°, λ-75.00000°. Principal axes: T Plg4.0000°, Azm66.0000°; N Plg10.0000°, Azm335.0000°; P Plg79.0000°, Azm178.0000°;

JMA Felt II J1.

ISC 05 09:30:02.6±1.0**, 36°.79N**±0°.04×**140°.55E**±0°.07**, h8**km±8km**, n12, σ0ˢ.49**/17**, mb3.5**/4**, 5C, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
JHO	**Hitachi**	**0.18**	**175**	⇑P	**Pg**	**09 30 06.2**	**-0.1**
JHO				*e*S	**Sg**	**09 30 08.7**	**-0.1**
ONAJ	**Iwakimizuishiy**	**0.37**	**32**	⇑P	**Pg**	**09 30 09.9**	**0.0**
ONAJ				*e*S	**Sg**	**09 30 15.3**	**+0.5**
JSB	**Shiboa**	**0.54**	**290**	⇑P	**Pb**	**09 30 13.9**	**-0.3**
JSB				S	**Sb**	**09 30 21.6**	**-0.5**
JYT	**Yasato**	**0.63**	**207**	⇑P	**Pg**	**09 30 14.5**	**-0.2**
JYT				S	**Sg**	**09 30 23.1**	**+0.2**
JFK	**Kawauchi**	**0.63**	**24**	⇑P	**Pg**	**09 30 14.5**	**-0.3**
JFK				S	**Sg**	**09 30 23.2**	**+0.1**
MJAR	**Matsushiro Arr**	**1.90**	**263**	Pn	**Pn**	**09 30 35.7**	**+0.4**
	30nm,0.3s,baz=86,slow=15,SNR=178						
MJAR				Lg	Lg	09 31 00.9	
	25nm,0.3s,baz=82,slow=32,SNR=13						
MAT	**Matsushiro**	**1.90**	**263**	P	**Pn**	**09 30 35.8**	**+0.5**
MAT				S	**Sb**	**09 31 01.7**	**+0.3**
KSRS	**Korea Array**	**10.11**	**278**	LR	LR	09 36 37.6	
	comp=Z,108nm,18.5s,baz=168,slow=39						
KURBB	**Kurchatov Arra**	**45.61**	**308**	P	**P**	**09 38 23.5**	**+0.5**
	0.2nm,0.3s,baz=82,slow=7.8,SNR=3.3						
NVAR	**Mina Array Bea**	**75.69**	**53**	P	**P**	**09 41 49.4**	**+0.6**
	0.3nm,0.6s,baz=297,slow=5.6,SNR=4.0						
PDAR	**Pinedale Array**	**78.33**	**45**	P	**P**	**09 42 03.5**	**0.0**
	0.3nm,0.6s,baz=291,slow=2.8,SNR=3.2						
TXAR	**Lajitas Array**	**90.82**	**52**	P	**P**	**09 43 05.8**	**-1.0**
	0.3nm,0.9s,baz=298,slow=1.9,SNR=3.7						

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*ISCJB **05** 09:31:22.5±0.6, 36°.78N±0°.04×140°.61E±0°.05, h10km±4km, mb3.6/11, Error ellipse: s-maj=7.7km s-min=6.0km az=40.9*

*JMA **05** 09:31:22.7, 36°.78N×140°.56E, h7km±1km, M3.6*

JMA Felt II J1.

*IDC **05** 09:31:22.3±0.9, 36°.76N×140°.55E, h0km, mb3.6/10, mb1 3.9/11, mb1mx3.6/69, mbtmp3.6/11, ML1.8/1, Error ellipse: s-maj=24.3km s-min=12.7km az=164.0*

ISC 05 09:31:23.2±1.2**, 36°.78N**±0°.04×**140°.59E**±0°.05**, h5**km±8km**, n23, σ0ˢ.94**/21**, mb3.6**/11**, 3C, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
JHO	**Hitachi**	**0.17**	**185**	⇑P	**Pg**	**09 31 26.2**	**-0.3**
JHO				S	**Sg**	**09 31 29.1**	**+0.4**
ONAJ	**Iwakimizuishiy**	**0.37**	**28**	⇑P	**Pg**	**09 31 29.9**	**-0.4**
ONAJ				S	**Sg**	**09 31 35.3**	**+0.1**
JSB	**Shiboa**	**0.57**	**290**	⇑P	**Pg**	**09 31 33.9**	**-0.2**
JSB				S	**Sg**	**09 31 41.8**	**+0.3**
MJAR	**Matsushiro Arr**	**1.93**	**264**	Pn	**Pn**	**09 31 55.9**	**-0.7**
	19nm,0.3s,baz=90,slow=13,SNR=13						
MJAR				Lg	Lg	09 32 20.2	
	22nm,0.3s,baz=83,slow=29,SNR=13						
MAT	**Matsushiro**	**1.93**	**264**	P	**Pn**	**09 31 56.2**	**-0.4**
MAT				S	**Sb**	**09 32 22.1**	**-1.0**
USRK	**Ussuriysk Ar.**	**9.89**	**321**	Pn	**Pn**	**09 33 46.8**	**+0.9**
	0.1nm,0.3s,baz=141,slow=16,SNR=2.6						
MA2	**Magadan**	**23.75**	**13**	P	**P**	**09 36 37.4**	**+1.3**
	1.1nm,0.3s,baz=262,slow=5.4,SNR=4.7						
SEY	**Seymchan**	**27.18**	**12**	P	**P**	**09 37 09.0**	**+1.8**
	0.9nm,0.7s,baz=176,slow=7.2,SNR=4.4						
H11N2	**WAKE ISLAND Hy**	**28.59**	**119**	T	T	10 07 06.8	
	baz=313,slow=75,SNR=13						
H11N1	**WAKE ISLAND Hy**	**28.60**	**119**	T	T	10 07 06.9	
	baz=313,slow=75,SNR=13						
H11N3	**WAKE ISLAND Hy**	**28.61**	**119**	T	T	10 07 07.8	
	baz=313,slow=75,SNR=12						
H11S1	**WAKE ISLAND Hy**	**29.29**	**121**	T	T	10 07 58.0	
	baz=314,slow=76,SNR=54						
H11S3	**WAKE ISLAND Hy**	**29.29**	**121**	T	T	10 07 56.6	
	baz=314,slow=76,SNR=32						
H11S2	**WAKE ISLAND Hy**	**29.30**	**121**	T	T	10 07 58.6	
	baz=314,slow=76,SNR=34						
MKAR	**Makanchi Array**	**43.69**	**302**	P	**P**	**09 39 29.1**	**+0.2**
	0.3nm,0.7s,baz=90,slow=7.8,SNR=3.3						
KURBB	**Kurchatov Arra**	**45.64**	**308**	P	**P**	**09 39 42.5**	**-1.9**
	0.3nm,0.3s,baz=82,slow=7.8,SNR=5.1						
ILAR	**Eielson Array**	**50.07**	**32**	P	**P**	**09 40 17.9**	**-0.6**
	0.6nm,0.8s,baz=264,slow=6.3,SNR=5.7						
WRA	**Warramunga Arr**	**56.72**	**187**	P	**P**	**09 41 08.6**	**+0.7**
	0.7nm,0.9s,baz=5.9,slow=7.5,SNR=2.7						
GEYT	**Alibeck**	**63.38**	**299**	P	**P**	**09 41 54.9**	**+1.3**
	3.3nm,0.4s,baz=21,slow=13,SNR=4.5						
YKA	**Yellowknife Ar**	**64.36**	**30**	P	**P**	**09 41 59.3**	**-0.3**
	0.1nm,0.7s,baz=304,slow=6.7,SNR=5.1						
NVAR	**Mina Array Bea**	**75.67**	**53**	P	**P**	**09 43 09.2**	**-0.6**
	0.4nm,0.7s,baz=316,slow=3.8,SNR=3.4						
PDAR	**Pinedale Array**	**78.32**	**45**	P	**P**	**09 43 24.1**	**-0.5**
	0.4nm,0.7s,baz=259,slow=5.6,SNR=3.5						
TXAR	**Lajitas Array**	**90.80**	**52**	P	**P**	**09 44 27.3**	**-0.6**
	0.4nm,0.8s,baz=298,slow=4.3,SNR=4.8						

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*IDC **05** 09:34:18.6±0.6, 3°.32S×130°.71E, h0km, mb4.3/18, mb1 4.4/22, mb1mx4.2/58, mbtmp4.3/22, ML3.8/3, MS3.9/10, Ms1 3.9/10, ms1mx3.4/52, Error ellipse: s-maj=23.1km s-min=12.7km az=75.0*

*ISCJB **05** 09:34:21.6±0.2, 3°.34S±0°.03×130°.73E±0°.04, h31km, mb4.3/27, MS3.9/8, Error ellipse: s-maj=5.3km s-min=4.0km az=166.0*

*DJA **05** 09:34:23.4±1.7, 3°S±3°×13°1E±°, h35km±20km, M4.6/11, mb4.8/9, mB5.5/4, MLv4.5/11, Mw(mB)4.9/4*

*NEIC **05** 09:34:24.1±0.4, 3°.35S×130°.62E, h35km, mb4.4/13, Error ellipse: s-maj=9.5km s-min=6.2km az=59.0*

ISC 05 09:34:23.3±0.4**, 3°.31S**±0°.04×**130°.75E**±0°.04**, h31km, n78, σ1ˢ.47**/78**, mb4.4**/27**, MS3.9**/8**, Seram**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
BNDI	**Bandanaira**	**1.47**	**215**	P	**Pb**	**09 34 49.2**	**-0.9**
FAKI	**Fak Fak**	**1.54**	**75**	P	**Pb**	**09 34 50.3**	**-1.0**
FAKI				S	**Sn**	**09 35 05.3**	**-2.4**
FAKI	**Fak Fak**	**1.54**	**75**	*e*Pn	**Pb**	**09 34 51.1**	**-0.2**
MSAI	**Masohi**	**1.82**	**269**	P	**Pn**	**09 34 52.6**	**+0.1**
SIJI	**Sorong**	**2.48**	**12**	Pn	**Pn**	**09 35 01.8**	**+0.2**
	16nm,0.3s,baz=0.0,slow=20,SNR=2.2						
SIJI				Sn	**Sn**	**09 35 32.4**	**+1.5**
	20nm,0.3s,baz=89,slow=24,SNR=7.6						
SWI	**Sorong**	**2.48**	**12**	P	**Pn**	**09 35 00.8**	**-0.9**
NLAI	**Namlea**	**3.65**	**271**	P	**Pn**	**09 35 17.0**	**-0.7**
RKPI	**Ransiki, Papua**	**3.86**	**62**	P	**Pn**	**09 35 21.0**	**+0.4**
LBMI	**Labuha**	**4.20**	**309**	P	**Pn**	**09 35 22.5**	**-2.7**
SANI	**Sanana**	**4.92**	**285**	P	**Pn**	**09 35 33.9**	**-1.3**
LUWI	**Luwuk**	**8.29**	**286**	P	**Pn**	**09 36 18.4**	**-3.1**
	63nm,0.8s,3μm						
LUWI	**Luwuk**	**8.29**	**286**	*e*Pn	**Pn**	**09 36 18.3**	**-3.1**
SOEI	**Soe**	**9.08**	**225**	P	**Pn**	**09 36 34.7**	**+2.2**
	69nm,1.1s,2μm						
APSI	**Ampana**	**9.40**	**284**	P	**Pn**	**09 36 34.5**	**-2.3**
	127nm,0.9s,1μm						
KDU	**Kakadu**	**9.47**	**170**	P	**Pn**	**09 36 37.3**	**-0.3**
	baz=9.5,SNR=8.3						
MTN	**Manton Dam**	**9.48**	**178**	P	**Pn**	**09 36 37.1**	**-0.7**
	baz=9.5,SNR=33						
MTN	**Manton Dam**	**9.48**	**178**	*e*Pn	**Pn**	**09 36 37.4**	**-0.4**
MRSI	**Marisa**	**9.58**	**293**	P	**Pn**	**09 36 36.9**	**-2.3**
	44nm,1.2s,5μm						
KAPI	**Kappang**	**11.10**	**261**	Pn	**Pn**	**09 37 02.8**	**+2.8**
	1.1nm,0.3s,baz=87,slow=4.5,SNR=11						
KAPI				LR	LR	09 42 12.0	
	comp=Z,871nm,21.3s,baz=100,slow=43						
DAV	**Davao City (W)**	**11.53**	**333**	LR	LR	09 42 26.7	
	comp=Z,650nm,20.0s,baz=122,slow=42						
MYLDM	**Lahad Datu**	**14.87**	**305**	*e*Pn	**P**	**09 37 55.0**	**-1.9**
FITZ	**Fitzroy Crossi**	**15.53**	**198**	Pn	**Pn**	**09 37 56.9**	**-3.3**
	0.2nm,0.3s,baz=337,slow=15,SNR=2.5						
FITZ				LR	LR	09 44 34.3	
	comp=Z,370nm,22.0s,baz=23,slow=40						
FITZ	**Fitzroy Crossi**	**15.53**	**198**	*e*Pn	**Pn**	**09 38 01.6**	**+1.4**
BBKI	**Banjar Baru**	**15.88**	**269**	P	**P**	**09 38 10.4**	**+2.2**
COEN	**Coen**	**16.20**	**132**	*e*Pn	**Pn**	**09 38 09.0**	**+0.2**
	23nm,1.1s						
WRAB	**Tennant Creek**	**16.89**	**168**	*e*P	**Pn**	**09 38 16.8**	**-0.8**
	20nm,0.7s						
WRAB				*e*S	**S**	**09 41 33.5**	**-0.6**
WRA	**Warramunga Arr**	**16.90**	**168**	Pn	**Pn**	**09 38 15.1**	**-2.5**
	0.6nm,0.3s,baz=353,slow=13,SNR=16						
WRA				Sn	Sn	09 41 13.7	-11
	0.2nm,0.3s,baz=346,slow=22,SNR=4.7						
WB2	**Warramunga Arr**	**16.90**	**168**	*e*Pn	**Pn**	**09 38 16.3**	**-1.3**
	23nm,0.9s						
WB2				*e*Sn	**Sn**	**09 41 19.5**	**-5.2**
PMG	**Port Moresby**	**17.39**	**111**	P	**Pn**	**09 38 23.2**	**-0.5**
	0.3nm,0.3s,baz=304,slow=3.9,SNR=4.6						
PMG	**Port Moresby**	**17.39**	**111**	*e*P	**P**	**09 38 25.6**	**+0.8**
	9.4nm,0.7s						
MTSU	**Mount Surprise**	**19.84**	**139**	P	**Pn**	**09 38 54.2**	**+0.7**
	baz=20,SNR=13						
AS31	**Alice Springs**	**20.46**	**172**	*e*P	**P**	**09 38 59.1**	**+0.6**
	13nm,0.8s						
ASAR	**Alice Springs**	**20.46**	**172**	P	**P**	**09 38 58.3**	**-0.3**
	24nm,0.7s,baz=350,slow=10,SNR=106						
ASAR				S	**S**	**09 42 47.9**	**+1.7**
	4.2nm,1.0s,baz=356,slow=28,SNR=4.6						
AS01	**Alice Springs**	**20.47**	**172**	*e*P	**P**	**09 38 59.3**	**+0.7**
KSM	**Kuching**	**20.98**	**283**	*e*P	**P**	**09 39 03.5**	**-0.7**
	38nm,1.1s						
WRKA	**Warakurna**	**21.73**	**186**	P	**P**	**09 39 10.6**	**-1.6**
	baz=22,SNR=12						
CTA	**Charters Tower**	**22.51**	**139**	P	**P**	**09 39 21.9**	**+1.3**
	11nm,0.7s,baz=316,slow=11,SNR=8.2						
CTAO	**Charters Tower**	**22.51**	**139**	*e*P	**P**	**09 39 22.2**	**+1.5**
	7.4nm,0.6s						
LEM	**Lembang**	**23.30**	**260**	LR	LR	09 50 03.6	
	comp=Z,611nm,21.7s,baz=180,slow=41						
QLP	**Quilpie**	**26.50**	**152**	P	**P**	**09 40 00.3**	**+2.1**
	baz=27,SNR=4.4						
BBOO	**Buckleboo**	**29.76**	**171**	*e*P	**P**	**09 40 27.1**	**-0.1**
	6.5nm,0.7s						
STKA	**Stephens Creek**	**30.19**	**161**	P	**P**	**09 40 30.3**	**-0.7**
	1.3nm,0.7s,baz=340,slow=8.9,SNR=4.8						
CMSA	**Cobar Meteorol**	**31.41**	**155**	P	**P**	**09 40 44.2**	**+2.5**
	baz=32						
PSI	**Prapat**	**32.39**	**280**	P	**P**	**09 40 50.7**	**0.0**
	5.2nm,0.8s,baz=176,slow=7.2,SNR=3.6						
YNG	**Young**	**34.93**	**154**	P	**P**	**09 41 14.5**	**+2.0**
	baz=35						
MGCD	**Mangrove Creek**	**35.31**	**150**	P	**P**	**09 41 17.8**	**+2.0**
	baz=36						
JNU	**Nakatsue**	**36.24**	**0**	LR	LR	09 55 35.7	
	comp=Z,161nm,20.3s,baz=126,slow=35						
CMAR	**Chiang Mai Arr**	**38.07**	**306**	P	**P**	**09 41 39.6**	**+0.1**
	0.9nm,0.3s,baz=132,slow=7.3,SNR=9.2						
KMI	**Kunming**	**39.22**	**318**	P	**P**	**09 41 51.3**	**+2.0**
KMI				pmax	pmax		
	comp=Z,16nm,0.7s						
KMI				pmax	pmax		
	comp=Z,100nm,4.2s						
MJAR	**Matsushiro Arr**	**40.25**	**9**	LR	LR	09 57 32.3	
	comp=Z,149nm,20.8s,baz=210,slow=35						
KSRS	**Korea Array**	**40.64**	**357**	P	**P**	**09 41 59.8**	**-0.8**
	comp=Z,2.1nm,0.7s,baz=176,slow=9.5,SNR=10						
KSRS				LR	LR	09 57 52.6	
	comp=Z,126nm,20.9s,baz=164,slow=35						
KS01	**Wonju Array Si**	**40.67**	**357**	*e*P	**P**	**09 42 00.8**	**0.0**
CD2	**Chengdu**	**42.67**	**325**	P	**P**	**09 42 17.2**	**-0.2**
CD2				pmax	pmax		
	comp=Z,1.0nm,0.5s						
USRK	**Ussuriysk Ar.**	**47.31**	**1**	P	**P**	**09 42 54.4**	**+0.3**
	comp=Z,3.0nm,0.8s,baz=186,slow=5.5,SNR=10						
HHC	**Hu-ho-hao-te**	**47.32**	**340**	*e*P	**P**	**09 42 55.8**	**+1.5**
HHC				pP	sP	09 43 11.5	+4.1
HHC				sP	pP	09 43 18.5	+15
HHC				S	**S**	**09 49 45.2**	**-0.9**
HHC				sS	sS	09 50 11.8	+10
HHC				pmax	pmax		
	comp=Z,18nm,0.8s						
HHC				pmax	pmax		
	comp=Z,150nm,8.3s						
HHC				LR	LR		
	comp=N,100nm,17.7s						
HHC				LR	LR		
	comp=E,360nm,15.9s						
HHC				LR	LR		
	comp=Z,120nm,16.2s						
KLR	**Kul'dur**	**52.34**	**1**	P	**P**	**09 43 32.1**	**0.0**
	comp=Z,3.0nm,0.8s,baz=192,slow=4.2,SNR=8.5						
RPZ	**Rata Peaks**	**53.73**	**144**	LR	LR	10 08 35.4	
	comp=Z,90nm,18.2s,baz=302,slow=38						
URZ	**Urewera**	**54.70**	**136**	LR	LR	10 07 59.1	
	comp=Z,107nm,18.0s,baz=301,slow=37						
ULN	**Ulaanbaatar**	**55.03**	**341**	*e*P	**P**	**09 43 52.6**	**+0.5**
	comp=Z,3.5nm,0.7s						
SONM	**Songino Array**	**55.23**	**340**	P	**P**	**09 43 53.7**	**+0.2**
	comp=Z,1.9nm,0.8s,baz=174,slow=7.5,SNR=6.9						
SONA1	**Songino Array**	**55.23**	**340**	*e*P	**P**	**09 43 53.9**	**+0.3**
WMQ	**Urumqi**	**60.76**	**326**	*e*P	**P**	**09 44 32.7**	**+0.3**
WMQ				pmax	pmax		
	comp=Z,2.0nm,0.6s						
MA2	**Magadan**	**64.66**	**11**	P	**P**	**09 44 58.5**	**+0.6**
	comp=Z,1.0nm,0.4s,baz=271,slow=7.5,SNR=4.5						
MK31	**Makanchi Array**	**65.60**	**326**	*e*P	**P**	**09 45 04.5**	**+0.2**
MKAR	**Makanchi Array**	**65.60**	**326**	P	**P**	**09 45 04.4**	**+0.1**
	comp=Z,3.4nm,0.7s,baz=120,slow=8.3,SNR=36						
SEY	**Seymchan**	**68.07**	**10**	P	**P**	**09 45 19.8**	**+0.1**
	comp=Z,2.5nm,0.8s,baz=209,slow=5.7,SNR=16						
ZALV	**Zalesovo Beam**	**68.64**	**333**	P	**P**	**09 45 22.5**	**-1.0**
	comp=Z,1.6nm,0.7s,baz=91,slow=5.8,SNR=4.6						
KURBB	**Kurchatov Arra**	**69.80**	**328**	P	**P**	**09 45 30.7**	**0.0**
	comp=Z,3.0nm,0.8s,baz=129,slow=5.6,SNR=23						
KURK	**Kurchatov**	**69.80**	**328**	*e*P	**P**	**09 45 30.7**	**0.0**
	comp=Z,8.9nm,0.8s						
BVAR	**Borovoye Array**	**75.38**	**327**	P	**P**	**09 46 03.8**	**0.0**
	comp=Z,2.6nm,0.8s,baz=114,slow=6.6,SNR=9.7						
MAW	**Mawson**	**78.64**	**201**	P	**P**	**09 46 22.4**	**+0.5**
	comp=Z,4.3nm,1.1s,baz=84,slow=2.6,SNR=3.7						
ABKAR	**Akbulak array**	**80.12**	**321**	*e*P	**P**	**09 46 30.8**	**+0.5**
	comp=Z,2.7nm,0.8s						
AKTO	**Aktyubinsk**	**81.64**	**322**	P	**P**	**09 46 39.0**	**+0.5**
	comp=Z,0.9nm,0.7s,baz=115,slow=7.2,SNR=5.5						
AKTO				LR	LR	10 27 28.6	
	comp=Z,62nm,19.0s,baz=298,slow=39						
QSPA	**South Pole Qui**	**86.64**	**180**	*e*P	**P**	**09 47 03.9**	**+0.1**
	comp=Z,13nm,1.0s						
RAYN	**Ar Rayn**	**86.95**	**294**	*e*P	**P**	**09 47 06.6**	**+0.5**
	comp=Z,5.7nm,1.0s						
ILAR	**Eielson Array**	**89.71**	**25**	P	**P**	**09 47 17.6**	**-0.7**
	comp=Z,0.3nm,0.7s,baz=264,slow=4.2,SNR=3.2						
TORD	**Torodi Ar. Bea**	**128.74**	**284**	PKP	**PKPdf**	**09 53 28.6**	**-0.1**
	comp=Z,0.9nm,0.6s,baz=48,slow=2.0,SNR=5.7						
CPUP	**Villa Florida**	**149.51**	**166**	PKPbc	**PKPbc**	**09 54 10.9**	**+0.5**
	comp=Z,3.3nm,1.0s,baz=169,slow=4.3,SNR=3.4						

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*ISCJB **05** 09:50:11.9±0.6, 47°.08N±0°.07×152°.7E±0°.1, h100km, mb3.9/16, Error ellipse: s-maj=13.7km s-min=4.8km az=136.2*

*MOS **05** 09:50:14.7±1.1, 47°.19N×152°.48E, h132km, mb4.0/10, Error ellipse: s-maj=14.8km s-min=8.6km az=72.6*

*SKHL **05** 09:50:14.9±0.3, 47°.02N×152°.71E, h124km±4km, mb4.9/2, msh5.3/4*

*IDC **05** 09:50:16.4±2.7, 47°.25N×152°.38E, h126km±23km, mb3.6/17, mb1 3.7/22, mb1mx3.5/71, mbtmp4.0/22, Error*

ellipse: s-maj=19.1km s-min=12.8km az=129.0

ISC 05 09:50:13.3±0.8, 47.11N±0.09×152.67E±0.09, h100km, n44, σ1.79/48, mb4.0/16, 5C-2D, Kuril Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
KUR	Kuril'sk	3.83	242	iP	Pn	09 51 12.0	+1.9
KUR				AMB	AMB	09 51 13.2	
	60nm,0.4s						
KUR				iS	Sn	09 51 55.0	+0.9
KUR				A	A	09 51 59.0	
	100nm,0.6s						
KUR				A	A	09 51 59.0	
	70nm,0.6s						
KUR	Kuril'sk	3.83	242⇑	iPN	Pn	09 51 12.6	+2.5
KUR				iS	Sn	09 51 57.0	+2.9
KUR				smax	smax		
	comp=E,18nm,0.1s						
KUR				smax	smax		
	comp=N,74nm,0.3s						
SKR	Severo-Kuril's	4.24	31	eP	Pn	09 51 18.0	+2.4
SKR				AMB	AMB	09 51 21.5	
	comp=N,110nm,0.7s						
SKR				eS	Sn	09 52 04.7	+0.8
SKR				A	A	09 52 10.5	
	comp=N,30nm,0.2s						
SKR				A	A	09 52 10.5	
	comp=N,60nm,0.2s						
SKR	Severo-Kuril's	4.24	31	ePN	Pn	09 51 18.0	+2.4
SKR				pmax	pmax		
	comp=Z,30nm,0.5s						
SHO	Shikotan	5.23	234	eP	Pn	09 51 29.9	+0.8
SHO				iS	Sn	09 52 25.9	-2.2
SHO				A	A	09 52 31.3	
	comp=Z,60nm,0.5s						
SHO				A	A	09 52 31.3	
	comp=Z,80nm,0.5s						
SHO	Shikotan	5.23	234⇑	iPN	Pn	09 51 28.3	-0.8
SHO				iS	Sn	09 52 24.1	-4.0
SHO				smax	smax		
	comp=N,57nm,0.7s						
SHO				smax	smax		
	comp=E,73nm,0.5s						
YUK	Yuzh-Kuril'sk	5.68	240	eP	Pn	09 51 37.6	+2.4
YUK				iS	Sn	09 52 39.7	+0.6
YUK				A	A	09 52 45.7	
	comp=E,50nm,0.4s						
YUK				A	A	09 52 45.7	
	comp=E,60nm,0.4s						
YUK	Yuzh-Kuril'sk	5.68	240⇑	iPN	Pn	09 51 37.0	+1.8
YUK				iS	Sn	09 52 40.1	+1.0
YUK				smax	smax		
	comp=E,59nm,0.4s						
YUK				smax	smax		
	comp=N,48nm,0.5s						
YSS	Yuzh-Sakhalins	6.78	272	eP	Pn	09 51 53.4	+3.3
YSS	Yuzh-Sakhalins	6.78	272	ePN	Pn	09 51 54.0	+3.9
PETK	Petropavlovsk-	6.82	26	P	Pn	09 51 53.4	+2.8
	comp=N,0.2nm,0.3s,baz=210,slow=11,SNR=2.8						
TYV	Tymovskoe	7.58	303	eP	Pn	09 52 04.2	+3.2
MA2	Magadan	12.54	356	P	Pn	09 53 08.4	+0.5
	baz=230,slow=9.4,SNR=2.2						
KLR	Kul'dur	14.12	286	P	Pn	09 53 29.0	+0.4
	comp=N,0.1nm,0.3s,baz=163,slow=9.9,SNR=2.1						
USRK	Ussuriysk Ar.	14.75	266	P	Pn	09 53 37.5	+0.8
	comp=N,0.2nm,0.3s,baz=72,slow=13,SNR=4.5						
SEY	Seymchan	15.86	360	P	Pn	09 53 48.8	-1.7
	comp=N,0.6nm,0.3s,baz=186,slow=11,SNR=19						
KSRS	Korea Array	20.62	251	P	P	09 54 44.5	0.0
	comp=N,2.0nm,0.7s,baz=61,slow=10,SNR=10						
H11N2	WAKE ISLAND Hy	29.68	152	T	T	10 27 49.0	
	baz=340,slow=76,SNR=163						
H11N1	WAKE ISLAND Hy	29.69	152	T	T	10 27 56.8	
	baz=340,slow=76,SNR=172						
H11N3	WAKE ISLAND Hy	29.69	152	T	T	10 27 50.4	
	baz=340,slow=76,SNR=96						
INK	Inuvik	41.51	33	P	P	09 57 50.6	+0.5
	comp=N,0.3nm,0.4s,baz=304,slow=5.4,SNR=4.2						
MKAR	Makanchi Array	46.51	297	P	P	09 58 29.1	-1.3
	comp=N,1.1nm,0.7s,baz=66,slow=7.9,SNR=11						
RES	Resolute Bay	50.59	19	P	P	09 59 01.7	+0.5
	comp=N,0.9nm,0.5s,baz=126,slow=2.2,SNR=11						
YKA	Yellowknife Ar	50.82	37	P	P	09 59 03.7	+0.7
	comp=N,0.1nm,0.4s,baz=299,slow=6.9,SNR=3.2						
CMAR	Chiang Mai Arr	52.16	256	P	P	09 59 12.9	-0.7
	comp=N,1.5nm,0.3s,baz=43,slow=7.9,SNR=5.1						
CMAR	Chiang Mai Arr	52.16	256	eP	P	09 59 13.0	-0.7
CMAR	Chiang Mai Arr	52.16	256	P	P	09 59 13.0	-0.7
CMAR				pmax	pmax		
	comp=Z,1.0nm,0.3s						
SPITS	Spitsbergen Ar	52.21	350	P	P	09 59 11.1	-2.2
	comp=Z,4.9nm,1.0s,baz=58,slow=7.9,SNR=9.9						
ARU	Arti	54.55	317	P	P	09 59 28.0	-2.6
	comp=Z,1.5nm,0.3s,baz=31,slow=2.9,SNR=4.4						
ARU	Arti	54.55	317	P	P	09 59 28.0	-2.6
ARU				pmax	pmax		
	comp=Z,2.0nm,0.3s						
FINES	FINESS Array B	63.59	334	P	P	10 00 31.0	-1.8
	comp=Z,3.3nm,0.7s,baz=41,slow=6.7,SNR=11						
NB2	NORSAR Subarra	67.79	341	P	P	10 00 59.5	-0.4
	comp=Z,1.7nm,0.6s,baz=28,slow=6.5						
NOA	NORSAR Array B	67.79	341	P	P	10 00 59.6	-0.4
	comp=Z,3.2nm,0.8s,baz=29,slow=6.5,SNR=9.0						
HFS	Hagfors	68.02	339	P	P	10 01 00.9	-0.4
	comp=Z,3.7nm,0.4s,baz=55,slow=5.6,SNR=23						
WRA	Warramunga Arr	68.75	199	P	P	10 01 06.1	-0.2
	comp=Z,0.4nm,0.9s,baz=14,slow=7.1,SNR=2.1						
AKASG	Malin Array Be	71.08	326	P	P	10 01 19.2	-1.1
	comp=Z,2.3nm,0.4s,baz=34,slow=6.3,SNR=5.5						
ASAR	Alice Springs	72.45	198	P	P	10 01 29.9	+1.1
	comp=Z,0.7nm,0.8s,baz=14,slow=5.2,SNR=6.4						
BURAR	Bucovina Array	75.12	326⇓	iP	P	10 01 44.4	+0.1
MLR	Muntele Rosu	76.60	325⇓	iP	P	10 01 53.8	+1.0
VOIR		77.00	325⇑	iP	P	10 01 55.4	+0.5
TXAR	Lajitas Array	77.58	60	P	P	10 01 59.1	+0.6
	comp=Z,0.3nm,0.6s,baz=312,slow=3.1,SNR=3.5						
GZR	Gura Zlata	77.91	326⇑	iP	P	10 01 59.5	-0.5
BRTR	Keskin Array B	77.92	316	P	P	10 01 59.8	-0.5
	comp=Z,1.7nm,0.9s,baz=36,slow=6.0,SNR=6.5						
GERES	GERESS Array B	78.00	334	P	P	10 01 59.3	-1.2
	comp=Z,0.6nm,0.4s,baz=333,slow=1.5,SNR=4.1						

IDC 05 09:50:36.9±1.1, 41.86S×84.06W, h0km, mb3.8/6, mb1 4.0/7, mb1mx3.8/35, mbtmp3.7/7, ML3.3/1, Error ellipse: s-maj=38.5km s-min=27.8km az=99.0, West Chile Rise

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
PLCA	Paso Flores	10.23	88	Pn	Pn	09 53 06.0	+0.9
	0.1nm,0.3s,baz=243,slow=16,SNR=2.8						
LPAZ	La Paz	28.94	33	P	P	09 56 37.9	-0.7
	1.5nm,0.7s,baz=204,slow=9.1,SNR=3.8						
VNDA	Vanda	54.37	194	P	P	10 00 04.6	-0.2
	0.8nm,0.6s,baz=116,slow=9.3,SNR=4.0						
TXAR	Lajitas Array	73.12	342	P	P	10 02 09.4	+0.4
	0.5nm,0.8s,baz=160,slow=8.6,SNR=3.2						
ANMO	Albuquerque	79.15	341	P	P	10 02 44.4	+1.0
	1.8nm,1.1s,baz=152,slow=11,SNR=4.7						
NVAR	Mina Array Bea	85.79	334	P	P	10 03 18.0	-0.1
	0.4nm,0.8s,baz=223,slow=5.7,SNR=4.2						
PDAR	Pinedale Array	87.32	341	P	P	10 03 24.6	-0.9
	0.2nm,0.7s,baz=152,slow=4.1,SNR=2.4						

IDC 05 09:55:12.0±1.2, 12.08N×86.75W, h0km, mb3.7/6, mb1 4.0/8, mb1mx3.7/48, mbtmp3.7/8, ML3.7/1, MS3.1/1, Ms1 3.1/1, ms1mx2.7/35, Error ellipse: s-maj=45.9km s-min=19.7km az=59.0, Nicaragua

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
JTS	JuntasAbangare	2.50	135	Pn	Pn	09 55 54.1	+0.1
	baz=122,slow=19,SNR=1.8						
JTS				Sn	Sn	09 56 21.9	-3.4
	16nm,0.3s,baz=258,slow=20,SNR=3.2						
CMIG	Matias Romero	9.32	303	Pn	Pn	09 57 27.8	+0.2
	0.8nm,0.3s,baz=128,slow=9.0,SNR=10						
SJG	San Juan	20.77	71	LR	LR	10 08 45.0	
	comp=Z,54nm,18.9s,baz=271,slow=39						
TXAR	Lajitas Array	23.30	320	P	P	10 00 21.6	-0.1
	0.6nm,0.5s,baz=134,slow=11,SNR=6.2						
H06E1	SOCORRO T-PHAS	24.22	289	T	T	10 25 18.9	
	SNR=7.3						
PDAR	Pinedale Array	36.42	331	P	P	10 02 19.3	+0.6
	0.4nm,0.8s,baz=129,slow=7.1,SNR=2.7						
ULM	Lac du Bonnet	38.79	351	P	P	10 02 38.1	-0.2
	1.8nm,0.6s,baz=163,slow=9.0,SNR=3.7						
SCHQ	Schefferville	45.44	16	P	P	10 03 32.7	+0.1
	1.4nm,0.6s,baz=211,slow=12,SNR=4.2						
YKA	Yellowknife Ar	54.15	344	P	P	10 04 37.8	-0.9
	0.4nm,0.7s,baz=140,slow=7.2,SNR=6.3						
PLCA	Paso Flores	54.64	165	P	P	10 04 42.6	-0.1
	2.8nm,1.0s,baz=13,slow=8.5,SNR=3.4						

BJI 05 09:57:06.7, 10.21S×160.81E, h28km, mb4.7/27, mB5.1/22, Ms5.1/10, Ms7 4.8/8

ISCJB 05 09:57:12.5±0.8, 9.56S±0.06×159.63E±0.05, h27km±5km, mb4.8/77, MS3.9/7, Error ellipse: s-maj=10.6km s-min=7.1km az=154.9

MOS 05 09:57:12.3±0.8, 9.51S×159.66E, h26km, mb5.2/12, Error ellipse: s-maj=11.3km s-min=9.3km az=58.4

NEIC 05 09:57:13.7±0.8, 9.59S×159.73E, h26km±5km, mb5.1/41, Error ellipse: s-maj=7.3km s-min=4.8km az=144.0

NEIC Felt [IV] at Honiara.

IDC 05 09:57:13.1±0.7, 9.62S×159.76E, h23km±3km, mb4.3/21, mb1 4.4/23, mb1mx4.3/45, mbtmp4.4/23, ML4.0/2, MS3.9/8, Ms1 3.9/8, ms1mx3.5/42, Error ellipse: s-maj=17.6km s-min=9.1km az=142.0

ISC 05 09:57:13.1±0.7, 9.62S±0.07×159.77E±0.08, h22km±4km, h22km:pP-P, n155, σ0.91/158, mb4.9/76, MS4.0/8, 5C, Bougainville-Solomon Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
HNR	Honiara	0.26	43	Pg	Pb	09 57 19.9	+0.6
	9μm,0.3s,baz=190,slow=8.7,SNR=1968						
HNR				Lg	Lg	09 57 24.5	
	94μm,0.3s,baz=238,slow=19,SNR=277						
HNR				LR	LR	09 57 41.1	
	comp=Z,11μm,18.0s,baz=226,slow=109						
HNR	Honiara	0.26	43	iP	Pb	09 57 19.5	+0.2
HNR				iS	Sn	09 57 26.0	-0.9
HNR	Honiara	0.26	43	eP	Pb	09 57 20.1	+0.8
PMG	Port Moresby	12.44	270	LR	LR	10 04 40.2	
	comp=Z,1μm,20.7s,baz=164,slow=36						
PMG	Port Moresby	12.44	270	iP	Pn	10 00 13.4	+4.4
PMG				pmax	pmax		
	comp=Z,163nm,1.2s						
PMG	Port Moresby	12.44	270	ePn	Pn	10 00 08.2	-0.8
DZM	Mont Dzumac	13.94	153	Pn	Pn	10 00 30.3	+0.8
	comp=Z,1.3nm,0.3s,baz=7.1,slow=8.4,SNR=17						
DZM				LR	LR	10 05 30.5	
	comp=Z,576nm,19.7s,baz=40,slow=36						
CTA	Charters Tower	16.69	230	Pn	P	10 01 07.0	-0.9
	comp=Z,0.3nm,0.3s,baz=56,slow=15,SNR=3.8						
JAY	Jayapura	20.22	289	P	P	10 01 47.3	+0.4
	comp=Z,2.2nm,0.9s,baz=283,slow=22,SNR=6.6						
WRAB	Tennant Creek	26.59	244	eP	P	10 02 50.0	-0.1
WRAB				pmax	pmax		
	comp=Z,6.0nm,0.8s						
WRAB	Tennant Creek	26.59	244	eP	P	10 02 50.0	-0.1
	comp=Z,6.5nm,0.8s						
WRA	Warramunga Arr	26.61	244	P	P	10 02 50.2	+0.1
	comp=Z,4.5nm,0.6s,baz=71,slow=9.4,SNR=31						
WRA				PcP	PcP	10 06 14.2	-0.1
	comp=Z,2.2nm,0.8s,baz=69,slow=2.4,SNR=8.0						
STKA	Stephens Creek	27.83	215	P	P	10 03 01.6	+0.7
	comp=Z,1.5nm,0.9s,baz=35,slow=11,SNR=8.9						
STKA				LR	LR	10 13 26.4	
	comp=Z,208nm,18.4s,baz=26,slow=35						
STKA	Stephens Creek	27.83	215	eP	P	10 03 07.4	+6.4
STKA	Stephens Creek	27.83	215	eP	P	10 03 07.4	+6.5
AFI	Afiamalu	28.17	101	LR	LR	10 12 23.5	
	comp=Z,406nm,18.7s,baz=302,slow=32						
AS01	Alice Springs	28.34	237	eP	P	10 03 04.9	-0.7
ASAR	Alice Springs	28.38	237	P	P	10 03 05.0	-1.0
	comp=Z,0.6nm,0.5s,baz=62,slow=10,SNR=8.6						
ASAR				PcP	PcP	10 06 18.1	-0.4
	comp=Z,0.9nm,0.8s,baz=55,slow=1.8,SNR=5.1						
ASAR				LR	LR	10 13 43.7	
	comp=Z,174nm,20.7s,baz=85,slow=35						
BBOO	Buckleboo	31.80	220	eP	P	10 03 36.6	+0.4
	comp=Z,62nm,1.9s						
KAPI	Kappang	39.94	274	LR	LR	10 22 21.0	
	comp=Z,44nm,20.0s,baz=123,slow=38						
PPT	Papeete	49.74	105	LR	LR	10 23 13.8	
	comp=Z,136nm,20.7s,baz=182,slow=31						
SHO	Shikotan	54.52	349	eP	P	10 06 35.1	-4.1
KSRS	Korea Array	55.52	329	P	P	10 06 45.9	-0.8
	comp=Z,1.9nm,0.8s,baz=144,slow=8.0,SNR=4.1						
KSAR	Wonju Array Be	55.53	329	P	P	10 06 45.9	-0.8
KSAR	Wonju Array Be	55.53	329	P	P	10 06 45.9	-0.8
NJ2	Nanjing	56.97	318	eP	P	10 06 57.6	+0.5
NJ2				pmax	pmax		
	comp=Z,13nm,1.0s						
YSS	Yuzh-Sakhalins	58.33	346	eP	P	10 07 05.6	-0.8
YSS				pmax	pmax		
	comp=Z,11nm,1.0s						
USRK	Ussuriysk Ar.	59.19	337	P	P	10 07 13.4	+1.0
	comp=Z,3.4nm,0.9s,baz=204,slow=4.2,SNR=5.8						
CN2	Changchun	61.63	332	eP	P	10 07 36.5	+7.4
CN2				pmax	pmax		
	comp=Z,10.0nm,0.6s						
PEA0	Petropavlovsk-	62.51	359	eP	P	10 07 35.1	+0.3
PEA0				epP	pP	10 07 42.3	+0.4
PETK	Petropavlovsk-	62.51	359	P	P	10 07 35.2	+0.4
	comp=Z,5.7nm,0.7s,baz=158,slow=8.4,SNR=8.4						
PETK				pP	pP	10 07 42.1	+0.2
	comp=Z,6.5nm,0.7s,baz=159,slow=8.9,SNR=7.0						
GYA	Guiyang	62.80	306	P	P	10 07 40.2	+2.7
GYA				pmax	pmax		
	comp=Z,10.0nm,1.0s						
KLR	Kul'dur	63.56	340	P	P	10 07 42.4	+0.5
	comp=Z,3.8nm,1.1s,baz=128,slow=11,SNR=6.9						
NKL	Nikolayevsk	64.61	347	eP	P	10 07 50.0	+1.3
XAN	Xi'an	64.88	315	P	P	10 07 56.5	+5.5
XAN				pmax	pmax		
	comp=Z,5.0nm,0.6s						
XAN				pmax	pmax		
	comp=Z,120nm,5.7s						
KMI	Kunming	65.40	303	P	P	10 07 57.7	+3.0
KMI				pmax	pmax		
	comp=Z,9.0nm,0.8s						
KMI				pmax	pmax		
	comp=Z,80nm,5.0s						
CM01	Chiang Mai Arr	66.15	295	eP	P	10 07 59.8	+0.5
CMAR	Chiang Mai Arr	66.17	295	P	P	10 08 00.2	+0.7
	comp=Z,1.1nm,0.4s,baz=114,slow=4.8,SNR=8.7						
CMAR	Chiang Mai Arr	66.17	295c	eP	P	10 08 00.8	+1.3
CMAR				pmax	pmax		
	comp=Z,2.0nm,0.7s						
HHC	Hu-ho-hao-te	67.02	322	eP	P	10 08 08.4	+3.7
HHC				pP	sP	10 08 16.2	+1.7
HHC				sP	pP	10 08 19.4	+7.5
HHC				PP	PP	10 10 37.9	+5.2
HHC				S	S	10 16 59.3	+2.0
HHC				pmax	pmax		
	comp=Z,15nm,0.9s						
HHC				pmax	pmax		
	comp=Z,99nm,8.8s						
HHC				LR	LR		
	comp=Z,150nm,17.6s						
HHC				LR	LR		
	comp=Z,540nm,15.1s						
HHC				LR	LR		
	comp=Z,170nm,19.1s						
CD2	Chengdu	67.11	309	P	P	10 08 06.5	+1.1
CD2				sP	sP	10 08 18.8	+3.5
CD2				PP	PP	10 10 34.5	+0.9
CD2				S	S	10 16 59.8	+1.2
CD2				pmax	pmax		
	comp=Z,20nm,0.5s						
CD2				pmax	pmax		
	comp=Z,130nm,5.4s						
CD2				LR	LR		
	comp=Z,300nm,6.6s						
CD2				LR	LR		
	comp=Z,170nm,6.6s						
VNDA	Vanda	67.89	180	P	P	10 08 09.2	-0.2
	comp=Z,2.0nm,0.8s,baz=336,slow=6.9,SNR=9.2						
MA2	Magadan	69.34	355	P	P	10 08 18.4	-0.3
	comp=Z,12nm,0.7s,baz=177,slow=5.9,SNR=26						
MA2				pP	pP	10 08 25.5	-0.4
	comp=Z,11nm,0.7s,baz=166,slow=8.0,SNR=9.9						
MA2	Magadan	69.34	355	eP	P	10 08 18.3	-0.3
MA2				*PP	pP	10 08 25.5	-0.4
MA2				pmax	pmax		
	comp=Z,45nm,0.8s						
MA2	Magadan	69.34	355	eP	P	10 08 18.3	-0.4
	comp=Z,45nm,0.8s						
MA2				pP	pP	10 08 25.5	-0.4
LZH	Lanzhou	69.50	314	eP	P	10 08 26.4	+6.0
LZH				pP	sP	10 08 35.7	+5.4
LZH				sP	PcP	10 08 39.0	-4.5
LZH				pmax	pmax		
	comp=Z,17nm,1.0s						
SEY	Seymchan	72.56	356	P	P	10 08 38.1	0.0
	comp=Z,3.7nm,0.7s,baz=155,slow=5.9,SNR=31						
SEY				pP	pP	10 08 45.4	0.0
	comp=Z,6.3nm,0.9s,baz=148,slow=3.6,SNR=11						
SEY	Seymchan	72.56	356⇑	iP	P	10 08 37.4	-0.7
ULN	Ulaanbaatar	73.77	326	iP	P	10 08 46.5	+0.6
ULN				pmax	pmax		
	comp=Z,10.0nm,2.5s						
ULN	Ulaanbaatar	73.77	326	eP	P	10 08 46.8	+1.0
	comp=Z,6.3nm,1.0s						
GTA	Gaotai	73.89	316	eP	P	10 08 44.8	-1.9
GTA				pP	pP	10 08 54.7	+0.7
GTA				sP	sP	10 08 58.6	+2.0
GTA				pmax	pmax		
	comp=Z,3.0nm,1.1s						
SONM	Songino Array	74.12	326	P	P	10 08 47.4	-0.5
	comp=Z,2.9nm,0.8s,baz=138,slow=5.3,SNR=10.0						
SONA1	Songino Array	74.12	326	eP	P	10 08 49.0	+1.2
YAK	Yakutsk	75.18	346	eP	P	10 08 52.4	-1.1
YAK				pmax	pmax		
	comp=Z,19nm,0.9s						
GAMB	Gambell	76.34	13	eP	P	10 08 60.0	-0.1
	comp=Z,5.1nm,0.8s						
BOD	Bodaibo	76.83	337	eP	P	10 09 02.1	-0.9
BOD				pmax	pmax		
	comp=Z,4.0nm,1.1s						
ZAK	Zakamensk	77.23	327	eP	P	10 09 04.4	-1.2
ZAK				pmax	pmax		
	comp=Z,4.0nm,1.2s						
BILL	Bilibino	77.60	2c	iP	P	10 09 07.2	+0.1
BILL				i		10 09 14.3	
BILL				e		10 11 59.4	
BILL				pmax	pmax		
	comp=Z,30nm,1.7s						
BILL	Bilibino	77.60	2	eP	P	10 09 07.5	+0.4
	comp=Z,19nm,1.1s						
SVW2	Sparrevohn	78.71	20	eP	P	10 09 14.6	+1.1
	comp=Z,20nm,1.0s						
TT01	Tatalina	79.86	19	eP	P	10 09 20.4	+0.7
TTA	Tatalina	79.88	19	eP	P	10 09 20.5	+0.6
TTA				pmax	pmax		
	comp=Z,12nm,1.0s						
TTA	Tatalina	79.88	19	eP	P	10 09 20.5	+0.6
	comp=Z,12nm,1.0s						
QSPA	South Pole Qui	80.37	180	eP	P	10 09 23.7	+1.0
PMR	Palmer	81.35	22	eP	P	10 09 27.8	+0.1
PMR				pmax	pmax		
	comp=Z,14nm,0.8s						
PMR	Palmer	81.35	22	eP	P	10 09 27.8	+0.1
	comp=Z,14nm,0.8s						
CAST	Castle Rocks	81.51	20	eP	P	10 09 28.1	-0.4
	comp=Z,15nm,0.8s						
KTH	Kantishna Hill	81.98	20	eP	P	10 09 30.4	-0.7
	comp=Z,18nm,0.8s						
TRF	Thorofare Moun	82.13	20	eP	P	10 09 31.3	-0.7
	comp=Z,14nm,0.8s						
BPAW	Bear Paw Mtn.	82.33	20	eP	P	10 09 32.0	-0.8
	comp=Z,9.1nm,1.0s						
RND	Reindeer	82.60	21	eP	P	10 09 34.1	-0.2
RND				pmax	pmax		
	comp=Z,15nm,0.8s						
RND	Reindeer	82.60	21	eP	P	10 09 34.1	-0.2
	comp=Z,15nm,0.8s						
MCK	McKinley	82.78	20	eP	P	10 09 33.8	-1.4
MCK				pmax	pmax		
	comp=Z,40nm,0.8s						
MCK	McKinley	82.78	20	eP	P	10 09 33.8	-1.4
	comp=Z,40nm,0.8s						
DHY	Denali Highway	82.92	21	eP	P	10 09 36.1	0.0
	comp=Z,8.0nm,0.8s						
MLY	Manley	83.02	19	eP	P	10 09 36.5	+0.1
	comp=Z,13nm,0.8s						
WRH	Wood River Hil	83.53	20	eP	P	10 09 38.4	-0.7
	comp=Z,15nm,1.0s						
TIXI	Tiksi	83.66	351	iP	P	10 09 39.5	0.0
TIXI				pmax	pmax		
	comp=Z,10.0nm,2.5s						
CCB	Clear Creek Bu	83.74	20	eP	P	10 09 39.0	-1.0
	comp=Z,9.3nm,0.7s						
MDM	Murphy Dome	83.79	20	eP	P	10 09 39.8	-0.6
	comp=Z,12nm,0.8s						
COLA	College	83.86	20c	iP	P	10 09 39.5	-1.2
COLA				pmax	pmax		
	comp=Z,23nm,0.9s						
HDA	Harding Lake	83.89	20	eP	P	10 09 40.4	-0.4
	comp=Z,13nm,0.8s						
WMQ	Urumqi	83.97	316	eP	P	10 09 44.0	+2.2
WMQ				pP	sP	10 09 51.3	-0.5
WMQ				sP	pP	10 09 54.9	+5.7
WMQ				S	S	10 20 04.8	+0.1
WMQ				pmax	pmax		
	comp=Z,1.0nm,0.6s						
WMQ				pmax	pmax		
	comp=Z,53nm,7.0s						
ILAR	Eielson Array	84.13	20	P	P	10 09 41.0	-1.1
	comp=Z,5.3nm,0.6s,baz=248,slow=5.3,SNR=44						
ILAR	Eielson Array	84.13	20	P	P	10 09 41.0	-1.1
MENT	Mentasta	84.19	23	eP	P	10 09 43.1	+0.7
	comp=Z,7.7nm,0.7s						
DOT	Dot Lake	84.47	22	eP	P	10 09 44.2	+0.4
	comp=Z,37nm,0.8s						
COLD	Coldfoot	84.62	17	eP	P	10 09 45.0	+0.5
	comp=Z,3.6nm,0.9s						
EGAK	Eagle	86.15	22	eP	P	10 09 53.0	+0.8
	comp=Z,8.9nm,0.9s						
DAWY	Dawson	86.44	23	eP	P	10 09 54.7	+1.0
	comp=Z,10nm,1.0s						
N02D	Trinity Center	86.97	48	P	P	10 09 57.9	+1.0
	baz=255						
M02C	Callahan	86.97	47	P	P	10 09 57.9	+1.1
	baz=254						
O03D	Paynes Creek	87.46	49	P	P	10 09 59.7	+0.4
	baz=255						
PKM	Mcpherson Peak	87.68	54	P	P	10 10 01.5	+0.9
	baz=257						
AFDM	Forest Hills D	87.74	50	eP	P	10 10 01.7	+1.1
	comp=Z,5.0nm,1.0s						
MK01	Makanchi Array	88.48	318	eP	P	10 10 03.1	-0.8
MK31	Makanchi Array	88.50	318	eP	P	10 10 03.8	-0.2
MK31	Makanchi Array	88.50	318	eP	P	10 10 03.8	-0.2
MKAR	Makanchi Array	88.50	318	P	P	10 10 03.8	-0.2
	comp=Z,4.0nm,0.9s,baz=105,slow=5.7,SNR=28						
MKAR				pP	pP	10 10 10.4	-1.0
	comp=Z,1.8nm,0.7s,baz=89,slow=5.9,SNR=8.4						
J05D	Fort Rock, OR	88.62	46	P	P	10 10 06.0	+1.2
	baz=256						
MWC	Mount Wilson	88.95	55	eP	P	10 10 07.2	+0.6
MWC				pmax	pmax		
	comp=Z,21nm,1.1s						
MWC	Mount Wilson	88.95	55	eP	P	10 10 07.2	+0.6
	comp=Z,21nm,1.1s						
ZALV	Zalesovo Beam	89.00	325	P	P	10 10 04.7	-1.4
	comp=Z,1.2nm,0.7s,baz=119,slow=5.8,SNR=5.5						
EDW2	Edwards Air Fo	89.14	55	P	P	10 10 08.2	+0.9
	baz=258						
CWC	Cottonwood Cre	89.40	53	P	P	10 10 09.2	+0.5
	baz=258						
LRMC	Laurel Mtn Rad	89.52	54	P	P	10 10 10.3	+1.1
	baz=258						
NV01	Mina Array Sit	89.66	51	eP	P	10 10 10.2	+0.4
NVAR	Mina Array Bea	89.66	51	P	P	10 10 09.6	-0.2
	comp=Z,3.2nm,0.9s,baz=241,slow=6.9,SNR=21						
NVAR				LR	LR	10 43 47.0	
	comp=Z,107nm,20.3s,baz=314,slow=31						
BAR	Barrett	89.77	57	eP	P	10 10 10.3	0.0
	comp=Z,5.3nm,0.9s						
NV11	Mina Array Sit	89.77	51	eP	P	10 10 10.7	+0.4
	comp=Z,9.4nm,1.1s						
MPMC	Manual Prospec	89.79	53	P	P	10 10 11.3	+0.8
	baz=258						
MONP2	Monument Peak	90.01	57	P	P	10 10 12.2	+0.5
	baz=259						
GRAC	Grapevine Rang	90.08	53	P	P	10 10 12.4	+0.7
	baz=258						
PFO	Pinyon Flats O	90.12	56	eP	P	10 10 12.9	+0.9
PFO				pmax	pmax		
	comp=Z,9.0nm,0.3s						
PFO	Pinyon Flats O	90.12	56	eP	P	10 10 12.9	+0.9

Code	Station Name	Δ°	AZ°	Op	ISC	Time	Res
	comp=Z,8.5nm,0.3s						
GSC	Goldstone, Bar	90.18	54	P	P	10 10 12.6	+0.4
	baz=258						
GSC	Goldstone, Bar	90.18	54	eP	P	10 10 13.0	+0.8
GSC				pmax	pmax		
	comp=Z,17nm,0.3s						
GSC	Goldstone, Bar	90.18	54	eP	P	10 10 13.0	+0.8
	comp=Z,17nm,0.3s						
FURC	Furnace Creek,	90.37	53	P	P	10 10 13.7	+0.8
	baz=258						
HEC	Hector,Ludlow	90.46	55	P	P	10 10 13.9	+0.4
	baz=259						
INK	Inuvik	90.53	20	P	P	10 10 12.8	-0.2
	comp=Z,2.1nm,1.0s,baz=266,slow=5.9,SNR=6.4						
BELC	Belle Mtn. Jos	90.58	56	P	P	10 10 15.0	+0.8
	baz=259						
SHOC	Shoshone, Teco	90.72	54	P	P	10 10 15.3	+0.6
	baz=259						
TUQ	Turquoise Moun	90.91	54	P	P	10 10 16.2	+0.5
	baz=259						
TPNV	Topopah Spring	90.95	53	eP	P	10 10 16.7	+0.8
TPNV				pmax	pmax		
	comp=Z,9.0nm,1.1s						
TPNV	Topopah Spring	90.95	53	eP	P	10 10 16.6	+0.8
	comp=Z,9.2nm,1.1s						
GMRC	Granite Mounta	91.00	55	P	P	10 10 16.4	+0.3
	baz=259						
IRM	Iron Mountain	91.30	56	P	P	10 10 18.2	+0.8
	baz=259						
KSH	Kashi	91.31	310	eP	P	10 10 19.1	+1.7
KSH				sP	sP	10 10 30.4	+2.9
KSH				S	S	10 21 13.1	-2.3
KSH				pmax	pmax		
	comp=Z,99nm,4.4s						
KSH				LR	LR		
	comp=Z,460nm,14.7s						
KSH				LR	LR		
	comp=Z,150nm,6.8s						
KSH				LR	LR		
	comp=Z,120nm,8.9s						
SYO	Syowa Base	91.36	198⇑	epP	pP	10 10 24.0	-0.3
LDFC	Landfair	91.50	55	eP	P	10 10 19.6	+1.2
	comp=Z,18nm,1.1s						
R11A	Troy Canyon, C	91.73	52	P	P	10 10 20.0	+0.5
	baz=259						
R11A	Troy Canyon, C	91.73	52	eP	P	10 10 19.2	-0.3
	comp=Z,5.4nm,1.3s						
Y12C	Blythe	91.73	56	P	P	10 10 20.1	+0.7
	baz=260						
F10A	Beach Ranch, E	92.02	44	eP	P	10 10 20.9	+0.3
	comp=Z,11nm,0.8s						
W13A	Hualapai Mount	92.49	55	eP	P	10 10 24.6	+1.4
HLID	Hailey	93.54	47	P	P	10 10 28.3	+0.5
	baz=260						
HLID	Hailey	93.54	47	eP	P	10 10 28.4	+0.7
	comp=Z,3.7nm,0.9s						
MSU	Marysvale	94.40	52	eP	P	10 10 31.1	-0.8
MSU	Marysvale	94.40	52	eP	P	10 10 31.1	-0.8
HVU	Hansel Valley	94.44	49	eP	P	10 10 33.4	+1.5
HVU				pmax	pmax		
	comp=Z,6.0nm,1.0s						
HVU	Hansel Valley	94.44	49	eP	P	10 10 33.4	+1.5
	comp=Z,5.9nm,1.0s						
TMUT	Trail Mountain	95.26	51	eP	P	10 10 37.4	+1.6
	comp=Z,11nm,1.6s						
YKA	Yellowknife Ar	96.44	28	P	P	10 10 39.2	-1.0
	comp=Z,2.0nm,0.8s,baz=261,slow=4.7,SNR=42						
YKB5	Yellowknife Ar	96.44	28	eP	P	10 10 39.3	-1.0
LKWY	Lake	96.55	46	eP	P	10 10 40.9	-0.7
LKWY				pmax	pmax		
	comp=Z,29nm,1.1s						
LKWY	Lake	96.55	46	eP	P	10 10 40.9	-0.7
	comp=Z,29nm,1.1s						
BW06	Boulder Array	96.94	48	P	P	10 10 43.5	+0.1
	baz=263						
BW06	Boulder Array	96.94	48	eP	P	10 10 42.7	-0.6
PDAR	Pinedale Array	96.94	48	P	P	10 10 43.1	-0.2
	comp=Z,0.8nm,0.7s,baz=203,slow=1.8,SNR=7.8						
BRVK	Borovoye	97.30	323	iP	P	10 10 42.5	-1.9
BRVK				pmax	pmax		
	comp=Z,2.0nm,0.8s						
ANMO	Albuquerque	98.51	56	P	P	10 10 50.5	0.0
	comp=Z,0.4nm,0.3s,baz=110,slow=4.1,SNR=3.7						
PHWY	Pilot Hill	99.84	50	ePdif	Pdif	10 10 55.4	-1.1
	comp=Z,54nm,1.4s						
BRTR	Keskin Array B	123.65	312	PKP	PKPdf	10 16 08.2	-1.4
	comp=Z,1.2nm,0.8s,baz=98,slow=2.5,SNR=3.8						
TORD	Torodi Ar. Bea	158.23	281	PKP	PKPdf	10 17 07.8	-1.7
	comp=Z,1.1nm,1.0s,baz=41,slow=2.0,SNR=4.9						
TORD				PKPab	PKPab	10 17 43.7	+0.1
	comp=Z,0.5nm,0.7s,baz=89,slow=4.0,SNR=2.8						

CSEM 05 10:01:50.5, 41°.27N×1°.77E, h0km, ML1.6, Mining explosion., Spain

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
EPOB	Poblet	0.53	280	Pg	Pg	10 02 00.4	-0.2
	SNR=7.9						
EPOB				Lg	Lg	10 02 05.9	
	SNR=7.9						
EMIR	Miracle	0.67	344	Pg	Pg	10 02 02.2	-1.2
	5.8nm,0.3s,SNR=5.7						
EMIR				Lg	Lg	10 02 15.1	
	18nm,0.4s,SNR=5.0						
CFON	Fontmartina	0.70	45	P	Pg	10 02 04.2	+0.2
	2.4nm,0.3s,SNR=7.3						
CFON				Lg	Lg	10 02 12.4	
	6.0nm,0.2s,SNR=9.6						
ERTA	Horta de San J	1.13	255	Pg	Pg	10 02 11.8	-0.3
	SNR=7.9						
ERTA				Lg	Lg	10 02 27.1	
	SNR=7.9						
CSOR	Sort	1.21	337	P	Pg	10 02 12.1	-1.5
	5.2nm,0.3s,SNR=16						
CSOR				Lg	Lg	10 02 29.1	
	15nm,0.4s,SNR=11						
CLLI	Llivia	1.22	7	P	Pg	10 02 13.2	-0.7
	3.0nm,0.3s,SNR=9.5						
CLLI				Lg	Lg	10 02 29.4	
	SNR=7.9						
EJON	La Jonquera	1.45	35	Lg	Lg	10 02 36.4	
	SNR=7.9						
SJAF	Saint Jean de	1.47	34	Pg	Pn	10 02 16.8	-1.5
	SNR=7.9						
SJAF				Lg	Lg	10 02 36.8	
	SNR=7.9						

JMA 05 10:04:11.6±0.2, 37°.21N×142°.50E, h25km, M3.6, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
JFK	Kawauchi	1.31	277	P	Pb	10 04 34.9	-0.6
ONAJ	Iwakimizuishiy	1.36	266	P	Pn	10 04 35.0	-0.1
ONAJ				eS	Sb	10 04 53.0	-0.5
JMM	Marumori	1.51	296	P	Pn	10 04 37.2	+0.2
JMM				S	Sb	10 04 56.7	-0.9
JIO	Ouri	1.54	324	eS	Sb	10 04 57.9	-0.6
JFT	Otama	1.75	281	P	Pn	10 04 41.2	+0.8
JFT				S	Sn	10 05 02.8	+0.9
JOU	Okura	1.86	309	P	Pn	10 04 42.6	+0.8
JOU				eS	Sn	10 05 04.5	0.0
MAT	Matsushiro	3.51	260	P	Pn	10 05 06.2	+1.7
MAT				eS	Sn	10 05 46.6	+1.4

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*ISK **05** 10:09:32.7, 40°.32N×27°.85E, h6km, MD2.5*
*CSEM **05** 10:09:33.4±0.1, 40°.34N×27°.86E, h10km, MD2.5, Error ellipse: s-maj=3.2km s-min=2.3km az=24.0*
*DDA **05** 10:09:33.2, 40°.33N×27°.83E, h7km, Md2.6*
ISC 05 10:09:32.6±1.1, 40°.38N±0°.03×27°.84E±0°.02, h2km±10km, n52, σ0s.60/70, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
KNL	Bal˜–kesir	0.27	246	iP	Pg	10 09 37.4	-0.3
KNL				iS	Sg	10 09 41.9	+0.8
MRMT	Marmara Adasi	0.29	320	ePG	Pb	10 09 40.1	-0.4
MRMT				eSG	Sb	10 09 45.6	-0.3
MRMT	Marmara Adasi	0.29	320	ePg	Pb	10 09 40.1	-0.4
MRMT				eSg	Sb	10 09 45.6	-0.3
GONE	Gonen-Balikesi	0.35	200	ePG	Pg	10 09 39.4	0.0
GONE	Gonen-Balikesi	0.35	200	ePg	Pg	10 09 39.4	0.0
KCTX	Karacabey (Bur	0.41	106	ePG	Pg	10 09 40.5	+0.1
KCTX				eSG	Sg	10 09 46.1	+0.4
KCTX	Karacabey (Bur	0.41	106	ePg	Pg	10 09 40.5	+0.1
KCTX				eSg	Sg	10 09 46.1	+0.4
KRBG	Karabiga-Canak	0.42	272	ePG	Pg	10 09 41.3	+0.7
KRBG				eSG	Sb	10 09 48.1	-1.2
KRBG	Karabiga-Canak	0.42	272	ePg	Pg	10 09 41.3	+0.7
KRBG				eSg	Sb	10 09 48.1	-1.2
SART	Tekirdag	0.59	302	iP	Pb	10 09 45.5	-0.1
SART				iS	Sg	10 09 49.2	-2.3
SART	Tekirdag	0.59	302	P	Pb	10 09 45.5	-0.1
RKY	Sarkoy-Tekirda	0.59	301	ePG	Pb	10 09 45.5	-0.2
RKY				eSG	Sb	10 09 54.6	+0.1
RKY	Sarkoy-Tekirda	0.59	301	ePg	Pb	10 09 45.5	-0.2
RKY				eSg	Sb	10 09 54.6	+0.1
BALY	Balya	0.66	195	iP	Pg	10 09 45.1	-0.2
BALY	Balya	0.66	195	P	Pg	10 09 45.1	-0.2
BALB	Balikesir	0.74	178	ePG	Pg	10 09 46.4	-0.4
BALB	Balikesir	0.74	178	ePg	Pg	10 09 46.4	-0.4
MDNY	Mudanya-Bursa	0.80	91	ePG	Pg	10 09 47.8	0.0
MDNY	Mudanya-Bursa	0.80	91	ePg	Pg	10 09 47.8	0.0
ARMT	Armutlu	0.80	76	ePG	Pb	10 09 49.1	-0.1
ARMT	Armutlu	0.80	76	ePg	Pb	10 09 49.1	-0.1
SLVT	Silivri	0.89	18	ePG	Pn	10 09 51.5	-0.5
SLVT	Silivri	0.89	18	ePg	Pn	10 09 51.6	-0.5
DURS	Dursunbey	0.92	148	iP	Pg	10 09 50.4	+0.3
DURS				iS	Sb	10 10 02.9	-1.0
DURS	Dursunbey	0.92	148	P	Pg	10 09 50.4	+0.3
DURS				S	Sb	10 10 02.9	-1.0
KESN	Edirne-Kesan	0.99	297	iP	Pn	10 09 54.2	+0.4
KESN				iS	Sn	10 10 09.2	+0.7
KESN	Edirne-Kesan	0.99	297	P	Pn	10 09 54.2	+0.4
KESN				S	Sn	10 10 09.2	+0.7
CTKS	Kestanelik-??a	0.99	30	ePG	Pn	10 09 53.2	-0.2
CTKS	Kestanelik-??a	0.99	30	ePg	Pn	10 09 53.2	-0.2
ULDT	Uludag	1.02	103	iP	Pb	10 09 53.0	0.0
ULDT				iS	Sn	10 10 10.3	+1.3
ULDT	Uludag	1.02	103	P	Pb	10 09 53.0	0.0
ULDT				S	Sn	10 10 10.3	+1.3
IGD	Bursa	1.04	96	iP	Pb	10 09 53.0	-0.3
IGD				iS	Sn	10 10 09.2	-0.1
GELI	Tayfur-Gelibol	1.05	271	ePG	Pb	10 09 53.4	+0.1
GELI	Tayfur-Gelibol	1.05	271	ePg	Pb	10 09 53.4	+0.1
ERIK	Erikli-Kesan	1.05	286	ePN	Pb	10 09 53.4	-0.1
ERIK	Erikli-Kesan	1.05	286	ePn	Pb	10 09 53.4	-0.1
BGKT	Bogazkoy	1.07	41	ePN	Pn	10 09 54.1	-0.4
BGKT	Bogazkoy	1.07	41	ePn	Pn	10 09 54.1	-0.4
ISK	Istanbul-Kandi	1.15	53	ePN	Pn	10 09 55.4	-0.2
ISK	Istanbul-Kandi	1.15	53	ePn	Pn	10 09 55.4	-0.2
IZI	Iznik	1.25	92	ePN	Pb	10 09 56.7	-0.1
IZI	Iznik	1.25	92	ePn	Pb	10 09 56.7	-0.1
ENEZ	Enez	1.34	286	ePN	Pg	10 09 58.9	+0.7
ENEZ	Enez	1.34	286	ePn	Pg	10 09 58.9	+0.7
DEMI	Demirci	1.50	153	iP	Pg	10 10 01.4	+0.1
DEMI				iS	Sg	10 10 22.3	+1.7
DEMI	Demirci	1.50	153	P	Pg	10 10 01.4	+0.1
GADA	Gvkgeada	1.50	263	ePN	Pg	10 10 01.1	-0.1
GADA	Gvkgeada	1.50	263	ePn	Pg	10 10 01.2	-0.1
TVSB	Tavsanli	1.55	126	ePN	Pn	10 10 01.0	-0.3
TVSB	Tavsanli	1.55	126	ePn	Pn	10 10 01.0	-0.3
KULA	Kula-Manisa	1.97	161	ePN	Pn	10 10 06.6	-0.4
KULA	Kula-Manisa	1.97	161	ePn	Pn	10 10 06.6	-0.4

JMA 05 10:28:30.1±0.1, 38°.89N×142°.50E, h42km±2km, M3.6, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
OFUJ	Ofunato	0.68	287	P	Pn	10 28 43.3	+0.1
MIYJ	Miyakonagasawa	0.87	323	P	Pn	10 28 45.7	-0.1
MIYJ				S	Sn	10 28 57.1	-0.2
JIO	Ouri	1.00	245	P	Pn	10 28 47.5	-0.2
JIO				S	Sn	10 28 59.9	-0.7
JMK	Ichinoseki	1.00	274	P	Pn	10 28 48.0	+0.3
JMK				S	Sn	10 29 01.2	+0.6
JOM	Ohasama	1.10	302	P	Pn	10 28 49.5	+0.4
JOM				S	Sn	10 29 03.8	+0.6
JKZ	Kuzumaki	1.42	321	P	Pn	10 28 54.2	+0.7
JKZ				S	Sn	10 29 12.3	+1.3
JOU	Okura	1.53	251	P	Pn	10 28 55.8	+0.8
JRG	Rokugo	1.54	290	P	Pn	10 28 56.0	+1.0
JANG	Nango	1.67	333	P	Pn	10 28 57.2	+0.4
JYK	Kaneyama	1.67	272	P	Pn	10 28 57.8	+0.9
JMM	Marumori	1.69	233	P	Pn	10 28 57.4	+0.3

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*IDC **05** 10:33:51.4±1.5, 23°.07S×174°.72W, h0km, mb4.2/10, mb1 4.5/10, mb1mx4.1/38, mbtmp4.2/10, MS3.3/1, Ms1 3.3/1, ms1mx2.8/43, Error ellipse: s-maj=64.1km s-min=20.6km az=152.0*
*NEIC **05** 10:33:56.6±0.7, 23°.18S×174°.62W, h35km, mb4.2/3, Error ellipse: s-maj=21.7km s-min=16.6km az=157.0*
ISC 05 10:33:57.0±0.8, 23°.2S±0°.2×174°.6W±0°.1, h36km, n18, σ1s.20/15, mb4.2/13, Tonga Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
MSVF	Nonsavu	8.75	307	ePn	Pn	10 36 02.9	+1.8
AFI	Afiamalu	9.59	17	Pn	Pn	10 36 05.6	-7.0
	2.7nm,0.3s,baz=30,slow=3.7,SNR=5.2						
AFI				Sn	Sn	10 37 43.4	-16
	3.9nm,0.3s,baz=332,slow=23,SNR=4.1						
RAR	Rarotonga	13.88	85	Pn	Pn	10 37 02.7	-8.5
	3.0nm,0.3s,baz=272,slow=8.3,SNR=20						
RAR				Sn	Sn	10 39 24.5	-20
	2.0nm,0.3s,baz=288,slow=21,SNR=3.7						
DZM	Mont Dzumac	17.53	270	LR	LR	10 43 09.3	
	comp=Z,102nm,19.8s,baz=229,slow=32						
STKA	Stephens Creek	39.58	248	P	P	10 41 23.9	-1.0
	0.9nm,0.6s,baz=108,slow=8.4,SNR=4.9						
ASAR	Alice Springs	47.03	259	P	P	10 42 24.3	-0.9
	1.8nm,0.9s,baz=92,slow=7.1,SNR=20						
WRAB	Tennant Creek	47.39	264	eP	P	10 42 26.5	-1.5
	2.8nm,0.7s						
WRA	Warramunga Arr	47.40	264	P	P	10 42 26.6	-1.5
	7.5nm,0.7s,baz=92,slow=8.4,SNR=72						
SBA	Scott Base	55.45	185	eP	P	10 43 29.2	+1.7
	0.7nm,0.4s						
FITZ	Fitzroy Crossi	55.82	263	eP	P	10 43 31.6	+0.6
	1.2nm,0.5s						
MJAR	Matsushiro Arr	74.23	322	P	P	10 45 28.6	-1.6
	2.8nm,0.9s,baz=150,slow=4.6,SNR=5.5						
PETK	Petropavlovsk-	79.68	343	P	P	10 46 00.8	+0.3
	1.8nm,0.7s,baz=128,slow=9.7,SNR=4.2						
NVAR	Mina Array Bea	80.86	41	P	P	10 46 07.2	-0.3
	1.1nm,0.8s,baz=224,slow=8.2,SNR=10.0						
TXAR	Lajitas Array	85.89	56	P	P	10 46 34.0	+0.5
	1.5nm,1.1s,baz=210,slow=7.2,SNR=8.4						
ILAR	Eielson Array	90.25	12	P	P	10 46 52.8	-0.5
	1.3nm,0.9s,baz=219,slow=6.4,SNR=7.9						
CMAR	Chiang Mai Arr	93.95	288	P	P	10 47 12.6	+1.0
	1.1nm,0.4s,baz=106,slow=3.2,SNR=4.5						
YKA	Yellowknife Ar	97.64	24	P	P	10 47 27.1	-0.2
	0.1nm,0.7s,baz=220,slow=4.1,SNR=3.1						
AKASG	Malin Array Be	146.85	332	PKPbc	PKPdf	10 53 33.1	-0.2
	0.7nm,0.5s,baz=45,slow=4.1,SNR=4.5						

NNC 05 10:35:03.1±2.3, 37°.15N×70°.65E, h0km, mb3.5, mpv3.1, 3C-3D, Error ellipse: s-maj=18.3km s-min=10.8km az=166.0, Afghanistan-Tajikistan border region

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
SFK	Sufi-Kurgan	3.63	37	⇓S	Sn	10 36 45.8	+1.3
	2.5nm,0.4s						
MNAS	Manas	5.52	14	⇑P	Pn	10 36 26.1	-0.6
	0.6nm,0.3s						
MNAS				⇑S	Sn	10 37 31.7	+0.8
	4.3nm,0.8s						
KK31	Karatay Array	5.95	359	⇑P	Pn	10 36 33.2	+0.7
	0.9nm,0.4s,baz=182,slow=13,SNR=12						
KK31				⇓S	Sn	10 37 42.8	+1.5
	0.7nm,0.3s,baz=181,slow=21,SNR=6.6						
AB31	Akbulak array	14.38	331	⇓P	Pn	10 38 27.5	-0.3
	0.8nm,0.7s,baz=157,slow=12,SNR=5.0						

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*NIED **05** 10:45:00, 36°.40N×141°.80E, h53km, Mw4.0 Best double couple: M0 9.88000×10^14 NP1:φs246.00000°, δ42.00000°, λ-82.00000°. NP2:φs55.00000°, δ49.00000°, λ-98.00000°.*
*ISCJB **05** 10:45:35.8±0.6, 36°.38N±0°.05×141°.99E±0°.06, h19km, mb3.5/8, Error ellipse: s-maj=7.9km s-min=6.6km az=43.8*
*JMA **05** 10:45:38.6±0.1, 36°.42N×141°.82E, h60km±4km, M3.5*
*IDC **05** 10:45:40.3±3.6, 36°.28N×141°.85E, h41km±35km, mb3.3/8, mb1 3.7/10, mb1mx3.4/46, mbtmp3.6/10, ML3.8/2, MS3.2/1, Ms1 3.2/1, ms1mx2.4/41, Error ellipse: s-maj=29.2km s-min=19.4km az=98.0*
ISC 05 10:45:37.4±0.8, 36°.35N±0°.05×141°.84E±0°.06, h19km, n16, σ0s.98/20, mb3.5/8, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
CHOJ	Chosi	1.03	231	P	Pg	10 45 57.9	+0.5
CHOJ				S	Sg	10 46 11.6	+0.7
JHO	Hitachi	1.06	284	P	Pb	10 45 57.0	-0.1
JHO				S	Sn	10 46 11.0	-0.5
ONAJ	Iwakimizuishiy	1.12	312	P	Pn	10 45 57.8	-0.4
BSO1	Boso 1	1.84	203	P	Pn	10 46 08.6	+1.2
BSO1				S	Sb	10 46 32.1	-0.4
MJAR	Matsushiro Arr	2.94	275	P	Pn	10 46 24.7	+1.6
	13nm,0.3s,baz=97,slow=9.1,SNR=123						
MAT	Matsushiro	2.94	275	P	Pn	10 46 24.4	+1.3
MAT				eS	Sn	10 46 55.6	-2.3
JHJ	Hachijo jima 2	3.64	208	P	Pn	10 46 32.7	-0.1
	20nm,0.3s,baz=144,slow=23,SNR=6.8						
JHJ				S	Sn	10 47 13.5	-1.8
	22nm,0.3s,baz=356,slow=23,SNR=6.4						
JCJ	Chichijima	9.23	178	LR	LR	10 54 45.3	
	comp=Z,140nm,18.1s,baz=96,slow=60						
SONM	Songino Array	28.45	305	P	P	10 51 31.2	+0.1
	0.8nm,0.5s,baz=105,slow=9.4,SNR=4.5						
MKAR	Makanchi Array	44.77	303	P	P	10 53 50.0	+0.3
	0.4nm,0.6s,baz=89,slow=9.4,SNR=4.4						
ILAR	Eielson Array	49.89	32	P	P	10 54 29.4	+0.2
	0.4nm,0.8s,baz=254,slow=5.4,SNR=3.9						
WRA	Warramunga Arr	56.44	188	P	P	10 55 17.2	-0.7
	0.7nm,0.6s,baz=6.3,slow=6.8,SNR=6.6						
ASAR	Alice Springs	60.16	188	P	P	10 55 43.3	-0.7
	0.4nm,0.8s,baz=6.0,slow=9.7,SNR=3.2						
YKA	Yellowknife Ar	64.22	30	P	P	10 56 10.8	+0.1
	0.3nm,0.7s,baz=300,slow=6.6,SNR=9.2						
NVAR	Mina Array Bea	75.12	53	P	P	10 57 18.5	-0.1
	0.3nm,0.6s,baz=306,slow=6.2,SNR=3.5						
TXAR	Lajitas Array	90.26	53	P	P	10 58 37.8	+0.5
	0.3nm,0.9s,baz=251,slow=2.8,SNR=3.1						

IDC 05 10:49:02.9±1.7, 2°.78N×126°.54E, h0km, mb3.7/5, mb1 3.8/5, mb1mx3.5/50, mbtmp3.7/5, MS3.2/2, Ms1 3.2/2, ms1mx2.7/51, Error ellipse: s-maj=179.7km s-min=19.1km az=65.0, Northern Molucca Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
JAY	Jayapura	15.11	110	LR	LR	10 58 25.8	
	comp=Z,70nm,21.4s,baz=261,slow=37						
WRA	Warramunga Arr	23.84	162	P	P	10 54 18.2	+0.2
	2.1nm,0.8s,baz=339,slow=10,SNR=15						
ASAR	Alice Springs	27.25	165	P	P	10 54 49.8	+0.8
	0.4nm,0.6s,baz=347,slow=7.1,SNR=6.5						
JHJ	Hachijo jima 2	32.63	21	LR	LR	11 08 36.8	
	comp=Z,52nm,19.1s,baz=218,slow=36						
STKA	Stephens Creek	37.32	159	P	P	10 56 16.1	-0.9
	1.2nm,0.6s,baz=335,slow=9.6,SNR=4.2						
MKAR	Makanchi Array	58.23	326	P	P	10 58 60.0	+0.9
	0.2nm,0.5s,baz=116,slow=8.3,SNR=3.7						
KURBB	Kurchatov Arra	62.43	328	P	P	10 59 26.8	-1.0
	0.5nm,0.6s,baz=131,slow=6.5,SNR=7.6						

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*FUNV **05** 10:50:56.3, 11°.33N×61°.35W, h33km, MW2.9*
*TRN **05** 10:51:00.7, 11°.62N×61°.30W, h57km, MD3.7*
ISC 05 10:50:55.4±1.2, 11°.27N±0°.03×61°.54W±0°.04, h33km±5km, n13, σ1s.51/25, Windward Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
GRW	Mount Saint Ca	0.90	353	eP	Pb	10 51 12.8	+0.2
GRW				eS	Sn	10 51 24.5	+0.8
GRHS	Sauteurs	0.96	354	eP	Pb	10 51 12.9	-0.6
GRHS				eS	Sn	10 51 24.9	-0.1
TOSP	Speyside	0.99	88	eP	Pb	10 51 13.8	-0.3
TOSP				eS	Sb	10 51 28.8	+2.0
GRSS	Sisters	1.03	356	eP	Pb	10 51 14.1	-0.7
GRSS				eS	Sb	10 51 27.3	-0.6
GUNV	Guanoco	1.76	232	eP	Pb	10 51 26.5	-0.6
GUNV				eS	Sb	10 51 49.5	+0.7
CRUV	Carupano	1.76	251	eP	Pb	10 51 25.9	-1.3
CRUV				eS	Sb	10 51 48.1	-0.8
FCV	Fort Charlotte	1.90	9	eP	Pn	10 51 25.9	+0.3
FCV				eS	Sn	10 51 47.5	-0.9
SVB	Belmont	2.01	8	eP	Pn	10 51 26.6	-0.5
SVB				eS	Sn	10 51 50.4	-0.8
ORIV	Oritupano	2.85	220	eP	Pn	10 51 41.4	+2.8
GURV	El Guri	3.80	204	eP	Pn	10 51 53.0	+1.3
GURV				eS	Sn	10 52 34.9	-0.4
CUPV	Cœpira	4.34	254	eP	Pn	10 52 01.0	+1.8
CUPV				eS	Sn	10 52 49.7	+1.0
LUEV	Luepa	5.39	179	eP	Pn	10 52 14.0	+0.3
LUEV				eS	Sn	10 53 10.8	-3.9
BAUV	El Baul	6.80	251	eP	Pn	10 52 34.6	+1.7
BAUV				eS	Sn	10 53 47.1	-2.2

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*ISCJB **05** 10:52:13.6±0.7, 21°.55S±0°.06×68°.2W±0°.1, h129km±9km, mb3.6/4, Error ellipse: s-maj=16.2km s-min=9.5km az=16.5*
*GUC **05** 10:52:15.5±0.6, 21°.48S×68°.58W, h145km±6km, ML4.1*
*IDC **05** 10:52:25.1±25.0, 20°.70S×67°.76W, h188km±156km, mb3.5/4, mb1 3.6/7, mb1mx3.3/27, mbtmp4.0/7, ML4.1/3, Error ellipse: s-maj=357.3km s-min=22.6km az=18.0*
ISC 05 10:52:14.6±1.0, 21°.52S±0°.07×68°.2W±0°.1, h125km±11km, n13, σ1s.11/19, mb3.9/4, 6C, Chile-Bolivia border region

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
PB01	IPOC Station P	1.27	292⇑	iP	Pn	10 52 40.2	+0.3
PB01				iS	Sn	10 52 58.8	-0.2
PB01				AML	AML	10 53 00.9	
	comp=E,4μm,0.2s						
PB07	IPOC Station P	1.56	262⇑	iP	Pn	10 52 43.4	+0.2
PB07				iS	Sn	10 53 04.0	-1.0
PB07				AML	AML	10 53 05.2	
	comp=N,2μm,0.2s						
PB08	IPOC Station P	1.62	327⇑	iP	Pn	10 52 45.5	+1.3
PB08				iS	Sn	10 53 07.8	+1.2
PB06	IPOC Station P	1.72	226⇑	iP	Pn	10 52 45.9	+0.8
PB06				iS	Sn	10 53 08.9	+0.6
PB06				AML	AML	10 53 10.4	
	comp=N,1μm,0.4s						
PB04	IPOC Station P	1.96	245⇑	iP	Pn	10 52 48.0	-0.1
PB04				iS	Sn	10 53 12.2	-1.4
HMBC	Humberstone	1.98	308⇑	iP	Pn	10 52 47.9	-0.4
HMBC				iS	Sn	10 53 12.4	-1.6
HMBC				AML	AML	10 53 14.2	
	comp=N,3μm,0.5s						
LPAZ	La Paz	5.20	1	P	Pn	10 53 32.8	+1.8
	comp=N,3.1nm,0.3s,baz=164,slow=4.9,SNR=84						
SIV	San Ignacio	8.72	52	P	Pn	10 54 16.3	-1.7
	comp=N,1.7nm,0.3s,baz=250,slow=12,SNR=21						
BDFB	Brasilia	20.02	76	P	P	10 56 37.3	-0.7
	comp=N,0.7nm,0.3s,baz=288,slow=4.1,SNR=4.0						
DBIC	Dimbokro	68.13	73	P	P	11 03 00.8	-0.9
	comp=N,2.0nm,0.6s,baz=226,slow=11,SNR=4.3						
NVAR	Mina Array Bea	75.90	322	P	P	11 03 49.0	+1.1
	comp=N,0.1nm,0.4s,baz=165,slow=6.2,SNR=3.8						
TORD	Torodi Ar. Bea	76.76	70	P	P	11 03 52.9	-0.1
	comp=N,1.2nm,0.6s,baz=251,slow=4.6,SNR=14						
YKA	Yellowknife Ar	91.41	340	P	P	11 05 06.2	+0.1
	comp=N,0.6nm,0.6s,baz=134,slow=4.5,SNR=26						

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*ISCJB **05** 10:59:41.1±0.8, 22°.79N±0°.03×143°.33E±0°.03, h80km±7km, mb4.7/126, Error ellipse: s-maj=5.4km s-min=4.2km az=38.0*
*IDC **05** 10:59:41.6±0.5, 22°.78N×143°.40E, h78km±3km, mb4.3/37, mb1 4.4/40, mb1mx4.3/55, mbtmp4.6/40, MS3.2/2, Ms1 3.2/2, ms1mx2.9/50, Error ellipse: s-maj=12.0km s-min=7.7km az=83.0*
*NEIC **05** 10:59:42.3±0.2, 22°.75N×143°.37E, mb4.8/63, Error ellipse: s-maj=5.1km s-min=4.2km az=103.0*
*BJI **05** 10:59:43.0, 22°.80N×143°.40E, h100km, mb4.8/30,*

mB4.8/19

ISC 05 10:59:42.0±0.4**, 22°.81N**±0°.05×**143°.43E**±0°.07**, h80**km±3km**,**
h79km**:pP-P, n272,** σ1s.**13**/298**, mb4.8**/125**, 1D, Volcano Islands region**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
JCJ	**Chichijima**	**4.42**	**345**	P	**Pn**	**11 00 47.7**	**+1.1**
	140nm,0.3s,baz=98,slow=17,SNR=34						
JCJ				S	**Sn**	**11 01 36.2**	**-0.6**
	baz=143,slow=20						
CBIJ	**Chichi jima**	**4.42**	**345**	*e*Pn	**Pn**	**11 00 48.1**	**+1.5**
CBIJ				*e*Sn	**Sn**	**11 01 37.1**	**+0.3**
GUMO	**Guam**	**9.27**	**171**	*e*Pn	**Pn**	**11 01 53.8**	**+1.0**
JHJ2	**Mitsune**	**10.75**	**344**	*e*Pn	**Pn**	**11 02 13.6**	**+0.7**
MJAR	**Matsushiro Arr**	**14.42**	**343**	P	**Pn**	**11 03 00.9**	**-1.2**
	0.8nm,0.3s,baz=159,slow=10,SNR=4.6						
MAJO	**Matsushiro**	**14.42**	**343**	*e*Pn	**Pn**	**11 03 02.3**	**+0.2**
MAJO				*e*Sn	**Sn**	**11 05 37.1**	**-3.6**
JNU	**Nakatsue**	**15.10**	**316**	LR	LR	11 08 05.6	
	comp=Z,96nm,20.7s,baz=121,slow=33						
KSRS	**Korea Array**	**19.78**	**321**	P	**Pn**	**11 04 07.5**	**-0.5**
	1.5nm,0.3s,baz=145,slow=8.4,SNR=52						
KSRS				LR	LR	11 11 10.5	
	comp=Z,74nm,19.4s,baz=108,slow=35						
KSRS				ScP	**ScP**	**11 11 50.4**	**+0.3**
	0.1nm,0.3s,baz=124,slow=1.8,SNR=4.3						
KS15	**Wonju Array Si**	**19.80**	**321**	*e*P	**Pn**	**11 04 09.8**	**+1.6**
KS01	**Wonju Array Si**	**19.81**	**321**	*e*P	**Pn**	**11 04 10.7**	**+2.3**
YHNB	**Yeheng**	**20.27**	**280**	*e*P	Pn	11 04 15.4	+1.5
	42nm,0.8s						
SSLB	**Suanglung**	**20.66**	**277**	*e*P	Pn	11 04 18.6	+0.1
	103nm,0.7s						
TPUB	**Ta-pu**	**20.98**	**276**	*e*P	Pn	11 04 21.2	-1.1
	168nm,1.7s						
H11N1	**WAKE ISLAND Hy**	**22.08**	**94**	T	T	11 27 56.4	
	baz=281,slow=75,SNR=31						
H11N2	**WAKE ISLAND Hy**	**22.08**	**94**	T	T	11 27 58.9	
	baz=281,slow=75,SNR=23						
H11N3	**WAKE ISLAND Hy**	**22.09**	**94**	T	T	11 27 42.0	
	baz=281,slow=75,SNR=39						
H11S3	**WAKE ISLAND Hy**	**22.18**	**97**	T	T	11 27 58.8	
	baz=284,slow=75,SNR=89						
H11S1	**WAKE ISLAND Hy**	**22.18**	**97**	T	T	11 27 59.3	
	baz=284,slow=75,SNR=56						
H11S2	**WAKE ISLAND Hy**	**22.19**	**97**	T	T	11 27 60.0	
	baz=284,slow=75,SNR=53						
USRK	**Ussuriysk Ar.**	**23.33**	**339**	P	**P**	**11 04 44.3**	**+1.1**
	5.0nm,0.6s,baz=137,slow=9.8,SNR=9.1						
DL2	**Dalian**	**24.56**	**316**	P	**P**	**11 04 55.9**	**+1.6**
DL2				pmax	pmax		
	comp=Z,43nm,0.9s						
SNY	**Shenyang**	**25.21**	**323**	⇓P	**P**	**11 04 59.9**	**-0.3**
SNY				pmax	pmax		
	comp=Z,8.0nm,0.6s						
SNY				pmax	pmax		
	comp=Z,95nm,4.9s						
SNY				LR	LR		
	comp=N,100nm,5.2s						
SNY				LR	LR		
	comp=E,160nm,4.6s						
SNY				LR	LR		
	comp=Z,220nm,21.8s						
TIA	**Tai'an**	**26.41**	**306**	*e*P	**P**	**11 05 12.2**	**+1.1**
TIA				pmax	pmax		
	comp=Z,20nm,0.7s						
KLR	**Kul'dur**	**27.94**	**344**	P	**P**	**11 05 25.7**	**+1.0**
	4.0nm,0.6s,baz=165,slow=6.9,SNR=14						
KLR				sP	**sP**	**11 05 51.3**	**-1.3**
	8.6nm,0.7s,baz=148,slow=5.8,SNR=7.5						
KLR				PcP	**PcP**	**11 08 37.9**	**-0.3**
	1.9nm,0.6s,baz=163,slow=5.6,SNR=6.0						
MYLDM	**Lahad Datu**	**29.78**	**238**	*e*P	**P**	**11 05 43.4**	**+2.1**
	51nm,1.1s						
MRSI	**Marisa**	**30.48**	**226**	P	**P**	**11 05 47.8**	**+0.2**
	52nm,0.9s,4μm						
APSI	**Ampana**	**31.71**	**225**	P	**P**	**11 05 58.5**	**+0.1**
	30nm,1.2s						
SPSI	**Sidrap Palu**	**35.24**	**224**	P	**P**	**11 06 29.3**	**+0.3**
	46nm,1.1s						
KAPI	**Kappang**	**36.06**	**223**	P	**P**	**11 06 35.8**	**-0.2**
	14nm,0.6s,baz=211,slow=6.9,SNR=7.1						
KAPI	**Kappang**	**36.06**	**223**	*e*P	**P**	**11 06 36.5**	**+0.5**
	21nm,0.8s						
SBUM	**Sibu**	**36.40**	**241**	*e*P	**P**	**11 06 39.7**	**+0.7**
	24nm,0.6s						
MTKI	**Muara Teweh, K**	**36.46**	**233**	P	**P**	**11 06 39.9**	**+0.4**
	98nm,0.8s						
COEN	**Coen**	**36.54**	**180**	*e*P	**P**	**11 06 40.4**	**+0.3**
	24nm,1.1s						
LZH	**Lanzhou**	**36.67**	**300**	*e*P	**P**	**11 06 42.3**	**+1.0**
LZH				pP	sP	11 07 06.9	-2.6
LZH				sP	pP	11 07 17.2	+17
LZH				pmax	pmax		
	comp=Z,27nm,1.0s						
LZH				pmax	pmax		
	comp=Z,79nm,4.5s						
MA2	**Magadan**	**37.10**	**6**	P	**P**	**11 06 45.6**	**+1.2**
	3.5nm,0.7s,baz=203,slow=8.7,SNR=5.3						
MA2				sP	**sP**	**11 07 11.3**	**-1.3**
	3.6nm,0.5s,baz=207,slow=4.0,SNR=3.6						
KBKI	**Kotabaru**	**37.17**	**229**	P	**P**	**11 06 45.9**	**+0.4**
	35nm,0.8s						
SOEI	**Soe**	**37.41**	**212**	*e*P	**P**	**11 06 46.3**	**-1.3**
	15nm,0.7s						
MTN	**Manton Dam**	**37.42**	**200**	*e*P	**P**	**11 06 46.6**	**-0.9**
	55nm,1.6s						
NONG	**Nongkai**	**37.96**	**270**	P	**P**	**11 06 53.1**	**+0.9**
	29nm,1.0s						
STKI	**Sintang**	**38.43**	**238**	P	**P**	**11 06 56.2**	**+0.1**
	59nm,0.7s,26μm						
SONA0	**Songino Array**	**38.64**	**319**	*e*P	**P**	**11 06 58.6**	**+0.9**
	5.7nm,0.7s						
SONM	**Songino Array**	**38.64**	**319**	P	**P**	**11 06 58.6**	**+0.9**
	5.3nm,0.6s,baz=130,slow=5.9,SNR=6.2						
SONA1	**Songino Array**	**38.64**	**319**	*e*P	**P**	**11 06 58.7**	**+0.9**
CHAI	**Chaiyaphum**	**39.60**	**268**	P	**P**	**11 07 07.4**	**+1.5**
	3.2nm,0.7s						
CRAI	**Chiangrai**	**40.04**	**275**	P	**P**	**11 07 09.1**	**-0.4**
	10nm,1.0s,374nm						
PBKT	**Sadao Pong**	**40.35**	**269**	P	**P**	**11 07 12.7**	**+0.6**
	11nm,0.8s,729nm						
GTA	**Gaotai**	**40.42**	**305**	*e*P	**P**	**11 07 13.0**	**+0.3**
GTA				pmax	pmax		
	comp=Z,8.0nm,1.2s						
UTTA	**Uttaradit**	**40.43**	**271**	P	**P**	**11 07 13.2**	**+0.4**
	6.9nm,0.9s,61nm						
PHRA	**Phrae**	**40.55**	**272**	P	**P**	**11 07 14.5**	**+0.7**
	165nm,1.0s						
SEY	**Seymchan**	**40.56**	**6**	P	**P**	**11 07 14.0**	**+0.8**
	3.6nm,0.8s,baz=178,slow=6.4,SNR=8.7						
LAMP	**Lampang**	**41.09**	**272**	P	**P**	**11 07 19.1**	**+0.9**
	4.6nm,0.7s						
CMAI	**Chiengmai2**	**41.32**	**275**	P	**P**	**11 07 20.5**	**+0.2**
	15nm,0.5s,737nm						
SUKH	**Sukhothai**	**41.35**	**271**	P	**P**	**11 07 21.2**	**+0.9**
	5.1nm,0.8s						
KMMI	**Kalianget**	**41.37**	**228**	P	**P**	**11 07 22.3**	**+1.8**
	157nm,0.8s						
CMMT	**Chiang Mai**	**41.65**	**273**	P	**P**	**11 07 23.0**	**+0.1**
	15nm,0.9s						
CHTO	**Chiang Mai**	**41.66**	**273**	P	**P**	**11 07 23.1**	**+0.2**
	56nm,0.8s						
CHTO	**Chiang Mai**	**41.66**	**273**	*e*P	**P**	**11 07 23.1**	**+0.2**
	14nm,1.0s						
ABJI	**Asem Bagus**	**41.73**	**227**	P	**P**	**11 07 25.0**	**+1.6**
	105nm,0.9s						
CM01	**Chiang Mai Arr**	**41.74**	**272**	*e*P	**P**	**11 07 23.7**	**+0.2**
CM31	**Chiang Mai Arr**	**41.74**	**273**	*e*P	**P**	**11 07 24.3**	**+0.7**
CMAR	**Chiang Mai Arr**	**41.74**	**273**	P	**P**	**11 07 24.0**	**+0.4**
	4.9nm,0.5s,baz=64,slow=7.7,SNR=29						
CMAR				PcP	**PcP**	**11 09 18.9**	**+0.2**
	1.2nm,0.6s,baz=108,slow=1.4,SNR=6.7						
PHET	**Kaeng Krachan**	**42.70**	**264**	P	**P**	**11 07 32.5**	**+1.2**
	8.3nm,0.8s						
CTA	**Charters Tower**	**42.72**	**176**	P	**P**	**11 07 31.0**	**-0.4**
	4.3nm,0.4s,baz=6.9,slow=10.0,SNR=9.3						
MHMT	**Maesarieng**	**42.74**	**272**	P	P	11 07 35.4	+3.7
	9.6nm,0.8s						
WRAB	**Tennant Creek**	**43.39**	**192**	*e*P	**P**	**11 07 36.6**	**-0.3**
	11nm,0.8s						
WB2	**Warramunga Arr**	**43.40**	**192**	*e*P	**P**	**11 07 36.3**	**-0.6**
	18nm,1.0s						
WR1	**Warramunga Arr**	**43.41**	**192**	*e*P	**P**	**11 07 35.4**	**-1.6**
	17nm,1.0s						
WRA	**Warramunga Arr**	**43.41**	**192**	P	**P**	**11 07 35.4**	**-1.6**
	5.4nm,0.5s,baz=17,slow=9.0,SNR=87						
WRA				PcP	**PcP**	**11 09 23.4**	**-0.7**
	2.2nm,0.5s,baz=8.2,slow=3.6,SNR=11						
WRA				ScP	**ScP**	**11 13 06.6**	**-1.8**
	2.0nm,0.9s,baz=7.5,slow=4.0,SNR=7.0						
FITZ	**Fitzroy Crossi**	**44.22**	**205**	P	**P**	**11 07 43.0**	**-0.4**
	13nm,0.6s,baz=25,slow=9.6,SNR=20						
FITZ	**Fitzroy Crossi**	**44.22**	**205**	*e*P	**P**	**11 07 43.0**	**-0.4**
	11nm,0.7s						
KULM	**Kulim**	**44.79**	**254**	*e*P	**P**	**11 07 49.1**	**+1.0**
	9.8nm,0.9s						
KPJI	**Karang Pucung**	**45.13**	**232**	P	**P**	**11 07 50.3**	**-0.5**
	50nm,0.6s						
LEM	**Lembang**	**45.77**	**234**	P	**P**	**11 07 58.4**	**+2.3**
	58nm,0.7s,baz=331,slow=16,SNR=10						
LEM	**Lembang**	**45.77**	**234**	P	P	11 08 01.9	+5.9
	784nm,0.9s						
DBJI	**Dramaga**	**46.24**	**235**	P	**P**	**11 08 00.7**	**+1.1**
	80nm,0.9s,6μm						
LHSI	**Lahat**	**47.10**	**241**	P	**P**	**11 08 06.4**	**+0.1**
	42nm,1.0s						
AS01	**Alice Springs**	**47.10**	**192**	*e*P	**P**	**11 08 05.2**	**-0.9**
AS31	**Alice Springs**	**47.11**	**192**	*e*P	**P**	**11 08 05.5**	**-0.7**
	2.2nm,0.7s						
AS31				*e*PcP	**PcP**	**11 09 37.4**	**+0.5**
ASAR	**Alice Springs**	**47.11**	**192**	P	**P**	**11 08 05.4**	**-0.8**
	2.9nm,0.6s,baz=16,slow=10,SNR=43						
ASAR				PcP	**PcP**	**11 09 37.1**	**+0.2**
	1.2nm,0.7s,baz=28,slow=2.7,SNR=5.0						
ASAR				ScP	**ScP**	**11 13 21.8**	**-1.9**
	1.1nm,0.8s,baz=3.9,slow=3.2,SNR=6.4						
PSI	**Prapat**	**47.47**	**252**	P	**P**	**11 08 10.0**	**+0.7**
	4.5nm,0.4s,baz=73,slow=5.0,SNR=5.3						
PSI	**Prapat**	**47.47**	**252**	*e*P	**P**	**11 08 09.8**	**+0.5**
	7.1nm,0.6s						
PPI	**Padang Panjang**	**47.82**	**247**	P	**P**	**11 08 14.5**	**+2.6**
	25nm,1.2s						
MNSI	**Mandailing Nat**	**47.88**	**249**	P	**P**	**11 08 13.3**	**+0.9**
	29nm,0.6s						
KCSI	**Kotacane, Aceh**	**48.14**	**253**	P	**P**	**11 08 14.7**	**+0.3**
	14nm,1.2s						
GSI	**Gunungsitoli**	**49.37**	**251**	P	**P**	**11 08 23.8**	**0.0**
GSI	**Gunungsitoli**	**49.37**	**251**	*e*P	**P**	**11 08 23.3**	**-0.5**
	27nm,0.6s						
DZM	**Mont Dzumac**	**49.92**	**152**	P	**P**	**11 08 27.4**	**-0.5**
	7.9nm,0.6s,baz=293,slow=6.1,SNR=9.2						
TAPN	**Taplejung**	**50.33**	**287**	*e*P	**P**	**11 08 31.5**	**+0.2**
	21nm,0.4s						
ODAN	**Odare**	**50.68**	**287**	*e*P	**P**	**11 08 33.3**	**-0.6**
	35nm,0.6s						
RAMN	**Ramite**	**51.36**	**287**	*e*P	**P**	**11 08 38.5**	**-0.5**
	31nm,0.6s						
GUN	**Gumba**	**51.86**	**288**	*e*P	**P**	**11 08 43.4**	**+0.6**
PKIN	**Phulchoki**	**52.33**	**288**	*e*P	**P**	**11 08 45.5**	**-0.7**
	21nm,0.6s						
KKN	**Kakani**	**52.40**	**288**	*e*P	**P**	**11 08 46.0**	**-0.7**
	17nm,0.5s						
DMN	**Daman**	**52.58**	**288**	*e*P	**P**	**11 08 48.0**	**-0.1**
	10nm,0.5s						
MSVF	**Nonsavu**	**52.62**	**137**	*e*P	**P**	**11 08 49.8**	**+1.6**
	13nm,1.1s						
GKN	**Gorkha**	**52.93**	**289**	*e*P	**P**	**11 08 50.3**	**-0.3**
	26nm,0.5s						
ZAA0	**Zalesovo Array**	**53.49**	**321**	*e*P	**P**	**11 08 53.6**	**-0.4**
ZAA0				*e*P	**P**	**11 08 54.0**	**-0.1**
ZAA1	**Zalesovo Array**	**53.49**	**321**	*e*P	**P**	**11 08 53.7**	**-0.3**
ZAA1				*e*PcP	**PcP**	**11 09 58.6**	**-1.4**
ZALV	**Zalesovo Beam**	**53.49**	**321**	P	**P**	**11 08 53.7**	**-0.3**
	4.9nm,0.4s,baz=104,slow=6.9,SNR=13						
ZALV				PcP	**PcP**	**11 09 58.6**	**-1.4**
	3.5nm,0.7s,baz=99,slow=5.2,SNR=4.0						
KOLN	**Koldanda**	**53.87**	**288**	*e*P	**P**	**11 08 57.5**	**0.0**
	32nm,0.8s						
MK01	**Makanchi Array**	**54.11**	**312**	*e*P	**P**	**11 08 59.1**	**+0.3**
MK31	**Makanchi Array**	**54.12**	**312**	*e*P	**P**	**11 08 59.5**	**+0.7**
MK32	**Makanchi Array**	**54.12**	**312**	*e*P	**P**	**11 08 59.3**	**+0.5**
MK32				*e*pP	**pP**	**11 09 19.0**	**+0.2**
MK32				*e*PcP	**PcP**	**11 10 01.8**	**-0.8**
MK32				*e*S	**S**	**11 16 27.5**	**-2.0**
MKAR	**Makanchi Array**	**54.12**	**312**	P	**P**	**11 08 59.3**	**+0.5**
	7.9nm,0.8s,baz=93,slow=9.7,SNR=25						
MKAR				pP	**pP**	**11 09 19.0**	**+0.2**
	4.6nm,0.6s,baz=90,slow=10.0,SNR=5.5						
MKAR				PcP	**PcP**	**11 10 01.8**	**-0.8**
	3.3nm,0.7s,baz=85,slow=7.9,SNR=4.0						
MKAR				ScP	**ScP**	**11 13 51.5**	**-2.2**
	1.8nm,1.0s,baz=92,slow=3.6,SNR=4.6						
MKAR				S	**S**	**11 16 27.5**	**-2.0**
	1.0nm,0.9s,baz=98,slow=14,SNR=4.0						
MAKZ	**Makanchi**	**54.34**	**312**	*e*P	**P**	**11 09 00.9**	**+0.5**
	12nm,0.9s						
PYUN	**Piuthan**	**54.35**	**289**	*e*P	**P**	**11 09 00.9**	**-0.1**
	36nm,0.5s						
STKA	**Stephens Creek**	**54.40**	**182**	P	**P**	**11 08 59.9**	**-0.9**
	7.7nm,0.5s,baz=355,slow=7.2,SNR=43						
STKA	**Stephens Creek**	**54.40**	**182**	*e*P	**P**	**11 08 59.9**	**-0.9**
	2.1nm,0.5s						
KURK	**Kurchatov**	**56.83**	**317**	*e*P	**P**	**11 09 18.1**	**0.0**
	8.5nm,0.8s						
KURBB	**Kurchatov Arra**	**56.88**	**316**	P	**P**	**11 09 18.3**	**-0.1**
	8.2nm,0.6s,baz=94,slow=7.7,SNR=16						
NRIK	**Noril'sk**	**57.04**	**340**	P	**P**	**11 09 17.6**	**-1.6**
	7.1nm,0.6s,baz=114,slow=6.2,SNR=7.3						
CAST	**Castle Rocks**	**58.47**	**28**	*e*P	**P**	**11 09 31.0**	**+1.6**
	7.9nm,1.0s						
KSH	**Kashi**	**58.81**	**303**	P	P	11 09 35.9	+3.6
KSH				*e*PP	**PP**	**11 11 48.1**	**+5.1**
KSH				pmax	pmax		
	comp=Z,10.0nm,0.6s						
KSH				pmax	pmax		
	comp=Z,78nm,5.3s						
TKM2	**Tokmak 2**	**58.85**	**307**	*e*P	**P**	**11 09 33.8**	**+1.1**
	7.9nm,0.6s						
BPAW	**Bear Paw Mtn.**	**59.09**	**28**	*e*P	**P**	**11 09 35.7**	**+2.0**
	22nm,1.6s						
TRF	**Thorofare Moun**	**59.27**	**29**	*e*P	**P**	**11 09 36.2**	**+1.0**
	9.3nm,0.9s						
MLY	**Manley**	**59.38**	**27**	*e*P	**P**	**11 09 37.6**	**+1.8**
	5.4nm,1.0s						
AAK	**Ala-Archa**	**59.68**	**307**	P	**P**	**11 09 38.1**	**-0.3**
	4.3nm,0.5s,baz=97,slow=6.8,SNR=15						
AAK	**Ala-Archa**	**59.68**	**307**	*e*P	**P**	**11 09 38.9**	**+0.6**
	4.6nm,0.6s						
MCK	**McKinley**	**59.91**	**28**	*e*P	**P**	**11 09 41.8**	**+2.4**
	11nm,1.2s						
EKS2	**Erkin-Say**	**60.20**	**307**	*e*P	**P**	**11 09 42.5**	**+0.6**
	6.0nm,0.9s						
IL1	**Eielson Array**	**60.95**	**27**	*e*P	**P**	**11 09 46.2**	**-0.3**
ILAR	**Eielson Array**	**60.95**	**27**	P	**P**	**11 09 45.5**	**-0.9**
	2.8nm,0.9s,baz=256,slow=5.6,SNR=13						
ILAR				pP	**pP**	**11 10 06.8**	**-0.1**
	1.6nm,0.8s,baz=258,slow=5.1,SNR=4.2						
ILB	**Eielson Array**	**60.95**	**27**	*e*P	**P**	**11 09 46.6**	**+0.1**
ILB				*e*pP	**pP**	**11 10 06.8**	**-0.1**
VOSK	**Vostochnaya**	**61.63**	**319**	*e*P	**P**	**11 09 50.9**	**-0.4**
	5.5nm,0.5s						
BVAR	**Borovoye Array**	**61.98**	**319**	P	**P**	**11 09 53.7**	**+0.1**
	15nm,0.5s,baz=89,slow=7.4,SNR=41						
BVAR				pP	**pP**	**11 10 14.6**	**+0.6**
	16nm,0.7s,baz=90,slow=7.6,SNR=7.9						
BRVK	**Borovoye**	**62.05**	**319**	*e*P	**P**	**11 09 54.2**	**+0.3**
	15nm,0.8s						
KKAR	**Karatay Array**	**62.55**	**308**	*e*P	**P**	**11 09 58.0**	**+0.4**
ZRNK	**Zerenda**	**62.82**	**319**	*e*P	**P**	**11 09 59.1**	**0.0**
	9.0nm,0.8s						
INK	**Inuvik**	**66.47**	**24**	P	**P**	**11 10 22.6**	**0.0**
	2.0nm,0.7s,baz=291,slow=6.9,SNR=7.8						
ARU	**Arti**	**68.51**	**324**	P	**P**	**11 10 34.5**	**-1.2**
	5.9nm,0.5s,baz=82,slow=4.0,SNR=7.3						
ARU	**Arti**	**68.51**	**324**	*e*P	**P**	**11 10 35.6**	**-0.1**
	9.8nm,0.9s						
ABKAR	**Akbulak array**	**68.92**	**316**	*e*P	**P**	**11 10 38.0**	**-0.4**
AKTO	**Aktyubinsk**	**69.91**	**317**	P	**P**	**11 10 42.8**	**-1.7**
	2.8nm,0.7s,baz=61,slow=7.5,SNR=8.2						
GEYT	**Alibeck**	**72.81**	**304**	P	**P**	**11 11 02.3**	**+0.1**
	3.4nm,0.7s,baz=57,slow=5.5,SNR=6.2						
SPITS	**Spitsbergen Ar**	**74.78**	**350**	P	**P**	**11 11 13.6**	**+0.6**
	6.6nm,1.0s,baz=97,slow=7.1,SNR=6.8						
YKW3	**Yellowknife Ar**	**75.34**	**28**	*e*P	**P**	**11 11 16.9**	**+0.5**
	5.7nm,1.1s						
YKA	**Yellowknife Ar**	**75.37**	**28**	P	**P**	**11 11 17.0**	**+0.4**
	2.1nm,0.4s,baz=292,slow=5.9,SNR=77						
YKB5	**Yellowknife Ar**	**75.37**	**28**	*e*P	**P**	**11 11 16.9**	**+0.3**
B08A	**Colville Reser**	**77.90**	**43**	*e*P	**P**	**11 11 32.5**	**+1.2**
	8.1nm,0.9s						
M02C	**Callahan**	**77.94**	**50**	P	**P**	**11 11 33.4**	**+1.7**
	baz=290						
ARCES	**ARCESS Array B**	**77.95**	**341**	P	**P**	**11 11 31.0**	**0.0**
	3.6nm,0.7s,baz=71,slow=8.0,SNR=13						
UOSS	**Minazif**	**78.33**	**292**	*e*P	**P**	**11 11 33.9**	**-0.1**
	0.7nm,0.8s						
J05D	**Fort Rock, OR**	**78.43**	**48**	P	**P**	**11 11 35.4**	**+1.0**
	baz=290						
M04C	**Macdoel**	**78.53**	**50**	P	**P**	**11 11 36.2**	**+1.2**
	baz=290						
O03D	**Paynes Creek**	**79.07**	**51**	P	**P**	**11 11 38.6**	**+0.7**
	baz=291						
NEW	**Newport**	**79.31**	**42**	P	**P**	**11 11 40.2**	**+1.2**
	baz=292						
CMB	**Columbia Colle**	**80.91**	**53**	*e*P	**P**	**11 11 48.8**	**+1.0**
	7.3nm,0.7s						
WALA	**Waterton Lakes**	**80.95**	**41**	*e*P	**P**	**11 11 50.0**	**+2.1**
	7.0nm,0.9s						
SWMT	**Swartz Lake**	**81.54**	**42**	*e*P	**P**	**11 11 52.3**	**+1.2**
KBZ	**Khabaz**	**81.77**	**314**	P	**P**	**11 11 52.4**	**+0.3**
	14nm,0.8s,baz=129,slow=2.4,SNR=18						
KBZ				pP	**pP**	**11 12 13.1**	**-0.3**
	22nm,0.8s,baz=64,slow=3.8,SNR=9.7						
MFID	**Camas Ranch**	**82.03**	**46**	*e*P	**P**	**11 11 54.8**	**+1.0**
	6.4nm,0.9s						
NV01	**Mina Array Sit**	**82.28**	**52**	*e*P	**P**	**11 11 56.0**	**+0.8**
NVAR	**Mina Array Bea**	**82.28**	**52**	P	**P**	**11 11 56.5**	**+1.2**
	4.0nm,0.8s,baz=269,slow=5.7,SNR=34						
NVAR				pP	**pP**	**11 12 16.7**	**+0.1**
	3.6nm,0.7s,baz=270,slow=5.8,SNR=8.2						
FIA1	**FINESS Array S**	**82.28**	**334**	*e*P	**P**	**11 11 53.0**	**-1.4**
FIA0	**FINESS Array S**	**82.28**	**334**	*e*P	**P**	**11 11 53.1**	**-1.3**
FIA0				*e*pP	**pP**	**11 12 15.9**	**+0.1**
FINES	**FINESS Array B**	**82.28**	**334**	P	**P**	**11 11 53.1**	**-1.3**
	3.9nm,0.4s,baz=78,slow=4.8,SNR=45						
FINES				pP	**pP**	**11 12 15.9**	**+0.1**
	3.3nm,0.4s,baz=74,slow=5.1,SNR=4.3						
PKM	**Mcpherson Peak**	**82.52**	**55**	P	**P**	**11 11 57.9**	**+1.4**
	baz=292						
HLID	**Hailey**	**82.91**	**46**	P	**P**	**11 11 59.4**	**+1.0**
	baz=295						
HLID	**Hailey**	**82.91**	**46**	*e*P	**P**	**11 11 59.5**	**+1.1**
	2.2nm,0.8s						
SCZ2	**Santa Cruz Isl**	**83.00**	**56**	P	**P**	**11 12 00.2**	**+1.4**
	baz=293						
MPMC	**Manual Prospec**	**83.81**	**54**	P	**P**	**11 12 04.0**	**+0.8**
	baz=294						
LRMC	**Laurel Mtn Rad**	**83.90**	**54**	P	**P**	**11 12 04.6**	**+1.1**
	baz=294						
FURC	**Furnace Creek,**	**84.11**	**53**	P	**P**	**11 12 05.5**	**+1.1**
	baz=294						
R11A	**Troy Canyon, C**	**84.27**	**51**	P	**P**	**11 12 06.4**	**+0.9**
	baz=294						
R11A	**Troy Canyon, C**	**84.27**	**51**	*e*P	**P**	**11 12 06.2**	**+0.7**
	2.5nm,1.0s						
TPNV	**Topopah Spring**	**84.36**	**52**	P	**P**	**11 12 06.6**	**+0.7**
	baz=294						
TPNV	**Topopah Spring**	**84.36**	**52**	*e*P	**P**	**11 12 07.0**	**+1.1**
	8.7nm,1.4s						
GSC	**Goldstone, Bar**	**84.62**	**54**	P	**P**	**11 12 07.9**	**+0.8**
	baz=294						
GSC	**Goldstone, Bar**	**84.62**	**54**	*e*P	**P**	**11 12 08.3**	**+1.1**
	9.8nm,1.3s						
FFC	**Flin Flon**	**84.77**	**32**	*e*P	**P**	**11 12 08.1**	**+0.7**
	12nm,0.8s						
SHOC	**Shoshone, Teco**	**84.77**	**53**	P	**P**	**11 12 08.8**	**+1.0**
	baz=294						
H17A	**Grant Village**	**85.04**	**44**	P	**P**	**11 12 12.1**	**+2.8**
	baz=297						
HEC	**Hector,Ludlow**	**85.17**	**54**	P	**P**	**11 12 10.4**	**+0.6**
	baz=294						
TUQ	**Turquoise Moun**	**85.23**	**54**	P	**P**	**11 12 11.1**	**+0.8**
	baz=295						
PSUT	**Pine Spring**	**85.42**	**50**	*e*P	**P**	**11 12 12.3**	**+1.0**
	4.7nm,0.9s						
DUG	**Dugway, Tooele**	**85.43**	**48**	P	**P**	**11 12 11.9**	**+0.7**
	baz=296						
DUG	**Dugway, Tooele**	**85.43**	**48**	*e*P	**P**	**11 12 12.2**	**+1.0**
	4.9nm,0.6s						
RLMT	**Red Lodge**	**85.53**	**43**	P	**P**	**11 12 13.1**	**+1.4**
	baz=298						
RLMT	**Red Lodge**	**85.53**	**43**	*e*P	**P**	**11 12 13.5**	**+1.8**
RLMT				*e*pP	**pP**	**11 12 35.6**	**+2.5**
PFO	**Pinyon Flats O**	**85.58**	**55**	P	**P**	**11 12 12.4**	**+0.4**
	baz=294						
PFO	**Pinyon Flats O**	**85.58**	**55**	*e*P	**P**	**11 12 12.8**	**+0.8**
	6.5nm,1.0s						
HWUT	**Hardware Ranch**	**85.65**	**47**	*e*P	**P**	**11 12 13.4**	**+1.1**
	4.7nm,0.9s						
GMRC	**Granite Mounta**	**85.69**	**54**	P	**P**	**11 12 13.5**	**+0.9**
	baz=295						
BELC	**Belle Mtn. Jos**	**85.76**	**55**	P	**P**	**11 12 13.2**	**+0.2**
	baz=295						
MONP2	**Monument Peak**	**85.90**	**56**	P	**P**	**11 12 14.3**	**+0.6**
	baz=294						
FCC	**Fort Churchill**	**85.95**	**26**	*e*P	**P**	**11 12 13.4**	**+0.3**
	4.1nm,0.8s						
NLU	**North Lily Min**	**86.05**	**48**	*e*P	**P**	**11 12 15.2**	**+0.9**
	5.0nm,1.2s						
JLU	**Jordanelle**	**86.18**	**47**	*e*P	**P**	**11 12 16.1**	**+1.1**
	5.9nm,0.8s						
BC3	**Big Chuckawall**	**86.32**	**55**	P	**P**	**11 12 16.2**	**+0.6**
	baz=295						
IRM	**Iron Mountain**	**86.34**	**55**	P	**P**	**11 12 16.4**	**+0.7**
	baz=295						
SWSC	**Sam W. Stewart**	**86.35**	**56**	P	**P**	**11 12 16.2**	**+0.5**
	baz=295						
PDAR	**Pinedale Array**	**86.45**	**45**	P	**P**	**11 12 16.1**	**-0.1**
	0.7nm,0.6s,baz=257,slow=3.0,SNR=5.8						
PDAR				pP	**pP**	**11 12 37.2**	**-0.5**
	0.8nm,0.8s,baz=259,slow=3.9,SNR=3.2						
LCMT	**Little Creek M**	**86.52**	**51**	*e*P	**P**	**11 12 17.8**	**+1.2**
	3.6nm,0.7s						
LAO	**LASA Array**	**86.64**	**40**	P	**P**	**11 12 17.9**	**+1.0**
	baz=300						
LAO	**LASA Array**	**86.64**	**40**	*e*P	**P**	**11 12 18.2**	**+1.3**
	8.8nm,1.0s						
AKASG	**Malin Array Be**	**86.74**	**324**	P	**P**	**11 12 15.8**	**-1.4**
	0.9nm,0.4s,baz=45,slow=4.0,SNR=4.7						
KNB	**Kanab**	**86.82**	**51**	*e*P	**P**	**11 12 19.8**	**+1.6**
	10nm,0.8s						
W13A	**Hualapai Mount**	**86.88**	**53**	*e*P	**P**	**11 12 19.6**	**+1.0**
	2.7nm,0.9s						
PDMCI	**Parker Dam,Lak**	**87.03**	**54**	P	**P**	**11 12 19.8**	**+0.9**
	baz=296						
GLA	**Glamis**	**87.05**	**55**	P	**P**	**11 12 20.1**	**+1.0**
	baz=295						
P18A	**Preston Nutter**	**87.45**	**48**	*e*P	**P**	**11 12 21.3**	**0.0**
	17nm,1.5s						
SRU	**San Rafael Swe**	**87.50**	**48**	*e*P	**P**	**11 12 21.8**	**+0.5**
	3.8nm,0.6s						
RAYN	**Ar Rayn**	**87.93**	**295**	*e*P	**P**	**11 12 23.2**	**-0.3**
	13nm,0.8s						
113A	**Mohawk Valley,**	**87.98**	**55**	*e*P	**P**	**11 12 24.6**	**+1.1**
	3.4nm,0.8s						
NB2	**NORSAR Subarra**	**88.00**	**339**	P	**P**	**11 12 21.2**	**-1.9**
	comp=Z,1.5nm,0.6s,baz=44,slow=5.1						
NB200	**NORSAR Array S**	**88.00**	**339**	*e*P	**P**	**11 12 21.2**	**-1.9**
NOA	**NORSAR Array B**	**88.00**	**339**	P	**P**	**11 12 21.2**	**-1.9**
	comp=Z,1.0nm,0.5s,baz=46,slow=4.8,SNR=4.2						
WUAZ	**Wupatki**	**88.53**	**52**	P	**P**	**11 12 27.5**	**+1.1**
	baz=297						
WUAZ	**Wupatki**	**88.53**	**52**	*e*P	**P**	**11 12 27.8**	**+1.4**
	comp=Z,23nm,2.0s						
PV10	**Paradox Valley**	**88.87**	**49**	*e*P	**P**	**11 12 29.1**	**+1.1**
X16A	**Lo Mia Camp, P**	**88.98**	**53**	*e*P	**P**	**11 12 30.1**	**+1.6**
	comp=Z,4.1nm,1.4s						
214A	**Organ Pipe Nat**	**89.06**	**56**	P	**P**	**11 12 30.1**	**+1.4**
	baz=296						
B28A	**Dugan Ranch, T**	**89.07**	**37**	P	**P**	**11 12 29.2**	**+0.9**
	baz=304						
A29A	**Manning Farm,**	**89.42**	**36**	P	**P**	**11 12 30.7**	**+0.7**
	baz=305						
E27A	**Carson**	**89.51**	**39**	P	**P**	**11 12 31.5**	**+1.0**
	baz=303						
I25A	**Rochford**	**89.51**	**42**	P	**P**	**11 12 31.0**	**+0.2**
	baz=302						
BR101	**Keskin Array S**	**89.75**	**313**	*e*P	**P**	**11 12 30.1**	**-1.8**
BR101				*e*pP	**pP**	**11 12 51.5**	**-2.0**
BR131	**Keskin Array S**	**89.75**	**313**	*e*P	**P**	**11 12 31.5**	**-0.4**
BRTR	**Keskin Array B**	**89.75**	**313**	P	**P**	**11 12 30.1**	**-1.8**
	comp=Z,1.3nm,0.5s,baz=77,slow=4.4,SNR=4.4						
BRTR				pP	**pP**	**11 12 51.5**	**-2.0**
	comp=Z,3.9nm,0.8s,baz=90,slow=3.8,SNR=9.3						
G27A	**Dupree**	**89.87**	**40**	P	**P**	**11 12 32.8**	**+0.6**
	baz=303						
SMCO	**Snowmass**	**89.89**	**47**	*e*P	**P**	**11 12 34.1**	**+1.2**
	comp=Z,3.2nm,0.7s						
A30A	**Hoffart Farm,**	**89.91**	**36**	P	**P**	**11 12 32.8**	**+0.6**
	baz=306						
B30A	**Myrvik Farm, E**	**90.18**	**36**	P	**P**	**11 12 34.0**	**+0.5**
	baz=306						

H27A	**Howes**	**90.19**	**41**	P	**P**	**11 12 34.8**	**+1.1**
	baz=303						
J26A	**Sides Ranch, S**	**90.29**	**42**	P	**P**	**11 12 34.7**	**+0.4**
	baz=302						
ULM	**Lac du Bonnet**	**90.40**	**34**	P	**P**	**11 12 33.2**	**-1.2**
	comp=Z,1.9nm,0.6s,baz=246,slow=8.9,SNR=4.7						
I27A	**Quinn**	**90.51**	**41**	P	**P**	**11 12 35.4**	**+0.1**
	baz=303						
C30A	**Mose, Pekin**	**90.53**	**37**	P	**P**	**11 12 35.5**	**+0.3**
	baz=306						
B31A	**Greenbush Farm**	**90.56**	**36**	P	**P**	**11 12 35.8**	**+0.5**
	baz=306						
G28A	**Parade**	**90.64**	**40**	P	**P**	**11 12 35.9**	**+0.1**
	baz=304						
S22A	**4UR Ranch, Cre**	**90.70**	**48**	P	**P**	**11 12 37.7**	**+1.1**
	baz=300						
D30A	**Buchanan**	**90.72**	**37**	P	**P**	**11 12 36.2**	**+0.1**
	baz=305						
C31A	**Landman Farms,**	**90.89**	**36**	P	**P**	**11 12 37.3**	**+0.4**
	baz=306						
J27A	**Elkhorn Farm,**	**90.98**	**42**	P	**P**	**11 12 38.1**	**+0.6**
	baz=303						
I28A	**Midland**	**91.08**	**41**	P	**P**	**11 12 38.1**	**+0.3**
	baz=304						
B32A	**Ashes, Strandq**	**91.17**	**35**	P	**P**	**11 12 38.4**	**+0.3**
	baz=307						
H29A	**Onida**	**91.30**	**40**	P	**P**	**11 12 39.0**	**+0.1**
	baz=304						
A33A	**Warroad**	**91.45**	**34**	P	**P**	**11 12 39.5**	**0.0**
	baz=308						
SDCO	**Great Sand Dun**	**91.61**	**48**	P	**P**	**11 12 41.5**	**+0.7**
	baz=301						
STHS	**Stebnicka Huta**	**91.67**	**326**	*e*P	**P**	**11 12 42.8**	**+2.3**
J29A	**Okreek**	**91.92**	**41**	P	**P**	**11 12 41.9**	**+0.1**
	baz=304						
B34A	**Aery, Baudette**	**92.11**	**34**	P	**P**	**11 12 42.5**	**0.0**
	baz=308						
ANMO	**Albuquerque**	**92.34**	**51**	P	**P**	**11 12 44.7**	**+0.6**
	baz=300						
L29A	**Maesberg Ranch**	**92.58**	**42**	P	**P**	**11 12 44.8**	**0.0**
	baz=304						
D34A	**Park Rapids**	**92.69**	**36**	P	**P**	**11 12 45.5**	**+0.3**
	baz=308						
L30A	**Spencer Herefo**	**93.11**	**42**	P	**P**	**11 12 47.1**	**-0.3**
	baz=305						
H33A	**Prehn Over Nor**	**93.29**	**38**	P	**P**	**11 12 48.2**	**+0.1**
	baz=307						
L31A	**Butterfield Fa**	**93.52**	**41**	P	**P**	**11 12 49.9**	**+0.7**
	baz=305						
CLL	**Collm**	**94.33**	**331**	*i* P	**P**	**11 12 50.9**	**-1.7**
	comp=Z,20nm,2.0s						
LTX	**Lajitas**	**97.22**	**54**	*e*P	Pdif	11 13 06.5	0.0
TXAR	**Lajitas Array**	**97.22**	**54**	P	Pdif	11 13 06.5	0.0
	comp=Z,0.5nm,0.8s,baz=295,slow=3.5,SNR=4.8						
BOSA	**Boshof**	**124.52**	**250**	PKP	**PKPdf**	**11 18 31.3**	**-1.4**
	comp=Z,2.9nm,0.8s,baz=261,slow=2.4,SNR=3.8						
SNAA	**Sanae**	**127.47**	**193**	P	**PKPdf**	**11 18 36.2**	**-0.8**
TOA1	**Torodi Ar. Sit**	**128.22**	**310**	*e*PKPdf	**PKPdf**	**11 18 38.7**	**-1.3**
TOA1				*e*pPKPdf	**pPKPdf**	**11 19 00.5**	**-2.0**
TOA0	**Torodi Ar. Sit**	**128.22**	**310**	*e*PKPdf	**PKPdf**	**11 18 39.7**	**-0.3**
TORD	**Torodi Ar. Bea**	**128.22**	**310**	PKP	**PKPdf**	**11 18 38.7**	**-1.3**
	comp=Z,1.5nm,0.6s,baz=28,slow=1.7,SNR=15						
TORD				pPKP	**pPKPdf**	**11 19 00.5**	**-2.0**
	comp=Z,1.3nm,0.8s,baz=38,slow=1.7,SNR=4.4						
TORD	**Torodi Ar. Bea**	**128.22**	**310**	PKP	**PKPdf**	**11 18 38.7**	**-1.3**
VNA2	**Neumayer--Watz**	**128.97**	**192**	P	**PKPdf**	**11 18 39.3**	**-0.5**
	baz=37,slow=0.8						
VNA3	**Neumayer Olymp**	**129.12**	**191**	P	**PKPdf**	**11 18 39.3**	**-0.8**
VNA1	**Neumayer--Stat**	**129.36**	**192**	P	**PKPdf**	**11 18 38.3**	**-2.2**
SJG	**San Juan**	**130.10**	**38**	*e*P	**PKPdf**	**11 18 46.2**	**+2.7**
URB	**Uribe, Santand**	**133.25**	**55**	*e*P	**PKPdf**	**11 18 47.3**	**-2.4**
SDV	**Santo Domingo**	**134.13**	**50**	*e*PKPdf	**PKPdf**	**11 18 50.7**	**-0.7**
CHIC	**Chingaza**	**134.60**	**58**	*e*P	**PKPdf**	**11 18 48.5**	**-4.2**
DBIC	**Dimbokro**	**137.33**	**310**	PKP	**PKPdf**	**11 18 57.8**	**+0.6**
	comp=Z,2.3nm,0.6s,baz=26,slow=1.1,SNR=7.2						
DBIC	**Dimbokro**	**137.33**	**310**	PKP	**PKPdf**	**11 18 57.8**	**+0.6**
PTGA	**Pitinga**	**148.40**	**49**	PKP	**PKPdf**	**11 19 16.5**	**-0.2**
	comp=Z,12nm,0.6s,baz=344,slow=5.1,SNR=12						
PTGA				PKPbc	**PKPbc**	**11 19 20.0**	**-0.2**
	comp=Z,12nm,0.6s,baz=322,slow=4.3,SNR=16						
LCO	**Las Campanas**	**148.76**	**109**	*e*PKPdf	**PKPdf**	**11 19 15.2**	**-1.9**
LCO				*e*PKPbc	**PKPbc**	**11 19 21.1**	**0.0**
PB01	**IPOC Station P**	**149.45**	**93**	*e*PKPbc	**PKPbc**	**11 19 23.0**	**+0.3**
LPAZ	**La Paz**	**149.60**	**83**	PKP	**PKPdf**	**11 19 19.5**	**+0.2**
	comp=Z,10nm,0.8s,baz=306,slow=4.8,SNR=3.8						
LPAZ				PKPbc	**PKPbc**	**11 19 24.2**	**+0.3**
	comp=Z,9.5nm,0.8s,baz=264,slow=1.5,SNR=27						
SAML	**Samuel**	**151.00**	**66**	*e*PKPbc	**PKPbc**	**11 19 26.1**	**-0.5**
SAML				*e*PKPab	**PKPab**	**11 19 33.3**	**-1.0**

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*IDC **05** 10:59:56.7±0.7, 38°.35N×142°.23E, h0km, mb3.9/16, mb1 4.0/20, mb1mx3.8/57, mbtmp3.9/20, ML3.2/4, MS3.1/1, Ms1 3.1/1, ms1mx2.6/57, Error ellipse: s-maj=18.5km s-min=16.1km az=108.0*

*ISCJB **05** 11:00:00.5±0.4, 38°.39N±0°.04×142°.19E±0°.05, h41km, mb4.0/20, Error ellipse: s-maj=6.1km s-min=4.4km az=36.3*

*JMA **05** 11:00:00.4±0.2, 38°.42N×142°.22E, h36km±3km, M4.0 JMA Felt I J1.*

*NIED **05** 11:00:00, 38°.40N×142°.20E, h38km, Mw4.0 Best double couple: Mo1.05000×10^15 NP1:φs336.00000°, δ58.00000°, λ-156.00000°. NP2:φs232.00000°, δ70.00000°, λ-35.00000°.*

*NEIC **05** 11:00:02.3±0.8, 38°.38N×142°.18E, h41km±7km, mb4.6/4, Error ellipse: s-maj=10.0km s-min=6.3km az=110.0*

ISC 05 11:00:02.6±0.6**, 38°.41N**±0°.05×**142°.12E**±0°.06**, h41km, n42, σ1s21**/44**, mb4.0**/20**, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**0.61**	**275**	P	**Pn**	**11 00 13.5**	**-1.3**
JIO				S	**Sn**	**11 00 22.4**	**-1.1**
OFUJ	**Ofunato**	**0.76**	**332**	P	**Pn**	**11 00 15.0**	**-1.8**
JMK	**Ichinoseki**	**0.89**	**308**	P	**Pn**	**11 00 17.6**	**-1.0**
JOU	**Okura**	**1.15**	**268**	P	**Pn**	**11 00 22.0**	**-0.2**
JOU				S	**Sn**	**11 00 37.4**	**+0.7**
JMM	**Marumori**	**1.18**	**243**	P	**Pn**	**11 00 21.8**	**-0.8**
JMM				S	**Sn**	**11 00 36.8**	**-0.6**
JOM	**Ohasama**	**1.24**	**329**	P	**Pn**	**11 00 22.5**	**-1.0**
JOM				S	**Sn**	**11 00 38.4**	**-0.7**
MJAR	**Matsushiro Arr**	**3.63**	**240**	Pn	**Pn**	**11 00 57.8**	**+1.6**
	3.1nm,0.3s,baz=58,slow=9.5,SNR=9.4						
MAJO	**Matsushiro**	**3.63**	**240**	*e*Pn	**Pn**	**11 00 56.9**	**+0.6**
MAJO				*e*Sn	**Sn**	**11 01 38.2**	**+0.4**
MAT	**Matsushiro**	**3.63**	**240**	P	**Pn**	**11 00 58.7**	**+2.4**
MAT				*e*S	**Sn**	**11 01 41.5**	**+3.7**
ERM	**Erimo**	**3.69**	**12**	*e*Pn	**Pn**	**11 00 57.1**	**+0.1**
JHJ2	**Mitsune**	**5.61**	**200**	*e*Pn	**Pn**	**11 01 22.0**	**-1.4**
JHJ2				*e*Sn	**Sn**	**11 02 27.7**	**+1.1**
JHJ	**Hachijo jima 2**	**5.61**	**200**	Pn	**Pn**	**11 01 22.1**	**-1.4**
	19nm,0.3s,baz=160,slow=22,SNR=6.2						
JHJ				Sn	**Sn**	**11 02 22.5**	**-4.1**
	13nm,0.3s,baz=73,slow=19,SNR=4.1						
USRK	**Ussuriysk Ar.**	**9.57**	**310**	Pn	**Pn**	**11 02 18.4**	**+0.7**
	0.4nm,0.3s,baz=117,slow=13,SNR=8.3						
USRK				LR	LR	11 06 00.5	
	comp=Z,111nm,18.1s,baz=138,slow=38						
KSRS	**Korea Array**	**11.26**	**270**	Pn	**Pn**	**11 02 41.2**	**+0.4**
	0.2nm,0.3s,baz=77,slow=14,SNR=3.6						
KSAR	**Wonju Array Be**	**11.29**	**269**	Pn	**Pn**	**11 02 41.2**	**0.0**
KLR	**Kul'dur**	**13.14**	**329**	Pn	**Pn**	**11 03 05.7**	**-0.8**
	0.1nm,0.3s,baz=155,slow=17,SNR=2.5						
MA2	**Magadan**	**21.89**	**12**	P	**P**	**11 04 52.1**	**+0.3**
	1.1nm,0.4s,baz=230,slow=14,SNR=3.6						
SEY	**Seymchan**	**25.34**	**11**	P	**P**	**11 05 25.6**	**+0.4**
	0.9nm,0.5s,baz=190,slow=9.9,SNR=7.2						
H11N2	**WAKE ISLAND Hy**	**28.41**	**124**	T	T	11 36 17.0	
	baz=316,slow=75,SNR=51						
H11N1	**WAKE ISLAND Hy**	**28.42**	**124**	T	T	11 36 17.6	
	baz=316,slow=75,SNR=95						
H11N3	**WAKE ISLAND Hy**	**28.43**	**124**	T	T	11 36 19.2	
	baz=316,slow=75,SNR=102						
H11S1	**WAKE ISLAND Hy**	**29.17**	**126**	T	T	11 37 08.8	
	baz=318,slow=76,SNR=18						
H11S3	**WAKE ISLAND Hy**	**29.17**	**126**	T	T	11 37 09.0	
	baz=318,slow=76,SNR=26						
H11S2	**WAKE ISLAND Hy**	**29.19**	**126**	T	T	11 37 10.9	
	baz=318,slow=76,SNR=20						
ZALV	**Zalesovo Beam**	**41.42**	**311**	P	**P**	**11 07 45.2**	**+0.5**
	2.2nm,0.4s,baz=84,slow=8.3,SNR=7.0						
MKAR	**Makanchi Array**	**43.88**	**301**	P	**P**	**11 08 05.1**	**+0.2**
	1.5nm,0.8s,baz=84,slow=12,SNR=10						
KURK	**Kurchatov**	**45.54**	**307**	*e*P	**P**	**11 08 17.9**	**-0.1**
	12nm,0.8s						
KURBB	**Kurchatov Arra**	**45.61**	**307**	P	**P**	**11 08 18.8**	**+0.2**
	3.6nm,0.5s,baz=80,slow=8.0,SNR=24						
ILAR	**Eielson Array**	**48.04**	**33**	P	**P**	**11 08 37.8**	**+0.5**
	0.1nm,0.4s,baz=264,slow=6.0,SNR=2.5						
TKM2	**Tokmak 2**	**49.48**	**298**	*e*P	**P**	**11 08 48.7**	**-0.3**
	1.9nm,0.5s						
BVAR	**Borovoye Array**	**50.07**	**312**	P	**P**	**11 08 53.8**	**+0.7**
	0.5nm,0.6s,baz=72,slow=9.8,SNR=3.6						
INK	**Inuvik**	**52.91**	**28**	P	**P**	**11 09 13.3**	**-0.7**
	1.0nm,1.1s,baz=286,slow=6.5,SNR=2.3						
ABKAR	**Akbulak array**	**57.49**	**310**	*e*P	**P**	**11 09 47.5**	**+0.2**
	0.8nm,0.5s						
AKTO	**Aktyubinsk**	**58.18**	**312**	P	**P**	**11 09 52.9**	**+0.7**
	1.6nm,0.8s,baz=78,slow=7.1,SNR=5.7						
WRAB	**Tennant Creek**	**58.49**	**189**	*e*P	**P**	**11 09 54.0**	**-0.6**
	6.7nm,0.8s						
WRA	**Warramunga Arr**	**58.50**	**189**	P	**P**	**11 09 54.1**	**-0.5**
	5.3nm,0.7s,baz=7.1,slow=7.3,SNR=7.1						
ASAR	**Alice Springs**	**62.23**	**189**	P	**P**	**11 10 19.9**	**-0.2**
	2.1nm,0.7s,baz=9.5,slow=6.3,SNR=6.6						
YKA	**Yellowknife Ar**	**62.34**	**31**	P	**P**	**11 10 20.5**	**+0.1**
	0.1nm,0.5s,baz=305,slow=6.8,SNR=3.9						
FINES	**FINESS Array B**	**67.86**	**332**	P	**P**	**11 10 56.5**	**+0.3**
	1.8nm,0.8s,baz=57,slow=14,SNR=5.2						
AKASG	**Malin Array Be**	**73.55**	**322**	P	**P**	**11 11 31.9**	**+0.8**
	0.7nm,0.5s,baz=12,slow=21,SNR=5.0						
PDAR	**Pinedale Array**	**76.31**	**46**	P	**P**	**11 11 47.5**	**0.0**
	0.3nm,0.5s,baz=260,slow=2.7,SNR=4.2						
TXAR	**Lajitas Array**	**88.84**	**53**	P	**P**	**11 12 52.7**	**+0.1**
	0.3nm,0.7s,baz=310,slow=3.9,SNR=3.8						

IDC 05 11:02:40.3±3.2**, 53°.42N**×**87°.89E, h0km, mb1 2.8**/2**, mb1mx2.7**/56**, mbtmp2.8**/2**, ML2.5**/2**, Error ellipse: s-maj=29.4km s-min=16.8km az=58.0, Southwestern Siberia**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
I46RU	**ZALESOVO INFRA**	**1.90**	**287**	*i*		11 11 50.0	
	baz=106,slow=331,SNR=4.0						
ZALV	**Zalesovo Beam**	**1.90**	**287**	Pg	Pn	11 03 14.3	+0.3
	1.0nm,0.3s,baz=106,slow=12,SNR=16						
ZALV				Lg	Lg	11 03 42.4	
	2.2nm,0.3s,baz=104,slow=25,SNR=9.4						
KURBB	**Kurchatov Arra**	**6.42**	**248**	Pn	Pn	11 04 15.2	-0.8
	0.1nm,0.3s,baz=62,slow=14,SNR=6.5						
KURBB				Lg	Lg	11 06 05.8	
	0.0nm,0.3s,baz=53,slow=27,SNR=4.7						
MKAR	**Makanchi Array**	**7.54**	**211**	Pn	Pn	11 04 34.1	+2.5
	0.1nm,0.3s,baz=22,slow=12,SNR=5.3						
MKAR				Lg	Lg	11 06 37.7	
	0.1nm,0.3s,baz=22,slow=27,SNR=3.5						

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*NIED **05** 11:04:00, 35°.90N×141°.70E, h11km, Mw3.8 Best double couple: Mo4.87000×10^14 NP1:φs139.00000°, δ60.00000°, λ-12.00000°. NP2:φs235.00000°, δ79.00000°, λ-149.00000°.*

*IDC **05** 11:04:46.9±1.4, 35°.76N×141°.69E, h0km, mb3.7/9, mb1 3.8/11, mb1mx3.6/51, mbtmp3.6/11, ML3.3/2, Error ellipse: s-maj=32.1km s-min=20.5km az=154.0*

*ISCJB **05** 11:04:49.1±0.7, 35°.79N±0°.05×141°.67E±0°.07, h26km, mb3.6/9, Error ellipse: s-maj=8.1km s-min=6.7km az=37.7*

*JMA **05** 11:04:49.3±0.4, 35°.95N×141°.67E, h21km, M3.7*

ISC 05 11:04:50.9±0.9**, 35°.90N**±0°.05×**141°.59E**±0°.07**, h26km, n19, σ1s26**/22**, mb3.6**/9**, 1C, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.63**	**252**	P	**Pb**	**11 05 02.7**	**-0.6**
CHOJ				S	**Sb**	**11 05 11.9**	**+0.2**
JHO	**Hitachi**	**1.09**	**311**	P	**Pn**	**11 05 08.1**	**-2.4**
JYT	**Yasato**	**1.18**	**287**	P	**Pb**	**11 05 11.4**	**-1.2**
ONAJ	**Iwakimizuishiy**	**1.36**	**332**	P	**Pb**	**11 05 14.3**	**-1.5**
JAG	**Ashikaga**	**1.81**	**288**	P	**Pn**	**11 05 20.6**	**+0.2**
JFT	**Otama**	**1.91**	**328**	P	**Pb**	**11 05 23.1**	**-1.9**
JFT				S	**Sb**	**11 05 47.8**	**-0.6**
MJAR	**Matsushiro Arr**	**2.81**	**284**	Pn	**Pn**	**11 05 35.6**	**+1.4**
	4.4nm,0.3s,baz=90,slow=9.0,SNR=16						
MAT	**Matsushiro**	**2.81**	**284**	P	**Pn**	**11 05 35.1**	**+0.9**
MAT				*e*S	**Sn**	**11 06 06.7**	**-0.5**
JHJ	**Hachijo jima 2**	**3.15**	**209**	Pn	**Pn**	**11 05 37.5**	**-1.4**
	8.1nm,0.3s,baz=24,slow=11,SNR=3.1						
JHJ				Sn	**Sn**	**11 06 13.1**	**-2.5**
	21nm,0.3s,baz=67,slow=14,SNR=3.7						
SONM	**Songino Array**	**28.55**	**306**	P	**P**	**11 10 45.4**	**+0.8**
	0.6nm,0.7s,baz=82,slow=10,SNR=2.3						
DAV	**Davao City (W)**	**32.23**	**211**	⇑S	S	11 16 34.5	+5.6
ZALV	**Zalesovo Beam**	**42.79**	**313**	P	**P**	**11 12 47.0**	**+0.8**
	0.7nm,0.5s,baz=99,slow=8.9,SNR=2.7						
MKAR	**Makanchi Array**	**44.85**	**303**	P	**P**	**11 13 03.8**	**+0.9**
	0.8nm,0.7s,baz=90,slow=7.5,SNR=3.1						
KURBB	**Kurchatov Arra**	**46.82**	**309**	P	**P**	**11 13 18.9**	**+0.7**
	1.5nm,0.8s,baz=78,slow=6.8,SNR=4.4						
ILAR	**Eielson Array**	**50.38**	**32**	P	**P**	**11 13 46.2**	**+0.8**
	0.7nm,0.7s,baz=264,slow=6.7,SNR=4.8						
BVAR	**Borovoye Array**	**51.45**	**313**	P	**P**	**11 13 54.6**	**+0.9**
	0.5nm,0.6s,baz=74,slow=11,SNR=2.7						
INK	**Inuvik**	**55.33**	**27**	P	**P**	**11 14 23.0**	**+1.1**
	0.4nm,0.6s,baz=266,slow=1.6,SNR=3.6						
YKA	**Yellowknife Ar**	**64.72**	**30**	P	**P**	**11 15 26.9**	**+0.5**
	0.4nm,0.7s,baz=302,slow=6.6,SNR=4.7						
PDAR	**Pinedale Array**	**78.36**	**45**	P	**P**	**11 16 49.3**	**0.0**
	0.2nm,0.5s,baz=347,slow=3.7,SNR=2.6						

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*ISCJB **05** 11:10:26.0±0.7, 7°.47S±0°.06×129°.11E±0°.08, h131km, mb3.7/7, Error ellipse: s-maj=10.9km s-min=8.6km az=172.5*

*IDC **05** 11:10:32.2±4.2, 7°.66S×128°.85E, h178km±46km, mb3.5/6, mb1 3.7/10, mb1mx3.4/38, mbtmp4.1/10, Error ellipse: s-maj=39.6km s-min=19.0km az=44.0*

ISC 05 11:10:27.6±0.8**, 7°.60S**±0°.07×**129°.11E**±0°.10**, h131km, n11, σ2s33**/15**, mb3.8**/7**, Banda Sea**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BATI	**Baumata**	**5.97**	**244**	P	**Pn**	**11 11 56.2**	**+2.5**
	4.1nm,0.3s,baz=272,slow=24,SNR=4.3						
BATI				S	**Sn**	**11 13 01.4**	**+0.4**
	13nm,0.3s,baz=95,slow=24,SNR=8.2						
FITZ	**Fitzroy Crossi**	**10.97**	**198**	P	**Pn**	**11 13 02.2**	**+1.3**
	0.8nm,0.3s,baz=16,slow=9.3,SNR=7.8						
FITZ				S	**Sn**	**11 14 56.5**	**-5.4**
	0.8nm,0.3s,baz=72,slow=17,SNR=4.4						
WRA	**Warramunga Arr**	**13.27**	**158**	P	**Pn**	**11 13 33.5**	**+2.4**
	1.5nm,0.3s,baz=329,slow=13,SNR=33						
WRA				S	**Sn**	**11 15 55.7**	**-2.0**
	1.3nm,0.3s,baz=332,slow=23,SNR=7.9						
ASAR	**Alice Springs**	**16.62**	**164**	P	**P**	**11 14 16.2**	**+3.0**
	2.0nm,0.3s,baz=338,slow=9.5,SNR=142						
ASAR				S	**S**	**11 17 19.8**	**+0.3**
	0.5nm,0.3s,baz=353,slow=29,SNR=5.9						
STKA	**Stephens Creek**	**26.81**	**156**	P	**P**	**11 15 53.8**	**-1.8**
	1.7nm,0.9s,baz=326,slow=11,SNR=3.2						
CMAR	**Chiang Mai Arr**	**39.45**	**311**	P	**P**	**11 17 43.5**	**-1.8**
	0.6nm,0.3s,baz=135,slow=6.9,SNR=4.3						
SONM	**Songino Array**	**58.74**	**342**	P	**P**	**11 20 11.6**	**-0.2**
	0.2nm,0.4s,baz=151,slow=6.3,SNR=2.0						
PETK	**Petropavlovsk-**	**65.17**	**19**	P	**P**	**11 20 54.7**	**+0.1**
	1.1nm,0.7s,baz=193,slow=5.9,SNR=3.2						
MKAR	**Makanchi Array**	**68.25**	**327**	P	**P**	**11 21 13.3**	**-1.0**
	3.2nm,0.5s,baz=121,slow=8.0,SNR=51						
ZALV	**Zalesovo Beam**	**71.73**	**334**	P	**P**	**11 21 34.0**	**-1.3**
	0.9nm,0.4s,baz=146,slow=6.4,SNR=3.6						
SEY	**Seymchan**	**72.56**	**11**	P	**P**	**11 21 40.3**	**+0.3**
	0.7nm,0.6s,baz=197,slow=3.2,SNR=3.9						

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*IDC **05** 11:14:11.9±0.3, 3°.02N×126°.95E, h0km, mb5.1/46, mb1 5.1/46, mb1mx5.1/50, mbtmp5.1/46, MS5.3/11, Ms1 5.3/11, ms1mx4.7/51, Error ellipse: s-maj=13.9km s-min=7.9km az=83.0*

*BJI **05** 11:14:12.1, 3°.10N×127°.00E, h10km, mb5.3/85, mB5.5/70, Ms5.5/95, Ms7 5.5/89*

*KLM **05** 11:14:13.6, 3°.02N×127°.52E, h18km, mb5.6, MS6.2*

*MOS **05** 11:14:15.5±1.4, 3°.07N×126°.94E, h33km, mb5.6/81, MS5.4/46, Error ellipse: s-maj=8.6km s-min=4.4km az=111.6*

*GCMT **05** 11:14:15.3±0.1, 3°.06N×127°.24E, h15km, MW5.8/115, Moment Tensor Solution. s115,c235; s106,c258; Duration: 2s0 Moment tensor: Scale 10^17Nm; Mrr3.36±.05; Mθθ0.33±.04; Mφφ-3.69±.05; Mrθ1.15±.14; Mθφ-2.69±.04; Mφr5.71±.14; Best double couple: Mo7.23300×10^17 NP1:φs12.00000°, δ73.00000°, λ77.00000°. NP2:φs230.00000°, δ21.00000°, λ126.00000°. Principal axes: T 6.5620, Plg60.0000°, Azm264.0000°; N 1.3450, Plg12.0000°, Azm16.0000°; P -7.9040, Plg27.0000°, Azm112.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface/mantle waves, cutoff=50s.*

*NEIC **05** 11:14:15.0±0.0, 3°.06N×127°.17E, h17km, Moment Tensor Solution. s23 Moment tensor: Scale 10^17Nm; Mrr3.20; Mθθ0.30; Mφφ-3.50; Mrθ3.20; Mθφ-2.40; Mφr6.40; Best double couple: Mo8.00000×10^17 NP1:φs26.00000°, δ76.00000°, λ91.00000°. NP2:φs203.00000°, δ14.00000°, λ87.00000°. Principal axes: T 7.4000, Plg59.0000°, Azm297.0000°; N 1.5000, Plg0.0000°, Azm206.0000°; P -8.9000, Plg30.0000°, Azm115.0000°;*

*NEIC **05** 11:14:15.3±0.1, 3°.03N×126°.94E, h20km, mb5.5/102, ME5.8, MS5.6/263, MW5.6, MW5.9 Error ellipse: s-maj=4.7km s-min=3.1km az=86.0, Moment Tensor Solution. s46 Moment tensor: Scale 10^17Nm; Mrr2.05; Mθθ-0.52; Mφφ-1.53; Mrθ1.14; Mθφ-1.22; Mφr2.01; Best double couple: Mo3.20000×10^17 NP1:φs218.00000°, δ22.00000°, λ97.00000°. NP2:φs30.00000°, δ68.00000°, λ87.00000°. Principal axes: T 3.0500, Plg67.0000°, Azm295.0000°; N 0.2900, Plg3.0000°, Azm32.0000°; P -3.3400, Plg23.0000°, Azm123.0000°; Depth from synthetics of broadband displacement seismograms. Energy computed from CMT mechanism.*

*ISCJB **05** 11:14:16.6±0.3, 3°.04N±0°.02×126°.99E±0°.02, h43km±3km, mb5.3/221, MS5.5/315 Error ellipse: s-maj=3.5km s-min=2.7km az=162.5*

*DJA **05** 11:14:20.9±0.3, 3°N±2°×12°7E±°, h51km±3km, M5.5/101, mb5.2/101, mB5.8/81, MLv5.5/14, Mw(mB)5.4/81, Mwp6.0/23*

ISC 05 11:14:16.5±0.4**, 3°.05N**±0°.03×**126°.98E**±0°.03**, h28km**±2km**, h28km:pP-P, n916, σ1s93**/812**, mb5.4**/236**, MS5.6**/316**, 40C-29D, Talaud Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SGSI	**Sangihe**	**1.58**	**294**	P	**Pb**	**11 14 44.8**	**-0.3**
TNTI	**Ternate**	**2.29**	**170**	P	**Pn**	**11 14 53.5**	**+1.0**
TNTI	**Ternate**	**2.29**	**170**	*e*Pn	**Pn**	**11 14 52.6**	**+0.2**
TNTI				*e*Sn	**Sn**	**11 15 18.2**	**-1.5**
LBMI	**Labuha**	**3.70**	**172**	P	**Pn**	**11 15 13.6**	**+1.8**
MATI	**Mati**	**3.94**	**350**	*e*P	**Pn**	**11 15 18.1**	**+3.0**
DAV	**Davao City (W)**	**4.23**	**341**	Pn	**Pn**	**11 15 21.7**	**+2.5**
	12nm,0.3s,baz=101,slow=3.8,SNR=7.0						
DAV				Sn	**Sb**	**11 16 20.3**	**-0.6**
	21nm,0.3s,baz=200,slow=11,SNR=4.9						
DAV	**Davao City (W)**	**4.23**	**341**	⇓*e*P	Pb	11 15 25.3	-5.0
DAV	**Davao City (W)**	**4.23**	**341**	*e*Pn	**Pn**	**11 15 22.0**	**+2.9**
DAV				*e*Sn	**Sn**	**11 16 09.0**	**+1.3**
CTBH	**Cotabato--PC H**	**4.96**	**327**	⇑*e*P	**Pn**	**11 15 31.1**	**+1.9**
SANI	**Sanana**	**5.16**	**191**	P	**Pn**	**11 15 33.9**	**+2.0**
	240nm,1.4s,7μm44μm2.3nm						
BUKP	**Musuan**	**5.17**	**338**	*e*P	**Pn**	**11 15 34.3**	**+2.3**
MRSI	**Marisa**	**5.64**	**243**	P	Pn	11 15 43.5	+5.0
	552nm,1.0s,12μm1.9nm						
SWI	**Sorong**	**5.78**	**132**	P	**Pn**	**11 15 42.2**	**+1.8**
	568nm,1.2s,13μm208μm2.5nm						
LUWI	**Luwuk**	**5.84**	**226**	P	Pn	11 15 46.5	+5.2
	1μm,1.1s,24μm8.0nm						
LUWI	**Luwuk**	**5.84**	**226**	*e*Pn	**Pn**	**11 15 41.7**	**+0.4**
LUWI				*e*Sn	**Sn**	**11 16 48.9**	**+1.4**
PAGZ	**Pagadian**	**5.96**	**323**	*e*P	**Pn**	**11 15 44.1**	**+1.2**
BUTP	**Butuan**	**6.04**	**347**	*e*P	**Pn**	**11 15 47.2**	**+3.3**
NLAI	**Namlea**	**6.25**	**179**	P	**Pn**	**11 15 49.3**	**+2.5**
	186nm,0.9s,4μm1.1nm						
APSI	**Ampana**	**6.62**	**234**	P	Pn	11 15 58.1	+6.1
	1μm,1.5s,20μm42μm4.7nm						
MSAI	**Masohi**	**6.64**	**163**	P	**Pn**	**11 15 56.1**	**+3.8**
	119nm,1.5s,2μm19μm0.5nm						
SCPH	**Surigao**	**6.85**	**348**	⇓*e*P	**Pn**	**11 15 58.3**	**+3.1**
MSLP	**Maasin**	**7.35**	**343**	*e*P	**Pn**	**11 16 03.5**	**+1.5**
LLP	**Lapu-Lapu**	**7.82**	**338**	*e*P	**Pn**	**11 16 11.0**	**+2.5**
FAKI	**Fak Fak**	**7.93**	**138**	P	**Pn**	**11 16 12.5**	**+2.5**
	207nm,1.8s,7μm118μm1.0nm						
FAKI	**Fak Fak**	**7.93**	**138**	*e*Pn	**Pn**	**11 16 11.3**	**+1.3**
FAKI				*e*Sn	**Sn**	**11 17 39.7**	**+0.8**
BNDI	**Bandanaira**	**8.07**	**159**	P	**Pn**	**11 16 16.1**	**+4.2**
	1μm,1.6s,17μm58μm						
OCLP	**Ormoc**	**8.29**	**344**	*e*P	**Pn**	**11 16 19.3**	**+4.4**
PLP	**Palo**	**8.31**	**346**	⇑*e*P	**Pn**	**11 16 17.2**	**+2.1**
RKPI	**Ransiki, Papua**	**8.50**	**122**	P	**Pn**	**11 16 21.0**	**+3.1**
	624nm,1.2s,8μm						
PALU	**Palau**	**8.60**	**60**	P	**Pn**	**11 16 18.4**	**-0.8**
	baz=8.5,SNR=7.2						
MYLDM	**Lahad Datu**	**8.72**	**284**	⇑P	Pn	11 16 27.2	+6.4
MYLDM	**Lahad Datu**	**8.72**	**284**	*e*Pn	**Pn**	**11 16 24.6**	**+3.8**
TTSI	**Tana Toraja**	**9.37**	**230**	P	**Pn**	**11 16 33.7**	**+4.0**
	260nm,1.2s,6μm						
RCP	**Roxas**	**9.44**	**334**	⇑*e*P	**Pn**	**11 16 35.3**	**+4.6**
SPSI	**Sidrap Palu**	**10.02**	**226**	P	Pn	11 16 43.6	+5.0
	90nm,1.0s,3μm						
KAPI	**Kappang**	**10.78**	**222**	Pn	**Pn**	**11 16 51.4**	**+2.4**
	2.0nm,0.3s,baz=74,slow=3.8,SNR=7.8						
KAPI				Sn	Sn	11 19 04.6	+16
	baz=17,slow=19,SNR=2.0						
KAPI	**Kappang**	**10.78**	**222**	*e*Pn	**Pn**	**11 16 46.0**	**-3.1**
KAPI				*e*Sn	**Sn**	**11 18 46.2**	**-2.7**
BKB	**Balikpapan**	**10.95**	**247**	P	**Pn**	**11 16 54.8**	**+3.4**
	122nm,1.3s,6μm60μm						
KKM	**Kota Kinabalu**	**11.13**	**286**	*e*Pn	Pn	11 16 59.2	+5.2
BSSI	**Bau Bau, Buton**	**11.19**	**215**	P	**Pn**	**11 16 57.8**	**+3.1**
	133nm,1.7s,3μm						
GQP	**Guinayangan**	**11.68**	**338**	⇓*e*P	**Pn**	**11 17 04.6**	**+3.2**
SAUI	**Saumlaki**	**11.77**	**159**	P	**Pn**	**11 17 06.5**	**+3.8**
	454nm,1.5s,8μm						
SAUI	**Saumlaki**	**11.77**	**159**	*e*Pn	**Pn**	**11 17 04.7**	**+2.0**
LQP	**Lukban**	**12.24**	**334**	⇓*e*P	**Pn**	**11 17 12.6**	**+3.5**
KBKI	**Kotabaru**	**12.51**	**240**	P	**Pn**	**11 17 15.5**	**+2.8**
	71nm,1.8s,2μm16μm						
MMRI	**Maumere**	**12.53**	**202**	P	Pn	11 17 18.1	+5.1
	150nm,1.7s,3μm						
MMRI	**Maumere**	**12.53**	**202**	*e*Pn	**Pn**	**11 17 11.8**	**-1.2**
MMRI				*e*Sn	**Sn**	**11 19 29.3**	**-2.5**
EDFI	**Ende, Flores**	**12.85**	**204**	P	Pn	11 17 22.6	+5.1
	96nm,1.1s,10μm						
SOEI	**Soe**	**13.00**	**192**	P	**P**	**11 17 25.1**	**-4.6**
	251nm,1.5s,9μm						
SOEI	**Soe**	**13.00**	**192**	*e*Pn	**Pn**	**11 17 17.8**	**-1.8**
SOEI				*e*Sn	**Sn**	**11 19 40.6**	**-2.9**
BATI	**Baumata**	**13.57**	**194**	Pn	**P**	**11 17 34.6**	**-1.4**
	4.0nm,0.3s,baz=93,slow=24,SNR=8.3						
BATI	**Baumata**	**13.57**	**194**	P	**Pn**	**11 17 31.6**	**+4.3**
	44nm,1.9s,2μm						
BBKI	**Banjar Baru**	**13.74**	**242**	P	**P**	**11 17 34.7**	**-3.2**
	172nm,2.1s,8μm						
BTM	**Bintulu**	**13.87**	**271**	⇑P	**P**	**11 17 37.1**	**-2.2**
WSI	**Waingapu**	**14.28**	**208**	P	**P**	**11 17 42.3**	**-1.5**
	534nm,2.0s,13μm						
GENI	**Genyem**	**14.33**	**113**	P	**P**	**11 17 44.0**	**-0.4**
BCPH	**Baguio City Da**	**14.67**	**335**	⇓*e*P	**P**	**11 17 50.0**	**+1.7**
SBUM	**Sibu**	**14.75**	**268**	⇓P	**P**	**11 17 52.2**	**+3.1**
SBUM	**Sibu**	**14.75**	**268**	*e*Pn	**P**	**11 17 46.6**	**-2.5**
JAY	**Jayapura**	**14.79**	**112**	P	**Pn**	**11 17 46.6**	**+2.6**
	148nm,2.1s,44μm891μm						
PLAI	**Plampang**	**14.94**	**218**	P	**P**	**11 17 50.3**	**-0.9**
	647nm,1.2s,7μm						
TWSI	**Taliwang, Sumb**	**15.44**	**221**	P	**P**	**11 17 57.7**	**+1.0**
	559nm,1.2s,5μm						
STKI	**Sintang**	**15.77**	**259**	P	**P**	**11 18 01.6**	**+1.1**
	222nm,1.8s,11μm15μm						
MTN	**Manton Dam**	**16.32**	**165**	P	**Pn**	**11 18 03.7**	**-0.1**
	baz=16,SNR=12						
MTN	**Manton Dam**	**16.32**	**165**	*e*Pn	**Pn**	**11 18 03.3**	**-0.5**
	96nm,0.9s						
PBKI	**Pangkalan Bun**	**16.33**	**250**	P	**P**	**11 18 07.0**	**+0.3**
	180nm,1.3s,6μm						
KMMI	**Kalianget**	**16.41**	**232**	P	**P**	**11 18 09.5**	**+2.0**
	145nm,1.5s,5μm						
ABJI	**Asem Bagus**	**16.66**	**230**	P	**P**	**11 18 13.2**	**+2.9**
	198nm,1.6s,5μm						
KSM	**Kuching**	**16.73**	**265**	⇑P	**P**	**11 18 12.7**	**+1.6**
KSM	**Kuching**	**16.73**	**265**	*e*Pn	**P**	**11 18 11.0**	**-0.1**
	280nm,1.4s						

KSM eSn Sn 11 21 12.8 -1.3
JAGI Jajag, Banyuwa 17.16 228 P P 11 18 18.3 +2.5
256nm,1.2s,6µm
JAGI Jajag, Banyuwa 17.16 228 *e*Pn Pn 11 18 13.3 -1.2
481nm,1.4s
GMJI Gumukmas 17.57 230 P P 11 18 24.2 +3.9
172nm,1.3s,5µm
UWJI Ujung Watu 18.56 240 P Pn 11 18 36.7 +5.0
131nm,0.9s
NGJI Ngawi 18.62 236 P Pn 11 18 33.2 +0.8
106nm,1.3s
KNRA Kununurra 18.69 175 P P 11 18 32.1 -0.6
baz=19
PWJI Pagerwojo 18.71 234 P P 11 18 31.8 -1.1
SMRI Semarang 19.31 239 P Pn 11 18 43.1 +2.3
162nm,1.1s
SMRI Semarang 19.31 239 *e*P P 11 18 39.6 +0.1
125nm,1.0s
TWG Pinlang 20.47 344 *e*P P 11 18 50.3 -1.9
755nm,1.4s
TWG LR LR
comp=Z,35µm,21.0s
GUMO Guam 20.55 58 P P 11 18 52.5 -0.5
comp=Z,102nm,0.9s,baz=191,slow=19,SNR=2.9
GUMO Guam 20.55 58 *e*P P 11 18 52.5 -0.5
GUMO MLR MLR
comp=Z,8µm,20.0s
GUMO Guam 20.55 58 *e*P P 11 18 52.5 -0.5
GUMO LR LR
comp=Z,8µm,20.0s
KPJI Karang Pucung 20.75 240 P P 11 18 55.6 +0.4
comp=Z,125nm,1.0s,comp=Z,2µm
YULB Yu-li 20.96 345 *e*P P 11 18 54.9 -2.6
comp=Z,239nm,1.5s
YULB LR LR
comp=Z,5µm,22.0s
MANU Manus Island 21.00 104 PFAKE 11 19 10.0 +12
MANU LR LR
comp=Z,8µm,21.0s
TPUB Ta-pu 21.05 344 *e*P P 11 18 57.4 -1.0
comp=Z,360nm,1.1s
TPUB LR LR
comp=Z,10µm,22.0s
FITZ Fitzroy Crossi 21.06 184 P P 11 18 57.0 -1.5
comp=Z,53nm,0.8s,baz=21,slow=9.3,SNR=19
FITZ S S 11 22 46.2 -5.3
comp=Z,6.8nm,0.9s,baz=38,slow=19,SNR=3.4
FITZ Fitzroy Crossi 21.06 184 P P 11 18 57.2 -1.3
baz=21,SNR=13
FITZ Fitzroy Crossi 21.06 184 *e*P P 11 18 56.9 -1.5
comp=Z,278nm,1.6s
FITZ *e*S S 11 22 50.9 -0.6
SSLB Suanglung 21.43 345 *e*P P 11 19 01.8 -0.7
comp=Z,112nm,0.8s
SSLB LR LR
comp=Z,7µm,22.0s
PPBI Pangkal Pinang 21.46 256 P P 11 19 05.4 +2.4
comp=Z,58nm,1.2s,comp=Z,9µm
YOJ Yonaguni jima 21.63 350 *e*P P 11 19 05.6 +1.0
YOJ pmax pmax
comp=Z,738nm,1.4s
YOJ MLR MLR
comp=Z,10µm,22.0s
YOJ Yonaguni jima 21.63 350 *e*P P 11 19 05.6 +1.0
comp=Z,738nm,1.4s
YOJ LR LR
comp=Z,10µm,22.0s
NACB Ninganchiao 21.64 347 PFAKE 11 19 20.0 +15
NACB LR LR
comp=Z,7µm,22.0s
LEM Lembang 21.67 243 P P 11 19 13.0 +7.7
comp=Z,123nm,0.9s,baz=65,slow=12,SNR=15
LEM S Sn 11 23 18.2 +4.5
comp=Z,9.7nm,0.4s,baz=315,slow=19,SNR=3.3
LEM LR LR 11 29 09.3
comp=Z,16µm,21.0s,baz=52,slow=42
LEM Lembang 21.67 243 P P 11 19 14.8 +9.5
LEM Lembang 21.67 243 P P 11 19 13.0 +7.7
LEM pmax pmax
comp=Z,123nm,0.9s
LEM MLR MLR
comp=Z,16µm,21.0s
CISI Cisompet, Garu 21.83 241 P P 11 19 09.4 +2.5
comp=Z,123nm,1.1s,comp=Z,2µm
CISI Cisompet, Garu 21.83 241 *e*P P 11 19 06.4 -0.5
comp=Z,77nm,0.8s
CISI LR LR
comp=Z,6µm,19.0s
YHNB Yeheng 22.17 346 *e*P P 11 19 10.1 -0.4
comp=Z,123nm,1.0s
YHNB LR LR
comp=Z,9µm,21.0s
CBJI Citeko 22.19 245 P P 11 19 14.5 +3.8
comp=Z,747nm,1.2s,comp=Z,31µm
CNJI Cibinong 22.32 242 P P 11 19 13.8 +1.7
comp=Z,144nm,1.3s,comp=Z,2µm
DBJI Dramaga 22.33 245 P P 11 19 15.6 +3.3
comp=Z,288nm,1.4s
TATO Taipei 22.43 347 PFAKE 11 19 20.0 +6.8
TATO LR LR
comp=Z,10µm,21.0s
SBJI Serang 22.72 246 P P 11 19 20.8 +4.4
comp=Z,388nm,1.6s
HKC Hong Kong Obse 22.82 328 P P 11 19 25.0 +7.7
MCO Taipa Grande 23.01 327 P P 11 19 28.0 +8.7
QIZ Qiongzhong 23.09 315 P P 11 19 18.4 -1.8
QIZ sP pP 11 19 24.8 -3.2
QIZ S S 11 23 30.9 +1.2
QIZ LR LR
comp=Z,7µm,18.7s
QIZ LR LR
comp=Z,11µm,21.9s
QIZ Qiongzhong 23.09 315 PFAKE 11 19 30.0 +10
QIZ LR LR
comp=Z,10µm,22.0s
MYKOM Kota Tinggi 23.14 267 ⇓P P 11 19 22.2 +1.4
MYKOM Kota Tinggi 23.14 267 *e*P P 11 19 22.1 +1.4
MYKOM comp=Z,218nm,1.9s LR LR
comp=Z,8µm,22.0s
QZH Quanzhou 23.22 340 ⇑*i*P P 11 19 18.9 -2.5
QZH S S 11 23 28.0 -3.7
QZH pmax pmax
comp=Z,860nm,1.4s
QZH LR LR
comp=Z,6µm,12.5s
QZH LR LR
comp=Z,8µm,16.8s
QZH LR LR
comp=Z,33µm,22.1s
BLSI Bandar Lampung 23.26 249 P P 11 19 25.7 +3.7
comp=Z,282nm,0.9s
COEN Coen 23.31 137 P P 11 19 22.3 -0.2
baz=23,SNR=5.5
COEN Coen 23.31 137 *e*P P 11 19 21.2 -1.2
comp=Z,114nm,1.3s
COEN LR LR
comp=Z,12µm,19.0s
CGJI Cibinong 23.31 246 P P 11 19 23.9 +1.4
comp=Z,228nm,1.5s,comp=Z,3µmcomp=Z,19µm
KLI Kotabumi 23.45 251 P P 11 19 26.7 +2.8
comp=Z,249nm,1.3s
PMG Port Moresby 23.61 122 P P 11 19 24.4 -1.0
comp=Z,9.2nm,0.7s,baz=310,slow=16,SNR=3.2
PMG S S 11 23 46.1 +7.8
comp=Z,11nm,0.9s,baz=293,slow=13,SNR=1.7
PMG LR LR 11 29 28.7
comp=Z,15µm,21.1s,baz=301,slow=39
PMG Port Moresby 23.61 122 PFAKE 11 19 40.0 +15
PMG LR LR
comp=Z,14µm,20.0s
KGM Kluang 23.66 268 ⇓P P 11 19 28.3 +2.5
JOW Kunigami 23.68 3 P P 11 19 26.6 +0.7
comp=Z,107nm,1.0s,baz=192,slow=6.1,SNR=6.6
JOW S S 11 23 42.9 +3.6
comp=Z,8.2nm,0.3s,baz=315,slow=20,SNR=2.6
JOW Kunigami 23.68 3 *e*P P 11 19 27.0 +1.0
comp=Z,277nm,1.3s
JOW LR LR
comp=Z,4µm,20.0s
JMBI JAMBI 23.79 259 P P 11 19 32.2 +5.1
comp=Z,462nm,1.4s
KTGM Kuala Trenggan 23.89 276 ⇑P P 11 19 30.3 +2.3
GZH Guangzhou 23.90 328 ⇑*i*P P 11 19 29.6 +1.6
GZH sP pP 11 19 37.0 +0.8
GZH S S 11 23 46.9 +4.2
GZH LR LR
comp=Z,37µm,19.4s
WRAB Tennant Creek 23.96 163 *d i*P P 11 19 25.8 -2.8
WRAB pmax pmax
comp=Z,177nm,1.2s
WRAB Tennant Creek 23.96 163 *e*P P 11 19 26.6 -2.0
comp=Z,262nm,1.3s
WR1 Warramunga Arr 23.96 163 P P 11 19 26.8 -1.8
baz=24
WR1 Warramunga Arr 23.96 163 *e*P P 11 19 26.2 -2.5
comp=Z,120nm,0.8s
WR1 *e*PcP PcP 11 23 11.1 +0.4
WR1 *e*S S 11 23 43.6 -0.2
WRA Warramunga Arr 23.96 163 P P 11 19 26.2 -2.5
comp=Z,81nm,0.8s,baz=342,slow=11,SNR=58
WRA PcP PcP 11 23 11.1 +0.4
comp=Z,2.5nm,0.8s,baz=328,slow=2.0,SNR=3.9
WRA S S 11 23 43.6 -0.2
comp=Z,8.1nm,0.9s,baz=334,slow=19,SNR=5.6
WRA ScP ScP 11 26 50.3 +2.9
comp=Z,3.7nm,1.0s,baz=351,slow=3.9,SNR=4.6
WB2 Warramunga Arr 23.97 163 *e*P P 11 19 26.8 -1.9
comp=Z,170nm,1.1s
KASI Kota Agung 24.01 249 P P 11 19 31.6 +2.4
comp=Z,150nm,1.4s,comp=Z,2µm
LWLI Liwa 24.26 251 P P 11 19 35.1 +3.5
comp=Z,125nm,1.1s
LHSI Lahat 24.41 254 P P 11 19 37.7 +4.8
comp=Z,63nm,2.0s,comp=Z,3µm
UBPT Khong Chiam 24.43 301 P P 11 19 32.4 -0.6
comp=Z,91nm,1.3s
MBWA Marble Bar 25.08 196 *e*P P 11 19 38.7 -0.2
comp=Z,351nm,1.5s
MBWA Marble Bar 25.08 196 P P 11 19 39.3 +0.5
SNR=9.6
MBWA Marble Bar 25.08 196 P P 11 19 39.3 +0.5
SNR=9.6
MBWA P P 11 19 39.3 +0.5
SNR=9.6
MNAI Manna 25.11 253 PFAKE 11 19 50.0 +11
MNAI LR LR
comp=Z,3µm,19.0s
XMIS Christmas Isla 25.13 237 PFAKE
XMIS LR LR 11 19 50.0 +11
comp=Z,3µm,20.0s
FRIM Kepong 25.31 271 ⇑P P 11 19 45.9 +4.8
MASI Maura Aman, Be 25.48 256 P P 11 19 48.6 +6.0
comp=Z,213nm,1.6s,comp=Z,12µm
BKNI Bangkinang 26.06 265 PFAKE
BKNI LR LR 11 20 00.0 +12
comp=Z,6µm,22.0s
RABL Rabaul 26.18 106 *e*P P 11 19 47.3 -1.6
comp=Z,130nm,1.1s
RABL LR LR
comp=Z,12µm,20.0s
CHBT CHBT 26.22 293 P P 11 19 49.2 0.0
comp=Z,100nm,1.4s
KULM Kulim 26.35 276 ⇓P P 11 19 52.6 +2.2
KULM Kulim 26.35 276 *e*P P 11 19 51.9 +1.5
comp=Z,79nm,1.3s
KULM LR LR
comp=Z,3µm,19.0s
QIS Mount Isa 26.53 153 P P 11 19 52.8 +0.8
baz=27,SNR=9.7
PPI Padang Panjang 26.80 263 P P 11 19 55.4 +0.9
comp=Z,50nm,1.1s,comp=Z,1µm
KHON Khomkaen 27.18 301 P P 11 19 59.6 +1.7
comp=Z,33nm,1.2s,comp=Z,8µm
AS31 Alice Springs 27.39 166 *e*P P 11 19 58.5 -1.3
comp=Z,11nm,0.6s
AS31 LR LR
comp=Z,100nm,20.0s
ASAR Alice Springs 27.40 166 P P 11 19 58.1 -1.7
comp=Z,11nm,0.7s,baz=343,slow=8.9,SNR=18
ASAR PcP PcP 11 23 18.7 +0.2
comp=Z,4.1nm,0.9s,baz=358,slow=2.7,SNR=4.1
ASAR S S 11 24 53.1 +15
comp=Z,5.9nm,1.0s,baz=347,slow=21,SNR=5.7
ASAR ScP ScP 11 26 59.5 +2.2
comp=Z,1.0nm,0.9s,baz=350,slow=2.1,SNR=3.2
AS01 Alice Springs 27.41 166 *e*P P 11 19 58.5 -1.4
MNSI Mandailing Nat 27.47 266 P P 11 20 03.0 +2.5
comp=Z,37nm,1.2s
CHAI Chaiyaphum 27.71 299 P P 11 20 02.4 -0.3
comp=Z,9.7nm,1.2s,comp=Z,96nm
NONG Nongkai 27.71 304 P P 11 20 03.4 +0.7
comp=Z,32nm,1.0s
WRKA Warakurna 27.95 177 P P 11 20 04.1 -0.6
baz=28,SNR=15
CBIJ Chichi jima 28.00 30 PFAKE 11 20 20.0 +15
CBIJ LR LR
comp=Z,8µm,22.0s
JCJ Chichijima 28.00 30 P P 11 20 04.5 -0.6
comp=Z,188nm,1.1s,baz=207,slow=11,SNR=2.9
PSI Prapat 28.02 270 P P 11 20 04.8 -0.8
comp=Z,3.7nm,0.5s,baz=85,slow=8.2,SNR=10
PSI LR LR 11 33 37.5
comp=Z,7µm,19.8s,baz=94,slow=42
PSI Prapat 28.02 270 *e*P P 11 20 05.1 -0.5
comp=Z,70nm,1.5s
PSI LR LR
comp=Z,9µm,20.0s
GIRL Giralia 28.40 205 P P 11 20 11.4 +2.7
baz=29,SNR=4.8
SURT Suratani 28.62 283 P P 11 20 10.4 -0.4
comp=Z,11nm,0.9s,comp=Z,331nm
PHET Kaeng Krachan 28.77 291 P P 11 20 12.8 +0.7
comp=Z,6.7nm,1.2s
PKDT Phuket 28.91 281 P P 11 20 13.7 +0.4
comp=Z,42nm,0.7s,comp=Z,9µm
KCSI Kotacane, Aceh 29.16 272 P P 11 20 18.9 +3.3
comp=Z,19nm,1.5s,comp=Z,1µm
GSI Gunungsitoli 29.43 267 PFAKE 11 20 30.0 +12
GSI LR LR
comp=Z,7µm,22.0s
PHIT Phitsanulok 29.62 300 P P 11 20 22.3 +2.7
comp=Z,33nm,1.0s
SRDT SRDT 29.69 294 P P 11 20 21.7 +1.4
comp=Z,123nm,1.1s,comp=Z,6µm
UTTA Uttaradit 29.74 301 P P 11 20 20.7 0.0
comp=Z,5.7nm,0.9s
CTA Charters Tower 29.78 141 P P 11 20 20.6 -0.4
comp=Z,4.4nm,0.8s,baz=315,slow=10.0,SNR=2.1
CTA LR LR 11 35 05.9
comp=Z,4µm,19.6s,baz=326,slow=42
CTAO Charters Tower 29.78 141 *e*P P 11 20 26.9 +5.9
CTAO pmax pmax
comp=Z,87nm,1.5s
CTAO MLR MLR
comp=Z,10µm,22.0s
CTAO Charters Tower 29.78 141 *e*P P 11 20 26.9 +5.9
comp=Z,87nm,1.5s
CTAO LR LR
comp=Z,10µm,22.0s
WHN Wuhan 29.84 338 P P 11 20 21.8 +0.4
WHN pmax pmax
comp=Z,71nm,1.1s
WHN pmax pmax
comp=Z,810nm,4.8s
WHN LR LR
comp=Z,26µm,21.3s
WHN LR LR
comp=Z,10µm,17.4s
WHN LR LR
comp=Z,50µm,24.2s
NJ2 Nanjing 29.85 346 *e*P P 11 20 22.3 +0.9
NJ2 pP pP 11 20 25.2 -4.6
NJ2 S S 11 25 22.0 +5.3
NJ2 sS sS 11 25 27.0 -3.4
NJ2 pmax pmax
comp=Z,26nm,1.0s
NJ2 pmax pmax
comp=Z,2µm,10.3s
NJ2 LR LR
comp=Z,7µm,29.3s
NJ2 LR LR
comp=Z,14µm,29.3s
NJ2 LR LR
comp=Z,7µm,16.3s
LHMI Lhok Sumawe 30.03 275 PFAKE 11 20 40.0 +17
LHMI LR LR
comp=Z,3µm,19.0s
NANT Nan 30.10 303 P P 11 20 25.1 +1.2
comp=Z,8.0nm,0.7s,comp=Z,6µm
JNU Nakatsue 30.14 7 P P 11 20 23.5 -0.6
comp=Z,155nm,1.0s,baz=200,slow=5.6,SNR=43
JNU Nakatsue 30.14 7 *e*P P 11 20 23.7 -0.4
comp=Z,227nm,1.0s
JNU LR LR
comp=Z,5µm,20.0s
GYA Guiyang 30.35 322 ⇑*i*P P 11 20 25.4 -0.8
GYA PP PnPn 11 21 27.8 +2.8
GYA PcP PcP 11 23 28.0 +2.0
GYA S S 11 25 27.2 +2.1
GYA SS ScP 11 27 07.4 +0.7
GYA ScS ScS 11 31 03.3 +0.5
GYA pmax pmax
comp=Z,40nm,0.9s
GYA LR LR
comp=Z,5µm,18.3s
GYA LR LR
comp=Z,7µm,18.2s
GYA LR LR
comp=Z,10µm,21.7s
PHRA Phrae 30.36 302 P P 11 20 26.0 -0.2
comp=Z,407nm,1.1s,comp=Z,43µm
SUKH Sukhothai 30.42 300 P P 11 20 27.8 +1.1
comp=Z,6.2nm,0.8s,comp=Z,122nm
LAMP Lampang 30.87 302 P P 11 20 31.6 +0.9
comp=Z,8.0nm,1.0s
CRAI Chiangrai 31.06 305 P P 11 20 32.0 -0.4
comp=Z,15nm,2.3s,comp=Z,590nm
CM01 Chiang Mai Arr 31.40 301 *e*P P 11 20 35.2 -0.2
CMAR Chiang Mai Arr 31.43 301 P P 11 20 35.3 -0.3
comp=Z,6.4nm,0.9s,baz=121,slow=7.2,SNR=30
CMAR PcP PcP 11 23 31.1 +2.2
comp=Z,8.8nm,1.0s,baz=132,slow=1.3,SNR=12
CMAR ScP ScP 11 27 13.0 +2.8
comp=Z,1.4nm,0.8s,baz=141,slow=2.4,SNR=6.6
PATS Pohnpei 31.44 82 PFAKE 11 20 50.0 +14
PATS LR LR
comp=Z,6µm,18.0s
CMMT Chiang Mai 31.58 302 P P 11 20 36.5 -0.5
comp=Z,36nm,1.6s,comp=Z,819nm
CHTO Chiang Mai 31.59 302 P P 11 20 36.5 -0.5
comp=Z,160nm,1.6s,comp=Z,3µm
CHTO Chiang Mai 31.59 302 *e*P P 11 20 36.3 -0.7
CHTO *e* 11 23 30.7
CHTO pmax pmax
comp=Z,68nm,1.4s
CHTO MLR MLR
comp=Z,5µm,22.0s
CHTO Chiang Mai 31.59 302 *e*P P 11 20 36.3 -0.7
comp=Z,68nm,1.4s
CHTO *e*PcP PcP 11 23 30.7 +1.5
CHTO LR LR
comp=Z,5µm,22.0s
CHTO Chiang Mai 31.59 302 P P 11 20 37.0 -0.1
SNR=21
CHTO Chiang Mai 31.59 302 P P 11 20 37.0 -0.1
SNR=21
CHTO P P 11 20 37.0 -0.1
SNR=21
ENH Enshi 31.74 330 *e*P P 11 20 37.6 -0.6
comp=Z,101nm,1.2s
ENH *e*PcP PcP 11 23 30.5 +1.1
ENH LR LR
comp=Z,5µm,19.0s
CMAI Chiengmai2 32.01 304 P P 11 20 40.6 -0.3
comp=Z,32nm,1.6s,comp=Z,832nm
KMI Kunming 32.03 315 P P 11 20 41.3 +0.2
KMI pP pP 11 20 47.8 -1.7
KMI sP sP 11 20 50.4 -2.6
KMI PP PP 11 21 50.8 -3.0
KMI S S 11 25 51.9 +0.3
KMI sS sS 11 26 02.6 -2.8
KMI SS SnSn 11 27 48.2 +5.9
KMI pmax pmax
comp=Z,30nm,1.7s
KMI pmax pmax
comp=Z,520nm,9.6s
KMI LR LR
comp=Z,6µm,19.9s
KMI LR LR
comp=Z,4µm,20.2s
KMI LR LR
comp=Z,7µm,19.9s
MHMT Maesarieng 32.18 300 P P 11 20 42.1 -0.2
comp=Z,18nm,1.4s,comp=Z,585nm
JHJ2 Mitsune 32.24 20 PFAKE 11 20 50.0 +7.5
JHJ2 LR LR
comp=Z,10µm,20.0s
CMBY CAMPBELL BAY 33.15 278 *e*P P 11 20 49.7 -1.1
INU Inuyama 33.46 15 *e*P P 11 20 53.0 -0.3
comp=Z,67nm,1.0s
INU LR LR
comp=Z,8µm,20.0s
COCO West Island 33.56 243 PFAKE 11 21 10.0 +16
COCO LR LR
comp=Z,7µm,21.0s
MORW Morawa 33.61 197 P P 11 20 54.6 0.0
baz=34,SNR=10
QLP Quilpie 33.85 152 P P 11 20 56.6 -0.2
baz=34,SNR=12
TIA Tai'an 34.23 346 ⇑P P 11 21 00.6 +0.7
TIA S S 11 26 28.7 +3.6
TIA pmax pmax
comp=Z,40nm,1.2s
TIA pmax pmax
comp=Z,770nm,5.2s
TIA LR LR
comp=Z,5µm,21.0s
TIA LR LR
comp=Z,3µm,21.4s
TIA LR LR
comp=Z,8µm,19.4s
KS15 Wonju Array Si 34.24 1 *e*P P 11 21 00.8 +0.9
KS15 *e*PcP PcP 11 23 38.0 +1.8
KSRS Korea Array 34.25 1 P P 11 21 00.0 0.0
comp=Z,70nm,1.0s,baz=179,slow=10,SNR=148
KSRS PcP PcP 11 23 38.0 +1.8
comp=Z,5.1nm,0.9s,baz=189,slow=3.6,SNR=5.6
KSRS ScP ScP 11 27 23.8 +4.3
comp=Z,2.6nm,1.1s,baz=207,slow=4.0,SNR=4.2
KSRS Korea Array 34.25 1 P P 11 21 00.0 0.0
KSRS 11 23 38.1
KSRS pmax pmax
comp=Z,66nm,1.0s
KSRS pmax pmax
comp=Z,5.0nm,0.9s
KSRS pmax pmax
comp=N,3.0nm,1.1s
INCN Inchon 34.27 360 PFAKE 11 21 10.0 +10
INCN LR LR
comp=Z,4µm,22.0s
INCN Inchon 34.27 360 P P 11 21 01.8 +1.5
SNR=5.1
INCN Inchon 34.27 360 P P 11 21 01.8 +1.5
SNR=5.1
KS01 Wonju Array Si 34.27 1 *e*P P 11 20 59.8 -0.5
KS01 *e*PcP PcP 11 23 37.6 +1.2
KMBL Kambalda 34.56 188 P P 11 21 01.3 -1.5
baz=35,SNR=49
BLDU Ballidu 34.88 196 P P 11 21 05.3 -0.2
baz=35,SNR=9.6
MJAR Matsushiro Arr 34.91 16 P P 11 21 04.2 -1.6
comp=Z,22nm,1.0s,baz=186,slow=9.0,SNR=32
MJAR PcP PcP 11 23 38.5 +0.3
comp=Z,3.9nm,0.7s,baz=187,slow=3.6,SNR=5.4
MJAR LR LR 11 37 25.9
comp=Z,8µm,18.6s,baz=190,slow=40
MAJO Matsushiro 34.91 16 *e*P P 11 21 04.3 -1.5
MAJO pmax pmax
comp=Z,77nm,1.4s
MAJO MLR MLR
comp=Z,10µm,19.0s
MAJO Matsushiro 34.91 16 *e*P P 11 21 04.3 -1.5
comp=Z,77nm,1.4s
MAJO LR LR
comp=Z,10µm,19.0s
PBA Port Blair 34.98 286 *e*P P 11 21 06.3 -0.3
HNR Honiara 35.11 111 PFAKE 11 21 20.0 +12
HNR LR LR
comp=Z,8µm,21.0s
DGPR DIGLIPUR 35.13 289 *e*P P 11 21 07.6 -0.3
DGPR IAmb IAmb 11 22 51.3
XAN Xi'an 35.13 333 P P 11 21 06.6 -1.2
XAN PP PnPn 11 22 26.3 +0.5
XAN pmax pmax
comp=Z,49nm,1.0s
XAN pmax pmax
comp=Z,720nm,11.2s
XAN LR LR
comp=Z,12µm,29.8s

XAN LR LR
comp=Z,16µm,32.2s
XAN LR LR
comp=Z,10µm,27.9s
CD2 Chengdu 35.34 324 P **P** **11 21 08.5 -1.1**
CD2 sP pP 11 21 16.3 -1.7
CD2 PP **PnPn** **11 22 29.1 +0.7**
CD2 PcP **PcP** **11 23 38.0 -1.7**
CD2 S **S** **11 26 43.5 +1.2**
CD2 sS sS 11 26 52.7 -3.5
CD2 pmax pmax
comp=Z,50nm,1.3s
CD2 pmax pmax
comp=Z,840nm,12.7s
CD2 LR LR
comp=Z,9µm,21.6s
CD2 LR LR
comp=Z,11µm,19.2s
KLBR Kellerberrin 35.55 194 P **P** **11 21 10.7 -0.6**
baz=36,SNR=8.3
DL2 Dalian 36.02 353 ⇑P **P** **11 21 16.5 +1.2**
DL2 S **S** **11 26 53.8 +1.3**
DL2 pmax pmax
comp=Z,160nm,1.2s
DL2 pmax pmax
comp=Z,1µm,9.8s
DL2 LR LR
comp=Z,6µm,20.1s
DL2 LR LR
comp=Z,5µm,22.1s
DL2 LR LR
comp=Z,8µm,20.6s
EIDS Eidsvold 36.66 142 P **P** **11 21 19.9 -1.0**
baz=37,SNR=7.2
EIDS Eidsvold 36.66 142 *e*P **P** **11 21 19.9 -1.0**
comp=Z,33nm,0.9s
EIDS LR LR
comp=Z,6µm,21.0s
BBOO Buckleboo 36.69 167 P **P** **11 21 19.7 -1.4**
baz=37,SNR=38
BBOO Buckleboo 36.69 167 *e*P **P** **11 21 19.9 -1.2**
comp=Z,61nm,1.2s
BBOO LR LR
comp=Z,3µm,20.0s
NWAO Narrogin (SRO) 36.95 194 P **P** **11 21 22.6 -0.6**
comp=Z,19nm,0.6s,baz=288,slow=0.0,SNR=20
NWAO Narrogin (SRO) 36.95 194 P **P** **11 21 23.5 +0.3**
baz=37,SNR=18
NWAO Narrogin (SRO) 36.95 194 *e*P **P** **11 21 23.4 +0.1**
NWAO MLR MLR
comp=Z,2µm,20.0s
NWAO Narrogin (SRO) 36.95 194 *e*P **P** **11 21 23.4 +0.1**
NWAO LR LR
comp=Z,2µm,20.0s
TIY Taiyuan 36.99 341 *e*P **P** **11 21 24.9 +1.2**
TIY S **S** **11 27 10.0 +2.5**
TIY pmax pmax
comp=Z,18nm,0.5s
TIY pmax pmax
comp=Z,970nm,5.0s
TIY LR LR
comp=Z,3µm,15.0s
TIY LR LR
comp=Z,2µm,15.8s
TIY LR LR
comp=Z,9µm,27.4s
STKA Stephens Creek 37.41 159 P **P** **11 21 25.6 -1.6**
comp=Z,46nm,0.7s,baz=332,slow=8.3,SNR=56
STKA PcP **PcP** **11 23 45.4 -0.4**
comp=Z,10nm,0.6s,baz=341,slow=4.3,SNR=5.1
STKA Stephens Creek 37.41 159 P **P** **11 21 26.5 -0.7**
baz=38,SNR=12
STKA Stephens Creek 37.41 159 *e*P **P** **11 21 26.4 -0.7**
comp=Z,10.0nm,0.7s
STKA LR LR
comp=Z,400nm,21.0s
HTT Hallett 38.00 164 P **P** **11 21 32.0 -0.2**
baz=38,SNR=9.7
BJT Baijiatuan 38.09 346 *e*P **P** **11 21 33.4 +0.6**
BJT pmax pmax
comp=Z,237nm,1.1s
BJT MLR MLR
comp=Z,6µm,22.0s
BJT Baijiatuau 38.09 346 *e*P **P** **11 21 33.4 +0.6**
comp=Z,237nm,1.1s
BJT LR LR
comp=Z,6µm,22.0s
RKGY Rocky Gully 38.62 193 P **P** **11 21 38.9 +1.5**
baz=39,SNR=18
SNY Shenyang 38.73 356 ⇑P **P** **11 21 39.1 +0.9**
SNY S **S** **11 27 37.3 +3.7**
SNY pmax pmax
comp=Z,120nm,1.3s
SNY pmax pmax
comp=Z,2µm,8.3s
SNY LR LR
comp=Z,3µm,18.6s
SNY LR LR
comp=Z,3µm,22.4s
SNY LR LR
comp=Z,5µm,22.3s
LZH Lanzhou 39.21 330 ⇑P **P** **11 21 42.8 +0.2**
LZH pP pP 11 21 49.1 -1.9
LZH sP sP 11 21 52.2 -2.3
LZH PP **PnPn** **11 23 18.5 +2.9**
LZH S **S** **11 27 48.1 +6.7**
LZH sS sS 11 27 57.0 +1.7
LZH SS **SS** **11 30 31.5 -3.6**
LZH pmax pmax
comp=Z,95nm,1.3s
LZH pmax pmax
comp=Z,690nm,4.9s
LZH LR LR
comp=Z,7µm,17.2s
LZH LR LR
comp=Z,7µm,18.8s
LZH LR LR
comp=Z,8µm,19.0s
HHC Hu-ho-hao-te 40.12 342 *e*P **P** **11 21 50.7 +0.7**
HHC pP pP 11 21 56.8 -1.6
HHC sP sP 11 21 59.5 -2.4
HHC S **S** **11 28 03.5 +8.8**
HHC ScS **ScS** **11 31 53.8 -1.2**
HHC pmax pmax
comp=Z,27nm,0.8s
HHC pmax pmax
comp=Z,1µm,9.1s
HHC LR LR
comp=Z,2µm,17.7s
HHC LR LR
comp=Z,5µm,19.8s
HHC LR LR
comp=Z,2µm,20.5s
VLA Vladivostok 40.14 6*c i*P **P** **11 21 51.4 +1.5**
VLA pmax pmax
comp=Z,174nm,1.2s
BTO Baotou 40.41 340 *e*P **P** **11 21 53.2 +0.9**
SHL Shillong 40.48 307 *e*P **P** **11 21 51.6 -1.7**
SHL IAmb IAmb 11 21 54.0
comp=Z,138nm,1.5s
CN2 Changchun 40.61 358 *e*P **P** **11 21 53.7 -0.1**
CN2 PP **PnPn** **11 23 32.0 +0.2**
CN2 eS **S** **11 28 04.5 +2.8**
CN2 pmax pmax
comp=Z,30nm,1.0s
CN2 pmax pmax
comp=Z,1µm,10.0s
CN2 LR LR
comp=Z,3µm,21.0s
CN2 LR LR
comp=Z,2µm,21.0s
CN2 LR LR
comp=Z,3µm,22.0s
ARMA Armidale 40.76 147 P **P** **11 21 55.3 -0.2**
baz=41,SNR=26
ARMA Armidale 40.76 147 *e*P **P** **11 21 55.0 -0.5**
comp=Z,71nm,1.3s
ARMA LR LR
comp=Z,12µm,18.0s
USRK Ussuriysk Ar. 41.22 5 P **P** **11 21 59.5 +0.7**
comp=Z,75nm,0.9s,baz=189,slow=7.4,SNR=106
PcP **PcP** **11 23 58.3 +0.8**
comp=Z,5.3nm,0.9s,baz=182,slow=5.5,SNR=4.5
ERM Erimo 41.42 18 PFAKE 11 22 10.0 +9.5
ERM LR LR
comp=Z,5µm,19.0s

MDJ Mudanjiang 41.46 3 P **P** **11 22 02.1 +1.3**
MDJ pP pP 11 22 05.1 -4.2
MDJ sP sP 11 22 06.7 -6.1
MDJ S **S** **11 28 19.7 +5.3**
MDJ ScS **ScS** **11 31 56.8 -5.9**
MDJ pmax pmax
comp=Z,200nm,1.0s
MDJ pmax pmax
comp=Z,1µm,8.3s
MDJ LR LR
comp=Z,5µm,20.5s
MDJ LR LR
comp=Z,4µm,35.9s
MDJ LR LR
comp=Z,7µm,23.9s
MDJ Mudanjiang 41.46 3 *e*P **P** **11 22 01.4 +0.6**
comp=Z,250nm,1.1s
MDJ LR LR
comp=Z,7µm,22.0s
H11S3 WAKE ISLAND Hy 41.78 65 T T 12 06 28.3
baz=253,slow=75,SNR=157
H11S2 WAKE ISLAND Hy 41.80 66 T T 12 06 30.0
baz=253,slow=75,SNR=130
H11S1 WAKE ISLAND Hy 41.80 65 T T 12 06 29.6
baz=253,slow=75,SNR=58
ARPS Mount Arapiles 41.97 162 P **P** **11 22 05.5 +0.4**
baz=42,SNR=14
WAKE Wake Island 41.98 64 PFAKE 11 22 20.0 +15
WAKE LR LR
comp=Z,3µm,21.0s
H11N1 WAKE ISLAND Hy 42.33 64 T T 12 07 32.5
baz=254,slow=75
H11N2 WAKE ISLAND Hy 42.34 64 T T 12 07 33.7
baz=254
H11N3 WAKE ISLAND Hy 42.35 64 T T 12 07 35.9
baz=254,slow=75
MGCD Mangrove Creek 42.67 150 P **P** **11 22 11.4 +0.5**
baz=43
LSA Lhasa 43.07 312 P **P** **11 22 15.0 +0.2**
LSA pmax pmax
comp=Z,48nm,1.6s
LSA Lhasa 43.07 312 *e*P **P** **11 22 15.3 +0.5**
LSA pmax pmax
comp=Z,121nm,1.4s
LSA MLR MLR
comp=Z,2µm,19.0s
LSA Lhasa 43.07 312 *e*P **P** **11 22 15.3 +0.5**
comp=Z,121nm,1.4s
LSA LR LR
comp=Z,2µm,19.0s
CAN Canberra 43.39 153 *e*P **P** **11 22 16.7 -0.1**
CAN pmax pmax
comp=Z,96nm,1.5s
CAN MLR MLR
comp=Z,4µm,19.0s
CAN Canberra 43.39 153 *e*P **P** **11 22 16.7 -0.1**
comp=Z,96nm,1.5s
CAN LR LR
comp=Z,4µm,19.0s
GTA Gaotai 43.81 329 ⇑P **P** **11 22 19.8 -0.3**
GTA pP pP 11 22 24.3 -4.4
GTA sP sP 11 22 26.8 -5.3
GTA ScP **ScP** **11 27 59.4 +3.0**
GTA S **S** **11 28 50.3 +1.0**
GTA SS **SS** **11 31 58.9 -7.0**
GTA ScS **ScS** **11 32 19.0 +1.3**
GTA pmax pmax
comp=Z,350nm,5.9s
GTA LR LR
comp=Z,8µm,25.2s
GTA LR LR
comp=Z,6µm,24.2s
GTA LR LR
comp=Z,9µm,22.8s
TOO Toolangi 43.92 159 P **P** **11 22 22.7 +1.7**
baz=44,SNR=7.1
YUK Yuzh-Kuril'sk 44.11 20*d i*P P 11 22 30.7 +8.4
YUK *i* S **S** **11 28 51.6 -1.6**
YUK pmax pmax
comp=Z,926nm,2.6s
YUK pmax pmax
comp=Z,374nm,1.3s
YUK pmax pmax
comp=N,121nm,0.7s
YUK pmax pmax
comp=E,105nm,0.9s
TAPN Taplejung 44.62 307 *e*P **P** **11 22 26.3 -0.8**
comp=E,220nm,1.3s
ODAN Odare 44.66 306 *e*P **P** **11 22 26.3 -1.1**
comp=E,220nm,1.3s
CHLP Challavanipeta 44.72 293 *e*P **P** **11 22 27.3 -0.2**
CHLP IAmb IAmb 11 22 29.8
comp=Z,63nm,1.2s
CHLP *e*S **S** **11 29 04.5 +1.7**
CHLP IVMs_BB IVMs_BB 11 49 17.5
comp=Z,916nm,21.2s
BOK Bokaro 44.72 301 *e*P **P** **11 22 26.9 -0.6**
BOK IAmb IAmb 11 22 27.8
comp=Z,120nm,1.8s
VIS Vishakhapatnam 45.20 292 *e*P **P** **11 22 30.4 -1.0**
RAMN Ramite 45.34 306 *e*P **P** **11 22 31.9 -0.9**
comp=Z,361nm,1.3s
HABR Khabarovsk 45.78 7 *e*P **P** **11 22 33.4 -2.2**
HABR *e**PP **pP** **11 22 43.0 -1.1**
HABR *e**SP **sP** **11 22 47.2 -0.3**
HABR *e* 11 24 09.9
HABR *e* 11 24 21.0
HABR *e*PPP PPP 11 25 02.1
HABR *e*S **S** **11 29 16.0 -1.4**
HABR *e* 11 29 32.5
HABR *e* 11 32 26.4
HABR *e*SSS SSS 11 33 33.8
HABR pmax pmax
comp=N,28nm,1.1s
HABR pmax pmax
comp=Z,87nm,1.1s
HABR pmax pmax
comp=E,30nm,1.1s
HABR pmax pmax
comp=Z,404nm,1.4s
HABR MLR MLR
comp=Z,5µm,20.0s
HABR MLR MLR
comp=N,3µm,20.0s
HABR MLR MLR
comp=E,3µm,20.0s
YSS Yuzh-Sakhalins 45.83 15⇑*e*P **P** **11 22 36.1 +0.1**
YSS *e*S **S** **11 29 13.4 -4.8**
YSS *e*SS **ScS** **11 32 22.0 -8.0**
YSS MLR MLR
comp=Z,4µm,21.0s
YSS MLR MLR
comp=N,2µm,19.0s
YSS MLR MLR
comp=E,2µm,20.0s
YSS Yuzh-Sakhalins 45.83 15 *e*P **P** **11 22 36.1 +0.1**
comp=E,120nm,1.2s
YSS LR LR
comp=Z,2µm,21.0s
KUR Kuril'sk 45.85 21 *e*P **P** **11 22 37.9 +1.8**
KUR *e*S **S** **11 29 19.0 +0.6**
KUR MLR MLR
comp=N,1µm,22.0s
KUR MLR MLR
comp=E,1µm,22.0s
KUR MLR MLR
comp=Z,3µm,22.0s
TARA Tarawa 45.94 91 PFAKE 11 22 50.0 +13
TARA LR LR
comp=Z,7µm,21.0s
JIRN Jiri 45.97 306 *e*P **P** **11 22 37.4 -0.5**
KLR Kul'dur 46.19 4 P **P** **11 22 38.8 0.0**
comp=Z,80nm,1.1s,baz=207,slow=5.5,SNR=104
GUN Gumba 46.33 306 *e*P **P** **11 22 39.9 -0.7**
comp=Z,393nm,1.3s
HIA Hailar 46.46 353 *e*P **P** **11 22 41.7 +0.8**
HIA pmax pmax
comp=Z,127nm,1.3s
HIA MLR MLR
comp=Z,4µm,22.0s
HIA Hailar 46.46 353 *e*P **P** **11 22 41.7 +0.8**
comp=Z,127nm,1.3s
HIA LR LR
comp=Z,4µm,22.0s
PKIN Phulchoki 46.58 306 *e*P **P** **11 22 41.4 -1.1**
comp=Z,157nm,1.4s

PVM Polavaram 46.67 291 *e*P **P** **11 22 42.5 -0.6**
PVM IAmb IAmb 11 22 44.2
comp=Z,91nm,1.5s
PVM *e*S **S** **11 29 28.8 -2.3**
PVM IVMs_BB IVMs_BB 11 41 55.3
comp=Z,1µm,20.1s
KKN Kakani 46.76 306 *e*P **P** **11 22 42.7 -1.2**
comp=Z,204nm,1.3s
DMN Daman 46.83 306 *e*P **P** **11 22 43.4 -1.1**
comp=Z,248nm,1.3s
MDRS Chennai 47.25 285 *e*P **P** **11 22 47.2 -0.3**
MDRS IAmb IAmb 11 22 48.5
comp=Z,19nm,0.7s
GKN Gorkha 47.36 306 *e*P **P** **11 22 47.4 -1.1**
comp=Z,229nm,1.3s
ULN Ulaanbaatar 47.84 342*c e*P **P** **11 22 51.7 -0.2**
ULN pmax pmax
comp=Z,71nm,1.2s
ULN Ulaanbaatar 47.84 342 *e*P **P** **11 22 52.5 +0.6**
comp=Z,59nm,1.1s
ULN LR LR
comp=Z,2µm,21.0s
ULN Ulaanbaatar 47.84 342 P **P** **11 22 52.9 +1.0**
SNR=48
ULN Ulaanbaatar 47.84 342 P **P** **11 22 52.9 +1.0**
SNR=48
SKHT Srikalahasti 47.86 286 *e*P **P** **11 22 49.0 -3.4**
SKHT IAmb IAmb 11 22 53.2
comp=Z,35nm,1.1s
SKHT *e*S **S** **11 29 48.4 +0.3**
SKHT IVMs_BB IVMs_BB 11 42 16.0
comp=Z,1µm,24.4s
ADKI Addanki 47.95 289 *e*P **P** **11 22 51.4 -1.7**
ADKI IAmb IAmb 11 22 54.3
comp=Z,45nm,1.2s
ADKI *e*S **S** **11 29 48.4 -1.0**
ADKI IVMs_BB IVMs_BB 11 47 40.0
comp=Z,1µm,20.9s
SONA0 Songino Array 48.02 341 *e*P **P** **11 22 52.7 -0.5**
comp=Z,45nm,1.2s
SONA0 *e*PcP **PcP** **11 24 22.8 +1.8**
SONM Songino Array 48.02 341 P **P** **11 22 52.7 -0.5**
comp=Z,16nm,0.8s,baz=161,slow=8.6,SNR=35
SONM PcP **PcP** **11 24 22.7 +1.8**
comp=Z,5.0nm,0.8s,baz=150,slow=4.4,SNR=2.2
SONA1 Songino Array 48.03 341 *e*P **P** **11 22 53.3 0.0**
KOLN Koldanda 48.11 305 *e*P **P** **11 22 53.4 -1.0**
comp=Z,417nm,1.3s
NJS Nagarjunasagar 48.71 289 *e*P P 11 22 52.8 -6.1
PYUN Piuthan 48.74 305 *e*P **P** **11 22 58.6 -0.6**
comp=Z,635nm,1.3s
RCLA Racherla 48.85 288 *e*P **P** **11 22 58.8 -1.2**
RCLA IAmb IAmb 11 23 01.1
comp=Z,138nm,1.8s
RCLA *e*S **S** **11 30 00.8 -1.3**
RCLA IVMs_BB IVMs_BB 11 42 54.6
comp=Z,810nm,26.2s
SRLM Srisailam 49.02 289 *e*P **P** **11 23 00.2 -1.1**
SRLM IAmb IAmb 11 23 01.9
comp=Z,51nm,1.2s
SRLM *e*S **S** **11 30 02.6 -1.9**
SRLM IVMs_BB IVMs_BB 11 48 13.6
comp=Z,824nm,22.5s
RPR Rampur 49.19 292 *e*P **P** **11 23 01.8 -0.7**
RPR IAmb IAmb 11 23 03.2
comp=Z,93nm,1.4s
RPR *e*S **S** **11 30 04.1 -2.6**
RPR IVMs_BB IVMs_BB 11 39 52.4
comp=Z,969nm,30.9s
TAU Tasmania Unive 49.30 160 PFAKE 11 23 10.0 +7.0
TAU LR LR
comp=Z,4µm,20.0s
TYV Tymovskoe 49.45 13 *e*P **P** **11 23 05.8 +1.8**
TYV *e*S **S** **11 30 11.0 +1.6**
TYV pmax pmax
comp=Z,242nm,0.8s
TYV pmax pmax
comp=Z,1µm,4.0s
TYV smax smax
comp=E,2µm,6.0s
TYV MLR MLR
comp=E,4µm,20.0s
TYV MLR MLR
comp=Z,4µm,20.0s
HYB Hyderabad 49.58 290 *i* P **P** **11 23 04.0 -1.6**
HYB *e*S **S** **11 30 12.0 -0.4**
HYB Hyderabad 49.58 290 *e*P **P** **11 23 05.0 -0.7**
HYB IAmb IAmb 11 23 06.7
comp=Z,117nm,1.3s
HYBB Hyderabad (bro 49.58 290 *e*P **P** **11 23 04.7 -0.9**
HYBB IAmb IAmb 11 23 06.2
comp=Z,90nm,1.2s
HYBB *e*S **S** **11 30 10.0 -2.4**
HYBB IVMs_BB IVMs_BB 11 43 31.6
comp=Z,1µm,29.2s
TRD Trivandrum 50.03 278 *e*P **P** **11 23 07.1 -1.9**
SRSP Sriramsagar 50.08 292 *e*P **P** **11 23 08.4 -1.0**
SRSP IAmb IAmb 11 23 09.7
comp=Z,92nm,1.4s
SRSP *e*S **S** **11 30 14.8 -4.5**
SRSP IVMs_BB IVMs_BB 11 51 40.7
comp=Z,944nm,23.5s
CIT Chita 50.08 349 *e*P **P** **11 23 10.2 +1.3**
CIT *e* 11 23 20.0
CIT *e* 11 23 26.8
CIT pmax pmax
comp=Z,276nm,1.4s
URV Uravakonda 50.38 287 *e*P **P** **11 23 10.3 -1.5**
URV IAmb IAmb 11 23 11.7
comp=Z,41nm,1.1s
URV *e*S **S** **11 30 20.7 -3.0**
URV IVMs_BB IVMs_BB 11 47 08.0
comp=Z,1µm,21.6s
NKL Nikolayevsk 51.21 11 *e*P **P** **11 23 16.2 -1.0**
NKL *e* 11 23 26.0
NKL *e*S **S** **11 30 37.0 +3.2**
NKL pmax pmax
comp=N,60nm,1.0s
NKL pmax pmax
comp=Z,170nm,1.0s
NKL smax smax
comp=E,2µm,6.0s
NKL MLR MLR
comp=E,2µm,20.0s
NKL MLR MLR
comp=Z,4µm,20.0s
ZAK Zakamensk 51.25 341 *e*P **P** **11 23 17.7 -0.1**
ZAK pmax pmax
comp=Z,23nm,1.4s
KLRI Killari 51.53 291 *e*P **P** **11 23 19.0 -1.3**
KLRI IAmb IAmb 11 23 20.4
comp=Z,135nm,1.3s
KLRI *e*S **S** **11 30 38.5 -1.0**
KLRI IVMs_BB IVMs_BB 11 44 38.0
comp=Z,1µm,29.2s
BHPL Bhopal 51.93 297 *e*P **P** **11 23 20.9 -2.4**
BHPL IAmb IAmb 11 23 24.0
comp=Z,34nm,0.7s
TLY Talaya 52.25 342 P **P** **11 23 25.8 +0.7**
comp=Z,21nm,1.0s,baz=166,slow=7.8,SNR=29
TLY Talaya 52.25 342*c i*P **P** **11 23 26.4 +1.3**
TLY *e*S **S** **11 30 51.9 +3.6**
TLY *e* 11 33 16.0
TLY pmax pmax
comp=Z,106nm,1.7s
IRK Irkutsk 52.55 343 *e*P **P** **11 23 27.4 +0.1**
IRK *e*S **S** **11 30 57.3 +4.9**
IRK pmax pmax
comp=Z,281nm,2.4s
MOY Mondy 53.10 340 *e*P **P** **11 23 32.2 +0.6**
MOY pmax pmax
comp=Z,129nm,3.4s
WMQ Urumqi 53.42 325 P **P** **11 23 34.0 0.0**
WMQ pP pP 11 23 41.8 -0.9
WMQ PcP **PcP** **11 24 41.7 +0.7**
WMQ S **S** **11 31 03.1 -1.6**
WMQ ScS **ScS** **11 33 23.5 +1.7**
WMQ SS **SS** **11 34 45.0 -0.1**
WMQ pmax pmax
comp=Z,20nm,1.2s
WMQ pmax pmax
comp=Z,140nm,4.2s
WMQ LR LR
comp=Z,4µm,20.4s
WMQ LR LR

comp=Z,2µm,18.4s
WMQ LR LR
comp=Z,3µm,24.6s
SKR Severo-Kuril's 53.45 23 *e*P P 11 23 40.0 +6.1
SKR *e* 11 24 41.0
SKR *e* 11 25 32.0
SKR *e*S **S** **11 30 58.0 -6.5**
SKR *e*SSS SSS 11 36 28.0
SKR pmax pmax
comp=Z,1µm,10.0s
SKR MLR MLR
comp=N,1µm,20.0s
SKR MLR MLR
comp=E,2µm,20.0s
SKR MLR MLR
comp=Z,2µm,20.0s
DDI Dehra Dun 53.56 306 *e*P **P** **11 23 33.4 -1.9**
CLNS Chul'man 53.66 359 *e*P **P** **11 23 35.1 -0.4**
CLNS pmax pmax
comp=E,10.0nm,0.7s
CLNS pmax pmax
comp=Z,37nm,0.8s
CLNS pmax pmax
comp=N,30nm,0.8s
NDI New Delhi 53.70 304 *e*P **P** **11 23 35.5 -0.7**
GOA Goa 53.74 287 *e*P **P** **11 23 33.5 -3.2**
GOA IAmb IAmb 11 23 36.5
MNCY Minicoy 53.89 278 *e*P **P** **11 23 35.1 -2.7**
POO Poona 54.18 291 *e*P **P** **11 23 39.5 -0.5**
MSVF Nonsavu 54.41 114 *e*P **P** **11 23 40.7 -0.9**
MSVF pmax pmax
comp=Z,88nm,1.2s
MSVF Nonsavu 54.41 114 *e*P **P** **11 23 42.0 +0.4**
comp=Z,88nm,1.2s
MSVF LR LR
comp=Z,4µm,21.0s
SMLA Simla 54.56 306 *e*P **P** **11 23 40.1 -2.3**
DGAR Diego Garcia 55.39 259 PFAKE 11 24 00.0 +11
DGAR LR LR
comp=Z,2µm,20.0s
BOD Bodaibo 55.57 352 *e*P **P** **11 23 49.5 +0.3**
BOD pmax pmax
comp=Z,129nm,1.3s
DHRM DHARAMSHALA 55.65 307 *e*P **P** **11 23 48.5 -2.1**
PEA0 Petropavlovsk- 55.97 22 *e*P **P** **11 23 52.0 -0.2**
PEA0B Petropavlovsk- 55.97 22 *e*P **P** **11 23 52.8 +0.6**
comp=Z,78nm,1.0s
PEA0B LR LR
comp=Z,3µm,21.0s
PETK Petropavlovsk- 55.97 22 P **P** **11 23 52.5 +0.3**
comp=Z,38nm,0.9s,baz=197,slow=4.6,SNR=38
PEA1 Petropavlovsk- 55.97 22 *e*P **P** **11 23 52.5 +0.2**
PET Petropavlovsk 56.26 22 *e*P **P** **11 23 54.6 +0.4**
PET *e*S **S** **11 31 43.5 +1.3**
PET pmax pmax
comp=Z,104nm,1.1s
PET pmax pmax
comp=Z,600nm,15.1s
PET pmax pmax
comp=Z,1µm,14.7s
PET MLR MLR
comp=Z,4µm,20.0s
PET MLR MLR
comp=Z,3µm,18.0s
PET Petropavlovsk 56.26 22 *e*P **P** **11 23 54.6 +0.4**
comp=Z,87nm,1.0s
PET LR LR
comp=Z,3µm,20.0s
ZSN Zaisan 57.46 327 *e*P **P** **11 24 01.0 -2.0**
comp=Z,162nm,1.5s
ZSN *e*S **S** **11 31 56.3 -2.1**
ZSN LR LR 11 48 59.1
comp=Z,1µm,20.1s
OUZ Omahuta 57.91 135 PFAKE 11 24 20.0 +14
OUZ LR LR
comp=Z,6µm,19.0s
PDGK Podgornoye 58.10 321 P **P** **11 24 05.9 -1.5**
PDGK pmax pmax
comp=Z,22nm,1.3s
MK01 Makanchi Array 58.23 325 *e*P **P** **11 24 07.3 -1.1**
MK31 Makanchi Array 58.25 325 *i* P **P** **11 24 07.1 -1.4**
MK31 pmax pmax
comp=Z,30nm,1.2s
MK31 Makanchi Array 58.25 325 *e*P **P** **11 24 07.8 -0.7**
MK32 Makanchi Array 58.25 325 *e*P **P** **11 24 07.7 -0.9**
MKAR Makanchi Array 58.25 325 P **P** **11 24 07.7 -0.9**
comp=Z,8.3nm,0.5s,baz=116,slow=8.2,SNR=68
MKAR Makanchi Array 58.25 325 *e*P **P** **11 24 07.8 -0.7**
UZB Uzynbulak 58.30 320⇑ *e*P **P** **11 24 08.7 -0.4**
comp=Z,133nm,1.4s
UZB *e*S **S** **11 32 11.0 +1.1**
UZB LR LR 11 49 44.7
comp=Z,701nm,19.2s
MAKZ Makanchi 58.44 325 *e*P **P** **11 24 09.1 -0.7**
MAKZ pmax pmax
comp=Z,53nm,1.3s
MAKZ MLR MLR
comp=Z,6µm,22.0s
MAKZ Makanchi 58.44 325 *e*P **P** **11 24 09.1 -0.7**
comp=Z,53nm,1.3s
MAKZ LR LR
comp=Z,6µm,22.0s
SATY Saty 58.65 320⇓ *i*P **P** **11 24 11.0 -0.5**
comp=Z,313nm,0.9s
SATY *e*S **S** **11 32 14.9 +0.5**
SATY LR LR 11 49 38.5
comp=Z,351nm,15.1s
KSH Kashi 58.70 315 *e*P **P** **11 24 12.6 +0.7**
KSH sP pP 11 24 21.6 +0.9
KSH PP **PP** **11 26 24.9 +3.0**
KSH PcS **PcS** **11 29 03.5 0.0**
KSH S **S** **11 32 14.0 -1.1**
KSH pmax pmax
comp=Z,29nm,1.2s
KSH pmax pmax
comp=Z,270nm,4.9s
KSH LR LR
comp=Z,2µm,16.3s
KSH LR LR
comp=Z,4µm,17.2s
KSH LR LR
comp=Z,2µm,18.9s
YAK Yakutsk 58.88 1 P **P** **11 24 12.7 +0.2**
comp=Z,3.8nm,0.4s,baz=3.6,slow=21,SNR=17
YAK Yakutsk 58.88 1 *e*P **P** **11 24 12.5 0.0**
YAK *e**PP **pP** **11 24 21.4 +0.1**
YAK *e* 11 25 02.3
YAK *e* 11 26 20.7
YAK *e*S **S** **11 32 14.7 -1.6**
YAK *e**SS **sS** **11 32 31.8 +1.0**
YAK *e* 11 33 57.3
YAK *e*SS **SS** **11 36 03.3 -6.9**
YAK pmax pmax
comp=Z,169nm,0.9s
YAK pmax pmax
comp=N,65nm,1.2s
YAK pmax pmax
comp=E,7.0nm,0.9s
YAK pmax pmax
comp=Z,172nm,3.5s
YAK pmax pmax
comp=N,152nm,4.3s
YAK pmax pmax
comp=E,31nm,1.5s
YAK smax smax
comp=N,898nm,4.2s
YAK smax smax
comp=E,887nm,5.3s
YAK MLR MLR
comp=N,5µm,21.0s
YAK MLR MLR
comp=Z,7µm,23.0s
YAK MLR MLR
comp=E,2µm,22.0s
YAK Yakutsk 58.88 1 *e*P **P** **11 24 12.7 +0.2**
comp=E,181nm,0.9s
YAK LR LR
comp=Z,5µm,21.0s
BHJ Bhuj 58.90 295 *e*P **P** **11 24 11.8 -1.6**
MA2 Magadan 59.30 14 P **P** **11 24 16.0 +0.5**
comp=Z,46nm,1.0s,baz=215,slow=7.5
MA2 LR LR 11 48 56.8
comp=Z,2µm,21.9s,baz=228,slow=35
MDOK Medeo 59.58 320 *i* P **P** **11 24 17.9 0.0**
comp=Z,80nm,1.6s
MDOK *e*S **S** **11 32 27.1 +0.6**
MDOK LRM MLR 11 52 00.1
comp=Z,1µm,20.7s
KUU Kurty 60.37 320 *e*P **P** **11 24 22.4 -0.8**
KUU *e*S **S** **11 32 37.3 +0.9**
KUU LR LR 11 50 56.8
comp=Z,970nm,19.7s
TKM2 Tokmak 2 60.42 319 P **P** **11 24 21.9 -1.9**
TKM2 pmax pmax
comp=Z,15nm,1.5s
TKM2 Tokmak 2 60.42 319 *e*P **P** **11 24 23.1 -0.7**
comp=Z,35nm,1.4s
TKM2 LR LR
comp=Z,2µm,21.0s
SFK Sufi-Kurgan 60.64 315 P **P** **11 24 23.8 -1.6**
SFK pmax pmax
comp=Z,20nm,1.3s
LBZ Lake Benmore 60.98 146 PFAKE 11 24 40.0 +13
LBZ LR LR
comp=Z,6µm,21.0s
THZ Tophouse 61.01 142 PFAKE 11 24 40.0 +12
THZ LR LR
comp=Z,7µm,22.0s
AAK Ala-Archa 61.02 318 P **P** **11 24 28.0 +0.1**
comp=Z,3.7nm,0.9s,baz=119,slow=4.8,SNR=13
AAK Ala-Archa 61.02 318 *i* P **P** **11 24 27.5 -0.4**
AAK pmax pmax
comp=Z,22nm,1.7s
AAK Ala-Archa 61.02 318 *e*P **P** **11 24 27.8 -0.1**
comp=Z,54nm,1.6s
AAK LR LR
comp=Z,1µm,21.0s
AAK Ala-Archa 61.02 318 P **P** **11 24 28.3 +0.4**
SNR=9.2
AAK Ala-Archa 61.02 318 P **P** **11 24 28.3 +0.4**
SNR=9.2
FRU Bishkek 61.03 318 *e*P **P** **11 24 27.0 -0.8**
FRU *e* 11 24 40.0
FRU *e* 11 25 12.0
FRU *e*S **S** **11 32 41.0 -3.8**
FRU pmax pmax
comp=Z,50nm,2.0s
ZAA0 Zalesovo Array 61.30 333 *e*P **P** **11 24 28.0 -1.3**
ZALV Zalesovo Beam 61.30 333 P **P** **11 24 28.5 -0.8**
comp=Z,36nm,1.1s,baz=131,slow=6.2,SNR=48
ZALV PP **PP** **11 26 45.0 +0.5**
comp=Z,1.5nm,0.2s,baz=109,slow=11,SNR=5.2
ZALV PKP2ab 11 53 58.1
comp=Z,0.7nm,0.5s,baz=297,slow=4.5,SNR=5.1
ZAA1 Zalesovo Array 61.31 333 *e*P **P** **11 24 28.5 -0.8**
EKS2 Erkin-Say 61.52 318 *e*P **P** **11 24 31.3 +0.1**
EKS2 pmax pmax
comp=Z,27nm,1.1s
EKS2 MLR MLR
comp=Z,500nm,22.0s
EKS2 Erkin-Say 61.52 318 *e*P **P** **11 24 31.2 +0.1**
comp=Z,27nm,1.1s
EKS2 LR LR
comp=Z,500nm,22.0s
KHZ Kahutara 61.77 142 PFAKE 11 24 50.0 +17
KHZ LR LR
comp=Z,5µm,20.0s
URZ Urewera 61.88 137 PFAKE 11 24 50.0 +17
URZ LR LR
comp=Z,8µm,19.0s
SNZO South Karori 61.88 141 PFAKE 11 24 50.0 +17
SNZO LR LR
comp=Z,8µm,21.0s
BKZ Black Stump Fm 61.91 138 PFAKE 11 24 50.0 +16
BKZ LR LR
comp=Z,7µm,21.0s
KBL Kabul 62.13 308 *e*P **P** **11 24 35.2 -0.4**
KBL pmax pmax
comp=Z,34nm,1.2s
KBL Kabul 62.13 308 *e*P **P** **11 24 35.5 -0.1**
comp=Z,34nm,1.3s
KBL LR LR
comp=Z,900nm,22.0s
MNAS Manas 62.31 317 P **P** **11 24 34.9 -1.6**
MNAS pmax pmax
comp=Z,18nm,1.3s
MXZ Matakaoa Point 62.37 136 PFAKE 11 24 50.0 +13
MXZ LR LR
comp=Z,5µm,21.0s
KURBB Kurchatov Arra 62.44 327 P **P** **11 24 36.3 -0.8**
comp=Z,27nm,1.0s,baz=128,slow=6.0,SNR=101
KURK Kurchatov 62.45 328 *e*P **P** **11 24 36.1 -1.0**
KURK pmax pmax
comp=Z,54nm,1.0s
KURK MLR MLR
comp=Z,2µm,20.0s
KURK Kurchatov 62.45 328 *e*P **P** **11 24 36.0 -1.0**
comp=Z,54nm,1.0s
KURK LR LR
comp=Z,2µm,20.0s
KURK Kurchatov 62.45 328 P **P** **11 24 36.8 -0.3**
SNR=26
KURK Kurchatov 62.45 328 P **P** **11 24 36.8 -0.3**
SNR=26
KURK P **P** **11 24 36.8 -0.3**
SNR=26
BFZ Birch Farm 62.53 139 PFAKE 11 24 50.0 +12
BFZ LR LR
comp=Z,8µm,20.0s
NVS Novosibirsk 62.59 333⇓ *i*P **P** **11 24 39.2 +1.3**
NVS *i* S **S** **11 33 01.2 -2.8**
NVS *i* 11 34 27.3
NVS pmax pmax
comp=N,39nm,1.3s
NVS pmax pmax
comp=E,56nm,1.3s
NVS pmax pmax
comp=Z,74nm,1.3s
NVS smax smax
comp=N,48nm,2.0s
NVS smax smax
comp=E,46nm,2.0s
SEY Seymchan 62.64 13 P **P** **11 24 39.0 +0.9**
comp=E,68nm,1.2s,baz=215,slow=6.0,SNR=90
SEY Seymchan 62.64 13⇓ *i*P **P** **11 24 38.2 +0.1**
IUG Iuzhnay 63.87 316⇓ *e*P **P** **11 24 46.4 -0.5**
comp=E,227nm,0.9s
IUG LRM MLR 11 54 49.9
comp=E,686nm,20.4s
KK31 Karatay Array 63.90 317 *i* P **P** **11 24 46.0 -0.9**
KK31 pmax pmax
comp=Z,19nm,1.0s
KKAR Karatay Array 63.90 317 *e*P **P** **11 24 46.2 -0.7**
KKAR Karatay Array 63.90 317 *e*P **P** **11 24 46.2 -0.7**
OTUK Ortayu 64.81 323 P **P** **11 24 51.6 -1.2**
OTUK pmax pmax
comp=Z,17nm,1.4s
VOSK Vostochnaya 67.57 327 *e*P **P** **11 25 09.3 -1.1**
VOSK pmax pmax
comp=Z,31nm,1.0s
VOSK MLR MLR
comp=Z,3µm,20.0s
VOSK Vostochnaya 67.57 327 *e*P **P** **11 25 09.3 -1.1**
comp=Z,31nm,1.0s
VOSK LR LR
comp=Z,3µm,20.0s
BVAR Borovoye Array 68.02 327 P **P** **11 25 12.6 -0.6**
comp=Z,7.4nm,0.6s,baz=120,slow=8.8,SNR=21
BRVK Borovoye 68.09 327⇑ *i*P **P** **11 25 13.0 -0.6**
BRVK pmax pmax
comp=Z,61nm,1.2s
BRVK Borovoye 68.09 327 *e*P **P** **11 25 13.1 -0.6**
comp=Z,63nm,1.0s
BRVK LR LR
comp=Z,4µm,19.0s
BRVK Borovoye 68.09 327 P **P** **11 25 13.6 -0.1**
SNR=27
BRVK Borovoye 68.09 327 P **P** **11 25 13.6 -0.1**
SNR=27
BRVK P **P** **11 25 13.6 -0.1**
SNR=27
CHKZ Chkalovo 68.19 328 P **P** **11 25 13.8 -0.4**
CHKZ pmax pmax
comp=Z,56nm,1.5s
TIXI Tiksi 68.52 1⇓ *i*P **P** **11 25 14.3 -1.6**
TIXI Tiksi 68.52 1 *e*P **P** **11 25 15.6 -0.3**
comp=Z,58nm,1.1s
TIXI LR LR
comp=Z,6µm,22.0s
ZRNK Zerenda 68.75 327 *e*P **P** **11 25 16.8 -1.0**
ZRNK pmax pmax
comp=Z,60nm,1.0s
ZRNK MLR MLR
comp=Z,4µm,21.0s
ZRNK Zerenda 68.75 327 *e*P **P** **11 25 16.8 -1.0**
comp=Z,60nm,1.0s
ZRNK LR LR
comp=Z,4µm,21.0s
ATKA Atka Island 68.92 34 *e*P **P** **11 25 18.1 -0.7**
comp=Z,148nm,1.0s
BILL Bilibino 70.15 15 *e*P **P** **11 25 24.8 -1.3**
BILL pmax pmax
comp=Z,63nm,1.7s
BILL Bilibino 70.15 15 *e*P **P** **11 25 26.2 +0.1**
comp=Z,63nm,1.7s
BILL LR LR
comp=Z,4µm,22.0s
CASY Casey 70.17 187 *e*P **P** **11 25 26.4 +0.2**
comp=Z,23nm,0.9s
NRIK Noril'sk 71.15 346 P **P** **11 25 32.6 +0.5**
comp=Z,33nm,0.9s,baz=132,slow=6.0,SNR=47
UOSS Minazif 71.30 295 PFAKE 11 25 50.0 +16
UOSS LR LR
comp=Z,700nm,20.0s
GEYT Alibeck 71.51 309 P **P** **11 25 35.3 +0.2**
comp=Z,6.2nm,0.7s,baz=164,slow=5.9,SNR=9.0
ABKAR Akbulak array 72.83 321 *e*P **P** **11 25 42.0 -0.7**
RER Riviere de l'E 73.68 247 PFAKE 11 26 00.0 +12
RER LR LR
comp=Z,4µm,20.0s
UNV Unalaska Valle 73.84 34 PFAKE 11 26 00.0 +12
UNV LR LR
comp=Z,5µm,22.0s
AKTO Aktyubinsk 74.34 322 P **P** **11 25 51.0 -0.5**
comp=Z,20nm,1.1s,baz=106,slow=7.1,SNR=37
SVE Sverdlovsk 74.67 329 *d i*P **P** **11 25 53.5 +0.2**
SVE *e*S **S** **11 35 27.4 0.0**
SVE pmax pmax
comp=Z,172nm,1.4s
GAMB Gambell 74.92 24 *e*P **P** **11 25 55.5 +1.0**
comp=Z,50nm,1.1s
GAMB LR LR
comp=Z,800nm,18.0s
RAR Rarotonga 75.55 113 LR LR 11 57 03.5
comp=Z,802nm,19.8s,baz=270,slow=34
ARU Arti 75.64 328 P **P** **11 25 58.1 -0.8**
comp=Z,111nm,1.2s,baz=98,slow=4.0,SNR=61
ARU Arti 75.64 328 *d i*P **P** **11 25 58.0 -0.9**
ARU S **S** **11 35 37.2 -1.0**
ARU SS **SS** **11 40 25.0 -4.8**
ARU pmax pmax
comp=Z,115nm,1.2s
ARU MLR MLR
comp=Z,3µm,23.0s
ARU Arti 75.64 328 *e*P **P** **11 25 58.1 -0.8**
comp=Z,78nm,1.0s
ARU LR LR
comp=Z,2µm,18.0s
SOKR Solikamsk 77.43 331 *c i*P **P** **11 26 07.3 -1.6**
SOKR S **S** **11 35 53.8 -3.8**
SOKR pmax pmax
comp=Z,55nm,1.3s
SOKR MLR MLR
comp=Z,4µm,24.0s
CHGN Chignik 78.96 33 *e*P **P** **11 26 17.4 -0.1**
RAYN Ar Rayn 80.97 293 *e*P **P** **11 26 28.8 -0.4**
comp=Z,41nm,1.4s
RAYN LR LR
comp=Z,2µm,22.0s
SVW2 Sparrevohn 81.28 29 *e*P **P** **11 26 31.1 +1.1**
comp=Z,64nm,1.7s
ABPO Ambohimpanom 81.31 250 *e*P **P** **11 26 32.2 +1.0**
ABPO pmax pmax
comp=Z,20nm,1.0s
ABPO MLR MLR
comp=Z,2µm,20.0s
ABPO Ambohimpanom 81.31 250 *e*P **P** **11 26 32.2 +1.0**
comp=Z,20nm,1.0s
ABPO LR LR
comp=Z,2µm,20.0s
TT01 Tatalina 81.39 27 *e*P **P** **11 26 31.6 +1.1**
TTA Tatalina 81.39 27 *e*P **P** **11 26 31.6 +1.0**
TTA pmax pmax
comp=Z,51nm,1.3s
TTA Tatalina 81.39 27 *e*P **P** **11 26 31.6 +1.0**
comp=Z,51nm,1.3s
DGRG David-gareji 81.69 311 P **P** **11 26 33.4 +0.8**
DGRG David-gareji 81.69 311 P **P** **11 26 33.4 +0.8**
OHAK Old Harbor 81.89 33 PFAKE 11 26 40.0 +6.8
OHAK LR LR
comp=Z,4µm,21.0s
DAMY Dhamar 82.07 284 PFAKE 11 26 50.0 +15
DAMY LR LR
comp=Z,2µm,22.0s
GNI Garni 82.11 310 *e*P **P** **11 26 36.8 +1.8**
GNI pmax pmax
comp=Z,79nm,1.4s
GNI MLR MLR
comp=Z,600nm,19.0s
GNI Garni 82.11 310 *e*P **P** **11 26 36.8 +1.8**
comp=Z,79nm,1.4s
GNI LR LR
comp=Z,600nm,19.0s
TBLG Delisi 82.19 312 P **P** **11 26 37.3 +2.1**
TBLG Delisi 82.19 312 P **P** **11 26 37.3 +2.1**
DUS Dusheti 82.23 312 P **P** **11 26 37.4 +1.9**
DUS Dusheti 82.23 312 P **P** **11 26 37.4 +1.9**
KDAK Kodiak Island 82.33 32 P P 11 26 51.6 +16
comp=Z,30nm,0.8s,baz=300,slow=4.6,SNR=17
KDAK Kodiak Island 82.33 32 *i* P **P** **11 26 36.5 +1.0**
KDAK Kodiak Island 82.33 32 PFAKE 11 26 50.0 +15
KDAK LR LR
comp=Z,4µm,22.0s
GUDG Gudauri 82.42 312 P **P** **11 26 37.9 +1.3**
RSO Redoubt South 82.56 30 *e*P **P** **11 26 38.1 +1.1**
VNDA Vanda 82.72 173 P **P** **11 26 37.0 -0.2**
comp=Z,14nm,1.1s,baz=313,slow=6.0,SNR=29
VNDA Vanda 82.72 173 *e*P **P** **11 26 37.0 -0.2**
VNDA pmax pmax
comp=Z,25nm,1.1s
VNDA Vanda 82.72 173 *e*P **P** **11 26 37.0 -0.2**
comp=Z,25nm,1.1s
ZEI Tsey 82.86 313 *e*P **P** **11 26 37.2 -1.7**
ZEI pmax pmax
comp=Z,172nm,1.2s
SPU Mount Spurr 82.98 29 *e*P **P** **11 26 38.8 -0.1**
AKH Akhalkalaki 83.11 311 P **P** **11 26 41.6 +1.4**
AKH Akhalkalaki 83.11 311⇓ *i*P **P** **11 26 40.8 +0.6**
AKH Akhalkalaki 83.11 311 P **P** **11 26 41.6 +1.4**
NCK Nalchik 83.11 313 *e*P **P** **11 26 38.8 -1.1**
NCK pmax pmax
comp=Z,15nm,0.6s
PPLA Purkeypile 83.12 27 *e*P **P** **11 26 41.1 +1.4**
comp=Z,112nm,1.4s
PPLA LR LR
comp=Z,2µm,22.0s
MAW Mawson 83.20 200 P **P** **11 26 40.5 +0.7**
comp=Z,15nm,1.1s,baz=46,slow=7.3,SNR=14
MAW Mawson 83.20 200 P **P** **11 26 40.9 +1.1**
baz=83,SNR=4.6
MAW Mawson 83.20 200 *e*P **P** **11 26 40.5 +0.7**
MAW pmax pmax
comp=Z,5.0nm,1.1s
MAW MLR MLR
comp=Z,200nm,20.0s
MAW Mawson 83.20 200 *e*P **P** **11 26 40.5 +0.7**
comp=Z,5.4nm,1.1s
MAW LR LR
comp=Z,200nm,20.0s
CAST Castle Rocks 83.23 27 *e*P **P** **11 26 40.9 +0.8**
comp=Z,104nm,1.8s
KBZ Khabaz 83.62 313 P **P** **11 26 42.5 0.0**
comp=Z,16nm,1.1s,baz=81,slow=4.8,SNR=10
SBA Scott Base 83.63 172 *e*P **P** **11 26 42.8 +1.0**
SBA pmax pmax
comp=Z,89nm,1.8s
SBA MLR MLR
comp=Z,2µm,19.0s
SBA Scott Base 83.63 172 *e*P **P** **11 26 42.8 +1.0**
comp=Z,89nm,1.8s
SBA LR LR
comp=Z,2µm,19.0s
NEY Neytrino 83.74 313 *i* P **P** **11 26 46.2 +2.8**
NEY pmax pmax
comp=Z,8.0nm,1.2s
KTH Kantishna Hill 83.76 26 *e*P **P** **11 26 43.2 +0.3**
comp=Z,80nm,1.3s
KIV Kislovodsk 83.78 314 *e*P **P** **11 26 40.3 -3.2**

KIV eS S 11 36 59.2 -5.8
KIV pmax pmax
comp=Z,22nm,1.1s
KIV Kislovodsk 83.78 314 PFAKE 11 26 50.0 +6.5
KIV LR LR
comp=Z,1µm,20.0s
KIV Kislovodsk 83.78 314 P P **11 26 43.7 +0.2**
SNR=5.7
KIV Kislovodsk 83.78 314 P P **11 26 43.7 +0.2**
SNR=5.7
KIV P P **11 26 43.7 +0.2**
SNR=5.7
BPAW Bear Paw Mtn. 83.79 26 eP P **11 26 43.7 +0.7**
comp=Z,85nm,1.5s
MLY Manley 83.99 25 eP P **11 26 45.0 +1.0**
comp=Z,36nm,1.0s
TRF Thorofare Moun 84.04 27 eP P **11 26 44.5 +0.1**
comp=Z,57nm,1.2s
RC01 Rabbit Creek A 84.10 29 eP P **11 26 44.7 +0.1**
comp=Z,70nm,1.0s
SEW Seward 84.17 30 eP P **11 26 45.4 +0.5**
comp=Z,212nm,1.6s
CHVG Ch'k'valeri 84.19 312 ⇓i P P **11 26 48.9 +3.4**
COLD Coldfoot 84.42 23 eP P **11 26 47.6 +1.5**
comp=Z,51nm,1.1s
PMR Palmer 84.42 29 eP P **11 26 46.1 -0.1**
PMR pmax pmax
comp=Z,88nm,1.1s
PMR Palmer 84.42 29 eP P **11 26 46.1 -0.1**
comp=Z,88nm,1.1s
MCK McKinley 84.66 26 eP P **11 26 47.4 -0.1**
MCK pmax pmax
comp=Z,79nm,1.2s
MCK McKinley 84.66 26 eP P **11 26 47.4 -0.1**
comp=Z,79nm,1.2s
VRH Novokhopyorsk 84.66 321 eP P **11 26 46.7 -0.9**
VRH pmax pmax
comp=Z,180nm,1.3s
VRH MLR MLR
comp=Z,840nm,16.0s
PPT Papeete 84.67 108 LR LR 11 59 00.7
comp=Z,750nm,21.2s,baz=270,slow=32
PPT2 Papeete2 84.67 108 eS S **11 37 10.1 -4.7**
comp=Z,5µm,32.5s
PPT2 eSS SS **11 42 49.4 +2.6**
comp=Z,2µm,30.8s
PPT2 eLQ LQ 11 50 12.7
comp=Z,6µm,37.0s
PPT2 eLR LR 11 53 43.7
comp=Z,8µm,31.0s
RND Reindeer 84.68 27 eP P **11 26 47.2 -0.4**
RND pmax pmax
comp=Z,48nm,1.1s
RND MLR MLR
comp=Z,2µm,22.0s
RND Reindeer 84.68 27 eP P **11 26 47.2 -0.4**
comp=Z,48nm,1.1s
RND LR LR
comp=Z,2µm,22.0s
SML Sawmill 84.82 28 eP P **11 26 48.8 +0.5**
SML pmax pmax
comp=Z,143nm,1.2s
SML Sawmill 84.82 28 eP P **11 26 48.8 +0.5**
comp=Z,143nm,1.2s
MDM Murphy Dome 85.05 25 eP P **11 26 49.2 -0.1**
comp=Z,29nm,1.4s
WRH Wood River Hil 85.08 26 eP P **11 26 49.1 -0.4**
comp=Z,60nm,1.4s
COLA College 85.20 25 ceP P **11 26 49.3 -0.7**
COLA pmax pmax
comp=Z,12nm,1.7s
CCB Clear Creek Bu 85.21 26 eP P **11 26 49.7 -0.4**
comp=Z,39nm,1.4s
TBI Tubuai 85.29 114 eS S **11 37 18.3 -2.2**
comp=Z,3µm,29.8s
TBI eSS SS **11 42 57.7 +2.1**
comp=Z,2µm,31.8s
TBI eLQ LQ 11 50 26.8
comp=Z,2µm,36.8s
TBI eLR LR 11 53 59.3
comp=Z,5µm,36.8s
SCM Sheep Creek Mo 85.30 28 eP P **11 26 50.8 +0.1**
SCM pmax pmax
comp=Z,109nm,1.2s
SCM Sheep Creek Mo 85.30 28 eP P **11 26 50.8 +0.1**
comp=Z,109nm,1.2s
DHY Denali Highway 85.33 27 eP P **11 26 51.3 +0.3**
comp=Z,40nm,1.4s
HDA Harding Lake 85.57 26 eP P **11 26 52.8 +0.8**
comp=Z,24nm,1.2s
IL1 Eielson Array 85.61 25 eP P **11 26 50.7 -1.4**
ILAR Eielson Array 85.61 25 P P **11 26 51.5 -0.7**
comp=Z,3.8nm,0.9s,baz=241,slow=5.0,SNR=23
ILAR PP PP **11 30 07.7 -3.2**
comp=Z,2.5nm,1.1s,baz=273,slow=6.4,SNR=4.7
ILB Eielson Array 85.61 25 eP P **11 26 52.1 0.0**
SFNV Sufian 85.68 306 eP P **11 26 53.0 -0.2**
SOC Sochi 85.93 313 eP P **11 26 53.2 -1.0**
SOC e 11 30 20.2
SOC ePPP PPP 11 32 13.3
SOC eS S 11 37 15.7 -10
SOC pmax pmax
comp=Z,64nm,0.8s
KLU Klutina 85.96 29 eP P **11 26 55.2 +1.2**
comp=Z,54nm,1.3s
DIV Divide 86.02 29 eP P **11 26 56.0 +1.7**
comp=Z,112nm,1.2s
KLMR Klimovskoe 86.12 331 eP P **11 26 52.8 -1.9**
KLMR eS S 11 37 16.1 -11
KLMR pmax pmax
comp=Z,90nm,1.4s
PAX Paxson 86.19 27 eP P **11 26 56.2 +1.0**
PAX pmax pmax
comp=Z,37nm,1.4s
PAX MLR MLR
comp=Z,2µm,22.0s
PAX Paxson 86.19 27 eP P **11 26 56.1 +1.0**
comp=Z,37nm,1.4s
PAX LR LR
comp=Z,2µm,22.0s
VSR Storozhevoye 86.27 321 eP P **11 26 54.6 -1.1**
VSR eS S **11 37 25.6 -3.5**
VSR pmax pmax
comp=Z,90nm,1.2s
VSR smax smax
comp=N,250nm,9.9s
VSR MLR MLR
comp=Z,1µm,21.0s
FYU Fort Yukon 86.34 24 eP P **11 26 58.6 +3.0**
comp=Z,91nm,1.8s
LPSR Galich'ya Gora 86.41 322 eP P **11 26 56.1 -0.2**
LPSR eS S **11 37 27.0 -3.4**
LPSR pmax pmax
comp=Z,60nm,1.1s
LPSR smax smax
comp=N,490nm,4.0s
BMRM Bremner River 86.59 29 eP P **11 26 58.5 +1.4**
comp=N,51nm,1.2s
KSRV Kasrt alli 86.59 306 eP P **11 26 57.8 +0.1**
DOT Dot Lake 86.83 27 eP P **11 26 59.8 +1.6**
comp=N,74nm,1.5s
MENT Mentasta 86.99 27 eP P **11 27 00.1 +1.0**
comp=N,36nm,1.7s
MOS Moscow 87.14 326 eP P **11 26 59.2 -0.6**
MOS e 11 30 28.4
MOS eS S **11 37 36.7 -0.6**
MOS pmax pmax
comp=Z,78nm,1.2s
MOS MLR MLR
comp=Z,2µm,21.0s
ANN Anapa 87.55 315 eP P **11 26 59.9 -2.1**
ANN eS SKSac **11 37 24.8 -3.3**
ANN pmax pmax
comp=Z,125nm,1.5s
BALM Baldy 87.69 29 PFAKE 11 27 10.0 +7.5
BALM LR LR
comp=Z,2µm,18.0s
OBN Obninsk 87.76 325 P P **11 27 01.9 -0.9**
comp=Z,29nm,0.6s,baz=345,slow=1.9,SNR=14
OBN Obninsk 87.76 325 ⇓iP P **11 27 02.5 -0.3**
OBN i 11 27 14.8
OBN i S S **11 37 40.8 -2.5**
OBN pmax pmax
comp=Z,116nm,1.2s
OBN MLR MLR
comp=Z,2µm,21.0s
OBN Obninsk 87.76 325 eP P **11 27 02.9 +0.2**
comp=Z,134nm,1.3s
OBN LR LR
comp=Z,2µm,21.0s
FURI Furi 87.86 279 PFAKE 11 27 20.0 +15
FURI LR LR
comp=Z,5µm,22.0s
ROOS tI_alroos 88.05 304 eP P **11 27 04.9 +0.1**
EGAK Eagle 88.06 25 eP P **11 27 04.7 +0.6**
LVZ Lovozero 88.08 338 PFAKE 11 27 20.0 +16
LVZ LR LR
comp=Z,3µm,21.0s
RABH Abou Rabah 88.11 304 eP P **11 27 05.8 +0.7**
DRWC Darouich 88.45 306 eP P **11 27 06.9 +0.3**
APA Apatity 88.57 337 ⇑iP P **11 27 11.0 +4.6**
APA i 11 30 34.0
APA MLR MLR
comp=Z,5µm,24.0s
BTCH Batrach 88.65 306 eP P **11 27 07.8 +0.2**
WRDH Warideh 88.71 305 eP P **11 27 08.6 +0.7**
MARH Ras Al Marh 88.72 304 eP P **11 27 09.0 +0.7**
HAWK Haweek 88.76 304 eP P **11 27 08.3 +0.1**
SLNF Slenfeh 88.86 305 eP P **11 27 08.8 +0.1**
DAWY Dawson 88.88 26 eP P **11 27 08.9 +0.9**
comp=Z,19nm,1.3s
ARNB Al Arnab 89.05 306 eP P **11 27 09.1 -0.4**
BRBR Barbar 89.20 303 eP P **11 27 10.4 0.0**
KMBO Kilima Mbogo 89.78 269 P P **11 27 14.5 +0.9**
comp=Z,24nm,1.2s,baz=65,slow=4.5,SNR=25
KMBO Kilima Mbogo 89.78 269 eP P **11 27 14.5 +0.9**
KMBO pmax pmax
comp=Z,45nm,1.4s
KMBO MLR MLR
comp=Z,1µm,20.0s
KMBO Kilima Mbogo 89.78 269 eP P **11 27 14.5 +0.9**
comp=Z,45nm,1.4s
KMBO LR LR
comp=Z,1µm,20.0s
KMBO Kilima Mbogo 89.78 269 P P **11 27 15.1 +1.6**
SNR=15
KMBO P P **11 27 15.1 +1.6**
SNR=15
SIM Simferopol' 89.90 315 eP P **11 27 15.2 +2.1**
SIM e 11 37 44.0
SIM eS S **11 38 07.0 +3.1**
SIM pmax pmax
comp=Z,81µm,8.3s
SIM MLR MLR
comp=N,5µm,26.0s
KEV Kevo 90.61 340 PFAKE 11 27 30.0 +14
KEV LR LR
comp=Z,2µm,22.0s
BR101 Keskin Array S 90.64 310 eP P **11 27 16.8 -0.2**
BRTR Keskin Array B 90.64 310 P P **11 27 16.8 -0.2**
comp=Z,11nm,1.1s,baz=120,slow=4.4,SNR=25
BRTR LR LR 12 16 35.0
comp=Z,330nm,18.1s,baz=70,slow=41
BRTR Keskin Array B 90.64 310 iP P **11 27 16.7 -0.2**
BRTR pmax pmax
comp=Z,12nm,1.1s
INK Inuvik 90.70 22 P P **11 27 15.8 -0.5**
comp=Z,21nm,1.3s,baz=277,slow=7.1,SNR=17
INK PKKP **PKKPdf 11 44 40.9 -0.2**
comp=Z,1.1nm,0.9s,baz=73,slow=1.1,SNR=3.8
INK Inuvik 90.70 22 eP P **11 27 16.0 -0.4**
comp=Z,20nm,1.2s
ARCES ARCESS Array B 91.17 340 P P **11 27 18.2 -0.3**
comp=Z,4.8nm,0.7s,baz=71,slow=6.2,SNR=15
ARCES LR LR 12 11 41.0
comp=Z,1µm,21.7s,baz=78,slow=38
ARCES ARCESS Array B 91.17 340 P P **11 27 18.2 -0.3**
ARCES pmax pmax
comp=Z,5.0nm,0.7s
ARCES MLR MLR
comp=Z,1µm,21.7s
ARE0 ARCESS Array S 91.17 340 PFAKE 11 27 30.0 +11
ARE0 LR LR
comp=Z,2µm,22.0s
SPITS Spitsbergen Ar 91.19 349 P P **11 27 18.2 -0.3**
comp=Z,5.6nm,0.8s,baz=144,slow=13,SNR=3.6
CSS Mathiatis 91.26 305 eP P **11 27 20.0 +0.3**
comp=Z,4.4nm,0.9s
CSS LR LR
comp=Z,200nm,21.0s
BR231 Keskin MP Arra 91.30 310 eP P **11 27 16.7 -3.2**
KBS Kingsbay 91.71 350 PFAKE 11 27 30.0 +9.1
KBS LR LR
comp=Z,3µm,21.0s
HSPB Hornsund (broa 91.79 348 eP P 11 27 31.8 +11
SYO Syowa Base 91.88 201 ⇑eP P **11 27 21.4 -0.3**
FIA1 FINESS Array S 92.55 332 eP P **11 27 23.8 -1.2**
FIA0 FINESS Array S 92.55 332 eP P **11 27 23.8 -1.2**
FIA0 FINESS Array S 92.55 332 eP P **11 27 23.8 -1.2**
FINES FINESS Array B 92.55 332 P P **11 27 23.8 -1.2**
comp=Z,4.9nm,1.1s,baz=81,slow=12,SNR=7.2
AKASG Malin Array Be 92.57 321 P P **11 27 24.1 -1.2**
comp=Z,8.4nm,0.9s,baz=70,slow=4.4,SNR=20
AKASG Malin Array Be 92.57 321 iP P **11 27 24.2 -1.2**
AKASG pmax pmax
comp=Z,10.0nm,0.9s
AKBB Malin Array Si 92.57 321 eP P **11 27 25.1 -0.3**
AKBB pmax pmax
comp=Z,13nm,0.8s
AKBB MLR MLR
comp=Z,2µm,21.0s
AKBB Malin Array Si 92.57 321 eP P **11 27 25.1 -0.3**
comp=Z,13nm,0.8s
AKBB LR LR
comp=Z,2µm,21.0s
KIEV Kiev 92.58 321 ceP P **11 27 24.2 -1.2**
KIEV pmax pmax
comp=Z,15nm,1.0s
KIEV Kiev 92.58 321 eP P **11 27 24.9 -0.5**
comp=Z,15nm,1.1s
KIEV LR LR
comp=Z,2µm,21.0s
AK11 Malin Array Si 92.61 321 eP P **11 27 25.1 -0.5**
QSPA South Pole Qui 92.96 180 eP P **11 27 27.9 +0.9**
QSPA LR LR
comp=Z,3µm,20.0s
TAOE Nuku Hiva Isla 93.30 99 eSKSac **SKSac 11 37 58.0 -4.8**
comp=Z,2µm,23.6s
TAOE eSP **SP 11 39 47.1 -1.4**
comp=Z,1µm,29.6s
TAOE Nuku Hiva Isla 93.30 99 eLR LR 11 57 42.9
comp=Z,6µm,26.5s
HEL Helsinki 93.34 331 PFAKE 11 27 40.0 +11
HEL LR LR
comp=Z,2µm,22.0s
KIS Kishinev 93.35 317 eP P **11 27 30.0 +0.9**
KIS LRM MLR 12 12 50.0
comp=Z,2µm,22.0s
KIS Kishinev 93.35 317 eP P **11 27 30.0 +0.9**
KIS e 11 38 00.0
KIS e 11 38 40.0
KIS MLR MLR
comp=Z,3µm,23.0s
KIS MLR MLR
comp=N,2µm,21.0s
KIS MLR MLR
comp=E,2µm,22.0s
KIS MLR MLR
comp=Z,3µm,24.0s
TIRR Tirgusor 93.99 315 PFAKE 11 27 40.0 +7.9
TIRR LR LR
comp=Z,2µm,22.0s
DLBC Dease Lake 94.20 31 P P **11 27 32.8 -0.1**
comp=Z,4.7nm,0.9s,baz=283,slow=9.6,SNR=4.8
TESR Tescani 94.90 317 ⇑iP P **11 27 35.0 -1.2**
VRI Vrincioaia 94.95 316 ⇓iP P **11 27 36.8 +0.3**
VRI Vrincioaia 94.95 316 ⇓P P **11 27 36.8 +0.3**
PLOR Plostina 95.01 316 ⇓iP P **11 27 37.0 +0.2**
PLOR Plostina 95.01 316 ⇓P P **11 27 37.0 +0.2**
MLR Muntele Rosu 95.56 316 ⇑iP P **11 27 38.7 -0.7**
MLR Muntele Rosu 95.56 316 ⇑P P **11 27 38.7 -0.7**
MLR Muntele Rosu 95.56 316 eP P **11 27 38.8 -0.7**
comp=Z,19nm,1.1s
MLR LR LR
comp=Z,600nm,22.0s
SUW Suwalki 95.62 325 eP P **11 27 36.8 -2.5**
SUW Suwalki 95.62 325 eP P **11 27 36.8 -2.5**
BURAR Bucovina Array 95.67 318 ⇑iP P **11 27 39.8 -0.1**
BURAR Bucovina Array 95.67 318 ⇑P P **11 27 39.8 -0.1**
BUR08 Bucovina Ar. S 95.68 318 eP P **11 27 39.7 -0.2**
VOIR 96.19 316 ⇑iP P **11 27 39.9 -2.3**
VOIR 96.19 316 ⇑P P **11 27 39.9 -2.3**
KARP Karpathos 96.22 306 PFAKE 11 27 50.0 +7.5
KARP LR LR
comp=Z,200nm,22.0s
ARR Arges 96.49 316 ⇑iP P **11 27 44.0 +0.4**
KWP Kalwaria Pacla 96.89 321 eP P **11 27 45.6 +0.4**
KWP Kalwaria Pacla 96.89 321 eP P **11 27 45.6 +0.4**
CJR Cluj-Napoca 96.93 318 ⇓iP P **11 27 47.4 +1.9**
CJR Cluj-Napoca 96.93 318 ⇓P P **11 27 47.4 +1.9**
LOT Lotru 97.07 316 ⇓iP Pdif 11 27 46.4 0.0
KOLS Kolonicke sedl 97.32 320 eP P **11 27 47.1 -0.1**
KOLS pmax pmax
comp=Z,13nm,1.4s
KOLS Kolonicke sedl 97.32 320 eP P **11 27 47.1 -0.1**
UZH Uzhgorod 97.38 320 eP P **11 27 46.9 -0.5**
UZH e 11 28 00.9
SANT Santorini 97.45 307 PFAKE 11 28 00.0 +12
SANT LR LR
comp=Z,500nm,22.0s
DRGR 97.51 318 ⇑iP Pdif 11 27 48.9 +0.6
DRGR 97.51 318 ⇑P Pdif 11 27 48.9 +0.6
LAST Lasithi 97.63 306 PFAKE 11 28 00.0 +11
LAST LR LR
comp=Z,400nm,21.0s
GZR Gura Zlata 97.77 316 ⇑iP Pdif 11 27 50.3 +0.9
GZR Gura Zlata 97.77 316 ⇑P Pdif 11 27 50.3 +0.9
STHS Stebnicka Huta 97.87 321 eP Pdif 11 27 51.1 +1.4
STHS pmax pmax
comp=Z,5.0nm,1.2s
STHS Stebnicka Huta 97.87 321 eP Pdif 11 27 51.1 +1.4
VTS Vitosha 98.04 314 PFAKE 11 28 00.0 +9.2
VTS LR LR
comp=Z,1µm,21.0s
SIRR Siria 98.33 317 ⇑iP P **11 27 51.8 0.0**
RES Resolute Bay 98.44 10 eP Pdif 11 27 52.3 +0.7
RES Resolute Bay 98.44 10 eP Pdif 11 27 52.3 +0.7
NIE Niedzica 98.46 321 eP Pdif 11 27 53.1 +0.7
NIE Niedzica 98.46 321 eP Pdif 11 27 53.2 +0.8
KECS Kecovo 98.58 320 eP Pdif 11 27 54.0 +1.1
KECS pmax pmax
comp=Z,4.0nm,1.0s
KECS Kecovo 98.58 320 ePDIF Pdif 11 27 54.0 +1.1
RKT Rikitea 98.59 113 eSKSac **SKSac 11 38 23.6 -6.5**
comp=Z,2µm,28.2s
RKT Rikitea 98.59 113 ePS PS 11 40 51.6 +1.9
comp=Z,956nm,32.0s
RKT Rikitea 98.59 113 eLQ LQ 11 56 00.3
comp=Z,1µm,37.2s
RKT eLR LR 12 00 19.6
comp=Z,4µm,33.8s
MDVR Moldovita 98.64 316 ⇓iP P **11 27 52.2 -1.1**
PSZ Piszkesteto 99.11 319 PFAKE 11 28 10.0 +15
PSZ LR LR
comp=Z,1µm,20.0s
LSZ Lusaka 99.27 255 PFAKE 11 28 10.0 +13
LSZ LR LR
comp=Z,3µm,22.0s
NB2 NORSAR Subarra 99.50 334 P Pdif **11 27 55.5 -1.3**
comp=Z,6.7nm,1.0s,baz=68,slow=4.4
NB2 NORSAR Subarra 99.50 334 P Pdif **11 27 55.5 -1.3**
baz=68,slow=4.4
NB200 NORSAR Array S 99.50 334 eP Pdif **11 27 55.5 -1.3**
NOA NORSAR Array B 99.50 334 P Pdif **11 27 55.5 -1.3**
comp=Z,3.3nm,0.9s,baz=66,slow=4.6,SNR=5.7
NOA LR LR 12 18 23.7
comp=Z,2µm,19.9s,baz=60,slow=39
NOA NORSAR Array B 99.50 334 P Pdif **11 27 55.5 -1.3**
NOA pmax pmax
comp=Z,4.0nm,0.9s
OKC Ostrava-Krasne 99.70 322 AMS AMS 12 18 20.0
comp=Z,1µm,19.9s
YKA Yellowknife Ar 100.02 24 P Pdif **11 27 58.8 -0.1**
comp=Z,1.3nm,0.9s,baz=298,slow=4.7,SNR=18
YKA PKiKP **PKiKP 11 32 27.2 +0.6**
comp=Z,0.6nm,0.8s,baz=294,slow=1.7,SNR=4.9
YKA PKKPbc **PKKPbc 11 44 17.9 -2.3**
comp=Z,0.2nm,0.7s,baz=105,slow=2.7,SNR=4.0
YKB5 Yellowknife Ar 100.02 24 ePdif Pdif **11 27 57.8 -1.1**
MORC Moravsky Berou 100.09 322 PFAKE 11 28 10.0 +10
MORC LR LR
comp=Z,7µm,21.0s
KSP Ksiaz 100.53 323 eP Pdif **11 28 02.7 +1.2**
KSP Ksiaz 100.53 323 eP Pdif **11 28 02.7 +1.2**
DPC Dobruska-Polom 100.67 322 AMS AMS 12 18 40.0
comp=Z,2µm,21.7s
TIR Tirane 100.75 313 PFAKE 11 28 10.0 +7.3
TIR LR LR
comp=Z,1µm,22.0s
UPC Upice 100.81 323 eSP SP 11 41 09.8 +1.6
UPC AMS AMS 12 16 40.0
comp=Z,2µm,22.1s
KONO Kongsberg 100.82 333 PFAKE 11 28 10.0 +7.4
KONO LR LR
comp=Z,4µm,22.0s
RGN Rugen 100.98 327 PFAKE 11 28 10.0 +6.6
RGN LR LR
comp=Z,2µm,21.0s
TUM Tumwater 101.33 41 PFAKE 11 28 20.0 +15
TUM LR LR
comp=Z,3µm,20.0s
TREC Trest 101.51 322 ePP PP 11 32 16.4 +0.7
TREC AMS AMS 12 18 40.0
comp=Z,2µm,19.8s
PVCC Panska Ves 101.67 323 ePP PP 11 32 18.9 +2.1
PVCC AMS AMS 12 19 20.0
comp=Z,2µm,21.3s
GOPC GO Pecny, Ondr 101.74 322 eSKS 11 38 46.6
GOPC eSP **SP 11 41 18.5 +0.2**
GOPC AMS AMS 12 19 10.0
comp=Z,2µm,21.8s
PRU Pruhonice 101.87 322 ePP PP 11 32 20.0 +1.7
PRU eSKS 11 38 48.9
PRU eSP **SP 11 41 20.2 +0.7**
PRU AMS AMS 12 19 20.0
comp=Z,2µm,21.1s
PRA Prague 101.91 323 AMS AMS 12 19 20.0
comp=Z,2µm,20.9s
BRG Berggiesshubel 101.93 323 eP Pdif **11 28 08.1 +0.4**
comp=Z,8.1nm,1.2s
BRG PP PP **11 32 24.0 +5.3**
BRG SKS 11 38 51.0
BRG S SKKSac **11 39 15.0 -8.1**
BRG PS PS 11 41 02.0 -22
BRG SS SS **11 46 41.0 -11**
comp=N,2µm,23.5s
comp=E,2µm,20.8s
comp=Z,2µm,23.8s
BRG Berggiesshubel 101.93 323 eP Pdif **11 28 08.1 +0.4**
BRG 11 32 24.0
BRG pmax pmax
comp=Z,8.0nm,1.2s
BRG MLR MLR
comp=N,2µm,23.5s
BRG MLR MLR
comp=E,2µm,20.8s
BRG MLR MLR
comp=Z,2µm,23.8s
JCC Jacoby Creek, 102.26 47 PFAKE 11 28 20.0 +11
JCC LR LR
comp=Z,3µm,19.0s
CLL Collm 102.33 324 ePdif Pdif **11 28 08.0 -1.5**
CLL ePP PKiKP **11 32 30.0 -1.2**
comp=Z,300nm,18.5s
CLL esPP 11 33 16.0
CLL ePPP PPP 11 34 38.0
CLL ePPPP 11 36 24.0
CLL eSKSac SKSac **11 38 42.0 -5.3**
CLL eSdif Sdif **11 39 47.0 -4.4**
CLL e 11 40 45.0
CLL ePS PS **11 41 25.0 -3.5**
CLL ePPS PPS 11 42 11.0
CLL e 11 44 12.0
CLL esSS 11 47 28.0
CLL eSS SKKPbc **11 48 00.0 +7.3**
CLL e 11 51 42.0
CLL Collm 102.33 324 eP Pdif **11 28 08.0 -1.5**
CLL e 11 32 30.0
CLL eS Sdif **11 39 47.0 -4.4**
CLL Collm 102.33 324 PFAKE 11 28 20.0 +11
CLL LR LR
comp=Z,2µm,20.0s
KHMM Horse Mountain 102.46 47 PFAKE 11 28 20.0 +9.5
KHMM LR LR
comp=Z,3µm,22.0s

H04A **Detroit Lake** **102.50** **43** PFAKE 11 28 20.0 +10
H04A LR LR
comp=Z,2µm,22.0s
HUMO **Hull Mountain** **102.55** **45** PFAKE 11 28 20.0 +9.3
HUMO LR LR
comp=Z,2µm,19.0s
LTY **Liberty** **102.71** **40** PFAKE 11 28 20.0 +8.6
LTY LR LR
comp=Z,3µm,22.0s
KHC **Kasperske Hory** **102.75** **322** *e*PP PP 11 32 25.9 +0.9
KHC *e*SKS 11 38 52.7
KHC *e*SP **SP** **11 41 30.3 +1.4**
KHC comp=Z,2µm,19.2s AMS AMS 12 20 00.0
KHC **Kasperske Hory** **102.75** **322** PFAKE 11 28 20.0 +8.5
KHC LR LR
comp=Z,700nm,21.0s
GERES **GERESS Array B** **102.77** **322** P **Pdif** **11 28 11.7 +0.1**
comp=Z,0.5nm,0.7s,baz=46,slow=5.8,SNR=6.5
GEA0 **GERESS Array S** **102.77** **322** *e*Pdif **Pdif** **11 28 12.0 +0.3**
YBH **Yreka Blue Hor** **102.97** **46** PFAKE 11 28 20.0 +7.3
YBH LR LR
comp=Z,3µm,20.0s
NKC **Novy Kostel** **103.05** **323** *e*SP SP 11 41 32.0 0.0
NKC AMS AMS 12 18 00.0
comp=Z,2µm,21.1s
WDC **Whiskeytown Da** **103.41** **47** PFAKE 11 28 30.0 +15
WDC LR LR
comp=Z,3µm,22.0s
TIP **Timpagrande** **103.59** **311** PFAKE 11 28 30.0 +15
TIP LR LR
comp=Z,700nm,21.0s
HAWA **Hanford** **103.73** **41** PFAKE 11 28 30.0 +14
HAWA LR LR
comp=Z,2µm,19.0s
TRI **Trieste** **103.78** **318** PFAKE 11 28 30.0 +14
TRI LR LR
comp=Z,1µm,21.0s
D08A **Wollman Farm,** **103.90** **40** PFAKE 11 28 30.0 +13
D08A LR LR
comp=Z,2µm,18.0s
GRFO **Grafenberg** **103.98** **323** PFAKE 11 28 30.0 +13
GRFO LR LR
comp=Z,2µm,21.0s
CUC **Castrocucco** **104.07** **312** PFAKE 11 28 30.0 +12
CUC LR LR
comp=Z,900nm,22.0s
ORV **Oroville** **104.46** **48** PFAKE 11 28 30.0 +11
ORV LR LR
comp=Z,1µm,19.0s
CEL **Celeste** **104.49** **311** PFAKE 11 28 30.0 +11
CEL LR LR
comp=Z,900nm,22.0s
SNAA **Sanae** **104.62** **195** PFAKE 11 28 30.0 +11
SNAA LR LR
comp=Z,53µm,20.0s
AFDM **Forest Hills D** **105.03** **48** PFAKE 11 32 50.0
AFDM LR LR
comp=Z,2µm,22.0s
SUR **Sutherland** **105.27** **237** PFAKE 11 32 50.0
SUR LR LR
comp=Z,2µm,20.0s
F10A **Beach Ranch, E** **105.38** **41** PFAKE 11 32 50.0
F10A LR LR
comp=Z,2µm,22.0s
STU **Stuttgart** **105.56** **323** PFAKE 11 32 50.0
STU LR LR
comp=Z,2µm,21.0s
FUORN **Ofenpass-Fuorn** **105.73** **320** PFAKE 11 32 50.0
FUORN LR LR
comp=Z,2µm,22.0s
WDD **Wied Dalam** **106.20** **309** PFAKE 11 32 50.0
WDD LR LR
comp=Z,400nm,20.0s
BFO **Black Forest** **106.27** **322** PFAKE 11 32 50.0
BFO LR LR
comp=Z,2µm,20.0s
TUE **Stuetta** **106.37** **320** PFAKE 11 32 50.0
TUE LR LR
comp=Z,2µm,22.0s
VLC **Villacollemand** **106.56** **318** PFAKE 11 32 50.0
VLC LR LR
comp=Z,800nm,22.0s
CLTB **Caltabellotta** **106.72** **311** PFAKE 11 32 50.0
CLTB LR LR
comp=Z,1µm,21.0s
WLF **Walferdange** **107.00** **324** PFAKE 11 32 50.0
WLF LR LR
comp=Z,2µm,22.0s
NVAR **Mina Array Bea** **107.18** **48** pPdiff **Pdif** **11 28 32.6 +1.0**
comp=Z,1.0nm,0.9s,baz=269,slow=5.5,SNR=5.7
MFID **Camas Ranch** **107.24** **43** PFAKE 11 32 50.0
MFID LR LR
comp=Z,2µm,21.0s
NV11 **Mina Array Sit** **107.29** **48** PFAKE 11 32 50.0
NV11 LR LR
comp=Z,2µm,22.0s
SENIN **Lac Senin/Sane** **107.72** **321** PFAKE 11 32 50.0
SENIN LR LR
comp=Z,2µm,21.0s
OSI **Osito Audit: C** **108.00** **52** PFAKE 11 32 50.0
OSI LR LR
comp=Z,3µm,20.0s
PASC **Pasadena Art C** **108.56** **53** PFAKE 11 33 00.0
PASC LR LR
comp=Z,2µm,20.0s
DLMT **Dillon** **108.61** **40** PFAKE 11 32 50.0
DLMT LR LR
comp=Z,1µm,20.0s
ELK **Elko** **108.62** **45** PFAKE 11 33 00.0
ELK LR LR
comp=Z,2µm,21.0s
MWC **Mount Wilson** **108.64** **52** PFAKE 11 33 00.0
MWC LR LR
comp=Z,3µm,21.0s
BNI **Bardonecchia** **108.66** **320** PFAKE 11 32 50.0
BNI LR LR
comp=Z,2µm,21.0s
VSL **Villasalto** **108.94** **314** PFAKE 11 33 00.0
VSL LR LR
comp=Z,700nm,21.0s
ESK **Eskdalemuir** **108.97** **332** PFAKE 11 32 50.0
ESK LR LR
comp=Z,3µm,19.0s
R11A **Troy Canyon, C** **109.22** **48** PFAKE 11 33 00.0
R11A LR LR
comp=Z,1µm,22.0s
TSUM **Tsumeb** **109.31** **251** PFAKE 11 33 00.0
TSUM LR LR
comp=Z,2µm,21.0s
SSB **Saint Sauveur** **109.92** **321** PFAKE 11 33 00.0
SSB LR LR
comp=Z,1µm,21.0s
HVU **Hansel Valley** **109.95** **43** PFAKE 11 33 00.0
HVU LR LR
comp=Z,2µm,22.0s
SFJD **Kangerlussuaq** **110.10** **359** PFAKE 11 33 00.0
SFJD LR LR
comp=Z,2µm,19.0s
BGU **Big Grassy Mou** **110.11** **44** PFAKE 11 33 00.0
BGU LR LR
comp=Z,2µm,20.0s
FCC **Fort Churchill** **110.32** **21** PFAKE 11 33 00.0
FCC LR LR
comp=Z,3µm,22.0s
FLWY **Flagg Ranch** **110.38** **41** PFAKE 11 33 00.0
FLWY LR LR
comp=Z,2µm,22.0s
MOOW **Moose Ponds** **110.49** **41** PFAKE 11 33 00.0
MOOW LR LR
comp=Z,2µm,21.0s
DUG **Dugway, Tooele** **110.55** **45** PFAKE 11 33 00.0
DUG LR LR
comp=Z,2µm,21.0s
REDW **Red Top Meadow** **110.59** **41** PFAKE 11 33 00.0
REDW LR LR
comp=Z,2µm,21.0s
LDFC **Landfair** **110.69** **51** PFAKE 11 33 00.0
LDFC LR LR
comp=Z,2µm,20.0s
HWUT **Hardware Ranch** **110.85** **43** PFAKE 11 33 00.0
HWUT LR LR
comp=Z,1µm,20.0s
CTU **Camp Tracy** **111.09** **44** PFAKE 11 33 00.0
CTU LR LR
comp=Z,2µm,19.0s
CCUT **Cedar City** **111.14** **48** PFAKE 11 33 00.0
CCUT LR LR
comp=Z,2µm,20.0s
LCMT **Little Creek M** **111.43** **48** PFAKE 11 33 00.0
LCMT LR LR
comp=Z,1µm,18.0s
MPU **Maple Canyon** **111.45** **45** PFAKE 11 33 00.0
MPU LR LR
comp=Z,1µm,19.0s
Y12C **Blythe** **111.58** **52** PFAKE 11 33 00.0
Y12C LR LR
comp=Z,2µm,20.0s
BW06 **Boulder Array** **111.70** **41** PFAKE 11 33 00.0
BW06 LR LR
comp=Z,2µm,21.0s
PDAR **Pinedale Array** **111.70** **41** PKKPbc PKKPbc 11 43 43.0 -1.0
comp=Z,0.7nm,0.8s,baz=108,slow=4.8,SNR=6.0
PDAR PKKPab **PKKPab** **11 43 52.2 -0.6**
comp=Z,1.9nm,1.0s,baz=110,slow=6.5,SNR=6.8
KNB **Kanab** **111.74** **48** PFAKE 11 33 00.0
KNB LR LR
comp=Z,1µm,21.0s
MTPU **Mount Pierson** **111.83** **47** PFAKE 11 33 00.0
MTPU LR LR
comp=Z,2µm,19.0s
TMUT **Trail Mountain** **112.04** **45** PFAKE 11 33 00.0
TMUT LR LR
comp=Z,2µm,20.0s
P17A **Butcher Ranch,** **112.30** **45** PFAKE 11 33 00.0
P17A LR LR
comp=Z,1µm,20.0s
U15A **North Rim** **112.36** **49** PFAKE 11 33 00.0
U15A LR LR
comp=Z,1µm,19.0s
P18A **Preston Nutter** **112.58** **45** PFAKE 11 33 00.0
P18A LR LR
comp=Z,1µm,21.0s
SRU **San Rafael Swe** **112.60** **45** PFAKE 11 33 00.0
SRU LR LR
comp=Z,2µm,22.0s
Y14A **Wickenburg** **112.71** **51** PFAKE 11 33 00.0
Y14A LR LR
comp=Z,9µm,21.0s
WUAZ **Wupatki** **113.39** **49** PFAKE 11 33 00.0
WUAZ LR LR
comp=Z,1µm,22.0s
K22A **Casper** **113.74** **40** PFAKE 11 33 00.0
K22A LR LR
comp=Z,2µm,22.0s
X16A **Lo Mia Camp, P** **113.75** **50** PFAKE 11 33 10.0
X16A LR LR
comp=Z,2µm,22.0s
O20A **White River Ci** **113.76** **43** PFAKE 11 33 10.0
O20A LR LR
comp=Z,4µm,21.0s
W18A **Petrified Fore** **114.78** **49** PFAKE 11 33 10.0 +15
W18A LR LR
comp=Z,2µm,22.0s
MVCO **Mesa Verde** **114.84** **46** PFAKE 11 33 10.0 +15
MVCO LR LR
comp=Z,2µm,22.0s
X18A **Snowflake** **114.84** **50** PFAKE 11 33 10.0 +15
X18A LR LR
comp=Z,2µm,21.0s
N23A **Red Feather La** **114.96** **42** PFAKE 11 33 10.0 +14
N23A LR LR
comp=Z,2µm,22.0s
ULM **Lac du Bonnet** **115.44** **29** PKP **PKPdf** **11 32 56.3 +0.5**
comp=Z,1.2nm,0.5s,baz=64,slow=1.7,SNR=3.2
SRIG **Santa Rosalia** **115.51** **58** PFAKE 11 33 10.0 +13
SRIG LR LR
comp=Z,2µm,22.0s
C30A **Mose, Pekin** **115.74** **32** P **PKPdf** **11 32 57.3 +0.9**
baz=308
S22A **4UR Ranch, Cre** **115.80** **45** PFAKE 11 33 10.0 +13
S22A LR LR
comp=Z,2µm,19.0s
I27A **Quinn** **115.81** **37** P **PKPdf** **11 32 57.4 +0.6**
baz=303
HSIG **116.04** **56** PFAKE 11 33 10.0 +12
HSIG LR LR
comp=Z,2µm,22.0s
C31A **Landman Farms,** **116.08** **32** P **PKPdf** **11 32 57.0 -0.1**
baz=309
I28A **Midland** **116.38** **37** P **PKPdf** **11 32 58.3 +0.4**
baz=304
SDCO **Great Sand Dun** **116.74** **45** PFAKE 11 33 10.0 +11
SDCO LR LR
comp=Z,1µm,22.0s
G30A **Faulkton** **116.92** **35** P **PKPdf** **11 32 59.5 +0.6**
baz=306
J29A **Okreek** **117.22** **37** P **PKPdf** **11 33 00.2 +0.7**
baz=304
ANMO **Albuquerque** **117.30** **48** PFAKE 11 33 10.0 +10
ANMO LR LR
comp=Z,2µm,22.0s
Y22D **IRIS PASSCAL I** **117.32** **49** PFAKE 11 33 10.0 +10
Y22D LR LR
comp=Z,2µm,21.0s
TAM **Tamanrasset** **117.42** **298** PFAKE 11 33 10.0 +9.4
TAM LR LR
comp=Z,700nm,22.0s
OGNE **Ogallala** **117.50** **40** PFAKE 11 33 10.0 +10
OGNE LR LR
comp=Z,2µm,22.0s
T25A **Trinidad** **117.79** **45** P **PKPdf** **11 33 01.4 +0.4**
baz=298
T25A **Trinidad** **117.79** **45** PFAKE 11 33 10.0 +9.0
T25A LR LR
comp=Z,2µm,22.0s
ES19 **SONSECA Array** **118.07** **319** *e*PKPdf **PKPdf** **11 32 59.6 -1.7**
KSCO **Kaye Shedlock'** **118.11** **42** PFAKE 11 33 10.0 +8.5
KSCO LR LR
comp=Z,2µm,22.0s
ESLA **Sonseca Array** **118.13** **319** *e*PKPdf **PKPdf** **11 33 01.8 +0.5**
PAB **San Pablo** **118.45** **319** PFAKE 11 33 10.0 +8.0
PAB LR LR
comp=Z,1µm,21.0s
H33A **Prehn Over Nor** **118.55** **34** P **PKPdf** **11 33 02.4 +0.4**
baz=308
ECSD **EROS Data Cent** **119.20** **35** P **PKPdf** **11 33 03.7 +0.4**
baz=308
ECSD **EROS Data Cent** **119.20** **35** *e*PKPdf **PKPdf** **11 33 03.7 +0.4**
ECSD LR LR
comp=Z,1µm,19.0s
MVO **Moncorvo** **119.29** **321** *e*PP PP 11 34 35.2 +11
MVO *i* P **PS** **11 44 12.3 -0.8**
MNTX **Cornudas Mount** **119.49** **51** P **PKPdf** **11 33 05.4 +1.2**
baz=295
MNTX **Cornudas Mount** **119.49** **51** *e*PKPdf **PKPdf** **11 33 05.7 +1.5**
F36A **Milaca** **119.53** **31** P **PKPdf** **11 33 04.5 +0.7**
baz=312
PGAV **Gavieira, Arco** **119.58** **323** *e*PKPdf **PKPdf** **11 33 04.9 +0.7**
PGAV **Gavieira, Arco** **119.58** **323** *e*PP PP 11 34 34.9 +8.9
PGAV *i* P PKKPdf 11 44 19.0 +31
PGAV **Gavieira, Arco** **119.58** **323** *e*LQ LQ 12 14 16.2
PGAV A A 12 35 24.6
comp=Z,2µm,22.0s
POLO **Lamas de Olo** **119.64** **322** *e*PP PP 11 34 41.1 +15
POLO *i* P **PS** **11 44 19.4 +3.1**
MTE **Manteigas** **120.04** **321** *e*PP PP 11 34 33.7 +4.5
MTE *i* P **PS** **11 44 23.6 +3.7**
MTE **Manteigas** **120.04** **321** *e*LR LR 12 15 02.1
comp=Z,1µm,22.0s
PVIS **Viseu** **120.08** **321** *e*PKPdf **PKPdf** **11 33 06.5 +1.4**
CBKS **Cedar Bluff** **120.13** **41** PFAKE 11 33 20.0 +15
CBKS LR LR
comp=Z,3µm,22.0s
PCBR **Castelo Branco** **120.32** **320** *e*PKPdf **PKPdf** **11 33 05.0 -0.5**
MSTX **Muleshoe** **120.46** **47** P **PKPdf** **11 33 06.3 +0.2**
baz=298
MSTX **Muleshoe** **120.46** **47** *e*PKPdf **PKPdf** **11 33 06.5 +0.4**
MSTX LR LR
comp=Z,2µm,20.0s
PMRV **Marv??o** **120.49** **320** *e*PP PP 11 34 47.3 +15
PMRV *i* P **PS** **11 44 24.5 +0.7**
AMTX **Amarillo** **120.81** **46** PFAKE 11 33 20.0 +13
AMTX LR LR
comp=Z,2µm,22.0s
PESTR **Estremoz** **120.94** **320** *e*PP PP 11 34 46.8 +11
PESTR *i* P **PS** **11 44 29.9 +2.1**
PBAR **Barrancos** **120.96** **319** *i* P **PS** **11 44 27.7 -0.3**
K36A **Gilmore City** **121.12** **35** P **PKPdf** **11 33 07.4 +0.4**
baz=310
HPIG **121.14** **56** PFAKE 11 33 20.0 +12
HPIG LR LR
comp=Z,2µm,22.0s
PMTG **Montargil** **121.23** **320** *e*PP PP 11 34 47.7 +10
PMTG *i* P **SP** **11 44 27.9 +1.7**
P34A **Walnut Farm, R** **121.59** **39** P **PKPdf** **11 33 08.0 +0.1**
baz=306
TX31 **Lajitas Ar. Si** **121.82** **53** *e*PKPdf **PKPdf** **11 33 08.9 0.0**
TX31 *e*PKPdf **PKiKP** **11 33 09.5 +0.5**
LTX **Lajitas** **121.82** **53** *e*PKiKP **PKPdf** **11 33 09.4 +0.6**
LTX **Lajitas** **121.82** **53** *e*PKPdf **PKPdf** **11 33 09.4 +0.6**
TXAR **Lajitas Array** **121.82** **53** PKP **PKPdf** **11 33 09.4 +0.6**
comp=Z,0.6nm,0.7s,baz=174,slow=1.1,SNR=6.9
PVAQ **Vaqueiros** **121.83** **318** *e*PP PP 11 34 48.4 +7.0
PVAQ *i* P **SP** **11 44 33.9 +2.3**
PCVE **Castro Verde** **121.92** **319** *e*PP PP 11 34 51.6 +10
PCVE *i* P **PS** **11 44 39.7 +3.2**
PNCL **Nicolau / Gran** **121.97** **319** *e*PP PP 11 34 55.7 +13
PNCL *i* P **PS** **11 44 37.7 +0.8**
PMAFR **Mafra** **121.97** **321** *e*PP PP 11 34 51.8 +9.5
PMAFR *i* P PKKPdf 11 44 02.2 +19
KSU1 **Kansas State U** **121.98** **39** PFAKE 11 33 20.0 +11
KSU1 LR LR
comp=Z,2µm,20.0s
PBDV **Barranco-do-Ve** **122.06** **318** *i* P **SP** **11 44 32.5 -1.2**
U34A **Anderson Ranch** **122.89** **42** PFAKE 11 33 20.0 +9.4
U34A LR LR
comp=Z,999nm,20.0s
WMOK **Wichita Mounta** **122.95** **45** PFAKE 11 33 20.0 +9.2
WMOK LR LR
comp=Z,2µm,22.0s
V34A **Guthrie** **123.23** **43** PFAKE 11 33 20.0 +8.7
V34A LR LR
comp=Z,2µm,21.0s
JFWS **Jewell Farm** **123.25** **32** *e*PKIKP **PKPdf** **11 33 11.1 0.0**
JFWS **Jewell Farm** **123.25** **32** *e*PKPdf **PKPdf** **11 33 11.1 0.0**
TOAO **Torodi Ar. Sit** **123.36** **288** *e*PKPdf **PKPdf** **11 33 11.4 -0.6**
TOA0 *e*PKPdf **PKiKP** **11 33 12.9 +0.6**
TORD **Torodi Ar. Bea** **123.36** **288** PKP **PKPdf** **11 33 11.6 -0.4**
comp=Z,9.6nm,0.9s,baz=60,slow=2.0,SNR=39
TOA1 **Torodi Ar. Sit** **123.36** **288** *e*PKPdf **PKPdf** **11 33 11.6 -0.4**
W34A **Bridge Creek,** **123.38** **44** PFAKE 11 33 20.0 +8.4
W34A LR LR
comp=Z,2µm,21.0s
ABTX **Abilene, Hawle** **123.40** **47** PFAKE 11 33 20.0 +8.3
ABTX LR LR
comp=Z,2µm,20.0s
P38A **Dawn** **123.56** **37** P **PKPdf** **11 33 11.9 +0.2**
baz=309
S37A **Fort Scott** **123.90** **40** P **PKPdf** **11 33 12.7 +0.2**
baz=307
133A **Hamilton Ranch** **123.94** **47** P **PKPdf** **11 33 12.9 +0.2**
baz=300
W35A **Tecumseh** **124.05** **43** P **PKPdf** **11 33 13.5 +0.7**
baz=304
P39A **Salisbury** **124.12** **37** P **PKPdf** **11 33 13.1 +0.3**
baz=310
R38A **Fenwick Farm,** **124.23** **39** P **PKPdf** **11 33 12.4 -0.6**
baz=308
Q39A **Willow Grove F** **124.26** **37** P **PKPdf** **11 33 13.3 +0.2**
baz=309
JCT **Junction City** **124.31** **50** P **PKPdf** **11 33 14.2 +0.7**
baz=298
JCT **Junction City** **124.31** **50** *e*PKIKP **PKPdf** **11 33 14.6 +1.1**
JCT MLR MLR
comp=Z,2µm,21.0s
JCT **Junction City** **124.31** **50** *e*PKPdf **PKPdf** **11 33 14.6 +1.1**
JCT LR LR
comp=Z,2µm,21.0s
TUL1 **Leonard** **124.35** **42** PFAKE 11 33 30.0 +17
TUL1 LR LR
comp=Z,2µm,22.0s
P40A **Paris** **124.51** **36** P **PKPdf** **11 33 14.3 +0.7**
baz=310
U37A **Salina** **124.52** **41** P **PKPdf** **11 33 14.1 +0.5**
baz=306
333A **Richland Sprin** **124.53** **48** P **PKPdf** **11 33 13.9 0.0**
baz=300
S38A **Stockton** **124.56** **39** P **PKPdf** **11 33 13.7 0.0**
baz=308
T38A **Diamond** **124.68** **40** P **PKPdf** **11 33 14.0 0.0**
baz=307
R39A **Chumby, Stover** **124.68** **38** P **PKPdf** **11 33 14.1 +0.2**
baz=309
433A **Art** **124.72** **49** P **PKPdf** **11 33 14.5 +0.3**
baz=299
X36A **Centrahoma** **124.72** **44** P **PKPdf** **11 33 14.6 +0.5**
baz=304
V37A **Hulbert** **124.80** **42** P **PKPdf** **11 33 12.7 -1.6**
baz=306
Q40A **Laux Farm, Aux** **124.84** **37** P **PKPdf** **11 33 13.8 -0.4**
baz=310
S39A **Bolivar** **124.89** **39** P **PKPdf** **11 33 14.5 +0.1**
baz=308
U38A **Gravette** **124.97** **41** P **PKPdf** **11 33 14.9 +0.3**
baz=306
W37B **Quinton** **125.03** **42** P **PKPdf** **11 33 15.1 +0.4**
baz=305
334A **Lometa** **125.08** **48** P **PKPdf** **11 33 15.6 +0.7**
baz=300
Y36A **Durant** **125.14** **44** P **PKPdf** **11 33 15.7 +0.8**
baz=303
R40A **Maddies Statio** **125.17** **38** P **PKPdf** **11 33 15.4 +0.5**
baz=310
832A **Faith Ranch, C** **125.19** **52** P **PKPdf** **11 33 15.8 +0.6**
baz=297
T39A **Clever** **125.27** **39** P **PKPdf** **11 33 15.7 +0.6**
baz=308
ZAIG **Zacatecas** **125.29** **59** PFAKE 11 33 30.0 +14
ZAIG LR LR
comp=Z,2µm,22.0s
V38A **Canehill** **125.30** **41** P **PKPdf** **11 33 15.8 +0.5**
baz=306
434A **Burnet** **125.31** **48** P **PKPdf** **11 33 16.2 +0.8**
baz=300
WHTX **Lake Whitney,** **125.32** **47** PFAKE 11 33 30.0 +15
WHTX LR LR
comp=Z,1µm,19.0s
T40A **Mansfield** **125.73** **39** P **PKPdf** **11 33 16.4 +0.4**
baz=309
V39A **Pettigrew** **125.81** **41** P **PKPdf** **11 33 16.6 +0.3**
baz=307
U40A **Yellville** **126.01** **40** P **PKPdf** **11 33 17.0 +0.4**
baz=308
X39A **Fountain Ranch** **126.28** **42** P **PKPdf** **11 33 17.9 +0.8**
baz=306
V40A **Witts Springs** **126.36** **40** P **PKPdf** **11 33 17.8 +0.5**
baz=308
MIAR **Mount Ida** **126.62** **42** *e*PKIKP **PKPdf** **11 33 19.5 +1.7**
MIAR MLR MLR
comp=Z,3µm,22.0s
MIAR **Mount Ida** **126.62** **42** *e*PKPdf **PKPdf** **11 33 19.5 +1.7**
MIAR LR LR
comp=Z,3µm,22.0s
X201 **Greenbrier Sit** **126.97** **40** PFAKE 11 33 30.0 +12
X201 LR LR
comp=Z,1µm,21.0s
X301 **Greenbrier Sit** **126.98** **41** PFAKE 11 33 30.0 +12
X301 LR LR
comp=Z,2µm,22.0s
SADO **Sadowa** **126.99** **23** PFAKE 11 33 30.0 +12
SADO LR LR
comp=Z,2µm,22.0s
AAM **Ann Arbor** **127.02** **28** PFAKE 11 33 30.0 +12
AAM LR LR
comp=Z,1µm,21.0s
UALR **University of** **127.30** **41** PFAKE 11 33 30.0 +11
UALR LR LR
comp=Z,2µm,21.0s
SIUC **Southern Illin** **127.37** **36** PFAKE 11 33 30.0 +11
SIUC LR LR
comp=Z,2µm,22.0s
HKT **Hockley** **127.56** **48** PFAKE 11 33 30.0 +10
HKT LR LR
comp=Z,1µm,19.0s
CCAR **Cane Creek** **128.19** **41** PFAKE 11 33 30.0 +9.2
CCAR LR LR
comp=Z,2µm,20.0s
MET **Memphis--Engin** **128.63** **39** PFAKE 11 33 30.0 +8.4
MET LR LR
comp=Z,1µm,20.0s
WCI **Wyandotte Cave** **128.68** **34** PFAKE 11 33 30.0 +8.4
WCI LR LR
comp=Z,2µm,21.0s
LONY **Lake Ozonia** **128.78** **20** PFAKE 11 33 30.0 +8.4
LONY LR LR

	comp=Z,2µm,21.0s						
ERPA	Erie	128.82	26	PFAKE		11 33 30.0	+8.3
ERPA				LR	LR		
	comp=Z,1µm,19.0s						
WVT	Waverly	129.26	37	ePKIKP	PKPdf	11 33 24.0	+1.3
WVT	Waverly	129.26	37	ePKPdf	PKPdf	11 33 24.0	+1.3
OXF	Oxford	129.35	39	PFAKE		11 33 30.0	+7.0
OXF				LR	LR		
	comp=Z,2µm,22.0s						
NCB	Newcomb	129.47	20	PFAKE		11 33 30.0	+7.0
NCB				LR	LR		
	comp=Z,2µm,20.0s						
UNM	Universidad Na	129.49	62	PFAKE		11 33 40.0	+16
UNM				LR	LR		
	comp=Z,2µm,20.0s						
PKME	Peaks-Kenny Pk	129.76	15	PFAKE		11 33 40.0	+17
PKME				LR	LR		
	comp=Z,3µm,22.0s						
VBMS	Vicksburg	130.06	42	PFAKE		11 33 40.0	+16
VBMS				LR	LR		
	comp=Z,2µm,21.0s						
WVL	Waterville	130.32	16	PFAKE		11 33 40.0	+16
WVL				LR	LR		
	comp=Z,4µm,21.0s						
PMOZ	Porto Moniz, M	130.79	319	ePP	PP	11 35 48.8	+7.8
SSPA	Standing Stone	130.94	25	PFAKE		11 33 40.0	+14
SSPA				LR	LR		
	comp=Z,2µm,22.0s						
DBIC	Dimbokro	130.96	281	PKP	PKPdf	11 33 28.3	+1.8
	comp=Z,7.6nm,1.0s,baz=6.2,slow=2.3,SNR=7.5						
DBIC				SKPbc	SKPab	11 36 50.5	+1.2
	comp=Z,13nm,1.1s,baz=94,slow=4.2,SNR=6.1						
DBIC	Dimbokro	130.96	281	ePKIKP	PKPdf	11 33 27.9	+1.4
DBIC	Dimbokro	130.96	281	ePKPdf	PKPdf	11 33 27.9	+1.4
KSPA	Keystone Colle	131.02	23	PFAKE		11 33 40.0	+14
KSPA				LR	LR		
	comp=Z,2µm,20.0s						
TZTN	Tazewell	131.41	33	PFAKE		11 33 40.0	+13
TZTN				LR	LR		
	comp=Z,1µm,20.0s						
WES	Weston	131.84	18	PFAKE		11 33 40.0	+13
WES				LR	LR		
	comp=Z,4µm,22.0s						
LRAL	Lakeview Retre	131.84	39	PFAKE		11 33 40.0	+12
LRAL				LR	LR		
	comp=Z,2µm,21.0s						
SDMD	Soldier's Deli	132.41	25	PFAKE		11 33 40.0	+11
SDMD				LR	LR		
	comp=Z,800nm,20.0s						
BLA	Blacksburg	132.53	30	PFAKE		11 33 40.0	+11
BLA				LR	LR		
	comp=Z,1µm,21.0s						
KMSC	Kings Mountain	133.65	32	PFAKE		11 33 40.0	+8.9
KMSC				LR	LR		
	comp=Z,2µm,22.0s						
JSC	Jenkinsville	134.34	33	PFAKE		11 33 40.0	+7.6
JSC				LR	LR		
	comp=Z,1µm,20.0s						
CCIG	Comitan	136.84	62	PFAKE		11 33 50.0	+12
CCIG				LR	LR		
	comp=Z,900nm,20.0s						
DWPF	Disney Wildern	138.69	40	PFAKE		11 33 50.0	+9.4
DWPF				LR	LR		
	comp=Z,2µm,22.0s						
TGUH	Tegucigalpa,Un	142.03	63	PFAKE		11 34 00.0	+13
TGUH				LR	LR		
	comp=Z,800nm,20.0s						
TRQA	Tornquist	144.20	168	ePKPdf	PKPdf	11 33 49.5	-0.8
JTS	JuntasAbangare	145.56	67	ePKP2	PKPab	11 33 53.9	+0.3
JTS				MLR	MLR		
	comp=Z,900nm,19.0s						
JTS	JuntasAbangare	145.56	67	ePKPdf	PKPab	11 33 53.9	+0.3
JTS				LR	LR		
	comp=Z,900nm,19.0s						
ROC1	El Roble	145.79	152	ePKPdf	PKPbc	11 33 54.0	+0.1
HDC	Heredia	146.43	67	PFAKE		11 34 10.0	+13
HDC				LR	LR		
	comp=Z,900nm,21.0s						
LCO	Las Campanas	149.19	149	ePKPbc	PKPbc	11 34 04.0	+0.6
BCIP	Isla Barro Col	150.65	65	PFAKE		11 34 10.0	+3.0
BCIP				LR	LR		
	comp=Z,1µm,19.0s						
BCIP	Isla Barro Col	150.65	65	eP	PKPbc	11 34 06.6	-0.4
PAPH	Port-au-Prince	151.37	41	PFAKE		11 34 10.0	+1.4
PAPH				LR	LR		
	comp=Z,1µm,21.0s						
SDDR	Presa de Saban	151.68	39	PFAKE		11 34 10.0	+0.6
SDDR				LR	LR		
	comp=Z,2µm,22.0s						
OTAV	Otavalo	154.38	83	PFAKE		11 34 20.0	+4.0
OTAV				LR	LR		
	comp=Z,1µm,22.0s						
DBBC	Dabeiba	154.79	67	eP	PKPab	11 34 28.1	-3.4
NNA	Nana	154.79	112	PFAKE		11 34 20.0	+3.7
NNA				LR	LR		
	comp=Z,6µm,20.0s						
SJG	San Juan	155.31	31	PFAKE		11 34 20.0	+12
SJG				LR	LR		
	comp=Z,1µm,22.0s						
CBYP	Canovanas	155.33	30	PFAKE		11 34 20.0	+12
CBYP				LR	LR		
	comp=Z,2µm,22.0s						
STVI	Saint Thomas	155.71	29	PFAKE		11 34 20.0	+11
STVI				LR	LR		
	comp=Z,1µm,21.0s						
PB01	IPOC Station P	155.98	139	PFAKE		11 34 20.0	+11
PB01				LR	LR		
	comp=Z,2µm,20.0s						
GUYC	Guyana, Colomb	156.19	70	eP	PKPab	11 34 37.9	-0.1
CPUP	Villa Florida	156.48	170	PKPab	PKPab	11 34 37.2	-0.7
	comp=Z,13nm,1.1s,baz=221,slow=3.2,SNR=6.2						
CPUP	Villa Florida	156.48	170	ePKPab	PKPab	11 34 39.2	+1.2
NORC	Norcasia	156.56	69	eP	PKPab	11 34 40.2	+1.2
PB11	IPOC Station P	156.77	137	PFAKE		11 34 20.0	+10
PB11				LR	LR		
	comp=Z,1µm,18.0s						
OCAC	Ocana	156.86	61	eP	PKPab	11 34 30.9	-9.5
SABA	Saba	157.12	26	PFAKE		11 34 20.0	+9.4
SABA				LR	LR		
	comp=Z,2µm,21.0s						
ROSC	El Rosal	157.33	70	ePKPab	PKPab	11 34 45.3	+2.5
SEUS	St. Eustatius	157.35	25	PFAKE		11 34 20.0	+9.1
SEUS				LR	LR		
	comp=Z,2µm,21.0s						
BARC	Barichara	157.71	65	eP	PKPab	11 34 43.9	-0.2
CHIC	Chingaza	157.95	70	eP	PKPab	11 34 44.4	-1.1
VILC	Villavicencio,	158.16	71	eP	PKPab	11 34 47.7	+1.7
SDV	Santo Domingo	158.82	56	ePKPdf	PKPdf	11 34 13.8	+0.7
SDV				LR	LR		
	comp=Z,900nm,21.0s						
SDV	Santo Domingo	158.82	56	eP	PKPdf	11 34 17.8	+4.7
YOPC	Yopal, Colombi	158.90	67	eP	PKPab	11 34 49.5	+0.3
LPAZ	La Paz	160.15	133	PKP	PKPdf	11 34 16.3	+1.2
	comp=Z,4.2nm,1.0s,baz=30,slow=3.2,SNR=9.8						
BDFB	Brasilia	166.55	201	PKP	PKPdf	11 34 21.3	+0.8
	comp=Z,4.2nm,0.9s,baz=90,slow=8.6,SNR=4.3						
BDFB				PKPab	PKPab	11 35 23.6	+1.3
	comp=Z,3.6nm,0.9s,baz=164,slow=15,SNR=2.8						
SAML	Samuel	168.32	121	ePKPdf	PKPdf	11 34 22.1	+0.5
SAML				ePKPab	PKPab	11 35 31.0	+0.6

*NSSC **05** 11:17:01.7±1.2, 33°.90N×35°.59E, h6km±7km, ML1.8*
*ISCJB **05** 11:17:03.5±0.9, 33°.89N±0°.03×35°.67E±0°.08, h19km±7km, Error ellipse: s-maj=11.9km s-min=4.5km az=11.5*
*CSEM **05** 11:17:04.5, 33°.88N×35°.84E, h0km, ML2.9*
*GRAL **05** 11:17:04.5±0.3, 33°.88N×35°.84E, h0km±57km, MD2.9*
ISC 05 11:17:03.3±0.9, **33°.88N**±0°.03×**35°.78E**±0°.04, **h18**km±6km, **n12**, σ**0s.55**/22, **Jordan-Syria region**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
BHL	Bhannes	0.11	282	eP	Pg	11 17 07.3	+0.1
BHL	Bhannes	0.11	282	eP	Pg	11 17 07.3	+0.1
DQRL	Deir Qamar	0.25	225	eP	Pb	11 17 09.6	+0.2
DQRL				eS	Sg	11 17 13.2	+0.3
DQRL	Deir Qamar	0.25	225	eP	Pb	11 17 09.6	+0.2
DQRL				eS	Sg	11 17 13.2	+0.3
RCY	Rachaya	0.39	173	eP	Pg	11 17 11.3	-0.1
RCY				eS	Sg	11 17 16.3	-0.6
HWQ	Hawqa	0.42	19	eP	Pg	11 17 11.9	-0.1
HWQ				eS	Sg	11 17 17.4	-0.4
HWQ	Hawqa	0.42	19	eP	Pg	11 17 11.9	-0.1
HWQ				eS	Sg	11 17 17.4	-0.4
BRBR	Barbar	0.49	163	eP	Pg	11 17 12.5	-0.8
BRBR				eS	Sb	11 17 20.8	+0.2
BRBR				AML	AML	11 17 25.2	
	comp=E,75nm,0.4s						
BRBR				AML	AML	11 17 31.3	
	comp=N,86nm,0.6s						
HAWK	Haweek	0.82	39	eP	Pg	11 17 19.3	-0.1
HAWK				eS	Sn	11 17 32.1	+0.2
HAWK				AML	AML	11 17 36.9	
	comp=E,26nm,0.3s						
HAWK				AML	AML	11 17 38.4	
	comp=N,29nm,0.5s						
BIDA	Albida	1.21	21	eP	Pn	11 17 25.2	-0.4
BIDA				eS	Sg	11 17 42.2	-0.5
BIDA				AML	AML	11 17 45.5	
	comp=E,69nm,0.3s						
BIDA				AML	AML	11 17 49.8	
	comp=N,60nm,0.3s						
ROOS	tl_alroos	1.29	77	eP	Pg	11 17 28.0	-0.2
ROOS				eS	Sg	11 17 46.8	+1.8
ROOS				AML	AML	11 17 59.1	
	comp=N,32nm,0.7s						
ROOS				AML	AML	11 18 04.8	
	comp=E,22nm,0.5s						
SALA	Sala	1.42	145	eP	Pg	11 17 30.8	+0.2
SALA				eS	Sg	11 17 49.0	-0.1
SALA				AML	AML	11 17 52.4	
	comp=E,1.7nm,0.6s						
SALA				AML	AML	11 17 54.5	
	comp=N,34nm,0.5s						

*IDC **05** 11:26:39.9±1.0, 24°.11N×125°.74E, h0km, mb3.4/5, mb1 3.6/6, mb1mx3.3/61, mbtmp3.5/6, ML3.9/1, Error ellipse: s-maj=36.3km s-min=20.8km az=74.0*
*JMA **05** 11:26:43.8±0.2, 24°.12N×125°.76E, h60km, M3.6*
ISC 05 11:26:43.2±1.9, **24°.11N**±0°.07×**125°.87E**±0°.04, **h29**km±13km, **n29**, σ**1s.52**/47, **mb3.3**/5, **Southwestern Ryukyu Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
JOGS	Gusukube	0.77	327	P	Pb	11 26 58.3	+0.2
JOGS				S	Sn	11 27 09.1	+0.3
JMJ	Miyako jima 2	0.88	324	P	Pn	11 26 59.5	0.0
JMJ				S	Sb	11 27 11.4	+0.2
JIRB	Irabujima	0.95	319	P	Pn	11 27 00.4	-0.2
JIRB				S	Sn	11 27 12.2	-1.1
JIKM	Ikemajima	0.99	325	P	Pn	11 27 01.0	-0.1
JIKM				eS	Sb	11 27 14.6	+0.2
JTJ	Tarama	1.19	297	P	Pn	11 27 03.3	-0.5
JTJ				S	Sn	11 27 17.3	-1.7
JISG	Ishigakijimahi	1.50	289	P	Pn	11 27 07.5	-0.6
JISG				S	Sn	11 27 24.8	-1.8
JIJ	Ishigaki jima	1.59	280	P	Pn	11 27 09.1	-0.3
JIJ				S	Sn	11 27 27.5	-1.5
JKRS	Kuro-shima	1.70	275	P	Pn	11 27 10.9	0.0
JKRS				S	Sn	11 27 29.7	-1.9
HATJ	Hateruma jima	1.88	269	P	Pn	11 27 12.9	-0.5
HATJ				S	Sn	11 27 33.3	-2.9
IRIF	Iriomote-Funau	1.96	277	P	Pn	11 27 14.2	-0.3
IRIF				S	Sn	11 27 36.1	-2.0
JKE	Kume jima 2	2.36	20	P	Pn	11 27 19.9	-0.1
YOJ	Yonaguni jima	2.63	278	P	Pn	11 27 23.1	-0.5
JJT2	Tamagusuku 2	2.65	40	P	Pn	11 27 24.5	+0.5
JJT2				S	Sn	11 27 54.5	-0.6
JYNG	Yonagunijimaku	2.69	278	P	Pn	11 27 24.2	-0.2
JYNG				S	Sn	11 27 52.5	-3.5
JAGN	Aguni-jima	2.77	26	P	Pn	11 27 25.5	-0.1
JAGN				eS	Sn	11 27 56.3	-1.7
JNTH	Nagotoyohara	3.10	39	P	Pn	11 27 30.6	+0.5
JIH	Iheya	3.48	33	P	Pn	11 27 35.7	+0.3
JIH				S	Sn	11 28 12.7	-2.9
JOW	Kunigami	3.48	38	Pn	Pn	11 27 36.2	+0.8
	19nm,0.3s,baz=177,slow=15,SNR=23						
JOW				Sn	Sn	11 28 13.7	-1.9
	baz=120,slow=20						
JOW	Kunigami	3.48	38	P	Pn	11 27 36.0	+0.6
JOW				S	Sn	11 28 13.6	-2.0
JOKE	Okinoerabujima	4.06	36	P	Pn	11 27 43.5	+0.2
JTK	Tokunoshima	4.60	37	P	Pn	11 27 50.4	-0.3
JTK				eS	Sn	11 28 38.6	-4.6
JAMN	Amaminishikomi	5.08	35	P	Pn	11 27 56.3	-1.1
JAMN				S	Sn	11 28 52.4	-2.7
JMZ	Minamidaito 2	5.15	70	P	Pn	11 27 56.5	-1.8
JAM	Amami Oshima	5.45	37	P	Pn	11 28 01.7	-0.7
MKAR	Makanchi Array	41.41	314	P	P	11 34 26.9	-0.1
	0.8nm,0.5s,baz=93,slow=9.6,SNR=11						
WRA	Warramunga Arr	44.55	169	P	P	11 34 53.9	+1.3
	0.5nm,0.6s,baz=347,slow=8.6,SNR=4.4						
KURBB	Kurchatov Arra	44.96	318	P	P	11 34 56.4	+0.8
	0.1nm,0.4s,baz=105,slow=14,SNR=3.7						
ASAR	Alice Springs	48.13	170	P	P	11 35 21.7	+1.0
	0.2nm,0.7s,baz=357,slow=14,SNR=3.5						
YKA	Yellowknife Ar	81.34	24	P	P	11 38 58.4	+1.7
	0.1nm,0.5s,baz=301,slow=5.3,SNR=2.9						

*IDC **05** 11:32:43.0±1.0, 3°.09N×127°.23E, h0km, mb3.6/6, mb1 3.7/7, mb1mx3.5/51, mbtmp3.6/7, ML3.6/1, Error ellipse: s-maj=73.0km s-min=17.2km az=65.0*
*ISCJB **05** 11:32:46.8±0.8, 3°.3N±0°.2×127°.6E±0°.2, h45km, mb3.5/6, Error ellipse: s-maj=34.9km s-min=14.3km az=145.9*
ISC 05 11:32:48.9±1.2, **3°.3N**±0°.2×**127°.6E**±0°.2, **h45**km, **n7**, σ**0s.76**/7, **mb3.6**/6, **Talaud Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
JAY	Jayapura	14.27	114	Pn	Pn	11 36 08.6	+0.1
	0.3nm,0.3s,baz=287,slow=20,SNR=7.5						
WRA	Warramunga Arr	23.98	164	P	P	11 37 58.9	-0.5
	0.7nm,0.4s,baz=339,slow=10,SNR=13						
ASAR	Alice Springs	27.45	167	P	P	11 38 30.4	-0.4
	0.3nm,0.6s,baz=353,slow=6.5,SNR=7.8						
STKA	Stephens Creek	37.38	160	P	P	11 39 57.8	+0.4
	1.5nm,0.8s,baz=333,slow=5.4,SNR=3.0						
MKAR	Makanchi Array	58.45	325	P	P	11 42 40.6	+0.3
	0.1nm,0.3s,baz=125,slow=6.8,SNR=2.7						
ZALV	Zalesovo Beam	61.41	333	P	P	11 42 59.4	-1.0
	0.4nm,0.3s,baz=111,slow=7.9,SNR=2.2						
KURBB	Kurchatov Arra	62.62	327	P	P	11 43 09.4	+0.8
	0.3nm,0.6s,baz=132,slow=6.7,SNR=3.3						

*CSEM **05** 11:39:00.3±0.3, 34°.10N×26°.22E, h5km, MD3.7, Error ellipse: s-maj=9.7km s-min=5.0km az=34.0*
*ATH **05** 11:39:02.9, 34°.24N×26°.16E, h25km±1km, ML3.0/2, Error ellipse: s-maj=3.3km s-min=1.2km az=348.0*
*HLW **05** 11:39:05.0, 34°.19N×26°.93E, h11km±10km, Ml3.2*
*GII **05** 11:39:08.2±0.0, 33°.77N×26°.66E, h27km, MD3.7/2*
*DDA **05** 11:39:54.6, 34°.24N×26°.40E, h26km, Md3.7*
ISC 05 11:39:00.5±1.3, **34°.04N**±0°.05×**26°.21E**±0°.04, **h32**km±14km, **n78**, σ**1s.81**/92, **Crete**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
ZKR	Zakros	1.07	0	P	Pn	11 39 18.7	-0.6
ZKR				S	Sn	11 39 33.5	+0.4
ZKR	Zakros	1.07	0	P	Pn	11 39 18.7	-0.6
ZKR				S	Sn	11 39 33.5	+0.4
ZKR				AML	AML	11 39 43.5	
	comp=E,2468µm,0.6s						
ZKR				AML	AML	11 39 46.4	
	comp=N,2078µm,0.7s						
LAST	Lasithi	1.27	332	P	Pn	11 39 22.4	+0.3
LAST				S	Sb	11 39 39.0	-0.9
LAST	Lasithi	1.27	332	P	Pn	11 39 22.4	+0.3
NPS	Neapolis	1.31	338	P	Pb	11 39 24.7	+0.1
NPS	Neapolis	1.31	338	P	Pb	11 39 24.7	+0.1
SIVA	Sivas	1.51	311	P	Pb	11 39 29.2	+1.3
SIVA				S	Sb	11 39 45.4	-1.2
SIVA	Sivas	1.51	311	P	Pb	11 39 29.2	+1.3
SIVA				S	Sb	11 39 45.4	-1.2
IDI	Anoyia	1.65	319	P	Pb	11 39 31.2	+0.9
IDI	Anoyia	1.65	319	P	Pb	11 39 31.2	+0.9
KARP	Karpathos	1.69	27	P	Pb	11 39 31.5	+0.4
KARP				S	Sb	11 39 51.2	-0.8
KARP	Karpathos	1.69	27	P	Pb	11 39 31.5	+0.4
KARP				S	Sb	11 39 51.2	-0.8
GVD	Gavdhos	1.92	295	P	Pb	11 39 34.4	-0.5
GVD				S	Sb	11 39 57.8	-0.7
GVD	Gavdhos	1.92	295	P	Pb	11 39 34.4	-0.5
GVD				S	Sb	11 39 57.8	-0.7
GVD				AML	AML	11 40 16.7	
	comp=N,624µm,0.4s						
GVD				AML	AML	11 40 17.0	
	comp=E,893µm,0.5s						
VAM	Vamos	2.14	310	P	Pb	11 39 38.0	-0.6
IMMV	Iera Moni Meta	2.31	308	P	Pb	11 39 40.4	-1.2
IMMV	Iera Moni Meta	2.31	308	P	Pb	11 39 40.4	-1.2
ARG	Arkhangelos	2.68	35	P	Pb	11 39 45.7	-2.1
ANKY	Antikythira Is	3.00	308	P	Pb	11 39 49.7	-3.5
ANKY	Antikythira Is	3.00	308	P	Pb	11 39 49.7	-3.6
MHLO	Agia Marina, M	3.02	331	P	Pn	11 39 49.3	+3.1
MHLO	Agia Marina, M	3.02	331	P	Pn	11 39 49.3	+3.1
APE	Apeiranthos	3.07	350	P	Pn	11 39 48.7	+1.9
APE	Apeiranthos	3.07	350	P	Pn	11 39 48.7	+1.9
BDRM	Kayabasi	3.18	18	iP	Pn	11 39 49.3	+1.0
BDRM				iS	Sn	11 40 24.3	-0.9
BDRM	Kayabasi	3.18	18	P	Pn	11 39 49.3	+1.0
KYTH	Kithira	3.42	312	P	Pn	11 39 53.1	+1.4
KYTH	Kithira	3.42	312	P	Pn	11 39 53.1	+1.4
TURN	Turunc	3.44	34	iP	Pn	11 39 51.2	-0.6
AKAS	Kas	3.54	51	iP	Pn	11 39 55.9	+2.5
AKAS				iS	Sn	11 40 29.4	-4.8
AKAS	Kas	3.54	51	P	Pn	11 39 55.9	+2.5
SMG	Samos	3.69	8	P	Pn	11 39 56.0	+0.6
SMG	Samos	3.69	8	P	Pn	11 39 56.0	+0.6
VLI	Veliai	3.78	316	P	Pn	11 39 56.0	-0.5
VLI	Veliai	3.78	316	P	Pn	11 39 56.0	-0.5
AYDN	Tasoluk	3.86	20	iP	Pn	11 39 59.7	+2.0
AYDN				iS	Sn	11 40 40.1	-1.8
AYDN	Tasoluk	3.86	20	P	Pn	11 39 59.7	+2.0
GOLH	Golhisar	4.20	40	iP	Pn	11 40 05.5	+3.2
GOLH				iS	Sn	11 40 51.3	+0.9
GOLH	Golhisar	4.20	40	P	Pn	11 40 05.6	+3.2
GOLH				S	Sn	11 40 51.3	+0.9
DID	Didima	4.22	326	P	Pn	11 40 02.8	+0.2
DID	Didima	4.22	326	P	Pn	11 40 02.8	+0.2
KORT	Korkueli	4.49	48	iP	Pn	11 40 11.6	+5.2
KORT				iS	Sn	11 40 53.8	-3.8
ITM	Ithomi	4.69	313	P	Pn	11 40 09.3	+0.3
ITM	Ithomi	4.69	313	P	Pn	11 40 09.3	+0.3
LTK	Loutraki	4.76	327	P	Pn	11 40 10.6	+0.5
LTK	Loutraki	4.76	327	P	Pn	11 40 10.6	+0.5
KHAL	Karahalli	5.07	31	iP	Pn	11 40 16.0	+1.6
KHAL	Karahalli	5.07	31	P	Pn	11 40 16.0	+1.6
KLV	Kalavryta, Ach	5.17	322	P	Pn	11 40 16.0	+0.3
KLV	Kalavryta, Ach	5.17	322	P	Pn	11 40 16.0	+0.3
GAZI	Gazipasa	5.46	65	iP	Pn	11 40 19.9	+0.2
GAZI				iS	Sn	11 41 12.4	-9.0
GAZI	Gazipasa	5.46	65	P	Pn	11 40 19.9	+0.2
CSS	Mathiatis	5.95	79	Pn	Pn	11 40 30.4	+3.9
CSS	Mathiatis	5.95	79	Pn	Pn	11 40 30.4	+3.9
PDO	Prodromos	6.09	320	P	Pn	11 40 31.8	+3.5
PDO	Prodromos	6.09	320	P	Pn	11 40 31.8	+3.5
GLL	Jalalah	6.46	132	P	Pn	11 40 36.3	+2.8
	baz=137						
GLL	Jalalah	6.46	132	P	Pn	11 40 36.3	+2.8
KIZK	Mersin	6.93	67	iP	Pn	11 40 43.2	+3.3
SUZ	Suez	7.02	125	P	Pn	11 40 43.3	+2.2
	baz=129						
SUZ	Suez	7.02	125	P	Pn	11 40 43.3	+2.2
KERG	Konya-Eregli	7.26	60	iP	Pn	11 40 47.3	+2.7
KERG	Konya-Eregli	7.26	60	P	Pn	11 40 47.3	+2.7
HNKL	Nakhl	7.77	120	P	Pn	11 40 53.1	+1.6
	baz=123						
HNKL				AMP		11 42 00.0	
	comp=N,20µm,0.6s,logA/T=4.5,baz=123						
HNKL				S	Sn	11 42 12.0	-6.4
	baz=123						
HNKL	Nakhl	7.77	120	P	Pn	11 40 53.1	+1.6
HMDT	Nahal Hemdat	8.02	100	Pn	Pn	11 40 57.2	+2.4
HMDT				Sn	Sn	11 42 24.0	-0.3
HMDT	Nahal Hemdat	8.02	100	Pn	Pn	11 40 57.2	+2.4
HMDT				Sn	Sn	11 42 24.0	-0.3
DSI	Dead Sea	8.11	105	Pn	Pn	11 40 58.4	+2.4
DSI				Sn	Sn	11 42 25.4	-1.2
DSI	Dead Sea	8.11	105	Pn	Pn	11 40 58.4	+2.4
MZDA	Masada	8.19	107	Pn	Pn	11 40 59.9	+2.9
MZDA				Sn	Sn	11 42 27.5	-0.9
MZDA	Masada	8.19	107	Pn	Pn	11 40 59.9	+2.9
PRNI	Paran	8.31	114	Pn	Pn	11 41 01.9	+3.0
PRNI				Sn	Sn	11 42 30.1	-1.6
PRNI	Paran	8.31	114	Pn	Pn	11 41 01.9	+3.0
ZFRI	Zfri	8.35	112	Sn	Sn	11 42 31.0	-1.6
MBRI	Mt Berech	8.53	117	Pn	Pn	11 41 04.9	+3.0
MBRI				Sn	Sn	11 42 36.1	-0.9
MBRI	Mt Berech	8.53	117	Pn	Pn	11 41 04.9	+3.0
EIL	Elat	8.62	118	Pn	Pn	11 41 05.5	+2.4
EIL				Sn	Sn	11 42 37.1	-2.1
EIL	Elat	8.62	118	Pn	Pn	11 41 05.5	+2.4

IDC 05 11:39:19.7±8.6, **1°.93S**×**117°.91E**, **h0**km, **mb3.4**/3, **mb1 3.6**/3, **mb1mx3.3**/40, **mbtmp3.4**/3, **Error ellipse: s-maj=291.7km s-min=131.9km az=46.0**, **Borneo**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
WRA	Warramunga Arr	24.05	139	P	P	11 44 35.8	-1.1
	0.2nm,0.3s,baz=316,slow=11,SNR=3.2						
ASAR	Alice Springs	26.59	146	P	P	11 45 00.6	+0.7
	0.2nm,0.6s,baz=321,slow=8.8,SNR=5.2						
STKA	Stephens Creek	37.23	146	P	P	11 46 33.2	0.0
	1.4nm,0.8s,baz=315,slow=11,SNR=2.9						

*IDC **05** 11:45:09.4±2.2, 37°.09N×142°.96E, h0km, mb3.8/5, mb1 3.7/9, mb1mx3.5/63, mbtmp3.8/9, ML3.0/4, Error ellipse: s-maj=42.5km s-min=33.3km az=114.0*
*JMA **05** 11:45:10.5±0.3, 37°.34N×142°.52E, h1km±3km, M4.1*
*ISCJB **05** 11:45:12.6±1.0, 37°.34N±0°.07×142°.63E±0°.08, h21km, mb3.6/5, Error ellipse: s-maj=9.8km s-min=9.1km az=138.5*
ISC 05 11:45:13.5±1.3, **37°.27N**±0°.06×**142°.7E**±0°.1, **h21**km, **n23**, σ**2s.40**/22, **mb3.6**/5, **Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
JFK	Kawauchi	1.45	275	P	Pn	11 45 35.4	-3.2
ONAJ	Iwakimizuishiy	1.52	264	P	Pn	11 45 36.8	-2.7
JIO	Ouri	1.59	319	P	Pn	11 45 37.9	-2.6
JIO				eS	Sn	11 45 56.9	-3.5
JMM	Marumori	1.62	292	P	Pn	11 45 37.6	-3.3
JMM				S	Sn	11 45 59.2	-2.0
JFT	Otama	1.89	278	P	Pn	11 45 42.8	-1.8
JFT				S	Sn	11 46 06.6	-1.3
JOU	Okura	1.95	305	P	Pn	11 45 43.4	-2.0
JOU				eS	Sn	11 46 05.9	-3.3
MJAR	Matsushiro Arr	3.67	260	Pn	Pn	11 46 10.2	+1.2
	2.1nm,0.3s,baz=79,slow=17,SNR=14						
MJAR				Sn	Sn	11 46 53.6	+2.0
	1.5nm,0.3s,baz=80,slow=18,SNR=5.1						
MAT	Matsushiro	3.67	260	P	Pn	11 46 07.3	-1.7
MAT				S	Sn	11 46 53.1	+1.5
JHJ	Hachijo jima 2	4.77	211	Pn	Pn	11 46 22.2	-2.0
	6.2nm,0.3s,baz=75,slow=18,SNR=2.9						
JHJ				Sn	Sn	11 47 14.2	-4.7
	7.5nm,0.3s,baz=72,slow=20,SNR=2.3						
USRK	Ussuriysk Ar.	10.67	314	Pn	Pn	11 47 47.3	+2.2
	0.2nm,0.3s,baz=101,slow=15,SNR=3.2						
KSRS	Korea Array	11.76	275	Pn	Pn	11 48 02.8	+2.8
	0.1nm,0.3s,baz=95,slow=12,SNR=5.7						
H11N2	WAKE ISLAND Hy	27.40	123	T	T	12 19 54.2	
	baz=315,slow=75,SNR=52						
H11N1	WAKE ISLAND Hy	27.41	123	T	T	12 19 51.6	
	baz=315,slow=75,SNR=32						
H11N3	WAKE ISLAND Hy	27.42	123	T	T	12 19 54.5	
	baz=315,slow=75,SNR=38						
H11S1	WAKE ISLAND Hy	28.14	125	T	T	12 20 47.2	
	baz=316,slow=76,SNR=59						
H11S3	WAKE ISLAND Hy	28.14	125	T	T	12 20 47.3	
	baz=316,slow=76,SNR=52						
H11S2	WAKE ISLAND Hy	28.16	125	T	T	12 20 48.8	
	baz=316,slow=76,SNR=43						
SONM	Songino Array	28.51	303	P	P	11 51 08.5	+1.0
	0.7nm,0.6s,baz=91,slow=8.9,SNR=3.6						
ZALV	Zalesovo Beam	42.52	312	P	P	11 53 07.9	+0.7
	0.7nm,0.7s,baz=90,slow=8.6,SNR=2.9						
MKAR	Makanchi Array	44.86	302	P	P	11 53 27.3	+1.1
	0.4nm,0.6s,baz=82,slow=8.7,SNR=3.9						
KURBB	Kurchatov Arra	46.66	308	P	P	11 53 41.2	+0.8
	0.7nm,0.4s,baz=82,slow=8.1,SNR=5.7						
FINES	FINESS Array B	69.08	333	P	P	11 56 19.6	+2.1

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
	0.9nm,0.8s,baz=49,slow=9.4,SNR=2.8						
TORD	**Torodi Ar. Bea**	**117.88**	**316**	PKP	**PKPdf**	**12 03 58.2**	**-0.8**
	0.1nm,0.4s,baz=232,slow=1.6,SNR=2.5						

IDC 05 11:46:50.1±1.7**, 2.42°N×125.80°E, h0km, mb3.4**/4**, mb1 3.5**/4**, mb1mx3.3**/52**, mbtmp3.4**/4**, Error ellipse: s-maj=178.4km s-min=22.0km az=66.0, Talaud Islands**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**23.75**	**160**	P	P	11 52 03.6	-0.7
	0.7nm,0.5s,baz=338,slow=10,SNR=8.7						
ASAR	**Alice Springs**	**27.10**	**164**	P	P	11 52 35.8	+0.9
	0.2nm,0.3s,baz=343,slow=7.7,SNR=4.6						
MKAR	**Makanchi Array**	**58.11**	**326**	P	P	11 56 46.5	+1.0
	0.3nm,0.6s,baz=136,slow=8.5,SNR=3.5						
KURBB	**Kurchatov Arra**	**62.34**	**328**	P	P	11 57 13.6	-0.8
	0.2nm,0.4s,baz=131,slow=6.6,SNR=3.9						

*NEIC **05** 11:48:50.0±0.4, 3.11°N×127.33°E, h10km, mb4.5/12, Error ellipse: s-maj=18.8km s-min=7.4km az=83.0*
*DJA **05** 11:48:52.0±0.9, 3°N±9°×12°7E±°, h10km, M4.6/11, mB5.3/2, mb4.7/11, MLv4.6/10, Mw(mB)4.7/2*
*BJI **05** 11:48:52.0, 3.00°N×127.10°E, h28km, mb4.5/18, mB5.3/3, Ms4.8/6, Ms7 4.5/5*
*ISCJB **05** 11:48:53.3±0.3, 3.14°N±0.03°×127.23°E±0.06°, h44km, mb4.3/35, MS4.2/4, Error ellipse: s-maj=9.1km s-min=4.4km az=171.8*
*IDC **05** 11:49:02.1±4.9, 2.81°N×127.15°E, h132km±48km, mb3.8/20, mb1 3.9/20, mb1mx3.7/51, mbtmp4.2/20, MS4.2/3, Ms1 4.2/3, ms1mx3.5/57, Error ellipse: s-maj=23.6km s-min=10.8km az=80.0*
ISC 05 11:48:55.1±0.4**, 3.11°N**±0.05°×**127.17°E**±0.07°**, h44km, n67, σ1.74s**/65**, mb4.4**/35**, MS4.2**/4**, 1D, Talaud Islands**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
SGSI	**Sangihe**	**1.74**	**289**	P	**Pn**	**11 49 21.7**	**-1.1**
TNTI	**Ternate**	**2.33**	**175**	P	**Pn**	**11 49 31.6**	**+0.6**
TNTI	**Ternate**	**2.33**	**175**	*e*Pn	**Pn**	**11 49 31.6**	**+0.6**
TNTI				*e*Sn	**Sn**	**11 49 59.5**	**+1.0**
LBMI	**Labuha**	**3.74**	**175**	P	Pn	11 49 53.5	+3.2
CTBH	**Cotabato--PC H**	**5.01**	**325**	⇓*i*P	**Pn**	**11 50 09.4**	**+1.6**
SANI	**Sanana**	**5.26**	**193**	P	**Pn**	**11 50 11.5**	**+0.2**
SWI	**Sorong**	**5.68**	**134**	P	**Pn**	**11 50 17.9**	**+0.9**
	41nm,0.6s,0.2nm						
MRSI	**Marisa**	**5.85**	**244**	P	**Pn**	**11 50 21.6**	**+2.3**
	76nm,0.9s,3µm0.2nm						
NLAI	**Namlea**	**6.31**	**181**	P	Pn	11 50 29.3	+3.7
	46nm,1.6s,0.2nm						
MSAI	**Masohi**	**6.65**	**165**	P	**Pn**	**11 50 32.9**	**+2.6**
	13nm,2.2s,0.5nm						
APSI	**Ampana**	**6.82**	**234**	P	Pn	11 50 36.3	+3.7
	134nm,1.5s,2µm0.5nm						
KAPI	**Kappang**	**10.96**	**223**	*e*Pn	**Pn**	**11 51 30.6**	**+1.2**
SBUM	**Sibu**	**14.95**	**268**	*e*Pn	**P**	**11 52 29.4**	**+1.0**
SBUM				*e*Sn	**Sn**	**11 55 06.2**	**-2.0**
PLAI	**Plampang**	**15.12**	**218**	P	**P**	**11 52 33.5**	**+3.2**
TWSI	**Taliwang, Sumb**	**15.62**	**221**	P	**P**	**11 52 38.2**	**+2.4**
	57nm,1.0s						
MTN	**Manton Dam**	**16.33**	**166**	*e*Pn	**Pn**	**11 52 39.7**	**-1.7**
	21nm,1.2s						
GUMO	**Guam**	**20.35**	**58**	LR	LR	11 59 38.6	
	comp=Z,626nm,19.6s,baz=242,slow=31						
FITZ	**Fitzroy Crossi**	**21.14**	**184**	P	**P**	**11 53 34.4**	**-2.0**
	3.6nm,0.5s,baz=4.4,slow=7.9,SNR=8.5						
FITZ	**Fitzroy Crossi**	**21.14**	**184**	*e*P	**P**	**11 53 34.9**	**-1.5**
	20nm,1.3s						
PMG	**Port Moresby**	**23.48**	**122**	LR	LR	12 03 44.8	
	comp=Z,1µm,20.3s,baz=298,slow=38						
KLI	**Kotabumi**	**23.66**	**251**	P	P	11 54 08.8	+6.0
	155nm,0.5s						
WRAB	**Tennant Creek**	**23.96**	**163**	*e*P	**P**	**11 54 04.2**	**-1.3**
	16nm,0.8s						
WRA	**Warramunga Arr**	**23.97**	**163**	P	**P**	**11 54 01.0**	**-4.6**
	7.5nm,0.8s,baz=338,slow=10,SNR=50						
WRA				PcP	**PcP**	**11 57 47.5**	**+0.3**
	0.3nm,0.4s,baz=337,slow=2.1,SNR=4.2						
WB2	**Warramunga Arr**	**23.97**	**163**	*e*P	**P**	**11 54 04.0**	**-1.6**
	15nm,0.8s						
AS31	**Alice Springs**	**27.41**	**167**	*e*P	**P**	**11 54 35.9**	**-0.9**
	1.9nm,0.8s						
ASAR	**Alice Springs**	**27.41**	**167**	P	**P**	**11 54 33.0**	**-3.8**
	1.7nm,0.7s,baz=343,slow=8.0,SNR=21						
ASAR				PcP	**PcP**	**11 57 55.7**	**+0.8**
	0.8nm,0.7s,baz=351,slow=2.6,SNR=4.1						
AS01	**Alice Springs**	**27.42**	**166**	*e*P	**P**	**11 54 35.4**	**-1.5**
NJ2	**Nanjing**	**29.83**	**346**	*e*P	**P**	**11 54 57.9**	**-0.2**
NJ2				pmax	pmax		
	comp=Z,13nm,1.0s						
JNU	**Nakatsue**	**30.05**	**6**	P	**P**	**11 55 00.3**	**+0.2**
	10nm,0.8s,baz=292,slow=3.9,SNR=6.0						
JNU	**Nakatsue**	**30.05**	**6**	*e*P	**P**	**11 55 01.6**	**+1.4**
	116nm,2.0s						
CMAR	**Chiang Mai Arr**	**31.57**	**301**	P	**P**	**11 55 13.5**	**-0.2**
	0.9nm,0.3s,baz=121,slow=7.1,SNR=7.5						
JHJ	**Hachijo jima 2**	**32.10**	**20**	LR	LR	12 08 06.6	
	comp=Z,234nm,19.7s,baz=236,slow=35						
KS15	**Wonju Array Si**	**34.17**	**1**	*e*P	**P**	**11 55 38.8**	**+2.6**
KSAR	**Wonju Array Be**	**34.17**	**1**	P	**P**	**11 55 37.6**	**+1.5**
KSRS	**Korea Array**	**34.18**	**1**	P	**P**	**11 55 37.6**	**+1.4**
	3.7nm,0.8s,baz=178,slow=9.2,SNR=15						
MAJO	**Matsushiro**	**34.79**	**16**	*e*P	**P**	**11 55 41.4**	**-0.2**
	7.0nm,0.4s						
CD2	**Chengdu**	**35.40**	**324**	P	**P**	**11 55 47.6**	**+0.7**
CD2				pmax	pmax		
	comp=Z,1.0nm,0.5s						
STKA	**Stephens Creek**	**37.40**	**160**	P	P	11 56 00.2	-3.7
	7.0nm,0.7s,baz=336,slow=7.0,SNR=16						
STKA				PcP	**PcP**	**11 58 22.8**	**+0.6**
	1.8nm,0.5s,baz=358,slow=3.7,SNR=4.6						
STKA	**Stephens Creek**	**37.40**	**160**	*e*P	**P**	**11 56 02.9**	**-1.0**
	1.6nm,0.6s						
STKA				PcP	**PcP**	**11 58 22.8**	**+0.6**
HHC	**Hu-ho-hao-te**	**40.12**	**342**	*e*P	P	11 56 30.2	+3.5
HHC				S	**S**	**12 02 32.0**	**+1.8**
HHC				pmax	pmax		
	comp=Z,10.0nm,0.9s						
HHC				pmax	pmax		
	comp=Z,800nm,13.1s						
HHC				LR	LR		
	comp=N,310nm,17.7s						
HHC				LR	LR		
	comp=E,670nm,20.0s						
USRK	**Ussuriysk Ar.**	**41.14**	**5**	P	**P**	**11 56 36.6**	**+1.7**
	3.3nm,0.7s,baz=203,slow=6.8,SNR=7.1						
MDJ	**Mudanjiang**	**41.39**	**3**	P	**P**	**11 56 39.3**	**+2.3**
MDJ				pmax	pmax		
	comp=Z,8.0nm,0.7s						
GTA	**Gaotai**	**43.85**	**329**	*e*P	**P**	**11 56 59.0**	**+1.8**
GTA				pP	pP	11 57 06.0	-3.4
GTA				sP	sP	11 57 09.0	-5.6
GTA				pmax	pmax		
	comp=Z,3.0nm,0.9s						
KLR	**Kul'dur**	**46.11**	**4**	P	**P**	**11 57 16.1**	**+1.2**
	3.0nm,1.0s,baz=202,slow=4.9,SNR=6.1						
ULN	**Ulaanbaatar**	**47.84**	**342**	*e*P	**P**	**11 57 28.6**	**0.0**
	17nm,1.7s						
SONM	**Songino Array**	**48.02**	**341**	P	**P**	**11 57 30.2**	**+0.2**
	1.3nm,0.7s,baz=155,slow=8.4,SNR=4.5						
WMQ	**Urumqi**	**53.48**	**325**	*e*P	**P**	**11 58 13.7**	**+2.6**
WMQ				sP	pP	11 58 24.0	+0.5
WMQ				pmax	pmax		
	comp=Z,4.0nm,0.6s						
PETK	**Petropavlovsk-**	**55.83**	**22**	P	**P**	**11 58 27.4**	**-0.5**
	3.4nm,0.8s,baz=182,slow=4.0,SNR=5.1						
MK01	**Makanchi Array**	**58.29**	**325**	*e*P	**P**	**11 58 44.8**	**-0.6**
MK31	**Makanchi Array**	**58.31**	**325**	*e*P	**P**	**11 58 45.4**	**-0.2**
MKAR	**Makanchi Array**	**58.31**	**325**	P	**P**	**11 58 45.2**	**-0.3**
	0.9nm,0.4s,baz=121,slow=7.7,SNR=16						
MKAR	**Makanchi Array**	**58.31**	**325**	*e*P	**P**	**11 58 45.4**	**-0.2**
MAKZ	**Makanchi**	**58.50**	**325**	*e*P	**P**	**11 58 46.6**	**-0.2**
	4.9nm,1.2s						
YAK	**Yakutsk**	**58.81**	**1**	P	**P**	**11 58 48.8**	**+0.1**
	1.5nm,0.3s,baz=189,slow=22,SNR=4.5						
MA2	**Magadan**	**59.19**	**14**	P	**P**	**11 58 51.0**	**-0.4**
	2.6nm,0.8s,baz=228,slow=7.1,SNR=8.5						
ZAA0	**Zalesovo Array**	**61.33**	**333**	*e*P	**P**	**11 59 07.1**	**+1.0**
ZALV	**Zalesovo Beam**	**61.33**	**333**	P	**P**	**11 59 05.2**	**-0.9**
	1.4nm,0.6s,baz=111,slow=8.1,SNR=6.8						
KURBB	**Kurchatov Arra**	**62.49**	**327**	P	**P**	**11 59 11.5**	**-2.5**
	3.4nm,0.7s,baz=125,slow=6.5,SNR=27						
KURK	**Kurchatov**	**62.49**	**328**	*e*P	**P**	**11 59 13.8**	**-0.3**
	6.0nm,0.6s						
SEY	**Seymchan**	**62.53**	**13**	P	**P**	**11 59 13.5**	**-0.5**
	0.7nm,0.5s,baz=228,slow=8.6,SNR=5.9						
BVAR	**Borovoye Array**	**68.07**	**327**	P	**P**	**11 59 50.4**	**+0.2**
	0.6nm,0.5s,baz=129,slow=12,SNR=4.3						
NRIK	**Noril'sk**	**71.13**	**346**	P	**P**	**12 00 07.0**	**-1.6**
	3.6nm,0.6s,baz=108,slow=4.4,SNR=3.0						
ABKAR	**Akbulak array**	**72.90**	**321**	*e*P	**P**	**12 00 20.1**	**+0.4**
	0.4nm,0.3s						
BRTR	**Keskin Array B**	**90.75**	**310**	P	**P**	**12 01 51.0**	**-3.0**
	0.3nm,0.4s,baz=74,slow=5.8,SNR=2.7						
BW06	**Boulder Array**	**111.52**	**41**	*e*Pdif	**Pdif**	**12 03 25.2**	**-2.2**
TXAR	**Lajitas Array**	**121.62**	**53**	PKP	**PKPdf**	**12 07 40.0**	**-4.9**
	0.2nm,0.6s,baz=285,slow=4.6,SNR=3.8						
TORD	**Torodi Ar. Bea**	**123.53**	**288**	PKP	**PKPdf**	**12 07 46.3**	**-2.4**
	0.6nm,0.8s,baz=150,slow=1.9,SNR=3.2						

*ISCJB **05** 11:51:40.6±0.5, 31.30°N±0.05°×115.66°W±0.04°, h9km±9km, Error ellipse: s-maj=8.6km s-min=5.9km az=19.6*
*ECX **05** 11:51:41.6±0.6, 31.26°N×115.67°W, h5km, MD2.8, ML3.0*
*MEX **05** 11:51:42.1±0.4, 31.08°N×115.75°W, h12km±17km, MD3.7*
ISC 05 11:51:40.3±0.9**, 31.27°N**±0.05°×**115.67°W**±0.04°**, h16km**±10km**, n13, σ0.24s**/23**, 2C-5D, Baja California**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
SPIG	**San Pedro Mart**	**0.29**	**142**	*e*P	**Pg**	**11 51 46.9**	**+0.2**
SPIG				*e*S	**Sg**	**11 51 50.9**	**0.0**
SPIG	**San Pedro Mart**	**0.29**	**142**	*i* P	**Pb**	**11 51 47.1**	**-0.2**
SPIG				*e*S	**Sg**	**11 51 50.7**	**-0.3**
SPX	**San Pedro Mart**	**0.29**	**142**	⇓*e*P	**Pb**	**11 51 47.1**	**-0.2**
SPX				*e*S	**Sg**	**11 51 51.0**	**0.0**
SPX				AML	AML	11 51 51.6	
	comp=N,2µm,0.2s						
SPX				⇓*e*		11 51 51.6	
ZAX	**El Zacaton**	**0.57**	**295**	*e*P	**Pg**	**11 51 51.6**	**+0.1**
ZAX				*e*S	**Sb**	**11 51 59.8**	**-0.1**
ZAX				⇑*e*		11 52 01.0	
ZAX				AML	AML	11 52 01.0	
	comp=N,772nm,0.4s						
ZAX				AML	AML	11 52 02.0	
	comp=E,900nm,0.5s						
ZAX				⇓*e*		11 52 02.0	
ECBX	**El Chinero**	**0.57**	**69**	⇑*e*P	**Pg**	**11 51 51.6**	**+0.1**
ECBX				*e*S	**Sg**	**11 51 59.0**	**-0.2**
ECBX				⇓*e*		11 51 59.3	
ECBX				AML	AML	11 51 59.3	
	comp=E,1µm,0.3s						
ECNX	**Esteban Cantu**	**0.88**	**296**	*e*P	**Pg**	**11 51 57.4**	**0.0**
ECNX				*e*S	**Sg**	**11 52 08.9**	**0.0**
PBX	**Punta Banda**	**1.01**	**298**	*e*P	**Pb**	**11 51 59.5**	**-0.1**
PBX				*e*S	**Sg**	**11 52 13.2**	**0.0**
CBX	**Cerro Bola**	**1.34**	**321**	*e*P	**Pb**	**11 52 05.3**	**+0.1**
CBX				*e*S	**Sg**	**11 52 22.9**	**-0.6**
CBX				⇓*e*		11 52 25.6	
CBX				AML	AML	11 52 25.6	
	comp=N,194nm,0.4s						
CBX	**Cerro Bola**	**1.34**	**321**	*e*P	**Pb**	**11 52 04.7**	**-0.4**
CBX				*e*S	**Sb**	**11 52 21.9**	**-0.2**
RMX	**La Rumorosa**	**1.37**	**346**	*e*P	**Pb**	**11 52 05.9**	**+0.1**
TJIG	**Tijuana**	**1.44**	**324**	*e*P	**Pb**	**11 52 06.6**	**-0.2**
TJIG	**Tijuana**	**1.44**	**324**	*e*P	**Pn**	**11 52 06.1**	**+0.3**
TJIG				*e*S	**Sb**	**11 52 25.0**	**+0.1**
BAR	**Barrett**	**1.64**	**329**	*e*P	**Pb**	**11 52 10.1**	**-0.2**

*ISCJB **05** 11:54:23.9±0.7, 50.27°N±0.05°×18.87°E±0.04°, h0km, Error ellipse: s-maj=7.8km s-min=3.3km az=14.8*
*PRU **05** 11:54:25.7, 50.25°N×18.91°E, h0km*
*CSEM **05** 11:54:27.1±1.6, 50.30°N×18.78°E, h1km, ML2.8/6, Error ellipse: s-maj=23.4km s-min=12.9km az=48.0*
ISC 05 11:54:25.0±1.1**, 50.20°N**±0.07°×**18.91°E**±0.03°**, h0km, n19, σ0.92s**/27**, Poland**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
OJC	**Ojcow**	**0.57**	**88**	*e*Pg	**Pg**	**11 54 35.3**	**-0.6**
OJC				*e*Sg	**Sg**	**11 54 42.4**	**-0.9**
OJC	**Ojcow**	**0.57**	**88**	*e*Pg	**Pg**	**11 54 35.3**	**-0.6**
OKC	**Ostrava-Krasne**	**0.61**	**234**	*e*PG	**Pb**	**11 54 39.2**	**+0.6**
OKC				*e*SG	**Sb**	**11 54 48.2**	**+0.4**
	comp=Z,10nm,0.2s						
OKC	**Ostrava-Krasne**	**0.61**	**234**	Pg	**Pb**	**11 54 39.2**	**+0.6**
OKC				Sg	**Sb**	**11 54 48.2**	**+0.4**
	10nm,0.2s						
LANS	**Liptovska Anna**	**1.11**	**161**	*e*PG	**Pb**	**11 54 47.3**	**+0.2**
LANS				*e*SG	**Sb**	**11 55 02.6**	**+0.5**
DPC	**Dobruska-Polom**	**1.67**	**276**	*e*PG	**Pg**	**11 54 57.0**	**0.0**
DPC				*e*SG	**Sg**	**11 55 18.9**	**+0.3**
	comp=Z,12nm,0.4s						
DPC	**Dobruska-Polom**	**1.67**	**276**	Pg	**Pg**	**11 54 57.0**	**0.0**
DPC				Sg	**Sg**	**11 55 18.9**	**+0.3**
	12nm,0.4s						
STHS	**Stebnicka Huta**	**1.70**	**117**	*e*PN	**Pg**	**11 54 57.0**	**-0.6**
STHS				*e*SN	**Sg**	**11 55 21.4**	**+1.8**
STHS				*e*LG	Lg	11 55 27.4	
VYHS	**Vyhne**	**1.71**	**182**	*e*PN	**Pn**	**11 54 55.9**	**-0.2**
VYHS				*e*SN	**Sn**	**11 55 18.8**	**+0.2**
VYHS				*e*LG	Lg	11 55 20.4	
UPC	**Upice**	**1.88**	**281**	*e*SG	**Sg**	**11 55 26.2**	**+0.7**
UPC	**Upice**	**1.88**	**281**	Sg	**Sg**	**11 55 26.2**	**+0.7**
GOPC	**GO Pecny, Ondr**	**2.67**	**265**	*e*SG	**Sg**	**11 55 49.2**	**-1.7**
	comp=Z,4.9nm,0.2s						
GOPC	**GO Pecny, Ondr**	**2.67**	**265**	Sg	**Sg**	**11 55 49.2**	**-1.7**
	4.9nm,0.2s						
PVCC	**Panska Ves**	**2.80**	**278**	*e*SG	**Sg**	**11 55 55.5**	**+0.5**
	comp=Z,8.0nm,0.2s						
PVCC	**Panska Ves**	**2.80**	**278**	Sg	**Sg**	**11 55 55.5**	**+0.5**
	8.0nm,0.2s						
PRU	**Pruhonice**	**2.82**	**267**	*e*SG	**Sg**	**11 55 54.3**	**-1.4**
	comp=Z,4.2nm,0.2s						
PRU	**Pruhonice**	**2.82**	**267**	Sg	**Sg**	**11 55 54.3**	**-1.4**
	4.2nm,0.2s						
KHC	**Kasperske Hory**	**3.63**	**255**	*e*x	x	11 56 18.0	
KHC				*e*SG	**Sg**	**11 56 20.4**	**-1.1**
	comp=Z,3.9nm,0.4s						
KHC	**Kasperske Hory**	**3.63**	**255**	Sg	**Sg**	**11 56 20.4**	**-1.1**
	3.9nm,0.4s						

*IDC **05** 11:54:49.5±2.2, 37.33°N×142.61°E, h0km, mb3.6/3, mb1 3.7/5, mb1mx3.3/53, mbtmp3.6/5, ML3.2/2, Error ellipse: s-maj=43.4km s-min=28.3km az=72.0*
*JMA **05** 11:54:49.5±0.3, 37.37°N×142.37°E, h0km*
ISC 05 11:54:53.3±1.4**, 37.37°N**±0.07°×**142.3°E**±0.1°**, h21km, n17, σ1.71s**/14**, mb3.7**/3**, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**1.10**	**270**	P	**Pn**	**11 55 12.7**	**-0.8**
JMM	**Marumori**	**1.27**	**293**	P	**Pn**	**11 55 14.9**	**-0.8**
JIO	**Ouri**	**1.30**	**327**	P	**Pn**	**11 55 15.1**	**-1.1**
JFT	**Otama**	**1.54**	**276**	P	**Pn**	**11 55 20.0**	**+0.5**
JOU	**Okura**	**1.61**	**309**	P	**Pn**	**11 55 20.6**	**+0.1**
MJAR	**Matsushiro Arr**	**3.35**	**257**	Pn	**Pn**	**11 55 46.1**	**+1.7**
	1.5nm,0.3s,baz=85,slow=15,SNR=6.5						
MJAR				Sn	**Sb**	**11 56 31.3**	**-0.9**
	1.9nm,0.3s,baz=79,slow=13,SNR=3.9						
MAT	**Matsushiro**	**3.35**	**257**	P	**Pn**	**11 55 47.5**	**+3.1**
MAT				*e*S	**Sb**	**11 56 29.6**	**-2.6**
JHJ	**Hachijo jima 2**	**4.70**	**206**	Pn	**Pn**	**11 56 02.6**	**-0.3**
	4.6nm,0.3s,baz=50,slow=7.8,SNR=2.0						
JHJ				Sn	**Sb**	**11 57 08.9**	**-2.2**
	8.2nm,0.3s,baz=177,slow=23,SNR=5.6						
H11N2	**WAKE ISLAND Hy**	**27.75**	**122**	T	T	12 29 30.8	
	baz=315,slow=75,SNR=18						
H11N1	**WAKE ISLAND Hy**	**27.76**	**123**	T	T	12 29 31.9	
	baz=315,slow=75,SNR=17						
H11N3	**WAKE ISLAND Hy**	**27.77**	**122**	T	T	12 29 33.1	
	baz=315,slow=75,SNR=17						
H11S1	**WAKE ISLAND Hy**	**28.48**	**125**	T	T	12 30 25.1	
	baz=317,slow=76,SNR=20						
H11S3	**WAKE ISLAND Hy**	**28.48**	**125**	T	T	12 30 27.6	
	baz=317,slow=76,SNR=23						
H11S2	**WAKE ISLAND Hy**	**28.50**	**125**	T	T	12 30 26.6	
	baz=317,slow=76,SNR=28						
MKAR	**Makanchi Array**	**44.51**	**302**	P	**P**	**12 03 04.8**	**+1.6**
	0.4nm,0.6s,baz=89,slow=7.8,SNR=4.1						
KURBB	**Kurchatov Arra**	**46.33**	**308**	P	**P**	**12 03 18.7**	**+1.2**
	0.4nm,0.4s,baz=82,slow=7.8,SNR=5.3						
WRA	**Warramunga Arr**	**57.49**	**189**	P	**P**	**12 04 40.5**	**-0.4**
	0.3nm,0.4s,baz=7.2,slow=7.0,SNR=6.0						

*ISCJB **05** 11:56:48.2±0.6, 35.95°N±0.02°×121.65°W±0.03°, h8km±4km, mb4.0/13, MS4.6/1, Error ellipse: s-maj=5.0km s-min=2.4km az=147.4*
*IDC **05** 11:56:49.8±1.0, 36.02°N×121.57°W, h0km, mb3.8/9, mb1 3.9/15, mb1mx3.8/48, mbtmp3.7/15, ML3.6/5, Error ellipse: s-maj=18.8km s-min=9.1km az=49.0*
*NEIC **05** 11:56:50.4, 36.07°N×121.62°W, h11km, mb4.3/4, MW3.9(BRK), After NCEDC.*
NEIC Felt [II] at Big Sur, Carmel, Carmel Valley, Monterey, Pacific Grove, Pebble Beach, Salinas, Santa Cruz, Seaside and Watsonville. Also felt at Aptos, Atascadero, Capitola, Felton, Fremont, Gilroy, Hollister, King City, Lockwood, Redwood City, San Francisco and Scotts Valley.
ISC 05 11:56:49.0±1.6**, 35.98°N**±0.03°×**121.71°W**±0.05°**, h6km**±9km**, n218, σ1.28s**/213**, mb4.0**/13**, Central California**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
LRV	**Little Rabbit**	**0.71**	**51**	*e*Pg	**Pg**	**11 57 02.1**	**-0.6**
SAO	**San Andreas Ge**	**0.81**	**15**	*e*Pg	**Pg**	**11 57 03.8**	**-0.8**
SAO				*e*Pn	**Pb**	**11 57 03.9**	**-1.5**
SAO				*e*Sg	**Sg**	**11 57 13.8**	**-1.3**
DPD	**Davis Peak**	**1.06**	**134**	*e*Pn	**Pn**	**11 57 09.9**	**-0.5**
PTRM	**Twissleman Ran**	**1.26**	**105**	*e*Pg	**Pn**	**11 57 11.5**	**-1.6**
MHC	**Mount Hamilton**	**1.36**	**2**	*e*Pn	**Pn**	**11 57 12.8**	**-1.8**
SMMC	**Simmler**	**1.54**	**115**	P	**Pn**	**11 57 16.1**	**-0.9**
	baz=300,SNR=265						
SMMC				S	**Sb**	**11 57 36.6**	**-1.2**
	baz=300						
WENL	**Wente Vineyard**	**1.64**	**359**	*e*Pn	**Pn**	**11 57 16.3**	**-2.0**
CARC	**Carrizo Plain**	**1.66**	**113**	*e*Pn	**Pn**	**11 57 17.5**	**-1.1**
FIGC	**Figueroa Mtn.**	**1.88**	**131**	*e*Pn	**Pn**	**11 57 21.0**	**-0.7**
PKM	**Mcpherson Peak**	**1.89**	**125**	P	**Pn**	**11 57 21.2**	**-0.8**
	baz=309,SNR=114						
PKM				S	**Sn**	**11 57 45.3**	**-0.8**
	baz=309						
BDM	**Black Diamond**	**1.98**	**356**	*e*Pn	**Pn**	**11 57 21.0**	**-2.0**
RCTC	**Rector, Farmer**	**2.02**	**80**	P	**Pn**	**11 57 22.1**	**-1.5**
	baz=264,SNR=30						
RCTC				S	**Sn**	**11 57 47.4**	**-1.7**
	baz=264						
SYP	**Santa Ynez Pea**	**2.02**	**135**	*e*Pn	**Pn**	**11 57 23.5**	**-0.3**
MARC	**Maricopa**	**2.16**	**116**	*e*Pn	**Pn**	**11 57 24.4**	**-1.2**
SBC	**Santa Barbara**	**2.24**	**133**	P	**Pn**	**11 57 26.1**	**-0.5**
	baz=317,SNR=20						
CMB	**Columbia Colle**	**2.31**	**27**	*e*Pn	**Pn**	**11 57 26.9**	**-0.6**
CMB				*e*Sn	**Sn**	**11 57 53.9**	**-2.3**
MCCM	**Marconi Confer**	**2.36**	**337**	*e*Pn	**Pn**	**11 57 26.6**	**-1.6**
MCCM				*e*Sn	**Sn**	**11 57 54.1**	**-3.2**
CVS	**Carmenet Viney**	**2.44**	**346**	*e*Pn	**Pn**	**11 57 27.6**	**-1.7**
WOFM	**Oak Flat**	**2.47**	**99**	*e*Pn	**Pn**	**11 57 28.4**	**-1.5**
ARVC	**Arvin**	**2.50**	**109**	P	**Pn**	**11 57 29.0**	**-1.1**
	baz=293,SNR=29						
ARVC				S	**Sn**	**11 57 58.9**	**-1.9**
	baz=293						
ARVC	**Arvin**	**2.50**	**109**	*e*Pn	**Pn**	**11 57 29.0**	**-1.1**
WASM	**Alta Sierra Ca**	**2.57**	**94**	*e*Pn	**Pn**	**11 57 29.6**	**-1.6**
SCZ2	**Santa Cruz Isl**	**2.61**	**139**	P	**Pn**	**11 57 30.6**	**-1.1**
	baz=322						
ISA	**Isabella, Lake**	**2.65**	**96**	P	**Pn**	**11 57 31.5**	**-0.8**
	baz=280,SNR=81						
ISA				S	**Sn**	**11 58 02.7**	**-1.9**
	baz=280						
ISA	**Isabella, Lake**	**2.65**	**96**	*e*Pn	**Pn**	**11 57 30.8**	**-1.5**
ISA				*e*Sn	**Sn**	**11 58 03.2**	**-1.4**
WLHM	**Little Horse**	**2.75**	**85**	*e*Pn	**Pn**	**11 57 32.0**	**-1.9**
OSI	**Osito Audit: C**	**2.79**	**118**	*e*Pn	**Pn**	**11 57 35.2**	**+1.0**
BALC	**Balcom Canyon**	**2.80**	**126**	*e*Pn	**Pn**	**11 57 33.6**	**-0.6**
MLAC	**Mammoth, Mammo**	**2.83**	**54**	P	**Pn**	**11 57 35.6**	**+0.7**
	baz=236,SNR=83						
MLAC	**Mammoth, Mammo**	**2.83**	**54**	*e*Pn	**Pn**	**11 57 32.6**	**-2.3**
BLG	**Laguna Peak, P**	**2.86**	**130**	P	**Pn**	**11 57 33.9**	**-1.2**
	baz=314,SNR=7.9						
BLG				S	**Sn**	**11 58 08.1**	**-1.7**
	baz=314						
MTUM	**Tungsten Hills**	**2.87**	**61**	*e*Pn	**Pn**	**11 57 33.3**	**-2.2**
NMTM	**Middletown**	**2.88**	**348**	*e*Pn	**Pn**	**11 57 33.7**	**-1.7**
STTC	**Scott Ranch**	**2.91**	**113**	*e*Pn	**Pn**	**11 57 34.8**	**-1.0**
STTC				*e*Sn	**Sb**	**11 58 14.7**	**-2.3**
WCHM	**Chimney Peak**	**2.95**	**91**	*e*Pn	**Pn**	**11 57 34.9**	**-1.7**
WWPM	**Walker Pass**	**2.95**	**94**	*e*Pn	**Pn**	**11 57 34.9**	**-1.5**
CWC	**Cottonwood Cre**	**2.97**	**80**	P	**Pn**	**11 57 37.2**	**+0.5**
	baz=264						
CWC				S	**Sn**	**11 58 12.3**	**-0.4**
	baz=264						
TIN	**Tinemaha, Big**	**3.00**	**68**	P	**Pn**	**11 57 37.7**	**+0.6**
	baz=251,SNR=56						
TIN				S	**Sn**	**11 58 13.4**	**0.0**
	baz=251						
TIN	**Tinemaha, Big**	**3.00**	**68**	*e*Pn	**Pn**	**11 57 35.1**	**-2.0**
AFDM	**Forest Hills D**	**3.02**	**11**	*e*Pn	**Pn**	**11 57 37.0**	**-0.3**
BLCC	**Black Canyon**	**3.03**	**124**	*e*Pn	**Pn**	**11 57 36.8**	**-0.7**
LEOC	**Leona Valley**	**3.09**	**115**	*e*Pn	**Pn**	**11 57 37.4**	**-1.0**
WAKR	**Walker**	**3.10**	**35**	*e*Pn	**Pn**	**11 57 39.7**	**+1.1**
IR2C	**Iron Canyon**	**3.14**	**119**	*e*Pn	**Pn**	**11 57 38.2**	**-0.8**
HOPS	**Hopland Field**	**3.20**	**341**	*e*Pn	**Pn**	**11 57 38.1**	**-1.6**
EDW2	**Edwards Air Fo**	**3.22**	**109**	P	**Pn**	**11 57 39.5**	**-0.6**
	baz=293,SNR=30						
DECC	**Green Verdugo**	**3.26**	**121**	P	**Pn**	**11 57 39.8**	**-0.8**
	baz=305						
DECC				S	**Sn**	**11 58 18.9**	**-0.7**
	baz=305						
DJJ	**Donna J Jenkin**	**3.26**	**124**	*e*Pn	**Pn**	**11 57 40.2**	**-0.4**
SNCC	**San Nicolas Is**	**3.27**	**146**	P	**Pn**	**11 57 40.5**	**-0.2**
	baz=329						
SNCC				S	**Sn**	**11 58 18.1**	**-1.7**
	baz=329						
SNCC	**San Nicolas Is**	**3.27**	**146**	*e*Pn	**Pn**	**11 57 38.8**	**-1.8**
LRMC	**Laurel Mtn Rad**	**3.31**	**97**	P	**Pn**	**11 57 40.5**	**-0.9**
	baz=282						
CLC	**China Lake**	**3.34**	**92**	*e*Pn	**Pn**	**11 57 41.5**	**-0.3**
PASC	**Pasadena Art C**	**3.41**	**121**	*e*Pn	**Pn**	**11 57 42.2**	**-0.4**
MPMC	**Manual Prospec**	**3.42**	**87**	P	**Pn**	**11 57 42.2**	**-0.7**
	baz=272,SNR=56						
MWC	**Mount Wilson**	**3.47**	**119**	*e*Pn	**Pn**	**11 57 43.4**	**-0.2**
MWC				*e*Sn	Sn	11 58 14.2	-11
HOLC	**Holcomb Ridge**	**3.51**	**115**	*e*Pn	**Pn**	**11 57 43.9**	**-0.2**
ORV	**Oroville**	**3.57**	**3**	*e*Pn	**Pn**	**11 57 44.0**	**-0.9**
ORV				*e*Sn	**Sn**	**11 58 25.4**	**-2.0**
FMP	**Fort Macarthur**	**3.60**	**128**	P	**Pn**	**11 57 44.8**	**-0.5**
	baz=312						
GRAC	**Grapevine Rang**	**3.64**	**73**	P	**Pn**	**11 57 46.1**	**+0.2**
	baz=256,SNR=36						
NV01	**Mina Array Sit**	**3.66**	**47**	*e*Pn	**Pn**	**11 57 46.2**	**0.0**
NVAR	**Mina Array Bea**	**3.66**	**47**	Pn	**Pn**	**11 57 46.8**	**+0.5**
	2.0nm,0.3s,baz=348,slow=24,SNR=41						
NVAR				Lg	Lg	11 58 37.7	
	8.4nm,0.3s,baz=228,slow=26,SNR=2.6						
SSK	**Sunset Peak**	**3.73**	**117**	*e*Pn	**Pn**	**11 57 47.6**	**+0.3**
CIS	**Catalina Islan**	**3.74**	**133**	P	**Pn**	**11 57 45.9**	**-1.3**
	baz=316						
CIS				S	**Sn**	**11 58 28.7**	**-2.8**
	baz=316						
BFSC	**Mount Baldy Ra**	**3.75**	**116**	P	**Pn**	**11 57 47.0**	**-0.4**
	baz=301,SNR=34						
BFSC				S	**Sn**	**11 58 30.6**	**-1.2**
	baz=301						
NV11	**Mina Array Sit**	**3.75**	**48**	*e*Pn	Pn	11 57 50.1	+2.7
BLKC	**Black Mountain**	**3.77**	**102**	*e*Pn	**Pn**	**11 57 47.2**	**-0.4**
FURC	**Furnace Creek,**	**3.95**	**81**	P	**Pn**	**11 57 49.8**	**-0.2**
	baz=266						
SCI2	**San Clemente I**	**3.97**	**138**	P	**Pn**	**11 57 49.6**	**-0.7**
	baz=322						
SCI2				S	**Sn**	**11 58 36.0**	**-1.2**
	baz=322						
RRX	**Edison Barstow**	**4.00**	**105**	P	**Pn**	**11 57 50.4**	**-0.4**
	baz=289						
GSC	**Goldstone, Bar**	**4.05**	**98**	P	**Pn**	**11 57 50.7**	**-0.8**
	baz=282,SNR=53						
GSC				S	**Sn**	**11 58 37.8**	**-1.5**
	baz=282						
GSC	**Goldstone, Bar**	**4.05**	**98**	*e*Pn	**Pn**	**11 57 50.7**	**-0.8**
BBRC	**Big Bear Solar**	**4.28**	**112**	P	**Pn**	**11 57 54.5**	**-0.3**
	baz=297,SNR=8.0						
O03D	**Paynes Creek**	**4.31**	**359**	P	**Pn**	**11 57 54.7**	**-0.4**
	baz=178,SNR=11						
MURC	**Murrieta**	**4.41**	**121**	P	**Pn**	**11 57 55.0**	**-1.3**
	baz=306						
MURC				S	**Sn**	**11 58 46.5**	**-1.6**
	baz=306						
SHOC	**Shoshone, Teco**	**4.41**	**89**	P	**Pn**	**11 57 55.9**	**-0.5**

baz=274
TPNV Topopah Spring 4.50 76 P Pn 11 57 58.3 +0.5
baz=260,SNR=47
TPNV Topopah Spring 4.50 76 *e*Pn Pn 11 57 58.4 +0.5
KMRM Mail Ridge 4.52 340 *e*Pn Pn 11 57 58.1 +0.2
HEC Hector,Ludlow 4.54 103 P Pn 11 57 57.1 -1.1
baz=288,SNR=26
HEC S Sn 11 58 50.1 -1.2
baz=288
WDC Whiskeytown Da 4.64 352 *e*Pn Pn 11 57 58.5 -1.1
TUQ Turquoise Moun 4.74 95 P Pn 11 57 59.8 -1.2
baz=280,SNR=43
TUQ S Sn 11 58 54.8 -1.5
baz=280
109C Camp Elliot, M 4.89 128 P Pn 11 58 02.8 -0.3
baz=312
PFO Pinyon Flats O 4.92 117 Pn Pn 11 58 03.4 -0.2
2.2nm,0.3s,baz=311,slow=14,SNR=29
PFO Sn 11 59 01.2 +0.4
2.0nm,0.3s,baz=186,slow=9.8,SNR=4.3
PFO Pinyon Flats O 4.92 117 P Pn 11 58 02.9 -0.7
baz=302,SNR=14
PFO S Sn 11 59 00.3 -0.5
baz=302
N02D Trinity Center 5.05 351 P Pn 11 58 07.3 +2.1
baz=170
GMRC Granite Mounta 5.08 102 P Pn 11 58 04.0 -1.8
baz=287,SNR=6.7
GMRC S Sn 11 59 01.6 -3.3
baz=287
BELC Belle Mtn. Jos 5.08 111 P Pn 11 58 05.1 -0.7
baz=296,SNR=12
BAR Barrett 5.31 127 *e*Pn Pn 11 58 08.0 -0.8
BAR *e*Sn Sn 11 59 07.7 -2.6
MONP2 Monument Peak 5.34 124 P Pn 11 58 08.9 -0.6
baz=308,SNR=15
MONP2 S Sn 11 59 09.3 -2.1
baz=308
R11A Troy Canyon, C 5.43 62 P Pn 11 58 10.3 -0.3
baz=246
R11A Troy Canyon, C 5.43 62 *e*Pn Pn 11 58 12.4 +1.8
CBKC Canebrake 5.45 123 *e*Pn Pn 11 58 11.3 +0.5
LDFC Landfair 5.45 98 *e*Pn Pn 11 58 09.0 -1.9
M02C Callahan 5.48 351 P Pn 11 58 14.7 +3.6
baz=169
BC3 Big Chuckawall 5.64 112 P Pn 11 58 12.3 -1.2
baz=297,SNR=6.0
IRM Iron Mountain 5.68 107 P Pn 11 58 13.1 -0.8
baz=292,SNR=6.7
IBP Imperial Bould 5.70 124 P Pn 11 58 13.6 -0.7
baz=308
SWSC Sam W. Stewart 5.74 120 P Pn 11 58 13.8 -0.9
baz=305
M04C Macdoel 5.80 359 P Pn 11 58 18.5 +3.0
baz=178
YBH Yreka Blue Hor 5.80 353 Pn Pn 11 58 17.1 +1.6
0.4nm,0.3s,baz=87,slow=1.2,SNR=9.2
YBH Sn Sn 11 59 24.7 +2.4
baz=174,slow=19,SNR=3.5
YBH Yreka Blue Hor 5.80 353 *e*Pn Pn 11 58 19.0 +3.5
NEE2 Needles Airpor 5.92 100 P Pn 11 58 16.2 -0.9
baz=285
MOD Modoc Plateau 6.01 10 *e*Pn Pn 11 58 22.8 +4.2
Y12C Blythe 6.31 109 P Pn 11 58 22.7 +0.2
baz=294
L02D Cave Junction, 6.34 347 P Pn 11 58 26.0 +3.0
baz=165
GLA Glamis 6.38 115 P Pn 11 58 23.0 -0.6
baz=300
GLA Glamis 6.38 115 *e*Pn Pn 11 58 23.5 -0.1
PDMCI Parker Dam,Lak 6.42 103 P Pn 11 58 23.5 -0.5
baz=288
W13A Hualapai Mount 6.44 96 *e*Pn Pn 11 58 24.4 -0.1
WVOR Wild Horse Val 6.87 19 *e*Pn Pn 11 58 33.0 +2.6
CCUT Cedar City 6.88 74 *e*Pn Pn 11 58 37.0 +6.4
LCMT Little Creek M 6.89 79 *e*Pn Pn 11 58 32.2 +1.5
ELK Elko 6.96 45 *e*Pn Pn 11 58 32.3 +0.6
KNB Kanab 7.23 79 *e*Pn Pn 11 58 37.1 +1.8
Y14A Wickenburg 7.43 103 *e*Pn Pn 11 58 37.9 -0.1
U15A North Rim 7.62 84 *e*Pn Pn 11 58 43.7 +2.8
PKCU Pink Cliffs 7.69 76 *e*Pn Pn 11 58 42.8 +1.1
BGU Big Grassy Mou 8.41 51 *e*Pn Pn 11 58 56.2 +4.7
WUAZ Wupatki 8.41 90 *e*Pn Pn 11 58 52.5 +1.0
X16A Lo Mia Camp, P 8.55 98 *e*Pn Pn 11 58 54.3 +0.9
MPU Maple Canyon 8.91 60 *e*Pn Pn 11 59 02.5 +4.1
SRU San Rafael Swe 9.41 67 *e*Pn Pn 11 59 07.5 +2.3
HWUT Hardware Ranch 9.70 52 *e*Pn Pn 11 59 13.3 +4.1
X18A Snowflake 9.72 95 *e*Pn Pn 11 59 11.6 +2.0
W18A Petrified Fore 9.79 92 *e*Pn Pn 11 59 13.9 +3.5
F04A Amboy 9.96 357 *e*Pn Pn 11 59 10.5 -2.0
PV09 Paradox Valley 10.34 72 *e*Pn Pn 11 59 21.1 +3.1
PV10 Paradox Valley 10.39 73 *e*Pn Pn 11 59 21.2 +2.5
MVCO Mesa Verde 10.69 80 *e*Pn Pn 11 59 26.8 +4.0
PV01 Paradox Valley 10.72 75 *e*Pn Pn 11 59 25.4 +2.3
BW06 Boulder Array 11.58 51 *e*Pn Pn 11 59 39.2 +4.2
PDAR Pinedale Array 11.58 51 Pn Pn 11 59 37.6 +2.6
0.0nm,0.3s,baz=246,slow=15,SNR=4.9
MSO Missoula 12.30 26 P Pn 11 59 45.1 +0.5
baz=211
ANMO Albuquerque 12.48 90 Pn Pn 11 59 48.6 +1.3
baz=296,slow=12,SNR=3.9
YBMT Yellow Bay 13.17 23 *e*Pn Pn 11 59 51.9 -4.8
YBMT *e*Sn Sn 12 02 14.2 -9.3
EGMT Eagleton 14.94 33 P P 12 00 25.6 -0.7
baz=221
EGMT Eagleton 14.94 33 *e*Pn P 12 00 26.4 0.0
KSCO Kaye Shedlock' 15.44 73 P P 12 00 31.3 -0.8
baz=265
J25A Sunshine Ranch 15.63 56 P P 12 00 34.9 +0.8
baz=248
MSTX Muleshoe 15.65 92 P P 12 00 34.4 0.0
baz=283
RSSD Black Hills 15.77 54 P P 12 00 36.2 +0.4
baz=245
LAO LASA Array 15.77 43 P P 12 00 35.5 -0.1
baz=233
LAO LASA Array 15.77 43 *e*Pn P 12 00 37.5 +1.9
28nm,1.1s
I25A Rochford 15.92 54 P P 12 00 37.3 -0.1
baz=246
J26A Sides Ranch, S 16.09 57 P P 12 00 40.4 +1.2
baz=249
OGNE Ogallala 16.18 66 P P 12 00 40.5 +0.3
baz=259
LTX Lajitas 16.56 108 *e*Pn P 12 00 44.8 +0.3
TXAR Lajitas Array 16.56 108 Pn P 12 00 44.8 +0.3
0.0nm,0.3s,baz=295,slow=12,SNR=6.6
G25A Newell 16.63 51 P P 12 00 45.5 +0.3
baz=243
H26A Fairpoint 16.79 53 P P 12 00 47.9 +0.9
baz=246
F25A Bowman 16.96 49 P P 12 00 49.5 +0.7
baz=241
G26A Maurine 17.20 51 P P 12 00 50.9 -0.5
baz=244
H27A Howes 17.26 54 P P 12 00 51.9 -0.1
baz=247
E25A Miller Ranch, 17.28 47 P P 12 00 52.8 +0.5
baz=239
D25A Fairfield 17.67 45 P P 12 00 55.4 -1.2
baz=237
F27A Lemmon 17.82 50 P P 12 00 58.0 -0.3
baz=243
E26A Carlson Angus 17.83 48 P P 12 00 58.5 +0.2
baz=241
C25A Freed Ranch, W 18.01 44 P P 12 01 01.3 +1.0
baz=236
J29A Okreek 18.02 59 P P 12 01 00.6 +0.1
baz=253
D26A Manning 18.12 47 P P 12 01 02.7 +1.1
baz=239
G28A Parade 18.19 54 P P 12 01 03.1 +0.7
baz=247
I29A Vivian Onida 18.23 57 P P 12 01 04.1 +1.4
baz=251
W32A Sentinel 18.30 86 P P 12 01 03.8 +0.2
baz=280
S32A Newby Ranch, P 18.30 78 P P 12 01 03.8 +0.1
baz=272
E27A Carson 18.35 49 P P 12 01 05.0 +0.9
baz=242
B25A Knox Farm, Ray 18.38 42 P P 12 01 04.9 +0.5
baz=235
C26A Wahner Farm, P 18.73 45 P Pn 12 01 09.7 +1.0
baz=238
A26A Wade Farm, Ken 19.35 42 P Pn 12 01 16.6 +0.4
baz=235
B28A Dugan Ranch, T 20.05 45 P Pn 12 01 23.3 -1.1
baz=239
ECSD EROS Data Cent 20.71 60 P P 12 01 29.4 -0.5
baz=257
ECSD EROS Data Cent 20.71 60 *e*P Pn 12 01 31.5 -0.7
10nm,1.1s
H33A Prehn Over Nor 20.86 58 P P 12 01 31.2 -0.3
baz=254
K34A Le Mars 20.87 63 P Pn 12 01 32.1 -1.9
baz=260
A29A Manning Farm, 20.93 45 P Pn 12 01 33.5 -1.3
baz=240,SNR=13
B30A Myrvik Farm, E 21.23 47 P P 12 01 35.8 +0.3
baz=243
A30A Hoffart Farm, 21.48 46 P P 12 01 39.0 +0.9
baz=242,SNR=6.1
F33A 5 Mile Ranch, 21.50 55 P P 12 01 38.0 -0.4
baz=252
H34A Spellman Lake, 21.52 58 P P 12 01 38.1 -0.5
baz=255
E33A Westby DABS, E 21.91 53 P P 12 01 43.0 +0.2
baz=251
F34A Alexandria 22.18 56 P P 12 01 46.1 +0.4
baz=253
H35A Sunnyside Ranc 22.18 59 P P 12 01 45.4 -0.3
baz=256
J36A Seneca 1, Swea 22.25 62 P P 12 01 46.3 -0.1
baz=260
B32A Ashes, Strandq 22.28 48 P P 12 01 47.0 +0.2
baz=246
AGMN Agassiz Nation 22.66 49 P P 12 01 50.8 0.0
baz=247
AGMN Agassiz Nation 22.66 49 *e*P P 12 01 51.1 +0.4
9.7nm,1.3s
F35A Swanville 22.66 56 P P 12 01 50.5 -0.3
baz=254
K37A Belmond 22.67 64 P P 12 01 50.4 -0.5
baz=262
L38A Oak Wood Farm, 23.09 66 P P 12 01 55.8 +0.5
baz=264
P39A Salisbury 23.12 73 P P 12 01 54.7 -0.9
baz=271
DLBC Dease Lake 23.13 349 P P 12 01 59.1 +3.4
1.5nm,0.3s,baz=160,slow=15,SNR=24
DLBC Dease Lake 23.13 349 P P 12 01 59.1 +3.4
F36A Milaca 23.36 56 P P 12 01 57.8 -0.3
baz=255
B34A Aery, Baudette 23.47 49 P P 12 01 58.9 -0.3
baz=248
ULM Lac du Bonnet 23.49 45 P P 12 02 01.1 +1.9
2.8nm,0.9s,baz=266,slow=7.0,SNR=4.3
C35A Jirik Farms, M 23.61 52 P P 12 01 59.6 -0.9
baz=250
Q40A Laux Farm, Aux 23.66 74 P P 12 01 59.8 -1.2
baz=272
D37A Cotton 24.45 54 P P 12 02 06.9 -1.5
baz=254
YKA Yellowknife Ar 26.91 7 P P 12 02 31.9 +1.4
0.4nm,0.9s,baz=184,slow=9.8,SNR=6.8
YKA Yellowknife Ar 26.91 7 P P 12 02 31.9 +1.4
ILAR Eielson Array 32.54 340 P P 12 03 23.3 +3.0
0.8nm,0.8s,baz=159,slow=7.7,SNR=5.9
PEA1 Petropavlovsk- 56.87 315 *e*P P 12 06 36.9 +2.7
PETK Petropavlovsk- 56.87 315 P P 12 06 36.9 +2.6
1.5nm,0.8s,baz=87,slow=11,SNR=2.4
SEY Seymchan 56.87 327 P P 12 06 35.5 +1.4
0.5nm,0.3s,baz=96,slow=6.9,SNR=2.3
H11N3 WAKE ISLAND Hy 63.89 276 T T 13 16 56.3
baz=58,slow=75
H11N2 WAKE ISLAND Hy 63.89 276 T T 13 16 57.5
baz=58,slow=75
H11N1 WAKE ISLAND Hy 63.91 276 T T 13 16 58.5
baz=58,slow=75
H11S1 WAKE ISLAND Hy 64.69 275 T T 13 17 56.1
baz=58,slow=75,SNR=2091
H11S2 WAKE ISLAND Hy 64.69 275 T T 13 17 57.5
baz=58,slow=75,SNR=2519
H11S3 WAKE ISLAND Hy 64.70 275 T T 13 17 57.8
baz=58,slow=75,SNR=1194
LPAZ La Paz 72.57 126 P P 12 08 20.0 +2.1
0.8nm,0.5s,baz=330,slow=7.8,SNR=4.1
FIA0 FINESS Array S 79.44 15 *e*P P 12 08 57.4 +1.7
FINES FINESS Array B 79.44 15 P P 12 08 57.4 +1.7
0.7nm,0.6s,baz=328,slow=10,SNR=2.8
SONA0 Songino Array 86.14 330 *e*P P 12 09 32.7 +1.7
7.7nm,1.8s
SONM Songino Array 86.14 330 P P 12 09 32.7 +1.7
0.6nm,0.7s,baz=35,slow=3.5,SNR=2.7
HHC Hu-ho-hao-te 89.25 323 *e*P P 12 09 45.1 -0.9
HHC pP sP 12 09 50.0 +1.1
HHC sP pP 12 09 52.2 +4.0
HHC Hu-ho-hao-te 89.25 323 S S 12 20 30.4 -5.6
HHC pmax pmax
comp=Z,19nm,0.8s
HHC pmax pmax
comp=Z,560nm,10.9s
HHC LR LR
comp=N,130nm,16.5s
HHC LR LR
comp=E,140nm,15.8s
HHC LR LR
comp=Z,180nm,15.7s
WMQ Urumqi 96.19 339 *e*P P 12 10 18.0 0.0
WMQ pmax pmax
comp=Z,1.0nm,0.6s
CD2 Chengdu 100.95 321 P Pdif 12 10 38.0 -1.5
CD2 pmax pmax
comp=Z,1.0nm,0.5s

*IDC **05** 11:59:57.9±1.1,3°.11N×127°.06E,h0km,mb3.7/6, mb1 3.9/6,mb1mx3.6/46,mbtmp3.8/6,Error ellipse: s-maj=71.0km s-min=18.0km az=76.0*
*ISCJB **05** 12:00:01.7±0.9,3°.1N±0°.1×127°.0E±0°.4,h44km,mb3.7/6, Error ellipse: s-maj=65.0km s-min=15.3km az=168.0*

ISC 05 12:00:03.7±1.1,3°.1N±0°.2×127°.2E±0°.5,h44km,n9,σ0s86/6, mb3.7/6,Talaud Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
FITZ	**Fitzroy Crossi**	**21.13**	**184**	P	**P**	**12 04 44.0**	**-1.0**
	2.3nm,0.6s,baz=354,slow=9.2,SNR=3.1						
WRA	**Warramunga Arr**	**23.97**	**163**	P	**P**	**12 05 14.1**	**-0.2**
	0.9nm,0.4s,baz=342,slow=10.0,SNR=13						
ASAR	**Alice Springs**	**27.41**	**166**	P	**P**	**12 05 45.8**	**+0.3**
	0.4nm,0.5s,baz=342,slow=7.1,SNR=5.4						
KSRS	**Korea Array**	**34.19**	**1**	P	**P**	**12 06 44.3**	**-0.6**
	0.4nm,0.5s,baz=182,slow=9.7,SNR=3.2						
STKA	**Stephens Creek**	**37.40**	**160**	P	**P**	**12 07 13.1**	**+0.5**
	1.0nm,0.3s,baz=338,slow=9.9,SNR=3.1						
H11S3	**WAKE ISLAND Hy**	**41.60**	**65**	T	T	12 52 14.0	
	baz=253,slow=75,SNR=6.7						
H11S1	**WAKE ISLAND Hy**	**41.61**	**65**	T	T	12 52 13.3	
	baz=253,slow=75,SNR=5.4						
H11S2	**WAKE ISLAND Hy**	**41.61**	**66**	T	T	12 52 14.8	
	baz=253,slow=75,SNR=8.1						
MKAR	**Makanchi Array**	**58.30**	**325**	P	**P**	**12 09 54.8**	**+0.6**
	0.6nm,0.6s,baz=116,slow=7.6,SNR=6.7						

MEX 05 12:02:09.5±0.4,16°.73N×94°.49W,h58km±116km,MD3.5, Oaxaca

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PCIG		**1.59**	**130**	*e*P	Pn	12 02 33.9	-1.4
PCIG				*e*S	Sn	12 02 52.9	-2.0
HUIG	**Huatulco**	**1.82**	**239**	*i* P	Pn	12 02 37.1	-1.5
HUIG				*e*S	Sn	12 02 58.7	-1.9

DJA 05 12:04:53.4±2.7,0°.5S±6°.×12°.0E±°,h30km±33km,M4.1/7, MLv4.1/7,Minahassa Peninsula, Sulawesi

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
APSI	**Ampana**	**1.86**	**104**	P	Pn	12 05 23.5	+0.3
APSI				S	Sb	12 05 48.0	-1.6
MRSI	**Marisa**	**2.30**	**66**	P	Pn	12 05 30.6	+1.3
MRSI				S	Sn	12 05 57.9	+1.2
TTSI	**Tana Toraja**	**2.56**	**180**	P	Pn	12 05 33.2	+0.3
TTSI				S	Sn	12 06 04.1	+1.1
LUWI	**Luwuk**	**2.99**	**101**	P	Pn	12 05 37.4	-1.3
SPSI	**Sidrap Palu**	**3.47**	**181**	P	Pn	12 05 45.6	+0.2

*IDC **05** 12:11:55.3±0.8,2°.90N×126°.87E,h0km,mb4.0/9, mb1 4.1/9,mb1mx3.9/43,mbtmp4.0/9,MS4.2/1,Ms1 4.2/1, ms1mx2.9/57,Error ellipse: s-maj=54.7km s-min=15.3km az=76.0*
*NEIC **05** 12:11:56.9±0.3,2°.90N×126°.86E,h10km,mb4.8/3,Error ellipse: s-maj=27.9km s-min=6.3km az=74.0*
*ISCJB **05** 12:11:59.4±0.5,2°.91N±0°.08×126°.9E±0°.3,h44km, mb4.2/12,MS4.2/1,Error ellipse: s-maj=38.8km s-min=7.0km az=166.7*

ISC 05 12:12:01.2±0.7,2°.9N±0°.1×126°.9E±0°.3,h44km,n18, σ0s71/16,mb4.2/12,Northern Molucca Sea

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
TNTI	**Ternate**	**2.13**	**168**	*e*Pn	**Pn**	**12 12 32.7**	**-1.6**
TNTI				*e*Sn	**Sn**	**12 13 00.4**	**+0.9**
WRAB	**Tennant Creek**	**23.80**	**162**	*e*P	**P**	**12 17 10.9**	**+0.7**
	7.7nm,0.9s						
WRA	**Warramunga Arr**	**23.81**	**162**	P	**P**	**12 17 10.4**	**+0.1**
	3.4nm,0.5s,baz=338,slow=10,SNR=35						
ASAR	**Alice Springs**	**27.24**	**166**	P	**P**	**12 17 41.9**	**+0.6**
	0.4nm,0.3s,baz=350,slow=7.7,SNR=7.8						
KSAR	**Wonju Array Be**	**34.42**	**1**	P	**P**	**12 18 44.4**	**0.0**
KSRS	**Korea Array**	**34.43**	**1**	P	**P**	**12 18 44.4**	**-0.1**
	2.9nm,0.9s,baz=178,slow=9.4,SNR=8.6						
STKA	**Stephens Creek**	**37.26**	**159**	P	**P**	**12 19 09.2**	**+0.2**
	4.6nm,0.7s,baz=334,slow=9.2,SNR=11						
USRK	**Ussurisk Ar.**	**41.40**	**6**	P	**P**	**12 19 42.9**	**-0.4**
	2.0nm,0.7s,baz=207,slow=8.1,SNR=5.0						
H11S3	**WAKE ISLAND Hy**	**41.91**	**65**	T	T	13 04 10.5	
	baz=256,slow=74						
H11S1	**WAKE ISLAND Hy**	**41.92**	**65**	T	T	13 04 11.9	
	baz=256						
H11S2	**WAKE ISLAND Hy**	**41.92**	**65**	T	T	13 04 11.6	
	baz=256,slow=74						
SONM	**Songino Array**	**48.17**	**342**	P	**P**	**12 20 37.1**	**-0.2**
	0.5nm,0.7s,baz=161,slow=9.2,SNR=3.4						
SONM				LR	LR	12 41 37.8	
	comp=Z,219nm,18.1s,baz=242,slow=37						
PETK	**Petropavlovsk-**	**56.15**	**22**	P	**P**	**12 21 36.6**	**+0.2**
	2.0nm,0.7s,baz=197,slow=4.5,SNR=2.7						
MKAR	**Makanchi Array**	**58.37**	**325**	P	**P**	**12 21 51.9**	**-0.2**
	0.7nm,0.4s,baz=118,slow=7.8,SNR=19						
ZALV	**Zalesovo Beam**	**61.44**	**333**	P	**P**	**12 22 12.8**	**-0.3**
	0.5nm,0.4s,baz=108,slow=3.2,SNR=3.5						
KURK	**Kurchatov**	**62.57**	**328**	*e*P	**P**	**12 22 20.5**	**-0.1**
	5.2nm,0.6s						
ARU	**Arti**	**75.76**	**328**	*e*P	**P**	**12 23 42.4**	**+0.1**
	3.1nm,0.1s						
TORD	**Torodi Ar. Bea**	**123.37**	**288**	PKP	**PKPdf**	**12 30 56.0**	**+1.4**
	0.3nm,0.6s,baz=90,slow=1.1,SNR=2.5						

GUC 05 12:24:12.7±0.6,37°.15S×73°.96W,h22km±9km,ML3.6, 2C-1D,Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CCSP	**San Pedro de C**	**0.75**	**66**	⇓*i* P	Pb	12 24 26.5	-0.5
CCSP				*i* S	Sb	12 24 37.1	+0.2
CCSP				AML	AML	12 24 40.8	
	comp=N,5μm,0.6s						
CCHI	**Chillan**	**1.61**	**71**	*e*P	Pn	12 24 37.4	-2.3
CCHI				*i* S	Sb	12 25 01.3	-0.3
CCHI				AML	AML	12 25 08.5	
	comp=E,1μm,1.1s						
PEL	**Peldehue**	**4.82**	**35**	⇑*i* P	Pn	12 25 26.0	+2.0
ROCH	**El Roble**	**4.82**	**31**	⇑*i* P	Pn	12 25 25.9	+1.7

*UPP **05** 12:29:54.7±3.0,59°.11N×4°.98E,h0km,ML2.3,Suspected explosion*
*ISCJB **05** 12:29:59.9±0.4,59°.12N±0°.02×5°.92E±0°.05,h0km,Error ellipse: s-maj=3.7km s-min=2.9km az=147.7*
*CSEM **05** 12:30:00.5±0.1,59°.10N×5°.85E,h1km,ML2.2,Error ellipse: s-maj=2.7km s-min=1.9km az=56.0,Suspected Mining explosion.*
*IDC **05** 12:30:02.4±2.6,59°.04N×5°.93E,h0km,mb1 3.4/4, mb1mx3.0/55,mbtmp3.3/4,ML3.1/3,Error ellipse: s-maj=29.1km s-min=19.6km az=162.0*
*BER **05** 12:30:02.0±2.9,59°.09N×5°.84E,h0km,MD2.4,ML2.2, ML2.2(NAO),Suspected explosion*
*NAO **05** 12:30:03.5±2.9,59°.30N×5°.96E,ML2.2*

ISC 05 12:30:00.1±0.7,59°.12N±0°.02×5°.91E±0°.03,h0km,n59, σ0s83/91,2C,Southern Norway

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
STAV	**Stavanger**	**0.22**	**209**	*e*P	**Pg**	**12 30 04.6**	**+0.4**
STAV				*e*S	**Sg**	**12 30 07.4**	**+0.4**
STAV				IAML		12 30 09.7	
	comp=Z,1μm,0.5s						
STAV	**Stavanger**	**0.22**	**209**	*e*P	**Pg**	**12 30 04.6**	**+0.4**
	SNR=90						
STAV				*e*S	**Sg**	**12 30 07.4**	**+0.4**
	SNR=90						
KMY	**Karmoy**	**0.35**	**285**	*e*P	**Pg**	**12 30 07.0**	**+0.2**
KMY				*e*S	**Sg**	**12 30 11.4**	**0.0**
KMY				IAML		12 30 12.7	
	comp=Z,145nm,0.2s						
KMY	**Karmoy**	**0.35**	**285**	*e*P	**Pg**	**12 30 07.0**	**+0.2**
	SNR=90						
KMY				*e*S	**Sg**	**12 30 11.4**	**0.0**
	SNR=90						
BLS5	**Blasjo**	**0.41**	**43**	⇑*i* P	**Pb**	**12 30 10.3**	**0.0**
BLS5				*e*S	**Sb**	**12 30 16.9**	**-0.2**
BLS5				IAML		12 30 19.1	
	comp=Z,112nm,0.4s						
BLS5	**Blasjo**	**0.41**	**43**	⇑*i* P	**Pb**	**12 30 10.3**	**0.0**
	SNR=91						
BLS5				*e*S	**Sb**	**12 30 16.9**	**-0.2**
	SNR=91						
ODD1	**Odda**	**0.87**	**25**	*e*P	**Pb**	**12 30 18.6**	**+0.5**
ODD1				*e*S	**Sb**	**12 30 31.0**	**+0.6**
ODD1				IAML		12 30 36.3	
	comp=Z,94nm,0.2s						
ODD1	**Odda**	**0.87**	**25**	*e*P	**Pb**	**12 30 18.6**	**+0.5**
	SNR=90						
ODD1				*e*S	**Sb**	**12 30 31.0**	**+0.6**
	SNR=90						
SNART	**Snartemo**	**1.04**	**139**	*e*P	**Pg**	**12 30 20.5**	**+0.5**
SNART				*e*S	**Sb**	**12 30 35.2**	**+0.1**
SNART				IAML		12 30 38.7	
	comp=Z,158nm,0.5s						
SNART	**Snartemo**	**1.04**	**139**	*e*P	**Pg**	**12 30 20.5**	**+0.5**
	SNR=90						
SNART				*i* S	**Sb**	**12 30 34.9**	**-0.2**
	SNR=90						
BER	**Bergen**	**1.30**	**347**	*e*P	**Pb**	**12 30 25.6**	**+0.3**
BER				*e*S	**Sb**	**12 30 43.2**	**+0.7**
BER				IAML		12 30 45.5	
	comp=Z,67nm,0.3s						
BER	**Bergen**	**1.30**	**347**	*e*P	**Pb**	**12 30 25.6**	**+0.3**
	SNR=70						
BER				*e*S	**Sb**	**12 30 43.2**	**+0.7**
	SNR=70						
ASK	**Askoy**	**1.41**	**346**	*e*P	**Pn**	**12 30 26.9**	**-0.1**
ASK				*e*S	**Sg**	**12 30 45.9**	**+0.5**
ASK				IAML		12 30 48.5	
	comp=Z,56nm,0.3s						
HOMB	**Homborsund**	**1.60**	**121**	*e*P	**Pn**	**12 30 30.2**	**+0.6**
HOMB				*e*S	**Sn**	**12 30 51.2**	**+0.2**
HOMB				IAML		12 30 54.3	
	comp=Z,29nm,0.2s						
HOMB	**Homborsund**	**1.60**	**121**	*e*P	**Pn**	**12 30 30.2**	**+0.6**
	SNR=50						
HOMB				*e*S	**Sn**	**12 30 51.2**	**+0.2**
	SNR=50						
KONO	**Kongsberg**	**1.96**	**73**	*e*P	**Pn**	**12 30 35.3**	**+0.7**
KONO				*e*Sg	**Sg**	**12 31 03.5**	**+0.5**
KONO				IAML		12 31 04.9	
	comp=Z,24nm,0.3s						
KONO	**Kongsberg**	**1.96**	**73**	*e*P	**Pn**	**12 30 35.3**	**+0.7**
	SNR=50						
KONO				*e*Sg	**Sg**	**12 31 03.5**	**+0.5**
	SNR=90						
SUE	**Sulen**	**2.02**	**344**	*e*P	**Pn**	**12 30 35.3**	**-0.1**
SUE				*e*		12 30 37.8	
SUE				*e*S	**Sn**	**12 31 01.8**	**+0.4**
SUE				IAML		12 31 06.9	
	comp=Z,32nm,0.2s						
SUE	**Sulen**	**2.02**	**344**	*e*P	**Pn**	**12 30 35.3**	**-0.1**
	SNR=50						
SUE				*e*S	**Sn**	**12 31 01.8**	**+0.4**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
	SNR=50						
HYA	Hoyanger	2.05	4	eP	Pn	12 30 36.3	+0.5
HYA				eS	Sn	12 31 02.9	+0.8
HYA				IAML		12 31 07.6	
	comp=Z,37nm,0.5s						
HYA	Hoyanger	2.05	4	eP	Pn	12 30 36.3	+0.5
	SNR=50						
HYA				eS	Sn	12 31 02.9	+0.8
	SNR=50						
FOO	Floro	2.52	351	eP	Pn	12 30 42.2	0.0
FOO				IAML		12 31 21.1	
	comp=Z,27nm,0.4s						
FOO	Floro	2.52	351	eP	Pn	12 30 42.2	0.0
	SNR=50						
STRU	Stroemstad	2.73	90	P	Pn	12 30 45.7	+0.7
STRU				S	Sb	12 31 26.0	+2.5
AKN	Aaknes	3.11	9	Pn	Pn	12 30 51.4	+1.0
AKN				Sn	Sn	12 31 29.0	+0.8
AKN				Lg	Lg	12 31 38.6	
AKN	Aaknes	3.11	9	Pn	Pn	12 30 51.4	+1.0
AKN				Sn	Sn	12 31 29.0	+0.8
AKN				Lg	Lg	12 31 38.6	
AKN	Aaknes	3.11	9	Pn	Pn	12 30 51.4	+1.0
	SNR=50						
AKN				Sn	Sn	12 31 29.0	+0.8
	SNR=50						
AKN				Lg	Lg	12 31 38.6	
TJOU	Tjoern	3.19	108	P	Pn	12 30 52.5	+1.1
TJOU	Tjoern	3.19	108	P	Pn	12 30 52.5	+1.1
NC602	NORSAR Array S	3.26	58	eP	Pn	12 30 53.6	+1.1
NC602				IAML		12 31 48.5	
	comp=Z,16nm,0.5s						
NC602	NORSAR Array S	3.26	58	eP	Pn	12 30 53.6	+1.1
	SNR=50						
VANU	Vaenersborg	3.27	99	P	Pn	12 30 52.7	+0.2
VANU	Vaenersborg	3.27	99	P	Pn	12 30 52.7	+0.2
NB2	NORSAR Subarra	3.28	52	Pn	Pn	12 30 53.7	+0.9
	baz=234,slow=14						
NB2				Pg	Pb	12 30 59.0	-0.2
NB2				Lg	Lg	12 31 42.8	
	baz=239,slow=37						
NB2	NORSAR Subarra	3.28	52	Pn	Pn	12 30 53.7	+0.9
	baz=234,slow=14						
NB2				Pg	Pb	12 30 59.0	-0.2
NB2				Lg	Lg	12 31 42.8	
	baz=239,slow=37						
NB2	NORSAR Subarra	3.28	52	Pn	Pn	12 30 53.7	+0.9
	baz=234,slow=13,SNR=50						
NB2				Lg	Lg	12 31 42.8	
	SNR=3.9						
NOA	NORSAR Array B	3.28	52	Pn	Pn	12 30 54.2	+1.4
	comp=Z,2.5nm,0.3s,baz=233,slow=16,SNR=32						
NOA				Sn	Sb	12 31 38.7	-1.0
	comp=Z,3.4nm,0.3s,baz=62,slow=18,SNR=7.6						
NOA				Lg	Lg	12 31 47.4	
	comp=Z,5.6nm,0.3s,baz=222,slow=25,SNR=9.7						
FINU	Finntorp	3.39	82	P	Pn	12 30 55.0	+0.8
MOL	Molde	3.55	12	eP	Pn	12 30 57.2	+0.8
MOL	Molde	3.55	12	eP	Pn	12 30 57.2	+0.8
	SNR=50						
NASU	Vaermlandsnaes	3.77	90	P	Pn	12 30 59.8	+0.4
NASU	Vaermlandsnaes	3.77	90	P	Pn	12 30 59.8	+0.4
BORU	Boraas	3.91	110	P	Pn	12 31 01.8	+0.4
BORU	Boraas	3.91	110	P	Pn	12 31 01.8	+0.4
UDD	Uddeholm	4.03	73	P	Pn	12 31 04.0	+1.0
HFS	Hagfors	4.08	72	Pn	Pn	12 31 03.9	+0.2
	baz=261,slow=14						
HFS				Sn	Sn	12 31 50.4	-1.7
	baz=249,slow=28						
HFS				Lg	Lg	12 32 09.5	
	baz=261,slow=37						
HFS	Hagfors	4.08	72	Pn	Pn	12 31 03.9	+0.2
	baz=261,slow=14						
HFS				Sn	Sn	12 31 50.4	-1.7
	baz=249,slow=28						
HFS				Lg	Lg	12 32 09.5	
	baz=261,slow=37						
HFS	Hagfors	4.08	72	Pn	Pn	12 31 04.2	+0.5
	comp=Z,0.2nm,0.3s,baz=253,slow=12,SNR=8.8						
HFS				Sn	Sn	12 31 53.2	+1.1
	comp=Z,0.7nm,0.3s,baz=262,slow=18,SNR=3.7						
HFS				Lg	Lg	12 32 11.0	
	comp=Z,2.1nm,0.3s,baz=255,slow=32,SNR=8.7						
HFS	Hagfors	4.08	72	Pn	Pn	12 31 03.9	+0.2
	baz=261,slow=13,SNR=50						
HFS				Sn	Sn	12 31 50.4	-1.7
	baz=249,slow=27						
HFS				Lg	Lg	12 32 09.5	
	SNR=6.3						
FKPU	Falk	4.20	100	P	Pn	12 31 05.9	+0.6
FKPU	Falk	4.20	100	P	Pn	12 31 05.9	+0.6
MOR8	Moi Rana	8.08	25	eP	Pg	12 32 50.3	+16
MOR8				eS	Sn	12 33 16.1	-14
MOR8				IAML		12 33 18.5	
	comp=Z,4.9nm,0.3s						
FIA0	FINESS Array S	10.27	68	Pn	Pn	12 32 28.7	+0.2
	baz=260,slow=11						
FIA0	FINESS Array S	10.27	68	Pn	Pn	12 32 28.7	+0.2
	baz=260,slow=11						
FIA0	FINESS Array S	10.27	68	Pn	Pn	12 32 28.7	+0.2
	baz=260,slow=11,SNR=50						
FINES	FINESS Array B	10.27	68	Pn	Pn	12 32 28.8	+0.3
	comp=Z,0.2nm,0.3s,baz=260,slow=12,SNR=6.2						
FINES				Sn	Sn	12 34 22.6	-1.6
	comp=Z,0.1nm,0.3s,baz=261,slow=22,SNR=2.8						
FINES				Lg	Lg	12 35 21.9	
	comp=Z,0.2nm,0.3s,baz=268,slow=24,SNR=3.2						
ARA0	ARCESS Array S	13.37	31	Pn	Pn	12 33 08.3	-2.5
	baz=226,slow=14						
ARA0	ARCESS Array S	13.37	31	P	Pn	12 33 08.3	-2.5
	baz=226,slow=14						
ARCES	ARCESS Array B	13.37	31	Pn	Pn	12 33 10.7	-0.2
	comp=Z,0.1nm,0.3s,baz=226,slow=12,SNR=8.1						

WEL 05 12:31:32.6±0.2, 44°.74S×167°.34E, h5km, ML3.9/18, 6C-3D, Error ellipse: s-maj=1.8km s-min=1.1km az=90.0, South Island

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
MSZ	Milford Sound	0.43	81	⇓PG	Pg	12 31 41.2	+0.4
MSZ				SG	Sg	12 31 46.1	-0.3
MSZ				AML	AML	12 31 46.3	
MSZ				AML	AML	12 31 46.3	
MSZ				AML	AML	12 31 46.3	
DCZ	Deep Cove	0.73	190	⇑P*	Pg	12 31 47.0	+0.2
DCZ				S*	Sb	12 31 57.5	-0.8
DCZ				AML	AML	12 31 57.5	
DCZ				AML	AML	12 31 57.6	
DCZ				AML	AML	12 31 58.2	
MLZ	Mavora Lakes	0.84	139	⇓P*	Pg	12 31 48.9	+0.2
MLZ				S*	Sg	12 31 59.6	+0.1
MLZ				AML	AML	12 32 01.1	
WKZ	Wanaka	1.20	95	P*	Pg	12 31 55.1	-0.6
WKZ				AML	AML	12 32 11.0	
WKZ				AML	AML	12 32 11.0	
WKZ				S*	Sb	12 32 11.5	-0.2
WHZ	Wether Hill Ro	1.23	160	P*	Pg	12 31 55.8	-0.4
WHZ				S*	Sg	12 32 11.5	-0.7
WHZ				AML	AML	12 32 12.0	
JCZ	Jackson Bay	1.24	58	⇑P*	Pg	12 31 55.5	-0.8
JCZ				S*	Sg	12 32 12.4	+0.1
JCZ				AML	AML	12 32 17.7	
EAZ	Earnscleugh	1.48	110	⇓PN	Pn	12 31 59.7	-0.3
EAZ				SN	Sb	12 32 20.0	+0.2
EAZ				AML	AML	12 32 20.5	
PYZ	Puysegur Point	1.50	198	PN	Pn	12 31 58.2	-2.0
TUZ	Tuapeka	2.02	128	PN	Pn	12 32 07.3	-0.1
TUZ				AML	AML	12 32 36.8	
TUZ				AML	AML	12 32 43.6	
LBZ	Lake Benmore	2.07	81	⇑PN	Pn	12 32 08.4	+0.4
LBZ				AML	AML	12 32 12.5	
LBZ				AML	AML	12 32 40.3	
APZ	The Paps	2.14	168	PN	Pn	12 32 10.2	+1.2
APZ				AML	AML	12 32 43.7	
APZ				AML	AML	12 32 45.4	
FOZ	Fox Glacier	2.16	57	PN	Pn	12 32 07.1	-2.1
FOZ				AML	AML	12 32 42.8	
FOZ				AML	AML	12 32 44.6	
SYZ	Scrubby Hill	2.20	145	PN	Pn	12 32 10.7	+1.0
SYZ				AML	AML	12 32 37.9	
SYZ				AML	AML	12 32 44.6	
ODZ	Otahua Downs	2.37	98	⇑PN	Pn	12 32 12.6	+0.4
ODZ				AML	AML	12 32 39.3	
ODZ				AML	AML	12 32 47.4	
HHSZ	Highcliff Hill	2.57	118	PN	Pn	12 32 15.9	+1.0
RPZ	Rata Peaks	2.86	70	⇑PN	Pn	12 32 18.4	-0.5
RPZ				SN	Sn	12 32 53.7	-0.1
RPZ				AML	AML	12 33 05.2	
WVZ	Waitaha Valley	2.97	57	PN	Pn	12 32 17.8	-2.5
WVZ				AML	AML	12 33 08.6	
WVZ				AML	AML	12 33 08.8	
INZ	Inchbonnie	3.60	57	PN	Pn	12 32 26.6	-2.4
DSZ	Denniston Nort	4.43	49	⇑PN	Pn	12 32 38.5	-2.1
DSZ				AML	AML	12 33 28.1	
DSZ				AML	AML	12 33 28.1	
DSZ				AML	AML	12 34 09.4	
DSZ				AML	AML	12 34 09.4	
THZ	Tophouse	5.04	56	PN	Pn	12 32 48.2	-0.7
THZ				AML	AML	12 33 16.0	
THZ				AML	AML	12 34 09.5	
QRZ	Quartz Range	5.47	46	PN	Pn	12 32 52.8	-2.0
QRZ				AML	AML	12 33 50.3	
QRZ				AML	AML	12 34 49.4	
NNZ	Nelson	5.66	54	PN	Pn	12 32 56.0	-1.3

IDC 05 12:40:31.4±2.8, 1°.00S×134°.84E, h0km, mb3.2/2, mb1 3.6/4, mb1mx3.4/46, mbtmp3.4/4, ML3.6/2, Error ellipse: s-maj=110.9km s-min=25.2km az=81.0, Irian Jaya region

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
WRA	Warramunga Arr	18.83	181	P	P	12 44 52.8	-0.2
	0.1nm,0.3s,baz=0.9,slow=12,SNR=5.8						
FITZ	Fitzroy Crossi	19.25	207	P	P	12 44 57.2	-0.4
	0.3nm,0.3s,baz=39,slow=13,SNR=2.7						
ASAR	Alice Springs	22.55	182	P	P	12 45 33.7	+0.4
	0.6nm,0.6s,baz=7.8,slow=12,SNR=13						
MKAR	Makanchi Array	66.10	323	P	P	12 51 20.5	0.0
	0.2nm,0.5s,baz=102,slow=5.0,SNR=3.3						

JMA 05 12:44:07.3±0.2, 35°.71N×140°.96E, h9km±1km, M3.5, 1C, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
CHOJ	Chosi	0.08	265	⇑P	Pg	12 44 09.6	+0.1
CHOJ				S	Sg	12 44 11.4	+0.3
JCN	Nagara	0.68	245	P	Pb	12 44 21.4	0.0
JCN				S	Sn	12 44 32.9	-1.0
JYT	Yasato	0.81	310	P	Pg	12 44 22.8	-0.1
JYT				S	Sg	12 44 33.4	0.0
JHO	Hitachi	0.95	341	P	Pg	12 44 25.3	-0.3
BSO3	Boso 3	0.98	202	P	Pg	12 44 25.8	-0.3
BSO1	Boso 1	1.05	179	P	Pb	12 44 25.9	-1.5
MAT	Matsushiro	2.38	291	P	Pn	12 44 45.7	-0.8
MAT				S	Sb	12 45 19.9	+0.1

IDC 05 12:44:50.1±1.6, 2°.87N×125°.76E, h0km, mb3.5/5, mb1 3.7/5, mb1mx3.4/56, mbtmp3.5/5, Error ellipse: s-maj=183.6km s-min=19.4km az=65.0, Talaud Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
WRA	Warramunga Arr	24.18	160	P	P	12 50 07.3	-1.1
	1.2nm,0.7s,baz=339,slow=11,SNR=10						
ASAR	Alice Springs	27.54	164	P	P	12 50 40.1	+1.2
	0.2nm,0.4s,baz=344,slow=8.3,SNR=5.2						
STKA	Stephens Creek	37.69	158	P	P	12 52 07.8	+0.4
	2.5nm,0.8s,baz=338,slow=9.9,SNR=4.3						
MKAR	Makanchi Array	57.71	326	P	P	12 54 42.6	-0.1
	0.2nm,0.6s,baz=123,slow=8.0,SNR=3.3						
KURBB	Kurchatov Arra	61.94	328	P	P	12 55 11.4	-0.3
	0.2nm,0.5s,baz=133,slow=6.2,SNR=3.0						

ISCJB 05 12:44:57.3±0.3, 45°.30N±0°.04×141°.63E±0°.07, h294km±3km, mb3.4/14, Error ellipse: s-maj=8.4km s-min=6.4km az=162.7
IDC 05 12:44:57.5±1.7, 45°.21N×141°.68E, h285km±18km, mb3.2/14, mb1 3.4/20, mb1mx3.2/64, mbtmp3.9/20, Error ellipse: s-maj=23.1km s-min=10.9km az=166.0
JMA 05 12:44:58.1±0.2, 45°.32N×141°.71E, h291km±2km, M3.3
SKHL 05 12:44:58.7±0.4, 45°.42N×141°.56E, h306km±30km, mb4.0/4, msh4.6/1
ISC 05 12:44:58.0±0.6, 45°.24N±0°.06×141°.70E±0°.07, h290km±6km, n48, σ1s.22/55, mb3.4/14, 1C, Hokkaido region

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
JWK2	Keihoku	0.16	62	P	Pn	12 45 35.0	+0.2
JWK2				eS	S	12 46 04.0	-0.1
JRR	Rishiri	0.29	249	P	Pn	12 45 35.8	+0.8
JYG	Yagishiri	0.84	193	P	Pn	12 45 37.2	+0.6
JSS	Shosan	0.85	172	eS	S	12 46 08.6	+1.2
ASAJ	Asahikawa	1.29	150	P	Pn	12 45 39.5	+0.5
ASAJ				eS	S	12 46 11.6	+0.1
JHR	Hokuryu	1.50	179	P	Pn	12 45 41.3	+1.1
JKK2	Kamakawa 2	1.56	151	P	Pn	12 45 41.4	+0.7
JMP	Maruseppu	1.71	136	P	Pn	12 45 42.4	+0.7
JAB	Ashibetsu	1.78	168	P	Pn	12 45 43.2	+1.0
YSS	Yuzh-Sakhalins	1.86	23	⇑iP	Pn	12 45 42.8	+0.1
YSS				AMB	AMB	12 45 43.4	
	30nm,0.4s						
YSS				i S	S	12 46 17.1	-1.2
YSS				A	A	12 46 18.5	
	120nm,0.9s						
JTKR	Abashiri--Toko	2.03	128	P	Pn	12 45 45.1	+1.0
JTKR				eS	S	12 46 21.9	+1.1
JEW	Eniwo	2.41	184	P	Pn	12 45 48.3	+0.8
JEW				eS	S	12 46 28.0	+1.2
JAR	Ashorobuto	2.45	142	P	Pn	12 45 48.8	+1.0
JAR				eS	S	12 46 29.2	+1.7
JRA	Rausu	2.77	117	P	Pn	12 45 52.3	+1.5
JCH	Churui	2.89	155	P	Pn	12 45 50.8	-1.2
JCH				eS	S	12 46 31.7	-3.4
JNBK	Urakawa-nobuka	3.06	165	eS	S	12 46 38.2	+0.1
JAK	Akkeshi	3.12	135	eS	S	12 46 36.7	-2.4
JKB	Kayabe	3.39	188	P	Pn	12 45 56.4	-0.7
NEM2	Nemuro 2	3.46	121	eS	S	12 46 42.7	-2.8
UGL	Uglegorsk	3.85	4	eP	Pn	12 46 02.5	+0.7
UGL				AMB	AMB	12 46 03.0	
	80nm,0.6s						
TYV	Tymovskoe	5.66	6	eP	Pn	12 46 21.5	-1.3
GRNR	Gornyy	6.56	329	eP	Pn	12 46 30.7	-3.0
GRNR				AMB	AMB	12 46 31.0	
	10.0nm,0.6s						
USRK	Ussuriysk Ar.	7.00	265	P	Pn	12 46 39.0	-0.1
	1.3nm,0.3s,baz=74,slow=12,SNR=29						
KLR	Kul'dur	7.86	304	P	Pn	12 46 49.2	-0.4
	0.3nm,0.3s,baz=112,slow=14,SNR=11						
OKH	Okha	8.36	5	eP	Pn	12 46 54.5	-1.1
MJAR	Matsushiro Arr	9.08	198	P	Pn	12 47 03.6	-1.3
	0.9nm,0.3s,baz=8.2,slow=12,SNR=4.2						
EKMR	Ekimchan	9.70	327	eP	Pn	12 47 11.5	-0.8
EKMR				AMB	AMB	12 47 12.3	
	3.0nm,0.7s						
YASR	Yasnyy	12.03	317	eP	Pn	12 47 38.5	-2.4
YASR				AMB	AMB	12 47 41.5	
	2.0nm,0.5s						
BMKR	Bomnak	12.56	324	eP	P	12 47 47.5	-0.9
BMKR				AMB	AMB	12 47 49.5	
	1.0nm,0.6s						
ZEA	Zeya	12.65	317	eP	Pn	12 47 48.2	-0.2
ZEA				AMB	AMB	12 47 50.7	
	20nm,0.7s						
PETK	Petropavlovsk-	13.08	47	P	P	12 47 55.0	+0.9
	0.2nm,0.3s,baz=219,slow=9.2,SNR=5.0						
KROS	Kirovskiy	13.20	319	eP	P	12 47 55.0	-0.5
KROS				AMB	AMB	12 47 57.6	
	3.0nm,0.5s						
MA2	Magadan	15.36	18	P	Pn	12 48 19.9	-0.8
	1.3nm,0.3s,baz=224,slow=12,SNR=31						
SEY	Seymchan	18.75	15	P	P	12 48 55.7	-0.2
	1.4nm,0.3s,baz=202,slow=7.4,SNR=58						
SONM	Songino Array	24.29	289	P	P	12 49 49.6	+0.1
	1.1nm,0.4s,baz=83,slow=9.2,SNR=16						
NRIK	Noril'sk	36.05	331	P	P	12 51 33.5	+1.7
	1.3nm,0.3s,baz=113,slow=7.7,SNR=4.7						
ZALV	Zalesovo Beam	36.96	305	P	P	12 51 38.9	-0.8
	0.6nm,0.4s,baz=84,slow=7.8,SNR=3.1						
MKAR	Makanchi Array	40.42	294	P	P	12 52 08.2	-0.2
	1.3nm,0.6s,baz=80,slow=10,SNR=14						
KURBB	Kurchatov Arra	41.52	301	P	P	12 52 16.3	-0.8
	1.4nm,0.4s,baz=72,slow=8.7,SNR=9.1						
ILAR	Eielson Array	42.62	37	P	P	12 52 25.3	-0.5
	0.9nm,0.7s,baz=278,slow=9.0,SNR=14						
BVAR	Borovoye Array	45.51	307	P	P	12 52 48.4	-0.3
	0.6nm,0.4s,baz=81,slow=9.2,SNR=4.5						
INK	Inuvik	47.09	30	P	P	12 53 00.3	-0.3
	1.0nm,0.3s,baz=273,slow=5.4,SNR=22						
AKTO	Aktyubinsk	53.57	308	P	P	12 53 49.0	-0.3
	0.5nm,0.5s,baz=41,slow=14						
RES	Resolute Bay	54.63	16	P	P	12 53 55.6	-0.8
	0.7nm,0.5s,baz=291,slow=7.3,SNR=5.5						
YKA	Yellowknife Ar	56.69	33	P	P	12 54 11.7	+0.5
	0.4nm,0.5s,baz=305,slow=6.6,SNR=17						
KBZ	Khabaz	65.85	308	P	P	12 55 13.6	+1.0
	1.4nm,0.8s,baz=67,slow=13,SNR=2.8						
PDAR	Pinedale Array	71.84	47	P	P	12 55 50.1	+0.5
	0.3nm,0.5s,baz=292,slow=1.8,SNR=4.7						
TXAR	Lajitas Array	84.96	53	P	P	12 57 02.4	+1.4
	0.2nm,0.4s,baz=298,slow=1.9,SNR=2.9						

IDC 05 12:57:19.9±0.8, 2°.74N×126°.54E, h0km, mb3.8/9, mb1 3.9/9, mb1mx3.7/61, mbtmp3.8/9, MS3.1/1, Ms1 3.1/1, ms1mx2.7/38, Error ellipse: s-maj=76.2km s-min=14.8km az=72.0
NEIC 05 12:57:21.3±0.5, 2°.68N×126°.41E, h10km, mb4.2/2, Error ellipse: s-maj=20.3km s-min=8.6km az=76.0
ISCJB 05 12:57:25.0±0.6, 2°.57N±0°.08×126°.2E±0°.2, h55km, mb3.8/10, MS3.0/1, Error ellipse: s-maj=22.5km s-min=9.6km az=162.1
ISC 05 12:57:26.5±0.8, 2°.59N±0°.09×126°.4E±0°.2, h55km, n17, σ1s.60/15, mb3.8/10, Northern Molucca Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
TNTI	Ternate	2.07	151	ePn	Pn	12 57 57.2	-1.7
KAPI	Kappang	10.03	221	ePn	Pn	12 59 46.9	-1.0
FITZ	Fitzroy Crossi	20.57	182	P	P	13 02 00.3	-0.6
	1.9nm,0.6s,baz=356,slow=18,SNR=2.3						
WRAB	Tennant Creek	23.72	161	eP	P	13 02 34.5	+0.8
	2.5nm,0.7s						
WRA	Warramunga Arr	23.73	161	P	P	13 02 34.5	+0.8
	1.2nm,0.4s,baz=335,slow=11,SNR=22						
ASAR	Alice Springs	27.11	165	P	P	13 03 06.2	+1.7
	0.5nm,0.7s,baz=350,slow=7.0,SNR=12						
ASAR				PcP	PcP	13 06 26.5	+2.2
	0.4nm,0.8s,baz=350,slow=2.0,SNR=4.0						
KSAR	Wonju Array Be	34.71	2	P	P	13 04 08.8	-2.4
KSRS	Korea Array	34.73	2	P	P	13 04 08.8	-2.5
	1.0nm,0.7s,baz=172,slow=9.9,SNR=4.7						
KSRS				LR	LR	13 17 29.5	
	comp=Z,32nm,21.7s,baz=195,slow=35						
STKA	Stephens Creek	37.21	158	P	P	13 04 33.8	+1.2
	2.4nm,0.8s,baz=342,slow=9.8,SNR=5.8						
H11S3	WAKE ISLAND Hy	42.54	65	T	T	13 49 36.1	
	baz=253						
H11S1	WAKE ISLAND Hy	42.56	65	T	T	13 49 37.2	
	baz=253						
H11S2	WAKE ISLAND Hy	42.56	65	T	T	13 49 38.1	
	baz=253						
SONM	Songino Array	48.25	342	P	P	13 06 03.1	+1.0
	0.2nm,0.5s,baz=167,slow=7.0,SNR=2.8						
MKAR	Makanchi Array	58.27	326	P	P	13 07 15.9	+0.3
	0.5nm,0.6s,baz=112,slow=7.8,SNR=6.5						
ZALV	Zalesovo Beam	61.43	333	P	P	13 07 38.5	+1.6
	0.6nm,0.3s,baz=104,slow=4.9,SNR=2.5						
KURBB	Kurchatov Arra	62.49	328	P	P	13 07 44.7	+0.5
	0.5nm,0.3s,baz=130,slow=6.0,SNR=7.8						
KURK	Kurchatov	62.49	328	eP	P	13 07 44.6	+0.4
	1.4nm,0.5s						

ISCJB 05 13:05:32.4±0.6, 9°.06N±0°.05×74°.31W±0°.04, h85km±8km, mb3.6/4, Error ellipse: s-maj=9.1km s-min=6.0km az=10.4
RSNC 05 13:05:34.5±0.7, 8°.98N×74°.31W, h24km±8km, ML3.9
IDC 05 13:05:35.9±2.2, 9°.11N×74°.16W, h99km±22km, mb3.4/4, mb1 3.6/6, mb1mx3.3/40, mbtmp3.8/6, Error ellipse: s-maj=22.7km s-min=14.1km az=145.0
ISC 05 13:05:33.0±1.1, 9°.10N±0°.07×74°.30W±0°.04, h72km±12km, n20, σ1s.36/29, mb3.7/4, 1D, Northern Colombia

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
OCAC	Ocana	1.29	131	i P	Pn	13 05 55.3	-0.2
OCAC				eS	Sn	13 06 11.6	-0.7
OCAC				i		13 06 14.5	
	comp=Z,5μm,0.5s						
MOTC	Monteria, Cord	1.39	257	i P	Pn	13 05 56.7	+0.2
MOTC				eS	Sn	13 06 14.2	0.0
MOTC				i		13 06 23.9	
	comp=Z,539nm,0.2s						
BRRC	Barranca, Sant	2.06	164	eP	Pn	13 06 05.0	-0.6
BRRC				eS	Sn	13 06 29.3	-1.1
BRRC				i		13 06 35.5	
	comp=Z,664nm,0.5s						
PAMC	Pamplona, Colo	2.36	138	eP	Pn	13 06 10.5	+0.5
PAMC				eS	Sn	13 06 38.2	0.0
BTLC	Betulia, Santa	2.40	155	eP	Pn	13 06 10.2	-0.1
BARC	Barichara	2.73	156	eP	Pn	13 06 14.7	0.0
BARC				eS	Sn	13 06 45.6	-1.2
BARC				i		13 06 56.4	
	comp=Z,541nm,0.7s						
DBBC	Dabeiba	2.80	223	eP	Pn	13 06 16.0	+0.3
HELC	Santa Helena	3.14	203	eP	Pn	13 06 21.0	+0.5
HELC				eS	Sn	13 06 56.8	-0.2
HELC				i		13 07 08.5	
	comp=Z,336nm,0.4s						
NORC	Norcasia	3.56	189	eP	Pn	13 06 24.7	-1.2
SDV	Santo Domingo	3.63	93	P	Pn	13 06 28.9	+1.9
	comp=Z,81nm,0.3s,baz=259,slow=9.5,SNR=535						
SDV				S	Sn	13 07 09.5	+0.8
	comp=Z,65nm,0.3s,baz=25,slow=22,SNR=3.5						
SDV	Santo Domingo	3.63	93	⇓iP	Pn	13 06 28.8	+1.8
GUYC	Guyana, Colomb	4.00	196	eP	Pn	13 06 32.2	-0.1
GUYC				i		13 07 34.8	
	comp=Z,238nm,0.7s						
ROSC	El Rosal	4.23	180	P	Pn	13 06 38.0	+2.5
	comp=Z,8.3nm,0.3s,baz=69,slow=9.3,SNR=9.4						
ROSC				S	Sn	13 07 28.4	+4.6
	comp=Z,22nm,0.3s,baz=199,slow=22,SNR=8.8						
CHIC	Chingaza	4.48	173	eP	Pn	13 06 39.8	+1.0
CHIC				eS	Sn	13 07 28.6	-1.2
CHIC				i		13 07 43.5	
	comp=Z,101nm,0.7s						
BCIP	Isla Barro Col	5.47	271	eP	Pn	13 06 51.6	-0.4
PTGA	Pitinga	17.30	124	P	P	13 09 30.3	-0.1
	comp=Z,0.5nm,0.3s,baz=306,slow=14,SNR=4.5						
TXAR	Lajitas Array	34.10	310	P	P	13 12 11.5	+0.5
	comp=Z,0.3nm,0.6s,baz=118,slow=10,SNR=3.4						
YKA	Yellowknife Ar	60.74	340	P	P	13 15 37.5	+0.7
	comp=Z,0.2nm,0.6s,baz=130,slow=7.0,SNR=6.3						
DBIC	Dimbokro	68.74	86	P	P	13 16 28.5	-1.4
	comp=Z,1.2nm,0.6s,baz=262,slow=6.4,SNR=5.8						
TORD	Torodi Ar. Bea	74.44	79	P	P	13 17 03.5	-0.6
	comp=Z,1.0nm,0.4s,baz=283,slow=6.3,SNR=12						

JMA 05 13:09:14.0±0.1, 38°.04N×141°.67E, h48km±2km, M3.7, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
JIO	Ouri	0.48	329	P	Pn	13 09 25.1	+0.2
JIO				S	Sn	13 09 32.6	-0.2
JMM	Marumori	0.71	256	P	Pn	13 09 27.8	0.0
JMM				S	Sn	13 09 37.6	-0.3
JOU	Okura	0.86	293	P	Pn	13 09 30.2	+0.4
JOU				S	Sn	13 09 41.7	+0.4
JFK	Kawauchi	0.92	223	P	Pn	13 09 30.8	+0.1
JFK				S	Sn	13 09 42.2	-0.7
JMK	Ichinoseki	0.98	339	P	Pn	13 09 31.6	+0.3
JMK				S	Sn	13 09 44.1	0.0
JFT	Otama	1.18	244	P	Pn	13 09 34.2	+0.1
JYS	Shirataka	1.28	279	P	Pn	13 09 36.0	+0.5
JYS				S	Sn	13 09 52.3	+0.8
JYK	Kaneyama	1.35	311	P	Pn	13 09 37.1	+0.6
JYK				S	Sn	13 09 54.2	+1.0
JOM	Ohasama	1.46	348	P	Pn	13 09 38.4	+0.5
MAT	Matsushiro	3.14	243	P	Pn	13 10 02.6	+1.6
MAT				eS	Sn	13 10 42.8	+5.6

IDC 05 13:17:05.2±7.5**, 21°.23N×144°.53E, h167**km±69km**, mb3.3**/11**, mb1 3.4**/11**, mb1mx3.2**/44**, mbtmp3.7**/11**, Error ellipse: s-maj=33.6km s-min=14.4km az=82.0, Mariana Islands region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KSRS	**Korea Array**	**21.65**	**322**	P	P	13 21 42.5	+0.1
	1.5nm,0.7s,baz=154,slow=8.4,SNR=6.7						
KLR	**Kul'dur**	**29.74**	**343**	P	P	13 22 55.8	+0.2
	1.0nm,0.5s,baz=170,slow=7.1,SNR=4.4						
SONM	**Songino Array**	**40.50**	**320**	P	P	13 24 27.7	0.0
	0.4nm,0.5s,baz=132,slow=6.0,SNR=2.0						
WRA	**Warramunga Arr**	**42.11**	**194**	P	P	13 24 40.5	-0.6
	0.3nm,0.3s,baz=12,slow=8.6,SNR=11						
CMAR	**Chiang Mai Arr**	**42.86**	**275**	P	P	13 24 47.8	+0.6
	0.3nm,0.5s,baz=90,slow=6.3,SNR=3.3						
ASAR	**Alice Springs**	**45.81**	**194**	P	P	13 25 10.4	0.0
	0.1nm,0.3s,baz=12,slow=6.8,SNR=8.7						
ZALV	**Zalesovo Beam**	**55.36**	**322**	P	P	13 26 20.3	-1.2
	0.6nm,0.3s,baz=123,slow=7.6,SNR=3.2						
MKAR	**Makanchi Array**	**55.94**	**313**	P	P	13 26 26.2	+0.3
	0.6nm,0.5s,baz=92,slow=8.1,SNR=10						
GEYT	**Alibeck**	**74.55**	**305**	P	P	13 28 26.1	+0.3
	1.1nm,0.3s,baz=32,slow=8.5,SNR=2.9						
YKA	**Yellowknife Ar**	**76.28**	**28**	P	P	13 28 36.0	+0.9
	0.2nm,0.6s,baz=291,slow=5.4,SNR=4.8						
FINES	**FINESS Array B**	**84.14**	**335**	P	P	13 29 16.4	-0.7
	1.0nm,0.3s,baz=77,slow=5.0,SNR=12						

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*IDC **05** 13:29:53.1±0.7, 37°.97N×144°.19E, h0km, mb3.8/13, mb1 4.0/15, mb1mx3.8/44, mbtmp3.8/15, ML3.4/2, MS3.0/1, Ms1 3.0/1, ms1mx2.4/58, Error ellipse: s-maj=21.4km s-min=14.9km az=123.0*
*NEIC **05** 13:29:54.4±0.6, 38°.00N×144°.11E, h10km, mb4.3/2, Error ellipse: s-maj=13.5km s-min=8.4km az=127.0*
*JMA **05** 13:30:06.9±0.2, 38°.91N×142°.69E, h27km±2km, M2.9*
ISC 05 13:29:57.7±0.9**, 37°.9N**±0°.1×**144°.0E**±0°.1**, h35**km**, n33, σ1ˢ18**/20**, mb3.8**/15**, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**2.13**	**286**	P	Pn	13 30 26.8	-3.9
JIO				S	Sn	13 30 41.0	-15
OFUJ	**Ofunato**	**2.15**	**304**	P	Pn	13 30 22.1	-8.9
MIYJ	**Miyakonagasawa**	**2.37**	**316**	P	Pn	13 30 23.9	-10
MIYJ				S	Sn	13 30 36.3	-25
JMK	**Ichinoseki**	**2.39**	**297**	P	Pn	13 30 27.4	-6.9
JMK				S	Sn	13 30 42.6	-20
JOM	**Ohasama**	**2.61**	**308**	P	Pn	13 30 28.6	-8.8
JKZ	**Kuzumaki**	**2.92**	**316**	P	Pn	13 30 33.0	-8.7
JRG	**Rokugo**	**3.00**	**301**	P	Pn	13 30 35.6	-7.1
JANG	**Nango**	**3.12**	**323**	P	Pn	13 30 36.1	-8.2
JANG				*e*S	Sn	13 30 58.0	-22
ERM	**Erimo**	**4.16**	**352**	*e*Pn	Pn	13 30 53.7	-4.8
MJAR	**Matsushiro Arr**	**4.78**	**255**	Pn	**Pn**	**13 31 08.7**	**+1.5**
	2.2nm,0.3s,baz=83,slow=15,SNR=32						
MAJO	**Matsushiro**	**4.78**	**255**	*e*Pn	**Pn**	**13 31 08.8**	**+1.5**
MAT	**Matsushiro**	**4.78**	**255**	P	**Pn**	**13 31 08.4**	**+1.1**
MAT				*e*S	**Sn**	**13 31 59.1**	**-2.4**
JHJ2	**Mitsune**	**5.85**	**216**	Pn	**Pn**	**13 31 21.7**	**-0.1**
USRK	**Ussuriysk Ar.**	**11.01**	**309**	LR	LR	13 36 54.5	
	comp=Z,82nm,20.7s,baz=286,slow=38						
KSRS	**Korea Array**	**12.71**	**273**	Pn	**Pn**	**13 32 56.4**	**+0.5**
	0.1nm,0.3s,baz=86,slow=14,SNR=6.6						
KSAR	**Wonju Array Be**	**12.75**	**273**	Pn	**Pn**	**13 32 56.4**	**0.0**
MA2	**Magadan**	**22.13**	**9**	P	**P**	**13 34 48.1**	**-1.8**
	1.5nm,0.5s,baz=198,slow=8.1,SNR=7.4						
MA2	**Magadan**	**22.13**	**9**	*e*P	**P**	**13 34 48.8**	**-1.2**
SEY	**Seymchan**	**25.59**	**9**	P	**P**	**13 35 22.4**	**-0.8**
	1.3nm,0.3s,baz=195,slow=7.3,SNR=10						
SONM	**Songino Array**	**29.01**	**302**	P	P	13 35 56.8	+2.6
	0.5nm,0.4s,baz=99,slow=9.2,SNR=3.8						
ZALV	**Zalesovo Beam**	**42.84**	**312**	P	**P**	**13 37 53.8**	**+1.7**
	0.5nm,0.5s,baz=81,slow=4.5,SNR=2.0						
CMAR	**Chiang Mai Arr**	**43.67**	**256**	P	P	13 38 02.2	+3.0
	0.2nm,0.4s,baz=40,slow=8.5,SNR=2.6						
MKAR	**Makanchi Array**	**45.38**	**302**	P	**P**	**13 38 13.2**	**+0.6**
	0.4nm,0.6s,baz=85,slow=8.5,SNR=6.0						
ILAR	**Eielson Array**	**47.68**	**33**	P	**P**	**13 38 29.9**	**-0.3**
	0.9nm,0.7s,baz=262,slow=6.4,SNR=9.5						
INK	**Inuvik**	**52.69**	**28**	P	**P**	**13 39 08.0**	**-0.2**
	0.3nm,0.5s,baz=284,slow=6.9,SNR=4.5						
WRAB	**Tennant Creek**	**58.23**	**191**	*e*P	**P**	**13 39 48.9**	**+0.4**
	3.6nm,0.6s						
WRA	**Warramunga Arr**	**58.24**	**191**	P	**P**	**13 39 49.5**	**+0.9**
	4.5nm,0.7s,baz=11,slow=7.3,SNR=42						
ABKAR	**Akbulak array**	**58.92**	**310**	*e*P	**P**	**13 39 53.4**	**+0.2**
	0.3nm,0.3s						
ASAR	**Alice Springs**	**61.96**	**190**	P	**P**	**13 40 15.4**	**+1.4**
	0.7nm,0.6s,baz=13,slow=7.3,SNR=16						
YKA	**Yellowknife Ar**	**62.03**	**31**	P	**P**	**13 40 13.6**	**-0.5**
	0.5nm,0.7s,baz=303,slow=6.7,SNR=13						
FINES	**FINESS Array B**	**68.98**	**333**	P	**P**	**13 40 59.4**	**+0.4**
	0.9nm,0.6s,baz=49,slow=11,SNR=4.3						
PDAR	**Pinedale Array**	**75.61**	**47**	P	P	13 41 39.6	+0.4
	0.7nm,0.7s,baz=280,slow=2.6,SNR=6.7						
VNA2	**Neumayer--Watz**	**143.70**	**195**	P	PKPbc	13 49 24.3	-1.1
	baz=141,slow=3.1						

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*CSEM **05** 13:37:00.4±0.3, 33°.75N×35°.59E, h30km, ML2.9, Error ellipse: s-maj=9.3km s-min=5.8km az=80.0*
*NSSC **05** 13:37:00.2±0.7, 33°.73N×35°.57E, h36km±2km, ML1.7*
*ISCJB **05** 13:37:01.5±0.6, 33°.69N±0°.03×35°.63E±0°.05, h29km±4km, Error ellipse: s-maj=7.1km s-min=4.9km az=170.1*
*GRAL **05** 13:37:03.4±0.3, 33°.79N×35°.79E, h0km±50km, MD2.9*
ISC 05 13:37:00.9±1.0**, 33°.71N**±0°.03×**35°.61E**±0°.06**, h31**km±6km**, n28, σ1ˢ38**/48**, Jordan-Syria region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DQRL	**Deir Qamar**	**0.04**	**259**	*e*P	**Pb**	**13 37 07.1**	**+0.9**
DQRL				*e*S	**Sb**	**13 37 09.8**	**0.0**
DQRL	**Deir Qamar**	**0.04**	**259**	*e*P	**Pb**	**13 37 07.1**	**+0.9**
DQRL				*e*S	**Sb**	**13 37 09.8**	**0.0**
BHL	**Bhannes**	**0.19**	**10**	*e*P	**Pb**	**13 37 06.3**	**-1.0**
BHL	**Bhannes**	**0.19**	**10**	*e*P	**Pb**	**13 37 06.3**	**-1.0**
RCY	**Rachaya**	**0.28**	**139**	*e*P	**Pb**	**13 37 08.8**	**+0.4**
RCY				*e*S	**Sb**	**13 37 12.8**	**-0.7**
RCY	**Rachaya**	**0.28**	**139**	*e*P	**Pb**	**13 37 08.8**	**+0.4**
RCY				*e*S	**Sb**	**13 37 12.8**	**-0.7**
BRBR	**Barbar**	**0.41**	**137**	*e*P	**Pb**	**13 37 10.4**	**+0.2**
BRBR				*e*S	**Sn**	**13 37 17.2**	**-0.5**
BRBR				AML	AML	13 37 20.8	
	comp=E,86nm,0.4s						
BRBR				AML	AML	13 37 22.5	
	comp=N,81nm,0.4s						
BRBR	**Barbar**	**0.41**	**137**	*e*P	**Pn**	**13 37 10.9**	**-0.1**
BRBR				*e*S	**Sb**	**13 37 16.9**	**+0.4**
	comp=N,81nm,0.4s						
HWQ	**Hawqa**	**0.63**	**26**	*e*P	**Pb**	**13 37 12.4**	**-1.1**
HWQ	**Hawqa**	**0.63**	**26**	*e*P	**Pb**	**13 37 12.4**	**-1.1**
TOTH	**TOTAH**	**0.77**	**117**	*e*P	**Pb**	**13 37 16.1**	**+0.3**
TOTH				*e*S	**Sn**	**13 37 26.7**	**+0.5**
TOTH				AML	AML	13 37 32.8	
	comp=E,26nm,0.3s						
TOTH				AML	AML	13 37 37.3	
	comp=N,20nm,0.4s						
TOTH	**TOTAH**	**0.77**	**117**	*e*P	**Pb**	**13 37 16.5**	**+0.7**
TOTH				*e*S	**Sn**	**13 37 27.4**	**+1.2**
	comp=N,20nm,0.4s						
MARH	**Ras Al Marh**	**0.79**	**66**	*e*P	**Pn**	**13 37 16.0**	**-0.2**
MARH				*e*S	**Sb**	**13 37 26.5**	**-0.4**
MARH				AML	AML	13 37 31.6	
	comp=E,125nm,0.3s						
MARH				AML	AML	13 37 32.0	
	comp=N,58nm,0.3s						
MARH	**Ras Al Marh**	**0.79**	**66**	*e*P	**Pn**	**13 37 16.0**	**-0.2**
MARH				*e*S	**Sb**	**13 37 26.2**	**-0.6**
	comp=N,58nm,0.3s						
HAWK	**Haweek**	**1.04**	**39**	*e*P	**Pb**	**13 37 20.5**	**+0.1**
HAWK				*e*S	**Sb**	**13 37 36.7**	**+2.9**
HAWK				AML	AML	13 37 40.3	
	comp=N,14nm,0.6s						
HAWK				AML	AML	13 37 42.1	
	comp=E,18nm,0.3s						
HAWK	**Haweek**	**1.04**	**39**	*e*P	**Pb**	**13 37 20.7**	**+0.3**
HAWK				*e*S	**Sb**	**13 37 36.4**	**+2.6**
	comp=E,18nm,0.3s						
TCHB	**Talchebab**	**1.08**	**164**	*e*P	**Pn**	**13 37 19.7**	**-0.3**
TCHB				*e*S	**Sn**	**13 37 33.2**	**-0.8**
TCHB				AML	AML	13 37 37.0	
	comp=E,41nm,0.7s						
TCHB				AML	AML	13 37 43.4	
	comp=N,21nm,0.4s						
TCHB	**Talchebab**	**1.08**	**164**	*e*P	**Pn**	**13 37 19.7**	**-0.3**
TCHB				*e*S	**Sn**	**13 37 33.2**	**-0.8**
	comp=N,21nm,0.4s						
SALA	**Sala**	**1.37**	**136**	*e*P	**Pn**	**13 37 23.9**	**-0.3**
SALA				*e*S	**Sn**	**13 37 40.9**	**-0.5**
SALA				AML	AML	13 37 46.1	
	comp=E,1.5nm,0.4s						
SALA				AML	AML	13 37 46.9	
	comp=N,22nm,0.4s						
SALA	**Sala**	**1.37**	**136**	*e*P	**Pn**	**13 37 23.9**	**-0.3**
SALA				*e*S	**Sn**	**13 37 40.9**	**-0.5**
	comp=N,22nm,0.4s						
BIDA	**Albida**	**1.42**	**24**	*e*P	**Pn**	**13 37 25.3**	**+0.6**
BIDA				*e*S	**Sb**	**13 37 45.3**	**+0.6**
BIDA				AML	AML	13 37 51.0	
	comp=N,68nm,0.4s						
BIDA				AML	AML	13 37 54.6	
	comp=E,78nm,0.4s						
BIDA	**Albida**	**1.42**	**24**	*e*P	**Pn**	**13 37 26.0**	**+1.2**
BIDA				*e*S	**Sb**	**13 37 45.4**	**+0.6**
	comp=E,78nm,0.4s						
ZALF	**Zalf**	**1.64**	**118**	*e*P	Pn	13 37 17.7	-10
ZALF	**Zalf**	**1.64**	**118**	*e*P	Pn	13 37 17.7	-10
WRDH	**Warideh**	**1.91**	**20**	*e*P	**Pn**	**13 37 28.2**	**-3.2**
WRDH				*e*S	**Sn**	**13 37 52.3**	**-2.1**
WRDH				AML	AML	13 37 58.8	
	comp=N,14nm,0.4s						
WRDH				AML	AML	13 37 59.1	
	comp=E,9.1nm,0.3s						
WRDH	**Warideh**	**1.91**	**20**	*e*P	**Pn**	**13 37 27.4**	**-4.0**
WRDH				*e*S	**Sn**	**13 37 52.6**	**-1.8**
	comp=E,9.0nm,0.3s						
ARNB	**Al Arnab**	**2.16**	**8**	*e*P	**Pn**	**13 37 35.4**	**+0.5**
ARNB				*e*S	**Sn**	**13 38 03.6**	**+2.9**
ARNB				AML	AML	13 38 06.7	
	comp=E,14nm,0.5s						
ARNB				AML	AML	13 38 10.3	
	comp=N,14nm,0.3s						
ARNB	**Al Arnab**	**2.16**	**8**	*e*P	**Pn**	**13 37 35.4**	**+0.5**
ARNB				*e*S	**Sn**	**13 38 03.9**	**+3.1**
	comp=N,15nm,0.3s						

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*ISCJB **05** 13:43:42.4±0.4, 24°.28N±0°.02×121°.84E±0°.02, h2km±3km, Error ellipse: s-maj=3.0km s-min=2.1km az=142.6*
*TAP **05** 13:43:42.7, 24°.30N×121°.77E, h16km, ML3.6, B*
*JMA **05** 13:43:42.6, 24°.25N×121°.68E, h26km±1km, M3.0*
ISC 05 13:43:43.2±0.8**, 24°.27N**±0°.02×**121°.81E**±0°.02**, h13**km±5km**, n65, σ0ˢ76**/107**, 9C-4D, Taiwan**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
EHP	**Heping Village**	**0.07**	**302**	*e*P	**Pg**	**13 43 46.3**	**+0.4**
	baz=298						
EHP				*e*S	**Sg**	**13 43 48.5**	**+0.6**
	baz=298						
ENA	**Nanau**	**0.17**	**339**	⇑*i*P	**Pg**	**13 43 46.6**	**-0.6**
	baz=351						
ENA				*i* S	**Sg**	**13 43 49.3**	**-0.6**
	baz=351						
TWD	**Chiawan**	**0.27**	**225**	⇓*i*P	**Pg**	**13 43 48.7**	**-0.2**
	baz=221						
TWD				S	**Sg**	**13 43 52.6**	**-0.1**
	baz=221						
TWC	**Suao**	**0.34**	**6**	⇑*i*P	**Pg**	**13 43 49.6**	**-0.4**
	baz=9.0						
TWC				*i* S	**Sg**	**13 43 54.2**	**-0.5**
	baz=9.0						
HWA	**Hwalien**	**0.35**	**212**	*e*P	**Pb**	**13 43 50.6**	**-0.5**
	baz=213						
ENTT	**Nioudou**	**0.43**	**329**	⇑*i*P	**Pg**	**13 43 51.0**	**-0.8**
	baz=331						
ENTT				*i* S	**Sg**	**13 43 56.8**	**-0.8**
	baz=331						
NNS	**Nan Shan**	**0.43**	**293**	⇑*i*P	**Pg**	**13 43 51.0**	**-0.8**
	baz=292						
NNS				*i* S	**Sg**	**13 43 56.2**	**-1.4**
	baz=292						
TWE	**Neicheng**	**0.47**	**344**	⇑*i*P	**Pg**	**13 43 51.7**	**-0.7**
	baz=348						
TWE				*i* S	**Sg**	**13 43 58.2**	**-0.4**
	baz=348						
ESF	**Shoufeng Towns**	**0.48**	**215**	*e*P	**Pg**	**13 43 52.6**	**-0.2**
	baz=219						
ILA	**Ilan**	**0.49**	**354**	*e*P	**Pg**	**13 43 52.4**	**-0.6**
	baz=351						
ILA				S	**Sg**	**13 43 59.6**	**0.0**
	baz=351						
WHF	**Hehuan Shan**	**0.51**	**256**	⇑*i*P	**Pg**	**13 43 52.7**	**-0.7**
	baz=253						
WHF				*i* S	**Sg**	**13 43 59.5**	**-0.8**
	baz=253						
ESL	**Shilin**	**0.57**	**217**	*e*P	**Pg**	**13 43 53.8**	**-0.6**
	baz=221						
NSK	**Sanguang**	**0.57**	**315**	⇑*i*P	**Pg**	**13 43 53.5**	**-1.0**
	baz=315						
NSK				S	**Sg**	**13 44 00.7**	**-1.4**
	baz=315						
TWT	**Tachien**	**0.58**	**268**	P	**Pg**	**13 43 54.3**	**-0.3**
	baz=266						
TWT				S	**Sg**	**13 44 01.5**	**-0.8**
	baz=266						
TWA	**Mucha**	**0.73**	**344**	*e*P	**Pg**	**13 43 57.1**	**-0.3**
	baz=346						
TWB1	**Santiao Chiao**	**0.75**	**13**	P	**Pg**	**13 43 57.0**	**-0.7**
	baz=14						
TWB1				S	**Sg**	**13 44 06.4**	**-1.3**
	baz=14						
NWF	**Wu-fen Shan**	**0.80**	**358**	*e*P	**Pg**	**13 43 58.1**	**-0.6**
	baz=360						
WDT	**Danda**	**0.80**	**230**	⇓P	**Pg**	**13 43 58.2**	**-0.6**
	baz=235						
TAP1	**Taipei**	**0.81**	**341**	*e*P	**Pb**	**13 43 59.0**	**-0.1**
	baz=332						
TAP	**Taipei**	**0.81**	**340**	*e*P	**Pb**	**13 43 58.8**	**-0.3**
	baz=332						
NSTT	**Nanjuang**	**0.82**	**296**	⇓*i*P	**Pg**	**13 43 58.5**	**-0.5**
	baz=296						
NSTT				S	**Sg**	**13 44 08.8**	**-0.9**
	baz=296						
EHY	**Hungye**	**0.88**	**210**	*e*P	**Pg**	**13 43 59.0**	**-1.3**
	baz=220						
EHY				*e*S	**Sg**	**13 44 11.0**	**-0.8**
	baz=220						
NCU	**National Centr**	**0.90**	**321**	*e*P	**Pb**	**13 44 00.4**	**-0.2**
	baz=318						
NCU				*e*S	**Sb**	**13 44 13.1**	**+0.7**
	baz=318						
TWS1	**Kuangyinshan**	**0.90**	**337**	*e*P	**Pg**	**13 44 00.3**	**-0.3**
	baz=337						
TWS1				*e*S	**Sg**	**13 44 11.8**	**-0.5**
	baz=337						
SMLT	**Sun Moon Lake**	**0.92**	**245**	*e*P	**Pg**	**13 44 00.1**	**-0.8**
	baz=243						
HSN	**Hsinchu**	**0.93**	**305**	*e*P	**Pb**	**13 44 00.9**	**-0.2**
	baz=299						
HSN				*e*S	**Sb**	**13 44 14.0**	**+0.7**
	baz=299						
TYC	**Yuchr**	**0.94**	**247**	⇑*i*P	**Pg**	**13 44 00.8**	**-0.6**
	baz=246						
TWQ1	**Liyutan**	**0.95**	**275**	P	**Pb**	**13 44 01.4**	**-0.1**
	baz=274						
TWQ1				*e*S	**Sg**	**13 44 13.5**	**-0.4**
	baz=274						
NSY	**Sanyi**	**0.96**	**279**	*e*P	**Pb**	**13 44 01.7**	**-0.1**
	baz=278						
NSY				S	**Sb**	**13 44 14.9**	**+0.5**
	baz=278						
TWY	**Chenhua**	**1.02**	**349**	*e*P	**Pg**	**13 44 01.6**	**-1.2**
	baz=350						
TWF1	**Yuli**	**1.03**	**207**	*e*P	**Pg**	**13 44 01.5**	**-1.5**
	baz=216						
TCU	**Taichung**	**1.04**	**263**	*e*P	**Pn**	**13 44 03.8**	**+0.3**
	baz=263						
TCU				*e*S	**Sn**	**13 44 18.4**	**+0.6**
	baz=263						
JYNG	**Yonagunijimaku**	**1.05**	**80**	P	**Pn**	**13 44 03.5**	**-0.1**
JYNG				S	**Sn**	**13 44 19.4**	**+1.3**
WNT	**Mingjian**	**1.10**	**249**	*e*P	**Pn**	**13 44 04.3**	**+0.1**
	baz=246						
WNT				*e*S	**Sn**	**13 44 21.0**	**+1.8**
	baz=246						
YUS	**Yu-Shan**	**1.10**	**225**	P	**Pg**	**13 44 03.5**	**-1.1**
	baz=226						
YUS				*e*S	**Sb**	**13 44 19.2**	**+0.3**
	baz=226						
YOJ	**Yonaguni jima**	**1.11**	**80**	P	**Pg**	**13 44 04.1**	**-0.5**
YOJ				*e*S	**Sn**	**13 44 20.1**	**+0.5**
YOJ	**Yonaguni jima**	**1.11**	**80**	*i* P	**Pb**	**13 44 04.4**	**+0.1**
	baz=69						
YOJ				*e*S	**Sn**	**13 44 20.9**	**+1.3**
	baz=69						
ALS	**Alishan**	**1.19**	**231**	P	**Pg**	**13 44 05.3**	**-0.9**
	baz=217						
CHN5	**Tsauling**	**1.23**	**237**	⇑*i*P	**Pn**	**13 44 06.3**	**+0.2**
	baz=230						
CHN5				*i* S	**Sn**	**13 44 23.4**	**+0.7**
	baz=230						
CHKT	**Chengkung**	**1.24**	**199**	*e*P	**Pn**	**13 44 05.8**	**-0.3**
	baz=183						
WGK	**Gukeng**	**1.28**	**243**	*e*P	**Pg**	**13 44 07.5**	**-0.4**
	baz=244						
WGK				*e*S	**Sn**	**13 44 25.1**	**+1.4**
	baz=244						
ELDTW	**Lidau**	**1.30**	**214**	*e*P	**Pn**	**13 44 06.0**	**-1.1**
	baz=215						
CHN2	**Minshiung**	**1.43**	**239**	*e*P	**Pn**	**13 44 08.6**	**-0.1**
	baz=227						
CHN2				*e*S	**Sg**	**13 44 30.0**	**+0.9**
	baz=227						
CHN4	**Tsaushan**	**1.44**	**231**	*e*P	**Pb**	**13 44 09.8**	**0.0**
	baz=221						
CHN4				*e*S	**Sg**	**13 44 29.8**	**+0.2**
	baz=221						
WTCT	**Ta-ch'eng**	**1.45**	**254**	*e*P	**Pb**	**13 44 09.7**	**-0.3**
	baz=267						
WTCT				*e*S	**Sg**	**13 44 29.3**	**-0.8**
	baz=267						
STYT	**Tauyuan**	**1.47**	**221**	*e*P	**Pn**	**13 44 09.2**	**-0.2**
	baz=222						
CHY	**Chiayi**	**1.48**	**239**	*e*P	**Pb**	**13 44 10.7**	**+0.1**
	baz=240						
CHY				*e*S	**Sg**	**13 44 31.6**	**+0.6**
	baz=240						
WTP	**Ta-pu**	**1.50**	**227**	⇓*i*P	**Pb**	**13 44 10.7**	**-0.2**
	baz=229						
WTP				*e*S	**Sg**	**13 44 30.4**	**-1.0**
	baz=229						
TWK	**Hsinying**	**1.57**	**231**	*e*P	**Pn**	**13 44 11.3**	**+0.6**
	baz=232						
TWK				*e*S	**Sg**	**13 44 33.7**	**0.0**
	baz=232						
WSF	**Szhu**	**1.58**	**247**	*e*P	**Pn**	**13 44 11.3**	**+0.4**
	baz=257						
WSF				*e*S	**Sg**	**13 44 33.7**	**-0.5**
	baz=257						
TWG	**Pinlang**	**1.59**	**205**	*e*P	**Pn**	**13 44 09.6**	**-1.4**
	baz=192						
CHN1	**Nanshi**	**1.60**	**228**	*e*P	**Pb**	**13 44 12.2**	**-0.3**
	baz=230						
CHN1				*e*S	**Sg**	**13 44 34.7**	**+0.1**
	baz=230						
SGST	**Jiashian**	**1.63**	**224**	*e*P	**Pb**	**13 44 12.5**	**-0.7**
	baz=219						
SGST				*e*S	**Sg**	**13 44 34.8**	**-1.0**
	baz=219						
CHN8	**Yiju**	**1.73**	**238**	*e*P	**Pn**	**13 44 12.1**	**-0.8**
	baz=226						
CHN8				*e*S	**Sg**	**13 44 37.9**	**-1.0**
	baz=226						
IRIF	**Iriomote-Funau**	**1.75**	**88**	P	**Pn**	**13 44 12.9**	**-0.3**
IRIF				*e*S	**Sn**	**13 44 36.6**	**+1.2**
HATJ	**Hateruma jima**	**1.84**	**96**	P	**Pn**	**13 44 14.7**	**+0.3**
ECL	**Taimali**	**1.84**	**205**	*e*P	**Pn**	**13 44 14.9**	**+0.5**
	baz=194						
SSD	**Sandimen**	**1.86**	**216**	*e*P	**Pn**	**13 44 15.7**	**+0.9**
	baz=229						
SSD				*e*S	**Sb**	**13 44 41.3**	**+1.1**
	baz=229						
TWM1	**Shoushan**	**1.92**	**222**	*e*P	**Pb**	**13 44 17.3**	**-0.8**
	baz=221						
JKRS	**Kuro-shima**	**2.01**	**91**	P	**Pn**	**13 44 17.3**	**+0.6**
JKRS				*e*S	**Sb**	**13 44 43.7**	**-0.8**
EAST	**Anshuo**	**2.08**	**205**	*e*P	**Pn**	**13 44 18.3**	**+0.6**
	baz=197						
JIJ	**Ishigaki jima**	**2.13**	**87**	P	**Pn**	**13 44 18.5**	**+0.1**
JIJ				*e*S	**Sn**	**13 44 45.0**	**+0.2**
SCZT	**Fangliau**	**2.18**	**210**	*e*P	**Pn**	**13 44 20.8**	**+1.6**
	baz=196						
JISG	**Ishigakijimahi**	**2.30**	**82**	P	**Pn**	**13 44 21.0**	**+0.2**
JISG				S	**Sn**	**13 44 50.7**	**+1.7**
JTJ	**Tarama**	**2.66**	**81**	P	**Pn**	**13 44 26.0**	**+0.3**

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*IDC **05** 13:46:35.2±1.7, 23°.45S×174°.48W, h0km, mb4.3/11, mb1 4.5/11, mb1mx4.2/41, mbtmp4.3/11, Error ellipse: s-maj=61.3km s-min=21.8km az=147.0*
*NEIC **05** 13:46:39.1±0.8, 23°.56S×174°.29W, h35km, mb4.8/2, Error ellipse: s-maj=26.4km s-min=12.7km az=172.0*
ISC 05 13:46:39.1±0.9**, 23°.6S**±0°.2×**174°.27W**±0°.09**, h35**km**, n20, σ1ˢ41**/18**, mb4.3**/12**, Tonga Islands region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MSVF	**Nonsavu**	**9.23**	**307**	*e*P	**Pn**	**13 48 48.5**	**-1.4**
	21nm,1.1s						
RAR	**Rarotonga**	**13.61**	**83**	Pn	**Pn**	**13 49 48.0**	**-1.8**
	3.1nm,0.3s,baz=271,slow=11,SNR=8.1						
RAR	**Rarotonga**	**13.61**	**83**	*e*P	**Pn**	**13 49 48.1**	**-1.6**
CTA	**Charters Tower**	**36.73**	**268**	P	**P**	**13 53 42.5**	**-0.9**
	8.2nm,0.6s,baz=88,slow=11,SNR=16						
CTAO	**Charters Tower**	**36.73**	**268**	*e*P	**P**	**13 53 42.7**	**-0.6**
	8.6nm,0.6s						
STKA	**Stephens Creek**	**39.72**	**248**	P	**P**	**13 54 08.7**	**+0.3**
	2.4nm,0.7s,baz=100,slow=11,SNR=7.3						
ASAR	**Alice Springs**	**47.26**	**259**	P	**P**	**13 55 09.3**	**0.0**
	1.5nm,0.6s,baz=99,slow=7.7,SNR=11						
WRAB	**Tennant Creek**	**47.66**	**264**	*e*P	**P**	**13 55 11.4**	**-1.0**
	9.0nm,0.8s						
WRA	**Warramunga Arr**	**47.67**	**264**	P	**P**	**13 55 11.3**	**-1.1**
	8.9nm,0.7s,baz=102,slow=8.2,SNR=54						
FITZ	**Fitzroy Crossi**	**56.09**	**263**	P	**P**	**13 56 15.7**	**+0.5**
	2.5nm,0.6s,baz=90,slow=3.0,SNR=3.4						
FITZ	**Fitzroy Crossi**	**56.09**	**263**	*e*P	**P**	**13 56 16.2**	**+0.9**
MJAR	**Matsushiro Arr**	**74.72**	**322**	P	**P**	**13 58 14.9**	**-0.6**
	2.8nm,0.8s,baz=150,slow=7.7,SNR=4.3						
PETK	**Petropavlovsk-**	**80.14**	**343**	P	**P**	**13 58 46.1**	**+0.8**
	3.0nm,0.8s,baz=148,slow=12,SNR=4.4						
KSRS	**Korea Array**	**81.47**	**317**	P	**P**	**13 58 54.5**	**+1.8**
	0.9nm,0.7s,baz=142,slow=6.3,SNR=4.3						
KSAR	**Wonju Array Be**	**81.48**	**317**	P	**P**	**13 58 54.5**	**+1.7**
USRK	**Ussuriysk Ar.**	**83.44**	**324**	P	**P**	**13 59 04.9**	**+2.0**
	2.5nm,0.8s,baz=74,slow=11,SNR=5.2						
VNA3	**Neumayer Olymp**	**84.84**	**175**	P	P	13 59 14.6	+4.8
VNA2	**Neumayer--Watz**	**85.32**	**176**	P	P	13 59 17.0	+4.8
	baz=241,slow=6.1						
TXAR	**Lajitas Array**	**85.85**	**56**	P	**P**	**13 59 18.1**	**+2.5**
	1.2nm,0.9s,baz=205,slow=5.5,SNR=6.8						
ILAR	**Eielson Array**	**90.57**	**11**	P	**P**	**13 59 36.7**	**-0.4**
	1.0nm,0.9s,baz=215,slow=6.2,SNR=6.5						

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*IDC **05** 13:46:59.5±2.5, 9°.50S×112°.72E, h0km, mb3.6/5, mb1 3.7/5, mb1mx3.4/47, mbtmp3.6/5, Error ellipse: s-maj=120.9km s-min=21.2km az=50.0*
*ISCJB **05** 13:47:05.1±0.8, 9°.66S±0°.07×112°.80E±0°.04, h36km, mb3.6/5, Error ellipse: s-maj=9.6km s-min=5.8km az=15.9*
*DJA **05** 13:47:05.3±0.5, 10°S±4°×11°3E±°, h10km, M3.8/15, MLv3.8/15*
ISC 05 13:47:05.9±1.1**, 9°.59S**±0°.10×**112°.80E**±0°.05**, h36**km**, n15, σ1ˢ75**/19**, mb4.0**/5**, South of Jawa**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GMJI	**Gumukmas**	**1.45**	**26**	P	**Pn**	**13 47 29.0**	**-0.6**
GMJI				S	**Sn**	**13 47 48.6**	**+1.2**
JAGI	**Jajag, Banyuwa**	**1.73**	**50**	P	**Pn**	**13 47 33.3**	**-0.2**
JAGI				S	**Sn**	**13 47 56.2**	**+1.8**
PWJI	**Pagerwojo**	**1.84**	**328**	P	**Pn**	**13 47 35.2**	**+0.2**
PWJI				S	**Sn**	**13 47 57.4**	**+0.3**
ABJI	**Asem Bagus**	**2.27**	**39**	P	**Pn**	**13 47 43.2**	**+2.2**
WOJI	**Wonogiri, Jawa**	**2.55**	**313**	P	**Pn**	**13 47 45.6**	**+0.9**
NGJI	**Ngawi**	**2.58**	**329**	P	**Pn**	**13 47 48.1**	**+3.0**
UGM	**Wanagama**	**2.80**	**306**	P	**Pn**	**13 47 49.3**	**+1.0**
UGM				S	**Sn**	**13 48 23.7**	**+2.8**
TWSI	**Taliwang, Sumb**	**4.12**	**78**	P	**Pn**	**13 48 07.8**	**+1.5**
KPJI	**Karang Pucung**	**4.44**	**300**	P	**Pn**	**13 48 12.2**	**+1.5**
PLAI	**Plampang**	**4.97**	**82**	P	**Pn**	**13 48 20.6**	**+2.6**
WRA	**Warramunga Arr**	**23.20**	**119**	P	**P**	**13 52 09.8**	**0.0**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
	0.4nm,0.7s,baz=294,slow=11,SNR=2.8						
ASAR	**Alice Springs**	**24.54**	**127**	P	**P**	**13 52 21.7**	**-0.7**
	0.6nm,0.7s,baz=304,slow=9.3,SNR=8.8						
SONM	**Songino Array**	**57.45**	**355**	P	**P**	**13 56 50.0**	**-1.3**
	1.0nm,0.6s,baz=175,slow=8.3,SNR=6.1						
MKAR	**Makanchi Array**	**62.39**	**337**	P	**P**	**13 57 23.5**	**-1.6**
	0.6nm,0.4s,baz=150,slow=7.8,SNR=14						
ZALV	**Zalesovo Beam**	**67.59**	**343**	P	**P**	**13 57 56.6**	**-2.1**
	0.4nm,0.3s,baz=139,slow=6.8,SNR=4.3						

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*IDC **05** 13:50:57.6±1.0, 36°.44N×142°.40E, h0km, mb3.8/9, mb1 3.8/13, mb1mx3.6/65, mbtmp3.8/13, ML3.3/3, Error ellipse: s-maj=25.2km s-min=17.8km az=83.0*

*ISCJB **05** 13:50:58.1±0.6, 36°.33N±0°.04×142°.36E±0°.07, h15km, mb4.0/14, Error ellipse: s-maj=8.5km s-min=5.6km az=28.6*

*NEIC **05** 13:51:01.3±2.7, 36°.37N×142°.34E, h23km±19km, mb4.4/5, Error ellipse: s-maj=12.8km s-min=8.8km az=108.0*

*JMA **05** 13:51:01.6±0.3, 36°.29N×142°.14E, h73km, M3.4*

ISC 05 13:50:59.7±0.9**, 36°.31N**±0°.05×**142°.31E**±0°.08**, h15km, n37, σ1.17**/35**, mb4.2**/14**, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**1.32**	**243**	P	**Pn**	**13 51 22.9**	**-0.7**
CHOJ				*e*S	**Sb**	**13 51 39.9**	**-1.1**
JHO	**Hitachi**	**1.44**	**283**	P	**Pn**	**13 51 24.2**	**-1.0**
JFK	**Kawauchi**	**1.56**	**313**	P	**Pn**	**13 51 26.8**	**-0.2**
JMM	**Marumori**	**1.97**	**322**	P	**Pn**	**13 51 32.7**	**+0.1**
BSO1	**Boso 1**	**1.98**	**214**	P	**Pn**	**13 51 32.0**	**-0.1**
BSO1				*e*S	**Sn**	**13 51 56.4**	**0.0**
BSO4	**Boso 4**	**2.08**	**231**	P	**Pn**	**13 51 34.0**	**+0.1**
BSO3	**Boso 3**	**2.10**	**225**	P	**Pn**	**13 51 34.0**	**-0.1**
JAG	**Ashikaga**	**2.31**	**274**	P	**Pn**	**13 51 36.9**	**-0.3**
MJAR	**Matsushiro Arr**	**3.32**	**275**	Pn	**Pn**	**13 51 51.6**	**+0.5**
	4.2nm,0.3s,baz=99,slow=7.9,SNR=41						
MAJO	**Matsushiro**	**3.32**	**275**	*e*Pn	**Pn**	**13 51 51.7**	**+0.6**
MAT	**Matsushiro**	**3.32**	**275**	P	**Pn**	**13 51 50.7**	**-0.4**
MAT				*e*S	**Sn**	**13 52 30.8**	**+0.5**
JHJ2	**Mitsune**	**3.79**	**214**	*e*Pn	**Pn**	**13 51 59.2**	**+1.6**
JHJ	**Hachijo jima 2**	**3.80**	**214**	Pn	**Pn**	**13 51 58.9**	**+1.2**
	35nm,0.3s,baz=325,slow=21,SNR=11						
JHJ				Sn	**Sn**	**13 52 39.2**	**-2.9**
	38nm,0.3s,baz=108,slow=24,SNR=9.6						
ERM	**Erimo**	**5.74**	**6**	*e*Pn	**Pn**	**13 52 24.8**	**+0.5**
USRK	**Ussuriysk Ar.**	**11.14**	**318**	Pn	**Pn**	**13 53 35.5**	**-2.9**
	0.2nm,0.3s,baz=132,slow=13,SNR=2.1						
KSRS	**Korea Array**	**11.58**	**280**	Pn	**Pn**	**13 53 46.5**	**+2.0**
	baz=94,slow=11,SNR=6.0						
KSAR	**Wonju Array Be**	**11.61**	**280**	Pn	**Pn**	**13 53 46.5**	**+1.6**
MA2	**Magadan**	**23.92**	**11**	P	**P**	**13 56 11.1**	**-1.7**
	0.7nm,0.3s,baz=210,slow=20,SNR=2.9						
H11N2	**WAKE ISLAND Hy**	**27.16**	**121**	T	T	14 24 47.0	
	baz=310						
H11N1	**WAKE ISLAND Hy**	**27.16**	**121**	T	T	14 24 53.7	
	baz=310,slow=74						
H11N3	**WAKE ISLAND Hy**	**27.17**	**121**	T	T	14 25 05.6	
	baz=310,slow=74						
H11S1	**WAKE ISLAND Hy**	**27.86**	**123**	T	T	14 25 37.8	
	baz=318,slow=74						
H11S3	**WAKE ISLAND Hy**	**27.86**	**123**	T	T	14 25 34.6	
	baz=318						
H11S2	**WAKE ISLAND Hy**	**27.87**	**123**	T	T	14 25 39.5	
	baz=318,slow=74						
ENH	**Enshi**	**28.01**	**267**	*e*P	**P**	**13 56 49.7**	**-0.3**
	6.7nm,0.8s						
ULN	**Ulaanbaatar**	**28.36**	**305**	*e*P	**P**	**13 56 54.7**	**+1.4**
	4.7nm,1.0s						
SONM	**Songino Array**	**28.79**	**305**	P	**P**	**13 56 57.5**	**+0.5**
	3.5nm,0.9s,baz=105,slow=9.3,SNR=17						
ZALV	**Zalesovo Beam**	**42.94**	**313**	P	**P**	**13 58 57.1**	**-0.6**
	0.6nm,0.3s,baz=91,slow=7.4,SNR=6.2						
MKAR	**Makanchi Array**	**45.12**	**303**	P	**P**	**13 59 14.8**	**-0.5**
	2.6nm,0.8s,baz=90,slow=9.7,SNR=19						
KURK	**Kurchatov**	**46.95**	**309**	*e*P	**P**	**13 59 30.1**	**+0.5**
	18nm,1.2s						
TKM2	**Tokmak 2**	**50.61**	**299**	*e*P	**P**	**13 59 59.3**	**+1.1**
	7.8nm,1.3s						
WRA	**Warramunga Arr**	**56.45**	**189**	P	**P**	**14 00 41.9**	**+1.0**
	0.5nm,0.7s,baz=8.6,slow=7.8,SNR=3.2						
ARU	**Arti**	**57.38**	**319**	P	**P**	**14 00 46.7**	**-0.5**
	0.9nm,0.3s,baz=53,slow=3.2,SNR=3.7						
ABKAR	**Akbulak array**	**58.96**	**311**	*e*P	**P**	**14 00 59.1**	**+0.8**
	0.8nm,0.5s						
AKTO	**Aktyubinsk**	**59.70**	**313**	P	**P**	**14 01 04.5**	**+1.1**
	2.5nm,1.1s,baz=61,slow=10,SNR=4.1						
ASAR	**Alice Springs**	**60.18**	**189**	P	**P**	**14 01 08.0**	**+1.1**
	0.4nm,0.7s,baz=12,slow=9.6,SNR=3.7						
YKA	**Yellowknife Ar**	**64.07**	**30**	P	**P**	**14 01 32.6**	**0.0**
	0.1nm,0.8s,baz=289,slow=7.8,SNR=3.9						

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*ISCJB **05** 13:52:10.0±0.4, 24°.29N±0°.02×121°.83E±0°.02, h2km±3km, Error ellipse: s-maj=3.2km s-min=2.1km az=136.6*

*JMA **05** 13:52:10.1±0.1, 24°.23N×121°.71E, h22km±1km, M2.7*

*TAP **05** 13:52:10.3, 24°.30N×121°.77E, h16km, ML3.6, B*

ISC 05 13:52:10.5±0.8**, 24°.30N**±0°.02×**121°.76E**±0°.02**, h17km**±5km**, n64, σ0.81**/102**, 10C-5D, Taiwan**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
EHP	**Heping Village**	**0.02**	**311**	P	**Pg**	**13 52 13.9**	**+0.3**
	baz=293						
EHP				*e*S	**Sg**	**13 52 16.0**	**+0.3**
	baz=293						
ENA	**Nanau**	**0.13**	**353**	⇑*i*P	**Pb**	**13 52 14.1**	**-0.5**
	baz=352						
TWD	**Chiawan**	**0.26**	**215**	⇓*i*P	**Pg**	**13 52 16.2**	**-0.2**
	baz=220						
TWD				S	**Sg**	**13 52 20.2**	**-0.1**
	baz=220						
TWC	**Suao**	**0.32**	**15**	⇑*i*P	**Pg**	**13 52 17.2**	**-0.2**
	baz=10.0						
TWC				*i* S	**Sg**	**13 52 21.7**	**-0.4**
	baz=10.0						
HWA	**Hwalien**	**0.35**	**204**	*e*P	**Pb**	**13 52 18.2**	**0.0**
	baz=212						
NNS	**Nan Shan**	**0.38**	**292**	⇑*i*P	**Pb**	**13 52 18.6**	**-0.3**
	baz=291						
NNS				*i* S	**Sb**	**13 52 23.7**	**-0.8**
	baz=291						
ENTT	**Nioudou**	**0.39**	**333**	⇑*i*P	**Pb**	**13 52 18.5**	**-0.4**
	baz=331						
ENTT				*i* S	**Sb**	**13 52 24.1**	**-0.5**
	baz=331						
TWE	**Neicheng**	**0.43**	**349**	⇑*i*P	**Pg**	**13 52 19.1**	**-0.2**
	baz=348						
TWE				*i* S	**Sg**	**13 52 25.2**	**-0.1**
	baz=348						
ILA	**Ilan**	**0.47**	**359**	*e*P	**Pg**	**13 52 18.5**	**-1.5**
	baz=351						
ILA				*e*S	**Sb**	**13 52 26.9**	**0.0**
	baz=351						
WHF	**Hehuan Shan**	**0.48**	**252**	⇑*i*P	**Pb**	**13 52 20.2**	**-0.4**
	baz=257						
ESF	**Shoufeng Towns**	**0.48**	**209**	*e*P	**Pb**	**13 52 20.5**	**0.0**
	baz=219						
NSK	**Sanguang**	**0.53**	**316**	⇓*i*P	**Pb**	**13 52 21.2**	**-0.2**
	baz=315						
NSK				S	**Sb**	**13 52 28.1**	**-0.6**
	baz=315						
TWT	**Tachien**	**0.53**	**266**	⇑*i*P	**Pb**	**13 52 21.8**	**+0.3**
	baz=265						
TWT				*i* S	**Sb**	**13 52 28.8**	**-0.2**
	baz=265						
ESL	**Shilin**	**0.56**	**212**	⇓*i*P	**Pg**	**13 52 21.3**	**-0.4**
	baz=220						
TWA	**Mucha**	**0.70**	**347**	*e*P	**Pn**	**13 52 25.1**	**-0.6**
	baz=345						
TWA				*e*S	**Sb**	**13 52 32.9**	**-0.7**
	baz=345						
TWB1	**Santiao Chiao**	**0.74**	**16**	P	**Pb**	**13 52 24.2**	**-0.7**
	baz=14						
TWB1				S	**Sb**	**13 52 33.9**	**-0.8**
	baz=14						
NSTT	**Nanjuang**	**0.77**	**296**	⇓*i*P	**Pn**	**13 52 25.9**	**-0.7**
	baz=295						
NSTT				S	**Sg**	**13 52 35.8**	**+0.1**
	baz=295						
TAP1	**Taipei**	**0.77**	**344**	*e*P	**Pn**	**13 52 26.0**	**-0.6**
	baz=332						
NWF	**Wu-fen Shan**	**0.77**	**1**	*e*P	**Pb**	**13 52 25.5**	**-0.1**
	baz=360						
TAP	**Taipei**	**0.78**	**343**	*e*P	**Pg**	**13 52 25.5**	**-0.2**
	baz=332						
WDT	**Danda**	**0.79**	**227**	P	**Pg**	**13 52 25.8**	**-0.1**
	baz=229						
WDT				S	**Sn**	**13 52 37.4**	**-1.1**
	baz=229						
NCU	**National Centr**	**0.85**	**322**	*e*P	**Pn**	**13 52 28.3**	**+0.6**
	baz=318						
NCU				*e*S	**Sn**	**13 52 40.5**	**+0.7**
	baz=318						
TWS1	**Kuangyinshan**	**0.86**	**339**	P	**Pn**	**13 52 27.9**	**0.0**
	baz=337						
TWS1				*e*S	**Sn**	**13 52 40.5**	**+0.5**
	baz=337						
HSN	**Hsinchu**	**0.88**	**305**	*e*P	**Pn**	**13 52 27.8**	**-0.3**
	baz=299						
HSN				*e*S	**Sn**	**13 52 40.7**	**+0.3**
	baz=299						
EHY	**Hungye**	**0.88**	**207**	*e*P	**Pb**	**13 52 27.1**	**-0.2**
	baz=220						
EHY				*e*S	**Sn**	**13 52 40.7**	**+0.1**
	baz=220						
SMLT	**Sun Moon Lake**	**0.89**	**243**	⇑*i*P	**Pn**	**13 52 28.1**	**-0.2**
	baz=243						
TWQ1	**Liyutan**	**0.90**	**274**	⇑*i*P	**Pn**	**13 52 29.2**	**+0.8**
	baz=274						
TWQ1				S	**Sn**	**13 52 41.2**	**+0.2**
	baz=274						
TYC	**Yuchr**	**0.91**	**245**	*e*P	**Pn**	**13 52 28.1**	**-0.4**
	baz=246						
TYC				*e*S	**Sn**	**13 52 40.5**	**-0.8**
	baz=246						
NSY	**Sanyi**	**0.92**	**278**	*e*P	**Pn**	**13 52 29.3**	**+0.7**
	baz=278						
NSY				S	**Sn**	**13 52 42.5**	**+1.1**
	baz=278						
TWY	**Chenhua**	**0.99**	**352**	*e*P	**Pb**	**13 52 28.7**	**-0.5**
	baz=350						
TCU	**Taichung**	**1.00**	**262**	*e*P	**Pg**	**13 52 31.9**	**+2.0**
	baz=262						
TWF1	**Yuli**	**1.03**	**204**	*e*P	**Pb**	**13 52 29.1**	**-0.8**
	baz=216						
WNT	**Mingjian**	**1.07**	**247**	*e*P	**Pg**	**13 52 31.9**	**+0.7**
	baz=245						
WNT				*e*S	**Sg**	**13 52 47.8**	**+2.6**
	baz=245						
YUS	**Yu-Shan**	**1.09**	**223**	P	**Pn**	**13 52 31.3**	**-0.1**
	baz=225						
JYNG	**Yonagunijimaku**	**1.09**	**82**	P	**Pn**	**13 52 31.1**	**+0.1**
JYNG				*e*S	**Sg**	**13 52 46.9**	**+0.9**
YOJ	**Yonaguni jima**	**1.15**	**81**	P	**Pb**	**13 52 32.2**	**+0.2**
YOJ				*e*S	**Sn**	**13 52 47.5**	**+0.3**
YOJ	**Yonaguni jima**	**1.15**	**81**	⇓*i*P	**Pn**	**13 52 32.1**	**+0.3**
	baz=69						
YOJ				*e*S	**Sg**	**13 52 48.8**	**+0.9**
	baz=69						
ALS	**Alishan**	**1.17**	**228**	P	**Pg**	**13 52 32.7**	**-0.5**
	baz=217						
CHN5	**Tsauling**	**1.21**	**235**	P	**Pg**	**13 52 34.0**	**+0.1**
	baz=229						
CHN5				S	**Sg**	**13 52 51.5**	**+1.8**
	baz=229						
CHKT	**Chengkung**	**1.24**	**197**	*e*P	**Pn**	**13 52 31.9**	**-1.2**
	baz=182						
WGK	**Gukeng**	**1.25**	**241**	*e*P	**Pg**	**13 52 34.6**	**-0.1**
	baz=244						
WGK				*e*S	**Sg**	**13 52 53.0**	**+1.9**
	baz=244						
ELDTW	**Lidau**	**1.29**	**212**	*e*P	**Pn**	**13 52 32.7**	**-1.2**
	baz=214						
CHN2	**Minshiung**	**1.40**	**237**	*e*P	**Pg**	**13 52 37.5**	**0.0**
	baz=225						
CHN4	**Tsaushan**	**1.42**	**229**	*e*P	**Pg**	**13 52 37.6**	**-0.4**
	baz=221						
CHN4				*e*S	**Sg**	**13 52 58.7**	**+2.2**
	baz=221						
STYT	**Tauyuan**	**1.45**	**219**	*e*P	**Pb**	**13 52 36.6**	**-0.5**
	baz=223						
STYT				*e*S	**Sg**	**13 52 57.8**	**+0.3**
	baz=223						
CHY	**Chiayi**	**1.46**	**237**	*e*P	**Pg**	**13 52 38.3**	**-0.3**
	baz=226						
WTP	**Ta-pu**	**1.48**	**225**	*e*P	**Pg**	**13 52 38.3**	**-0.7**
	baz=229						
WTP				*e*S	**Sg**	**13 52 58.9**	**+0.5**
	baz=229						
TWK	**Hsinying**	**1.55**	**229**	*e*P	**Pb**	**13 52 38.4**	**-0.4**
	baz=232						
TWK				*e*S	**Sg**	**13 53 00.5**	**-0.1**
	baz=232						
WSF	**Szhu**	**1.55**	**245**	*e*P	**Pb**	**13 52 38.6**	**-0.1**
	baz=257						
WSF				*e*S	**Sg**	**13 53 00.9**	**+0.3**
	baz=257						
CHN1	**Nanshi**	**1.58**	**226**	⇑P	**Pg**	**13 52 40.4**	**-0.6**
	baz=229						
CHN1				*e*S	**Sg**	**13 53 02.9**	**+1.3**
	baz=229						
TWG	**Pinlang**	**1.60**	**203**	*e*P	**Pn**	**13 52 38.0**	**0.0**
	baz=192						
SGST	**Jiashian**	**1.62**	**222**	P	**Pg**	**13 52 40.8**	**-0.9**
	baz=226						
SGST				*e*S	**Sg**	**13 53 04.8**	**+2.0**
	baz=226						
CHN8	**Yiju**	**1.70**	**237**	*e*P	**Pb**	**13 52 41.3**	**-0.1**
	baz=225						
CHN8				*e*S	**Sg**	**13 53 04.9**	**-0.6**
	baz=225						
IRIF	**Iriomote-Funau**	**1.80**	**88**	P	**Pn**	**13 52 40.6**	**-0.1**
IRIF				S	**Sb**	**13 53 05.1**	**-0.1**
SCLT	**Jiali**	**1.82**	**232**	*e*P	**Pb**	**13 52 42.3**	**-1.0**
	baz=234						
ECL	**Taimali**	**1.84**	**204**	*e*P	**Pn**	**13 52 41.8**	**+0.4**
	baz=194						
SSD	**Sandimen**	**1.86**	**214**	*e*P	**Pb**	**13 52 43.7**	**-0.3**
	baz=228						
SSD				*e*S	**Sg**	**13 53 08.7**	**-1.7**
	baz=228						
TWM1	**Shoushan**	**1.91**	**220**	*e*P	**Pb**	**13 52 45.8**	**+0.9**
	baz=221						
JKRS	**Kuro-shima**	**2.05**	**91**	P	**Pn**	**13 52 44.9**	**+0.7**
EAST	**Anshuo**	**2.08**	**204**	*e*P	**Pb**	**13 52 46.3**	**-1.5**
	baz=197						
JIJ	**Ishigaki jima**	**2.17**	**88**	P	**Pn**	**13 52 46.1**	**+0.2**
JIJ				S	**Sn**	**13 53 13.6**	**+1.2**
SCZT	**Fangliau**	**2.18**	**209**	*e*P	**Pb**	**13 52 48.3**	**-1.2**
	baz=196						
JISG	**Ishigakijimahi**	**2.34**	**82**	P	**Pn**	**13 52 48.2**	**0.0**
JISG				S	**Sn**	**13 53 17.4**	**+0.8**
JTJ	**Tarama**	**2.70**	**82**	S	**Sn**	**13 53 26.9**	**+1.4**

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*IDC **05** 13:52:49.4±2.0, 9°.30S×112°.97E, h0km, mb3.8/6, mb1 3.9/6, mb1mx3.6/53, mbtmp3.8/6, MS3.4/1, Ms1 3.4/1, ms1mx2.7/38, Error ellipse: s-maj=76.6km s-min=20.9km az=51.0*

*ISCJB **05** 13:52:52.1±0.7, 9°.81S±0°.08×112°.74E±0°.06, h35km, mb3.9/8, MS3.5/1, Error ellipse: s-maj=12.2km s-min=7.4km az=27.1*

*NEIC **05** 13:52:53.8±1.2, 9°.68S×112°.78E, h43km±14km, mb4.1/2, Error ellipse: s-maj=21.9km s-min=11.8km az=219.0*

*DJA **05** 13:52:54.0±0.9, 10°S±10°×11°3E±°, h10km, M4.0/12, MLv4.0/12*

ISC 05 13:52:53.2±0.9**, 9°.7S**±0°.1×**112°.75E**±0°.08**, h35km, n27, σ2.11**/23**, mb4.1**/8**, South of Jawa**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
GMJI	**Gumukmas**	**1.60**	**25**	P	**Pn**	**13 53 18.2**	**-0.8**
JAGI	**Jajag, Banyuwa**	**1.86**	**48**	P	**Pn**	**13 53 22.4**	**-0.2**
JAGI	**Jajag, Banyuwa**	**1.86**	**48**	*e*Pn	**Pn**	**13 53 22.2**	**-0.4**
ABJI	**Asem Bagus**	**2.42**	**37**	P	**Pn**	**13 53 32.5**	**+2.3**
WOJI	**Wonogiri, Jawa**	**2.61**	**316**	P	**Pn**	**13 53 35.1**	**+2.3**
NGJI	**Ngawi**	**2.67**	**331**	P	**Pn**	**13 53 38.2**	**+4.5**
UGM	**Wanagama**	**2.85**	**309**	P	**Pn**	**13 53 38.7**	**+2.5**
SMRI	**Semarang**	**3.51**	**319**	P	**Pn**	**13 53 48.3**	**+3.1**
SMRI	**Semarang**	**3.51**	**319**	*e*P	**Pn**	**13 53 48.3**	**+3.1**
UWJI	**Ujung Watu**	**3.74**	**331**	P	**Pn**	**13 53 50.5**	**+2.1**
TWSI	**Taliwang, Sumb**	**4.20**	**77**	P	**Pn**	**13 53 55.9**	**+1.2**
PLAI	**Plampang**	**5.04**	**80**	P	**Pn**	**13 54 08.8**	**+2.5**
CISI	**Cisompet, Garu**	**5.33**	**293**	*e*P	**Pn**	**13 54 11.6**	**+1.2**
MNAI	**Manna**	**11.09**	**298**	*e*P	**Pn**	**13 55 27.8**	**-1.5**
MBWA	**Marble Bar**	**13.20**	**150**	*e*P	**Pn**	**13 55 57.4**	**-0.8**
WRA	**Warramunga Arr**	**23.18**	**118**	P	**P**	**13 57 58.8**	**+1.8**
	0.3nm,0.6s,baz=289,slow=11,SNR=3.8						
ASAR	**Alice Springs**	**24.50**	**127**	P	**P**	**13 58 11.1**	**+1.6**
	0.9nm,0.7s,baz=303,slow=9.3,SNR=8.9						
H08S2	**Diego Garcia H**	**39.83**	**270**	T	T	14 42 30.4	
	baz=92,SNR=176						
H08S3	**Diego Garcia H**	**39.84**	**270**	T	T	14 42 31.1	
	baz=92,SNR=131						
H08S1	**Diego Carcia H**	**39.85**	**270**	T	T	14 42 31.8	
	baz=92,SNR=148						
JHJ	**Hachijo jima 2**	**49.79**	**30**	LR	LR	14 22 43.2	
	comp=Z,44nm,20.5s,baz=52,slow=36						
MJAR	**Matsushiro Arr**	**51.88**	**26**	P	**P**	**14 01 55.5**	**-2.8**
	0.6nm,0.3s,baz=224,slow=7.0,SNR=6.4						
ULN	**Ulaanbaatar**	**57.56**	**355**	*e*P	**P**	**14 02 38.7**	**-0.8**
	2.3nm,0.8s						
SONM	**Songino Array**	**57.59**	**355**	P	**P**	**14 02 39.2**	**-0.3**
	1.3nm,0.6s,baz=174,slow=8.1,SNR=7.8						
MKAR	**Makanchi Array**	**62.49**	**337**	P	**P**	**14 03 12.6**	**-0.6**
	0.8nm,0.4s,baz=149,slow=7.8,SNR=24						
ZALV	**Zalesovo Beam**	**67.70**	**343**	P	**P**	**14 03 45.7**	**-1.0**
	0.8nm,0.4s,baz=145,slow=3.3,SNR=6.4						
ABKAR	**Akbulak array**	**74.72**	**327**	*e*P	**P**	**14 04 29.3**	**0.0**
	0.9nm,0.5s						

JMA 05 13:55:17.8±0.2**, 37°.43N**×**144°.61E, h22km, M4.1, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**2.77**	**293**	P	Pn	13 56 02.3	+1.4
JIO				*e*S	Sn	13 56 35.6	+1.9
OFUJ	**Ofunato**	**2.84**	**306**	P	Pn	13 56 03.5	+1.7
JMM	**Marumori**	**3.06**	**279**	P	Pn	13 56 06.0	+1.2
JMM				S	Sn	13 56 42.9	+2.1
JMK	**Ichinoseki**	**3.07**	**301**	P	Pn	13 56 06.7	+1.7
JMK				S	Sn	13 56 43.0	+1.9
JOU	**Okura**	**3.26**	**288**	S	Sn	13 56 48.8	+3.1
JTH	**Tanohata**	**3.30**	**320**	*e*S	Sn	13 56 47.9	+1.2
JOM	**Ohasama**	**3.31**	**309**	P	Pn	13 56 09.7	+1.5
JOM				S	Sn	13 56 49.4	+2.5
JFT	**Otama**	**3.40**	**273**	P	Pn	13 56 11.3	+1.8
JFT				S	Sn	13 56 51.1	+1.9
JYK	**Kaneyama**	**3.66**	**295**	P	Pn	13 56 15.3	+2.2
JYK				*e*S	Sn	13 56 59.0	+3.3
JRG	**Rokugo**	**3.69**	**303**	P	Pn	13 56 16.2	+2.7
JRG				*e*S	Sn	13 56 59.5	+3.2
JANG	**Nango**	**3.80**	**322**	P	Pn	13 56 16.7	+1.6
JANG				S	Sn	13 56 59.3	+0.2
JTM	**Tenmabayashi**	**4.34**	**322**	P	Pn	13 56 25.2	+2.8
JTM				*e*S	Sn	13 57 13.5	+1.2

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*BJI **05** 13:57:21.9, 5°.06S×101°.39E, h25km, mb4.9/57, mB4.9/37, Ms4.6/31, Ms7 4.2/31*

*IDC **05** 13:57:24.7±0.8, 4°.47S×101°.25E, h0km, mb4.5/26, mb1 4.6/27, mb1mx4.4/61, mbtmp4.5/27, ML4.4/1, MS4.0/4, Ms1 4.0/4, ms1mx3.3/40, Error ellipse: s-maj=24.9km s-min=13.2km az=41.0*

*ISCJB **05** 13:57:25.9±1.0, 4°.61S±0°.04×101°.14E±0°.04, h27km±7km, mb4.7/63, MS4.1/14, Error ellipse: s-maj=8.9km s-min=4.4km az=41.7*

*NEIC **05** 13:57:27.4±2.5, 4°.43S×101°.29E, h18km±14km, mb4.9/20, Error ellipse: s-maj=11.3km s-min=4.3km az=47.0*

*DJA **05** 13:57:28.6±0.4, 5°S±3°×10°1E±°, h43km±30km, M4.9/25, mb5.0/19, mB5.4/11, MLv4.9/25, Mw(mB)4.8/11*

ISC 05 13:57:28.1±1.2**, 4°.62S**±0°.05×**101°.19E**±0°.06**, h30km**±7km**, n217, σ1.48**/217**, mb4.8**/63**, MS4.2**/14**, 1D, Southern Sumatera**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
MNAI	**Manna**	**1.77**	**82**	P	**Pb**	**13 57 58.2**	**-1.8**
MNAI	**Manna**	**1.77**	**82**	*e*Pn	**Pb**	**13 57 57.9**	**-2.1**
MASI	**Maura Aman, Be**	**1.80**	**35**	P	**Pn**	**13 57 57.2**	**0.0**
MASI				S	**Sb**	**13 58 22.8**	**+0.2**
PPSI	**Pulau Pagai**	**2.19**	**327**	P	**Pn**	**13 58 01.8**	**-0.7**
LHSI	**Lahat**	**2.45**	**71**	P	**Pn**	**13 58 07.7**	**+1.6**
LWLI	**Liwa**	**2.88**	**98**	P	**Pn**	**13 58 13.6**	**+1.5**
MDSI	**Maura Dua**	**2.98**	**88**	P	**Pn**	**13 58 14.9**	**+1.6**
MDSI				S	**Sn**	**13 58 50.4**	**+2.3**
KASI	**Kota Agung**	**3.41**	**105**	P	**Pn**	**13 58 20.6**	**+1.3**
KLI	**Kotabumi**	**3.66**	**94**	P	Pb	13 58 34.4	+2.3
SDSI	**Sungai Dareh**	**3.67**	**4**	P	**Pn**	**13 58 23.9**	**+1.1**
PDSI	**Padang**	**3.75**	**349**	P	**Pn**	**13 58 23.1**	**-0.9**
JMBI	**JAMBI**	**3.84**	**40**	P	Pb	13 58 36.1	+0.9
PMBI	**Palembang**	**3.94**	**65**	P	Pb	13 58 45.1	+8.1
BLSI	**Bandar Lampung**	**4.10**	**101**	P	Pb	13 58 45.4	+5.7
PPI	**Padang Panjang**	**4.21**	**349**	P	**Pn**	**13 58 29.8**	**-0.5**
CGJI	**Cibinong**	**4.90**	**114**	P	**Pn**	**13 58 40.3**	**+0.6**
BKNI	**Bangkinang**	**4.91**	**358**	P	**Pn**	**13 58 39.8**	**-0.2**
BKNI	**Bangkinang**	**4.91**	**358**	*e*Pn	**Pn**	**13 58 38.3**	**-1.7**
BKNI				*e*Pg	Pb	13 58 55.9	+2.4
DSRI	**Dabo**	**5.32**	**40**	P	**Pn**	**13 58 46.6**	**+1.0**
	329nm,0.8s,4μm1.3nm						
PBSI	**Pulau Batu**	**5.39**	**327**	P	**Pn**	**13 58 45.5**	**-1.0**
	245nm,0.7s,5μm1.8nm						
PPBI	**Pangkal Pinang**	**5.50**	**64**	P	**Pn**	**13 58 48.8**	**+0.7**
	44nm,1.1s,2μm0.5nm						
MNSI	**Mandailing Nat**	**5.61**	**343**	P	**Pn**	**13 58 49.0**	**-0.6**
	81nm,0.7s,3μm1.0nm						
DBJI	**Dramaga**	**5.86**	**109**	P	**Pn**	**13 58 54.6**	**+1.7**
	261nm,1.5s,4μm0.9nm						
TPRI	**Tanjung Pinang**	**6.43**	**31**	P	**Pn**	**13 59 01.7**	**+0.9**
CNJI	**Cibinong**	**6.48**	**115**	P	**Pn**	**13 59 01.9**	**+0.4**
	161nm,0.8s,2μm0.7nm						
LEM	**Lembang**	**6.76**	**109**	Pn	Pn	13 59 14.4	+9.0
	11nm,0.3s,baz=212,slow=5.6,SNR=8.7						
MYKOM	**Kota Tinggi**	**6.90**	**23**	*e*Pn	**Pn**	**13 59 03.5**	**-3.7**
GSI	**Gunungsitoli**	**6.90**	**328**	P	**Pn**	**13 59 05.8**	**-1.5**
	114nm,0.7s,0.5nm						
GSI	**Gunungsitoli**	**6.90**	**328**	*e*Pn	**Pn**	**13 59 05.3**	**-2.1**
CISI	**Cisompet, Garu**	**7.20**	**114**	P	**Pn**	**13 59 11.5**	**0.0**
	175nm,0.7s,2μm0.7nm						
CISI	**Cisompet, Garu**	**7.20**	**114**	*e*Pn	**Pn**	**13 59 11.4**	**0.0**
XMIS	**Christmas Isla**	**7.31**	**143**	*e*Pn	**Pn**	**13 59 09.5**	**-3.4**
XMIS				*e*Sn	**Sn**	**14 00 28.5**	**-6.5**
PSI	**Prapat**	**7.71**	**343**	Pn	**Pn**	**13 59 16.4**	**-2.1**
	6.3nm,0.3s,baz=183,slow=4.6,SNR=12						
PSI	**Prapat**	**7.71**	**343**	*e*Pn	**Pn**	**13 59 15.4**	**-3.1**
CMJI	**Cimerak**	**7.87**	**114**	P	**Pn**	**13 59 20.8**	**+0.2**
	100nm,1.1s,0.4nm						
KPJI	**Karang Pucung**	**8.15**	**110**	P	**Pn**	**13 59 25.4**	**+0.9**
	55nm,1.1s						
TPTI		**8.79**	**333**	P	**Pn**	**13 59 33.2**	**-0.1**
	389nm,0.7s,8μm						
UGM	**Wanagama**	**9.83**	**110**	P	**Pn**	**13 59 48.6**	**+1.0**
UGM	**Wanagama**	**9.83**	**110**	*e*Pn	**Pn**	**13 59 48.3**	**+0.7**
KULM	**Kulim**	**9.86**	**357**	*e*Pn	**Pn**	**13 59 46.6**	**-1.3**
SBUM	**Sibu**	**13.06**	**58**	*e*Pn	**Pn**	**14 00 29.0**	**-2.8**
CHBT	**CHBT**	**17.29**	**4**	P	**P**	**14 01 28.7**	**0.0**
	38nm,1.1s						
MYLDM	**Lahad Datu**	**19.84**	**61**	*e*P	**P**	**14 01 55.0**	**-1.7**
	65nm,1.0s						
CHAI	**Chaiyaphum**	**20.40**	**2**	P	**P**	**14 02 03.2**	**+0.4**
	7.8nm,1.1s,81nm						
KHON	**Khomkaen**	**20.88**	**4**	P	**P**	**14 02 07.9**	**-0.1**
	15nm,0.9s						
PBKT	**Sadao Pong**	**21.05**	**359**	P	**P**	**14 02 09.8**	**0.0**
	15nm,0.8s						
PHIT	**Phitsanulok**	**21.68**	**358**	P	**P**	**14 02 19.0**	**+2.4**
	29nm,0.8s						
SUKH	**Sukhothai**	**22.01**	**356**	P	**P**	**14 02 21.8**	**+1.7**
	6.1nm,0.9s						
UTTA	**Uttaradit**	**22.23**	**358**	P	**P**	**14 02 22.2**	**-0.3**
	4.0nm,0.8s						
NONG	**Nongkai**	**22.62**	**5**	P	**P**	**14 02 24.5**	**-2.1**
	123nm,0.9s,5μm						
MHMT	**Maesarieng**	**22.88**	**352**	P	**P**	**14 02 29.7**	**+0.3**
	22nm,1.0s,309nm						
BATI	**Baumata**	**22.95**	**105**	P	**P**	**14 02 30.3**	**0.0**
	7.1nm,0.3s,baz=300,slow=12,SNR=3.1						
CM01	**Chiang Mai Arr**	**23.00**	**355**	*e*P	**P**	**14 02 29.0**	**-1.6**
CM31	**Chiang Mai Arr**	**23.04**	**355**	*e*P	**P**	**14 02 29.0**	**-2.0**
CMAR	**Chiang Mai Arr**	**23.04**	**355**	P	**P**	**14 02 29.1**	**-2.0**
	16nm,0.8s,baz=187,slow=8.7,SNR=56						
LAMP	**Lampang**	**23.05**	**356**	P	**P**	**14 02 31.9**	**+0.8**
	12nm,0.9s						
CHTO	**Chiang Mai**	**23.39**	**355**	P	**P**	**14 02 34.0**	**-0.5**
	101nm,1.0s						
CHTO	**Chiang Mai**	**23.39**	**355**	*e*P	**P**	**14 02 33.0**	**-1.5**
	19nm,0.9s						
CRAI	**Chiangrai**	**24.70**	**358**	P	**P**	**14 02 46.0**	**-0.8**
	16nm,1.1s						
QIZ	**Qiongzhong**	**24.99**	**20**	P	**P**	**14 02 50.5**	**+1.1**
QIZ				S	**S**	**14 07 13.9**	**+2.3**

QIZ				LR	LR		
	comp=N,170nm,22.9s						
QIZ				LR	LR		
	comp=Z,190nm,23.0s						
DAV	Davao City (W)	26.96	65	P	P	14 03 07.2	-0.2
	246nm,0.4s,baz=227,slow=19,SNR=4.2						
H08S2	Diego Garcia H	28.69	263	T	T	14 33 21.9	
	baz=87,SNR=3402						
H08S3	Diego Garcia H	28.70	263	T	T	14 33 20.4	
	baz=87,SNR=3396						
H08S1	Diego Carcia H	28.71	263	T	T	14 33 21.3	
	baz=87,SNR=3463						
KMI	Kunming	29.60	3	P	P	14 03 32.4	+1.4
KMI				pP	sP	14 03 40.0	-3.3
KMI				sP	pP	14 03 43.3	+3.6
KMI				PP	PnPn	14 04 30.4	+3.9
KMI				S	S	14 08 24.9	+0.2
KMI				sS	sS	14 08 37.7	-1.3
KMI				SS	SnSn	14 09 59.1	+4.6
KMI				pmax	pmax		
	comp=Z,17nm,1.0s						
KMI				pmax	pmax		
	comp=Z,110nm,4.8s						
KMI				LR	LR		
	comp=N,410nm,18.1s						
KMI				LR	LR		
	comp=E,380nm,17.0s						
KMI				LR	LR		
	comp=Z,400nm,19.1s						
H08N1	Diego Carcia H	30.09	265	T	T	14 35 54.2	
	baz=169,SNR=74						
H08N2	Diego Garcia H	30.10	265	T	T	14 35 52.5	
	baz=169,SNR=52						
H08N3	Diego Garcia H	30.11	265	T	T	14 35 55.1	
	baz=169,SNR=80						
GYA	Guiyang	31.34	9	P	P	14 03 48.2	+1.9
GYA				PP	PnPn	14 04 51.2	+1.9
GYA				PcP	PcP	14 06 42.0	+2.1
GYA				S	S	14 08 51.8	0.0
GYA				ScP	ScP	14 10 22.4	+1.3
GYA				ScS	ScS	14 14 18.6	-0.2
GYA				pmax	pmax		
	comp=Z,20nm,0.8s						
GYA				pmax	pmax		
	comp=Z,160nm,6.2s						
GYA				LR	LR		
	comp=N,580nm,17.8s						
GYA				LR	LR		
	comp=E,510nm,18.0s						
GYA				LR	LR		
	comp=Z,550nm,18.2s						
H01W3	Cape Leeuwin H	32.41	160	T	T	14 38 09.5	
	baz=337,slow=76,SNR=280						
H01W2	Cape Leeuwin H	32.43	160	T	T	14 38 12.0	
	baz=337,slow=76,SNR=335						
H01W1	Cape Leeuwin H	32.43	160	T	T	14 38 10.6	
	baz=337,slow=76,SNR=280						
ODAN	Odare	34.02	338	*e*P	P	14 04 11.1	+1.2
	66nm,0.9s						
TAPN	Taplejung	34.35	338	*e*P	P	14 04 14.3	+1.6
	99nm,0.9s						
RAMN	Ramite	34.41	337	*e*P	P	14 04 14.4	+1.2
	47nm,0.9s						
CD2	Chengdu	35.41	4	P	P	14 04 21.5	-0.1
CD2				sP	sP	14 04 32.4	-1.6
CD2				PP	PP	14 05 42.1	-0.3
CD2				S	S	14 09 55.4	+0.7
CD2				sS	sS	14 10 08.3	-0.8
CD2				pmax	pmax		
	comp=Z,30nm,1.0s						
CD2				pmax	pmax		
	comp=Z,190nm,4.9s						
CD2				LR	LR		
	comp=E,790nm,16.8s						
CD2				LR	LR		
	comp=Z,460nm,15.6s						
PKIN	Phulchoki	35.45	335	*e*P	P	14 04 23.0	+0.7
	12nm,0.9s						
LSA	Lhasa	35.46	345	*e*P	P	14 04 23.8	+1.3
	9.7nm,1.0s						
ENH	Enshi	35.59	12	*e*P	P	14 04 21.3	-1.8
	18nm,0.9s						
DMN	Daman	35.60	335	*e*P	P	14 04 24.7	+1.2
WRA	Warramunga Arr	35.68	118	P	P	14 04 24.8	+0.7
	5.5nm,0.8s,baz=310,slow=8.9,SNR=19						
WRAB	Tennant Creek	35.69	118	*e*P	P	14 04 24.5	+0.4
	19nm,0.9s						
KKN	Kakani	35.69	335	*e*P	P	14 04 25.5	+1.3
	47nm,1.0s						
GKN	Gorkha	36.15	335	*e*P	P	14 04 29.3	+1.2
KOLN	Koldanda	36.40	333	*e*P	P	14 04 31.6	+1.3
	14nm,0.7s						
ASAR	Alice Springs	36.78	124	P	P	14 04 35.2	+1.8
	2.9nm,1.0s,baz=299,slow=8.3,SNR=10.0						
ASAR				PcP	PcP	14 06 57.1	+1.7
	2.9nm,1.1s,baz=282,slow=2.4,SNR=4.7						
ASAR				LR	LR	14 21 44.7	
	comp=Z,172nm,20.0s,baz=265,slow=40						
AS31	Alice Springs	36.78	124	*e*P	P	14 04 34.2	+0.7
	2.6nm,0.6s						
AS01	Alice Springs	36.82	124	*e*P	P	14 04 34.0	+0.2
PYUN	Piuthan	36.96	333	*e*P	P	14 04 36.3	+1.2
XAN	Xi’an	39.13	10	P	P	14 04 52.6	-0.5
XAN				S	S	14 10 48.2	-3.0
XAN				pmax	pmax		
	comp=Z,21nm,1.0s						
XAN				LR	LR		
	comp=N,160nm,18.2s						
XAN				LR	LR		
	comp=E,290nm,16.6s						
XAN				LR	LR		
	comp=Z,260nm,18.3s						
LZH	Lanzhou	40.57	3	*e*P	P	14 05 05.9	+0.8
LZH				pP	pP	14 05 13.9	-0.1
LZH				sP	sP	14 05 18.6	+1.0
LZH				pmax	pmax		
	comp=Z,20nm,1.0s						
TIA	Tai’an	43.27	19	*e*P	P	14 05 26.6	-0.4
TIA				pmax	pmax		
	comp=Z,10.0nm,0.8s						
GTA	Gaotai	43.83	358	P	P	14 05 31.1	-0.5
GTA				pP	pP	14 05 39.0	-1.6
GTA				sP	sP	14 05 42.3	-1.9
GTA				PcP	PcP	14 07 18.8	+1.0
GTA				ScP	ScP	14 11 05.9	-1.7
GTA				S	S	14 11 59.4	-1.4
GTA				SS	SS	14 15 08.7	-9.0
GTA				pmax	pmax		
	comp=Z,9.0nm,1.3s						
GTA				pmax	pmax		
	comp=Z,63nm,5.5s						
GTA				LR	LR		
	comp=N,160nm,13.3s						
GTA				LR	LR		
	comp=E,260nm,17.6s						
GTA				LR	LR		
	comp=Z,230nm,14.3s						
HHC	Hu-ho-hao-te	46.23	11	*e*P	P	14 05 52.1	+1.4
HHC				pP	pP	14 05 59.7	0.0
HHC				sP	sP	14 06 03.0	-0.3
HHC				PP	PP	14 07 40.8	+1.1
HHC				S	S	14 12 37.9	+2.3
HHC				sS	sS	14 12 48.6	-1.7
HHC				ScS	ScS	14 15 43.3	-0.9
HHC				pmax	pmax		
	comp=Z,36nm,0.8s						
HHC				pmax	pmax		
	comp=Z,160nm,8.2s						
HHC				LR	LR		
	comp=N,110nm,16.0s						
HHC				LR	LR		
	comp=E,580nm,18.8s						
HHC				LR	LR		
	comp=Z,160nm,18.1s						
STKA	Stephens Creek	46.54	131	LR	LR	14 24 48.9	
	comp=Z,154nm,20.3s,baz=252,slow=35						
KS15	Wonju Array Si	48.67	28	*e*P	P	14 06 09.4	-0.1
KSAR	Wonju Array Be	48.67	28	P	P	14 06 09.8	+0.2
KSRS	Korea Array	48.70	28	P	P	14 06 09.8	0.0
	11nm,0.8s,baz=218,slow=8.0,SNR=35						
KS01	Wonju Array Si	48.70	28	*e*P	P	14 06 09.2	-0.6
KSH	Kashi	49.69	334	P	P	14 06 16.8	-0.8
KSH				*e*sP	sP	14 06 27.6	-2.6
KSH				*e*PP	PP	14 08 10.5	-1.9
KSH				PcS	PcS	14 11 36.2	+0.8
KSH				S	S	14 13 19.8	-4.9
KSH				pmax	pmax		
	comp=Z,94nm,5.3s						
KSH				LR	LR		
	comp=N,120nm,7.6s						
KSH				LR	LR		
	comp=E,93nm,5.0s						
KSH				LR	LR		
	comp=Z,170nm,10.9s						
WMQ	Urumqi	49.73	347	P	P	14 06 18.8	+1.1
WMQ				pP	sP	14 06 27.2	-3.1
WMQ				PcP	PcP	14 07 40.2	+1.7
WMQ				S	S	14 13 22.2	-2.7
WMQ				pmax	pmax		
	comp=Z,17nm,0.8s						
WMQ				pmax	pmax		
	comp=Z,53nm,4.0s						
WMQ				LR	LR		
	comp=N,81nm,19.6s						
WMQ				LR	LR		
	comp=E,41nm,25.0s						
WMQ				LR	LR		
	comp=Z,24nm,19.6s						
WSAR	Wadi Sarin	49.91	306	LR	LR	14 26 52.9	
	comp=Z,147nm,18.2s,baz=156,slow=36						
SONM	Songino Array	52.43	4	P	P	14 06 38.8	+0.8
	23nm,0.9s,baz=184,slow=8.5,SNR=116						
SONM				PcP	PcP	14 07 48.6	+0.1
	1.0nm,0.6s,baz=170,slow=3.9,SNR=2.6						
ULN	Ulaanbaatar	52.51	5	*e*P	P	14 06 38.2	-0.4
	20nm,1.0s						
TKM2	Tokmak 2	52.69	336	*e*P	P	14 06 40.4	+0.3
	11nm,0.8s						
AAK	Ala-Archa	52.90	335	P	P	14 06 42.7	+1.0
	2.0nm,0.7s,baz=169,slow=5.3,SNR=8.3						
CN2	Changchun	52.92	22	*e*P	P	14 06 41.2	-0.3
CN2				*e*pP	pP	14 06 48.3	-2.3
CN2				pmax	pmax		
	comp=Z,30nm,0.6s						
CN2				pmax	pmax		
	comp=Z,200nm,3.0s						
CN2				LR	LR		
	comp=Z,200nm,17.0s						
EKS2	Erkin-Say	53.22	335	*e*P	P	14 06 44.5	+0.6
	11nm,0.8s						
MAJO	Matsushiro	53.59	37	*e*P	P	14 06 44.6	-2.0
	12nm,1.0s						
MAT	Matsushiro	53.59	37	P	P	14 06 44.0	-2.6
MJAR	Matsushiro Arr	53.59	37	P	P	14 06 45.5	-1.1
	10nm,0.9s,baz=218,slow=7.3,SNR=29						
MK01	Makanchi Array	53.83	344	*e*P	P	14 06 47.8	-0.4
MK31	Makanchi Array	53.85	344	*e*P	P	14 06 48.4	0.0
MKAR	Makanchi Array	53.85	344	P	P	14 06 49.0	+0.6
	10nm,0.8s,baz=148,slow=8.4,SNR=94						
MKAR	Makanchi Array	53.85	344	*e*P	P	14 06 48.4	0.0
MAKZ	Makanchi	53.95	344	*e*P	P	14 06 48.7	-0.4
	10nm,1.1s						
MDJ	Mudanjiang	55.23	24	P	P	14 06 59.1	+0.7
MDJ				pmax	pmax		
	comp=Z,8.0nm,0.7s						
MDJ				pmax	pmax		
	comp=Z,93nm,6.3s						
USRK	Ussuriysk Ar.	55.92	26	P	P	14 07 03.6	+0.2
	22nm,0.8s,baz=222,slow=6.0,SNR=38						
TLY	Talaya	56.12	2	P	P	14 07 06.0	+1.3
	6.3nm,0.8s,baz=190,slow=6.9,SNR=12						
GEYT	Alibeck	58.21	321	P	P	14 07 20.5	+0.8
	3.1nm,0.7s,baz=115,slow=7.0,SNR=6.1						
KURBB	Kurchatov Arra	58.38	343	P	P	14 07 21.1	+0.5
	7.9nm,0.9s,baz=160,slow=6.7,SNR=49						
KURK	Kurchatov	58.44	343	*e*P	P	14 07 20.3	-0.7
	15nm,0.9s						
KLR	Kul’dur	59.85	23	P	P	14 07 30.9	+0.1
	10nm,0.8s,baz=226,slow=5.3,SNR=27						
ZAA0	Zalesovo Array	59.95	349	*e*P	P	14 07 30.7	-0.7
ZALV	Zalesovo Beam	59.95	349	P	P	14 07 31.4	0.0
	12nm,0.7s,baz=182,slow=5.3,SNR=54						
BVAR	Borovoye Array	63.04	340	P	P	14 07 52.1	-0.2
	7.0nm,0.8s,baz=138,slow=9.1,SNR=39						
YSS	Yuzh-Sakhalins	63.08	31	*e*P	P	14 07 52.6	-0.1
	34nm,1.0s						
BRVK	Borovoye	63.10	340	*e*P	P	14 07 52.2	-0.5
	7.6nm,0.9s						
ABKAR	Akbulak array	64.49	331	*e*P	P	14 08 01.9	0.0
AKTO	Aktyubinsk	66.21	331	P	P	14 08 12.8	-0.3
	2.2nm,0.9s,baz=132,slow=9.4,SNR=4.7						
MAW	Mawson	68.07	195	LR	LR	14 32 30.2	
	comp=Z,156nm,19.7s,baz=58,slow=31						
YAK	Yakutsk	69.97	14	P	P	14 08 35.9	-0.5
	1.3nm,0.3s,baz=29,slow=21,SNR=6.1						
YAK	Yakutsk	69.97	14	*e*P	P	14 08 35.6	-0.8
	25nm,0.8s						
ARU	Arti	70.07	336	P	P	14 08 37.7	+0.6
	3.1nm,0.5s,baz=130,slow=2.3,SNR=10						
ARU	Arti	70.07	336	*e*P	P	14 08 37.2	0.0
	12nm,1.0s						
KBZ	Khabaz	71.05	319	P	P	14 08 44.5	+1.1
	4.7nm,0.9s,baz=60,slow=5.7,SNR=5.3						
NRIK	Noril’sk	74.39	355	P	P	14 09 03.0	+0.3
	2.8nm,0.5s,baz=158,slow=5.1,SNR=12						
PETK	Petropavlovsk-	74.46	31	P	P	14 09 03.4	-0.1
	4.1nm,0.9s,baz=147,slow=3.0,SNR=4.8						
MA2	Magadan	74.92	24	*e*P	P	14 09 04.8	-1.2
	30nm,0.9s						
SYO	Syowa Base	75.79	199⇓	*e*P	P	14 09 12.0	+1.1
BRTR	Keskin Array B	75.96	313	P	P	14 09 12.8	+0.2
	1.2nm,0.9s,baz=90,slow=4.9,SNR=3.7						
SEY	Seymchan	77.60	21	P	P	14 09 21.8	+0.7
	4.9nm,1.0s,baz=225,slow=6.8						
TIXI	Tiksi	78.24	9	*e*P	P	14 09 23.2	-1.3
	5.9nm,0.7s						
BUR08	Bucovina Ar. S	84.02	319	*e*P	P	14 09 58.1	+2.2
BILL	Bilibino	85.19	20	*e*P	P	14 10 00.5	-0.7
	10nm,1.6s						
KOLS	Kolonicke sedl	86.20	320	*e*P	P	14 10 09.3	+2.6
KOLS				*e*		14 10 17.7	
FINES	FINESS Array B	86.97	332	P	P	14 10 10.8	+0.7
	2.7nm,0.9s,baz=197,slow=5.8,SNR=5.5						
ARCES	ARCESS Array B	89.32	340	P	P	14 10 19.1	-2.2
	4.5nm,0.9s,baz=100,slow=6.3,SNR=6.1						
GERES	GERESS Array B	91.79	319	P	P	14 10 34.5	+1.3
	0.8nm,0.7s,baz=102,slow=5.6,SNR=5.7						
YKA	Yellowknife Ar	116.50	18	PKP	PKPdf	14 16 09.5	+0.8
	0.2nm,0.8s,baz=306,slow=2.1,SNR=3.7						
ULM	Lac du Bonnet	132.30	15	PKP	PKPdf	14 16 40.1	+0.7
	1.9nm,0.8s,baz=196,slow=3.5,SNR=3.4						
R39A	Chumby, Stover	144.04	19	P	PKPbc	14 16 59.5	+0.3
	baz=335						
T36A	Boggs Farm, Ca	144.12	24	P	PKPbc	14 17 00.3	+0.8
	baz=330						
W32A	Sentinel	144.24	29	P	PKPbc	14 17 00.4	+0.5
	baz=324						
R40A	Maddies Statio	144.31	18	P	PKPbc	14 17 00.6	+0.6
	baz=337,SNR=5.1						
U35A	Pawnee	144.36	25	P	PKPbc	14 17 00.8	+0.6
	baz=328						
S38A	Stockton	144.36	21	P	PKPbc	14 17 00.6	+0.4
	baz=334						
T37A	Cheneyville 18	144.44	22	P	PKPbc	14 17 00.8	+0.4
	baz=332,SNR=6.3						
S39A	Bolivar	144.51	20	P	PKPab	14 17 00.9	+0.5
	baz=335						
W33A	Caddo, Fort Co	144.59	28	P	PKPbc	14 17 02.0	+1.0
	baz=325						
U36A	Oologah	144.75	24	P	PKPbc	14 17 02.5	+1.0
	baz=330						
WMOK	Wichita Mounta	144.78	29	*e*PKPdf	PKPab	14 17 01.5	-0.1
X32A	Elmer	144.78	30	P	PKPab	14 17 02.0	+0.4
	baz=323						
V35A	Meyer Ranch, C	144.83	26	P	PKPbc	14 17 02.5	+0.7
	baz=328						
W34A	Bridge Creek,	144.85	28	P	PKPbc	14 17 02.4	+0.6
	baz=326						
S40A	Lebanon	144.87	19	P	PKPab	14 17 01.9	+0.1
	baz=336,SNR=6.8						
U37A	Salina	144.99	23	P	PKPab	14 17 02.6	+0.4
	baz=331,SNR=8.8						
OLIL	Olney	145.00	13	*e*PKPdf	PKPbc	14 17 02.7	+0.5
T39A	Clever	145.09	21	P	PKPab	14 17 02.9	+0.3
	baz=334,SNR=5.2						
TUL1	Leonard	145.14	25	P	PKPbc	14 17 03.0	+0.2
	baz=330						
TUL1	Leonard	145.14	25	*e*PKPbc	PKPab	14 17 03.3	+0.5
V36A	Jenks	145.19	25	P	PKPab	14 17 03.7	+0.7
	baz=329,SNR=8.0						
U38A	Gravette	145.24	22	P	PKPbc	14 17 03.4	+0.3
	baz=332,SNR=11						
T40A	Mansfield	145.27	19	P	PKPab	14 17 03.9	+0.6
	baz=336,SNR=5.9						
W35A	Tecumseh	145.32	27	P	PKPdf	14 17 04.1	+0.5
	baz=327						
X34A	Smith Ranch, M	145.34	28	P	PKPdf	14 17 04.4	+0.8
	baz=325						
V37A	Hulbert	145.43	24	P	PKPab	14 17 04.3	+0.4
	baz=330,SNR=6.0						
Y33A	Hilltop Ranch,	145.44	30	P	PKPbc	14 17 03.9	+0.1
	baz=324						
HHAR	Hobbs	145.55	22	*e*PKPdf	PKPbc	14 17 04.2	+0.1
W36A	Wetumka	145.62	26	P	PKPab	14 17 05.1	+0.5
	baz=328						
SIUC	Southern Illin	145.71	15	*e*PKPdf	PKPbc	14 17 05.1	+0.6
V38A	Canehill	145.74	23	P	PKPbc	14 17 05.3	+0.6
	baz=332,SNR=6.5						
WCI	Wyandotte Cave	145.85	11	*e*PKPdf	PKPbc	14 17 05.5	+0.5
U40A	Yellville	145.87	20	P	PKPbc	14 17 05.4	+0.3
	baz=334,SNR=12						
Y34A	Reagan Ranch,	145.90	29	P	PKPab	14 17 06.0	+0.3
	baz=325,SNR=6.6						
X35A	Drake	145.91	27	P	PKPbc	14 17 05.5	+0.2
	baz=326,SNR=6.3						
Z33A	Whitaker Ranch	145.94	31	P	PKPbc	14 17 05.9	+0.5
	baz=323						
W37B	Quinton	145.96	25	P	PKPdf	14 17 05.6	+0.8
	baz=330						
TX31	Lajitas Ar. Si	145.97	41	*e*PKPdf	PKPab	14 17 06.8	+0.6
TXAR	Lajitas Array	145.97	41	PKPbc	PKPab	14 17 07.2	+1.0
	8.2nm,0.8s,baz=289,slow=1.5,SNR=66						
ABTX	Abilene, Hawle	146.00	32	P	PKPab	14 17 06.7	+0.5
	baz=321						
ABTX	Abilene, Hawle	146.00	32	*e*PKPdf	PKPab	14 17 06.8	+0.5
X36A	Centrahoma	146.04	26	P	PKPbc	14 17 06.3	+0.7
	baz=328						
V39A	Pettigrew	146.05	22	P	PKPbc	14 17 06.3	+0.6
	baz=333,SNR=7.5						
V40A	Witts Springs	146.38	21	P	PKPbc	14 17 06.9	+0.2
	baz=334,SNR=7.1						
133A	Hamilton Ranch	146.40	32	P	PKPab	14 17 08.1	+0.4
	baz=322,SNR=5.8						
X37A	Clayton	146.45	25	P	PKPab	14 17 07.8	0.0
	baz=329						
W39A	Magazine	146.57	23	P	PKPbc	14 17 07.7	+0.5
	baz=332						
X38A	Whitesboro	146.61	24	P	PKPab	14 17 08.6	+0.3
	baz=330						
W40A	Ferguson Farm,	146.84	22	P	PKPbc	14 17 08.5	+0.6
	baz=333						
233A	Rising Star	146.87	32	P	PKPab	14 17 09.7	+0.2
	baz=321						
X39A	Fountain Ranch	147.04	24	P	PKPbc	14 17 09.6	+1.0
	baz=331						
Z36A	Blue Ridge	147.09	28	P	PKPbc	14 17 09.5	+0.7
	baz=326						
MIAR	Mount Ida	147.22	23	P	PKPbc	14 17 09.6	+0.5
	baz=332						
MIAR	Mount Ida	147.22	23	*e*PKPbc	PKPbc	14 17 09.6	+0.5
234A	Clairette	147.28	31	P	PKPbc	14 17 10.2	+0.8
	baz=323						
333A	Richland Sprin	147.36	33	P	PKPbc	14 17 10.4	+0.8
	baz=321,SNR=6.5						
JCT	Junction City	147.54	35	P	PKPbc	14 17 11.5	+1.3
	baz=318,SNR=9.5						
JCT	Junction City	147.54	35	*e*PKPbc	PKPbc	14 17 11.2	+1.1
X40A	Basin Creek Fa	147.55	22	P	PKPbc	14 17 10.8	+0.8
	baz=333						
WVT	Waverly	147.56	14	*e*PKPbc	PKPbc	14 17 10.7	+0.8
433A	Art	147.73	34	P	PKPbc	14 17 11.5	+0.9
	baz=320						
334A	Lometa	147.75	32	P	PKPbc	14 17 11.9	+1.3
	baz=322						
434A	Burnet	148.14	33	P	PKPbc	14 17 12.5	+0.7
	baz=321						
335A	Moody	148.22	31	P	PKPbc	14 17 12.9	+1.1
	baz=323						
533A	Kerrville	148.28	35	P	PKPbc	14 17 13.1	+0.9
	baz=319						
TKL	Tuckaleechee C	148.77	8	PKPbc	PKPbc	14 17 13.7	+0.4
	16nm,1.1s,baz=292,slow=2.9,SNR=4.9						

*IDC **05** 13:58:27.0±0.9, 2°.83N×126°.66E, h0km, mb4.1/8, mb1 4.2/8, mb1mx3.8/54, mbtmp4.1/8, MS3.7/1, Ms1 3.7/1, ms1mx2.6/47, Error ellipse: s-maj=68.1km s-min=15.1km az=72.0*

*NEIC **05** 13:58:28.5±0.5, 2°.81N×126°.68E, h10km, mb4.3/1, Error ellipse: s-maj=26.8km s-min=7.3km az=69.0*

*ISCJB **05** 13:58:30.9±0.6, 2°.91N±0°.10×126°.9E±0°.2, h44km, mb4.0/8, MS3.7/1, Error ellipse: s-maj=32.5km s-min=9.3km az=160.2*

ISC 05 13:58:33.1±0.9, 2°.9N±0°.1×127°.0E±0°.2, h44km, n14, σ0s.82/14, mb4.2/8, Northern Molucca Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TNTI	Ternate	2.19	169	*e*Pg	Pn	13 59 08.5	+1.5
FAKI	Fak Fak	7.86	138	*e*P	Pn	14 00 25.3	+0.4
FITZ	Fitzroy Crossi	20.94	184	P	P	14 03 11.3	-1.0
	6.2nm,0.7s,baz=5.9,slow=9.0,SNR=7.1						
FITZ	Fitzroy Crossi	20.94	184	*e*P	P	14 03 11.5	-0.8
	16nm,0.9s						
WRAB	Tennant Creek	23.86	163	*e*P	P	14 03 41.5	-1.1
	6.9nm,0.8s						
WRA	Warramunga Arr	23.86	163	P	P	14 03 41.8	-0.8
	5.3nm,0.7s,baz=339,slow=10,SNR=18						
ASAR	Alice Springs	27.29	166	P	P	14 04 13.2	-0.6
	1.5nm,0.8s,baz=343,slow=7.4,SNR=13						
KSAR	Wonju Array Be	34.35	1	P	P	14 05 16.4	+0.6
KSRS	Korea Array	34.37	1	P	P	14 05 16.4	+0.5
	1.2nm,0.7s,baz=184,slow=10,SNR=4.5						
STKA	Stephens Creek	37.31	159	P	P	14 05 41.0	-0.2
	4.7nm,0.8s,baz=324,slow=7.5,SNR=12						
MKAR	Makanchi Array	58.33	325	P	P	14 08 23.5	-0.2
	1.4nm,0.6s,baz=117,slow=7.5,SNR=4.2						
MKAR				LR	LR	14 35 19.8	
	comp=Z,56nm,19.1s,baz=124,slow=38						
KURBB	Kurchatov Arra	62.52	328	P	P	14 08 51.9	-0.3
	1.1nm,0.5s,baz=131,slow=6.5,SNR=11						
KURK	Kurchatov	62.53	328	P	P	14 08 51.9	-0.3
BVAR	Borovoye Array	68.11	327	P	P	14 09 28.4	0.0
	0.6nm,0.6s,baz=134,slow=6.2,SNR=3.1						

SJA 05 14:03:25.7±0.8, 31°.27S×68°.81W, h107km±4km, ML3.0, MW3.1, San Juan Province

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RTLL	Cerro Villicun	0.30	101	*e*P	Pn	14 03 41.5	+0.4
RTLL				*e*S	Sn	14 03 53.2	+0.5
SJA	San Juan	0.33	140	*e*P	Pn	14 03 42.3	+0.9
SJA				IAML		14 03 55.4	
	comp=Z,477nm,0.2s						
AMOG	MOGNA	0.43	40	*e*P	Pn	14 03 42.8	+0.9
RTCV	Cerro Valdivia	0.63	158	*e*P	Pn	14 03 44.0	+0.7
AUSP	Uspallata	1.07	207	*e*P	Pn	14 03 48.4	+0.7
AMAR	Marayes	1.28	99	*e*P	Pn	14 03 50.9	+1.1
ASAL	Salagasta	1.31	181	*e*P	Pn	14 03 51.4	+1.2
AVFE	Valle Fertil	1.32	63	*e*P	Pn	14 03 51.1	+0.9
AVFE				IAML		14 04 11.5	
	comp=Z,190nm,0.4s						
ARCO	CERRO ARCO	1.57	184	*e*P	Pn	14 03 54.4	+1.0
ARCO				IAML		14 04 19.9	
	comp=Z,59nm,0.1s						
ACAN	Cantantal	1.71	126	*e*P	Pn	14 03 56.4	+1.5
AGUA	GUANDACOL	1.80	9	*e*P	Pn	14 03 57.5	+1.3
AAGR	Agrelo	1.81	180	*e*P	Pn	14 03 57.2	+1.0
ACHE	Chepes	1.85	87	*e*P	Pn	14 03 57.9	+1.1
APLL	PUNTA DE LOS L	2.15	67	*e*P	Pn	14 04 01.6	+1.0
ACLC	CERRO LA CRUZ	2.45	42	*e*P	Pn	14 04 05.5	+1.0
VCA	Vinchina	2.58	12	*e*P	Pn	14 04 07.3	+1.0
VCA				IAML		14 04 42.5	
	comp=Z,73nm,0.2s						
MRA	San Martin	2.87	114	*e*P	Pn	14 04 10.8	+0.8

IDC 05 14:04:10.3±2.2, 4°.38S×100°.44E, h0km, mb3.7/8, mb1 3.8/8, mb1mx3.5/54, mbtmp3.7/8, MS3.5/2, Ms1 3.5/2, ms1mx2.8/51, Error ellipse: s-maj=105.0km s-min=19.1km az=58.0, Southwest of Sumatera

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CMAR	Chiang Mai Arr	22.74	356	P	P	14 09 13.9	-0.3
	1.2nm,0.6s,baz=185,slow=8.4,SNR=9.3						

Code	Station Name	Δ°	AZ°	Op	ISC	Time	Res
H08S2	Diego Garcia H	27.98	262	T	T	14 40 07.5	
	baz=85,SNR=150						
H08S3	Diego Garcia H	27.99	262	T	T	14 40 04.8	
	baz=85,SNR=144						
H08S1	Diego Carcia H	28.00	262	T	T	14 40 05.6	
	baz=85,SNR=144						
H01W3	Cape Leeuwin H	32.90	159	T	T	14 44 52.5	
	baz=337,slow=76,SNR=36						
H01W2	Cape Leeuwin H	32.91	159	T	T	14 44 53.5	
	baz=337,slow=76,SNR=25						
H01W1	Cape Leeuwin H	32.91	159	T	T	14 44 53.7	
	baz=337,slow=76,SNR=25						
ASAR	Alice Springs	37.53	124	P	P	14 11 27.1	+0.6
	0.6nm,0.7s,baz=302,slow=7.5,SNR=6.4						
STKA	Stephens Creek	47.27	130	P	P	14 12 45.1	-0.4
	1.1nm,0.7s,baz=326,slow=7.3,SNR=2.2						
GUMO	Guam	47.57	67	LR	LR	14 33 16.7	
	comp=Z,46nm,20.2s,baz=231,slow=37						
SONM	Songino Array	52.25	5	P	P	14 13 23.5	0.0
	1.5nm,0.7s,baz=186,slow=9.5,SNR=9.9						
MKAR	Makanchi Array	53.42	345	P	P	14 13 33.3	+1.4
	0.8nm,0.7s,baz=149,slow=9.3,SNR=8.4						
KURBB	Kurchatov Arra	57.94	344	P	P	14 14 03.9	-0.5
	0.4nm,0.7s,baz=164,slow=6.1,SNR=5.9						
ZALV	Zalesovo Beam	59.57	349	P	P	14 14 15.2	-0.4
	1.0nm,0.7s,baz=163,slow=5.1,SNR=5.2						
BVAR	Borovoye Array	62.55	340	P	P	14 14 35.7	-0.3
	0.2nm,0.3s,baz=126,slow=7.3,SNR=3.7						
NOA	NORSAR Array B	93.42	331	LR	LR	15 02 46.0	
	comp=Z,22nm,19.4s,baz=0.0,slow=38						
TXAR	Lajitas Array	146.27	40	PKPbc	PKPdf	14 23 51.7	-1.0
	1.0nm,0.9s,baz=336,slow=2.0,SNR=3.8						

*IDC **05** 14:06:34.9±1.8, 4°.62S×101°.01E, h0^{km}, mb3.7/10, mb1 3.8/10, mb1mx3.6/52, mbtmp3.7/10, Error ellipse: s-maj=72.1km s-min=17.4km az=56.0*
*ISCJB **05** 14:06:36.9±1.5, 4°.6S±0°.2×101°.0E±0°.4, h29^{km}, mb3.7/10, Error ellipse: s-maj=59.3km s-min=14.2km az=146.7*
ISC 05 14:06:39.2±1.9**, 4°.6S**±0°.3×**101°.1E**±0°.4**, h29^{km}, n11, σ0^{s}40**/11**, mb3.8**/10**, Southern Sumatera**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
CMAR	Chiang Mai Arr	23.01	355	P	P	14 11 42.1	+0.1
	1.1nm,0.5s,baz=185,slow=8.3,SNR=9.5						
WRA	Warramunga Arr	35.80	118	P	P	14 13 36.6	+0.2
	0.5nm,0.7s,baz=308,slow=8.7,SNR=4.6						
ASAR	Alice Springs	36.90	124	P	P	14 13 45.9	+0.2
	0.4nm,0.8s,baz=298,slow=8.0,SNR=3.8						
STKA	Stephens Creek	46.65	131	P	P	14 15 05.1	-0.3
	0.9nm,0.8s,baz=310,slow=9.6,SNR=2.9						
KSRS	Korea Array	48.75	29	P	P	14 15 20.9	-0.5
	1.4nm,0.9s,baz=216,slow=7.8,SNR=4.4						
SONM	Songino Array	52.43	5	P	P	14 15 49.7	+0.4
	1.8nm,0.7s,baz=183,slow=9.0,SNR=10						
MKAR	Makanchi Array	53.80	344	P	P	14 15 59.6	+0.3
	1.0nm,0.8s,baz=152,slow=8.7,SNR=7.3						
KURBB	Kurchatov Arra	58.33	343	P	P	14 16 31.7	+0.2
	0.1nm,0.5s,baz=161,slow=6.6,SNR=5.9						
ZALV	Zalesovo Beam	59.91	349	P	P	14 16 42.3	-0.1
	0.7nm,0.4s,baz=179,slow=5.8,SNR=3.7						
BVAR	Borovoye Array	62.98	340	P	P	14 17 02.6	-0.6
	0.7nm,0.6s,baz=144,slow=10,SNR=5.1						
TXAR	Lajitas Array	146.04	41	PKPbc	PKPab	14 26 18.3	+0.5
	0.4nm,0.5s,baz=285,slow=1.6,SNR=5.1						

*IDC **05** 14:06:56.4±3.0, 36°.61N×144°.42E, h0^{km}, mb3.4/3, mb1 3.6/4, mb1mx3.2/55, mbtmp3.3/4, ML2.9/1, Error ellipse: s-maj=81.8km s-min=32.0km az=58.0*
*JMA **05** 14:07:23.3±0.4, 38°.29N×143°.77E, h35^{km}, M3.5*
ISC 05 14:06:57.0±1.6**, 36°.9N**±0°.2×**144°.5E**±0°.1**, h10^{km}, n11, σ1^{s}72**/12**, mb3.7**/3**, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
JFK	Kawauchi	2.95	281	P	Pg	14 08 01.7	+8.1
JIO	Ouri	2.98	303	P	Pg	14 07 54.6	+0.6
JIO				S	Sn	14 08 17.7	-2.3
JMM	Marumori	3.13	290	P	Pg	14 08 01.0	+4.0
JMM				S	Sb	14 08 29.2	-1.8
OFUJ	Ofunato	3.16	316	P	Pb	14 07 53.3	0.0
JFT	Otama	3.40	283	eS	Sb	14 08 41.0	+2.3
JOU	Okura	3.41	297	P	Pg	14 08 02.8	+0.5
JYK	Kaneyama	3.88	303	P	Pb	14 08 07.2	+1.7
JYK				S	Sn	14 08 40.0	-2.3
MJAR	Matsushiro Arr	5.07	268	Pn	Pn	14 08 12.7	-0.5
	0.4nm,0.3s,baz=90,slow=15,SNR=4.4						
KURBB	Kurchatov Arra	48.06	309	P	P	14 15 37.9	+1.5
	0.3nm,0.4s,baz=82,slow=8.0,SNR=4.0						
WRA	Warramunga Arr	57.30	191	P	P	14 16 43.6	-1.4
	0.4nm,0.5s,baz=12,slow=7.2,SNR=4.6						
ASAR	Alice Springs	61.02	191	P	P	14 17 10.4	-0.3
	0.3nm,0.8s,baz=5.8,slow=7.2,SNR=4.2						

*ISCJB **05** 14:14:54.3±0.8, 13°.95N±0°.08×90°.37W±0°.07, h118^{km}±7^{km}, mb4.3/26, Error ellipse: s-maj=15.2km s-min=7.1km az=35.6*
*IDC **05** 14:14:55.9±1.8, 14°.02N×90°.36W, h114^{km}±14^{km}, mb3.8/13, mb1 4.0/17, mb1mx3.8/38, mbtmp4.2/17, MS3.2/3, Ms1 3.2/3, ms1mx2.8/37, Error ellipse: s-maj=19.8km s-min=12.6km az=45.0*
*NEIC **05** 14:14:55.8±0.8, 14°.00N×90°.33W, h114^{km}±7^{km}, mb4.6/17, MD4.4(SNET), Error ellipse: s-maj=11.9km s-min=6.7km az=49.0*
NEIC Felt [II] at San Salvador, El Salvador.
ISC 05 14:14:54.2±1.1**, 13°.91N**±0°.08×**90°.34W**±0°.08**, h107^{km}**±9^{km}**, n64, σ1^{s}33**/70**, mb4.3**/26**, Near coast of Guatemala**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
CCIG	Comitan	2.93	324	ePn	Pn	14 15 40.2	+0.8
TGUH	Tegucigalpa,Un	2.98	87	ePn	Pn	14 15 41.7	+1.9
CMIG	Matias Romero	5.41	306	P	Pn	14 16 11.6	-0.9
	12nm,0.3s,baz=102,slow=11,SNR=44						
CMIG				S	Sn	14 17 13.5	-0.1
	4.2nm,0.3s,baz=97,slow=19,SNR=3.1						
CMIG				LR	LR	14 17 36.3	
	comp=Z,51nm,21.7s,baz=70,slow=30						
JTS	JuntasAbangare	6.37	124	P	Pn	14 16 27.7	+2.0
	21nm,0.3s,baz=291,slow=6.2,SNR=40						
JTS				S	Sn	14 17 33.8	-3.3
	2.1nm,0.3s,baz=222,slow=16,SNR=1.5						
JTS	JuntasAbangare	6.37	124	ePn	Pn	14 16 27.3	+1.6
JTS				S	Sn	14 17 33.8	-3.3
TEIG	Tepich	6.59	17	P	Pn	14 16 30.2	+1.7
	0.5nm,0.3s,baz=15,slow=24,SNR=11						
HDC	Heredia	7.22	122	ePn	Pn	14 16 39.4	+2.1
WHTX	Lake Whitney,	19.15	341	eP	P	14 19 09.2	0.0
	20nm,0.6s						
LRAL	Lakeview Retre	19.29	9	Pn	Pn	14 19 12.0	-0.7
	20nm,0.7s						
TXAR	Lajitas Array	19.70	323	P	Pn	14 19 17.0	-0.8
	0.3nm,0.3s,baz=145,slow=11,SNR=14						
TXAR				PcP	PcP	14 23 31.3	+1.2
	0.1nm,0.3s,baz=168,slow=2.5,SNR=6.3						
TX31	Lajitas Ar. Si	19.70	323	eP	Pn	14 19 17.2	-0.6
SDV	Santo Domingo	19.94	102	P	Pn	14 19 21.1	+0.3
	0.5nm,0.3s,baz=279,slow=6.5,SNR=5.4						
GOGA	Godfrey	20.40	17	eP	Pn	14 19 24.2	-1.5
MIAR	Mount Ida	20.76	352	eP	P	14 19 26.5	0.0
	11nm,1.0s						
SWET	Sewanee	21.59	10	eP	P	14 19 36.7	+1.2
	7.1nm,0.7s						
W34A	Bridge Creek,	22.27	344	eP	P	14 19 41.2	-1.5
	30nm,0.9s						
MNTX	Cornudas Mount	22.45	325	eP	P	14 19 44.8	+0.3
	6.9nm,1.0s						
TKL	Tuckaleechee C	22.45	14	P	P	14 19 45.9	+1.4
	14nm,0.7s,baz=179,slow=12,SNR=16						
TUL1	Leonard	22.45	348	eP	P	14 19 42.6	-1.9
	16nm,0.8s						
V34A	Guthrie	22.77	345	eP	P	14 19 46.7	-1.0
	39nm,0.7s						
TZTN	Tazewell	23.35	14	eP	P	14 19 51.9	-1.3
121A	Cookes Peak, D	24.45	322	eP	P	14 20 04.1	+0.7
	9.0nm,0.8s						
WCI	Wyandotte Cave	24.49	8	eP	P	14 20 03.9	+0.4
	40nm,0.6s						
OLIL	Olney	24.81	4	eP	P	14 20 06.6	+0.3
	23nm,0.8s						
S22A	4UR Ranch, Cre	27.91	331	ePcP	PcP	14 23 49.5	+1.8
MVCO	Mesa Verde	28.30	328	ePcP	PcP	14 23 48.4	-0.3
Y14A	Wickenburg	28.64	318	ePcP	PcP	14 23 50.7	+1.4
PFO	Pinyon Flats O	30.78	314	ePcP	PcP	14 23 57.4	+2.5
LCMT	Little Creek M	30.78	322	eP	P	14 21 01.2	+1.3
	2.1nm,0.8s						
SPMN	Marine on St.	31.29	357	eP	P	14 21 03.3	-0.7
	18nm,0.5s						
CCCA	Chr Cany lake	32.46	316	eP	P	14 21 16.9	+2.3
BW06	Boulder Array	33.20	334	ePcP	PcP	14 24 01.4	-0.1
PDAR	Pinedale Array	33.20	334	P	P	14 21 20.7	-0.4
	0.3nm,0.8s,baz=145,slow=3.3,SNR=2.5						
PDAR				PcP	PcP	14 24 01.4	0.0
	0.8nm,0.7s,baz=129,slow=4.1,SNR=6.8						
PDAR				LR	LR	14 38 00.7	
	comp=Z,37nm,19.2s,baz=340,slow=42						
REDW	Red Top Meadow	34.24	333	eP	P	14 21 30.1	0.0
	5.2nm,1.0s						
AGMN	Agassiz Nation	34.60	353	eP	P	14 21 31.8	-1.1
	9.9nm,0.8s						
NV01	Mina Array Sit	34.77	320	eP	P	14 21 36.5	+1.8
NV01				ePcP	PcP	14 24 07.2	+1.2
NVAR	Mina Array Bea	34.77	320	P	P	14 21 36.4	+1.6
	5.3nm,0.7s,baz=134,slow=8.1,SNR=43						
NVAR				PcP	PcP	14 24 07.5	+1.5
	2.6nm,0.7s,baz=134,slow=3.5,SNR=17						
MCMT	McKenzie Canyo	36.28	333	eP	P	14 21 48.3	+0.7
ULM	Lac du Bonnet	36.53	354	P	P	14 21 48.0	-1.3
	7.8nm,0.6s,baz=169,slow=9.7,SNR=18						
ULM	Lac du Bonnet	36.53	354	eP	P	14 21 47.6	-1.7
	8.6nm,0.6s						
SCHQ	Schefferville	44.77	19	P	P	14 22 56.5	-0.5
	9.3nm,0.6s,baz=234,slow=6.6,SNR=7.9						
YKA	Yellowknife Ar	51.50	346	P	P	14 23 47.7	-0.9
	0.9nm,0.6s,baz=138,slow=7.0,SNR=22						
YKA				PcP	PcP	14 25 00.6	-0.7
	0.6nm,0.6s,baz=149,slow=3.8,SNR=10.0						
DLBC	Dease Lake	53.41	335	P	P	14 24 04.2	+1.3
	3.0nm,1.0s,baz=109,slow=3.9,SNR=3.4						
PLCA	Paso Flores	57.37	162	P	P	14 24 32.4	+0.8
	2.6nm,0.9s,baz=12,slow=7.9,SNR=3.4						
RES	Resolute Bay	60.83	359	P	P	14 24 53.4	-1.4
	1.8nm,0.6s,baz=182,slow=9.7,SNR=9.6						
RES	Resolute Bay	60.83	359	eP	P	14 24 53.3	-1.5
	18nm,1.8s						
INK	Inuvik	60.99	343	P	P	14 24 55.0	-0.9
	1.6nm,0.8s,baz=129,slow=4.2,SNR=6.7						
ILAR	Eielson Array	63.57	336	P	P	14 25 12.5	-0.7
	0.7nm,0.9s,baz=114,slow=4.9,SNR=7.1						
BBTS	Babate	71.20	79	LR	LR	14 50 55.9	
	comp=Z,85nm,21.6s,slow=30						
DBIC	Dimbokro	84.06	85	P	P	14 27 12.0	-1.7
	2.6nm,1.1s,baz=148,slow=7.5,SNR=3.8						
ARCES	ARCESS Array B	85.72	19	P	P	14 27 23.2	+2.2
	2.8nm,0.8s,baz=297,slow=8.0,SNR=2.9						
SEY	Seymchan	89.50	336	P	P	14 27 39.8	+0.6
	0.5nm,0.5s,baz=8.2,slow=7.2,SNR=3.9						
KSRS	Korea Array	117.53	326	PKP	PKPdf	14 33 28.3	+0.3
	1.3nm,0.6s,baz=3.5,slow=1.2,SNR=6.8						
KSAR	Wonju Array Be	117.56	326	PKP	PKPdf	14 33 28.3	+0.2
MKAR	Makanchi Array	119.22	6	PKP	PKPdf	14 33 30.2	-0.8
	0.3nm,0.6s,baz=356,slow=3.6,SNR=3.8						
WMQ	Urumqi	122.53	2	ePKP	PKPdf	14 33 38.6	+1.0
NJ2	Nanjing	126.42	329	ePKP	PKPdf	14 33 43.5	-1.7
STKA	Stephens Creek	129.41	240	PKP	PKPdf	14 33 51.2	+0.4
	1.3nm,0.8s,baz=98,slow=7.4,SNR=3.7						
CD2	Chengdu	133.43	343	PKP	PKPdf	14 33 57.8	-0.9
WRA	Warramunga Arr	136.94	256	PKP	PKPdf	14 34 06.4	+1.1
	1.0nm,0.7s,baz=90,slow=2.4,SNR=7.7						
ASAR	Alice Springs	137.16	250	PKP	PKPdf	14 34 06.5	+0.8
	0.8nm,0.7s,baz=94,slow=2.2,SNR=9.1						
KMI	Kunming	139.17	342	PKP	PKPdf	14 34 09.3	-0.4
FITZ	Fitzroy Crossi	145.21	258	PKPbc	PKPab	14 34 20.5	+0.3
	5.4nm,0.8s,baz=176,slow=7.7,SNR=5.0						
CMAR	Chiang Mai Arr	146.57	344	PKPbc	PKPbc	14 34 23.6	-0.6
	6.4nm,0.6s,baz=342,slow=3.2,SNR=32						

IDC 05 14:17:19.1±9.9**, 2°.80N**×**127°.35E, h306^{km}**±113^{km}**, mb3.2**/10**, mb1 3.3**/10**, mb1mx3.0**/45**, mbtmp3.8**/10**, MS3.3**/1**, Ms1 3.5**/1**, ms1mx2.8**/22**, Error ellipse: s-maj=47.1km s-min=14.4km az=85.0, Northern Molucca Sea**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
FITZ	Fitzroy Crossi	20.84	185	P	P	14 21 38.5	+0.4
	3.0nm,0.7s,baz=17,slow=14,SNR=3.8						
WRA	Warramunga Arr	23.62	163	P	P	14 22 03.1	-0.4
	2.3nm,0.6s,baz=342,slow=10,SNR=20						
ASAR	Alice Springs	27.07	167	P	P	14 22 34.5	+0.1
	0.6nm,0.6s,baz=340,slow=7.3,SNR=10						
CMAR	Chiang Mai Arr	31.88	301	LR	LR	14 38 35.3	
	comp=Z,52nm,18.0s,baz=80,slow=40						
KSRS	Korea Array	34.49	1	P	P	14 23 38.1	-0.7
	1.3nm,0.8s,baz=181,slow=10,SNR=6.8						
STKA	Stephens Creek	37.05	160	P	P	14 24 00.5	-0.1
	2.2nm,0.6s,baz=337,slow=8.6,SNR=11						
USRK	Ussuriysk Ar.	41.43	5	P	P	14 24 36.7	+0.3
	2.3nm,0.8s,baz=188,slow=5.4,SNR=3.8						
SONM	Songino Array	48.37	341	P	P	14 25 31.4	+0.5
	0.6nm,0.8s,baz=159,slow=8.2,SNR=2.8						
MKAR	Makanchi Array	58.67	325	P	P	14 26 44.3	-0.8
	0.6nm,0.5s,baz=120,slow=8.1,SNR=11						
KURBB	Kurchatov Arra	62.85	327	P	P	14 27 12.8	-0.1
	0.8nm,0.6s,baz=131,slow=6.5,SNR=17						
BVAR	Borovoye Array	68.43	327	P	P	14 27 49.3	+0.9
	0.3nm,0.5s,baz=134,slow=6.2,SNR=3.5						

IDC 05 14:19:06.3±14.0**, 2°.41N**×**126°.31E, h242^{km}**±153^{km}**, mb3.1**/6**, mb1 3.3**/6**, mb1mx3.0**/46**, mbtmp3.7**/6**, Error ellipse: s-maj=91.7km s-min=21.6km az=61.0, Northern Molucca Sea**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
FITZ	Fitzroy Crossi	20.39	182	P	P	14 23 25.3	+0.1
	1.7nm,0.7s,baz=350,slow=17,SNR=1.7						
WRA	Warramunga Arr	23.57	161	P	P	14 23 55.4	-0.1
	1.5nm,0.4s,baz=338,slow=10,SNR=10						
ASAR	Alice Springs	26.96	164	P	P	14 24 26.4	+0.5
	0.6nm,0.6s,baz=340,slow=8.0,SNR=5.6						
STKA	Stephens Creek	37.06	158	P	P	14 25 52.8	-0.7
	2.7nm,0.7s,baz=328,slow=7.5,SNR=4.1						
SONM	Songino Array	48.41	342	P	P	14 27 23.9	-0.5
	0.2nm,0.3s,baz=147,slow=6.2,SNR=5.9						
MKAR	Makanchi Array	58.40	326	P	P	14 28 36.9	+0.2
	0.3nm,0.4s,baz=113,slow=6.9,SNR=4.2						

*NIED **05** 14:27:00, 36°.50N×142°.70E, h8^{km}, Mw3.9 Best double couple: M$_0$8.60000×10^{14} NP1:φ$_s$212.00000°, δ41.00000°, λ114.00000°. NP2:φ$_s$2.00000°, δ53.00000°, λ71.00000°.*
*ISCJB **05** 14:27:16.7±0.5, 36°.50N±0°.06×142°.71E±0°.06, h15^{km}, mb3.7/16, MS3.9/2, Error ellipse: s-maj=8.1km s-min=6.7km az=163.0*
*IDC **05** 14:27:16.3±0.7, 36°.54N×142°.64E, h0^{km}, mb3.7/14, mb1 3.8/16, mb1mx3.7/41, mbtmp3.7/16, ML3.6/2, MS3.8/2, Ms1 3.8/2, ms1mx2.8/51, Error ellipse: s-maj=20.3km s-min=15.7km az=114.0*
*JMA **05** 14:27:18.4±0.3, 36°.51N×142°.72E, h36^{km}, M3.6*
*NEIC **05** 14:27:21.4±0.6, 36°.55N×142°.65E, h35^{km}, mb4.4/2, Error ellipse: s-maj=12.4km s-min=8.8km az=138.0*
ISC 05 14:27:18.3±0.7**, 36°.50N**±0°.06×**142°.59E**±0°.07**, h15^{km}, n37, σ1^{s}18**/32**, mb3.8**/16**, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
CHOJ	Chosi	1.61	241	P	Pb	14 27 47.0	-0.8
JFK	Kawauchi	1.63	303	P	Pb	14 27 47.2	-0.8
JHO	Hitachi	1.63	274	P	Pn	14 27 47.0	+0.5
JMM	Marumori	1.98	314	P	Pn	14 27 51.0	-0.3
JFT	Otama	2.07	300	P	Pn	14 27 53.8	+1.2
JFT				eS	Sn	14 28 18.5	+0.3
MJAR	Matsushiro Arr	3.53	272	Pn	Pn	14 28 14.5	+1.8
	3.4nm,0.3s,baz=92,slow=8.7,SNR=33						
MAJO	Matsushiro	3.53	272	ePn	Pn	14 28 14.7	+2.0
MAT	Matsushiro	3.53	272	P	Pn	14 28 14.3	+1.6
MAT				eS	Sn	14 28 53.4	-0.8
JHJ2	Mitsune	4.08	215	ePn	Pn	14 28 20.2	+0.1
JHJ	Hachijo jima 2	4.09	215	Pn	Pn	14 28 19.8	-0.5
	17nm,0.3s,baz=305,slow=21,SNR=10						
JHJ				Sn	Sn	14 29 04.8	-3.1
	22nm,0.3s,baz=128,slow=23,SNR=6.6						
ERM	Erimo	5.53	4	ePn	Pn	14 28 37.8	-2.2
USRK	Ussuriysk Ar.	11.16	317	Pn	Pn	14 30 00.2	+3.0
	0.1nm,0.3s,baz=130,slow=15,SNR=3.5						
KSRS	Korea Array	11.78	279	Pn	Pn	14 30 09.2	+3.5
	0.2nm,0.3s,baz=93,slow=14,SNR=9.7						
KSAR	Wonju Array Be	11.80	279	Pn	Pn	14 30 09.2	+3.0
MA2	Magadan	23.69	10	P	P	14 32 28.8	-0.4
	0.8nm,0.2s,baz=197,slow=8.3,SNR=7.9						
MA2	Magadan	23.69	10	eP	P	14 32 29.2	0.0
YAK	Yakutsk	26.80	346	P	P	14 32 56.7	-0.8
	0.5nm,0.3s,baz=129,slow=20,SNR=2.7						
SEY	Seymchan	27.14	10	P	P	14 33 01.6	+1.0
	0.3nm,0.4s,baz=213,slow=17,SNR=4.0						
H11S1	WAKE ISLAND Hy	27.77	124	T	T	15 01 38.0	
	baz=315,slow=76,SNR=8.4						
H11S3	WAKE ISLAND Hy	27.78	124	T	T	15 01 38.8	
	baz=315,slow=76,SNR=11						
H11S2	WAKE ISLAND Hy	27.79	124	T	T	15 01 40.8	
	baz=315,slow=76,SNR=9.4						
ULN	Ulaanbaatar	28.44	305	eP	P	14 33 13.0	+0.4
	2.2nm,0.9s						
SONM	Songino Array	28.87	304	P	P	14 33 17.4	+1.1
	1.7nm,0.8s,baz=107,slow=8.4,SNR=10						
ZALV	Zalesovo Beam	42.97	313	P	P	14 35 15.0	-1.6
	0.5nm,0.5s,baz=116,slow=6.6,SNR=2.9						
MKAR	Makanchi Array	45.20	303	P	P	14 35 35.9	+1.3
	0.9nm,0.8s,baz=87,slow=10.0,SNR=9.7						
KAPI	Kappang	46.50	212	LR	LR	14 54 06.8	
	comp=Z,151nm,21.2s,baz=62,slow=35						
KURK	Kurchatov	47.01	309	eP	P	14 35 48.8	+0.1
	22nm,1.2s						
ILAR	Eielson Array	49.44	32	P	P	14 36 06.9	-0.5
	0.7nm,0.8s,baz=264,slow=6.5,SNR=9.9						
INK	Inuvik	54.43	27	P	P	14 36 45.5	+1.1
	0.8nm,0.8s,baz=282,slow=5.2,SNR=3.5						
WRA	Warramunga Arr	56.68	189	P	P	14 37 02.3	+1.2
	0.7nm,0.7s,baz=6.7,slow=7.2,SNR=4.8						
ABKAR	Akbulak array	59.01	311	eP	P	14 37 17.4	+0.2
ASAR	Alice Springs	60.40	189	P	P	14 37 27.0	-0.1
	0.6nm,1.0s,baz=0.6,slow=6.7,SNR=3.5						
YKA	Yellowknife Ar	63.79	30	P	P	14 37 48.5	-0.9
	0.3nm,0.7s,baz=304,slow=6.8,SNR=5.7						
FINES	FINESS Array B	69.72	333	P	P	14 38 26.8	-0.4
	0.9nm,0.8s,baz=49,slow=6.3,SNR=2.9						
NVAR	Mina Array Bea	74.55	54	P	P	14 38 57.7	+0.9
	0.5nm,0.8s,baz=316,slow=2.5,SNR=3.3						
URZ	Urewera	80.94	153	LR	LR	15 11 16.3	
	comp=Z,46nm,21.8s,baz=267,slow=33						
TXAR	Lajitas Array	89.69	53	P	P	14 40 16.3	+0.1
	0.2nm,0.7s,baz=307,slow=7.5,SNR=3.0						

*ISCJB **05** 14:28:47.6±0.4, 24°.28N±0°.02×121°.83E±0°.02, h3^{km}±3^{km}, Error ellipse: s-maj=3.5km s-min=2.3km az=34.7*
*TAP **05** 14:28:47.8, 24°.30N×121°.77E, h18^{km}, ML3.3, B*
*JMA **05** 14:28:47.9±0.1, 24°.27N×121°.74E, h16^{km}±2^{km}, M2.6*
ISC 05 14:28:48.5±0.8**, 24°.30N**±0°.02×**121°.77E**±0°.02**, h15^{km}**±5^{km}**, n54, σ0^{s}72**/84**, 10C-2D, Taiwan**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
EHP	Heping Village	0.03	286	P	Pg	14 28 51.6	+0.3
	baz=286						
EHP				S	Sg	14 28 53.8	+0.7
	baz=286						
ENA	Nanau	0.13	348	⇑iP	Pg	14 28 51.8	-0.4
	baz=350						
TWD	Chiawan	0.27	216	⇑iP	Pg	14 28 54.0	-0.4
	baz=220						
TWD				iS	Sg	14 28 57.9	-0.4
	baz=220						
TWC	Suao	0.31	13	⇑iP	Pg	14 28 54.9	-0.2
	baz=9.0						
TWC				iS	Sg	14 28 59.3	-0.3
	baz=9.0						
HWA	Hwalien	0.36	205	eP	Pg	14 28 55.7	-0.1
	baz=214						
HWA				eS	Sb	14 29 01.5	-0.5
	baz=214						
ENTT	Nioudou	0.38	331	⇑iP	Pg	14 28 56.1	-0.3
	baz=330						
ENTT				iS	Sg	14 29 02.0	+0.3
	baz=330						
NNS	Nan Shan	0.39	291	⇑iP	Pg	14 28 56.2	-0.2
	baz=291						
NNS				iS	Sg	14 29 01.6	-0.3
	baz=291						
TWE	Neicheng	0.43	347	⇑iP	Pg	14 28 56.9	-0.3
	baz=347						
TWE				iS	Sg	14 29 02.8	-0.2
	baz=347						
ILA	Ilan	0.46	358	eP	Pg	14 28 56.4	-1.3
	baz=351						
WHF	Hehuan Shan	0.49	251	⇑iP	Pg	14 28 57.9	-0.5
	baz=260						
WHF				iS	Sg	14 29 04.6	-0.4
	baz=260						
ESF	Shoufeng Towns	0.49	209	eP	Pg	14 28 58.0	-0.3
	baz=219						
NSK	Sanguang	0.53	315	⇑eP	Pg	14 28 58.7	-0.3
	baz=314						
NSK				iS	Sg	14 29 05.8	-0.3
	baz=314						
TWT	Tachien	0.54	265	iP	Pg	14 28 59.5	+0.1
	baz=265						
TWT				S	Sg	14 29 06.5	-0.2
	baz=265						
ESL	Shilin	0.57	212	⇓P	Pg	14 28 59.0	-0.9
	baz=220						
TWA	Mucha	0.70	346	eP	Pb	14 29 02.8	+0.4
	baz=345						
TWA				eS	Sb	14 29 11.9	+0.1
	baz=345						
TWB1	Santiao Chiao	0.73	16	P	Pg	14 29 02.1	-0.6
	baz=14						
TWB1				S	Sg	14 29 11.5	-1.0
	baz=14						
NWF	Wu-fen Shan	0.77	1	eP	Pg	14 29 03.1	-0.4
	baz=351						
NWF				eS	Sn	14 29 15.3	-0.9
	baz=351						
NSTT	Nanjuang	0.77	295	eP	Pg	14 29 03.5	-0.1
	baz=295						
NSTT				eS	Sg	14 29 13.6	-0.2
	baz=295						
WDT	Danda	0.80	227	P	Pg	14 29 03.2	-0.8
	baz=228						
WDT				S	Sb	14 29 15.4	+0.5
	baz=228						
NCU	National Centr	0.85	322	eP	Pn	14 29 05.8	-0.2
	baz=317						
NCU				eS	Sn	14 29 18.4	+0.3
	baz=317						
TWS1	Kuangyinshan	0.86	338	eP	Pg	14 29 05.5	+0.3
	baz=337						
TWS1				eS	Sn	14 29 18.7	+0.4
	baz=337						
HSN	Hsinchu	0.88	304	eP	Pn	14 29 06.2	-0.2
	baz=297						
EHY	Hungye	0.89	207	eP	Pb	14 29 04.2	-1.5
	baz=218						
SMLT	Sun Moon Lake	0.90	242	⇑iP	Pb	14 29 05.5	-0.3
	baz=243						
TWQ1	Liyutan	0.91	273	eP	Pn	14 29 06.6	-0.2
	baz=273						
TWQ1				eS	Sn	14 29 18.9	-0.8
	baz=273						
TYC	Yuchr	0.92	245	⇑iP	Pb	14 29 06.0	-0.3
	baz=245						
NSY	Sanyi	0.93	277	eP	Pn	14 29 07.5	+0.5
	baz=277						
TWY	Chenhua	0.98	351	eP	Pb	14 29 07.3	+0.1
	baz=350						
TCU	Taichung	1.01	261	eP	Pg	14 29 09.3	+1.3
	baz=261						
TWF1	Yuli	1.04	205	eP	Pb	14 29 07.2	-1.1
	baz=216						
WNT	Mingjian	1.08	247	eP	Pg	14 29 09.3	0.0
	baz=246						
WNT				eS	Sn	14 29 26.7	+2.9
	baz=246						
JYNG	Yonagunijimaku	1.08	82	P	Pb	14 29 08.7	-0.2
JYNG				S	Sn	14 29 25.4	+1.6
YUS	Yu-Shan	1.10	223	eP	Pb	14 29 08.8	-0.8
	baz=224						
YOJ	Yonaguni jima	1.14	82	P	Pn	14 29 09.6	-0.4
YOJ				eS	Sg	14 29 26.7	+1.2

YOJ	Yonaguni jima	1.14	82	eP	Pn	14 29 09.6	-0.4
	baz=71						
YOJ				eS	Sg	14 29 27.0	+1.5
	baz=71						
ALS	Alishan	1.18	228	eP	Pn	14 29 10.2	-0.6
	baz=216						
CHN5	Tsauling	1.22	235	P	Pb	14 29 11.5	+0.1
	baz=221						
CHN5				iS	Sg	14 29 29.0	+1.0
	baz=221						
ELDTW	Lidau	1.30	212	eP	Pn	14 29 10.8	-1.5
	baz=199						
CHN4	Tsaushan	1.44	229	eP	Pb	14 29 14.7	-0.3
	baz=219						
CHN4				eS	Sg	14 29 35.5	+0.7
	baz=219						
STYT	Tauyuan	1.47	220	eP	Pn	14 29 14.5	+0.1
	baz=221						
CHY	Chiayi	1.47	237	eP	Pb	14 29 15.6	+0.1
	baz=225						
WTP	Ta-pu	1.49	225	⇓P	Pb	14 29 15.8	-0.2
	baz=227						
WTP				eS	Sg	14 29 37.8	+1.1
	baz=227						
TWK	Hsinying	1.56	229	eP	Pb	14 29 17.3	+0.2
	baz=230						
TWK				eS	Sg	14 29 38.2	-0.7
	baz=230						
CHN1	Nanshi	1.59	226	eP	Pb	14 29 17.2	-0.5
	baz=228						
CHN1				eS	Sg	14 29 39.8	0.0
	baz=228						
TWG	Pinlang	1.61	204	eP	Pn	14 29 16.8	+0.4
	baz=191						
SGST	Jiashian	1.63	222	eP	Pn	14 29 17.2	+0.5
	baz=224						
SGST				eS	Sg	14 29 40.9	-0.2
	baz=224						
IRIF	Iriomote-Funau	1.79	89	P	Pn	14 29 18.2	-0.6
ECL	Taimali	1.85	204	eP	Pn	14 29 19.7	0.0
	baz=194						
SSD	Sandimen	1.87	214	eP	Pb	14 29 21.4	-1.0
	baz=226						
TWM1	Shoushan	1.92	220	eP	Pn	14 29 21.1	+0.3
	baz=221						
JKRS	Kuro-shima	2.04	91	P	Pn	14 29 22.5	+0.1
JKRS				S	Sn	14 29 48.9	+1.3
EAST	Anshuo	2.09	204	eP	Pn	14 29 23.2	+0.2
	baz=196						
JIJ	Ishigaki jima	2.17	88	P	Pn	14 29 23.7	-0.3
JIJ				S	Sn	14 29 50.1	-0.5
JISG	Ishigakijimahi	2.33	82	S	Sn	14 29 55.8	+1.1

*IDC **05** 14:34:20.3±1.2, 37°.47N×143°.79E, h0^{km}, mb3.4/4, mb1 3.7/6, mb1mx3.4/48, mbtmp3.5/6, ML3.5/2, Error ellipse: s-maj=34.0km s-min=24.6km az=108.0*
*ISCJB **05** 14:34:23.4±0.8, 37°.48N±0°.05×143°.65E±0°.06, h33^{km}, mb3.4/4, Error ellipse: s-maj=7.0km s-min=6.6km az=44.6*
*JMA **05** 14:34:24.2±0.2, 37°.49N×143°.59E, h49^{km}, M3.7*
ISC 05 14:34:24.9±1.1**, 37°.48N**±0°.05×**143°.68E**±0°.08**, h35**^{km}**, n18, σ1^{s}.31**/26**, mb3.5**/4**, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	Ouri	2.08	298	S	Sn	14 35 20.4	-1.5
JFK	Kawauchi	2.23	268	P	Pn	14 34 59.0	-0.4
JFK				S	Sn	14 35 24.5	-1.3
JMM	Marumori	2.32	280	P	Pn	14 35 00.2	-0.3
JMM				eS	Sn	14 35 26.5	-1.3
ONAJ	Iwakimizuishiy	2.33	261	eS	Sn	14 35 26.7	-1.4
JOU	Okura	2.54	291	eS	Sn	14 35 32.9	-0.4
JHO	Hitachi	2.64	252	P	Pn	14 35 04.4	-0.5
JFT	Otama	2.66	272	P	Pn	14 35 05.4	+0.2
JFT				S	Sn	14 35 36.3	+0.1
JOM	Ohasama	2.73	317	P	Pn	14 35 05.6	-0.6
JOM				S	Sn	14 35 36.5	-1.5
CHOJ	Chosi	2.88	233	eS	Sn	14 35 40.5	-1.2
JYK	Kaneyama	2.98	300	P	Pn	14 35 09.9	+0.3
JYK				eS	Sn	14 35 44.0	-0.2
JANG	Nango	3.34	330	P	Pn	14 35 14.4	-0.2
JANG				eS	Sn	14 35 50.0	-3.1
MJAR	Matsushiro Arr	4.48	260	Pn	Pn	14 35 31.4	+1.2
	2.8nm,0.3s,baz=89,slow=15,SNR=21						
MAT	Matsushiro	4.48	260	P	Pn	14 35 31.9	+1.7
MAT				S	Sn	14 36 20.8	-0.3
JHJ	Hachijo jima 2	5.39	217	Pn	Pn	14 35 42.1	-0.7
	3.8nm,0.3s,baz=315,slow=5.7,SNR=3.8						
JHJ				Sn	Sn	14 36 40.5	-3.2
	8.9nm,0.3s,baz=68,slow=19,SNR=3.6						
MKAR	Makanchi Array	45.41	302	P	P	14 42 40.7	+0.7
	0.4nm,0.8s,baz=97,slow=7.4,SNR=3.6						
ILAR	Eielson Array	48.15	33	P	P	14 43 01.6	+0.5
	0.4nm,0.7s,baz=262,slow=6.3,SNR=5.5						
WRA	Warramunga Arr	57.79	190	P	P	14 44 12.8	+0.2
	0.6nm,0.8s,baz=8.4,slow=7.5,SNR=4.0						
ASAR	Alice Springs	61.52	190	P	P	14 44 39.5	+1.2
	0.2nm,0.8s,baz=5.2,slow=7.6,SNR=3.1						

*NIED **05** 14:41:00, 35°.80N×141°.00E, h8^{km}, Mw4.6 Best double couple: M₀1.02000×10^{16} NP1:φs351.00000°, δ33.00000°, λ-80.00000°. NP2:φs159.00000°, δ58.00000°, λ-96.00000°.*
*ISCJB **05** 14:41:36.4±1.0, 35°.75N±0°.03×141°.09E±0°.05, h2^{km}±5^{km}, mb4.3/47, MS3.7/17, Error ellipse: s-maj=6.7km s-min=5.2km az=18.1*
*IDC **05** 14:41:37.7±0.6, 35°.70N×140°.95E, h0^{km}, mb4.1/21, mb1 4.2/24, mb1mx4.1/56, mbtmp4.1/24, ML3.6/3, MS3.7/17, Ms1 3.7/17, ms1mx3.4/56, Error ellipse: s-maj=17.8km s-min=13.9km az=108.0*
*JMA **05** 14:41:38.3±0.2, 35°.70N×140°.99E, h10^{km}±1^{km}, M4.6*
JMA Felt III J1.
*MOS **05** 14:41:41.0±1.8, 35°.91N×140°.89E, h22^{km}, mb4.8/18, Error ellipse: s-maj=9.1km s-min=5.8km az=100.6*
*NEIC **05** 14:41:43.4±1.0, 36°.18N×140°.70E, h18^{km}±6^{km}, mb4.7/14, Error ellipse: s-maj=12.4km s-min=6.6km az=150.0*
NEIC Recorded [3 JMA] in Chiba and Ibaraki.
ISC 05 14:41:38.6±1.3**, 35°.86N**±0°.06×**140°.92E**±0°.05**, h3**^{km}±9^{km}**, n137, σ1^{s}.59**/97**, mb4.3**/47**, MS3.8**/17**, 7C-6D, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	Chosi	0.16	196	⇑P	Pg	14 41 40.9	-0.9
CHOJ				S	Sg	14 41 42.9	-1.0
JYT	Yasato	0.69	302	⇓P	Pn	14 41 53.7	-1.5
JYT				S	Sn	14 42 04.8	-1.6
JCN	Nagara	0.73	233	⇑P	Pg	14 41 52.7	+0.1
JCN				S	Sb	14 42 04.2	-0.1
JHO	Hitachi	0.80	340	⇓P	Pn	14 41 56.0	-0.8
JHO				S	Sn	14 42 09.4	+0.2
BSO4	Boso 4	0.99	209	P	Pg	14 41 56.0	-1.5
BSO3	Boso 3	1.11	198	⇓P	Pb	14 41 57.0	-3.2
BSO1	Boso 1	1.21	178	P	Pn	14 41 57.2	-4.6
MJAR	Matsushiro Arr	2.29	288	Pn	Pn	14 42 17.1	-0.2
	18nm,0.3s,baz=98,slow=8.4,SNR=114						
MAJO	Matsushiro	2.29	288	d iP	Pn	14 42 17.7	+0.4
MAJO	Matsushiro	2.29	288	ePn	Pn	14 42 17.4	0.0
MAT	Matsushiro	2.29	288	P	Pn	14 42 17.1	-0.2
MAT				S	Sn	14 42 43.4	-2.7
JHJ2	Mitsune	2.89	199	ePn	Pg	14 42 33.4	-0.6
JHJ	Hachijo jima 2	2.89	199	Pn	Pn	14 42 22.2	-3.3
	44nm,0.3s,baz=323,slow=23,SNR=13						
JHJ				LR	LR	14 43 38.7	
	comp=Z,804nm,19.9s,baz=54,slow=44						
INU	Inuyama	3.22	262	ePn	Pn	14 42 30.8	+0.8
ERM	Erimo	6.39	15	iP	Pn	14 43 13.8	+0.3
ERM	Erimo	6.39	15	ePn	Pn	14 43 13.3	-0.2
JNU	Nakatsue	8.72	255	Pn	Pn	14 43 49.1	+3.4
	0.2nm,0.3s,baz=126,slow=17,SNR=3.2						
JNU				LR	LR	14 47 42.1	
	comp=Z,2μm,18.6s,baz=120,slow=42						
YUK	Yuzh-Kuril'sk	9.00	23	P	Pn	14 43 55.2	+5.8
YUK				eS	Sn	14 45 27.4	-3.8
SHO	Shikotan	9.20	28	eP	Pn	14 43 55.3	+3.2
KSRS	Korea Array	10.56	282	Pn	Pn	14 44 16.9	+6.2
	0.2nm,0.3s,baz=104,slow=15,SNR=12						
KSRS				LR	LR	14 48 26.0	
	comp=Z,359nm,19.5s,baz=90,slow=38						
KSRS	Korea Array	10.56	282	P	Pn	14 44 17.0	+6.3
KSRS				MLR	MLR		
	comp=Z,359nm,19.5s						
KSAR	Wonju Array Be	10.59	282	P	Pn	14 44 17.0	+5.8
KSAR	Wonju Array Be	10.59	282	Pn	Pn	14 44 16.9	+5.8
KUR	Kuril'sk	10.75	27	eP	Pn	14 44 19.3	+6.0
KUR				eS	Sn	14 46 10.0	-4.1
USRK	Ussuriysk Ar.	10.77	323	Pn	Pn	14 44 20.9	+7.2
	comp=Z,0.1nm,0.3s,baz=135,slow=12,SNR=7.6						
USRK				LR	LR	14 47 57.8	
	comp=Z,168nm,20.6s,baz=121,slow=35						
YSS	Yuzh-Sakhalins	11.17	7	⇑eP	Pn	14 44 20.0	+0.9
YSS				pmax	pmax		
	comp=Z,20nm,0.7s						
YSS				MLR	MLR		
	comp=Z,400nm,15.0s						
YSS				MLR	MLR		
	comp=N,400nm,18.0s						
YSS	Yuzh-Sakhalins	11.17	7	ePn	Pn	14 44 18.0	-1.0
KLR	Kul'dur	14.95	336	Pn	P	14 45 13.4	-3.1
	comp=N,0.1nm,0.3s,baz=180,slow=9.1,SNR=2.7						
KLR				LR	LR	14 50 51.9	
	comp=N,188nm,19.2s,baz=124,slow=37						
TYV	Tymovskoe	15.05	4	eP	Pn	14 45 11.5	-0.5
TYV				pmax	pmax		
	comp=Z,13nm,0.8s						
DL2	Dalian	15.63	287	P	P	14 45 28.2	+4.2
DL2				eS	S	14 48 23.1	-5.8
DL2				pmax	pmax		
	comp=Z,21nm,0.8s						
DL2				pmax	pmax		
	comp=Z,210nm,6.8s						
DL2				LR	LR		
	comp=N,470nm,13.0s						
DL2				LR	LR		
	comp=E,500nm,12.7s						
DL2				LR	LR		
	comp=Z,480nm,10.7s						
NJ2	Nanjing	18.68	265	eP	Pn	14 45 58.7	+0.5
NJ2				pmax	pmax		
	comp=Z,11nm,0.6s						
PEA0	Petropavlovsk-	20.90	29	eP	Pn	14 46 22.6	-1.9
PEA0B	Petropavlovsk-	20.90	29	eP	Pn	14 46 22.3	-2.1
	comp=Z,36nm,1.2s						
PETK	Petropavlovsk-	20.90	29	P	Pn	14 46 23.0	-1.4
	comp=Z,15nm,1.1s,baz=210,slow=7.7,SNR=9.4						
PETK				LR	LR	14 54 08.9	
	comp=Z,120nm,21.6s,baz=224,slow=36						
PETK	Petropavlovsk-	20.90	29	P	Pn	14 46 23.0	-1.4
WHN	Wuhan	22.82	264	P	P	14 46 43.9	+1.3
WHN				S	S	14 50 54.3	+1.7
WHN				pmax	pmax		
	comp=Z,42nm,0.5s						
WHN				LR	LR		
	comp=N,1μm,11.6s						
WHN				LR	LR		
	comp=E,780nm,11.7s						
WHN				LR	LR		
	comp=Z,1μm,24.5s						
MA2	Magadan	24.58	12	P	P	14 47 01.0	+1.5
	comp=Z,10.0nm,0.8s,baz=220,slow=9.3,SNR=24						
MA2				LR	LR	14 57 54.4	
	comp=Z,83nm,18.9s,baz=210,slow=40						
MA2	Magadan	24.58	12	eP	P	14 47 00.5	+0.9
	comp=Z,173nm,1.4s						
XAN	Xi'an	26.23	275	P	P	14 47 15.3	+0.5
ENH	Enshi	26.85	267	eP	P	14 47 18.7	-1.8
	comp=Z,15nm,0.8s						
YAK	Yakutsk	27.13	348	P	P	14 47 22.8	+0.2
	comp=Z,0.6nm,0.4s,baz=341,slow=23,SNR=7.3						
YAK				LR	LR	14 58 49.7	
	comp=Z,137nm,20.6s,baz=145,slow=38						
ULN	Ulaanbaatar	27.70	306	⇑iP	P	14 47 29.6	+1.5
ULN				pmax	pmax		
	comp=Z,8.0nm,1.8s						
ULN	Ulaanbaatar	27.70	306	P	P	14 47 27.7	-0.4
	comp=Z,3.9nm,0.9s						
H11N2	WAKE ISLAND Hy	27.92	118	T	T	15 16 23.6	
	baz=311,slow=75,SNR=1259						
H11N1	WAKE ISLAND Hy	27.93	118	T	T	15 16 22.7	
	baz=311,slow=75,SNR=725						
H11N3	WAKE ISLAND Hy	27.94	118	T	T	15 16 23.5	
	baz=311,slow=75,SNR=715						
SEY	Seymchan	28.02	11	P	P	14 47 32.3	+1.8
	comp=Z,4.6nm,0.9s,baz=197,slow=7.2,SNR=14						
SEY	Seymchan	28.02	11	ceP	P	14 47 31.7	+1.2
SONM	Songino Array	28.13	306	P	P	14 47 33.8	+2.0
	comp=Z,1.3nm,0.7s,baz=105,slow=9.8,SNR=8.3						
SONM				LR	LR	14 59 27.5	
	comp=Z,85nm,18.4s,baz=110,slow=38						
BOD	Bodaibo	28.32	329	eP	P	14 47 33.0	-0.3
BOD				pmax	pmax		
	comp=Z,5.0nm,0.8s						
H11S1	WAKE ISLAND Hy	28.59	120	T	T	15 17 12.6	
	baz=312,slow=76,SNR=3732						
H11S3	WAKE ISLAND Hy	28.59	120	T	T	15 17 12.6	
	baz=312,slow=76,SNR=1499						
H11S2	WAKE ISLAND Hy	28.60	120	T	T	15 17 13.7	
	baz=312,slow=76,SNR=2036						
GYA	Guiyang	30.64	262	P	P	14 47 56.8	+2.5
GYA				pmax	pmax		
	comp=Z,10.0nm,0.8s						
ZAK	Zakamensk	30.70	310	eP	P	14 47 58.2	+3.6
ZAK				pmax	pmax		
	comp=Z,2.0nm,1.7s						
TLY	Talaya	30.81	313	LR	LR	14 59 17.9	
	comp=Z,44nm,19.8s,baz=126,slow=34						
CD2	Chengdu	31.29	272	P	P	14 47 59.5	-0.4
CD2				pmax	pmax		
	comp=Z,10.0nm,0.7s						
QIZ	Qiongzhong	32.09	247	P	P	14 48 09.7	+2.7
QIZ				S	S	14 53 29.4	+9.4
QIZ				LR	LR		
	comp=N,130nm,22.0s						
QIZ				LR	LR		
	comp=Z,150nm,19.8s						
GTA	Gaotai	32.54	289	eP	P	14 48 12.0	+1.0
GTA				pP	sP	14 48 16.2	+3.8
GTA				sP	pP	14 48 19.0	+7.0
GTA				S	S	14 53 24.3	-2.7
GTA				sS	sS	14 53 31.9	+3.3
GTA				SS	SnSn	14 55 20.3	+0.2
GTA				pmax	pmax		
	comp=Z,2.0nm,1.1s						
GTA				pmax	pmax		
	comp=Z,57nm,5.3s						
GTA				LR	LR		
	comp=N,160nm,15.7s						
GTA				LR	LR		
	comp=E,220nm,14.7s						
GTA				LR	LR		
	comp=Z,190nm,18.1s						
KMI	Kunming	34.40	263	P	P	14 48 29.6	+2.2
KMI				pmax	pmax		
	comp=Z,17nm,0.5s						
KMI				pmax	pmax		
	comp=Z,100nm,5.3s						
BILL	Bilibino	35.26	16	⇓eP	P	14 48 33.8	-0.3
BILL				i		14 48 38.4	
BILL				pmax	pmax		
	comp=Z,15nm,1.2s						
BILL				MLR	MLR		
	comp=Z,133nm,19.0s						
BILL	Bilibino	35.26	16	eP	P	14 48 34.2	+0.1
	comp=Z,13nm,1.1s						
TIXI	Tiksi	36.41	354	⇑iP	P	14 48 43.7	-0.1
TIXI				pmax	pmax		
	comp=Z,6.0nm,1.0s						
TIXI	Tiksi	36.41	354	eP	P	14 48 41.9	-1.9
	comp=Z,6.3nm,1.1s						
CMAR	Chiang Mai Arr	40.82	256	P	P	14 49 21.3	-0.2
	comp=Z,0.3nm,0.3s,baz=54,slow=7.0,SNR=4.2						
CMAR				LR	LR	15 08 06.1	
	comp=Z,148nm,19.2s,baz=74,slow=39						
WMQ	Urumqi	41.02	298	eP	P	14 49 24.4	+1.4
WMQ				pP	sP	14 49 27.3	+2.8
WMQ				sP	pP	14 49 30.8	+6.7
WMQ				S	S	14 55 30.3	-5.8
WMQ				pmax	pmax		
	comp=Z,3.0nm,0.6s						
WMQ				pmax	pmax		
	comp=Z,54nm,5.0s						
WMQ				LR	LR		
	comp=N,98nm,19.0s						
WMQ				LR	LR		
	comp=E,30nm,20.6s						
WMQ				LR	LR		
	comp=Z,43nm,20.6s						
ZALV	Zalesovo Beam	42.42	313	P	P	14 49 34.6	+0.4
	comp=Z,3.5nm,0.7s,baz=81,slow=6.4,SNR=13						
NRIK	Noril'sk	44.17	336	P	P	14 49 48.6	+0.5
	comp=Z,5.7nm,1.1s,baz=128,slow=10,SNR=4.6						
MK01	Makanchi Array	44.41	303	eP	P	14 49 50.2	-0.2
MK31	Makanchi Array	44.41	303	eP	P	14 49 50.4	-0.1
MK31	Makanchi Array	44.41	303	eP	P	14 49 50.4	-0.1
MKAR	Makanchi Array	44.41	303	P	P	14 49 50.7	+0.3
	comp=Z,3.6nm,0.7s,baz=91,slow=10.0,SNR=36						
MKAR	Makanchi Array	44.41	303	eP	P	14 49 50.4	-0.1
MKAR	Makanchi Array	44.41	303	eP	P	14 49 50.4	-0.1
KURK	Kurchatov	46.35	309	eP	P	14 50 05.5	-0.2
KURK				pmax	pmax		
	comp=Z,10.0nm,0.8s						
KURK	Kurchatov	46.35	309	eP	P	14 50 05.5	-0.2
	comp=Z,10nm,0.8s						
KDAK	Kodiak Island	48.24	41	LR	LR	15 10 08.8	
	comp=Z,184nm,19.4s,baz=256,slow=35						
TKM2	Tokmak 2	49.84	299	eP	P	14 50 33.0	-0.1
TKM2				pmax	pmax		
	comp=Z,14nm,1.3s						
TKM2	Tokmak 2	49.84	299	eP	P	14 50 33.0	-0.1
	comp=Z,14nm,1.3s						
KSH	Kashi	50.52	295	eP	P	14 50 42.6	+4.3
KSH				epP	sP	14 50 47.0	+7.3
KSH				esP	pP	14 50 49.6	+10
KSH				S	S	14 57 54.5	+1.4
KSH				sS	sS	14 58 02.1	+7.3
FRU	Bishkek	50.56	299	eP	P	14 50 50.0	+12
IL1	Eielson Array	50.70	32	eP	P	14 50 39.3	+0.3
ILAR	Eielson Array	50.70	32	P	P	14 50 39.5	+0.4
	comp=Z,1.4nm,0.8s,baz=270,slow=5.8,SNR=9.3						
ILB	Eielson Array	50.70	32	eP	P	14 50 39.5	+0.4
BRVK	Borovoye	51.13	313	ceP	P	14 50 42.4	0.0
BRVK				pmax	pmax		
	comp=Z,5.0nm,0.8s						
BRVK	Borovoye	51.13	313	P	P	14 50 42.2	-0.2
	comp=Z,3.7nm,0.8s						
KKAR	Karatay Array	53.37	301	eP	P	14 50 58.7	-0.6
KKAR	Karatay Array	53.37	301	eP	P	14 50 58.7	-0.6
INK	Inuvik	55.61	27	P	P	14 51 15.8	+0.6
	comp=Z,1.3nm,0.8s,baz=285,slow=5.8,SNR=4.3						
INK				LR	LR	15 16 54.4	
	comp=Z,77nm,18.0s,baz=270,slow=38						
SVE	Sverdlovsk	55.76	319	eP	P	14 51 19.5	+3.1
SVE				pmax	pmax		
	comp=Z,11nm,0.8s						
WRA	Warramunga Arr	55.85	187	P	P	14 51 14.7	-2.7
	comp=Z,6.3nm,0.8s,baz=6.0,slow=7.5,SNR=13						
ARU	Arti	56.98	319	d iP	P	14 51 28.0	+2.9
ARU						14 52 19.3	
ARU						14 53 28.3	
ARU				S	S	14 59 22.6	+2.8
ARU				SS	SS	15 03 11.6	+4.0
ARU				pmax	pmax		
	comp=Z,11nm,0.8s						
ARU	Arti	56.98	319	eP	P	14 51 24.8	-0.3
	comp=Z,10nm,0.8s						
ABKAR	Akbulak array	58.39	311	eP	P	14 51 34.6	-0.6
ASAR	Alice Springs	59.57	187	P	P	14 51 43.2	-0.3
	comp=Z,1.1nm,0.8s,baz=26,slow=8.9,SNR=5.9						
DLBC	Dease Lake	59.80	37	LR	LR	15 18 20.8	
	comp=Z,86nm,19.5s,baz=360,slow=37						
BBB	Bella Bella	63.19	44	LR	LR	15 16 50.8	
	comp=Z,83nm,18.2s,baz=229,slow=33						
RES	Resolute Bay	63.84	14	P	P	14 52 12.0	+0.3
	comp=Z,2.8nm,0.8s,baz=317,slow=4.5,SNR=8.2						
RES	Resolute Bay	63.84	14	eP	P	14 52 12.0	+0.3
RES				pmax	pmax		
	comp=Z,9.0nm,1.3s						
RES	Resolute Bay	63.84	14	eP	P	14 52 12.0	+0.3
	comp=Z,9.2nm,1.3s						
YKA	Yellowknife Ar	65.02	30	P	P	14 52 19.2	-0.5
	comp=Z,0.6nm,0.9s,baz=292,slow=6.1,SNR=5.7						
VRH	Novokhopyorsk	68.18	318	eP	P	14 52 38.9	-1.1
VRH				pmax	pmax		
	comp=Z,7.0nm,0.7s						
LPSR	Galich'ya Gora	68.94	320	eP	P	14 52 46.6	+1.9
LPSR				pmax	pmax		
	comp=Z,5.0nm,0.5s						
VSR	Storozhevoye	69.55	319	eP	P	14 52 50.3	+1.8
VSR				pmax	pmax		
	comp=Z,5.0nm,0.7s						
FINES	FINESS Array B	69.66	332	P	P	14 52 49.1	+0.1
	comp=Z,0.5nm,0.4s,baz=46,slow=4.0,SNR=3.5						
KBZ	Khabaz	71.36	311	P	P	14 53 03.1	+3.4
	comp=Z,2.9nm,0.8s,baz=13,slow=2.9,SNR=4.5						
AKASG	Malin Array Be	74.98	322	P	P	14 53 19.8	-1.1
	comp=Z,2.6nm,0.8s,baz=46,slow=5.9,SNR=7.6						
HFS	Hagfors	74.99	336	P	P	14 53 19.0	-1.9
	comp=Z,5.4nm,1.1s,baz=34,slow=6.1,SNR=3.3						
KIEV	Kiev	74.99	322	eP	P	14 53 23.3	+2.2
KIEV				pmax	pmax		
	comp=Z,2.0nm,0.7s						
KIEV	Kiev	74.99	322	eP	P	14 53 23.3	+2.2
	comp=Z,2.2nm,0.7s						
NB2	NORSAR Subarra	75.11	337	P	P	14 53 21.5	-0.2
	comp=Z,3.0nm,1.0s,baz=39,slow=6.2						
NOA	NORSAR Array B	75.11	337	P	P	14 53 22.3	+0.6
	comp=Z,1.4nm,0.8s,baz=43,slow=5.5,SNR=4.6						
FCC	Fort Churchill	75.23	26	eP	P	14 53 25.2	+2.9
FCC	Fort Churchill	75.23	26	eP	P	14 53 25.2	+2.9
BOZ	Bozeman (W)	75.83	44	eP	P	14 53 30.1	+3.9
BOZ				pmax	pmax		
	comp=Z,3.0nm,1.0s						
BOZ	Bozeman (W)	75.83	44	eP	P	14 53 30.1	+3.8
	comp=Z,3.2nm,1.0s						
NVAR	Mina Array Bea	76.02	53	P	P	14 53 30.8	+3.3
	comp=Z,0.5nm,0.6s,baz=278,slow=6.0,SNR=4.5						
PLEC	Pleito Hills	77.48	56	eP	P	14 53 41.2	+5.5
LTU	Little Mountai	77.92	47	eP	P	14 53 41.8	+3.7
BRTR	Keskin Array B	79.33	311	P	P	14 53 48.0	+2.2
	comp=Z,1.4nm,0.9s,baz=77,slow=5.6,SNR=5.4						
STHS	Stebnicka Huta	79.69	325	eP	P	14 53 50.6	+3.1
STHS	Stebnicka Huta	79.69	325	eP	P	14 53 50.6	+3.1
BR231	Keskin MP Arra	79.78	312	eP	P	14 53 48.5	+0.2
DNR	Dunn Ranch,Anz	79.94	56	epP	pP	14 53 56.9	+6.6
CLL	Collm	81.91	330	eP	P	14 54 02.0	+2.7
	comp=Z,5.0nm,0.9s						
CLL				ePP	PP	14 57 10.0	+4.1
CLL	Collm	81.91	330	eP	P	14 54 02.0	+2.7
CLL				pmax	pmax		
	comp=Z,5.0nm,0.9s						
PHWY	Pilot Hill	82.06	44	eP	P	14 54 01.2	+0.6
	comp=Z,15nm,0.7s						
GERES	GERESS Array B	83.49	328	P	P	14 54 07.8	0.0
	comp=Z,0.3nm,0.3s,baz=42,slow=4.2,SNR=4.4						
PMOR	Pomariorio Ree	84.08	113	eT	T	16 26 27.6	
	comp=Z,27nm,0.2s						
PPT	Papeete	84.47	116	LR	LR	15 24 48.0	
	comp=Z,58nm,21.9s,baz=322,slow=31						
PPT2	Papeete2	84.49	116	eLR	LR	15 20 45.1	
	comp=Z,152nm,30.2s						
PPT2	Papeete2	84.49	116	eT	T	16 26 58.2	
	comp=Z,3.1nm,0.3s						
MEH	Mehetia	85.78	115	eT	T	16 28 34.0	
	comp=Z,24nm,0.2s						
TAOE	Nuku Hiva Isla	86.28	104	eLR	LR	15 21 36.2	
	comp=Z,140nm,29.1s						
TXAR	Lajitas Array	91.16	52	P	P	14 54 46.7	+1.4
	comp=Z,0.5nm,0.8s,baz=245,slow=2.4,SNR=3.8						
TXAR				LR	LR	15 30 49.4	
	comp=Z,55nm,21.2s,baz=0.0,slow=32						
LPAZ	La Paz	147.63	61	PKPbc	PKPbc	15 01 24.5	-1.2
	comp=Z,3.4nm,0.8s,baz=26,slow=8.4,SNR=12						
SIV	San Ignacio	152.14	50	PKPbc	PKPbc	15 01 36.0	-0.1
	comp=Z,4.0nm,0.9s,baz=265,slow=1.4,SNR=5.6						

JMA 05 14:41:38.2, 36°.82N×138°.62E, h0^{km}, M0.5, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JGK	Kuni	0.26	176	eS	Sg	14 41 48.0	+1.5
MAT	Matsushiro	0.43	230	P	Pg	14 41 46.3	-0.2
MAT				S	Sg	14 41 52.5	+0.4
MAT	Matsushiro	0.43	230	P	Pg	14 41 46.7	+0.2
MAT				S	Sg	14 41 52.5	+0.4
JNG	Nsakai	0.59	226	P	Pg	14 41 49.6	+0.1
JNG				eS	Sg	14 41 57.6	+0.5

*ISCJB **05** 14:44:35.8±0.7, 2°.91N±0°.07×127°.40E±0°.09, h50^{km}, mb3.7/9, Error ellipse: s-maj=12.7km s-min=9.7km*

az=169.4
*DJA **05** 14:44:39.9±0.7, 3°N±7°×12°7E±°, h53km±26km, M4.2/9, mB4.8/1, mb4.4/5, MLv4.2/9, Mw(mB)4.1/1*
*IDC **05** 14:45:19.3±4.8, 2°.43N×127°.64E, h622km±92km, mb2.6/8, mb1 2.8/8, mb1mx2.6/42, mbtmp3.7/8, Error ellipse: s-maj=36.9km s-min=18.3km az=83.0*
ISC 05 14:44:35.9±0.8**, 2°.90N**±0°.08×**127°.4E**±0°.1**, h50**km**, n17, σ2.87**/15**, mb3.7**/9**, Northern Molucca Sea**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SGSI	Sangihe	2.04	293	P	Pn	14 45 09.2	+1.4
TNTI	Ternate	2.11	181	P	Pn	14 45 13.4	+4.6
LBMI	Labuha	3.51	179	P	Pn	14 45 31.1	+3.0
SANI	Sanana	5.12	196	P	Pn	14 45 49.9	-0.2
SWI	Sorong	5.36	134	P	Pn	14 45 55.7	+2.2
	25nm,0.9s,958nm0.1nm						
MRSI	Marisa	5.97	246	P	Pn	14 46 02.0	+0.2
	29nm,0.7s,0.1nm						
APSI	Ampana	6.89	237	P	Pn	14 46 17.2	+2.8
	61nm,1.4s,0.2nm						
FITZ	Fitzroy Crossi	20.94	185	P	Pn	14 49 17.8	+0.1
	5.6nm,0.9s,baz=18,slow=12,SNR=3.8						
WRA	Warramunga Arr	23.70	164	P	P	14 49 39.9	-3.5
	2.0nm,1.0s,baz=341,slow=9.9,SNR=9.0						
ASAR	Alice Springs	27.15	167	P	P	14 50 11.1	-3.7
	0.2nm,0.6s,baz=342,slow=7.4,SNR=5.3						
CMAR	Chiang Mai Arr	31.88	301	P	P	14 50 59.7	+3.0
	0.4nm,0.3s,baz=116,slow=8.1,SNR=4.2						
KSRS	Korea Array	34.39	1	P	P	14 51 19.6	+1.2
	2.0nm,0.9s,baz=176,slow=11,SNR=8.7						
STKA	Stephens Creek	37.12	160	P	P	14 51 39.0	-2.7
	1.5nm,0.9s,baz=328,slow=10,SNR=2.4						
USRK	Ussuriysk Ar.	41.33	5	P	P	14 52 18.0	+1.3
	3.5nm,1.0s,baz=191,slow=10,SNR=4.6						
KLR	Kul'dur	46.31	4	P	P	14 52 58.0	+1.4
	1.4nm,0.8s,baz=283,slow=3.6,SNR=4.4						
SONM	Songino Array	48.30	341	P	P	14 53 09.8	-2.6
	0.3nm,0.5s,baz=160,slow=5.5,SNR=2.4						
MKAR	Makanchi Array	58.62	325	P	P	14 54 21.6	-6.4
	0.2nm,0.4s,baz=128,slow=8.5,SNR=3.1						

GUC 05 14:46:12.9±0.5**, 35°.93S**×**71°.49W, h113**km±3km**, ML4.0, 4C-1D, Central Chile**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TALC	Talca	0.54	347	⇑ iP	Pn	14 46 30.0	-0.3
TALC				i S	Sn	14 46 42.9	-0.5
CHPI	Pichilemu	1.59	344	⇑ iP	Pn	14 46 40.7	-0.3
CHPI				i S	Sn	14 47 01.8	-0.5
ANTU	Antumapu	2.46	17	i S	Sn	14 47 21.8	-0.1
ANTU				AML	AML	14 47 27.6	
	comp=E,499nm,0.4s						
RCDM	Rinconada Maip	2.50	13	⇑ iP	Pn	14 46 52.2	-0.3
RCDM				i S	Sn	14 47 21.5	-1.3
CLCH	Cerro Calan	2.65	18	i S	Sn	14 47 25.7	-0.6
CLCH				AML	AML	14 47 28.8	
	comp=E,431nm,0.5s						
PEL	Peldehue	2.86	14	⇑ iP	Pn	14 46 57.3	+0.1
PEL				i S	Sn	14 47 30.6	-0.6
PEL				AML	AML	14 47 34.4	
	comp=N,357nm,0.2s						
ROCH	El Roble	2.98	8	⇓ iP	Pn	14 46 59.0	+0.1
ROCH				i S	Sn	14 47 31.8	-2.5
ROCH				AML	AML	14 47 37.3	
	comp=N,641nm,0.4s						

IDC 05 14:50:04.0±6.1**, 10°.02S**×**107°.95E, h94**km±42km**, mb3.2**/4**, mb1 3.4**/5**, mb1mx3.1**/43**, mbtmp3.6**/5**, Error ellipse: s-maj=91.3km s-min=17.7km az=55.0, South of Jawa**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LEM	Lembang	3.19	354	P	Pn	14 50 50.2	-2.0
	30nm,0.3s,baz=85,slow=11,SNR=21						
LEM				S	Sn	14 51 30.6	+1.1
	18nm,0.3s,baz=3.5,slow=23,SNR=14						
WRA	Warramunga Arr	27.30	114	P	P	14 55 39.9	-0.1
	0.6nm,0.6s,baz=288,slow=11,SNR=4.1						
ASAR	Alice Springs	28.24	122	P	P	14 55 48.6	+0.3
	0.1nm,0.7s,baz=302,slow=11,SNR=2.7						
SONM	Songino Array	57.61	359	P	P	14 59 44.2	0.0
	0.5nm,0.5s,baz=175,slow=7.9,SNR=5.5						
MKAR	Makanchi Array	61.02	340	P	P	15 00 07.4	-0.2
	0.6nm,0.5s,baz=154,slow=8.2,SNR=11						

IDC 05 14:55:25.7±1.9**, 2°.91N**×**126°.86E, h0**km**, mb3.6**/4**, mb1 3.8**/4**, mb1mx3.4**/45**, mbtmp3.6**/4**, Error ellipse: s-maj=167.2km s-min=24.1km az=65.0, Northern Molucca Sea**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	Warramunga Arr	23.86	162	P	P	15 00 40.7	-0.3
	1.0nm,0.6s,baz=341,slow=10,SNR=8.6						
ASAR	Alice Springs	27.29	166	P	P	15 01 13.7	+1.5
	0.2nm,0.5s,baz=352,slow=14,SNR=11						
STKA	Stephens Creek	37.32	159	P	P	15 02 38.5	-1.4
	1.2nm,0.6s,baz=336,slow=10.0,SNR=3.6						
MKAR	Makanchi Array	58.30	325	P	P	15 05 22.3	-0.2
	0.3nm,0.5s,baz=120,slow=8.4,SNR=6.2						

*IDC **05** 14:59:03.0±0.9, 40°.03N×144°.42E, h0km, mb3.6/8, mb1 3.9/10, mb1mx3.6/51, mbtmp3.6/10, ML4.4/2, MS3.9/1, Ms1 3.9/1, ms1mx2.6/46, Error ellipse: s-maj=51.0km s-min=17.2km az=114.0*
*ISCJB **05** 14:59:06.1±0.7, 40°.1N±0°.1×144°.3E±0°.3, h34km, mb3.6/8, MS3.9/1, Error ellipse: s-maj=32.6km s-min=12.2km az=32.1*
ISC 05 14:59:08.1±0.8**, 40°.2N**±0°.2×**144°.3E**±0°.2**, h34**km**, n11, σ0.89**/10**, mb3.7**/8**, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MJAR	Matsushiro Arr	5.96	235	Pn	Pn	15 00 34.7	+0.6
	1.5nm,0.3s,baz=38,slow=12,SNR=16						
MA2	Magadan	19.87	10	P	Pn	15 03 36.9	-1.0
	0.3nm,0.3s,baz=214,slow=6.1,SNR=3.5						
SEY	Seymchan	23.33	9	P	P	15 04 12.6	-0.4
	2.4nm,0.8s,baz=188,slow=6.7,SNR=13						
ZALV	Zalesovo Beam	41.54	310	LR	LR	15 26 38.2	
	comp=Z,140nm,18.2s,baz=56,slow=40						
ILAR	Eielson Array	45.67	34	P	P	15 07 25.4	+0.3
	1.0nm,1.1s,baz=263,slow=7.2,SNR=4.8						
INK	Inuvik	50.59	28	P	P	15 08 03.4	+0.3
	0.7nm,0.4s,baz=317,slow=4.6,SNR=5.6						
YKA	Yellowknife Ar	59.99	32	P	P	15 09 10.9	+0.1
	0.2nm,0.6s,baz=300,slow=6.6,SNR=3.8						
WRA	Warramunga Arr	60.49	191	P	P	15 09 13.0	-1.7
	0.6nm,0.8s,baz=10,slow=7.1,SNR=3.4						
ASAR	Alice Springs	64.22	191	P	P	15 09 39.3	-0.3
	0.2nm,0.6s,baz=6.0,slow=5.5,SNR=4.6						
NVAR	Mina Array Bea	71.36	55	P	P	15 10 25.5	+0.6
	0.3nm,0.5s,baz=294,slow=6.8,SNR=3.3						
TXAR	Lajitas Array	86.47	54	P	P	15 11 48.3	+0.6
	0.4nm,0.7s,baz=339,slow=4.8,SNR=3.9						

*NIED **05** 15:01:00, 39°.30N×142°.20E, h47km, Mw4.4 Best double couple: Mo4.53000×10^15 NP1:φs176.00000°, δ25.00000°, λ62.00000°. NP2:φs26.00000°, δ68.00000°, λ102.00000°.*
*MOS **05** 15:01:20.7±1.0, 39°.21N×142°.26E, h35km, mb4.6/14, Error ellipse: s-maj=11.5km s-min=6.6km az=101.4*
*ISCJB **05** 15:01:23.1±0.5, 39°.28N±0°.03×142°.28E±0°.06, h52km±3km, mb4.3/45, MS3.4/7, Error ellipse: s-maj=7.6km s-min=4.4km az=21.9*
*JMA **05** 15:01:23.8±0.1, 39°.28N×142°.25E, h43km±1km, M4.2*
JMA Felt II J1.
*BJI **05** 15:01:25.2, 39°.70N×141°.80E, h10km, mb4.7/23, mB4.9/14, Ms4.0/6, Ms7 3.8/6*
*IDC **05** 15:01:26.9±2.1, 39°.27N×142°.12E, h69km±19km, mb3.8/23, mb1 4.0/27, mb1mx3.8/53, mbtmp4.1/27, MS3.4/12, Ms1 3.4/12, ms1mx3.1/55, Error ellipse: s-maj=15.3km s-min=12.4km az=109.0*
*NEIC **05** 15:01:27.2±0.7, 39°.28N×142°.22E, h74km±6km, mb4.6/16, Error ellipse: s-maj=9.0km s-min=6.2km az=113.0*
ISC 05 15:01:24.1±0.9**, 39°.30N**±0°.04×**142°.28E**±0°.05**, h48**km±7km**, n122, σ1.19**/121**, mb4.3**/44**, MS3.6**/7**, 12C-3D, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MIYJ	Miyakonagasawa	0.45	308	P	Pn	15 01 33.9	-0.8
MIYJ				S	Sn	15 01 41.0	-1.2
OFUJ	Ofunato	0.52	245	P	Pn	15 01 34.5	-1.0
JTH	Tanohata	0.71	334	P	Pn	15 01 37.6	-0.4
JTH				S	Sn	15 01 47.5	-0.5
JOM	Ohasama	0.78	283	P	Pn	15 01 38.3	-0.6
JOM				S	Sn	15 01 48.9	-0.7
JMK	Ichinoseki	0.89	247	P	Pn	15 01 39.6	-0.7
JMK				S	Sn	15 01 50.7	-1.5
JKZ	Kuzumaki	1.00	313	P	Pn	15 01 41.9	0.0
JIO	Ouri	1.11	221	P	Pn	15 01 42.1	-1.2
JIO				S	Sn	15 01 55.6	-1.9
JANG	Nango	1.22	332	P	Pn	15 01 44.6	-0.2
JANG				S	Sn	15 02 01.1	+0.9
JRG	Rokugo	1.28	275	P	Pn	15 01 45.5	-0.1
ERM	Erimo	2.79	14	eP	Pn	15 02 09.6	+3.3
ERM	Erimo	2.79	14	ePn	Pn	15 02 09.6	+3.3
MJAR	Matsushiro Arr	4.23	231	P	Pn	15 02 29.0	+2.9
	8.9nm,0.3s,baz=35,slow=12,SNR=85						
MJAR				LR	LR	15 04 13.8	
	comp=Z,382nm,20.7s,baz=55,slow=41						
MJAR	Matsushiro Arr	4.23	231	P	Pn	15 02 29.0	+2.9
MAJO	Matsushiro	4.23	231	c iP	Pn	15 02 28.7	+2.6
MAJO	Matsushiro	4.23	231	ePn	Pn	15 02 28.4	+2.3
MAT	Matsushiro	4.23	231	P	Pn	15 02 27.7	+1.6
MAT				eS	Sn	15 03 16.5	+2.2
YUK	Yuzh-Kuril'sk	5.44	28	c iP	Pn	15 02 43.4	+0.8
YUK				i S	Sn	15 03 40.6	-3.2
YUK				pmax	pmax		
	comp=Z,88nm,0.5s						
YUK				pmax	pmax		
	comp=N,37nm,0.4s						
YUK				pmax	pmax		
	comp=E,30nm,0.1s						
SHO	Shikotan	5.70	35	⇑ iP	Pn	15 02 45.2	-1.0
SHO				i S	Sn	15 03 44.6	-5.7
JHJ2	Mitsune	6.49	199	ePn	Pn	15 02 59.1	+2.1
JHJ	Hachijo jima 2	6.49	199	P	Pn	15 02 59.0	+1.9
	comp=E,11nm,0.3s,baz=284,slow=13,SNR=4.4						
JHJ				S	Sn	15 04 08.7	-1.0
	comp=E,34nm,0.3s,baz=49,slow=19,SNR=4.6						
JHJ				LR	LR	15 05 09.7	
	comp=E,136nm,20.7s,baz=356,slow=35						
KUR	Kuril'sk	7.23	33	P	Pn	15 03 07.3	+0.1
KUR				eS	Sn	15 04 25.6	-2.3
KUR				pmax	pmax		
	comp=Z,15nm,1.3s						
KUR				smax	smax		
	comp=N,17nm,0.3s						
KUR				smax	smax		
	comp=E,34nm,0.3s						
YSS	Yuzh-Sakhalins	7.66	2	eP	Pn	15 03 15.0	+2.0
YSS				pmax	pmax		
	comp=Z,20nm,0.8s						
USRK	Ussuriysk Ar.	9.11	306	P	Pn	15 03 35.4	+2.5
	comp=Z,0.7nm,0.3s,baz=113,slow=15,SNR=18						
USRK				LR	LR	15 06 57.7	
	comp=Z,387nm,19.0s,baz=148,slow=37						
MDJ	Mudanjiang	10.83	303	ePn	Pn	15 04 00.8	+4.3
	comp=Z,26nm,0.9s						
JNU	Nakatsue	11.07	240	LR	LR	15 08 31.3	
	comp=Z,193nm,19.0s,baz=120,slow=39						
KSRS	Korea Array	11.42	265	P	Pn	15 04 09.4	+5.0
	comp=Z,0.6nm,0.3s,baz=77,slow=12,SNR=12						
KSRS				LR	LR	15 07 55.7	
	comp=Z,179nm,20.5s,baz=118,slow=34						
KSAR	Wonju Array Be	11.45	265	P	Pn	15 04 09.5	+4.6
KSAR	Wonju Array Be	11.45	265	P	Pn	15 04 09.4	+4.5
KLR	Kul'dur	12.46	326	P	Pn	15 04 19.5	+0.9
	comp=Z,0.2nm,0.3s,baz=127,slow=12,SNR=3.9						
KLR				LR	LR	15 09 07.4	
	comp=Z,245nm,19.0s,baz=122,slow=37						
HIA	Hailar	18.90	309	eP	P	15 05 37.8	-2.8
HIA				pmax	pmax		
	comp=Z,6.0nm,0.7s						
HIA	Hailar	18.90	309	eP	P	15 05 37.8	-2.8
	comp=Z,5.7nm,0.7s						
TIA	Tai'an	20.11	269	eP	P	15 05 53.3	-0.5
TIA				pmax	pmax		
	comp=Z,10.0nm,0.9s						
MA2	Magadan	21.00	12	P	P	15 06 04.0	+0.7
	comp=Z,9.1nm,0.7s,baz=223,slow=9.7,SNR=31						
MA2	Magadan	21.00	12	P	P	15 06 04.0	+0.7
MA2				pmax	pmax		
	comp=Z,9.0nm,0.7s						
MA2	Magadan	21.00	12	eP	P	15 06 03.5	+0.3
	comp=Z,40nm,0.8s						
YAK	Yakutsk	24.03	345	P	P	15 06 33.5	-0.8
	comp=Z,1.3nm,0.4s,baz=176,slow=21,SNR=7.1						
YAK				LR	LR	15 16 09.6	
	comp=Z,48nm,19.2s,baz=181,slow=37						
YAK	Yakutsk	24.03	345	eP	P	15 06 33.5	-0.8
YAK				pmax	pmax		
	comp=Z,33nm,1.0s						
YAK	Yakutsk	24.03	345	P	P	15 06 33.3	-1.0
	comp=Z,21nm,0.6s						
SEY	Seymchan	24.44	11	P	P	15 06 38.1	+0.1
	comp=Z,3.2nm,0.8s,baz=200,slow=8.2,SNR=14						
SEY	Seymchan	24.44	11	c eP	P	15 06 39.0	+1.0
GUMO	Guam	25.71	174	LR	LR	15 15 35.2	
	comp=Z,18nm,20.6s,baz=238,slow=33						
BOD	Bodaibo	26.03	325	eP	P	15 06 52.3	-0.2
BOD				pmax	pmax		
	comp=Z,6.0nm,1.2s						
ULN	Ulaanbaatar	26.72	300	c eP	P	15 06 59.8	+0.7
ULN				pmax	pmax		
	comp=Z,7.0nm,2.5s						
ULN	Ulaanbaatar	26.72	300	eP	P	15 06 59.5	+0.4
	comp=Z,1.3nm,0.6s						
SONM	Songino Array	27.16	300	P	P	15 07 02.1	-0.9
	comp=Z,1.4nm,0.7s,baz=90,slow=9.6,SNR=8.8						
ENH	Enshi	28.27	262	eP	P	15 07 11.9	-1.0
	comp=Z,14nm,0.7s						
H11N2	WAKE ISLAND Hy	28.82	125	T	T	15 37 47.5	
	baz=318,slow=75,SNR=402						
H11N1	WAKE ISLAND Hy	28.82	126	T	T	15 37 47.8	
	baz=318,slow=75,SNR=482						
H11N3	WAKE ISLAND Hy	28.83	125	T	T	15 37 48.5	
	baz=318,slow=75,SNR=511						
TLY	Talaya	29.42	308	P	P	15 07 22.1	-0.8
	comp=Z,2.2nm,0.6s,baz=121,slow=3.8,SNR=5.7						
TLY				LR	LR	15 19 44.3	
	comp=Z,141nm,18.2s,baz=141,slow=37						
TLY	Talaya	29.42	308	eP	P	15 07 23.5	+0.5
TLY				pmax	pmax		
	comp=Z,4.0nm,0.8s						
TLY				MLR	MLR		
	comp=Z,126nm,18.0s						
ZAK	Zakamensk	29.46	305	eP	P	15 07 23.3	-0.1
ZAK				pmax	pmax		
	comp=Z,5.0nm,1.1s						
H11S1	WAKE ISLAND Hy	29.61	127	T	T	15 38 51.5	
	baz=319,slow=76,SNR=92						
H11S3	WAKE ISLAND Hy	29.61	127	T	T	15 38 51.7	
	baz=319,slow=76,SNR=44						
H11S2	WAKE ISLAND Hy	29.62	127	T	T	15 38 52.7	
	baz=319,slow=76,SNR=88						
GYA	Guiyang	32.32	257	⇓ iP	P	15 07 48.4	-0.5
GYA				pmax	pmax		
	comp=Z,20nm,0.8s						
GTA	Gaotai	32.61	284	eP	P	15 07 51.1	-0.2
GTA				pP	pP	15 07 56.9	-6.9
GTA				sP	sP	15 07 59.7	-10
GTA				S	S	15 13 01.4	-2.4
GTA				pmax	pmax		
	comp=Z,3.0nm,1.1s						
GTA				pmax	pmax		
	comp=Z,89nm,5.3s						
GTA				LR	LR		
	comp=Z,120nm,17.1s						
GTA				LR	LR		
	comp=Z,190nm,16.6s						
GTA				LR	LR		
	comp=Z,220nm,16.2s						
TIXI	Tiksi	33.13	352	c eP	P	15 07 54.0	-1.3
TIXI				pmax	pmax		
	comp=Z,2.0nm,0.8s						
ZALV	Zalesovo Beam	40.93	310	P	P	15 09 01.9	+0.3
	comp=Z,6.5nm,0.6s,baz=92,slow=8.4,SNR=21						
ZALV				PcP	PcP	15 11 01.6	+0.4
	comp=Z,1.1nm,0.4s,baz=120,slow=2.1,SNR=3.6						
NRIK	Noril'sk	41.51	334	LR	LR	15 27 09.5	
	comp=Z,139nm,19.9s,baz=116,slow=37						
CHTO	Chiang Mai	42.54	254	eP	P	15 09 15.7	+0.5
CHTO				pmax	pmax		
	comp=Z,4.0nm,0.8s						
CHTO	Chiang Mai	42.54	254	eP	P	15 09 15.7	+0.5
	comp=Z,3.6nm,0.8s						
CMAR	Chiang Mai Arr	42.76	254	P	P	15 09 16.1	-0.9
	comp=Z,0.7nm,0.4s,baz=46,slow=6.8,SNR=8.6						
CMAR				LR	LR	15 28 55.7	
	comp=Z,19nm,18.1s,baz=85,slow=39						
MKAR	Makanchi Array	43.53	300	P	P	15 09 23.2	+0.2
	comp=Z,4.3nm,0.8s,baz=83,slow=9.2,SNR=35						
KURK	Kurchatov	45.10	306	eP	P	15 09 35.2	-0.2
KURK				pmax	pmax		
	comp=Z,33nm,0.8s						
KURK	Kurchatov	45.10	306	eP	P	15 09 35.2	-0.2
	comp=Z,33nm,0.8s						
TAPN	Taplejung	46.50	272	eP	P	15 09 47.5	+0.4
	comp=Z,6.5nm,0.7s						
ODAN	Odare	46.98	272	eP	P	15 09 51.4	+0.6
	comp=Z,11nm,0.6s						
ILAR	Eielson Array	47.23	33	P	P	15 09 53.4	+1.5
	comp=Z,1.1nm,0.7s,baz=264,slow=6.1,SNR=19						
RAMN	Ramite	47.55	273	eP	P	15 09 55.4	+0.1
	comp=Z,20nm,0.8s						
GUN	Gumba	47.64	274	eP	P	15 09 56.4	+0.3
KKN	Kakani	48.16	274	eP	P	15 10 00.3	+0.3
	comp=Z,24nm,0.7s						
GKN	Gorkha	48.56	275	eP	P	15 10 03.1	+0.2
	comp=Z,29nm,0.8s						
TKM2	Tokmak 2	49.18	297	eP	P	15 10 08.3	+0.7
TKM2				pmax	pmax		
	comp=Z,15nm,0.9s						
TKM2	Tokmak 2	49.18	297	eP	P	15 10 08.3	+0.7
	comp=Z,15nm,0.9s						
KOLN	Koldanda	49.47	275	eP	P	15 10 10.5	+0.5
	comp=Z,14nm,0.7s						
BRVK	Borovoye	49.63	311	c eP	P	15 10 10.5	-0.1
BRVK				pmax	pmax		
	comp=Z,5.0nm,1.0s						
BRVK	Borovoye	49.63	311	eP	P	15 10 10.7	+0.1
	comp=Z,4.4nm,0.8s						
PYUN	Piuthan	49.78	276	eP	P	15 10 12.7	+0.4
	comp=Z,60nm,0.9s						
AAK	Ala-Archa	50.04	297	eP	P	15 10 14.1	0.0
AAK				pmax	pmax		
	comp=Z,3.0nm,0.9s						
AAK	Ala-Archa	50.04	297	eP	P	15 10 14.1	0.0
	comp=Z,3.3nm,0.9s						
KSH	Kashi	50.13	293	eP	P	15 10 18.8	+4.0
KSH				pmax	pmax		
	comp=Z,3.0nm,0.7s						
KSH				pmax	pmax		
	comp=Z,90nm,4.2s						
EKS2	Erkin-Say	50.53	297	eP	P	15 10 17.9	+0.2
EKS2				pmax	pmax		
	comp=Z,5.0nm,0.8s						
EKS2	Erkin-Say	50.53	297	eP	P	15 10 17.9	+0.2
	comp=Z,4.5nm,0.8s						
INK	Inuvik	52.07	28	P	P	15 10 30.4	+1.8
	comp=Z,0.5nm,0.4s,baz=275,slow=11,SNR=4.6						
KKAR	Karatay Array	52.60	299	eP	P	15 10 33.0	-0.1
KKAR				pmax	pmax		
	comp=Z,5.0nm,0.7s						
KKAR	Karatay Array	52.60	299	eP	P	15 10 33.0	-0.1
	comp=Z,4.6nm,0.7s						
SVE	Sverdlovsk	53.92	318	eP	P	15 10 43.7	+1.3
SVE				pmax	pmax		
	comp=Z,23nm,0.8s						
ARU	Arti	55.13	318	c iP	P	15 10 51.5	+0.2
ARU						15 12 52.0	
ARU				S	S	15 18 29.7	-0.7
ARU				SS	SS	15 22 12.9	-1.4
ARU				pmax	pmax		
	comp=Z,19nm,1.0s						
ARU	Arti	55.13	318	eP	P	15 10 51.2	-0.1
	comp=Z,17nm,0.9s						
ABKAR	Akbulak array	57.02	309	eP	P	15 11 04.8	-0.1
	comp=Z,8.9nm,0.5s						
WRAB	Tennant Creek	59.39	189	eP	P	15 11 21.1	-0.5
WRAB				pmax	pmax		
	comp=Z,1.0nm,0.5s						
WRAB	Tennant Creek	59.39	189	eP	P	15 11 21.1	-0.5
	comp=Z,0.8nm,0.5s						
WRA	Warramunga Arr	59.40	189	P	P	15 11 20.9	-0.8
	comp=Z,1.3nm,0.5s,baz=6.1,slow=7.0,SNR=18						
YKA	Yellowknife Ar	61.51	31	P	P	15 11 36.6	+1.0
	comp=Z,0.2nm,0.6s,baz=299,slow=6.5,SNR=4.1						
ARCES	ARCESS Array B	62.12	339	P	P	15 11 40.6	+0.9
	comp=Z,2.6nm,1.0s,baz=40,slow=7.9,SNR=5.8						
ARCES				LR	LR	15 43 32.1	
	comp=Z,44nm,18.0s,baz=46,slow=41						
KLMR	Klimovskoe	62.21	327	eP	P	15 11 39.1	-1.3
KLMR				e		15 13 54.8	
KLMR				pmax	pmax		
	comp=Z,19nm,1.5s						
ASAR	Alice Springs	63.12	189	P	P	15 11 46.8	-0.1
	comp=Z,0.6nm,0.7s,baz=1.1,slow=4.8,SNR=7.4						
GEYT	Alibeck	63.35	298	P	P	15 11 48.2	-0.2
	comp=Z,4.8nm,0.8s,baz=8.5,slow=3.0,SNR=7.7						
FINES	FINESS Array B	67.13	332	P	P	15 12 12.8	+0.4
	comp=Z,4.7nm,0.6s,baz=48,slow=8.5,SNR=15						
GOF	Gofitskoye	69.10	312	⇑ eP	P	15 12 23.7	-1.4
KIV	Kislovodsk	69.94	311	eP	P	15 12 32.1	+1.7
KIV				pmax	pmax		
	comp=Z,18nm,0.9s						
KIV	Kislovodsk	69.94	311	eP	P	15 12 32.1	+1.7
	comp=Z,14nm,0.9s						
KBZ	Khabaz	69.95	310	P	P	15 12 31.0	+0.7
	comp=Z,7.3nm,0.9s,baz=359,slow=0.8,SNR=7.3						
KBZ	Khabaz	69.95	310	P	P	15 12 31.0	+0.7
NOA	NORSAR Array B	72.36	337	P	P	15 12 44.8	+0.2
	comp=Z,1.9nm,0.8s,baz=37,slow=6.0,SNR=4.1						
AKASG	Malin Array Be	72.92	322	P	P	15 12 48.2	+0.1
	comp=Z,2.6nm,0.4s,baz=44,slow=6.2,SNR=21						
NVAR	Mina Array Bea	73.10	54	P	P	15 12 51.6	+1.9
	comp=Z,0.2nm,0.3s,baz=282,slow=5.4,SNR=3.2						
PDAR	Pinedale Array	75.60	46	P	P	15 13 05.2	+1.0
	comp=Z,0.4nm,0.7s,baz=268,slow=5.4,SNR=3.3						
BURAR	Bucovina Array	76.96	322	⇓ iP	P	15 13 12.3	+0.7
KOLS	Kolonicke sedl	77.39	324	eP	P	15 13 14.6	+0.7
KOLS	Kolonicke sedl	77.39	324	eP	P	15 13 14.6	+0.7
STHS	Stebnicka Huta	77.50	325	eP	P	15 13 15.8	+1.3
STHS	Stebnicka Huta	77.50	325	eP	P	15 13 15.8	+1.3
BRTR	Keskin Array B	77.86	312	P	P	15 13 17.1	+0.2
	comp=Z,0.8nm,0.5s,baz=145,slow=4.5,SNR=3.6						
BRTR	Keskin Array B	77.86	312	c eP	P	15 13 18.7	+1.8
BRTR				pmax	pmax		
	comp=Z,1.0nm,1.0s						
VOIR		78.58	320	⇑ iP	P	15 13 22.2	+1.6
CLL	Collm	79.47	330	i P	P	15 13 25.6	+0.3
	comp=Z,6.0nm,0.9s						
CLL				ePP	PP	15 16 23.0	-2.3
CLL	Collm	79.47	330	i P	P	15 13 25.6	+0.3
CLL				pmax	pmax		
	comp=Z,6.0nm,0.9s						
MDVR	Moldovita	80.69	322	⇑ iP	P	15 13 32.2	+0.2
GERES	GERESS Array B	81.14	328	P	P	15 13 34.6	+0.2
	comp=Z,0.7nm,0.7s,baz=58,slow=5.0,SNR=5.4						
VTS	Vitosha	81.55	319	⇓ iP	P	15 13 37.9	+1.1

MAN 05 15:05:25, 13°.02N×**121°.13E, h7**km**, mb4.1, ML3.0, MS2.7, 1C-2D, Mindoro**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PGP	Puerto Galera	0.50	341	⇑ eP	Pb	15 05 36.3	0.0
PGP				i S	Sn	15 05 46.0	-1.6
SJMP	San Jose	0.56	181	eP	Pb	15 05 37.5	+0.3
SJMP				eS	Sg	15 05 43.1	0.0
BOAC	Boac	0.82	58	eP	Pg	15 05 41.1	+0.3
BOAC				eS	Sb	15 05 52.4	-0.6
LQP	Lukban	1.15	20	⇓ eP	Pg	15 05 46.7	-0.5
BUSP	Coron	1.36	222	eP	Pg	15 05 51.0	-0.1
BUSP				eS	Sg	15 06 09.4	+0.6
GQP	Guinayangan	1.56	56	⇓ eP	Pg	15 05 54.5	-0.4
GQP				eS	Sb	15 06 14.4	+0.3
CUYO	Cuyo Island	2.16	183	eP	Pn	15 06 00.8	-0.7
ENPP	El Nido	2.46	223	eP	Pn	15 06 06.2	+0.7

MAN 05 15:08:10, 13°.01N×**121°.02E, h37**km**, mb3.5, ML2.2, MS1.7, 1C, Mindoro**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
PGP	**Puerto Galera**	**0.49**	**352**	⇑*i*P	Pn	15 08 22.8	+2.2
PGP				*i* S	Sn	15 08 31.2	+3.3
SJMP	**San Jose**	**0.55**	**170**	*e*P	Pn	15 08 23.7	+2.2
SJMP				*e*S	Sn	15 08 32.3	+2.9
BOAC	**Boac**	**0.92**	**61**	*e*P	Pn	15 08 27.1	+0.7
BOAC				*e*S	Sn	15 08 40.5	+2.1

JMA 05 15:08:42.0±0.1**, 36°.49N×141°.11E, h39**km±1km**, M2.9, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
JHO	**Hitachi**	**0.45**	**286**	P	Pn	15 08 51.9	-0.1
JHO				S	Sn	15 08 58.8	-0.3
ONAJ	**Iwakimizuishiy**	**0.66**	**338**	P	Pn	15 08 54.9	-0.1
ONAJ				S	Sn	15 09 03.9	-0.3
JFK	**Kawauchi**	**0.90**	**348**	P	Pn	15 08 57.9	-0.2
JFT	**Otama**	**1.20**	**329**	P	Pn	15 09 03.7	+1.4
JFT				S	Sn	15 09 18.7	+1.4
MAT	**Matsushiro**	**2.34**	**272**	P	Pn	15 09 19.1	+1.2
MAT				S	Sn	15 09 48.5	+3.1

*ISCJB **05** 15:20:03.8±0.6, 35°.44N±0°.04×141°.28E±0°.09, h33km, mb3.8/11, Error ellipse: s-maj=10.0km s-min=6.3km az=0.3*
*JMA **05** 15:20:04.1±0.1, 35°.43N×141°.21E, h30km±1km, M3.4*
*IDC **05** 15:20:07.4±2.1, 35°.40N×141°.09E, h48km±21km, mb3.6/11, mb1 3.7/14, mb1mx3.5/54, mbtmp3.8/14, ML2.9/3, MS2.9/5, Ms1 2.9/5, ms1mx2.7/42, Error ellipse: s-maj=26.1km s-min=12.0km az=85.0*
ISC 05 15:20:05.4±0.7**, 35°.42N**±0°.05×**141°.19E**±0°.08**, h33**km**, n29, σ0s.94**/24**, mb3.8**/11**, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.39**	**317**	P	**Pb**	**15 20 12.7**	**-1.7**
CHOJ				S	**Sb**	**15 20 18.8**	**-1.8**
BSO1	**Boso 1**	**0.78**	**193**	P	**Pn**	**15 20 18.7**	**-0.9**
BSO4	**Boso 4**	**0.82**	**239**	P	**Pn**	**15 20 19.8**	**-0.7**
BSO3	**Boso 3**	**0.83**	**222**	P	**Pn**	**15 20 19.8**	**-0.7**
JHO	**Hitachi**	**1.29**	**337**	P	**Pn**	**15 20 26.7**	**-0.5**
JHJ	**Hachijo jima 2**	**2.57**	**207**	P	**Pn**	**15 20 45.3**	**+0.6**
	39nm,0.3s,baz=321,slow=21,SNR=18						
JHJ				S	**Sn**	**15 21 15.8**	**+1.0**
	55nm,0.3s,baz=342,slow=23,SNR=8.3						
JHJ				LR	LR	15 21 56.0	
	comp=Z,290nm,20.1s,baz=78,slow=43						
MJAR	**Matsushiro Arr**	**2.67**	**296**	P	**Pn**	**15 20 47.5**	**+1.4**
	4.0nm,0.3s,baz=102,slow=7.2,SNR=33						
MJAR				LR	LR	15 22 07.8	
	comp=Z,234nm,20.9s,baz=115,slow=47						
MAT	**Matsushiro**	**2.67**	**296**	P	**Pn**	**15 20 47.0**	**+0.9**
MAT				S	**Sb**	**15 21 26.2**	**+1.4**
JNU	**Nakatsue**	**8.84**	**258**	LR	LR	15 25 22.8	
	comp=Z,51nm,18.7s,baz=126,slow=36						
KSRS	**Korea Array**	**10.88**	**285**	P	Pn	15 22 43.9	+5.2
	0.3nm,0.3s,baz=101,slow=14,SNR=3.7						
KSRS				LR	LR	15 26 18.8	
	comp=Z,57nm,20.4s,baz=62,slow=34						
USRK	**Ussuriysk Ar.**	**11.26**	**324**	P	**Pn**	**15 22 43.2**	**-0.8**
	0.1nm,0.3s,baz=121,slow=10,SNR=4.7						
USRK				LR	LR	15 26 56.0	
	comp=Z,126nm,18.1s,baz=141,slow=36						
H11N2	**WAKE ISLAND Hy**	**27.52**	**118**	T	T	15 54 42.9	
	baz=310,slow=76,SNR=46						
H11N1	**WAKE ISLAND Hy**	**27.52**	**118**	T	T	15 54 49.1	
	baz=310,slow=76,SNR=47						
H11N3	**WAKE ISLAND Hy**	**27.53**	**118**	T	T	15 54 49.1	
	baz=310,slow=76,SNR=40						
H11S3	**WAKE ISLAND Hy**	**28.17**	**120**	T	T	15 55 22.9	
	baz=312,slow=75,SNR=255						
H11S1	**WAKE ISLAND Hy**	**28.17**	**120**	T	T	15 55 36.2	
	baz=312,slow=75,SNR=314						
H11S2	**WAKE ISLAND Hy**	**28.19**	**120**	T	T	15 55 26.3	
	baz=312,slow=75,SNR=209						
SONM	**Songino Array**	**28.57**	**306**	P	**P**	**15 25 57.9**	**-0.4**
	0.4nm,0.6s,baz=93,slow=8.2,SNR=4.2						
ZALV	**Zalesovo Beam**	**42.88**	**314**	P	**P**	**15 28 00.8**	**+0.3**
	0.9nm,0.5s,baz=95,slow=7.2,SNR=4.6						
MKAR	**Makanchi Array**	**44.84**	**303**	P	**P**	**15 28 16.8**	**+0.5**
	1.0nm,0.8s,baz=89,slow=11,SNR=14						
ILAR	**Eielson Array**	**50.96**	**32**	P	**P**	**15 29 04.5**	**+1.1**
	0.4nm,0.7s,baz=255,slow=6.1,SNR=6.0						
WRA	**Warramunga Arr**	**55.44**	**188**	P	**P**	**15 29 36.3**	**-0.5**
	4.3nm,0.6s,baz=4.2,slow=7.6,SNR=19						
ASAR	**Alice Springs**	**59.16**	**188**	P	**P**	**15 30 03.3**	**+0.3**
	0.3nm,0.4s,baz=358,slow=5.6,SNR=12						
RES	**Resolute Bay**	**64.21**	**14**	P	**P**	**15 30 37.1**	**+0.7**
	0.9nm,0.8s,baz=327,slow=6.1,SNR=4.9						
YKA	**Yellowknife Ar**	**65.30**	**30**	P	**P**	**15 30 44.0**	**+0.3**
	0.3nm,0.8s,baz=299,slow=6.0,SNR=3.4						
FINES	**FINESS Array B**	**70.16**	**332**	P	**P**	**15 31 13.5**	**-0.8**
	1.3nm,0.7s,baz=49,slow=6.3,SNR=4.8						
AKASG	**Malin Array Be**	**75.47**	**322**	P	**P**	**15 31 45.8**	**-0.2**
	0.8nm,0.6s,baz=48,slow=6.0,SNR=6.9						
NOA	**NORSAR Array B**	**75.61**	**337**	P	**P**	**15 31 47.1**	**+0.5**
	1.4nm,0.8s,baz=40,slow=5.9,SNR=3.6						
LPAZ	**La Paz**	**147.65**	**61**	PKPbc	**PKPbc**	**15 39 48.2**	**+0.5**
	0.6nm,0.6s,baz=297,slow=4.5,SNR=2.8						

IDC 05 15:23:45.4±2.0**, 2°.31N×125°.95E, h0**km**, mb3.5**/4**, mb1 3.7**/4**, mb1mx3.4**/35**, mbtmp3.6**/4**, Error ellipse: s-maj=211.9km s-min=23.5km az=64.0, Talaud Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**23.60**	**160**	P	P	15 28 56.6	-1.6
	0.5nm,0.5s,baz=339,slow=10,SNR=9.9						
ASAR	**Alice Springs**	**26.95**	**164**	P	P	15 29 29.3	+0.4
	0.6nm,1.1s,baz=343,slow=7.5,SNR=3.8						
STKA	**Stephens Creek**	**37.10**	**158**	P	P	15 30 59.0	+1.2
	4.4nm,1.2s,baz=319,slow=11,SNR=3.1						
MKAR	**Makanchi Array**	**58.28**	**326**	P	P	15 33 41.9	-0.2
	0.3nm,0.5s,baz=116,slow=6.3,SNR=4.0						

*IDC **05** 15:27:25.1±3.3, 12°.29N×87°.68W, h21km±20km, mb3.9/10, mb1 4.1/12, mb1mx3.9/36, mbtmp4.0/12, ML3.6/2, MS3.5/6, Ms1 3.5/6, ms1mx3.0/39, Error ellipse: s-maj=35.8km s-min=14.7km az=58.0*
*ISCJB **05** 15:27:27.0±0.5, 12°.12N±0°.05×87°.82W±0°.04, h54km±5km, mb4.2/22, MS3.5/5, Error ellipse: s-maj=9.8km s-min=3.1km az=38.4*
*CASC **05** 15:27:27.5±1.8, 12°.13N×87°.82W, h36km±999km, MD4.5, ML4.0, mb4.5(NEIC)*
*NEIC **05** 15:27:29.0±0.9, 12°.20N×87°.74W, h57km±9km, mb4.5/12, MD4.0(SNET), Error ellipse: s-maj=16.3km s-min=6.3km az=48.0*
NEIC Felt [I] at La Union, El Salvador.
ISC 05 15:27:27.9±1.1**, 12°.18N**±0°.06×**87°.81W**±0°.05**, h46**km±9km**, n76, σ1s.09**/84**, mb4.3**/22**, MS3.6**/5**, 3C-5D, Near coast of Nicaragua**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
CSGN	**Cosiguina Volc**	**0.82**	**17**	⇑*e*P	**Pn**	**15 27 44.8**	**+1.6**
CSGN				*e*S	**Sn**	**15 27 55.5**	**+1.1**
CRIN	**San Cristobal**	**0.90**	**55**	*e*P	**Pn**	**15 27 44.6**	**+0.3**
TEL3	**Telica 3**	**1.01**	**68**	*e*P	**Pn**	**15 27 46.8**	**+1.0**
CNCH	**Conchagua**	**1.09**	**359**	*e*P	**Pn**	**15 27 46.8**	**-0.1**
CNGN	**Cerro Negro**	**1.13**	**74**	*e*P	**Pn**	**15 27 46.8**	**-0.6**
CNGN				AML	AML	15 28 17.0	
	comp=N,6μm,0.4s						
COPN	**Copaltepe**	**1.19**	**90**	⇓*e*P	**Pn**	**15 27 47.9**	**-0.3**
COPN				*e*S	**Sn**	**15 28 03.1**	**0.0**
MOMN	**Momotombo**	**1.26**	**80**	*e*P	**Pn**	**15 27 48.6**	**-0.5**
VSM	**San Miguel**	**1.32**	**340**	*e*P	**Pn**	**15 27 50.2**	**0.0**
LCY	**Lacayo**	**1.32**	**339**	*e*P	**Pn**	**15 27 50.1**	**0.0**
LCY				*e*S	**Sn**	**15 28 08.0**	**+1.4**
PACA	**Pacayal**	**1.37**	**338**	⇓*e*P	**Pn**	**15 27 50.8**	**-0.1**
APYN	**Apoyeque**	**1.42**	**88**	*e*P	**Pn**	**15 27 51.1**	**-0.3**
XAVN	**Gruta Xavier**	**1.45**	**91**	*e*P	**Pn**	**15 27 51.6**	**-0.1**
TECA	**Tecapa**	**1.47**	**333**	⇑*e*P	**Pn**	**15 27 51.6**	**-0.6**
CRUN	**El Crucero**	**1.49**	**98**	*e*P	**Pn**	**15 27 52.1**	**-0.2**
TISN	**Laguna Tiscapa**	**1.50**	**91**	*e*P	**Pn**	**15 27 52.5**	**0.0**
MGAN	**Managua**	**1.52**	**91**	*e*P	**Pn**	**15 27 52.5**	**-0.3**
MGAN				*e*S	**Sn**	**15 28 12.3**	**+1.0**
HUEN		**1.60**	**84**	*e*P	**Pn**	**15 27 53.5**	**-0.4**
MASN	**Masaya**	**1.63**	**97**	*e*P	**Pn**	**15 27 54.3**	**+0.1**
ESTN	**Estel**	**1.67**	**57**	*e*P	**Pn**	**15 27 54.9**	**0.0**
SNVI	**San Vicente**	**1.74**	**325**	*e*P	**Pn**	**15 27 56.3**	**+0.5**
SNVI				*e*S	**Sn**	**15 28 17.9**	**+0.9**
LFRS	**El Faro**	**1.88**	**320**	⇓*e*P	**Pn**	**15 27 57.1**	**-0.7**
TGUH	**Tegucigalpa,Un**	**1.93**	**15**	*e*P	**Pn**	**15 27 59.2**	**+0.9**
TGUH	**Tegucigalpa,Un**	**1.93**	**15**	*e*Pn	**Pn**	**15 27 59.1**	**+0.8**
LBRS	**Las Brisas**	**1.96**	**322**	*e*P	**Pn**	**15 27 58.9**	**0.0**
LBRS				*e*S	**Sn**	**15 28 23.2**	**+1.0**
LFU	**La Fuente**	**2.01**	**321**	*e*P	**Pn**	**15 27 59.0**	**-0.6**
SNET	**Serv Nac Est T**	**2.04**	**317**	*e*S	**Sn**	**15 28 24.9**	**+0.6**
SNET				AML	AML	15 28 35.1	
	comp=Z,999nm,0.4s						
BOAB	**BOACO BROADBAN**	**2.11**	**83**	*e*P	**Pn**	**15 28 00.2**	**-0.5**
BOQS	**Boqueron**	**2.11**	**317**	*e*P	**Pn**	**15 28 00.5**	**-0.4**
BOQS				*e*S	**Sn**	**15 28 28.0**	**+1.9**
RBDL	**Robledal**	**2.65**	**317**	*e*P	**Pn**	**15 28 08.8**	**+0.4**
JTS	**JuntasAbangare**	**3.37**	**124**	Pn	**Pn**	**15 28 18.1**	**-0.1**
	comp=Z,6.4nm,0.3s,baz=115,slow=22,SNR=16						
JTS				Sn	Sn	15 29 04.3	+7.3
	comp=Z,33nm,0.3s,baz=310,slow=21,SNR=3.7						
JTS				LR	LR	15 29 51.6	
	comp=Z,348nm,19.6s,baz=309,slow=44						
JTS	**JuntasAbangare**	**3.37**	**124**	*e*P	**Pn**	**15 28 18.0**	**-0.1**
ESPN	**Las Esperanzas**	**3.43**	**89**	*e*P	**Pn**	**15 28 19.2**	**+0.3**
JCR	**Jicaral**	**3.52**	**131**	*e*P	**Pn**	**15 28 19.2**	**-1.0**
HDC	**Heredia**	**4.22**	**121**	*e*Pn	**Pn**	**15 28 31.2**	**+1.3**
QCR	**Quepos**	**4.51**	**127**	⇓*e*P	**Pn**	**15 28 34.0**	**+0.3**
URSC	**Urasca**	**4.59**	**120**	*e*P	**Pn**	**15 28 36.6**	**+1.6**
BUS	**Buena Vista**	**4.76**	**123**	⇑*e*P	**Pn**	**15 28 39.0**	**+1.4**
CTCR	**Cotoan**	**5.94**	**123**	*i* P	**Pn**	**15 28 54.5**	**+0.9**
CTCR				*e*S	**Sn**	**15 29 59.2**	**-1.3**
PBNC	**Punta Burica N**	**5.96**	**129**	⇓*i*P	**Pn**	**15 28 54.9**	**+1.1**
TBS2		**6.08**	**123**	*i* P	**Pn**	**15 28 56.7**	**+1.2**
CMIG	**Matias Romero**	**8.41**	**306**	Pn	**Pn**	**15 29 27.0**	**-0.3**
	comp=Z,0.8nm,0.3s,baz=128,slow=7.2,SNR=6.2						
CMIG				Sn	**Sn**	**15 31 04.0**	**+3.1**
	comp=Z,0.3nm,0.3s,baz=353,slow=16,SNR=2.0						
SDV	**Santo Domingo**	**17.20**	**99**	P	**P**	**15 31 25.9**	**-0.4**
	comp=Z,0.5nm,0.3s,baz=323,slow=5.9,SNR=3.5						
JCT	**Junction City**	**21.33**	**330**	*e*P	**P**	**15 32 13.5**	**+2.3**
	comp=Z,11nm,0.7s						
ATAH	**Atahualpa**	**21.35**	**154**	LR	LR	15 39 45.3	
	comp=Z,90nm,19.9s,baz=351,slow=35						
TXAR	**Lajitas Array**	**22.56**	**322**	P	**P**	**15 32 25.4**	**+0.9**
	comp=Z,5.7nm,0.5s,baz=137,slow=10.0,SNR=46						
TX31	**Lajitas Ar. Si**	**22.56**	**322**	*e*P	**P**	**15 32 25.4**	**+0.8**
MIAR	**Mount Ida**	**22.87**	**348**	*e*P	**P**	**15 32 27.9**	**+0.4**
	comp=Z,9.7nm,0.8s						
TKL	**Tuckaleechee C**	**23.65**	**8**	P	**P**	**15 32 35.8**	**+0.5**
	comp=Z,2.2nm,0.3s,baz=167,slow=8.1,SNR=4.5						
MNTX	**Cornudas Mount**	**25.29**	**323**	*e*P	**P**	**15 32 51.0**	**+0.8**
	comp=Z,4.1nm,0.9s						
MSTX	**Muleshoe**	**25.62**	**330**	*e*P	**P**	**15 32 53.4**	**0.0**
	comp=Z,16nm,0.8s						
AMTX	**Amarillo**	**25.87**	**333**	*e*P	**P**	**15 32 57.0**	**+1.4**
	comp=Z,8.8nm,0.5s						
SAML	**Samuel**	**32.24**	**130**	*e*P	**P**	**15 33 51.4**	**-0.9**
	comp=Z,4.6nm,0.8s						
BELC	**Belle Mtn. Jos**	**33.63**	**315**	*e*P	P	15 34 08.1	+3.7
BW06	**Boulder Array**	**35.84**	**332**	*e*P	**P**	**15 34 23.4**	**-0.1**
PD31	**Pinedale Array**	**35.84**	**332**	*e*P	**P**	**15 34 24.6**	**+1.0**
PDAR	**Pinedale Array**	**35.84**	**332**	P	**P**	**15 34 23.5**	**-0.1**
	comp=Z,0.9nm,0.5s,baz=130,slow=11,SNR=12						
HWUT	**Hardware Ranch**	**35.92**	**329**	*e*P	**P**	**15 34 24.3**	**+0.1**
	comp=Z,4.9nm,0.8s						
AGMN	**Agassiz Nation**	**36.62**	**351**	*e*P	**P**	**15 34 29.2**	**-0.7**
	comp=Z,15nm,1.5s						
REDW	**Red Top Meadow**	**36.90**	**332**	*e*P	**P**	**15 34 33.3**	**+0.7**
	comp=Z,9.1nm,0.6s						
FLWY	**Flagg Ranch**	**37.39**	**333**	*e*P	**P**	**15 34 38.4**	**+1.7**
	comp=Z,14nm,1.4s						
NVAR	**Mina Array Bea**	**37.67**	**319**	P	**P**	**15 34 38.8**	**-0.4**
	comp=Z,0.6nm,0.9s,baz=133,slow=7.5,SNR=2.7						
NVAR				PcP	**PcP**	**15 36 57.3**	**+1.4**
	comp=Z,1.1nm,0.8s,baz=132,slow=2.7,SNR=3.6						
NVAR				ScP	**ScP**	**15 40 44.0**	**+4.2**
	comp=Z,0.4nm,0.7s,baz=116,slow=4.1,SNR=3.6						
NVAR				LR	LR	15 54 10.8	
	comp=Z,144nm,18.8s,baz=360,slow=43						
SIV	**San Ignacio**	**38.51**	**136**	P	**P**	**15 34 45.8**	**-0.4**
	comp=Z,4.1nm,0.6s,baz=315,slow=9.2,SNR=11						
ULM	**Lac du Bonnet**	**38.53**	**352**	P	**P**	**15 34 44.7**	**-1.2**
	comp=Z,1.5nm,0.4s,baz=160,slow=8.9,SNR=5.8						
MCMT	**McKenzie Canyo**	**38.95**	**331**	*e*P	**P**	**15 34 51.3**	**+1.4**
BOZ	**Bozeman (W)**	**39.02**	**333**	*e*P	**P**	**15 34 50.7**	**+0.4**
	comp=Z,3.6nm,0.8s						
SCHQ	**Schefferville**	**45.63**	**17**	P	**P**	**15 35 41.8**	**-2.0**
	comp=Z,4.6nm,0.5s,baz=215,slow=9.1,SNR=4.5						
YKA	**Yellowknife Ar**	**53.78**	**345**	P	**P**	**15 36 44.4**	**-1.1**
	comp=Z,0.7nm,0.7s,baz=149,slow=6.5,SNR=11						
YKA				PcP	**PcP**	**15 37 50.5**	**-0.5**
	comp=Z,0.4nm,0.7s,baz=148,slow=3.8,SNR=5.3						
YKA				ScP	**ScP**	**15 41 47.3**	**+1.9**
	comp=Z,0.3nm,0.7s,baz=140,slow=3.6,SNR=6.6						
PLCA	**Paso Flores**	**55.02**	**164**	P	**P**	**15 36 55.1**	**+0.2**
	comp=Z,1.6nm,0.8s,baz=0.0,slow=6.1,SNR=4.6						
DLBC	**Dease Lake**	**56.00**	**335**	LR	LR	16 06 02.0	
	comp=Z,119nm,18.3s,baz=148,slow=41						
RES	**Resolute Bay**	**62.61**	**358**	*e*P	**P**	**15 37 45.2**	**-1.9**
	comp=Z,7.4nm,1.4s						
ILAR	**Eielson Array**	**66.12**	**336**	P	**P**	**15 38 09.1**	**-1.2**
	comp=Z,0.3nm,0.6s,baz=116,slow=3.5,SNR=3.4						
NOA	**NORSAR Array B**	**83.77**	**29**	LR	LR	16 17 57.9	
	comp=Z,7.4nm,18.1s,baz=35,slow=36						
GERES	**GERESS Array B**	**88.36**	**40**	LR	LR	16 16 01.7	
	comp=Z,23nm,19.6s,baz=336,slow=33						
ASAR	**Alice Springs**	**138.85**	**248**	PKhKP	PKPpre	15 46 43.5	
	comp=Z,0.3nm,0.8s,baz=109,slow=3.8,SNR=3.6						
ASAR				PKP	**PKPdf**	**15 46 50.5**	**+0.4**
	comp=Z,0.4nm,0.6s,baz=92,slow=2.6,SNR=7.2						
WRA	**Warramunga Arr**	**138.86**	**254**	PKhKP	PKPpre	15 46 40.2	
	comp=Z,0.2nm,0.7s,baz=91,slow=3.4,SNR=3.1						
WRA				PKP	**PKPdf**	**15 46 50.3**	**+0.1**
	comp=Z,0.5nm,0.6s,baz=90,slow=2.1,SNR=7.4						
CMAR	**Chiang Mai Arr**	**148.83**	**348**	PKPbc	**PKPbc**	**15 47 10.9**	**-0.6**
	comp=Z,1.2nm,0.7s,baz=348,slow=3.5,SNR=8.5						

*ISCJB **05** 15:45:51.7±0.5, 32°.16N±0°.03×115°.19W±0°.05, h25km±5km, Error ellipse: s-maj=6.7km s-min=4.1km az=169.4*
*NEIC **05** 15:45:53.1, 32°.14N×115°.24W, h8km, ML2.8(PAS), ML2.8(ECX), After ECX.*
*MEX **05** 15:45:53.9±0.7, 32°.19N×115°.16W, h17km±168km, MD3.7*
*ECX **05** 15:45:53.1±0.6, 32°.14N×115°.24W, h8km, MD2.8, ML3.0*
ISC 05 15:45:51.4±1.0**, 32°.17N**±0°.03×**115°.19W**±0°.04**, h28**km±8km**, n24, σ0s.51**/40**, 4C-5D, California-Baja California border region**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
MBIG	**Mexicali**	**0.23**	**357**	*e*P	**Pb**	**15 45 58.4**	**+0.6**
MBIG				*i* S	**Sb**	**15 46 01.0**	**-1.3**
CPBX	**Cerro Prieto**	**0.27**	**338**	*e*P	**Pb**	**15 45 58.7**	**+0.4**
CPBX				*e*S	**Sb**	**15 46 02.8**	**-0.1**
CPBX				AML	AML	15 46 06.5	
	comp=N,5μm,0.2s						
CPBX				⇑*e*		15 46 06.5	
CPBX	**Cerro Prieto**	**0.27**	**338**	*e*P	**Pb**	**15 45 58.7**	**+0.4**
CPBX				*i* S	**Sb**	**15 46 02.4**	**-0.5**
EMSC	**East Mesa**	**0.59**	**17**	⇓*i*P	**Pn**	**15 46 04.4**	**+0.5**
SGL	**Mount Signal**	**0.66**	**316**	⇓*i*P	**Pn**	**15 46 04.9**	**+0.1**
COA	**Coachella**	**0.69**	**4**	⇓*e*P	**Pn**	**15 46 05.6**	**+0.4**
COA	**Coachella**	**0.69**	**4**	P	**Pn**	**15 46 05.6**	**+0.4**
ECBX	**El Chinero**	**0.71**	**171**	⇓*e*P	**Pb**	**15 46 05.2**	**0.0**
ECBX				*e*S	**Sb**	**15 46 14.3**	**-0.2**
YUH	**Yuha Desert**	**0.78**	**307**	⇑*i*P	**Pn**	**15 46 06.8**	**+0.3**
RMX	**La Rumorosa**	**0.87**	**300**	*e*P	**Pn**	**15 46 07.5**	**-0.4**
RMX				*e*S	**Sb**	**15 46 19.2**	**-0.2**
RMX				⇑*e*		15 46 19.7	
RMX				AML	AML	15 46 19.7	
	comp=E,383nm,0.2s						
ZAX	**El Zacaton**	**1.14**	**235**	*e*P	**Pn**	**15 46 11.5**	**0.0**
ZAX				*e*S	**Sn**	**15 46 26.4**	**+0.2**
SPIG	**San Pedro Mart**	**1.15**	**192**	⇓*e*P	**Pn**	**15 46 12.2**	**+0.3**
SPIG				*e*S	**Sb**	**15 46 27.3**	**-0.2**
SPIG	**San Pedro Mart**	**1.15**	**192**	*e*P	**Pn**	**15 46 12.2**	**+0.3**
SPIG				*i* S	**Sn**	**15 46 25.9**	**-0.9**
SPIG	**San Pedro Mart**	**1.15**	**192**	*e*P	**Pn**	**15 46 12.2**	**+0.3**
SPIG				*i* S	**Sn**	**15 46 25.9**	**-0.9**
SPX	**San Pedro Mart**	**1.15**	**192**	*e*P	**Pn**	**15 46 12.3**	**+0.4**
SPX				*e*S	**Sb**	**15 46 27.9**	**+0.5**
SPX				*e*		15 46 30.6	
SPX				AML	AML	15 46 30.6	
	comp=N,213nm,0.1s						
CBX	**Cerro Bola**	**1.26**	**277**	*e*P	**Pb**	**15 46 14.3**	**-0.3**
CBX				*e*S	**Sb**	**15 46 30.7**	**+0.2**
CBX				AML	AML	15 46 32.3	
	comp=E,668nm,0.3s						
CBX				⇑*e*		15 46 32.3	
CBX	**Cerro Bola**	**1.26**	**277**	*e*P	**Pn**	**15 46 13.9**	**+0.7**
CBX				*e*S	**Sn**	**15 46 28.5**	**-0.8**
CBX	**Cerro Bola**	**1.26**	**277**	*e*P	**Pn**	**15 46 13.9**	**+0.7**
CBX				*e*S	**Sn**	**15 46 28.5**	**-0.8**
TJIG	**Tijuana**	**1.29**	**282**	*e*P	**Pn**	**15 46 14.1**	**+0.6**
TJIG				*e*S	**Sn**	**15 46 29.7**	**-0.1**
ECNX	**Esteban Cantu**	**1.31**	**247**	*e*P	**Pn**	**15 46 14.3**	**+0.5**
ECNX				*e*S	**Sb**	**15 46 31.9**	**+0.1**
PBX	**Punta Banda**	**1.38**	**252**	*e*P	**Pn**	**15 46 15.5**	**+0.8**
PBX				*e*S	**Sb**	**15 46 33.7**	**0.0**
PFO	**Pinyon Flats O**	**1.79**	**324**	*e*Pn	**Pn**	**15 46 20.6**	**0.0**
PFO				*e*Sn	**Sb**	**15 46 46.1**	**+0.3**
214A	**Organ Pipe Nat**	**2.03**	**95**	*e*Pn	**Pn**	**15 46 24.1**	**+0.4**
TUC	**Tucson**	**3.73**	**87**	*e*Pg	Pb	15 47 06.3	+10

*IDC **05** 15:46:45.7±0.8, 35°.90N×143°.50E, h0km, mb3.6/13, mb1 3.9/16, mb1mx3.7/64, mbtmp3.6/16, ML3.1/3, MS3.1/2, Ms1 3.1/2, ms1mx2.4/42, Error ellipse: s-maj=20.5km s-min=16.8km az=123.0*
*ISCJB **05** 15:46:49.9±0.6, 36°.13N±0°.04×143°.30E±0°.04, h33km, mb3.6/13, MS3.5/1, Error ellipse: s-maj=6.5km s-min=4.5km az=168.9*
*JMA **05** 15:46:49.8±0.3, 36°.14N×143°.31E, h80km, M3.3*
ISC 05 15:46:51.1±0.7**, 36°.07N**±0°.05×**143°.35E**±0°.07**, h35**km**, n38, σ1s.27**/40**, mb3.6**/13**, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**2.06**	**261**	*e*S	**Sn**	**15 47 48.2**	**+0.6**
ONAJ	**Iwakimizuishiy**	**2.30**	**297**	*e*S	**Sn**	**15 47 51.9**	**-1.8**
JHO	**Hitachi**	**2.31**	**284**	P	**Pn**	**15 47 25.9**	**-0.8**
JHO				S	**Sn**	**15 47 52.2**	**-1.7**
JFT	**Otama**	**2.82**	**302**	P	**Pn**	**15 47 33.2**	**-0.5**
JFT				*e*S	**Sn**	**15 48 05.5**	**-1.0**
JAG	**Ashikaga**	**3.17**	**278**	P	**Pn**	**15 47 38.1**	**-0.4**
JAG				S	**Sn**	**15 48 13.7**	**-1.4**
JMK	**Ichinoseki**	**3.34**	**330**	P	**Pn**	**15 47 39.4**	**-1.4**
JMK				S	**Sn**	**15 48 17.1**	**-2.1**
JOD2	**Odawara 2**	**3.56**	**258**	P	**Pn**	**15 47 43.6**	**-0.3**
JOD2				*e*S	**Sn**	**15 48 24.5**	**-0.3**
JRY	**Ryogami san**	**3.61**	**270**	P	**Pn**	**15 47 44.9**	**+0.4**
JRY				*e*S	**Sn**	**15 48 24.8**	**-1.1**
JYK	**Kaneyama**	**3.71**	**321**	P	**Pn**	**15 47 45.2**	**-0.7**
JYK				*e*S	**Sn**	**15 48 26.9**	**-1.5**
JOM	**Ohasama**	**3.77**	**335**	P	**Pn**	**15 47 45.9**	**-0.8**
JOM				*e*S	**Sn**	**15 48 27.0**	**-2.9**
JYN	**Shimob**	**3.95**	**263**	P	**Pn**	**15 47 50.1**	**+0.8**
JHJ	**Hachijo jima 2**	**4.16**	**226**	Pn	**Pn**	**15 47 50.5**	**-1.6**
	8.0nm,0.3s,baz=60,slow=20,SNR=7.6						
JHJ				Sn	**Sn**	**15 48 36.1**	**-3.4**
	26nm,0.3s,baz=68,slow=24,SNR=6.0						
MJAR	**Matsushiro Arr**	**4.18**	**278**	Pn	**Pn**	**15 47 52.0**	**-0.3**
	3.6nm,0.3s,baz=105,slow=8.6,SNR=29						
MJAR				Sn	**Sn**	**15 48 41.3**	**+1.3**
	1.2nm,0.3s,baz=76,slow=20,SNR=5.7						
MAT	**Matsushiro**	**4.18**	**278**	P	**Pn**	**15 47 52.8**	**+0.4**
MAT				*e*S	**Sn**	**15 48 40.1**	**0.0**
MAT	**Matsushiro**	**4.18**	**278**	P	**Pn**	**15 47 52.3**	**-0.1**
JANG	**Nango**	**4.54**	**342**	P	**Pn**	**15 47 56.9**	**-0.3**
USRK	**Ussuriysk Ar.**	**11.89**	**317**	Pn	Pn	15 49 40.5	+2.5
	0.1nm,0.3s,baz=120,slow=13,SNR=3.1						
KSRS	**Korea Array**	**12.45**	**281**	LR	LR	15 54 01.6	
	comp=Z,37nm,19.6s,baz=28,slow=34						
KLR	**Kul'dur**	**15.65**	**331**	Pn	**P**	**15 50 32.9**	**+0.2**
	0.1nm,0.3s,baz=125,slow=13,SNR=7.1						
MA2	**Magadan**	**24.01**	**9**	P	**P**	**15 52 02.6**	**+0.3**
	0.6nm,0.3s,baz=166,slow=11,SNR=5.9						
H11N2	**WAKE ISLAND Hy**	**26.31**	**122**	T	T	16 19 40.9	
	baz=313,slow=75,SNR=23						
H11N1	**WAKE ISLAND Hy**	**26.32**	**122**	T	T	16 19 41.4	
	baz=313,slow=75,SNR=22						
H11N3	**WAKE ISLAND Hy**	**26.33**	**122**	T	T	16 19 41.6	
	baz=313,slow=75,SNR=17						
H11S1	**WAKE ISLAND Hy**	**27.02**	**124**	T	T	16 20 35.7	
	baz=316,slow=76,SNR=14						
H11S3	**WAKE ISLAND Hy**	**27.02**	**124**	T	T	16 20 34.5	
	baz=316,slow=76,SNR=12						
H11S2	**WAKE ISLAND Hy**	**27.04**	**124**	T	T	16 20 32.1	
	baz=316,slow=76,SNR=13						
SEY	**Seymchan**	**27.47**	**9**	P	**P**	**15 52 35.1**	**+1.5**
	0.8nm,0.7s,baz=197,slow=8.6,SNR=5.2						
SONM	**Songino Array**	**29.62**	**305**	P	P	15 52 55.2	+2.1
	0.5nm,0.6s,baz=98,slow=9.5,SNR=3.6						
ZALV	**Zalesovo Beam**	**43.72**	**313**	P	**P**	**15 54 53.2**	**+0.7**
	0.2nm,0.3s,baz=72,slow=4.7,SNR=2.7						
MKAR	**Makanchi Array**	**45.95**	**303**	P	**P**	**15 55 11.8**	**+1.2**
	0.2nm,0.7s,baz=82,slow=12,SNR=3.0						
ILAR	**Eielson Array**	**49.48**	**32**	P	**P**	**15 55 37.8**	**+0.2**
	0.4nm,0.6s,baz=252,slow=5.9,SNR=6.6						
WRA	**Warramunga Arr**	**56.35**	**190**	P	**P**	**15 56 26.3**	**-2.4**
	1.2nm,0.9s,baz=13,slow=7.9,SNR=4.6						
WRA				LR	LR	16 20 13.4	
	comp=Z,47nm,21.7s,baz=115,slow=36						
ASAR	**Alice Springs**	**60.08**	**190**	P	**P**	**15 56 54.2**	**-0.5**
	0.6nm,0.9s,baz=1.9,slow=7.0,SNR=5.5						
RES	**Resolute Bay**	**63.14**	**15**	P	**P**	**15 57 14.5**	**-0.2**
	0.8nm,0.4s,baz=188,slow=3.5,SNR=6.1						
YKA	**Yellowknife Ar**	**63.85**	**30**	P	**P**	**15 57 19.9**	**+0.3**
	0.3nm,0.9s,baz=289,slow=7.5,SNR=4.1						
NVAR	**Mina Array Bea**	**74.31**	**54**	P	**P**	**15 58 26.2**	**+1.0**
	0.6nm,0.7s,baz=300,slow=6.8,SNR=4.4						
PDAR	**Pinedale Array**	**77.22**	**46**	P	**P**	**15 58 42.6**	**+0.8**
	0.5nm,0.7s,baz=276,slow=2.8,SNR=4.0						
TXAR	**Lajitas Array**	**89.46**	**54**	P	**P**	**15 59 45.7**	**+0.9**
	0.4nm,0.5s,baz=320,slow=3.3,SNR=4.6						

*NIED **05** 15:50:00, 38°.50N×141°.80E, h56km, Mw3.6 Best double couple: M0 3.28000×10^14 NP1: φs 171.00000°, δ28.00000°, λ68.00000°. NP2: φs 15.00000°, δ65.00000°, λ101.00000°.*
*IDC **05** 15:50:21.9±3.0, 39°.14N×141°.09E, h0km, mb3.5/4, mb1 3.6/5, mb1mx3.3/60, mbtmp3.5/5, ML3.1/1, MS3.5/2, Ms1 3.6/2, ms1mx2.6/43, Error ellipse: s-maj=67.6km s-min=27.6km az=127.0*
*ISCJB **05** 15:50:22.4±1.0, 38°.53N±0°.05×141°.8E±0°.1, h68km, mb3.4/4, Error ellipse: s-maj=14.8km s-min=5.9km az=21.7*
*JMA **05** 15:50:22.8±0.1, 38°.53N×141°.81E, h51km±1km, M3.7*
JMA Felt II J1.
ISC 05 15:50:23.0±1.4**, 38°.54N**±0°.06×**141°.8E**±0°.1**, h68**km**, n18, σ1s.72**/21**, mb3.4**/4**, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
JIO	**Ouri**	**0.39**	**257**	P	**Pn**	**15 50 32.7**	**-1.9**
JIO				S	**Sn**	**15 50 39.4**	**-3.7**
OFUJ	**Ofunato**	**0.55**	**347**	P	**Pn**	**15 50 34.7**	**-1.5**
JMK	**Ichinoseki**	**0.62**	**311**	P	**Pn**	**15 50 35.8**	**-1.1**
JMK				S	**Sn**	**15 50 45.0**	**-2.2**
JOU	**Okura**	**0.93**	**259**	P	**Pn**	**15 50 39.5**	**-1.0**
JOM	**Ohasama**	**1.02**	**336**	P	**Pn**	**15 50 41.1**	**-0.5**
JMM	**Marumori**	**1.06**	**231**	P	**Pn**	**15 50 40.8**	**-1.3**
JMM				S	**Sn**	**15 50 54.1**	**-2.2**
JYK	**Kaneyama**	**1.21**	**289**	P	**Pn**	**15 50 43.6**	**-0.4**
JRG	**Rokugo**	**1.26**	**313**	P	**Pn**	**15 50 44.5**	**-0.3**
JFK	**Kawauchi**	**1.40**	**213**	P	**Pn**	**15 50 45.6**	**-1.0**
JFK				S	**Sn**	**15 51 02.1**	**-2.1**
JYS	**Shirataka**	**1.42**	**257**	P	**Pn**	**15 50 46.5**	**-0.4**
MAT	**Matsushiro**	**3.50**	**236**	P	**Pn**	**15 51 16.1**	**+1.1**
MAT				S	**Sn**	**15 51 56.3**	**+1.0**
MJAR	**Matsushiro Arr**	**3.50**	**236**	Pn	**Pn**	**15 51 16.6**	**+1.6**
	1.7nm,0.3s,baz=35,slow=13,SNR=17						
MA2	**Magadan**	**21.81**	**12**	P	**P**	**15 55 10.4**	**+1.2**
	0.5nm,0.3s,baz=211,slow=12,SNR=5.4						
SEY	**Seymchan**	**25.25**	**11**	P	**P**	**15 55 45.0**	**+2.6**
	1.0nm,0.7s,baz=199,slow=9.8,SNR=5.5						
ZALV	**Zalesovo Beam**	**41.16**	**311**	P	**P**	**15 58 00.9**	**+0.5**
	0.7nm,0.5s,baz=81,slow=8.8,SNR=3.7						
CMAR	**Chiang Mai Arr**	**42.21**	**254**	LR	LR	16 15 08.7	
	comp=Z,30nm,19.4s,baz=353,slow=36						
MKAR	**Makanchi Array**	**43.61**	**301**	P	**P**	**15 58 21.4**	**+1.0**
	0.4nm,0.7s,baz=83,slow=9.9,SNR=5.3						
URZ	**Urewera**	**83.03**	**153**	LR	LR	16 40 42.5	
	comp=Z,47nm,18.7s,baz=182,slow=36						

ISCJB ***05*** *15:57:18.3±0.4, 26°.36S±0°.03×27°.53E±0°.03, h24km±3km, mb3.7/3, Error ellipse: s-maj=5.4km s-min=4.7km az=24.7*
IDC ***05*** *15:57:18.3±1.5, 26°.33S×27°.66E, h0km, mb3.7/3, mb1 3.8/7, mb1mx3.6/33, mbtmp3.8/7, ML3.9/3, Error ellipse: s-maj=20.8km s-min=19.0km az=56.0*
PRE ***05*** *15:57:18.5±2.9, 26°.44S×27°.64E, h2km, ML3.4*
ISC 05 15:57:19.7±1.0**, 26°.43S**±0°.03×**27°.54E**±0°.04**, h19**km±2km**, n28,** σ**1s.98**/47**, mb3.9**/3**, 2D, South Africa**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
KLOF	**Kloof**	**0.10**	**39**	*e*P	**Pb**	**15 57 21.2**	**+0.5**
KLOF				*e*S	**Sb**	**15 57 22.3**	**+1.2**
KLOF				AML	AML	15 57 22.9	
	comp=Z,23µm,0.2s						
WDLM	**Western Deep L**	**0.10**	**273**	*e*P	**Pg**	**15 57 23.9**	**0.0**
WDLM				*e*S	**Sg**	**15 57 26.7**	**+0.1**
WDLM				AML	AML	15 57 27.9	
	comp=Z,2µm,0.5s						
PRYS	**Parys**	**0.52**	**198**	*e*P	**Pg**	**15 57 30.1**	**-0.2**
PRYS				*e*S	**Sg**	**15 57 37.4**	**+0.1**
PRYS				AML	AML	15 57 43.3	
	comp=Z,821nm,0.6s						
ERPM	**east rand prop**	**0.64**	**82**	*e*P	Pb	15 57 29.3	-2.9
ERPM				*e*S	**Sb**	**15 57 35.5**	**-5.3**
ERPM				AML	AML	15 57 36.9	
	comp=Z,557nm,0.1s						
KSR	**Koster**	**0.81**	**315**	*e*P	**Pb**	**15 57 35.6**	**+0.3**
KSR				*e*S	**Sg**	**15 57 47.3**	**+0.8**
KSR				AML	AML	15 57 54.5	
	comp=Z,118nm,0.2s						
SWZ	**Schweizer**	**2.11**	**249**	*e*P	**Pb**	**15 57 58.0**	**+0.6**
SWZ				*e*S	**Sg**	**15 58 26.1**	**-1.6**
SWZ				AML	AML	15 58 27.4	
	comp=Z,230nm,0.5s						
LBTB	**Lobatse**	**2.25**	**308**	Pg	**Pb**	**15 58 01.0**	**+1.2**
	comp=Z,41nm,0.3s,baz=125,slow=18,SNR=328						
LBTB				Sn	**Sn**	**15 58 18.9**	**-4.3**
	comp=Z,16nm,0.3s,baz=128,slow=12,SNR=6.2						
LBTB				Lg	Lg	15 58 30.9	
	comp=Z,116nm,0.3s,baz=225,slow=23,SNR=33						
BOSA	**Boshof**	**2.97**	**222**	⇓*i*P	Pn	15 57 58.2	-7.8
BOSA				*i* S	Sn	15 58 24.6	-17
BOSA	**Boshof**	**2.97**	**222**	⇓*i*P	Pn	15 57 58.2	-7.8
BOSA				*i* S	Sn	15 58 24.6	-17
BOSA	**Boshof**	**2.97**	**222**	Pn	**Pn**	**15 58 07.8**	**+1.8**
	comp=Z,5.8nm,0.3s,baz=46,slow=13,SNR=111						
BOSA				Pg	**Pg**	**15 58 16.5**	**-0.2**
	comp=Z,5.6nm,0.3s,baz=41,slow=17,SNR=30						
BOSA				Sn	**Sn**	**15 58 41.3**	**+0.1**
	comp=Z,9.7nm,0.3s,baz=14,slow=19,SNR=9.4						
BOSA				Lg	Lg	15 58 52.7	
	comp=Z,13nm,0.3s,baz=309,slow=15,SNR=11						
POGA	**Pongola**	**3.76**	**105**	*e*P	**Pn**	**15 58 17.5**	**+0.8**
POGA				*e*S	**Sn**	**15 59 02.5**	**+2.1**
POGA				AML	AML	15 59 20.7	
	comp=Z,159nm,0.6s						
KSD	**Kokstad**	**4.42**	**158**	*e*P	**Pn**	**15 58 28.4**	**+2.5**
KSD				*e*S	**Sn**	**15 59 17.0**	**+0.1**
KSD				AML	AML	15 59 39.5	
	comp=Z,25nm,0.5s						
UPI	**Upington**	**5.91**	**250**	*e*P	**Pn**	**15 58 49.2**	**+2.9**
UPI				*e*S	**Sn**	**15 59 53.6**	**0.0**
UPI				AML	AML	16 00 28.0	
	comp=Z,27nm,0.5s						
MATP	**Matopo**	**6.04**	**9**	*i* P	**Pn**	**15 58 49.4**	**+1.2**
MATP				*i* S	**Sn**	**15 59 54.9**	**-2.0**
MATP	**Matopo**	**6.04**	**9**	*i* P	**Pn**	**15 58 49.4**	**+1.2**
MATP				*i* S	**Sn**	**15 59 54.9**	**-2.0**
MATP	**Matopo**	**6.04**	**9**	Pn	**Pn**	**15 58 48.6**	**+0.4**
	comp=Z,2.3nm,0.3s,baz=187,slow=13,SNR=25						
MATP				Lg	Lg	16 00 22.4	
KEIM	**Keimoes**	**6.25**	**247**	*e*P	**Pn**	**15 58 53.5**	**+2.5**
KEIM				*e*S	**Sn**	**16 00 01.3**	**-0.8**
KEIM				AML	AML	16 00 41.1	
	comp=Z,28nm,0.4s						
BLWY	**Bulawayo**	**6.34**	**9**	*i* P	**Pn**	**15 58 53.5**	**+1.2**
BLWY				*i* S	**Sn**	**16 00 02.4**	**-1.9**
BLWY	**Bulawayo**	**6.34**	**9**	*i* P	**Pn**	**15 58 53.5**	**+1.2**
BLWY				*i* S	**Sn**	**16 00 02.4**	**-1.9**
BUFB	**Buffelsbos**	**8.07**	**197**	*e*P	**Pn**	**15 59 16.6**	**+0.8**
BUFB				*e*S	**Sn**	**16 00 44.0**	**-2.5**
BUFB				AML	AML	16 01 38.2	
	comp=Z,12nm,0.5s						
SUR	**Sutherland**	**8.34**	**223**	Sn	**Sn**	**16 00 51.2**	**-2.3**
	comp=Z,0.1nm,0.3s,baz=20,slow=16,SNR=4.6						
SUR				Lg	Lg	16 01 39.9	
	comp=Z,0.3nm,0.3s,baz=136,slow=23,SNR=5.8						
CVNA	**Calvinia**	**8.47**	**232**	*e*P	**Pn**	**15 59 23.2**	**+1.7**
CVNA				*e*S	**Sn**	**16 00 55.3**	**-1.3**
CVNA				AML	AML	16 01 45.6	
	comp=Z,13nm,0.5s						
KOMG	**Komaggas**	**9.49**	**247**	*e*P	**Pn**	**15 59 37.4**	**+2.0**
KOMG				*e*S	**Sn**	**16 01 19.6**	**-1.9**
KOMG				AML	AML	16 02 17.6	
	comp=Z,6.0nm,0.4s						
LSZ	**Lusaka**	**11.11**	**3**	Pn	**Pn**	**15 59 56.4**	**-1.4**
	comp=Z,0.9nm,0.3s,baz=183,slow=9.4,SNR=4.4						
LSZ				Sn	**Sn**	**16 01 56.3**	**-5.4**
	comp=Z,0.6nm,0.3s,baz=151,slow=5.7,SNR=4.7						
LSZ				Lg	Lg	16 03 03.3	
	comp=Z,0.4nm,0.3s,baz=232,slow=7.9,SNR=4.6						
TSUM	**Tsumeb**	**11.66**	**306**	Pn	**Pn**	**16 00 06.4**	**+1.1**
	baz=135,slow=13						
TSUM				Sn	**Sn**	**16 02 13.7**	**-1.3**
	comp=Z,0.1nm,0.3s,baz=200,slow=17,SNR=2.4						
TSUM				Lg	Lg	16 03 26.1	
	comp=Z,0.6nm,0.3s,baz=53,slow=20,SNR=4.5						
DBIC	**Dimbokro**	**45.49**	**312**	P	**P**	**16 05 38.4**	**+0.3**
	comp=Z,0.4nm,0.3s,baz=85,slow=4.2,SNR=4.3						
TORD	**Torodi Ar. Bea**	**46.68**	**324**	P	**P**	**16 05 48.2**	**+0.8**
	comp=Z,0.6nm,0.5s,baz=132,slow=6.3,SNR=7.3						
MKAR	**Makanchi Array**	**88.06**	**34**	P	**P**	**16 10 10.6**	**+1.9**
	comp=Z,0.2nm,0.6s,baz=217,slow=3.5,SNR=4.1						

IDC 05 15:57:20.6±6.9**, 8°.30S**×**124°.22E, h70**km±59km**, mb3.3**/1**, mb1 3.4**/4**, mb1mx3.1**/34**, mbtmp3.5**/4**, ML3.1**/2**, Error ellipse: s-maj=99.8km s-min=48.0km az=115.0, Timor region**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
BATI	**Baumata**	**1.97**	**196**	P	Pn	15 57 52.2	+0.3
	7.0nm,0.3s,baz=287,slow=20,SNR=10						
BATI				S	Sn	15 58 16.2	+0.5
	30nm,0.3s,baz=282,slow=23,SNR=14						
FITZ	**Fitzroy Crossi**	**9.84**	**172**	P	Pn	15 59 38.3	-1.1
FITZ				S	Sn	16 01 18.0	-10
	0.5nm,0.3s,baz=152,slow=18,SNR=6.6						
WRA	**Warramunga Arr**	**15.17**	**141**	P	Pn	16 00 51.3	+0.4
	0.1nm,0.3s,baz=314,slow=13,SNR=4.8						
WRA				S	Sn	16 03 33.5	-4.5
	0.2nm,0.3s,baz=320,slow=24,SNR=5.6						
ASAR	**Alice Springs**	**17.88**	**150**	P	Pn	16 01 26.1	+1.4
	0.1nm,0.3s,baz=330,slow=12,SNR=15						
ASAR				S	Sn	16 04 37.4	-6.3
	0.1nm,0.3s,baz=312,slow=21,SNR=5.0						
STKA	**Stephens Creek**	**28.49**	**148**	P	P	16 03 08.7	-0.6
	0.6nm,0.8s,baz=327,slow=12,SNR=4.6						

IDC 05 16:04:41.1±4.7**, 12°.95S**×**167°.61E, h0**km**, mb3.7**/3**, mb1 4.0**/3**, mb1mx3.5**/37**, mbtmp3.7**/3**, Error ellipse: s-maj=232.5km s-min=31.8km az=141.0, Santa Cruz Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**32.62**	**253**	P	P	16 11 14.8	0.0
	0.4nm,0.5s,baz=85,slow=9.1,SNR=4.9						
ASAR	**Alice Springs**	**33.65**	**247**	P	P	16 11 23.8	0.0
	0.4nm,0.4s,baz=73,slow=9.7,SNR=9.8						
ILAR	**Eielson Array**	**84.74**	**18**	P	P	16 17 16.8	0.0
	0.6nm,0.5s,baz=233,slow=5.2,SNR=12						

NNC 05 16:06:16.7±2.4**, 36°.73N**×**70°.29E, h0**km**, mb3.5, mpv3.0, 2C-4D, Error ellipse: s-maj=19.8km s-min=15.9km az=155.0, Hindu Kush region**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
SFK	**Sufi-Kurgan**	**4.14**	**37**	⇓P	Pn	16 07 21.1	-0.3
	1.7nm,0.3s						
SFK				⇓S	Sn	16 08 12.3	+1.7
	1.3nm,0.2s						
MNAS	**Manas**	**6.00**	**16**	⇓P	Pn	16 07 47.0	+0.1
	2.0nm,1.1s						
MNAS				⇑S	Sn	16 08 56.7	+0.3
	1.0nm,0.4s						
KK31	**Karatay Array**	**6.37**	**1**	⇓P	Pn	16 07 51.8	0.0
	0.1nm,0.1s,baz=31,slow=21,SNR=4.7						
KK31				⇑S	Sn	16 09 06.9	+1.6
	0.6nm,0.3s,baz=184,slow=30,SNR=2.8						
AB31	**Akbulak array**	**14.61**	**332**	P	Pn	16 09 45.9	+1.2
	0.5nm,0.8s,baz=167,slow=12,SNR=5.3						

IDC 05 16:08:10.9±2.0**, 33°.15N**×**96°.08E, h0**km**, mb3.6**/2**, mb1 3.6**/4**, mb1mx3.3**/45**, mbtmp3.4**/4**, ML3.1**/2**, Error ellipse: s-maj=85.6km s-min=33.0km az=69.0, Qinghai**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
SONM	**Songino Array**	**16.61**	**25**	Pn	Pn	16 12 05.0	-0.1
	0.1nm,0.3s,baz=211,slow=15,SNR=4.9						
MKAR	**Makanchi Array**	**17.21**	**326**	P	Pn	16 12 12.8	+0.2
	0.0nm,0.3s,baz=137,slow=14,SNR=5.0						
WRA	**Warramunga Arr**	**64.21**	**140**	P	P	16 18 47.5	-0.1
	0.8nm,1.1s,baz=333,slow=6.4,SNR=3.7						
ASAR	**Alice Springs**	**67.03**	**142**	P	P	16 19 06.0	+0.1
	0.2nm,0.4s,baz=325,slow=6.4,SNR=7.6						

IDC ***05*** *16:13:50.1±0.7, 2°.90N×126°.98E, h0km, mb3.8/11, mb1 4.0/11, mb1mx3.8/40, mbtmp3.8/11, MS3.2/5, Ms1 3.3/5, ms1mx2.8/36, Error ellipse: s-maj=38.5km s-min=13.8km az=76.0*
NEIC ***05*** *16:13:52.1±0.6, 2°.93N×126°.80E, h10km, mb4.4/1, Error ellipse: s-maj=20.0km s-min=9.5km az=75.0*
ISCJB ***05*** *16:13:54.1±0.5, 2°.86N±0°.06×126°.8E±0°.1, h44km, mb3.9/11, MS3.2/5, Error ellipse: s-maj=17.2km s-min=8.3km az=166.5*
ISC 05 16:13:56.3±0.7**, 2°.88N**±0°.08×**126°.8E**±0°.1**, h44**km**, n21,** σ**1s.03**/17**, mb4.0**/11**, MS3.2**/5**, Northern Molucca Sea**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
TNTI	**Ternate**	**2.17**	**165**	*e*Pn	**Pn**	**16 14 32.0**	**+2.0**
FAKI	**Fak Fak**	**7.92**	**137**	*e*Pn	**Pn**	**16 15 50.1**	**+1.0**
KAPI	**Kappang**	**10.54**	**222**	*e*Pn	**Pn**	**16 16 23.8**	**-1.1**
FITZ	**Fitzroy Crossi**	**20.88**	**183**	P	**P**	**16 18 33.6**	**-1.3**
	1.7nm,0.5s,baz=21,slow=13,SNR=2.9						
WRAB	**Tennant Creek**	**23.85**	**162**	*e*P	**P**	**16 19 05.2**	**-0.5**
	9.4nm,0.9s						
WRA	**Warramunga Arr**	**23.86**	**162**	P	**P**	**16 19 04.8**	**-1.0**
	5.1nm,0.7s,baz=338,slow=10,SNR=30						
ASAR	**Alice Springs**	**27.28**	**166**	P	**P**	**16 19 36.5**	**-0.4**
	0.8nm,0.6s,baz=345,slow=6.4,SNR=17						
CMAR	**Chiang Mai Arr**	**31.37**	**302**	P	**P**	**16 20 14.9**	**+1.6**
	0.5nm,0.8s,baz=119,slow=7.8,SNR=4.8						
CMAR				LR	LR	16 34 49.0	
	comp=Z,26nm,18.1s,baz=150,slow=40						
KSAR	**Wonju Array Be**	**34.41**	**2**	P	**P**	**16 20 39.4**	**-0.2**
KSRS	**Korea Array**	**34.42**	**2**	P	**P**	**16 20 39.4**	**-0.2**
	2.1nm,1.1s,baz=187,slow=8.8,SNR=4.4						
KSRS				LR	LR	16 40 41.1	
	comp=Z,14nm,18.0s,baz=185,slow=47						
STKA	**Stephens Creek**	**37.31**	**159**	P	**P**	**16 21 04.0**	**-0.4**
	3.0nm,0.7s,baz=338,slow=7.7,SNR=13						
H11S3	**WAKE ISLAND Hy**	**42.01**	**65**	T	T	17 06 07.0	
	baz=253,slow=75,SNR=9.1						
H11S1	**WAKE ISLAND Hy**	**42.02**	**65**	T	T	17 06 07.1	
	baz=253,slow=75,SNR=5.7						
H11S2	**WAKE ISLAND Hy**	**42.02**	**65**	T	T	17 06 12.2	
	baz=253,slow=75,SNR=7.2						
KLR	**Kul'dur**	**46.37**	**4**	P	**P**	**16 22 17.0**	**-1.2**
	1.0nm,0.7s,baz=207,slow=11,SNR=2.9						
SONM	**Songino Array**	**48.12**	**342**	P	**P**	**16 22 32.6**	**+0.6**
	0.4nm,0.5s,baz=156,slow=8.6,SNR=4.0						
SONM				LR	LR	16 46 21.1	
	comp=Z,24nm,18.1s,baz=90,slow=40						
PETK	**Petropavlovsk-**	**56.18**	**22**	P	**P**	**16 23 31.4**	**-0.3**
	1.3nm,0.8s,baz=160,slow=4.6,SNR=3.4						
MKAR	**Makanchi Array**	**58.29**	**326**	P	**P**	**16 23 46.8**	**0.0**
	0.6nm,0.5s,baz=115,slow=8.1,SNR=16						
MKAR				LR	LR	16 50 31.6	
	comp=Z,28nm,21.0s,baz=88,slow=38						
ZALV	**Zalesovo Beam**	**61.38**	**333**	P	**P**	**16 24 07.8**	**0.0**
	0.8nm,0.8s,baz=126,slow=7.7,SNR=3.7						
KURK	**Kurchatov**	**62.49**	**328**	*e*P	**P**	**16 24 15.8**	**+0.5**
NOA	**NORSAR Array B**	**99.58**	**334**	LR	LR	17 15 22.0	
	comp=Z,22nm,20.2s,baz=55,slow=37						

ISCJB ***05*** *16:16:43.1±0.5, 32°.20N±0°.02×115°.20W±0°.03, h15km±4km, Error ellipse: s-maj=4.1km s-min=3.5km az=158.3*
NEIC ***05*** *16:16:44.7, 32°.18N×115°.26W, h8km, ML3.0(PAS), ML3.2(ECX), After ECX.*
ECX ***05*** *16:16:44.7±0.5, 32°.18N×115°.26W, h8km, MD3.0, ML3.2*
MEX ***05*** *16:16:45.8±0.5, 32°.26N×115°.15W, h16km±130km, MD3.6*
ISC 05 16:16:43.2±0.9**, 32°.19N**±0°.02×**115°.27W**±0°.02**, h17**km±7km**, n36,** σ**0s.75**/56**, 2C-4D, California-Baja California border region**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
MBIG	**Mexicali**	**0.22**	**16**	*e*P	**Pb**	**16 16 49.4**	**+0.6**
MBIG	**Mexicali**	**0.22**	**16**	*e*P	**Pb**	**16 16 49.2**	**+0.4**
MBIG				*e*S	**Sg**	**16 16 51.3**	**-0.5**
CPBX	**Cerro Prieto**	**0.23**	**353**	*e*P	**Pb**	**16 16 49.3**	**+0.4**
CPBX				*e*S	**Sb**	**16 16 52.9**	**+0.2**
CPBX				AML	AML	16 16 55.1	
	comp=N,14µm,0.5s						
CPBX				⇓*e*		16 16 57.1	
CPBX	**Cerro Prieto**	**0.23**	**353**	*e*P	**Pb**	**16 16 49.3**	**+0.4**
CPBX				*e*S	**Sg**	**16 16 51.8**	**-0.2**
EMSC	**East Mesa**	**0.60**	**24**	⇓*e*P	**Pg**	**16 16 55.2**	**+0.2**
SGL	**Mount Signal**	**0.60**	**320**	⇑*i*P	**Pb**	**16 16 55.7**	**+0.5**
COA	**Coachella**	**0.68**	**10**	⇓*i*P	**Pg**	**16 16 56.5**	**-0.1**
YMD	**Yuma Desert**	**0.71**	**59**	*i* P	**Pb**	**16 16 57.1**	**-0.1**
YUH	**Yuha Desert**	**0.71**	**310**	⇑*i*P	**Pb**	**16 16 57.3**	**+0.1**
ECBX	**El Chinero**	**0.74**	**165**	*e*P	**Pg**	**16 16 57.6**	**0.0**
ECBX				*e*S	**Sg**	**16 17 07.6**	**+0.1**
RMX	**La Rumorosa**	**0.80**	**301**	*e*P	**Pb**	**16 16 58.7**	**0.0**
RMX				*e*S	**Sg**	**16 17 09.7**	**+0.4**
IBP	**Imperial Bould**	**0.84**	**304**	P	**Pg**	**16 16 59.9**	**+0.4**
	baz=124,SNR=109						
IBP				S	**Sg**	**16 17 11.3**	**+0.7**
	baz=124						
SWSC	**Sam W. Stewart**	**0.87**	**329**	P	**Pb**	**16 16 59.4**	**-0.5**
	baz=149,SNR=14						
SWSC				S	**Sb**	**16 17 10.5**	**-0.8**
	baz=149						
GLA	**Glamis**	**0.94**	**23**	P	**Pb**	**16 16 59.8**	**-1.2**
	baz=201,SNR=39						
GLA				S	**Sb**	**16 17 11.5**	**-1.6**
	baz=201						
ZAX	**El Zacaton**	**1.09**	**232**	*e*P	**Pb**	**16 17 03.6**	**0.0**
ZAX				*e*S	**Sn**	**16 17 18.5**	**0.0**
SPIG	**San Pedro Mart**	**1.15**	**188**	*e*P	**Pn**	**16 17 04.6**	**-0.3**
SPIG	**San Pedro Mart**	**1.15**	**188**	*e*P	**Pn**	**16 17 04.8**	**0.0**
SPIG				*e*S	**Sn**	**16 17 20.1**	**-0.4**
SPIG	**San Pedro Mart**	**1.15**	**188**	*e*P	**Pn**	**16 17 04.8**	**0.0**
SPIG				*e*S	**Sn**	**16 17 20.1**	**-0.4**
SPX	**San Pedro Mart**	**1.16**	**188**	*e*P	**Pn**	**16 17 04.9**	**0.0**
CBX	**Cerro Bola**	**1.19**	**276**	*e*P	**Pn**	**16 17 05.4**	**+0.2**
CBX				⇓*e*		16 17 23.2	
CBX				AML	AML	16 17 23.2	
	comp=E,473nm,0.5s						
CBX	**Cerro Bola**	**1.19**	**276**	*e*P	**Pn**	**16 17 05.4**	**+0.2**
CBX				*e*S	**Sb**	**16 17 20.1**	**-0.4**
CBX	**Cerro Bola**	**1.19**	**276**	*e*P	**Pn**	**16 17 05.4**	**+0.2**
CBX				*e*S	**Sb**	**16 17 20.1**	**-0.4**
MONP2	**Monument Peak**	**1.20**	**306**	P	**Pb**	**16 17 05.8**	**+0.3**
	baz=126,SNR=29						
MONP2				S	**Sn**	**16 17 21.8**	**+0.4**
	baz=126						
TJIG	**Tijuana**	**1.21**	**282**	*e*P	**Pn**	**16 17 05.5**	**+0.1**
TJIG				*e*S	**Sb**	**16 17 21.0**	**-0.1**
ECNX	**Esteban Cantu**	**1.25**	**245**	*e*P	**Pb**	**16 17 06.5**	**+0.1**
ECNX				*e*S	**Sg**	**16 17 23.6**	**0.0**
PBX	**Punta Banda**	**1.31**	**250**	*e*P	**Pn**	**16 17 07.2**	**+0.3**
PBX				*e*S	**Sg**	**16 17 25.7**	**0.0**
BC3	**Big Chuckawall**	**1.47**	**354**	P	**Pn**	**16 17 07.9**	**-1.1**
	baz=173,SNR=18						
109C	**Camp Elliot, M**	**1.70**	**295**	Pb	**Pb**	**16 17 14.6**	**+0.6**
	baz=114						
109C				Sb	**Sg**	**16 17 36.9**	**-1.0**
	baz=114						
PFO	**Pinyon Flats O**	**1.73**	**325**	P	**Pn**	**16 17 12.0**	**-0.6**
	baz=144						
PFO	**Pinyon Flats O**	**1.73**	**325**	*e*Pn	**Pb**	**16 17 14.0**	**-0.6**
PFO				*e*Sn	**Sg**	**16 17 38.4**	**-0.7**
BELC	**Belle Mtn. Jos**	**1.91**	**341**	Pb	**Pn**	**16 17 16.4**	**+1.4**
	baz=161						
IRM	**Iron Mountain**	**1.96**	**3**	Pb	**Pn**	**16 17 17.0**	**+1.2**
	baz=182						
214A	**Organ Pipe Nat**	**2.10**	**96**	*e*Pn	**Pn**	**16 17 16.1**	**-1.6**
214A				*e*Pg	**Pb**	**16 17 21.7**	**+0.9**
MURC	**Murrieta**	**2.14**	**311**	Sb	**Sg**	**16 17 50.4**	**-1.7**
	baz=131						
TUC	**Tucson**	**3.80**	**87**	*e*Pg	**Pg**	**16 17 56.9**	**+0.9**
WUAZ	**Wupatki**	**4.64**	**43**	*e*Pn	**Pn**	**16 17 55.1**	**+2.5**

WEL 05 16:22:47.0±0.2**, 37°.15S**×**176°.21E, h261**km±3km**, ML3.5**/8**, Error ellipse: s-maj=6.8km s-min=5.6km az=90.0, North Island**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
URZ	**Urewera**	**1.32**	**147**	PN	Pn	16 23 25.2	+0.2
URZ				SN	S	16 23 55.3	+0.2
HAZ	**Te Kaha**	**1.39**	**116**	PN	Pn	16 23 25.7	+0.2
HAZ				SN	S	16 23 55.0	-0.9
MWZ	**Matawai**	**1.58**	**139**	PN	Pn	16 23 27.0	+0.1
MWZ				SN	S	16 23 58.0	-0.5
RAGZ	**Rawiri**	**1.65**	**145**	PN	Pn	16 23 27.8	+0.3
MRHZ	**Matea Rd**	**1.69**	**174**	PN	Pn	16 23 27.9	+0.1
MRHZ				SN	S	16 23 59.5	-0.6
SNGZ	**Shannon Statio**	**1.86**	**152**	PN	Pn	16 23 29.1	0.0
WMGZ	**Waiomatatini S**	**1.88**	**112**	PN	Pn	16 23 29.4	+0.1
RIGZ	**Rimuhau**	**1.98**	**142**	PN	Pn	16 23 29.9	-0.3
BKZ	**Black Stump Fm**	**2.03**	**174**	PN	Pn	16 23 30.1	-0.5
KNZ	**Kokohu**	**2.20**	**149**	PN	Pn	16 23 31.8	-0.3
ARHZ	**Aropaoanui**	**2.20**	**164**	PN	Pn	16 23 31.7	-0.4
MCHZ	**McNeill Hill**	**2.32**	**171**	PN	Pn	16 23 32.9	-0.4
BHHZ	**Black Hill Sta**	**2.34**	**183**	PN	Pn	16 23 32.7	-0.8
KRHZ	**Kereru**	**2.49**	**177**	PN	Pn	16 23 33.8	-1.1
KAHZ	**Kahuranaki**	**2.69**	**169**	PN	Pn	16 23 35.8	-1.2
TSZ	**Takapari Road**	**2.91**	**184**	PN	Pn	16 23 37.3	-1.9
MRZ	**Mangatainoka R**	**3.54**	**188**	PN	Pn	16 23 43.1	-2.9
TIWZ	**Tintock**	**3.63**	**184**	PN	Pn	16 23 43.9	-3.1
OGWZ	**Otaki Gorge**	**3.75**	**192**	PN	Pn	16 23 45.6	-2.7
KIW	**Kapiti Island**	**3.84**	**195**	PN	Pn	16 23 46.6	-2.9
CAW	**Cannon Point**	**4.05**	**192**	PN	Pn	16 23 48.3	-3.5
TCW	**Tory Channel**	**4.33**	**200**	PN	Pn	16 23 52.1	-2.9
NNZ	**Nelson**	**4.62**	**208**	PN	Pn	16 23 55.3	-3.2
TUWZ	**Tuamarina**	**4.62**	**202**	PN	Pn	16 23 55.3	-3.2
THZ	**Tophouse**	**5.27**	**208**	PN	Pn	16 24 02.6	-3.8

IDC 05 16:23:36.7±2.6**, 36°.14N**×**142°.73E, h0**km**, mb3.3**/3**, mb1 3.2**/4**, mb1mx3.1**/31**, mbtmp3.2**/4**, ML2.5**/1**, MS3.3**/1**, Ms1 3.3**/1**, ms1mx2.3**/22**, Error ellipse: s-maj=78.4km s-min=30.0km az=62.0, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
MJAR	**Matsushiro Arr**	**3.68**	**278**	Pn	Pn	16 24 35.2	+0.4
	0.4nm,0.3s,baz=91,slow=9.7,SNR=6.5						
JCJ	**Chichijima**	**9.03**	**183**	LR	LR	16 29 07.0	
	comp=Z,212nm,21.8s,baz=112,slow=37						
MKAR	**Makanchi Array**	**45.50**	**303**	P	P	16 31 55.9	-1.8
	0.2nm,0.5s,baz=90,slow=7.5,SNR=5.4						
BVAR	**Borovoye Array**	**51.96**	**313**	P	P	16 32 48.4	+1.1
	0.3nm,0.4s,baz=79,slow=7.5,SNR=2.6						
ASAR	**Alice Springs**	**60.06**	**189**	P	P	16 33 45.5	-0.1
	0.2nm,0.8s,baz=8.1,slow=8.5,SNR=3.0						

IDC ***05*** *16:37:54.1±0.8, 2°.96N×126°.84E, h0km, mb3.8/9, mb1 3.9/9, mb1mx3.7/38, mbtmp3.8/9, Error ellipse: s-maj=41.2km s-min=14.9km az=71.0*
NEIC ***05*** *16:37:56.1±0.5, 3°.01N×126°.81E, h10km, mb4.3/3, Error ellipse: s-maj=29.6km s-min=9.3km az=66.0*
ISCJB ***05*** *16:37:58.4±0.5, 3°.04N±0°.09×126°.9E±0°.2, h44km, mb3.9/12, Error ellipse: s-maj=26.6km s-min=8.6km az=158.7*
ISC 05 16:38:00.5±0.7**, 3°.0N**±0°.1×**126°.9E**±0°.2**, h44**km**, n15,** σ**0s.89**/15**, mb3.9**/12**, Talaud Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
TNTI	**Ternate**	**2.27**	**169**	*e*Pn	**Pn**	**16 38 36.7**	**+1.2**
FAKI	**Fak Fak**	**7.94**	**138**	*e*Pn	**Pn**	**16 39 53.8**	**+0.4**
WRAB	**Tennant Creek**	**23.94**	**163**	*e*P	**P**	**16 43 09.6**	**-1.1**
	9.0nm,0.9s						
WRA	**Warramunga Arr**	**23.94**	**163**	P	**P**	**16 43 09.4**	**-1.4**
	2.7nm,0.5s,baz=339,slow=11,SNR=20						
ASAR	**Alice Springs**	**27.37**	**166**	P	**P**	**16 43 41.2**	**-0.6**
	0.3nm,0.3s,baz=349,slow=13,SNR=18						
CMAR	**Chiang Mai Arr**	**31.41**	**301**	P	**P**	**16 44 17.4**	**-0.3**
	0.3nm,0.6s,baz=124,slow=7.3,SNR=2.8						
KSAR	**Wonju Array Be**	**34.28**	**1**	P	**P**	**16 44 42.5**	**-0.1**
KSRS	**Korea Array**	**34.29**	**1**	P	**P**	**16 44 42.5**	**-0.1**
	0.5nm,0.7s,baz=180,slow=8.8,SNR=3.1						
STKA	**Stephens Creek**	**37.39**	**159**	P	**P**	**16 45 08.9**	**-0.4**
	5.5nm,0.8s,baz=323,slow=5.5,SNR=11						
SONM	**Songino Array**	**48.04**	**341**	P	**P**	**16 46 35.5**	**0.0**
	0.3nm,0.5s,baz=151,slow=7.7,SNR=2.8						
PETK	**Petropavlovsk-**	**56.02**	**22**	P	**P**	**16 47 35.6**	**+0.9**
	1.5nm,0.8s,baz=204,slow=5.7,SNR=5.4						
MKAR	**Makanchi Array**	**58.26**	**325**	P	**P**	**16 47 51.1**	**+0.5**
	0.8nm,0.7s,baz=121,slow=8.4,SNR=11						
ZALV	**Zalesovo Beam**	**61.31**	**333**	P	**P**	**16 48 09.8**	**-1.7**
	0.3nm,0.3s,baz=144,slow=5.4,SNR=3.0						
KURK	**Kurchatov**	**62.45**	**328**	*e*P	**P**	**16 48 19.2**	**+0.1**
	5.5nm,0.7s						
ABKAR	**Akbulak array**	**72.83**	**321**	P	**P**	**16 49 25.2**	**+0.5**
	0.3nm,0.4s						

IDC 05 16:50:24.9±3.0**, 23°.97S**×**179°.76E, h496**km±25km**, mb3.5**/5**, mb1 3.7**/5**, mb1mx3.2**/24**, mbtmp4.4**/5**, Error ellipse: s-maj=81.0km s-min=27.7km az=161.0, South of Fiji Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
CTA	**Charters Tower**	**31.26**	**270**	P	P	16 56 04.9	+1.4
	7.4nm,0.4s,baz=89,slow=11,SNR=18						
STKA	**Stephens Creek**	**34.50**	**248**	P	P	16 56 30.2	-0.6
	2.9nm,0.6s,baz=101,slow=10,SNR=22						
ASAR	**Alice Springs**	**41.81**	**261**	P	P	16 57 30.2	-0.5
	1.1nm,0.5s,baz=92,slow=6.9,SNR=56						
ASAR				ScP	ScP	17 02 17.8	-0.5
	0.6nm,1.0s,baz=106,slow=5.1,SNR=4.9						
WRA	**Warramunga Arr**	**42.19**	**266**	P	P	16 57 33.1	-0.5
	4.0nm,0.5s,baz=98,slow=8.2,SNR=62						
WRA				ScP	ScP	17 02 19.6	-0.2
	2.3nm,1.3s,baz=99,slow=3.9,SNR=5.5						
TXAR	**Lajitas Array**	**90.65**	**58**	P	P	17 02 34.4	0.0
	0.6nm,0.8s,baz=202,slow=5.3,SNR=5.0						

MAN 05 16:51:58, 13°.09N×**121°.06E, h27**km**, mb3.9, ML2.6, MS2.3, 1C, Mindoro**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
PGP	**Puerto Galera**	**0.43**	**346**	⇑*e*P	Pn	16 52 09.5	+1.1
PGP				*i* S	Sn	16 52 17.0	+1.6
SJMP	**San Jose**	**0.62**	**175**	*e*P	Pb	16 52 10.3	0.0
SJMP				*e*S	Sb	16 52 16.9	-1.8
BOAC	**Boac**	**0.85**	**64**	*e*P	Pn	16 52 14.2	+0.1
BOAC				*e*S	Sn	16 52 26.3	+0.6
OTRP	**Odiongan**	**1.18**	**127**	*e*P	Pb	16 52 20.6	+0.8

ISCJB ***05*** *17:06:35.0±0.7, 37°.22N±0°.05×71°.93E±0°.09, h150km, mb2.7/1, Error ellipse: s-maj=11.1km s-min=4.8km az=153.7*
IDC ***05*** *17:06:41.4±8.7, 37°.69N×71°.69E, h165km±56km, mb2.7/1, mb1 2.8/6, mb1mx2.6/56, mbtmp3.3/6, Error ellipse: s-maj=89.1km s-min=73.8km az=114.0*
NNC ***05*** *17:06:42.0±1.2, 37°.69N×71°.81E, h170km±14km, mb2.9, mpv4.0, Error ellipse: s-maj=15.6km s-min=8.0km az=52.0*
ISC 05 17:06:34.9±1.1**, 37°.25N**±0°.08×**71°.7E**±0°.1**, h150**km**, n21,**

σ1.ˢ71/27, 3C-7D, Afghanistan-Tajikistan border region

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
SFK	Sufi-Kurgan	3.08	26	⇓P	Pn	17 07 25.9	+2.4
	46nm,0.3s						
SFK				⇓S	Sn	17 08 01.3	+0.1
	52nm,0.5s						
MNAS	Manas	5.26	6	⇓P	Pn	17 07 53.8	+1.9
	14nm,0.3s						
MNAS				⇓S	Sn	17 08 50.1	-1.9
	25nm,0.7s						
AAK	Ala-Archa	5.78	21	P	Pn	17 08 00.9	+2.1
	4.0nm,0.3s,baz=177,slow=6.0,SNR=92						
AAK				S	Sn	17 09 02.9	-1.4
	1.7nm,0.3s,baz=325,slow=22,SNR=13						
KK31	Karatay Array	5.92	351	⇑P	Pn	17 08 02.6	+2.1
	1.7nm,0.3s,baz=183,slow=14,SNR=76						
KK31				⇓S	Sn	17 09 05.0	-2.5
	17nm,0.3s,baz=160,slow=15,SNR=31						
MK31	Makanchi Array	12.34	36	P	Pn	17 09 26.6	+1.2
	0.4nm,0.6s,baz=225,slow=13,SNR=4.7						
MKAR	Makanchi Array	12.34	36	P	Pn	17 09 26.4	+0.9
	0.1nm,0.3s,baz=226,slow=14,SNR=6.2						
PYUN	Piuthan	13.14	131	eP	Pn	17 09 35.0	-1.2
	3.2nm,0.2s						
KOLN	Koldanda	13.75	130	eP	Pn	17 09 42.1	-1.8
	3.5nm,0.4s						
KURBB	Kurchatov Arra	14.22	18	P	Pn	17 09 48.2	-1.2
	0.0nm,0.3s,baz=207,slow=12,SNR=3.3						
KURBB	Kurchatov Arra	14.22	18	⇑P	Pn	17 09 49.5	0.0
	0.9nm,0.5s						
GKN	Gorkha	14.24	127	eP	Pn	17 09 48.0	-2.0
	4.5nm,0.3s						
AB31	Akbulak array	14.74	328	P	P	17 09 58.6	+0.5
	0.5nm,0.3s,baz=135,slow=14,SNR=31						
AB31				⇓S	Sn	17 12 36.4	-3.0
	1.1nm,0.6s,baz=155,slow=23,SNR=6.8						
KKN	Kakani	14.80	126	eP	Pn	17 09 55.4	-1.6
	5.9nm,0.6s						
PKIN	Phulchoki	15.02	126	eP	Pn	17 09 58.8	-1.0
BVAR	Borovoye Array	15.80	357	P	P	17 10 09.1	-0.7
	0.1nm,0.3s,baz=172,slow=11,SNR=3.0						
RAMN	Ramite	16.23	125	eP	P	17 10 14.0	-1.0
	10nm,0.6s						
AKTO	Aktyubinsk	16.45	328	⇑P	P	17 10 19.0	+2.1
	2.9nm,1.5s						
AKTO				⇓S	Sn	17 13 19.3	-1.1
	3.3nm,0.9s						
TAPN	Taplejung	16.70	122	eP	Pn	17 10 19.8	-0.7
ODAN	Odare	16.81	124	eP	Pn	17 10 22.0	+0.3
	36nm,1.4s						
ZALV	Zalesovo Beam	18.99	24	P	Pn	17 10 46.5	-0.6
	0.3nm,0.3s,baz=230,slow=12,SNR=6.7						
YKA	Yellowknife Ar	80.47	3	P	P	17 18 32.2	+2.6
	0.1nm,0.5s,baz=351,slow=5.7,SNR=3.8						

*NIED **05** 17:09:00, 36.°70N×142.°40E, h20^{km}, Mw3.8 Best double couple: $M_0$5.94000×10^{14} NP1:ϕ_s202.00000°, δ23.00000°, λ93.00000°. NP2:ϕ_s19.00000°, δ67.00000°, λ89.00000°.*
*ISCJB **05** 17:09:53.1±0.5, 36.°59N±0.°04×142.°48E±0.°06, h15^{km}, mb3.9/15, MS3.2/2, Error ellipse: s-maj=6.4km s-min=5.2km az=169.6*
*JMA **05** 17:09:53.8±0.3, 36.°68N×142.°44E, h13^{km}, M4.0*
*IDC **05** 17:09:53.4±1.0, 36.°56N×142.°31E, h0^{km}, mb3.6/9, mb1 3.7/11, mb1mx3.5/55, mbtmp3.7/11, ML3.9/2, MS2.9/6, Ms1 2.9/6, ms1mx2.6/46, Error ellipse: s-maj=25.1km s-min=16.7km az=101.0*
*NEIC **05** 17:09:57.5±0.7, 36.°61N×142.°44E, h35^{km}, mb4.5/7, Error ellipse: s-maj=13.4km s-min=8.4km az=125.0*
ISC 05 17:09:55.2±0.7, **36.°66N**±0.°05×**142.°32E**±0.°06, **h15**^{km}, **n46**, σ**1.ˢ20**/46, **mb3.8**/15, **Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
ONAJ	Iwakimizuishiy	1.30	290	P	Pn	17 10 18.8	-0.1
JFK	Kawauchi	1.36	302	P	Pn	17 10 19.5	-0.1
JFK				eS	Sn	17 10 37.3	-0.1
JHO	Hitachi	1.41	269	P	Pn	17 10 19.9	-0.5
JHO	Hitachi	1.41	269	P	Pn	17 10 19.9	-0.5
JMM	Marumori	1.71	315	P	Pn	17 10 25.2	+0.7
JMM				eS	Sb	17 10 47.2	-0.6
JFT	Otama	1.80	299	P	Pb	17 10 26.8	-1.2
JFT				eS	Sb	17 10 50.0	-0.4
JIO	Ouri	1.95	337	P	Pn	17 10 28.1	+0.3
JOU	Okura	2.15	323	P	Pn	17 10 32.0	+1.4
JOU				S	Sb	17 10 59.9	-0.5
MJAR	Matsushiro Arr	3.31	269	Pn	Pn	17 10 45.5	-1.0
	11nm,0.3s,baz=99,slow=11,SNR=18						
MJAR				LR	LR	17 12 18.4	
	comp=Z,145nm,18.1s,baz=105,slow=44						
MAJO	Matsushiro	3.31	269	ePn	Pn	17 10 48.9	+2.4
MAT	Matsushiro	3.31	269	P	Pn	17 10 49.2	+2.7
MAT				S	Sb	17 11 32.9	-0.9
JHJ2	Mitsune	4.10	211	ePn	Pn	17 10 56.7	-0.6
JHJ	Hachijo jima 2	4.10	211	Pn	Pn	17 10 58.2	+0.8
	19nm,0.3s,baz=246,slow=20,SNR=3.9						
JHJ				Sn	Sn	17 11 43.7	-1.4
	33nm,0.3s,baz=89,slow=22,SNR=8.1						
INU	Inuyama	4.50	255	ePn	Pn	17 11 06.0	+3.3
ERM	Erimo	5.39	7	ePn	Pn	17 11 12.8	-2.2
JNU	Nakatsue	10.04	253	LR	LR	17 16 03.5	
	comp=Z,24nm,18.8s,baz=98,slow=37						
YSS	Yuzh-Sakhalins	10.29	2	ePn	Pn	17 12 22.0	-0.2
KSRS	Korea Array	11.54	278	LR	LR	17 16 57.5	
	comp=Z,79nm,18.7s,baz=70,slow=37						
KLR	Kul'dur	14.74	332	LR	LR	17 19 06.7	
	comp=Z,50nm,20.0s,baz=115,slow=37						
JOW	Kunigami	15.44	235	ePn	Pn	17 13 32.9	+0.5
	82nm,1.2s						
PEA0	Petropavlovsk-	19.66	28	eP	Pn	17 14 23.5	-1.2
MA2	Magadan	23.57	11	P	P	17 15 05.8	+0.8
	1.0nm,0.5s,baz=217,slow=2.9,SNR=7.3						
SEY	Seymchan	27.02	10	P	P	17 15 38.6	+2.2
	0.4nm,0.3s,baz=175,slow=3.7,SNR=7.0						
ENH	Enshi	28.03	266	eP	P	17 15 46.0	+0.1
	45nm,1.8s						
ULN	Ulaanbaatar	28.17	305	eP	P	17 15 47.6	+0.6
	6.1nm,1.6s						
SONA1	Songino Array	28.59	304	eP	P	17 15 52.0	+1.1
SONA0	Songino Array	28.60	304	eP	P	17 15 52.5	+1.6
	1.6nm,0.8s						
SONM	Songino Array	28.60	304	P	P	17 15 52.5	+1.6
	1.2nm,0.7s,baz=105,slow=9.0,SNR=12						
TLY	Talaya	31.12	311	LR	LR	17 27 42.7	
	comp=Z,24nm,21.4s,baz=151,slow=34						
ZAA0	Zalesovo Array	42.70	313	eP	P	17 17 50.4	-0.9
ZAA1	Zalesovo Array	42.70	313	eP	P	17 17 51.1	-0.2
ZALV	Zalesovo Beam	42.70	313	P	P	17 17 51.1	-0.2
	0.3nm,0.4s,baz=76,slow=6.4,SNR=3.0						
CHGN	Chignik	43.73	44	eP	P	17 17 57.4	-2.1
MK01	Makanchi Array	44.93	303	eP	P	17 18 10.1	+0.7
MK31	Makanchi Array	44.93	303	eP	P	17 18 10.1	+0.7
MK32	Makanchi Array	44.93	303	eP	P	17 18 10.5	+1.1
MKAR	Makanchi Array	44.93	303	P	P	17 18 10.5	+1.1
	0.5nm,0.6s,baz=87,slow=9.5,SNR=7.8						
MKAR	Makanchi Array	44.93	303	eP	P	17 18 09.9	+0.5
MAKZ	Makanchi	45.14	303	eP	P	17 18 11.9	+0.9
	8.0nm,1.9s						
KURBB	Kurchatov Arra	46.80	308	P	P	17 18 24.9	+0.8
	0.9nm,0.6s,baz=82,slow=7.7,SNR=11						
ILAR	Eielson Array	49.42	32	P	P	17 18 45.5	+1.4
	0.4nm,0.6s,baz=267,slow=6.1,SNR=5.1						
TKM2	Tokmak 2	50.45	299	eP	P	17 18 53.4	+0.9
	8.9nm,1.8s						
WR1	Warramunga Arr	56.80	189	eP	P	17 19 37.1	-1.8
	38nm,1.9s						
WRA	Warramunga Arr	56.80	189	P	P	17 19 37.1	-1.8
	0.2nm,0.5s,baz=3.2,slow=7.5,SNR=5.3						
ASAR	Alice Springs	60.53	189	P	P	17 20 05.6	+0.8
	0.2nm,0.7s,baz=16,slow=10,SNR=3.2						
ATD	Arta Tunnel	90.67	285	LR	LR	18 06 50.8	
	comp=Z,20nm,19.8s,baz=78,slow=38						

JMA 05 17:10:03.2±0.1, **35.°69N**×**140.°84E**, **h27**^{km}±1^{km}, **M2.8**, **Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
CHOJ	Chosi	0.02	50	P	Pb	17 10 07.6	-0.2
CHOJ				S	Sb	17 10 10.7	-0.2
JCN	Nagara	0.59	243	P	Pn	17 10 15.5	-0.3
JYT	Yasato	0.75	316	P	Pb	17 10 17.1	-0.6
JYT				S	Sb	17 10 27.3	-0.2
BSO3	Boso 3	0.93	197	P	Pb	17 10 21.4	+0.9

*ISCJB **05** 17:17:52.0±1.2, 26.°8N±0.°1×143.°8E±0.°1, h10^{km}, mb3.5/4, Error ellipse: s-maj=18.9km s-min=13.3km az=38.0*
*IDC **05** 17:17:52.1±1.8, 26.°75N×143.°90E, h0^{km}, mb3.4/4, mb1 3.6/5, mb1mx3.4/38, mbtmp3.5/5, ML3.1/1, Error ellipse: s-maj=49.6km s-min=21.1km az=73.0*
ISC 05 17:17:54.1±1.4, **26.°7N**±0.°1×**143.°7E**±0.°1, **h10**^{km}, **n6**, σ**0.ˢ92**/7, **mb3.5**/4, **Bonin Islands region**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
JCJ	Chichijima	1.43	285	Pn	Pb	17 18 21.2	+0.3
	13nm,0.3s,baz=270,slow=20,SNR=3.6						
JCJ				Sn	Sn	17 18 38.4	-0.6
	37nm,0.3s,baz=278,slow=23,SNR=6.9						
MJAR	Matsushiro Arr	10.85	336	Pn	Pn	17 20 29.6	0.0
	0.1nm,0.3s,baz=155,slow=11,SNR=4.6						
KLR	Kul'dur	24.31	341	P	P	17 23 10.9	-0.8
	0.3nm,0.3s,baz=276,slow=19,SNR=2.2						
WRA	Warramunga Arr	47.28	192	P	P	17 26 28.4	+0.5
	1.2nm,0.7s,baz=11,slow=8.4,SNR=8.5						
ASAR	Alice Springs	50.99	192	P	P	17 26 55.3	-1.0
	0.2nm,0.8s,baz=2.0,slow=6.7,SNR=2.8						
MKAR	Makanchi Array	51.77	310	P	P	17 27 03.0	+1.0
	0.5nm,0.6s,baz=91,slow=8.4,SNR=6.3						

*NIED **05** 17:37:00, 38.°30N×143.°40E, h5^{km}, Mw3.9 Best double couple: $M_0$7.99000×10^{14} NP1:ϕ_s348.00000°, δ29.00000°, λ-155.00000°. NP2:ϕ_s237.00000°, δ78.00000°, λ-64.00000°.*
*IDC **05** 17:37:25.1±0.9, 37.°99N×143.°71E, h0^{km}, mb3.6/8, mb1 3.8/12, mb1mx3.6/37, mbtmp3.7/12, ML2.8/3, MS3.0/7, Ms1 3.0/7, ms1mx2.8/42, Error ellipse: s-maj=23.1km s-min=16.4km az=102.0*
*ISCJB **05** 17:37:26.2±0.7, 37.°99N±0.°06×143.°58E±0.°07, h19^{km}, mb3.7/9, MS3.9/4, Error ellipse: s-maj=8.5km s-min=7.7km az=176.8*
*JMA **05** 17:37:27.2±0.4, 38.°27N×143.°45E, h1^{km}, M3.9*
ISC 05 17:37:28.0±0.9, **37.°99N**±0.°06×**143.°58E**±0.°09, **h19**^{km}, **n28**, σ**1.ˢ47**/24, **mb3.6**/9, **MS4.0**/4, **Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
JIO	Ouri	1.82	285	P	Pn	17 37 57.6	-0.7
JIO				eS	Sn	17 38 18.5	-2.3
OFUJ	Ofunato	1.85	307	P	Pn	17 37 57.0	-1.8
JMK	Ichinoseki	2.09	298	P	Pn	17 38 00.9	-1.1
JMK				eS	Sn	17 38 26.5	-0.9
JOM	Ohasama	2.32	310	P	Pn	17 38 03.8	-1.4
JFT	Otama	2.61	261	P	Pn	17 38 10.9	+1.6
JYK	Kaneyama	2.69	291	P	Pn	17 38 10.4	+0.1
JANG	Nango	2.87	327	P	Pn	17 38 11.7	-1.1
MJAR	Matsushiro Arr	4.52	253	Pn	Pn	17 38 33.8	-1.7
	0.7nm,0.3s,baz=68,slow=11,SNR=8.4						
MJAR				LR	LR	17 40 32.8	
	comp=Z,33nm,20.2s,baz=110,slow=41						
MAT	Matsushiro	4.52	253	P	Pn	17 38 38.1	+2.6
MAT				S	Sn	17 39 26.6	-1.0
JHJ	Hachijo jima 2	5.76	214	Pn	Pn	17 38 52.4	-0.1
	30nm,0.3s,baz=300,slow=16,SNR=11						
JHJ				Sn	Sn	17 39 54.7	-3.4
	24nm,0.3s,baz=287,slow=20,SNR=3.6						
JHJ				LR	LR	17 41 47.4	
	comp=Z,31nm,18.1s,baz=310,slow=45						
USRK	Ussuriysk Ar.	10.72	309	Pn	Pn	17 40 01.8	+1.4
	0.2nm,0.3s,baz=108,slow=14,SNR=3.4						
KSRS	Korea Array	12.41	272	Pn	Pn	17 40 26.1	+2.5
	0.1nm,0.3s,baz=88,slow=15,SNR=2.8						
KSRS				LR	LR	17 44 38.3	
	comp=Z,26nm,19.8s,baz=32,slow=34						
KLR	Kul'dur	14.11	327	LR	LR	17 46 12.6	
	comp=Z,107nm,21.8s,baz=103,slow=37						
MA2	Magadan	22.09	10	P	P	17 42 20.1	-1.7
	0.8nm,0.2s,baz=248,slow=10,SNR=4.5						
SEY	Seymchan	25.54	9	P	P	17 42 54.9	-0.3
	0.4nm,0.3s,baz=190,slow=9.5,SNR=4.6						
YAK	Yakutsk	25.56	345	LR	LR	17 53 13.5	
	comp=Z,25nm,18.6s,baz=18,slow=37						
H11N2	WAKE ISLAND Hy	27.23	125	T	T	18 11 51.6	
	baz=318,slow=74,SNR=12						
H11N1	WAKE ISLAND Hy	27.23	125	T	T	18 11 36.3	
	baz=318,slow=74,SNR=6.9						
H11N3	WAKE ISLAND Hy	27.24	125	T	T	18 11 44.2	
	baz=318,slow=74,SNR=10.0						
SONM	Songino Array	28.71	302	P	P	17 43 24.6	+0.5
	0.6nm,0.5s,baz=96,slow=8.8,SNR=4.9						
ZALV	Zalesovo Beam	42.55	312	P	P	17 45 23.5	+1.2
	1.0nm,0.5s,baz=93,slow=8.1,SNR=7.3						
CMAR	Chiang Mai Arr	43.40	256	P	P	17 45 30.7	+1.1
	0.3nm,0.7s,baz=46,slow=7.7,SNR=3.1						
MKAR	Makanchi Array	45.08	302	P	P	17 45 43.1	+0.3
	0.5nm,0.6s,baz=84,slow=10,SNR=10						
ILAR	Eielson Array	47.76	33	P	P	17 46 03.5	0.0
	0.4nm,0.8s,baz=262,slow=6.9,SNR=3.8						
BATI	Baumata	51.44	205	LR	LR	18 06 10.5	
	comp=Z,139nm,20.8s,baz=206,slow=34						
LEM	Lembang	55.76	225	LR	LR	18 13 28.2	
	comp=Z,458nm,18.0s,baz=60,slow=39						
WRA	Warramunga Arr	58.28	190	P	P	17 47 21.5	0.0
	4.5nm,0.7s,baz=8.4,slow=7.0,SNR=36						
ASAR	Alice Springs	62.00	190	P	P	17 47 47.3	+0.3
	0.9nm,0.5s,baz=6.5,slow=7.3,SNR=42						
ASAR				LR	LR	18 16 10.6	
	comp=Z,128nm,20.6s,baz=345,slow=38						

MEX 05 17:39:29.2±0.8, **17.°48N**×**95.°88W**, **h133**^{km}±14^{km}, **MD3.7**, **Oaxaca**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
OXBJ	Oaxaca	0.90	243	eP	Pn	17 39 50.0	-1.7
VHO	Vista Hermosa	0.91	244	eP	Pn	17 39 50.9	-0.9
VHO				eS	Sn	17 40 07.2	-1.8
TPIG	Tehuac#an	1.69	304	eP	Pn	17 39 57.4	-2.5
TPIG				eS	Sn	17 40 23.7	+0.3
HUIG	Huatulco	1.71	187	eP	Pn	17 39 58.7	-1.3
HUIG				eS	Sn	17 40 20.8	-2.7
PNIG	Pinotepa	2.41	244	eP	Pn	17 40 07.3	-1.1
PNIG				i S	Sn	17 40 36.3	-2.1
TLIG	Tlapa	2.56	272	eP	Pn	17 40 09.5	-1.0
TLIG				eS	Sn	17 40 40.9	-1.4

*KRSC **05** 17:51:31.6±1.1, 56.°07N×164.°92E, h60^{km}±19^{km}, ML3.9*
*IDC **05** 17:51:35.4±1.3, 56.°31N×163.°79E, h0^{km}, mb3.4/6, mb1 3.6/7, mb1mx3.3/60, mbtmp3.3/7, ML2.4/1, Error ellipse: s-maj=50.1km s-min=16.9km az=157.0*
ISC 05 17:51:34.6±2.2, **56.°16N**±0.°06×**164.°20E**±0.°07, **h2**^{km}±13^{km}, **n40**, σ**1.ˢ33**/47, **mb3.4**/6, **Komandorsky Islands region**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
KBTR	Krutoberegovo	0.77	274	eP	Pn	17 51 52.0	-0.5
KBTR				eS	Sn	17 52 06.2	+1.5
BKI	Bering	1.39	133	eP	Pn	17 51 52.5	-8.4
BKI				eS	Sn	17 52 06.5	-13
SMKR	Semkarok	1.58	287	eP	Pg	17 52 05.0	+0.2
SMKR				eS	Sg	17 52 28.5	+3.2
BDR	Baidarnaya	1.71	285	eP	Pg	17 52 07.3	-0.2
BDR				eS	Sg	17 52 33.0	+3.3
SRKR	Sorokina	1.76	288	eP	Pg	17 52 08.0	-0.3
ZLN	Zelenaya	1.91	267	eP	Pg	17 52 10.5	-0.7
CIRR	Tsirk	1.93	270	eP	Pb	17 52 10.7	+0.1
LGNR	Loginova	1.97	269	eP	Pb	17 52 11.2	-0.1
KLY	Klyuchi	1.99	276	eP	Pn	17 52 09.4	+0.3
KLY				eS	Sg	17 52 36.9	-1.5
KRSR	Krestovskiy	2.03	273	eP	Pb	17 52 11.5	-0.8
BZMR	Bezymyannaya	2.09	265	eP	Pb	17 52 12.9	-0.4
KIRR	Kirishev	2.17	266	eP	Pb	17 52 14.2	-0.5
KIRR				eS	Sg	17 52 44.5	+0.1
KPT	Kopyto	2.24	267	eP	Pb	17 52 15.2	-0.6
KMNR	Kamenistaya	2.27	261	eP	Pb	17 52 15.5	-0.7
TUMD	Tumrok D	2.36	248	eS	Sg	17 52 49.2	-1.1
KOZ	Kozyrevsk	2.43	269	eP	Pb	17 52 18.3	-0.6
KOZ				eS	Sg	17 52 51.5	-1.0
TUMR	Tumrok	2.46	251	eP	Pb	17 52 17.9	-1.6
ESO	Esso	3.10	268	eP	Pn	17 52 26.4	+2.0
OSSR	Ossora	3.16	349	eP	Pn	17 52 23.9	-1.3
OSSR				eS	Sn	17 53 00.2	-3.2
SPN	Mys Shipunski	3.91	220	eP	Pn	17 52 35.1	-0.5
NLC	Nalytchevo	4.11	225	eP	Pn	17 52 37.8	-0.5
SDLR	Sedlovina	4.22	229	eP	Pn	17 52 40.4	+0.4
SDLR				eS	Sn	17 53 30.1	+0.2
SMAR	Somma	4.27	229	eP	Pn	17 52 41.3	+0.6
SMAR				eS	Sn	17 53 30.4	-0.7
AVH	Avacha	4.29	230	eP	Pn	17 52 41.5	+0.6
UGLR	Uglovaya	4.30	229	eP	Pn	17 52 41.6	+0.6
GNL	Ganaly	4.37	238	eP	Pn	17 52 43.5	+1.4
DALK	Dalny	4.46	228	eP	Pn	17 52 42.7	-0.4
DALK				eS	Sn	17 53 34.3	-1.1
PETK	Petropavlovsk-	4.86	234	Pn	Pn	17 52 49.7	+1.1
	0.7nm,0.3s,baz=81,slow=15,SNR=15						
PETK				Sn	Sn	17 53 43.9	-1.5
	0.2nm,0.3s,baz=95,slow=15,SNR=2.9						
RUS	Russkaya	5.00	224	eP	Pn	17 52 50.0	-0.6
ASAK	Asacha	5.29	227	eP	Pn	17 52 55.0	+0.4
KMSK	Kamenskaya	6.41	8	eP	Pn	17 53 08.3	-1.5
ILAR	Eielson Array	24.98	50	P	P	17 57 00.8	+1.7
	0.6nm,0.8s,baz=282,slow=9.5,SNR=3.0						
SONM	Songino Array	35.58	281	P	P	17 58 32.5	-0.7
	0.2nm,0.5s,baz=71,slow=9.3,SNR=3.1						
H11N2	WAKE ISLAND Hy	36.43	176	T	T	18 36 32.6	
	baz=358,slow=76,SNR=56						
H11N3	WAKE ISLAND Hy	36.44	176	T	T	18 36 33.6	
	baz=358,slow=76,SNR=50						
H11N1	WAKE ISLAND Hy	36.45	176	T	T	18 36 34.0	
	baz=358,slow=76,SNR=51						
YKA	Yellowknife Ar	39.30	46	P	P	17 59 06.6	+2.4
	0.2nm,0.7s,baz=302,slow=8.0,SNR=3.7						
KURBB	Kurchatov Arra	48.25	302	P	P	18 00 14.7	-1.7
	0.2nm,0.6s,baz=55,slow=8.0,SNR=3.8						
PDAR	Pinedale Array	54.00	65	P	P	18 01 01.4	+1.4
	0.3nm,0.3s,baz=304,slow=6.4,SNR=3.3						
CMAR	Chiang Mai Arr	61.11	260	P	P	18 01 49.7	-0.4
	0.6nm,0.7s,baz=21,slow=7.6,SNR=3.7						

*IDC **05** 17:53:42.7±0.5, 2.°97N×126.°96E, h0^{km}, mb4.3/22, mb1 4.4/22, mb1mx4.2/50, mbtmp4.3/22, MS4.1/17, Ms1 4.1/17, ms1mx3.8/41, Error ellipse: s-maj=26.3km s-min=11.4km az=78.0*
*BJI **05** 17:53:44.2, 2.°56N×127.°36E, h54^{km}, mb4.7/35, mB5.1/28, Ms4.5/24, Ms7 4.3/24*
*NEIC **05** 17:53:45.7±2.8, 3.°04N×127.°13E, h22^{km}±20^{km}, mb4.7/39, Error ellipse: s-maj=8.4km s-min=5.1km az=73.0*
*ISCJB **05** 17:53:46.7±0.2, 3.°07N±0.°03×127.°11E±0.°05, h44^{km}, mb4.5/66, MS4.2/25, Error ellipse: s-maj=6.8km s-min=3.8km az=166.2*
*GCMT **05** 17:53:50.1±0.2, 2.°87N×127.°11E, h19^{km}, MW5.0/67, Moment Tensor Solution. s46,c71; s67,c111; Duration: 0 Moment tensor: Scale 10^{16}Nm; M_{rr}3.18±.17; $M_{\theta\theta}$-0.76±.10; $M_{\phi\phi}$-2.42±.13; $M_{r\theta}$1.90±.25; $M_{\theta\phi}$-2.47±.09; $M_{\phi r}$0.12±.25; Best double couple: $M_0$4.23300×10^{16} NP1:ϕ_s59.00000°, δ59.00000°, λ119.00000°. NP2: ϕ_s191.00000°, δ42.00000°, λ51.00000°. Principal axes: T 4.0660, Plg63.0000°, Azm19.0000°; N 0.3330, Plg25.0000°, Azm223.0000°; P -4.3990, Plg10.0000°, Azm128.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
*DJA **05** 17:53:53.7±0.6, 3°N±5°×12°7E±°, h10^{km}, M4.5/18, mb4.6/18, mB5.2/10, MLv4.4/10, Mw(mB)4.5/10*
ISC 05 17:53:49.0±0.4, **3.°05N**±0.°05×**127.°09E**±0.°06, **h44**^{km}, **n141**, σ**1.ˢ45**/133, **mb4.6**/66, **MS4.2**/27, **1D**, **Talaud Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
SGSI	Sangihe	1.68	292	P	Pn	17 54 15.8	-0.2
TNTI	Ternate	2.28	173	P	Pn	17 54 25.0	+0.8
TNTI	Ternate	2.28	173	ePn	Pn	17 54 23.1	-1.1
LBMI	Labuha	3.69	174	P	Pn	17 54 44.5	+0.9
CTBH	Cotabato--PC H	5.02	326	⇓iP	Pn	17 55 02.5	+0.6
SANI	Sanana	5.18	192	P	Pn	17 55 04.7	+0.6
SWI	Sorong	5.70	133	P	Pn	17 55 13.2	+2.0
	56nm,1.6s,1µm0.2nm						
MRSI	Marisa	5.75	244	P	Pn	17 55 16.1	+4.3
	90nm,0.7s,4µm0.3nm						
LUWI	Luwuk	5.93	227	Pn	Pn	17 55 14.4	0.0
NLAI	Namlea	6.25	180	P	Pn	17 55 19.5	+0.8
	25nm,0.7s,0.1nm						
APSI	Ampana	6.71	234	P	Pn	17 55 31.1	+6.0
	145nm,1.3s,2µm0.5nm						
FAKI	Fak Fak	7.86	139	P	Pn	17 55 42.8	+2.0
	27nm,1.1s,0.1nm						
FAKI	Fak Fak	7.86	139	ePn	Pn	17 55 42.5	+1.6
MYLDM	Lahad Datu	8.82	284	ePn	Pn	17 55 57.8	+3.7
TTSI	Tana Toraja	9.46	230	P	Pn	17 56 07.0	+4.2
	31nm,2.2s,844nm						
SBUM	Sibu	14.87	268	eP	P	17 57 22.2	+0.8
PLAI	Plampang	15.02	218	P	P	17 57 23.7	+0.6
	113nm,0.9s,950nm						
TWSI	Taliwang, Sumb	15.52	221	P	P	17 57 31.0	+2.3
	71nm,1.2s,902nm						
STKI	Sintang	15.88	260	P	P	17 57 36.5	+3.7
KSM	Kuching	16.84	265	ePn	Pn	17 57 41.4	-0.4
	19nm,0.9s						
JAGI	Jajag, Banyuwa	17.25	228	ePn	P	17 57 50.5	+2.6
	61nm,1.3s						
YULB	Yu-li	20.98	345	eP	P	17 58 25.9	-2.9
	58nm,1.6s						
FITZ	Fitzroy Crossi	21.07	184	P	P	17 58 28.5	-1.2
	5.4nm,0.7s,baz=355,slow=10,SNR=5.7						
FITZ	Fitzroy Crossi	21.07	184	eP	P	17 58 29.1	-0.5
	48nm,1.6s						
TPUB	Ta-pu	21.08	343	eP	P	17 58 27.4	-2.4
	78nm,1.3s						
SSLB	Suanglung	21.45	344	eP	P	17 58 32.7	-1.1
	87nm,1.6s						
LEM	Lembang	21.77	243	P	P	17 58 48.4	+11
	372nm,1.7s						
YHNB	Yeheng	22.19	346	eP	P	17 58 41.3	-0.4
	118nm,1.6s						
DBJI	Dramaga	22.44	245	P	P	17 58 52.9	+8.5
	50nm,1.1s						
QIZ	Qiongzhong	23.17	315	P	P	17 58 51.6	-0.3
QIZ				pP	pP	17 59 04.4	+1.5
QIZ				S	S	18 03 02.9	+2.3
QIZ				pmax	pmax		
	comp=Z,30nm,2.4s						
QIZ				LR	LR		
	comp=N,310nm,25.8s						
QIZ				LR	LR		
	comp=E,480nm,32.8s						
QIZ				LR	LR		
	comp=Z,550nm,39.4s						
PMG	Port Moresby	23.52	122	LR	LR	18 08 59.6	
	comp=Z,807nm,20.5s,baz=298,slow=39						
JOW	Kunigami	23.67	3	LR	LR	18 08 19.1	
	comp=Z,584nm,21.6s,baz=173,slow=37						
WRAB	Tennant Creek	23.93	163	eP	P	17 58 57.0	-2.1
	28nm,1.1s						
WR1	Warramunga Arr	23.93	163	eP	P	17 58 57.4	-1.8
	23nm,0.9s						
WRA	Warramunga Arr	23.93	163	P	P	17 58 57.4	-1.8
	8.8nm,0.7s,baz=340,slow=10,SNR=39						
WB2	Warramunga Arr	23.94	163	eP	P	17 58 57.3	-1.9
	20nm,0.9s						
RGRI	Rengat	24.98	263	P	P	17 59 19.2	+10
MBWA	Marble Bar	25.12	196	eP	P	17 59 09.1	-0.9
	66nm,1.5s						
KULM	Kulim	26.46	276	eP	P	17 59 22.3	0.0
	38nm,1.9s						
AS31	Alice Springs	27.37	166	eP	P	17 59 29.0	-1.3
	2.2nm,0.8s						
ASAR	Alice Springs	27.37	166	P	P	17 59 29.1	-1.2
	2.5nm,0.7s,baz=335,slow=5.8,SNR=28						
ASAR				PcP	PcP	18 02 49.2	+0.4
	0.6nm,0.7s,baz=353,slow=2.0,SNR=4.2						
AS01	Alice Springs	27.38	166	eP	P	17 59 29.2	-1.2
PSI	Prapat	28.13	270	eP	P	17 59 37.0	-0.4
	7.1nm,1.1s						
SSE	Sheshan	28.45	349	eP	P	17 59 41.5	+1.7
SSE				S	S	18 04 24.5	+0.3
SSE				sS	sS	18 04 49.6	+5.7
SSE				pmax	pmax		
	comp=Z,10.0nm,0.9s						
SSE				pmax	pmax		
	comp=Z,180nm,4.8s						
SSE				LR	LR		
	comp=N,180nm,23.2s						
SSE				LR	LR		

comp=E,160nm,23.3s
SSE LR LR
comp=Z,460nm,20.2s
GSI Gunungsitoli 29.54 267 *eP* **P 17 59 49.5 -0.3**
23nm,1.5s
CTA Charters Tower 29.71 142 LR LR 18 14 19.0
comp=Z,329nm,18.7s,baz=46,slow=42
NJ2 Nanjing 29.87 346 *eP* **P 17 59 50.3 -2.1**
NJ2 pmax pmax
comp=Z,11nm,0.6s
WHN Wuhan 29.88 338 P **P 17 59 52.6 0.0**
WHN LR LR
comp=N,810nm,12.4s
WHN LR LR
comp=E,2μm,18.7s
WHN LR LR
comp=Z,3μm,24.6s
JNU Nakatsue 30.12 6 P **P 17 59 55.0 +0.2**
16nm,0.9s,baz=134,slow=3.3,SNR=10
JNU LR LR 18 11 38.2
comp=Z,271nm,21.2s,baz=180,slow=36
JNU Nakatsue 30.12 6 *eP* **P 17 59 54.7 -0.1**
19nm,0.9s
PATS Pohnpei 31.33 82 *eP* P 18 00 01.6 -3.9
183nm,1.5s
CM01 Chiang Mai Arr 31.50 301 *eP* **P 18 00 05.3 -1.7**
CM31 Chiang Mai Arr 31.53 301 *eP* **P 18 00 06.5 -0.8**
CMAR Chiang Mai Arr 31.53 301 P **P 18 00 06.8 -0.5**
1.1nm,0.8s,baz=117,slow=7.1,SNR=11
CMAR LR LR 18 14 28.1
comp=Z,328nm,20.3s,baz=120,slow=40
CHTO Chiang Mai 31.68 302 *eP* **P 18 00 06.5 -2.1**
3.6nm,0.8s
ENH Enshi 31.79 330 *eP* **P 18 00 08.7 -0.8**
40nm,1.9s
KMI Kunming 32.11 315 P **P 18 00 14.7 +2.1**
KMI pP sP 18 00 28.5 -1.2
KMI sP pP 18 00 34.8 +10
KMI PP **PP 18 01 22.5 -3.2**
KMI S **S 18 05 23.6 +1.3**
KMI sS sS 18 05 47.6 +5.5
KMI SS **SnSn 18 07 20.6 +5.2**
KMI pmax pmax
comp=Z,9.0nm,0.7s
KMI pmax pmax
comp=Z,130nm,4.4s
KMI LR LR
comp=N,360nm,19.6s
KMI LR LR
comp=E,300nm,19.6s
KMI LR LR
comp=Z,390nm,24.3s
JHJ Hachijo jima 2 32.19 20 LR LR 18 15 25.1
comp=Z,363nm,18.2s,baz=258,slow=40
KS15 Wonju Array Si 34.23 1 *eP* **P 18 00 28.7 -2.0**
KSAR Wonju Array Be 34.23 1 P **P 18 00 31.4 +0.7**
KSRS Korea Array 34.25 1 P **P 18 00 31.4 +0.6**
7.0nm,0.9s,baz=179,slow=10,SNR=27
MAJO Matsushiro 34.87 16 *eP* **P 18 00 33.9 -2.3**
20nm,1.7s
MJAR Matsushiro Arr 34.87 16 P **P 18 00 35.6 -0.6**
1.8nm,0.8s,baz=182,slow=8.7,SNR=7.4
XAN Xi'an 35.18 333 P **P 18 00 38.2 -0.8**
XAN S S 18 06 19.7 +10
XAN pmax pmax
comp=Z,5.0nm,0.9s
XAN pmax pmax
comp=Z,67nm,4.2s
XAN LR LR
comp=N,570nm,29.6s
XAN LR LR
comp=E,590nm,28.1s
XAN LR LR
comp=Z,510nm,28.1s
CD2 Chengdu 35.40 324 P **P 18 00 41.0 +0.1**
CD2 pP pP 18 00 54.8 +2.0
CD2 PP **PP 18 02 02.7 +0.8**
CD2 S **S 18 06 13.8 +1.0**
CD2 sS sS 18 06 37.8 +5.1
CD2 pmax pmax
comp=Z,10.0nm,0.5s
CD2 pmax pmax
comp=Z,170nm,4.3s
CD2 LR LR
comp=N,610nm,21.6s
CD2 LR LR
comp=Z,520nm,19.2s
BBOO Buckleboo 36.66 167 *eP* **P 18 00 50.0 -1.6**
22nm,1.4s
STKA Stephens Creek 37.37 159 P **P 18 00 57.0 -0.7**
9.3nm,0.7s,baz=326,slow=7.8,SNR=21
STKA Stephens Creek 37.37 159 *eP* **P 18 00 57.3 -0.3**
2.1nm,0.8s
BJT Baijiatuan 38.11 346 *eP* **P 18 01 02.9 -0.9**
36nm,1.2s
HHC Hu-ho-hao-te 40.15 342 *eP* **P 18 01 21.8 +0.8**
HHC pP sP 18 01 37.2 -1.0
HHC sP pP 18 01 44.3 +11
HHC PP **PnPn 18 02 59.6 +1.8**
HHC S **S 18 07 25.0 +0.3**
HHC pmax pmax
comp=Z,13nm,0.9s
HHC pmax pmax
comp=Z,69nm,7.4s
HHC LR LR
comp=N,320nm,17.8s
HHC LR LR
comp=E,280nm,17.8s
HHC LR LR
comp=Z,380nm,20.1s
CN2 Changchun 40.60 358 *eP* **P 18 01 23.2 -1.3**
CN2 pmax pmax
comp=Z,10.0nm,0.6s
USRK Ussuriysk Ar. 41.21 5 P **P 18 01 30.6 +1.2**
8.9nm,0.8s,baz=188,slow=6.5,SNR=15
USRK LR LR 18 17 51.6
comp=Z,198nm,21.4s,baz=169,slow=35
MDJ Mudanjiang 41.45 3 P **P 18 01 32.5 +1.0**
MDJ pP sP 18 01 46.8 -2.0
MDJ sP pP 18 01 52.0 +8.4
MDJ PP **PnPn 18 03 11.0 -1.8**
MDJ S **S 18 07 41.8 -1.9**
MDJ pmax pmax
comp=Z,16nm,0.8s
MDJ pmax pmax
comp=Z,96nm,4.6s
MDJ LR LR
comp=N,240nm,26.3s
MDJ LR LR
comp=E,290nm,23.0s
MDJ LR LR
comp=Z,330nm,23.0s
MDJ Mudanjiang 41.45 3 *eP* **P 18 01 32.4 +0.9**
15nm,0.9s
H11S3 WAKE ISLAND Hy 41.68 65 T T 18 45 56.7
baz=253,slow=75,SNR=37
H11S1 WAKE ISLAND Hy 41.69 65 T T 18 45 57.8
baz=253,slow=75,SNR=16
H11S2 WAKE ISLAND Hy 41.69 65 T T 18 45 56.7
baz=253,slow=75,SNR=28
LSA Lhasa 43.16 312 *eP* **P 18 01 46.2 +0.1**
8.2nm,1.3s
GTA Gaotai 43.86 329 *eP* **P 18 01 54.0 +2.7**
GTA pP sP 18 02 07.3 -1.3
GTA sP pP 18 02 13.6 +10
GTA S **S 18 08 23.7 +4.2**
GTA sS sS 18 08 51.2 +11
GTA SS **SS 18 11 35.5 -1.5**
GTA pmax pmax
comp=Z,2.0nm,0.6s
GTA pmax pmax
comp=Z,90nm,3.9s
GTA LR LR
comp=N,510nm,23.8s
GTA LR LR
comp=E,410nm,20.4s
GTA LR LR
comp=Z,530nm,21.4s
TAPN Taplejung 44.71 307 *eP* **P 18 01 56.5 -2.0**
13nm,1.0s
ODAN Odare 44.76 306 *eP* **P 18 01 57.3 -1.5**
10nm,0.8s
RAMN Ramite 45.43 306 *eP* **P 18 02 03.6 -0.6**
28nm,1.2s
KLR Kul'dur 46.18 4 P **P 18 02 10.0 +0.6**
6.6nm,0.9s,baz=206,slow=5.8,SNR=18

PKIN Phulchoki 46.67 306 *eP* **P 18 02 12.0 -1.9**
5.8nm,0.9s
KKN Kakani 46.85 306 *eP* **P 18 02 13.3 -2.0**
GKN Gorkha 47.45 306 *eP* **P 18 02 18.9 -1.0**
16nm,1.1s
ULN Ulaanbaatar 47.87 342 *eP* **P 18 02 22.7 -0.1**
10.0nm,1.2s
SONA0 Songino Array 48.05 341 *eP* **P 18 02 24.4 +0.2**
12nm,1.5s
SONM Songino Array 48.05 341 P **P 18 02 24.4 +0.2**
1.7nm,0.7s,baz=151,slow=9.1,SNR=13
SONM LR LR 18 24 56.6
comp=Z,352nm,21.7s,baz=153,slow=39
SONA1 Songino Array 48.06 341 *eP* **P 18 02 24.1 -0.1**
KOLN Koldanda 48.20 305 *eP* **P 18 02 24.9 -0.9**
10.0nm,0.5s
PYUN Piuthan 48.83 305 *eP* **P 18 02 30.0 -0.6**
53nm,1.1s
TLY Talaya 52.28 342 LR LR 18 27 56.4
comp=Z,255nm,20.6s,baz=144,slow=39
WMQ Urumqi 53.48 325 *eP* **P 18 03 06.2 +1.1**
WMQ pP sP 18 03 21.2 -1.4
WMQ sP pP 18 03 26.7 +9.2
WMQ S **S 18 10 33.2 -1.6**
WMQ pmax pmax
comp=Z,4.0nm,0.6s
WMQ pmax pmax
comp=Z,40nm,4.0s
WMQ LR LR
comp=N,370nm,20.2s
WMQ LR LR
comp=E,190nm,21.6s
WMQ LR LR
comp=Z,190nm,24.4s
PEA0 Petropavlovsk- 55.92 22 *eP* **P 18 03 23.3 +0.8**
PETK Petropavlovsk- 55.92 22 P **P 18 03 23.7 +1.2**
4.6nm,0.8s,baz=206,slow=6.4,SNR=7.9
PEA1 Petropavlovsk- 55.92 22 *eP* **P 18 03 23.7 +1.2**
MK01 Makanchi Array 58.30 325 *eP* **P 18 03 38.7 -0.7**
MK31 Makanchi Array 58.31 325 *eP* **P 18 03 38.7 -0.9**
MK32 Makanchi Array 58.31 325 *eP* **P 18 03 39.3 -0.3**
MKAR Makanchi Array 58.31 325 P **P 18 03 39.3 -0.3**
1.9nm,0.6s,baz=125,slow=8.2,SNR=23
MKAR Makanchi Array 58.31 325 *eP* **P 18 03 38.6 -1.0**
MAKZ Makanchi 58.50 325 *eP* **P 18 03 39.5 -1.4**
3.8nm,0.9s
YAK Yakutsk 58.87 1 *eP* **P 18 03 41.4 -1.7**
27nm,0.9s
TKM2 Tokmak 2 60.49 319 *eP* **P 18 03 54.2 -0.7**
13nm,1.9s
AAK Ala-Archa 61.10 318 P **P 18 03 59.3 +0.3**
0.4nm,0.6s,baz=180,slow=6.1,SNR=2.3
ZAA0 Zalesovo Array 61.35 333 *eP* **P 18 03 59.0 -1.3**
ZALV Zalesovo Beam 61.35 333 P **P 18 03 58.8 -1.5**
1.4nm,0.6s,baz=146,slow=6.5,SNR=9.6
ZALV LR LR 18 33 09.7
comp=Z,155nm,21.5s,baz=240,slow=39
ZAA1 Zalesovo Array 61.35 333 *eP* **P 18 03 58.8 -1.5**
KURBB Kurchatov Arra 62.50 327 P **P 18 04 08.0 0.0**
3.3nm,0.7s,baz=128,slow=6.3,SNR=52
KURK Kurchatov 62.50 328 *eP* **P 18 04 07.6 -0.5**
6.2nm,0.7s
KKAR Karatay Array 63.97 317 *eP* **P 18 04 16.4 -1.5**
VOSK Vostochnaya 67.63 327 *eP* **P 18 04 41.0 -0.3**
2.8nm,0.9s
BRVK Borovoye 68.15 327 *eP* **P 18 04 44.2 -0.4**
10nm,1.3s
TIXI Tiksi 68.51 1 *eP* **P 18 04 46.5 0.0**
6.3nm,1.1s
ZRNK Zerenda 68.81 327 *eP* **P 18 04 48.4 -0.3**
5.7nm,0.9s
NRIK Noril'sk 71.17 346 P **P 18 05 04.2 +1.3**
3.6nm,0.6s,baz=140,slow=8.9,SNR=3.9
NRIK LR LR 18 39 13.2
comp=Z,227nm,21.8s,baz=136,slow=38
ABKAR Akbulak array 72.90 321 *eP* **P 18 05 13.2 -0.4**
AKTO Aktyubinsk 74.41 322 P **P 18 05 22.7 +0.2**
2.0nm,0.7s,baz=108,slow=5.7,SNR=8.6
GAMB Gambell 74.87 24 *eP* **P 18 05 23.8 -1.0**
7.1nm,1.2s
ARU Arti 75.70 328 P **P 18 05 29.4 -0.3**
5.5nm,0.7s,baz=77,slow=2.8,SNR=13
ARU Arti 75.70 328 *eP* **P 18 05 28.8 -0.9**
7.6nm,0.8s
VNDA Vanda 82.71 173 P **P 18 06 07.9 +0.3**
1.3nm,0.7s,baz=318,slow=6.4,SNR=5.6
VNDA LR LR 18 41 00.1
comp=Z,54nm,22.0s,baz=328,slow=34
MLY Manley 83.94 25 *eP* **P 18 06 15.7 +1.4**
10nm,1.3s
COLD Coldfoot 84.37 23 *eP* **P 18 06 15.6 -0.7**
9.2nm,1.3s
PPT2 Papeete2 84.57 108 *e*SS SS 18 22 15.8 +1.1
132nm,33.2s
PPT2 Papeete2 84.57 108 *e*LR LR 18 32 58.3
514nm,30.0s
TBI Tubuai 85.19 114 *e*S **S 18 16 47.3 -1.3**
236nm,31.2s
TBI *e*SS **SS 18 22 27.1 +3.6**
117nm,34.8s
TBI Tubuai 85.19 114 *e*LR LR 18 33 12.8
324nm,38.2s
ILAR Eielson Array 85.56 25 P **P 18 06 24.3 +1.9**
0.4nm,0.7s,baz=234,slow=3.9,SNR=4.0
ILB Eielson Array 85.56 25 *eP* **P 18 06 22.6 +0.2**
BRTR Keskin Array B 90.73 310 LR LR 18 53 53.6
comp=Z,49nm,22.0s,baz=64,slow=40
ARCES ARCESS Array B 91.20 340 P **P 18 06 48.9 -0.3**
1.9nm,0.8s,baz=83,slow=7.4,SNR=3.1
ARCES LR LR 18 53 40.7
comp=Z,100nm,20.3s,baz=86,slow=39
FINES FINESS Array B 92.60 332 LR LR 18 51 07.9
comp=Z,170nm,21.1s,baz=70,slow=37
AKASG Malin Array Be 92.64 321 LR LR 18 53 12.8
comp=Z,51nm,19.7s,baz=40,slow=38
TAOE Nuku Hiva Isla 93.19 99 *e*LR LR 18 36 57.7
269nm,30.8s
NOA NORSAR Array B 99.55 334 LR LR 18 58 22.8
comp=Z,108nm,19.7s,baz=65,slow=39
VYHS Vyhne 99.71 320 *e*PDIF **Pdif 18 07 27.2 -1.2**
CLL Collm 102.40 324 *e*PP PP 18 11 51.0 -1.9
CLL *e* 18 12 08.0
TORD Torodi Ar. Bea 123.47 288 PKP **PKPdf 18 12 43.4 +0.8**
1.1nm,0.8s,baz=66,slow=1.4,SNR=7.4
TOA1 Torodi Ar. Sit 123.47 288 *e*PKPdf **PKPdf 18 12 43.4 +0.8**

JMA 05 18:12:55.5±0.4, 37.83N×142.63E, h11km±5km, M3.9, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**1.19**	**302**	P	Pb	18 13 17.5	-0.5
JIO				*e*S	Sb	18 13 33.2	-0.2
OFUJ	**Ofunato**	**1.46**	**329**	P	Pn	18 13 22.0	+0.2
OFUJ				S	Sn	18 13 39.3	-1.6
JMK	**Ichinoseki**	**1.58**	**316**	P	Pb	18 13 24.2	-0.4
MIK1	**Miyakonagasawa**	**1.86**	**340**	P	Pn	18 13 27.1	-0.1
JOM	**Ohasama**	**1.95**	**328**	P	Pn	18 13 29.6	+1.1
JYK	**Kaneyama**	**2.09**	**302**	P	Pn	18 13 31.3	+0.8
JYK				*e*S	Sb	18 13 58.9	-0.5
JRG	**Rokugo**	**2.21**	**316**	P	Pb	18 13 33.9	-1.6
JKZ	**Kuzumaki**	**2.38**	**335**	P	Pn	18 13 35.9	+1.4
JKZ				*e*S	Sn	18 14 05.5	+1.8
JANG	**Nango**	**2.68**	**341**	P	Pb	18 13 41.2	-2.4
JANG				*e*S	Sn	18 14 13.0	+1.9

*ISCJB **05** 18:13:04.9±0.8, 37.08N×141.2E±0.1, h62km±4km, mb3.7/8, Error ellipse: s-maj=14.3km s-min=6.1km az=1.8*
*IDC **05** 18:13:06.0±5.3, 37.14N×141.26E, h59km±38km, mb3.5/8, mb1 3.6/12, mb1mx3.4/44, mbtmp3.8/12, ML3.2/4, MS3.6/4, Ms1 3.7/4, ms1mx3.1/40, Error ellipse: s-maj=67.0km s-min=15.8km az=70.0*
*JMA **05** 18:13:06.6±0.1, 37.09N×141.07E, h55km±1km, M3.9*
JMA Felt II J1.

ISC 05 18:13:05.7±1.1, 37.10N±0.04×141.19E±0.09, h53km±8km, n32, σ1°03/32, mb3.8/8, MS3.6/3, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.32**	**271**	P	**Pn**	**18 13 15.6**	**+0.3**
ONAJ				S	**Sn**	**18 13 22.0**	**-0.2**
JFK	**Kawauchi**	**0.37**	**317**	P	**Pn**	**18 13 16.3**	**+0.5**
JFK				S	**Sn**	**18 13 23.0**	**-0.1**
JHO	**Hitachi**	**0.70**	**226**	P	**Pn**	**18 13 19.4**	**-0.1**
JHO				S	**Sn**	**18 13 28.4**	**-1.2**
JFT	**Otama**	**0.80**	**302**	P	**Pn**	**18 13 21.6**	**+0.7**
JFT				S	**Sn**	**18 13 31.9**	**-0.1**
JMM	**Marumori**	**0.83**	**338**	P	**Pn**	**18 13 21.5**	**+0.2**
JMM	**Marumori**	**0.83**	**338**	P	**Pn**	**18 13 21.5**	**+0.2**
JMM				S	**Sn**	**18 13 32.8**	**+0.1**
JFY	**Yanaizu**	**1.23**	**285**	P	**Pn**	**18 13 26.5**	**-0.1**
JFY				*e*S	**Sn**	**18 13 39.4**	**-2.7**
JOU	**Okura**	**1.33**	**342**	S	**Sn**	**18 13 45.9**	**+1.2**
JYS	**Shirataka**	**1.44**	**322**	P	**Pn**	**18 13 30.1**	**+0.7**
JAG	**Ashikaga**	**1.55**	**245**	P	**Pn**	**18 13 30.8**	**-0.1**
JKT	**Katashina**	**1.59**	**259**	P	**Pn**	**18 13 32.0**	**+0.4**
MJAR	**Matsushiro Arr**	**2.46**	**258**	P	**Pn**	**18 13 44.1**	**+0.8**
	10nm,0.3s,baz=84,slow=15,SNR=72						
MAT	**Matsushiro**	**2.46**	**258**	P	**Pn**	**18 13 44.3**	**+0.9**
MAT				S	**Sn**	**18 14 15.6**	**+3.4**
JHJ	**Hachijo jima 2**	**4.13**	**197**	P	**Pn**	**18 14 07.5**	**+1.2**
	16nm,0.3s,baz=340,slow=22,SNR=17						
JHJ				S	**Sn**	**18 14 53.5**	**+0.1**
	32nm,0.3s,baz=122,slow=23,SNR=8.4						
USRK	**Ussuriysk Ar.**	**9.96**	**318**	P	**Pn**	**18 15 26.2**	**+0.2**
	0.2nm,0.3s,baz=116,slow=15,SNR=2.9						
KSRS	**Korea Array**	**10.58**	**276**	P	**Pn**	**18 15 35.6**	**+1.0**
	0.2nm,0.3s,baz=89,slow=14,SNR=3.5						
KSRS				LR	LR	18 19 26.3	
	comp=Z,257nm,20.8s,baz=180,slow=36						
MA2	**Magadan**	**23.33**	**12**	LR	LR	18 28 02.4	
	comp=Z,100nm,19.7s,baz=223,slow=38						
SONM	**Songino Array**	**27.61**	**304**	P	**P**	**18 18 48.6**	**+0.5**
	0.8nm,0.7s,baz=110,slow=7.1,SNR=5.3						
H11N2	**WAKE ISLAND Hy**	**28.33**	**121**	T	T	18 48 57.8	
	baz=314,slow=75,SNR=50						
H11N1	**WAKE ISLAND Hy**	**28.34**	**121**	T	T	18 49 04.8	
	baz=314,slow=75,SNR=46						
H11N3	**WAKE ISLAND Hy**	**28.35**	**121**	T	T	18 48 54.8	
	baz=314,slow=75,SNR=30						
H11S1	**WAKE ISLAND Hy**	**29.04**	**123**	T	T	18 49 55.7	
	baz=315,slow=76,SNR=50						
H11S3	**WAKE ISLAND Hy**	**29.04**	**123**	T	T	18 49 52.4	
	baz=315,slow=76,SNR=44						
H11S2	**WAKE ISLAND Hy**	**29.06**	**123**	T	T	18 49 56.9	
	baz=315,slow=76,SNR=31						
ZALV	**Zalesovo Beam**	**41.74**	**312**	P	**P**	**18 20 48.4**	**-1.0**
	1.2nm,0.5s,baz=95,slow=6.6,SNR=8.2						
MKAR	**Makanchi Array**	**43.94**	**302**	P	**P**	**18 21 07.2**	**-0.1**
	0.4nm,0.5s,baz=83,slow=11,SNR=8.7						
KURBB	**Kurchatov Arra**	**45.83**	**308**	P	**P**	**18 21 21.7**	**-0.5**
	1.0nm,0.6s,baz=84,slow=7.9,SNR=12						
ILAR	**Eielson Array**	**49.53**	**32**	LR	LR	18 43 19.0	
	comp=Z,154nm,20.1s,baz=264,slow=37						
WRA	**Warramunga Arr**	**57.10**	**188**	P	**P**	**18 22 46.6**	**-0.1**
	0.7nm,0.6s,baz=5.4,slow=7.3,SNR=10						
WRA				LR	LR	18 46 52.9	
	comp=Z,59nm,21.9s,baz=85,slow=36						
ASAR	**Alice Springs**	**60.83**	**188**	P	**P**	**18 23 12.3**	**-0.2**
	0.4nm,0.8s,baz=1.7,slow=6.6,SNR=11						
FINES	**FINESS Array B**	**68.68**	**332**	P	**P**	**18 24 02.9**	**-0.2**
	1.2nm,0.7s,baz=43,slow=8.4,SNR=3.0						
AKASG	**Malin Array Be**	**74.14**	**322**	P	**P**	**18 24 35.6**	**-0.7**
	0.3nm,0.3s,baz=48,slow=6.2,SNR=5.9						

*NEIC **05** 18:27:01.1±0.7, 3.43N×127.92E, h10km, mb4.3/5, Error ellipse: s-maj=36.9km s-min=8.6km az=71.0*
*ISCJB **05** 18:27:02.8±0.9, 3.4N±0.1×127.8E±0.3, h35km, mb4.0/8, Error ellipse: s-maj=48.0km s-min=10.8km az=161.5*
*IDC **05** 18:27:02.4±1.7, 2.53N×125.99E, h0km, mb3.8/4, mb1 3.9/4, mb1mx3.5/32, mbtmp3.8/4, Error ellipse: s-maj=161.6km s-min=21.6km az=64.0*

ISC 05 18:27:05.2±1.4, 3.4N±0.2×127.7E±0.4, h35km, n15, σ0°68/15, mb4.0/8, Talaud Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TNTI	**Ternate**	**2.59**	**188**	*e*Pn	**Pn**	**18 27 44.8**	**+0.1**
WRAB	**Tennant Creek**	**24.04**	**165**	*e*P	**P**	**18 32 15.4**	**-1.8**
	10nm,0.6s						
WR1	**Warramunga Arr**	**24.04**	**165**	*e*P	**P**	**18 32 16.9**	**-0.4**
	15nm,1.4s						
WRA	**Warramunga Arr**	**24.04**	**165**	P	**P**	**18 32 16.9**	**-0.4**
	1.1nm,0.4s,baz=338,slow=10,SNR=23						
WRA	**Warramunga Arr**	**24.04**	**165**	P	**P**	**18 32 16.9**	**-0.4**
AS31	**Alice Springs**	**27.52**	**168**	*e*P	**P**	**18 32 48.4**	**-0.4**
	5.2nm,1.9s						
ASAR	**Alice Springs**	**27.52**	**168**	P	**P**	**18 32 48.3**	**-0.5**
	0.4nm,0.6s,baz=347,slow=7.6,SNR=9.5						
ASAR	**Alice Springs**	**27.52**	**168**	P	**P**	**18 32 48.3**	**-0.5**
STKA	**Stephens Creek**	**37.44**	**160**	P	**P**	**18 34 15.7**	**+0.5**
	2.1nm,0.7s,baz=328,slow=9.0,SNR=7.2						
STKA	**Stephens Creek**	**37.44**	**160**	*e*P	**P**	**18 34 16.1**	**+0.8**
	4.1nm,1.8s						
MK01	**Makanchi Array**	**58.41**	**325**	*e*P	**P**	**18 36 57.2**	**-0.2**
MK31	**Makanchi Array**	**58.43**	**325**	*e*P	**P**	**18 36 57.5**	**-0.1**
MKAR	**Makanchi Array**	**58.43**	**325**	P	**P**	**18 36 57.8**	**+0.2**
	0.6nm,0.5s,baz=123,slow=8.0,SNR=18						
MKAR	**Makanchi Array**	**58.43**	**325**	*e*P	**P**	**18 36 57.2**	**-0.4**
KURK	**Kurchatov**	**62.59**	**327**	*e*P	**P**	**18 37 26.1**	**+0.3**
	7.0nm,1.3s						

IDC 05 18:43:04.6±4.0, 3.15S×130.92E, h0km, mb3.6/2, mb1 3.8/3, mb1mx3.4/33, mbtmp3.6/3, ML3.6/1, Error ellipse: s-maj=294.1km s-min=27.8km az=72.0, Seram

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**17.02**	**169**	P	Pn	18 47 04.1	-0.1
	0.2nm,0.3s,baz=349,slow=11,SNR=10.0						
ASAR	**Alice Springs**	**20.60**	**172**	P	P	18 47 45.5	0.0
	3.1nm,0.8s,baz=353,slow=11,SNR=35						
MKAR	**Makanchi Array**	**65.56**	**326**	P	P	18 53 50.2	0.0
	0.3nm,0.6s,baz=107,slow=8.1,SNR=3.1						

*IDC **05** 18:57:44.8±0.7, 20.04S×173.44W, h0km, mb4.4/14, mb1 4.6/15, mb1mx4.4/39, mbtmp4.4/15, ML4.0/1, MS3.7/5, Ms1 3.7/5, ms1mx3.2/33, Error ellipse: s-maj=28.3km s-min=15.9km az=161.0*
*ISCJB **05** 18:57:47.9±0.2, 19.81S±0.06×173.64W±0.05, h25km, mb4.9/58, MS3.8/5, Error ellipse: s-maj=9.1km s-min=5.4km az=145.4*
*NEIC **05** 18:57:50.8±0.2, 19.79S×173.60W, h35km, mb5.1/32, Error ellipse: s-maj=9.3km s-min=5.5km az=139.0*
*BJI **05** 18:57:53.6, 19.67S×173.93W, h49km, mb4.8/17, mB5.3/11, Ms5.1/5, Ms7 4.9/5*
*MOS **05** 18:57:56.8±2.3, 18.74S×174.79W, h33km, mb5.1/10, Error ellipse: s-maj=15.9km s-min=12.3km az=19.8*

ISC 05 18:57:49.4±0.3, 19.83S±0.09×173.55W±0.07, h25km, n221, σ1°34/221, mb4.9/58, MS3.9/5, 19C-19D, Tonga Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AFI	**Afiamalu**	**6.13**	**16**	Pn	Pn	18 59 12.1	-6.3
	19nm,0.3s,baz=227,slow=2.2,SNR=26						
AFI				Sn	Sn	19 00 17.3	-11
	20nm,0.3s,baz=270,slow=20,SNR=2.2						
MSVF	**Nonsavu**	**8.22**	**283**	*e*P	Pn	18 59 38.9	-8.4
MSVF	**Nonsavu**	**8.22**	**283**	*e*Pn	Pn	18 59 38.9	-8.3
RAR	**Rarotonga**	**12.98**	**98**	Pn	Pn	19 00 42.4	-10
	6.7nm,0.3s,baz=256,slow=7.6,SNR=11						
RAR	**Rarotonga**	**12.98**	**98**	*e*Pn	Pn	19 00 42.6	-10
DZM	**Mont Dzumac**	**18.82**	**260**	P	**Pn**	**19 02 08.5**	**+0.4**
	0.5nm,0.3s,baz=76,slow=12,SNR=4.7						
DZM				LR	LR	19 08 33.0	
	comp=Z,216nm,19.5s,baz=62,slow=34						
URZ	**Urewera**	**20.07**	**202**	P	**P**	**19 02 21.3**	**+0.4**
	3.2nm,0.3s,baz=326,slow=2.7,SNR=13						
HIZ	**Hauiti**	**21.16**	**206**	*e*P	**P**	**19 02 34.9**	**+2.2**
	647nm,2.0s						
TBI	**Tubuai**	**22.66**	**103**	*e*P	**P**	**19 02 45.4**	**-3.6**
	148nm,1.2s						
TBI				*e*LR	LR	19 08 06.3	
	85nm,26.0s						
PAE	**Paea**	**22.80**	**89**	*e*P	**P**	**19 02 46.9**	**-3.5**
	18nm,1.5s						
PPT2	**Papeete2**	**22.81**	**88**	*e*P	**P**	**19 02 47.3**	**-3.4**
	58nm,1.3s						
PPT2				*e*LR	LR	19 08 05.3	
	159nm,26.2s						
PPT	**Papeete**	**22.82**	**88**	LR	LR	19 09 46.5	
	comp=Z,94nm,19.5s,baz=188,slow=32						

TIAR Tiarei 23.04 88 eP P 19 02 49.4 -3.5
13nm,0.9s
THZ Tophouse 24.70 205 eP P 19 03 07.6 -1.0
249nm,2.0s
KHZ Kahutara 25.02 203 eP P 19 03 13.2 +1.8
74nm,1.3s
ARMA Armidale 33.12 245 eP P 19 04 24.2 +0.5
69nm,1.8s
TAOE Nuku Hiva Isla 34.08 76 eLR LR 19 13 27.1
83nm,23.2s
PMG Port Moresby 39.31 280 P P 19 05 16.1 -0.7
11nm,0.9s,baz=124,slow=13,SNR=3.4
COEN Coen 41.73 271 eP P 19 05 36.3 -0.5
41nm,1.3s
STKA Stephens Creek 41.84 244 P P 19 05 36.3 -1.2
2.9nm,0.7s,baz=89,slow=13,SNR=6.4
STKA LR LR 19 20 53.4
comp=Z,123nm,18.9s,baz=29,slow=33
STKA Stephens Creek 41.84 244 eP P 19 05 36.8 -0.7
STKA pmax pmax
comp=Z,3.0nm,1.4s
STKA Stephens Creek 41.84 244 eP P 19 05 36.8 -0.7
comp=Z,2.9nm,1.4s
BBOO Buckleboo 46.58 243 eP P 19 06 14.3 -1.2
comp=Z,58nm,2.0s
JAY Jayapura 47.85 285 P P 19 06 25.5 -0.1
comp=Z,0.7nm,0.6s,baz=108,slow=19,SNR=5.3
AS01 Alice Springs 48.69 256 eP P 19 06 30.2 -1.8
AS31 Alice Springs 48.73 256 eP P 19 06 31.4 -0.9
comp=Z,1.6nm,0.6s
AS31 eS S 19 13 30.0 -3.9
ASAR Alice Springs 48.74 256 P P 19 06 31.9 -0.4
comp=Z,3.4nm,0.5s,baz=94,slow=7.7,SNR=71
ASAR PcP PcP 19 07 58.2 +1.0
comp=Z,1.9nm,0.7s,baz=109,slow=4.1,SNR=5.1
ASAR S S 19 13 30.0 -3.9
comp=Z,0.5nm,0.7s,baz=93,slow=16,SNR=4.5
ASAR LR LR 19 26 36.7
comp=Z,107nm,19.2s,baz=108,slow=36
WB2 Warramunga Arr 48.82 260 eP P 19 06 31.7 -1.4
comp=Z,16nm,1.1s
WRAB Tennant Creek 48.82 261 ceP P 19 06 31.4 -1.7
WRAB pmax pmax
comp=Z,52nm,1.4s
WRAB Tennant Creek 48.82 261 eP P 19 06 31.3 -1.7
comp=Z,10nm,0.7s
WR1 Warramunga Arr 48.83 260 eP P 19 06 32.0 -1.1
comp=Z,15nm,1.0s
WRA Warramunga Arr 48.83 260 P P 19 06 32.0 -1.1
comp=Z,3.0nm,0.5s,baz=97,slow=7.2,SNR=41
MTN Manton Dam 53.35 269 eP P 19 07 06.9 -0.1
comp=Z,85nm,1.8s
SAUI Saumlaki 54.59 274 eP P 19 07 16.1 -0.1
comp=Z,107nm,1.0s
SBA Scott Base 58.85 185 eP P 19 07 47.9 +2.5
SBA pmax pmax
comp=Z,8.0nm,0.8s
SBA Scott Base 58.85 185 eP P 19 07 47.9 +2.5
comp=Z,8.2nm,0.8s
VNDA Vanda 58.98 186 eP P 19 07 48.1 +1.8
VNDA pmax pmax
comp=Z,4.0nm,1.0s
VNDA Vanda 58.98 186 eP P 19 07 48.1 +1.8
comp=Z,4.1nm,1.0s
SOEI Soe 60.67 270 eP P 19 08 00.1 +1.0
comp=Z,46nm,0.8s
TNTI Ternate 61.37 282 eP P 19 08 02.8 -0.9
comp=Z,142nm,1.8s
QSPA South Pole Qui 70.24 180 eP P 19 09 00.8 +0.6
MJAR Matsushiro Arr 72.24 321 P P 19 09 12.3 -0.2
comp=Z,2.2nm,0.7s,baz=159,slow=6.7,SNR=5.1
MAJO Matsushiro 72.24 321 iP P 19 09 13.6 +1.0
MAJO pmax pmax
comp=Z,59nm,1.4s
RPV Rancho Palos V 74.82 45 eP P 19 09 27.8 0.0
EDW2 Edwards Air Fo 75.77 44 P P 19 09 33.8 +0.5
baz=233
CWC Cottonwood Cre 76.65 43 P P 19 09 39.1 +0.7
baz=233
PEA0 Petropavlovsk- 76.79 343 eP P 19 09 39.2 +0.7
PETK Petropavlovsk- 76.79 343 P P 19 09 39.2 +0.6
comp=Z,7.2nm,0.9s,baz=95,slow=9.1,SNR=5.8
PEA1 Petropavlovsk- 76.79 343 eP P 19 09 39.2 +0.6
MPMC Manual Prospec 76.80 44 P P 19 09 39.8 +0.5
baz=233
NV01 Mina Array Sit 77.72 41 eP P 19 09 43.6 -0.8
NVAR Mina Array Bea 77.72 41 P P 19 09 44.5 0.0
comp=Z,2.8nm,0.8s,baz=227,slow=9.3,SNR=15
TPNV Topopah Spring 78.14 44 P P 19 09 46.6 -0.1
baz=234
KSRS Korea Array 79.22 316 P P 19 09 53.8 +1.4
comp=Z,1.5nm,0.8s,baz=134,slow=5.9,SNR=6.2
KSAR Wonju Array Be 79.24 316 P P 19 09 53.8 +1.3
KSAR Wonju Array Be 79.24 316 P P 19 09 53.8 +1.3
NJ2 Nanjing 82.73 308 eP P 19 10 11.2 0.0
NJ2 pmax pmax
comp=Z,11nm,0.6s
TMUT Trail Mountain 82.74 44 eP P 19 10 12.1 +0.5
comp=Z,10.0nm,1.2s
MNTX Cornudas Mount 82.99 53 P P 19 10 13.4 +0.8
baz=242
MNTX Cornudas Mount 82.99 53 eP P 19 10 12.3 -0.4
comp=Z,4.5nm,1.0s
SRU San Rafael Swe 83.09 44 eP P 19 10 12.3 -0.9
SRU pmax pmax
comp=Z,9.0nm,1.2s
SRU San Rafael Swe 83.09 44 eP P 19 10 12.3 -0.9
comp=Z,9.0nm,1.2s
HLID Hailey 83.14 39 P P 19 10 14.1 +0.7
baz=234
HLID Hailey 83.14 39 eP P 19 10 14.1 +0.7
comp=Z,4.8nm,0.9s
LTX Lajitas 83.20 56 eP P 19 10 14.4 +0.5
LTX Lajitas 83.20 56 eP P 19 10 14.4 +0.5
TX31 Lajitas Ar. Si 83.20 56 eP P 19 10 13.4 -0.5
TXAR Lajitas Array 83.20 56 P P 19 10 14.4 +0.5
comp=Z,2.3nm,1.0s,baz=214,slow=6.0,SNR=13
TXAR LR LR 19 40 49.0
comp=Z,44nm,18.9s,baz=0.0,slow=31
PV05 Paradox Valley 83.49 46 eP P 19 10 16.2 +0.8
PV09 Paradox Valley 83.69 45 eP P 19 10 17.2 +0.7
ANMO Albuquerque 83.76 50 P P 19 10 17.2 +0.5
baz=241
ANMO Albuquerque 83.76 50 eP P 19 10 17.3 +0.5
ANMO pmax pmax
comp=Z,9.0nm,1.3s
ANMO Albuquerque 83.76 50 eP P 19 10 17.3 +0.5
comp=Z,9.3nm,1.3s
PV01 Paradox Valley 83.88 46 eP P 19 10 16.4 -1.0
MA2 Magadan 84.32 343⇑eP P 19 10 18.7 -0.1
MCMT McKenzie Canyo 84.78 39 eP P 19 10 21.8 0.0
S22A 4UR Ranch, Cre 84.87 47 P P 19 10 23.5 +0.9
baz=240
S22A 4UR Ranch, Cre 84.87 47 eP P 19 10 23.0 +0.4
comp=Z,19nm,1.3s
S22A ePP PP 19 13 42.2 +2.7
RND Reindeer 85.19 11 eP P 19 10 23.6 +0.4
RND pmax pmax
comp=Z,13nm,1.0s
RND Reindeer 85.19 11 eP P 19 10 23.6 +0.4
comp=Z,13nm,1.0s
MCK McKinley 85.48 11 eP P 19 10 24.5 -0.1
MCK pmax pmax
comp=Z,11nm,1.0s
MCK McKinley 85.48 11 eP P 19 10 24.5 -0.1
comp=Z,11nm,1.0s
BW06 Boulder Array 85.65 42 eP P 19 10 25.5 -0.7
PD31 Pinedale Array 85.65 42 eP P 19 10 24.2 -2.0
PDAR Pinedale Array 85.65 42 P P 19 10 24.4 -1.8
comp=Z,1.7nm,1.0s,baz=224,slow=4.1,SNR=6.9
MSTX Muleshoe 85.98 52 P P 19 10 28.4 +0.4
baz=243
MSTX Muleshoe 85.98 52 eP P 19 10 27.6 -0.3
comp=Z,18nm,1.2s
WRH Wood River Hil 86.31 11 eP P 19 10 28.2 -0.4
comp=Z,9.4nm,0.9s
DOT Dot Lake 86.33 13 eP P 19 10 29.2 +0.3
comp=Z,22nm,1.2s
CCB Clear Creek Bu 86.52 11 eP P 19 10 29.5 -0.1
comp=Z,5.2nm,0.8s
PLCA Paso Flores 86.66 132 P P 19 10 29.2 -2.1
comp=Z,2.3nm,0.9s,baz=289,slow=9.8,SNR=4.5
PLCA Paso Flores 86.66 132 eP P 19 10 29.7 -1.6
PLCA pmax pmax
comp=Z,39nm,1.9s
PLCA Paso Flores 86.66 132 eP P 19 10 29.7 -1.6
comp=Z,39nm,1.9s

COLA College 86.72 11⇑iP P 19 10 31.0 +0.4
COLA pmax pmax
comp=Z,8.0nm,0.9s
MDM Murphy Dome 86.73 11 eP P 19 10 29.6 -1.1
comp=Z,7.3nm,1.1s
SEY Seymchan 86.74 345 ceP P 19 10 31.0 +0.2
ILAR Eielson Array 86.80 11 P P 19 10 30.5 -0.5
comp=Z,1.4nm,0.6s,baz=220,slow=5.6,SNR=16
ILB Eielson Array 86.80 11 eP P 19 10 30.5 -0.5
533A Kerrville 87.15 57 P P 19 10 34.1 +0.5
baz=245
433A Art 87.39 56 P P 19 10 34.8 0.0
baz=245
534A Blanco 87.57 57 P P 19 10 35.6 -0.1
baz=246
EGAK Eagle 87.94 13 eP P 19 10 36.3 -0.2
comp=Z,36nm,2.0s
SYO Syowa Base 88.25 191⇓epP pP 19 10 47.0 +0.7
VNA3 Neumayer Olymp 88.48 175 P P 19 10 39.8 +0.5
SNAA Sanae 88.51 177 P P 19 10 40.1 +0.6
SNAA Sanae 88.51 177 iP P 19 10 38.8 -0.7
SNAA Sanae 88.51 177 eP P 19 10 39.1 -0.4
comp=Z,570nm,1.1s
BILL Bilibino 88.86 353 ceP P 19 10 40.9 +0.1
BILL pmax pmax
comp=Z,4.0nm,1.3s
VNA2 Neumayer--Watz 88.97 175 P P 19 10 42.2 +0.6
baz=190,slow=3.3
ENH Enshi 89.16 303 eP P 19 10 44.3 +1.1
comp=Z,22nm,1.5s
VNA1 Neumayer--Stat 89.17 175 P P 19 10 43.5 +1.1
XAN Xi'an 91.09 306 P P 19 10 54.4 +2.3
XAN pmax pmax
comp=Z,4.0nm,1.0s
XAN pmax pmax
comp=Z,74nm,6.6s
HHC Hu-ho-hao-te 91.92 313 eP P 19 10 57.2 +1.3
HHC pP sP 19 11 11.1 +4.1
HHC sP pP 19 11 16.0 +12
HHC S S 19 21 52.6 -3.5
HHC pmax pmax
comp=Z,12nm,0.8s
HHC pmax pmax
comp=Z,100nm,8.5s
HHC LR LR
comp=Z,110nm,16.7s
HHC LR LR
comp=Z,110nm,16.5s
HHC LR LR
comp=Z,61nm,15.9s
KMI Kunming 92.80 296 P P 19 11 01.4 +0.9
KMI pmax pmax
comp=Z,15nm,0.7s
KMI pmax pmax
comp=Z,140nm,4.6s
CD2 Chengdu 93.98 301 P P 19 11 04.8 -0.8
CD2 pmax pmax
comp=Z,1.0nm,0.5s
YKA Yellowknife Ar 94.20 24 P P 19 11 05.6 0.0
comp=Z,0.6nm,0.7s,baz=238,slow=4.4,SNR=13
YKB5 Yellowknife Ar 94.20 24 eP P 19 11 04.1 -1.6
R38A Fenwick Farm, 94.26 51 P P 19 11 06.7 +0.1
baz=248
ECSD EROS Data Cent 94.48 45 P P 19 11 07.1 -0.4
baz=247
S39A Bolivar 94.50 52 P P 19 11 07.6 -0.1
baz=248
A29A Manning Farm, 94.91 40 P P 19 11 09.1 -0.2
baz=246
R39A Chumby, Stover 94.94 51 P P 19 11 09.3 -0.4
baz=249
C31A Landman Farms, 95.36 41 P P 19 11 11.3 -0.1
baz=246
A33A Warroad 97.25 41 P P 19 11 19.5 -0.5
baz=248
MK32 Makanchi Array 113.78 313 ePKiKP PKiKP 19 16 25.6 -0.3
MKAR Makanchi Array 113.78 313 PKP PKiKP 19 16 25.6 -0.3
comp=Z,0.4nm,0.5s,baz=66,slow=1.4,SNR=7.6
KSH Kashi 117.93 305 ePKP PKPdf 19 16 37.0 +2.8
VOSK Vostochnaya 120.92 320 ePKIKP PKPdf 19 16 38.7 -0.7
VOSK Vostochnaya 120.92 320 ePKPdf PKPdf 19 16 38.6 -0.7
BRVK Borovoye 121.29 321 c iPKIKP PKPdf 19 16 40.6 +0.5
BRVK pmax pmax
comp=Z,7.0nm,2.5s
ZRNK Zerenda 122.07 321 ePKIKP PKPdf 19 16 41.3 -0.3
ZRNK Zerenda 122.07 321 ePKPdf PKPdf 19 16 41.3 -0.3
ARU Arti 126.98 327 PKIKP PKPdf 19 16 52.6 +1.7
ARCES ARCESS Array B 128.95 352 PKP PKPdf 19 16 53.7 -0.6
comp=Z,1.9nm,0.8s,baz=95,slow=1.3,SNR=4.2
KLMR Klimovskoe 132.86 339 ePKIKP PKPdf 19 17 00.8 -1.1
KLMR pmax pmax
comp=Z,17nm,1.9s
FIA0 FINESS Array S 136.20 347 ePKIKP PKPdf 19 17 08.4 +0.3
FIA0 FINESS Array S 136.20 347 ePKPdf PKPdf 19 17 08.4 +0.3
FINES FINESS Array B 136.20 347 PKP PKPdf 19 17 08.4 +0.3
comp=Z,0.8nm,0.7s,baz=316,slow=5.3,SNR=3.9
KMBO Kilima Mbogo 143.31 239 PKP PKPdf 19 17 21.9 -0.9
comp=Z,0.4nm,0.2s,baz=52,slow=16,SNR=2.4
KMBO Kilima Mbogo 143.31 239 c iPKIKP PKPdf 19 17 27.0 +4.2
AKASG Malin Array Be 144.31 335 PKP PKPbc 19 17 21.5 +0.1
comp=Z,0.8nm,0.4s,baz=40,slow=4.5,SNR=16
AK11 Malin Array Si 144.35 335 ePKPdf PKPbc 19 17 21.4 -0.1
SORM Soroca 146.67 333⇓iP PKPbc 19 17 29.3 +0.5
SORM Soroca 146.67 333 ⇓PKP2 PKPbc 19 17 29.3 +0.5
MILM Milestii Mici 147.38 331⇑iP PKPbc 19 17 31.8 +0.9
OJC Ojcow 147.87 344 ePKP PKPbc 19 17 33.0 +0.9
OJC Ojcow 147.87 344 ePKIKP PKPbc 19 17 33.1 +0.9
OJC Ojcow 147.87 344 ePKPbc PKPbc 19 17 32.6 +0.5
KSP Ksiaz 148.09 348 ePKP PKPab 19 17 34.1 -1.4
KSP Ksiaz 148.09 348 ePKIKP PKPab 19 17 34.2 -1.3
CLL Collm 148.16 352 i PKPbc PKPbc 19 17 33.7 +0.8
comp=Z,14nm,1.1s
CLL i 19 17 44.4
CLL Collm 148.16 352 ePKPdf PKPdf 19 17 27.9 -1.7
CLL ePKPbc PKPbc 19 17 33.4 +0.5
STHS Stebnicka Huta 148.19 342 ePKIKP PKPab 19 17 34.6 -1.4
STHS e 19 17 41.6
STHS Stebnicka Huta 148.19 342 ePKP PKPab 19 17 34.6 -1.4
STHS e 19 17 41.6
KOLS Kolonicke sedl 148.30 340 ePKIKP PKPab 19 17 34.9 -1.5
KOLS e 19 17 43.4
KOLS Kolonicke sedl 148.30 340 ePKP PKPab 19 17 34.9 -1.5
KOLS e 19 17 43.4
BUR08 Bucovina Ar. S 148.35 336 ePKPbc PKPbc 19 17 35.2 +1.5
BURAR Bucovina Array 148.36 335⇑iP PKPbc 19 17 35.0 +1.3
BURAR Bucovina Array 148.36 335 ⇑PKIKP PKPbc 19 17 35.0 +1.3
BRG Berggiesshubel 148.46 351 ePKP PKPbc 19 17 34.9 +1.2
comp=Z,7.5nm,1.0s
BRG Berggiesshubel 148.46 351 ePKIKP PKPbc 19 17 34.9 +1.2
BRG pmax pmax
comp=Z,8.0nm,1.0s
UPC Upice 148.46 348 ePKP PKPbc 19 17 35.1 +1.4
UPC Upice 148.46 348 ePKIKP PKPbc 19 17 35.1 +1.4
NIE Niedzica 148.46 343 ePKP PKPbc 19 17 35.3 +1.5
NIE Niedzica 148.46 343 ePKIKP PKPbc 19 17 35.3 +1.5
DPC Dobruska-Polom 148.55 348 ePKP PKPbc 19 17 35.5 +1.5
DPC ex x 19 17 38.5
DPC epPKP pPKPdf 19 17 44.7 +5.9
DPC Dobruska-Polom 148.55 348 ePKIKP PKPbc 19 17 35.5 +1.5
DPC e 19 17 38.5
DPC e 19 17 44.7
UZH Uzhgorod 148.55 340⇓iPKIKP PKPbc 19 17 34.5 +0.5
TESR Tescani 148.66 333⇑iP PKPbc 19 17 36.1 +1.7
PVCC Panska Ves 148.70 350 ePKP PKPbc 19 17 35.3 +1.0
PVCC Panska Ves 148.70 350 ePKIKP PKPbc 19 17 35.3 +1.0
MORC Moravsky Berou 148.83 346 ePKIKP PKPbc 19 17 36.1 +1.3
MORC Moravsky Berou 148.83 346 ePKPbc PKPbc 19 17 36.1 +1.3
LANS Liptovska Anna 148.93 343 ePKP2 PKPab 19 17 38.2 -0.8
LANS Liptovska Anna 148.93 343 ePKP PKPab 19 17 38.2 -0.8
CFR Carcaliu 148.99 330⇓iP PKPbc 19 17 36.3 +1.1
CFR Carcaliu 148.99 330 ⇓PKIKP PKPbc 19 17 36.3 +1.1
VRI Vrincioaia 149.12 332⇓iP PKPbc 19 17 34.1 -1.5
ARCR ARCALIA 149.13 336⇓iP PKPab 19 17 42.3 +2.4
PLOR Plostina 149.17 332⇑iP PKPbc 19 17 36.7 +1.0
PLOR Plostina 149.17 332 ⇑PKIKP PKPbc 19 17 36.7 +1.0
PRU Pruhonice 149.22 350 ePKP PKPbc 19 17 36.9 +1.2
PRU Pruhonice 149.22 350 ePKIKP PKPbc 19 17 36.9 +1.2
KECS Kecovo 149.25 342 ePKIKP PKPbc 19 17 36.0 +0.2
KECS Kecovo 149.25 342 ePKP PKPbc 19 17 36.0 +0.2
BR101 Keskin Array S 149.37 316 ePKPbc PKPbc 19 17 37.5 +0.9
BR131 Keskin Array S 149.37 316 ePKPbc PKPbc 19 17 37.1 +0.5
BRTR Keskin Array B 149.37 316 PKPbc PKPbc 19 17 37.5 +0.9
comp=Z,4.0nm,0.9s,baz=131,slow=2.5,SNR=15
TIRR Tirgusor 149.38 328⇓iP PKPdf 19 17 33.2 +1.4

VRAC Vranov 149.48 347⇓iP PKPbc 19 17 38.0 +1.6
VRAC Vranov 149.48 347 ⇓PKIKP PKPbc 19 17 38.0 +1.6
DOPR Dopca 149.62 333⇓iP PKPbc 19 17 38.4 +1.6
VYHS Vyhne 149.70 344 ePKIKP PKPbc 19 17 38.3 +1.4
VYHS Vyhne 149.70 344 ePKP PKPbc 19 17 38.3 +1.4
TREC Trest 149.72 348 ePKP PKPbc 19 17 38.1 +1.1
TREC Trest 149.72 348 ePKIKP PKPbc 19 17 38.1 +1.1
CJR Cluj-Napoca 149.73 336⇑iP PKPab 19 17 39.8 -2.6
CJR Cluj-Napoca 149.73 336 ⇑PKP2 PKPab 19 17 39.8 -2.6
MLR Muntele Rosu 149.76 332⇑iP PKPbc 19 17 37.1 -0.2
MLR Muntele Rosu 149.76 332 ⇑PKIKP PKPbc 19 17 37.1 -0.2
MLR Muntele Rosu 149.76 332 ePKPbc PKPbc 19 17 37.7 +0.4
ANTO Ankara 149.84 317 ePKIKP PKPbc 19 17 37.9 +0.3
ANTO Ankara 149.84 317 ePKPbc PKPbc 19 17 37.9 +0.3
BR231 Keskin MP Arra 149.86 317 ePKPdf PKPpre 19 17 28.5
BR231 ePKPbc PKPbc 19 17 37.9 +0.2
DRGR 149.99 337⇓iP PKPbc 19 17 38.2 +0.4
DRGR 149.99 337 ⇓PKIKP PKPbc 19 17 38.2 +0.4
VOIR 150.19 333⇓iP PKPbc 19 17 40.1 +1.8
VOIR 150.19 333 ⇓PKIKP PKPbc 19 17 40.1 +1.8
KHC Kasperske Hory 150.21 351 ePKP PKPbc 19 17 39.2 +1.0
KHC epPKP PKPab 19 17 44.7 +0.5
KHC Kasperske Hory 150.21 351 ePKIKP PKPbc 19 17 38.7 +0.5
KHC Kasperske Hory 150.21 351 ePKPbc PKPbc 19 17 38.7 +0.5
ARR Arges 150.42 334⇑iP PKPbc 19 17 40.8 +2.0
GERES GERESS Array B 150.47 350 PKPbc PKPbc 19 17 39.9 +1.0
comp=Z,3.0nm,0.9s,baz=90,slow=1.3,SNR=14
GEA0 GERESS Array S 150.48 350 ePKPdf PKPpre 19 17 27.7
GEA0 ePKPbc PKiKP 19 17 39.6 0.0
GZR Gura Zlata 151.15 336⇓iP PKPbc 19 17 41.6 +1.0
GZR Gura Zlata 151.15 336 ⇓PKIKP PKPbc 19 17 41.6 +1.0
BZS Buzias 151.39 337⇑iP PKPbc 19 17 42.0 +1.0
BFO Black Forest 151.53 357 i PKIKP PKPbc 19 17 43.0 +1.7
MDVR Moldovita 152.07 336⇓iP PKPbc 19 17 44.0 +1.3
TORD Torodi Ar. Bea 171.94 145 PKP PKPdf 19 17 55.8 -1.1
comp=Z,0.7nm,0.8s,baz=238,slow=0.5,SNR=4.1
TORD PKPab PKPab 19 19 18.8 -0.6
comp=Z,1.2nm,0.9s,baz=219,slow=3.0,SNR=5.0
TOA1 Torodi Ar. Sit 171.95 145 ePKPdf PKPdf 19 17 55.8 -1.1
TOA1 ePKPab PKPab 19 19 18.8 -0.6

BKK 05 19:08:04.0±0.9, 20˚N±6˚×10˚0E±˚, h0km, M3.6/9, MLv3.6/9, Laos

Code Station Name Δ° AZ° Phase ID (Op ISC) Time (h m s) Res ISC

CRAI Chiangrai 0.20 163 P Pg 19 08 07.8 0.0
CRAI S Sg 19 08 10.2 -0.2
CMAI Chiengmai2 1.28 248 P Pg 19 08 27.6 -1.0
PHRA Phrae 1.91 182 P Pn 19 08 37.4 -0.5
PHRA S Sn 19 09 03.1 +0.4
LAMP Lampang 1.99 199 P Pn 19 08 39.1 +0.1
CMMT Chiang Mai 2.05 219 P Pn 19 08 38.8 -1.0
CMMT S Sb 19 09 07.6 -0.6
CHTO Chiang Mai 2.05 219 P Pn 19 08 38.7 -1.1
UTTA Uttaradit 2.67 175 P Pn 19 08 48.1 -0.2
PBKT Sadao Pong 3.88 171 P Pn 19 09 04.6 -0.3

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*NIED **05** 19:11:00, 38.˚60N×142.˚40E, h20km, Mw4.2 Best double couple: $M_0 2.26000\times10^{15}$ NP1: ϕ_s129.00000°, δ50.00000°, λ-51.00000°. NP2: ϕ_s257.00000°, δ53.00000°, λ-127.00000°.*

*NEIC **05** 19:11:32.3±1.3, 37.˚75N×144.˚54E, h40km±11km, mb4.5/9, Error ellipse: s-maj=15.5km s-min=11.2km az=129.0*

*BJI **05** 19:11:34.0, 37.˚33N×143.˚90E, h30km, mb4.4/27, mB4.8/14, Ms4.1/8, Ms7 3.8/8*

*ISCJB **05** 19:11:41.7±0.8, 38.˚58N±0.˚03×142.˚52E±0.˚04, h21km±5km, mb4.1/44, MS3.4/6, Error ellipse: s-maj=6.1km s-min=4.0km az=40.8*

*MOS **05** 19:11:42.5±0.9, 38.˚62N×142.˚52E, h27km, mb4.3/23, Error ellipse: s-maj=9.9km s-min=6.1km az=89.4*

*JMA **05** 19:11:44.1±0.1, 38.˚61N×142.˚41E, h33km±3km, M4.2*

JMA Felt I J1.

*IDC **05** 19:11:46.8±2.0, 38.˚55N×142.˚33E, h47km±19km, mb3.7/19, mb1 3.9/25, mb1mx3.8/53, mbtmp3.9/25, ML3.2/4, MS3.1/8, Ms1 3.1/8, ms1mx3.0/37, Error ellipse: s-maj=17.6km s-min=13.2km az=115.0*

ISC 05 19:11:41.2±2.1, 38.˚57N±0.˚04×142.˚51E±0.˚05, h8km±12km, n112, σ1.˚36/115, mb4.1/44, MS3.3/6, 1D, Near east coast of eastern Honshu

Code Station Name Δ° AZ° Phase ID (Op ISC) Time (h m s) Res ISC

OFUJ Ofunato 0.84 308 P Pb 19 11 58.2 +0.2
OFUJ S Sg 19 12 08.1 0.0
JIO Ouri 0.92 263 P Pb 19 11 59.5 +0.1
JIO S Sg 19 12 10.1 -0.7
JMK Ichinoseki 1.08 291 P Pb 19 12 02.0 -0.2
JMK S Sg 19 12 14.8 -1.2
MIYJ Miyakonagasawa 1.15 332 P Pb 19 12 02.5 -0.8
MIYJ S Sb 19 12 15.9 -2.4
JOM Ohasama 1.31 314 P Pn 19 12 05.7 -0.2
JOM S Sb 19 12 21.3 -1.8
JOU Okura 1.47 263 P Pn 19 12 08.0 0.0
JOU S Sn 19 12 25.7 -1.6
JMM Marumori 1.52 243 P Pn 19 12 08.1 -0.6
JMM S Sn 19 12 26.5 -2.2
JRG Rokugo 1.68 300 P Pn 19 12 11.8 +0.9
JRG eS Sn 19 12 32.1 -0.6
JKZ Kuzumaki 1.69 327 P Pn 19 12 11.5 +0.4
JKZ eS Sn 19 12 31.9 -1.0
JYK Kaneyama 1.72 282 P Pn 19 12 12.1 +0.6
JYK eS Sn 19 12 32.4 -1.2
JYS Shirataka 1.95 261 P Pn 19 12 15.3 +0.6
JYS eS Sn 19 12 38.5 -0.9
JANG Nango 1.96 337 P Pn 19 12 15.1 +0.3
JANG eS Sn 19 12 38.1 -1.6
JFT Otama 2.01 239 P Pn 19 12 15.9 +0.4
JFT eS Sn 19 12 38.9 -1.9
ERM Erimo 3.48 8 eP Pn 19 12 36.8 +1.1
ERM Erimo 3.48 8 ePn Pn 19 12 36.8 +1.1
MJAR Matsushiro Arr 3.97 241 P Pn 19 12 44.0 +1.6
5.2nm,0.3s,baz=29,slow=14,SNR=37
MAJO Matsushiro 3.97 241 eP Pn 19 12 44.8 +2.3
MAJO Matsushiro 3.97 241 ePn Pn 19 12 44.8 +2.3
MAT Matsushiro 3.97 241 P Pn 19 12 44.8 +2.4
MAT S Sb 19 13 36.4 -3.3
INU Inuyama 5.45 236 ePn Pn 19 13 05.2 +2.5
JHJ2 Mitsune 5.87 203 ePn Pn 19 13 02.4 -6.0
JHJ2 eSn Sn 19 14 05.7 -10
JHJ Hachijo jima 2 5.87 203 P Pn 19 13 08.2 -0.3
23nm,0.3s,baz=154,slow=23,SNR=14
JHJ S Sn 19 14 12.9 -3.0
14nm,0.3s,baz=60,slow=20,SNR=3.0
YUK Yuzh-Kuril'sk 6.02 24 eP Pn 19 13 10.6 +0.1
YUK i S Sn 19 14 15.7 -3.8
YUK pmax pmax
comp=Z,121nm,0.6s
YUK pmax pmax
comp=N,67nm,0.5s
YUK pmax pmax
comp=E,82nm,0.6s
YUK MLR MLR
comp=Z,433nm,14.0s
SHO Shikotan 6.22 30 eP Pn 19 13 11.8 -1.4
SHO eS Sn 19 14 17.5 -7.0
KUR Kuril'sk 7.77 29 eP Pn 19 13 35.6 +1.1
KUR eS Sn 19 14 58.1 -4.4
KUR pmax pmax
comp=E,7.0nm,0.6s
KUR pmax pmax
comp=Z,17nm,0.6s
KUR pmax pmax
comp=N,7.0nm,0.3s
KUR smax smax
comp=N,28nm,0.6s
KUR smax smax
comp=E,20nm,0.7s
YSS Yuzh-Sakhalins 8.39 1 eP Pn 19 13 44.4 +1.4
YSS Yuzh-Sakhalins 8.39 1 ePn Pn 19 13 44.2 +1.2
USRK Ussuriysk Ar. 9.70 309 P Pn 19 14 02.0 +0.9
comp=E,0.1nm,0.3s,baz=118,slow=14,SNR=3.0
USRK LR LR 19 17 37.1
comp=E,107nm,18.1s,baz=123,slow=36
JNU Nakatsue 10.89 244 P Pn 19 14 18.9 +1.6
comp=E,0.2nm,0.3s,baz=57,slow=5.2,SNR=7.3
JNU LR LR 19 18 54.4
comp=E,118nm,19.4s,baz=335,slow=40

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
JNU	Nakatsue	10.89	244	ePn	Pn	19 14 20.1	+2.7
MDJ	Mudanjiang	11.40	306	ePn	Pn	19 14 31.7	+7.4
KSRS	Korea Array	11.57	269	P	Pn	19 14 28.4	+1.8
	comp=E,0.0nm,0.3s,baz=81,slow=13,SNR=2.8						
KSRS				LR	LR	19 18 23.1	
	comp=E,70nm,20.1s,baz=46,slow=35						
TYV	Tymovskoe	12.30	0	eP	Pn	19 14 37.0	+0.5
TYV				pmax	pmax		
	comp=Z,11nm,0.8s						
KLR	Kul'dur	13.17	328	P	Pn	19 14 49.0	+0.5
	comp=Z,0.1nm,0.3s,baz=204,slow=20,SNR=2.0						
KLR				LR	LR	19 19 30.2	
	comp=Z,83nm,20.6s,baz=148,slow=35						
KLR	Kul'dur	13.17	328	P	Pn	19 14 49.0	+0.5
KLR				MLR	MLR		
	comp=Z,83nm,20.6s						
PETK	Petropavlovsk-	17.93	31	LR	LR	19 22 35.5	
	comp=Z,37nm,19.6s,baz=216,slow=36						
NJ2	Nanjing	20.34	259	eP	P	19 16 18.6	+0.7
NJ2				pmax	pmax		
	comp=Z,11nm,0.6s						
MA2	Magadan	21.68	11	P	P	19 16 33.4	+1.3
	comp=Z,7.9nm,0.9s,baz=219,slow=9.5,SNR=17						
HHC	Hu-ho-hao-te	23.86	285	eP	P	19 16 57.7	+2.6
HHC				pP	sP	19 17 08.9	+10
HHC				sP	pP	19 17 15.1	+18
HHC				PP	PnPn	19 17 37.9	+15
HHC				S	S	19 21 19.4	+8.1
HHC				pmax	pmax		
	comp=Z,10.0nm,0.9s						
HHC				pmax	pmax		
	comp=Z,100nm,11.0s						
HHC				LR	LR		
	comp=Z,72nm,12.7s						
HHC				LR	LR		
	comp=Z,150nm,11.8s						
HHC				LR	LR		
	comp=Z,120nm,12.9s						
YAK	Yakutsk	24.79	346	eP	P	19 17 04.0	+0.8
YAK				pmax	pmax		
	comp=Z,13nm,0.9s						
SEY	Seymchan	25.12	11	P	P	19 17 07.7	+1.4
	comp=Z,8.3nm,0.8s,baz=195,slow=6.9,SNR=54						
SEY	Seymchan	25.12	11	eP	P	19 17 06.3	0.0
BOD	Bodaibo	26.73	325	eP	P	19 17 20.9	0.0
BOD				pmax	pmax		
	comp=Z,5.0nm,1.5s						
XAN	Xi'an	27.35	271	P	P	19 17 27.9	+1.1
XAN				pmax	pmax		
	comp=Z,4.0nm,1.0s						
SONM	Songino Array	27.69	301	P	P	19 17 30.2	+0.3
	comp=Z,0.4nm,0.6s,baz=96,slow=8.1,SNR=3.7						
SONM				LR	LR	19 28 55.7	
	comp=Z,38nm,19.1s,baz=67,slow=37						
H11N2	WAKE ISLAND Hy	28.24	125	T	T	19 47 20.1	
	baz=317,slow=75,SNR=643						
H11N1	WAKE ISLAND Hy	28.25	125	T	T	19 47 21.3	
	baz=317,slow=75,SNR=639						
H11N3	WAKE ISLAND Hy	28.26	125	T	T	19 47 21.3	
	baz=317,slow=75,SNR=667						
ENH	Enshi	28.36	263	eP	P	19 17 36.8	+1.0
	comp=Z,11nm,0.9s						
ZAK	Zakamensk	30.04	306	eP	P	19 17 49.4	-1.2
ZAK				pmax	pmax		
	comp=Z,3.0nm,1.1s						
BILL	Bilibino	32.31	16	eP	P	19 18 09.0	-1.3
BILL				pmax	pmax		
	comp=Z,1.0nm,1.1s						
BILL				MLR	MLR		
	comp=Z,46nm,17.0s						
CD2	Chengdu	32.56	268	P	P	19 18 12.0	-1.0
CD2				pmax	pmax		
	comp=Z,1.0nm,0.6s						
GTA	Gaotai	32.97	285	eP	P	19 18 25.0	+8.4
GTA				S	S	19 23 52.8	+18
GTA				pmax	pmax		
	comp=Z,2.0nm,1.2s						
GTA				pmax	pmax		
	comp=Z,40nm,4.9s						
GTA				LR	LR		
	comp=Z,79nm,13.3s						
GTA				LR	LR		
	comp=Z,180nm,15.2s						
GTA				LR	LR		
	comp=Z,130nm,16.2s						
TIXI	Tiksi	33.88	352	eP	P	19 18 24.2	+0.2
TIXI				pmax	pmax		
	comp=Z,1.0nm,1.1s						
KMI	Kunming	36.07	260	P	P	19 18 43.4	-0.2
KMI				pmax	pmax		
	comp=Z,15nm,0.8s						
KMI				pmax	pmax		
	comp=Z,130nm,5.6s						
WMQ	Urumqi	40.95	295	eP	P	19 19 25.3	+1.0
WMQ				pP	sP	19 19 38.5	+11
WMQ				sP	pP	19 19 43.5	+17
WMQ				S	S	19 25 46.5	+10
WMQ				pmax	pmax		
	comp=Z,3.0nm,0.8s						
WMQ				pmax	pmax		
	comp=Z,66nm,5.0s						
ZAA0	Zalesovo Array	41.55	311	eP	P	19 19 30.0	+1.0
ZALV	Zalesovo Beam	41.55	311	P	P	19 19 29.1	+0.1
	comp=Z,0.7nm,0.4s,baz=86,slow=7.4,SNR=5.5						
CHTO	Chiang Mai	42.52	255	eP	P	19 19 34.7	-2.7
CHTO				pmax	pmax		
	comp=Z,13nm,2.0s						
CHTO	Chiang Mai	42.52	255	eP	P	19 19 34.7	-2.7
	comp=Z,13nm,2.0s						
CMAR	Chiang Mai Arr	42.73	255	P	P	19 19 38.0	-1.1
	comp=Z,0.6nm,0.6s,baz=45,slow=9.5,SNR=6.4						
CMAR				LR	LR	19 39 52.0	
	comp=Z,30nm,18.4s,baz=135,slow=40						
MK01	Makanchi Array	44.06	301	eP	P	19 19 50.2	+0.7
MK31	Makanchi Array	44.06	301	eP	P	19 19 50.3	+0.8
MK31	Makanchi Array	44.06	301	eP	P	19 19 50.3	+0.8
MKAR	Makanchi Array	44.06	301	P	P	19 19 49.7	+0.2
	comp=Z,0.5nm,0.7s,baz=85,slow=10.0,SNR=7.1						
MKAR	Makanchi Array	44.06	301	eP	P	19 19 50.7	+1.2
MKAR	Makanchi Array	44.06	301	eP	P	19 19 50.7	+1.2
MAKZ	Makanchi	44.27	301	eP	P	19 19 51.5	+0.3
MAKZ				pmax	pmax		
	comp=Z,7.0nm,1.0s						
MAKZ	Makanchi	44.27	301	eP	P	19 19 51.5	+0.3
	comp=Z,7.4nm,1.0s						
KURK	Kurchatov	45.69	307	eP	P	19 20 02.9	+0.5
KURK				pmax	pmax		
	comp=Z,20nm,1.1s						
KURK	Kurchatov	45.69	307	eP	P	19 20 02.9	+0.5
	comp=Z,20nm,1.1s						
TAPN	Taplejung	46.72	273	eP	P	19 20 18.2	+7.1
	comp=Z,10nm,1.0s						
ILAR	Eielson Array	47.74	33	P	P	19 20 19.6	+1.4
	comp=Z,0.9nm,0.7s,baz=266,slow=6.5,SNR=11						
RAMN	Ramite	47.77	273	eP	P	19 20 23.5	+4.2
	comp=Z,21nm,0.9s						
GUN	Gumba	47.88	275	eP	P	19 20 25.7	+5.4
GKN	Gorkha	48.81	276	eP	P	19 20 29.0	+1.8
	comp=Z,24nm,1.2s						
TKM2	Tokmak 2	49.68	298	eP	P	19 20 33.0	-0.8
TKM2				pmax	pmax		
	comp=Z,6.0nm,0.9s						
TKM2	Tokmak 2	49.68	298	eP	P	19 20 33.0	-0.8
	comp=Z,5.8nm,0.9s						
VOSK	Vostochnaya	49.92	311	eP	P	19 20 36.1	+0.9
VOSK				pmax	pmax		
	comp=Z,3.0nm,0.9s						
VOSK	Vostochnaya	49.92	311	eP	P	19 20 36.1	+0.9
	comp=Z,3.3nm,0.9s						
BRVK	Borovoye	50.25	312	eP	P	19 20 39.4	+1.7
BRVK				pmax	pmax		
	comp=Z,4.0nm,1.0s						
BRVK	Borovoye	50.25	312	eP	P	19 20 39.4	+1.7
	comp=Z,4.4nm,1.0s						
AAK	Ala-Archa	50.54	298	eP	P	19 20 40.3	+0.1
AAK				pmax	pmax		
	comp=Z,8.0nm,1.8s						
AAK	Ala-Archa	50.54	298	eP	P	19 20 40.3	+0.1
	comp=Z,8.0nm,1.8s						
EKS2	Erkin-Say	51.03	298	eP	P	19 20 43.4	-0.5
EKS2				pmax	pmax		
	comp=Z,2.0nm,0.8s						
EKS2	Erkin-Say	51.03	298	eP	P	19 20 43.4	-0.5
	comp=Z,1.9nm,0.8s						
INK	Inuvik	52.63	28	P	P	19 20 55.6	+0.4
	comp=Z,0.8nm,0.6s,baz=304,slow=4.9,SNR=3.4						
KKAR	Karatay Array	53.12	299	eP	P	19 20 59.1	-0.2
KKAR	Karatay Array	53.12	299	eP	P	19 20 59.0	-0.2
ARU	Arti	55.80	318	d iP	P	19 21 27.1	+8.6
ARU						19 23 31.2	
ARU				S	S	19 29 21.2	+16
ARU				pmax	pmax		
	comp=Z,10.0nm,1.0s						
ABKAR	Akbulak array	57.63	310	eP	P	19 21 30.6	-1.0
WRA	Warramunga Arr	58.70	189	P	P	19 21 39.4	0.0
	comp=Z,2.1nm,0.8s,baz=7.4,slow=7.1,SNR=11						
RES	Resolute Bay	60.90	15	P	P	19 21 54.5	+0.6
	comp=Z,1.0nm,0.7s,baz=326,slow=7.9,SNR=4.3						
YKA	Yellowknife Ar	62.05	31	P	P	19 22 02.2	+0.5
	comp=Z,0.3nm,0.6s,baz=302,slow=6.4,SNR=7.9						
ASAR	Alice Springs	62.43	189	P	P	19 22 05.0	+0.3
	comp=Z,0.8nm,0.8s,baz=10,slow=9.6,SNR=4.9						
GEYT	Alibeck	63.86	299	P	P	19 22 12.9	-1.5
	comp=Z,0.8nm,0.5s,baz=101,slow=2.9,SNR=2.5						
FINES	FINESS Array B	67.87	332	P	P	19 22 39.4	-0.2
	comp=Z,0.9nm,0.6s,baz=62,slow=8.9,SNR=5.7						
JMIC	Jan Mayen	68.79	350	LR	LR	19 52 25.5	
	comp=Z,21nm,21.8s,baz=68,slow=36						
VSU	Vasula	69.58	330	eP	P	19 22 51.5	+1.2
VSU				pmax	pmax		
	comp=Z,26nm,1.1s						
KIV	Kislovodsk	70.56	311	eP	P	19 22 57.2	+0.4
KIV				pmax	pmax		
	comp=Z,15nm,1.1s						
NOA	NORSAR Array B	73.11	338	P	P	19 23 12.0	+0.2
	comp=Z,1.5nm,0.9s,baz=35,slow=5.9,SNR=3.3						
NOA	NORSAR Array B	73.11	338	P	P	19 23 12.0	+0.2
NOA				pmax	pmax		
	comp=Z,2.0nm,0.9s						
NVAR	Mina Array Bea	73.38	54	P	P	19 23 14.8	+0.8
	comp=Z,0.8nm,0.7s,baz=284,slow=6.4,SNR=6.1						
AKASG	Malin Array Be	73.62	322	P	P	19 23 12.8	-2.0
	comp=Z,0.3nm,0.4s,baz=42,slow=6.0,SNR=4.4						
KIEV	Kiev	73.63	322	eP	P	19 23 16.2	+1.3
KIEV				pmax	pmax		
	comp=Z,2.0nm,1.0s						
FRB	Frobisher Bay	75.08	14	P	P	19 23 23.4	+0.3
	comp=Z,2.0nm,0.7s,baz=338,slow=5.9,SNR=6.4						
PDAR	Pinedale Array	75.98	46	P	P	19 23 30.1	+1.1
	comp=Z,1.4nm,0.7s,baz=270,slow=2.6,SNR=18						
TXAR	Lajitas Array	88.50	53	P	P	19 24 35.2	+0.6
	comp=Z,0.8nm,0.6s,baz=293,slow=3.2,SNR=14						
VNA2	Neumayer--Watz	144.03	196	PKP	PKPbc	19 31 15.0	+0.8
	baz=95,slow=3.5						
VNA3	Neumayer Olymp	144.27	195	PKP	PKPbc	19 31 14.7	-0.2
VNA1	Neumayer--Stat	144.43	196	PKP	PKPdf	19 31 16.5	-0.3
LPAZ	La Paz	145.16	59	PKPbc	PKPbc	19 31 19.4	-0.7
	comp=Z,1.9nm,0.6s,baz=330,slow=2.8,SNR=7.6						

IDC 05 19:16:24.9±2.4, 2°.64S×133°.87E, h0km, mb3.3/4, mb1 3.5/4, mb1mx3.4/23, mbtmp3.3/4, Error ellipse: s-maj=95.9km s-min=28.7km az=76.0, Irian Jaya region

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
WRA	Warramunga Arr	17.20	179	P	Pn	19 20 21.8	-5.0
	0.2nm,0.3s,baz=354,slow=13,SNR=12						
ASAR	Alice Springs	20.90	180	P	P	19 21 08.8	-0.2
	1.3nm,0.7s,baz=353,slow=10,SNR=16						
CMAR	Chiang Mai Arr	40.27	303	P	P	19 24 03.4	-0.6
	0.7nm,0.8s,baz=133,slow=6.9,SNR=8.1						
SONM	Songino Array	55.71	338	P	P	19 26 01.9	-1.5
	0.1nm,0.6s,baz=140,slow=5.6,SNR=2.5						
MKAR	Makanchi Array	66.84	324	P	P	19 27 20.4	+1.7
	0.1nm,0.6s,baz=113,slow=6.8,SNR=4.3						

MEX 05 19:26:16.3±0.4, 20°.26N×105°.90W, h24km±20km, MD3.5, Near coast of Jalisco

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
PUVA	Puert Vallarta	0.73	60	eP	Pb	19 26 27.3	-3.1
PUVA				i S	Sb	19 26 35.2	-4.8
CJM	Chamela	1.11	133	eP	Pn	19 26 33.6	-2.7
CJM				eS	Sn	19 26 46.8	-4.0
ANIG	Ahuacatlan	1.51	58	eP	Pn	19 26 39.7	-2.2
ANIG				eS	Sn	19 26 58.3	-2.6
R15V		2.11	121	eP	Pn	19 26 48.5	-1.6
R15V				eS	Sn	19 27 12.5	-3.0
EZ5V		2.30	109	eP	Pn	19 26 52.8	-0.1
EZ5V				eS	Sn	19 27 17.8	-2.8
MMIG	Aquila	3.11	129	eP	Pn	19 27 01.5	-2.3
MMIG				eS	Sn	19 27 37.7	-2.6

*ISCJB **05** 19:42:34.5±0.4, 67°.38N±0°.04×54°.39W±0°.08, h10km, mb3.6/10, MS3.0/4, Error ellipse: s-maj=6.3km s-min=4.4km az=0.4*
*IDC **05** 19:42:37.2±0.8, 67°.21N×53°.96W, h0km, mb3.7/9, mb1 3.9/11, mb1mx3.6/51, mbtmp3.8/11, ML3.3/2, MS3.1/5, Ms1 3.1/5, ms1mx2.7/67, Error ellipse: s-maj=29.8km s-min=10.6km az=177.0*
*NEIC **05** 19:42:38.1, 67°.24N×54°.07W, h18km, mb3.9/1, MN4.3(OTT), After OTT.*
*OTT **05** 19:42:38.1±0.3, 67°.24N×54°.07W, h18km, MN4.3/2, West coast of Greenland.*
ISC 05 19:42:36.4±0.5, 67°.40N±0°.05×54°.33W±0°.04, h10km, n44, σ2s.18/53, mb3.8/10, MS3.0/4, Davis Strait

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
SFJD	Kangerlussuaq	1.50	104	Pg	Pn	19 43 03.3	0.0
	86nm,0.3s,baz=292,slow=16,SNR=666						
SFJD				LR	LR	19 43 18.4	
	comp=Z,86nm,19.5s,baz=202,slow=31						
SFJD				Lg	Lg	19 43 20.0	
	482nm,0.3s,baz=274,slow=8.6,SNR=45						
SFJD	Kangerlussuaq	1.50	104	i P	Pn	19 43 03.4	0.0
SFJD				i S	Sn	19 43 20.3	-2.6
SFJD	Kangerlussuaq	1.50	104	PG	Pn	19 43 03.4	0.0
SFJD				SG	Sn	19 43 20.3	-2.6
SFJD				Trac		19 43 23.8	
	comp=Z,2μm,0.2s						
ILULI	Ilulissat	2.18	32	i P	Pb	19 43 15.5	-0.4
ILULI	Ilulissat	2.18	32	PN	Pb	19 43 15.2	-0.6
ILULI				PG	Pg	19 43 18.3	+0.2
ILULI				SN	Sb	19 43 41.4	-1.5
ILULI				SG	Sg	19 43 45.5	-0.8
ILULI				Trac		19 43 47.3	
	comp=Z,232nm,0.1s						
ILULI	Ilulissat	2.18	32	Pn	Pb	19 43 15.2	-0.6
ILULI				Pg	Pg	19 43 18.3	+0.2
ILULI				Sn	Sb	19 43 41.4	-1.5
ILULI				Sg	Sg	19 43 45.5	-0.8
CLRN	Clyde River	5.99	307	PN	Pn	19 44 05.2	+0.2
CLRN				mb		19 44 09.3	
	comp=Z,8.2nm,0.1s						
CLRN				SN	Sn	19 45 13.5	+0.1
CLRN				Trac		19 45 19.1	
	comp=Z,10.0nm,0.1s						
FRB	Frobisher Bay	6.94	245	Pn	Pn	19 44 18.8	+0.8
	1.3nm,0.3s,baz=73,slow=9.0,SNR=16						
FRB				Sn	Sn	19 45 34.0	-2.8
	3.9nm,0.3s,baz=14,slow=18,SNR=5.5						
FRB				LR	LR	19 46 53.6	
	comp=Z,126nm,18.7s,baz=92,slow=37						
FRB	Frobisher Bay	6.94	245	PN	Pn	19 44 18.8	+0.8
FRB				mb		19 44 23.8	
	comp=Z,17nm,0.4s						
FRB				SN	Sn	19 45 32.1	-4.6
FRB				Trac		19 45 39.9	
	comp=Z,5.2nm,0.1s						
FRB	Frobisher Bay	6.94	245	Pn	Pn	19 44 18.8	+0.8
FRB				Sn	Sn	19 45 32.1	-4.6
NRS	Narsarsuaq	7.36	144	i P	Pn	19 44 24.8	+1.0
SUMG	Summit	7.50	39	i P	Pn	19 44 26.4	+0.3
SUMG	Summit	7.50	39	ePn	Pn	19 44 27.0	+0.9
GIFN	Gifford Fjord,	10.22	297	PN	Pn	19 45 04.4	+1.6
GIFN				mb		19 45 08.9	
	comp=Z,4.1nm,0.5s						
GIFN				SN	Sn	19 46 53.8	-3.5
GIFN				Trac		19 46 57.7	
	comp=Z,3.5nm,0.3s						
GIFN	Gifford Fjord,	10.22	297	Pn	Pn	19 45 04.4	+1.6
GIFN				Sn	Sn	19 46 53.8	-3.5
ILON	Igloolik, Nuna	10.29	294	PN	Pn	19 45 04.9	+1.1
ILON				mb		19 45 13.1	
	comp=Z,3.5nm,0.3s						
ILON				SN	Sn	19 46 53.6	-5.3
ILON				Trac		19 47 00.1	
	comp=Z,3.5nm,0.3s						
ILON	Igloolik, Nuna	10.29	294	Pn	Pn	19 45 04.9	+1.1
ILON				Sn	Sn	19 46 53.6	-5.3
SCO	Scoresbysund	11.95	60	i P	Pn	19 45 24.8	-1.7
KUGN	Kugaaruk Camp,	13.44	289	PN	Pn	19 45 46.9	0.0
KUGN				mb		19 45 53.2	
	comp=Z,13nm,0.8s						
KUGN				SN	Sn	19 48 09.6	-6.4
KUGN				Trac		19 48 23.9	
	comp=Z,3.2nm,0.3s						
KUGN	Kugaaruk Camp,	13.44	289	Pn	Pn	19 45 46.9	0.0
KUGN				Sn	Sn	19 48 09.6	-6.4
INUQ	Inukjuak	13.96	242	SN	Sn	19 48 18.8	-10
INUQ	Inukjuak	13.96	242	Sn	Sn	19 48 18.8	-10
SMLN	Simpson Lake,	14.00	292	PN	Pn	19 45 55.7	+1.2
SMLN				SN	Sn	19 48 18.6	-11
DAG	Danmarks Havn	14.11	33	i P	Pn	19 45 56.3	+0.3
RES	Resolute Bay	14.73	317	Pn	P	19 46 08.5	-2.0
	0.1nm,0.3s,baz=93,slow=8.8,SNR=2.6						
BULN	Bullion Camp,	15.09	284	PN	Pn	19 46 09.5	+0.1
BULN				SN	Sn	19 48 48.1	-8.2
BULN				Trac		19 48 58.6	
	comp=Z,1.5nm,0.3s						
BULN	Bullion Camp,	15.09	284	Pn	Pn	19 46 09.5	+0.1
BULN				Sn	Sn	19 48 48.1	-8.2
MCMN	McManaman Lake	16.16	273	PN	Pn	19 46 20.9	-2.3
MCMN				SN	Sn	19 49 08.8	-13
MCMN				Trac		19 49 12.7	
	comp=Z,10.0nm,1.1s						
YOSQ	Ashton Mining	16.97	220	PN	Pn	19 46 31.9	-1.7
YOSQ	Ashton Mining	16.97	220	Pn	Pn	19 46 31.9	-1.7
SPITS	Spitsbergen Ar	21.75	32	LR	LR	19 55 37.8	
	comp=Z,43nm,18.4s,baz=290,slow=36						
YKA	Yellowknife Ar	25.07	288	P	P	19 48 04.2	+3.8
	0.4nm,0.8s,baz=50,slow=9.6,SNR=8.1						
ULM	Lac du Bonnet	26.77	251	P	P	19 48 19.8	+3.8
	2.9nm,0.8s,baz=55,slow=9.7,SNR=4.6						
ARCES	ARCESS Array B	27.46	49	P	P	19 48 24.3	+2.3
	2.7nm,0.9s,baz=312,slow=8.1,SNR=4.5						
NOA	NORSAR Array B	27.92	71	LR	LR	19 57 48.6	
	comp=Z,13nm,19.9s,baz=345,slow=33						
FINES	FINESS Array B	32.88	61	P	P	19 49 11.8	+1.8
	0.5nm,0.7s,baz=316,slow=9.7,SNR=3.0						
GERES	GERESS Array B	38.01	84	LR	LR	20 05 00.1	
	comp=Z,33nm,21.4s,baz=293,slow=35						
PDAR	Pinedale Array	38.16	258	P	P	19 49 59.7	+3.8
	0.7nm,0.8s,baz=57,slow=11,SNR=5.1						
AKASG	Malin Array Be	42.32	70	P	P	19 50 31.0	+1.1
	0.4nm,0.3s,baz=329,slow=8.4,SNR=7.0						
ANMO	Albuquerque	43.88	249	LR	LR	20 10 01.5	
	comp=Z,68nm,21.1s,baz=285,slow=37						
TXAR	Lajitas Array	47.98	243	P	P	19 51 18.0	+2.8
	0.4nm,0.7s,baz=50,slow=6.3,SNR=5.2						
BRTR	Keskin Array B	53.30	74	P	P	19 51 58.0	+2.8
	1.8nm,0.9s,baz=317,slow=4.8,SNR=8.6						
ABKAR	Akbulak array	53.65	48	P	P	19 51 56.7	-0.9
	1.0nm,0.8s						
TORD	Torodi Ar. Bea	65.24	117	P	P	19 53 17.0	-0.9
	0.6nm,0.7s,baz=332,slow=7.4,SNR=4.1						

*NIED **05** 19:43:00, 39°.70N×142°.30E, h41km, Mw4.5 Best double couple: $M_0$6.22000×10^15 NP1:ϕ_s184.00000°, δ19.00000°, λ68.00000°. NP2:ϕ_s27.00000°, δ72.00000°, λ97.00000°.*
*ISCJB **05** 19:43:37.9±0.4, 39°.73N±0°.03×142°.31E±0°.05, h49km±2km, mb4.5/68, MS3.4/6, Error ellipse: s-maj=6.4km s-min=4.2km az=25.5*
*MOS **05** 19:43:38.5±1.0, 39°.82N×142°.23E, h49km, mb4.8/30, Error ellipse: s-maj=8.0km s-min=5.2km az=103.3*
*JMA **05** 19:43:39.0±0.1, 39°.73N×142°.25E, h44km±1km, M4.3*
JMA Felt II J1.
*NEIC **05** 19:43:41.4±0.6, 39°.76N×142°.19E, h64km±5km, mb4.7/33, Error ellipse: s-maj=6.6km s-min=4.7km az=120.0*
*IDC **05** 19:43:41.9±2.2, 39°.72N×142°.17E, h67km±19km, mb4.1/25, mb1 4.2/30, mb1mx4.1/47, mbtmp4.4/30, MS3.2/3, Ms1 3.2/3, ms1mx2.8/50, Error ellipse: s-maj=15.7km s-min=12.0km az=110.0*
ISC 05 19:43:39.2±0.6, 39°.72N±0°.04×142°.28E±0°.05, h46km±4km, n215, σ1s.30/234, mb4.6/68, MS3.5/6, 11C-8D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
MIYJ	Miyakonagasawa	0.38	248	P	Pn	19 43 48.3	-0.5
MIYJ				S	Sn	19 43 54.8	-0.8
JTH	Tanohata	0.39	305	P	Pn	19 43 48.4	-0.5
JTH				S	Sn	19 43 54.7	-1.0
JKZ	Kuzumaki	0.78	290	P	Pn	19 43 53.4	-0.5
JKZ				S	Sn	19 44 03.7	-0.8
OFUJ	Ofunato	0.79	217	P	Pn	19 43 53.6	-0.5
OFUJ				S	Sn	19 44 04.1	-0.7
JOM	Ohasama	0.80	252	P	Pn	19 43 53.9	-0.2
JOM				S	Sn	19 44 05.1	+0.1
JANG	Nango	0.88	318	P	Pn	19 43 54.4	-0.8
JANG				S	Sn	19 44 05.8	-1.1
JMK	Ichinoseki	1.12	227	P	Pn	19 43 58.4	-0.1
JMK				S	Sn	19 44 12.1	-0.7
JRG	Rokugo	1.31	256	P	Pn	19 44 00.9	-0.2
JAH	Hinai	1.35	291	P	Pn	19 44 01.5	0.0
JTM	Tenmabayashi	1.41	319	P	Pn	19 44 02.1	-0.3
JTM				S	Sn	19 44 20.0	+0.1
ERM	Erimo	2.39	16	ceP	Pn	19 44 16.5	+0.7
ERM				pmax	pmax		
	comp=Z,75nm,0.8s						
ERM	Erimo	2.39	16	ePn	Pn	19 44 16.0	+0.2
MAJO	Matsushiro	4.51	227	i P	Pn	19 44 47.2	+2.2
MAJO	Matsushiro	4.51	227	ePn	Pn	19 44 47.0	+2.0
MJAR	Matsushiro Arr	4.51	227	P	Pn	19 44 47.1	+2.1
	comp=Z,13nm,0.3s,baz=28,slow=12,SNR=145						
YUK	Yuzh-Kuril'sk	5.07	31	eP	Pn	19 44 52.5	-0.1
YUK				eS	Sn	19 45 46.6	-3.3
YUK				pmax	pmax		
	comp=Z,176nm,0.4s						
YUK				pmax	pmax		
	comp=N,40nm,0.2s						
YUK				pmax	pmax		
	comp=E,76nm,0.2s						
YUK				MLR	MLR		
	comp=Z,493nm,19.0s						
YUK				MLR	MLR		
	comp=E,586nm,18.0s						
SHO	Shikotan	5.36	38⇑	iP	Pn	19 44 54.7	-1.9
SHO				i S	Sn	19 45 50.1	-6.9
INU	Inuyama	6.04	225	ePn	Pn	19 45 07.6	+1.6
KUR	Kuril'sk	6.88	35	eP	Pn	19 45 17.3	-0.2
KUR				i S	Sn	19 46 31.0	-3.4
KUR				pmax	pmax		
	comp=Z,19nm,0.9s						
KUR				pmax	pmax		
	comp=E,15nm,0.5s						
KUR				pmax	pmax		
	comp=N,11nm,0.7s						
KUR				smax	smax		
	comp=N,62nm,0.6s						
KUR				smax	smax		
	comp=E,21nm,0.6s						
JHJ	Hachijo jima 2	6.89	198	P	Pn	19 45 16.6	-0.9
	comp=E,12nm,0.3s,baz=324,slow=19,SNR=7.9						
JHJ				S	Sn	19 46 29.2	-5.4
	comp=E,11nm,0.3s,baz=70,slow=20,SNR=2.2						
JHJ2	Mitsune	6.89	197	ePn	Pn	19 45 18.7	+1.1
JHJ2				eSn	Sn	19 46 31.1	-3.5
YSS	Yuzh-Sakhalins	7.24	3	eP	Pn	19 45 23.6	+1.2
YSS	Yuzh-Sakhalins	7.24	3	ePn	Pn	19 45 23.6	+1.2
VLA	Vladivostok	8.52	297⇑	eP	Pn	19 45 35.9	-3.9
VLA				pmax	pmax		
	comp=Z,7.0nm,1.1s						
USRK	Ussuriysk Ar.	8.88	304	P	Pn	19 45 45.7	+0.9
	comp=Z,2.0nm,0.3s,baz=112,slow=13,SNR=32						
MDJ	Mudanjiang	10.61	302	P	Pn	19 46 12.0	+3.5
MDJ				S	Sn	19 48 22.3	+16
MDJ	Mudanjiang	10.61	302	ePn	Pn	19 46 08.9	+0.4
TYV	Tymovskoe	11.15	1	eP	Pn	19 46 18.0	+2.2
JNU	Nakatsue	11.29	238	P	Pn	19 46 18.9	+0.9
	comp=Z,0.6nm,0.3s,baz=143,slow=4.4,SNR=6.1						
KSRS	Korea Array	11.46	263	P	Pn	19 46 23.6	+3.5
	comp=Z,2.5nm,0.3s,baz=74,slow=14,SNR=26						
KS01	Wonju Array Si	11.48	263	ePn	Pn	19 46 24.1	+3.7
KS15	Wonju Array Si	11.49	263	ePn	Pn	19 46 24.2	+3.5
KSAR	Wonju Array Be	11.49	263	P	Pn	19 46 23.7	+3.1

Code	Station	Δ	Az	Op	ISC	Time	Res
KSAR	Wonju Array Be	11.49	263	P	Pn	19 46 23.6	+3.0
KLR	Kul'dur	12.11	325	P	Pn	19 46 31.1	+2.1
	comp=Z,0.3nm,0.3s,baz=128,slow=13,SNR=6.5						
CN2	Changchun	13.21	293	eP	P	19 46 50.2	-2.6
HIA	Hailar	18.64	308	eP	P	19 47 50.8	-2.1
HIA				pmax	pmax		
	comp=Z,8.0nm,0.9s						
HIA	Hailar	18.64	308	eP	P	19 47 50.8	-2.1
	comp=Z,7.6nm,0.9s						
BJT	Baijiatuau	20.03	279	eP	P	19 48 05.3	-2.9
BJT				pmax	pmax		
	comp=Z,13nm,1.0s						
BJT	Baijiatuau	20.03	279	eP	P	19 48 05.2	-2.9
	comp=Z,13nm,1.0s						
TIA	Tai'an	20.12	268	eP	P	19 48 09.1	-0.1
NJ2	Nanjing	20.43	255	eP	P	19 48 10.2	-2.3
MA2	Magadan	20.59	12	P	P	19 48 13.9	-0.1
	comp=Z,8.7nm,0.8s,baz=215,slow=8.8,SNR=18						
HHC	Hu-ho-hao-te	23.40	283	eP	P	19 48 43.5	-0.6
HHC				pP	pP	19 48 55.0	-0.5
HHC				sP	sP	19 49 00.5	-0.6
HHC				PP	PnPn	19 49 15.6	+3.9
HHC				S	S	19 52 48.6	-5.3
YAK	Yakutsk	23.62	345	P	P	19 48 43.1	-2.7
	comp=Z,2.1nm,0.4s,baz=340,slow=22,SNR=10.0						
YAK	Yakutsk	23.62	345	eP	P	19 48 43.2	-2.6
YAK				e*PP	sP	19 49 04.3	+1.3
YAK				eS	S	19 52 52.7	-4.1
YAK				e*SS	Sn	19 53 36.3	+16
YAK				pmax	pmax		
	comp=Z,34nm,1.0s						
YAK				pmax	pmax		
	comp=E,5.0nm,1.1s						
YAK				pmax	pmax		
	comp=N,19nm,1.0s						
YAK				smax	smax		
	comp=N,106nm,2.5s						
YAK				smax	smax		
	comp=E,156nm,4.7s						
YAK	Yakutsk	23.62	345	eP	P	19 48 42.9	-2.9
	comp=E,46nm,1.0s						
SEY	Seymchan	24.03	11	P	P	19 48 50.0	+0.5
	comp=E,17nm,1.0s,baz=199,slow=8.2,SNR=44						
SEY	Seymchan	24.03	11	ceP	P	19 48 49.4	-0.1
WHN	Wuhan	24.53	257	P	P	19 48 54.7	+0.3
WHN				S	S	19 53 03.3	-8.6
BOD	Bodaibo	25.68	324	eP	P	19 49 03.9	-0.7
BOD				pmax	pmax		
	comp=Z,10.0nm,1.0s						
ULN	Ulaanbaatar	26.52	300	eP	P	19 49 12.2	-0.3
ULN				pmax	pmax		
	comp=Z,4.0nm,0.8s						
ULN	Ulaanbaatar	26.52	300	eP	P	19 49 12.2	-0.3
	comp=Z,4.1nm,0.8s						
SONA1	Songino Array	26.95	299	eP	P	19 49 15.1	-1.2
SONA0	Songino Array	26.95	299	eP	P	19 49 16.2	-0.2
	comp=Z,3.8nm,0.8s						
SONM	Songino Array	26.95	299	P	P	19 49 16.2	-0.2
	comp=Z,3.8nm,0.7s,baz=90,slow=8.9,SNR=35						
XAN	Xi'an	27.18	269	P	P	19 49 17.6	-0.8
ENH	Enshi	28.34	261	eP	P	19 49 27.1	-1.7
	comp=Z,11nm,0.6s						
TLY	Talaya	29.17	307	P	P	19 49 36.3	+0.4
	comp=Z,5.8nm,0.9s,baz=91,slow=5.8,SNR=4.6						
TLY	Talaya	29.17	307	eP	P	19 49 36.2	+0.2
TLY				pmax	pmax		
	comp=Z,7.0nm,0.8s						
TLY				MLR	MLR		
	comp=Z,127nm,18.0s						
ZAK	Zakamensk	29.23	304	eP	P	19 49 35.9	-0.7
ZAK				pmax	pmax		
	comp=Z,9.0nm,1.0s						
LZH	Lanzhou	30.39	275	eP	P	19 49 46.5	-0.6
LZH				pP	pP	19 49 56.2	-3.0
LZH				sP	sP	19 50 01.4	-3.2
MOY	Mondy	30.80	307	eP	P	19 49 50.4	-0.1
BILL	Bilibino	31.26	17	⇓eP	P	19 49 54.5	+0.3
BILL				pmax	pmax		
	comp=Z,5.0nm,1.6s						
BILL				MLR	MLR		
	comp=Z,57nm,16.0s						
CD2	Chengdu	32.44	266	P	P	19 50 03.8	-1.2
GTA	Gaotai	32.51	283	eP	P	19 50 06.6	+0.9
GTA				pP	pP	19 50 17.4	-0.5
GTA				sP	sP	19 50 21.2	-2.1
GTA				S	S	19 55 19.1	+1.4
GTA				sS	sS	19 55 35.0	-3.1
GTA				SS	SnSn	19 57 16.4	+2.2
TIXI	Tiksi	32.72	352	ceP	P	19 50 06.3	-0.6
TIXI				pmax	pmax		
	comp=Z,5.0nm,0.8s						
TIXI	Tiksi	32.72	352	eP	P	19 50 06.2	-0.7
	comp=Z,4.5nm,0.8s						
KMI	Kunming	36.10	258	P	P	19 50 37.6	+0.6
WMQ	Urumqi	40.30	294	P	P	19 51 12.7	+0.8
WMQ				pP	pP	19 51 24.5	+0.2
ZAA0	Zalesovo Array	40.66	310	eP	P	19 51 13.8	-0.9
ZAA1	Zalesovo Array	40.66	310	eP	P	19 51 14.5	-0.2
ZAA1				ePcP	PcP	19 53 15.8	+0.1
ZALV	Zalesovo Beam	40.66	310	P	P	19 51 14.5	-0.2
	comp=Z,6.0nm,0.4s,baz=97,slow=8.5,SNR=37						
ZALV				PcP	PcP	19 53 15.8	+0.1
	comp=Z,1.3nm,0.4s,baz=103,slow=3.5,SNR=5.3						
NRIK	Noril'sk	41.14	334	P	P	19 51 18.4	0.0
	comp=Z,2.1nm,0.5s,baz=141,slow=14,SNR=4.0						
JAY	Jayapura	42.05	182	LR	LR	20 09 09.9	
	comp=Z,6.6nm,19.9s,baz=220,slow=36						
CHTO	Chiang Mai	42.66	254	eP	P	19 51 31.2	-0.2
CHTO				pmax	pmax		
	comp=Z,6.0nm,1.0s						
CHTO	Chiang Mai	42.66	254	eP	P	19 51 31.2	-0.2
	comp=Z,5.6nm,1.0s						
LSA	Lhasa	42.70	273	eP	P	19 51 32.7	+0.5
LSA				pmax	pmax		
	comp=Z,5.0nm,0.8s						
LSA	Lhasa	42.70	273	eP	P	19 51 32.7	+0.5
	comp=Z,5.3nm,0.8s						
CMAR	Chiang Mai Arr	42.88	253	P	P	19 51 33.5	+0.3
	comp=Z,1.4nm,0.3s,baz=40,slow=8.6,SNR=12						
MK01	Makanchi Array	43.32	300	eP	P	19 51 36.3	-0.2
MK31	Makanchi Array	43.32	300	eP	P	19 51 36.2	-0.3
MK31	Makanchi Array	43.32	300	eP	P	19 51 36.2	-0.3
MK32	Makanchi Array	43.32	300	eP	P	19 51 36.4	-0.2
MKAR	Makanchi Array	43.32	300	P	P	19 51 36.4	-0.2
	comp=Z,3.9nm,0.4s,baz=85,slow=10.0,SNR=67						
MKAR	Makanchi Array	43.32	300	eP	P	19 51 35.9	-0.6
MAKZ	Makanchi	43.53	300	eP	P	19 51 37.7	-0.5
MAKZ				pmax	pmax		
	comp=Z,13nm,1.2s						
MAKZ	Makanchi	43.53	300	eP	P	19 51 37.7	-0.5
	comp=Z,13nm,1.2s						
KURK	Kurchatov	44.85	306	eP	P	19 51 47.8	-0.9
KURK				pmax	pmax		
	comp=Z,13nm,0.7s						
KURK	Kurchatov	44.85	306	eP	P	19 51 47.8	-0.9
	comp=Z,13nm,0.7s						
TAPN	Taplejung	46.48	272	eP	P	19 52 02.7	+0.5
	comp=Z,7.1nm,0.4s						
ILAR	Eielson Array	46.88	34	P	P	19 52 05.5	+1.1
	comp=Z,1.5nm,0.6s,baz=265,slow=5.8,SNR=26						
ILB	Eielson Array	46.88	34	eP	P	19 52 05.3	+0.8
ODAN	Odare	46.97	272	eP	P	19 52 06.3	+0.3
	comp=Z,24nm,0.8s						
RAMN	Ramite	47.54	272	eP	P	19 52 10.7	+0.3
	comp=Z,55nm,0.8s						
GUN	Gumba	47.62	274	eP	P	19 52 11.3	+0.2
	comp=Z,74nm,0.7s						
KKN	Kakani	48.13	274	eP	P	19 52 15.5	+0.5
	comp=Z,29nm,0.7s						
PKIN	Phulchoki	48.15	274	eP	P	19 52 15.2	0.0
	comp=Z,6.7nm,0.4s						
DMN	Daman	48.36	274	eP	P	19 52 17.1	+0.3
	comp=Z,9.0nm,0.4s						
GKN	Gorkha	48.52	275	eP	P	19 52 17.9	0.0
	comp=Z,14nm,0.3s						
TKM2	Tokmak 2	48.99	297	eP	P	19 52 21.6	+0.2
TKM2				pmax	pmax		
	comp=Z,11nm,0.8s						
TKM2	Tokmak 2	48.99	297	eP	P	19 52 21.6	+0.2
	comp=Z,11nm,0.8s						
VOSK	Vostochnaya	49.03	310	eP	P	19 52 21.0	-0.3
VOSK				e		19 53 43.8	
VOSK				pmax	pmax		
	comp=Z,5.0nm,0.8s						
VOSK	Vostochnaya	49.03	310	eP	P	19 52 21.0	-0.3
	comp=Z,4.9nm,0.8s						
VOSK				ePcP	PcP	19 53 43.8	-0.7
BVAR	Borovoye Array	49.30	311	P	P	19 52 23.4	+0.1
	comp=Z,2.9nm,0.4s,baz=76,slow=9.5,SNR=24						
BRVK	Borovoye	49.35	311	eP	P	19 52 23.6	-0.2
BRVK				e		19 53 45.5	
BRVK				pmax	pmax		
	comp=Z,7.0nm,1.1s						
BRVK	Borovoye	49.35	311	eP	P	19 52 23.6	-0.2
	comp=Z,7.4nm,1.1s						
BRVK				ePcP	PcP	19 53 45.5	-0.2
KOLN	Koldanda	49.44	275	eP	P	19 52 24.8	-0.2
	comp=Z,7.6nm,0.3s						
PYUN	Piuthan	49.74	276	eP	P	19 52 27.4	+0.1
	comp=Z,34nm,0.6s						
AAK	Ala-Archa	49.85	297	LR	LR	20 13 58.5	
	comp=Z,79nm,21.7s,baz=89,slow=36						
AAK	Ala-Archa	49.85	297	c iP	P	19 52 27.7	-0.2
AAK				pmax	pmax		
	comp=Z,23nm,2.1s						
AAK	Ala-Archa	49.85	297	eP	P	19 52 27.4	-0.5
	comp=Z,8.2nm,1.4s						
KSH	Kashi	49.97	292	eP	P	19 52 32.8	+4.0
KSH				esP	sP	19 52 50.8	+4.0
KSH				ePP	PP	19 54 27.9	+4.1
KSH				PcS	PcS	19 57 48.6	+3.2
KSH				S	S	19 59 40.0	+3.8
KSH	Kashi	49.97	292	SS	SS	20 03 10.2	+1.0
ZRNK	Zerenda	50.13	311	eP	P	19 52 29.7	+0.1
ZRNK				pmax	pmax		
	comp=Z,9.0nm,0.9s						
ZRNK	Zerenda	50.13	311	eP	P	19 52 29.7	+0.1
	comp=Z,9.3nm,0.9s						
EKS2	Erkin-Say	50.34	297	eP	P	19 52 30.9	-0.6
EKS2				pmax	pmax		
	comp=Z,4.0nm,0.6s						
EKS2	Erkin-Say	50.34	297	eP	P	19 52 30.9	-0.6
	comp=Z,4.2nm,0.6s						
INK	Inuvik	51.70	28	P	P	19 52 42.6	+1.5
	comp=Z,1.7nm,0.4s,baz=287,slow=5.8,SNR=10.0						
INK	Inuvik	51.70	28	eP	P	19 52 42.3	+1.2
	comp=Z,3.1nm,0.7s						
KKAR	Karatay Array	52.40	299	eP	P	19 52 46.0	-0.9
KKAR	Karatay Array	52.40	299	eP	P	19 52 46.0	-0.9
ARU	Arti	54.82	317	c iP	P	19 53 04.4	+0.1
ARU						19 54 04.6	
ARU						19 55 04.0	
ARU				S	S	20 00 43.3	+1.6
ARU				SS	SS	20 04 23.7	-1.1
ARU				pmax	pmax		
	comp=Z,31nm,1.0s						
ARU	Arti	54.82	317	eP	P	19 53 04.1	-0.2
	comp=Z,22nm,0.7s						
GSI	Gunungsitoli	55.77	238	eP	P	19 53 11.8	+0.1
	comp=Z,16nm,1.2s						
ABKAR	Akbulak array	56.75	309	eP	P	19 53 17.5	-0.7
KBL	Kabul	57.12	290	eP	P	19 53 20.7	-0.6
KBL				pmax	pmax		
	comp=Z,10.0nm,0.8s						
KBL	Kabul	57.12	290	eP	P	19 53 20.7	-0.6
	comp=Z,9.7nm,0.8s						
WR1	Warramunga Arr	59.81	189	eP	P	19 53 39.5	-0.4
	comp=Z,9.2nm,1.0s						
WRA	Warramunga Arr	59.81	189	P	P	19 53 39.5	-0.4
	comp=Z,3.8nm,0.6s,baz=6.2,slow=7.0,SNR=51						
RES	Resolute Bay	59.83	15	P	P	19 53 39.5	+0.2
	comp=Z,3.0nm,0.9s,baz=310,slow=6.7,SNR=5.9						
YKB5	Yellowknife Ar	61.15	31	eP	P	19 53 50.7	+2.2
YKA	Yellowknife Ar	61.15	31	P	P	19 53 49.3	+0.8
	comp=Z,0.4nm,0.6s,baz=304,slow=6.4,SNR=8.6						
ARCES	ARCESS Array B	61.73	339	P	P	19 53 51.7	-0.6
	comp=Z,1.7nm,0.8s,baz=56,slow=8.9,SNR=5.4						
KLMR	Klimovskoe	61.86	327	eP	P	19 53 47.8	-5.5
KLMR				pmax	pmax		
	comp=Z,16nm,1.4s						
GEYT	Alibeck	63.15	298	P	P	19 54 02.1	-0.2
	comp=Z,2.8nm,0.6s,baz=23,slow=5.0,SNR=6.0						
AS31	Alice Springs	63.54	189	eP	P	19 54 05.0	+0.1
	comp=Z,0.9nm,0.8s						
ASAR	Alice Springs	63.54	189	P	P	19 54 04.8	0.0
	comp=Z,2.6nm,0.8s,baz=3.6,slow=6.7,SNR=33						
VRH	Novokhopyorsk	66.06	317	eP	P	19 54 20.0	-1.0
VRH				pmax	pmax		
	comp=Z,10.0nm,0.7s						
OBN	Obninsk	66.36	323	⇓eP	P	19 54 22.0	-0.9
OBN				e		19 56 48.6	
OBN				pmax	pmax		
	comp=Z,14nm,0.9s						
OBN				MLR	MLR		
	comp=Z,102nm,16.0s						
LPSR	Galich'ya Gora	66.69	320	eP	P	19 54 24.1	-0.9
LPSR				pmax	pmax		
	comp=Z,10.0nm,0.9s						
FIA1	FINESS Array S	66.76	332	eP	P	19 54 25.1	-0.3
FIA0	FINESS Array S	66.76	332	eP	P	19 54 25.3	-0.1
FIA0	FINESS Array S	66.76	332	eP	P	19 54 25.2	-0.1
FINES	FINESS Array B	66.76	332	P	P	19 54 25.2	-0.1
	comp=Z,7.4nm,0.8s,baz=30,slow=12,SNR=31						
VSR	Storozhevoye	67.37	318	eP	P	19 54 28.7	-0.7
VSR				pmax	pmax		
	comp=Z,20nm,1.3s						
VSU	Vasula	68.49	329	ceP	P	19 54 36.8	+0.5
VSU				pmax	pmax		
	comp=Z,40nm,1.0s						
F10A	Beach Ranch, E	69.01	47	eP	P	19 54 41.3	+1.4
	comp=Z,18nm,1.4s						
ZEI	Tsey	69.63	309	eP	P	19 54 42.0	-1.9
ZEI				pmax	pmax		
	comp=Z,9.0nm,0.8s						
KIV	Kislovodsk	69.67	311	eP	P	19 54 45.3	+1.3
KIV				pmax	pmax		
	comp=Z,30nm,1.1s						
KIV	Kislovodsk	69.67	311	eP	P	19 54 44.7	+0.6
	comp=Z,27nm,1.0s						
KBZ	Khabaz	69.68	310	P	P	19 54 44.2	+0.3
	comp=Z,8.5nm,0.9s,baz=57,slow=6.5,SNR=10						
AKH	Akhalkalaki	70.68	308	⇓iP	P	19 54 51.6	+1.2
CHVG	Ch'k'valeri	70.75	310	⇓iP	P	19 54 51.8	+1.2
NACGM	Naroch	70.86	327	e	P	19 54 50.0	-0.9
UOSS	Minazif	71.64	287	eP	P	19 54 55.5	-0.7
	comp=Z,0.4nm,0.8s						
HFS	Hagfors	71.92	336	P	P	19 54 57.4	+0.1
	comp=Z,3.4nm,0.3s,baz=44,slow=6.6,SNR=48						
NB2	NORSAR Subarra	71.97	337	P	P	19 54 57.7	+0.1
	comp=Z,2.1nm,0.5s,baz=36,slow=6.2						
NB200	NORSAR Array S	71.97	337	eP	P	19 54 57.3	-0.4
NOA	NORSAR Array B	71.97	337	P	P	19 54 57.3	-0.4
	comp=Z,3.7nm,0.8s,baz=38,slow=6.1,SNR=10						
AKASG	Malin Array Be	72.59	322	P	P	19 55 01.2	-0.2
	comp=Z,6.9nm,0.4s,baz=44,slow=6.0,SNR=48						
KIEV	Kiev	72.61	322	i P	P	19 55 01.1	-0.4
KIEV	Kiev	72.61	322	eP	P	19 55 00.8	-0.7
	comp=Z,8.0nm,0.8s						
AK11	Malin Array Si	72.64	322	eP	P	19 55 01.8	+0.1
PD31	Pinedale Array	75.31	46	eP	P	19 55 18.8	+1.0
PDAR	Pinedale Array	75.31	46	P	P	19 55 18.9	+1.1
	comp=Z,0.5nm,0.6s,baz=244,slow=2.0,SNR=7.4						
BUR08	Bucovina Ar. S	76.61	322	eP	P	19 55 25.2	+0.3
BURAR	Bucovina Array	76.63	322	⇓iP	P	19 55 25.4	+0.4
TESR	Tescani	76.71	320	⇓iP	P	19 55 25.7	+0.3
KOLS	Kolonicke sedl	77.05	324	eP	P	19 55 27.5	+0.2
KOLS				e		19 55 36.0	
KOLS	Kolonicke sedl	77.05	324	eP	P	19 55 27.5	+0.2
KOLS				ePCP	PcP	19 55 36.0	-2.0
STHS	Stebnicka Huta	77.15	325	eP	P	19 55 28.6	+0.7
STHS				pmax	pmax		
	comp=Z,4.0nm,0.9s						
STHS	Stebnicka Huta	77.15	325	eP	P	19 55 28.6	+0.7
OJC	Ojcow	77.19	326	eP	P	19 55 27.6	-0.4
OJC				pmax	pmax		
	comp=Z,13nm,1.1s						
OJC	Ojcow	77.19	326	eP	P	19 55 27.6	-0.4
	comp=Z,13nm,1.1s						
DOPR	Dopca	77.71	320	⇓iP	P	19 55 32.2	+1.2
LANS	Liptovska Anna	78.13	326	eP	P	19 55 35.1	+1.7
LANS	Liptovska Anna	78.13	326	eP	P	19 55 35.0	+1.7
KECS	Kecovo	78.18	325	eP	P	19 55 35.7	+2.1
KECS				pmax	pmax		
	comp=Z,2.0nm,1.0s						
KECS	Kecovo	78.18	325	eP	P	19 55 35.7	+2.1
MORC	Moravsky Berou	78.48	327	eP	P	19 55 35.6	+0.3
MORC				pmax	pmax		
	comp=Z,20nm,0.9s						
MORC	Moravsky Berou	78.48	327	eP	P	19 55 35.5	+0.3
	comp=Z,20nm,0.9s						
DPC	Dobruska-Polom	78.54	328	eP	P	19 55 36.8	+1.2
DPC				ePCP	PcP	19 55 42.2	-2.4
DPC				epP	sP	19 55 54.1	-0.1
DPC	Dobruska-Polom	78.54	328	eP	P	19 55 36.8	+1.2
DPC				e		19 55 42.2	
DPC				e		19 55 54.1	
UPC	Upice	78.55	328	eP	P	19 55 36.6	+1.0
UPC	Upice	78.55	328	eP	P	19 55 36.6	+1.0
VYHS	Vyhne	78.90	326	eP	P	19 55 37.8	+0.2
VYHS				pmax	pmax		
	comp=Z,2.0nm,1.2s						
VYHS	Vyhne	78.90	326	eP	P	19 55 37.8	+0.2
BRG	Berggiesshubel	79.09	330	eP	P	19 55 38.8	+0.3
	comp=Z,5.8nm,1.1s						
BRG	Berggiesshubel	79.09	330	eP	P	19 55 38.8	+0.3
	comp=Z,5.8nm,1.1s						
BRG	Berggiesshubel	79.09	330	eP	P	19 55 38.8	+0.3
BRG				pmax	pmax		
	comp=Z,6.0nm,1.1s						
CLL	Collm	79.11	330	⇑iP	P	19 55 38.6	0.0
	comp=Z,7.0nm,0.9s						
CLL				i		19 55 55.9	
CLL	Collm	79.11	330	⇑iP	P	19 55 38.6	0.0
CLL				pmax	pmax		
	comp=Z,7.0nm,0.9s						
CLL	Collm	79.11	330	eP	P	19 55 38.2	-0.4
	comp=Z,6.6nm,0.8s						
PVCC	Panska Ves	79.11	329	eP	P	19 55 39.8	+1.2
PVCC	Panska Ves	79.11	329	eP	P	19 55 39.8	+1.2
VRAC	Vranov	79.24	327	⇓iP	P	19 55 40.5	+1.1
PRU	Pruhonice	79.55	329	eP	P	19 55 42.0	+1.0
PRU	Pruhonice	79.55	329	eP	P	19 55 42.0	+1.0
BZS	Buzias	79.79	322	⇑iP	P	19 55 42.5	+0.1
KHC	Kasperske Hory	80.61	329	eP	P	19 55 47.7	+0.9
KHC				ex	x	19 55 56.9	
KHC				epP	sP	19 56 05.1	-0.3
KHC	Kasperske Hory	80.61	329	eP	P	19 55 47.7	+0.9
KHC				e		19 55 56.9	
KHC				e		19 56 05.1	
KHC	Kasperske Hory	80.61	329	eP	P	19 55 46.5	-0.4
	comp=Z,1.9nm,0.9s						
GERES	GERESS Array B	80.79	328	P	P	19 55 48.0	+0.2
	comp=Z,0.8nm,0.4s,baz=38,slow=5.7,SNR=11						
GEA0	GERESS Array S	80.79	328	eP	P	19 55 47.6	-0.3
VTS	Vitosha	81.23	319	eP	P	19 55 50.6	+0.2
VTS				pmax	pmax		
	comp=Z,8.0nm,0.7s						
VTS	Vitosha	81.23	319	eP	P	19 55 50.6	+0.2
	comp=Z,8.4nm,0.7s						
FUORN	Ofenpass-Fuorn	83.95	329	eP	P	19 56 04.9	+0.3
	comp=Z,11nm,1.0s						
PPT	Papeete	85.24	117	LR	LR	20 25 04.6	
	comp=Z,18nm,21.9s,baz=4.5,slow=29						
ESDC	Sonseca Array	95.17	334	P	P	19 56 57.7	-0.1
	comp=Z,0.2nm,0.3s,baz=16,slow=3.6,SNR=4.2						
SNAA	Sanae	143.51	198	PKP	PKPab	20 03 03.7	-0.3
LPAZ	La Paz	144.71	57	PKP	PKPdf	20 03 11.7	-0.3
	comp=Z,0.8nm,0.7s,baz=102,slow=2.0,SNR=3.0						
VNA2	Neumayer--Watz	145.08	197	PKP	PKPab	20 03 10.1	+0.2
	baz=115,slow=2.4						
VNA3	Neumayer Olymp	145.33	196	PKP	PKPbc	20 03 08.5	-2.2
VNA1	Neumayer--Stat	145.48	197	PKP	PKPab	20 03 12.2	+0.8

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*NIED **05** 19:47:00, 35.°50N×142.°90E, h5km, Mw4.8 Best double couple: M0 1.99000×10¹⁶ NP1:φs41.00000°, δ29.00000°, λ-97.00000°. NP2:φs229.00000°, δ61.00000°, λ-86.00000°.*

*IDC **05** 19:47:26.3±0.5, 35.°41N×142.°98E, h0km, mb4.6/34, mb1 4.7/40, mb1mx4.6/54, mbtmp4.6/40, ML3.8/5, MS4.0/29, Ms1 4.0/29, ms1mx3.9/42, Error ellipse: s-maj=12.8km s-min=11.1km az=124.0*

*ISCJB **05** 19:47:28.2±0.9, 35.°55N±0.°03×142.°90E±0.°02, h15km±5km, mb4.8/196, MS4.2/43, Error ellipse: s-maj=4.4km s-min=2.5km az=173.2*

*NEIC **05** 19:47:29.0±1.5, 35.°44N×142.°93E, h15km±9km, mb5.0/130, Error ellipse: s-maj=3.7km s-min=2.6km az=146.0*

*JMA **05** 19:47:29.8±0.3, 35.°53N×142.°91E, h73km, M4.7*

*GCMT **05** 19:47:29.0±0.3, 35.°52N×143.°02E, h12km, MW4.8/79, Moment Tensor Solution. s20,c27; s79,c131; Duration: 0 Moment tensor: Scale 10¹⁶Nm; Mrr-2.29±.06; Mθθ1.41±.07; Mφφ0.87±.06; Mrθ-0.08±.25; Mθφ0.96±.05; Mφr-0.09±.28; Best double couple: M0 2.22000×10¹⁶ NP1:φs52.00000°, δ46.00000°, λ-91.00000°. NP2: φs233.00000°, δ44.00000°, λ-89.00000°. Principal axes: T 2.1470, Plg1.0000°, Azm143.0000°; N 0.1450, Plg1.0000°, Azm53.0000°; P -2.2930, Plg88.0000°, Azm302.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

*BJI **05** 19:47:30.2, 35.°66N×143.°01E, h38km, mb4.6/66, mB5.0/47, Ms4.5/59, Ms7 4.3/54*

*MOS **05** 19:47:32.5±0.9, 35.°92N×142.°87E, h35km, mb5.1/69, Error ellipse: s-maj=6.8km s-min=4.3km az=105.7*

ISC 05 19:47:30.0±0.6, **35.°47N**±0.°03×**142.°99E**±0.°04, **h23**km±3km, **n566**, σ1.§15/593, **mb4.9**/195, **MS4.2**/43, **26C-10D, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	Chosi	1.75	278	P	Pn	19 47 58.1	-0.8
CHOJ				S	Sn	19 48 18.3	-2.1
BSO1	Boso 1	1.84	244	P	Pn	19 47 58.5	-1.1
BSO3	Boso 3	2.13	253	P	Pn	19 48 03.8	-0.1
BSO3				S	Sn	19 48 28.7	-0.9
JHO	Hitachi	2.27	301	P	Pn	19 48 04.1	-1.9
JHO				S	Sn	19 48 29.5	-3.7
JFT	Otama	2.96	315	P	Pn	19 48 14.4	-1.1
JFT				S	Sn	19 48 47.0	-3.2
JAG	Ashikaga	3.02	289	P	Pn	19 48 15.1	-1.3
JAG				S	Sn	19 48 48.2	-3.6
JOD2	Odawara 2	3.19	267	P	Pn	19 48 17.6	-1.1
JOD2				S	Sn	19 48 54.1	-2.0
JRY	Ryogami san	3.37	281	P	Pn	19 48 20.8	-0.3
JHJ2	Mitsune	3.52	229	P	Pn	19 48 22.1	-1.1
JHJ2				S	Sn	19 49 02.3	-1.9
JHJ2	Mitsune	3.52	229	ePn	Pn	19 48 21.6	-1.6
JHJ2				eSn	Sn	19 49 00.2	-4.0
JHJ	Hachijo jima 2	3.54	229	Pn	Pn	19 48 21.8	-1.7
	147nm,0.3s,baz=345,slow=15,SNR=60						
JHJ				Sn	Sn	19 49 01.4	-3.2
	361nm,0.3s,baz=75,slow=23,SNR=4.3						
JYN	Shimob	3.62	272	P	Pn	19 48 24.4	-0.3
JYN				S	Sn	19 49 06.2	-0.6
JMK	Ichinoseki	3.75	338	P	Pn	19 48 24.8	-1.6
JMK				S	Sn	19 49 05.5	-4.3
JNS	Sasagawa	3.77	310	P	Pn	19 48 26.5	-0.1
JNS				S	Sn	19 49 08.7	-1.5
MJAR	Matsushiro Arr	4.02	287	Pn	Pn	19 48 29.3	-0.8
	19nm,0.3s,baz=217,slow=9.8,SNR=34						
MJAR				LR	LR	19 50 16.1	
	comp=Z,2μm,21.7s,baz=110,slow=42						
MAJO	Matsushiro	4.02	287	eP	Pn	19 48 30.1	0.0
MAJO	Matsushiro	4.02	287	ePn	Pn	19 48 30.1	0.0
MAT	Matsushiro	4.02	287	P	Pn	19 48 29.9	-0.2
MAT				S	Sn	19 49 13.1	-3.4
MAT	Matsushiro	4.02	287	P	Pn	19 48 30.5	+0.4
JYK	Kaneyama	4.03	329	P	Pn	19 48 28.3	-1.9
JYK				S	Sn	19 49 15.3	-1.4
JOM	Ohasama	4.22	342	P	Pn	19 48 31.3	-1.5
JOM				S	Sn	19 49 16.8	-4.5
TK02	Tokai 2	4.57	252	P	Pn	19 48 39.2	+1.8
JSD	Sado	4.58	305	P	Pn	19 48 37.0	-0.8
INU	Inuyama	4.88	270	ePn	Pn	19 48 42.4	+0.5
ERM	Erimo	6.54	1	eP	Pn	19 49 00.9	-3.8
ERM				e		19 50 10.3	
ERM	Erimo	6.54	1	ePn	Pn	19 49 00.9	-3.8
ERM				eSn	Sn	19 50 10.3	-8.1
CBIJ	Chichi jima	8.38	185	ePn	Pn	19 49 27.8	-2.2
CBIJ				eSn	Sn	19 50 53.6	-10
JCJ	Chichijima	8.38	185	Pn	Pn	19 49 27.8	-2.2
	25nm,0.3s,baz=287,slow=23,SNR=6.6						
JCJ				Sn	Sn	19 50 53.6	-10
JCJ				LR	LR	19 52 40.9	
	comp=Z,320nm,21.5s,baz=90,slow=38						
YUK	Yuzh-Kuril'sk	8.84	14	eP	Pn	19 49 32.4	-3.8
YUK				eS	Sn	19 51 03.8	-11
YUK				pmax	pmax		
	comp=Z,156nm,0.5s						
YUK				pmax	pmax		

comp=N,99nm,0.6s
YUK pmax pmax
comp=E,62nm,0.3s
YUK MLR MLR
comp=Z,678nm,7.0s
SHO Shikotan 8.90 18 *e*P Pn 19 49 32.7 -4.3
SHO *e*S Sn 19 51 04.3 -12
SHO pmax pmax
comp=Z,82nm,0.7s
SHO pmax pmax
comp=N,41nm,0.6s
SHO pmax pmax
comp=E,41nm,0.6s
JNU Nakatsue 10.29 260 Pn **Pn 19 49 55.9 -0.2**
comp=E,0.7nm,0.3s,baz=58,slow=5.4,SNR=7.8
JNU LR LR 19 54 24.9
comp=E,2μm,20.2s,baz=86,slow=41
JNU Nakatsue 10.29 260 *e*Pn **Pn 19 49 56.2 +0.1**
KUR Kuril'sk 10.44 19 *e*P **Pn 19 49 56.1 -2.0**
KUR *e*S Sn 19 51 42.9 -11
KUR pmax pmax
comp=N,10.0nm,0.8s
KUR pmax pmax
comp=E,11nm,0.8s
KUR pmax pmax
comp=Z,17nm,0.8s
KUR pmax pmax
comp=Z,199nm,3.2s
KUR pmax pmax
comp=N,226nm,3.1s
KUR pmax pmax
comp=E,341nm,3.1s
KUR pmax pmax
comp=N,58nm,0.6s
KUR pmax pmax
comp=E,25nm,0.6s
YSS Yuzh-Sakhalins 11.48 359⇑ *e*P **Pn 19 50 10.3 -2.0**
YSS *e*S Sn 19 52 12.7 -7.0
YSS pmax pmax
comp=Z,50nm,0.8s
YSS MLR MLR
comp=E,700nm,12.0s
YSS MLR MLR
comp=Z,600nm,12.0s
YSS Yuzh-Sakhalins 11.48 359 *e*Pn **Pn 19 50 10.2 -2.1**
VLA Vladivostok 11.50 315*d* *i*P **Pn 19 50 14.8 +2.2**
VLA pmax pmax
comp=Z,170nm,1.3s
USRK Ussuriysk Ar. 12.13 319 Pn **Pn 19 50 21.5 +0.2**
comp=Z,0.7nm,0.3s,baz=126,slow=10.0,SNR=16
USRK LR LR 19 54 47.0
comp=Z,993nm,18.8s,baz=130,slow=36
KSRS Korea Array 12.29 284 Pn **Pn 19 50 23.9 +0.4**
comp=Z,0.1nm,0.3s,baz=99,slow=13,SNR=29
KSRS LR LR 19 55 03.5
comp=Z,689nm,19.4s,baz=89,slow=37
KS01 Wonju Array Si 12.31 284 *e*Pn **Pn 19 50 24.1 +0.2**
KS15 Wonju Array Si 12.32 284 *e*Pn **Pn 19 50 25.3 +1.4**
KSAR Wonju Array Be 12.32 284 P **Pn 19 50 23.9 0.0**
KSAR Wonju Array Be 12.32 284 Pn **Pn 19 50 23.9 0.0**
INCN Inchon 13.31 283 *e*Pn **Pn 19 50 35.2 -2.3**
MDJ Mudanjiang 13.72 316 P Pn 19 50 46.9 +3.9
MDJ S **Sn 19 53 18.7 +4.1**
MDJ pmax pmax
comp=Z,18nm,1.0s
MDJ pmax pmax
comp=Z,130nm,6.7s
MDJ LR LR
comp=Z,340nm,23.7s
MDJ LR LR
comp=Z,740nm,26.9s
MDJ LR LR
comp=Z,1μm,19.4s
MDJ Mudanjiang 13.72 316 *e*Pn **Pn 19 50 41.6 -1.4**
HABR Khabarovsk 14.26 338 *e*P Pn 19 50 46.0 -4.3
HABR *e*S Sn 19 53 19.6 -8.1
HABR pmax pmax
comp=E,13nm,1.6s
HABR pmax pmax
comp=N,48nm,1.6s
HABR pmax pmax
comp=Z,59nm,1.6s
HABR MLR MLR
comp=Z,417nm,13.0s
TYV Tymovskoe 15.39 359 *e*P **Pn 19 51 03.0 -2.5**
TYV pmax pmax
comp=Z,22nm,1.0s
TYV MLR MLR
comp=Z,1μm,14.0s
CN2 Changchun 15.85 307 *e*P **Pn 19 51 11.0 -0.5**
CN2 pmax pmax
comp=Z,10.0nm,0.7s
CN2 pmax pmax
comp=Z,300nm,3.0s
CN2 LR LR
comp=Z,500nm,13.0s
CN2 LR LR
comp=Z,800nm,13.0s
CN2 LR LR
comp=Z,800nm,14.0s
KLR Kul'dur 16.04 332 Pn **Pn 19 51 11.3 -2.5**
comp=Z,0.4nm,0.3s,baz=130,slow=8.9,SNR=14
KLR LR LR 19 57 03.5
comp=Z,498nm,21.6s,baz=142,slow=36
SNY Shenyang 16.42 299⇓ P **Pn 19 51 18.9 +0.1**
SNY pmax pmax
comp=Z,26nm,2.0s
SNY pmax pmax
comp=Z,350nm,12.0s
SNY LR LR
comp=Z,670nm,13.2s
SNY LR LR
comp=Z,1μm,14.9s
SNY LR LR
comp=Z,2μm,14.1s
DL2 Dalian 17.36 288 *e*P Pn 19 51 22.8 -7.8
DL2 *e*S Sn 19 54 28.3 -15
DL2 pmax pmax
comp=Z,20nm,0.9s
DL2 pmax pmax
comp=Z,340nm,8.9s
DL2 LR LR
comp=N,520nm,11.7s
DL2 LR LR
comp=E,760nm,14.1s
DL2 LR LR
comp=Z,1μm,14.5s
NKL Nikolayevsk 17.75 355 *e*P **Pn 19 51 30.9 -4.5**
NKL pmax pmax
comp=Z,110nm,1.6s
NJ2 Nanjing 20.34 267 *e*P **P 19 52 04.9 +0.3**
NJ2 S **S 19 55 52.8 +1.3**
NJ2 pmax pmax
comp=Z,11nm,0.9s
NJ2 LR LR
comp=Z,860nm,19.5s
NJ2 LR LR
comp=Z,470nm,22.8s
NJ2 LR LR
comp=Z,480nm,26.0s
PEA0 Petropavlovsk- 20.47 26 *e*P **P 19 52 06.3 +0.5**
PEA0B Petropavlovsk- 20.47 26 *e*P **P 19 52 06.3 +0.5**
comp=Z,65nm,1.2s
PETK Petropavlovsk- 20.47 26 P **P 19 52 06.5 +0.7**
comp=Z,13nm,1.1s,baz=205,slow=6.0,SNR=9.8
PETK LR LR 20 01 59.8
comp=Z,49nm,18.1s,baz=219,slow=43
PEA1 Petropavlovsk- 20.47 26 *e*P **P 19 52 06.5 +0.6**
TIA Tai'an 20.96 280 *e*P **P 19 52 11.1 -0.3**
TIA pmax pmax
comp=Z,10.0nm,1.4s
TIA LR LR
comp=Z,570nm,12.9s
TIA LR LR
comp=Z,550nm,12.6s
TIA LR LR
comp=Z,420nm,15.3s
BJT Baijiatuau 21.65 290 *e*P **P 19 52 18.3 -0.4**
BJT pmax pmax
comp=Z,39nm,1.4s
BJT Baijiatuau 21.65 290 *e*P **P 19 52 18.3 -0.4**
comp=Z,39nm,1.4s
GUMO Guam 21.85 175 LR LR 19 59 41.9
comp=Z,205nm,21.2s,baz=302,slow=34
HIA Hailar 21.91 316 *e*P **P 19 52 21.8 +0.4**
HIA pmax pmax
comp=Z,37nm,1.1s
HIA Hailar 21.91 316 *e*P **P 19 52 21.8 +0.4**
comp=Z,37nm,1.1s
WHN Wuhan 24.47 267⇓ P **P 19 52 47.1 -0.1**
WHN pmax pmax
comp=Z,110nm,1.4s
WHN LR LR
comp=Z,1μm,15.1s
WHN LR LR
comp=Z,1μm,12.8s
WHN LR LR
comp=Z,2μm,16.1s
TIY Taiyuan 24.58 284 *e*P P 19 52 54.6 +6.3
TIY S **S 19 57 12.5 +4.5**
TIY pmax pmax
comp=Z,230nm,3.6s
TIY LR LR
comp=N,470nm,11.2s
TIY LR LR
comp=E,670nm,14.9s
TIY LR LR
comp=Z,720nm,14.4s
MA2 Magadan 24.65 10 P **P 19 52 48.4 -0.2**
comp=Z,14nm,1.0s,baz=220,slow=9.4,SNR=26
MA2 LR LR 20 03 17.8
comp=Z,188nm,19.7s,baz=236,slow=38
HHC Hu-ho-hao-te 25.20 292 *e*P **P 19 52 55.1 +1.2**
HHC pP sP 19 53 04.5 +0.8
HHC sP pP 19 53 08.5 +7.7
HHC S **S 19 57 16.2 -1.8**
HHC pmax pmax
comp=Z,19nm,0.8s
HHC pmax pmax
comp=Z,260nm,8.5s
HHC LR LR
comp=Z,270nm,11.2s
HHC LR LR
comp=Z,310nm,13.0s
HHC LR LR
comp=Z,350nm,13.5s
H11N2 WAKE ISLAND Hy 26.26 120 T T 20 20 11.6
baz=318,slow=75,SNR=3313
H11N1 WAKE ISLAND Hy 26.27 120 T T 20 20 14.8
baz=318,slow=75
H11N3 WAKE ISLAND Hy 26.28 120 T T 20 20 15.4
baz=318,slow=75,SNR=2348
CIT Chita 26.69 317 *e*P **P 19 53 08.2 +1.0**
CIT *e* 19 53 22.7
CIT *e* 19 53 45.1
CIT *e* 19 54 04.6
CIT pmax pmax
comp=Z,94nm,1.6s
H11S1 WAKE ISLAND Hy 26.95 123 T T 20 21 11.0
baz=320,slow=76,SNR=154
H11S3 WAKE ISLAND Hy 26.95 123 T T 20 21 11.2
baz=320,slow=76,SNR=96
H11S2 WAKE ISLAND Hy 26.96 123 T T 20 21 12.3
baz=320,slow=76,SNR=125
YAK Yakutsk 27.88 347 P **P 19 53 17.6 0.0**
comp=Z,3.0nm,0.6s,baz=339,slow=23,SNR=13
YAK S **S 19 58 04.5 +5.0**
comp=Z,0.4nm,0.3s,baz=36,slow=24,SNR=1.5
YAK LR LR 20 04 42.7
comp=Z,261nm,19.1s,baz=159,slow=37
YAK Yakutsk 27.88 347 *e*P **P 19 53 17.4 -0.2**
YAK *e* 19 56 29.1
YAK pmax pmax
comp=Z,56nm,0.8s
YAK Yakutsk 27.88 347 *e*P **P 19 53 17.4 -0.2**
comp=Z,56nm,0.8s
YAK *e*PcP **PcP 19 56 29.1 -3.7**
YAK *e*S **S 19 58 04.5 +5.0**
XAN Xi'an 27.95 277 P **P 19 53 19.8 +1.1**
XAN pP sP 19 53 29.4 +0.9
XAN S S 19 57 52.4 -8.9
XAN sS sS 19 58 16.5 +3.7
XAN pmax pmax
comp=Z,20nm,1.0s
XAN pmax pmax
comp=Z,110nm,7.7s
XAN LR LR
comp=Z,400nm,16.5s
XAN LR LR
comp=Z,140nm,16.2s
XAN LR LR
comp=Z,360nm,15.5s
SEY Seymchan 28.11 9 P **P 19 53 20.2 +0.5**
comp=Z,15nm,1.0s,baz=192,slow=6.4,SNR=31
SEY Seymchan 28.11 9*c* *e*P **P 19 53 19.8 +0.1**
ENH Enshi 28.52 269 *e*P **P 19 53 23.6 -0.2**
comp=Z,76nm,1.0s
ULN Ulaanbaatar 29.29 306 *e*P P 19 53 34.8 +4.2
ULN pmax pmax
comp=Z,15nm,0.9s
ULN Ulaanbaatar 29.29 306 *e*P P 19 53 34.8 +4.2
comp=Z,15nm,0.9s
BOD Bodaibo 29.53 328 *e*P **P 19 53 32.6 +0.2**
BOD pmax pmax
comp=Z,23nm,1.6s
SONA1 Songino Array 29.72 306 *e*P **P 19 53 35.3 +0.9**
SONA0 Songino Array 29.72 306 *e*P **P 19 53 35.7 +1.3**
comp=Z,27nm,1.2s
SONA0 *e*PcP **PcP 19 56 38.5 +0.5**
SONM Songino Array 29.72 306 P **P 19 53 35.7 +1.3**
comp=Z,11nm,1.1s,baz=103,slow=8.7,SNR=12
SONM PcP **PcP 19 56 38.5 +0.5**
comp=Z,0.8nm,0.5s,baz=134,slow=3.0,SNR=4.3
SONM LR LR 20 05 27.0
comp=Z,358nm,21.6s,baz=114,slow=36
LZH Lanzhou 31.62 283 *e*P P 19 53 55.5 +4.2
LZH pP sP 19 54 05.0 +3.9
LZH sP pP 19 54 09.3 +11
LZH PP **PP 19 55 01.2 -1.6**
LZH *e*S **S 19 58 58.0 -1.1**
LZH SS **SnSn 20 00 45.7 +0.2**
LZH pmax pmax
comp=Z,38nm,1.0s
LZH pmax pmax
comp=Z,130nm,4.4s
LZH LR LR
comp=Z,530nm,12.4s
LZH LR LR
comp=Z,630nm,13.2s
LZH LR LR
comp=Z,820nm,13.8s
IRK Irkutsk 32.09 314 *e*P **P 19 53 56.8 +1.7**
IRK pmax pmax
comp=Z,21nm,1.7s
ZAK Zakamensk 32.24 310 *e*P **P 19 53 56.7 +0.2**
ZAK pmax pmax
comp=Z,9.0nm,1.4s
GYA Guiyang 32.27 264⇑ *i*P **P 19 53 56.6 -0.4**
GYA pP sP 19 54 07.8 +0.9
GYA PP **PnPn 19 55 05.2 +1.7**
GYA PcP **PcP 19 56 46.0 +0.9**
GYA S **S 19 59 07.2 -2.1**
GYA sS sS 19 59 25.0 +4.1
GYA ScP **ScP 20 00 24.6 -2.7**
GYA ScS **ScS 20 04 23.4 -3.1**
GYA pmax pmax
comp=Z,20nm,0.8s
GYA pmax pmax
comp=Z,130nm,6.2s
GYA LR LR
comp=Z,580nm,17.8s
GYA LR LR
comp=Z,510nm,18.0s
GYA LR LR
comp=Z,550nm,18.2s
TLY Talaya 32.32 312 P **P 19 53 58.4 +1.3**
comp=Z,6.1nm,0.8s,baz=120,slow=4.3,SNR=5.0
TLY Talaya 32.32 312 *e*P **P 19 53 58.4 +1.3**
TLY *e*S **S 19 59 13.9 +4.4**
TLY pmax pmax
comp=Z,12nm,1.3s
TLY MLR MLR
comp=Z,445nm,15.0s
TLY Talaya 32.32 312 *e*P P 19 54 01.0 +3.9
comp=Z,13nm,0.9s
CD2 Chengdu 32.99 273 P **P 19 54 03.8 +0.5**
CD2 sP sP 19 54 18.7 +5.6
CD2 PP **PP 19 55 18.5 +0.6**
CD2 S **S 19 59 19.6 -0.8**
CD2 sS sS 19 59 37.3 +5.4
CD2 pmax pmax
comp=Z,20nm,0.7s
CD2 pmax pmax
comp=Z,120nm,5.1s
CD2 LR LR
comp=Z,510nm,15.6s
CD2 LR LR
comp=Z,510nm,16.8s
MOY Mondy 33.92 312 *e*P P 19 54 20.6 +9.4
GTA Gaotai 34.26 290 *e*P **P 19 54 14.5 +0.2**
GTA pP sP 19 54 25.0 +0.8
GTA sP pP 19 54 29.1 +7.8
GTA PcP **PcP 19 56 51.0 +0.5**
GTA S **S 19 59 38.1 -2.0**
GTA sS sS 19 59 53.8 +2.1
GTA ScP **ScP 20 00 30.5 -3.5**
GTA PcS **PcS 20 00 37.0 +0.2**
GTA SS **SnSn 20 01 47.8 -1.8**
GTA pmax pmax
comp=Z,4.0nm,1.4s
GTA pmax pmax
comp=Z,170nm,5.9s
GTA LR LR
comp=Z,260nm,16.2s
GTA LR LR
comp=Z,260nm,15.7s
GTA LR LR
comp=Z,290nm,17.6s
BILL Bilibino 35.19 15⇑ *i*P **P 19 54 21.9 +0.1**
BILL pmax pmax
comp=Z,9.0nm,1.0s
BILL MLR MLR
comp=Z,150nm,18.0s
BILL Bilibino 35.19 15 *e*P **P 19 54 21.1 -0.7**
comp=Z,7.2nm,1.0s
KMI Kunming 36.03 265 P **P 19 54 30.6 +0.8**
KMI pmax pmax
comp=Z,22nm,0.6s
KMI pmax pmax
comp=Z,85nm,4.8s
TIXI Tiksi 37.00 353*c* *e*P **P 19 54 36.8 -0.4**
TIXI pmax pmax
comp=Z,22nm,1.7s
TIXI Tiksi 37.00 353 *e*P **P 19 54 36.9 -0.4**
comp=Z,22nm,1.4s
MYLDM Lahad Datu 37.66 223 *e*P **P 19 54 45.3 +1.9**
comp=Z,50nm,1.1s
SKNT Sakolnakorn 39.23 252 P P 19 54 59.9 +3.2
comp=Z,24nm,1.2s
KRAR Krasnoyarsk 39.47 317 *i* P **P 19 54 57.3 -0.9**
KRAR pmax pmax
comp=Z,7.0nm,1.2s
CRAI Chiangrai 40.30 259 P **P 19 55 06.2 +0.6**
comp=Z,44nm,1.3s,comp=Z,8μm
KHON Khomkaen 40.50 252 P **P 19 55 09.2 +2.0**
comp=Z,12nm,1.0s
PHRA Phrae 41.33 257 P **P 19 55 15.5 +1.5**
comp=Z,164nm,1.0s
UTTA Uttaradit 41.48 256 P **P 19 55 16.5 +1.2**
comp=Z,12nm,0.8s,comp=Z,81nm
LAMP Lampang 41.79 258 P P 19 55 22.6 +4.7
comp=Z,6.7nm,1.0s
PBKT Sadao Pong 41.81 254 P **P 19 55 19.2 +1.2**
comp=Z,40nm,1.0s
CMMT Chiang Mai 42.18 259 P **P 19 55 22.3 +1.2**
comp=Z,14nm,1.1s
CHTO Chiang Mai 42.19 259 P **P 19 55 22.6 +1.5**
comp=Z,61nm,1.1s
CHTO Chiang Mai 42.19 259 *e*P **P 19 55 21.7 +0.6**
CHTO pmax pmax
comp=Z,13nm,1.0s
CHTO Chiang Mai 42.19 259 *e*P **P 19 55 21.6 +0.6**
comp=Z,12nm,1.0s
SUKH Sukhothai 42.36 257 P **P 19 55 24.5 +2.0**
comp=Z,8.4nm,0.9s,comp=Z,178nm
CM31 Chiang Mai Arr 42.38 258 *e*P **P 19 55 22.0 -0.6**
CMAR Chiang Mai Arr 42.38 258 P **P 19 55 22.0 -0.6**
comp=Z,2.0nm,0.8s,baz=48,slow=7.0,SNR=11
CMAR LR LR 20 15 06.9
comp=Z,161nm,18.0s,baz=52,slow=39
CMAR Chiang Mai Arr 42.38 258*c* *e*P **P 19 55 23.6 +1.0**
CMAR pmax pmax
comp=Z,2.0nm,0.8s
CM01 Chiang Mai Arr 42.38 258 *e*P **P 19 55 21.8 -0.9**
CM01 *e*PcP **PcP 19 57 16.7 +0.9**
WMQ Urumqi 42.69 299 P **P 19 55 26.0 +1.0**
WMQ pP sP 19 55 36.6 +1.6
WMQ PcP **PcP 19 57 17.6 +1.1**
WMQ S **S 20 01 46.8 -0.3**
WMQ sS sS 20 02 04.4 +5.6
WMQ ScS **ScS 20 05 23.0 -1.8**
WMQ pmax pmax
comp=Z,5.0nm,1.0s
WMQ pmax pmax
comp=Z,31nm,4.0s
WMQ LR LR
comp=Z,180nm,15.8s
WMQ LR LR
comp=Z,140nm,12.6s
WMQ LR LR
comp=Z,120nm,23.8s
CHBT CHBT 43.04 249 P **P 19 55 30.7 +2.7**
comp=Z,40nm,1.1s
SBUM Sibu 43.51 228 *e*P **P 19 55 31.9 +0.1**
ZAA0 Zalesovo Array 43.91 314 *e*P **P 19 55 34.5 -0.1**
ZAA0 *e*PP **PcP 19 57 19.6 -0.7**
ZAA1 Zalesovo Array 43.91 314 *e*P **P 19 55 35.0 +0.4**
ZAA1 *e*PP **PcP 19 57 20.3 0.0**
ZALV Zalesovo Beam 43.91 314 P **P 19 55 35.0 +0.4**
comp=Z,4.0nm,0.6s,baz=92,slow=6.7,SNR=16
ZALV PcP **PcP 19 57 20.3 0.0**
comp=Z,2.6nm,0.5s,baz=98,slow=3.5,SNR=4.4
ZALV LR LR 20 14 36.4
comp=Z,289nm,19.3s,baz=70,slow=37
NVS Novosibirsk 44.84 315⇑ *i*P **P 19 55 41.9 -0.1**
NVS pmax pmax
comp=N,8.0nm,1.7s
NVS pmax pmax
comp=E,19nm,1.7s
NVS pmax pmax
comp=Z,27nm,1.7s
PHET Kaeng Krachan 45.01 251 P P 19 55 49.3 +5.4
comp=Z,18nm,0.8s,comp=Z,168nm
PHET P sP 19 55 56.1 +2.3
comp=Z,18nm,0.8s,comp=Z,168nm
NRIK Noril'sk 45.22 336 P **P 19 55 45.0 +0.2**
comp=Z,8.2nm,0.8s,baz=129,slow=6.5,SNR=13
NRIK LR LR 20 15 22.7
comp=Z,188nm,19.8s,baz=113,slow=37
TT01 Tatalina 45.99 34 *e*P **P 19 55 52.1 +1.1**
TTA Tatalina 46.00 34 *e*P **P 19 55 51.8 +0.6**
TTA pmax pmax
comp=Z,22nm,1.4s
TTA Tatalina 46.00 34 *e*P **P 19 55 51.8 +0.6**
comp=Z,22nm,1.4s
SVW2 Sparrevohn 46.01 36 *e*P **P 19 55 53.1 +1.9**
comp=Z,20nm,1.0s
MK01 Makanchi Array 46.03 304 *e*P **P 19 55 51.7 +0.1**
MK31 Makanchi Array 46.03 304 *e*P **P 19 55 51.3 -0.3**
MK31 Makanchi Array 46.03 304 *e*P **P 19 55 51.3 -0.3**
MK32 Makanchi Array 46.03 304 *e*P **P 19 55 52.0 +0.3**
MKAR Makanchi Array 46.03 304 P **P 19 55 52.0 +0.3**
comp=Z,4.5nm,0.8s,baz=89,slow=10,SNR=24
MKAR LR LR 20 15 55.6
comp=Z,145nm,18.2s,baz=82,slow=37
MKAR Makanchi Array 46.03 304 *e*P **P 19 55 51.4 -0.3**
MKAR Makanchi Array 46.03 304 *e*P **P 19 55 51.4 -0.3**
MAKZ Makanchi 46.24 304 *e*P **P 19 55 53.2 -0.1**
MAKZ pmax pmax
comp=Z,9.0nm,0.9s
MAKZ Makanchi 46.24 304 *e*P **P 19 55 53.2 -0.1**
comp=Z,8.7nm,0.9s
TAPN Taplejung 47.35 276 *e*P **P 19 56 03.3 +0.8**
comp=Z,25nm,0.9s
RSO Redoubt South 47.36 37 *e*P **P 19 56 02.6 +0.6**
KDAK Kodiak Island 47.43 41 *i* P **P 19 56 02.7 +0.4**
KDAK Kodiak Island 47.43 41 *e*P **P 19 56 02.8 +0.4**
comp=Z,105nm,1.5s
SPU Mount Spurr 47.72 36 *e*P **P 19 56 06.0 +1.3**
PPLA Purkeypile 47.74 34 *e*P **P 19 56 06.6 +1.7**
comp=Z,57nm,1.2s
ODAN Odare 47.81 276 *e*P **P 19 56 06.8 +0.8**
comp=Z,27nm,0.8s
CAST Castle Rocks 47.82 33 *e*P **P 19 56 06.8 +1.5**
comp=Z,53nm,1.6s
KURK Kurchatov 47.90 309 *e*P **P 19 56 05.7 -0.4**
KURK pmax pmax
comp=Z,46nm,1.2s
KURK Kurchatov 47.90 309 *e*P **P 19 56 05.7 -0.4**

comp=Z,46nm,1.2s
SOEI Soe 48.33 205 *e*P **P 19 56 09.2 -0.7**
KTH Kantishna Hill 48.34 33 *e*P **P 19 56 10.8 +1.3**
comp=Z,32nm,1.2s
BPAW Bear Paw Mtn. 48.35 32 *e*P **P 19 56 10.8 +1.3**
comp=Z,16nm,1.2s
RAMN Ramite 48.41 276 *e*P **P 19 56 11.4 +0.7**
comp=Z,68nm,0.7s
MLY Manley 48.51 31 *e*P **P 19 56 12.2 +1.4**
comp=Z,26nm,1.0s
GUN Gumba 48.60 278 *e*P **P 19 56 13.1 +0.8**
TRF Thorofare Moun 48.62 33 *e*P **P 19 56 12.6 +0.9**
comp=Z,16nm,1.0s
RC01 Rabbit Creek A 48.85 37 *e*P **P 19 56 13.7 +0.4**
comp=Z,28nm,1.0s
COLD Coldfoot 48.91 28 *e*P **P 19 56 14.8 +1.1**
comp=Z,25nm,2.0s
PKIN Phulchoki 49.13 278 *e*P **P 19 56 16.4 +0.2**
KKN Kakani 49.13 278 *e*P **P 19 56 16.8 +0.6**
comp=Z,39nm,1.2s
PMR Palmer 49.13 36 *e*P **P 19 56 15.5 +0.1**
PMR pmax pmax
comp=Z,52nm,1.1s
PMR Palmer 49.13 36 *e*P **P 19 56 15.5 +0.1**
comp=Z,52nm,1.1s
KULM Kulim 49.17 242 *e*P **P 19 56 17.0 +0.7**
MCK McKinley 49.24 33 *e*P **P 19 56 16.8 +0.5**
MCK pmax pmax
comp=Z,21nm,1.0s
MCK McKinley 49.24 33 *e*P **P 19 56 16.8 +0.5**
comp=Z,21nm,1.0s
RND Reindeer 49.27 33 *e*P **P 19 56 16.6 0.0**
RND pmax pmax
comp=Z,35nm,1.0s
RND Reindeer 49.27 33 *e*P **P 19 56 16.6 0.0**
comp=Z,34nm,1.0s
MTN Manton Dam 49.34 195 *e*P **P 19 56 17.4 -0.1**
SML Sawmill 49.51 36 *e*P **P 19 56 18.4 0.0**
SML pmax pmax
comp=Z,31nm,0.8s
SML Sawmill 49.51 36 *e*P **P 19 56 18.4 0.0**
comp=Z,31nm,0.8s
GKN Gorkha 49.57 279 *e*P **P 19 56 20.0 +0.5**
comp=Z,50nm,1.2s
MDM Murphy Dome 49.58 31 *e*P **P 19 56 20.2 +1.3**
comp=Z,52nm,1.0s
WRH Wood River Hil 49.62 32 *e*P **P 19 56 19.9 +0.7**
comp=Z,29nm,1.4s
COLA College 49.73 32 *i*P **P 19 56 20.3 +0.3**
COLA College 49.73 32 *e*P **P 19 56 21.3 +1.4**
comp=Z,18nm,1.0s
CCB Clear Creek Bu 49.75 32 *e*P **P 19 56 20.4 +0.3**
comp=Z,9.4nm,0.9s
DHY Denali Highway 49.94 34 *e*P **P 19 56 22.1 +0.4**
comp=Z,9.6nm,0.9s
SCM Sheep Creek Mo 49.99 36 *e*P **P 19 56 23.1 +1.0**
SCM pmax pmax
comp=Z,49nm,1.0s
SCM Sheep Creek Mo 49.99 36 *e*P **P 19 56 23.1 +1.0**
comp=Z,49nm,1.0s
HDA Harding Lake 50.12 32 *e*P **P 19 56 22.4 -0.5**
comp=Z,34nm,1.0s
ILAR Eielson Array 50.15 32 P **P 19 56 23.4 +0.3**
comp=Z,20nm,0.9s,baz=266,slow=6.2,SNR=126
ILB Eielson Array 50.15 32 *e*P **P 19 56 23.3 +0.1**
IL1 Eielson Array 50.15 32 *e*P **P 19 56 23.1 0.0**
KOLN Koldanda 50.50 279 *e*P **P 19 56 27.3 +0.7**
comp=Z,16nm,0.9s
KLU Klutina 50.67 36 *e*P **P 19 56 28.5 +1.2**
comp=Z,37nm,1.0s
DIV Divide 50.77 36 *e*P **P 19 56 29.2 +1.2**
comp=Z,52nm,1.0s
PAX Paxson 50.81 34 *e*P **P 19 56 28.8 +0.5**
PAX pmax pmax
comp=Z,18nm,1.0s
PAX Paxson 50.81 34 *e*P **P 19 56 28.8 +0.5**
comp=Z,18nm,1.0s
FYU Fort Yukon 50.84 29 *e*P **P 19 56 30.5 +2.2**
comp=Z,85nm,1.4s
PYUN Piuthan 50.85 279 *e*P **P 19 56 29.7 +0.4**
comp=Z,30nm,0.8s
BMRM Bremner River 51.35 37 *e*P **P 19 56 33.6 +1.3**
comp=Z,32nm,1.0s
DOT Dot Lake 51.41 33 *e*P **P 19 56 32.8 +0.1**
comp=Z,34nm,0.8s
TKM2 Tokmak 2 51.50 300 *e*P **P 19 56 35.3 +1.3**
TKM2 pmax pmax
comp=Z,11nm,0.8s
TKM2 Tokmak 2 51.50 300 *e*P **P 19 56 35.2 +1.3**
comp=Z,12nm,0.8s
MENT Mentasta 51.61 34 *e*P **P 19 56 35.5 +1.3**
comp=Z,19nm,0.9s
KSH Kashi 52.22 296 *e*P P 19 56 43.6 +4.4
KSH *ep*P sP 19 56 53.6 +4.3
KSH *es*P pP 19 56 57.6 +11
KSH PcS **PcS 20 01 50.6 +1.6**
KSH S **S 20 04 06.4 +3.6**
KSH sS sS 20 04 22.7 +8.0
KSH pmax pmax
comp=Z,100nm,3.5s
KSH LR LR
comp=Z,150nm,7.6s
KSH LR LR
comp=Z,170nm,7.9s
KSH LR LR
comp=Z,380nm,16.1s
FRU Bishkek 52.22 300 *e*P **P 19 56 39.0 -0.1**
FRU pmax pmax
comp=Z,45nm,2.0s
VOSK Vostochnaya 52.27 313 *e*P **P 19 56 39.4 +0.1**
VOSK pmax pmax
comp=Z,11nm,1.1s
VOSK Vostochnaya 52.27 313 *e*P **P 19 56 39.4 +0.1**
comp=Z,11nm,1.1s
AAK Ala-Archa 52.36 300 *d i*P **P 19 56 40.8 +0.5**
AAK pmax pmax
comp=Z,19nm,1.6s
AAK Ala-Archa 52.36 300 *e*P **P 19 56 40.6 +0.3**
comp=Z,4.6nm,0.8s
BALM Baldy 52.44 36 *e*P **P 19 56 41.4 +0.9**
BALM pmax pmax
comp=Z,17nm,1.0s
BALM Baldy 52.44 36 *e*P **P 19 56 41.4 +0.9**
comp=Z,17nm,1.0s
BVAR Borovoye Array 52.57 313 P **P 19 56 41.8 +0.4**
comp=Z,1.6nm,0.8s,baz=77,slow=8.4,SNR=7.5
EGAK Eagle 52.60 32 *e*P **P 19 56 41.8 +0.3**
comp=Z,7.2nm,0.8s
BRVK Borovoye 52.62 314 *ce*P **P 19 56 41.8 0.0**
BRVK pmax pmax
comp=Z,17nm,2.5s
EKS2 Erkin-Say 52.86 300 *e*P **P 19 56 44.3 +0.3**
EKS2 Erkin-Say 52.86 300 *e*P **P 19 56 44.3 +0.3**
ZRNK Zerenda 53.40 314 *e*P **P 19 56 47.5 -0.1**
ZRNK pmax pmax
comp=Z,11nm,1.1s
ZRNK Zerenda 53.40 314 *e*P **P 19 56 47.5 -0.1**
comp=Z,11nm,1.1s
DAWY Dawson 53.43 32 *e*P **P 19 56 48.5 +0.7**
comp=Z,16nm,1.3s
GSI Gunungsitoli 54.13 241 *e*P **P 19 56 53.6 +0.2**
comp=Z,32nm,0.8s
KKAR Karatay Array 55.02 302 *e*P **P 19 56 59.6 +0.1**
KKAR Karatay Array 55.02 302 *e*P **P 19 56 59.6 +0.1**
INK Inuvik 55.20 27 P **P 19 57 01.4 +0.9**
comp=Z,14nm,0.7s,baz=293,slow=6.6,SNR=48
INK Inuvik 55.20 27 *e*P **P 19 57 01.0 +0.6**
INK pmax pmax
comp=Z,26nm,1.0s
INK Inuvik 55.20 27 *e*P **P 19 57 01.0 +0.6**
comp=Z,26nm,1.0s
WRAB Tennant Creek 55.70 190 *e*P **P 19 57 04.3 -0.3**
WRAB pmax pmax
comp=Z,23nm,1.0s
WRAB Tennant Creek 55.70 190 *e*P **P 19 57 04.3 -0.3**
comp=Z,22nm,1.0s
WB2 Warramunga Arr 55.71 190 *e*P **P 19 57 04.1 -0.5**
WR1 Warramunga Arr 55.71 190 *e*P **P 19 57 04.1 -0.6**
comp=Z,26nm,0.9s
WRA Warramunga Arr 55.71 190 P **P 19 57 04.1 -0.6**
comp=Z,15nm,0.9s,baz=8.1,slow=7.5,SNR=32
SVE Sverdlovsk 57.16 320 *e*P **P 19 57 15.6 +1.0**
ARU Arti 58.37 320 *d i*P **P 19 57 23.0 -0.1**
ARU 19 59 32.5
ARU S **S 20 05 22.9 -1.4**
ARU SS **SS 20 09 12.5 -3.5**
ARU pmax pmax
comp=Z,30nm,1.7s
ARU MLR MLR
comp=Z,312nm,17.0s
ARU Arti 58.37 320 *e*P **P 19 57 22.7 -0.4**
comp=Z,42nm,1.6s
DLBC Dease Lake 59.08 38 P **P 19 57 29.6 +1.5**
comp=Z,2.7nm,0.8s,baz=296,slow=7.6,SNR=3.6
DLBC Dease Lake 59.08 38 *e*P **P 19 57 29.6 +1.5**
comp=Z,12nm,1.3s
KBL Kabul 59.17 293 *e*P **P 19 57 28.8 -0.6**
KBL pmax pmax
comp=Z,16nm,1.4s
KBL Kabul 59.17 293 *e*P **P 19 57 28.8 -0.6**
comp=Z,16nm,1.4s
AS01 Alice Springs 59.43 190 *e*P **P 19 57 30.4 -0.4**
AS31 Alice Springs 59.44 190 *e*P **P 19 57 30.7 -0.2**
comp=Z,3.1nm,0.7s
ASAR Alice Springs 59.44 190 P **P 19 57 30.7 -0.2**
comp=Z,5.1nm,0.8s,baz=12,slow=8.5,SNR=28
ASAR LR LR 20 22 53.2
comp=Z,57nm,21.9s,baz=18,slow=36
HYB Hyderabad 59.46 270 *i*P **P 19 57 32.0 +0.7**
HYB *e* 19 57 42.5
ABKAR Akbulak array 59.92 311 *e*P **P 19 57 33.4 -0.6**
RES Resolute Bay 63.80 15 P **P 19 58 00.2 +0.6**
comp=Z,19nm,0.8s,baz=305,slow=6.6,SNR=60
RES Resolute Bay 63.80 15 *e*P **P 19 57 59.9 +0.3**
RES pmax pmax
comp=Z,24nm,0.8s
RES Resolute Bay 63.80 15 *e*P **P 19 57 59.9 +0.3**
comp=Z,24nm,0.8s
LVZ Lovozero 64.05 336 *ce*P **P 19 58 03.5 +2.0**
LVZ pmax pmax
comp=Z,47nm,2.5s
YKW3 Yellowknife Ar 64.48 30 *e*P **P 19 58 04.3 -0.1**
comp=Z,11nm,0.9s
YKA Yellowknife Ar 64.52 30 P **P 19 58 05.0 +0.4**
comp=Z,8.1nm,0.9s,baz=296,slow=6.6,SNR=53
YKA Yellowknife Ar 64.52 30 P **P 19 58 05.0 +0.4**
YKA Yellowknife Ar 64.52 30 P **P 19 58 05.0 +0.4**
YKB5 Yellowknife Ar 64.52 30 *e*P **P 19 58 03.8 -0.7**
TMCR Tamitsa 64.72 332 *e*P **P 19 58 04.7 -1.1**
TMCR pmax pmax
comp=Z,19nm,0.4s
GEYT Alibeck 65.71 300 P **P 19 58 12.3 -0.5**
comp=Z,7.1nm,1.0s,baz=29,slow=3.4,SNR=16
GEYT LR LR 20 28 24.4
comp=Z,156nm,20.3s,baz=50,slow=37
KLMR Klimovskoe 65.75 329 *e*P P 19 58 07.7 -4.9
KLMR pmax pmax
comp=Z,27nm,1.4s
ARCES ARCESS Array B 65.90 340 P **P 19 58 12.6 -0.9**
comp=Z,3.2nm,0.9s,baz=32,slow=7.1,SNR=3.7
ARCES LR LR 20 31 03.2
comp=Z,125nm,18.1s,baz=40,slow=40
STKA Stephens Creek 67.00 181 P **P 19 58 20.8 0.0**
comp=Z,4.1nm,0.8s,baz=8.0,slow=7.9,SNR=7.9
STKA Stephens Creek 67.00 181 *e*P **P 19 58 20.8 0.0**
STKA pmax pmax
comp=Z,1.0nm,0.9s
STKA Stephens Creek 67.00 181 *e*P **P 19 58 20.8 0.0**
comp=Z,1.2nm,0.9s
B08A Colville Reser 69.04 45 *e*P **P 19 58 33.9 +0.2**
comp=Z,12nm,1.0s
H04A Detroit Lake 69.16 50 *e*P **P 19 58 35.9 +1.4**
comp=Z,57nm,1.7s
I04A Tendick Farm, 69.45 50 P **P 19 58 37.4 +1.0**
baz=300
VRH Novokhopyorsk 69.59 319 *e*P **P 19 58 36.0 -0.9**
VRH *e**SP **pP 19 58 45.7 +1.3**
VRH pmax pmax
comp=Z,10.0nm,0.8s
OBN Obninsk 70.11 324 *ce*P **P 19 58 40.1 +0.1**
OBN *e* 19 58 47.1
OBN pmax pmax
comp=Z,15nm,1.7s
OBN MLR MLR
comp=Z,261nm,16.0s
LPSR Galich'ya Gora 70.31 321 *e*P **P 19 58 41.6 +0.2**
LPSR *e**SP **sP 19 58 51.6 0.0**
LPSR pmax pmax
comp=Z,10.0nm,0.9s
NEW Newport 70.36 44 P **P 19 58 42.3 +0.5**
comp=Z,6.9nm,1.1s,baz=285,slow=5.5,SNR=5.8
NEW Newport 70.36 44 P **P 19 58 42.5 +0.6**
baz=302
NEW Newport 70.36 44 *e*P **P 19 58 42.3 +0.5**
NEW pmax pmax
comp=Z,10.0nm,0.9s
NEW Newport 70.36 44 *e*P **P 19 58 42.3 +0.5**
comp=Z,9.9nm,0.9s
FIA1 FINESS Array S 70.78 333 *e*P **P 19 58 43.9 -0.2**
FIA0 FINESS Array S 70.78 333 *e*P **P 19 58 44.2 +0.1**
FIA0 FINESS Array S 70.78 333 *e*P **P 19 58 44.2 +0.1**
FINES FINESS Array B 70.78 333 P **P 19 58 44.2 +0.1**
comp=Z,10.0nm,0.8s,baz=60,slow=7.5,SNR=28
FINES LR LR 20 32 44.5
comp=Z,265nm,18.1s,baz=54,slow=38
FINES FINESS Array B 70.78 333 *i*P **P 19 58 44.4 +0.3**
FINES pmax pmax
comp=Z,10.0nm,0.8s
M04C Macdoel 70.83 52 P **P 19 58 46.3 +1.4**
baz=301
VSR Storozhevoye 70.94 320 *e*P **P 19 58 44.8 -0.4**
VSR *e**SP **sP 19 58 54.6 -0.9**
VSR pmax pmax
comp=Z,10.0nm,1.2s
K05A Summer Lake 70.95 51 *e*P **P 19 58 47.0 +1.3**
comp=Z,31nm,1.1s
O03D Paynes Creek 71.61 53 P **P 19 58 50.2 +0.6**
baz=301
WALA Waterton Lakes 71.74 42 *e*P **P 19 58 50.5 +0.2**
comp=Z,68nm,0.6s
MOD Modoc Plateau 71.75 51 *e*P **P 19 58 51.0 +0.5**
comp=Z,6.0nm,0.8s
SUMG Summit 72.24 0 *e*P **P 19 58 53.9 +0.7**
SUMG Summit 72.24 0 *e*P **P 19 58 53.9 +0.7**
SWMT Swartz Lake 72.54 44 *e*P **P 19 58 55.0 -0.1**
ZEI Tsey 72.78 310 *e*P **P 19 58 55.7 -1.0**
ZEI pmax pmax
comp=Z,14nm,0.9s
KBZ Khabaz 72.89 312 P **P 19 58 57.9 +0.8**
comp=Z,8.9nm,0.9s,baz=50,slow=3.4,SNR=12
KBZ LR LR 20 34 32.6
comp=Z,102nm,19.5s,baz=66,slow=39
KIV Kislovodsk 72.89 312 *e*P **P 19 58 59.0 +1.8**
KIV pmax pmax
comp=Z,28nm,1.0s
KIV MLR MLR
comp=Z,122nm,18.0s
KIV Kislovodsk 72.89 312 *e*P **P 19 58 58.4 +1.2**
comp=Z,25nm,0.9s
MSO Missoula 72.95 44 P **P 19 58 58.0 +0.5**
baz=304
MSO Missoula 72.95 44 *e*P **P 19 58 57.7 +0.2**
comp=Z,8.2nm,1.1s
UOSS Minazif 73.51 289 *e*P **P 19 59 01.2 +0.2**
MFID Camas Ranch 73.73 48 *e*P **P 19 59 03.1 +0.9**
comp=Z,8.1nm,1.1s
CMB Columbia Colle 73.74 55 *e*P **P 19 59 03.2 +1.0**
CMB pmax pmax
comp=Z,27nm,1.6s
CMB Columbia Colle 73.74 55 *e*P **P 19 59 03.2 +1.0**
comp=Z,27nm,1.6s
AKH Akhalkalaki 73.78 309 ⇑ *i*P **P 19 59 03.5 +0.9**
CHVG Ch'k'valeri 73.94 311 ⇓ *i*P **P 19 59 05.9 +2.6**
FFC Flin Flon 74.33 33 *e*P **P 19 59 05.6 +0.3**
FFC pmax pmax
comp=Z,20nm,0.9s
FFC Flin Flon 74.33 33 *e*P **P 19 59 05.6 +0.3**
comp=Z,20nm,0.9s
LRM Limekiln Ridge 74.37 45 *e*P **P 19 59 06.9 +0.8**
HLID Hailey 74.50 47 P **P 19 59 08.2 +1.5**
baz=304
HLID Hailey 74.50 47 *e*P **P 19 59 07.9 +1.1**
comp=Z,5.6nm,1.1s
DLMT Dillon 74.55 45 *e*P **P 19 59 07.8 +0.8**
comp=Z,8.3nm,1.0s
NACGM Naroch 74.73 328 *e* **P 19 59 07.0 -0.6**
FCC Fort Churchill 74.82 27 *e*P **P 19 59 08.2 +0.1**
FCC pmax pmax
comp=Z,27nm,1.1s
FCC Fort Churchill 74.82 27 *e*P **P 19 59 08.2 +0.1**
comp=Z,27nm,1.1s
NV01 Mina Array Sit 74.90 54 *e*P **P 19 59 10.1 +0.9**
NVAR Mina Array Bea 74.90 54 P **P 19 59 09.7 +0.4**
comp=Z,6.2nm,0.9s,baz=288,slow=5.6,SNR=19
NVAR LR LR 20 23 07.7
comp=Z,66nm,21.8s,baz=282,slow=28
BOZ Bozeman (W) 74.94 44 P **P 19 59 10.1 +0.8**
baz=306
BOZ Bozeman (W) 74.94 44 *e*P **P 19 59 09.9 +0.6**
BOZ pmax pmax
comp=Z,12nm,1.0s
BOZ Bozeman (W) 74.94 44 *e*P **P 19 59 09.9 +0.6**
comp=Z,12nm,1.0s
ELK Elko 75.58 50 *e*P **P 19 59 14.3 +1.1**
ELK pmax pmax
comp=Z,5.0nm,1.0s
ELK Elko 75.58 50 *e*P **P 19 59 14.3 +1.1**
comp=Z,4.6nm,1.0s
YMR Madison River 75.89 45 *e*P **P 19 59 15.9 +1.1**
comp=Z,39nm,1.8s
NC405 NORSAR Array S 75.90 338 *e*P **P 19 59 14.7 +0.3**
HFS Hagfors 76.03 336 P **P 19 59 15.1 +0.1**
comp=Z,8.7nm,0.9s,baz=92,slow=3.6,SNR=14
NC204 NORSAR Array S 76.07 338 *e*P **P 19 59 15.6 +0.3**
NB201 NORSAR Array S 76.08 338 *e*P **P 19 59 15.5 +0.2**
YFT Old Faithful 76.10 45 *e*P **P 19 59 18.5 +2.5**
comp=Z,11nm,1.1s
NB2 NORSAR Subarra 76.11 338 P **P 19 59 15.5 0.0**
comp=Z,8.5nm,0.8s,baz=38,slow=5.9
NB200 NORSAR Array S 76.11 338 *e*P **P 19 59 15.8 +0.2**
NOA NORSAR Array B 76.11 338 P **P 19 59 15.8 +0.2**
comp=Z,7.7nm,0.8s,baz=39,slow=5.7,SNR=18
NOA LR LR 20 37 33.3
comp=Z,177nm,19.1s,baz=35,slow=40
H17A Grant Village 76.28 45 P **P 19 59 19.7 +2.5**
baz=306
H17A Grant Village 76.28 45 *e*P **P 19 59 19.6 +2.5**
comp=Z,14nm,0.9s
AKASG Malin Array Be 76.31 323 P **P 19 59 16.7 -0.1**
comp=Z,3.6nm,0.5s,baz=46,slow=6.1,SNR=36
AKASG LR LR 20 35 49.4
comp=Z,261nm,18.3s,baz=70,slow=38
AKBB Malin Array Si 76.31 323 *e*P **P 19 59 16.8 0.0**
AKBB Malin Array Si 76.31 323 *e*P **P 19 59 16.8 0.0**
KIEV Kiev 76.32 323 ⇑ *i*P **P 19 59 16.5 -0.3**
KIEV pmax pmax
comp=Z,22nm,1.7s
KIEV Kiev 76.32 323 *e*P **P 19 59 16.2 -0.6**
comp=Z,8.7nm,0.7s
AK11 Malin Array Si 76.35 323 *e*P **P 19 59 16.6 -0.4**
FLWY Flagg Ranch 76.39 45 *e*P **P 19 59 19.6 +1.9**
comp=Z,26nm,1.3s
MOOW Moose Ponds 76.57 46 *e*P **P 19 59 19.9 +1.2**
comp=Z,4.8nm,0.8s
RLMT Red Lodge 76.60 44 *e*P **P 19 59 18.4 -0.4**
comp=Z,15nm,0.8s
R11A Troy Canyon, C 76.72 52 P **P 19 59 20.3 +0.7**
baz=305
R11A Troy Canyon, C 76.72 52 *e*P **P 19 59 20.2 +0.7**
comp=Z,11nm,1.2s
REDW Red Top Meadow 76.73 46 *e*P **P 19 59 21.1 +1.4**
comp=Z,14nm,1.0s
MPMC Manual Prospec 76.76 55 P **P 19 59 20.5 +0.7**
baz=304
BGU Big Grassy Mou 76.85 49 *e*P **P 19 59 21.0 +0.7**
comp=Z,4.4nm,0.9s
SUW Suwalki 76.89 328 *e*P **P 19 59 18.7 -1.2**
SUW Suwalki 76.89 328 *e*P **P 19 59 18.8 -1.2**
AHID Auburn Hatcher 76.94 47 *e*P **P 19 59 21.4 +0.7**
comp=Z,14nm,1.1s
SPUT South Promonto 76.98 48 *e*P **P 19 59 22.0 +1.0**
comp=Z,6.1nm,1.1s
EDW2 Edwards Air Fo 77.08 56 P **P 19 59 22.0 +0.5**
baz=304
TPNV Topopah Spring 77.08 54 P **P 19 59 22.2 +0.6**
baz=305
TPNV Topopah Spring 77.08 54 *e*P **P 19 59 22.3 +0.6**
TPNV pmax pmax
comp=Z,8.0nm,0.9s
TPNV Topopah Spring 77.08 54 *e*P **P 19 59 22.2 +0.6**
comp=Z,7.5nm,0.9s
DGMT Dagmar 77.26 39 P **P 19 59 23.0 +0.8**
baz=310
DGMT Dagmar 77.26 39 *e*P **P 19 59 22.6 +0.4**
comp=Z,29nm,1.0s
HWUT Hardware Ranch 77.35 48 *e*P **P 19 59 23.8 +0.8**
comp=Z,14nm,1.1s
DUG Dugway, Tooele 77.41 50 P **P 19 59 24.3 +0.9**
baz=306
DUG Dugway, Tooele 77.41 50 *e*P **P 19 59 24.2 +0.8**
DUG pmax pmax
comp=Z,12nm,1.0s
DUG Dugway, Tooele 77.41 50 *e*P **P 19 59 24.2 +0.8**
comp=Z,12nm,1.0s
GSC Goldstone, Bar 77.64 55 *e*P **P 19 59 24.6 -0.1**
GSC pmax pmax
comp=Z,10.0nm,1.3s
GSC Goldstone, Bar 77.64 55 *e*P **P 19 59 24.6 -0.1**
comp=Z,10nm,1.3s
PSUT Pine Spring 77.72 51 *e*P **P 19 59 26.0 +0.7**
comp=Z,7.4nm,0.6s
BW06 Boulder Array 77.85 46 *e*P **P 19 59 24.5 -1.4**
FRB Frobisher Bay 78.00 14 P **P 19 59 26.3 +0.3**
comp=Z,5.2nm,0.6s,baz=334,slow=5.2,SNR=4.1
NLU North Lily Min 78.01 49 *e*P **P 19 59 27.1 +0.3**
comp=Z,4.7nm,0.8s
A26A Wade Farm, Ken 78.08 38 P **P 19 59 27.3 +0.5**
baz=311
TUQ Turquoise Moun 78.16 55 P **P 19 59 28.5 +0.8**
baz=305
HEC Hector,Ludlow 78.23 56 P **P 19 59 28.7 +0.7**
baz=305
A27A Ledoux Ranch, 78.44 37 P **P 19 59 29.4 +0.7**
baz=312
GMRC Granite Mounta 78.71 55 P **P 19 59 31.1 +0.4**
baz=305
PFO Pinyon Flats O 78.84 57 P **P 19 59 31.6 +0.2**
baz=305
PFO Pinyon Flats O 78.84 57 *e*P **P 19 59 31.7 +0.2**
PFO pmax pmax
comp=Z,9.0nm,1.0s
PFO Pinyon Flats O 78.84 57 *e*P **P 19 59 31.7 +0.2**
comp=Z,9.2nm,1.0s
BELC Belle Mtn. Jos 78.93 56 *e*P **P 19 59 34.8 +2.8**
A28A Rude Farm, Bot 78.95 37 P **P 19 59 32.0 +0.4**
baz=312
LCMT Little Creek M 79.00 52 *e*P **P 19 59 33.5 +1.2**
comp=Z,11nm,1.0s
D26A Manning 79.10 39 P **P 19 59 32.9 +0.4**
baz=311
P17A Butcher Ranch, 79.12 49 *e*P **P 19 59 33.8 +0.9**
comp=Z,8.6nm,0.9s
B28A Dugan Ranch, T 79.21 37 P **P 19 59 33.5 +0.5**
baz=312
KNB Kanab 79.27 52 *e*P **P 19 59 34.8 +1.0**
KNB pmax pmax
comp=Z,17nm,1.0s
KNB Kanab 79.27 52 *e*P **P 19 59 34.8 +1.0**
comp=Z,16nm,1.0s
IRM Iron Mountain 79.42 56 P **P 19 59 35.4 +0.9**
baz=306
A29A Manning Farm, 79.44 36 P **P 19 59 34.6 +0.3**
baz=313
SRU San Rafael Swe 79.47 49 *e*P **P 19 59 35.5 +0.6**
SRU pmax pmax
comp=Z,14nm,0.8s
SRU San Rafael Swe 79.47 49 *e*P **P 19 59 35.5 +0.6**
comp=Z,14nm,0.8s
BC3 Big Chuckawall 79.50 56 P **P 19 59 35.7 +0.7**
baz=306
D27A Center 79.52 39 P **P 19 59 35.5 +0.8**
baz=312
B29A Wagenman Farm, 79.69 37 P **P 19 59 35.9 +0.2**
baz=313
W13A Hualapai Mount 79.71 54 *e*P **P 19 59 36.8 +0.5**
comp=Z,3.8nm,1.0s
A30A Hoffart Farm, 79.88 36 P **P 19 59 37.0 +0.3**
baz=313
D28A Regan 79.95 38 P **P 19 59 37.9 +0.9**
baz=312
PDMCI Parker Dam,Lak 80.01 55 P **P 19 59 38.5 +0.9**
baz=306
ULM Lac du Bonnet 80.10 34 P **P 19 59 37.7 -0.1**
comp=Z,7.6nm,0.8s,baz=300,slow=6.3,SNR=12
ULM Lac du Bonnet 80.10 34 *e*P **P 19 59 37.4 -0.4**
ULM pmax pmax
comp=Z,14nm,1.0s
ULM Lac du Bonnet 80.10 34 *e*P **P 19 59 37.4 -0.4**
comp=Z,14nm,1.0s

Code	Station Name	Δ°	AZ°	Phase Op	Phase ISC	Time h m s	Res ISC
KWP	**Kalwaria Pacla**	**80.14**	**325**	*e*P	**P**	**19 59 39.0**	**+1.0**
KWP	**Kalwaria Pacla**	**80.14**	**325**	*e*P	**P**	**19 59 39.1**	**+1.0**
B30A	**Myrvik Farm, E**	**80.20**	**36**	P	**P**	**19 59 38.7**	**+0.3**
	baz=314						
GLA	**Glamis**	**80.28**	**56**	P	**P**	**19 59 39.8**	**+0.6**
	baz=306						
GLA	**Glamis**	**80.28**	**56**	*e*P	**P**	**19 59 40.0**	**+0.8**
GLA				pmax	pmax		
	comp=Z,14nm,1.0s						
GLA	**Glamis**	**80.28**	**56**	*e*P	**P**	**19 59 40.0**	**+0.8**
	comp=Z,14nm,1.0s						
BUR08	**Bucovina Ar. S**	**80.31**	**323**	*e*P	**P**	**19 59 39.6**	**+0.4**
BURAR	**Bucovina Array**	**80.32**	**323**	⇑*i*P	**P**	**19 59 39.6**	**+0.4**
TESR	**Tescani**	**80.35**	**321**	⇑*i*P	**P**	**19 59 40.1**	**+0.9**
CFR	**Carcaliu**	**80.46**	**319**	⇓*i*P	**P**	**19 59 40.6**	**+0.8**
D29A	**Pettibone, Tap**	**80.53**	**38**	P	**P**	**19 59 40.2**	**0.0**
	baz=313						
C30A	**Mose, Pekin**	**80.64**	**37**	P	**P**	**19 59 41.1**	**+0.3**
	baz=314						
PV09	**Paradox Valley**	**80.71**	**49**	*e*P	**P**	**19 59 42.5**	**+0.8**
VRI	**Vrincioaia**	**80.74**	**321**	⇑*i*P	**P**	**19 59 43.1**	**+1.8**
A32A	**Rocking H Ranc**	**80.75**	**35**	P	**P**	**19 59 41.5**	**+0.2**
	baz=315						
PLOR	**Plostina**	**80.79**	**321**	⇑*i*P	**P**	**19 59 43.4**	**+1.8**
KOLS	**Kolonicke sedl**	**80.83**	**325**	*e*P	**P**	**19 59 42.2**	**+0.4**
KOLS				*e*		19 59 53.1	
KOLS				*e*		20 02 45.5	
KOLS				pmax	pmax		
	comp=Z,4.0nm,1.0s						
KOLS	**Kolonicke sedl**	**80.83**	**325**	*e*P	**P**	**19 59 42.2**	**+0.4**
KOLS				*e*		19 59 53.1	
KOLS				*e*PP	**PP**	**20 02 45.5**	**0.0**
BR101	**Keskin Array S**	**80.84**	**313**	*e*P	**P**	**19 59 42.6**	**+0.5**
BR131	**Keskin Array S**	**80.84**	**313**	*e*P	**P**	**19 59 42.5**	**+0.4**
BRTR	**Keskin Array B**	**80.84**	**313**	P	**P**	**19 59 42.6**	**+0.5**
	comp=Z,5.1nm,0.8s,baz=107,slow=4.0,SNR=14						
BRTR				LR	LR	20 39 35.9	
	comp=Z,58nm,19.9s,baz=52,slow=39						
PV10	**Paradox Valley**	**80.84**	**49**	*e*P	**P**	**19 59 43.5**	**+1.2**
D30A	**Buchanan**	**80.91**	**38**	P	**P**	**19 59 42.3**	**+0.1**
	baz=313						
C31A	**Landman Farms,**	**80.94**	**37**	P	**P**	**19 59 42.7**	**+0.3**
	baz=314						
STHS	**Stebnicka Huta**	**80.97**	**326**	*e*P	**P**	**19 59 43.5**	**+1.0**
STHS				pmax	pmax		
	comp=Z,4.0nm,1.2s						
STHS	**Stebnicka Huta**	**80.97**	**326**	*e*P	**P**	**19 59 43.5**	**+1.0**
Y14A	**Wickenburg**	**80.98**	**55**	*e*P	**P**	**19 59 43.5**	**+0.6**
	comp=Z,34nm,1.0s						
PV05	**Paradox Valley**	**80.99**	**49**	*e*P	**P**	**19 59 43.4**	**+0.3**
UZH	**Uzhgorod**	**81.03**	**325**	*e*P	**P**	**19 59 42.7**	**-0.1**
OJC	**Ojcow**	**81.04**	**327**	*e*P	**P**	**19 59 43.7**	**+0.8**
OJC	**Ojcow**	**81.04**	**327**	*e*P	**P**	**19 59 43.7**	**+0.8**
OJC	**Ojcow**	**81.04**	**327**	*e*P	**P**	**19 59 43.7**	**+0.8**
	comp=Z,22nm,1.3s						
B32A	**Ashes, Strandq**	**81.10**	**36**	P	**P**	**19 59 42.8**	**-0.4**
	baz=315						
WUAZ	**Wupatki**	**81.11**	**53**	P	**P**	**19 59 44.5**	**+0.8**
	baz=307						
WUAZ	**Wupatki**	**81.11**	**53**	*e*P	**P**	**19 59 44.2**	**+0.5**
	comp=Z,12nm,1.0s						
113A	**Mohawk Valley,**	**81.17**	**56**	*e*P	**P**	**19 59 44.0**	**+0.2**
	comp=Z,8.8nm,1.0s						
E30A	**Jud**	**81.25**	**38**	P	**P**	**19 59 44.3**	**+0.2**
	baz=313						
A33A	**Warroad**	**81.25**	**35**	P	**P**	**19 59 43.9**	**-0.1**
	baz=315						
ANTO	**Ankara**	**81.26**	**313**	*e*P	**P**	**19 59 44.9**	**+0.6**
ANTO	**Ankara**	**81.26**	**313**	*e*P	**P**	**19 59 44.9**	**+0.6**
PV01	**Paradox Valley**	**81.28**	**49**	*e*P	**P**	**19 59 45.4**	**+0.7**
BR231	**Keskin MP Arra**	**81.28**	**313**	*e*P	**P**	**19 59 43.5**	**-1.0**
MSAB	**Monastry St. A**	**81.34**	**319**	⇑*i*P	**P**	**19 59 45.8**	**+1.3**
DOPR	**Dopca**	**81.36**	**321**	⇑*i*P	**P**	**19 59 46.1**	**+1.4**
NIE	**Niedzica**	**81.40**	**326**	*e*P	**P**	**19 59 45.8**	**+1.0**
NIE	**Niedzica**	**81.40**	**326**	*e*P	**P**	**19 59 45.9**	**+1.1**
MLR	**Muntele Rosu**	**81.40**	**321**	⇑*i*P	**P**	**19 59 46.5**	**+1.5**
H28A	**Mission Ridge**	**81.40**	**40**	P	**P**	**19 59 45.6**	**+0.7**
	baz=312						
AGMN	**Agassiz Nation**	**81.49**	**35**	P	**P**	**19 59 44.8**	**-0.5**
	baz=315						
AGMN	**Agassiz Nation**	**81.49**	**35**	*e*P	**P**	**19 59 44.6**	**-0.6**
	comp=Z,10nm,0.8s						
B33A	**Robert and Kas**	**81.63**	**35**	P	**P**	**19 59 45.7**	**-0.4**
	baz=315						
E31A	**Nome**	**81.72**	**38**	P	**P**	**19 59 46.6**	**+0.1**
	baz=314						
X16A	**Lo Mia Camp, P**	**81.73**	**54**	*e*P	**P**	**19 59 47.9**	**+0.8**
	comp=Z,6.3nm,0.9s						
I28A	**Midland**	**81.77**	**41**	P	**P**	**19 59 47.2**	**+0.3**
	baz=312						
VOIR		**81.90**	**321**	⇓*i*P	**P**	**19 59 48.6**	**+1.0**
MVCO	**Mesa Verde**	**81.90**	**50**	*e*P	**P**	**19 59 48.4**	**+0.4**
	comp=Z,9.4nm,1.0s						
C33A	**Trail**	**81.91**	**36**	P	**P**	**19 59 47.1**	**-0.4**
	baz=315						
B34A	**Aery, Baudette**	**81.92**	**35**	P	**P**	**19 59 47.1**	**-0.4**
	baz=316						
LANS	**Liptovska Anna**	**81.97**	**326**	*e*P	**P**	**19 59 48.9**	**+1.1**
LANS				*e*		19 59 59.3	
LANS				*e*		20 02 55.6	
LANS	**Liptovska Anna**	**81.97**	**326**	*e*P	**P**	**19 59 48.9**	**+1.1**
LANS				*e*		19 59 59.3	
LANS				*e*PP	**PP**	**20 02 55.6**	**+0.8**
KECS	**Kecovo**	**81.98**	**325**	*e*P	**P**	**19 59 47.5**	**-0.4**
KECS				pmax	pmax		
	comp=Z,2.0nm,1.0s						
KECS	**Kecovo**	**81.98**	**325**	*e*P	**P**	**19 59 47.5**	**-0.4**
F31A	**Hecla**	**82.03**	**38**	P	**P**	**19 59 48.0**	**-0.2**
	baz=314						
OKC	**Ostrava-Krasne**	**82.05**	**328**	AMS	AMS	20 40 20.0	
	comp=Z,300nm,16.8s						
G30A	**Faulkton**	**82.07**	**39**	P	**P**	**19 59 48.5**	**0.0**
	baz=313						
KSP	**Ksiaz**	**82.10**	**329**	*e*P	**P**	**19 59 49.5**	**+1.1**
KSP	**Ksiaz**	**82.10**	**329**	*e*P	**P**	**19 59 49.5**	**+1.1**
ARR	**Arges**	**82.16**	**321**	⇑*i*P	**P**	**19 59 50.4**	**+1.5**
MORC	**Moravsky Berou**	**82.36**	**328**	*e*P	**P**	**19 59 50.0**	**+0.1**
MORC				pmax	pmax		
	comp=Z,34nm,1.2s						
MORC	**Moravsky Berou**	**82.36**	**328**	*e*P	**P**	**19 59 50.0**	**+0.1**
	comp=Z,34nm,1.2s						
RAYN	**Ar Rayn**	**82.43**	**293**	*e*P	**P**	**19 59 51.2**	**+0.5**
	comp=Z,9.4nm,1.0s						
B35A	**Bob, Littlefor**	**82.44**	**34**	P	**P**	**19 59 50.0**	**-0.3**
	baz=317						
DPC	**Dobruska-Polom**	**82.45**	**329**	*e*P	**P**	**19 59 51.2**	**+0.8**
DPC				*e*x	x	20 00 00.7	
DPC				*e*x	x	20 00 05.2	
DPC				*e*PP	**PP**	**20 02 58.5**	**-0.3**
DPC	**Dobruska-Polom**	**82.45**	**329**	*e*P	**P**	**19 59 51.2**	**+0.8**
DPC				*e*		20 00 00.7	
DPC				*e*		20 00 05.2	
DPC				*e*		20 02 58.5	
UPC	**Upice**	**82.47**	**329**	AMS	AMS	20 40 50.0	
	comp=Z,300nm,16.5s						
S22A	**4UR Ranch, Cre**	**82.60**	**49**	*e*P	**P**	**19 59 52.8**	**+1.1**
	comp=Z,7.3nm,1.0s						
E33A	**Westby DABS, E**	**82.69**	**37**	P	**P**	**19 59 51.5**	**-0.1**
	baz=315						
VYHS	**Vyhne**	**82.73**	**326**	*e*P	**P**	**19 59 52.5**	**+0.7**
VYHS				pmax	pmax		
	comp=Z,3.0nm,1.0s						
VYHS	**Vyhne**	**82.73**	**326**	*e*P	**P**	**19 59 52.5**	**+0.7**
VYHS				*e*PP	PP	20 02 54.7	-6.4
I30A	**Oacoma**	**82.76**	**40**	P	**P**	**19 59 52.3**	**+0.3**
	baz=313						
C35A	**Jirik Farms, M**	**82.80**	**35**	P	**P**	**19 59 51.6**	**-0.5**
	baz=316						
G32A	**Webster**	**82.83**	**38**	P	**P**	**19 59 52.6**	**+0.2**
	baz=314						
F33A	**5 Mile Ranch,**	**83.02**	**37**	P	**P**	**19 59 53.5**	**+0.2**
	baz=315						
BRG	**Berggiesshubel**	**83.04**	**330**	*e*P	**P**	**19 59 53.6**	**+0.4**
	comp=Z,10nm,1.4s						
BRG	**Berggiesshubel**	**83.04**	**330**	*e*P	**P**	**19 59 53.7**	**+0.4**
BRG				pmax	pmax		
	comp=Z,10.0nm,1.4s						
GZR	**Gura Zlata**	**83.08**	**322**	⇑*i*P	**P**	**19 59 54.3**	**+0.6**
CLL	**Collm**	**83.08**	**331**	⇓*i*P	**P**	**19 59 53.5**	**0.0**
	comp=Z,9.0nm,0.9s						
CLL				*i*		19 59 55.4	
CLL				*e*		20 00 04.0	
	comp=Z,10.0nm,0.7s						
CLL	**Collm**	**83.08**	**331**	⇓*i*P	**P**	**19 59 53.5**	**0.0**
CLL				*e*		20 00 04.0	
CLL				pmax	pmax		
	comp=Z,9.0nm,0.9s						
CLL	**Collm**	**83.08**	**331**	*e*P	**P**	**19 59 53.0**	**-0.5**
VRAC	**Vranov**	**83.12**	**328**	⇑*i*P	**P**	**19 59 54.8**	**+1.0**
C36A	**Pine Crest Far**	**83.28**	**34**	P	**P**	**19 59 54.2**	**-0.4**
	baz=317						
MQZ	**McQueen's Vall**	**83.30**	**159**	*e*P	**P**	**19 59 54.7**	**+0.3**
	comp=Z,234nm,0.2s						
G33A	**Ortonville**	**83.40**	**38**	P	**P**	**19 59 55.3**	**0.0**
	baz=315						
SDCO	**Great Sand Dun**	**83.41**	**48**	*e*P	**P**	**19 59 56.7**	**+0.9**
	comp=Z,3.8nm,1.0s						
E35A	**Pequot Lakes**	**83.42**	**36**	P	**P**	**19 59 54.9**	**-0.5**
	baz=316						
TUC	**Tucson**	**83.45**	**55**	P	**P**	**19 59 56.7**	**+0.8**
	baz=308						
TUC	**Tucson**	**83.45**	**55**	*e*P	**P**	**19 59 56.7**	**+0.8**
TUC				pmax	pmax		
	comp=Z,7.0nm,1.0s						
TUC	**Tucson**	**83.45**	**55**	*e*P	**P**	**19 59 56.7**	**+0.8**
	comp=Z,6.6nm,1.0s						
PRU	**Pruhonice**	**83.48**	**329**	*e*P	**P**	**19 59 56.1**	**+0.5**
PRU	**Pruhonice**	**83.48**	**329**	*e*P	**P**	**19 59 56.1**	**+0.5**
BZS	**Buzias**	**83.50**	**323**	⇑*i*P	**P**	**19 59 56.1**	**+0.3**
C37A	**Embarrass**	**83.60**	**34**	P	**P**	**19 59 55.8**	**-0.5**
	baz=318						
TREC	**Trest**	**83.61**	**328**	*e*P	**P**	**19 59 57.0**	**+0.7**
TREC	**Trest**	**83.61**	**328**	*e*P	**P**	**19 59 57.0**	**+0.7**
H33A	**Prehn Over Nor**	**83.61**	**38**	P	**P**	**19 59 56.7**	**+0.3**
	baz=315						
F35A	**Swanville**	**83.85**	**36**	P	**P**	**19 59 57.5**	**-0.1**
	baz=316						
E36A	**McGregor**	**84.00**	**35**	P	**P**	**19 59 58.0**	**-0.3**
	baz=317						
CSS	**Mathiatis**	**84.03**	**309**	*e*P	**P**	**19 59 59.0**	**+0.2**
	comp=Z,2.9nm,0.8s						
MDVR	**Moldovita**	**84.04**	**322**	⇑*i*P	**P**	**19 59 59.0**	**+0.3**
NKC	**Novy Kostel**	**84.14**	**331**	*e*P	**P**	**19 59 59.2**	**+0.2**
NKC				*e*x	x	20 00 09.9	
NKC	**Novy Kostel**	**84.14**	**331**	*e*P	**P**	**19 59 59.2**	**+0.2**
NKC				*e*		20 00 09.9	
ECSD	**EROS Data Cent**	**84.35**	**39**	P	**P**	**19 59 59.9**	**-0.2**
	baz=315						
ECSD	**EROS Data Cent**	**84.35**	**39**	*e*P	**P**	**19 59 59.7**	**-0.5**
	comp=Z,11nm,0.9s						
G35A	**Watkins**	**84.35**	**37**	P	**P**	**20 00 00.5**	**+0.4**
	baz=316						
KHC	**Kasperske Hory**	**84.54**	**329**	*e*P	**P**	**20 00 01.5**	**+0.4**
KHC				*e*sP	**sP**	**20 00 11.2**	**-0.2**
KHC				AMS	AMS	20 41 40.0	
	comp=Z,300nm,18.8s						
KHC	**Kasperske Hory**	**84.54**	**329**	*e*P	**P**	**20 00 01.5**	**+0.4**
KHC				*e*		20 00 11.2	
KHC				MLR	MLR		
	comp=Z,300nm,18.8s						
KHC	**Kasperske Hory**	**84.54**	**329**	*e*P	**P**	**20 00 01.2**	**+0.1**
	comp=Z,3.2nm,1.0s						
ANMO	**Albuquerque**	**84.61**	**51**	P	**P**	**20 00 03.1**	**+1.2**
	baz=310						
ANMO	**Albuquerque**	**84.61**	**51**	*e*P	**P**	**20 00 03.0**	**+1.1**
ANMO				pmax	pmax		
	comp=Z,8.0nm,1.1s						
ANMO	**Albuquerque**	**84.61**	**51**	*e*P	**P**	**20 00 03.0**	**+1.1**
	comp=Z,8.0nm,1.1s						
GEC2	**GERESS Array S**	**84.71**	**329**	*e*P	**P**	**20 00 01.9**	**-0.1**
GEC2				pmax	pmax		
	comp=Z,3.0nm,0.8s						
GEC2	**GERESS Array S**	**84.71**	**329**	*e*P	**P**	**20 00 01.9**	**-0.1**
	comp=Z,3.1nm,0.8s						
GERES	**GERESS Array B**	**84.71**	**329**	P	**P**	**20 00 01.9**	**-0.1**
	comp=Z,2.3nm,0.7s,baz=33,slow=5.1,SNR=17						
GERES				LR	LR	20 41 55.8	
	comp=Z,148nm,18.5s,baz=50,slow=39						
GEA0	**GERESS Array S**	**84.71**	**329**	*e*P	**P**	**20 00 01.9**	**-0.1**
VTS	**Vitosha**	**84.83**	**320**	⇑*i*P	**P**	**20 00 03.9**	**+1.1**
VTS	**Vitosha**	**84.83**	**320**	*e*P	**P**	**20 00 03.4**	**+0.6**
VTS				pmax	pmax		
	comp=Z,10.0nm,0.8s						
VTS	**Vitosha**	**84.83**	**320**	*e*P	**P**	**20 00 03.4**	**+0.6**
	comp=Z,10nm,0.8s						
319A	**Douglas**	**85.03**	**55**	*e*P	**P**	**20 00 03.5**	**-0.5**
	comp=Z,8.2nm,0.9s						
GRFO	**Grafenberg**	**85.06**	**331**	*e*P	**P**	**20 00 03.3**	**-0.4**
GRFO				pmax	pmax		
	comp=Z,10.0nm,0.9s						
GRFO	**Grafenberg**	**85.06**	**331**	*e*P	**P**	**20 00 03.2**	**-0.4**
	comp=Z,10nm,0.9s						
121A	**Cookes Peak, D**	**85.29**	**53**	P	**P**	**20 00 05.3**	**0.0**
	baz=310						
HSIG		**85.36**	**58**	*e*P	**P**	**20 00 06.4**	**+0.9**
	comp=Z,12nm,1.2s						
I37A	**Lemond, Waseca**	**85.76**	**37**	P	**P**	**20 00 07.4**	**+0.2**
	baz=317						
I38A	**Scanlan Farm,**	**86.26**	**36**	P	**P**	**20 00 09.7**	**0.0**
	baz=318						
SCHQ	**Schefferville**	**86.48**	**17**	LR	LR	20 44 45.7	
	comp=Z,39nm,18.6s,baz=28,slow=40						
K37A	**Belmond**	**86.55**	**38**	P	**P**	**20 00 11.3**	**+0.1**
	baz=317						
P34A	**Walnut Farm, R**	**87.19**	**42**	P	**P**	**20 00 14.4**	**0.0**
	baz=315						
BFO	**Black Forest**	**87.28**	**332**	*i*P	**P**	**20 00 15.0**	**+0.3**
BFO	**Black Forest**	**87.28**	**332**	*e*P	**P**	**20 00 14.5**	**-0.2**
AMTX	**Amarillo**	**87.61**	**48**	P	**P**	**20 00 16.8**	**+0.2**
	baz=313						
AMTX	**Amarillo**	**87.61**	**48**	*e*P	**P**	**20 00 17.2**	**+0.6**
	comp=Z,13nm,1.1s						
FUORN	**Ofenpass-Fuorn**	**87.89**	**330**	*e*P	**P**	**20 00 17.9**	**0.0**
	comp=Z,5.2nm,0.6s						
N39A	**Derby Farms, D**	**88.52**	**39**	P	**P**	**20 00 20.9**	**+0.3**
	baz=318						
S35A	**Otter Creek Ra**	**88.80**	**43**	P	**P**	**20 00 22.6**	**+0.6**
	baz=316						
Q39A	**Willow Grove F**	**89.62**	**40**	P	**P**	**20 00 26.1**	**+0.2**
	baz=318						
LTX	**Lajitas**	**90.05**	**53**	*e*P	**P**	**20 00 28.6**	**+0.4**
LTX	**Lajitas**	**90.05**	**53**	*e*P	**P**	**20 00 28.6**	**+0.4**
TX31	**Lajitas Ar. Si**	**90.05**	**53**	*e*P	**P**	**20 00 28.1**	**-0.1**
TXAR	**Lajitas Array**	**90.05**	**53**	P	**P**	**20 00 28.6**	**+0.4**
	comp=Z,2.0nm,0.7s,baz=300,slow=3.5,SNR=16						
TXAR				LR	LR	20 40 13.8	
	comp=Z,51nm,18.1s,baz=0.0,slow=35						
T38A	**Diamond**	**90.38**	**42**	P	**P**	**20 00 29.3**	**-0.2**
	baz=317						
V37A	**Hulbert**	**90.74**	**44**	P	**P**	**20 00 31.4**	**+0.2**
	baz=316						
X36A	**Centrahoma**	**90.99**	**45**	P	**P**	**20 00 32.3**	**0.0**
	baz=316						
V38A	**Canehill**	**91.17**	**43**	P	**P**	**20 00 33.4**	**+0.2**
	baz=317						
233A	**Rising Star**	**91.26**	**49**	P	**P**	**20 00 34.4**	**+0.7**
	baz=314						
T40A	**Mansfield**	**91.26**	**41**	P	**P**	**20 00 33.3**	**-0.3**
	baz=318						
134A	**White-Moore Ra**	**91.37**	**48**	P	**P**	**20 00 35.3**	**+1.2**
	baz=314						
V39A	**Pettigrew**	**91.61**	**43**	P	**P**	**20 00 35.4**	**+0.2**
	baz=317						
U40A	**Yellville**	**91.67**	**42**	P	**P**	**20 00 35.6**	**+0.2**
	baz=318						
333A	**Richland Sprin**	**91.69**	**49**	P	**P**	**20 00 36.2**	**+0.6**
	baz=314						
X38A	**Whitesboro**	**91.79**	**44**	P	**P**	**20 00 36.7**	**+0.6**
	baz=316						
334A	**Lometa**	**92.14**	**49**	P	**P**	**20 00 38.2**	**+0.4**
	baz=314						
X39A	**Fountain Ranch**	**92.31**	**44**	P	**P**	**20 00 39.5**	**+1.0**
	baz=317						
434A	**Burnet**	**92.48**	**49**	P	**P**	**20 00 40.0**	**+0.6**
	baz=314						
MIAR	**Mount Ida**	**92.59**	**44**	P	**P**	**20 00 40.2**	**+0.5**
	baz=317						
MIAR	**Mount Ida**	**92.59**	**44**	*e*P	**P**	**20 00 40.2**	**+0.5**
MIAR				pmax	pmax		
	comp=Z,21nm,1.0s						
MIAR	**Mount Ida**	**92.59**	**44**	*e*P	**P**	**20 00 40.2**	**+0.5**
	comp=Z,21nm,1.0s						
PBMO	**Poplar Bluff**	**92.65**	**40**	*e*P	**P**	**20 00 40.1**	**+0.1**
	comp=Z,15nm,1.2s						
534A	**Blanco**	**92.90**	**50**	P	**P**	**20 00 41.7**	**+0.4**
	baz=314						
ACSO	**Alum Creek Sta**	**93.60**	**33**	*e*P	**P**	**20 00 41.8**	**-2.5**
	comp=Z,24nm,0.8s						
KEST	**Kesra**	**97.03**	**324**	LR	LR	20 51 05.0	
	comp=Z,94nm,18.9s,baz=314,slow=39						
ESDC	**Sonseca Array**	**99.25**	**335**	P	**Pdif**	**20 01 09.6**	**-0.5**
	comp=Z,0.2nm,0.4s,baz=3.8,slow=3.9,SNR=4.2						
ESDC				LR	LR	20 52 01.4	
	comp=Z,94nm,19.1s,baz=175,slow=39						
TOA1	**Torodi Ar. Sit**	**119.33**	**316**	*e*PKPdf	**PKPdf**	**20 06 17.3**	**-0.7**
TORD	**Torodi Ar. Bea**	**119.33**	**316**	PKP	**PKPdf**	**20 06 17.3**	**-0.7**
	comp=Z,0.3nm,0.6s,baz=25,slow=2.3,SNR=4.2						
QSPA	**South Pole Qui**	**125.21**	**180**	*e*PKPdf	**PKPdf**	**20 06 27.6**	**0.0**
SDV	**Santo Domingo**	**125.67**	**42**	*e*PKPdf	**PKPdf**	**20 06 29.9**	**-0.4**
SYO	**Syowa Base**	**127.37**	**206**	⇑*e*pPdiff	pPdif	20 03 19.6	-2.1
VNA2	**Neumayer--Watz**	**141.16**	**195**	PKP	**PKPdf**	**20 06 52.8**	**-4.5**
	baz=75,slow=1.7						
VNA3	**Neumayer Olymp**	**141.37**	**194**	PKP	**PKPdf**	**20 06 53.8**	**-4.0**
SAML	**Samuel**	**144.40**	**48**	*e*PKPdf	PKPbc	20 07 03.2	0.0
LPAZ	**La Paz**	**146.32**	**64**	PKPbc	**PKPbc**	**20 07 09.8**	**-0.2**
	comp=Z,4.8nm,0.8s,baz=356,slow=4.7,SNR=14						
LPAZ	**La Paz**	**146.32**	**64**	*e*PKP2	**PKPbc**	**20 07 10.0**	**0.0**
LPAZ	**La Paz**	**146.32**	**64**	*e*PKPdf	**PKPbc**	**20 07 10.0**	**0.0**
PB01	**IPOC Station P**	**148.16**	**72**	*e*PKPdf	**PKPdf**	**20 07 11.5**	**+0.4**
RCBR	**Riachuelo**	**150.48**	**358**	PKPbc	**PKPbc**	**20 07 20.0**	**-0.3**
	comp=Z,13nm,1.0s,baz=337,slow=3.2,SNR=3.2						
LCO	**Las Campanas**	**150.88**	**87**	*e*PKPbc	**PKPbc**	**20 07 20.7**	**-0.5**
PLCA	**Paso Flores**	**153.19**	**111**	PKPbc	**PKPbc**	**20 07 26.3**	**+0.5**
	comp=Z,2.4nm,0.9s,baz=48,slow=2.8,SNR=4.1						

ISCJB ***05*** *19:53:49.6±0.4, 39°.11N±0°.02×29°.06E±0°.02, h3km±3km, Error ellipse: s-maj=2.6km s-min=2.4km az=19.4*

DDA ***05*** *19:53:49.2, 39°.13N×29°.07E, h14km, Ml3.5*

ISK ***05*** *19:53:49.0, 39°.13N×29°.12E, h5km, ML3.5*

CSEM ***05*** *19:53:50.1±0.1, 39°.12N×29°.08E, h2km, ML3.5, Error ellipse: s-maj=2.5km s-min=2.3km az=16.0*

THE ***05*** *19:53:51.1, 39°.06N×28°.91E, h0km±2km, ML3.2/2, Error ellipse: s-maj=4.9km s-min=1.4km az=83.0*

ISC 05 19:53:49.7±0.9**, 39°.13N**±0°.01×**29°.03E**±0°.01**, h8**km±8km**, n192, σ0**s**.90**/221**, 8C-5D, Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.26**	**250**	*i* P	**Pg**	**19 53 55.2**	**+0.3**
DEMI				*i* S	**Sg**	**19 53 59.5**	**+1.0**
DEMI	**Demirci**	**0.26**	**250**	P	**Pg**	**19 53 55.2**	**+0.3**
DEMI				S	**Sg**	**19 53 59.5**	**+1.0**
GDZ	**Gediz**	**0.35**	**97**	*i* P	**Pg**	**19 53 56.6**	**-0.1**
GDZ				*i* S	**Sg**	**19 54 01.4**	**0.0**
GDZ	**Gediz**	**0.35**	**97**	P	**Pg**	**19 53 56.6**	**-0.1**
GDZ				S	**Sg**	**19 54 01.4**	**0.0**
TVSB	**Tavsanli**	**0.46**	**47**	*e*PG	**Pg**	**19 53 58.7**	**0.0**
TVSB				*e*SG	**Sg**	**19 54 04.7**	**-0.1**
TVSB	**Tavsanli**	**0.46**	**47**	*e*Pg	**Pg**	**19 53 58.7**	**0.0**
TVSB				*e*Sg	**Sg**	**19 54 04.7**	**-0.1**
DST	**Dursunbey**	**0.57**	**326**	*e*PG	**Pb**	**19 54 01.4**	**-0.6**
DST				*e*SG	**Sb**	**19 54 11.9**	**+1.7**
DST	**Dursunbey**	**0.57**	**326**	*e*Pg	**Pb**	**19 54 01.4**	**-0.6**
DST				*e*Sg	**Sb**	**19 54 11.9**	**+1.7**
DURS	**Dursunbey**	**0.64**	**317**	*i* P	**Pg**	**19 54 02.3**	**+0.3**
DURS				*i* S	**Sb**	**19 54 11.3**	**-0.9**
DURS	**Dursunbey**	**0.64**	**317**	P	**Pg**	**19 54 02.3**	**+0.3**
DURS				S	**Sb**	**19 54 11.3**	**-0.9**
KULA	**Kula-Manisa**	**0.68**	**205**	P	**Pg**	**19 54 02.5**	**-0.4**
KULA				S	**Sg**	**19 54 11.5**	**-0.3**
KULA	**Kula-Manisa**	**0.68**	**205**	P	**Pg**	**19 54 02.5**	**-0.4**
KULA				S	**Sg**	**19 54 11.5**	**-0.3**
KHAL	**Karahalli**	**0.84**	**155**	*i* P	**Pg**	**19 54 05.6**	**-0.3**
KHAL				*i* S	**Sg**	**19 54 16.4**	**-0.5**
KHAL	**Karahalli**	**0.84**	**155**	P	**Pg**	**19 54 05.6**	**-0.3**
KHAL				S	**Sg**	**19 54 16.4**	**-0.5**
KHL	**Karahalli**	**0.90**	**154**	*e*PG	**Pg**	**19 54 06.9**	**-0.1**
KHL	**Karahalli**	**0.90**	**154**	*e*Pg	**Pg**	**19 54 06.9**	**-0.1**
ORLT	**Orhaneli**	**0.92**	**354**	*e*PG	**Pb**	**19 54 07.8**	**-0.1**
ORLT	**Orhaneli**	**0.92**	**354**	*e*Pg	**Pb**	**19 54 07.8**	**-0.1**
AKHS	**Akhisar**	**0.98**	**255**	*i* P	**Pb**	**19 54 08.8**	**-0.1**
AKHS				*i* S	**Sb**	**19 54 22.5**	**+0.5**
AKHS	**Akhisar**	**0.98**	**255**	P	**Pb**	**19 54 08.8**	**-0.1**
AKHS				S	**Sb**	**19 54 22.5**	**+0.5**
AKS	**Akhisar**	**0.98**	**255**	*e*PG	**Pn**	**19 54 09.6**	**-0.2**
AKS	**Akhisar**	**0.98**	**255**	*e*Pg	**Pn**	**19 54 09.6**	**-0.2**
ULDT	**Uludag**	**1.01**	**5**	*i* P	**Pg**	**19 54 08.7**	**-0.5**
ULDT				*i* S	**Sb**	**19 54 22.9**	**-0.2**
ULDT	**Uludag**	**1.01**	**5**	P	**Pg**	**19 54 08.7**	**-0.5**
ULDT				S	**Sb**	**19 54 22.9**	**-0.2**
BALB	**Balikesir**	**1.02**	**300**	*e*PN	**Pn**	**19 54 10.8**	**+0.5**
BALB	**Balikesir**	**1.02**	**300**	*e*Pn	**Pn**	**19 54 10.8**	**+0.5**
UZP	**Denizli**	**1.11**	**174**	*i* P	**Pg**	**19 54 10.7**	**-0.3**
UZP				*i* S	**Sg**	**19 54 24.4**	**-1.0**
AUKUT	**KUTAHYA**	**1.12**	**43**	*i* P	Pg	19 54 04.9	-6.4
AUKUT				*i* S	Sg	19 54 16.0	-10
IGD	**Bursa**	**1.14**	**7**	*i* P	**Pg**	**19 54 10.2**	**-1.3**
IGD				*i* S	**Sn**	**19 54 27.9**	**+0.2**
AUKIR	**K˜–rka- Seyitg**	**1.18**	**83**	*i* P	**Pn**	**19 54 12.7**	**+0.1**
AUKIR				*i* S	**Sg**	**19 54 27.0**	**-0.5**
AUKIR	**K˜–rka- Seyitg**	**1.18**	**83**	P	**Pn**	**19 54 12.6**	**+0.1**
AUKIR				S	**Sg**	**19 54 27.0**	**-0.5**
CAVI	**Cavuskoy**	**1.24**	**30**	*e*PN	**Pg**	**19 54 13.7**	**+0.2**
CAVI	**Cavuskoy**	**1.24**	**30**	*e*Pn	**Pg**	**19 54 13.7**	**+0.2**
MDNY	**Mudanya-Bursa**	**1.24**	**355**	*e*PN	**Pg**	**19 54 13.7**	**+0.2**
MDNY	**Mudanya-Bursa**	**1.24**	**355**	*e*Pn	**Pg**	**19 54 13.7**	**+0.2**
KCTX	**Karacabey (Bur**	**1.24**	**336**	*e*PN	**Pg**	**19 54 14.1**	**+0.5**
KCTX	**Karacabey (Bur**	**1.24**	**336**	*e*Pn	**Pg**	**19 54 14.1**	**+0.5**
BALY	**Balya**	**1.25**	**299**	*i* P	**Pg**	**19 54 13.9**	**+0.2**
BALY	**Balya**	**1.25**	**299**	P	**Pg**	**19 54 13.9**	**+0.2**
IZI	**Iznik**	**1.25**	**16**	*e*PN	**Pb**	**19 54 13.4**	**-0.1**
IZI	**Iznik**	**1.25**	**16**	*e*Pn	**Pb**	**19 54 13.5**	**-0.1**
GEMT	**Gemlik**	**1.31**	**5**	*e*PN	**Pg**	**19 54 15.3**	**+0.5**
GEMT	**Gemlik**	**1.31**	**5**	*e*Pn	**Pg**	**19 54 15.3**	**+0.5**
SHUT	**Suhut-Afyon**	**1.32**	**116**	*e*PN	**Pn**	**19 54 14.7**	**+0.2**
SHUT	**Suhut-Afyon**	**1.32**	**116**	*e*Pn	**Pn**	**19 54 14.7**	**+0.2**
BORA	**Eskisehir**	**1.33**	**55**	*i* P	**Pn**	**19 54 14.1**	**-0.5**
BORA				*i* S	**Sg**	**19 54 32.5**	**0.0**
BORA	**Eskisehir**	**1.33**	**55**	P	**Pn**	**19 54 14.1**	**-0.5**
BORA				S	**Sg**	**19 54 32.5**	**0.0**
DENT	**Denizli**	**1.38**	**180**	*e*PN	**Pb**	**19 54 15.8**	**+0.1**
DENT	**Denizli**	**1.38**	**180**	*e*Pn	**Pb**	**19 54 15.8**	**+0.1**
ADVT	**Abdulvahap**	**1.41**	**23**	*e*PN	**Pg**	**19 54 16.8**	**+0.1**
ADVT	**Abdulvahap**	**1.41**	**23**	*e*Pn	**Pg**	**19 54 16.8**	**+0.1**
ARMT	**Armutlu**	**1.44**	**355**	*e*PN	**Pb**	**19 54 16.5**	**-0.2**
ARMT	**Armutlu**	**1.44**	**355**	*e*Pn	**Pb**	**19 54 16.5**	**-0.2**
ESKT	**Eskisehir**	**1.46**	**74**	*i* P	**Pn**	**19 54 16.2**	**-0.3**
SEYT	**Eskypehyr**	**1.46**	**74**	P	**Pn**	**19 54 16.2**	**-0.3**
BNT	**Bandirma**	**1.49**	**325**	*e*PN	**Pg**	**19 54 18.5**	**+0.2**
BNT	**Bandirma**	**1.49**	**325**	*e*Pn	**Pg**	**19 54 18.5**	**+0.2**
EDC	**Edincik**	**1.51**	**324**	*e*PN	**Pg**	**19 54 18.6**	**-0.1**
EDC	**Edincik**	**1.51**	**324**	*e*Pn	**Pg**	**19 54 18.6**	**-0.1**
GPA	**Golpazari**	**1.52**	**40**	*e*PN	**Pb**	**19 54 18.4**	**+0.2**
GPA	**Golpazari**	**1.52**	**40**	*e*Pn	**Pb**	**19 54 18.4**	**+0.2**
BOLV	**Bolvadin**	**1.55**	**105**	*i* P	**Pn**	**19 54 17.8**	**0.0**
BOLV				*i* S	**Sb**	**19 54 38.7**	**+0.1**
BOLV	**Bolvadin**	**1.55**	**105**	P	**Pn**	**19 54 17.8**	**0.0**
BOLV				S	**Sb**	**19 54 38.7**	**+0.1**
IZM	**Izmir**	**1.56**	**243**	*e*PN	**Pg**	**19 54 20.1**	**+0.4**
IZM	**Izmir**	**1.56**	**243**	*e*Pn	**Pg**	**19 54 20.1**	**+0.4**
KNL	**Bal˜–kesir**	**1.62**	**315**	*i* P	**Pn**	**19 54 18.9**	**+0.4**
KNL				*i* S	**Sg**	**19 54 41.5**	**-0.4**
BLCB	**Balcova**	**1.73**	**245**	*e*PN	**Pg**	**19 54 22.4**	**-0.4**
BLCB	**Balcova**	**1.73**	**245**	*e*Pn	**Pg**	**19 54 22.4**	**-0.4**
AYDN	**Tasoluk**	**1.73**	**212**	*i* P	**Pb**	**19 54 21.8**	**+0.1**
AYDN	**Tasoluk**	**1.73**	**212**	P	**Pb**	**19 54 21.8**	**+0.1**
GULT	**Gulveren**	**1.73**	**41**	*e*PN	**Pn**	**19 54 20.1**	**0.0**
GULT	**Gulveren**	**1.73**	**41**	*e*Pn	**Pn**	**19 54 20.1**	**0.0**
BAGO	**Egridir - ISPA**	**1.79**	**129**	*i* S	**Sg**	**19 54 49.2**	**+1.9**
AYVA	**Ayvalik**	**1.83**	**276**	*i* P	**Pg**	**19 54 25.0**	**+0.3**
AYVA	**Ayvalik**	**1.83**	**276**	P	**Pg**	**19 54 25.0**	**+0.3**
KRBG	**Karabiga-Canak**	**1.83**	**314**	*e*PN	**Pg**	**19 54 24.4**	**-0.5**
KRBG	**Karabiga-Canak**	**1.83**	**314**	*e*Pn	**Pg**	**19 54 24.4**	**-0.5**
SPNC	**Sapanca-Adapaz**	**1.84**	**32**	*e*PN	**Pn**	**19 54 22.4**	**+0.9**
SPNC	**Sapanca-Adapaz**	**1.84**	**32**	*e*Pn	**Pn**	**19 54 22.4**	**+0.9**
MRMT	**Marmara Adasi**	**1.84**	**324**	*e*PN	**Pg**	**19 54 24.4**	**-0.6**
MRMT	**Marmara Adasi**	**1.84**	**324**	*e*Pn	**Pg**	**19 54 24.4**	**-0.6**
ISK	**Istanbul-Kandi**	**1.93**	**1**	*e*PN	**Pb**	**19 54 24.4**	**-0.7**
ISK	**Istanbul-Kandi**	**1.93**	**1**	P	**Pb**	**19 54 25.6**	**+0.5**
ISK				S	**Sg**	**19 54 51.1**	**-0.6**
ISK	**Istanbul-Kandi**	**1.93**	**1**	*e*Pn	**Pb**	**19 54 24.4**	**-0.7**
ISK	**Istanbul-Kandi**	**1.93**	**1**	P	**Pb**	**19 54 25.6**	**+0.5**
ISK				S	**Sg**	**19 54 51.1**	**-0.6**
GOLH	**Golhisar**	**1.94**	**167**	*i* P	**Pn**	**19 54 23.2**	**+0.2**
GOLH	**Golhisar**	**1.94**	**167**	P	**Pn**	**19 54 23.2**	**+0.2**
SVRH	**Sivrihisar-ESK**	**1.96**	**80**	*e*PN	**Pn**	**19 54 23.6**	**+0.3**
SVRH	**Sivrihisar-ESK**	**1.96**	**80**	*e*Pn	**Pn**	**19 54 23.6**	**+0.3**
AUMIH	**MIHALICIK**	**2.04**	**68**	*i* P	**Pb**	**19 54 27.8**	**+0.8**
AUMIH				*i* S	**Sg**	**19 54 55.9**	**+0.8**
URLA	**Izmir**	**2.05**	**249**	*i* P	**Pg**	**19 54 31.1**	**+2.0**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BGKT	**Bogazkoy**	**2.06**	**355**	*e*PN	**Pb**	**19 54 26.7**	**-0.5**
BGKT	**Bogazkoy**	**2.06**	**355**	*e*Pn	**Pb**	**19 54 26.7**	**-0.5**
SILT	**Sile**	**2.07**	**13**	*e*PN	**Pb**	**19 54 26.7**	**-0.8**
SILT	**Sile**	**2.07**	**13**	*e*Pn	**Pb**	**19 54 26.7**	**-0.8**
YER	**Yerkesik**	**2.08**	**197**	*e*PN	**Pb**	**19 54 27.1**	**-0.6**
YER	**Yerkesik**	**2.08**	**197**	*e*Pn	**Pb**	**19 54 27.1**	**-0.6**
BTAS	**Taskesti**	**2.09**	**46**	*i* P	**Pg**	**19 54 29.0**	**-0.8**
RKY	**Sarkoy-Tekirda**	**2.11**	**318**	*e*PN	**Pb**	**19 54 27.6**	**-0.6**
RKY	**Sarkoy-Tekirda**	**2.11**	**318**	*e*Pn	**Pb**	**19 54 27.6**	**-0.6**
SART	**Tekirdag**	**2.11**	**318**	*i* P	**Pg**	**19 54 30.5**	**+0.4**
KLYT	**Kilyos**	**2.12**	**0**	*e*PN	**Pb**	**19 54 27.0**	**-1.3**
KLYT	**Kilyos**	**2.12**	**0**	*e*Pn	**Pb**	**19 54 27.0**	**-1.3**
MDUB	**Mudurnu**	**2.14**	**51**	*e*PN	**Pn**	**19 54 26.7**	**+0.9**
MDUB	**Mudurnu**	**2.14**	**51**	*e*Pn	**Pn**	**19 54 26.7**	**+0.9**
CTKS	**Kestanelik-??a**	**2.14**	**349**	*e*PN	**Pb**	**19 54 27.6**	**-1.1**
CTKS	**Kestanelik-??a**	**2.14**	**349**	*e*Pn	**Pb**	**19 54 27.6**	**-1.1**
PRK	**Paraskevi**	**2.15**	**274**	P	**Pn**	**19 54 25.9**	**+0.1**
PRK	**Paraskevi**	**2.15**	**274**	P	**Pn**	**19 54 25.9**	**+0.1**
TKR	**Tekirdag**	**2.18**	**329**	*e*PN	**Pb**	**19 54 28.4**	**-1.0**
TKR	**Tekirdag**	**2.18**	**329**	*e*Pn	**Pb**	**19 54 28.4**	**-1.0**
SLVT	**Silivri**	**2.19**	**344**	*e*PN	**Pb**	**19 54 28.6**	**-0.9**
SLVT	**Silivri**	**2.19**	**344**	*e*Pn	**Pb**	**19 54 28.6**	**-0.9**
SAHE	**Sakarya_HENDEK**	**2.22**	**39**	*i* P	**Pn**	**19 54 27.1**	**+0.4**
SAHE	**Sakarya_HENDEK**	**2.22**	**39**	P	**Pn**	**19 54 27.1**	**+0.4**
CRLT	**Corlu**	**2.23**	**334**	*e*PN	**Pb**	**19 54 29.0**	**-1.2**
CRLT	**Corlu**	**2.23**	**334**	*e*Pn	**Pb**	**19 54 29.0**	**-1.2**
KIZT	**Kizilcal**	**2.23**	**96**	*e*PN	**Pn**	**19 54 27.3**	**+0.2**
KIZT	**Kizilcal**	**2.23**	**96**	*e*Pn	**Pn**	**19 54 27.3**	**+0.2**
GELI	**Tayfur-Gelibol**	**2.34**	**303**	*e*PN	**Pb**	**19 54 31.3**	**-0.8**
GELI	**Tayfur-Gelibol**	**2.34**	**303**	*e*Pn	**Pb**	**19 54 31.3**	**-0.8**
KORT	**Korkueli**	**2.37**	**154**	*i* P	**Pn**	**19 54 29.4**	**+0.4**
KORT	**Korkueli**	**2.37**	**154**	P	**Pn**	**19 54 29.4**	**+0.4**
CTYL	**Yalikoy Yolu**	**2.41**	**347**	*e*PN	**Pb**	**19 54 32.0**	**-1.2**
CTYL	**Yalikoy Yolu**	**2.41**	**347**	*e*Pn	**Pb**	**19 54 32.0**	**-1.2**
CHOS	**Chios island**	**2.44**	**253**	*e*PN	**Pb**	**19 54 32.6**	**-1.3**
CHOS	**Chios island**	**2.44**	**253**	P	**Pn**	**19 54 30.6**	**+0.7**
CHOS				S	**Sn**	**19 54 59.9**	**-0.1**
CHOS	**Chios island**	**2.44**	**253**	P	**Pn**	**19 54 30.6**	**+0.7**
CHOS	**Chios island**	**2.44**	**253**	*e*Pn	**Pb**	**19 54 32.6**	**-1.3**
CHOS				S	**Sn**	**19 54 59.9**	**-0.1**
SIGR	**SIGRI**	**2.47**	**273**	*e*PN	**Pb**	**19 54 33.5**	**-0.8**
SIGR	**SIGRI**	**2.47**	**273**	*e*Pn	**Pb**	**19 54 33.5**	**-0.8**
ERIK	**Erikli-Kesan**	**2.47**	**309**	*e*PN	**Pb**	**19 54 32.6**	**-1.6**
ERIK	**Erikli-Kesan**	**2.47**	**309**	*e*Pn	**Pb**	**19 54 32.7**	**-1.6**
BODT	**Bodrum**	**2.47**	**214**	*e*PN	**Pb**	**19 54 32.5**	**-1.9**
BODT	**Bodrum**	**2.47**	**214**	*e*Pn	**Pb**	**19 54 32.5**	**-1.9**
KESN	**Edirne-Kesan**	**2.47**	**314**	*i* P	**Pn**	**19 54 30.9**	**+0.3**
KESN	**Edirne-Kesan**	**2.47**	**314**	P	**Pn**	**19 54 30.9**	**+0.3**
KDHN	**Kadinhani**	**2.49**	**103**	*i* P	**Pn**	**19 54 30.5**	**-0.1**
KDHN	**Kadinhani**	**2.49**	**103**	P	**Pn**	**19 54 30.5**	**-0.1**
FETY	**Fethiye**	**2.49**	**179**	*e*PN	**Pn**	**19 54 31.7**	**+1.1**
FETY	**Fethiye**	**2.49**	**179**	P	**Pn**	**19 54 31.1**	**+0.5**
FETY	**Fethiye**	**2.49**	**179**	P	**Pn**	**19 54 31.1**	**+0.5**
FETY	**Fethiye**	**2.49**	**179**	*e*Pn	**Pn**	**19 54 31.7**	**+1.1**
GADA	**Gvkgeada**	**2.64**	**295**	*e*PN	**Pb**	**19 54 36.0**	**-1.2**
GADA	**Gvkgeada**	**2.64**	**295**	*e*Pn	**Pb**	**19 54 36.0**	**-1.2**
ENEZ	**Enez**	**2.73**	**307**	*e*PN	**Pb**	**19 54 36.7**	**-2.0**
ENEZ	**Enez**	**2.73**	**307**	P	**Pn**	**19 54 34.7**	**+0.9**
ENEZ	**Enez**	**2.73**	**307**	P	**Pn**	**19 54 34.7**	**+0.9**
ENEZ	**Enez**	**2.73**	**307**	*e*Pn	**Pb**	**19 54 36.7**	**-2.0**
ALN	**Alexandroupoli**	**2.89**	**308**	*e*PN	**Pb**	**19 54 39.3**	**-2.2**
ALN	**Alexandroupoli**	**2.89**	**308**	P	**Pn**	**19 54 36.3**	**+0.3**
ALN				S	**Sn**	**19 55 12.4**	**+1.5**
ALN	**Alexandroupoli**	**2.89**	**308**	P	**Pn**	**19 54 36.3**	**+0.3**
ALN	**Alexandroupoli**	**2.89**	**308**	*e*Pn	**Pb**	**19 54 39.3**	**-2.2**
ALN				S	**Sn**	**19 55 12.4**	**+1.5**
LOD	**Lodumlu**	**2.98**	**74**	*e*PN	**Pn**	**19 54 38.3**	**+0.9**
LOD	**Lodumlu**	**2.98**	**74**	*e*Pn	**Pn**	**19 54 38.3**	**+0.9**
SMTH	**Samothraki Isl**	**3.01**	**297**	P	**Pn**	**19 54 38.3**	**+0.7**
SMTH	**Samothraki Isl**	**3.01**	**297**	P	**Pn**	**19 54 38.3**	**+0.7**
AFSR	**Af¯ar-Bala (A**	**3.15**	**83**	*e*PN	**Pn**	**19 54 40.3**	**+0.6**
AFSR	**Af¯ar-Bala (A**	**3.15**	**83**	*e*Pn	**Pn**	**19 54 40.3**	**+0.6**
EDRB	**Edirne**	**3.22**	**328**	*e*PN	**Pn**	**19 54 43.4**	**+2.8**
EDRB	**Edirne**	**3.22**	**328**	P	**Pn**	**19 54 41.0**	**+0.4**
EDRB	**Edirne**	**3.22**	**328**	P	**Pn**	**19 54 41.0**	**+0.4**
EDRB	**Edirne**	**3.22**	**328**	*e*Pn	**Pn**	**19 54 43.4**	**+2.8**
SAFT	**Safranbolu**	**3.50**	**52**	*e*PN	**Pn**	**19 54 46.1**	**+1.6**
SAFT	**Safranbolu**	**3.50**	**52**	*e*Pn	**Pn**	**19 54 46.1**	**+1.6**
SERE	**Sereflikochisa**	**3.54**	**92**	*e*PN	**Pn**	**19 54 46.1**	**+1.1**
SERE	**Sereflikochisa**	**3.54**	**92**	*e*Pn	**Pn**	**19 54 46.1**	**+1.1**
CORM	**Corum**	**4.45**	**75**	*e*PN	**Pn**	**19 54 58.9**	**+1.4**
CORM	**Corum**	**4.45**	**75**	*e*Pn	**Pn**	**19 54 58.9**	**+1.4**
NIG	**Nigde**	**4.49**	**101**	*e*PN	**Pn**	**19 54 59.7**	**+1.5**
NIG	**Nigde**	**4.49**	**101**	*e*Pn	**Pn**	**19 54 59.7**	**+1.5**
MSAB	**Monastry St. A**	**5.04**	**350**	⇓*i*P	**Pn**	**19 55 06.6**	**+1.2**
TIRR	**Tirgusor**	**5.34**	**355**	⇑*i*P	**Pn**	**19 55 09.8**	**+0.2**
TIRR	**Tirgusor**	**5.34**	**355**	S	**Sn**	**19 56 09.0**	**-2.3**
VTS	**Vitosha**	**5.60**	**310**	⇓*i*P	Pn	19 55 08.0	-5.4
VTS	**Vitosha**	**5.60**	**310**	S	Sn	19 56 09.8	-8.2
CFR	**Carcaliu**	**6.08**	**354**	⇓*i*P	**Pn**	**19 55 19.7**	**0.0**
BARS	**Barje**	**6.58**	**306**	*e*Pn	**Pn**	**19 55 27.8**	**+1.1**
PETR	**Petresti**	**6.72**	**349**	⇑*i*P	**Pn**	**19 55 28.6**	**0.0**
MLR	**Muntele Rosu**	**6.75**	**341**	⇓*i*P	**Pn**	**19 55 30.6**	**+1.4**
MLR	**Muntele Rosu**	**6.75**	**341**	⇑*i*P	**Pn**	**19 55 27.8**	**-1.4**
MLR	**Muntele Rosu**	**6.75**	**341**	*e*P	**Pn**	**19 55 30.4**	**+1.2**
MLR				pmax	pmax		
	comp=Z,11nm,1.1s						
MLR	**Muntele Rosu**	**6.75**	**341**	*e*P	**Pn**	**19 55 30.4**	**+1.2**
	comp=Z,10nm,1.1s						
PLOR	**Plostina**	**6.94**	**346**	⇑*i*P	**Pn**	**19 55 29.4**	**-2.3**
VRI	**Vrincioaia**	**6.94**	**347**	⇑*i*P	**Pn**	**19 55 29.5**	**-2.1**
VOIR		**6.96**	**336**	⇓*i*P	**Pn**	**19 55 32.5**	**+0.6**
VOIR		**6.96**	**336**	⇑*i*P	**Pn**	**19 55 30.2**	**-1.7**
ARR	**Arges**	**7.03**	**334**	⇑*i*P	Pn	19 55 37.9	+5.0
KUBS	**Kucevo**	**7.62**	**316**	*e*Pn	**Pn**	**19 55 42.2**	**+1.3**
GZR	**Gura Zlata**	**7.79**	**325**	⇑*i*P	**Pn**	**19 55 40.7**	**-2.6**
GZR	**Gura Zlata**	**7.79**	**325**	S	Sn	19 57 04.0	-7.6
BBLS	**Lazići**	**8.63**	**306**	*e*Pn	**Pn**	**19 55 55.5**	**+0.6**

*IDC **05** 19:57:12.7±1.1, 37°.01N×144°.10E, h0km, mb3.5/7, mb1 3.7/10, mb1mx3.5/62, mbtmp3.6/10, ML3.6/2, Error ellipse: s-maj=26.5km s-min=18.8km az=92.0*
*ISCJB **05** 19:57:16.0±0.7, 37°.15N±0°.06×143°.93E±0°.06, h33km, mb3.5/7, Error ellipse: s-maj=8.2km s-min=6.7km az=19.4*
*JMA **05** 19:57:17.5±0.3, 37°.21N×143°.84E, h45km, M3.7*
ISC 05 19:57:17.8±1.0**, 37°.16N**±0°.07×**143°.98E**±0°.08**, h35**km**, n21, σ1ˢ49**/28**, mb3.5**/7**, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**2.45**	**303**	P	**Pn**	**19 57 54.9**	**-0.4**
JIO				*e*S	**Sn**	**19 58 21.8**	**-2.2**
JFK	**Kawauchi**	**2.49**	**276**	P	**Pn**	**19 57 55.3**	**-0.5**
JFK				S	**Sn**	**19 58 23.2**	**-1.7**
ONAJ	**Iwakimizuishiy**	**2.54**	**270**	P	**Pn**	**19 57 55.9**	**-0.7**
ONAJ				S	**Sn**	**19 58 25.3**	**-1.1**
JMM	**Marumori**	**2.63**	**287**	P	**Pn**	**19 57 57.2**	**-0.6**
OFUJ	**Ofunato**	**2.65**	**317**	P	**Pn**	**19 57 56.9**	**-1.1**
JHO	**Hitachi**	**2.79**	**260**	P	**Pn**	**19 57 59.3**	**-0.6**
JOU	**Okura**	**2.89**	**296**	P	**Pn**	**19 58 01.3**	**-0.1**
JOU				S	**Sn**	**19 58 33.7**	**-1.2**
JOM	**Ohasama**	**3.13**	**318**	S	**Sn**	**19 58 38.9**	**-1.9**
JYK	**Kaneyama**	**3.35**	**303**	P	**Pn**	**19 58 08.2**	**+0.5**
JYK				S	**Sn**	**19 58 45.2**	**-1.1**
JANG	**Nango**	**3.74**	**330**	P	**Pn**	**19 58 12.7**	**-0.4**
JANG				S	**Sn**	**19 58 51.9**	**-4.0**
MJAR	**Matsushiro Arr**	**4.67**	**264**	Pn	**Pn**	**19 58 26.2**	**+0.4**
	1.5nm,0.3s,baz=90,slow=15,SNR=11						
MAT	**Matsushiro**	**4.67**	**264**	P	**Pn**	**19 58 26.5**	**+0.7**
MAT				S	**Sn**	**19 59 19.0**	**+0.2**
JHJ	**Hachijo jima 2**	**5.30**	**222**	Pn	**Pn**	**19 58 31.8**	**-2.6**
	8.9nm,0.3s,baz=78,slow=20,SNR=5.9						
JHJ				Sn	Sn	19 59 26.4	-7.9
	6.9nm,0.3s,baz=109,slow=23,SNR=2.9						
USRK	**Ussuriysk Ar.**	**11.50**	**311**	Pn	**Pn**	**19 59 58.3**	**-1.1**
	0.1nm,0.3s,baz=113,slow=15,SNR=3.6						
SEY	**Seymchan**	**26.32**	**9**	P	**P**	**20 02 51.6**	**+1.7**
	1.9nm,0.7s,baz=189,slow=8.0,SNR=9.4						
SONM	**Songino Array**	**29.43**	**303**	P	**P**	**20 03 20.6**	**+2.5**
	0.2nm,0.8s,baz=109,slow=9.2,SNR=3.2						
MKAR	**Makanchi Array**	**45.79**	**302**	P	**P**	**20 05 37.1**	**+1.1**
	0.4nm,0.8s,baz=78,slow=9.0,SNR=3.5						
KURBB	**Kurchatov Arra**	**47.54**	**308**	P	**P**	**20 05 49.8**	**+0.2**
	0.4nm,0.7s,baz=81,slow=8.1,SNR=4.0						
ILAR	**Eielson Array**	**48.29**	**32**	P	**P**	**20 05 55.3**	**+0.1**
	0.5nm,0.9s,baz=249,slow=6.4,SNR=4.5						
WRA	**Warramunga Arr**	**57.52**	**191**	P	**P**	**20 07 02.7**	**-1.0**
	0.9nm,0.7s,baz=10,slow=7.2,SNR=9.8						
ASAR	**Alice Springs**	**61.24**	**191**	P	**P**	**20 07 28.8**	**-0.6**

0.2nm,0.5s,baz=13,slow=8.7,SNR=4.8

IDC 05 20:00:28.6±1.1**, 50°.15N**×**114°.75W, h0**km**, mb1 3.7**/3**, mb1mx3.1**/60**, mbtmp3.5**/3**, ML2.6**/3**, Error ellipse: s-maj=19.2km s-min=7.8km az=125.0, Alberta**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
NEW	**Newport**	**2.45**	**220**	Pn	Pn	20 01 10.8	+1.0
	0.6nm,0.3s,baz=51,slow=12,SNR=9.7						
NEW				Sn	Sn	20 01 41.0	+0.5
	2.0nm,0.3s,baz=318,slow=19,SNR=7.7						
NEW				Lg	Lg	20 01 45.7	
	3.4nm,0.3s,baz=302,slow=20,SNR=7.3						
I56US	**NEWPORT INFRAS**	**2.45**	**220**	*i*		20 15 50.0	
	baz=36,slow=333,SNR=1.3						
I10CA	**LAC DU BONNET**	**12.01**	**83**	*i*		21 14 20.0	
	baz=271,slow=331,SNR=1.4						
ULM	**Lac du Bonnet**	**12.10**	**82**	Pn	Pn	20 03 17.6	-4.5
	0.1nm,0.3s,baz=283,slow=18,SNR=2.6						
ULM				Lg	Lg	20 06 46.5	
	0.1nm,0.3s,baz=180,slow=20,SNR=3.8						
YKA	**Yellowknife Ar**	**12.37**	**0**	Pn	Pn	20 03 22.4	-3.4
	0.1nm,0.3s,baz=181,slow=13,SNR=5.8						
YKA				Sn	Sn	20 05 34.3	-10
	0.1nm,0.3s,baz=172,slow=23,SNR=3.8						
YKA				Lg	Lg	20 06 52.7	
	0.0nm,0.3s,baz=172,slow=27,SNR=3.3						

IDC 05 20:02:24.1±2.6**, 37°.13N**×**142°.53E, h0**km**, mb3.5**/4**, mb1 3.5**/5**, mb1mx3.3**/57**, mbtmp3.4**/5**, ML2.9**/1**, Error ellipse: s-maj=68.7km s-min=29.3km az=63.0, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MJAR	**Matsushiro Arr**	**3.52**	**262**	Pn	Pn	20 03 20.0	-0.1
	1.1nm,0.3s,baz=90,slow=16,SNR=8.9						
SONM	**Songino Array**	**28.48**	**304**	P	P	20 08 20.4	-0.5
	0.2nm,0.6s,baz=94,slow=7.8,SNR=3.8						
MKAR	**Makanchi Array**	**44.83**	**302**	P	P	20 10 39.5	-0.3
	0.2nm,0.5s,baz=102,slow=7.7,SNR=1.9						
KURBB	**Kurchatov Arra**	**46.65**	**308**	P	P	20 10 54.7	+0.6
	0.3nm,0.5s,baz=86,slow=8.5,SNR=4.2						
WRA	**Warramunga Arr**	**57.29**	**189**	P	P	20 12 13.5	-0.1
	0.7nm,1.0s,baz=6.0,slow=7.1,SNR=3.1						

*SOME **05** 20:07:23.3, 42°.07N×81°.30E, h10km*
ISC 05 20:07:22.9±2.5**, 41°.9N**±0°.1×**81°.15E**±0°.08**, h10**km**, n14, σ1ˢ18**/28**, 5C-6D, Southern Xinjiang**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SHLS	**Shalkode**	**1.55**	**323**	⇑*i*P	**Pg**	**20 07 52.3**	**-0.4**
	13nm,0.2s						
SHLS				⇓*i*S	**Sg**	**20 08 12.8**	**0.0**
	85nm,0.3s						
KTMS	**Ketmen**	**1.64**	**339**	*e*P	**Pb**	**20 07 53.2**	**-0.1**
	18nm,0.2s						
KTMS				*e*S	**Sg**	**20 08 14.2**	**-1.4**
	54nm,0.4s						
PDGK	**Podgornoye**	**1.87**	**319**	⇓P	**Pb**	**20 07 57.0**	**-0.1**
	1.4nm,0.3s						
PDGK				⇓S	**Sb**	**20 08 21.1**	**+0.6**
	14nm,0.5s						
UZB	**Uzynbulak**	**2.00**	**309**	⇑*i*P	**Pg**	**20 08 00.4**	**-0.8**
	3.3nm,0.5s						
UZB				⇑*i*S	**Sg**	**20 08 27.5**	**+0.5**
	14nm,0.4s						
SATY	**Saty**	**2.33**	**300**	⇑*i*P	**Pb**	**20 08 05.9**	**+0.9**
	4.9nm,0.4s						
SATY				⇓*i*S	**Sg**	**20 08 37.8**	**0.0**
	22nm,0.2s						
ZHN	**Zhinishke**	**2.36**	**303**	*e*P	**Pb**	**20 08 06.0**	**+0.4**
	4.2nm,0.5s						
ZHN				*e*S	**Sg**	**20 08 36.6**	**-2.2**
	31nm,0.2s						
KPKS	**Kokpek**	**2.39**	**311**	*e*P	**Pb**	**20 08 05.5**	**-0.6**
	11nm,0.3s						
KPKS				*e*S	**Sg**	**20 08 37.4**	**-2.3**
	70nm,0.6s						
DJR	**Jarkent**	**2.61**	**338**	*e*P	**Pb**	**20 08 10.0**	**+0.1**
	3.1nm,1.2s						
DJR				*e*S	**Sb**	**20 08 43.2**	**+1.2**
	16nm,0.4s						
MNBS	**Baschi**	**2.95**	**318**	*e*P	**Pb**	**20 08 14.6**	**-1.1**
	1.4nm,0.3s						
MNBS				*e*S	**Sb**	**20 08 50.9**	**-1.0**
	7.4nm,0.6s						
KOTS	**Kotyrbulak**	**3.26**	**295**	*e*P	**Pg**	**20 08 25.2**	**-0.2**
KOTS				*e*S	**Sg**	**20 09 09.1**	**+1.5**
TNSS	**Tian-Shan**	**3.31**	**291**	*e*P	**Pg**	**20 08 24.9**	**-1.4**
	0.5nm,0.2s						
TNSS				*e*S	**Sg**	**20 09 09.1**	**-0.1**
	3.9nm,0.2s						
ARXS	**Arharly**	**3.34**	**314**	*e*P	**Pb**	**20 08 23.1**	**+0.7**
	2.0nm,0.5s						
ARXS				*e*S	**Sb**	**20 09 05.8**	**+2.7**
	9.5nm,0.7s						
KAPS	**Kapalarasan**	**3.61**	**339**	*e*P	**Pb**	**20 08 26.7**	**-0.1**
	1.1nm,0.3s						
KAPS				*e*S	**Sb**	**20 09 12.6**	**+2.0**
	3.4nm,0.3s						
MK31	**Makanchi Array**	**4.94**	**9**	⇑Pn	**Pn**	**20 08 37.2**	**0.0**
	0.1nm,0.2s,baz=191,slow=13,SNR=21						
MK31				⇓Sn	**Sn**	**20 09 35.1**	**+0.7**
	1.4nm,0.9s,baz=187,slow=25,SNR=4.1						
MK31				⇓Lg	Lg	20 09 55.2	
	0.3nm,0.4s,baz=185,slow=27						

*CSEM **05** 20:12:16.6±1.0, 36°.29N×28°.85E, h8km, MD2.6, Error ellipse: s-maj=18.7km s-min=8.8km az=162.0*
*ISCJB **05** 20:12:17.8±1.3, 36°.35N±0°.06×28°.81E±0°.05, h6km±8km, Error ellipse: s-maj=10.9km s-min=7.3km az=5.7*
*DDA **05** 20:12:21.7, 36°.61N×28°.74E, h7km, Md2.6*
ISC 05 20:12:17.4±2.0**, 36°.36N**±0°.09×**28°.81E**±0°.04**, h8**km±11km**, n15, σ0ˢ59**/25**, Dodecanese Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FETY	**Fethiye**	**0.35**	**39**	*e*PG	**Pg**	**20 12 24.4**	**+0.1**
FETY				*e*SG	**Sg**	**20 12 29.2**	**+0.2**
FETY	**Fethiye**	**0.35**	**39**	*e*Pg	**Pg**	**20 12 24.4**	**+0.1**
FETY				*e*Sg	**Sg**	**20 12 29.2**	**+0.2**
TURN	**Turunc**	**0.54**	**342**	*i* P	**Pb**	**20 12 29.1**	**+0.1**
TURN				*i* S	**Sb**	**20 12 37.6**	**+0.7**
TURN	**Turunc**	**0.54**	**342**	P	**Pb**	**20 12 29.1**	**+0.1**
TURN				S	**Sb**	**20 12 37.6**	**+0.7**
AKAS	**Kas**	**0.65**	**101**	*i* P	**Pn**	**20 12 32.4**	**-0.6**
YER	**Yerkesik**	**0.88**	**331**	*e*PG	**Pg**	**20 12 33.4**	**-1.0**
YER	**Yerkesik**	**0.88**	**331**	*e*Pg	**Pg**	**20 12 33.4**	**-1.0**
GOLH	**Golhisar**	**1.06**	**34**	*i* P	**Pb**	**20 12 37.9**	**-0.1**
GOLH				*i* S	**Sb**	**20 12 52.8**	**+0.7**
GOLH	**Golhisar**	**1.06**	**34**	P	**Pb**	**20 12 37.9**	**-0.1**
GOLH				S	**Sb**	**20 12 52.8**	**+0.7**
BDRM	**Kayabasi**	**1.30**	**303**	*i* P	**Pg**	**20 12 43.2**	**+0.7**
BDRM				*i* S	**Sn**	**20 12 59.8**	**+0.3**
BDRM	**Kayabasi**	**1.30**	**303**	P	**Pg**	**20 12 43.2**	**+0.7**
BDRM				S	**Sn**	**20 12 59.8**	**+0.3**
BODT	**Bodrum**	**1.40**	**301**	*e*PN	**Pn**	**20 12 42.3**	**-0.8**
BODT	**Bodrum**	**1.40**	**301**	*e*Pn	**Pn**	**20 12 42.3**	**-0.8**
AYDN	**Tasoluk**	**1.50**	**330**	*i* P	**Pb**	**20 12 45.5**	**+0.1**
AYDN				*i* S	**Sb**	**20 13 04.9**	**+0.3**
AYDN	**Tasoluk**	**1.50**	**330**	P	**Pb**	**20 12 45.5**	**+0.1**
AYDN				S	**Sb**	**20 13 04.9**	**+0.3**

*ISCJB **05** 20:17:34.4±0.3, 16°.48N±0°.03×95°.67W±0°.02, h73km±3km, mb4.1/22, Error ellipse: s-maj=5.4km s-min=3.7km az=0.1*
*NEIC **05** 20:17:36.0±0.7, 16°.58N×95°.61W, h60km±5km, mb4.3/29, MD4.1(MEX), Error ellipse: s-maj=10.3km s-min=5.7km az=196.0*
*MEX **05** 20:17:38.1±0.7, 16°.50N×95°.66W, h41km±35km, MD4.1*
*IDC **05** 20:17:39.3±1.6, 16°.92N×95°.41W, h73km±8km, mb3.6/10, mb1 4.0/13, mb1mx3.7/40, mbtmp4.0/13, MS4.0/2, Ms1 4.0/2, ms1mx3.0/25, Error ellipse: s-maj=30.7km s-min=19.3km az=18.0*
ISC 05 20:17:35.2±0.8**, 16°.52N**±0°.04×**95°.65W**±0°.03**, h56**km±7km**, n202, σ1ˢ46**/213**, mb4.1**/22**, 1C, Oaxaca**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HUIG	**Huatulco**	**0.87**	**211**	*i* P	**Pn**	**20 17 51.5**	**+0.1**
HUIG				*e*S	**Sn**	**20 18 02.8**	**-0.4**
CMIG	**Matias Romero**	**0.93**	**52**	P	**Pn**	**20 17 52.7**	**+0.6**
	89nm,0.3s,baz=229,slow=9.2,SNR=484						
CMIG				S	**Sn**	**20 18 05.0**	**+0.4**
	876nm,0.3s,baz=360,slow=18,SNR=118						
CMIG				LR	LR	20 18 13.1	
	comp=Z,171nm,19.5s,baz=202,slow=64						
PANG	**Puerto Angel**	**1.16**	**223**	*e*P	**Pn**	**20 17 54.8**	**-0.5**
PANG				*e*S	**Sn**	**20 18 08.6**	**-1.6**
OXBJ	**Oaxaca**	**1.17**	**298**	*e*P	**Pn**	**20 17 56.4**	**+0.9**
OXBJ				*e*S	**Sn**	**20 18 09.9**	**-0.7**
VHO	**Vista Hermosa**	**1.18**	**298**	*e*Pn	**Pn**	**20 17 56.9**	**+1.2**
VHO				*e*Sn	**Sn**	**20 18 10.3**	**-0.6**
VHO	**Vista Hermosa**	**1.18**	**298**	*i* P	**Pn**	**20 17 56.9**	**+1.2**
VHO				*e*S	**Sn**	**20 18 10.3**	**-0.6**
TUIG	**Tuzandepetl**	**1.91**	**38**	*e*Pn	**Pn**	**20 18 06.5**	**+1.1**
TUIG				*e*Sn	**Sn**	**20 18 29.4**	**+1.1**
TUIG	**Tuzandepetl**	**1.91**	**38**	*e*P	**Pn**	**20 18 06.5**	**+1.1**
TUIG				*i* S	**Sn**	**20 18 29.5**	**+1.2**
PNIG	**Pinotepa**	**2.38**	**267**	*e*Pn	**Pn**	**20 18 11.4**	**-0.5**
PNIG				*e*Sn	**Sn**	**20 18 36.9**	**-3.0**
PNIG	**Pinotepa**	**2.38**	**267**	*i* P	**Pn**	**20 18 11.4**	**-0.5**
PNIG				*e*S	**Sn**	**20 18 38.9**	**-1.0**
TGIG		**2.43**	**84**	*e*Sn	**Sn**	**20 18 42.7**	**+1.4**
TGIG		**2.43**	**84**	*e*P	**Pn**	**20 18 13.9**	**+1.3**
TGIG				*e*S	**Sn**	**20 18 42.7**	**+1.4**
PCIG		**2.47**	**109**	*e*Pn	**Pn**	**20 18 15.0**	**+2.0**
PCIG				*e*Sn	**Sn**	**20 18 42.9**	**+0.9**
PCIG		**2.47**	**109**	*i* P	**Pn**	**20 18 15.0**	**+2.0**
PCIG				*e*S	**Sn**	**20 18 42.9**	**+0.9**
TPIG	**Tehuac#an**	**2.50**	**319**	*e*Pn	**Pn**	**20 18 12.3**	**-1.4**
TPIG	**Tehuac#an**	**2.50**	**319**	*e*P	**Pn**	**20 18 14.9**	**+1.3**
TPIG				*i* S	**Sn**	**20 18 43.7**	**+0.7**
TLIG	**Tlapa**	**2.98**	**291**	*e*Pn	**Pn**	**20 18 21.2**	**+1.1**
TLIG	**Tlapa**	**2.98**	**291**	*i* P	**Pn**	**20 18 21.6**	**+1.5**
TLIG				*e*S	**Sn**	**20 18 55.4**	**+0.6**
CCIG	**Comitan**	**3.38**	**94**	*e*Pn	**Pn**	**20 18 25.4**	**-0.2**
CAIG	**El Cayaco**	**4.46**	**277**	*e*Pn	**Pn**	**20 18 40.2**	**0.0**
CAIG	**El Cayaco**	**4.46**	**277**	*e*P	**Pn**	**20 18 40.2**	**0.0**
CAIG				*i* S	**Sn**	**20 19 31.5**	**+0.6**
MOIG	**Morelia**	**6.14**	**302**	*e*Pn	**Pn**	**20 19 06.2**	**+2.7**
TEIG	**Tepich**	**7.91**	**61**	P	**Pn**	**20 19 25.7**	**-1.9**
	2.6nm,0.3s,baz=270,slow=24,SNR=27						
TEIG				S	**Sn**	**20 20 48.8**	**-6.9**
	5.1nm,0.3s,baz=178,slow=24,SNR=14						
TEIG	**Tepich**	**7.91**	**61**	*e*Pn	**Pn**	**20 19 26.2**	**-1.4**
TEIG				*e*Sn	**Sn**	**20 20 50.0**	**-5.8**
TGUH	**Tegucigalpa,Un**	**8.44**	**106**	*e*Pn	**Pn**	**20 19 31.8**	**-3.1**
ZAIG	**Zacatecas**	**9.01**	**315**	*e*Pn	**Pn**	**20 19 45.8**	**+2.9**
JTS	**JuntasAbangare**	**12.10**	**119**	P	**Pn**	**20 20 27.4**	**+2.4**
	4.9nm,0.3s,baz=118,slow=22,SNR=13						
JTS	**JuntasAbangare**	**12.10**	**119**	*e*Pn	**Pn**	**20 20 26.8**	**+1.8**
HKT	**Hockley**	**13.37**	**359**	*e*Pn	**Pn**	**20 20 42.1**	**-0.1**
534A	**Blanco**	**13.70**	**350**	P	**Pn**	**20 20 48.0**	**+1.3**
	baz=168,SNR=11						
434A	**Burnet**	**14.43**	**351**	P	**Pn**	**20 20 57.5**	**+1.0**
	baz=170						
433A	**Art**	**14.52**	**348**	P	**Pn**	**20 20 58.4**	**+0.8**
	baz=167,SNR=6.2						
LTX	**Lajitas**	**14.73**	**331**	*e*Pn	**Pn**	**20 20 59.5**	**-1.0**
TX31	**Lajitas Ar. Si**	**14.73**	**331**	*e*Pn	**Pn**	**20 20 59.0**	**-1.5**
TXAR	**Lajitas Array**	**14.73**	**331**	P	**Pn**	**20 20 59.5**	**-1.0**
	0.0nm,0.3s,baz=150,slow=15,SNR=7.7						
334A	**Lometa**	**14.94**	**351**	P	**Pn**	**20 21 03.5**	**+0.4**
	baz=170,SNR=8.0						
342A	**Flagon Creek P**	**15.10**	**11**	P	**Pn**	**20 21 05.4**	**+0.3**
	baz=192						
238A	**Jacksonville**	**15.42**	**2**	P	**Pn**	**20 21 09.9**	**+0.6**
	baz=182,SNR=5.5						
WHTX	**Lake Whitney,**	**15.49**	**354**	P	**Pn**	**20 21 12.0**	**+1.8**
	baz=173						
WHTX	**Lake Whitney,**	**15.49**	**354**	*e*Pn	**Pn**	**20 21 10.6**	**+0.4**
	16nm,0.6s						
344A	**Westbrook Farm**	**15.53**	**16**	P	**Pn**	**20 21 11.5**	**+0.8**
	baz=198						
234A	**Clairette**	**15.58**	**352**	P	**Pn**	**20 21 12.8**	**+1.4**
	baz=171,SNR=13						
233A	**Rising Star**	**15.71**	**350**	P	**Pn**	**20 21 14.3**	**+1.2**
	baz=168						
244A	**Avery, Jackson**	**16.10**	**15**	P	**Pn**	**20 21 18.2**	**+0.2**
	baz=197						
134A	**White-Moore Ra**	**16.14**	**353**	P	**P**	**20 21 20.5**	**-0.3**
	baz=171						
133A	**Hamilton Ranch**	**16.29**	**350**	P	**P**	**20 21 22.0**	**-0.5**
	baz=169						
ABTX	**Abilene, Hawle**	**16.44**	**348**	P	**P**	**20 21 24.6**	**+0.4**
	baz=166						
ABTX	**Abilene, Hawle**	**16.44**	**348**	*e*Pn	**Pn**	**20 21 18.5**	**-3.7**
	13nm,0.8s						
Z36A	**Blue Ridge**	**16.70**	**358**	P	**P**	**20 21 27.2**	**+0.2**
	baz=177						
Z39A	**Irene McRaven,**	**16.70**	**4**	P	**P**	**20 21 26.6**	**-0.4**
	baz=185						
Z40A	**Long Farm, Mag**	**16.79**	**7**	P	**P**	**20 21 27.6**	**-0.4**
	baz=187						
Z33A	**Whitaker Ranch**	**16.93**	**351**	P	**P**	**20 21 30.1**	**+0.5**
	baz=170						
WLAR	**White Oak Lake**	**17.25**	**7**	*e*Pn	**Pn**	**20 21 32.8**	**+0.6**
	59nm,1.0s						
Y35A	**Marietta**	**17.36**	**356**	P	**P**	**20 21 35.3**	**+1.0**
	baz=175,SNR=6.1						
Y37A	**Hugo**	**17.39**	**0**	P	**P**	**20 21 35.5**	**+1.0**
	baz=180						
Y39A	**Lockesburg**	**17.40**	**4**	P	**P**	**20 21 35.7**	**+0.9**
	baz=185						
Y34A	**Reagan Ranch,**	**17.47**	**354**	P	**P**	**20 21 36.6**	**+1.1**
	baz=173						
DWPF	**Disney Wildern**	**17.47**	**46**	*e*Pn	**Pn**	**20 21 30.5**	**-4.5**
	304nm,1.5s						
MNTX	**Cornudas Mount**	**17.52**	**331**	P	**P**	**20 21 38.7**	**+2.6**
	baz=147						
Y40A	**Okolona**	**17.55**	**7**	P	**P**	**20 21 37.0**	**+0.6**
	baz=187						
Y33A	**Hilltop Ranch,**	**17.62**	**352**	P	**P**	**20 21 38.2**	**+1.0**
	baz=170						
X35A	**Drake**	**17.85**	**356**	P	**Pn**	**20 21 40.7**	**+1.1**
	baz=176						
X39A	**Fountain Ranch**	**17.97**	**4**	P	**Pn**	**20 21 41.6**	**+0.5**
	baz=185						
X36A	**Centrahoma**	**17.99**	**358**	P	**Pn**	**20 21 42.4**	**+1.1**
	baz=178						
X37A	**Clayton**	**18.00**	**1**	P	**Pn**	**20 21 42.6**	**+1.1**
	baz=181,SNR=5.2						
MIAR	**Mount Ida**	**18.05**	**6**	P	**P**	**20 21 42.1**	**+0.2**
	baz=186						
MIAR	**Mount Ida**	**18.05**	**6**	*e*P	**P**	**20 21 41.5**	**-0.3**
	25nm,1.0s						
X40A	**Basin Creek Fa**	**18.07**	**8**	P	**P**	**20 21 42.4**	**+0.2**
	baz=189						
X38A	**Whitesboro**	**18.09**	**2**	P	**Pn**	**20 21 42.9**	**+0.3**
	baz=182,SNR=6.1						
X34A	**Smith Ranch, M**	**18.11**	**354**	P	**Pn**	**20 21 43.9**	**+1.0**
	baz=173,SNR=5.1						
X32A	**Elmer**	**18.12**	**350**	P	**P**	**20 21 42.8**	**0.0**
	baz=169						
X33A	**Lawton**	**18.13**	**352**	P	**Pn**	**20 21 43.1**	**0.0**
	baz=171						
UALR	**University of**	**18.42**	**9**	*e*P	**P**	**20 21 44.9**	**-1.1**
	15nm,0.9s						
W38A	**Poteau**	**18.50**	**3**	P	**P**	**20 21 47.4**	**+0.5**
	baz=183,SNR=9.1						
MSTX	**Muleshoe**	**18.52**	**341**	P	**Pn**	**20 21 48.0**	**+0.1**
	baz=158						
MSTX	**Muleshoe**	**18.52**	**341**	*e*P	**P**	**20 21 46.9**	**-0.4**
	8.0nm,0.8s						
W37B	**Quinton**	**18.55**	**1**	P	**P**	**20 21 47.5**	**+0.1**
	baz=180						
W36A	**Wetumka**	**18.55**	**359**	P	**P**	**20 21 47.5**	**+0.1**
	baz=178						
W35A	**Tecumseh**	**18.59**	**357**	P	**P**	**20 21 47.4**	**-0.5**
	baz=176,SNR=6.1						
W39A	**Magazine**	**18.68**	**5**	P	**P**	**20 21 49.0**	**+0.2**
	baz=186,SNR=5.9						
W40A	**Ferguson Farm,**	**18.74**	**7**	P	**P**	**20 21 49.6**	**+0.2**
	baz=188						
X301	**Greenbrier Sit**	**18.87**	**8**	*e*P	**Pn**	**20 21 54.2**	**+2.3**
	27nm,0.8s						
X201	**Greenbrier Sit**	**18.93**	**8**	*e*P	**P**	**20 21 51.6**	**+0.1**
	29nm,0.7s						
WHAR	**Wooly Hollow**	**18.93**	**8**	*e*P	**Pn**	**20 21 52.5**	**-0.2**
	19nm,0.9s						
AMTX	**Amarillo**	**19.07**	**345**	*e*P	**Pn**	**20 21 54.4**	**-0.1**
	6.7nm,0.6s						

V36A	Jenks	19.19	359	P	P	20 21 54.0	-0.4
	baz=179						
V35A	Meyer Ranch, C	19.20	357	P	P	20 21 54.4	-0.1
	baz=176,SNR=6.8						
V37A	Hulbert	19.29	1	P	P	20 21 55.2	-0.4
	baz=181,SNR=5.4						
V38A	Canehill	19.30	3	P	P	20 21 55.1	-0.5
	baz=184,SNR=10.0						
V34A	Guthrie	19.31	355	P	P	20 21 55.8	+0.1
	baz=174						
V34A	Guthrie	19.31	355	eP	P	20 21 54.5	-1.2
	85nm,2.0s						
TUL1	Leonard	19.31	360	P	P	20 21 55.3	-0.4
	baz=180						
TUL1	Leonard	19.31	360	eP	P	20 21 54.2	-1.5
	11nm,0.6s						
V39A	Pettigrew	19.32	5	P	P	20 21 55.9	-0.1
	baz=186,SNR=14						
V33A	Lossen Ranch,	19.37	354	P	P	20 21 56.5	+0.2
	baz=172,SNR=5.8						
V40A	Witts Springs	19.37	7	P	P	20 21 56.6	+0.1
	baz=188,SNR=6.1						
HHAR	Hobbs	19.74	4	eP	P	20 21 59.5	-0.9
	9.2nm,0.7s						
U35A	Pawnee	19.80	357	P	P	20 22 00.8	-0.2
	baz=177						
U38A	Gravette	19.87	3	P	P	20 22 01.3	-0.6
	baz=183,SNR=6.2						
U39A	Green Forest	19.88	5	P	P	20 22 01.8	-0.2
	baz=186,SNR=6.9						
U40A	Yellville	19.91	7	P	P	20 22 02.1	-0.2
	baz=188,SNR=12						
U33A	Lingo Farm, Me	19.96	354	P	P	20 22 02.4	-0.3
	baz=173						
BNM	Barren Site	20.14	333	eP	Pn	20 22 07.2	-0.1
LPM	Los Pinos Moun	20.28	333	eP	Pn	20 22 08.7	-0.2
T35A	Sooner Cattle	20.33	358	P	P	20 22 06.1	-0.7
	baz=178						
T36A	Boggs Farm, Ca	20.46	359	P	P	20 22 07.5	-0.8
	baz=179,SNR=10						
T34A	McClaskey Farm	20.47	356	P	P	20 22 07.9	-0.4
	baz=176						
T38A	Diamond	20.47	3	P	P	20 22 08.1	-0.3
	baz=184,SNR=12						
T39A	Clever	20.52	5	P	P	20 22 08.3	-0.6
	baz=186						
T37A	Cheneyville 18	20.53	2	P	P	20 22 08.4	-0.6
	baz=182						
T33A	Patterson Ranc	20.61	354	P	P	20 22 09.4	-0.4
	baz=173						
PBMO	Poplar Bluff	20.70	12	eP	P	20 22 09.1	-1.7
	19nm,1.1s						
WVT	Waverly	20.73	18	eP	P	20 22 09.8	-1.3
	73nm,1.9s						
T40A	Mansfield	20.74	7	P	P	20 22 10.6	-0.6
	baz=188						
ANMO	Albuquerque	20.75	334	eP	P	20 22 11.9	+0.3
	5.3nm,1.4s						
T32A	Huddler Ranch,	20.78	353	P	P	20 22 11.6	-0.2
	baz=171,SNR=5.5						
S38A	Stockton	21.09	4	P	P	20 22 14.5	-0.4
	baz=184,SNR=6.1						
S35A	Otter Creek Ra	21.09	359	P	P	20 22 14.2	-0.8
	baz=178						
S34A	Willow Spring	21.14	357	P	P	20 22 14.3	-1.3
	baz=176						
S37A	Fort Scott	21.17	2	P	P	20 22 15.5	-0.3
	baz=182						
S39A	Bolivar	21.19	5	P	P	20 22 15.6	-0.5
	baz=186						
S32A	Newby Ranch, P	21.30	353	P	P	20 22 17.1	-0.1
	baz=171						
R38A	Fenwick Farm,	21.64	4	P	P	20 22 19.9	-1.0
	baz=184						
R36A	Gordon, Harris	21.72	0	P	P	20 22 21.4	-0.4
	baz=180						
R37A	Teagarden Farm	21.72	2	P	P	20 22 20.6	-1.2
	baz=182						
R34A	Isabella, Hill	21.75	357	P	P	20 22 21.7	-0.4
	baz=176						
TKL	Tuckaleechee C	21.80	27	P	P	20 22 21.9	-0.8
	4.2nm,0.6s,baz=187,slow=14,SNR=5.5						
R40A	Maddies Statio	21.89	7	P	P	20 22 23.2	-0.4
	baz=189						
T25A	Trinidad	21.95	341	eP	P	20 22 22.4	-2.1
	9.4nm,1.0s						
X18A	Snowflake	22.05	327	eP	P	20 22 26.7	+1.2
	3.4nm,0.4s						
TZTN	Tazewell	22.65	26	eP	P	20 22 30.1	-1.6
	97nm,1.4s						
SDCO	Great Sand Dun	22.86	340	P	P	20 22 35.9	+1.6
	baz=155						
SDCO	Great Sand Dun	22.86	340	eP	P	20 22 35.3	+1.1
	3.3nm,0.9s						
P40A	Paris	23.14	7	P	P	20 22 35.7	-1.0
	baz=189						
MVCO	Mesa Verde	23.54	334	eP	P	20 22 42.5	+1.7
	15nm,1.5s						
O40A	La Belle	23.75	7	P	P	20 22 41.2	-1.2
	baz=189						
O32A	Brockman Farm,	23.77	355	P	P	20 22 42.4	-0.2
	baz=174						
O39A	Kirksville	23.80	6	P	P	20 22 42.4	-0.6
	baz=187						
N38A	Joes South For	24.28	4	P	P	20 22 46.7	-0.5
	baz=186						
N39A	Derby Farms, D	24.43	6	P	P	20 22 47.9	-0.7
	baz=187						
BGNE	Belgrade	24.90	356	P	P	20 22 53.5	+0.6
	baz=174						
M38A	Pleasantville	24.90	4	P	P	20 22 52.8	-0.1
	baz=186						
EML	El Monte Cty P	25.15	314	eP	P	20 22 57.0	+1.7
DANC	Danby, Needles	25.26	319	ePcP	PcP	20 26 26.2	-2.2
PKCU	Pink Cliffs	25.51	328	eP	P	20 22 52.2	-6.7
	11nm,0.8s						
L37A	Phoenix Point,	25.57	3	P	P	20 22 58.4	-0.6
	baz=184						
L33A	Hoskins	25.60	357	P	P	20 22 59.1	-0.1
	baz=176						
L38A	Oak Wood Farm,	25.64	5	P	P	20 22 59.2	-0.4
	baz=186						
PASC	Pasadena Art C	26.80	315	eScP	ScP	20 30 05.4	-2.2
SBI	Santa Barbara	27.00	313	eP	P	20 23 13.6	+1.7
WSHM	Spangler Hills	27.21	318	eP	P	20 23 20.5	+6.6
WMUT	West Mountain	27.37	332	epP	pP	20 23 26.5	-2.9
SRTC	Snort	27.43	318	eP	P	20 23 13.7	-2.2
K22A	Casper	27.66	343	P	P	20 23 17.6	-0.3
	baz=157						
K22A	Casper	27.66	343	eP	P	20 23 15.5	-2.5
	21nm,0.9s						
ABL	Mount Abel	27.89	315	eScP	ScP	20 30 11.4	+0.3
H32A	Carlson Farm,	27.94	357	P	P	20 23 20.0	-0.2
	baz=176						
G32A	Webster	28.69	357	P	P	20 23 26.6	-0.4
	baz=176						
PD31	Pinedale Array	28.74	338	eP	P	20 23 28.3	+0.6
PDAR	Pinedale Array	28.74	338	P	P	20 23 27.9	+0.3
	0.6nm,0.8s,baz=154,slow=9.5,SNR=4.8						
BW06	Boulder Array	28.74	338	eP	P	20 23 27.4	-0.3
F36A	Milaca	29.31	3	P	P	20 23 31.7	-0.7
	baz=184						
NV01	Mina Array Sit	29.52	322	eP	P	20 23 36.9	+2.2
NVAR	Mina Array Bea	29.52	322	P	P	20 23 36.5	+1.8
	1.5nm,0.7s,baz=145,slow=9.6,SNR=7.2						
LOHW	Long Hollow	29.85	338	eP	P	20 23 37.6	+0.1
	3.2nm,0.8s						
E35A	Pequot Lakes	29.97	2	P	P	20 23 38.4	+0.2
	baz=182						
MOOW	Moose Ponds	30.02	338	eP	P	20 23 39.4	+0.4
	8.8nm,1.7s						
D37A	Cotton	30.67	4	P	P	20 23 43.6	-0.8
	baz=186						
D28A	Regan	30.86	353	P	P	20 23 46.3	+0.1
	baz=171						
C30A	Mose, Pekin	31.18	356	P	P	20 23 48.4	-0.6
	baz=175						
C31A	Landman Farms,	31.23	357	P	P	20 23 48.7	-0.7
	baz=176,SNR=5.6						
C36A	Pine Crest Far	31.24	4	P	P	20 23 48.9	-0.5
	baz=185						
HLID	Hailey	31.32	333	P	P	20 23 51.3	+0.9
	baz=144						
HLID	Hailey	31.32	333	eP	P	20 23 51.3	+0.9
	6.1nm,1.5s						
MDND	Maddock	31.41	355	P	P	20 23 51.6	+0.6
	baz=173						
AGMN	Agassiz Nation	31.69	360	P	P	20 23 52.8	-0.6
	baz=180						
AGMN	Agassiz Nation	31.69	360	eP	P	20 23 52.1	-1.3
	10nm,0.7s						
B32A	Ashes, Strandq	31.80	359	P	P	20 23 53.5	-0.9
	baz=178,SNR=5.7						
B34A	Aery, Baudette	31.89	1	P	P	20 23 54.3	-0.8
	baz=182						
B30A	Myrvik Farm, E	31.92	357	P	P	20 23 55.0	-0.4
	baz=175						
B29A	Wagenman Farm,	32.01	355	P	P	20 23 55.9	-0.3
	baz=173						
B28A	Dugan Ranch, T	32.08	354	P	P	20 23 57.1	+0.3
	baz=171						
A32A	Rocking H Ranc	32.32	359	P	P	20 23 58.4	-0.5
	baz=178						
A30A	Hoffart Farm,	32.41	357	P	P	20 23 59.4	-0.3
	baz=175,SNR=12						
A29A	Manning Farm,	32.45	356	P	P	20 24 00.0	0.0
	baz=174						
A28A	Rude Farm, Bot	32.52	354	P	P	20 24 00.7	0.0
	baz=172						
A26A	Wade Farm, Ken	32.71	352	P	P	20 24 02.9	+0.5
	baz=169						
ULM	Lac du Bonnet	33.65	360	P	P	20 24 08.3	-2.2
	2.3nm,0.7s,baz=180,slow=11,SNR=6.0						
ALVY	Alvey	35.87	326	ePP	PP	20 25 51.5	-0.6
VT2	Vantage 2	36.45	332	ePcP	PcP	20 26 59.0	+1.3
YKA	Yellowknife Ar	47.82	348	P	P	20 26 06.4	-0.5
	1.0nm,0.6s,baz=153,slow=7.4,SNR=19						
YKB5	Yellowknife Ar	47.82	348	eP	P	20 26 06.2	-0.7
INK	Inuvik	57.05	344	P	P	20 27 14.9	-0.3
	1.8nm,0.7s,baz=106,slow=6.9,SNR=6.3						
ILAR	Eielson Array	59.16	337	P	P	20 27 30.1	+0.1
	0.5nm,0.6s,baz=141,slow=4.5,SNR=8.0						
TBI	Tubuai	65.85	234	eLR	LR	20 27 14.5	
	330nm,26.8s,baz=305						
ESDC	Sonseca Array	80.91	51	P	P	20 29 44.2	+0.3
	1.0nm,0.8s,baz=287,slow=6.5,SNR=6.2						
PMSA	Palmer Station	84.56	167	LR	LR	20 58 16.4	
	comp=Z,128nm,21.9s,baz=267,slow=29						
ARCES	ARCESS Array B	84.84	18	P	P	20 30 02.9	-0.6
	1.0nm,0.8s,baz=300,slow=2.0,SNR=4.6						
DBIC	Dimbokro	88.89	83	LR	LR	21 06 17.8	
	comp=Z,49nm,19.3s,baz=358,slow=33						
TOA1	Torodi Ar. Sit	93.18	75	eP	P	20 30 46.1	+1.9
	13nm,1.7s						
TORD	Torodi Ar. Bea	93.18	75	P	P	20 30 46.1	+1.9
	0.9nm,1.2s,baz=251,slow=4.4,SNR=2.4						
SYO	Syowa Base	120.60	163⇑	eP	Pdif	20 32 41.8	-3.6

*IDC **05** 20:19:15.3±2.6, 38.°97N×142.°74E, h0km, mb3.6/4, mb1 3.7/7, mb1mx3.4/36, mbtmp3.6/7, ML3.5/2, MS3.2/1, Ms1 3.2/1, ms1mx2.4/53, Error ellipse: s-maj=54.9km s-min=29.7km az=71.0*
*ISCJB **05** 20:19:23.9±1.3, 38.°78N±0.°05×142.°0E±0.°1, h56km±7km, mb3.5/4, MS3.1/1, Error ellipse: s-maj=17.2km s-min=7.9km az=1.3*
*JMA **05** 20:19:24.2±0.1, 38.°77N×142.°01E, h48km±1km, M3.6*
JMA Felt I J1.
ISC 05 20:19:23.8±2.4, 38.°81N±0.°06×142.°1E±0.°2, h42km±17km, n23, σ1.s41/22, mb3.6/4, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
OFUJ	Ofunato	0.42	310	P	Pn	20 19 34.4	+0.7
JIO	Ouri	0.68	239	P	Pn	20 19 36.5	-0.4
JIO				S	Sn	20 19 44.9	-1.4
JMK	Ichinoseki	0.69	282	P	Pn	20 19 37.3	+0.2
JMK				S	Sn	20 19 46.4	-0.3
JOM	Ohasama	0.91	317	P	Pn	20 19 40.7	+0.6
JOM				S	Sn	20 19 52.3	+0.3
JOU	Okura	1.20	249	P	Pn	20 19 43.9	-0.2
JOU				S	Sn	20 19 58.3	-0.8
JRG	Rokugo	1.27	298	P	Pn	20 19 45.4	+0.3
JRG				S	Sn	20 19 59.6	-1.4
JYK	Kaneyama	1.35	275	P	Pn	20 19 46.2	0.0
JMM	Marumori	1.38	228	P	Pn	20 19 46.0	-0.6
JMM				S	Sn	20 20 02.0	-1.7
MJAR	Matsushiro Arr	3.82	235	Pn	Pn	20 20 21.7	+1.7
	2.2nm,0.3s,baz=39,slow=13,SNR=27						
MJAR				Sn	Sn	20 21 10.3	+6.7
	0.6nm,0.3s,baz=81,slow=14,SNR=1.7						
MAT	Matsushiro	3.82	235	P	Pn	20 20 21.4	+1.3
MAT				eS	Sn	20 21 08.3	+4.6
USRK	Ussuriysk Ar.	9.29	309	Pn	Pn	20 21 35.4	+0.3
	0.1nm,0.3s,baz=117,slow=15,SNR=1.8						
KSRS	Korea Array	11.24	268	Pn	Pn	20 22 05.8	+4.0
	0.4nm,0.3s,baz=75,slow=14,SNR=4.5						
SONM	Songino Array	27.28	301	P	P	20 25 04.1	-0.2
	0.3nm,0.7s,baz=85,slow=8.8,SNR=2.2						
H11N2	WAKE ISLAND Hy	28.66	124	T	T	20 55 36.3	
	baz=317,slow=75,SNR=100						
H11N1	WAKE ISLAND Hy	28.66	125	T	T	20 55 37.0	
	baz=317,slow=75,SNR=67						
H11N3	WAKE ISLAND Hy	28.67	124	T	T	20 55 37.7	
	baz=317,slow=75,SNR=109						
H11S1	WAKE ISLAND Hy	29.43	126	T	T	20 56 35.2	
	baz=318,slow=76,SNR=55						
H11S3	WAKE ISLAND Hy	29.43	126	T	T	20 56 39.6	
	baz=318,slow=76,SNR=52						
H11S2	WAKE ISLAND Hy	29.45	126	T	T	20 56 41.2	
	baz=318,slow=76,SNR=38						
DAV	Davao City (W)	34.93	210	LR	LR	20 41 33.2	
	comp=Z,34nm,19.4s,baz=350,slow=38						
ZALV	Zalesovo Beam	41.14	311	P	P	20 27 03.4	-0.1
	1.5nm,0.5s,baz=88,slow=8.1,SNR=8.7						
MKAR	Makanchi Array	43.65	301	P	P	20 27 23.9	-0.2
	0.3nm,0.4s,baz=84,slow=10.0,SNR=15						
WRA	Warramunga Arr	58.89	189	P	P	20 29 17.8	-0.6
	0.7nm,1.0s,baz=7.1,slow=6.9,SNR=2.7						

*IDC **05** 20:23:49.4±3.3, 36.°18N×143.°26E, h0km, mb3.4/2, mb1 3.6/4, mb1mx3.3/39, mbtmp3.5/4, ML3.2/2, MS3.2/2, Ms1 3.2/2, ms1mx2.4/37, Error ellipse: s-maj=65.2km s-min=37.6km az=65.0*
*ISCJB **05** 20:23:54.4±1.2, 36.°07N±0.°05×142.°88E±0.°10, h33km, mb3.5/2, MS3.8/1, Error ellipse: s-maj=11.7km s-min=7.2km az=160.0*
*JMA **05** 20:23:54.0±0.3, 36.°09N×142.°81E, h19km, M3.1*
ISC 05 20:23:55.7±1.7, 36.°10N±0.°06×142.°9E±0.°1, h35km, n14, σ0.s73/18, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
JHO	Hitachi	1.95	286	P	Pn	20 24 25.4	-0.9
JHO				eS	Sn	20 24 49.3	-0.3
BSO1	Boso 1	2.13	228	P	Pn	20 24 28.5	+0.2
BSO3	Boso 3	2.34	237	P	Pn	20 24 32.5	+1.0
JMM	Marumori	2.44	317	P	Pn	20 24 33.0	0.0
JMM				eS	Sn	20 25 00.9	-0.8
JFT	Otama	2.50	305	P	Pn	20 24 34.1	+0.2
JFT				eS	Sn	20 25 03.1	0.0
JAG	Ashikaga	2.81	278	P	Pn	20 24 37.8	-0.3
JAG				eS	Sn	20 25 10.7	0.0
JOD2	Odawara 2	3.22	256	P	Pn	20 24 44.2	+0.5
JRY	Ryogami san	3.24	270	P	Pn	20 24 44.8	+0.7
JRY				eS	Sn	20 25 21.4	-0.1
MJAR	Matsushiro Arr	3.82	278	Pn	Pn	20 24 52.8	+0.8
	0.8nm,0.3s,baz=88,slow=16,SNR=3.8						
JHJ	Hachijo jima 2	3.93	222	Pn	Pn	20 24 53.8	+0.2
	7.8nm,0.3s,baz=237,slow=11,SNR=1.7						
JHJ				Sn	Sn	20 25 36.6	-1.9
	7.7nm,0.3s,baz=44,slow=15,SNR=2.2						
KSRS	Korea Array	12.09	281	LR	LR	20 31 32.0	
	comp=Z,34nm,20.1s,baz=68,slow=37						
MKAR	Makanchi Array	45.63	303	P	P	20 32 13.0	+0.4
	0.3nm,0.8s,baz=90,slow=7.2,SNR=2.6						
WRA	Warramunga Arr	56.32	190	P	P	20 33 33.0	-0.1
	0.5nm,0.7s,baz=16,slow=7.8,SNR=2.2						
NEW	Newport	69.96	44	LR	LR	21 03 35.7	
	comp=Z,50nm,19.9s,baz=227,slow=34						

*NIED **05** 20:28:00, 36.°70N×143.°60E, h5km, Mw3.4 Best double couple: M0 1.65000×10^14 NP1: φs 14.00000°, δ39.00000°, λ-103.00000°. NP2: φs 211.00000°, δ52.00000°, λ-79.00000°.*
*IDC **05** 20:28:52.7±1.2, 36.°66N×143.°99E, h0km, mb3.4/6, mb1 3.6/9, mb1mx3.4/48, mbtmp3.5/9, ML2.9/3, MS3.2/1, Ms1 3.2/1, ms1mx2.3/36, Error ellipse: s-maj=29.6km s-min=21.1km az=77.0*
*ISCJB **05** 20:28:56.3±0.8, 36.°68N±0.°06×143.°62E±0.°06, h33km, mb3.5/6, Error ellipse: s-maj=8.2km s-min=6.9km az=18.2*
*JMA **05** 20:28:56.9±0.3, 36.°75N×143.°60E, h48km, M3.5*
ISC 05 20:28:57.6±1.1, 36.°70N±0.°06×143.°70E±0.°09, h35km, n20, σ1.s79/27, mb3.5/6, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
JFK	Kawauchi	2.36	287	P	Pn	20 29 33.0	-0.9
JFK				eS	Sn	20 29 59.5	-2.1
JHO	Hitachi	2.52	269	eS	Sn	20 30 04.3	-1.2
JMM	Marumori	2.60	298	P	Pn	20 29 36.4	-0.7
JMM				eS	Sn	20 30 05.5	-1.9
JFT	Otama	2.81	288	P	Pn	20 29 40.1	0.0
JFT				eS	Sn	20 30 12.2	-0.6
JMK	Ichinoseki	2.99	320	P	Pn	20 29 40.9	-1.6
JMK				eS	Sn	20 30 13.8	-3.3
BSO1	Boso 1	3.01	228	P	Pn	20 29 42.3	0.0
JAG	Ashikaga	3.43	267	P	Pn	20 29 48.5	-0.1
JAG				eS	Sn	20 30 26.1	-1.9
JRY	Ryogami san	3.93	262	P	Pn	20 29 55.1	-0.4
JRY				eS	Sn	20 30 38.6	-1.8
JOD2	Odawara 2	4.01	250	P	Pn	20 29 56.7	+0.2
JYN	Shimob	4.34	256	P	Pn	20 30 01.5	+0.3
JYN				eS	Sn	20 30 49.4	-1.2
MJAR	Matsushiro Arr	4.42	270	Pn	Pn	20 30 02.8	+0.6
	1.1nm,0.3s,baz=79,slow=18,SNR=9.0						
MJAR				Sn	Sn	20 30 56.2	+3.8
	0.9nm,0.3s,baz=87,slow=29,SNR=4.6						
JHJ	Hachijo jima 2	4.81	223	Pn	Pn	20 30 06.8	-0.6
	5.6nm,0.3s,baz=105,slow=22,SNR=5.9						
JHJ				Sn	Sn	20 30 58.1	-3.8
	11nm,0.3s,baz=260,slow=23,SNR=3.8						
USRK	Ussuriysk Ar.	11.65	314	Pn	Pn	20 31 44.2	+3.1
	0.1nm,0.3s,baz=125,slow=13,SNR=3.1						
JOW	Kunigami	16.38	237	LR	LR	20 38 51.9	
	comp=Z,96nm,21.3s,baz=180,slow=36						
SONM	Songino Array	29.50	304	P	P	20 35 02.2	+3.7
	0.7nm,0.8s,baz=96,slow=8.5,SNR=5.5						
MKAR	Makanchi Array	45.85	303	P	P	20 37 17.2	+1.0
	0.4nm,0.9s,baz=77,slow=5.5,SNR=3.6						
KURBB	Kurchatov Arra	47.65	309	P	P	20 37 31.1	+0.9
	0.4nm,0.8s,baz=81,slow=7.7,SNR=4.1						
ILAR	Eielson Array	48.80	32	P	P	20 37 37.9	-1.0
	0.4nm,0.8s,baz=256,slow=6.3,SNR=5.0						
WRA	Warramunga Arr	57.02	191	P	P	20 38 40.2	+0.2
	0.5nm,0.8s,baz=10,slow=7.4,SNR=3.9						
ASAR	Alice Springs	60.74	190	P	P	20 39 06.9	+1.1
	0.3nm,0.9s,baz=3.9,slow=7.1,SNR=3.5						

JMA 05 20:41:28.2±0.2, 37.°68N×142.°08E, h13km±2km, M3.6, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
JIO	Ouri	0.96	323	P	Pb	20 41 46.1	-0.7
JIO				S	Sb	20 41 58.8	-0.6
JFK	Kawauchi	1.01	252	P	Pb	20 41 47.5	0.0
JFK				eS	Sb	20 42 00.7	0.0
JMM	Marumori	1.04	281	P	Pb	20 41 47.2	-0.8
JMM				S	Sb	20 42 01.0	-0.5
ONAJ	Iwakimizuishiy	1.17	241	P	Pb	20 41 49.9	-0.5
ONAJ				S	Sb	20 42 05.1	-0.4
JOU	Okura	1.31	302	P	Pn	20 41 52.4	+0.2
JOU				eS	Sb	20 42 09.5	+0.1
JFT	Otama	1.39	264	P	Pb	20 41 53.8	-0.3
JFT				S	Sg	20 42 12.7	-0.4
JHO	Hitachi	1.61	229	P	Pn	20 41 56.1	-0.2
JHO				eS	Sn	20 42 16.2	-0.8
MAT	Matsushiro	3.30	251	P	Pn	20 42 22.6	+3.1
MAT				S	Sb	20 43 06.7	+0.1

*ISCJB **05** 20:58:01.5±0.7, 13.°2N±0.°1×143.°71E±0.°10, h138km, mb3.5/9, Error ellipse: s-maj=15.8km s-min=12.8km az=161.9*
*IDC **05** 20:58:03.6±0.9, 13.°21N×143.°93E, h148km±12km, mb3.3/9, mb1 3.4/9, mb1mx3.2/52, mbtmp3.7/9, Error ellipse: s-maj=33.1km s-min=14.2km az=90.0*
ISC 05 20:58:03.0±0.9, 13.°2N±0.°1×143.°8E±0.°1, h138km, n10, σ0.s65/11, mb3.6/9, South of Mariana Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
GUMO	Guam	1.13	70	P	Pn	20 58 28.6	+0.7
	32nm,0.3s,baz=56,slow=4.5,SNR=13						
GUMO				S	Sn	20 58 47.0	+0.2
	96nm,0.3s,baz=358,slow=23,SNR=21						
JNU	Nakatsue	23.07	331	P	P	21 02 57.2	+0.7
	8.6nm,1.1s,baz=153,slow=9.0,SNR=3.6						
WRA	Warramunga Arr	34.21	196	P	P	21 04 35.4	-0.2
	1.9nm,0.7s,baz=19,slow=9.7,SNR=25						
KLR	Kul'dur	37.28	347	P	P	21 05 01.6	+0.2
	0.5nm,0.4s,baz=154,slow=10,SNR=4.4						
ASAR	Alice Springs	37.88	195	P	P	21 05 07.3	+0.5
	0.3nm,0.5s,baz=16,slow=13,SNR=12						
SONM	Songino Array	46.45	326	P	P	21 06 16.8	+0.6
	0.5nm,0.6s,baz=143,slow=7.0,SNR=5.6						
MKAR	Makanchi Array	61.04	316	P	P	21 08 02.0	-0.2
	0.4nm,0.5s,baz=82,slow=8.8,SNR=13						
ZALV	Zalesovo Beam	61.33	325	P	P	21 08 03.4	-0.5
	0.4nm,0.5s,baz=111,slow=7.9,SNR=3.0						
INK	Inuvik	75.14	22	P	P	21 09 28.8	-0.9
	0.9nm,0.9s,baz=249,slow=4.9,SNR=3.0						
YKA	Yellowknife Ar	83.70	27	P	P	21 10 15.3	-0.8
	0.2nm,0.6s,baz=285,slow=5.0,SNR=3.0						

*IDC **05** 21:03:04.8±1.4, 9.°70S×150.°98E, h0km, mb3.8/7, mb1 3.9/9, mb1mx3.8/37, mbtmp3.8/9, ML3.5/1, MS3.0/2, Ms1 3.0/2, ms1mx2.8/33, Error ellipse: s-maj=41.5km s-min=22.9km az=115.0*
*ISCJB **05** 21:03:06.0±1.1, 9.°7S±0.°1×150.°8E±0.°2, h13km, mb3.8/7, Error ellipse: s-maj=25.5km s-min=16.3km az=28.9*
ISC 05 21:03:06.8±1.1, 9.°7S±0.°2×151.°0E±0.°1, h13km, n11, σ1.s22/11, mb3.8/7, Eastern New Guinea region

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
PMG	Port Moresby	3.77	275	Pn	Pn	21 04 02.3	-2.3
	2.2nm,0.3s,baz=72,slow=6.0,SNR=5.9						
PMG				Sn	Sb	21 05 00.1	+1.2
	baz=96,slow=22,SNR=1.3						
PMG				LR	LR	21 05 46.4	
	comp=Z,251nm,18.6s,baz=79,slow=43						
HNR	Honiara	8.86	89	LR	LR	21 08 07.9	
	comp=Z,71nm,20.1s,baz=226,slow=34						
WRA	Warramunga Arr	18.99	236	P	Pn	21 07 29.4	+0.4
	0.1nm,0.3s,baz=62,slow=12,SNR=7.8						
ASAR	Alice Springs	21.39	228	P	P	21 07 55.7	+1.3
	1.5nm,0.7s,baz=55,slow=10.0,SNR=13						
STKA	Stephens Creek	23.69	200	P	P	21 08 17.7	-0.6
	1.4nm,0.6s,baz=29,slow=11,SNR=4.9						
CMAR	Chiang Mai Arr	58.47	299	P	P	21 13 03.6	+0.6
	0.8nm,0.5s,baz=128,slow=5.5,SNR=4.4						
SONM	Songino Array	69.57	330	P	P	21 14 16.6	+0.9
	0.7nm,1.0s,baz=130,slow=5.4,SNR=3.9						
MKAR	Makanchi Array	82.86	320	P	P	21 15 31.1	0.0
	0.8nm,0.7s,baz=104,slow=6.2,SNR=9.3						
ZALV	Zalesovo Beam	84.25	327	P	P	21 15 37.1	-1.0
	1.8nm,0.7s,baz=105,slow=5.7,SNR=9.0						
ILAR	Eielson Array	87.38	22	P	P	21 15 53.8	+0.4
	0.3nm,0.7s,baz=253,slow=5.2,SNR=4.5						
TORD	Torodi Ar. Bea	149.70	279	PKPbc	PKPbc	21 22 56.7	-0.7
	0.7nm,0.7s,baz=53,slow=1.7,SNR=4.5						

*IDC **05** 21:06:02.8±3.4, 37.°66N×144.°86E, h0km, mb3.7/2, mb1 3.8/3, mb1mx3.3/45, mbtmp3.5/3, ML3.3/1, MS2.2/1, Ms1 2.2/1, ms1mx1.9/48, Error ellipse: s-maj=80.2km s-min=41.6km az=54.0*
*ISCJB **05** 21:06:05.8±1.1, 37.°77N±0.°05×144.°59E±0.°07, h33km, mb3.7/2, Error ellipse: s-maj=8.0km s-min=6.2km az=23.3*
*JMA **05** 21:06:05.5±0.4, 37.°68N×144.°58E, h45km, M3.6*
ISC 05 21:06:07.9±1.5, 37.°71N±0.°07×144.°60E±0.°09, h35km, n21, σ1.s60/23, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
JIO	Ouri	2.67	287	eS	Sn	21 07 18.8	-0.6

JMK	Ichinoseki	2.93	296	eS	Sn	21 07 25.7	-0.2
JFK	Kawauchi	2.98	265	eS	Sn	21 07 25.4	-1.7
JMM	Marumori	3.02	274	eS	Sn	21 07 26.5	-1.5
JTH	Tanohata	3.08	317	eS	Sn	21 07 28.5	-1.2
JOM	Ohasama	3.13	305	eS	Sn	21 07 30.7	-0.1
JOU	Okura	3.17	283	eS	Sn	21 07 32.0	+0.1
JFT	Otama	3.39	268	eS	Sn	21 07 34.7	-2.5
JRG	Rokugo	3.53	300	eS	Sn	21 07 41.2	+0.4
JYK	Kaneyama	3.54	291	eS	Sn	21 07 41.4	+0.4
JANG	Nango	3.58	319	eS	Sn	21 07 40.7	-1.3
JTM	Tenmabayashi	4.12	319	eS	Sn	21 07 53.7	-1.4
JOT	Ohata	4.58	324	eS	Sn	21 08 04.9	-1.6
JNBK	Urakawa-nobuka	4.78	343	P	Pn	21 07 18.1	+0.8
JNBK				eS	Sn	21 08 10.3	-1.2
JRY	Ryogami san	4.87	251	P	Pn	21 07 18.1	-0.5
JRY				eS	Sn	21 08 10.5	-3.2
JCH	Churui	4.99	349	P	Pn	21 07 20.3	+0.1
JCH				eS	Sn	21 08 13.6	-3.1
JKB	Kayabe	5.00	328	eS	Sn	21 08 14.5	-2.3
MJAR	Matsushiro Arr	5.23	259	Pn	Pn	21 07 24.9	+1.2
	0.9nm,0.3s,baz=89,slow=15,SNR=5.9						
JHJ	Hachijo jima 2	6.03	222	LR	LR	21 10 55.6	
	comp=Z,20nm,19.0s,baz=113,slow=48						
MKAR	Makanchi Array	45.91	302	P	P	21 14 28.5	+1.6
	0.5nm,1.0s,baz=89,slow=8.8,SNR=2.4						
WRA	Warramunga Arr	58.15	191	P	P	21 15 58.2	+0.1
	1.2nm,0.7s,baz=12,slow=7.2,SNR=4.4						

*IDC **05** 21:15:53.2±9.0, 33°.80N×142°.39E, h0km, mb3.4/3, mb1 3.6/4, mb1mx3.3/28, mbtmp3.4/4, ML3.8/1, MS4.0/1, Ms1 4.0/1, ms1mx2.4/36, Error ellipse: s-maj=313.4km s-min=31.7km az=63.0*

*JMA **05** 21:16:10.6±0.3, 36°.54N×141°.93E, h15km±4km, M3.4*

ISC 05 21:16:12.5±2.5**, 36°.6N**±0°.1×**141°.9E**±0°.2**, h19km, n10, σ1s.32**/10**, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHO	Hitachi	1.10	271	P	Pn	21 16 30.7	-2.2
JMM	Marumori	1.56	325	P	Pn	21 16 38.3	-1.0
JMM				S	Sb	21 16 59.0	-1.3
JFT	Otama	1.58	306	P	Pn	21 16 39.6	+0.1
JOU	Okura	2.04	331	P	Pn	21 16 46.4	+0.6
MJAR	Matsushiro Arr	3.00	270	Pn	Pn	21 16 59.4	+0.2
	5.1nm,0.3s,baz=89,slow=9.4,SNR=48						
MAT	Matsushiro	3.01	270	P	Pn	21 16 59.4	+0.3
MAT	Matsushiro	3.01	270	S	Sn	21 17 36.6	+2.0
SONM	Songino Array	28.38	305	P	P	21 22 06.1	+0.5
	0.2nm,0.6s,baz=103,slow=6.5,SNR=4.7						
MKAR	Makanchi Array	44.71	303	P	P	21 24 24.1	-0.2
	0.2nm,0.7s,baz=92,slow=8.9,SNR=2.6						
ASAR	Alice Springs	60.41	188	LR	LR	21 52 52.9	
	comp=Z,106nm,18.2s,baz=350,slow=38						

*NIED **05** 21:23:00, 36°.30N×140°.90E, h29km, Mw4.3 Best double couple: M0 2.73000×10^15 NP1:φs302.00000°, δ7.00000°, λ-168.00000°. NP2:φs200.00000°, δ88.00000°, λ-83.00000°.*

*BJI **05** 21:23:58.9, 36°.21N×140°.70E, h25km, mb4.6/23, mB4.7/11, Ms3.9/9, Ms7 3.7/9*

*ISCJB **05** 21:23:59.1±0.6, 36°.31N±0°.02×141°.01E±0°.04, h31km±3km, mb4.2/31, MS3.2/5, Error ellipse: s-maj=5.3km s-min=4.0km az=16.9*

*JMA **05** 21:23:59.8±0.1, 36°.31N×140°.94E, h41km±1km, M4.4*

JMA Felt III J1.

*IDC **05** 21:24:01.0±0.5, 36°.19N×140°.81E, h32km±3km, mb4.0/22, mb1 4.2/24, mb1mx4.0/47, mbtmp4.2/24, ML4.6/2, MS3.4/7, Ms1 3.4/7, ms1mx3.0/55, Error ellipse: s-maj=14.1km s-min=12.5km az=121.0*

*NEIC **05** 21:24:02.3±0.9, 36°.20N×140°.90E, h47km±8km, mb4.7/5, Error ellipse: s-maj=7.1km s-min=6.6km az=125.0*

NEIC Recorded [3 JMA] in Ibaraki.

ISC 05 21:23:59.7±0.4**, 36°.32N**±0°.03×**140°.95E**±0°.04**, h23km**±2km**, h23km:pP-P, n111, σ1s.09**/130**, mb4.3**/30**, MS3.4**/6**, 1C-1D, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHO	Hitachi	0.43	314	P	Pb	21 24 09.3	+0.6
JHO				S	Sb	21 24 15.9	+1.1
CHOJ	Chosi	0.62	187	P	Pb	21 24 12.0	+0.1
CHOJ				eS	Sb	21 24 19.8	-0.3
JYT	Yasato	0.62	262	P	Pb	21 24 12.1	+0.2
JYT				S	Sb	21 24 20.4	+0.2
ONAJ	Iwakimizuishiy	0.79	351	P	Pb	21 24 14.4	-0.5
ONAJ				S	Sb	21 24 24.4	-0.9
JFK	Kawauchi	1.05	357	P	Pn	21 24 17.8	-1.2
JFK				S	Sb	21 24 30.5	-2.1
JAG	Ashikaga	1.22	276	P	Pn	21 24 20.7	-0.6
JAG				S	Sn	21 24 35.6	-1.4
MJAR	Matsushiro Arr	2.23	277	Pn	Pn	21 24 35.5	+0.4
	53nm,0.3s,baz=103,slow=7.5,SNR=152						
MJAR				Sn	Sb	21 25 04.9	-1.5
	62nm,0.3s,baz=84,slow=29,SNR=8.4						
MAJO	Matsushiro	2.23	277	ePn	Pn	21 24 36.5	+1.3
MAJO				eSn	Sn	21 25 02.0	0.0
MAT	Matsushiro	2.23	277	P	Pn	21 24 35.8	+0.6
MAT				S	Sb	21 25 04.5	-1.9
JHJ	Hachijo jima 2	3.33	197	Pn	Pn	21 24 53.2	+2.8
	32nm,0.3s,baz=285,slow=22,SNR=10						
JHJ				Sn	Sn	21 25 27.8	-1.4
	97nm,0.3s,baz=8.6,slow=23,SNR=6.7						
JHJ2	Mitsune	3.33	197	ePn	Pn	21 24 51.2	+0.8
JHJ2				eSn	Sn	21 25 29.2	0.0
INU	Inuyama	3.34	254	ePn	Pn	21 24 52.3	+1.8
ERM	Erimo	5.94	16	ePn	Pn	21 25 25.9	-0.4
ERM				eSn	Sn	21 26 34.6	+1.1
JNU	Nakatsue	8.88	252	Pn	Pn	21 26 09.1	+2.4
	0.5nm,0.3s,baz=37,slow=4.8,SNR=5.9						
CBIJ	Chichi jima	9.25	173	ePn	Pn	21 26 09.6	-2.1
JCJ	Chichijima	9.25	173	Pn	Pn	21 26 09.6	-2.1
	27nm,0.3s,baz=300,slow=22,SNR=8.2						
USRK	Ussuriysk Ar.	10.43	322	Pn	Pn	21 26 32.2	+4.5
	0.8nm,0.3s,baz=134,slow=13,SNR=18						
USRK				LR	LR	21 30 24.2	
	comp=Z,322nm,18.1s,baz=131,slow=37						
KSRS	Korea Array	10.50	280	Pn	Pn	21 26 32.8	+4.1
	0.3nm,0.3s,baz=96,slow=14,SNR=13						
KSRS				LR	LR	21 30 33.0	
	comp=Z,276nm,18.1s,baz=76,slow=38						
KSAR	Wonju Array Be	10.53	280	Pn	Pn	21 26 32.8	+3.6
KLR	Kul'dur	14.55	335	Pn	Pn	21 27 22.2	-1.8
	0.1nm,0.3s,baz=127,slow=11,SNR=4.7						
KLR				LR	LR	21 32 47.2	
	comp=Z,185nm,20.9s,baz=244,slow=36						
BJT	Baijiatuau	19.82	288	eP	P	21 28 27.4	-1.1
PEA0	Petropavlovsk-	20.49	30	eP	P	21 28 35.0	-0.9
PETK	Petropavlovsk-	20.49	30	LR	LR	21 36 30.2	
	comp=Z,29nm,21.1s,baz=219,slow=36						
MA2	Magadan	24.13	12	P	P	21 29 14.4	+0.8
	4.8nm,0.3s,baz=216,slow=6.3,SNR=7.0						
MA2				LR	LR	21 39 03.6	
	comp=Z,33nm,18.4s,baz=200,slow=37						
XAN	Xi'an	26.22	275	P	P	21 29 31.9	-1.0
XAN				pmax	pmax		
	comp=Z,9.0nm,0.8s						
XAN				pmax	pmax		
	comp=Z,83nm,5.0s						
XAN				LR	LR		
	comp=N,250nm,25.3s						
XAN				LR	LR		
	comp=E,240nm,29.2s						
XAN				LR	LR		
	comp=Z,300nm,20.0s						
YAK	Yakutsk	26.69	348	LR	LR	21 40 29.1	
	comp=Z,108nm,18.4s,baz=209,slow=37						
ENH	Enshi	26.91	266	eP	P	21 29 37.9	-1.2
	17nm,0.6s						
SEY	Seymchan	27.57	11	P	P	21 29 47.9	+3.3
	9.3nm,0.8s,baz=208,slow=7.2,SNR=30						
SONA1	Songino Array	27.88	305	eP	P	21 29 47.1	-0.7
SONA0	Songino Array	27.89	305	eP	P	21 29 47.6	-0.3
SONA0				ePcP	PcP	21 33 02.4	-0.7
SONM	Songino Array	27.89	305	P	P	21 29 47.6	-0.3
	3.4nm,0.7s,baz=106,slow=9.3,SNR=33						
SONM				PcP	PcP	21 33 02.4	-0.7
	0.4nm,0.7s,baz=104,slow=0.8,SNR=3.6						
SONM				pPcP		21 33 14.1	
	0.4nm,0.6s,baz=119,slow=2.7,SNR=4.5						
SONM				LR	LR	21 41 12.3	
	comp=Z,110nm,20.9s,baz=78,slow=37						
H11N2	WAKE ISLAND Hy	28.11	119	T	T	21 59 09.3	
	baz=312,slow=75,SNR=35						
H11N1	WAKE ISLAND Hy	28.12	119	T	T	21 59 14.4	
	baz=312,slow=75,SNR=39						
H11N3	WAKE ISLAND Hy	28.13	119	T	T	21 59 17.5	
	baz=312,slow=75,SNR=36						
H11S1	WAKE ISLAND Hy	28.79	121	T	T	22 00 06.0	
	baz=314,slow=76,SNR=88						
H11S3	WAKE ISLAND Hy	28.79	121	T	T	21 59 58.9	
	baz=314,slow=76,SNR=274						
H11S2	WAKE ISLAND Hy	28.81	121	T	T	22 00 02.2	
	baz=314,slow=76,SNR=105						
GTA	Gaotai	32.43	288	eP	P	21 30 27.6	-0.5
GTA				pP	sP	21 30 36.6	-1.4
GTA				sP	pP	21 30 41.0	+5.9
GTA				S	S	21 35 44.4	+3.1
GTA				pmax	pmax		
	comp=Z,2.0nm,1.0s						
GTA				pmax	pmax		
	comp=Z,62nm,4.9s						
GTA				LR	LR		
	comp=N,85nm,10.4s						
GTA				LR	LR		
	comp=E,130nm,17.1s						
GTA				LR	LR		
	comp=Z,120nm,19.0s						
TIXI	Tiksi	35.96	354	eP	P	21 30 57.2	-0.8
	3.3nm,0.8s						
GAMB	Gambell	39.52	31	eP	P	21 31 28.7	+0.4
CM31	Chiang Mai Arr	40.96	256	eP	P	21 31 39.4	-1.3
CMAR	Chiang Mai Arr	40.96	256	P	P	21 31 39.4	-1.3
	0.5nm,0.8s,baz=44,slow=5.7,SNR=6.9						
CM01	Chiang Mai Arr	40.97	256	eP	P	21 31 40.5	-0.4
LSA	Lhasa	41.91	276	eP	P	21 31 50.7	+1.7
ZAA0	Zalesovo Array	42.13	313	eP	P	21 31 50.6	+0.7
ZAA1	Zalesovo Array	42.13	313	eP	P	21 31 50.0	+0.1
ZAA1				ePcP	PcP	21 33 44.2	+0.1
ZALV	Zalesovo Beam	42.13	313	P	P	21 31 50.0	+0.1
	15nm,0.8s,baz=91,slow=6.5,SNR=66						
ZALV				PcP	PcP	21 33 44.2	+0.1
	1.3nm,0.9s,baz=108,slow=4.7,SNR=3.3						
ZALV				pPcP		21 33 54.3	
	2.1nm,0.7s,baz=86,slow=2.8,SNR=4.8						
MK01	Makanchi Array	44.19	303	eP	P	21 32 06.7	0.0
MK31	Makanchi Array	44.19	303	eP	P	21 32 07.3	+0.6
MK32	Makanchi Array	44.19	303	eP	P	21 32 07.2	+0.4
MKAR	Makanchi Array	44.19	303	P	P	21 32 07.2	+0.4
	5.0nm,0.7s,baz=90,slow=9.9,SNR=62						
MAKZ	Makanchi	44.40	303	eP	P	21 32 08.4	0.0
TAPN	Taplejung	45.62	274	eP	P	21 32 18.9	+0.2
	4.8nm,0.4s						
KURK	Kurchatov	46.09	309	eP	P	21 32 21.2	-0.4
ODAN	Odare	46.09	274	eP	P	21 32 22.3	0.0
	10nm,0.8s						
RAMN	Ramite	46.69	275	eP	P	21 32 27.2	+0.2
	40nm,0.8s						
GUN	Gumba	46.86	276	eP	P	21 32 28.9	+0.4
	24nm,0.7s						
PKIN	Phulchoki	47.39	276	eP	P	21 32 32.3	-0.2
	8.2nm,0.7s						
KKN	Kakani	47.39	276	eP	P	21 32 32.6	+0.1
	20nm,0.8s						
RSO	Redoubt South	47.69	38	eP	P	21 32 34.1	-0.2
GKN	Gorkha	47.82	277	eP	P	21 32 36.0	+0.3
	50nm,1.0s						
KOLN	Koldanda	48.75	277	eP	P	21 32 43.5	+0.5
	11nm,0.7s						
PYUN	Piuthan	49.10	278	eP	P	21 32 46.4	+0.8
	77nm,1.0s						
TKM2	Tokmak 2	49.65	299	eP	P	21 32 50.7	+1.0
	4.7nm,0.6s						
ILAR	Eielson Array	50.30	32	P	P	21 32 55.4	+1.4
	1.8nm,0.8s,baz=269,slow=6.4,SNR=15						
ILB	Eielson Array	50.30	32	eP	P	21 32 55.4	+1.4
KSH	Kashi	50.36	294	P	P	21 32 59.3	+4.3
KSH				pmax	pmax		
	comp=Z,5.0nm,0.7s						
ZRNK	Zerenda	51.62	313	eP	P	21 33 04.2	+0.1
INK	Inuvik	55.19	27	P	P	21 33 31.6	+1.6
	1.4nm,0.6s,baz=307,slow=5.6,SNR=9.8						
INK	Inuvik	55.19	27	eP	P	21 33 31.6	+1.6
	3.6nm,0.8s						
WRAB	Tennant Creek	56.29	187	eP	P	21 33 35.4	-3.1
WB2	Warramunga Arr	56.30	187	eP	P	21 33 38.2	-0.3
WR1	Warramunga Arr	56.30	187	eP	P	21 33 35.6	-3.0
	19nm,1.5s						
WRA	Warramunga Arr	56.30	187	P	P	21 33 35.6	-3.0
	1.2nm,0.5s,baz=5.4,slow=7.4,SNR=8.1						
AS31	Alice Springs	60.03	187	eP	P	21 34 04.3	-0.3
AS31				epP	sP	21 34 15.2	+0.4
ASAR	Alice Springs	60.03	187	P	P	21 34 04.3	-0.3
	0.8nm,0.6s,baz=14,slow=7.4,SNR=13						
ASAR				pP	sP	21 34 15.2	+0.4
	2.7nm,0.7s,baz=18,slow=8.9,SNR=14						
GEYT	Alibeck	63.86	299	P	P	21 34 30.6	+0.1
	2.7nm,0.9s,baz=29,slow=3.4,SNR=5.8						
ARCES	ARCESS Array B	64.54	339	P	P	21 34 34.6	+0.3
	1.7nm,0.8s,baz=46,slow=6.9,SNR=5.7						
YKA	Yellowknife Ar	64.61	30	P	P	21 34 36.4	+1.5
	0.3nm,0.7s,baz=303,slow=6.6,SNR=5.5						
YKA				pP	sP	21 34 45.9	+0.8
	1.1nm,0.7s,baz=300,slow=6.7,SNR=11						
YKB5	Yellowknife Ar	64.61	30	eP	P	21 34 36.4	+1.5
YKB5				epP	sP	21 34 45.9	+0.8
FIA0	FINESS Array S	69.28	332	eP	P	21 35 04.6	+0.1
FINES	FINESS Array B	69.28	332	P	P	21 35 04.6	+0.1
	3.5nm,0.7s,baz=69,slow=10,SNR=14						
KBZ	Khabaz	71.09	311	P	P	21 35 16.5	+0.6
	1.7nm,0.8s,baz=3.8,slow=5.5,SNR=5.3						
AKASG	Malin Array Be	74.64	322	P	P	21 35 36.6	-0.2
	2.7nm,0.6s,baz=48,slow=6.0,SNR=28						
AKASG				pP	sP	21 35 46.4	-0.9
	2.4nm,0.7s,baz=45,slow=5.7,SNR=4.0						
AKBB	Malin Array Si	74.64	322	eP	P	21 35 36.6	-0.2
AKBB				epP	sP	21 35 46.4	-0.9
NB2	NORSAR Subarra	74.70	337	P	P	21 35 37.1	-0.1
	comp=Z,1.5nm,0.7s,baz=40,slow=6.2						
NB200	NORSAR Array S	74.70	337	eP	P	21 35 37.0	-0.1
NOA	NORSAR Array B	74.70	337	P	P	21 35 37.0	-0.1
	comp=Z,3.2nm,0.9s,baz=43,slow=5.4,SNR=8.5						
NVAR	Mina Array Bea	75.71	53	P	P	21 35 45.1	+1.5
	comp=Z,1.6nm,0.8s,baz=300,slow=5.9,SNR=5.5						
NVAR				pP	PcP	21 35 55.3	-1.0
	comp=Z,1.8nm,0.7s,baz=291,slow=5.2,SNR=6.3						
PD31	Pinedale Array	78.43	45	eP	P	21 35 59.7	+0.8
PD31				epP	sP	21 36 09.7	+0.4
PDAR	Pinedale Array	78.43	45	P	P	21 35 59.7	+0.8
	comp=Z,0.5nm,0.7s,baz=245,slow=4.1,SNR=4.9						
PDAR				pP	sP	21 36 09.7	+0.4
	comp=Z,1.1nm,0.6s,baz=264,slow=3.0,SNR=9.1						
BR101	Keskin Array S	79.05	311	eP	P	21 36 02.2	+0.1
BR101				epP	sP	21 36 12.6	0.0
BRTR	Keskin Array B	79.05	311	P	P	21 36 02.2	+0.1
	comp=Z,1.4nm,0.9s,baz=90,slow=3.8,SNR=5.3						
BRTR				pP	sP	21 36 12.6	0.0
	comp=Z,1.4nm,0.9s,baz=71,slow=5.4,SNR=4.5						
BACC	Bachelor Mtn.	79.36	56	eP	P	21 36 04.0	+0.2
BR231	Keskin MP Arra	79.50	312	eP	P	21 36 03.9	-0.7
CRY	Cary Ranch	79.59	56	eP	P	21 36 00.8	-4.4
EML	El Monte Cty P	79.92	57	eP	P	21 36 04.8	-2.0
RAYN	Ar Rayn	80.58	292	eP	P	21 36 11.1	+0.4
DPC	Dobruska-Polom	80.87	328	eP	P	21 36 12.8	+1.1
DPC				epP	sP	21 36 21.8	-0.3
BRG	Berggiesshubel	81.48	329	e(P)	sP	21 36 25.6	+0.3
	comp=Z,4.8nm,1.1s						
CLL	Collm	81.53	330	⇑iP	P	21 36 15.1	0.0
	comp=Z,4.0nm,0.7s						
CLL				⇓i		21 36 25.3	
	comp=Z,8.0nm,0.8s						
PRU	Pruhonice	81.90	328	eP	P	21 36 17.5	+0.4
PRU				epP	sP	21 36 27.8	+0.3
TREC	Trest	82.01	327	epP	pP	21 36 28.3	+2.9
KHC	Kasperske Hory	82.96	328	eP	P	21 36 22.9	+0.2
KHC				epP	sP	21 36 33.3	+0.2
GERES	GERESS Array B	83.12	328	P	P	21 36 23.8	+0.2
	comp=Z,0.6nm,0.6s,baz=38,slow=6.8,SNR=5.6						
GERES				pP	sP	21 36 32.9	-1.1
	comp=Z,1.5nm,0.7s,baz=36,slow=6.0,SNR=7.7						
LTX	Lajitas	90.85	52	eP	P	21 37 02.0	+0.3
LTX				epP	sP	21 37 12.2	+0.2
TXAR	Lajitas Array	90.85	52	P	P	21 37 02.0	+0.3
	comp=Z,0.4nm,0.8s,baz=300,slow=2.5,SNR=4.1						
TXAR				pP	sP	21 37 12.2	+0.2
	comp=Z,1.0nm,0.7s,baz=300,slow=2.8,SNR=8.8						
TOA1	Torodi Ar. Sit	117.57	314	ePKPdf	PKPdf	21 42 44.0	-0.2
TORD	Torodi Ar. Bea	117.57	314	PKP	PKPdf	21 42 44.0	-0.2
	comp=Z,0.2nm,0.7s,baz=26,slow=1.0,SNR=3.9						
TORD	Torodi Ar. Bea	117.57	314	PKP	PKPdf	21 42 44.0	-0.2
LPAZ	La Paz	147.37	60	PKPbc	PKPbc	21 43 42.8	+0.1
	comp=Z,1.4nm,0.8s,baz=318,slow=6.0,SNR=4.5						

*IDC **05** 21:30:35.1±0.6, 2°.85N×126°.76E, h0km, mb4.1/15, mb1 4.3/15, mb1mx4.1/43, mbtmp4.1/15, Error ellipse: s-maj=37.9km s-min=12.7km az=77.0*

*NEIC **05** 21:30:36.4±0.3, 2°.86N×126°.78E, h10km, mb4.4/4, Error ellipse: s-maj=16.9km s-min=5.7km az=73.0*

*DJA **05** 21:30:38.4±0.7, 3°N±5°×12°7E±°, h10km, M4.6/8, mb4.6/7, mB5.1/3, MLv4.5/8, Mw(mB)4.4/3*

ISC 05 21:30:36.7±0.5**, 2°.74N**±0°.05×**126°.73E**±0°.07**, h10km, n36, σ2s.03**/36**, mb4.3**/19**, Northern Molucca Sea**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SGSI	Sangihe	1.52	308	P	Pg	21 31 07.8	+1.8
SGSI				S	Sg	21 31 32.6	+6.8
TNTI	Ternate	2.06	162	P	Pg	21 31 17.6	+1.4
TNTI				S	Sg	21 31 54.8	+12
TNTI	Ternate	2.06	162	ePn	Pn	21 31 11.6	+0.2
TNTI				eSg	Sg	21 31 44.5	+1.6
LBMI	Labuha	3.44	167	P	Pb	21 31 37.8	-0.1
LBMI				S	Sg	21 32 29.3	+1.9
SANI	Sanana	4.81	189	P	Pb	21 32 00.7	-0.6
	41nm,1.1s,0.2nm						
MRSI	Marisa	5.29	245	P	Pb	21 32 07.8	-1.5
	65nm,0.6s,1μm0.2nm						
LUWI	Luwuk	5.45	227	P	Pb	21 32 09.4	-2.8
	84nm,0.9s,1μm0.5nm						
SWI	Sorong	5.77	128	P	Pn	21 32 05.1	+2.6
	44nm,1.2s,0.2nm						
NLAI	Namlea	5.95	176	P	Pb	21 32 18.1	-2.5
APSI	Ampana	6.24	235	P	Pb	21 32 22.6	-3.0
	70nm,0.9s,1μm0.3nm						
FAKI	Fak Fak	7.88	135	P	Pn	21 32 35.2	+3.7
FAKI	Fak Fak	7.88	135	ePn	Pn	21 32 32.3	+0.8
	14nm,0.6s						
FITZ	Fitzroy Crossi	20.74	183	P	P	21 35 19.4	+1.8
	3.2nm,0.5s,baz=7.1,slow=6.7,SNR=7.0						
WRAB	Tennant Creek	23.74	162	eP	P	21 35 49.3	-0.1
	24nm,1.1s						
WRA	Warramunga Arr	23.75	162	P	P	21 35 49.6	+0.2
	6.6nm,0.6s,baz=340,slow=10,SNR=47						
ASAR	Alice Springs	27.16	165	P	P	21 36 21.1	+0.6
	1.7nm,0.5s,baz=343,slow=7.3,SNR=15						
JNU	Nakatsue	30.47	7	eP	P	21 36 47.0	-2.9
	6.7nm,1.1s						
CMAR	Chiang Mai Arr	31.38	302	P	P	21 36 58.1	+0.1
	0.3nm,0.6s,baz=119,slow=7.3,SNR=4.7						
KSAR	Wonju Array Be	34.55	2	P	P	21 37 23.9	-1.7
KSRS	Korea Array	34.56	2	P	P	21 37 23.9	-1.8
	1.8nm,0.6s,baz=177,slow=9.8,SNR=8.0						
STKA	Stephens Creek	37.21	159	P	P	21 37 48.5	+0.1
	5.4nm,0.8s,baz=355,slow=8.4,SNR=8.0						
USRK	Ussuriysk Ar.	41.55	6	P	P	21 38 23.1	-1.3
	2.1nm,0.7s,baz=188,slow=6.5,SNR=5.5						
H11S3	WAKE ISLAND Hy	42.14	65	T	T	22 22 53.5	
	baz=254,slow=74,SNR=11						
H11S1	WAKE ISLAND Hy	42.15	65	T	T	22 22 50.8	
H11S2	WAKE ISLAND Hy	42.15	65	T	T	22 22 50.9	
	baz=315,slow=74,SNR=6.4						
KLR	Kul'dur	46.52	5	P	P	21 39 03.5	-0.8
	2.2nm,0.7s,baz=147,slow=6.7,SNR=5.7						
SONM	Songino Array	48.23	342	P	P	21 39 16.7	-1.1
	0.5nm,0.5s,baz=157,slow=8.2,SNR=5.7						
MKAR	Makanchi Array	58.36	326	P	P	21 40 31.0	-1.4
	1.3nm,0.6s,baz=119,slow=7.6,SNR=22						
MA2	Magadan	59.66	14	P	P	21 40 40.7	-0.3
	2.7nm,0.3s,baz=213,slow=3.4,SNR=4.1						
ZALV	Zalesovo Beam	61.47	333	P	P	21 40 52.2	-1.2
	2.0nm,0.8s,baz=112,slow=6.9,SNR=8.3						
KURK	Kurchatov	62.57	328	eP	P	21 40 59.2	-1.7
	7.4nm,0.6s						
TIXI	Tiksi	68.83	1	eP	P	21 41 40.1	-0.8
	2.0nm,0.7s						
NRIK	Noril'sk	71.39	346	P	P	21 41 57.7	+1.0
	2.4nm,0.4s,baz=155,slow=2.9,SNR=4.6						
ABKAR	Akbulak array	72.91	321	eP	P	21 42 05.5	-0.7
	1.0nm,0.6s						
VNDA	Vanda	82.45	173	P	P	21 43 00.3	+1.5
	0.8nm,0.8s,baz=318,slow=7.8,SNR=4.1						
INK	Inuvik	91.08	21	P	P	21 43 41.1	-0.1
	0.8nm,0.5s,baz=335,slow=14,SNR=3.3						

*NIED **05** 21:30:00, 36°.20N×143°.00E, h5km, Mw3.5 Best double couple: M0 2.00000×10^14 NP1:φs44.00000°, δ30.00000°, λ-60.00000°. NP2:φs190.00000°, δ64.00000°, λ-106.00000°.*

JMA 05 21:30:39.2±0.2**, 36°.21N**×**142°.97E, h46km, M3.5, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	Chosi	1.79	254	P	Pn	21 31 08.5	+0.9
JHO	Hitachi	1.98	282	eS	Sn	21 31 34.7	+0.9
BSO1	Boso 1	2.25	227	P	Pn	21 31 14.4	+1.0
JMM	Marumori	2.40	314	P	Pn	21 31 17.3	+1.3
JMM				eS	Sn	21 31 45.7	+1.5
JFT	Otama	2.48	303	P	Pn	21 31 19.4	+2.3
JFT				eS	Sn	21 31 48.5	+2.3
JIO	Ouri	2.59	331	P	Pn	21 31 20.2	+1.7
JIO				eS	Sn	21 31 48.4	-0.3
JOU	Okura	2.83	320	P	Pn	21 31 23.5	+1.6
JOU				eS	Sn	21 31 56.9	+2.1
JAG	Ashikaga	2.85	275	P	Pn	21 31 23.4	+1.3
JAG				eS	Sn	21 31 55.8	+0.6
OFUJ	Ofunato	3.05	341	P	Pn	21 31 24.6	-0.2
JMK	Ichinoseki	3.07	334	P	Pn	21 31 26.1	+0.9
JMK				eS	Sn	21 32 01.4	+0.8
JYK	Kaneyama	3.41	323	P	Pn	21 31 31.2	+1.4

*IDC **05** 21:31:26.1±0.7, 3°.01N×126°.95E, h0km, mb4.3/15, mb1 4.4/15, mb1mx4.2/43, mbtmp4.3/15, MS3.7/4, Ms1 3.8/4, ms1mx3.2/38, Error ellipse: s-maj=32.3km s-min=13.8km az=81.0*

*NEIC **05** 21:31:27.4±0.3, 3°.01N×126°.94E, h10km, mb4.3/5, Error ellipse: s-maj=18.2km s-min=7.0km az=77.0*

*ISCJB **05** 21:31:30.0±0.5, 3°.01N±0°.07×126°.9E±0°.2, h44km, mb4.3/19, MS3.6/4, Error ellipse: s-maj=23.1km s-min=8.8km az=168.7*

ISC 05 21:31:32.0±0.7**, 3°.0N**±0°.1×**127°.0E**±0°.2**, h44km, n24, σ0s.70**/22**, mb4.4**/19**, MS3.6**/4**, Talaud Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GUMO	Guam	20.56	58	LR	LR	21 43 17.8	
	comp=Z,135nm,21.6s,baz=259,slow=35						
FITZ	Fitzroy Crossi	21.02	184	P	P	21 36 11.9	-0.1
	3.2nm,0.5s,baz=4.0,slow=10,SNR=3.1						
FITZ	Fitzroy Crossi	21.02	184	eP	P	21 36 12.1	0.0
	2.5nm,0.3s						
LEM	Lembang	21.66	243	LR	LR	21 46 27.8	
	comp=Z,196nm,19.1s,baz=44,slow=42						
WRAB	Tennant Creek	23.92	163	eP	P	21 36 40.8	-1.2
	8.5nm,0.6s						
WRA	Warramunga Arr	23.93	163	P	P	21 36 41.1	-1.0
	4.5nm,0.6s,baz=339,slow=10,SNR=6.7						
ASAR	Alice Springs	27.36	166	P	P	21 37 14.3	+1.1
	1.6nm,0.6s,baz=344,slow=7.2,SNR=4.1						
JNU	Nakatsue	30.18	7	P	P	21 37 37.9	-0.4
	12nm,0.8s,baz=180,slow=1.3,SNR=7.5						
CMAR	Chiang Mai Arr	31.46	301	P	P	21 37 49.6	0.0
	1.4nm,0.7s,baz=115,slow=7.1,SNR=7.9						
CMAR				LR	LR	21 52 26.5	
	comp=Z,153nm,18.3s,baz=133,slow=40						
KSAR	Wonju Array Be	34.28	1	P	P	21 38 14.4	+0.4
KSRS	Korea Array	34.29	1	P	P	21 38 14.4	+0.3
	6.1nm,0.9s,baz=178,slow=10,SNR=14						
STKA	Stephens Creek	37.37	159	P	P	21 38 40.1	-0.4
	5.9nm,0.7s,baz=342,slow=8.3,SNR=4.4						
USRK	Ussuriysk Ar.	41.26	5	P	P	21 39 13.2	+0.4
	6.4nm,0.8s,baz=188,slow=6.7,SNR=10						
KLR	Kul'dur	46.23	4	P	P	21 39 52.9	+0.2
	4.5nm,0.9s,baz=190,slow=7.1,SNR=6.3						
SONM	Songino Array	48.06	341	P	P	21 40 07.7	+0.5
	1.4nm,0.7s,baz=149,slow=8.7,SNR=4.4						
SONM				LR	LR	22 02 52.1	

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
	comp=Z,155nm,19.5s,baz=90,slow=39						
PETK	**Petropavlovsk-**	**56.00**	**22**	P	**P**	**21 41 06.5**	**+0.5**
	4.9nm,0.8s,baz=193,slow=5.8,SNR=6.5						
MKAR	**Makanchi Array**	**58.29**	**325**	P	**P**	**21 41 22.0**	**-0.3**
	2.7nm,0.7s,baz=122,slow=8.4,SNR=7.7						
MA2	**Magadan**	**59.34**	**14**	P	**P**	**21 41 29.6**	**+0.3**
	3.2nm,0.3s,baz=207,slow=11,SNR=4.1						
ZALV	**Zalesovo Beam**	**61.34**	**333**	P	**P**	**21 41 42.4**	**-0.8**
	2.7nm,0.9s,baz=122,slow=7.2,SNR=6.0						
KURK	**Kurchatov**	**62.48**	**328**	*e*P	**P**	**21 41 50.0**	**-0.9**
	12nm,0.6s						
KKAR	**Karatay Array**	**63.93**	**317**	*e*P	**P**	**21 41 59.9**	**-0.8**
	1.7nm,0.8s						
ABKAR	**Akbulak array**	**72.86**	**321**	*e*P	**P**	**21 42 55.8**	**-0.5**
	0.8nm,0.4s						
BRTR	**Keskin Array B**	**90.67**	**310**	P	**P**	**21 44 31.8**	**+1.3**
	0.8nm,0.8s,baz=102,slow=5.7,SNR=4.0						
TORD	**Torodi Ar. Bea**	**123.38**	**288**	PKP	**PKPdf**	**21 50 25.6**	**+0.1**
	0.8nm,0.7s,baz=79,slow=1.5,SNR=3.8						

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*NIED **05** 21:35:00, 39°.60N×144°.60E, h8km, Mw3.8 Best double couple: $M_0$4.85000×10^{14} NP1:φs17.00000°, δ27.00000°, λ-63.00000°. NP2:φs167.00000°, δ66.00000°, λ-103.00000°.*

*IDC **05** 21:35:25.6±1.7, 39°.29N×144°.92E, h0km, mb3.8/8, mb1 4.0/11, mb1mx3.7/58, mbtmp4.0/11, ML4.2/2, MS2.6/1, Ms1 2.6/1, ms1mx2.1/49, Error ellipse: s-maj=43.9km s-min=21.7km az=141.0*

*ISCJB **05** 21:35:29.0±0.7, 39°.62N±0°.04×144°.62E±0°.05, h23km, mb3.7/7, Error ellipse: s-maj=7.3km s-min=4.7km az=139.0*

*JMA **05** 21:35:30.1±0.2, 39°.56N×144°.60E, h46km, M3.9*

ISC 05 21:35:30.1±1.0**, 39°.56N**±0°.07×**144°.70E**±0°.07**, h23**km**, n28,** σ**1s.68**/36**, mb3.9**/7**, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
JTH	**Tanohata**	**2.22**	**281**	P	**Pn**	**21 36 04.3**	**-1.2**
MIYJ	**Miyakonagasawa**	**2.23**	**271**	P	**Pn**	**21 36 04.6**	**-1.0**
MIYJ				*e*S	**Sn**	**21 36 29.8**	**-2.6**
OFUJ	**Ofunato**	**2.40**	**260**	P	**Pn**	**21 36 06.7**	**-1.3**
JANG	**Nango**	**2.58**	**289**	P	**Pn**	**21 36 09.5**	**-1.0**
JANG				*e*S	**Sn**	**21 36 38.3**	**-2.9**
JOM	**Ohasama**	**2.64**	**269**	P	**Pn**	**21 36 10.6**	**-0.7**
JMK	**Ichinoseki**	**2.77**	**259**	P	**Pn**	**21 36 12.1**	**-0.9**
JTM	**Tenmabayashi**	**3.04**	**295**	P	**Pn**	**21 36 16.9**	**+0.1**
JTM				*e*S	**Sn**	**21 36 51.1**	**-1.4**
JNBK	**Urakawa-nobuka**	**3.10**	**332**	P	**Pn**	**21 36 17.7**	**+0.2**
JRG	**Rokugo**	**3.15**	**268**	P	**Pn**	**21 36 18.0**	**-0.3**
JAH	**Hinai**	**3.19**	**283**	P	**Pn**	**21 36 19.0**	**+0.1**
JAH				*e*S	**Sn**	**21 36 55.1**	**-1.1**
JCH	**Churui**	**3.22**	**342**	P	**Pn**	**21 36 18.7**	**-0.5**
JCH				*e*S	**Sn**	**21 36 55.1**	**-1.8**
JOT	**Ohata**	**3.33**	**304**	P	**Pn**	**21 36 20.9**	**+0.1**
JOT				*e*S	**Sn**	**21 36 58.5**	**-1.1**
JOU	**Okura**	**3.37**	**251**	P	**Pn**	**21 36 20.1**	**-1.2**
JOU				*e*S	**Sn**	**21 36 57.3**	**-3.2**
JYK	**Kaneyama**	**3.43**	**261**	P	**Pn**	**21 36 21.7**	**-0.5**
JAR	**Ashorobuto**	**3.80**	**350**	P	**Pn**	**21 36 26.4**	**-0.9**
JAR				*e*S	**Sn**	**21 37 08.8**	**-2.5**
NEM2	**Nemuro 2**	**3.89**	**11**	P	**Pn**	**21 36 26.6**	**-1.8**
NEM2				*e*S	**Sn**	**21 37 08.3**	**-5.0**
JTKR	**Abashiri--Toko**	**4.45**	**353**	P	**Pn**	**21 36 35.9**	**-0.2**
JTKR				*e*S	**Sn**	**21 37 25.3**	**-1.9**
MJAR	**Matsushiro Arr**	**5.94**	**242**	Pn	**Pn**	**21 36 55.8**	**-0.9**
	5.1nm,0.3s,baz=54,slow=10,SNR=43						
MJAR				LR	LR	21 39 55.0	
	comp=Z,47nm,18.2s,baz=65,slow=45						
JHJ	**Hachijo jima 2**	**7.55**	**213**	Pn	Pn	21 37 15.0	-3.7
	13nm,0.3s,baz=250,slow=8.3,SNR=1.3						
JHJ				Sn	Sn	21 38 32.0	-12
	17nm,0.3s,baz=100,slow=22,SNR=6.9						
USRK	**Ussuriysk Ar.**	**10.55**	**300**	Pn	**Pn**	**21 38 02.0**	**+2.2**
	0.4nm,0.3s,baz=109,slow=14,SNR=11						
MA2	**Magadan**	**20.41**	**9**	P	Pn	21 40 06.8	-0.5
	2.3nm,0.3s,baz=200,slow=9.8,SNR=4.0						
SEY	**Seymchan**	**23.86**	**9**	P	**P**	**21 40 43.2**	**+1.8**
	1.3nm,0.2s,baz=51,slow=19,SNR=4.8						
MKAR	**Makanchi Array**	**45.02**	**301**	P	**P**	**21 43 45.6**	**+1.9**
	0.3nm,0.7s,baz=83,slow=9.7,SNR=1.7						
ILAR	**Eielson Array**	**45.97**	**34**	P	**P**	**21 43 51.2**	**+0.2**
	0.9nm,0.7s,baz=267,slow=7.1,SNR=8.4						
RES	**Resolute Bay**	**59.50**	**15**	P	**P**	**21 45 31.5**	**+0.7**
	0.5nm,0.5s,baz=342,slow=7.7,SNR=4.4						
YKA	**Yellowknife Ar**	**60.32**	**32**	P	**P**	**21 45 36.5**	**0.0**
	0.3nm,0.7s,baz=300,slow=6.5,SNR=5.1						
FINES	**FINESS Array B**	**67.77**	**333**	P	**P**	**21 46 25.4**	**-0.2**
	1.3nm,0.9s,baz=54,slow=4.9,SNR=4.6						
NOA	**NORSAR Array B**	**72.83**	**338**	P	**P**	**21 46 57.5**	**+0.9**
	1.2nm,0.8s,baz=292,slow=8.3,SNR=3.6						

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*IDC **05** 21:36:15.4±0.8, 2°.90N×126°.83E, h0km, mb3.9/11, mb1 4.1/11, mb1mx3.9/42, mbtmp3.9/11, MS3.7/1, Ms1 3.7/1, ms1mx2.8/42, Error ellipse: s-maj=38.4km s-min=14.5km az=76.0*

*NEIC **05** 21:36:16.7±0.4, 2°.89N×126°.80E, h10km, mb4.3/5, Error ellipse: s-maj=22.5km s-min=7.6km az=75.0*

*ISCJB **05** 21:36:19.2±0.5, 2°.88N±0°.07×126°.7E±0°.2, h44km, mb4.0/15, MS3.6/1, Error ellipse: s-maj=26.8km s-min=9.1km az=167.3*

ISC 05 21:36:21.3±0.8**, 2°.9N**±0°.1×**126°.9E**±0°.2**, h44**km**, n19,** σ**0s.78**/18**, mb4.0**/15**, Northern Molucca Sea**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**20.89**	**183**	*e*P	**P**	**21 40 58.7**	**-1.2**
	4.9nm,0.8s						
WRAB	**Tennant Creek**	**23.84**	**162**	*e*P	**P**	**21 41 30.5**	**-0.1**
	6.0nm,0.5s						
WRA	**Warramunga Arr**	**23.84**	**162**	P	**P**	**21 41 30.1**	**-0.6**
	6.6nm,0.7s,baz=338,slow=10,SNR=32						
ASAR	**Alice Springs**	**27.27**	**166**	P	**P**	**21 42 02.1**	**+0.4**
	0.4nm,0.3s,baz=342,slow=7.7,SNR=10						
CMAR	**Chiang Mai Arr**	**31.41**	**302**	P	**P**	**21 42 39.6**	**+1.0**
	0.6nm,0.8s,baz=120,slow=7.2,SNR=5.8						
KSAR	**Wonju Array Be**	**34.41**	**1**	P	**P**	**21 43 04.8**	**+0.4**
KSRS	**Korea Array**	**34.42**	**2**	P	**P**	**21 43 04.8**	**+0.3**
	1.4nm,0.7s,baz=179,slow=10,SNR=8.5						
MJAR	**Matsushiro Arr**	**35.10**	**16**	P	**P**	**21 43 10.2**	**-0.3**
	0.6nm,0.5s,baz=180,slow=10.0,SNR=4.5						
HNR	**Honiara**	**35.17**	**111**	LR	LR	21 57 21.9	
	comp=Z,109nm,18.1s,baz=298,slow=36						
STKA	**Stephens Creek**	**37.30**	**159**	P	**P**	**21 43 29.9**	**+0.6**
	7.3nm,0.8s,baz=326,slow=8.1,SNR=7.8						
USRK	**Ussuriysk Ar.**	**41.40**	**6**	P	**P**	**21 44 03.4**	**+0.1**
	3.0nm,0.9s,baz=182,slow=8.1,SNR=6.3						
KLR	**Kul'dur**	**46.37**	**4**	P	**P**	**21 44 43.5**	**+0.4**
	1.5nm,0.8s,baz=304,slow=2.4,SNR=4.5						
SONM	**Songino Array**	**48.14**	**342**	P	**P**	**21 44 57.2**	**+0.1**
	0.5nm,0.5s,baz=155,slow=7.9,SNR=5.2						
MKAR	**Makanchi Array**	**58.32**	**325**	P	**P**	**21 46 11.2**	**-0.7**
	0.7nm,0.4s,baz=118,slow=7.9,SNR=21						
ZALV	**Zalesovo Beam**	**61.39**	**333**	P	**P**	**21 46 31.3**	**-1.5**
	0.5nm,0.5s,baz=146,slow=5.1,SNR=3.8						
KURK	**Kurchatov**	**62.52**	**328**	*e*P	**P**	**21 46 40.0**	**-0.5**
	6.9nm,0.7s						
BRVK	**Borovoye**	**68.17**	**327**	*e*P	**P**	**21 47 16.0**	**-1.0**
	1.3nm,0.5s						
ABKAR	**Akbulak array**	**72.88**	**321**	*e*P	**P**	**21 47 45.1**	**-0.7**
	0.3nm,0.3s						
TORD	**Torodi Ar. Bea**	**123.29**	**288**	PKP	**PKPdf**	**21 55 15.6**	**+1.0**
	0.1nm,0.3s,baz=88,slow=1.5,SNR=6.2						

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*CSEM **05** 22:00:50.1±0.3, 37°.26N×36°.34E, h2km, MD2.6, Error ellipse: s-maj=6.9km s-min=5.5km az=100.0*

*DDA **05** 22:00:50.0, 37°.26N×36°.36E, h7km, Md2.6*

ISC 05 22:00:48.8±1.4**, 37°.31N**±0°.03×**36°.29E**±0°.04**, h1**km±16km**, n19,** σ**0s.39**/30**, Turkey**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
ANDN	**Andirin**	**0.28**	**9**	*i* P	**Pb**	**22 00 56.6**	**-0.1**
ANDN				*i* S	**Sb**	**22 01 01.7**	**-0.3**
ANDN	**Andirin**	**0.28**	**9**	P	**Pb**	**22 00 56.7**	**-0.1**
ANDN				S	**Sb**	**22 01 01.7**	**-0.3**
KAMA	**Osmaniye**	**0.33**	**112**	*i* P	**Pg**	**22 00 54.4**	**-0.7**
KOZT	**Kozan**	**0.41**	**295**	*e*PG	**Pb**	**22 00 58.9**	**0.0**
KOZT	**Kozan**	**0.41**	**295**	*e*Pg	**Pb**	**22 00 58.9**	**0.0**
AYKD	**Aykdinkavak**	**0.43**	**75**	*i* P	**Pg**	**22 00 57.0**	**0.0**
AYKD				*i* S	**Sg**	**22 01 02.5**	**0.0**
KMRS	**Kahramanmaras**	**0.53**	**68**	*e*PG	**Pg**	**22 00 58.4**	**-0.5**
KMRS				*e*SG	**Sg**	**22 01 05.6**	**-0.1**
KMRS	**Kahramanmaras**	**0.53**	**68**	*e*Pg	**Pg**	**22 00 58.4**	**-0.5**
KMRS				*e*Sg	**Sg**	**22 01 05.6**	**-0.1**
KUZU	**Kuzuini**	**0.82**	**130**	*i* P	**Pg**	**22 01 04.8**	**+0.2**
KUZU				*i* S	**Sg**	**22 01 16.1**	**+0.8**
KUZU	**Kuzuini**	**0.82**	**130**	P	**Pg**	**22 01 04.8**	**+0.2**
KUZU				S	**Sg**	**22 01 16.1**	**+0.8**
TAHT	**Tahtakopru-Hat**	**0.93**	**185**	*e*PG	**Pg**	**22 01 06.3**	**-0.4**
TAHT	**Tahtakopru-Hat**	**0.93**	**185**	*e*Pg	**Pg**	**22 01 06.3**	**-0.4**
GZT	**Gaziantep**	**1.02**	**87**	*i* P	**Pb**	**22 01 09.2**	**-0.2**
YAYL	**Yayladag**	**1.28**	**187**	*i* P	**Pn**	**22 01 14.2**	**+0.2**
YAYL				*i* S	**Sb**	**22 01 30.6**	**-0.2**
YAYL	**Yayladag**	**1.28**	**187**	P	**Pn**	**22 01 14.2**	**+0.2**
YAYL				S	**Sb**	**22 01 30.6**	**-0.2**
AKCD	**Akcadag**	**1.63**	**52**	*i* P	**Pg**	**22 01 20.4**	**+0.3**
AKCD				*i* S	**Sg**	**22 01 41.6**	**+0.5**
AKCD	**Akcadag**	**1.63**	**52**	P	**Pg**	**22 01 20.4**	**+0.3**
AKCD				S	**Sg**	**22 01 41.6**	**+0.5**
SURC	**SANLIURFA_SURC**	**1.91**	**102**	*i* P	**Pb**	**22 01 24.3**	**-0.2**
SURC	**SANLIURFA_SURC**	**1.91**	**102**	P	**Pb**	**22 01 24.3**	**-0.2**

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*NIED **05** 22:01:00, 38°.40N×142°.30E, h14km, Mw4.8 Best double couple: $M_0$2.09000×10^{16} NP1:φs171.00000°, δ22.00000°, λ-48.00000°. NP2:φs307.00000°, δ74.00000°, λ-105.00000°.*

*BJI **05** 22:01:55.5, 38°.20N×142°.30E, h16km, mb5.0/75, mB4.9/49, Ms4.8/79, Ms7 4.6/75*

*IDC **05** 22:01:56.3±0.5, 38°.32N×142°.17E, h0km, mb4.7/34, mb1 4.8/37, mb1mx4.7/55, mbtmp4.7/37, ML4.4/3, MS4.2/24, Ms1 4.2/24, ms1mx4.0/46, Error ellipse: s-maj=13.0km s-min=11.2km az=115.0*

*ISCJB **05** 22:01:58.6±0.6, 38°.35N±0°.02×142°.21E±0°.03, h24km±4km, mb4.9/186, MS4.5/46, Error ellipse: s-maj=4.1km s-min=2.8km az=42.9*

*JMA **05** 22:01:58.2±0.2, 38°.40N×142°.31E, h27km±3km, M5.0*

JMA Felt III J1.

*NEIC **05** 22:01:59.3±2.0, 38°.37N×142°.10E, h16km±12km, mb5.0/99, Error ellipse: s-maj=5.0km s-min=3.3km az=125.0*

NEIC Recorded [3 JMA] in Miyagi.

*GCMT **05** 22:01:59.3±0.3, 38°.37N×142°.31E, h17km±1km, MW5.0/92, Moment Tensor Solution. s30,c37; s92,c121; Duration: 0 Moment tensor: Scale 10^{16}Nm; M_{rr}-2.28±.16; $M_{\theta\theta}$0.91±.09; $M_{\phi\phi}$1.37±.10; $M_{r\theta}$2.24±.31; $M_{\theta\phi}$-0.21±.06; $M_{\phi r}$-2.49±.30; Best double couple: $M_0$3.82300×10^{16} NP1:φs320.00000°, δ76.00000°, λ-93.00000°. NP2: φs153.00000°, δ15.00000°, λ-78.00000°. Principal axes: T 3.3770, Plg31.0000°, Azm53.0000°; N 0.8950, Plg3.0000°, Azm321.0000°; P -4.2690, Plg59.0000°, Azm226.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

*MOS **05** 22:02:00.2±0.9, 38°.46N×142°.15E, h32km, mb5.1/59, MS4.6/16 Error ellipse: s-maj=7.1km s-min=4.4km az=108.0*

ISC 05 22:01:58.5±0.4**, 38°.37N**±0°.03×**142°.32E**±0°.03**, h16**km±2km**, h15**km**:pP-P, n527,** σ**1s.79**/569**, mb5.0**/190**, MS4.5**/46**, 28C-30D, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**0.77**	**276**	P	**Pb**	**22 02 12.5**	**-0.9**
JIO				S	**Sb**	**22 02 21.8**	**-1.8**
OFUJ	**Ofunato**	**0.87**	**324**	⇑P	**Pb**	**22 02 13.8**	**-1.4**
JMK	**Ichinoseki**	**1.04**	**304**	⇑P	**Pb**	**22 02 16.6**	**-1.4**
JMK				S	**Sn**	**22 02 30.6**	**-1.9**
JOU	**Okura**	**1.30**	**270**	⇓P	**Pn**	**22 02 21.2**	**-0.8**
JOU				S	**Sn**	**22 02 37.4**	**-1.7**
JMM	**Marumori**	**1.31**	**248**	⇓P	**Pn**	**22 02 20.6**	**-1.5**
JMM				S	**Sb**	**22 02 37.0**	**-2.2**
JOM	**Ohasama**	**1.36**	**324**	⇑P	**Pn**	**22 02 21.7**	**-1.1**
JOM				S	**Sb**	**22 02 38.7**	**-2.0**
JFK	**Kawauchi**	**1.52**	**229**	⇓P	**Pn**	**22 02 23.2**	**-1.9**
JFK				S	**Sn**	**22 02 41.2**	**-3.4**
JYK	**Kaneyama**	**1.63**	**290**	⇓P	**Pn**	**22 02 25.8**	**-0.7**
ERM	**Erimo**	**3.69**	**10**	*c e*P	**Pn**	**22 02 54.5**	**-0.4**
ERM				pmax	pmax		
	comp=Z,140nm,0.7s						
ERM	**Erimo**	**3.69**	**10**	*e*Pn	**Pn**	**22 02 54.6**	**-0.3**
ERM				*e*Sn	**Sn**	**22 03 33.6**	**-4.5**
MJAR	**Matsushiro Arr**	**3.75**	**242**	Pn	**Pn**	**22 02 55.8**	**+0.2**
	comp=Z,24nm,0.3s,baz=59,slow=11,SNR=84						
MJAR				LR	LR	22 04 15.1	
	comp=Z,3μm,19.9s,baz=65,slow=39						
MAJO	**Matsushiro**	**3.75**	**242**	*d i*P	**Pn**	**22 02 56.3**	**+0.6**
MAJO	**Matsushiro**	**3.75**	**242**	*e*Pn	**Pn**	**22 02 56.5**	**+0.8**
MAT	**Matsushiro**	**3.75**	**242**	P	**Pn**	**22 02 56.3**	**+0.6**
MAT				S	**Sb**	**22 03 44.6**	**-4.9**
INU	**Inuyama**	**5.21**	**236**	*e*Pn	**Pn**	**22 03 17.7**	**+1.9**
JHJ2	**Mitsune**	**5.63**	**202**	*e*Pn	**Pn**	**22 03 21.3**	**-0.2**
JHJ2				*e*Sn	**Sn**	**22 04 22.4**	**-3.5**
JHJ	**Hachijo jima 2**	**5.63**	**202**	Pn	**Pn**	**22 03 20.9**	**-0.6**
	comp=Z,181nm,0.3s,baz=340,slow=3.1,SNR=22						
YUK	**Yuzh-Kuril'sk**	**6.25**	**24**	*e*P	**Pn**	**22 03 29.0**	**-1.0**
YUK				*e*S	**Sn**	**22 04 39.0**	**-2.1**
YUK				pmax	pmax		
	comp=E,417nm,0.5s						
YUK				pmax	pmax		
	comp=Z,517nm,0.5s						
YUK				pmax	pmax		
	comp=N,284nm,0.3s						
YUK				MLR	MLR		
	comp=Z,2μm,14.0s						
YUK				MLR	MLR		
	comp=N,3μm,16.0s						
YUK				MLR	MLR		
	comp=E,2μm,14.0s						
SHO	**Shikotan**	**6.46**	**30**	*e*P	**Pn**	**22 03 30.4**	**-2.5**
SHO				*e*S	**Sn**	**22 04 40.5**	**-5.7**
SHO				pmax	pmax		
	comp=Z,378nm,0.5s						
SHO				pmax	pmax		
	comp=N,175nm,0.8s						
SHO				pmax	pmax		
	comp=E,67nm,0.3s						
KUR	**Kuril'sk**	**8.01**	**29**	⇓*i*P	**Pn**	**22 03 53.1**	**-1.0**
KUR				*e*S	**Sn**	**22 05 21.7**	**-2.6**
KUR				pmax	pmax		
	comp=Z,86nm,0.7s						
KUR				pmax	pmax		
	comp=N,68nm,0.7s						
KUR				pmax	pmax		
	comp=E,23nm,0.6s						
KUR				smax	smax		
	comp=N,107nm,0.7s						
KUR				smax	smax		
	comp=E,66nm,0.7s						
KUR				pmax	pmax		
	comp=N,447nm,2.5s						
KUR				pmax	pmax		
	comp=E,359nm,2.6s						
KUR				MLR	MLR		
	comp=N,1μm,18.0s						
KUR				MLR	MLR		
	comp=Z,982nm,18.0s						
KUR				MLR	MLR		
	comp=E,763nm,15.0s						
YSS	**Yuzh-Sakhalins**	**8.58**	**2**	⇑*e*P	**Pn**	**22 04 03.0**	**+1.0**
YSS				*e*S	**Sn**	**22 05 42.7**	**+4.3**
YSS				pmax	pmax		
	comp=Z,140nm,0.8s						
YSS				MLR	MLR		
	comp=Z,2μm,16.0s						
YSS				MLR	MLR		
	comp=N,3μm,17.0s						
YSS				MLR	MLR		
	comp=E,2μm,14.0s						
YSS	**Yuzh-Sakhalins**	**8.58**	**2**	*e*Pn	**Pn**	**22 04 01.9**	**0.0**
USRK	**Ussuriysk Ar.**	**9.71**	**310**	Pn	**Pn**	**22 04 20.6**	**+3.1**
	comp=E,0.7nm,0.3s,baz=123,slow=12,SNR=25						
JNU	**Nakatsue**	**10.67**	**244**	Pn	**Pn**	**22 04 33.2**	**+2.6**
	comp=E,2.7nm,0.3s,baz=53,slow=7.2,SNR=57						
JNU				LR	LR	22 08 56.5	
	comp=E,5μm,18.7s,baz=52,slow=40						
JNU	**Nakatsue**	**10.67**	**244**	*e*Pn	**Pn**	**22 04 32.0**	**+1.3**
CBIJ	**Chichi jima**	**11.25**	**181**	*e*Pn	**Pn**	**22 04 36.7**	**-1.9**
HABR	**Khabarovsk**	**11.39**	**335**	*e*P	**Pn**	**22 04 37.7**	**-2.7**
HABR				*e*S	**Sn**	**22 06 41.6**	**-5.6**
HABR				pmax	pmax		
	comp=Z,42nm,1.2s						
HABR				MLR	MLR		
	comp=Z,554nm,12.0s						
MDJ	**Mudanjiang**	**11.39**	**307**	P	Pn	22 04 44.9	+4.4
MDJ				S	**Sn**	**22 06 53.6**	**+6.1**
MDJ				pmax	pmax		
	comp=Z,14nm,0.7s						
MDJ				pmax	pmax		
	comp=Z,200nm,5.3s						
MDJ				LR	LR		
	comp=Z,2μm,17.2s						
MDJ				LR	LR		
	comp=Z,1μm,16.1s						
MDJ				LR	LR		
	comp=Z,1μm,12.9s						
MDJ	**Mudanjiang**	**11.39**	**307**	*e*Pn	**Pn**	**22 04 38.2**	**-2.3**
	comp=Z,27nm,0.8s						
KSRS	**Korea Array**	**11.41**	**270**	Pn	**Pn**	**22 04 44.2**	**+3.5**
	comp=Z,0.7nm,0.3s,baz=89,slow=13,SNR=28						
KSRS				LR	LR	22 08 51.9	
	comp=Z,1μm,18.2s,baz=66,slow=37						
KS01	**Wonju Array Si**	**11.43**	**270**	*e*Pn	Pn	22 04 45.8	+4.7
KS15	**Wonju Array Si**	**11.44**	**270**	*e*Pn	Pn	22 04 45.4	+4.1
KSAR	**Wonju Array Be**	**11.44**	**270**	P	**Pn**	**22 04 44.3**	**+3.1**
KSAR	**Wonju Array Be**	**11.44**	**270**	Pn	**Pn**	**22 04 44.2**	**+3.1**
TYV	**Tymovskoe**	**12.49**	**1**	*e*P	**Pn**	**22 04 58.0**	**+2.6**
TYV				*e*		22 07 18.0	
TYV				pmax	pmax		
	comp=Z,20nm,0.8s						
TYV				MLR	MLR		
	comp=Z,3μm,16.0s						
KLR	**Kul'dur**	**13.25**	**328**	Pn	**Pn**	**22 05 05.7**	**-0.1**
	comp=Z,0.2nm,0.3s,baz=132,slow=11,SNR=16						
KLR				LR	LR	22 10 06.3	
	comp=Z,526nm,19.1s,baz=142,slow=37						
CN2	**Changchun**	**13.82**	**298**	*e*P	**P**	**22 05 20.3**	**-1.8**
CN2				*e*sP	sP	22 05 50.8	
CN2				pmax	pmax		
	comp=Z,10.0nm,0.7s						
CN2				pmax	pmax		
	comp=Z,200nm,4.0s						
CN2				LR	LR		
	comp=N,1μm,12.0s						
CN2				LR	LR		
	comp=E,800nm,12.0s						
CN2				LR	LR		
	comp=Z,700nm,13.0s						
SNY	**Shenyang**	**14.75**	**289**	⇓P	**P**	**22 05 33.1**	**+0.8**
SNY				S	**Sn**	**22 08 13.5**	**+4.1**
SNY				pmax	pmax		
	comp=Z,24nm,1.0s						
SNY				pmax	pmax		
	comp=Z,380nm,9.2s						
SNY				LR	LR		
	comp=N,3μm,13.9s						
SNY				LR	LR		
	comp=E,2μm,17.3s						
SNY				LR	LR		
	comp=Z,2μm,17.0s						
NKL	**Nikolayevsk**	**14.82**	**356**	*e*P	**Pn**	**22 05 25.0**	**-2.2**
NKL				*e*		22 08 11.0	
NKL				pmax	pmax		
	comp=N,10.0nm,1.0s						
NKL				pmax	pmax		
	comp=E,10.0nm,1.0s						
NKL				pmax	pmax		
	comp=Z,24nm,1.0s						
NKL				MLR	MLR		
	comp=E,1μm,17.0s						
NKL				MLR	MLR		
	comp=Z,2μm,17.0s						
SKR	**Severo-Kuril's**	**15.72**	**34**	*e*P	**Pn**	**22 05 36.0**	**-3.1**
SKR				pmax	pmax		
	comp=Z,50nm,0.5s						
SKR				MLR	MLR		
	comp=E,1μm,14.0s						
SKR				MLR	MLR		
	comp=Z,2μm,14.0s						
DL2	**Dalian**	**16.18**	**278**	P	**P**	**22 05 46.6**	**-1.6**
DL2				S	**S**	**22 08 50.2**	**-7.0**
DL2				pmax	pmax		
	comp=Z,110nm,1.1s						
DL2				pmax	pmax		
	comp=Z,470nm,9.8s						
DL2				LR	LR		
	comp=Z,1μm,13.5s						
DL2				LR	LR		
	comp=Z,1μm,14.8s						
DL2				LR	LR		
	comp=Z,2μm,13.6s						
JOW	**Kunigami**	**16.48**	**230**	Pn	**Pn**	**22 05 49.4**	**+0.3**
	comp=Z,3.1nm,0.3s,baz=61,slow=6.1,SNR=4.5						
PEA0	**Petropavlovsk-**	**18.17**	**31**	*e*Pn	**Pn**	**22 06 09.9**	**-0.1**
PETK	**Petropavlovsk-**	**18.17**	**31**	P	**Pn**	**22 06 07.4**	**-2.6**
	comp=Z,0.5nm,0.3s,baz=189,slow=8.4,SNR=6.9						
PETK				LR	LR	22 12 52.6	
	comp=Z,716nm,20.6s,baz=207,slow=36						
PEA1	**Petropavlovsk-**	**18.17**	**31**	*e*Pn	**Pn**	**22 06 07.4**	**-2.6**
PET	**Petropavlovsk**	**18.50**	**32**	*e*P	**Pn**	**22 06 15.3**	**+1.4**
PET				*e*S	**Sn**	**22 09 37.2**	**-3.0**
PET				pmax	pmax		
	comp=Z,300nm,9.6s						
PET				pmax	pmax		
	comp=Z,54nm,1.2s						
PET				MLR	MLR		
	comp=Z,700nm,18.0s						
SSE	**Sheshan**	**18.80**	**254**	⇑P	**Pn**	**22 06 18.3**	**+0.5**
SSE				S	**S**	**22 09 49.8**	**-0.9**
SSE				pmax	pmax		
	comp=Z,68nm,1.1s						
SSE				pmax	pmax		
	comp=Z,210nm,4.0s						
SSE				LR	LR		
	comp=Z,160nm,16.0s						
SSE				LR	LR		
	comp=Z,890nm,16.0s						
SSE				LR	LR		
	comp=Z,1μm,16.0s						
HIA	**Hailar**	**19.52**	**311**	*e*P	**P**	**22 06 25.0**	**0.0**
HIA				pmax	pmax		
	comp=Z,15nm,0.8s						
HIA	**Hailar**	**19.52**	**311**	*e*P	**P**	**22 06 25.0**	**0.0**
	comp=Z,15nm,0.8s						
TIA	**Tai'an**	**20.15**	**272**	*e*P	**P**	**22 06 30.2**	**-1.7**
TIA				S	**S**	**22 10 08.8**	**-8.8**
TIA				pmax	pmax		
	comp=Z,20nm,1.3s						
TIA				LR	LR		
	comp=Z,1μm,11.9s						
TIA				LR	LR		
	comp=Z,1μm,14.1s						
TIA				LR	LR		
	comp=Z,1μm,13.7s						
NJ2	**Nanjing**	**20.16**	**259**	*e*P	**P**	**22 06 30.3**	**-1.8**
NJ2				S	**S**	**22 10 17.5**	**-0.3**
NJ2				pmax	pmax		
	comp=Z,5.0nm,0.6s						
NJ2				LR	LR		
	comp=Z,1μm,19.5s						
NJ2				LR	LR		
	comp=Z,2μm,22.8s						
NJ2				LR	LR		
	comp=Z,2μm,22.8s						
BJT	**Baijiatuau**	**20.32**	**283**	*e*P	**P**	**22 06 30.8**	**-2.9**
BJT				pmax	pmax		
	comp=Z,34nm,0.7s						
BJT	**Baijiatuau**	**20.32**	**283**	*e*P	**P**	**22 06 30.8**	**-2.9**
	comp=Z,34nm,0.7s						
MA2	**Magadan**	**21.90**	**12**	P	**P**	**22 06 51.2**	**+0.6**
	comp=Z,43nm,0.7s,baz=218,slow=10,SNR=29						
MA2				LR	LR	22 15 12.7	
	comp=Z,514nm,21.6s,baz=219,slow=36						
MA2	**Magadan**	**21.90**	**12**	*e*P	**P**	**22 06 51.0**	**+0.4**
MA2				pmax	pmax		
	comp=Z,201nm,0.8s						
MA2	**Magadan**	**21.90**	**12**	*e*P	**P**	**22 06 51.0**	**+0.4**
	comp=Z,201nm,0.8s						
TATO	**Taipei**	**22.13**	**239**	*e*P	**P**	**22 06 51.1**	**-2.3**
YHNB	**Yeheng**	**22.41**	**239**	*e*P	**P**	**22 06 56.5**	**0.0**
	comp=Z,44nm,0.8s						
NACB	**Ninganchiao**	**22.60**	**237**	*e*P	**P**	**22 06 57.1**	**-1.3**
	comp=Z,40nm,0.8s						
SSLB	**Suanglung**	**23.29**	**238**	*e*P	**P**	**22 07 02.0**	**-3.7**
	comp=Z,27nm,0.7s						
YULB	**Yu-li**	**23.34**	**236**	*e*P	**P**	**22 07 03.5**	**-2.6**
	comp=Z,117nm,1.6s						
TIY	**Taiyuan**	**23.50**	**278**	*e*P	**P**	**22 07 09.9**	**+2.2**

TIY pmax pmax
comp=Z,41nm,0.6s
TIY LR LR
comp=Z,940nm,12.6s
TIY LR LR
comp=Z,780nm,15.1s
TIY LR LR
comp=Z,1µm,13.9s
HHC Hu-ho-hao-te 23.76 286 *e*P **P** **22 07 09.4 -0.9**
HHC pP pP 22 07 15.0 0.0
HHC sP sP 22 07 18.2 +1.2
HHC PP **PnPn** **22 07 46.0 +8.1**
HHC S **S** **22 11 22.2 -2.9**
HHC pmax pmax
comp=Z,21nm,0.8s
HHC pmax pmax
comp=Z,74nm,8.3s
HHC LR LR
comp=Z,2µm,13.2s
HHC LR LR
comp=Z,960nm,14.2s
HHC LR LR
comp=Z,780nm,16.7s
TPUB Ta-pu 23.84 237 *e*P **P** **22 07 06.9 -4.1**
comp=Z,62nm,0.8s
TWG Pinlang 23.89 236 *e*P **P** **22 07 09.8 -1.7**
comp=Z,480nm,1.1s
QZH Quanzhou 24.15 243 P **P** **22 07 08.5 -5.3**
QZH S S 22 11 20.0 -11
QZH LR LR
comp=Z,2µm,14.0s
QZH LR LR
comp=Z,1µm,11.3s
QZH LR LR
comp=Z,2µm,12.5s
WHN Wuhan 24.28 260 P **P** **22 07 14.1 -1.0**
WHN S S 22 11 22.0 -11
WHN pmax pmax
comp=Z,98nm,0.7s
WHN LR LR
comp=Z,3µm,12.2s
WHN LR LR
comp=Z,1µm,9.5s
WHN LR LR
comp=Z,5µm,16.0s
GUMO Guam 24.79 174 LR LR 22 22 00.1
comp=Z,270nm,18.4s,baz=332,slow=49
YAK Yakutsk 24.93 346 P **P** **22 07 21.0 +0.4**
comp=Z,2.5nm,0.3s,baz=326,slow=23,SNR=6.4
YAK LR LR 22 17 26.8
comp=Z,921nm,18.4s,baz=162,slow=37
YAK Yakutsk 24.93 346 *e*P **P** **22 07 18.6 -2.0**
YAK *e**PP **sP** **22 07 27.9 +0.5**
YAK *e*PPP PPP 22 07 55.5
YAK *e*S **S** **22 11 32.6 -11**
YAK *e**SS **sS** **22 11 47.1 -4.0**
YAK pmax pmax
comp=Z,47nm,0.9s
YAK pmax pmax
comp=N,19nm,1.0s
YAK pmax pmax
comp=E,15nm,1.6s
YAK pmax pmax
comp=Z,31nm,0.8s
YAK pmax pmax
comp=E,68nm,3.4s
YAK pmax pmax
comp=N,66nm,2.0s
YAK smax smax
comp=N,146nm,2.7s
YAK smax smax
comp=E,35nm,1.2s
YAK MLR MLR
comp=E,360nm,12.0s
YAK MLR MLR
comp=Z,1µm,14.0s
YAK MLR MLR
comp=N,707nm,12.0s
YAK Yakutsk 24.93 346 *e*P **P** **22 07 21.0 +0.4**
comp=N,50nm,0.6s
SEY Seymchan 25.34 11 P **P** **22 07 26.3 +2.0**
comp=N,29nm,0.7s,baz=197,slow=6.4,SNR=124
SEY Seymchan 25.34 11 *c e*P **P** **22 07 26.0 +1.7**
BOD Bodaibo 26.80 326 *e*P **P** **22 07 37.2 -0.4**
BOD pmax pmax
comp=Z,15nm,0.9s
XAN Xi'an 27.20 271 P **P** **22 07 40.0 -1.6**
XAN pP sP 22 07 48.4 +0.1
XAN PP **PnPn** **22 08 23.3 -1.6**
XAN S **S** **22 12 19.1 -0.8**
XAN pmax pmax
comp=Z,43nm,0.7s
XAN pmax pmax
comp=Z,160nm,10.9s
XAN LR LR
comp=Z,1µm,15.4s
XAN LR LR
comp=Z,520nm,18.4s
XAN LR LR
comp=Z,990nm,15.4s
ULN Ulaanbaatar 27.23 302 *e*P **P** **22 07 40.3 -1.5**
ULN *e* 22 11 01.0
ULN pmax pmax
comp=Z,6.0nm,0.7s
ULN Ulaanbaatar 27.23 302 *e*P **P** **22 07 40.3 -1.5**
comp=Z,5.6nm,0.7s
ULN *e*PcP **PcP** **22 11 01.0 -0.5**
SONA1 Songino Array 27.66 302 *e*P **P** **22 07 45.0 -0.6**
SONA0 Songino Array 27.66 302 *e*P **P** **22 07 45.0 -0.6**
comp=Z,7.4nm,0.9s
SONM Songino Array 27.66 302 P **P** **22 07 45.0 -0.6**
comp=Z,4.0nm,0.7s,baz=95,slow=8.1,SNR=29
H11N2 WAKE ISLAND Hy 28.26 124 T T 22 37 29.9
baz=320,slow=75,SNR=2813
H11N1 WAKE ISLAND Hy 28.27 124 T T 22 38 09.2
SNR=2404
H11N3 WAKE ISLAND Hy 28.28 124 T T 22 37 32.5
baz=314,slow=75,SNR=2354
H11S1 WAKE ISLAND Hy 29.03 126 T T 22 38 53.6
baz=318,slow=74,SNR=1398
H11S3 WAKE ISLAND Hy 29.03 126 T T 22 39 14.5
baz=128,slow=74,SNR=1980
H11S2 WAKE ISLAND Hy 29.04 126 T T 22 38 30.5
SNR=1314
TLY Talaya 30.02 309 P **P** **22 08 06.0 -0.4**
comp=Z,12nm,0.8s,baz=83,slow=0.5,SNR=15
TLY Talaya 30.02 309 P **P** **22 08 06.0 -0.4**
TLY pmax pmax
comp=Z,13nm,0.8s
ZAK Zakamensk 30.03 306 *e*P **P** **22 08 06.2 -0.4**
ZAK pmax pmax
comp=Z,13nm,1.0s
LZH Lanzhou 30.57 278 *e*P **P** **22 08 11.6 0.0**
LZH pP sP 22 08 17.0 -1.4
LZH sP pP 22 08 19.4 +2.9
LZH PP **PP** **22 09 15.5 -5.1**
LZH *e*S **S** **22 13 06.6 -6.4**
LZH SS **ScP** **22 14 55.2 +3.3**
LZH pmax pmax
comp=Z,45nm,1.0s
LZH pmax pmax
comp=Z,160nm,4.6s
LZH LR LR
comp=Z,1µm,12.7s
LZH LR LR
comp=Z,680nm,12.2s
LZH LR LR
comp=Z,1µm,13.2s
MOY Mondy 31.65 308 *e*P **P** **22 08 20.8 -0.1**
MOY pmax pmax
comp=Z,18nm,2.2s
GYA Guiyang 32.17 259 ⇑ *i*P **P** **22 08 23.3 -2.4**
GYA PP **PnPn** **22 09 32.4 +0.8**
GYA PcP **PcP** **22 11 17.0 +2.6**
GYA S **S** **22 13 35.6 -2.4**
GYA ScP **ScP** **22 14 57.8 +0.4**
GYA ScS **ScS** **22 18 55.2 -1.3**
GYA pmax pmax
comp=Z,50nm,0.6s
GYA pmax pmax
comp=Z,130nm,6.3s
GYA LR LR
comp=Z,560nm,17.8s
GYA LR LR
comp=Z,530nm,18.0s
GYA LR LR
comp=Z,550nm,18.2s
CD2 Chengdu 32.41 269 P **P** **22 08 25.9 -1.8**
CD2 sP sP 22 08 34.3 -0.2
CD2 PP **PP** **22 09 38.8 -2.1**
CD2 S **S** **22 13 38.9 -2.6**
CD2 sS sS 22 13 48.9 -0.6
CD2 pmax pmax
comp=Z,50nm,0.8s
CD2 pmax pmax
comp=Z,200nm,5.4s
CD2 LR LR
comp=Z,1µm,13.2s
CD2 LR LR
comp=Z,1µm,15.6s
BILL Bilibino 32.54 16 ⇓ *e*P **P** **22 08 29.0 +0.6**
BILL *i* 22 08 34.0
BILL *e* 22 09 31.5
BILL *e*S **S** **22 13 47.8 +5.1**
BILL *e*SS **SnSn** **22 15 31.6 -5.0**
BILL pmax pmax
comp=Z,10.0nm,1.2s
BILL MLR MLR
comp=Z,387nm,18.0s
BILL Bilibino 32.54 16 *e*P **P** **22 08 28.2 -0.2**
comp=Z,11nm,0.9s
GTA Gaotai 32.88 285 *e*P **P** **22 08 30.5 -1.3**
GTA pP pP 22 08 36.4 -0.3
GTA sP sP 22 08 39.3 +0.7
GTA PcP **PcP** **22 11 16.7 +0.5**
GTA S **S** **22 13 44.7 -4.2**
GTA PcS **PcS** **22 14 58.7 -2.9**
GTA pmax pmax
comp=Z,3.0nm,1.2s
GTA pmax pmax
comp=Z,84nm,4.3s
GTA LR LR
comp=Z,1µm,16.2s
GTA LR LR
comp=Z,640nm,17.1s
GTA LR LR
comp=Z,770nm,18.1s
TIXI Tiksi 34.05 352 *e*P **P** **22 08 41.2 -0.3**
TIXI pmax pmax
comp=Z,8.0nm,0.8s
TIXI Tiksi 34.05 352 *e*P **P** **22 08 41.1 -0.3**
comp=Z,8.0nm,0.8s
QIZ Qiongzhong 34.14 245 P **P** **22 08 44.5 +1.7**
QIZ S **S** **22 14 08.9 +0.4**
QIZ LR LR
comp=Z,770nm,14.7s
QIZ LR LR
comp=Z,1µm,14.9s
QIZ Qiongzhong 34.14 245 *e*P **P** **22 08 42.0 -0.9**
KMI Kunming 35.88 260 P **P** **22 08 58.1 0.0**
KMI pP sP 22 09 04.7 -0.2
KMI sP pP 22 09 07.8 +4.8
KMI PP **PP** **22 10 20.4 +0.8**
KMI S **S** **22 14 33.1 -2.6**
KMI sS sS 22 14 43.9 +0.2
KMI SS **SnSn** **22 16 54.3 -4.8**
KMI pmax pmax
comp=Z,30nm,0.9s
KMI pmax pmax
comp=Z,160nm,3.4s
KMI LR LR
comp=Z,830nm,15.8s
KMI LR LR
comp=Z,910nm,15.9s
KMI LR LR
comp=Z,1µm,15.4s
KRAR Krasnoyarsk 37.01 315 ⇑ *i*P **P** **22 09 06.7 -0.4**
KRAR pmax pmax
comp=Z,36nm,0.9s
GAMB Gambell 37.20 32 *e*P **P** **22 09 11.8 +3.2**
MYLDM Lahad Datu 39.50 219 *e*P **P** **22 09 30.7 +2.3**
comp=Z,47nm,0.8s
UBPT Khong Chiam 39.74 245 P **P** **22 09 34.1 +3.6**
comp=Z,32nm,0.9s
KKM Kota Kinabalu 39.95 223 *e*P **P** **22 09 33.1 +0.8**
SWI Sorong 40.35 197 P **P** **22 09 36.0 +0.5**
comp=Z,27nm,0.7s
WMQ Urumqi 40.89 296 P **P** **22 09 40.2 +0.3**
WMQ pP pP 22 09 44.5 -0.3
WMQ sP sP 22 09 48.6 +1.9
WMQ S **S** **22 15 51.4 +0.7**
WMQ sS sS 22 15 59.1 +0.3
WMQ ScS **ScS** **22 19 42.6 -1.7**
WMQ pmax pmax
comp=Z,31nm,0.8s
WMQ pmax pmax
comp=Z,62nm,4.4s
WMQ LR LR
comp=Z,320nm,13.4s
WMQ LR LR
comp=Z,170nm,13.4s
WMQ LR LR
comp=Z,73nm,16.4s
KHON Khomkaen 40.96 249 P **P** **22 09 41.0 +0.4**
comp=Z,16nm,0.6s
LBMI Labuha 41.15 203 P **P** **22 09 44.3 +2.2**
comp=Z,34nm,1.0s
PHRA Phrae 41.54 254 P **P** **22 09 45.2 -0.1**
comp=Z,228nm,0.8s
ZAA1 Zalesovo Array 41.56 311 *e*P **P** **22 09 45.0 -0.1**
ZAA1 *e*PcP **PcP** **22 11 41.9 -0.2**
ZAA0 Zalesovo Array 41.56 311 *e*P **P** **22 09 43.7 -1.4**
ZALV Zalesovo Beam 41.56 311 P **P** **22 09 45.0 -0.1**
comp=Z,11nm,0.6s,baz=87,slow=7.7,SNR=47
ZALV PcP **PcP** **22 11 41.9 -0.2**
comp=Z,5.1nm,0.7s,baz=81,slow=3.6,SNR=3.8
UTTA Uttaradit 41.76 252 P **P** **22 09 48.1 +1.0**
comp=Z,9.0nm,0.8s,comp=Z,61nm
LAMP Lampang 41.98 254 P **P** **22 09 49.2 +0.3**
comp=Z,15nm,0.7s
MRSI Marisa 42.11 211 P **P** **22 09 51.2 +1.3**
comp=Z,62nm,1.2s
FAKI Fak Fak 42.13 195 P **P** **22 09 49.6 -0.5**
comp=Z,40nm,0.7s
FAKI Fak Fak 42.13 195 *e*P **P** **22 09 50.4 +0.2**
comp=Z,33nm,1.0s
PBKT Sadao Pong 42.18 251 P **P** **22 09 50.5 0.0**
comp=Z,15nm,1.1s
CMMT Chiang Mai 42.32 255 P **P** **22 09 51.2 -0.6**
comp=Z,39nm,0.7s,comp=Z,387nm
CHTO Chiang Mai 42.32 255 P **P** **22 09 51.3 -0.5**
comp=Z,171nm,0.8s,comp=Z,1µm
CHTO Chiang Mai 42.32 255 *e*P **P** **22 09 51.3 -0.5**
CHTO pmax pmax
comp=Z,29nm,0.8s
CHTO Chiang Mai 42.32 255 *e*P **P** **22 09 51.3 -0.5**
comp=Z,29nm,0.8s
CHTO Chiang Mai 42.32 255 P **P** **22 09 51.3 -0.5**
SNR=8.8
CHTO Chiang Mai 42.32 255 P **P** **22 09 51.3 -0.5**
SNR=8.8
NRIK Noril'sk 42.36 335 P **P** **22 09 51.3 -0.1**
comp=Z,4.7nm,0.6s,baz=129,slow=8.3,SNR=5.6
NRIK LR LR 22 30 54.0
comp=Z,384nm,18.2s,baz=104,slow=41
NVS Novosibirsk 42.45 313 ⇑ *i*P **P** **22 09 52.3 0.0**
NVS pmax pmax
comp=Z,37nm,1.1s
NVS pmax pmax
comp=N,6.0nm,1.0s
NVS pmax pmax
comp=E,23nm,1.0s
CM31 Chiang Mai Arr 42.54 255 *e*P **P** **22 09 53.6 +0.1**
CM31 *e*PcP **PcP** **22 11 46.2 +0.3**
CMAR Chiang Mai Arr 42.54 255 P **P** **22 09 53.4 -0.2**
comp=E,11nm,0.7s,baz=43,slow=7.8,SNR=71
CMAR PcP **PcP** **22 11 46.2 +0.3**
comp=E,2.8nm,0.7s,baz=5.7,slow=2.0,SNR=5.8
CMAR LR LR 22 29 08.2
comp=E,339nm,18.6s,baz=60,slow=38
CM01 Chiang Mai Arr 42.55 255 *e*P **P** **22 09 53.1 -0.5**
SUKH Sukhothai 42.61 253 P **P** **22 09 54.2 +0.1**
comp=E,15nm,0.8s,comp=E,209nm
LSA Lhasa 42.81 274 P **P** **22 09 57.1 +0.9**
LSA pmax pmax
comp=E,6.0nm,0.8s
SANI Sanana 42.96 204 P **P** **22 09 58.2 +1.4**
comp=E,61nm,0.8s,comp=E,852nm
MHMT Maesarieng 43.47 255 P **P** **22 10 01.2 +0.1**
comp=E,52nm,0.7s,comp=E,396nm
APSI Ampana 43.48 211 P **P** **22 10 01.4 +0.3**
comp=E,130nm,1.2s,comp=E,1µm
CHBT CHBT 43.69 245 P **P** **22 10 04.6 +1.8**
comp=E,23nm,0.9s
TT01 Tatalina 43.91 36 *e*P **P** **22 10 05.6 +1.6**
SVW2 Sparrevohn 44.02 38 *e*P **P** **22 10 07.7 +2.7**
comp=E,18nm,1.2s
MK01 Makanchi Array 44.03 301 *e*P **P** **22 10 04.3 -1.0**
MK31 Makanchi Array 44.03 301 *e*P **P** **22 10 05.4 +0.1**
MK31 Makanchi Array 44.03 301 *e*P **P** **22 10 05.4 +0.1**
MK32 Makanchi Array 44.03 301 *e*P **P** **22 10 05.0 -0.3**
MKAR Makanchi Array 44.03 301 P **P** **22 10 05.0 -0.3**
comp=E,12nm,0.8s,baz=83,slow=11,SNR=70
MKAR Makanchi Array 44.03 301 *e*P **P** **22 10 05.4 +0.1**
MKAR Makanchi Array 44.03 301 *e*P **P** **22 10 05.4 +0.1**
PCI Palu 44.24 213 P **P** **22 10 07.6 +0.4**
comp=E,108nm,1.2s,comp=E,891nm
MAKZ Makanchi 44.24 301 *e*P **P** **22 10 06.7 -0.2**
MAKZ pmax pmax
comp=Z,41nm,0.9s
MAKZ Makanchi 44.24 301 *e*P **P** **22 10 06.7 -0.2**
comp=Z,41nm,0.9s
SRDT SRDT 44.96 250 P **P** **22 10 13.2 +0.2**
comp=Z,61nm,1.0s
SBUM Sibu 45.12 225 *e*P **P** **22 10 14.8 +0.5**
comp=Z,8.5nm,0.7s
PHET Kaeng Krachan 45.53 248 P **P** **22 10 18.2 +0.7**
comp=Z,11nm,0.7s,comp=Z,115nm
KDAK Kodiak Island 45.63 43 *e*P **P** **22 10 18.8 +1.0**
KDAK Kodiak Island 45.63 43 *e*P **P** **22 10 18.8 +1.0**
PPLA Purkeypile 45.66 36 *e*P **P** **22 10 20.7 +2.5**
KURK Kurchatov 45.68 307 *e*P **P** **22 10 17.3 -1.0**
KURK pmax pmax
comp=Z,104nm,0.8s
KURK Kurchatov 45.68 307 *e*P **P** **22 10 17.3 -1.0**
comp=Z,104nm,0.8s
KURK Kurchatov 45.68 307 P **P** **22 10 18.0 -0.4**
SNR=40
KURK Kurchatov 45.68 307 P **P** **22 10 18.0 -0.4**
SNR=40
CAST Castle Rocks 45.72 35 *e*P **P** **22 10 20.8 +2.3**
comp=Z,8.3nm,0.9s
KURBB Kurchatov Arra 45.76 307 P **P** **22 10 18.4 -0.5**
comp=Z,46nm,0.7s,baz=83,slow=8.1,SNR=300
BPAW Bear Paw Mtn. 46.21 34 *e*P **P** **22 10 25.1 +2.7**
comp=Z,10nm,1.3s
KTH Kantishna Hill 46.24 35 *e*P **P** **22 10 24.8 +2.2**
comp=Z,17nm,1.0s
MLY Manley 46.34 33 *e*P **P** **22 10 25.7 +2.3**
comp=Z,6.9nm,0.8s
TRF Thorofare Moun 46.52 35 *e*P P 22 10 31.1 +6.1
comp=Z,15nm,1.2s
TAPN Taplejung 46.57 273 *e*P **P** **22 10 26.1 +0.1**
comp=Z,76nm,0.8s
COLD Coldfoot 46.63 30 *e*P **P** **22 10 30.3 +4.7**
comp=Z,7.5nm,0.9s
KSM Kuching 46.99 226 *e*P **P** **22 10 29.9 +0.8**
comp=Z,19nm,0.7s
SPSI Sidrap Palu 47.02 212 P **P** **22 10 30.9 +1.7**
comp=Z,34nm,1.2s
ODAN Odare 47.06 273 *e*P **P** **22 10 29.5 -0.2**
comp=Z,78nm,0.8s
MCK McKinley 47.12 34 *e*P P 22 10 34.6 +5.1
MCK pmax pmax
comp=Z,9.0nm,0.8s
MCK McKinley 47.12 34 *e*P P 22 10 34.5 +5.1
comp=Z,8.8nm,0.8s
RND Reindeer 47.17 35 *e*P **P** **22 10 31.1 +1.2**
RND pmax pmax
comp=Z,18nm,1.2s
RND Reindeer 47.17 35 *e*P **P** **22 10 31.1 +1.2**
comp=Z,18nm,1.2s
MDM Murphy Dome 47.40 33 *e*P **P** **22 10 33.7 +2.1**
comp=Z,10nm,1.0s
WRH Wood River Hil 47.47 33 *e*P **P** **22 10 33.9 +1.8**
comp=Z,12nm,1.3s
SML Sawmill 47.49 37 *e*P **P** **22 10 34.6 +2.2**
SML pmax pmax
comp=Z,14nm,0.8s
SML Sawmill 47.49 37 *e*P **P** **22 10 34.6 +2.2**
comp=Z,14nm,0.8s
STKI Sintang 47.50 224 P **P** **22 10 33.8 +0.8**
COLA College 47.56 33 *i* P **P** **22 10 35.3 +2.4**
CCB Clear Creek Bu 47.59 33 *e*P **P** **22 10 35.5 +2.5**
comp=Z,29nm,2.0s
RAMN Ramite 47.63 273 *e*P **P** **22 10 34.1 -0.2**
comp=Z,222nm,0.8s
GUN Gumba 47.75 275 *e*P **P** **22 10 35.2 0.0**
comp=Z,192nm,0.8s
DHY Denali Highway 47.85 35 *e*P **P** **22 10 34.4 -1.0**
SCM Sheep Creek Mo 47.96 37 *e*P **P** **22 10 35.4 -0.7**
SCM Sheep Creek Mo 47.96 37 *e*P **P** **22 10 35.4 -0.7**
HDA Harding Lake 47.97 34 *e*P **P** **22 10 34.7 -1.4**
KAPI Kappang 47.98 211 P **P** **22 10 36.8 +0.2**
SNR=7.3
KAPI Kappang 47.98 211 P **P** **22 10 36.8 +0.2**
SNR=7.3
ILAR Eielson Array 47.98 33 P **P** **22 10 37.1 +1.0**
comp=Z,5.0nm,0.8s,baz=268,slow=6.2,SNR=39
ILAR LR LR 22 31 59.3
comp=Z,164nm,20.0s,baz=281,slow=38
ILB Eielson Array 47.98 33 *e*P **P** **22 10 37.2 +1.0**
IL1 Eielson Array 47.98 33 *e*P **P** **22 10 36.6 +0.5**
KKN Kakani 48.27 275 *e*P **P** **22 10 39.2 0.0**
comp=Z,185nm,0.7s
PKIN Phulchoki 48.28 275 *e*P **P** **22 10 38.6 -0.7**
comp=Z,48nm,0.7s
DMN Daman 48.49 275 *e*P **P** **22 10 40.6 -0.3**
comp=Z,44nm,0.7s
KLU Klutina 48.66 37 *e*P **P** **22 10 43.0 +1.5**
GKN Gorkha 48.68 276 *e*P **P** **22 10 41.8 -0.4**
comp=Z,148nm,0.8s
SURT Suratani 48.80 245 P **P** **22 10 43.8 +0.8**
comp=Z,9.9nm,0.9s
TRTT Trang 48.95 243 P **P** **22 10 45.5 +1.3**
comp=Z,24nm,1.0s
DOT Dot Lake 49.29 34 *e*P **P** **22 10 48.0 +1.7**
comp=Z,11nm,0.8s
BMRM Bremner River 49.36 38 *e*P **P** **22 10 48.5 +1.6**
MENT Mentasta 49.53 35 *e*P **P** **22 10 51.5 +3.4**
comp=Z,9.2nm,0.9s
KOLN Koldanda 49.60 276 *e*P **P** **22 10 49.2 -0.1**
comp=Z,54nm,0.7s
TKM2 Tokmak 2 49.63 298 *e*P **P** **22 10 49.8 +0.4**
TKM2 pmax pmax
comp=Z,28nm,0.9s
TKM2 Tokmak 2 49.63 298 *e*P **P** **22 10 49.8 +0.4**
comp=Z,28nm,0.9s
PKDT Phuket 49.87 244 P **P** **22 10 51.6 +0.4**
comp=Z,84nm,0.7s,comp=Z,778nm
PYUN Piuthan 49.92 277 *e*P **P** **22 10 51.7 -0.1**
comp=Z,188nm,0.9s
VOSK Vostochnaya 49.93 311 *e*P **P** **22 10 51.1 -0.2**
VOSK pmax pmax
comp=Z,29nm,0.9s
VOSK Vostochnaya 49.93 311 *e*P **P** **22 10 51.1 -0.2**
comp=Z,29nm,0.9s
KULM Kulim 50.11 240 *e*P **P** **22 10 52.6 -0.5**
comp=Z,25nm,0.8s
BRVK Borovoye 50.27 312 *e*P **P** **22 10 53.9 +0.1**
BRVK pmax pmax
comp=Z,23nm,0.8s
BRVK Borovoye 50.27 312 *e*P **P** **22 10 53.9 +0.1**
comp=Z,22nm,0.8s
BRVK Borovoye 50.27 312 P P 22 10 59.6 +5.8
SNR=6.3
HNR Honiara 50.32 157 LR LR 22 31 08.1
comp=Z,271nm,20.1s,baz=336,slow=35
FRU Bishkek 50.34 298 *e*P **P** **22 10 55.0 +0.4**
EGAK Eagle 50.42 33 *e*P **P** **22 10 57.5 +2.7**
comp=Z,12nm,1.0s
AAK Ala-Archa 50.50 298 *e*P **P** **22 10 55.6 -0.3**
AAK pmax pmax
comp=Z,7.0nm,0.8s
AAK Ala-Archa 50.50 298 *e*P **P** **22 10 55.6 -0.3**
comp=Z,6.9nm,0.8s
KSH Kashi 50.52 293 P **P** **22 10 59.8 +3.7**
KSH *e*pP sP 22 11 05.7 +2.7
KSH *e*PP **PP** **22 12 56.9 +5.2**
KSH *e*ScP **ScP** **22 16 10.5 +1.2**
KSH S **S** **22 18 11.9 +2.2**
KSH sS sS 22 18 22.1 +4.2
KSH pmax pmax
comp=Z,6.0nm,0.7s
KSH pmax pmax
comp=Z,89nm,5.1s
KSH LR LR
comp=Z,180nm,6.9s

KSH LR LR
comp=Z,270nm,11.4s
KSH LR LR
comp=Z,310nm,12.6s
MYKOM **Kota Tinggi** 50.63 234 *e*P **P** 22 10 57.7 +0.7
comp=Z,23nm,0.7s
SOEI Soe 50.76 203 *e*P **P** 22 10 58.0 0.0
comp=Z,115nm,1.5s
EKS2 Erkin-Say 50.98 298 *e*P **P** 22 10 59.6 0.0
EKS2 pmax pmax
comp=Z,7.0nm,0.8s
EKS2 Erkin-Say 50.98 298 *e*P **P** 22 10 59.6 0.0
comp=Z,6.9nm,0.8s
ZRNK Zerenda 51.04 312 *e*P **P** 22 10 59.6 -0.1
ZRNK pmax pmax
comp=Z,29nm,0.9s
ZRNK Zerenda 51.04 312 *e*P **P** 22 10 59.6 -0.1
comp=Z,29nm,0.9s
DAWY Dawson 51.29 33 *e*P **P** 22 11 03.3 +1.9
MTN Manton Dam 52.01 194 *e*P **P** 22 11 07.5 +0.3
comp=Z,35nm,0.8s
COEN Coen 52.06 179 *e*P **P** 22 11 08.7 +1.2
comp=Z,18nm,0.8s
INK Inuvik 52.87 28 P **P** 22 11 14.2 +1.2
comp=Z,3.2nm,0.7s,baz=303,slow=6.2,SNR=13
INK Inuvik 52.87 28 *e*P **P** 22 11 14.7 +1.7
comp=Z,6.5nm,0.8s
KKAR Karatay Array 53.08 300 *e*P **P** 22 11 14.6 -0.4
KKAR Karatay Array 53.08 300 *e*P **P** 22 11 14.6 -0.4
PSI Prapat 53.10 239 *e*P **P** 22 11 15.6 +0.1
PSI pmax pmax
comp=Z,38nm,0.8s
PSI Prapat 53.10 239 *e*P **P** 22 11 15.6 +0.1
comp=Z,38nm,0.8s
KIP Kipapa 53.53 90 *ce*P **P** 22 11 20.5 +1.9
KIP pmax pmax
comp=Z,1μm,1.7s
BKNI Bangkinang 53.55 235 *e*P **P** 22 11 19.6 +1.0
comp=Z,142nm,0.9s
UGM Wanagama 54.74 220 *e*P **P** 22 11 26.2 -1.2
GSI Gunungsitoli 55.10 239 *e*P **P** 22 11 29.5 -0.5
comp=Z,79nm,0.8s
ARU Arti 55.84 318 *d i*P **P** 22 11 34.6 -0.2
ARU 22 12 32.7
ARU 22 13 36.2
ARU S **S** 22 19 20.5 -0.7
ARU SS **SS** 22 23 03.1 -3.2
ARU pmax pmax
comp=Z,16nm,0.7s
ARU MLR MLR
comp=Z,405nm,17.0s
DLBC Dease Lake 57.13 39 P **P** 22 11 46.2 +2.1
comp=Z,3.8nm,0.8s,baz=291,slow=7.2,SNR=4.1
DLBC Dease Lake 57.13 39 P **P** 22 11 46.2 +2.1
DLBC *ep*P **sP** 22 11 51.7 +0.7
KBL Kabul 57.61 291 *e*P **P** 22 11 47.7 -0.3
KBL pmax pmax
comp=Z,20nm,1.0s
KBL Kabul 57.61 291 *e*P **P** 22 11 47.7 -0.3
comp=Z,20nm,1.0s
ABKAR **Akbulak array** 57.63 310 *e*P **P** 22 11 47.1 -0.6
FITZ Fitzroy Crossi 58.32 199 *e*P **P** 22 11 53.6 +0.9
comp=Z,48nm,1.4s
WRAB Tennant Creek 58.48 189 *ce*P **P** 22 11 52.5 -1.3
WRAB pmax pmax
comp=Z,89nm,1.2s
WRAB Tennant Creek 58.48 189 *e*P **P** 22 11 53.4 -0.4
comp=Z,21nm,0.8s
WB2 Warramunga Arr 58.49 189 *e*P **P** 22 11 53.5 -0.4
comp=Z,24nm,0.7s
WR1 Warramunga Arr 58.49 189 *e*P **P** 22 11 53.1 -0.7
comp=Z,25nm,0.6s
WRA Warramunga Arr 58.49 189 P **P** 22 11 53.1 -0.7
comp=Z,18nm,0.7s,baz=7.7,slow=7.2,SNR=165
HYB Hyderabad 58.96 268 *i*P **P** 22 11 56.5 -0.9
SPITS Spitsbergen Ar 59.35 349 P **P** 22 11 59.6 +0.3
comp=Z,3.0nm,0.6s,baz=87,slow=6.8,SNR=8.0
XMIS Christmas Isla 59.45 223 *e*P **P** 22 11 59.1 -1.5
RES Resolute Bay 61.12 15 P **P** 22 12 12.3 +0.9
comp=Z,2.5nm,0.8s,baz=305,slow=7.5,SNR=9.6
RES Resolute Bay 61.12 15 *e*P **P** 22 12 12.1 +0.7
RES pmax pmax
comp=Z,7.0nm,0.8s
RES Resolute Bay 61.12 15 *e*P **P** 22 12 12.1 +0.7
comp=Z,6.5nm,0.8s
TMCR Tamitsa 61.92 331 *e*P **P** 22 12 17.4 +0.6
TMCR pmax pmax
comp=Z,15nm,0.8s
AS01 Alice Springs 62.21 189 *e*P **P** 22 12 19.0 -0.2
AS31 Alice Springs 62.21 189 *e*P **P** 22 12 19.6 +0.2
comp=Z,5.5nm,0.6s
ASAR Alice Springs 62.22 189 P **P** 22 12 19.4 0.0
comp=Z,16nm,0.7s,baz=11,slow=6.4,SNR=142
ASAR LR LR 22 37 20.1
comp=Z,178nm,21.9s,baz=4.5,slow=34
YKW3 Yellowknife Ar 62.25 31 *e*P **P** 22 12 22.0 +2.9
comp=Z,4.9nm,0.9s
YKB5 Yellowknife Ar 62.29 31 *e*P **P** 22 12 21.5 +2.1
YKA Yellowknife Ar 62.29 31 P **P** 22 12 20.0 +0.6
comp=Z,1.1nm,0.7s,baz=302,slow=6.5,SNR=20
YKA Yellowknife Ar 62.29 31 P **P** 22 12 20.0 +0.6
ARA0 ARCESS Array S 63.00 339 *e*P **P** 22 12 25.1 +1.1
ARCES **ARCESS Array B** 63.00 339 P **P** 22 12 24.8 +0.8
comp=Z,2.0nm,0.6s,baz=55,slow=8.1,SNR=15
ARCES LR LR 22 44 04.2
comp=Z,211nm,18.5s,baz=42,slow=40
KLMR Klimovskoe 63.01 328 *e*P **P** 22 12 22.8 -1.4
KLMR pmax pmax
comp=Z,7.0nm,0.8s
KLMR MLR MLR
comp=Z,395nm,14.0s
GEYT Alibeck 63.82 299 P **P** 22 12 30.1 +0.1
comp=Z,12nm,0.8s,baz=35,slow=3.6,SNR=25
GEYT LR LR 22 43 06.8
comp=Z,119nm,18.3s,baz=60,slow=39
EIDS Eidsvold 63.94 171 *e*P **P** 22 12 32.2 +1.5
comp=Z,124nm,1.9s
DAG Danmarks Havn 64.50 355 *i*P **P** 22 12 33.9 +0.1
comp=Z,5.1nm,0.9s
DAG Danmarks Havn 64.50 355 *i*P **P** 22 12 33.9 +0.1
DAG pmax pmax
comp=Z,4.0nm,0.9s
MSVF Nonsavu 65.11 142 *e*P **P** 22 12 37.1 -1.5
MSVF Nonsavu 65.11 142 *e*P **P** 22 12 37.1 -1.5
MOS Moscow 66.60 323 *e*P P 22 12 42.9 -4.8
MOS MLR MLR
comp=Z,600nm,15.0s
VRH Novokhopyorsk 67.07 318 *e*P **P** 22 12 50.4 -0.4
VRH *e**SP **sP** 22 12 58.7 +0.9
VRH pmax pmax
comp=Z,30nm,0.8s
LTY Liberty 67.22 47 *e*P **P** 22 12 54.1 +2.2
comp=Z,44nm,1.0s
B08A Colville Reser 67.39 46 *e*P **P** 22 12 51.9 -1.0
B08A *ep*P **sP** 22 13 00.3 +0.4
OBN Obninsk 67.45 323⇑ *e*P **P** 22 12 53.7 +0.6
OBN *e* 22 13 02.0
OBN *e*S **S** 22 21 50.0 +1.7
OBN *e*SS **SS** 22 26 09.2 +1.5
OBN pmax pmax
comp=Z,23nm,1.4s
OBN MLR MLR
comp=Z,308nm,14.0s
LPSR Galich'ya Gora 67.73 320 *e*P **P** 22 12 54.9 -0.1
LPSR *e**SP **sP** 22 13 01.7 -0.3
LPSR pmax pmax
comp=Z,10.0nm,0.8s
FIA0 FINESS Array S 67.96 332 *e*P **P** 22 12 56.3 +0.1
FIA0 FINESS Array S 67.96 332 *e*P **P** 22 12 56.3 +0.1
FINES FINESS Array B 67.96 332 P **P** 22 12 56.3 +0.1
comp=Z,21nm,0.8s,baz=57,slow=7.0,SNR=55
VGB Gordon Butte 68.09 49 *e*P **P** 22 13 02.1 +4.7
VGB Gordon Butte 68.09 49 *e*P **P** 22 13 02.1 +4.7
VSR Storozhevoye 68.40 319 *e*P **P** 22 12 58.6 -0.6
VSR *e**SP **sP** 22 13 07.7 +1.5
VSR pmax pmax
comp=Z,10.0nm,0.6s
NEW Newport 68.67 45 P **P** 22 13 02.5 +1.5
comp=Z,4.4nm,0.7s,baz=300,slow=4.7,SNR=5.5
NEW Newport 68.67 45 *e*P **P** 22 13 02.8 +1.8
comp=Z,41nm,1.8s
YBH Yreka Blue Hor 68.96 53 P **P** 22 13 06.4 +3.4
comp=Z,1.9nm,0.6s,baz=324,slow=5.6,SNR=4.2
SUMG Summit 69.35 0 *i*P **P** 22 13 06.4 +1.2
comp=Z,12nm,0.8s
SUMG Summit 69.35 0 *e*P **P** 22 13 06.2 +1.0
SUMG pmax pmax
comp=Z,36nm,1.3s
SUMG Summit 69.35 0 *e*P **P** 22 13 06.2 +1.0
comp=Z,36nm,1.3s
K05A Summer Lake 69.54 51 *e*P P 22 13 11.6 +4.9
comp=Z,24nm,1.2s
VSU Vasula 69.66 330 *ce*P **P** 22 13 06.7 -0.2
VSU pmax pmax
comp=Z,135nm,1.7s
GOF Gofitskoye 69.74 312⇓ *i*P **P** 22 13 07.6 0.0
GOF pmax pmax
comp=Z,35nm,0.6s
STKA Stephens Creek 69.89 181 P **P** 22 13 08.3 -0.2
comp=Z,8.8nm,0.7s,baz=346,slow=7.0,SNR=26
STKA Stephens Creek 69.89 181 *e*P **P** 22 13 08.8 +0.3
comp=Z,1.9nm,0.8s
WALA Waterton Lakes 69.97 43 *e*P **P** 22 13 10.9 +1.8
comp=Z,19nm,1.2s
BSMT Basseo Peak 70.19 44 *e*P **P** 22 13 12.7 +2.1
NCK Nalchik 70.29 310 *i*P **P** 22 13 10.7 -0.4
NCK pmax pmax
comp=Z,8.0nm,1.0s
GUDG Gudauri 70.34 309 P **P** 22 13 12.7 +1.1
MOD Modoc Plateau 70.37 52 *e*P **P** 22 13 15.7 +3.9
comp=Z,20nm,1.6s
ZEI Tsey 70.50 309 *e*P **P** 22 13 10.9 -1.7
ZEI pmax pmax
comp=Z,41nm,1.1s
KIV Kislovodsk 70.57 311 *i*P **P** 22 13 14.0 +1.2
SNR=21
KIV Kislovodsk 70.57 311 *e*P **P** 22 13 13.5 +0.6
KIV *e*S **S** 22 22 24.3 -1.6
KIV pmax pmax
comp=Z,62nm,1.0s
KIV pmax pmax
comp=Z,20nm,5.1s
KIV Kislovodsk 70.57 311 *e*P **P** 22 13 13.2 +0.4
comp=Z,52nm,0.9s
KIV Kislovodsk 70.57 311 P **P** 22 13 13.6 +0.8
SNR=8.0
KIV Kislovodsk 70.57 311 P **P** 22 13 13.6 +0.8
SNR=8.0
KBZ Khabaz 70.58 311 P **P** 22 13 13.2 +0.4
comp=Z,22nm,0.9s,baz=48,slow=2.9,SNR=37
TBLG Delisi 70.59 308 P **P** 22 13 15.5 +2.6
TBLG Delisi 70.59 308 P **P** 22 13 15.5 +2.6
ONI Oni 70.89 309 P **P** 22 13 15.9 +1.1
ONI Oni 70.89 309 P **P** 22 13 15.9 +1.1
NEY Neytrino 70.95 310⇓ *e*P **P** 22 13 16.7 +1.4
NEY pmax pmax
comp=Z,3.0nm,0.8s
BBOO Buckleboo 71.06 186 *e*P **P** 22 13 16.3 +0.7
comp=Z,24nm,0.7s
BANOM **Banah** 71.46 289 *i*P **P** 22 13 18.5 0.0
SNR=6.0
AKH Akhalkalaki 71.54 308 P **P** 22 13 19.6 +0.7
AKH Akhalkalaki 71.54 308⇓ *i*P **P** 22 13 19.3 +0.4
AKH Akhalkalaki 71.54 308 P **P** 22 13 19.6 +0.7
CHVG Ch'k'valeri 71.64 310 P **P** 22 13 20.4 +1.1
CHVG Ch'k'valeri 71.64 310⇓ *i*P **P** 22 13 20.8 +1.5
IZAR Zarasai 71.66 328 *e*P **P** 22 13 19.4 +0.2
IZAR IAmb IAmb 22 13 20.8
comp=Z,8.3nm,0.8s
IDID Didziasalis 71.75 327 *e*P **P** 22 13 20.0 +0.4
IDID IAmb IAmb 22 13 22.4
comp=Z,12nm,0.8s
ISAL Salakas 71.83 328 *e*P **P** 22 13 20.4 +0.3
ISAL IAmb IAmb 22 13 22.3
comp=Z,17nm,0.8s
IIGN Ignalina 71.94 327 *e*P **P** 22 13 21.2 +0.4
IIGN IAmb IAmb 22 13 22.9
comp=Z,10.0nm,0.8s
NACGM **Naroch** 72.00 327 *e* P **P** 22 13 21.0 -0.2
NACGM *e*LR LR 22 47 22.0
UOSS Minazif 72.08 288 *e*P **P** 22 13 22.1 -0.1
comp=Z,0.9nm,0.8s
HATD Hatta, Dubai 72.20 288 *i*P **P** 22 13 23.5 +0.6
SNR=8.4
ASHO Ashiyiah 72.34 288 *i*P **P** 22 13 23.8 0.0
SNR=7.2
FCC Fort Churchill 72.48 27 *e*P **P** 22 13 24.6 +0.7
FCC pmax pmax
comp=Z,12nm,1.0s
FCC Fort Churchill 72.48 27 *e*P **P** 22 13 24.6 +0.7
comp=Z,12nm,1.0s
FAQ Al Faqa, Dubai 72.65 288 *i*P **P** 22 13 25.1 -0.5
SNR=6.8
HLID Hailey 72.94 48 P **P** 22 13 27.6 +0.4
baz=307
NC405 NORSAR Array S 73.02 337 *e*P **P** 22 13 27.6 +0.5
NC303 NORSAR Array S 73.03 338 *e*P **P** 22 13 25.3 -2.0
ANN Anapa 73.12 314 *e*P **P** 22 13 29.5 +1.5
ANN *e*S **S** 22 22 52.3 -2.6
ANN pmax pmax
comp=Z,119nm,1.6s
NC204 NORSAR Array S 73.18 338 *e*P **P** 22 13 28.5 +0.4
NB201 NORSAR Array S 73.20 337 *e*P **P** 22 13 28.9 +0.7
NB2 NORSAR Subarra 73.23 337 P **P** 22 13 28.1 -0.3
comp=Z,7.9nm,0.8s,baz=39,slow=6.2
NB200 NORSAR Array S 73.23 337 *e*P **P** 22 13 28.6 +0.2
NOA NORSAR Array B 73.23 337 P **P** 22 13 28.6 +0.2
comp=Z,9.7nm,0.9s,baz=39,slow=6.0,SNR=19
NOA LR LR 22 51 50.5
comp=Z,254nm,18.0s,baz=60,slow=41
BOZ Bozeman (W) 73.25 45 *e*P **P** 22 13 31.9 +2.9
BOZ pmax pmax
comp=Z,5.0nm,0.7s
BOZ Bozeman (W) 73.25 45 *e*P **P** 22 13 31.9 +2.9
comp=Z,5.3nm,0.7s
NBO02 NORSAR Array S 73.33 338 *e*P **P** 22 13 29.4 +0.5
NBO00 NORSAR Array S 73.37 338 *e*P **P** 22 13 29.9 +0.7
NAO01 NORSAR Array S 73.48 337 *e*P **P** 22 13 29.9 0.0
NV01 Mina Array Sit 73.61 54 *e*P **P** 22 13 33.2 +1.9
NVAR Mina Array Bea 73.61 54 P **P** 22 13 32.8 +1.4
comp=Z,1.0nm,0.6s,baz=287,slow=7.0,SNR=5.0
NVAR LR LR 22 40 45.3
comp=Z,141nm,20.6s,baz=264,slow=32
AKASG **Malin Array Be** 73.68 322 P **P** 22 13 30.9 -0.3
comp=Z,22nm,0.8s,baz=46,slow=5.9,SNR=102
AKASG LR LR 22 50 07.6
comp=Z,177nm,18.3s,baz=50,slow=39
AKBB Malin Array Si 73.68 322 *e*P **P** 22 13 31.3 +0.1
AKBB pmax pmax
comp=Z,26nm,0.8s
AKBB Malin Array Si 73.68 322 *e*P **P** 22 13 31.3 +0.1
comp=Z,26nm,0.8s
KIEV Kiev 73.69 322 *d i*P **P** 22 13 30.5 -0.7
KIEV pmax pmax
comp=Z,26nm,0.8s
KIEV Kiev 73.69 322 *e*P **P** 22 13 30.9 -0.3
comp=Z,26nm,0.8s
AK11 Malin Array Si 73.72 322 *e*P **P** 22 13 31.3 -0.2
H17A Grant Village 74.61 45 *e*P **P** 22 13 41.0 +3.9
comp=Z,27nm,1.5s
NWAO Narrogin (SRO) 74.68 202 *e*P **P** 22 13 36.9 -0.2
NWAO Narrogin (SRO) 74.68 202 *e*P **P** 22 13 36.9 -0.2
SIM Simferopol' 74.87 316 *e*P **P** 22 13 38.5 +0.2
SIM pmax pmax
comp=Z,19nm,0.7s
MOOW Moose Ponds 74.93 46 *e*P **P** 22 13 41.6 +2.7
comp=Z,5.9nm,0.9s
FRB Frobisher Bay 75.31 14 P **P** 22 13 40.8 +0.4
comp=Z,4.5nm,0.6s,baz=341,slow=6.6,SNR=11
DAC Darwin (Calif) 75.35 55 *e*P **P** 22 13 41.5 0.0
DAC Darwin (Calif) 75.35 55 *e*P **P** 22 13 41.5 0.0
R11A Troy Canyon, C 75.38 53 P **P** 22 13 43.2 +1.7
baz=308
R11A Troy Canyon, C 75.38 53 *e*P **P** 22 13 43.2 +1.7
comp=Z,10nm,1.3s
MPMC Manual Prospec 75.55 55 P **P** 22 13 43.9 +1.3
baz=307
HWUT Hardware Ranch 75.80 48 *e*P **P** 22 13 47.2 +3.2
comp=Z,18nm,1.4s
TPNV Topopah Spring 75.81 54 P **P** 22 13 45.1 +1.1
baz=308
DUG Dugway, Tooele 75.94 50 P **P** 22 13 46.5 +1.8
baz=309
BW06 Boulder Array 76.22 46 P **P** 22 13 47.4 +1.0
baz=310
BW06 Boulder Array 76.22 46 *e*P **P** 22 13 47.0 +0.6
PD31 Pinedale Array 76.22 46 *e*P **P** 22 13 47.5 +1.1
PDAR Pinedale Array 76.22 46 P **P** 22 13 47.4 +1.0
comp=Z,2.8nm,0.6s,baz=324,slow=0.5,SNR=26
PSUT Pine Spring 76.33 52 *e*P P 22 13 52.9 +5.8
comp=Z,5.6nm,1.0s
LVV L'vov 76.72 324 *e*P **P** 22 13 47.8 -0.9
LVV MLR MLR
comp=Z,300nm,14.0s
LVV MLR MLR
comp=N,300nm,13.0s
LVV MLR MLR
comp=E,200nm,14.0s
IAS Iasi 76.84 321⇓ *i*P **P** 22 13 49.4 0.0
DSCC Desert Studies 77.00 55 *e*P **P** 22 13 50.1 -0.5
D26A Manning 77.19 39 P **P** 22 13 50.7 -0.8
baz=313
MSU Marysvale 77.38 51 *e*P **P** 22 13 57.4 +4.5
MSU Marysvale 77.38 51 *e*P **P** 22 13 57.4 +4.5
PRAR RASCA 77.39 321⇑ *i*P **P** 22 13 52.4 -0.2
KWP Kalwaria Pacla 77.46 325 *e*P **P** 22 13 53.7 +0.8
KWP Kalwaria Pacla 77.46 325 *e*P **P** 22 13 53.7 +0.8
TLCR 77.56 318⇓ *i*P **P** 22 13 54.3 +0.8
P17A Butcher Ranch, 77.63 49 *e*P **P** 22 13 56.5 +2.2
comp=E,15nm,1.1s
FRD Ford Ranch, An 77.68 57 *e*P **P** 22 13 52.4 -2.2
BUR08 Bucovina Ar. S 77.69 322 *e*P **P** 22 13 54.8 +0.4
BURAR Bucovina Array 77.70 322⇓ *i*P **P** 22 13 54.6 +0.2
TESR Tescani 77.76 320⇑ *i*P **P** 22 13 55.1 +0.4
P18A Preston Nutter 77.83 49 *e*P **P** 22 13 59.5 +3.9
comp=E,7.0nm,0.9s
CFR Carcaliu 77.92 319⇓ *i*P **P** 22 13 55.5 0.0
CTCC Cactus City 77.98 57 *e*P **P** 22 13 57.4 +1.2
ULM Lac du Bonnet 77.99 34 P **P** 22 13 56.6 +0.7
comp=E,2.1nm,0.7s,baz=243,slow=4.5,SNR=4.1
SRU San Rafael Swe 77.99 49 *e*P **P** 22 13 58.3 +2.0
SRU pmax pmax
comp=E,10.0nm,0.9s
SRU San Rafael Swe 77.99 49 *e*P **P** 22 13 58.3 +2.0
comp=Z,9.9nm,0.9s
ODBI Odobesti 78.07 320⇓ *i*P **P** 22 13 57.3 +0.9
KOLS Kolonicke sedl 78.16 324 *e*P **P** 22 13 57.2 +0.4
KOLS *e* 22 14 06.1
KOLS pmax pmax
comp=Z,6.0nm,1.0s
KOLS Kolonicke sedl 78.16 324 *e*P **P** 22 13 57.2 +0.4
KOLS *e* 22 14 06.1
VRI Vrincioaia 78.17 320⇑ *i*P **P** 22 13 57.7 +0.7
TIRR Tirgusor 78.26 318⇑ *i*P **P** 22 13 58.0 +0.6
TIRR Tirgusor 78.26 318 *e*P **P** 22 13 57.7 +0.3
TIRR pmax pmax
comp=Z,6.0nm,0.8s
TIRR Tirgusor 78.26 318 *e*P **P** 22 13 57.7 +0.3
comp=Z,6.4nm,0.8s
STHS Stebnicka Huta 78.27 325 *e*P **P** 22 13 57.5 0.0
STHS pmax pmax
comp=Z,7.0nm,0.9s
STHS Stebnicka Huta 78.27 325 *e*P **P** 22 13 57.5 0.0
G26A Maurine 78.30 41 P **P** 22 13 57.6 -0.1
baz=314
OJC Ojcow 78.33 326 *e*P **P** 22 13 58.2 +0.5
OJC Ojcow 78.33 326 *e*P **P** 22 13 57.8 +0.1
OJC pmax pmax
comp=Z,18nm,0.8s
OJC Ojcow 78.33 326 *e*P **P** 22 13 57.8 +0.1
comp=Z,18nm,0.8s
RSSD Black Hills 78.35 42 *e*P **P** 22 14 02.5 +4.2
RSSD pmax pmax
comp=Z,5.0nm,0.7s
RSSD Black Hills 78.35 42 *e*P **P** 22 14 02.5 +4.2
comp=Z,5.3nm,0.7s
GRER 78.38 319⇑ *i*P **P** 22 13 58.8 +0.7
ARCR ARCALIA 78.49 322⇓ *i*P **P** 22 13 59.4 +0.7
BR101 Keskin Array S 78.50 312 *e*P **P** 22 13 59.0 0.0
BR131 Keskin Array S 78.50 312 *e*P **P** 22 13 59.4 +0.3
BRTR Keskin Array B 78.50 312 P **P** 22 13 59.0 0.0
comp=Z,2.4nm,0.9s,baz=48,slow=3.7,SNR=10
BRTR LR LR 22 54 24.8
comp=Z,80nm,18.6s,baz=26,slow=40
BRTR Keskin Array B 78.50 312 *ce*P **P** 22 13 59.0 0.0
BRTR pmax pmax
comp=Z,3.0nm,0.9s
NIE Niedzica 78.69 326 *e*P **P** 22 14 01.0 +1.2
NIE Niedzica 78.69 326 *e*P **P** 22 14 01.1 +1.2
PGOR Pogoanele 78.70 319⇑ *i*P **P** 22 14 01.0 +1.2
DOPR Dopca 78.77 321⇑ *i*P **P** 22 14 01.3 +1.0
ISR Istrita 78.78 319⇓ *i*P **P** 22 14 01.2 +0.8
MSAB Monastry St. A 78.82 318⇓ *i*P **P** 22 14 00.5 0.0
MLR Muntele Rosu 78.82 320⇑ *i*P **P** 22 14 01.0 +0.3
MLR Muntele Rosu 78.82 320 *e*P **P** 22 14 01.3 +0.6
MLR pmax pmax
comp=Z,7.0nm,0.9s
MLR Muntele Rosu 78.82 320 *e*P **P** 22 14 01.3 +0.6
comp=Z,6.5nm,0.9s
ANTO Ankara 78.90 312 *e*P **P** 22 14 02.0 +0.9
ANTO pmax pmax
comp=Z,14nm,0.8s
ANTO Ankara 78.90 312 *e*P **P** 22 14 02.0 +0.9
comp=Z,14nm,0.8s
BR231 Keskin MP Arra 78.93 312 *e*P **P** 22 13 59.9 -1.5
CJR Cluj-Napoca 79.12 322⇓ *i*P **P** 22 14 03.5 +1.3
SULR 79.23 319⇑ *i*P **P** 22 14 03.3 +0.5
LANS Liptovska Anna 79.26 326 *e*P **P** 22 14 03.0 +0.1
LANS Liptovska Anna 79.26 326 *e*P **P** 22 14 03.0 +0.1
KECS Kecovo 79.30 325 *e*P **P** 22 14 03.1 0.0
KECS *e* 22 14 09.2
KECS pmax pmax
comp=Z,2.0nm,1.1s
KECS Kecovo 79.30 325 *e*P **P** 22 14 03.1 0.0
KECS *e* 22 14 09.2
VOIR 79.31 320⇓ *i*P **P** 22 14 04.4 +1.1
OKC Ostrava-Krasne 79.32 327 *e*P **P** 22 14 03.7 +0.5
OKC AMS AMS 22 51 50.0
comp=Z,400nm,15.6s
OKC Ostrava-Krasne 79.32 327 *e*P **P** 22 14 03.7 +0.5
OKC MLR MLR
comp=Z,400nm,15.6s
KSP Ksiaz 79.34 329 *e*P **P** 22 14 03.9 +0.7
KSP Ksiaz 79.34 329 *e*P **P** 22 14 04.0 +0.7
PV10 Paradox Valley 79.35 49 *e*P **P** 22 14 07.9 +4.0
DRGR 79.49 323⇓ *i*P **P** 22 14 04.6 +0.3
PV05 Paradox Valley 79.51 50 *e*P P 22 14 10.7 +5.9
ARR Arges 79.57 321⇓ *i*P **P** 22 14 06.1 +1.4
MORC Moravsky Berou 79.63 327 *e*P **P** 22 14 05.3 +0.4
MORC pmax pmax
comp=Z,54nm,0.8s
MORC Moravsky Berou 79.63 327 *e*P **P** 22 14 05.3 +0.4
comp=Z,54nm,0.8s
DPC Dobruska-Polom 79.70 328 *e*P **P** 22 14 06.2 +0.9
DPC *ep*P **pP** 22 14 10.6 +0.1
DPC *ex* x 22 14 16.9
DPC AMS AMS 22 59 50.0
comp=Z,300nm,14.4s
DPC Dobruska-Polom 79.70 328 *e*P **P** 22 14 06.2 +0.9
DPC *e* 22 14 10.6
DPC *e* 22 14 16.9
DPC MLR MLR
comp=Z,300nm,14.4s
UPC Upice 79.71 328 *e*P **P** 22 14 06.2 +0.9
UPC AMS AMS 22 53 50.0
comp=Z,400nm,13.8s
UPC Upice 79.71 328 *e*P **P** 22 14 06.2 +0.9
UPC MLR MLR
comp=Z,400nm,13.8s
Y14A Wickenburg 79.75 55 *e*P **P** 22 14 09.7 +3.8
comp=Z,23nm,0.9s
PV01 Paradox Valley 79.79 49 *e*P **P** 22 14 04.2 -2.1
LOT Lotru 79.94 321⇓ *i*P **P** 22 14 06.7 -0.1
PSZ Piszkesteto 79.98 325 *e*P **P** 22 14 07.9 +1.0
PSZ pmax pmax
comp=Z,11nm,0.8s
PSZ Piszkesteto 79.98 325 *e*P **P** 22 14 07.9 +1.0
comp=Z,11nm,0.8s
VYHS Vyhne 80.03 326 *e*P **P** 22 14 07.8 +0.7
VYHS *e* 22 14 13.7
VYHS pmax pmax
comp=Z,4.0nm,0.9s
VYHS Vyhne 80.03 326 *e*P **P** 22 14 07.8 +0.7
VYHS *e* 22 14 13.7
G30A Faulkton 80.16 39 P **P** 22 14 08.9 +1.0
baz=316
BRG Berggiesshubel 80.26 330 *e*P **P** 22 14 08.8 +0.5
comp=Z,11nm,0.8s
BRG *i* 22 14 14.6
comp=Z,11nm,0.9s
comp=N,366nm,17.0s
comp=E,195nm,20.5s
comp=Z,527nm,15.8s
BRG Berggiesshubel 80.26 330 *e*P **P** 22 14 08.8 +0.5
BRG *i* 22 14 14.6
BRG pmax pmax

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
	comp=Z,11nm,0.8s						
BRG				pmax	pmax		
	comp=Z,11nm,0.9s						
BRG				MLR	MLR		
	comp=N,366nm,17.0s						
BRG				MLR	MLR		
	comp=E,195nm,20.5s						
BRG				MLR	MLR		
	comp=Z,527nm,15.8s						
PVCC	Panska Ves	80.28	329	eP	P	22 14 09.4	+1.0
PVCC				epP	sP	22 14 14.8	-0.7
PVCC				AMS	AMS	22 57 00.0	
	comp=Z,500nm,16.1s						
PVCC	Panska Ves	80.28	329	eP	P	22 14 09.4	+1.0
PVCC				e		22 14 14.8	
PVCC				MLR	MLR		
	comp=Z,500nm,16.1s						
CLL	Collm	80.29	330	⇑iP	P	22 14 08.7	+0.3
	comp=Z,16nm,0.8s						
CLL				i		22 14 14.0	
	comp=Z,18nm,0.9s						
CLL				ePP	PP	22 17 10.0	-0.4
CLL				LmH		22 51 00.0	
	comp=N,200nm,19.1s						
CLL				LmH		22 51 00.0	
	comp=E,400nm,19.7s						
CLL	Collm	80.29	330	⇑iP	P	22 14 08.7	+0.3
CLL				i		22 14 14.0	
CLL				pmax	pmax		
	comp=Z,16nm,0.8s						
CLL	Collm	80.29	330	eP	P	22 14 08.7	+0.3
	comp=Z,22nm,0.9s						
VRAC	Vranov	80.39	327	⇓iP	P	22 14 09.8	+0.8
GZR	Gura Zlata	80.47	322	⇓iP	P	22 14 09.7	+0.1
SMOL	Smolenice	80.63	326	eP	P	22 14 11.7	+1.4
SMOL	Smolenice	80.63	326	eP	P	22 14 11.7	+1.4
GOPC	GO Pecny, Ondr	80.67	329	eP	P	22 14 11.5	+1.0
GOPC				epP	PcP	22 14 16.6	-0.7
GOPC	GO Pecny, Ondr	80.67	329	eP	P	22 14 11.5	+1.0
GOPC				e		22 14 16.6	
PRU	Pruhonice	80.71	329	eP	P	22 14 11.4	+0.7
PRU				AMS	AMS	22 57 00.0	
	comp=Z,400nm,16.1s						
PRU	Pruhonice	80.71	329	eP	P	22 14 11.4	+0.7
PRU				MLR	MLR		
	comp=Z,400nm,16.1s						
TREC	Trest	80.86	328	eP	P	22 14 12.3	+0.7
TREC	Trest	80.86	328	eP	P	22 14 12.3	+0.7
BZS	Buzias	80.87	322	⇑iP	P	22 14 11.6	0.0
NKC	Novy Kostel	81.36	330	eP	P	22 14 14.9	+0.7
NKC				epP	pP	22 14 18.4	-1.0
NKC				esP	sP	22 14 21.7	+0.4
NKC	Novy Kostel	81.36	330	eP	P	22 14 14.9	+0.7
NKC				e		22 14 21.7	
MDVR	Moldovita	81.43	322	⇓iP	P	22 14 14.3	-0.4
KHC	Kasperske Hory	81.77	329	eP	P	22 14 17.2	+0.8
KHC				epP	PcP	22 14 22.0	-0.2
KHC				ex	x	22 14 29.3	
KHC	Kasperske Hory	81.77	329	eP	P	22 14 17.2	+0.8
KHC				e		22 14 22.0	
KHC				e		22 14 29.3	
KHC	Kasperske Hory	81.77	329	eP	P	22 14 16.2	-0.2
	comp=Z,4.0nm,0.8s						
GEC2	GERESS Array S	81.95	329	eP	P	22 14 17.8	+0.4
GEC2				pmax	pmax		
	comp=Z,6.0nm,0.8s						
GEC2	GERESS Array S	81.95	329	eP	P	22 14 17.8	+0.4
	comp=Z,5.7nm,0.8s						
GERES	GERESS Array B	81.95	329	P	P	22 14 17.4	0.0
	comp=Z,4.5nm,0.8s,baz=32,slow=5.2,SNR=28						
GERES				LR	LR	22 52 53.6	
	comp=Z,135nm,19.4s,baz=22,slow=37						
GEA0	GERESS Array S	81.95	329	eP	P	22 14 17.3	-0.2
GRFO	Grafenberg	82.27	330	eP	P	22 14 20.1	+1.1
GRFO				pmax	pmax		
	comp=Z,16nm,0.9s						
GRFO	Grafenberg	82.27	330	eP	P	22 14 20.1	+1.1
	comp=Z,16nm,0.9s						
VTS	Vitosha	82.27	319	⇑iP	P	22 14 20.2	+0.9
VTS	Vitosha	82.27	319	eP	P	22 14 19.9	+0.6
VTS				pmax	pmax		
	comp=Z,18nm,0.9s						
VTS	Vitosha	82.27	319	i P	P	22 14 20.0	+0.6
VTS	Vitosha	82.27	319	eP	P	22 14 19.9	+0.6
	comp=Z,18nm,0.9s						
MMB	Musomiste	82.72	318	i P	P	22 14 23.0	+1.5
KKB	Krupnik	82.86	319	i P	P	22 14 24.0	+1.8
ANMO	Albuquerque	83.18	50	P	P	22 14 26.2	+2.0
	comp=Z,1.5nm,0.9s,baz=304,slow=5.0,SNR=3.0						
VAY	Valandovo	83.52	319	eP	P	22 14 27.0	+1.4
SKO	Skopje	83.62	320	i P	P	22 14 27.3	+1.2
SCHQ	Schefferville	83.85	16	LR	LR	22 53 31.1	
	comp=Z,184nm,21.3s,baz=355,slow=37						
PMOR	Pomariorio Ree	84.06	114	eT	T	23 46 55.9	
	comp=Z,44nm,0.2s						
BIA	Bitola	84.38	319	i P	P	22 14 30.3	+0.2
BFO	Black Forest	84.48	331	eP	P	22 14 30.7	+0.3
BFO				pmax	pmax		
	comp=Z,10.0nm,1.0s						
BFO	Black Forest	84.48	331	eP	P	22 14 30.7	+0.3
	comp=Z,9.9nm,1.0s						
OHR	Ohrid	84.58	320	i P	P	22 14 31.1	0.0
PPT	Papeete	84.60	117	LR	LR	22 43 09.9	
	comp=Z,32nm,21.9s,baz=351,slow=29						
PPT2	Papeete2	84.61	117	eLR	LR	22 41 26.3	
	comp=Z,76nm,22.8s						
FUORN	Ofenpass-Fuorn	85.12	329	eP	P	22 14 34.6	+0.6
	comp=Z,17nm,0.8s						
TUE	Stuetta	85.61	330	eP	P	22 14 36.5	+0.2
	comp=Z,12nm,0.9s						
TAOE	Nuku Hiva Isla	85.81	105	eLR	LR	22 41 53.4	
	comp=Z,157nm,22.1s						
MEH	Mehetia	85.86	116	eT	T	23 49 09.7	
	comp=Z,36nm,0.2s						
SENIN	Lac Senin/Sane	86.50	331	eP	P	22 14 41.2	+0.4
	comp=Z,5.4nm,0.8s						
TBI	Tubuai	88.60	121	eLR	LR	22 43 13.6	
	comp=Z,99nm,25.0s						
TBI	Tubuai	88.60	121	eT	T	23 52 33.0	
	comp=Z,88nm,0.3s						
LTX	Lajitas	88.74	53	eP	P	22 14 52.6	+0.9
LTX	Lajitas	88.74	53	eP	P	22 14 52.6	+0.9
TXAR	Lajitas Array	88.74	53	P	P	22 14 52.6	+0.9
	comp=Z,1.7nm,0.7s,baz=298,slow=3.3,SNR=15						
TXAR				LR	LR	22 52 18.9	
	comp=Z,117nm,19.5s,baz=0.0,slow=34						
KEST	Kesra	94.39	323	LR	LR	23 02 37.2	
	comp=Z,272nm,18.1s,baz=287,slow=39						
VNDA	Vanda	116.25	175	PKP	PKPdf	22 20 39.3	-0.4
	comp=Z,0.9nm,0.7s,baz=308,slow=4.6,SNR=4.6						
SDV	Santo Domingo	123.84	40	ePKPdf	PKPdf	22 20 57.1	+0.6
DBIC	Dimbokro	125.79	318	PKP	PKPdf	22 20 58.8	-1.2
	comp=Z,1.3nm,0.7s,baz=45,slow=4.3,SNR=3.3						
QSPA	South Pole Qui	128.11	180	ePKPdf	PKPdf	22 21 03.4	+0.6
SNAA	Sanae	142.24	197	PKP	PKPpre	22 21 23.6	
SNAA	Sanae	142.24	197	ePKHKP	PKPpre	22 21 24.0	
SNAA	Sanae	142.24	197	ePKPpre	PKPpre	22 21 24.0	
VNA2	Neumayer--Watz	143.80	196	PKP	PKPbc	22 21 29.5	+0.1
	baz=90,slow=2.7						
VNA3	Neumayer Olymp	144.04	195	PKP	PKPbc	22 21 30.0	-0.1
VNA1	Neumayer--Stat	144.20	196	PKP	PKPab	22 21 30.5	+0.3
LPAZ	La Paz	145.39	59	PKPbc	PKPab	22 21 37.5	+0.6
	comp=Z,3.2nm,0.7s,baz=16,slow=8.4,SNR=9.6						
PB11	IPOC Station P	146.69	65	ePKPdf	PKPbc	22 21 40.0	-0.1
PB01	IPOC Station P	147.63	67	ePKPbc	PKPbc	22 21 43.5	+0.9
LCO	Las Campanas	151.11	81	ePKPbc	PKPbc	22 21 51.9	+0.6

IDC 05 22:09:43.3±2.6, 37°.49N×144°.70E, h0km, mb3.9/3, mb1 4.1/5, mb1mx3.6/56, mbtmp4.0/5, ML3.8/2, MS4.2/1, Ms1 4.2/1, ms1mx2.9/42, Error ellipse: s-maj=57.9km s-min=34.4km az=54.0, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
MJAR	Matsushiro Arr	5.28	262	Pn	Pn	22 11 04.5	+1.1
	3.3nm,0.3s,baz=89,slow=15,SNR=15						
MJAR				Sn	Sn	22 12 02.0	-3.0
	1.9nm,0.3s,baz=95,slow=25,SNR=4.3						
MAT	Matsushiro	5.28	262	P	Pn	22 11 05.0	+1.5
MAT				S	Sn	22 12 02.3	-2.8
JHJ	Hachijo jima 2	5.93	224	Pn	Pn	22 11 11.2	-1.1
	7.1nm,0.3s,baz=62,slow=4.4,SNR=1.6						
JHJ				Sn	Sn	22 12 13.3	-7.6
	25nm,0.3s,baz=243,slow=22,SNR=1.9						
USRK	Ussuriysk Ar.	11.73	309	Pn	Pn	22 12 36.1	+4.3
	0.1nm,0.3s,baz=125,slow=14,SNR=2.1						
KDAK	Kodiak Island	45.00	42	LR	LR	22 34 45.2	
	comp=Z,278nm,20.0s,baz=300,slow=33						
MKAR	Makanchi Array	46.10	302	P	P	22 18 08.6	-0.4
	0.3nm,0.7s,baz=90,slow=9.3,SNR=2.9						
WRA	Warramunga Arr	57.95	192	P	P	22 19 37.2	-0.2
	3.2nm,0.6s,baz=11,slow=7.1,SNR=11						
ASAR	Alice Springs	61.67	191	P	P	22 20 03.2	+0.1
	0.6nm,0.4s,baz=8.1,slow=7.4,SNR=5.1						

ISCJB ***05*** *22:15:56.4±0.3, 5°.96S±0°.03×146°.48E±0°.05, h100km, mb4.7/41, Error ellipse: s-maj=6.9km s-min=4.7km az=167.4*

IDC ***05*** *22:15:58.0±1.4, 5°.99S×146°.33E, h96km±13km, mb4.1/19, mb1 4.2/21, mb1mx4.1/39, mbtmp4.5/21, MS3.6/2, Ms1 3.6/2, ms1mx2.9/44, Error ellipse: s-maj=17.3km s-min=8.2km az=92.0*

DJA ***05*** *22:15:59.5±1.0, 6°S±7°×14°6E±°, h70km±7km, M4.8/21, mb4.9/21, mB5.4/6, MLv4.8/3, Mw(mB)4.8/6, Mwp6.1/1*

NEIC ***05*** *22:16:00.4±0.8, 5°.99S×146°.31E, h119km±7km, mb4.2/6, Error ellipse: s-maj=8.9km s-min=5.6km az=86.0*

ISC 05 22:15:58.3±0.4, 5°.98S±0°.05×146°.38E±0°.07, h100km, n122, σ1s.20/123, mb4.7/41, Eastern New Guinea region

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
PMG	Port Moresby	3.50	167	P	Pn	22 16 51.2	+0.4
	15nm,0.3s,baz=21,slow=7.4,SNR=29						
PMG				S	Sn	22 17 30.4	-0.8
	45nm,0.3s,baz=128,slow=23,SNR=18						
PMG				LR	LR	22 18 09.7	
	comp=Z,500nm,19.8s,baz=91,slow=38						
PMG	Port Moresby	3.50	167	ePn	Pn	22 16 51.1	+0.4
PMG				eSn	Sn	22 17 23.9	-7.3
MANU	Manus Island	4.03	14	ePn	Pn	22 17 01.9	+4.0
JAY	Jayapura	6.62	301	P	Pn	22 17 34.0	+1.0
	0.4nm,0.3s,baz=175,slow=23,SNR=11						
JAY	Jayapura	6.62	301	P	Pn	22 17 33.8	+0.7
	37nm,0.8s,912nm135µm0.2nm						
JAY				S	Sn	22 18 47.1	0.0
	37nm,0.8s,912nm135µm0.2nm						
GENI	Genyem	7.04	298	P	Pn	22 17 40.6	+1.8
	74nm,0.8s,0.9nm						
COEN	Coen	8.54	201	ePn	Pn	22 18 00.7	+1.6
COEN				eSn	Sn	22 19 32.3	-1.4
CTA	Charters Tower	14.03	180	P	P	22 19 16.5	-0.9
	10.0nm,0.3s,baz=360,slow=14,SNR=95						
CTAO	Charters Tower	14.03	180	eP	P	22 19 16.4	-0.9
FAKI	Fak Fak	14.41	282	P	P	22 19 19.2	-2.4
	28nm,1.2s						
FAKI	Fak Fak	14.41	282	ePn	P	22 19 19.7	-1.9
SAUI	Saumlaki	15.10	262	P	P	22 19 29.5	+0.3
	86nm,0.7s						
SWI	Sorong	15.92	288	P	P	22 19 36.8	-1.5
	216nm,1.1s,2µm						
BNDI	Bandanaira	16.47	274	P	P	22 19 46.6	+2.2
	127nm,0.9s						
WRAB	Tennant Creek	18.14	219	eP	P	22 20 00.3	-2.6
WB2	Warramunga Arr	18.15	219	eP	P	22 20 02.1	-0.8
WR1	Warramunga Arr	18.16	219	eP	P	22 20 02.2	-0.8
WR1				ePcP	PcP	22 24 33.0	+0.7
WRA	Warramunga Arr	18.16	219	P	P	22 20 02.2	-0.8
	1.1nm,0.3s,baz=33,slow=11,SNR=22						
WRA				PcP	PcP	22 24 33.0	+0.7
	0.2nm,0.3s,baz=22,slow=2.0,SNR=5.3						
WRA				LR	LR	22 27 41.1	
	comp=Z,350nm,19.9s,baz=0.0,slow=39						
NLAI	Namlea	19.40	277	P	Pn	22 20 19.0	+0.2
	33nm,1.0s						
LBMI	Labuha	19.57	285	P	Pn	22 20 19.8	-1.0
	97nm,1.6s,1µm						
EIDS	Eidsvold	19.80	167	eP	P	22 20 19.9	-1.1
TNTI	Ternate	20.13	289	P	Pn	22 20 26.9	-0.4
	80nm,1.4s						
SANI	Sanana	20.70	280	P	Pn	22 20 35.0	+1.0
	49nm,1.0s						
AS01	Alice Springs	21.27	213	eP	P	22 20 36.5	-0.2
AS31	Alice Springs	21.29	213	eP	P	22 20 37.3	+0.3
AS31				eS	S	22 24 27.1	-0.9
ASAR	Alice Springs	21.30	213	P	P	22 20 37.3	+0.3
	7.2nm,0.7s,baz=46,slow=7.6,SNR=49						
ASAR				S	S	22 24 27.1	-1.0
	1.3nm,0.4s,baz=25,slow=21,SNR=7.7						
BATI	Baumata	22.87	258	P	P	22 20 56.6	+3.0
	12nm,1.5s						
SGSI	Sangihe	22.92	294	P	P	22 20 58.7	+4.6
	293nm,1.1s						
KMSI	Cibinong	23.29	285	P	P	22 20 59.2	+1.7
	202nm,1.1s						
FITZ	Fitzroy Crossi	23.56	237	P	P	22 20 59.3	-0.6
	15nm,0.4s,baz=59,slow=11,SNR=27						
FITZ	Fitzroy Crossi	23.56	237	eP	P	22 20 59.2	-0.6
	16nm,0.6s						
LUWI	Luwuk	24.06	281	P	P	22 21 05.8	+1.3
LUWI	Luwuk	24.06	281	eP	P	22 21 06.1	+1.6
	119nm,1.0s						
STKA	Stephens Creek	26.15	189	P	P	22 21 23.6	+0.4
	2.9nm,0.5s,baz=10,slow=7.6,SNR=12						
STKA	Stephens Creek	26.15	189	eP	P	22 21 23.6	+0.4
	7.5nm,1.9s						
BBOO	Buckleboo	28.38	199	eP	P	22 21 42.3	-0.9
MYLDM	Lahad Datu	29.96	291	eP	P	22 21 58.0	+0.6
JAGI	Jajag, Banyuwa	32.06	264	eP	P	22 22 12.1	-3.8
SBUM	Sibu	35.12	283	eP	P	22 22 41.1	-1.4
CISI	Cisompet, Garu	38.32	265	eP	P	22 23 08.2	-1.5
	208nm,1.7s						
NACB	Ninganchiao	38.49	322	eP	P	22 23 10.9	0.0
XMIS	Christmas Isla	40.53	261	eP	P	22 23 28.2	+0.2
JNU	Nakatsue	41.57	340	P	P	22 23 36.0	-0.4
	9.3nm,0.7s,baz=182,slow=1.1,SNR=10						
MNAI	Manna	43.27	270	eP	P	22 23 49.1	-1.3
LBZ	Lake Benmore	43.57	155	eP	P	22 23 53.6	+1.3
BFZ	Birch Farm	43.69	147	eP	P	22 23 54.8	+1.4
KSRS	Korea Array	46.51	340	P	P	22 24 15.2	-0.4
	2.7nm,0.5s,baz=158,slow=9.2,SNR=13						
KS15	Wonju Array Si	46.51	340	eP	P	22 24 15.2	-0.5
KSAR	Wonju Array Be	46.51	340	P	P	22 24 15.2	-0.5
KS01	Wonju Array Si	46.54	340	eP	P	22 24 15.7	-0.1
KULM	Kulim	47.00	283	eP	P	22 24 19.6	-0.3
CHBT	CHBT	47.56	293	P	P	22 24 24.6	+0.4
	62nm,0.6s,2µm						
SURT	Suratani	49.70	287	P	P	22 24 41.9	+1.3
	5.5nm,0.6s						
PKDT	Phuket	49.86	285	P	P	22 24 42.1	+0.3
	20nm,1.1s						
PHET	Kaeng Krachan	50.09	292	P	P	22 24 44.7	+1.2
	7.4nm,1.0s,105nm						
PBKT	Sadao Pong	50.18	297	P	P	22 24 45.5	+1.3
	8.7nm,1.2s						
UTTA	Uttaradit	51.00	298	P	P	22 24 51.2	+0.8
	12nm,0.9s,102nm						
SRDT	SRDT	51.03	294	P	P	22 24 51.9	+1.2
	60nm,0.9s						
NANT	Nan	51.30	300	P	P	22 24 53.5	+0.9
	15nm,0.9s,229nm						
PHRA	Phrae	51.59	299	P	P	22 24 56.0	+1.3
	594nm,0.9s						
USRK	Ussuriysk Ar.	51.60	347	P	P	22 24 54.9	+0.5
	6.2nm,0.6s,baz=166,slow=7.5,SNR=28						
SUKH	Sukhothai	51.71	298	P	P	22 24 57.2	+1.5
	5.9nm,1.2s						
LAMP	Lampang	52.12	299	P	P	22 25 00.2	+1.5
	7.5nm,0.9s						
CRAI	Chiangrai	52.17	301	P	P	22 24 59.1	0.0
	104nm,0.9s						
CM01	Chiang Mai Arr	52.66	298	eP	P	22 25 03.5	+0.8
CM31	Chiang Mai Arr	52.69	298	eP	P	22 25 04.5	+1.6
CMAR	Chiang Mai Arr	52.69	298	P	P	22 25 04.5	+1.6
	13nm,0.5s,baz=119,slow=5.5,SNR=80						
CMMT	Chiang Mai	52.83	299	P	P	22 25 04.8	+0.9
	15nm,1.2s						
CHTO	Chiang Mai	52.83	299	P	P	22 25 04.8	+0.8
	69nm,1.2s						
CHTO	Chiang Mai	52.83	299	eP	P	22 25 05.1	+1.1
CMAI	Chiengmai2	53.19	300	P	P	22 25 08.1	+1.3
	68nm,0.8s						
MHMT	Maesarieng	53.47	298	P	P	22 25 09.8	+1.1
KLR	Kul'dur	56.44	349	P	P	22 25 29.9	+0.5
	1.2nm,0.4s,baz=171,slow=6.7,SNR=11						
PEA0	Petropavlovsk-	59.64	8	eP	P	22 25 52.0	+0.2
PEA0B	Petropavlovsk-	59.64	8	eP	P	22 25 50.5	-1.3
PETK	Petropavlovsk-	59.64	8	P	P	22 25 52.8	+1.1
	2.1nm,0.5s,baz=173,slow=8.7,SNR=5.6						
PEA1	Petropavlovsk-	59.64	8	eP	P	22 25 52.8	+1.1
LSA	Lhasa	63.73	307	eP	P	22 26 21.5	+1.2
SONA0	Songino Array	64.08	331	eP	P	22 26 22.1	+0.2
SONM	Songino Array	64.08	331	P	P	22 26 22.1	+0.2
	0.5nm,0.4s,baz=122,slow=4.9,SNR=6.2						
MA2	Magadan	65.44	2	P	P	22 26 30.3	+0.2
	4.0nm,0.3s,baz=221,slow=3.9,SNR=8.4						
TAPN	Taplejung	65.62	303	eP	P	22 26 32.8	+0.4
	10nm,0.4s						
ODAN	Odare	65.71	303	eP	P	22 26 33.3	+0.4
	14nm,0.5s						
RAMN	Ramite	66.40	303	eP	P	22 26 37.8	+0.4
	7.3nm,0.5s						
GUN	Gumba	67.33	303	eP	P	22 26 43.8	+0.4
	12nm,0.3s						
PKIN	Phulchoki	67.62	303	eP	P	22 26 45.6	+0.5
	3.6nm,0.4s						
KKN	Kakani	67.79	303	eP	P	22 26 46.4	+0.3
	4.3nm,0.4s						
DMN	Daman	67.88	303	eP	P	22 26 47.1	+0.4
GKN	Gorkha	68.40	303	eP	P	22 26 50.0	+0.1
	6.8nm,0.5s						
SEY	Seymchan	68.87	3	P	P	22 26 52.3	+0.5
	3.4nm,0.5s,baz=168,slow=5.8,SNR=25						
KOLN	Koldanda	69.19	303	eP	P	22 26 54.8	0.0
	7.3nm,0.6s						
PYUN	Piuthan	69.81	303	eP	P	22 26 58.4	-0.2
	12nm,0.6s						
VNDA	Vanda	71.97	176	P	P	22 27 11.4	+0.9
	2.3nm,0.6s,baz=334,slow=7.1,SNR=16						
MK31	Makanchi Array	77.08	321	eP	P	22 27 40.4	-0.3
MK32	Makanchi Array	77.08	321	eP	P	22 27 40.5	-0.2
MKAR	Makanchi Array	77.08	321	P	P	22 27 40.5	-0.2
	1.2nm,0.4s,baz=97,slow=8.9,SNR=64						
MAKZ	Makanchi	77.29	321	eP	P	22 27 41.3	-0.5
	8.2nm,1.3s						
ZAA0	Zalesovo Array	78.66	328	eP	P	22 27 47.3	-1.9
ZALV	Zalesovo Beam	78.66	328	P	P	22 27 47.8	-1.4
	2.4nm,0.5s,baz=113,slow=5.9,SNR=20						
ZAA1	Zalesovo Array	78.66	328	eP	P	22 27 47.8	-1.4
KURK	Kurchatov	80.82	323	eP	P	22 28 00.4	-0.6
KURBB	Kurchatov Arra	80.84	323	P	P	22 28 00.4	-0.7
	0.5nm,0.4s,baz=105,slow=7.7,SNR=18						
EKS2	Erkin-Say	81.40	315	eP	P	22 28 04.8	+0.4
	1.9nm,0.8s						
MAW	Mawson	82.03	203	P	P	22 28 07.4	+0.3
	1.8nm,0.7s,baz=100,slow=7.6,SNR=8.4						
QSPA	South Pole Qui	83.99	180	eP	P	22 28 17.4	0.0
NRIK	Noril'sk	85.06	342	P	P	22 28 21.8	-0.7
	4.0nm,0.5s,baz=109,slow=6.4,SNR=8.6						
ILAR	Eielson Array	85.70	23	P	P	22 28 24.4	-1.4
	2.2nm,0.6s,baz=253,slow=5.0,SNR=38						
ILB	Eielson Array	85.70	23	eP	P	22 28 24.4	-1.4
IL1	Eielson Array	85.70	23	eP	P	22 28 23.9	-1.9
ABKAR	Akbulak array	92.15	319	eP	P	22 28 54.9	-1.7
SWMT	Swartz Lake	100.88	43	ePdif	Pdif	22 29 34.6	-1.8
S22A	4UR Ranch, Cre	106.91	52	ePdif	Pdif	22 29 57.2	-6.4
PLCA	Paso Flores	122.48	147	PKP	PKPdf	22 34 43.5	+1.0
	2.1nm,0.6s,baz=241,slow=1.5,SNR=7.6						
LPAZ	La Paz	139.32	123	PKP	PKPdf	22 35 16.2	+0.7
	1.8nm,0.7s,baz=155,slow=1.5,SNR=5.0						
CPUP	Villa Florida	140.50	145	PKP	PKPdf	22 35 17.6	+0.9
	2.5nm,0.8s,baz=161,slow=0.8,SNR=4.0						
TORD	Torodi Ar. Bea	144.48	284	PKP	PKPbc	22 35 23.1	+0.3
	16nm,0.6s,baz=60,slow=3.9,SNR=229						
TOA1	Torodi Ar. Sit	144.49	284	ePKPdf	PKPbc	22 35 23.1	+0.2
KIC	Kosan Boka	151.28	272	ePKIKP	PKPbc	22 35 41.8	+0.5
	35nm,0.6s						
DBIC	Dimbokro	151.40	273	PKPbc	PKPbc	22 35 42.1	+0.5
	21nm,0.6s,baz=71,slow=2.5,SNR=138						
TIC	Toumodi	151.56	273	ePKIKP	PKPbc	22 35 42.3	+0.3
LIC	Lamto	151.57	272	ePKIKP	PKPbc	22 35 42.2	+0.2
	44nm,0.6s						
BDFB	Brasilia	154.22	147	PKP	PKPdf	22 35 40.5	+0.8
	2.2nm,0.8s,baz=206,slow=6.8,SNR=3.3						
BDFB				PKPbc	PKiKP	22 35 48.6	+0.7
	3.3nm,0.6s,baz=210,slow=3.6,SNR=8.8						

IDC 05 22:21:04.5±2.2, 36°.38N×141°.84E, h0km, mb3.8/3, mb1 3.8/5, mb1mx3.5/49, mbtmp3.8/5, ML3.6/2, Error ellipse: s-maj=45.5km s-min=25.6km az=62.0, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
MJAR	Matsushiro Arr	2.93	274	Pn	Pn	22 21 52.3	-0.1
	5.1nm,0.3s,baz=113,slow=9.4,SNR=33						
MJAR				Sn	Sn	22 22 28.3	0.0
	3.3nm,0.3s,baz=93,slow=29,SNR=5.2						
MAT	Matsushiro	2.94	274	P	Pn	22 21 53.5	+1.1
MAT				S	Sn	22 22 30.0	+1.6
JHJ	Hachijo jima 2	3.67	208	Pn	Pn	22 22 02.4	-0.1
	26nm,0.3s,baz=340,slow=22,SNR=12						
JHJ				Sn	Sn	22 22 42.0	-4.4
	24nm,0.3s,baz=72,slow=22,SNR=2.5						
SONM	Songino Array	28.44	305	P	P	22 27 00.7	-0.3
	1.2nm,0.7s,baz=104,slow=8.8,SNR=6.8						
KURBB	Kurchatov Arra	46.68	309	P	P	22 29 34.8	+0.1
	1.0nm,0.6s,baz=82,slow=7.7,SNR=9.8						
WRA	Warramunga Arr	56.46	188	P	P	22 30 48.1	-0.1
	0.4nm,0.8s,baz=6.6,slow=7.4,SNR=7.2						

ISCJB ***05*** *22:25:05.5±0.8, 18°.31S±0°.09×168°.9E±0°.1, h201km, mb3.9/11, Error ellipse: s-maj=20.5km s-min=11.1km az=21.7*

IDC ***05*** *22:25:07.7±2.9, 18°.47S×168°.93E, h210km±27km, mb3.6/10, mb1 3.8/11, mb1mx3.6/40, mbtmp4.2/11, Error ellipse: s-maj=19.8km s-min=17.6km az=56.0*

ISC 05 22:25:06.5±0.9, 18°.4S±0°.1×169°.0E±0°.2, h201km, n14, σ1s.28/15, mb4.0/10, Vanuatu Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
DZM	Mont Dzumac	4.41	213	P	Pn	22 26 12.7	-0.8
	23nm,0.3s,baz=40,slow=8.0,SNR=151						
DZM				S	S	22 27 07.9	+2.2
	4.3nm,0.3s,baz=333,slow=18,SNR=1.8						
URZ	Urewera	21.03	162	P	P	22 29 35.8	+1.2
	14nm,0.8s,baz=5.0,slow=8.7,SNR=5.5						
STKA	Stephens Creek	28.15	236	P	P	22 30 39.7	-0.5
	1.5nm,0.5s,baz=80,slow=10.0,SNR=6.7						
WRA	Warramunga Arr	32.78	262	P	P	22 31 19.9	-1.1
	0.9nm,0.3s,baz=81,slow=6.1,SNR=13						
ASAR	Alice Springs	33.16	255	P	P	22 31 23.3	-1.0
	6.5nm,0.4s,baz=82,slow=8.7,SNR=78						
FITZ	Fitzroy Crossi	41.14	263	P	P	22 32 31.4	0.0
	2.2nm,0.5s,baz=56,slow=7.3,SNR=4.2						
VNDA	Vanda	59.28	182	P	P	22 34 45.4	-1.1
	0.7nm,0.7s,baz=352,slow=5.4,SNR=4.8						
MJAR	Matsushiro Arr	61.91	332	P	P	22 35 05.4	+0.6
	2.2nm,1.0s,baz=167,slow=6.1,SNR=3.4						
PETK	Petropavlovsk-	71.86	353	P	P	22 36 07.8	+0.6
	3.0nm,0.7s,baz=146,slow=9.0,SNR=4.7						
SONM	Songino Array	86.42	323	P	P	22 37 27.5	+1.1
	0.7nm,0.7s,baz=152,slow=6.5,SNR=5.0						
ILAR	Eielson Array	89.47	17	P	P	22 37 39.4	-0.9
	0.7nm,0.9s,baz=246,slow=5.4,SNR=4.1						
YKA	Yellowknife Ar	100.00	27	P	Pdif	22 38 29.8	+1.5
	0.2nm,0.5s,baz=254,slow=4.4,SNR=6.3						
MKAR	Makanchi Array	100.99	316	P	Pdif	22 38 35.0	+1.8
	0.1nm,0.5s,baz=90,slow=5.8,SNR=3.2						
TORD	Torodi Ar. Bea	166.75	249	PKP	PKPdf	22 44 48.0	-0.9
	0.7nm,0.9s,baz=105,slow=1.6,SNR=4.0						

NIED ***05*** *22:31:00, 29°.10N×129°.40E, h5km, Mw3.9 Best double couple: M0 9.09000×10^14 NP1:φs121.00000°, δ22.00000°, λ-107.00000°. NP2:φs320.00000°, δ69.00000°, λ-83.00000°.*

IDC ***05*** *22:31:29.4±1.4, 29°.09N×129°.55E, h0km, mb3.4/4, mb1 3.7/5, mb1mx3.4/39, mbtmp3.5/5, ML3.4/1, MS2.9/4, Ms1 2.9/4, ms1mx2.6/42, Error ellipse: s-maj=43.0km s-min=24.8km az=87.0*

ISCJB ***05*** *22:31:31.8±0.5, 29°.10N±0°.03×129°.47E±0°.05, h27km±4km, mb3.4/4, MS2.8/1, Error ellipse: s-maj=7.9km s-min=4.2km az=16.9*

JMA ***05*** *22:31:31.3±0.1, 29°.12N×129°.44E, h34km, M3.5*

JMA Felt II J1.

ISC 05 22:31:31.1±1.3, 29°.10N±0°.03×129°.51E±0°.05, h13km±9km, n18, σ0s.72/25, mb3.4/4, Ryukyu Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
JTAJ	Takarajima	0.28	282	P	Pb	22 31 37.9	0.0
JTAJ				eS	Sb	22 31 42.6	+0.1
JAM	Amami Oshima	0.69	173	P	Pg	22 31 44.0	-0.4
JAM				eS	Sg	22 31 53.7	+0.2
JNN	Nakanoshima	0.81	23	P	Pg	22 31 46.6	-0.1
JNN				eS	Sb	22 31 58.5	+0.7
JZK	Kikaishima	0.88	153	P	Pn	22 31 49.3	+0.2
JZK				eS	Sn	22 32 02.0	+0.3
JAMN	Amaminishikomi	0.90	199	P	Pg	22 31 48.3	-0.2
JAMN				eS	Sb	22 32 00.6	+0.2
JTK	Tokunoshima	1.40	201	P	Pn	22 31 55.7	-0.6
JTK				eS	Sn	22 32 12.6	-2.0
JYAK	Yakushimahirau	1.43	37	P	Pn	22 31 56.1	-0.7
JYAK				eS	Sn	22 32 14.1	-1.3
JOKE	Okinoerabujima	1.92	206	P	Pn	22 32 03.5	0.0
JOKE				eS	Sn	22 32 27.2	-0.3
JIH	Iheya	2.47	214	P	Pn	22 32 11.4	+0.4
JIH				eS	Sn	22 32 40.2	-0.8
JOW	Kunigami	2.51	206	Pn	Pn	22 32 11.9	+0.3
	12nm,0.3s,baz=81,slow=16,SNR=21						
JOW				Sn	Sn	22 32 40.8	-1.2
	17nm,0.3s,baz=142,slow=27,SNR=5.8						
JOW				LR	LR	22 33 03.0	
	comp=Z,152nm,18.7s,baz=204,slow=37						
JOW	Kunigami	2.51	206	P	Pn	22 32 12.3	+0.7
JNU	Nakatsue	4.18	16	Pn	Pn	22 32 39.0	+4.4
	1.2nm,0.3s,baz=219,slow=10.0,SNR=12						
JNU				LR	LR	22 34 17.2	
	comp=Z,204nm,19.9s,baz=123,slow=40						
KSRS	Korea Array	8.44	351	Pn	Pn	22 33 43.2	+10
	0.3nm,0.3s,baz=162,slow=13,SNR=4.3						
KSRS				LR	LR	22 37 09.0	
	comp=Z,65nm,19.0s,baz=105,slow=40						
SONM	Songino Array	25.87	323	P	P	22 37 03.3	+0.7
	0.6nm,0.8s,baz=129,slow=10,SNR=4.5						
KAPI	Kappang	35.19	197	LR	LR	22 51 51.0	
	comp=Z,16nm,19.2s,baz=336,slow=35						
MKAR	Makanchi Array	40.55	309	P	P	22 39 10.3	+0.2
	0.4nm,0.8s,baz=105,slow=9.2,SNR=5.4						
WRA	Warramunga Arr	48.97	174	P	P	22 40 17.4	0.0
	0.4nm,0.4s,baz=352,slow=8.3,SNR=2.4						
YKA	Yellowknife Ar	75.46	26	P	P	22 43 14.9	+0.4
	0.3nm,0.7s,baz=303,slow=5.3,SNR=5.4						

*IDC **05** 22:48:23.5±1.1, 6°.68N×125°.01E, h0^{km}, mb3.6/5, mb1 3.7/5, mb1mx3.4/50, mbtmp3.6/5, MS3.2/2, Ms1 3.2/2, ms1mx2.5/42, Error ellipse: s-maj=20.8km s-min=10.1km az=140.0*

*ISCJB **05** 22:48:27.2±0.7, 7°.1N±0°.1×125°.96E±0°.06, h51^{km}, mb3.4/5, MS2.9/1, Error ellipse: s-maj=16.4km s-min=7.1km az=17.6*

*MAN **05** 22:48:27, 6°.99N×125°.87E, h14^{km}, mb4.5, ML3.4, MS3.2*

ISC 05 22:48:29.0±0.9, **7°.0N**±0°.1×**125°.96E**±0°.06, **h51**^{km}, **n14, σ2^{s}16**/15, **mb3.6**/5, **1C-1D, Mindanao**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
MATI	Mati	0.30	104	eP	Pn	22 48 35.7	-2.5
MATI				eS	Sn	22 48 46.7	+1.8
DAV	Davao City (W)	0.38	277	Pg	Pn	22 48 37.2	-1.8
	190nm,0.3s,baz=230,slow=4.9,SNR=16						
DAV				Lg	Lg	22 48 45.7	
	657nm,0.3s,baz=107,slow=21,SNR=59						
DMPH	Davao City--Mi	0.45	278	⇑eP	Pn	22 48 43.5	+3.7
DMPH				iS	Sn	22 48 52.0	+4.5
KCP	Kidapawan	0.86	269	⇓eP	Pn	22 48 42.4	-2.6
KCP				iS	Sn	22 48 54.6	-2.1
BUKP	Musuan	1.23	314	eP	Pn	22 48 48.0	-2.0
CTBH	Cotabato--PC H	1.71	277	eP	Pn	22 48 55.3	-1.1
CTBH				iS	Sn	22 49 16.4	-0.8
PAGZ	Pagadian	2.69	288	eP	Pn	22 49 11.4	+1.6
BATI	Baumata	17.27	188	LR	LR	23 00 02.2	
	comp=Z,124nm,18.4s,baz=166,slow=42						
FITZ	Fitzroy Crossi	24.97	181	LR	LR	23 06 06.3	
	comp=Z,32nm,18.0s,baz=48,slow=43						
WRA	Warramunga Arr	28.04	163	P	P	22 54 16.4	+0.8
	0.4nm,0.7s,baz=331,slow=10,SNR=3.9						
ASAR	Alice Springs	31.47	166	P	P	22 54 46.3	+0.3
	0.4nm,0.4s,baz=337,slow=7.1,SNR=5.7						
STKA	Stephens Creek	41.46	160	P	P	22 56 12.1	+1.1
	0.7nm,0.4s,baz=0.7,slow=8.8,SNR=3.3						
MKAR	Makanchi Array	54.44	324	P	P	22 57 51.5	+0.3
	0.3nm,0.5s,baz=109,slow=8.2,SNR=7.8						
KURBB	Kurchatov Arra	58.58	327	P	P	22 58 19.5	-1.0
	0.1nm,0.4s,baz=132,slow=5.4,SNR=5.2						

*NIED **05** 22:50:00, 38°.40N×142°.30E, h71^{km}, Mw4.6 Best double couple: M$_0$7.58000×10^{15} NP1:φ$_s$73.00000°, δ20.00000°, λ13.00000°. NP2:φ$_s$331.00000°, δ86.00000°, λ110.00000°.*

JMA 05 22:50:21.9±0.2, **38°.40N**×**142°.28E, h31**^{km}±3^{km}, **M3.7, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
JIO	Ouri	0.73	275	P	Pn	22 50 35.7	-0.4
JIO				S	Sb	22 50 44.7	-1.2
OFUJ	Ofunato	0.83	325	P	Pn	22 50 37.1	-0.4
JMK	Ichinoseki	1.00	304	P	Pn	22 50 39.8	+0.1
JMK				eS	Sn	22 50 52.3	-0.4
MIYJ	Miyakonagasawa	1.23	343	P	Pn	22 50 43.0	+0.1
MIYJ				eS	Sn	22 50 58.7	+0.2
JOU	Okura	1.27	269	P	Pn	22 50 44.3	+0.8
JOU				S	Sn	22 50 59.8	+0.3
JMM	Marumori	1.29	246	P	Pn	22 50 43.9	+0.2
JMM				eS	Sn	22 50 58.5	-1.4
JOM	Ohasama	1.32	325	P	Pn	22 50 44.8	+0.6
JOM				S	Sn	22 51 01.3	+0.6
JFK	Kawauchi	1.52	228	P	Pn	22 50 46.6	-0.3
JFK				S	Sn	22 51 04.0	-1.6
JYK	Kaneyama	1.59	290	P	Pn	22 50 49.1	+1.2
JRG	Rokugo	1.62	308	P	Pn	22 50 49.7	+1.3
JKZ	Kuzumaki	1.75	335	P	Pn	22 50 51.4	+1.3
JYS	Shirataka	1.75	265	P	Pn	22 50 50.0	-0.1
JYS				eS	Sn	22 51 12.8	+1.4
JFT	Otama	1.77	241	P	Pn	22 50 51.3	+0.9
JFT				eS	Sn	22 51 12.8	+0.9

*NIED **05** 22:54:00, 39°.20N×142°.40E, h32^{km}, Mw3.8 Best double couple: M$_0$6.68000×10^{14} NP1:φ$_s$318.00000°, δ42.00000°, λ-109.00000°. NP2:φ$_s$163.00000°, δ51.00000°, λ-74.00000°.*

*IDC **05** 22:54:22.0±0.8, 39°.06N×142°.30E, h0^{km}, mb3.8/15, mb1 3.9/15, mb1mx3.8/47, mbtmp3.8/15, MS3.0/6, Ms1 3.0/6, ms1mx2.7/43, Error ellipse: s-maj=21.0km s-min=19.8km az=142.0*

*ISCJB **05** 22:54:26.4±0.9, 39°.13N±0°.04×142°.39E±0°.08, h44^{km}±7^{km}, mb3.9/18, MS3.2/3, Error ellipse: s-maj=10.8km s-min=5.7km az=21.3*

*JMA **05** 22:54:26.4±0.1, 39°.19N×142°.40E, h32^{km}±1^{km}, M4.2*

JMA Felt I J1.

*NEIC **05** 22:54:27.2±0.5, 39°.11N×142°.33E, h35^{km}, mb4.3/2, Error ellipse: s-maj=13.1km s-min=7.4km az=124.0*

ISC 05 22:54:26.2±1.6, **39°.11N**±0°.04×**142°.32E**±0°.07, **h28**^{km}±10^{km}, **n46, σ1^{s}20**/41, **mb4.0**/18, **MS3.1**/3, **Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
OFUJ	Ofunato	0.51	267	P	Pn	22 54 37.8	+0.2
MIYJ	Miyakonagasawa	0.61	321	P	Pb	22 54 38.1	-0.3
MIYJ				eS	Sb	22 54 46.0	-0.6
JMK	Ichinoseki	0.87	260	P	Pb	22 54 43.6	+0.9
JMK				eS	Sn	22 54 55.6	+1.2
JOM	Ohasama	0.88	295	P	Pb	22 54 43.2	+0.4
JOM				eS	Sn	22 54 54.8	+0.2
JTH	Tanohata	0.90	337	P	Pn	22 54 42.1	-1.0
JTH				eS	Sn	22 54 53.6	-1.6
JIO	Ouri	1.00	230	P	Pb	22 54 44.9	0.0
JIO				eS	Sb	22 54 58.3	+0.6
JKZ	Kuzumaki	1.16	319	P	Pn	22 54 46.9	+0.2
JRG	Rokugo	1.34	283	P	Pb	22 54 50.7	0.0
JRG				eS	Sb	22 55 08.6	+1.2
JANG	Nango	1.41	334	P	Pn	22 54 49.9	-0.2
JANG				eS	Sn	22 55 07.2	-0.5
ERM	Erimo	2.98	12	ePn	Pn	22 55 11.3	-0.3
ERM				eSn	Sn	22 55 48.7	+2.4
MAJO	Matsushiro	4.14	233	Pn	Pn	22 55 28.5	+0.8
MAT	Matsushiro	4.14	233	P	Pn	22 55 32.5	+4.9
MAT				eS	Sb	22 56 23.5	-4.5
MJAR	Matsushiro Arr	4.14	233	Pn	Pn	22 55 30.6	+3.0
	3.0nm,0.3s,baz=40,slow=11,SNR=52						
MJAR				LR	LR	22 57 13.2	
	comp=Z,94nm,21.7s,baz=60,slow=42						
USRK	Ussuriysk Ar.	9.25	307	Pn	Pn	22 56 41.2	+3.4
	0.1nm,0.3s,baz=134,slow=16,SNR=5.3						
JNU	Nakatsue	11.01	241	LR	LR	23 01 18.8	
	comp=Z,71nm,21.3s,baz=120,slow=38						
JNU	Nakatsue	11.01	241	Pn	Pn	22 57 01.5	-0.4
KSRS	Korea Array	11.44	266	Pn	Pn	22 57 12.4	+4.8
	0.2nm,0.3s,baz=76,slow=14,SNR=3.4						
KSRS				LR	LR	23 01 15.2	
	comp=Z,40nm,20.2s,baz=90,slow=36						
KSAR	Wonju Array Be	11.47	266	Pn	Pn	22 57 12.4	+4.3
SEY	Seymchan	24.62	11	P	P	22 59 45.2	+1.2
	1.3nm,0.6s,baz=194,slow=9.4,SNR=6.3						
SONM	Songino Array	27.29	300	P	P	23 00 08.2	-0.2
	0.2nm,0.5s,baz=112,slow=6.4,SNR=3.5						
H11N2	WAKE ISLAND Hy	28.68	125	T	T	23 30 47.8	
	baz=318,slow=75,SNR=176						
H11N1	WAKE ISLAND Hy	28.68	125	T	T	23 30 49.9	
	baz=318,slow=75,SNR=167						
H11N3	WAKE ISLAND Hy	28.69	125	T	T	23 30 46.0	
	baz=318,slow=75,SNR=156						
H11S1	WAKE ISLAND Hy	29.46	127	T	T	23 31 49.6	
	baz=319,slow=76,SNR=16						
H11S3	WAKE ISLAND Hy	29.46	127	T	T	23 31 56.7	
	baz=319,slow=76,SNR=9.2						
H11S2	WAKE ISLAND Hy	29.48	127	T	T	23 32 02.0	
	baz=319,slow=76,SNR=9.0						
TLY	Talaya	29.57	308	LR	LR	23 13 04.2	
	comp=Z,39nm,18.6s,baz=328,slow=38						
ZALV	Zalesovo Beam	41.08	311	P	P	23 02 07.5	+0.3
	0.8nm,0.4s,baz=92,slow=8.6,SNR=5.0						
LSA	Lhasa	42.77	273	eP	P	23 02 21.2	-0.7
MKAR	Makanchi Array	43.66	300	P	P	23 02 26.8	-1.6
	0.8nm,0.8s,baz=86,slow=11,SNR=10						
KURK	Kurchatov	45.24	307	eP	P	23 02 41.2	+0.3
	3.7nm,0.5s						
KURBB	Kurchatov Arra	45.32	307	P	P	23 02 41.8	+0.3
	0.7nm,0.3s,baz=75,slow=7.3,SNR=17						
ILAR	Eielson Array	47.37	33	P	P	23 02 56.9	-0.5
	1.1nm,0.7s,baz=268,slow=6.4,SNR=12						
BVAR	Borovoye Array	49.73	311	P	P	23 03 15.7	0.0
	1.2nm,0.7s,baz=160,slow=10,SNR=8.5						
INK	Inuvik	52.22	28	P	P	23 03 34.9	+0.7
	0.8nm,0.5s,baz=286,slow=4.5,SNR=4.9						
ARU	Arti	55.30	318	P	P	23 03 57.5	+0.6
	2.2nm,0.7s,baz=92,slow=3.4,SNR=3.9						
ABKAR	Akbulak array	57.17	309	eP	P	23 04 09.8	-0.5
	0.6nm,0.4s						
WRAB	Tennant Creek	59.20	189	P	P	23 04 23.6	-1.3
	5.6nm,0.9s						
WRA	Warramunga Arr	59.21	189	P	P	23 04 24.6	-0.3
	2.2nm,0.7s,baz=8.6,slow=7.3,SNR=5.4						
YKA	Yellowknife Ar	61.66	31	P	P	23 04 41.4	+0.2
	0.2nm,0.6s,baz=303,slow=6.2,SNR=3.1						
ASAR	Alice Springs	62.94	189	P	P	23 04 50.1	-0.1
	0.7nm,0.7s,baz=4.3,slow=5.0,SNR=4.3						
AFI	Afiamalu	67.93	131	LR	LR	23 36 14.0	
	comp=Z,11nm,18.4s,baz=28,slow=37						
AKASG	Malin Array Be	73.10	322	P	P	23 05 53.4	-0.4
	0.8nm,0.3s,baz=44,slow=6.7,SNR=5.5						
PDAR	Pinedale Array	75.71	46	P	P	23 06 09.3	-0.1
	0.4nm,0.6s,baz=174,slow=1.5,SNR=3.8						
BRTR	Keskin Array B	78.01	312	P	P	23 06 23.3	+1.0
	0.4nm,0.7s,baz=88,slow=7.0,SNR=3.8						
URZ	Urewera	83.36	153	LR	LR	23 37 44.6	
	comp=Z,21nm,20.5s,baz=43,slow=31						

IDC 05 22:56:37.6±2.0, **8°.96S**×**126°.25E, h0**^{km}, **mb3.4**/1, **mb1 4.0**/5, **mb1mx3.5**/40, **mbtmp3.8**/5, **ML3.9**/4, **Error ellipse: s-maj=45.1km s-min=29.6km az=66.0, Timor region**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
BATI	Baumata	2.83	244	Pn	Pn	22 57 24.8	+0.6
	5.0nm,0.3s,baz=294,slow=24,SNR=4.4						
BATI				Sn	Sn	22 57 53.3	-5.7
	12nm,0.3s,baz=91,slow=23,SNR=5.9						
FITZ	Fitzroy Crossi	9.11	184	Pn	Pn	22 58 50.0	-0.4
	1.1nm,0.3s,baz=359,slow=11,SNR=3.7						
FITZ				Sn	Sn	23 00 23.6	-10
	2.0nm,0.3s,baz=258,slow=20,SNR=6.1						
WRA	Warramunga Arr	13.43	145	Pn	Pn	22 59 49.8	+0.1
	0.9nm,0.3s,baz=319,slow=14,SNR=11						
WRA				Sn	Sn	23 02 08.3	-12
	0.7nm,0.3s,baz=316,slow=25,SNR=5.7						
ASAR	Alice Springs	16.36	154	Pn	Pn	23 00 28.9	0.0
	0.9nm,0.3s,baz=321,slow=11,SNR=27						
ASAR				Sn	Sn	23 03 20.4	-11
	0.2nm,0.3s,baz=314,slow=20,SNR=8.5						
MKAR	Makanchi Array	67.90	329	P	P	23 07 38.0	-0.1
	0.3nm,0.7s,baz=134,slow=5.2,SNR=1.9						

*IDC **05** 23:00:12.2±2.6, 40°.15N×72°.95E, h0^{km}, mb3.7/5, mb1 3.8/8, mb1mx3.5/41, mbtmp3.7/8, ML3.4/2, Error ellipse: s-maj=55.8km s-min=12.6km az=136.0*

*NNC **05** 23:00:13.0±0.6, 40°.16N×72°.77E, h0^{km}, mb3.8, mpv3.4, Error ellipse: s-maj=8.4km s-min=2.0km az=33.0*

*KRNET **05** 23:00:12.5±0.1, 40°.17N×72°.76E, h14^{km}, mb3.4*

*SOME **05** 23:00:17.2, 41°.13N×72°.05E, h0^{km}*

ISC 05 23:00:14.5±0.7, **40°.20N**±0°.04×**72°.74E**±0°.03, **h10**^{km}, **n54, σ1^{s}98**/79, **mb3.7**/5, **32C-22D, Kyrgyzstan**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
SFK	Sufi-Kurgan	0.61	108	⇓iP	Pg	23 00 24.3	-2.1
	baz=104						
SFK				⇓iS	Sg	23 00 32.9	-1.6
	baz=104						
SFK	Sufi-Kurgan	0.61	108	⇑P	Pg	23 00 24.3	-2.1
	4.8nm,0.2s						
SFK				⇑S	Sg	23 00 32.7	-1.8
	618nm,0.4s						
BTK	Batken	1.48	265	⇑eP	Pb	23 00 41.0	-1.2
	baz=267						
BTK				⇑iS	Sg	23 01 02.5	+0.3
	baz=267						
ARK	Arkit	1.70	340	⇑eP	Pb	23 00 44.8	-1.1
	baz=340						
ARK				⇑eS	Sb	23 01 07.4	0.0
	baz=340						
TOKL	Toktogul	1.74	3	⇓eP	Pb	23 00 46.0	-0.6
	baz=3.0						
TOKL				⇓iS	Sg	23 01 10.7	+0.3
	baz=3.0						
ARLS	Aral	2.04	35	⇓eP	Pn	23 00 49.8	+0.7
	baz=34						
ARLS				⇓eS	Sb	23 01 16.7	-0.6
	baz=34						
AML	Almayashu	2.06	20	⇑iP	Pb	23 00 51.0	-1.2
	baz=19						
AML				⇑iS	Sb	23 01 18.9	+1.0
	baz=19						
MNAS	Manas	2.29	356	⇓eP	Pb	23 00 54.2	-1.8
	baz=355						
MNAS				⇓iS	Sb	23 01 24.9	+0.5
	baz=355						
MNAS	Manas	2.29	356	⇓Pn	Pb	23 00 54.2	-1.8
	30nm,0.6s						
MNAS				⇑Lg	Lg	23 01 26.5	
	127nm,0.6s						
UCH	Uchtor	2.42	33	⇑iP	Pb	23 00 56.2	-2.3
	baz=32						
UCH				⇑iS	Sb	23 01 28.3	-0.3
	baz=32						
EKS2	Erkin-Say	2.58	17	⇑iP	Pb	23 00 58.6	-2.3
	baz=17						
EKS2				⇑iS	Sb	23 01 31.5	-1.2
	baz=17						
KZA	Kyzart	2.66	44	⇑iP	Pn	23 00 59.4	+1.5
	baz=44						
KZA				⇑iS	Sb	23 01 33.5	-1.9
	baz=44						
NRN	Naryn	2.76	62	⇓eP	Pn	23 00 59.5	+0.4
	baz=62						
NRN				⇓eS	Sn	23 01 34.6	+1.9
	baz=62						
AAK	Ala-Archa	2.76	28	Pn	Pb	23 01 01.8	-2.2
	18nm,0.3s,baz=175,slow=6.1,SNR=158						
AAK				Pg	Pg	23 01 04.1	-3.3
	18nm,0.3s,baz=193,slow=9.8,SNR=156						
AAK				Lg	Lg	23 01 37.0	
	52nm,0.3s,baz=27,slow=19,SNR=40						
AAK	Ala-Archa	2.76	28	⇓iP	Pn	23 01 00.8	+1.8
	baz=27						
AAK				⇓iS	Sb	23 01 37.0	-1.0
	baz=27						
IUG	Iuzhnay	2.82	314	eP	Pn	23 00 52.0	-7.8
	3.1nm,0.2s						
IUG				eS	Sn	23 01 17.8	-16
	59nm,0.5s						
KBK	Karagaybulak	2.96	33	⇓iP	Pn	23 01 03.2	+1.5
	baz=33						
KBK				⇓iS	Sb	23 01 42.3	-1.4
	baz=33						
CHMS	Chumysh	3.17	28	⇑iP	Pn	23 01 07.0	+2.5
	baz=27						
CHMS				⇑iS	Sb	23 01 47.1	-2.6
	baz=27						
BOOM	Boomskoye usch	3.32	45	⇑iP	Pn	23 01 08.4	+1.8
	baz=45						
BOOM				⇑eS	Sn	23 01 48.2	+2.0
	baz=45						
KK31	Karatay Array	3.35	331	⇑Pn	Pn	23 01 07.3	+0.4
	1.3nm,0.3s,baz=141,slow=12,SNR=181						
KK31				⇑Pg	Pb	23 01 14.7	+0.8
	3.0nm,0.2s,baz=146,slow=16,SNR=31						
KK31				⇓Lg	Lg	23 02 00.2	
	9.0nm,0.3s,baz=128,slow=31,SNR=4.9						
KST	Kastek	3.73	39	eP	Pb	23 01 20.3	-0.2
	5.4nm,0.4s						
KST				eS	Sb	23 02 05.3	-0.4
	58nm,0.5s						
DGS	Degeres	3.79	36	eP	Pb	23 01 22.3	+0.7
	8.6nm,0.5s						
DGS				eS	Sb	23 02 09.7	+2.1
	159nm,0.7s						
IZV	Izvestkoviy	4.05	44	eP	Pb	23 01 27.7	+1.6
	6.7nm,0.3s						
IZV				eS	Sb	23 02 19.1	+3.9
	155nm,0.7s						
MDOK	Medeo	4.37	46	eP	Pg	23 01 34.6	-3.7
	12nm,0.4s						
MDOK				eS	Sb	23 02 29.0	+4.6
	27nm,0.8s						
AAA	Alma-Ata	4.39	44	eP	Pb	23 01 34.1	+2.3
	50nm,0.2s						
AAA				⇑iS	Sb	23 02 30.1	+5.3
	138nm,0.3s						
KOTS	Kotyrbulak	4.46	46	eP	Pb	23 01 33.7	+0.7
KOTS				eS	Sb	23 02 29.4	+2.6
ANVS	Anan'yevo	4.51	54	⇑eP	Pn	23 01 24.1	+1.1
	baz=53						
ANVS				⇑eS	Sn	23 02 15.5	-0.1
	baz=53						
KUU	Kurty	4.56	35	eP	Pb	23 01 35.5	+1.0
	16nm,0.4s						
KUU				eS	Sb	23 02 32.1	+2.6
	39nm,0.5s						
KTBS	Karatobe	4.57	39	eP	Pb	23 01 34.5	-0.3
KTBS				eS	Sb	23 02 30.7	+0.7
CHKK	Chushkaly	4.84	39	eP	Pb	23 01 40.0	+0.6
	6.7nm,0.5s						
CHKK				eS	Sb	23 02 38.7	+0.9
	32nm,0.8s						
SATY	Saty	5.11	54	eP	Pg	23 01 51.0	-1.4
	26nm,1.0s						
SATY				eS	Sg	23 02 57.7	-0.9
	50nm,1.3s						
ZHN	Zhinishke	5.19	53	eP	Pg	23 01 51.7	-2.1
	9.5nm,0.5s						
ZHN				eS	Sg	23 02 58.1	-3.0
	33nm,0.3s						
KURS	Kuram	5.21	49	⇓iP	Pg	23 01 49.9	-4.4
	8.1nm,0.9s						
KURS				⇑iS	Sg	23 02 57.6	-4.2
	16nm,1.0s						
ARXS	Arharly	5.50	42	eP	Pb	23 01 52.9	+2.2
	4.1nm,0.8s						
ARXS				eS	Sb	23 03 02.5	+5.7
	82nm,0.6s						
MNBS	Baschi	5.72	46	eP	Pb	23 01 58.3	+3.9
	1.9nm,0.7s						
MNBS				eS	Sg	23 03 11.5	-6.5
	6.8nm,0.8s						
PDGK	Podgornoye	5.93	56	⇓Pn	Pn	23 01 43.5	+1.2
	2.7nm,0.6s						
PDGK				⇓Pg	Pb	23 02 00.4	+2.5
	8.8nm,0.8s						
PDGK				⇓Lg	Lg	23 03 20.7	
	29nm,0.9s						
KTMS	Ketmen	6.54	58	eP	Pb	23 02 12.3	+3.9
	1.4nm,0.2s						
KTMS				eS	Sb	23 03 35.5	+8.8
	13nm,0.7s						
DJR	Jarkent	6.66	49	eP	Pg	23 02 17.4	-4.6
	8.6nm,0.7s						
DJR				eS	Sg	23 03 43.8	-4.3
	18nm,1.2s						
KAPS	Kapalarasan	7.03	42	eP	Pb	23 02 21.9	+5.2
	2.0nm,0.8s						
KAPS				eS	Sg	23 03 52.2	-8.0
	13nm,0.9s						
OTUK	Ortayu	8.05	358	⇑Pn	Pn	23 02 11.4	0.0
	3.1nm,1.0s						
OTUK				⇓Pg	Pb	23 02 39.8	+5.8
	2.5nm,0.9s						
OTUK				⇑Lg	Lg	23 04 28.9	
	24nm,0.8s						
MK31	Makanchi Array	9.56	43	Pn	Pn	23 02 31.3	-0.9
	0.7nm,0.6s,baz=86,slow=9.0,SNR=9.8						
MK31				⇑Lg	Lg	23 05 16.6	
	2.2nm,0.6s						
KURBB	Kurchatov Arra	11.18	19	Lg	Lg	23 06 02.2	
	0.1nm,0.3s,baz=203,slow=29,SNR=5.7						
KURBB	Kurchatov Arra	11.18	19	⇑Sn	Sn	23 05 01.1	+1.9
	3.6nm,0.8s						
KURBB				⇑Lg	Lg	23 06 10.1	
	21nm,0.8s						
GEYT	Alibeck	11.60	263	Pn	Pn	23 02 58.9	-1.2
	baz=50,slow=12,SNR=2.6						
AB31	Akbulak array	12.82	319	⇑Pn	Pn	23 03 16.8	+0.1
	0.2nm,0.3s,baz=157,slow=6.5,SNR=13						
AB31				⇑Sn	Sn	23 05 40.4	+1.1
	0.4nm,0.3s						
BVA0	Borovoye Array	12.93	354	Pn	Pn	23 03 18.0	-0.2
	3.1nm,1.2s,baz=144,slow=8.5,SNR=8.8						
BVA0				⇓Lg	Lg	23 07 03.8	
	5.4nm,0.9s,baz=163,slow=29,SNR=4.1						
BVAR	Borovoye Array	12.93	354	Lg	Lg	23 06 58.8	
	0.2nm,0.3s,baz=148,slow=25,SNR=3.7						
ZALV	Zalesovo Beam	15.99	27	Pn	Pn	23 03 58.3	-1.0
	0.2nm,0.3s,baz=218,slow=12,SNR=4.5						
KVAR	Kislovodsk Arr	22.55	289	P	P	23 05 17.3	+2.5
	2.3nm,0.6s,baz=143,slow=15,SNR=3.2						
FINES	FINESS Array B	35.27	323	P	P	23 07 09.8	+0.8
	1.2nm,0.6s,baz=103,slow=8.2,SNR=6.2						
NB2	NORSAR Subarra	42.32	321	P	P	23 08 10.4	+2.2
	comp=Z,0.9nm,0.6s,baz=94,slow=7.9						
NOA	NORSAR Array B	42.32	321	P	P	23 08 07.9	-0.3
	comp=Z,0.9nm,0.6s,baz=92,slow=8.2,SNR=4.1						
TORD	Torodi Ar. Bea	67.19	268	P	P	23 11 08.3	-0.8
	comp=Z,0.4nm,0.7s,baz=40,slow=5.5,SNR=4.5						
YKA	Yellowknife Ar	77.48	3	P	P	23 12 09.4	-0.3
	comp=Z,0.2nm,0.5s,baz=349,slow=5.9,SNR=4.9						

*IDC **05** 23:02:08.9±1.6, 36°.07N×29°.42E, h0^{km}, mb3.2/2, mb1 3.2/3, mb1mx3.0/43, mbtmp3.2/3, ML3.0/1, Error ellipse: s-maj=92.2km s-min=21.4km az=139.0*

*ATH **05** 23:02:09.3, 36°.71N×28°.86E, h13^{km}±1^{km}, ML3.0/4, Error ellipse: s-maj=1.6km s-min=0.7km az=197.0*

*THE **05** 23:02:09.0, 36°.87N×29°.05E, h4^{km}±2^{km}, ML3.1/4, Error ellipse: s-maj=3.4km s-min=0.7km az=53.0*

*ISK **05** 23:02:09.8, 36°.62N×28°.80E, h6^{km}, MD3.3, ML3.3*

*DDA **05** 23:02:10.1, 36°.63N×28°.76E, h22^{km}, Ml3.4*

*CSEM **05** 23:02:10.7±0.1, 36°.64N×28°.82E, h2^{km}, ML3.1, Error ellipse: s-maj=3.4km s-min=2.3km az=14.0*

*ISCJB **05** 23:02:10.4±0.5, 36°.64N±0°.02×28°.84E±0°.02, h5^{km}±4^{km}, mb3.2/2, Error ellipse: s-maj=3.6km s-min=2.6km az=11.5*

*NIC **05** 23:02:12.8±0.2, 35°.91N×28°.55E, h16^{km}, ML3.5*

ISC 05 23:02:10.5±1.1, **36°.62N**±0°.02×**28°.80E**±0°.02, **h4**^{km}±8^{km}, **n161, σ1^{s}00**/197, **3C-2D, Dodecanese Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FETY	Fethiye	0.23	85	ePG	Pg	23 02 14.1	-0.8
FETY				eSG	Sg	23 02 18.6	+0.7
FETY	Fethiye	0.23	85	P	Pg	23 02 14.1	-0.8
FETY				S	Sg	23 02 17.9	-0.1
FETY	Fethiye	0.23	85	P	Pg	23 02 14.1	-0.8
FETY				S	Sg	23 02 17.9	-0.1
FETY				eSg	Sg	23 02 18.6	+0.7
TURN	Turunc	0.30	328	iP	Pb	23 02 18.9	+0.4
TURN				iS	Sb	23 02 25.8	+2.0
TURN	Turunc	0.30	328	P	Pb	23 02 18.9	+0.4
YER	Yerkesik	0.66	322	ePG	Pg	23 02 22.9	-0.3
YER				eSG	Sg	23 02 32.6	+0.7
YER	Yerkesik	0.66	322	P	Pg	23 02 22.2	-1.0
YER				S	Sg	23 02 32.5	+0.7
YER	Yerkesik	0.66	322	P	Pg	23 02 22.2	-1.0
YER	Yerkesik	0.66	322	ePg	Pg	23 02 22.9	-0.3
YER				S	Sg	23 02 32.5	+0.7
AKAS	Kas	0.75	120	iP	Pg	23 02 24.9	0.0
AKAS				iS	Sb	23 02 37.0	0.0
AKAS	Kas	0.75	120	P	Pg	23 02 25.0	0.0
AKAS				S	Sb	23 02 37.0	0.0
KSL	Kastellorizon	0.79	126	P	Pg	23 02 24.8	-0.7
KSL				S	Sb	23 02 38.3	+0.6
KSL	Kastellorizon	0.79	126	P	Pg	23 02 25.1	-0.5
KSL				S	Sg	23 02 35.8	+0.1
KSL				AML	AML	23 02 44.2	
	comp=E,901µm,0.3s						
KSL				AML	AML	23 02 44.8	
	comp=N,994µm,0.6s						
GOLH	Golhisar	0.87	44	iP	Pg	23 02 26.4	-0.8
GOLH	Golhisar	0.87	44	P	Pg	23 02 26.4	-0.8
DENT	Denizli	1.15	9	ePN	Pg	23 02 32.3	-0.3
DENT	Denizli	1.15	9	ePn	Pg	23 02 32.3	-0.3
BDRM	Kayabasi	1.18	293	iP	Pg	23 02 32.9	-0.1
BDRM				iS	Sn	23 02 49.9	-0.4
BDRM	Kayabasi	1.18	293	P	Pg	23 02 32.9	-0.1
BDRM				S	Sn	23 02 49.9	-0.4
BODT	Bodrum	1.27	291	ePN	Pg	23 02 35.0	+0.1
BODT	Bodrum	1.27	291	P	Pg	23 02 33.3	-1.6
BODT				S	Sn	23 02 53.4	+0.6
BODT	Bodrum	1.27	291	P	Pg	23 02 33.3	-1.6
BODT	Bodrum	1.27	291	ePn	Pg	23 02 35.0	+0.1
BODT				S	Sn	23 02 53.4	+0.6
AYDN	Tasoluk	1.28	325	iP	Pg	23 02 34.2	-0.8
AYDN	Tasoluk	1.28	325	P	Pg	23 02 34.2	-0.8
KORT	Korkueli	1.30	72	iP	Pn	23 02 35.8	+0.2
KORT				iS	Sn	23 02 57.8	+4.2
KORT	Korkueli	1.30	72	P	Pn	23 02 35.8	+0.2
NIS1	Nisyros Isl.	1.30	270	ePN	Pg	23 02 35.5	+0.1
NIS1	Nisyros Isl.	1.30	270	P	Pg	23 02 35.0	-0.5
NIS1				S	Sn	23 02 56.2	+2.7
NIS1	Nisyros Isl.	1.30	270	P	Pg	23 02 35.0	-0.5
NIS1	Nisyros Isl.	1.30	270	ePn	Pg	23 02 35.6	+0.1
NIS1				S	Sn	23 02 53.5	0.0
NIS1	Nisyros Isl.	1.30	270	P	Pg	23 02 34.9	-0.6
NIS1				S	Sn	23 02 53.5	0.0
NIS1				AML	AML	23 03 00.8	
	comp=N,2254µm,0.4s						
NIS1				AML	AML	23 03 02.9	
	comp=E,3264µm,0.4s						
UZP	Denizli	1.44	12	iP	Pn	23 02 37.5	-0.1
UZP				iS	Sn	23 02 59.0	+1.9
GCAM	G?zelcaml?	1.65	311	iP	Pn	23 02 40.3	0.0
GCAM				iS	Sg	23 03 04.1	+0.5
GCAM	G?zelcaml?	1.65	311	P	Pn	23 02 40.3	0.0
GCAM				S	Sg	23 03 04.1	+0.5
BCK	Bucak	1.66	59	ePN	Pn	23 02 40.1	-0.4
BCK	Bucak	1.66	59	ePn	Pn	23 02 40.1	-0.4
KARP	Karpathos	1.70	232	P	Pg	23 02 43.0	-0.1
KARP				S	Sg	23 03 07.3	+2.1
KARP	Karpathos	1.70	232	P	Pb	23 02 42.7	+0.3
KARP				S	Sg	23 03 06.2	+1.0
KARP	Karpathos	1.70	232	P	Pb	23 02 42.7	+0.3
KARP				S	Sg	23 03 06.2	+1.0
KHL	Karahalli	1.80	18	ePN	Pn	23 02 42.2	-0.2
KHL	Karahalli	1.80	18	ePn	Pn	23 02 42.2	-0.2
KHAL	Karahalli	1.84	17	iP	Pn	23 02 42.7	-0.3
KHAL				iS	Sn	23 03 06.8	+0.1
KHAL	Karahalli	1.84	17	P	Pn	23 02 42.7	-0.3
KHAL				S	Sn	23 03 06.8	+0.1
SMG	Samos	1.91	305	P	Pn	23 02 42.8	-1.1
SMG				S	Sn	23 03 06.0	-2.4
SMG	Samos	1.91	305	P	Pn	23 02 42.8	-1.1
SMG				S	Sn	23 03 08.7	+0.3
SMG	Samos	1.91	305	P	Pn	23 02 42.8	-1.1
SMG				S	Sn	23 03 08.7	+0.3
SMG				AML	AML	23 03 11.7	
	comp=N,608µm,0.4s						
SMG				AML	AML	23 03 12.8	
	comp=E,477µm,0.6s						
BAGO	Egridir - ISPA	2.10	49	iP	Pn	23 02 47.1	+0.5
IZM	Izmir	2.16	326	ePN	Pn	23 02 47.2	-0.1
IZM	Izmir	2.16	326	ePn	Pn	23 02 47.2	-0.1
BLCB	Balcova	2.25	322	ePN	Pn	23 02 48.0	-0.5
BLCB	Balcova	2.25	322	ePn	Pn	23 02 48.0	-0.6
SHUT	Suhut-Afyon	2.38	35	ePN	Pn	23 02 50.8	+0.3
SHUT	Suhut-Afyon	2.38	35	ePn	Pn	23 02 50.8	+0.3
AKHS	Akhisar	2.39	341	iP	Pn	23 02 49.8	-0.7
AKHS	Akhisar	2.39	341	P	Pn	23 02 49.8	-0.7
AKS	Akhisar	2.39	341	ePN	Pn	23 02 50.4	-0.1
AKS	Akhisar	2.39	341	ePn	Pn	23 02 50.4	-0.1
DEMI	Demirci	2.42	358	iP	Pn	23 02 50.8	-0.2
DEMI	Demirci	2.42	358	P	Pn	23 02 50.8	-0.2
ZEY	˜zmir	2.44	312	iP	Pn	23 02 51.9	+0.7
GDZ	Gediz	2.53	12	iP	Pn	23 02 52.3	-0.2
GDZ	Gediz	2.53	12	P	Pn	23 02 52.3	-0.2
ZKR	Zakros	2.58	235	P	Pn	23 02 54.6	+1.5
ZKR				S	Sb	23 03 29.2	-0.2
ZKR	Zakros	2.58	235	P	Pn	23 02 54.6	+1.5
ZKR				S	Sb	23 03 28.1	-1.2
ZKR	Zakros	2.58	235	P	Pn	23 02 54.9	+1.9
ZKR				S	Sb	23 03 28.1	-1.2
ZKR				AML	AML	23 03 39.5	
	comp=N,256µm,1.1s						
ZKR				AML	AML	23 03 39.9	
	comp=E,221µm,0.6s						
APE	Apeiranthos	2.66	281	ePN	Pn	23 02 54.6	+0.3
APE	Apeiranthos	2.66	281	P	Pn	23 02 54.4	+0.2
APE	Apeiranthos	2.66	281	ePn	Pn	23 02 54.6	+0.4
APE				S	Sn	23 03 28.3	+1.3
APE	Apeiranthos	2.66	281	P	Pn	23 02 54.0	-0.2
APE				S	Sn	23 03 28.3	+1.3
THR6	Thira Island,	2.75	266	P	Pn	23 02 56.0	+0.5
THR6	Thira Island,	2.75	266	P	Pn	23 02 56.0	+0.5
CHOS	Chios island	2.81	310	ePN	Pn	23 02 56.3	0.0
CHOS	Chios island	2.81	310	ePn	Pn	23 02 56.3	0.0
CHOS	Chios island	2.81	310	P	Pn	23 02 57.2	+0.9
CHOS	Chios island	2.81	310	P	Pn	23 02 57.1	+0.9
TVSB	Tavsanli	2.88	10	ePN	Pn	23 02 57.3	0.0
TVSB	Tavsanli	2.88	10	ePn	Pn	23 02 57.3	0.0
NPS	Neapolis	2.92	243	P	Pn	23 02 58.5	+0.8
NPS	Neapolis	2.92	243	P	Pn	23 02 57.9	+0.2
NPS	Neapolis	2.92	243	P	Pn	23 02 57.9	+0.2
DST	Dursunbey	2.99	357	ePN	Pn	23 02 58.8	+0.1
DST	Dursunbey	2.99	357	ePn	Pn	23 02 58.8	+0.1
DURS	Dursunbey	2.99	355	iP	Pn	23 02 58.8	0.0
DURS	Dursunbey	2.99	355	P	Pn	23 02 58.8	0.0
LAST	Lasithi	3.06	243	P	Pn	23 03 00.6	+0.8
LAST				S	Sb	23 03 40.6	-2.8
LAST	Lasithi	3.06	243	P	Pn	23 03 00.3	+0.5
LAST	Lasithi	3.06	243	P	Pn	23 03 00.3	+0.5
BALB	Balikesir	3.10	347	ePN	Pn	23 03 00.5	+0.2
BALB	Balikesir	3.10	347	ePn	Pn	23 03 00.5	+0.2
KONT	Konya--Tatoy	3.13	64	ePN	Pn	23 03 01.6	+0.8
KONT	Konya--Tatoy	3.13	64	ePn	Pn	23 03 01.6	+0.8
BALY	Balya	3.25	344	iP	Pn	23 03 02.7	+0.3
BALY	Balya	3.25	344	P	Pn	23 03 02.7	+0.3
AKMC	Akamas	3.28	118	P	Pn	23 03 02.0	-0.7
	baz=287						
AKMC	Akamas	3.28	118	P	Pn	23 03 02.0	-0.7
PRK	Paraskevi	3.30	323	P	Pn	23 03 01.8	-1.2
PRK	Paraskevi	3.30	323	P	Pn	23 03 01.8	-1.2
KIZT	Kizilcal	3.33	46	ePN	Pn	23 03 04.5	+1.0
KIZT	Kizilcal	3.33	46	ePn	Pn	23 03 04.5	+1.0
PPCY	Paphos	3.36	120	P	Pn	23 03 03.1	-0.7
	baz=289						
PPCY	Paphos	3.36	120	P	Pn	23 03 03.1	-0.7
ALFC	Alefka	3.41	114	P	Pn	23 03 04.5	-0.1
	baz=283						
ALFC				S	Sn	23 03 45.2	-0.3
ALFC	Alefka	3.41	114	P	Pn	23 03 04.5	-0.1
ALFC				S	Sn	23 03 45.2	-0.3
IDI	Anoyia	3.44	248	P	Pn	23 03 05.1	+0.2
IDI	Anoyia	3.44	248	P	Pn	23 03 05.1	+0.2
IDI	Anoyia	3.44	248	P	Pn	23 03 05.3	+0.3
SVRH	Sivrihisar-ESK	3.55	36	ePN	Pn	23 03 07.2	+0.6
SVRH	Sivrihisar-ESK	3.55	36	ePn	Pn	23 03 07.2	+0.6
SIVA	Sivas	3.61	245	P	Pn	23 03 09.4	+2.1
SIVA	Sivas	3.61	245	P	Pn	23 03 09.4	+2.1
SIVA	Sivas	3.61	245	P	Pn	23 03 10.1	+2.8
LEF	Lefka	3.64	113	ePN	Pn	23 03 07.0	-0.7
LEF	Lefka	3.64	113	ePn	Pn	23 03 07.0	-0.7
CHBY	Cihanbeyli	3.80	58	ePN	Pn	23 03 10.7	+0.8
CHBY	Cihanbeyli	3.80	58	ePn	Pn	23 03 10.7	+0.8
SZAC	Souni	3.81	118	P	Pn	23 03 09.7	-0.3
	baz=289						
SZAC	Souni	3.81	118	P	Pn	23 03 09.7	-0.3
MAMC	Mammari	3.87	111	P	Pn	23 03 11.9	+1.1
	baz=282						
MAMC	Mammari	3.87	111	P	Pn	23 03 11.9	+1.1
VAM	Vamos	3.92	253	P	Pn	23 03 12.8	+1.3
VAM	Vamos	3.92	253	P	Pn	23 03 12.8	+1.3
IKL	Isikli	3.96	94	ePN	Pn	23 03 12.9	+0.9
IKL	Isikli	3.96	94	ePn	Pn	23 03 12.9	+0.9
CSS	Mathiatis	4.04	113	ePN	Pn	23 03 13.1	0.0
CSS	Mathiatis	4.04	113	P	Pn	23 03 13.5	+0.4
	baz=284						
CSS	Mathiatis	4.04	113	ePn	Pn	23 03 13.1	0.0
CSS	Mathiatis	4.04	113	P	Pn	23 03 13.5	+0.4
GULT	Gulveren	4.04	19	ePN	Pn	23 03 14.1	+0.8
GULT	Gulveren	4.04	19	ePn	Pn	23 03 14.1	+0.8
IMMV	Iera Moni Meta	4.07	255	P	Pn	23 03 15.3	+1.7
IMMV	Iera Moni Meta	4.07	255	P	Pn	23 03 15.2	+1.7
IMMV	Iera Moni Meta	4.07	255	P	Pn	23 03 15.2	+1.7
YESY	Yesilyurt	4.12	72	ePN	Pn	23 03 15.3	+1.0
YESY	Yesilyurt	4.12	72	ePn	Pn	23 03 15.3	+1.0
ATHU	Athens Univers	4.22	290	P	Pn	23 03 15.7	+0.1
ATHU	Athens Univers	4.22	290	P	Pn	23 03 15.7	+0.1
GADA	Gvkgeada	4.23	328	ePN	Pn	23 03 16.4	+0.6
GADA	Gvkgeada	4.23	328	ePn	Pn	23 03 16.4	+0.6
AFSR	Af¯ar-Bala (A	4.40	49	ePN	Pn	23 03 19.1	+0.9
AFSR	Af¯ar-Bala (A	4.40	49	ePn	Pn	23 03 19.1	+0.9
ANKY	Antikythira Is	4.51	262	P	Pn	23 03 21.5	+1.9
ANKY	Antikythira Is	4.51	262	P	Pn	23 03 21.5	+1.9
ENEZ	Enez	4.61	334	ePN	Pn	23 03 22.1	+1.2
ENEZ	Enez	4.61	334	ePn	Pn	23 03 22.1	+1.2
ALN	Alexandroupoli	4.79	334	ePN	Pn	23 03 25.1	+1.7
ALN	Alexandroupoli	4.79	334	ePn	Pn	23 03 25.1	+1.7
BRTR	Keskin Array B	4.92	49	Pn	Pn	23 03 26.1	+0.7
	comp=E,0.6nm,0.3s,baz=225,slow=13,SNR=15						
BRTR				Sn	Sn	23 04 24.4	+1.6
	comp=E,0.2nm,0.3s,baz=222,slow=25,SNR=3.4						
KARA	Karaisali	5.05	81	ePN	Pn	23 03 28.4	+1.3
KARA	Karaisali	5.05	81	ePn	Pn	23 03 28.4	+1.3
OUR	Ouranopolis	5.30	316	ePN	Pn	23 03 32.0	+1.6
OUR	Ouranopolis	5.30	316	ePn	Pn	23 03 32.0	+1.6
TAHT	Tahtakopru-Hat	5.96	90	ePN	Pn	23 03 41.2	+1.7
TAHT	Tahtakopru-Hat	5.96	90	ePn	Pn	23 03 41.2	+1.7
TIRR	Tirgusor	7.84	358	⇓iP	Pn	23 04 05.4	+0.1
MLR	Muntele Rosu	9.12	347	⇓iP	Pn	23 04 25.6	+2.5
PLOR	Plostina	9.37	351	⇑iP	Pn	23 04 30.1	+3.8
VRI	Vrincioaia	9.37	351	⇑iP	Pn	23 04 20.7	-5.7
BURAR	Bucovina Array	11.31	348	⇑iP	Pn	23 04 45.4	-7.5
TORD	Torodi Ar. Bea	33.71	233	P	P	23 08 52.5	-0.5
	comp=E,0.3nm,0.6s,baz=33,slow=8.9,SNR=7.6						
MKAR	Makanchi Array	40.50	58	P	P	23 09 48.5	-2.0
	comp=E,0.2nm,0.5s,baz=274,slow=9.9,SNR=3.3						

*NIED **05** 23:13:00, 38.°00N×143.°60E, h8km, Mw4.1 Best double couple: $M_0 1.83000\times10^{15}$ NP1:ϕ_s29.00000°, δ26.00000°, λ-82.00000°. NP2:ϕ_s201.00000°, δ64.00000°, λ-94.00000°.*

*IDC **05** 23:13:40.2±0.6, 37.°91N×143.°64E, h0km, mb4.1/19, mb1 4.3/23, mb1mx4.1/40, mbtmp4.1/23, ML3.0/4, MS3.2/15, Ms1 3.2/15, ms1mx3.0/56, Error ellipse: s-maj=17.2km s-min=14.3km az=134.0*

*ISCJB **05** 23:13:41.7±0.5, 37.°99N±0.°05×143.°55E±0.°05, h19km, mb4.2/24, MS3.3/10, Error ellipse: s-maj=7.7km s-min=5.1km az=169.8*

*JMA **05** 23:13:42.4±0.2, 38.°01N×143.°59E, h41km, M4.2*

*NEIC **05** 23:13:45.6±0.4, 37.°98N×143.°55E, h35km, mb4.6/5, Error ellipse: s-maj=9.5km s-min=5.9km az=149.0*

ISC 05 23:13:43.6±0.6**, 38.°02N**±0.°08×**143.°54E**±0.°07**, h19**km**, n62,** $\sigma 0^{s}93$/49**, mb4.2**/24**, MS3.2**/10**, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	Ouri	1.78	285	P	Pn	23 14 12.3	-1.1
OFUJ	Ofunato	1.81	307	P	Pn	23 14 12.6	-1.2
JMK	Ichinoseki	2.05	298	P	Pn	23 14 16.2	-0.8
JMK				S	Sn	23 14 41.0	-1.0
JMM	Marumori	2.18	267	P	Pn	23 14 17.6	-1.2
JFK	Kawauchi	2.21	254	P	Pn	23 14 17.5	-1.9
JOM	Ohasama	2.28	310	P	Pn	23 14 19.6	-0.7
JOM				S	Sn	23 14 47.4	-0.5
JOU	Okura	2.29	280	P	Pn	23 14 20.0	-0.5
JFT	Otama	2.59	260	P	Pn	23 14 24.1	-0.4
JYK	Kaneyama	2.65	291	P	Pn	23 14 25.1	-0.3
JYK				S	Sn	23 14 56.1	-1.0
JAW	Awa shima	3.41	279	P	Pn	23 14 35.8	+0.1
JAG	Ashikaga	3.63	245	S	Sn	23 15 19.7	-1.4
MJAR	Matsushiro Arr	4.50	253	Pn	Pn	23 14 50.9	+0.1
	6.2nm,0.3s,baz=84,slow=14,SNR=38						
MAJO	Matsushiro	4.50	253	ePn	Pn	23 14 51.1	+0.3
USRK	Ussuriysk Ar.	10.68	309	Pn	Pn	23 16 15.1	-0.4
	0.2nm,0.3s,baz=101,slow=15,SNR=5.2						
USRK				LR	LR	23 20 15.6	
	comp=Z,166nm,19.7s,baz=119,slow=37						
JNU	Nakatsue	11.40	248	LR	LR	23 21 02.8	
	comp=Z,141nm,18.3s,baz=256,slow=39						
KSRS	Korea Array	12.38	272	Pn	Pn	23 16 39.7	+0.9
	0.1nm,0.3s,baz=86,slow=13,SNR=13						
KSRS				LR	LR	23 21 27.0	
	comp=Z,77nm,21.0s,baz=78,slow=37						
KSAR	Wonju Array Be	12.41	272	Pn	Pn	23 16 39.7	+0.5
KLR	Kul'dur	14.07	327	Pn	Pn	23 17 00.4	-1.5
	0.2nm,0.3s,baz=129,slow=14,SNR=10						
KLR				LR	LR	23 22 27.3	
	comp=Z,75nm,19.0s,baz=130,slow=37						
PETK	Petropavlovsk-	18.00	28	P	Pn	23 17 52.2	-0.4
	0.1nm,0.3s,baz=195,slow=11,SNR=5.3						
PETK				LR	LR	23 24 44.6	
	comp=Z,21nm,21.9s,baz=189,slow=37						
MA2	Magadan	22.07	10	P	P	23 18 37.4	+0.2
	2.3nm,0.3s,baz=198,slow=20,SNR=3.1						
SEY	Seymchan	25.52	9	P	P	23 19 11.5	+0.8
	3.0nm,0.8s,baz=180,slow=6.6,SNR=14						
H11S1	WAKE ISLAND Hy	28.04	127	T	T	23 48 54.8	
	baz=319,slow=76,SNR=6.7						
H11S3	WAKE ISLAND Hy	28.04	127	T	T	23 48 50.1	
	baz=319,slow=76,SNR=5.5						
H11S2	WAKE ISLAND Hy	28.06	127	T	T	23 48 56.4	
	baz=319,slow=76,SNR=5.0						
SONM	Songino Array	28.67	302	P	P	23 19 40.2	+0.9
	3.0nm,0.7s,baz=90,slow=9.0,SNR=22						
SONM				LR	LR	23 31 13.3	
	comp=Z,49nm,18.8s,baz=56,slow=37						
ENH	Enshi	29.10	265	eP	P	23 19 43.1	0.0
	11nm,0.7s						
ZALV	Zalesovo Beam	42.52	312	P	P	23 21 38.2	+0.7
	1.5nm,0.4s,baz=76,slow=9.1,SNR=5.4						
ZALV				LR	LR	23 40 15.6	
	comp=Z,40nm,18.8s,baz=70,slow=37						
NRIK	Noril'sk	43.10	334	LR	LR	23 40 40.4	
	comp=Z,60nm,19.4s,baz=112,slow=38						
CMAR	Chiang Mai Arr	43.38	256	LR	LR	23 39 23.0	
	comp=Z,14nm,19.1s,baz=80,slow=36						
MKAR	Makanchi Array	45.04	302	P	P	23 21 58.6	+0.6
	2.4nm,0.7s,baz=85,slow=8.0,SNR=16						
MKAR				LR	LR	23 41 23.0	
	comp=Z,31nm,19.6s,baz=7.5,slow=37						
KURK	Kurchatov	46.66	308	eP	P	23 22 11.0	+0.2
	22nm,0.6s						
TAPN	Taplejung	47.56	274	eP	P	23 22 21.5	+3.1
	14nm,1.0s						
ILAR	Eielson Array	47.76	33	P	P	23 22 19.4	+0.3
	3.4nm,0.7s,baz=264,slow=6.7,SNR=37						
ODAN	Odare	48.04	274	eP	P	23 22 23.2	+1.1
	19nm,1.0s						
RAMN	Ramite	48.62	274	eP	P	23 22 27.6	+1.1
	15nm,0.7s						
GUN	Gumba	48.74	276	eP	P	23 22 32.3	+4.7
	30nm,0.9s						
KKN	Kakani	49.27	276	eP	P	23 22 35.8	+4.3
	10.0nm,0.6s						
PKIN	Phulchoki	49.27	276	eP	P	23 22 34.9	+3.3
GKN	Gorkha	49.67	277	eP	P	23 22 39.0	+4.5
	23nm,0.8s						
KOLN	Koldanda	50.59	277	eP	P	23 22 46.2	+4.7
	11nm,0.8s						
TKM2	Tokmak 2	50.65	298	eP	P	23 22 42.2	+0.4
	9.4nm,1.2s						
PYUN	Piuthan	50.92	278	eP	P	23 22 49.6	+5.6
	50nm,1.1s						
AAK	Ala-Archa	51.51	298	LR	LR	23 44 36.5	
	comp=Z,17nm,19.7s,baz=32,slow=36						
INK	Inuvik	52.74	28	P	P	23 22 55.8	-0.9
	0.7nm,0.5s,baz=291,slow=7.8,SNR=5.0						
KKAR	Karatay Array	54.09	300	eP	P	23 23 07.3	+0.2
	0.8nm,0.3s						
ARU	Arti	56.74	319	LR	LR	23 50 11.4	
	comp=Z,54nm,18.6s,baz=100,slow=38						
WRA	Warramunga Arr	58.30	190	P	P	23 23 35.9	-1.3
	6.1nm,0.7s,baz=9.8,slow=7.4,SNR=33						
ABKAR	Akbulak array	58.60	310	eP	P	23 23 38.7	-0.4
	1.8nm,0.5s						
AKTO	Aktyubinsk	59.27	312	LR	LR	23 49 31.1	
	comp=Z,11nm,20.4s,slow=36						
RES	Resolute Bay	61.22	15	P	P	23 23 56.7	0.0
	1.4nm,0.7s,baz=318,slow=4.8,SNR=9.8						
ASAR	Alice Springs	62.02	190	P	P	23 24 01.4	-1.3
	2.0nm,0.7s,baz=14,slow=6.8,SNR=22						
YKA	Yellowknife Ar	62.10	31	P	P	23 24 03.0	+0.2
	0.6nm,0.7s,baz=304,slow=6.8,SNR=16						
YKA	Yellowknife Ar	62.10	31	P	P	23 24 03.0	+0.2
ARCES	ARCESS Array B	63.67	340	P	P	23 24 12.9	-0.2
	2.8nm,1.0s,baz=46,slow=8.7,SNR=4.5						
GEYT	Alibeck	64.83	299	P	P	23 24 22.5	+1.1
	0.6nm,0.4s,baz=91,slow=13,SNR=2.3						
FINES	FINESS Array B	68.72	333	P	P	23 24 44.6	-1.1
	2.0nm,0.7s,baz=26,slow=9.1,SNR=6.9						
FINES				LR	LR	23 56 10.7	
	comp=Z,43nm,18.9s,baz=24,slow=37						
NVAR	Mina Array Bea	73.05	54	P	P	23 25 12.5	-0.2
	1.1nm,0.8s,baz=270,slow=4.4,SNR=4.4						
NOA	NORSAR Array B	73.92	338	P	P	23 25 17.8	+0.6
	1.1nm,0.7s,baz=16,slow=1.7,SNR=3.3						
NOA				LR	LR	00 03 35.4	
	comp=Z,14nm,19.6s,baz=45,slow=40						
AKASG	Malin Array Be	74.54	323	P	P	23 25 21.2	+0.3
	0.5nm,0.5s,baz=46,slow=5.4,SNR=3.8						
PDAR	Pinedale Array	75.77	47	P	P	23 25 28.6	+0.1
	0.9nm,0.6s,baz=256,slow=2.2,SNR=11						
TXAR	Lajitas Array	88.18	54	P	P	23 26 33.6	-0.1
	0.6nm,0.6s,baz=289,slow=3.9,SNR=8.2						
LPAZ	La Paz	144.74	61	PKP	PKPbc	23 33 19.6	+0.3
	1.2nm,0.6s,baz=280,slow=5.5,SNR=4.0						

*NIED **05** 23:23:00, 38.°00N×144.°10E, h11km, Mw3.7 Best double couple: $M_0 3.83000\times10^{14}$ NP1:ϕ_s5.00000°, δ25.00000°, λ-92.00000°. NP2:ϕ_s187.00000°, δ65.00000°, λ-89.00000°.*

*IDC **05** 23:23:39.2±0.8, 37.°68N×144.°51E, h0km, mb3.7/8, mb1 4.0/10, mb1mx3.7/45, mbtmp3.7/10, ML3.7/2, MS3.0/2, Ms1 3.0/2, ms1mx2.3/53, Error ellipse: s-maj=24.9km s-min=18.0km az=132.0*

*ISCJB **05** 23:23:43.1±0.7, 38.°07N±0.°05×144.°18E±0.°05, h33km, mb3.7/8, MS3.5/1, Error ellipse: s-maj=6.5km s-min=5.6km az=168.8*

*JMA **05** 23:23:43.4±0.2, 38.°04N×144.°11E, h34km, M4.0*

ISC 05 23:23:44.5±0.9**, 38.°00N**±0.°06×**144.°21E**±0.°07**, h35**km**, n29,** $\sigma 1^{s}59$/35**, mb3.7**/8**, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	Ofunato	2.26	299	P	Pn	23 24 18.7	-0.6
JIO	Ouri	2.30	282	P	Pn	23 24 18.8	-1.0
JIO				eS	Sn	23 24 44.7	-2.1
JMK	Ichinoseki	2.53	293	P	Pn	23 24 22.7	-0.3
JMK				eS	Sn	23 24 52.1	-0.5
JTH	Tanohata	2.66	317	P	Pn	23 24 24.7	-0.1
JTH				eS	Sn	23 24 54.5	-1.3
JOM	Ohasama	2.71	304	P	Pn	23 24 25.2	-0.3
JOM				eS	Sn	23 24 56.8	-0.3
JOU	Okura	2.82	278	P	Pn	23 24 26.8	-0.2
JOU				S	Sn	23 24 59.1	-0.6
JRG	Rokugo	3.12	298	P	Pn	23 24 31.4	+0.2
JRG				S	Sn	23 25 05.2	-2.0
JYK	Kaneyama	3.16	288	P	Pn	23 24 31.6	0.0
JYK				eS	Sn	23 25 08.5	+0.4
JANG	Nango	3.16	319	S	Sn	23 25 07.0	-1.1
JTM	Tenmabayashi	3.69	320	P	Pn	23 24 38.8	-0.2
JTM				eS	Sn	23 25 19.3	-2.0
JNBK	Urakawa-nobuka	4.42	346	P	Pn	23 24 48.2	-0.7
JNBK				eS	Sn	23 25 37.3	-1.8
JCH	Churui	4.65	352	P	Pn	23 24 51.1	-1.1
JCH				eS	Sn	23 25 41.6	-3.3
JRY	Ryogami san	4.69	247	P	Pn	23 24 51.0	-1.7
JRY				eS	Sn	23 25 41.0	-4.9
MJAR	Matsushiro Arr	5.00	255	Pn	Pn	23 24 57.1	+0.1
	8.1nm,0.3s,baz=77,slow=15,SNR=50						
MAT	Matsushiro	5.00	255	P	Pn	23 24 57.5	+0.5
MAT				S	Sn	23 25 54.6	+1.0
JNU	Nakatsue	11.89	250	LR	LR	23 31 16.8	
	comp=Z,28nm,20.3s,baz=304,slow=38						
KSRS	Korea Array	12.91	273	Pn	Pn	23 26 46.5	+1.2
	0.1nm,0.3s,baz=86,slow=14,SNR=5.0						
H11S1	WAKE ISLAND Hy	27.62	128	T	T	23 57 54.6	
	baz=314,slow=76,SNR=5.6						
H11S3	WAKE ISLAND Hy	27.62	128	T	T	23 57 53.1	
	baz=314,slow=76,SNR=4.5						
H11S2	WAKE ISLAND Hy	27.63	128	T	T	23 57 55.3	
	baz=314,slow=76,SNR=6.2						
SONM	Songino Array	29.12	302	P	P	23 29 45.9	+3.9
	0.2nm,0.4s,baz=96,slow=8.9,SNR=3.2						
MKAR	Makanchi Array	45.49	302	P	P	23 32 02.8	+2.5
	0.6nm,0.7s,baz=84,slow=9.3,SNR=8.9						
ILAR	Eielson Array	47.48	33	P	P	23 32 16.2	+0.6
	1.4nm,0.8s,baz=265,slow=6.5,SNR=14						
INK	Inuvik	52.51	28	P	P	23 32 55.0	+1.4
	0.9nm,0.5s,baz=324,slow=6.6,SNR=7.6						
WRA	Warramunga Arr	58.38	191	P	P	23 33 34.0	-2.3
	0.9nm,0.6s,baz=11,slow=7.1,SNR=3.2						
YKA	Yellowknife Ar	61.84	31	P	P	23 34 00.3	+0.7
	0.6nm,0.7s,baz=301,slow=6.5,SNR=13						
ASAR	Alice Springs	62.10	191	P	P	23 34 00.4	-1.4
	0.3nm,0.7s,baz=6.4,slow=6.4,SNR=3.2						
PDAR	Pinedale Array	75.39	47	P	P	23 35 25.7	+0.9
	0.2nm,0.6s,baz=318,slow=2.4,SNR=3.7						
MLR	Muntele Rosu	80.06	321	LR	LR	00 13 00.7	
	comp=Z,26nm,21.6s,baz=118,slow=37						

*IDC **05** 23:30:19.4±1.8, 13.°45N×89.°78W, h0km, mb4.0/8, mb1 4.2/11, mb1mx3.9/37, mbtmp4.0/11, ML3.2/3, MS3.4/4, Ms1 3.4/4, ms1mx2.8/36, Error ellipse: s-maj=46.2km s-min=20.8km az=34.0*

*NEIC **05** 23:30:24.2±1.2, 12.°86N×90.°15W, h63km±11km, mb4.5/25, Error ellipse: s-maj=23.0km s-min=8.3km az=203.0*

ISC 05 23:30:17.3±1.7**, 12.°4N**±0.°2×**90.°07W**±0.°10**, h35**km**, n201,** $\sigma 1^{s}47$/191**, mb4.5**/31**, MS3.6**/4**, Off coast of central America**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SBLS	San Blas	1.47	17	eP	Pn	23 30 42.1	+0.6
MONT	Ecomontaæa	1.48	16	eP	Pn	23 30 42.3	+0.6
SNJE	San Jose	1.50	18	eP	Pn	23 30 42.5	+0.6
BOQS	Boqueron	1.51	31	eP	Pn	23 30 44.8	+2.8
RTR	El Retiro	1.52	16	eP	Pn	23 30 42.8	+0.7
LFRS	El Faro	1.54	40	eP	Pn	23 30 44.6	+2.2
LFRS				eS	Sn	23 31 03.9	+2.6
LFU	La Fuente	1.61	35	eP	Pn	23 30 45.4	+2.1
RBDL	Robledal	1.71	13	eP	Pn	23 30 45.5	+0.6
IXG	Ixpaco	1.77	348	eP	Pn	23 30 43.4	-2.2
PACA	Pacayal	1.99	59	eP	Pn	23 30 53.1	+4.5
LCY	Lacayo	2.00	60	eP	Pn	23 30 53.1	+4.5
TGUH	Tegucigalpa,Un	3.17	59	ePn	Pn	23 31 11.6	+6.9
JTS	JuntasAbangare	5.45	112	Pn	Pn	23 31 45.5	+9.3
	2.0nm,0.3s,baz=305,slow=12,SNR=6.6						
JTS				Sn	Sn	23 32 46.7	+9.0

Code	Station Name	Δ°	AZ°	Op	ISC	Time	Res
	1.2nm,0.3s,baz=137,slow=23,SNR=2.5						
JTS	JuntasAbangare	5.45	112	eP	Pn	23 31 45.2	+9.1
	13nm,0.8s						
CMIG	Matias Romero	6.56	315	Pn	Pn	23 31 53.0	+1.6
	0.7nm,0.3s,baz=134,slow=11,SNR=6.5						
CMIG				Sn	Sn	23 32 53.3	-12
	0.4nm,0.3s,baz=129,slow=18,SNR=2.1						
TLIG	Tlapa	9.66	303	ePn	Pn	23 32 35.7	+1.7
MOIG	Morelia	12.88	305	ePn	Pn	23 33 17.0	-1.1
341A	Kurthwood	19.03	352	P	Pn	23 34 38.7	+1.5
	baz=169						
534A	Blanco	19.17	337	P	Pn	23 34 39.2	+0.3
	baz=151						
340A	Bronson	19.22	350	P	Pn	23 34 39.6	+0.1
	baz=167						
339A	Huntington	19.26	348	P	Pn	23 34 39.9	-0.1
	baz=165						
SDV	Santo Domingo	19.43	99	P	Pn	23 34 48.1	+5.8
	0.2nm,0.3s,baz=265,slow=11,SNR=3.1						
245A	Little AP, Sta	19.51	0	P	Pn	23 34 43.6	+0.6
	baz=180						
242A	Grayson	19.63	355	P	Pn	23 34 45.2	+0.7
	baz=173						
NATX	Nacogdoches	19.70	348	P	P	23 34 43.9	+0.3
	baz=165						
VBMS	Vicksburg	19.70	359	eP	P	23 34 37.2	-6.4
	29nm,0.8s						
334A	Lometa	20.26	339	P	P	23 34 49.5	-0.3
	baz=154						
TXAR	Lajitas Array	21.04	325	P	P	23 34 59.9	+1.6
	4.4nm,1.0s,baz=145,slow=11,SNR=15						
LTX	Lajitas	21.04	325	eP	P	23 34 59.9	+1.6
TX31	Lajitas Ar. Si	21.04	325	eP	P	23 35 00.4	+2.1
Y39A	Lockesburg	21.72	351	P	P	23 35 05.7	+0.2
	baz=168						
Y38A	Idabel	21.82	350	P	P	23 35 06.3	-0.2
	baz=166,SNR=6.3						
Y37A	Hugo	22.04	348	P	P	23 35 08.8	-0.1
	baz=164						
MIAR	Mount Ida	22.24	352	P	P	23 35 11.3	+0.2
	baz=170						
MIAR	Mount Ida	22.24	352	eP	P	23 35 12.4	+1.3
	10nm,0.9s						
X39A	Fountain Ranch	22.29	351	P	P	23 35 11.7	+0.2
	baz=168						
Y35A	Marietta	22.30	345	P	P	23 35 11.1	-0.6
	baz=160						
X38A	Whitesboro	22.56	350	P	P	23 35 14.7	+0.2
	baz=166						
X37A	Clayton	22.58	349	P	P	23 35 15.1	+0.5
	baz=165						
X36A	Centrahoma	22.77	347	P	P	23 35 15.6	-1.0
	baz=162,SNR=5.4						
AGP	Aguadilla	22.88	72	eP	P	23 35 21.8	+3.8
	427nm,1.5s						
W39A	Magazine	22.91	352	P	P	23 35 17.4	-0.8
	baz=169						
W37B	Quinton	23.12	349	P	P	23 35 19.4	-1.0
	baz=165						
W36A	Wetumka	23.29	347	P	P	23 35 20.7	-1.2
	baz=163						
V40A	Witts Springs	23.40	354	P	P	23 35 22.1	-1.0
	baz=172						
W35A	Tecumseh	23.45	346	P	P	23 35 21.9	-1.6
	baz=161,SNR=6.1						
V39A	Pettigrew	23.53	353	P	P	23 35 23.2	-1.2
	baz=170						
WMOK	Wichita Mounta	23.57	342	eP	P	23 35 21.0	-3.8
	7.7nm,1.0s						
V38A	Canehill	23.66	351	P	P	23 35 24.8	-0.7
	baz=168						
V37A	Hulbert	23.79	350	P	P	23 35 25.9	-0.9
	baz=166,SNR=8.6						
MNTX	Cornudas Mount	23.80	326	P	P	23 35 27.3	+0.4
	baz=137,SNR=6.7						
MNTX	Cornudas Mount	23.80	326	eP	P	23 35 26.5	-0.5
	6.5nm,1.0s						
TKL	Tuckaleechee C	23.82	13	P	P	23 35 24.9	-2.1
	7.2nm,0.8s,baz=202,slow=5.4,SNR=4.5						
TKL	Tuckaleechee C	23.82	13	eP	P	23 35 20.8	-6.2
	51nm,1.6s						
V36A	Jenks	23.85	348	P	P	23 35 26.6	-0.7
	baz=164						
U40A	Yellville	23.95	354	P	P	23 35 27.9	-0.4
	baz=172						
W32A	Sentinel	24.07	341	P	P	23 35 28.6	-0.9
	baz=156						
V34A	Guthrie	24.25	345	P	P	23 35 30.0	-1.1
	baz=160						
V34A	Guthrie	24.25	345	eP	P	23 35 30.1	-0.9
	21nm,0.9s						
U37A	Salina	24.30	350	P	P	23 35 30.8	-0.7
	baz=167,SNR=5.8						
MSTX	Muleshoe	24.36	334	P	P	23 35 32.7	+0.5
	baz=146						
U36A	Oologah	24.40	349	P	P	23 35 32.0	-0.4
	baz=165						
V33A	Lossen Ranch,	24.44	344	P	P	23 35 33.1	+0.3
	baz=158						
U35A	Pawnee	24.58	347	P	P	23 35 33.2	-0.8
	baz=163						
T39A	Clever	24.67	354	P	P	23 35 35.0	+0.2
	baz=171						
T40A	Mansfield	24.71	355	P	P	23 35 35.4	+0.1
	baz=173						
T38A	Diamond	24.79	352	P	P	23 35 36.5	+0.5
	baz=169						
T37A	Cheneyville 18	24.97	351	P	P	23 35 37.3	-0.2
	baz=168						
T35A	Sooner Cattle	25.06	348	P	P	23 35 38.2	-0.2
	baz=164						
T36A	Boggs Farm, Ca	25.07	349	P	P	23 35 38.3	-0.2
	baz=165,SNR=5.7						
S40A	Lebanon	25.16	355	P	P	23 35 39.1	-0.2
	baz=174						
T34A	McClaskey Farm	25.31	347	P	P	23 35 40.0	-0.6
	baz=162,SNR=9.3						
S39A	Bolivar	25.32	354	P	P	23 35 40.4	-0.4
	baz=172,SNR=6.3						
S38A	Stockton	25.33	353	P	P	23 35 40.7	-0.1
	baz=170						
S37A	Fort Scott	25.58	351	P	P	23 35 42.9	-0.2
	baz=168						
S36A	Lake Cedric, C	25.67	350	P	P	23 35 43.7	-0.2
	baz=166						
S35A	Otter Creek Ra	25.76	349	P	P	23 35 44.5	-0.2
	baz=164						
R40A	Maddies Statio	25.83	356	P	P	23 35 44.8	-0.5
	baz=174						
R38A	Fenwick Farm,	25.88	353	P	P	23 35 45.2	-0.6
	baz=170						
R39A	Chumby, Stover	25.91	355	P	P	23 35 45.7	-0.4
	baz=172,SNR=6.2						
WCI	Wyandotte Cave	25.91	7	eP	P	23 35 45.9	-0.2
	75nm,0.8s						
S34A	Willow Spring	25.94	347	P	P	23 35 46.5	+0.2
	baz=163						
S33A	Kaszmaul Farm,	26.04	346	P	P	23 35 47.6	+0.3
	baz=161						
BNM	Barren Site	26.35	328	eP	P	23 35 51.4	+0.9
LPM	Los Pinos Moun	26.48	328	eP	P	23 35 53.1	+1.6
R34A	Isabella, Hill	26.55	347	P	P	23 35 51.8	-0.1
	baz=163						
Q38A	Cooks Store, C	26.61	354	P	P	23 35 52.1	-0.3
	baz=171,SNR=5.2						
Q39A	Willow Grove F	26.63	355	P	P	23 35 52.0	-0.6
	baz=173						
LAZ	Ladron	26.82	327	eP	P	23 35 51.5	-3.1
BLO	Bloomington	26.82	6	eP	P	23 35 47.9	-6.4
	11nm,0.9s						
P40A	Paris	27.05	357	P	P	23 35 55.5	-0.8
	baz=175						
P38A	Dawn	27.26	354	P	P	23 35 57.7	-0.5
	baz=172						
P37A	Lathrop	27.31	353	P	P	23 35 57.7	-1.1
	baz=170						
P36A	Good Intent, A	27.46	351	P	P	23 35 59.7	-0.3
	baz=168						
P34A	Walnut Farm, R	27.66	349	P	P	23 36 01.8	-0.1
	baz=164						
GRGR	Grenville	27.77	88	eP	P	23 36 16.8	+14
	216nm,1.3s						
N39A	Derby Farms, D	28.42	356	P	P	23 36 07.9	-0.7
	baz=174						
214A	Organ Pipe Nat	28.54	317	P	P	23 36 12.2	+2.4
	baz=125						
W18A	Petrified Fore	28.76	325	eP	P	23 36 11.4	-0.6
	9.8nm,0.8s						
M38A	Pleasantville	29.00	355	P	P	23 36 12.6	-1.2
	baz=173						
X16A	Lo Mia Camp, P	29.26	322	eP	P	23 36 18.1	+1.7
	4.1nm,1.0s						
L38A	Oak Wood Farm,	29.70	356	P	P	23 36 19.1	-0.9
	baz=174						
K37A	Belmond	30.38	355	P	P	23 36 24.1	-1.9
	baz=172						
GLA	Glamis	30.55	316	P	P	23 36 30.2	+2.5
	baz=124						
J37A	Redenius Farm,	30.91	355	P	P	23 36 29.9	-0.8
	baz=173						
BC3	Big Chuckawall	31.33	317	P	P	23 36 37.4	+2.7
	baz=124						
IRM	Iron Mountain	31.43	318	P	P	23 36 39.0	+3.6
	baz=125						
I38A	Scanlan Farm,	31.56	357	P	P	23 36 36.0	-0.3
	baz=175						
I35A	Creekview Farm	31.60	353	P	P	23 36 36.8	+0.1
	baz=170						
I37A	Lemond, Waseca	31.60	355	P	P	23 36 36.7	0.0
	baz=173						
ECSD	EROS Data Cent	31.70	351	P	P	23 36 37.3	-0.3
	baz=167						
ECSD	EROS Data Cent	31.70	351	eP	P	23 36 36.9	-0.7
	6.9nm,0.9s						
O20A	White River Ci	31.91	333	P	P	23 36 42.0	+2.3
	baz=143						
PLM	Palomar	32.12	315	eP	P	23 36 48.1	+6.5
H37A	Dierke Farm, C	32.13	356	P	P	23 36 41.3	-0.1
	baz=174						
GMRC	Granite Mounta	32.15	318	P	P	23 36 44.5	+2.7
	baz=125						
H36A	Jessenland, He	32.20	355	P	P	23 36 42.0	0.0
	baz=172						
H35A	Sunnyside Ranc	32.41	354	P	P	23 36 43.3	-0.6
	baz=170						
YLE	Yale	32.45	24	eP	P	23 36 40.9	-3.3
	442nm,1.8s						
P17A	Butcher Ranch,	32.55	329	eP	P	23 36 47.8	+2.5
	4.6nm,0.7s						
H32A	Carlson Farm,	32.58	350	P	P	23 36 44.5	-0.8
	baz=166,SNR=7.8						
HEC	Hector,Ludlow	32.62	318	P	P	23 36 49.0	+3.1
	baz=124						
H33A	Prehn Over Nor	32.64	351	P	P	23 36 45.7	-0.2
	baz=167						
TMUT	Trail Mountain	32.65	329	eP	P	23 36 46.1	-0.3
	3.8nm,0.8s						
I29A	Vivian Onida	32.69	346	P	P	23 36 46.5	+0.2
	baz=160						
SPMN	Marine on St.	32.76	356	P	P	23 36 45.8	-1.1
	baz=174						
SPMN	Marine on St.	32.76	356	eP	P	23 36 44.4	-2.5
	9.7nm,0.6s						
SUSD	Miller	32.80	348	P	P	23 36 46.8	-0.5
	baz=163						
G34A	Benson	33.04	353	P	P	23 36 49.4	+0.1
	baz=169						
G33A	Ortonville	33.10	352	P	P	23 36 48.8	-1.0
	baz=168						
G32A	Webster	33.32	350	P	P	23 36 51.0	-0.8
	baz=166						
G30A	Faulkton	33.49	348	P	P	23 36 52.8	-0.5
	baz=163						
F35A	Swanville	33.53	354	P	P	23 36 53.6	-0.1
	baz=171						
COWI	Conover	33.57	1	eP	P	23 36 53.6	-0.3
	8.9nm,0.7s						
F33A	5 Mile Ranch,	33.71	352	P	P	23 36 54.2	-1.0
	baz=168						
F31A	Hecla	34.03	350	P	P	23 36 58.3	+0.3
	baz=165						
MPMC	Manual Prospec	34.11	318	P	P	23 37 01.1	+2.1
	baz=124						
E35A	Pequot Lakes	34.21	355	P	P	23 36 59.2	-0.3
	baz=172						
E34A	Wadena	34.24	354	P	P	23 36 59.7	-0.1
	baz=170						
E33A	Westby DABS, E	34.33	353	P	P	23 36 59.3	-1.2
	baz=169						
HWUT	Hardware Ranch	34.60	331	eP	P	23 37 05.2	+2.0
	6.0nm,1.3s						
PD31	Pinedale Array	34.63	334	eP	P	23 37 02.6	-0.9
PDAR	Pinedale Array	34.63	334	P	P	23 37 02.6	-0.9
	0.3nm,0.7s,baz=114,slow=10,SNR=3.1						
D37A	Cotton	34.67	357	P	P	23 37 02.3	-1.2
	baz=175						
D35A	Remer	34.70	355	P	P	23 37 02.0	-1.8
	baz=172						
D36A	Goodland	34.73	356	P	P	23 37 02.3	-1.7
	baz=174						
E30A	Jud	34.77	349	P	P	23 37 02.8	-1.6
	baz=164						
D34A	Park Rapids	34.81	354	P	P	23 37 02.8	-1.9
	baz=170						
D33A	AnnSam, Waubun	34.94	353	P	P	23 37 05.1	-0.7
	baz=169						
F26A	Lodgepole	34.98	345	P	P	23 37 06.1	-0.2
	baz=157						
FIGC	Figueroa Mtn.	35.05	314	eP	P	23 37 06.7	-0.3
FIGC				eScP	ScP	23 43 22.5	+0.9
C36A	Pine Crest Far	35.29	357	P	P	23 37 08.3	-0.6
	baz=175						
C35A	Jirik Farms, M	35.31	355	P	P	23 37 08.1	-0.8
	baz=173,SNR=7.3						
D30A	Buchanan	35.33	350	P	P	23 37 08.2	-0.9
	baz=164						
C34A	RKJ Ranch, Bem	35.34	354	P	P	23 37 08.6	-0.7
	baz=171						
EYMN	Ely	35.42	358	P	P	23 37 09.5	-0.5
	baz=177						
REDW	Red Top Meadow	35.66	334	eP	P	23 37 13.9	+1.5
	9.5nm,1.0s						
SNOW	Snow King Moun	35.70	334	eP	P	23 37 14.4	+1.7
	9.7nm,1.0s						
D28A	Regan	35.76	348	P	P	23 37 13.0	+0.1
	baz=161						
LOHW	Long Hollow	35.76	334	eP	P	23 37 15.0	+1.8
	3.4nm,1.0s						
E25A	Miller Ranch,	35.78	344	P	P	23 37 13.3	+0.2
	baz=156						
C31A	Landman Farms,	35.83	351	P	P	23 37 12.3	-1.1
	baz=166						
C30A	Mose, Pekin	35.86	350	P	P	23 37 13.4	-0.3
	baz=165,SNR=8.4						
B35A	Bob, Littlefor	35.95	356	P	P	23 37 13.7	-0.7
	baz=173						
B33A	Robert and Kas	36.02	354	P	P	23 37 14.2	-0.9
	baz=170						
D26A	Manning	36.02	346	P	P	23 37 14.8	-0.4
	baz=158						
NV01	Mina Array Sit	36.06	321	eP	P	23 37 18.3	+2.5
NVAR	Mina Array Bea	36.06	321	P	P	23 37 18.3	+2.4
	4.5nm,0.8s,baz=136,slow=8.5,SNR=11						
AGMN	Agassiz Nation	36.08	353	P	P	23 37 14.7	-0.9
	baz=170,SNR=6.3						
AGMN	Agassiz Nation	36.08	353	eP	P	23 37 14.8	-0.9
	11nm,0.9s						
B34A	Aery, Baudette	36.15	355	P	P	23 37 15.4	-0.7
	baz=172						
MDND	Maddock	36.20	349	P	P	23 37 16.5	-0.1
	baz=163,SNR=8.2						
MDND	Maddock	36.20	349	eP	P	23 37 16.9	+0.3
	54nm,0.9s						
B32A	Ashes, Strandq	36.26	353	P	P	23 37 16.5	-0.6
	baz=168,SNR=7.1						
B31A	Greenbush Farm	36.43	351	P	P	23 37 18.1	-0.5
	baz=167						
B30A	Myrvik Farm, E	36.56	351	P	P	23 37 19.3	-0.4
	baz=166,SNR=8.9						
A33A	Warroad	36.66	354	P	P	23 37 19.9	-0.6
	baz=171,SNR=8.7						
C26A	Wahner Farm, P	36.69	346	P	P	23 37 20.5	-0.4
	baz=159						
B29A	Wagenman Farm,	36.75	350	P	P	23 37 21.0	-0.2
	baz=164,SNR=6.6						
LAO	LASA Array	36.77	341	P	P	23 37 21.3	-0.2
	baz=152						
B28A	Dugan Ranch, T	36.92	349	P	P	23 37 22.8	+0.1
	baz=162						
A30A	Hoffart Farm,	37.03	351	P	P	23 37 23.4	-0.4
	baz=166,SNR=7.5						
A28A	Rude Farm, Bot	37.34	349	P	P	23 37 26.0	-0.3
	baz=162						
B25A	Knox Farm, Ray	37.36	346	P	P	23 37 26.5	0.0
	baz=158						
A26A	Wade Farm, Ken	37.69	347	P	P	23 37 29.4	+0.1
	baz=160,SNR=7.1						
DGMT	Dagmar	37.80	345	P	P	23 37 30.9	+0.7
	baz=156						
DGMT	Dagmar	37.80	345	eP	P	23 37 31.6	+1.3
	16nm,0.8s						
ULM	Lac du Bonnet	38.01	354	P	P	23 37 30.3	-1.6
	4.5nm,0.9s,baz=181,slow=8.4,SNR=7.7						
ULM				LR	LR	23 53 06.4	
	comp=Z,23nm,21.2s,baz=277,slow=37						
ULM	Lac du Bonnet	38.01	354	eP	P	23 37 30.9	-1.0
	5.0nm,0.8s						
O03D	Paynes Creek	39.35	321	P	P	23 37 46.7	+3.2
	baz=124						
NEWO	Newport DOGAMI	43.26	324	eP	P	23 38 13.2	-2.2
SCHQ	Schefferville	46.07	18	P	P	23 38 35.9	-1.7
	3.4nm,0.6s,baz=222,slow=6.8,SNR=10						
SCHQ	Schefferville	46.07	18	eP	P	23 38 35.9	-1.7
	28nm,1.4s						
YKA	Yellowknife Ar	52.98	346	P	P	23 39 30.3	+0.2
	1.3nm,0.8s,baz=147,slow=7.7,SNR=23						
YKB5	Yellowknife Ar	52.98	346	eP	P	23 39 30.3	+0.2
SFJD	Kangerlussuaq	60.45	17	LR	LR	00 06 58.7	
	comp=Z,44nm,18.6s,baz=257,slow=37						
INK	Inuvik	62.47	343	P	P	23 40 37.9	+1.2
	0.8nm,0.8s,baz=126,slow=12,SNR=3.3						
INK	Inuvik	62.47	343	eP	P	23 40 37.9	+1.2
	4.4nm,1.3s						
MDT	Midelt	79.60	59	LR	LR	00 12 48.4	
	comp=Z,24nm,18.4s,baz=148,slow=32						
NRIK	Noril'sk	98.42	1	LR	LR	00 30 21.6	
	comp=Z,33nm,19.7s,baz=116,slow=37						
CMAR	Chiang Mai Arr	148.04	344	PKPbc	PKPab	23 50 03.7	+1.0
	2.3nm,0.8s,baz=340,slow=3.2,SNR=18						

*NIED **05** 23:35:00, 38.00N×144.10E, h5km, Mw3.9 Best double couple: $M_0$7.43000×10^{14} NP1:ϕ_s4.00000°,δ26.00000°, λ-60.00000°. NP2:ϕ_s151.00000°,δ67.00000°, λ-104.00000°.*

*IDC **05** 23:35:34.3±0.7, 37.82N×144.35E, h0km, mb3.9/18, mb1 4.0/22, mb1mx3.9/50, mbtmp4.0/22, ML3.8/3, MS2.7/4, Ms1 2.8/4, ms1mx2.5/54, Error ellipse: s-maj=18.8km s-min=16.1km az=123.0*

*JMA **05** 23:35:38.7±0.2, 37.99N×144.13E, h46km, M4.4*

*NEIC **05** 23:35:39.3±0.3, 37.81N×144.40E, h35km, mb4.7/16, Error ellipse: s-maj=7.7km s-min=7.3km az=165.0*

ISC 05 23:35:35.4±1.4**, 37.97N**±0.05×**144.24E**±0.06**, h5km**±8km**,** **n87,** σ1.**52**/97**, mb4.3**/35**, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
OFUJ	Ofunato	2.30	300	P	Pn	23 36 14.1	+0.2
JIO	Ouri	2.33	283	P	Pn	23 36 14.4	+0.2
JIO				S	Sn	23 36 40.3	-2.9
JMK	Ichinoseki	2.56	293	P	Pn	23 36 18.4	+0.9
JTH	Tanohata	2.70	317	P	Pn	23 36 20.2	+0.8
JTH				eS	Sn	23 36 51.2	-1.2
JMM	Marumori	2.73	269	P	Pn	23 36 19.9	+0.2
JMM				S	Sn	23 36 50.1	-2.9
JFK	Kawauchi	2.73	258	P	Pn	23 36 19.8	-0.1
JFK				eS	Sn	23 36 50.1	-3.2
JOM	Ohasama	2.75	304	P	Pn	23 36 20.6	+0.5
JOM				eS	Sn	23 36 51.7	-1.9
JOU	Okura	2.84	279	P	Pn	23 36 22.2	+0.8
JOU				S	Sn	23 36 54.2	-1.8
JFT	Otama	3.12	263	P	Pn	23 36 26.4	+1.2
JFT				S	Sn	23 37 01.3	-1.6
JRG	Rokugo	3.16	298	P	Pn	23 36 26.8	+1.1
JRG				eS	Sn	23 37 02.7	-1.1
JYK	Kaneyama	3.19	288	P	Pn	23 36 27.0	+0.9
JYK				eS	Sn	23 37 03.8	-0.7
JANG	Nango	3.20	319	P	Pn	23 36 26.5	+0.2
JANG				S	Sn	23 37 02.7	-2.1
JTM	Tenmabayashi	3.73	320	P	Pn	23 36 34.6	+1.0
JTM				S	Sn	23 37 15.1	-2.8
ERM	Erimo	4.13	349	ePn	Pn	23 36 39.4	+0.4
ERM				eSn	Sn	23 37 17.8	-10
JOT	Ohata	4.20	325	P	Pn	23 36 41.1	+1.0
JNBK	Urakawa-nobuka	4.45	346	P	Pn	23 36 43.9	+0.4
JNBK				S	Sn	23 37 34.1	-1.6
JKB	Kayabe	4.62	329	P	Pn	23 36 47.2	+1.4
JKB				eS	Sn	23 37 36.7	-3.1
JCH	Churui	4.69	352	P	Pn	23 36 46.0	-0.7
JCH				S	Sn	23 37 37.0	-4.4
JRY	Ryogami san	4.69	247	P	Pn	23 36 46.8	0.0
JRY				eS	Sn	23 37 36.3	-5.4
MJAR	Matsushiro Arr	5.01	255	Pn	Pn	23 36 52.7	+1.5
	6.0nm,0.3s,baz=78,slow=15,SNR=40						
MAJO	Matsushiro	5.02	255	ePn	Pn	23 36 53.2	+1.9
MAJO				eSn	Sn	23 37 48.8	-0.8
MAT	Matsushiro	5.02	255	P	Pn	23 36 53.0	+1.7
MAT				S	Sn	23 37 50.0	+0.4
JHJ	Hachijo jima 2	6.05	218	Pn	Pn	23 37 04.5	-0.9
	17nm,0.3s,baz=256,slow=19,SNR=3.8						
JHJ				Sn	Sn	23 38 08.1	-6.9
	15nm,0.3s,baz=72,slow=19,SNR=2.5						
INU	Inuyama	6.36	248	ePn	Pn	23 37 11.3	+1.5
USRK	Ussuriysk Ar.	11.14	308	Pn	Pn	23 38 18.8	+3.6
	0.2nm,0.3s,baz=110,slow=12,SNR=3.9						
JNU	Nakatsue	11.90	250	LR	LR	23 42 56.2	
	comp=Z,72nm,19.9s,baz=112,slow=37						
KSRS	Korea Array	12.93	273	LR	LR	23 43 01.0	
	comp=Z,37nm,18.6s,baz=85,slow=34						
KLR	Kul'dur	14.42	325	Pn	P	23 39 04.0	-3.0
	0.1nm,0.3s,baz=135,slow=8.1,SNR=6.1						
PETK	Petropavlovsk-	17.79	27	LR	LR	23 48 56.6	
	comp=Z,15nm,18.1s,baz=190,slow=45						
SEY	Seymchan	25.48	9	P	P	23 41 05.1	+1.0
	2.6nm,0.6s,baz=182,slow=8.2,SNR=12						
H11N2	WAKE ISLAND Hy	26.79	126	T	T	00 09 29.6	
	baz=315,slow=75,SNR=3.0						
H11N1	WAKE ISLAND Hy	26.80	126	T	T	00 09 19.3	
H11N3	WAKE ISLAND Hy	26.81	126	T	T	00 09 19.7	
	baz=319,slow=75,SNR=5.4						
SONA1	Songino Array	29.16	302	eP	P	23 41 38.0	+0.6
SONA0	Songino Array	29.16	302	eP	P	23 41 38.8	+1.3
	9.6nm,1.9s						
SONM	Songino Array	29.16	302	P	P	23 41 38.8	+1.3
	0.5nm,0.6s,baz=99,slow=7.9,SNR=4.9						
DAV	Davao City (W)	35.10	214	eP	P	23 42 26.1	-3.6
	152nm,0.5s						
ZAA1	Zalesovo Array	42.96	312	eP	P	23 43 35.7	+0.7
ZAA1				ePcP	PcP	23 45 25.9	+0.4
ZALV	Zalesovo Beam	42.96	312	P	P	23 43 35.7	+0.7
	0.5nm,0.5s,baz=90,slow=7.4,SNR=3.7						
ZALV				PcP	PcP	23 45 25.9	+0.4
	1.2nm,0.5s,baz=85,slow=3.1,SNR=5.1						
CMAR	Chiang Mai Arr	43.90	257	LR	LR	00 02 49.3	
	comp=Z,8.1nm,18.9s,baz=30,slow=37						
MK01	Makanchi Array	45.53	302	eP	P	23 43 56.7	+0.9
MK31	Makanchi Array	45.53	302	eP	P	23 43 57.3	+1.5
MK32	Makanchi Array	45.53	302	eP	P	23 43 56.9	+1.1
MKAR	Makanchi Array	45.53	302	P	P	23 43 56.9	+1.1
	1.5nm,0.7s,baz=87,slow=9.6,SNR=21						
MKAR	Makanchi Array	45.53	302	eP	P	23 43 57.3	+1.5
MAKZ	Makanchi	45.74	302	eP	P	23 43 58.4	+1.0
MAKZ				epP	pP	23 43 58.7	-0.5
SEW	Seward	46.43	39	eP	P	23 44 03.1	+0.5
	111nm,1.9s						
MDM	Murphy Dome	46.93	33	eP	P	23 44 06.9	+0.4
	5.5nm,1.1s						
KURK	Kurchatov	47.13	308	eP	P	23 44 09.7	+1.5
	2.6nm,0.6s						
KURBB	Kurchatov Arra	47.20	308	P	P	23 44 09.7	+0.9
	3.4nm,0.6s,baz=82,slow=7.9,SNR=26						
HDA	Harding Lake	47.48	33	eP	P	23 44 08.7	-2.1
	41nm,1.7s						
IL1	Eielson Array	47.50	33	eP	P	23 44 12.2	+1.2
ILAR	Eielson Array	47.50	33	P	P	23 44 11.7	+0.7
	1.5nm,0.8s,baz=266,slow=6.4,SNR=17						
ILB	Eielson Array	47.50	33	eP	P	23 44 11.7	+0.7
EYAK	Cordova Ski Ar	48.23	39	eP	P	23 44 15.5	-1.2
	120nm,1.9s						
BALM	Baldy	49.84	38	eP	P	23 44 28.9	-0.3
	40nm,1.9s						
TKM2	Tokmak 2	51.16	299	eP	P	23 44 41.7	+2.2
	3.7nm,0.8s						
VOSK	Vostochnaya	51.33	312	eP	P	23 44 42.1	+1.7
	1.9nm,0.9s						
BVAR	Borovoye Array	51.61	312	P	P	23 44 42.1	-0.4
	0.5nm,0.4s,baz=75,slow=7.5,SNR=6.2						
BRVK	Borovoye	51.66	312	eP	P	23 44 44.3	+1.5
	11nm,2.0s						
KIP	Kipapa	52.02	91	eP	P	23 44 43.5	-2.4

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
	492nm,1.8s						
ZRNK	Zerenda	52.43	312	eP	P	23 44 50.1	+1.5
	3.9nm,1.1s						
INK	Inuvik	52.53	28	P	P	23 44 49.9	+0.9
	1.4nm,0.5s,baz=294,slow=6.0,SNR=7.4						
INK	Inuvik	52.53	28	eP	P	23 44 49.9	+0.9
	12nm,1.8s						
KKH	Kailua Kona	54.54	92	eP	P	23 45 01.4	-3.0
ARU	Arti	57.14	319	P	P	23 45 24.8	+2.1
	0.7nm,0.4s,baz=19,slow=5.3,SNR=4.2						
WB2	Warramunga Arr	58.35	191	eP	P	23 45 30.7	-0.8
	17nm,1.4s						
WR1	Warramunga Arr	58.35	191	eP	P	23 45 29.9	-1.5
	31nm,1.6s						
WRA	Warramunga Arr	58.35	191	P	P	23 45 29.9	-1.5
	1.4nm,0.6s,baz=8.7,slow=7.5,SNR=4.8						
ABKAR	Akbulak array	59.05	311	eP	P	23 45 37.2	+1.1
AKTO	Aktyubinsk	59.71	312	P	P	23 45 41.9	+1.1
	2.7nm,0.8s,baz=68,slow=9.7,SNR=9.7						
YKA	Yellowknife Ar	61.86	31	P	P	23 45 55.6	+0.5
	0.7nm,0.7s,baz=301,slow=6.7,SNR=12						
YKB5	Yellowknife Ar	61.86	31	eP	P	23 45 55.6	+0.5
AS31	Alice Springs	62.07	191	eP	P	23 45 56.1	-0.8
	1.4nm,1.2s						
ASAR	Alice Springs	62.07	191	P	P	23 45 56.1	-0.8
	0.2nm,0.4s,baz=7.6,slow=7.7,SNR=4.0						
FIA0	FINESS Array S	69.02	333	eP	P	23 46 41.2	-0.2
FINES	FINESS Array B	69.02	333	P	P	23 46 41.2	-0.2
	1.6nm,0.7s,baz=21,slow=6.3,SNR=5.1						
HFS	Hagfors	74.14	337	P	P	23 47 13.0	+0.7
	2.4nm,0.8s,baz=76,slow=7.8,SNR=5.1						
NB2	NORSAR Subarra	74.17	338	P	P	23 47 13.0	+0.4
	comp=Z,0.7nm,0.6s,baz=36,slow=6.2						
NB200	NORSAR Array S	74.17	338	eP	P	23 47 12.8	+0.2
NOA	NORSAR Array B	74.17	338	P	P	23 47 12.8	+0.2
	comp=Z,0.8nm,0.6s,baz=39,slow=5.7,SNR=4.0						
AKASG	Malin Array Be	74.91	323	P	P	23 47 17.7	+0.7
	comp=Z,0.2nm,0.2s,baz=45,slow=6.7,SNR=3.9						
AKBB	Malin Array Si	74.91	323	eP	P	23 47 17.7	+0.7
	comp=Z,8.1nm,0.4s						
AK11	Malin Array Si	74.95	323	eP	P	23 47 19.5	+2.3
PD31	Pinedale Array	75.40	47	eP	P	23 47 20.9	+0.6
PDAR	Pinedale Array	75.40	47	P	P	23 47 20.9	+0.6
	comp=Z,0.3nm,0.6s,baz=268,slow=2.7,SNR=4.1						
TORD	Torodi Ar. Bea	118.21	318	PKP	PKPdf	23 54 23.3	-0.8
	comp=Z,0.5nm,1.1s,baz=347,slow=1.0,SNR=4.7						

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*SOME **05** 23:37:18.1, 43°.22N×83°.80E, h5km*
ISC 05 23:37:16.5±3.5**, 43°.3N**±0°.1×**83°.9E**±0°.1**, h10km, n8,**
σ**2.80**/14**, 2C-4D, Northern Xinjiang**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
SHLS	Shalkode	2.93	269	eP	Pb	23 38 10.8	+1.8
	1.7nm,0.3s						
SHLS				eS	Sg	23 38 48.6	-2.1
	10.0nm,0.7s						
DJR	Jarkent	3.14	291	⇑iP	Pg	23 38 17.0	+0.3
	2.4nm,0.5s						
DJR				⇓iS	Sg	23 39 00.2	+2.8
	4.1nm,0.5s						
PDGK	Podgornoye	3.22	272	⇑Pn	Pn	23 38 01.3	-5.7
	1.3nm,0.7s						
PDGK				⇓Sn	Sg	23 38 56.6	-3.2
	5.8nm,0.7s						
UZB	Uzynbulak	3.56	269	eP	Pb	23 38 20.4	+0.7
	1.4nm,0.3s						
UZB				eS	Sb	23 39 04.9	+1.9
	4.4nm,0.3s						
MK31	Makanchi Array	3.68	343	Pn	Pn	23 37 58.8	-15
	0.1nm,0.4s,baz=153,slow=15,SNR=9.1						
MK31				⇓Pg	Pb	23 38 11.1	-11
	1.5nm,1.1s,baz=148,slow=14,SNR=9.9						
MK31				⇓Sn	Sn	23 38 52.0	-4.8
	1.0nm,0.7s,baz=135,slow=26,SNR=3.8						
MK31				Lg	Lg	23 39 11.9	
	1.0nm,0.4s,baz=154,slow=28,SNR=7.2						
KPKS	Kokpek	3.80	274	eP	Pb	23 38 26.6	+2.9
	2.3nm,0.2s						
KPKS				eS	Sg	23 39 15.3	-3.2
	11nm,0.5s						
KAPS	Kapalarasan	3.81	303	eP	Pb	23 38 27.5	+3.5
	0.5nm,0.5s						
KAPS				eS	Sg	23 39 17.7	-1.3
	1.8nm,0.6s						
SATY	Saty	4.02	269	eP	Pg	23 38 32.4	-1.0
	1.6nm,0.3s						
SATY				eS	Sg	23 39 25.8	+0.3
	6.1nm,0.3s						

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*ISCJB **05** 23:38:28.0±1.2, 43°.81N±0°.08×147°.30E±0°.10, h86km±8km, Error ellipse: s-maj=16.4km s-min=6.8km az=139.0*
*SKHL **05** 23:38:29.9±0.6, 43°.89N×147°.37E, h79km±6km, mb4.1/3*
*JMA **05** 23:38:30.0±0.2, 43°.68N×147°.20E, h81km±4km, M3.5*
ISC 05 23:38:27.0±2.3**, 43°.72N**±0°.10×**147°.5E**±0°.1**, h86km**±13km**,**
n14, σ**1.27**/24**, Kuril Islands**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
SHO	Shikotan	0.49	288	iP	Pn	23 38 42.6	+1.5
SHO				AMB	AMB	23 38 42.9	
	160nm,0.2s						
SHO				AMB	AMB	23 38 42.9	
	110nm,0.2s						
SHO				AMB	AMB	23 38 42.9	
	70nm,0.2s						
SHO				iS	Sn	23 38 51.9	+0.3
SHO				A	A	23 38 52.7	
	1µm,0.3s						
SHO				A	A	23 38 52.7	
	3µm,0.3s						
YUK	Yuzh-Kuril'sk	1.20	286	eP	Pn	23 38 49.2	+0.5
YUK				AMB	AMB	23 38 49.4	
	100nm,0.3s						
YUK				iS	Sn	23 39 03.3	-1.9
YUK				A	A	23 39 06.4	
	1µm,0.3s						
NEM2	Nemuro 2	1.30	255	P	Pn	23 38 50.6	+0.6
NEM2				eS	Sn	23 39 05.9	-1.4
KUR	Kuril'sk	1.54	11	eP	Pn	23 38 52.6	-0.4
KUR				AMB	AMB	23 38 54.6	
	40nm,0.3s						
KUR				iS	Sn	23 39 11.3	-1.4
KUR				A	A	23 39 14.8	
	150nm,0.2s						
KUR				A	A	23 39 14.8	
	110nm,0.2s						
JRA	Rausu	1.71	278	P	Pn	23 38 56.1	+0.9
JRA				eS	Sn	23 39 16.1	-0.5
JNK	Nakash	2.00	267	P	Pn	23 38 59.5	+0.5
JNK				eS	Sn	23 39 21.4	-2.0
JAK	Akkeshi	2.15	251	P	Pn	23 39 01.6	+0.7
JAK				eS	Sn	23 39 25.4	-1.4
JTKR	Abashiri--Toko	2.59	277	P	Pn	23 39 07.8	+1.0
JTKR				eS	Sn	23 39 36.2	-1.2
JAR	Ashorobuto	2.72	262	P	Pn	23 39 10.0	+1.4
JAR				eS	Sn	23 39 39.6	-1.1
JOB	Onbets	2.77	254	P	Pn	23 39 10.4	+1.1
JOB				eS	Sn	23 39 40.8	-1.1
JCH	Churui	3.20	251	P	Pn	23 39 15.8	+0.8
JNBK	Urakawa-nobuka	3.75	249	P	Pn	23 39 23.2	+0.8
YSS	Yuzh-Sakhalins	4.64	316	eP	Pn	23 39 35.7	+1.2
TYV	Tymovskoe	7.86	337	eP	Pn	23 40 20.2	+1.8

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*IDC **05** 23:38:32.4±0.9, 37°.74N×144°.37E, h0km, mb3.8/13, mb1 4.0/16, mb1mx3.8/56, mbtmp3.9/16, ML3.7/3, Error ellipse: s-maj=23.0km s-min=17.0km az=139.0*
*NEIC **05** 23:38:33.8±0.3, 37°.72N×144°.43E, h10km, mb4.5/5, Error ellipse: s-maj=7.6km s-min=5.4km az=139.0*
*ISCJB **05** 23:38:36.6±0.5, 37°.99N±0°.04×144°.17E±0°.04, h33km, mb4.2/19, Error ellipse: s-maj=5.6km s-min=4.1km az=163.5*
*JMA **05** 23:38:37.2±0.3, 37°.99N×144°.11E, h41km, M4.2*
ISC 05 23:38:37.8±0.6**, 37°.97N**±0°.05×**144°.26E**±0°.06**, h35km, n62,**
σ**1.77**/71**, mb4.0**/19**, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
OFUJ	Ofunato	2.31	299	P	Pn	23 39 12.6	-0.8
JIO	Ouri	2.34	283	S	Sn	23 39 38.8	-2.5
JMK	Ichinoseki	2.58	293	P	Pn	23 39 15.9	-1.1
JTH	Tanohata	2.71	317	P	Pn	23 39 18.4	-0.5
JTH				eS	Sn	23 39 49.1	-1.3
JMM	Marumori	2.74	269	P	Pn	23 39 18.3	-1.0
JMM				S	Sn	23 39 48.5	-2.7
JFK	Kawauchi	2.75	258	eS	Sn	23 39 48.6	-2.9
JOM	Ohasama	2.76	304	P	Pn	23 39 19.4	-0.2
JOM				eS	Sn	23 39 50.4	-1.3
JOU	Okura	2.86	279	S	Sn	23 39 52.8	-1.4
JFT	Otama	3.14	263	P	Pn	23 39 23.7	-1.1
JFT				S	Sn	23 39 59.4	-1.7
JRG	Rokugo	3.17	298	P	Pn	23 39 25.9	+0.7
JRG				eS	Sn	23 40 01.7	-0.2
JYK	Kaneyama	3.21	288	P	Pn	23 39 25.7	0.0
JYK				eS	Sn	23 40 01.8	-0.8
JANG	Nango	3.21	319	P	Pn	23 39 24.6	-1.1
JANG				eS	Sn	23 40 00.8	-2.0
JTM	Tenmabayashi	3.75	320	P	Pn	23 39 32.8	-0.3
JTM				eS	Sn	23 40 13.2	-2.7
ERM	Erimo	4.13	349	ePn	Pn	23 39 36.9	-1.4
ERM				eSn	Sn	23 40 20.3	-5.1
JOT	Ohata	4.21	325	P	Pn	23 39 39.8	+0.3
JNBK	Urakawa-nobuka	4.46	345	P	Pn	23 39 41.4	-1.4
JNBK				S	Sn	23 40 32.1	-1.4
JKB	Kayabe	4.63	329	P	Pn	23 39 45.6	+0.4
JKB				S	Sn	23 40 34.2	-3.6
JCH	Churui	4.69	352	P	Pn	23 39 45.4	-0.6
JCH				eS	Sn	23 40 35.5	-3.7
JRY	Ryogami san	4.71	247	P	Pn	23 39 45.1	-1.3
JRY				S	Sn	23 40 34.6	-5.2
MJAR	Matsushiro Arr	5.03	255	Pn	Pn	23 39 51.0	+0.2
	5.5nm,0.3s,baz=68,slow=13,SNR=11						
MAJO	Matsushiro	5.03	255	ePn	Pn	23 39 51.3	+0.5
MAT	Matsushiro	5.03	255	P	Pn	23 39 51.2	+0.4
MAT				S	Sn	23 40 48.5	+0.7
JHJ2	Mitsune	6.05	218	ePn	Pn	23 40 00.6	-4.2
JHJ2				eSn	Sn	23 41 06.8	-5.9
JHJ	Hachijo jima 2	6.06	218	Pn	Pn	23 40 00.2	-4.7
	11nm,0.3s,baz=13,slow=23,SNR=3.2						
JHJ				Sn	Sn	23 41 04.7	-8.3
	11nm,0.3s,baz=97,slow=22,SNR=2.4						
INU	Inuyama	6.38	248	ePn	Pn	23 40 09.5	+0.2
KLR	Kul'dur	14.43	325	Pn	P	23 42 03.0	-2.8
	0.1nm,0.3s,baz=145,slow=14,SNR=3.3						
MA2	Magadan	22.02	9	P	P	23 43 30.0	+1.1
	2.3nm,0.4s,baz=203,slow=5.0,SNR=4.8						
GUMO	Guam	24.29	179	eP	P	23 43 48.3	-3.6
	467nm,1.4s						
SEY	Seymchan	25.48	9	P	P	23 44 03.6	+1.3
	1.6nm,0.5s,baz=194,slow=6.5,SNR=7.7						
H11S1	WAKE ISLAND Hy	27.57	128	T	T	00 13 07.6	
	SNR=3.7						
H11S3	WAKE ISLAND Hy	27.57	129	T	T	00 13 06.2	
H11S2	WAKE ISLAND Hy	27.58	129	T	T	00 13 06.2	
SONA1	Songino Array	29.17	302	eP	P	23 44 37.5	+1.7
SONA0	Songino Array	29.18	302	eP	P	23 44 37.8	+1.9
	4.9nm,1.6s						
SONM	Songino Array	29.18	302	P	P	23 44 37.8	+1.9
	0.4nm,0.7s,baz=104,slow=9.6,SNR=3.4						
FALS	False Pass	38.81	47	eP	P	23 45 59.7	+0.7
	466nm,1.8s						
MK01	Makanchi Array	45.54	302	eP	P	23 46 54.8	+0.8
MK31	Makanchi Array	45.54	302	eP	P	23 46 55.2	+1.2
MK32	Makanchi Array	45.54	302	eP	P	23 46 54.9	+0.9
MKAR	Makanchi Array	45.54	302	P	P	23 46 54.9	+0.9
	0.9nm,0.6s,baz=85,slow=9.8,SNR=9.3						
MKAR	Makanchi Array	45.54	302	eP	P	23 46 55.2	+1.2
KURK	Kurchatov	47.14	308	eP	P	23 47 08.0	+1.6
KURBB	Kurchatov Arra	47.22	308	P	P	23 47 08.0	+1.0
	2.2nm,0.6s,baz=81,slow=8.1,SNR=16						
ILAR	Eielson Array	47.49	33	P	P	23 47 09.9	+1.0
	1.3nm,0.8s,baz=264,slow=6.5,SNR=11						
ILB	Eielson Array	47.49	33	eP	P	23 47 09.9	+1.0
TKM2	Tokmak 2	51.17	299	eP	P	23 47 40.0	+2.3
	2.4nm,0.8s						
BVAR	Borovoye Array	51.62	312	P	P	23 47 41.8	+1.3
	0.4nm,0.5s,baz=87,slow=7.6,SNR=4.1						
INK	Inuvik	52.52	28	P	P	23 47 48.0	+1.0
	0.7nm,0.7s,baz=317,slow=8.2,SNR=5.3						
INK	Inuvik	52.52	28	eP	P	23 47 48.0	+1.0
	17nm,1.9s						
WR1	Warramunga Arr	58.35	191	eP	P	23 48 28.1	-1.4
	28nm,1.6s						
WRA	Warramunga Arr	58.35	191	P	P	23 48 28.1	-1.4
	1.2nm,0.7s,baz=11,slow=7.4,SNR=4.7						
ABKAR	Akbulak array	59.06	311	eP	P	23 48 35.4	+1.2
AKTO	Aktyubinsk	59.73	312	P	P	23 48 40.2	+1.5
	1.2nm,0.6s,baz=65,slow=13,SNR=4.2						
YKA	Yellowknife Ar	61.85	31	P	P	23 48 53.9	+0.9
	0.5nm,0.7s,baz=302,slow=6.7,SNR=9.1						
YKB5	Yellowknife Ar	61.85	31	eP	P	23 48 53.9	+0.9
FIA0	FINESS Array S	69.03	333	eP	P	23 49 40.3	+0.9
FINES	FINESS Array B	69.03	333	P	P	23 49 40.3	+0.9
	0.8nm,0.7s,baz=12,slow=10,SNR=4.5						
FLWY	Flagg Ranch	73.92	46	eP	P	23 50 07.0	-2.6
	11nm,1.4s						
NB201	NORSAR Array S	74.15	338	eP	P	23 50 10.7	+0.4
PD31	Pinedale Array	75.39	47	eP	P	23 50 19.4	+1.3
PDAR	Pinedale Array	75.39	47	P	P	23 50 19.4	+1.3
	0.2nm,0.6s,baz=256,slow=3.6,SNR=3.1						
TORD	Torodi Ar. Bea	118.22	318	PKP	PKPdf	23 57 21.2	-0.5
	0.4nm,1.1s,baz=11,slow=1.5,SNR=3.0						

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*ISCJB **05** 23:38:45.3±0.5, 50°.08N±0°.03×18°.34E±0°.03, h0km, Error ellipse: s-maj=4.7km s-min=2.5km az=16.0*
*IPEC **05** 23:38:46.6±0.2, 50°.05N×18°.46E, h0km±3km, ML1.7/3, Error ellipse: s-maj=2.0km s-min=1.1km az=160.0*
*CSEM **05** 23:38:46.2±0.2, 50°.07N×18°.37E, h1km, ML2.7/9, Error ellipse: s-maj=5.8km s-min=3.4km az=2.0*
ISC 05 23:38:46.3±0.8**, 50°.09N**±0°.03×**18°.40E**±0°.02**, h0km, n28,**
σ**0.86**/50**, Poland**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
OKC	Ostrava-Krasne	0.30	213	ePG	Pg	23 38 52.8	+0.7
OKC				eSG	Sg	23 38 57.2	+1.2
	comp=Z,31nm,0.5s						
OKC	Ostrava-Krasne	0.30	213	Pg	Pg	23 38 52.8	+0.7
OKC				Sg	Sg	23 38 57.2	+1.2
	31nm,0.5s						
MORC	Moravsky Berou	0.64	241	ePg	Pg	23 38 58.8	+0.3
MORC				eSg	Sg	23 39 07.1	+0.3
	16nm,0.1s						
OJC	Ojcow	0.91	81	ePg	Pg	23 39 03.6	-0.1
OJC				eSg	Sb	23 39 16.6	-1.0
OJC	Ojcow	0.91	81	ePg	Pg	23 39 03.6	-0.1
OJC				eSg	Sb	23 39 16.6	-1.0
LANS	Liptovska Anna	1.17	143	ePG	Pg	23 39 08.8	+0.1
LANS				eSG	Sb	23 39 25.4	+0.3
DPC	Dobruska-Polom	1.36	282	ePG	Pg	23 39 12.4	0.0
DPC				eSG	Sb	23 39 30.4	-0.3
	comp=Z,15nm,0.6s						
DPC	Dobruska-Polom	1.36	282	Pg	Pg	23 39 12.4	0.0
DPC				Sg	Sb	23 39 30.4	-0.3
	15nm,0.6s						
NIE	Niedzica	1.40	118	ePg	Pb	23 39 13.4	0.0
NIE				eSg	Sn	23 39 32.8	+0.4
NIE	Niedzica	1.40	118	ePg	Pb	23 39 13.4	0.0
NIE				eSg	Sn	23 39 32.8	+0.4
VRAC	Vranov	1.41	237	ePg	Pn	23 39 12.8	-0.5
VRAC				eSg	Sg	23 39 31.2	-0.4
	9.4nm,0.2s						
KSP	Ksiaz	1.54	300	ePn	Pn	23 39 14.8	-0.3
KSP				ePg	Pg	23 39 16.8	+0.9
KSP				eSg	Sg	23 39 37.0	+1.1
KSP	Ksiaz	1.54	300	ePn	Pn	23 39 14.8	-0.3
UPC	Upice	1.59	286	eSG	Sg	23 39 38.0	+0.7
	comp=Z,7.4nm,0.4s						
UPC	Upice	1.59	286	Sg	Sg	23 39 38.0	+0.7
	7.4nm,0.4s						
VYHS	Vyhne	1.62	170	ePG	Pn	23 39 15.6	-0.6
VYHS				eSN	Sn	23 39 37.4	-0.4
VYHS				eLG	Lg	23 39 38.4	
KRUC	Moravsky	1.66	233	ePg	Pn	23 39 16.5	-0.2
KRUC				eSg	Sn	23 39 38.4	-0.4
	5.9nm,0.2s						
STHS	Stebnicka Huta	1.96	109	ePN	Pg	23 39 24.0	+0.1
STHS				eSN	Sg	23 39 51.2	+1.8
STHS				eLG	Lg	23 39 55.4	
GOPC	GO Pecny, Ondr	2.34	267	ePG	Pg	23 39 30.9	-0.3
GOPC				eSG	Sb	23 39 59.7	+0.9
	comp=Z,3.4nm,0.4s						
GOPC	GO Pecny, Ondr	2.34	267	Pg	Pg	23 39 30.9	-0.3
GOPC				Sg	Sb	23 39 59.7	+0.9
	3.4nm,0.4s						
PRU	Pruhonice	2.49	269	ePG	Pb	23 39 32.5	+0.6
PRU				eSG	Sb	23 40 04.0	+0.9
	comp=Z,2.2nm,0.2s						
PRU	Pruhonice	2.49	269	Pg	Pb	23 39 32.5	+0.6
PRU				Sg	Sb	23 40 04.0	+0.9
	2.2nm,0.2s						
PVCC	Panska Ves	2.50	282	eSG	Sg	23 40 06.4	-0.1
	comp=Z,7.6nm,0.3s						
PVCC	Panska Ves	2.50	282	Sg	Sg	23 40 06.4	-0.1
	7.6nm,0.3s						
BRG	Berggiesshubel	2.95	287	SG	Sg	23 40 20.4	-0.8
	2.2nm,0.5s						
BRG	Berggiesshubel	2.95	287	SG	Sg	23 40 22.8	+1.6
	2.2nm,0.5s						
KHC	Kasperske Hory	3.28	255	ePG	Pg	23 39 47.7	-1.5
KHC				eSG	Sg	23 40 29.6	-2.1
	comp=Z,2.4nm,0.3s						
KHC	Kasperske Hory	3.28	255	Pg	Pg	23 39 47.7	-1.5
KHC				Sg	Sg	23 40 29.6	-2.1
	2.4nm,0.3s						

IDC 05 23:44:48.1±2.8**, 0°.05S**×**128°.09E, h0km, mb3.4**/3**, mb1 3.7**/3**, mb1mx3.3**/46**, mbtmp3.5**/3**, Error ellipse: s-maj=242.9km s-min=27.4km az=67.0, Halmahera**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
WRA	Warramunga Arr	20.69	163	P	P	23 49 29.1	-1.0
	0.9nm,0.5s,baz=342,slow=11,SNR=2.0						
ASAR	Alice Springs	24.14	167	P	P	23 50 06.7	+0.5
	0.9nm,0.7s,baz=350,slow=9.4,SNR=10						
MKAR	Makanchi Array	61.42	326	P	P	23 55 06.3	-0.1
	0.2nm,0.6s,baz=116,slow=6.8,SNR=4.9						

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*IDC **05** 23:50:29.4±1.0, 37°.75N×143°.86E, h0km, mb3.6/8, mb1 3.7/10, mb1mx3.5/53, mbtmp3.5/10, ML3.5/2, MS2.8/3, Ms1 2.8/3, ms1mx2.4/52, Error ellipse: s-maj=23.8km s-min=21.3km az=107.0*
*ISCJB **05** 23:50:32.3±0.8, 37°.7N±0°.1×143°.7E±0°.1, h33km, mb3.6/8, Error ellipse: s-maj=18.9km s-min=9.9km az=158.7*
ISC 05 23:50:34.5±1.1**, 37°.7N**±0°.2×**143°.7E**±0°.1**, h35km, n16,**
σ**1.13**/12**, mb3.6**/8**, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
MJAR	Matsushiro Arr	4.54	257	Pn	Pn	23 51 40.1	-0.7
	1.2nm,0.3s,baz=66,slow=11,SNR=14						
MAT	Matsushiro	4.54	257	P	Pn	23 51 40.5	-0.3
MAT				S	Sn	23 52 31.2	-1.2
USRK	Ussuriysk Ar.	10.97	310	LR	LR	23 56 53.9	
	comp=Z,63nm,21.7s,baz=113,slow=35						
JNU	Nakatsue	11.42	250	LR	LR	23 58 11.9	
	comp=Z,34nm,18.2s,baz=126,slow=40						
KSRS	Korea Array	12.53	274	Pn	Pn	23 53 30.4	+0.3
	0.4nm,0.3s,baz=86,slow=13,SNR=5.0						
KSRS				LR	LR	23 57 55.4	
	comp=Z,34nm,20.3s,baz=56,slow=35						
H11N2	WAKE ISLAND Hy	26.98	125	T	T	00 24 41.4	
	baz=322,slow=74,SNR=6.1						
H11N1	WAKE ISLAND Hy	26.99	125	T	T	00 24 39.7	
H11N3	WAKE ISLAND Hy	27.00	125	T	T	00 24 47.1	
	baz=312,slow=74,SNR=5.1						
SONM	Songino Array	28.94	302	P	P	23 56 30.4	0.0
	0.6nm,0.8s,baz=100,slow=9.2,SNR=4.6						
ZALV	Zalesovo Beam	42.82	312	P	P	23 58 30.6	+1.8
	0.9nm,0.6s,baz=96,slow=6.7,SNR=4.9						
MKAR	Makanchi Array	45.31	302	P	P	23 58 50.4	+1.6
	0.8nm,0.9s,baz=85,slow=10,SNR=5.0						
ILAR	Eielson Array	47.95	33	P	P	23 59 08.4	-0.8
	1.1nm,0.7s,baz=264,slow=6.8,SNR=13						
BVAR	Borovoye Array	51.47	312	P	P	23 59 35.5	-0.6
	0.3nm,0.7s,baz=64,slow=9.8,SNR=2.9						
WRA	Warramunga Arr	58.01	190	P	P	00 00 23.7	-0.1
	1.0nm,0.8s,baz=4.0,slow=7.2,SNR=4.9						
ASAR	Alice Springs	61.74	190	P	P	00 00 50.8	+1.4
	0.3nm,0.7s,baz=3.5,slow=7.5,SNR=3.3						
YKA	Yellowknife Ar	62.30	31	P	P	00 00 51.8	-0.9
	0.2nm,0.7s,baz=305,slow=6.9,SNR=5.2						

NNC 05 23:59:01.9±4.1**, 38°.22N**×**72°.60E, h138km**±22km**, mb2.5, mpv3.2, 5C-6D, Error ellipse: s-maj=34.4km s-min=10.0km az=151.0, Tajikistan**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
SFK	Sufi-Kurgan	1.93	21	⇓S	Sn	00 00 01.9	+0.4
	24nm,0.2s						
DZET	Dzherino	3.02	282	⇑S	Sn	00 00 25.8	+0.3
	39nm,0.3s						
MNAS	Manas	4.27	359	⇓P	Pn	00 00 05.6	+0.2
	1.2nm,0.4s						
MNAS				⇑S	Sn	00 00 56.0	+1.3
	3.2nm,0.3s						
AAK	Ala-Archa	4.64	18	⇑P	Pn	00 00 10.5	+0.1
	1.0nm,0.3s						
AAK				⇑S	Sn	00 01 04.5	+0.7
	2.3nm,0.4s						
KK31	Karatay Array	5.13	343	⇑P	Pn	00 00 17.2	+0.4
	2.7nm,0.2s,baz=154,slow=13,SNR=122						
KK31				⇓S	Sn	00 01 15.9	+0.6
	2.9nm,0.3s,baz=157,slow=23,SNR=4.4						
AB31	Akbulak array	14.31	324	⇓P	Pn	00 02 17.4	-0.6
	0.3nm,0.5s,baz=132,slow=13,SNR=11						
AB31				⇓S	Sn	00 04 50.2	-6.1
	0.1nm,0.4s,baz=136,slow=25,SNR=2.8						
AKTO	Aktyubinsk	16.03	324	⇓P	P	00 02 40.6	+0.5
	0.6nm,0.5s						

DJA 06 00:00:58.0±0.6**, 0°S**±5°×**12°3E**±°**, h75km**±10km**, M3.7**/6**, mb3.9**/1**, MLv3.5**/6**, Minahassa Peninsula, Sulawesi**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
LUWI	Luwuk	0.95	200	P	Pn	00 01 17.0	+0.8
LUWI				S	Sn	00 01 31.0	+1.3
MRSI	Marisa	1.30	298	P	Pn	00 01 21.2	+0.6
MRSI				S	Sn	00 01 38.5	+1.0
APSI	Ampana	1.63	242	P	Pn	00 01 25.2	+0.3
APSI				S	Sn	00 01 46.1	+0.9
SANI	Sanana	3.46	123	P	Pn	00 01 49.2	-0.4
TTSI	Tana Toraja	4.36	229	P	Pn	00 02 01.6	-0.2
SPSI	Sidrap Palu	5.04	221	P	Pn	00 02 11.3	+0.1

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*IDC **06** 00:08:56.9±1.8, 34°.80N×73°.85E, h0km, mb3.7/8, mb1 3.6/13, mb1mx3.5/58, mbtmp3.6/13, ML3.2/5, Error ellipse: s-maj=37.0km s-min=22.5km az=143.0*
*ISCJB **06** 00:08:60.0±0.7, 34°.81N±0°.08×73°.9E±0°.1, h34km, mb3.6/7, Error ellipse: s-maj=16.6km s-min=6.2km az=142.6*
ISC 06 00:09:02.0±1.0**, 34°.8N**±0°.1×**73°.8E**±0°.1**, h34km, n21,**
σ**0.81**/21**, mb3.7**/7**, Pakistan**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
AAK	Ala-Archa	7.81	4	Pn	Pn	00 10 54.6	+1.1
	0.1nm,0.3s,baz=205,slow=17,SNR=2.4						
PYUN	Piuthan	10.29	128	eP	Pn	00 11 27.8	+0.3
	16nm,0.4s						
KOLN	Koldanda	10.91	127	eP	Pn	00 11 36.5	+0.6
	7.8nm,0.4s						
GKN	Gorkha	11.45	123	eP	Pn	00 11 43.2	-0.1
	12nm,0.3s						
KKN	Kakani	12.03	123	eP	Pn	00 11 50.9	-0.4
	17nm,0.5s						
PKIN	Phulchoki	12.24	123	eP	Pn	00 11 54.5	+0.3
	10nm,0.4s						
GUN	Gumba	12.37	121	eP	Pn	00 11 56.1	0.0
	7.2nm,0.4s						
RAMN	Ramite	13.47	122	eP	Pn	00 12 10.7	-0.3
	4.8nm,0.2s						
MKAR	Makanchi Array	13.55	26	Pn	Pn	00 12 13.1	+1.4
	0.1nm,0.3s,baz=224,slow=13,SNR=2.7						
TAPN	Taplejung	14.02	118	eP	Pn	00 12 17.8	-0.7
	10.0nm,0.5s						
KURBB	Kurchatov Arra	16.16	11	Pn	Pn	00 12 44.6	-1.7
	0.0nm,0.3s,baz=200,slow=11,SNR=6.6						
BVAR	Borovoye Array	18.36	353	P	P	00 13 14.0	+0.4
	0.5nm,0.3s,baz=152,slow=10,SNR=16						
AKTO	Aktyubinsk	19.40	328	P	P	00 13 25.3	+0.2
	0.3nm,0.3s,baz=122,slow=19,SNR=5.1						
ZALV	Zalesovo Beam	20.62	19	P	P	00 13 37.0	-1.2

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
	0.8nm,0.3s,baz=210,slow=9.9,SNR=6.8						
ARU	**Arti**	**24.00**	**339**	P	**P**	**00 14 14.1**	**+0.7**
	0.6nm,0.3s,baz=101,slow=19,SNR=2.9						
SONM	**Songino Array**	**27.46**	**52**	P	**P**	**00 14 45.3**	**+0.3**
	0.1nm,0.3s,baz=243,slow=6.3,SNR=3.0						
ARCES	**ARCESS Array B**	**43.57**	**338**	P	**P**	**00 17 02.5**	**+0.2**
	2.5nm,1.1s,baz=114,slow=9.0,SNR=4.2						
HFS	**Hagfors**	**45.80**	**323**	P	**P**	**00 17 20.0**	**-0.2**
	2.3nm,0.8s,baz=92,slow=13,SNR=4.2						
NOA	**NORSAR Array B**	**47.10**	**324**	P	**P**	**00 17 29.4**	**-1.1**
	0.8nm,0.9s,baz=102,slow=7.5,SNR=2.8						
TORD	**Torodi Ar. Bea**	**68.03**	**271**	P	**P**	**00 19 59.0**	**+0.6**
	0.3nm,0.4s,baz=48,slow=5.9,SNR=28						
YKA	**Yellowknife Ar**	**82.78**	**4**	P	**P**	**00 21 21.6**	**-0.7**
	0.2nm,0.4s,baz=348,slow=5.3,SNR=5.9						

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*NIED **06** 00:17:00, 39.°10N×144.°40E, h5km, Mw3.7 Best double couple: Mo3.65000×10^{14} NP1:φs21.00000°, δ32.00000°, λ-76.00000°. NP2:φs185.00000°, δ59.00000°, λ-98.00000°.*
*IDC **06** 00:17:12.4±1.0, 38.°74N×144.°89E, h0km, mb3.8/12, mb1 3.9/15, mb1mx3.7/72, mbtmp3.8/15, ML3.0/2, MS2.6/3, Ms1 2.6/3, ms1mx2.2/40, Error ellipse: s-maj=23.1km s-min=17.9km az=131.0*
*ISCJB **06** 00:17:14.6±0.5, 38.°95N±0.°05×144.°60E±0.°04, h19km, mb4.2/20, MS3.4/2, Error ellipse: s-maj=7.1km s-min=4.3km az=168.5*
*JMA **06** 00:17:17.6±0.2, 39.°13N×144.°35E, h10km, M3.8*
*NEIC **06** 00:17:17.4±0.7, 38.°84N×144.°77E, h35km, mb4.5/6, Error ellipse: s-maj=17.5km s-min=13.5km az=153.0*
ISC 06 00:17:16.0±0.7**, 38.°99N**±0.°07×**144.°67E**±0.°06**, h19km, n56, σ1.s60**/61**, mb4.2**/20**, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
MIYJ	**Miyakonagasawa**	**2.29**	**286**	P	**Pn**	**00 17 52.2**	**-0.5**
MIYJ				S	**Sn**	**00 18 17.5**	**-2.9**
JTH	**Tanohata**	**2.37**	**295**	P	**Pn**	**00 17 53.2**	**-0.7**
JTH				*e*S	**Sn**	**00 18 19.7**	**-2.7**
JOM	**Ohasama**	**2.66**	**282**	P	**Pn**	**00 17 57.9**	**0.0**
JOM				*e*S	**Sn**	**00 18 27.8**	**-1.9**
JMK	**Ichinoseki**	**2.69**	**270**	S	**Sn**	**00 18 27.7**	**-2.5**
JANG	**Nango**	**2.80**	**301**	P	**Pn**	**00 17 58.8**	**-1.0**
JRG	**Rokugo**	**3.16**	**279**	P	**Pn**	**00 18 05.3**	**+0.6**
JRG				S	**Sn**	**00 18 40.9**	**-1.0**
JOU	**Okura**	**3.19**	**260**	S	**Sn**	**00 18 40.9**	**-1.9**
ERM	**Erimo**	**3.23**	**340**	*e*Pn	**Pn**	**00 18 05.7**	**-0.1**
ERM				*e*Sn	**Sn**	**00 18 40.1**	**-3.6**
JTM	**Tenmabayashi**	**3.30**	**304**	P	**Pn**	**00 18 07.0**	**+0.3**
JTM				S	**Sn**	**00 18 42.8**	**-2.5**
JAH	**Hinai**	**3.34**	**292**	P	**Pn**	**00 18 07.6**	**+0.4**
JAH				*e*S	**Sn**	**00 18 44.9**	**-1.4**
JYK	**Kaneyama**	**3.36**	**270**	P	**Pn**	**00 18 08.2**	**+0.7**
JYK				*e*S	**Sn**	**00 18 45.9**	**-0.9**
MJAR	**Matsushiro Arr**	**5.67**	**246**	Pn	**Pn**	**00 18 39.3**	**0.0**
	1.5nm,0.3s,baz=70,slow=12,SNR=15						
MJAR				Sn	**Sn**	**00 19 44.4**	**+0.5**
	0.5nm,0.3s,baz=57,slow=13,SNR=2.3						
MJAR				LR	LR	00 20 42.3	
	comp=Z,32nm,21.4s,baz=75,slow=37						
MAJO	**Matsushiro**	**5.67**	**246**	*e*Pn	**Pn**	**00 18 40.6**	**+1.3**
MAT	**Matsushiro**	**5.67**	**246**	P	**Pn**	**00 18 39.8**	**+0.5**
MAT				*e*S	**Sn**	**00 19 41.8**	**-2.1**
MJB9	**Matsu-Tunnel**	**5.67**	**247**	*e*Pn	**Pn**	**00 18 38.8**	**-0.5**
YSS	**Yuzh-Sakhalins**	**8.08**	**351**	*e*Pn	**Pn**	**00 19 13.7**	**+1.4**
USRK	**Ussuriysk Ar.**	**10.82**	**303**	Pn	**Pn**	**00 19 51.4**	**+1.5**
	0.3nm,0.3s,baz=108,slow=14,SNR=4.1						
CBIJ	**Chichi jima**	**12.04**	**191**	*e*Pn	Pn	00 20 00.2	-6.4
JCJ	**Chichijima**	**12.04**	**191**	Pn	Pn	00 20 00.2	-6.4
	6.2nm,0.3s,baz=80,slow=6.1,SNR=2.6						
KSRS	**Korea Array**	**13.26**	**269**	LR	LR	00 24 37.1	
	comp=Z,27nm,20.4s,baz=72,slow=33						
KS01	**Wonju Array Si**	**13.28**	**269**	*e*Pn	**Pn**	**00 20 20.6**	**-2.9**
YAK	**Yakutsk**	**24.83**	**343**	*e*P	**P**	**00 22 36.0**	**-0.8**
	20nm,0.5s						
GUMO	**Guam**	**25.30**	**180**	LR	LR	00 31 37.6	
	comp=Z,19nm,18.7s,baz=311,slow=34						
TWG	**Pinlang**	**25.77**	**238**	*e*P	**P**	**00 22 41.9**	**-3.7**
	105nm,1.1s						
SONA0	**Songino Array**	**28.92**	**300**	*e*P	**P**	**00 23 17.1**	**+3.2**
	7.8nm,2.0s						
SONM	**Songino Array**	**28.92**	**300**	P	**P**	**00 23 17.1**	**+3.2**
	0.3nm,0.7s,baz=83,slow=8.8,SNR=3.3						
NIKH	**Nikolski High**	**34.55**	**51**	*e*P	**P**	**00 24 01.4**	**-1.8**
	70nm,0.9s						
ZAA1	**Zalesovo Array**	**42.54**	**311**	*e*P	**P**	**00 25 11.4**	**+1.2**
ZAA0	**Zalesovo Array**	**42.54**	**311**	*e*P	**P**	**00 25 11.8**	**+1.7**
ZALV	**Zalesovo Beam**	**42.54**	**311**	P	**P**	**00 25 11.4**	**+1.2**
	0.8nm,0.5s,baz=85,slow=8.6,SNR=4.5						
CM31	**Chiang Mai Arr**	**44.47**	**256**	*e*P	**P**	**00 25 26.5**	**+0.4**
CMAR	**Chiang Mai Arr**	**44.47**	**256**	P	**P**	**00 25 26.5**	**+0.4**
	0.6nm,0.3s,baz=52,slow=7.4,SNR=3.1						
MLY	**Manley**	**44.82**	**33**	*e*P	**P**	**00 25 29.7**	**+1.2**
	16nm,2.0s						
MK01	**Makanchi Array**	**45.28**	**301**	*e*P	**P**	**00 25 32.6**	**+0.3**
MK32	**Makanchi Array**	**45.29**	**301**	*e*P	**P**	**00 25 32.6**	**+0.2**
MKAR	**Makanchi Array**	**45.29**	**301**	P	**P**	**00 25 32.6**	**+0.2**
	0.5nm,0.7s,baz=88,slow=9.5,SNR=5.8						
ILAR	**Eielson Array**	**46.46**	**33**	P	**P**	**00 25 41.2**	**-0.2**
	0.5nm,0.6s,baz=262,slow=6.9,SNR=6.3						
ILB	**Eielson Array**	**46.46**	**33**	*e*P	**P**	**00 25 41.2**	**-0.2**
KURK	**Kurchatov**	**46.78**	**307**	*e*P	**P**	**00 25 44.1**	**+0.1**
	2.7nm,0.7s						
TKM2	**Tokmak 2**	**50.97**	**298**	*e*P	**P**	**00 26 19.0**	**+2.4**
	11nm,1.7s						
BVAR	**Borovoye Array**	**51.17**	**312**	P	**P**	**00 26 19.1**	**+1.4**
	0.5nm,0.5s,baz=58,slow=8.1,SNR=3.3						
INK	**Inuvik**	**51.47**	**28**	P	**P**	**00 26 20.0**	**+0.4**
	0.9nm,0.6s,baz=311,slow=6.0,SNR=7.6						
INK	**Inuvik**	**51.47**	**28**	*e*P	**P**	**00 26 20.0**	**+0.4**
	14nm,2.0s						
ABKAR	**Akbulak array**	**58.65**	**310**	*e*P	**P**	**00 27 13.3**	**+1.5**
AKTO	**Aktyubinsk**	**59.28**	**312**	P	**P**	**00 27 18.8**	**+2.6**
	0.7nm,0.6s,baz=72,slow=8.4,SNR=4.2						
WR1	**Warramunga Arr**	**59.41**	**191**	*e*P	**P**	**00 27 15.7**	**-1.7**
	26nm,1.6s						
WRA	**Warramunga Arr**	**59.41**	**191**	P	**P**	**00 27 15.6**	**-1.7**
	0.6nm,0.8s,baz=102,slow=25,SNR=3.8						
RES	**Resolute Bay**	**60.05**	**15**	P	**P**	**00 27 22.0**	**+0.9**
	1.3nm,0.9s,baz=12,slow=8.7,SNR=4.3						
RES	**Resolute Bay**	**60.05**	**15**	*e*P	**P**	**00 27 22.0**	**+0.9**
	18nm,1.9s						
GEYT	**Alibeck**	**65.12**	**300**	P	**P**	**00 27 56.3**	**+0.7**
	1.0nm,0.6s,baz=98,slow=7.7,SNR=4.0						
NEW	**Newport**	**66.93**	**46**	LR	LR	00 50 56.1	
	comp=Z,126nm,21.4s,baz=206,slow=30						
FIA0	**FINESS Array S**	**68.26**	**333**	*e*P	**P**	**00 28 16.1**	**+0.9**
FINES	**FINESS Array B**	**68.26**	**333**	P	**P**	**00 28 16.1**	**+0.9**
	1.0nm,0.5s,baz=35,slow=7.0,SNR=6.4						
DNR	**Dunn Ranch,Anz**	**75.74**	**58**	*e*P	**P**	**00 28 59.9**	**-0.8**
BORC	**Borrego Spring**	**76.06**	**59**	*e*P	**P**	**00 29 00.8**	**-1.5**
TORD	**Torodi Ar. Bea**	**117.67**	**319**	PKP	**PKPdf**	**00 36 01.5**	**+0.1**
	0.3nm,0.9s,baz=343,slow=1.8,SNR=3.7						

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*DDA **06** 00:18:02.1, 39.°94N×37.°53E, h7km, Md2.8*
*ISK **06** 00:18:02.0, 39.°99N×37.°53E, h4km, MD2.7*
*CSEM **06** 00:18:02.4±0.2, 39.°96N×37.°54E, h2km, MD2.7, Error ellipse: s-maj=4.4km s-min=3.4km az=2.0*
ISC 06 00:18:02.1±0.9**, 39.°95N**±0.°02×**37.°54E**±0.°02**, h16km**±8km**, n30, σ0.s99**/47**, Turkey**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
SVSK	**Karacayir**	**0.42**	**266**	*e*PG	**Pg**	**00 18 10.6**	**0.0**
SVSK				*e*SG	**Sb**	**00 18 17.2**	**0.0**
SVSK	**Karacayir**	**0.42**	**266**	*e*Pg	**Pg**	**00 18 10.6**	**0.0**
SVSK				*e*Sg	**Sb**	**00 18 17.2**	**0.0**
RSDY	**Resadiye-TOKAT**	**0.48**	**340**	*e*PG	**Pg**	**00 18 11.2**	**-0.5**
RSDY				*e*SG	**Sg**	**00 18 17.7**	**-0.5**
RSDY	**Resadiye-TOKAT**	**0.48**	**340**	*e*Pg	**Pg**	**00 18 11.2**	**-0.5**
RSDY				*e*Sg	**Sg**	**00 18 17.7**	**-0.5**
SUSE	**Susehri**	**0.57**	**63**	*i* P	**Pb**	**00 18 14.1**	**+0.3**
SUSE				*i* S	**Sb**	**00 18 22.5**	**+0.8**
SUSE	**Susehri**	**0.57**	**63**	P	**Pb**	**00 18 14.1**	**+0.3**
SUSE				S	**Sb**	**00 18 22.5**	**+0.8**
CUKAN	**kangal_SIVAS**	**0.63**	**185**	*i* P	**Pg**	**00 18 14.3**	**-0.2**
CUKAN	**kangal_SIVAS**	**0.63**	**185**	P	**Pg**	**00 18 14.4**	**-0.2**
TOKA	**Tokat**	**0.90**	**295**	*i* P	**Pb**	**00 18 19.1**	**-0.2**
TOKA				*i* S	**Sn**	**00 18 32.6**	**-0.1**
TOKA	**Tokat**	**0.90**	**295**	P	**Pb**	**00 18 19.1**	**-0.2**
TOKA				S	**Sn**	**00 18 32.6**	**-0.1**
KEMA	**Kemaliye**	**1.00**	**132**	*i* P	**Pb**	**00 18 21.4**	**+0.3**
KEMA				*i* S	**Sn**	**00 18 35.5**	**+0.2**
KEMA	**Kemaliye**	**1.00**	**132**	P	**Pb**	**00 18 21.4**	**+0.3**
KEMA				S	**Sn**	**00 18 35.5**	**+0.2**
REFA	**Refahiye_ERZ˜**	**1.09**	**120**	*i* P	**Pb**	**00 18 19.8**	**-2.9**
REFA				*i* S	**Sb**	**00 18 32.9**	**-3.9**
REFA	**Refahiye_ERZ˜**	**1.09**	**120**	P	**Pb**	**00 18 19.8**	**-2.9**
CUSAR	**Sarkisla-SIVAS**	**1.13**	**243**	*i* P	**Pb**	**00 18 23.3**	**0.0**
CUSAR				*i* S	**Sg**	**00 18 39.3**	**+0.5**
CUSAR	**Sarkisla-SIVAS**	**1.13**	**243**	P	**Pb**	**00 18 23.3**	**0.0**
CUSAR				S	**Sg**	**00 18 39.3**	**+0.5**
KELT	**Kelkit**	**1.33**	**81**	*i* P	**Pn**	**00 18 26.4**	**+0.2**
KELT				*i* S	**Sg**	**00 18 46.0**	**+0.9**
KELT	**Kelkit**	**1.33**	**81**	P	**Pn**	**00 18 26.4**	**+0.2**
KELT				S	**Sg**	**00 18 46.0**	**+0.9**
DARE	**Darende-Malaty**	**1.38**	**182**	*e*PN	**Pg**	**00 18 29.4**	**+0.9**
DARE	**Darende-Malaty**	**1.38**	**182**	*e*Pn	**Pg**	**00 18 29.5**	**+0.9**
GUMT	**Gumushane**	**1.57**	**70**	*e*PN	**Pb**	**00 18 31.4**	**+0.6**
GUMT	**Gumushane**	**1.57**	**70**	*e*Pn	**Pb**	**00 18 31.4**	**+0.6**
AKCD	**Akcadag**	**1.68**	**170**	*i* P	**Pg**	**00 18 34.2**	**-0.1**
AKCD				*i* S	**Sg**	**00 18 57.2**	**+1.1**
AKCD	**Akcadag**	**1.68**	**170**	P	**Pg**	**00 18 34.2**	**-0.1**
AKCD				S	**Sg**	**00 18 57.2**	**+1.1**
BNN	**Bunyan**	**1.71**	**231**	*e*PN	**Pg**	**00 18 34.3**	**-0.7**
BNN	**Bunyan**	**1.71**	**231**	*e*Pn	**Pg**	**00 18 34.3**	**-0.7**
YOZ	**Yozgat**	**1.74**	**261**	*e*PN	**Pb**	**00 18 33.7**	**0.0**
YOZ	**Yozgat**	**1.74**	**261**	*e*Pn	**Pb**	**00 18 33.7**	**0.0**
PTK	**Pertek**	**1.78**	**126**	*e*PN	**Pb**	**00 18 34.5**	**+0.1**
PTK	**Pertek**	**1.78**	**126**	*e*Pn	**Pb**	**00 18 34.5**	**+0.1**

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*ISK **06** 00:19:16.8, 40.°78N×28.°19E, h13km, MD2.6*
*ISCJB **06** 00:19:17.2±0.4, 40.°79N±0.°03×28.°19E±0.°04, h12km, Error ellipse: s-maj=5.1km s-min=4.1km az=155.0*
*CSEM **06** 00:19:17.3±0.1, 40.°78N×28.°18E, h15km, MD2.6, Error ellipse: s-maj=3.7km s-min=2.6km az=170.0*
*DDA **06** 00:19:17.6, 40.°80N×28.°13E, h7km, Md2.8*
ISC 06 00:19:16.9±0.9**, 40.°81N**±0.°04×**28.°18E**±0.°02**, h12km, n30, σ0.s29**/35**, Turkey**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
CRLT	**Corlu**	**0.46**	**313**	*e*PG	**Pb**	**00 19 26.9**	**-0.1**
CRLT				*e*SG	**Sb**	**00 19 34.2**	**+0.4**
CRLT	**Corlu**	**0.46**	**313**	*e*Pg	**Pb**	**00 19 26.9**	**-0.1**
CRLT				*e*Sg	**Sb**	**00 19 34.2**	**+0.4**
CTKS	**Kestanelik-??a**	**0.49**	**30**	*e*PG	**Pb**	**00 19 27.2**	**-0.2**
CTKS	**Kestanelik-??a**	**0.49**	**30**	*e*Pg	**Pb**	**00 19 27.2**	**-0.2**
EDC	**Edincik**	**0.53**	**208**	*e*PG	**Pg**	**00 19 27.2**	**0.0**
EDC				*e*SG	**Sg**	**00 19 34.5**	**+0.4**
EDC	**Edincik**	**0.53**	**208**	*e*Pg	**Pg**	**00 19 27.2**	**0.0**
EDC				*e*Sg	**Sg**	**00 19 34.5**	**+0.4**
ARMT	**Armutlu**	**0.57**	**115**	*e*PG	**Pg**	**00 19 28.0**	**-0.1**
ARMT	**Armutlu**	**0.57**	**115**	*e*Pg	**Pg**	**00 19 28.0**	**-0.1**
BGKT	**Bogazkoy**	**0.58**	**50**	*e*PG	**Pb**	**00 19 29.6**	**+0.6**
BGKT	**Bogazkoy**	**0.58**	**50**	*e*Pg	**Pb**	**00 19 29.6**	**+0.6**
MDNY	**Mudanya-Bursa**	**0.70**	**129**	*e*PG	**Pg**	**00 19 30.4**	**0.0**
MDNY	**Mudanya-Bursa**	**0.70**	**129**	*e*Pg	**Pg**	**00 19 30.4**	**0.0**
BUY	**Buyukada**	**0.71**	**87**	*i* P	**Pn**	**00 19 32.3**	**-0.5**
BUY	**Buyukada**	**0.71**	**87**	P	**Pn**	**00 19 32.3**	**-0.5**
ISK	**Istanbul-Kandi**	**0.71**	**69**	*e*PG	**Pb**	**00 19 31.1**	**0.0**
ISK	**Istanbul-Kandi**	**0.71**	**69**	*e*Pg	**Pb**	**00 19 31.2**	**0.0**
KNL	**Bal˜–kesir**	**0.74**	**223**	*i* P	**Pg**	**00 19 30.4**	**-0.7**
KNL				*i* S	**Sb**	**00 19 41.5**	**-0.1**
RKY	**Sarkoy-Tekirda**	**0.77**	**261**	*e*PG	**Pg**	**00 19 31.9**	**+0.1**
RKY	**Sarkoy-Tekirda**	**0.77**	**261**	*e*Pg	**Pg**	**00 19 31.9**	**+0.1**
KLYT	**Kilyos**	**0.79**	**56**	*e*PG	**Pb**	**00 19 32.4**	**-0.1**
KLYT	**Kilyos**	**0.79**	**56**	*e*Pg	**Pb**	**00 19 32.4**	**-0.1**
IGD	**Bursa**	**0.95**	**125**	*i* P	**Pn**	**00 19 35.9**	**-0.1**
KESN	**Edirne-Kesan**	**1.14**	**271**	*i* P	**Pb**	**00 19 38.7**	**0.0**
KESN	**Edirne-Kesan**	**1.14**	**271**	P	**Pb**	**00 19 38.7**	**0.0**
SILT	**Sile**	**1.16**	**72**	*e*PN	**Pg**	**00 19 39.1**	**0.0**
SILT	**Sile**	**1.16**	**72**	*e*Pn	**Pg**	**00 19 39.1**	**0.0**
ERIK	**Erikli-Kesan**	**1.27**	**264**	*e*PN	**Pb**	**00 19 41.0**	**+0.2**
ERIK	**Erikli-Kesan**	**1.27**	**264**	*e*Pn	**Pb**	**00 19 41.0**	**+0.2**
EDRB	**Edirne**	**1.50**	**314**	*e*PN	**Pb**	**00 19 44.5**	**-0.1**
EDRB	**Edirne**	**1.50**	**314**	*e*Pn	**Pb**	**00 19 44.5**	**-0.1**

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*IDC **06** 00:22:31.2±6.2, 36.°45N×142.°46E, h0km, mb3.3/3, mb1 3.5/5, mb1mx3.2/68, mbtmp3.5/5, ML3.0/2, MS3.1/1, Ms1 3.1/1, ms1mx2.1/25, Error ellipse: s-maj=102.0km s-min=66.9km az=136.0*
*JMA **06** 00:22:47.5±0.1, 36.°94N×141.°13E, h50km±1km, M3.4*
JMA Felt II J1.
ISC 06 00:22:45.5±2.4**, 36.°91N**±0.°08×**141.°3E**±0.°2**, h43km**±14km**, n13, σ0.s82**/20**, mb3.3**/3**, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.47**	**295**	P	**Pn**	**00 22 56.6**	**+0.6**
ONAJ				S	**Sn**	**00 23 02.9**	**-0.6**
JFK	**Kawauchi**	**0.59**	**322**	P	**Pn**	**00 22 58.1**	**+0.6**
JFK				S	**Sn**	**00 23 05.6**	**-0.5**
JHO	**Hitachi**	**0.68**	**245**	P	**Pn**	**00 22 59.0**	**+0.3**
JHO				S	**Sn**	**00 23 07.5**	**-0.7**
JFT	**Otama**	**1.00**	**308**	P	**Pn**	**00 23 04.1**	**+1.0**
JFT				S	**Sn**	**00 23 15.7**	**-0.4**
JMM	**Marumori**	**1.05**	**336**	P	**Pn**	**00 23 04.4**	**+0.7**
JMM				S	**Sn**	**00 23 16.9**	**-0.3**
JFY	**Yanaizu**	**1.39**	**292**	P	**Pn**	**00 23 08.8**	**+0.3**
JFY				*e*S	**Sn**	**00 23 24.7**	**-0.9**
JOU	**Okura**	**1.55**	**340**	P	**Pn**	**00 23 11.8**	**+1.2**
JOU				*e*S	**Sn**	**00 23 29.7**	**+0.1**
MJAR	**Matsushiro Arr**	**2.53**	**263**	Pn	**Pn**	**00 23 25.4**	**+1.3**
	7.1nm,0.3s,baz=86,slow=15,SNR=25						
MAT	**Matsushiro**	**2.54**	**263**	P	**Pn**	**00 23 25.1**	**+1.0**
MAT				S	**Sn**	**00 23 55.1**	**+1.3**
USRK	**Ussuriysk Ar.**	**10.17**	**319**	Pn	Pn	00 25 12.5	+3.6
	0.2nm,0.3s,baz=128,slow=18,SNR=4.9						
SONM	**Songino Array**	**27.80**	**304**	P	**P**	**00 28 30.6**	**+0.1**
	0.2nm,0.3s,baz=90,slow=6.6,SNR=3.7						
SONM				LR	LR	00 40 20.3	
	comp=Z,30nm,18.2s,baz=48,slow=37						
MKAR	**Makanchi Array**	**44.13**	**302**	P	**P**	**00 30 49.1**	**-0.5**
	0.2nm,0.7s,baz=91,slow=11,SNR=3.3						
BVAR	**Borovoye Array**	**50.61**	**312**	P	**P**	**00 31 39.2**	**-0.6**
	0.3nm,0.5s,baz=94,slow=5.8,SNR=2.5						

IDC 06 00:23:24.4±1.3**, 38.°76N**×**145.°01E, h0km, mb3.7**/8**, mb1 3.8**/10**, mb1mx3.5**/66**, mbtmp3.7**/10**, ML2.5**/1**, Error ellipse: s-maj=39.6km s-min=19.7km az=76.0, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
MJAR	**Matsushiro Arr**	**5.83**	**250**	Pn	Pn	00 24 50.5	-1.7
	baz=58,slow=12,SNR=2.2						
USRK	**Ussuriysk Ar.**	**11.17**	**303**	Pn	Pn	00 26 06.0	+0.7
	0.3nm,0.3s,baz=107,slow=16,SNR=5.0						
SONM	**Songino Array**	**29.27**	**301**	P	P	00 29 28.7	+0.4
	0.3nm,0.8s,baz=103,slow=6.5,SNR=2.1						
ZALV	**Zalesovo Beam**	**42.89**	**311**	P	P	00 31 24.2	-0.1
	0.5nm,0.4s,baz=79,slow=7.8,SNR=2.7						
MKAR	**Makanchi Array**	**45.63**	**301**	P	P	00 31 46.5	0.0
	0.3nm,0.6s,baz=80,slow=10.0,SNR=4.1						
BVAR	**Borovoye Array**	**51.53**	**312**	P	P	00 32 31.7	0.0
	0.5nm,0.6s,baz=59,slow=8.7,SNR=3.5						
WRA	**Warramunga Arr**	**59.24**	**192**	P	P	00 33 27.1	-0.5
	0.6nm,0.8s,baz=10,slow=7.1,SNR=2.9						
SPITS	**Spitsbergen Ar**	**59.38**	**349**	P	P	00 33 27.5	-0.4
	4.9nm,0.9s,baz=48,slow=2.1,SNR=2.8						
ASAR	**Alice Springs**	**62.96**	**191**	P	P	00 33 53.4	+0.6
	0.3nm,0.6s,baz=11,slow=7.5,SNR=3.2						
FINES	**FINESS Array B**	**68.59**	**333**	P	P	00 34 28.6	-0.1
	0.9nm,0.6s,baz=56,slow=5.2,SNR=6.0						

PGC 06 00:57:23.5±3.2**, 50.°61N**×**130.°39W, h10km, ML2.9**/9**, Mw3.5**/9**, 209km west of Pt. Hardy, Bc Vancouver Island, Canada Region, Vancouver Island region**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
HOLB	**Holberg**	**1.44**	**88**	Pn	Pn	00 57 47.6	-2.0
HOLB				Sn	Sn	00 58 04.9	-3.7
BPBC	**Brooks Peninsu**	**1.73**	**104**	Pn	Pn	00 57 51.4	-2.4
BPBC				Sn	Sn	00 58 11.1	-4.8
PHC	**Port Hardy**	**1.88**	**86**	Pn	Pn	00 57 54.0	-1.7
PHC				Sn	Sn	00 58 15.7	-3.8
MAYB	**Maynard**	**2.06**	**95**	Pn	Pn	00 57 56.4	-1.9
MAYB				Sn	Sn	00 58 19.8	-4.4
BBB	**Bella Bella**	**2.12**	**41**	Pn	Pn	00 57 56.9	-2.1
BBB				Sn	Sn	00 58 21.3	-4.2
FHRB	**Fair Harbour**	**2.17**	**104**	Pn	Pn	00 57 57.7	-1.9
TLCB	**Telegraph Cove**	**2.27**	**90**	Pn	Pn	00 57 59.8	-1.2
TLCB				Sn	Sn	00 58 26.0	-2.9
WOSB	**Woss**	**2.48**	**99**	Pn	Pn	00 58 02.6	-1.5
NCRB	**Newcastle Ridg**	**2.77**	**93**	Pn	Pn	00 58 06.8	-1.3
CBB	**Campbell River**	**3.27**	**98**	Pn	Pn	00 58 13.8	-1.0

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*NIED **06** 01:09:00, 38.°10N×143.°30E, h8km, Mw3.5 Best double couple: Mo1.82000×10^{14} NP1:φs328.00000°, δ50.00000°, λ-173.00000°. NP2:φs233.00000°, δ85.00000°, λ-41.00000°.*
*IDC **06** 01:09:21.4±1.4, 37.°86N×143.°76E, h0km, mb3.5/4, mb1 3.7/5, mb1mx3.4/35, mbtmp3.4/5, ML3.3/1, Error ellipse: s-maj=32.0km s-min=28.8km az=115.0*
*ISCJB **06** 01:09:23.3±1.0, 37.°93N±0.°07×143.°58E±0.°08, h19km, mb3.4/4, Error ellipse: s-maj=10.6km s-min=9.1km az=13.7*
*JMA **06** 01:09:24.9±0.3, 38.°08N×143.°31E, h1km, M3.5*
ISC 06 01:09:25.0±1.2**, 37.°95N**±0.°08×**143.°54E**±0.°10**, h19km, n16, σ0.s97**/20**, mb3.4**/4**, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**1.80**	**287**	P	**Pn**	**01 09 54.4**	**-0.6**
JIO				*e*S	**Sn**	**01 10 16.3**	**-0.9**
OFUJ	**Ofunato**	**1.85**	**308**	P	**Pn**	**01 09 54.7**	**-1.0**
JMK	**Ichinoseki**	**2.08**	**299**	P	**Pn**	**01 09 58.5**	**-0.3**
JMK				S	**Sn**	**01 10 23.5**	**-0.7**
JMM	**Marumori**	**2.17**	**269**	P	**Pn**	**01 09 59.9**	**-0.2**
JOU	**Okura**	**2.30**	**281**	P	**Pn**	**01 10 02.2**	**+0.2**
JOM	**Ohasama**	**2.32**	**312**	P	**Pn**	**01 10 01.9**	**-0.3**
JOM				S	**Sn**	**01 10 29.3**	**-1.0**
JTH	**Tanohata**	**2.38**	**327**	P	**Pn**	**01 10 03.7**	**+0.8**
JFT	**Otama**	**2.58**	**261**	P	**Pn**	**01 10 06.4**	**+0.7**
JFT				*e*S	**Sn**	**01 10 36.7**	**+0.2**
JYK	**Kaneyama**	**2.68**	**292**	P	**Pn**	**01 10 07.3**	**+0.2**
JRG	**Rokugo**	**2.69**	**303**	P	**Pn**	**01 10 07.6**	**+0.3**
JANG	**Nango**	**2.89**	**328**	P	**Pn**	**01 10 10.7**	**+0.8**
MJAR	**Matsushiro Arr**	**4.48**	**253**	Pn	**Pn**	**01 10 31.9**	**+0.1**
	1.3nm,0.3s,baz=67,slow=9.6,SNR=5.0						
SONM	**Songino Array**	**28.70**	**302**	P	**P**	**01 15 23.8**	**+2.9**
	0.3nm,0.5s,baz=86,slow=8.8,SNR=3.2						
MKAR	**Makanchi Array**	**45.07**	**302**	P	**P**	**01 17 38.9**	**-0.8**
	0.3nm,0.9s,baz=96,slow=10,SNR=2.4						
ILAR	**Eielson Array**	**47.81**	**33**	P	**P**	**01 18 00.1**	**-0.8**
	0.4nm,0.9s,baz=270,slow=6.3,SNR=4.1						
WRA	**Warramunga Arr**	**58.23**	**190**	P	**P**	**01 19 17.2**	**-0.9**
	0.8nm,0.7s,baz=8.4,slow=7.5,SNR=4.0						

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*SOME **06** 01:11:52.0, 39.°43N×72.°85E, h0km*
*KRNET **06** 01:11:56.1±0.1, 39.°42N×73.°31E, mb2.7*
*NNC **06** 01:11:58.4±1.9, 39.°47N×73.°48E, h0km, mb3.3, mpv2.6, Error ellipse: s-maj=22.3km s-min=8.6km az=104.0*
ISC 06 01:12:00.6±1.4**, 39.°55N**±0.°07×**73.°29E**±0.°04**, h10km, n27, σ1.s95**/51**, 27C-10D, Tajikistan-Xinjiang border region**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
SFK	**Sufi-Kurgan**	**0.49**	**20**	⇑*i*P	**Pg**	**01 12 08.4**	**-1.7**
	baz=13						
SFK				⇑*i*S	**Sg**	**01 12 17.2**	**+0.6**
	baz=13						
SFK	**Sufi-Kurgan**	**0.49**	**20**	⇑P	**Pg**	**01 12 08.4**	**-1.7**
	0.1nm,0.2s						
SFK				⇓S	**Sg**	**01 12 17.0**	**+0.4**
	140nm,0.2s						
BTK	**Batken**	**1.97**	**286**	⇓*e*P	**Pn**	**01 12 33.2**	**-0.9**
	baz=289						
BTK				⇓*e*S	**Sb**	**01 13 00.7**	**-0.5**
	baz=289						
TOKL	**Toktogul**	**2.41**	**353**	⇑*i*P	**Pn**	**01 12 41.0**	**+0.9**
	baz=352						
TOKL				⇑*e*S	**Sb**	**01 13 13.3**	**-0.4**
	baz=352						
ARLS	**Aral**	**2.44**	**18**	⇑*e*P	**Pn**	**01 12 41.1**	**+0.5**
	baz=17						
ARLS				⇑*e*S	**Sb**	**01 13 13.6**	**-1.1**
	baz=17						
ARK	**Arkit**	**2.46**	**336**	⇑*i*P	**Pn**	**01 12 41.9**	**+1.1**
	baz=337						
ARK				⇑*i*S	**Sb**	**01 13 14.7**	**-0.6**
	baz=337						
AML	**Almayashu**	**2.59**	**7**	⇓*i*P	**Pb**	**01 12 44.9**	**-2.5**
	baz=6.0						
AML				⇓*i*S	**Sb**	**01 13 19.3**	**-0.2**
	baz=6.0						
NRN	**Naryn**	**2.79**	**47**	⇑*i*P	**Pn**	**01 12 45.5**	**-0.1**
	baz=45						
NRN				⇑*i*S	**Sn**	**01 13 20.6**	**+1.1**
	baz=45						
UCH	**Uchtor**	**2.83**	**19**	⇑*i*P	**Pb**	**01 12 48.8**	**-2.6**
	baz=18						
UCH				⇑*i*S	**Sb**	**01 13 25.8**	**-0.5**
	baz=18						
KZA	**Kyzart**	**2.93**	**30**	⇑*i*P	**Pb**	**01 12 50.6**	**-2.5**
	baz=28						
KZA				⇑*i*S	**Sb**	**01 13 29.9**	**+0.8**
	baz=28						
MNAS	**Manas**	**2.99**	**349**	⇑*i*P	**Pn**	**01 12 49.6**	**+1.4**
	baz=349						
MNAS				⇑*e*S	**Sb**	**01 13 27.9**	**-2.7**
	baz=349						
MNAS	**Manas**	**2.99**	**349**	⇑Pn	**Pb**	**01 12 51.0**	**-3.0**
	2.1nm,0.4s						
MNAS				⇓Lg	Lg	01 13 35.5	
	12nm,0.6s						
EKS2	**Erkin-Say**	**3.13**	**7**	⇑*i*P	**Pb**	**01 12 53.1**	**-3.2**
	baz=6.0						
EKS2				⇑*i*S	**Sb**	**01 13 35.4**	**+0.9**
	baz=6.0						
MRKS	**Merke**	**3.19**	**359**	*e*P	**Pn**	**01 12 53.5**	**+2.7**
	4.9nm,0.4s						
MRKS				⇓*i*S	**Sb**	**01 13 38.9**	**+2.6**
	20nm,0.5s						
AAK	**Ala-Archa**	**3.21**	**16**	⇑*i*P	**Pb**	**01 12 54.5**	**-3.2**
	baz=15						
AAK				⇑*i*S	**Sb**	**01 13 37.6**	**+0.7**
	baz=15						
AAK	**Ala-Archa**	**3.21**	**16**	⇑Pn	**Pb**	**01 12 54.2**	**-3.5**
	2.5nm,0.3s						
AAK				⇑Lg	Lg	01 13 40.6	
	7.8nm,0.7s						
JBG	**Jabagly**	**3.34**	**30**	*e*P	**Pb**	**01 12 56.2**	**-3.7**
	7.4nm,0.4s						
JBG				*e*S	**Sb**	**01 13 43.0**	**+2.4**
	14nm,0.4s						
DZET	**Dzherino**	**3.55**	**259**	Pg	**Pg**	**01 13 07.8**	**-0.7**
	7.2nm,0.5s						
DZET				⇓Lg	Lg	01 13 51.2	
	17nm,0.5s						
IUG	**Iuzhnay**	**3.58**	**317**	*e*P	**Pn**	**01 12 54.8**	**-1.5**
	2.8nm,0.2s						
IUG				*e*S	**Sn**	**01 13 41.0**	**+2.4**
	22nm,0.4s						
TKM2	**Tokmak 2**	**3.79**	**27**	⇓Pg	**Pb**	**01 13 08.6**	**+1.0**
	1.9nm,0.6s						
TKM2				⇑Lg	Lg	01 14 02.9	
	4.9nm,0.6s						
KK31	**Karatay Array**	**4.12**	**330**	⇓Pn	**Pn**	**01 13 06.7**	**+3.1**
	0.1nm,0.2s,baz=148,slow=13,SNR=6.4						
KK31				Pg	**Pb**	**01 13 14.6**	**+1.5**
	0.6nm,0.3s,baz=156,slow=15,SNR=6.4						
KK31				⇑Sn	**Sn**	**01 13 56.6**	**+4.9**
	1.6nm,0.3s,baz=150,slow=23,SNR=5.5						
KK31				⇑Lg	Lg	01 14 11.8	
	2.8nm,0.5s,baz=157,slow=28,SNR=4.2						
DGS	**Degeres**	**4.13**	**26**	*e*P	**Pb**	**01 13 12.8**	**-0.7**
	2.4nm,0.4s						
DGS				*e*S	**Sg**	**01 14 11.9**	**-1.3**
IZV	**Izvestkoviy**	**4.29**	**35**	*e*P	**Pb**	**01 13 16.2**	**+0.2**
	4.1nm,0.5s						
IZV				*e*S	**Sg**	**01 14 17.9**	**-0.3**
	10nm,0.5s						
TNSS	**Tian-Shan**	**4.44**	**37**	*e*P	**Pb**	**01 13 19.5**	**+0.6**
	2.7nm,0.4s						
TNSS				*e*S	**Sg**	**01 14 23.3**	**+0.1**
	7.7nm,0.6s						
KOTS	**Kotyrbulak**	**4.67**	**37**	*e*P	**Pb**	**01 13 23.9**	**+1.3**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
KOTS				eS	Sg	01 14 30.7	+0.3
KTBS	Karatobe	4.87	30	eP	Pb	01 13 25.9	-0.1
KTBS				eS	Sg	01 14 34.5	-2.4
ARXS	Arharly	5.76	35	eP	Pb	01 13 43.0	+1.9
	1.8nm,0.3s						
ARXS				eS	Sg	01 15 03.2	-2.1
	5.7nm,0.5s						

*NIED **06** 01:12:00, 37°.70N×143°.50E, h26km, Mw4.0 Best double couple: M0 1.09000×10^15 NP1: φs333.00000°, δ63.00000°, λ-176.00000°. NP2: φs242.00000°, δ86.00000°, λ-27.00000°.*
*IDC **06** 01:12:21.2±0.8, 37°.44N×143°.51E, h0km, mb3.8/12, mb1 4.0/16, mb1mx3.9/37, mbtmp3.9/16, ML3.5/3, MS2.9/5, Ms1 2.9/5, ms1mx2.6/49, Error ellipse: s-maj=19.7km s-min=15.4km az=101.0*
*NEIC **06** 01:12:24.4±6.0, 37°.53N×143°.63E, h19km±36km, mb4.1/2, Error ellipse: s-maj=19.9km s-min=12.0km az=125.0*
*JMA **06** 01:12:25.0±0.3, 37°.66N×143°.54E, h45km, M4.3*
ISC 06 01:12:20.6±3.0**, 37°.50N**±0°.04×**143°.62E**±0°.07**, h4**km±18km**, n48, σ2.73**/55**, mb4.0**/16**, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
JIO	Ouri	2.03	299	P	Pn	01 12 56.1	+0.5
JIO				S	Sn	01 13 18.8	-2.6
JFK	Kawauchi	2.19	267	P	Pb	01 12 58.6	-2.1
JFK				S	Sn	01 13 23.3	-2.0
JMM	Marumori	2.27	280	P	Pb	01 12 59.6	-2.5
JMM				S	Sn	01 13 25.1	-2.2
JMK	Ichinoseki	2.38	308	P	Pn	01 13 00.8	+0.4
JMK				eS	Sn	01 13 27.5	-2.6
JOU	Okura	2.49	291	P	Pb	01 13 03.3	-2.6
JOU				eS	Sn	01 13 31.8	-1.0
JFT	Otama	2.61	272	P	Pb	01 13 05.5	-2.4
JFT				S	Sn	01 13 34.7	-1.0
JOM	Ohasama	2.69	318	P	Pn	01 13 05.0	+0.3
JOM				S	Sn	01 13 34.6	-3.1
JTH	Tanohata	2.80	331	P	Pn	01 13 05.7	-0.5
JTH				eS	Sn	01 13 36.1	-4.3
JYK	Kaneyama	2.93	300	P	Pn	01 13 09.3	+1.3
JRG	Rokugo	3.01	310	P	Pn	01 13 10.0	+0.9
JRG				eS	Sn	01 13 43.4	-2.3
JANG	Nango	3.31	331	P	Pn	01 13 14.1	+0.9
JANG				S	Sn	01 13 47.8	-5.2
JTM	Tenmabayashi	3.84	330	P	Pn	01 13 21.5	+1.1
JTM				S	Sn	01 14 01.6	-4.4
JRY	Ryogami san	4.06	250	P	Pn	01 13 25.6	+2.0
JRY				S	Sn	01 14 09.6	-2.0
MJAR	Matsushiro Arr	4.43	259	Pn	Pn	01 13 29.8	+1.2
	6.3nm,0.3s,baz=80,slow=13,SNR=30						
MJAR				Sn	Sn	01 14 20.2	-0.4
	6.9nm,0.3s,baz=72,slow=22,SNR=7.1						
MAJO	Matsushiro	4.43	259	ePn	Pn	01 13 31.7	+3.1
MAT	Matsushiro	4.43	259	P	Pn	01 13 31.8	+3.2
MAT				S	Sn	01 14 21.5	+0.8
ERM	Erimo	4.53	356	ePn	Pn	01 13 29.4	-0.5
ERM				eSn	Sn	01 14 16.6	-6.4
JHJ	Hachijo jima 2	5.37	217	Sn	Sn	01 14 40.0	-3.8
	153nm,0.3s,baz=81,slow=20,SNR=4.2						
JHJ				LR	LR	01 16 03.6	
	comp=Z,61nm,18.1s,baz=160,slow=42						
CBIJ	Chichi jima	10.44	187	Pn	Pn	01 14 49.4	-1.7
CBIJ				Sn	Sn	01 16 41.1	-7.5
JCJ	Chichijima	10.44	187	Pn	Pn	01 14 49.4	-1.7
	11nm,0.3s,baz=286,slow=23,SNR=5.4						
JCJ				Sn	Sn	01 16 41.1	-7.5
	10nm,0.3s,baz=270,slow=20,SNR=3.2						
USRK	Ussuriysk Ar.	11.06	311	Pn	Pn	01 15 01.8	+2.3
	0.6nm,0.3s,baz=119,slow=14,SNR=15						
KSRS	Korea Array	12.47	275	Pn	Pn	01 15 23.2	+4.4
	0.2nm,0.3s,baz=87,slow=13,SNR=14						
KSRS				LR	LR	01 19 28.1	
	comp=Z,36nm,18.4s,baz=87,slow=34						
KSAR	Wonju Array Be	12.50	275	Pn	Pn	01 15 23.2	+3.9
KLR	Kul'dur	14.54	328	Pn	Pn	01 15 46.4	-0.7
	0.4nm,0.3s,baz=133,slow=13,SNR=9.7						
KLR				LR	LR	01 21 30.7	
	comp=Z,86nm,18.8s,baz=119,slow=38						
PETK	Petropavlovsk-	18.43	28	LR	LR	01 25 01.9	
	comp=Z,23nm,19.3s,baz=194,slow=41						
SEY	Seymchan	26.03	9	P	P	01 17 57.1	+2.6
	0.6nm,0.3s,baz=198,slow=8.4,SNR=5.6						
H11N2	WAKE ISLAND Hy	26.92	125	T	T	01 46 25.5	
	baz=317,slow=75,SNR=6.0						
H11N1	WAKE ISLAND Hy	26.93	125	T	T	01 46 26.9	
	baz=317,slow=75,SNR=5.4						
H11N3	WAKE ISLAND Hy	26.94	125	T	T	01 46 23.9	
	baz=317,slow=75,SNR=7.0						
H11S1	WAKE ISLAND Hy	27.68	127	T	T	01 47 22.6	
	baz=322,slow=74,SNR=4.8						
H11S3	WAKE ISLAND Hy	27.68	127	T	T	01 47 23.6	
	baz=322						
H11S2	WAKE ISLAND Hy	27.70	127	T	T	01 47 20.0	
	baz=322,slow=74,SNR=5.0						
SONM	Songino Array	29.00	303	P	P	01 18 22.9	+1.4
	0.9nm,0.4s,baz=106,slow=9.6,SNR=7.0						
ZALV	Zalesovo Beam	42.91	312	P	P	01 20 21.3	+1.2
	1.3nm,0.4s,baz=86,slow=6.1,SNR=5.3						
MKAR	Makanchi Array	45.36	302	P	P	01 20 41.2	+1.2
	1.4nm,0.8s,baz=88,slow=9.3,SNR=15						
KURK	Kurchatov	47.03	308	eP	P	01 20 53.6	+0.7
	9.5nm,0.6s						
ILAR	Eielson Array	48.16	33	P	P	01 21 02.3	+0.7
	0.3nm,0.6s,baz=262,slow=6.2,SNR=4.2						
TKM2	Tokmak 2	50.95	299	eP	P	01 21 25.3	+1.9
	2.8nm,0.6s						
INK	Inuvik	53.17	27	P	P	01 21 41.0	+1.7
	0.5nm,0.7s,baz=207,slow=3.5,SNR=2.1						
WRA	Warramunga Arr	57.79	190	P	P	01 22 13.5	+0.4
	7.1nm,0.7s,baz=11,slow=7.4,SNR=23						
ABKAR	Akbulak array	58.98	311	eP	P	01 22 21.8	+0.7
	0.5nm,0.6s						
ASAR	Alice Springs	61.52	190	P	P	01 22 40.0	+1.3
	1.3nm,0.7s,baz=13,slow=6.7,SNR=14						
YKA	Yellowknife Ar	62.52	31	P	P	01 22 48.6	+3.6
	0.1nm,0.7s,baz=301,slow=5.9,SNR=2.5						
ARCES	ARCESS Array B	64.18	340	P	P	01 22 57.5	+1.6
	3.2nm,1.0s,baz=41,slow=17,SNR=2.7						
GEYT	Alibeck	65.14	300	P	P	01 23 02.6	-0.2
	0.7nm,0.5s,baz=54,slow=2.5,SNR=2.5						
FINES	FINESS Array B	69.22	333	P	P	01 23 27.9	-0.3
	2.2nm,1.1s,baz=52,slow=9.0,SNR=3.2						
AKASG	Malin Array Be	75.00	323	P	P	01 24 03.7	+0.7
	0.3nm,0.3s,baz=45,slow=5.8,SNR=6.2						
SFJD	Kangerlussuaq	75.27	6	LR	LR	01 56 01.0	
	comp=Z,25nm,19.6s,baz=244,slow=35						

MEX 06 01:19:16.5±0.5**, 16°.52N**×**94°.83W, h133**km±15km**, MD3.9, Oaxaca**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
HUIG	Huatulco	1.44	239	i P	Pn	01 19 42.6	-1.6
HUIG				eS	Sn	01 20 03.8	-1.4
TGIG		1.65	81	i P	Pn	01 19 45.3	-1.3
TGIG				i S	Sn	01 20 07.4	-2.2
PCIG		1.74	117	eP	Pn	01 19 46.7	-0.9
PCIG				eS	Sn	01 20 09.6	-1.7
VHO	Vista Hermosa	1.91	287	eP	Pn	01 19 48.7	-1.0
VHO				i S	Sn	01 20 13.1	-2.0

*NIED **06** 01:23:00, 36°.40N×141°.90E, h20km, Mw4.2 Best double couple: M0 2.44000×10^15 NP1: φs244.00000°, δ10.00000°, λ142.00000°. NP2: φs12.00000°, δ84.00000°, λ82.00000°.*
*IDC **06** 01:23:41.6±0.7, 36°.41N×142°.02E, h0km, mb4.1/20, mb1 4.2/25, mb1mx4.1/50, mbtmp4.1/25, ML3.8/3, MS3.3/11, Ms1 3.4/11, ms1mx3.0/51, Error ellipse: s-maj=16.8km s-min=14.3km az=152.0*
*ISCJB **06** 01:23:42.8±0.4, 36°.43N±0°.04×142°.09E±0°.05, h19km, mb4.1/25, MS3.3/7, Error ellipse: s-maj=6.3km s-min=4.7km az=139.3*
*JMA **06** 01:23:45.4±0.2, 36°.45N×141°.95E, h54km, M4.2*
*NEIC **06** 01:23:48.0±1.0, 36°.39N×141°.91E, h45km±8km, mb4.5/5, Error ellipse: s-maj=8.4km s-min=6.8km az=120.0*
ISC 06 01:23:44.6±0.6**, 36°.39N**±0°.05×**142°.04E**±0°.06**, h19**km**, n53, σ1.03**/51**, mb4.2**/25**, MS3.4**/7**, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
CHOJ	Chosi	1.18	234	P	Pn	01 24 05.6	-0.4
CHOJ				S	Sb	01 24 21.6	+0.4
JHO	Hitachi	1.20	281	P	Pn	01 24 04.9	-1.5
JHO				S	Sb	01 24 19.9	-2.0
ONAJ	Iwakimizuishiy	1.22	306	P	Pn	01 24 05.4	-1.3
JCN	Nagara	1.78	237	P	Pn	01 24 15.3	+1.0
BSO1	Boso 1	1.94	207	P	Pn	01 24 16.2	+0.2
BSO1				S	Sn	01 24 40.9	+1.3
BSO4	Boso 4	1.97	225	P	Pn	01 24 17.3	+0.5
BSO3	Boso 3	2.02	218	P	Pn	01 24 17.6	+0.3
JRY	Ryogami san	2.56	262	P	Pn	01 24 24.5	-0.6
JOD2	Odawara 2	2.65	246	P	Pn	01 24 26.2	-0.1
MJAR	Matsushiro Arr	3.09	274	Pn	Pn	01 24 32.4	+0.1
	46nm,0.3s,baz=105,slow=9.2,SNR=386						
MJAR				Sn	Sn	01 25 10.9	+2.1
	18nm,0.3s,baz=106,slow=11,SNR=7.9						
MJAR				LR	LR	01 25 59.0	
	comp=Z,638nm,19.5s,baz=115,slow=45						
MAJO	Matsushiro	3.09	274	ePn	Pn	01 24 32.9	+0.5
MAT	Matsushiro	3.09	274	P	Pn	01 24 32.6	+0.2
MAT				S	Sn	01 25 10.7	+1.9
JHJ	Hachijo jima 2	3.76	210	Pn	Pn	01 24 41.1	-0.4
	178nm,0.3s,baz=72,slow=21,SNR=14						
JHJ				Sn	Sn	01 25 22.4	-2.8
	254nm,0.3s,baz=94,slow=21,SNR=9.1						
JNU	Nakatsue	9.74	254	Pn	Pn	01 26 04.3	+0.6
	0.7nm,0.3s,baz=13,slow=10,SNR=5.9						
JNU				LR	LR	01 30 03.7	
	comp=Z,198nm,21.1s,baz=296,slow=39						
USRK	Ussuriysk Ar.	10.93	319	Pn	Pn	01 26 20.4	+0.5
	0.2nm,0.3s,baz=131,slow=13,SNR=9.0						
USRK				LR	LR	01 30 24.3	
	comp=Z,201nm,18.7s,baz=125,slow=37						
KSRS	Korea Array	11.35	280	Pn	Pn	01 26 28.3	+2.7
	0.5nm,0.3s,baz=98,slow=14,SNR=12						
KSRS				LR	LR	01 30 51.4	
	comp=Z,208nm,18.6s,baz=96,slow=38						
KSAR	Wonju Array Be	11.38	279	Pn	Pn	01 26 28.3	+2.2
KLR	Kul'dur	14.86	333	Pn	Pn	01 27 14.9	+1.3
	0.2nm,0.3s,baz=140,slow=14,SNR=5.7						
GUMO	Guam	22.85	173	LR	LR	01 37 09.1	
	comp=Z,31nm,21.5s,baz=310,slow=35						
MA2	Magadan	23.88	11	P	P	01 28 58.0	+1.4
	2.2nm,0.3s,baz=342,slow=17,SNR=2.6						
H11N2	WAKE ISLAND Hy	27.39	121	T	T	01 58 10.6	
	baz=313,slow=75,SNR=28						
H11N1	WAKE ISLAND Hy	27.40	121	T	T	01 58 14.2	
	baz=313,slow=75,SNR=22						
H11N3	WAKE ISLAND Hy	27.41	121	T	T	01 58 15.0	
	baz=313,slow=75,SNR=24						
ENH	Enshi	27.79	267	eP	P	01 29 31.2	-1.3
	13nm,0.6s						
H11S1	WAKE ISLAND Hy	28.09	123	T	T	01 59 12.4	
	baz=314,slow=75,SNR=31						
H11S3	WAKE ISLAND Hy	28.09	123	T	T	01 59 09.6	
	baz=314,slow=75,SNR=11						
H11S2	WAKE ISLAND Hy	28.11	123	T	T	01 59 23.5	
	baz=314,slow=75,SNR=20						
SONM	Songino Array	28.56	305	P	P	01 29 39.3	+0.1
	8.3nm,0.8s,baz=109,slow=9.2,SNR=59						
SONM				LR	LR	01 41 14.9	
	comp=Z,47nm,18.5s,baz=54,slow=37						
CMAR	Chiang Mai Arr	41.83	257	P	P	01 31 33.5	+0.1
	1.2nm,0.3s,baz=46,slow=7.1,SNR=6.7						
CMAR				LR	LR	01 49 27.0	
	comp=Z,27nm,20.4s,baz=265,slow=37						
ZALV	Zalesovo Beam	42.72	313	P	P	01 31 39.5	-0.7
	1.9nm,0.4s,baz=98,slow=7.6,SNR=15						
MKAR	Makanchi Array	44.88	303	P	P	01 31 57.6	-0.2
	3.8nm,0.6s,baz=89,slow=9.9,SNR=38						
MKAR				LR	LR	01 50 50.3	
	comp=Z,57nm,20.7s,baz=68,slow=36						
KURK	Kurchatov	46.72	309	eP	P	01 32 11.2	-1.0
	16nm,0.8s						
ILAR	Eielson Array	49.77	32	P	P	01 32 35.8	+0.3
	0.3nm,0.5s,baz=263,slow=6.3,SNR=3.7						
BRVK	Borovoye	51.43	313	eP	P	01 32 47.8	-0.4
	2.6nm,0.8s						
KKAR	Karatay Array	53.88	301	eP	P	01 33 06.7	+0.2
	0.9nm,0.5s						
WRA	Warramunga Arr	56.50	189	P	P	01 33 25.8	+0.2
	0.5nm,0.3s,baz=6.6,slow=7.3,SNR=3.0						
ABKAR	Akbulak array	58.73	311	eP	P	01 33 40.4	-0.6
	1.6nm,0.5s						
AKTO	Aktyubinsk	59.47	312	LR	LR	01 59 58.5	
	comp=Z,33nm,19.4s,baz=60,slow=37						
ASAR	Alice Springs	60.23	189	P	P	01 33 51.4	-0.1
	0.4nm,0.6s,baz=13,slow=7.6,SNR=4.1						
YKA	Yellowknife Ar	64.11	30	P	P	01 34 17.4	+0.3
	0.9nm,0.7s,baz=303,slow=6.7,SNR=16						
GEYT	Alibeck	64.58	299	P	P	01 34 20.7	0.0
	1.1nm,0.4s,baz=59,slow=4.2,SNR=3.5						
ARCES	ARCESS Array B	64.77	340	P	P	01 34 21.3	-0.1
	1.8nm,0.8s,baz=38,slow=6.1,SNR=3.1						
ARCES				LR	LR	02 05 39.9	
	comp=Z,28nm,20.2s,baz=4.0,slow=39						
FINES	FINESS Array B	69.61	333	P	P	01 34 51.8	-0.4
	1.5nm,0.7s,baz=57,slow=7.0,SNR=5.0						
FINES				LR	LR	02 06 13.0	
	comp=Z,28nm,21.4s,baz=358,slow=37						
KBZ	Khabaz	71.70	311	P	P	01 35 04.9	-0.3
	2.6nm,0.9s,baz=63,slow=2.3,SNR=3.1						
NB2	NORSAR Subarra	74.97	338	P	P	01 35 24.2	0.0
	comp=Z,1.1nm,0.7s,baz=37,slow=6.2						
NOA	NORSAR Array B	74.97	338	P	P	01 35 23.9	-0.3
	comp=Z,1.8nm,0.8s,baz=38,slow=5.9,SNR=5.5						
NVAR	Mina Array Bea	74.97	53	P	P	01 35 25.4	+0.5
	comp=Z,0.6nm,0.3s,baz=284,slow=5.0,SNR=4.3						
AKASG	Malin Array Be	75.11	323	P	P	01 35 24.1	-1.0
	comp=Z,1.3nm,0.6s,baz=47,slow=6.0,SNR=11						
PDAR	Pinedale Array	77.76	46	P	P	01 35 41.1	+0.5
	comp=Z,0.5nm,0.6s,baz=234,slow=1.6,SNR=6.6						
BRTR	Keskin Array B	79.65	312	P	P	01 35 51.2	+0.2
	comp=Z,1.4nm,1.0s,baz=146,slow=2.7,SNR=5.8						
GERES	GERESS Array B	83.52	329	P	P	01 36 10.4	-0.8
	comp=Z,0.4nm,0.5s,baz=30,slow=11,SNR=3.5						
TXAR	Lajitas Array	90.11	53	P	P	01 36 43.9	+0.2
	comp=Z,0.6nm,0.7s,baz=301,slow=3.8,SNR=8.5						
LPAZ	La Paz	146.57	61	PKPbc	PKPbc	01 43 25.5	-0.5
	comp=Z,2.0nm,0.5s,baz=230,slow=2.8,SNR=6.9						

*NEIC **06** 01:28:00.3, 57°.77N×133°.36W, h1km, ML2.9(OTT), After OTT.*
PGC 06 01:28:00.3±70.0**, 57°.77N**×**133°.36W, h1**km**, ML2.9**/6**, 86km Ese of Juneau, Ak Southeastern Alaska, Southeastern Alaska**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
WRAK	Wrangell Islan	1.46	157	ePn	Pg	01 28 28.8	+0.6
WRAK				eS	Sn	01 28 51.9	+4.5
DLBC	Dease Lake	1.89	68	Pg	Pn	01 28 34.5	+0.8
DLBC				Sg	Sn	01 28 58.4	+0.1
DLBC	Dease Lake	1.89	68	ePn	Pn	01 28 32.4	-1.3
SKAG	Skagway	1.99	330	ePn	Pn	01 28 34.9	-0.1
PLBC	Pleasant Camp	2.31	318	Pg	Pn	01 28 40.7	+1.2
PLBC				Sg	Sb	01 29 11.1	-0.7
PLBC	Pleasant Camp	2.31	318	Pg	Pn	01 28 40.7	+1.2
PLBC				Sg	Sb	01 29 11.1	-0.7
WHY	Whitehorse	3.01	346	Pn	Pn	01 28 49.5	+0.4
WHY				Sg	Sb	01 29 33.5	+1.6
WHY	Whitehorse	3.01	346	Pn	Pn	01 28 49.5	+0.4
WHY				Sg	Sb	01 29 33.5	+1.6
YUK7	Dusty Glacier	3.71	320	Sg	Sb	01 29 55.1	+3.0
HYT	Haines Junctio	3.73	327	Pn	Pn	01 29 01.4	+2.4
HYT				Sg	Sg	01 29 57.1	-3.0
HYT	Haines Junctio	3.73	327	Pn	Pn	01 29 01.4	+2.4
HYT				Sg	Sg	01 29 57.1	-3.0
YUK5	Granite Creek	4.08	328	Pn	Pn	01 29 07.1	+3.1
YUK5				Sg	Sb	01 30 06.0	+3.2
YUK5	Granite Creek	4.08	328	Pn	Pn	01 29 07.1	+3.1
YUK5				Sg	Sb	01 30 06.0	+3.2
YUK6	Outpost Mounta	4.09	323	Pn	Pn	01 29 06.3	+2.2
YUK6	Outpost Mounta	4.09	323	Pn	Pn	01 29 06.3	+2.2
YUK1	Sand Pete Hill	5.69	324	Sg	Sg	01 30 57.3	-5.4
DAWY	Dawson	6.97	338	Sg	Sg	01 31 37.0	-6.8

*ISK **06** 01:31:13.5, 38°.54N×44°.25E, h13km, MD2.5*
*DDA **06** 01:31:15.9, 38°.59N×44°.22E, h7km, Md2.6*
*CSEM **06** 01:31:15.5±0.9, 38°.62N×44°.25E, h2km, MD2.6, Error ellipse: s-maj=16.3km s-min=9.5km az=94.0*
ISC 06 01:31:13.3±1.8**, 38°.58N**±0°.03×**44°.34E**±0°.07**, h6**km±14km**, n22, σ0.75**/32**, Turkey-Iran border region**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
CLDR	Caldiran	0.65	330	ePG	Pg	01 31 26.7	+0.8
CLDR				eSG	Sb	01 31 36.2	-0.5
CLDR	Caldiran	0.65	330	ePg	Pg	01 31 26.7	+0.8
CLDR				eSg	Sb	01 31 36.2	-0.5
VMUR	Van-Muradiye	0.72	305	i P	Pb	01 31 28.0	-0.4
VMUR				i S	Sb	01 31 38.3	-0.4
VMUR	Van-Muradiye	0.72	305	P	Pb	01 31 28.0	-0.4
VMUR				S	Sb	01 31 38.3	-0.4
TVAN	Van	0.73	266	i P	Pb	01 31 28.6	0.0
TVAN				i S	Sb	01 31 38.3	-0.6
TVAN	Van	0.73	266	P	Pb	01 31 28.6	0.0
TVAN				S	Sb	01 31 38.3	-0.6
VANB	Van	0.74	271	ePG	Pg	01 31 28.1	+0.5
VANB				eSG	Sg	01 31 36.7	-0.5
VANB	Van	0.74	271	ePg	Pg	01 31 28.1	+0.5
VANB				eSg	Sg	01 31 36.7	-0.5
GEVA	Gevas	1.04	255	i P	Pg	01 31 33.4	+0.2
GEVA				i S	Sb	01 31 47.4	-0.3
GEVA	Gevas	1.04	255	P	Pg	01 31 33.4	+0.2
GEVA				S	Sb	01 31 47.4	-0.3
HKR	Hakkari	1.10	205	ePG	Pg	01 31 33.2	-1.3
HKR	Hakkari	1.10	205	ePg	Pg	01 31 33.2	-1.3
HAKT	HAKKARI	1.13	206	i P	Pn	01 31 37.5	+1.6
HAKT	HAKKARI	1.13	206	P	Pn	01 31 37.5	+1.6
AGRB	Hanur-Agry	1.44	314	ePN	Pn	01 31 39.7	-0.4
AGRB	Hanur-Agry	1.44	314	ePn	Pn	01 31 39.7	-0.4
SIRN	S˜–rnak	1.86	235	i P	Pg	01 31 50.2	+1.2
SIRN	S˜–rnak	1.86	235	P	Pg	01 31 50.2	+1.2
EKAR	Karacoban	1.90	292	i P	Pg	01 31 49.8	+0.1
EKAR	Karacoban	1.90	292	P	Pg	01 31 49.8	+0.1
EATA	Eleskirt	1.92	312	i P	Pb	01 31 48.9	0.0
EATA	Eleskirt	1.92	312	P	Pb	01 31 48.9	0.0

*ISK **06** 01:31:46.2, 38°.58N×44°.30E, h6km, MD3.0, ML3.0*
*CSEM **06** 01:31:47.2±0.5, 38°.57N×44°.25E, h2km, MD3.1, Error ellipse: s-maj=10.7km s-min=7.5km az=111.0*
*NSSP **06** 01:31:47.2, 38°.47N×44°.27E, h6km, Ms3.0*
*DDA **06** 01:31:48.8, 38°.66N×44°.12E, h6km, Md3.1*
ISC 06 01:31:47.9±1.3**, 38°.59N**±0°.03×**44°.23E**±0°.04**, h6**km±11km**, n36, σ0.97**/50**, 2C-1D, Turkey-Iran border region**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
CLDR	Caldiran	0.61	337	ePG	Pg	01 31 59.0	-0.6
CLDR				eSG	Sg	01 32 08.3	+0.7
CLDR	Caldiran	0.61	337	ePg	Pg	01 31 59.0	-0.6
CLDR				eSg	Sg	01 32 08.3	+0.7
TVAN	Van	0.65	265	i P	Pg	01 32 00.3	0.0
TVAN	Van	0.65	265	P	Pg	01 32 00.3	0.0
VMUR	Van-Muradiye	0.65	308	i P	Pg	01 31 59.9	-0.5
VMUR				i S	Sb	01 32 11.6	+0.3
VMUR	Van-Muradiye	0.65	308	P	Pg	01 31 59.9	-0.5
VANB	Van	0.66	271	ePG	Pg	01 32 00.6	+0.1
VANB				eSG	Sb	01 32 10.6	-0.7
VANB	Van	0.66	271	ePg	Pg	01 32 00.6	+0.1
VANB				eSg	Sb	01 32 10.6	-0.7
GEVA	Gevas	0.96	254	i P	Pg	01 32 05.1	-1.2
GEVA				i S	Sg	01 32 18.6	-0.1
GEVA	Gevas	0.96	254	P	Pg	01 32 05.1	-1.2
GEVA				S	Sg	01 32 18.6	-0.1
DYDN	Diyadin	1.04	337	i P	Pg	01 32 06.4	-1.5
DYDN	Diyadin	1.04	337	P	Pg	01 32 06.4	-1.5
HKR	Hakkari	1.08	201	ePN	Pg	01 32 07.3	-1.2
HKR	Hakkari	1.08	201	ePn	Pg	01 32 07.3	-1.2
HAKT	HAKKARI	1.10	202	i P	Pn	01 32 10.2	+0.1
HAKT				i S	Sn	01 32 27.6	+1.8
HAKT	HAKKARI	1.10	202	P	Pn	01 32 10.2	+0.1
AGRB	Hanur-Agry	1.38	316	ePN	Pn	01 32 13.1	-0.8
AGRB	Hanur-Agry	1.38	316	ePn	Pn	01 32 13.1	-0.8
CUKT	Cukurca	1.42	200	ePN	Pn	01 32 13.9	-0.5
CUKT	Cukurca	1.42	200	ePn	Pn	01 32 13.9	-0.5
TATV	Tatvan	1.54	268	i P	Pb	01 32 16.5	-0.4
TATV	Tatvan	1.54	268	P	Pb	01 32 16.5	-0.4
GNI	Garni	1.61	14	⇑i P	Pg	01 32 19.2	+0.4
GNI				⇓i S	Sg	01 32 41.7	+2.0
GNI	Garni	1.61	14	⇑P	Pg	01 32 19.2	+0.4
GNI				S	Sg	01 32 41.7	+2.0
SIRN	S˜–rnak	1.80	233	i P	Pg	01 32 22.6	+0.3
SIRN				i S	Sg	01 32 47.7	+2.1
EKAR	Karacoban	1.82	292	i P	Pg	01 32 22.2	-0.5
EKAR	Karacoban	1.82	292	P	Pg	01 32 22.2	-0.5
EATA	Eleskirt	1.86	314	i P	Pb	01 32 21.6	-0.8
EATA				i S	Sg	01 32 49.4	+1.8
EATA	Eleskirt	1.86	314	P	Pb	01 32 21.6	-0.8
VADZ	Vardenis	1.97	36	eP	Pn	01 32 21.0	-1.1
VADZ				eS	Sb	01 32 49.0	-0.3
VADZ	Vardenis	1.97	36	P	Pn	01 32 21.0	-1.1
VADZ				S	Sb	01 32 49.0	-0.3
EAK	Akyaka	2.15	347	i P	Pg	01 32 28.9	-0.3
VRTB	Varto-Mus	2.24	286	ePN	Pn	01 32 25.7	+0.1
VRTB	Varto-Mus	2.24	286	ePn	Pn	01 32 25.7	+0.1
HOMI	Horasan	2.32	310	i P	Pb	01 32 28.7	-1.5
KOPT	Kop Dagi	3.23	297	i P	Pb	01 32 47.0	+1.2

*ISCJB **06** 01:31:59.6±0.7, 19°.0N±0°.1×145°.3E±0°.2, h214km, mb3.5/13, Error ellipse: s-maj=26.4km s-min=15.9km az=2.7*
*IDC **06** 01:32:06.3±7.8, 19°.02N×145°.27E, h265km±78km, mb3.3/13, mb1 3.5/13, mb1mx3.2/52, mbtmp3.9/13, Error ellipse: s-maj=25.0km s-min=15.0km az=83.0*
ISC 06 01:32:01.0±0.9**, 19°.0N**±0°.1×**145°.3E**±0°.2**, h214**km**, n14, σ0.69**/14**, mb3.6**/13**, Mariana Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
KLR	Kul'dur	32.05	343	P	P	01 38 08.0	+0.4
	0.7nm,0.4s,baz=140,slow=6.0,SNR=3.6						
WRA	Warramunga Arr	40.19	196	P	P	01 39 16.8	0.0
	1.6nm,0.5s,baz=3.7,slow=8.9,SNR=6.2						
SONM	Songino Array	42.65	321	P	P	01 39 37.6	+0.9
	0.4nm,0.5s,baz=136,slow=12,SNR=2.6						
ASAR	Alice Springs	43.87	195	P	P	01 39 46.6	+0.2
	1.1nm,0.6s,baz=17,slow=7.3,SNR=13						
MKAR	Makanchi Array	57.96	314	P	P	01 41 31.0	-0.2
	0.5nm,0.5s,baz=98,slow=9.2,SNR=7.2						
ILAR	Eielson Array	63.52	26	P	P	01 42 08.0	-0.3
	0.2nm,0.5s,baz=254,slow=6.2,SNR=3.2						
BVAR	Borovoye Array	65.98	320	P	P	01 42 24.5	+0.1
	1.3nm,0.5s,baz=96,slow=7.6,SNR=11						
AKTO	Aktyubinsk	73.87	318	P	P	01 43 12.3	-0.1
	0.6nm,0.5s,baz=63,slow=16,SNR=2.7						
YKA	Yellowknife Ar	77.88	28	P	P	01 43 34.7	0.0
	0.4nm,0.6s,baz=290,slow=5.5,SNR=8.1						
RES	Resolute Bay	79.20	14	P	P	01 43 41.6	-0.2
	0.5nm,0.7s,baz=4.1,slow=7.2,SNR=4.0						
ARCES	ARCESS Array B	82.07	342	P	P	01 43 56.6	-0.5
	1.9nm,0.9s,baz=81,slow=7.5,SNR=4.5						
NVAR	Mina Array Bea	83.24	52	P	P	01 44 04.7	+0.7
	0.6nm,0.3s,baz=258,slow=4.5,SNR=3.6						
FINES	FINESS Array B	86.43	335	P	P	01 44 17.3	-1.8
	0.9nm,0.3s,baz=66,slow=4.9,SNR=17						
TORD	Torodi Ar. Bea	131.96	309	PKP	PKPdf	01 50 50.1	+0.2
	0.5nm,1.0s,baz=32,slow=3.2,SNR=3.1						

*NIED **06** 01:35:00, 36°.30N×142°.50E, h23km, Mw3.8 Best double couple: M0 5.81000×10^14 NP1: φs191.00000°, δ2.00000°, λ30.00000°. NP2: φs71.00000°, δ89.00000°, λ92.00000°.*
*ISCJB **06** 01:35:38.9±0.5, 36°.28N±0°.06×142°.62E±0°.05, h15km, mb3.7/16, Error ellipse: s-maj=8.6km s-min=5.3km az=154.5*
*IDC **06** 01:35:38.1±0.7, 36°.26N×142°.75E, h0km, mb3.7/16, mb1 3.9/20, mb1mx3.8/55, mbtmp3.7/20, ML3.5/3, MS2.8/1, Ms1 2.8/1, ms1mx2.2/44, Error ellipse: s-maj=18.1km s-min=16.6km az=166.0*
*JMA **06** 01:35:41.8±0.2, 36°.34N×142°.55E, h49km, M3.5*
ISC 06 01:35:40.9±0.7**, 36°.31N**±0°.07×**142°.57E**±0°.07**, h15**km**, n33, σ1.20**/34**, mb3.7**/16**, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
CHOJ	Chosi	1.52	247	P	Pn	01 36 07.1	-0.3
ONAJ	Iwakimizuishiy	1.63	299	P	Pn	01 36 08.3	-0.7

Code	Station Name	Δ°	AZ°	Op	ISC	Time	Res
JHO	Hitachi	1.64	281	P	Pn	01 36 08.5	-0.7
BSO1	Boso 1	2.10	219	P	Pn	01 36 15.3	+0.2
BSO1				eS	Sn	01 36 41.6	+0.9
JFT	Otama	2.16	305	P	Pn	01 36 16.5	+0.2
JAG	Ashikaga	2.52	273	P	Pn	01 36 21.1	-0.1
JAG				S	Sn	01 36 50.3	-1.4
JRY	Ryogami san	2.98	265	P	Pn	01 36 27.3	-0.4
JRY				eS	Sn	01 37 01.7	-1.5
JOD2	Odawara 2	3.02	251	S	Sn	01 37 02.4	-1.6
MJAR	Matsushiro Arr	3.52	275	Pn	Pn	01 36 35.2	+0.1
	4.3nm,0.3s,baz=106,slow=9.0,SNR=40						
MAT	Matsushiro	3.53	275	P	Pn	01 36 35.3	+0.2
MAT				eS	Sn	01 37 13.8	-2.8
USRK	Ussuriysk Ar.	11.28	318	Pn	Pn	01 38 24.1	+2.7
	0.1nm,0.3s,baz=147,slow=14,SNR=4.7						
KSRS	Korea Array	11.79	280	Pn	Pn	01 38 30.3	+1.9
	0.4nm,0.3s,baz=99,slow=12,SNR=4.2						
KSRS				LR	LR	01 43 13.6	
	comp=Z,45nm,18.4s,baz=75,slow=38						
KLR	Kul'dur	15.13	332	Pn	Pn	01 39 16.1	+2.1
	0.1nm,0.3s,baz=165,slow=18,SNR=2.7						
H11N2	WAKE ISLAND Hy	26.98	121	T	T	02 09 33.0	
	baz=313,slow=75,SNR=5.5						
H11N1	WAKE ISLAND Hy	26.99	121	T	T	02 09 31.5	
	baz=313,slow=75,SNR=6.2						
H11N3	WAKE ISLAND Hy	27.00	121	T	T	02 09 38.0	
	baz=313,slow=75,SNR=5.4						
SEY	Seymchan	27.33	10	P	P	01 41 24.1	-0.7
	0.5nm,0.2s,baz=108,slow=20,SNR=2.7						
SONM	Songino Array	28.96	305	P	P	01 41 40.2	+0.5
	1.2nm,0.6s,baz=116,slow=10,SNR=7.2						
ZALV	Zalesovo Beam	43.09	313	P	P	01 43 40.1	+0.1
	0.8nm,0.5s,baz=81,slow=4.9,SNR=5.0						
MKAR	Makanchi Array	45.29	303	P	P	01 43 58.2	+0.3
	2.1nm,0.8s,baz=89,slow=9.9,SNR=18						
ILAR	Eielson Array	49.61	32	P	P	01 44 31.0	-0.1
	0.4nm,0.8s,baz=268,slow=6.9,SNR=4.4						
BVAR	Borovoye Array	51.74	313	P	P	01 44 48.4	+1.0
	0.4nm,0.4s,baz=81,slow=9.5,SNR=2.0						
INK	Inuvik	54.60	27	P	P	01 45 08.4	+0.2
	0.5nm,0.7s,baz=306,slow=5.2,SNR=3.3						
WRA	Warramunga Arr	56.49	189	P	P	01 45 21.1	-1.3
	1.2nm,0.9s,baz=7.7,slow=7.7,SNR=3.6						
AKTO	Aktyubinsk	59.85	313	P	P	01 45 46.9	+1.3
	0.7nm,0.5s,baz=90,slow=10,SNR=3.5						
ASAR	Alice Springs	60.22	189	P	P	01 45 48.3	0.0
	0.3nm,0.5s,baz=16,slow=7.9,SNR=3.0						
RES	Resolute Bay	63.06	15	P	P	01 46 06.7	-0.2
	1.0nm,0.8s,baz=336,slow=8.0,SNR=3.7						
YKA	Yellowknife Ar	63.96	30	P	P	01 46 12.3	-0.7
	0.1nm,0.3s,baz=301,slow=6.1,SNR=5.7						
NVAR	Mina Array Bea	74.67	54	P	P	01 47 19.2	-0.9
	1.0nm,0.7s,baz=286,slow=10,SNR=2.9						
AKASG	Malin Array Be	75.43	323	P	P	01 47 23.4	-0.6
	0.4nm,0.5s,baz=45,slow=5.9,SNR=2.5						
PDAR	Pinedale Array	77.50	46	P	P	01 47 34.8	-1.4
	0.4nm,0.8s,baz=270,slow=3.0,SNR=3.5						
TXAR	Lajitas Array	89.82	53	P	P	01 48 38.5	-0.8
	0.3nm,0.7s,baz=312,slow=3.0,SNR=4.4						
TORD	Torodi Ar. Bea	118.50	316	PKP	PKPdf	01 54 30.4	+1.8
	0.5nm,1.0s,baz=259,slow=2.2,SNR=2.9						

*DDA **06** 01:38:17.2, 39°.33N×43°.82E, h7km, Md2.8*

ISC 06 01:38:15.0±2.3**, 39°.39N**±0°.07×**44°.0E**±0°.1**, h9**km**, n5, σ0s62**/9**, Turkey**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
CLDR	Caldiran	0.25	192	ePG	Pg	01 38 20.2	+0.1
CLDR				eSG	Sg	01 38 24.5	+1.0
DYDN	Diyadin	0.28	304	i P	Pb	01 38 22.2	-0.1
VMUR	Van-Muradiye	0.51	219	i P	Pg	01 38 25.2	+0.3
VMUR				i S	Sg	01 38 30.9	-0.7
AGRB	Hanur-Agry	0.79	284	ePG	Pg	01 38 30.5	+0.3
AGRB				eSG	Sb	01 38 41.9	0.0
EATA	Eleskirt	1.25	293	i P	Pn	01 38 38.4	-0.5
EATA				i S	Sg	01 38 55.8	+0.7

*IDC **06** 01:38:25.1±1.3, 36°.98N×141°.87E, h0km, mb3.4/4, mb1 3.6/5, mb1mx3.3/53, mbtmp3.4/5, ML3.4/1, Error ellipse: s-maj=30.3km s-min=29.4km az=129.0*

*JMA **06** 01:38:25.7±0.2, 36°.44N×141°.93E, h58km, M3.3*

ISC 06 01:38:31.2±1.5**, 36°.45N**±0°.07×**141°.2E**±0°.1**, h26**km**, n13, σ1s81**/12**, mb3.3**/4**, 2D, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
JHO	Hitachi	0.54	287	P	Pn	01 38 45.2	+2.0
ONAJ	Iwakimizuishiy	0.73	333	P	Pn	01 38 45.6	-0.3
CHOJ	Chosi	0.80	201	P	Pn	01 38 46.2	-0.5
BSO4	Boso 4	1.62	206	P	Pn	01 38 57.8	-0.1
JRY	Ryogami san	1.92	258	P	Pb	01 39 04.8	-0.7
MJAR	Matsushiro Arr	2.42	273	Pn	Pb	01 39 13.0	-1.0
	5.6nm,0.3s,baz=94,slow=9.4,SNR=12						
MAT	Matsushiro	2.42	273	P	Pb	01 39 13.0	-1.1
MAT				eS	Sb	01 39 50.6	+7.1
SONM	Songino Array	27.98	305	P	P	01 44 19.8	0.0
	0.7nm,0.8s,baz=112,slow=9.0,SNR=4.6						
MKAR	Makanchi Array	44.29	303	P	P	01 46 36.5	-2.1
	0.2nm,0.5s,baz=95,slow=7.3,SNR=3.4						
WRA	Warramunga Arr	56.46	188	P	P	01 48 13.1	+2.3
	0.4nm,0.6s,baz=17,slow=8.8,SNR=3.6						
YKA	Yellowknife Ar	64.39	30	P	P	01 48 58.0	-6.6
	0.1nm,0.5s,baz=309,slow=7.8,SNR=3.1						
SYO	Syowa Base	127.61	206⇓	eP	Pdif	01 54 16.0	+0.2
SYO	Syowa Base	127.61	206⇓	eP	Pdif	01 54 19.4	+3.6

*IDC **06** 01:47:58.6±0.6, 36°.31N×142°.68E, h0km, mb3.9/19, mb1 4.1/25, mb1mx4.0/50, mbtmp3.9/25, ML3.3/5, MS2.9/1, Ms1 2.9/1, ms1mx2.4/44, Error ellipse: s-maj=15.3km s-min=13.8km az=139.0*

*ISCJB **06** 01:47:59.3±0.4, 36°.33N±0°.04×142°.64E±0°.04, h15km, mb4.1/23, Error ellipse: s-maj=5.7km s-min=4.9km az=142.4*

*NIED **06** 01:48:00, 36°.30N×142°.60E, h17km, Mw3.9 Best double couple: M0 7.23000×10^14 NP1:φs156.00000°, δ19.00000°, λ-158.00000°. NP2:φs45.00000°, δ83.00000°, λ-73.00000°.*

*JMA **06** 01:48:01.3±0.2, 36°.34N×142°.63E, h48km, M3.8*

*NEIC **06** 01:48:04.1±0.4, 36°.39N×142°.60E, h35km, mb4.3/2, Error ellipse: s-maj=9.8km s-min=7.5km az=158.0*

ISC 06 01:48:01.0±0.5**, 36°.34N**±0°.05×**142°.56E**±0°.06**, h15**km**, n54, σ1s21**/54**, mb4.1**/23**, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
CHOJ	Chosi	1.52	246	P	Pb	01 48 27.5	-1.3
CHOJ				eS	Sn	01 48 46.4	-0.6
ONAJ	Iwakimizuishiy	1.60	299	P	Pb	01 48 28.8	-1.6
ONAJ				eS	Sn	01 48 48.9	-0.4
JHO	Hitachi	1.62	280	P	Pn	01 48 28.9	-0.2
JHO				S	Sn	01 48 49.4	-0.3
JFK	Kawauchi	1.69	308	P	Pn	01 48 30.0	-0.1
JMM	Marumori	2.07	318	P	Pn	01 48 34.9	-0.4
BSO1	Boso 1	2.12	218	P	Pn	01 48 35.4	0.0
BSO1				eS	Sn	01 49 02.0	+0.8
JFT	Otama	2.13	304	P	Pb	01 48 37.2	-2.1
JFT				S	Sn	01 49 02.6	+0.3
JIO	Ouri	2.32	336	P	Pn	01 48 37.9	-0.7
JAG	Ashikaga	2.50	273	P	Pn	01 48 41.4	+0.2
JOU	Okura	2.52	324	P	Pb	01 48 42.6	-3.4
JMK	Ichinoseki	2.81	338	P	Pn	01 48 45.9	+0.4
JRY	Ryogami san	2.97	265	P	Pn	01 48 48.0	+0.3
JOD2	Odawara 2	3.02	250	P	Pn	01 48 48.6	+0.3
JYK	Kaneyama	3.11	327	P	Pn	01 48 49.8	+0.3
MJAR	Matsushiro Arr	3.51	275	Pn	Pn	01 48 56.0	+0.9
	5.5nm,0.3s,baz=103,slow=8.7,SNR=29						
MAJO	Matsushiro	3.51	275	ePn	Pn	01 48 56.4	+1.3
MAT	Matsushiro	3.51	275	P	Pn	01 48 56.3	+1.2
MAT				eS	Sn	01 49 33.0	-3.4
JHJ	Hachijo jima 2	3.94	216	Pn	Pn	01 49 00.6	-0.4
	18nm,0.3s,baz=246,slow=20,SNR=4.2						
JHJ				Sn	Sn	01 49 42.9	-4.1
	72nm,0.3s,baz=307,slow=22,SNR=7.6						
ERM	Erimo	5.69	5	ePn	Pn	01 49 23.1	-1.8
	21nm,0.5s						
JNU	Nakatsue	10.13	255	Pn	Pn	01 50 27.5	+1.5
	0.3nm,0.3s,baz=270,slow=5.1,SNR=2.2						
USRK	Ussuriysk Ar.	11.25	317	Pn	Pn	01 50 41.5	+0.3
	0.3nm,0.3s,baz=125,slow=14,SNR=8.2						
KSRS	Korea Array	11.77	280	Pn	Pn	01 50 50.0	+1.7
	baz=100,slow=13,SNR=9.1						
KSRS				LR	LR	01 55 25.5	
	comp=Z,58nm,19.6s,baz=88,slow=38						
KSAR	Wonju Array Be	11.80	280	Pn	Pn	01 50 50.0	+1.2
KLR	Kul'dur	15.11	332	Pn	Pn	01 51 32.5	-1.3
	0.1nm,0.3s,baz=152,slow=17,SNR=2.4						
H11N2	WAKE ISLAND Hy	27.00	121	T	T	02 21 50.1	
	baz=313,slow=75,SNR=8.3						
H11N1	WAKE ISLAND Hy	27.01	121	T	T	02 21 58.3	
	baz=313,slow=75,SNR=10						
H11N3	WAKE ISLAND Hy	27.02	121	T	T	02 21 45.6	
	baz=313,slow=75,SNR=8.2						
SEY	Seymchan	27.30	10	P	P	01 53 43.4	-1.4
	0.6nm,0.4s,baz=206,slow=15,SNR=2.5						
H11S1	WAKE ISLAND Hy	27.71	123	T	T	02 22 42.9	
	baz=315,slow=76,SNR=7.4						
H11S3	WAKE ISLAND Hy	27.71	123	T	T	02 22 40.4	
	baz=315,slow=76,SNR=8.5						
H11S2	WAKE ISLAND Hy	27.73	123	T	T	02 22 41.1	
	baz=315,slow=76,SNR=6.4						
ENH	Enshi	28.20	267	eP	P	01 53 54.1	+0.9
	5.1nm,0.5s						
SONM	Songino Array	28.93	305	P	P	01 54 00.8	+1.1
	3.2nm,0.7s,baz=104,slow=8.8,SNR=22						
CMAR	Chiang Mai Arr	42.22	257	P	P	01 55 54.7	+1.1
	0.6nm,0.4s,baz=52,slow=8.9,SNR=3.4						
ZALV	Zalesovo Beam	43.06	313	P	P	01 56 00.4	+0.4
	1.9nm,0.6s,baz=93,slow=7.7,SNR=6.2						
MKAR	Makanchi Array	45.26	303	P	P	01 56 18.9	+1.0
	4.2nm,0.7s,baz=86,slow=9.8,SNR=28						
KURK	Kurchatov	47.08	309	eP	P	01 56 32.6	+0.5
	9.4nm,0.8s						
HNR	Honiara	48.38	157	P	P	01 56 43.0	+0.6
	65nm,0.3s,baz=208,slow=11,SNR=4.1						
ILAR	Eielson Array	49.59	32	P	P	01 56 51.1	-0.1
	0.6nm,0.6s,baz=261,slow=6.6,SNR=7.6						
BVAR	Borovoye Array	51.72	313	P	P	01 57 08.7	+1.3
	0.6nm,0.5s,baz=78,slow=9.0,SNR=3.7						
INK	Inuvik	54.59	27	P	P	01 57 28.5	+0.2
	0.7nm,0.6s,baz=304,slow=9.1,SNR=8.2						
WRA	Warramunga Arr	56.51	189	P	P	01 57 41.2	-1.5
	1.0nm,0.4s,baz=9.1,slow=7.6,SNR=4.0						
ABKAR	Akbulak array	59.09	311	eP	P	01 58 00.9	+0.3
	1.0nm,0.6s						
ASAR	Alice Springs	60.24	189	P	P	01 58 08.0	-0.7
	0.8nm,0.8s,baz=11,slow=5.9,SNR=3.9						
RES	Resolute Bay	63.04	15	P	P	01 58 26.9	0.0
	1.3nm,0.9s,baz=303,slow=7.2,SNR=5.8						
YKA	Yellowknife Ar	63.94	30	P	P	01 58 33.2	+0.1
	0.4nm,0.7s,baz=300,slow=6.6,SNR=9.0						
FINES	FINESS Array B	69.85	333	P	P	01 59 11.2	+0.5
	1.8nm,0.8s,baz=44,slow=6.3,SNR=4.2						
KBZ	Khabaz	72.05	311	P	P	01 59 25.7	+1.4
	2.6nm,0.9s,baz=26,slow=3.9,SNR=4.1						
NVAR	Mina Array Bea	74.67	54	P	P	01 59 40.0	-0.2
	1.2nm,0.5s,baz=304,slow=5.2,SNR=5.3						
AKASG	Malin Array Be	75.40	323	P	P	01 59 42.6	-1.3
	0.8nm,0.5s,baz=59,slow=15,SNR=3.9						
PDAR	Pinedale Array	77.49	46	P	P	01 59 56.5	+0.2
	0.3nm,0.6s,baz=262,slow=4.0,SNR=4.3						
BRTR	Keskin Array B	80.00	312	P	P	02 00 11.6	+1.6
	0.5nm,0.6s,baz=46,slow=4.2,SNR=3.9						
TXAR	Lajitas Array	89.81	53	P	P	02 00 59.4	-0.1
	0.5nm,0.6s,baz=301,slow=2.7,SNR=8.2						
LPAZ	La Paz	146.23	62	PKPbc	PKPab	02 07 41.7	-1.1
	1.1nm,0.5s,baz=304,slow=3.6,SNR=3.8						

*NIED **06** 01:51:00, 37°.80N×144°.40E, h5km, Mw4.3 Best double couple: M0 2.79000×10^15 NP1:φs280.00000°, δ15.00000°, λ-82.00000°. NP2:φs92.00000°, δ75.00000°, λ-92.00000°.*

*IDC **06** 01:51:22.6±0.6, 37°.67N×144°.62E, h0km, mb4.3/28, mb1 4.5/35, mb1mx4.4/51, mbtmp4.3/35, ML3.5/6, MS3.3/12, Ms1 3.3/12, ms1mx3.0/50, Error ellipse: s-maj=15.7km s-min=11.4km az=148.0*

*ISCJB **06** 01:51:23.5±1.1, 37°.70N±0°.03×144°.49E±0°.03, h14km±6km, mb4.5/89, MS3.7/15, Error ellipse: s-maj=5.7km s-min=3.4km az=158.0*

*BJI **06** 01:51:25.8, 37°.95N×144°.73E, h31km, mb4.6/38, mB4.9/21, Ms4.5/16, Ms7 4.3/15*

*NEIC **06** 01:51:25.2±2.0, 37°.65N×144°.57E, h16km±12km, mb4.7/44, Error ellipse: s-maj=5.7km s-min=3.7km az=141.0*

*MOS **06** 01:51:26.1±1.0, 37°.70N×144°.55E, h32km, mb4.7/31, Error ellipse: s-maj=8.7km s-min=6.1km az=100.1*

*JMA **06** 01:51:27.1±0.3, 37°.79N×144°.38E, h54km, M4.7*

ISC 06 01:51:27.2±1.5**, 37°.74N**±0°.06×**144°.57E**±0°.05**, h28**km±9km**, n223, σ1s21**/215**, mb4.6**/90**, MS3.6**/15**, 13C-3D, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
JIO	Ouri	2.64	287	P	Pn	01 52 06.4	-1.5
JIO				S	Sn	01 52 35.2	-3.8
OFUJ	Ofunato	2.64	301	P	Pn	01 52 06.1	-1.9
JMK	Ichinoseki	2.90	296	P	Pn	01 52 10.3	-1.2
JMK				S	Sn	01 52 42.3	-3.1
JOM	Ohasama	3.10	305	P	Pn	01 52 12.8	-1.4
JOM				S	Sn	01 52 47.5	-2.8
JFT	Otama	3.37	268	S	Sn	01 52 54.3	-2.7
BSO1	Boso 1	4.23	224	P	Pn	01 52 27.2	-2.1
BSO1				S	Sn	01 53 15.7	-1.9
ERM	Erimo	4.41	346	ceP	Pn	01 52 30.8	-1.4
ERM				pmax	pmax		
	comp=Z,46nm,0.7s						
ERM	Erimo	4.41	346	ePn	Pn	01 52 30.5	-1.7
ERM				eSn	Sn	01 53 14.1	-8.5
JOT	Ohata	4.54	324	P	Pn	01 52 33.6	-0.5
JOT				eS	Sn	01 53 21.3	-4.7
JRY	Ryogami san	4.86	251	P	Pn	01 52 36.9	-1.6
JRY				S	Sn	01 53 30.0	-3.8
JCH	Churui	4.96	350	P	Pn	01 52 37.7	-2.1
JCH				eS	Sn	01 53 29.4	-6.8
JKB	Kayabe	4.96	328	P	Pn	01 52 38.7	-1.1
JKB				S	Sn	01 53 30.2	-6.0
JOD2	Odawara 2	5.06	242	P	Pn	01 52 40.0	-1.2
MJAR	Matsushiro Arr	5.22	259	Pn	Pn	01 52 42.8	-0.7
	comp=Z,12nm,0.3s,baz=91,slow=15,SNR=20						
MJAR				Sn	Sn	01 53 42.7	0.0
	comp=Z,4.5nm,0.3s,baz=86,slow=31,SNR=7.2						
MAJO	Matsushiro	5.22	259	eP	Pn	01 52 43.1	-0.3
MAJO				e		01 53 40.4	
MAJO	Matsushiro	5.22	259	ePn	Pn	01 52 43.1	-0.3
MAJO				eSn	Sn	01 53 40.4	-2.3
MAT	Matsushiro	5.22	259	P	Pn	01 52 43.1	-0.4
MAT				S	Sn	01 53 41.0	-1.8
NEM2	Nemuro 2	5.69	9	P	Pn	01 52 45.6	-4.2
NEM2				S	Sn	01 53 44.1	-10
JOSM	Okushiri--Mats	5.84	320	P	Pn	01 52 51.4	-0.5
JHJ2	Mitsune	6.03	221	P	Pn	01 52 51.2	-3.3
JHJ2				S	Sn	01 53 55.5	-7.1
JHJ2	Mitsune	6.03	221	ePn	Pn	01 52 50.7	-3.8
JHJ2				eSn	Sn	01 53 57.3	-5.4
JHJ	Hachijo jima 2	6.04	222	Pn	Pn	01 52 51.1	-3.6
	comp=Z,111nm,0.3s,baz=245,slow=21,SNR=15						
JHJ				Sn	Sn	01 53 57.2	-5.7
	comp=Z,84nm,0.3s,baz=43,slow=20,SNR=5.2						
JHJ				LR	LR	01 56 00.2	
	comp=Z,80nm,19.9s,baz=252,slow=46						
JTKR	Abashiri--Toko	6.25	356	P	Pn	01 52 54.9	-2.6
JTKR				S	Sn	01 54 00.4	-7.5
SHO	Shikotan	6.36	15	eP	Pn	01 52 54.5	-4.5
SHO				pmax	pmax		
	comp=Z,274nm,0.7s						
SHO				pmax	pmax		
	comp=E,66nm,0.3s						
SHO				pmax	pmax		
	comp=N,167nm,0.8s						
YUK	Yuzh-Kuril'sk	6.37	8	eP	Pn	01 52 54.6	-4.5
YUK				pmax	pmax		
	comp=Z,210nm,0.5s						
YUK				pmax	pmax		
	comp=E,141nm,0.4s						
YUK				pmax	pmax		
	comp=N,139nm,0.5s						
JHR	Hokuryu	6.38	341	P	Pn	01 52 58.9	-0.3
JHR				eS	Sn	01 54 05.9	-5.2
INU	Inuyama	6.53	251	ePn	Pn	01 53 01.0	-0.4
JIE	Ise	7.19	245	P	Pn	01 53 09.9	-0.6
KUR	Kuril'sk	7.89	17	eP	Pn	01 53 18.5	-1.5
KUR				pmax	pmax		
	comp=Z,80nm,0.4s						
CBIJ	Chichi jima	10.80	191	ePn	Pn	01 53 53.9	-6.1
JCJ	Chichijima	10.80	191	Pn	Pn	01 53 53.5	-6.5
	baz=90,slow=20						
USRK	Ussuriysk Ar.	11.49	308	Pn	Pn	01 54 08.8	-0.5
	comp=Z,0.9nm,0.3s,baz=110,slow=14,SNR=12						
JNU	Nakatsue	12.08	252	Pn	Pn	01 54 17.1	-0.4
	comp=Z,0.1nm,0.3s,baz=130,slow=7.9,SNR=2.9						
JNU	Nakatsue	12.08	252	ePn	Pn	01 54 16.4	-1.1
MDJ	Mudanjiang	13.20	306	P	Pn	01 54 32.4	-0.3
MDJ				pmax	pmax		
	comp=Z,19nm,1.0s						
MDJ				pmax	pmax		
	comp=Z,52nm,4.0s						
KSRS	Korea Array	13.21	274	Pn	Pn	01 54 34.4	+1.5
	comp=Z,0.4nm,0.3s,baz=90,slow=13,SNR=7.2						
KSAR	Wonju Array Be	13.24	274	P	Pn	01 54 34.4	+1.1
KSAR	Wonju Array Be	13.24	274	Pn	Pn	01 54 34.4	+1.1
KLR	Kul'dur	14.76	325	Pn	Pn	01 54 53.8	-0.2
	comp=Z,0.2nm,0.3s,baz=135,slow=14,SNR=5.7						
KLR				LR	LR	02 01 54.8	
	comp=Z,54nm,18.1s,baz=262,slow=43						
NKL	Nikolayevsk	15.65	351	eP	P	01 55 09.7	+0.2
NKL				pmax	pmax		
	comp=Z,20nm,1.0s						
PETK	Petropavlovsk-	17.87	27	P	P	01 55 35.1	+1.0
	comp=Z,0.6nm,0.3s,baz=200,slow=12,SNR=3.0						
PETK				LR	LR	02 02 13.1	
	comp=Z,75nm,21.1s,baz=222,slow=36						
NJ2	Nanjing	21.81	263	eP	P	01 56 17.8	+0.7
NJ2				pmax	pmax		
	comp=Z,12nm,0.7s						
BJI	Beijing	22.18	285	P	P	01 56 21.3	+0.2
BJI				pmax	pmax		
	comp=Z,6.0nm,0.9s						
MA2	Magadan	22.21	8	P	P	01 56 21.9	+0.7
	comp=Z,2.5nm,0.3s,baz=211,slow=11,SNR=7.3						
MA2				LR	LR	02 03 37.1	
	comp=Z,63nm,21.6s,baz=166,slow=33						
YHNB	Yeheng	23.66	243	eP	P	01 56 35.9	-0.5
	comp=Z,20nm,0.9s						
GUMO	Guam	24.05	179	LR	LR	02 03 50.2	
	comp=Z,112nm,20.7s,baz=323,slow=31						
YULB	Yu-li	24.53	241	eP	P	01 56 41.6	-2.9
	comp=Z,47nm,1.4s						
HHC	Hu-ho-hao-te	25.65	287	eP	P	01 56 54.5	-0.1
HHC				S	S	02 01 27.2	+5.9
HHC				pmax	pmax		
	comp=Z,17nm,0.9s						
HHC				pmax	pmax		
	comp=Z,86nm,5.0s						
HHC				LR	LR		
	comp=Z,310nm,11.1s						
HHC				LR	LR		
	comp=Z,540nm,11.8s						
HHC				LR	LR		
	comp=Z,340nm,11.0s						
SEY	Seymchan	25.67	8	P	P	01 56 54.5	+0.1
	comp=Z,6.1nm,1.0s,baz=182,slow=7.2,SNR=14						
YAK	Yakutsk	26.01	344	LR	LR	02 07 17.9	
	comp=Z,55nm,21.3s,baz=148,slow=37						
YAK	Yakutsk	26.01	344	eP	P	01 56 58.5	+1.0
YAK				pmax	pmax		
	comp=Z,18nm,0.7s						
H11N2	WAKE ISLAND Hy	26.44	127	T	T	02 24 40.1	
	baz=318,slow=75,SNR=5.3						
H11N1	WAKE ISLAND Hy	26.45	127	T	T	02 24 33.3	
	baz=318,slow=75,SNR=5.2						
H11N3	WAKE ISLAND Hy	26.46	127	T	T	02 24 37.0	
	baz=318,slow=75,SNR=5.0						
H11S1	WAKE ISLAND Hy	27.23	129	T	T	02 25 41.7	
	baz=318						
H11S3	WAKE ISLAND Hy	27.23	129	T	T	02 25 45.6	
	baz=318						
H11S2	WAKE ISLAND Hy	27.25	129	T	T	02 25 46.9	
	baz=318						
BOD	Bodaibo	28.34	325	eP	P	01 57 18.0	-0.4
BOD				pmax	pmax		
	comp=Z,7.0nm,0.8s						
SONM	Songino Array	29.51	302	P	P	01 57 29.6	+0.5
	comp=Z,1.2nm,0.7s,baz=85,slow=7.9,SNR=6.1						
LZH	Lanzhou	32.43	280	eP	P	01 58 00.4	+5.4
LZH				pmax	pmax		
	comp=Z,17nm,1.0s						
LZH				pmax	pmax		
	comp=Z,71nm,4.4s						
LZH				LR	LR		
	comp=Z,230nm,14.5s						
LZH				LR	LR		
	comp=Z,190nm,14.3s						
LZH				LR	LR		
	comp=Z,150nm,17.2s						
BILL	Bilibino	32.67	15	eP	P	01 57 56.2	-0.4
BILL				pmax	pmax		
	comp=Z,9.0nm,2.1s						
GYA	Guiyang	33.81	262	P	P	01 58 07.8	+0.6
GYA				pP	sP	01 58 20.0	+1.3
GYA				PP	PnPn	01 59 22.4	+2.5
GYA				PcP	PcP	02 00 47.0	+1.1
GYA				S	S	02 03 29.8	+0.2
GYA				sS	sS	02 03 48.4	+5.4
GYA				ScP	ScP	02 04 28.2	-0.5
GYA				SS	SnSn	02 05 35.6	+0.1
GYA				ScS	ScS	02 08 28.6	-2.0
GYA				pmax	pmax		
	comp=Z,20nm,0.8s						
GYA				pmax	pmax		
	comp=Z,110nm,5.8s						
GYA				LR	LR		
	comp=Z,480nm,16.8s						
GYA				LR	LR		
	comp=Z,460nm,15.6s						
GYA				LR	LR		
	comp=Z,440nm,16.9s						
CD2	Chengdu	34.18	271	P	P	01 58 09.0	-1.2
CD2				pmax	pmax		
	comp=Z,1.0nm,0.6s						
GTA	Gaotai	34.76	287	eP	P	01 58 17.7	+2.4
GTA				pP	sP	01 58 29.7	+2.9
GTA				S	S	02 03 45.5	+1.5
GTA				SS	SnSn	02 06 02.1	+3.9
GTA				pmax	pmax		
	comp=Z,5.0nm,1.4s						
GTA				pmax	pmax		
	comp=Z,100nm,5.5s						
GTA				LR	LR		
	comp=Z,300nm,17.6s						
GTA				LR	LR		
	comp=Z,370nm,19.5s						
TIXI	Tiksi	34.93	351	ceP	P	01 58 15.4	-0.8
TIXI				pmax	pmax		
	comp=Z,4.0nm,1.7s						
KMI	Kunming	37.55	263	P	P	01 58 41.3	+1.9
KMI				pmax	pmax		
	comp=Z,10.0nm,0.8s						
KMI				LR	LR		
	comp=Z,90nm,12.5s						
WMQ	Urumqi	42.77	297	P	P	01 59 24.5	+2.3
WMQ				pP	pP	01 59 34.5	+4.0
WMQ				sP	sP	01 59 40.4	+6.6
WMQ				PcP	PcP	02 01 13.3	0.0
WMQ				S	S	02 05 40.2	-4.2
WMQ				ScS	ScS	02 09 19.9	-1.4
WMQ				pmax	pmax		
	comp=Z,18nm,0.8s						
WMQ				pmax	pmax		
	comp=Z,230nm,5.0s						
WMQ				LR	LR		
	comp=Z,260nm,20.6s						
WMQ				LR	LR		
	comp=Z,280nm,23.0s						
WMQ				LR	LR		
	comp=Z,330nm,26.0s						
ZAA0	Zalesovo Array	43.31	312	eP	P	01 59 26.8	+0.5
ZALV	Zalesovo Beam	43.31	312	P	P	01 59 26.9	+0.5
	comp=Z,1.3nm,0.4s,baz=103,slow=5.7,SNR=6.6						
ZALV				PcP	PcP	02 01 14.9	+0.1
	comp=Z,2.8nm,0.5s,baz=106,slow=2.4,SNR=7.6						
NRIK	Noril'sk	43.70	334	P	P	01 59 29.5	+0.2
	comp=Z,4.3nm,0.9s,baz=104,slow=13,SNR=4.0						
NRIK				LR	LR	02 18 13.6	
	comp=Z,63nm,19.6s,baz=102,slow=37						
CMAR	Chiang Mai Arr	44.10	257	P	P	01 59 34.5	+1.3
	comp=Z,0.9nm,0.3s,baz=50,slow=6.9,SNR=5.7						
KDAK	Kodiak Island	44.89	42	ceP	P	01 59 38.5	-0.5
BPAW	Bear Paw Mtn.	45.75	34	eP	P	01 59 45.9	+0.1

comp=Z,1.8nm,1.3s
MK01 Makanchi Array 45.87 302 eP P 01 59 47.1 +0.1
MK31 Makanchi Array 45.88 302 eP P 01 59 47.4 +0.4
MK31 Makanchi Array 45.88 302 eP P 01 59 47.4 +0.4
MKAR Makanchi Array 45.88 302 P P 01 59 47.6 +0.6
comp=Z,3.4nm,0.8s,baz=84,slow=9.4,SNR=21
MKAR Makanchi Array 45.88 302 eP P 01 59 47.2 +0.2
MLY Manley 45.92 32 eP P 01 59 47.6 +0.5
comp=Z,6.1nm,0.8s
TRF Thorofare Moun 46.03 35 eP P 01 59 48.5 +0.2
comp=Z,4.4nm,0.8s
MAKZ Makanchi 46.08 302 eP P 01 59 48.8 +0.2
MAKZ pmax pmax
comp=Z,5.0nm,1.0s
MAKZ Makanchi 46.08 302 eP P 01 59 48.8 +0.2
comp=Z,5.1nm,1.0s
PMR Palmer 46.55 37 eP P 01 59 52.0 -0.1
PMR pmax pmax
comp=Z,11nm,1.0s
PMR Palmer 46.55 37 eP P 01 59 52.0 -0.1
comp=Z,11nm,1.0s
MCK McKinley 46.65 34 eP P 01 59 52.4 -0.4
MCK pmax pmax
comp=Z,7.0nm,0.9s
MCK McKinley 46.65 34 eP P 01 59 52.4 -0.4
comp=Z,7.5nm,0.9s
RND Reindeer 46.68 35 eP P 01 59 53.2 +0.1
RND pmax pmax
comp=Z,8.0nm,0.8s
RND Reindeer 46.68 35 eP P 01 59 53.2 +0.1
comp=Z,7.7nm,0.8s
SML Sawmill 46.93 37 eP P 01 59 55.1 0.0
SML pmax pmax
comp=Z,4.0nm,0.9s
SML Sawmill 46.93 37 eP P 01 59 55.1 0.0
comp=Z,3.8nm,0.9s
MDM Murphy Dome 46.98 32 eP P 01 59 56.5 +1.1
comp=Z,11nm,0.8s
WRH Wood River Hil 47.03 33 eP P 01 59 56.0 +0.2
comp=Z,4.9nm,0.8s
COLA College 47.14 33 iP P 01 59 57.5 +0.9
COLA pmax pmax
comp=Z,15nm,2.3s
KURK Kurchatov 47.48 308 eP P 01 59 59.6 +0.1
KURK pmax pmax
comp=Z,11nm,0.8s
KURK Kurchatov 47.48 308 eP P 01 59 59.6 +0.1
comp=Z,11nm,0.8s
HDA Harding Lake 47.52 33 eP P 01 59 59.4 -0.2
comp=Z,8.4nm,0.9s
ILAR Eielson Array 47.55 33 P P 01 59 59.8 -0.1
comp=Z,6.0nm,0.8s,baz=263,slow=6.5,SNR=48
ILAR LR LR 02 23 32.1
comp=Z,33nm,18.5s,baz=212,slow=40
ILB Eielson Array 47.55 33 eP P 01 59 59.5 -0.3
KLU Klutina 48.09 37 eP P 02 00 04.0 -0.2
comp=Z,9.4nm,1.0s
DIV Divide 48.19 38 eP P 02 00 05.0 +0.1
comp=Z,13nm,1.0s
FYU Fort Yukon 48.24 30 eP P 02 00 06.0 +0.9
comp=Z,35nm,1.6s
DOT Dot Lake 48.82 34 eP P 02 00 09.8 +0.1
comp=Z,9.6nm,0.7s
MENT Mentasta 49.02 35 eP P 02 00 12.7 +1.4
comp=Z,5.9nm,0.6s
EGAK Eagle 50.00 33 eP P 02 00 18.4 -0.3
comp=Z,2.2nm,0.7s
TKM2 Tokmak 2 51.50 299 eP P 02 00 31.4 +0.8
TKM2 pmax pmax
comp=Z,10.0nm,0.9s
TKM2 Tokmak 2 51.50 299 eP P 02 00 31.4 +0.8
comp=Z,9.6nm,0.9s
VOSK Vostochnaya 51.68 312 eP P 02 00 31.7 +0.2
VOSK pmax pmax
comp=Z,8.0nm,0.9s
VOSK Vostochnaya 51.68 312 eP P 02 00 31.7 +0.2
comp=Z,8.1nm,0.9s
BRVK Borovoye 52.01 313 ceP P 02 00 34.0 +0.1
BRVK pmax pmax
comp=Z,7.0nm,1.2s
BRVK Borovoye 52.01 313 eP P 02 00 34.5 +0.6
comp=Z,4.7nm,0.7s
AAK Ala-Archa 52.36 299 eP P 02 00 36.8 -0.1
AAK pmax pmax
comp=Z,3.0nm,0.8s
AAK Ala-Archa 52.36 299 eP P 02 00 36.8 -0.1
comp=Z,2.5nm,0.8s
KSH Kashi 52.41 295 P P 02 00 42.1 +4.9
KSH epP sP 02 00 54.6 +5.7
KSH S S 02 08 05.8 +4.3
KSH sS sS 02 08 26.9 +11
KSH pmax pmax
comp=Z,5.0nm,0.8s
KSH pmax pmax
comp=Z,94nm,5.2s
KSH LR LR
comp=Z,98nm,5.2s
KSH LR LR
comp=Z,83nm,6.1s
KSH LR LR
comp=Z,150nm,5.4s
INK Inuvik 52.61 28 P P 02 00 38.5 +0.4
comp=Z,4.1nm,0.6s,baz=301,slow=6.4,SNR=31
INK Inuvik 52.61 28 eP P 02 00 37.9 -0.2
INK pmax pmax
comp=Z,5.0nm,0.6s
INK Inuvik 52.61 28 eP P 02 00 37.9 -0.2
comp=Z,4.6nm,0.6s
ZRNK Zerenda 52.78 313 eP P 02 00 40.2 +0.6
ZRNK pmax pmax
comp=Z,9.0nm,1.0s
ZRNK Zerenda 52.78 313 eP P 02 00 40.2 +0.6
comp=Z,8.8nm,1.0s
EKS2 Erkin-Say 52.85 299 eP P 02 00 40.6 +0.1
EKS2 pmax pmax
comp=Z,2.0nm,0.5s
EKS2 Erkin-Say 52.85 299 eP P 02 00 40.5 +0.1
comp=Z,1.9nm,0.5s
DLBC Dease Lake 56.51 39 P P 02 01 07.3 +0.7
comp=Z,1.7nm,0.7s,baz=0.0,slow=20,SNR=5.5
DLBC Dease Lake 56.51 39 eP P 02 01 07.5 +0.8
comp=Z,1.8nm,0.6s
ARU Arti 57.49 319 dP P 02 01 12.6 -0.9
ARU 02 03 16.6
ARU S S 02 09 08.4 -0.5
ARU SS SS 02 12 54.8 -3.5
ARU pmax pmax
comp=Z,10.0nm,1.2s
ARU Arti 57.49 319 eP P 02 01 14.0 +0.5
comp=Z,5.8nm,0.8s
WRAB Tennant Creek 58.16 191 ceP P 02 01 17.1 -1.5
WRAB pmax pmax
comp=Z,18nm,0.8s
WRAB Tennant Creek 58.16 191 eP P 02 01 17.2 -1.5
comp=Z,14nm,0.7s
WB2 Warramunga Arr 58.17 191 eP P 02 01 17.8 -0.9
comp=Z,20nm,0.6s
WRA Warramunga Arr 58.17 191 P P 02 01 17.7 -1.0
comp=Z,7.8nm,0.7s,baz=10,slow=7.4,SNR=24
ABKAR Akbulak array 59.40 311 eP P 02 01 27.1 +0.2
RES Resolute Bay 61.28 15 P P 02 01 38.9 -0.5
comp=Z,6.7nm,0.8s,baz=319,slow=7.1,SNR=28
RES Resolute Bay 61.28 15 eP P 02 01 39.3 -0.1
RES pmax pmax
comp=Z,5.0nm,0.8s
RES Resolute Bay 61.28 15 eP P 02 01 39.2 -0.1
comp=Z,5.2nm,0.8s
AS01 Alice Springs 61.89 191 eP P 02 01 43.0 -1.1
ASAR Alice Springs 61.90 191 P P 02 01 43.5 -0.7
comp=Z,1.3nm,0.7s,baz=7.4,slow=4.9,SNR=9.7
ASAR LR LR 02 25 32.0
comp=Z,29nm,21.2s,baz=44,slow=33
YKA Yellowknife Ar 61.92 31 P P 02 01 43.7 -0.2
comp=Z,1.9nm,0.7s,baz=300,slow=6.6,SNR=30
ARCES ARCESS Array B 64.21 340 P P 02 01 58.5 -0.6
comp=Z,5.4nm,1.0s,baz=52,slow=14,SNR=4.4
KLMR Klimovskoe 64.49 328 eP P 02 01 58.1 -2.9
KLMR pmax pmax
comp=Z,8.0nm,0.8s
GEYT Allbeck 65.68 300 P P 02 02 09.0 -0.1
comp=Z,3.9nm,0.8s,baz=46,slow=4.3,SNR=8.6
NEW Newport 67.86 46 P P 02 02 22.8 -0.1
comp=Z,3.5nm,1.0s,baz=290,slow=8.7,SNR=3.8
WALA Waterton Lakes 69.21 44 eP P 02 02 27.8 -3.6
FINES FINESS Array B 69.34 333 P P 02 02 31.6 -0.2
comp=Z,2.1nm,0.6s,baz=38,slow=7.2,SNR=15
FINES LR LR 02 36 37.3
comp=Z,31nm,19.2s,baz=3.0,slow=39
FINES FINESS Array B 69.34 333 ceP P 02 02 32.0 +0.2
FINES pmax pmax
comp=Z,2.0nm,0.6s
MOD Modoc Plateau 69.35 53 eP P 02 02 32.9 +0.5
comp=Z,3.8nm,0.9s
BMO Blue Mountains 69.59 49 eP P 02 02 33.9 +0.1
BMO pmax pmax
comp=Z,3.0nm,0.7s
BMO Blue Mountains 69.59 49 eP P 02 02 33.9 +0.1
comp=Z,3.4nm,0.7s
SUMG Summit 69.96 1 eP P 02 02 35.8 -0.2
SUMG pmax pmax
comp=Z,4.0nm,0.7s
SUMG Summit 69.96 1 eP P 02 02 35.8 -0.2
comp=Z,3.9nm,0.7s
BBOO Buckleboo 70.64 188 eP P 02 02 39.7 -0.3
comp=Z,18nm,1.4s
MFID Camas Ranch 71.28 49 eP P 02 02 45.2 +1.1
comp=Z,6.9nm,1.1s
FFC Flin Flon 71.73 34 eP P 02 02 46.1 -0.5
FFC pmax pmax
comp=Z,5.0nm,0.9s
FFC Flin Flon 71.73 34 eP P 02 02 46.1 -0.5
comp=Z,5.1nm,0.9s
LRM Limekiln Ridge 71.87 46 eP P 02 02 48.7 +0.8
HLID Hailey 72.04 49 eP P 02 02 48.6 -0.2
comp=Z,6.0nm,1.1s
KIV Kislovodsk 72.32 312 eP P 02 02 51.7 +1.3
KIV pmax pmax
comp=Z,11nm,1.0s
KIV Kislovodsk 72.32 312 eP P 02 02 51.2 +0.8
comp=Z,10nm,0.8s
KBZ Khabaz 72.33 312 P P 02 02 51.1 +0.8
comp=Z,4.3nm,0.9s,baz=90,slow=5.0,SNR=5.8
NV01 Mina Array Sit 72.54 55 eP P 02 02 52.8 +0.8
NVAR Mina Array Bea 72.54 55 P P 02 02 52.6 +0.7
comp=Z,4.5nm,0.7s,baz=286,slow=6.6,SNR=17
H17A Grat Village 73.79 46 eP P 02 03 00.9 +1.6
comp=Z,12nm,1.0s
MOOW Moose Ponds 74.08 47 eP P 02 03 02.5 +1.5
R11A Troy Canyon, C 74.34 54 eP P 02 03 03.2 +0.7
HFS Hagfors 74.45 337 LR LR 02 43 14.6
comp=Z,24nm,18.3s,baz=9.0,slow=42
NB2 NORSAR Subarra 74.48 338 P P 02 03 02.3 -0.4
comp=Z,2.3nm,0.7s,baz=35,slow=5.9
NOA NORSAR Array B 74.48 338 P P 02 03 02.9 +0.1
comp=Z,4.4nm,0.8s,baz=37,slow=5.9,SNR=11
NOA LR LR 02 38 30.0
comp=Z,43nm,21.9s,baz=40,slow=38
HWUT Hardware Ranch 74.89 49 eP P 02 03 05.2 -0.4
DUG Dugway, Tooele 74.98 51 eP P 02 03 07.5 +1.4
DUG Dugway, Tooele 74.98 51 eP P 02 03 07.5 +1.4
AKASG Malin Array Be 75.25 324 P P 02 03 06.8 -0.5
comp=Z,3.1nm,0.5s,baz=43,slow=6.0,SNR=11
AKASG Malin Array Be 75.25 324 ceP P 02 03 07.3 0.0
AKASG pmax pmax
comp=Z,3.0nm,0.5s
KIEV Kiev 75.26 324 eP P 02 03 07.2 -0.1
KIEV pmax pmax
comp=Z,4.0nm,0.6s
KIEV Kiev 75.26 324 eP P 02 03 07.2 -0.1
comp=Z,3.8nm,0.6s
PSUT Pine Spring 75.32 53 eP P 02 03 07.2 -1.0
BW06 Boulder Array 75.36 47 eP P 02 03 08.4 0.0
PD31 Pinedale Array 75.36 47 eP P 02 03 08.1 -0.3
PDAR Pinedale Array 75.36 47 P P 02 03 08.6 +0.1
comp=Z,1.9nm,0.8s,baz=263,slow=2.2,SNR=17
KNB Kanab 76.89 53 eP P 02 03 18.7 +1.6
KNB Kanab 76.89 53 eP P 02 03 18.7 +1.6
SRU San Rafael Swe 77.04 50 eP P 02 03 19.0 +1.0
SRU San Rafael Swe 77.04 50 eP P 02 03 19.0 +1.0
K22A Casper 77.18 46 eP P 02 03 18.6 0.0
comp=Z,9.7nm,1.1s
ULM Lac du Bonnet 77.51 35 P P 02 03 19.1 -1.0
comp=Z,2.0nm,0.7s,baz=324,slow=3.9,SNR=5.1
BUR08 Bucovina Ar. S 79.27 323 eP P 02 03 30.9 +0.9
BURAR Bucovina Array 79.29 323 iP P 02 03 30.9 +0.8
TESR Tescani 79.37 322 iP P 02 03 31.2 +0.7
KOLS Kolonicke sedl 79.70 325 eP P 02 03 33.2 +1.0
KOLS Kolonicke sedl 79.70 325 eP P 02 03 33.2 +1.0
VRI Vrincioaia 79.79 321 iP P 02 03 30.3 -2.5
STHS Stebnicka Huta 79.80 326 eP P 02 03 34.7 +1.9
STHS e 02 03 36.9
STHS Stebnicka Huta 79.80 326 eP P 02 03 34.7 +1.9
STHS 02 03 36.9
BRTR Keskin Array B 80.24 313 P P 02 03 35.6 +0.2
comp=Z,1.4nm,0.9s,baz=40,slow=6.4,SNR=5.4
DOPR Dopca 80.38 322 iP P 02 03 37.4 +1.4
DPC Dobruska-Polom 81.17 329 eP P 02 03 41.2 +1.1
DPC Dobruska-Polom 81.17 329 eP P 02 03 41.2 +1.1
PSZ Piszkesteto 81.51 326 eP P 02 03 41.2 -0.9
PSZ pmax pmax
comp=Z,4.0nm,0.9s
PSZ Piszkesteto 81.51 326 eP P 02 03 41.2 -0.9
comp=Z,4.0nm,0.9s
VYHS Vyhne 81.54 327 eP P 02 03 42.8 +0.7
VYHS Vyhne 81.54 327 eP P 02 03 42.8 +0.7
BRG Berggiesshubel 81.69 331 e(P) P 02 03 46.0 +3.2
comp=Z,1.0nm,9.6s
BRG Berggiesshubel 81.69 331 e(P) P 02 03 46.0 +3.2
comp=Z,1.0nm,0.6s
BRG Berggiesshubel 81.69 331 eP P 02 03 46.0 +3.2
BRG pmax pmax
comp=Z,1.0nm,9.6s
CLL Collm 81.70 332 iP P 02 03 42.9 0.0
comp=Z,5.0nm,1.1s
CLL i 02 04 02.3
CLL Collm 81.70 332 iP P 02 03 42.9 0.0
CLL pmax pmax
comp=Z,5.0nm,1.1s
PRU Pruhonice 82.16 330 eP P 02 03 46.3 +1.0
PRU Pruhonice 82.16 330 eP P 02 03 46.3 +1.0
ANMO Albuquerque 82.20 52 P P 02 03 46.3 +0.2
comp=Z,2.3nm,1.0s,baz=285,slow=2.0,SNR=4.5
ANMO Albuquerque 82.20 52 ceP P 02 03 46.0 -0.1
ANMO pmax pmax
comp=Z,4.0nm,1.2s
ANMO Albuquerque 82.20 52 eP P 02 03 46.7 +0.7
KHC Kasperske Hory 83.22 330 eP P 02 03 51.8 +0.9
KHC epP PcP 02 03 55.3 -0.1
KHC Kasperske Hory 83.22 330 eP P 02 03 51.8 +0.9
KHC Kasperske Hory 83.22 330 eP P 02 03 50.9 0.0
CONA Conrad Observa 83.24 328 iP P 02 03 50.9 -0.2
comp=Z,4.1nm,0.9s
GERES GERESS Array B 83.40 330 P P 02 03 51.5 -0.5
comp=Z,0.6nm,0.6s,baz=39,slow=5.1,SNR=5.7
VTS Vitosha 83.90 321 iP P 02 03 53.3 -1.4
VTS Vitosha 83.90 321 eP P 02 03 53.5 -1.2
VTS Vitosha 83.90 321 eP P 02 03 53.5 -1.2
MOA Molln 83.97 329 iPcP P 02 03 55.7 +1.0
comp=Z,7.3nm,1.7s
SOKA Soboth 84.58 328 iP P 02 03 56.9 -1.0
comp=Z,5.8nm,1.5s
BFO Black Forest 85.88 332 ceP P 02 04 05.3 +0.9
FUORN Ofenpass-Fuorn 86.57 330 eP P 02 04 07.5 -0.5
TXAR Lajitas Array 87.69 54 P P 02 04 13.7 0.0
comp=Z,0.6nm,0.7s,baz=318,slow=3.0,SNR=7.4
TORD Torodi Ar. Bea 118.56 318 PKP PKPdf 02 10 12.2 -0.8
comp=Z,0.3nm,0.7s,baz=14,slow=1.8,SNR=3.3
LPAZ La Paz 144.15 62 PKP PKPbc 02 11 00.6 +0.9
comp=Z,1.0nm,0.5s,baz=45,slow=2.9,SNR=3.0
LCO Las Campanas 149.43 84 ePKPbc PKPbc 02 11 14.3 +0.1

*IDC **06** 02:08:45.0±2.6, 18°.93S×176°.39W, h0km, mb4.0/5, mb1 4.2/5, mb1mx3.8/32, mbtmp4.0/5, Error ellipse: s-maj=169.9km s-min=25.9km az=151.0*
*ISCJB **06** 02:08:46.7±1.1, 19°.0S±0°.3×176°.4W±0°.2, h21km, mb4.1/5, Error ellipse: s-maj=42.0km s-min=23.3km az=167.1*
ISC 06 02:08:48.1±1.0, 19°.0S±0°.3×176°.4W±0°.2, h21km, n9, σ0s89/9, mb4.2/5, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
CTA	Charters Tower	35.21	262	P		P		02 15 42.1	+1.0
	5.0nm,0.9s,baz=75,slow=12,SNR=2.8								
STKA	Stephens Creek	39.84	243	P		P		02 16 20.6	+0.4
	1.4nm,0.8s,baz=39,slow=6.3,SNR=3.0								
WRA	Warramunga Arr	46.36	260	P		P		02 17 11.5	-1.7
	0.9nm,0.3s,baz=97,slow=8.3,SNR=5.9								
ASAR	Alice Springs	46.38	255	P		P		02 17 13.2	-0.2
	1.5nm,0.5s,baz=93,slow=8.0,SNR=31								
NVAR	Mina Array Bea	78.88	43	P		P		02 20 50.6	+0.3
	0.6nm,0.5s,baz=235,slow=9.4,SNR=2.9								
VNA3 Neumayer Olymp 89.51 176 P P 02 21 43.8 +0.3
VNA2 Neumayer--Watz 89.97 176 P P 02 21 45.0 -0.6
baz=192,slow=4.1
ARCES ARCESS Array B 127.73 350 PKP PKPdf 02 27 51.0 -0.4
0.4nm,0.4s,baz=20,slow=1.4,SNR=9.5
GERES GERESS Array B 149.15 347 PKPbc PKPbc 02 28 34.9 -0.1
0.6nm,0.5s,baz=48,slow=2.0,SNR=5.6

*ISK **06** 02:11:27.9, 37°.66N×36°.32E, h7km, MD2.9*
*CSEM **06** 02:11:28.6±0.1, 37°.66N×36°.31E, h5km, MD2.8, Error ellipse: s-maj=3.7km s-min=3.3km az=99.0*
*DDA **06** 02:11:28.0, 37°.68N×36°.35E, h10km, Md2.8*
ISC 06 02:11:28.9±0.8, 37°.63N±0°.02×36°.32E±0°.02, h9km±5km, n48, σ0s67/72, Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
ANDN	Andirin	0.05	155	iP		P	Pg	02 11 30.5	-0.4
ANDN				iS		S	Sg	02 11 32.7	+0.3
ANDN	Andirin	0.05	155	P		P	Pg	02 11 30.5	-0.4
ANDN				S		S	Sg	02 11 32.7	+0.3
KOZT	Kozan	0.42	249	ePG		P	Pg	02 11 36.7	-0.3
KOZT				eSG		S	Sg	02 11 43.1	+0.6
KOZT	Kozan	0.42	249	ePg		P	Pg	02 11 36.7	-0.3
KOZT				eSg		S	Sg	02 11 43.1	+0.6
AYKD	Aykdinkavak	0.44	119	iP		P	Pg	02 11 37.0	-0.5
KMRS	Kahramanmaras	0.48	105	ePG		P	Pg	02 11 37.5	-0.7
KMRS	Kahramanmaras	0.48	105	ePg		P	Pg	02 11 37.5	-0.7
KAMA	Osmaniye	0.52	148	iP		P	Pg	02 11 39.1	0.0
KAMA				iS		S	Sb	02 11 47.4	-0.5
GAZ	Gaziantep	0.85	122	ePG		P	Pg	02 11 44.8	-0.3
GAZ				eSG		S	Sb	02 11 57.3	+0.1
GAZ	Gaziantep	0.85	122	ePg		P	Pg	02 11 44.8	-0.3
GAZ				eSg		S	Sb	02 11 57.3	+0.1
GZT	Gaziantep	1.03	105	iP		P	Pg	02 11 48.2	-0.5
GZT				iS		S	Sb	02 12 03.6	+1.0
DRWC	Darouich	1.04	164	eP		P	Pb	02 11 49.3	+0.2
DRWC				eS		S	Sn	02 12 04.5	+0.1
	55nm,0.4s								
KUZU	Kuzuini	1.05	144	iP		P	Pb	02 11 49.4	+0.2
KUZU				iS		S	Sn	02 12 05.4	+0.9
KUZU	Kuzuini	1.05	144	P		P	Pb	02 11 49.4	+0.2
KUZU				S		S	Sn	02 12 05.4	+0.9
KARA	Karaisali	1.07	250	ePG		P	Pg	02 11 48.8	-0.6
KARA	Karaisali	1.07	250	ePg		P	Pg	02 11 48.8	-0.6
TAHT	Tahtakopru-Hat	1.25	185	ePN		P	Pn	02 11 52.9	+0.3
TAHT	Tahtakopru-Hat	1.25	185	ePn		P	Pn	02 11 52.9	+0.3
BNN	Bunyan	1.28	343	ePN		P	Pg	02 11 52.3	-1.1
BNN	Bunyan	1.28	343	ePn		P	Pg	02 11 52.3	-1.1
DARE	Darende-Malaty	1.32	44	ePN		P	Pn	02 11 52.1	-1.4
DARE	Darende-Malaty	1.32	44	ePn		P	Pn	02 11 52.1	-1.4
CUGUR	Gurin_S˜VAS	1.33	34	iP		P	Pn	02 11 52.7	-1.0
CUGUR				iS		S	Sn	02 12 12.3	+0.8
CUGUR	Gurin_S˜VAS	1.33	34	P		P	Pn	02 11 52.7	-1.0
CUGUR				S		S	Sn	02 12 12.3	+0.8
AKCD	Akcadag	1.43	62	iP		P	Pn	02 11 54.7	-0.4
AKCD				iS		S	Sb	02 12 14.7	+0.5
AKCD	Akcadag	1.43	62	P		P	Pn	02 11 54.7	-0.4
AKCD				S		S	Sb	02 12 14.7	+0.5
NIG	Nigde	1.43	290	ePN		P	Pn	02 11 54.9	-0.4
NIG	Nigde	1.43	290	ePn		P	Pn	02 11 54.9	-0.4
BTCH	Batrach	1.59	176	eP		P	Pb	02 11 58.3	-0.2
BTCH				eS		S	Sg	02 12 19.8	-0.3
	31nm,0.5s								
YAYL	Yayladag	1.60	186	iP		P	Pg	02 11 59.1	-0.5
YAYL				iS		S	Sb	02 12 19.2	+0.2
YAYL	Yayladag	1.60	186	P		P	Pg	02 11 59.1	-0.5
YAYL				S		S	Sb	02 12 19.2	+0.2
CUALT	Altinyayla-SIV	1.68	12	iP		P	Pn	02 11 58.7	+0.2
CUALT				iS		S	Sg	02 12 22.6	-0.3
CUALT	Altinyayla-SIV	1.68	12	P		P	Pn	02 11 58.7	+0.2
KERG	Konya-Eregli	1.76	264	iP		P	Pb	02 12 01.1	-0.2
KERG				iS		S	Sg	02 12 26.9	+1.6
KERG	Konya-Eregli	1.76	264	P		P	Pb	02 12 01.1	-0.2
ARNB	Al Arnab	1.79	189	eP		P	Pn	02 11 58.5	-1.4
ARNB				eS		S	Sn	02 12 20.6	-2.2
CUSAR	Sarkisla-SIVAS	1.79	358	iP		P	Pn	02 12 00.6	+0.6
CUSAR				iS		S	Sb	02 12 24.9	+0.4
CUSAR	Sarkisla-SIVAS	1.79	358	P		P	Pn	02 12 00.6	+0.6
CUSAR				S		S	Sb	02 12 24.9	+0.4
CUKAN	kangal_SIVAS	1.91	28	iP		P	Pn	02 12 02.0	+0.3
CUKAN				iS		S	Sg	02 12 30.0	-0.4
CUKAN	kangal_SIVAS	1.91	28	P		P	Pn	02 12 02.0	+0.3
YESY	Yesilyurt	2.05	275	ePN		P	Pn	02 12 03.7	+0.1
YESY	Yesilyurt	2.05	275	ePn		P	Pn	02 12 03.7	+0.1
SVSK	Karacayir	2.35	13	ePN		P	Pn	02 12 07.9	+0.4
SVSK	Karacayir	2.35	13	ePn		P	Pn	02 12 07.9	+0.4
PTK	Pertek	2.73	62	ePN		P	Pn	02 12 13.6	+0.6
PTK	Pertek	2.73	62	ePn		P	Pn	02 12 13.6	+0.6
CORM	Corum	2.87	333	ePN		P	Pn	02 12 14.8	0.0
CORM	Corum	2.87	333	ePn		P	Pn	02 12 14.8	0.0

*ISK **06** 02:13:15.3, 39°.10N×29°.07E, h10km, MD2.6*
*DDA **06** 02:13:15.8, 39°.13N×29°.05E, h7km, Md2.6*
*ISCJB **06** 02:13:16.0±0.5, 39°.11N±0°.03×29°.04E±0°.04, h7km±5km, Error ellipse: s-maj=4.6km s-min=4.3km az=10.9*
*CSEM **06** 02:13:16.1±0.1, 39°.11N×29°.05E, h10km, MD2.6, Error ellipse: s-maj=1.9km s-min=1.7km az=78.0*
ISC 06 02:13:15.8±0.9, 39°.11N±0°.02×29°.04E±0°.02, h17km±7km, n27, σ0s24/44, Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
DEMI	Demirci	0.26	255	iP		P	Pb	02 13 22.1	0.0
DEMI				iS		S	Sg	02 13 26.0	+0.2
DEMI	Demirci	0.26	255	P		P	Pb	02 13 22.1	0.0
DEMI				S		S	Sg	02 13 26.0	+0.2
GDZ	Gediz	0.34	94	iP		P	Pg	02 13 23.1	0.0
GDZ				iS		S	Sg	02 13 27.9	-0.2
GDZ	Gediz	0.34	94	P		P	Pg	02 13 23.1	0.0
GDZ				S		S	Sg	02 13 27.9	-0.2
TVSB	Tavsanli	0.47	44	ePG		P	Pg	02 13 25.2	-0.2
TVSB				eSG		S	Sg	02 13 31.8	0.0
TVSB	Tavsanli	0.47	44	ePg		P	Pg	02 13 25.2	-0.2
TVSB				eSg		S	Sg	02 13 31.8	0.0
DURS	Dursunbey	0.66	318	iP		P	Pb	02 13 28.9	0.0
DURS				iS		S	Sb	02 13 37.9	+0.1
DURS	Dursunbey	0.66	318	P		P	Pb	02 13 28.9	0.0
DURS				S		S	Sb	02 13 37.9	+0.1
KULA	Kula-Manisa	0.67	207	ePG		P	Pb	02 13 28.7	-0.3
KULA				eSG		S	Sb	02 13 38.1	+0.1
KULA	Kula-Manisa	0.67	207	ePg		P	Pb	02 13 28.7	-0.3
KULA				eSg		S	Sb	02 13 38.1	+0.1
KHAL	Karahalli	0.82	154	iP		P	Pn	02 13 32.6	0.0
KHAL				iS		S	Sg	02 13 43.3	+0.6
KHAL	Karahalli	0.82	154	P		P	Pn	02 13 32.6	0.0
KHAL				S		S	Sg	02 13 43.3	+0.6
ULDT	Uludag	1.03	4	iP		P	Pg	02 13 36.0	+0.1
ULDT				iS		S	Sg	02 13 49.7	-0.1
ULDT	Uludag	1.03	4	P		P	Pg	02 13 36.0	+0.1
ULDT				S		S	Sn	02 13 49.7	-0.1
BALB	Balikesir	1.04	301	ePG		P	Pg	02 13 36.2	+0.1
BALB	Balikesir	1.04	301	ePg		P	Pg	02 13 36.2	+0.1
IGD	Bursa	1.16	6	iP		P	Pn	02 13 36.9	-0.3
IGD				iS		S	Sg	02 13 53.6	+0.2
MDNY	Mudanya-Bursa	1.26	354	ePN		P	Pg	02 13 39.9	-0.3
MDNY	Mudanya-Bursa	1.26	354	ePn		P	Pg	02 13 39.9	-0.3
KCTX	Karacabey (Bur	1.27	336	ePN		P	Pg	02 13 40.1	-0.2
KCTX	Karacabey (Bur	1.27	336	ePn		P	Pg	02 13 40.1	-0.2
SHUT	Suhut-Afyon	1.30	115	ePN		P	Pb	02 13 39.7	-0.2
SHUT	Suhut-Afyon	1.30	115	ePn		P	Pb	02 13 39.7	-0.2
BORA	Eskisehir	1.33	54	iP		P	Pg	02 13 40.9	+0.5
BORA				iS		S	Sg	02 13 59.0	0.0
BORA	Eskisehir	1.33	54	P		P	Pg	02 13 40.9	+0.5
BORA				S		S	Sg	02 13 59.0	0.0
ARMT	Armutlu	1.46	355	ePN		P	Pb	02 13 42.7	+0.2
ARMT	Armutlu	1.46	355	ePn		P	Pb	02 13 42.7	+0.2

*ISCJB **06** 02:16:58.7±1.0, 36°.45N±0°.06×28°.77E±0°.05, h3km±8km, Error ellipse: s-maj=9.9km s-min=5.5km az=22.9*
*CSEM **06** 02:16:58.5±0.5, 36°.43N×28°.78E, h2km, MD2.4, Error ellipse: s-maj=10.0km s-min=4.8km az=18.0*
*DDA **06** 02:16:59.0, 36°.49N×28°.77E, h7km, Md2.6*
*ISK **06** 02:16:58.2, 36°.52N×28°.80E, h5km, MD2.4*
ISC 06 02:16:58.6±1.2, 36°.48N±0°.05×28°.79E±0°.03, h16km±7km, n18, σ0s45/32, Dodecanese Islands

Code	Station Name	Δ°	AZ°	Op	ISC	h m s	Res ISC
FETY	Fethiye	0.28	57	*e*PG	Pg	02 17 04.6	-0.1
FETY				*e*SG	Sg	02 17 08.9	0.0
FETY	Fethiye	0.28	57	*e*Pg	Pg	02 17 04.6	-0.1
FETY				*e*Sg	Sg	02 17 08.9	0.0
DALY	Dalyan (Mu˜la	0.35	342	*e*PG	Pg	02 17 05.7	-0.2
DALY				*e*SG	Sb	02 17 11.6	-0.3
DALY	Dalyan (Mu˜la	0.35	342	*e*Pg	Pg	02 17 05.7	-0.2
DALY				*e*Sg	Sb	02 17 11.6	-0.3
TURN	Turunc	0.42	339	*i* P	Pn	02 17 09.1	-0.9
TURN				*i* S	Sn	02 17 17.3	-0.1
TURN	Turunc	0.42	339	P	Pn	02 17 09.1	-0.9
TURN				S	Sn	02 17 17.3	-0.1
AKAS	Kas	0.70	110	*i* P	Pg	02 17 12.5	+0.1
AKAS				*i* S	Sn	02 17 24.2	-0.4
AKAS	Kas	0.70	110	P	Pg	02 17 12.5	+0.1
AKAS				S	Sn	02 17 24.2	-0.4
YER	Yerkesik	0.77	328	*e*PG	Pg	02 17 13.5	-0.1
YER	Yerkesik	0.77	328	*e*Pg	Pg	02 17 13.5	-0.1
ELL	Elmali	0.94	73	*e*PG	Pn	02 17 17.3	+0.1
ELL	Elmali	0.94	73	*e*Pg	Pn	02 17 17.3	+0.1
GOLH	Golhisar	0.98	39	*i* P	Pb	02 17 17.1	-0.1
GOLH				*i* S	Sn	02 17 32.2	+0.9
GOLH	Golhisar	0.98	39	P	Pb	02 17 17.1	-0.1
GOLH				S	Sn	02 17 32.2	+0.9
BDRM	Kayabasi	1.23	299	*i* P	Pb	02 17 21.7	+0.2
BDRM				*i* S	Sg	02 17 38.7	+0.4
BDRM	Kayabasi	1.23	299	P	Pb	02 17 21.7	+0.2
BDRM				S	Sg	02 17 38.7	+0.4
AYDN	Tasoluk	1.39	329	*i* P	Pg	02 17 25.6	+0.3
AYDN				*i* S	Sg	02 17 44.2	+0.8
AYDN	Tasoluk	1.39	329	P	Pg	02 17 25.6	+0.3
AYDN				S	Sg	02 17 44.2	+0.8

*IDC **06** 02:46:53.5±6.9, 18.°74N×108.°15W, h0km, mb3.4/5, mb1 3.8/7, mb1mx3.7/33, mbtmp3.4/7, ML3.3/2, MS3.5/9, Ms1 3.5/9, ms1mx3.3/20, Error ellipse: s-maj=127.7km s-min=65.9km az=142.0*

ISC 06 02:47:02.3±6.5**, 19.°2N**±0.°7×**108.°8W**±0.°6**, h35**km**, n15, σ0.s63**/8**, mb3.5**/4**, MS3.3**/4**, Revilla Gigedo Islands region**

Code	Station Name	Δ°	AZ°	Op	ISC	h m s	Res ISC
H06E1	SOCORRO T-PHAS	2.09	260	Pn	Pn	02 47 34.8	-0.2
H06E1				Sn	Sn	02 48 12.8	+13
H06E1				T	T	02 49 56.7	
	SNR=117						
H06S1	SOCORRO T	2.13	259	T	T	02 49 50.4	
	SNR=25						
H06N1	SOCORRO T-PHAS	2.13	262	Pn	Pn	02 47 35.1	-0.4
H06N1				Sn	Sn	02 48 09.0	+8.3
H06N1				T	T	02 49 55.5	
	SNR=23						
LPIG	La Paz	5.12	344	LR	LR	02 49 50.0	
	comp=Z,508nm,19.4s,baz=202,slow=31						
TXAR	Lajitas Array	11.13	24	Pn	Pn	02 49 38.7	-0.4
	0.1nm,0.3s,baz=196,slow=15,SNR=11						
TXAR				LR	LR	02 53 23.2	
	comp=Z,97nm,19.6s,baz=0.0,slow=34						
CMIG	Matias Romero	13.35	97	LR	LR	02 54 55.7	
	comp=Z,175nm,21.7s,baz=265,slow=38						
ANMO	Albuquerque	15.85	7	Pn	Pn	02 50 42.8	-0.1
	0.1nm,0.3s,baz=179,slow=11,SNR=2.2						
ANMO				LR	LR	02 56 27.0	
	comp=Z,127nm,18.2s,baz=200,slow=35						
PFO	Pinyon Flats O	15.94	336	LR	LR	02 55 55.3	
	comp=Z,264nm,21.7s,baz=142,slow=33						
NVAR	Mina Array Bea	20.91	339	P	Pn	02 51 44.1	-0.5
	0.8nm,0.7s,baz=166,slow=13,SNR=3.7						
NVAR				LR	LR	02 58 02.7	
	comp=Z,114nm,21.0s,baz=100,slow=31						
PDAR	Pinedale Array	23.53	359	P	P	02 52 09.2	-0.3
	0.4nm,0.7s,baz=168,slow=9.7,SNR=3.9						
PDAR				LR	LR	03 00 43.3	
	comp=Z,95nm,18.2s,baz=252,slow=35						
NEW	Newport	29.81	349	LR	LR	03 04 16.0	
	comp=Z,566nm,18.7s,baz=211,slow=34						
ULM	Lac du Bonnet	32.67	15	LR	LR	03 07 01.9	
	comp=Z,75nm,20.2s,baz=329,slow=37						
YKA	Yellowknife Ar	43.48	356	P	P	02 55 01.6	-0.2
	0.4nm,0.8s,baz=170,slow=7.8,SNR=8.9						
INK	Inuvik	51.53	349	P	P	02 56 05.2	+0.8
	1.0nm,0.8s,baz=126,slow=9.9,SNR=4.1						
ILAR	Eielson Array	52.15	340	P	P	02 56 09.9	+0.9
	0.7nm,0.7s,baz=146,slow=6.0,SNR=8.0						

IDC 06 02:53:13.7±2.8**, 46.°22N**×**129.°16W, h0**km**, mb3.1**/2**, mb1 3.5**/6**, mb1mx3.3**/37**, mbtmp3.2**/6**, ML3.0**/4**, Error ellipse: s-maj=58.5km s-min=19.0km az=59.0, Off coast of Washington**

Code	Station Name	Δ°	AZ°	Op	ISC	h m s	Res ISC
BBB	Bella Bella	6.01	6	Pn	Pn	02 54 43.8	0.0
	0.3nm,0.3s,baz=195,slow=12,SNR=2.0						
NVAR	Mina Array Bea	11.18	130	Pn	Pn	02 55 56.5	+1.5
	0.2nm,0.3s,baz=309,slow=14,SNR=3.0						
PDAR	Pinedale Array	14.41	97	Pn	P	02 56 43.1	-3.2
	0.0nm,0.3s,baz=285,slow=7.4,SNR=2.2						
YKA	Yellowknife Ar	18.30	22	P	Pn	02 57 28.5	-0.2
	0.0nm,0.3s,baz=211,slow=12,SNR=3.3						
ILAR	Eielson Array	20.99	339	P	P	02 57 57.6	-0.7
	0.7nm,0.9s,baz=154,slow=10,SNR=4.9						
TXAR	Lajitas Array	26.10	121	P	P	02 58 50.6	+1.3
	0.6nm,0.9s,baz=296,slow=7.7,SNR=4.4						
H11S1	WAKE ISLAND Hy	59.04	265	T	T	04 06 30.8	
	baz=47,slow=75,SNR=35						
H11S2	WAKE ISLAND Hy	59.05	265	T	T	04 06 29.4	
	baz=47,slow=75,SNR=47						
H11S3	WAKE ISLAND Hy	59.06	265	T	T	04 06 32.1	
	baz=47,slow=75,SNR=24						

*ISK **06** 02:55:26.7, 37.°61N×29.°73E, h11km, MD2.9*
*DDA **06** 02:55:27.0, 37.°57N×29.°76E, h7km, Md2.6*
*ISCJB **06** 02:55:27.4±0.5, 37.°59N±0.°02×29.°75E±0.°04, h7km±6km, Error ellipse: s-maj=5.1km s-min=4.0km az=159.6*
*CSEM **06** 02:55:27.2±0.2, 37.°60N×29.°74E, h8km, MD2.6, Error ellipse: s-maj=5.6km s-min=4.3km az=73.0*

ISC 06 02:55:27.4±1.0**, 37.°59N**±0.°02×**29.°74E**±0.°03**, h12**km±9km**, n31, σ0.s69**/46**, Turkey**

Code	Station Name	Δ°	AZ°	Op	ISC	h m s	Res ISC
GOLH	Golhisar	0.38	202	*i* P	Pg	02 55 34.4	-0.6
GOLH				*i* S	Sg	02 55 40.5	+0.4
GOLH	Golhisar	0.38	202	P	Pg	02 55 34.4	-0.6
GOLH				S	Sg	02 55 40.5	+0.4
UZP	Denizli	0.63	315	*i* P	Pg	02 55 39.0	-0.7
UZP				*i* S	Sb	02 55 49.5	+0.3
BCK	Bucak	0.69	100	*e*PG	Pg	02 55 40.6	-0.2
BCK				*e*SG	Sb	02 55 50.9	+0.1
BCK	Bucak	0.69	100	*e*Pg	Pg	02 55 40.6	-0.2
BCK				*e*Sg	Sb	02 55 50.9	+0.1
KHL	Karahalli	0.75	347	*e*PG	Pg	02 55 41.2	-0.8
KHL	Karahalli	0.75	347	*e*Pg	Pg	02 55 41.2	-0.8
KORT	Korkueli	0.76	140	*i* P	Pg	02 55 41.5	-0.7
KORT				*i* S	Sn	02 55 54.9	-0.7
KORT	Korkueli	0.76	140	P	Pg	02 55 41.5	-0.7
KORT				S	Sn	02 55 54.9	-0.7
KHAL	Karahalli	0.81	346	*i* P	Pg	02 55 42.4	-0.6
KHAL				*i* S	Sb	02 55 55.3	+1.0
KHAL	Karahalli	0.81	346	P	Pg	02 55 42.4	-0.6
ELL	Elmali	0.85	171	*e*PG	Pg	02 55 43.9	0.0
ELL				*e*SG	Sb	02 55 56.3	+0.8
ELL	Elmali	0.85	171	*e*Pg	Pg	02 55 43.9	0.0
ELL				*e*Sg	Sb	02 55 56.3	+0.8
FETY	Fethiye	1.09	209	*e*PN	Pn	02 55 48.8	+0.3
FETY	Fethiye	1.09	209	*e*Pn	Pn	02 55 48.8	+0.3
TURN	Turunc	1.15	232	*i* P	Pg	02 55 52.9	+3.3
TURN				*i* S	Sn	02 56 14.0	+9.0
SHUT	Suhut-Afyon	1.16	33	*e*PN	Pb	02 55 49.0	-0.4
SHUT				*e*SN	Sn	02 56 05.2	-0.1
SHUT	Suhut-Afyon	1.16	33	*e*Pn	Pb	02 55 49.0	-0.4
SHUT				*e*Sn	Sn	02 56 05.2	-0.1
DALY	Dalyan (Mu˜la	1.16	229	*e*PN	Pg	02 55 49.7	0.0
DALY	Dalyan (Mu˜la	1.16	229	*e*Pn	Pg	02 55 49.7	0.0
YER	Yerkesik	1.25	249	*e*PN	Pb	02 55 50.9	0.0
YER	Yerkesik	1.25	249	*e*Pn	Pb	02 55 50.9	0.0
KULA	Kula-Manisa	1.26	318	*e*PN	Pn	02 55 50.2	-0.7
KULA	Kula-Manisa	1.26	318	*e*Pn	Pn	02 55 50.2	-0.7
AYDN	Tasoluk	1.48	273	*i* P	Pg	02 55 55.7	-0.1
AYDN				*i* S	Sg	02 56 14.4	-0.6
AYDN	Tasoluk	1.48	273	P	Pg	02 55 55.7	-0.1
AYDN				S	Sg	02 56 14.4	-0.6
AYDB	Zeytinkoy-Aydi	1.51	284	*e*PN	Pn	02 55 54.2	-0.1
AYDB	Zeytinkoy-Aydi	1.51	284	*e*Pn	Pn	02 55 54.2	-0.1
GDZ	Gediz	1.51	352	*i* P	Pg	02 55 56.5	0.0
GDZ				*i* S	Sg	02 56 18.9	+2.8
GDZ	Gediz	1.51	352	P	Pg	02 55 56.5	0.0
DEMI	Demirci	1.66	331	*i* P	Pg	02 55 58.8	-0.5
DEMI				*i* S	Sg	02 56 22.0	+1.2

IDC 06 03:05:32.2±8.0**, 18.°98N**×**108.°28W, h0**km**, mb3.1**/4**, mb1 3.6**/6**, mb1mx3.6**/36**, mbtmp3.2**/6**, ML3.2**/2**, MS3.3**/5**, Ms1 3.3**/5**, ms1mx3.2**/9**, Error ellipse: s-maj=140.3km s-min=66.8km az=145.0, Revilla Gigedo Islands region**

Code	Station Name	Δ°	AZ°	Op	ISC	h m s	Res ISC
H06E1	SOCORRO T-PHAS	2.51	266	Pn	Pn	03 06 11.7	-2.6
H06E1				Sn	Sb	03 06 49.5	-0.2
H06E1				T	T	03 08 38.2	
	SNR=134						
H06S1	SOCORRO T	2.54	265	T	T	03 08 33.7	
	SNR=33						
H06N1	SOCORRO T-PHAS	2.56	268	Pn	Pn	03 06 13.0	-2.0
H06N1				Sn	Sb	03 06 50.6	-0.6
H06N1				T	T	03 08 24.6	
	SNR=13						
LPIG	La Paz	5.44	340	LR	LR	03 08 26.7	
	comp=Z,391nm,19.2s,baz=218,slow=32						
TXAR	Lajitas Array	11.14	21	Pn	Pn	03 08 14.4	+1.5
	0.1nm,0.3s,baz=201,slow=14,SNR=14						
CMIG	Matias Romero	12.88	96	LR	LR	03 12 48.9	
	comp=Z,53nm,20.8s,baz=274,slow=34						
ANMO	Albuquerque	15.99	5	Pn	Pn	03 09 19.1	+0.3
	0.0nm,0.3s,baz=187,slow=16,SNR=1.8						
ANMO				LR	LR	03 15 03.0	
	comp=Z,109nm,19.1s,baz=195,slow=36						
PFO	Pinyon Flats O	16.30	335	LR	LR	03 14 32.1	
	comp=Z,184nm,21.7s,baz=134,slow=33						
NVAR	Mina Array Bea	21.26	338	P	P	03 10 20.5	+0.2
	0.5nm,0.5s,baz=168,slow=14,SNR=3.2						
NVAR				LR	LR	03 17 28.0	
	comp=Z,120nm,18.5s,baz=265,slow=34						
PDAR	Pinedale Array	23.74	358	P	P	03 10 46.3	-0.1
	0.2nm,0.7s,baz=156,slow=6.8,SNR=3.0						
YKA	Yellowknife Ar	43.70	356	P	P	03 13 38.0	-0.7
	0.2nm,0.8s,baz=168,slow=7.7,SNR=6.2						
ILAR	Eielson Array	52.48	340	P	P	03 14 47.0	+0.3
	0.6nm,0.8s,baz=156,slow=7.0,SNR=7.1						

*CSEM **06** 03:09:50.5, 34.°97N×25.°32E, h19km, ML0.9/2*

ATH 06 03:09:50.5, 34.°97N×**25.°32E, h19**km±7km**, ML0.9**/1**, Error ellipse: s-maj=8.0km s-min=1.3km az=3.0, Crete**

Code	Station Name	Δ°	AZ°	Op	ISC	h m s	Res ISC
LAST	Lasithi	0.23	35	P	Pb	03 09 55.3	-0.6
LAST				S	Sg	03 10 00.6	+0.6
LAST	Lasithi	0.23	35	P	Pb	03 09 55.3	-0.5
NPS	Neapolis	0.38	40	P	Pg	03 09 58.5	0.0
NPS				S	Sb	03 10 04.9	+0.7
NPS	Neapolis	0.38	40	P	Pg	03 09 58.5	0.0
NPS				S	Sb	03 10 04.9	+0.7
SIVA	Sivas	0.42	277	P	Pg	03 09 59.1	-0.1
SIVA				S	Sb	03 10 05.8	+0.5
SIVA	Sivas	0.42	277	P	Pg	03 09 59.1	-0.1
SIVA				S	Sb	03 10 05.8	+0.5
IDI	Anoyia	0.47	312	P	Pg	03 10 00.2	0.0
IDI				S	Sg	03 10 06.1	-0.6
IDI	Anoyia	0.47	312	P	Pg	03 10 00.2	0.0
IDI				S	Sg	03 10 06.1	-0.6
IDI				AML	AML	03 10 08.6	
	comp=N,55μm,1.4s						
IDI				AML	AML	03 10 09.7	
	comp=E,40μm,0.9s						

*NIED **06** 03:12:00, 36.°80N×142.°20E, h20km, Mw4.4 Best double couple: M₀3.99000×10¹⁵ NP1:φs207.00000°, δ20.00000°, λ96.00000°. NP2:φs21.00000°, δ70.00000°, λ88.00000°.*
*JMA **06** 03:12:59.6±0.3, 36.°75N×142.°16E, h33km, M4.4*
*ISCJB **06** 03:13:00.6±0.8, 36.°73N±0.°04×142.°12E±0.°06, h36km±6km, mb4.2/27, MS3.8/6, Error ellipse: s-maj=8.2km s-min=5.4km az=21.9*
*NEIC **06** 03:13:03.0±0.8, 36.°71N×142.°07E, h42km±6km, mb4.7/2, Error ellipse: s-maj=8.7km s-min=5.4km az=135.0*
*IDC **06** 03:13:03.4±1.9, 36.°67N×142.°05E, h47km±18km, mb3.9/22, mb1 4.0/29, mb1mx3.9/47, mbtmp4.1/29, ML3.7/5, MS3.6/11, Ms1 3.6/11, ms1mx3.3/35, Error ellipse: s-maj=17.2km s-min=13.6km az=111.0*

ISC 06 03:13:02.6±0.6**, 36.°76N**±0.°04×**142.°10E**±0.°07**, h36**km±1km**, n77, σ1.s12**/71**, mb4.2**/27**, MS3.8**/6**, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	h m s	Res ISC
ONAJ	Iwakimizuishiy	1.09	289	P	Pn	03 13 19.4	-2.1
JFK	Kawauchi	1.15	302	P	Pn	03 13 20.2	-2.0
JFK				*e*S	Sn	03 13 35.4	-1.3
JHO	Hitachi	1.24	264	P	Pn	03 13 21.6	-1.8
JMM	Marumori	1.52	317	P	Pn	03 13 25.6	-1.6
JFT	Otama	1.60	299	P	Pn	03 13 27.7	-0.6
JIO	Ouri	1.79	341	P	Pn	03 13 30.3	-0.7
JIO				S	Sn	03 13 52.2	-0.3
JAG	Ashikaga	2.15	262	P	Pn	03 13 35.0	-1.0
JAG				S	Sn	03 14 01.2	-0.2
BSO1	Boso 1	2.29	204	P	Pn	03 13 36.3	-1.1
BSO1				S	Sn	03 14 05.0	+1.0
JMK	Ichinoseki	2.29	343	P	Pn	03 13 37.7	-0.2
JNS	Sasagawa	2.46	296	P	Pn	03 13 40.6	+0.5
JRY	Ryogami san	2.68	255	P	Pn	03 13 42.4	-0.9
JRY				S	Sn	03 14 14.8	+0.3
MJAR	Matsushiro Arr	3.13	267	P	Pn	03 13 49.6	+0.1
	37nm,0.3s,baz=96,slow=9.8,SNR=193						
MJAR				LR	LR	03 15 16.7	
	comp=Z,992nm,18.2s,baz=95,slow=44						
MAJO	Matsushiro	3.14	267	*e*Pn	Pn	03 13 49.9	+0.4
MAT	Matsushiro	3.14	267	P	Pn	03 13 49.6	+0.1
MAT				*e*S	Sn	03 14 26.0	+0.3
JHJ	Hachijo jima 2	4.10	208	P	Pn	03 14 01.2	-1.5
	45nm,0.3s,baz=89,slow=18,SNR=17						
JHJ				S	Sn	03 14 45.2	-4.3
	161nm,0.3s,baz=46,slow=23,SNR=12						
JHJ				LR	LR	03 16 02.0	
	comp=Z,193nm,18.5s,baz=273,slow=45						
INU	Inuyama	4.35	253	*e*Pn	Pn	03 14 07.1	+1.0
INU				*e*Sn	Sn	03 14 60.0	+4.4
ERM	Erimo	5.31	9	*e*Pn	Pn	03 14 18.1	-1.3
ERM				*e*Sn	Sn	03 15 16.0	-3.2
JNU	Nakatsue	9.90	252	P	Pn	03 15 22.6	+0.2
	0.7nm,0.3s,baz=150,slow=4.8,SNR=4.3						
JNU				LR	LR	03 19 12.4	
	comp=Z,162nm,19.0s,baz=124,slow=38						
USRK	Ussuriysk Ar.	10.69	317	P	Pn	03 15 34.1	+1.0
	0.7nm,0.3s,baz=129,slow=12,SNR=14						
KSRS	Korea Array	11.34	278	P	Pn	03 15 43.4	+1.3
	baz=87,slow=13,SNR=6.1						
KSRS				LR	LR	03 19 56.6	
	comp=Z,414nm,18.8s,baz=84,slow=36						
KSAR	Wonju Array Be	11.37	278	P	Pn	03 15 43.4	+0.9
KLR	Kul'dur	14.56	332	P	Pn	03 16 26.4	+0.4
	0.1nm,0.3s,baz=147,slow=18,SNR=3.0						
JOW	Kunigami	15.35	234	LR	LR	03 22 08.2	
	comp=Z,135nm,21.8s,baz=167,slow=36						
PETK	Petropavlovsk-	19.66	29	P	Pn	03 17 30.0	+0.3
	0.1nm,0.3s,baz=224,slow=8.2,SNR=4.3						
PEA1	Petropavlovsk-	19.66	29	*e*P	Pn	03 17 30.0	+0.2
MA2	Magadan	23.51	11	P	P	03 18 08.6	-0.4
	4.3nm,0.4s,baz=220,slow=8.4,SNR=8.3						
SEY	Seymchan	26.96	10	P	P	03 18 41.3	+0.9
	2.5nm,0.5s,baz=189,slow=5.8,SNR=17						
H11N2	WAKE ISLAND Hy	27.54	121	T	T	03 46 51.6	
	baz=317,slow=74,SNR=53						
H11N1	WAKE ISLAND Hy	27.55	121	T	T	03 46 40.2	
	baz=317,slow=74,SNR=59						
H11N3	WAKE ISLAND Hy	27.55	121	T	T	03 47 00.8	
	baz=317,slow=74,SNR=55						
ENH	Enshi	27.86	266	*e*P	P	03 18 47.4	-1.4
	23nm,0.6s						
H11S1	WAKE ISLAND Hy	28.25	123	T	T	03 47 37.6	
	baz=318,slow=74						
H11S3	WAKE ISLAND Hy	28.25	123	T	T	03 47 48.4	
	baz=318,slow=74						
H11S2	WAKE ISLAND Hy	28.27	123	T	T	03 47 38.3	
	baz=318						
SONA1	Songino Array	28.39	304	*e*P	P	03 18 53.4	-0.1
SONA0	Songino Array	28.39	304	*e*P	P	03 18 53.9	+0.3
	10nm,0.8s						
SONM	Songino Array	28.39	304	P	P	03 18 53.9	+0.3
	9.7nm,0.8s,baz=102,slow=8.8,SNR=62						
TLY	Talaya	30.92	311	P	P	03 19 15.8	0.0
	2.0nm,0.5s,baz=116,slow=7.6,SNR=6.0						
CMAR	Chiang Mai Arr	41.96	256	P	P	03 20 49.4	-0.8
	1.0nm,0.5s,baz=48,slow=7.6,SNR=4.4						
ZAA0	Zalesovo Array	42.50	313	*e*P	P	03 20 53.9	-0.3
ZAA1	Zalesovo Array	42.50	313	*e*P	P	03 20 53.6	-0.5
ZALV	Zalesovo Beam	42.50	313	P	P	03 20 53.6	-0.6
	4.8nm,0.7s,baz=90,slow=7.4,SNR=15						
MK32	Makanchi Array	44.73	302	*e*P	P	03 21 12.2	0.0
MKAR	Makanchi Array	44.73	302	P	P	03 21 12.2	0.0
	2.6nm,0.7s,baz=87,slow=10,SNR=20						
MKAR				LR	LR	03 41 12.7	
	comp=Z,87nm,18.7s,baz=68,slow=38						
KURK	Kurchatov	46.53	308	P	P	03 21 26.7	+0.4
KURBB	Kurchatov Arra	46.60	308	P	P	03 21 26.7	-0.2
	2.3nm,0.4s,baz=83,slow=8.2,SNR=26						
ILAR	Eielson Array	49.43	32	P	P	03 21 49.0	+0.4
	1.3nm,0.8s,baz=263,slow=6.5,SNR=13						
ILB	Eielson Array	49.43	32	*e*P	P	03 21 47.9	-0.7
AAK	Ala-Archa	51.10	299	LR	LR	03 44 45.5	
	comp=Z,198nm,20.8s,baz=65,slow=37						
BVAR	Borovoye Array	51.16	313	P	P	03 22 01.9	+0.1
	1.1nm,0.5s,baz=72,slow=8.0,SNR=5.7						
INK	Inuvik	54.38	27	P	P	03 22 25.8	+0.5
	0.8nm,0.6s,baz=295,slow=8.7,SNR=4.9						
WR1	Warramunga Arr	56.87	189	*e*P	P	03 22 42.5	-1.3
	11nm,0.8s						
WRA	Warramunga Arr	56.87	189	P	P	03 22 42.5	-1.3
	0.5nm,0.4s,baz=8.5,slow=7.1,SNR=8.7						
ASAR	Alice Springs	60.60	189	P	P	03 23 08.4	-1.2
	0.6nm,0.7s,baz=4.5,slow=6.1,SNR=7.2						
YKA	Yellowknife Ar	63.77	30	P	P	03 23 30.2	-0.2
	0.2nm,0.6s,baz=303,slow=6.5,SNR=5.9						
ARCES	ARCESS Array B	64.44	340	P	P	03 23 33.8	-1.0
	2.6nm,1.0s,baz=37,slow=9.1,SNR=3.6						
STKA	Stephens Creek	68.28	180	LR	LR	03 59 32.4	
	comp=Z,25nm,18.1s,baz=25,slow=41						
FIA0	FINESS Array S	69.31	333	*e*P	P	03 24 05.8	0.0
FINES	FINESS Array B	69.31	333	P	P	03 24 05.8	0.0
	2.2nm,0.7s,baz=46,slow=8.2,SNR=7.3						
KBZ	Khabaz	71.50	311	P	P	03 24 19.0	-0.4
	3.9nm,0.9s,baz=33,slow=2.7,SNR=5.9						
NB2	NORSAR Subarra	74.65	338	P	P	03 24 38.0	+0.1
	comp=Z,1.1nm,0.7s,baz=40,slow=6.2						
NB200	NORSAR Array S	74.65	338	*e*P	P	03 24 38.4	+0.5
NOA	NORSAR Array B	74.65	338	P	P	03 24 38.4	+0.5
	comp=Z,2.2nm,0.8s,baz=38,slow=5.8,SNR=4.8						
AKASG	Malin Array Be	74.85	323	P	P	03 24 38.8	-0.3
	comp=Z,1.9nm,0.5s,baz=47,slow=6.2,SNR=12						
BUR08	Bucovina Ar. S	78.85	322	*e*P	P	03 25 03.0	+1.0
BR101	Keskin Array S	79.44	312	*e*P	P	03 25 05.2	-0.1
BRTR	Keskin Array B	79.44	312	P	P	03 25 05.2	-0.1
	comp=Z,1.5nm,1.0s,baz=132,slow=1.8,SNR=5.2						
BR231	Keskin MP Arra	79.88	312	*e*P	P	03 25 07.3	-0.4
URZ	Urewera	81.35	153	LR	LR	03 56 46.8	
	comp=Z,57nm,19.3s,baz=340,slow=32						
BRG	Berggiesshubel	81.56	330	*e*P	P	03 25 17.2	+0.9
	comp=Z,5.4nm,1.2s						
BRG				*e*		03 26 28.7	
	comp=Z,5.1nm,1.0s						
CLL	Collm	81.61	330	*e*(P)	P	03 25 16.0	-0.5
	comp=Z,4.0nm,0.8s						
KHC	Kasperske Hory	83.06	329	*e*P	P	03 25 25.2	+0.9
GERES	GERESS Array B	83.23	329	P	P	03 25 24.5	-0.7
	comp=Z,0.7nm,0.6s,baz=79,slow=6.9,SNR=3.7						
PPT	Papeete	84.02	117	LR	LR	03 53 42.0	
	comp=Z,29nm,21.2s,baz=340,slow=29						
DAVOX	Davos/Dischmat	86.44	329	LR	LR	04 07 47.2	
	comp=Z,59nm,18.8s,baz=176,slow=38						
LTX	Lajitas	89.85	53	*e*P	P	03 25 59.1	+1.2
TXAR	Lajitas Array	89.85	53	P	P	03 25 59.1	+1.2
	comp=Z,0.4nm,0.8s,baz=273,slow=2.2,SNR=4.1						

*NIED **06** 03:14:00, 37.°50N×144.°20E, h5km, Mw4.6 Best double couple: M₀8.13000×10¹⁵ NP1:φs49.00000°, δ14.00000°, λ-110.00000°. NP2:φs250.00000°, δ77.00000°, λ-85.00000°.*
*IDC **06** 03:14:06.6±0.5, 37.°28N×144.°45E, h0km, mb4.4/26, mb1 4.6/31, mb1mx4.5/44, mbtmp4.4/31, ML3.1/3, MS3.6/4, Ms1 3.6/4, ms1mx3.1/34, Error ellipse: s-maj=14.8km s-min=12.6km az=127.0*
*NEIC **06** 03:14:08.5±0.2, 37.°36N×144.°55E, h10km, mb4.8/46, Error ellipse: s-maj=7.3km s-min=4.6km az=161.0*
*BJI **06** 03:14:10.6, 37.°55N×144.°68E, h40km, mb4.6/37, mB4.9/21, Ms4.4/17, Ms7 4.2/17*
*MOS **06** 03:14:10.3±1.2, 37.°41N×144.°50E, h32km, mb4.9/34, Error ellipse: s-maj=8.9km s-min=5.7km az=100.4*
*ISCJB **06** 03:14:11.6±0.2, 37.°62N±0.°03×144.°42E±0.°02, h33km, mb4.6/100, MS4.0/10, Error ellipse: s-maj=4.7km s-min=2.4km az=6.4*
*JMA **06** 03:14:13.4±0.3, 37.°54N×144.°25E, h45km, M4.3*

ISC 06 03:14:12.3±0.5**, 37.°47N**±0.°05×**144.°52E**±0.°04**, h35**km**, n449, σ1.s28**/466**, mb4.7**/102**, MS4.2**/11**, 10C-8D, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	h m s	Res ISC
JIO	Ouri	2.69	292	P	Pn	03 14 52.1	-0.9
OFUJ	Ofunato	2.76	306	P	Pn	03 14 53.4	-0.6
JMM	Marumori	2.98	279	P	Pn	03 14 56.3	-0.8
JMM				*e*S	Sn	03 15 28.5	-3.1
JMK	Ichinoseki	2.99	301	P	Pn	03 14 57.3	+0.2
JMK				S	Sn	03 15 29.1	-2.6
JOU	Okura	3.18	287	S	Sn	03 15 34.3	-2.1
JOM	Ohasama	3.23	309	S	Sn	03 15 35.1	-2.5
JFT	Otama	3.33	272	P	Pn	03 15 01.2	-0.6
JFT				*e*S	Sn	03 15 38.2	-1.9
JANG	Nango	3.73	322	*e*S	Sn	03 15 46.3	-3.6
JTM	Tenmabayashi	4.26	322	S	Sn	03 15 59.5	-3.6
ERM	Erimo	4.66	347	*e*P	Pn	03 15 18.3	-1.7
ERM	Erimo	4.66	347	*e*Pn	Pn	03 15 18.3	-1.7
JOT	Ohata	4.74	327	P	Pn	03 15 22.2	+1.0
JOT				*e*S	Sn	03 16 12.0	-2.9
JRY	Ryogami san	4.74	254	S	Sn	03 16 09.8	-5.2
JNBK	Urakawa-nobuka	4.99	345	P	Pn	03 15 24.4	-0.2
JNBK				*e*S	Sn	03 16 19.5	-1.5
MJAR	Matsushiro Arr	5.14	261	Pn	Pn	03 15 25.3	-1.4
	baz=88,slow=15,SNR=1.7						
MAT	Matsushiro	5.14	261	P	Pn	03 15 34.2	+7.5
MAT				S	Sn	03 16 23.1	-1.7
JKB	Kayabe	5.16	330	P	Pn	03 15 27.5	+0.5
JKB				*e*S	Sn	03 16 21.3	-4.0
JCH	Churui	5.21	351	P	Pn	03 15 26.4	-1.3
JCH				S	Sn	03 16 23.2	-3.3
JHJ	Hachijo jima 2	5.82	223	Pn	Pn	03 15 30.6	-5.4
	baz=81,slow=19,SNR=1.9						
JHJ				Sn	Sn	03 16 32.0	-10
	70nm,0.3s,baz=60,slow=20,SNR=3.9						
SHO	Shikotan	6.63	15	*e*P	Pn	03 15 43.3	-3.8
SHO				pmax	pmax		
	comp=Z,395nm,0.6s						
SHO				pmax	pmax		
	comp=N,284nm,0.8s						
SHO				pmax	pmax		
	comp=E,172nm,0.6s						
YUK	Yuzh-Kuril'sk	6.63	8	*e*P	Pn	03 15 43.3	-3.9
YUK				pmax	pmax		
	comp=Z,245nm,0.3s						
KUR	Kuril'sk	8.15	17⇓	*e*P	Pn	03 16 05.4	-2.6
KUR				pmax	pmax		
	comp=Z,38nm,0.8s						
KUR				pmax	pmax		
	comp=N,15nm,0.4s						
KUR				pmax	pmax		
	comp=E,11nm,0.4s						
JCJ	Chichijima	10.54	191	LR	LR	03 19 34.1	
	comp=E,221nm,21.0s,baz=57,slow=32						
USRK	Ussuriysk Ar.	11.62	309	Pn	Pn	03 16 55.4	-0.2
	comp=E,0.8nm,0.3s,baz=112,slow=16,SNR=5.8						
JNU	Nakatsue	11.96	253	Pn	Pn	03 17 00.3	0.0

comp=E,0.3nm,0.3s,baz=67,slow=7.5,SNR=4.0
KSRS Korea Array 13.19 275 Pn **Pn 03 17 19.4 +2.4**
comp=E,0.4nm,0.3s,baz=90,slow=13,SNR=6.2
KS01 Wonju Array Si 13.21 275 *e*Pn **Pn 03 17 17.5 +0.2**
KS15 Wonju Array Si 13.22 275 *e*Pn **Pn 03 17 19.1 +1.6**
KSAR Wonju Array Be 13.22 275 P **Pn 03 17 19.4 +2.0**
KSAR Wonju Array Be 13.22 275 Pn **Pn 03 17 19.4 +2.0**
MDJ Mudanjiang 13.32 307 P **Pn 03 17 19.2 +0.4**
MDJ pmax pmax
comp=E,5.0nm,0.5s
MDJ pmax pmax
comp=E,74nm,6.0s
KLR Kul'dur 14.95 326 Pn **Pn 03 17 40.9 0.0**
comp=E,0.1nm,0.3s,baz=115,slow=6.7,SNR=2.8
KLR LR LR 03 22 38.9
comp=E,274nm,19.6s,baz=112,slow=34
SKR Severo-Kuril's 15.59 28 *e*P **Pn 03 17 47.3 -1.9**
PEA0 Petropavlovsk- 18.13 26 *e*P **Pn 03 18 18.5 -2.6**
PETK Petropavlovsk- 18.13 26 P **P 03 18 22.1 +1.0**
comp=E,0.3nm,0.3s,baz=200,slow=12,SNR=6.5
NJ2 Nanjing 21.74 263 *e*P **P 03 19 00.2 -0.3**
NJ2 pmax pmax
comp=E,9.0nm,0.8s
BJI Beijing 22.22 285 P **P 03 19 04.9 -0.7**
BJI pmax pmax
comp=E,4.0nm,1.1s
MA2 Magadan 22.48 8 P **P 03 19 09.4 +1.1**
comp=E,2.8nm,0.3s,baz=236,slow=12,SNR=3.8
GUMO Guam 23.79 179 LR LR 03 26 51.1
comp=E,88nm,21.2s,baz=314,slow=32
HHC Hu-ho-hao-te 25.69 288 *e*P **P 03 19 38.7 -0.4**
HHC S **S** 03 24 08.0 +2.6
HHC pmax pmax
comp=E,14nm,0.8s
HHC pmax pmax
comp=E,88nm,5.0s
HHC LR LR
comp=E,690nm,12.3s
HHC LR LR
comp=E,480nm,12.3s
HHC LR LR
comp=E,510nm,12.8s
WHN Wuhan 25.88 263 P **P 03 19 42.9 +2.2**
WHN S S 03 24 00.8 -7.5
WHN LR LR
comp=E,800nm,13.9s
SEY Seymchan 25.94 8 P **P 03 19 42.9 +1.9**
comp=E,13nm,0.9s,baz=192,slow=7.1,SNR=12
SEY Seymchan 25.94 8 *i* P **P 03 19 41.2 +0.2**
BOD Bodaibo 28.53 325 *e*P **P 03 20 04.1 -0.2**
BOD pmax pmax
comp=Z,7.0nm,1.4s
SONA1 Songino Array 29.61 303 *e*P **P 03 20 15.2 +1.0**
SONM Songino Array 29.62 303 P **P 03 20 16.0 +1.8**
comp=Z,1.9nm,0.8s,baz=107,slow=8.2,SNR=4.1
SONM Songino Array 29.62 303 P **P 03 20 16.0 +1.8**
ENH Enshi 29.84 267 *e*P **P 03 20 18.5 +2.3**
comp=Z,17nm,0.8s
LZH Lanzhou 32.43 280 *e*P **P 03 20 39.5 +0.3**
LZH pP pP 03 20 48.6 -0.7
LZH sP sP 03 20 53.2 -0.3
LZH pmax pmax
comp=Z,21nm,1.0s
LZH pmax pmax
comp=Z,110nm,4.9s
LZH LR LR
comp=Z,260nm,14.7s
LZH LR LR
comp=Z,510nm,17.5s
LZH LR LR
comp=Z,420nm,14.2s
BILL Bilibino 32.94 15⇓ *i* P **P 03 20 43.1 +0.1**
BILL *i* 03 20 52.3
BILL *i* 03 21 51.9
BILL *i* 03 23 27.9
BILL pmax pmax
comp=Z,5.0nm,0.8s
BILL MLR MLR
comp=Z,59nm,19.0s
BILL Bilibino 32.94 15 *e*P **P 03 20 43.5 +0.5**
comp=Z,8.2nm,1.0s
GYA Guiyang 33.74 262⇓ *i* P **P 03 20 51.0 +0.4**
GYA pP pP 03 21 02.4 +1.7
GYA PP **PnPn 03 22 04.5 +1.2**
GYA PcP **PcP 03 23 30.8 +1.2**
GYA S **S 03 26 10.0 -1.9**
GYA sS sS 03 26 28.9 +0.3
GYA ScP **ScP 03 27 11.2 -0.4**
GYA SS **SnSn 03 28 16.8 -1.0**
GYA ScS **ScS 03 31 11.0 -2.3**
GYA pmax pmax
comp=Z,20nm,0.8s
GYA pmax pmax
comp=Z,110nm,5.4s
GYA LR LR
comp=Z,490nm,16.6s
GYA LR LR
comp=Z,440nm,15.9s
GYA LR LR
comp=Z,460nm,16.4s
CD2 Chengdu 34.15 271 P **P 03 20 51.9 -2.1**
CD2 pmax pmax
comp=Z,1.0nm,0.5s
GTA Gaotai 34.80 287 *e*P **P 03 21 01.6 +1.9**
GTA pP sP 03 21 14.3 +0.2
GTA sP pP 03 21 18.9 +9.0
GTA S **S 03 26 29.0 +0.9**
GTA sS sS 03 26 51.8 +7.0
GTA SS **SnSn 03 28 46.3 +3.0**
GTA pmax pmax
comp=Z,4.0nm,1.1s
GTA pmax pmax
comp=Z,92nm,6.9s
GTA LR LR
comp=Z,260nm,18.5s
GTA LR LR
comp=Z,250nm,19.0s
GTA LR LR
comp=Z,150nm,19.5s
TIXI Tiksi 35.19 351 *i* P **P 03 21 02.1 -0.3**
TIXI pmax pmax
comp=Z,8.0nm,2.5s
KMI Kunming 37.48 263 P **P 03 21 23.3 +0.5**
KMI pmax pmax
comp=Z,12nm,0.8s
KMI LR LR
comp=Z,150nm,23.1s
KMI LR LR
comp=Z,140nm,22.8s
KMI LR LR
comp=Z,160nm,18.9s
WMQ Urumqi 42.85 297 P **P 03 22 08.1 +1.1**
WMQ pP sP 03 22 19.7 -1.8
WMQ sP pP 03 22 24.3 +7.0
WMQ PcP **PcP 03 24 01.8 +4.2**
WMQ S **S 03 28 26.0 -3.1**
WMQ ScS **ScS 03 32 01.2 -3.9**
WMQ pmax pmax
comp=Z,16nm,0.6s
WMQ pmax pmax
comp=Z,290nm,3.6s
WMQ LR LR
comp=Z,230nm,19.6s
WMQ LR LR
comp=Z,260nm,23.6s
ZALV Zalesovo Beam 43.45 312 P **P 03 22 10.3 -1.3**
comp=Z,1.2nm,0.5s,baz=126,slow=7.3,SNR=2.7
CMAR Chiang Mai Arr 44.01 257 P **P 03 22 14.8 -1.7**
comp=Z,0.7nm,0.3s,baz=68,slow=8.6,SNR=5.3
KDAK Kodiak Island 45.11 42 *i* P **P 03 22 25.2 +0.4**
CAST Castle Rocks 45.47 34 *e*P **P 03 22 29.0 +1.4**
comp=Z,42nm,1.8s
MK01 Makanchi Array 45.98 302 *e*P **P 03 22 32.6 +0.7**
MK31 Makanchi Array 45.98 302 *e*P **P 03 22 31.1 -0.8**
MK31 Makanchi Array 45.98 302 *e*P **P 03 22 31.1 -0.8**
MKAR Makanchi Array 45.98 302 P **P 03 22 32.9 +0.9**
comp=Z,5.6nm,0.7s,baz=86,slow=9.9,SNR=13
KTH Kantishna Hill 45.99 34 *e*P **P 03 22 33.2 +1.4**
comp=Z,16nm,1.2s
MLY Manley 46.16 32 *e*P **P 03 22 33.8 +0.7**
comp=Z,13nm,0.8s
MAKZ Makanchi 46.19 302 *e*P **P 03 22 33.4 -0.2**
MAKZ pmax pmax
comp=Z,6.0nm,0.9s
MAKZ Makanchi 46.19 302 *e*P **P 03 22 33.4 -0.2**

comp=Z,5.8nm,0.9s
MCK McKinley 46.89 34 *e*P **P 03 22 37.9 -0.9**
MCK McKinley 46.89 34 *e*P **P 03 22 37.9 -0.9**
RND Reindeer 46.92 34 *e*P **P 03 22 38.8 -0.3**
RND pmax pmax
comp=Z,18nm,1.1s
RND Reindeer 46.92 34 *e*P **P 03 22 38.8 -0.3**
comp=Z,18nm,1.1s
MDM Murphy Dome 47.22 32 *e*P **P 03 22 43.3 +1.9**
comp=Z,19nm,0.9s
WRH Wood River Hil 47.27 33 *e*P **P 03 22 43.4 +1.7**
comp=Z,6.9nm,1.0s
COLA College 47.38 32 *e*P **P 03 22 43.0 +0.5**
COLA pmax pmax
comp=Z,9.0nm,0.6s
COLA College 47.38 32 *e*P **P 03 22 43.0 +0.5**
comp=Z,9.3nm,0.6s
DHY Denali Highway 47.59 35 *e*P **P 03 22 45.0 +0.6**
comp=Z,26nm,1.8s
KURK Kurchatov 47.61 308 P **P 03 22 45.6 +1.1**
KURK Kurchatov 47.61 308 P **P 03 22 45.6 +1.1**
KURBB Kurchatov Arra 47.68 308 P **P 03 22 45.6 +0.5**
comp=Z,12nm,0.6s,baz=81,slow=7.9,SNR=16
ILAR Eielson Array 47.79 33 P **P 03 22 46.5 +0.7**
comp=Z,6.8nm,0.8s,baz=266,slow=6.4,SNR=20
ILB Eielson Array 47.79 33 *e*P **P 03 22 46.8 +1.0**
IL1 Eielson Array 47.79 33 *e*P **P 03 22 46.2 +0.4**
FYU Fort Yukon 48.49 30 *e*P **P 03 22 53.2 +2.1**
comp=Z,89nm,1.8s
MENT Mentasta 49.26 35 *e*P **P 03 22 57.9 +0.7**
comp=Z,42nm,2.0s
BVAR Borovoye Array 52.10 313 P **P 03 23 17.3 -1.4**
comp=Z,3.8nm,0.8s,baz=87,slow=7.6,SNR=8.1
BRVK Borovoye 52.16 313 *i* P **P 03 23 19.1 0.0**
BRVK pmax pmax
comp=Z,12nm,1.2s
AAK Ala-Archa 52.45 299 *e*P **P 03 23 22.1 +0.5**
AAK pmax pmax
comp=Z,6.0nm,0.5s
KSH Kashi 52.48 295 P P 03 23 27.2 +5.4
KSH *ep*P sP 03 23 39.6 +3.1
KSH *es*P pP 03 23 45.3 +13
KSH S **S** **03 30 51.4 +5.5**
KSH SS **SS** **03 34 29.4 +5.5**
KSH pmax pmax
comp=Z,8.0nm,0.9s
KSH pmax pmax
comp=Z,110nm,4.2s
KSH LR LR
comp=Z,180nm,11.2s
KSH LR LR
comp=Z,96nm,5.2s
KSH LR LR
comp=Z,210nm,7.5s
INK Inuvik 52.86 28 P **P 03 23 25.4 +1.5**
comp=Z,7.2nm,0.8s,baz=286,slow=8.0,SNR=14
ARU Arti 57.66 319 *d* iP **P** 03 23 59.6 +0.8
ARU 03 26 02.4
ARU S **S** **03 31 55.8 +1.2**
ARU SS **SS** **03 35 45.2 +0.7**
ARU pmax pmax
comp=Z,11nm,1.2s
WB2 Warramunga Arr 57.91 191 *e*P **P 03 23 59.1 -1.8**
comp=Z,9.0nm,0.6s
WRA Warramunga Ar 57.91 191 P **P 03 23 59.0 -1.8**
comp=Z,8.3nm,0.9s,baz=11,slow=7.3,SNR=11
HYB Hyderabad 60.69 270 *i* P **P 03 24 21.0 +0.7**
HYB *ep*P **pP** **03 24 30.0 -1.0**
AS01 Alice Springs 61.62 191 *e*P **P 03 24 24.5 -1.8**
AS31 Alice Springs 61.63 191 *e*P **P 03 24 24.8 -1.6**
comp=Z,1.5nm,0.8s
ASAR Alice Springs 61.63 191 P **P 03 24 24.9 -1.5**
comp=Z,4.2nm,0.9s,baz=13,slow=5.9,SNR=12
YKA Yellowknife Ar 62.17 31 P **P 03 24 30.3 +0.7**
comp=Z,2.3nm,0.8s,baz=300,slow=6.7,SNR=15
YKB5 Yellowknife Ar 62.17 31 *e*P **P 03 24 29.5 -0.1**
TMCR Tamitsa 63.53 332 *e*P **P 03 24 39.6 +1.0**
TMCR pmax pmax
comp=Z,20nm,1.2s
ARCES ARCESS Array B 64.44 340 P **P 03 24 44.8 +0.2**
comp=Z,3.5nm,0.7s,baz=52,slow=8.0,SNR=7.0
KLMR Klimovskoe 64.69 328 *e*P **P 03 24 46.0 -0.3**
KLMR *e* 03 25 22.0
KLMR pmax pmax
comp=Z,9.0nm,1.5s
DAG Danmarks Havn 65.53 356 *i* P **P 03 24 51.9 +0.4**
comp=Z,5.2nm,0.8s
DAG Danmarks Havn 65.53 356 *i* P **P 03 24 51.9 +0.4**
DAG pmax pmax
comp=Z,4.0nm,0.8s
GEYT Alibeck 65.78 300 P **P 03 24 53.5 -0.3**
comp=Z,4.3nm,0.8s,baz=52,slow=2.4,SNR=5.4
G05D Wamic, OR 67.17 50 P **P 03 25 04.9 +2.3**
baz=301
I04A Tendick Farm, 67.23 52 P **P 03 25 05.2 +2.1**
baz=300
NEW Newport 68.07 45 P **P 03 25 09.5 +1.3**
baz=302
NEW Newport 68.07 45 *e*P **P 03 25 08.0 -0.2**
NEW pmax pmax
comp=Z,13nm,1.0s
NEW Newport 68.07 45 *e*P **P 03 25 08.0 -0.2**
comp=Z,13nm,1.0s
J05D Fort Rock, OR 68.23 52 P **P 03 25 11.6 +2.1**
baz=301
M04C Macdoel 68.63 53 P **P 03 25 13.6 +1.6**
baz=302
VRH Novokhopyorsk 68.90 319 *e*P **P 03 25 11.8 -1.4**
VRH pmax pmax
comp=Z,10.0nm,0.8s
STKA Stephens Creek 69.05 183 P **P 03 25 13.0 -1.2**
comp=Z,0.9nm,0.5s,baz=8,slow=7.1,SNR=2.5
OBN Obninsk 69.21 324 *e*P **P 03 25 15.5 +0.4**
OBN pmax pmax
comp=Z,7.0nm,1.0s
O03D Paynes Creek 69.44 55 P **P 03 25 18.1 +1.2**
baz=302
LPSR Galich'ya Gora 69.53 321 *e*P **P 03 25 17.4 +0.2**
LPSR pmax pmax
comp=Z,5.0nm,0.9s
MOD Modoc Plateau 69.54 53 *e*P **P 03 25 16.9 -0.8**
comp=Z,6.5nm,1.0s
FIA1 FINESS Array S 69.56 333 *e*P **P 03 25 17.6 +0.4**
FINES FINESS Array B 69.56 333 P **P 03 25 18.0 +0.8**
comp=Z,7.3nm,0.7s,baz=48,slow=8.5,SNR=15
FINES FINESS Array B 69.56 333 P **P 03 25 18.0 +0.8**
VSR Storozhevoye 70.21 320 *e*P **P 03 25 21.1 -0.3**
VSR pmax pmax
comp=Z,10.0nm,1.2s
SUMG Summit 70.23 1 *i* P **P 03 25 22.7 +1.1**
comp=Z,8.6nm,0.8s
SUMG Summit 70.23 1 *e*P **P 03 25 21.2 -0.4**
SUMG pmax pmax
comp=Z,9.0nm,0.8s
SUMG Summit 70.23 1 *e*P **P 03 25 21.2 -0.4**
comp=Z,8.8nm,0.8s
WVOR Wild Horse Val 70.30 51 *e*P **P 03 25 23.2 +0.9**
WVOR pmax pmax
comp=Z,9.0nm,1.2s
WVOR Wild Horse Val 70.30 51 *e*P **P 03 25 23.2 +0.9**
comp=Z,8.9nm,1.2s
MSO Missoula 70.66 45 P **P 03 25 25.5 +1.2**
baz=304
MSO Missoula 70.66 45 *e*P **P 03 25 25.0 +0.6**
comp=Z,14nm,1.4s
MFID Camas Ranch 71.48 49 *e*P **P 03 25 30.3 +0.9**
comp=Z,8.5nm,1.0s
CMB Columbia Colle 71.58 56 *e*P **P 03 25 30.3 +0.3**
CMB pmax pmax
comp=Z,14nm,1.3s
CMB Columbia Colle 71.58 56 *e*P **P 03 25 30.3 +0.3**
comp=Z,14nm,1.3s
HLID Hailey 72.24 49 P **P 03 25 35.5 +1.4**
baz=305
HLID Hailey 72.24 49 *e*P **P 03 25 34.5 +0.5**
comp=Z,5.7nm,1.0s
BMN Battle Mountai 72.29 52 *e*P **P 03 25 35.5 +1.1**
BMN pmax pmax
comp=Z,9.0nm,0.9s
BMN Battle Mountai 72.29 52 *e*P **P 03 25 35.5 +1.1**
comp=Z,8.9nm,0.9s
KIV Kislovodsk 72.47 312 *e*P **P 03 25 37.2 +1.9**
KIV pmax pmax
comp=Z,13nm,1.0s
KBZ Khabaz 72.48 312 P **P 03 25 36.5 +1.4**
comp=Z,5.1nm,0.8s,baz=51,slow=3.8,SNR=7.0

BOZ Bozeman (W) 72.65 46 P **P 03 25 37.9 +1.4**
baz=306
BOZ Bozeman (W) 72.65 46 *e*P **P 03 25 37.3 +0.9**
BOZ pmax pmax
comp=Z,11nm,1.0s
BOZ Bozeman (W) 72.65 46 *e*P **P 03 25 37.3 +0.9**
comp=Z,11nm,1.0s
NV01 Mina Array Sit 72.73 55 *e*P **P 03 25 38.5 +1.4**
NVAR Mina Array Bea 72.73 55 P **P 03 25 39.0 +2.0**
comp=Z,6.5nm,0.8s,baz=284,slow=6.5,SNR=28
NV11 Mina Array Sit 72.82 55 *e*P **P 03 25 38.4 +0.8**
comp=Z,7.4nm,1.1s
MLAC Mammoth, Mammo 72.83 56 P **P 03 25 39.4 +1.7**
baz=304
PKM Mcpherson Peak 73.72 58 P **P 03 25 44.8 +1.9**
baz=304
H17A Grant Village 74.00 46 P **P 03 25 47.2 +2.7**
baz=307
CWC Cottonwood Cre 74.00 56 P **P 03 25 46.1 +1.5**
baz=305
SBC Santa Barbara 74.04 59 P **P 03 25 44.1 -0.4**
baz=305
FLWY Flagg Ranch 74.11 46 *e*P **P 03 25 46.2 +1.1**
comp=Z,18nm,1.4s
GRAC Grapevine Rang 74.15 55 P **P 03 25 47.0 +1.7**
baz=305
MOOW Moose Ponds 74.29 47 *e*P **P 03 25 46.9 +0.7**
comp=Z,9.3nm,1.2s
RLMT Red Lodge 74.30 45 P **P 03 25 47.7 +1.4**
baz=308
RLMT Red Lodge 74.30 45 *e*P **P 03 25 47.6 +1.4**
comp=Z,6.4nm,1.1s
DAC Darwin (Calif) 74.41 56 *e*P **P 03 25 47.4 +0.4**
DAC pmax pmax
comp=Z,6.0nm,1.0s
DAC Darwin (Calif) 74.41 56 *e*P **P 03 25 47.4 +0.4**
comp=Z,5.8nm,1.0s
LOHW Long Hollow 74.45 47 *e*P **P 03 25 47.9 +0.7**
comp=Z,2.5nm,0.8s
REDW Red Top Meadow 74.46 47 *e*P **P 03 25 48.2 +1.0**
comp=Z,7.4nm,1.0s
R11A Troy Canyon, C 74.52 53 P **P 03 25 48.9 +1.3**
baz=306,SNR=10.0
R11A Troy Canyon, C 74.52 53 *e*P **P 03 25 47.7 +0.1**
comp=Z,8.4nm,1.0s
MPMC Manual Prospec 74.61 56 P **P 03 25 49.3 +1.1**
baz=305,SNR=6.5
NC204 NORSAR Array S 74.65 339 *e*P **P 03 25 47.0 -0.8**
NB2 NORSAR Subarra 74.71 338 P **P 03 25 48.4 +0.3**
comp=Z,3.8nm,0.6s,baz=39,slow=5.9
NOA NORSAR Array B 74.71 338 P **P 03 25 48.7 +0.6**
comp=Z,6.5nm,0.7s,baz=38,slow=5.8,SNR=15
FURC Furnace Creek, 74.79 56 P **P 03 25 50.5 +1.7**
baz=305,SNR=5.1
TPNV Topopah Spring 74.91 55 P **P 03 25 51.3 +1.5**
baz=306
TPNV Topopah Spring 74.91 55 *e*P **P 03 25 49.9 +0.1**
TPNV pmax pmax
comp=Z,11nm,1.0s
TPNV Topopah Spring 74.91 55 *e*P **P 03 25 49.9 +0.1**
comp=Z,11nm,1.0s
DGMT Dagmar 74.93 40 P **P 03 25 50.5 +1.0**
baz=310
EDW2 Edwards Air Fo 74.95 58 P **P 03 25 51.5 +1.6**
baz=305,SNR=5.5
ANN Anapa 74.99 315 *e*P **P 03 25 47.6 -2.3**
ANN *e**PP **pP** **03 25 55.7 -5.1**
ANN *e*S **S** **03 35 20.2 -4.8**
ANN pmax pmax
comp=Z,56nm,1.1s
LAO LASA Array 75.00 42 P **P 03 25 51.4 +1.4**
baz=309
A25A Svangstu Ranch 75.18 39 P **P 03 25 52.4 +1.5**
baz=310
DUG Dugway, Tooele 75.18 51 P **P 03 25 53.0 +1.7**
baz=307
DUG Dugway, Tooele 75.18 51 *e*P **P 03 25 53.3 +2.0**
DUG pmax pmax
comp=Z,10.0nm,0.9s
DUG Dugway, Tooele 75.18 51 *e*P **P 03 25 53.3 +2.0**
comp=Z,9.6nm,0.9s
AKASG Malin Array Be 75.44 324 P **P 03 25 52.9 +0.6**
comp=Z,3.6nm,0.6s,baz=42,slow=5.8,SNR=12
AK11 Malin Array Si 75.48 324 *e*P **P 03 25 52.6 -0.1**
GSC Goldstone, Bar 75.50 57 P **P 03 25 54.3 +1.1**
baz=306
BFSC Mount Baldy Ra 75.55 58 P **P 03 25 54.3 +0.8**
baz=306
BW06 Boulder Array 75.57 47 P **P 03 25 54.4 +0.8**
baz=308
BW06 Boulder Array 75.57 47 *e*P **P 03 25 54.4 +0.8**
PD31 Pinedale Array 75.57 47 *e*P **P 03 25 53.6 0.0**
PDAR Pinedale Array 75.57 47 P **P 03 25 54.8 +1.1**
comp=Z,2.5nm,0.7s,baz=267,slow=2.0,SNR=19
A26A Wade Farm, Ken 75.74 39 P **P 03 25 54.6 +0.5**
baz=311
HEC Hector,Ludlow 76.09 57 P **P 03 25 57.8 +1.3**
baz=306
MURC Murrieta 76.23 58 P **P 03 25 58.2 +1.0**
baz=306
D25A Fairfield 76.23 41 P **P 03 25 58.2 +1.1**
baz=311
C26A Wahner Farm, P 76.42 40 P **P 03 25 59.0 +0.9**
baz=311
GMRC Granite Mounta 76.56 56 P **P 03 26 00.6 +1.3**
baz=306
A28A Rude Farm, Bot 76.61 38 P **P 03 26 00.0 +0.9**
baz=312
E25A Miller Ranch, 76.62 41 P **P 03 26 00.6 +1.4**
baz=311
109C Camp Elliot, M 76.71 59 P **P 03 26 01.1 +1.1**
baz=306
PFO Pinyon Flats O 76.72 58 P **P 03 26 01.4 +1.2**
baz=306
D26A Manning 76.77 40 P **P 03 26 01.0 +0.9**
baz=311
C27A Sayler Ranch, 76.79 39 P **P 03 26 00.9 +0.7**
baz=312
BELC Belle Mtn. Jos 76.80 57 P **P 03 26 01.4 +0.8**
baz=306
B28A Dugan Ranch, T 76.87 38 P **P 03 26 01.5 +1.0**
baz=312
F25A Bowman 76.96 42 P **P 03 26 02.1 +0.9**
baz=311
A29A Manning Farm, 77.10 37 P **P 03 26 02.7 +0.8**
baz=313,SNR=5.8
E26A Carlson Angus 77.12 41 P **P 03 26 02.6 +0.5**
baz=311
MONP2 Monument Peak 77.17 58 P **P 03 26 03.4 +0.6**
baz=306
IRM Iron Mountain 77.28 57 P **P 03 26 04.2 +1.1**
baz=307
B29A Wagenman Farm, 77.35 38 P **P 03 26 04.1 +0.8**
baz=313
BC3 Big Chuckawall 77.37 57 P **P 03 26 04.6 +0.8**
baz=307
K22A Casper 77.39 46 P **P 03 26 04.6 +0.7**
baz=310
F26A Lodgepole 77.43 41 P **P 03 26 04.6 +0.8**
baz=311
A30A Hoffart Farm, 77.53 37 P **P 03 26 04.8 +0.5**
baz=314,SNR=5.5
D28A Regan 77.61 39 P **P 03 26 05.2 +0.4**
baz=312
E27A Carson 77.62 40 P **P 03 26 05.9 +1.0**
baz=312
MDND Maddock 77.65 38 P **P 03 26 05.8 +0.8**
baz=313
H25A Fruitdale 77.74 43 P **P 03 26 06.3 +0.7**
baz=311
ULM Lac du Bonnet 77.75 35 P **P 03 26 04.8 -0.7**
comp=Z,2.8nm,0.8s,baz=326,slow=7.5,SNR=4.9
F27A Lemmon 77.75 41 P **P 03 26 06.6 +1.0**
baz=312
RSSD Black Hills 77.83 43 P **P 03 26 07.1 +0.8**
baz=311
G26A Maurine 77.83 42 P **P 03 26 07.0 +0.9**
baz=311
PDMCI Parker Dam,Lak 77.86 56 P **P 03 26 07.5 +1.1**
baz=307
B30A Myrvik Farm, E 77.86 37 P **P 03 26 06.9 +0.8**
baz=314,SNR=5.9
Y12C Blythe 77.93 57 P **P 03 26 07.8 +1.0**
baz=307
E28A Huff 77.97 40 P **P 03 26 07.6 +0.8**
baz=312
O20A White River Ci 77.98 48 P **P 03 26 08.4 +1.2**
baz=309

I25A	Rochford	78.06	43	P	P	03 26 07.6	+0.1
	baz=311						
G27A	Dupree	78.13	41	P	P	03 26 08.4	+0.6
	baz=312						
GLA	Glamis	78.15	57	P	P	03 26 09.4	+1.3
	baz=307						
H26A	Fairpoint	78.19	42	P	P	03 26 08.3	+0.2
	baz=311						
D29A	Pettibone, Tap	78.19	39	P	P	03 26 08.4	+0.4
	baz=313						
B31A	Greenbush Farm	78.20	37	P	P	03 26 08.7	+0.7
	baz=314						
C30A	Mose, Pekin	78.30	38	P	P	03 26 09.3	+0.7
	baz=314						
A32A	Rocking H Ranc	78.41	36	P	P	03 26 09.2	+0.1
	baz=315						
PV09	Paradox Valley	78.47	50	eP	P	03 26 12.0	+2.0
I26A	New Underwood	78.53	43	P	P	03 26 10.3	+0.3
	baz=312						
H27A	Howes	78.55	42	P	P	03 26 10.3	+0.2
	baz=312						
D30A	Buchanan	78.57	38	P	P	03 26 10.7	+0.5
	baz=314						
C31A	Landman Farms,	78.60	38	P	P	03 26 10.8	+0.6
	baz=314						
PV10	Paradox Valley	78.61	50	eP	P	03 26 12.8	+2.1
B32A	Ashes, Strandq	78.75	36	P	P	03 26 11.1	0.0
	baz=315,SNR=5.2						
PV05	Paradox Valley	78.75	51	eP	P	03 26 12.5	+0.9
N23A	Red Feather La	78.85	47	P	P	03 26 13.8	+1.7
	baz=310						
G28A	Parade	78.86	41	P	P	03 26 12.3	+0.5
	baz=312						
J26A	Sides Ranch, S	78.89	43	P	P	03 26 12.2	+0.2
	baz=311						
A33A	Warroad	78.90	36	P	P	03 26 12.2	+0.3
	baz=315						
E30A	Jud	78.92	39	P	P	03 26 12.3	+0.3
	baz=314						
WUAZ	Wupatki	78.92	54	P	P	03 26 14.0	+1.6
	baz=308						
WUAZ	Wupatki	78.92	54	eP	P	03 26 13.4	+1.0
	comp=Z,7.6nm,0.8s						
I27A	Quinn	78.94	42	P	P	03 26 13.0	+0.7
	baz=312						
PV01	Paradox Valley	79.04	50	eP	P	03 26 13.4	+0.2
H28A	Mission Ridge	79.08	41	P	P	03 26 13.8	+0.8
	baz=312,SNR=11						
D31A	Mcclaflin, Tow	79.13	38	P	P	03 26 13.6	+0.4
	baz=314						
AGMN	Agassiz Nation	79.14	36	P	P	03 26 13.2	+0.1
	baz=315						
KWP	Kalwaria Pacla	79.19	326	eP	P	03 26 14.7	+1.3
KWP	Kalwaria Pacla	79.19	326	eP	P	03 26 14.7	+1.3
G29A	Hoven	79.30	40	P	P	03 26 14.3	+0.1
	baz=313						
F30A	Leola	79.32	40	P	P	03 26 14.4	+0.1
	baz=314						
E31A	Nome	79.39	38	P	P	03 26 15.3	+0.8
	baz=314						
I28A	Midland	79.45	42	P	P	03 26 15.9	+0.8
	baz=312,SNR=7.5						
BUR08	Bucovina Ar. S	79.46	323	eP	P	03 26 16.7	+1.6
BURAR	Bucovina Array	79.47	323⇑	iP	P	03 26 16.8	+1.6
J27A	Elkhorn Farm,	79.51	43	P	P	03 26 16.2	+0.8
	baz=312						
H29A	Onida	79.53	41	P	P	03 26 15.8	+0.4
	baz=313						
TESR	Tescani	79.56	322⇓	iP	P	03 26 16.8	+1.3
C33A	Trail	79.56	37	P	P	03 26 15.6	0.0
	baz=315						
B34A	Aery, Baudette	79.57	36	P	P	03 26 15.7	+0.2
	baz=316						
MVCO	Mesa Verde	79.67	51	P	P	03 26 17.7	+1.1
	baz=309						
F31A	Hecla	79.69	39	P	P	03 26 16.8	+0.5
	baz=314						
CFR	Carcaliu	79.73	320⇓	iP	P	03 26 17.4	+1.0
G30A	Faulkton	79.74	40	P	P	03 26 17.2	+0.6
	baz=314,SNR=7.7						
J28A	Allard Ranch,	79.81	42	P	P	03 26 17.7	+0.7
	baz=312						
KOLS	Kolonicke sedl	79.89	325	eP	P	03 26 18.7	+1.4
KOLS				pmax	pmax		
	comp=Z,4.0nm,1.1s						
KOLS	Kolonicke sedl	79.89	325	eP	P	03 26 18.7	+1.4
I29A	Vivian Onida	79.90	42	P	P	03 26 18.2	+0.7
	baz=313						
VRI	Vrincioaia	79.97	321⇑	iP	P	03 26 19.5	+1.7
D33A	AnnSam, Waubun	79.97	37	P	P	03 26 17.9	+0.1
	baz=315						
STHS	Stebnicka Huta	80.00	326	eP	P	03 26 19.9	+2.1
STHS				pmax	pmax		
	comp=Z,4.0nm,0.9s						
STHS	Stebnicka Huta	80.00	326	eP	P	03 26 19.9	+2.1
OJC	Ojcow	80.03	328	eP	P	03 26 19.0	+1.0
OJC	Ojcow	80.03	328	eP	P	03 26 18.0	+0.1
OJC				pmax	pmax		
	comp=Z,11nm,0.9s						
OJC	Ojcow	80.03	328	eP	P	03 26 18.0	+0.1
	comp=Z,11nm,0.9s						
C34A	RKJ Ranch, Bem	80.05	36	P	P	03 26 18.4	+0.3
	baz=316						
B35A	Bob, Littlefor	80.09	35	P	P	03 26 18.5	+0.2
	baz=317						
G31A	Conde	80.15	40	P	P	03 26 19.5	+0.8
	baz=314						
214A	Organ Pipe Nat	80.17	57	P	P	03 26 20.1	+1.0
	baz=308						
K28A	Ten Mile Ranch	80.22	43	P	P	03 26 20.2	+0.9
	baz=312						
J29A	Okreek	80.31	42	P	P	03 26 20.0	+0.4
	baz=313						
SUSD	Miller	80.31	41	P	P	03 26 20.3	+0.6
	baz=314						
D34A	Park Rapids	80.32	37	P	P	03 26 19.8	+0.1
	baz=316						
E33A	Westby DABS, E	80.35	38	P	P	03 26 20.3	+0.5
	baz=315						
S22A	4UR Ranch, Cre	80.35	50	P	P	03 26 22.1	+1.8
	baz=310,SNR=5.2						
BRTR	Keskin Array B	80.39	313	P	P	03 26 20.2	-0.1
	comp=Z,0.9nm,0.7s,baz=123,slow=4.6,SNR=6.5						
NIE	Niedzica	80.41	327	eP	P	03 26 22.0	+2.0
NIE	Niedzica	80.41	327	eP	P	03 26 22.1	+2.0
I30A	Oacoma	80.43	41	P	P	03 26 21.0	+0.7
	baz=314,SNR=7.8						
C35A	Jirik Farms, M	80.45	36	P	P	03 26 20.3	0.0
	baz=316						
G32A	Webster	80.49	39	P	P	03 26 21.2	+0.6
	baz=315						
DOPR	Dopca	80.56	322⇑	iP	P	03 26 23.3	+2.4
ISR	Istrita	80.58	321⇑	iP	P	03 26 23.4	+2.3
MLR	Muntele Rosu	80.62	321⇑	iP	P	03 26 22.7	+1.3
F33A	5 Mile Ranch,	80.68	38	P	P	03 26 21.7	+0.2
	baz=315						
K29A	Lazy Trails An	80.75	42	P	P	03 26 22.3	+0.2
	baz=313						
J30A	Dallas	80.81	42	P	P	03 26 22.3	0.0
	baz=314						
BR231	Keskin MP Arra	80.81	314	eP	P	03 26 22.1	-0.4
C36A	Pine Crest Far	80.93	35	P	P	03 26 23.1	+0.3
	baz=317						
LANS	Liptovska Anna	80.97	327	eP	P	03 26 24.3	+1.2
LANS	Liptovska Anna	80.97	327	eP	P	03 26 24.3	+1.2
OKC	Ostrava-Krasne	81.01	328	eP	P	03 26 24.8	+1.6
OKC	Ostrava-Krasne	81.01	328	eP	P	03 26 24.8	+1.6
KECS	Kecovo	81.03	326	eP	P	03 26 24.3	+1.0
KECS				pmax	pmax		
	comp=Z,2.0nm,0.9s						
KECS	Kecovo	81.03	326	eP	P	03 26 24.3	+1.0
G33A	Ortonville	81.06	39	P	P	03 26 24.1	+0.5
	baz=315						
VOIR		81.11	322⇑	iP	P	03 26 26.5	+2.6
K30A	Basset	81.19	42	P	P	03 26 25.1	+0.7
	baz=314						
F34A	Alexandria	81.22	38	P	P	03 26 24.8	+0.4
	baz=316						
J31A	Geddes	81.22	41	P	P	03 26 25.0	+0.5
	baz=314						
DRGR		81.25	324⇑	iP	P	03 26 26.0	+1.3
H33A	Prehn Over Nor	81.28	39	P	P	03 26 25.5	+0.7
	baz=315,SNR=5.9						
TUC	Tucson	81.29	56	P	P	03 26 25.9	+0.7
	baz=309						
MORC	Moravsky Berou	81.31	328	eP	P	03 26 25.1	+0.2
MORC				pmax	pmax		
	comp=Z,31nm,1.1s						
MORC	Moravsky Berou	81.31	328	eP	P	03 26 25.1	+0.2
	comp=Z,31nm,1.1s						
ARR	Arges	81.36	322⇑	iP	P	03 26 27.9	+2.6
DPC	Dobruska-Polom	81.37	329	eP	P	03 26 27.0	+1.8
DPC	Dobruska-Polom	81.37	329	eP	P	03 26 27.0	+1.8
G34A	Benson	81.43	38	P	P	03 26 25.9	+0.4
	baz=316						
F35A	Swanville	81.50	37	P	P	03 26 26.1	+0.1
	baz=316						
E36A	McGregor	81.65	36	P	P	03 26 26.2	-0.5
	baz=317						
C38A	Sawbill Land.	81.67	34	P	P	03 26 26.9	+0.1
	baz=318						
K31A	O'Neill	81.68	42	P	P	03 26 26.9	0.0
	baz=314						
PSZ	Piszkesteto	81.71	326	eP	P	03 26 27.9	+0.8
PSZ				pmax	pmax		
	comp=Z,7.0nm,0.9s						
PSZ	Piszkesteto	81.71	326	eP	P	03 26 27.9	+0.8
	comp=Z,7.4nm,0.9s						
VYHS	Vyhne	81.74	327	eP	P	03 26 28.8	+1.6
VYHS				pmax	pmax		
	comp=Z,2.0nm,0.9s						
VYHS	Vyhne	81.74	327	eP	P	03 26 28.8	+1.6
CLL	Collm	81.92	332⇓	iP	P	03 26 28.3	+0.3
	comp=Z,8.0nm,0.9s						
CLL				e		03 26 39.0	
CLL				ePP	PP	03 29 28.0	-6.9
CLL	Collm	81.92	332⇓	iP	P	03 26 28.3	+0.3
CLL				pmax	pmax		
	comp=Z,8.0nm,0.9s						
CLL	Collm	81.92	332	eP	P	03 26 28.0	0.0
	comp=Z,8.3nm,0.8s						
PVCC	Panska Ves	81.93	330	eP	P	03 26 29.5	+1.4
PVCC	Panska Ves	81.93	330	eP	P	03 26 29.5	+1.4
G35A	Watkins	82.01	38	P	P	03 26 29.2	+0.6
	baz=316						
ECSD	EROS Data Cent	82.01	40	P	P	03 26 29.0	+0.3
	baz=315						
ECSD	EROS Data Cent	82.01	40	eP	P	03 26 28.2	-0.4
	comp=Z,5.2nm,0.9s						
VRAC	Vranov	82.07	329⇑	iP	P	03 26 30.8	+1.9
T25A	Trinidad	82.20	49	P	P	03 26 30.8	+0.7
	baz=312						
H35A	Sunnyside Ranc	82.22	38	P	P	03 26 30.6	+0.9
	baz=316						
GZR	Gura Zlata	82.25	323⇑	iP	P	03 26 29.6	-0.3
GOPC	GO Pecny, Ondr	82.33	330	eP	P	03 26 31.6	+1.4
GOPC	GO Pecny, Ondr	82.33	330	eP	P	03 26 31.6	+1.4
PRU	Pruhonice	82.37	330	eP	P	03 26 31.9	+1.5
PRU	Pruhonice	82.37	330	eP	P	03 26 31.9	+1.5
ANMO	Albuquerque	82.39	52	P	P	03 26 31.9	+0.9
	baz=311						
ANMO	Albuquerque	82.39	52	eP	P	03 26 31.9	+0.9
ANMO				pmax	pmax		
	comp=Z,5.0nm,1.2s						
ANMO	Albuquerque	82.39	52	eP	P	03 26 31.9	+0.9
	comp=Z,5.2nm,1.2s						
M31A	Lambtecht Ranc	82.45	43	P	P	03 26 31.5	+0.4
	baz=314						
L32A	Elgin	82.51	42	P	P	03 26 31.7	+0.3
	baz=315						
TREC	Trest	82.53	329	eP	P	03 26 32.6	+1.3
TREC	Trest	82.53	329	eP	P	03 26 32.6	+1.3
H36A	Jessenland, He	82.75	38	P	P	03 26 33.1	+0.6
	baz=317						
I35A	Creekview Farm	82.75	39	P	P	03 26 33.1	+0.6
	baz=316						
K34A	Le Mars	83.03	40	P	P	03 26 34.3	+0.3
	baz=316						
121A	Cookes Peak, D	83.11	54	P	P	03 26 35.8	+1.1
	baz=310						
121A	Cookes Peak, D	83.11	54	eP	P	03 26 35.9	+1.1
	comp=Z,34nm,1.8s						
H37A	Dierke Farm, C	83.23	37	P	P	03 26 35.6	+0.6
	baz=318						
L34A	Svendsen Farm,	83.39	41	P	P	03 26 36.0	+0.1
	baz=316						
I37A	Lemond, Waseca	83.42	38	P	P	03 26 36.7	+0.7
	baz=317						
KHC	Kasperske Hory	83.43	330	eP	P	03 26 37.3	+1.3
KHC				ex	x	03 26 46.9	
KHC	Kasperske Hory	83.43	330	eP	P	03 26 37.3	+1.3
KHC				e		03 26 46.9	
CONA	Conrad Observa	83.45	328	epP	P	03 26 37.0	+0.9
	comp=Z,4.3nm,0.8s						
GERES	GERESS Array B	83.61	330	P	P	03 26 37.0	0.0
	comp=Z,1.0nm,0.7s,baz=44,slow=7.9,SNR=5.5						
J37A	Redenius Farm,	83.86	39	P	P	03 26 38.2	-0.1
	baz=317						
I38A	Scanlan Farm,	83.92	37	P	P	03 26 39.0	+0.4
	baz=318						
VTS	Vitosha	84.08	321	eP	P	03 26 39.9	+0.3
VTS				pmax	pmax		
	comp=Z,7.0nm,0.9s						
VTS	Vitosha	84.08	321	eP	P	03 26 39.9	+0.3
	comp=Z,7.1nm,0.9s						
O33A	Hebron	84.09	43	P	P	03 26 40.0	+0.4
	baz=315						
M35A	Neola	84.11	41	P	P	03 26 39.9	+0.3
	baz=316						
N34A	Lincoln	84.14	42	P	P	03 26 39.4	-0.3
	baz=316						
L36A	Harm Buss Farm	84.18	40	P	P	03 26 40.0	+0.1
	baz=317						
K37A	Belmond	84.22	39	P	P	03 26 40.3	+0.2
	baz=317						
N35A	Tabor	84.57	41	P	P	03 26 42.6	+0.7
	baz=316						
M36A	Felix, Anita	84.58	40	P	P	03 26 42.3	+0.3
	baz=317						
SOKA	Soboth	84.78	328	i PcP	P	03 26 43.9	+1.0
	comp=Z,6.7nm,1.2s						
P34A	Walnut Farm, R	84.88	43	P	P	03 26 43.3	-0.2
	baz=316						
S32A	Newby Ranch, P	85.01	45	P	P	03 26 44.4	+0.2
	baz=314						
MNTX	Cornudas Mount	85.20	53	P	P	03 26 45.3	+0.1
	baz=312						
MNTX	Cornudas Mount	85.20	53	eP	P	03 26 44.0	-1.3
	comp=Z,5.0nm,1.1s						
MSTX	Muleshoe	85.31	50	P	P	03 26 46.3	+0.4
	baz=313						
KSU1	Kansas State U	85.32	43	P	P	03 26 46.0	+0.3
	baz=316						
P35A	Duane Minner,	85.33	43	P	P	03 26 45.9	+0.2
	baz=316						
AMTX	Amarillo	85.36	49	P	P	03 26 46.8	+0.7
	baz=313						
T32A	Huddler Ranch,	85.38	46	P	P	03 26 46.6	+0.5
	baz=314						
N37A	Lee Faris, Mou	85.39	41	P	P	03 26 46.6	+0.5
	baz=317						
M38A	Pleasantville	85.43	40	P	P	03 26 46.4	+0.2
	baz=318						
O36A	Bolckow	85.46	41	P	P	03 26 46.5	+0.2
	baz=317						
P36A	Good Intent, A	85.70	42	P	P	03 26 47.4	-0.2
	baz=316						
Q35A	Mercer Eighty,	85.80	43	P	P	03 26 47.9	-0.2
	baz=316						
Q36A	Arnold C. Orve	86.04	43	P	P	03 26 49.2	-0.1
	baz=316						
S34A	Willow Spring	86.04	44	P	P	03 26 49.5	+0.2
	baz=316						
BFO	Black Forest	86.10	332	i P	P	03 26 50.9	+1.5
R35A	Emporia Munici	86.10	43	P	P	03 26 49.7	+0.2
	baz=316						
P37A	Lathrop	86.18	42	P	P	03 26 50.3	+0.4
	baz=317						
N39A	Derby Farms, D	86.18	40	P	P	03 26 50.1	+0.2
	baz=318						
R36A	Gordon, Harris	86.48	43	P	P	03 26 52.1	+0.7
	baz=316						
T34A	McClaskey Farm	86.48	45	P	P	03 26 52.1	+0.7
	baz=315						
S35A	Otter Creek Ra	86.49	44	P	P	03 26 52.1	+0.5
	baz=316						
S36A	Lake Cedric, C	86.86	44	P	P	03 26 53.7	+0.4
	baz=316						
Q38A	Cooks Store, C	87.02	42	P	P	03 26 54.1	0.0
	baz=317						
O40A	La Belle	87.06	40	P	P	03 26 54.3	0.0
	baz=318						
V34A	Guthrie	87.14	46	P	P	03 26 54.9	+0.2
	baz=315						
T36A	Boggs Farm, Ca	87.18	44	P	P	03 26 55.1	+0.2
	baz=316						
U35A	Pawnee	87.20	45	P	P	03 26 54.5	-0.5
	baz=316						
S37A	Fort Scott	87.25	43	P	P	03 26 55.1	-0.1
	baz=317						
Q39A	Willow Grove F	87.30	41	P	P	03 26 55.3	-0.1
	baz=318						
P40A	Paris	87.42	40	P	P	03 26 56.0	0.0
	baz=318						
Q40A	Laux Farm, Aux	87.80	41	P	P	03 26 57.2	-0.6
	baz=318						
R39A	Chumby, Stover	87.81	42	P	P	03 26 57.3	-0.6
	baz=318						
S38A	Stockton	87.84	43	P	P	03 26 57.7	-0.4
	baz=317						
TX31	Lajitas Ar. Si	87.87	54	eP	P	03 26 59.0	+0.5
TXAR	Lajitas Array	87.87	54	P	P	03 26 59.1	+0.6
	comp=Z,1.4nm,0.7s,baz=307,slow=2.8,SNR=11						
HDIL	Hopedale	88.02	38	P	P	03 26 59.0	+0.1
	baz=320						
TUL1	Leonard	88.06	45	P	P	03 26 58.4	-0.7
	baz=316						
V36A	Jenks	88.06	45	P	P	03 26 58.7	-0.5
	baz=316						
T38A	Diamond	88.07	43	P	P	03 26 59.4	+0.2
	baz=317						
U37A	Salina	88.08	44	P	P	03 26 59.5	+0.3
	baz=317						
S39A	Bolivar	88.11	42	P	P	03 26 59.4	0.0
	baz=318						
Z33A	Whitaker Ranch	88.20	48	P	P	03 26 59.9	0.0
	baz=315						
V37A	Hulbert	88.44	45	P	P	03 27 01.1	+0.1
	baz=317						
U38A	Gravette	88.46	44	P	P	03 27 01.1	+0.1
	baz=317						
T39A	Clever	88.58	43	P	P	03 27 01.2	-0.4
	baz=318						
S40A	Lebanon	88.62	42	P	P	03 27 01.6	-0.1
	baz=318						
X36A	Centrahoma	88.70	46	P	P	03 27 01.8	-0.4
	baz=316						
V38A	Canehill	88.86	44	P	P	03 27 02.9	0.0
	baz=317						
T40A	Mansfield	88.94	42	P	P	03 27 03.1	-0.2
	baz=318						
U39A	Green Forest	88.99	43	P	P	03 27 03.5	0.0
	baz=318						
V39A	Pettigrew	89.30	44	P	P	03 27 04.9	-0.2
	baz=318						
U40A	Yellville	89.35	43	P	P	03 27 05.3	+0.1
	baz=318						
W38A	Poteau	89.38	45	P	P	03 27 05.4	0.0
	baz=317						
333A	Richland Sprin	89.45	50	P	P	03 27 05.8	0.0
	baz=315						
Z36A	Blue Ridge	89.59	47	P	P	03 27 06.1	-0.2
	baz=316						
W39A	Magazine	89.70	44	P	P	03 27 06.1	-0.7
	baz=317						
V40A	Witts Springs	89.78	43	P	P	03 27 06.6	-0.7
	baz=318						
334A	Lometa	89.89	50	P	P	03 27 07.8	0.0
	baz=315						
WHTX	Lake Whitney,	89.90	49	P	P	03 27 08.5	+0.6
	baz=315						
X39A	Fountain Ranch	90.02	45	P	P	03 27 08.6	+0.2
	baz=317						
MIAR	Mount Ida	90.29	44	P	P	03 27 10.0	+0.4
	baz=318						
MIAR	Mount Ida	90.29	44	eP	P	03 27 10.4	+0.8
MIAR				pmax	pmax		
	comp=Z,10.0nm,1.0s						
MIAR	Mount Ida	90.29	44	eP	P	03 27 10.4	+0.8
	comp=Z,10nm,1.0s						
Y39A	Lockesburg	90.45	45	P	P	03 27 10.6	+0.3
	baz=317						
534A	Blanco	90.67	51	P	P	03 27 10.8	-0.7
	baz=315						
337A	Centerville	91.31	48	P	P	03 27 14.1	-0.4
	baz=316						
ESDC	Sonseca Array	97.94	336	LR	LR	04 17 29.3	
	comp=Z,36nm,18.1s,baz=170,slow=39						
TORD	Torodi Ar. Bea	118.72	318	PKP	PKPdf	03 32 55.8	-1.4
	comp=Z,0.3nm,0.8s,baz=28,slow=3.0,SNR=2.4						
VNA2	Neumayer--Watz	143.41	195	P	PKPbc	03 33 38.6	-0.5
	baz=312,slow=1.0						
VNA3	Neumayer Olymp	143.60	194	P	PKPab	03 33 36.0	-2.8

*ISCJB **06** 03:19:59.6±0.5, 39.°80N±0.°02×19.°82E±0.°04, h6km±4km, Error ellipse: s-maj=5.7km s-min=3.5km az=149.8*
*ATH **06** 03:19:59.4, 39.°79N×19.°85E, h14km±1km, ML2.7/4, Error ellipse: s-maj=1.9km s-min=1.2km az=272.0*
*CSEM **06** 03:20:00.2±0.2, 39.°80N×19.°89E, h2km, ML2.7, Error ellipse: s-maj=5.7km s-min=3.6km az=57.0*
*THE **06** 03:20:00.3, 39.°79N×19.°90E, h0km±1km, ML2.6/6, Error ellipse: s-maj=1.8km s-min=0.8km az=267.0*
ISC 06 03:20:00.1±0.8**, 39.°78N**±0.°02×**19.°87E**±0.°02**, h10**km±6km**,**
n70, σ1.**°05**/103**, Greece-Albania border region**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
KEK	Kerkira	0.09	219	P	Pg	03 20 02.2	-0.3
KEK				S	Sg	03 20 04.4	+0.2
KEK	Kerkira	0.09	219	P	Pg	03 20 02.2	-0.3
KEK				S	Sg	03 20 04.3	+0.1
SGD	Sagiada	0.33	120	P	Pg	03 20 06.1	-0.5
SGD				S	Sg	03 20 11.6	+0.6
SGD	Sagiada	0.33	120	P	Pg	03 20 06.1	-0.5
SGD				S	Sg	03 20 11.6	+0.6
SGD	Sagiada	0.33	120	P	Pg	03 20 05.9	-0.7
IGT	Igoumenitsa	0.43	124	P	Pg	03 20 08.1	-0.5
IGT				S	Sg	03 20 15.2	+0.9
IGT	Igoumenitsa	0.43	124	P	Pg	03 20 08.1	-0.5
IGT				S	Sg	03 20 15.2	+0.9
IGT	Igoumenitsa	0.43	124	P	Pg	03 20 07.9	-0.7
IGT				S	Sb	03 20 15.7	-0.8
IGT				AML	AML	03 20 19.4	
	comp=N,3629μm,0.4s						
IGT				AML	AML	03 20 21.8	
	comp=E,1637μm,0.3s						
JAN	Janina	0.77	99	P	Pg	03 20 13.8	-1.1
JAN	Janina	0.77	99	P	Pg	03 20 13.8	-1.1
JAN				S	Sg	03 20 25.5	+0.6
JAN	Janina	0.77	99	S	Sg	03 20 25.5	+0.6
JAN				AML	AML	03 20 31.2	
	comp=E,1428μm,0.3s						
NEST	Nestorio	1.11	55	P	Pg	03 20 20.1	-1.3
NEST	Nestorio	1.11	55	P	Pg	03 20 20.1	-1.3
NEST	Nestorio	1.11	55	P	Pg	03 20 20.1	-1.3
DSL	Palaion Diasel	1.15	124	P	Pb	03 20 21.7	-0.4
DSL				S	Sn	03 20 38.7	+0.6
DSL	Palaion Diasel	1.15	124	P	Pb	03 20 22.1	+0.1
DSL				S	Sn	03 20 38.7	+0.6
DSL	Palaion Diasel	1.15	124	P	Pb	03 20 22.1	+0.1
KPRO	Kipourio	1.16	81	P	Pb	03 20 21.1	-1.3
KPRO				S	Sn	03 20 38.2	-0.3
KPRO	Kipourio	1.16	81	P	Pb	03 20 21.1	-1.3
KPRO				S	Sn	03 20 38.2	-0.3
KPRO	Kipourio	1.16	81	P	Pb	03 20 20.6	-1.8
LKD2	Lefkada island	1.16	148	P	Pb	03 20 21.5	-0.8
LKD2				S	Sn	03 20 38.5	+0.1
LKD2	Lefkada island	1.16	148	P	Pb	03 20 21.5	-0.8
LKD2				S	Sn	03 20 38.5	+0.1
LKD2	Lefkada island	1.16	148	P	Pb	03 20 21.3	-1.0
LKD2				S	Sn	03 20 39.3	+0.8
LKD2				AML	AML	03 20 46.5	
	comp=N,540μm,0.5s						
LKD2				AML	AML	03 20 46.5	
	comp=E,372μm,0.7s						
OHR	Ohrid	1.51	28	i Pn	Pg	03 20 29.3	+0.3
OHR				i Sn	Sg	03 20 51.2	+2.6
OHR	Ohrid	1.51	28	i Pn	Pg	03 20 29.3	+0.3
OHR				i Sn	Sg	03 20 51.2	+2.6
FNA	Florina	1.53	49	P	Pb	03 20 28.1	-0.5
FNA				S	Sg	03 20 49.2	-0.1
FNA	Florina	1.53	49	P	Pb	03 20 28.1	-0.5
FNA				S	Sg	03 20 49.2	-0.1
FNA	Florina	1.53	49	P	Pb	03 20 28.5	-0.1
FNA				S	Sg	03 20 50.0	+0.7
FNA				AML	AML	03 20 53.4	
	comp=E,436μm,0.3s						

Code	Station Name	Δ°	AZ°	Op	ISC	Time	Res
FNA				AML	AML	03 20 54.4	
	comp=N,569µm,0.5s						
KZN	Kozani	1.55	70	P	Pb	03 20 28.9	-0.1
KZN				S	Sg	03 20 49.6	-0.4
KZN	Kozani	1.55	70	P	Pb	03 20 28.9	-0.1
KZN				S	Sg	03 20 49.6	-0.4
PDO	Prodromos	1.56	139	P	Pb	03 20 28.6	-0.5
PDO	Prodromos	1.56	139	P	Pb	03 20 28.7	-0.3
PDO	Prodromos	1.56	139	P	Pb	03 20 28.7	-0.3
TIR	Tirane	1.57	360	*i* PG	Pb	03 20 29.1	-0.1
TIR				*i* SG	Sg	03 20 52.3	+1.8
TIR	Tirane	1.57	360	P	Pb	03 20 29.0	-0.2
TIR	Tirane	1.57	360	P	Pb	03 20 29.0	-0.2
TIR				*i* Sg	Sg	03 20 52.3	+1.8
	SNR=90						
TIR	Tirane	1.57	360	P	Pg	03 20 29.9	-0.3
BIA	Bitola	1.66	41	*i* Pn	Pb	03 20 31.2	+0.3
BIA				*i* Sn	Sg	03 20 56.6	+2.9
BIA	Bitola	1.66	41	*i* Pn	Pb	03 20 31.1	+0.3
BIA				*i* Sn	Sg	03 20 56.5	+2.9
THL	Klokotos Trika	1.67	97	P	Pb	03 20 30.2	-0.7
THL				S	Sb	03 20 51.9	-0.1
THL	Klokotos Trika	1.67	97	P	Pb	03 20 30.2	-0.7
THL				S	Sb	03 20 51.9	-0.1
VLS	Valsamata	1.70	160	P	Pb	03 20 32.1	+0.7
EVR	Evrytania	1.73	119	P	Pg	03 20 33.7	+0.4
EVR	Evrytania	1.73	119	P	Pg	03 20 33.7	+0.4
KFL	Anninata	1.81	156	P	Pn	03 20 32.1	+0.7
KFL	Anninata	1.81	156	P	Pn	03 20 32.1	+0.7
ANX	Ano Chora	1.99	126	P	Pn	03 20 34.6	+0.7
ANX				S	Sb	03 21 00.7	-0.5
ANX	Ano Chora	1.99	126	P	Pn	03 20 34.6	+0.7
ANX				S	Sb	03 21 00.7	-0.5
TAR1	Taranto	2.12	291	*e*Pn	Pb	03 20 38.8	+0.3
GRG	Griva	2.26	58	P	Pn	03 20 38.1	+0.5
GRG	Griva	2.26	58	P	Pn	03 20 38.1	+0.5
DRO	Drossia	2.32	141	P	Pn	03 20 38.6	+0.2
DRO	Drossia	2.32	141	P	Pn	03 20 38.6	+0.2
KLV	Kalavryta, Ach	2.48	134	P	Pn	03 20 42.3	+1.6
KLV	Kalavryta, Ach	2.48	134	P	Pn	03 20 42.4	+1.6
LKR	Lokris	2.68	114	P	Pn	03 20 45.4	+2.1
LKR	Lokris	2.68	114	P	Pn	03 20 45.4	+2.1
KNT	Kendrikon	2.69	58	P	Pn	03 20 44.1	+0.6
KNT	Kendrikon	2.69	58	P	Pn	03 20 44.1	+0.6
OUR	Ouranopolis	3.21	79	P	Pn	03 20 50.2	-0.3
OUR	Ouranopolis	3.21	79	P	Pn	03 20 50.2	-0.3
BARS	Barje	3.37	25	*e*Pn	Pn	03 20 53.0	+0.2
SJES	Sjenica	3.48	1	*e*Pn	Pn	03 20 56.8	+2.4
STON	Ston	3.49	333	*e*Pn	Pn	03 20 54.1	-0.4
STON				Sn	Sn	03 21 34.7	-1.2
STON	Ston	3.49	333	*e*Pn	Pn	03 20 54.0	-0.4
STON				Sn	Sn	03 21 34.6	-1.2
IVAS	Ivanjica	3.80	3	*e*Pn	Pb	03 21 03.7	-3.6
UDBI	Udbina	5.64	329	*e*Pn	Pn	03 21 24.6	+0.6
UDBI				Sn	Sn	03 22 26.9	-2.0
UDBI	Udbina	5.64	329	*e*Pn	Pn	03 21 24.6	+0.6
NVLJ	Novalja	6.05	324	*e*Pn	Pn	03 21 29.9	+0.3
NVLJ				Sn	Sn	03 22 35.3	-3.6
NVLJ	Novalja	6.05	324	*e*Pn	Pn	03 21 29.9	+0.3

JMA 06 03:21:56.4, 36°.78N×140°.64E, h9km±1km, M2.8, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
JHO	Hitachi	0.18	199	P	Pg	03 22 00.3	+0.2
JHO				S	Sg	03 22 02.8	+0.1
ONAJ	Iwakimizuishiy	0.34	22	P	Pg	03 22 03.3	0.0
ONAJ				S	Sg	03 22 08.0	+0.1
JFK	Kawauchi	0.61	18	P	Pg	03 22 08.0	-0.3
JFK				S	Sg	03 22 16.1	-0.3
JFT	Otama	0.78	342	S	Sg	03 22 21.3	-0.2
MAT	Matsushiro	1.97	264	P	Pn	03 22 30.8	+0.8
MAT				S	Sb	03 22 56.1	-1.0

*NIED **06** 03:26:00, 38°.50N×143°.10E, h8km, Mw3.9 Best double couple: M₀8.53000×10¹⁴ NP1:φs19.00000°, δ50.00000°, λ162.00000°. NP2:φs121.00000°, δ77.00000°, λ42.00000°.*
*IDC **06** 03:26:50.6±1.1, 38°.22N×143°.70E, h0km, mb3.6/7, mb1 3.8/10, mb1mx3.6/35, mbtmp3.7/10, ML3.3/3, Error ellipse: s-maj=27.0km s-min=18.9km az=95.0*
*JMA **06** 03:26:52.2±0.3, 38°.51N×143°.09E, h2km±4km, M4.0*
ISC 06 03:26:51.0±2.5, 38°.45N±0°.05×143°.11E±0°.09, h8km±15km, n23, σ1s.14/27, mb3.6/7, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
OFUJ	Ofunato	1.29	300	P	Pg	03 27 15.9	+0.1
JIO	Ouri	1.39	271	P	Pg	03 27 17.7	+0.1
JIO				S	Sg	03 27 36.5	+1.0
MIYJ	Miyakonagasawa	1.51	319	P	Pb	03 27 18.7	-0.6
MIYJ				*e*S	Sb	03 27 37.7	-1.0
JMK	Ichinoseki	1.56	289	P	Pg	03 27 20.5	-0.5
JMK				*e*S	Sg	03 27 41.2	-0.1
JOM	Ohasama	1.75	306	P	Pg	03 27 24.7	+0.1
JMM	Marumori	1.92	253	P	Pb	03 27 26.1	-0.2
JMM				*e*S	Sg	03 27 51.9	-0.8
JOU	Okura	1.93	268	P	Pb	03 27 26.6	+0.2
JKZ	Kuzumaki	2.06	318	P	Pb	03 27 28.1	-0.7
JFK	Kawauchi	2.07	239	P	Pb	03 27 28.1	-0.9
JFK				*e*S	Sb	03 27 54.5	-0.4
JYK	Kaneyama	2.21	283	P	Pb	03 27 30.5	-0.7
JANG	Nango	2.29	328	P	Pb	03 27 31.0	-1.6
JANG				S	Sb	03 28 00.2	-0.8
JFT	Otama	2.38	248	P	Pb	03 27 33.8	-0.4
JYS	Shirataka	2.41	265	P	Pb	03 27 33.6	-1.0
JYS				*e*S	Sb	03 28 03.1	-1.4
MJAR	Matsushiro Arr	4.34	245	Pn	Pn	03 28 00.9	+3.5
	2.4nm,0.3s,baz=89,slow=14,SNR=11						
JHJ	Hachijo jima 2	5.97	208	Pn	Pn	03 28 19.8	+0.1
	12nm,0.3s,baz=140,slow=22,SNR=8.4						
JHJ				Sn	Sn	03 29 26.2	-2.0
	17nm,0.3s,baz=232,slow=19,SNR=4.4						
USRK	Ussuriysk Ar.	10.14	308	Pn	Pn	03 29 23.5	+6.5
	0.3nm,0.3s,baz=268,slow=6.4,SNR=4.3						
SEY	Seymchan	25.15	10	P	P	03 32 17.7	+1.3
	1.8nm,0.4s,baz=180,slow=8.5,SNR=6.3						
SONM	Songino Array	28.16	301	P	P	03 32 48.2	+4.4
	0.4nm,0.6s,baz=116,slow=9.8,SNR=3.3						
ZALV	Zalesovo Beam	41.98	311	P	P	03 34 47.7	+5.3
	0.5nm,0.4s,baz=71,slow=9.6,SNR=2.5						
MKAR	Makanchi Array	44.52	301	P	P	03 35 09.6	+6.5
	0.4nm,0.6s,baz=86,slow=9.8,SNR=4.6						
ILAR	Eielson Array	47.58	33	P	P	03 35 27.0	+0.1
	0.3nm,0.6s,baz=262,slow=6.1,SNR=5.4						
WRA	Warramunga Arr	58.66	190	P	P	03 36 49.3	+0.4
	1.3nm,0.7s,baz=9.5,slow=7.2,SNR=5.0						
ASAR	Alice Springs	62.39	190	P	P	03 37 13.9	-0.5
	0.1nm,0.3s,baz=7.6,slow=7.4,SNR=2.6						

*NIED **06** 03:27:00, 38°.80N×142°.10E, h32km, Mw4.0 Best double couple: M₀1.22000×10¹⁵ NP1:φs219.00000°, δ55.00000°, λ-148.00000°. NP2:φs109.00000°, δ64.00000°, λ-39.00000°.*
*IDC **06** 03:27:48.0±0.8, 38°.68N×141°.99E, h0km, mb3.7/7, mb1 3.9/7, mb1mx3.7/31, mbtmp3.7/7, MS2.6/1, Ms1 2.6/1, ms1mx2.2/48, Error ellipse: s-maj=35.3km s-min=21.8km az=102.0*
*ISCJB **06** 03:27:53.1±0.7, 38°.76N±0°.06×142°.03E±0°.07, h51km, mb3.8/7, Error ellipse: s-maj=9.4km s-min=7.8km az=148.4*
*JMA **06** 03:27:53.5±0.1, 38°.80N×142°.08E, h36km±2km, M3.9*
JMA Felt II J1.
ISC 06 03:27:55.1±0.8, 38°.80N±0°.07×141°.94E±0°.10, h51km, n14, σ1s.09/17, mb3.7/7, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
OFUJ	Ofunato	0.35	323	P	Pn	03 28 03.0	-1.8
JIO	Ouri	0.58	234	P	Pn	03 28 06.0	-1.3
JIO				S	Sn	03 28 14.5	-1.6
JMK	Ichinoseki	0.58	286	P	Pn	03 28 06.7	-0.7
JMK				S	Sn	03 28 16.0	-0.3
JOM	Ohasama	0.84	323	P	Pn	03 28 10.0	-0.7
JOM				S	Sn	03 28 21.8	-0.4
JOU	Okura	1.09	247	P	Pn	03 28 14.5	+0.5
JOU				S	Sn	03 28 28.8	+0.7
KSRS	Korea Array	11.12	267	LR	LR	03 33 37.2	
	comp=Z,28nm,18.9s,baz=112,slow=31						
MKAR	Makanchi Array	43.56	301	P	P	03 35 53.8	0.0
	0.5nm,0.5s,baz=84,slow=11,SNR=4.7						
ILAR	Eielson Array	47.79	33	P	P	03 36 27.2	+0.3
	0.5nm,0.6s,baz=265,slow=6.0,SNR=6.9						
WRA	Warramunga Arr	58.86	188	P	P	03 37 47.7	-0.8
	1.1nm,0.5s,baz=6.5,slow=7.1,SNR=3.2						
YKA	Yellowknife Ar	62.08	31	P	P	03 38 10.1	0.0
	0.2nm,0.6s,baz=301,slow=6.1,SNR=3.4						
ASAR	Alice Springs	62.59	188	P	P	03 38 12.7	-1.2
	0.6nm,0.6s,baz=13,slow=5.1,SNR=5.7						
FINES	FINESS Array B	67.45	332	P	P	03 38 45.7	+0.6
	1.1nm,0.7s,baz=69,slow=7.7,SNR=3.0						
TXAR	Lajitas Array	88.72	53	P	P	03 40 44.1	+0.7
	0.2nm,0.6s,baz=354,slow=1.3,SNR=3.4						
TORD	Torodi Ar. Bea	116.37	316	PKP	PKPdf	03 46 35.5	+2.1
	0.5nm,1.1s,baz=298,slow=9.3,SNR=3.1						

*ROM **06** 03:31:46.6±0.2, 44°.37N×7°.27E, h14km±3km, Md2.1/5, Ml1.7/5, Error ellipse: s-maj=3.3km s-min=1.5km az=66.0*
*CSEM **06** 03:31:46.8±0.1, 44°.38N×7°.29E, h12km, ML2.3/17, Error ellipse: s-maj=1.6km s-min=1.2km az=60.0*
*GEN **06** 03:31:47.5, 44°.35N×7°.28E, h14km, ML1.9*
*ISCJB **06** 03:31:47.4±0.3, 44°.36N±0°.02×7°.31E±0°.03, h19km±4km, Error ellipse: s-maj=3.8km s-min=2.9km az=154.6*
*LDG **06** 03:31:47.0±0.2, 44°.38N×7°.34E, h2km, Md2.5/4, Ml2.2/10, Error ellipse: s-maj=3.6km s-min=1.8km az=67.0*
*STR **06** 03:31:48.7±0.4, 44°.32N×7°.32E, h5km, Ml2.1, Error ellipse: s-maj=0.0km s-min=0.0km az=0.0*
ISC 06 03:31:46.8±0.8, 44°.38N±0°.02×7°.30E±0°.02, h16km±6km, n47, σ0s.32/92, Northern Italy

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
STV	Sant Anna di V	0.13	171	Pg	Pb	03 31 50.8	-0.2
STV				Sg	Sg	03 31 53.1	-0.1
	286nm,0.1s						
STV	Sant Anna di V	0.13	171	P	Pb	03 31 50.8	-0.2
STV				Sg	Sg	03 31 53.1	-0.1
	286nm,0.1s						
ENR	Entracque	0.17	149	P	Pg	03 31 51.4	+0.1
ENR				S	Sg	03 31 54.1	-0.1
BHB	Bricherasio	0.47	357	Pg	Pg	03 31 56.0	-0.2
BHB				Sg	Sg	03 32 02.4	-0.2
	16nm,0.2s						
BHB	Bricherasio	0.47	357	Pg	Pg	03 31 56.0	-0.2
BHB				Sg	Sg	03 32 02.4	-0.2
	16nm,0.2s						
LUCF	Luceram	0.48	176	Pg	Pb	03 31 56.8	-0.2
LUCF				Sg	Sg	03 32 03.1	0.0
LUCF	Luceram	0.48	176	Pg	Pb	03 31 56.8	-0.2
LUCF				Sg	Sg	03 32 03.1	0.0
MVIF	Mont Vial	0.49	192	Pg	Pb	03 31 57.0	-0.1
MVIF				Sg	Sg	03 32 03.1	-0.2
MVIF	Mont Vial	0.49	192	Pg	Pb	03 31 57.0	-0.1
MVIF				Sg	Sg	03 32 03.1	-0.2
MBDF	Montbardon	0.52	313	*e*Pg	Pb	03 31 57.5	-0.1
MBDF				*e*Sg	Sb	03 32 05.1	+0.2
	29nm,0.2s						
MBDF	Montbardon	0.52	313	*e*Pg	Pb	03 31 57.5	-0.1
MBDF				*e*Sg	Sb	03 32 05.1	+0.2
	14nm,0.2s						
SBF	Sospel	0.52	169	*e*Pg	Pb	03 31 57.4	-0.2
SBF				*e*Sg	Sg	03 32 04.5	+0.3
	63nm,0.3s						
SBF	Sospel	0.52	169	*e*Pg	Pb	03 31 57.4	-0.2
SBF				*e*Sg	Sg	03 32 04.5	+0.3
	31nm,0.3s						
RORO	Rocca Rossa	0.61	115	Pg	Pg	03 31 58.9	0.0
RORO				Sg	Sb	03 32 07.7	+0.2
	19nm,0.1s						
RORO	Rocca Rossa	0.61	115	Pg	Pg	03 31 58.9	0.0
RORO				Sg	Sb	03 32 07.7	+0.2
	19nm,0.1s						
IMI	Imperia	0.63	137	Pg	Pg	03 31 59.2	-0.1
IMI				Sg	Sg	03 32 07.6	-0.1
	32nm,0.2s						
IMI	Imperia	0.63	137	Pg	Pg	03 31 59.2	-0.1
IMI				Sg	Sg	03 32 07.6	-0.1
	32nm,0.2s						
REVF	Revere	0.64	175	Pg	Pb	03 32 00.1	+0.5
REVF				Sg	Sg	03 32 07.6	-0.2
REVF	Revere	0.64	175	Pg	Pb	03 32 00.1	+0.5
REVF				Sg	Sg	03 32 07.6	-0.2
CALN	Calern	0.69	205	Pg	Pb	03 32 00.7	+0.2
CALN				Sg	Sb	03 32 10.2	+0.4
CALN	Calern	0.69	205	Pg	Pb	03 32 00.7	+0.2
CALN				Sg	Sb	03 32 10.2	+0.4
FINB	Finale Ligure	0.77	105	Pg	Pb	03 32 01.8	+0.1
FINB				Sg	Sb	03 32 12.4	+0.5
	24nm,0.3s						
FINB	Finale Ligure	0.77	105	Pg	Pb	03 32 01.8	+0.1
FINB				Sg	Sb	03 32 12.4	+0.5
	24nm,0.3s						
PCP	Piancastagn	0.91	79	Pg	Pg	03 32 04.4	-0.1
PCP				Sg	Sg	03 32 16.5	+0.1
PCP	Piancastagn	0.91	79	Pg	Pg	03 32 04.4	-0.1
PCP				Sg	Sg	03 32 16.5	+0.1
FRF	La Foret Royal	0.94	210	*e*Pg	Pb	03 32 04.6	-0.1
FRF	La Foret Royal	0.94	210	*e*Pn	Pn	03 32 05.3	0.0
FRF				*e*Sg	Sb	03 32 17.0	+0.1
	15nm,0.2s						
FRF	La Foret Royal	0.94	210	*e*Pg	Pb	03 32 04.6	-0.1
FRF	La Foret Royal	0.94	210	*e*Pn	Pn	03 32 05.3	0.0
FRF				*e*Sg	Sb	03 32 17.0	+0.1
	7.3nm,0.2s						
ORIF	Oris-en-Rattie	1.15	299	*e*Pg	Pg	03 32 09.0	0.0
ORIF				*e*Sg	Sn	03 32 23.7	0.0
	7.0nm,0.2s						
ORIF	Oris-en-Rattie	1.15	299	*e*Pg	Pg	03 32 09.0	0.0
ORIF				*e*Sg	Sn	03 32 23.7	0.0
	3.5nm,0.2s						
LMR	La Mourre	1.19	209	*e*Pg	Pg	03 32 09.3	-0.4
LMR				*e*Sg	Sn	03 32 24.6	+0.1
	25nm,0.3s						
LMR	La Mourre	1.19	209	*e*Pg	Pg	03 32 09.3	-0.4
LMR				*e*Sg	Sn	03 32 24.6	+0.1
	12nm,0.3s						
LPG	La Plagne	1.19	341	*e*Pg	Pg	03 32 09.5	-0.3
LPG				*e*Sg	Sn	03 32 24.9	-0.1
	2.3nm,0.2s						
LPG	La Plagne	1.19	341	*e*Pg	Pg	03 32 09.5	-0.3
LPG				*e*Sg	Sn	03 32 24.9	-0.1
	1.1nm,0.2s						
LPL	La Plagne	1.21	341	*e*Pg	Pg	03 32 09.9	-0.3
LPL				*e*Sg	Sn	03 32 25.5	+0.1
	3.0nm,0.3s						
LPL	La Plagne	1.21	341	*e*Pg	Pg	03 32 09.9	-0.3
LPL				*e*Sg	Sn	03 32 25.5	+0.1
	1.5nm,0.3s						
SMRF	Simiane la Rot	1.30	253	*e*Pg	Pg	03 32 12.1	+0.2
SMRF				*e*Sg	Sg	03 32 29.0	+0.1
	15nm,0.4s						
SMRF	Simiane la Rot	1.30	253	*e*Pg	Pg	03 32 12.1	+0.2
SMRF				*e*Sg	Sg	03 32 29.0	+0.1
	7.4nm,0.4s						
VIVF	Saint-Julien-l	1.94	285	*e*Pn	Pn	03 32 19.6	+0.5
VIVF	Saint-Julien-l	1.94	285	*e*P	Pb	03 32 21.4	-0.3
VIVF				*e*Sn	Sn	03 32 42.9	-0.2
	0.8nm,0.2s						
VIVF				*e*Sg	Sg	03 32 48.5	-0.6
	2.7nm,0.3s						
VIVF	Saint-Julien-l	1.94	285	*e*Pn	Pn	03 32 19.6	+0.5
VIVF	Saint-Julien-l	1.94	285	*e*P	Pb	03 32 21.4	-0.3
VIVF				*e*Sn	Sn	03 32 42.9	-0.2
	0.4nm,0.2s						
VIVF				*e*Sg	Sg	03 32 48.5	-0.6
	1.4nm,0.3s						
PGF	Pioggiola	2.21	145	*e*Pn	Pn	03 32 22.7	-0.2
PGF				*e*Sn	Sn	03 32 49.0	-0.9
	1.3nm,0.2s						
PGF	Pioggiola	2.21	145	*e*Pn	Pn	03 32 22.7	-0.2
PGF				*e*Sn	Sn	03 32 49.0	-0.9
	0.6nm,0.2s						
LASF	Ste Croix	2.49	264	*e*Pn	Pn	03 32 27.6	+0.9
LASF				*e*Sn	Sn	03 32 56.2	-0.6
	0.9nm,0.2s						
LASF	Ste Croix	2.49	264	*e*Pn	Pn	03 32 27.6	+0.9
LASF				*e*Sn	Sn	03 32 56.2	-0.6
	0.4nm,0.2s						

NNC 06 03:35:38.7±3.5, 36°.86N×70°.74E, h151km±38km, mb3.0, mpv4.0, 6C-5D, Error ellipse: s-maj=32.1km s-min=15.9km az=164.0, Hindu Kush region

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
DZET	Dzherino	2.46	323	⇑P	Pn	03 36 19.2	-0.3
	64nm,0.2s						
DZET				⇓S	Sn	03 36 51.7	+0.8
	83nm,0.2s						
SFK	Sufi-Kurgan	3.82	34	⇑P	Pn	03 36 36.1	-0.7
	26nm,0.2s						
SFK				⇑S	Sn	03 37 22.3	+0.3
	39nm,0.2s						
MNAS	Manas	5.78	13	⇑P	Pn	03 37 03.8	+1.3
	1.4nm,0.2s						
MNAS				⇓S	Sn	03 38 08.8	+0.6
	4.4nm,0.2s						
KK31	Karatay Array	6.24	358	⇑P	Pn	03 37 09.2	+0.7
	1.0nm,0.2s,baz=177,slow=12,SNR=13						
KK31				⇓S	Sn	03 38 20.4	+1.5
	1.4nm,0.2s,baz=185,slow=23,SNR=6.7						
AAK	Ala-Archa	6.45	25	⇓P	Pn	03 37 11.8	+0.3
	1.7nm,0.2s						
AAK				⇓S	Sn	03 38 23.8	-0.4
	1.8nm,0.2s						
AB31	Akbulak array	14.67	331	P	P	03 39 00.8	-0.1
	0.4nm,0.2s,baz=170,slow=11,SNR=20						
AB31				⇑S	Sn	03 41 37.7	-3.7
	0.6nm,0.6s,baz=154,slow=22,SNR=4.1						

*CSEM **06** 03:37:16.8±0.4, 36°.47N×28°.85E, h10km, MD2.6, Error ellipse: s-maj=7.9km s-min=4.2km az=17.0*
*DDA **06** 03:37:16.8, 36°.52N×28°.80E, h7km, Md2.8*
*ISCJB **06** 03:37:17.0±1.0, 36°.49N±0°.06×28°.82E±0°.05, h7km±6km, Error ellipse: s-maj=9.9km s-min=5.4km az=23.3*
*ISK **06** 03:37:17.7, 36°.80N×28°.98E, h5km, MD2.6*
ISC 06 03:37:16.5±1.3, 36°.49N±0°.05×28°.83E±0°.04, h20km±3km, n18, σ0s.41/32, Dodecanese Islands

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
FETY	Fethiye	0.25	55	*e*PG	Pb	03 37 22.1	-0.2
FETY				*e*SG	Sb	03 37 25.8	-0.3
FETY	Fethiye	0.25	55	*e*Pg	Pb	03 37 22.1	-0.2
FETY				*e*Sg	Sb	03 37 25.8	-0.3
DALY	Dalyan (Mu˜la	0.35	336	*e*PG	Pb	03 37 24.1	-0.1
DALY				*e*SG	Sg	03 37 29.0	-0.3
DALY	Dalyan (Mu˜la	0.35	336	*e*Pg	Pb	03 37 24.2	-0.1
DALY				*e*Sg	Sg	03 37 29.0	-0.3
TURN	Turunc	0.42	334	*i* P	Pb	03 37 26.3	+0.9
TURN				*i* S	Sn	03 37 34.9	+0.1
TURN	Turunc	0.42	334	P	Pb	03 37 26.3	+0.9
TURN				S	Sn	03 37 34.9	+0.1
AKAS	Kas	0.68	112	*i* P	Pb	03 37 29.7	-0.1
AKAS				*i* S	Sn	03 37 41.8	+0.5
AKAS	Kas	0.68	112	P	Pb	03 37 29.7	-0.1
AKAS				S	Sn	03 37 41.8	+0.5
YER	Yerkesik	0.78	326	*e*PG	Pb	03 37 31.4	-0.1
YER	Yerkesik	0.78	326	*e*Pg	Pb	03 37 31.4	-0.1
GOLH	Golhisar	0.95	38	*i* P	Pb	03 37 34.3	-0.1
GOLH				*i* S	Sn	03 37 48.6	+0.7
GOLH	Golhisar	0.95	38	P	Pb	03 37 34.3	-0.1
GOLH				S	Sn	03 37 48.6	+0.7
BDRM	Kayabasi	1.25	298	*i* P	Pg	03 37 40.8	0.0
BDRM				*i* S	Sg	03 37 56.5	-0.7
BDRM	Kayabasi	1.25	298	P	Pg	03 37 40.8	0.0
BDRM				S	Sg	03 37 56.5	-0.7
AYDN	Tasoluk	1.39	327	*i* P	Pg	03 37 43.5	0.0
AYDN				*i* S	Sg	03 38 01.4	-0.3
AYDN	Tasoluk	1.39	327	P	Pg	03 37 43.5	0.0
AYDN				S	Sg	03 38 01.4	-0.3
AYDB	Zeytinkoy-Aydi	1.63	333	*e*PN	Pb	03 37 46.0	-0.1
AYDB	Zeytinkoy-Aydi	1.63	333	*e*Pn	Pb	03 37 46.0	-0.1

*IDC **06** 03:43:52.4±1.0, 35°.57N×4°.34W, h97km±12km, mb3.2/4, mb1 3.3/7, mb1mx3.0/49, mbtmp3.5/7, Error ellipse: s-maj=30.7km s-min=8.7km az=94.0*
*IGIL **06** 03:43:53.9, 35°.55N×4°.50W, h1km, ML3.3*
*MDD **06** 03:43:55.5±0.9, 35°.53N×4°.48W, h112km±7km, mb2.9/34, Error ellipse: s-maj=9.0km s-min=4.4km az=173.0, PRXIMO*
*INMG **06** 03:43:56.2±1.7, 35°.56N×4°.46W, h115km±9km, ML3.1, Error ellipse: s-maj=5.2km s-min=3.5km az=168.0*
*SFS **06** 03:43:56.0, 35°.54N×4°.55W, h57km, ML4.1*
*ISCJB **06** 03:43:57.2±0.5, 35°.88N±0°.03×4°.54W±0°.02, h134km±3km, mb3.3/4, Error ellipse: s-maj=5.1km s-min=2.9km az=174.9*
*LDG **06** 03:43:57.7±0.4, 35°.86N×4°.46W, h100km, Ml2.8/2, Error ellipse: s-maj=8.0km s-min=3.8km az=169.0*
*CSEM **06** 03:43:58.3±0.2, 35°.84N×4°.54W, h114km±2km, mb2.9, Error ellipse: s-maj=5.3km s-min=2.7km az=171.0*
ISC 06 03:43:56.0±1.3, 35°.71N±0°.07×4°.49W±0°.03, h126km±6km, n175, σ1s.35/316, mb3.6/4, 22C-1D, Strait of Gibraltar

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
ECEU	Ceuta	0.75	285	P	Pn	03 44 14.0	-2.3
	49nm,0.2s,SNR=7.9						
ECEU				S	Sn	03 44 27.8	-3.9
	34nm,0.1s,SNR=7.9						
EMIJ	Mijas	0.88	345	⇑P	Pn	03 44 16.1	-1.4
	37nm,0.2s,SNR=18						
EMIJ				S	Sn	03 44 31.1	-2.7
	223nm,0.2s,SNR=7.9						
EMIJ	Mijas	0.88	345	P	Pn	03 44 16.1	-1.4
	37nm,0.2s,SNR=18						
EMIJ				S	Sn	03 44 31.1	-2.7
	223nm,0.2s,SNR=7.9						
REAL	Reales	0.97	323	*e*P	Pn	03 44 19.0	+0.6
REAL				S	Sn	03 44 35.2	-0.2
EMAL	Malaga-Limoner	1.05	2	*i* P	Pn	03 44 18.0	-1.0
EMAL				*e*S	Sn	03 44 34.0	-2.5
MOMI	Momias	1.18	302	*e*P	Pn	03 44 21.7	+1.4
MOMI				S	Sn	03 44 39.0	+0.3
ALJ	Aljibe	1.25	311	*e*P	Pn	03 44 22.2	+1.2
ALJ				S	Sn	03 44 40.1	0.0
LIJA	Lijar	1.41	328	*i* P	Pn	03 44 23.7	+0.9
LIJA				*e*S	Sn	03 44 45.5	+2.2
EGOR	Sierra Gorda,	1.43	12	P	Pn	03 44 23.4	+0.3
	14nm,0.3s,SNR=7.9						
EGOR				S	Sn	03 44 43.7	-0.1
	74nm,0.3s,SNR=7.9						
EGOR	Sierra Gorda,	1.43	12	P	Pn	03 44 23.5	+0.3
	14nm,0.3s,SNR=7.9						
EGOR				S	Sn	03 44 43.7	-0.1
	74nm,0.3s,SNR=7.9						
CNIL	Conil	1.43	298	*i* P	Pn	03 44 24.0	+1.0
CNIL				*e*S	Sn	03 44 47.5	+4.0
ESPR	Espera	1.60	317	⇑P	Pn	03 44 25.6	+0.7
	31nm,0.2s,SNR=18						
ESPR				S	Sn	03 44 47.8	+0.8
	56nm,0.1s,SNR=7.9						
ESPR	Espera	1.60	317	P	Pn	03 44 25.6	+0.7
	31nm,0.2s,SNR=18						
ESPR				S	Sn	03 44 47.8	+0.8
	56nm,0.1s,SNR=7.9						
GIBL	Gibalbin	1.64	313	*e*P	Pn	03 44 25.9	+0.5
GIBL				S	Sn	03 44 48.0	+0.2
SELV	Sierra Elvira	1.64	22	⇑P	Pn	03 44 26.4	+0.9
	38nm,0.5s,SNR=18						
SELV				S	Sn	03 44 49.3	+1.3
	36nm,0.4s,SNR=7.9						
SELV	Sierra Elvira	1.64	22	P	Pn	03 44 26.4	+0.9
	38nm,0.5s,SNR=18						
SELV				S	Sn	03 44 49.3	+1.3
	36nm,0.4s,SNR=7.9						
EQUE	Quentar	1.71	29	P	Pn	03 44 26.9	+0.5
	14nm,0.3s,SNR=14						
EQUE				S	Sn	03 44 50.5	+0.9
	12nm,0.3s,SNR=8.5						
EQUE	Quentar	1.71	29	P	Pn	03 44 26.9	+0.5
	14nm,0.3s,SNR=14						
EQUE				S	Sn	03 44 50.5	+0.9
	12nm,0.3s,SNR=8.5						
ECOG	Cogollos-Vega	1.73	25	⇓P	Pn	03 44 27.5	+0.9
	61nm,0.6s,SNR=18						
ECOG				S	Sn	03 44 51.8	+1.8
	47nm,0.4s						

ECOG Cogollos-Vega 1.73 25 P Pn 03 44 27.5 +0.9
61nm,0.6s,SNR=18
ECOG S Sn 03 44 51.8 +1.8
47nm,0.4s
GORA Gorafe 2.12 33 ⇑P Pn 03 44 32.3 +1.1
13nm,0.4s,SNR=18
GORA S Sn 03 44 57.8 -0.4
19nm,0.2s,SNR=7.9
GORA Gorafe 2.12 33 P Pn 03 44 32.3 +1.1
13nm,0.4s,SNR=18
GORA S Sn 03 44 57.8 -0.4
19nm,0.2s,SNR=7.9
ENIJ Nijar 2.23 55 P Pn 03 44 31.8 -0.7
1.4nm,0.1s,SNR=7.9
ENIJ S Sn 03 44 59.2 -1.4
3.7nm,0.1s,SNR=4.0
EQES Quesada 2.38 28 P Pn 03 44 35.0 +0.5
5.5nm,0.3s,SNR=29
EQES S Sn 03 45 04.4 +0.2
23nm,0.4s,SNR=5.9
EQES Quesada 2.38 28 P Pn 03 44 35.0 +0.5
5.5nm,0.3s,SNR=29
EQES S Sn 03 45 04.4 +0.2
23nm,0.4s,SNR=5.9
EADA Adamuz 2.45 358 ⇑P Pn 03 44 35.9 +0.5
36nm,0.1s,SNR=18
EADA S Sn 03 45 04.8 -1.0
39nm,0.1s,SNR=6.4
EADA Adamuz 2.45 358 P Pn 03 44 35.9 +0.5
36nm,0.1s,SNR=18
EADA S Sn 03 45 04.8 -1.0
39nm,0.1s,SNR=6.4
ECAB El Cabril 2.48 343 ⇑P Pn 03 44 35.8 +0.1
14nm,0.1s,SNR=18
ECAB S Sn 03 45 04.9 -1.4
31nm,0.1s,SNR=5.7
ECAB El Cabril 2.48 343 P Pn 03 44 35.8 +0.1
14nm,0.1s,SNR=18
ECAB S Sn 03 45 04.9 -1.4
31nm,0.1s,SNR=5.7
EMIN Mina Concepcio 2.70 320 ⇑P Pn 03 44 38.8 +0.3
47nm,0.1s,SNR=18
EMIN S Sn 03 45 10.2 -1.2
25nm,0.1s,SNR=14
EMIN Mina Concepcio 2.70 320 P Pn 03 44 38.8 +0.3
47nm,0.1s,SNR=18
EMIN S Sn 03 45 10.2 -1.2
25nm,0.1s,SNR=14
SESP Santiago Espad 2.87 32 P Pn 03 44 41.0 +0.2
3.0nm,0.2s,SNR=7.9
SESP S Sn 03 45 16.3 +0.9
7.5nm,0.2s,SNR=7.9
SESP Santiago Espad 2.87 32 P Pn 03 44 41.0 +0.2
3.0nm,0.2s,SNR=7.9
SESP S Sn 03 45 16.3 +0.9
7.5nm,0.2s,SNR=7.9
MDT Midelt 2.89 182 P Pn 03 44 37.0 -4.1
6.8nm,0.3s,baz=6.5,slow=5.6,SNR=227
MDT S Sn 03 45 07.9 -8.0
13nm,0.3s,baz=141,slow=20,SNR=28
EGRO El Granado 3.02 308 ⇑P Pn 03 44 42.8 +0.1
54nm,0.1s,SNR=18
EGRO S Sn 03 45 17.7 -1.1
74nm,0.1s,SNR=26
EGRO El Granado 3.02 308 P Pn 03 44 42.8 +0.1
54nm,0.1s,SNR=18
EGRO S Sn 03 45 17.7 -1.1
74nm,0.1s,SNR=26
PVAQ Vaqueiros 3.10 304 ⇑*e*P Pn 03 44 43.6 -0.1
PVAQ *e*S Sn 03 45 19.7 -0.9
PVAQ A A 03 45 21.2
109nm,0.2s
PVAQ Vaqueiros 3.10 304 P Pn 03 44 43.6 -0.1
PVAQ S Sn 03 45 19.7 -0.9
109nm,0.2s
PVAQ Vaqueiros 3.10 304 P Pn 03 44 43.6 -0.1
PVAQ *e*S Sn 03 45 19.7 -0.9
109nm,0.2s
PBDV Barranco-do-Ve 3.17 300 ⇑*i*P Pn 03 44 44.7 0.0
PBDV *e*S Sn 03 45 21.7 -0.6
PBDV A A 03 45 22.0
146nm,0.3s
PBDV Barranco-do-Ve 3.17 300 P Pn 03 44 44.7 0.0
PBDV S Sn 03 45 21.7 -0.6
146nm,0.3s
PBDV Barranco-do-Ve 3.17 300 P Pn 03 44 44.7 0.0
PBDV *e*S Sn 03 45 21.7 -0.6
146nm,0.3s
PBAR Barrancos 3.20 321 ⇑*e*P Pn 03 44 45.4 +0.4
PBAR *e*S Sn 03 45 21.5 -1.4
PBAR A A 03 45 23.8
76nm,0.2s
PBAR Barrancos 3.20 321 P Pn 03 44 45.4 +0.4
PBAR S Sn 03 45 21.5 -1.4
76nm,0.2s
PBAR Barrancos 3.20 321 P Pn 03 44 45.4 +0.4
PBAR *e*S Sn 03 45 21.5 -1.4
76nm,0.2s
PCVE Castro Verde 3.44 305 ⇑*e*P Pn 03 44 48.2 0.0
PCVE *e*S Sn 03 45 27.1 -1.5
PCVE A A 03 45 29.7
74nm,0.5s
PCVE Castro Verde 3.44 305 P Pn 03 44 48.2 0.0
PCVE S Sn 03 45 27.1 -1.5
74nm,0.5s
PCVE Castro Verde 3.44 305 P Pn 03 44 48.2 0.0
PCVE *e*S Sn 03 45 27.1 -1.5
74nm,0.5s
PBEJ Beja 3.56 311 *e*P Pn 03 44 49.9 +0.1
PBEJ *e*S Sn 03 45 30.7 -0.8
PBEJ A A 03 45 31.3
48nm,0.3s
PBEJ Beja 3.56 311 P Pn 03 44 49.9 +0.1
PBEJ S Sn 03 45 30.7 -0.8
24nm,0.3s
PBEJ Beja 3.56 311 P Pn 03 44 49.9 +0.1
PBEJ *e*S Sn 03 45 30.7 -0.8
48nm,0.3s
EBAD Badajoz 3.65 327 P Pn 03 44 51.4 +0.5
44nm,0.1s,SNR=283
EBAD S Sn 03 45 33.1 -0.4
23nm,0.1s,SNR=4.7
EBAD Badajoz 3.65 327 P Pn 03 44 51.4 +0.5
44nm,0.1s,SNR=283
EBAD S Sn 03 45 33.1 -0.4
23nm,0.1s,SNR=4.7
MESJ Messejana 3.67 306 *e*P Pn 03 44 51.3 +0.1
MESJ *e*S Sn 03 45 33.0 -1.1
MESJ AML AML 03 45 34.2
comp=N,67nm,0.3s
MESJ Messejana 3.67 306 ⇑*i*P Pn 03 44 51.4 +0.1
MESJ *e*S Sn 03 45 33.0 -1.1
MESJ A A 03 45 34.9
comp=N,60nm,0.4s
MESJ Messejana 3.67 306 P Pn 03 44 51.3 +0.1
MESJ S Sn 03 45 33.0 -1.1
comp=N,67nm,0.3s
MESJ Messejana 3.67 306 ⇑*i*P Pn 03 44 51.4 +0.1
MESJ *e*S Sn 03 45 33.0 -1.1
comp=N,60nm,0.4s
MORF Marmelete 3.71 297 *e*P Pn 03 44 51.4 -0.4
MORF *e*S Sn 03 45 33.7 -1.5
MORF AML AML 03 45 34.5
comp=N,91nm,0.5s
MORF Marmelete 3.71 297 *e*P Pn 03 44 51.8 0.0
MORF *e*S Sn 03 45 34.0 -1.1
MORF A A 03 45 35.9
comp=N,65nm,0.1s
MORF Marmelete 3.71 297 P Pn 03 44 51.4 -0.4
MORF S Sn 03 45 33.7 -1.5
comp=N,91nm,0.5s
MORF Marmelete 3.71 297 *e*P Pn 03 44 51.8 0.0
MORF *e*S Sn 03 45 34.0 -1.1
comp=N,65nm,0.1s
ETOB Tobarra 3.75 38 P Pn 03 44 52.5 +0.1
comp=N,2.5nm,0.2s,SNR=26
ETOB S Sn 03 45 36.0 -0.1
comp=N,3.6nm,0.3s,SNR=4.0
ETOB Tobarra 3.75 38 P Pn 03 44 52.5 +0.1
comp=N,2.5nm,0.2s,SNR=26
ETOB S Sn 03 45 36.0 -0.1
comp=N,3.6nm,0.3s,SNR=4.0
PTEO Sao Teotonio 3.87 300 ⇑*e*P Pn 03 44 54.1 +0.3
PTEO *e*S Sn 03 45 37.7 -1.0
PTEO A A 03 45 40.7
comp=N,51nm,0.3s
PTEO Sao Teotonio 3.87 300 P Pn 03 44 54.1 +0.3
PTEO *e*S Sn 03 45 37.7 -1.0
comp=N,51nm,0.3s
ESDC Sonseca Array 3.98 6 P Pn 03 44 54.9 -0.5
comp=N,6.4nm,0.3s,baz=185,slow=12,SNR=109
ESDC S Sn 03 45 39.3 -2.2
comp=N,6.0nm,0.3s,baz=188,slow=22,SNR=6.5
ESDC Sonseca Array 3.98 6 P Pn 03 44 55.6 +0.2
comp=N,9.8nm,0.2s,baz=185,slow=12,SNR=84
ESDC S Sn 03 45 39.6 -1.8
comp=N,6.1nm,0.1s,baz=187,slow=16,SNR=4.4
ESDC Sonseca Array 3.98 6 P Pn 03 44 55.6 +0.2
comp=N,9.8nm,0.2s,SNR=84
ESDC S Sn 03 45 39.6 -1.8
comp=N,6.1nm,0.1s,SNR=4.4
EVO Evora 3.98 316 ⇑*e*P Pn 03 44 55.7 +0.3
EVO *e*S Sn 03 45 40.2 -1.3
EVO A A 03 45 42.4
comp=N,55nm,0.4s
EVO Evora 3.98 316 P Pn 03 44 55.7 +0.3
EVO S Sn 03 45 40.2 -1.3
comp=N,55nm,0.4s
EVO Evora 3.98 316 P Pn 03 44 55.7 +0.3
EVO *e*S Sn 03 45 40.2 -1.3
comp=N,55nm,0.4s
PESTR Estremoz 4.01 323 *e*P Pn 03 44 56.1 +0.4
PESTR *e*S Sn 03 45 41.1 -0.9
PESTR A A 03 45 43.4
comp=N,20nm,0.7s
PESTR Estremoz 4.01 323 P Pn 03 44 56.1 +0.4
PESTR S Sn 03 45 41.1 -0.9
comp=N,20nm,0.7s
PESTR Estremoz 4.01 323 P Pn 03 44 56.1 +0.4
PESTR *e*S Sn 03 45 41.1 -0.9
comp=N,20nm,0.7s
PNCL Nicolau / Gran 4.03 308 ⇑*e*P Pn 03 44 56.0 0.0
PNCL *e*S Sn 03 45 40.9 -1.6
PNCL A A 03 45 42.1
comp=N,41nm,0.3s
PNCL Nicolau / Gran 4.03 308 ⇑*e*P Pn 03 44 56.0 0.0
PNCL *e*S Sn 03 45 40.9 -1.6
comp=N,41nm,0.3s
MOE Montemor 4.17 313 *e*P Pn 03 44 58.3 +0.4
MOE *e*S Sn 03 45 44.0 -2.0
MOE Montemor 4.17 313 P Pn 03 44 58.3 +0.4
MOE S Sn 03 45 44.0 -2.0
MOE Montemor 4.17 313 P Pn 03 44 58.3 +0.4
MOE S Sn 03 45 44.0 -2.0
PMRV Marv??o 4.37 329 ⇑*i*P Pn 03 45 01.0 +0.5
PMRV *e*S Sn 03 45 49.9 -0.8
PMRV A A 03 46 05.3
comp=N,21nm,0.7s
PMRV Marv??o 4.37 329 P Pn 03 45 01.0 +0.5
PMRV S Sn 03 45 49.9 -0.8
comp=N,21nm,0.7s
PMRV Marv??o 4.37 329 P Pn 03 45 01.0 +0.5
PMRV *e*S Sn 03 45 49.9 -0.8
comp=N,21nm,0.7s
PMTG Montargil 4.48 320 *e*P Pn 03 45 02.1 +0.1
PMTG *e*S Sn 03 45 51.9 -1.5
PMTG A A 03 46 06.9
comp=N,17nm,0.6s
PMTG Montargil 4.48 320 *e*P Pn 03 45 02.1 +0.1
PMTG *e*S Sn 03 45 51.9 -1.5
comp=N,17nm,0.6s
EPLA Plasencia 4.53 344 P Pn 03 45 03.6 +1.0
comp=N,12nm,0.2s,SNR=6.1
EPLA Plasencia 4.53 344 P Pn 03 45 03.6 +1.0
comp=N,12nm,0.2s,SNR=6.1
PACT Alcochete 4.62 313 *e*P Pn 03 45 04.5 +0.7
PACT *e*S Sn 03 45 55.8 -0.8
PACT A A 03 46 16.2
comp=N,25nm,0.6s
PACT Alcochete 4.62 313 *e*P Pn 03 45 04.5 +0.7
PACT *e*S Sn 03 45 55.8 -0.8
comp=N,25nm,0.6s
PCBR Castelo Branco 4.76 331 ⇑*e*P Pn 03 45 06.2 +0.6
PCBR *e*S Sn 03 45 58.8 -1.1
PCBR A A 03 46 01.9
comp=N,9.5nm,0.5s
PCBR Castelo Branco 4.76 331 P Pn 03 45 06.2 +0.6
PCBR S Sn 03 45 58.8 -1.1
comp=N,4.8nm,0.5s
PCBR Castelo Branco 4.76 331 P Pn 03 45 06.2 +0.6
PCBR *e*S Sn 03 45 58.8 -1.1
comp=N,9.5nm,0.5s
GUD Guadarrama 4.93 3 P Pn 03 45 08.6 +0.4
comp=N,3.8nm,0.3s,SNR=15
GUD S Sn 03 46 02.5 -1.8
comp=N,3.3nm,0.3s
GUD Guadarrama 4.93 3 P Pn 03 45 08.6 +0.4
comp=N,3.8nm,0.3s,SNR=15
GUD S Sn 03 46 02.5 -1.8
comp=N,3.3nm,0.3s
PTOM Tomar 4.99 323 ⇑*e*P Pn 03 45 09.1 +0.3
PTOM *e*S Sn 03 46 03.7 -1.8
PTOM A A 03 46 08.1
comp=N,23nm,0.6s
PTOM Tomar 4.99 323 P Pn 03 45 09.1 +0.3
PTOM S Sn 03 46 03.7 -1.8
comp=N,12nm,0.6s
PTOM Tomar 4.99 323 P Pn 03 45 09.1 +0.3
PTOM *e*S Sn 03 46 03.7 -1.8
comp=N,23nm,0.6s
PMAFR Mafra 5.01 312 *e*P Pn 03 45 09.4 +0.3
PMAFR *e*S Sn 03 46 05.4 -0.6
PMAFR A A 03 46 32.1
comp=N,19nm,0.7s
PMAFR Mafra 5.01 312 P Pn 03 45 08.9 -0.1
comp=N,2.5nm,0.2s,SNR=7.9
PMAFR S Sn 03 46 04.6 -1.4
comp=N,14nm,0.3s,SNR=7.9
PMAFR Mafra 5.01 312 *e*P Pn 03 45 09.4 +0.3
PMAFR *e*S Sn 03 46 04.6 -1.4
comp=N,14nm,0.3s,SNR=7.9
MTE Manteigas 5.27 334 *e*P Pn 03 45 13.0 +0.4
MTE *e*S Sn 03 46 12.4 +0.1
MTE A A 03 46 37.6
comp=N,20nm,0.7s
MTE Manteigas 5.27 334 P Pn 03 45 13.0 +0.4
MTE S Sn 03 46 12.4 +0.1
comp=N,9.9nm,0.7s
MTE Manteigas 5.27 334 P Pn 03 45 13.0 +0.4
MTE *e*S Sn 03 46 12.4 +0.1
comp=N,20nm,0.7s
ETOR Torete 5.45 20 P Pn 03 45 15.2 +0.1
comp=N,22nm,0.3s,SNR=36
ETOR S Sn 03 46 14.0 -2.7
comp=N,8.0nm,0.4s
ETOR Torete 5.45 20 P Pn 03 45 15.1 +0.1
comp=N,22nm,0.3s,SNR=36
EMOS Mosqueruela 5.62 33 P Pn 03 45 17.9 +0.4
comp=N,1.0nm,0.3s,SNR=29
EMOS S Sn 03 46 19.8 -1.2
comp=N,1.7nm,0.3s
EMOS Mosqueruela 5.62 33 P Pn 03 45 17.9 +0.4
comp=N,1.0nm,0.3s,SNR=29
EMOS S Sn 03 46 19.8 -1.2
comp=N,1.7nm,0.3s
PVIS Viseu 5.67 333 *e*P Pn 03 45 18.4 +0.4
PVIS *e*S Sn 03 46 21.1 -0.9
PVIS A A 03 46 24.3
comp=N,8.5nm,0.6s
PVIS Viseu 5.67 333 P Pn 03 45 18.4 +0.4
PVIS S Sn 03 46 21.1 -0.9
comp=N,4.2nm,0.6s
PVIS Viseu 5.67 333 P Pn 03 45 18.4 +0.4
PVIS *e*S Sn 03 46 21.1 -0.9
comp=N,8.5nm,0.6s
MVO Moncorvo 5.80 341 *e*P Pn 03 45 20.3 +0.5
MVO *e*S Sn 03 46 23.5 -1.6
MVO A A 03 46 58.8
comp=N,7.4nm,0.5s
MVO Moncorvo 5.80 341 ⇑P Pn 03 45 20.3 +0.5
comp=N,3.4nm,0.1s,SNR=18
MVO S Sn 03 46 23.8 -1.3
comp=N,1.2nm,0.1s
MVO Moncorvo 5.80 341 P Pn 03 45 20.3 +0.5
comp=N,3.4nm,0.1s,SNR=18
MVO S Sn 03 46 23.8 -1.3
comp=N,1.2nm,0.1s
PVRL Vila Real 6.11 336 *e*P Pn 03 45 24.6 +0.7
PVRL *e*S Sn 03 46 31.9 -0.6
PVRL A A 03 46 35.8
comp=N,9.5nm,0.1s
PVRL Vila Real 6.11 336 P Pn 03 45 24.6 +0.7
PVRL S Sn 03 46 31.9 -0.6
comp=N,4.8nm,0.1s
PVRL Vila Real 6.11 336 P Pn 03 45 24.6 +0.7
PVRL *e*S Sn 03 46 31.9 -0.6
comp=N,9.5nm,0.1s
POLO Lamas de Olo 6.22 336 *e*P Pn 03 45 26.9 +1.5
POLO *e*S Sn 03 46 34.1 -1.2
POLO A A 03 47 00.6
comp=N,2.6nm,0.4s
POLO Lamas de Olo 6.22 336 *e*P Pn 03 45 26.9 +1.5
POLO *e*S Sn 03 46 34.1 -1.2
comp=N,2.6nm,0.4s
PTO Porto 6.31 330 *e*P Pn 03 45 26.4 -0.1
PTO *e*S Sn 03 46 36.5 -0.8
PTO Porto 6.31 330 P Pn 03 45 26.4 -0.1
PTO S Sn 03 46 36.5 -0.8
PTO Porto 6.31 330 P Pn 03 45 26.4 -0.1
PTO S Sn 03 46 36.5 -0.8
PBRG Braganca 6.34 345 *e*P Pn 03 45 27.8 +0.9
PBRG *e*S Sn 03 46 35.7 -2.3
PBRG A A 03 47 13.3
comp=N,4.6nm,0.7s
PBRG Braganca 6.34 345 P Pn 03 45 27.8 +0.9
PBRG S Sn 03 46 35.7 -2.3
comp=N,2.3nm,0.7s
PBRG Braganca 6.34 345 P Pn 03 45 27.8 +0.9
PBRG *e*S Sn 03 46 35.7 -2.3
comp=N,4.6nm,0.7s
ERTA Horta de San J 6.46 34 P Pn 03 45 28.8 +0.2
comp=N,1.1nm,0.4s,SNR=7.9
ERTA S Sn 03 46 39.7 -1.4
comp=N,0.4nm,0.2s,SNR=7.9
ERTA Horta de San J 6.46 34 P Pn 03 45 28.8 +0.2
comp=N,1.1nm,0.4s,SNR=7.9
ERTA S Sn 03 46 39.7 -1.4
comp=N,0.4nm,0.2s,SNR=7.9
ECAL Calabor 6.47 345 P Pn 03 45 30.2 +1.5
comp=N,1.8nm,0.2s,SNR=5.2
ECAL S Sn 03 46 40.1 -1.1
comp=N,1.3nm,0.1s
ECAL Calabor 6.47 345 P Pn 03 45 30.2 +1.5
comp=N,1.8nm,0.2s,SNR=5.2
ECAL S Sn 03 46 40.1 -1.1
comp=N,1.3nm,0.1s
ELOB Lobios 6.75 337 P Pn 03 45 34.3 +1.7
comp=N,2.2nm,0.1s,SNR=14
ELOB S Sn 03 46 45.7 -2.4
comp=N,1.5nm,0.2s,SNR=7.9
ELOB Lobios 6.75 337 P Pn 03 45 34.3 +1.7
comp=N,2.2nm,0.1s,SNR=14
ELOB S Sn 03 46 45.7 -2.4
comp=N,1.5nm,0.2s,SNR=7.9
PGAV Gavieira, Arco 6.91 336 *e*P Pn 03 45 36.1 +1.4
PGAV *e*S Sn 03 46 51.4 -0.5
PGAV Gavieira, Arco 6.91 336 *e*P Pn 03 45 36.1 +1.4
PGAV *e*S Sn 03 46 51.4 -0.5
ELAN Lanestosa 7.56 6 P Pn 03 45 45.7 +2.4
comp=N,1.7nm,0.3s,SNR=6.6
ELAN S Sn 03 47 04.9 -2.6
comp=N,0.5nm,0.1s,SNR=7.9
ELAN Lanestosa 7.56 6 P Pn 03 45 45.7 +2.4
comp=N,1.7nm,0.3s,SNR=6.6
ELAN S Sn 03 47 04.9 -2.6
comp=N,0.5nm,0.1s,SNR=7.9
IELO Elcoad 7.56 18 P Pn 03 45 44.4 +1.0
comp=N,0.6nm,0.2s,SNR=7.9
IELO S Sn 03 47 05.2 -2.3
comp=N,2.1nm,0.4s,SNR=7.9
IELO Elcoad 7.56 18 P Pn 03 45 44.4 +1.0
comp=N,0.6nm,0.2s,SNR=7.9
IELO S Sn 03 47 05.2 -2.3
comp=N,2.1nm,0.4s,SNR=7.9
EARI Arriondas 7.60 356 P Pn 03 45 45.9 +1.9
comp=N,0.2nm,0.1s,SNR=7.7
EARI S Sn 03 47 06.2 -2.4
comp=N,5.0nm,0.6s,SNR=7.9
EARI Arriondas 7.60 356 P Pn 03 45 45.9 +1.9
comp=N,0.2nm,0.1s,SNR=7.7
EARI S Sn 03 47 06.2 -2.4
comp=N,5.0nm,0.6s,SNR=7.9
EAGO Agolada(Pontev 7.61 340 P Pn 03 45 46.1 +2.0
comp=N,1.1nm,0.1s,SNR=7.9
EAGO S Sn 03 47 06.8 -2.1
comp=N,1.7nm,0.3s,SNR=7.9
EAGO Agolada(Pontev 7.61 340 P Pn 03 45 46.1 +2.0
comp=N,1.1nm,0.1s,SNR=7.9
EAGO S Sn 03 47 06.8 -2.1
comp=N,1.7nm,0.3s,SNR=7.9
ELIZ Elizondo 7.79 16 P Pn 03 45 48.7 +2.2
comp=N,1.4nm,0.2s,SNR=8.3
ELIZ S Sn 03 47 09.3 -3.7
comp=N,0.5nm,0.3s,SNR=7.9
ELIZ Elizondo 7.79 16 P Pn 03 45 48.7 +2.2
comp=N,1.4nm,0.2s,SNR=8.3
ETSF Etsaut 7.80 22 *e*P Pn 03 45 48.8 +2.2
ETSF *e*Sn Sn 03 47 07.3 -6.0
comp=N,0.4nm,0.2s
ETSF Etsaut 7.80 22 P Pn 03 45 48.8 +2.2
ETSF S Sn 03 47 07.3 -6.0
comp=N,0.2nm,0.2s
ETSF Etsaut 7.80 22 P Pn 03 45 48.8 +2.2
SJPF Ste Jean 7.81 18 *e*P Pn 03 45 47.8 +1.0
SJPF *e*Sn Sn 03 47 07.7 -5.9
comp=N,1.1nm,0.3s
SJPF Ste Jean 7.81 18 P Pn 03 45 47.8 +1.0
SJPF S Sn 03 47 07.7 -5.9
comp=N,0.6nm,0.3s
SJPF Ste Jean 7.81 18 P Pn 03 45 47.8 +1.0
EALK Alkurruntz 7.85 16 P Pn 03 45 49.1 +1.8
comp=N,1.7nm,0.3s,SNR=7.8
EALK S Sn 03 47 12.9 -1.6
comp=N,3.0nm,0.3s,SNR=7.9
EALK Alkurruntz 7.85 16 P Pn 03 45 49.1 +1.8
comp=N,1.7nm,0.3s,SNR=7.8
EALK S Sn 03 47 12.9 -1.6
comp=N,3.0nm,0.3s,SNR=7.9
EPON Pontenova 7.88 346 P Pn 03 45 49.9 +2.2
comp=N,1.5nm,0.3s,SNR=5.6
EPON S Sn 03 47 13.0 -2.3
comp=N,0.6nm,0.2s,SNR=7.9
EPON Pontenova 7.88 346 P Pn 03 45 49.9 +2.2
comp=N,1.5nm,0.3s,SNR=5.6
EPON S Sn 03 47 13.0 -2.3
comp=N,0.6nm,0.2s,SNR=7.9
ATE Arette 7.93 21 P Pn 03 45 50.3 +2.0
comp=N,2.9nm,0.4s,SNR=7.9
ATE S Sn 03 47 14.6 -1.8
comp=N,0.4nm,0.2s,SNR=7.9
ATE Arette 7.93 21 P Pn 03 45 50.3 +2.0
comp=N,2.9nm,0.4s,SNR=7.9
ATE S Sn 03 47 14.6 -1.8
comp=N,0.4nm,0.2s,SNR=7.9
CSOR Sort 7.96 32 P Pn 03 45 49.8 +0.9
comp=N,1.7nm,0.3s,SNR=6.8
CSOR Sort 7.96 32 P Pn 03 45 49.8 +0.9
comp=N,1.7nm,0.3s,SNR=6.8
EPF Esparros 8.21 26 *e*Pn Pn 03 45 51.5 -0.7
EPF Esparros 8.21 26 Pn Pn 03 45 51.5 -0.7
EPF Esparros 8.21 26 Pn Pn 03 45 51.5 -0.7
CLLI Llivia 8.42 35 P Pn 03 45 56.6 +1.5
comp=N,1.0nm,0.4s,SNR=7.9
CLLI Llivia 8.42 35 P Pn 03 45 56.6 +1.5
comp=N,1.0nm,0.4s,SNR=7.9
QUIF Quistinic 12.24 4 *e*P Pn 03 46 47.3 +1.4
QUIF Quistinic 12.24 4 P Pn 03 46 47.3 +1.4
QUIF Quistinic 12.24 4 P Pn 03 46 47.3 +1.4
SGMF Saint Gilles 12.62 6 *e*P Pn 03 46 52.1 +1.3
SGMF Saint Gilles 12.62 6 P Pn 03 46 52.1 +1.3
SGMF Saint Gilles 12.62 6 P Pn 03 46 52.1 +1.3
ROSF Rostrenen 12.65 4 *e*P Pn 03 46 53.8 +2.5
ROSF Rostrenen 12.65 4 P Pn 03 46 53.8 +2.5
ROSF Rostrenen 12.65 4 P Pn 03 46 53.8 +2.5
GERES GERESS Array B 18.74 40 P P 03 48 04.9 0.0
comp=N,0.1nm,0.3s,baz=230,slow=18,SNR=3.8
TORD Torodi Ar. Bea 23.15 165 P P 03 48 48.4 -2.9
comp=N,0.1nm,0.4s,baz=338,slow=12,SNR=6.0
KURBB Kurchatov Arra 59.27 47 P P 03 53 43.0 -1.1
comp=N,0.4nm,0.3s,baz=295,slow=7.2,SNR=4.7
MKAR Makanchi Array 63.02 50 P P 03 54 08.7 -0.8
comp=N,0.4nm,0.6s,baz=280,slow=7.3,SNR=6.3
YKA Yellowknife Ar 67.38 332 P P 03 54 38.2 +1.0
comp=N,0.5nm,0.5s,baz=60,slow=6.4,SNR=17

*IDC **06** 03:45:54.6±1.1, 0°.88N×124°.57E, h0km, mb3.6/5, mb1 3.7/5, mb1mx3.5/43, mbtmp3.7/5, Error ellipse: s-maj=67.1km s-min=20.3km az=74.0*
*ISCJB **06** 03:46:06.5±0.8, 0°.75N±0°.07×125°.10E±0°.05, h87km, mb3.5/5, Error ellipse: s-maj=10.5km s-min=6.6km az=15.7*
*DJA **06** 03:46:09.7±0.5, 1°N±4°×12°5E±°, h82km±13km, M4.3/9, mB5.0/1, mb4.5/1, MLv4.2/9, Mw(mB)4.3/1*
ISC 06 03:46:05.8±0.9, 0°.82N±0°.07×125°.08E±0°.05, h87km, n14, σ2s.30/19, mb3.9/5, Northern Molucca Sea

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
KMSI	Cibinong	1.13	257	P	Pn	03 46 29.1	+2.3
KMSI				S	Sn	03 46 46.0	+3.4
TNTI	Ternate	2.29	91	P	Pn	03 46 44.8	+3.1
LBMI	Labuha	2.82	121	P	Pn	03 46 51.9	+3.0
LUWI	Luwuk	2.96	231	P	Pn	03 46 52.7	+2.0
LUWI				S	Sn	03 47 24.2	-1.2
SANI	Sanana	2.99	162	P	Pn	03 46 53.5	+2.3
SANI				S	Sn	03 47 24.5	-1.6
MRSI	Marisa	3.16	264	P	Pn	03 46 54.6	+1.2
APSI	Ampana	3.84	243	P	Pn	03 47 05.3	+2.7
NLAI	Namlea	4.51	153	P	Pn	03 47 13.4	+1.6
NLAI				S	Sn	03 48 01.4	-1.6
MSAI	Masohi	5.65	137	P	Pn	03 47 29.5	+2.2
WRA	Warramunga Arr	22.54	157	P	P	03 50 57.7	-1.1
	0.4nm,0.6s,baz=336,slow=10,SNR=2.8						
ASAR	Alice Springs	25.81	161	P	P	03 51 31.1	+2.1
	0.2nm,0.4s,baz=350,slow=15,SNR=4.7						
USRK	Ussuriysk Ar.	43.63	7	P	P	03 54 01.5	-0.1
	0.9nm,0.4s,baz=191,slow=8.2,SNR=6.1						
KLR	Kul'dur	48.56	6	P	P	03 54 39.4	-0.9
	1.1nm,0.4s,baz=197,slow=6.5,SNR=6.3						
MKAR	Makanchi Array	59.04	327	P	P	03 55 54.2	-2.6
	0.4nm,0.3s,baz=121,slow=8.3,SNR=9.6						
MKAR				PcP	PcP	03 56 42.9	-1.9
	0.4nm,0.6s,baz=127,slow=3.2,SNR=4.0						

*ISK **06** 03:46:05.1, 39°.07N×41°.26E, h2km, MD2.8*
*ISCJB **06** 03:46:07.3±0.5, 39°.17N±0°.04×41°.23E±0°.04, h7km±7km, Error ellipse: s-maj=7.6km s-min=4.4km az=150.7*
*CSEM **06** 03:46:07.2±0.3, 39°.14N×41°.31E, h10km, MD2.8, Error ellipse: s-maj=8.0km s-min=4.8km az=160.0*
*DDA **06** 03:46:07.1, 39°.17N×41°.23E, h7km, Md2.8*
ISC 06 03:46:06.3±0.9, 39°.12N±0°.04×41°.26E±0°.03, h14km±7km, n20, σ0s.56/30, Turkey

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
VRTB	Varto-Mus	0.16	76	ePG	Pg	03 46 09.7	-0.7
VRTB	Varto-Mus	0.16	76	ePg	Pg	03 46 09.7	-0.7
BNGL	BINGOL	0.19	206	i P	Pg	03 46 10.7	-0.1
BNGL				i S	Sb	03 46 16.3	+1.0
BNGB	Bing˜¶l	0.47	254	ePG	Pg	03 46 14.8	-0.8
BNGB				eSG	Sg	03 46 22.4	+0.5
BGOL	Bingol	0.47	254	i P	Pn	03 46 18.6	-0.2
BGOL				i S	Sb	03 46 24.0	+0.6
BGOL	Bingol	0.47	254	P	Pn	03 46 18.6	-0.2
BGOL				S	Sb	03 46 24.0	+0.6
EKAR	Karacoban	0.64	78	i P	Pb	03 46 19.3	-0.2
EKAR				i S	Sn	03 46 30.8	-0.6
EKAR	Karacoban	0.64	78	P	Pb	03 46 19.3	-0.2
EKAR				S	Sn	03 46 30.8	-0.6
EZM	Erzurum	0.79	6	ePG	Pb	03 46 22.1	+0.2
EZM	Erzurum	0.79	6	ePg	Pb	03 46 22.1	+0.2
ERZM	Erzurum	0.79	6	i P	Pb	03 46 21.9	-0.1
ERZM				i S	Sg	03 46 32.4	+0.4
ERZM	Erzurum	0.79	6	P	Pb	03 46 21.9	-0.1
ERZM				S	Sg	03 46 32.4	+0.4
EATA	Eleskirt	1.21	52	i P	Pg	03 46 29.6	0.0
EATA				i S	Sg	03 46 46.5	+1.1
EATA	Eleskirt	1.21	52	P	Pg	03 46 29.6	0.0
EATA				S	Sg	03 46 46.5	+1.1
AGRB	Hanur-Agry	1.42	71	ePN	Pg	03 46 33.1	-0.5
AGRB	Hanur-Agry	1.42	71	ePn	Pg	03 46 33.1	-0.5
PTK	Pertek	1.47	262	ePN	Pb	03 46 33.4	-0.1
PTK	Pertek	1.47	262	ePn	Pb	03 46 33.4	-0.1
BAYT	Ayd˜–ntepe-Bay	1.53	326	ePN	Pg	03 46 35.3	-0.5
BAYT	Ayd˜–ntepe-Bay	1.53	326	ePn	Pg	03 46 35.3	-0.5

*ISCJB **06** 03:47:30.0±0.5, 38°.33N±0°.03×27°.23E±0°.06, h9km±6km, Error ellipse: s-maj=8.1km s-min=4.3km az=160.1*
*DDA **06** 03:47:29.8, 38°.32N×27°.25E, h7km, Md2.6*
*ISK **06** 03:47:29.5, 38°.33N×27°.22E, h14km, MD2.6*
*CSEM **06** 03:47:30.3±0.2, 38°.33N×27°.23E, h8km, MD2.6, Error ellipse: s-maj=5.7km s-min=4.2km az=65.0*
ISC 06 03:47:29.9±0.9, 38°.33N±0°.02×27°.25E±0°.03, h12km±6km, n24, σ0s.32/40, Turkey

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
IZM	Izmir	0.07	11	ePG	Pg	03 47 32.6	+0.2
IZM	Izmir	0.07	11	ePg	Pg	03 47 32.6	+0.2
BLCB	Balcova	0.17	288	ePG	Pg	03 47 33.7	0.0
BLCB				eSG	Sg	03 47 36.3	-0.2
BLCB	Balcova	0.17	288	ePg	Pg	03 47 33.7	0.0
BLCB				eSg	Sg	03 47 36.3	-0.2
GCAM	G?zelcaml?	0.63	181	i P	Pg	03 47 42.0	-0.2
GCAM				i S	Sg	03 47 50.5	0.0
GCAM	G?zelcaml?	0.63	181	P	Pg	03 47 42.0	-0.2
GCAM				S	Sg	03 47 50.5	0.0
AYDB	Zeytinkoy-Aydi	0.64	127	ePG	Pg	03 47 42.7	+0.4
AYDB	Zeytinkoy-Aydi	0.64	127	ePg	Pg	03 47 42.7	+0.4
AKHS	Akhisar	0.70	39	i P	Pg	03 47 43.5	-0.1
AKHS				i S	Sb	03 47 54.4	+0.6
AKHS	Akhisar	0.70	39	P	Pg	03 47 43.5	-0.1
AKHS				S	Sb	03 47 54.4	+0.6
DKL	Dikili	0.78	340	ePG	Pb	03 47 45.3	-0.2
DKL	Dikili	0.78	340	ePg	Pb	03 47 45.3	-0.2
AYDN	Tasoluk	0.84	143	i P	Pb	03 47 46.4	0.0
AYDN				i S	Sb	03 47 57.5	-0.1
AYDN	Tasoluk	0.84	143	P	Pb	03 47 46.4	0.0
AYDN				S	Sb	03 47 57.5	-0.1
AYVA	Ayvalik	1.07	336	i P	Pn	03 47 51.4	+0.8
AYVA				i S	Sg	03 48 04.2	-0.1
AYVA	Ayvalik	1.07	336	P	Pn	03 47 51.4	+0.8
AYVA				S	Sg	03 48 04.2	-0.1
KULA	Kula-Manisa	1.12	80	ePN	Pn	03 47 51.5	-0.1
KULA	Kula-Manisa	1.12	80	ePn	Pn	03 47 51.5	-0.1
DEMI	Demirci	1.35	58	i P	Pg	03 47 55.9	0.0
DEMI				i S	Sg	03 48 13.1	-0.3
DEMI	Demirci	1.35	58	P	Pg	03 47 55.9	0.0
DEMI				S	Sg	03 48 13.1	-0.3
BALY	Balya	1.44	12	i P	Pb	03 47 56.2	-0.5
BALY				i S	Sn	03 48 14.1	-0.6
DURS	Dursunbey	1.59	37	i P	Pn	03 47 57.5	-0.4
DURS				i S	Sn	03 48 18.5	+0.1
KHAL	Karahalli	1.77	88	i P	Pg	03 48 04.0	+0.2
KHAL				i S	Sb	03 48 24.7	+0.3
KHAL	Karahalli	1.77	88	P	Pg	03 48 04.0	+0.2
KHAL				S	Sb	03 48 24.7	+0.3

*NIED **06** 03:51:00, 35°.60N×142°.90E, h5km, Mw3.7 Best double couple: $M_0$3.45000×10^14 NP1:ϕ_s23.00000°, δ38.00000°, λ-62.00000°. NP2:ϕ_s169.00000°, δ57.00000°, λ-110.00000°.*
*IDC **06** 03:51:30.0±0.8, 35°.45N×142°.89E, h0km, mb3.4/9, mb1 3.7/11, mb1mx3.6/51, mbtmp3.5/11, ML3.7/2, MS2.5/2, Ms1 2.5/2, ms1mx2.2/34, Error ellipse: s-maj=23.8km s-min=19.4km az=129.0*
*JMA **06** 03:51:33.4±0.3, 35°.58N×142°.95E, h74km, M3.5*
*ISCJB **06** 03:51:35.9±0.6, 35°.40N±0°.07×142°.69E±0°.07, h59km, mb3.4/9, Error ellipse: s-maj=10.3km s-min=7.7km az=160.0*
ISC 06 03:51:37.5±0.8, 35°.40N±0°.08×142°.69E±0°.09, h59km, n18, σ0s.86/19, mb3.4/9, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
CHOJ	Chosi	1.52	282	P	Pn	03 52 02.1	-0.3
BSO3	Boso 3	1.88	252	P	Pn	03 52 07.3	+0.2
BSO4	Boso 4	1.97	259	P	Pn	03 52 09.0	+0.6
JAG	Ashikaga	2.82	292	P	Pn	03 52 19.0	-1.1
JOD2	Odawara 2	2.95	268	P	Pn	03 52 21.5	-0.4
JHJ	Hachijo jima 2	3.31	227	Pn	Pn	03 52 25.7	-1.2
	32nm,0.3s,baz=86,slow=24,SNR=18						
JHJ				Sn	Sn	03 53 04.2	-0.7
	52nm,0.3s,baz=79,slow=21,SNR=10.0						
JHJ				LR	LR	03 54 38.1	
	comp=Z,38nm,18.6s,baz=266,slow=54						
MJAR	Matsushiro Arr	3.81	289	Pn	Pn	03 52 33.5	-0.2
	3.3nm,0.3s,baz=91,slow=14,SNR=15						
MAT	Matsushiro	3.81	289	P	Pn	03 52 34.0	+0.3
MAT				S	Sn	03 53 16.5	-0.7
JNU	Nakatsue	10.04	260	LR	LR	03 58 25.2	
	comp=Z,42nm,18.4s,baz=118,slow=41						
SONM	Songino Array	29.57	306	P	P	03 57 36.7	0.0
	0.2nm,0.4s,baz=86,slow=9.2,SNR=3.1						
MKAR	Makanchi Array	45.87	304	P	P	03 59 55.0	+1.1
	0.3nm,0.6s,baz=87,slow=10,SNR=4.1						
ILAR	Eielson Array	50.33	32	P	P	04 00 27.4	-0.6
	0.4nm,0.8s,baz=260,slow=6.0,SNR=4.5						
WRA	Warramunga Arr	55.60	190	P	P	04 01 07.6	+0.4
	1.0nm,0.9s,baz=7.3,slow=7.6,SNR=3.7						
ASAR	Alice Springs	59.33	189	P	P	04 01 34.6	+1.1
	0.2nm,0.5s,baz=12,slow=18,SNR=4.3						
YKA	Yellowknife Ar	64.70	30	P	P	04 02 08.5	-0.4
	0.2nm,0.8s,baz=297,slow=5.7,SNR=4.2						
NVAR	Mina Array Bea	75.14	53	P	P	04 03 12.3	-1.4
	0.7nm,0.3s,baz=79,slow=32,SNR=4.3						
AKASG	Malin Array Be	76.22	323	P	P	04 03 19.5	+0.1
	0.1nm,0.3s,baz=44,slow=4.6,SNR=4.5						
PDAR	Pinedale Array	78.07	46	P	P	04 03 31.7	+1.5
	0.1nm,0.5s,baz=293,slow=4.7,SNR=2.6						

JMA 06 03:54:09.2±0.2, 38°.40N×142°.28E, h25km±2km, M3.6, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
JIO	Ouri	0.73	275	P	Pb	03 54 23.1	-0.2
JIO				S	Sb	03 54 32.4	-0.5
OFUJ	Ofunato	0.83	325	P	Pb	03 54 24.6	-0.4
JMK	Ichinoseki	1.00	304	P	Pn	03 54 27.4	-0.2
JMK				S	Sb	03 54 40.5	0.0
MIYJ	Miyakonagasawa	1.23	343	P	Pn	03 54 30.6	-0.2
MIYJ				S	Sn	03 54 46.5	-0.1
JOU	Okura	1.27	269	P	Pn	03 54 31.7	+0.3
JOU				S	Sn	03 54 47.6	0.0
JMM	Marumori	1.29	246	P	Pn	03 54 31.1	-0.5
JOM	Ohasama	1.32	325	P	Pb	03 54 32.8	-0.5
JOM				S	Sb	03 54 49.7	-0.1
JYK	Kaneyama	1.59	290	P	Pb	03 54 36.9	-1.0
JYK				S	Sn	03 54 56.3	+0.8
JRG	Rokugo	1.62	308	P	Pb	03 54 37.4	-1.1
JKZ	Kuzumaki	1.75	335	P	Pn	03 54 38.7	+0.7
JYS	Shirataka	1.75	265	P	Pn	03 54 39.0	+1.0
JYS				eS	Sn	03 55 00.4	+0.9
JFT	Otama	1.77	241	P	Pn	03 54 39.3	+1.1
JFT				eS	Sn	03 55 01.3	+1.3

IDC 06 03:56:06.1±22.0, 19°.28S×67°.47W, h240km±117km, mb3.0/2, mb1 3.1/4, mb1mx2.9/26, mbtmp3.5/4, MS2.4/1, Ms1 2.4/1, ms1mx2.1/6, Error ellipse: s-maj=414.4km s-min=32.7km az=16.0, Southern Bolivia

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
LPAZ	La Paz	3.04	348	P	Pn	03 56 59.1	0.0
	0.4nm,0.3s,baz=183,slow=5.3,SNR=9.1						
SIV	San Ignacio	6.92	63	P	Pn	03 57 45.9	0.0
	1.0nm,0.3s,baz=249,slow=10,SNR=21						
SIV				LR	LR	03 59 57.7	
	comp=Z,28nm,20.7s,baz=202,slow=33						
TORD	Torodi Ar. Bea	75.34	70	P	P	04 07 23.7	0.0
	0.4nm,0.5s,baz=253,slow=5.1,SNR=11						
YKA	Yellowknife Ar	89.56	340	P	P	04 08 35.8	0.0
	0.1nm,0.5s,baz=133,slow=4.8,SNR=5.5						

*ISCJB **06** 03:57:30.4±0.7, 41°.08N±0°.05×40°.08E±0°.04, h10km±5km, Error ellipse: s-maj=8.0km s-min=4.2km az=157.4*
*DDA **06** 03:57:30.0, 41°.13N×40°.12E, h7km, Md2.7*
*CSEM **06** 03:57:30.5±0.2, 41°.08N×40°.08E, h15km, MD2.6, Error ellipse: s-maj=5.6km s-min=2.7km az=161.0*
*ISK **06** 03:57:31.7, 40°.98N×39°.98E, h20km, MD2.6*
ISC 06 03:57:29.3±1.2, 41°.08N±0°.05×40°.09E±0°.03, h6km±10km, n25, σ0s.37/48, Turkey

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
KTUT	Trabzon	0.26	249	ePG	Pb	03 57 36.6	+0.1
KTUT				eSG	Sb	03 57 40.3	-0.9
KTUT	Trabzon	0.26	249	ePg	Pb	03 57 36.6	+0.1
KTUT				eSg	Sb	03 57 40.3	-0.9
MACK	Trabzon	0.28	240	i P	Pb	03 57 37.0	+0.2
MACK				i S	Sb	03 57 41.4	-0.4
MACK	Trabzon	0.28	240	P	Pb	03 57 37.0	+0.2
MACK				S	Sb	03 57 41.4	-0.4
BAYT	Ayd˜–ntepe-Bay	0.69	177	ePG	Pb	03 57 44.0	+0.1
BAYT				eSG	Sb	03 57 52.9	-0.8
BAYT	Ayd˜–ntepe-Bay	0.69	177	ePg	Pb	03 57 44.0	+0.1
BAYT				eSg	Sb	03 57 52.9	-0.8
GUMT	Gumushane	0.78	217	ePG	Pg	03 57 44.8	+0.6
GUMT				eSG	Sg	03 57 54.1	-0.1
GUMT	Gumushane	0.78	217	ePg	Pg	03 57 44.8	+0.6
GUMT				eSg	Sg	03 57 54.2	-0.1
ESPY	Espiye-Giresun	1.05	261	ePG	Pb	03 57 50.0	+0.2
ESPY	Espiye-Giresun	1.05	261	ePg	Pb	03 57 50.0	+0.2
KOPT	Kop Dagi	1.11	164	i P	Pn	03 57 52.0	+0.4
KOPT				i S	Sn	03 58 07.6	+0.3
KOPT	Kop Dagi	1.11	164	P	Pn	03 57 52.0	+0.4
KOPT				S	Sn	03 58 07.6	+0.3
KELT	Kelkit	1.13	215	i P	Pg	03 57 51.1	+0.1
KELT				i S	Sg	03 58 05.2	-0.4
KELT	Kelkit	1.13	215	P	Pg	03 57 51.1	+0.1
KELT				S	Sg	03 58 05.2	-0.4
DBAD	Bademkaya	1.21	93	i P	Pn	03 57 53.0	+0.1
DBAD				i S	Sn	03 58 09.4	-0.3
DBAD	Bademkaya	1.21	93	P	Pn	03 57 53.0	+0.1
DBAD				S	Sn	03 58 09.4	-0.3
DBOC	Borcka	1.22	77	i P	Pb	03 57 52.8	+0.1
DBOC				i S	Sb	03 58 08.8	+0.1
DBOC	Borcka	1.22	77	P	Pb	03 57 52.8	+0.1
DBOC				S	Sb	03 58 08.8	+0.1
DDEM	Demirkent	1.27	98	i P	Pg	03 57 53.6	-0.1
DDEM				i S	Sn	03 58 11.6	+0.5
DDEM	Demirkent	1.27	98	P	Pg	03 57 53.6	-0.1
DDEM				S	Sn	03 58 11.6	+0.5
DAGI	Agillar	1.38	90	i P	Pg	03 57 55.7	-0.1
DAGI				i S	Sg	03 58 13.7	0.0
ARTV	Artvin	1.39	85	i P	Pn	03 57 55.6	+0.1
ARTV				i S	Sg	03 58 13.8	-0.2
ARTV	Artvin	1.39	85	P	Pn	03 57 55.6	+0.1
ARTV				S	Sg	03 58 13.9	-0.2
SUSE	Susehri	1.68	239	i P	Pb	03 58 00.6	-0.2
SUSE				i S	Sn	03 58 21.6	+0.3
SUSE	Susehri	1.68	239	P	Pb	03 58 00.6	-0.2
SUSE				S	Sn	03 58 21.6	+0.3

*IDC **06** 04:01:03.8±2.1, 5°.35N×126°.50E, h86km±14km, mb3.8/14, mb1 3.8/14, mb1mx3.6/56, mbtmp4.1/14, MS2.7/1, Ms1 2.9/1, ms1mx2.3/43, Error ellipse: s-maj=86.1km s-min=11.3km az=69.0*
ISC 06 04:01:01.1±0.8, 5°.5N±0°.2×126°.9E±0°.3, h66km, n17, σ0s.77/19, mb4.2/14, Mindanao

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
DAV	Davao City (W)	2.08	321	P	Pn	04 01 34.3	+0.5
	46nm,0.3s,baz=144,slow=8.7,SNR=3.0						
DAV				S	Sn	04 01 59.7	+1.0
	95nm,0.3s,baz=285,slow=18,SNR=4.7						
FITZ	Fitzroy Crossi	23.43	183	P	P	04 06 04.5	-0.2
	1.8nm,0.4s,baz=7.1,slow=8.1,SNR=3.2						
WRA	Warramunga Arr	26.27	164	P	P	04 06 32.2	+1.7
	1.9nm,0.7s,baz=343,slow=10,SNR=6.0						
ASAR	Alice Springs	29.73	167	P	P	04 07 01.4	0.0
	0.3nm,0.4s,baz=350,slow=7.2,SNR=6.6						
CMAR	Chiang Mai Arr	30.20	298	LR	LR	04 18 56.7	
	comp=Z,16nm,21.7s,baz=105,slow=36						
STKA	Stephens Creek	39.67	160	P	P	04 08 27.6	+0.8
	2.1nm,0.6s,baz=332,slow=8.9,SNR=4.8						
SONM	Songino Array	45.74	341	P	P	04 09 16.4	+0.4
	0.4nm,0.3s,baz=158,slow=7.2,SNR=3.1						
SONM				PcP	PcP	04 10 53.3	+0.5
	0.5nm,0.8s,baz=147,slow=3.4,SNR=2.8						
MKAR	Makanchi Array	56.26	325	P	P	04 10 33.8	-1.1
	1.1nm,0.4s,baz=116,slow=8.1,SNR=12						
MKAR				PcP	PcP	04 11 31.8	+0.1
	1.0nm,0.7s,baz=106,slow=5.2,SNR=5.4						
ZALV	Zalesovo Beam	59.15	333	P	P	04 10 54.3	-0.6
	1.1nm,0.3s,baz=120,slow=6.9,SNR=3.8						
KURBB	Kurchatov Arra	60.40	327	P	P	04 11 02.5	-1.1
	1.9nm,0.7s,baz=124,slow=6.4,SNR=20						
BVAR	Borovoye Array	65.99	327	P	P	04 11 40.8	+0.3
	1.4nm,0.5s,baz=134,slow=8.4,SNR=6.1						
AKTO	Aktyubinsk	72.43	321	P	P	04 12 19.9	-0.6
	1.7nm,0.6s,baz=94,slow=12,SNR=6.0						
ARU	Arti	73.59	327	P	P	04 12 27.4	+0.2
	2.9nm,0.2s,baz=31,slow=5.9,SNR=4.0						
ARCES	ARCESS Array B	88.91	340	P	P	04 13 47.2	-0.8
	1.2nm,0.8s,baz=86,slow=7.8,SNR=6.2						
FINES	FINESS Array B	90.41	332	P	P	04 13 55.2	0.0
	0.7nm,0.6s,baz=46,slow=8.2,SNR=4.3						
AKASG	Malin Array Be	90.68	321	P	P	04 13 56.4	-0.2
	0.6nm,0.6s,baz=74,slow=4.0,SNR=4.0						
TORD	Torodi Ar. Bea	122.54	289	PKP	PKPdf	04 19 49.6	-0.6
	0.4nm,0.4s,baz=74,slow=1.8,SNR=13						

*ISCJB **06** 04:04:24.3±0.8, 21°.53N±0°.10×143°.4E±0°.1, h250km, mb4.0/19, Error ellipse: s-maj=18.5km s-min=13.8km az=175.1*
*IDC **06** 04:04:28.0±3.4, 21°.65N×143°.40E, h266km±27km, mb3.7/20, mb1 3.8/21, mb1mx3.6/60, mbtmp4.3/21, Error ellipse: s-maj=25.0km s-min=14.7km az=174.0*
ISC 06 04:04:26.9±0.8, 21°.7N±0°.1×143°.4E±0°.2, h250km, n27, σ2s.67/28, mb4.0/19, Mariana Islands region

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
JCJ	Chichijima	5.48	348	P	Pn	04 05 49.3	+0.8
	12nm,0.3s,baz=246,slow=20,SNR=4.6						
JCJ				S	S	04 06 54.4	+0.6
	4.0nm,0.3s,baz=248,slow=19,SNR=2.4						
KSRS	Korea Array	20.64	323	P	P	04 08 48.4	+0.7
	4.0nm,0.8s,baz=146,slow=9.3,SNR=14						
KLR	Kul'dur	28.99	344	P	P	04 10 04.0	+0.6
	3.9nm,0.6s,baz=166,slow=8.1,SNR=15						
SONM	Songino Array	39.47	320	P	P	04 11 33.2	-0.2
	0.7nm,0.4s,baz=140,slow=8.8,SNR=5.9						
SONM				PcP	PcP	04 13 35.0	-0.8
	0.4nm,0.6s,baz=130,slow=4.5,SNR=3.5						
SEY	Seymchan	41.65	6	P	P	04 11 51.8	+1.1
	1.8nm,0.5s,baz=182,slow=6.3,SNR=10						
CMAR	Chiang Mai Arr	41.80	274	P	P	04 11 52.2	-0.4
	0.8nm,0.3s,baz=79,slow=5.9,SNR=4.5						
ZALV	Zalesovo Beam	54.34	322	P	P	04 13 27.3	-0.4
	4.7nm,0.6s,baz=103,slow=7.3,SNR=13						
ZALV				PcP	PcP	04 14 27.1	-1.2
	2.4nm,0.5s,baz=128,slow=3.4,SNR=6.2						
MKAR	Makanchi Array	54.85	313	P	P	04 13 32.0	+0.4
	1.1nm,0.6s,baz=84,slow=10,SNR=6.8						
MKAR				PcP	PcP	04 14 29.9	-0.6
	0.8nm,0.6s,baz=80,slow=4.0,SNR=6.4						
KURBB	Kurchatov Arra	57.66	317	P	P	04 13 51.0	-0.3
	3.1nm,0.5s,baz=92,slow=7.6,SNR=27						
ILAR	Eielson Array	61.92	27	P	P	04 14 19.2	-0.8
	1.6nm,0.4s,baz=262,slow=5.3,SNR=20						
BVAR	Borovoye Array	62.80	319	P	P	04 14 26.2	+0.2
	4.3nm,0.4s,baz=99,slow=8.2,SNR=28						
INK	Inuvik	67.47	24	P	P	04 14 55.5	-0.1
	0.9nm,0.5s,baz=280,slow=6.5,SNR=11						
ARU	Arti	69.38	324	P	P	04 15 07.0	-0.7
	5.6nm,0.2s,baz=101,slow=16,SNR=3.6						
YKA	Yellowknife Ar	76.34	28	P	P	04 15 48.1	-0.1
	1.3nm,0.3s,baz=292,slow=5.8,SNR=69						
ARCES	ARCESS Array B	78.98	342	P	P	04 16 02.3	-0.4
	1.6nm,0.5s,baz=80,slow=8.9,SNR=20						
KBZ	Khabaz	82.52	314	P	P	04 16 22.0	+0.1
	3.7nm,0.8s,baz=113,slow=2.4,SNR=6.3						
NVAR	Mina Array Bea	82.96	52	P	P	04 16 24.6	0.0
	1.2nm,0.6s,baz=276,slow=5.2,SNR=6.8						
FINES	FINESS Array B	83.26	335	P	P	04 16 23.8	-1.5
	3.9nm,0.5s,baz=64,slow=6.3,SNR=37						
AKASG	Malin Array Be	87.62	325	P	P	04 16 44.8	-2.1
	0.4nm,0.4s,baz=49,slow=5.0,SNR=3.3						
NOA	NORSAR Array B	89.01	339	P	P	04 16 51.6	-1.7
	0.8nm,0.7s,baz=51,slow=4.2,SNR=3.1						
BRTR	Keskin Array B	90.49	313	P	P	04 16 58.6	-2.3
	0.5nm,0.6s,baz=30,slow=5.7,SNR=3.0						
VNA2	Neumayer--Watz	127.90	192	P	Pdif	04 19 57.3	+10
	baz=313,slow=17						
VNA3	Neumayer Olymp	128.05	191	P	Pdif	04 20 01.7	+14
VNA1	Neumayer--Stat	128.29	192	P	Pdif	04 19 56.4	+7.7
TORD	Torodi Ar. Bea	128.90	309	PKP	PKPdf	04 23 04.7	-1.1
	0.3nm,0.5s,baz=22,slow=1.4,SNR=8.4						
PLCA	Paso Flores	145.60	131	PKPbc	PKPdf	04 23 34.9	-0.7
	1.6nm,0.7s,baz=283,slow=3.8,SNR=8.4						
LPAZ	La Paz	149.72	85	PKPbc	PKPbc	04 23 48.2	-0.5
	1.8nm,0.5s,baz=327,slow=1.4,SNR=4.7						

CASC 06 04:04:42.5±2.2, 8°.65N×82°.68W, h23km±4km, MD3.6, 2C-2D, Panama-Costa Rica border region

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
BRU2	Volcan	0.15	355⇓	iP	Pb	04 04 47.7	+0.2
	baz=175,slow=7.9						
BRU2				i S	Sb	04 04 51.0	+0.1
TBS2		0.15	9⇑	iP	Pn	04 04 48.6	-1.0
TBS2				i S	Sb	04 04 52.4	+1.4
BUS	Buena Vista	1.40	310	eP	Pn	04 05 06.5	-0.5
BUS				eS	Sn	04 05 25.2	+0.2
URSC	Urasca	1.60	317⇑	eP	Pn	04 05 09.8	+0.2
URSC				eS	Sb	04 05 32.3	+0.8
PNME	Penonome	2.33	94	eP	Pn	04 05 21.0	+1.5
AZU	Azuero	2.53	109⇓	eP	Pn	04 05 23.1	+1.0
AZU				i S	Sn	04 05 52.2	-0.1

*ISCJB **06** 04:06:30.8±0.6, 11°.6S±0°.1×124°.6E±0°.2, h33km, mb3.8/7, Error ellipse: s-maj=38.2km s-min=7.0km az=148.5*
*IDC **06** 04:06:33.2±2.5, 11°.53S×124°.65E, h39km±25km, mb3.7/7, mb1 4.0/10, mb1mx3.7/42, mbtmp4.0/10, ML4.5/3, MS2.6/1, Ms1 2.6/1, ms1mx2.3/42, Error ellipse: s-maj=85.3km s-min=16.8km az=58.0*
ISC 06 04:06:32.3±0.8, 11°.61S±0°.08×124°.7E±0°.1, h35km, n14, σ1s.96/15, mb4.0/7, South of Timor

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
BATI	Baumata	1.72	324	Pn	Pn	04 06 59.4	-0.4
	35nm,0.3s,baz=108,slow=23,SNR=59						
BATI				Sn	Sn	04 07 19.4	-1.1
	406nm,0.3s,baz=258,slow=21,SNR=22						
BATI				LR	LR	04 08 05.1	
	comp=Z,241nm,19.5s,baz=214,slow=56						
FITZ	Fitzroy Crossi	6.52	172	Pn	Pn	04 08 07.3	+1.5
	6.8nm,0.3s,baz=4.5,slow=7.4,SNR=49						
FITZ				Sn	Sn	04 09 16.9	-1.9
	16nm,0.3s,baz=248,slow=19,SNR=17						
FITZ				LR	LR	04 10 54.6	
	comp=Z,53nm,21.5s,baz=40,slow=40						
WRA	Warramunga Arr	12.45	133	Pn	Pn	04 09 29.6	+2.6
	2.4nm,0.3s,baz=305,slow=13,SNR=16						
WRA				Sn	Sn	04 11 42.1	-2.5
	4.2nm,0.3s,baz=300,slow=23,SNR=11						
ASAR	Alice Springs	14.86	145	Pn	Pn	04 10 01.9	+2.0
	2.6nm,0.3s,baz=318,slow=12,SNR=106						
ASAR				Sn	Sn	04 12 39.1	-4.3
	0.9nm,0.3s,baz=317,slow=22,SNR=9.6						
STKA	Stephens Creek	25.50	145	P	P	04 11 58.4	+1.0
	0.8nm,0.6s,baz=317,slow=11,SNR=2.1						
H08S2	Diego Garcia H	51.55	269	T	T	05 10 43.6	
	baz=98,slow=76,SNR=4.1						
H08S3	Diego Garcia H	51.56	269	T	T	05 10 40.5	
	baz=98,slow=76,SNR=4.7						
H08S1	Diego Carcia H	51.56	269	T	T	05 10 39.7	
	baz=98,slow=76,SNR=3.9						
SONM	Songino Array	61.38	346	P	P	04 16 44.6	-0.2
	0.5nm,0.6s,baz=169,slow=8.7,SNR=3.5						
MKAR	Makanchi Array	69.40	330	P	P	04 17 36.8	+0.2
	1.3nm,0.7s,baz=135,slow=7.7,SNR=9.6						
ZALV	Zalesovo Beam	73.55	337	P	P	04 18 01.0	-0.5
	0.6nm,0.3s,baz=147,slow=6.5,SNR=3.7						
KURBB	Kurchatov Arra	73.85	331	P	P	04 18 02.2	-1.1
	0.4nm,0.6s,baz=140,slow=5.4,SNR=3.9						

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
BVAR	**Borovoye Array** 1.1nm,0.6s,baz=132,slow=6.2,SNR=6.2	**79.28**	**330**	P	**P**	**04 18 34.5**	**+0.5**
AKTO	**Aktyubinsk** 0.7nm,0.6s,baz=100,slow=6.1,SNR=3.1	**84.58**	**324**	P	**P**	**04 19 02.6**	**+0.7**

*IDC **06** 04:08:01.3±1.7, 40.°09N×72.°78E, h0km, mb3.5/5, mb1 3.6/11, mb1mx3.4/52, mbtmp3.5/11, ML3.2/6, MS1.6/1, Ms1 1.6/1, ms1mx1.6/44, Error ellipse: s-maj=30.0km s-min=13.0km az=146.0*

*KRNET **06** 04:08:02.8±0.1, 40.°20N×72.°81E, h9km, mb3.6*

*NNC **06** 04:08:03.9±1.7, 40.°20N×72.°84E, h0km, mb3.8, mpv3.4, Error ellipse: s-maj=20.0km s-min=5.3km az=39.0*

*SOME **06** 04:08:05.1, 40.°25N×72.°83E, h10km*

ISC 06 04:08:02.7±1.2**, 40.°25N**±0.°03×**72.°87E**±0.°02**, h7**km±9km**, n46,** σ**1.s48**/68**, mb3.5**/5**, 24C-21D, Kyrgyzstan**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
SFK	**Sufi-Kurgan** baz=108	**0.54**	**116**	⇓*i*P	**Pg**	**04 08 13.9**	**+0.7**
SFK	baz=108			⇓*i*S	**Sg**	**04 08 21.9**	**+1.7**
SFK	**Sufi-Kurgan** 25nm,0.6s	**0.54**	**116**	⇓P	**Pg**	**04 08 13.8**	**+0.7**
SFK	256nm,0.4s			⇓S	**Sb**	**04 08 22.5**	**-0.3**
BTK	**Batken** baz=265	**1.59**	**264**	⇓*i*P	**Pg**	**04 08 32.3**	**-0.9**
BTK	baz=265			⇓*i*S	**Sg**	**04 08 53.7**	**0.0**
TOKL	**Toktogul** baz=2.0	**1.69**	**360**	⇑*i*P	**Pb**	**04 08 35.2**	**+1.0**
TOKL	baz=2.0			⇑*i*S	**Sg**	**04 09 00.0**	**+3.0**
ARK	**Arkit** baz=339	**1.69**	**336**	⇓*i*P	**Pb**	**04 08 34.8**	**+0.5**
ARK	baz=339			⇓*i*S	**Sg**	**04 08 58.5**	**+1.3**
ARLS	**Aral** baz=34	**1.95**	**34**	⇓*i*P	**Pb**	**04 08 40.1**	**+1.4**
ARLS	baz=34			⇓*i*S	**Sg**	**04 09 06.9**	**+1.6**
AML	**Almayashu** baz=18	**1.98**	**18**	⇓*i*P	**Pb**	**04 08 40.5**	**+1.1**
AML	baz=18			⇓*i*S	**Sg**	**04 09 08.5**	**+2.1**
MNAS	**Manas** baz=354	**2.25**	**353**	⇓*e*P	**Pb**	**04 08 43.8**	**-0.1**
MNAS	baz=354			⇓*i*S	**Sb**	**04 09 14.0**	**+2.0**
MNAS	**Manas** 31nm,0.6s	**2.25**	**353**	⇓Pn	**Pb**	**04 08 43.6**	**-0.2**
MNAS	68nm,0.4s			⇑Lg	Lg	04 09 14.6	
UCH	**Uchtor** baz=32	**2.33**	**32**	⇑*i*P	**Pb**	**04 08 45.8**	**+0.4**
UCH	baz=32			⇑*i*S	**Sb**	**04 09 17.7**	**+3.1**
EKS2	**Erkin-Say** baz=16	**2.50**	**15**	⇓*i*P	**Pb**	**04 08 49.2**	**+1.1**
EKS2	baz=16			⇓*i*S	**Sb**	**04 09 21.6**	**+2.4**
MRKS	**Merke** 71nm,0.5s	**2.51**	**6**	*e*P	**Pb**	**04 08 49.9**	**+1.7**
MRKS	365nm,0.6s			*e*S	**Sb**	**04 09 21.8**	**+2.5**
KZA	**Kyzart** baz=44	**2.56**	**44**	⇑*i*P	**Pb**	**04 08 49.3**	**0.0**
KZA	baz=44			⇑*i*S	**Sb**	**04 09 23.0**	**+1.9**
NRN	**Naryn** baz=62	**2.65**	**63**	⇑*e*P	**Pb**	**04 08 49.7**	**-1.1**
NRN	baz=62			⇑*e*S	**Sb**	**04 09 24.9**	**+1.2**
AAK	**Ala-Archa** 17nm,0.3s,baz=166,slow=6.5,SNR=44	**2.67**	**27**	Pn	**Pb**	**04 08 51.2**	**+0.2**
AAK	33nm,0.3s,baz=33,slow=19,SNR=33			Sn	**Sb**	**04 09 27.0**	**+2.8**
AAK	comp=Z,10nm,18.8s,baz=273,slow=38			LR	LR	04 09 50.8	
AAK	**Ala-Archa** baz=27	**2.67**	**27**	⇑*i*P	**Pb**	**04 08 51.3**	**+0.2**
AAK	baz=27			⇑*i*S	**Sb**	**04 09 26.7**	**+2.5**
AAK	**Ala-Archa** 30nm,0.5s	**2.67**	**27**	⇓Pn	**Pb**	**04 08 51.8**	**+0.7**
AAK	96nm,0.5s			⇑Lg	Lg	04 09 29.0	
IUG	**Iuzhnay** 36nm,0.3s	**2.86**	**312**	*e*P	**Pb**	**04 08 55.7**	**+1.5**
IUG	337nm,0.4s			*e*S	**Sg**	**04 09 32.2**	**-2.4**
KBK	**Karagaybulak** baz=33	**2.87**	**32**	⇓*i*P	**Pb**	**04 08 53.9**	**-0.5**
KBK	baz=33			⇓*i*S	**Sb**	**04 09 31.3**	**+1.6**
JBG	**Jabagly** 42nm,0.4s	**2.96**	**42**	⇑*i*P	**Pb**	**04 08 55.2**	**-0.7**
JBG	204nm,0.5s			*e*S	**Sb**	**04 09 31.0**	**-1.4**
CHMS	**Chumysh** baz=27	**3.09**	**27**	⇑*i*P	**Pb**	**04 08 56.0**	**-2.0**
CHMS	baz=27			⇑*i*S	**Sb**	**04 09 36.4**	**+0.5**
ULHL	**Ulahol** baz=51	**3.23**	**51**	⇑*i*P	Pn	04 08 57.9	+3.8
ULHL	baz=51			⇑*i*S	**Sb**	**04 09 38.7**	**-1.5**
KK31	**Karatay Array** 1.2nm,0.5s,baz=140,slow=13,SNR=81	**3.35**	**329**	Pn	**Pn**	**04 08 57.7**	**+2.0**
KK31	2.9nm,0.3s,baz=144,slow=17,SNR=22			Pg	**Pg**	**04 09 05.2**	**-1.8**
KK31	13nm,0.3s,baz=144,slow=32,SNR=5.4			⇑Lg	Lg	04 09 48.8	
TKM2	**Tokmak 2** 9.5nm,0.5s	**3.36**	**37**	⇑Pn	**Pb**	**04 09 00.9**	**-1.9**
TKM2	39nm,0.5s			⇑Lg	Lg	04 09 50.9	
BRLS	**Borolday** 2.9nm,0.4s	**3.49**	**318**	*e*P	**Pg**	**04 09 08.0**	**-1.6**
BRLS	44nm,0.4s			*e*S	**Sg**	**04 09 52.8**	**-1.9**
DGS	**Degeres** 13nm,0.6s	**3.69**	**35**	*e*P	Pb	04 09 12.0	+3.6
DGS	85nm,0.7s			*e*S	**Sg**	**04 09 59.7**	**-1.6**
IZV	**Izvestkoviy** 9.7nm,0.5s	**3.95**	**44**	*e*P	**Pg**	**04 09 17.6**	**-0.8**
IZV	104nm,0.7s			*e*S	**Sg**	**04 10 09.6**	**0.0**
TNSS	**Tian-Shan** 16nm,0.6s	**4.13**	**46**	⇑*i*P	**Pg**	**04 09 20.8**	**-1.1**
TNSS	33nm,0.6s			⇑*i*S	**Sg**	**04 10 15.5**	**0.0**
KOTS	**Kotyrbulak**	**4.35**	**45**	*e*P	**Pg**	**04 09 24.6**	**-1.5**
KOTS				*e*S	**Sg**	**04 10 21.6**	**-0.9**
KUU	**Kurty** 24nm,0.4s	**4.46**	**34**	*e*P	Pg	04 09 26.3	-1.9
KUU	34nm,0.7s			*e*S	**Sg**	**04 10 24.1**	**-1.8**
KTBS	**Karatobe**	**4.47**	**38**	*e*P	**Pg**	**04 09 26.9**	**-1.5**
KTBS				*e*S	**Sg**	**04 10 25.3**	**-1.1**
CHKK	**Chushkaly** 6.9nm,0.6s	**4.75**	**39**	*e*P	Pg	04 09 31.3	-2.3
CHKK	38nm,0.7s			*e*S	**Sg**	**04 10 33.1**	**-2.0**
ARXS	**Arharly** 3.0nm,0.7s	**5.40**	**41**	*e*P	Pb	04 09 42.7	+5.2
ARXS	40nm,0.7s			*e*S	Sg	04 10 52.3	-3.9
PDGK	**Podgornoye** 3.0nm,0.7s	**5.82**	**56**	⇓Pg	**Pg**	**04 09 53.3**	**-0.9**
PDGK	35nm,1.1s			⇑Lg	Lg	04 11 06.3	
OTUK	**Ortayu** 8.5nm,1.0s	**8.00**	**357**	⇑Lg	Lg	04 12 15.6	
MKAR	**Makanchi Array** 0.1nm,0.3s,baz=229,slow=15,SNR=2.5	**9.46**	**43**	Pn	Pn	04 10 23.3	+3.9
MKAR	0.1nm,0.3s,baz=227,slow=25,SNR=4.7			Lg	Lg	04 12 57.1	
KURBB	**Kurchatov Arra** 0.0nm,0.3s,baz=211,slow=13,SNR=4.7	**11.10**	**19**	Pn	**Pn**	**04 10 42.5**	**+0.6**
BVAR	**Borovoye Array** 0.3nm,0.3s,baz=146,slow=11,SNR=7.5	**12.89**	**353**	Pn	**Pn**	**04 11 05.4**	**-0.9**
AKTO	**Aktyubinsk** 0.1nm,0.3s,baz=113,slow=16,SNR=2.3	**14.56**	**319**	Pn	**Pn**	**04 11 29.1**	**0.0**
ZALV	**Zalesovo Beam** 0.8nm,0.3s,baz=213,slow=12,SNR=4.9	**15.90**	**27**	Pn	**Pn**	**04 11 48.2**	**+1.3**
FINES	**FINESS Array B** 0.9nm,0.6s,baz=96,slow=8.5,SNR=3.7	**35.29**	**323**	P	**P**	**04 14 58.1**	**+0.1**
ARCES	**ARCESS Array B** 1.5nm,1.0s,baz=116,slow=10,SNR=3.0	**38.30**	**335**	P	**P**	**04 15 24.7**	**+1.2**
HFS	**Hagfors** baz=97,slow=12	**41.11**	**319**	P	**P**	**04 15 46.3**	**-0.7**
NOA	**NORSAR Array B** 0.7nm,0.7s,baz=91,slow=8.2,SNR=2.9	**42.35**	**321**	P	**P**	**04 15 57.1**	**-0.1**
TORD	**Torodi Ar. Bea** 0.1nm,0.4s,baz=52,slow=5.5,SNR=6.5	**67.29**	**268**	P	**P**	**04 18 56.9**	**-1.6**
YKA	**Yellowknife Ar** 0.2nm,0.7s,baz=350,slow=5.9,SNR=5.8	**77.43**	**4**	P	**P**	**04 19 58.7**	**+0.5**

*NIED **06** 04:23:00, 39.°30N×142.°40E, h20km, Mw3.9 Best double couple: M0 7.43000×10^14 NP1:φs285.00000°, δ46.00000°, λ-123.00000°. NP2:φs148.00000°, δ53.00000°, λ-60.00000°.*

*IDC **06** 04:23:09.8±0.9, 38.°97N×142.°86E, h0km, mb3.5/8, mb1 3.7/10, mb1mx3.6/46, mbtmp3.5/10, ML3.5/2, MS2.9/1, Ms1 2.9/1, ms1mx2.3/42, Error ellipse: s-maj=26.4km s-min=18.6km az=116.0*

*ISCJB **06** 04:23:10.7±1.7, 39.°26N±0.°04×142.°47E±0.°06, h11km±10km, mb3.6/8, Error ellipse: s-maj=8.5km s-min=6.6km az=13.3*

*JMA **06** 04:23:12.2±0.1, 39.°28N×142.°41E, h30km±1km, M3.6*

ISC 06 04:23:13.2±1.9**, 39.°28N**±0.°05×**142.°31E**±0.°09**, h26**km±13km**, n26,** σ**1.s16**/21**, mb3.6**/8**, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
MIYJ	**Miyakonagasawa**	**0.49**	**308**	P	**Pb**	**04 23 22.9**	**-0.3**
MIYJ				S	**Sb**	**04 23 30.5**	**+0.5**
OFUJ	**Ofunato**	**0.54**	**249**	P	**Pb**	**04 23 24.0**	**0.0**
JOM	**Ohasama**	**0.82**	**284**	P	**Pn**	**04 23 28.6**	**-0.3**
JOM				S	**Sn**	**04 23 40.4**	**+0.2**
JMK	**Ichinoseki**	**0.91**	**250**	P	**Pn**	**04 23 29.8**	**-0.4**
JMK				S	**Sn**	**04 23 42.4**	**-0.1**
JKZ	**Kuzumaki**	**1.04**	**313**	P	**Pn**	**04 23 31.9**	**-0.2**
JKZ				S	**Sb**	**04 23 46.5**	**+0.7**
JIO	**Ouri**	**1.11**	**223**	P	**Pn**	**04 23 31.9**	**-1.1**
JIO				S	**Sn**	**04 23 47.2**	**-0.3**
JANG	**Nango**	**1.26**	**331**	P	**Pn**	**04 23 34.5**	**-0.5**
JANG				S	**Sb**	**04 23 51.5**	**-0.5**
JRG	**Rokugo**	**1.31**	**276**	P	**Pb**	**04 23 37.0**	**-0.1**
MAT	**Matsushiro**	**4.24**	**231**	P	**Pn**	**04 24 18.7**	**+2.6**
MAT				S	**Sb**	**04 25 16.1**	**-1.7**
MJAR	**Matsushiro Arr** 1.7nm,0.3s,baz=46,slow=10.0,SNR=32	**4.24**	**231**	Pn	**Pn**	**04 24 18.8**	**+2.7**
USRK	**Ussuriysk Ar.** 0.1nm,0.3s,baz=122,slow=14,SNR=4.5	**9.15**	**306**	Pn	Pn	04 25 33.5	+10
USRK	comp=Z,78nm,21.2s,baz=179,slow=35			LR	LR	04 28 44.3	
KSRS	**Korea Array** 0.4nm,0.3s,baz=94,slow=15,SNR=4.3	**11.45**	**265**	Pn	Pn	04 25 59.6	+4.8
H11N2	**WAKE ISLAND Hy** baz=319,slow=75,SNR=215	**28.78**	**126**	T	T	04 59 17.9	
H11N1	**WAKE ISLAND Hy** baz=319,slow=75,SNR=184	**28.79**	**126**	T	T	04 59 14.8	
H11N3	**WAKE ISLAND Hy** baz=319,slow=75,SNR=175	**28.80**	**126**	T	T	04 59 14.7	
H11S1	**WAKE ISLAND Hy** baz=320,slow=76,SNR=26	**29.57**	**127**	T	T	05 00 13.8	
H11S3	**WAKE ISLAND Hy** baz=320,slow=76,SNR=23	**29.57**	**127**	T	T	05 00 14.9	
H11S2	**WAKE ISLAND Hy** baz=320,slow=76,SNR=14	**29.59**	**127**	T	T	05 00 15.1	
ZALV	**Zalesovo Beam** 0.7nm,0.4s,baz=99,slow=8.6,SNR=3.8	**40.97**	**311**	P	P	04 30 57.9	+4.5
MKAR	**Makanchi Array** 0.2nm,0.5s,baz=82,slow=8.6,SNR=2.6	**43.57**	**300**	P	P	04 31 19.5	+4.8
ILAR	**Eielson Array** 0.3nm,0.8s,baz=273,slow=7.1,SNR=4.0	**47.23**	**33**	P	**P**	**04 31 43.9**	**+0.4**
INK	**Inuvik** 0.5nm,0.8s,baz=291,slow=5.7,SNR=2.3	**52.07**	**28**	P	P	04 32 22.0	+1.7
WRA	**Warramunga Arr** 0.7nm,0.6s,baz=4.7,slow=6.8,SNR=5.8	**59.38**	**189**	P	**P**	**04 33 12.0**	**-1.2**
YKA	**Yellowknife Ar** 0.1nm,0.5s,baz=300,slow=6.3,SNR=4.3	**61.52**	**31**	P	**P**	**04 33 28.0**	**+0.7**
ASAR	**Alice Springs** 0.5nm,0.8s,baz=8.9,slow=6.6,SNR=3.8	**63.10**	**189**	P	**P**	**04 33 37.7**	**-0.7**
FINES	**FINESS Array B** 1.8nm,0.7s,baz=28,slow=8.9,SNR=5.0	**67.17**	**332**	P	P	04 34 08.2	+3.9

*IDC **06** 04:28:02.6±0.9, 27.°19N×143.°46E, h0km, mb4.0/12, mb1 4.2/15, mb1mx3.9/48, mbtmp4.0/15, ML3.6/3, Error ellipse: s-maj=25.5km s-min=17.6km az=81.0*

*ISCJB **06** 04:28:05.8±0.8, 27.°18N±0.°09×143.°45E±0.°08, h33km, mb4.1/14, Error ellipse: s-maj=13.6km s-min=10.4km az=160.5*

*NEIC **06** 04:28:08.2±0.6, 27.°20N×143.°35E, h35km, mb4.4/2, Error ellipse: s-maj=15.1km s-min=10.1km az=78.0*

ISC 06 04:28:08.2±1.0**, 27.°2N**±0.°1×**143.°4E**±0.°1**, h35**km**, n22,** σ**0.s80**/23**, mb4.2**/14**, Bonin Islands region**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
CBIJ	**Chichi jima**	**1.05**	**263**	*e*Pg	**Pn**	**04 28 25.9**	**-0.6**
JCJ	**Chichijima** 52nm,0.3s,baz=90,slow=20,SNR=24	**1.05**	**263**	Pn	**Pn**	**04 28 25.8**	**-0.7**
JCJ	214nm,0.3s,baz=4.9,slow=18,SNR=28			Sn	**Sn**	**04 28 40.0**	**0.0**
MJAR	**Matsushiro Arr** 1.2nm,0.3s,baz=153,slow=11,SNR=9.2	**10.26**	**336**	Pn	**Pn**	**04 30 31.3**	**-1.7**
KSRS	**Korea Array** 0.5nm,0.3s,baz=116,slow=11,SNR=20	**16.53**	**312**	Pn	**Pn**	**04 31 58.0**	**+0.7**
KSAR	**Wonju Array Be**	**16.55**	**312**	Pn	**Pn**	**04 31 58.0**	**+0.4**
USRK	**Ussuriysk Ar.** 0.2nm,0.3s,baz=160,slow=12,SNR=13	**19.25**	**335**	P	**P**	**04 32 27.9**	**-1.6**
KLR	**Kul'dur** 3.3nm,0.9s,baz=146,slow=6.9,SNR=7.0	**23.73**	**341**	P	**P**	**04 33 17.5**	**+0.6**
SONM	**Songino Array** 0.9nm,0.6s,baz=121,slow=8.2,SNR=5.3	**35.35**	**316**	P	**P**	**04 35 00.5**	**+0.1**
TLY	**Talaya** 2.8nm,0.6s,baz=154,slow=4.1,SNR=6.7	**38.50**	**320**	P	**P**	**04 35 28.4**	**+1.4**
WRA	**Warramunga Arr** 2.8nm,0.6s,baz=12,slow=8.4,SNR=14	**47.70**	**192**	P	**P**	**04 36 41.1**	**-0.4**
ZALV	**Zalesovo Beam** 1.7nm,0.6s,baz=96,slow=6.5,SNR=5.9	**50.07**	**319**	P	**P**	**04 36 59.5**	**+0.1**
MKAR	**Makanchi Array** 0.9nm,0.7s,baz=93,slow=9.6,SNR=12	**51.20**	**310**	P	**P**	**04 37 08.3**	**+0.3**
ASAR	**Alice Springs** 0.4nm,0.6s,baz=16,slow=7.5,SNR=4.8	**51.41**	**191**	P	**P**	**04 37 08.9**	**-0.9**
KURK	**Kurchatov**	**53.64**	**314**	P	**P**	**04 37 26.9**	**+0.9**
KURBB	**Kurchatov Arra** 5.2nm,0.6s,baz=91,slow=8.1,SNR=63	**53.69**	**314**	P	**P**	**04 37 26.9**	**+0.5**
KKAR	**Karatay Array** 3.7nm,0.7s	**59.85**	**306**	*e*P	**P**	**04 38 10.4**	**+0.1**
ABKAR	**Akbulak array** 1.1nm,0.5s	**65.75**	**314**	*e*P	**P**	**04 38 49.9**	**+0.5**
YKA	**Yellowknife Ar** 0.3nm,0.7s,baz=293,slow=5.2,SNR=3.5	**71.53**	**29**	P	**P**	**04 39 25.2**	**0.0**
FINES	**FINESS Array B** 0.5nm,0.4s,baz=101,slow=3.9,SNR=5.5	**78.29**	**334**	P	**P**	**04 40 04.4**	**+0.1**
KBZ	**Khabaz** 3.2nm,0.8s,baz=53,slow=4.5,SNR=5.7	**78.68**	**313**	P	**P**	**04 40 07.8**	**+1.0**
AKASG	**Malin Array Be** 1.6nm,0.7s,baz=47,slow=4.9,SNR=7.5	**83.12**	**324**	P	**P**	**04 40 29.9**	**-0.5**
TORD	**Torodi Ar. Bea** 0.5nm,1.0s,baz=45,slow=0.4,SNR=3.3	**125.28**	**312**	PKP	**PKPdf**	**04 47 06.1**	**+0.1**

*NIED **06** 04:30:00, 38.°10N×144.°50E, h5km, Mw4.0 Best double couple: M0 1.10000×10^15 NP1:φs42.00000°, δ57.00000°, λ-13.00000°. NP2:φs139.00000°, δ79.00000°, λ-146.00000°.*

*IDC **06** 04:30:44.8±0.6, 37.°86N×144.°74E, h0km, mb3.8/13, mb1 4.1/18, mb1mx4.0/45, mbtmp4.0/18, ML4.4/4, MS3.2/5, Ms1 3.2/5, ms1mx2.7/55, Error ellipse: s-maj=18.3km s-min=14.5km az=125.0*

*NEIC **06** 04:30:46.4±0.5, 37.°80N×144.°79E, h10km, mb4.2/1, Error ellipse: s-maj=12.4km s-min=8.9km az=141.0*

*ISCJB **06** 04:30:48.1±0.5, 37.°93N±0.°05×144.°52E±0.°04, h33km, mb3.9/17, MS3.2/3, Error ellipse: s-maj=6.5km s-min=4.3km az=178.2*

*JMA **06** 04:30:49.0±0.2, 38.°10N×144.°50E, h47km, M4.4*

ISC 06 04:30:49.8±0.6**, 37.°92N**±0.°06×**144.°59E**±0.°06**, h35**km**, n52,** σ**1.s76**/54**, mb3.8**/17**, MS3.2**/3**, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**2.56**	**298**	P	**Pn**	**04 31 27.4**	**-1.5**
JIO	**Ouri**	**2.60**	**283**	P	**Pn**	**04 31 28.4**	**-1.0**
JIO				S	**Sn**	**04 31 57.4**	**-2.4**
JMK	**Ichinoseki**	**2.84**	**292**	P	**Pn**	**04 31 31.5**	**-1.1**
JMK				S	**Sn**	**04 32 03.5**	**-2.0**
JTH	**Tanohata**	**2.92**	**314**	P	**Pn**	**04 31 31.8**	**-2.0**
JMM	**Marumori**	**3.00**	**270**	P	**Pn**	**04 31 34.2**	**-0.7**
JMM				S	**Sn**	**04 32 07.5**	**-2.1**
JOM	**Ohasama**	**3.01**	**302**	P	**Pn**	**04 31 33.7**	**-1.2**
JOM				S	**Sn**	**04 32 07.1**	**-2.6**
JOU	**Okura**	**3.12**	**279**	P	**Pn**	**04 31 36.3**	**-0.3**
JOU				S	**Sn**	**04 32 11.4**	**-1.3**
JFT	**Otama**	**3.39**	**264**	*e*S	**Sn**	**04 32 18.8**	**-0.5**
JANG	**Nango**	**3.42**	**317**	P	**Pn**	**04 31 38.5**	**-2.1**
JRG	**Rokugo**	**3.42**	**297**	P	**Pn**	**04 31 40.0**	**-0.7**
JRG				S	**Sn**	**04 32 19.4**	**-0.7**
JYK	**Kaneyama**	**3.46**	**288**	P	**Pn**	**04 31 41.1**	**-0.2**
JYK				S	**Sn**	**04 32 20.0**	**-1.1**
JTM	**Tenmabayashi**	**3.95**	**317**	P	**Pn**	**04 31 46.2**	**-1.7**
JTM				*e*S	**Sn**	**04 32 29.1**	**-3.9**
JNBK	**Urakawa-nobuka**	**4.57**	**343**	P	**Pn**	**04 31 53.9**	**-2.6**
JCH	**Churui**	**4.78**	**349**	P	Pn	04 31 55.9	-3.4
JRY	**Ryogami san**	**4.93**	**249**	P	**Pn**	**04 32 01.6**	**+0.1**
MJAR	**Matsushiro Arr** 11nm,0.3s,baz=79,slow=15,SNR=35	**5.27**	**257**	Pn	**Pn**	**04 32 07.0**	**+0.9**
MJAR	10nm,0.3s,baz=70,slow=24,SNR=6.7			Sn	**Sn**	**04 33 06.3**	**+0.6**
MAJO	**Matsushiro** 100nm,0.7s	**5.27**	**257**	*e*Pn	**Pn**	**04 32 07.6**	**+1.4**
MAJO				*e*S	**Sn**	**04 33 00.7**	**-5.0**
MAT	**Matsushiro**	**5.27**	**257**	P	**Pn**	**04 32 07.2**	**+1.1**
MAT				S	**Sn**	**04 33 05.9**	**+0.2**
JHJ	**Hachijo jima 2** 37nm,0.3s,baz=66,slow=19,SNR=3.1	**6.19**	**221**	Pn	**Pn**	**04 32 18.5**	**-0.2**
JHJ	95nm,0.3s,baz=53,slow=20,SNR=6.4			Sn	**Sn**	**04 33 23.7**	**-4.5**
CBIJ	**Chichi jima**	**10.98**	**191**	Pn	**Pn**	**04 33 22.8**	**-1.7**
CBIJ				Sn	Sn	04 35 18.0	-8.1
JCJ	**Chichijima** 10nm,0.3s,baz=37,slow=20,SNR=2.7	**10.98**	**191**	Pn	**Pn**	**04 33 22.8**	**-1.7**
JCJ	12nm,0.3s,baz=300,slow=20,SNR=4.0			Sn	Sn	04 35 18.0	-8.1
USRK	**Ussuriysk Ar.** 0.4nm,0.3s,baz=105,slow=13,SNR=4.1	**11.38**	**307**	Pn	**Pn**	**04 33 30.6**	**+0.7**
JNU	**Nakatsue** comp=Z,101nm,18.6s,baz=117,slow=38	**12.15**	**251**	LR	LR	04 38 35.8	
KSRS	**Korea Array** 0.4nm,0.3s,baz=90,slow=13,SNR=8.1	**13.21**	**273**	Pn	**Pn**	**04 33 57.0**	**+2.2**
KSAR	**Wonju Array Be**	**13.24**	**273**	Pn	**Pn**	**04 33 57.0**	**+1.7**
PETK	**Petropavlovsk-** comp=Z,48nm,18.3s,baz=223,slow=44	**17.70**	**27**	LR	LR	04 43 41.9	
MA2	**Magadan** 2.2nm,0.3s,baz=203,slow=12,SNR=3.3	**22.03**	**8**	P	**P**	**04 35 43.0**	**+2.0**
MA2	comp=Z,35nm,21.5s,baz=204,slow=35			LR	LR	04 43 42.2	
SEY	**Seymchan** 2.7nm,0.4s,baz=205,slow=7.4,SNR=8.4	**25.49**	**8**	P	**P**	**04 36 17.4**	**+3.0**
H11S1	**WAKE ISLAND Hy** baz=318	**27.34**	**129**	T	T	05 04 22.0	
H11S3	**WAKE ISLAND Hy** baz=318,slow=74	**27.34**	**129**	T	T	05 04 19.4	
H11S2	**WAKE ISLAND Hy** baz=318,slow=74	**27.35**	**129**	T	T	05 04 16.1	
SONM	**Songino Array** 0.5nm,0.6s,baz=105,slow=9.1,SNR=2.0	**29.42**	**302**	P	P	04 36 53.7	+3.7
ZALV	**Zalesovo Beam** 0.3nm,0.3s,baz=91,slow=8.8,SNR=2.6	**43.19**	**312**	P	**P**	**04 38 49.7**	**+2.6**
ZALV	0.7nm,0.5s,baz=114,slow=4.1,SNR=3.2			PcP	**PcP**	**04 40 36.5**	**+0.5**
NRIK	**Noril'sk** comp=Z,31nm,19.7s,baz=111,slow=37	**43.54**	**334**	LR	LR	04 57 49.6	
KDAK	**Kodiak Island** 22nm,1.1s,baz=276,slow=9.2,SNR=2.2	**44.74**	**43**	P	P	04 38 59.8	+0.4
MKAR	**Makanchi Array** 0.5nm,0.7s,baz=81,slow=11,SNR=3.9	**45.79**	**302**	P	**P**	**04 39 08.8**	**+0.9**
KURK	**Kurchatov**	**47.37**	**308**	P	**P**	**04 39 21.2**	**+0.9**
ILAR	**Eielson Array** 0.8nm,0.8s,baz=258,slow=6.3,SNR=5.8	**47.39**	**33**	P	**P**	**04 39 18.8**	**-1.4**
KURBB	**Kurchatov Arra** 1.4nm,0.6s,baz=81,slow=8.1,SNR=11	**47.45**	**308**	P	**P**	**04 39 21.2**	**+0.3**
WRA	**Warramunga Arr** 3.5nm,0.6s,baz=13,slow=7.3,SNR=16	**58.36**	**191**	P	**P**	**04 40 41.3**	**-0.3**
ABKAR	**Akbulak array** 0.7nm,0.3s	**59.29**	**311**	*e*P	**P**	**04 40 48.4**	**+0.6**
YKA	**Yellowknife Ar** 0.4nm,0.7s,baz=300,slow=6.5,SNR=5.1	**61.76**	**31**	P	**P**	**04 41 03.7**	**-0.7**
ASAR	**Alice Springs** 1.2nm,0.7s,baz=14,slow=7.3,SNR=12	**62.08**	**191**	P	**P**	**04 41 07.1**	**+0.1**
FINES	**FINESS Array B** 0.7nm,0.7s,baz=51,slow=11,SNR=2.4	**69.18**	**333**	P	**P**	**04 41 52.9**	**+0.5**
NVAR	**Mina Array Bea** 1.0nm,0.8s,baz=287,slow=6.3,SNR=3.1	**72.42**	**55**	P	**P**	**04 42 13.6**	**+0.8**
AKASG	**Malin Array Be** 0.2nm,0.4s,baz=45,slow=6.3,SNR=3.3	**75.11**	**324**	P	**P**	**04 42 28.2**	**+0.1**
PDAR	**Pinedale Array** 0.5nm,0.6s,baz=303,slow=0.9,SNR=6.8	**75.23**	**47**	P	**P**	**04 42 29.2**	**0.0**
DAVOX	**Davos/Dischmat** comp=Z,18nm,18.1s,baz=340,slow=38	**86.43**	**331**	LR	LR	05 25 31.6	
TXAR	**Lajitas Array** 0.2nm,0.7s,baz=255,slow=3.5,SNR=2.9	**87.57**	**54**	P	**P**	**04 43 36.0**	**+1.4**
TORD	**Torodi Ar. Bea** 0.3nm,0.9s,baz=24,slow=2.9,SNR=3.3	**118.43**	**318**	PKP	**PKPdf**	**04 49 33.8**	**-0.4**
VNA2	**Neumayer--Watz** baz=88,slow=2.2	**143.86**	**195**	P	PKPbc	04 50 18.5	+0.5
VNA3	**Neumayer Olymp**	**144.05**	**194**	P	**PKPab**	**04 50 17.5**	**-0.5**

IDC 06 04:37:47.2±3.2**, 37.°34N**×**143.°52E, h0**km**, mb3.5**/2**, mb1 3.7**/3**, mb1mx3.3**/37**, mbtmp3.4**/3**, ML3.3**/1**, MS3.2**/1**, Ms1 3.2**/1**, ms1mx2.4**/40**, Error ellipse: s-maj=77.4km s-min=36.9km az=56.0, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
MJAR	**Matsushiro Arr** 1.8nm,0.3s,baz=81,slow=15,SNR=7.6	**4.32**	**261**	Pn	Pn	04 38 53.9	-0.3
MAT	**Matsushiro**	**4.33**	**261**	P	Pn	04 38 53.7	-0.5
MAT				*e*S	Sn	04 39 43.4	-2.0
JCJ	**Chichijima** comp=Z,158nm,21.7s,baz=68,slow=36	**10.27**	**187**	LR	LR	04 43 57.4	
MKAR	**Makanchi Array** 0.4nm,0.8s,baz=87,slow=9.0,SNR=4.4	**45.38**	**302**	P	P	04 46 07.0	-0.2
WRA	**Warramunga Arr** 0.6nm,0.8s,baz=8.5,slow=7.0,SNR=2.7	**57.62**	**190**	P	P	04 47 39.1	0.0

*IDC **06** 04:39:38.8±3.0, 36.°66N×141.°25E, h0km, mb3.5/2, mb1 3.6/3, mb1mx3.3/40, mbtmp3.4/3, ML3.3/1, Error ellipse: s-maj=69.2km s-min=33.3km az=53.0*

*ISCJB **06** 04:39:47.7±0.9, 36.°48N±0.°05×140.°64E±0.°07, h64km±6km, mb3.5/2, Error ellipse: s-maj=10.9km s-min=6.8km az=42.3*

*JMA **06** 04:39:49.2±0.1, 36.°52N×140.°57E, h58km±1km, M3.3 JMA Felt II J1.*

ISC 06 04:39:48.5±1.2**, 36.°49N**±0.°07×**140.°65E**±0.°07**, h60**km±8km**, n18,** σ**0.s52**/20**, 5D, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
JHO	**Hitachi**	**0.14**	**333**	⇓P	**Pn**	**04 39 58.0**	**+0.4**
JHO				S	**Sn**	**04 40 04.1**	**-0.1**
JYT	**Yasato**	**0.45**	**235**	P	**Pn**	**04 40 00.3**	**+0.5**
JYT				S	**Sn**	**04 40 07.7**	**-0.4**
ONAJ	**Iwakimizuishiy**	**0.63**	**11**	⇓P	**Pn**	**04 40 01.9**	**0.0**
ONAJ				S	**Sn**	**04 40 11.5**	**-0.2**
JFK	**Kawauchi**	**0.90**	**12**	⇓P	**Pn**	**04 40 05.1**	**-0.1**
JFK				S	**Sn**	**04 40 17.0**	**-0.6**
JAG	**Ashikaga**	**0.96**	**267**	⇓P	**Pn**	**04 40 06.1**	**+0.1**
JAG				S	**Sn**	**04 40 18.0**	**-1.0**
JFT	**Otama**	**1.06**	**346**	P	**Pn**	**04 40 07.7**	**+0.4**
JFT				S	**Sn**	**04 40 21.1**	**-0.2**
JKT	**Katashina**	**1.16**	**284**	S	**Sn**	**04 40 23.5**	**-0.2**
JFY	**Yanaizu**	**1.19**	**321**	⇓P	**Pn**	**04 40 09.3**	**+0.3**
JFY				S	**Sn**	**04 40 24.2**	**-0.1**
MJAR	**Matsushiro Arr** 6.2nm,0.3s,baz=84,slow=15,SNR=19	**1.97**	**272**	Pn	**Pn**	**04 40 19.7**	**+0.3**
MAT	**Matsushiro**	**1.97**	**272**	P	**Pn**	**04 40 20.3**	**+0.8**
MAT				S	**Sn**	**04 40 42.1**	**-1.0**
H11N2	**WAKE ISLAND Hy** baz=311,slow=75,SNR=34	**28.41**	**119**	T	T	05 14 21.2	
H11N1	**WAKE ISLAND Hy**	**28.42**	**119**	T	T	05 14 22.0	

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
	baz=311,slow=75,SNR=37						
H11N3	**WAKE ISLAND Hy**	**28.43**	**119**	T	T	05 14 22.6	
	baz=311,slow=75,SNR=47						
H11S1	**WAKE ISLAND Hy**	**29.09**	**121**	T	T	05 15 09.4	
	baz=312,slow=76,SNR=19						
H11S3	**WAKE ISLAND Hy**	**29.09**	**121**	T	T	05 15 07.5	
	baz=312,slow=76,SNR=31						
H11S2	**WAKE ISLAND Hy**	**29.11**	**121**	T	T	05 15 07.6	
	baz=312,slow=76,SNR=16						
MKAR	**Makanchi Array**	**43.89**	**302**	P	**P**	**04 47 49.5**	**+0.5**
	0.3nm,0.5s,baz=92,slow=8.0,SNR=4.1						
WRA	**Warramunga Arr**	**56.44**	**187**	P	**P**	**04 49 23.8**	**-0.3**
	0.7nm,1.0s,baz=4.0,slow=7.2,SNR=3.1						

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*NIED **06** 04:44:00, 39.°00N×144.°10E, h5km, Mw3.6 Best double couple: M0 3.19000×10^14 NP1:φs 233.00000°, δ41.00000°, λ-38.00000°. NP2:φs 354.00000°, δ66.00000°, λ-124.00000°.*
*IDC **06** 04:44:21.8±1.1, 38.°78N×144.°43E, h0km, mb3.5/6, mb1 3.8/8, mb1mx3.6/42, mbtmp3.5/8, ML3.0/2, MS3.1/2, Ms1 3.1/2, ms1mx2.3/43, Error ellipse: s-maj=29.0km s-min=22.8km az=145.0*
*ISCJB **06** 04:44:24.0±0.7, 39.°01N±0.°06×144.°22E±0.°05, h23km, mb3.5/6, MS3.1/2, Error ellipse: s-maj=9.3km s-min=5.4km az=162.9*
*JMA **06** 04:44:25.8±0.2, 39.°03N×144.°14E, h34km, M3.7*
ISC 06 04:44:25.5±1.0, **39.°00N**±0.°08×**144.°27E**±0.°07, **h23**km, **n22**, σ**1.37**/27, **mb3.6**/6, **Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MIYJ	**Miyakonagasawa**	**1.98**	**288**	P	**Pn**	**04 44 56.7**	**-1.0**
MIYJ				S	**Sn**	**04 45 19.3**	**-2.5**
JTH	**Tanohata**	**2.08**	**298**	S	**Sn**	**04 45 21.9**	**-2.3**
JOM	**Ohasama**	**2.36**	**283**	P	**Pn**	**04 45 02.3**	**-0.5**
JOM				*e*S	**Sn**	**04 45 29.7**	**-1.3**
JRG	**Rokugo**	**2.85**	**279**	P	**Pn**	**04 45 09.5**	**-0.1**
JRG				S	**Sn**	**04 45 42.2**	**-0.9**
JOU	**Okura**	**2.89**	**259**	P	**Pn**	**04 45 09.5**	**-0.6**
JOU				*e*S	**Sn**	**04 45 42.6**	**-1.5**
JAH	**Hinai**	**3.05**	**294**	P	**Pn**	**04 45 12.4**	**+0.1**
JAH				S	**Sn**	**04 45 47.1**	**-0.9**
JYK	**Kaneyama**	**3.05**	**270**	P	**Pn**	**04 45 12.5**	**+0.2**
JYK				*e*S	**Sn**	**04 45 46.7**	**-1.3**
JNBK	**Urakawa-nobuka**	**3.48**	**341**	P	**Pn**	**04 45 18.8**	**+0.6**
JCH	**Churui**	**3.68**	**350**	P	**Pn**	**04 45 20.9**	**0.0**
JAR	**Ashorobuto**	**4.31**	**355**	P	**Pn**	**04 45 28.2**	**-1.5**
NEM2	**Nemuro 2**	**4.50**	**14**	P	**Pn**	**04 45 30.6**	**-1.7**
JTKR	**Abashiri--Toko**	**4.98**	**357**	P	**Pn**	**04 45 38.6**	**-0.2**
MJAR	**Matsushiro Arr**	**5.39**	**245**	Pn	**Pn**	**04 45 44.3**	**-0.2**
	2.9nm,0.3s,baz=59,slow=11,SNR=14						
MAT	**Matsushiro**	**5.39**	**245**	P	**Pn**	**04 45 44.2**	**-0.3**
MAT				*e*S	Sn	04 46 38.3	-7.5
USRK	**Ussuriysk Ar.**	**10.56**	**303**	Pn	**Pn**	**04 46 57.5**	**+2.2**
	0.2nm,0.3s,baz=93,slow=15,SNR=4.9						
SONM	**Songino Array**	**28.65**	**300**	P	**P**	**04 50 22.6**	**+2.2**
	0.5nm,0.6s,baz=111,slow=7.9,SNR=3.5						
ZALV	**Zalesovo Beam**	**42.30**	**311**	LR	LR	05 10 46.3	
	comp=Z,20nm,18.0s,baz=68,slow=37						
MKAR	**Makanchi Array**	**45.01**	**301**	P	**P**	**04 52 39.7**	**+0.6**
	0.5nm,0.7s,baz=85,slow=11,SNR=4.4						
MKAR				LR	LR	05 14 23.4	
	comp=Z,24nm,18.2s,baz=103,slow=40						
ILAR	**Eielson Array**	**46.63**	**33**	P	**P**	**04 52 50.3**	**-1.3**
	0.5nm,0.8s,baz=259,slow=6.5,SNR=4.4						
INK	**Inuvik**	**51.61**	**28**	P	**P**	**04 53 31.6**	**+2.0**
	0.4nm,0.5s,baz=289,slow=6.0,SNR=7.7						
WRA	**Warramunga Arr**	**59.36**	**191**	P	**P**	**04 54 24.2**	**-1.6**
	0.6nm,0.8s,baz=9.2,slow=7.3,SNR=2.7						
TXAR	**Lajitas Array**	**87.14**	**54**	P	**P**	**04 57 10.5**	**+0.6**
	0.1nm,0.3s,baz=290,slow=5.3,SNR=2.9						

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*IDC **06** 04:46:36.1±0.8, 35.°40N×143.°06E, h0km, mb3.5/9, mb1 3.8/12, mb1mx3.7/45, mbtmp3.5/12, ML3.2/2, Error ellipse: s-maj=21.5km s-min=19.5km az=128.0*
*JMA **06** 04:46:37.8±0.4, 35.°56N×143.°04E, h57km, M3.7*
*ISCJB **06** 04:46:42.0±0.6, 35.°56N±0.°06×142.°69E±0.°07, h59km, mb3.5/9, Error ellipse: s-maj=8.5km s-min=7.4km az=145.4*
ISC 06 04:46:44.2±0.8, **35.°59N**±0.°06×**142.°67E**±0.°08, **h59**km, **n24**, σ**1.75**/27, **mb3.5**/9, **Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**1.48**	**275**	P	**Pn**	**04 47 07.4**	**-1.1**
BSO1	**Boso 1**	**1.67**	**237**	P	**Pn**	**04 47 08.0**	**-2.6**
BSO1				*e*S	**Sn**	**04 47 31.1**	**+0.5**
BSO3	**Boso 3**	**1.93**	**247**	P	**Pn**	**04 47 13.0**	**-1.4**
JHO	**Hitachi**	**1.98**	**302**	P	**Pn**	**04 47 13.1**	**-2.2**
BSO4	**Boso 4**	**2.00**	**253**	P	**Pn**	**04 47 14.7**	**-0.7**
JFK	**Kawauchi**	**2.29**	**321**	P	**Pn**	**04 47 17.0**	**-2.6**
JFK				S	**Sn**	**04 47 45.6**	**-1.0**
JFT	**Otama**	**2.69**	**316**	P	**Pn**	**04 47 23.8**	**-1.2**
JAG	**Ashikaga**	**2.73**	**289**	P	**Pn**	**04 47 24.2**	**-1.4**
JOD2	**Odawara 2**	**2.94**	**265**	P	**Pn**	**04 47 27.1**	**-1.3**
JRY	**Ryogami san**	**3.09**	**279**	P	**Pn**	**04 47 30.0**	**-0.5**
JYN	**Shimob**	**3.36**	**270**	P	**Pn**	**04 47 33.5**	**-0.8**
MJAR	**Matsushiro Arr**	**3.73**	**286**	Pn	**Pn**	**04 47 39.3**	**0.0**
	5.5nm,0.3s,baz=95,slow=6.9,SNR=14						
MAT	**Matsushiro**	**3.74**	**286**	P	**Pn**	**04 47 39.5**	**+0.2**
MAT				*e*S	**Sn**	**04 48 17.6**	**-4.5**
USRK	**Ussuriysk Ar.**	**11.87**	**320**	Pn	**Pn**	**04 49 32.4**	**+1.8**
	0.3nm,0.3s,baz=144,slow=12,SNR=3.4						
KSRS	**Korea Array**	**12.01**	**283**	Pn	**Pn**	**04 49 33.8**	**+1.3**
	baz=110,slow=12,SNR=4.2						
SONM	**Songino Array**	**29.44**	**306**	P	**P**	**04 52 45.2**	**+2.9**
	0.4nm,0.6s,baz=95,slow=8.7,SNR=3.2						
MKAR	**Makanchi Array**	**45.75**	**304**	P	**P**	**04 55 01.5**	**+1.9**
	0.4nm,0.5s,baz=94,slow=9.0,SNR=5.2						
ILAR	**Eielson Array**	**50.18**	**32**	P	**P**	**04 55 33.2**	**-0.3**
	0.8nm,0.8s,baz=267,slow=6.3,SNR=9.0						
INK	**Inuvik**	**55.22**	**27**	P	**P**	**04 56 11.1**	**+0.6**
	0.5nm,0.6s,baz=287,slow=5.0,SNR=6.2						
WRA	**Warramunga Arr**	**55.79**	**189**	P	**P**	**04 56 12.9**	**-2.3**
	0.7nm,0.4s,baz=7.9,slow=7.4,SNR=3.1						
ASAR	**Alice Springs**	**59.51**	**189**	P	**P**	**04 56 41.4**	**+0.1**
	0.3nm,0.8s,baz=16,slow=11,SNR=2.7						
YKA	**Yellowknife Ar**	**64.55**	**30**	P	**P**	**04 57 13.5**	**-1.1**
	0.4nm,0.8s,baz=298,slow=6.9,SNR=6.8						
PDAR	**Pinedale Array**	**77.95**	**46**	P	**P**	**04 58 35.9**	**-0.4**
	0.1nm,0.5s,baz=289,slow=2.8,SNR=2.4						
TXAR	**Lajitas Array**	**90.19**	**53**	P	**P**	**04 59 38.5**	**+0.1**
	0.1nm,0.5s,baz=242,slow=1.9,SNR=2.4						

IDC 06 04:49:55.5±28.0, **20.°03S**×**172.°54W**, **h0**km, **mb4.3**/4, **mb1 4.4**/4, **mb1mx3.7**/37, **mbtmp4.3**/4, **Error ellipse: s-maj=522.9km s-min=164.7km az=75.0, Tonga Islands region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CTA	**Charters Tower**	**38.64**	**263**	P	P	04 57 21.2	+0.2
	3.1nm,0.5s,baz=100,slow=10,SNR=5.5						
STKA	**Stephens Creek**	**42.61**	**244**	P	P	04 57 53.9	+0.1
	1.5nm,0.5s,baz=81,slow=11,SNR=6.4						
ASAR	**Alice Springs**	**49.61**	**256**	P	P	04 58 49.0	-0.1
	3.6nm,0.8s,baz=97,slow=8.2,SNR=24						
WRA	**Warramunga Arr**	**49.74**	**260**	P	P	04 58 49.5	-0.6
	1.0nm,0.3s,baz=97,slow=8.2,SNR=8.4						

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*IDC **06** 05:02:51.6±2.6, 36.°03N×140.°97E, h0km, mb3.4/3, mb1 3.6/5, mb1mx3.3/61, mbtmp3.5/5, ML3.6/2, Error ellipse: s-maj=63.5km s-min=24.7km az=67.0*
*ISCJB **06** 05:03:02.5±0.6, 35.°72N±0.°04×140.°05E±0.°07, h81km±5km, mb3.2/3, Error ellipse: s-maj=9.3km s-min=5.4km az=156.1*
*JMA **06** 05:03:03.4±0.2, 35.°81N×140.°06E, h67km±2km, M2.8*
ISC 06 05:03:03.6±1.0, **35.°72N**±0.°04×**140.°04E**±0.°06, **h78**km±7km, **n23**, σ**1.00**/28, **mb3.2**/3, **Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TOK	**Tokyo**	**0.23**	**261**	P	**Pn**	**05 03 15.2**	**0.0**
TOK				S	**Sn**	**05 03 24.7**	**+0.9**
JCN	**Nagara**	**0.33**	**156**	P	**Pn**	**05 03 15.7**	**-0.2**
JCN				S	**Sn**	**05 03 25.4**	**+0.5**
JAG	**Ashikaga**	**0.85**	**326**	P	**Pn**	**05 03 19.7**	**-1.0**
JAG				*e*S	**Sn**	**05 03 31.4**	**-2.1**
JOD2	**Odawara 2**	**0.90**	**240**	P	**Pn**	**05 03 20.7**	**-0.7**
JOD2				S	**Sn**	**05 03 33.4**	**-1.2**
JRY	**Ryogami san**	**0.97**	**288**	P	**Pn**	**05 03 22.1**	**-0.1**
BSO3	**Boso 3**	**1.00**	**157**	P	**Pn**	**05 03 21.8**	**-0.4**
BSO3				S	**Sn**	**05 03 36.7**	**+0.6**
JIM2	**Oshima 3**	**1.12**	**207**	P	**Pn**	**05 03 23.2**	**-0.8**
JIM2				S	**Sn**	**05 03 37.9**	**-1.4**
JKT	**Katashina**	**1.22**	**329**	P	**Pn**	**05 03 24.5**	**-0.9**
JKT				*e*S	**Sn**	**05 03 40.3**	**-1.4**
JYN	**Shimob**	**1.24**	**260**	P	**Pn**	**05 03 25.4**	**-0.1**
JYN				*e*S	**Sn**	**05 03 42.2**	**+0.2**
BSO1	**Boso 1**	**1.31**	**144**	P	**Pn**	**05 03 25.5**	**-0.4**
JIZS	**Izushimoda**	**1.38**	**224**	P	**Pn**	**05 03 27.5**	**+0.2**
JIZS				S	**Sn**	**05 03 44.5**	**-0.6**
MJAR	**Matsushiro Arr**	**1.69**	**299**	Pn	**Pn**	**05 03 31.4**	**0.0**
	10nm,0.3s,baz=102,slow=13,SNR=28						
MAT	**Matsushiro**	**1.69**	**299**	P	**Pn**	**05 03 31.4**	**0.0**
MAT				*e*S	**Sn**	**05 03 53.1**	**+0.7**
JHJ	**Hachijo jima 2**	**2.60**	**185**	Pn	**Pn**	**05 03 40.9**	**-2.7**
	34nm,0.3s,baz=66,slow=20,SNR=3.6						
JHJ				Sn	**Sn**	**05 04 14.4**	**+0.2**
	32nm,0.3s,baz=66,slow=19,SNR=3.1						
H11N2	**WAKE ISLAND Hy**	**28.49**	**117**	T	T	05 38 29.6	
	baz=313						
H11N1	**WAKE ISLAND Hy**	**28.50**	**117**	T	T	05 38 34.7	
	baz=313						
H11N3	**WAKE ISLAND Hy**	**28.51**	**117**	T	T	05 38 34.3	
	baz=313						
H11S1	**WAKE ISLAND Hy**	**29.14**	**119**	T	T	05 39 26.5	
	baz=317						
H11S3	**WAKE ISLAND Hy**	**29.14**	**119**	T	T	05 39 20.7	
	baz=317						
H11S2	**WAKE ISLAND Hy**	**29.15**	**119**	T	T	05 39 23.7	
	baz=317						
MKAR	**Makanchi Array**	**43.89**	**303**	P	**P**	**05 11 03.1**	**+0.8**
	0.1nm,0.3s,baz=92,slow=7.5,SNR=2.8						
KURBB	**Kurchatov Arra**	**45.94**	**309**	P	**P**	**05 11 18.8**	**+0.3**
	0.2nm,0.6s,baz=89,slow=9.4,SNR=4.3						
WRA	**Warramunga Arr**	**55.62**	**186**	P	**P**	**05 12 32.2**	**+0.7**
	0.6nm,0.8s,baz=0.1,slow=7.5,SNR=5.3						

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*ISCJB **06** 05:12:06.8±0.5, 51.°47N±0.°02×16.°22E±0.°03, h0km, Error ellipse: s-maj=3.4km s-min=2.8km az=12.9*
*CSEM **06** 05:12:08.8±0.3, 51.°46N×16.°16E, h2km, ML3.4/11, Error ellipse: s-maj=4.5km s-min=4.1km az=173.0*
*IDC **06** 05:12:09.9±0.7, 51.°47N×16.°01E, h0km, mb1 3.4/6, mb1mx3.1/52, mbtmp3.3/6, ML2.8/6, Error ellipse: s-maj=13.5km s-min=6.8km az=105.0*
*PRU **06** 05:12:11.5, 51.°36N×16.°13E, h0km*
ISC 06 05:12:08.1±0.7, **51.°52N**±0.°03×**16.°18E**±0.°02, **h0**km, **n43**, σ**0.99**/80, **Poland**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KSP	**Ksiaz**	**0.68**	**174**	*i* Pg	**Pg**	**05 12 21.2**	**+0.1**
KSP				*e*Sg	**Sg**	**05 12 29.2**	**-0.7**
KSP	**Ksiaz**	**0.68**	**174**	*i* Pg	**Pg**	**05 12 21.2**	**+0.1**
KSP				*e*Sg	**Sg**	**05 12 29.2**	**-0.7**
UPC	**Upice**	**1.02**	**186**	*e*PG	**Pg**	**05 12 27.3**	**-0.3**
UPC				*e*SG	**Sg**	**05 12 40.0**	**-0.7**
	comp=Z,124nm,0.4s						
UPC	**Upice**	**1.02**	**186**	Pg	**Pg**	**05 12 27.3**	**-0.3**
UPC				Sg	**Sg**	**05 12 40.0**	**-0.7**
	124nm,0.4s						
DPC	**Dobruska-Polom**	**1.17**	**176**	*e*PG	**Pg**	**05 12 30.1**	**-0.4**
DPC				*e*SG	**Sg**	**05 12 44.2**	**-1.5**
	comp=Z,34nm,0.3s						
DPC	**Dobruska-Polom**	**1.17**	**176**	Pg	**Pg**	**05 12 30.1**	**-0.4**
DPC				Sg	**Sg**	**05 12 44.2**	**-1.5**
	34nm,0.3s						
PVCC	**Panska Ves**	**1.42**	**226**	*e*PG	**Pn**	**05 12 35.5**	**+0.3**
PVCC				*e*SG	**Sg**	**05 12 53.8**	**+0.1**
	comp=Z,262nm,0.3s						
PVCC	**Panska Ves**	**1.42**	**226**	Pg	**Pn**	**05 12 35.5**	**+0.3**
PVCC				Sg	**Sg**	**05 12 53.8**	**+0.1**
	262nm,0.3s						
BRG	**Berggiesshubel**	**1.55**	**246**	PN	**Pb**	**05 12 37.8**	**+0.1**
BRG				PG	**Pg**	**05 12 38.7**	**+0.9**
BRG				SG	**Sg**	**05 12 58.8**	**+0.9**
	58nm,0.5s						
PRA	**Prague**	**1.82**	**218**	*e*PN	**Pn**	**05 12 41.2**	**+0.5**
PRA				*e*PG	**Pb**	**05 12 42.5**	**+0.2**
PRA				*e*SG	**Sb**	**05 13 05.6**	**-0.1**
	comp=Z,36nm,0.5s						
PRA	**Prague**	**1.82**	**218**	Pn	**Pn**	**05 12 41.2**	**+0.5**
GOPC	**GO Pecny, Ondr**	**1.83**	**209**	*e*PN	**Pn**	**05 12 41.2**	**+0.3**
GOPC				*e*PG	**Pb**	**05 12 42.6**	**+0.1**
GOPC				*e*SG	**Sb**	**05 13 05.6**	**-0.4**
	comp=Z,22nm,0.3s						
GOPC	**GO Pecny, Ondr**	**1.83**	**209**	Pn	**Pn**	**05 12 41.2**	**+0.3**
PRU	**Pruhonice**	**1.85**	**215**	*e*PG	**Pb**	**05 12 42.7**	**-0.1**
PRU				*e*SG	**Sb**	**05 13 06.7**	**+0.2**
	comp=Z,41nm,0.4s						
PRU	**Pruhonice**	**1.85**	**215**	Pg	**Pb**	**05 12 42.7**	**-0.1**
PRU				Sg	**Sb**	**05 13 06.7**	**+0.2**
	41nm,0.4s						
CLL	**Collm**	**2.00**	**265**	*e*Pn	**Pb**	**05 12 45.0**	**-0.4**
CLL				*e*Pg	**Pg**	**05 12 47.0**	**+0.5**
CLL				*e*Sg	**Sg**	**05 13 13.0**	**+0.6**
	comp=Z,19nm,0.4s						
OKC	**Ostrava-Krasne**	**2.10**	**143**	*e*PG	**Pb**	**05 12 47.6**	**+0.7**
OKC				*e*SG	**Sb**	**05 13 12.7**	**-0.8**
	comp=Z,40nm,0.6s						
OKC	**Ostrava-Krasne**	**2.10**	**143**	Pg	**Pb**	**05 12 47.6**	**+0.7**
OKC				Sg	**Sb**	**05 13 12.7**	**-0.8**
	comp=Z,40nm,0.6s						
VRAC	**Vranov**	**2.23**	**173**	Pn	**Pn**	**05 12 46.9**	**+0.6**
	comp=Z,2.3nm,0.3s,baz=345,slow=16,SNR=8.9						
VRAC				Pg	**Pg**	**05 12 50.4**	**-0.4**
	comp=Z,2.3nm,0.3s,baz=345,slow=16,SNR=9.1						
VRAC				Sn	**Sb**	**05 13 16.3**	**-1.0**
	comp=Z,7.5nm,0.3s,baz=74,slow=16,SNR=9.6						
TREC	**Trest**	**2.27**	**192**	*e*PN	**Pn**	**05 12 47.0**	**+0.1**
TREC				*e*PG	**Pb**	**05 12 50.1**	**+0.2**
TREC				*e*SG	**Sb**	**05 13 19.2**	**+0.7**
	comp=Z,23nm,0.3s						
TREC	**Trest**	**2.27**	**192**	Pn	**Pn**	**05 12 47.0**	**+0.1**
OJC	**Ojcow**	**2.63**	**118**	*e*Pg	**Pg**	**05 12 59.5**	**+1.0**
OJC				*e*Sg	**Sg**	**05 13 33.3**	**+0.6**
OJC	**Ojcow**	**2.63**	**118**	*e*Pg	**Pg**	**05 12 59.5**	**+1.0**
OJC				*e*Sg	**Sg**	**05 13 33.3**	**+0.6**
NKC	**Novy Kostel**	**2.69**	**243**	*e*PN	**Pn**	**05 12 53.5**	**+0.8**
NKC				*e*PG	**Pg**	**05 13 00.0**	**+0.3**
NKC				*e*SG	**Sg**	**05 13 34.3**	**-0.2**
	comp=Z,37nm,0.4s						
NKC	**Novy Kostel**	**2.69**	**243**	Pn	**Pn**	**05 12 53.5**	**+0.8**
KHC	**Kasperske Hory**	**2.91**	**216**	*e*PN	**Pn**	**05 12 56.1**	**+0.4**
KHC				*e*PG	**Pb**	**05 13 01.8**	**+0.9**
KHC				*e*SN	**Sn**	**05 13 30.1**	**-1.4**
KHC				*e*SG	**Sb**	**05 13 39.2**	**+2.1**
	comp=Z,14nm,0.4s						
KHC	**Kasperske Hory**	**2.91**	**216**	Pn	**Pn**	**05 12 56.1**	**+0.4**
GERES	**GERESS Array B**	**3.11**	**212**	Pn	**Pn**	**05 12 58.8**	**+0.3**
	comp=Z,0.5nm,0.3s,baz=32,slow=13,SNR=8.1						
GERES				Pg	**Pb**	**05 13 05.2**	**+0.8**
	comp=Z,4.1nm,0.3s,baz=30,slow=17,SNR=38						
GERES				Lg	Lg	05 13 45.0	
	comp=Z,6.2nm,0.3s,baz=27,slow=31,SNR=11						
LANS	**Liptovska Anna**	**3.17**	**137**	*e*PG	Pg	05 13 12.9	+4.1
LANS				*e*SG	**Sg**	**05 13 48.0**	**-1.9**
VYHS	**Vyhne**	**3.48**	**149**	*e*PG	**Pg**	**05 13 15.8**	**+1.1**
VYHS				*e*SG	**Sg**	**05 13 58.4**	**-1.3**
VYHS				*e*LG	Lg	05 14 01.6	
CONA	**Conrad Observa**	**3.60**	**183**	*e*Pn	**Pn**	**05 13 06.1**	**+0.9**
	comp=Z,1.2nm,0.2s						
CONA				*i* Sg	**Sn**	**05 13 52.3**	**+3.8**
	comp=Z,11nm,0.3s						
CONA	**Conrad Observa**	**3.60**	**183**	Pn	**Pn**	**05 13 06.1**	**+0.9**
	comp=Z,1.2nm,0.2s						
BSD	**Bornholm Skovb**	**3.68**	**349**	*i* P	**Pn**	**05 13 06.9**	**+0.7**
BSD				*i* S	**Sn**	**05 13 50.2**	**-0.1**
BSD	**Bornholm Skovb**	**3.68**	**349**	*i* P	**Pn**	**05 13 06.9**	**+0.7**
BSD				*i* S	**Sn**	**05 13 50.2**	**-0.1**
STHS	**Stebnicka Huta**	**3.86**	**121**	*e*PG	Pg	05 13 26.2	+4.2
STHS				*e*SG	**Sg**	**05 14 12.6**	**+0.7**
STHS				*e*LG	Lg	05 14 23.5	
MOA	**Molln**	**3.88**	**199**	*i* Pn	**Pn**	**05 13 10.0**	**+1.1**
	comp=Z,0.9nm,0.2s						
MOA				*i* Sg	**Sg**	**05 14 11.6**	**-0.9**
	comp=Z,15nm,0.6s						
MOA	**Molln**	**3.88**	**199**	Pn	**Pn**	**05 13 10.0**	**+1.1**
	comp=Z,0.9nm,0.2s						
MOA				Sg	**Sg**	**05 14 11.6**	**-0.9**
	comp=Z,15nm,0.6s						
KECS	**Kecovo**	**4.11**	**136**	*e*SG	**Sb**	**05 14 14.3**	**+2.7**
KECS				*e*LG	Lg	05 14 24.0	
DAVOX	**Davos/Dischmat**	**6.29**	**224**	Lg	Lg	05 15 27.8	
	comp=Z,0.4nm,0.3s,baz=299,slow=19,SNR=2.5						
AKASG	**Malin Array Be**	**8.25**	**91**	Pn	**Pn**	**05 14 09.0**	**+0.1**
	comp=Z,0.6nm,0.3s,baz=276,slow=12,SNR=3.8						
HFS	**Hagfors**	**8.75**	**352**	Pn	**Pn**	**05 14 15.6**	**-0.1**
	comp=Z,0.1nm,0.3s,baz=168,slow=15,SNR=3.9						
FINES	**FINESS Array B**	**11.34**	**25**	Pn	**Pn**	**05 14 49.6**	**-1.6**
	comp=Z,0.1nm,0.3s,baz=205,slow=12,SNR=5.1						
FINES				Sn	Sn	05 16 51.5	-6.9
	comp=Z,0.1nm,0.3s,baz=210,slow=24,SNR=2.9						
ARCES	**ARCESS Array B**	**18.61**	**10**	Pn	**P**	**05 16 23.5**	**-3.1**
	comp=Z,0.1nm,0.3s,baz=196,slow=13,SNR=5.1						

JMA 06 05:18:25.4, 37.°04N×140.°78E, h7km±1km, **M2.6, Eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.06**	**13**	P	Pg	05 18 27.3	+0.1
ONAJ				S	Sg	05 18 28.7	+0.2
JHO	**Hitachi**	**0.46**	**202**	P	Pg	05 18 34.2	-0.1
JHO				S	Sg	05 18 40.6	+0.3
JFT	**Otama**	**0.59**	**324**	P	Pg	05 18 37.1	+0.2
JFT				S	Sg	05 18 45.3	+0.7
JMM	**Marumori**	**0.82**	**1**	P	Pg	05 18 40.9	-0.4
JMM				S	Sg	05 18 52.3	+0.3
MAT	**Matsushiro**	**2.12**	**257**	P	Pn	05 19 01.9	+0.6
MAT				S	Sb	05 19 30.8	0.0

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*NIED **06** 05:19:00, 29.°10N×129.°40E, h5km, Mw3.9 Best double couple: M0 7.26000×10^14 NP1:φs 113.00000°, δ25.00000°, λ-94.00000°. NP2:φs 297.00000°, δ65.00000°, λ-88.00000°.*
*ISCJB **06** 05:19:60.0±0.5, 29.°11N±0.°02×129.°48E±0.°05, h27km±4km, mb3.4/5, MS2.7/2, Error ellipse: s-maj=7.7km s-min=3.6km az=19.1*
*JMA **06** 05:19:59.4±0.1, 29.°14N×129.°42E, h36km, M3.5*
*IDC **06** 05:20:06.7±2.4, 29.°11N×129.°54E, h69km±24km, mb3.2/5, mb1 3.5/7, mb1mx3.2/47, mbtmp3.6/7, MS2.8/3, Ms1 2.8/3, ms1mx2.5/20, Error ellipse: s-maj=33.4km s-min=20.0km az=87.0*
ISC 06 05:19:59.8±1.2, **29.°09N**±0.°03×**129.°54E**±0.°06, **h15**km±8km, **n22**, σ**1.09**/27, **mb3.5**/5, **Ryukyu Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JTAJ	**Takarajima**	**0.30**	**282**	P	**Pg**	**05 20 06.0**	**-0.3**
JTAJ				S	**Sg**	**05 20 11.0**	**+0.4**
JAM	**Amami Oshima**	**0.68**	**175**	P	**Pg**	**05 20 12.3**	**-0.8**
JAM				S	**Sb**	**05 20 22.8**	**+0.3**
JNN	**Nakanoshima**	**0.80**	**21**	P	Pb	05 20 14.7	-0.8
JNN				S	**Sb**	**05 20 25.6**	**-0.6**
JZK	**Kikaishima**	**0.86**	**154**	P	**Pn**	**05 20 17.9**	**+0.6**
JZK				S	**Sn**	**05 20 30.3**	**+0.7**
JAMN	**Amaminishikomi**	**0.90**	**201**	P	**Pb**	**05 20 16.8**	**-0.4**
JAMN				S	**Sb**	**05 20 28.6**	**-0.4**
JTK	**Tokunoshima**	**1.40**	**202**	P	**Pn**	**05 20 24.3**	**-0.5**
JTK				S	**Sn**	**05 20 40.8**	**-2.2**
JYAK	**Yakushimahirau**	**1.42**	**36**	P	**Pn**	**05 20 24.7**	**-0.4**
JYAK				S	**Sn**	**05 20 41.3**	**-2.2**
JKC	**Kuchinoerabu**	**1.48**	**22**	*e*S	**Sn**	**05 20 42.8**	**-2.2**
JOKE	**Okinoerabujima**	**1.92**	**207**	S	**Sn**	**05 20 55.6**	**-0.3**
JTN	**Tanegashima 3**	**2.00**	**38**	P	**Pn**	**05 20 33.1**	**+0.1**
JTN				S	**Sn**	**05 20 57.1**	**-0.7**
JIH	**Iheya**	**2.48**	**215**	S	**Sn**	**05 21 07.6**	**-1.9**
JOW	**Kunigami**	**2.51**	**207**	P	**Pb**	**05 20 45.9**	**+1.2**
	40nm,0.3s,baz=94,slow=21,SNR=13						
JOW				S	**Sn**	**05 21 09.8**	**-0.7**
	17nm,0.3s,baz=61,slow=21,SNR=3.5						
JOW	**Kunigami**	**2.51**	**207**	*e*S	**Sn**	**05 21 09.8**	**-0.7**
JNU	**Nakatsue**	**4.18**	**16**	P	Pn	05 21 07.3	+4.3
	1.3nm,0.3s,baz=252,slow=0.9,SNR=7.2						
JNU				S	**Sn**	**05 21 53.4**	**+1.7**
	0.7nm,0.3s,baz=125,slow=17,SNR=2.0						
KSRS	**Korea Array**	**8.45**	**351**	LR	LR	05 25 43.8	
	comp=Z,46nm,18.9s,baz=166,slow=40						
DAV	**Davao City (W)**	**22.22**	**190**	LR	LR	05 35 48.9	
	comp=Z,18nm,18.5s,baz=346,slow=42						
SONM	**Songino Array**	**25.89**	**323**	P	**P**	**05 25 31.6**	**+0.5**
	0.8nm,0.8s,baz=138,slow=8.9,SNR=3.6						
TLY	**Talaya**	**29.69**	**327**	LR	LR	05 39 21.1	
	comp=Z,23nm,19.2s,baz=90,slow=39						
MKAR	**Makanchi Array**	**40.57**	**309**	P	**P**	**05 27 39.5**	**+0.9**
	0.3nm,0.8s,baz=100,slow=8.8,SNR=3.3						
ZALV	**Zalesovo Beam**	**40.74**	**320**	P	**P**	**05 27 40.0**	**+0.2**
	0.4nm,0.4s,baz=107,slow=9.7,SNR=3.0						
WRA	**Warramunga Arr**	**48.97**	**174**	P	**P**	**05 28 46.0**	**+0.3**
	0.8nm,0.7s,baz=352,slow=8.2,SNR=4.6						
YKA	**Yellowknife Ar**	**75.45**	**26**	P	**P**	**05 31 42.9**	**+0.1**
	0.3nm,0.7s,baz=304,slow=5.5,SNR=6.1						

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*IDC **06** 05:20:29.8±2.7, 37.°61N×143.°71E, h0km, mb3.5/3, mb1 3.7/4, mb1mx3.3/42, mbtmp3.5/4, ML3.5/1, Error ellipse: s-maj=69.5km s-min=31.6km az=64.0*
*JMA **06** 05:20:33.3±0.4, 37.°65N×143.°39E, h40km, M3.6*
*ISCJB **06** 05:20:34.3±1.2, 37.°65N±0.°07×143.°35E±0.°09, h33km, mb3.6/3, Error ellipse: s-maj=11.0km s-min=9.7km az=151.6*
ISC 06 05:20:36.2±1.7, **37.°65N**±0.°08×**143.°3E**±0.°1, **h35**km, **n14**, σ**1.05**/19, **mb3.7**/3, **Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**1.73**	**298**	P	**Pn**	**05 21 03.3**	**-0.5**
JIO				*e*S	**Sn**	**05 21 24.7**	**+0.1**
JMM	**Marumori**	**2.00**	**277**	P	**Pn**	**05 21 06.6**	**-0.8**
JMM				*e*S	**Sn**	**05 21 31.4**	**+0.3**
ONAJ	**Iwakimizuishiy**	**2.06**	**255**	P	**Pn**	**05 21 07.5**	**-0.9**
ONAJ				S	**Sn**	**05 21 32.8**	**-0.1**
JOU	**Okura**	**2.20**	**290**	P	**Pn**	**05 21 10.1**	**-0.1**
JFT	**Otama**	**2.35**	**268**	P	**Pn**	**05 21 12.8**	**+0.5**
JFT				S	**Sn**	**05 21 40.2**	**+0.2**
JOM	**Ohasama**	**2.40**	**320**	S	**Sn**	**05 21 40.3**	**-0.9**
JYK	**Kaneyama**	**2.63**	**300**	P	**Pn**	**05 21 16.1**	**-0.1**
JAG	**Ashikaga**	**3.31**	**249**	P	**Pn**	**05 21 25.8**	**+0.3**
JRY	**Ryogami san**	**3.88**	**246**	P	**Pn**	**05 21 33.6**	**+0.2**
MJAR	**Matsushiro Arr**	**4.21**	**256**	Pn	**Pn**	**05 21 39.1**	**+1.2**
	2.6nm,0.3s,baz=76,slow=15,SNR=9.5						
MAT	**Matsushiro**	**4.22**	**256**	P	**Pn**	**05 21 39.6**	**+1.7**
MAT				*e*S	**Sn**	**05 22 23.5**	**-2.5**
MKAR	**Makanchi Array**	**45.06**	**302**	P	**P**	**05 28 50.4**	**+1.9**
	0.3nm,0.5s,baz=88,slow=8.4,SNR=4.9						
KURBB	**Kurchatov Arra**	**46.81**	**308**	P	**P**	**05 29 02.5**	**+0.3**
	0.4nm,0.4s,baz=81,slow=9.1,SNR=5.9						
WRA	**Warramunga Arr**	**57.90**	**190**	P	**P**	**05 30 23.7**	**-1.0**
	0.6nm,0.8s,baz=9.3,slow=7.1,SNR=2.6						

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*NIED **06** 05:31:00, 38.°30N×141.°80E, h44km, Mw3.7 Best double couple: M0 4.63000×10^14 NP1:φs 179.00000°, δ16.00000°, λ69.00000°. NP2:φs 20.00000°, δ75.00000°, λ96.00000°.*
*IDC **06** 05:31:14.2±1.7, 38.°38N×142.°43E, h0km, mb4.0/5, mb1 4.0/8, mb1mx3.6/40, mbtmp4.0/8, ML3.3/3, MS2.7/5, Ms1 2.7/5, ms1mx2.5/54, Error ellipse: s-maj=45.8km s-min=22.7km az=87.0*
*ISCJB **06** 05:31:21.4±1.1, 38.°26N±0.°05×141.°9E±0.°1, h55km±7km, mb4.0/5, MS3.4/1, Error ellipse: s-maj=16.3km s-min=6.6km az=16.5*
*JMA **06** 05:31:22.5±0.1, 38.°25N×141.°78E, h50km±1km, M4.1*
JMA Felt I J1.
ISC 06 05:31:21.4±1.7, **38.°23N**±0.°05×**141.°9E**±0.°1, **h42**km±15km, **n29**, σ**1.25**/26, **mb4.1**/5, **Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**0.50**	**296**	P	**Pn**	**05 31 32.6**	**+0.3**
JIO				S	**Sn**	**05 31 39.4**	**-0.5**
OFUJ	**Ofunato**	**0.87**	**347**	P	**Pn**	**05 31 37.8**	**+0.6**
JMK	**Ichinoseki**	**0.91**	**323**	P	**Pn**	**05 31 38.1**	**+0.4**
JMK				*e*S	**Sn**	**05 31 48.9**	**-0.7**
JMM	**Marumori**	**0.96**	**248**	P	**Pn**	**05 31 38.2**	**-0.3**

JMM				S	Sn	05 31 49.4	-1.6
JOU	Okura	1.00	278	P	Pn	05 31 39.1	+0.1
JOU				eS	Sn	05 31 51.1	-0.8
JOM	Ohasama	1.33	338	P	Pn	05 31 44.4	+0.8
JOM				eS	Sn	05 32 00.3	+0.2
JYK	Kaneyama	1.40	300	P	Pn	05 31 44.5	0.0
JFT	Otama	1.45	241	P	Pn	05 31 45.6	+0.5
JFT				S	Sn	05 32 02.7	-0.2
JYS	Shirataka	1.46	270	P	Pn	05 31 45.5	+0.1
JRG	Rokugo	1.54	319	P	Pn	05 31 47.3	+0.9
MJAR	Matsushiro Arr	3.41	241	Pn	Pn	05 32 14.4	+2.4
	4.1nm,0.3s,baz=56,slow=10,SNR=11						
MJAR				Sn	Sn	05 32 56.9	+5.7
	1.8nm,0.3s,baz=96,slow=25,SNR=3.2						
MJAR				LR	LR	05 33 55.2	
	comp=Z,65nm,19.6s,baz=80,slow=42						
MAT	Matsushiro	3.41	241	P	Pn	05 32 15.1	+3.0
MAT				eS	Sn	05 32 54.9	+3.6
JHJ	Hachijo jima 2	5.39	199	Pn	Pn	05 32 40.6	+1.3
	11nm,0.3s,baz=90,slow=20,SNR=6.7						
JHJ				Sn	Sn	05 33 37.9	-2.2
	13nm,0.3s,baz=322,slow=19,SNR=3.4						
USRK	Ussuriysk Ar.	9.56	312	Pn	Pn	05 33 37.8	+1.3
	0.4nm,0.3s,baz=119,slow=14,SNR=6.3						
JNU	Nakatsue	10.33	244	LR	LR	05 37 57.3	
	comp=Z,48nm,21.8s,baz=119,slow=38						
KSRS	Korea Array	11.10	270	Pn	Pn	05 34 04.6	+7.1
	0.5nm,0.3s,baz=81,slow=14,SNR=3.6						
KSRS				LR	LR	05 37 52.8	
	comp=Z,22nm,20.5s,baz=95,slow=35						
KLR	Kul'dur	13.21	330	LR	LR	05 38 37.9	
	comp=Z,22nm,21.8s,baz=153,slow=33						
H11N2	WAKE ISLAND Hy	28.44	123	T	T	06 07 26.3	
	baz=316,slow=76,SNR=343						
H11N1	WAKE ISLAND Hy	28.45	123	T	T	06 07 29.6	
	baz=316,slow=76,SNR=546						
H11N3	WAKE ISLAND Hy	28.46	123	T	T	06 07 30.3	
	baz=316,slow=76,SNR=440						
H11S1	WAKE ISLAND Hy	29.20	125	T	T	06 08 24.2	
	baz=318,slow=76,SNR=500						
H11S3	WAKE ISLAND Hy	29.20	125	T	T	06 08 30.3	
	baz=318,slow=76,SNR=694						
H11S2	WAKE ISLAND Hy	29.21	125	T	T	06 08 26.9	
	baz=318,slow=76,SNR=460						
ZALV	Zalesovo Beam	41.42	311	P	P	05 39 03.2	-0.3
	1.9nm,0.5s,baz=92,slow=7.4,SNR=6.8						
MKAR	Makanchi Array	43.84	301	P	P	05 39 23.1	-0.2
	1.1nm,0.7s,baz=85,slow=9.6,SNR=9.8						
WRA	Warramunga Arr	58.30	188	P	P	05 41 11.9	-0.1
	1.3nm,1.1s,baz=5.5,slow=7.0,SNR=4.7						
ARCES	ARCESS Array B	63.02	339	P	P	05 41 43.0	-0.7
	1.8nm,0.9s,baz=49,slow=6.1,SNR=5.6						
FINES	FINESS Array B	67.94	332	P	P	05 42 15.1	-0.5
	2.3nm,0.9s,baz=54,slow=3.6,SNR=3.6						
VRAC	Vranov	80.33	327	LR	LR	06 24 48.9	
	comp=Z,17nm,19.5s,baz=353,slow=40						

*IDC **06** 05:50:00.3±1.1, 35°.59N×141°.48E, h0^{km}, mb3.4/5, mb1 3.7/6, mb1mx3.4/51, mbtmp3.3/6, ML3.3/1, MS2.3/1, Ms1 2.3/1, ms1mx2.1/34, Error ellipse: s-maj=30.6km s-min=26.9km az=163.0*

*JMA **06** 05:50:02.9±0.3, 35°.77N×141°.41E, h20^{km}±3^{km}, M3.3*

*ISCJB **06** 05:50:03.1±0.8, 35°.75N±0°.08×141°.45E±0°.07, h26^{km}, mb3.5/5, Error ellipse: s-maj=11.7km s-min=8.1km az=171.6*

ISC 06 05:50:04.5±0.9**, 35°.80N**±0°.07×**141°.32E**±0°.07**, h26^{km}, n19, σ1^{s}16**/15**, mb3.5**/5**, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
CHOJ	Chosi	0.39	256	P	Pb	05 50 12.1	-0.8
CHOJ				S	Sb	05 50 18.7	+0.1
JCN	Nagara	0.99	248	P	Pb	05 50 23.8	+0.9
JYT	Yasato	1.01	295	P	Pn	05 50 21.9	-1.0
JHO	Hitachi	1.01	323	P	Pn	05 50 22.2	-0.8
BSO4	Boso 4	1.14	225	P	Pn	05 50 24.7	+0.1
BSO3	Boso 3	1.20	214	P	Pn	05 50 24.9	-0.4
MJAR	Matsushiro Arr	2.62	287	Pn	Pn	05 50 46.9	+1.7
	4.3nm,0.3s,baz=110,slow=9.2,SNR=28						
MJAR				LR	LR	05 51 52.3	
	comp=Z,54nm,20.8s,baz=95,slow=40						
MAT	Matsushiro	2.63	287	P	Pn	05 50 46.9	+1.7
MAT				eS	Sb	05 51 20.9	-1.8
H11N2	WAKE ISLAND Hy	27.60	119	T	T	06 24 48.4	
	baz=311,slow=75,SNR=40						
H11N1	WAKE ISLAND Hy	27.61	119	T	T	06 24 54.7	
	baz=311,slow=75,SNR=36						
H11N3	WAKE ISLAND Hy	27.62	119	T	T	06 24 48.9	
	baz=311,slow=75,SNR=43						
H11S1	WAKE ISLAND Hy	28.27	121	T	T	06 25 30.9	
	baz=312,slow=75,SNR=32						
H11S3	WAKE ISLAND Hy	28.27	121	T	T	06 25 38.5	
	baz=312,slow=75,SNR=28						
H11S2	WAKE ISLAND Hy	28.29	121	T	T	06 25 40.6	
	baz=312,slow=75,SNR=22						
MKAR	Makanchi Array	44.72	303	P	P	05 58 16.4	+1.0
	0.2nm,0.3s,baz=90,slow=8.0,SNR=3.0						
ILAR	Eielson Array	50.58	32	P	P	05 59 00.9	+0.3
	0.4nm,0.6s,baz=270,slow=7.2,SNR=5.3						
WRA	Warramunga Arr	55.83	188	P	P	05 59 38.0	-1.6
	0.2nm,0.3s,baz=3.2,slow=7.9,SNR=2.5						
PDAR	Pinedale Array	78.59	45	P	P	06 02 04.5	+0.3
	0.2nm,0.5s,baz=298,slow=1.9,SNR=3.3						
TXAR	Lajitas Array	90.93	52	P	P	06 03 06.9	+0.5
	0.1nm,0.5s,baz=290,slow=2.6,SNR=2.5						

WEL 06 05:50:34.1±0.1**, 38°.48S**×**177°.79E, h63^{km}**±1^{km}**, ML3.6**/9**, 3C-13D, Error ellipse: s-maj=1.2km s-min=0.8km az=90.0, North Island**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
TKGZ	Te Karaka	0.06	54	PN	Pn	05 50 42.9	-0.5
TKGZ				SN	Sn	05 50 49.6	-0.5
RIGZ	Rimuhau	0.23	184	⇑PN	Pn	05 50 43.8	-0.4
RIGZ				SN	Sn	05 50 51.7	+0.2
MWZ	Matawai	0.25	305	⇓PN	Pn	05 50 43.5	-0.8
MWZ				SN	Sn	05 50 50.3	-1.3
MWZ				AML	AML	05 50 50.5	
MWZ				AML	AML	05 50 50.5	
RAGZ	Rawiri	0.29	266	⇑PN	Pn	05 50 44.2	-0.4
RAGZ				SN	Sn	05 50 51.9	-0.3
CNGZ	Carnagh Statio	0.33	92	PN	Pn	05 50 44.9	+0.1
TWGZ	Tauwhareparae	0.34	27	⇓PN	Pn	05 50 44.9	0.0
TWGZ				SN	Sn	05 50 53.4	+0.7
PRGZ	Paritu Road	0.45	170	PN	Pn	05 50 45.5	-0.5
SNGZ	Shannon Statio	0.46	229	PN	Pn	05 50 45.7	-0.3
SNGZ				SN	Sn	05 50 54.8	+0.1
PUZ	Puketiti	0.55	43	⇓PN	Pn	05 50 46.6	-0.3
PUZ				SN	Sn	05 50 55.9	-0.3
PUZ				AML	AML	05 50 56.9	
KNZ	Kokohu	0.55	189	⇓PN	Pn	05 50 46.3	-0.6
KNZ				SN	Sn	05 50 56.2	0.0
KNZ				AML	AML	05 50 56.4	
URZ	Urewera	0.57	292	PN	Pn	05 50 47.0	-0.1
URZ				SN	Sn	05 50 56.3	-0.3
URZ				AML	AML	05 50 57.6	
PKGZ	Pakihiroa	0.63	21	⇓PN	Pn	05 50 47.7	-0.1
MHGZ	Mahia Peninsul	0.68	172	PN	Pn	05 50 48.2	-0.2
RAHZ	Arahi	0.70	231	⇓PN	Pn	05 50 48.5	-0.1
RAHZ				SN	Sn	05 50 59.7	+0.5
HAZ	Te Kaha	0.72	360	⇓PN	Pn	05 50 48.9	+0.1
WHHZ	Waihua	0.74	215	PN	Pn	05 50 48.8	-0.2
WHHZ				SN	Sn	05 51 01.2	+1.3
WMGZ	Waiomatatini S	0.82	37	⇓PN	Pn	05 50 50.0	0.0
NMHZ	Naumai	0.98	231	PN	Pn	05 50 52.3	+0.1
NMHZ				SN	Sn	05 51 07.1	+1.5
ARHZ	Aropaoanui	1.00	218	PN	Pn	05 50 52.3	0.0
MXZ	Matakaoa Point	1.00	24	⇓PN	Pn	05 50 52.3	0.0
MXZ				AML	AML	05 51 07.7	
MXZ				AML	AML	05 51 07.7	
MXZ				AML	AML	05 51 08.3	
RRRZ	Republican Roa	1.01	277	PN	Pn	05 50 52.3	-0.1
TARZ	Mount Tarawera	1.03	283	PN	Pn	05 50 52.8	0.0
PRRZ	Plateau Road	1.09	268	⇑PN	Pn	05 50 53.3	-0.2
MRHZ	Matea Rd	1.13	251	⇓PN	Pn	05 50 54.0	0.0
MRHZ				SN	Sn	05 51 08.3	-0.6
OPRZ	Ohinepanea	1.16	303	PN	Pn	05 50 53.6	-0.7
OPRZ				SN	Sn	05 51 08.0	-1.3
BKZ	Black Stump Fm	1.22	235	⇓PN	Pn	05 50 55.3	0.0
BKZ				SN	Sn	05 51 11.2	+0.2
BKZ				AML	AML	05 51 12.3	
MCHZ	McNeill Hill	1.29	221	⇓PN	Pn	05 50 55.9	-0.2
MCHZ				SN	Sn	05 51 13.5	+1.0
KWHZ	Kaweka Forest	1.42	228	⇓PN	Pn	05 50 57.5	-0.4
KWHZ				SN	Sn	05 51 16.4	+0.6
KAHZ	Kahuranaki	1.50	208	PN	Pn	05 50 58.1	-0.8
KRHZ	Kereru	1.60	223	PN	Pn	05 50 59.3	-1.0
KRHZ				SN	Sn	05 51 19.4	-0.7
BHHZ	Black Hill Sta	1.68	232	PN	Pn	05 51 01.0	-0.4
PXZ	Pawanui	1.71	204	PN	Pn	05 50 59.8	-1.9
PXZ				AML	AML	05 51 22.0	
PXZ				AML	AML	05 51 22.0	
PNHZ	Pukenui	1.89	220	PN	Pn	05 51 02.7	-1.5
PNHZ				SN	Sn	05 51 26.1	-1.0
PRHZ	Porangahau	2.00	206	PN	Pn	05 51 03.8	-1.8
TSZ	Takapari Road	2.12	221	PN	Pn	05 51 05.5	-1.9
DVHZ	Dannevirke	2.21	214	PN	Pn	05 51 06.3	-2.2
DVHZ				SN	Sn	05 51 33.1	-1.7
ANWZ	Angora Road	2.23	207	PN	Pn	05 51 06.9	-1.8
BFZ	Birch Farm	2.50	208	PN	Pn	05 51 09.9	-2.6
BFZ				SN	Sn	05 51 39.4	-2.5
MRZ	Mangatainoka R	2.77	217	PN	Pn	05 51 13.4	-2.7
MRZ				SN	Sn	05 51 45.5	-2.9
MRZ				AML	AML	05 51 48.1	
TMWZ	Te Maipa	3.01	208	PN	Pn	05 51 16.4	-2.9
MTW	Mount Morrison	3.21	213	AML	AML	05 51 56.0	
MQZ	McQueen's Vall	6.50	215	PN	Pn	05 52 02.0	-5.1

IDC 06 05:52:10.6±70.0**, 16°.48S**×**178°.28W, h0^{km}, mb3.7**/3**, mb1 3.9**/3**, mb1mx3.5**/40**, mbtmp3.7**/3**, Error ellipse: s-maj=1289.0km s-min=175.5km az=77.0, Fiji Islands region**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
STKA	Stephens Creek	39.44	240	P	P	05 59 43.2	+0.6
	0.7nm,0.4s,baz=80,slow=11,SNR=3.7						
WRA	Warramunga Arr	45.03	258	P	P	06 00 28.6	+0.2
	0.6nm,0.6s,baz=96,slow=7.5,SNR=3.7						
ASAR	Alice Springs	45.31	253	P	P	06 00 29.5	-1.1
	0.4nm,0.5s,baz=87,slow=8.6,SNR=5.6						

*NIED **06** 05:54:00, 38°.40N×142°.30E, h11^{km}, Mw4.3 Best double couple: M₀3.10000×10^{15} NP1:φs158.00000°, δ19.00000°, λ-56.00000°. NP2:φs303.00000°, δ75.00000°, λ-101.00000°.*

*ISCJB **06** 05:54:21.5±0.8, 38°.36N±0°.03×142°.29E±0°.04, h24^{km}±5^{km}, mb4.4/60, MS3.9/9, Error ellipse: s-maj=6.0km s-min=4.5km az=33.2*

*JMA **06** 05:54:22.1±0.2, 38°.40N×142°.30E, h31^{km}±3^{km}, M4.5*

JMA Felt II J1.

*MOS **06** 05:54:23.1±1.0, 38°.38N×142°.31E, h37^{km}, mb4.6/15, Error ellipse: s-maj=9.2km s-min=6.7km az=101.0*

*IDC **06** 05:54:26.2±2.2, 38°.35N×142°.11E, h42^{km}±20^{km}, mb4.0/30, mb1 4.2/34, mb1mx4.1/50, mbtmp4.3/34, ML3.2/3, MS3.3/8, Ms1 3.3/8, ms1mx3.0/60, Error ellipse: s-maj=14.0km s-min=11.4km az=104.0*

*NEIC **06** 05:54:26.6±0.7, 38°.35N×142°.17E, h46^{km}±6^{km}, mb4.6/17, Error ellipse: s-maj=7.3km s-min=5.2km az=110.0*

ISC 06 05:54:20.7±0.7**, 38°.36N**±0°.04×**142°.27E**±0°.04**, h8^{km}**±4^{km}**, n138, σ1^{s}35**/142**, mb4.5**/60**, MS4.0**/9**, 7C-4D, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
JIO	Ouri	0.73	277	P	Pb	05 54 36.2	+0.5
JIO				S	Sb	05 54 45.2	-0.6
OFUJ	Ofunato	0.86	327	P	Pb	05 54 37.5	-0.3
JMK	Ichinoseki	1.01	306	P	Pb	05 54 40.2	-0.3
JMK				eS	Sb	05 54 53.7	-0.2
JOU	Okura	1.26	271	P	Pn	05 54 44.1	-0.6
JOU				eS	Sb	05 55 00.5	-0.7
JMM	Marumori	1.27	247	P	Pn	05 54 44.0	-0.7
JMM				S	Sb	05 55 00.3	-1.0
JOM	Ohasama	1.35	326	P	Pn	05 54 45.1	-0.7
JOM				S	Sb	05 55 02.0	-1.6
JFK	Kawauchi	1.49	228	P	Pn	05 54 47.0	-0.8
JFK				eS	Sn	05 55 04.5	-2.9
JYK	Kaneyama	1.60	291	P	Pn	05 54 49.4	+0.2
JYK				eS	Sn	05 55 09.9	-0.2
JRG	Rokugo	1.64	309	P	Pn	05 54 50.0	+0.1
JYS	Shirataka	1.74	266	P	Pn	05 54 51.6	+0.4
JYS				eS	Sb	05 55 14.5	-0.5
MJAR	Matsushiro Arr	3.71	242	P	Pn	05 55 19.8	+1.4
	13nm,0.3s,baz=61,slow=11,SNR=28						
ERM	Erimo	3.71	10	⇑iP	Pn	05 55 19.2	+0.9
ERM	Erimo	3.71	10	ePn	Pn	05 55 19.7	+1.4
MAJO	Matsushiro	3.71	242	deP	Pn	05 55 20.0	+1.7
MAJO	Matsushiro	3.71	242	ePn	Pn	05 55 20.4	+2.0
MAT	Matsushiro	3.71	242	P	Pn	05 55 19.5	+1.2
MAT				S	Sn	05 56 06.5	+4.3
INU	Inuyama	5.18	236	ePn	Pn	05 55 41.3	+2.8
JHJ2	Mitsune	5.61	202	ePn	Pn	05 55 45.0	+0.7
JHJ	Hachijo jima 2	5.61	202	P	Pn	05 55 45.4	+1.0
	118nm,0.3s,baz=309,slow=23,SNR=7.9						
JHJ				S	Sn	05 56 45.5	-3.6
	89nm,0.3s,baz=69,slow=23,SNR=7.6						
JHJ				LR	LR	05 58 27.2	
	comp=Z,358nm,18.3s,baz=38,slow=44						
YUK	Yuzh-Kuril'sk	6.28	24	eP	Pn	05 55 53.4	-0.1
YUK				eS	Sn	05 57 03.3	-2.1
YUK				pmax	pmax		
	comp=Z,118nm,0.3s						
SHO	Shikotan	6.49	31	eP	Pn	05 55 53.8	-2.6
SHO				eS	Sn	05 57 03.8	-6.8
SHO				pmax	pmax		
	comp=Z,127nm,0.5s						
SHO				pmax	pmax		
	comp=N,53nm,0.4s						
SHO				pmax	pmax		
	comp=E,48nm,0.4s						
KUR	Kuril'sk	8.03	30	eP	Pn	05 56 17.5	-0.1
KUR				eS	Sn	05 57 44.0	-4.6
KUR				pmax	pmax		
	comp=Z,36nm,1.0s						
KUR				smax	smax		
	comp=N,54nm,0.7s						
KUR				smax	smax		
	comp=E,33nm,0.7s						
YSS	Yuzh-Sakhalins	8.59	2	eP	Pn	05 56 22.2	-3.1
USRK	Ussuriysk Ar.	9.69	310	P	Pn	05 56 41.2	+1.0
	comp=E,0.3nm,0.3s,baz=122,slow=12,SNR=4.6						
USRK				LR	LR	06 00 28.5	
	comp=E,103nm,18.7s,baz=122,slow=38						
JNU	Nakatsue	10.63	244	P	Pn	05 56 56.9	+3.5
	comp=E,0.8nm,0.3s,baz=61,slow=7.7,SNR=13						
JNU				LR	LR	06 01 19.6	
	comp=E,512nm,18.7s,baz=122,slow=39						
JNU	Nakatsue	10.63	244	ePn	Pn	05 56 57.3	+4.0
CBIJ	Chichi jima	11.24	180	P	Pn	05 56 59.1	-2.5
CBIJ				S	Sn	05 58 57.6	-10
JCJ	Chichijima	11.24	180	P	Pn	05 56 59.1	-2.5
	comp=E,22nm,0.3s,baz=30,slow=20,SNR=8.2						
JCJ				S	Sn	05 58 57.6	-10
	baz=287,slow=19						
KSRS	Korea Array	11.38	270	P	Pn	05 57 07.5	+4.1
	comp=E,0.6nm,0.3s,baz=77,slow=14,SNR=4.5						
KSRS				LR	LR	06 00 54.4	
	comp=E,99nm,21.0s,baz=68,slow=34						
KSAR	Wonju Array Be	11.41	270	P	Pn	05 57 07.5	+3.6
KSAR	Wonju Array Be	11.41	270	P	Pn	05 57 07.5	+3.6
KLR	Kul'dur	13.24	328	P	Pn	05 57 32.3	+3.4
	comp=E,0.2nm,0.3s,baz=126,slow=12,SNR=4.1						
KLR				LR	LR	06 02 28.9	
	comp=E,91nm,19.0s,baz=138,slow=37						
PETK	Petropavlovsk-	18.20	31	LR	LR	06 05 16.8	
	comp=E,65nm,21.2s,baz=221,slow=36						
NJ2	Nanjing	20.12	259	eP	Pn	05 58 55.8	-1.0
NJ2				pmax	pmax		
	comp=Z,23nm,0.9s						
MA2	Magadan	21.91	12	P	P	05 59 14.9	+0.7
	comp=Z,9.7nm,0.6s,baz=218,slow=8.6,SNR=13						
MA2				LR	LR	06 07 24.2	
	comp=Z,83nm,20.1s,baz=185,slow=35						
MA2	Magadan	21.91	12	P	P	05 59 14.9	+0.7
MA2				eP	pP	05 59 15.1	-1.3
YULB	Yu-li	23.30	236	eP	P	05 59 29.9	+0.8
HHC	Hu-ho-hao-te	23.73	286	eP	P	05 59 32.4	-0.9
HHC				S	S	06 03 37.4	-11
HHC				pmax	pmax		
	comp=Z,24nm,0.8s						
HHC				pmax	pmax		
	comp=Z,120nm,4.5s						
HHC				LR	LR		
	comp=N,320nm,10.8s						
HHC				LR	LR		
	comp=E,510nm,10.3s						
HHC				LR	LR		
	comp=Z,390nm,11.2s						
SEY	Seymchan	25.36	11	P	P	05 59 49.7	+1.8
	comp=Z,8.6nm,0.8s,baz=200,slow=6.6,SNR=35						
SEY	Seymchan	25.36	11	⇓iP	P	05 59 50.1	+2.2
BOD	Bodaibo	26.79	326	eP	P	05 59 59.2	-1.7
BOD				pmax	pmax		
	comp=Z,3.0nm,1.2s						
SONM	Songino Array	27.64	302	P	P	06 00 07.9	-0.9
	comp=Z,0.7nm,0.5s,baz=112,slow=8.6,SNR=4.6						
ENH	Enshi	28.14	263	eP	P	06 00 12.8	-0.6
	comp=Z,24nm,0.8s						
H11N2	WAKE ISLAND Hy	28.28	124	T	T	06 30 32.8	
	baz=316,slow=75,SNR=1797						
H11N1	WAKE ISLAND Hy	28.29	124	T	T	06 30 35.8	
	baz=316,slow=75,SNR=1573						
H11N3	WAKE ISLAND Hy	28.30	124	T	T	06 30 34.1	
	baz=316,slow=75,SNR=1151						
H11S1	WAKE ISLAND Hy	29.05	126	T	T	06 31 32.0	
	baz=317,slow=76,SNR=472						
H11S3	WAKE ISLAND Hy	29.05	126	T	T	06 31 32.6	
	baz=317,slow=76,SNR=655						
H11S2	WAKE ISLAND Hy	29.07	126	T	T	06 31 33.5	
	baz=317,slow=76,SNR=392						
TLY	Talaya	30.00	309	P	P	06 00 29.7	+0.1
	comp=Z,2.1nm,0.7s,baz=135,slow=2.9,SNR=4.8						
TLY	Talaya	30.00	309	eP	P	06 00 26.7	-3.0
TLY				pmax	pmax		
	comp=Z,5.0nm,0.9s						
TLY				MLR	MLR		
	comp=Z,72nm,16.0s						
TLY	Talaya	30.00	309	eP	P	06 00 30.2	+0.6
	comp=Z,4.4nm,0.9s						
ZAK	Zakamensk	30.01	306	eP	P	06 00 29.7	-0.1
ZAK				pmax	pmax		
	comp=Z,3.0nm,1.2s						
LZH	Lanzhou	30.54	278	eP	P	06 00 35.1	+0.4
LZH				pP	sP	06 00 46.9	+8.8
LZH				sP	pP	06 00 52.2	+15
LZH				pmax	pmax		
	comp=Z,19nm,1.0s						
LZH				pmax	pmax		
	comp=Z,82nm,4.1s						
LZH				LR	LR		
	comp=N,380nm,17.2s						
LZH				LR	LR		
	comp=E,230nm,12.2s						
LZH				LR	LR		
	comp=Z,310nm,16.0s						
GYA	Guiyang	32.13	259	⇑iP	P	06 00 48.1	-0.7
GYA				pP	sP	06 01 01.8	+10
GYA				PP	PnPn	06 01 55.4	+1.1
GYA				PcP	PcP	06 03 39.0	+1.1
GYA				S	S	06 05 57.2	-4.4
GYA				sS	sS	06 06 16.8	+11
GYA				ScP	ScP	06 07 19.2	-2.5
GYA				SS	SnSn	06 07 50.0	-1.5
GYA	Guiyang	32.13	259	ScS	ScS	06 11 14.5	-6.2
GYA				pmax	pmax		
	comp=Z,20nm,0.8s						
GYA				pmax	pmax		
	comp=Z,110nm,5.5s						
GYA				LR	LR		
	comp=N,450nm,16.2s						
GYA				LR	LR		
	comp=E,410nm,15.8s						
GYA				LR	LR		
	comp=Z,440nm,16.0s						
CD2	Chengdu	32.37	269	P	P	06 00 49.8	-1.0
CD2				pmax	pmax		
	comp=Z,1.0nm,0.5s						
BILL	Bilibino	32.56	17	⇑iP	P	06 00 55.9	+3.9
BILL				pmax	pmax		
	comp=Z,2.0nm,1.1s						
GTA	Gaotai	32.84	285	eP	P	06 00 55.9	+0.9
GTA				pP	sP	06 01 03.2	+4.8
GTA				sP	pP	06 01 06.1	+8.7
GTA				PcP	PcP	06 03 43.0	+3.3
GTA				S	S	06 06 11.0	-1.6
GTA				pmax	pmax		
	comp=Z,4.0nm,1.0s						
GTA				pmax	pmax		
	comp=Z,120nm,5.0s						
GTA				LR	LR		
	comp=N,340nm,17.1s						
GTA				LR	LR		
	comp=E,360nm,19.0s						
GTA				LR	LR		
	comp=Z,150nm,17.1s						
TIXI	Tiksi	34.06	352	⇑iP	P	06 01 05.1	+0.1
TIXI				pmax	pmax		
	comp=Z,1.0nm,0.8s						
TIXI	Tiksi	34.06	352	eP	P	06 01 06.4	+1.4
	comp=Z,2.3nm,0.8s						
KMI	Kunming	35.85	260	P	P	06 01 19.1	-2.1
KMI				sP	sP	06 01 32.1	+7.5
KMI				pmax	pmax		
	comp=Z,9.0nm,0.9s						
KMI				pmax	pmax		
	comp=Z,55nm,6.8s						
KMI				LR	LR		
	comp=N,140nm,13.9s						
KMI				LR	LR		
	comp=E,210nm,12.9s						
KMI				LR	LR		
	comp=Z,190nm,15.2s						
WMQ	Urumqi	40.86	296	P	P	06 02 04.0	+0.9
WMQ				pP	sP	06 02 11.5	+5.0
WMQ				sP	pP	06 02 19.0	+13
WMQ				S	S	06 08 11.0	-3.5
WMQ				pmax	pmax		
	comp=Z,30nm,0.8s						
WMQ				pmax	pmax		
	comp=Z,250nm,4.0s						
WMQ				LR	LR		
	comp=N,280nm,25.0s						
WMQ				LR	LR		
	comp=E,130nm,22.0s						
WMQ				LR	LR		
	comp=Z,65nm,23.2s						
ZAA0	Zalesovo Array	41.54	311	eP	P	06 02 08.3	-0.1
ZAA0				eP	pP	06 02 08.8	-1.9
ZALV	Zalesovo Beam	41.54	311	P	P	06 02 08.5	+0.1
	comp=Z,3.7nm,0.5s,baz=88,slow=7.9,SNR=13						
ZALV				PcP	PcP	06 04 04.6	-1.0
	comp=Z,1.0nm,0.4s,baz=124,slow=3.1,SNR=4.3						
NVS	Novosibirsk	42.43	313	eP	P	06 02 15.6	0.0
CMAR	Chiang Mai Arr	42.50	255	P	P	06 02 16.4	-0.2
	comp=Z,0.9nm,0.3s,baz=43,slow=5.7,SNR=4.0						
CM01	Chiang Mai Arr	42.51	255	eP	P	06 02 16.9	+0.2
MK01	Makanchi Array	44.00	301	eP	P	06 02 28.7	+0.2
MK31	Makanchi Array	44.00	301	eP	P	06 02 29.5	+0.9
MK31	Makanchi Array	44.00	301	eP	P	06 02 29.4	+0.9
MKAR	Makanchi Array	44.00	301	P	P	06 02 28.3	-0.2
	comp=Z,2.1nm,0.7s,baz=84,slow=10,SNR=9.0						
MKAR	Makanchi Array	44.00	301	ceP	P	06 02 28.7	+0.2
MKAR				pmax	pmax		
	comp=Z,2.0nm,0.6s						
MAKZ	Makanchi	44.21	301	eP	P	06 02 30.6	+0.4
MAKZ				pmax	pmax		
	comp=Z,7.0nm,0.9s						
MAKZ	Makanchi	44.21	301	eP	P	06 02 30.6	+0.4
	comp=Z,6.6nm,0.9s						
KURK	Kurchatov	45.66	307	eP	P	06 02 41.5	-0.1
KURK				pmax	pmax		
	comp=Z,19nm,0.9s						
KURK	Kurchatov	45.66	307	eP	P	06 02 41.5	-0.1
	comp=Z,20nm,0.9s						
KURBB	Kurchatov Arra	45.73	307	P	P	06 02 42.2	0.0
	comp=Z,11nm,0.6s,baz=82,slow=8.1,SNR=105						
COLA	College	47.59	33	⇓eP	P	06 02 59.8	+3.3
COLA				pmax	pmax		
	comp=Z,12nm,2.6s						
ILAR	Eielson Array	48.01	33	P	P	06 03 01.0	+1.2
	comp=Z,1.1nm,0.8s,baz=267,slow=7.1,SNR=9.0						
TKM2	Tokmak 2	49.61	298	eP	P	06 03 13.5	+0.8
TKM2				pmax	pmax		
	comp=Z,9.0nm,1.2s						

Code	Station Name	Δ°	AZ°	Op	ISC	Time	Res
TKM2	Tokmak 2	49.61	298	eP	P	06 03 13.5	+0.8
	comp=Z,9.4nm,1.2s						
BVAR	Borovoye Array	50.19	312	P	P	06 03 17.0	+0.3
	comp=Z,1.1nm,0.5s,baz=72,slow=8.4,SNR=8.8						
BVAR				PcP	PcP	06 04 35.8	-0.1
	comp=Z,1.8nm,0.5s,baz=98,slow=3.0,SNR=5.5						
BRVK	Borovoye	50.24	312⇑	eP	P	06 03 17.4	+0.3
BRVK				pmax	pmax		
	comp=Z,4.0nm,2.1s						
BRVK	Borovoye	50.24	312	eP	P	06 03 19.2	+2.1
	comp=Z,5.0nm,1.0s						
AAK	Ala-Archa	50.47	298	P	P	06 03 19.2	0.0
	comp=Z,1.2nm,0.6s,baz=138,slow=7.3,SNR=3.9						
AAK	Ala-Archa	50.47	298⇑	eP	P	06 03 19.1	0.0
AAK				pmax	pmax		
	comp=Z,4.0nm,1.1s						
KSH	Kashi	50.49	293	eP	P	06 03 23.7	+4.3
KSH				epP	sP	06 03 36.3	+13
KSH				S	S	06 10 34.8	+1.3
KSH				pmax	pmax		
	comp=Z,94nm,5.5s						
INK	Inuvik	52.90	28	P	P	06 03 37.8	+1.1
	comp=Z,0.8nm,0.7s,baz=319,slow=5.2,SNR=5.0						
KKAR	Karatay Array	53.06	300	eP	P	06 03 38.4	+0.1
KKAR				pmax	pmax		
	comp=Z,2.0nm,0.6s						
KKAR	Karatay Array	53.06	300	eP	P	06 03 38.4	+0.1
	comp=Z,1.6nm,0.6s						
PSI	Prapat	53.06	239	P	P	06 03 38.5	-0.2
	comp=Z,6.0nm,0.8s,baz=66,slow=2.4,SNR=8.9						
PSI	Prapat	53.06	239	eP	P	06 03 39.0	+0.3
PSI				pmax	pmax		
	comp=Z,6.0nm,0.7s						
PSI	Prapat	53.06	239	eP	P	06 03 39.0	+0.3
	comp=Z,6.3nm,0.7s						
ARU	Arti	55.82	318	P	P	06 03 58.2	+0.1
	comp=Z,4.5nm,0.2s,baz=82,slow=5.4,SNR=4.3						
ARU	Arti	55.82	318	eP	P	06 03 58.3	+0.1
ARU				pmax	pmax		
	comp=Z,7.0nm,0.9s						
ARU	Arti	55.82	318	eP	P	06 03 58.3	+0.1
	comp=Z,6.9nm,0.9s						
DLBC	Dease Lake	57.16	39	P	P	06 04 09.9	+2.1
	comp=Z,1.5nm,0.8s,baz=262,slow=6.7,SNR=2.4						
ABKAR	Akbulak array	57.61	310	eP	P	06 04 10.7	-0.3
	comp=Z,2.5nm,0.6s						
AKTO	Aktyubinsk	58.30	312	P	P	06 04 15.5	-0.3
	comp=Z,1.7nm,0.6s,baz=69,slow=10,SNR=8.5						
WRAB	Tennant Creek	58.46	189d	iP	P	06 04 17.1	-0.1
WRAB				pmax	pmax		
	comp=Z,61nm,2.5s						
WRAB	Tennant Creek	58.46	189	eP	P	06 04 17.0	-0.2
	comp=Z,11nm,1.0s						
WRAB				eP	sP	06 04 21.1	+0.5
WB2	Warramunga Arr	58.47	189	eP	P	06 04 17.1	-0.1
	comp=Z,12nm,0.9s						
WRA	Warramunga Arr	58.47	189	P	P	06 04 17.1	-0.1
	comp=Z,6.5nm,0.7s,baz=7.2,slow=7.4,SNR=37						
SPITS	Spitsbergen Ar	59.35	349	LR	LR	06 31 35.1	
	comp=Z,40nm,18.6s,baz=10.0,slow=38						
AS01	Alice Springs	62.19	189	eP	P	06 04 43.1	+0.4
AS31	Alice Springs	62.20	189	eP	P	06 04 43.3	+0.6
	comp=Z,1.6nm,0.9s						
ASAR	Alice Springs	62.20	189	P	P	06 04 43.3	+0.6
	comp=Z,4.5nm,0.7s,baz=11,slow=6.4,SNR=44						
YKA	Yellowknife Ar	62.32	31	P	P	06 04 43.9	+0.9
	comp=Z,0.2nm,0.6s,baz=301,slow=6.8,SNR=5.4						
YKA	Yellowknife Ar	62.32	31	P	P	06 04 44.0	+0.9
ARCES	ARCESS Array B	62.99	339	P	P	06 04 47.2	-0.3
	comp=Z,3.9nm,1.0s,baz=54,slow=9.1,SNR=4.7						
GEYT	Alibeck	63.79	299	P	P	06 04 53.6	+0.3
	comp=Z,1.9nm,0.5s,baz=85,slow=3.3,SNR=3.2						
VRH	Novokhopyorsk	67.05	318	eP	P	06 05 13.4	-0.8
VRH				pmax	pmax		
	comp=Z,10.0nm,1.0s						
FINES	FINESS Array B	67.96	332	P	P	06 05 19.8	+0.1
	comp=Z,3.8nm,0.7s,baz=46,slow=8.2,SNR=12						
VSR	Storozhevoye	68.38	319	eP	P	06 05 22.7	+0.1
VSR				pmax	pmax		
	comp=Z,10.0nm,1.4s						
STKA	Stephens Creek	69.88	181	P	P	06 05 32.5	+0.6
	comp=Z,2.1nm,0.7s,baz=357,slow=8.0,SNR=5.1						
KIV	Kislovodsk	70.55	311	eP	P	06 05 37.5	+1.3
KIV				pmax	pmax		
	comp=Z,15nm,1.1s						
KBZ	Khabaz	70.55	311	P	P	06 05 36.7	+0.6
	comp=Z,3.9nm,0.9s,baz=78,slow=6.6,SNR=7.2						
WSAR	Wadi Sarin	71.18	285	P	P	06 05 40.8	+0.5
	comp=Z,3.8nm,0.8s,baz=125,slow=7.3,SNR=4.1						
NB2	NORSAR Subarra	73.22	337	P	P	06 05 52.4	+0.5
	comp=Z,1.9nm,0.6s,baz=39,slow=6.5						
NOA	NORSAR Array B	73.22	337	P	P	06 05 52.2	+0.3
	comp=Z,1.2nm,0.6s,baz=39,slow=6.0,SNR=5.9						
AKASG	Malin Array Be	73.66	322	P	P	06 05 54.5	-0.1
	comp=Z,3.5nm,0.6s,baz=46,slow=5.7,SNR=17						
KIEV	Kiev	73.67	322	eP	P	06 05 54.8	+0.1
KIEV				pmax	pmax		
	comp=Z,6.0nm,0.7s						
KIEV	Kiev	73.67	322	eP	P	06 05 54.8	+0.1
	comp=Z,6.4nm,0.7s						
PDAR	Pinedale Array	76.25	46	P	P	06 06 11.0	+0.9
	comp=Z,0.5nm,0.6s,baz=271,slow=1.1,SNR=7.6						
CRY	Cary Ranch	77.58	57	eP	P	06 06 18.7	+1.1
BRTR	Keskin Array B	78.48	312	P	P	06 06 22.6	+0.1
	comp=Z,0.9nm,0.7s,baz=64,slow=6.6,SNR=4.5						
MORC	Moravsky Berou	79.61	327	eP	P	06 06 29.2	+0.8
MORC				pmax	pmax		
	comp=Z,24nm,1.0s						
MORC	Moravsky Berou	79.61	327	eP	P	06 06 29.2	+0.8
	comp=Z,24nm,1.0s						
SMCO	Snowmass	80.08	48	eP	P	06 06 35.1	+3.5
	comp=Z,189nm,1.7s						
CLL	Collm	80.28	330	eP	P	06 06 32.0	+0.1
CLL				i		06 06 39.4	
	comp=Z,8.0nm,0.7s						
CLL	Collm	80.28	330	eP	P	06 06 32.0	+0.1
CLL				i		06 06 39.4	
GERES	GERESS Array B	81.94	329	P	P	06 06 41.2	+0.3
	comp=Z,0.6nm,0.5s,baz=26,slow=6.5,SNR=4.8						
ANMO	Albuquerque	83.21	50	eP	P	06 06 51.5	+3.6
ANMO				pmax	pmax		
	comp=Z,4.0nm,1.3s						
ANMO	Albuquerque	83.21	50	eP	P	06 06 51.5	+3.5
	comp=Z,3.8nm,1.3s						
TXAR	Lajitas Array	88.77	53	P	P	06 07 16.1	+0.7
	comp=Z,0.3nm,0.6s,baz=310,slow=3.6,SNR=5.9						
LPAZ	La Paz	145.43	59	PKPbc	PKPab	06 14 01.0	+0.4
	comp=Z,0.7nm,0.4s,baz=6.1,slow=5.9,SNR=4.0						
LPAZ	La Paz	145.43	59	PKIKP	PKPab	06 14 01.0	+0.4

*ISCJB **06** 05:59:27.3±0.6, 22°.5N±0°.1×93°.58E±0°.09, h59km, mb3.6/4, Error ellipse: s-maj=18.8km s-min=4.3km az=37.2*

*IDC **06** 05:59:29.3±5.2, 22°.54N×93°.74E, h47km±45km, mb3.5/4, mb1 3.7/5, mb1mx3.2/53, mbtmp3.7/5, ML3.5/1, Error ellipse: s-maj=81.9km s-min=21.0km az=68.0*

ISC 06 05:59:30.2±0.9, 22°.5N±0°.1×93°.60E±0°.09, h59km, n16, σ1s34/16, mb3.8/4, Myanmar-India border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SHL	Shillong	3.46	333	ePN	Pn	06 00 24.0	+2.3
SHL				eSN	Sn	06 00 59.0	-2.6
CMAR	Chiang Mai Arr	6.40	128	P	Pn	06 01 00.3	-1.6
	0.3nm,0.3s,baz=306,slow=15,SNR=2.5						
CMAR				S	Sn	06 02 13.6	-0.1
	0.5nm,0.3s,baz=302,slow=32,SNR=4.1						
ODAN	Odare	7.14	309	ePn	Pn	06 01 18.0	+5.8
ODAN				eSn	Sn	06 02 33.7	+1.6
	127nm,0.4s						
TAPN	Taplejung	7.22	313	ePn	Pn	06 01 18.9	+5.5
RAMN	Ramite	7.77	306	ePn	Pn	06 01 26.7	+5.8
RAMN				eSn	Sn	06 02 48.6	+1.0
	66nm,0.4s						
GUN	Gumba	8.84	309	ePn	Pn	06 01 40.9	+5.3
PKIN	Phulchoki	9.01	306	ePn	Pn	06 01 43.7	+5.9
PKIN				eSn	Sn	06 03 18.1	+0.1
	36nm,0.4s						
KKN	Kakani	9.21	307	ePn	Pn	06 01 46.1	+5.6
KKN				eSn	Sn	06 03 23.2	+0.4
	24nm,0.2s						
DMN	Daman	9.24	305	ePn	Pn	06 01 48.0	+7.0
DMN				eSn	Sn	06 03 24.0	+0.3
	42nm,0.5s						
GKN	Gorkha	9.80	306	ePn	Pn	06 01 54.4	+5.8
GKN				eSn	Sn	06 03 37.2	-0.1
	72nm,0.3s						
KOLN	Koldanda	10.48	302	ePn	Pn	06 02 03.0	+5.1
KOLN				eSn	Sn	06 03 52.6	-1.4
	51nm,0.4s						
PYUN	Piuthan	11.11	302	ePn	Pn	06 02 11.3	+4.8
PYUN				eSn	Sn	06 04 07.8	-1.6
	38nm,0.5s						
MKAR	Makanchi Array	25.93	342	P	P	06 04 56.8	0.0
	0.9nm,0.5s,baz=148,slow=11,SNR=5.0						
SONM	Songino Array	27.31	19	P	P	06 05 08.7	-0.7
	0.3nm,0.5s,baz=198,slow=8.6,SNR=1.9						
WRA	Warramunga Arr	57.96	134	P	P	06 09 16.6	-0.2
	0.4nm,0.3s,baz=321,slow=7.5,SNR=5.1						
ASAR	Alice Springs	60.32	137	P	P	06 09 33.5	+0.3
	0.6nm,0.5s,baz=316,slow=6.9,SNR=9.5						

*NIED **06** 06:06:00, 37°.30N×142°.50E, h8km, Mw4.7 Best double couple: Mo1.23000×10^16 NP1:φs347.00000°, δ44.00000°, λ-104.00000°. NP2:φs186.00000°, δ47.00000°, λ-76.00000°.*

*JMA **06** 06:06:54.1±0.2, 37°.32N×142°.49E, h0km, M4.8*

JMA Felt I J1.

*ISCJB **06** 06:06:55.5±0.8, 37°.30N±0°.02×142°.42E±0°.02, h4km±5km, mb4.7/95, MS4.0/29, Error ellipse: s-maj=4.2km s-min=2.7km az=172.7*

*IDC **06** 06:06:55.9±0.5, 37°.31N×142°.45E, h0km, mb4.6/33, mb1 4.7/39, mb1mx4.6/58, mbtmp4.5/39, ML3.6/4, MS3.8/23, Ms1 3.8/23, ms1mx3.6/53, Error ellipse: s-maj=12.2km s-min=11.6km az=121.0*

*BJI **06** 06:06:58.0, 37°.21N×142°.60E, h35km, mb4.8/67, mB4.9/39, Ms4.5/55, Ms7 4.2/48*

*MOS **06** 06:07:00.7±0.9, 37°.63N×142°.32E, h28km, mb5.0/41, Error ellipse: s-maj=6.8km s-min=4.4km az=103.1*

*NEIC **06** 06:07:02.5±0.7, 37°.34N×142°.36E, h40km±5km, mb4.9/30, Error ellipse: s-maj=5.7km s-min=3.9km az=146.0*

ISC 06 06:06:58.4±0.5, 37°.38N±0°.04×142°.41E±0°.03, h13km±2km, h13km:pP-P, n532, σ1s39/563, mb4.8/97, MS4.0/30, 22C-14D, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	Kawauchi	1.22	270	P	Pn	06 07 18.9	-2.3
ONAJ	Iwakimizuishiy	1.32	258	P	Pn	06 07 20.1	-2.4
ONAJ				eS	Sb	06 07 40.4	+0.6
JIO	Ouri	1.37	322	P	Pn	06 07 21.3	-1.8
JIO				S	Sn	06 07 41.6	+0.5
JMM	Marumori	1.38	291	P	Pn	06 07 21.1	-2.2
JFT	Otama	1.66	276	P	Pn	06 07 26.1	-1.1
JOU	Okura	1.70	306	P	Pn	06 07 26.6	-1.2
JMK	Ichinoseki	1.83	330	P	Pn	06 07 28.8	-0.8
JMK				eS	Sn	06 07 53.8	+1.2
JFY	Yanaizu	2.16	272	P	Pn	06 07 33.1	-0.9
JYK	Kaneyama	2.23	314	P	Pn	06 07 34.1	-1.0
JOM	Ohasama	2.27	338	P	Pn	06 07 36.0	+0.4
JOM				eS	Sn	06 08 05.5	+2.1
JRG	Rokugo	2.45	326	P	Pn	06 07 37.6	-0.5
JRG				eS	Sb	06 08 11.2	-1.3
JNS	Sasagawa	2.50	281	P	Pn	06 07 40.0	+1.3
JNS				eS	Sb	06 08 11.6	-2.1
JAG	Ashikaga	2.55	249	P	Pn	06 07 38.5	-1.0
MJAR	Matsushiro Arr	3.47	257	Pn	Pn	06 07 52.2	+0.1
	14nm,0.3s,baz=83,slow=10,SNR=78						
MJAR				Sn	Sn	06 08 30.9	-2.1
	18nm,0.3s,baz=71,slow=16,SNR=6.2						
MJAR				LR	LR	06 09 18.7	
	comp=Z,2μm,20.5s,baz=95,slow=41						
MAJO	Matsushiro	3.47	257	eP	Pn	06 07 52.3	+0.2
MAJO	Matsushiro	3.47	257	ePn	Pn	06 07 52.3	+0.2
MAT	Matsushiro	3.47	257	P	Pn	06 07 52.0	-0.1
MAT				S	Sn	06 08 35.5	+2.5
ERM	Erimo	4.67	7⇑	eP	Pn	06 08 07.2	-1.3
ERM	Erimo	4.67	7	ePn	Pn	06 08 08.3	-0.3
JHJ2	Mitsune	4.75	207	ePn	Pn	06 08 06.9	-2.8
JHJ	Hachijo jima 2	4.76	208	Pn	Pn	06 08 07.6	-2.2
	79nm,0.3s,baz=70,slow=22,SNR=13						
JHJ				Sn	Sn	06 09 00.1	-4.8
	125nm,0.3s,baz=78,slow=22,SNR=6.8						
INU	Inuyama	4.80	247	ePn	Pn	06 08 12.4	+2.0
YUK	Yuzh-Kuril’sk	7.15	20	eP	Pn	06 08 41.7	-0.9
YUK				eS	Sn	06 09 59.2	-4.4
YUK				pmax	pmax		
	comp=Z,223nm,0.5s						
YUK				MLR	MLR		
	comp=Z,1μm,12.0s						
SHO	Shikotan	7.30	26	eP	Pn	06 08 42.9	-1.8
SHO				eS	Sn	06 10 01.0	-6.5
SHO				pmax	pmax		
	comp=Z,91nm,0.8s						
SHO				pmax	pmax		
	comp=N,52nm,0.9s						
SHO				pmax	pmax		
	comp=E,64nm,0.7s						
KUR	Kuril’sk	8.86	26	eP	Pn	06 09 04.7	-1.3
KUR				eS	Sn	06 10 39.7	-5.9
KUR				pmax	pmax		
	comp=Z,70nm,0.5s						
KUR				MLR	MLR		
	comp=Z,882nm,15.0s						
KUR				MLR	MLR		
	comp=N,1μm,13.0s						
KUR				MLR	MLR		
	comp=E,1μm,14.0s						
YSS	Yuzh-Sakhalins	9.57	1	eP	Pn	06 09 15.5	-0.3
YSS				eS	Sn	06 10 59.7	-3.5
YSS				pmax	pmax		
	comp=Z,40nm,1.6s						
YSS				MLR	MLR		
	comp=Z,1μm,16.0s						
YSS				MLR	MLR		
	comp=N,1μm,15.0s						
YSS	Yuzh-Sakhalins	9.57	1	ePn	Pn	06 09 18.5	+2.7
VLA	Vladivostok	9.88	309	P	Pn	06 09 21.0	+1.0
CBIJ	Chichi jima	10.25	181	Sn	Sn	06 11 07.9	-12
JCJ	Chichijima	10.25	181	Sn	Sn	06 11 07.9	-12
	comp=N,8.4nm,0.3s,baz=342,slow=20,SNR=2.3						
JNU	Nakatsue	10.34	249	Pn	Pn	06 09 27.1	+0.7
	comp=N,0.5nm,0.3s,baz=57,slow=12,SNR=10						
JNU				LR	LR	06 13 42.1	
	comp=N,972nm,19.6s,baz=106,slow=39						
JNU	Nakatsue	10.34	249	ePn	Pn	06 09 28.5	+2.1
USRK	Ussuriysk Ar.	10.43	314	Pn	Pn	06 09 29.1	+1.5
	comp=N,0.3nm,0.3s,baz=125,slow=14,SNR=5.4						
USRK				LR	LR	06 12 57.6	
	comp=N,521nm,21.1s,baz=123,slow=34						
KSRS	Korea Array	11.53	275	Pn	Pn	06 09 46.5	+3.9
	comp=N,0.5nm,0.3s,baz=91,slow=13,SNR=39						
KSRS				LR	LR	06 13 41.3	
	comp=N,490nm,18.7s,baz=76,slow=35						
KS01	Wonju Array Si	11.55	275	ePn	Pn	06 09 45.7	+2.8
KS15	Wonju Array Si	11.56	275	ePn	Pn	06 09 46.1	+3.1
KSAR	Wonju Array Be	11.56	275	P	Pn	06 09 46.5	+3.5
KSAR	Wonju Array Be	11.56	275	Pn	Pn	06 09 46.5	+3.5
MDJ	Mudanjiang	12.08	311	P	Pn	06 09 53.5	+3.4
MDJ				S	Sn	06 12 06.5	+1.9
MDJ				pmax	pmax		
	comp=N,7.0nm,0.7s						
MDJ				pmax	pmax		
	comp=N,88nm,3.4s						
MDJ				LR	LR		
	comp=N,1μm,15.0s						
MDJ				LR	LR		
	comp=N,930nm,16.2s						
MDJ				LR	LR		
	comp=N,490nm,13.2s						
MDJ	Mudanjiang	12.08	311	ePn	Pn	06 09 52.1	+1.9
	comp=N,53nm,1.1s						
TYV	Tymovskoe	13.48	1	eP	Pn	06 10 11.5	+2.2
TYV				pmax	pmax		
	comp=Z,26nm,1.0s						
TYV				MLR	MLR		
	comp=Z,1μm,14.0s						
KLR	Kul’dur	14.15	330	Pn	Pn	06 10 17.0	-1.4
	comp=Z,0.2nm,0.3s,baz=126,slow=14,SNR=7.5						
KLR	Kul’dur	14.15	330	P	Pn	06 10 17.0	-1.4
CN2	Changchun	14.39	302	eP	P	06 10 27.9	-0.7
CN2				pmax	pmax		
	comp=Z,10.0nm,0.5s						
SNY	Shenyang	15.18	293	⇑P	P	06 10 37.4	0.0
SNY				pmax	pmax		
	comp=Z,16nm,0.8s						
SNY				pmax	pmax		
	comp=Z,220nm,12.0s						
SNY				LR	LR		
	comp=Z,570nm,11.5s						
SNY				LR	LR		
	comp=Z,520nm,11.2s						
SNY				LR	LR		
	comp=Z,670nm,13.2s						
NKL	Nikolayevsk	15.82	356	eP	Pn	06 10 39.8	-0.9
NKL				pmax	pmax		
	comp=Z,90nm,1.4s						
NKL				MLR	MLR		
	comp=Z,900nm,14.0s						
JOW	Kunigami	15.92	233	LR	LR	06 16 58.1	
	comp=Z,230nm,20.7s,baz=189,slow=38						
DL2	Dalian	16.42	282	P	P	06 10 52.7	+1.5
DL2				S	S	06 13 58.8	-3.9
DL2				pmax	pmax		
	comp=Z,64nm,1.1s						
DL2				LR	LR		
	comp=Z,710nm,16.1s						
DL2				LR	LR		
	comp=Z,460nm,17.0s						
DL2				LR	LR		
	comp=Z,620nm,11.2s						
SSE	Sheshan	18.62	257	eP	Pn	06 11 17.4	+1.6
SSE				S	Sn	06 14 40.2	-3.6
SSE				sS	sS	06 14 53.2	-0.2
SSE				pmax	pmax		
	comp=Z,38nm,0.8s						
SSE				pmax	pmax		
	comp=Z,130nm,4.3s						
SSE				LR	LR		
	comp=Z,79nm,17.1s						
SSE				LR	LR		
	comp=Z,170nm,17.2s						
SSE				LR	LR		
	comp=Z,220nm,17.8s						
PEA0	Petropavlovsk-	19.00	29	eP	P	06 11 19.6	+0.1
PEA0				epP	sP	06 11 28.0	+3.0
PETK	Petropavlovsk-	19.00	29	P	P	06 11 19.5	-0.1
	comp=Z,0.6nm,0.3s,baz=226,slow=7.7,SNR=3.4						
PETK				LR	LR	06 19 24.1	
	comp=Z,152nm,18.8s,baz=215,slow=39						
PET	Petropavlovsk	19.31	31	eP	Pn	06 11 26.3	+2.3
PET				eS	Sn	06 14 58.6	-1.7
PET				pmax	pmax		
	comp=Z,100nm,10.7s						
PET				pmax	pmax		
	comp=Z,31nm,1.1s						
PET				MLR	MLR		
	comp=Z,400nm,19.0s						
NJ2	Nanjing	20.06	262	eP	P	06 11 32.2	+0.9
NJ2				pmax	pmax		
	comp=Z,21nm,0.8s						
HIA	Hailar	20.24	313	P	Pn	06 11 34.9	-0.3
HIA				pmax	pmax		
	comp=Z,13nm,0.8s						
HIA	Hailar	20.24	313	P	Pn	06 11 34.9	-0.3
	comp=Z,13nm,0.8s						
TIA	Tai’an	20.27	274	⇓P	P	06 11 32.6	-1.0
TIA				pmax	pmax		
	comp=Z,30nm,0.8s						
TIA				LR	LR		
	comp=Z,630nm,12.1s						
TIA				LR	LR		
	comp=Z,570nm,12.3s						
TIA				LR	LR		
	comp=Z,620nm,12.3s						
BJI	Beijing	20.62	286	P	P	06 11 35.3	-2.1
BJI				pmax	pmax		
	comp=Z,9.0nm,1.7s						
BJT	Baijiatuau	20.63	285	eP	P	06 11 37.4	-0.1
BJT				pmax	pmax		
	comp=Z,37nm,1.0s						
BJT	Baijiatuau	20.63	285	eP	P	06 11 37.4	-0.1
	comp=Z,37nm,1.0s						
CLNS	Chul’man	22.70	335	eP	P	06 12 00.1	+0.4
CLNS				pmax	pmax		
	comp=N,22nm,0.9s						
CLNS				pmax	pmax		
	comp=Z,23nm,0.9s						
CLNS				pmax	pmax		
	comp=E,6.0nm,0.8s						
MA2	Magadan	22.86	11	P	P	06 12 00.7	-0.5
	comp=E,9.5nm,0.7s,baz=225,slow=9.2,SNR=12						
MA2				LR	LR	06 21 53.7	
	comp=E,215nm,19.0s,baz=233,slow=39						
HHC	Hu-ho-hao-te	24.12	288	eP	P	06 12 14.6	+0.6
HHC				S	S	06 16 23.0	-8.4
HHC				sS	sS	06 16 42.2	+4.2
HHC				pmax	pmax		
	comp=E,23nm,0.8s						
HHC				pmax	pmax		
	comp=E,120nm,4.9s						
HHC				LR	LR		
	comp=E,520nm,11.3s						
HHC				LR	LR		
	comp=E,420nm,11.5s						
HHC				LR	LR		
	comp=E,370nm,11.8s						
WHN	Wuhan	24.20	262	⇓P	P	06 12 14.8	+0.2
WHN				pP	pP	06 12 20.6	+2.0
WHN				S	S	06 16 29.8	-2.7
WHN				LR	LR		
	comp=E,2μm,15.1s						
WHN				LR	LR		
	comp=E,740nm,12.1s						
WHN				LR	LR		
	comp=E,1μm,14.8s						
CIT	Chita	24.99	315	eP	P	06 12 22.3	+0.6
CIT				e		06 12 32.0	
CIT				e		06 12 54.8	
CIT				pmax	pmax		
	comp=Z,224nm,1.3s						
YAK	Yakutsk	25.92	346	P	P	06 12 29.7	-0.2
	comp=Z,2.9nm,0.4s,baz=229,slow=20,SNR=3.9						
YAK	Yakutsk	25.92	346	eP	P	06 12 29.0	-0.9
YAK				e*PP	pP	06 12 35.7	+1.8
YAK				e		06 13 11.8	
YAK				ePPP	PPP	06 13 25.0	
YAK				eSS		06 18 05.6	
YAK				pmax	pmax		
	comp=Z,27nm,0.9s						
YAK				pmax	pmax		
	comp=E,3.0nm,0.9s						
YAK				pmax	pmax		
	comp=N,16nm,1.5s						
YAK				pmax	pmax		
	comp=Z,15nm,0.4s						
YAK				MLR	MLR		
	comp=N,259nm,17.0s						
YAK				MLR	MLR		
	comp=E,220nm,17.0s						
YAK				MLR	MLR		
	comp=Z,427nm,18.0s						
SEY	Seymchan	26.31	10	P	P	06 12 34.4	+0.9
	comp=Z,10nm,0.8s,baz=187,slow=9.0,SNR=24						
SEY	Seymchan	26.31	10⇑	iP	P	06 12 34.8	+1.4
XAN	Xi’an	27.32	273	P	P	06 12 41.6	-1.3
XAN				pP	sP	06 12 52.0	+3.4
XAN				sP	pP	06 12 57.5	+11
XAN				S	S	06 17 28.0	+5.8
XAN				sS	sS	06 17 34.4	+5.6
XAN				pmax	pmax		
	comp=Z,8.0nm,1.0s						
XAN				pmax	pmax		
	comp=Z,150nm,14.2s						
XAN				LR	LR		
	comp=Z,300nm,16.3s						
XAN				LR	LR		
	comp=Z,370nm,15.8s						
XAN				LR	LR		
	comp=Z,290nm,12.9s						
H11N2	WAKE ISLAND Hy	27.65	123	T	T	06 41 30.8	
	baz=315,slow=75,SNR=1031						
H11N1	WAKE ISLAND Hy	27.66	123	T	T	06 41 39.2	
	baz=315,slow=75,SNR=811						
H11N3	WAKE ISLAND Hy	27.67	123	T	T	06 41 37.6	
	baz=315,slow=75,SNR=734						
BOD	Bodaibo	27.67	327	eP	P	06 12 44.8	-1.0
BOD				e		06 16 09.7	
BOD				pmax	pmax		
	comp=Z,19nm,0.9s						
ENH	Enshi	28.16	265	eP	P	06 12 50.3	-0.1
	comp=Z,61nm,0.8s						
SONA1	Songino Array	28.26	303	eP	P	06 12 51.5	+0.3

SONM **Songino Array** 28.26 303 P **P** 06 12 51.6 +0.3
comp=Z,20nm,0.8s,baz=96,slow=7.9,SNR=51
SONM LR LR 06 24 03.0
comp=Z,166nm,18.2s,baz=72,slow=36
H11S1 **WAKE ISLAND Hy** 28.39 125 T T 06 42 30.6
baz=317,slow=76,SNR=711
H11S3 **WAKE ISLAND Hy** 28.39 125 T T 06 42 30.7
baz=317,slow=76,SNR=694
H11S2 **WAKE ISLAND Hy** 28.40 125 T T 06 42 29.5
baz=317,slow=76,SNR=726
ZAK Zakamensk 30.69 308 *e*P **P** 06 13 12.9 +0.1
ZAK pmax pmax
comp=Z,17nm,1.2s
TLY Talaya 30.71 310 P **P** 06 13 13.6 +0.8
comp=Z,9.3nm,0.8s,baz=140,slow=2.2,SNR=15
TLY LR LR 06 26 00.4
comp=Z,106nm,19.4s,baz=102,slow=37
TLY Talaya 30.71 310 *e*P **P** 06 13 13.5 +0.6
TLY *e*S **S** 06 18 21.0 +5.8
TLY pmax pmax
comp=Z,9.0nm,0.8s
TLY MLR MLR
comp=Z,171nm,15.0s
TLY Talaya 30.71 310 *e*P **P** 06 13 13.5 +0.6
comp=Z,9.8nm,0.8s
LZH Lanzhou 30.80 279 ⇑P P 06 13 23.1 +9.2
LZH pP sP 06 13 30.0 +10
LZH sP pP 06 13 33.1 +15
LZH PP **PP** 06 14 23.0 -0.4
LZH *e*S **S** 06 18 18.1 +1.0
LZH SS **SnSn** 06 20 05.0 +9.3
GYA Guiyang 32.06 261 ⇑*i*P **P** 06 13 25.1 0.0
GYA pP sP 06 13 37.4 +6.6
GYA PP **PnPn** 06 14 33.0 +2.5
GYA PcP **PcP** 06 16 15.3 +0.7
GYA S **S** 06 18 35.8 -1.2
GYA ScP **ScP** 06 19 55.4 -2.3
GYA SS **SnSn** 06 20 27.6 +1.0
GYA ScS **ScS** 06 23 52.8 -3.8
GYA pmax pmax
comp=Z,30nm,0.8s
GYA pmax pmax
comp=Z,130nm,5.4s
GYA LR LR
comp=Z,650nm,16.4s
GYA LR LR
comp=Z,560nm,16.0s
GYA LR LR
comp=Z,640nm,16.2s
MOY Mondy 32.33 310 *e*P **P** 06 13 28.0 +0.8
CD2 Chengdu 32.47 270 P **P** 06 13 28.4 -0.2
CD2 sP sP 06 13 42.5 +8.2
CD2 PP **PP** 06 14 42.0 +0.1
CD2 S **S** 06 18 41.2 -1.9
CD2 sS sS 06 18 57.9 +8.1
CD2 pmax pmax
comp=Z,40nm,0.9s
CD2 pmax pmax
comp=Z,100nm,6.5s
CD2 LR LR
comp=Z,550nm,15.5s
CD2 LR LR
comp=Z,540nm,14.3s
GTA Gaotai 33.23 287 ⇑P **P** 06 13 37.0 +1.8
GTA pP sP 06 13 43.4 +2.5
GTA sP pP 06 13 46.3 +7.1
GTA PcP **PcP** 06 16 18.4 +0.8
GTA S **S** 06 18 54.6 -0.3
GTA sS sS 06 19 05.7 +4.2
GTA SS **SnSn** 06 20 56.9 +2.3
GTA pmax pmax
comp=Z,9.0nm,1.4s
GTA pmax pmax
comp=Z,77nm,5.7s
GTA LR LR
comp=Z,590nm,16.6s
GTA LR LR
comp=Z,470nm,20.9s
GTA LR LR
comp=Z,290nm,15.7s
BILL Bilibino 33.48 16 *i*P **P** 06 13 36.1 -0.8
BILL *i* 06 16 16.6
BILL pmax pmax
comp=Z,7.0nm,1.2s
BILL MLR MLR
comp=Z,217nm,21.0s
BILL Bilibino 33.48 16 *e*P **P** 06 13 36.6 -0.3
comp=Z,24nm,1.6s
TIXI Tiksi 35.05 353⇑*e*P **P** 06 13 51.5 +1.0
TIXI pmax pmax
comp=Z,8.0nm,1.7s
TIXI Tiksi 35.05 353 *e*P **P** 06 13 50.9 +0.5
comp=Z,5.9nm,1.1s
KMI Kunming 35.80 262 P **P** 06 13 59.3 +1.6
KMI pP pP 06 14 03.6 +1.8
KMI S **S** 06 19 31.2 -3.8
KMI SS **SnSn** 06 21 53.9 -3.6
KMI pmax pmax
comp=Z,13nm,0.9s
KMI pmax pmax
comp=Z,120nm,5.0s
KMI LR LR
comp=Z,390nm,15.4s
KMI LR LR
comp=Z,230nm,18.6s
KMI LR LR
comp=Z,300nm,24.3s
WMQ Urumqi 41.40 297 P **P** 06 14 46.6 +2.2
WMQ pP sP 06 14 58.3 +8.2
WMQ PP **PnPn** 06 16 23.4 -1.1
WMQ S **S** 06 20 57.4 -1.5
WMQ SS **SS** 06 23 57.2 -5.5
WMQ pmax pmax
comp=Z,55nm,0.8s
WMQ pmax pmax
comp=Z,180nm,3.6s
WMQ LR LR
comp=Z,2µm,16.2s
WMQ LR LR
comp=Z,1µm,14.2s
ZAA0 Zalesovo Array 42.27 312 *e*P **P** 06 14 51.0 -0.3
ZAA0 *e*P **pP** 06 14 51.2 -4.2
ZALV Zalesovo Beam 42.27 312 P **P** 06 14 51.5 +0.2
comp=Z,9.4nm,0.8s,baz=89,slow=7.0,SNR=38
ZALV LR LR 06 32 14.3
comp=Z,92nm,18.6s,baz=76,slow=36
CMAR Chiang Mai Arr 42.35 256 P **P** 06 14 52.0 -0.3
comp=Z,2.9nm,0.3s,baz=54,slow=4.6,SNR=4.1
CMAR LR LR 06 32 34.5
comp=Z,113nm,19.9s,baz=46,slow=36
LSA Lhasa 42.97 275 P **P** 06 15 00.5 +2.7
LSA pmax pmax
comp=Z,7.0nm,0.9s
LSA Lhasa 42.97 275 *e*P **P** 06 14 58.6 +0.8
LSA pmax pmax
comp=Z,19nm,0.9s
LSA Lhasa 42.97 275 *e*P **P** 06 14 58.6 +0.8
comp=Z,19nm,0.9s
NVS Novosibirsk 43.18 313⇑*i*P **P** 06 14 59.0 +0.4
NVS pmax pmax
comp=Z,27nm,1.0s
NVS pmax pmax
comp=N,6.0nm,1.2s
NVS pmax pmax
comp=E,23nm,1.2s
NRIK Noril'sk 43.29 335 P **P** 06 14 59.2 -0.1
comp=E,1.9nm,0.4s,baz=136,slow=5.7,SNR=4.7
MK01 Makanchi Array 44.61 302 *e*P **P** 06 15 10.2 -0.2
MK31 Makanchi Array 44.61 302 *e*P **P** 06 15 10.4 +0.1
MK31 Makanchi Array 44.61 302 *e*P **P** 06 15 10.4 +0.1
MKAR Makanchi Array 44.61 302 P **P** 06 15 10.2 -0.1
comp=E,9.1nm,0.8s,baz=88,slow=9.1,SNR=39
MKAR LR LR 06 33 39.4
comp=E,110nm,18.1s,baz=84,slow=36
MKAR Makanchi Array 44.61 302 *i*P **P** 06 15 10.6 +0.3
MKAR pmax pmax
comp=Z,9.0nm,0.8s
MAKZ Makanchi 44.82 302 *e*P **P** 06 15 12.3 +0.3
MAKZ pmax pmax
comp=Z,32nm,1.3s
MAKZ Makanchi 44.82 302 *e*P **P** 06 15 12.3 +0.3
comp=Z,32nm,1.3s
KDAK Kodiak Island 46.31 42 P P 06 15 38.4 +15
comp=Z,18nm,0.8s,baz=253,slow=7.9,SNR=7.4
KDAK Kodiak Island 46.31 42 *i*P **P** 06 15 24.0 +0.5

KURK Kurchatov 46.35 308 *e*P **P** 06 15 23.8 -0.2
KURK pmax pmax
comp=Z,42nm,1.0s
KURK Kurchatov 46.35 308 *e*P **P** 06 15 23.8 -0.2
comp=Z,42nm,1.0s
KURBB Kurchatov Arra 46.42 308 P **P** 06 15 24.3 -0.2
comp=Z,14nm,0.7s,baz=82,slow=7.7,SNR=86
TAPN Taplejung 46.71 274 *e*P **P** 06 15 27.4 -0.1
comp=Z,48nm,1.0s
MLY Manley 47.14 32 *e*P **P** 06 15 31.5 +1.5
comp=Z,8.3nm,1.1s
KAPI Kappang 47.16 212 *e*P **P** 06 15 30.1 -0.5
comp=Z,37nm,1.3s
ODAN Odare 47.19 274 *e*P **P** 06 15 31.2 +0.1
comp=Z,26nm,0.8s
RAMN Ramite 47.77 274 *e*P **P** 06 15 35.5 -0.2
comp=Z,54nm,0.9s
GUN Gumba 47.91 276 *e*P **P** 06 15 36.8 -0.1
comp=Z,59nm,0.8s
RND Reindeer 47.95 34 *e*P **P** 06 15 37.3 +1.0
RND pmax pmax
comp=Z,9.0nm,0.9s
RND Reindeer 47.95 34 *e*P **P** 06 15 37.3 +1.0
comp=Z,8.5nm,0.9s
MDM Murphy Dome 48.20 32 *e*P **P** 06 15 39.1 +0.9
comp=Z,16nm,1.1s
COLA College 48.36 32⇑*i*P **P** 06 15 40.6 +1.2
COLA pmax pmax
comp=Z,3.0nm,0.7s
COLA College 48.36 32 *e*P **P** 06 15 39.9 +0.5
comp=Z,6.2nm,1.1s
KKN Kakani 48.44 276 *e*P **P** 06 15 40.9 +0.1
IL1 Eielson Array 48.78 33 *e*P **P** 06 15 42.1 -0.6
ILAR Eielson Array 48.78 33 P **P** 06 15 42.6 -0.1
comp=Z,3.9nm,0.8s,baz=265,slow=6.4,SNR=28
ILAR LR LR 06 36 01.3
comp=Z,61nm,21.0s,baz=276,slow=36
ILB Eielson Array 48.78 33 *e*P **P** 06 15 42.8 +0.2
GKN Gorkha 48.86 277 *e*P **P** 06 15 44.2 +0.2
comp=Z,70nm,0.8s
DIV Divide 49.52 37 *e*P **P** 06 15 49.6 +1.1
comp=Z,27nm,0.7s
KOLN Koldanda 49.78 277 *e*P **P** 06 15 51.4 +0.3
comp=Z,37nm,0.9s
PYUN Piuthan 50.12 278 *e*P **P** 06 15 54.5 +0.9
comp=Z,175nm,1.0s
TKM2 Tokmak 2 50.17 298 *e*P **P** 06 15 54.8 +1.0
TKM2 pmax pmax
comp=Z,22nm,0.9s
TKM2 Tokmak 2 50.17 298 *e*P **P** 06 15 54.8 +1.0
comp=Z,22nm,0.9s
MENT Mentasta 50.30 35 *e*P **P** 06 15 55.9 +1.5
comp=Z,8.6nm,1.0s
FRU Bishkek 50.88 299 *e*P **P** 06 16 00.0 +1.0
BRVK Borovoye 50.99 312⇑*i*P **P** 06 16 00.1 +0.5
BRVK pmax pmax
comp=Z,23nm,2.5s
BRVK Borovoye 50.99 312 *e*P **P** 06 16 00.0 +0.5
comp=Z,17nm,1.3s
KSH Kashi 50.99 294 *e*P **P** 06 16 04.4 +4.4
KSH *ep*P sP 06 16 14.3 +8.5
KSH *es*P pP 06 16 18.4 +14
KSH S **S** 06 23 18.7 +1.9
KSH pmax pmax
comp=Z,9.0nm,0.9s
KSH pmax pmax
comp=Z,99nm,3.3s
KSH LR LR
comp=Z,210nm,9.6s
KSH LR LR
comp=Z,140nm,9.0s
KSH LR LR
comp=Z,180nm,12.4s
AAK Ala-Archa 51.03 298 P **P** 06 15 59.8 -0.5
comp=Z,7.5nm,0.8s,baz=120,slow=9.7,SNR=4.4
AAK Ala-Archa 51.03 298⇓*e*P **P** 06 16 00.1 -0.2
AAK pmax pmax
comp=Z,7.0nm,1.0s
AAK Ala-Archa 51.03 298 *e*P **P** 06 16 00.6 +0.3
comp=Z,9.2nm,0.8s
EKS2 Erkin-Say 51.52 299 *e*P **P** 06 15 05.8 +1.9
EKS2 pmax pmax
comp=Z,8.0nm,0.8s
EKS2 Erkin-Say 51.52 299 *e*P **P** 06 15 05.8 +1.9
comp=Z,8.3nm,0.8s
PSI Prapat 52.65 240 *e*P **P** 06 16 12.9 +0.3
PSI pmax pmax
comp=Z,9.0nm,0.8s
PSI Prapat 52.65 240 *e*P **P** 06 16 12.9 +0.3
comp=Z,8.9nm,0.8s
KKAR Karatay Array 53.64 300 *e*P **P** 06 16 19.9 +0.4
KKAR pmax pmax
comp=Z,6.0nm,0.7s
KKAR Karatay Array 53.64 300 *e*P **P** 06 16 19.9 +0.4
comp=Z,5.7nm,0.7s
INK Inuvik 53.72 27 P **P** 06 16 19.8 +0.2
comp=Z,3.2nm,0.8s,baz=299,slow=5.6,SNR=13
GSI Gunungsitoli 54.66 240 *e*P **P** 06 16 27.5 +0.3
comp=Z,30nm,1.0s
SVE Sverdlovsk 55.42 319 *e*P **P** 06 16 32.9 +0.8
SVE pmax pmax
comp=Z,36nm,1.3s
ARU Arti 56.63 319*d i*P **P** 06 16 40.7 -0.1
ARU 06 18 46.3
ARU S **S** 06 24 31.1 -1.3
ARU SS **SS** 06 28 15.8 -3.6
ARU pmax pmax
comp=Z,28nm,1.7s
ARU Arti 56.63 319 *e*P **P** 06 16 40.9 +0.1
comp=Z,33nm,1.3s
WRAB Tennant Creek 57.51 189*d i*P **P** 06 16 45.9 -1.4
WRAB pmax pmax
comp=Z,131nm,1.7s
WRAB Tennant Creek 57.51 189 *e*P **P** 06 16 46.3 -1.1
comp=Z,46nm,1.2s
WB2 Warramunga Arr 57.51 189 *e*P **P** 06 16 46.1 -1.3
comp=Z,45nm,1.2s
WRA Warramunga Arr 57.52 189 P **P** 06 16 46.2 -1.3
comp=Z,9.6nm,0.5s,baz=7.5,slow=7.3,SNR=68
KBL Kabul 58.04 291 *e*P **P** 06 16 51.2 -0.2
KBL pmax pmax
comp=Z,19nm,1.3s
KBL Kabul 58.04 291 *e*P **P** 06 16 51.2 -0.2
comp=Z,19nm,1.3s
ABKAR Akbulak array 58.33 310 *e*P **P** 06 16 52.8 -0.2
comp=Z,4.1nm,0.6s
HYB Hyderabad 59.01 269 *i*P **P** 06 16 58.0 -0.1
AS01 Alice Springs 61.23 189 *e*P **P** 06 17 12.1 -1.0
AS31 Alice Springs 61.24 189 *e*P **P** 06 17 12.1 -1.1
comp=Z,4.7nm,0.8s
ASAR Alice Springs 61.24 189 P **P** 06 17 12.4 -0.8
comp=Z,14nm,0.8s,baz=8.7,slow=6.0,SNR=119
TMCR Tamitsa 62.83 332 *e*P **P** 06 17 24.1 +0.8
TMCR pmax pmax
comp=Z,8.0nm,0.4s
YKW3 Yellowknife Ar 63.07 30 *e*P **P** 06 17 26.6 +1.6
YKA Yellowknife Ar 63.11 30 P **P** 06 17 25.1 -0.1
comp=Z,2.0nm,0.8s,baz=303,slow=6.7,SNR=26
YKB5 Yellowknife Ar 63.11 30 *e*P **P** 06 17 26.1 +0.8
KLMR Klimovskoe 63.89 328 *e*P **P** 06 17 27.3 -3.1
KLMR *e* 06 19 47.5
KLMR pmax pmax
comp=Z,34nm,1.7s
ARCES ARCESS Array B 63.96 340 P **P** 06 17 30.3 -0.5
comp=Z,3.4nm,1.0s,baz=47,slow=8.0,SNR=3.5
GEYT Alibeck 64.36 299 P **P** 06 17 34.0 -0.1
comp=Z,4.3nm,0.8s,baz=76,slow=6.7,SNR=4.4
GEYT LR LR 06 47 41.6
comp=Z,59nm,19.1s,baz=355,slow=38
DAG Danmarks Havn 65.50 355 *i*P **P** 06 17 40.5 -0.2
comp=Z,6.7nm,1.1s
DAG Danmarks Havn 65.50 355 *i*P **P** 06 17 40.5 -0.2
DAG pmax pmax
comp=Z,9.0nm,1.1s
MOS Moscow 67.45 324 *e*P **P** 06 17 53.4 -0.1
VRH Novokhopyorsk 67.86 318 *e*P **P** 06 17 55.4 -0.7
VRH pmax pmax
comp=Z,10.0nm,1.0s
OBN Obninsk 68.30 323 *i*P **P** 06 17 58.5 -0.3
OBN pmax pmax
comp=Z,10.0nm,1.3s
LPSR Galich'ya Gora 68.55 320 *e*P **P** 06 18 00.1 -0.3
LPSR pmax pmax
comp=Z,10.0nm,0.7s
I04A Tendick Farm, 68.60 51 P **P** 06 18 01.9 +0.8
baz=302

FIA1 FINESS Array S 68.88 333 *e*P **P** 06 18 02.2 -0.1
FIA1 *e*P **pP** 06 18 02.6 -4.0
FIA1 *ep*P **sP** 06 18 08.0 -0.2
FINES FINESS Array B 68.88 333 P **P** 06 18 02.2 -0.2
comp=Z,9.1nm,0.8s,baz=54,slow=9.7,SNR=25
FINES LR LR 06 49 11.1
comp=Z,101nm,19.2s,baz=64,slow=37
STKA Stephens Creek 68.90 181 P **P** 06 18 01.8 -0.9
comp=Z,5.8nm,0.8s,baz=345,slow=7.4,SNR=14
STKA Stephens Creek 68.90 181 *e*P **P** 06 18 02.4 -0.3
STKA Stephens Creek 68.90 181 *e*P **P** 06 18 02.4 -0.3
VSR Storozhevoye 69.20 319 *e*P **P** 06 18 04.1 -0.4
VSR pmax pmax
comp=Z,10.0nm,0.9s
NEW Newport 69.33 45 LR LR 06 44 32.2
comp=Z,33nm,21.8s,baz=286,slow=32
NEW Newport 69.33 45 P **P** 06 18 06.4 +0.9
baz=303
M02C Callahan 69.59 53 P **P** 06 18 08.3 +1.0
baz=302
J05D Fort Rock, OR 69.60 51 P **P** 06 18 08.3 +0.9
baz=302
N02D Trinity Center 69.91 53 P **P** 06 18 09.6 +0.4
baz=302
M04C Macdoel 70.03 52 P **P** 06 18 10.6 +0.6
baz=303
BBOO Buckleboo 70.08 186 *e*P **P** 06 18 09.6 -0.3
K05A Summer Lake 70.11 51 *e*P **P** 06 18 12.2 +1.7
SUMG Summit 70.34 0 *i*P **P** 06 18 12.1 +0.4
comp=Z,22nm,1.2s
SUMG Summit 70.34 0 *e*P **P** 06 18 12.3 +0.6
SUMG Summit 70.34 0 *e*P **P** 06 18 12.3 +0.6
VSU Vasula 70.56 330⇑*i*P **P** 06 18 13.4 +0.6
VSU pmax pmax
comp=Z,59nm,1.2s
O03D Paynes Creek 70.86 54 P **P** 06 18 15.8 +0.7
baz=303
ZEI Tsey 71.20 310 *e*P **P** 06 18 14.6 -2.6
ZEI pmax pmax
comp=Z,12nm,0.9s
KVAR Kislovodsk Arr 71.28 311 P **P** 06 18 18.3 +0.8
comp=Z,12nm,0.9s,baz=18,slow=20,SNR=4.1
KBZ Khabaz 71.28 311 P **P** 06 18 17.3 -0.1
comp=Z,7.9nm,0.8s,baz=51,slow=4.0,SNR=15
KIV Kislovodsk 71.28 311 *e*P **P** 06 18 18.8 +1.2
KIV pmax pmax
comp=Z,28nm,1.0s
NEY Neytrino 71.66 311⇑*e*P **P** 06 18 21.2 +1.3
NEY pmax pmax
comp=Z,1.0nm,0.7s
AKH Akhalkalaki 72.22 309⇑*i*P **P** 06 18 24.5 +1.2
UOSS Minazif 72.46 288 *e*P **P** 06 18 25.7 +0.9
MFID Camas Ranch 72.80 48 *e*P **P** 06 18 27.8 +1.0
FFC Flin Flon 72.98 33 *e*P **P** 06 18 27.7 +0.3
FFC Flin Flon 72.98 33 *e*P **P** 06 18 27.7 +0.3
CMB Columbia Colle 73.02 55 *e*P **P** 06 18 28.9 +0.9
CMB Columbia Colle 73.02 55 *e*P **P** 06 18 28.9 +0.9
LRM Limekiln Ridge 73.34 45 *e*P **P** 06 18 30.9 +0.8
EGMT Eagleton 73.49 42 P **P** 06 18 31.2 +0.6
baz=308
HLID Hailey 73.56 48 P **P** 06 18 31.6 +0.3
baz=306
HLID Hailey 73.56 48 *e*P **P** 06 18 32.3 +1.0
BMN Battle Mountai 73.68 51 *e*P **P** 06 18 33.3 +1.3
BMN Battle Mountai 73.68 51 *e*P **P** 06 18 33.3 +1.3
BOZ Bozeman (W) 73.91 45 P **P** 06 18 34.0 +0.7
baz=307
BOZ Bozeman (W) 73.91 45 *e*P **P** 06 18 34.2 +0.9
BOZ Bozeman (W) 73.91 45 *e*P **P** 06 18 34.2 +0.9
NVAR Mina Array Bea 74.14 54 P **P** 06 18 34.1 -0.8
comp=Z,3.1nm,0.9s,baz=282,slow=5.2,SNR=12
NB2 NORSAR Subarra 74.18 338 P **P** 06 18 34.8 +0.4
comp=Z,10.0nm,1.1s,baz=39,slow=5.9
NOA NORSAR Array B 74.18 338 P **P** 06 18 34.7 +0.3
comp=Z,6.6nm,1.0s,baz=38,slow=5.8,SNR=6.0
NOA LR LR 06 55 41.1
comp=Z,87nm,18.6s,baz=30,slow=39
MLAC Mammoth, Mammo 74.26 55 P **P** 06 18 36.2 +0.6
baz=305
AKASG Malin Array Be 74.51 323 P **P** 06 18 36.2 -0.2
comp=Z,5.9nm,0.7s,baz=45,slow=5.8,SNR=23
AKASG LR LR 06 56 02.4
comp=Z,122nm,18.4s,baz=45,slow=40
AKBB Malin Array Si 74.51 323 *e*P **P** 06 18 36.7 +0.2
AKBB Malin Array Si 74.51 323 *e*P **P** 06 18 36.7 +0.2
KIEV Kiev 74.52 323 *i*P **P** 06 18 36.5 0.0
KIEV pmax pmax
comp=Z,13nm,0.8s
KIEV Kiev 74.52 323 *e*P **P** 06 18 36.6 +0.1
AK11 Malin Array Si 74.55 323 *e*P **P** 06 18 36.7 0.0
YMR Madison River 74.88 45 *e*P **P** 06 18 40.5 +1.4
GCMT Greycliff 74.91 44 *e*P **P** 06 18 36.6 -2.5
YFT Old Faithful 75.08 45 *e*P **P** 06 18 43.2 +3.0
RLMT Red Lodge 75.55 44 P **P** 06 18 42.8 0.0
baz=309
MOOW Moose Ponds 75.57 46 *e*P **P** 06 18 44.4 +1.4
GRAC Grapevine Rang 75.58 54 P **P** 06 18 43.9 +0.9
baz=306
HVU Hansel Valley 75.59 48 *e*P **P** 06 18 44.7 +1.6
HVU Hansel Valley 75.59 48 *e*P **P** 06 18 44.7 +1.6
SIM Simferopol' 75.64 316 P **P** 06 18 43.5 +0.4
SIM pmax pmax
comp=Z,17nm,0.6s
SIM MLR MLR
comp=E,100nm,16.4s
LOHW Long Hollow 75.73 46 *e*P **P** 06 18 45.3 +1.3
SNOW Snow King Moun 75.74 46 *e*P **P** 06 18 45.6 +1.5
REDW Red Top Meadow 75.75 46 *e*P **P** 06 18 45.2 +1.1
R11A Troy Canyon, C 75.92 52 P **P** 06 18 45.1 +0.1
baz=307,SNR=6.3
R11A Troy Canyon, C 75.92 52 *e*P **P** 06 18 46.1 +1.0
MPMC Manual Prospec 76.05 55 P **P** 06 18 46.3 +0.4
baz=306
DGMT Dagmar 76.07 39 P **P** 06 18 46.0 +0.5
baz=311
DGMT Dagmar 76.07 39 *e*P **P** 06 18 46.0 +0.5
LAO LASA Array 76.19 41 P **P** 06 18 46.9 +0.6
baz=310
LAO LASA Array 76.19 41 *e*P **P** 06 18 47.3 +1.0
FURC Furnace Creek, 76.22 55 P **P** 06 18 47.3 +0.7
baz=306
TPNV Topopah Spring 76.33 54 P **P** 06 18 47.6 +0.2
baz=307
TPNV Topopah Spring 76.33 54 *e*P **P** 06 18 48.3 +0.9
TPNV Topopah Spring 76.33 54 *e*P **P** 06 18 48.3 +0.9
EDW2 Edwards Air Fo 76.41 57 P **P** 06 18 48.1 +0.4
baz=306
HWUT Hardware Ranch 76.41 48 *e*P **P** 06 18 49.0 +1.2
DUG Dugway, Tooele 76.53 50 P **P** 06 18 48.4 0.0
baz=308,SNR=6.3
DUG Dugway, Tooele 76.53 50 *e*P **P** 06 18 49.4 +1.0
DUG Dugway, Tooele 76.53 50 *e*P **P** 06 18 49.4 +1.0
A26A Wade Farm, Ken 76.86 38 P **P** 06 18 50.1 +0.1
baz=312
BW06 Boulder Array 76.86 46 P **P** 06 18 50.6 +0.2
baz=309
BW06 Boulder Array 76.86 46 *e*P **P** 06 18 50.1 -0.2
BW06 *e*P **pP** 06 18 50.7 -4.0
PD31 Pinedale Array 76.86 46 *e*P **P** 06 18 50.6 +0.3
PDAR Pinedale Array 76.86 46 P **P** 06 18 50.6 +0.3
comp=E,1.7nm,0.6s,baz=255,slow=2.0,SNR=20
PSUT Pine Spring 76.90 51 *e*P **P** 06 18 52.0 +1.4
GSC Goldstone, Bar 76.95 56 P **P** 06 18 50.5 -0.3
baz=307
CIS Catalina Islan 77.00 58 P **P** 06 18 51.0 -0.1
baz=306
BFSC Mount Baldy Ra 77.01 57 P **P** 06 18 51.8 +0.5
baz=306
NLU North Lily Min 77.12 49 *e*P **P** 06 18 54.6 +2.8
D25A Fairfield 77.39 40 P **P** 06 18 54.0 +0.9
baz=312
A28A Rude Farm, Bot 77.70 37 P **P** 06 18 55.0 +0.3
baz=314
MSU Marysvale 77.95 51 *e*P **P** 06 18 58.2 +1.6
MSU Marysvale 77.95 51 *e*P **P** 06 18 58.2 +1.6
B28A Dugan Ranch, T 77.97 37 P **P** 06 18 55.8 -0.4
baz=314
SNDA J Saunders Pla 78.12 57 *e*P **P** 06 18 55.9 -1.5
A29A Manning Farm, 78.18 36 P **P** 06 18 57.2 -0.2
baz=314,SNR=6.8
PFO Pinyon Flats O 78.19 57 LR LR 06 46 20.1
comp=E,104nm,19.4s,baz=310,slow=30
LCMT Little Creek M 78.21 52 *e*P **P** 06 18 59.3 +1.4
P17A Butcher Ranch, 78.23 49 *e*P **P** 06 18 59.3 +1.3
E26A Carlson Angus 78.28 40 P **P** 06 18 58.1 0.0

baz=313
KWP Kalwaria Pacla 78.31 325 eP P 06 18 58.9 +0.8
KWP Kalwaria Pacla 78.31 325 eP P 06 18 58.9 +0.8
P18A Preston Nutter 78.43 49 eP P 06 19 00.5 +1.2
B29A Wagenman Farm, 78.45 37 P P 06 18 58.4 -0.4
baz=314
KNB Kanab 78.47 52 eP P 06 19 01.0 +1.6
KNB Kanab 78.47 52 eP P 06 19 01.0 +1.6
BUR08 Bucovina Ar. S 78.52 322 eP P 06 18 60.0 +0.6
BURAR Bucovina Array 78.53 322⇓iP P 06 19 00.1 +0.7
TESR Tescani 78.58 321⇓iP P 06 19 00.1 +0.5
SRU San Rafael Swe 78.59 49 eP P 06 19 00.9 +0.9
SRU San Rafael Swe 78.59 49 eP P 06 19 00.9 +0.9
F26A Lodgepole 78.60 40 P P 06 18 59.4 -0.3
baz=313
A30A Hoffart Farm, 78.61 36 P P 06 18 59.8 +0.1
baz=315,SNR=5.2
K22A Casper 78.65 45 P P 06 18 59.9 -0.3
baz=311
G25A Newell 78.65 41 P P 06 18 59.9 -0.2
baz=312
CFR Carcaliu 78.72 319⇑iP P 06 19 00.1 -0.2
IRM Iron Mountain 78.73 56 P P 06 19 00.8 +0.1
baz=308
D28A Regan 78.74 38 P P 06 19 00.2 -0.3
baz=314
MDND Maddock 78.76 37 P P 06 19 00.3 -0.3
baz=314
MDND Maddock 78.76 37 eP P 06 19 01.1 +0.6
E27A Carson 78.77 39 P P 06 19 00.2 -0.5
baz=313
ULM Lac du Bonnet 78.78 34 P P 06 18 59.6 -1.0
comp=E,4.0nm,0.8s,baz=308,slow=6.8,SNR=6.2
ULM LR LR 06 59 43.7
comp=E,18nm,18.0s,baz=285,slow=40
BC3 Big Chuckawall 78.83 56 P P 06 19 01.4 0.0
baz=308
H25A Fruitdale 78.94 42 P P 06 19 01.3 -0.4
baz=312
B30A Myrvik Farm, E 78.94 36 P P 06 19 01.8 +0.2
baz=315,SNR=7.7
VRI Vrincioaia 78.98 320⇑iP P 06 19 02.9 +1.1
KOLS Kolonicke sedl 79.01 324 eP P 06 19 02.6 +0.7
KOLS pmax pmax
comp=Z,6.0nm,1.1s
KOLS Kolonicke sedl 79.01 324 eP P 06 19 02.6 +0.7
G26A Maurine 79.01 41 P P 06 19 01.6 -0.5
baz=313
PLOR Plostina 79.03 320⇑iP P 06 19 03.8 +1.7
RSSD Black Hills 79.04 42 P P 06 19 02.0 -0.4
baz=312
STHS Stebnicka Huta 79.14 325 eP P 06 19 03.9 +1.3
STHS pmax pmax
comp=Z,6.0nm,1.0s
STHS Stebnicka Huta 79.14 325 eP P 06 19 03.9 +1.3
OJC Ojcow 79.20 327 eP P 06 19 03.7 +0.8
OJC Ojcow 79.20 327 eP P 06 19 03.6 +0.7
OJC Ojcow 79.20 327 eP P 06 19 03.6 +0.7
UZH Uzhgorod 79.22 324 eP P 06 19 02.5 -0.5
UZH e 06 19 08.3
UZH e 06 19 13.7
BRTR Keskin Array B 79.22 312 P P 06 19 03.9 +0.4
comp=Z,3.2nm,1.0s,baz=100,slow=6.4,SNR=9.5
I25A Rochford 79.27 42 P P 06 19 02.9 -0.8
baz=312
B31A Greenbush Farm 79.28 36 P P 06 19 03.1 -0.3
baz=316
O20A White River Ci 79.29 47 P P 06 19 03.5 -0.4
baz=310
PDMCI Parker Dam,Lak 79.30 55 P P 06 19 03.9 +0.2
baz=308
G27A Dupree 79.30 40 P P 06 19 03.2 -0.5
baz=313
H26A Fairpoint 79.38 41 P P 06 19 04.3 +0.3
baz=313
Y12C Blythe 79.38 56 P P 06 19 04.5 +0.3
baz=308
C30A Mose, Pekin 79.40 37 P P 06 19 03.8 -0.3
baz=315
A32A Rocking H Ranc 79.46 35 P P 06 19 04.5 +0.1
baz=316
F28A McLaughlin 79.55 39 P P 06 19 05.0 0.0
baz=314
NIE Niedzica 79.56 326 eP P 06 19 06.2 +1.3
NIE Niedzica 79.56 326 eP P 06 19 06.2 +1.3
ISR Istrita 79.58 320⇓iP P 06 19 06.9 +1.7
DOPR Dopca 79.59 321⇓iP P 06 19 06.6 +1.4
MSAB Monastry St. A 79.61 318⇑iP P 06 19 06.5 +1.2
MLR Muntele Rosu 79.64 320 P P 06 19 06.1 +0.6
comp=Z,0.5nm,0.7s,baz=48,slow=6.4,SNR=2.5
MLR Muntele Rosu 79.64 320⇑iP P 06 19 07.4 +1.8
BR231 Keskin MP Arra 79.65 313 eP P 06 19 05.0 -0.7
C31A Landman Farms, 79.69 36 P P 06 19 05.7 +0.1
baz=316
I26A New Underwood 79.73 42 P P 06 19 05.5 -0.5
baz=313
H27A Howes 79.73 41 P P 06 19 05.6 -0.3
baz=313,SNR=5.6
B32A Ashes, Strandq 79.82 35 P P 06 19 05.9 -0.4
baz=316
A33A Warroad 79.95 35 P P 06 19 06.1 -0.9
baz=317,SNR=5.4
PV10 Paradox Valley 79.95 49 eP P 06 19 08.9 +1.3
G28A Parade 80.03 40 P P 06 19 07.1 -0.5
baz=314
E30A Jud 80.04 38 P P 06 19 07.3 -0.3
baz=315
F29A Eureka 80.05 39 P P 06 19 07.5 -0.2
baz=314
J26A Sides Ranch, S 80.10 42 P P 06 19 08.2 +0.1
baz=313
PV05 Paradox Valley 80.10 49 eP P 06 19 09.6 +1.2
LANS Liptovska Anna 80.13 326 eP P 06 19 09.6 +1.6
LANS Liptovska Anna 80.13 326 eP P 06 19 09.6 +1.6
N23A Red Feather La 80.13 46 P P 06 19 08.7 +0.2
baz=311
VOIR 80.13 321⇑iP P 06 19 09.8 +1.6
I27A Quinn 80.13 41 P P 06 19 08.4 +0.2
baz=313
KECS Kecovo 80.16 325 eP P 06 19 08.5 +0.4
KECS pmax pmax
comp=Z,2.0nm,0.8s
KECS Kecovo 80.16 325 eP P 06 19 08.5 +0.4
AGMN Agassiz Nation 80.20 35 P P 06 19 08.2 -0.2
baz=317
KSP Ksiaz 80.23 329 eP P 06 19 09.6 +1.1
KSP Ksiaz 80.23 329 eP P 06 19 09.7 +1.2
H28A Mission Ridge 80.25 40 P P 06 19 08.7 -0.1
baz=314,SNR=7.3
G29A Hoven 80.45 39 P P 06 19 09.9 0.0
baz=314
E31A Nome 80.50 37 P P 06 19 10.1 +0.1
baz=316
MORC Moravsky Berou 80.50 327 eP P 06 19 11.0 +1.0
MORC Moravsky Berou 80.50 327 eP P 06 19 11.0 +1.0
DPC Dobruska-Polom 80.59 328 eP P 06 19 11.8 +1.3
DPC Dobruska-Polom 80.59 328 eP P 06 19 11.8 +1.3
B34A Aery, Baudette 80.61 34 P P 06 19 10.2 -0.4
baz=317
C33A Trail 80.63 36 P P 06 19 10.5 -0.2
baz=317
I28A Midland 80.64 41 P P 06 19 10.8 -0.1
baz=314,SNR=5.2
H29A Onida 80.70 40 P P 06 19 11.1 -0.1
baz=314
J27A Elkhorn Farm, 80.71 42 P P 06 19 11.1 -0.3
baz=313
F31A Hecla 80.81 38 P P 06 19 11.7 -0.1
baz=315
PSZ Piszkesteto 80.84 325 eP P 06 19 12.1 +0.2
PSZ Piszkesteto 80.84 325 eP P 06 19 12.1 +0.2
G30A Faulkton 80.89 39 P P 06 19 11.7 -0.5
baz=315,SNR=7.9
VYHS Vyhne 80.89 326 eP P 06 19 13.1 +1.0
VYHS pmax pmax
comp=Z,10.0nm,1.5s
VYHS Vyhne 80.89 326 eP P 06 19 13.1 +1.0
J28A Allard Ranch, 81.00 41 P P 06 19 12.9 0.0
baz=314
MVCO Mesa Verde 81.03 50 P P 06 19 13.5 +0.2
baz=310
MVCO Mesa Verde 81.03 50 eP P 06 19 14.3 +0.9
I29A Vivian Onida 81.08 40 P P 06 19 13.5 +0.3
baz=314
C34A RKJ Ranch, Bem 81.11 35 P P 06 19 13.2 -0.1
baz=317
B35A Bob, Littlefor 81.12 34 P P 06 19 13.3 -0.1
baz=318
BRG Berggiesshubel 81.16 330 eP P 06 19 13.7 +0.2
comp=Z,6.9nm,0.9s
BRG Berggiesshubel 81.16 330 eP P 06 19 13.7 +0.2
BRG pmax pmax
comp=Z,7.0nm,0.9s
CLL Collm 81.19 331⇓iP P 06 19 13.5 -0.1
comp=Z,11nm,1.1s
CLL LmV 06 59 00.0
comp=Z,100nm,18.4s
CLL Collm 81.19 331⇓iP P 06 19 13.5 -0.1
CLL e 06 19 19.0
CLL i 06 19 29.6
CLL pmax pmax
comp=Z,11nm,1.1s
VRAC Vranov 81.26 328 P P 06 19 14.2 +0.2
comp=Z,4.1nm,0.4s,baz=50,slow=5.0,SNR=6.8
VRAC Vranov 81.26 328⇓iP P 06 19 14.3 +0.2
GZR Gura Zlata 81.29 322⇑iP P 06 19 14.8 +0.4
D34A Park Rapids 81.39 36 P P 06 19 14.8 0.0
baz=317
K28A Ten Mile Ranch 81.42 42 P P 06 19 15.4 +0.2
baz=314
E33A Westby DABS, E 81.44 37 P P 06 19 15.1 0.0
baz=317
SUSD Miller 81.47 39 P P 06 19 14.9 -0.3
baz=315
J29A Okreek 81.49 41 P P 06 19 15.5 0.0
baz=314
C35A Jirik Farms, M 81.50 35 P P 06 19 15.4 0.0
baz=318
GOPC GO Pecny, Ondr 81.56 329 eP P 06 19 16.6 +0.9
GOPC GO Pecny, Ondr 81.56 329 eP P 06 19 16.6 +0.9
I30A Oacoma 81.60 40 P P 06 19 16.0 0.0
baz=315
G32A Webster 81.62 38 P P 06 19 16.3 +0.3
baz=316
214A Organ Pipe Nat 81.62 56 P P 06 19 16.5 +0.1
baz=309
S22A 4UR Ranch, Cre 81.68 49 P P 06 19 17.6 +0.7
baz=311
BZS Buzias 81.70 322⇓iP P 06 19 15.7 -0.7
F33A 5 Mile Ranch, 81.78 37 P P 06 19 17.3 +0.4
baz=317
K29A Lazy Trails An 81.95 41 P P 06 19 17.7 -0.1
baz=314
C36A Pine Crest Far 81.97 34 P P 06 19 17.5 -0.3
baz=319
J30A Dallas 81.98 41 P P 06 19 17.4 -0.6
baz=315
E35A Pequot Lakes 82.15 36 P P 06 19 18.5 -0.3
baz=318
G33A Ortonville 82.18 38 P P 06 19 18.5 -0.5
baz=317
MDVR Moldovita 82.26 322⇑iP P 06 19 19.5 0.0
C37A Embarrass 82.28 34 P P 06 19 19.5 0.0
baz=319
K30A Basset 82.38 41 P P 06 19 20.4 +0.2
baz=315
H33A Prehn Over Nor 82.40 38 P P 06 19 20.4 +0.3
baz=316
EYMN Ely 82.42 33 P P 06 19 20.2 0.0
baz=320
SDCO Great Sand Dun 82.47 48 P P 06 19 21.6 +0.6
baz=312
SDCO Great Sand Dun 82.47 48 eP P 06 19 22.1 +1.1
G34A Benson 82.53 37 P P 06 19 21.1 +0.3
baz=317
CONA Conrad Observa 82.63 327 iPcP P 06 19 22.6 +1.2
comp=Z,5.1nm,0.9s
KHC Kasperske Hory 82.67 329 eP P 06 19 22.0 +0.5
KHC ePCP PcP 06 19 25.3 -1.2
KHC Kasperske Hory 82.67 329 eP P 06 19 22.0 +0.5
KHC Kasperske Hory 82.67 329 eP P 06 19 21.1 -0.4
C38A Sawbill Land. 82.69 33 P P 06 19 21.5 -0.1
baz=320
E36A McGregor 82.71 35 P P 06 19 21.4 -0.3
baz=319
TUC Tucson 82.73 55 P P 06 19 23.0 +0.8
baz=310
TUC Tucson 82.73 55 eP P 06 19 23.1 +0.9
TUC Tucson 82.73 55 eP P 06 19 23.1 +0.9
GERES GERESS Array B 82.84 329 P P 06 19 22.4 0.0
comp=Z,2.1nm,0.8s,baz=35,slow=4.9,SNR=11
GERES LR LR 07 00 26.2
comp=Z,92nm,19.4s,baz=20,slow=39
K31A O'Neill 82.86 41 P P 06 19 22.9 +0.3
baz=315
VTS Vitosha 83.08 320⇑iP P 06 19 24.7 +0.8
VTS Vitosha 83.08 320 eP P 06 19 24.2 +0.3
VTS Vitosha 83.08 320 eP P 06 19 24.1 +0.3
G35A Watkins 83.10 37 P P 06 19 24.2 +0.4
baz=318
L31A Butterfield Fa 83.14 41 P P 06 19 24.2 +0.1
baz=315
ECSD EROS Data Cent 83.15 39 P P 06 19 24.2 +0.1
baz=317
ECSD EROS Data Cent 83.15 39 eP P 06 19 24.0 -0.1
H35A Sunnyside Ranc 83.32 37 P P 06 19 25.2 +0.3
baz=318
T25A Trinidad 83.52 48 P P 06 19 26.5 +0.2
baz=313
T25A Trinidad 83.52 48 eP P 06 19 27.4 +1.0
PMOR Pomariorio Ree 83.59 114 eT T 07 51 27.9
comp=Z,20nm,0.2s
ANMO Albuquerque 83.76 50 P P 06 19 27.6 0.0
comp=Z,5.3nm,1.1s,baz=303,slow=6.2,SNR=8.5
ANMO Albuquerque 83.76 50 P P 06 19 28.4 +0.8
baz=312
ANMO Albuquerque 83.76 50⇓iP P 06 19 29.3 +1.7
ANMO pmax pmax
comp=Z,7.0nm,1.2s
ANMO Albuquerque 83.76 50 eP P 06 19 28.8 +1.2
SPMN Marine on St. 83.89 36 P P 06 19 27.6 -0.2
baz=319
SOKA Soboth 83.95 327 iP P 06 19 28.8 +0.5
comp=Z,7.1nm,1.0s
PPT2 Papeete2 84.09 117 eLR LR 06 45 22.4
comp=Z,166nm,30.8s
PPT2 Papete2 84.09 117 eT T 07 52 04.9
comp=Z,2.3nm,0.3s
TIAR Tiarei 84.23 117 eT T 07 52 14.1
comp=Z,2.0nm,0.2s
KBA Koelnbreinsper 84.37 328 iPcP P 06 19 31.7 +1.3
comp=Z,4.5nm,0.7s
I37A Lemond, Waseca 84.52 37 P P 06 19 31.0 0.0
baz=319
121A Cookes Peak, D 84.52 53 P P 06 19 31.9 +0.4
baz=311
HSIG 84.72 57 eP P 06 19 33.0 +0.6
SCHQ Schefferville 84.79 16 LR LR 07 01 46.2
comp=Z,54nm,18.5s,baz=62,slow=39
J37A Redenius Farm, 84.97 37 P P 06 19 33.1 -0.3
baz=319
I38A Scanlan Farm, 85.00 36 P P 06 19 33.0 -0.5
baz=319
P32A Huiting Farm, 85.08 43 P P 06 19 33.9 -0.1
baz=316
K37A Belmond 85.33 38 P P 06 19 35.2 0.0
baz=319
MEH Mehetia 85.35 116 eT T 07 53 39.2
comp=Z,15nm,0.3s
BFO Black Forest 85.39 331 eP P 06 19 35.2 -0.2
BFO pmax pmax
comp=Z,6.0nm,0.9s
BFO Black Forest 85.39 331 eP P 06 19 35.2 -0.2
comp=Z,6.4nm,0.9s
J38A Wedel Dairy, R 85.48 37 P P 06 19 35.8 -0.1
TAOE Nuku Hiva Isla 85.48 105 eLR LR 06 46 10.1
comp=Z,205nm,31.4s
N35A Tabor 85.74 40 P P 06 19 37.1 -0.1
baz=317
FUORN Ofenpass-Fuorn 86.02 329 eP P 06 19 39.4 +0.6
P34A Walnut Farm, R 86.08 42 P P 06 19 38.5 -0.5
baz=317
L38A Oak Wood Farm, 86.14 38 P P 06 19 38.8 -0.4
baz=319
M37A Trindle Farm, 86.15 39 P P 06 19 38.8 -0.4
baz=318
S32A Newby Ranch, P 86.27 44 P P 06 19 39.8 -0.2
baz=316
Q34A Chapman 86.48 42 P P 06 19 40.7 -0.3
baz=317
N37A Lee Faris, Mou 86.55 39 P P 06 19 41.2 0.0
baz=318
M38A Pleasantville 86.56 38 P P 06 19 41.3 0.0
baz=319
O36A Bolckow 86.63 40 P P 06 19 41.6 0.0
baz=318
T32A Huddler Ranch, 86.64 45 P P 06 19 41.5 -0.3
baz=316
P36A Good Intent, A 86.88 41 P P 06 19 42.2 -0.6
baz=318
Q35A Mercer Eighty, 87.01 42 P P 06 19 43.5 0.0
baz=317
N38A Joes South For 87.01 39 P P 06 19 43.0 -0.5
baz=319
R35A Emporia Munici 87.31 42 P P 06 19 45.0 0.0
baz=317
N39A Derby Farms, D 87.31 38 P P 06 19 45.1 +0.1
baz=319
P37A Lathrop 87.35 40 P P 06 19 44.8 -0.4
baz=318
V32A Arapaho 87.62 46 P P 06 19 46.8 +0.2
baz=316
R36A Gordon, Harris 87.68 42 P P 06 19 46.5 -0.3
baz=318
S35A Otter Creek Ra 87.72 43 P P 06 19 46.9 0.0
baz=317
P38A Dawn 87.74 40 P P 06 19 46.9 -0.1
baz=319
O39A Kirksville 87.77 39 P P 06 19 46.9 -0.3
baz=319
W32A Sentinel 87.93 46 P P 06 19 48.4 +0.3
baz=316
U34A Anderson Ranch 87.95 44 P P 06 19 48.3 +0.2
baz=316
TBI Tubuai 88.02 121 eLR LR 06 46 59.5
comp=Z,114nm,34.5s
TBI Tubuai 88.02 121 eT T 07 56 56.3
comp=Z,39nm,0.3s
T35A Sooner Cattle 88.17 43 P P 06 19 49.2 +0.1
baz=317
Q38A Cooks Store, C 88.19 40 P P 06 19 49.0 -0.2
baz=319
O40A La Belle 88.20 39 P P 06 19 49.2 0.0
baz=320
V34A Guthrie 88.40 45 P P 06 19 50.1 -0.1
baz=316
X32A Elmer 88.40 47 P P 06 19 50.1 -0.1
baz=316
S37A Fort Scott 88.46 42 P P 06 19 50.2 -0.3
baz=318
Q39A Willow Grove F 88.46 40 P P 06 19 50.0 -0.4
baz=319
P40A Paris 88.56 39 P P 06 19 50.6 -0.3
baz=320
R38A Fenwick Farm, 88.62 41 P P 06 19 50.7 -0.5
baz=319
Q40A Laux Farm, Aux 88.96 39 P P 06 19 52.4 -0.4
baz=320
R39A Chumby, Stover 88.98 40 P P 06 19 52.5 -0.4
baz=319
S38A Stockton 89.04 41 P P 06 19 52.4 -0.8
baz=319
W35A Tecumseh 89.25 45 P P 06 19 53.5 -0.8
baz=317
T38A Diamond 89.28 42 P P 06 19 53.6 -0.8
baz=318
TXAR Lajitas Array 89.28 53 P P 06 19 54.7 +0.1
comp=Z,1.7nm,0.8s,baz=300,slow=2.8,SNR=16
TXAR LR LR 06 53 51.2
comp=Z,19nm,21.5s,baz=0.0,slow=32
TUL1 Leonard 89.30 44 P P 06 19 53.8 -0.7
baz=318
S39A Bolivar 89.30 41 P P 06 19 54.1 -0.3
baz=319
V36A Jenks 89.31 44 P P 06 19 54.6 +0.1
baz=317
R40A Maddies Statio 89.39 40 P P 06 19 54.8 0.0
baz=320
U38A Gravette 89.67 42 P P 06 19 56.2 -0.1
baz=318
V37A Hulbert 89.68 43 P P 06 19 56.4 +0.2
baz=318
T39A Clever 89.77 41 P P 06 19 56.4 -0.3
baz=319
X36A Centrahoma 89.97 45 P P 06 19 58.1 +0.5
baz=317
V38A Canehill 90.09 43 P P 06 19 57.9 -0.3
baz=318
T40A Mansfield 90.13 41 P P 06 19 58.4 0.0
baz=319
U39A Green Forest 90.20 42 P P 06 19 58.7 0.0
baz=319
233A Rising Star 90.34 48 P P 06 19 58.9 -0.6
baz=316
134A White-Moore Ra 90.43 47 P P 06 20 00.0 +0.2
baz=316
Y36A Durant 90.50 45 P P 06 20 00.3 +0.2
baz=317
V39A Pettigrew 90.52 42 P P 06 20 00.1 -0.1
baz=319
U40A Yellville 90.55 42 P P 06 20 00.4 0.0
baz=319
W38A Poteau 90.62 43 P P 06 20 00.7 +0.1
baz=318
X38A Whitesboro 90.75 44 P P 06 20 01.7 +0.4
baz=318
333A Richland Sprin 90.78 49 P P 06 20 01.2 -0.3
baz=316
Y37A Hugo 90.81 45 P P 06 20 01.9 +0.3
baz=318
Z36A Blue Ridge 90.87 46 P P 06 20 01.7 -0.2
baz=317
JCT Junction City 90.89 50 P P 06 20 01.6 -0.4
baz=315
V40A Witts Springs 90.98 42 P P 06 20 01.9 -0.5
baz=319
334A Lometa 91.22 48 P P 06 20 03.4 -0.2
baz=316
X39A Fountain Ranch 91.26 44 P P 06 20 03.4 -0.2
baz=318
MIAR Mount Ida 91.53 43 P P 06 20 04.9 +0.1
baz=319
Y39A Lockesburg 91.70 44 P P 06 20 06.0 +0.3
baz=318
633A Saathoff Ranch 92.00 50 P P 06 20 06.0 -1.1
baz=316
534A Blanco 92.02 49 P P 06 20 07.2 -0.1
baz=316
Z40A Long Farm, Mag 92.59 44 P P 06 20 10.3 +0.6
baz=319
TORD Torodi Ar. Bea 117.65 316 PKP PKPdf 06 25 42.3 -2.4
comp=Z,0.4nm,0.9s,baz=9.5,slow=1.9,SNR=4.5
TORD PP PP 06 27 00.2 +3.7
comp=Z,0.6nm,0.8s,baz=31,slow=5.9,SNR=4.6
TORD PKKPbc PKKPbc 06 36 06.0 +0.8
comp=Z,0.7nm,0.8s,baz=220,slow=2.7,SNR=3.8
LPAZ La Paz 145.83 60 PKPbc PKPdf 06 26 38.0 0.0
comp=Z,5.5nm,0.9s,baz=338,slow=4.2,SNR=10
PLCA Paso Flores 154.27 108 PKPbc PKPbc 06 26 59.2 +1.1
comp=Z,4.7nm,1.1s,baz=210,slow=5.9,SNR=3.7
PLCA PKPab PKPab 06 27 12.2 +0.1
comp=Z,8.0nm,1.1s,baz=278,slow=4.0,SNR=7.4

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*ISK **06** 06:08:24.5, 35°.03N×26°.27E, h11km, MD3.4*
*ATH **06** 06:08:27.3, 35°.25N×26°.30E, h20km±1km, ML3.1/6, Error ellipse: s-maj=3.2km s-min=0.9km az=169.0*
*CSEM **06** 06:08:27.7±0.3, 35°.21N×26°.28E, h10km, ML3.1, Error ellipse: s-maj=8.4km s-min=3.1km az=163.0*
*THE **06** 06:08:27.8, 35°.26N×26°.24E, h0km±1km, ML3.1/6, Error ellipse: s-maj=1.4km s-min=0.7km az=23.0*
*ISCJB **06** 06:08:27.4±0.6, 35°.25N±0°.05×26°.31E±0.03, h6km±5km, Error ellipse: s-maj=8.0km s-min=3.1km az=163.5*
*DDA **06** 06:08:56.5, 36°.52N×28°.55E, h4km, Md3.1*

ISC 06 06:08:27.9±0.8, **35°.23N**±0°.04×**26°.29E**±0°.02, **h14**km±6km, **n67**, σ**1°16**/103, **Crete**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ZKR	**Zakros**	**0.13**	**207**	P	**Pg**	**06 08 31.1**	**-0.3**
ZKR				S	**Sg**	**06 08 34.5**	**+0.7**
ZKR	**Zakros**	**0.13**	**207**	P	**Pg**	**06 08 31.1**	**-0.3**
ZKR				S	**Sg**	**06 08 34.5**	**+0.7**
ZKR	**Zakros**	**0.13**	**207**	P	**Pg**	**06 08 30.9**	**-0.5**
ZKR				S	**Sb**	**06 08 35.1**	**+0.2**
ZKR				AML	AML	06 08 35.8	
	comp=N,22825μm,0.6s						
ZKR				AML	AML	06 08 35.9	
	comp=E,12794μm,0.5s						

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
NPS	Neapolis	0.55	274	P	Pg	06 08 38.9	+0.1
NPS				S	Sg	06 08 46.4	+0.2
NPS	Neapolis	0.55	274	P	Pg	06 08 38.9	+0.1
NPS				S	Sg	06 08 46.4	+0.2
NPS	Neapolis	0.55	274	P	Pb	06 08 39.1	-0.3
NPS				S	Sb	06 08 47.2	0.0
NPS				AML	AML	06 08 48.5	
	comp=N,5024μm,0.5s						
NPS				AML	AML	06 08 48.6	
	comp=E,5794μm,0.3s						
LAST	Lasithi	0.67	264	P	Pg	06 08 39.9	-1.0
LAST				S	Sb	06 08 50.2	-0.3
LAST	Lasithi	0.67	264	P	Pg	06 08 39.9	-1.0
LAST				S	Sb	06 08 50.2	-0.3
LAST	Lasithi	0.67	264	P	Pg	06 08 39.6	-1.3
KARP	Karpathos	0.78	66	P	Pg	06 08 43.0	-0.1
KARP				S	Sn	06 08 56.7	+0.6
KARP	Karpathos	0.78	66	P	Pg	06 08 43.0	-0.1
KARP				S	Sn	06 08 56.7	+0.6
KARP	Karpathos	0.78	66	P	Pg	06 08 42.8	-0.3
KARP				S	Sg	06 08 53.4	-0.1
KARP				AML	AML	06 09 04.3	
	comp=E,2771μm,0.4s						
KARP				AML	AML	06 09 05.0	
	comp=N,2277μm,0.6s						
IACM	Heraklion	1.00	275	P	Pb	06 08 46.1	-0.8
IACM				S	Sn	06 09 01.6	+0.3
IACM	Heraklion	1.00	275	P	Pb	06 08 46.1	-0.8
IACM				S	Sn	06 09 01.6	+0.3
IACM				AML	AML	06 09 12.3	
	comp=N,7383μm,0.4s						
IACM				AML	AML	06 09 17.7	
	comp=E,8496μm,0.9s						
IDI	Anoyia	1.14	273	P	Pb	06 08 48.5	-1.0
IDI				S	Sn	06 09 06.1	+1.0
IDI	Anoyia	1.14	273	P	Pb	06 08 48.5	-1.0
IDI				S	Sn	06 09 06.1	+1.0
IDI	Anoyia	1.14	273	P	Pb	06 08 49.3	-0.2
IDI				S	Sn	06 09 06.0	+0.9
IDI				AML	AML	06 09 10.1	
	comp=N,1034μm,0.4s						
IDI				AML	AML	06 09 10.8	
	comp=E,606μm,0.4s						
SIVA	Sivas	1.23	261	P	Pn	06 08 50.2	-0.4
SIVA				S	Sg	06 09 07.7	+0.1
SIVA	Sivas	1.23	261	P	Pn	06 08 50.2	-0.4
SIVA				S	Sg	06 09 07.7	+0.1
SIVA	Sivas	1.23	261	P	Pb	06 08 51.2	+0.3
SIVA				S	Sg	06 09 07.6	+0.1
SIVA				AML	AML	06 09 11.8	
	comp=N,2168μm,0.7s						
SIVA				AML	AML	06 09 13.2	
	comp=E,1862μm,0.5s						
THR3	Thira Island,	1.38	329	P	Pn	06 08 52.5	-0.3
THR3	Thira Island,	1.38	329	P	Pn	06 08 52.5	-0.3
THR2	Thira island,	1.40	331	P	Pn	06 08 52.7	-0.3
THR2	Thira island,	1.40	331	P	Pn	06 08 52.7	-0.3
THR5	Thira Island,	1.41	328	ePN	Pn	06 08 53.2	0.0
THR5				eSN	Sg	06 09 13.9	+0.5
THR5	Thira Island,	1.41	328	P	Pn	06 08 52.8	-0.4
THR5	Thira Island,	1.41	328	P	Pn	06 08 52.8	-0.4
THR5	Thira Island,	1.41	328	ePn	Pn	06 08 53.2	0.0
THR5				eSn	Sg	06 09 13.9	+0.5
NIS1	Nisyros Isl.	1.55	28	ePN	Pn	06 08 55.6	+0.5
NIS1	Nisyros Isl.	1.55	28	ePn	Pn	06 08 55.6	+0.5
NIS1	Nisyros Isl.	1.55	28	P	Pb	06 08 55.9	-0.5
NIS1	Nisyros Isl.	1.55	28	P	Pb	06 08 55.9	-0.5
ARG	Arkhangelos	1.79	56	P	Pn	06 08 59.1	+0.7
GVD	Gavdhos	1.85	258	P	Pb	06 09 00.7	-0.8
GVD				S	Sb	06 09 24.7	+0.3
GVD	Gavdhos	1.85	258	P	Pb	06 09 00.7	-0.8
GVD				S	Sb	06 09 24.7	+0.3
IMMV	Iera Moni Meta	1.90	278	P	Pn	06 08 59.7	-0.2
IMMV				S	Sn	06 09 24.2	+0.6
IMMV	Iera Moni Meta	1.90	278	P	Pn	06 08 59.7	-0.2
IMMV				S	Sn	06 09 24.2	+0.6
IMMV	Iera Moni Meta	1.90	278	P	Pb	06 09 01.6	-0.8
APE	Apeiranthos	1.94	342	ePN	Pn	06 09 00.7	+0.2
APE	Apeiranthos	1.94	342	P	Pn	06 09 00.0	-0.5
APE	Apeiranthos	1.94	342	ePn	Pn	06 09 00.7	+0.2
APE	Apeiranthos	1.94	342	P	Pn	06 08 60.0	-0.5
BODT	Bodrum	2.01	24	ePN	Pn	06 09 02.2	+0.8
BODT	Bodrum	2.01	24	ePn	Pn	06 09 02.2	+0.8
BDRM	Kayabasi	2.06	27	i P	Pb	06 09 04.3	-0.8
BDRM				i S	Sb	06 09 29.7	-0.8
BDRM	Kayabasi	2.06	27	P	Pb	06 09 04.3	-0.8
BDRM				S	Sb	06 09 29.7	-0.8
MHLO	Agia Marina, M	2.11	314	P	Pn	06 09 03.7	+0.8
MHLO	Agia Marina, M	2.11	314	P	Pn	06 09 03.7	+0.8
TURN	Turunc	2.49	48	i P	Pn	06 09 03.7	-4.3
TURN				i S	Sn	06 09 32.5	-5.7
TURN	Turunc	2.49	48	P	Pn	06 09 03.7	-4.3
YER	Yerkesik	2.50	40	ePN	Pn	06 09 08.6	+0.4
YER	Yerkesik	2.50	40	ePn	Pn	06 09 08.6	+0.4
ANKY	Antikythira Is	2.52	286	P	Pn	06 09 09.6	+1.2
ANKY	Antikythira Is	2.52	286	P	Pn	06 09 09.6	+1.2
FETY	Fethiye	2.67	57	ePN	Pn	06 09 10.4	-0.1
FETY	Fethiye	2.67	57	P	Pn	06 09 10.2	-0.3
FETY	Fethiye	2.67	57	ePn	Pn	06 09 10.4	-0.1
AYDN	Tasoluk	2.75	27	i P	Pn	06 09 12.5	+0.9
AYDN				i S	Sn	06 09 47.0	+2.4
AYDN	Tasoluk	2.75	27	P	Pn	06 09 12.5	+0.9
AYDN				S	Sn	06 09 47.0	+2.4
AKAS	Kas	2.88	69	i P	Pn	06 09 13.1	-0.4
AKAS				i S	Sn	06 09 47.2	-0.8
AKAS	Kas	2.88	69	P	Pn	06 09 13.1	-0.4
AKAS				S	Sn	06 09 47.2	-0.8
GOLH	Golhisar	3.32	52	i P	Pn	06 09 18.5	-1.0
GOLH				i S	Sn	06 10 01.4	+2.6
GOLH	Golhisar	3.32	52	P	Pn	06 09 18.5	-1.0
GOLH				S	Sn	06 10 01.4	+2.6
KORT	Korkueli	3.73	61	i P	Pn	06 09 25.8	+0.5
KORT				i S	Sn	06 10 12.1	+3.0
KORT	Korkueli	3.73	61	P	Pn	06 09 25.8	+0.5
KORT				S	Sn	06 10 12.1	+3.0
KHAL	Karahalli	4.06	38	i P	Pn	06 09 32.5	+2.9
KHAL				i S	Sn	06 10 14.9	-2.1
KHAL	Karahalli	4.06	38	P	Pn	06 09 32.5	+2.9
KHAL				S	Sn	06 10 14.9	-2.1

PGC 06 06:11:21.8±4.7, 50°.76N×130°.53W, h10km, ML3.2/15, Mw3.9/15, 219km west of Pt. Hardy, Bc Vancouver Island, Canada Region, Vancouver Island region

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
HOLB	Holberg	1.53	94	Pn	Pn	06 11 47.0	-2.2
HOLB				Sn	Sn	06 12 05.7	-3.5
BPBC	Brooks Peninsu	1.87	108	Pn	Pn	06 11 51.5	-2.4
BNB	Barry Inlet	1.97	338	Pn	Pn	06 11 53.6	-1.7
BNB				Sn	Sn	06 12 15.8	-4.2
PHC	Port Hardy	1.97	90	Pn	Pn	06 11 53.3	-1.9
PHC				Sn	Sn	06 12 15.8	-4.2
BBB	Bella Bella	2.08	46	Pn	Pn	06 11 55.0	-1.7
BBB				Sn	Sn	06 12 18.2	-4.3
MAYB	Maynard	2.17	98	Pn	Pn	06 11 56.1	-2.0
FHRB	Fair Harbour	2.30	107	Pn	Pn	06 11 57.7	-2.0
FHRB				Sn	Sn	06 12 24.6	-3.4
EDB	Eliza Dome	2.36	111	Pn	Pn	06 11 59.1	-1.5
TLCB	Telegraph Cove	2.36	94	Pn	Pn	06 11 59.2	-1.4
TLCB				Sn	Sn	06 12 26.6	-3.0
MOBC	Moresby Island	2.55	340	Pn	Pn	06 12 01.7	-1.5
MOBC				Sn	Sn	06 12 30.9	-3.4
WOSB	Woss	2.60	102	Pn	Pn	06 12 02.4	-1.5
DIB	Dawson Inlet,	2.72	335	Pn	Pn	06 12 04.2	-1.4
VIB	Van Inlet	2.79	334	Pn	Pn	06 12 05.1	-1.4
VIB				Sn	Sn	06 12 36.5	-3.7
NCRB	Newcastle Ridg	2.88	95	Pn	Pn	06 12 06.4	-1.4
GDR	Gold River	3.05	107	Pn	Pn	06 12 08.5	-1.5
CBB	Campbell River	3.39	100	Pn	Pn	06 12 13.9	-0.8
SHB	Sechelt	4.43	103	Pn	Pn	06 12 28.9	-0.3

*IDC **06** 06:12:47.3±0.9, 37°.22N×142°.59E, h0km, mb3.7/6, mb1 3.8/8, mb1mx3.5/57, mbtmp3.6/8, ML2.6/2, MS3.9/1, Ms1 3.9/1, ms1mx2.7/49, Error ellipse: s-maj=28.3km s-min=20.4km az=108.0*
*JMA **06** 06:12:48.6±0.3, 37°.31N×142°.47E, h9km±4km, M4.0*
*ISCJB **06** 06:12:49.4±2.6, 37°.26N±0°.06×142°.55E±0°.07, h27km±20km, mb3.6/6, MS3.7/1, Error ellipse: s-maj=10.1km s-min=9.1km az=3.2*
ISC 06 06:12:51.0±4.1, 37°.31N±0°.08×142°.4E±0°.1, h23km±28km, n21, σ0s.90/19, mb3.8/6, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
JFK	Kawauchi	1.25	273	P	Pn	06 13 12.2	-0.9
JFK				eS	Sb	06 13 29.3	-0.3
ONAJ	Iwakimizuishiy	1.33	262	P	Pn	06 13 13.4	-0.8
JIO	Ouri	1.44	323	P	Pn	06 13 14.6	-1.0
JIO				eS	Sn	06 13 33.3	-0.4
JHO	Hitachi	1.65	246	P	Pn	06 13 17.9	-0.7
JHO				S	Sn	06 13 38.9	-0.2
JFT	Otama	1.69	278	P	Pn	06 13 19.5	+0.4
JFT				eS	Sb	06 13 41.9	-0.3
JOU	Okura	1.76	307	P	Pn	06 13 20.3	+0.2
JOU				eS	Sb	06 13 43.7	-0.6
MJAR	Matsushiro Arr	3.48	259	Pn	Pn	06 13 45.1	+1.4
	1.1nm,0.3s,baz=85,slow=14,SNR=4.4						
USRK	Ussuriysk Ar.	10.50	314	Pn	Pn	06 15 21.9	+2.0
	0.2nm,0.3s,baz=138,slow=16,SNR=2.7						
GUMO	Guam	23.72	174	LR	LR	06 25 13.5	
	comp=Z,282nm,20.9s,baz=315,slow=32						
SEY	Seymchan	26.37	10	P	P	06 18 26.4	+1.2
	0.7nm,0.2s,baz=252,slow=19,SNR=3.5						
H11N2	WAKE ISLAND Hy	27.59	123	T	T	06 47 27.1	
	baz=315,slow=75,SNR=33						
H11N1	WAKE ISLAND Hy	27.60	123	T	T	06 47 27.0	
	baz=315,slow=75,SNR=40						
H11N3	WAKE ISLAND Hy	27.61	123	T	T	06 47 27.6	
	baz=315,slow=75,SNR=34						
H11S1	WAKE ISLAND Hy	28.33	125	T	T	06 48 18.7	
	baz=317,slow=76,SNR=39						
H11S3	WAKE ISLAND Hy	28.33	125	T	T	06 48 21.0	
	baz=317,slow=76,SNR=42						
H11S2	WAKE ISLAND Hy	28.34	125	T	T	06 48 20.3	
	baz=317,slow=76,SNR=45						
KURBB	Kurchatov Arra	46.48	308	P	P	06 21 15.7	-0.4
	0.8nm,0.5s,baz=83,slow=8.0,SNR=7.2						
WRA	Warramunga Arr	57.45	189	P	P	06 22 37.4	-0.6
	0.8nm,0.5s,baz=7.2,slow=7.3,SNR=2.7						
ASAR	Alice Springs	61.18	189	P	P	06 23 03.4	-0.4
	0.2nm,0.3s,baz=8.8,slow=8.4,SNR=4.8						
YKA	Yellowknife Ar	63.16	30	P	P	06 23 16.4	-0.2
	0.1nm,0.6s,baz=300,slow=6.3,SNR=3.1						
PDAR	Pinedale Array	76.89	46	P	P	06 24 41.6	+0.1
	0.5nm,0.9s,baz=318,slow=1.2,SNR=3.1						

*NIED **06** 06:14:00, 39°.60N×142°.70E, h8km, Mw4.2 Best double couple: Mo2.49000×10^15 NP1:φs110.00000°, δ32.00000°, λ-34.00000°. NP2:φs229.00000°, δ73.00000°, λ-117.00000°.*
*ISCJB **06** 06:14:25.0±1.2, 39°.58N±0°.04×142°.76E±0°.07, h18km±7km, mb4.2/32, Error ellipse: s-maj=9.5km s-min=6.0km az=29.1*
*JMA **06** 06:14:24.9±0.2, 39°.56N×142°.75E, h17km±2km, M4.4*
JMA Felt I J1.
*IDC **06** 06:14:30.4±2.4, 39°.54N×142°.68E, h48km±22km, mb3.9/26, mb1 4.1/29, mb1mx4.0/58, mbtmp4.2/29, ML3.5/3, MS3.4/1, Ms1 3.4/1, ms1mx2.8/42, Error ellipse: s-maj=15.7km s-min=13.3km az=137.0*
*NEIC **06** 06:14:30.5±1.0, 39°.65N×142°.77E, h47km±8km, mb4.5/5, Error ellipse: s-maj=11.8km s-min=7.6km az=123.0*
ISC 06 06:14:26.2±2.5, 39°.55N±0°.05×142°.65E±0°.06, h15km±14km, n67, σ0s.81/59, mb4.2/32, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
MIYJ	Miyakonagasawa	0.64	272	P	Pb	06 14 38.7	-0.4
MIYJ				S	Sg	06 14 48.1	+0.8
JTH	Tanohata	0.72	303	P	Pb	06 14 39.8	-0.6
JTH				S	Sb	06 14 49.9	-0.2
OFUJ	Ofunato	0.90	239	P	Pb	06 14 42.7	-0.8
OFUJ				eS	Sb	06 14 55.6	+0.4
JOM	Ohasama	1.05	266	P	Pn	06 14 45.4	-1.1
JOM				eS	Sb	06 15 00.1	+0.3
JKZ	Kuzumaki	1.11	293	P	Pn	06 14 46.1	-1.1
JKZ				eS	Sb	06 15 01.2	-0.1
JANG	Nango	1.20	313	P	Pn	06 14 46.6	-1.8
JMK	Ichinoseki	1.26	242	P	Pn	06 14 48.7	-0.6
JMK				eS	Sn	06 15 05.5	-0.5
JIO	Ouri	1.50	223	P	Pn	06 14 51.8	-0.7
JIO				eS	Sn	06 15 10.9	-0.8
JRG	Rokugo	1.57	265	P	Pb	06 14 54.2	-0.7
JRG				eS	Sb	06 15 16.0	+1.4
ERM	Erimo	2.49	9	ePn	Pn	06 15 05.7	-0.5
MJAR	Matsushiro Arr	4.62	231	P	Pn	06 15 38.9	+3.4
	7.1nm,0.3s,baz=36,slow=12,SNR=15						
MAJO	Matsushiro	4.62	231	ePn	Pn	06 15 39.4	+3.9
JHJ	Hachijo jima 2	6.83	201	LR	LR	06 19 16.1	
	comp=Z,260nm,18.0s,baz=160,slow=42						
USRK	Ussuriysk Ar.	9.21	304	P	Pn	06 16 41.5	+3.2
	1.3nm,0.3s,baz=115,slow=13,SNR=15						
JNU	Nakatsue	11.46	240	P	Pn	06 17 15.4	+6.1
	0.5nm,0.3s,baz=34,slow=7.3,SNR=3.0						
KSRS	Korea Array	11.73	264	P	Pn	06 17 18.4	+5.4
	0.6nm,0.3s,baz=74,slow=14,SNR=5.5						
KSAR	Wonju Array Be	11.76	264	P	Pn	06 17 18.4	+5.0
KLR	Kul'dur	12.41	325	P	Pn	06 17 23.6	+1.4
	0.3nm,0.3s,baz=156,slow=13,SNR=3.7						
MA2	Magadan	20.69	12	P	P	06 19 04.5	-0.9
	6.9nm,0.6s,baz=232,slow=10,SNR=8.8						
MA2	Magadan	20.69	12	P	P	06 19 04.5	-0.9
MA2				eP	P	06 19 05.5	0.0
YAK	Yakutsk	23.86	345	P	P	06 19 36.5	-2.1
	4.0nm,0.5s,baz=110,slow=18,SNR=5.2						
SEY	Seymchan	24.14	11	P	P	06 19 40.6	-0.6
	6.4nm,0.6s,baz=184,slow=19,SNR=17						
SONM	Songino Array	27.29	300	P	P	06 20 10.5	+0.4
	3.0nm,0.8s,baz=94,slow=7.7,SNR=7.1						
H11N2	WAKE ISLAND Hy	28.73	126	T	T	06 50 21.3	
	baz=319,slow=75,SNR=73						
H11N1	WAKE ISLAND Hy	28.74	126	T	T	06 50 21.5	
	baz=319,slow=75,SNR=79						
H11N3	WAKE ISLAND Hy	28.75	126	T	T	06 50 22.4	
	baz=319,slow=75,SNR=110						
H11S1	WAKE ISLAND Hy	29.53	128	T	T	06 51 24.8	
	baz=321,slow=76,SNR=41						
H11S3	WAKE ISLAND Hy	29.54	128	T	T	06 51 25.8	
	baz=321,slow=76,SNR=41						
H11S2	WAKE ISLAND Hy	29.55	128	T	T	06 51 25.6	
	baz=321,slow=76,SNR=33						
TIXI	Tiksi	32.92	352	P	P	06 21 00.2	+0.7
	1.6nm,0.5s						
ZALV	Zalesovo Beam	40.98	310	PcP	PcP	06 24 09.7	+1.6
	3.1nm,0.5s,baz=82,slow=2.9,SNR=1.7						
CMAR	Chiang Mai Arr	43.11	254	P	P	06 22 27.1	+1.1
	0.5nm,0.3s,baz=30,slow=7.3,SNR=2.7						
MKAR	Makanchi Array	43.65	300	P	P	06 22 30.4	+0.3
	2.3nm,0.5s,baz=86,slow=10.0,SNR=11						
KURK	Kurchatov	45.19	306	eP	P	06 22 42.0	-0.3
	26nm,0.6s						
KURK				P	P	06 22 42.8	+0.6
KURBB	Kurchatov Arra	45.26	306	P	P	06 22 42.8	0.0
	6.5nm,0.5s,baz=79,slow=8.5,SNR=10						
ILAR	Eielson Array	46.85	34	P	P	06 22 55.4	+0.1
	1.4nm,0.7s,baz=270,slow=6.1,SNR=14						
TKM2	Tokmak 2	49.33	297	eP	P	06 23 15.8	+0.8
BVAR	Borovoye Array	49.63	311	P	P	06 23 16.9	0.0
	1.7nm,0.4s,baz=78,slow=9.0,SNR=9.5						
AAK	Ala-Archa	50.19	297	P	P	06 23 21.5	+0.1
	1.2nm,0.4s,baz=59,slow=12,SNR=5.2						
INK	Inuvik	51.71	28	P	P	06 23 32.7	+0.5
	1.5nm,0.6s,baz=305,slow=6.7,SNR=20						
KKAR	Karatay Array	52.73	299	eP	P	06 23 40.3	0.0
	4.2nm,0.7s						
ARU	Arti	55.14	318	P	P	06 23 57.9	+0.3
	3.3nm,0.2s,baz=56,slow=1.3,SNR=5.9						
ABKAR	Akbulak array	57.08	309	eP	P	06 24 11.6	-0.1
	5.7nm,0.5s						
AKTO	Aktyubinsk	57.73	311	P	P	06 24 15.9	-0.3
	2.6nm,0.6s,baz=44,slow=10,SNR=11						
WRA	Warramunga Arr	59.69	189	P	P	06 24 28.8	-1.2
	0.7nm,0.6s,baz=7.3,slow=7.0,SNR=3.7						
YKA	Yellowknife Ar	61.15	31	P	P	06 24 39.6	0.0
	0.8nm,0.6s,baz=300,slow=6.3,SNR=20						
ARCES	ARCESS Array B	61.99	339	P	P	06 24 44.0	-1.2
	2.0nm,0.8s,baz=39,slow=7.8,SNR=6.5						
DAG	Danmarks Havn	63.35	355	i P	P	06 24 54.8	+0.7
	5.1nm,1.0s						
ASAR	Alice Springs	63.42	189	P	P	06 24 54.0	-1.2
	0.4nm,0.7s,baz=7.5,slow=5.2,SNR=3.1						
FINES	FINESS Array B	67.04	332	P	P	06 25 17.8	-0.5
	3.2nm,0.6s,baz=66,slow=6.5,SNR=10.0						
SUMG	Summit	68.17	0	i P	P	06 25 28.2	+2.5
KBZ	Khabaz	70.01	311	P	P	06 25 37.8	+0.7
	5.1nm,0.8s,baz=113,slow=4.8,SNR=5.3						
EGMT	Eagleton	71.75	42	P	P	06 25 46.8	-0.9
HFS	Hagfors	72.19	336	P	P	06 25 50.0	-0.1
	1.6nm,0.5s,baz=42,slow=6.8,SNR=7.5						
NB2	NORSAR Subarra	72.24	337	P	P	06 25 50.6	+0.2
	comp=Z,3.9nm,0.7s,baz=38,slow=6.2						
NOA	NORSAR Array B	72.24	337	P	P	06 25 50.0	-0.5
	comp=Z,1.8nm,0.8s,baz=38,slow=6.0,SNR=6.6						
NVAR	Mina Array Bea	72.71	54	P	P	06 25 54.8	+0.9
	comp=Z,1.5nm,0.7s,baz=291,slow=5.9,SNR=10						
AKASG	Malin Array Be	72.90	322	P	P	06 25 54.3	-0.1
	comp=Z,1.5nm,0.4s,baz=44,slow=6.5,SNR=13						
PDAR	Pinedale Array	75.22	46	P	P	06 26 08.3	-0.2
	comp=Z,0.8nm,0.7s,baz=265,slow=2.4,SNR=10						
STHS	Stebnicka Huta	77.45	325	eP	P	06 26 26.8	+6.0
BRTR	Keskin Array B	77.91	312	P	P	06 26 24.8	+1.2
	comp=Z,0.5nm,0.6s,baz=71,slow=4.0,SNR=2.9						
VYHS	Vyhne	79.20	326	eP	P	06 26 38.2	+7.8
KHC	Kasperske Hory	80.90	329	eP	P	06 26 42.0	+2.4
KHC				ePCP	pP	06 26 44.0	-0.6
KHC	Kasperske Hory	80.90	329	eP	P	06 26 39.0	-0.7
	comp=Z,1.9nm,0.8s						
GERES	GERESS Array B	81.08	329	P	P	06 26 40.9	+0.2
	comp=Z,0.5nm,0.5s,baz=44,slow=4.4,SNR=4.5						
TXAR	Lajitas Array	87.82	53	P	P	06 27 15.4	+0.3
	comp=Z,0.4nm,0.5s,baz=304,slow=3.6,SNR=6.9						
LPAZ	La Paz	144.55	58	PKP	PKPbc	06 34 00.6	-1.3
	comp=Z,1.0nm,0.5s,baz=18,slow=3.4,SNR=4.5						

*ISCJB **06** 06:18:42.0±1.3, 37°.25N±0°.05×28°.22E±0°.05, h5km±47km, Error ellipse: s-maj=9.2km s-min=5.4km az=33.2*
*DDA **06** 06:18:41.9, 37°.25N×28°.22E, h7km, Md2.5*
*CSEM **06** 06:18:42.3±0.3, 37°.25N×28°.22E, h2km, MD2.5, Error ellipse: s-maj=7.8km s-min=4.0km az=33.0*
ISC 06 06:18:42.3±1.1, 37°.24N±0°.04×28°.21E±0°.04, h5km±14km, n12, σ0s.51/20, Turkey

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
YER	Yerkesik	0.12	151	ePG	Pg	06 18 44.2	-0.5
YER	Yerkesik	0.12	151	ePg	Pg	06 18 44.2	-0.5
TURN	Turunc	0.48	139	i P	Pg	06 18 51.3	-0.2
TURN				i S	Sg	06 18 58.5	+0.8
TURN	Turunc	0.48	139	P	Pg	06 18 51.3	-0.2
TURN				S	Sg	06 18 58.5	+0.8
AYDN	Tasoluk	0.50	328	i P	Pg	06 18 51.6	-0.2
AYDN				i S	Sg	06 18 58.9	+0.5
AYDN	Tasoluk	0.50	328	P	Pg	06 18 51.7	-0.2
AYDN				S	Sg	06 18 58.9	+0.5
BDRM	Kayabasi	0.64	255	i P	Pg	06 18 55.1	+0.6
BDRM				i S	Sb	06 19 04.7	-0.4
BDRM	Kayabasi	0.64	255	P	Pg	06 18 55.1	+0.6
BDRM				S	Sb	06 19 04.7	-0.4
BODT	Bodrum	0.74	257	ePG	Pg	06 18 55.9	-0.6
BODT				eSG	Sg	06 19 06.3	+0.2
BODT	Bodrum	0.74	257	ePg	Pg	06 18 55.9	-0.6
BODT				eSg	Sg	06 19 06.3	+0.2
FETY	Fethiye	0.92	130	ePG	Pb	06 19 00.7	0.0
FETY	Fethiye	0.92	130	ePg	Pb	06 19 00.7	0.0

IDC 06 06:21:50.4±2.5, 54°.14N×86°.42E, h0km, mb1 3.4/2, mb1mx3.1/57, mbtmp3.4/2, ML3.3/2, Error ellipse: s-maj=19.6km s-min=11.8km az=60.0, Southwestern Siberia

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
I46RU	ZALESOVO INFRA	0.96	259	i		06 29 00.0	
	baz=82,slow=334,SNR=3.7						
ZALV	Zalesovo Beam	0.96	259	Pg	Pg	06 22 07.8	-1.0
	5.3nm,0.3s,baz=77,slow=16,SNR=39						
ZALV				Lg	Lg	06 22 21.9	
	5.3nm,0.3s,baz=74,slow=28,SNR=15						
ZALV				Rg	Rg	06 22 27.4	
	5.9nm,0.3s,baz=79,slow=32,SNR=12						
KURBB	Kurchatov Arra	5.98	237	Pn	Pn	06 23 21.2	+1.2
	0.4nm,0.3s,baz=53,slow=13,SNR=11						
KURBB				Lg	Lg	06 25 01.0	
	0.0nm,0.3s,baz=52,slow=30,SNR=2.9						
MKAR	Makanchi Array	7.81	201	Pn	Pn	06 23 46.0	+0.8
	0.7nm,0.3s,baz=22,slow=14,SNR=8.7						
MKAR				Sn	Sn	06 25 14.4	0.0
	0.1nm,0.3s,baz=23,slow=28,SNR=2.8						
MKAR				Lg	Lg	06 25 58.8	
	0.1nm,0.3s,baz=25,slow=35,SNR=3.9						

*ISCJB **06** 06:27:06.5±0.8, 10°.94S±0°.10×164°.55E±0°.09, h29km, mb4.0/8, MS3.4/4, Error ellipse: s-maj=15.6km s-min=10.5km az=36.5*
*IDC **06** 06:27:12.0±3.5, 11°.17S×164°.40E, h69km±31km, mb3.7/7, mb1 4.0/9, mb1mx3.7/42, mbtmp4.2/9, ML4.5/2, MS3.4/7, Ms1 3.4/7, ms1mx3.0/34, Error ellipse: s-maj=32.3km s-min=26.4km az=99.0*
ISC 06 06:27:08.1±0.8, 10°.9S±0°.1×164°.6E±0°.1, h29km, n24, σ1s.58/13, mb4.2/8, MS3.4/4, Santa Cruz Islands region

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
HNR	Honiara	4.80	287	P	Pn	06 28 18.8	+0.2
	54nm,0.3s,baz=134,slow=6.5,SNR=6.8						
HNR				S	Sn	06 29 14.0	+0.7
	baz=53,slow=20,SNR=1.8						
HNR				LR	LR	06 30 04.7	
	comp=Z,570nm,21.9s,baz=120,slow=37						
HNR	Honiara	4.80	287	eP	Pn	06 28 13.0	-5.6
DZM	Mont Dzumac	11.30	171	P	Pn	06 29 48.5	+0.8
	1.1nm,0.3s,baz=322,slow=13,SNR=15						
DZM				LR	LR	06 33 09.7	
	comp=Z,273nm,18.8s,baz=17,slow=32						
PMG	Port Moresby	17.24	273	LR	LR	06 35 58.6	
	comp=Z,49nm,21.7s,baz=30,slow=31						
CTA	Charters Tower	19.92	240	P	P	06 31 38.7	+1.0
	0.3nm,0.3s,baz=60,slow=13,SNR=4.1						
H11S2	WAKE ISLAND Hy	29.23	4	T	T	07 03 28.8	
	baz=184,slow=76,SNR=30						
H11S3	WAKE ISLAND Hy	29.23	4	T	T	07 03 33.1	
	baz=184,slow=76,SNR=26						
H11S1	WAKE ISLAND Hy	29.24	4	T	T	07 03 25.0	
	baz=184,slow=76,SNR=29						
H11N1	WAKE ISLAND Hy	30.45	4	T	T	07 05 01.3	
	baz=184,slow=76,SNR=26						
H11N3	WAKE ISLAND Hy	30.46	4	T	T	07 05 01.3	
	baz=184,slow=76,SNR=16						
H11N2	WAKE ISLAND Hy	30.47	4	T	T	07 05 02.7	
	baz=184,slow=76,SNR=17						
WRA	Warramunga Arr	30.51	249	P	P	06 33 16.6	-2.5
	0.4nm,0.5s,baz=78,slow=9.1,SNR=4.9						
GUMO	Guam	31.20	321	LR	LR	06 44 01.0	
	comp=Z,66nm,21.6s,baz=316,slow=32						
ASAR	Alice Springs	31.89	242	P	P	06 33 27.4	-3.8
	1.4nm,1.1s,baz=74,slow=9.8,SNR=3.1						
ASAR				LR	LR	06 45 11.9	
	comp=Z,99nm,19.9s,baz=54,slow=34						
FITZ	Fitzroy Crossi	38.36	255	LR	LR	06 49 14.2	
	comp=Z,68nm,19.7s,baz=74,slow=35						
DAV	Davao City (W)	42.74	293	LR	LR	06 50 39.5	
	comp=Z,28nm,20.1s,baz=293,slow=33						
USRK	Ussuriysk Ar.	62.28	334	P	P	06 37 29.3	+1.8
	1.4nm,0.6s,baz=126,slow=9.1,SNR=4.2						
KLR	Kul'dur	66.44	337	P	P	06 37 57.0	+2.4
	2.3nm,0.8s,baz=142,slow=3.1,SNR=5.6						
VNDA	Vanda	66.67	181	P	P	06 37 56.8	+1.0
	1.9nm,1.0s,baz=13,slow=9.6,SNR=4.4						
SONM	Songino Array	77.85	324	P	P	06 39 03.4	+0.3
	0.8nm,0.9s,baz=133,slow=4.0,SNR=3.6						
ILAR	Eielson Array	83.69	19	P	P	06 39 33.2	-0.5
	0.9nm,0.6s,baz=236,slow=6.0,SNR=13						
MKAR	Makanchi Array	92.62	317	P	P	06 40 16.1	-1.1
	1.1nm,0.8s,baz=94,slow=6.1,SNR=9.9						
ARCES	ARCESS Array B	115.86	345	PKP	PKPdf	06 45 45.9	-1.6
	1.3nm,0.9s,baz=82,slow=1.9,SNR=13						
TORD	Torodi Ar. Bea	163.13	280	PKP	PKPdf	06 47 07.2	-1.7
	0.9nm,1.1s,baz=90,slow=2.9,SNR=3.3						

IDC 06 06:30:03.0±3.1, 30°.09S×138°.69E, h0km, mb1 3.1/3,

mb1mx3.0/30, mbtmp2.8/3, ML2.7/3, Error ellipse: s-maj=97.6km s-min=17.4km az=45.0, South Australia

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
STKA	Stephens Creek	3.06	126	Pn	Pn	06 30 52.6	0.0
	0.3nm,0.3s,baz=306,slow=13,SNR=7.5						
STKA				Pg	Pb	06 30 58.6	+0.3
	1.2nm,0.3s,baz=300,slow=12,SNR=15						
STKA				Sn	Sn	06 31 27.4	-2.6
	1.0nm,0.3s,baz=221,slow=20,SNR=4.5						
STKA				Lg	Lg	06 31 40.5	
	1.8nm,0.3s,baz=336,slow=20,SNR=5.9						
ASAR	Alice Springs	7.70	325	Pn	Pn	06 31 57.7	+1.3
	0.1nm,0.3s,baz=146,slow=14,SNR=3.7						
WRA	Warramunga Arr	10.85	338	Pn	Pn	06 32 38.1	-1.4
	0.1nm,0.3s,baz=161,slow=12,SNR=2.9						

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*ISCJB **06** 06:34:09.8±0.3, 46.°71N±0.°02×81.°23W±0.°03, h0km, mb3.3/1, Error ellipse: s-maj=2.7km s-min=2.3km az=15.1*
*IDC **06** 06:34:11.1±0.7, 46.°66N×81.°23W, h0km, mb3.1/2, mb1 3.8/7, mb1mx3.4/60, mbtmp3.7/7, ML3.0/5, Error ellipse: s-maj=10.8km s-min=6.7km az=59.0*
*OTT **06** 06:34:12.1±0.1, 46.°67N×81.°34W, h1km, MN3.7/27, Mining induced event, Sudbury, On Mining induced.*
ISC 06 06:34:10.0±0.6, **46.°72N**±0.°02×**81.°27W**±0.°03, **h0km, n63,** σ**1.s42**/120, **1D, Ontario**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
SUNO	Sudbury Onapin	0.09	214	⇓PG	Pg	06 34 12.8	+1.1
SUNO				SG	Sg	06 34 13.1	+0.2
SUNO				Trac		06 34 13.2	
	comp=Z,7μm,0.0s						
TOBO	Tobermory, Bru	1.50	187	PG	Pn	06 34 38.4	+0.1
TOBO				SG	Sg	06 34 56.5	-1.8
TOBO				Trac		06 34 58.0	
	comp=Z,119nm,0.2s						
EEO	Eldee	1.52	92	PG	Pg	06 34 40.4	+1.3
EEO				SN	Sn	06 35 02.1	+3.3
EEO				Trac		06 35 03.4	
	comp=Z,352nm,0.1s						
KLBO	Killbear Provi	1.55	151	PG	Pb	06 34 39.4	-0.1
KLBO				SG	Sn	06 34 58.9	-0.7
KLBO				Trac		06 35 00.3	
	comp=Z,262nm,0.1s						
BUKO	Buck Lake	1.82	134	PN	Pb	06 34 44.1	-0.1
BUKO				SN	Sg	06 35 08.4	-0.2
BUKO				Trac		06 35 09.4	
	comp=Z,166nm,0.2s						
BELQ	Belleterre	1.89	68	PN	Pb	06 34 45.1	-0.3
BELQ				SN	Sb	06 35 09.9	+0.3
BELQ				Trac		06 35 22.0	
	comp=Z,150nm,0.2s						
KILO	Kirkland Lake	2.06	30	PN	Pb	06 34 48.3	-0.1
KILO				PG	Pg	06 34 50.1	+0.5
KILO				SG	Sg	06 35 17.6	+1.3
KILO				Trac		06 35 19.6	
	comp=Z,59nm,0.1s						
BMRO	Meriville Lake	2.12	179	PN	Pn	06 34 47.9	+1.1
BMRO				SN	Sb	06 35 15.1	-1.2
BMRO				Trac		06 35 20.4	
	comp=Z,66nm,0.1s						
ALGO	Algonquin Park	2.36	108	PN	Pb	06 34 52.2	-1.1
ALGO				SN	Sb	06 35 23.5	+0.5
ALGO				Trac		06 35 28.8	
	comp=Z,360nm,0.1s						
CLWO	Collingwood	2.37	163	PN	Pb	06 34 52.1	-1.4
CLWO				SG	Sb	06 35 24.0	+0.6
CLWO				Trac		06 35 25.9	
	comp=Z,656nm,0.4s						
SADO	Sadowa	2.46	142	Pn	Pn	06 34 52.4	+1.1
	25nm,0.3s,baz=331,slow=16,SNR=211						
SADO				Pg	Pb	06 34 54.0	-1.0
	25nm,0.3s,baz=333,slow=16,SNR=216						
SADO				Lg	Lg	06 35 25.1	
	108nm,0.3s,baz=65,slow=22,SNR=51						
SADO	Sadowa	2.46	142	PN	Pn	06 34 52.6	+1.3
SADO				SN	Sn	06 35 23.5	+1.5
SADO				SG	Sb	06 35 25.8	0.0
SADO				Trac		06 35 29.4	
	comp=Z,115nm,0.1s						
BRCO	Bruce Peninsul	2.48	183	PN	Pn	06 34 53.3	+1.7
BRCO				SN	Sn	06 35 23.4	+0.8
BRCO				Trac		06 35 29.9	
	comp=Z,229nm,0.2s						
BWLO	Walkerton	2.60	178	PN	Pn	06 34 54.6	+1.3
BWLO				SN	Sn	06 35 26.1	+0.4
BWLO				Trac		06 35 32.7	
	comp=Z,80nm,0.2s						
BASO	Ashfield	2.72	186	PN	Pn	06 34 55.6	+0.6
BASO				SN	Sn	06 35 27.8	-0.8
BASO				SG	Sb	06 35 33.2	-0.2
BASO				Trac		06 35 43.0	
	comp=Z,113nm,0.2s						
CRLO	Chalk River	2.78	103	PN	Pn	06 34 58.0	+2.2
CRLO				SN	Sn	06 35 31.8	+1.8
CRLO				LG	Lg	06 35 36.9	
CRLO				Trac		06 35 40.7	
	comp=Z,141nm,0.2s						
KAPO	Kapuskasing	2.86	344	PN	Pn	06 34 58.6	+1.8
KAPO				SN	Sn	06 35 34.4	+2.5
KAPO				LG	Lg	06 35 39.9	
KAPO				Trac		06 35 43.6	
	comp=Z,84nm,0.1s						
BANO	Bancroft	2.89	125	PN	Pn	06 34 58.7	+1.5
BANO				SN	Sn	06 35 34.0	+1.2
BANO				Trac		06 35 49.3	
	comp=Z,64nm,0.2s						
VLDQ	Val d'Or	2.94	60	PN	Pn	06 34 57.9	-0.1
VLDQ				PG	Pb	06 35 02.5	-0.8
VLDQ				SN	Sn	06 35 31.7	-2.3
VLDQ				LG	Lg	06 35 39.1	
VLDQ				Trac		06 35 40.0	
	comp=Z,102nm,0.2s						
PEMO	Pembroke	2.98	109	PN	Pn	06 35 00.4	+1.9
PEMO				SN	Sn	06 35 36.4	+1.4
PEMO				LG	Lg	06 35 43.3	
PEMO				Trac		06 35 52.5	
	comp=Z,125nm,0.2s						
PKRO	Pickering	3.16	150	PN	Pn	06 35 03.2	+2.2
PKRO				SN	Sn	06 35 39.8	+0.4
PKRO				LG	Lg	06 35 45.9	
PKRO				Trac		06 35 58.0	
	comp=Z,279nm,0.2s						
ACTO	Acton	3.23	164	PN	Pn	06 35 02.8	+0.9
ACTO				SN	Sn	06 35 41.2	+0.2
ACTO				LG	Lg	06 35 48.4	
ACTO				Trac		06 35 58.2	
	comp=Z,86nm,0.3s						
DREO	Darlington Eas	3.37	147	PN	Pn	06 35 05.3	+1.4
DREO				PG	Pb	06 35 09.2	-1.5
DREO				SN	Sn	06 35 44.8	+0.1
DREO				LG	Lg	06 35 51.8	
DREO				Trac		06 35 57.7	
	comp=Z,60nm,0.1s						
PLVO	Plevna	3.38	118	PN	Pn	06 35 05.4	+1.4
PLVO				SN	Sn	06 35 44.8	+0.1
PLVO				LG	Lg	06 35 56.3	
PLVO				Trac		06 36 01.4	
	comp=Z,91nm,0.2s						
DELO	Deloro Mine	3.38	129	PN	Pn	06 35 05.2	+1.2
DELO				SN	Sn	06 35 45.4	+0.6
DELO				LG	Lg	06 35 54.4	
DELO				Trac		06 36 01.3	
	comp=Z,86nm,0.3s						
TORO	Toronto--Lesli	3.39	156	PN	Pn	06 35 05.2	+1.1
TORO				LG	Lg	06 35 53.0	
WLVO	Wesleyville	3.45	143	LG	Lg	06 35 54.4	
WLVO				Trac		06 36 02.4	
	comp=Z,154nm,0.3s						
MALO	McAlpine Lake	3.46	16	PN	Pn	06 35 06.7	+1.7
MALO				SN	Sn	06 35 48.5	+1.8
MALO				LG	Lg	06 35 58.2	
MALO				Trac		06 36 03.8	
	comp=Z,42nm,0.2s						
ELFO	Elginfield	3.53	181	PN	Pn	06 35 06.7	+0.7
ELFO				SN	Sn	06 35 49.0	+0.5
ELFO				LG	Lg	06 35 58.1	
ELFO				Trac		06 36 00.8	
	comp=Z,128nm,0.2s						
LSQQ	Lebel-sur-Quev	3.72	49	PN	Pn	06 35 10.3	+1.6
LSQQ				SN	Sn	06 35 51.8	-1.3
LSQQ				LG	Lg	06 36 05.4	
LSQQ				Trac		06 36 10.3	
	comp=Z,50nm,0.2s						
GRQ	Grand Remous	3.73	90	PN	Pn	06 35 10.3	+1.5
GRQ				SN	Sn	06 35 54.9	+1.5
GRQ				LG	Lg	06 36 06.2	
GRQ				Trac		06 36 14.2	
	comp=Z,53nm,0.2s						
TYNO	Tyneside	3.76	164	PN	Pn	06 35 10.5	+1.2
TYNO				LG	Lg	06 36 07.0	
TYNO				Trac		06 36 12.1	
	comp=Z,106nm,0.3s						
STCO	Saint Catharin	3.81	156	PN	Pn	06 35 11.2	+1.3
STCO				PG	Pb	06 35 18.6	+0.4
STCO				LG	Lg	06 36 05.5	
PNPO	Pukaskwa Natio	3.87	301	PN	Pn	06 35 12.0	+1.2
PNPO				SN	Sn	06 35 55.2	-1.8
PNPO				LG	Lg	06 36 09.6	
PNPO				Trac		06 36 12.0	
	comp=Z,53nm,0.2s						
EFO	Effingham	3.88	158	PN	Pn	06 35 12.1	+1.2
EFO				SN	Sn	06 35 55.8	-1.5
EFO				Trac		06 36 12.4	
	comp=Z,59nm,0.2s						
VABQ	Val Des Bois	4.01	100	PN	Pn	06 35 13.9	+1.3
VABQ				SN	Sn	06 36 01.4	+1.1
VABQ				LG	Lg	06 36 14.2	
VABQ				Trac		06 36 19.6	
	comp=Z,61nm,0.2s						
OTT	Ottawa	4.09	107	PN	Pn	06 35 15.2	+1.5
OTT				PN	Pn	06 35 15.3	+1.6
OTT				SN	Sn	06 36 02.8	+0.6
OTT				SN	Sb	06 36 03.2	-9.5
OTT				LG	Lg	06 36 16.9	
OTT				Trac		06 36 23.8	
	comp=Z,74nm,0.2s						
PECO	Prince Edward	4.11	131	PN	Pn	06 35 14.9	+1.0
PECO				SN	Sn	06 36 02.3	-0.4
PECO				LG	Lg	06 36 16.6	
PECO				Trac		06 36 22.0	
	comp=Z,54nm,0.2s						
GAC	Glen Almond	4.15	102	PN	Pn	06 35 15.6	+1.1
GAC				SN	Sn	06 36 05.4	+1.7
GAC				LG	Lg	06 36 18.8	
GAC				Trac		06 36 24.9	
	comp=Z,56nm,0.2s						
KGNO	Kingston	4.18	125	PN	Pn	06 35 15.8	+0.7
KGNO				SN	Sn	06 36 04.8	+0.2
KGNO				LG	Lg	06 36 20.1	
KGNO				Trac		06 36 21.8	
	comp=Z,51nm,0.3s						
ORIO	Orleans, Innes	4.20	105	PN	Pn	06 35 16.7	+1.4
ORIO				SN	Sn	06 36 05.3	+0.3
ORIO				LG	Lg	06 36 20.1	
ORIO				Trac		06 36 25.1	
	comp=Z,68nm,0.2s						
WBO	Williamsburg	4.53	110	PN	Pn	06 35 20.9	+1.1
WBO				SN	Sn	06 36 12.5	-0.6
WBO				LG	Lg	06 36 29.7	
WBO				Trac		06 36 33.0	
	comp=Z,84nm,0.4s						
ALFO	Alfred	4.57	102	PN	Pn	06 35 21.4	+1.1
ALFO				SN	Sn	06 36 14.8	+0.8
ALFO				LG	Lg	06 36 30.1	
ALFO				Trac		06 36 38.5	
	comp=Z,31nm,0.2s						
TRQ	Mont Tremblant	4.67	94	PN	Pn	06 35 23.3	+1.5
TRQ				SN	Sn	06 36 17.8	+1.2
TRQ				LG	Lg	06 36 34.5	
TRQ				Trac		06 36 39.0	
	comp=Z,27nm,0.2s						
ERPA	Erie	4.69	168	PN	Pn	06 35 23.7	+1.6
ERPA				PG	Pb	06 35 34.1	+0.9
ERPA				PN	Pg	06 36 15.9	+36
ERPA				LG	Lg	06 36 33.1	
ERPA				Trac		06 36 37.1	
	comp=Z,81nm,0.3s						
GTO	Geraldton	4.86	311	PN	Pn	06 35 26.1	+1.7
GTO				SN	Sn	06 36 19.4	-1.9
GTO				LG	Lg	06 36 39.4	
GTO				Trac		06 36 44.3	
	comp=Z,37nm,0.3s						
PLIO	Pelee Island,	5.06	192	PN	Pn	06 35 27.9	+0.8
PLIO				PG	Pb	06 35 36.1	-3.4
PLIO				SN	Sn	06 36 24.8	-1.5
PLIO				LG	Lg	06 36 46.4	
ALLY	Alegheny Colle	5.13	171	LG	Lg	06 36 46.5	
LONY	Lake Ozonia	5.14	112	PN	Pn	06 35 28.5	+0.3
LONY				SN	Sn	06 36 28.6	+0.5
LONY				LG	Lg	06 36 49.6	
MNTQ	Montreal, Queb	5.46	100	PN	Pn	06 35 33.1	+0.5
MNTQ				SN	Sn	06 36 35.8	-0.2
MNTQ				LG	Lg	06 36 56.5	
MNTQ				Trac		06 37 11.2	
	comp=Z,27nm,0.3s						
CHGQ	Chibougamau	5.60	53	PN	Pn	06 35 35.0	+0.5
CHGQ				SN	Sn	06 36 37.1	-2.5
CHGQ				LG	Lg	06 37 05.2	
CHGQ				Trac		06 37 11.6	
	comp=Z,17nm,0.2s						
FRNY	Flat Rock	5.69	107	PN	Pn	06 35 36.9	+1.0
FRNY				SN	Sn	06 36 39.6	-2.3
FRNY				LG	Lg	06 37 05.8	
TBO	Thunder Bay	5.82	292	PN	Pn	06 35 38.6	+1.0
TBO				SN	Sn	06 36 43.1	-1.9
TBO				Trac		06 37 19.6	
	comp=Z,10nm,0.2s						
DPQ	Saint Jean	5.84	87	PN	Pn	06 35 37.6	-0.3
DPQ				SN	Sn	06 36 44.4	-1.1
DPQ				LG	Lg	06 37 12.1	
DPQ				Trac		06 37 18.7	
	comp=Z,26nm,0.2s						
BINY	Binghamton	5.89	138	PN	Pn	06 35 38.6	+0.1
BINY				SN	Sn	06 36 43.8	-3.0
BINY				SN	Sn	06 36 43.9	-3.0
BINY				LG	Lg	06 37 08.2	
BINY				LG	Lg	06 37 12.2	
DAQ	Lac Daran	6.93	76	PN	Pn	06 35 52.1	-0.7
DAQ				SN	Sn	06 37 07.3	-5.0
DAQ				LG	Lg	06 37 45.7	
DAQ				Trac		06 37 49.2	
	comp=Z,22nm,0.3s						
LG4Q	La Grande 4	8.30	31	PN	Pn	06 36 10.7	-0.9
LG4Q				SN	Sn	06 37 42.7	-3.3
LG4Q				LG	Lg	06 38 28.9	
LG4Q				Trac		06 38 39.5	
	comp=Z,7.4nm,0.3s						
ULM	Lac du Bonnet	10.32	295	Pn	Pn	06 36 37.3	-1.9
	1.2nm,0.3s,baz=107,slow=12,SNR=17						
ULM				Sn	Sn	06 38 25.9	-10
	1.3nm,0.3s,baz=208,slow=22,SNR=9.7						
ULM				Lg	Lg	06 39 26.4	
	0.7nm,0.3s,baz=178,slow=22,SNR=3.2						
TKL	Tuckaleechee C	11.21	191	Pn	Pn	06 36 49.1	-2.4
	0.2nm,0.3s,baz=11,slow=10,SNR=3.3						
TKL				Sn	Sn	06 38 49.4	-8.1
	0.3nm,0.3s,baz=208,slow=17,SNR=3.0						
TKL				Lg	Lg	06 39 53.5	
	0.5nm,0.3s,baz=31,slow=19,SNR=2.8						
SCHQ	Schefferville	12.21	43	Pn	Pn	06 37 01.4	-3.6
	0.5nm,0.3s,baz=234,slow=16,SNR=6.3						
SCHQ				Sn	Sn	06 39 12.5	-9.2
	0.4nm,0.3s,baz=143,slow=20,SNR=3.0						
SCHQ				Lg	Lg	06 40 26.9	
	1.1nm,0.3s,baz=318,slow=18,SNR=4.1						
FRB	Frobisher Bay	18.48	18	Pn	P	06 38 25.2	-1.9
	0.1nm,0.3s,baz=229,slow=20,SNR=2.5						
FRB				Sn	Sn	06 41 35.0	-19
	0.1nm,0.3s,baz=145,slow=19,SNR=2.1						
FRB				Lg	Lg	06 43 37.5	
	0.1nm,0.3s,baz=131,slow=20,SNR=2.0						
PDAR	Pinedale Array	20.43	269	P	P	06 38 49.8	+0.9
	0.3nm,0.5s,baz=64,slow=13,SNR=5.7						
YKA	Yellowknife Ar	24.55	322	P	P	06 39 32.1	+1.1
	0.3nm,0.5s,baz=111,slow=9.9,SNR=14						

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*NIED **06** 06:35:00, 39.°10N×144.°50E, h5km, Mw3.8 Best double couple: M₀6.52000×10^14 NP1:φs17.00000°, δ31.00000°, λ-80.00000°. NP2:φs185.00000°, δ60.00000°, λ-96.00000°.*
*IDC **06** 06:35:08.8±1.1, 38.°83N×144.°69E, h0km, mb3.9/14, mb1 4.1/16, mb1mx3.9/44, mbtmp3.9/16, ML3.1/2, MS2.9/4, Ms1 2.9/4, ms1mx2.5/45, Error ellipse: s-maj=25.4km s-min=19.5km az=153.0*
*ISCJB **06** 06:35:11.0±0.6, 39.°00N±0.°06×144.°57E±0.°05, h19km, mb3.9/15, Error ellipse: s-maj=8.5km s-min=5.4km az=167.8*
*JMA **06** 06:35:12.9±0.3, 39.°13N×144.°46E, h19km, M3.9*
*NEIC **06** 06:35:13.7±3.4, 38.°83N×144.°66E, h33km±24km, mb4.3/1, Error ellipse: s-maj=14.4km s-min=9.7km az=135.0*
ISC 06 06:35:12.6±0.8, **39.°02N**±0.°08×**144.°58E**±0.°08, **h19km, n35,** σ**0.s84**/38, **mb4.0**/15, **Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
MIYJ	Miyakonagasawa	2.21	285	P	Pn	06 35 48.0	-0.3
MIYJ				S	Sn	06 36 14.3	-0.8
OFUJ	Ofunato	2.27	272	P	Pn	06 35 48.8	-0.2
JTH	Tanohata	2.30	294	P	Pn	06 35 48.9	-0.5
JTH				eS	Sn	06 36 16.2	-0.9
JOM	Ohasama	2.59	281	P	Pn	06 35 53.8	+0.3
JOM				eS	Sn	06 36 23.3	-1.2
JANG	Nango	2.73	301	P	Pn	06 35 54.7	-0.6
JRG	Rokugo	3.09	278	P	Pn	06 36 01.7	+1.4
JOU	Okura	3.14	259	P	Pn	06 36 01.1	+0.1
JOU				S	Sn	06 36 38.2	+0.3
JTM	Tenmabayashi	3.23	304	P	Pn	06 36 02.6	+0.4
JTM				S	Sn	06 36 38.4	-1.7
JAH	Hinai	3.27	292	P	Pn	06 36 03.4	+0.7
JAH				S	Sn	06 36 40.7	-0.3
JYK	Kaneyama	3.29	270	P	Pn	06 36 03.3	+0.2
JNBK	Urakawa-nobuka	3.54	337	P	Pn	06 36 06.8	+0.3
MJAR	Matsushiro Arr	5.62	246	Pn	Pn	06 36 34.9	-0.2
	2.3nm,0.3s,baz=72,slow=11,SNR=24						
MJAR				Sn	Sn	06 37 40.1	+0.9
	baz=92,slow=26,SNR=3.2						
MAJO	Matsushiro	5.62	246	ePn	Pn	06 36 34.6	-0.5
	29nm,0.6s						
MAT	Matsushiro	5.62	246	P	Pn	06 36 35.6	+0.4
MAT				eS	Sn	06 37 31.9	-7.3
USRK	Ussuriysk Ar.	10.75	303	Pn	Pn	06 37 45.7	+0.3
	0.3nm,0.3s,baz=121,slow=14,SNR=6.5						
JCJ	Chichijima	12.06	190	LR	LR	06 41 33.6	
	comp=Z,235nm,20.5s,baz=81,slow=32						
JNU	Nakatsue	12.55	246	LR	LR	06 42 37.2	
	comp=Z,57nm,20.9s,baz=304,slow=36						
KSRS	Korea Array	13.19	268	LR	LR	06 43 13.9	
	comp=Z,33nm,20.6s,baz=36,slow=36						
KLR	Kul'dur	13.73	322	LR	LR	06 44 03.3	
	comp=Z,30nm,18.6s,baz=177,slow=38						
MA2	Magadan	20.95	9	P	Pn	06 39 55.4	-1.3
	3.2nm,0.6s,baz=190,slow=15,SNR=4.1						
SEY	Seymchan	24.41	9	P	P	06 40 30.7	+1.2
	1.1nm,0.3s,baz=136,slow=13,SNR=3.5						
SONM	Songino Array	28.85	300	P	P	06 41 09.6	-0.3
	0.4nm,0.6s,baz=98,slow=9.0,SNR=2.8						
ZALV	Zalesovo Beam	42.47	311	P	P	06 43 07.3	+1.2
	1.2nm,0.5s,baz=77,slow=7.6,SNR=3.5						
MKAR	Makanchi Array	45.21	301	P	P	06 43 28.8	+0.5
	0.8nm,0.7s,baz=83,slow=9.2,SNR=9.0						
ILAR	Eielson Array	46.47	33	P	P	06 43 37.8	-0.1
	0.7nm,0.8s,baz=256,slow=6.8,SNR=7.0						
KURK	Kurchatov	46.71	307	eP	P	06 43 40.0	0.0
	8.1nm,0.6s						
KURK				P	P	06 43 41.3	+1.3
KURBB	Kurchatov Arra	46.78	307	P	P	06 43 41.3	+0.7
	2.4nm,0.6s,baz=80,slow=8.0,SNR=4.1						
BVAR	Borovoye Array	51.11	312	P	P	06 44 14.8	+1.0
	1.2nm,0.6s,baz=79,slow=7.5						
INK	Inuvik	51.47	28	P	P	06 44 16.8	+0.6
	1.8nm,0.8s,baz=303,slow=5.4,SNR=8.5						
ABKAR	Akbulak array	58.58	310	eP	P	06 45 08.4	+0.6
	1.3nm,0.5s						
WRA	Warramunga Arr	59.43	191	P	P	06 45 12.1	-1.9
	0.3nm,0.5s,baz=9.8,slow=7.1,SNR=4.7						
FINES	FINESS Array B	68.20	333	P	P	06 46 11.1	-0.2
	2.1nm,0.6s,baz=48,slow=8.5,SNR=8.4						
KBZ	Khabaz	71.49	312	P	P	06 46 33.0	+1.2
	2.2nm,0.8s,baz=24,slow=9.4,SNR=4.1						
AKASG	Malin Array Be	74.23	323	P	P	06 46 47.4	-0.6
	0.6nm,0.5s,baz=33,slow=5.7,SNR=4.9						
TXAR	Lajitas Array	86.93	54	P	P	06 47 55.7	-0.8
	0.4nm,0.8s,baz=313,slow=2.3,SNR=4.4						

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*IDC **06** 06:45:16.6±0.9, 34.°99N×141.°26E, h0km, mb3.7/8, mb1 3.9/10, mb1mx3.6/53, mbtmp3.7/10, ML3.2/2, MS2.8/4, Ms1 2.8/4, ms1mx2.6/45, Error ellipse: s-maj=23.0km s-min=20.8km az=101.0*
*ISCJB **06** 06:45:19.8±0.7, 34.°99N±0.°05×141.°25E±0.°07, h35km, mb3.6/8, MS2.6/1, Error ellipse: s-maj=8.4km s-min=6.7km az=176.9*
*JMA **06** 06:45:19.5±0.1, 35.°10N×141.°25E, h17km±3km, M3.2*
ISC 06 06:45:21.5±0.8, **35.°01N**±0.°05×**141.°23E**±0.°08, **h35km, n26,** σ**1.s54**/22, **mb3.5**/8, **Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
BSO1	Boso 1	0.41	210	P	Pn	06 45 29.1	-1.3
BSO3	Boso 3	0.62	250	P	Pn	06 45 32.6	-1.0
BSO4	Boso 4	0.73	268	P	Pn	06 45 34.2	-1.0
CHOJ	Chosi	0.75	337	P	Pn	06 45 32.5	-3.1
CHOJ				S	Sn	06 45 42.0	-3.8
KTR	Katsuura	0.76	280	P	Pn	06 45 33.7	-2.0
KTR				S	Sn	06 45 44.8	-1.1
JCN	Nagara	0.93	296	P	Pn	06 45 39.0	+0.9
JYT	Yasato	1.48	326	P	Pn	06 45 45.9	+0.3
JHJ	Hachijo jima 2	2.24	213	Pn	Pn	06 45 55.9	-0.1
	16nm,0.3s,baz=54,slow=19,SNR=4.1						
JHJ				Sn	Sn	06 46 20.2	-2.2
	41nm,0.3s,baz=108,slow=20,SNR=4.7						
JHJ				LR	LR	06 46 53.3	
	comp=Z,85nm,18.1s,baz=218,slow=43						
MJAR	Matsushiro Arr	2.89	303	Pn	Pn	06 46 05.2	+0.2
	3.4nm,0.3s,baz=96,slow=14,SNR=24						
MJAR				LR	LR	06 47 22.3	
	comp=Z,235nm,19.4s,baz=130,slow=44						
MAT	Matsushiro	2.89	303	P	Pn	06 46 05.8	+0.7
MAT				eS	Sn	06 46 39.0	+0.4
KSRS	Korea Array	11.02	287	Pn	Pn	06 48 01.0	+4.5
	0.5nm,0.3s,baz=99,slow=15,SNR=4.6						
KSRS				LR	LR	06 52 23.5	
	comp=Z,98nm,19.8s,baz=98,slow=38						
PETK	Petropavlovsk-	21.53	28	LR	LR	06 59 09.6	
	comp=Z,24nm,18.9s,baz=175,slow=39						
H11N2	WAKE ISLAND Hy	27.30	117	T	T	07 19 35.0	
	baz=309,slow=75,SNR=18						
H11N1	WAKE ISLAND Hy	27.31	117	T	T	07 19 35.6	
	baz=309,slow=75,SNR=15						
H11N3	WAKE ISLAND Hy	27.32	117	T	T	07 19 36.3	
	baz=309,slow=75,SNR=13						
H11S3	WAKE ISLAND Hy	27.95	119	T	T	07 20 58.3	
	baz=312,slow=75,SNR=27						
H11S1	WAKE ISLAND Hy	27.95	119	T	T	07 20 57.4	
	baz=312,slow=75,SNR=29						
H11S2	WAKE ISLAND Hy	27.96	119	T	T	07 21 00.0	
	baz=312,slow=75,SNR=11						
SONM	Songino Array	28.83	307	P	P	06 51 17.8	+1.2
	0.3nm,0.4s,baz=107,slow=12,SNR=2.9						
ZALV	Zalesovo Beam	43.18	314	P	P	06 53 18.8	+0.1
	0.7nm,0.5s,baz=91,slow=7.4,SNR=3.6						
MKAR	Makanchi Array	45.09	304	P	P	06 53 33.9	-0.3
	0.5nm,0.6s,baz=86,slow=8.8,SNR=5.9						
KURBB	Kurchatov Arra	47.14	309	P	P	06 53 50.2	+0.1
	1.4nm,0.7s,baz=85,slow=8.1,SNR=13						
ILAR	Eielson Array	51.29	31	P	P	06 54 21.6	-0.1
	0.4nm,0.7s,baz=264,slow=6.4,SNR=5.1						
WRA	Warramunga Arr	55.04	188	P	P	06 54 49.4	-0.3
	2.2nm,0.6s,baz=5.5,slow=7.4,SNR=16						
YKA	Yellowknife Ar	65.63	30	P	P	06 56 01.7	+0.1
	0.3nm,0.8s,baz=298,slow=6.1,SNR=6.0						
PDAR	Pinedale Array	79.19	45	P	P	06 57 25.2	+2.0
	0.3nm,0.6s,baz=232,slow=1.7,SNR=4.7						

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*ISCJB **06** 06:47:54.5±0.7, 7.°1S±0.°1×124.°8E±0.°2, h559km, mb3.6/4, Error ellipse: s-maj=23.6km s-min=10.3km az=155.7*
*IDC **06** 06:47:56.1±1.4, 7.°19S×124.°68E, h569km±21km, mb3.1/4, mb1 3.3/9, mb1mx3.0/45, mbtmp4.2/9, Error ellipse: s-maj=51.4km s-min=15.1km az=60.0*
ISC 06 06:47:55.3±0.9, **7.°2S**±0.°1×**124.°7E**±0.°2, **h559km, n10,** σ**0.s95**/11, **mb3.6**/4, **Banda Sea**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC

Code	Station Name	Δ°	AZ°	Op	ISC	Time	Res
BATI	**Baumata**	**3.18**	**198**	P	**P**	**06 49 13.2**	**+1.0**
	26nm,0.3s,baz=296,slow=24,SNR=22						
BATI				S	**S**	**06 50 13.5**	**-1.4**
	10nm,0.3s,baz=270,slow=20,SNR=5.4						
KAPI	**Kappang**	**5.33**	**293**	P	P	06 49 31.0	+2.5
	1.1nm,0.3s,baz=153,slow=4.5,SNR=5.2						
FITZ	**Fitzroy Crossi**	**10.91**	**175**	P	**P**	**06 50 22.8**	**+0.2**
	1.8nm,0.3s,baz=280,slow=3.5,SNR=25						
WRA	**Warramunga Arr**	**15.79**	**145**	P	**P**	**06 51 11.0**	**-1.6**
	2.3nm,0.3s,baz=323,slow=11,SNR=57						
ASAR	**Alice Springs**	**18.65**	**153**	P	**P**	**06 51 39.1**	**+0.3**
	1.6nm,0.3s,baz=340,slow=12,SNR=51						
ASAR				S	**S**	**06 54 40.6**	**+0.3**
	0.1nm,0.3s,baz=349,slow=24,SNR=7.2						
STKA	**Stephens Creek**	**29.22**	**150**	P	**P**	**06 53 13.0**	**+0.5**
	2.1nm,0.5s,baz=317,slow=6.9,SNR=8.2						
MKAR	**Makanchi Array**	**65.57**	**329**	P	**P**	**06 57 44.7**	**+0.6**
	0.4nm,0.5s,baz=118,slow=7.5,SNR=8.2						
ZALV	**Zalesovo Beam**	**69.49**	**336**	P	**P**	**06 58 07.2**	**-0.6**
	0.8nm,0.5s,baz=132,slow=2.2,SNR=3.7						
SEY	**Seymchan**	**73.04**	**13**	P	**P**	**06 58 28.6**	**+0.1**
	1.3nm,0.5s,baz=157,slow=4.8,SNR=8.1						
TORD	**Torodi Ar. Bea**	**123.65**	**281**	PKP	**PKPdf**	**07 05 50.0**	**-0.8**
	0.5nm,0.9s,baz=22,slow=1.4,SNR=3.1						

*ISCJB **06** 06:55:26.8±0.5, 39.°45N±0.°03×39.°03E±0.°03, h8km±6km, Error ellipse: s-maj=4.9km s-min=4.3km az=1.1*
*CSEM **06** 06:55:26.9±0.3, 39.°43N×39.°02E, h15km, MD2.6, Error ellipse: s-maj=5.8km s-min=5.3km az=66.0*
*DDA **06** 06:55:26.5, 39.°45N×39.°02E, h7km, Md2.6*
*ISK **06** 06:55:26.1, 39.°47N×39.°01E, h11km, MD2.5*
ISC 06 06:55:25.8±1.3**, 39.°46N**±0.°03×**39.°10E**±0.°03**, h2**km±14km**, n21, σ0.s82**/37**, Turkey**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
REFA	**Refahiye_ERZ˜**	**0.27**	**256**	*i* P	**Pn**	**06 55 35.7**	**-1.2**
REFA				*i* S	**Sb**	**06 55 42.6**	**+4.1**
EZC	**Erzincan**	**0.35**	**34**	*e*Pg	**Pn**	**06 55 37.5**	**-0.5**
ILIC	**ilic-Erzincan**	**0.41**	**269**	*e*PG	**Pg**	**06 55 33.6**	**-0.1**
ILIC				*e*SG	**Sg**	**06 55 38.8**	**-0.2**
ILIC	**ilic-Erzincan**	**0.41**	**269**	*e*Pg	**Pg**	**06 55 33.6**	**-0.1**
ILIC				*e*Sg	**Sg**	**06 55 38.8**	**-0.2**
TNCL	**Tunceli-Merkez**	**0.49**	**135**	*i* P	**Pg**	**06 55 35.6**	**+0.5**
TNCL				*i* S	**Sb**	**06 55 44.9**	**+0.1**
TNCL	**Tunceli-Merkez**	**0.49**	**135**	P	**Pg**	**06 55 35.6**	**+0.5**
TNCL				S	**Sb**	**06 55 44.9**	**+0.1**
ERZN	**Erzincan**	**0.50**	**75**	*e*PG	**Pb**	**06 55 37.5**	**+0.2**
ERZN				*e*SG	**Sb**	**06 55 45.7**	**+0.7**
KEMA	**Kemaliye**	**0.51**	**248**	*i* P	**Pg**	**06 55 35.7**	**+0.2**
KEMA				*i* S	**Sg**	**06 55 42.2**	**+0.1**
KEMA	**Kemaliye**	**0.51**	**248**	P	**Pg**	**06 55 35.7**	**+0.2**
KEMA				S	**Sg**	**06 55 42.2**	**+0.1**
PTK	**Pertek**	**0.61**	**158**	*e*PG	**Pb**	**06 55 39.2**	**-0.1**
PTK				*e*SG	**Sb**	**06 55 48.7**	**+0.2**
PTK	**Pertek**	**0.61**	**158**	*e*Pg	**Pb**	**06 55 39.2**	**-0.1**
PTK				*e*Sg	**Sb**	**06 55 48.7**	**+0.2**
KELT	**Kelkit**	**0.70**	**10**	*i* P	**Pb**	**06 55 40.7**	**-0.1**
KELT				*i* S	**Sb**	**06 55 51.4**	**+0.5**
KELT	**Kelkit**	**0.70**	**10**	P	**Pb**	**06 55 40.7**	**-0.1**
KELT				S	**Sb**	**06 55 51.4**	**+0.5**
ELZG	**Elazig**	**0.97**	**185**	*i* P	**Pg**	**06 55 44.6**	**+0.3**
ELZG				*i* S	**Sb**	**06 55 58.4**	**-0.2**
ELZG	**Elazig**	**0.97**	**185**	P	**Pg**	**06 55 44.6**	**+0.3**
ELZG				S	**Sb**	**06 55 58.4**	**-0.2**
SVRC	**Sivrice-ELAZID**	**1.09**	**171**	*e*PN	**Pn**	**06 55 47.9**	**-0.4**
SVRC	**Sivrice-ELAZID**	**1.09**	**171**	*e*Pn	**Pn**	**06 55 47.9**	**-0.4**
CUKAN	**kangal_SIVAS**	**1.27**	**264**	*i* P	**Pg**	**06 55 49.5**	**-0.7**
CUKAN				*i* S	**Sg**	**06 56 06.9**	**+0.2**
CUKAN	**kangal_SIVAS**	**1.27**	**264**	P	**Pg**	**06 55 49.5**	**-0.7**
CUKAN				S	**Sg**	**06 56 06.9**	**+0.2**
ESPY	**Espiye-Giresun**	**1.48**	**349**	*e*PN	**Pn**	**06 55 53.0**	**-0.4**
ESPY	**Espiye-Giresun**	**1.48**	**349**	*e*Pn	**Pn**	**06 55 53.0**	**-0.4**

IDC 06 06:57:02.2±1.7**, 6.°68S**×**129.°77E, h0**km**, mb3.6**/2**, mb1 3.8**/4**, mb1mx3.5**/44**, mbtmp3.7**/4**, ML3.9**/2**, MS3.6**/1**, Ms1 3.6**/1**, ms1mx2.7**/30**, Error ellipse: s-maj=128.9km s-min=29.5km az=72.0, Banda Sea**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**13.91**	**162**	Pn	Pn	07 00 20.8	+0.1
	0.6nm,0.3s,baz=345,slow=13,SNR=20						
WRA				Sn	Sn	07 02 41.3	-15
	1.2nm,0.3s,baz=339,slow=23,SNR=10						
ASAR	**Alice Springs**	**17.35**	**167**	Pn	Pn	07 01 06.0	+0.1
	0.4nm,0.3s,baz=345,slow=9.5,SNR=15						
ASAR				Sn	Sn	07 04 06.1	-14
	0.3nm,0.3s,baz=351,slow=28,SNR=5.9						
MJAR	**Matsushiro Arr**	**43.72**	**10**	LR	LR	07 23 12.7	
	comp=Z,65nm,18.4s,baz=150,slow=36						
SONM	**Songino Array**	**58.07**	**342**	P	P	07 06 57.7	+0.4
	0.4nm,0.6s,baz=142,slow=7.3,SNR=2.7						
MKAR	**Makanchi Array**	**67.83**	**327**	P	P	07 08 01.8	-0.5
	0.3nm,0.3s,baz=116,slow=6.9,SNR=6.1						

JMA 06 06:59:50.6±0.2**, 37.°74N**×**144.°36E, h41**km**, M3.6, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**2.48**	**288**	P	Pn	07 00 30.1	+1.6
JIO				S	Sn	07 00 58.9	+1.4
OFUJ	**Ofunato**	**2.50**	**303**	P	Pn	07 00 30.3	+1.5
JMK	**Ichinoseki**	**2.75**	**297**	P	Pn	07 00 33.9	+1.7
JMK				*e*S	Sn	07 01 06.4	+2.3
JMM	**Marumori**	**2.83**	**274**	P	Pn	07 00 34.2	+1.0
JMM				*e*S	Sn	07 01 06.6	+0.5
JTH	**Tanohata**	**2.94**	**319**	P	Pn	07 00 36.1	+1.4
JOM	**Ohasama**	**2.96**	**307**	P	Pn	07 00 37.0	+1.9
JOM				*e*S	Sn	07 01 11.5	+2.1
JOU	**Okura**	**2.98**	**283**	P	Pn	07 00 37.2	+1.8
JOU				S	Sn	07 01 12.0	+2.0
JFT	**Otama**	**3.20**	**267**	*e*S	Sn	07 01 16.0	+0.7
JRG	**Rokugo**	**3.36**	**301**	P	Pn	07 00 43.3	+2.8
JRG				*e*S	Sn	07 01 22.0	+2.9
JYK	**Kaneyama**	**3.36**	**292**	P	Pn	07 00 42.5	+1.9
JYK				*e*S	Sn	07 01 22.1	+2.9
JANG	**Nango**	**3.44**	**321**	P	Pn	07 00 44.2	+2.6
JANG				*e*S	Sn	07 01 22.8	+1.7
JNBK	**Urakawa-nobuka**	**4.70**	**345**	P	Pn	07 01 00.1	+1.2
JNBK				*e*S	Sn	07 01 52.8	+0.6
JRY	**Ryogami san**	**4.70**	**250**	*e*S	Sn	07 01 49.3	-3.0

*CSEM **06** 07:03:05.7±0.3, 34.°10N×25.°34E, h2km, ML3.2, Error ellipse: s-maj=5.3km s-min=3.2km az=162.0*
*IDC **06** 07:03:07.5±1.3, 34.°18N×25.°23E, h0km, mb3.8/4, mb1 3.7/9, mb1mx3.5/53, mbtmp3.7/9, ML4.0/4, MS2.7/1, Ms1 2.7/1, ms1mx2.1/58, Error ellipse: s-maj=23.4km s-min=13.1km az=64.0*
*ATH **06** 07:03:07.7, 34.°20N×25.°27E, h13km±2km, ML3.2/7, Error ellipse: s-maj=3.3km s-min=1.4km az=12.0*
*THE **06** 07:03:07.5, 34.°21N×25.°37E, h0km±2km, ML3.2/7, Error ellipse: s-maj=5.2km s-min=1.2km az=166.0*
ISC 06 07:03:08.1±1.6**, 34.°24N**±0.°06×**25.°30E**±0.°03**, h7**km±10km**, n36, σ0.s71**/57**, mb3.9**/4**, Crete**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
SIVA	**Sivas**	**0.88**	**332**	P	**Pb**	**07 03 25.1**	**-0.6**
SIVA				S	**Sn**	**07 03 39.0**	**-0.9**
SIVA	**Sivas**	**0.88**	**332**	P	**Pb**	**07 03 25.1**	**-0.6**
SIVA				S	**Sn**	**07 03 39.0**	**-0.9**
SIVA	**Sivas**	**0.88**	**332**	P	**Pb**	**07 03 25.5**	**-0.2**
SIVA				S	**Sb**	**07 03 37.9**	**+0.2**
SIVA				AML	AML	07 03 41.1	
	comp=E,17365μm,0.5s						
SIVA				AML	AML	07 03 41.6	
	comp=N,13714μm,0.5s						
LAST	**Lasithi**	**0.93**	**9**	P	**Pb**	**07 03 26.3**	**-0.3**
LAST				S	**Sn**	**07 03 40.5**	**-0.9**
LAST	**Lasithi**	**0.93**	**9**	P	**Pb**	**07 03 26.3**	**-0.3**
LAST				S	**Sn**	**07 03 40.5**	**-0.9**
LAST	**Lasithi**	**0.93**	**9**	P	**Pb**	**07 03 26.4**	**-0.3**
NPS	**Neapolis**	**1.05**	**14**	P	**Pg**	**07 03 28.4**	**+0.1**
NPS				S	**Sn**	**07 03 44.2**	**-0.1**
NPS	**Neapolis**	**1.05**	**14**	P	**Pg**	**07 03 28.4**	**+0.1**
NPS				S	**Sn**	**07 03 44.0**	**-0.3**
NPS	**Neapolis**	**1.05**	**14**	P	**Pg**	**07 03 28.3**	**+0.1**
NPS				S	**Sn**	**07 03 44.0**	**-0.3**
NPS				AML	AML	07 03 47.8	
	comp=N,1105μm,0.6s						
NPS				AML	AML	07 03 48.4	
	comp=E,1206μm,0.5s						
IACM	**Heraklion**	**1.08**	**350**	P	**Pn**	**07 03 29.3**	**-0.4**
IACM				S	**Sg**	**07 03 43.6**	**+0.7**
IACM	**Heraklion**	**1.08**	**350**	P	**Pn**	**07 03 29.3**	**-0.4**
IACM				S	**Sg**	**07 03 43.6**	**+0.7**
IACM				AML	AML	07 03 56.4	
	comp=N,6770μm,0.6s						
IACM				AML	AML	07 04 09.9	
	comp=E,6989μm,1.0s						
IDI	**Anoyia**	**1.10**	**342**	Pg	**Pb**	**07 03 28.9**	**-0.6**
	comp=E,10.0nm,0.3s,baz=176,slow=9.3,SNR=37						
IDI				Lg	Lg	07 03 45.2	
	comp=E,82nm,0.3s,baz=231,slow=10,SNR=32						
IDI				LR	LR	07 04 17.2	
	comp=E,67nm,20.2s,baz=242,slow=61						
IDI	**Anoyia**	**1.10**	**342**	P	**Pb**	**07 03 28.9**	**-0.6**
IDI				S	**Sn**	**07 03 45.9**	**+0.3**
IDI	**Anoyia**	**1.10**	**342**	P	**Pb**	**07 03 28.9**	**-0.6**
IDI				S	**Sn**	**07 03 45.9**	**+0.3**
IDI	**Anoyia**	**1.10**	**342**	P	**Pb**	**07 03 28.6**	**-1.0**
IDI				S	**Sb**	**07 03 43.9**	**-0.3**
IDI				AML	AML	07 03 50.9	
	comp=N,1120μm,0.7s						
IDI				AML	AML	07 03 53.4	
	comp=E,1035μm,0.6s						
ZKR	**Zakros**	**1.15**	**40**	P	**Pb**	**07 03 29.2**	**-1.2**
ZKR				S	**Sb**	**07 03 45.3**	**-0.3**
ZKR	**Zakros**	**1.15**	**40**	P	**Pb**	**07 03 29.2**	**-1.2**
ZKR				S	**Sb**	**07 03 45.3**	**-0.3**
ZKR	**Zakros**	**1.15**	**40**	P	**Pg**	**07 03 30.1**	**-0.1**
ZKR				S	**Sn**	**07 03 47.4**	**+0.6**
ZKR				AML	AML	07 03 56.2	
	comp=N,1064μm,0.7s						
ZKR				AML	AML	07 03 57.6	
	comp=E,1598μm,0.5s						
GVD	**Gavdhos**	**1.17**	**301**	P	**Pb**	**07 03 29.6**	**-1.1**
GVD				S	**Sn**	**07 03 48.4**	**+1.2**
GVD	**Gavdhos**	**1.17**	**301**	P	**Pb**	**07 03 29.6**	**-1.1**
GVD				S	**Sb**	**07 03 45.5**	**-0.6**
GVD	**Gavdhos**	**1.17**	**301**	P	**Pb**	**07 03 29.6**	**-1.1**
GVD				S	**Sb**	**07 03 45.5**	**-0.6**
GVD				AML	AML	07 03 51.1	
	comp=E,2978μm,0.3s						
GVD				AML	AML	07 03 51.8	
	comp=N,3858μm,0.4s						
VAM	**Vamos**	**1.48**	**322**	P	**Pb**	**07 03 34.9**	**-1.0**
VAM				S	**Sg**	**07 03 56.6**	**+1.0**
VAM	**Vamos**	**1.48**	**322**	P	**Pb**	**07 03 35.3**	**-0.6**
VAM				S	**Sg**	**07 03 56.6**	**+1.0**
IMMV	**Iera Moni Meta**	**1.63**	**319**	P	**Pb**	**07 03 37.5**	**-1.1**
IMMV				S	**Sg**	**07 04 00.7**	**+0.1**
IMMV	**Iera Moni Meta**	**1.63**	**319**	P	**Pb**	**07 03 37.5**	**-1.1**
IMMV				S	**Sg**	**07 04 00.7**	**+0.1**
IMMV	**Iera Moni Meta**	**1.63**	**319**	P	**Pb**	**07 03 38.2**	**-0.3**
IMMV				S	**Sg**	**07 04 01.4**	**+0.8**
IMMV				AML	AML	07 04 10.9	
	comp=E,1051μm,1.1s						
IMMV				AML	AML	07 04 16.6	
	comp=N,989μm,0.8s						
MMAI	**Mount Meron Ar**	**8.51**	**95**	Pn	Pn	07 05 14.9	+3.1
	comp=N,3.1nm,0.3s,baz=263,slow=12,SNR=5.6						
BRTR	**Keskin Array B**	**8.63**	**48**	Pn	Pn	07 05 17.3	+3.8
	comp=N,0.1nm,0.3s,baz=223,slow=14,SNR=3.5						
EIL	**Elat**	**9.37**	**116**	Pn	**Pn**	**07 05 23.8**	**+0.1**
	comp=N,0.9nm,0.3s,baz=323,slow=12,SNR=6.1						
AKASG	**Malin Array Be**	**16.70**	**9**	Pn	**P**	**07 07 04.2**	**-0.7**
	comp=N,0.9nm,0.3s,baz=202,slow=11,SNR=7.6						
GERES	**GERESS Array B**	**16.95**	**333**	Pn	**P**	**07 07 08.4**	**+0.7**
	comp=N,0.2nm,0.3s,baz=149,slow=16,SNR=5.4						
TORD	**Torodi Ar. Bea**	**30.00**	**231**	P	**P**	**07 09 17.4**	**-0.1**
	comp=N,0.3nm,0.4s,baz=29,slow=9.3,SNR=4.8						
ARCES	**ARCESS Array B**	**35.35**	**0**	LR	LR	07 25 59.0	
	comp=N,10nm,18.4s,baz=358,slow=39						
MKAR	**Makanchi Array**	**44.19**	**56**	P	**P**	**07 11 18.2**	**+0.6**
	comp=N,1.2nm,0.6s,baz=278,slow=6.6,SNR=19						
ZALV	**Zalesovo Beam**	**45.56**	**46**	P	**P**	**07 11 28.8**	**+0.4**
	comp=N,1.3nm,0.4s,baz=246,slow=9.0,SNR=3.2						
SONM	**Songino Array**	**59.98**	**50**	P	**P**	**07 13 16.4**	**+1.0**
	comp=N,0.4nm,0.5s,baz=289,slow=6.6,SNR=2.8						

*ATH **06** 07:08:33.0, 35.°10N×26.°27E, h28km±1km, ML2.7/3, Error ellipse: s-maj=6.5km s-min=1.2km az=170.0*
*THE **06** 07:08:33.9, 35.°29N×26.°24E, h0km±1km, ML2.8/2, Error ellipse: s-maj=1.2km s-min=0.6km az=23.0*
*ISCJB **06** 07:08:34.9±0.7, 35.°26N±0.°09×26.°24E±0.°04, h8km±11km, Error ellipse: s-maj=14.6km s-min=5.0km az=2.4*
*CSEM **06** 07:08:34.6±0.2, 35.°28N×26.°24E, h0km±5km, ML2.7, Error ellipse: s-maj=11.6km s-min=3.3km az=171.0*
*ISK **06** 07:08:35.5, 35.°36N×26.°28E, h6km, MD3.0*
ISC 06 07:08:33.9±1.0**, 35.°26N**±0.°03×**26.°31E**±0.°03**, h18**km±3km**, n27, σ0.s69**/43**, Crete**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
ZKR	**Zakros**	**0.17**	**207**	P	**Pb**	**07 08 37.5**	**-0.2**
ZKR				S	**Sg**	**07 08 41.6**	**+0.2**
ZKR	**Zakros**	**0.17**	**207**	P	**Pb**	**07 08 37.3**	**-0.4**
ZKR				S	**Sg**	**07 08 41.6**	**+0.2**
ZKR	**Zakros**	**0.17**	**207**	P	**Pb**	**07 08 37.3**	**-0.4**
ZKR				S	**Sg**	**07 08 41.6**	**+0.2**
NPS	**Neapolis**	**0.57**	**270**	P	**Pb**	**07 08 45.1**	**-0.1**
NPS				S	**Sb**	**07 08 53.1**	**+0.1**
NPS	**Neapolis**	**0.57**	**270**	P	**Pb**	**07 08 45.1**	**-0.1**
NPS				S	**Sg**	**07 08 52.5**	**-0.4**
NPS	**Neapolis**	**0.57**	**270**	P	**Pg**	**07 08 45.7**	**+0.5**
NPS				S	**Sg**	**07 08 52.5**	**-0.4**
NPS				AML	AML	07 08 54.7	
	comp=N,2588μm,0.7s						
NPS				AML	AML	07 08 54.8	
	comp=E,2802μm,0.4s						
LAST	**Lasithi**	**0.69**	**262**	P	**Pb**	**07 08 46.5**	**-0.8**
LAST				S	**Sg**	**07 08 56.9**	**+0.3**
LAST	**Lasithi**	**0.69**	**262**	P	**Pb**	**07 08 46.7**	**-0.6**
LAST				S	**Sb**	**07 08 55.3**	**-1.2**
LAST	**Lasithi**	**0.69**	**262**	P	**Pb**	**07 08 46.7**	**-0.6**
KARP	**Karpathos**	**0.75**	**68**	P	**Pn**	**07 08 49.4**	**-0.2**
KARP				S	**Sn**	**07 09 02.2**	**+1.6**
KARP	**Karpathos**	**0.75**	**68**	P	**Pn**	**07 08 49.4**	**-0.2**
KARP				S	**Sn**	**07 09 02.2**	**+1.6**
KARP	**Karpathos**	**0.75**	**68**	P	**Pn**	**07 08 49.2**	**-0.4**
KARP				S	**Sn**	**07 09 02.4**	**+1.8**
KARP				AML	AML	07 09 10.7	
	comp=E,1489μm,0.5s						
KARP				AML	AML	07 09 11.0	
	comp=N,1112μm,0.6s						
IDI	**Anoyia**	**1.16**	**272**	P	**Pn**	**07 08 54.9**	**-0.3**
IDI				S	**Sg**	**07 09 11.2**	**-0.4**
IDI	**Anoyia**	**1.16**	**272**	P	**Pn**	**07 08 54.9**	**-0.3**
IDI				S	**Sb**	**07 09 09.8**	**-0.3**
IDI	**Anoyia**	**1.16**	**272**	P	**Pn**	**07 08 55.2**	**-0.1**
IDI				S	**Sb**	**07 09 09.8**	**-0.3**
IDI				AML	AML	07 09 16.4	
	comp=N,491μm,0.4s						
IDI				AML	AML	07 09 22.7	
	comp=E,289μm,0.5s						
THR5	**Thira Island,**	**1.39**	**326**	*e*PN	**Pg**	**07 09 00.8**	**+0.1**
THR5				*e*SN	**Sg**	**07 09 19.1**	**+0.2**
THR5	**Thira Island,**	**1.39**	**326**	*e*Pn	**Pg**	**07 09 00.8**	**+0.1**
THR5				*e*Sn	**Sg**	**07 09 19.1**	**+0.2**
NIS1	**Nisyros Isl.**	**1.51**	**28**	*e*PN	**Pg**	**07 09 02.8**	**-0.2**
NIS1	**Nisyros Isl.**	**1.51**	**28**	*e*Pn	**Pg**	**07 09 02.8**	**-0.2**
APE	**Apeiranthos**	**1.91**	**341**	*e*PN	**Pb**	**07 09 08.0**	**-0.2**
APE	**Apeiranthos**	**1.91**	**341**	*e*Pn	**Pb**	**07 09 08.0**	**-0.2**
BODT	**Bodrum**	**1.97**	**24**	*e*PN	**Pb**	**07 09 09.4**	**+0.2**
BODT	**Bodrum**	**1.97**	**24**	*e*Pn	**Pb**	**07 09 09.4**	**+0.2**
YER	**Yerkesik**	**2.46**	**40**	*e*PN	**Pb**	**07 09 16.4**	**-1.1**
YER	**Yerkesik**	**2.46**	**40**	*e*Pn	**Pb**	**07 09 16.4**	**-1.1**
FETY	**Fethiye**	**2.64**	**58**	*e*PN	**Pb**	**07 09 19.5**	**-1.0**
FETY	**Fethiye**	**2.64**	**58**	*e*Pn	**Pb**	**07 09 19.5**	**-1.0**

*NIED **06** 07:12:00, 27.°20N×143.°40E, h5km, Mw4.4 Best double couple: M₀3.97000×10[15] NP1:φs151.00000°, δ40.00000°, λ-108.00000°. NP2:φs353.00000°, δ53.00000°, λ-76.00000°.*
*IDC **06** 07:12:06.7±0.5, 27.°20N×143.°38E, h0km, mb4.6/30, mb1 4.8/35, mb1mx4.7/48, mbtmp4.7/35, ML4.2/5, MS3.5/21, Ms1 3.5/21, ms1mx3.3/49, Error ellipse: s-maj=12.6km s-min=11.6km az=87.0*
*ISCJB **06** 07:12:09.8±1.2, 27.°22N±0.°03×143.°30E±0.°03, h30km±8km, mb4.9/120, MS3.8/29, Error ellipse: s-maj=5.8km s-min=4.7km az=152.2*
*MOS **06** 07:12:10.2±0.8, 27.°16N×143.°27E, h34km, mb5.2/53, Error ellipse: s-maj=10.7km s-min=5.0km az=117.1*
*BJI **06** 07:12:11.9, 27.°27N×143.°01E, h37km, mb4.9/60, mB5.0/37, Ms4.5/35, Ms7 4.1/36*
*NEIC **06** 07:12:12.2±0.8, 27.°16N×143.°32E, h37km±6km, mb5.1/30, Error ellipse: s-maj=5.8km s-min=4.0km az=109.0*
ISC 06 07:12:12.4±0.5**, 27.°30N**±0.°05×**143.°30E**±0.°06**, h34**km±4km**, n258, σ1.s23**/296**, mb5.0**/120**, MS3.8**/29**, 12C-10D, Bonin Islands region**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
CBIJ	**Chichi jima**	**1.01**	**259**	*e*Pn	**Pn**	**07 12 29.7**	**-0.4**
CBIJ				Sn	**Sn**	**07 12 43.7**	**+0.5**
JCJ	**Chichijima**	**1.01**	**259**	Pn	**Pn**	**07 12 29.7**	**-0.4**
	684nm,0.3s,baz=83,slow=22,SNR=71						
JCJ				Sn	**Sn**	**07 12 43.7**	**+0.5**
	1μm,0.3s,baz=274,slow=22,SNR=34						
JHJ2	**Mitsune**	**6.53**	**333**	*e*Pn	**Pn**	**07 13 46.8**	**+0.7**
JHJ	**Hachijo jima 2**	**6.55**	**333**	Pn	**Pn**	**07 13 45.6**	**-0.7**
	32nm,0.3s,baz=69,slow=20,SNR=2.7						
JHJ				Sn	**Sn**	**07 14 57.5**	**-2.3**
	84nm,0.3s,baz=266,slow=23,SNR=3.4						
JHJ				LR	LR	07 16 34.4	
	comp=Z,234nm,19.9s,baz=116,slow=40						
INU	**Inuyama**	**9.66**	**328**	*e*Pn	**Pn**	**07 14 32.9**	**+4.0**
MJAR	**Matsushiro Arr**	**10.18**	**336**	Pn	**Pn**	**07 14 35.4**	**-0.7**
	12nm,0.3s,baz=163,slow=12,SNR=12						
MAJO	**Matsushiro**	**10.18**	**336**	⇑*e*P	**Pn**	**07 14 34.0**	**-2.1**
JNU	**Nakatsue**	**12.21**	**301**	Pn	**Pn**	**07 15 04.8**	**+0.9**
	0.4nm,0.3s,baz=100,slow=8.2,SNR=4.0						
JNU				LR	LR	07 19 49.5	
	comp=Z,299nm,18.2s,baz=121,slow=38						
JNU	**Nakatsue**	**12.21**	**301**	*e*Pn	**Pn**	**07 15 05.6**	**+1.7**
JOW	**Kunigami**	**13.40**	**271**	LR	LR	07 20 36.8	
	comp=Z,286nm,18.3s,baz=176,slow=38						
KSRS	**Korea Array**	**16.45**	**312**	Pn	**Pn**	**07 16 01.8**	**+1.2**
	2.5nm,0.3s,baz=120,slow=12,SNR=47						
KSRS				LR	LR	07 22 01.8	
	comp=Z,189nm,19.6s,baz=122,slow=36						
KS15	**Wonju Array Si**	**16.47**	**312**	*e*Pn	**P**	**07 16 02.1**	**-1.1**
KSAR	**Wonju Array Be**	**16.47**	**312**	P	**Pn**	**07 16 01.8**	**+1.0**
KSAR	**Wonju Array Be**	**16.47**	**312**	Pn	**Pn**	**07 16 01.8**	**+1.0**
KS01	**Wonju Array Si**	**16.48**	**312**	*e*Pn	**P**	**07 16 02.5**	**-0.9**
INCN	**Inchon**	**17.33**	**310**	*e*Pn	**P**	**07 16 12.5**	**-0.3**
	73nm,1.2s						
VLA	**Vladivostok**	**18.31**	**333**	⇓*i*P	**Pn**	**07 16 24.7**	**+1.1**
VLA				pmax	pmax		
	comp=Z,186nm,0.9s						
USRK	**Ussuriysk Ar.**	**19.17**	**335**	P	**P**	**07 16 31.6**	**-1.3**
	comp=Z,2.4nm,0.3s,baz=158,slow=12,SNR=32						
USRK				LR	LR	07 24 03.8	
	comp=Z,102nm,18.4s,baz=144,slow=37						
YSS	**Yuzh-Sakhalins**	**19.63**	**359**	*e*P	**Pn**	**07 16 39.6**	**+0.2**
YSS				pmax	pmax		
	comp=Z,37nm,1.2s						
YHNB	**Yeheng**	**19.88**	**267**	*e*P	**P**	**07 16 40.2**	**-0.8**
	comp=Z,48nm,0.9s						
YULB	**Yu-li**	**20.25**	**264**	*e*P	**P**	**07 16 45.6**	**+0.7**
	comp=Z,174nm,2.0s						
SSLB	**Suanglung**	**20.46**	**265**	*e*P	**P**	**07 16 47.7**	**+0.5**
	comp=Z,59nm,0.9s						
MDJ	**Mudanjiang**	**20.49**	**331**	P	**P**	**07 16 47.9**	**+0.6**
MDJ				sP	sP	07 17 03.2	+2.6
MDJ				S	**S**	**07 20 33.1**	**-1.6**
MDJ				ScP	**ScP**	**07 24 35.3**	**+3.2**
MDJ				ScS	**ScS**	**07 28 12.2**	**-2.8**
MDJ				pmax	pmax		
	comp=Z,64nm,0.9s						
MDJ				pmax	pmax		
	comp=Z,120nm,4.1s						
MDJ				LR	LR		
	comp=Z,230nm,14.1s						
MDJ				LR	LR		
	comp=Z,110nm,12.9s						
MDJ				LR	LR		
	comp=Z,310nm,12.7s						
MDJ	**Mudanjiang**	**20.49**	**331**	*e*P	**P**	**07 16 47.5**	**+0.1**
	comp=Z,71nm,1.0s						
TWG	**Pinlang**	**20.61**	**262**	*e*P	**P**	**07 16 48.6**	**-0.3**
	comp=Z,122nm,0.6s						
TPUB	**Ta-pu**	**20.87**	**264**	*e*Pn	Pn	07 16 53.3	-1.0
DL2	**Dalian**	**21.48**	**308**	P	**P**	**07 16 57.5**	**-0.5**
DL2				S	**S**	**07 20 51.4**	**-2.9**
DL2				pmax	pmax		
	comp=Z,70nm,0.7s						
DL2				LR	LR		
	comp=Z,330nm,16.4s						
DL2				LR	LR		
	comp=Z,320nm,14.9s						
DL2				LR	LR		
	comp=Z,460nm,13.7s						
SNY	**Shenyang**	**21.70**	**317**	⇓P	**P**	**07 16 59.9**	**-0.4**
SNY				pP	**pP**	**07 17 10.9**	**+1.6**
SNY				sP	**sP**	**07 17 15.9**	**+2.3**
SNY				pmax	pmax		
	comp=Z,36nm,1.1s						
NJ2	**Nanjing**	**21.74**	**288**	*e*P	**P**	**07 17 02.3**	**+1.4**
NJ2				pmax	pmax		
	comp=Z,25nm,0.7s						
CN2	**Changchun**	**21.88**	**323**	*e*P	**P**	**07 17 01.0**	**-1.3**
HABR	**Khabarovsk**	**22.10**	**345**	*e*P	**P**	**07 17 03.2**	**-1.3**
HABR				*e**PP	**pP**	**07 17 12.0**	**-1.6**
HABR				*e**SP	**sP**	**07 17 16.4**	**-1.5**
HABR				*e*PPP	PPP	07 17 34.3	
HABR				*e*		07 20 59.0	
HABR				*e*S	**S**	**07 21 06.1**	**0.0**
HABR				*e*		07 21 21.2	
HABR				*e*		07 28 18.2	
HABR				pmax	pmax		
	comp=Z,81nm,2.1s						
HABR				pmax	pmax		
	comp=Z,120nm,2.0s						
HABR				pmax	pmax		
	comp=E,134nm,2.0s						
HABR				MLR	MLR		
	comp=Z,153nm,16.0s						
KLR	**Kul'dur**	**23.65**	**341**	P	**P**	**07 17 21.1**	**+0.6**
	comp=Z,6.3nm,0.3s,baz=160,slow=9.8,SNR=45						
TIA	**Tai'an**	**23.91**	**298**	⇑P	**P**	**07 17 20.9**	**-2.2**
TIA				pmax	pmax		
	comp=Z,40nm,0.8s						
SKR	**Severo-Kuril's**	**25.32**	**19**	⇑*i*P	**P**	**07 17 34.9**	**-0.8**
WHN	**Wuhan**	**25.51**	**284**	⇓P	**P**	**07 17 36.4**	**-1.4**
WHN				LR	LR		
	comp=Z,460nm,14.8s						
BJI	**Beijing**	**25.80**	**306**	P	**P**	**07 17 38.0**	**-2.2**
BJI				S	**S**	**07 22 08.8**	**+1.5**
BJI				pmax	pmax		
	comp=Z,18nm,1.3s						
BJI				pmax	pmax		
	comp=Z,54nm,3.5s						
BJI				LR	LR		
	comp=Z,170nm,10.1s						
BJI				LR	LR		
	comp=Z,220nm,14.5s						
NKL	**Nikolayevsk**	**25.90**	**356**	*e*P	**P**	**07 17 41.0**	**0.0**
NKL				pmax	pmax		
	comp=Z,30nm,1.0s						
DAV	**Davao City (W)**	**26.22**	**223**	LR	LR	07 26 16.2	
	comp=Z,130nm,21.3s,baz=330,slow=32						
PETK	**Petropavlovsk-**	**27.92**	**19**	P	**P**	**07 18 02.1**	**+2.8**
	comp=Z,3.6nm,0.7s,baz=261,slow=2.9,SNR=3.9						
PETK				LR	LR	07 27 35.4	
	comp=Z,44nm,21.9s,baz=198,slow=33						
HIA	**Hailar**	**28.48**	**327**	*e*P	**P**	**07 18 05.1**	**+0.8**
HIA				pmax	pmax		
	comp=Z,86nm,1.1s						
HIA	**Hailar**	**28.48**	**327**	*e*P	**P**	**07 18 05.0**	**+0.8**
	comp=Z,86nm,1.1s						
HHC	**Hu-ho-hao-te**	**29.38**	**306**	*e*P	**P**	**07 18 13.0**	**+0.5**
HHC				S	**S**	**07 23 01.2**	**-2.9**
HHC				pmax	pmax		
	comp=Z,17nm,1.0s						
HHC				pmax	pmax		
	comp=Z,88nm,4.7s						
HHC				LR	LR		

comp=Z,470nm,12.2s
HHC LR LR
comp=Z,490nm,13.9s
HHC LR LR
comp=Z,470nm,13.9s
ENH Enshi 29.72 284 *e*P **P 07 18 14.7 -0.9**
comp=Z,28nm,0.9s
XAN Xi'an 30.22 291 P P **07 18 19.0 -1.0**
XAN pP pP 07 18 29.5 -0.2
XAN sP sP 07 18 33.7 -0.1
XAN pmax pmax
comp=Z,30nm,0.9s
XAN pmax pmax
comp=Z,36nm,4.3s
GYA Guiyang 32.62 277⇑ *i*P **P 07 18 41.2 0.0**
GYA pP sP 07 18 53.2 -1.9
GYA PcP **PcP 07 21 28.6 +1.6**
GYA S **S 07 23 54.8 -0.2**
GYA sS sS 07 24 14.0 +2.8
GYA ScP **ScP 07 25 07.7 -0.7**
GYA SS **SnSn 07 25 51.9 +0.9**
GYA ScS **ScS 07 29 05.2 -3.1**
GYA pmax pmax
comp=Z,30nm,0.8s
GYA pmax pmax
comp=Z,130nm,5.5s
GYA LR LR
comp=Z,620nm,16.6s
GYA LR LR
comp=Z,550nm,16.2s
GYA LR LR
comp=Z,600nm,16.8s
MA2 Magadan 32.68 7 LR LR 07 33 09.6
comp=Z,52nm,19.2s,baz=208,slow=38
MA2 Magadan 32.68 7‖ *e*P **P 07 18 42.5 +1.3**
LZH Lanzhou 34.51 295 *e*P **P 07 18 56.8 -0.8**
LZH pP pP 07 19 08.8 +1.4
LZH sP sP 07 19 15.1 +3.6
LZH PP **PnPn 07 20 12.0 -1.2**
LZH *e*S **S 07 24 20.1 -4.1**
LZH sS sS 07 24 42.6 +2.2
LZH pmax pmax
comp=Z,32nm,1.0s
LZH pmax pmax
comp=Z,94nm,4.2s
LZH LR LR
comp=Z,310nm,15.3s
LZH LR LR
comp=Z,390nm,17.8s
LZH LR LR
comp=Z,360nm,18.4s
CD2 Chengdu 34.61 286⇑ *i*P **P 07 18 57.7 -0.7**
CD2 pP pP 07 19 09.6 +1.3
CD2 sP sP 07 19 15.2 +2.8
CD2 PP **PP 07 20 16.8 -0.4**
CD2 S **S 07 24 24.8 -0.9**
CD2 sS sS 07 24 45.3 +3.3
CD2 pmax pmax
comp=Z,180nm,5.3s
CD2 LR LR
comp=Z,300nm,6.5s
CD2 LR LR
comp=Z,260nm,5.3s
SONA1 Songino Array 35.26 316 *e*P **P 07 19 04.0 +0.1**
SONM Songino Array 35.26 316 P P **07 19 04.4 +0.4**
comp=Z,6.4nm,0.6s,baz=120,slow=8.9,SNR=23
SONM LR LR 07 34 13.5
comp=Z,45nm,18.3s,baz=39,slow=38
SEY Seymchan 36.14 7 P **P 07 19 11.9 +0.8**
comp=Z,0.5nm,0.3s,baz=190,slow=7.2,SNR=6.3
KMI Kunming 36.34 276 P **P 07 19 13.4 -0.2**
KMI pmax pmax
comp=Z,31nm,1.0s
BOD Bodaibo 36.81 334 *e*P **P 07 19 16.2 -0.6**
BOD pmax pmax
comp=Z,11nm,1.2s
SKNT Sakolnakorn 37.70 263 P **P 07 19 24.9 0.0**
comp=Z,40nm,1.0s,comp=Z,3μm
GTA Gaotai 37.94 300 *e*P **P 07 19 25.7 -1.2**
GTA pP pP 07 19 35.2 -1.6
GTA sP sP 07 19 39.5 -1.3
GTA PcP **PcP 07 21 43.0 +0.6**
GTA S **S 07 25 13.8 -2.8**
GTA sS ScP 07 25 30.6 +3.1
GTA SS **SnSn 07 27 51.5 -8.2**
GTA pmax pmax
comp=Z,13nm,1.1s
GTA pmax pmax
comp=Z,100nm,4.8s
GTA LR LR
comp=Z,340nm,18.5s
GTA LR LR
comp=Z,370nm,19.5s
GTA LR LR
comp=Z,150nm,16.2s
ZAK Zakamensk 38.12 318 *e*P **P 07 19 28.2 0.0**
ZAK pmax pmax
comp=Z,37nm,1.1s
IRK Irkutsk 38.30 321 *e*P **P 07 19 30.2 +0.6**
IRK pmax pmax
comp=Z,50nm,0.9s
TLY Talaya 38.41 320 *e*P **P 07 19 32.0 +1.4**
TLY pmax pmax
comp=Z,34nm,0.8s
TLY MLR MLR
comp=Z,116nm,15.0s
TLY Talaya 38.41 320 *e*P **P 07 19 32.0 +1.4**
comp=Z,32nm,0.8s
TLY Talaya 38.41 320 P **P 07 19 32.0 +1.4**
SNR=17
TLY Talaya 38.41 320 P **P 07 19 32.0 +1.4**
SNR=17
KHON Khomkaen 38.97 262 P **P 07 19 36.0 +0.4**
comp=Z,18nm,0.6s
MOY Mondy 39.94 319 *e*P **P 07 19 44.1 +0.7**
MOY pmax pmax
comp=Z,22nm,1.8s
UTTA Uttaradit 40.45 266 P **P 07 19 47.5 -0.4**
comp=Z,7.6nm,0.8s,comp=Z,86nm
PBKT Sadao Pong 40.52 264 P **P 07 19 48.3 -0.1**
comp=Z,70nm,0.9s
PHIT Phitsanulok 40.77 265 P **P 07 19 51.8 +1.2**
comp=Z,24nm,0.8s
CHBT CHBT 40.92 258 P **P 07 19 51.9 +0.1**
comp=Z,41nm,0.9s,comp=Z,3μm
LAMP Lampang 40.99 267 P **P 07 19 52.5 +0.1**
comp=Z,6.6nm,0.8s
CMAI Chiengmai2 41.04 269 P **P 07 19 53.1 +0.2**
comp=Z,40nm,0.7s,comp=Z,9μm
SOEI Soe 41.19 209 *e*P **P 07 19 52.5 -1.6**
comp=Z,43nm,0.9s
SUKH Sukhothai 41.36 266 P **P 07 19 55.2 -0.2**
comp=Z,5.3nm,0.7s
CMMT Chiang Mai 41.50 268 P **P 07 19 55.7 -0.9**
comp=Z,21nm,1.0s,comp=Z,530nm
CHTO Chiang Mai 41.50 268 P **P 07 19 55.8 -0.8**
comp=Z,94nm,1.0s
CHTO Chiang Mai 41.50 268 *e*P **P 07 19 56.2 -0.4**
CHTO pmax pmax
comp=Z,19nm,0.9s
CHTO Chiang Mai 41.50 268 *e*P **P 07 19 56.2 -0.4**
comp=Z,19nm,0.9s
CHTO Chiang Mai 41.50 268 P **P 07 19 56.0 -0.6**
SNR=7.0
CHTO Chiang Mai 41.50 268 P **P 07 19 56.0 -0.6**
SNR=7.0
MTN Manton Dam 41.61 198 *e*P **P 07 19 55.7 -1.6**
comp=Z,108nm,2.0s
CM01 Chiang Mai Arr 41.62 267 *e*P **P 07 19 56.0 -1.6**
CMAR Chiang Mai Arr 41.62 267 P **P 07 19 57.1 -0.5**
comp=Z,6.8nm,0.8s,baz=58,slow=8.4,SNR=37
CMAR PcP **PcP 07 21 55.6 +1.3**
comp=Z,1.5nm,0.3s,baz=104,slow=0.5,SNR=4.4
CMAR LR LR 07 36 30.5
comp=Z,50nm,21.7s,baz=118,slow=35
CMAR Chiang Mai Arr 41.62 267 *c e*P **P 07 19 57.0 -0.5**
CMAR pmax pmax
comp=Z,8.0nm,0.9s
BATI Baumata 41.86 210 P **P 07 19 58.0 -1.5**
comp=Z,16nm,0.5s,baz=90,slow=24,SNR=4.7
MHMT Maesarieng 42.62 268 P **P 07 20 05.7 0.0**
comp=Z,15nm,0.8s
SRDT SRDT 43.04 262 P **P 07 20 09.0 -0.1**
comp=Z,55nm,1.2s
BILL Bilibino 43.05 12⇑ *i*P **P 07 20 06.3 -2.2**
BILL *i* SS SS 07 29 46.8 +2.5

BILL pmax pmax
comp=Z,3.0nm,1.1s
PHET Kaeng Krachan 43.20 260 P **P 07 20 10.9 +0.5**
comp=Z,9.9nm,0.9s
TIXI Tiksi 45.12 354‖ *e*P **P 07 20 25.1 +0.1**
TIXI pmax pmax
comp=Z,6.0nm,0.5s
TIXI MLR MLR
comp=Z,31nm,14.0s
TIXI Tiksi 45.12 354 *e*P **P 07 20 24.6 -0.4**
comp=Z,9.7nm,0.6s
TRTT Trang 45.55 253 P **P 07 20 29.8 +0.5**
comp=Z,20nm,1.1s
SURT Suratani 45.76 255 P **P 07 20 31.3 +0.4**
comp=Z,7.5nm,1.7s
KULM Kulim 46.09 249 *e*P **P 07 20 33.5 +0.1**
comp=Z,21nm,1.0s
IPM Ipoh 46.22 248 *e*P **P 07 20 34.2 -0.4**
comp=Z,32nm,1.1s
PKDT Phuket 46.69 254 P **P 07 20 38.5 +0.3**
comp=Z,38nm,0.9s,comp=Z,9μm
WMQ Urumqi 47.26 306 P **P 07 20 42.8 +0.4**
WMQ pP sP 07 20 56.6 0.0
WMQ sP pP 07 21 00.4 +7.9
WMQ PcP **PcP 07 22 18.0 +4.7**
WMQ S **S 07 27 30.0 -3.5**
WMQ pmax pmax
comp=Z,43nm,0.8s
WMQ pmax pmax
comp=Z,290nm,4.0s
WMQ LR LR
comp=Z,440nm,21.2s
WMQ LR LR
comp=Z,280nm,22.6s
WMQ LR LR
comp=Z,130nm,26.0s
WRAB Tennant Creek 47.74 191 *d i*P **P 07 20 44.7 -1.5**
WRAB pmax pmax
comp=Z,125nm,1.2s
WRAB Tennant Creek 47.74 191 *e*P **P 07 20 44.8 -1.5**
comp=Z,35nm,0.6s
WB2 Warramunga Arr 47.75 191 *e*P **P 07 20 44.9 -1.4**
comp=Z,33nm,0.6s
WRA Warramunga Arr 47.75 191 P **P 07 20 44.9 -1.4**
comp=Z,26nm,0.6s,baz=13,slow=8.6,SNR=120
FITZ Fitzroy Crossi 48.27 203 *e*P **P 07 20 49.8 -0.4**
comp=Z,15nm,1.0s
PSI Prapat 48.89 248 *e*P **P 07 20 54.9 -0.5**
PSI pmax pmax
comp=Z,19nm,0.8s
PSI Prapat 48.89 248 *e*P **P 07 20 54.9 -0.5**
comp=Z,19nm,0.8s
ZAA0 Zalesovo Array 49.99 319 *e*P **P 07 21 03.5 +0.4**
ZALV Zalesovo Beam 49.99 319 P **P 07 21 03.6 +0.5**
comp=Z,9.8nm,0.6s,baz=101,slow=6.8,SNR=38
ZALV PcP **PcP 07 22 22.5 -0.2**
comp=Z,4.2nm,0.5s,baz=125,slow=3.2,SNR=6.7
ZALV LR LR 07 42 28.4
comp=Z,42nm,19.3s,baz=86,slow=36
RAMN Ramite 50.08 283 *e*P **P 07 21 04.2 -0.3**
comp=Z,97nm,1.0s
GUN Gumba 50.47 285 *e*P **P 07 21 07.7 +0.1**
comp=Z,118nm,0.8s
GSI Gunungsitoli 50.84 247 *e*P **P 07 21 09.2 -0.9**
comp=Z,25nm,0.9s
KKN Kakani 51.01 285 *e*P **P 07 21 11.3 -0.2**
comp=Z,59nm,0.9s
NVS Novosibirsk 51.03 320⇑ *i*P **P 07 21 12.7 +1.8**
NVS pmax pmax
comp=N,6.0nm,1.2s
NVS pmax pmax
comp=E,17nm,1.2s
NVS pmax pmax
comp=Z,20nm,1.2s
MK31 Makanchi Array 51.11 309 *i* P **P 07 21 11.6 -0.2**
MK31 pmax pmax
comp=Z,10.0nm,0.8s
MKAR Makanchi Array 51.11 309 P **P 07 21 11.8 0.0**
comp=Z,9.5nm,0.8s,baz=92,slow=9.0,SNR=51
MKAR PcP **PcP 07 22 27.2 0.0**
comp=Z,0.8nm,0.4s,baz=83,slow=2.5,SNR=4.7
MKAR LR LR 07 43 52.0
comp=Z,79nm,18.7s,baz=72,slow=37
DMN Daman 51.21 285 *e*P **P 07 21 12.9 -0.1**
MAKZ Makanchi 51.33 309 *e*P **P 07 21 13.3 -0.1**
MAKZ pmax pmax
comp=Z,17nm,1.2s
MAKZ Makanchi 51.33 309 *e*P **P 07 21 13.3 -0.1**
comp=Z,17nm,1.2s
AS01 Alice Springs 51.46 191 *e*P **P 07 21 12.6 -1.9**
AS31 Alice Springs 51.47 191 *e*P **P 07 21 13.0 -1.6**
comp=Z,3.3nm,0.4s
ASAR Alice Springs 51.47 191 P **P 07 21 12.8 -1.7**
comp=Z,2.9nm,0.6s,baz=1.6,slow=5.2,SNR=53
ASAR PcP **PcP 07 22 28.4 -0.3**
comp=Z,1.6nm,0.8s,baz=26,slow=3.8,SNR=5.4
ASAR LR LR 07 42 58.1
comp=Z,56nm,18.3s,baz=43,slow=36
GKN Gorkha 51.52 285 *e*P **P 07 21 14.8 -0.4**
KOLN Koldanda 52.46 285 *e*P **P 07 21 22.0 -0.3**
comp=Z,39nm,0.9s
NRIK Noril'sk 52.83 338 P **P 07 21 24.5 +0.4**
comp=Z,11nm,0.8s,baz=109,slow=9.1,SNR=21
PYUN Piuthan 52.90 286 *e*P **P 07 21 25.4 -0.2**
PDGK Podgornoye 53.24 305 P **P 07 21 29.3 +1.7**
PDGK pmax pmax
comp=Z,7.0nm,0.8s
KURK Kurchatov 53.55 314 *e*P **P 07 21 29.9 +0.1**
KURK pmax pmax
comp=Z,141nm,0.9s
KURK Kurchatov 53.55 314 *e*P **P 07 21 29.9 +0.1**
comp=Z,141nm,0.9s
KURK P **P 07 21 30.0 +0.3**
KURK Kurchatov 53.55 314 P **P 07 21 30.0 +0.3**
SNR=18
KURK Kurchatov 53.55 314 P **P 07 21 30.0 +0.3**
SNR=18
KURBB Kurbatov Arra 53.61 314 P **P 07 21 30.0 -0.1**
comp=Z,37nm,0.5s,baz=62,slow=2.4,SNR=191
TKM2 Tokmak 2 56.11 305 P **P 07 21 48.9 +0.2**
TKM2 pmax pmax
comp=Z,4.0nm,0.6s
TKM2 Tokmak 2 56.11 305 *e*P **P 07 21 49.2 +0.5**
comp=Z,9.7nm,1.1s
KSH Kashi 56.33 301 P **P 07 21 53.9 +3.7**
KSH *e*pP sP 07 22 06.7 +2.2
KSH *e*sP pP 07 22 11.9 +11
KSH *e*ScP **ScP 07 26 43.6 -0.5**
KSH S **S 07 29 41.1 +2.7**
KSH pmax pmax
comp=Z,11nm,0.5s
KSH pmax pmax
comp=Z,160nm,4.1s
KSH LR LR
comp=Z,83nm,5.0s
KSH LR LR
comp=Z,150nm,4.9s
KSH LR LR
comp=Z,180nm,5.8s
FRU Bishkek 56.84 305 *e*P **P 07 21 53.0 -0.7**
AAK Ala-Archa 56.96 305 P **P 07 21 54.8 +0.1**
comp=Z,4.3nm,0.5s,baz=115,slow=5.4,SNR=14
AAK Ala-Archa 56.96 305 *d i*P **P 07 21 54.7 +0.1**
AAK pmax pmax
comp=Z,14nm,0.7s
AAK Ala-Archa 56.96 305 *e*P **P 07 21 55.1 +0.4**
comp=Z,5.5nm,0.6s
AAK *e*P **P 07 21 55.3 +0.6**
ILAR Eielson Array 57.06 29 P **P 07 21 53.9 -1.0**
comp=Z,2.8nm,0.9s,baz=256,slow=6.0,SNR=4.7
EKS2 Erkin-Say 57.48 305 *e*P **P 07 21 58.9 +0.6**
EKS2 pmax pmax
comp=Z,6.0nm,0.9s
EKS2 Erkin-Say 57.48 305 *e*P **P 07 21 58.9 +0.6**
comp=Z,6.1nm,0.9s
OTUK Ortayu 57.77 312 P **P 07 22 00.7 +0.6**
OTUK pmax pmax
comp=Z,33nm,0.7s
SFK Sufi-Kurgan 58.12 302 P **P 07 22 02.9 -0.1**
SFK pmax pmax
comp=Z,8.0nm,0.7s
VOSK Vostochnaya 58.23 317 P **P 07 22 03.1 -0.2**
VOSK pmax pmax
comp=Z,22nm,1.2s
CHKZ Chkalovo 58.38 318 P **P 07 22 04.2 0.0**
CHKZ pmax pmax
comp=Z,20nm,0.7s

BVA0 Borovoye Array 58.57 317 P **P 07 22 05.9 +0.3**
BVA0 pmax pmax
comp=Z,33nm,1.1s
BVAR Borovoye Array 58.57 317 P **P 07 22 06.0 +0.4**
comp=Z,32nm,0.8s,baz=93,slow=7.4,SNR=64
BRVK Borovoye 58.63 317 *e*P **P 07 22 06.4 +0.4**
BRVK pmax pmax
comp=Z,28nm,0.8s
BRVK Borovoye 58.63 317 *e*P **P 07 22 06.4 +0.4**
comp=Z,28nm,0.8s
BRVK Borovoye 58.63 317 P **P 07 22 06.7 +0.7**
SNR=10
BRVK Borovoye 58.63 317 P **P 07 22 06.7 +0.7**
SNR=10
STKA Stephens Creek 58.87 182 P **P 07 22 06.2 -1.6**
comp=Z,3.2nm,0.6s,baz=354,slow=7.4,SNR=11
ZRNK Zerenda 59.41 317 P **P 07 22 11.7 +0.3**
ZRNK pmax pmax
comp=Z,14nm,0.8s
KK31 Karatay Array 59.77 306 *i* P **P 07 22 14.3 +0.2**
KK31 pmax pmax
comp=Z,21nm,0.8s
KKAR Karatay Array 59.77 306 *e*P **P 07 22 14.5 +0.4**
KKAR pmax pmax
comp=Z,19nm,0.7s
KKAR Karatay Array 59.77 306 *e*P **P 07 22 14.5 +0.4**
comp=Z,19nm,0.7s
DZET Dzherino 61.91 301 P **P 07 22 28.9 0.0**
DZET pmax pmax
comp=Z,24nm,0.5s
INK Inuvik 62.44 25 P **P 07 22 31.6 -0.1**
comp=Z,1.1nm,0.3s,baz=292,slow=5.6,SNR=15
SVE Sverdlovsk 63.67 323 *e*P **P 07 22 40.9 +0.8**
SVE pmax pmax
comp=Z,23nm,0.9s
ARU Arti 64.87 322 *d i*P **P 07 22 48.1 +0.1**
ARU 07 23 19.1
ARU S **S 07 31 29.1 +2.3**
ARU SS **SS 07 35 41.9 +3.8**
ARU pmax pmax
comp=Z,32nm,1.0s
ARU Arti 64.87 322 *e*P **P 07 22 47.9 -0.1**
comp=Z,22nm,0.7s
AB31 Akbulak array 65.67 314 *i* P **P 07 22 53.4 +0.2**
AB31 pmax pmax
comp=Z,11nm,0.6s
ABKAR Akbulak array 65.67 314 *e*P **P 07 22 53.3 +0.1**
comp=Z,13nm,0.6s
AKTO Aktyubinsk 66.58 316 P **P 07 22 59.2 +0.1**
comp=Z,4.9nm,0.7s,baz=81,slow=7.2,SNR=23
GEYT Alibeck 70.22 303 P **P 07 23 22.7 +0.5**
comp=Z,13nm,0.9s,baz=60,slow=3.6,SNR=13
GEYT LR LR 07 57 52.4
comp=Z,49nm,18.7s,baz=315,slow=39
YKA Yellowknife Ar 71.49 29 P **P 07 23 28.8 -0.6**
comp=Z,0.8nm,0.5s,baz=294,slow=6.1,SNR=21
YKB5 Yellowknife Ar 71.49 29 *e*P **P 07 23 27.7 -1.7**
APA Apatity 72.24 338⇑ *i*P **P 07 23 34.0 +0.2**
KLMR Klimovskoe 72.90 330 *e*P **P 07 23 35.1 -2.7**
KLMR *e* 07 23 52.1
KLMR pmax pmax
comp=Z,20nm,1.0s
ARCES ARCESS Array B 73.68 341 P **P 07 23 43.1 +0.8**
comp=Z,2.4nm,0.7s,baz=74,slow=8.9,SNR=12
ARCES LR LR 08 04 21.2
comp=Z,27nm,18.0s,baz=68,slow=42
DAG Danmarks Havn 75.58 356 *i* P **P 07 23 53.2 0.0**
DAG Danmarks Havn 75.58 356 *i* P **P 07 23 53.2 0.0**
VRH Novokhopyorsk 75.98 321 *e*P **P 07 23 54.9 -1.0**
VRH pmax pmax
comp=Z,20nm,1.3s
MOS Moscow 76.10 326 *e*P **P 07 23 56.0 -0.5**
HOQ Hoqain 76.20 290 P **P 07 23 58.1 +0.5**
SNR=8.6
HOQ Hoqain 76.20 290 P **P 07 23 58.1 +0.5**
SNR=8.6
UOSS Minazif 76.57 291 *e*P **P 07 23 60.0 +0.3**
BSY Bisya 76.63 289 P **P 07 24 00.5 +0.3**
SNR=7.2
BSY Bisya 76.63 289 P **P 07 24 00.5 +0.3**
SNR=7.2
LPSR Galich'ya Gora 76.89 323 *e*P **P 07 24 00.3 -0.7**
LPSR pmax pmax
comp=Z,10.0nm,1.3s
OBN Obninsk 76.93 326 *c i*P **P 07 24 01.8 +0.7**
OBN *i* 07 24 12.2
OBN pmax pmax
comp=Z,26nm,1.2s
OBN MLR MLR
comp=Z,92nm,16.0s
ARQ Araqi 76.96 290 P **P 07 24 02.6 +0.6**
SNR=5.4
ARQ Araqi 76.96 290 P **P 07 24 02.6 +0.6**
SNR=5.4
VSR Storozhevoye 77.41 321 *e*P **P 07 24 03.9 0.0**
VSR pmax pmax
comp=Z,30nm,1.1s
PUL Pulkovo 77.43 331 P **P 07 24 04.0 +0.1**
PUL pmax pmax
comp=Z,59nm,0.8s
FIA1 FINESS Array S 78.20 334 *e*P **P 07 24 08.1 -0.1**
FIA1 *e*P **P 07 24 08.5 +0.4**
FINES FINESS Array B 78.20 334 P **P 07 24 08.4 +0.2**
comp=Z,3.6nm,0.4s,baz=71,slow=4.9,SNR=48
FINES LR LR 08 01 44.5
comp=Z,26nm,18.1s,baz=24,slow=38
NCK Nalchik 78.25 313‖ *e*P **P 07 24 09.2 +0.4**
NCK pmax pmax
comp=Z,15nm,0.3s
KBZ Khabaz 78.59 313 P **P 07 24 11.8 +1.1**
comp=Z,20nm,0.8s,baz=99,slow=3.6,SNR=34
KBZ LR LR 08 01 16.8
comp=Z,30nm,18.3s,baz=38,slow=38
KIV Kislovodsk 78.63 314 *e*P **P 07 24 10.8 -0.2**
KIV pmax pmax
comp=Z,25nm,1.0s
KIV Kislovodsk 78.63 314 *e*P **P 07 24 12.4 +1.4**
NEY Neytrino 78.93 313⇑ *e*P **P 07 24 14.8 +2.0**
NEY pmax pmax
comp=Z,4.0nm,1.1s
NVAR Mina Array Bea 79.62 52 P **P 07 24 16.6 -0.1**
comp=Z,1.1nm,0.7s,baz=286,slow=5.3,SNR=8.7
VSU Vasula 79.70 331⇑ *i*P **P 07 24 17.0 +0.6**
VSU pmax pmax
comp=Z,95nm,1.2s
SUMG Summit 80.39 1 *i* P **P 07 24 20.9 +0.5**
SUMG Summit 80.39 1 *e*P **P 07 24 20.8 +0.4**
SUMG Summit 80.39 1 *e*P **P 07 24 20.8 +0.4**
FFC Flin Flon 81.05 32 *e*P **P 07 24 24.0 +0.2**
FFC Flin Flon 81.05 32 *e*P **P 07 24 24.0 +0.2**
ANN Anapa 81.54 316 *e*P **P 07 24 24.3 -2.2**
ANN *e**PP **PcP 07 24 34.4 +2.0**
ANN *e*S **S 07 34 34.5 -1.5**
ANN *e*SSS SSS 07 43 16.9
ANN pmax pmax
comp=Z,31nm,1.2s
R11A Troy Canyon, C 81.55 51 P **P 07 24 26.9 -0.1**
baz=298
H17A Grant Village 81.91 44 P **P 07 24 31.4 +2.5**
baz=300
RLMT Red Lodge 82.34 43 P **P 07 24 31.4 +0.3**
baz=301
DUG Dugway, Tooele 82.55 49 P **P 07 24 32.1 -0.1**
baz=299
DUG Dugway, Tooele 82.55 49 *e*P **P 07 24 32.4 +0.2**
DUG Dugway, Tooele 82.55 49 *e*P **P 07 24 32.4 +0.2**
CTU Camp Tracy 83.01 48 *e*P **P 07 24 34.7 +0.1**
AKASG Malin Array Be 83.04 324 P **P 07 24 33.8 -0.5**
comp=Z,11nm,0.7s,baz=45,slow=5.4,SNR=24
KIEV Kiev 83.05 324 *d i*P **P 07 24 33.7 -0.6**
KIEV pmax pmax
comp=Z,11nm,0.6s
KIEV Kiev 83.05 324 *e*P **P 07 24 33.9 -0.4**
PDAR Pinedale Array 83.37 45 P **P 07 24 35.1 -1.4**
comp=Z,1.0nm,0.9s,baz=258,slow=4.2,SNR=7.0
PDAR LR LR 07 56 52.0
comp=Z,75nm,19.6s,baz=291,slow=32
SIM Simferopol' 83.48 318 P **P 07 24 37.4 +0.7**
SIM pmax pmax
comp=Z,16nm,1.0s
NB2 NORSAR Subarra 83.79 339 P **P 07 24 37.7 -0.3**
comp=Z,2.8nm,0.6s,baz=46,slow=5.1
NOA NORSAR Array B 83.79 339 P **P 07 24 37.7 -0.3**
comp=Z,1.1nm,0.5s,baz=49,slow=4.8,SNR=3.7
YUH Yuha Desert 84.00 56 *e*P **P 07 24 38.6 -1.0**
KNB Kanab 84.11 51 *e*P **P 07 24 41.4 +1.1**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
KNB	Kanab	84.11	51	eP	P	07 24 41.4	+1.1
SRU	San Rafael Swe	84.63	49	eP	P	07 24 43.4	+0.5
SRU	San Rafael Swe	84.63	49	eP	P	07 24 43.4	+0.5
SFJD	Kangerlussuaq	85.42	5	i P	P	07 24 46.0	0.0
	comp=Z,15nm,0.8s						
SFJD	Kangerlussuaq	85.42	5	i P	P	07 24 46.0	0.0
SFJD				pmax	pmax		
	comp=Z,15nm,0.8s						
SFJD	Kangerlussuaq	85.42	5	eP	P	07 24 46.7	+0.7
A29A	Manning Farm,	85.87	36	P	P	07 24 49.0	+0.3
	baz=308						
H25A	Fruitdale	85.99	41	P	P	07 24 50.0	+0.5
	baz=305						
PV10	Paradox Valley	86.00	49	eP	P	07 24 50.5	+0.6
B29A	Wagenman Farm,	86.08	36	P	P	07 24 50.1	+0.4
	baz=308						
A30A	Hoffart Farm,	86.34	36	P	P	07 24 51.2	+0.2
	baz=308						
G27A	Dupree	86.52	40	P	P	07 24 51.7	-0.3
	baz=306						
BR131	Keskin Array S	86.59	313	eP	P	07 24 52.5	-0.2
BRTR	Keskin Array B	86.59	313	P	P	07 24 52.0	-0.6
	comp=Z,2.9nm,0.8s,baz=98,slow=3.7,SNR=12						
BRTR				LR	LR	08 07 04.2	
	comp=Z,15nm,19.1s,baz=65,slow=38						
B30A	Myrvik Farm, E	86.63	36	P	P	07 24 52.5	0.0
	baz=308						
214A	Organ Pipe Nat	86.64	56	P	P	07 24 53.0	+0.2
	baz=300						
ULM	Lac du Bonnet	86.73	34	P	P	07 24 52.4	-0.5
	comp=Z,1.4nm,0.7s,baz=301,slow=7.2,SNR=3.2						
ULM				LR	LR	08 05 12.3	
	comp=Z,22nm,19.7s,baz=348,slow=37						
H27A	Howes	86.87	41	P	P	07 24 53.7	0.0
	baz=306						
F28A	McLaughlin	86.88	39	P	P	07 24 53.6	-0.1
	baz=307						
C31A	Landman Farms,	87.35	36	P	P	07 24 55.4	-0.5
	baz=309						
E30A	Jud	87.52	38	P	P	07 24 56.6	-0.2
	baz=308						
STHS	Stebnicka Huta	87.88	326	eP	P	07 24 59.3	+0.8
STHS	Stebnicka Huta	87.88	326	eP	P	07 24 59.3	+0.8
AGMN	Agassiz Nation	88.00	35	P	P	07 24 58.6	-0.5
	baz=310						
F31A	Hecla	88.28	38	P	P	07 25 00.1	-0.4
	baz=308						
C33A	Trail	88.39	35	P	P	07 25 00.8	-0.2
	baz=310						
KECS	Kecovo	88.87	326	eP	P	07 25 02.7	-0.5
KECS	Kecovo	88.87	326	eP	P	07 25 02.7	-0.5
B35A	Bob, Littlefor	89.04	34	P	P	07 25 03.6	-0.3
	baz=312						
G32A	Webster	89.07	38	P	P	07 25 04.5	+0.2
	baz=309						
D34A	Park Rapids	89.13	36	P	P	07 25 04.0	-0.5
	baz=311						
VYHS	Vyhne	89.68	327	eP	P	07 25 06.8	-0.2
VYHS				pmax	pmax		
	comp=Z,4.0nm,0.8s						
VYHS	Vyhne	89.68	327	eP	P	07 25 06.8	-0.2
BRG	Berggiesshubel	90.27	331	eP	P	07 25 09.1	-0.5
	comp=Z,7.6nm,1.3s						
BRG	Berggiesshubel	90.27	331	eP	P	07 25 09.1	-0.5
BRG				pmax	pmax		
	comp=Z,8.0nm,1.3s						
CLL	Collm	90.35	331	eP	P	07 25 09.0	-1.0
	comp=Z,5.0nm,1.0s						
CLL	Collm	90.35	331	eP	P	07 25 09.0	-1.0
CLL				pmax	pmax		
	comp=Z,5.0nm,1.0s						
GERES	GERESS Array B	91.85	329	P	P	07 25 16.5	-0.7
	comp=Z,0.7nm,0.7s,baz=44,slow=5.9,SNR=7.6						
GERES				LR	LR	08 10 13.8	
	comp=Z,37nm,18.4s,baz=309,slow=38						
MNTX	Cornudas Mount	92.14	53	P	P	07 25 18.5	-0.2
	baz=304						
MNTX	Cornudas Mount	92.14	53	eP	P	07 25 19.1	+0.3
JAVS	Javornik	93.82	327	i P	P	07 25 24.8	-1.5
TXAR	Lajitas Array	94.69	54	P	P	07 25 31.2	+0.6
	comp=Z,1.5nm,1.1s,baz=318,slow=2.5,SNR=11						
TORD	Torodi Ar. Bea	125.19	312	PKP	PKPdf	07 31 09.4	-0.8
	comp=Z,0.5nm,0.4s,baz=69,slow=1.0,SNR=13						
TORD				PP	PP	07 32 58.0	-1.1
	comp=Z,1.2nm,0.9s,baz=55,slow=5.8,SNR=5.7						
LPAZ	La Paz	148.91	76	PKPbc	PKPbc	07 31 58.2	+0.1
	comp=Z,1.8nm,0.5s,baz=330,slow=4.9,SNR=6.7						
SAML	Samuel	149.03	59	ePKPdf	PKPdf	07 31 53.0	-0.7
PLCA	Paso Flores	149.11	124	PKPbc	PKPbc	07 31 56.9	-0.4
	comp=Z,2.2nm,0.8s,baz=281,slow=5.6,SNR=6.9						

JMA 06 07:12:58.5±0.2, 37°.37N×141°.83E, h40km±3km, M4.0, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
JFK	Kawauchi	0.76	270	P	Pn	07 13 12.9	+0.1
JFK				S	Sn	07 13 23.0	-0.1
ONAJ	Iwakimizuishiy	0.87	252	P	Pn	07 13 14.2	-0.1
ONAJ				S	Sn	07 13 25.3	-0.4
JMM	Marumori	0.96	301	P	Pn	07 13 15.7	+0.2
JMM				S	Sn	07 13 27.8	-0.2
JIO	Ouri	1.15	341	P	Pn	07 13 18.0	-0.1
JIO				S	Sn	07 13 32.0	-0.6
JFT	Otama	1.20	278	P	Pn	07 13 19.9	+1.1
JFT				S	Sn	07 13 35.2	+1.4
JOU	Okura	1.36	317	P	Pn	07 13 21.8	+0.8
JOU				eS	Sn	07 13 39.5	+1.7
JYS	Shirataka	1.64	302	P	Pn	07 13 26.2	+1.4
JYS				eS	Sn	07 13 46.8	+2.2
JMK	Ichinoseki	1.65	343	P	Pn	07 13 25.8	+0.8
JMK				eS	Sn	07 13 45.4	+0.4
JFY	Yanaizu	1.69	272	P	Pn	07 13 27.0	+1.4
JFY				S	Sn	07 13 47.9	+1.8
MAT	Matsushiro	3.02	255	P	Pn	07 13 45.8	+2.0
MAT				eS	Sn	07 14 23.8	+5.1

*ISCJB **06** 07:15:55.3±0.6, 50°.27N±0°.04×18°.64E±0°.03, h0km, Error ellipse: s-maj=5.6km s-min=2.9km az=12.1*
*IPEC **06** 07:15:56.6±0.2, 50°.22N×18°.69E, h3km±1km, ML1.8/3, Error ellipse: s-maj=2.3km s-min=1.1km az=166.0*
*CSEM **06** 07:15:56.0±0.2, 50°.27N×18°.67E, h2km, ML2.7/6, Error ellipse: s-maj=4.4km s-min=2.2km az=5.0*
*PRU **06** 07:15:57.0, 50°.25N×18°.61E, h0km*
ISC 06 07:15:56.1±0.8, 50°.20N±0°.04×18°.65E±0°.02, h0km, n23, σ0.s65/39, Poland

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
OKC	Ostrava-Krasne	0.48	222	ePG	Pb	07 16 06.8	-0.7
OKC				eSG	Sb	07 16 15.1	0.0
	comp=Z,30nm,0.4s						
OKC	Ostrava-Krasne	0.48	222	Pg	Pb	07 16 06.8	-0.7
OKC				Sg	Sb	07 16 15.1	0.0
	30nm,0.4s						
OJC	Ojcow	0.74	88	ePg	Pg	07 16 10.3	0.0
OJC				eSg	Sg	07 16 19.4	-0.5
OJC	Ojcow	0.74	88	ePg	Pg	07 16 10.3	0.0
OJC				eSg	Sg	07 16 19.4	-0.5
MORC	Moravsky Berou	0.83	240	ePg	Pg	07 16 12.6	+0.7
	baz=59						
MORC				eSg	Sb	07 16 24.2	-0.9
	26nm,0.4s,baz=59						
LANS	Liptovska Anna	1.18	153	ePG	Pb	07 16 19.1	-0.2
LANS				eSG	Sb	07 16 35.3	+0.2
NIE	Niedzica	1.32	125	ePg	Pg	07 16 21.6	+0.1
NIE				eSg	Sb	07 16 39.4	0.0
NIE	Niedzica	1.32	125	ePg	Pg	07 16 21.6	+0.1
NIE				eSg	Sb	07 16 39.4	0.0
DPC	Dobruska-Polom	1.50	277	ePG	Pn	07 16 24.1	-0.2
DPC				eSG	Sn	07 16 44.7	+0.1
	comp=Z,14nm,0.4s						
DPC	Dobruska-Polom	1.50	277	Pg	Pn	07 16 24.1	-0.2
DPC				Sg	Sn	07 16 44.7	+0.1
	14nm,0.4s						
VRAC	Vranov	1.60	237	ePn	Pb	07 16 26.4	-0.1
	baz=55						
VRAC				eSg	Sb	07 16 47.5	+0.2
	8.9nm,0.2s,baz=55						
KSP	Ksiaz	1.64	294	ePg	Pg	07 16 27.6	+0.2
KSP				eSg	Sb	07 16 48.4	+0.1
KSP	Ksiaz	1.64	294	ePg	Pg	07 16 27.6	+0.2
KSP				eSg	Sb	07 16 48.4	+0.1
VYHS	Vyhne	1.71	176	ePN	Pn	07 16 27.0	-0.2
VYHS				eSN	Sg	07 16 51.6	+0.6
VYHS				eLG	Lg	07 16 55.4	
UPC	Upice	1.71	281	eSG	Sg	07 16 51.2	0.0
	comp=Z,7.2nm,0.4s						
UPC	Upice	1.71	281	Sg	Sg	07 16 51.2	0.0
	7.2nm,0.4s						
KRUC	Moravsky	1.85	233	ePn	Pn	07 16 29.7	+0.6
	baz=51						
KRUC				eSn	Sb	07 16 55.0	+0.5
	4.5nm,0.2s,baz=51						
STHS	Stebnicka Huta	1.86	114	ePN	Pb	07 16 31.0	+0.1
STHS				eSN	Sg	07 16 56.2	+0.5
STHS				eLG	Lg	07 17 00.8	
KECS	Kecovo	2.10	144	ePN	Pg	07 16 36.3	+0.1
KECS				eLG	Lg	07 17 06.3	
TREC	Trest	2.24	247	eSG	Sb	07 17 06.3	+0.6
	comp=Z,4.6nm,0.3s						
GOPC	GO Pecny, Ondr	2.50	265	eSG	Sb	07 17 14.5	+1.2
	comp=Z,5.1nm,0.3s						
PRU	Pruhonice	2.65	267	eSG	Sb	07 17 19.2	+1.7
	comp=Z,3.6nm,0.4s						
KHC	Kasperske Hory	3.46	254	eSG	Sg	07 17 44.7	-2.5
	comp=Z,4.9nm,0.4s						

*IDC **06** 07:20:36.9±1.2, 38°.38N×143°.15E, h0km, mb3.6/7, mb1 3.7/8, mb1mx3.5/46, mbtmp3.6/8, ML3.2/1, Error ellipse: s-maj=31.0km s-min=22.1km az=139.0*
*JMA **06** 07:20:37.4±0.4, 38°.51N×142°.89E, h6km±5km, M3.7*
*ISCJB **06** 07:20:38.1±0.8, 38°.57N±0°.05×142°.93E±0°.06, h10km, mb3.6/7, Error ellipse: s-maj=7.9km s-min=5.9km az=136.1*
ISC 06 07:20:38.5±1.0, 38°.60N±0°.06×142°.83E±0°.07, h10km, n27, σ1.s24/24, mb3.6/7, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
OFUJ	Ofunato	1.03	298	P	Pn	07 20 58.7	-0.2
OFUJ				eS	Sn	07 21 13.6	+0.2
JIO	Ouri	1.17	263	P	Pb	07 20 59.7	-1.1
JIO				S	Sb	07 21 15.8	-0.2
MIYJ	Miyakonagasawa	1.25	322	P	Pg	07 21 02.0	-0.6
MIYJ				eS	Sn	07 21 19.2	+0.2
JMK	Ichinoseki	1.31	286	P	Pg	07 21 03.5	-0.1
JOM	Ohasama	1.48	307	P	Pg	07 21 05.8	-1.1
JOU	Okura	1.71	263	P	Pb	07 21 09.7	-0.4
JOU				eS	Sb	07 21 32.5	+0.8
JMM	Marumori	1.76	246	P	Pn	07 21 08.7	-0.4
JKZ	Kuzumaki	1.81	320	P	Pb	07 21 11.1	-0.6
JRG	Rokugo	1.89	296	P	Pb	07 21 13.0	0.0
JYK	Kaneyama	1.96	280	P	Pb	07 21 13.6	-0.6
JANG	Nango	2.04	331	P	Pg	07 21 15.9	-1.8
JFT	Otama	2.24	242	P	Pb	07 21 17.7	-1.4
JFT				eS	Sb	07 21 45.5	-1.4
MJAR	Matsushiro Arr	4.21	242	Pn	Pn	07 21 45.8	+3.1
	1.2nm,0.3s,baz=78,slow=14,SNR=5.7						
MAT	Matsushiro	4.21	242	P	Pn	07 21 46.2	+3.5
MAT				eS	Sn	07 22 35.2	+3.3
SEY	Seymchan	25.05	10	P	P	07 26 04.8	+2.2
	1.7nm,0.7s,baz=185,slow=10,SNR=7.7						
SONM	Songino Array	27.89	301	P	P	07 26 33.1	+4.5
	0.6nm,0.5s,baz=79,slow=10,SNR=3.4						
H11N2	WAKE ISLAND Hy	28.06	125	T	T	07 55 39.1	
	baz=318,slow=76,SNR=31						
H11N1	WAKE ISLAND Hy	28.07	125	T	T	07 55 37.8	
	baz=318,slow=76,SNR=18						
H11N3	WAKE ISLAND Hy	28.08	125	T	T	07 55 43.4	
	baz=318,slow=76,SNR=16						
H11S1	WAKE ISLAND Hy	28.84	127	T	T	07 56 39.0	
	baz=319,slow=76,SNR=5.4						
H11S3	WAKE ISLAND Hy	28.84	127	T	T	07 56 37.6	
	baz=319,slow=76,SNR=5.1						
H11S2	WAKE ISLAND Hy	28.86	127	T	T	07 56 33.9	
	baz=319,slow=76,SNR=4.6						
MKAR	Makanchi Array	44.26	301	P	P	07 28 49.2	+1.1
	0.7nm,0.7s,baz=84,slow=10,SNR=5.4						
KURBB	Kurchatov Arra	45.94	307	P	P	07 29 02.1	+0.8
	1.1nm,0.2s,baz=82,slow=8.3,SNR=4.8						
ILAR	Eielson Array	47.57	33	P	P	07 29 14.0	+0.1
	0.2nm,0.7s,baz=255,slow=6.4,SNR=2.5						
WRA	Warramunga Arr	58.77	189	P	P	07 30 35.3	-1.5
	0.9nm,0.8s,baz=8.6,slow=6.8,SNR=4.5						
YKA	Yellowknife Ar	61.89	31	P	P	07 30 58.2	+0.5
	0.1nm,0.6s,baz=300,slow=5.8,SNR=3.2						

*CSEM **06** 07:29:50.7±0.1, 43°.10N×0°.02E, h10km, ML3.2/31, Error ellipse: s-maj=1.9km s-min=1.4km az=167.0*
*MRB **06** 07:29:51.6, 42°.98N×0°.02W, h4km±2km, ML2.7/9, Error ellipse: s-maj=1.1km s-min=0.3km az=56.0*
*MDD **06** 07:29:51.8±0.2, 43°.03N×0°.02E, h8km±3km, mbLg3.0/25, Error ellipse: s-maj=2.4km s-min=1.5km az=0.0, PRXIMO*
*LDG **06** 07:29:51.7±0.1, 43°.05N×0°.02E, h6km, Md3.0/3, Ml3.3/21, Error ellipse: s-maj=1.1km s-min=0.8km az=163.0*
*STR **06** 07:29:52.1±0.1, 43°.03N×0°.02W, h3km, Ml2.7, Error ellipse: s-maj=0.0km s-min=0.0km az=0.0*
ISC 06 07:29:50.8±0.5, 43°.08N±0°.01×0°.03E±0°.01, h14km±3km, n247, σ1.s41/354, 5C-3D, France

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
LABF	Labassere	0.05	133	Pg	Pg	07 29 54.1	+0.6
LABF				Sg	Sg	07 29 55.4	0.0
LABF	Labassere	0.05	133	Pg	Pg	07 29 54.1	+0.6
LABF				Sg	Sg	07 29 55.4	0.0
PYLO	Lourdes	0.06	288	P	Pg	07 29 54.1	+0.5
PYLO				S	Sg	07 29 56.0	+0.6
VIEF	Viey	0.20	181	Pg	Pg	07 29 54.6	-0.8
VIEF				Sg	Sg	07 29 58.2	-0.3
VIEF	Viey	0.20	181	Pg	Pg	07 29 54.6	-0.8
VIEF				Sg	Sg	07 29 58.2	-0.3
EPF	Esparros	0.23	102	ePg	Pg	07 29 56.6	+0.6
	SNR=1.0						
EPF				eSg	Sg	07 30 00.2	+0.7
	508nm,0.2s						
EPF	Esparros	0.23	102	Pg	Pg	07 29 56.6	+0.6
EPF				Lg	Lg	07 30 00.2	
	254nm,0.2s						
EPF	Esparros	0.23	102	Pg	Pg	07 29 56.6	+0.6
EPF				eSg	Sg	07 30 00.2	+0.7
	254nm,0.2s						
FMON	Montouss^'	0.29	93	P	Pg	07 29 57.6	+0.8
REYF	Montagne du Re	0.31	268	Pg	Pg	07 29 57.4	+0.2
REYF				Sg	Sg	07 30 01.5	-0.1
REYF	Montagne du Re	0.31	268	Pg	Pg	07 29 57.4	+0.2
REYF				Sg	Sg	07 30 01.5	-0.1
ECHI	Chisagues Biel	0.43	163	⇑Pg	Pg	07 29 58.8	-0.7
	14nm,0.2s,SNR=18						
ECHI				Lg	Lg	07 30 03.8	
	745nm,0.1s,SNR=7.9						
ECHI	Chisagues Biel	0.43	163	Pg	Pg	07 29 58.8	-0.7
	14nm,0.2s,SNR=18						
ECHI				Lg	Lg	07 30 03.8	
	745nm,0.1s,SNR=7.9						
ETSF	Etsaut	0.47	247	ePg	Pg	07 29 59.7	-0.4
	SNR=1.0						
ETSF				eSg	Sg	07 30 05.5	-0.9
	806nm,0.2s						
ETSF	Etsaut	0.47	247	Pg	Pg	07 29 59.7	-0.4
ETSF				Lg	Lg	07 30 05.5	
	403nm,0.2s						
ETSF	Etsaut	0.47	247	Pg	Pg	07 29 59.7	-0.4
ETSF				eSg	Sg	07 30 05.5	-0.9
	403nm,0.2s						
ATE	Arette	0.53	271	Pg	Pg	07 30 01.5	+0.2
ATE				Sg	Sg	07 30 08.9	+0.5
ATE	Arette	0.53	271	⇓Pg	Pg	07 30 01.1	-0.2
	4.4nm,0.2s,SNR=18						
ATE				Lg	Lg	07 30 09.0	
	378nm,0.2s,SNR=7.9						
ATE	Arette	0.53	271	P	Pg	07 30 01.1	-0.2
ATE				Sg	Sg	07 30 08.9	+0.5
ATE				Lg	Lg	07 30 09.0	
	378nm,0.2s,SNR=7.9						
MELF	Melles	0.58	111	Pg	Pg	07 30 03.3	+1.2
MELF				Sg	Sg	07 30 11.0	+1.2
MELF	Melles	0.58	111	Pg	Pg	07 30 03.3	+1.2
MELF				Sg	Sg	07 30 11.0	+1.2
ORDF	Ordiarp	0.72	281	Pg	Pg	07 30 05.2	+0.5
ORDF				Sg	Sg	07 30 15.5	+1.3
ORDF	Ordiarp	0.72	281	Pg	Pg	07 30 05.2	+0.5
ORDF				Sg	Sg	07 30 15.5	+1.3
LARF	Larrau	0.74	267	Pg	Pg	07 30 05.6	+0.3
LARF				Sg	Sg	07 30 15.5	+0.4
LARF	Larrau	0.74	267	Pg	Pg	07 30 05.6	+0.3
LARF				Sg	Sg	07 30 15.5	+0.4
MLS	Moulis	0.79	99	Pg	Pg	07 30 06.7	+0.5
MLS				Lg	Lg	07 30 18.4	
MLS	Moulis	0.79	99	P	Pg	07 30 06.7	+0.5
MLS				Lg	Lg	07 30 18.4	
YBER	Berdun	0.85	235	Pg	Pg	07 30 07.1	-0.3
	20nm,0.2s,SNR=7.9						
YBER				Lg	Lg	07 30 18.0	
	296nm,0.2s,SNR=7.9						
YBER	Berdun	0.85	235	Pg	Pg	07 30 07.1	-0.3
	20nm,0.2s,SNR=7.9						
YBER				Lg	Lg	07 30 18.0	
	296nm,0.2s,SNR=7.9						
YSIG	Sigues	0.87	240	Pg	Pg	07 30 07.3	-0.3
	7.5nm,0.1s,SNR=7.9						
YSIG				Lg	Lg	07 30 18.9	
	85nm,0.1s,SNR=7.9						
YSIG	Sigues	0.87	240	Pg	Pg	07 30 07.3	-0.3
	7.5nm,0.1s,SNR=7.9						
YSIG				Lg	Lg	07 30 18.9	
	85nm,0.1s,SNR=7.9						
SALF	Salau	0.91	110	Pg	Pb	07 30 09.9	+1.5
SALF				Sg	Sb	07 30 22.4	+2.0
SALF	Salau	0.91	110	Pg	Pb	07 30 09.9	+1.5
SALF				Sg	Sb	07 30 22.4	+2.0
YMUS	Pe^–a Musera	0.92	238	Pg	Pg	07 30 08.2	-0.3
	8.6nm,0.1s,SNR=7.9						
YMUS				Lg	Lg	07 30 20.1	
	130nm,0.2s,SNR=7.9						
YMUS	Pe^–a Musera	0.92	238	Pg	Pg	07 30 08.2	-0.3
	8.6nm,0.1s,SNR=7.9						
YMUS				Lg	Lg	07 30 20.1	
	130nm,0.2s,SNR=7.9						
SJPF	Ste Jean	0.92	272	ePg	Pg	07 30 08.1	-0.4
	SNR=1.0						
SJPF				eSg	Sg	07 30 21.1	+0.5
	64nm,0.2s						
SJPF	Ste Jean	0.92	272	Pg	Pg	07 30 08.1	-0.4
SJPF				Lg	Lg	07 30 21.1	
	32nm,0.2s						
SJPF	Ste Jean	0.92	272	Pg	Pg	07 30 08.1	-0.4
SJPF				eSg	Sg	07 30 21.1	+0.5
	32nm,0.2s						
CTRE	Tremp	0.94	144	Pg	Pg	07 30 08.4	-0.5
CTRE				Lg	Lg	07 30 20.6	
	65nm,0.2s						
CTRE	Tremp	0.94	144	P	Pg	07 30 08.4	-0.5
CTRE				Lg	Lg	07 30 20.6	
	65nm,0.2s						
YASP	Aspurt	0.94	249	Pg	Pg	07 30 08.7	-0.3
	3.8nm,0.1s,SNR=7.9						
YASP				Lg	Lg	07 30 21.5	
	88nm,0.1s,SNR=7.9						
YASP	Aspurt	0.94	249	Pg	Pg	07 30 08.7	-0.3
	3.8nm,0.1s,SNR=7.9						
YASP				Lg	Lg	07 30 21.5	
	88nm,0.1s,SNR=7.9						
IELO	Elcoad	0.96	256	⇑Pg	Pg	07 30 08.7	-0.6
	1.5nm,0.1s,SNR=18						
IELO				Lg	Lg	07 30 22.4	
	63nm,0.2s,SNR=7.9						
IELO	Elcoad	0.96	256	Pg	Pg	07 30 08.7	-0.6
	1.5nm,0.1s,SNR=18						
IELO				Lg	Lg	07 30 22.4	
	63nm,0.2s,SNR=7.9						
OSSF	Osses	0.96	281	Pg	Pg	07 30 09.3	0.0
OSSF				Sg	Sg	07 30 22.3	+0.4
OSSF	Osses	0.96	281	Pg	Pg	07 30 09.3	0.0
OSSF				Sg	Sg	07 30 22.3	+0.4
YUND	Undues	0.99	240	Pg	Pg	07 30 09.7	-0.2
	22nm,0.1s,SNR=7.9						
YUND				Lg	Lg	07 30 22.6	
	179nm,0.1s,SNR=7.9						
YUND	Undues	0.99	240	Pg	Pg	07 30 09.7	-0.2
	22nm,0.1s,SNR=7.9						
YUND				Lg	Lg	07 30 22.6	
	179nm,0.1s,SNR=7.9						
YARA	Arangoiti	0.99	245	Pg	Pg	07 30 09.9	-0.1
	15nm,0.2s,SNR=7.9						
YARA				Lg	Lg	07 30 22.9	
	65nm,0.2s,SNR=7.9						
YARA	Arangoiti	0.99	245	Pg	Pg	07 30 09.9	-0.1
	15nm,0.2s,SNR=7.9						
YARA				Lg	Lg	07 30 22.9	
	65nm,0.2s,SNR=7.9						
IEPA	Eparoz	1.00	253	Pg	Pg	07 30 10.1	+0.1
	17nm,0.2s,SNR=7.9						
IEPA				Lg	Lg	07 30 23.4	
	100nm,0.3s,SNR=7.9						
IEPA	Eparoz	1.00	253	Pg	Pg	07 30 10.1	+0.1
	17nm,0.2s,SNR=7.9						
IEPA				Lg	Lg	07 30 23.4	
	100nm,0.3s,SNR=7.9						
CEST	Esterri de Car	1.02	118	Pg	Pg	07 30 10.2	-0.3
CEST				Lg	Lg	07 30 24.9	
	41nm,0.1s						
CEST	Esterri de Car	1.02	118	P	Pg	07 30 10.3	-0.3
CEST				Lg	Lg	07 30 24.9	
	41nm,0.1s						
CEST				S	Sb	07 30 25.0	+1.3
	41nm,0.1s						
IPRE	Itoiz	1.05	255	Pg	Pg	07 30 10.8	-0.2
	0.2nm,0.1s,SNR=9.0						
IPRE				Lg	Lg	07 30 25.6	
	56nm,0.2s,SNR=14						
IPRE	Itoiz	1.05	255	Pg	Pg	07 30 10.9	-0.2
	0.2nm,0.1s,SNR=9.0						
IPRE				Lg	Lg	07 30 25.6	
	56nm,0.2s,SNR=14						
YSOS	Sos del Rey Ca	1.07	235	Pg	Pg	07 30 10.9	-0.4
	53nm,0.1s,SNR=7.9						
YSOS				Lg	Lg	07 30 24.9	
	487nm,0.2s,SNR=7.9						
YSOS	Sos del Rey Ca	1.07	235	Pg	Pg	07 30 10.9	-0.4
	53nm,0.1s,SNR=7.9						
YSOS				Lg	Lg	07 30 24.9	
	487nm,0.2s,SNR=7.9						
CSOR	Sort	1.08	130	⇑Pg	Pg	07 30 11.1	-0.5
	38nm,0.2s,SNR=18						
CSOR				Lg	Lg	07 30 25.5	
	166nm,0.2s,SNR=69						
CSOR	Sort	1.08	130	P	Pg	07 30 11.1	-0.5
CSOR				Lg	Lg	07 30 25.5	
	166nm,0.2s,SNR=69						
CSOR				S	Sg	07 30 25.8	+0.1
	187nm,0.3s						
EALK	Alkurruntz	1.13	278	Pg	Pg	07 30 11.8	-0.8
	7.6nm,0.3s,SNR=20						
EALK				Lg	Lg	07 30 28.7	
	88nm,0.2s,SNR=5.0						
EALK	Alkurruntz	1.13	278	Pg	Pg	07 30 11.8	-0.8
	7.6nm,0.3s,SNR=20						
EALK				Lg	Lg	07 30 28.7	
	88nm,0.2s,SNR=5.0						
ELIZ	Elizondo	1.14	275	Pg	Pg	07 30 13.4	+0.6
	10nm,0.2s,SNR=7.9						
ELIZ				Lg	Lg	07 30 28.2	
	102nm,0.3s,SNR=11						
ELIZ	Elizondo	1.14	275	Pg	Pg	07 30 13.4	+0.6
	10nm,0.2s,SNR=7.9						
ELIZ				Lg	Lg	07 30 28.2	
	102nm,0.3s,SNR=11						
IUSE	Utxeti	1.16	264	Pg	Pg	07 30 13.5	+0.3
	34nm,0.1s,SNR=7.9						
IUSE				Lg	Lg	07 30 29.2	
	79nm,0.1s,SNR=7.9						
IUSE	Utxeti	1.16	264	Pg	Pg	07 30 13.5	+0.3
	34nm,0.1s,SNR=7.9						
IUSE				Lg	Lg	07 30 29.2	
	79nm,0.1s,SNR=7.9						
EARA	Aranguren	1.22	256	Pg	Pn	07 30 15.6	+2.2
	9.5nm,0.3s,SNR=5.6						
EARA				Lg	Lg	07 30 30.8	
	43nm,0.1s,SNR=6.7						
EARA	Aranguren	1.22	256	Pg	Pn	07 30 15.6	+2.2
	9.5nm,0.3s,SNR=5.6						
EARA				Lg	Lg	07 30 30.8	
	43nm,0.1s,SNR=6.7						
CORG	Organya	1.28	131	Pg	Pg	07 30 14.4	-0.9
CORG				Lg	Lg	07 30 31.5	
	28nm,0.4s						
CORG	Organya	1.28	131	P	Pg	07 30 14.5	-0.9

CORG S Sg 07 30 31.5 -0.5
57nm,0.4s
ARBS La Rabassa 1.29 119 P Pg 07 30 14.9 -0.7
ARBS S Sg 07 30 32.5 +0.1
162nm,0.2s
CAVN Les Avellanes 1.31 156 Pg Pn 07 30 14.3 -0.4
CAVN Lg Lg 07 30 31.2
118nm,0.2s
CAVN Les Avellanes 1.31 156 P Pn 07 30 14.3 -0.4
CAVN S Sg 07 30 31.2 -1.9
235nm,0.2s
ESAC San Caprasio 1.41 195 ⇑Pg Pn 07 30 16.6 +0.6
221nm,0.3s,SNR=18
ESAC Lg Lg 07 30 35.0
165nm,0.2s,SNR=8.1
ESAC San Caprasio 1.41 195 Pg Pn 07 30 16.6 +0.6
221nm,0.3s,SNR=18
ESAC Lg Lg 07 30 35.0
165nm,0.2s,SNR=8.1
FNEB N^bias 1.54 96 Pg Pn 07 30 20.0 +2.2
FNEB Lg Lg 07 30 40.4
FNEB N^bias 1.54 96 P Pn 07 30 20.0 +2.2
FNEB Lg Lg 07 30 40.4
CLLI Llivia 1.56 112 Pg Pb 07 30 20.5 +1.1
0.1nm,0.1s,SNR=19
CLLI Lg Lg 07 30 42.6
40nm,0.2s,SNR=22
CLLI Llivia 1.56 112 P Pn 07 30 20.0 +1.9
CLLI Llivia 1.56 112 Pg Pb 07 30 20.5 +1.1
0.1nm,0.1s,SNR=19
CLLI S Sb 07 30 40.8 +1.8
62nm,0.3s
CLLI Lg Lg 07 30 42.6
40nm,0.2s,SNR=22
CARF Carcanieres 1.57 103 Pn Pn 07 30 20.0 +1.7
CARF Carcanieres 1.57 103 Pg Pg 07 30 21.6 +0.6
CARF Sn Sg 07 30 42.0 +0.6
CARF Sg Sg 07 30 44.2 +2.8
CARF Carcanieres 1.57 103 Pn Pn 07 30 20.0 +1.7
CARF Carcanieres 1.57 103 Pg Pg 07 30 21.6 +0.6
CARF Sg Sg 07 30 44.2 +2.8
EMIR Miracle 1.61 136 Pg Pb 07 30 20.9 +0.6
7.1nm,0.1s,SNR=42
EMIR Lg Lg 07 30 42.5
25nm,0.1s,SNR=12
EMIR Miracle 1.61 136 Pg Pb 07 30 20.9 +0.6
7.1nm,0.1s,SNR=42
EMIR Lg Lg 07 30 42.5
25nm,0.1s,SNR=12
VALF Valcebollere 1.62 114 Pn Pn 07 30 20.1 +1.1
VALF Valcebollere 1.62 114 Pg Pg 07 30 23.1 +1.2
VALF Sn Sg 07 30 42.8 -0.1
VALF Sg Sb 07 30 45.7 +4.9
VALF Valcebollere 1.62 114 Pn Pn 07 30 20.1 +1.1
VALF Valcebollere 1.62 114 Pg Pg 07 30 23.1 +1.2
VALF Sn Sg 07 30 42.8 -0.1
VALF Sg Sb 07 30 45.7 +4.9
MTLF Montolieu 1.62 80 ePn Pn 07 30 18.9 -0.1
SNR=1.0
MTLF Montolieu 1.62 80 ePg Pb 07 30 22.3 +1.8
SNR=1.0
MTLF eSg Sb 07 30 43.1 +2.3
41nm,0.2s,SNR=1.0
MTLF Montolieu 1.62 80 Pn Pn 07 30 18.9 -0.1
MTLF Pg Pb 07 30 22.3 +1.8
MTLF Lg Lg 07 30 43.1
20nm,0.2s
MTLF Montolieu 1.62 80 Pn Pn 07 30 18.9 -0.1
MTLF Montolieu 1.62 80 Pg Pb 07 30 22.3 +1.8
MTLF eSg Sb 07 30 43.1 +2.3
20nm,0.2s,SNR=1.0
CBRU Bruguera 1.78 116 Pg Pn 07 30 23.0 +1.8
CBRU Lg Lg 07 30 46.6
31nm,0.4s
CBRU Bruguera 1.78 116 P Pn 07 30 23.0 +1.8
CBRU S Sb 07 30 46.7 +1.4
62nm,0.4s
LRDF Laroque-de-Fa 1.85 94 Pn Pn 07 30 24.0 +1.9
LRDF Laroque-de-Fa 1.85 94 Pg Pg 07 30 27.2 +0.9
LRDF Sg Sg 07 30 53.5 +3.2
LRDF Laroque-de-Fa 1.85 94 Pn Pn 07 30 24.0 +1.9
LRDF Laroque-de-Fa 1.85 94 Pg Pg 07 30 27.2 +0.9
CORI Orista 1.86 126 Pg Pn 07 30 23.8 +1.6
CORI Lg Lg 07 30 47.2
114nm,0.3s
CORI Orista 1.86 126 P Pn 07 30 23.9 +1.7
CORI S Sn 07 30 47.2 +1.7
114nm,0.3s
EPOB Poblet 1.90 155 Pn Pn 07 30 23.4 +0.6
0.4nm,0.1s,SNR=7.9
EPOB ⇓Pg Pb 07 30 25.4 +0.2
6.0nm,0.2s,SNR=18
EPOB Lg Lg 07 30 49.1
57nm,0.4s,SNR=19
EPOB Poblet 1.90 155 Pn Pn 07 30 23.4 +0.6
0.4nm,0.1s,SNR=7.9
LFF La Frestale 1.93 15 ePn Pn 07 30 23.4 +0.2
SNR=1.0
LFF La Frestale 1.93 15 ePg Pb 07 30 28.2 +2.5
LFF eSn Sn 07 30 46.5 -0.7
SNR=1.0
LFF eSg Sg 07 30 54.3 +1.5
129nm,0.3s
LFF La Frestale 1.93 15 Pn Pn 07 30 23.4 +0.2
LFF Pg Pb 07 30 28.2 +2.5
LFF Sn Sn 07 30 46.5 -0.7
LFF Lg Lg 07 30 54.3
64nm,0.3s
LFF La Frestale 1.93 15 Pn Pn 07 30 23.4 +0.2
LFF La Frestale 1.93 15 Pg Pb 07 30 28.2 +2.5
LFF Sn Sn 07 30 46.5 -0.7
LFF eSg Sg 07 30 54.3 +1.5
64nm,0.3s
FILF Fillols 1.94 105 Pn Pn 07 30 23.8 +0.5
FILF Fillols 1.94 105 Pg Pb 07 30 27.4 +1.5
FILF Sn Sn 07 30 49.2 +1.7
FILF Sg Sg 07 30 52.9 -0.2
FILF Fillols 1.94 105 Pn Pn 07 30 23.8 +0.5
FILF Fillols 1.94 105 Pg Pb 07 30 27.4 +1.5
FILF Sn Sn 07 30 49.2 +1.7
FILF Sg Sg 07 30 52.9 -0.2
ERTA Horta de San J 2.13 174 Pg Pb 07 30 29.4 +0.2
4.1nm,0.2s,SNR=40
ERTA Lg Lg 07 30 56.7
20nm,0.2s,SNR=9.8
ERTA Horta de San J 2.13 174 Pg Pb 07 30 29.4 +0.2
4.1nm,0.2s,SNR=40
ERTA Lg Lg 07 30 56.7
20nm,0.2s,SNR=9.8
SJAF Saint Jean de 2.19 105 Pn Pn 07 30 28.7 +2.0
SJAF Saint Jean de 2.19 105 Pg Pg 07 30 33.7 +1.0
SJAF Sg Sg 07 31 04.3 +3.3
SJAF Saint Jean de 2.19 105 Pg Pb 07 30 31.7 +1.6
2.6nm,0.3s,SNR=7.9
SJAF Sn Sn 07 30 55.7 +2.2
1.2nm,0.2s,SNR=7.9
SJAF Lg Lg 07 31 01.6
2.5nm,0.1s,SNR=7.9
SJAF Saint Jean de 2.19 105 Pn Pn 07 30 28.7 +2.0
SJAF Saint Jean de 2.19 105 Pg Pg 07 30 33.7 +1.0
SJAF Sn Sn 07 30 55.7 +2.2
1.2nm,0.2s,SNR=7.9
SJAF Lg Lg 07 31 01.6
2.5nm,0.1s,SNR=7.9
EJON La Jonquera 2.20 106 Pn Pn 07 30 28.5 +1.6
0.4nm,0.1s,SNR=4.0
EJON Pg Pb 07 30 32.4 +2.0
2.0nm,0.2s,SNR=7.9
EJON Sn Sn 07 30 56.2 +2.2
0.8nm,0.1s,SNR=7.9
EJON Lg Lg 07 31 02.1
31nm,0.2s,SNR=13
EJON La Jonquera 2.20 106 Pn Pn 07 30 28.5 +1.6
0.4nm,0.1s,SNR=4.0
CFON Fontmartina 2.22 126 Pn Pn 07 30 29.4 +2.2
0.6nm,0.1s,SNR=18
CFON Pg Pb 07 30 32.6 +1.9
9.8nm,0.2s,SNR=7.9
CFON Lg Lg 07 31 00.3
108nm,0.3s,SNR=15
CFON Fontmartina 2.22 126 Pn Pn 07 30 29.4 +2.2
0.6nm,0.1s,SNR=18
CAF Calviac 2.36 38 ePn Pn 07 30 29.4 +0.3
SNR=1.0
CAF Calviac 2.36 38 ePg Pb 07 30 36.1 +3.0
CAF eSn Sn 07 30 57.0 -0.9
SNR=1.0
CAF eSg Sg 07 31 07.3 +0.7
81nm,0.3s,SNR=1.0
CAF Calviac 2.36 38 Pn Pn 07 30 29.4 +0.3
CAF Pg Pb 07 30 36.1 +3.0
CAF Sn Sn 07 30 57.0 -0.9
CAF Lg Lg 07 31 07.3
40nm,0.3s
CAF Calviac 2.36 38 Pn Pn 07 30 29.4 +0.3
CAF Calviac 2.36 38 Pg Pb 07 30 36.1 +3.0
CAF Sn Sn 07 30 57.0 -0.9
CAF eSg Sg 07 31 07.3 +0.7
40nm,0.3s,SNR=1.0
RJF Les Rejaudoux 2.47 25 ePn Pn 07 30 30.4 -0.2
SNR=1.0
RJF Les Rejaudoux 2.47 25 ePg Pb 07 30 38.0 +3.1
SNR=1.0
RJF eSn Sn 07 30 59.7 -0.8
SNR=1.0
RJF eSg Sg 07 31 10.6 +0.5
47nm,0.2s
RJF Les Rejaudoux 2.47 25 Pn Pn 07 30 30.4 -0.2
RJF Pg Pb 07 30 38.0 +3.1
RJF Sn Sn 07 30 59.7 -0.8
RJF Lg Lg 07 31 10.6
23nm,0.2s
RJF Les Rejaudoux 2.47 25 Pn Pn 07 30 30.4 -0.2
RJF Les Rejaudoux 2.47 25 Pg Pb 07 30 38.0 +3.1
RJF Sn Sn 07 30 59.7 -0.8
RJF eSg Sg 07 31 10.6 +0.5
23nm,0.2s
ELAN Lanestosa 2.54 275 Pn Pn 07 30 34.5 +3.0
0.4nm,0.1s,SNR=7.9
ELAN Pg Pb 07 30 38.9 +2.8
0.4nm,0.1s,SNR=5.7
ELAN Sn Sn 07 31 04.6 +2.3
2.6nm,0.2s,SNR=4.0
ELAN Lanestosa 2.54 275 Pn Pn 07 30 34.5 +3.0
0.4nm,0.1s,SNR=7.9
EMOS Mosqueruela 2.74 188 Pn Pn 07 30 36.3 +1.8
0.2nm,0.1s,SNR=12
EMOS Pg Pb 07 30 41.2 +1.6
26nm,0.5s,SNR=27
EMOS Sn Sn 07 31 06.3 -1.1
17nm,0.6s,SNR=5.0
EMOS Lg Lg 07 31 15.5
4.0nm,0.2s,SNR=5.0
EMOS Mosqueruela 2.74 188 Pn Pn 07 30 36.3 +1.8
0.2nm,0.1s,SNR=12
ETOR Torete 2.74 215 ⇑Pn Pn 07 30 35.4 +1.0
21nm,0.2s,SNR=18
ETOR Sn Sn 07 31 06.2 -1.2
43nm,0.3s,SNR=5.0
ETOR Lg Lg 07 31 17.9
45nm,0.2s,SNR=5.0
ETOR Torete 2.74 215 Pn Pn 07 30 35.4 +1.0
21nm,0.2s,SNR=18
ETOR Sn Sn 07 31 06.2 -1.2
43nm,0.3s,SNR=5.0
ETOR Lg Lg 07 31 17.9
45nm,0.2s,SNR=5.0
LASF Ste Croix 2.96 69 ePn Pn 07 30 37.0 -0.3
SNR=1.0
LASF Ste Croix 2.96 69 eP Pn 07 30 40.1 +2.8
LASF Ste Croix 2.96 69 ePg Pg 07 30 47.1 -0.3
LASF eSg Sg 07 31 25.5 -0.2
20nm,0.3s,SNR=1.0
LASF Ste Croix 2.96 69 Pn Pn 07 30 37.0 -0.3
LASF Pg Pg 07 30 47.1 -0.3
LASF Lg Lg 07 31 25.5
9.9nm,0.3s
LASF Ste Croix 2.96 69 Pn Pn 07 30 37.0 -0.3
LASF Ste Croix 2.96 69 eP Pn 07 30 40.1 +2.8
LASF Ste Croix 2.96 69 Pg Pg 07 30 47.1 -0.3
LASF eSg Sg 07 31 25.5 -0.2
9.9nm,0.3s,SNR=1.0
MFF Saint Martin d 3.52 358 eP Pn 07 30 48.4 +3.3
MFF Saint Martin d 3.52 358 ePg Pg 07 30 57.7 -0.6
MFF eSg Sg 07 31 42.8 -1.1
15nm,0.2s,SNR=1.0
MFF Saint Martin d 3.52 358 Pn Pn 07 30 48.4 +3.3
MFF Pg Pg 07 30 57.7 -0.6
MFF Lg Lg 07 31 42.8
7.3nm,0.2s
MFF Saint Martin d 3.52 358 eP Pn 07 30 48.4 +3.3
MFF Saint Martin d 3.52 358 Pg Pg 07 30 57.7 -0.6
MFF eSg Sg 07 31 42.8 -1.1
7.3nm,0.2s,SNR=1.0
TCF Toulx Ste Croi 3.56 25 ePn Pn 07 30 45.7 0.0
TCF Toulx Ste Croi 3.56 25 ePg Pg 07 30 58.6 -0.5
TCF eSn Sn 07 31 24.1 -3.5
SNR=1.0
TCF eSg Sg 07 31 44.7 -0.6
20nm,0.3s,SNR=1.0
TCF Toulx Ste Croi 3.56 25 Pn Pn 07 30 45.7 0.0
TCF Pg Pg 07 30 58.6 -0.5
TCF Sn Sn 07 31 24.1 -3.5
TCF Lg Lg 07 31 44.7
10nm,0.3s
TCF Toulx Ste Croi 3.56 25 Pn Pn 07 30 45.7 0.0
TCF Toulx Ste Croi 3.56 25 Pg Pg 07 30 58.6 -0.5
TCF Sn Sn 07 31 24.1 -3.5
TCF eSg Sg 07 31 44.7 -0.6
10nm,0.3s,SNR=1.0
VIVF Saint-Julien-l 3.79 61 ePn Pn 07 30 48.7 -0.1
SNR=1.0
VIVF Saint-Julien-l 3.79 61 eP Pn 07 30 52.2 +3.4
VIVF Saint-Julien-l 3.79 61 ePg Pg 07 31 02.6 -0.9
VIVF eSg Sg 07 31 51.0 -1.6
11nm,0.3s,SNR=1.0
VIVF Saint-Julien-l 3.79 61 Pn Pn 07 30 48.7 -0.1
VIVF Pg Pg 07 31 02.6 -0.9
VIVF Lg Lg 07 31 51.0
5.7nm,0.3s
VIVF Saint-Julien-l 3.79 61 Pn Pn 07 30 48.7 -0.1
VIVF Saint-Julien-l 3.79 61 eP Pn 07 30 52.2 +3.4
VIVF Saint-Julien-l 3.79 61 Pg Pg 07 31 02.6 -0.9
VIVF eSg Sg 07 31 51.0 -1.6
5.7nm,0.3s,SNR=1.0
EARI Arriondas 3.83 275 Pn Pn 07 30 51.7 +2.3
4.1nm,1.0s,SNR=11
EARI Sn Sn 07 31 35.1 +0.8
1.8nm,0.3s,SNR=5.5
EARI Arriondas 3.83 275 Pn Pn 07 30 51.7 +2.3
4.1nm,1.0s,SNR=11
EARI Sn Sn 07 31 35.1 +0.8
1.8nm,0.3s,SNR=5.5
ETOS Mallorca 3.92 147 Pn Pn 07 30 51.4 +0.9
0.4nm,0.3s,SNR=7.9
ETOS Sn Sn 07 31 33.4 -2.9
1.6nm,0.3s,SNR=7.9
ETOS Mallorca 3.92 147 Pn Pn 07 30 51.4 +0.9
0.4nm,0.3s,SNR=7.9
ETOS Sn Sn 07 31 33.4 -2.9
1.6nm,0.3s,SNR=7.9
GUD Guadarrama 3.96 233 ⇓Pn Pn 07 30 52.3 +1.1
1.2nm,0.2s,SNR=18
GUD Sn Sn 07 31 36.4 -1.1
0.8nm,0.2s,SNR=5.6
GUD Lg Lg 07 31 54.8
2.7nm,0.3s,SNR=5.0
GUD Guadarrama 3.96 233 Pn Pn 07 30 52.3 +1.1
1.2nm,0.2s,SNR=18
GUD Sn Sn 07 31 36.4 -1.1
0.8nm,0.2s,SNR=5.6
GUD Lg Lg 07 31 54.8
2.7nm,0.3s,SNR=5.0
BGF Bois d'Agland 4.01 29 ePn Pn 07 30 52.0 +0.2
SNR=1.0
BGF Bois d'Agland 4.01 29 ePg Pg 07 31 06.9 -0.8
BGF eSn Sn 07 31 35.6 -3.0
SNR=1.0
BGF eSg Sg 07 31 59.7 +0.1
92nm,0.4s,SNR=1.0
BGF Bois d'Agland 4.01 29 Pn Pn 07 30 52.0 +0.2
BGF Pg Pg 07 31 06.9 -0.8
BGF Sn Sn 07 31 35.6 -3.0
BGF Lg Lg 07 31 59.7
46nm,0.4s
BGF Bois d'Agland 4.01 29 Pn Pn 07 30 52.0 +0.2
BGF Bois d'Agland 4.01 29 Pg Pg 07 31 06.9 -0.8
BGF Sn Sn 07 31 35.6 -3.0
BGF eSg Sg 07 31 59.7 +0.1
46nm,0.4s,SNR=1.0
SMRF Simiane la Rot 4.13 76 ePn Pn 07 30 54.0 +0.5
SNR=1.0
SMRF Simiane la Rot 4.13 76 ePg Pg 07 31 08.6 -1.3
SMRF eSg Sg 07 32 02.6 -0.9
2.1nm,0.2s
SMRF Simiane la Rot 4.13 76 Pn Pn 07 30 54.0 +0.5
SMRF Pg Pg 07 31 08.6 -1.3
SMRF Lg Lg 07 32 02.6
2.1nm,0.2s
SMRF Simiane la Rot 4.13 76 Pn Pn 07 30 54.0 +0.5
SMRF Simiane la Rot 4.13 76 Pg Pg 07 31 08.6 -1.3
SMRF eSg Sg 07 32 02.6 -0.9
1.0nm,0.2s
AVF Avril sur Loir 4.40 31 ePg Pb 07 31 13.3 +5.5
AVF eSn Sn 07 31 46.2 -1.9
SNR=1.0
AVF eSg Sg 07 32 11.3 -0.6
16nm,0.4s,SNR=1.0
AVF Avril sur Loir 4.40 31 Pg Pb 07 31 13.3 +5.5
AVF Sn Sn 07 31 46.2 -1.9
AVF Lg Lg 07 32 11.3
8.1nm,0.4s
AVF Avril sur Loir 4.40 31 Pg Pb 07 31 13.3 +5.5
AVF Sn Sn 07 31 46.2 -1.9
AVF eSg Sg 07 32 11.3 -0.6
8.1nm,0.4s,SNR=1.0
SMF Signal de Mont 4.48 36 ePn Pn 07 30 58.3 +0.1
SNR=1.0
SMF Signal de Mont 4.48 36 ePg Pg 07 31 15.4 -1.1
SMF eSg Sg 07 32 13.6 -0.9
15nm,0.4s,SNR=1.0
SMF Signal de Mont 4.48 36 Pn Pn 07 30 58.3 +0.1
SMF Pg Pg 07 31 15.4 -1.1
SMF Lg Lg 07 32 13.6
0.0nm,0.4s
SMF Signal de Mont 4.48 36 Pn Pn 07 30 58.3 +0.1
SMF Signal de Mont 4.48 36 Pg Pg 07 31 15.4 -1.1
SMF eSg Sg 07 32 13.6 -0.9
7.5nm,0.4s,SNR=1.0
ESDC Sonseca Array 4.54 223 Pn Pn 07 30 59.5 +0.4
0.5nm,0.3s,baz=40,slow=13,SNR=3.5
ESDC Sn Sn 07 31 49.0 -2.6
baz=43,slow=24,SNR=7.9
ESDC Sonseca Array 4.54 223 Pn Pn 07 30 59.5 +0.4
0.5nm,0.3s,SNR=3.5
ESDC Sn Sn 07 31 49.0 -2.6
SNR=7.9
HYF Humbligny 4.58 23 eSg Sg 07 32 17.0 -0.7
HYF Humbligny 4.58 23 Lg Lg 07 32 17.0
HYF Humbligny 4.58 23 eSg Sg 07 32 17.0 -0.7
ETOB Tobarra 4.59 196 Pn Pn 07 31 01.2 +1.4
2.2nm,0.2s,SNR=7.0
ETOB Sn Sn 07 31 48.9 -4.0
16nm,1.1s,SNR=5.0
ETOB Tobarra 4.59 196 Pn Pn 07 31 01.2 +1.4
2.2nm,0.2s,SNR=7.0
ETOB Sn Sn 07 31 48.9 -4.0
16nm,1.1s,SNR=5.0
SSF Saint Saulge 4.68 31 ePn Pn 07 30 59.6 -1.4
SSF Saint Saulge 4.68 31 ePg Pg 07 31 18.8 -1.6
SSF eSg Sg 07 32 19.8 -1.2
8.3nm,0.3s,SNR=1.0
SSF Saint Saulge 4.68 31 Pn Pn 07 30 59.6 -1.4
SSF Pg Pg 07 31 18.8 -1.6
SSF Lg Lg 07 32 19.8
4.2nm,0.3s
SSF Saint Saulge 4.68 31 Pn Pn 07 30 59.6 -1.4
SSF Saint Saulge 4.68 31 Pg Pg 07 31 18.8 -1.6
SSF eSg Sg 07 32 19.8 -1.2
4.2nm,0.3s,SNR=1.0
LOR Lormes 4.99 32 ePn Pn 07 31 05.1 -0.1
LOR Lormes 4.99 32 ePg Pg 07 31 24.9 -1.4
LOR eSg Sg 07 32 29.4 -1.4
10nm,0.4s
LOR Lormes 4.99 32 Pn Pn 07 31 05.1 -0.1
LOR Pg Pg 07 31 24.9 -1.4
LOR Lg Lg 07 32 29.4
5.2nm,0.4s
LOR Lormes 4.99 32 Pn Pn 07 31 05.1 -0.1
LOR Lormes 4.99 32 Pg Pg 07 31 24.9 -1.4
LOR eSg Sg 07 32 29.4 -1.4
5.2nm,0.4s
ECAL Calabor 5.13 259 Pn Pn 07 31 08.4 +1.2
0.3nm,0.2s,SNR=7.9
ECAL Sn Sn 07 32 04.4 -1.8
6.3nm,0.3s,SNR=7.9
ECAL Calabor 5.13 259 Pn Pn 07 31 08.4 +1.2
0.3nm,0.2s,SNR=7.9
ECAL Sn Sn 07 32 04.4 -1.8
6.3nm,0.3s,SNR=7.9
PBRG Braganca 5.17 258 eSn Sn 07 32 03.9 -3.2
PBRG A A 07 32 07.6
5.1nm,0.4s
PBRG Braganca 5.17 258 Sn Sn 07 32 03.9 -3.2
2.6nm,0.4s
PBRG Braganca 5.17 258 eSn Sn 07 32 03.9 -3.2
5.1nm,0.4s
EPON Pontenova 5.25 275 Pn Pn 07 31 11.6 +2.8
0.9nm,0.3s,SNR=7.9
EPON Sn Sn 07 32 09.2 +0.1
3.2nm,0.3s,SNR=7.9
EPON Pontenova 5.25 275 Pn Pn 07 31 11.6 +2.8
0.9nm,0.3s,SNR=7.9
EPON Sn Sn 07 32 09.2 +0.1
3.2nm,0.3s,SNR=7.9
EMUR La Murta 5.32 191 Pn Pn 07 31 10.5 +0.7
1.3nm,0.1s,SNR=6.9
EMUR La Murta 5.32 191 Pn Pn 07 31 10.5 +0.7
1.3nm,0.1s,SNR=6.9
QUIF Quistinic 5.33 336 ePn Pn 07 31 09.1 -0.8
SNR=1.0
QUIF eSg Sg 07 32 39.8 -2.0
4.2nm,0.3s
QUIF Quistinic 5.33 336 Pn Pn 07 31 09.1 -0.8
QUIF Lg Lg 07 32 39.8
2.1nm,0.3s
QUIF Quistinic 5.33 336 Pn Pn 07 31 09.1 -0.8
QUIF eSg Sg 07 32 39.8 -2.0
2.1nm,0.3s
GRR Gorron 5.34 354 ePn Pn 07 31 10.1 0.0
GRR eSg Sg 07 32 40.7 -1.6
3.4nm,0.3s
GRR Gorron 5.34 354 Pn Pn 07 31 10.1 0.0
GRR Lg Lg 07 32 40.7
1.7nm,0.3s
GRR Gorron 5.34 354 Pn Pn 07 31 10.1 0.0
GRR eSg Sg 07 32 40.7 -1.6
1.7nm,0.3s
SGMF Saint Gilles 5.48 342 eP Pn 07 31 16.0 +4.0
SGMF Saint Gilles 5.48 342 Pn Pn 07 31 16.0 +4.0
LDF La Druitiere 5.51 359 eSg Sg 07 32 45.8 -1.9
4.8nm,0.3s,SNR=1.0
LDF La Druitiere 5.51 359 eSg Sg 07 32 45.8 -1.9
2.4nm,0.3s,SNR=1.0
CABF La Chapelle 5.57 49 eSg Sg 07 32 46.8 -2.7
5.1nm,0.4s,SNR=1.0
CABF La Chapelle 5.57 49 Lg Lg 07 32 46.8
2.6nm,0.4s
CABF La Chapelle 5.57 49 eSg Sg 07 32 46.8 -2.7
2.5nm,0.4s,SNR=1.0
MVO Moncorvo 5.58 252 eSn Sn 07 32 14.6 -2.9
MVO Moncorvo 5.58 252 Pn Pn 07 31 14.7 +1.2
1.7nm,0.2s,SNR=4.0
MVO Sn Sn 07 32 14.7 -2.7
4.2nm,0.3s,SNR=7.9
MVO Moncorvo 5.58 252 Pn Pn 07 31 14.7 +1.2
1.7nm,0.2s,SNR=4.0
ROSF Rostrenen 5.74 337 ePn Pn 07 31 16.1 +0.6
SNR=1.0
ROSF Rostrenen 5.74 337 Pn Pn 07 31 16.1 +0.6
ROSF Rostrenen 5.74 337 Pn Pn 07 31 16.1 +0.6
ELOB Lobios 6.10 261 Sn Sn 07 32 28.2 -2.0
0.8nm,0.2s,SNR=7.9
ELOB Lobios 6.10 261 Sn Sn 07 32 28.2 -2.0
0.8nm,0.2s,SNR=7.9
SFTF Sexfontaines 6.21 33 eP Pn 07 31 26.5 +4.5
SFTF Sexfontaines 6.21 33 Pn Pn 07 31 26.5 +4.5
PGAV Gavieira, Arco 6.23 263 eSn Sn 07 32 30.8 -2.6
ECAB El Cabril 6.49 221 Pn Pn 07 31 26.4 +0.5
0.5nm,0.2s,SNR=7.9
ECAB El Cabril 6.49 221 Pn Pn 07 31 26.4 +0.5
0.5nm,0.2s,SNR=7.9
PMRV Marv??o 6.67 239 ePn Pn 07 31 28.9 +0.5
PMRV Marv??o 6.67 239 Pn Pn 07 31 28.9 +0.5
PMRV Marv??o 6.67 239 Pn Pn 07 31 28.9 +0.5
CDF Champ du Feu 7.36 41 ePn Pn 07 31 37.4 -0.4
CDF Champ du Feu 7.36 41 Pn Pn 07 31 37.4 -0.4

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
CDF	Champ du Feu	7.36	41	Pn	Pn	07 31 37.4	-0.4

ISCJB ***06*** *07:30:06.8±1.0, 36°.42N±0°.04×142°.81E±0°.09, h29^{km}, mb3.5/2, Error ellipse: s-maj=10.3km s-min=5.1km az=17.6*
IDC ***06*** *07:30:06.3±2.6, 36°.01N×142°.94E, h0^{km}, mb3.6/2, mb1 3.6/4, mb1mx3.3/56, mbtmp3.6/4, ML3.1/2, Error ellipse: s-maj=48.6km s-min=30.2km az=71.0*
JMA ***06*** *07:30:08.1±0.3, 36°.42N×142°.69E, h94^{km}, M3.1*
ISC 06 07:30:07.1±1.4**, 36°.41N**±0°.04×**142°.87E**±0°.09**, h29**^{km}**, n19,** σ**1^{s}38**/26**, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	Chosi	1.78	247	P	Pn	07 30 36.5	+0.6
CHOJ				S	Sn	07 30 56.9	-0.6
ONAJ	Iwakimizuishiy	1.80	293	P	Pn	07 30 35.6	-0.7
JFK	Kawauchi	1.86	301	P	Pn	07 30 37.6	+0.5
JHO	Hitachi	1.86	277	P	Pn	07 30 37.3	+0.2
JHO				eS	Sn	07 30 58.4	-1.3
JMM	Marumori	2.21	312	P	Pn	07 30 42.4	+0.6
BSO1	Boso 1	2.34	222	P	Pn	07 30 43.3	+0.2
BSO1				eS	Sn	07 31 12.0	+1.5
JAG	Ashikaga	2.76	271	P	Pn	07 30 50.0	+0.6
OFUJ	Ofunato	2.83	341	P	Pn	07 30 50.1	-0.3
JMK	Ichinoseki	2.85	333	P	Pn	07 30 51.2	+0.5
JMK				S	Sn	07 31 24.2	+0.1
JYK	Kaneyama	3.20	322	P	Pn	07 30 56.4	+1.0
JRY	Ryogami san	3.23	264	P	Pn	07 30 56.5	+0.6
JRY				eS	Sn	07 31 31.8	-1.7
JOD2	Odawara 2	3.28	251	P	Pn	07 30 57.9	+1.3
JOD2				eS	Sn	07 31 33.6	-1.0
JOM	Ohasama	3.30	338	eS	Sn	07 31 34.7	-0.4
MJAR	Matsushiro Arr	3.76	273	Pn	Pn	07 31 05.7	+2.5
	1.2nm,0.3s,baz=92,slow=9.7,SNR=4.1						
MAT	Matsushiro	3.76	273	P	Pn	07 31 04.9	+1.7
MAT				eS	Sn	07 31 37.9	-8.6
JANG	Nango	4.10	345	P	Pn	07 31 08.9	+1.1
JANG				eS	Sn	07 31 52.1	-2.6
JHJ	Hachijo jima 2	4.15	219	Pn	Pn	07 31 08.6	0.0
	4.0nm,0.3s,baz=345,slow=21,SNR=4.8						
JHJ				Sn	Sn	07 31 52.6	-3.5
	19nm,0.3s,baz=109,slow=23,SNR=6.2						
SONM	Songino Array	29.10	305	P	P	07 36 11.4	+6.1
	0.4nm,0.5s,baz=108,slow=9.3,SNR=2.6						
WRA	Warramunga Arr	56.62	190	P	P	07 39 48.0	+0.5
	0.5nm,0.8s,baz=10,slow=7.3,SNR=3.4						

CSEM ***06*** *07:40:17.4±0.4, 46°.36N×13°.65E, h2^{km}, ML0.6, Error ellipse: s-maj=9.6km s-min=9.0km az=52.0*
LJU 06 07:40:17.0, 46°.32N×13°.64E, h8^{km}, ML0.6, 1D, Austria

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CADS	Cadrg	0.11	144	i Pg	Pg	07 40 19.7	0.0
CADS				i Sg	Sg	07 40 21.6	+0.1
	comp=Z,4.0nm,0.1s						
CADS	Cadrg	0.11	144	Pg	Pg	07 40 19.7	0.0
CADS				i Sg	Sg	07 40 21.6	+0.1
	comp=Z,4.0nm,0.1s						
ROBS	Robic	0.12	230	i Pg	Pg	07 40 19.8	+0.1
ROBS				i Sg	Sg	07 40 21.8	+0.2
	comp=Z,11nm,0.1s						
ROBS	Robic	0.12	230	i Pg	Pg	07 40 19.8	+0.1
ROBS				i Sg	Sg	07 40 21.8	+0.2
	comp=Z,11nm,0.1s						
DRE	Drenchia	0.15	179	eP	Pg	07 40 20.3	+0.1
DRE	Drenchia	0.15	179	ePg	Pg	07 40 22.9	+2.7
DRE	Drenchia	0.15	179	⇓ePg	Pg	07 40 20.3	+0.1
DRE				eSg	Sg	07 40 22.9	+0.5
ACOM	Acomizza, Ital	0.24	339	ePg	Pg	07 40 22.2	+0.2
ACOM	Acomizza, Ital	0.24	339	ePg	Pg	07 40 22.2	+0.2
GORS	Gorjuse	0.24	91	ePg	Pg	07 40 22.1	+0.1
GORS				i Sg	Sg	07 40 26.0	+0.7
	comp=Z,2.0nm,0.1s						
GORS	Gorjuse	0.24	91	ePg	Pg	07 40 22.1	+0.1
GORS				i Sg	Sg	07 40 26.0	+0.7
	comp=Z,2.0nm,0.1s						

NIED ***06*** *07:42:00, 37°.40N×142°.40E, h11^{km}, Mw3.5 Best double couple: M$_0$1.81000$\times 10^{14}$ NP1:ϕ_s215.00000°, δ26.00000°, λ-100.00000°. NP2:ϕ_s46.00000°, δ64.00000°, λ-85.00000°.*
IDC ***06*** *07:42:25.2±13.0, 37°.07N×144°.27E, h0^{km}, mb3.6/2, mb1 3.6/3, mb1mx3.3/49, mbtmp3.5/3, ML3.3/1, Error ellipse: s-maj=237.3km s-min=76.9km az=136.0*
JMA ***06*** *07:42:35.7±0.3, 37°.36N×142°.40E, h1^{km}±3^{km}, M3.5*
ISC 06 07:42:39.8±2.6**, 37°.4N**±0°.1×**142°.4E**±0°.2**, h21**^{km}**, n10,** σ**1^{s}31**/12**, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	Kawauchi	1.17	271	P	Pn	07 42 59.0	-2.0
JFK				eS	Sn	07 43 17.0	+0.6
ONAJ	Iwakimizuishiy	1.26	259	P	Pn	07 43 00.4	-1.9
JMM	Marumori	1.33	293	P	Pn	07 43 01.7	-1.5
JIO	Ouri	1.35	324	P	Pn	07 43 01.8	-1.6
JFT	Otama	1.61	276	P	Pn	07 43 06.2	-0.8
JHO	Hitachi	1.61	243	S	Sn	07 43 27.7	+0.6
JOU	Okura	1.67	308	P	Pn	07 43 07.0	-0.8
JOU				S	Sn	07 43 28.7	+0.1
MJAR	Matsushiro Arr	3.41	257	Pn	Pb	07 43 40.0	+0.4
	1.1nm,0.3s,baz=84,slow=15,SNR=5.2						
SONM	Songino Array	28.23	303	P	P	07 48 32.0	+0.7
	0.9nm,0.7s,baz=112,slow=8.9,SNR=4.8						
MKAR	Makanchi Array	44.58	302	P	P	07 50 50.9	+0.7
	0.4nm,0.7s,baz=91,slow=9.6,SNR=5.1						

NIED ***06*** *07:48:00, 38°.30N×144°.60E, h5^{km}, Mw3.7 Best double couple: M$_0$4.30000$\times 10^{14}$ NP1:ϕ_s226.00000°, δ40.00000°, λ-95.00000°. NP2:ϕ_s53.00000°, δ50.00000°, λ-86.00000°.*
IDC ***06*** *07:48:02.1±1.1, 38°.26N×144°.95E, h0^{km}, mb3.6/7, mb1 3.9/9, mb1mx3.6/41, mbtmp3.7/9, ML2.7/2, MS2.9/3, Ms1 2.9/3, ms1mx2.4/46, Error ellipse: s-maj=27.2km s-min=21.0km az=143.0*
ISCJB ***06*** *07:48:04.6±0.7, 38°.27N±0°.06×144°.64E±0°.05, h29^{km}, mb3.6/7, MS3.0/2, Error ellipse: s-maj=8.8km s-min=5.4km az=164.9*
JMA ***06*** *07:48:05.4±0.3, 38°.32N×144°.56E, h27^{km}, M4.1*
ISC 06 07:48:06.5±0.9**, 38°.34N**±0°.07×**144°.69E**±0°.07**, h29**^{km}**, n27,** σ**1^{s}58**/26**, mb3.6**/7**, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	Ouri	2.63	274	S	Sn	07 49 15.6	-2.2
JMK	Ichinoseki	2.78	284	eS	Sn	07 49 20.4	-1.3
JOM	Ohasama	2.88	294	eS	Sn	07 49 22.4	-1.8
JMM	Marumori	3.11	262	S	Sn	07 49 27.9	-1.8
JOU	Okura	3.16	272	P	Pn	07 48 53.1	-1.3
JOU				S	Sn	07 49 30.6	-0.6
JFK	Kawauchi	3.17	253	S	Sn	07 49 29.4	-1.9
JANG	Nango	3.19	311	P	Pn	07 48 54.6	-0.1
JANG				eS	Sn	07 49 32.3	+0.5
JRG	Rokugo	3.34	290	P	Pn	07 48 56.8	+0.1
JYK	Kaneyama	3.44	281	P	Pn	07 48 57.6	-0.5
JYK				eS	Sn	07 49 37.2	-0.7
JFT	Otama	3.54	258	S	Sn	07 49 39.5	-0.8
JTM	Tenmabayashi	3.72	312	P	Pn	07 49 02.1	+0.2
JNBK	Urakawa-nobuka	4.21	340	eS	Sn	07 49 52.5	-4.3
JCH	Churui	4.39	347	eS	Sn	07 49 56.0	-5.3
JKB	Kayabe	4.52	323	P	Pn	07 49 13.1	+0.2
JRY	Ryogami san	5.17	245	P	Pn	07 49 21.6	-0.3
JRY				eS	Sn	07 50 18.2	-2.4
MJAR	Matsushiro Arr	5.46	253	Pn	Pn	07 49 27.8	+1.9
	0.8nm,0.3s,baz=58,slow=9.7,SNR=10						
USRK	Ussuriysk Ar.	11.20	306	Pn	Pn	07 50 45.1	+0.5
	0.2nm,0.3s,baz=112,slow=13,SNR=6.2						
KSRS	Korea Array	13.28	271	LR	LR	07 56 06.8	
	comp=Z,24nm,19.1s,baz=345,slow=36						
SEY	Seymchan	25.07	8	P	P	07 53 28.7	+0.6
	3.9nm,0.8s,baz=183,slow=7.3,SNR=21						
SONM	Songino Array	29.27	301	P	P	07 54 09.1	+2.9
	0.3nm,0.4s,baz=98,slow=8.9,SNR=2.9						
ZALV	Zalesovo Beam	42.98	311	LR	LR	08 14 23.6	
	comp=Z,19nm,18.5s,baz=74,slow=37						
NRIK	Noril'sk	43.20	334	LR	LR	08 14 01.6	
	comp=Z,21nm,21.8s,baz=116,slow=36						
MKAR	Makanchi Array	45.64	302	P	P	07 56 24.8	+0.5
	1.1nm,0.8s,baz=85,slow=9.0,SNR=11						
ILAR	Eielson Array	47.00	33	P	P	07 56 34.1	-0.5
	0.6nm,0.8s,baz=263,slow=7.2,SNR=2.3						
WRA	Warramunga Arr	58.78	191	P	P	07 58 01.7	-0.3
	0.4nm,0.6s,baz=8.6,slow=7.2,SNR=5.6						
YKA	Yellowknife Ar	61.36	31	P	P	07 58 18.5	-0.7
	0.1nm,0.6s,baz=311,slow=7.3,SNR=5.1						
PDAR	Pinedale Array	74.89	47	P	P	07 59 44.8	0.0
	0.3nm,0.6s,baz=225,slow=4.0,SNR=3.8						

ISK ***06*** *07:50:46.3, 37°.24N×36°.44E, h2^{km}, MD2.9*
ISCJB ***06*** *07:50:47.5±0.5, 37°.24N±0°.02×36°.38E±0°.03, h2^{km}±5^{km}, Error ellipse: s-maj=3.8km s-min=3.4km az=4.3*
CSEM ***06*** *07:50:47.5±0.2, 37°.24N×36°.41E, h5^{km}, MD2.8, Error ellipse: s-maj=4.0km s-min=2.9km az=78.0*
DDA ***06*** *07:50:47.4, 37°.26N×36°.39E, h7^{km}, Md2.8*
ISC 06 07:50:47.7±1.0**, 37°.24N**±0°.02×**36°.40E**±0°.02**, h6**^{km}±9^{km}**, n33,** σ**0^{s}51**/53**, Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KAMA	Osmaniye	0.22	104	i P	Pg	07 50 52.0	0.0
KAMA				i S	Sg	07 50 55.4	+0.4
ANDN	Andirin	0.34	353	i P	Pg	07 50 54.3	-0.1
ANDN				i S	Sg	07 50 59.6	+0.7
ANDN	Andirin	0.34	353	P	Pg	07 50 54.3	-0.1
ANDN				S	Sg	07 50 59.6	+0.7
AYKD	Aykdinkavak	0.37	62	i P	Pg	07 50 54.7	-0.2
AYKD				i S	Sg	07 50 60.0	+0.3
KMRS	Kahramanmaras	0.48	56	ePG	Pg	07 50 56.4	-0.5
KMRS				eSG	Sg	07 51 02.9	-0.3
KOZT	Kozan	0.52	298	ePG	Pg	07 50 57.0	-0.6
KOZT				eSG	Sb	07 51 06.3	-0.6
KOZT	Kozan	0.52	298	ePg	Pg	07 50 57.0	-0.6
KOZT				eSg	Sb	07 51 06.3	-0.6
CEYT	Ceyhan	0.57	246	ePG	Pg	07 50 58.9	+0.3
CEYT	Ceyhan	0.57	246	ePg	Pg	07 50 58.9	+0.3
DRWC	Darouich	0.65	161	eP	Pg	07 51 00.7	+0.5
DRWC				eS	Sg	07 51 08.5	-0.3
	177nm,0.4s						
KUZU	Kuzuini	0.71	131	i P	Pg	07 51 00.2	-1.2
KUZU				i S	Sb	07 51 13.5	+0.9
KUZU	Kuzuini	0.71	131	P	Pg	07 51 00.2	-1.2
TAHT	Tahtakopru-Hat	0.88	191	ePG	Pg	07 51 03.9	-0.6
TAHT				eSG	Sb	07 51 17.5	+0.2
TAHT	Tahtakopru-Hat	0.88	191	ePg	Pg	07 51 03.9	-0.6
TAHT				eSg	Sb	07 51 17.5	+0.2
GZT	Gaziantep	0.94	83	i P	Pb	07 51 06.4	0.0
GZT				i S	Sn	07 51 20.9	-0.3
KRTS	Karatas	1.06	231	ePN	Pb	07 51 08.0	-0.3
KRTS	Karatas	1.06	231	ePn	Pb	07 51 08.0	-0.3
KARA	Karaisali	1.07	271	ePN	Pb	07 51 08.6	0.0
KARA	Karaisali	1.07	271	ePn	Pb	07 51 08.6	0.0
BTCH	Batrach	1.20	178	eP	Pb	07 51 10.9	+0.1
BTCH				eS	Sg	07 51 26.0	-0.3
	140nm,0.4s						
YAYL	Yayladag	1.23	191	i P	Pg	07 51 10.8	-0.4
YAYL				i S	Sn	07 51 28.9	+0.5
YAYL	Yayladag	1.23	191	P	Pg	07 51 10.8	-0.4
YAYL				S	Sn	07 51 28.9	+0.5
DARE	Darende-Malaty	1.58	32	ePN	Pn	07 51 15.9	-0.4
DARE	Darende-Malaty	1.58	32	ePn	Pn	07 51 15.9	-0.4
AKCD	Akcadag	1.60	48	i P	Pn	07 51 17.1	+0.4
AKCD				i S	Sg	07 51 39.7	+0.6
AKCD	Akcadag	1.60	48	P	Pn	07 51 17.0	+0.4
AKCD				S	Sg	07 51 39.7	+0.6
SLNF	Slenfeh	1.65	185	eP	Pn	07 51 17.6	+0.3
SLNF				eS	Sn	07 51 38.8	0.0
	82nm,0.4s						
NIG	Nigde	1.67	302	ePN	Pn	07 51 17.9	+0.3
NIG	Nigde	1.67	302	ePn	Pn	07 51 17.9	+0.3
KERG	Konya-Eregli	1.82	276	i P	Pb	07 51 20.8	-0.7
KERG				i S	Sn	07 51 43.1	0.0
KERG	Konya-Eregli	1.82	276	P	Pb	07 51 20.8	-0.7
KERG				S	Sn	07 51 43.1	0.0
GULA	Gulagac	2.04	303	ePN	Pn	07 51 23.3	+0.7
GULA	Gulagac	2.04	303	ePn	Pn	07 51 23.3	+0.7

NIED ***06*** *07:54:00, 38°.60N×142°.20E, h47^{km}, Mw3.8 Best double couple: M$_0$5.32000$\times 10^{14}$ NP1:ϕ_s355.00000°, δ80.00000°, λ-176.00000°. NP2:ϕ_s265.00000°, δ86.00000°, λ-10.00000°.*
IDC ***06*** *07:54:12.6±1.1, 38°.60N×142°.42E, h0^{km}, mb3.6/5, mb1 3.9/9, mb1mx3.6/38, mbtmp3.8/9, ML3.5/4, MS2.4/2, Ms1 2.4/2, ms1mx2.1/45, Error ellipse: s-maj=26.7km s-min=21.1km az=86.0*
ISCJB ***06*** *07:54:16.8±0.8, 38°.55N±0°.05×142°.19E±0°.08, h41^{km}, mb3.5/5, Error ellipse: s-maj=8.5km s-min=6.7km az=166.2*
JMA ***06*** *07:54:17.4±0.1, 38°.61N×142°.16E, h39^{km}±2^{km}, M4.0*
JMA Felt I J1.
ISC 06 07:54:18.4±1.1**, 38°.57N**±0°.06×**142°.18E**±0°.09**, h41**^{km}**, n22,** σ**1^{s}41**/21**, mb3.5**/5**, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	Ofunato	0.65	322	P	Pn	07 54 29.7	-1.5
JIO	Ouri	0.66	260	P	Pn	07 54 30.0	-1.4
JIO				S	Sn	07 54 38.5	-2.2
JMK	Ichinoseki	0.84	297	P	Pn	07 54 32.5	-1.3
JMK				S	Sn	07 54 43.5	-1.5
JOM	Ohasama	1.14	323	P	Pn	07 54 36.8	-1.1
JOM				S	Sn	07 54 50.8	-1.5
JOU	Okura	1.21	261	P	Pn	07 54 38.3	-0.6
JOU				S	Sn	07 54 53.4	-0.7
JMM	Marumori	1.30	238	P	Pn	07 54 38.9	-1.2
MJAR	Matsushiro Arr	3.75	239	Pn	Pn	07 55 16.1	+2.3
	7.5nm,0.3s,baz=41,slow=11,SNR=59						
MJAR				LR	LR	07 56 48.6	
	comp=Z,39nm,19.3s,baz=180,slow=40						
MAT	Matsushiro	3.75	239	P	Pn	07 55 14.5	+0.7
MAT				eS	Sn	07 56 03.9	+7.2
JHJ	Hachijo jima 2	5.78	200	Pn	Pn	07 55 40.9	-0.7
	21nm,0.3s,baz=78,slow=20,SNR=2.6						
JHJ				Sn	Sn	07 56 44.9	-1.8
	10.0nm,0.3s,baz=72,slow=21,SNR=3.5						
JHJ				LR	LR	07 58 18.0	
	comp=Z,38nm,19.9s,baz=246,slow=42						
USRK	Ussuriysk Ar.	9.50	310	Pn	Pn	07 56 34.3	+1.7
	0.5nm,0.3s,baz=118,slow=14,SNR=8.3						
JNU	Nakatsue	10.66	243	Pn	Pn	07 56 50.7	+2.1
	0.3nm,0.3s,baz=141,slow=4.5,SNR=4.3						
H11N2	WAKE ISLAND Hy	28.46	124	T	T	08 30 37.9	
	baz=317,slow=75,SNR=58						
H11N1	WAKE ISLAND Hy	28.47	124	T	T	08 30 38.6	
	baz=317,slow=75,SNR=66						
H11N3	WAKE ISLAND Hy	28.48	124	T	T	08 30 39.7	
	baz=317,slow=75,SNR=160						
H11S1	WAKE ISLAND Hy	29.23	126	T	T	08 31 36.9	
	baz=318,slow=76,SNR=39						
H11S3	WAKE ISLAND Hy	29.23	126	T	T	08 31 37.4	
	baz=318,slow=76,SNR=34						
H11S2	WAKE ISLAND Hy	29.25	126	T	T	08 31 38.2	
	baz=318,slow=76,SNR=31						
ZALV	Zalesovo Beam	41.35	311	P	P	08 02 00.0	0.0
	0.5nm,0.3s,baz=79,slow=12,SNR=3.4						
MKAR	Makanchi Array	43.84	301	P	P	08 02 20.5	+0.1
	0.4nm,0.5s,baz=86,slow=11,SNR=9.3						
WRA	Warramunga Arr	58.67	189	P	P	08 04 11.2	-0.5
	0.5nm,0.8s,baz=6.9,slow=7.4,SNR=6.4						
ASAR	Alice Springs	62.39	189	P	P	08 04 37.6	+0.5
	0.2nm,0.6s,baz=10,slow=5.8,SNR=3.6						
PDAR	Pinedale Array	76.16	46	P	P	08 06 02.9	+0.5
	0.2nm,0.6s,baz=313,slow=5.5,SNR=2.8						

THE ***06*** *08:04:06.9, 36°.50N×28°.81E, h1^{km}±1^{km}, ML2.8/1, Error ellipse: s-maj=1.7km s-min=0.9km az=98.0*
DDA ***06*** *08:04:07.4, 36°.43N×28°.73E, h21^{km}, Md3.1*
ISCJB ***06*** *08:04:07.5±0.5, 36°.45N±0°.02×28°.79E±0°.02, h6^{km}±4^{km}, Error ellipse: s-maj=3.9km s-min=2.9km az=155.6*
ATH ***06*** *08:04:07.0, 36°.50N×28°.80E, h20^{km}±1^{km}, ML2.9/6, Error ellipse: s-maj=1.8km s-min=0.8km az=183.0*
CSEM ***06*** *08:04:07.7±0.1, 36°.47N×28°.80E, h5^{km}, ML2.8, Error ellipse: s-maj=3.3km s-min=2.3km az=172.0*
ISK ***06*** *08:04:07.0, 36°.49N×28°.80E, h7^{km}, MD3.3*
ISC 06 08:04:07.3±1.1**, 36°.48N**±0°.02×**28°.77E**±0°.02**, h1**^{km}±10^{km}**, n85,** σ**0^{s}72**/135**, Dodecanese Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FETY	Fethiye	0.30	58	ePG	Pg	08 04 12.6	-0.5
FETY				eSG	Sg	08 04 17.3	+0.3
FETY	Fethiye	0.30	58	P	Pg	08 04 12.4	-0.7
FETY				S	Sg	08 04 17.3	+0.3
FETY	Fethiye	0.30	58	ePg	Pg	08 04 12.6	-0.5
FETY				S	Sg	08 04 17.3	+0.3
TURN	Turunc	0.42	342	i P	Pb	08 04 17.7	+0.2
TURN				i S	Sb	08 04 26.0	+1.6
TURN	Turunc	0.42	342	P	Pb	08 04 17.7	+0.2
TURN				S	Sb	08 04 26.0	+1.6
ARG	Arkhangelos	0.58	244	P	Pb	08 04 19.5	-0.7
ARG				S	Sb	08 04 28.5	-0.5
ARG	Arkhangelos	0.58	244	P	Pb	08 04 19.5	-0.7
ARG				S	Sb	08 04 28.2	-0.8
AKAS	Kas	0.72	109	i P	Pg	08 04 20.7	-0.4
AKAS				i S	Sb	08 04 33.3	+0.2
AKAS	Kas	0.72	109	P	Pg	08 04 20.7	-0.4
AKAS				S	Sb	08 04 33.3	+0.2
KSL	Kastellorizon	0.73	116	P	Pg	08 04 20.9	-0.5
KSL				S	Sb	08 04 33.0	-0.4
KSL	Kastellorizon	0.73	116	P	Pg	08 04 20.9	-0.5
KSL				S	Sb	08 04 32.0	-1.4
KSL	Kastellorizon	0.73	116	P	Pg	08 04 20.5	-0.8
KSL				S	Sb	08 04 32.0	-1.4
KSL				AML	AML	08 04 36.9	
	comp=N,827μm,0.4s						
KSL				AML	AML	08 04 38.8	
	comp=E,1841μm,0.4s						
YER	Yerkesik	0.77	330	ePG	Pb	08 04 22.7	-0.8
YER				eSG	Sb	08 04 33.3	-1.1
YER	Yerkesik	0.77	330	P	Pg	08 04 21.8	-0.2
YER				S	Sb	08 04 33.7	-0.7
YER	Yerkesik	0.77	330	P	Pg	08 04 21.8	-0.2
YER	Yerkesik	0.77	330	ePg	Pb	08 04 22.7	-0.8
YER				eSg	Sb	08 04 33.3	-1.1
GOLH	Golhisar	0.99	40	i P	Pg	08 04 25.8	-0.5
GOLH				i S	Sn	08 04 42.2	-1.0
GOLH	Golhisar	0.99	40	P	Pg	08 04 25.8	-0.5
GOLH				S	Sn	08 04 42.2	-1.0
BDRM	Kayabasi	1.22	299	i P	Pb	08 04 31.1	0.0
BDRM				i S	Sn	08 04 48.5	-0.1
BDRM	Kayabasi	1.22	299	P	Pb	08 04 31.1	0.0
BDRM				S	Sn	08 04 48.5	-0.1
NIS1	Nisyros Isl.	1.29	276	ePN	Pb	08 04 32.3	0.0
NIS1	Nisyros Isl.	1.29	276	P	Pg	08 04 31.7	-0.3
NIS1				S	Sg	08 04 48.9	+0.3
NIS1	Nisyros Isl.	1.29	276	P	Pb	08 04 32.3	0.0
NIS1				S	Sg	08 04 48.9	+0.3
NIS1	Nisyros Isl.	1.29	276	P	Pb	08 04 32.3	0.0
NIS1				S	Sn	08 04 51.4	+1.1
NIS1				AML	AML	08 04 53.7	
	comp=E,2011μm,0.4s						
NIS1				AML	AML	08 04 56.0	
	comp=N,2219μm,0.5s						
DENT	Denizli	1.29	9	ePN	Pg	08 04 31.6	-0.5
DENT				eSN	Sn	08 04 50.0	-0.6
DENT	Denizli	1.29	9	ePn	Pg	08 04 31.6	-0.5
DENT				eSn	Sn	08 04 50.0	-0.6
BODT	Bodrum	1.31	297	ePN	Pg	08 04 32.1	-0.3
BODT				eSN	Sn	08 04 51.1	+0.2
BODT	Bodrum	1.31	297	P	Pg	08 04 31.5	-0.9
BODT				S	Sb	08 04 50.5	+0.5
BODT	Bodrum	1.31	297	P	Pg	08 04 31.5	-0.9
BODT	Bodrum	1.31	297	ePn	Pg	08 04 32.1	-0.3
BODT				S	Sb	08 04 50.5	+0.5
BODT				eSn	Sn	08 04 51.1	+0.2
NISR	Nisiros	1.33	276	P	Pb	08 04 33.6	+0.6
NISR	Nisiros	1.33	276	P	Pb	08 04 33.6	+0.6
KORT	Korkueli	1.38	67	i P	Pb	08 04 34.6	+0.7
KORT				i S	Sn	08 04 55.6	+2.9
KORT	Korkueli	1.38	67	P	Pb	08 04 34.6	+0.7
AYDN	Tasoluk	1.38	329	i P	Pb	08 04 33.8	-0.2
AYDN				i S	Sn	08 04 53.0	+0.3
AYDN	Tasoluk	1.38	329	P	Pb	08 04 33.8	-0.2
AYDN				S	Sn	08 04 53.0	+0.3
UZP	Denizli	1.59	12	i P	Pg	08 04 38.0	+0.3
UZP				i S	Sg	08 04 60.0	+1.7
KARP	Karpathos	1.60	235	P	Pn	08 04 36.0	-0.8
KARP				S	Sn	08 04 58.2	+0.1
KARP	Karpathos	1.60	235	P	Pn	08 04 36.0	-0.8
KARP				S	Sn	08 04 58.2	+0.1
KARP	Karpathos	1.60	235	P	Pb	08 04 37.7	0.0
KARP				S	Sg	08 04 59.6	+0.9
GCAM	G?zelcaml?	1.73	315	i P	Pn	08 04 38.5	-0.1
GCAM				i S	Sg	08 05 03.5	+0.5
GCAM	G?zelcaml?	1.73	315	P	Pn	08 04 38.5	-0.1
GCAM				S	Sg	08 05 03.5	+0.5
BCK	Bucak	1.76	55	ePN	Pn	08 04 38.5	-0.5
BCK	Bucak	1.76	55	ePn	Pn	08 04 38.5	-0.5
KHL	Karahalli	1.94	18	ePN	Pn	08 04 41.1	-0.4
KHL	Karahalli	1.94	18	ePn	Pn	08 04 41.1	-0.4
ISP	Isparta	1.94	46	ePN	Pn	08 04 41.1	-0.5
ISP	Isparta	1.94	46	ePn	Pn	08 04 41.1	-0.5
SMG	Samos	1.98	309	P	Pn	08 04 41.2	-0.7
SMG				S	Sn	08 05 05.9	-1.5
SMG	Samos	1.98	309	P	Pn	08 04 41.2	-0.7
SMG				S	Sn	08 05 05.9	-1.5
SMG				AML	AML	08 05 12.4	
	comp=N,440μm,0.4s						
SMG				AML	AML	08 05 17.2	
	comp=E,489μm,0.3s						
KHAL	Karahalli	1.98	17	i P	Pn	08 04 41.9	-0.2
KHAL				i S	Sb	08 05 08.6	-0.8
KHAL	Karahalli	1.98	17	P	Pn	08 04 41.9	-0.2
KHAL				S	Sb	08 05 08.6	-0.8
SUTC	Sutluce-Ispart	2.05	60	ePN	Pn	08 04 42.7	-0.4
SUTC	Sutluce-Ispart	2.05	60	ePn	Pn	08 04 42.7	-0.4
IZM	Izmir	2.26	328	ePN	Pn	08 04 46.0	+0.1
IZM	Izmir	2.26	328	ePn	Pn	08 04 46.0	+0.1
BLCB	Balcova	2.35	325	ePN	Pn	08 04 47.0	-0.1
BLCB	Balcova	2.35	325	ePn	Pn	08 04 47.0	-0.1
ZKR	Zakros	2.48	238	P	Pn	08 04 49.8	+1.0
ZKR				S	Sn	08 05 19.4	-0.3
ZKR	Zakros	2.48	238	P	Pn	08 04 49.8	+1.0
ZKR				S	Sn	08 05 19.4	-0.3
ZKR				AML	AML	08 05 31.7	
	comp=N,150μm,0.6s						
ZKR				AML	AML	08 05 38.4	
	comp=E,276μm,1.2s						
SHUT	Suhut-Afyon	2.51	34	ePN	Pn	08 04 49.3	-0.1
SHUT	Suhut-Afyon	2.51	34	ePn	Pn	08 04 49.3	-0.1
AKS	Akhisar	2.52	343	ePN	Pn	08 04 49.1	-0.3
ZEY	˜zmir	2.52	315	i P	Pn	08 04 50.4	+1.0
ZEY				i S	Sb	08 05 24.1	-0.7
DEMI	Demirci	2.56	359	i P	Pn	08 04 49.6	-0.5
APE	Apeiranthos	2.67	284	P	Pn	08 04 51.3	-0.1
APE	Apeiranthos	2.67	284	P	Pn	08 04 51.3	-0.1
NPS	Neapolis	2.83	246	P	Pn	08 04 54.8	+1.1
NPS				S	Sn	08 05 29.7	+1.2
NPS	Neapolis	2.83	246	P	Pn	08 04 54.8	+1.1
NPS				S	Sn	08 05 29.7	+1.2
NPS				AML	AML	08 05 29.9	
	comp=N,174μm,0.4s						
NPS				AML	AML	08 05 31.9	
	comp=E,172μm,0.3s						
CHOS	Chios island	2.88	312	ePN	Pn	08 04 55.0	+0.6
CHOS	Chios island	2.88	312	S	Sn	08 05 29.1	-0.7
CHOS	Chios island	2.88	312	P	Pn	08 04 54.7	+0.2
CHOS				S	Sn	08 05 29.1	-0.7
LAST	Lasithi	2.98	245	P	Pn	08 04 55.8	0.0
LAST				S	Sn	08 05 31.3	-0.9
LAST	Lasithi	2.98	245	P	Pn	08 04 55.8	0.0
KONT	Konya--Tatoy	3.22	62	ePN	Pn	08 04 59.4	+0.3
KONT	Konya--Tatoy	3.22	62	ePn	Pn	08 04 59.4	+0.3
IDI	Anoyia	3.36	251	P	Pn	08 05 00.7	-0.4
IDI				S	Sn	08 05 42.4	+0.7
IDI	Anoyia	3.36	251	P	Pn	08 05 00.7	-0.4
IDI				S	Sn	08 05 42.4	+0.7
IDI				AML	AML	08 05 45.2	
	comp=E,58μm,0.5s						
IDI				AML	AML	08 05 48.6	
	comp=N,69μm,0.4s						
PRK	Paraskevi	3.40	325	P	Pn	08 05 02.6	+1.1
PRK	Paraskevi	3.40	325	P	Pn	08 05 02.6	+1.1
SIGR	SIGRI	3.57	321	P	Pn	08 05 04.4	+0.5
SIGR	SIGRI	3.57	321	P	Pn	08 05 04.4	+0.5
IKL	Isikli	3.98	92	ePN	Pn	08 05 10.2	+0.8

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
IKL	Isikli	3.98	92	ePn	Pn	08 05 10.2	+0.8
LIA	Limnos Island	4.43	322	P	Pn	08 05 16.8	+1.1

IDC 06 08:09:11.0±1.6, 4°.82S×152°.31E, h0km, mb3.8/5, mb1 4.1/5, mb1mx3.7/34, mbtmp3.8/5, MS3.7/2, Ms1 3.7/2, ms1mx2.8/37, Error ellipse: s-maj=118.0km s-min=22.6km az=131.0, New Britain region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	Warramunga Arr	23.07	228	P	P	08 14 18.6	+0.2
	1.9nm,0.4s,baz=54,slow=10,SNR=24						
ASAR	Alice Springs	25.80	222	P	P	08 14 44.0	-0.2
	0.4nm,0.5s,baz=59,slow=8.7,SNR=7.8						
FITZ	Fitzroy Crossi	29.22	241	P	P	08 15 14.8	0.0
	3.0nm,0.7s,baz=69,slow=8.6,SNR=3.8						
FITZ				LR	LR	08 27 30.2	
	comp=Z,52nm,18.0s,baz=98,slow=38						
TIXI	Tiksi	77.86	353	LR	LR	08 54 04.2	
	comp=Z,115nm,19.9s,baz=210,slow=35						
ILAR	Eielson Array	82.36	22	P	P	08 21 33.5	-1.0
	0.8nm,0.7s,baz=254,slow=5.5,SNR=7.3						
YKA	Yellowknife Ar	95.67	28	P	P	08 22 39.6	+1.1
	0.1nm,0.5s,baz=272,slow=5.1,SNR=5.7						

IDC 06 08:13:39.0±2.5, 15°.77S×174°.57W, h0km, mb3.8/6, mb1 4.2/6, mb1mx3.8/32, mbtmp3.8/6, MS3.6/13, Ms1 3.6/13, ms1mx3.4/50, Error ellipse: s-maj=190.9km s-min=23.1km az=152.0, Tonga Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AFI	Afiamalu	3.28	56	LR	LR	08 15 22.6	
	comp=Z,810nm,20.9s,baz=239,slow=32						
RAR	Rarotonga	15.04	113	LR	LR	08 21 35.3	
	comp=Z,135nm,18.7s,baz=268,slow=32						
PPT2	Papeete2	24.01	98	eLQ	LQ	08 23 32.2	
	675nm,26.2s						
TBI	Tubuai	24.81	112	eLQ	LQ	08 23 54.6	
	571nm,29.0s						
TBI				eLR	LR	08 25 02.8	
	112nm,27.8s						
HNR	Honiara	25.64	281	LR	LR	08 27 32.9	
	comp=Z,238nm,20.4s,baz=119,slow=32						
TAOE	Nuku Hiva Isla	34.29	83	eLR	LR	08 29 23.0	
	126nm,23.4s						
STKA	Stephens Creek	42.87	240	LR	LR	08 37 27.1	
	comp=Z,99nm,18.9s,baz=32,slow=33						
WRA	Warramunga Arr	48.66	257	P	P	08 22 26.1	+0.8
	0.5nm,0.8s,baz=90,slow=7.7,SNR=3.5						
ASAR	Alice Springs	48.92	252	P	P	08 22 26.2	-1.0
	1.4nm,0.8s,baz=86,slow=8.0,SNR=12						
ASAR				LR	LR	08 41 52.0	
	comp=Z,73nm,19.3s,baz=94,slow=35						
VNDA	Vanda	62.89	186	LR	LR	08 46 17.5	
	comp=Z,29nm,21.4s,baz=9.5,slow=31						
JHJ	Hachijo jima 2	65.29	319	LR	LR	08 53 04.5	
	comp=Z,26nm,18.1s,baz=98,slow=36						
MJAR	Matsushiro Arr	68.50	321	LR	LR	08 48 51.6	
	comp=Z,42nm,21.9s,baz=120,slow=31						
JNU	Nakatsue	71.23	314	LR	LR	08 50 49.4	
	comp=Z,51nm,21.0s,baz=126,slow=31						
PETK	Petropavlovsk-	72.65	343	LR	LR	08 53 59.0	
	comp=Z,16nm,20.4s,baz=124,slow=33						
NVAR	Mina Array Bea	75.36	42	P	P	08 25 24.4	-0.4
	1.2nm,1.0s,baz=233,slow=7.4,SNR=4.5						
KSRS	Korea Array	75.64	316	LR	LR	08 56 02.0	
	comp=Z,42nm,18.6s,baz=144,slow=34						
USRK	Ussuriysk Ar.	77.01	324	LR	LR	08 53 27.9	
	comp=Z,79nm,21.3s,baz=135,slow=31						
TXAR	Lajitas Array	81.76	56	P	P	08 26 00.8	+0.6
	0.6nm,1.0s,baz=259,slow=4.7,SNR=5.3						
PDAR	Pinedale Array	83.30	42	P	P	08 26 07.8	-0.3
	1.2nm,1.0s,baz=235,slow=4.3,SNR=6.5						
YKA	Yellowknife Ar	90.89	24	P	P	08 26 44.3	+0.1
	0.7nm,1.1s,baz=234,slow=4.9,SNR=4.0						
SONM	Songino Array	94.37	318	LR	LR	09 04 08.0	
	comp=Z,32nm,22.0s,baz=14,slow=32						

IDC 06 08:27:58.7±2.9, 53°.58N×91°.11E, h0km, mb1 3.4/4, mb1mx3.2/57, mbtmp3.4/4, ML2.9/4, Error ellipse: s-maj=26.0km s-min=19.3km az=55.0, Southwestern Siberia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
I46RU	ZALESOVO INFRA	3.75	278	i		08 50 50.0	
	baz=91,slow=332,SNR=1.9						
ZALV	Zalesovo Beam	3.75	278	Pn	Pn	08 28 59.7	+1.9
	1.9nm,0.3s,baz=98,slow=14,SNR=19						
ZALV				Sn	Sn	08 29 44.7	+2.2
	1.1nm,0.3s,baz=104,slow=18,SNR=5.4						
ZALV				Lg	Lg	08 29 55.9	
	3.1nm,0.3s,baz=97,slow=24,SNR=7.5						
TLY	Talaya	7.86	99	Lg	Lg	08 32 03.2	
	0.0nm,0.3s,baz=26,slow=18,SNR=6.3						
KURBB	Kurchatov Arra	8.29	254	Pn	Pn	08 29 59.1	-1.0
	0.1nm,0.3s,baz=66,slow=14,SNR=16						
KURBB				Sn	Sn	08 31 32.2	-2.1
	0.1nm,0.3s,baz=66,slow=25,SNR=7.0						
KURBB				Lg	Lg	08 32 21.6	
	0.1nm,0.3s,baz=70,slow=31,SNR=6.3						
MKAR	Makanchi Array	8.84	223	Pn	Pn	08 30 08.3	+0.6
	0.2nm,0.3s,baz=40,slow=13,SNR=15						
MKAR				Sn	Sn	08 31 48.0	+0.1
	0.1nm,0.3s,baz=39,slow=30,SNR=7.6						
MKAR				Lg	Lg	08 32 33.1	
	0.1nm,0.3s,baz=50,slow=25,SNR=3.6						
SONM	Songino Array	11.26	115	Lg	Lg	08 33 48.5	
	baz=306,slow=24,SNR=3.7						
BVAR	Borovoye Array	12.40	276	Pn	Pn	08 30 54.8	-1.5
	0.1nm,0.3s,baz=115,slow=6.5,SNR=2.3						
BVAR				Sn	Sn	08 33 08.9	-6.2
	0.2nm,0.3s,baz=77,slow=22,SNR=3.6						
BVAR				Lg	Lg	08 34 27.4	
	0.6nm,0.3s,baz=30,slow=11,SNR=8.7						

IDC 06 08:32:35.2±0.9, 5°.51N×126°.89E, h0km, mb3.9/7, mb1 4.0/7, mb1mx3.7/53, mbtmp3.9/7, Error ellipse: s-maj=73.5km s-min=17.8km az=71.0

ISC 06 08:32:45.9±0.9, 5°.4N±0°.2×126°.8E±0°.5, h84km, n7, σ1s.42/7, mb3.8/7, Mindanao

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	Warramunga Arr	26.29	164	P	P	08 38 11.2	-2.5
	0.6nm,0.6s,baz=342,slow=10,SNR=16						
ASAR	Alice Springs	29.75	167	P	P	08 38 44.9	+0.4
	0.3nm,0.8s,baz=347,slow=6.4,SNR=3.2						
STKA	Stephens Creek	39.70	160	P	P	08 40 10.7	+0.7
	0.6nm,0.4s,baz=345,slow=16,SNR=3.6						
MKAR	Makanchi Array	56.21	325	P	P	08 42 17.4	+0.1
	1.8nm,0.4s,baz=118,slow=7.6,SNR=18						
ZALV	Zalesovo Beam	59.11	333	P	P	08 42 36.5	-0.9
	1.0nm,0.3s,baz=131,slow=7.9,SNR=3.6						
ILAR	Eielson Array	83.53	25	P	P	08 45 04.5	+0.1
	0.4nm,0.5s,baz=236,slow=4.3,SNR=6.2						
ARCES	ARCESS Array B	88.88	340	P	P	08 45 31.1	+0.6
	1.3nm,0.7s,baz=87,slow=6.2,SNR=7.6						

IDC 06 08:35:24.4±1.0, 7°.04N×127°.36E, h0km, mb3.9/6, mb1 4.0/6, mb1mx3.6/51, mbtmp3.9/6, MS3.4/1, Ms1 3.4/1, ms1mx2.4/47, Error ellipse: s-maj=28.0km s-min=18.6km az=62.0

ISCJB 06 08:35:30.2±0.8, 6°.95N±0°.07×127°.13E±0°.08, h60km, mb3.8/6, MS3.4/1, Error ellipse: s-maj=12.6km s-min=8.6km az=136.9

MAN 06 08:35:33, 7°.29N×126°.75E, h5km, mb4.4, ML3.2, MS3.1

ISC 06 08:35:31.8±0.9, 6°.98N±0°.08×127°.05E±0°.10, h60km, n12, σ1s.57/13, mb3.8/6, 1C-1D, Philippine Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MATI	Mati	0.78	268	eP	Pn	08 35 45.4	-1.7
MATI				eS	Sn	08 35 58.6	+0.3
BIPH	Bislig	1.38	330⇓	iP	Pn	08 35 53.3	-1.5
BIPH				i S	Sn	08 36 13.1	+0.9
DAV	Davao City (W)	1.46	274	Pn	Pn	08 35 57.8	+1.9
	81nm,0.3s,baz=74,slow=16,SNR=3.7						
DAV				Sn	Sn	08 36 20.1	+6.0
	114nm,0.3s,baz=242,slow=21,SNR=3.9						
DMPH	Davao City--Mi	1.53	274⇑	eP	Pn	08 36 04.5	+7.6
DMPH				eS	Sn	08 36 29.2	+13
BUKP	Musuan	2.16	295	eP	Pn	08 36 06.8	+1.3
BUKP				eS	Sn	08 36 28.2	-3.1
WRA	Warramunga Arr	27.70	165	P	P	08 41 15.6	+1.1
	1.0nm,0.7s,baz=343,slow=10,SNR=5.4						
ASAR	Alice Springs	31.18	168	P	P	08 41 44.7	-0.7
	0.2nm,0.3s,baz=342,slow=7.2,SNR=5.4						
USRK	Ussuriysk Ar.	37.33	6	P	P	08 42 39.4	+1.2
	1.3nm,0.4s,baz=185,slow=8.7,SNR=6.4						
STKA	Stephens Creek	41.06	161	P	P	08 43 08.8	-0.7
	1.2nm,0.7s,baz=337,slow=7.7,SNR=3.9						
MKAR	Makanchi Array	55.11	324	P	P	08 44 58.2	+0.3
	0.4nm,0.4s,baz=110,slow=7.2,SNR=6.0						
ZALV	Zalesovo Beam	57.87	332	LR	LR	09 11 02.4	
	comp=Z,33nm,21.7s,baz=69,slow=37						
ARCES	ARCESS Array B	87.53	340	P	P	08 48 12.8	0.0
	1.6nm,0.9s,baz=87,slow=7.3,SNR=3.4						

MEX 06 08:42:45.2±0.3, 16°.18N×98°.37W, h2km±12km, MD3.7, Near coast of Guerrero

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PNIG	Pinotepa	0.32	48	eP	Pg	08 42 51.1	-0.3
PNIG				eS	Sg	08 42 55.7	+0.2
VHO	Vista Hermosa	1.81	60	eP	Pn	08 43 13.9	-3.6
VHO				eS	Sn	08 43 37.9	-3.1
CAIG	El Cayaco	2.01	296	eP	Pn	08 43 16.7	-3.4

ISCJB 06 08:42:56.6±1.8, 9°.0S±0°.3×109°.8W±0°.6, h10km, mb3.7/8, MS4.1/15, Error ellipse: s-maj=92.7km s-min=21.1km az=158.6

IDC 06 08:42:56.6±1.2, 8°.99S×109°.89W, h0km, mb3.8/8, mb1 4.1/8, mb1mx3.8/38, mbtmp3.8/8, MS4.1/15, Ms1 4.1/15, ms1mx4.0/19, Error ellipse: s-maj=54.6km s-min=28.7km az=79.0

GCMT 06 08:42:56.0±0.3, 9°.01S×109°.29W, h19km±1km, MW4.9/91, Moment Tensor Solution. s25,c26; s91,c118; Duration: 0 Moment tensor: Scale 10^{16}Nm; M_{rr}-0.37±.11; $M_{\theta\theta}$0.96±.10; $M_{\phi\phi}$-0.59±.11; $M_{r\theta}$0.72±.21; $M_{\theta\phi}$2.67±.10; $M_{\phi r}$0.22±.21; Best double couple: $M_0$2.86800×10^{16} NP1:ϕ_s98.00000°,δ87.00000°,λ13.00000°. NP2: ϕ_s8.00000°,δ77.00000°,λ176.00000°. Principal axes: T 3.1110, Plg12.0000°, Azm324.0000°; N -0.4870, Plg77.0000°, Azm113.0000°; P -2.6240, Plg7.0000°, Azm232.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.

ISC 06 08:42:58.1±1.2, 9°.0S±0°.2×109°.9W±0°.4, h10km, n27, σ0s.72/10, mb3.8/8, MS4.1/15, Central East Pacific Rise

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RKT	Rikitea	27.83	237	eT	T	09 18 05.5	
	2.2nm,0.3s						
CMIG	Matias Romero	29.87	30	LR	LR	08 57 07.0	
	comp=Z,180nm,18.9s,baz=154,slow=28						
LPIG	La Paz	32.91	359	LR	LR	08 59 23.7	
	comp=Z,384nm,19.8s,baz=196,slow=30						
TXAR	Lajitas Array	38.58	9	P	P	08 50 21.3	-0.2
	0.4nm,0.9s,baz=175,slow=10,SNR=3.2						
TXAR				LR	LR	09 03 13.7	
	comp=Z,136nm,18.8s,baz=0.0,slow=32						
PPT	Papeete	39.48	253	LR	LR	09 02 37.6	
	comp=Z,188nm,20.7s,baz=82,slow=30						
LPAZ	La Paz	41.32	104	LR	LR	09 03 32.0	
	comp=Z,242nm,21.3s,baz=265,slow=30						
PLCA	Paso Flores	47.03	139	P	P	08 51 29.9	0.0
	2.2nm,1.0s,baz=325,slow=5.7,SNR=2.9						
PLCA				LR	LR	09 05 50.5	
	comp=Z,499nm,21.4s,baz=332,slow=29						
NVAR	Mina Array Bea	47.84	351	P	P	08 51 37.2	+0.9
	0.7nm,0.7s,baz=180,slow=9.5,SNR=5.2						
RAR	Rarotonga	49.47	250	LR	LR	09 08 03.4	
	comp=Z,87nm,19.5s,baz=88,slow=30						
PDAR	Pinedale Array	51.52	0	P	P	08 52 03.4	-1.0
	0.7nm,1.0s,baz=159,slow=7.7,SNR=3.4						
PDAR				LR	LR	09 11 10.2	
	comp=Z,317nm,18.1s,baz=186,slow=33						
CPUP	Villa Florida	52.59	116	LR	LR	09 10 23.8	
	comp=Z,200nm,19.5s,baz=283,slow=31						
ULM	Lac du Bonnet	60.26	10	P	P	08 53 06.7	+0.1
	3.0nm,1.0s,baz=228,slow=13,SNR=3.9						
BDFB	Brasilia	60.64	103	LR	LR	09 16 53.0	
	comp=Z,62nm,18.9s,baz=268,slow=34						
URZ	Urewera	71.14	233	LR	LR	09 17 22.1	
	comp=Z,200nm,20.9s,baz=106,slow=29						
YKA	Yellowknife Ar	71.37	358	P	P	08 54 18.4	+0.5
	0.5nm,0.8s,baz=169,slow=5.9,SNR=9.3						
SCHQ	Schefferville	73.09	24	LR	LR	09 25 32.8	
	comp=Z,120nm,19.6s,baz=72,slow=35						
ILAR	Eielson Array	78.60	345	P	P	08 54 59.0	-0.7
	0.7nm,1.0s,baz=151,slow=6.4,SNR=5.2						
ILAR				LR	LR	09 21 59.0	
	comp=Z,104nm,20.2s,baz=136,slow=30						
VNDA	Vanda	80.89	193	LR	LR	09 23 40.5	
	comp=Z,76nm,18.6s,baz=55,slow=30						
RES	Resolute Bay	84.05	4	P	P	08 55 28.8	+0.4
	1.5nm,1.0s,baz=186,slow=7.3,SNR=5.3						
H11S2	WAKE ISLAND Hy	86.64	289	T	T	10 31 57.5	
	baz=101,slow=75,SNR=309						
H11S1	WAKE ISLAND Hy	86.65	289	T	T	10 31 55.5	
	baz=101,slow=75,SNR=206						
H11S3	WAKE ISLAND Hy	86.66	289	T	T	10 32 03.1	
	baz=101,slow=75,SNR=295						
H11N3	WAKE ISLAND Hy	86.67	290	T	T	10 32 02.0	
	baz=101,slow=74,SNR=21						
H11N2	WAKE ISLAND Hy	86.69	290	T	T	10 31 59.6	
	baz=101,slow=74,SNR=27						
H11N1	WAKE ISLAND Hy	86.69	290	T	T	10 31 58.4	
	baz=101,slow=74,SNR=21						
PETK	Petropavlovsk-	98.58	322	LR	LR	09 32 06.8	
	comp=Z,136nm,21.4s,baz=88,slow=30						
CMAR	Chiang Mai Arr	150.50	292	PKPbc	PKPbc	09 02 51.8	+0.6
	0.8nm,0.3s,baz=70,slow=1.1,SNR=4.2						
CMAR				PKPab	PKPab	09 02 56.9	-0.8
	1.1nm,0.4s,baz=58,slow=0.4,SNR=5.5						

IDC 06 08:48:55.9±5.4, 15°.00N×97°.54W, h0km, mb3.5/4, mb1 3.8/7, mb1mx3.6/47, mbtmp3.5/7, ML3.5/3, MS3.2/1, Ms1 3.2/1, ms1mx2.7/19, Error ellipse: s-maj=93.8km s-min=29.6km az=175.0

NEIC 06 08:49:00.7, 15°.27N×97°.77W, h16km, mb4.2/7, MD4.1(MEX), After MEX.

MEX 06 08:49:04.4±0.7, 15°.58N×97°.91W, h18km, MD4.1

ISC 06 08:49:02.5±1.3, 15°.60N±0°.09×97°.92W±0°.06, h14km, n103, σ1s.30/99, mb3.8/4, Near coast of Oaxaca

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PNIG	Pinotepa	0.81	346	i P	Pg	08 49 18.3	-0.1
PNIG				eS	Sb	08 49 32.1	+2.7
PNIG	Pinotepa	0.81	346	i P	Pg	08 49 18.3	-0.1
PNIG				eS	Sg	08 49 27.9	-1.2
HUIG	Huatulco	1.75	84	eP	Pn	08 49 25.6	-6.9
HUIG				eS	Sn	08 49 45.6	-9.1
HUIG	Huatulco	1.75	84	eP	Pn	08 49 25.6	-6.9
HUIG				eS	Sn	08 49 45.8	-8.9
VHO	Vista Hermosa	1.86	38	eP	Pn	08 49 32.4	-1.7
VHO				eS	Sn	08 49 56.0	-1.5
VHO	Vista Hermosa	1.86	38	eP	Pn	08 49 32.4	-1.7
VHO				eS	Sn	08 49 54.0	-3.5
TLIG	Tlapa	2.05	342	eP	Pn	08 49 35.5	-1.3
TLIG				i S	Sn	08 49 58.9	-3.4
CAIG	El Cayaco	2.67	303	eP	Pn	08 49 43.8	-1.5
CAIG				eS	Sn	08 50 16.6	-0.8
CAIG	El Cayaco	2.67	303	eP	Pn	08 49 43.6	-1.6
CAIG				i S	Sn	08 50 14.3	-3.2
CMIG	Matias Romero	3.27	63	Pn	Pn	08 49 48.3	-5.2
	11nm,0.3s,baz=233,slow=12,SNR=210						
CMIG				Sn	Sn	08 50 30.2	-2.0
	8.9nm,0.3s,baz=38,slow=16,SNR=2.9						
TEIG	Tepich	10.27	62	Pn	Pn	08 51 23.8	-5.8
	0.3nm,0.3s,baz=88,slow=24,SNR=11						
TEIG	Tepich	10.27	62	ePn	Pn	08 51 25.2	-4.3
	0.8nm,0.3s						
832A	Faith Ranch, C	12.77	352	P	Pn	08 52 07.2	+3.5
	baz=171						
733A	Divot King Ran	13.12	355	P	Pn	08 52 11.9	+3.3
	baz=174						
533A	Kerrville	14.44	356	P	Pn	08 52 28.5	+1.8
	baz=175						
537A	Green Hill Far	14.49	6	P	Pn	08 52 29.1	+1.9
	baz=186						
TXAR	Lajitas Array	14.66	340	Pn	Pn	08 52 33.8	+4.0
	0.0nm,0.3s,baz=159,slow=14,SNR=6.6						
JCT	Junction City	14.91	354	ePn	Pn	08 52 35.2	+2.1
	5.2nm,0.8s						
540A	Vidor	14.99	13	P	Pn	08 52 36.3	+2.3
	baz=194						
433A	Art	15.12	356	P	Pn	08 52 36.6	+0.7
	baz=175						
434A	Burnet	15.15	359	P	Pn	08 52 36.8	+0.6
	baz=178						
334A	Lometa	15.66	359	P	Pn	08 52 44.2	+1.2
	baz=178						
333A	Richland Sprin	15.69	357	P	Pn	08 52 44.1	+0.9
	baz=176						
234A	Clairette	16.33	359	P	Pn	08 52 53.3	+1.7
	baz=179,SNR=6.0						
233A	Rising Star	16.37	357	P	Pn	08 52 53.6	+1.6
	baz=176,SNR=9.9						
134A	White-Moore Ra	16.90	360	P	Pn	08 53 00.4	+1.7
	baz=179						
133A	Hamilton Ranch	16.96	357	P	Pn	08 53 00.6	+1.1
	baz=176,SNR=5.3						
ABTX	Abilene, Hawle	17.02	355	P	Pn	08 53 00.8	+0.5
	baz=174,SNR=5.4						
ABTX	Abilene, Hawle	17.02	355	ePn	Pn	08 53 01.8	+1.5
	24nm,1.1s						
Z33A	Whitaker Ranch	17.63	358	P	Pn	08 53 08.0	+0.1
	baz=177						
Z36A	Blue Ridge	17.65	4	P	Pn	08 53 08.5	+0.5
	baz=184						
Y35A	Marietta	18.25	2	P	Pn	08 53 16.1	+0.7
	baz=182						
Y33A	Hilltop Ranch,	18.34	358	P	Pn	08 53 17.0	+0.4
	baz=177						
X35A	Drake	18.74	2	P	P	08 53 22.0	+1.0
	baz=182						
X32A	Elmer	18.78	356	P	P	08 53 22.1	+0.6
	baz=176						
MSTX	Muleshoe	18.81	347	P	P	08 53 23.7	+1.8
	baz=165,SNR=7.2						
MSTX	Muleshoe	18.81	347	eP	P	08 53 23.6	+1.8
	11nm,1.0s						
X33A	Lawton	18.87	359	P	P	08 53 23.1	+0.7
	baz=178,SNR=7.1						
X34A	Smith Ranch, M	18.92	0	P	P	08 53 23.4	+0.4
	baz=180						
X36A	Centrahoma	18.94	4	P	P	08 53 23.1	-0.1
	baz=184						
X37A	Clayton	19.05	6	P	P	08 53 24.4	+0.1
	baz=187						
WMOK	Wichita Mounta	19.07	358	eP	P	08 53 25.8	+1.1
	13nm,1.3s						
X39A	Fountain Ranch	19.14	10	P	P	08 53 25.7	+0.3
	baz=191						
X38A	Whitesboro	19.19	8	P	P	08 53 26.5	+0.5
	baz=188						
MIAR	Mount Ida	19.27	11	P	P	08 53 27.7	+0.9
	baz=192						
W33A	Caddo, Fort Co	19.48	359	P	P	08 53 30.0	+0.9
	baz=178						
W32A	Sentinel	19.48	357	P	P	08 53 30.0	+0.9
	baz=176						
W35A	Tecumseh	19.50	3	P	P	08 53 31.0	+1.7
	baz=182						
AMTX	Amarillo	19.50	351	eP	P	08 53 31.2	+1.8
	26nm,0.8s						
W36A	Wetumka	19.52	4	P	P	08 53 30.6	+1.1
	baz=184						
W34A	Bridge Creek,	19.55	0	P	P	08 53 30.9	+0.9
	baz=180						
W37B	Quinton	19.59	6	P	P	08 53 31.3	+1.1
	baz=187						
V32A	Arapaho	20.06	357	P	P	08 53 37.0	+1.4
	baz=176						
V35A	Meyer Ranch, C	20.10	3	P	P	08 53 37.4	+1.5
	baz=183						
V34A	Guthrie	20.16	1	P	P	08 53 37.8	+1.3
	baz=181						
V34A	Guthrie	20.16	1	eP	P	08 53 37.4	+0.9
	21nm,1.2s						
V36A	Jenks	20.18	5	P	P	08 53 38.3	+1.6
	baz=185						
TUL1	Leonard	20.32	5	P	P	08 53 39.3	+1.0
	baz=185						
TUL1	Leonard	20.32	5	eP	P	08 53 38.9	+0.6
	39nm,1.5s						
V37A	Hulbert	20.35	6	P	P	08 53 40.9	+2.3
	baz=187,SNR=7.0						
V38A	Canehill	20.42	8	P	P	08 53 40.6	+1.2
	baz=189						
V39A	Pettigrew	20.52	10	P	P	08 53 42.9	+2.4
	baz=191,SNR=6.8						
V40A	Witts Springs	20.63	12	P	P	08 53 43.0	+1.3
	baz=193						
U32A	Winter Ranch,	20.72	358	P	P	08 53 43.5	+0.9
	baz=177						
ANMO	Albuquerque	20.74	340	P	Pn	08 53 47.0	+1.6
	1.3nm,0.8s,baz=148,slow=16,SNR=5.0						
ANMO				LR	LR	09 00 53.6	
	comp=Z,72nm,21.9s,baz=168,slow=34						
U33A	Lingo Farm, Me	20.75	360	P	P	08 53 44.1	+1.2
	baz=179						
U34A	Anderson Ranch	20.76	1	P	P	08 53 43.8	+0.8
	baz=181						
U37A	Salina	20.87	6	P	P	08 53 46.2	+1.9
	baz=187						
U39A	Green Forest	21.07	10	P	P	08 53 47.5	+1.0
	baz=191						
U40A	Yellville	21.16	11	P	P	08 53 48.7	+1.3
	baz=193,SNR=5.9						
T35A	Sooner Cattle	21.27	3	P	P	08 53 49.4	+0.9
	baz=183						
T34A	McClaskey Farm	21.35	2	P	P	08 53 49.4	0.0
	baz=182						
T33A	Patterson Ranc	21.40	359	P	P	08 53 50.3	+0.4
	baz=179						
T36A	Boggs Farm, Ca	21.45	4	P	P	08 53 52.1	+1.6
	baz=185,SNR=7.0						
T32A	Huddler Ranch,	21.51	358	P	P	08 53 51.9	+0.7
	baz=177,SNR=5.3						
T38A	Diamond	21.59	8	P	P	08 53 53.2	+1.2
	baz=189,SNR=5.0						
T37A	Cheneyville 18	21.60	7	P	P	08 53 52.4	+0.3
	baz=187						
T39A	Clever	21.72	10	P	P	08 53 54.7	+1.4
	baz=191						
T40A	Mansfield	22.00	12	P	P	08 53 57.8	+1.5
	baz=193,SNR=8.2						
S32A	Newby Ranch, P	22.03	358	P	P	08 53 57.5	+0.7
	baz=177						
S36A	Lake Cedric, C	22.14	5	P	P	08 53 59.4	+1.6
	baz=186,SNR=7.1						
T25A	Trinidad	22.21	346	P	P	08 53 59.5	+0.6
	baz=163						
S38A	Stockton	22.23	8	P	P	08 53 59.5	+0.7
	baz=190						
S37A	Fort Scott	22.24	6	P	P	08 54 00.3	+1.3
	baz=187						
S39A	Bolivar	22.38	10	P	P	08 54 00.8	+0.3
	baz=191						
S40A	Lebanon	22.43	11	P	P	08 54 01.5	+0.5
	baz=193						
R33A	Olander Ranch,	22.62	360	P	P	08 54 03.3	+0.2
	baz=180						
R34A	Isabella, Hill	22.62	1	P	P	08 54 03.6	+0.5
	baz=181						
R32A	Long Quarter,	22.75	358	P	P	08 54 04.7	+0.3
	baz=178						
R38A	Fenwick Farm,	22.78	8	P	P	08 54 05.5	+0.9
	baz=190						
R39A	Chumby, Stover	23.03	10	P	P	08 54 07.4	+0.1
	baz=192						
R40A	Maddies Statio	23.15	11	P	P	08 54 07.9	-0.6
	baz=193						
Q35A	Mercer Eighty,	23.23	4	P	P	08 54 08.8	-0.5
	baz=184						
Q32A	Meitler Ranch,	23.31	359	P	P	08 54 10.7	+0.5
	baz=178						
Q33A	Connelly Farm,	23.31	0	P	P	08 54 10.3	+0.2
	baz=180						
TKL	Tuckaleechee C	23.65	30	P	P	08 54 13.6	0.0
	3.0nm,0.7s,baz=214,slow=16,SNR=4.2						
P32A	Huiting Farm,	23.94	359	P	P	08 54 16.7	+0.4
	baz=178						

P38A	**Dawn**	**24.24**	**8**	P	**P**	**08 54 19.7**	**+0.6**
	baz=190						
WCI	**Wyandotte Cave**	**24.77**	**22**	*e*P	**P**	**08 54 23.8**	**-0.1**
	74nm,0.9s						
O40A	**La Belle**	**25.00**	**11**	P	**P**	**08 54 26.7**	**+0.8**
	baz=193						
N38A	**Joes South For**	**25.43**	**8**	P	**P**	**08 54 31.3**	**+1.5**
	baz=190						
YKA	**Yellowknife Ar**	**48.30**	**350**	P	**P**	**08 57 43.0**	**-0.1**
	0.3nm,1.0s,baz=151,slow=7.3,SNR=3.6						
ILAR	**Eielson Array**	**59.16**	**338**	P	**P**	**08 59 02.7**	**0.0**
	0.5nm,0.8s,baz=156,slow=7.3,SNR=4.4						

*ISK **06** 08:52:59.3, 37.°22N×28.°14E, h5km, MD2.7*
*DDA **06** 08:53:00.6, 37.°23N×28.°17E, h7km, Md2.8*
*CSEM **06** 08:53:00.6±0.3, 37.°23N×28.°18E, h2km, MD2.8, Error ellipse: s-maj=9.4km s-min=4.9km az=23.0*
ISC 06 08:52:59.5±1.2**, 37.°20N**±0.°06×**28.°06E**±0.°04**, h9**km±10km**, n16, σ1.ˢ38**/28**, Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
YER	**Yerkesik**	**0.19**	**109**	*e*PG	**Pg**	**08 53 02.7**	**-0.8**
YER	**Yerkesik**	**0.19**	**109**	*e*Pg	**Pg**	**08 53 02.7**	**-0.8**
AYDN	**Tasoluk**	**0.48**	**343**	*i* P	**Pb**	**08 53 10.1**	**-0.1**
AYDN				*i* S	**Sb**	**08 53 17.2**	**-0.2**
AYDN	**Tasoluk**	**0.48**	**343**	P	**Pb**	**08 53 10.1**	**-0.1**
AYDN				S	**Sb**	**08 53 17.2**	**-0.2**
BDRM	**Kayabasi**	**0.51**	**255**	*i* P	**Pn**	**08 53 12.4**	**-0.5**
BDRM				*i* S	**Sn**	**08 53 22.2**	**+0.5**
BDRM	**Kayabasi**	**0.51**	**255**	P	**Pn**	**08 53 12.4**	**-0.5**
BDRM				S	**Sn**	**08 53 22.2**	**+0.5**
TURN	**Turunc**	**0.55**	**126**	*i* P	**Pg**	**08 53 08.5**	**-1.6**
TURN				*i* S	**Sg**	**08 53 16.7**	**-0.5**
TURN	**Turunc**	**0.55**	**126**	P	**Pg**	**08 53 08.5**	**-1.6**
TURN				S	**Sg**	**08 53 16.7**	**-0.5**
BODT	**Bodrum**	**0.61**	**257**	*e*PG	**Pn**	**08 53 13.7**	**-0.6**
BODT				*e*SG	**Sn**	**08 53 24.2**	**-0.1**
BODT	**Bodrum**	**0.61**	**257**	*e*Pg	**Pn**	**08 53 13.7**	**-0.6**
BODT				*e*Sg	**Sn**	**08 53 24.2**	**-0.1**
FETY	**Fethiye**	**1.00**	**124**	*e*PG	**Pg**	**08 53 18.8**	**+0.2**
FETY				*e*SG	**Sn**	**08 53 32.9**	**-0.9**
FETY	**Fethiye**	**1.00**	**124**	*e*Pg	**Pg**	**08 53 18.8**	**+0.2**
FETY				*e*Sg	**Sn**	**08 53 32.9**	**-0.9**
GOLH	**Golhisar**	**1.20**	**88**	*i* P	**Pn**	**08 53 21.7**	**-0.8**
GOLH				*i* S	**Sg**	**08 53 41.8**	**+3.6**
GOLH	**Golhisar**	**1.20**	**88**	P	**Pn**	**08 53 21.7**	**-0.8**
AKAS	**Kas**	**1.57**	**127**	*i* P	**Pg**	**08 53 30.3**	**+0.6**
AKAS				*i* S	**Sg**	**08 53 54.6**	**+4.5**
AKAS	**Kas**	**1.57**	**127**	P	**Pg**	**08 53 30.3**	**+0.6**

JMA 06 08:56:17.9±0.1**, 39.°47N**×**138.°68E, h21**km±2km**, M2.9, Eastern Sea of Japan**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JTB	**Tobi-shima**	**0.73**	**112**	P	Pb	08 56 31.7	-0.2
JTB				S	Sb	08 56 41.5	0.0
JOG2	**Oga 2**	**0.96**	**62**	P	Pb	08 56 35.7	-0.2
JOG2				S	Sn	08 56 49.0	-0.3
JYW	**Yuwa**	**1.19**	**86**	S	Sn	08 56 55.4	+0.7
JYA	**Atsumi**	**1.19**	**137**	P	Pn	08 56 38.9	-0.4
JYA				*e*S	Sb	08 56 54.3	-0.4
JYK	**Kaneyama**	**1.42**	**112**	P	Pn	08 56 42.0	-0.4
JYK				*e*S	Sn	08 57 00.4	0.0
JSD	**Sado**	**1.47**	**193**	P	Pn	08 56 43.4	+0.3
JSD				*e*S	Sb	08 57 02.3	-0.4
JIW	**Iwasaki**	**1.52**	**42**	S	Sn	08 57 02.7	-0.2
JRG	**Rokugo**	**1.52**	**92**	S	Sn	08 57 02.9	0.0
JAH	**Hinai**	**1.67**	**64**	S	Sn	08 57 07.4	+0.8
MAT	**Matsushiro**	**2.95**	**187**	P	Pn	08 57 04.9	+1.4
MAT				*e*S	Sn	08 57 38.6	+0.4

IDC 06 09:02:22.1±12.0**, 18.°92S**×**171.°79W, h0**km**, mb3.6**/3**, mb1 3.9**/3**, mb1mx3.5**/35**, mbtmp3.6**/3**, Error ellipse: s-maj=546.9km s-min=38.3km az=141.0, Tonga Islands region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ASAR	**Alice Springs**	**50.58**	**255**	P	P	09 11 22.9	-0.1
	0.3nm,0.5s,baz=100,slow=7.1,SNR=4.9						
WRA	**Warramunga Arr**	**50.63**	**259**	P	P	09 11 23.3	-0.1
	0.3nm,0.3s,baz=97,slow=7.8,SNR=3.4						
ILAR	**Eielson Array**	**85.59**	**10**	P	P	09 15 01.9	0.0
	0.4nm,0.9s,baz=209,slow=6.5,SNR=3.9						

*ISCJB **06** 09:26:44.7±2.1, 36.°56N±0.°07×142.°0E±0.°1, h13km±18km, mb3.2/2, Error ellipse: s-maj=14.0km s-min=10.9km az=169.2*
*IDC **06** 09:26:44.3±3.6, 36.°59N×141.°97E, h0km, mb3.5/2, mb1 3.4/4, mb1mx3.2/36, mbtmp3.5/4, ML2.8/2, Error ellipse: s-maj=55.3km s-min=36.4km az=96.0*
*JMA **06** 09:26:46.4±0.2, 36.°58N×141.°90E, h24km±4km, M3.1*
ISC 06 09:26:43.5±2.4**, 36.°53N**±0.°06×**142.°0E**±0.°1**, h2**km±14km**, n11, σ1.ˢ61**/17**, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**1.10**	**301**	S	**Sb**	**09 27 19.4**	**-0.8**
JHO	**Hitachi**	**1.13**	**274**	P	**Pb**	**09 27 05.7**	**-0.1**
JHO				S	**Sb**	**09 27 19.6**	**-1.4**
JFK	**Kawauchi**	**1.21**	**314**	P	**Pg**	**09 27 06.6**	**-0.2**
JFK				*e*S	**Sb**	**09 27 22.1**	**-1.3**
JMM	**Marumori**	**1.63**	**325**	P	**Pn**	**09 27 12.9**	**-0.4**
JFT	**Otama**	**1.64**	**307**	P	**Pn**	**09 27 13.8**	**+0.4**
JFT				S	**Sn**	**09 27 33.4**	**-1.7**
JOU	**Okura**	**2.11**	**331**	P	**Pn**	**09 27 20.8**	**+0.9**
MJAR	**Matsushiro Arr**	**3.03**	**271**	Pn	**Pn**	**09 27 33.5**	**+0.9**
	2.3nm,0.3s,baz=86,slow=10,SNR=29						
MJAR				Sn	**Sn**	**09 28 10.8**	**+1.3**
	1.1nm,0.3s,baz=88,slow=17,SNR=8.1						
MAT	**Matsushiro**	**3.03**	**271**	P	**Pn**	**09 27 33.8**	**+1.2**
MAT				S	**Sn**	**09 28 10.8**	**+1.3**
JHJ	**Hachijo jima 2**	**3.85**	**208**	Pn	**Pn**	**09 27 45.1**	**+1.2**
	1.1nm,0.3s,baz=307,slow=20,SNR=3.4						
JHJ				Sn	**Sn**	**09 28 25.9**	**-3.7**
	6.4nm,0.3s,baz=88,slow=22,SNR=4.1						
SONM	**Songino Array**	**28.44**	**305**	P	**P**	**09 32 39.1**	**-0.7**
	0.5nm,0.8s,baz=90,slow=5.8,SNR=4.1						
MKAR	**Makanchi Array**	**44.77**	**303**	P	**P**	**09 35 00.4**	**+1.9**
	0.2nm,0.5s,baz=97,slow=8.1,SNR=2.9						

MAN 06 09:31:28, 10.°85N×**122.°39E, h8**km**, mb4.1, ML2.9, MS2.6, Panay**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GUIM	**Jordan**	**0.29**	**138**	*e*P	Pb	09 31 34.9	-0.6
GUIM				*e*S	Sb	09 31 39.6	-0.9
RCP	**Roxas**	**0.79**	**26**	*e*P	Pb	09 31 43.9	-0.2
RCP				*i* S	Sn	09 31 56.6	-0.9
CUYO	**Cuyo Island**	**1.35**	**270**	*e*P	Pn	09 31 52.8	-0.4
CUYO				*e*S	Sg	09 32 12.2	+0.7
OTRP	**Odiongan**	**1.55**	**347**	*e*P	Pb	09 31 56.6	-0.4
LLP	**Lapu-Lapu**	**1.64**	**109**	*e*P	Pn	09 31 57.2	+0.2
LLP				*e*S	Sg	09 32 22.5	+1.8
BUSP	**Coron**	**2.44**	**298**	*e*P	Pn	09 32 08.1	0.0

*MOS **06** 09:45:05.2±2.5, 47.°77N×156.°51E, h17km, mb4.2/1, Error ellipse: s-maj=97.4km s-min=8.6km az=81.5*
*SKHL **06** 09:45:06.4±5.3, 47.°84N×155.°06E, h15km±3km, mb4.1/1*
KRSC 06 09:45:05.3±1.9**, 47.°77N**×**156.°51E, h17**km±14km**, ML4.0, East of Kuril Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SKR	**Severo-Kuril's**	**2.93**	**355**	*e*P	Pn	09 45 53.1	+2.1
SKR				*e*S	Sn	09 46 28.1	+2.4
SKR	**Severo-Kuril's**	**2.93**	**355**	*e*P	Pn	09 45 52.0	+1.0
SKR				AMB	AMB	09 45 52.5	
	40nm,0.5s						
SKR				*e*S	Sn	09 46 26.2	+0.5
SKR				A	A	09 46 30.0	
	80nm,0.5s						
SKR				A	A	09 46 30.0	
	50nm,0.5s						
SKR	**Severo-Kuril's**	**2.93**	**355**	*e*PN	Pn	09 45 52.0	+1.0
SKR				*e*S	Sn	09 46 26.2	+0.5
SKR				pmax	pmax		
	comp=Z,40nm,0.5s						
SKR				smax	smax		
	comp=N,80nm,0.5s						
SKR				smax	smax		
	comp=E,50nm,0.5s						
ASAK	**Asacha**	**4.70**	**10**	*e*P	Pn	09 46 19.8	+4.3
ASAK	**Asacha**	**4.70**	**10**	PN	Pn	09 46 19.8	+4.3
MTVR	**Mutnovka**	**4.84**	**12**	*e*S	Sn	09 47 18.7	+5.6
RUS	**Russkaya**	**4.84**	**15**	*e*P	Pn	09 46 21.8	+4.5
RUS				*e*S	Sn	09 47 17.6	+4.7
RUS	**Russkaya**	**4.84**	**15**	*e*P	Pn	09 46 21.8	+4.5
RUS	**Russkaya**	**4.84**	**15**	PN	Pn	09 46 21.8	+4.5
RUS				S	Sn	09 47 17.6	+4.7
UGLR	**Uglovaya**	**5.64**	**14**	*e*P	Pn	09 46 34.2	+5.8
UGLR	**Uglovaya**	**5.64**	**14**	PN	Pn	09 46 34.2	+5.8
AVH	**Avacha**	**5.68**	**14**	*e*P	Pn	09 46 33.6	+4.7
AVH	**Avacha**	**5.68**	**14**	*e*P	Pn	09 46 33.6	+4.7
AVH	**Avacha**	**5.68**	**14**	PN	Pn	09 46 33.6	+4.7
SDLR	**Sedlovina**	**5.72**	**14**	*e*P	Pn	09 46 32.7	+3.3
SDLR	**Sedlovina**	**5.72**	**14**	PN	Pn	09 46 32.7	+3.3
KRX	**Arik**	**5.76**	**13**	*e*P	Pn	09 46 34.6	+4.6
KRX	**Arik**	**5.76**	**13**	PN	Pn	09 46 34.6	+4.6
SPN	**Mys Shipunski**	**5.79**	**21**	*e*P	Pn	09 46 36.2	+5.9
SPN	**Mys Shipunski**	**5.79**	**21**	*e*P	Pn	09 46 36.2	+5.9
SPN	**Mys Shipunski**	**5.79**	**21**	PN	Pn	09 46 36.2	+5.9
GNL	**Ganaly**	**6.00**	**8**	*e*P	Pn	09 46 38.4	+5.1
GNL	**Ganaly**	**6.00**	**8**	PN	Pn	09 46 38.4	+5.1
KBTR	**Krutoberegovo**	**9.30**	**22**	*e*P	Pn	09 47 21.4	+3.0
KBTR	**Krutoberegovo**	**9.30**	**22**	PN	Pn	09 47 21.4	+3.0

IDC 06 09:55:05.6±1.7**, 0.°98N**×**125.°10E, h0**km**, mb3.6**/4**, mb1 3.8**/4**, mb1mx3.4**/60**, mbtmp3.6**/4**, Error ellipse: s-maj=180.0km s-min=22.9km az=63.0, Northern Molucca Sea**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**22.68**	**157**	P	P	10 00 09.8	+0.9
	1.2nm,0.4s,baz=334,slow=11,SNR=15						
ASAR	**Alice Springs**	**25.95**	**161**	P	P	10 00 41.2	+1.2
	0.1nm,0.3s,baz=341,slow=7.5,SNR=8.3						
STKA	**Stephens Creek**	**36.23**	**156**	P	P	10 02 08.5	-1.9
	1.8nm,0.4s,baz=339,slow=9.4,SNR=11						
MKAR	**Makanchi Array**	**58.91**	**327**	P	P	10 05 06.8	+0.1
	0.1nm,0.5s,baz=140,slow=7.5,SNR=2.6						

*NIED **06** 10:03:00, 38.°60N×142.°90E, h26km, Mw3.9 Best double couple: M0 8.46000×10^14 NP1: φs144.00000°, δ45.00000°, λ135.00000°. NP2: φs269.00000°, δ60.00000°, λ55.00000°.*
*ISCJB **06** 10:03:10.9±0.6, 38.°56N±0.°05×143.°02E±0.°06, h23km, mb3.6/10, MS3.6/1, Error ellipse: s-maj=7.6km s-min=5.9km az=137.1*
*JMA **06** 10:03:12.2±0.2, 38.°59N×142.°88E, h21km±4km, M4.0*
*IDC **06** 10:03:14.6±0.8, 38.°52N×142.°90E, h39km±6km, mb3.4/10, mb1 3.7/12, mb1mx3.5/56, mbtmp3.7/12, ML3.8/2, MS3.1/3, Ms1 3.1/3, ms1mx2.6/48, Error ellipse: s-maj=21.5km s-min=15.2km az=121.0*
ISC 06 10:03:12.6±0.6**, 38.°55N**±0.°05×**142.°96E**±0.°07**, h23**km**, n34, σ1.ˢ63**/36**, mb3.7**/10**, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**1.14**	**298**	P	**Pn**	**10 03 31.7**	**-1.4**
JIO	**Ouri**	**1.27**	**266**	P	**Pn**	**10 03 33.9**	**-0.9**
JIO				S	**Sn**	**10 03 49.4**	**-1.7**
MIYJ	**Miyakonagasawa**	**1.35**	**320**	P	**Pn**	**10 03 34.4**	**-1.7**
MIYJ				S	**Sn**	**10 03 51.2**	**-2.2**
JMK	**Ichinoseki**	**1.42**	**287**	P	**Pn**	**10 03 36.1**	**-0.8**
JOM	**Ohasama**	**1.59**	**306**	P	**Pn**	**10 03 38.9**	**-0.5**
JOU	**Okura**	**1.81**	**265**	P	**Pn**	**10 03 42.5**	**+0.1**
JMM	**Marumori**	**1.84**	**249**	P	**Pn**	**10 03 42.4**	**-0.3**
JKZ	**Kuzumaki**	**1.91**	**319**	P	**Pn**	**10 03 43.9**	**+0.1**
JRG	**Rokugo**	**2.00**	**296**	P	**Pn**	**10 03 44.7**	**-0.2**
JFK	**Kawauchi**	**2.03**	**235**	P	**Pn**	**10 03 44.7**	**-0.7**
JYK	**Kaneyama**	**2.06**	**281**	P	**Pn**	**10 03 46.1**	**+0.2**
JANG	**Nango**	**2.14**	**329**	P	**Pn**	**10 03 47.7**	**+0.8**
JFT	**Otama**	**2.31**	**244**	P	**Pn**	**10 03 50.5**	**+1.2**
JFT				S	**Sn**	**10 04 17.1**	**+0.1**
MJAR	**Matsushiro Arr**	**4.27**	**243**	Pn	**Pn**	**10 04 17.8**	**+1.5**
	3.7nm,0.3s,baz=55,slow=9.9,SNR=26						
MAT	**Matsushiro**	**4.27**	**244**	P	**Pn**	**10 04 18.6**	**+2.4**
MAT				S	**Sn**	**10 05 09.5**	**+4.1**
JHJ	**Hachijo jima 2**	**6.00**	**206**	Pn	**Pn**	**10 04 39.4**	**-0.6**
	11nm,0.3s,baz=346,slow=23,SNR=8.6						
JHJ				Sn	**Sn**	**10 05 42.1**	**-5.8**
	16nm,0.3s,baz=94,slow=19,SNR=4.0						
JHJ				LR	LR	10 07 15.0	
	comp=Z,79nm,19.0s,baz=53,slow=40						
USRK	**Ussuriysk Ar.**	**9.99**	**308**	LR	LR	10 09 16.8	
	comp=Z,78nm,19.5s,baz=141,slow=36						
SEY	**Seymchan**	**25.08**	**10**	P	**P**	**10 08 36.5**	**+1.5**
	2.8nm,1.0s,baz=216,slow=4.2,SNR=6.4						
H11N2	**WAKE ISLAND Hy**	**27.95**	**125**	T	T	10 38 22.3	
	baz=318,slow=74,SNR=59						
H11N1	**WAKE ISLAND Hy**	**27.96**	**125**	T	T	10 38 23.5	
	baz=318,slow=74,SNR=34						
H11N3	**WAKE ISLAND Hy**	**27.97**	**125**	T	T	10 38 24.2	
	baz=318,slow=74,SNR=43						
SONM	**Songino Array**	**28.00**	**301**	P	**P**	**10 09 01.6**	**-0.2**
	0.9nm,0.9s,baz=114,slow=10,SNR=3.2						
H11S1	**WAKE ISLAND Hy**	**28.73**	**127**	T	T	10 36 42.0	
	baz=320,slow=76,SNR=14						
H11S3	**WAKE ISLAND Hy**	**28.73**	**127**	T	T	10 36 34.2	
	baz=320,slow=76,SNR=7.6						
H11S2	**WAKE ISLAND Hy**	**28.75**	**127**	T	T	10 36 35.3	
	baz=320,slow=76,SNR=7.3						
MKAR	**Makanchi Array**	**44.37**	**301**	P	**P**	**10 11 20.1**	**-0.9**
	0.3nm,0.8s,baz=83,slow=10,SNR=2.9						
KURBB	**Kurchatov Arra**	**46.05**	**307**	P	**P**	**10 11 33.5**	**-0.8**
	1.2nm,0.6s,baz=82,slow=8.0,SNR=16						
ILAR	**Eielson Array**	**47.56**	**33**	P	**P**	**10 11 45.8**	**-0.2**
	0.4nm,0.9s,baz=263,slow=7.2,SNR=3.4						
ILAR				pP	**sP**	**10 11 57.4**	**+1.5**
	0.8nm,0.7s,baz=264,slow=6.4,SNR=5.6						
ARU	**Arti**	**56.04**	**318**	LR	LR	10 39 36.6	
	comp=Z,46nm,18.5s,baz=149,slow=39						
WRA	**Warramunga Arr**	**58.74**	**189**	P	**P**	**10 13 08.1**	**-0.6**
	2.5nm,0.7s,baz=10,slow=7.3,SNR=14						
YKA	**Yellowknife Ar**	**61.88**	**31**	P	**P**	**10 13 29.4**	**-0.3**
	0.1nm,0.7s,baz=304,slow=6.7,SNR=3.6						
YKA				pP	**sP**	**10 13 41.1**	**+1.4**
	0.2nm,0.6s,baz=301,slow=6.1,SNR=5.0						
YKA				PcP	**PcP**	**10 14 10.4**	**+0.1**
	0.2nm,0.6s,baz=293,slow=3.9,SNR=4.1						
YKA				pPcP		10 14 22.6	
	0.1nm,0.5s,baz=305,slow=3.7,SNR=4.2						
ASAR	**Alice Springs**	**62.47**	**189**	P	**P**	**10 13 33.9**	**-0.2**
	0.9nm,0.8s,baz=6.3,slow=5.7,SNR=6.3						
PDAR	**Pinedale Array**	**75.73**	**46**	P	**P**	**10 14 56.6**	**0.0**
	0.5nm,0.6s,baz=259,slow=2.8,SNR=6.5						
PDAR				pP	**PcP**	**10 15 08.6**	**-0.7**
	0.4nm,0.4s,baz=50,slow=0.6,SNR=5.8						
TXAR	**Lajitas Array**	**88.23**	**53**	P	**P**	**10 16 02.4**	**+0.1**
	0.3nm,0.8s,baz=329,slow=1.5,SNR=3.9						
TXAR				pP	**sP**	**10 16 14.2**	**+1.6**
	0.3nm,0.6s,baz=287,slow=3.3,SNR=4.5						

MEX 06 10:07:34.7±0.4**, 18.°70N**×**100.°40W, h17**km±752km**, MD3.6, Guerrero**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ARIG	**Puente Sto Nin**	**0.42**	**173**	*e*P	Pg	10 07 41.8	-1.5
ARIG				*e*S	Sg	10 07 47.7	-1.5
PLIG	**Platanillo**	**0.91**	**110**	*e*P	Pb	10 07 49.2	-2.9
PLIG				*i* S	Sb	10 07 60.0	-3.9
YAIG	**Yautepec**	**1.27**	**83**	*e*P	Pn	10 07 53.9	-4.0
ZIIG	**Zihuatanejo**	**1.49**	**223**	*e*P	Pn	10 07 57.1	-3.6
MMIG	**Aquila**	**2.83**	**262**	*e*P	Pn	10 08 14.9	-4.2

*NIED **06** 10:09:00, 35.°90N×140.°80E, h23km, Mw4.0 Best double couple: M0 1.24000×10^15 NP1: φs292.00000°, δ42.00000°, λ-143.00000°. NP2: φs173.00000°, δ66.00000°, λ-54.00000°.*
*IDC **06** 10:09:21.9±0.7, 35.°86N×140.°67E, h0km, mb3.7/14, mb1 3.9/16, mb1mx3.8/50, mbtmp3.7/16, ML3.7/2, MS3.1/6, Ms1 3.1/6, ms1mx2.7/60, Error ellipse: s-maj=20.8km s-min=15.3km az=82.0*
*ISCJB **06** 10:09:23.8±0.5, 35.°86N±0.°04×140.°76E±0.°07, h26km±3km, mb3.7/14, MS2.9/2, Error ellipse: s-maj=9.4km s-min=5.4km az=158.3*
*JMA **06** 10:09:24.7±0.1, 35.°89N×140.°71E, h18km±1km, M4.1 Broadband fault plane solution: P waves. NP1: φs170.00000°, δ52.00000°, λ-88.00000°. NP2: φs346.00000°, δ38.00000°, λ-93.00000°. Principal axes: T Plg7.0000°, Azm258.0000°; N Plg2.0000°, Azm348.0000°; P Plg83.0000°, Azm94.0000°;*
JMA Felt III J1.
ISC 06 10:09:24.0±1.1**, 35.°87N**±0.°05×**140.°61E**±0.°08**, h13**km±8km**, n34, σ0.ˢ71**/27**, mb3.8**/14**, 1C-1D, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.26**	**129**	⇓P	**Pg**	**10 09 29.8**	**+0.2**
CHOJ				S	**Sg**	**10 09 33.3**	**0.0**
JYT	**Yasato**	**0.49**	**317**	⇑P	**Pb**	**10 09 35.1**	**+0.6**
JYT				S	**Sb**	**10 09 42.6**	**+1.0**
JHO	**Hitachi**	**0.74**	**358**	P	**Pg**	**10 09 37.7**	**-0.8**
JHO				*e*S	**Sg**	**10 09 47.4**	**-0.9**
BSO4	**Boso 4**	**0.90**	**194**	P	**Pn**	**10 09 42.9**	**+0.6**
MJAR	**Matsushiro Arr**	**2.05**	**290**	Pn	**Pn**	**10 09 58.5**	**+0.2**
	18nm,0.3s,baz=91,slow=12,SNR=140						
MAT	**Matsushiro**	**2.05**	**290**	P	**Pn**	**10 09 58.7**	**+0.4**
MAT				S	**Sb**	**10 10 26.7**	**+0.1**
JHJ	**Hachijo jima 2**	**2.83**	**194**	Pn	**Pn**	**10 10 08.4**	**-0.4**
	45nm,0.3s,baz=330,slow=18,SNR=20						
JHJ				Sn	**Sn**	**10 10 41.0**	**-1.8**
	90nm,0.3s,baz=313,slow=22,SNR=8.6						
JNU	**Nakatsue**	**8.48**	**254**	LR	LR	10 14 59.2	
	comp=Z,203nm,18.2s,baz=127,slow=40						
KSRS	**Korea Array**	**10.31**	**283**	Pn	Pn	10 11 57.1	+5.5
	0.2nm,0.3s,baz=102,slow=12,SNR=5.9						
KSRS				LR	LR	10 15 47.2	
	comp=Z,88nm,21.2s,baz=112,slow=37						
USRK	**Ussuriysk Ar.**	**10.62**	**324**	Pn	Pn	10 12 00.9	+5.1
	0.2nm,0.3s,baz=101,slow=15,SNR=2.8						
JOW	**Kunigami**	**13.85**	**233**	LR	LR	10 17 51.8	
	comp=Z,83nm,20.9s,baz=122,slow=37						
KLR	**Kul'dur**	**14.85**	**337**	LR	LR	10 17 57.6	
	comp=Z,31nm,18.2s,baz=116,slow=35						
PETK	**Petropavlovsk-**	**21.02**	**30**	LR	LR	10 21 27.1	
	comp=Z,40nm,21.8s,baz=207,slow=34						
SONM	**Songino Array**	**27.92**	**306**	P	**P**	**10 15 13.4**	**-0.5**
	0.4nm,0.5s,baz=92,slow=9.2,SNR=2.9						
SONM				LR	LR	10 25 42.9	
	comp=Z,39nm,18.1s,baz=38,slow=35						
H11N2	**WAKE ISLAND Hy**	**28.15**	**118**	T	T	10 44 15.2	
	baz=311,slow=75,SNR=205						
H11N1	**WAKE ISLAND Hy**	**28.15**	**118**	T	T	10 44 22.9	
	baz=311,slow=75,SNR=139						
H11N3	**WAKE ISLAND Hy**	**28.16**	**118**	T	T	10 44 16.5	
	baz=311,slow=75,SNR=138						
H11S1	**WAKE ISLAND Hy**	**28.81**	**120**	T	T	10 45 05.2	
	baz=312,slow=75,SNR=191						
H11S3	**WAKE ISLAND Hy**	**28.81**	**120**	T	T	10 45 05.2	
	baz=312,slow=75,SNR=158						
H11S2	**WAKE ISLAND Hy**	**28.82**	**120**	T	T	10 45 06.8	
	baz=312,slow=75,SNR=134						
ZALV	**Zalesovo Beam**	**42.23**	**313**	P	**P**	**10 17 17.4**	**+0.8**
	0.7nm,0.3s,baz=94,slow=5.9,SNR=2.7						
MKAR	**Makanchi Array**	**44.20**	**303**	P	**P**	**10 17 33.5**	**+0.8**
	0.6nm,0.7s,baz=92,slow=10.0,SNR=4.9						
ILAR	**Eielson Array**	**50.83**	**32**	P	**P**	**10 18 24.1**	**+0.2**
	0.8nm,0.8s,baz=259,slow=5.0,SNR=4.3						
BVAR	**Borovoye Array**	**50.88**	**313**	P	**P**	**10 18 24.5**	**0.0**
	0.3nm,0.4s,baz=76,slow=6.1,SNR=3.1						
INK	**Inuvik**	**55.72**	**27**	P	**P**	**10 18 58.4**	**-1.4**
	1.4nm,1.1s,baz=285,slow=3.5,SNR=2.7						
WRA	**Warramunga Arr**	**55.82**	**187**	P	**P**	**10 19 00.7**	**-0.4**
	2.6nm,0.9s,baz=1.0,slow=7.7,SNR=11						
ASAR	**Alice Springs**	**59.55**	**187**	P	**P**	**10 19 27.2**	**0.0**
	1.0nm,0.8s,baz=14,slow=4.8,SNR=6.1						
YKA	**Yellowknife Ar**	**65.14**	**30**	P	**P**	**10 20 04.3**	**+0.1**
	0.2nm,0.8s,baz=300,slow=6.1,SNR=2.9						
STKA	**Stephens Creek**	**67.40**	**179**	P	**P**	**10 20 18.6**	**-0.3**
	1.1nm,0.7s,baz=4.2,slow=7.2,SNR=4.7						
FINES	**FINESS Array B**	**69.54**	**332**	P	**P**	**10 20 32.2**	**+0.2**
	1.4nm,0.8s,baz=100,slow=6.1,SNR=3.1						
AKASG	**Malin Array Be**	**74.82**	**322**	P	**P**	**10 21 03.6**	**-0.3**
	0.3nm,0.3s,baz=46,slow=5.7,SNR=3.3						
NB2	**NORSAR Subarra**	**75.01**	**337**	P	**P**	**10 21 05.1**	**+0.2**
	comp=Z,0.8nm,0.4s,baz=40,slow=6.2						
NOA	**NORSAR Array B**	**75.01**	**337**	P	**P**	**10 21 05.0**	**+0.2**
	comp=Z,0.6nm,0.5s,baz=31,slow=6.7,SNR=2.9						
TXAR	**Lajitas Array**	**91.35**	**52**	P	**P**	**10 22 30.8**	**+0.9**
	comp=Z,0.1nm,0.7s,baz=284,slow=3.6,SNR=2.3						

DJA 06 10:14:39.7±0.7**, 4°S**±5°×**12°9E**±°**, h121**km±7km**, M4.0**/10**, MLv4.0**/10**, Banda Sea**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BNDI	**Bandanaira**	**0.71**	**122**	P	Pn	10 15 01.1	+1.9
MSAI	**Masohi**	**0.87**	**335**	P	Pn	10 15 00.9	+0.3
MSAI				S	Sn	10 15 18.2	+1.8
NLAI	**Namlea**	**2.37**	**292**	P	Pn	10 15 17.4	-0.5
FAKI	**Fak Fak**	**3.18**	**68**	P	Pn	10 15 29.7	+1.2
FAKI				S	Sn	10 16 07.2	+1.1
SWI	**Sorong**	**3.80**	**31**	P	Pn	10 15 37.1	+0.5
SWI				S	Sn	10 16 22.4	+1.7
SANI	**Sanana**	**3.91**	**302**	P	Pn	10 15 37.7	-0.3
SANI				S	Sn	10 16 19.2	-4.0
LBMI	**Labuha**	**3.92**	**333**	P	Pn	10 15 38.2	0.0
KMPI	**Kaimana, Papua**	**4.42**	**84**	P	Pn	10 15 45.3	+0.4
KMPI				S	Sn	10 16 36.1	+0.6

*ISCJB **06** 10:17:37.9±0.4, 39.°46N±0.°03×30.°08E±0.°03, h0km, Error ellipse: s-maj=4.6km s-min=3.5km az=175.6*
*CSEM **06** 10:17:38.1±0.2, 39.°45N×30.°03E, h1km, MD2.7, Error ellipse: s-maj=4.6km s-min=4.4km az=23.0, Suspected Mining explosion.*
*DDA **06** 10:17:38.1, 39.°47N×30.°04E, h3km, Md2.6, Suspected Mining explosion.*
*ISK **06** 10:17:38.2, 39.°44N×29.°99E, h9km, MD2.7*
ISC 06 10:17:37.7±0.8**, 39.°48N**±0.°02×**30.°04E**±0.°02**, h0**km**, n37, σ0.ˢ93**/49**, Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TVSB	**Tavsanli**	**0.45**	**267**	*e*PG	**Pg**	**10 17 46.4**	**+0.2**
TVSB				*e*SG	**Sg**	**10 17 53.0**	**+0.9**
TVSB	**Tavsanli**	**0.45**	**267**	*e*Pg	**Pg**	**10 17 46.4**	**+0.2**
TVSB				*e*Sg	**Sg**	**10 17 53.0**	**+0.9**
AUKUT	**KUTAHYA**	**0.48**	**358**	*i* P	Pg	10 17 40.1	-6.7
AUKUT				*i* S	**Sg**	**10 17 48.5**	**-4.6**
GDZ	**Gediz**	**0.58**	**228**	*i* P	**Pg**	**10 17 48.5**	**-0.3**
GDZ				*i* S	**Sb**	**10 17 58.6**	**-1.1**
GDZ	**Gediz**	**0.58**	**228**	P	**Pg**	**10 17 48.5**	**-0.3**
GDZ				S	**Sb**	**10 17 58.6**	**-1.1**
ESKT	**Eskisehir**	**0.63**	**86**	*i* P	**Pg**	**10 17 49.5**	**-0.2**
ESKT				*i* S	**Sg**	**10 17 57.8**	**0.0**
SEYT	**Eskypehyr**	**0.63**	**86**	P	**Pg**	**10 17 49.5**	**-0.2**
SEYT				S	**Sg**	**10 17 57.8**	**0.0**
CAVI	**Cavuskoy**	**0.74**	**348**	*e*PG	**Pb**	**10 17 53.5**	**0.0**
CAVI	**Cavuskoy**	**0.74**	**348**	*e*Pg	**Pb**	**10 17 53.5**	**0.0**
ULDT	**Uludag**	**0.96**	**314**	*i* P	**Pg**	**10 17 56.7**	**+0.6**
ULDT				*i* S	**Sn**	**10 18 13.7**	**+0.6**
IZI	**Iznik**	**0.96**	**333**	*e*PG	**Pb**	**10 17 57.4**	**+0.1**
IZI	**Iznik**	**0.96**	**333**	*e*Pg	**Pb**	**10 17 57.4**	**+0.1**
ADVT	**Abdulvahap**	**0.98**	**346**	*e*PG	**Pb**	**10 17 57.9**	**+0.3**
ADVT	**Abdulvahap**	**0.98**	**346**	*e*Pg	**Pb**	**10 17 57.9**	**+0.3**
SHUT	**Suhut-Afyon**	**1.00**	**156**	*e*PG	**Pb**	**10 17 57.8**	**-0.2**
SHUT	**Suhut-Afyon**	**1.00**	**156**	*e*Pg	**Pb**	**10 17 57.8**	**-0.2**
IGD	**Bursa**	**1.02**	**321**	*i* P	**Pg**	**10 17 57.4**	**+0.2**
IGD				*i* S	**Sn**	**10 18 14.1**	**-0.1**
GULT	**Gulveren**	**1.02**	**21**	*e*PG	**Pn**	**10 17 59.2**	**-0.2**
GULT	**Gulveren**	**1.02**	**21**	*e*Pg	**Pn**	**10 17 59.2**	**-0.2**
BOLV	**Bolvadin**	**1.04**	**137**	*i* P	**Pn**	**10 17 59.4**	**-0.2**
BOLV				*i* S	**Sn**	**10 18 16.5**	**+1.6**
BOLV	**Bolvadin**	**1.04**	**137**	P	**Pn**	**10 17 59.4**	**-0.2**
BOLV				S	**Sn**	**10 18 16.5**	**+1.6**
DEMI	**Demirci**	**1.11**	**248**	*i* P	**Pb**	**10 17 59.8**	**-0.1**
DEMI				*i* S	**Sn**	**10 18 18.1**	**+1.4**
SVRH	**Sivrihisar-ESK**	**1.15**	**91**	*e*PN	**Pb**	**10 18 00.6**	**+0.1**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
SVRH	Sivrihisar-ESK	1.15	91	ePn	Pb	10 18 00.6	+0.1
DURS	Dursunbey	1.22	276	i P	Pb	10 18 01.3	-0.3
DURS				i S	Sn	10 18 20.8	+1.5
MDNY	Mudanya-Bursa	1.26	315	ePN	Pb	10 18 02.4	+0.2
MDNY	Mudanya-Bursa	1.26	315	ePn	Pb	10 18 02.4	+0.2
MDUB	Mudurnu	1.33	42	ePN	Pb	10 18 04.5	+0.9
MDUB	Mudurnu	1.33	42	ePn	Pb	10 18 04.5	+0.9
ARMT	Armutlu	1.41	321	ePN	Pg	10 18 04.9	+0.1
ARMT	Armutlu	1.41	321	ePn	Pg	10 18 04.9	+0.1
KULA	Kula-Manisa	1.44	229	ePN	Pn	10 18 04.4	-0.7
KULA	Kula-Manisa	1.44	229	ePn	Pn	10 18 04.4	-0.7
KCTX	Karacabey (Bur	1.52	302	ePN	Pn	10 18 06.1	0.0
KCTX	Karacabey (Bur	1.52	302	ePn	Pn	10 18 06.1	0.0
SILT	Sile	1.70	350	ePN	Pn	10 18 09.2	+0.6
SILT	Sile	1.70	350	ePn	Pn	10 18 09.2	+0.6

*ISCJB **06** 10:26:14.6±0.7, 34°.54N±0°.09×135°.82E±0°.08, h379km±5km, mb2.9/2, Error ellipse: s-maj=13.6km s-min=10.6km az=167.2*
*JMA **06** 10:26:15.6±0.1, 34°.58N×135°.82E, h372km±1km, M2.8*
*IDC **06** 10:26:15.2±0.8, 34°.51N×135°.93E, h375km±14km, mb2.8/2, mb1 3.0/8, mb1mx2.7/49, mbtmp3.7/8, Error ellipse: s-maj=22.8km s-min=16.8km az=54.0*
ISC 06 10:26:15.3±0.9**, 34°.56N**±0°.09×**135°.82E**±0°.07**, h374**km±8km**, n20,** σ**0s.70**/27**, Near south coast of western Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
JHE	Heguri	0.14	310	P	Pn	10 27 02.1	+0.4
JHE				S	S	10 27 38.4	-0.7
JIE	Ise	0.75	103	P	Pn	10 27 03.3	+0.5
JIE				S	S	10 27 40.5	-0.5
JWT	Wachi	0.80	335	P	Pn	10 27 03.2	+0.4
JWT				S	S	10 27 40.2	-0.9
TK02	Tokai 2	1.72	110	P	Pn	10 27 07.8	+1.0
JKG	Kaga	1.76	14	P	Pn	10 27 07.5	+0.4
JKG				S	S	10 27 48.7	-0.3
JHS	Saijyo	2.27	282	P	Pn	10 27 11.2	+0.6
JYN	Shimob	2.42	67	P	Pn	10 27 11.8	0.0
JOI	OKI	2.72	310	P	Pn	10 27 14.9	+0.9
MAT	Matsushiro	2.77	44	P	Pn	10 27 14.4	-0.1
MAT				S	S	10 28 02.2	-0.1
MAT	Matsushiro	2.77	44	P	Pn	10 27 14.6	+0.1
MJAR	Matsushiro Arr	2.77	44	P	Pn	10 27 14.7	+0.2
	3.1nm,0.3s,baz=218,slow=7.9,SNR=66						
MJAR				S	S	10 28 02.1	-0.2
	baz=223,slow=15,SNR=4.8						
JOD2	Odawara 2	2.78	74	P	Pn	10 27 14.6	+0.1
JRY	Ryogami san	2.91	59	P	Pn	10 27 15.9	+0.3
JRY				eS	S	10 28 04.7	+0.3
JHJ	Hachijo jima 2	3.60	112	P	Pn	10 27 23.0	+1.1
	8.7nm,0.3s,baz=27,slow=2.3,SNR=4.2						
JNU	Nakatsue	4.36	252	P	Pn	10 27 29.4	+0.1
	1.6nm,0.3s,baz=46,slow=2.0,SNR=20						
KSRS	Korea Array	7.02	297	P	P	10 27 59.8	+0.4
	0.6nm,0.3s,baz=111,slow=13,SNR=20						
USRK	Ussuriysk Ar.	10.07	344	P	P	10 28 34.5	+0.3
	0.8nm,0.3s,baz=156,slow=12,SNR=11						
KLR	Kul'dur	14.96	350	P	P	10 29 27.1	-1.0
	0.1nm,0.3s,baz=174,slow=9.2,SNR=2.6						
SONM	Songino Array	25.63	310	P	P	10 31 14.0	+1.7
	0.6nm,0.7s,baz=122,slow=11,SNR=4.4						
WRA	Warramunga Arr	54.22	182	P	P	10 35 02.9	-1.0
	0.2nm,0.3s,baz=0.3,slow=7.7,SNR=13						

*IDC **06** 10:28:19.1±2.3, 53°.54N×87°.75E, h0km, mb1 3.7/3, mb1mx3.2/53, mbtmp3.7/3, ML3.5/3, Error ellipse: s-maj=21.1km s-min=13.0km az=60.0*
ISC 06 10:28:23.4±3.8**, 53°.7N**±0°.1×**87°.6E**±0°.2**, h35**km**, n7,** σ**1s.04**/11**, 4C-1D, Southwestern Siberia**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
I46RU	ZALESOVO INFRA	1.66	281	i		10 41 15.0	
	baz=98,slow=329,SNR=13						
ZALV	Zalesovo Beam	1.66	281	Pn	Pn	10 28 50.2	+0.2
	13nm,0.3s,baz=100,slow=15,SNR=83						
ZALV				Lg	Lg	10 29 15.2	
	17nm,0.3s,baz=107,slow=30,SNR=33						
KURK	Kurchatov	6.24	246	⇓Pn	Pn	10 29 53.0	+0.1
	5.3nm,0.6s						
KURK				⇑Sn	Sn	10 31 02.0	-0.9
	5.0nm,0.5s						
KURK				⇑Lg	Lg	10 31 38.6	
	62nm,1.0s						
KURBB	Kurchatov Arra	6.34	245	Pn	Pn	10 29 54.8	+0.6
	0.6nm,0.3s,baz=63,slow=14,SNR=27						
KURBB				Sn	Sn	10 31 07.1	+1.8
	0.2nm,0.3s,baz=63,slow=25,SNR=4.3						
KURBB				Lg	Lg	10 31 42.9	
	0.1nm,0.3s,baz=65,slow=32,SNR=5.6						
MK31	Makanchi Array	7.65	208	⇑Pn	Pn	10 30 11.9	-0.4
	0.2nm,0.2s,baz=26,slow=13,SNR=19						
MK31				⇑Sn	Sn	10 31 38.3	+0.6
	0.9nm,0.5s,baz=27,slow=21,SNR=3.8						
MK31				Lg	Lg	10 32 20.1	
	5.6nm,0.7s,baz=23,slow=26,SNR=3.9						
MKAR	Makanchi Array	7.65	208	Pn	Pn	10 30 12.2	-0.1
	0.6nm,0.3s,baz=26,slow=13,SNR=22						
MKAR				Sn	Sn	10 31 37.5	-0.3
	0.5nm,0.3s,baz=34,slow=19,SNR=4.6						
MKAR				Lg	Lg	10 32 20.8	
	0.2nm,0.3s,baz=34,slow=32,SNR=6.8						
BVAR	Borovoye Array	10.30	273	Pn	Pn	10 30 49.5	+1.0
	0.7nm,0.3s,baz=72,slow=15,SNR=9.8						
BVAR				Sn	Sn	10 32 41.0	-1.7
	0.5nm,0.3s,baz=76,slow=25,SNR=12						

*NIED **06** 10:28:00, 39°.10N×142°.40E, h38km, Mw3.6 Best double couple: M₀2.70000×10^14 NP1:φs330.00000°, δ35.00000°, λ-97.00000°. NP2:φs159.00000°, δ56.00000°, λ-85.00000°.*
*ISCJB **06** 10:28:29.3±1.3, 39°.09N±0°.04×142°.48E±0°.08, h26km±7km, mb3.5/8, Error ellipse: s-maj=10.1km s-min=6.3km az=18.7*
*JMA **06** 10:28:30.7±0.1, 39°.12N×142°.40E, h34km±1km, M3.8*
*IDC **06** 10:28:35.2±4.1, 39°.03N×142°.35E, h68km±39km, mb3.2/8, mb1 3.4/9, mb1mx3.2/57, mbtmp3.5/9, ML3.2/1, MS2.6/1, Ms1 2.6/1, ms1mx2.1/23, Error ellipse: s-maj=28.8km s-min=16.8km az=106.0*
ISC 06 10:28:30.1±0.9**, 39°.13N**±0°.05×**142°.4E**±0°.1**, h21**km±5km**, n28,** σ**1s.21**/30**, mb3.4**/8**, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
OFUJ	Ofunato	0.59	266	P	Pb	10 28 42.1	+0.2
MIYJ	Miyakonagasawa	0.65	314	P	Pb	10 28 42.9	0.0
MIYJ				S	Sb	10 28 51.7	+0.1
JOM	Ohasama	0.95	292	P	Pb	10 28 47.7	-0.1
JOM				S	Sb	10 29 00.1	+0.1
JMK	Ichinoseki	0.96	260	P	Pb	10 28 47.6	-0.4
JMK				S	Sb	10 28 59.7	-0.5
JIO	Ouri	1.08	232	P	Pn	10 28 48.7	-1.3
JIO				S	Sb	10 29 01.6	-2.1
JKZ	Kuzumaki	1.21	316	P	Pn	10 28 51.9	+0.1
JKZ				S	Sb	10 29 07.0	-0.5
JRG	Rokugo	1.42	282	P	Pn	10 28 55.0	+0.3
JANG	Nango	1.43	331	P	Pn	10 28 55.2	+0.3
JOU	Okura	1.58	242	P	Pn	10 28 57.3	+0.4
JYK	Kaneyama	1.63	263	P	Pn	10 28 57.6	+0.1
JYK				S	Sn	10 29 18.3	+0.4
JMM	Marumori	1.80	226	P	Pn	10 28 59.9	0.0
JMM				S	Sn	10 29 20.6	-1.5
JFT	Otama	2.30	226	P	Pn	10 29 07.9	+1.1
MJAR	Matsushiro Arr	4.22	234	P	Pn	10 29 35.3	+2.0
	1.4nm,0.3s,baz=40,slow=11,SNR=28						
MJAR				LR	LR	10 31 33.3	
	comp=Z,61nm,18.1s,baz=85,slow=43						
MAT	Matsushiro	4.22	234	P	Pn	10 29 35.9	+2.7
MAT				eS	Sb	10 30 37.4	+3.2
SEY	Seymchan	24.59	11	P	P	10 33 49.4	+1.0
	0.3nm,0.5s,baz=210,slow=8.3,SNR=3.8						
H11N2	WAKE ISLAND Hy	28.62	125	T	T	11 04 50.3	
	baz=317,slow=76,SNR=109						
H11N1	WAKE ISLAND Hy	28.62	125	T	T	11 04 50.5	
	baz=317,slow=76,SNR=91						
H11N3	WAKE ISLAND Hy	28.63	125	T	T	11 04 51.2	
	baz=317,slow=76,SNR=80						
H11S1	WAKE ISLAND Hy	29.41	127	T	T	11 05 49.4	
	baz=319,slow=76,SNR=11						
H11S3	WAKE ISLAND Hy	29.41	127	T	T	11 05 46.2	
	baz=319,slow=76,SNR=15						
H11S2	WAKE ISLAND Hy	29.42	127	T	T	11 05 47.8	
	baz=319,slow=76,SNR=14						
MKAR	Makanchi Array	43.72	300	P	P	10 36 33.6	-0.1
	0.2nm,0.4s,baz=90,slow=7.2,SNR=3.2						
KURBB	Kurchatov Arra	45.38	307	P	P	10 36 46.2	-0.6
	0.6nm,0.4s,baz=79,slow=8.4,SNR=4.4						
ILAR	Eielson Array	47.30	33	P	P	10 37 02.6	+0.9
	0.3nm,0.6s,baz=267,slow=6.0,SNR=4.5						
INK	Inuvik	52.16	28	P	P	10 37 39.5	+0.9
	0.2nm,0.5s,baz=303,slow=6.5,SNR=2.7						
WRA	Warramunga Arr	59.24	189	P	P	10 38 28.6	-1.4
	0.6nm,0.4s,baz=6.8,slow=7.1,SNR=18						
YKA	Yellowknife Ar	61.60	31	P	P	10 38 45.0	-0.5
	0.1nm,0.6s,baz=289,slow=6.3,SNR=2.8						
ASAR	Alice Springs	62.97	189	P	P	10 38 54.2	-1.0
	0.4nm,0.7s,baz=12,slow=4.7,SNR=5.5						

*NIED **06** 10:34:00, 39°.40N×144°.00E, h11km, Mw3.9 Best double couple: M₀6.79000×10^14 NP1:φs210.00000°, δ39.00000°, λ107.00000°. NP2:φs9.00000°, δ53.00000°, λ77.00000°.*
*JMA **06** 10:34:02.4±0.3, 39°.39N×143°.99E, h0km, M4.1*
*ISCJB **06** 10:34:04.7±0.8, 39°.45N±0°.05×143°.96E±0°.09, h11km, mb3.6/8, MS3.0/1, Error ellipse: s-maj=10.9km s-min=4.4km az=29.7*
*IDC **06** 10:34:04.8±1.3, 39°.31N×143°.96E, h0km, mb3.7/8, mb1 3.8/11, mb1mx3.6/72, mbtmp3.7/11, ML3.0/3, MS2.8/4, Ms1 2.8/4, ms1mx2.5/43, Error ellipse: s-maj=28.1km s-min=23.7km az=104.0*
ISC 06 10:34:06.9±1.0**, 39°.45N**±0°.07×**143°.92E**±0°.09**, h11**km**, n30,** σ**1s.37**/33**, mb3.7**/8**, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
MIYJ	Miyakonagasawa	1.63	275	P	Pn	10 34 33.5	-2.0
JTH	Tanohata	1.66	288	P	Pn	10 34 34.0	-1.9
JOM	Ohasama	2.03	272	P	Pn	10 34 39.5	-1.5
JANG	Nango	2.07	297	P	Pn	10 34 39.6	-1.9
JMK	Ichinoseki	2.15	258	P	Pn	10 34 41.0	-1.7
JRG	Rokugo	2.54	270	P	Pn	10 34 47.1	-1.0
JTM	Tenmabayashi	2.56	302	P	Pn	10 34 47.5	-0.8
JAH	Hinai	2.63	287	P	Pn	10 34 48.5	-0.8
JOU	Okura	2.76	248	P	Pn	10 34 49.5	-1.5
JYK	Kaneyama	2.82	260	P	Pn	10 34 50.6	-1.2
JNBK	Urakawa-nobuka	2.97	343	P	Pn	10 34 54.9	+1.0
JNBK				S	Sn	10 35 30.6	+1.2
JCH	Churui	3.19	353	P	Pn	10 34 57.2	+0.2
JCH				eS	Sn	10 35 33.8	-1.2
JAR	Ashorobuto	3.85	358	P	Pn	10 35 05.7	-0.3
JAR				S	Sn	10 35 49.0	-2.2
NEM2	Nemuro 2	4.15	19	P	Pn	10 35 09.4	-0.7
NEM2				S	Sn	10 35 56.3	-2.3
JTKR	Abashiri--Toko	4.52	360	P	Pn	10 35 15.7	+0.5
JTKR				S	Sn	10 36 06.5	-1.3
MJAR	Matsushiro Arr	5.36	239	Pn	Pn	10 35 26.4	-0.4
	1.8nm,0.3s,baz=52,slow=11,SNR=22						
MAT	Matsushiro	5.36	239	P	Pn	10 35 25.8	-1.0
MAT				eS	Sn	10 36 31.7	+3.2
USRK	Ussuriysk Ar.	10.09	302	Pn	Pn	10 36 32.8	+1.2
	0.4nm,0.3s,baz=105,slow=12,SNR=7.0						
JNU	Nakatsue	12.26	243	LR	LR	10 42 05.2	
	comp=Z,52nm,18.4s,baz=315,slow=39						
KSRS	Korea Array	12.70	266	LR	LR	10 41 36.2	
	comp=Z,16nm,19.5s,baz=255,slow=35						
KLR	Kul'dur	13.08	322	Pn	Pn	10 37 12.2	-0.3
	0.1nm,0.3s,baz=144,slow=14,SNR=2.7						
KLR				LR	LR	10 42 39.3	
	comp=Z,47nm,18.5s,baz=115,slow=39						
SEY	Seymchan	24.07	10	P	P	10 39 23.1	+1.2
	1.7nm,0.8s,baz=200,slow=9.6,SNR=9.6						
SONM	Songino Array	28.19	300	P	P	10 40 00.2	+0.8
	0.5nm,0.6s,baz=100,slow=11,SNR=3.5						
ZALV	Zalesovo Beam	41.80	310	LR	LR	10 58 12.8	
	comp=Z,19nm,19.0s,baz=76,slow=34						
MKAR	Makanchi Array	44.55	300	P	P	10 42 18.9	+0.3
	0.7nm,0.6s,baz=79,slow=8.8,SNR=5.8						
KURBB	Kurchatov Arra	46.11	307	P	P	10 42 31.1	+0.2
	0.7nm,0.3s,baz=82,slow=8.2,SNR=8.0						
BVAR	Borovoye Array	50.44	311	P	P	10 43 04.6	+0.3
	0.7nm,0.6s,baz=70,slow=12,SNR=4.1						
WRA	Warramunga Arr	59.75	190	P	P	10 44 10.3	-1.5
	0.3nm,0.7s,baz=7.5,slow=7.1,SNR=6.3						
YKA	Yellowknife Ar	60.73	31	P	P	10 44 18.6	+0.6
	0.2nm,0.7s,baz=304,slow=6.5,SNR=4.3						
AKASG	Malin Array Be	73.58	323	P	P	10 45 40.2	+0.5
	0.2nm,0.3s,baz=43,slow=5.8,SNR=2.2						

*ISCJB **06** 10:40:44.7±0.4, 40°.78N±0°.02×27°.36E±0°.03, h6km±4km, Error ellipse: s-maj=4.1km s-min=4.0km az=169.4*
*ISK **06** 10:40:44.6, 40°.77N×27°.36E, h7km, MD2.6*
*DDA **06** 10:40:45.1, 40°.76N×27°.35E, h5km, Md2.7*
*CSEM **06** 10:40:45.0±0.1, 40°.77N×27°.35E, h8km, MD2.7, Error ellipse: s-maj=1.6km s-min=1.4km az=4.0*
ISC 06 10:40:44.7±0.8**, 40°.77N**±0°.02×**27°.36E**±0°.02**, h13**km±6km**, n55,** σ**0s.24**/68**, Turkey**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
SART	Tekirdag	0.16	239	i P	Pg	10 40 48.5	0.0
SART				i S	Sg	10 40 51.2	0.0
SART	Tekirdag	0.16	239	P	Pg	10 40 48.5	0.0
SART				S	Sg	10 40 51.2	0.0
MRMT	Marmara Adasi	0.25	132	ePG	Pg	10 40 49.8	-0.2
MRMT				eSG	Sg	10 40 53.6	+0.1
MRMT	Marmara Adasi	0.25	132	ePg	Pg	10 40 49.8	-0.2
MRMT				eSg	Sg	10 40 53.6	+0.1
TKR	Tekirdag	0.26	31	ePG	Pg	10 40 50.3	+0.1
TKR				eSG	Sg	10 40 54.2	+0.4
TKR	Tekirdag	0.26	31	ePg	Pg	10 40 50.3	+0.1
TKR				eSg	Sg	10 40 54.3	+0.4
KRBG	Karabiga-Canak	0.38	187	ePG	Pg	10 40 52.6	+0.3
KRBG	Karabiga-Canak	0.38	187	ePg	Pg	10 40 52.6	+0.3
KNL	Bal˜–kesir	0.52	166	i P	Pg	10 40 54.8	-0.1
KNL				i S	Sg	10 41 02.1	+0.4
KESN	Edirne-Kesan	0.52	276	i P	Pg	10 40 54.9	-0.1
KESN				i S	Sg	10 41 02.0	0.0
KESN	Edirne-Kesan	0.52	276	P	Pg	10 40 54.9	-0.1
KESN				S	Sg	10 41 02.0	0.0
EDC	Edincik	0.57	137	ePG	Pg	10 40 56.1	+0.2
EDC	Edincik	0.57	137	ePg	Pg	10 40 56.1	+0.2
ERIK	Erikli-Kesan	0.65	262	ePG	Pb	10 40 57.7	-0.2
ERIK	Erikli-Kesan	0.65	262	ePg	Pb	10 40 57.7	-0.2
GONE	Gonen-Balikesi	0.76	161	ePG	Pb	10 40 59.9	0.0
GONE	Gonen-Balikesi	0.76	161	ePg	Pb	10 40 59.9	0.0
PHSR	Pinarhisar	0.87	8	ePG	Pb	10 41 01.8	+0.1
PHSR	Pinarhisar	0.87	8	ePg	Pb	10 41 01.8	+0.1
KCTX	Karacabey (Bur	0.91	123	ePG	Pb	10 41 02.3	-0.1
KCTX	Karacabey (Bur	0.91	123	ePg	Pb	10 41 02.3	-0.1
ENEZ	Enez	0.92	268	ePG	Pg	10 41 02.4	0.0
ENEZ	Enez	0.92	268	ePg	Pg	10 41 02.4	0.0
CTKS	Kestanelik-??a	0.99	61	ePG	Pg	10 41 03.9	+0.1
CTKS	Kestanelik-??a	0.99	61	ePg	Pg	10 41 03.9	+0.1
CTYL	Yalikoy Yolu	1.00	45	ePG	Pg	10 41 04.1	+0.2
CTYL	Yalikoy Yolu	1.00	45	ePg	Pg	10 41 04.1	+0.2
ALN	Alexandroupoli	1.00	278	ePG	Pn	10 41 04.3	-0.2
ALN	Alexandroupoli	1.00	278	ePg	Pn	10 41 04.3	-0.2
BALY	Balya	1.05	169	i P	Pb	10 41 04.8	0.0
BALY				i S	Sn	10 41 19.5	-0.2
BALY	Balya	1.05	169	P	Pb	10 41 04.8	0.0
BALY				S	Sn	10 41 19.5	-0.2
BGKT	Bogazkoy	1.15	69	ePN	Pg	10 41 07.0	+0.2
BGKT	Bogazkoy	1.15	69	ePn	Pg	10 41 07.0	+0.2
ARMT	Armutlu	1.16	100	ePN	Pg	10 41 07.3	+0.2
ARMT	Armutlu	1.16	100	ePn	Pg	10 41 07.3	+0.2
EDRB	Edirne	1.17	337	ePN	Pg	10 41 07.7	+0.4
EDRB	Edirne	1.17	337	ePn	Pg	10 41 07.7	+0.4
BALB	Balikesir	1.20	160	ePN	Pg	10 41 08.2	+0.4
BALB	Balikesir	1.20	160	ePn	Pg	10 41 08.2	+0.4
EZN	Ezine	1.23	220	ePN	Pb	10 41 07.7	-0.1
EZN	Ezine	1.23	220	ePn	Pb	10 41 07.7	-0.1
GADA	Gvkgeada	1.25	243	ePN	Pg	10 41 09.1	+0.2
GADA	Gvkgeada	1.25	243	ePn	Pg	10 41 09.1	+0.2
ISK	Istanbul-Kandi	1.32	77	ePN	Pg	10 41 10.1	-0.1
ISK	Istanbul-Kandi	1.32	77	ePn	Pg	10 41 10.1	-0.1
KLYT	Kilyos	1.36	69	ePN	Pg	10 41 10.6	-0.3
KLYT	Kilyos	1.36	69	ePn	Pg	10 41 10.6	-0.3
ORLT	Orhaneli	1.38	121	ePN	Pg	10 41 11.1	-0.2
ORLT	Orhaneli	1.38	121	ePn	Pg	10 41 11.1	-0.2
DURS	Dursunbey	1.45	143	i P	Pg	10 41 12.3	-0.2
DURS				i S	Sb	10 41 30.4	+0.4
DURS	Dursunbey	1.45	143	P	Pg	10 41 12.3	-0.2
DURS				S	Sb	10 41 30.4	+0.4
DST	Dursunbey	1.51	140	ePN	Pb	10 41 12.9	+0.2
DST	Dursunbey	1.51	140	ePn	Pb	10 41 12.9	+0.2
SILT	Sile	1.77	77	ePN	Pb	10 41 16.5	-0.6
SILT	Sile	1.77	77	ePn	Pb	10 41 16.5	-0.6

*ISCJB **06** 10:42:09.8±0.6, 39°.50N±0°.04×33°.50E±0°.04, h3km±7km, Error ellipse: s-maj=7.4km s-min=4.3km az=163.9*
*CSEM **06** 10:42:09.9±0.2, 39°.50N×33°.48E, h8km, MD2.8, Error ellipse: s-maj=5.8km s-min=3.1km az=157.0*
*ISK **06** 10:42:09.4, 39°.49N×33°.48E, h6km, MD2.6*
*DDA **06** 10:42:09.4, 39°.48N×33°.49E, h7km, Md2.8*
ISC 06 10:42:10.0±1.0**, 39°.48N**±0°.04×**33°.47E**±0°.02**, h12**km±12km**, n22,** σ**0s.74**/35**, Turkey**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
BBAL	Bala	0.28	284	i P	Pg	10 42 15.5	-0.3
BBAL				i S	Sg	10 42 20.0	+0.3
BBAL	Bala	0.28	284	P	Pg	10 42 15.5	-0.3
BBAL				S	Sg	10 42 20.0	+0.3
AFSR	Af¯ar-Bala (A	0.31	265	ePG	Pg	10 42 16.2	-0.2
AFSR				eSG	Sg	10 42 21.0	+0.3
AFSR	Af¯ar-Bala (A	0.31	265	ePg	Pg	10 42 16.2	-0.2
AFSR				eSg	Sg	10 42 21.0	+0.3
KKUL	Konya-Kulu	0.53	235	i P	Pg	10 42 20.3	-0.1
KKUL				i S	Sb	10 42 28.6	-0.3
KKUL	Konya-Kulu	0.53	235	P	Pg	10 42 20.3	-0.1
KKUL				S	Sb	10 42 28.6	-0.3
SERE	Sereflikochisa	0.53	172	ePG	Pg	10 42 20.5	+0.1
SERE				eSG	Sb	10 42 28.5	-0.6
SERE	Sereflikochisa	0.53	172	ePg	Pg	10 42 20.5	+0.1
SERE				eSg	Sb	10 42 28.5	-0.6
CDAG	Cicekdag	0.71	78	i P	Pg	10 42 22.8	-1.0
CDAG				i S	Sg	10 42 33.4	+0.2
CDAG	Cicekdag	0.71	78	P	Pg	10 42 22.8	-1.0
CDAG				S	Sg	10 42 33.4	+0.2
CORM	Corum	1.13	51	ePN	Pb	10 42 31.4	-0.3
CORM	Corum	1.13	51	ePn	Pb	10 42 31.4	-0.3
SULT	Sultanhani-AKS	1.28	179	ePN	Pg	10 42 34.5	0.0
SULT	Sultanhani-AKS	1.28	179	ePn	Pg	10 42 34.5	0.0
KIZT	Kizilcal	1.37	245	ePN	Pb	10 42 35.7	0.0
KIZT	Kizilcal	1.37	245	ePn	Pb	10 42 35.7	0.0
COAL	Corum-Alaca	1.40	56	i P	Pg	10 42 37.1	+0.2
COAL				i S	Sg	10 42 58.4	+3.3
COAL	Corum-Alaca	1.40	56	P	Pg	10 42 37.1	+0.2
KDHN	Kadinhani	1.42	228	i P	Pb	10 42 36.4	-0.2
KDHN				i S	Sg	10 42 56.8	+0.9
KDHN	Kadinhani	1.42	228	P	Pb	10 42 36.4	-0.2
KDHN				S	Sg	10 42 56.8	+0.9
YOZ	Yozgat	1.44	83	ePN	Pb	10 42 36.4	-0.4
YOZ	Yozgat	1.44	83	ePn	Pb	10 42 36.4	-0.4

BUC 06 10:44:26.7±0.5**, 45°.29N**×**25°.15E, h5**km±7km**, MD2.0**/2**, 4C-4D, Error ellipse: s-maj=5.0km s-min=4.4km az=72.0, Romania**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
MTUR	Matau	0.09	228	⇑iP	Pg	10 44 29.7	+1.0
MTUR	Matau	0.09	228	⇑iP	Pg	10 44 29.7	+1.0
VOIR		0.17	334	⇓iP	Pg	10 44 30.8	+0.7
VOIR				S	Sg	10 44 33.5	+1.1
VOIR		0.17	334	⇓iP	Pg	10 44 30.8	+0.7
VOIR				i S	Sg	10 44 33.5	+1.1
ARR	Arges	0.38	283	S	Sb	10 44 41.2	-0.9
ARR	Arges	0.38	283	i S	Sb	10 44 41.2	-0.9
MLR	Muntele Rosu	0.59	69	⇑iP	Pb	10 44 39.0	-0.7
MLR	Muntele Rosu	0.59	69	⇑iP	Pb	10 44 39.0	-0.7
MLR				i S	Sg	10 44 46.5	+0.6
LOT	Lotru	0.99	280	⇓iP	Pb	10 44 46.4	0.0
LOT	Lotru	0.99	280	⇓iP	Pb	10 44 46.4	0.0
LOT				i S	Sn	10 45 01.6	-0.2

*NIED **06** 10:44:00, 38°.90N×142°.40E, h38km, Mw3.9 Best double couple: M₀8.94000×10^14 NP1:φs113.00000°, δ16.00000°, λ67.00000°. NP2:φs317.00000°, δ75.00000°, λ96.00000°.*
JMA 06 10:44:56.0±0.2**, 38°.94N**×**142°.36E, h32**km±2km**, M3.5, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
OFUJ	Ofunato	0.56	285	P	Pb	10 45 07.3	-0.1
JMK	Ichinoseki	0.89	271	P	Pn	10 45 12.2	-0.1
JMK				S	Sn	10 45 23.9	-0.1
JIO	Ouri	0.93	239	P	Pn	10 45 11.9	-0.9
JIO				S	Sn	10 45 23.6	-1.4
JOM	Ohasama	0.99	303	P	Pn	10 45 13.9	+0.3
JOM				S	Sn	10 45 26.6	+0.1
JRG	Rokugo	1.42	289	P	Pb	10 45 20.9	-0.9
JRG				S	Sb	10 45 39.5	0.0
JOU	Okura	1.45	247	P	Pn	10 45 20.6	+0.6
MAT	Matsushiro	4.07	235	P	Pn	10 45 58.3	+2.3

*ISCJB **06** 10:46:48.0±0.5, 39°.70N±0°.02×30°.77E±0°.03, h3km±4km, Error ellipse: s-maj=4.4km s-min=3.2km az=139.4*
*DDA **06** 10:46:47.6, 39°.72N×30°.74E, h7km, Md2.9*
*CSEM **06** 10:46:47.8±0.2, 39°.69N×30°.79E, h8km, MD2.9, Error ellipse: s-maj=4.7km s-min=4.0km az=59.0*
*ISK **06** 10:46:47.5, 39°.66N×30°.79E, h11km, MD2.6*
ISC 06 10:46:47.7±0.9**, 39°.71N**±0°.02×**30°.78E**±0°.02**, h9**km±8km**, n35,** σ**0s.65**/59**, Turkey**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
ESKT	Eskisehir	0.20	165	i P	Pg	10 46 51.6	-0.3
ESKT				i S	Sg	10 46 55.9	+1.1
SEYT	Eskypehyr	0.20	165	P	Pg	10 46 51.6	-0.3
SEYT				S	Sg	10 46 55.9	+1.1
BORA	Eskisehir	0.30	303	i P	Pg	10 46 52.7	-1.1
BORA				i S	Sg	10 46 58.0	+0.1
BORA	Eskisehir	0.30	303	P	Pg	10 46 52.7	-1.1
BORA				S	Sg	10 46 58.0	+0.1
SVRH	Sivrihisar-ESK	0.63	115	ePG	Pg	10 46 59.7	-0.2
SVRH				eSG	Sg	10 47 08.5	+0.3
SVRH	Sivrihisar-ESK	0.63	115	ePg	Pg	10 46 59.7	-0.2
GULT	Gulveren	0.75	344	ePG	Pb	10 47 03.3	+0.4
GULT	Gulveren	0.75	344	ePg	Pb	10 47 03.3	+0.4
MDUB	Mudurnu	0.82	23	ePG	Pn	10 47 05.1	-0.4
MDUB				eSG	Sn	10 47 17.0	-0.8
MDUB	Mudurnu	0.82	23	ePg	Pn	10 47 05.1	-0.4
MDUB				eSg	Sn	10 47 17.0	-0.8
CAVI	Cavuskoy	0.87	304	ePG	Pb	10 47 04.9	-0.1
CAVI				eSG	Sn	10 47 18.6	-0.4
CAVI	Cavuskoy	0.87	304	ePg	Pb	10 47 04.9	-0.1
CAVI				eSg	Sn	10 47 18.6	-0.4
BOLV	Bolvadin	1.00	173	i P	Pn	10 47 07.7	-0.3
BOLV				i S	Sn	10 47 22.9	+0.6
BOLV	Bolvadin	1.00	173	P	Pn	10 47 07.7	-0.3
TVSB	Tavsanli	1.05	256	ePG	Pb	10 47 08.1	-0.1
TVSB				eSG	Sn	10 47 23.1	-0.5
TVSB	Tavsanli	1.05	256	ePg	Pb	10 47 08.1	-0.1
TVSB				eSg	Sn	10 47 23.1	-0.5
SAHE	Sakarya_HENDEK	1.14	3	i P	Pb	10 47 09.3	-0.3
SAHE				i S	Sn	10 47 26.0	+0.4
SAHE	Sakarya_HENDEK	1.14	3	P	Pb	10 47 09.3	-0.3
SAHE				S	Sn	10 47 26.0	+0.4
SHUT	Suhut-Afyon	1.17	189	ePN	Pb	10 47 09.3	-0.9
SHUT	Suhut-Afyon	1.17	189	ePn	Pb	10 47 09.3	-0.9
IZI	Iznik	1.18	302	ePN	Pg	10 47 10.9	+0.5
IZI	Iznik	1.18	302	ePn	Pg	10 47 10.9	+0.5
GDZ	Gediz	1.19	239	i P	Pg	10 47 11.3	+0.8
GDZ				i S	Sn	10 47 26.5	-0.4
GDZ	Gediz	1.19	239	P	Pg	10 47 11.3	+0.8
GDZ				S	Sn	10 47 26.5	-0.4
KIZT	Kizilcal	1.19	134	ePN	Pb	10 47 09.8	-0.7
KIZT	Kizilcal	1.19	134	ePn	Pb	10 47 09.8	-0.7
IGD	Bursa	1.33	295	i P	Pn	10 47 12.0	-0.5
IGD				i S	Sn	10 47 30.1	-0.2
ULDT	Uludag	1.34	289	i P	Pb	10 47 12.8	-0.3
ULDT				i S	Sg	10 47 31.4	+0.7

ULDT	Uludag	1.34	289	P	Pb	10 47 12.8	-0.3
ULDT				S	Sg	10 47 31.4	+0.7
KAND	Kocaeli-Kandir	1.45	342	*i* P	Pn	10 47 14.0	-0.1
KAND				*i* S	Sg	10 47 35.9	+1.5
KAND	Kocaeli-Kandir	1.45	342	P	Pn	10 47 14.0	-0.1
KAND				S	Sg	10 47 35.9	+1.5
KDHN	Kadinhani	1.58	139	*i* P	Pb	10 47 17.2	+0.1
KDHN				*i* S	Sg	10 47 40.2	+1.7
KDHN	Kadinhani	1.58	139	P	Pb	10 47 17.2	+0.1
DURS	Dursunbey	1.79	267	*i* P	Pb	10 47 20.1	-0.5
DURS				*i* S	Sn	10 47 41.7	+0.1
DURS	Dursunbey	1.79	267	P	Pb	10 47 20.1	-0.5
DURS				S	Sn	10 47 41.7	+0.1

*NIED **06** 10:47:00, 38°.90N×142°.40E, h50^{km}, Mw3.9 Best double couple: M0 7.84000×10^{14} NP1:ϕ_s134.00000°, δ28.00000°, λ-88.00000°. NP2:ϕ_s312.00000°, δ62.00000°, λ-91.00000°.*
*ISCJB **06** 10:47:53.4±0.8, 38°.87N±0°.06×142°.50E±0°.07, h27^{km}, mb3.5/4, Error ellipse: s-maj=8.9km s-min=7.7km az=166.0*
*JMA **06** 10:47:55.9±0.2, 38°.95N×142°.37E, h39^{km}±2^{km}, M3.9*
JMA Felt I J1.
*IDC **06** 10:47:58.5±4.0, 38°.83N×142°.37E, h62^{km}±38^{km}, mb3.2/4, mb1 3.6/6, mb1mx3.1/53, mbtmp3.6/6, ML3.5/2, MS2.5/1, Ms1 2.5/1, ms1mx2.1/17, Error ellipse: s-maj=38.2km s-min=26.6km az=96.0*
ISC 06 10:47:54.1±1.0, **38°.82N**±0°.05×**142°.38E**±0°.07, **h27**^{km}, **n14, σ1^s.55**/17, **mb3.7**/4, **Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
OFUJ	Ofunato	0.61	296	P	Pn	10 48 07.5	+0.4
JIO	Ouri	0.89	246	P	Pb	10 48 11.9	+1.0
JIO				S	Sn	10 48 23.6	+0.9
JMK	Ichinoseki	0.92	279	P	Pb	10 48 12.2	+0.8
JMK				S	Sn	10 48 24.1	+0.6
JOM	Ohasama	1.07	308	P	Pb	10 48 13.9	-0.1
JOM				S	Sn	10 48 26.5	-0.8
JTH	Tanohata	1.19	340	P	Pn	10 48 14.5	-0.5
JOU	Okura	1.42	252	P	Pb	10 48 20.0	+0.1
JRG	Rokugo	1.48	294	P	Pb	10 48 20.4	-0.5
MAT	Matsushiro	4.01	237	P	Pn	10 48 58.7	+4.8
MAT				S	Sb	10 49 50.1	-2.1
MJAR	Matsushiro Arr	4.01	237	P	Pn	10 48 58.9	+5.1
	2.6nm,0.3s,baz=34,slow=14,SNR=23						
MJAR				LR	LR	10 50 53.9	
	comp=Z,56nm,19.0s,baz=85,slow=44						
JHJ	Hachijo jima 2	6.06	201	P	Pn	10 49 23.6	+1.6
	4.1nm,0.3s,baz=316,slow=22,SNR=6.2						
JHJ				S	Sn	10 50 25.9	-4.6
	2.7nm,0.3s,baz=72,slow=19,SNR=3.0						
KURBB	Kurchatov Arra	45.53	307	P	P	10 56 11.4	+0.2
	0.5nm,0.4s,baz=81,slow=8.2,SNR=5.9						
ILAR	Eielson Array	47.58	33	P	P	10 56 27.8	+0.7
	0.4nm,0.7s,baz=268,slow=6.1,SNR=4.7						
WRA	Warramunga Arr	58.93	189	P	P	10 57 51.4	+0.4
	0.4nm,0.5s,baz=6.5,slow=6.9,SNR=9.8						
TXAR	Lajitas Array	88.43	53	P	P	11 00 43.9	-0.2
	0.1nm,0.6s,baz=334,slow=6.0,SNR=2.0						

*NEIC **06** 10:51:45.7, 16°.12N×95°.77W, h74^{km}, MD4.0(MEX), After MEX.*
MEX 06 10:51:45.7±0.3, **16°.12N**×**95°.77W**, **h74**^{km}±6^{km}, **MD4.0, Oaxaca**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
HUIG	Huatulco	0.48	223	*e*P	Pn	10 51 57.4	-1.3
HUIG				*e*S	Sn	10 52 06.5	-1.8
HUIG	Huatulco	0.48	223	*e*P	Pn	10 51 57.4	-1.3
HUIG				*e*S	Sn	10 52 06.5	-1.8
PANG	Puerto Angel	0.81	237	*e*P	Pn	10 52 00.9	-1.3
PANG				*e*S	Sn	10 52 12.9	-1.6
VHO	Vista Hermosa	1.33	316	*e*P	Pn	10 52 07.4	-1.4
VHO				*e*S	Sn	10 52 24.7	-1.4
VHO	Vista Hermosa	1.33	316	*e*P	Pn	10 52 07.4	-1.4
VHO				*e*S	Sn	10 52 24.7	-1.4
PNIG	Pinotepa	2.28	277	*e*P	Pn	10 52 20.0	-1.3
PNIG				*e*S	Sn	10 52 46.8	-1.7
PNIG	Pinotepa	2.28	277	*e*P	Pn	10 52 20.0	-1.3
PNIG				*e*S	Sn	10 52 46.8	-1.7
TEIG	Tepich	8.21	59	*e*Pn	Pn	10 53 39.7	-2.4
TEIG				*e*Sn	Sn	10 55 06.6	-6.7

*ISCJB **06** 10:52:54.9±0.8, 36°.46N±0°.04×28°.78E±0°.04, h3^{km}±6^{km}, Error ellipse: s-maj=7.3km s-min=4.5km az=24.1*
*DDA **06** 10:52:55.0, 36°.48N×28°.78E, h7^{km}, Md3.0*
*ISK **06** 10:52:54.9, 36°.50N×28°.79E, h8^{km}, MD2.9*
*CSEM **06** 10:52:55.3±0.2, 36°.47N×28°.80E, h8^{km}, MD2.9, Error ellipse: s-maj=4.2km s-min=2.7km az=13.0*
ISC 06 10:52:55.0±1.1, **36°.47N**±0°.03×**28°.78E**±0°.02, **h8**^{km}±9^{km}, **n34, σ0^s.89**/51, **Dodecanese Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
FETY	Fethiye	0.29	55	*e*PG	Pg	10 53 00.8	0.0
FETY				*e*SG	Sg	10 53 05.0	+0.3
FETY	Fethiye	0.29	55	*e*Pg	Pg	10 53 00.8	0.0
FETY				*e*Sg	Sg	10 53 05.0	+0.3
DALY	Dalyan (Mu˜la	0.36	343	*e*PG	Pg	10 53 01.9	-0.2
DALY				*e*SG	Sg	10 53 07.1	+0.2
DALY	Dalyan (Mu˜la	0.36	343	*e*Pg	Pg	10 53 01.9	-0.2
DALY				*e*Sg	Sg	10 53 07.1	+0.2
TURN	Turunc	0.43	340	*i* P	Pb	10 53 05.0	+0.2
TURN				*i* S	Sb	10 53 13.5	+2.0
TURN	Turunc	0.43	340	P	Pb	10 53 05.0	+0.2
TURN				S	Sb	10 53 13.5	+2.0
AKAS	Kas	0.70	109	*i* P	Pg	10 53 08.3	-0.3
AKAS				*i* S	Sb	10 53 19.3	-0.3
AKAS	Kas	0.70	109	P	Pg	10 53 08.3	-0.3
AKAS				S	Sb	10 53 19.3	-0.3
YER	Yerkesik	0.78	329	*e*PG	Pb	10 53 09.8	-1.0
YER				*e*SG	Sb	10 53 20.7	-0.9
YER	Yerkesik	0.78	329	*e*Pg	Pb	10 53 09.9	-1.0
YER				*e*Sg	Sb	10 53 20.7	-0.9
ELL	Elmali	0.95	73	*e*PG	Pb	10 53 13.2	-0.6
ELL	Elmali	0.95	73	*e*Pg	Pb	10 53 13.2	-0.6
GOLH	Golhisar	0.99	39	*i* P	Pb	10 53 13.7	-0.8
GOLH				*i* S	Sn	10 53 27.8	-1.8
GOLH	Golhisar	0.99	39	P	Pb	10 53 13.7	-0.8
GOLH				S	Sn	10 53 27.8	-1.8
BDRM	Kayabasi	1.23	299	*i* P	Pg	10 53 18.6	0.0
BDRM				*i* S	Sn	10 53 35.2	-0.2
BDRM	Kayabasi	1.23	299	P	Pg	10 53 18.6	0.0
BDRM				S	Sn	10 53 35.2	-0.2
DENT	Denizli	1.30	9	*e*PN	Pg	10 53 19.3	-0.6
DENT	Denizli	1.30	9	*e*Pn	Pg	10 53 19.3	-0.6
NIS1	Nisyros Isl.	1.30	276	*e*PN	Pg	10 53 19.9	0.0
NIS1	Nisyros Isl.	1.30	276	*e*Pn	Pg	10 53 19.9	0.0
BODT	Bodrum	1.32	297	*e*PN	Pg	10 53 20.0	-0.4
BODT	Bodrum	1.32	297	*e*Pn	Pg	10 53 20.0	-0.4
KORT	Korkueli	1.37	67	*i* P	Pg	10 53 21.5	+0.3
KORT				*i* S	Sn	10 53 42.7	+3.7
KORT	Korkueli	1.37	67	P	Pg	10 53 21.5	+0.3
AYDN	Tasoluk	1.39	329	*i* P	Pg	10 53 21.4	-0.3
AYDN				*i* S	Sg	10 53 40.4	+0.6
AYDN	Tasoluk	1.39	329	P	Pg	10 53 21.4	-0.3
AYDN				S	Sg	10 53 40.4	+0.6
KARP	Karpathos	1.60	236	*e*PN	Pb	10 53 24.6	-0.3
KARP	Karpathos	1.60	236	*e*Pn	Pb	10 53 24.6	-0.3
AYDB	Zeytinkoy-Aydi	1.64	334	*e*PN	Pn	10 53 24.2	-0.1
AYDB	Zeytinkoy-Aydi	1.64	334	*e*Pn	Pn	10 53 24.2	-0.1
KULA	Kula-Manisa	2.04	357	*e*PN	Pn	10 53 30.0	+0.2
KULA	Kula-Manisa	2.04	357	*e*Pn	Pn	10 53 30.0	+0.2
IZM	Izmir	2.27	328	*e*PN	Pn	10 53 33.3	+0.3
IZM	Izmir	2.27	328	*e*Pn	Pn	10 53 33.3	+0.3

JMA 06 10:56:47.0±0.2, **36°.67N**×**141°.46E**, **h45**^{km}±3^{km}, **M2.6, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
ONAJ	Iwakimizuishiy	0.68	309	P	Pn	10 57 00.0	-0.4
ONAJ				S	Sn	10 57 09.7	-0.4
JHO	Hitachi	0.72	266	P	Pn	10 57 00.6	-0.2
JHO				S	Sn	10 57 08.8	-2.0
JFK	Kawauchi	0.84	326	P	Pn	10 57 02.1	-0.4
JFK				S	Sn	10 57 13.5	-0.2
JFT	Otama	1.23	314	P	Pn	10 57 09.0	+1.2
JMM	Marumori	1.31	336	P	Pn	10 57 09.0	+0.2
JMM				S	Sn	10 57 25.6	+0.5
MAT	Matsushiro	2.62	268	P	Pn	10 57 28.7	+1.9
MAT				S	Sn	10 58 02.3	+4.9

IDC 06 10:59:28.1±6.0, **3°.49S**×**133°.15E**, **h0**^{km}, **mb3.5**/2, **mb1 3.8**/3, **mb1mx3.4**/31, **mbtmp3.5**/3, **ML3.3**/1, **Error ellipse: s-maj=362.9km s-min=29.1km az=76.0, Irian Jaya region**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
WRA	Warramunga Arr	16.39	176	Pn	Pn	11 03 21.0	+1.1
	0.1nm,0.3s,baz=352,slow=13,SNR=7.3						
ASAR	Alice Springs	20.07	178	P	P	11 04 02.9	-0.5
	3.0nm,0.7s,baz=5.8,slow=12,SNR=54						
MKAR	Makanchi Array	67.11	325	P	P	11 10 23.7	0.0
	0.1nm,0.4s,baz=114,slow=6.5,SNR=2.8						

*DDA **06** 10:59:48.7, 36°.97N×36°.92E, h7^{km}, Md2.9*
*ISK **06** 10:59:48.3, 36°.97N×36°.94E, h2^{km}, MD2.7*
*ISCJB **06** 10:59:49.2±0.4, 36°.96N±0°.02×36°.89E±0°.03, h4^{km}±4^{km}, Error ellipse: s-maj=3.8km s-min=2.8km az=30.9*
*CSEM **06** 10:59:49.5±0.1, 36°.96N×36°.90E, h2^{km}, MD2.9, Error ellipse: s-maj=3.2km s-min=2.2km az=108.0*
*NSSC **06** 10:59:51.5±1.2, 36°.86N×36°.81E, h1^{km}±3^{km}, MD1.0, ML2.3*
ISC 06 10:59:49.1±0.9, **36°.97N**±0°.02×**36°.90E**±0°.02, **h9**^{km}±8^{km}, **n51, σ0^s.88**/88, **1D, Jordan-Syria region**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
KUZU	Kuzuini	0.24	145	*i* P	Pg	10 59 54.0	0.0
KUZU				*i* S	Sg	10 59 57.8	+0.5
KUZU	Kuzuini	0.24	145	P	Pg	10 59 54.0	0.0
KUZU				S	Sg	10 59 57.8	+0.5
KAMA	Osmaniye	0.28	319	*i* P	Pg	10 59 54.4	-0.4
KAMA				*i* S	Sg	10 59 59.2	+0.5
GAZ	Gaziantep	0.32	51	*e*PG	Pg	10 59 55.3	-0.2
GAZ				*e*SG	Sg	11 00 00.2	+0.5
GAZ	Gaziantep	0.32	51	*e*Pg	Pg	10 59 55.3	-0.2
GAZ				*e*Sg	Sg	11 00 00.2	+0.5
DRWC	Darouich	0.40	208	*e*P	Pg	10 59 57.1	+0.1
DRWC				*e*S	Sg	11 00 02.1	0.0
DRWC				AML	AML	11 00 06.7	
	comp=N,125nm,0.2s						
DRWC				AML	AML	11 00 07.5	
	comp=E,149nm,1.0s						
DRWC	Darouich	0.40	208	*e*P	Pg	10 59 57.1	+0.1
DRWC				*e*S	Sg	11 00 02.2	0.0
AYKD	Aykdinkavak	0.45	350	*i* P	Pg	10 59 58.1	+0.2
AYKD				*i* S	Sg	11 00 04.6	+0.8
KMRS	Kahramanmaras	0.53	360	*e*PG	Pg	10 59 59.6	+0.1
KMRS				*e*SG	Sb	11 00 08.1	-0.5
KMRS	Kahramanmaras	0.53	360	*e*Pg	Pg	10 59 59.6	+0.1
KMRS				*e*Sg	Sb	11 00 08.1	-0.5
GZT	Gaziantep	0.65	54	*i* P	Pg	11 00 01.6	-0.2
GZT				*i* S	Sb	11 00 11.7	-0.5
ANDN	Andirin	0.75	324	*i* P	Pg	11 00 03.5	-0.1
ANDN				*i* S	Sg	11 00 14.2	+0.7
ANDN	Andirin	0.75	324	P	Pg	11 00 03.5	-0.1
ANDN				S	Sg	11 00 14.2	+0.7
TAHT	Tahtakopru-Hat	0.83	224	*e*PG	Pb	11 00 05.3	-0.4
TAHT	Tahtakopru-Hat	0.83	224	*e*Pg	Pb	11 00 05.3	-0.4
CEYT	Ceyhan	0.93	273	*e*PG	Pn	11 00 07.8	-0.6
CEYT	Ceyhan	0.93	273	*e*Pg	Pn	11 00 07.8	-0.6
KOZT	Kozan	1.00	301	*e*PG	Pn	11 00 09.0	-0.4
KOZT	Kozan	1.00	301	*e*Pg	Pn	11 00 09.0	-0.4
BTCH	Batrach	1.00	201	*e*P	Pg	11 00 08.0	-0.3
BTCH				*e*S	Sg	11 00 20.7	-0.6
BTCH				AML	AML	11 00 24.1	
	comp=E,277nm,0.3s						
BTCH				AML	AML	11 00 24.4	
	comp=N,193nm,0.4s						
BTCH	Batrach	1.00	201	*e*P	Pg	11 00 08.0	-0.3
BTCH				*e*S	Sg	11 00 20.7	-0.6
YAYL	Yayladag	1.13	215	*i* P	Pn	11 00 11.2	-0.2
YAYL				*i* S	Sb	11 00 25.8	-0.1
YAYL	Yayladag	1.13	215	P	Pn	11 00 11.1	-0.2
YAYL				S	Sb	11 00 25.8	-0.1
KRTS	Karatas	1.29	252	*e*PN	Pg	11 00 14.8	+0.9
KRTS	Karatas	1.29	252	*e*Pn	Pg	11 00 14.8	+0.9
ARNB	Al Arnab	1.34	214	⇓*e*P	Pb	11 00 14.2	-0.3
ARNB				*e*S	Sb	11 00 31.2	-0.6
ARNB				AML	AML	11 00 34.2	
	comp=E,104nm,0.3s						
ARNB				AML	AML	11 00 38.1	
	comp=N,61nm,0.4s						
SURC	SANLIURFA_SURC	1.37	93	*i* P	Pb	11 00 14.7	-0.4
SURC				*i* S	Sg	11 00 32.9	-0.4
SURC	SANLIURFA_SURC	1.37	93	P	Pb	11 00 14.6	-0.4
SURC				S	Sg	11 00 32.9	-0.4
SLNF	Slenfeh	1.48	202	*e*P	Pb	11 00 16.7	-0.2
SLNF				*e*S	Sn	11 00 34.6	-1.1
SLNF				AML	AML	11 00 40.0	
	comp=N,191nm,0.5s						
SLNF				AML	AML	11 00 42.1	
	comp=E,209nm,0.4s						
SLNF	Slenfeh	1.48	202	*e*P	Pb	11 00 16.7	-0.2
SLNF				*e*S	Sn	11 00 34.6	-1.1
WRDH	Warideh	1.51	195	*e*P	Pn	11 00 16.6	+0.1
WRDH				*e*S	Sn	11 00 36.0	-0.4
WRDH				AML	AML	11 00 38.6	
	comp=N,122nm,0.3s						
WRDH				AML	AML	11 00 39.8	
	comp=E,57nm,0.5s						
WRDH	Warideh	1.51	195	*e*P	Pn	11 00 16.6	+0.1
WRDH				*e*S	Sn	11 00 36.0	-0.4
AKCD	Akcadag	1.55	31	*i* P	Pg	11 00 19.6	+0.7
AKCD				*i* S	Sb	11 00 37.9	0.0
AKCD	Akcadag	1.55	31	P	Pg	11 00 19.6	+0.7
AKCD				S	Sb	11 00 37.9	0.0
DARE	Darende-Malaty	1.66	16	*e*PN	Pb	11 00 19.5	-0.5
DARE	Darende-Malaty	1.66	16	*e*Pn	Pb	11 00 19.5	-0.5
KFRA	Kufra	1.76	183	*e*P	Pb	11 00 21.3	-0.3
KFRA				*e*S	Sb	11 00 43.0	-0.8
KFRA				AML	AML	11 00 50.0	
	comp=E,63nm,0.5s						
KFRA				AML	AML	11 00 54.4	
	comp=N,118nm,0.2s						
KFRA	Kufra	1.76	183	*e*P	Pb	11 00 21.3	-0.3
KFRA				*e*S	Sb	11 00 43.0	-0.8
MERS	Mersin	1.91	268	*e*PN	Pb	11 00 23.6	-0.6
MERS	Mersin	1.91	268	*e*Pn	Pb	11 00 23.6	-0.6
BIDA	Albida	2.01	194	*e*P	Pn	11 00 24.1	+0.7
BIDA				*e*S	Sn	11 00 49.4	+0.7
BIDA				AML	AML	11 00 55.9	
	comp=E,69nm,0.4s						
BIDA				AML	AML	11 00 57.1	
	comp=N,87nm,0.4s						
BIDA	Albida	2.01	194	*e*P	Pn	11 00 24.1	+0.7
BIDA				*e*S	Sn	11 00 49.4	+0.7
NIG	Nigde	2.15	303	*e*PN	Pb	11 00 27.0	-1.4
NIG	Nigde	2.15	303	*e*Pn	Pb	11 00 27.0	-1.4
HAWK	Haweek	2.48	190	*e*P	Pb	11 00 31.8	-2.2
HAWK				*e*S	Sn	11 01 00.1	-0.1
HAWK				AML	AML	11 01 10.8	
	comp=N,10nm,0.6s						
HAWK				AML	AML	11 01 16.1	
	comp=E,13nm,0.7s						
HAWK	Haweek	2.48	190	*e*P	Pb	11 00 31.8	-2.2
HAWK				*e*S	Sn	11 01 00.2	-0.1
SFNV	Sufian	2.64	101	*e*P	Pb	11 00 37.1	+0.4
SFNV				*e*S	Sb	11 01 08.3	-0.9
SFNV				AML	AML	11 01 18.9	
	comp=Z,33nm,0.6s						
SFNV	Sufian	2.64	101	*e*P	Pb	11 00 37.1	+0.4
SFNV				*e*S	Sb	11 01 08.3	-0.9
IKL	Isikli	2.69	255	*e*PG	Sg	11 01 17.3	+1.8
IKL				*e*SG	Sg	11 01 19.7	+4.2
ROOS	tl_alroos	2.81	173	*e*P	Pn	11 00 36.6	+2.2
ROOS				*e*S	Sn	11 01 09.3	+0.7
ROOS				AML	AML	11 01 28.6	
	comp=E,11nm,0.7s						
ROOS				AML	AML	11 01 32.9	
	comp=N,20nm,0.6s						
ROOS	tl_alroos	2.81	173	*e*P	Pn	11 00 36.6	+2.2
ROOS				*e*S	Sn	11 01 09.3	+0.7

*ISK **06** 11:04:52.2, 40°.95N×31°.55E, h5^{km}, MD2.7*
*ISCJB **06** 11:04:54.4±0.5, 40°.95N±0°.03×31°.48E±0°.04, h7^{km}±6^{km}, Error ellipse: s-maj=5.9km s-min=4.3km az=144.6*
*CSEM **06** 11:04:54.3±0.2, 40°.96N×31°.47E, h5^{km}, MD2.7, Error ellipse: s-maj=4.4km s-min=3.3km az=142.0*
*DDA **06** 11:04:54.2, 40°.97N×31°.47E, h7^{km}, Md2.9*
ISC 06 11:04:53.6±1.3, **40°.98N**±0°.03×**31°.47E**±0°.03, **h13**^{km}±11^{km}, **n26, σ0^s.44**/40, **Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
KDZE	Karadeniz Ereo	0.34	356	*e*PG	Pg	11 05 00.1	-0.4
KDZE				*e*SG	Sb	11 05 07.5	+0.6
KDZE	Karadeniz Ereo	0.34	356	*e*Pg	Pg	11 05 00.1	-0.4
KDZE				*e*Sg	Sb	11 05 07.5	+0.6
BCAM	Yenicaga	0.48	109	*i* P	Pg	11 05 03.5	+0.5
BCAM				*i* S	Sb	11 05 10.8	-0.1
BCAM	Yenicaga	0.48	109	P	Pg	11 05 03.5	+0.5
BCAM				S	Sb	11 05 10.8	-0.1
SAHE	Sakarya_HENDEK	0.49	255	*i* P	Pb	11 05 03.8	-0.2
SAHE				*i* S	Sb	11 05 11.7	+0.6
SAHE	Sakarya_HENDEK	0.49	255	P	Pb	11 05 03.8	-0.2
SAHE				S	Sb	11 05 11.7	+0.6
BTAS	Taskesti	0.54	222	*i* P	Pg	11 05 04.5	+0.3
BTAS				*i* S	Sb	11 05 13.2	+0.5
BTAS	Taskesti	0.54	222	P	Pg	11 05 04.5	+0.3
BTAS				S	Sb	11 05 13.2	+0.5
MDUB	Mudurnu	0.55	203	*e*PG	Pg	11 05 04.4	+0.1
MDUB				*e*SG	Sb	11 05 12.2	-0.7
MDUB	Mudurnu	0.55	203	*e*Pg	Pg	11 05 04.4	+0.1
MDUB				*e*Sg	Sb	11 05 12.2	-0.7
BTIN	Bart˜–n	0.88	41	*i* P	Pn	11 05 11.9	+0.2
BTIN				*i* S	Sn	11 05 24.4	-0.1
BTIN	Bart˜–n	0.88	41	P	Pn	11 05 11.9	+0.2
BTIN				S	Sn	11 05 24.4	-0.1
GULT	Gulveren	0.91	234	*e*PG	Pg	11 05 11.4	+0.3
GULT	Gulveren	0.91	234	*e*Pg	Pg	11 05 11.4	+0.3
KAND	Kocaeli-Kandir	0.98	277	*i* P	Pb	11 05 12.1	-0.2
KAND				*i* S	Sn	11 05 26.2	-0.5
KAND	Kocaeli-Kandir	0.98	277	P	Pb	11 05 12.1	-0.2
KAND				S	Sn	11 05 26.2	-0.5
SILT	Sile	1.40	278	*e*PN	Pg	11 05 20.9	+0.5
SILT	Sile	1.40	278	*e*Pn	Pg	11 05 20.9	+0.5
ADVT	Abdulvahap	1.43	248	*e*PN	Pg	11 05 21.0	0.0
ADVT	Abdulvahap	1.43	248	*e*Pn	Pg	11 05 21.0	0.0
SVRH	Sivrihisar-ESK	1.53	179	*e*PN	Pb	11 05 21.6	-0.3
SVRH	Sivrihisar-ESK	1.53	179	*e*Pn	Pb	11 05 21.6	-0.3
IZI	Iznik	1.65	248	*e*PN	Pb	11 05 24.2	+0.3
IZI	Iznik	1.65	248	*e*Pn	Pb	11 05 24.2	+0.3
ARMT	Armutlu	2.02	259	*e*PN	Pb	11 05 29.5	-0.8
ARMT	Armutlu	2.02	259	*e*Pn	Pb	11 05 29.5	-0.8

*SCB **06** 11:13:10.9±0.3, 17°.16S×69°.10W, h180^{km}, Ml3.9/3, Error ellipse: s-maj=8.1km s-min=3.9km az=90.0*
*ISCJB **06** 11:13:13.2±1.1, 17°.12S±0°.10×69°.3W±0°.1, h185^{km}±6^{km}, mb3.7/4, Error ellipse: s-maj=23.0km s-min=15.7km az=5.0*
*IDC **06** 11:13:13.6±1.6, 17°.18S×69°.34W, h178^{km}±9^{km}, mb3.5/5, mb1 3.6/7, mb1mx3.3/30, mbtmp4.0/7, MS3.1/1, Ms1 3.1/1, ms1mx2.6/13, Error ellipse: s-maj=28.8km s-min=21.5km az=107.0*
ISC 06 11:13:13.7±1.4, **17°.12S**±0°.10×**69°.4W**±0°.1, **h177**^{km}±7^{km}, **n16, σ0^s.74**/21, **mb3.8**/4, **9C-2D, Peru-Bolivia border region**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
BBOD	La Paz, Gloria	0.87	56	⇓*i*Pn	Pn	11 13 40.2	-0.7
BBOD				⇑*i*Sn	Sn	11 14 01.5	-0.2
	389nm,0.5s						
BBOJ	La Paz, Jacaqu	1.12	83	⇓*i*Pn	Pn	11 13 42.8	+0.1
BBOJ				⇑*i*Sn	Sn	11 14 03.8	-1.1
	487nm,0.7s						
BBOE	La Paz, Chanca	1.34	77	⇑*i*Pn	Pn	11 13 45.2	+0.6
BBOE				⇑*i*Sn	Sn	11 14 08.0	-0.4
LPAZ	La Paz	1.44	55	P	Pn	11 13 46.1	+0.6
	30nm,0.3s,baz=310,slow=3.9,SNR=913						
LPAZ				S	Sn	11 14 10.4	+0.4
	26nm,0.3s,baz=150,slow=25,SNR=47						
LPAZ	La Paz	1.44	55	⇑*i*Pn	Pn	11 13 45.7	+0.2
LPAZ				*e*Sn	Sn	11 14 09.8	-0.2
	978nm,0.5s						
BBOB	La Paz, Bander	1.52	50	⇑*i*Pn	Pn	11 13 46.1	-0.1
BBOB				⇑*i*Sn	Sn	11 14 12.1	+0.8
	372nm,0.4s						
MOCB	Mochara	5.40	140	⇑*i*Pn	Pn	11 14 33.8	+0.6
SIV	San Ignacio	8.02	83	P	Pn	11 15 05.4	-1.9
	4.7nm,0.3s,baz=271,slow=9.3,SNR=41						
SIV	San Ignacio	8.02	83	⇑*i*Pn	Pn	11 15 07.8	+0.5
PTGA	Pitinga	18.73	31	P	P	11 17 19.3	+0.2
	0.8nm,0.3s,baz=35,slow=7.3,SNR=5.0						
BDFB	Brasilia	20.52	89	P	P	11 17 39.6	+1.1
	1.0nm,0.3s,baz=236,slow=3.6,SNR=3.1						
ROSC	El Rosal	22.37	347	LR	LR	11 27 35.8	
	comp=Z,48nm,18.4s,baz=202,slow=38						
PLCA	Paso Flores	23.55	182	P	P	11 18 07.2	-0.8
	5.0nm,1.0s,baz=25,slow=11,SNR=9.2						
DBIC	Dimbokro	67.96	75	P	P	11 23 53.9	-0.2
	1.3nm,0.7s,baz=236,slow=5.8,SNR=5.4						
TORD	Torodi Ar. Bea	76.33	71	P	P	11 24 43.8	+0.1
	1.6nm,1.0s,baz=258,slow=4.6,SNR=8.9						
YKA	Yellowknife Ar	86.94	341	P	P	11 25 38.2	0.0
	0.2nm,0.4s,baz=132,slow=4.5,SNR=16						

*ISCJB **06** 11:17:42.7±1.0, 36°.48N±0°.04×143°.41E±0°.07, h33^{km}, mb3.5/2, Error ellipse: s-maj=8.7km s-min=6.2km az=168.5*
*IDC **06** 11:17:42.3±3.5, 36°.12N×143°.45E, h0^{km}, mb3.5/2, mb1 3.6/4, mb1mx3.3/40, mbtmp3.5/4, ML3.4/2, MS2.3/4, Ms1 2.3/4, ms1mx2.2/44, Error ellipse: s-maj=63.6km s-min=40.4km az=13.0*
*JMA **06** 11:17:44.6±0.3, 36°.47N×143°.32E, h67^{km}, M3.4*
ISC 06 11:17:44.1±1.5, **36°.44N**±0°.05×**143°.45E**±0°.10, **h35**^{km}, **n17, σ1^s.51**/20, **Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
ONAJ	Iwakimizuishiy	2.23	288	*e*S	Sn	11 18 44.4	-0.5
JHO	Hitachi	2.33	275	*e*S	Sn	11 18 45.4	-1.9
JFT	Otama	2.71	294	S	Sn	11 18 56.9	0.0
JMK	Ichinoseki	3.07	325	*e*S	Sn	11 19 03.4	-2.1
JAG	Ashikaga	3.22	271	*e*S	Sn	11 19 07.6	-1.8
JYK	Kaneyama	3.48	316	P	Pn	11 18 35.9	+0.1
JYK				*e*S	Sn	11 19 14.9	-0.8
JRY	Ryogami san	3.70	265	P	Pn	11 18 39.5	+0.6
JRY				S	Sn	11 19 20.0	-1.3
JOD2	Odawara 2	3.73	253	P	Pn	11 18 40.2	+0.9
JYN	Shimob	4.09	258	P	Pn	11 18 45.6	+1.4
JANG	Nango	4.21	339	P	Pn	11 18 45.0	-0.8
JANG				*e*S	Sn	11 19 32.7	-1.0
MJAR	Matsushiro Arr	4.22	273	Pn	Pn	11 18 47.9	+1.9
	1.4nm,0.3s,baz=85,slow=10,SNR=8.2						
MJAR				LR	LR	11 20 38.8	
	comp=Z,48nm,20.6s,baz=70,slow=42						
JHJ2	Mitsune	4.47	223	P	Pn	11 18 49.6	+0.2
JHJ2				*e*S	Sn	11 19 37.7	-2.5
JHJ	Hachijo jima 2	4.48	223	Pn	Pn	11 18 49.7	+0.1
	7.6nm,0.3s,baz=84,slow=21,SNR=6.3						
JHJ				Sn	Sn	11 19 37.7	-2.8
	12nm,0.3s,baz=59,slow=24,SNR=8.5						
JHJ				LR	LR	11 20 14.1	
	comp=Z,22nm,21.1s,baz=47,slow=36						
JNU	Nakatsue	10.86	256	LR	LR	11 23 44.2	
	comp=Z,18nm,19.1s,baz=314,slow=34						
KSRS	Korea Array	12.47	279	LR	LR	11 24 43.9	
	comp=Z,18nm,20.4s,baz=94,slow=34						
WRA	Warramunga Arr	56.74	190	P	P	11 27 25.4	+1.0
	0.3nm,0.5s,baz=10,slow=7.4,SNR=7.3						
ASAR	Alice Springs	60.46	190	P	P	11 27 51.6	+1.2
	0.2nm,0.6s,baz=4.0,slow=6.7,SNR=7.6						

*ISK **06** 11:20:06.1, 40°.51N×37°.24E, h5^{km}, MD2.8*
*ISCJB **06** 11:20:07.0±0.5, 40°.54N±0°.03×37°.27E±0°.04, h0^{km}, Error ellipse: s-maj=4.3km s-min=3.5km az=44.0*

CSEM ***06*** *11:20:07.0±0.2, 40°.51N×37°.26E, h2km, MD2.8, Error ellipse: s-maj=5.1km s-min=4.5km az=39.0, Suspected Mining explosion.*

DDA ***06*** *11:20:07.7, 40°.49N×37°.27E, h7km, Md2.8, Suspected Mining explosion.*

ISC 06 11:20:06.8±0.8**, 40°.52N**±0°.02×**37°.20E**±0°.03**, h0km, n32, σ0.85**/52**, Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
RSDY	Resadiye-TOKAT	0.15	142	ePG	Pg	11 20 09.1	-0.6
RSDY				eSG	Sg	11 20 11.7	0.0
RSDY	Resadiye-TOKAT	0.15	142	ePg	Pg	11 20 09.1	-0.6
RSDY				eSg	Sg	11 20 11.7	0.0
ERBA	Erbaa	0.38	296	i P	Pb	11 20 15.9	-0.5
ERBA				i S	Sb	11 20 24.3	+1.4
ERBA	Erbaa	0.38	296	P	Pb	11 20 15.9	-0.5
ERBA				S	Sb	11 20 24.3	+1.4
SVSK	Karacayir	0.62	195	ePG	Pg	11 20 18.6	-0.1
SVSK				eSG	Sb	11 20 28.9	-0.8
SVSK	Karacayir	0.62	195	ePg	Pg	11 20 18.6	-0.1
SVSK				eSg	Sb	11 20 28.9	-0.8
ORDU	Ordu-Boztepe	0.69	46	i P	Pg	11 20 19.7	-0.2
ORDU				i S	Sb	11 20 31.7	0.0
ORDU	Ordu-Boztepe	0.69	46	P	Pg	11 20 19.7	-0.2
ORDU				S	Sb	11 20 31.7	0.0
CUZAR	Zara_SIVAS	0.77	145	i P	Pg	11 20 16.5	-4.9
CUZAR				i S	Sg	11 20 32.1	+0.7
CUZAR	Zara_SIVAS	0.77	145	P	Pg	11 20 16.5	-4.9
CUZAR				S	Sg	11 20 32.1	+0.7
SUSE	Susehri	0.82	112	i P	Pg	11 20 21.6	-1.0
SUSE				i S	Sg	11 20 34.0	+0.7
SUSE	Susehri	0.82	112	P	Pg	11 20 21.6	-1.0
SUSE				S	Sg	11 20 34.0	+0.7
KVT	Kavak	1.04	303	ePG	Pn	11 20 27.8	-0.9
KVT				eSG	Sn	11 20 43.6	-0.4
KVT	Kavak	1.04	303	ePg	Pn	11 20 27.8	-0.9
KVT				eSg	Sn	11 20 43.6	-0.4
CUKAN	kangal_SIVAS	1.22	170	i P	Pg	11 20 29.0	-1.1
CUKAN				i S	Sn	11 20 48.6	+0.1
CUKAN	kangal_SIVAS	1.22	170	P	Pg	11 20 29.0	-1.1
CUKAN				S	Sn	11 20 48.6	+0.1
ESPY	Espiye-Giresun	1.22	71	ePN	Pg	11 20 30.1	-0.2
ESPY	Espiye-Giresun	1.22	71	ePn	Pg	11 20 30.1	-0.2
CUALT	Altinyayla-SIV	1.29	196	i P	Pg	11 20 30.8	-0.7
CUALT				i S	Sn	11 20 52.3	+2.0
CUALT	Altinyayla-SIV	1.29	196	P	Pg	11 20 30.8	-0.7
CUALT				S	Sn	11 20 52.3	+2.0
CUSAR	Sarkisla-SIVAS	1.32	214	i P	Pg	11 20 31.8	-0.3
CUSAR				i S	Sn	11 20 52.4	+1.3
CUSAR	Sarkisla-SIVAS	1.32	214	P	Pg	11 20 31.8	-0.3
CUSAR				S	Sn	11 20 52.4	+1.3
KEMA	Kemaliye	1.59	141	i P	Pn	11 20 35.2	-1.2
KEMA				i S	Sg	11 20 59.1	+1.1
KEMA	Kemaliye	1.59	141	P	Pn	11 20 35.2	-1.2
KEMA				S	Sg	11 20 59.1	+1.1
YOZ	Yozgat	1.69	239	ePN	Pb	11 20 38.2	-0.6
YOZ	Yozgat	1.69	239	ePn	Pb	11 20 38.2	-0.6
DARE	Darende-Malaty	1.96	174	ePN	Pn	11 20 41.7	+0.4
DARE	Darende-Malaty	1.96	174	ePn	Pn	11 20 41.7	+0.4
BAYT	Ayd˘–ntepe-Bay	2.25	92	ePN	Pn	11 20 45.6	+0.2
BAYT	Ayd˘–ntepe-Bay	2.25	92	ePn	Pn	11 20 45.6	+0.2
PTK	Pertek	2.34	133	ePN	Pn	11 20 47.0	+0.3
PTK	Pertek	2.34	133	ePn	Pn	11 20 47.0	+0.3

IDC ***06*** *11:25:50.9±0.3, 31°.29S×176°.97W, h0km, mb5.2/22, mb1 5.3/22, mb1mx5.2/29, mbtmp5.1/22, MS4.5/21, Ms1 4.5/21, ms1mx4.4/34, Error ellipse: s-maj=15.4km s-min=14.6km az=48.0*

BJI ***06*** *11:25:50.2, 30°.92S×176°.54W, h5km, mb5.5/37, mB5.8/29, Ms5.2/18, Ms7 4.9/19*

GCMT ***06*** *11:25:51.2±0.2, 31°.27S×176°.78W, h14km, MW5.2/90, Moment Tensor Solution. s74,c104; s90,c152; Duration: 1s0 Moment tensor: Scale 10^{17}Nm; M_{rr}-0.70±.02; $M_{\theta\theta}$-0.06±.01; $M_{\phi\phi}$0.75±.01; $M_{r\theta}$0.09±.03; $M_{\theta\phi}$0.33±.01; $M_{\phi r}$-0.30±.03; Best double couple: $M_0$0.85400×10^{17} NP1:ϕ_s4.00000°,δ56.00000°, λ-110.00000°. NP2:ϕ_s216.00000°,δ39.00000°, λ-64.00000°. Principal axes: T 0.9140, Plg9.0000°, Azm108.0000°; N -0.1200, Plg16.0000°, Azm15.0000°; P -0.7930, Plg71.0000°, Azm226.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

NEIC ***06*** *11:25:51.2±2.3, 31°.43S×177°.10W, h3km±14km, mb5.2/15 Error ellipse: s-maj=6.3km s-min=4.5km az=156.0*

ISCJB ***06*** *11:25:54.4±0.1, 31°.68S±0°.03×177°.06W±0°.03, h33km, mb5.4/76, MS4.7/28, Error ellipse: s-maj=5.3km s-min=2.4km az=41.6*

MOS ***06*** *11:25:55.4±1.1, 31°.34S×177°.13W, h33km, mb5.2/28, MS4.9/6, Error ellipse: s-maj=10.8km s-min=8.8km az=82.8*

ISC 06 11:25:56.1±0.2**, 31°.55S**±0°.03×**177°.01W**±0°.05**, h35km, n606, σ1.11**/623**, mb5.4**/76**, MS4.7**/28**, 26C-29D, Kermadec Islands region**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
MXZ	Matakaoa Point	7.13	212	PN	Pn	11 27 35.0	-3.0
MXZ				SN	Sn	11 28 57.5	-0.2
MXZ	Matakaoa Point	7.13	212	ePn	Pn	11 27 35.5	-2.5
MXZ				eSn	Sn	11 28 54.6	-3.2
WMGZ	Waiomatatini S	7.30	210	PN	Pn	11 27 37.9	-2.3
WMGZ				SN	Sn	11 29 00.4	-1.5
PKGZ	Pakihiroa	7.51	211	PN	Pn	11 27 40.4	-2.7
PKGZ				SN	Sn	11 29 06.9	-0.2
HAZ	Te Kaha	7.53	213	PN	Pn	11 27 41.3	-2.1
HAZ				SN	Sn	11 29 09.3	+1.7
PUZ	Puketiti	7.58	210	PN	Pn	11 27 40.7	-3.4
PUZ				SN	Sn	11 29 07.4	-1.4
TWGZ	Tauwhareparae	7.79	211	PN	Pn	11 27 44.2	-2.8
TWGZ				SN	Sn	11 29 15.2	+1.3
CNGZ	Carnagh Statio	7.95	208	PN	Pn	11 27 46.3	-2.9
TKGZ	Te Karaka	8.06	210	PN	Pn	11 27 47.4	-3.3
MWZ	Matawai	8.12	212	PN	Pn	11 27 47.5	-4.0
OPRZ	Ohinepanea	8.22	218	PN	Pn	11 27 51.6	-1.2
URZ	Urewera	8.25	214	Pn	Pn	11 27 50.0	-3.3
	12nm,0.3s,baz=310,slow=1.9,SNR=51						
URZ				Sn	Sn	11 29 23.2	-2.1
	51nm,0.3s,baz=252,slow=10,SNR=10						
URZ	Urewera	8.25	214	ePN	Pn	11 27 49.9	-3.4
URZ				eSN	Sn	11 29 21.9	-3.4
URZ	Urewera	8.25	214	ePn	Pn	11 27 52.1	-1.2
URZ				eSn	Sn	11 29 23.4	-1.9
MKAZ	Moumakai	8.52	227	PN	Pn	11 27 58.9	+1.9
SNGZ	Shannon Statio	8.57	211	PN	Pn	11 27 54.5	-3.1
KNZ	Kokohu	8.63	209	PN	Pn	11 27 53.8	-4.6
OUZ	Omahuta	8.67	243	PN	Pn	11 28 03.1	+4.1
TOZ	Tahuroa Road	8.72	223	PN	Pn	11 28 00.3	+0.6
WHHZ	Waihua	8.86	210	PN	Pn	11 27 58.2	-3.4
NMHZ	Naumai	9.07	212	PN	Pn	11 28 01.9	-2.7
ARHZ	Aropaoanui	9.12	211	PN	Pn	11 28 01.6	-3.6
BKZ	Black Stump Fm	9.27	213	ePN	Pn	11 28 02.8	-4.5
BKZ				eSN	Sn	11 29 48.2	-2.1
BKZ	Black Stump Fm	9.27	213	ePn	Pn	11 28 06.3	-1.0
BKZ				eSn	Sn	11 29 49.0	-1.3
KAHZ	Kahuranaki	9.61	209	ePN	Pn	11 28 06.7	-5.3
HIZ	Hauiti	9.63	222	ePn	Pn	11 28 12.9	+0.7
PXZ	Pawanui	9.82	209	ePN	Pn	11 28 08.5	-6.2
TSZ	Takapari Road	10.23	212	ePN	Pn	11 28 15.9	-4.5
MRZ	Mangatainoka R	10.89	211	ePN	Pn	11 28 23.3	-6.1
MRZ				eSN	Sn	11 30 22.3	-7.7
DUWZ	D'Urville Isla	11.78	216	ePN	Pn	11 28 35.6	-6.1
THZ	Tophouse	13.01	216	ePN	Pn	11 28 51.0	-7.4
THZ				eSN	Sn	11 31 13.1	-8.8
THZ	Tophouse	13.01	216	ePn	Pn	11 28 57.7	-0.7
KHZ	Kahutara	13.21	212	ePN	Pn	11 28 54.7	-6.4
KHZ	Kahutara	13.21	212	ePn	Pn	11 28 58.8	-2.3
DSZ	Denniston Nort	13.56	218	ePN	Pn	11 28 59.7	-6.3
LTZ	Lake Taylor	14.08	214	ePn	Pn	11 29 11.1	-2.0
LTZ				eSn	Sn	11 31 39.4	-8.7
INZ	Inchbonnie	14.45	216	ePN	Pn	11 29 11.3	-6.7
MSVF	Nonsavu	14.47	341	eP	Pn	11 29 15.4	-3.1
MSVF	Nonsavu	14.47	341	ePn	Pn	11 29 15.4	-3.1
MQZ	McQueen's Vall	14.62	211	ePn	Pn	11 29 20.5	+0.1
MQZ				eSn	Sn	11 31 49.1	-12
RPZ	Rata Peaks	15.37	214	Pn	Pn	11 29 22.1	-8.3
	1.2nm,0.3s,baz=120,slow=8.1,SNR=5.8						
RPZ				Sn	Sn	11 32 06.7	-13
	5.3nm,0.3s,baz=127,slow=23,SNR=7.8						
ODZ	Otahua Downs	16.57	212	ePn	Pn	11 29 43.8	-1.8
	179nm,0.9s						
DZM	Mont Dzumac	17.51	299	P	P	11 30 00.8	+2.2
	1.8nm,0.3s,baz=72,slow=17,SNR=13						
DZM				LR	LR	11 35 35.8	
	comp=Z,2µm,19.1s,baz=121,slow=34						
AFI	Afiamalu	18.20	16	P	Pn	11 29 58.1	-8.0
	3.3nm,0.3s,baz=95,slow=0.8,SNR=4.9						
AFI				S	Sn	11 33 02.6	-26
	6.1nm,0.3s,baz=67,slow=20,SNR=6.7						
AFI				LR	LR	11 36 58.9	
	comp=Z,559nm,20.7s,baz=193,slow=37						
RAR	Rarotonga	18.53	60	P	P	11 30 03.5	-6.2
	10nm,0.3s,baz=261,slow=7.2,SNR=12						
RAR				LR	LR	11 35 43.9	
	comp=Z,2µm,21.4s,baz=241,slow=32						
RAR				PKP2ab		12 08 52.3	
	2.4nm,0.3s,baz=97,slow=6.3,SNR=3.1						
DCZ	Deep Cove	18.57	217	eP	Pn	11 30 10.5	+0.1
	64nm,1.0s						
LHI	Lord Howe Isla	20.39	264	P	Pn	11 30 33.3	+1.0
	baz=21,SNR=5.2						
TBI	Tubuai	25.72	78	eLQ	LQ	11 36 37.2	
	1µm,27.4s						
TBI				eLR	LR	11 37 41.8	
	2µm,25.5s,baz=247						
TBI	Tubuai	25.72	78	eT	T	11 57 03.5	
	29nm,0.3s						
ARMA	Armidale	26.87	264	P	P	11 31 36.5	+2.8
	baz=27,SNR=32						
CNB	Canberra Magne	28.24	253	P	P	11 31 48.0	+2.1
	baz=29,SNR=17						
PAE	Paea	28.41	67	eT	T	12 00 18.7	
	4.2nm,0.2s						
PPT2	Papeete2	28.46	67	eS	S	11 36 24.6	-8.7
	301nm,24.5s						
PPT2				eLQ	LQ	11 37 18.5	
	2µm,25.2s						
PPT2				eLR	LR	11 38 55.9	
	1µm,23.8s						
PPT2	Papeete2	28.46	67	eT	T	12 00 28.0	
	4.5nm,0.3s						
PPT	Papeete	28.47	67	LR	LR	11 40 29.7	
	comp=Z,852nm,19.0s,baz=242,slow=31						
CAN	Canberra	28.54	253	P	P	11 31 50.6	+2.0
	baz=29						
CAN	Canberra	28.54	253	eP	P	11 31 49.9	+1.3
CAN				pmax	pmax		
	comp=Z,53nm,1.5s						
CAN	Canberra	28.54	253	eP	P	11 31 49.9	+1.3
	comp=Z,53nm,1.5s						
TIAR	Tiarei	28.66	67	eP	P	11 31 44.4	-5.3
	comp=Z,22nm,0.8s						
EIDS	Eidsvold	28.66	274	P	P	11 31 50.8	+1.1
	baz=29,SNR=5.0						
EIDS	Eidsvold	28.66	274	eP	P	11 31 49.8	+0.1
	comp=Z,17nm,0.9s						
YNG	Young	29.09	255	P	P	11 31 55.3	+1.8
	baz=29,SNR=10						
RMQ	Roma	30.28	271	P	P	11 32 06.0	+1.9
	baz=31,SNR=18						
TAU	Tasmania Unive	30.37	238	eP	P	11 32 05.8	+1.1
TAU				pmax	pmax		
	comp=Z,27nm,0.9s						
TAU	Tasmania Unive	30.37	238	eP	P	11 32 05.8	+1.1
	comp=Z,27nm,0.9s						
MOO	Moorlands	30.39	239	P	P	11 32 07.1	+2.3
	baz=31,SNR=4.4						
TOO	Toolangi	31.32	249	P	P	11 32 14.8	+1.7
	baz=32,SNR=15						
VAH	Vaihoa	31.34	66	eP	P	11 32 08.0	-5.4
	comp=Z,50nm,0.8s						
CMSA	Cobar Meteorol	31.69	260	P	P	11 32 17.7	+1.2
	baz=32,SNR=93						
QLP	Quilpie	34.12	268	P	P	11 32 38.1	+0.4
	baz=34,SNR=29						
ARPS	Mount Arapiles	34.26	250	P	P	11 32 40.3	+1.5
	baz=35,SNR=26						
CTAO	Charters Tower	34.83	280	eP	P	11 32 45.2	+1.3
CTAO				pmax	pmax		
	comp=Z,62nm,1.0s						
CTAO	Charters Tower	34.83	280	eP	P	11 32 45.2	+1.3
	comp=Z,62nm,1.0s						
STKA	Stephens Creek	35.07	258	P	P	11 32 47.0	+1.1
	comp=Z,50nm,0.7s,baz=100,slow=9.7,SNR=142						
STKA				LR	LR	11 47 15.0	
	comp=Z,1µm,18.0s,baz=90,slow=36						
STKA	Stephens Creek	35.07	258	P	P	11 32 47.0	+1.1
	baz=35,SNR=144						
STKA	Stephens Creek	35.07	258	eP	P	11 32 46.9	+1.1
STKA				pmax	pmax		
	comp=Z,12nm,0.9s						
STKA	Stephens Creek	35.07	258	eP	P	11 32 46.9	+1.1
	comp=Z,12nm,0.9s						
HTT	Hallett	37.02	255	P	P	11 33 03.3	+0.7
	baz=37,SNR=44						
MTSU	Mount Surprise	37.36	282	P	P	11 33 06.6	+1.0
	baz=38,SNR=19						
RKT	Rikitea	38.09	88	eS	S	11 38 55.7	-6.5
	comp=Z,487nm,27.0s						
RKT				eLR	LR	11 43 26.6	
	comp=Z,2µm,26.5s,baz=249						
BBOO	Buckleboo	39.49	255	P	P	11 33 22.8	-0.6
	baz=40,SNR=68						
BBOO	Buckleboo	39.49	255	eP	P	11 33 23.2	-0.2
	comp=Z,49nm,0.8s						
QIS	Mount Isa	40.26	275	P	P	11 33 29.6	-0.3
	baz=40,SNR=9.3						
COEN	Coen	40.41	286	P	P	11 33 32.0	+0.8
	baz=41,SNR=7.8						
TAOE	Nuku Hiva Isla	41.00	65	eS	S	11 39 38.5	-7.8
	comp=Z,366nm,24.4s						
TAOE				eLR	LR	11 44 53.2	
	comp=Z,914nm,24.0s,baz=236						
AS01	Alice Springs	43.87	268	eP	P	11 33 57.1	-2.3
AS31	Alice Springs	43.91	268	eP	P	11 33 58.8	-0.9
	comp=Z,17nm,0.7s						
ASAR	Alice Springs	43.91	268	P	P	11 33 58.9	-0.8
	comp=Z,49nm,0.7s,baz=104,slow=7.3,SNR=588						
ASAR				PcP	PcP	11 35 45.6	+0.2
	comp=Z,7.5nm,0.5s,baz=110,slow=4.0,SNR=5.8						
ASAR				ScP	ScP	11 39 38.1	+3.6
	comp=Z,3.2nm,0.8s,baz=113,slow=4.1,SNR=2.7						
ASAR				S	S	11 40 29.6	+0.7
	comp=Z,0.9nm,0.9s,baz=109,slow=14,SNR=3.2						
WB2	Warramunga Arr	44.99	273	eP	P	11 34 07.0	-1.4
	comp=Z,65nm,0.6s						
WRAB	Tennant Creek	44.99	273d	iP	P	11 34 07.4	-0.9
WRAB				pmax	pmax		
	comp=Z,128nm,0.6s						
WRAB	Tennant Creek	44.99	273	eP	P	11 34 07.2	-1.1
	comp=Z,60nm,0.7s						
WRA	Warramunga Arr	45.00	273	P	P	11 34 07.0	-1.4
	comp=Z,49nm,0.5s,baz=111,slow=8.0,SNR=550						
WRA				PcP	PcP	11 35 49.6	+0.5
	comp=Z,5.5nm,0.7s,baz=120,slow=3.2,SNR=5.5						
WRA				LR	LR	11 53 34.3	
	comp=Z,2µm,18.1s,baz=105,slow=37						
WB9	Warramunga Arr	45.02	273	P	P	11 34 07.1	-1.5
	baz=45						
VNDA	Vanda	47.04	186	P	P	11 34 26.4	+2.7
	comp=Z,5.8nm,0.8s,baz=60,slow=4.4,SNR=24						
VNDA				PcP	PcP	11 35 57.3	+2.1
	comp=Z,7.6nm,0.9s,baz=53,slow=1.3,SNR=5.7						
VNDA				LR	LR	11 51 03.9	
	comp=Z,447nm,20.7s,baz=16,slow=32						
VNDA	Vanda	47.04	186	eP	P	11 34 26.6	+2.9
	comp=Z,7.2nm,0.8s						
VNDA				PcP	PcP	11 35 57.3	+2.1
MTN	Manton Dam	51.01	279	P	P	11 34 53.5	-1.4
	baz=51,SNR=5.1						
MTN	Manton Dam	51.01	279	eP	P	11 34 53.7	-1.1
	comp=Z,26nm,0.6s						
KMBL	Kambalda	51.50	253	P	P	11 34 57.6	-0.8
	baz=52						
KNRA	Kununurra	51.65	275	P	P	11 34 59.3	-0.4
	baz=52						
FITZ	Fitzroy Crossi	53.22	270	P	P	11 35 10.7	-0.6
	comp=Z,48nm,0.7s,baz=166,slow=7.1,SNR=72						
FITZ	Fitzroy Crossi	53.22	270	P	P	11 35 10.5	-0.7
	baz=54,SNR=14						
FITZ	Fitzroy Crossi	53.22	270	eP	P	11 35 10.7	-0.6
	comp=Z,44nm,0.7s						
CASY	Casey	54.53	208	eP	P	11 35 20.9	+0.7
	comp=Z,44nm,0.8s						
KLBR	Kellerberrin	54.79	252	P	P	11 35 20.9	-1.7
	baz=55,SNR=11						
FAKI	Fak Fak	55.54	290	P	P	11 35 27.3	-0.9
	comp=Z,33nm,1.0s,comp=Z,486nm						
FAKI	Fak Fak	55.54	290	eP	P	11 35 27.4	-0.8
	comp=Z,24nm,0.8s						
KIP	Kipapa	55.73	22⇓	iP	P	11 35 28.9	-0.4
KIP				pmax	pmax		
	comp=Z,478nm,0.9s						
BNDI	Bandanaira	56.50	287	P	P	11 35 36.5	+1.4
	comp=Z,95nm,1.1s						
MBWA	Marble Bar	56.95	264	eP	P	11 35 37.3	-0.9
	comp=Z,23nm,0.8s						
MORW	Morawa	57.03	254	P	P	11 35 37.6	-1.1
	baz=57,SNR=11						
SOEI	Soe	58.36	278	P	P	11 35 50.3	+1.9
	comp=Z,36nm,0.8s						
SOEI	Soe	58.36	278	eP	P	11 35 48.5	+0.2
	comp=Z,39nm,0.8s						
QSPA	South Pole Qui	58.56	180	eP	P	11 35 51.4	+2.3
MIR	Mirnyy	61.49	207	i P	P	11 36 10.0	+1.1
MIR				pmax	pmax		
	comp=Z,4.0nm,1.0s						
JAGI	Jajag, Banyuwa	67.60	274	eP	P	11 36 49.6	-0.1
	comp=Z,97nm,1.1s						
BBKI	Banjar Baru	69.61	279	P	P	11 37 04.2	+2.0
	comp=Z,45nm,0.9s						
JCJ	Chichijima	70.11	322	LR	LR	12 01 51.7	
	comp=Z,335nm,21.1s,baz=350,slow=31						
MAW	Mawson	71.53	200	P	P	11 37 15.0	+2.0
	comp=Z,11nm,0.8s,baz=118,slow=8.9,SNR=9.1						
MAW				LR	LR	12 11 35.3	
	comp=Z,292nm,18.0s,baz=78,slow=38						
MAW	Mawson	71.53	200	P	P	11 37 15.0	+2.0
MAW				pmax	pmax		
	comp=Z,11nm,0.8s						
MAW				MLR	MLR		
	comp=Z,292nm,18.0s						
CISI	Cisompet, Garu	73.47	271	eP	P	11 37 24.6	-1.0
STKI	Sintang	74.33	280	P	P	11 37 30.9	+0.4
	comp=Z,42nm,0.9s,comp=Z,21µm						
SBUM	Sibu	75.00	282	eP	P	11 37 33.5	-0.9
KSM	Kuching	76.07	280	eP	P	11 37 39.5	-1.1
JHJ2	Mitsune	76.15	324	eP	P	11 37 39.2	-1.2
JHJ	Hachijo jima 2	76.17	324	P	P	11 37 38.9	-1.7
	comp=Z,102nm,0.7s,baz=146,slow=2.8,SNR=7.3						
SYO	Syowa Base	76.19	193⇑	eP	P	11 37 40.0	-0.2
SYO	Syowa Base	76.19	193⇓	epP	P	11 37 42.6	+2.4
SNAA	Sanae	76.98	178	P	P	11 37 45.7	+0.9
SNAA	Sanae	76.98	178	eP	P	11 37 45.6	+0.8
SNAA	Sanae	76.98	178	eP	P	11 37 45.6	+0.8
VNA3	Neumayer Olymp	77.10	176	P	P	11 37 45.9	+0.4
VNA2	Neumayer--Watz	77.55	177	P	P	11 37 48.9	+1.0
	baz=169,slow=5.4						
PPBI	Pangkal Pinang	77.67	275	P	P	11 37 50.2	+0.6
	comp=Z,32nm,0.7s						
VNA1	Neumayer--Stat	77.77	176	P	P	11 37 50.1	+1.0
NVL	N'lazarevskaya	77.78	183	eP	P	11 37 49.8	+0.6
INU	Inuyama	79.33	323	eP	P	11 37 56.5	-1.6
MJAR	Matsushiro Arr	79.67	325	P	P	11 37 58.7	-1.3
	comp=Z,7.9nm,0.9s,baz=160,slow=5.4,SNR=14						
MJAR				LR	LR	12 12 51.6	
	comp=Z,111nm,18.6s,baz=70,slow=36						
MAJO	Matsushiro	79.67	325	eP	P	11 37 59.1	-0.9
MAJO	Matsushiro	79.67	325	eP	P	11 37 59.1	-0.9
MAT	Matsushiro	79.67	325	P	P	11 37 57.7	-2.3
TPUB	Ta-pu	80.83	304	eP	P	11 38 04.0	-2.5
SSLB	Suanglung	80.92	305	eP	P	11 38 04.6	-2.4
JNU	Nakatsue	80.98	318	P	P	11 38 06.0	-1.1
	comp=Z,16nm,0.8s,baz=90,slow=1.8,SNR=11						
JNU	Nakatsue	80.98	318	eP	P	11 38 05.8	-1.4
PLCA	Paso Flores	81.10	132	P	P	11 38 09.0	+1.1
	comp=Z,4.5nm,0.7s,baz=251,slow=4.9,SNR=21						
PLCA				LR	LR	12 08 46.7	
	comp=Z,396nm,18.1s,baz=278,slow=32						
PLCA	Paso Flores	81.10	132	eP	P	11 38 08.7	+0.7
PLCA	Paso Flores	81.10	132	eP	P	11 38 08.7	+0.7
EFI	East Falkland	81.36	147	P	P	11 38 10.0	+1.0
EFI				pmax	pmax		
	comp=Z,48nm,0.9s						
MYKOM	Kota Tinggi	81.69	277	eP	P	11 38 11.4	+0.1
YUK	Yuzh-Kuril'sk	82.52	334⇑	eP	P	11 38 12.3	-2.6
YUK				e		11 41 31.8	
YUK				eS	S	11 48 28.1	-0.8
YUK				pmax	pmax		
	comp=Z,404nm,2.5s						
CIS	Catalina Islan	85.02	46	P	P	11 38 28.6	+0.6
	baz=227						
SRIG	Santa Rosalia	85.06	54	eP	P	11 38 28.1	-0.2
SMMC	Simmler	85.38	43	P	P	11 38 30.3	+0.5
	baz=226						
IPM	Ipoh	85.50	278	eP	P	11 38 30.1	-0.9
PASC	Pasadena Art C	85.68	45	eP	P	11 38 32.0	+0.7
KSRS	Korea Array	85.77	319	P	P	11 38 31.8	+0.2
	comp=Z,12nm,0.8s,baz=142,slow=5.6,SNR=49						
KSRS				LR	LR	12 13 09.6	
	comp=Z,96nm,19.7s,baz=118,slow=33						
KSAR	Wonju Array Be	85.79	319	P	P	11 38 31.8	+0.1
KSAR	Wonju Array Be	85.79	319	P	P	11 38 31.8	+0.1
MWC	Mount Wilson	85.79	45	eP	P	11 38 32.3	+0.2
MWC	Mount Wilson	85.79	45	eP	P	11 38 32.3	+0.2
MURC	Murrieta	85.90	46	P	P	11 38 32.0	-0.4
	baz=228,SNR=11						
MONP2	Monument Peak	85.91	47	P	P	11 38 33.1	+0.4
	baz=228,SNR=13						
ARVC	Arvin	85.94	44	P	P	11 38 32.8	+0.3
	baz=227,SNR=5.4						
IBP	Imperial Bould	85.96	48	P	P	11 38 33.3	+0.5
	baz=228						
BFSC	Mount Baldy Ra	86.04	46	P	P	11 38 33.1	-0.2
	baz=227,SNR=9.6						
YSS	Yuzh-Sakhalins	86.15	334⇓	eP	P	11 38 33.8	+0.6
YSS				pmax	pmax		
	comp=Z,70nm,0.9s						
YSS	Yuzh-Sakhalins	86.15	334	eP	P	11 38 34.3	+1.1
CRY	Cary Ranch	86.16	47	eP	P	11 38 31.9	-2.0
KULM	Kulim	86.24	278	eP	P	11 38 33.8	-0.8
EDW2	Edwards Air Fo	86.28	45	P	P	11 38 34.2	-0.1
	baz=227,SNR=11						
SWSC	Sam W. Stewart	86.33	48	P	P	11 38 35.5	+0.9
	baz=229,SNR=5.5						
PFO	Pinyon Flats O	86.36	47	P	P	11 38 34.8	-0.1
	baz=228,SNR=12						
PFO	Pinyon Flats O	86.36	47	eP	P	11 38 35.4	+0.6
PFO	Pinyon Flats O	86.36	47	eP	P	11 38 35.4	+0.6
PSI	Prapat	86.40	275	eP	P	11 38 33.9	-1.6
PSI	Prapat	86.40	275	eP	P	11 38 33.9	-1.6
RCTC	Rector, Farmer	86.51	43	P	P	11 38 35.7	+0.5
	baz=226						
ISA	Isabella, Lake	86.52	44	eP	P	11 38 36.2	+0.7
ISA	Isabella, Lake	86.52	44	eP	P	11 38 36.2	+0.7
GSI	Gunungsitoli	86.77	273	eP	P	11 38 36.6	-0.5
LRMC	Laurel Mtn Rad	86.87	45	P	P	11 38 37.5	+0.2
	baz=227,SNR=8.9						
BELC	Belle Mtn. Jos	86.91	47	P	P	11 38 37.7	+0.1
	baz=228,SNR=16						
HSIG		87.01	53	eP	P	11 38 37.8	-0.2
BC3	Big Chuckawall	87.02	47	P	P	11 38 38.3	+0.3
	baz=229,SNR=14						
GLA	Glamis	87.02	48	P	P	11 38 38.4	+0.5
	baz=229,SNR=7.5						
GLA	Glamis	87.02	48	eP	P	11 38 39.0	+1.0
GLA	Glamis	87.02	48	eP	P	11 38 39.0	+1.0
CMB	Columbia Colle	87.05	41	eP	P	11 38 37.3	-0.7
CMB	Columbia Colle	87.05	41	eP	P	11 38 37.3	-0.7
PEA0	Petropavlovsk-	87.14	345	eP	P	11 38 37.7	-0.3
PETK	Petropavlovsk-	87.14	345	P	P	11 38 37.7	-0.3
	comp=Z,39nm,0.8s,baz=142,slow=7.5,SNR=39						
PETK				LR	LR	12 14 18.7	
	comp=Z,149nm,18.9s,baz=161,slow=34						
HEC	Hector,Ludlow	87.25	46	P	P	11 38 39.4	+0.4
	baz=228,SNR=6.7						
GSC	Goldstone, Bar	87.28	45	P	P	11 38 39.0	-0.3
	baz=228,SNR=16						
GSC	Goldstone, Bar	87.28	45	eP	P	11 38 39.4	+0.2
GSC	Goldstone, Bar	87.28	45	eP	P	11 38 39.4	+0.2
CWC	Cottonwood Cre	87.28	44	P	P	11 38 39.6	+0.3
	baz=227						
AFDM	Forest Hills D	87.36	40	eP	P	11 38 39.5	0.0
MPMC	Manual Prospec	87.38	44	P	P	11 38 39.7	-0.1
	baz=227,SNR=16						
DAC	Darwin (Calif)	87.46	44	eP	P	11 38 40.5	+0.3
DAC	Darwin (Calif)	87.46	44	eP	P	11 38 40.5	+0.3
IRM	Iron Mountain	87.54	47	P	P	11 38 40.9	+0.5
	baz=229,SNR=18						

214A	Organ Pipe Nat	87.61	50	P	P	11 38 41.1	+0.3
	baz=230						
214A	Organ Pipe Nat	87.61	50	eP	P	11 38 41.2	+0.4
	comp=Z,60nm,0.7s						
TIN	Tinemaha, Big	87.61	43	P	P	11 38 41.1	+0.3
	baz=227						
GMRC	Granite Mounta	87.64	46	P	P	11 38 41.1	+0.1
	baz=229,SNR=9.4						
NJ2	Nanjing	87.64	310	eP	P	11 38 41.2	+0.3
NJ2				pmax	pmax		
	comp=Z,20nm,0.5s						
MLAC	Mammoth, Mammo	87.66	42	P	P	11 38 41.5	+0.4
	baz=227						
Y12C	Blythe	87.67	48	P	P	11 38 41.8	+0.8
	baz=229						
Y12C	Blythe	87.67	48	eP	P	11 38 41.9	+0.9
WDC	Whiskeytown Da	87.68	38	eP	P	11 38 41.3	+0.4
WDC	Whiskeytown Da	87.68	38	eP	P	11 38 41.3	+0.4
O03D	Paynes Creek	87.87	39	P	P	11 38 41.9	0.0
	baz=225						
N02D	Trinity Center	87.87	38	P	P	11 38 42.6	+0.7
	baz=224						
TUQ	Turquoise Moun	87.90	46	P	P	11 38 42.8	+0.5
	baz=228						
WAKR	Walker	87.91	42	eP	P	11 38 42.4	+0.1
SHOC	Shoshone, Teco	88.00	45	P	P	11 38 42.4	-0.2
	baz=228,SNR=7.1						
FURC	Furnace Creek,	88.02	44	P	P	11 38 43.1	+0.5
	baz=228,SNR=8.6						
GRAC	Grapevine Rang	88.08	44	P	P	11 38 43.3	+0.3
	baz=228,SNR=11						
M02C	Callahan	88.10	38	P	P	11 38 43.7	+0.7
	baz=224,SNR=9.2						
LDFC	Landfair	88.17	46	eP	P	11 38 45.0	+1.5
PDMCI	Parker Dam,Lak	88.27	47	P	P	11 38 44.0	+0.2
	baz=230,SNR=5.8						
NEE2	Needles Airpor	88.27	47	P	P	11 38 44.5	+0.7
	baz=229						
TRTT	Trang	88.39	280	P	P	11 38 44.8	-0.1
	comp=Z,31nm,0.9s						
YBH	Yreka Blue Hor	88.42	37	eP	P	11 38 44.3	-0.2
YBH	Yreka Blue Hor	88.42	37	eP	P	11 38 44.3	-0.2
NVAR	Mina Array Bea	88.51	42	P	P	11 38 45.1	-0.1
	comp=Z,13nm,0.7s,baz=222,slow=8.1,SNR=94						
NVAR				LR	LR	12 11 25.5	
	comp=Z,831nm,19.5s,baz=224,slow=31						
USRK	Ussuriysk Ar.	88.59	326	P	P	11 38 45.5	+0.4
	comp=Z,14nm,0.7s,baz=126,slow=3.8,SNR=32						
TPNV	Topopah Spring	88.71	44	P	P	11 38 46.4	+0.3
	baz=228,SNR=21						
TPNV	Topopah Spring	88.71	44	eP	P	11 38 46.5	+0.4
TPNV	Topopah Spring	88.71	44	eP	P	11 38 46.5	+0.4
CHBT	CHBT	88.80	286	P	P	11 38 48.5	+1.7
	comp=Z,40nm,0.8s,comp=Z,3µm						
M04C	Macdoel	88.91	38	P	P	11 38 47.0	+0.1
	baz=224						
HUMO	Hull Mountain	88.92	37	eP	P	11 38 47.6	+0.8
TUC	Tucson	89.17	51	P	P	11 38 49.3	+1.1
	baz=231						
TUC	Tucson	89.17	51	eP	P	11 38 48.9	+0.7
TUC	Tucson	89.17	51	eP	P	11 38 48.9	+0.7
ZAIG	Zacatecas	89.37	63	eP	P	11 38 50.7	+1.0
TYV	Tymovskoe	89.45	336	eP	P	11 38 50.0	+1.1
TYV				pmax	pmax		
	comp=Z,14nm,1.0s						
HPIG		89.47	58	eP	P	11 38 49.7	-0.3
WHN	Wuhan	89.72	307	⇑P	P	11 38 51.2	+0.5
WHN				SKS	SKSac	11 49 21.6	+3.0
WHN				S	ScS	11 49 46.0	+1.8
WHN				LR	LR		
	comp=Z,360nm,16.7s						
SURT	Suratani	89.73	281	P	P	11 38 52.5	+1.3
	comp=Z,7.4nm,0.9s						
SKNT	Sakolnakorn	89.73	290	P	P	11 38 51.6	+0.5
	comp=Z,112nm,0.9s						
MOD	Modoc Plateau	89.80	39	eP	P	11 38 50.8	-0.2
R11A	Troy Canyon, C	90.03	44	P	P	11 38 52.4	+0.1
	baz=229						
I04A	Tendick Farm,	90.05	36	P	P	11 38 52.1	0.0
	baz=224						
MDJ	Mudanjiang	90.06	325	P	P	11 38 52.2	+0.2
MDJ				pP	PcP	11 38 55.5	+2.3
MDJ				sP	pP	11 38 56.8	-6.3
MDJ				PP	PP	11 42 22.3	-3.7
MDJ				S	S	11 49 43.9	+1.5
MDJ				sS	ScS	11 49 49.6	+3.2
MDJ				SS	SS	11 55 41.0	-1.3
MDJ				pmax	pmax		
	comp=Z,21nm,1.0s						
MDJ				pmax	pmax		
	comp=Z,150nm,4.1s						
MDJ				LR	LR		
	comp=Z,190nm,18.3s						
MDJ				LR	LR		
	comp=Z,150nm,20.1s						
MDJ				LR	LR		
	comp=Z,210nm,18.3s						
K05A	Summer Lake	90.07	38	eP	P	11 38 52.9	+0.5
PATY	Pattaya	90.10	285	P	P	11 38 54.4	+1.5
	comp=Z,27nm,0.8s,comp=Z,4µm						
J05D	Fort Rock, OR	90.29	37	P	P	11 38 53.8	+0.5
	baz=225						
KHON	Khomkaen	90.32	289	P	P	11 38 55.0	+1.1
	comp=Z,32nm,0.9s,comp=Z,1µm						
HABR	Khabarovsk	90.46	330	eP	P	11 38 52.3	-1.4
HABR				e*PP	pP	11 39 02.8	-2.1
HABR				e*SP	sP	11 39 06.8	-2.1
HABR				e		11 42 26.6	
HABR				ePPP	PPP	11 44 23.7	
HABR				eS	SKSac	11 49 20.3	-1.8
HABR				e		11 49 38.7	
HABR				eSS	SS	11 55 44.9	-3.1
HABR				eSSS	SSS	11 59 22.3	
HABR				MLR	MLR		
	comp=Z,211nm,20.0s						
BMN	Battle Mountai	90.48	41	eP	P	11 38 54.4	+0.1
BMN	Battle Mountai	90.48	41	eP	P	11 38 54.4	+0.1
LCMT	Little Creek M	90.57	46	eP	P	11 38 55.5	+0.7
G03D	McMinnville, O	90.65	35	P	P	11 38 55.4	+0.6
	baz=224						
WUAZ	Wupatki	90.79	48	P	P	11 38 56.5	+0.7
	baz=231						
WUAZ	Wupatki	90.79	48	eP	P	11 38 56.5	+0.7
KNB	Kanab	90.83	46	eP	P	11 38 56.8	+0.7
KNB	Kanab	90.83	46	eP	P	11 38 56.8	+0.7
I05D	Terrebonne, OR	90.98	36	P	P	11 38 56.7	+0.4
	baz=225						
WVOR	Wild Horse Val	91.06	39	eP	P	11 38 57.0	+0.1
WVOR	Wild Horse Val	91.06	39	eP	P	11 38 57.0	+0.1
PHET	Kaeng Krachan	91.11	284	P	P	11 38 58.9	+1.3
	comp=Z,19nm,0.8s,comp=Z,168nm						
PSUT	Pine Spring	91.18	44	eP	P	11 38 58.2	+0.5
SNY	Shenyang	91.22	320	⇓P	P	11 38 57.2	-0.2
SNY				pmax	pmax		
	comp=Z,17nm,0.7s						
121A	Cookes Peak, D	91.31	52	P	P	11 38 59.0	+0.6
	baz=233						
TIA	Tai'an	91.38	312	⇓P	P	11 38 59.0	+0.6
TIA				pmax	pmax		
	comp=Z,70nm,0.9s						
F04D	Rainier, OR	91.41	34	P	P	11 38 59.3	+1.1
	baz=224						
PKCU	Pink Cliffs	91.42	46	eP	P	11 39 01.0	+2.0
CN2	Changchun	91.57	322	eP	P	11 38 58.7	-0.3
CN2				pmax	pmax		
	comp=Z,30nm,1.0s						
F04A	Amboy	91.58	35	eP	P	11 38 59.3	+0.2
W18A	Petrified Fore	91.59	49	eP	P	11 38 58.4	-1.2
G05D	Wamic, OR	91.63	36	P	P	11 38 59.9	+0.5
	baz=225						
ELK	Elko	91.81	42	eP	P	11 39 00.7	+0.1
ELK	Elko	91.81	42	eP	P	11 39 00.7	+0.1
PBKT	Sadao Pong	91.95	288	P	P	11 39 02.3	+0.9
	comp=Z,24nm,0.9s						
G06A	Carlson Farm,	91.97	36	eP	P	11 39 01.2	+0.3
NKL	Nikolayevsk	92.03	336	eP	P	11 39 00.5	-0.4
NKL				pmax	pmax		
	comp=Z,22nm,0.8s						
MSU	Marysvale	92.18	45	eP	P	11 39 03.4	+1.1
MSU	Marysvale	92.18	45	eP	P	11 39 03.4	+1.1
SRDT	SRDT	92.29	285	P	P	11 39 04.0	+1.0
	comp=Z,64nm,1.1s,comp=Z,9µm						
NNA	Nana	92.29	105	i P	P	11 39 04.1	+0.9
TX31	Lajitas Ar. Si	92.29	57	eP	P	11 39 02.8	-0.1
TXAR	Lajitas Array	92.30	57	P	P	11 39 02.7	-0.2
	comp=Z,2.7nm,0.7s,baz=207,slow=7.3,SNR=37						
TXAR				LR	LR	12 12 48.9	
	comp=Z,410nm,19.4s,baz=0.0,slow=31						
CMIG	Matias Romero	92.30	71	LR	LR	12 11 39.3	
	comp=Z,243nm,18.3s,baz=221,slow=30						
MNTX	Cornudas Mount	92.45	54	P	P	11 39 03.9	+0.4
	baz=234						
MNTX	Cornudas Mount	92.45	54	eP	P	11 39 03.2	-0.3
KLR	Kul'dur	92.46	329	P	P	11 39 03.5	+0.5
	comp=Z,9.7nm,0.8s,baz=136,slow=2.8,SNR=36						
KLR				LR	LR	12 17 19.3	
	comp=Z,283nm,19.7s,baz=88,slow=34						
PHIT	Phitsanulok	92.72	288	P	P	11 39 06.4	+1.4
	comp=Z,29nm,0.7s						
LAZ	Ladron	92.86	51	eP	P	11 39 06.0	+0.5
GYA	Guiyang	92.86	299	⇓iP	P	11 39 05.5	-0.1
GYA				PP	PP	11 42 52.0	+3.4
GYA				SKS	SKSac	11 49 37.8	+0.8
GYA				S	S	11 50 08.9	0.0
GYA				SS	SS	11 56 26.2	+2.6
GYA				pmax	pmax		
	comp=Z,30nm,0.8s						
GYA				pmax	pmax		
	comp=Z,120nm,6.9s						
GYA				LR	LR		
	comp=Z,540nm,21.6s						
GYA				LR	LR		
	comp=Z,510nm,22.2s						
GYA				LR	LR		
	comp=Z,500nm,22.8s						
UTTA	Uttaradit	92.91	289	P	P	11 39 06.8	+1.0
	comp=Z,6.3nm,0.7s						
MFID	Camas Ranch	93.25	40	eP	P	11 39 07.1	+0.1
TMUT	Trail Mountain	93.26	45	eP	P	11 39 08.2	+0.8
B05A	Bryant	93.41	33	P	P	11 39 07.7	+0.3
	baz=224						
BMO	Blue Mountains	93.42	38	eP	P	11 39 07.3	-0.4
BMO	Blue Mountains	93.42	38	eP	P	11 39 07.3	-0.4
MPU	Maple Canyon	93.45	44	eP	P	11 39 08.9	+0.8
ANMO	Albuquerque	93.63	51	P	P	11 39 09.1	0.0
	baz=234						
ANMO	Albuquerque	93.63	51	⇑iP	P	11 39 09.1	0.0
ANMO				pmax	pmax		
	comp=Z,5.0nm,0.7s						
P17A	Butcher Ranch,	93.65	45	eP	P	11 39 09.5	+0.5
MVCO	Mesa Verde	93.66	48	P	P	11 39 09.1	-0.1
	baz=233						
MVCO	Mesa Verde	93.66	48	eP	P	11 39 09.6	+0.4
PV05	Paradox Valley	93.81	47	eP	P	11 39 10.8	+0.9
HVU	Hansel Valley	93.90	42	eP	P	11 39 10.2	+0.1
HVU	Hansel Valley	93.90	42	eP	P	11 39 10.2	+0.1
JLU	Jordanelle	93.93	44	eP	P	11 39 10.7	+0.3
PV10	Paradox Valley	94.03	47	eP	P	11 39 10.8	0.0
PV09	Paradox Valley	94.04	47	eP	P	11 39 11.0	0.0
P18A	Preston Nutter	94.05	45	eP	P	11 39 11.1	+0.1
LAMP	Lampang	94.06	289	P	P	11 39 12.3	+1.2
	comp=Z,5.8nm,0.9s						
D08A	Wollman Farm,	94.09	36	eP	P	11 39 11.2	+0.6
HLID	Hailey	94.12	40	P	P	11 39 11.4	+0.3
	baz=230						
HLID	Hailey	94.12	40	eP	P	11 39 11.2	+0.1
PV01	Paradox Valley	94.17	47	eP	P	11 39 11.3	-0.2
TCUT	Toone Canyon	94.28	44	eP	P	11 39 12.1	+0.1
832A	Faith Ranch, C	94.39	60	P	P	11 39 12.4	0.0
	baz=237						
HWUT	Hardware Ranch	94.49	43	eP	P	11 39 12.3	-0.5
CMAR	Chiang Mai Arr	94.58	289	P	P	11 39 14.3	+0.8
	comp=Z,4.0nm,0.7s,baz=145,slow=4.0,SNR=22						
CMAR				PP	PP	11 43 00.8	-1.3
	comp=Z,0.7nm,0.4s,baz=123,slow=6.2,SNR=4.8						
CMAR				PKKP	PKKPdf	11 56 12.2	+1.1
	comp=Z,1.1nm,0.6s,baz=291,slow=4.3,SNR=7.9						
MA2	Magadan	94.63	344	P	P	11 39 11.6	-1.1
	comp=Z,7.7nm,0.8s,baz=161,slow=4.6,SNR=20						
034A	Hebbronville	94.68	61	P	P	11 39 15.1	+1.3
	baz=237						
CMMT	Chiang Mai	94.76	289	P	P	11 39 15.1	+0.7
	comp=Z,9.7nm,0.9s						
CHTO	Chiang Mai	94.77	289	P	P	11 39 15.2	+0.8
	comp=Z,44nm,0.9s,comp=Z,1µm						
CHTO	Chiang Mai	94.77	289	eP	P	11 39 14.9	+0.5
CHTO	Chiang Mai	94.77	289	eP	P	11 39 14.9	+0.5
B08A	Colville Reser	94.79	34	eP	P	11 39 13.1	-0.8
833A	Chaparral WMA,	94.83	60	P	P	11 39 14.6	+0.1
	baz=237						
S22A	4UR Ranch, Cre	95.04	48	P	P	11 39 15.4	-0.2
	baz=234						
KMI	Kunming	95.10	296	P	P	11 39 17.3	+1.2
KMI				pP	pP	11 39 22.6	-4.6
KMI				sP	sP	11 39 26.3	-4.9
KMI				PP	PP	11 43 06.6	+0.3
KMI				S	S	11 50 28.8	0.0
KMI				sS	ScS	11 50 37.2	+7.4
KMI				SS	SS	11 56 59.2	+3.4
KMI				pmax	pmax		
	comp=Z,11nm,0.9s						
KMI				pmax	pmax		
	comp=Z,89nm,5.4s						
KMI				LR	LR		
	comp=Z,82nm,14.9s						
KMI				LR	LR		
	comp=Z,130nm,19.6s						
KMI				LR	LR		
	comp=Z,220nm,40.8s						
CMAI	Chiengmai2	95.27	290	P	P	11 39 17.5	+0.6
XAN	Xi'an	95.48	307	P	P	11 39 18.1	+0.7
XAN				pP	pP	11 39 24.1	-4.4
XAN				sP	sP	11 39 25.8	-6.7
XAN				PP	PP	11 43 11.3	+2.4
XAN				SKS	SKSac	11 49 52.5	+1.7
XAN				S	S	11 50 30.1	-1.3
XAN				SS	SS	11 57 02.5	+1.8
XAN				pmax	pmax		
	comp=Z,11nm,0.7s						
XAN				pmax	pmax		
	comp=Z,94nm,6.6s						
XAN				LR	LR		
	comp=Z,120nm,14.3s						
XAN				LR	LR		
	comp=Z,140nm,20.0s						
XAN				LR	LR		
	comp=Z,200nm,18.6s						
MSTX	Muleshoe	95.56	53	P	P	11 39 17.3	-0.5
	baz=236						
MSTX	Muleshoe	95.56	53	eP	P	11 39 16.4	-1.4
	comp=Z,9.9nm,0.7s						
O20A	White River Ci	95.58	46	P	P	11 39 17.4	-0.5
	baz=233						
JCT	Junction City	95.71	58	P	P	11 39 18.0	-0.5
	baz=237						
SDCO	Great Sand Dun	95.89	49	P	P	11 39 19.3	-0.2
	baz=234						
REDW	Red Top Meadow	96.00	42	eP	P	11 39 19.7	-0.1
SNOW	Snow King Moun	96.12	42	eP	P	11 39 20.5	+0.2
T25A	Trinidad	96.25	50	P	P	11 39 20.9	-0.2
	baz=235						
DLMT	Dillon	96.27	40	eP	P	11 39 21.4	+0.5
LOHW	Long Hollow	96.30	42	eP	P	11 39 20.6	-0.5
433A	Art	96.38	58	P	P	11 39 20.7	-0.8
	baz=237						
BW06	Boulder Array	96.38	43	P	P	11 39 20.9	-0.6
	baz=233						
PD31	Pinedale Array	96.38	43	eP	P	11 39 20.6	-0.9
PDAR	Pinedale Array	96.38	43	P	P	11 39 20.6	-0.9
	comp=Z,2.8nm,0.8s,baz=192,slow=3.6,SNR=28						
PDAR				PKKP	PKKPbc	11 56 07.5	-0.1
	comp=Z,1.2nm,0.7s,baz=65,slow=3.8,SNR=12						
PDAR				LR	LR	12 16 38.7	
	comp=Z,578nm,19.3s,baz=242,slow=32						
534A	Blanco	96.43	59	P	P	11 39 20.9	-0.9
	baz=237						
MSO	Missoula	96.49	38	P	P	11 39 22.7	+1.0
	baz=230						
QLMT	Earthquake Lak	96.58	41	eP	P	11 39 23.0	+0.7
YMR	Madison River	96.74	41	eP	P	11 39 23.9	+0.8
333A	Richland Sprin	96.76	57	P	P	11 39 22.6	-0.6
	baz=237						
Q24A	Divide	96.83	48	P	P	11 39 24.1	+0.3
	baz=235						
LPAZ	La Paz	96.90	114	P	P	11 39 25.9	+0.9
	comp=Z,2.1nm,0.6s,baz=267,slow=4.9,SNR=7.1						
LPAZ				LR	LR	12 14 41.8	
	comp=Z,74nm,20.8s,baz=209,slow=30						
BOZ	Bozeman (W)	96.98	40	P	P	11 39 24.2	+0.1
	baz=232						
BOZ	Bozeman (W)	96.98	40	eP	P	11 39 24.0	0.0
BOZ	Bozeman (W)	96.98	40	eP	P	11 39 24.0	0.0
ISCO	Idaho Springs	97.01	47	P	Pdif	11 39 24.9	+0.3
	baz=235						
JTS	JuntasAbangare	97.04	82	LR	LR	12 13 13.5	
	comp=Z,220nm,20.8s,baz=247,slow=29						
SEY	Seymchan	97.29	346	P	P	11 39 24.3	-0.5
	comp=Z,6.8nm,0.7s,baz=148,slow=5.5,SNR=40						
SEY	Seymchan	97.29	346	⇑iP	Pdif	11 39 24.4	-0.4
334A	Lometa	97.30	58	P	Pdif	11 39 27.1	+1.4
	baz=238						
CD2	Chengdu	97.42	302	P	P	11 39 25.5	-0.8
CD2				pmax	pmax		
	comp=Z,10.0nm,0.4s						
HHC	Hu-ho-hao-te	97.64	313	eP	Pdif	11 39 27.6	+0.4
HHC				S	S	11 50 53.3	+3.4
HHC				sS	ScS	11 50 58.3	+8.2
HHC				pmax	pmax		
	comp=Z,18nm,1.4s						
HHC				pmax	pmax		
	comp=Z,120nm,7.0s						
HHC				LR	LR		
	comp=Z,180nm,19.1s						
HHC				LR	LR		
	comp=Z,230nm,19.4s						
HHC				LR	LR		
	comp=Z,160nm,17.9s						
K22A	Casper	98.11	45	P	Pdif	11 39 28.9	-0.3
	baz=234						
WRH	Wood River Hil	98.36	12	eP	P	11 39 28.9	-0.7
CPUP	Villa Florida	98.61	128	LR	LR	12 18 41.8	
	comp=Z,175nm,18.2s,baz=232,slow=32						
COLA	College	98.77	12	⇑iP	P	11 39 30.5	-0.9
COLA				pmax	pmax		
	comp=Z,8.0nm,0.8s						
COLA	College	98.77	12	eP	P	11 39 30.9	-0.5
ILAR	Eielson Array	98.86	13	P	P	11 39 30.7	-1.1
	comp=Z,2.1nm,0.7s,baz=221,slow=5.3,SNR=27						
ILAR				PKiKP	PKiKP	11 44 02.5	-0.1
	comp=Z,0.8nm,0.7s,baz=305,slow=3.1,SNR=5.6						
ILAR				PKKPbc	PKKPbc	11 56 00.0	-1.2
	comp=Z,0.5nm,0.8s,baz=338,slow=3.6,SNR=5.9						
EGMT	Eagleton	99.46	39	Pdiff	Pdif	11 39 36.8	+1.8
	baz=233						
BILL	Bilibino	100.07	354	i P	Pdif	11 39 36.3	-0.8
BILL				pmax	pmax		
	comp=Z,3.0nm,1.0s						
LZH	Lanzhou	100.09	306	eP	Pdif	11 39 35.6	-2.6
LZH				pP	pP	11 39 40.7	-8.7
LZH				sP	sP	11 39 43.5	-10
LZH				pmax	pmax		
	comp=Z,21nm,1.0s						
LZH				pmax	pmax		
	comp=Z,190nm,4.5s						
LZH				LR	LR		
	comp=Z,350nm,16.4s						
LZH				LR	LR		
	comp=Z,300nm,15.1s						
LZH				LR	LR		
	comp=Z,440nm,17.8s						
T33A	Patterson Ranc	100.34	53	Pdiff	Pdif	11 39 40.3	+1.2
	baz=238						
I25A	Rochford	100.56	45	Pdiff	Pdif	11 39 40.7	+0.5
	baz=236						
R32A	Long Quarter,	100.73	52	Pdiff	Pdif	11 39 41.8	+0.9
	baz=238						
X37A	Clayton	101.06	56	Pdiff	Pdif	11 39 43.9	+1.6
	baz=239						
W37B	Quinton	101.29	56	Pdiff	Pdif	11 39 44.5	+1.1
	baz=240						
F25A	Bowman	101.78	43	Pdiff	Pdif	11 39 46.3	+0.9
	baz=237						
G26A	Maurine	101.94	44	Pdiff	Pdif	11 39 46.9	+0.8
	baz=237						
343A	Vidalia	102.14	61	Pdiff	Pdif	11 39 47.8	+0.6
	baz=240						
F26A	Lodgepole	102.20	44	Pdiff	Pdif	11 39 48.7	+1.4
	baz=237						
G28A	Parade	102.83	45	Pdiff	Pdif	11 39 50.9	+0.9
	baz=238						
T38A	Diamond	103.04	55	Pdiff	Pdif	11 39 51.6	+0.5
	baz=240						
R37A	Teagarden Farm	103.30	53	Pdiff	Pdif	11 39 53.1	+0.9
	baz=240						
D27A	Center	103.54	43	Pdiff	Pdif	11 39 53.9	+0.7
	baz=238						
SONM	Songino Array	104.56	317	Pdiff	Pdif	11 39 58.7	+1.0
	comp=Z,0.6nm,0.5s,baz=133,slow=2.9,SNR=4.3						
SONM				PKKPbc	PKKPbc	11 55 44.1	+0.2
	comp=Z,1.3nm,0.7s,baz=256,slow=2.8,SNR=7.0						
INK	Inuvik	104.66	15	PKiKP	PKiKP	11 44 12.5	-0.4
	comp=Z,1.6nm,1.0s,baz=217,slow=5.8,SNR=3.6						
YKA	Yellowknife Ar	106.11	25	Pdiff	Pdif	11 40 03.4	-0.7
	comp=Z,0.5nm,0.7s,baz=231,slow=4.2,SNR=5.9						
YKA				PKiKP	PKiKP	11 44 14.5	-1.2
	comp=Z,0.8nm,0.6s,baz=256,slow=1.4,SNR=24						
YKA				PKKPbc	PKKPbc	11 55 35.6	-3.8
	comp=Z,0.9nm,0.8s,baz=31,slow=3.4,SNR=7.8						
I37A	Lemond, Waseca	106.97	49	PKiKP	PKiKP	11 44 18.6	+0.7
	baz=243						
A32A	Rocking H Ranc	107.37	43	PKiKP	PKiKP	11 44 19.6	+1.1
	baz=242						
F36A	Milaca	107.74	47	PKiKP	PKiKP	11 44 20.2	+0.9
	baz=243						
TLY	Talaya	108.01	320	PKKP	PKKPdf	11 55 47.6	0.0
	comp=Z,1.7nm,0.8s,baz=90,slow=1.0,SNR=3.4						
ULM	Lac du Bonnet	108.34	42	PKiKP	PKiKP	11 44 18.2	-2.1
	comp=Z,1.1nm,0.6s,baz=166,slow=3.2,SNR=3.5						
ULM				PKKP	PKKPdf	11 55 46.2	-0.7
	comp=Z,1.8nm,0.8s,baz=95,slow=4.2,SNR=4.4						
SDV	Santo Domingo	108.52	91	PKKP	PKKPdf	11 55 43.6	-1.6
	comp=Z,1.8nm,0.4s,baz=65,slow=4.2,SNR=4.7						
TIXI	Tiksi	109.60	344	PKiKP	PKiKP	11 44 20.7	-1.3
	comp=Z,2.7nm,0.3s,baz=129,slow=1.5,SNR=3.3						
BDFB	Brasilia	112.21	126	PKKPab	PKKPab	11 55 28.9	-1.1
	comp=Z,4.1nm,0.7s,baz=107,slow=6.4,SNR=4.4						
WMQ	Urumqi	114.60	308	ePKP	PKPdf	11 44 31.5	-1.0
O56A	Blue Knob Stat	115.54	57	PKiKP	PKiKP	11 44 34.6	+0.2
	baz=250						
KRAR	Krasnoyarsk	115.58	321	⇑iPKIKP	PKPdf	11 44 31.8	-2.0
BOSA	Boshof	116.53	202	PKP	PKPdf	11 44 37.8	+0.9
	comp=Z,12nm,0.9s,baz=71,slow=1.0,SNR=12						
BOSA				PKKPab	PKKPab	11 55 08.3	-3.5
	comp=Z,2.5nm,0.7s,baz=0.0,slow=5.1,SNR=4.5						
MKAR	Makanchi Array	119.16	309	PKP	PKPdf	11 44 40.1	-1.0
	comp=Z,3.0nm,0.8s,baz=98,slow=2.5,SNR=17						
MKAR				PKKPab	PKKPab	11 54 56.9	+1.8
	comp=Z,2.4nm,0.7s,baz=286,slow=4.4,SNR=24						
ZALV	Zalesovo Beam	119.46	318	PKP	PKPdf	11 44 39.0	-2.4
	comp=Z,2.6nm,1.0s,baz=270,slow=1.5,SNR=5.4						
ZALV	Zalesovo Beam	119.46	318	PKIKP	PKPdf	11 44 39.0	-2.4
ZALV				pmax	pmax		
	comp=Z,3.0nm,1.0s						
NRIK	Noril'sk	121.03	336	PKP	PKPdf	11 44 43.1	-0.9
	comp=Z,3.8nm,0.7s,baz=110,slow=1.8,SNR=5.1						
KSH	Kashi	121.56	300	ePKP	PKPdf	11 44 46.2	+0.1
KSH				ePP	PP	11 46 28.2	+9.3
KSH				PKS	PKSdf	11 48 23.1	+0.3
KSH				AMB	AMB		
	comp=Z,120nm,4.5s						
KSH				LR	LR		
	comp=Z,97nm,5.2s						
KSH				LR	LR		
	comp=Z,120nm,4.8s						
KSH				LR	LR		
	comp=Z,150nm,5.8s						
KURK	Kurchatov	122.46	313	ePKIKP	PKPdf	11 44 45.9	-1.3
KURK	Kurchatov	122.46	313	ePKPdf	PKPdf	11 44 45.9	-1.3
KURK				PKKPbc	PKKPbc	11 54 42.3	-0.4
KURK				PKKP	PKKPdf	11 55 20.4	+0.6
KURBB	Kurchatov Arra	122.50	313	PKP	PKPdf	11 44 46.1	-1.2
	comp=Z,5.8nm,0.9s,baz=106,slow=2.0,SNR=42						
KURBB				PKKPbc	PKKPbc	11 54 42.3	-0.2
	comp=Z,0.1nm,0.3s,baz=293,slow=4.8,SNR=6.0						
KURBB				PKKP	PKKPdf	11 55 20.4	+0.6
	comp=Z,0.6nm,0.7s,baz=292,slow=2.8,SNR=7.4						
TKM2	Tokmak 2	122.74	304	ePKIKP	PKPdf	11 44 47.4	-1.0
TKM2	Tokmak 2	122.74	304	ePKPdf	PKPdf	11 44 47.4	-1.0
AAK	Ala-Archa	123.46	303	PKP	PKPdf	11 44 49.3	-0.4
	comp=Z,3.9nm,0.8s,baz=193,slow=2.3,SNR=13						
AAK				PKKPbc	PKKPbc	11 54 38.2	-0.6
	comp=Z,1.1nm,0.7s,baz=280,slow=3.5,SNR=4.7						
AAK	Ala-Archa	123.46	303	d iPKIKP	PKPdf	11 44 49.2	-0.5
EKS2	Erkin-Say	123.98	303	ePKIKP	PKPdf	11 44 49.8	-0.8
EKS2	Erkin-Say	123.98	303	ePKPdf	PKPdf	11 44 49.8	-0.8
KKAR	Karatay Array	126.42	303	ePKIKP	PKPdf	11 44 54.8	-0.3
KKAR	Karatay Array	126.42	303	ePKPdf	PKPdf	11 44 54.8	-0.3

SCHQ	Schefferville	126.51	43	PKP	PKPdf	11 44 52.6	-2.3
	comp=Z,8.4nm,0.8s,baz=245,slow=7.8,SNR=6.1						
BVAR	Borovoye Array	127.82	315	PKP	PKPdf	11 44 56.7	-0.8
	comp=Z,5.8nm,0.8s,baz=90,slow=3.0,SNR=18						
BRVK	Borovoye	127.89	315	⇓iPKIKP	PKPdf	11 44 56.7	-0.9
SPITS	Spitsbergen Ar	132.90	356	PKP	PKPdf	11 45 06.2	-0.3
	comp=Z,9.2nm,0.8s,baz=115,slow=9.3,SNR=8.0						
SUMG	Summit	133.57	16	i P	PKPdf	11 45 08.9	+0.6
	comp=Z,5.8nm,1.0s						
SUMG	Summit	133.57	16	ePKIKP	PKPdf	11 45 08.9	+0.6
SUMG				pmax	pmax		
	comp=Z,6.0nm,1.0s						
DAG	Danmarks Havn	133.59	7	i P	PKPdf	11 45 06.0	-1.7
	comp=Z,4.6nm,0.8s						
DAG	Danmarks Havn	133.59	7	i PKIKP	PKPdf	11 45 06.0	-1.7
DAG				pmax	pmax		
	comp=Z,3.0nm,0.8s						
KMBO	Kilima Mbogo	134.05	232	PKP	PKPdf	11 45 11.8	+1.0
	comp=Z,4.2nm,0.7s,baz=61,slow=3.3,SNR=8.0						
KMBO				SKP		11 48 49.1	
	comp=Z,1.3nm,0.3s,baz=17,slow=3.3,SNR=5.1						
ABKAR	Akbulak array	134.30	310	ePKPdf	PKPdf	11 45 09.3	-0.6
ARU	Arti	134.52	320	PKhKP	PKPpre	11 45 05.8	
	comp=Z,1.1nm,0.3s,baz=0.0,slow=1.0,SNR=3.5						
ARU				PKP	PKiKP	11 45 10.7	-0.8
	comp=Z,1.5nm,0.3s,baz=275,slow=0.5,SNR=4.8						
GEYT	Alibeck	134.81	294	PKP	PKPdf	11 45 10.8	-0.4
	comp=Z,2.7nm,0.7s,baz=224,slow=4.1,SNR=4.1						
AKTO	Aktyubinsk	135.50	312	PKP	PKPdf	11 45 12.1	0.0
	comp=Z,5.2nm,0.8s,baz=95,slow=1.4,SNR=11						
H10S2	ASCENSION HYDR	136.32	154	T	T	14 17 41.1	
	baz=204,slow=75,SNR=5.1						
H10S3	ASCENSION HYDR	136.32	154	T	T	14 17 39.6	
	baz=204,slow=75,SNR=7.7						
H10S1	ASCENSION HYDR	136.34	154	T	T	14 17 42.1	
	baz=204,slow=75,SNR=7.8						
H10N3	ASCENSION HYDR	137.41	154	T	T	14 18 52.5	
	baz=203,slow=75,SNR=3.3						
H10N1	ASCENSION HYDR	137.41	154	T	T	14 19 01.0	
	baz=203,slow=75,SNR=11						
H10N2	ASCENSION HYDR	137.42	154	T	T	14 18 57.3	
	baz=203,slow=75,SNR=7.4						
ARCES	ARCESS Array B	139.89	348	PKhKP	PKPpre	11 45 12.8	
	comp=Z,3.6nm,0.7s,baz=28,slow=3.1,SNR=9.0						
ARCES				PKP	PKiKP	11 45 21.3	-0.8
	comp=Z,6.4nm,0.7s,baz=50,slow=1.9,SNR=11						
KLMR	Klimovskoe	142.18	332	ePKHKP	PKPpre	11 45 17.0	
KLMR				pmax	pmax		
	comp=Z,13nm,1.0s						
DGRG	David-gareji	144.83	298	P	PKPdf	11 45 29.3	0.0
DGRG	David-gareji	144.83	298	PKIKP	PKPdf	11 45 29.3	0.0
TBLG	Delisi	145.29	299	P	PKPdf	11 45 31.5	+1.4
TBLG	Delisi	145.29	299	PKIKP	PKPdf	11 45 31.5	+1.4
DUS	Dusheti	145.30	300	P	PKPdf	11 45 31.1	+1.0
DUS	Dusheti	145.30	300	PKIKP	PKPdf	11 45 31.1	+1.0
GNI	Garni	145.35	296	PKPbc	PKPab	11 45 31.0	+0.5
	comp=Z,27nm,1.0s,baz=136,slow=4.1,SNR=14						
GUDG	Gudauri	145.44	300	P	PKPab	11 45 33.1	+2.2
VRH	Novokhopyorsk	145.46	316	ePKP2	PKPdf	11 45 28.8	-1.2
VRH				pmax	pmax		
	comp=Z,70nm,0.8s						
MOS	Moscow	145.76	325	ePKIKP	PKPdf	11 45 29.3	-1.0
MOS				pmax	pmax		
	comp=Z,230nm,0.9s						
MOS				pmax	pmax		
	comp=Z,300nm,1.0s						
ZEI	Tsey	145.83	301	i PKP2	PKPab	11 45 34.6	+2.3
ZEI				pmax	pmax		
	comp=Z,146nm,1.1s						
NCK	Nalchik	145.98	302	PKIKP	PKPdf	11 45 30.0	-1.2
GOF	Gofitskoye	146.15	305	⇑ePKP2	PKPab	11 45 32.7	-0.4
GOF				pmax	pmax		
	comp=Z,45nm,0.9s						
ONI	Oni	146.18	301	P	PKPab	11 45 33.1	-0.3
ONI	Oni	146.18	301	PKP2	PKPab	11 45 33.1	-0.3
AKH	Akhalkalaki	146.25	298	P	PKPab	11 45 34.8	+0.9
AKH	Akhalkalaki	146.25	298	⇓iP	PKPab	11 45 33.3	-0.6
AKH	Akhalkalaki	146.25	298	PKP2	PKPab	11 45 34.8	+0.9
PUL	Pulkovo	146.40	335	⇑iPKIKP	PKPdf	11 45 31.2	-0.1
KBZ	Khabaz	146.46	303	PKPbc	PKPab	11 45 33.5	-0.8
	comp=Z,12nm,0.9s,baz=112,slow=5.7,SNR=14						
FINES	FINESS Array B	146.51	340	PKPbc	PKPbc	11 45 31.9	-1.0
	comp=Z,82nm,0.8s,baz=64,slow=4.4,SNR=144						
FINES	FINESS Array B	146.51	340	PKP2	PKPbc	11 45 32.0	-1.0
FINES				pmax	pmax		
	comp=Z,82nm,0.8s						
LPSR	Galich'ya Gora	146.54	320	ePKIKP	PKPdf	11 45 31.3	-0.5
LPSR				pmax	pmax		
	comp=Z,10.0nm,0.8s						
KVAR	Kislovodsk Arr	146.57	303	PKPbc	PKPab	11 45 34.9	0.0
	comp=Z,15nm,0.8s,baz=197,slow=10,SNR=7.0						
KIV	Kislovodsk	146.57	303	i PKHKP	PKPpre	11 45 29.8	
KIV				pmax	pmax		
	comp=Z,23nm,0.9s						
KIV	Kislovodsk	146.57	303	ePKPbc	PKPbc	11 45 33.4	-0.4
OBN	Obninsk	146.60	325	PKPbc	PKPbc	11 45 33.1	-0.2
	comp=Z,76nm,0.7s,baz=29,slow=5.0,SNR=12						
OBN	Obninsk	146.60	325	d iPKP2	PKPbc	11 45 32.7	-0.7
OBN				pmax	pmax		
	comp=Z,42nm,0.7s						
NEY	Neytrino	146.64	302	⇓iPKP2	PKPbc	11 45 34.2	0.0
VSR	Storozhevoye	146.96	317	ePKP2	PKPbc	11 45 33.5	-1.0
VSR				pmax	pmax		
	comp=Z,70nm,0.9s						
CHVG	Ch'k'valeri	147.17	301	P	PKPab	11 45 36.0	-1.2
CHVG	Ch'k'valeri	147.17	301	⇓iP	PKPab	11 45 36.3	-0.9
MZRK	Al-Mazaregh	148.51	288	eP	PKPbc	11 45 40.2	+0.9
VSU	Vasula	148.62	336	d iPKP2	PKPbc	11 45 38.2	-0.6
KBSD	Kabsdagh	148.64	290	eP	PKPbc	11 45 40.7	+1.1
SFNV	Sufian	148.97	289	eP	PKPbc	11 45 40.3	-0.2
KSRV	Kasrt alli	149.85	288	eP	PKPbc	11 45 43.4	+0.8
NB2	NORSAR Subarra	150.01	352	PKP	PKPbc	11 45 41.1	-1.1
	comp=Z,18nm,0.8s,baz=12,slow=2.7						
NOA	NORSAR Array B	150.01	352	PKP	PKPdf	11 45 36.7	-0.5
	comp=Z,3.3nm,0.7s,baz=14,slow=4.2,SNR=9.5						
NOA				PKPbc	PKPbc	11 45 41.5	-0.8
	comp=Z,14nm,0.7s,baz=14,slow=4.2,SNR=40						
ANN	Anapa	150.10	306	i PKHKP	PKPpre	11 45 42.0	
ANN				e		11 45 49.2	
ANN				pmax	pmax		
	comp=Z,89nm,1.5s						
HFS	Hagfors	150.53	349	PKP	PKPdf	11 45 37.3	-0.8
	comp=Z,3.2nm,0.8s,baz=179,slow=5.9,SNR=4.3						
HFS				PKPbc	PKPbc	11 45 42.5	-1.0
	comp=Z,39nm,0.7s,baz=76,slow=0.6,SNR=48						
IZAR	Zarasai	150.81	333	eP	PKPbc	11 45 44.4	+0.2
IZAR				IAmb	IAmb	11 45 44.9	
	comp=Z,18nm,0.8s						
IDID	Didziasalis	150.92	332	eP	PKPbc	11 45 44.8	+0.3
IDID				IAmb	IAmb	11 45 45.9	
	comp=Z,12nm,0.6s						
ISAL	Salakas	150.98	333	eP	PKPbc	11 45 44.7	+0.1
ISAL				IAmb	IAmb	11 45 45.3	
	comp=Z,13nm,0.9s						
ZALF	Zalf	150.99	282	eP	PKPbc	11 45 46.1	+0.6
IIGN	Ignalina	151.10	332	eP	PKPbc	11 45 45.1	+0.2
IIGN				IAmb	IAmb	11 45 46.5	
	comp=Z,20nm,0.9s						
ROOS	tl_alroos	151.15	284	eP	PKPbc	11 45 46.7	+0.8
NACGM	Naroch	151.19	331	eP	PKPbc	11 45 45.0	-0.1
NACGM				PM		11 45 46.0	
	comp=Z,0.4nm,0.8s						
RABH	Abou Rabah	151.24	285	eP	PKPbc	11 45 47.5	+1.5
ASF	Jabal al Asfar	151.26	280	PKPbc	PKPbc	11 45 46.8	+0.6
	comp=Z,13nm,0.8s,baz=83,slow=2.8,SNR=18						
SALA	Sala	151.47	281	eP	PKPbc	11 45 47.7	+0.9
TOTH	TOTAH	151.80	283	eP	PKPbc	11 45 47.5	+0.2
MARH	Ras Al Marh	151.81	284	eP	PKPbc	11 45 48.6	+1.0
HAWK	Haweek	151.91	285	eP	PKPbc	11 45 49.3	+1.7
BTCH	Batrach	151.91	288	eP	PKPdf	11 45 43.5	+2.5
WRDH	Warideh	151.94	287	eP	PKPbc	11 45 46.9	-0.7
BIDA	Albida	152.00	286	eP	PKPbc	11 45 48.1	+0.3
SLNF	Slenfeh	152.10	287	eP	PKPbc	11 45 50.5	+2.4
TCHB	Talchebab	152.11	281	eP	PKPbc	11 45 50.9	+2.9
BRBR	Barbar	152.20	283	eP	PKPbc	11 45 48.8	+0.3
ARNB	Al Arnab	152.31	288	eP	PKPbc	11 45 48.2	-0.2
EIL	Elat	152.48	274	PKPbc	PKPbc	11 45 49.5	+0.6
	comp=Z,17nm,0.7s,baz=295,slow=3.4,SNR=16						
MMAI	Mount Meron Ar	152.62	282	PKPbc	PKPbc	11 45 50.4	+1.2
	comp=Z,14nm,0.7s,baz=80,slow=4.6,SNR=23						
AKASG	Malin Array Be	152.73	322	PKPbc	PKPbc	11 45 48.0	-0.8
	comp=Z,8.6nm,0.6s,baz=47,slow=2.6,SNR=26						
AKASG				PKPab	PKPab	11 45 57.5	-2.1
	comp=Z,11nm,0.7s,baz=47,slow=4.3,SNR=18						
KIEV	Kiev	152.74	322	ePKIKP	PKPbc	11 45 48.1	-0.7
KIEV				e		11 45 58.6	
KIEV	Kiev	152.74	322	ePKPbc	PKPbc	11 45 48.1	-0.7
KIEV				ePKPab	PKPab	11 45 58.5	-1.1
SUW	Suwalki	153.29	333	ePKP	PKPbc	11 45 49.2	-0.6
SUW	Suwalki	153.29	333	ePKIKP	PKPbc	11 45 49.3	-0.6
LIC	Lamto	153.71	162	ePKP1	PKPdf	11 45 44.5	+0.3
	comp=Z,31nm,0.8s						
BRTR	Keskin Array B	153.89	297	PKP	PKPdf	11 45 44.4	+0.4
	comp=Z,1.4nm,0.9s,baz=124,slow=2.2,SNR=4.4						
BRTR				PKPbc	PKPbc	11 45 51.2	-0.6
	comp=Z,4.2nm,0.9s,baz=157,slow=4.0,SNR=11						
BRTR				PKPab	PKPab	11 46 04.8	-0.4
	comp=Z,16nm,0.8s,baz=114,slow=4.0,SNR=28						
KIC	Kosan Boka	153.91	162	ePKP1	PKPdf	11 45 44.9	+0.4
	comp=Z,41nm,0.9s						
TIC	Toumodi	154.11	162	ePKP1	PKPdf	11 45 45.4	+0.6
DBIC	Dimbokro	154.18	162	PKP	PKPdf	11 45 45.5	+0.6
	comp=Z,6.1nm,0.9s,baz=171,slow=3.3,SNR=12						
DBIC				PKPbc	PKiKP	11 45 53.3	+0.2
	comp=Z,8.7nm,0.7s,baz=158,slow=2.4,SNR=20						
DBIC				PKPab	PKPab	11 46 06.8	+0.1
	comp=Z,5.4nm,0.7s,baz=107,slow=6.4,SNR=5.8						
EKA	Eskdalemuir Ar	155.83	9	PKPab	PKPab	11 46 11.6	-1.0
	comp=Z,3.3nm,0.7s,baz=330,slow=3.7,SNR=7.2						
LVV	L'vov	155.90	325	ePKP2	PKPab	11 46 12.0	-1.2
CFR	Carcaliu	156.17	312	⇑iP	PKPab	11 46 13.6	-0.9
CFR	Carcaliu	156.17	312	⇑PKP2	PKPab	11 46 13.6	-0.9
TIRR	Tirgusor	156.29	310	⇑iP	PKPab	11 46 15.2	+0.1
TIRR	Tirgusor	156.29	310	⇑PKP2	PKPab	11 46 15.2	+0.1
TIRR	Tirgusor	156.29	310	ePKPab	PKPab	11 46 15.0	-0.1
TESR	Tescani	156.44	316	⇑iP	PKPab	11 46 14.5	-1.2
HARR	Harsova	156.51	311	⇓iP	PKPab	11 46 14.5	-1.5
HARR	Harsova	156.51	311	⇓PKP2	PKPab	11 46 14.5	-1.5
BURAR	Bucovina Array	156.66	320	⇓iP	PKPab	11 46 16.6	-0.1
BURAR	Bucovina Array	156.66	320	⇓PKP2	PKPab	11 46 16.6	-0.1
KWP	Kalwaria Pacla	156.66	326	ePKP	PKPab	11 46 16.2	-0.3
KWP	Kalwaria Pacla	156.66	326	ePKP2	PKPab	11 46 16.2	-0.3
VRI	Vrincioaia	156.72	315	⇓iP	PKPab	11 46 17.3	+0.4
VRI	Vrincioaia	156.72	315	⇓PKP2	PKPab	11 46 17.3	+0.4
PLOR	Plostina	156.78	315	⇑iP	PKPab	11 46 17.2	0.0
PLOR	Plostina	156.78	315	⇑PKP2	PKPab	11 46 17.2	0.0
GRER		156.80	313	⇓iP	PKPab	11 46 18.0	+0.8
MSAB	Monastry St. A	156.83	310	⇑iP	PKPab	11 46 17.3	-0.1
KOLS	Kolonicke sedl	157.35	326	ePKP2	PKPab	11 46 18.9	-0.6
KOLS	Kolonicke sedl	157.35	326	ePKP	PKPab	11 46 18.9	-0.6
MLR	Muntele Rosu	157.38	315	PKPab	PKPab	11 46 19.6	-0.3
	comp=Z,1.1nm,0.6s,baz=100,slow=8.6,SNR=4.9						
MLR	Muntele Rosu	157.38	315	⇓iP	PKPab	11 46 20.7	+0.8
MLR	Muntele Rosu	157.38	315	⇓PKP2	PKPab	11 46 20.7	+0.8
PRD	Provadia	157.47	308	eP	PKPab	11 46 20.7	+0.5
PRD	Provadia	157.47	308	eP	PKPab	11 46 20.7	+0.5
DOPR	Dopca	157.47	316	⇓iP	PKPab	11 46 20.3	+0.2
STHS	Stebnicka Huta	157.49	328	ePKP2	PKPab	11 46 20.6	+0.5
STHS	Stebnicka Huta	157.49	328	ePKP	PKPab	11 46 20.6	+0.5
UZH	Uzhgorod	157.54	325	ePKP2	PKPab	11 46 19.1	-1.2
VOIR		157.95	315	⇓iP	PKPab	11 46 22.2	-0.1
VOIR		157.95	315	⇓PKP2	PKPab	11 46 22.2	-0.1
ARR	Arges	158.24	315	⇑iP	PKPab	11 46 23.9	+0.4
KSP	Ksiaz	158.35	337	ePKP	PKPab	11 46 23.3	-0.4
KSP	Ksiaz	158.35	337	ePKP2	PKPab	11 46 23.3	-0.4
SZH	Strazhica	158.42	309	eP	PKPab	11 46 24.6	+0.3
SZH	Strazhica	158.42	309	eP	PKPab	11 46 24.6	+0.3
HUMR	Humele	158.46	313	⇑iP	PKPab	11 46 23.0	-1.4
LANS	Liptovska Anna	158.48	330	ePKP2	PKPab	11 46 22.8	-1.6
LANS	Liptovska Anna	158.48	330	ePKP	PKPab	11 46 22.8	-1.6
KECS	Kecovo	158.51	327	ePKP2	PKPab	11 46 23.8	-0.7
KECS	Kecovo	158.51	327	ePKP	PKPab	11 46 23.8	-0.7
DRGR		158.52	321	⇓iP	PKPab	11 46 23.7	-1.0
DRGR		158.52	321	⇓PKP2	PKPab	11 46 23.7	-1.0
UPC	Upice	158.72	337	ePKPAB	PKPab	11 46 25.2	-0.1
UPC				AMS	AMS	13 00 20.0	
	comp=Z,400nm,19.7s						
UPC	Upice	158.72	337	ePKP2	PKPab	11 46 25.2	-0.1
UPC				MLR	MLR		
	comp=Z,400nm,19.7s						
DPC	Dobruska-Polom	158.75	336	ePKPDF	PKPdf	11 45 49.6	-0.2
DPC				ePKPAB	PKPab	11 46 25.3	-0.2
DPC				ex	x	11 46 30.0	
DPC				ex	x	11 46 38.5	
DPC	Dobruska-Polom	158.75	336	ePKIKP	PKPdf	11 45 49.6	-0.2
DPC				e		11 46 25.3	
CLL	Collm	158.92	342	ePKPdf	PKPdf	11 45 51.0	+1.1
CLL				⇑iPKPab	PKPab	11 46 25.2	-0.9
	comp=Z,19nm,0.8s						
CLL				e		11 46 39.0	
CLL				LmV		13 08 00.0	
	comp=Z,200nm,18.8s						
CLL	Collm	158.92	342	⇑ePKIKP	PKPdf	11 45 51.0	+1.1
CLL				i		11 46 25.2	
CLL				pmax	pmax		
	comp=Z,19nm,0.8s						
CLL				MLR	MLR		
	comp=Z,200nm,18.8s						
BRG	Berggiesshubel	159.05	340	i PKP	PKPab	11 46 26.0	-0.7
	comp=Z,13nm,0.8s						
BRG	Berggiesshubel	159.05	340	i PKP2	PKPab	11 46 26.0	-0.7
BRG				pmax	pmax		
	comp=Z,13nm,0.8s						
VYHS	Vyhne	159.25	329	ePKP2	PKPab	11 46 27.4	-0.3
VYHS	Vyhne	159.25	329	ePKP	PKPab	11 46 27.4	-0.3
VRAC	Vranov	159.52	334	PKPab	PKPab	11 46 28.2	-0.6
	comp=Z,5.9nm,0.7s,baz=28,slow=6.7,SNR=5.8						
VRAC	Vranov	159.52	334	⇑iP	PKPab	11 46 28.8	0.0
VRAC	Vranov	159.52	334	⇑PKP2	PKPab	11 46 28.8	0.0
GOPC	GO Pecny, Ondr	159.64	338	ePKPAB	PKPab	11 46 29.1	-0.2
GOPC	GO Pecny, Ondr	159.64	338	ePKP2	PKPab	11 46 29.1	-0.2
PRU	Pruhonice	159.65	338	ePKPAB	PKPab	11 46 29.0	-0.3
PRU	Pruhonice	159.65	338	ePKP2	PKPab	11 46 29.0	-0.3
MPEP	Malo Peshtene	159.81	312	eP	PKPab	11 46 30.6	+0.3
MPEP	Malo Peshtene	159.81	312	eP	PKPab	11 46 30.6	+0.3
BZS	Buzias	159.84	319	⇑iP	PKPab	11 46 30.0	-0.4
BZS	Buzias	159.84	319	⇑PKP2	PKPab	11 46 30.0	-0.4
NKC	Novy Kostel	160.04	342	ePKPAB	PKPab	11 46 30.5	-0.6
NKC	Novy Kostel	160.04	342	ePKP2	PKPab	11 46 30.5	-0.6
MDVR	Moldovita	160.28	317	⇑iP	PKPab	11 46 30.6	-1.8
VTS	Vitosha	160.51	310	⇓iP	PKPab	11 46 33.8	+0.2
VTS	Vitosha	160.51	310	eP	PKPab	11 46 33.9	+0.3
VTS	Vitosha	160.51	310	eP	PKPab	11 46 33.9	+0.3
KHC	Kasperske Hory	160.71	339	ePKPDF	PKPdf	11 45 51.1	-0.9
KHC				ePKPAB	PKPab	11 46 33.9	-0.1
KHC				ex	x	11 46 38.6	
KHC				ex	x	11 46 47.0	
KHC				AMS	AMS	13 12 30.0	
	comp=Z,400nm,16.4s						
KHC	Kasperske Hory	160.71	339	ePKIKP	PKPdf	11 45 51.1	-0.9
KHC				e		11 46 33.9	
KHC				MLR	MLR		
	comp=Z,400nm,16.4s						
GERES	GERESS Array B	160.92	338	PKP	PKPdf	11 45 52.0	-0.4
	comp=Z,0.4nm,0.3s,baz=34,slow=0.5,SNR=4.4						
GERES				PKPab	PKPab	11 46 34.4	-0.6
	comp=Z,4.0nm,0.8s,baz=35,slow=4.9,SNR=16						
CONA	Conrad Observa	160.93	333	i pPKPab	PKPab	11 46 35.0	-0.1
IDI	Anoyia	161.35	287	PKPab	PKPab	11 46 37.6	+0.2
	comp=Z,31nm,0.7s,baz=51,slow=6.8,SNR=13						
TORD	Torodi Ar. Bea	161.65	176	PKP	PKPdf	11 45 54.2	+0.2
	comp=Z,1.8nm,0.7s,baz=251,slow=0.4,SNR=14						
TORD				PKPab	PKPab	11 46 39.3	+0.5
	comp=Z,11nm,0.7s,baz=182,slow=4.0,SNR=20						
KBA	Koelnbreinsper	162.57	336	i PKPdf	PKPdf	11 45 54.2	0.0
	comp=Z,8.4nm,1.4s						
KBA				i PKPab	PKPab	11 46 41.5	-0.9
MYKA	Terra Mystica	162.85	334	i PKPab	PKPab	11 46 42.3	-1.2
	comp=Z,6.8nm,0.8s						
WATA	Walderalm	162.92	340	i PKPab	PKPab	11 46 43.3	-0.6
WTTA	Wattenberg	162.96	340	i pPKPab	PKPab	11 46 43.9	-0.2
	comp=Z,10.0nm,0.7s						
RETA	Reutte	163.01	342	i PKPab	PKPab	11 46 43.8	-0.3
	comp=Z,14nm,0.9s						
MOTA	Moosalm	163.04	341	i pPKPab	PKPab	11 46 44.7	+0.2
ABTA	Abfaltersbach	163.15	337	i PKPab	PKPab	11 46 43.7	-1.1
	comp=Z,8.4nm,0.8s						
DAVA	Damuels	163.42	343	i PKPab	PKPab	11 46 45.6	-0.5
FETA	Feichten	163.44	341	i PKPdf	PKPdf	11 45 54.6	-0.5
FETA				i PKPab	PKPab	11 46 45.9	-0.3
	comp=Z,5.7nm,0.8s						
DAVOX	Davos/Dischmat	163.89	343	PKP	PKPdf	11 45 54.7	-0.8
	comp=Z,3.8nm,0.8s,baz=17,slow=14,SNR=6.6						
DAVOX				PKPab	PKPab	11 46 47.8	-0.4
	comp=Z,14nm,0.8s,baz=28,slow=6.5,SNR=16						
POLO	Lamas de Olo	166.91	38	ePKPab	PKPab	11 47 00.6	-1.1
PBRG	Braganca	167.13	35	ePKPab	PKPab	11 47 01.7	-0.8
PVIS	Viseu	167.32	41	ePKPab	PKPab	11 47 02.0	-1.4
MVO	Moncorvo	167.47	37	ePKPab	PKPab	11 47 03.5	-0.6
MTE	Manteigas	167.73	41	ePKPab	PKPab	11 47 03.8	-1.4
PMRV	Marv??o	168.46	44	ePKPab	PKPab	11 47 06.9	-1.5
ESDC	Sonseca Array	170.12	33	PKP	PKPdf	11 46 01.1	+0.9
	comp=Z,0.2nm,0.3s,baz=141,slow=29,SNR=4.5						
ESDC				PKPab	PKPab	11 47 14.6	-1.2
	comp=Z,0.3nm,0.4s,baz=316,slow=4.4,SNR=4.7						
KEST	Kesra	173.26	310	PKPab	PKPab	11 47 30.3	+0.3
	comp=Z,9.9nm,0.9s,baz=334,slow=6.4,SNR=6.2						
MDT	Midelt	173.43	77	PKP	PKPdf	11 46 03.6	+1.6
	comp=Z,5.0nm,1.0s,baz=286,slow=6.4,SNR=4.7						
MDT				PKPab	PKPab	11 47 30.2	-0.8
	comp=Z,2.6nm,0.7s,baz=258,slow=1.6,SNR=5.1						

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*CSEM **06** 11:29:59.5±0.1, 38.°19N×22.°07E, h5km, ML1.7, Error ellipse: s-maj=2.8km s-min=2.4km az=45.0*

*THE **06** 11:29:59.5, 38.°19N×22.°08E, h10km±1km, ML1.8/5, Error ellipse: s-maj=1.5km s-min=0.3km az=313.0*

ATH 06 11:29:59.3, 38.°19N×22.°07E, h12km±2km, ML1.7/8, Error ellipse: s-maj=2.6km s-min=0.7km az=297.0, Greece

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LAKA	Lakka	0.09	307	P	Pg	11 30 02.0	0.0
LAKA				S	Sg	11 30 03.8	-0.3
LAKA	Lakka	0.09	307	P	Pg	11 30 02.0	0.0
LAKA				S	Sg	11 30 03.6	-0.5
LAKA	Lakka	0.09	307	P	Pg	11 30 02.0	-0.1
LAKA				S	Sg	11 30 03.6	-0.5
LAKA				AML	AML	11 30 03.8	
	comp=N,1319µm,0.1s						
LAKA				AML	AML	11 30 03.9	
	comp=E,2042µm,0.2s						
KLV	Kalavryta, Ach	0.15	156	P	Pg	11 30 02.9	0.0
KLV				S	Sg	11 30 05.5	0.0
KLV	Kalavryta, Ach	0.15	156	P	Pg	11 30 02.8	-0.1
KLV				S	Sg	11 30 05.5	0.0
KLV	Kalavryta, Ach	0.15	156	P	Pg	11 30 02.8	-0.1
KLV				S	Sg	11 30 05.7	+0.2
KLV				AML	AML	11 30 05.7	
	comp=N,769µm,0.1s						
KLV				AML	AML	11 30 05.8	
	comp=E,614µm,0.1s						
RODI	Rodini	0.19	315	P	Pg	11 30 02.9	-0.6
RODI	Rodini	0.19	315	P	Pg	11 30 02.9	-0.6
KALE	Kalithea	0.21	15	P	Pg	11 30 04.0	+0.1
KALE				S	Sg	11 30 07.6	+0.5
KALE	Kalithea	0.21	15	P	Pg	11 30 04.0	+0.1
KALE				S	Sg	11 30 07.6	+0.5
KALE	Kalithea	0.21	15	P	Pg	11 30 04.2	+0.3
KALE				S	Sg	11 30 07.8	+0.8
KALE				AML	AML	11 30 08.0	
	comp=E,576µm,0.2s						
KALE				AML	AML	11 30 08.3	
	comp=N,1277µm,0.2s						
SERG	Sergoula	0.23	357	P	Pg	11 30 04.1	0.0
SERG				S	Sg	11 30 08.2	+0.8
SERG	Sergoula	0.23	357	P	Pg	11 30 04.1	0.0
SERG				S	Sg	11 30 08.2	+0.8
EFP	Efpalio	0.27	332	P	Pg	11 30 04.9	0.0
EFP				S	Sg	11 30 09.2	+0.5
EFP	Efpalio	0.27	332	P	Pg	11 30 04.9	0.0
EFP				S	Sg	11 30 08.7	0.0
EFP	Efpalio	0.27	332	P	Pg	11 30 04.7	-0.2
EFP				S	Sg	11 30 08.7	-0.1
EFP				AML	AML	11 30 10.3	
	comp=E,388µm,0.2s						
EFP				AML	AML	11 30 11.0	
	comp=N,238µm,0.2s						
GUR	Goura	0.33	139	P	Pg	11 30 05.6	-0.4
GUR				S	Sg	11 30 10.8	+0.4
GUR	Goura	0.33	139	P	Pg	11 30 05.6	-0.4
GUR				S	Sg	11 30 10.8	+0.4
GUR	Goura	0.33	139	P	Pg	11 30 05.4	-0.6
GUR				S	Sg	11 30 11.2	+0.7
GUR				AML	AML	11 30 11.4	
	comp=N,738µm,0.3s						
GUR				AML	AML	11 30 12.5	
	comp=E,692µm,0.2s						
DRO	Drossia	0.37	231	P	Pg	11 30 06.7	+0.1
DRO				S	Sb	11 30 12.8	-0.7
DRO	Drossia	0.37	231	P	Pg	11 30 06.7	+0.1
DRO				S	Sg	11 30 12.5	+0.9
DRO	Drossia	0.37	231	P	Pg	11 30 06.8	+0.2
DRO				S	Sg	11 30 12.5	+0.9
DRO				AML	AML	11 30 15.8	
	comp=N,309µm,0.2s						
DRO				AML	AML	11 30 16.8	
	comp=E,472µm,0.3s						
ANX	Ano Chora	0.42	344	P	Pg	11 30 07.5	-0.2
ANX				S	Sb	11 30 14.4	-0.8
ANX	Ano Chora	0.42	344	P	Pg	11 30 07.5	-0.2
ANX				S	Sb	11 30 14.4	-0.8
DSF	Desfina	0.42	58	P	Pg	11 30 07.3	-0.4
DSF				S	Sg	11 30 13.9	+0.5
DSF	Desfina	0.42	58	P	Pg	11 30 07.3	-0.4
DSF				S	Sg	11 30 13.3	-0.1
DSF	Desfina	0.42	58	P	Pg	11 30 07.2	-0.5
DSF				S	Sg	11 30 13.3	0.0
DSF				AML	AML	11 30 15.3	
	comp=E,133µm,0.1s						
DSF				AML	AML	11 30 15.8	
	comp=N,137µm,0.1s						
THAL	Thalero	0.49	107	P	Pb	11 30 09.7	-0.1
THAL				S	Sg	11 30 14.9	-0.5
THAL	Thalero	0.49	107	P	Pb	11 30 09.7	-0.1
THAL				S	Sg	11 30 14.9	-0.4
AMT	Artemida-Makis	0.71	204	P	Pg	11 30 12.6	-0.5
AMT				S	Sb	11 30 24.2	+0.8
AMT	Artemida-Makis	0.71	204	P	Pg	11 30 12.6	-0.5
AMT				S	Sb	11 30 24.2	+0.8
AMT	Artemida-Makis	0.71	204	P	Pg	11 30 12.3	-0.8
LTK	Loutraki	0.73	103	P	Pb	11 30 14.1	+0.2
LTK	Loutraki	0.73	103	P	Pb	11 30 14.1	+0.2
PDO	Prodromos	0.81	301	P	Pb	11 30 15.8	+0.5
PDO				S	Sg	11 30 25.2	-0.3
PDO	Prodromos	0.81	301	P	Pb	11 30 15.8	+0.5
PDO				S	Sg	11 30 25.2	-0.4
PDO				AML	AML	11 30 29.7	
	comp=N,107µm,0.3s						
PDO				AML	AML	11 30 31.6	
	comp=E,90µm,0.4s						

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*ISCJB **06** 11:30:45.7±0.6, 39.°39N±0.°04×38.°19E±0.°04, h0km, Error ellipse: s-maj=6.1km s-min=3.9km az=20.1*

*ISK **06** 11:30:45.6, 39.°37N×38.°21E, h11km, MD2.5*

*DDA **06** 11:30:46.0, 39.°34N×38.°19E, h8km, Md2.6, Suspected Mining explosion.*

*CSEM **06** 11:30:46.0±0.3, 39.°34N×38.°18E, h2km, MD2.6, Error ellipse: s-maj=7.7km s-min=5.0km az=19.0, Suspected Mining explosion.*

ISC 06 11:30:46.7±1.1**, 39.°37N**±0.°03×**38.°20E**±0.°02**, h0km, n16, σ0.s93**/27**, Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KEMA	Kemaliye	0.25	115	i P	Pg	11 30 51.2	-0.3
KEMA				i S	Sg	11 30 55.1	+0.4
KEMA	Kemaliye	0.25	115	P	Pg	11 30 51.2	-0.3
KEMA				S	Sg	11 30 55.1	+0.4
ILIC	ilic-Erzincan	0.29	74	ePG	Pg	11 30 51.8	-0.6
ILIC				eSG	Sg	11 30 56.6	+0.4
ILIC	ilic-Erzincan	0.29	74	ePg	Pg	11 30 51.8	-0.6
ILIC				eSg	Sg	11 30 56.6	+0.4
CUKAN	kangal_SIVAS	0.57	265	i P	Pg	11 30 57.1	-0.6
CUKAN				i S	Sg	11 31 05.7	+0.6
CUKAN	kangal_SIVAS	0.57	265	P	Pg	11 30 57.1	-0.6
CUKAN				S	Sg	11 31 05.7	+0.6
SUSE	Susehri	0.83	0	i P	Pg	11 31 03.0	+0.3
SUSE				i S	Sg	11 31 10.4	-3.1
SUSE	Susehri	0.83	0	P	Pg	11 31 03.0	+0.3
EZC	Erzincan	0.97	67	ePn	Pn	11 31 08.7	+1.0
PTK	Pertek	1.04	117	ePG	Pg	11 31 05.9	-0.8
PTK				eSG	Sg	11 31 20.7	+0.5
PTK	Pertek	1.04	117	ePg	Pg	11 31 05.9	-0.8
PTK				eSg	Sg	11 31 20.7	+0.5
ELZG	Elazig	1.07	145	i P	Pg	11 31 05.8	-1.4
ELZG				i S	Sg	11 31 21.1	+0.2
ELZG	Elazig	1.07	145	P	Pg	11 31 05.8	-1.4

Code	Station Name	Δ°	AZ°	Op	ISC	Time	Res
ELZG				S	Sg	11 31 21.1	+0.2
SVSK	Karacayir	1.08	301	ePN	Pg	11 31 06.9	-0.4
SVSK	Karacayir	1.08	301	ePn	Pg	11 31 06.9	-0.4
ERZN	Erzincan	1.20	79	ePN	Pg	11 31 08.7	-0.9

*CSEM **06** 11:34:49.9,34°.08N×25°.32E,h6km,ML2.8/10*
ATH 06 11:34:49.9,34°.08N×25°.32E,h6km±2km,ML2.8/8,Error ellipse: s-maj=2.9km s-min=1.3km az=349.0,Crete

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SIVA	Sivas	1.02	336	P	Pg	11 35 09.4	-0.2
SIVA				S	Sg	11 35 21.0	-1.9
SIVA	Sivas	1.02	336	P	Pg	11 35 08.8	-0.8
SIVA				S	Sg	11 35 22.5	-0.4
SIVA	Sivas	1.02	336	P	Pg	11 35 08.8	-0.8
SIVA				S	Sg	11 35 22.4	-0.5
SIVA				AML	AML	11 35 23.2	
	comp=E,6919µm,0.5s						
SIVA				AML	AML	11 35 24.6	
	comp=N,5082µm,0.8s						
LAST	Lasithi	1.08	7	P	Pg	11 35 10.0	-0.8
LAST				S	Sg	11 35 24.2	-0.7
LAST	Lasithi	1.08	7	P	Pg	11 35 10.1	-0.7
LAST				S	Sn	11 35 26.8	-0.3
LAST	Lasithi	1.08	7	P	Pg	11 35 10.1	-0.7
NPS	Neapolis	1.20	11	P	Pg	11 35 11.9	-1.1
NPS	Neapolis	1.20	11	P	Pg	11 35 12.7	-0.3
NPS				S	Sn	11 35 29.6	-0.3
NPS	Neapolis	1.20	11	P	Pg	11 35 12.7	-0.3
NPS				S	Sn	11 35 29.6	-0.3
NPS				AML	AML	11 35 31.7	
	comp=N,409µm,0.6s						
NPS				AML	AML	11 35 33.1	
	comp=E,602µm,0.6s						
IDI	Anoyia	1.25	344	P	Pg	11 35 13.4	-0.6
IDI				S	Sg	11 35 28.8	-1.5
IDI	Anoyia	1.25	344	P	Pg	11 35 12.9	-1.1
IDI				S	Sg	11 35 29.9	-0.4
IDI	Anoyia	1.25	344	P	Pg	11 35 12.9	-1.1
IDI				S	Sg	11 35 29.9	-0.5
IDI				AML	AML	11 35 31.1	
	comp=E,389µm,0.5s						
IDI				AML	AML	11 35 34.2	
	comp=N,454µm,0.4s						
ZKR	Zakros	1.27	35	P	Pg	11 35 14.3	0.0
ZKR				S	Sb	11 35 30.9	+0.1
ZKR	Zakros	1.27	35	P	Pg	11 35 14.6	+0.3
ZKR				S	Sn	11 35 31.5	0.0
ZKR	Zakros	1.27	35	P	Pg	11 35 14.6	+0.3
ZKR				S	Sn	11 35 31.5	0.0
ZKR				AML	AML	11 35 38.1	
	comp=E,641µm,0.6s						
ZKR				AML	AML	11 35 40.2	
	comp=N,397µm,0.6s						
GVD	Gavdhos	1.27	307	P	Pn	11 35 13.6	-0.6
GVD				S	Sg	11 35 29.8	-1.0
GVD	Gavdhos	1.27	307	P	Pn	11 35 13.6	-0.6
GVD				S	Sn	11 35 32.5	+0.9
GVD	Gavdhos	1.27	307	P	Pn	11 35 13.6	-0.6
GVD				S	Sn	11 35 32.5	+0.9
GVD				AML	AML	11 35 34.9	
	comp=E,1447µm,0.4s						
GVD				AML	AML	11 35 35.7	
	comp=N,1483µm,0.4s						
VAM	Vamos	1.61	325	P	Pb	11 35 19.6	-0.5
VAM	Vamos	1.61	325	P	Pn	11 35 19.2	+0.3
VAM				S	Sg	11 35 42.4	+0.6
IMMV	Iera Moni Meta	1.76	322	P	Pb	11 35 23.1	+0.4
IMMV	Iera Moni Meta	1.76	322	P	Pg	11 35 24.8	+1.0
IMMV				S	Sg	11 35 46.2	-0.5
IMMV	Iera Moni Meta	1.76	322	P	Pg	11 35 24.8	+1.0
IMMV				S	Sg	11 35 46.2	-0.4
IMMV				AML	AML	11 35 52.6	
	comp=E,502µm,0.9s						
IMMV				AML	AML	11 36 00.4	
	comp=N,365µm,0.7s						
KARP	Karpathos	2.10	45	P	Pb	11 35 28.1	-0.4
KARP	Karpathos	2.10	45	P	Pb	11 35 27.3	-1.2
KARP				S	Sb	11 35 54.9	0.0
KARP	Karpathos	2.10	45	P	Pb	11 35 27.3	-1.2
KARP				S	Sb	11 35 54.9	0.0
KARP				AML	AML	11 36 07.6	
	comp=N,154µm,0.6s						
KARP				AML	AML	11 36 12.2	
	comp=E,141µm,0.8s						
VLI	Veliai	3.27	324	P	Pn	11 35 43.0	+1.2
VLI	Veliai	3.27	324	P	Pn	11 35 45.0	+3.2
VLI				S	Sn	11 36 24.6	+3.6
VLI	Veliai	3.27	324	P	Pn	11 35 45.0	+3.3
VLI				S	Sn	11 36 24.6	+3.5
VLI				AML	AML	11 36 42.6	
	comp=N,150µm,1.5s						
VLI				AML	AML	11 36 42.8	
	comp=E,160µm,1.1s						

*ISCJB **06** 11:36:23.4±1.0,7°.1S±0°.1×119°.59E±0°.06,h33km,mb3.9/3, MS4.1/1,Error ellipse: s-maj=15.0km s-min=8.2km az=8.9*
*IDC **06** 11:36:33.7±6.1,8°.14S×118°.70E,h142km±65km,mb3.4/3, mb1 3.6/4,mb1mx3.1/48,mbtmp3.9/4,MS4.2/1,Ms1 4.2/1, ms1mx3.1/25,Error ellipse: s-maj=114.3km s-min=14.8km az=47.0*
*DJA **06** 11:36:49.0±0.8,8°S±6°×11°8E±°,h10km,M3.8/6,MLv3.8/6*
ISC 06 11:36:24.4±1.2,7°.2S±0°.1×119°.68E±0°.09,h35km,n10, σ1s.82/11,mb3.8/3,Flores Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PLAI	Plampang	2.47	229	P	Pn	11 37 05.0	+2.8
PLAI				S	Sn	11 37 29.5	-1.7
TWSI	Taliwang, Sumb	3.15	241	P	Pn	11 37 12.1	+0.5
SRBI	Singaraja	4.51	259	P	Pn	11 37 32.3	+2.1
JAGI	Jajag, Banyuwa	5.61	257	P	Pn	11 37 45.1	-0.4
JAGI				S	Sn	11 38 36.3	-12
GMJI	Gumukmas	6.26	260	P	Pn	11 37 54.8	+0.4
WRA	Warramunga Arr	19.04	133	P	Pn	11 40 46.4	+1.8
	0.8nm,0.3s,baz=304,slow=12,SNR=48						
WRA				S	Sn	11 44 16.9	-0.1
	0.3nm,0.3s,baz=308,slow=24,SNR=6.9						
ASAR	Alice Springs	21.31	142	P	P	11 41 08.9	+0.5
	3.4nm,0.3s,baz=315,slow=9.0,SNR=56						
STKA	Stephens Creek	31.93	143	P	P	11 42 44.2	-2.7
	0.5nm,0.4s,baz=333,slow=10,SNR=3.6						
GUMO	Guam	32.45	50	LR	LR	11 59 37.3	
	comp=Z,381nm,18.1s,baz=125,slow=41						
MKAR	Makanchi Array	63.19	332	P	P	11 46 49.3	+0.3
	0.3nm,0.4s,baz=131,slow=4.4,SNR=3.4						

*NIED **06** 11:37:00,36°.20N×143°.00E,h5km,Mw3.8 Best double couple: Mo5.47000×10^14 NP1:φs35.00000°,δ32.00000°, λ-83.00000°. NP2:φs207.00000°,δ58.00000°, λ-94.00000°.*
*IDC **06** 11:37:32.0±0.8,36°.00N×143°.17E,h0km,mb3.7/9, mb1 3.8/11,mb1mx3.6/57,mbtmp3.7/11,ML3.3/2,MS2.5/1, Ms1 2.5/1,ms1mx2.1/52,Error ellipse: s-maj=25.9km s-min=18.1km az=116.0*
*ISCJB **06** 11:37:35.4±0.6,36°.18N±0°.05×143°.02E±0°.06,h33km, mb3.7/9,Error ellipse: s-maj=6.9km s-min=6.0km az=44.7*
*JMA **06** 11:37:36.0±0.2,36°.21N×143°.00E,h63km,M3.6*
ISC 06 11:37:37.1±0.8,36°.12N±0°.05×143°.02E±0°.07,h35km,n25, σ1s.27/29,mb3.7/9,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	Chosi	1.80	257	P	Pn	11 38 05.7	+0.1
JHO	Hitachi	2.04	285	P	Pn	11 38 08.2	-0.6
JHO				eS	Sn	11 38 32.3	-0.7
ONAJ	Iwakimizuishiy	2.04	299	P	Pn	11 38 08.0	-0.9
JFK	Kawauchi	2.12	306	eS	Sn	11 38 33.7	-1.5
JFT	Otama	2.56	304	eS	Sn	11 38 45.9	-0.2
JIO	Ouri	2.68	331	P	Pn	11 38 16.4	-1.3
JIO				eS	Sn	11 38 46.3	-2.6
JAG	Ashikaga	2.90	277	P	Pn	11 38 20.7	0.0
JMK	Ichinoseki	3.17	334	S	Sn	11 38 59.0	-1.9
JOD2	Odawara 2	3.31	256	P	Pn	11 38 26.9	+0.5
JRY	Ryogami san	3.33	269	P	Pn	11 38 26.9	+0.1
JYK	Kaneyama	3.50	324	P	Pn	11 38 28.5	-0.5
JOM	Ohasama	3.61	338	eS	Sn	11 39 09.6	-2.3
MJAR	Matsushiro Arr	3.90	278	Pn	Pn	11 38 35.4	+0.8
	1.9nm,0.3s,baz=90,slow=15,SNR=8.0						
MJAR				LR	LR	11 40 22.4	
	comp=Z,63nm,21.6s,baz=95,slow=42						
MAT	Matsushiro	3.91	278	P	Pn	11 38 35.0	+0.4
MAT				S	Sn	11 39 18.9	-0.3
JHJ	Hachijo jima 2	4.01	223	Pn	Pn	11 38 34.8	-1.2
	5.8nm,0.3s,baz=343,slow=20,SNR=13						
JHJ				Sn	Sn	11 39 18.3	-3.5
	23nm,0.3s,baz=59,slow=24,SNR=7.6						
SEY	Seymchan	27.46	9	P	P	11 43 20.4	+0.9
	0.5nm,0.5s,baz=149,slow=5.9,SNR=4.7						
ZALV	Zalesovo Beam	43.48	313	P	P	11 45 37.6	+1.0
	0.8nm,0.4s,baz=99,slow=7.6,SNR=4.0						
KURBB	Kurchatov Arra	47.58	309	P	P	11 46 10.4	+1.3
	1.5nm,0.6s,baz=83,slow=7.7,SNR=6.5						
INK	Inuvik	54.61	27	P	P	11 47 02.2	+0.6
	0.5nm,0.5s,baz=302,slow=6.0,SNR=5.7						
WRA	Warramunga Arr	56.36	190	P	P	11 47 13.8	-0.9
	0.8nm,0.7s,baz=12,slow=7.4,SNR=4.4						
ASAR	Alice Springs	60.09	190	P	P	11 47 40.4	-0.4
	0.5nm,0.8s,baz=15,slow=14,SNR=5.3						
YKA	Yellowknife Ar	63.94	30	P	P	11 48 06.7	+0.5
	0.2nm,0.7s,baz=303,slow=6.6,SNR=4.1						
PDAR	Pinedale Array	77.38	46	P	P	11 49 28.9	+0.2
	0.3nm,0.6s,baz=270,slow=1.3,SNR=4.4						
TXAR	Lajitas Array	89.64	53	P	P	11 50 32.1	+0.5
	0.3nm,0.8s,baz=316,slow=3.5,SNR=3.6						
LPAZ	La Paz	146.00	63	PKPbc	PKPbc	11 57 14.4	0.0
	1.2nm,0.5s,baz=230,slow=2.0,SNR=4.4						

MAN 06 11:38:13,15°.93N×121°.91E,h0km,mb4.1,ML2.8,MS2.5, 1C,Luzon

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BALP	Baler	0.37	239	eP	Pg	11 38 20.8	+0.8
BALP				eS	Sg	11 38 25.9	+1.0
CAUP	Cauayan	1.01	356	eP	Pg	11 38 32.8	+0.4
CAUP				eS	Sn	11 38 48.6	-0.9
BCPH	Baguio City Da	1.35	290	⇑iP	Pb	11 38 40.7	+1.4
BCPH				i S	Sn	11 38 58.3	+0.3

*NIED **06** 11:48:00,37°.00N×140°.30E,h35km,Mw3.9 Best double couple: Mo6.96000×10^14 NP1:φs281.00000°,δ59.00000°, λ-164.00000°. NP2:φs182.00000°,δ76.00000°, λ-32.00000°.*
*IDC **06** 11:48:54.5±1.7,36°.96N×140°.40E,h0km,mb3.6/4, mb1 3.7/5,mb1mx3.4/59,mbtmp3.6/5,ML3.3/1,Error ellipse: s-maj=34.8km s-min=21.0km az=61.0*
*ISCJB **06** 11:48:56.1±0.4,37°.04N±0°.03×140°.34E±0°.03,h20km±5km, mb3.6/4,Error ellipse: s-maj=5.0km s-min=4.0km az=152.9*
*JMA **06** 11:48:56.3,37°.05N×140°.32E,h12km±1km,M3.8 Broadband fault plane solution: P waves. NP1: φs17.00000°,δ69.00000°,λ23.00000°. NP2:φs279.00000°, δ69.00000°,λ157.00000°. Principal axes: T Plg31.0000°, Azm238.0000°; N Plg59.0000°, Azm58.0000°; P Plg0.0000°, Azm148.0000°;*
JMA Felt III J1.
ISC 06 11:48:55.8±1.1,37°.05N±0°.03×140°.32E±0°.03,h11km±9km, n23,σ0s.90/29,mb3.7/4,7C-3D,Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JSB	Shiboa	0.33	256	⇑P	Pb	11 49 03.4	-0.4
JSB				S	Sb	11 49 08.2	-0.9
ONAJ	Iwakimizuishiy	0.38	82	⇑P	Pb	11 49 04.3	-0.3
ONAJ				S	Sb	11 49 10.0	-0.6
JFT	Otama	0.47	1	⇓P	Pb	11 49 05.6	-0.4
JFT				S	Sb	11 49 11.9	-1.0
JHO	Hitachi	0.48	156	⇓P	Pg	11 49 05.4	+0.1
JHO				S	Sg	11 49 12.3	+0.6
JFK	Kawauchi	0.54	54	⇑P	Pb	11 49 06.9	-0.4
JFK				S	Sb	11 49 14.3	-0.8
JFY	Yanaizu	0.61	306	⇓P	Pg	11 49 07.8	+0.1
JFY				S	Sg	11 49 15.7	0.0
JMM	Marumori	0.89	25	⇑P	Pg	11 49 13.0	-0.1
JMM				S	Sg	11 49 24.5	-0.3
JKT	Katashina	0.91	252	⇑P	Pg	11 49 13.2	-0.2
JAG	Ashikaga	0.94	228	⇑P	Pb	11 49 13.2	-0.9
JAG				S	Sb	11 49 25.5	-1.0
JHK	Hiroka	1.06	281	⇑P	Pb	11 49 15.7	-0.5
JHK				eS	Sb	11 49 29.2	-0.9
MJAR	Matsushiro Arr	1.77	254	Pn	Pn	11 49 26.9	+0.4
	27nm,0.3s,baz=68,slow=14,SNR=236						
MJAR				Sn	Sb	11 49 50.5	-0.1
	21nm,0.3s,baz=101,slow=14,SNR=9.6						
MJAR				LR	LR	11 49 57.2	
	comp=Z,62nm,21.9s,baz=70,slow=35						
MAT	Matsushiro	1.77	254	P	Pn	11 49 27.2	+0.8
MAT				S	Sb	11 49 50.9	+0.3
JHJ	Hachijo jima 2	3.95	187	Pn	Pn	11 49 56.6	+0.3
	5.7nm,0.3s,baz=253,slow=19,SNR=4.1						
JHJ				Sn	Sn	11 50 41.4	-1.2
	19nm,0.3s,baz=208,slow=22,SNR=4.4						
SONM	Songino Array	27.05	304	P	P	11 54 41.4	+3.2
	0.6nm,0.8s,baz=112,slow=9.0,SNR=3.3						
H11N2	WAKE ISLAND Hy	28.91	119	T	T	12 24 48.9	
	baz=313,slow=75,SNR=32						
H11N1	WAKE ISLAND Hy	28.92	119	T	T	12 24 49.4	
	baz=313,slow=75,SNR=34						
H11N3	WAKE ISLAND Hy	28.93	119	T	T	12 24 51.3	
	baz=313,slow=75,SNR=32						
H11S1	WAKE ISLAND Hy	29.61	121	T	T	12 25 41.2	
	baz=314,slow=76,SNR=32						
H11S3	WAKE ISLAND Hy	29.61	121	T	T	12 25 43.2	
	baz=314,slow=76,SNR=45						
H11S2	WAKE ISLAND Hy	29.62	121	T	T	12 25 41.8	
	baz=314,slow=76,SNR=35						
KURBB	Kurchatov Arra	45.30	308	P	P	11 57 12.9	-0.5
	0.8nm,0.8s,baz=84,slow=8.0,SNR=7.0						
WRA	Warramunga Arr	56.97	187	P	P	11 58 40.8	-0.5
	1.3nm,1.0s,baz=2.4,slow=7.6,SNR=11						
ASAR	Alice Springs	60.70	187	P	P	11 59 07.2	+0.1
	0.4nm,0.8s,baz=15,slow=10,SNR=4.3						

*ISCJB **06** 12:01:57.5±1.2,27°.3N±0°.1×143°.5E±0°.1,h10km,mb3.8/4, MS3.9/2,Error ellipse: s-maj=16.7km s-min=14.2km az=172.7*
*IDC **06** 12:01:59.4±1.5,27°.08N×143°.34E,h0km,mb3.7/4, mb1 3.8/5,mb1mx3.4/65,mbtmp3.7/5,ML3.5/1,MS3.9/2, Ms1 3.9/2,ms1mx2.9/50,Error ellipse: s-maj=30.1km s-min=21.1km az=57.0*
ISC 06 12:01:59.7±1.5,27°.2N±0°.1×143°.4E±0°.1,h10km,n8, σ0s.46/6,mb3.8/4,Bonin Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JCJ	Chichijima	1.11	264	Pn	Pn	12 02 21.6	+0.3
	baz=106,slow=20						
JCJ				Sn	Sn	12 02 36.3	-0.3
	baz=270,slow=20						
MJAR	Matsushiro Arr	10.30	336	Pn	Pn	12 04 27.3	-0.3
	0.4nm,0.3s,baz=141,slow=14,SNR=4.1						
YAK	Yakutsk	36.00	349	LR	LR	12 30 44.9	
	comp=Z,155nm,18.6s,baz=85,slow=48						
WRA	Warramunga Arr	47.70	192	P	P	12 10 36.8	+0.1
	2.1nm,0.8s,baz=13,slow=8.5,SNR=15						
ZALV	Zalesovo Beam	50.12	319	LR	LR	12 34 24.1	
	comp=Z,111nm,18.8s,baz=34,slow=39						
ASAR	Alice Springs	51.41	191	P	P	12 11 04.5	-0.5
	0.3nm,0.6s,baz=10,slow=7.4,SNR=5.3						
KURBB	Kurchatov Arra	53.74	314	P	P	12 11 22.4	+0.4
	0.4nm,0.4s,baz=92,slow=7.4,SNR=9.0						
BVAR	Borovoye Array	58.70	317	P	P	12 12 00.7	+3.3
	0.4nm,0.5s,baz=91,slow=7.2,SNR=2.9						

DHMR 06 12:08:11.1±1.0,11°.96N×43°.88E,h14km±99km,ML3.6, Ethiopia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ADEN	Aden	1.35	53	i P	Pb	12 08 36.1	-0.1
ADEN				i S	Sg	12 08 54.5	-0.3
ADEN				AML	AML	12 09 02.2	
	comp=E,1µm,0.4s						
UDYN	Al 'Udayn	2.00	3	i P	Pb	12 08 46.2	-1.2
UDYN				i S	Sb	12 09 12.9	+0.8
BDHA	Al Bayda'	2.59	39	i P	Pn	12 08 55.2	+2.3
BDHA				i S	Sb	12 09 30.3	+0.9
BDHA				AML	AML	12 09 37.8	
	comp=N,332nm,0.5s						
DHBB	Dhamar BB	2.64	11	i P	Pb	12 08 56.2	-2.2
DHBB				i S	Sb	12 09 32.3	+1.4

*ISCJB **06** 12:12:26.6±0.3,35°.49N±0°.02×51°.98E±0°.03,h10km,Error ellipse: s-maj=3.6km s-min=2.9km az=155.9*
*CSEM **06** 12:12:26.8±0.1,35°.46N×51°.99E,h2km,ML3.8,Error ellipse: s-maj=3.9km s-min=3.2km az=77.0*
*THR **06** 12:12:26.3±1.3,35°.50N×51°.96E,h15km±11km,ML3.9*
*AZER **06** 12:12:26.5±99.0,35°.61N×51°.84E,h2km±49km,Error ellipse: s-maj=329.2km s-min=16.0km az=329.0*
*TEH **06** 12:12:27.0,35°.49N×51°.98E,h5km,ML3.8*
ISC 06 12:12:26.8±0.8,35°.44N±0°.02×52°.00E±0°.02,h10km,n70, σ1s.43/95,8C-13D,Northern and central Iran

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
IDMV	Damavand	0.14	13	ePg	Pg	12 12 28.5	-1.7
IDMV				eSg	Sg	12 12 31.0	-1.6
IDMV				eAMB	AMB	12 12 31.6	
	comp=Z,84µm,0.1s						
IDMV	Damavand	0.14	13	ePg	Pg	12 12 28.5	-1.7
IDMV				eSg	Sg	12 12 31.0	-1.6
DAMV	Damavand	0.19	354	ePg	Pg	12 12 30.1	-0.9
DAMV				eSg	Sg	12 12 33.0	-0.8
DAMV				AML	AML	12 12 33.4	
	comp=N,39µm,0.1s						
DAMV				AML	AML	12 12 34.1	
	comp=E,60µm,0.1s						
DAMV	Damavand	0.19	354	ePg	Pg	12 12 30.1	-0.9
DAMV				eSg	Sg	12 12 33.0	-0.8
IAFJ	Afjeh	0.47	331	ePg	Pg	12 12 35.1	-1.0
IAFJ				eAMB	AMB	12 12 42.9	
	comp=Z,70nm,0.1s						
IAFJ	Afjeh	0.47	331	ePg	Pg	12 12 35.1	-1.0
IVRN	Varamin	0.50	206	ePg	Pg	12 12 36.4	-0.2
IVRN				eAMB	AMB	12 12 47.3	
	comp=Z,19µm,0.1s						
IVRN	Varamin	0.50	206	ePg	Pg	12 12 36.4	-0.2
IFIR	Firoozkooh	0.65	72	ePg	Pg	12 12 38.4	-1.1
IFIR				eSg	Sg	12 12 47.9	-0.1
IFIR				eAMB	AMB	12 12 49.5	
	comp=Z,19µm,0.1s						
IFIR	Firoozkooh	0.65	72	ePg	Pg	12 12 38.4	-1.1
IFIR				eSg	Sg	12 12 47.9	-0.1
ILAS	Lasjerd	0.79	94	ePg	Pg	12 12 41.5	-0.6
ILAS				eAMB	AMB	12 12 57.9	
	comp=E,50µm,0.1s						
ILAS	Lasjerd	0.79	94	ePg	Pg	12 12 41.5	-0.6
IR3	Iran Long-Peri	0.79	273	ePg	Pg	12 12 41.2	-1.0
IR3	Iran Long-Peri	0.79	273	ePg	Pg	12 12 41.2	-1.0
IPRN	Peran	0.84	19	ePg	Pg	12 12 42.3	-0.8
IPRN				eAMB	AMB	12 12 59.3	
	comp=Z,52µm,0.3s						
CHTH	Charan	0.85	303	ePg	Pg	12 12 41.8	-1.4
CHTH	Charan	0.85	303	ePg	Pg	12 12 41.8	-1.4
IALA	Alasht	0.92	46	ePg	Pg	12 12 43.5	-1.1
IALA				eAMB	AMB	12 13 00.1	
	comp=Z,21µm,0.1s						
IALA	Alasht	0.92	46	ePg	Pg	12 12 43.5	-1.1
THKV	Tehran--Karaj	1.02	298	ePg	Pg	12 12 45.2	-1.4
THKV				AML	AML	12 13 02.3	
	comp=E,5µm,0.5s						
THKV				AML	AML	12 13 05.6	
	comp=N,3µm,0.8s						
THKV	Tehran--Karaj	1.02	298	ePg	Pg	12 12 45.2	-1.4
IMHD	Mahdasht	1.11	283	ePg	Pg	12 12 46.4	-1.8
IMHD				eAMB	AMB	12 13 05.5	
	comp=Z,25µm,0.1s						
IMHD	Mahdasht	1.11	283	ePg	Pg	12 12 46.4	-1.8
GHVR	GHOM	1.12	211	ePg	Pg	12 12 48.0	-0.3
GHVR				AML	AML	12 13 09.9	
	comp=E,2µm,0.5s						
GHVR				AML	AML	12 13 10.3	
	comp=N,2µm,0.7s						
GHVR	GHOM	1.12	211	eP	Pg	12 12 48.0	-0.3
IANJ	Anjilo	1.57	89	ePn	Pn	12 12 55.0	0.0
IANJ				eAMB	AMB	12 13 21.2	
	comp=Z,36µm,0.1s						
IANJ	Anjilo	1.57	89	ePn	Pn	12 12 55.0	0.0
IKIA	Kiasar	1.57	60	ePn	Pb	12 12 55.6	-0.5
IKIA				eAMB	AMB	12 13 25.2	
	comp=Z,6µm,0.2s						
IKIA	Kiasar	1.57	60	ePn	Pb	12 12 55.6	-0.5
IRAZ	Razeghan	1.69	269	ePn	Pn	12 12 56.6	0.0
IRAZ				eAMB	AMB	12 13 30.1	
	comp=Z,25µm,0.2s						
IRAZ	Razeghan	1.69	269	ePn	Pn	12 12 56.6	0.0
IGLO	Ghaloghah	1.82	54	ePn	Pb	12 13 00.5	0.0
IGLO				eAMB	AMB	12 13 34.8	
	comp=Z,17µm,0.3s						
ASAO	Ashtian	1.85	242	ePg	Pb	12 12 59.5	-1.3
ASAO				AML	AML	12 13 30.2	
	comp=N,871nm,0.5s						
ASAO				AML	AML	12 13 30.6	
	comp=E,741nm,0.5s						
ASAO	Ashtian	1.85	242	eP	Pb	12 12 59.7	-1.2
IKLH	Kolahrood	2.15	189	ePn	Pn	12 13 03.8	+0.8
IKLH				eAMB	AMB	12 13 36.9	
	comp=Z,10µm,0.1s						
IKLH	Kolahrood	2.15	189	ePn	Pn	12 13 03.8	+0.8
KHMZ	Khomeyn	2.39	225	ePn	Pn	12 13 07.7	+1.4
KHMZ	Khomeyn	2.39	225	ePn	Pn	12 13 07.7	+1.4
IZEF	Zefreh	2.56	174	ePn	Pn	12 13 09.5	+0.9
IZEF				eAMB	AMB	12 14 00.1	
	comp=Z,3µm,0.3s						
IZEF	Zefreh	2.56	174	ePn	Pn	12 13 09.5	+0.9
NASN	Na'in	2.72	165	ePn	Pb	12 13 13.1	-2.7
NASN	Na'in	2.72	165	eP	Pb	12 13 13.1	-2.7
IPIR	Pirpir	2.90	199	ePn	Pn	12 13 14.8	+1.4
IPIR				eAMB	AMB	12 14 15.9	
	comp=Z,3µm,0.4s						
IPIR	Pirpir	2.90	199	ePn	Pn	12 13 14.8	+1.4
IGAR	Gharneh	3.03	179	ePn	Pb	12 13 20.0	-1.0
IGAR				eAMB	AMB	12 14 09.9	
	comp=Z,2µm,0.3s						
SHRO	Shahrood	3.31	79	ePn	Pn	12 13 20.1	+1.3
SHRO	Shahrood	3.31	79	eP	Pn	12 13 20.2	+1.4
IRAM	Ramesheh	3.64	175	ePn	Pn	12 13 25.4	+1.9
IRAM				eAMB	AMB	12 14 44.3	
	comp=Z,1µm,0.3s						
IRAM	Ramesheh	3.64	175	ePn	Pn	12 13 25.4	+1.9
ASTR	Astara	4.03	321	⇓P	Pn	12 13 30.0	+1.4
ASTR				⇓S	Sn	12 14 17.5	+1.7
ASTR	Astara	4.03	321	P	Pn	12 13 30.0	+1.4
ASTR				S	Sn	12 14 17.5	+1.7
LKRN	Lenkeran, Azer	4.15	323	⇓P	Pn	12 13 31.1	+0.8
LKRN				⇓S	Sn	12 14 21.1	+2.3
LKRN	Lenkeran, Azer	4.15	323	P	Pn	12 13 31.1	+0.8
LKRN				S	Sn	12 14 21.1	+2.3
LRK	Lerik	4.33	319	⇑P	Pn	12 13 33.9	+1.0
LRK				⇓S	Sn	12 14 25.4	+1.9
LRK	Lerik	4.33	319	P	Pn	12 13 33.9	+1.0
LRK				S	Sn	12 14 25.4	+1.9
ATGJ	Altiaghaj	5.92	337	⇑P	Pn	12 13 56.7	+2.1
ATGJ				⇓S	Sn	12 15 04.0	+1.4
ATGJ	Altiaghaj	5.92	337	P	Pn	12 13 56.7	+2.1
ATGJ				S	Sn	12 15 04.0	+1.4
PQL	Pirkuli	5.97	334	⇓P	Pn	12 13 57.1	+1.7
PQL				⇓S	Sn	12 15 06.0	+2.1
PQL	Pirkuli	5.97	334	P	Pn	12 13 57.1	+1.7
PQL				S	Sn	12 15 06.0	+2.1
SIZA	Siyzn	6.13	338	⇑P	Pn	12 13 59.5	+2.0
SIZA				⇓S	Sn	12 15 09.5	+1.8
SIZA	Siyzn	6.13	338	P	Pn	12 13 59.5	+2.0
SIZA				S	Sn	12 15 09.5	+1.8
XNQ	Khinaliq	6.47	333	⇓P	Pn	12 14 04.4	+2.0
XNQ				⇑S	Sn	12 15 16.7	+0.4
XNQ	Khinaliq	6.47	333	P	Pn	12 14 04.4	+2.0
XNQ				S	Sn	12 15 16.7	+0.4
QUBA	Quba, Azerbaij	6.51	336	⇑P	Pn	12 14 05.1	+2.4
QUBA				⇑S	Sn	12 15 18.3	+1.3
QUBA	Quba, Azerbaij	6.51	336	P	Pn	12 14 05.1	+2.4
QUBA				S	Sn	12 15 18.3	+1.3
SEKA	Sheki	6.88	328	⇑P	Pn	12 14 10.0	+2.2
SEKA				⇓S	Sn	12 15 26.4	+0.2
SEKA	Sheki	6.88	328	P	Pn	12 14 10.0	+2.2
SEKA				S	Sn	12 15 26.4	+0.2

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
GDB	GEDABAY	7.21	319	⇓P	Pn	12 14 12.7	+0.3
GDB	GEDABAY	7.21	319	P	Pn	12 14 12.7	+0.3
ZKTA	Zakatala	7.48	327	⇑P	Pn	12 14 16.8	+0.8
ZKTA				⇓S	Sn	12 15 42.4	+1.5

IDC 06 12:21:45.8±7.7, 6.39S×145.80E, h96km±57km, mb3.3/2, mb1 3.4/4, mb1mx3.0/45, mbtmp3.7/4, ML3.4/1, MS3.3/3, Ms1 3.3/3, ms1mx2.7/19, Error ellipse: s-maj=86.1km s-min=51.7km az=43.0, New Guinea

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
PMG	Port Moresby	3.29	156	P	Pn	12 22 35.5	+0.1
	4.2nm,0.3s,baz=23,slow=6.8,SNR=12						
PMG				S	Sn	12 23 14.0	+0.4
	15nm,0.3s,baz=107,slow=22,SNR=18						
WRA	Warramunga Arr	17.48	218	P	P	12 25 42.0	-1.3
	0.1nm,0.3s,baz=38,slow=11,SNR=13						
GUMO	Guam	19.87	357	LR	LR	12 33 09.9	
	comp=Z,45nm,21.6s,baz=19,slow=34						
ASAR	Alice Springs	20.64	212	P	P	12 26 18.1	+0.3
	1.2nm,0.6s,baz=38,slow=12,SNR=13						
DZM	Mont Dzumac	25.32	130	LR	LR	12 35 12.1	
	comp=Z,209nm,19.8s,baz=298,slow=32						
STKA	Stephens Creek	25.66	188	P	P	12 27 07.0	+0.3
	1.3nm,0.9s,baz=342,slow=6.4,SNR=3.0						
NWAO	Narrogin (SRO)	37.45	221	LR	LR	12 43 44.7	
	comp=Z,24nm,21.0s,baz=22,slow=35						

ISCJB 06 12:21:49.4±0.9, 37.46N±0.04×141.58E±0.09, h50km±8km, mb3.5/6, Error ellipse: s-maj=12.5km s-min=6.2km az=8.0
IDC 06 12:21:51.5±4.6, 37.40N×141.47E, h51km±39km, mb3.3/6, mb1 3.5/8, mb1mx3.2/57, mbtmp3.5/8, ML3.3/2, Error ellipse: s-maj=39.6km s-min=16.8km az=68.0
JMA 06 12:21:51.3±0.1, 37.52N×141.45E, h47km±2km, M3.7
JMA Felt I J1.
ISC 06 12:21:49.6±1.0, 37.49N±0.04×141.61E±0.09, h39km±3km, n25, σ1.18/33, mb3.5/6, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
JFK	Kawauchi	0.59	258	P	Pn	12 22 02.2	+0.5
JFK				S	Sn	12 22 10.0	-0.2
JMM	Marumori	0.75	300	P	Pn	12 22 04.1	+0.5
JMM				S	Sn	12 22 12.9	-0.8
ONAJ	Iwakimizuishiy	0.75	239	P	Pn	12 22 04.3	+0.5
ONAJ				S	Sn	12 22 13.9	0.0
JIO	Ouri	0.98	348	P	Pn	12 21 55.4	-12
JIO				S	Sn	12 22 19.7	+0.1
JFT	Otama	1.01	272	P	Pn	12 22 05.2	-2.1
JFT				S	Sn	12 22 19.8	-0.4
JOU	Okura	1.15	320	P	Pn	12 22 09.7	+0.5
JOU				S	Sn	12 22 23.9	+0.2
JYS	Shirataka	1.42	301	P	Pn	12 22 13.4	+0.5
JYS				S	Sn	12 22 30.4	0.0
JMK	Ichinoseki	1.49	348	P	Pn	12 22 15.2	+1.3
JFY	Yanaizu	1.52	267	P	Pn	12 22 14.9	+0.7
JFY				eS	Sn	12 22 32.0	-0.7
JYK	Kaneyama	1.73	326	P	Pn	12 22 18.1	+0.9
JKT	Katashina	2.02	250	P	Pn	12 22 23.9	+2.7
JAG	Ashikaga	2.02	239	P	Pn	12 22 22.4	+1.2
JAW	Awa shima	2.10	298	P	Pn	12 22 22.8	+0.6
MJAR	Matsushiro Arr	2.88	252	P	Pn	12 22 34.1	+1.1
	2.3nm,0.3s,baz=237,slow=9.5,SNR=19						
MAT	Matsushiro	2.88	252	P	Pn	12 22 34.6	+1.6
MAT				eS	Sn	12 23 09.9	+3.5
JHJ	Hachijo jima 2	4.61	199	P	Pn	12 22 56.1	-0.6
	9.8nm,0.3s,baz=82,slow=23,SNR=24						
JHJ				S	Sn	12 23 48.0	-0.9
	30nm,0.3s,baz=342,slow=23,SNR=9.2						
USRK	Ussuriysk Ar.	9.89	316	P	Pn	12 24 15.3	+6.2
	0.2nm,0.3s,baz=106,slow=14,SNR=4.7						
KLR	Kul'dur	13.73	332	P	P	12 25 08.2	-1.4
	0.1nm,0.3s,baz=121,slow=12,SNR=4.7						
SONM	Songino Array	27.66	303	P	P	12 27 33.9	0.0
	0.3nm,0.6s,baz=77,slow=6.5,SNR=3.3						
MKAR	Makanchi Array	44.01	302	P	P	12 29 53.6	+0.4
	0.1nm,0.3s,baz=89,slow=9.6,SNR=3.3						
KURBB	Kurchatov Arra	45.84	308	P	P	12 30 07.4	-0.3
	0.6nm,0.5s,baz=83,slow=8.3,SNR=6.7						
WRA	Warramunga Arr	57.53	188	P	P	12 31 35.2	0.0
	0.6nm,0.5s,baz=5.2,slow=7.0,SNR=14						
ASAR	Alice Springs	61.26	188	P	P	12 32 00.8	-0.1
	0.4nm,0.7s,baz=359,slow=6.5,SNR=4.5						
TXAR	Lajitas Array	89.72	52	P	P	12 34 45.4	+1.3
	0.1nm,0.5s,baz=270,slow=0.9,SNR=2.7						
LPAZ	La Paz	146.33	59	PKPbc	PKPbc	12 41 27.1	-0.2
	0.6nm,0.6s,baz=270,slow=1.0,SNR=2.0						

JMA 06 12:23:19.5±0.1, 36.29N×141.14E, h18km±2km, M3.3, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
JHO	Hitachi	0.56	305	P	Pg	12 23 30.4	-0.3
CHOJ	Chosi	0.63	201	P	Pb	12 23 31.5	-0.4
CHOJ				eS	Sb	12 23 41.1	+0.8
JCN	Nagara	1.16	222	P	Pg	12 23 42.5	+0.6
MAT	Matsushiro	2.38	277	P	Pn	12 23 58.3	+0.7
MAT				S	Sb	12 24 28.8	-2.0

IDC 06 12:31:31.1±5.8, 36.05N×70.81E, h111km±32km, mb3.5/5, mb1 3.5/11, mb1mx3.2/46, mbtmp3.9/11, Error ellipse: s-maj=67.1km s-min=22.3km az=164.0
NNC 06 12:31:39.0±2.5, 36.67N×70.72E, h130km±26km, mb3.2, mpv4.0, Error ellipse: s-maj=21.6km s-min=10.8km az=168.0
ISC 06 12:31:40.5±1.6, 36.8N±0.1×70.66E±0.08, h150km, n19, σ1.78/25, mb3.4/4, 8C-7D, Hindu Kush region

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
DZET	Dzherino	2.49	325	⇑P	Pn	12 32 20.3	-1.2
	15nm,0.3s						
DZET				⇓S	Sn	12 32 53.4	+0.2
	143nm,0.4s						
SFK	Sufi-Kurgan	3.92	34	⇓P	Pn	12 32 39.0	-0.9
	7.4nm,0.2s						
SFK				⇑S	Sn	12 33 26.0	-0.1
	28nm,0.3s						
MNAS	Manas	5.87	13	⇑P	Pn	12 33 05.3	-0.2
	7.5nm,0.5s						
MNAS				⇓S	Sn	12 34 12.8	+0.8
	8.6nm,0.4s						
KK31	Karatay Array	6.31	359	⇑P	Pn	12 33 11.5	+0.2
	3.3nm,0.3s,baz=174,slow=12,SNR=77						
KK31				⇓S	Sn	12 34 23.8	+1.3
	8.7nm,0.4s,baz=177,slow=21,SNR=3.9						
AAK	Ala-Archa	6.55	26	P	Pn	12 33 13.5	-1.1
	5.2nm,0.3s,baz=157,slow=4.5,SNR=43						
AAK				S	Sn	12 34 28.8	+0.6
	1.2nm,0.3s,baz=321,slow=23,SNR=19						
AAK	Ala-Archa	6.55	26	⇑P	Pn	12 33 13.6	-0.9
	4.2nm,0.3s						
AAK				⇑S	Sn	12 34 28.9	+0.6
	25nm,0.8s						
TKM2	Tokmak 2	7.21	30	⇓P	Pn	12 33 21.7	-1.7
	9.3nm,0.6s						
TKM2				⇑S	Sn	12 34 46.7	+2.5
	8.3nm,0.7s						
GEYT	Alibeck	10.05	280	P	Pn	12 33 56.4	-4.8
	1.8nm,0.3s,baz=103,slow=13,SNR=6.6						
GEYT				S	Sn	12 35 50.0	-2.5
	2.7nm,0.3s,baz=97,slow=20,SNR=7.0						
MKAR	Makanchi Array	13.22	37	P	Pn	12 34 40.9	-1.5
	0.0nm,0.3s,baz=221,slow=14,SNR=8.2						
AB31	Akbulak array	14.71	331	⇓P	Pn	12 35 01.8	+0.8
	1.0nm,0.4s						
AB31				⇓S	Sn	12 37 39.8	-4.4
	1.4nm,0.5s,baz=147,slow=22,SNR=12						
KURBB	Kurchatov Arra	14.94	20	P	Pn	12 35 05.9	+1.9
	0.1nm,0.3s,baz=209,slow=10,SNR=46						
BVAR	Borovoye Array	16.24	359	P	Pn	12 35 21.0	+1.0
	0.4nm,0.3s,baz=159,slow=9.8,SNR=7.8						
AKTO	Aktyubinsk	16.40	330	P	Pn	12 35 23.1	+1.2
	0.4nm,0.3s,baz=160,slow=14,SNR=7.3						
AKTO	Aktyubinsk	16.40	330	⇑P	P	12 35 26.8	+4.9
	2.0nm,0.7s						
ZALV	Zalesovo Beam	19.77	25	P	P	12 35 58.3	-0.4
	10nm,0.5s,baz=222,slow=11,SNR=52						
ARU	Arti	21.28	341	P	P	12 36 15.8	+1.0
	0.8nm,0.3s,baz=148,slow=5.6,SNR=3.6						
ARCES	ARCESS Array B	40.78	338	P	P	12 39 06.8	+0.3
	0.3nm,0.4s,baz=108,slow=8.2,SNR=7.7						
INK	Inuvik	73.67	9	P	P	12 42 56.4	-0.7
	0.4nm,0.4s,baz=341,slow=5.5,SNR=6.8						
YKA	Yellowknife Ar	80.97	2	P	P	12 43 36.7	-1.1
	0.2nm,0.5s,baz=351,slow=5.3,SNR=11						

IDC 06 12:54:24.2±2.0, 2.95N×126.84E, h0km, mb3.5/4, mb1 3.7/4, mb1mx3.5/40, mbtmp3.5/4, Error ellipse: s-maj=176.6km s-min=23.3km az=65.0, Northern Molucca Sea

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
WRA	Warramunga Arr	23.91	162	P	P	12 59 39.6	-0.4
	0.8nm,0.4s,baz=342,slow=11,SNR=25						
ASAR	Alice Springs	27.34	166	P	P	13 00 11.4	+0.3
	0.1nm,0.3s,baz=345,slow=11,SNR=7.1						
STKA	Stephens Creek	37.37	159	P	P	13 01 39.1	+0.4
	0.7nm,0.5s,baz=345,slow=7.8,SNR=3.8						
MKAR	Makanchi Array	58.26	325	P	P	13 04 20.3	-0.4
	0.2nm,0.4s,baz=132,slow=9.2,SNR=3.6						

NIED 06 12:56:00, 36.70N×140.70E, h5km, Mw4.7 Best double couple: Mo1.21000×10^16 NP1:φs12.00000°, δ35.00000°, λ-66.00000°. NP2:φs163.00000°, δ59.00000°, λ-106.00000°.
ISCJB 06 12:56:50.2±0.5, 36.78N±0.02×140.42E±0.02, h15km±3km, mb4.8/134, MS4.0/30, Error ellipse: s-maj=4.1km s-min=2.9km az=151.9
BJI 06 12:56:50.3, 36.63N×140.75E, h37km, mb4.7/52, mB4.9/36, Ms4.5/48, Ms7 4.1/44
JMA 06 12:56:50.4, 36.73N×140.60E, h7km±1km, M4.9 Broadband fault plane solution: P waves. NP1: φs172.00000°, δ52.00000°, λ-76.00000°. NP2: φs330.00000°, δ40.00000°, λ-107.00000°. Principal axes: T Plg6.0000°, Azm252.0000°; N Plg11.0000°, Azm343.0000°; P Plg78.0000°, Azm135.0000°;
JMA Felt IV J1.
MOS 06 12:56:53.5±0.9, 37.10N×140.35E, h28km, mb5.1/60 Error ellipse: s-maj=6.4km s-min=4.5km az=100.4
NEIC 06 12:56:54.7±0.5, 36.74N×140.36E, h36km±5km, mb4.9/55, Error ellipse: s-maj=4.1km s-min=3.3km az=149.0
NEIC Felt at Tokyo. Recorded [4 JMA] in Ibaraki.
IDC 06 12:56:55.1±1.4, 36.70N×140.50E, h44km±13km, mb4.4/30, mb1 4.6/34, mb1mx4.5/46, mbtmp4.6/34, ML3.7/4, MS3.8/18, Ms1 3.9/18, ms1mx3.6/44, Error ellipse: s-maj=10.2km s-min=8.1km az=74.0
ISC 06 12:56:51.6±0.5, 36.72N±0.03×140.59E±0.04, h20km±2km, n702, σ1.30/719, mb4.9/134, MS4.0/30, 16C-11D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
JHO	Hitachi	0.11	189	⇑P	Pg	12 56 53.1	-2.6
JHO				S	Sg	12 56 55.1	-3.2
ONAJ	Iwakimizuishiy	0.41	24	⇑P	Pg	12 56 58.2	-2.1
ONAJ				S	Sg	12 57 04.2	-2.0
JYT	Yasato	0.59	213	⇑P	Pg	12 57 01.8	-1.6
JYT				S	Sb	12 57 10.3	-0.7
JSB	Shiboa	0.59	295	⇑P	Pb	12 57 02.5	-0.8
JFK	Kawauchi	0.68	19	⇑P	Pg	12 57 02.9	-2.3
JFK				S	Sg	12 57 12.1	-2.2
JFT	Otama	0.82	346	⇓P	Pb	12 57 05.9	-1.3
JFT				S	Sb	12 57 16.9	-1.0
MJAR	Matsushiro Arr	1.92	265	P	Pn	12 57 23.4	+0.1
	322nm,0.3s,baz=80,slow=12,SNR=1580						
MJAR				S	Sn	12 57 46.6	-0.3
	561nm,0.3s,baz=77,slow=13,SNR=19						
MJAR				LR	LR	12 58 25.6	
	comp=Z,3μm,20.5s,baz=90,slow=50						
MAJO	Matsushiro	1.93	265c	iP	Pb	12 57 24.0	-2.1
MAJO	Matsushiro	1.93	265	ePn	Pb	12 57 24.3	-1.7
MAJO				eSn	Sb	12 57 50.0	+0.3
MAT	Matsushiro	1.93	265	P	Pn	12 57 23.9	+0.6
MAT				S	Sb	12 57 49.2	-0.5
INU	Inuyama	3.20	246	ePn	Pn	12 57 42.9	+2.1
INU				eSn	Sb	12 58 21.8	-4.6
JHJ	Hachijo jima 2	3.65	191	P	Pn	12 57 48.6	+1.5
	93nm,0.3s,baz=121,slow=1.5,SNR=28						
JHJ				S	Sn	12 58 28.8	-0.8
	140nm,0.3s,baz=218,slow=22,SNR=8.5						
JHJ2	Mitsune	3.66	190	ePn	Pn	12 57 47.3	+0.2
ERM	Erimo	5.65	20	deP	Pn	12 58 15.4	+1.0
ERM	Erimo	5.65	20	ePn	Pn	12 58 15.9	+1.5
ERM				eSn	Sn	12 59 19.8	+1.1
YUK	Yuzh-Kuril'sk	8.34	27	eP	Pn	12 58 50.4	-0.9
YUK				eS	Sn	13 00 18.9	-5.9
YUK				pmax	pmax		
	comp=Z,52nm,0.3s						
SHO	Shikotan	8.58	32	eP	Pn	12 58 52.3	-2.4
SHO				eS	Sn	13 00 22.4	-8.5
SHO				pmax	pmax		
	comp=Z,36nm,0.6s						
SHO				pmax	pmax		
	comp=E,31nm,0.5s						
SHO				pmax	pmax		
	comp=N,24nm,0.4s						
JNU	Nakatsue	8.75	249	P	Pn	12 58 59.2	+2.2
	comp=N,0.6nm,0.3s,baz=50,slow=9.8,SNR=10						
JNU	Nakatsue	8.75	249	ePn	Pn	12 59 00.7	+3.7
VLA	Vladivostok	9.25	316	⇓eP	Pn	12 59 10.4	+6.6
VLA				pmax	pmax		
	comp=Z,47nm,1.3s						
CBIJ	Chichi jima	9.69	172	ePn	Pn	12 59 11.0	+1.1
USRK	Ussuriysk Ar.	9.93	321	P	Pn	12 59 18.1	+5.0
	comp=Z,0.8nm,0.3s,baz=127,slow=13,SNR=28						
USRK				LR	LR	13 02 32.6	
	comp=Z,245nm,21.6s,baz=131,slow=34						
KUR	Kuril'sk	10.12	31	eP	Pn	12 59 14.9	-0.9
KUR				eS	Sn	13 01 02.5	-6.2
KUR				pmax	pmax		
	comp=Z,25nm,0.5s						
KSRS	Korea Array	10.15	278	P	Pn	12 59 19.4	+3.2
	comp=Z,0.7nm,0.3s,baz=92,slow=13,SNR=32						
KSRS				LR	LR	13 02 56.4	
	comp=Z,876nm,20.0s,baz=86,slow=36						
KS01	Wonju Array Si	10.17	278	ePn	Pn	12 59 22.3	+5.8
KS15	Wonju Array Si	10.18	278	ePn	Pn	12 59 23.9	+7.3
KSAR	Wonju Array Be	10.18	278	P	Pn	12 59 19.4	+2.8
KSAR	Wonju Array Be	10.18	278	P	Pn	12 59 19.4	+2.8
YSS	Yuzh-Sakhalins	10.35	8	⇑eP	Pn	12 59 17.7	-1.2
YSS				eS	Sn	13 01 03.2	-11
YSS				pmax	pmax		
	comp=Z,50nm,0.8s						
YSS				MLR	MLR		
	comp=Z,1μm,16.0s						
YSS				MLR	MLR		
	comp=N,1μm,15.0s						
YSS				MLR	MLR		
	comp=E,700nm,18.0s						
MDJ	Mudanjiang	11.48	317	P	Pn	12 59 38.6	+4.3
MDJ				pmax	pmax		
	comp=E,40nm,1.1s						
MDJ				pmax	pmax		
	comp=E,300nm,4.9s						
CN2	Changchun	13.54	306	eP	Pn	13 00 05.2	+2.6
KLR	Kul'dur	14.06	336	P	Pn	13 00 09.7	0.0
	comp=E,0.1nm,0.3s,baz=146,slow=15,SNR=5.0						
SNY	Shenyang	14.12	296	⇑P	Pn	13 00 13.3	+2.8
SNY				S	S	13 02 58.6	-8.9
SNY				pmax	pmax		
	comp=E,19nm,1.7s						
SNY				pmax	pmax		
	comp=E,270nm,12.0s						
SNY				LR	LR		
	comp=E,810nm,19.7s						
SNY				LR	LR		
	comp=E,560nm,23.4s						
SNY				LR	LR		
	comp=E,900nm,22.0s						
TYV	Tymovskoe	14.21	5	eP	Pn	13 00 10.5	-1.2
TYV				pmax	pmax		
	comp=Z,15nm,0.8s						
TYV				MLR	MLR		
	comp=Z,1μm,11.0s						
NKL	Nikolayevsk	16.43	0	eP	Pn	13 00 39.0	-1.8
NKL				MLR	MLR		
	comp=N,500nm,12.0s						
NKL				MLR	MLR		
	comp=E,800nm,12.0s						
NKL				MLR	MLR		
	comp=Z,500nm,12.0s						
NJ2	Nanjing	18.52	262	eP	P	13 01 06.2	-0.6
NJ2				pmax	pmax		
	comp=Z,25nm,0.6s						
TIA	Tai'an	18.88	275	⇓P	Pn	13 01 10.8	-0.5
TIA				pmax	pmax		
	comp=Z,10.0nm,1.6s						
BJI	Beijing	19.41	287	P	P	13 01 15.8	-0.7
BJI				S	S	13 04 57.7	+2.6
BJI				pmax	pmax		
	comp=Z,12nm,1.4s						
BJI				LR	LR		
	comp=Z,470nm,15.0s						
BJI				LR	LR		
	comp=Z,220nm,15.4s						
PETK	Petropavlovsk-	20.29	31	P	Pn	13 01 29.6	+1.6
	comp=Z,12nm,1.0s,baz=230,slow=3.7,SNR=4.7						
PETK				LR	LR	13 08 51.4	
	comp=Z,186nm,20.2s,baz=216,slow=35						
PET	Petropavlovsk	20.63	32	eP	P	13 01 30.7	+1.1
PET				eS	S	13 05 13.4	-5.8
PET				pmax	pmax		
	comp=Z,42nm,1.4s						
PET				MLR	MLR		
	comp=Z,300nm,15.0s						
WHN	Wuhan	22.66	262	P	P	13 01 53.1	+1.4
WHN				S	S	13 05 55.1	-3.7
WHN				LR	LR		
	comp=Z,710nm,12.4s						
WHN				LR	LR		
	comp=Z,870nm,9.8s						
WHN				LR	LR		
	comp=Z,1μm,13.6s						
HHC	Hu-ho-hao-te	22.95	289	eP	P	13 01 54.2	-0.5
HHC				S	S	13 06 03.3	-0.6
HHC				SS	SnSn	13 06 43.2	+7.3
HHC				pmax	pmax		
	comp=Z,20nm,1.0s						
HHC				pmax	pmax		
	comp=Z,140nm,4.5s						
HHC				LR	LR		
	comp=Z,630nm,12.9s						
HHC				LR	LR		
	comp=Z,600nm,12.4s						
HHC				LR	LR		
	comp=Z,530nm,12.1s						
GUMO	Guam	23.35	169	LR	LR	13 09 07.9	
	comp=Z,77nm,21.9s,baz=89,slow=31						
MA2	Magadan	23.80	13	P	P	13 02 03.3	+0.4
	comp=Z,46nm,0.8s,baz=218,slow=8.7,SNR=78						
CIT	Chita	24.45	317	eP	P	13 02 00.2	-8.9
CIT				e		13 02 48.5	
XAN	Xi'an	25.90	274	P	P	13 02 23.8	+1.5
XAN				pP	sP	13 02 33.8	+3.0
XAN				sP	pP	13 02 40.3	+12
XAN				PP	PnPn	13 03 04.0	+4.2
XAN				S	S	13 06 47.6	-3.8
XAN				sS	sS	13 07 06.5	+5.2
XAN				SS	SnSn	13 07 53.5	+5.4
XAN				pmax	pmax		
	comp=Z,5.0nm,0.7s						
XAN				pmax	pmax		
	comp=Z,45nm,4.8s						
XAN				LR	LR		
	comp=Z,290nm,17.7s						
XAN				LR	LR		
	comp=Z,410nm,15.9s						
XAN				LR	LR		
	comp=Z,360nm,16.4s						
YAK	Yakutsk	26.24	348	P	P	13 02 24.0	-1.0
	comp=Z,1.3nm,0.6s,baz=344,slow=22,SNR=6.7						
YAK	Yakutsk	26.24	348	eP	P	13 02 23.0	-2.0
YAK				e*PP	sP	13 02 36.8	+3.3
YAK				e		13 03 12.1	
YAK				e		13 05 51.7	
YAK				eSS		13 08 08.5	
YAK				pmax	pmax		
	comp=Z,37nm,0.9s						
YAK				pmax	pmax		
	comp=N,16nm,1.1s						
YAK				pmax	pmax		
	comp=E,7.0nm,1.1s						
YAK				pmax	pmax		
	comp=Z,15nm,0.9s						
YAK	Yakutsk	26.24	348	eP	P	13 02 24.0	-1.0
	comp=Z,42nm,1.0s						
SEY	Seymchan	27.23	12	P	P	13 02 35.0	+1.1
	comp=Z,18nm,1.0s,baz=203,slow=6.3,SNR=41						
SONA1	Songino Array	27.41	305	eP	P	13 02 34.5	-1.5
SONM	Songino Array	27.42	305	P	P	13 02 34.6	-1.4
	comp=Z,14nm,0.8s,baz=106,slow=8.1,SNR=77						
SONM				PcP	PcP	13 05 55.0	+0.6
	comp=Z,1.4nm,0.9s,baz=110,slow=1.1,SNR=4.2						
SONM				LR	LR	13 13 32.7	
	comp=Z,251nm,18.9s,baz=104,slow=36						
BOD	Bodaibo	27.45	329	eP	P	13 02 34.3	-1.7
BOD				pmax	pmax		
	comp=Z,10.0nm,1.4s						
H11N2	WAKE ISLAND Hy	28.56	119	T	T	13 32 32.2	
	baz=313,slow=75,SNR=910						
H11N1	WAKE ISLAND Hy	28.57	119	T	T	13 32 32.8	
	baz=313,slow=75,SNR=1773						
H11N3	WAKE ISLAND Hy	28.58	119	T	T	13 32 33.7	
	baz=313,slow=75,SNR=1557						
H11S1	WAKE ISLAND Hy	29.25	121	T	T	13 33 22.5	
	baz=314,slow=76,SNR=9215						
H11S3	WAKE ISLAND Hy	29.25	121	T	T	13 33 21.9	
	baz=314,slow=76,SNR=4475						
H11S2	WAKE ISLAND Hy	29.27	121	T	T	13 33 22.1	
	baz=314,slow=76,SNR=4107						
LZH	Lanzhou	29.47	280	eP	P	13 02 55.8	+1.4
LZH				pP	sP	13 03 06.1	+3.2
LZH				sP	pP	13 03 10.7	+10
LZH				PP	PnPn	13 03 51.0	+2.4
LZH				eS	S	13 07 46.2	-1.7
LZH				sS	sS	13 08 06.0	+8.2
LZH				SS	SnSn	13 09 17.4	+2.0
LZH				pmax	pmax		
	comp=Z,21nm,1.0s						
LZH				pmax	pmax		
	comp=Z,88nm,4.2s						
LZH				LR	LR		
	comp=Z,540nm,14.8s						
LZH				LR	LR		
	comp=Z,770nm,17.6s						
LZH				LR	LR		
	comp=Z,990nm,18.3s						
ZAK	Zakamensk	29.95	309	eP	P	13 02 57.8	-0.7
ZAK				pmax	pmax		
	comp=Z,5.0nm,1.0s						
TLY	Talaya	30.04	312	P	P	13 02 59.6	+0.5
	comp=Z,7.7nm,0.7s,baz=32,slow=15,SNR=5.6						
TLY	Talaya	30.04	312	eP	P	13 03 00.0	+0.8
TLY				pmax	pmax		
	comp=Z,8.0nm,0.6s						
TLY				MLR	MLR		
	comp=Z,165nm,13.0s						
GYA	Guiyang	30.52	260	⇑iP	P	13 03 04.6	+0.9
GYA				pP	sP	13 03 16.2	+4.0
GYA				PP	PnPn	13 04 05.0	+2.2
GYA				PcP	PcP	13 06 03.4	+0.9
GYA				S	S	13 08 01.6	-2.8
GYA				sS	sS	13 08 20.8	+6.5
GYA				SS	SnSn	13 09 41.7	+0.7
GYA				ScS	ScS	13 13 36.3	-4.1
GYA				pmax	pmax		
	comp=Z,20nm,0.8s						
GYA				pmax	pmax		
	comp=Z,120nm,5.4s						
GYA				LR	LR		
	comp=Z,580nm,16.4s						
GYA				LR	LR		
	comp=Z,550nm,16.6s						
GYA				LR	LR		
	comp=Z,530nm,16.2s						
CD2	Chengdu	31.01	270	P	P	13 03 07.1	-0.9
CD2				pP	sP	13 03 18.3	+1.8
CD2				S	S	13 08 08.8	-3.2
CD2				sS	sS	13 08 28.0	+6.1
CD2				pmax	pmax		

comp=Z,10.0nm,0.5s
CD2 pmax pmax
comp=Z,130nm,4.1s
CD2 LR LR
comp=Z,510nm,13.1s
CD2 LR LR
comp=Z,460nm,11.9s
GTA Gaotai 32.03 287 *e*P P 13 03 20.2 +3.3
GTA pP sP 13 03 30.5 +5.1
GTA sP pP 13 03 34.5 +12
GTA pmax pmax
comp=Z,6.0nm,1.0s
KMI Kunming 34.26 261 P **P** **13 03 37.3 +0.6**
KMI pP sP 13 03 50.2 +5.0
KMI sP pP 13 03 54.2 +11
KMI PP **PP** **13 04 53.5 -0.8**
KMI S **S** **13 08 59.4 -3.5**
KMI sS sS 13 09 16.6 +3.7
KMI pmax pmax
comp=Z,18nm,1.1s
KMI pmax pmax
comp=Z,48nm,3.1s
KMI LR LR
comp=Z,350nm,18.8s
KMI LR LR
comp=Z,190nm,20.5s
KMI LR LR
comp=Z,330nm,23.8s
BILL Bilibino 34.51 17*c i*P **P** **13 03 37.9 -0.2**
BILL *i* 13 06 13.5
BILL pmax pmax
comp=Z,23nm,1.0s
BILL MLR MLR
comp=Z,97nm,16.0s
BILL Bilibino 34.51 17 *e*P **P** **13 03 36.9 -1.2**
comp=Z,20nm,1.0s
TIXI Tiksi 35.52 354⇓ *e*P **P** **13 03 45.4 -1.3**
TIXI pmax pmax
comp=Z,13nm,1.7s
TIXI MLR MLR
comp=Z,93nm,15.0s
TIXI Tiksi 35.52 354 *e*P **P** **13 03 45.7 -1.0**
comp=Z,10nm,1.2s
KRAR Krasnoyarsk 37.23 317⇓ *e*P P 13 03 58.2 -3.3
KRAR pmax pmax
comp=Z,30nm,0.4s
FAKI Fak Fak 40.20 193 *e*P **P** **13 04 27.2 +0.4**
comp=Z,14nm,0.8s
WMQ Urumqi 40.39 297 P **P** **13 04 28.4 +0.1**
WMQ pP sP 13 04 40.0 +3.1
WMQ sP pP 13 04 47.1 +13
WMQ PcP **PcP** **13 06 31.9 +0.7**
WMQ S **S** **13 10 33.5 -2.0**
WMQ sS sS 13 10 51.1 +5.6
WMQ pmax pmax
comp=Z,5.0nm,0.8s
WMQ pmax pmax
comp=Z,20nm,4.4s
WMQ LR LR
comp=Z,240nm,21.8s
WMQ LR LR
comp=Z,55nm,22.8s
WMQ LR LR
comp=Z,92nm,20.2s
CHTO Chiang Mai 40.58 255 *e*P **P** **13 04 29.3 -0.7**
CHTO pmax pmax
comp=Z,4.0nm,0.8s
CHTO Chiang Mai 40.58 255 *e*P **P** **13 04 29.3 -0.7**
comp=Z,3.9nm,0.8s
CMAR Chiang Mai Arr 40.78 255 P **P** **13 04 32.5 +0.8**
comp=Z,1.1nm,0.8s,baz=54,slow=6.0,SNR=6.2
CMAR PcP **PcP** **13 06 32.5 -0.2**
comp=Z,1.1nm,0.6s,baz=34,slow=2.1,SNR=6.4
CMAR LR LR 13 21 30.7
comp=Z,146nm,21.1s,baz=48,slow=36
CM01 Chiang Mai Arr 40.79 255 *e*P **P** **13 04 32.8 +1.1**
CM01 *e*PcP **PcP** **13 06 33.5 +0.8**
ZAA0 Zalesovo Array 41.64 313 *e*P **P** **13 04 37.9 -0.4**
ZAA0 *e*PcP **PcP** **13 06 34.5 -0.4**
ZALV Zalesovo Beam 41.64 313 P **P** **13 04 37.7 -0.6**
comp=Z,20nm,0.6s,baz=95,slow=6.7,SNR=74
ZALV PcP **PcP** **13 06 35.0 +0.1**
comp=Z,2.4nm,0.4s,baz=101,slow=3.0,SNR=7.3
NVS Novosibirsk 42.58 314 *e*P **P** **13 04 46.0 0.0**
NVS *e* 13 06 38.1
NVS pmax pmax
comp=Z,6.0nm,0.7s
NVS pmax pmax
comp=E,6.0nm,0.7s
NRIK Noril'sk 43.28 336 P **P** **13 04 51.6 +0.2**
comp=E,1.4nm,0.3s,baz=117,slow=8.0,SNR=7.3
NRIK PcP **PcP** **13 06 40.3 +0.2**
comp=E,4.4nm,0.7s,baz=100,slow=1.2,SNR=5.8
NRIK LR LR 13 24 24.2
comp=E,264nm,18.1s,baz=104,slow=38
MK01 Makanchi Array 43.72 302 *e*P **P** **13 04 54.7 -0.7**
MK31 Makanchi Array 43.73 302 *e*P **P** **13 04 54.9 -0.5**
MK31 Makanchi Array 43.73 302 *e*P **P** **13 04 54.9 -0.5**
MKAR Makanchi Array 43.73 302 P **P** **13 04 55.0 -0.5**
comp=E,5.0nm,0.8s,baz=89,slow=9.3,SNR=42
MKAR PcP **PcP** **13 06 42.2 +0.1**
comp=E,2.4nm,0.9s,baz=73,slow=5.8,SNR=3.7
MKAR LR LR 13 23 03.3
comp=E,219nm,21.0s,baz=86,slow=36
MKAR Makanchi Array 43.73 302 *i* P **P** **13 04 55.5 +0.1**
MKAR pmax pmax
comp=Z,5.0nm,0.8s
MAKZ Makanchi 43.94 302 *e*P **P** **13 04 56.9 -0.2**
MAKZ pmax pmax
comp=Z,9.0nm,0.9s
MAKZ Makanchi 43.94 302 *e*P **P** **13 04 56.9 -0.2**
comp=Z,8.5nm,0.9s
KURK Kurchatov 45.61 308 *e*P **P** **13 05 09.7 -0.6**
KURK pmax pmax
comp=Z,43nm,0.8s
KURK Kurchatov 45.61 308 *e*P **P** **13 05 09.7 -0.6**
comp=Z,43nm,0.8s
KAPI Kappang 45.86 210 P **P** **13 05 13.3 +0.7**
comp=Z,5.1nm,0.4s,baz=348,slow=11,SNR=5.7
SVW2 Sparrevohn 46.17 37 *e*P **P** **13 05 15.4 +0.8**
comp=Z,13nm,0.8s
PDGK Podgornoye 46.34 298 P **P** **13 05 15.3 -0.9**
PDGK pmax pmax
comp=Z,44nm,1.2s
KDAK Kodiak Island 47.77 42 *i* P **P** **13 05 28.3 +1.2**
CAST Castle Rocks 47.85 34 *e*P **P** **13 05 29.2 +1.4**
comp=Z,9.7nm,1.0s
BPAW Bear Paw Mtn. 48.35 33 *e*P **P** **13 05 32.0 +0.5**
comp=Z,12nm,1.3s
KTH Kantishna Hill 48.38 34 *e*P **P** **13 05 33.2 +1.4**
comp=Z,20nm,1.1s
MLY Manley 48.46 32 *e*P **P** **13 05 33.6 +1.2**
comp=Z,14nm,1.1s
SOEI Soe 48.71 202 *e*P **P** **13 05 34.6 -0.3**
comp=Z,80nm,1.2s
TKM2 Tokmak 2 49.20 298 *e*P **P** **13 05 39.0 +0.3**
TKM2 pmax pmax
comp=Z,54nm,1.5s
TKM2 Tokmak 2 49.20 298 *e*P **P** **13 05 39.0 +0.3**
comp=Z,54nm,1.5s
MCK McKinley 49.26 34 *e*P **P** **13 05 39.1 +0.5**
MCK pmax pmax
comp=Z,14nm,1.1s
MCK McKinley 49.26 34 *e*P **P** **13 05 39.0 +0.5**
comp=Z,14nm,1.1s
PMR Palmer 49.27 36 *e*P **P** **13 05 37.2 -1.4**
PMR pmax pmax
comp=Z,10.0nm,0.8s
PMR Palmer 49.27 36 *e*P **P** **13 05 37.2 -1.4**
comp=Z,10nm,0.8s
RND Reindeer 49.31 34 *e*P **P** **13 05 39.5 +0.5**
RND pmax pmax
comp=Z,11nm,0.9s
RND Reindeer 49.31 34 *e*P **P** **13 05 39.5 +0.5**
comp=Z,11nm,0.9s
MDM Murphy Dome 49.53 32 *e*P **P** **13 05 41.3 +0.7**
comp=Z,30nm,1.1s
WRH Wood River Hil 49.60 33 *e*P **P** **13 05 42.1 +1.0**
WRH *e*PcP **PcP** **13 07 03.3 +0.9**
SML Sawmill 49.63 36 *e*P **P** **13 05 42.6 +1.1**
SML pmax pmax
comp=Z,16nm,0.8s
SML Sawmill 49.63 36 *e*P **P** **13 05 42.5 +1.1**
comp=Z,16nm,0.8s
COLA College 49.69 32⇓ *e*P **P** **13 05 43.1 +1.3**
COLA pmax pmax
comp=Z,8.0nm,0.9s
FRU Bishkek 49.91 299 *e*P **P** **13 05 43.0 -0.9**
FRU pmax pmax
comp=Z,57nm,2.2s
KSH Kashi 49.93 294 *e*P P 13 05 48.2 +4.0
KSH *e*pP sP 13 06 00.0 +7.2
KSH *e*sP pP 13 06 05.9 +16
KSH PcS **PcS** **13 11 02.4 +1.1**
KSH S **S** **13 12 55.1 +1.5**
KSH ScS **ScS** **13 15 32.3 -2.4**
KSH pmax pmax
comp=Z,120nm,5.7s
KSH LR LR
comp=Z,140nm,8.5s
KSH LR LR
comp=Z,160nm,5.5s
KSH LR LR
comp=Z,260nm,15.8s
DHY Denali Highway 49.99 34 *e*P **P** **13 05 44.9 +0.6**
comp=Z,35nm,2.0s
VOSK Vostochnaya 50.00 312 P **P** **13 05 43.0 -1.3**
VOSK pmax pmax
comp=Z,27nm,0.9s
CHKZ Chkalovo 50.04 313 P **P** **13 05 43.3 -1.3**
CHKZ pmax pmax
comp=Z,18nm,0.8s
AAK Ala-Archa 50.06 298*d i*P **P** **13 05 44.8 -0.3**
AAK pmax pmax
comp=Z,11nm,0.7s
AAK Ala-Archa 50.06 298 *e*P **P** **13 05 45.1 0.0**
comp=Z,4.4nm,0.7s
OTUK Ortayu 50.08 306 P **P** **13 05 44.6 -0.4**
OTUK pmax pmax
comp=Z,21nm,0.9s
IL1 Eielson Array 50.11 32 *e*P **P** **13 05 45.4 +0.4**
ILAR Eielson Array 50.11 32 P **P** **13 05 45.6 +0.6**
comp=Z,6.6nm,0.8s,baz=272,slow=6.3,SNR=59
ILAR PcP **PcP** **13 07 04.0 -0.2**
comp=Z,1.5nm,0.8s,baz=292,slow=3.7,SNR=5.8
ILB Eielson Array 50.11 32 *e*P **P** **13 05 45.6 +0.6**
BRVK Borovoye 50.35 312 *e*P **P** **13 05 47.1 +0.1**
BRVK pmax pmax
comp=Z,16nm,0.9s
BRVK Borovoye 50.35 312 *e*P **P** **13 05 47.1 +0.1**
comp=Z,16nm,0.9s
EKS2 Erkin-Say 50.56 299 *e*P **P** **13 05 49.1 +0.2**
EKS2 pmax pmax
comp=Z,5.0nm,0.7s
EKS2 Erkin-Say 50.56 299 *e*P **P** **13 05 49.1 +0.2**
comp=Z,4.9nm,0.7s
FYU Fort Yukon 50.71 30 *e*P **P** **13 05 51.0 +1.6**
comp=Z,58nm,1.8s
KLU Klutina 50.81 36 *e*P **P** **13 05 51.7 +1.3**
comp=Z,9.4nm,0.8s
DIV Divide 50.92 37 *e*P **P** **13 05 52.3 +1.0**
comp=Z,18nm,1.0s
PSI Prapat 51.07 239 P **P** **13 05 51.9 -1.1**
comp=Z,2.5nm,0.5s,baz=315,slow=1.4,SNR=2.9
ZRNK Zerenda 51.13 312 P **P** **13 05 52.4 -0.5**
ZRNK pmax pmax
comp=Z,26nm,0.9s
MNAS Manas 51.51 299 P **P** **13 05 55.7 -0.3**
MNAS pmax pmax
comp=Z,14nm,0.8s
BMRM Bremner River 51.51 37 *e*P **P** **13 05 56.9 +1.3**
comp=Z,17nm,0.9s
MENT Mentasta 51.67 34 *e*P **P** **13 05 58.5 +1.8**
comp=Z,11nm,0.7s
EGAK Eagle 52.55 32 *e*P **P** **13 06 04.3 +1.0**
comp=Z,33nm,1.6s
KK31 Karatay Array 52.71 300 *i* P **P** **13 06 04.5 -0.3**
KK31 pmax pmax
comp=Z,10.0nm,0.9s
KKAR Karatay Array 52.71 300 *e*P **P** **13 06 04.8 0.0**
KKAR Karatay Array 52.71 300 *e*P **P** **13 06 04.8 0.0**
GSI Gunungsitoli 53.07 239 *e*P **P** **13 06 07.8 0.0**
comp=Z,45nm,1.1s
SVE Sverdlovsk 54.95 319⇓ *i*P **P** **13 06 21.0 +0.1**
SVE pmax pmax
comp=Z,28nm,0.9s
INK Inuvik 54.97 27 LR LR 13 31 44.4
comp=Z,114nm,18.6s,baz=308,slow=38
DZET Dzherino 55.39 296 P **P** **13 06 23.8 -0.7**
DZET pmax pmax
comp=Z,14nm,0.6s
ARU Arti 56.16 319*d i*P **P** **13 06 29.1 -0.5**
ARU 13 07 29.0
ARU S **S** **13 14 17.9 +0.3**
ARU 13 16 13.9
ARU SS **SS** **13 18 04.0 +0.5**
ARU pmax pmax
comp=Z,35nm,1.0s
ARU Arti 56.16 319 *e*P **P** **13 06 29.5 -0.1**
comp=Z,33nm,1.0s
SOKR Solikamsk 56.17 323*c i*P **P** **13 06 27.9 -1.7**
SOKR pmax pmax
comp=Z,19nm,1.1s
FITZ Fitzroy Crossi 56.33 197 P **P** **13 06 32.0 +0.8**
comp=Z,3.4nm,0.6s,baz=12,slow=9.3,SNR=5.3
FITZ Fitzroy Crossi 56.33 197 *e*P **P** **13 06 32.0 +0.8**
comp=Z,31nm,1.6s
SKAG Skagway 56.35 38 *e*P **P** **13 06 31.9 +1.0**
comp=Z,8.3nm,0.9s
WRAB Tennant Creek 56.66 187⇑ *i*P **P** **13 06 33.2 -0.3**
WRAB pmax pmax
comp=Z,56nm,1.7s
WB2 Warramunga Arr 56.66 187 *e*P **P** **13 06 33.3 -0.3**
comp=Z,12nm,0.8s
WRA Warramunga Arr 56.66 187 P **P** **13 06 33.3 -0.3**
comp=Z,8.5nm,0.7s,baz=2.8,slow=7.3,SNR=46
WRA PcP **PcP** **13 07 28.8 -0.9**
comp=Z,1.8nm,0.6s,baz=359,slow=4.1,SNR=4.8
AB31 Akbulak array 57.64 310 P **P** **13 06 39.4 -0.8**
AB31 pmax pmax
comp=Z,16nm,0.9s
ABKAR Akbulak array 57.64 310 *e*P **P** **13 06 39.8 -0.4**
AS01 Alice Springs 60.39 187 *e*P **P** **13 06 59.0 -0.5**
AS31 Alice Springs 60.39 187 *e*P **P** **13 06 59.6 0.0**
comp=Z,1.9nm,0.7s
ASAR Alice Springs 60.39 187 P **P** **13 06 59.5 0.0**
comp=Z,5.8nm,0.8s,baz=14,slow=6.2,SNR=28
ASAR PKP2bc 13 36 31.0
comp=Z,0.7nm,0.8s,baz=182,slow=1.7,SNR=7.3
TMCR Tamitsa 62.70 331 *e*P **P** **13 07 14.1 -0.5**
TMCR pmax pmax
comp=Z,28nm,0.4s
GEYT Alibeck 63.41 299 P **P** **13 07 20.1 +0.2**
comp=Z,1.5nm,0.3s,baz=341,slow=3.1,SNR=6.5
GEYT LR LR 13 34 54.3
comp=Z,96nm,20.9s,baz=270,slow=36
KLMR Klimovskoe 63.67 328 *e*P P 13 07 17.3 -3.8
KLMR pmax pmax
comp=Z,12nm,0.6s
ARCES ARCESS Array B 64.06 339 P **P** **13 07 23.6 +0.1**
comp=Z,6.0nm,0.8s,baz=34,slow=8.8,SNR=11
ARCES LR LR 13 38 39.0
comp=Z,60nm,18.8s,baz=300,slow=39
YKW3 Yellowknife Ar 64.37 30 *e*P **P** **13 07 26.2 +0.5**
comp=Z,16nm,1.5s
YKA Yellowknife Ar 64.41 30 P **P** **13 07 26.4 +0.5**
comp=Z,3.4nm,0.7s,baz=303,slow=6.7,SNR=87
YKA PcP **PcP** **13 08 01.6 +1.4**
comp=Z,2.4nm,0.6s,baz=299,slow=3.9,SNR=15
YKB5 Yellowknife Ar 64.41 30 *e*P **P** **13 07 25.2 -0.8**
DAG Danmarks Havn 66.03 355 *i* P **P** **13 07 36.2 -0.1**
comp=Z,8.4nm,0.7s
DAG Danmarks Havn 66.03 355 *i* P **P** **13 07 36.2 -0.1**
DAG pmax pmax
comp=Z,6.0nm,0.7s
VRH Novokhopyorsk 67.37 318 *e*P **P** **13 07 44.1 -1.1**
VRH pmax pmax
comp=Z,20nm,0.5s
OBN Obninsk 67.95 323 *i* P **P** **13 07 46.5 -2.3**
OBN pmax pmax
comp=Z,10.0nm,0.8s
OBN MLR MLR
comp=Z,184nm,15.0s
B05A Bryant 68.00 46 P **P** **13 07 51.3 +2.0**
baz=301
LPSR Galich'ya Gora 68.12 320 *e*P **P** **13 07 49.0 -0.9**
LPSR pmax pmax
comp=Z,20nm,0.7s
STKA Stephens Creek 68.25 179 P **P** **13 07 51.4 +0.6**
comp=Z,3.7nm,0.7s,baz=345,slow=7.4,SNR=9.9
STKA Stephens Creek 68.25 179 *e*P **P** **13 07 50.8 0.0**
comp=Z,1.8nm,1.1s
VSR Storozhevoye 68.73 319 *e*P **P** **13 07 53.1 -0.7**
VSR pmax pmax
comp=Z,10.0nm,0.6s
FIA1 FINESS Array S 68.78 332 *e*P **P** **13 07 53.8 -0.1**
comp=Z,31nm,0.9s
FINES FINESS Array B 68.78 332 P **P** **13 07 53.7 -0.2**
comp=Z,15nm,0.8s,baz=54,slow=7.5,SNR=39
BBOO Buckleboo 69.30 184 *e*P **P** **13 07 57.9 +0.5**
comp=Z,6.6nm,0.8s
I03D Drain, OR 69.62 50 P **P** **13 08 02.0 +2.6**
baz=302
G05D Wamic, OR 70.04 48 P **P** **13 08 03.5 +1.5**
baz=302
I04A Tendick Farm, 70.14 50 P **P** **13 08 04.6 +1.8**
baz=302
VSU Vasula 70.39 329⇑ *e*P **P** **13 08 02.8 -1.0**
VSU pmax pmax
comp=Z,70nm,1.0s
C09A Chrisman Ranch 70.42 45 *e*P **P** **13 08 04.9 +0.5**
comp=Z,15nm,0.9s
ZEI Tsey 70.49 309 *e*P **P** **13 08 03.2 -1.8**
ZEI pmax pmax
comp=Z,15nm,1.1s
I05D Terrebonne, OR 70.51 49 P **P** **13 08 06.1 +1.2**
baz=303
KBZ Khabaz 70.60 310 P **P** **13 08 05.7 +0.3**
comp=Z,5.8nm,0.8s,baz=49,slow=4.0,SNR=12
KBZ LR LR 13 41 37.2
comp=Z,122nm,18.7s,baz=72,slow=38
KIV Kislovodsk 70.61 311 *e*P **P** **13 08 06.2 +0.6**
KIV pmax pmax
comp=Z,21nm,0.9s
KIV Kislovodsk 70.61 311 *e*P **P** **13 08 05.8 +0.2**
comp=Z,19nm,0.9s
NEW Newport 70.81 44 P **P** **13 08 08.2 +1.5**
baz=304
NEW Newport 70.81 44 *e*P **P** **13 08 07.1 +0.4**
NEW pmax pmax
comp=Z,10.0nm,0.9s
NEW Newport 70.81 44 *e*P **P** **13 08 07.1 +0.4**
comp=Z,9.9nm,0.9s
NEY Neytrino 70.97 310 P **P** **13 08 09.0 +1.1**
NEY pmax pmax
comp=Z,2.0nm,1.1s
SUMG Summit 71.00 360 *i* P **P** **13 08 08.9 +1.0**
comp=Z,19nm,1.0s
SUMG Summit 71.00 360 *i* P **P** **13 08 08.9 +1.0**
SUMG pmax pmax
comp=Z,19nm,1.0s
SUMG Summit 71.00 360 *e*P **P** **13 08 08.3 +0.5**
comp=Z,20nm,1.0s
YBH Yreka Blue Hor 71.06 52 *e*P **P** **13 08 11.1 +2.7**
YBH pmax pmax
comp=Z,14nm,1.1s
YBH Yreka Blue Hor 71.06 52 *e*P **P** **13 08 11.1 +2.7**
comp=Z,14nm,1.1s
J05D Fort Rock, OR 71.14 50 P **P** **13 08 11.0 +2.1**
baz=303
M02C Callahan 71.15 52 P **P** **13 08 11.4 +2.4**
baz=303
N02D Trinity Center 71.47 52 P **P** **13 08 12.6 +1.7**
baz=303
M04C Macdoel 71.58 51 P **P** **13 08 13.7 +2.1**
baz=303
K05A Summer Lake 71.65 50 *e*P **P** **13 08 14.8 +2.7**
comp=Z,99nm,1.9s
F10A Beach Ranch, E 72.04 46 *e*P **P** **13 08 15.2 +1.0**
comp=Z,12nm,1.3s
O03D Paynes Creek 72.41 53 P **P** **13 08 17.9 +1.3**
baz=304
MOD Modoc Plateau 72.47 51 *e*P **P** **13 08 16.8 -0.2**
comp=Z,34nm,1.7s
NACGM Naroch 72.62 326 *e* **P** **13 08 18.0 +0.6**
BMO Blue Mountains 72.62 47 *e*P **P** **13 08 19.0 +1.2**
BMO pmax pmax
comp=Z,13nm,0.8s
BMO Blue Mountains 72.62 47 *e*P **P** **13 08 19.0 +1.2**
comp=Z,13nm,0.8s
JTMT Jette 72.67 43 *e*P **P** **13 08 20.0 +2.0**
YBMT Yellow Bay 72.75 43 *e*P **P** **13 08 20.9 +2.4**
SWMT Swartz Lake 72.97 43 *e*P **P** **13 08 21.5 +1.7**
WVOR Wild Horse Val 73.20 49 *e*P **P** **13 08 23.3 +2.1**
WVOR pmax pmax
comp=Z,15nm,1.4s
WVOR Wild Horse Val 73.20 49 *e*P **P** **13 08 23.3 +2.1**
comp=Z,15nm,1.4s
ANN Anapa 73.27 314 *e*P **P** **13 08 19.6 -1.8**
ANN *e**PP **sP** **13 08 28.9 -1.3**
ANN *e* 13 11 03.2
ANN eS **S** **13 17 46.0 -2.7**
ANN pmax pmax
comp=Z,60nm,1.5s
MSO Missoula 73.40 44 P **P** **13 08 23.5 +1.1**
baz=306
MSO Missoula 73.40 44 *e*P **P** **13 08 23.7 +1.4**
comp=Z,9.6nm,0.9s
NC405 NORSAR Array S 74.00 337 *e*P **P** **13 08 25.8 +0.3**
AKASG Malin Array Be 74.14 322 P **P** **13 08 26.0 -0.4**
comp=Z,4.0nm,0.4s,baz=46,slow=6.1,SNR=26
AKASG LR LR 13 42 06.9
comp=Z,67nm,18.3s,baz=100,slow=37
AKASG Malin Array Be 74.14 322 P **P** **13 08 26.0 -0.4**
AKBB Malin Array Si 74.14 322 *e*P **P** **13 08 26.1 -0.3**
AKBB Malin Array Si 74.14 322 *e*P **P** **13 08 26.1 -0.3**
KIEV Kiev 74.15 322*d i*P **P** **13 08 25.8 -0.7**
KIEV pmax pmax
comp=Z,16nm,0.9s
KIEV Kiev 74.15 322 *e*P **P** **13 08 25.5 -1.0**
comp=Z,13nm,0.8s
NC204 NORSAR Array S 74.18 337 *e*P **P** **13 08 26.8 +0.3**
AK11 Malin Array Si 74.18 322 *e*P **P** **13 08 26.1 -0.5**
NB201 NORSAR Array S 74.19 337 *e*P **P** **13 08 26.8 +0.2**
NB2 NORSAR Subarra 74.22 337 P **P** **13 08 26.5 -0.3**
comp=Z,20nm,1.0s,baz=41,slow=5.9
NB2 NORSAR Subarra 74.22 337 P **P** **13 08 26.5 -0.3**
baz=41,slow=5.9
NOA NORSAR Array B 74.22 337 P **P** **13 08 26.8 +0.1**
comp=Z,9.1nm,0.8s,baz=39,slow=5.8,SNR=20
NOA LR LR 13 43 58.3
comp=Z,52nm,19.4s,baz=240,slow=38
FFC Flin Flon 74.32 32 *e*P **P** **13 08 28.4 +0.9**
FFC pmax pmax
comp=Z,17nm,1.0s
FFC Flin Flon 74.32 32 *e*P **P** **13 08 28.4 +0.9**
comp=Z,17nm,1.0s
MFID Camas Ranch 74.32 47 *e*P **P** **13 08 29.8 +2.0**
comp=Z,18nm,1.1s
CMB Columbia Colle 74.59 54 *e*P **P** **13 08 31.3 +1.9**
CMB pmax pmax
comp=Z,25nm,1.3s
CMB Columbia Colle 74.59 54 *e*P **P** **13 08 31.3 +1.9**
comp=Z,24nm,1.3s
LRM Limekiln Ridge 74.83 44 *e*P **P** **13 08 32.1 +1.2**
WAKR Walker 74.93 53 *e*P **P** **13 08 32.9 +1.3**
EGMT Eagleton 74.94 41 P **P** **13 08 32.5 +1.2**
baz=309
EGMT Eagleton 74.94 41 *e*P **P** **13 08 32.8 +1.6**
comp=Z,29nm,0.9s
DLMT Dillon 75.03 44 *e*P **P** **13 08 33.7 +1.8**
comp=Z,26nm,0.8s
HLID Hailey 75.07 47 P **P** **13 08 34.0 +1.8**
baz=307
HLID Hailey 75.07 47 *e*P **P** **13 08 34.3 +2.1**
comp=Z,8.4nm,0.9s
LRV Little Rabbit 75.08 56 *e*P **P** **13 08 33.5 +1.2**
MCMT McKenzie Canyo 75.21 45 *e*P **P** **13 08 34.4 +1.4**
BMN Battle Mountai 75.22 51 *e*P **P** **13 08 35.4 +2.3**
BMN pmax pmax
comp=Z,15nm,0.8s
BMN Battle Mountai 75.22 51 *e*P **P** **13 08 35.4 +2.3**
comp=Z,15nm,0.8s
BOZ Bozeman (W) 75.39 44 P **P** **13 08 35.4 +1.4**
baz=308
BOZ Bozeman (W) 75.39 44 *e*P **P** **13 08 35.8 +1.8**
BOZ Bozeman (W) 75.39 44 *e*P **P** **13 08 35.8 +1.8**
NV01 Mina Array Sit 75.70 53 *e*P **P** **13 08 37.5 +1.5**
NVAR Mina Array Bea 75.70 53 P **P** **13 08 38.1 +2.1**
comp=Z,10.0nm,0.7s,baz=294,slow=5.5,SNR=80
NVAR LR LR 13 33 42.5
comp=Z,70nm,21.3s,baz=293,slow=29
NV11 Mina Array Sit 75.80 53 *e*P **P** **13 08 38.6 +2.2**
MLAC Mammoth, Mammo 75.82 54 P **P** **13 08 38.8 +2.1**
baz=306
QLMT Earthquake Lak 76.01 44 *e*P **P** **13 08 39.7 +2.1**
ELK Elko 76.25 49 *e*P **P** **13 08 41.3 +2.2**
ELK Elko 76.25 49 *e*P **P** **13 08 41.3 +2.2**

YMR Madison River 76.37 44 eP P 13 08 40.8 +1.1
comp=Z,13nm,0.7s
GCMT Greycliff 76.38 43 eP P 13 08 41.7 +2.0
YNR Norris Junctio 76.50 44 eP P 13 08 43.8 +3.3
YFT Old Faithful 76.57 44 eP P 13 08 44.6 +3.7
PKM Mcpherson Peak 76.77 56 P P 13 08 43.7 +1.7
baz=306
FLWY Flagg Ranch 76.88 44 eP P 13 08 45.4 +2.9
CWC Cottonwood Cre 77.01 54 P P 13 08 44.5 +1.2
baz=306
RLMT Red Lodge 77.02 43 P P 13 08 44.8 +1.4
baz=310
RLMT Red Lodge 77.02 43 eP P 13 08 45.5 +2.1
comp=Z,20nm,1.3s
MOOW Moose Ponds 77.06 45 eP P 13 08 46.0 +2.4
GRAC Grapevine Rang 77.14 53 P P 13 08 45.8 +1.8
baz=306,SNR=8.0
LOHW Long Hollow 77.23 45 eP P 13 08 46.8 +2.2
SNOW Snow King Moun 77.24 45 eP P 13 08 47.5 +2.9
REDW Red Top Meadow 77.24 45 eP P 13 08 46.9 +2.2
ARVC Arvin 77.28 56 P P 13 08 46.1 +1.4
baz=306
DAC Darwin (Calif) 77.42 54 eP P 13 08 47.3 +1.6
DAC pmax pmax
comp=Z,7.0nm,0.9s
DAC Darwin (Calif) 77.42 54 eP P 13 08 47.3 +1.6
comp=Z,6.9nm,0.9s
R11A Troy Canyon, C 77.47 51 P P 13 08 47.7 +1.7
baz=307,SNR=22
R11A Troy Canyon, C 77.47 51 eP P 13 08 47.9 +1.9
BGU Big Grassy Mou 77.48 48 eP P 13 08 48.1 +2.2
comp=Z,6.6nm,0.8s
DGMT Dagmar 77.49 38 P P 13 08 46.9 +1.2
baz=312
DGMT Dagmar 77.49 38 eP P 13 08 47.0 +1.2
comp=Z,24nm,0.9s
SPUT South Promonto 77.59 48 eP P 13 08 48.8 +2.3
MPMC Manual Prospec 77.62 54 P P 13 08 48.2 +1.4
baz=307,SNR=8.7
LAO LASA Array 77.64 40 P P 13 08 48.2 +1.6
baz=311
LAO LASA Array 77.64 40 eP P 13 08 48.6 +2.0
comp=Z,25nm,1.0s
A25A Svangstu Ranch 77.71 37 P P 13 08 47.9 +1.0
baz=313
BLG Laguna Peak, P 77.72 57 P P 13 08 48.5 +1.3
baz=306
FURC Furnace Creek, 77.78 54 P P 13 08 49.2 +1.8
baz=307,SNR=5.7
LRMC Laurel Mtn Rad 77.84 55 P P 13 08 49.2 +1.2
baz=307
TPNV Topopah Spring 77.89 53 P P 13 08 49.7 +1.3
baz=307,SNR=12
TPNV Topopah Spring 77.89 53 eP P 13 08 49.6 +1.3
TPNV Topopah Spring 77.89 53 eP P 13 08 49.6 +1.3
EDW2 Edwards Air Fo 77.98 55 P P 13 08 50.0 +1.3
baz=307
KWP Kalwaria Pacla 78.00 324 eP P 13 08 48.8 +0.3
KWP Kalwaria Pacla 78.00 324 eP P 13 08 48.9 +0.4
DUG Dugway, Tooele 78.06 49 P P 13 08 51.0 +1.8
baz=308
DUG Dugway, Tooele 78.06 49 eP P 13 08 50.7 +1.6
DUG Dugway, Tooele 78.06 49 eP P 13 08 50.7 +1.6
BUR08 Bucovina Ar. S 78.13 321 eP P 13 08 49.7 +0.3
B25A Knox Farm, Ray 78.14 38 P P 13 08 51.0 +1.7
baz=313
A26A Wade Farm, Ken 78.26 37 P P 13 08 50.9 +1.0
baz=314
TCUT Toone Canyon 78.32 47 eP P 13 08 53.0 +2.2
BW06 Boulder Array 78.35 45 P P 13 08 52.0 +1.1
baz=310
BW06 Boulder Array 78.35 45 eP P 13 08 51.9 +1.1
PD31 Pinedale Array 78.36 45 eP P 13 08 51.9 +1.0
PDAR Pinedale Array 78.36 45 P P 13 08 51.9 +1.0
comp=Z,7.0nm,0.6s,baz=262,slow=2.4,SNR=80
CTU Camp Tracy 78.39 48 eP P 13 08 53.0 +2.0
SHOC Shoshone, Teco 78.50 54 P P 13 08 53.1 +1.6
baz=307
GSC Goldstone, Bar 78.52 55 P P 13 08 52.7 +1.0
baz=307
GSC Goldstone, Bar 78.52 55 eP P 13 08 53.4 +1.7
GSC Goldstone, Bar 78.52 55 eP P 13 08 53.4 +1.7
BR131 Keskin Array S 78.56 311 eP P 13 08 52.5 +0.6
BRTR Keskin Array B 78.56 311 P P 13 08 51.8 -0.2
comp=Z,3.9nm,0.8s,baz=104,slow=5.2,SNR=13
BRTR Keskin Array B 78.56 311 i P P 13 08 52.0 +0.1
BRTR pmax pmax
comp=Z,4.0nm,0.8s
CIS Catalina Islan 78.58 57 P P 13 08 53.4 +1.4
baz=307
BFSC Mount Baldy Ra 78.59 56 P P 13 08 53.6 +1.5
baz=307
JLU Jordanelle 78.62 48 eP P 13 08 54.4 +2.0
NLU North Lily Min 78.65 48 eP P 13 08 54.7 +2.2
KOLS Kolonicke sedl 78.68 324 eP P 13 08 52.6 +0.3
KOLS pmax pmax
comp=Z,6.0nm,0.9s
KOLS Kolonicke sedl 78.68 324 eP P 13 08 52.6 +0.3
D25A Fairfield 78.82 39 P P 13 08 54.4 +1.3
baz=313
STHS Stebnicka Huta 78.83 325 eP P 13 08 53.7 +0.6
STHS pmax pmax
comp=Z,10.0nm,1.3s
STHS Stebnicka Huta 78.83 325 eP P 13 08 53.7 +0.6
MPU Maple Canyon 78.88 48 eP P 13 08 56.0 +2.2
UZH Uzhgorod 78.89 323 eP P 13 08 53.5 +0.2
UZH e 13 08 58.3
UZH e 13 09 05.1
OJC Ojcow 78.93 326 eP P 13 08 53.6 0.0
OJC Ojcow 78.93 326 eP P 13 08 54.0 +0.4
OJC Ojcow 78.93 326 eP P 13 08 54.0 +0.4
C26A Wahner Farm, P 78.96 38 P P 13 08 55.1 +1.2
baz=314
BR231 Keskin MP Arra 79.01 312 eP P 13 08 52.8 -1.6
TUQ Turquoise Moun 79.01 54 P P 13 08 55.6 +1.2
baz=308
A28A Rude Farm, Bot 79.09 36 P P 13 08 55.6 +1.0
baz=315,SNR=10
HEC Hector,Ludlow 79.11 55 P P 13 08 56.7 +1.7
baz=307
E25A Miller Ranch, 79.22 39 P P 13 08 56.7 +1.4
baz=313
NIE Niedzica 79.27 325 eP P 13 08 56.0 +0.5
NIE Niedzica 79.27 325 eP P 13 08 56.0 +0.5
MURC Murrieta 79.28 56 P P 13 08 56.8 +0.9
baz=307
C27A Sayler Ranch, 79.33 37 P P 13 08 56.9 +1.1
baz=314
D26A Manning 79.34 38 P P 13 08 57.0 +1.1
baz=314
B28A Dugan Ranch, T 79.37 36 P P 13 08 57.1 +1.1
baz=315,SNR=5.7
MSU Marysvale 79.49 50 eP P 13 08 59.6 +2.5
MSU Marysvale 79.49 50 eP P 13 08 59.6 +2.5
A29A Manning Farm, 79.57 35 P P 13 08 58.2 +1.1
baz=315,SNR=22
GMRC Granite Mounta 79.58 54 P P 13 08 59.1 +1.5
baz=308,SNR=5.4
F25A Bowman 79.58 40 P P 13 08 58.1 +0.8
baz=313
TMUT Trail Mountain 79.58 49 eP P 13 08 59.8 +2.0
E26A Carlson Angus 79.71 39 P P 13 08 59.0 +1.0
baz=314
D27A Center 79.74 38 P P 13 08 59.2 +1.1
baz=314
P17A Butcher Ranch, 79.75 48 eP P 13 09 00.6 +2.1
LCMT Little Creek M 79.76 51 eP P 13 09 00.8 +2.2
PFO Pinyon Flats O 79.76 56 P P 13 09 00.0 +1.5
baz=308
PFO Pinyon Flats O 79.76 56 eP P 13 09 00.1 +1.5
PFO Pinyon Flats O 79.76 56 eP P 13 09 00.1 +1.5
MTPU Mount Pierson 79.78 50 eP P 13 09 01.7 +2.8
BELC Belle Mtn. Jos 79.83 55 P P 13 09 00.0 +1.0
baz=308
B29A Wagenman Farm, 79.83 36 P P 13 08 59.8 +1.2
baz=315,SNR=7.3
LANS Liptovska Anna 79.84 325 eP P 13 09 00.0 +1.4
LANS Liptovska Anna 79.84 325 eP P 13 09 00.0 +1.4
KECS Kecovo 79.84 324 eP P 13 08 58.6 0.0
KECS pmax pmax
comp=Z,3.0nm,0.9s
KECS Kecovo 79.84 324 eP P 13 08 58.6 0.0
C28A Hausauer Farms 79.87 37 P P 13 08 60.0 +1.2
baz=315
P18A Preston Nutter 79.95 48 eP P 13 09 01.9 +2.1

A30A Hoffart Farm, 79.99 35 P P 13 09 00.4 +1.1
baz=316,SNR=19
KSP Ksiaz 80.02 328 eP P 13 08 59.7 +0.3
KSP Ksiaz 80.02 328 eP P 13 08 59.8 +0.3
KNB Kanab 80.02 51 eP P 13 09 02.5 +2.5
KNB Kanab 80.02 51 eP P 13 09 02.5 +2.5
F26A Lodgepole 80.03 39 P P 13 09 00.8 +1.0
baz=314,SNR=6.7
PKCU Pink Cliffs 80.07 51 eP P 13 09 06.3 +5.9
G25A Newell 80.10 40 P P 13 09 00.9 +0.8
baz=313
SRU San Rafael Swe 80.11 48 eP P 13 09 02.5 +2.0
SRU San Rafael Swe 80.11 48 eP P 13 09 02.5 +2.0
ULM Lac du Bonnet 80.12 33 P P 13 09 00.6 +0.5
comp=Z,10nm,0.9s,baz=320,slow=5.7,SNR=17
K22A Casper 80.13 44 P P 13 09 01.4 +0.9
baz=312
K22A Casper 80.13 44 eP P 13 09 01.7 +1.2
D28A Regan 80.15 37 P P 13 09 01.4 +1.1
baz=315
MDND Maddock 80.15 36 P P 13 09 01.4 +1.1
baz=315
MDND Maddock 80.15 36 eP P 13 09 01.9 +1.5
BAR Barrett 80.18 57 eP P 13 09 02.4 +1.6
E27A Carson 80.19 38 P P 13 09 01.2 +0.7
baz=314
MONP2 Monument Peak 80.22 56 P P 13 09 02.3 +1.1
baz=308
MMU Miners Mountai 80.22 49 eP P 13 09 03.1 +1.9
MORC Moravsky Berou 80.26 327 eP P 13 09 01.5 +0.6
MORC Moravsky Berou 80.26 327 eP P 13 09 01.5 +0.6
NEE2 Needles Airpor 80.27 54 P P 13 09 02.4 +1.3
baz=308
IRM Iron Mountain 80.30 55 P P 13 09 02.9 +1.5
baz=308,SNR=7.0
B30A Myrvik Farm, E 80.32 35 P P 13 09 02.3 +1.1
baz=316,SNR=10.0
F27A Lemmon 80.35 39 P P 13 09 02.5 +1.0
baz=314,SNR=8.9
DPC Dobruska-Polom 80.37 328 eP P 13 09 02.2 +0.7
DPC Dobruska-Polom 80.37 328 eP P 13 09 02.2 +0.7
H25A Fruitdale 80.39 41 P P 13 09 02.8 +1.0
baz=313
BC3 Big Chuckawall 80.40 55 P P 13 09 03.0 +0.9
baz=308
G26A Maurine 80.45 40 P P 13 09 02.9 +0.9
baz=314,SNR=9.7
RSSD Black Hills 80.50 41 P P 13 09 03.0 +0.5
baz=313
RSSD Black Hills 80.50 41 eP P 13 09 03.6 +1.1
RSSD Black Hills 80.50 41 eP P 13 09 03.6 +1.1
A31A Linda, St. Vin 80.50 34 P P 13 09 02.8 +0.7
baz=317
RAR Rarotonga 80.51 125 LR LR 13 36 27.8
comp=Z,66nm,20.8s,baz=14,slow=30
PSZ Piszkesteto 80.53 324 eP P 13 09 03.1 +0.7
PSZ Piszkesteto 80.53 324 eP P 13 09 03.1 +0.7
SWSC Sam W. Stewart 80.60 56 P P 13 09 03.8 +0.9
baz=308
VYHS Vyhne 80.61 325 eP P 13 09 03.1 +0.3
VYHS pmax pmax
comp=Z,5.0nm,1.1s
VYHS Vyhne 80.61 325 eP P 13 09 03.0 +0.3
B31A Greenbush Farm 80.66 35 P P 13 09 04.0 +1.1
baz=316,SNR=5.3
D29A Pettibone, Tap 80.71 37 P P 13 09 04.0 +0.7
baz=315
I25A Rochford 80.73 41 P P 13 09 04.3 +0.6
baz=313
G27A Dupree 80.73 39 P P 13 09 04.3 +0.8
baz=314
C30A Mose, Pekin 80.79 36 P P 13 09 04.5 +0.8
baz=316,SNR=7.0
O20A White River Ci 80.81 46 P P 13 09 05.5 +1.3
baz=311,SNR=8.9
O20A White River Ci 80.81 46 eP P 13 09 05.5 +1.3
A32A Rocking H Ranc 80.83 34 P P 13 09 04.3 +0.4
baz=317,SNR=7.2
PDMCI Parker Dam,Lak 80.86 54 P P 13 09 05.6 +1.3
baz=308
Y12C Blythe 80.95 55 P P 13 09 06.3 +1.5
baz=308
Y12C Blythe 80.95 55 eP P 13 09 06.9 +2.0
BRG Berggiesshubel 80.98 329 eP P 13 09 05.0 +0.3
comp=Z,9.9nm,0.9s
BRG e 13 09 07.3
comp=Z,6.1nm,0.7s
BRG Berggiesshubel 80.98 329 eP P 13 09 04.9 +0.3
BRG pmax pmax
comp=Z,10.0nm,0.9s
BRG pmax pmax
comp=Z,6.0nm,0.7s
CLL Collm 81.04 330⇑ i P P 13 09 05.0 +0.1
comp=Z,24nm,1.1s
CLL e 13 09 16.0
CLL LmV 13 49 00.0
comp=Z,100nm,19.8s
CLL Collm 81.04 330⇑ i P P 13 09 05.0 +0.1
CLL e 13 09 16.0
CLL pmax pmax
comp=Z,24nm,1.1s
CLL Collm 81.04 330 eP P 13 09 05.0 +0.1
E29A Napoleon 81.04 37 P P 13 09 06.0 +0.9
baz=315
C31A Landman Farms, 81.08 36 P P 13 09 05.9 +0.7
baz=316,SNR=9.2
D30A Buchanan 81.08 36 P P 13 09 06.0 +0.7
baz=316,SNR=5.8
H27A Howes 81.17 40 P P 13 09 07.0 +1.2
baz=314,SNR=9.0
I26A New Underwood 81.18 41 P P 13 09 07.5 +1.5
baz=314
GLA Glamis 81.18 55 P P 13 09 07.5 +1.4
baz=308
GLA Glamis 81.18 55 eP P 13 09 07.6 +1.4
GLA Glamis 81.18 55 eP P 13 09 07.6 +1.4
B32A Ashes, Strandq 81.19 35 P P 13 09 05.9 +0.1
baz=317,SNR=12
A33A Warroad 81.31 34 P P 13 09 06.7 +0.3
baz=318,SNR=11
PV09 Paradox Valley 81.34 48 eP P 13 09 07.6 +0.4
GOPC GO Pecny, Ondr 81.35 328 eP P 13 09 07.4 +0.7
GOPC ePCP PcP 13 09 12.9 +0.1
GOPC GO Pecny, Ondr 81.35 328 eP P 13 09 07.4 +0.7
GOPC e 13 09 12.9
PRU Pruhonice 81.40 328 eP P 13 09 07.3 +0.4
PRU Pruhonice 81.40 328 eP P 13 09 07.3 +0.4
E30A Jud 81.44 37 P P 13 09 07.9 +0.7
baz=316,SNR=10
G28A Parade 81.46 39 P P 13 09 08.5 +1.2
baz=315
F29A Eureka 81.47 38 P P 13 09 08.2 +0.8
baz=315,SNR=5.6
PV10 Paradox Valley 81.47 48 eP P 13 09 10.0 +2.1
TREC Trest 81.52 327 eP P 13 09 08.0 +0.4
TREC Trest 81.52 327 eP P 13 09 08.0 +0.4
J26A Sides Ranch, S 81.56 41 P P 13 09 09.0 +1.0
baz=314,SNR=5.4
AGMN Agassiz Nation 81.57 34 P P 13 09 08.1 +0.3
baz=318,SNR=9.0
AGMN Agassiz Nation 81.57 34 eP P 13 09 08.2 +0.4
I27A Quinn 81.58 40 P P 13 09 09.2 +1.1
baz=314
C32A Crookston 81.61 35 P P 13 09 08.5 +0.4
baz=317
N23A Red Feather La 81.62 45 P P 13 09 10.4 +1.8
baz=312,SNR=10
N23A Red Feather La 81.62 45 eP P 13 09 10.6 +2.0
PHWY Pilot Hill 81.62 44 eP P 13 09 10.0 +1.4
PV05 Paradox Valley 81.63 48 eP P 13 09 10.8 +2.2
H28A Mission Ridge 81.69 39 P P 13 09 10.1 +1.5
baz=315
B33A Robert and Kas 81.71 34 P P 13 09 08.6 0.0
baz=318
F30A Leola 81.86 38 P P 13 09 10.5 +1.0
baz=316
WUAZ Wupatki 81.87 52 P P 13 09 12.2 +2.3
baz=310,SNR=7.9
WUAZ Wupatki 81.87 52 eP P 13 09 12.1 +2.2
E31A Nome 81.89 36 P P 13 09 10.4 +0.8
baz=316,SNR=7.3
PV01 Paradox Valley 81.91 48 eP P 13 09 12.0 +1.9
B34A Aery, Baudette 81.97 34 P P 13 09 10.0 0.0
baz=318,SNR=8.8
C33A Trail 82.00 35 P P 13 09 10.3 +0.2
baz=318,SNR=5.3

I28A Midland 82.08 40 P P 13 09 11.8 +1.2
baz=315,SNR=8.0
NKC Novy Kostel 82.09 329 eP P 13 09 11.0 +0.4
NKC Novy Kostel 82.09 329 eP P 13 09 11.0 +0.4
H29A Onida 82.13 39 P P 13 09 11.7 +0.8
baz=315
J27A Elkhorn Farm, 82.17 41 P P 13 09 12.4 +1.2
baz=314
SMCO Snowmass 82.17 46 eP P 13 09 13.6 +1.9
F31A Hecla 82.22 37 P P 13 09 11.9 +0.5
baz=316
E32A Braaten, Kindr 82.26 36 P P 13 09 12.2 +0.7
baz=317
G30A Faulkton 82.31 38 P P 13 09 12.6 +0.8
baz=316,SNR=15
D33A AnnSam, Waubun 82.43 35 P P 13 09 12.5 +0.1
baz=318
J28A Allard Ranch, 82.45 40 P P 13 09 13.5 +0.9
baz=315
KHC Kasperske Hory 82.46 328 eP P 13 09 13.1 +0.5
KHC ePCP pP 13 09 17.9 -1.2
KHC Kasperske Hory 82.46 328 eP P 13 09 13.1 +0.5
KHC e 13 09 17.9
KHC Kasperske Hory 82.46 328 eP P 13 09 11.7 -0.8
B35A Bob, Littlefor 82.47 33 P P 13 09 13.1 +0.5
baz=319,SNR=7.7
C34A RKJ Ranch, Bem 82.48 34 P P 13 09 13.0 +0.4
baz=318
I29A Vivian Onida 82.51 39 P P 13 09 13.6 +0.7
baz=315
X16A Lo Mia Camp, P 82.53 52 eP P 13 09 15.5 +2.1
ISCO Idaho Springs 82.54 45 P P 13 09 15.1 +1.6
baz=312,SNR=10
ISCO Idaho Springs 82.54 45 eP P 13 09 15.5 +2.0
ISCO Idaho Springs 82.54 45 eP P 13 09 15.5 +2.0
MVCO Mesa Verde 82.56 49 P P 13 09 14.8 +1.3
baz=311,SNR=9.7
MVCO Mesa Verde 82.56 49 eP P 13 09 15.5 +1.9
VTS Vitosha 82.61 319 eP P 13 09 14.4 +0.8
VTS Vitosha 82.61 319 eP P 13 09 14.3 +0.8
GEC2 GERESS Array S 82.63 328 eP P 13 09 13.7 +0.2
GEC2 GERESS Array S 82.63 328 eP P 13 09 13.7 +0.2
GERES GERESS Array B 82.63 328 P P 13 09 13.6 +0.1
comp=Z,2.5nm,0.4s,baz=48,slow=4.2,SNR=18
G31A Conde 82.70 38 P P 13 09 14.6 +0.8
baz=316
F32A Veblen 82.76 37 P P 13 09 14.5 +0.4
baz=317,SNR=5.5
D34A Park Rapids 82.77 35 P P 13 09 14.4 +0.2
baz=318,SNR=10.0
E33A Westby DABS, E 82.82 36 P P 13 09 15.0 +0.5
baz=318,SNR=8.7
C35A Jirik Farms, M 82.86 34 P P 13 09 14.7 +0.1
baz=319,SNR=14
K28A Ten Mile Ranch 82.88 41 P P 13 09 15.8 +0.8
baz=315
SUSD Miller 82.89 38 P P 13 09 15.8 +0.9
baz=316
GRFO Grafenberg 83.01 330 eP P 13 09 16.0 +0.7
GRFO Grafenberg 83.01 330 eP P 13 09 16.0 +0.7
G32A Webster 83.02 37 P P 13 09 16.3 +0.7
baz=317,SNR=7.5
I30A Oaccoma 83.03 39 P P 13 09 16.4 +0.8
baz=316
F33A 5 Mile Ranch, 83.18 36 P P 13 09 16.9 +0.7
baz=318,SNR=9.4
214A Organ Pipe Nat 83.20 55 P P 13 09 17.8 +1.1
baz=309
S22A 4UR Ranch, Cre 83.20 47 P P 13 09 17.8 +1.8
baz=312,SNR=12
S22A 4UR Ranch, Cre 83.20 47 eP P 13 09 18.8 +1.8
D35A Remer 83.29 34 P P 13 09 17.5 +0.6
baz=319
C36A Pine Crest Far 83.32 33 P P 13 09 17.3 +0.4
baz=320,SNR=6.9
Q24A Divide 83.37 46 P P 13 09 19.2 +1.3
baz=313,SNR=7.3
Q24A Divide 83.37 46 eP P 13 09 19.4 +1.5
K29A Lazy Trails An 83.39 40 P P 13 09 18.4 +0.9
baz=315
J30A Dallas 83.42 40 P P 13 09 18.4 +0.8
baz=316
E35A Pequot Lakes 83.52 35 P P 13 09 18.2 +0.1
baz=319
G33A Ortonville 83.58 37 P P 13 09 19.3 +0.9
baz=318
H32A Carlson Farm, 83.60 38 P P 13 09 18.9 +0.4
baz=317
D36A Goodland 83.61 34 P P 13 09 18.6 +0.1
baz=320
C37A Embarrass 83.62 33 P P 13 09 18.9 +0.3
baz=320,SNR=7.1
F34A Alexandria 83.70 36 P P 13 09 19.7 +0.7
baz=318
EYMN Ely 83.75 32 P P 13 09 19.7 +0.4
baz=321
EYMN Ely 83.75 32 eP P 13 09 19.9 +0.7
OGNE Ogallala 83.75 43 P P 13 09 20.3 +0.8
baz=314
H33A Prehn Over Nor 83.81 37 P P 13 09 20.5 +0.9
baz=317,SNR=13
K30A Basset 83.82 40 P P 13 09 20.8 +1.1
baz=316
G34A Benson 83.93 36 P P 13 09 21.2 +1.0
baz=318
I32A Karley and Nic 83.94 38 P P 13 09 20.7 +0.5
baz=317
D37A Cotton 83.95 33 P P 13 09 20.5 +0.2
baz=320
F35A Swanville 83.97 35 P P 13 09 20.8 +0.5
baz=319
SDCO Great Sand Dun 83.99 47 P P 13 09 22.2 +1.3
baz=313,SNR=13
SDCO Great Sand Dun 83.99 47 eP P 13 09 22.8 +1.8
C38A Sawbill Land. 84.03 32 P P 13 09 21.1 +0.4
baz=321
E36A McGregor 84.07 34 P P 13 09 21.2 +0.3
baz=320,SNR=5.2
PDKS Podkum 84.16 325 i P P 13 09 21.5 +0.1
I33A Coleman 84.25 38 P P 13 09 22.9 +1.1
baz=317
H34A Spellman Lake, 84.29 37 P P 13 09 22.6 +0.6
baz=318
TUC Tucson 84.30 54 P P 13 09 23.5 +1.1
baz=310
TUC Tucson 84.30 54 eP P 13 09 24.2 +1.8
TUC Tucson 84.30 54 eP P 13 09 24.2 +1.8
K31A O'Neill 84.30 40 P P 13 09 23.1 +1.0
baz=316
F36A Milaca 84.45 35 P P 13 09 22.9 +0.1
baz=319
BOJS Bojanci 84.47 325 i P P 13 09 22.9 0.0
O28A Krutsinger Ran 84.47 43 P P 13 09 23.7 +0.6
baz=315
G35A Watkins 84.49 36 P P 13 09 23.7 +0.7
baz=319
ECSD EROS Data Cent 84.57 38 P P 13 09 24.0 +0.5
baz=318,SNR=9.4
ECSD EROS Data Cent 84.57 38 eP P 13 09 24.2 +0.7
L31A Butterfield Fa 84.58 40 P P 13 09 24.2 +0.6
baz=316,SNR=5.6
N29A Votaw Ranch, W 84.60 42 P P 13 09 24.7 +1.0
baz=315
PMOR Pomariorio Ree 84.66 113 eT T 14 42 35.4
comp=Z,25nm,0.2s
CEY Cerknica 84.67 325 eP P 13 09 23.6 -0.3
H35A Sunnyside Ranc 84.72 36 P P 13 09 25.1 +1.0
baz=319,SNR=11
JAVS Javornik 84.72 326 eP P 13 09 23.0 -1.2
T25A Trinidad 85.03 47 P P 13 09 27.8 +1.6
baz=313,SNR=17
T25A Trinidad 85.03 47 eP P 13 09 27.9 +1.6
PPT Papeete 85.09 116 LR LR 13 41 41.9
comp=Z,78nm,19.7s,baz=327,slow=32
PPT2 Papeete2 85.10 116 eLR LR 13 36 00.1
comp=Z,210nm,31.0s
PPT2 Papeete2 85.10 116 eT T 14 43 08.9
comp=Z,2.8nm,0.3s
M31A Lambtecht Ranc 85.11 41 P P 13 09 26.7 +0.5
baz=316
L32A Elgin 85.13 40 P P 13 09 27.2 +0.9
baz=317
K33A Hardington 85.20 39 P P 13 09 27.7 +1.0
baz=317
J34A George 85.22 38 P P 13 09 27.1 +0.4
baz=318
TIAR Tiarei 85.25 116 eT T 14 43 19.1

comp=Z,2.7nm,0.3s
BFO Black Forest 85.25 330 *e*P **P** **13 09 26.8 0.0**
BFO Black Forest 85.25 330 *e*P **P** **13 09 26.8 0.0**
SPMN Marine on St. 85.26 35 P **P** **13 09 27.4 +0.5**
baz=320
I35A Creekview Farm 85.27 37 P **P** **13 09 27.7 +0.7**
baz=319
ANMO Albuquerque 85.29 49 P **P** **13 09 29.4 +1.9**
baz=312
ANMO Albuquerque 85.29 49⇑*e*P **P** **13 09 29.5 +2.0**
ANMO pmax pmax
comp=Z,18nm,1.7s
ANMO Albuquerque 85.29 49 *e*P **P** **13 09 29.4 +2.0**
BGNE Belgrade 85.49 40 P **P** **13 09 28.8 +0.6**
baz=317
BGNE Belgrade 85.49 40 *e*P **P** **13 09 28.9 +0.8**
K34A Le Mars 85.60 38 P **P** **13 09 29.1 +0.5**
baz=318
I36A Fitzsimmons Fa 85.61 36 P **P** **13 09 29.5 +0.8**
baz=319
H37A Dierke Farm, C 85.70 35 P **P** **13 09 30.2 +1.1**
baz=320
BNM Barren Site 85.72 50 *e*P **P** **13 09 31.5 +1.8**
O31A Woolen Ranch, 85.77 42 P **P** **13 09 30.3 +0.7**
baz=316
SCHQ Schefferville 85.82 15 LR LR 13 50 28.6
comp=Z,36nm,19.2s,baz=63,slow=37
FUORN Ofenpass-Fuorn 85.82 328 *e*P **P** **13 09 30.3 +0.3**
M33A Taylor Creek F 85.86 40 P **P** **13 09 30.5 +0.5**
baz=317
I37A Lemond, Waseca 85.91 36 P **P** **13 09 31.1 +1.0**
baz=320
J36A Seneca 1, Swea 85.98 37 P **P** **13 09 31.2 +0.7**
baz=319
L34A Svendsen Farm, 85.99 39 P **P** **13 09 31.4 +0.9**
baz=318
121A Cookes Peak, D 86.07 52 P **P** **13 09 33.1 +1.7**
baz=312
J37A Redenius Farm, 86.37 36 P **P** **13 09 33.0 +0.6**
baz=320
MEH Mehetia 86.38 115 *e*T T 14 44 44.0
comp=Z,23nm,0.3s
I38A Scanlan Farm, 86.38 35 P **P** **13 09 33.2 +0.7**
baz=320
K36A Gilmore City 86.44 37 P **P** **13 09 33.3 +0.5**
baz=319
CBKS Cedar Bluff 86.51 43 P **P** **13 09 33.9 +0.6**
baz=316
M35A Neola 86.70 39 P **P** **13 09 34.8 +0.7**
baz=318
K37A Belmond 86.74 37 P **P** **13 09 35.0 +0.7**
baz=320
TAOE Nuku Hiva Isla 86.74 103 *e*LR LR 13 36 55.3
comp=Z,288nm,29.4s
N34A Lincoln 86.76 40 P **P** **13 09 35.0 +0.6**
baz=318
J38A Wedel Dairy, R 86.87 36 P **P** **13 09 35.4 +0.6**
baz=320
Q32A Meitler Ranch, 87.02 42 P **P** **13 09 36.3 +0.6**
baz=317
O34A Beatrice 87.14 40 P **P** **13 09 36.6 +0.4**
baz=318
M36A Felix, Anita 87.16 38 P **P** **13 09 37.4 +1.1**
baz=319
L37A Phoenix Point, 87.17 37 P **P** **13 09 37.2 +0.8**
baz=319
N35A Tabor 87.18 39 P **P** **13 09 37.5 +1.1**
baz=318
Q33A Connelly Farm, 87.41 42 P **P** **13 09 38.2 +0.6**
baz=317
O35A Humboldt 87.48 40 P **P** **13 09 38.5 +0.6**
baz=318
P34A Walnut Farm, R 87.54 41 P **P** **13 09 38.7 +0.5**
baz=318
L38A Oak Wood Farm, 87.54 37 P **P** **13 09 39.0 +0.8**
baz=320
N36A Muff Farm, Cla 87.56 39 P **P** **13 09 39.5 +1.2**
baz=319
M37A Trindle Farm, 87.56 38 P **P** **13 09 39.5 +1.2**
baz=319
S32A Newby Ranch, P 87.75 43 P **P** **13 09 40.0 +0.7**
baz=316
R33A Olander Ranch, 87.83 42 P **P** **13 09 40.7 +1.1**
baz=317
Q34A Chapman 87.94 41 P **P** **13 09 40.7 +0.6**
baz=318
P35A Duane Minner, 87.97 40 P **P** **13 09 41.0 +0.7**
baz=318
N37A Lee Faris, Mou 87.97 38 P **P** **13 09 41.0 +0.7**
baz=319
M38A Pleasantville 87.97 37 P **P** **13 09 40.9 +0.7**
baz=320
KSU1 Kansas State U 87.98 41 P **P** **13 09 40.8 +0.5**
baz=318
KSU1 Kansas State U 87.98 41 *e*P **P** **13 09 41.3 +1.0**
O36A Bolckow 88.06 39 P **P** **13 09 41.4 +0.7**
baz=319
T32A Huddler Ranch, 88.13 44 P **P** **13 09 41.6 +0.5**
baz=316
MNTX Cornudas Mount 88.14 51 P **P** **13 09 42.2 +1.0**
baz=313
MNTX Cornudas Mount 88.14 51 *e*P **P** **13 09 42.5 +1.3**
MSTX Muleshoe 88.18 48 P **P** **13 09 42.4 +0.9**
baz=314
AMTX Amarillo 88.19 47 P **P** **13 09 42.9 +1.4**
baz=315
R34A Isabella, Hill 88.23 42 P **P** **13 09 42.5 +1.0**
baz=317
P36A Good Intent, A 88.32 40 P **P** **13 09 43.0 +1.1**
baz=319
S33A Kaszmaul Farm, 88.33 43 P **P** **13 09 43.1 +1.1**
baz=317
O37A Wolven Farm, M 88.45 39 P **P** **13 09 43.5 +1.0**
baz=319
N39A Derby Farms, D 88.72 37 P **P** **13 09 44.6 +0.8**
baz=320
S34A Willow Spring 88.74 42 P **P** **13 09 44.9 +1.0**
baz=318
R35A Emporia Munici 88.77 41 P **P** **13 09 45.4 +1.3**
baz=318
P37A Lathrop 88.78 39 P **P** **13 09 44.9 +0.8**
baz=319
TBI Tubuai 88.94 120 *e*LR LR 13 37 41.9
comp=Z,118nm,28.2s
TBI Tubuai 88.94 120 *e*T T 14 47 55.3
comp=Z,18nm,0.3s
U33A Lingo Farm, Me 89.12 44 P **P** **13 09 46.9 +1.1**
baz=317
P38A Dawn 89.17 39 P **P** **13 09 47.0 +1.1**
baz=320
S35A Otter Creek Ra 89.18 42 P **P** **13 09 46.6 +0.6**
baz=318
W32A Sentinel 89.42 45 P **P** **13 09 48.1 +0.9**
baz=316
U34A Anderson Ranch 89.43 43 P **P** **13 09 47.8 +0.6**
baz=317
V33A Lossen Ranch, 89.46 44 P **P** **13 09 48.0 +0.6**
baz=317
S36A Lake Cedric, C 89.53 41 P **P** **13 09 48.2 +0.6**
baz=318
O40A La Belle 89.61 37 P **P** **13 09 48.5 +0.6**
baz=321
Q38A Cooks Store, C 89.63 39 P **P** **13 09 48.6 +0.6**
baz=320
T36A Boggs Farm, Ca 89.87 42 P **P** **13 09 50.2 +1.0**
baz=318
V34A Guthrie 89.88 44 P **P** **13 09 49.9 +0.6**
baz=317
V34A Guthrie 89.88 44 *e*P **P** **13 09 50.9 +1.5**
Q39A Willow Grove F 89.89 39 P **P** **13 09 50.0 +0.7**
baz=320
X32A Elmer 89.91 46 P **P** **13 09 50.4 +0.9**
baz=316
S37A Fort Scott 89.91 41 P **P** **13 09 49.9 +0.5**
baz=319
WMOK Wichita Mounta 89.97 45 *e*P **P** **13 09 50.3 +0.5**
WMOK Wichita Mounta 89.97 45 *e*P **P** **13 09 50.3 +0.5**
P40A Paris 89.98 38 P **P** **13 09 50.5 +0.8**
baz=321
R38A Fenwick Farm, 90.07 40 P **P** **13 09 49.7 -0.4**
baz=319
V35A Meyer Ranch, C 90.31 43 P **P** **13 09 52.3 +1.0**
baz=318
Q40A Laux Farm, Aux 90.38 38 P **P** **13 09 51.9 +0.3**
baz=321
R39A Chumby, Stover 90.42 39 P **P** **13 09 51.9 +0.2**
baz=320
U36A Oologah 90.45 42 P **P** **13 09 52.7 +0.7**
baz=318
S38A Stockton 90.49 40 P **P** **13 09 51.8 -0.3**
baz=319
Y33A Hilltop Ranch, 90.58 46 P **P** **13 09 53.4 +0.8**
baz=317
X34A Smith Ranch, M 90.60 45 P **P** **13 09 54.1 +1.4**
baz=317
T38A Diamond 90.73 41 P **P** **13 09 53.7 +0.4**
baz=319
W35A Tecumseh 90.74 44 P **P** **13 09 53.9 +0.6**
baz=318
S39A Bolivar 90.74 40 P **P** **13 09 53.1 -0.2**
baz=320
U37A Salina 90.77 42 P **P** **13 09 54.1 +0.7**
baz=319
TUL1 Leonard 90.77 43 P **P** **13 09 54.2 +0.7**
baz=318
V36A Jenks 90.78 43 P **P** **13 09 54.4 +0.8**
baz=318
R40A Maddies Statio 90.82 39 P **P** **13 09 53.8 +0.2**
baz=320
TX31 Lajitas Ar. Si 90.83 52 *e*P **P** **13 09 54.8 +0.8**
TXAR Lajitas Array 90.83 52 P **P** **13 09 55.4 +1.4**
comp=Z,3.8nm,0.7s,baz=300,slow=3.2,SNR=44
ABTX Abilene, Hawle 90.98 47 P **P** **13 09 55.5 +1.0**
baz=316
Z33A Whitaker Ranch 91.02 46 P **P** **13 09 55.6 +0.9**
baz=316
W36A Wetumka 91.11 43 P **P** **13 09 55.7 +0.7**
baz=318
Y34A Reagan Ranch, 91.11 45 P **P** **13 09 55.6 +0.5**
baz=317
U38A Gravette 91.13 41 P **P** **13 09 55.7 +0.5**
baz=319
V37A Hulbert 91.14 42 P **P** **13 09 55.7 +0.5**
baz=319
T39A Clever 91.22 40 P **P** **13 09 56.0 +0.4**
baz=320
S40A Lebanon 91.23 39 P **P** **13 09 56.1 +0.5**
baz=320
X35A Drake 91.23 44 P **P** **13 09 56.4 +0.7**
baz=318
133A Hamilton Ranch 91.42 47 P **P** **13 09 57.6 +1.0**
baz=316
X36A Centrahoma 91.46 44 P **P** **13 09 57.5 +0.9**
baz=318
V38A Canehill 91.55 42 P **P** **13 09 57.5 +0.4**
baz=319
Y35A Marietta 91.56 45 P **P** **13 09 57.6 +0.5**
baz=318
T40A Mansfield 91.57 40 P **P** **13 09 57.3 +0.1**
baz=320
U39A Green Forest 91.65 41 P **P** **13 09 58.1 +0.5**
baz=320
SFIN Lafayette 91.66 34 P **P** **13 09 58.2 +0.7**
baz=324
233A Rising Star 91.86 47 P **P** **13 09 60.0 +1.3**
baz=316
Z35A Perchaven, San 91.86 45 P **P** **13 09 59.4 +0.9**
baz=317
134A White-Moore Ra 91.94 46 P **P** **13 10 00.0 +1.1**
baz=317
V39A Pettigrew 91.98 41 P **P** **13 09 59.2 +0.1**
baz=320
X37A Clayton 91.98 43 P **P** **13 09 59.3 +0.2**
baz=318
Y36A Durant 91.99 44 P **P** **13 10 00.1 +1.0**
baz=318
U40A Yellville 92.00 40 P **P** **13 09 59.8 +0.6**
baz=320
W38A Poteau 92.09 42 P **P** **13 10 00.5 +0.9**
baz=319
X38A Whitesboro 92.22 43 P **P** **13 10 01.1 +0.9**
baz=319
Y37A Hugo 92.30 44 P **P** **13 10 01.2 +0.6**
baz=318
234A Clairette 92.31 47 P **P** **13 10 01.7 +1.0**
baz=317
135A Vickery Place, 92.33 46 P **P** **13 10 01.5 +0.7**
baz=317
Z36A Blue Ridge 92.37 45 P **P** **13 10 01.2 +0.4**
baz=318
W39A Magazine 92.39 42 P **P** **13 10 01.3 +0.3**
baz=320
JCT Junction City 92.42 49 P **P** **13 10 01.6 +0.4**
baz=316
V40A Witts Springs 92.44 41 P **P** **13 10 01.7 +0.5**
baz=320
433A Art 92.65 48 P **P** **13 10 02.7 +0.4**
baz=316
WHTX Lake Whitney, 92.72 46 P **P** **13 10 03.4 +0.9**
baz=317
X39A Fountain Ranch 92.73 42 P **P** **13 10 03.8 +1.3**
baz=319
334A Lometa 92.74 47 P **P** **13 10 03.0 +0.4**
baz=317
W40A Ferguson Farm, 92.77 41 P **P** **13 10 03.0 +0.3**
baz=320
MIAR Mount Ida 92.99 42 P **P** **13 10 04.7 +0.9**
baz=320
MIAR Mount Ida 92.99 42 *e*P **P** **13 10 05.2 +1.4**
MIAR Mount Ida 92.99 42 *e*P **P** **13 10 05.2 +1.4**
434A Burnet 93.10 48 P **P** **13 10 05.3 +1.0**
baz=317
X40A Basin Creek Fa 93.44 42 P **P** **13 10 06.8 +1.0**
baz=320
633A Saathoff Ranch 93.53 49 P **P** **13 10 07.3 +1.0**
baz=316
832A Faith Ranch, C 93.88 50 P **P** **13 10 09.0 +1.0**
baz=316
ESDC Sonseca Array 97.27 333 P **P** **13 10 22.8 -0.5**
comp=Z,0.1nm,0.3s,baz=16,slow=5.0,SNR=4.4
TORD Torodi Ar. Bea 117.08 314 PKP **PKPdf** **13 15 35.0 -0.8**
comp=Z,0.7nm,0.8s,baz=44,slow=2.1,SNR=3.5
TORD PP PP 13 16 34.9 -10
comp=Z,0.7nm,1.0s,baz=19,slow=6.5,SNR=3.4
BOSA Boshof 125.87 259 PKP **PKPdf** **13 15 52.4 0.0**
comp=Z,3.1nm,0.8s,baz=194,slow=3.0,SNR=3.8
DBIC Dimbokro 126.06 316 PKP **PKPdf** **13 15 52.7 -0.4**
comp=Z,1.2nm,0.5s,baz=343,slow=2.9,SNR=6.0
LPAZ La Paz 147.42 59 PKPbc **PKPbc** **13 16 35.2 -0.1**
comp=Z,8.0nm,0.8s,baz=341,slow=3.6,SNR=16
SIV San Ignacio 151.79 49 PKP **PKPdf** **13 16 40.6 +1.6**
comp=Z,3.0nm,1.0s,baz=158,slow=2.8,SNR=3.9
SIV PKPbc **PKiKP** **13 16 45.9 +0.1**
comp=Z,9.8nm,0.9s,baz=288,slow=1.3,SNR=12
SIV PKPab **PKPab** **13 16 54.9 +0.6**
comp=Z,6.0nm,0.9s,baz=13,slow=2.9,SNR=4.3
BDFB Brasilia 157.65 22 PKPab **PKPab** **13 17 17.8 -1.4**
comp=Z,4.4nm,0.8s,baz=11,slow=14,SNR=4.3

IDC 06 12:59:07.9±1.1, 2°12N×125°24E, h0km, mb3.5/5, mb1 3.7/5, mb1mx3.4/40, mbtmp3.5/5, Error ellipse: s-maj=142.0km s-min=18.7km az=67.0, Talaud Islands

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
WRA	**Warramunga Arr**	**23.68**	**158**	P	P	13 04 20.4	-1.0
	0.9nm,0.5s,baz=335,slow=11,SNR=17						
ASAR	**Alice Springs**	**26.98**	**162**	P	P	13 04 52.9	+1.2
	0.2nm,0.5s,baz=345,slow=7.3,SNR=6.7						
STKA	**Stephens Creek**	**37.20**	**157**	P	P	13 06 20.9	-0.2
	0.6nm,0.4s,baz=354,slow=10,SNR=3.9						
SONM	**Songino Array**	**48.37**	**343**	P	P	13 07 51.0	-0.7
	0.3nm,0.6s,baz=166,slow=11,SNR=2.5						
MKAR	**Makanchi Array**	**58.04**	**327**	P	P	13 09 03.2	+0.3
	0.4nm,0.6s,baz=125,slow=9.0,SNR=3.3						

SKO 06 13:06:24.0, 41°11N×22°45E, h2km, M0.5, ML0.7, 1C, Northwestern Balkan Peninsula

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
VAY	**Valandovo**	**0.23**	**23**⇑	*i*Pg	Pg	13 06 28.1	-0.3
VAY				*i* Sg	Sg	13 06 31.8	+0.4
VAY				*e*Lg	Lg	13 06 32.1	
	comp=E,17nm,0.4s						
VAY				*e*Lg	Lg	13 06 32.2	
	comp=N,17nm,0.3s						

*IDC **06** 13:13:04.5±0.8, 2°87N×126°81E, h0km, mb3.9/10, mb1 4.1/10, mb1mx3.8/47, mbtmp3.9/10, Error ellipse: s-maj=59.3km s-min=14.4km az=75.0*
*NEIC **06** 13:13:05.9±0.3, 2°88N×126°86E, h10km, mb4.4/8, Error ellipse: s-maj=25.9km s-min=5.9km az=74.0*
*ISCJB **06** 13:13:08.4±0.4, 2°90N±0°08×126°8E±0°2, h44km, mb4.0/15, Error ellipse: s-maj=33.7km s-min=7.0km az=164.0*

ISC 06 13:13:10.7±0°.7, 2°9N±0°.1×126°9E±0°.3, h44km, n28, σ1°06/28, mb4.0/15, Northern Molucca Sea

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
TNTI	**Ternate**	**2.14**	**166**	*e*Pn	**Pn**	**13 13 43.6**	**-0.2**
FITZ	**Fitzroy Crossi**	**20.86**	**183**	P	**P**	**13 17 47.9**	**-1.2**
	2.8nm,0.5s,baz=341,slow=7.6,SNR=4.4						
FITZ	**Fitzroy Crossi**	**20.86**	**183**	*e*P	**P**	**13 17 47.9**	**-1.2**
	20nm,1.6s						
WRAB	**Tennant Creek**	**23.82**	**162**	*e*P	**P**	**13 18 19.2**	**-0.6**
	42nm,1.8s						
WR1	**Warramunga Arr**	**23.82**	**162**	*e*P	**P**	**13 18 19.0**	**-0.8**
	49nm,1.8s						
WRA	**Warramunga Arr**	**23.82**	**162**	P	**P**	**13 18 19.0**	**-0.8**
	2.2nm,0.4s,baz=337,slow=10,SNR=70						
WB2	**Warramunga Arr**	**23.83**	**162**	*e*P	**P**	**13 18 19.0**	**-0.8**
	9.6nm,1.0s						
AS31	**Alice Springs**	**27.24**	**166**	*e*P	**P**	**13 18 50.4**	**-0.5**
	3.0nm,1.6s						
ASAR	**Alice Springs**	**27.25**	**166**	P	**P**	**13 18 50.4**	**-0.5**
	1.0nm,0.6s,baz=342,slow=6.9,SNR=22						
KS15	**Wonju Array Si**	**34.43**	**1**	*e*P	**P**	**13 19 52.3**	**-1.7**
KSAR	**Wonju Array Be**	**34.43**	**1**	P	**P**	**13 19 52.3**	**-1.7**
KSRS	**Korea Array**	**34.44**	**1**	P	**P**	**13 19 52.3**	**-1.8**
	1.4nm,0.8s,baz=178,slow=11,SNR=4.1						
STKA	**Stephens Creek**	**37.28**	**159**	P	**P**	**13 20 18.3**	**-0.1**
	3.3nm,0.7s,baz=334,slow=9.5,SNR=11						
STKA	**Stephens Creek**	**37.28**	**159**	*e*P	**P**	**13 20 18.3**	**-0.1**
	0.9nm,0.8s						
SONA0	**Songino Array**	**48.16**	**342**	*e*P	**P**	**13 21 47.9**	**+1.2**
	11nm,2.0s						
SONM	**Songino Array**	**48.16**	**342**	P	**P**	**13 21 47.9**	**+1.2**
	0.3nm,0.4s,baz=150,slow=9.3,SNR=3.0						
MK31	**Makanchi Array**	**58.34**	**325**	*e*P	**P**	**13 23 01.8**	**+0.4**
MK32	**Makanchi Array**	**58.34**	**325**	*e*P	**P**	**13 23 00.5**	**-0.9**
MKAR	**Makanchi Array**	**58.34**	**325**	P	**P**	**13 23 00.5**	**-0.9**
	1.2nm,0.5s,baz=118,slow=8.0,SNR=12						
MKAR	**Makanchi Array**	**58.34**	**325**	*e*P	**P**	**13 23 01.8**	**+0.4**
ZALV	**Zalesovo Beam**	**61.42**	**333**	P	**P**	**13 23 21.9**	**-0.4**
	0.5nm,0.3s,baz=101,slow=7.5,SNR=3.5						
ZAA1	**Zalesovo Array**	**61.42**	**333**	*e*P	**P**	**13 23 21.9**	**-0.4**
KURK	**Kurchatov**	**62.54**	**328**	*e*P	**P**	**13 23 28.9**	**-1.0**
ZRNK	**Zerenda**	**68.84**	**327**	*e*P	**P**	**13 24 09.8**	**-0.7**
	3.4nm,1.3s						
ABKAR	**Akbulak array**	**72.90**	**321**	*e*P	**P**	**13 24 35.6**	**+0.3**
VNDA	**Vanda**	**82.55**	**173**	P	**P**	**13 25 30.8**	**+2.4**
	1.0nm,0.8s,baz=288,slow=6.0,SNR=4.5						
ILAR	**Eielson Array**	**85.83**	**25**	P	**P**	**13 25 46.2**	**+0.8**
	0.1nm,0.4s,baz=280,slow=6.0,SNR=3.1						
ILB	**Eielson Array**	**85.83**	**25**	*e*P	**P**	**13 25 46.2**	**+0.8**

*IDC **06** 13:13:22.5±2.6, 33°66S×72°82W, h0km, mb3.9/1, mb1 3.8/2, mb1mx3.4/31, mbtmp3.7/2, ML3.9/1, Error ellipse: s-maj=124.9km s-min=44.5km az=87.0*
*NEIC **06** 13:13:26.0±1.2, 33°76S×72°71W, h20km±6km, mb4.8/1, Error ellipse: s-maj=22.0km s-min=14.8km az=85.0*
*ISCJB **06** 13:13:26.9±1.2, 33°89S±0°04×72°38W±0°08, h23km±9km, mb4.3/2, Error ellipse: s-maj=11.0km s-min=5.6km az=10.9*
*GUC **06** 13:13:27.3±0.4, 33°86S×72°25W, h24km±8km, ML3.7*

ISC 06 13:13:26.0±2.3, 33°87S±0°04×72°34W±0°09, h15km±13km, n34, σ1°97/39, 6C-1D, Off coast of central Chile

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
CHPI	**Pichilemu**	**0.59**	**152**⇑	*e*P	**Pb**	**13 13 38.1**	**+0.1**
CHPI				*e*S	**Sg**	**13 13 45.3**	**-0.2**
ROC1	**El Roble**	**1.42**	**52**	*e*P	**Pb**	**13 13 52.7**	**+0.4**
ROC1				*e*S	**Sg**	**13 14 11.4**	**-0.4**
ROC1	**El Roble**	**1.42**	**52**	*e*Pn	**Pn**	**13 13 52.3**	**+0.8**
ROCH	**El Roble**	**1.43**	**52**⇑	*e*P	**Pn**	**13 13 51.7**	**+0.2**
ROCH				*e*S	**Sn**	**13 14 10.0**	**-0.1**
ROCH				IAML		13 14 13.8	
	comp=N,2μm,0.3s						
NICH	**Los Niches**	**1.46**	**141**⇑	*e*P	**Pn**	**13 13 51.9**	**+0.1**
NICH				*e*S	**Sb**	**13 14 10.6**	**-0.5**
PEL	**Peldehue**	**1.56**	**63**⇑	*e*P	**Pn**	**13 13 53.3**	**+0.1**
PEL				*e*S	**Sn**	**13 14 13.0**	**-0.2**
PEL				IAML		13 14 19.4	
	comp=N,3μm,0.4s						
CLCH	**Cerro Calan**	**1.57**	**73**⇑	*e*P	**Pn**	**13 13 53.3**	**-0.1**
CLCH				*e*S	**Sn**	**13 14 13.1**	**-0.5**
CLCH				IAML		13 14 19.8	
	comp=E,1μm,0.7s						
TALC	**Talca**	**1.63**	**159**⇑	*e*P	**Pn**	**13 13 54.8**	**+0.6**
TALC				*e*S	**Sb**	**13 14 16.0**	**-0.2**
AUSP	**Uspallata**	**2.97**	**57**	*e*P	**Pn**	**13 14 16.2**	**+3.3**
ARCO	**CERRO ARCO**	**3.03**	**71**	*e*P	**Pb**	**13 14 18.3**	**-1.4**
ARCO				IAML		13 15 01.9	
	comp=Z,105nm,0.5s						
AAGR	**Agrelo**	**3.04**	**76**	*e*P	**Pb**	**13 14 17.8**	**-2.0**
ASAL	**Salagasta**	**3.20**	**68**	*e*P	**Pb**	**13 14 20.0**	**-2.6**
RTLS	**Leoncito**	**3.29**	**52**	*e*P	**Pn**	**13 14 21.6**	**+3.4**
RTCV	**Cerro Valdivia**	**3.77**	**59**	*e*P	**Pn**	**13 14 25.6**	**+2.0**
RTLL	**Cerro Villicun**	**4.13**	**53**	*e*P	**Pn**	**13 14 30.2**	**+1.6**
AMOG	**MOGNA**	**4.37**	**49**	*e*P	**Pn**	**13 14 34.6**	**+2.7**
ACAN	**Cantantal**	**4.61**	**71**	*e*P	**Pn**	**13 14 38.9**	**+3.8**
AMAR	**Marayes**	**4.86**	**62**	*e*P	**Pn**	**13 14 40.2**	**+1.6**
LCO	**Las Campanas**	**5.04**	**17**	*e*Pn	**Pn**	**13 14 42.3**	**+1.0**
AVFE	**Valle Fertil**	**5.23**	**54**	IAML		13 16 02.2	
	comp=Z,54nm,0.6s						
AGUA	**GUANDACOL**	**5.46**	**38**	*e*P	**Pn**	**13 14 49.5**	**+2.5**
ACHE	**Chepes**	**5.50**	**62**	*e*P	**Pn**	**13 14 50.2**	**+2.7**
PLCA	**Paso Flores**	**7.00**	**169**	Pn	**Pn**	**13 15 10.2**	**+2.3**
	comp=Z,0.5nm,0.3s,baz=356,slow=11,SNR=18						
PLCA	**Paso Flores**	**7.00**	**169**	*e*Pn	**Pn**	**13 15 10.5**	**+2.5**
TRQA	**Tornquist**	**9.38**	**119**	*e*Pn	**Pn**	**13 15 44.5**	**+3.9**
SYO	**Syowa Base**	**66.08**	**159**‖	*e*pP	pP	13 24 17.0	+0.3
BORC	**Borrego Spring**	**78.58**	**324**	*e*P	**P**	**13 25 27.8**	**+0.9**
WCHM	**Chimney Peak**	**81.50**	**324**	*e*P	**P**	**13 25 39.5**	**-3.5**
TORD	**Torodi Ar. Bea**	**84.40**	**70**	P	**P**	**13 25 58.5**	**+0.4**
	comp=Z,0.9nm,0.8s,baz=248,slow=4.8,SNR=5.1						
TOA1	**Torodi Ar. Sit**	**84.40**	**70**	*e*P	**P**	**13 25 58.5**	**+0.4**
	comp=Z,11nm,1.8s						
KURBB	**Kurchatov Arra**	**152.94**	**43**	PKPbc	**PKPbc**	**13 33 23.4**	**+1.3**
	comp=Z,0.3nm,0.6s,baz=289,slow=2.8,SNR=4.0						
KURK	**Kurchatov**	**152.95**	**43**	*e*PKPbc	**PKPbc**	**13 33 23.4**	**+1.2**
ZAA1	**Zalesovo Array**	**154.24**	**32**	*e*pPKPdf	**PKPbc**	**13 33 22.6**	**-2.3**
ZALV	**Zalesovo Beam**	**154.25**	**32**	PKPbc	**PKPbc**	**13 33 22.6**	**-2.3**
	comp=Z,0.4nm,0.4s,baz=333,slow=1.6,SNR=2.3						

*IDC **06** 13:18:04.6±2.2, 33°87S×71°94W, h0km, mb4.1/2, mb1 3.9/4, mb1mx3.5/33, mbtmp3.8/4, ML3.8/2, MS3.3/1, Ms1 3.2/1, ms1mx2.6/24, Error ellipse: s-maj=88.0km s-min=35.5km az=92.0*
*ISCJB **06** 13:18:06.6±1.1, 33°91S±0°04×72°25W±0°07, h27km±8km, mb4.1/3, MS3.2/1, Error ellipse: s-maj=10.0km s-min=5.8km az=12.1*
*GUC **06** 13:18:07.3±0.4, 33°93S×72°00W, h13km±7km, ML3.6*
*NEIC **06** 13:18:08.4±2.5, 33°83S×72°13W, h28km±17km, mb4.4/1, Error ellipse: s-maj=17.7km s-min=8.9km az=89.0*

ISC 06 13:18:05.6±1.8, 33°86S±0°04×72°17W±0°09, h11km±11km, n32, σ1°14/35, mb4.2/3, 3C-3D, Off coast of central Chile

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
CHPI	**Pichilemu**	**0.55**	**165**‖	*e*P	**Pg**	**13 18 16.7**	**+0.4**
CHPI				*e*S	**Sg**	**13 18 23.8**	**+0.3**
ROC1	**El Roble**	**1.31**	**48**	*e*P	**Pg**	**13 18 31.4**	**+0.5**
ROC1				*e*S	**Sg**	**13 18 48.6**	**+0.8**
ROC1	**El Roble**	**1.31**	**48**	*e*Pn	**Pn**	**13 18 30.3**	**+0.1**
ANTU	**Antumapu**	**1.31**	**78**‖	*e*P	**Pn**	**13 18 29.9**	**-0.2**
ANTU				*e*S	**Sg**	**13 18 47.0**	**-1.0**
ROCH	**El Roble**	**1.31**	**48**	IAML		13 18 52.3	
	comp=N,2μm,0.9s						
NICH	**Los Niches**	**1.38**	**146**‖	*e*P	**Pn**	**13 18 30.7**	**-0.2**
NICH				*e*S	**Sb**	**13 18 48.3**	**-0.9**
PEL	**Peldehue**	**1.43**	**60**⇑	*e*P	**Pb**	**13 18 32.5**	**+0.1**
PEL				*e*S	**Sg**	**13 18 51.4**	**-0.4**
PEL				IAML		13 18 57.9	
	comp=N,3μm,0.3s						
CLCH	**Cerro Calan**	**1.44**	**72**⇑	*e*P	**Pb**	**13 18 32.4**	**-0.2**
CLCH				*e*S	**Sg**	**13 18 51.1**	**-0.9**
CLCH				IAML		13 18 59.7	
	comp=E,2μm,0.5s						

Code	Station Name	Δ°	AZ°	Op	ISC	Time	Res
TALC	**Talca**	**1.60**	**164**⇓	*e*P	**Pn**	**13 18 34.1**	**+0.3**
TALC				*e*S	**Sb**	**13 18 54.3**	**-1.1**
AUSP	**Uspallata**	**2.85**	**56**	*e*P	**Pb**	**13 18 54.9**	**-1.9**
ARCO	**CERRO ARCO**	**2.90**	**70**	*e*P	**Pb**	**13 18 56.9**	**-0.5**
ARCO				IAML		13 19 40.2	
	comp=Z,134nm,0.6s						
AAGR	**Agrelo**	**2.90**	**75**	*e*P	**Pb**	**13 18 57.6**	**+0.1**
ASAL	**Salagasta**	**3.07**	**67**	*e*P	**Pb**	**13 18 59.3**	**-1.1**
RTLS	**Leoncito**	**3.18**	**50**	*e*P	**Pb**	**13 18 59.3**	**-3.0**
AMOG	**MOGNA**	**4.26**	**48**	*e*P	**Pn**	**13 19 13.5**	**+2.9**
LCO	**Las Campanas**	**5.00**	**15**	*e*Pn	**Pn**	**13 19 21.3**	**+0.4**
AVFE	**Valle Fertil**	**5.11**	**53**	IAML		13 20 40.8	
	comp=Z,61nm,0.7s						
AGUA	**GUANDACOL**	**5.37**	**37**	*e*P	**Pn**	**13 19 28.7**	**+2.8**
ACLC	**CERRO LA CRUZ**	**6.27**	**47**	IAML		13 21 25.5	
	comp=Z,35nm,0.6s						
PLCA	**Paso Flores**	**6.98**	**170**	Pn	**Pn**	**13 19 48.5**	**+0.6**
	comp=Z,0.5nm,0.3s,baz=358,slow=11,SNR=9.1						
PLCA	**Paso Flores**	**6.98**	**170**	*e*Pn	**Pn**	**13 19 48.8**	**+0.9**
TRQA	**Tornquist**	**9.26**	**120**	*e*Pn	**Pn**	**13 20 20.5**	**+1.3**
LPAZ	**La Paz**	**17.87**	**13**	P	**P**	**13 22 16.6**	**+0.9**
	comp=Z,0.1nm,0.3s,baz=167,slow=5.8,SNR=3.5						
BDFB	**Brasilia**	**28.35**	**56**	LR	LR	13 35 42.6	
	comp=Z,54nm,18.7s,baz=68,slow=38						
DBIC	**Dimbokro**	**75.24**	**71**	P	**P**	**13 29 48.7**	**-0.2**
	comp=Z,1.2nm,0.8s,baz=246,slow=10.0,SNR=3.1						
HWB	**Hans Werner Br**	**78.74**	**323**	*e*P	**P**	**13 30 08.5**	**+0.4**
TOA0	**Torodi Ar. Sit**	**84.27**	**70**	*e*P	**P**	**13 30 37.3**	**-0.5**
TORD	**Torodi Ar. Bea**	**84.27**	**70**	P	**P**	**13 30 37.5**	**-0.3**
	comp=Z,1.4nm,0.8s,baz=252,slow=5.4,SNR=7.6						
TOA1	**Torodi Ar. Sit**	**84.27**	**70**	*e*P	**P**	**13 30 37.5**	**-0.3**
	comp=Z,2.7nm,1.0s						
KURBB	**Kurchatov Arra**	**152.84**	**43**	PKPbc	**PKPbc**	**13 38 02.3**	**0.0**
	comp=Z,0.2nm,0.4s,baz=303,slow=3.2,SNR=5.8						
KURK	**Kurchatov**	**152.85**	**43**	PKPbc	**PKPbc**	**13 38 02.3**	**0.0**
ZALV	**Zalesovo Beam**	**154.17**	**32**	PKPbc	**PKPbc**	**13 38 05.4**	**+0.2**
	comp=Z,0.4nm,0.4s,baz=316,slow=4.0,SNR=2.3						

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*IDC **06** 13:21:28.7±2.6, 37.°85N×142.°31E, h0km, mb3.4/3, mb1 3.5/4, mb1mx3.2/45, mbtmp3.3/4, ML2.9/1, Error ellipse: s-maj=64.7km s-min=31.6km az=67.0*

*JMA **06** 13:21:37.0, 37.°81N×141.°72E, h53km±2km, M3.4*

ISC 06 13:21:34.3±1.8**, 37.°78N**±0.°04×**141.°88E**±0.°08**, h27**km±13km**, n19,** σ1§**25**/27**, mb3.4**/3**, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**0.79**	**328**	P	**Pb**	**13 21 51.0**	**+1.5**
JIO				S	**Sn**	**13 22 00.9**	**+0.3**
JMM	**Marumori**	**0.87**	**276**	P	**Pb**	**13 21 51.3**	**+0.6**
JMM				S	**Sn**	**13 22 01.5**	**-0.9**
JFK	**Kawauchi**	**0.90**	**243**	P	**Pb**	**13 21 52.2**	**+0.9**
JFK				*e*S	**Sn**	**13 22 03.0**	**-0.4**
ONAJ	**Iwakimizuishiy**	**1.10**	**232**	P	**Pb**	**13 21 55.1**	**+0.5**
ONAJ				S	**Sn**	**13 22 08.5**	**+0.3**
JOU	**Okura**	**1.12**	**302**	P	**Pb**	**13 21 54.9**	**-0.2**
JOU				S	**Sn**	**13 22 08.3**	**-0.6**
JFT	**Otama**	**1.25**	**258**	P	**Pn**	**13 21 57.2**	**+1.1**
JFT				S	**Sn**	**13 22 12.1**	**0.0**
JMK	**Ichinoseki**	**1.28**	**336**	P	**Pb**	**13 21 57.9**	**+0.2**
OFUJ	**Ofunato**	**1.31**	**353**	P	**Pb**	**13 21 58.8**	**+0.6**
JYS	**Shirataka**	**1.50**	**288**	P	**Pn**	**13 22 00.2**	**+0.8**
JHO	**Hitachi**	**1.57**	**222**	P	**Pn**	**13 22 01.5**	**+1.1**
JYK	**Kaneyama**	**1.65**	**314**	P	**Pn**	**13 22 02.4**	**+0.9**
MIYJ	**Miyakonagasawa**	**1.79**	**358**	P	**Pb**	**13 22 05.5**	**-1.0**
JRG	**Rokugo**	**1.89**	**329**	P	**Pb**	**13 22 06.5**	**-1.5**
JRG				*e*S	**Sn**	**13 22 28.8**	**+1.2**
MJAR	**Matsushiro Arr**	**3.18**	**248**	Pn	**Pn**	**13 22 24.4**	**+1.8**
	1.0nm,0.3s,baz=54,slow=11,SNR=8.9						
MAT	**Matsushiro**	**3.19**	**248**	P	**Pn**	**13 22 24.7**	**+2.1**
MAT				S	**Sb**	**13 23 05.4**	**-3.2**
JHJ	**Hachijo jima 2**	**4.96**	**201**	Sn	**Sn**	**13 23 41.9**	**-1.5**
	14nm,0.3s,baz=144,slow=23,SNR=9.5						
MKAR	**Makanchi Array**	**44.04**	**302**	P	**P**	**13 29 40.6**	**+1.0**
	0.3nm,0.8s,baz=91,slow=7.6,SNR=2.8						
KURBB	**Kurchatov Arra**	**45.84**	**307**	P	**P**	**13 29 53.5**	**-0.3**
	0.3nm,0.5s,baz=82,slow=8.1,SNR=3.5						
WRA	**Warramunga Arr**	**57.85**	**188**	P	**P**	**13 31 22.9**	**-0.7**
	0.9nm,1.0s,baz=5.3,slow=7.0,SNR=6.4						

IDC 06 13:25:06.1±1.9**, 1.°93N**×**124.°88E, h0**km**, mb3.2**/3**, mb1 3.4**/3**, mb1mx3.1**/49**, mbtmp3.2**/3**, Error ellipse: s-maj=202.9km s-min=24.8km az=64.0, Minahassa Peninsula, Sulawesi**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**23.63**	**157**	P	P	13 30 17.9	-1.3
	0.4nm,0.6s,baz=334,slow=11,SNR=8.2						
ASAR	**Alice Springs**	**26.91**	**161**	P	P	13 30 50.5	+1.3
	0.2nm,0.4s,baz=351,slow=14,SNR=6.5						
MKAR	**Makanchi Array**	**58.01**	**327**	P	P	13 35 00.6	-0.2
	0.2nm,0.6s,baz=131,slow=8.4,SNR=2.5						

DJA 06 13:36:33.4±4.2**, 10.°S**±5°×**10.°8E**±°**, h19**km±52km**, M4.1**/8**, mb4.4**/4**, MLv3.9**/8**, South of Jawa**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CMJI	**Cimerak**	**2.19**	**21**	P	Pn	13 37 08.3	-0.6
CMJI				S	Sn	13 37 35.4	-0.1
CISI	**Cisompet, Garu**	**2.28**	**4**	P	Pn	13 37 11.4	+1.3
CISI				S	Sn	13 37 38.7	+1.1
CNJI	**Cibinong**	**2.56**	**349**	P	Pn	13 37 14.5	+0.5
KPJI	**Karang Pucung**	**2.80**	**27**	P	Pn	13 37 18.3	+1.1
UGM	**Wanagama**	**3.43**	**56**	P	Pn	13 37 25.2	-0.8
UGM				S	Sn	13 38 02.6	-3.6
CGJI	**Cibinong**	**3.74**	**329**	P	Pn	13 37 33.0	+2.9
PCJI	**Pacitan**	**3.86**	**65**	P	Pn	13 37 31.2	-0.6
JAGI	**Jajag, Banyuwa**	**6.57**	**79**	P	Pn	13 38 08.7	-0.4
	41nm,1.7s,0.2nm						
ABJI	**Asem Bagus**	**6.83**	**73**	P	Pn	13 38 13.4	+0.8
	33nm,0.7s,0.2nm						
TWSI	**Taliwang, Sumb**	**9.19**	**84**	P	Pn	13 38 44.9	-0.1
	18nm,1.4s						
PLAI	**Plampang**	**10.05**	**85**	P	Pn	13 38 56.5	-0.4

IDC 06 13:49:52.7±66.0**, 3.°50N**×**97.°08E, h0**km**, mb3.6**/3**, mb1 3.6**/3**, mb1mx3.2**/56**, mbtmp3.6**/3**, Error ellipse: s-maj=1244.0km s-min=149.3km az=175.0, Northern Sumatera**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
H08S2	**Diego Garcia H**	**26.91**	**246**	T	T	14 22 17.0	
	baz=71						
H08S3	**Diego Garcia H**	**26.91**	**246**	T	T	14 22 15.4	
	baz=71						
H08S1	**Diego Carcia H**	**26.93**	**246**	T	T	14 22 16.9	
	baz=71						
SONM	**Songino Array**	**44.89**	**9**	P	P	13 58 09.0	-0.2
	0.2nm,0.7s,baz=180,slow=7.2,SNR=5.1						
MKAR	**Makanchi Array**	**45.00**	**346**	P	P	13 58 09.8	-0.1
	0.4nm,0.5s,baz=166,slow=9.1,SNR=6.8						
ZALV	**Zalesovo Beam**	**51.28**	**351**	P	P	13 58 58.3	-0.1
	0.4nm,0.4s,baz=179,slow=7.2,SNR=2.7						

IDC 06 13:50:02.0±601.0**, 47.°46N**×**48.°58E, h0**km**, Error ellipse: s-maj=221.3km s-min=139.2km az=49.0, Western Kazakhstan**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
I31KZ	**AKTYUBINSK INF**	**6.89**	**61**	*i*		14 30 20.0	
	baz=248,slow=319,SNR=22						
I43RU	**DUBNA INFRASON**	**11.59**	**327**	*i*		15 01 10.0	
	baz=137,slow=310,SNR=0.4						
I34MN	**SONGINO INFRAS**	**38.18**	**67**	*i*		17 47 10.0	
	baz=290,slow=328,SNR=0.3						

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*NIED **06** 13:54:00, 37.°60N×141.°60E, h53km, Mw5.1 Best double couple: M0 5.84000×10¹⁶ NP1: φs21.00000°, δ42.00000°, λ83.00000°. NP2: φs210.00000°, δ49.00000°, λ96.00000°.*

*MOS **06** 13:54:47.7±0.8, 37.°66N×141.°44E, h32km, mb5.6/77, MS4.1/9, Error ellipse: s-maj=6.6km s-min=3.8km az=104.2*

*BJI **06** 13:54:50.1, 37.°61N×141.°43E, h61km, mb5.3/73, mB5.0/46, Ms4.8/61, Ms7 4.6/58*

*ISCJB **06** 13:54:51.0±0.3, 37.°65N±0.°02×141.°45E±0.°02, h60km±2km, mb5.4/358, MS4.9/11, Error ellipse: s-maj=3.1km s-min=2.2km az=155.0*

*JMA **06** 13:54:51.1±0.1, 37.°63N×141.°57E, h46km±2km, M5.3*

JMA Felt IV J1.

*IDC **06** 13:54:51.4±0.4, 37.°66N×141.°56E, h52km±3km, mb5.0/40, mb1 5.1/46, mb1mx5.1/52, mbtmp5.2/46, MS4.7/5, Ms1 4.7/5, ms1mx4.1/52, Error ellipse: s-maj=10.1km s-min=7.7km az=100.0*

*NEIC **06** 13:54:52.2±0.3, 37.°65N×141.°43E, h60km±2km, mb5.4/240, MW5.3, Error ellipse: s-maj=2.7km s-min=1.9km az=139.0, Moment Tensor Solution. s14 Moment tensor: Scale 10¹⁷Nm; Mrr1.06; Mθθ-0.69; Mφφ-0.38; Mrθ0.13; Mθφ0.43; Mφr-0.30; Best double couple: M0 1.10000×10¹⁷ NP1: φs133.00000°, δ53.00000°, λ100.00000°. NP2: φs298.00000°, δ38.00000°, λ77.00000°. Principal axes: T 1.1200, Plg79.0000°, Azm83.0000°; N -0.1000, Plg8.0000°, Azm308.0000°; P -1.0200, Plg8.0000°, Azm217.0000°;*

NEIC Felt [II] at Tokyo. Also felt at Fukushima, Misawa, Musashino and Otawara. Recorded [4 JMA] in Miyagi.

*GCMT **06** 13:54:52.2±0.4, 37.°91N×141.°56E, h54km±1km, MW5.2/53, Moment Tensor Solution. s47,c67; s53,c77; Duration: 0 Moment tensor: Scale 10¹⁶Nm; Mrr7.51±.31; Mθθ-1.84±.20; Mφφ-5.68±.20; Mrθ-0.25±.17; Mθφ-1.96±.14; Mφr-0.46±.19; Best double couple: M0 7.02600×10¹⁶ NP1: φs203.00000°, δ47.00000°, λ90.00000°. NP2: φs22.00000°, δ43.00000°, λ89.00000°. Principal axes: T 7.5300, Plg88.0000°, Azm123.0000°; N -1.0170, Plg0.0000°, Azm23.0000°; P -6.5230, Plg2.0000°, Azm293.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

ISC 06 13:54:51.2±0.3**, 37.°67N**±0.°03×**141.°49E**±0.°03**, h53**km±2km**, h52**km**:pP-P, n1194,** σ1§**23**/1273**, mb5.4**/378**, MS4.9**/11**, 50C-33D, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**0.58**	**238**	⇑P	**Pn**	**13 55 03.6**	**+0.1**
JFK				S	**Sn**	**13 55 12.3**	**-0.2**
JMM	**Marumori**	**0.59**	**290**	⇓P	**Pn**	**13 55 04.3**	**+0.7**
JMM				S	**Sn**	**13 55 13.7**	**+1.1**
JIO	**Ouri**	**0.79**	**352**	⇑P	**Pn**	**13 55 06.5**	**+0.3**
JIO				S	**Sn**	**13 55 17.2**	**+0.1**
ONAJ	**Iwakimizuishiy**	**0.79**	**224**	⇑P	**Pn**	**13 55 06.1**	**-0.2**
ONAJ				S	**Sn**	**13 55 16.6**	**-0.7**
JFT	**Otama**	**0.93**	**261**	⇓P	**Pn**	**13 55 09.4**	**+1.4**
JFT				S	**Sn**	**13 55 22.5**	**+2.0**
JOU	**Okura**	**0.95**	**317**	⇓P	**Pn**	**13 55 09.1**	**+0.8**
JOU				S	**Sn**	**13 55 22.2**	**+1.2**
JYS	**Shirataka**	**1.25**	**296**	⇓P	**Pn**	**13 55 13.5**	**+1.1**
I30JP	**ISUMI INFRASON**	**2.54**	**202**	P	**Pn**	**13 55 32.1**	**+2.2**
	baz=21,slow=15,SNR=0.5						
I30JP				S	**Sn**	**13 56 00.8**	**+1.1**
	baz=67,slow=251						
MJAR	**Matsushiro Arr**	**2.86**	**248**	P	**Pn**	**13 55 36.0**	**+1.7**
	142nm,0.3s,baz=55,slow=10,SNR=880						
MJAR				S	**Sn**	**13 56 12.2**	**+4.7**
	239nm,0.3s,baz=92,slow=15,SNR=5.6						
MJAR				LR	LR	13 56 56.5	
	comp=Z,9µm,19.2s,baz=70,slow=43						
MAJO	**Matsushiro**	**2.86**	**248**	*e*P	**Pn**	**13 55 36.4**	**+2.1**
MAJO	**Matsushiro**	**2.86**	**248**	*e*Pn	**Pn**	**13 55 36.4**	**+2.1**
MAT	**Matsushiro**	**2.86**	**248**	P	**Pn**	**13 55 36.3**	**+2.0**
MAT				S	**Sn**	**13 56 13.1**	**+5.6**
INU	**Inuyama**	**4.29**	**239**	*e*Pn	**Pn**	**13 55 56.4**	**+2.6**
ERM	**Erimo**	**4.52**	**16**	*de*P	**Pn**	**13 55 55.9**	**-1.1**
ERM				pmax	pmax		
	comp=Z,131nm,0.6s						
ERM	**Erimo**	**4.52**	**16**	*e*Pn	**Pn**	**13 55 56.0**	**-1.1**
JHJ2	**Mitsune**	**4.75**	**197**	*e*Pn	**Pn**	**13 55 59.1**	**-1.1**
JHJ	**Hachijo jima 2**	**4.75**	**198**	P	**Pn**	**13 55 59.4**	**-0.9**
	comp=Z,687nm,0.3s,baz=5.0,slow=2.7,SNR=147						
JHJ				S	**Sn**	**13 56 50.1**	**-3.9**
	comp=Z,506nm,0.3s,baz=248,slow=22,SNR=15						
JHJ				LR	LR	13 58 15.6	
	comp=Z,3µm,20.9s,baz=59,slow=43						
YUK	**Yuzh-Kuril'sk**	**7.17**	**26***c*	*i*P	**Pn**	**13 56 30.3**	**-2.9**
YUK				*e*S	**Sn**	**13 57 45.0**	**-8.2**
YUK				pmax	pmax		
	comp=Z,762nm,0.4s						
YUK				pmax	pmax		
	comp=N,287nm,0.3s						
YUK				pmax	pmax		
	comp=E,178nm,0.3s						
YUK				MLR	MLR		
	comp=Z,2µm,14.0s						
SHO	**Shikotan**	**7.40**	**32**	*e*P	**Pn**	**13 56 33.3**	**-3.1**
SHO				pmax	pmax		
	comp=Z,250nm,0.4s						
SHO				pmax	pmax		
	comp=E,171nm,0.5s						
SHO				pmax	pmax		
	comp=N,236nm,0.3s						
KUR	**Kuril'sk**	**8.94**	**30**	*e*P	**Pn**	**13 56 56.1**	**-1.4**
KUR				*e*S	**Sn**	**13 58 30.7**	**-6.0**
KUR				pmax	pmax		
	comp=E,36nm,0.8s						
KUR				pmax	pmax		
	comp=Z,110nm,0.8s						
KUR				pmax	pmax		
	comp=N,37nm,0.5s						
KUR				pmax	pmax		
	comp=Z,560nm,3.5s						
KUR				smax	smax		
	comp=E,350nm,0.7s						
KUR				smax	smax		
	comp=N,207nm,0.5s						
KUR				smax	smax		
	comp=N,615nm,3.7s						
KUR				smax	smax		
	comp=E,354nm,1.9s						
VLA	**Vladivostok**	**9.12**	**310**	*de*P	**Pn**	**13 57 04.3**	**+4.2**
YSS	**Yuzh-Sakhalins**	**9.32**	**5**⇓	*e*P	**Pn**	**13 57 03.2**	**+0.4**
YSS				*e*S	**Sn**	**13 58 44.5**	**-1.6**
YSS				pmax	pmax		
	comp=Z,80nm,0.8s						
YSS				MLR	MLR		
	comp=Z,2µm,11.0s						
YSS				MLR	MLR		
	comp=N,1µm,12.0s						
YSS				MLR	MLR		
	comp=E,1µm,16.0s						
YSS	**Yuzh-Sakhalins**	**9.32**	**5**	*e*Pn	**Pn**	**13 57 02.1**	**-0.7**
USRK	**Ussuriysk Ar.**	**9.70**	**315**	P	**Pn**	**13 57 10.1**	**+2.1**
	comp=E,4.8nm,0.3s,baz=117,slow=14,SNR=84						
USRK				LR	LR	14 00 48.4	
	comp=E,3µm,18.3s,baz=113,slow=37						
JNU	**Nakatsue**	**9.78**	**246**	P	**Pn**	**13 57 11.6**	**+2.5**
	comp=E,3.9nm,0.3s,baz=74,slow=2.9,SNR=36						
JNU				LR	LR	14 01 19.3	
	comp=E,4µm,21.2s,baz=57,slow=40						
CBIJ	**Chichi jima**	**10.56**	**177**	*e*Pn	**Pn**	**13 57 16.3**	**-3.5**
CBIJ				*e*Sn	Sn	13 59 06.7	-10
JCJ	**Chichijima**	**10.56**	**177**	P	**Pn**	**13 57 15.2**	**-4.6**
	comp=E,65nm,0.3s,baz=90,slow=23,SNR=15						
JCJ				S	Sn	13 59 05.7	-11
	comp=E,116nm,0.3s,baz=292,slow=21,SNR=7.7						
KSRS	**Korea Array**	**10.78**	**273**	P	**Pn**	**13 57 27.4**	**+4.7**
	comp=E,4.5nm,0.3s,baz=85,slow=14,SNR=109						
KSRS				LR	LR	14 01 13.0	
	comp=E,3µm,21.4s,baz=80,slow=35						
KS01	**Wonju Array Si**	**10.80**	**273**	*e*Pn	**Pn**	**13 57 26.4**	**+3.4**
KS15	**Wonju Array Si**	**10.81**	**273**	*e*Pn	**Pn**	**13 57 27.1**	**+4.0**
KSAR	**Wonju Array Be**	**10.81**	**273**	P	**Pn**	**13 57 27.4**	**+4.3**
KSAR	**Wonju Array Be**	**10.81**	**273**	P	**Pn**	**13 57 27.4**	**+4.3**
MDJ	**Mudanjiang**	**11.33**	**311**	*e*Pn	**Pn**	**13 57 32.5**	**+2.2**
HABR	**Khabarovsk**	**11.77**	**339**	*e*P	**Pn**	**13 57 34.5**	**-1.7**
HABR				*e*S	**Sn**	**13 59 45.5**	**-0.5**
HABR				pmax	pmax		
	comp=N,56nm,1.2s						
HABR				pmax	pmax		
	comp=E,35nm,1.2s						
HABR				pmax	pmax		
	comp=Z,58nm,1.2s						
HABR				MLR	MLR		
	comp=Z,919nm,13.0s						
INCN	**Inchon**	**11.79**	**274**	*e*Pn	**Pn**	**13 57 40.4**	**+3.8**
INCN	**Inchon**	**11.79**	**274**	Pn	**Pn**	**13 57 41.1**	**+4.5**
	SNR=13						
TYV	**Tymovskoe**	**13.21**	**3**	*e*P	**Pn**	**13 57 55.5**	**-0.4**
TYV				pmax	pmax		
	comp=Z,108nm,0.8s						
TYV				MLR	MLR		
	comp=Z,2µm,18.0s						
KLR	**Kul'dur**	**13.53**	**332**	P	**Pn**	**13 58 00.5**	**+0.2**
	comp=Z,1.4nm,0.3s,baz=161,slow=9.4,SNR=15						
CN2	**Changchun**	**13.61**	**302**	*e*P	**Pn**	**13 58 02.6**	**+1.2**
CN2				*e*S	**Sn**	**14 00 32.7**	**+1.8**
CN2				pmax	pmax		
	comp=Z,30nm,1.0s						
CN2				LR	LR		
	comp=Z,1µm,18.0s						
CN2				LR	LR		
	comp=Z,2µm,18.0s						
CN2				LR	LR		
	comp=Z,2µm,23.0s						
SNY	**Shenyang**	**14.39**	**292**	⇓P	**Pn**	**13 58 12.8**	**+1.0**
SNY				sP	sP	13 58 32.3	
SNY				S	**Sn**	**14 00 42.0**	**-7.8**
SNY				pmax	pmax		
	comp=Z,36nm,1.7s						
SNY				pmax	pmax		
	comp=Z,310nm,6.1s						
SNY				LR	LR		
	comp=Z,1µm,21.5s						
SNY				LR	LR		
	comp=Z,3µm,21.3s						
SNY				LR	LR		
	comp=Z,4µm,18.6s						
NKL	**Nikolayevsk**	**15.49**	**358**	*e*P	**Pn**	**13 58 24.0**	**-2.0**
NKL				pmax	pmax		
	comp=Z,34nm,1.0s						
NKL				MLR	MLR		
	comp=N,800nm,17.0s						
NKL				MLR	MLR		
	comp=E,800nm,17.0s						
NKL				MLR	MLR		
	comp=Z,1µm,17.0s						
DL2	**Dalian**	**15.65**	**281**	P	**Pn**	**13 58 29.1**	**+1.0**
DL2				S	**Sn**	**14 01 18.9**	**-1.6**
DL2				pmax	pmax		
	comp=Z,280nm,0.7s						
DL2				pmax	pmax		
	comp=Z,550nm,11.2s						
DL2				LR	LR		
	comp=Z,600nm,14.8s						
DL2				LR	LR		
	comp=Z,1µm,18.7s						
DL2				LR	LR		
	comp=Z,2µm,20.9s						
SKR	**Severo-Kuril's**	**16.67**	**34**	P	Pn	13 58 28.0	-13
SKR				pmax	pmax		
	comp=E,70nm,0.8s						
SKR				pmax	pmax		
	comp=Z,70nm,0.8s						
SSE	**Sheshan**	**17.98**	**255**	P	**P**	**13 58 57.1**	**-0.1**
SSE				pP	**pP**	**13 59 08.9**	**-0.1**
SSE				sP	**sP**	**13 59 15.8**	**+0.1**
SSE				S	**Sn**	**14 02 14.8**	**-2.2**
SSE				pmax	pmax		
	comp=Z,32nm,0.7s						
SSE				pmax	pmax		
	comp=Z,34nm,3.5s						
SSE				LR	LR		
	comp=Z,730nm,22.7s						
SSE				LR	LR		
	comp=Z,630nm,22.5s						
PEA0	**Petropavlovsk-**	**19.11**	**31**	*e*P	**P**	**13 59 09.5**	**+0.1**
PEA0B	**Petropavlovsk-**	**19.11**	**31**	*e*P	**Pn**	**13 59 10.2**	**-0.5**
	comp=Z,72nm,1.0s						
PETK	**Petropavlovsk-**	**19.11**	**31**	P	**P**	**13 59 10.1**	**+0.6**
	comp=Z,0.9nm,0.3s,baz=210,slow=8.6,SNR=18						
PETK				LR	LR	14 07 52.0	
	comp=Z,305nm,18.0s,baz=211,slow=41						
NJ2	**Nanjing**	**19.39**	**260**	*e*P	**P**	**13 59 12.6**	**0.0**
NJ2				S	S	14 02 32.3	-17
NJ2				pmax	pmax		
	comp=Z,31nm,0.5s						
NJ2				pmax	pmax		
	comp=Z,280nm,3.5s						
NJ2				LR	LR		
	comp=Z,930nm,22.8s						
NJ2				LR	LR		
	comp=Z,1µm,21.1s						
NJ2				LR	LR		
	comp=Z,810nm,21.1s						
PET	**Petropavlovsk**	**19.44**	**32**	*e*P	**Pn**	**13 59 13.9**	**-0.8**
PET				*e*S	**S**	**14 02 47.4**	**-2.5**
PET				pmax	pmax		
	comp=Z,64nm,1.0s						
PET				pmax	pmax		
	comp=Z,200nm,10.3s						
PET				MLR	MLR		
	comp=Z,700nm,15.0s						
PET				MLR	MLR		
	comp=Z,500nm,15.0s						
PET	**Petropavlovsk**	**19.44**	**32**	*e*P	**P**	**13 59 13.5**	**+0.5**
	comp=Z,76nm,1.1s						
HIA	**Hailar**	**19.51**	**313**	*e*P	**P**	**13 59 13.0**	**-0.9**
HIA				pmax	pmax		
	comp=Z,18nm,0.6s						
HIA	**Hailar**	**19.51**	**313**	*e*P	**P**	**13 59 13.0**	**-0.9**
	comp=Z,18nm,0.6s						
TIA	**Tai'an**	**19.52**	**273**	⇓P	**P**	**13 59 13.9**	**-0.2**
TIA				S	**S**	**14 02 47.5**	**-4.3**
TIA				pmax	pmax		
	comp=Z,60nm,1.1s						
TIA				LR	LR		
	comp=Z,960nm,14.2s						
TIA				LR	LR		
	comp=Z,1µm,15.0s						
TIA				LR	LR		
	comp=Z,1µm,15.5s						
BJI	**Beijing**	**19.84**	**285**	P	**P**	**13 59 16.6**	**-0.9**
BJI				S	**S**	**14 02 51.5**	**-6.5**
BJI				pmax	pmax		
	comp=Z,43nm,1.5s						
BJI				pmax	pmax		
	comp=Z,170nm,3.9s						
BJI				LR	LR		
	comp=Z,510nm,13.7s						
BJI				LR	LR		
	comp=Z,590nm,21.2s						
BJI				LR	LR		
	comp=Z,1µm,28.7s						
BJT	**Baijiatuau**	**19.85**	**285**	*e*P	**P**	**13 59 16.8**	**-0.8**
BJT				pmax	pmax		
	comp=Z,173nm,0.6s						
BJT	**Baijiatuau**	**19.85**	**285**	*e*P	**P**	**13 59 16.8**	**-0.8**
	comp=Z,173nm,0.6s						
YHNB	**Yeheng**	**21.49**	**239**	*e*P	**P**	**13 59 33.3**	**-2.2**
	comp=Z,55nm,0.6s						
NACB	**Ninganchiao**	**21.68**	**237**	*e*P	**P**	**13 59 35.1**	**-2.3**
	comp=Z,75nm,1.3s						
CLNS	**Chul'man**	**22.13**	**335**	*e*P	**P**	**13 59 41.1**	**-1.0**
CLNS				*e**PP	**pP**	**13 59 54.1**	**0.0**
CLNS				*e*		14 00 07.0	
CLNS				*e*		14 03 34.7	
CLNS				*e*S	**S**	**14 03 39.9**	**-2.7**
CLNS				*e*SS	**SnSn**	**14 04 15.9**	**+3.4**
CLNS				pmax	pmax		
	comp=N,45nm,1.3s						
CLNS				pmax	pmax		
	comp=E,13nm,1.1s						
CLNS				pmax	pmax		
	comp=Z,40nm,0.8s						
CLNS				pmax	pmax		
	comp=E,23nm,0.8s						
CLNS				pmax	pmax		
	comp=N,46nm,0.8s						
CLNS				pmax	pmax		
	comp=Z,21nm,0.9s						
CLNS				smax	smax		
	comp=E,189nm,9.8s						
CLNS				smax	smax		
	comp=N,415nm,9.0s						
CLNS				MLR	MLR		
	comp=Z,785nm,16.0s						
CLNS				MLR	MLR		
	comp=N,532nm,16.0s						
CLNS				MLR	MLR		
	comp=E,587nm,14.0s						
SSLB	**Suanglung**	**22.37**	**238**	*e*P	**P**	**13 59 41.4**	**-3.5**
	comp=E,63nm,0.8s						

YULB	Yu-li	22.41	236	eP	P	13 59 41.0	-4.3
	comp=E,35nm,0.6s						
MA2	Magadan	22.72	12	P	P	13 59 48.0	-0.3
	comp=E,44nm,0.7s,baz=220,slow=9.4,SNR=92						
MA2	Magadan	22.72	12	eP	P	13 59 47.7	-0.6
	comp=E,207nm,0.8s						
TPUB	Ta-pu	22.92	237	eP	P	13 59 46.6	-4.1
	comp=E,160nm,1.2s						
TWG	Pinlang	22.96	236	eP	P	13 59 48.2	-2.9
	comp=E,310nm,0.8s						
QZH	Quanzhou	23.25	244	P	P	13 59 48.0	-5.9
QZH				S	S	14 03 52.7	-9.4
QZH				LR	LR		
	comp=E,1µm,7.1s						
QZH				LR	LR		
	comp=E,2µm,13.0s						
QZH				LR	LR		
	comp=E,2µm,11.0s						
HHC	Hu-ho-hao-te	23.34	287	eP	P	13 59 54.3	-0.5
HHC				PP	PnPn	14 00 29.7	+7.1
HHC				S	S	14 04 03.3	-0.3
HHC				pmax	pmax		
	comp=E,88nm,0.7s						
HHC				pmax	pmax		
	comp=E,140nm,4.6s						
HHC				LR	LR		
	comp=E,3µm,12.1s						
HHC				LR	LR		
	comp=E,3µm,13.8s						
HHC				LR	LR		
	comp=E,3µm,13.2s						
WHN	Wuhan	23.52	260⇓	iP	P	13 59 56.4	-0.1
WHN				S	S	14 03 58.3	-8.2
WHN				pmax	pmax		
	comp=E,150nm,0.7s						
WHN				LR	LR		
	comp=E,2µm,9.0s						
WHN				LR	LR		
	comp=E,2µm,12.9s						
WHN				LR	LR		
	comp=E,4µm,17.0s						
CIT	Chita	24.27	315	eP	P	14 00 01.3	-1.9
CIT				e		14 00 12.5	
CIT				e		14 00 34.2	
CIT				e		14 00 52.5	
CIT				e		14 04 16.0	
CIT				pmax	pmax		
	comp=Z,317nm,1.3s						
YAK	Yakutsk	25.46	347	P	P	14 00 14.3	+0.4
	comp=Z,11nm,0.5s,baz=341,slow=22,SNR=46						
YAK	Yakutsk	25.46	347	eP	P	14 00 13.7	-0.2
YAK				eS	S	14 04 39.3	+2.3
YAK				pmax	pmax		
	comp=Z,167nm,0.7s						
YAK	Yakutsk	25.46	347	eP	P	14 00 13.7	-0.2
	comp=Z,167nm,0.7s						
YAK				eS	S	14 04 39.3	+2.3
SEY	Seymchan	26.15	11	P	P	14 00 21.4	+1.3
	comp=Z,57nm,0.7s,baz=201,slow=8.5,SNR=145						
SEY	Seymchan	26.15	11⇑	eP	P	14 00 21.3	+1.2
XAN	Xi'an	26.57	272	P	P	14 00 23.9	-0.4
XAN				pP	pP	14 00 38.3	+0.7
XAN				sP	sP	14 00 45.7	+1.8
XAN				PP	PnPn	14 01 07.0	+0.1
XAN				S	S	14 04 48.5	-6.7
XAN				sS	sS	14 05 13.0	-4.9
XAN				pmax	pmax		
	comp=Z,130nm,0.6s						
BOD	Bodaibo	27.03	327⇓	iP	P	14 00 27.6	-0.4
BOD				e		14 00 38.6	
BOD				pmax	pmax		
	comp=Z,37nm,0.8s						
ENH	Enshi	27.45	264	eP	P	14 00 31.5	-0.7
	comp=Z,194nm,0.8s						
SONA1	Songino Array	27.48	303	eP	P	14 00 32.6	+0.2
SONM	Songino Array	27.49	303	P	P	14 00 33.7	+1.3
	comp=Z,27nm,0.6s,baz=103,slow=9.2,SNR=206						
SONM				PcP	PcP	14 03 49.3	-0.3
	comp=Z,3.7nm,0.6s,baz=123,slow=2.1,SNR=4.9						
BCPH	Baguio City Da	28.10	227⇓	eP	P	14 00 40.6	+2.4
H11N2	WAKE ISLAND Hy	28.43	122	T	T	14 30 51.9	
	baz=316,slow=75,SNR=3952						
H11N1	WAKE ISLAND Hy	28.43	122	T	T	14 31 14.3	
	baz=316,slow=75,SNR=5690						
H11N3	WAKE ISLAND Hy	28.44	122	T	T	14 31 12.0	
	baz=316,slow=75,SNR=3638						
H11S1	WAKE ISLAND Hy	29.16	124	T	T	14 31 54.1	
	baz=317,slow=76,SNR=617						
H11S3	WAKE ISLAND Hy	29.16	124	T	T	14 31 58.2	
	baz=317,slow=76,SNR=637						
H11S2	WAKE ISLAND Hy	29.17	124	T	T	14 31 56.6	
	baz=317,slow=76,SNR=241						
IRK	Irkutsk	29.72	311	eP	P	14 00 52.3	+0.2
IRK				pmax	pmax		
	comp=Z,36nm,2.3s						
ZAK	Zakamensk	29.93	307	eP	P	14 00 54.8	+0.7
ZAK				pmax	pmax		
	comp=Z,28nm,1.0s						
TLY	Talaya	29.96	310	eP	P	14 00 56.0	+1.7
TLY				pmax	pmax		
	comp=Z,27nm,1.0s						
TLY	Talaya	29.96	310	eP	P	14 00 55.2	+0.9
	comp=Z,29nm,1.0s						
LZH	Lanzhou	30.03	279	eP	P	14 00 55.6	+0.4
LZH				pP	sP	14 01 11.9	-3.0
LZH				sP	pP	14 01 18.1	+9.5
LZH				PP	PnPn	14 01 55.0	+1.4
LZH				PcP	PcP	14 03 57.8	+1.6
LZH				eS	S	14 05 48.4	-1.4
LZH				sS	sS	14 06 14.5	+2.0
LZH				SS	SnSn	14 07 25.0	-0.7
LZH				pmax	pmax		
	comp=Z,99nm,1.4s						
LZH				pmax	pmax		
	comp=Z,220nm,5.2s						
GYA	Guiyang	31.39	259⇑	iP	P	14 01 06.7	-0.6
GYA				pP	pP	14 01 22.8	+2.1
GYA				sP	sP	14 01 30.2	+3.2
GYA				PP	PnPn	14 02 12.6	+1.1
GYA				PcP	PcP	14 04 01.8	+1.9
GYA				S	S	14 06 10.2	-1.0
GYA				sS	sS	14 06 35.0	+1.0
GYA				ScP	ScP	14 07 37.8	-0.6
GYA				SS	SnSn	14 07 58.9	-0.2
GYA				ScS	ScS	14 11 33.0	-3.4
GYA				pmax	pmax		
	comp=Z,130nm,1.0s						
GYA				pmax	pmax		
	comp=Z,190nm,6.8s						
GYA				LR	LR		
	comp=Z,880nm,16.0s						
GYA				LR	LR		
	comp=Z,750nm,16.2s						
GYA				LR	LR		
	comp=Z,930nm,16.6s						
MOY	Mondy	31.58	309	eP	P	14 01 09.5	+0.9
MOY				pmax	pmax		
	comp=Z,21nm,1.1s						
CD2	Chengdu	31.74	269	P	P	14 01 08.8	-1.4
CD2				sP	sP	14 01 29.9	0.0
CD2				PP	PP	14 02 21.1	-1.4
CD2				S	S	14 06 14.9	-1.5
CD2				sS	sS	14 06 39.5	+0.3
CD2				pmax	pmax		
	comp=Z,80nm,0.6s						
CD2				pmax	pmax		
	comp=Z,160nm,4.9s						
GTA	Gaotai	32.44	286	eP	P	14 01 16.2	-0.2
GTA				pP	pP	14 01 31.3	+1.5
GTA				sP	sP	14 01 38.5	+2.4
GTA				PcP	PcP	14 04 03.6	+1.1
GTA				S	S	14 06 27.6	+0.2
GTA				sS	sS	14 06 53.8	+3.7
GTA				ScP	ScP	14 07 44.1	+2.3
GTA				pmax	pmax		
	comp=Z,10.0nm,1.0s						
GTA				pmax	pmax		
	comp=Z,110nm,6.7s						
GTA				LR	LR		
	comp=Z,2µm,17.6s						
GTA				LR	LR		
	comp=Z,3µm,16.2s						
GTA				LR	LR		
	comp=Z,1µm,17.6s						
BILL	Bilibino	33.40	17c	iP	P	14 01 24.1	-0.1
BILL				i		14 01 32.3	
BILL				i		14 04 04.6	
BILL				iS	S	14 06 37.1	-4.2
BILL				pmax	pmax		
	comp=Z,20nm,1.1s						
BILL				MLR	MLR		
	comp=Z,937nm,18.0s						
BILL	Bilibino	33.40	17	eP	P	14 01 23.6	-0.6
	comp=Z,12nm,0.7s						
TIXI	Tiksi	34.66	353c	iP	P	14 01 34.8	-0.3
TIXI				pmax	pmax		
	comp=Z,10.0nm,0.5s						
TIXI	Tiksi	34.66	353	eP	P	14 01 34.1	-1.0
	comp=Z,15nm,0.6s						
KMI	Kunming	35.12	260	P	P	14 01 39.9	0.0
KMI				pP	pP	14 01 53.1	-0.4
KMI				sP	sP	14 01 58.9	-0.8
KMI				pmax	pmax		
	comp=Z,80nm,1.1s						
KMI				pmax	pmax		
	comp=Z,210nm,3.1s						
KRAR	Krasnoyarsk	37.05	316	P	P	14 01 56.0	+0.3
KRAR				pmax	pmax		
	comp=Z,19nm,0.5s						
GAMB	Gambell	38.14	32	eP	P	14 02 04.7	-0.1
	comp=Z,14nm,1.1s						
MYLDM	Lahad Datu	38.55	219	eP	P	14 02 10.3	+1.5
	comp=Z,98nm,0.9s						
SKNT	Sakolnakorn	38.84	248	P	P	14 02 11.9	+0.7
	comp=Z,47nm,1.2s						
SWI	Sorong	39.49	196	P	P	14 02 17.3	+0.7
	comp=Z,53nm,0.9s						
JAY	Jayapura	39.99	181	P	P	14 02 20.9	+0.1
	comp=Z,1.8nm,0.7s,baz=300,slow=23,SNR=5.3						
JAY	Jayapura	39.99	181	P	P	14 02 21.4	+0.6
	comp=Z,32nm,1.0s						
GENI	Genyem	40.08	182	P	P	14 02 22.3	+0.8
	comp=Z,128nm,0.9s						
KHON	Khomkaen	40.09	249	P	P	14 02 22.4	+0.7
	comp=Z,21nm,0.8s						
LBMI	Labuha	40.25	202	P	P	14 02 23.5	+0.5
	comp=Z,72nm,0.9s,comp=Z,1µm						
WMQ	Urumqi	40.61	296	P	P	14 02 27.5	+1.7
WMQ				sP	sP	14 02 45.2	-0.5
WMQ				PP	PnPn	14 04 02.3	-2.0
WMQ				PcP	PcP	14 04 25.6	-1.3
WMQ				S	S	14 08 32.6	+0.9
WMQ				SS	SS	14 11 28.0	-5.1
WMQ				pmax	pmax		
	comp=Z,56nm,1.0s						
WMQ				pmax	pmax		
	comp=Z,99nm,4.0s						
WMQ				LR	LR		
	comp=Z,790nm,19.4s						
WMQ				LR	LR		
	comp=Z,1µm,24.0s						
WMQ				LR	LR		
	comp=Z,580nm,22.8s						
CMAI	Chiengmai2	40.79	256	P	P	14 02 28.5	+0.9
	comp=Z,49nm,0.4s						
UTTA	Uttaradit	40.92	252	P	P	14 02 29.0	+0.5
	comp=Z,7.2nm,0.9s,comp=Z,76nm						
LAMP	Lampang	41.16	254	P	P	14 02 31.6	+1.1
	comp=Z,10nm,0.7s						
MRSI	Marisa	41.17	211	P	P	14 02 31.3	+0.8
	comp=Z,87nm,1.1s						
FAKI	Fak Fak	41.29	194	P	P	14 02 31.3	-0.2
	comp=Z,132nm,0.8s,comp=Z,1µm						
FAKI	Fak Fak	41.29	194	eP	P	14 02 30.8	-0.7
	comp=Z,100nm,0.8s						
PBKT	Sadao Pong	41.33	251	P	P	14 02 32.2	+0.4
	comp=Z,33nm,1.1s						
CHTO	Chiang Mai	41.51	255	P	P	14 02 33.6	+0.2
	comp=Z,136nm,1.1s,comp=Z,1µm						
CHTO	Chiang Mai	41.51	255	eP	P	14 02 33.5	+0.2
CHTO				pmax	pmax		
	comp=Z,20nm,0.6s						
CHTO	Chiang Mai	41.51	255	eP	P	14 02 32.9	-0.5
	comp=Z,20nm,0.6s						
CHTO	Chiang Mai	41.51	255	P	P	14 02 25.1	-8.3
	SNR=12						
ZAA0	Zalesovo Array	41.53	312	eP	P	14 02 33.0	-0.1
ZALV	Zalesovo Beam	41.53	312	P	P	14 02 33.9	+0.8
	comp=Z,30nm,0.6s,baz=90,slow=6.7,SNR=99						
ZALV				PcP	PcP	14 04 29.8	+0.1
	comp=Z,9.4nm,0.6s,baz=99,slow=3.3,SNR=3.5						
ZALV				pPcP		14 04 44.6	
	comp=Z,5.1nm,0.6s,baz=96,slow=3.5,SNR=3.9						
CM31	Chiang Mai Arr	41.72	255	eP	P	14 02 34.6	-0.5
CMAR	Chiang Mai Arr	41.72	255	P	P	14 02 35.6	+0.6
	comp=Z,5.8nm,0.7s,baz=44,slow=8.7,SNR=38						
CMAR				PcP	PcP	14 04 31.8	+0.9
	comp=Z,5.1nm,0.7s,baz=26,slow=2.8,SNR=6.6						
CM01	Chiang Mai Arr	41.73	255	eP	P	14 02 34.7	-0.5
SANI	Sanana	42.05	204	P	P	14 02 38.8	+1.1
	comp=Z,166nm,0.9s,comp=Z,1µm						
LSA	Lhasa	42.22	275	P	P	14 02 41.0	+1.4
LSA				pmax	pmax		
	comp=Z,18nm,1.2s						
LSA	Lhasa	42.22	275	eP	P	14 02 40.7	+1.1
LSA				pmax	pmax		
	comp=Z,43nm,1.0s						
LSA	Lhasa	42.22	275	eP	P	14 02 40.7	+1.1
	comp=Z,43nm,1.0s						
LUWI	Luwuk	42.23	209	P	P	14 02 41.7	+2.5
	comp=Z,124nm,1.1s,comp=Z,2µm						
LUWI	Luwuk	42.23	209	eP	P	14 02 39.3	+0.1
	comp=Z,189nm,1.3s						
NVS	Novosibirsk	42.45	313⇓	iP	P	14 02 41.5	+1.0
NVS				eS	S	14 08 57.8	-0.6
NVS				pmax	pmax		
	comp=N,8.0nm,1.2s						
NVS				pmax	pmax		
	comp=Z,63nm,1.2s						
NVS				pmax	pmax		
	comp=E,43nm,1.1s						
NVS				smax	smax		
	comp=E,81nm,2.3s						
NVS				smax	smax		
	comp=N,17nm,1.7s						
APSI	Ampana	42.55	210	P	P	14 02 42.1	+0.3
	comp=N,186nm,1.2s,comp=N,2µm						
MHMT	Maesarieng	42.66	255	P	P	14 02 44.0	+1.3
	comp=N,22nm,1.2s,comp=N,308nm						
NRIK	Noril'sk	42.72	335	P	P	14 02 42.6	+0.1
	comp=N,11nm,0.5s,baz=106,slow=9.7,SNR=14						
CHBT	CHBT	42.80	245	P	P	14 02 44.7	+0.9
	comp=N,38nm,1.1s,comp=N,4µm						
NLAI	Namlea	42.84	201	P	P	14 02 45.0	+0.9
	comp=N,62nm,0.9s,comp=N,634nm						
BNDI	Bandanaira	43.34	197	P	P	14 02 48.2	+0.1
	comp=N,368nm,1.0s,comp=N,3µm						
CHGN	Chignik	43.47	45	eP	P	14 02 48.2	-0.5
MK01	Makanchi Array	43.83	302	eP	P	14 02 52.5	+0.6
MK31	Makanchi Array	43.84	302	eP	P	14 02 52.8	+0.9
MK31	Makanchi Array	43.84	302	eP	P	14 02 52.5	+0.5
MKAR	Makanchi Array	43.84	302	P	P	14 02 52.6	+0.7
	comp=N,19nm,0.5s,baz=86,slow=10,SNR=264						
MAKZ	Makanchi	44.05	302	eP	P	14 02 54.2	+0.6
MAKZ				pmax	pmax		
	comp=Z,60nm,1.1s						
MAKZ	Makanchi	44.05	302	eP	P	14 02 54.2	+0.6
	comp=Z,60nm,1.1s						
SRDT	SRDT	44.11	250	P	P	14 02 55.1	+0.7
	comp=Z,62nm,1.2s						
SBUM	Sibu	44.16	225	eP	P	14 02 54.9	+0.1
	comp=Z,26nm,1.0s						
TT01	Tatalina	44.86	35	eP	P	14 03 00.7	+0.9
TTA	Tatalina	44.86	35	eP	P	14 03 00.7	+0.7
TTA				pmax	pmax		
	comp=Z,32nm,1.5s						
TTA	Tatalina	44.86	35	eP	P	14 03 00.7	+0.7
	comp=Z,32nm,1.5s						
BKB	Balikpapan	44.92	216	P	P	14 03 02.4	+1.5
	comp=Z,195nm,1.0s						
SVW2	Sparrevohn	44.98	38	eP	P	14 03 02.4	+1.5
	comp=Z,36nm,0.7s						
TTSI	Tana Toraja	45.23	211	P	P	14 03 04.1	+0.8
	comp=Z,20nm,1.4s						
KURK	Kurchatov	45.59	308	P	P	14 03 06.8	+1.0
KURK				S	S	14 09 42.5	-1.7
KURK				pmax	pmax		
	comp=Z,105nm,0.6s						
KURK				smax	smax		
	comp=N,2.0nm,0.9s						
KURK	Kurchatov	45.59	308	eP	P	14 03 06.1	+0.3
	comp=N,200nm,0.7s						
KURK				S	S	14 09 42.5	-1.7
KURK	Kurchatov	45.59	308	P	P	14 03 06.3	+0.5
	SNR=81						
KURK	Kurchatov	45.59	308	P	P	14 03 06.3	+0.5
	SNR=81						
MTKI	Muara Teweh, K	45.61	219	P	P	14 03 08.1	+1.8
	comp=N,108nm,1.0s,comp=N,18µm						
KURBB	Kurchatov Arra	45.66	308	P	P	14 03 06.8	+0.5
	comp=N,105nm,0.6s,baz=81,slow=7.8,SNR=411						
KURBB				S	S	14 09 42.5	-2.7
	comp=N,2.0nm,0.9s,baz=81,slow=14,SNR=7.0						
TAPN	Taplejung	45.96	273	eP	P	14 03 10.3	+0.9
	comp=N,106nm,0.4s						
KSM	Kuching	46.04	226	eP	P	14 03 10.4	+0.7
	comp=N,272nm,1.6s						
SPSI	Sidrap Palu	46.08	211	P	P	14 03 09.6	-0.4
	comp=N,44nm,1.1s						
OHAK	Old Harbor	46.25	43	eP	P	14 03 10.8	-0.1
	comp=N,64nm,0.8s						
RSO	Redoubt South	46.37	39	eP	P	14 03 12.7	+0.7
SAUI	Saumlaki	46.41	194	eP	P	14 03 12.9	+0.4
	comp=N,189nm,1.0s						
ODAN	Odare	46.44	273	eP	P	14 03 13.8	+0.7
	comp=N,121nm,0.5s						
PDGK	Podgornoye	46.54	297	P	P	14 03 13.8	+0.5
PDGK				pmax	pmax		
	comp=Z,101nm,1.3s						
STKI	Sintang	46.55	224	P	P	14 03 15.1	+1.4
	comp=Z,66nm,1.0s,comp=Z,13µm						
KDAK	Kodiak Island	46.58	42	eP	P	14 03 14.3	+0.8
KDAK				e*PP	pP	14 03 28.6	+1.1
KDAK				pmax	pmax		
	comp=Z,98nm,0.7s						
KDAK	Kodiak Island	46.58	42	eP	P	14 03 13.7	+0.3
	comp=Z,98nm,0.7s						
KDAK				epP	pP	14 03 28.6	+1.1
PPLA	Purkeypile	46.61	35	eP	P	14 03 15.7	+1.8
	comp=Z,76nm,1.2s						
CAST	Castle Rocks	46.66	35	eP	P	14 03 15.7	+1.6
	comp=Z,22nm,0.7s						
SPU	Mount Spurr	46.69	38	eP	P	14 03 15.8	+1.4
RAMN	Ramite	47.02	274	eP	P	14 03 18.3	+0.6
	comp=Z,179nm,0.6s						
KAPI	Kappang	47.04	210	P	P	14 03 18.2	+0.7
	comp=Z,80nm,0.9s,baz=22,slow=1.3,SNR=18						
KAPI				PcP	PcP	14 04 49.6	+0.6
	comp=Z,15nm,0.7s,baz=332,slow=1.5,SNR=1.9						
KAPI	Kappang	47.04	210	eP	P	14 03 17.8	+0.3
	comp=Z,107nm,1.0s						
KAPI				PcP	PcP	14 04 49.6	+0.6
KAPI	Kappang	47.04	210	P	P	14 03 18.2	+0.7
	SNR=11						
KAPI	Kappang	47.04	210	P	P	14 03 18.2	+0.7
	SNR=11						
KBKI	Kotabaru	47.06	216	P	P	14 03 17.5	-0.1
	comp=Z,46nm,0.9s,comp=Z,591nm						
PMG	Port Moresby	47.13	172	eP	P	14 03 18.1	-0.1
PMG	Port Moresby	47.13	172	eP	P	14 03 18.1	-0.1
GUN	Gumba	47.16	275	eP	P	14 03 19.7	+0.9
	comp=Z,357nm,0.5s						
BPAW	Bear Paw Mtn.	47.16	34	eP	P	14 03 19.0	+1.1
	comp=Z,67nm,1.6s						
KTH	Kantishna Hill	47.19	34	eP	P	14 03 19.4	+1.2
	comp=Z,47nm,0.9s						
MLY	Manley	47.28	32	eP	P	14 03 20.3	+1.4
	comp=Z,65nm,1.2s						
BRLK	Bradley Lake	47.33	40	eP	P	14 03 20.6	+1.2
	comp=Z,40nm,0.8s						
TRF	Thorofare Moun	47.47	34	eP	P	14 03 21.3	+0.8
	comp=Z,34nm,0.8s						
COLD	Coldfoot	47.57	29	eP	P	14 03 22.0	+1.0
	comp=Z,12nm,0.8s						
KKN	Kakani	47.69	275	eP	P	14 03 23.5	+0.7
	comp=Z,234nm,0.6s						
PKIN	Phulchoki	47.69	275	eP	P	14 03 23.1	+0.2
RC01	Rabbit Creek A	47.82	38	eP	P	14 03 23.5	+0.4
	comp=Z,62nm,1.0s						
BBKI	Banjar Baru	47.82	217	P	P	14 03 23.8	+0.2
	comp=Z,155nm,1.0s,comp=Z,2µm						
DMN	Daman	47.91	275	eP	P	14 03 25.2	+0.7
	comp=Z,61nm,0.4s						
SURT	Suratani	47.91	245	P	P	14 03 25.8	+1.5
	comp=Z,227nm,0.9s,comp=Z,3µm						
SEW	Seward	48.03	39	eP	P	14 03 24.8	+0.2
	comp=Z,90nm,1.4s						
MCK	McKinley	48.07	34	eP	P	14 03 26.2	+1.2
MCK				e*PP	pP	14 03 39.8	+0.7
MCK				pmax	pmax		
	comp=Z,32nm,0.8s						
MCK	McKinley	48.07	34	eP	P	14 03 25.3	+0.3
	comp=Z,32nm,0.8s						
MCK				epP	pP	14 03 39.8	+0.7
PMR	Palmer	48.08	37	eP	P	14 03 25.5	+0.5
PMR				pmax	pmax		
	comp=Z,43nm,0.7s						
PMR	Palmer	48.08	37	eP	P	14 03 25.2	+0.2
	comp=Z,43nm,0.7s						
GKN	Gorkha	48.10	276	eP	P	14 03 26.6	+0.7
	comp=Z,220nm,0.5s						
RND	Reindeer	48.12	35	eP	P	14 03 25.9	+0.5
RND				pmax	pmax		
	comp=Z,47nm,0.8s						
RND	Reindeer	48.12	35	eP	P	14 03 25.6	+0.2
	comp=Z,47nm,0.8s						
MDM	Murphy Dome	48.34	32	eP	P	14 03 28.2	+1.1
	comp=Z,86nm,1.1s						
WRH	Wood River Hil	48.42	33	eP	P	14 03 28.0	+0.4
	comp=Z,23nm,0.6s						
SML	Sawmill	48.44	37	eP	P	14 03 28.8	+0.9
SML				pmax	pmax		
	comp=Z,67nm,0.7s						
SML	Sawmill	48.44	37	eP	P	14 03 28.5	+0.6
	comp=Z,67nm,0.7s						
COLA	College	48.51	33c	iP	P	14 03 29.7	+1.4
COLA				pmax	pmax		
	comp=Z,23nm,0.8s						
COLA	College	48.51	33	eP	P	14 03 29.0	+0.8
	comp=Z,29nm,0.8s						
CCB	Clear Creek Bu	48.53	33	eP	P	14 03 28.9	+0.4
	comp=Z,9.8nm,0.7s						
PBKI	Pangkalan Bun	48.77	221	P	P	14 03 32.5	+1.6
	comp=Z,110nm,1.1s,comp=Z,1µm						
DHY	Denali Highway	48.80	35	eP	P	14 03 31.0	+0.2
	comp=Z,64nm,1.5s						
SCM	Sheep Creek Mo	48.92	37	eP	P	14 03 32.8	+1.2
SCM				pmax	pmax		
	comp=Z,70nm,0.8s						
SCM	Sheep Creek Mo	48.92	37	eP	P	14 03 32.4	+0.8
	comp=Z,70nm,0.8s						
IL1	Eielson Array	48.92	33	eP	P	14 03 31.4	-0.1
ILAR	Eielson Array	48.92	33	P	P	14 03 31.9	+0.3
	comp=Z,32nm,0.8s,baz=269,slow=6.2,SNR=275						
ILAR				PcP	PcP	14 04 54.6	-0.4
	comp=Z,5.1nm,0.6s,baz=290,slow=3.5,SNR=5.2						
ILB	Eielson Array	48.92	33	eP	P	14 03 31.6	+0.1
KOLN	Koldanda	49.02	276	eP	P	14 03 33.8	+0.8
	comp=Z,71nm,0.5s						
PYUN	Piuthan	49.35	277	eP	P	14 03 36.5	+0.9
	comp=Z,663nm,1.0s						
TKM2	Tokmak 2	49.38	298	eP	P	14 03 37.1	+1.5
TKM2				pmax	pmax		
	comp=Z,75nm,0.8s						
TKM2	Tokmak 2	49.38	298	eP	P	14 03 36.8	+1.2
	comp=Z,75nm,0.8s						
FYU	Fort Yukon	49.53	30	eP	P	14 03 37.9	+1.9
	comp=Z,65nm,1.1s						
KLU	Klutina	49.62	37	eP	P	14 03 38.0	+1.0
	comp=Z,43nm,0.7s						
PAX	Paxson	49.68	35	eP	P	14 03 38.3	+0.8
PAX				pmax	pmax		
	comp=Z,16nm,0.7s						
PAX	Paxson	49.68	35	eP	P	14 03 38.2	+0.8
	comp=Z,16nm,0.7s						
DIV	Divide	49.73	37	eP	P	14 03 38.7	+0.9
	comp=Z,66nm,0.8s						
EYAK	Cordova Ski Ar	49.81	38	eP	P	14 03 39.5	+1.2
	comp=Z,54nm,0.9s						
SOEI	Soe	49.86	202	P	P	14 03 39.9	+0.6
	comp=Z,32nm,1.2s,comp=Z,1µm						
SOEI	Soe	49.86	202	eP	P	14 03 38.4	-1.0
	comp=Z,89nm,0.9s						
VOSK	Vostochnaya	49.91	311	eP	P	14 03 39.5	+0.3
VOSK				pmax	pmax		
	comp=Z,60nm,1.0s						
VOSK	Vostochnaya	49.91	311	eP	P	14 03 39.1	-0.1
	comp=Z,60nm,0.9s						
CHKZ	Chkalovo	49.92	313	P	P	14 03 39.4	+0.1

CHKZ pmax pmax
comp=Z,28nm,0.8s
FRU Bishkek 50.10 298 *i* P **P 14 03 41.0 +0.2**
FRU *i* 14 03 59.0
FRU pmax pmax
comp=Z,87nm,1.8s
OTUK Ortayu 50.11 305 P **P 14 03 41.5 +0.7**
OTUK pmax pmax
comp=Z,108nm,1.3s
BVA0 Borovoye Array 50.19 312 P **P 14 03 41.7 +0.3**
BVA0 pmax pmax
comp=Z,19nm,0.8s
BVAR Borovoye Array 50.19 312 P **P 14 03 41.9 +0.5**
comp=Z,14nm,0.5s,baz=71,slow=7.6,SNR=99
BVAR PcP **PcP 14 05 00.6 +0.7**
comp=Z,12nm,0.7s,baz=80,slow=3.6,SNR=4.1
BVAR pPcP 14 05 15.2
comp=Z,17nm,0.6s,baz=114,slow=1.8,SNR=6.2
KSH Kashi 50.21 294 P P 14 03 46.7 +4.9
KSH *es*P sP 14 04 09.9 +7.9
KSH *e*PP PP 14 05 45.6 +8.3
KSH pmax pmax
comp=Z,25nm,0.7s
KSH pmax pmax
comp=Z,80nm,3.6s
AAK Ala-Archa 50.24 298 P **P 14 03 43.0 +0.8**
comp=Z,17nm,0.5s,baz=103,slow=5.7,SNR=71
AAK Ala-Archa 50.24 298*c i*P **P 14 03 42.8 +0.7**
AAK pmax pmax
comp=Z,41nm,0.6s
AAK Ala-Archa 50.24 298 *e*P **P 14 03 42.0 -0.1**
comp=Z,52nm,1.3s
AAK Ala-Archa 50.24 298 P **P 14 03 42.9 +0.8**
SNR=13
AAK Ala-Archa 50.24 298 P **P 14 03 42.9 +0.8**
SNR=13
BRVK Borovoye 50.25 312*c i*P **P 14 03 42.3 +0.5**
BRVK pmax pmax
comp=Z,43nm,1.0s
BRVK Borovoye 50.25 312 *e*P **P 14 03 42.1 +0.3**
comp=Z,42nm,1.0s
BRVK Borovoye 50.25 312 P **P 14 03 42.4 +0.7**
SNR=15
BRVK Borovoye 50.25 312 P **P 14 03 42.4 +0.7**
SNR=15
BMRM Bremner River 50.32 38 *e*P **P 14 03 43.4 +1.2**
comp=Z,60nm,1.0s
RAGM Ragged Mountai 50.36 38 *e*P **P 14 03 43.6 +1.0**
comp=Z,46nm,0.9s
BATI Baumata 50.47 203 P **P 14 03 44.8 +1.0**
comp=Z,14nm,0.5s,baz=113,slow=24,SNR=7.2
MENT Mentasta 50.48 35 *e*P **P 14 03 45.1 +1.7**
comp=Z,36nm,0.7s
EKS2 Erkin-Say 50.74 298 *e*P **P 14 03 46.6 +0.8**
EKS2 pmax pmax
comp=Z,22nm,0.7s
EKS2 Erkin-Say 50.74 298 *e*P **P 14 03 46.6 +0.8**
comp=Z,22nm,0.7s
ZRNK Zerenda 51.02 312 P **P 14 03 48.2 +0.6**
ZRNK pmax pmax
comp=Z,68nm,1.3s
ZRNK Zerenda 51.02 312 *e*P **P 14 03 47.9 +0.3**
comp=Z,72nm,1.2s
MTN Manton Dam 51.18 193 *e*P **P 14 03 48.8 -0.3**
comp=Z,66nm,0.6s
PLAI Plampang 51.30 211 P **P 14 03 49.5 -0.5**
comp=Z,73nm,1.0s
EGAK Eagle 51.37 32 *e*P **P 14 03 50.6 +0.7**
comp=Z,14nm,0.7s
COEN Coen 51.38 178 *e*P **P 14 03 50.9 +0.3**
comp=Z,109nm,1.2s
PPBI Pangkal Pinang 51.40 228 P **P 14 03 51.9 +1.1**
comp=Z,224nm,1.3s,comp=Z,9μm
TWSI Taliwang, Sumb 51.59 212 P **P 14 03 51.7 -0.5**
comp=Z,91nm,1.0s
MNAS Manas 51.69 298 P **P 14 03 53.9 +1.0**
MNAS pmax pmax
comp=Z,76nm,0.9s
SFK Sufi-Kurgan 51.82 295 P **P 14 03 54.9 +0.8**
SFK pmax pmax
comp=Z,89nm,1.2s
ABJI Asem Bagus 51.91 215 P **P 14 03 54.6 0.0**
comp=Z,76nm,0.9s
JAGI Jajag, Banyuwa 52.54 215 P P 14 04 05.0 +5.7
JAGI Jajag, Banyuwa 52.54 215 *e*P **P 14 03 58.8 -0.5**
comp=Z,52nm,0.9s
GMJI Gumukmas 52.69 216 P **P 14 04 04.1 +3.7**
NGJI Ngawi 52.85 219 P **P 14 04 03.6 +2.0**
comp=Z,75nm,1.1s
KKAR Karatay Array 52.86 300 *e*P **P 14 04 02.1 +0.6**
KKAR Karatay Array 52.86 300 *e*P **P 14 04 01.7 +0.2**
PWJI Pagerwojo 53.25 218 P **P 14 04 03.5 -1.0**
comp=Z,174nm,0.8s,comp=Z,2μm
UGM Wanagama 53.79 219 P **P 14 04 08.2 -0.3**
comp=Z,290nm,1.1s
UGM Wanagama 53.79 219 *e*P **P 14 04 07.8 -0.7**
comp=Z,334nm,1.1s
KPJI Karang Pucung 54.11 221 P **P 14 04 10.5 -0.3**
comp=Z,134nm,1.0s,comp=Z,2μm
LEM Lembang 54.38 223 P P 14 04 18.5 +5.5
comp=Z,101nm,0.9s,baz=110,slow=21,SNR=14
LEM Lembang 54.38 223 P P 14 04 18.5 +5.5
comp=Z,992nm,1.1s,comp=Z,24μm
SVE Sverdlovsk 54.71 318*d i*P **P 14 04 15.7 +1.0**
SVE pmax pmax
comp=Z,129nm,1.0s
SKAG Skagway 55.16 38 *e*P **P 14 04 19.5 +1.6**
comp=Z,62nm,1.4s
SOKR Solikamsk 55.86 322*d i*P **P 14 04 22.4 -0.5**
SOKR pmax pmax
comp=Z,70nm,1.5s
ARU Arti 55.93 318 *e*P **P 14 04 23.9 +0.4**
ARU pmax pmax
comp=Z,160nm,1.2s
ARU Arti 55.93 318 *e*P **P 14 04 23.6 +0.1**
comp=Z,164nm,1.2s
KBL Kabul 57.25 291 *e*P **P 14 04 32.7 -0.8**
KBL pmax pmax
comp=Z,77nm,1.0s
KBL Kabul 57.25 291 *e*P **P 14 04 32.5 -1.0**
comp=Z,77nm,1.0s
FITZ Fitzroy Crossi 57.45 198 *e*P **P 14 04 34.9 +0.3**
comp=Z,108nm,1.3s
ABKAR Akbulak array 57.58 310 *e*P **P 14 04 35.3 +0.1**
WRAK Wrangell Islan 57.62 41 *e*P **P 14 04 35.6 +0.1**
comp=Z,78nm,1.5s
CTAO Charters Tower 57.62 175 *e*P **P 14 04 35.5 -0.3**
CTAO pmax pmax
comp=Z,222nm,2.0s
CTAO Charters Tower 57.62 175 *e*P **P 14 04 35.5 -0.3**
comp=Z,222nm,2.0s
WRAB Tennant Creek 57.69 188*c i*P **P 14 04 35.8 -0.5**
WRAB pmax pmax
comp=Z,301nm,0.9s
WRAB Tennant Creek 57.69 188 *e*P **P 14 04 35.4 -0.9**
comp=Z,122nm,0.9s
WB2 Warramunga Arr 57.70 188 *e*P **P 14 04 35.7 -0.7**
comp=Z,120nm,0.9s
WRA Warramunga Arr 57.70 188 P **P 14 04 35.8 -0.6**
comp=Z,95nm,0.8s,baz=5.5,slow=7.0,SNR=297
WRA pP **pP 14 04 49.8 -1.0**
comp=Z,64nm,0.7s,baz=4.7,slow=7.4,SNR=16
HYB Hyderabad 58.28 268 *i* P **P 14 04 41.0 +0.3**
comp=Z,70nm,1.0s
HOPEN Hopen 59.44 346 *e*P **P 14 04 49.3 +1.5**
HOPEN IAmb IAmb 14 04 50.1
comp=Z,40nm,1.1s
SPA0 Spitsbergen Ar 59.91 349 *e*P **P 14 04 52.3 +1.2**
SPA0 IAmb IAmb 14 05 06.0
comp=Z,32nm,1.2s
KBS Kingsbay 60.04 350 *e*P **P 14 04 53.1 +1.2**
KBS Kingsbay 60.04 350 *e*P **P 14 04 53.4 +1.5**
KBS pmax pmax
comp=Z,39nm,1.0s
KBS Kingsbay 60.04 350 *e*P **P 14 04 52.9 +0.9**
comp=Z,39nm,1.0s
AS01 Alice Springs 61.42 188 *e*P **P 14 05 01.7 -0.3**
AS31 Alice Springs 61.43 188 *e*P **P 14 05 01.7 -0.3**
comp=Z,17nm,0.8s
ASAR Alice Springs 61.43 188 P **P 14 05 01.9 -0.1**
comp=Z,47nm,0.8s,baz=12,slow=6.0,SNR=531
ASAR pP **pP 14 05 15.8 -0.7**
comp=Z,35nm,0.8s,baz=10,slow=7.1,SNR=16
ASAR LR LR 14 30 52.5
comp=Z,13μm,20.9s,baz=300,slow=35
LVZ Lovozero 61.56 336*de*P **P 14 05 02.8 +0.4**
LVZ pmax pmax
comp=Z,36nm,1.0s
LVZ Lovozero 61.56 336 *e*P **P 14 05 02.1 -0.4**
comp=Z,74nm,1.4s
MBWA Marble Bar 62.00 203 *e*P **P 14 05 05.8 0.0**
comp=Z,115nm,0.6s
APA Apatity 62.13 336⇑ *i*P **P 14 05 07.0 +0.8**
APA pmax pmax
comp=Z,52nm,1.0s
APA MLR MLR
comp=Z,1μm,18.0s
TMCR Tamitsa 62.22 331 *e*P **P 14 05 07.1 +0.3**
TMCR pmax pmax
comp=Z,77nm,1.3s
KEV Kevo 62.87 339 *e*P **P 14 05 11.1 0.0**
YKW3 Yellowknife Ar 63.19 30 *e*P **P 14 05 13.2 -0.1**
comp=Z,16nm,0.7s
YKA Yellowknife Ar 63.23 30 P **P 14 05 13.9 +0.4**
comp=Z,14nm,0.7s,baz=302,slow=6.6,SNR=276
YKA pP **pP 14 05 28.2 0.0**
comp=Z,6.1nm,0.6s,baz=303,slow=6.5,SNR=13
YKB5 Yellowknife Ar 63.23 30 *e*P **P 14 05 12.9 -0.7**
KLMR Klimovskoe 63.25 328 *e*P **P 14 05 10.6 -3.2**
KLMR *e**PP **pP 14 05 23.0 -5.4**
KLMR *e* 14 07 29.9
KLMR pmax pmax
comp=Z,83nm,1.4s
EIDS Eidsvold 63.35 170 *e*P **P 14 05 15.1 +0.3**
comp=Z,24nm,0.7s
ARA0 ARCESS Array S 63.42 339 *e*P **P 14 05 15.1 +0.3**
ARCES ARCESS Array B 63.42 339 P **P 14 05 15.4 +0.6**
comp=Z,12nm,0.8s,baz=55,slow=7.7,SNR=28
ARE0 ARCESS Array S 63.42 339 *e*P **P 14 05 15.7 +0.9**
ARE0 IAmb IAmb 14 05 16.9
comp=Z,19nm,0.9s
ARE0 ARCESS Array S 63.42 339 *e*P **P 14 05 15.0 +0.1**
comp=Z,44nm,1.3s
GEYT Alibeck 63.58 299 P **P 14 05 17.3 +0.9**
comp=Z,26nm,0.9s,baz=47,slow=2.6,SNR=36
KTK1 Kautokeino 64.38 339 *e*P **P 14 05 22.1 +1.0**
KTK1 IAmb IAmb 14 05 23.1
comp=Z,46nm,1.1s
HEF Hetta 64.65 339 *e*P **P 14 05 23.1 +0.3**
MSVF Nonsavu 64.96 141 *e*P **P 14 05 27.5 +1.9**
MSVF pmax pmax
comp=Z,24nm,1.0s
MSVF Nonsavu 64.96 141 *e*P **P 14 05 26.6 +1.0**
comp=Z,24nm,1.0s
KIF Kilpisjarvi 65.06 340 *e*P **P 14 05 26.0 +0.5**
DAG Danmarks Havn 65.14 355⇑ *i*P **P 14 05 26.2 +0.3**
comp=Z,28nm,0.7s
DAG Danmarks Havn 65.14 355⇑ *i*P **P 14 05 26.2 +0.3**
DAG pmax pmax
comp=Z,20nm,0.7s
NLWA Neilton Lookou 66.24 48 *e*pP pP 14 05 50.6 +2.4
MOS Moscow 66.78 323 *e*P **P 14 05 35.3 -1.4**
MOS pmax pmax
comp=Z,110nm,1.2s
MOS pmax pmax
comp=Z,200nm,1.7s
B05A Bryant 66.82 46 P **P 14 05 38.2 +1.0**
baz=301
B06A Marblemount 67.04 46 *e*P **P 14 05 39.4 +0.9**
comp=Z,125nm,1.5s
VRH Novokhopyorsk 67.15 318 *e*P **P 14 05 39.0 -0.2**
VRH pmax pmax
comp=Z,70nm,0.5s
STEI Steigen 67.29 341 *e*P **P 14 05 40.7 +1.0**
STEI IAmb IAmb 14 05 43.2
comp=Z,46nm,1.4s
KULLO Kullorsuaq 67.34 5⇑ *i*P **P 14 05 39.9 -0.1**
comp=Z,18nm,0.7s
KULLO Kullorsuaq 67.34 5⇑ *i*P **P 14 05 39.9 -0.1**
KULLO pmax pmax
comp=Z,18nm,0.7s
OBN Obninsk 67.62 323*c i*P **P 14 05 42.3 +0.2**
OBN *i* 14 06 07.5
OBN pmax pmax
comp=Z,66nm,1.2s
OBN Obninsk 67.62 323 *e*P **P 14 05 42.1 0.0**
comp=Z,99nm,1.2s
PUL Pulkovo 67.68 329⇓ *e*P **P 14 05 43.5 +1.1**
PUL pmax pmax
comp=Z,68nm,0.9s
G03D McMinnville, O 67.72 50 P **P 14 05 44.2 +1.3**
baz=302
F04A Amboy 67.85 49 *e*P **P 14 05 44.9 +1.2**
comp=Z,94nm,1.3s
LPSR Galich'ya Gora 67.85 320 *e*P **P 14 05 43.6 0.0**
LPSR pmax pmax
comp=Z,60nm,0.7s
LTY Liberty 68.17 47 *e*P **P 14 05 46.6 +0.7**
comp=Z,76nm,1.7s
FIA1 FINESS Array S 68.28 332 *e*P **P 14 05 46.2 +0.1**
FINES FINESS Array B 68.28 332 P **P 14 05 46.5 +0.4**
comp=Z,43nm,0.8s,baz=49,slow=8.8,SNR=107
B08A Colville Reser 68.34 45 *e*P **P 14 05 47.4 +0.6**
ARMA Armidale 68.40 171 *e*P **P 14 05 48.0 +0.7**
comp=Z,57nm,1.4s
ARMA *e*pP **pP 14 06 03.8 +1.8**
I03D Drain, OR 68.46 51 P **P 14 05 48.8 +1.3**
baz=302
VSR Storozhevoye 68.49 319 *e*P **P 14 05 47.9 +0.2**
VSR pmax pmax
comp=Z,170nm,1.3s
MOR8 Moi Rana 68.79 340 *e*P **P 14 05 48.8 -0.5**
MOR8 IAmb IAmb 14 05 49.6
comp=Z,55nm,1.1s
G05D Wamic, OR 68.87 49 P **P 14 05 51.4 +1.2**
baz=302
KONS Konsvik 68.90 340 *e*P **P 14 05 50.4 +0.5**
KONS IAmb IAmb 14 05 56.0
comp=Z,78nm,1.4s
I04A Tendick Farm, 68.98 50 P **P 14 05 52.1 +1.2**
baz=302,SNR=6.7
L02D Cave Junction, 69.11 52 P **P 14 05 53.1 +1.4**
baz=302
STKA Stephens Creek 69.19 180 P **P 14 05 52.3 +0.3**
comp=Z,24nm,0.8s,baz=350,slow=6.4,SNR=54
STKA pP **pP 14 06 07.2 +0.4**
comp=Z,38nm,0.9s,baz=346,slow=6.4,SNR=19
STKA Stephens Creek 69.19 180 *e*P **P 14 05 52.3 +0.3**
comp=Z,11nm,1.0s
STKA pP **pP 14 06 07.2 +0.4**
C09A Chrisman Ranch 69.24 45 *e*P **P 14 05 53.6 +1.2**
comp=Z,46nm,0.9s
G06A Carlson Farm, 69.28 48 *e*P **P 14 05 53.9 +1.1**
comp=Z,118nm,1.9s
D08A Wollman Farm, 69.28 46 *e*P **P 14 05 53.2 +0.6**
comp=Z,28nm,1.1s
D08A *e*pP **pP 14 06 08.6 +1.1**
I05D Terrebonne, OR 69.34 50 P **P 14 05 54.2 +1.0**
baz=303
NEW Newport 69.63 44 P **P 14 05 55.6 +0.8**
baz=304,SNR=12
NEW Newport 69.63 44 *e*P **P 14 05 55.8 +1.0**
NEW Newport 69.63 44 *e*P **P 14 05 55.4 +0.6**
comp=Z,58nm,1.3s
GOF Gofitskoye 69.72 312⇑ *e*P **P 14 05 56.5 +1.1**
GOF pmax pmax
comp=Z,94nm,0.9s
KHMM Horse Mountain 69.72 54 *e*P **P 14 05 57.0 +1.3**
comp=Z,48nm,1.2s
YBH Yreka Blue Hor 69.91 52 *e*P **P 14 05 58.4 +1.7**
YBH Yreka Blue Hor 69.91 52 *e*P **P 14 05 58.0 +1.3**
comp=Z,23nm,0.9s
VSU Vasula 69.94 329*c i*P **P 14 05 56.9 +0.5**
VSU pmax pmax
comp=Z,194nm,1.2s
J05D Fort Rock, OR 69.98 50 P **P 14 05 58.5 +1.3**
baz=303,SNR=6.2
M02C Callahan 70.00 53 P **P 14 05 58.5 +1.3**
baz=303,SNR=5.5
SUMG Summit 70.05 360 *i*P **P 14 05 58.4 +1.0**
comp=Z,43nm,1.0s
SUMG Summit 70.05 360 *e*P **P 14 05 58.5 +1.0**
SUMG Summit 70.05 360 *e*P **P 14 05 58.1 +0.7**
comp=Z,45nm,1.0s
NCK Nalchik 70.24 310⇑ *e*P **P 14 05 58.7 +0.1**
NCK pmax pmax
comp=Z,51nm,1.0s
GUDG Gudauri 70.27 309 P **P 14 06 01.3 +2.3**
BBOO Buckleboo 70.30 185 *e*P **P 14 05 58.8 0.0**
comp=Z,89nm,1.1s
N02D Trinity Center 70.32 53 P **P 14 06 00.8 +1.5**
baz=303,SNR=7.2
M04C Macdoel 70.42 52 P **P 14 06 01.4 +1.4**
baz=303,SNR=15
K05A Summer Lake 70.49 51 *e*P **P 14 06 02.0 +1.5**
comp=Z,63nm,0.9s
KBZ Khabaz 70.54 311 P **P 14 06 01.2 +0.8**
comp=Z,39nm,0.9s,baz=55,slow=4.4,SNR=76
KIV Kislovodsk 70.54 311 *i*P **P 14 06 03.2 +2.6**
SNR=11
KIV Kislovodsk 70.54 311 *e*P **P 14 06 01.3 +0.8**
KIV pmax pmax
comp=Z,139nm,1.1s
KIV Kislovodsk 70.54 311 *e*P **P 14 06 01.3 +0.8**
comp=Z,127nm,1.0s
KIV Kislovodsk 70.54 311 P **P 14 06 01.9 +1.3**
SNR=20
KIV Kislovodsk 70.54 311 P **P 14 06 01.9 +1.3**
SNR=20
WDC Whiskeytown Da 70.64 53 *e*P **P 14 06 02.3 +1.2**
WDC Whiskeytown Da 70.64 53 *e*P **P 14 06 01.9 +0.9**
comp=Z,17nm,1.0s
NSS Namsos 70.71 339 *e*P **P 14 06 01.6 +0.6**
NSS IAmb IAmb 14 06 16.2
comp=Z,92nm,1.8s
WSAR Wadi Sarin 70.76 285 P **P 14 06 02.9 +0.8**
comp=Z,22nm,1.0s,baz=84,slow=7.3,SNR=14
WSAR LR LR 14 38 56.7
comp=Z,1μm,20.1s,baz=121,slow=37
WBK Wadi Bani Khal 70.85 284 P **P 14 06 03.6 +0.9**
SNR=15
WBK Wadi Bani Khal 70.85 284 P **P 14 06 03.6 +0.9**
SNR=15
F10A Beach Ranch, E 70.86 46 *e*P **P 14 06 02.9 +0.5**
comp=Z,47nm,1.6s
NEY Neytrino 70.91 310⇓ *e*P **P 14 06 04.0 +1.1**
NEY pmax pmax
comp=Z,5.0nm,0.9s
BIDO Bidbid 71.00 285 P **P 14 06 05.2 +1.7**
SNR=7.2
BIDO Bidbid 71.00 285 P **P 14 06 05.2 +1.7**
SNR=7.2
BANOM Banah 71.07 288 *i*P **P 14 06 04.7 +0.7**
SNR=42
BANOM Banah 71.07 288 P **P 14 06 04.7 +0.7**
SNR=15
BANOM Banah 71.07 288 P **P 14 06 04.7 +0.7**
SNR=15
BSMT Bassoo Peak 71.15 44 P **P 14 06 05.5 +1.1**
O03D Paynes Creek 71.27 53 P **P 14 06 05.8 +0.8**
baz=304,SNR=9.0
BLMT Blacktail Moun 71.29 43 *e*P **P 14 06 06.3 +1.1**
BLMT *e*pP **pP 14 06 21.6 +1.6**
SMDO Samad 71.31 285 P **P 14 06 07.4 +1.8**
SNR=7.9
SMDO Samad 71.31 285 P **P 14 06 07.4 +1.8**
SNR=7.9
MOD Modoc Plateau 71.31 51 *e*P **P 14 06 06.0 +0.6**
comp=Z,18nm,0.8s
GNI Garni 71.38 307 *e*P **P 14 06 03.6 -2.2**
GNI pmax pmax
comp=Z,96nm,1.5s
GNI Garni 71.38 307 *e*P **P 14 06 03.6 -2.2**
comp=Z,96nm,1.5s
BMO Blue Mountains 71.45 47 *e*P **P 14 06 07.2 +1.1**
BMO Blue Mountains 71.45 47 *e*P **P 14 06 06.8 +0.7**
comp=Z,25nm,0.9s
AKH Akhalkalaki 71.46 308⇓ *i*P **P 14 06 07.9 +1.6**
SCO Scoresbysund 71.49 354⇑ *i*P **P 14 06 06.8 +1.2**
comp=Z,19nm,0.8s
SCO Scoresbysund 71.49 354⇑ *i*P **P 14 06 06.8 +1.2**
SCO pmax pmax
comp=Z,19nm,0.8s
JTMT Jette 71.49 44 *e*P **P 14 06 07.1 +0.8**
YBMT Yellow Bay 71.57 43 *e*P **P 14 06 07.4 +0.6**
HOQ Hoqain 71.58 286 P **P 14 06 08.0 +0.9**
SNR=9.6
HOQ Hoqain 71.58 286 P **P 14 06 08.0 +0.9**
SNR=9.6
UOSS Minazif 71.67 288 *e*P **P 14 06 07.5 -0.1**
comp=Z,2.9nm,0.7s
SWMT Swartz Lake 71.78 44 *e*P **P 14 06 08.7 +0.6**
HATD Hatta, Dubai 71.80 288 *i*P **P 14 06 09.0 +0.6**
SNR=19
ORV Oroville 71.87 54 *e*P **P 14 06 09.2 +0.6**
ORV *e**PP **pP 14 06 19.7 -3.7**
ORV Oroville 71.87 54 *e*P **P 14 06 08.7 +0.1**
comp=Z,73nm,1.7s
IZAR Zarasai 71.90 327 *e*P **P 14 06 09.3 +0.9**
IZAR IAmb IAmb 14 06 09.7
comp=Z,20nm,0.5s
ASHO Ashiyiah 71.93 287 *i*P **P 14 06 09.6 +0.4**
SNR=19
ASHO Ashiyiah 71.93 287 P **P 14 06 09.9 +0.7**
SNR=10
ASHO Ashiyiah 71.93 287 P **P 14 06 09.9 +0.7**
SNR=10
IDID Didziasalis 71.98 327 *e*P **P 14 06 09.8 +0.9**
IDID IAmb IAmb 14 06 10.3
comp=Z,18nm,0.6s
MICGM Minsk 72.00 326 *e* **P 14 06 10.0 +1.0**
MICGM eLR LR 14 37 24.0
MNK Minsk 72.00 326 *e*P **P 14 06 10.0 +1.0**
WVOR Wild Horse Val 72.04 50 *e*P **P 14 06 10.9 +1.2**
WVOR Wild Horse Val 72.04 50 *e*P **P 14 06 10.5 +0.8**
comp=Z,87nm,1.6s
ISAL Salakas 72.07 327 *e*P **P 14 06 10.5 +1.1**
ISAL IAmb IAmb 14 06 10.9
comp=Z,30nm,0.6s
BSY Bisya 72.13 285 P **P 14 06 11.2 +0.8**
SNR=13
BSY Bisya 72.13 285 P **P 14 06 11.2 +0.8**
SNR=13
IIGN Ignalina 72.18 327 *e*P **P 14 06 10.9 +0.9**
IIGN IAmb IAmb 14 06 11.5
comp=Z,23nm,0.6s
MSO Missoula 72.22 44 P **P 14 06 11.2 +0.5**
baz=306,SNR=10
MSO Missoula 72.22 44 *e*P **P 14 06 10.9 +0.3**
comp=Z,53nm,1.5s
NACGM Naroch 72.23 327 *e*P **P 14 06 11.0 +0.6**
NACGM PM 14 06 12.0
comp=Z,1.2nm,0.8s
FAQ Al Faqa, Dubai 72.25 288 *i*P **P 14 06 11.2 +0.2**
SNR=11
ARQ Araqi 72.32 286 P **P 14 06 12.5 +1.0**
SNR=18
ARQ Araqi 72.32 286 P **P 14 06 12.5 +1.0**
SNR=18
ASUD Al Ashush, Dub 72.51 288 *i*P **P 14 06 13.3 +0.7**
SNR=8.6
SOC Sochi 72.52 312 *i*P **P 14 06 12.6 +0.3**
SOC pmax pmax
comp=Z,52nm,0.8s
CHMT Chamberlain Mo 72.55 44 *e*P **P 14 06 12.8 +0.1**
AFDM Forest Hills D 72.55 54 *e*P **P 14 06 12.2 -0.5**
comp=Z,28nm,1.4s
CAN Canberra 72.96 174 *e*P **P 14 06 15.2 +0.4**
CAN *e**PP **PcP 14 06 30.8 -0.7**
CAN pmax pmax
comp=Z,76nm,1.5s
CAN Canberra 72.96 174 *e*P **P 14 06 15.2 +0.4**
comp=Z,76nm,1.5s
CAN *e*pP **PcP 14 06 30.8 -0.7**
ANN Anapa 73.13 314 *e*P **P 14 06 14.7 -1.2**
ANN *e**PP **pP 14 06 27.1 -3.7**
ANN *e* 14 06 30.8
ANN *e* 14 08 54.9
ANN *e*PPP PPP 14 10 43.6
ANN *e*S **S 14 15 39.3 -0.2**
ANN pmax pmax
comp=Z,70nm,1.4s
FFC Flin Flon 73.14 33 *e*P **P 14 06 16.1 +0.3**
FFC Flin Flon 73.14 33 *e*P **P 14 06 16.0 +0.2**
comp=Z,37nm,0.9s
MFID Camas Ranch 73.15 48 *e*P **P 14 06 17.0 +0.8**
comp=Z,23nm,0.8s
NC405 NORSAR Array S 73.41 337 *e*P **P 14 06 17.6 +0.3**
NC303 NORSAR Array S 73.43 337 *e*P **P 14 06 17.8 +0.4**
CMB Columbia Colle 73.45 55 *e*P **P 14 06 19.1 +1.1**
CMB Columbia Colle 73.45 55 *e*P **P 14 06 18.7 +0.7**
comp=Z,22nm,0.8s
MOL Molde 73.48 340 *e*P **P 14 06 18.9 +1.3**
MOL IAmb IAmb 14 06 19.6
comp=Z,26nm,0.7s
HFS Hagfors 73.53 336 P **P 14 06 18.3 +0.3**
comp=Z,24nm,0.4s,baz=51,slow=4.7,SNR=150
NC204 NORSAR Array S 73.58 338 *e*P **P 14 06 18.7 +0.3**
NB201 NORSAR Array S 73.59 337 *e*P **P 14 06 18.8 +0.4**

NB2 NORSAR Subarra 73.62 337 P P 14 06 18.8 +0.2
comp=Z,118nm,1.2s,baz=39,slow=6.2
NB2 NORSAR Subarra 73.62 337 P P 14 06 18.8 +0.2
baz=39,slow=6.2
NOA NORSAR Array B 73.62 337 P P 14 06 19.1 +0.5
comp=Z,49nm,0.8s,baz=39,slow=6.0,SNR=92
LRM Limekiln Ridge 73.65 44 eP P 14 06 20.2 +1.0
NBO02 NORSAR Array S 73.73 337 eP P 14 06 19.4 +0.3
EGMT Eagleton 73.75 41 P P 14 06 20.6 +0.9
baz=309,SNR=30
EGMT Eagleton 73.75 41 eP P 14 06 20.3 +0.7
comp=Z,79nm,1.1s
NC602 NORSAR Array S 73.76 337 eP P 14 06 19.9 +0.6
NC602 IAmb IAmb 14 06 21.8
comp=Z,76nm,1.6s
NC602 NORSAR Array S 73.76 337 eP P 14 06 19.0 -0.4
NBO00 NORSAR Array S 73.76 337 eP P 14 06 19.7 +0.3
NWAO Narrogin (SRO) 73.79 201 P P 14 06 20.1 +0.4
comp=Z,45nm,1.0s,baz=96,slow=0.0,SNR=8.2
NWAO Narrogin (SRO) 73.79 201 eP P 14 06 20.2 +0.5
NWAO e*PP pP 14 06 34.4 -0.2
NWAO Narrogin (SRO) 73.79 201 eP P 14 06 19.6 -0.1
comp=Z,76nm,1.2s
NWAO epP pP 14 06 34.4 -0.2
WAKR Walker 73.79 54 eP P 14 06 21.1 +0.9
AKASG Malin Array Be 73.83 322 P P 14 06 20.1 +0.2
comp=Z,40nm,0.5s,baz=46,slow=6.1,SNR=200
AKBB Malin Array Si 73.83 322 eP P 14 06 20.2 +0.3
AKBB Malin Array Si 73.83 322 eP P 14 06 19.9 0.0
comp=Z,56nm,0.6s
KIEV Kiev 73.84 322 eP P 14 06 20.1 +0.1
KIEV Kiev 73.84 322 eP P 14 06 20.1 +0.1
comp=Z,52nm,0.6s
DLMT Dillon 73.85 45 eP P 14 06 21.3 +1.0
comp=Z,42nm,0.8s
AK11 Malin Array Si 73.87 322 eP P 14 06 19.9 -0.3
NAO01 NORSAR Array S 73.88 337 eP P 14 06 20.0 -0.1
HLID Hailey 73.89 47 P P 14 06 21.7 +1.1
baz=307,SNR=21
HLID Hailey 73.89 47 eP P 14 06 21.6 +0.9
comp=Z,36nm,1.3s
AKN Aaknes 73.95 340 eP P 14 06 21.4 +1.0
AKN IAmb IAmb 14 06 23.0
comp=Z,131nm,1.7s
MCMT McKenzie Canyo 74.03 45 eP P 14 06 20.4 -1.2
BMN Battle Mountai 74.06 51 eP P 14 06 23.2 +1.5
BMN Battle Mountai 74.06 51 eP P 14 06 22.7 +1.0
comp=Z,110nm,1.8s
BOZ Bozeman (W) 74.21 44 P P 14 06 23.7 +1.2
baz=308,SNR=43
BOZ Bozeman (W) 74.21 44 eP P 14 06 23.4 +1.0
BOZ pmax pmax
comp=Z,36nm,0.9s
BOZ Bozeman (W) 74.21 44 eP P 14 06 23.4 +1.0
comp=Z,36nm,0.9s
SUW Suwalki 74.39 327 eP P 14 06 23.3 +0.2
SUW Suwalki 74.39 327 eP P 14 06 23.4 +0.3
NV01 Mina Array Sit 74.56 53 eP P 14 06 25.4 +0.7
NVAR Mina Array Bea 74.56 53 P P 14 06 25.9 +1.3
comp=Z,20nm,0.8s,baz=286,slow=5.9,SNR=114
NVAR pP pP 14 06 40.9 +1.3
comp=Z,15nm,0.8s,baz=288,slow=6.2,SNR=12
NV11 Mina Array Sit 74.65 53 eP P 14 06 26.1 +0.9
comp=Z,80nm,1.1s
MLAC Mammoth, Mammo 74.68 54 P P 14 06 27.0 +1.6
baz=306
QLMT Earthquake Lak 74.82 45 eP P 14 06 27.1 +0.9
SIM Simferopol' 74.92 315 d iP P 14 06 27.2 +0.8
SIM pmax pmax
comp=Z,39nm,0.8s
HYA Hoyanger 75.00 339 eP P 14 06 27.8 +1.3
HYA IAmb IAmb 14 06 28.5
comp=Z,43nm,0.9s
ELK Elko 75.09 50 eP P 14 06 29.2 +1.4
ELK Elko 75.09 50 eP P 14 06 28.7 +0.9
comp=Z,98nm,2.0s
YMR Madison River 75.19 45 eP P 14 06 29.1 +0.9
comp=Z,133nm,1.7s
GCMT Greycliff 75.20 43 eP P 14 06 29.1 +0.9
KLNR Kaliningrad 75.21 329 P P 14 06 30.5 +2.7
KLNR pmax pmax
comp=Z,103nm,0.7s
KONO Kongsberg 75.22 337 eP P 14 06 28.9 +1.1
KONO IAmb IAmb 14 06 35.0
comp=Z,197nm,2.2s
KONO Kongsberg 75.22 337 eP P 14 06 28.5 +0.7
KONO Kongsberg 75.22 337 eP P 14 06 27.9 +0.1
comp=Z,22nm,0.7s
SFJD Kangerlussuaq 75.25 5 i P P 14 06 28.4 +0.6
comp=Z,20nm,0.9s
SFJD Kangerlussuaq 75.25 5 i P P 14 06 28.4 +0.6
SFJD pmax pmax
comp=Z,20nm,0.9s
SFJD Kangerlussuaq 75.25 5 eP P 14 06 28.0 +0.2
comp=Z,11nm,0.6s
YNR Norris Junctio 75.31 45 eP P 14 06 30.4 +1.4
comp=Z,44nm,1.3s
MCID Moose Creek 75.36 45 eP P 14 06 31.4 +2.1
YFT Old Faithful 75.39 45 eP P 14 06 31.7 +2.3
comp=Z,30nm,0.8s
TIN Tinemaha, Big 75.41 54 P P 14 06 31.0 +1.5
baz=306
SUE Sulen 75.48 340 eP P 14 06 30.6 +1.3
SUE IAmb IAmb 14 06 38.6
comp=Z,50nm,1.0s
LKWY Lake 75.56 45 eP P 14 06 32.4 +2.0
LKWY pmax pmax
comp=Z,26nm,0.9s
LKWY Lake 75.56 45 eP P 14 06 32.4 +2.0
comp=Z,26nm,0.9s
PKM Mcpherson Peak 75.65 57 P P 14 06 31.9 +0.9
baz=306
FLWY Flagg Ranch 75.70 45 eP P 14 06 32.8 +1.6
comp=Z,141nm,1.6s
RLMT Red Lodge 75.84 44 P P 14 06 33.0 +1.1
baz=310,SNR=14
RLMT Red Lodge 75.84 44 eP P 14 06 32.9 +0.9
comp=Z,110nm,1.6s
ASK Askoy 75.84 339 eP P 14 06 32.8 +1.5
CWC Cottonwood Cre 75.87 55 P P 14 06 32.9 +0.7
baz=307
MOOW Moose Ponds 75.88 45 eP P 14 06 33.7 +1.5
comp=Z,70nm,1.5s
ODD1 Odda 75.90 338 eP P 14 06 33.2 +1.4
ODD1 IAmb IAmb 14 06 35.0
comp=Z,40nm,1.1s
HVU Hansel Valley 75.94 48 eP P 14 06 34.0 +1.5
HVU Hansel Valley 75.94 48 eP P 14 06 33.5 +1.1
comp=Z,87nm,1.6s
SORM Soroca 75.94 321 ⇑ iP P 14 06 32.2 +0.1
GRAC Grapevine Rang 76.00 54 P P 14 06 34.1 +1.3
baz=307,SNR=12
LOHW Long Hollow 76.05 45 eP P 14 06 34.3 +1.1
comp=Z,13nm,0.9s
SNOW Snow King Moun 76.06 46 eP P 14 06 34.7 +1.5
comp=Z,25nm,0.8s
REDW Red Top Meadow 76.06 46 eP P 14 06 34.4 +1.1
comp=Z,28nm,1.0s
ISA Isabella, Lake 76.08 56 P P 14 06 33.6 +0.3
baz=306
ARVC Arvin 76.16 56 P P 14 06 33.5 -0.1
baz=306
DAC Darwin (Calif) 76.28 55 eP P 14 06 35.3 +0.7
DAC Darwin (Calif) 76.28 55 eP P 14 06 34.6 0.0
comp=Z,20nm,0.8s
AHID Auburn Hatcher 76.30 46 eP P 14 06 35.3 +0.8
comp=Z,24nm,0.7s
DGMT Dagmar 76.30 39 P P 14 06 34.8 +0.6
baz=312,SNR=11
DGMT Dagmar 76.30 39 eP P 14 06 34.6 +0.3
comp=Z,69nm,1.0s
BGU Big Grassy Mou 76.31 49 eP P 14 06 35.7 +1.1
comp=Z,67nm,1.7s
R11A Troy Canyon, C 76.32 52 P P 14 06 35.5 +0.8
baz=307,SNR=41
R11A Troy Canyon, C 76.32 52 eP P 14 06 35.6 +0.8
comp=Z,136nm,1.8s
BLS5 Blasjo 76.35 338 eP P 14 06 34.8 +0.5
BLS5 IAmb IAmb 14 06 36.7
comp=Z,56nm,1.2s
SPUT South Promonto 76.42 48 eP P 14 06 36.3 +1.1
comp=Z,71nm,1.6s
SPUT epP pP 14 06 52.0 +1.8
LAO LASA Array 76.45 41 P P 14 06 36.2 +1.0
baz=311,SNR=15
LAO LASA Array 76.45 41 eP P 14 06 36.0 +0.8
comp=Z,114nm,1.3s
MPMC Manual Prospec 76.48 55 P P 14 06 36.5 +0.7
baz=307,SNR=16
SFNV Sufian 76.50 306 eP P 14 06 35.9 +0.3
A25A Svangstu Ranch 76.52 38 P P 14 06 36.2 +0.7
baz=313,SNR=9.0
OSI Osito Audit: C 76.53 57 P P 14 06 36.4 +0.6
baz=307
OSI Osito Audit: C 76.53 57 eP P 14 06 37.1 +1.2
comp=Z,26nm,0.8s
BLG Laguna Peak, P 76.60 57 P P 14 06 36.8 +0.6
baz=307
FURC Furnace Creek, 76.64 54 P P 14 06 37.4 +1.0
baz=307,SNR=10
HOMB Homborsund 76.66 337 eP P 14 06 36.8 +0.8
HOMB IAmb IAmb 14 06 37.7
comp=Z,77nm,1.4s
LRMC Laurel Mtn Rad 76.70 55 P P 14 06 37.5 +0.6
baz=307,SNR=9.6
TPNV Topopah Spring 76.75 54 P P 14 06 37.9 +0.8
baz=307,SNR=27
TPNV Topopah Spring 76.75 54 eP P 14 06 38.2 +1.0
TPNV Topopah Spring 76.75 54 eP P 14 06 37.6 +0.4
comp=Z,39nm,1.0s
RSUT Red Spur Mount 76.82 47 eP P 14 06 39.1 +1.5
EDW2 Edwards Air Fo 76.86 56 P P 14 06 38.5 +0.8
baz=307,SNR=13
DUG Dugway, Tooele 76.89 49 P P 14 06 39.0 +1.1
baz=308,SNR=24
DUG Dugway, Tooele 76.89 49 eP P 14 06 39.3 +1.4
DUG Dugway, Tooele 76.89 49 eP P 14 06 39.0 +1.1
comp=Z,147nm,1.8s
B25A Knox Farm, Ray 76.95 38 P P 14 06 38.7 +0.8
baz=313
BEL Belsk 76.95 327 eP P 14 06 38.8 +1.0
BEL Belsk 76.95 327 eP P 14 06 38.9 +1.1
IAS Iasi 76.96 320 ⇓ iP P 14 06 38.5 +0.5
SNART Snartemo 77.01 337 eP P 14 06 39.5 +1.5
SNART IAmb IAmb 14 06 40.2
comp=Z,20nm,0.5s
A26A Wade Farm, Ken 77.07 37 P P 14 06 39.2 +0.7
baz=313,SNR=17
LEOM Leova 77.09 319 ⇑ iP P 14 06 39.1 +0.4
TCUT Toone Canyon 77.15 48 eP P 14 06 40.5 +1.0
comp=Z,60nm,0.8s
BW06 Boulder Array 77.17 46 P P 14 06 40.0 +0.5
baz=310,SNR=23
BW06 Boulder Array 77.17 46 eP P 14 06 39.8 +0.2
comp=Z,19nm,0.6s
PD31 Pinedale Array 77.17 46 eP P 14 06 39.8 +0.2
PDAR Pinedale Array 77.17 46 P P 14 06 40.1 +0.5
comp=Z,17nm,0.8s,baz=266,slow=2.4,SNR=116
PDAR pP pP 14 06 55.3 +0.8
comp=Z,15nm,0.6s,baz=267,slow=2.4,SNR=22
MWC Mount Wilson 77.21 57 eP P 14 06 40.9 +1.1
MWC e*PP pP 14 06 56.2 +1.4
MWC Mount Wilson 77.21 57 eP P 14 06 39.9 +0.1
comp=Z,102nm,1.8s
MWC epP pP 14 06 56.2 +1.4
CTU Camp Tracy 77.22 48 eP P 14 06 40.5 +0.8
comp=Z,90nm,1.7s
PSUT Pine Spring 77.28 51 eP P 14 06 41.0 +0.8
comp=Z,21nm,0.9s
B26A Jensen Ranch, 77.33 38 P P 14 06 40.7 +0.6
baz=313
SHOC Shoshone, Teco 77.36 54 P P 14 06 41.2 +0.7
baz=308,SNR=6.7
GSC Goldstone, Bar 77.38 55 P P 14 06 41.4 +0.7
baz=307,SNR=7.4
GSC Goldstone, Bar 77.38 55 eP P 14 06 41.6 +0.9
GSC Goldstone, Bar 77.38 55 eP P 14 06 41.1 +0.4
comp=Z,18nm,0.8s
A27A Ledoux Ranch, 77.41 37 P P 14 06 41.1 +0.7
baz=314
JLU Jordanelle 77.45 48 eP P 14 06 42.0 +0.8
comp=Z,65nm,1.5s
CIS Catalina Islan 77.46 58 P P 14 06 41.9 +0.9
baz=307
BFSC Mount Baldy Ra 77.46 56 P P 14 06 41.6 +0.5
baz=307,SNR=5.3
NLU North Lily Min 77.48 49 eP P 14 06 42.3 +1.0
comp=Z,23nm,1.0s
PRAR RASCA 77.52 321 ⇑ iP P 14 06 40.2 -0.9
KSRV Kasrt alli 77.55 306 eP P 14 06 42.4 +0.9
D25A Fairfield 77.63 39 P P 14 06 42.5 +0.8
baz=313
TLCR 77.65 318 ⇑ iP P 14 06 42.0 +0.2
KWP Kalwaria Pacla 77.65 324 eP P 14 06 42.8 +1.0
KWP Kalwaria Pacla 77.65 324 eP P 14 06 42.9 +1.1
MPU Maple Canyon 77.71 49 eP P 14 06 43.5 +1.0
comp=Z,148nm,1.8s
C26A Wahner Farm, P 77.77 38 P P 14 06 43.2 +0.7
baz=314,SNR=10
B27A Peters Farms, 77.78 37 P P 14 06 43.0 +0.4
baz=314
LRW Lerwick 77.81 342 eP P 14 06 43.6 +1.2
BUR08 Bucovina Ar. S 77.84 322 eP P 14 06 43.5 +0.5
BURAR Bucovina Array 77.85 322 ⇓ iP P 14 06 43.7 +0.6
TUQ Turquoise Moun 77.87 55 P P 14 06 44.3 +0.8
baz=308,SNR=16
TESR Tescani 77.89 320 ⇑ iP P 14 06 43.6 +0.4
A28A Rude Farm, Bot 77.90 36 P P 14 06 43.8 +0.5
baz=314,SNR=24
HEC Hector,Ludlow 77.97 55 P P 14 06 44.8 +0.9
baz=308,SNR=13
CFR Carcaliu 78.01 318 ⇓ iP P 14 06 44.2 +0.4
E25A Miller Ranch, 78.03 40 P P 14 06 44.5 +0.5
baz=313
PETR Petresti 78.12 319 ⇓ iP P 14 06 46.5 +2.1
C27A Sayler Ranch, 78.14 38 P P 14 06 45.1 +0.5
baz=314,SNR=9.2
D26A Manning 78.15 39 P P 14 06 45.2 +0.5
baz=313,SNR=8.3
MURC Murrieta 78.15 57 P P 14 06 45.6 +0.7
baz=308
B28A Dugan Ranch, T 78.18 37 P P 14 06 45.5 +0.8
baz=314,SNR=14
ODBI Odobesti 78.18 319 ⇑ iP P 14 06 47.2 +2.4
ABTO Aybut 78.21 283 P P 14 06 45.6 +0.1
SNR=5.4
ABTO Aybut 78.21 283 P P 14 06 45.6 +0.1
SNR=5.4
VRI Vrincioaia 78.28 320 ⇓ iP P 14 06 46.5 +1.1
MSU Marysvale 78.33 50 eP P 14 06 47.7 +1.7
MSU Marysvale 78.33 50 eP P 14 06 47.6 +1.5
PLOR Plostina 78.33 320 ⇑ iP P 14 06 46.6 +0.9
KOLS Kolonicke sedl 78.34 324 eP P 14 06 46.5 +0.8
KOLS pmax pmax
comp=Z,22nm,1.2s
KOLS Kolonicke sedl 78.34 324 eP P 14 06 46.5 +0.8
TIRR Tirgusor 78.34 318 ⇓ iP P 14 06 46.0 +0.3
TIRR Tirgusor 78.34 318 eP P 14 06 45.6 -0.1
TIRR pmax pmax
comp=Z,28nm,1.1s
TIRR Tirgusor 78.34 318 eP P 14 06 45.6 -0.1
comp=Z,28nm,1.1s
A29A Manning Farm, 78.38 36 P P 14 06 46.3 +0.4
baz=315,SNR=14
F25A Bowman 78.39 40 P P 14 06 46.5 +0.5
baz=313,SNR=6.9
TMUT Trail Mountain 78.42 49 eP P 14 06 47.1 +0.5
comp=Z,17nm,0.8s
GMRC Granite Mounta 78.44 55 P P 14 06 47.2 +0.6
baz=308,SNR=10
HARR Harsova 78.45 318 ⇑ iP P 14 06 46.5 +0.2
STHS Stebnicka Huta 78.47 325 eP P 14 06 47.8 +1.4
STHS pmax pmax
comp=Z,31nm,1.3s
STHS Stebnicka Huta 78.47 325 eP P 14 06 47.8 +1.4
BR131 Keskin Array S 78.48 311 eP P 14 06 47.2 +0.4
BRTR Keskin Array B 78.48 311 P P 14 06 47.4 +0.6
comp=Z,28nm,1.2s,baz=92,slow=3.8,SNR=19
GRER 78.48 319 ⇑ iP P 14 06 48.9 +2.4
E26A Carlson Angus 78.52 39 P P 14 06 47.1 +0.4
baz=313,SNR=6.5
OJC Ojcow 78.55 326 eP P 14 06 47.6 +0.9
OJC Ojcow 78.55 326 eP P 14 06 47.6 +0.9
OJC Ojcow 78.55 326 eP P 14 06 47.2 +0.5
comp=Z,106nm,1.2s
D27A Center 78.55 38 P P 14 06 47.5 +0.6
baz=314,SNR=7.3
UZH Uzhgorod 78.55 324 eP P 14 06 45.9 -0.8
UZH e 14 06 50.9
UZH e 14 06 56.5
DRWC Darouich 78.57 307 eP P 14 06 46.8 -0.5
P17A Butcher Ranch, 78.59 49 eP P 14 06 48.4 +1.1
comp=Z,224nm,1.8s
LCMT Little Creek M 78.61 52 eP P 14 06 48.6 +1.1
comp=Z,30nm,1.1s
MTPU Mount Pierson 78.62 51 eP P 14 06 49.3 +1.5
comp=Z,29nm,0.9s
PFO Pinyon Flats O 78.63 56 P P 14 06 48.1 +0.5
baz=308,SNR=7.5
PFO Pinyon Flats O 78.63 56 eP P 14 06 48.7 +1.0
PFO Pinyon Flats O 78.63 56 eP P 14 06 47.9 +0.2
comp=Z,34nm,1.4s
ARCR ARCALIA 78.64 322 ⇓ iP P 14 06 48.6 +1.3
B29A Wagenman Farm, 78.64 36 P P 14 06 47.7 +0.4
baz=315,SNR=9.3
C28A Hausauer Farms 78.68 37 P P 14 06 48.1 +0.5
baz=315
BELC Belle Mtn. Jos 78.70 56 P P 14 06 48.6 +0.6
baz=308,SNR=6.9
P18A Preston Nutter 78.78 48 eP P 14 06 49.5 +0.9
comp=Z,76nm,1.5s
A30A Hoffart Farm, 78.80 36 P P 14 06 48.7 +0.5
baz=316,SNR=20
F26A Lodgepole 78.84 40 P P 14 06 49.0 +0.5
baz=313,SNR=5.4
KNB Kanab 78.87 52 eP P 14 06 50.6 +1.6
KNB Kanab 78.87 52 eP P 14 06 50.6 +1.6
comp=Z,154nm,1.8s
ANTO Ankara 78.89 312 eP P 14 06 50.3 +1.4
ANTO Ankara 78.89 312 eP P 14 06 49.7 +0.8
comp=Z,54nm,1.2s
ISR Istrita 78.89 319 ⇑ iP P 14 06 50.3 +1.5
DOPR Dopca 78.90 320 ⇑ iP P 14 06 50.1 +1.3
NIE Niedzica 78.90 325 eP P 14 06 49.9 +1.2
NIE Niedzica 78.90 325 eP P 14 06 50.0 +1.2
MSAB Monastry St. A 78.90 318 ⇑ iP P 14 06 50.1 +1.3
G25A Newell 78.91 41 P P 14 06 48.9 0.0
baz=313
BR231 Keskin MP Arra 78.91 312 eP P 14 06 47.7 -1.4
ULM Lac du Bonnet 78.94 33 P P 14 06 48.8 -0.1
comp=Z,18nm,0.8s,baz=308,slow=6.2,SNR=30
ULM Lac du Bonnet 78.94 33 eP P 14 06 48.9 0.0
ULM Lac du Bonnet 78.94 33 eP P 14 06 48.7 -0.2
comp=Z,43nm,1.2s
MLR Muntele Rosu 78.94 320 P P 14 06 49.9 +0.7
MLR Muntele Rosu 78.94 320 ⇑ iP P 14 06 49.8 +0.7
MLR Muntele Rosu 78.94 320 eP P 14 06 49.4 +0.2
comp=Z,36nm,1.2s
SRU San Rafael Swe 78.95 49 eP P 14 06 50.4 +1.0
SRU San Rafael Swe 78.95 49 eP P 14 06 50.1 +0.8
comp=Z,35nm,0.8s
K22A Casper 78.95 44 P P 14 06 49.8 +0.5
baz=312,SNR=7.6
K22A Casper 78.95 44 eP P 14 06 49.8 +0.5
comp=Z,120nm,1.6s
D28A Regan 78.96 38 P P 14 06 49.7 +0.6
baz=314,SNR=7.2
MDND Maddock 78.96 37 P P 14 06 49.7 +0.7
baz=315,SNR=7.4
MDND Maddock 78.96 37 eP P 14 06 49.6 +0.5
comp=Z,98nm,1.1s
MDND e 14 07 05.1
PSN Preselentsi 78.99 317 P P 14 06 50.3 +1.1
E27A Carson 79.00 39 P P 14 06 50.1 +0.8
baz=314
BAR Barrett 79.06 57 eP P 14 06 50.2 +0.3
comp=Z,112nm,2.0s
MMU Miners Mountai 79.06 50 eP P 14 06 51.8 +1.6
BTCH Batrach 79.07 307 eP P 14 06 48.0 -1.9
MONP2 Monument Peak 79.10 57 P P 14 06 51.2 +0.8
baz=308,SNR=7.9
B30A Myrvik Farm, E 79.13 36 P P 14 06 50.5 +0.5
baz=316,SNR=17
F27A Lemmon 79.16 40 P P 14 06 50.6 +0.4
baz=314,SNR=5.7
IRM Iron Mountain 79.16 55 P P 14 06 51.5 +1.0
baz=308,SNR=16
SECR 79.19 319 ⇑ iP P 14 06 51.9 +1.5
H25A Fruitdale 79.20 41 P P 14 06 51.4 +0.9
baz=313,SNR=5.5
G26A Maurine 79.26 40 P P 14 06 51.2 +0.4
baz=314,SNR=15
BC3 Big Chuckawall 79.27 56 P P 14 06 51.9 +0.7
baz=308,SNR=11
CJR Cluj-Napoca 79.27 322 ⇓ iP P 14 06 52.5 +1.7
RSSD Black Hills 79.31 42 P P 14 06 51.5 +0.2
baz=313
RSSD Black Hills 79.31 42 eP P 14 06 51.8 +0.5
RSSD Black Hills 79.31 42 eP P 14 06 51.8 +0.5
SULR 79.33 319 ⇑ iP P 14 06 52.4 +1.3
W13A Hualapai Mount 79.39 54 eP P 14 06 52.4 +0.5
comp=Z,78nm,1.9s
VOIR 79.43 320 ⇓ iP P 14 06 52.9 +1.1
B31A Greenbush Farm 79.47 36 P P 14 06 51.7 -0.1
baz=316
LANS Liptovska Anna 79.47 326 eP P 14 06 53.5 +1.6
LANS Liptovska Anna 79.47 326 eP P 14 06 53.5 +1.6
SWSC Sam W. Stewart 79.48 57 P P 14 06 52.8 +0.6
baz=308
ARNB Al Arnab 79.49 307 eP P 14 06 52.5 +0.3
KECS Kecovo 79.49 325 eP P 14 06 52.4 +0.5
KECS e 14 07 01.4
KECS pmax pmax
comp=Z,8.0nm,1.2s
KECS Kecovo 79.49 325 eP P 14 06 52.4 +0.5
KECS ePCP PcP 14 07 01.4 +1.6
SLNF Slenfeh 79.49 307 eP P 14 06 52.4 0.0
D29A Pettibone, Tap 79.52 37 P P 14 06 52.3 +0.1
baz=315
I25A Rochford 79.54 42 P P 14 06 53.0 +0.5
baz=313,SNR=11
G27A Dupree 79.54 40 P P 14 06 52.7 +0.4
baz=314,SNR=6.4
OKC Ostrava-Krasne 79.55 327 eP P 14 06 53.4 +1.2
OKC epP pP 14 07 07.2 -0.1
OKC Ostrava-Krasne 79.55 327 eP P 14 06 53.4 +1.2
OKC e 14 07 07.2
KSP Ksiaz 79.59 328 eP P 14 06 53.4 +1.0
KSP Ksiaz 79.59 328 eP P 14 06 53.4 +1.0
C30A Mose, Pekin 79.60 36 P P 14 06 52.8 +0.3
baz=316,SNR=15
O20A White River Ci 79.63 47 P P 14 06 53.8 +0.7
baz=311,SNR=12
O20A White River Ci 79.63 47 eP P 14 06 53.5 +0.4
comp=Z,28nm,1.0s
H26A Fairpoint 79.64 41 P P 14 06 53.4 +0.5
baz=314
A32A Rocking H Ranc 79.64 35 P P 14 06 53.0 +0.3
baz=317,SNR=6.1
DRGR 79.65 322 ⇑ iP P 14 06 54.0 +1.1
ARR Arges 79.69 320 ⇓ iP P 14 06 54.5 +1.3
ROOS tl_alroos 79.70 305 eP P 14 06 54.6 +1.2
PDMCI Parker Dam,Lak 79.72 55 P P 14 06 54.4 +1.0
baz=309,SNR=18
PRD Provadia 79.73 317 P P 14 06 54.0 +0.7
F28A McLaughlin 79.78 39 P P 14 06 54.1 +0.5
baz=315
BIDA Albida 79.80 306 eP P 14 06 54.1 +0.1
Y12C Blythe 79.82 55 P P 14 06 54.7 +0.7
baz=309
Y12C Blythe 79.82 55 eP P 14 06 54.6 +0.7
comp=Z,24nm,0.8s
E29A Napoleon 79.85 38 P P 14 06 54.1 +0.1
baz=315
MORC Moravsky Berou 79.86 327 eP P 14 06 55.0 +1.0
MORC Moravsky Berou 79.86 327 eP P 14 06 54.3 +0.3
comp=Z,148nm,1.0s
C31A Landman Farms, 79.88 36 P P 14 06 54.4 +0.3
baz=316,SNR=5.9
D30A Buchanan 79.89 37 P P 14 06 54.4 +0.3
baz=316,SNR=5.6
J25A Sunshine Ranch 79.93 42 P P 14 06 54.8 +0.2
baz=313
DPC Dobruska-Polom 79.95 328 eP P 14 06 55.7 +1.2
DPC epP pP 14 07 10.5 +1.0
DPC Dobruska-Polom 79.95 328 eP P 14 06 55.7 +1.2
DPC e 14 07 10.5
UPC Upice 79.96 328 eP P 14 06 55.6 +1.1
H27A Howes 79.98 40 P P 14 06 55.7 +1.0
baz=314,SNR=13
I26A New Underwood 79.99 41 P P 14 06 55.4 +0.6
baz=314,SNR=6.1
B32A Ashes, Strandq 80.00 35 P P 14 06 54.7 0.0
baz=317,SNR=14
GLA Glamis 80.05 56 P P 14 06 56.2 +0.9
baz=309,SNR=6.6
GLA Glamis 80.05 56 eP P 14 06 55.5 +0.2

GLA Glamis 80.05 56 eP P 14 06 54.6 -0.7
comp=Z,28nm,0.9s
LOT Lotru 80.07 321⇑iP P 14 06 56.0 +0.7
A33A Warroad 80.12 34 P P 14 06 55.2 -0.1
baz=318,SNR=18
PV09 Paradox Valley 80.17 49 eP P 14 06 56.9 +0.7
PSZ Piszkesteto 80.17 324 eP P 14 06 56.7 +1.0
PSZ Piszkesteto 80.17 324 eP P 14 06 56.3 +0.5
comp=Z,56nm,1.1s
VYHS Vyhne 80.24 325 eP P 14 06 57.1 +1.1
VYHS e 14 07 10.8
VYHS pmax pmax
comp=Z,13nm,1.1s
VYHS Vyhne 80.24 325 eP P 14 06 57.1 +1.1
VYHS epP pP 14 07 10.8 -0.2
E30A Jud 80.25 38 P P 14 06 56.4 +0.3
baz=316,SNR=14
G28A Parade 80.27 40 P P 14 06 56.5 +0.2
baz=315,SNR=6.1
F29A Eureka 80.28 38 P P 14 06 56.5 +0.3
baz=315,SNR=8.8
PV10 Paradox Valley 80.31 49 eP P 14 06 57.3 +0.5
MARH Ras Al Marh 80.31 306 eP P 14 06 57.9 +0.8
J26A Sides Ranch, S 80.37 42 P P 14 06 57.4 +0.5
baz=314
PV04 Paradox Valley 80.38 49 eP P 14 06 58.1 +1.0
AGMN Agassiz Nation 80.38 35 P P 14 06 56.6 -0.1
baz=318,SNR=15
AGMN Agassiz Nation 80.38 35 eP P 14 06 56.2 -0.6
comp=Z,38nm,1.1s
I27A Quinn 80.39 41 P P 14 06 57.8 +0.8
baz=314,SNR=6.5
C32A Crookston 80.42 35 P P 14 06 57.1 +0.2
baz=317
D31A Mcclaflin, Tow 80.43 37 P P 14 06 57.2 +0.2
baz=316,SNR=6.0
N23A Red Feather La 80.44 45 P P 14 06 58.8 +1.2
baz=312,SNR=12
N23A Red Feather La 80.44 45 eP P 14 06 58.5 +1.0
comp=Z,81nm,1.4s
PHWY Pilot Hill 80.44 45 eP P 14 06 57.7 +0.1
comp=Z,73nm,1.7s
ZALF Zalf 80.45 304 eP P 14 06 58.6 +1.1
PV05 Paradox Valley 80.46 49 eP P 14 06 58.4 +0.8
H28A Mission Ridge 80.50 40 P P 14 06 58.4 +0.9
baz=315,SNR=14
BRG Berggiesshubel 80.54 329 eP P 14 06 58.3 +0.8
comp=Z,26nm,0.8s
BRG Berggiesshubel 80.54 329 eP P 14 06 58.3 +0.8
BRG pmax pmax
comp=Z,26nm,0.8s
PVCC Panska Ves 80.55 329 eP P 14 06 58.7 +1.1
PVCC Panska Ves 80.55 329 eP P 14 06 58.7 +1.1
CLL Collm 80.58 330⇑iP P 14 06 58.0 +0.3
comp=Z,58nm,1.1s
CLL e 14 07 09.0
CLL e 14 07 17.0
CLL Collm 80.58 330⇑iP P 14 06 58.0 +0.3
CLL e 14 07 09.0
CLL pmax pmax
comp=Z,58nm,1.1s
CLL Collm 80.58 330 eP P 14 06 57.7 0.0
comp=Z,71nm,1.1s
CLL e 14 07 14.4
GZR Gura Zlata 80.61 321⇑iP P 14 06 58.7 +0.6
VRAC Vranov 80.62 327 P P 14 06 59.2 +1.2
comp=Z,26nm,1.0s,baz=51,slow=5.5,SNR=30
VRAC Vranov 80.62 327⇓iP P 14 06 59.6 +1.6
F30A Leola 80.67 38 P P 14 06 58.6 +0.2
baz=316
G29A Hoven 80.69 39 P P 14 06 58.9 +0.4
baz=315
Y14A Wickenburg 80.69 54 eP P 14 06 59.5 +0.8
comp=Z,98nm,0.8s
D32A Dogwood Acres, 80.70 36 P P 14 06 58.5 0.0
baz=317
E31A Nome 80.70 37 P P 14 06 58.7 +0.1
baz=316,SNR=8.5
WUAZ Wupatki 80.72 52 P P 14 07 00.1 +1.1
baz=310,SNR=15
WUAZ Wupatki 80.72 52 eP P 14 06 59.9 +0.9
comp=Z,33nm,0.9s
PV01 Paradox Valley 80.74 49 eP P 14 06 59.8 +0.6
TOTH TOTAH 80.76 305 eP P 14 06 57.0 -2.1
B34A Aery, Baudette 80.78 34 P P 14 06 58.6 -0.2
baz=318,SNR=12
C33A Trail 80.81 35 P P 14 06 59.1 0.0
baz=318,SNR=11
I28A Midland 80.89 40 P P 14 07 00.1 +0.5
baz=315,SNR=16
113A Mohawk Valley, 80.93 56 eP P 14 07 00.4 +0.5
comp=Z,16nm,0.8s
GOPC GO Pecny, Ondr 80.93 328 eP P 14 07 00.7 +1.0
GOPC epP pP 14 07 15.2 +0.5
GOPC GO Pecny, Ondr 80.93 328 eP P 14 07 00.7 +1.0
GOPC e 14 07 15.2
H29A Onida 80.94 40 P P 14 07 00.4 +0.5
baz=315,SNR=6.4
PRU Pruhonice 80.97 329 eP P 14 07 00.8 +0.9
PRU Pruhonice 80.97 329 eP P 14 07 00.8 +0.9
SALA Sala 80.97 304 eP P 14 07 00.8 +0.3
J27A Elkhorn Farm, 80.98 41 P P 14 07 01.0 +0.8
baz=314,SNR=5.0
SMCO Snowmass 81.00 47 eP P 14 07 01.3 +0.6
comp=Z,58nm,1.7s
BZS Buzias 81.02 322⇓iP P 14 07 00.7 +0.5
F31A Hecla 81.03 38 P P 14 07 00.7 +0.4
baz=316,SNR=8.5
BRBR Barbar 81.04 305 eP P 14 07 01.1 +0.3
E32A Braaten, Kindr 81.07 37 P P 14 07 00.8 +0.4
baz=317
TREC Trest 81.11 328 eP P 14 07 01.6 +1.0
TREC Trest 81.11 328 eP P 14 07 01.6 +1.0
G30A Faulkton 81.12 39 P P 14 07 00.9 +0.1
baz=316,SNR=32
ASF Jabal al Asfar 81.20 304 P P 14 07 02.6 +1.0
comp=Z,8.8nm,0.8s,baz=358,slow=2.6,SNR=10
D33A AnnSam, Waubun 81.24 36 P P 14 07 01.0 -0.4
baz=318
J28A Allard Ranch, 81.26 41 P P 14 07 02.2 +0.6
baz=315
B35A Bob, Littlefor 81.28 34 P P 14 07 01.7 +0.1
baz=319,SNR=16
C34A RKJ Ranch, Bem 81.29 35 P P 14 07 01.6 0.0
baz=318,SNR=10
I29A Vivian Onida 81.32 40 P P 14 07 02.4 +0.5
baz=315,SNR=6.4
ISCO Idaho Springs 81.36 46 P P 14 07 03.5 +0.9
baz=312,SNR=10
ISCO Idaho Springs 81.36 46 eP P 14 07 03.8 +1.2
ISCO Idaho Springs 81.36 46 eP P 14 07 03.8 +1.2
comp=Z,94nm,1.8s
X16A Lo Mia Camp, P 81.38 53 eP P 14 07 03.4 +0.9
comp=Z,28nm,1.0s
MVCO Mesa Verde 81.39 49 P P 14 07 03.3 +0.7
baz=311,SNR=15
MVCO Mesa Verde 81.39 49 eP P 14 07 03.5 +0.8
comp=Z,122nm,1.8s
G31A Conde 81.51 38 P P 14 07 03.1 +0.3
baz=316,SNR=8.2
MPEP Malo Peshtene 81.56 319 P P 14 07 03.9 +0.8
F32A Veblen 81.56 37 P P 14 07 03.2 +0.1
baz=317
MDVR Moldovita 81.57 321⇓iP P 14 07 03.2 0.0
D34A Park Rapids 81.58 35 P P 14 07 03.0 -0.1
baz=318,SNR=13
E33A Westby DABS, E 81.63 36 P P 14 07 03.7 +0.2
baz=318,SNR=9.3
NKC Novy Kostel 81.64 330 eP P 14 07 04.1 +0.7
NKC Novy Kostel 81.64 330 eP P 14 07 04.1 +0.7
MMAI Mount Meron Ar 81.65 305 P P 14 07 05.0 +1.1
comp=Z,23nm,0.8s,baz=43,slow=6.3,SNR=26
C35A Jirik Farms, M 81.67 34 P P 14 07 03.5 -0.1
baz=319,SNR=16
K28A Ten Mile Ranch 81.69 42 P P 14 07 04.2 +0.3
baz=315,SNR=6.4
SUSD Miller 81.70 39 P P 14 07 04.1 +0.2
baz=316
CSS Mathiatis 81.72 308 eP P 14 07 04.3 +0.1
comp=Z,6.1nm,0.8s
J29A Okreek 81.75 40 P P 14 07 04.8 +0.6
baz=315,SNR=5.8
G32A Webster 81.83 38 P P 14 07 05.2 +0.6
baz=317,SNR=11
I30A Oacoma 81.84 40 P P 14 07 04.9 +0.2
baz=316,SNR=18

H31A Wolsey 81.91 39 P P 14 07 05.2 +0.3
baz=316
F33A 5 Mile Ranch, 81.98 37 P P 14 07 05.4 +0.1
baz=317,SNR=23
S22A 4UR Ranch, Cre 82.03 48 P P 14 07 07.3 +1.2
baz=312,SNR=28
S22A 4UR Ranch, Cre 82.03 48 eP P 14 07 07.3 +1.2
comp=Z,26nm,1.1s
KHC Kasperske Hory 82.03 328 eP P 14 07 06.5 +0.9
KHC epP pP 14 07 21.0 +0.3
KHC ex x 14 07 26.1
KHC Kasperske Hory 82.03 328 eP P 14 07 06.5 +0.9
KHC e 14 07 21.0
KHC Kasperske Hory 82.03 328 eP P 14 07 06.2 +0.6
comp=Z,24nm,1.2s
214A Organ Pipe Nat 82.06 56 P P 14 07 06.9 +0.9
baz=310,SNR=6.8
214A Organ Pipe Nat 82.06 56 eP P 14 07 06.8 +0.7
comp=Z,112nm,1.3s
214A epP pP 14 07 21.9 +0.7
D35A Remer 82.10 35 P P 14 07 05.5 -0.4
baz=319,SNR=7.6
L28A Connealy Angus 82.10 42 P P 14 07 06.9 +0.8
baz=315
C36A Pine Crest Far 82.13 34 P P 14 07 05.9 -0.2
baz=320,SNR=14
Q24A Divide 82.19 46 P P 14 07 07.6 +0.7
baz=313,SNR=6.5
Q24A Divide 82.19 46 eP P 14 07 07.4 +0.5
comp=Z,9.4nm,0.8s
GEC2 GERESS Array S 82.20 328 eP P 14 07 07.1 +0.6
GEC2 GERESS Array S 82.20 328 eP P 14 07 06.7 +0.2
comp=Z,39nm,1.3s
GERES GERESS Array B 82.20 328 P P 14 07 06.9 +0.4
comp=Z,10nm,0.6s,baz=38,slow=5.0,SNR=49
K29A Lazy Trails An 82.20 41 P P 14 07 07.3 +0.7
baz=315,SNR=8.3
RZN Rozhen 82.21 318 P P 14 07 07.7 +0.9
J30A Dallas 82.23 40 P P 14 07 07.0 +0.4
baz=316,SNR=5.5
X18A Snowflake 82.25 52 eP P 14 07 07.9 +0.8
comp=Z,13nm,0.8s
E35A Pequot Lakes 82.33 35 P P 14 07 07.1 0.0
baz=319
VTS Vitosha 82.38 319⇑iP P 14 07 08.6 +0.9
VTS Vitosha 82.38 319 eP P 14 07 08.5 +0.9
VTS Vitosha 82.38 319 P P 14 07 08.2 +0.6
VTS Vitosha 82.38 319 eP P 14 07 08.3 +0.6
comp=Z,50nm,1.2s
G33A Ortonville 82.39 37 P P 14 07 07.8 +0.4
baz=317,SNR=10
H32A Carlson Farm, 82.41 38 P P 14 07 07.5 -0.2
baz=317,SNR=8.2
D36A Goodland 82.42 34 P P 14 07 07.2 -0.4
baz=319,SNR=5.8
C37A Embarrass 82.44 33 P P 14 07 07.6 0.0
baz=320,SNR=14
F34A Alexandria 82.50 36 P P 14 07 08.1 +0.1
baz=318
GRFO Grafenberg 82.55 330 eP P 14 07 09.4 +1.2
GRFO Grafenberg 82.55 330 eP P 14 07 08.8 +0.7
comp=Z,62nm,1.2s
EYMN Ely 82.57 33 P P 14 07 08.2 -0.2
baz=320,SNR=10
EYMN Ely 82.57 33 eP P 14 07 08.4 +0.1
OGNE Ogallala 82.57 43 P P 14 07 08.9 +0.3
baz=314
OGNE Ogallala 82.57 43 eP P 14 07 09.2 +0.6
comp=Z,83nm,1.3s
OGNE epP pP 14 07 24.4 +0.7
ESK Eskdalemuir 82.58 341 iP P 14 07 10.3 +2.1
M28A Bar X Bar Ranc 82.61 42 P P 14 07 08.6 -0.2
baz=315
L29A Maesberg Ranch 82.61 42 P P 14 07 08.6 -0.2
baz=315
H33A Prehn Over Nor 82.62 38 P P 14 07 09.1 +0.5
baz=317,SNR=21
K30A Basset 82.63 41 P P 14 07 09.4 +0.6
baz=316,SNR=5.0
J31A Geddes 82.64 40 P P 14 07 08.9 +0.1
baz=316
G34A Benson 82.74 37 P P 14 07 09.6 +0.4
baz=318,SNR=13
D37A Cotton 82.77 34 P P 14 07 09.5 +0.1
baz=320
F35A Swanville 82.78 36 P P 14 07 09.2 -0.3
baz=319,SNR=8.3
MMB Musomiste 82.81 318 P P 14 07 10.1 +0.4
SDCO Great Sand Dun 82.81 47 P P 14 07 11.1 +1.0
baz=313,SNR=16
SDCO Great Sand Dun 82.81 47 eP P 14 07 10.8 +0.7
comp=Z,14nm,1.0s
C38A Sawbill Land. 82.84 33 P P 14 07 09.6 -0.2
baz=321,SNR=19
E36A McGregor 82.88 35 P P 14 07 10.1 +0.1
baz=319,SNR=15
N28A Pribbeno Ranch 83.02 43 P P 14 07 11.0 +0.1
baz=315
J32A Parkston 83.03 39 P P 14 07 11.1 +0.2
baz=317
I33A Coleman 83.06 38 P P 14 07 11.2 +0.2
baz=317,SNR=7.0
L30A Spencer Herefo 83.09 41 P P 14 07 11.3 +0.1
baz=316
H34A Spellman Lake, 83.10 37 P P 14 07 11.4 +0.2
baz=318
K31A O'Neill 83.11 40 P P 14 07 11.7 +0.5
baz=316,SNR=6.9
TUC Tucson 83.16 54 P P 14 07 12.8 +1.0
baz=311
TUC Tucson 83.16 54 eP P 14 07 12.8 +1.0
TUC Tucson 83.16 54 eP P 14 07 12.3 +0.6
comp=Z,12nm,0.9s
E37A Wrenshall 83.23 34 P P 14 07 11.7 0.0
baz=320
C39A Grand Marais 83.25 32 P P 14 07 11.3 -0.5
baz=321
F36A Milaca 83.26 35 P P 14 07 11.7 -0.3
baz=319
GROS Grobnik 83.26 326 iP P 14 07 12.2 +0.1
O28A Krutsinger Ran 83.28 44 P P 14 07 12.7 +0.4
baz=315
G35A Watkins 83.30 36 P P 14 07 12.6 +0.5
baz=319,SNR=8.0
ECSD EROS Data Cent 83.38 38 P P 14 07 12.8 +0.2
baz=317,SNR=20
ECSD EROS Data Cent 83.38 38 eP P 14 07 12.5 -0.1
comp=Z,80nm,1.4s
L31A Butterfield Fa 83.39 41 P P 14 07 12.9 +0.2
baz=316,SNR=12
N29A Votaw Ranch, W 83.42 42 P P 14 07 13.4 +0.4
baz=315
J33A Davis 83.51 39 P P 14 07 13.6 +0.4
baz=317
H35A Sunnyside Ranc 83.52 37 P P 14 07 13.9 +0.6
baz=318,SNR=22
VAY Valandovo 83.61 318 iP P 14 07 14.6 +0.8
G36A St. Michael 83.63 36 P P 14 07 14.3 +0.5
baz=319
SKO Skopje 83.73 320 eP P 14 07 15.8 +1.3
MEM Membach 83.77 333 P P 14 07 14.7 +0.3
comp=Z,19nm,1.2s
T25A Trinidad 83.86 47 P P 14 07 16.5 +1.0
baz=313,SNR=18
T25A Trinidad 83.86 47 eP P 14 07 16.2 +0.7
comp=Z,165nm,1.8s
M31A Lambtecht Ranc 83.92 41 P P 14 07 15.5 +0.1
baz=316
L32A Elgin 83.94 40 P P 14 07 15.5 0.0
baz=317
J34A George 84.03 38 P P 14 07 16.3 +0.3
baz=318
H36A Jessenland, He 84.04 36 P P 14 07 16.7 +0.7
baz=319,SNR=11
VISS Visnje 84.06 326 iP P 14 07 15.2 -0.8
SPMN Marine on St. 84.07 35 P P 14 07 16.1 0.0
baz=320
SPMN Marine on St. 84.07 35 eP P 14 07 16.5 +0.4
SPMN e 14 07 31.5
LAZ Ladron 84.08 51 eP P 14 07 17.6 +1.0
I35A Creekview Farm 84.08 37 P P 14 07 16.7 +0.5
baz=318
EIL Elat 84.08 303 P P 14 07 16.9 +0.5
comp=Z,39nm,1.0s,baz=25,slow=3.4,SNR=20
STU Stuttgart 84.08 331 eP P 14 07 16.9 +0.8
STU Stuttgart 84.08 331 eP P 14 07 16.4 +0.3
comp=Z,112nm,1.4s

BOJS Bojanci 84.10 325 iP P 14 07 16.5 +0.2
ANMO Albuquerque 84.13 50 P P 14 07 18.3 +1.5
baz=312
ANMO Albuquerque 84.13 50 eP P 14 07 17.5 +0.7
ANMO pmax pmax
comp=Z,32nm,1.1s
ANMO Albuquerque 84.13 50 eP P 14 07 17.5 +0.7
comp=Z,32nm,1.1s
BCLA Clavier 84.18 334 P P 14 07 17.0 +0.5
comp=Z,19nm,1.6s
BGNE Belgrade 84.30 41 P P 14 07 17.7 +0.3
baz=317
BGNE Belgrade 84.30 41 eP P 14 07 17.3 -0.1
JAVS Javornik 84.33 326 iP P 14 07 16.9 -0.7
K34A Le Mars 84.41 39 P P 14 07 18.0 +0.1
baz=318
I36A Fitzsimmons Fa 84.42 37 P P 14 07 18.2 +0.3
baz=319
LPM Los Pinos Moun 84.45 51 eP P 14 07 19.3 +0.8
LANF Langenberg 84.45 331⇑eP P 14 07 18.2 +0.2
SNF Seneffe 84.46 334 P P 14 07 18.2 +0.3
WLF Walferdange 84.50 333 P P 14 07 19.0 +0.8
comp=Z,23nm,1.8s
H37A Dierke Farm, C 84.51 36 P P 14 07 18.8 +0.5
baz=320,SNR=8.6
BNM Barren Site 84.56 51 eP P 14 07 19.9 +0.8
TRI Trieste 84.61 326 eP P 14 07 18.1 -0.7
TRI pmax pmax
comp=Z,18nm,0.9s
TRI Trieste 84.61 326 eP P 14 07 18.1 -0.7
comp=Z,18nm,0.9s
OHR Ohrid 84.69 319 iP P 14 07 19.8 +0.4
DOU Dourbes 84.70 334 P P 14 07 19.5 +0.4
DOU AP pP 14 07 35.2 +0.9
SCHQ Schefferville 84.71 16 P P 14 07 19.9 +0.7
comp=Z,16nm,0.7s,baz=343,slow=5.0,SNR=10.0
SCHQ Schefferville 84.71 16 eP P 14 07 19.4 +0.3
comp=Z,19nm,0.8s
I37A Lemond, Waseca 84.71 36 P P 14 07 20.1 +0.7
baz=319,SNR=15
319A Douglas 84.73 54 eP P 14 07 20.2 +0.4
comp=Z,37nm,0.9s
BFO Black Forest 84.78 331 iP P 14 07 20.2 +0.5
BFO Black Forest 84.78 331 eP P 14 07 19.5 -0.2
comp=Z,65nm,1.1s
J36A Seneca 1, Swea 84.78 37 P P 14 07 20.1 +0.3
baz=319,SNR=7.6
L34A Svendsen Farm, 84.80 39 P P 14 07 20.1 +0.2
baz=318
K35A Storm Lake 84.81 38 P P 14 07 19.8 0.0
baz=318
121A Cookes Peak, D 84.92 52 P P 14 07 22.0 +1.1
baz=312,SNR=13
121A Cookes Peak, D 84.92 52 eP P 14 07 21.8 +0.9
comp=Z,26nm,0.9s
COWI Conover 85.02 33 eP P 14 07 20.7 -0.2
comp=Z,35nm,1.1s
M34A Aspy Farms, Fr 85.03 40 P P 14 07 21.3 +0.2
baz=318
J37A Redenius Farm, 85.18 37 P P 14 07 21.9 +0.2
baz=319,SNR=9.1
HSIG 85.18 57 eP P 14 07 22.1 +0.2
comp=Z,13nm,0.9s
I38A Scanlan Farm, 85.19 36 P P 14 07 22.0 +0.2
baz=320,SNR=9.1
K36A Gilmore City 85.25 38 P P 14 07 22.2 +0.1
baz=319,SNR=7.5
ECH Echery 85.32 331⇑eP P 14 07 22.6 +0.2
CBKS Cedar Bluff 85.32 43 P P 14 07 22.6 0.0
baz=316
P32A Huiting Farm, 85.36 42 P P 14 07 22.7 0.0
baz=316
FUORN Ofenpass-Fuorn 85.39 329 eP P 14 07 23.2 +0.2
comp=Z,46nm,0.8s
DAVOX Davos/Dischmat 85.42 329 P P 14 07 23.5 +0.4
comp=Z,16nm,0.9s,baz=29,slow=2.6,SNR=16
M35A Neola 85.51 39 P P 14 07 23.6 +0.2
baz=318
K37A Belmond 85.55 37 P P 14 07 23.8 +0.2
baz=319,SNR=17
N34A Lincoln 85.57 40 P P 14 07 23.7 0.0
baz=318
MOF Molkenrain 85.63 331⇑eP P 14 07 24.1 +0.1
J38A Wedel Dairy, R 85.68 36 P P 14 07 24.2 -0.1
baz=320,SNR=10
THEF They Montfort 85.75 332⇑eP P 14 07 24.7 +0.2
Q32A Meitler Ranch, 85.83 43 P P 14 07 24.8 -0.3
baz=317
TUE Stuetta 85.88 329 eP P 14 07 25.0 -0.4
comp=Z,21nm,1.0s
O34A Beatrice 85.95 41 P P 14 07 25.2 -0.4
baz=318
M36A Felix, Anita 85.97 39 P P 14 07 26.1 +0.4
baz=319
P33A Williams Farm, 85.97 42 P P 14 07 25.4 -0.4
baz=317
L37A Phoenix Point, 85.98 38 P P 14 07 25.7 0.0
baz=319,SNR=5.4
N35A Tabor 85.99 40 P P 14 07 26.5 +0.7
baz=318
K38A Parkersburg 86.05 37 P P 14 07 26.3 +0.2
baz=320
LOMF Lomont 86.16 331⇑eP P 14 07 26.9 +0.3
R32A Long Quarter, 86.16 43 P P 14 07 27.1 +0.3
baz=316
Q33A Connelly Farm, 86.22 42 P P 14 07 27.1 +0.1
baz=317
O35A Humboldt 86.29 40 P P 14 07 27.4 +0.1
baz=318
LAST Lasithi 86.35 312 eP P 14 07 28.0 +0.3
comp=Z,135nm,1.4s
P34A Walnut Farm, R 86.35 41 P P 14 07 27.2 -0.4
baz=318,SNR=8.5
L38A Oak Wood Farm, 86.35 37 P P 14 07 27.5 -0.1
baz=320
N36A Muff Farm, Cla 86.36 39 P P 14 07 28.2 +0.6
baz=319
M37A Trindle Farm, 86.37 38 P P 14 07 28.3 +0.6
baz=319
SCIA State Center 86.40 38 eP P 14 07 27.6 -0.2
comp=Z,82nm,1.2s
SCIA e 14 07 44.5
IDI Anoyia 86.60 313 P P 14 07 28.2 -0.8
comp=Z,19nm,0.7s,baz=51,slow=12,SNR=14
IDI Anoyia 86.60 313 eP P 14 07 28.7 -0.3
comp=Z,121nm,1.6s
R33A Olander Ranch, 86.64 43 P P 14 07 28.9 -0.2
baz=317
Q34A Chapman 86.75 42 P P 14 07 29.5 0.0
baz=318
P35A Duane Minner, 86.78 41 P P 14 07 29.7 0.0
baz=318
M38A Pleasantville 86.78 38 P P 14 07 30.3 +0.6
baz=320,SNR=11
KSU1 Kansas State U 86.79 41 P P 14 07 29.6 -0.1
baz=318
KSU1 Kansas State U 86.79 41 eP P 14 07 30.2 +0.4
SENIN Lac Senin/Sane 86.79 330 eP P 14 07 29.3 -0.6
comp=Z,7.6nm,0.8s
O36A Bolckow 86.87 40 P P 14 07 30.4 +0.2
baz=319
T32A Huddler Ranch, 86.94 44 P P 14 07 30.8 +0.2
baz=316
MNTX Cornudas Mount 86.99 52 P P 14 07 31.3 +0.4
baz=313,SNR=14
MNTX Cornudas Mount 86.99 52 eP P 14 07 31.1 +0.3
comp=Z,9.4nm,0.9s
MSTX Muleshoe 87.01 49 P P 14 07 31.4 +0.3
baz=314
MSTX Muleshoe 87.01 49 eP P 14 07 30.8 -0.3
comp=Z,29nm,1.5s
AMTX Amarillo 87.02 47 P P 14 07 32.3 +1.3
baz=315
AMTX Amarillo 87.02 47 eP P 14 07 31.7 +0.7
comp=Z,51nm,0.9s
JFWS Jewell Farm 87.03 35 eP P 14 07 30.5 -0.3
JFWS pmax pmax
comp=Z,21nm,0.8s
JFWS Jewell Farm 87.03 35 eP P 14 07 30.5 -0.3
comp=Z,21nm,0.8s
R34A Isabella, Hill 87.04 42 P P 14 07 32.0 +1.0
baz=317
P36A Good Intent, A 87.13 40 P P 14 07 31.5 +0.1
baz=318,SNR=7.9
S33A Kaszmaul Farm, 87.15 43 P P 14 07 32.2 +0.6
baz=317
N38A Joes South For 87.24 38 P P 14 07 32.5 +0.6

baz=320
O37A Wolven Farm, M 87.26 39 P P 14 07 32.6 +0.6
baz=319
N39A Derby Farms, D 87.53 38 P P 14 07 33.8 +0.4
baz=320,SNR=11
S34A Willow Spring 87.55 43 P P 14 07 33.7 +0.2
baz=318
R35A Emporia Munici 87.58 42 P P 14 07 34.1 +0.5
baz=318,SNR=8.0
P37A Lathrop 87.59 40 P P 14 07 34.1 +0.5
baz=319
O38A Galt 87.63 39 P P 14 07 34.4 +0.6
baz=320
V32A Arapaho 87.93 45 P P 14 07 36.2 +0.8
baz=316,SNR=6.8
GLMI Grayling 87.93 31 eP P 14 07 35.6 +0.5
comp=Z,113nm,0.9s
U33A Lingo Farm, Me 87.93 44 P P 14 07 35.8 +0.5
baz=317
R36A Gordon, Harris 87.94 41 P P 14 07 35.8 +0.5
baz=318,SNR=9.2
P38A Dawn 87.98 39 P P 14 07 35.8 +0.3
baz=320,SNR=8.3
O39A Kirksville 87.99 38 P P 14 07 35.8 +0.3
baz=320
S35A Otter Creek Ra 87.99 42 P P 14 07 35.9 +0.3
baz=318,SNR=11
T34A McClaskey Farm 88.01 43 P P 14 07 36.0 +0.3
baz=317
TIP Timpagrande 88.19 320 eP P 14 07 35.5 -1.1
comp=Z,32nm,1.2s
W32A Sentinel 88.25 46 P P 14 07 37.5 +0.6
baz=316,SNR=6.4
U34A Anderson Ranch 88.25 44 P P 14 07 37.4 +0.6
baz=317
U34A Anderson Ranch 88.25 44 eP P 14 07 36.9 +0.1
comp=Z,59nm,1.3s
R37A Teagarden Farm 88.31 41 P P 14 07 37.1 +0.1
baz=319
S36A Lake Cedric, C 88.34 42 P P 14 07 37.8 +0.6
baz=318
O40A La Belle 88.42 38 P P 14 07 37.6 +0.1
baz=321,SNR=9.0
Q38A Cooks Store, C 88.44 40 P P 14 07 37.6 0.0
baz=320,SNR=5.3
T35A Sooner Cattle 88.45 43 P P 14 07 38.4 +0.6
baz=318
P39A Salisbury 88.47 39 P P 14 07 38.2 +0.4
baz=320
PLDF La Plantade 88.53 332 eP P 14 07 39.0 +0.9
W33A Caddo, Fort Co 88.67 45 P P 14 07 40.2 +1.3
baz=317
T36A Boggs Farm, Ca 88.69 42 P P 14 07 39.3 +0.5
baz=318
V34A Guthrie 88.70 44 P P 14 07 39.6 +0.6
baz=317
V34A Guthrie 88.70 44 eP P 14 07 39.4 +0.4
comp=Z,112nm,1.6s
Q39A Willow Grove F 88.70 39 P P 14 07 39.1 +0.2
baz=320,SNR=18
S37A Fort Scott 88.72 41 P P 14 07 39.3 +0.3
baz=319
X32A Elmer 88.73 46 P P 14 07 39.4 +0.2
baz=316,SNR=7.1
U35A Pawnee 88.74 43 P P 14 07 39.6 +0.5
baz=318
WMOK Wichita Mounta 88.79 46 eP P 14 07 39.5 +0.1
WMOK pmax pmax
comp=Z,19nm,1.0s
WMOK Wichita Mounta 88.79 46 eP P 14 07 39.5 +0.1
comp=Z,19nm,1.0s
P40A Paris 88.79 38 P P 14 07 39.6 +0.3
baz=320,SNR=11
R38A Fenwick Farm, 88.88 40 P P 14 07 39.6 -0.2
baz=319
W34A Bridge Creek, 88.99 45 P P 14 07 41.5 +1.1
baz=317
X33A Lawton 89.09 46 P P 14 07 41.2 +0.4
baz=317
V35A Meyer Ranch, C 89.13 44 P P 14 07 41.3 +0.3
baz=318
T37A Cheneyville 18 89.15 42 P P 14 07 41.2 +0.2
baz=319
Q40A Laux Farm, Aux 89.19 39 P P 14 07 41.6 +0.4
baz=320,SNR=5.1
R39A Chumby, Stover 89.22 40 P P 14 07 41.4 +0.1
baz=320,SNR=7.8
U36A Oologah 89.26 43 P P 14 07 42.0 +0.5
baz=318
S38A Stockton 89.30 41 P P 14 07 41.5 -0.2
baz=319
HDIL Hopedale 89.32 36 P P 14 07 42.3 +0.5
baz=322
Y33A Hilltop Ranch, 89.40 46 P P 14 07 42.3 0.0
baz=317,SNR=5.9
X34A Smith Ranch, M 89.42 45 P P 14 07 43.1 +0.7
baz=317
T38A Diamond 89.55 41 P P 14 07 43.2 +0.3
baz=319,SNR=9.0
S39A Bolivar 89.55 40 P P 14 07 42.4 -0.6
baz=320,SNR=7.2
W35A Tecumseh 89.55 44 P P 14 07 43.7 +0.7
baz=318
U37A Salina 89.58 42 P P 14 07 43.3 +0.2
baz=319
TUL1 Leonard 89.59 43 P P 14 07 43.1 0.0
baz=318
TUL1 Leonard 89.59 43 eP P 14 07 43.2 +0.1
comp=Z,23nm,0.8s
V36A Jenks 89.60 43 P P 14 07 43.9 +0.7
baz=318
R40A Maddies Statio 89.63 39 P P 14 07 43.3 +0.1
baz=320,SNR=11
TX31 Lajitas Ar. Si 89.68 52 eP P 14 07 44.1 +0.3
TXAR Lajitas Array 89.68 52 P P 14 07 44.5 +0.6
comp=Z,13nm,0.6s,baz=299,slow=3.1,SNR=161
TXAR pP pP 14 07 58.9 -0.2
comp=Z,7.8nm,0.6s,baz=305,slow=2.9,SNR=12
ABTX Abilene, Hawle 89.81 48 P P 14 07 44.9 +0.6
baz=316,SNR=8.5
ABTX Abilene, Hawle 89.81 48 eP P 14 07 44.7 +0.4
comp=Z,42nm,1.0s
ABTX e 14 08 00.5
Z33A Whitaker Ranch 89.85 47 P P 14 07 44.6 +0.2
baz=317,SNR=5.8
W36A Wetumka 89.92 44 P P 14 07 45.0 +0.3
baz=318
Y34A Reagan Ranch, 89.94 46 P P 14 07 45.0 +0.2
baz=317
U38A Gravette 89.94 42 P P 14 07 44.6 -0.2
baz=319,SNR=6.0
V37A Hulbert 89.96 43 P P 14 07 45.2 +0.3
baz=319,SNR=9.7
T39A Clever 90.03 41 P P 14 07 45.4 +0.2
baz=320
S40A Lebanon 90.05 40 P P 14 07 45.5 +0.3
baz=320
HPIG 90.05 55 eP P 14 07 45.9 +0.3
comp=Z,15nm,0.9s
X35A Drake 90.05 45 P P 14 07 44.9 -0.4
baz=318,SNR=6.7
133A Hamilton Ranch 90.25 47 P P 14 07 46.8 +0.5
baz=316
Z34A Collier Ranch, 90.27 46 P P 14 07 46.8 +0.5
baz=317
X36A Centrahoma 90.27 44 P P 14 07 46.8 +0.5
baz=318,SNR=9.2
W37B Quinton 90.36 43 P P 14 07 47.2 +0.4
baz=318
V38A Canehill 90.37 42 P P 14 07 47.1 +0.3
baz=319,SNR=9.1
T40A Mansfield 90.38 40 P P 14 07 46.6 -0.2
baz=320,SNR=5.8
Y35A Marietta 90.38 45 P P 14 07 47.2 +0.4
baz=318
U39A Green Forest 90.47 41 P P 14 07 47.3 0.0
baz=320,SNR=7.5
SFIN Lafayette 90.47 35 P P 14 07 47.1 0.0
baz=324
SFIN Lafayette 90.47 35 eP P 14 07 47.0 -0.2
comp=Z,35nm,1.0s
Z35A Perchaven, San 90.68 46 P P 14 07 48.5 +0.2
baz=317,SNR=7.3
233A Rising Star 90.68 48 P P 14 07 48.9 +0.6
baz=316,SNR=14
134A White-Moore Ra 90.76 47 P P 14 07 49.2 +0.6
baz=317
V39A Pettigrew 90.79 42 P P 14 07 48.5 -0.3
baz=320,SNR=9.1
X37A Clayton 90.80 44 P P 14 07 48.6 -0.2
baz=318
Y36A Durant 90.81 45 P P 14 07 49.3 +0.5
baz=318,SNR=6.0
U40A Yellville 90.81 41 P P 14 07 48.9 0.0
baz=320,SNR=12
W38A Poteau 90.90 43 P P 14 07 49.7 +0.4
baz=319
X38A Whitesboro 91.04 43 P P 14 07 50.7 +0.8
baz=319,SNR=8.2
Y37A Hugo 91.12 44 P P 14 07 50.7 +0.5
baz=318
333A Richland Sprin 91.13 48 P P 14 07 50.9 +0.5
baz=316,SNR=18
234A Clairette 91.14 47 P P 14 07 51.0 +0.6
baz=317,SNR=13
135A Vickery Place, 91.16 46 P P 14 07 51.2 +0.7
baz=317
Z36A Blue Ridge 91.19 45 P P 14 07 50.8 +0.2
baz=318
W39A Magazine 91.20 42 P P 14 07 50.7 +0.1
baz=319
V40A Witts Springs 91.25 41 P P 14 07 51.0 +0.1
baz=320
JCT Junction City 91.25 49 P P 14 07 51.2 +0.2
baz=316
JCT Junction City 91.25 49 eP P 14 07 50.9 -0.1
JCT pmax pmax
comp=Z,20nm,0.7s
JCT Junction City 91.25 49 eP P 14 07 50.9 -0.1
comp=Z,20nm,0.7s
OLIL Olney 91.32 37 eP P 14 07 51.4 +0.3
comp=Z,59nm,1.3s
433A Art 91.48 49 P P 14 07 52.3 +0.2
baz=316,SNR=7.4
WHTX Lake Whitney, 91.54 47 P P 14 07 52.6 +0.4
baz=317,SNR=6.2
WHTX Lake Whitney, 91.54 47 eP P 14 07 52.7 +0.4
comp=Z,52nm,0.9s
X39A Fountain Ranch 91.54 43 P P 14 07 52.8 +0.5
baz=319,SNR=10
334A Lometa 91.57 48 P P 14 07 53.0 +0.6
baz=317,SNR=24
W40A Ferguson Farm, 91.59 42 P P 14 07 52.7 +0.3
baz=320,SNR=6.3
Z37A Pogue Cattle C 91.70 45 P P 14 07 53.3 +0.3
baz=318
MIAR Mount Ida 91.81 43 P P 14 07 53.9 +0.4
baz=320,SNR=13
MIAR Mount Ida 91.81 43 eP P 14 07 53.8 +0.4
MIAR pmax pmax
comp=Z,23nm,0.8s
MIAR Mount Ida 91.81 43 eP P 14 07 53.8 +0.3
comp=Z,23nm,0.8s
H06E1 SOCORRO T-PHAS 91.85 65 T T 15 50 00.4
SNR=15
WHAR Wooly Hollow 91.92 41 eP P 14 07 53.8 -0.2
comp=Z,28nm,0.8s
434A Burnet 91.93 48 P P 14 07 54.2 +0.1
baz=317,SNR=7.7
Y39A Lockesburg 91.99 43 P P 14 07 54.6 +0.3
baz=319
533A Wakeville 92.01 49 P P 14 07 55.1 +0.6
baz=316
335A Moody 92.08 47 P P 14 07 55.2 +0.5
baz=317
X40A Basin Creek Fa 92.25 42 P P 14 07 55.8 +0.3
baz=320,SNR=5.1
336A Riesel 92.34 47 P P 14 07 56.3 +0.4
baz=318
435B Jarrell 92.35 48 P P 14 07 56.5 +0.5
baz=317
633A Saathoff Ranch 92.36 50 P P 14 07 56.5 +0.4
baz=316,SNR=5.5
Y40A Okolona 92.37 43 P P 14 07 56.5 +0.4
baz=320
534A Blanco 92.37 49 P P 14 07 56.6 +0.4
baz=317,SNR=9.8
ACSO Alum Creek Sta 92.41 32 eP P 14 07 56.6 +0.5
ACSO e 14 08 12.3
M54A Oil Creek Stat 92.69 30 P P 14 07 57.9 +0.5
baz=329
832A Faith Ranch, C 92.72 51 P P 14 07 58.7 +0.9
baz=316
436A Wall Ranch, Ga 92.82 47 P P 14 07 59.2 +1.0
baz=318
Z40A Long Farm, Mag 92.88 43 P P 14 07 59.1 +0.7
baz=320
N54A Moraine State 93.03 30 P P 14 07 59.5 +0.5
baz=328
833A Chaparral WMA, 93.05 50 P P 14 08 00.0 +0.8
baz=316
536A Bastrop 93.17 48 P P 14 08 00.6 +0.7
baz=318
438A Sam Houston St 93.60 46 P P 14 08 03.0 +1.2
baz=318
735A Kenedy 93.62 49 P P 14 08 03.1 +1.2
baz=317
933A Laredo 93.63 51 P P 14 08 03.0 +1.0
baz=316,SNR=7.7
736A Circle Diamond 93.99 49 P P 14 08 05.2 +1.6
baz=317
637A Eagle Lake 94.07 48 P P 14 08 05.2 +1.2
baz=318
O56A Blue Knob Stat 94.18 30 P P 14 08 04.9 +0.5
baz=329
034A Hebbronville 94.39 51 P P 14 08 07.1 +1.6
baz=316
ZAIG Zacatecas 94.94 56 eP P 14 08 07.9 -0.5
comp=Z,14nm,1.0s
ES19 SONSECA Array 96.70 334 eP P 14 08 15.4 -0.4
ESDC Sonseca Array 96.75 334 P P 14 08 15.9 -0.1
comp=Z,0.6nm,0.4s,baz=17,slow=4.8,SNR=7.7
VNDA Vanda 115.61 175 PKP PKPdf 14 13 25.8 -0.2
comp=Z,0.7nm,0.5s,baz=329,slow=6.5,SNR=7.3
VNDA pPKP PKiKP 14 13 41.1 +15
comp=Z,2.0nm,0.8s,baz=294,slow=4.1,SNR=6.7
TOA0 Torodi Ar. Sit 116.92 315 ePKPdf PKPdf 14 13 29.0 -1.4
TOA0 ePKPdf PKPdf 14 13 29.3 -1.1
TORD Torodi Ar. Bea 116.92 315 PKP PKPdf 14 13 29.6 -0.8
comp=Z,2.0nm,0.5s,baz=36,slow=1.2,SNR=15
TORD PP PP 14 14 30.9 -8.1
comp=Z,4.0nm,1.1s,baz=31,slow=7.6,SNR=7.5
MATP Matopo 120.12 267 PKP PKPdf 14 13 36.3 -0.2
comp=Z,24nm,0.9s,baz=90,slow=1.6,SNR=12
LBTB Lobatse 124.77 264 PKP PKPdf 14 13 44.9 -0.4
comp=Z,56nm,0.9s,baz=99,slow=3.9,SNR=10
SDV Santo Domingo 124.80 40 ePKPdf PKPdf 14 13 45.4 -0.4
DBIC Dimbokro 125.87 317 PKP PKPdf 14 13 47.4 -0.2
comp=Z,6.6nm,0.7s,baz=28,slow=2.4,SNR=25
DBIC Dimbokro 125.87 317 ePKIKP PKPdf 14 13 46.9 -0.7
DBIC Dimbokro 125.87 317 ePKPdf PKPdf 14 13 46.9 -0.7
TIC Toumodi 125.98 317 ePKIKP PKPdf 14 13 47.3 -0.6
KIC Kosan Boka 126.06 317 ePKIKP PKPdf 14 13 47.3 -0.7
comp=Z,30nm,1.1s
ROSC El Rosal 126.17 46 PKP PKPdf 14 13 48.7 0.0
comp=Z,7.8nm,0.5s,baz=194,slow=4.5,SNR=5.6
LIC Lamto 126.33 317 ePKIKP PKPdf 14 13 46.7 -1.8
comp=Z,45nm,1.5s
QSPA South Pole Qui 127.41 180 ePKPdf PKPdf 14 13 48.8 -0.2
PTGA Pitinga 138.26 33 PKP PKPdf 14 14 11.6 +0.6
comp=Z,5.4nm,0.7s,baz=79,slow=5.2,SNR=4.1
SNAA Sanae 141.38 197 PKP PKPpre 14 14 08.0
SNAA Sanae 141.38 197 ePKHKP PKPpre 14 14 08.0
SNAA Sanae 141.38 197 ePKPpre PKPpre 14 14 08.0
VNA2 Neumayer--Watz 142.95 196 PKP PKPdf 14 14 13.9 -3.8
baz=97,slow=2.3
VNA3 Neumayer Olymp 143.20 195 PKP PKPab 14 14 14.5 +0.6
VNA1 Neumayer--Stat 143.34 196 PKP PKPbc 14 14 15.3 -0.3
SAML Samuel 143.75 44 ePKPpre PKPpre 14 14 17.5
LPAZ La Paz 146.31 59 PKPbc PKPbc 14 14 27.4 +0.2
comp=Z,39nm,0.7s,baz=351,slow=2.7,SNR=120
RCBR Riachuelo 148.21 355 PKPbc PKPdf 14 14 29.1 +0.6
comp=Z,23nm,0.9s,baz=314,slow=4.3,SNR=7.1
RCBR Riachuelo 148.21 355 ePKPdf PKPdf 14 14 27.9 -0.6
PB01 IPOC Station P 148.51 67 ePKPdf PKPdf 14 14 27.6 -1.2
PB04 IPOC Station P 148.80 70 ePKPbc PKPbc 14 14 33.6 +0.4
PMSA Palmer Station 148.94 159 ePKPbc PKPbc 14 14 32.9 +0.9
PB10 IPOC Station P 149.19 72 ePKPbc PKPbc 14 14 34.5 +0.5
SIV San Ignacio 150.62 49 PKP PKPdf 14 14 33.0 +0.8
comp=Z,17nm,0.8s,baz=23,slow=0.4,SNR=8.0
SIV PKPbc PKPbc 14 14 37.8 +0.1
comp=Z,30nm,0.6s,baz=289,slow=3.1,SNR=37
LCO Las Campanas 151.86 82 ePKPbc PKPbc 14 14 40.8 +0.3
YJA Yavi 152.09 64 eP PKPbc 14 14 42.6 +1.1
HJA Humahuaca 152.81 66 eP PKPbc 14 14 44.4 +1.4
ROC1 El Roble 153.15 90 eP PKPbc 14 14 43.5 +0.2
USHA Ushuaia 153.41 140 PKPbc PKPbc 14 14 43.5 +0.8
comp=Z,48nm,0.8s,baz=3.8,slow=1.5,SNR=3.9
VCA Vinchina 153.69 79 eP PKPbc 14 14 45.4 +0.9
VCA IAML 14 14 46.5
comp=Z,17nm,0.6s
AGUA GUANDACOL 153.80 81 eP PKPbc 14 14 45.6 +0.9
AUSP Uspallata 154.18 87 eP PKPbc 14 14 46.6 +1.0
AMOG MOGNA 154.41 84 eP PKPbc 14 14 46.6 +0.7
ASAL Salagasta 154.75 88 eP PKPbc 14 14 47.2 +0.7
AHML Horco Molle 154.93 72⇑ eP PKPdf 14 14 37.6 -0.7
ACLC CERRO LA CRUZ 154.98 79 eP PKPbc 14 14 47.4 +0.2
ACLC IAML 14 14 48.4
comp=Z,14nm,0.5s
PLCA Paso Flores 155.05 107 PKP PKPdf 14 14 40.0 +2.0
comp=Z,2.0nm,0.9s,baz=241,slow=12,SNR=3.2
PLCA PKPbc PKPbc 14 14 47.5
comp=Z,8.1nm,1.1s,baz=289,slow=3.9,SNR=7.0
PLCA Paso Flores 155.05 107 PKIKP PKPdf 14 14 40.0 +2.0
PLCA e 14 14 46.9
PLCA e 14 15 03.2
PLCA Paso Flores 155.05 107 PKP PKPdf 14 14 40.0 +2.0
PLCA ePKPbc PKPbc 14 14 46.9
PLCA ePKPab PKPab 14 15 03.2 +0.4
AVFE Valle Fertil 155.11 82 eP PKPdf 14 14 47.3 +8.8
AVFE IAML 14 14 50.2
comp=Z,5.1nm,0.6s
CYA Choya 155.41 76 eP PKPdf 14 14 48.8 +10
CYA IAML 14 14 49.6
comp=Z,14nm,0.5s
ACHE Chepes 155.94 83 eP PKPdf 14 14 49.3 +10
ACAN Cantantal 155.94 86 eP PKPdf 14 14 49.5 +10

BJI **06** *14:01:42.2, 1.°70N×97.°25E, h20km, mb5.9/82, mB5.9/67, Ms6.3/95, Ms7 6.4/84*

NEIC **06** *14:01:42.6±0.1, 1.°61N×97.°09E, h20km, mb5.9/137, ME6.4, MS6.0/298, MW5.8, MW6.0, Error ellipse: s-maj=3.7km s-min=2.8km az=216.0, Moment Tensor Solution. s59 Moment tensor: Scale 10^{17}Nm; M_{rr}4.04; $M_{\theta\theta}$-0.86; $M_{\phi\phi}$-3.18; $M_{r\theta}$3.62; $M_{\theta\phi}$-0.46; $M_{\phi r}$-2.56; Best double couple: $M_0$5.80000×10^{17} NP1:ϕ_s146.00000°,δ71.00000°, λ72.00000°. NP2:ϕ_s11.00000°,δ26.00000°,λ132.00000°. Principal axes: T 6.5900, Plg60.0000°, Azm30.0000°; N -2.3700, Plg17.0000°, Azm152.0000°; P -4.2200, Plg24.0000°, Azm250.0000°; Broadband fault plane solution: P waves. NP1:ϕ_s320.00000°,δ10.00000°, λ90.00000°. NP2:ϕ_s140.00000°,δ80.00000°,λ90.00000°. Principal axes: T Plg55.0000°, Azm50.0000°; N Plg0.0000°, Azm0.0000°; P Plg35.0000°, Azm230.0000°; Depth from synthetics of broadband displacement seismograms.*

NEIC Felt [IV] at Gunungsitoli, Nias and [III] at Sibolga, Sumatra. Also felt at Kuala Lumpur, Malaysia.

ISCJB **06** *14:01:42.3±0.5, 1.°60N±0.°02×97.°14E±0.°02, h28km±3km, mb5.8/268, MS6.0/450 Error ellipse: s-maj=3.3km s-min=2.2km az=37.4*

MOS **06** *14:01:43.1±1.0, 1.°69N×97.°22E, h33km, mb6.1/73, MS5.9/50, Error ellipse: s-maj=6.8km s-min=3.6km az=112.6*

NEIC **06** *14:01:43.0±0.0, 1.°28N×97.°15E, h18km Best double couple: NP1:ϕ_s132.00000°,δ77.00000°,λ91.00000°. NP2:ϕ_s308.00000°,δ13.00000°,λ85.00000°. Principal axes: T 1.0700, Plg57.0000°, Azm44.0000°; N 0.0500, Plg0.0000°, Azm312.0000°; P -1.1300, Plg32.0000°, Azm222.0000°;*

GCMT **06** *14:01:43.3±0.1, 1.°40N×96.°82E, h24km, MW5.9/118, Moment Tensor Solution. s118,c231; s113,c256; Duration: 23 Moment tensor: Scale 10^{17}Nm; M_{rr}5.24±.08; $M_{\theta\theta}$-2.01±.05; $M_{\phi\phi}$-3.23±.06; $M_{r\theta}$4.30±.12; $M_{\theta\phi}$2.40±.04; $M_{\phi r}$-3.83±.12; Best double couple: $M_0$7.73600×10^{17} NP1:ϕ_s135.00000°,δ69.00000°, λ85.00000°. NP2:ϕ_s329.00000°,δ21.00000°,λ104.00000°. Principal axes: T 7.8530, Plg65.0000°, Azm36.0000°; N -0.2340, Plg5.0000°, Azm136.0000°; P -7.6190, Plg24.0000°, Azm229.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface/mantle waves, cutoff=50s.*

IDC **06** *14:01:43.5±1.3, 1.°63N×97.°29E, h26km±8km, mb5.3/41, mb1 5.3/42, mb1mx5.3/42, mbtmp5.4/42, ML5.1/1, MS5.7/28, Ms1 5.7/28, ms1mx5.4/48 Error ellipse: s-maj=11.1km s-min=6.2km az=52.0*

KLM **06** *14:01:46.3, 1.°69N×97.°13E, h35km, mb5.8, ML6.0, MS6.7*

DJA **06** *14:01:46.2±0.4, 2.°N±2.°×97.°E±.°, h36km±3km, M5.7/90, mb5.7/90, mB6.0/86, MLv6.1/23, Mw(mB)5.7/86, Mwp6.0/22*

ISC 06 14:01:44.7±0.3, 1.°63N±0.°02×97.°17E±0.°03, h31km±1km, h31km:pP-P,n1501,σ1§85/1395, mb5.8/285, MS6.0/457, 126C-34D, Northern Sumatera

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GSI	Gunungsitoli	0.52	129	P	Pb	14 01 55.0	-0.5
GSI				S	Sn	14 02 06.5	+2.8
GSI	Gunungsitoli	0.52	129	ePg	Pb	14 01 55.1	-0.3
TPTI		1.62	0	P	Pn	14 02 12.4	+1.3
TPTI				S	Sb	14 02 34.7	+0.7
KCSI	Kotacane, Aceh	1.97	18	P	Pn	14 02 17.4	+1.5
KCSI				S	Sb	14 02 51.5	+7.4
PBSI	Pulau Batu	2.01	147	P	Pn	14 02 17.4	+1.0
PBSI				S	Sn	14 02 39.5	-1.0
PSI	Prapat	2.10	56	Pn	Pn	14 02 18.4	+0.5
	53nm,0.3s,baz=238,slow=4.5,SNR=263						
PSI				LR	LR	14 02 59.7	
	comp=Z,116μm,21.8s,baz=288,slow=39						
PSI	Prapat	2.10	56	ePn	Pn	14 02 18.5	+0.7
TSI	Tuntungan	2.32	37	P	Pn	14 02 23.2	+2.5
MNSI	Mandailing Nat	2.55	109	P	Pb	14 02 27.0	-2.7
LHMI	Lhok Sumawe	3.58	356	P	Pn	14 02 38.6	+0.5
LHMI	Lhok Sumawe	3.58	356	ePn	Pn	14 02 38.5	+0.5
PPI	Padang Panjang	3.83	123	P	Pn	14 02 43.6	+2.1
BKNI	Bangkinang	4.08	108	P	Pn	14 02 46.9	+2.0
BKNI	Bangkinang	4.08	108	ePn	Pn	14 02 46.2	+1.2
PDSI	Padang	4.15	128	P	Pn	14 02 45.7	-0.2
FRIM	Kepong	4.73	70	⇑P	Pn	14 02 55.1	+1.3
IPM	Ipoh	4.78	54	ePn	Pn	14 02 56.1	+1.6
SDSI	Sungai Dareh	4.96	121	P	Pn	14 02 59.4	+2.4
KULM	Kulim	5.03	44	⇑P	Pn	14 02 59.1	+1.1
KULM	Kulim	5.03	44	ePn	Pn	14 02 59.0	+1.1
PPSI	Pulau Pagai	5.21	147	P	Pn	14 03 01.3	+0.9
	1μm,0.9s,45μm96μm20nm						
PPSI				S	Sn	14 03 54.8	-4.6
	1μm,0.9s,45μm96μm20nm						
KGM	Kluang	6.16	86	⇑P	Pn	14 03 15.4	+1.9
CMBY	CAMPBELL BAY	6.25	329	eP	Pn	14 03 12.0	-2.8
PKDT	Phuket	6.33	11	P	Pn	14 03 15.1	-0.7
	671nm,0.9s,12μm						
SKLT	Songkhla	6.49	32	P	Pn	14 03 19.6	+1.6
	3μm,1.2s,21μm8.4nm						
TRTT	Trang	6.66	22	P	Pn	14 03 20.0	-0.4
	766nm,0.8s,15μm						
MYKOM	Kota Tinggi	6.68	89	ePn	Pn	14 03 22.3	+1.7
MASI	Maura Aman, Be	6.94	133	P	Pn	14 03 25.9	+1.6
	2μm,0.9s,45μm31nm						
KTGM	Kuala Trenggan	6.99	58	⇑P	Pn	14 03 26.3	+1.4
JMBI	JAMBI	7.24	117	P	Pn	14 03 31.7	+3.4
	1μm,0.9s,24μm33nm						
TPRI	Tanjung Pinang	7.39	95	P	Pn	14 03 33.1	+2.7
MNAI	Manna	8.30	136	P	Pn	14 03 42.2	-0.7
	1μm,1.1s,23μm50μm						
MNAI	Manna	8.30	136	ePn	Pn	14 03 42.2	-0.7
LHSI	Lahat	8.35	131	P	Pn	14 03 44.5	+0.9
	1μm,0.9s,11μm						
PMBI	Palembang	8.84	121	P	Pn	14 03 55.8	+5.4
MDSI	Maura Dua	9.27	131	P	Pn	14 03 55.6	-0.7
	420nm,0.9s,5μm						
MDSI	Maura Dua	9.27	131	P	Pn	14 03 55.5	-0.7
LWLI	Liwa	9.54	134	P	Pn	14 03 59.7	-0.3
	689nm,0.8s,9μm						
PPBI	Pangkal Pinang	9.72	113	P	Pn	14 04 05.5	+3.0
	224nm,1.3s,9μm						
KLI	Kotabumi	10.03	130	P	Pn	14 04 11.8	+5.1
	449nm,0.8s,7μm						
KASI	Kota Agung	10.20	134	P	Pn	14 04 06.5	-2.5
	297nm,1.0s,4μm						
PBA	Port Blair	10.89	336	eP	Pn	14 04 17.0	-1.4
PATY	Pattaya	11.80	18	P	Pn	14 04 33.2	+2.3
	94nm,1.0s,3μm						

CGJI Cibinong 11.81 134 P **Pn** **14 04 30.8 -0.2**
168nm,1.1s,2µm
CHBT CHBT 12.17 25 P **Pn** **14 04 38.7 +2.7**
451nm,1.2s,7µm
DGPR DIGLIPUR 12.22 340 IAmb IAmb 14 03 39.2
comp=Z,1µm,2.7s
DGPR *e*P **Pn** **14 04 36.6 0.0**
DBJI Dramaga 12.55 130 P **Pn** **14 04 39.7 -1.5**
SRDT SRDT 12.78 9 P **Pn** **14 04 45.8 +1.4**
comp=Z,661nm,1.2s
KSM Kuching 13.13 91 ⇑P **Pn** **14 04 51.4 +2.2**
KSM Kuching 13.13 91 *e*Pn **Pn** **14 04 51.7 +2.5**
CNJI Cibinong 13.33 132 P **Pn** **14 04 47.5 -4.3**
comp=Z,326nm,1.1s,comp=Z,4µm
LEM Lembang 13.39 129 Pn **Pn** **14 04 57.2 +4.4**
comp=Z,3.9nm,0.3s,baz=238,slow=20,SNR=4.4
LEM Lembang 13.39 129 P P 14 05 11.5 +10
JCJI Jatiwangi 13.71 126 P **Pn** **14 04 58.6 +1.6**
comp=Z,338nm,1.4s,comp=Z,6µm
COCO West Island 13.73 181 *i* P **Pn** **14 04 56.9 -0.5**
COCO West Island 13.73 181 *e*Pn **Pn** **14 04 54.2 -3.1**
CISI Cisompet, Garu 14.00 131 P **Pn** **14 04 56.7 -4.4**
comp=Z,275nm,0.7s,comp=Z,4µmcomp=Z,13µm
CISI Cisompet, Garu 14.00 131 *e*Pn Pn 14 04 55.9 -5.1
STKI Sintang 14.39 96 P **Pn** **14 05 09.3 +3.0**
comp=Z,981nm,0.9s,comp=Z,10µmcomp=Z,23µm
CMJI Cimerak 14.63 130 P **P** **14 05 19.9 +4.4**
XMIS Christmas Isla 14.70 145 *e*Pn **Pn** **14 05 10.7 +0.2**
KPJI Karang Pucung 14.73 127 P **Pn** **14 05 09.5 -1.4**
comp=Z,152nm,1.0s,comp=Z,2µm
SBUM Sibu 15.06 87 ⇑P **Pn** **14 05 16.9 +1.6**
SBUM Sibu 15.06 87 *e*Pn **Pn** **14 05 16.6 +1.2**
comp=Z,329nm,1.0s
PBKI Pangkalan Bun 15.12 107 P **Pn** **14 05 17.3 +1.1**
comp=Z,709nm,1.4s,comp=Z,10µm
KHON Khomkaen 15.64 21 P **P** **14 05 27.1 +0.4**
comp=Z,168nm,0.9s,comp=Z,1µm
PHIT Phitsanulok 15.79 11 P **Pn** **14 05 25.8 +1.0**
comp=Z,481nm,1.0s,comp=Z,3µm
UWJI Ujung Watu 15.91 120 P **P** **14 05 28.2 -1.6**
comp=Z,294nm,1.1s,comp=Z,5µm
BTM Bintulu 15.97 84 ⇑P **P** **14 05 29.2 -1.3**
UGM Wanagama 16.35 126 P **Pn** **14 05 28.7 -3.3**
comp=Z,222nm,1.2s
UTTA Uttaradit 16.35 12 P **Pn** **14 05 32.5 +0.4**
comp=Z,60nm,0.9s,comp=Z,452nm
WOJI Wonogiri, Jawa 16.63 125 P **Pn** **14 05 35.0 -0.6**
CM01 Chiang Mai Arr 16.78 6 *e*Pn **Pn** **14 05 35.9 -1.6**
CM31 Chiang Mai Arr 16.81 6 *e*Pn **Pn** **14 05 36.6 -1.3**
CMAR Chiang Mai Arr 16.81 6 Pn **Pn** **14 05 37.2 -0.7**
comp=Z,2.2nm,0.3s,baz=195,slow=12,SNR=106
CMAR Lg Lg 14 10 26.2
comp=Z,0.2nm,0.3s,baz=192,slow=30,SNR=4.8
CMAR LR LR 14 12 46.5
comp=Z,49µm,19.6s,baz=189,slow=40
CMAR P3KP 14 41 16.7
comp=Z,0.0nm,0.3s,baz=270,slow=2.7,SNR=5.9
NGJI Ngawi 16.83 122 P **Pn** **14 05 38.5 +0.4**
comp=Z,324nm,1.3s,comp=Z,4µm
LAMP Lampang 16.96 8 P **Pn** **14 05 40.4 +0.7**
comp=Z,159nm,1.0s,comp=Z,1µm
PCJI Pacitan 17.04 125 P **Pn** **14 05 36.8 -3.9**
CHTO Chiang Mai 17.16 6 P **Pn** **14 05 41.9 -0.4**
comp=Z,832nm,1.0s,comp=Z,20µm
CHTO Chiang Mai 17.16 6 P **Pn** **14 05 40.9 -1.4**
CHTO Chiang Mai 17.16 6 *e*Pn **Pn** **14 05 40.6 -1.7**
comp=Z,157nm,0.9s
CHTO Chiang Mai 17.16 6 P **Pn** **14 05 41.6 -0.7**
SNR=46
PWJI Pagerwojo 17.46 124 P **Pn** **14 05 44.3 -1.7**
comp=Z,148nm,1.0s,comp=Z,2µm
MTKI Muara Teweh, K 17.91 98 P **P** **14 05 52.4 +0.5**
comp=Z,390nm,1.3s,comp=Z,8µm
CMAI Chiengmai2 18.28 6 P **Pn** **14 05 56.7 +0.5**
comp=Z,166nm,1.2s,comp=Z,6µm
BBKI Banjar Baru 18.37 106 P **Pn** **14 05 57.4 +0.2**
comp=Z,469nm,1.1s,comp=Z,8µm
CRAI Chiangrai 18.75 9 P **P** **14 06 01.4 +0.3**
comp=Z,254nm,1.0s,comp=Z,3µm
GMJI Gumukmas 18.98 121 P **Pn** **14 06 04.5 0.0**
comp=Z,118nm,1.8s,comp=Z,3µm
ABJI Asem Bagus 19.42 119 P **P** **14 06 08.7 +0.1**
comp=Z,296nm,0.9s,comp=Z,4µm
KKM Kota Kinabalu 19.50 76 ⇑P **Pn** **14 06 10.8 -0.1**
KKM Kota Kinabalu 19.50 76 *e*P **P** **14 06 09.7 +0.2**
comp=Z,836nm,1.1s
KBKI Kotabaru 19.61 104 P **P** **14 06 11.3 +0.7**
comp=Z,277nm,1.1s,comp=Z,5µmcomp=Z,24µm
JAGI Jajag, Banyuwa 19.68 121 P **Pn** **14 06 19.4 +6.4**
JAGI Jajag, Banyuwa 19.68 121 *e*P **P** **14 06 11.3 -0.1**
comp=Z,164nm,1.0s
BKB Balikpapan 19.93 98 P **Pn** **14 06 16.6 +0.6**
comp=Z,1µm,1.2s,comp=Z,17µmcomp=Z,68µm
MDRS Chennai 20.25 305 *e*P **P** **14 06 16.9 -0.6**
KDM Kudat 20.29 74 ⇑P **P** **14 06 19.1 +1.0**
SDKM Sandakan 20.37 78 ⇑P Pn 14 06 20.2 -1.0
DNP Denpasar 20.69 120 P Pn 14 06 34.9 +10
TSM Tawau 20.84 82 ⇑P **P** **14 06 24.5 +0.5**
VIS Vishakhapatnam 20.99 320 *e*P **P** **14 06 24.8 -0.8**
SKHT Srikalahasti 21.05 306 *e*P **P** **14 06 27.0 +0.7**
SKHT IAmb IAmb 14 06 31.3
comp=Z,355nm,2.1s
SKHT *e*S **S** **14 10 12.6 -6.6**
SKHT IVMs_BB IVMs_BB 14 15 40.5
comp=Z,7µm,16.6s
TRD Trivandrum 21.25 289 *e*P **P** **14 06 27.3 -1.1**
QIZ Qiongzhong 21.29 35 *e*P **P** **14 06 28.6 -0.2**
comp=Z,626nm,1.3s
QIZ LR LR
comp=Z,22µm,20.0s
MYLDM Lahad Datu 21.58 80 ⇑P **P** **14 06 33.4 +1.5**
MYLDM Lahad Datu 21.58 80 *e*P **P** **14 06 33.3 +1.3**
comp=Z,943nm,1.1s
MYLDM LR LR
comp=Z,47µm,20.0s
PVM Polavaram 21.79 316 *e*P **P** **14 06 35.8 +1.7**
PVM IAmb IAmb 14 06 40.9
comp=Z,264nm,1.1s
PVM *e*S **S** **14 10 27.1 -6.5**
PVM IVMs_BB IVMs_BB 14 14 39.7
comp=Z,4µm,17.5s
ADKI Addanki 22.07 311 *e*P **P** **14 06 39.0 +1.9**
ADKI IAmb IAmb 14 06 45.3
comp=Z,193nm,1.3s
ADKI *e*S **S** **14 10 43.1 +4.0**
ADKI IVMs_BB IVMs_BB 14 16 49.2
comp=Z,6µm,17.7s
TWSI Taliwang, Sumb 22.18 118 P **P** **14 06 37.3 -1.2**
comp=Z,167nm,1.1s,comp=Z,2µm
RCLA Racherla 22.62 308 *e*P **P** **14 06 44.1 +1.0**
RCLA IAmb IAmb 14 06 46.7
comp=Z,226nm,1.4s
RCLA *e*S **S** **14 10 44.9 -4.3**
RCLA IVMs_BB IVMs_BB 14 16 46.7
comp=Z,7µm,18.6s
NJS Nagarjunasagar 23.01 311 *e*P **P** **14 06 48.2 +1.1**
NJS IAmb IAmb 14 06 57.8
comp=Z,240nm,1.4s
NJS *e*S **S** **14 10 54.2 -1.6**
NJS IVMs_BB IVMs_BB 14 17 19.7
comp=Z,5µm,18.8s
PLAI Plampang 23.01 117 P **P** **14 06 44.7 -2.6**
comp=Z,211nm,1.5s,comp=Z,3µm
SRLM Srisailam 23.05 310 *e*P **P** **14 06 48.5 +0.9**
SRLM IAmb IAmb 14 06 58.7
comp=Z,139nm,1.3s
SRLM *e*S **S** **14 10 55.0 -1.6**
SRLM IVMs_BB IVMs_BB 14 17 10.6
comp=Z,5µm,16.8s
TTSI Tana Toraja 23.11 102 P **P** **14 06 48.8 +0.6**
comp=Z,492nm,1.4s,comp=Z,5µm
SPSI Sidrap Palu 23.26 104 P **P** **14 06 48.6 -1.1**
comp=Z,196nm,1.0s,comp=Z,3µm
KAPI Kappang 23.50 106 P **P** **14 06 51.5 -0.6**
comp=Z,402nm,1.0s,baz=286,slow=8.0,SNR=57
KAPI S **S** **14 11 06.9 +2.8**
comp=Z,2.6nm,0.3s,baz=78,slow=21,SNR=1.0
KAPI Kappang 23.50 106 *e*P **P** **14 06 51.5 -0.6**
comp=Z,500nm,1.0s
KAPI S **S** **14 11 06.9 +2.8**
KAPI LR LR
comp=Z,35µm,19.0s
KAPI Kappang 23.50 106 P **P** **14 06 51.8 -0.3**
SNR=31
URV Uravakonda 23.70 305 *e*P **P** **14 06 55.5 +1.4**
URV IAmb IAmb 14 07 11.0
comp=Z,317nm,1.2s
URV *e*S **S** **14 11 09.1 +1.9**
URV IVMs_BB IVMs_BB 14 17 02.2
comp=Z,8µm,16.3s
KMI Kunming 23.97 13 P **P** **14 06 58.0 +1.3**
KMI pP pP 14 07 06.5 +0.8
KMI sP sP 14 07 10.9 +1.4
KMI S **S** **14 11 13.6 +1.9**
KMI pmax pmax
comp=Z,380nm,1.2s
KMI pmax pmax
comp=Z,4µm,6.3s
KMI LR LR
comp=Z,79µm,15.7s
KMI LR LR
comp=Z,54µm,14.1s
KMI LR LR
comp=Z,88µm,15.5s
ENPP El Nido 24.05 66 *e*P **P** **14 06 58.2 +0.9**
HYB Hyderabad 24.10 312 *i* P **P** **14 06 59.0 +1.2**
comp=Z,250nm,1.0s
HYB *e*S **S** **14 11 12.0 -1.7**
HYB LR LR 14 18 08.0
comp=Z,18nm,18.0s
HYB Hyderabad 24.10 312 *e*P **P** **14 06 58.4 +0.6**
HYB IAmb IAmb 14 07 01.1
comp=Z,92nm,1.1s
HYBB Hyderabad (bro 24.11 312 *e*P **P** **14 06 58.7 +0.9**
HYBB IAmb IAmb 14 07 04.5
comp=Z,86nm,1.0s
HYBB *e*S **S** **14 11 12.5 -1.2**
HYBB IVMs_BB IVMs_BB 14 18 02.0
comp=Z,5µm,17.2s
SHL Shillong 24.34 348 *e*P **P** **14 07 00.0 0.0**
SHL IAmb IAmb 14 07 02.8
comp=Z,729nm,0.4s
SHL *e*S **S** **14 11 17.0 -0.6**
RPR Rampur 24.50 315 *e*P **P** **14 07 02.0 +0.7**
RPR IAmb IAmb 14 07 07.7
comp=Z,125nm,1.1s
RPR *e*S **S** **14 11 22.4 +2.4**
RPR IVMs_BB IVMs_BB 14 19 58.3
comp=Z,5µm,16.3s
BSSI Bau Bau, Buton 24.53 109 P **P** **14 07 01.4 -0.3**
comp=Z,647nm,1.1s,comp=Z,8µm
BOK Bokaro 24.60 334 *e*P **P** **14 07 02.4 +0.2**
APSI Ampana 24.60 96 P **P** **14 07 03.2 +0.8**
comp=Z,2µm,1.1s,comp=Z,17µm
MRSI Marisa 24.79 92 P **P** **14 07 04.0 -0.1**
comp=Z,555nm,1.0s,comp=Z,5µm
SRSP Sriramsagar 25.22 314 *e*P **P** **14 07 08.1 +0.2**
SRSP IAmb IAmb 14 07 13.5
comp=Z,101nm,1.0s
SRSP *e*S **S** **14 11 32.4 +0.8**
SRSP IVMs_BB IVMs_BB 14 15 52.0
comp=Z,3µm,21.2s
CUYO Cuyo Island 25.39 68 *e*P **P** **14 07 10.6 +1.1**
LUWI Luwuk 25.73 96 P **P** **14 07 12.7 +0.1**
comp=Z,2µm,1.1s,comp=Z,14µm
LUWI Luwuk 25.73 96 *e*P **P** **14 07 12.4 -0.3**
comp=Z,2µm,1.1s
LUWI LR LR
comp=Z,20µm,18.0s
MCO Taipa Grande 25.86 37 P **P** **14 07 16.0 +2.3**
KLRI Killari 25.98 310 *e*P **P** **14 07 15.8 +1.0**
KLRI IAmb IAmb 14 07 19.0
comp=Z,145nm,1.2s
KLRI *e*S **S** **14 11 43.6 -0.1**
KLRI IVMs_BB IVMs_BB 14 18 57.7
comp=Z,6µm,16.2s
BASI Baing, Sumba 26.10 117 P **P** **14 07 14.1 -1.9**
comp=Z,623nm,1.2s,comp=Z,9µm
DGAR Diego Garcia 26.25 250 *i* P **P** **14 07 18.9 +1.6**
DGAR Diego Garcia 26.25 250 *e*P **P** **14 07 17.5 +0.2**
comp=Z,912nm,1.5s
DGAR LR LR
comp=Z,16µm,19.0s
H08S2 Diego Garcia H 26.29 249 T T 14 34 18.3
baz=70,slow=75
H08S3 Diego Garcia H 26.29 249 T T 14 34 21.6
baz=70,slow=75
H08S1 Diego Garcia H 26.30 249 T T 14 34 19.6
baz=70,slow=75
GYA Guiyang 26.32 19 ⇑*i*P **P** **14 07 17.1 -0.8**
GYA pP pP 14 07 27.4 +0.4
GYA PP **PnPn** **14 08 03.8 +5.8**
GYA PcP **PcP** **14 10 45.0 +1.3**
GYA S **S** **14 11 48.3 -0.7**
GYA sS sS 14 12 02.0 -2.0
GYA ScP **ScP** **14 14 21.6 +0.1**
GYA pmax pmax
comp=Z,390nm,1.1s
GYA pmax pmax
comp=Z,2µm,14.3s
GYA LR LR
comp=Z,91µm,15.5s
GYA LR LR
comp=Z,32µm,13.9s
GYA LR LR
comp=Z,134µm,16.7s
HKC Hong Kong Obse 26.37 38 ⇑*i*P **P** **14 07 19.0 +0.7**
GZH Guangzhou 26.48 35 P **P** **14 07 24.5 +5.2**
GZH pmax pmax
comp=Z,6µm,11.1s
EDFI Ende, Flores 26.52 113 P **P** **14 07 16.7 -3.2**
comp=Z,155nm,1.3s,comp=Z,16µm
GUIM Jordan 26.78 69 *e*P **P** **14 07 22.7 +0.6**
ODAN Odare 26.79 340 *e*P **P** **14 07 22.9 +0.6**
comp=Z,2µm,1.2s
GOA Goa 26.83 302 *e*P **P** **14 07 23.6 +1.1**
GOA IAmb IAmb 14 07 33.0
comp=Z,2µm,2.6s
OTRP Odiongan 26.84 65 *e*P **P** **14 07 23.9 +1.3**
MMRI Maumere 26.99 113 P **P** **14 07 20.7 -3.3**
comp=Z,247nm,1.2s,comp=Z,3µmcomp=Z,10µm
MMRI Maumere 26.99 113 *e*P **P** **14 07 20.3 -3.7**
comp=Z,280nm,1.1s
MMRI LR LR
comp=Z,35µm,18.0s
LQP Lukban 27.09 62 ⇑*e*P **P** **14 07 24.7 -0.4**
BOAC Boac 27.09 63 *e*P **P** **14 07 25.0 +0.1**
TAPN Taplejung 27.14 341 *e*P **P** **14 07 26.4 +0.9**
comp=Z,2µm,1.2s
RAMN Ramite 27.14 339 *e*P **P** **14 07 26.7 +1.2**
comp=Z,2µm,1.5s
RCP Roxas 27.22 68 ⇓*e*P **P** **14 07 26.2 +0.1**
H08N1 Diego Garcia H 27.29 253 T T 14 36 43.4
baz=92,slow=75,SNR=1582
H08N2 Diego Garcia H 27.30 253 T T 14 36 45.9
baz=92,slow=75,SNR=1087
H08N3 Diego Garcia H 27.31 253 T T 14 36 45.7
baz=92,slow=75,SNR=1466
BCPH Baguio City Da 27.32 56 ⇓*e*P **P** **14 07 31.0 +3.9**
AUQP San Andres 27.78 64 *e*P **P** **14 07 32.2 +1.2**
GQP Guinayangan 27.81 63 ⇓*e*P **P** **14 07 31.2 0.0**
PKIN Phulchoki 28.16 337 *e*P **P** **14 07 35.7 +1.1**
GUN Gumba 28.28 339 *e*P **P** **14 07 36.4 +0.6**
DMN Damoh 28.30 337 *e*P **P** **14 07 36.5 +0.6**
comp=Z,847nm,1.2s
POO Poona 28.38 308 *e*P **P** **14 07 34.7 -1.7**
KKN Kakani 28.39 337 *e*P **P** **14 07 37.2 +0.6**
comp=Z,2µm,1.3s
LSA Lhasa 28.50 349 P **P** **14 07 38.4 +0.6**
LSA pP **pP** **14 07 47.5 +0.6**
LSA pmax pmax
comp=Z,140nm,1.2s
LSA LR LR
comp=Z,6µm,21.8s
LSA LR LR
comp=Z,6µm,15.1s
LSA LR LR
comp=Z,16µm,18.4s
LSA Lhasa 28.50 349 *e*P **P** **14 07 38.2 +0.4**
LSA Lhasa 28.50 349 *e*P **P** **14 07 38.2 +0.4**
comp=Z,348nm,1.3s
LSA LR LR
comp=Z,5µm,20.0s
BHPL Bhopal 28.78 320 *e*P **P** **14 07 41.0 +1.0**
BHPL IAmb IAmb 14 07 43.2
DAV Davao City (W) 28.82 78 P **P** **14 07 42.3 +1.9**
comp=Z,146nm,0.4s,baz=24,slow=1.4,SNR=16
DAV LR LR 14 20 39.4
comp=Z,11µm,19.5s,baz=184,slow=40
DAV Davao City (W) 28.82 78 ⇑*i*P **P** **14 07 41.4 +1.0**
DAV Davao City (W) 28.82 78 P **P** **14 07 42.5 +2.1**
SNR=14
GKN Gorkha 28.84 337 *e*P **P** **14 07 41.2 +0.7**
comp=Z,2µm,1.3s
BATI Baumata 28.87 115 P **P** **14 07 38.9 -2.0**
comp=Z,32nm,0.5s,baz=279,slow=24,SNR=8.9
BATI S **S** **14 12 23.8 -5.7**
comp=Z,18nm,0.6s,baz=91,slow=24,SNR=2.3
BATI LR LR 14 20 57.3
comp=Z,10µm,19.2s,baz=167,slow=40
BATI Baumata 28.87 115 P **P** **14 07 38.7 -2.2**
comp=Z,87nm,1.3s,comp=Z,915nm
SANI Sanana 29.04 97 P **P** **14 07 42.8 +0.5**
comp=Z,89nm,1.2s,comp=Z,2µmcomp=Z,11µm
KOLN Koldanda 29.06 335 *e*P **P** **14 07 43.4 +0.9**
SOEI Soe 29.26 113 P **P** **14 07 41.0 -3.3**
comp=Z,467nm,1.2s,comp=Z,4µm
SOEI Soe 29.26 113 *e*P **P** **14 07 41.1 -3.3**
comp=Z,463nm,1.0s
SOEI LR LR
comp=Z,24µm,19.0s
PYUN Piuthan 29.61 334 *e*P **P** **14 07 48.2 +0.8**
comp=Z,2µm,1.3s
CD2 Chengdu 29.78 11 P **P** **14 07 49.5 +0.8**
CD2 sP pP 14 07 57.8 0.0
CD2 S **S** **14 12 46.8 +3.5**
CD2 sS sS 14 12 56.7 -1.7
CD2 pmax pmax
comp=Z,340nm,1.0s
CD2 LR LR
comp=Z,70µm,16.7s
CD2 LR LR
comp=Z,55µm,16.7s
TNTI Ternate 30.20 91 P **P** **14 07 54.9 +2.3**
comp=Z,108nm,1.4s,comp=Z,2µm
NLAI Namlea 30.30 99 P **P** **14 07 54.3 +0.8**
comp=Z,172nm,0.9s,comp=Z,2µm
LBMI Labuha 30.41 94 P **P** **14 07 54.6 +0.1**
comp=Z,346nm,1.5s,comp=Z,5µm
ENH Enshi 30.79 21 *e*P **P** **14 07 56.2 -1.4**
comp=Z,700nm,0.9s
ENH LR LR
comp=Z,40µm,20.0s
QZH Quanzhou 31.06 40 ⇑*i*P **P** **14 07 58.1 -1.9**
QZH S **S** **14 13 00.2 -3.2**
QZH pmax pmax
comp=Z,290nm,0.9s
QZH pmax pmax
comp=Z,3µm,6.2s
QZH LR LR
comp=Z,86µm,14.0s
QZH LR LR
comp=Z,68µm,14.9s
QZH LR LR
comp=Z,115µm,15.2s
TPUB Ta-pu 31.33 45 *e*P **P** **14 08 01.9 -0.6**
comp=Z,208nm,1.1s
TPUB LR LR
comp=Z,20µm,20.0s
TWG Pinlang 31.34 46 *e*P **P** **14 08 03.2 +0.7**
comp=Z,2µm,1.6s
TWG LR LR
comp=Z,74µm,20.0s
MBWA Marble Bar 31.63 137 *e*P **P** **14 08 05.8 +0.7**
comp=Z,489nm,1.7s
MBWA LR LR
comp=Z,17µm,21.0s
MBWA Marble Bar 31.63 137 P **P** **14 08 06.1 +1.0**
SNR=8.4
YULB Yu-li 31.86 45 *e*P **P** **14 08 07.4 +0.2**
comp=Z,144nm,0.9s
YULB LR LR
comp=Z,15µm,21.0s
SSLB Suanglung 31.87 44 *e*P **P** **14 08 07.6 +0.4**
comp=Z,152nm,0.9s
SSLB LR LR
comp=Z,24µm,21.0s
MSAI Masohi 32.12 99 P **P** **14 08 08.6 -1.0**
comp=Z,31nm,0.9s,comp=Z,575nm
NACB Ninganchiao 32.56 45 *e*P **P** **14 08 13.6 +0.3**
comp=Z,122nm,1.0s
NACB LR LR
comp=Z,31µm,20.0s
SONA Sohna 32.70 326 *e*P **P** **14 08 15.2 +0.8**
SONA IAmb IAmb 14 08 17.8
comp=Z,223nm,1.3s
YHNB Yeheng 32.73 44 *e*P **P** **14 08 15.4 +0.5**
comp=Z,157nm,1.2s
YHNB LR LR
comp=Z,19µm,20.0s
BISR Bishrakh 32.75 327 *e*P **P** **14 08 12.5 -2.4**
AYAN Aya Nagar 32.85 326 *e*P **P** **14 08 15.2 -0.5**
AYAN IAmb IAmb 14 08 19.0
comp=Z,96nm,1.0s
KUDL Kundal 32.95 325 *e*P **P** **14 08 16.0 -0.7**
KUDL IAmb IAmb 14 08 18.6
comp=Z,171nm,1.4s
NDI New Delhi 32.96 327 *e*P **P** **14 08 13.0 -3.7**
NDI *e*S **S** **14 13 30.0 -3.0**
TATO Taipei 33.01 43 *e*P **P** **14 08 18.1 +0.9**
comp=Z,315nm,1.4s
TATO LR LR
comp=Z,15µm,20.0s
WHN Wuhan 33.05 28 ⇓*i*P **P** **14 08 17.6 +0.2**
WHN pP **pP** **14 08 26.6 0.0**
WHN pmax pmax
comp=Z,570nm,1.1s
WHN LR LR
comp=Z,92µm,15.0s
WHN LR LR
comp=Z,88µm,20.7s
WHN LR LR
comp=Z,128µm,15.4s
BHGR Bahadurgarh 33.12 326 *e*P **P** **14 08 17.5 -0.6**
BHGR IAmb IAmb 14 08 19.3
comp=Z,781nm,0.1s
KHET Khetri 33.30 324 *e*P **P** **14 08 19.6 -0.1**
KHET IAmb IAmb 14 08 22.9
comp=Z,177nm,1.3s
YOJ Yonaguni jima 33.75 46 PFAKE 14 08 30.0 +6.4
YOJ LR LR
comp=Z,16µm,22.0s
DDI Dehra Dun 33.81 329 *e*P **P** **14 08 23.5 -0.7**
DDI IAmb IAmb 14 08 26.9
comp=Z,258nm,1.1s
XAN Xi'an 34.06 18 P **P** **14 08 25.2 -1.1**
XAN pP pP 14 08 32.5 -3.0
XAN sP sP 14 08 35.9 -3.4
XAN PP **PnPn** **14 09 41.9 +1.6**
XAN S **S** **14 13 51.9 +1.8**
XAN sS sS 14 14 04.0 -1.2
XAN pmax pmax
comp=Z,78nm,0.9s
XAN pmax pmax
comp=Z,2µm,8.7s
XAN LR LR
comp=Z,52µm,14.6s
XAN LR LR
comp=Z,34µm,13.6s
XAN LR LR
comp=Z,81µm,14.9s
KKR Kurukshetra 34.17 327 *e*P **P** **14 08 27.6 +0.3**
SWI Sorong 34.17 94 P **P** **14 08 26.2 -1.3**
comp=Z,120nm,1.3s,comp=Z,2µm
FITZ Fitzroy Crossi 34.20 126 P **P** **14 08 26.2 -1.5**
comp=Z,41nm,0.9s,baz=256,slow=4.4
FITZ S **S** **14 13 49.0 -3.5**
comp=Z,9.5nm,1.1s,baz=144,slow=17,SNR=2.7
FITZ ScP **ScP** **14 14 48.4 +1.2**
comp=Z,24nm,1.1s,baz=298,slow=6.6,SNR=4.2
FITZ Fitzroy Crossi 34.20 126 P **P** **14 08 27.3 -0.4**
baz=34,SNR=4.8
FITZ Fitzroy Crossi 34.20 126 *e*P **P** **14 08 26.3 -1.3**
comp=Z,44nm,0.9s
FITZ S **S** **14 13 49.0 -3.5**
FITZ ScP **ScP** **14 14 48.4 +1.2**
FITZ LR LR
comp=Z,10µm,21.0s
BHJ Bhuj 34.27 311 *e*P **P** **14 08 28.9 +0.7**
BHJ IAmb IAmb 14 08 41.5
comp=Z,2µm,3.4s
LZH Lanzhou 34.84 9 ⇑*i*P **P** **14 08 33.6 +0.5**
LZH pP pP 14 08 42.2 -0.1
LZH sP sP 14 08 47.2 +1.1
LZH PP **PP** **14 09 53.1 +0.6**
LZH S **S** **14 14 02.0 -0.2**
LZH sS sS 14 14 15.0 -2.3
LZH SS **SnSn** **14 16 18.2 +0.4**

LZH pmax pmax
comp=Z,690nm,1.2s
LZH pmax pmax
comp=Z,2μm,4.0s
LZH LR LR
comp=Z,38μm,16.4s
LZH LR LR
comp=Z,47μm,16.9s
LZH LR LR
comp=Z,42μm,17.9s
SMLA Simla 34.91 329 *i* P **P** **14 08 33.1 -0.6**
SAUI Saumlaki 35.35 106 PFAKE 14 08 50.0 +12
SAUI LR LR
comp=Z,16μm,18.0s
FAKI Fak Fak 35.35 97 P **P** **14 08 36.7 -1.0**
comp=Z,86nm,1.2s,comp=Z,2μm
FAKI Fak Fak 35.35 97 *e*P **P** **14 08 35.5 -2.2**
comp=Z,73nm,1.0s
FAKI LR LR
comp=Z,9μm,22.0s
JASL Jaisalmer 35.61 317 *ex* **P** **14 08 41.8 +2.1**
DHRM DHARAMSHALA 36.25 329 *e*P **P** **14 08 44.4 -1.0**
DHRM IAmb IAmb 14 08 46.9
comp=Z,119nm,0.7s
NJ2 Nanjing 36.52 32 *e*P **P** **14 08 47.9 +0.5**
NJ2 sP **pP** **14 08 56.0 -0.6**
NJ2 S **S** **14 14 36.2 +8.5**
NJ2 sS **sS** **14 14 42.7 -0.2**
NJ2 pmax pmax
comp=Z,87nm,1.2s
NJ2 pmax pmax
comp=Z,2μm,6.0s
NJ2 LR LR
comp=Z,38μm,16.8s
NJ2 LR LR
comp=Z,42μm,15.7s
NJ2 LR LR
comp=Z,64μm,15.2s
MTN Manton Dam 36.64 114 *e*P **P** **14 08 46.8 -1.9**
comp=Z,232nm,1.3s
MTN LR LR
comp=Z,10μm,20.0s
SSE Sheshan 37.08 35 ⇑P **P** **14 08 53.3 +1.1**
SSE sP **pP** **14 09 01.5 +0.1**
SSE S **S** **14 14 41.1 +4.8**
SSE sS **sS** **14 14 51.8 +0.3**
SSE pmax pmax
comp=Z,71nm,1.3s
SSE pmax pmax
comp=Z,1μm,7.8s
SSE LR LR
comp=Z,19μm,19.9s
SSE LR LR
comp=Z,4μm,19.9s
SSE LR LR
comp=Z,40μm,16.5s
PALU Palau 37.60 80 P **P** **14 08 55.8 -1.0**
baz=37,SNR=13
GTA Gaotai 37.68 3 ⇑P **P** **14 08 56.7 -0.6**
GTA pP pP 14 09 02.2 -4.3
GTA sP sP 14 09 05.4 -4.9
GTA PP **PnPn** **14 10 25.8 +0.9**
GTA S **S** **14 14 45.2 -0.3**
GTA sS ScP 14 14 55.7 -4.0
GTA ScP ScP 14 15 01.9 +2.2
GTA PcS **PcS** **14 15 03.1 +0.1**
GTA SS **SnSn** **14 17 18.0 -8.4**
GTA ScS **ScS** **14 19 06.5 -1.9**
GTA pmax pmax
comp=Z,2μm,6.9s
GTA LR LR
comp=Z,21μm,13.8s
GTA LR LR
comp=Z,16μm,15.2s
GTA LR LR
comp=Z,21μm,13.8s
KDU Kakadu 37.82 113 P **P** **14 08 58.0 -0.6**
baz=38,SNR=13
TIY Taiyuan 38.55 20 *e*P **P** **14 09 06.4 +1.7**
TIY pP **pP** **14 09 13.6 -0.3**
TIY S **S** **14 15 02.7 +4.0**
TIY sS **sS** **14 15 15.2 +1.3**
TIY pmax pmax
comp=Z,120nm,0.8s
TIY pmax pmax
comp=Z,1μm,6.4s
TIY LR LR
comp=Z,62μm,14.5s
TIY LR LR
comp=Z,46μm,13.7s
TIY LR LR
comp=Z,72μm,15.8s
JOW Kunigami 38.97 47 *e*P **P** **14 09 08.7 +0.4**
comp=Z,383nm,1.0s
JOW LR LR
comp=Z,10μm,20.0s
TIA Tai'an 39.06 26 ⇓P **P** **14 09 08.5 -0.3**
TIA sP **pP** **14 09 17.3 -0.8**
TIA S **S** **14 15 03.0 -3.2**
TIA pmax pmax
comp=Z,140nm,1.1s
TIA pmax pmax
comp=Z,2μm,7.7s
TIA LR LR
comp=Z,74μm,13.7s
TIA LR LR
comp=Z,55μm,14.3s
TIA LR LR
comp=Z,119μm,13.5s
NWAO Narrogin (SRO) 39.25 153 P **P** **14 09 12.8 +2.3**
comp=Z,13nm,0.9s,baz=126,slow=0.0,SNR=2.9
NWAO ScP **S** **14 15 07.7 -1.5**
comp=Z,27nm,1.1s,baz=79,slow=0.0,SNR=5.4
NWAO Narrogin (SRO) 39.25 153 *e*P **P** **14 09 11.3 +0.8**
NWAO *e*S **S** **14 15 07.3 -1.9**
NWAO Narrogin (SRO) 39.25 153 *e*P **P** **14 09 11.3 +0.8**
comp=Z,96nm,0.9s
NWAO *e*S **S** **14 15 07.3 -1.9**
NWAO LR LR
comp=Z,18μm,21.0s
H01W3 Cape Leeuwin H 39.65 158 T T 14 51 06.4
baz=333,slow=76,SNR=155
H01W2 Cape Leeuwin H 39.66 158 T T 14 51 08.0
baz=333,slow=76,SNR=116
H01W1 Cape Leeuwin H 39.67 158 T T 14 51 08.3
baz=333,slow=76,SNR=132
WRKA Warakurna 40.15 133 P **P** **14 09 18.2 0.0**
baz=40,SNR=18
KMBL Kambalda 40.35 146 P **P** **14 09 21.6 +2.0**
baz=41,SNR=10
BTO Baotou 40.51 15 *e*P **P** **14 09 21.9 +1.0**
HHC Hu-ho-hao-te 41.16 17 *e*P **P** **14 09 28.1 +1.8**
HHC sP pP 14 09 36.7 +1.1
HHC PP **PnPn** **14 11 04.4 -1.8**
HHC S **S** **14 15 36.7 -1.0**
HHC pmax pmax
comp=Z,150nm,1.1s
HHC pmax pmax
comp=Z,1μm,5.8s
HHC LR LR
comp=Z,3μm,14.7s
HHC LR LR
comp=Z,6μm,14.8s
BJT Baijiatuan 41.93 22 *e*P **P** **14 09 33.3 +0.8**
BJT Baijiatuan 41.93 22 *e*P **P** **14 09 33.3 +0.8**
comp=Z,1μm,1.1s
BJT LR LR
comp=Z,14μm,19.0s
BJI Beijing 41.95 22 P **P** **14 09 33.9 +1.2**
BJI PP **PP** **14 11 11.3 +1.2**
BJI S **S** **14 15 50.0 +0.8**
BJI pmax pmax
comp=Z,530nm,1.1s
BJI pmax pmax
comp=Z,3μm,5.1s
BJI LR LR
comp=Z,18μm,15.9s
BJI LR LR
comp=Z,12μm,17.2s
BJI LR LR
comp=Z,12μm,23.9s
KBL Kabul 41.96 324 *e*P **P** **14 09 32.3 -0.8**
KBL Kabul 41.96 324 *e*P **P** **14 09 32.3 -0.8**
comp=Z,100nm,1.1s
KBL LR LR
comp=Z,4μm,21.0s

WB0 Warramunga Arr 42.26 122 PFAKE 14 09 50.0 +15
WB0 LR LR
comp=Z,12μm,22.0s
WB9 Warramunga Arr 42.26 122 PFAKE 14 09 50.0 +14
WB9 LR LR
comp=Z,22μm,20.0s
WB8 Warramunga Arr 42.27 122 PFAKE 14 09 50.0 +14
WB8 LR LR
comp=Z,11μm,21.0s
WB6 Warramunga Arr 42.27 122 PFAKE 14 09 50.0 +14
WB6 LR LR
comp=Z,11μm,20.0s
WB5 Warramunga Arr 42.28 122 PFAKE 14 09 50.0 +14
WB5 LR LR
comp=Z,11μm,20.0s
WB4 Warramunga Arr 42.29 122 PFAKE 14 09 50.0 +14
WB4 LR LR
comp=Z,11μm,20.0s
WRA Warramunga Arr 42.29 122 P **P** **14 09 34.7 -1.0**
comp=Z,100nm,1.1s,baz=301,slow=9.2,SNR=66
WRA ScP **ScP** **14 15 18.2 +0.3**
comp=Z,16nm,1.2s,baz=304,slow=4.0,SNR=6.9
WRA S **S** **14 15 51.6 -3.2**
comp=Z,12nm,1.2s,baz=298,slow=16,SNR=10
WR1 Warramunga Arr 42.29 122 PFAKE 14 09 50.0 +14
WR1 LR LR
comp=Z,11μm,20.0s
WB3 Warramunga Arr 42.29 122 PFAKE 14 09 50.0 +14
WB3 LR LR
comp=Z,11μm,20.0s
WRAB Tennant Creek 42.29 122*c* *i*P **P** **14 09 34.5 -1.3**
WRAB Tennant Creek 42.29 122 *e*P **P** **14 09 34.9 -0.9**
comp=Z,192nm,1.1s
WRAB LR LR
comp=Z,12μm,20.0s
WC4 Warramunga Arr 42.30 122 PFAKE 14 09 50.0 +14
WC4 LR LR
comp=Z,11μm,20.0s
WB2 Warramunga Arr 42.30 122 *e*P **P** **14 09 34.9 -0.9**
comp=Z,210nm,1.3s
WB2 LR LR
comp=Z,13μm,21.0s
WC2 Warramunga Arr 42.30 122 PFAKE 14 09 50.0 +14
WC2 LR LR
comp=Z,12μm,20.0s
WR2 Warramunga Arr 42.31 122 PFAKE 14 09 50.0 +14
WR2 LR LR
comp=Z,10μm,20.0s
WC3 Warramunga Arr 42.32 122 PFAKE 14 09 50.0 +14
WC3 LR LR
comp=Z,11μm,20.0s
WR3 Warramunga Arr 42.33 122 PFAKE 14 09 50.0 +14
WR3 LR LR
comp=Z,11μm,20.0s
WR4 Warramunga Arr 42.35 122 PFAKE 14 09 50.0 +14
WR4 LR LR
comp=Z,10μm,21.0s
WR5 Warramunga Arr 42.37 122 PFAKE 14 09 50.0 +14
WR5 LR LR
comp=Z,10μm,20.0s
KSH Kashi 42.37 335 P **P** **14 09 34.9 -1.4**
KSH *e*pP pP 14 09 42.4 -3.2
KSH *e*PcP **PcP** **14 11 30.6 +1.3**
KSH PcS **PcS** **14 15 20.7 -0.6**
KSH S **S** **14 15 53.6 -2.1**
KSH ScS **ScS** **14 19 33.0 -3.2**
KSH pmax pmax
comp=Z,60nm,1.0s
KSH pmax pmax
comp=Z,1μm,7.0s
KSH LR LR
comp=Z,4μm,16.9s
KSH LR LR
comp=Z,6μm,16.6s
KSH LR LR
comp=Z,12μm,21.0s
WR6 Warramunga Arr 42.39 122 PFAKE 14 09 50.0 +13
WR6 LR LR
comp=Z,11μm,20.0s
WR7 Warramunga Arr 42.41 122 PFAKE 14 09 50.0 +13
WR7 LR LR
comp=Z,10μm,20.0s
WR8 Warramunga Arr 42.43 122 PFAKE 14 09 50.0 +13
WR8 LR LR
comp=Z,10μm,21.0s
WR9 Warramunga Arr 42.44 122 PFAKE 14 09 50.0 +13
WR9 LR LR
comp=Z,10μm,20.0s
WR0 Warramunga Arr 42.46 122 PFAKE 14 09 50.0 +13
WR0 LR LR
comp=Z,9μm,20.0s
WBK Wadi Bani Khal 42.55 302 P **P** **14 09 40.1 +2.2**
SNR=44
WMQ Urumqi 42.85 350 P **P** **14 09 41.4 +1.4**
WMQ sP pP 14 09 50.3 +1.0
WMQ PcP **PcP** **14 11 35.1 +4.4**
WMQ S **S** **14 16 04.0 +1.5**
WMQ sS sS 14 16 15.5 -2.4
WMQ SS **SS** **14 19 10.5 -4.1**
WMQ ScS **ScS** **14 19 36.6 -2.2**
WMQ pmax pmax
comp=Z,130nm,1.0s
WMQ pmax pmax
comp=Z,1μm,5.0s
WMQ LR LR
comp=Z,3μm,20.4s
WMQ LR LR
comp=Z,7μm,22.0s
WSAR Wadi Sarin 43.09 303 P **P** **14 09 43.6 +1.3**
comp=Z,44nm,1.2s,baz=142,slow=7.7,SNR=12
GENI Genyem 43.19 95 P **P** **14 09 42.4 -0.8**
comp=Z,223nm,1.0s,comp=Z,3μm
DL2 Dalian 43.31 28 P **P** **14 09 44.6 +0.9**
DL2 S **S** **14 16 12.9 +3.6**
DL2 pmax pmax
comp=Z,330nm,1.0s
DL2 pmax pmax
comp=Z,2μm,6.1s
DL2 LR LR
comp=Z,21μm,19.6s
DL2 LR LR
comp=Z,18μm,16.9s
DL2 LR LR
comp=Z,26μm,19.2s
SMDO Samad 43.51 302 P **P** **14 09 47.8 +2.1**
SNR=30
BIDO Bidbid 43.63 303 P **P** **14 09 48.1 +1.5**
SNR=43
ASAR Alice Springs 43.68 127 P **P** **14 09 45.8 -1.2**
comp=Z,76nm,1.0s,baz=301,slow=7.1,SNR=107
ASAR ScP **ScP** **14 15 24.3 +0.9**
comp=Z,20nm,1.1s,baz=310,slow=4.0,SNR=12
ASAR S **S** **14 16 13.3 -1.9**
comp=Z,19nm,1.1s,baz=297,slow=14,SNR=15
AS31 Alice Springs 43.68 127 *e*P **P** **14 09 45.8 -1.2**
comp=Z,34nm,1.2s
AS31 LR LR
comp=Z,200nm,22.0s
AS01 Alice Springs 43.71 127 *e*P **P** **14 09 45.8 -1.5**
JAY Jayapura 43.72 95 S **S** **14 16 11.3 -4.8**
comp=Z,0.7nm,0.9s,baz=131,slow=23,SNR=1.4
JAY LR LR 14 29 43.3
comp=Z,140nm,20.6s,baz=252,slow=38
JAY Jayapura 43.72 95 P **P** **14 09 46.7 -0.8**
comp=Z,95nm,0.9s,comp=Z,941nm
SFK Sufi-Kurgan 43.84 334 P **P** **14 09 48.8 +0.5**
SHAO Shalim 43.90 294 P P 14 10 01.8 +13
SNR=5.7
BSY Bisya 44.11 302 P **P** **14 09 52.2 +1.8**
SNR=64
SHLS Shalkode 44.13 342 ⇑*i*P **P** **14 09 51.3 +0.7**
comp=Z,4μm,1.2s
SHLS *e*S **S** **14 16 24.3 +2.6**
SHLS LRM MLR 14 32 13.5
comp=Z,925nm,17.4s
HOQ Hoqain 44.34 303 P **P** **14 09 56.4 +4.1**
SNR=30
UZB Uzynbulak 44.40 341 ⇑*i*P **P** **14 09 53.3 +0.6**
comp=Z,3μm,1.2s
UZB *e*S **S** **14 16 26.5 +1.1**
UZB *e*SS **ScS** **14 19 50.3 +1.5**
UZB LR LR 14 28 55.1
comp=Z,1μm,20.4s
PDGK Podgornoye 44.41 342 P **P** **14 09 53.4 +0.9**
JNU Nakatsue 44.50 42 *e*P **P** **14 09 53.2 -0.2**
comp=Z,533nm,1.0s

JNU LR LR
comp=Z,21μm,21.0s
SATY Saty 44.53 340 ⇑*i*P **P** **14 09 54.3 +0.7**
comp=Z,7μm,1.2s
SATY *e*S **S** **14 16 29.4 +2.2**
SATY LRM MLR 14 31 11.7
comp=Z,2μm,17.2s
INCN Inchon 44.81 34 *e*P **P** **14 09 55.0 -0.7**
comp=Z,158nm,1.1s
INCN LR LR
comp=Z,24μm,19.0s
INCN Inchon 44.81 34 P **P** **14 09 55.5 -0.3**
SNR=17
ARQ Araqi 44.91 302 P **P** **14 10 00.3 +3.4**
SNR=36
RBK Rabkut 45.05 293 P **P** **14 10 00.6 +2.5**
SNR=24
MDOK Medeo 45.09 339 *i* P **P** **14 09 58.8 +0.7**
comp=Z,3μm,1.3s
MDOK *i* S **S** **14 16 37.1 +1.7**
MDOK *i* SS **SS** **14 19 57.8 -0.5**
MDOK LR LR 14 29 08.6
comp=Z,2μm,19.5s
AAA Alma-Ata 45.22 339 *e*P **P** **14 10 00.2 +1.2**
AAA *e*S **S** **14 16 38.1 +1.0**
AAA Alma-Ata 45.22 339 *e*P **P** **14 09 59.3 +0.2**
comp=Z,2μm,1.4s
AAA *e*S **S** **14 16 39.7 +2.7**
AAA LR LR 14 29 16.3
AAA LRM MLR 14 31 33.8
comp=Z,1μm,19.9s
TKM2 Tokmak 2 45.41 338 P **P** **14 10 01.3 +0.5**
TKM2 pmax pmax
comp=Z,419nm,1.3s
TKM2 Tokmak 2 45.41 338 *e*P **P** **14 10 00.7 -0.1**
comp=Z,337nm,1.2s
TKM2 LR LR
comp=Z,11μm,21.0s
KS15 Wonju Array Si 45.48 35 *e*P **P** **14 10 00.9 -0.2**
KSAR Wonju Array Be 45.48 35 P **P** **14 10 00.7 -0.4**
KSAR Wonju Array Be 45.48 35 P **P** **14 10 00.7 -0.4**
KS01 Wonju Array Si 45.51 35 *e*P **P** **14 10 00.5 -0.9**
KSRS Korea Array 45.51 35 P **P** **14 10 00.7 -0.7**
comp=Z,273nm,1.0s,baz=230,slow=8.1,SNR=258
KSRS LR LR 14 29 35.3
comp=Z,13μm,20.8s,baz=220,slow=37
AAK Ala-Archa 45.59 337 P **P** **14 10 03.4 +1.3**
comp=Z,109nm,1.3s,baz=151,slow=6.3,SNR=51
AAK Ala-Archa 45.59 337⇓ *e*P **P** **14 10 02.3 +0.1**
AAK pmax pmax
comp=Z,267nm,1.3s
AAK Ala-Archa 45.59 337 *e*P **P** **14 10 02.7 +0.6**
comp=Z,345nm,1.2s
AAK LR LR
comp=Z,8μm,20.0s
AAK Ala-Archa 45.59 337 P **P** **14 10 03.8 +1.6**
SNR=70
AAK P **P** **14 10 03.8 +1.6**
SNR=70
FRU Bishkek 45.72 337 ⇑*i*P **P** **14 10 04.0 +1.1**
FRU *i* S **S** **14 16 46.0 +1.8**
FRU pmax pmax
comp=Z,800nm,2.0s
FRU smax smax
comp=E,3μm,10.0s
UOSS Minazif 45.81 304 *e*P **P** **14 10 05.0 +1.1**
comp=E,13nm,1.6s
ASHO Ashiyiah 45.83 303 P **P** **14 10 05.5 +1.3**
SNR=27
ABTO Aybut 45.85 293 P **P** **14 10 06.8 +2.3**
SNR=46
EKS2 Erkin-Say 45.91 336 *e*P **P** **14 10 04.9 +0.3**
EKS2 pmax pmax
comp=Z,110nm,1.0s
EKS2 Erkin-Say 45.91 336 *e*P **P** **14 10 04.9 +0.3**
comp=Z,106nm,0.9s
EKS2 LR LR
comp=Z,6μm,21.0s
KUU Kurty 45.98 339 ⇑*i*P **P** **14 10 04.7 -0.3**
comp=Z,3μm,1.3s
KUU *e*S **S** **14 16 48.7 +0.7**
KUU LRM MLR 14 31 33.7
comp=Z,793nm,15.4s
BANOM Banah 46.13 305 P **P** **14 10 07.9 +1.3**
SNR=12
MNAS Manas 46.30 335 P **P** **14 10 08.5 +0.8**
MNAS pmax pmax
comp=Z,520nm,1.4s
RER Riviere de l'E 46.41 238 *e*P **P** **14 10 09.2 +0.3**
comp=Z,282nm,1.0s
SNY Shenyang 46.53 27 ⇑P **P** **14 10 08.2 -1.1**
SNY S **S** **14 16 58.5 +2.6**
SNY pmax pmax
comp=Z,130nm,1.8s
SNY pmax pmax
comp=Z,3μm,12.0s
SNY LR LR
comp=Z,27μm,16.5s
SNY LR LR
comp=Z,43μm,15.2s
SNY LR LR
comp=Z,54μm,16.7s
SONM Songino Array 46.71 9 P **P** **14 10 10.7 -0.1**
comp=Z,251nm,0.9s,baz=188,slow=8.6,SNR=184
SONM LR LR 14 32 32.4
comp=Z,35μm,18.4s,baz=188,slow=40
SONA1 Songino Array 46.73 9 *e*P **P** **14 10 11.0 0.0**
MK01 Makanchi Array 46.80 346 *e*P **P** **14 10 10.9 -0.4**
MK31 Makanchi Array 46.82 346 *i* P **P** **14 10 11.4 -0.1**
MK31 pmax pmax
comp=Z,857nm,1.3s
MK31 Makanchi Array 46.82 346 *e*P **P** **14 10 11.5 -0.1**
MKAR Makanchi Array 46.82 346 P **P** **14 10 11.3 -0.3**
comp=Z,467nm,1.1s,baz=158,slow=2.8,SNR=172
MKAR S **S** **14 17 01.9 +2.0**
comp=Z,2.4nm,1.0s,baz=155,slow=18,SNR=2.1
MKAR LR LR 14 33 35.2
comp=Z,9μm,21.6s,baz=160,slow=41
MKAR PKPPKP P'P'df 14 41 23.1 -9.2
comp=Z,0.2nm,0.5s,baz=29,slow=3.3,SNR=4.2
MAKZ Makanchi 46.91 346 *e*P **P** **14 10 11.8 -0.4**
MAKZ pmax pmax
comp=Z,355nm,1.1s
MAKZ MLR MLR
comp=Z,11μm,21.0s
MAKZ Makanchi 46.91 346 *e*P **P** **14 10 11.8 -0.4**
comp=Z,355nm,1.1s
MAKZ LR LR
comp=Z,11μm,21.0s
ZSN Zaisan 46.97 348 ⇑*i*P **P** **14 10 12.7 0.0**
comp=Z,7μm,1.1s
ZSN *i* S **S** **14 17 03.1 +1.1**
ZSN LRM MLR 14 33 17.3
comp=Z,3μm,18.5s
QIS Mount Isa 47.04 120 P **P** **14 10 14.2 +0.6**
baz=47,SNR=31
IUG Iuzhnay 47.12 332 ⇑*i*P **P** **14 10 14.5 +0.4**
comp=Z,2μm,1.2s
IUG *i* S **S** **14 17 05.1 +0.5**
IUG LR LR 14 30 04.2
comp=Z,1μm,17.7s
KK31 Karatay Array 47.66 334 *i* P **P** **14 10 18.6 +0.4**
KK31 pmax pmax
comp=Z,411nm,1.4s
KKAR Karatay Array 47.66 334 *e*P **P** **14 10 17.9 -0.2**
KKAR Karatay Array 47.66 334 *e*P **P** **14 10 17.9 -0.2**
COEN Coen 48.14 110 P **P** **14 10 21.4 -1.0**
baz=48,SNR=20
COEN Coen 48.14 110 *e*P **P** **14 10 21.3 -1.0**
comp=Z,162nm,1.0s
COEN LR LR
comp=Z,8μm,21.0s
GUMO Guam 48.64 73 LR LR 14 31 15.3
comp=Z,2μm,21.1s,baz=236,slow=36
ZAK Zakamensk 48.85 5 *e*P **P** **14 10 27.4 +0.1**
ZAK pmax pmax
comp=Z,14nm,1.5s
CN2 Changchun 48.94 27 *e*P **P** **14 10 27.4 -0.5**
CN2 *e*PP **PP** **14 12 21.1 -0.5**
CN2 *e*S **S** **14 17 29.2 -0.7**
CN2 *e*SS **SS** **14 20 55.7 -5.4**
CN2 pmax pmax
comp=Z,200nm,4.0s
CN2 LR LR
comp=Z,21μm,16.0s
CN2 LR LR

comp=Z,21µm,16.0s
CN2 LR LR
comp=Z,17µm,19.0s
INU Inuyama 49.93 43 *e*P **P 14 10 35.4 -0.3**
comp=Z,374nm,1.3s
INU LR LR
comp=Z,12µm,18.0s
MOY Mondy 49.96 3 *e*P **P 14 10 35.8 0.0**
MOY pmax pmax
comp=Z,150nm,2.3s
TLY Talaya 50.17 5*c i*P **P 14 10 37.3 0.0**
TLY *e* 14 12 36.4
TLY *e*PPP PPP 14 13 28.2
TLY *e*S **S 14 17 50.3 +3.3**
TLY *e* 14 20 23.0
TLY pmax pmax
comp=Z,143nm,1.0s
TLY MLR MLR
comp=Z,29µm,20.0s
TLY Talaya 50.17 5 *e*P **P 14 10 37.6 +0.4**
comp=Z,127nm,1.0s
TLY LR LR
comp=Z,28µm,20.0s
TLY Talaya 50.17 5 P **P 14 10 38.2 +1.0**
SNR=54
TLY P **P 14 10 38.2 +1.0**
SNR=54
BBOO Buckleboo 50.21 137 P **P 14 10 37.6 -0.3**
baz=50,SNR=23
BBOO Buckleboo 50.21 137 *e*P **P 14 10 37.3 -0.6**
comp=Z,102nm,1.1s
BBOO LR LR
comp=Z,16µm,21.0s
MANU Manus Island 50.32 94 *e*P **P 14 10 39.4 +0.4**
comp=Z,128nm,1.0s
SEM Semipalatinsk 50.68 346 *e*P **P 14 10 40.9 -0.2**
comp=Z,2µm,1.3s
SEM *e*S **S 14 17 54.9 +0.8**
SEM LRM MLR 14 35 48.2
comp=Z,4µm,18.7s
JHJ2 Mitsune 50.77 47 *e*P **P 14 10 42.1 0.0**
PMG pmax pmax
comp=Z,531nm,1.0s
PMG Port Moresby 50.98 103 *e*P **P 14 10 43.5 -0.4**
comp=Z,106nm,0.8s
PMG LR LR
comp=Z,8µm,22.0s
OTUK Ortayu 51.14 339 P **P 14 10 44.6 -0.1**
OTUK pmax pmax
comp=Z,492nm,1.3s
HIA Hailar 51.24 19 *e*P **P 14 10 45.4 0.0**
HIA pmax pmax
comp=Z,195nm,1.0s
HIA MLR MLR
comp=Z,13µm,20.0s
HIA Hailar 51.24 19 *e*P **P 14 10 45.4 0.0**
comp=Z,196nm,1.0s
HIA LR LR
comp=Z,13µm,20.0s
KURBB Kurchatov Arra 51.31 345 P **P 14 10 45.5 -0.3**
comp=Z,36nm,0.7s,baz=163,slow=6.9,SNR=114
KURBB S **S 14 18 04.3 +1.5**
comp=Z,1.5nm,0.9s,baz=106,slow=5.9,SNR=2.6
KURBB PKP2ab 14 42 17.9
comp=Z,0.9nm,0.7s,baz=325,slow=1.2,SNR=10
KURK Kurchatov 51.37 345 P **P 14 10 45.5 -0.8**
KURK S **S 14 18 04.3 +0.7**
KURK pmax pmax
comp=Z,40nm,0.6s
KURK smax smax
comp=N,2.0nm,0.9s
KURK pmax pmax
comp=Z,1.0nm,0.7s
KURK Kurchatov 51.37 345 *e*P **P 14 10 45.9 -0.4**
comp=Z,648nm,1.4s
KURK S **S 14 18 04.3 +0.7**
KURK P'P'ab **P'P'ab 14 42 17.9 +7.0**
KURK LR LR
comp=Z,7µm,19.0s
KURK Kurchatov 51.37 345 P **P 14 10 46.6 +0.3**
SNR=77
MAT Matsushiro 51.39 43 P **P 14 10 45.2 -1.5**
MAT S **S 14 18 07.0 +2.5**
MAJO Matsushiro 51.39 43*c i*P **P 14 10 46.8 +0.1**
MAJO pmax pmax
comp=Z,603nm,1.3s
MAJO Matsushiro 51.39 43 *e*P **P 14 10 46.2 -0.6**
comp=Z,211nm,1.4s
MAJO LR LR
comp=Z,12µm,21.0s
MJAR Matsushiro Arr 51.39 43 P **P 14 10 45.8 -0.9**
comp=Z,74nm,1.0s,baz=223,slow=6.8,SNR=109
MJAR LR LR 14 33 12.7
comp=Z,10µm,21.1s,baz=240,slow=37
MJAR PKPPKP P'P'df 14 41 17.2 -11
comp=Z,0.2nm,0.4s,baz=332,slow=6.9,SNR=4.2
MDJ Mudanjiang 51.51 29 P **P 14 10 48.5 +1.1**
MDJ pP pP 14 10 54.8 -2.1
MDJ sP sP 14 10 57.5 -3.1
MDJ PcP **PcP 14 12 01.3 0.0**
MDJ PP **PP 14 12 46.2 +1.2**
MDJ PcS **PcS 14 15 55.2 -3.9**
MDJ S **S 14 18 08.2 +2.5**
MDJ ScS **ScS 14 20 35.1 -0.5**
MDJ pmax pmax
comp=Z,230nm,1.1s
MDJ pmax pmax
comp=Z,2µm,8.3s
MDJ LR LR
comp=Z,12µm,18.4s
MDJ LR LR
comp=Z,18µm,18.4s
MDJ LR LR
comp=Z,30µm,16.9s
MDJ Mudanjiang 51.51 29 *e*P **P 14 10 47.9 +0.5**
comp=Z,257nm,1.0s
MDJ LR LR
comp=Z,18µm,20.0s
VLA Vladivostok 51.62 32*c i*P **P 14 10 49.8 +1.6**
VLA pmax pmax
comp=Z,804nm,1.4s
CIT Chita 52.06 13 *e*P **P 14 10 52.6 +1.1**
CIT *e* 14 11 02.6
CIT *e* 14 11 06.7
CIT *e* 14 18 33.8
CIT pmax pmax
comp=Z,904nm,1.3s
USRK Ussuriysk Ar. 52.42 31 P **P 14 10 54.2 0.0**
comp=Z,571nm,1.0s,baz=237,slow=9.1,SNR=218
USRK LR LR 14 36 19.3
comp=Z,32µm,18.4s,baz=211,slow=40
BRZS Berezniki 52.50 340⇑*i*P **P 14 10 55.3 +0.6**
comp=Z,188nm,1.4s
BRZS *i*S **S 14 18 20.4 +1.2**
BRZS LR LR 14 33 46.4
BRZS LRM MLR 14 36 12.1
comp=Z,1µm,20.2s
CTAO Charters Tower 52.72 117 *e*P **P 14 10 57.1 +0.2**
CTAO pmax pmax
comp=Z,150nm,1.1s
CTAO MLR MLR
comp=Z,15µm,20.0s
CTAO Charters Tower 52.72 117 *e*P **P 14 10 57.1 +0.2**
comp=Z,150nm,1.1s
CTAO LR LR
comp=Z,15µm,20.0s
ZAA0 Zalesovo Array 53.13 351 *e*P **P 14 10 58.8 -0.4**
ZALV Zalesovo Beam 53.13 351 P **P 14 10 58.9 -0.4**
comp=Z,136nm,0.5s,baz=172,slow=6.1,SNR=176
ZALV S **S 14 18 30.1 +2.5**
comp=Z,4.7nm,0.9s,baz=184,slow=10,SNR=4.3
ZALV LR LR 14 38 47.3
comp=Z,8µm,19.1s,baz=165,slow=42
ZALV PKPPKP **P'P'df 14 41 19.2 -4.4**
comp=Z,0.4nm,0.4s,baz=343,slow=1.5,SNR=3.5
ABPO Ambohimpanom 53.17 245 *e*P **P 14 11 00.1 -0.3**
ABPO pmax pmax
comp=Z,51nm,1.1s
ABPO Ambohimpanom 53.17 245 *e*P **P 14 10 59.4 -1.0**
comp=Z,51nm,1.1s
ABPO LR LR
comp=Z,7µm,20.0s
QLP Quilpie 53.33 125 P **P 14 11 01.7 +0.4**
baz=53,SNR=78
STKA Stephens Creek 53.66 132 P **P 14 11 03.9 +0.3**
comp=Z,108nm,1.0s,baz=303,slow=7.2,SNR=68
STKA S **S 14 18 35.0 -0.7**
comp=Z,4.6nm,1.1s,baz=7.7,slow=15,SNR=3.1
STKA Stephens Creek 53.66 132 P **P 14 11 03.7 0.0**
baz=54,SNR=72
STKA Stephens Creek 53.66 132 *e*P **P 14 11 03.4 -0.2**
STKA S **S 14 18 35.0 -0.7**
STKA pmax pmax
comp=Z,48nm,1.3s
STKA MLR MLR
comp=Z,2µm,22.0s
STKA Stephens Creek 53.66 132 *e*P **P 14 11 03.4 -0.2**
comp=Z,48nm,1.3s
STKA S **S 14 18 35.0 -0.7**
STKA LR LR
comp=Z,2µm,22.0s
DAMY Dhamar 53.67 287 *e*P **P 14 11 06.0 +1.8**
comp=Z,1µm,1.3s
DAMY LR LR
comp=Z,4µm,19.0s
NVS Novosibirsk 54.25 350 *e*P **P 14 11 07.2 -0.2**
NVS *e* 14 11 17.1
NVS *e*S **S 14 18 38.7 -4.0**
NVS pmax pmax
comp=Z,245nm,1.3s
NVS pmax pmax
comp=N,195nm,1.4s
NVS pmax pmax
comp=E,94nm,1.2s
NVS smax smax
comp=E,95nm,1.7s
NVS smax smax
comp=N,73nm,2.7s
KRAR Krasnoyarsk 54.33 357*c i*P **P 14 11 07.3 -0.7**
KRAR pmax pmax
comp=Z,576nm,1.2s
RABL Rabaul 55.26 96 *e*P **P 14 11 14.8 -0.7**
comp=Z,166nm,1.0s
RABL LR LR
comp=Z,3µm,19.0s
VOSK Vostochnaya 55.39 341 *e*P **P 14 11 15.2 -0.6**
VOSK pmax pmax
comp=Z,190nm,1.1s
VOSK Vostochnaya 55.39 341 *e*P **P 14 11 14.9 -0.9**
comp=Z,187nm,1.1s
VOSK LR LR
comp=Z,5µm,22.0s
BVA0 Borovoye Array 55.84 341 P **P 14 11 17.8 -1.2**
BVA0 pmax pmax
comp=Z,94nm,1.3s
BVAR Borovoye Array 55.84 341 P **P 14 11 17.9 -1.1**
comp=Z,63nm,0.8s,baz=141,slow=7.3,SNR=50
BVAR S **S 14 19 03.6 -0.5**
comp=Z,3.6nm,0.9s,baz=164,slow=21,SNR=3.2
BVAR PKP2bc 14 41 41.6
comp=Z,2.9nm,1.2s,baz=204,slow=3.2,SNR=4.8
KLR Kul'dur 55.88 27 S **S 14 19 11.1 +6.2**
comp=Z,1.0nm,0.5s,baz=342,slow=16,SNR=1.9
KLR Kul'dur 55.88 27 *i P* **P 14 11 20.2 +0.8**
BRVK Borovoye 55.90 341*c i*P **P 14 11 19.2 -0.2**
BRVK pmax pmax
comp=Z,81nm,1.0s
BRVK Borovoye 55.90 341 *e*P **P 14 11 18.2 -1.3**
comp=Z,207nm,1.2s
BRVK LR LR
comp=Z,9µm,21.0s
BRVK Borovoye 55.90 341 P **P 14 11 19.2 -0.2**
SNR=30
ZRNK Zerenda 56.24 340 P **P 14 11 20.8 -1.1**
ZRNK pmax pmax
comp=Z,134nm,1.1s
ZRNK Zerenda 56.24 340 *e*P **P 14 11 20.5 -1.3**
comp=Z,144nm,1.1s
ZRNK LR LR
comp=Z,9µm,20.0s
CHKZ Chkalovo 56.31 341 P **P 14 11 21.9 -0.4**
CHKZ pmax pmax
comp=Z,456nm,1.7s
ARPS Mount Arapiles 56.36 137 P **P 14 11 25.0 +2.0**
baz=56,SNR=13
CMSA Cobar Meteorol 56.59 130 P **P 14 11 25.2 +0.4**
baz=57,SNR=66
HABR Khabarovsk 56.90 29 *e*P **P 14 11 24.5 -2.1**
HABR *e**SP **pP 14 11 35.3 -0.9**
HABR *e* 14 12 19.6
HABR *e* 14 13 31.2
HABR *e*PPP PPP 14 14 46.9
HABR *e*S **S 14 19 17.3 -1.0**
HABR *e* 14 19 26.7
HABR *e* 14 19 30.3
HABR *e* 14 21 11.9
HABR *e*SS **SS 14 23 06.9 -0.1**
HABR pmax pmax
comp=Z,447nm,1.2s
HABR pmax pmax
comp=Z,484nm,1.2s
HABR MLR MLR
comp=N,15µm,21.0s
HABR MLR MLR
comp=Z,13µm,17.0s
HABR MLR MLR
comp=E,19µm,18.0s
RMQ Roma 57.04 123 P **P 14 11 29.0 +0.9**
baz=57,SNR=43
AB31 Akbulak array 57.12 332 *i* P **P 14 11 27.1 -1.1**
AB31 pmax pmax
comp=Z,464nm,1.6s
ABKAR Akbulak array 57.12 332 *e*P **P 14 11 27.2 -1.0**
ERM Erimo 57.56 39*d i*P **P 14 11 32.7 +1.3**
ERM pmax pmax
comp=Z,39nm,1.2s
ERM Erimo 57.56 39 *e*P **P 14 11 32.2 +0.8**
comp=Z,197nm,1.3s
ERM LR LR
comp=Z,8µm,18.0s
BOD Bodaibo 57.59 11 *e*P **P 14 11 31.3 -0.1**
BOD pmax pmax
comp=Z,271nm,1.4s
ASAJ Asahikawa 58.34 37 PFAKE 14 11 50.0 +13
ASAJ LR LR
comp=Z,200nm,21.0s
EIDS Eidsvold 58.62 121 P **P 14 11 39.6 +0.4**
baz=59,SNR=30
EIDS Eidsvold 58.62 121 *e*P **P 14 11 39.3 +0.1**
comp=Z,168nm,1.0s
EIDS LR LR
comp=Z,7µm,22.0s
FURI Furi 58.63 279 *e*P **P 14 11 41.4 +1.6**
FURI Furi 58.63 279 PFAKE 14 11 50.0 +10
FURI LR LR
comp=Z,5µm,20.0s
AKTO Aktyubinsk 58.84 332 P **P 14 11 39.1 -1.1**
comp=Z,58nm,1.0s,baz=130,slow=8.2,SNR=65
AKTO S **S 14 19 40.0 -3.8**
comp=Z,2.8nm,0.7s,baz=308,slow=23,SNR=1.5
AKTO LR LR 14 40 50.1
comp=Z,3µm,20.3s,slow=40
AKTO PKP2bc 14 41 26.8
comp=Z,0.9nm,0.4s,baz=60,slow=5.7,SNR=4.6
TOO Toolangi 59.27 136 P **P 14 11 45.5 +2.0**
baz=59,SNR=12
CLNS Chul'man 59.34 17 *e*P **P 14 11 44.2 +0.6**
CLNS *e**PP **pP 14 11 54.1 +0.8**
CLNS *e* 14 12 31.5
CLNS *e* 14 13 55.4
CLNS *e*PPP PPP 14 15 15.4
CLNS *e*S **S 14 19 52.8 +2.7**
CLNS *e*SS **SS 14 23 42.0 -3.3**
CLNS pmax pmax
comp=Z,94nm,0.8s
CLNS pmax pmax
comp=N,68nm,0.9s
CLNS pmax pmax
comp=E,51nm,0.9s
CLNS pmax pmax
comp=Z,26nm,1.2s
CLNS smax smax
comp=E,579nm,12.1s
CLNS smax smax
comp=N,986nm,10.7s
CLNS MLR MLR
comp=N,19µm,13.0s
CLNS MLR MLR
comp=E,22µm,14.0s
CLNS MLR MLR
comp=Z,35µm,13.0s
YNG Young 59.84 132 P **P 14 11 48.9 +1.4**
baz=60,SNR=11
KMBO Kilima Mbogo 59.98 268 P **P 14 11 49.6 +0.5**
comp=Z,1.2nm,0.4s,baz=67,slow=8.1,SNR=11
KMBO LR LR 14 33 55.0
comp=Z,6µm,20.2s,baz=84,slow=32
KMBO PKP2ab 14 41 31.5
comp=Z,0.7nm,0.3s,baz=209,slow=5.9,SNR=4.2
KMBO Kilima Mbogo 59.98 268 *e*P **P 14 11 49.4 +0.3**
KMBO pmax pmax
comp=Z,71nm,1.2s
KMBO Kilima Mbogo 59.98 268 *e*P **P 14 11 49.4 +0.3**
comp=Z,71nm,1.2s
KMBO P'P'ab **P'P'ab 14 41 31.5 -7.0**
YSS Yuzh-Sakhalins 60.01 34⇑*i*P **P 14 11 48.7 +0.3**
YSS *e**SP **sP 14 12 03.0 +1.3**
YSS *e* 14 12 35.3
YSS *e*S **S 14 19 59.0 +0.1**
YSS *e*PPS PPS 14 20 20.0
YSS pmax pmax
comp=Z,450nm,1.0s
YSS MLR MLR
comp=Z,13µm,16.0s
YSS MLR MLR
comp=N,5µm,17.0s
YSS MLR MLR
comp=E,12µm,16.0s
YSS Yuzh-Sakhalins 60.01 34 *e*P **P 14 11 48.3 -0.1**
comp=E,531nm,1.0s
YSS LR LR
comp=Z,2µm,21.0s
YUK Yuzh-Kuril'sk 60.30 39 P **P 14 11 49.4 -1.0**
CUKT Cukurca 60.61 313 *e*P **P 14 11 50.9 -1.9**
HKR Hakkari 60.64 313 *e*P **P 14 11 51.7 -1.4**
CAN Canberra 60.73 133 *e*P **P 14 11 53.7 +0.1**
CAN pmax pmax
comp=Z,216nm,1.7s
CAN MLR MLR
comp=Z,16µm,21.0s
CAN Canberra 60.73 133 *e*P **P 14 11 53.7 +0.1**
comp=Z,216nm,1.7s
CAN LR LR
comp=Z,16µm,21.0s
ARMA Armidale 60.81 126 P **P 14 11 56.5 +2.2**
baz=61,SNR=16
ARMA Armidale 60.81 126 *e*P **P 14 11 54.6 +0.3**
comp=Z,146nm,1.2s
ARMA LR LR
comp=Z,11µm,21.0s
GNI Garni 60.97 316 P **P 14 11 55.0 -0.3**
comp=Z,15nm,0.6s,baz=184,slow=3.7,SNR=21
GNI Garni 60.97 316 *e*P **P 14 11 55.0 -0.3**
GNI pmax pmax
comp=Z,487nm,1.4s
GNI MLR MLR
comp=Z,3µm,19.0s
GNI Garni 60.97 316 *e*P **P 14 11 55.0 -0.3**
comp=Z,487nm,1.4s
GNI LR LR
comp=Z,3µm,19.0s
DGRG David-gareji 61.10 318 P **P 14 11 57.5 +1.5**
DGRG David-gareji 61.10 318 P **P 14 11 57.5 +1.5**
CLDR Caldiran 61.13 315 *e*P **P 14 11 55.8 -0.7**
PATS Pohnpei 61.16 83 P **P 14 11 57.8 +1.0**
baz=61,SNR=14
PATS Pohnpei 61.16 83 *e*P **P 14 11 57.1 +0.4**
comp=Z,609nm,1.1s
TBLG Delisi 61.65 318 *e*P **P 14 12 01.3 +1.7**
TBLG Delisi 61.65 318 P **P 14 12 01.9 +2.2**
TBLG Delisi 61.65 318 P **P 14 12 01.8 +2.2**
AGRB Hanur-Agry 61.96 315 *e*P **P 14 12 01.5 -0.6**
KUR Kuril'sk 62.13 38*ce*P P 14 11 56.4 -6.4
KUR *i*S S 14 20 36.0 +10
KUR pmax pmax
comp=Z,222µm,1.2s
KUR pmax pmax
comp=Z,776nm,8.3s
KUR MLR MLR
comp=N,7µm,14.0s
KUR MLR MLR
comp=E,5µm,14.0s
KUR MLR MLR
comp=Z,9µm,14.0s
TYV Tymovskoe 62.23 31 *e*P **P 14 12 05.5 +2.2**
TYV *e*S **S 14 20 34.0 +7.0**
TYV pmax pmax
comp=Z,66nm,1.0s
TYV pmax pmax
comp=Z,2µm,13.0s
TYV smax smax
comp=E,2µm,14.0s
TYV MLR MLR
comp=E,31µm,15.0s
TYV MLR MLR
comp=Z,36µm,16.0s
CRZF Crozet Islands 62.24 214 PFAKE 14 12 10.0 +6.5
CRZF LR LR
comp=Z,6µm,18.0s
SVE Sverdlovsk 62.28 338*ce*P **P 14 12 03.2 -0.4**
SVE *e* 14 14 20.3
SVE *e*PPP PPP 14 15 47.3
SVE *e*S **S 14 20 27.4 -0.1**
SVE *e* 14 24 29.2
SVE pmax pmax
comp=Z,275nm,1.3s
SVE pmax pmax
comp=Z,1µm,17.6s
MZRK Al-Mazaregh 62.32 310 *e*P **P 14 12 04.4 +0.1**
AKH Akhalkalaki 62.36 317 P **P 14 12 06.4 +1.8**
AKH Akhalkalaki 62.36 317 P **P 14 12 06.4 +1.8**
NKL Nikolayevsk 62.66 28 *e*P **P 14 12 06.0 -0.2**
NKL *e* 14 12 15.0
NKL *e* 14 20 36.0
NKL pmax pmax
comp=N,39nm,1.0s
NKL pmax pmax
comp=E,39nm,1.0s
NKL pmax pmax
comp=Z,220nm,1.0s
NKL pmax pmax
comp=N,500nm,12.0s
NKL pmax pmax
comp=E,700nm,12.0s
NKL pmax pmax
comp=Z,2µm,12.0s
NKL MLR MLR
comp=N,11µm,15.0s
NKL MLR MLR
comp=E,17µm,15.0s
NKL MLR MLR
comp=Z,24µm,15.0s
ZEI Tsey 62.66 318 *e*P **P 14 12 04.0 -2.7**
ZEI *e*S **S 14 20 32.1 -1.2**
ZEI pmax pmax
comp=Z,289nm,1.0s
ARU Arti 62.78 337 P **P 14 12 06.0 -0.9**
comp=Z,81nm,1.1s,baz=132,slow=4.0,SNR=65
ARU PKP2bc 14 41 24.2
comp=Z,0.8nm,0.3s,baz=304,slow=3.6,SNR=3.3
ARU LR LR 14 43 40.3
comp=Z,4µm,19.9s,baz=128,slow=40
ARU Arti 62.78 337*d i*P **P 14 12 05.3 -1.6**
ARU *e* 14 12 47.1
ARU *e* 14 14 24.5
ARU S **S 14 20 32.6 -1.2**
ARU 14 21 48.7
ARU SS **SS 14 24 35.0 -4.0**
ARU SSS SSS 14 27 29.6
ARU pmax pmax
comp=Z,149nm,1.2s
ARU MLR MLR
comp=Z,5µm,21.0s
ARU Arti 62.78 337 *e*P **P 14 12 05.0 -1.9**
comp=Z,158nm,1.1s
ARU ⇑*e* 14 41 24.2
KBSD Kabsdagh 62.80 311 *e*P **P 14 12 07.7 +0.2**
VRTB Varto-Mus 62.90 314 *e*P **P 14 12 07.7 -0.6**
SFNV Sufian 62.93 311 *e*P **P 14 12 08.8 +0.4**

SFNV	Sufian	62.93	311	eP	P	14 12 19.9	+12
MAZI	Mazidag	63.03	312	eP	P	14 12 08.3	-0.8
TAU	Tasmania Unive	63.16	141	eP	P	14 12 10.1	+0.4
TAU				pmax	pmax		
	comp=Z,119nm,1.5s						
TAU	Tasmania Unive	63.16	141	eP	P	14 12 10.1	+0.4
	comp=Z,119nm,1.5s						
NCK	Nalchik	63.17	319	⇓iP	P	14 12 10.3	+0.5
NCK				pmax	pmax		
	comp=Z,37nm,0.8s						
EZM	Erzurum	63.25	315	eP	P	14 12 11.5	+0.8
BNGB	Bingˆ¶l	63.40	313	eP	P	14 12 11.6	0.0
DYBB	Diyarbakir	63.43	312	eP	P	14 12 11.8	+0.1
HNR	Honiara	63.47	101	S	S	14 20 44.0	+0.2
	comp=Z,17nm,0.3s,baz=211,slow=12,SNR=0.9						
HNR	Honiara	63.47	101	eP	P	14 12 12.0	-0.4
HNR	Honiara	63.47	101	eP	P	14 12 11.9	-0.4
HNR				S	S	14 20 44.1	+0.2
HNR				pmax	pmax		
	comp=Z,453nm,1.1s						
HNR				MLR	MLR		
	comp=Z,3µm,21.0s						
HNR	Honiara	63.47	101	eP	P	14 12 11.9	-0.4
	comp=Z,453nm,1.1s						
HNR				S	S	14 20 44.0	+0.2
HNR				LR	LR		
	comp=Z,3µm,21.0s						
KSRV	Kasrt alli	63.59	310	eP	P	14 12 11.1	-1.7
NEY	Neytrino	63.64	318	c iP	P	14 12 13.8	+0.6
NEY				pmax	pmax		
	comp=Z,11nm,1.7s						
KBZ	Khabaz	63.73	319	P	P	14 12 13.2	-0.2
	comp=Z,25nm,0.8s,baz=94,slow=4.5,SNR=26						
CHVG	Ch'k'valeri	63.85	318	eP	P	14 12 14.7	+0.4
KVAR	Kislovodsk Arr	63.96	319	P	P	14 12 14.8	-0.3
	comp=Z,122nm,1.1s,baz=41,slow=2.0,SNR=28						
KIV	Kislovodsk	63.97	319	eP	P	14 12 15.4	+0.2
KIV	Kislovodsk	63.97	319	eP	P	14 12 14.9	-0.2
KIV				e		14 14 34.5	
KIV				eS	S	14 20 49.3	0.0
KIV				eSS	SS	14 24 59.1	+0.8
KIV				pmax	pmax		
	comp=Z,207nm,1.1s						
KIV				pmax	pmax		
	comp=Z,209nm,5.9s						
KIV	Kislovodsk	63.97	319	eP	P	14 12 14.5	-0.7
	comp=Z,254nm,1.1s						
KIV	Kislovodsk	63.97	319	P	P	14 12 15.2	0.0
	SNR=51						
KIV				P	P	14 12 15.2	0.0
	SNR=51						
ZALF	Zalf	64.04	306	eP	P	14 12 16.6	+0.8
ZALF	Zalf	64.04	306	eP	P	14 12 27.7	+12
SVRC	Sivrice-ELAZID	64.19	312	eP	P	14 12 15.0	-1.8
ASF	Jabal al Asfar	64.19	305	P	P	14 12 17.5	+0.6
	comp=Z,19nm,1.0s,baz=53,slow=2.1						
GOF	Gofitskoye	64.21	320	⇑eP	P	14 12 16.8	+0.2
GOF				pmax	pmax		
	comp=Z,126nm,1.4s						
GOF				pmax	pmax		
	comp=E,128nm,1.1s						
BAYT	Ayd˜–ntepe-Bay	64.30	315	eP	P	14 12 17.2	-0.3
PTK	Pertek	64.30	313	eP	P	14 12 16.1	-1.5
ROOS	tl_alroos	64.43	307	eP	P	14 12 22.5	+4.1
SALA	Sala	64.47	306	eP	P	14 12 21.7	+2.8
KTUT	Trabzon	64.78	315	eP	P	14 12 19.1	-1.3
GUMT	Gumushane	64.79	315	eP	P	14 12 20.7	0.0
TOTH	TOTAH	64.89	306	eP	P	14 12 22.9	+1.5
TOTH	TOTAH	64.89	306	eP	P	14 12 31.0	+10
TOTH				eP	pP	14 12 31.2	+0.1
YAK	Yakutsk	65.02	16	eP	P	14 12 20.5	-1.0
YAK				e*PP	pP	14 12 26.5	-4.7
YAK				e		14 14 45.8	
YAK				eS	S	14 20 59.6	-1.7
YAK				pmax	pmax		
	comp=Z,823nm,1.1s						
YAK				pmax	pmax		
	comp=N,298nm,1.2s						
YAK				pmax	pmax		
	comp=E,325nm,1.3s						
YAK				pmax	pmax		
	comp=N,121nm,1.6s						
YAK				pmax	pmax		
	comp=Z,77nm,1.4s						
YAK				pmax	pmax		
	comp=E,143nm,1.5s						
YAK				smax	smax		
	comp=E,263nm,2.3s						
YAK				smax	smax		
	comp=N,475nm,2.4s						
YAK				MLR	MLR		
	comp=N,21µm,17.0s						
YAK				MLR	MLR		
	comp=Z,34µm,17.0s						
YAK				MLR	MLR		
	comp=E,14µm,16.0s						
YAK	Yakutsk	65.02	16	eP	P	14 12 20.3	-1.2
	comp=E,720nm,1.0s						
YAK				LR	LR		
	comp=Z,31µm,18.0s						
MARH	Ras Al Marh	65.03	307	eP	P	14 12 22.0	-0.5
TCHB	Talchebab	65.08	305	eP	P	14 12 24.1	+1.5
EIL	Elat	65.20	302	eP	P	14 12 23.1	-0.3
HAWK	Haweek	65.23	307	eP	P	14 12 26.0	+2.4
BRBR	Barbar	65.29	306	eP	P	14 12 23.4	-0.8
BRBR	Barbar	65.29	306	eP	P	14 12 34.1	+10
GAZ	Gaziantep	65.37	310	eP	P	14 12 22.3	-2.1
BIDA	Albida	65.43	308	eP	P	14 12 23.7	-1.2
WRDH	Warideh	65.50	309	eP	P	14 12 27.3	+2.0
DARE	Darende-Malaty	65.61	312	eP	P	14 12 25.5	-0.5
BTCH	Batrach	65.61	309	eP	P	14 12 24.4	-1.7
DRWC	Darouich	65.62	310	eP	P	14 12 28.4	+2.3
MMAI	Mount Meron Ar	65.63	306	P	P	14 12 26.8	+0.6
	comp=Z,28nm,1.0s,baz=115,slow=9.7,SNR=2.0						
SLNF	Slenfeh	65.67	309	eP	P	14 12 16.3	-10
SOKR	Solikamsk	65.69	339	c iP	P	14 12 24.6	-1.3
SOKR				S	S	14 21 06.7	-2.9
SOKR				pmax	pmax		
	comp=Z,244nm,1.2s						
KMRS	Kahramanmaras	65.71	311	eP	P	14 12 26.7	+0.1
SOC	Sochi	65.78	318	c iP	P	14 12 25.4	-1.5
SOC				e*SP	pP	14 12 34.9	-1.7
SOC				e		14 12 55.4	
SOC				e		14 14 47.2	
SOC				ePPP	PPP	14 16 24.6	
SOC				eS	S	14 21 09.1	-2.3
SOC				e		14 22 21.2	
SOC				eSS	SS	14 25 25.9	-0.5
SOC				pmax	pmax		
	comp=Z,98nm,1.1s						
TAHT	Tahtakopru-Hat	65.92	309	eP	P	14 12 27.5	-0.5
ARNB	Al Arnab	65.94	309	eP	P	14 12 27.7	-0.5
ARNB	Al Arnab	65.94	309	eP	P	14 12 37.6	+9.4
RSDY	Resadiye-TOKAT	66.31	314	eP	P	14 12 30.5	+0.1
SVSK	Karacayir	66.39	313	eP	P	14 12 30.9	0.0
CEYT	Ceyhan	66.44	310	eP	P	14 12 30.9	-0.4
KOZT	Kozan	66.52	310	eP	P	14 12 31.4	-0.3
BNN	Bunyan	66.91	312	eP	P	14 12 33.8	-0.6
KARA	Karaisali	67.05	310	eP	P	14 12 41.0	+5.9
LHI	Lord Howe Isla	67.20	125	PFAKE		14 12 50.0	+14
LHI				LR	LR		
	comp=Z,7µm,20.0s						
EREN	Erenkoy	67.26	308	eP	P	14 12 40.8	+4.3
MERS	Mersin	67.34	309	eP	P	14 12 36.7	-0.4
KVT	Kavak	67.45	314	eP	P	14 12 36.1	-1.5
LFK	Lefkose	67.70	308	eP	P	14 12 39.9	+0.6
VRH	Novokhopyorsk	67.75	326	eP	P	14 12 38.5	-0.7
VRH				e*SP	pP	14 12 48.4	-0.6
VRH				eS	S	14 21 27.6	-7.3
VRH				pmax	pmax		
	comp=Z,160nm,1.3s						
VRH				smax	smax		
	comp=N,2µm,8.0s						
VRH				MLR	MLR		
	comp=Z,4µm,22.0s						
ANN	Anapa	67.76	318	eP	P	14 12 36.8	-2.6
ANN				e*PP	pP	14 12 45.1	-4.1
ANN				e		14 13 01.0	
ANN				eS	S	14 21 33.8	-1.5
ANN				pmax	pmax		
	comp=Z,74nm,1.5s						
ANN				MLR	MLR		
	comp=N,2µm,19.0s						
ANN				MLR	MLR		
	comp=Z,2µm,19.0s						
ANN				MLR	MLR		
	comp=E,2µm,19.0s						
CSS	Mathiatis	67.79	307	eP	P	14 12 38.0	-1.9
CSS	Mathiatis	67.79	307	P	P	14 12 39.2	-0.6
CSS	Mathiatis	67.79	307	eP	P	14 12 38.5	-1.3
	comp=E,59nm,1.2s						
CSS				LR	LR		
	comp=Z,2µm,18.0s						
IKL	Isikli	67.83	309	eP	P	14 12 45.9	+5.9
NRIK	Noril'sk	67.90	356	P	P	14 12 39.0	-0.9
	comp=Z,106nm,0.9s,baz=169,slow=5.0,SNR=76						
NRIK				S	S	14 21 36.4	+0.3
	comp=Z,3.4nm,0.8s,baz=357,slow=19,SNR=5.8						
NRIK				PKP2ab		14 41 09.9	
	comp=Z,0.8nm,0.4s,baz=85,slow=19,SNR=4.1						
NRIK				LR	LR	14 46 40.6	
	comp=Z,10µm,19.6s,baz=176,slow=40						
NRIK	Noril'sk	67.90	356	P	P	14 12 39.0	-0.9
NRIK				S	S	14 21 36.4	+0.3
NRIK				pmax	pmax		
	comp=Z,106nm,0.9s						
NRIK				smax	smax		
	comp=N,3.0nm,0.8s						
NRIK				pmax	pmax		
	comp=Z,1.0nm,0.4s						
NRIK				MLR	MLR		
	comp=Z,10µm,19.6s						
LEF	Lefka	68.17	307	eP	P	14 12 41.2	-1.0
CORM	Corum	68.20	313	eP	P	14 12 38.9	-3.6
SNOP	Sinop	68.35	315	eP	P	14 12 37.8	-5.4
CASY	Casey	68.43	174	eP	P	14 12 43.7	+0.5
	comp=Z,118nm,1.4s						
CASY				LR	LR		
	comp=Z,8µm,19.0s						
SULT	Sultanhani-AKS	68.48	311	eP	P	14 12 44.0	-0.2
BYBT	Boyabat	68.49	314	eP	P	14 12 51.3	+7.2
BR131	Keskin Array S	68.80	312	eP	P	14 12 44.1	-2.2
BRTR	Keskin Array B	68.80	312	P	P	14 12 44.6	-1.7
	comp=Z,17nm,0.8s,baz=133,slow=6.3,SNR=39						
BRTR				PKPPKP	P'P'df	14 41 00.5	-0.5
	comp=Z,0.8nm,0.9s,baz=231,slow=5.7,SNR=4.6						
CANT	Cankiri	69.07	313	eP	P	14 12 45.8	-2.0
AFSR	Af¯ar-Bala (A	69.15	312	eP	P	14 12 46.4	-1.9
BZK	Bozkurt	69.19	315	eP	P	14 12 42.4	-6.0
VSR	Storozhevoye	69.20	325	eP	P	14 12 47.2	-1.1
VSR				e*SP	pP	14 12 58.0	-0.1
VSR				eS	S	14 21 44.1	-8.1
VSR				pmax	pmax		
	comp=Z,80nm,1.0s						
VSR				smax	smax		
	comp=N,370nm,5.1s						
KONT	Konya--Tatoy	69.29	310	eP	P	14 12 49.6	+0.4
VORR	Voronezh	69.37	326	eP	P	14 12 49.0	-0.3
VORR				pmax	pmax		
	comp=Z,270nm,1.2s						
ANTO	Ankara	69.47	312	eP	P	14 12 49.2	-1.1
ANTO				pmax	pmax		
	comp=Z,96nm,1.0s						
ANTO	Ankara	69.47	312	eP	P	14 12 48.6	-1.7
	comp=Z,96nm,0.9s						
ANTO				LR	LR		
	comp=Z,1µm,20.0s						
BR231	Keskin MP Arra	69.47	312	eP	P	14 12 49.0	-1.4
LOD	Lodumlu	69.50	312	eP	P	14 12 48.6	-1.9
SKR	Severo-Kuril's	69.52	36	eP	P	14 12 49.0	-1.3
SKR				e		14 13 10.0	
SKR				eS	S	14 22 02.0	+6.1
SKR				ePS	PnS	14 22 30.0	+5.6
SKR				eSSS	SSS	14 29 24.0	
SKR				pmax	pmax		
	comp=E,110nm,1.0s						
SKR				pmax	pmax		
	comp=Z,220nm,1.0s						
SKR				pmax	pmax		
	comp=E,1µm,8.0s						
SKR				pmax	pmax		
	comp=Z,2µm,8.0s						
SKR				MLR	MLR		
	comp=N,3µm,18.0s						
SKR				MLR	MLR		
	comp=E,4µm,18.0s						
SKR				MLR	MLR		
	comp=Z,5µm,18.0s						
KIZT	Kizilcal	69.89	311	eP	P	14 12 50.8	-2.2
LPSR	Galich'ya Gora	69.92	326	eP	P	14 12 52.5	-0.2
LPSR				e*SP	pP	14 13 02.6	+0.1
LPSR				eS	S	14 21 53.5	-7.1
LPSR				pmax	pmax		
	comp=Z,80nm,0.9s						
LPSR				smax	smax		
	comp=N,790nm,5.3s						
SAFT	Safranbolu	69.92	314	eP	P	14 12 48.3	-4.7
SIM	Simferopol'	70.03	318	c iP	P	14 12 53.3	-0.3
SIM				iS	S	14 22 00.3	-1.9
SIM				pmax	pmax		
	comp=Z,250nm,1.5s						
SIM				MLR	MLR		
	comp=N,1µm,20.9s						
LSZ	Lusaka	70.21	253	P	P	14 12 55.6	+0.2
	comp=N,2.0nm,0.5s,baz=108,slow=6.4,SNR=6.9						
LSZ				LR	LR	14 39 41.9	
	comp=N,8µm,19.3s,baz=86,slow=32						
LSZ				PKPPKP	P'P'df	14 40 55.4	-4.1
	comp=N,3.9nm,0.3s,baz=342,slow=6.4,SNR=7.9						
SVRH	Sivrihisar-ESK	70.30	311	eP	P	14 12 55.5	0.0
MATP	Matopo	70.66	248	P	P	14 12 58.4	+0.3
	comp=N,27nm,1.3s,baz=82,slow=6.7,SNR=11						
MDUB	Mudurnu	70.81	312	eP	P	14 12 57.3	-1.3
SHUT	Suhut-Afyon	70.82	310	eP	P	14 12 56.8	-1.9
KDZE	Karadeniz Ereo	70.85	313	eP	P	14 12 57.0	-1.6
ELL	Elmali	70.90	308	eP	P	14 12 59.3	+0.1
MA2	Magadan	70.96	26	eP	P	14 12 57.4	-1.5
MA2				pmax	pmax		
	comp=Z,610nm,1.2s						
MA2	Magadan	70.96	26	eP	P	14 12 57.4	-1.5
	comp=Z,610nm,1.2s						
GULT	Gulveren	71.30	312	eP	P	14 13 00.9	-0.6
PEA0	Petropavlovsk-	71.39	34	eP	P	14 13 01.5	-0.2
PEA0B	Petropavlovsk-	71.39	34	PFAKE		14 13 10.0	+8.3
PEA0B				LR	LR		
	comp=Z,5µm,18.0s						
PETK	Petropavlovsk-	71.39	34	P	P	14 13 02.0	+0.3
	comp=Z,31nm,0.8s,baz=201,slow=6.2,SNR=20						
PETK				LR	LR	14 48 12.1	
	comp=Z,5µm,18.1s,baz=243,slow=39						
PETK	Petropavlovsk-	71.39	34	P	P	14 13 02.0	+0.3
DZM	Mont Dzumac	71.48	114	P	P	14 13 03.8	+0.8
	comp=Z,72nm,1.2s,baz=319,slow=7.7,SNR=9.6						
SPNC	Sapanca-Adapaz	71.52	312	eP	P	14 13 08.4	+5.7
FETY	Fethiye	71.53	308	eP	P	14 13 09.2	+6.3
FETY	Fethiye	71.53	308	P	P	14 13 01.9	-1.0
FETY	Fethiye	71.53	308	eP	P	14 13 01.9	-1.0
KHL	Karahalli	71.55	310	eP	P	14 13 10.6	+7.5
CAVI	Cavuskoy	71.74	312	eP	P	14 13 03.8	-0.3
TVSB	Tavsanli	71.85	311	eP	P	14 13 11.1	+6.2
ADVT	Abdulvahap	71.88	312	eP	P	14 13 08.4	+3.5
PET	Petropavlovsk	71.89	34	eP	P	14 13 02.1	-2.6
PET				eS	S	14 22 22.0	-1.4
PET				pmax	pmax		
	comp=Z,205nm,0.9s						
PET				pmax	pmax		
	comp=Z,2µm,7.2s						
PET				pmax	pmax		
	comp=Z,2µm,15.2s						
PET				MLR	MLR		
	comp=Z,6µm,16.0s						
PET				MLR	MLR		
	comp=Z,6µm,17.0s						
PET	Petropavlovsk	71.89	34	eP	P	14 13 02.7	-2.0
	comp=Z,224nm,1.1s						
PET				LR	LR		
	comp=Z,5µm,18.0s						
DALY	Dalyan (Mu˜la	71.90	308	eP	P	14 13 12.2	+7.1
MOS	Moscow	71.95	329	eP	P	14 13 03.3	-1.7
MOS				i		14 13 11.4	
MOS				e		14 13 19.3	
MOS				e		14 15 46.8	
MOS				ePPP	PPP	14 17 24.6	
MOS				eS	S	14 22 20.6	-3.4
MOS				pmax	pmax		
	comp=Z,282nm,1.3s						
MOS				pmax	pmax		
	comp=Z,500nm,1.7s						
OBN	Obninsk	72.24	328	c iP	P	14 13 05.2	-1.5
OBN				i		14 13 21.5	
OBN				i		14 15 48.6	
OBN				iS	S	14 22 18.2	-9.1
OBN				pmax	pmax		
	comp=Z,141nm,1.2s						
OBN				MLR	MLR		
	comp=Z,4µm,21.0s						
OBN	Obninsk	72.24	328	eP	P	14 13 05.1	-1.5
	comp=Z,719nm,1.6s						
OBN				LR	LR		
	comp=Z,4µm,21.0s						
KULA	Kula-Manisa	72.25	310	eP	P	14 13 14.1	+6.8
KULA	Kula-Manisa	72.25	310	P	P	14 13 06.8	-0.5
KULA	Kula-Manisa	72.25	310	P	P	14 13 06.8	-0.5
YER	Yerkesik	72.26	308	eP	P	14 13 13.5	+6.2
GEMT	Gemlik	72.28	312	eP	P	14 13 13.5	+6.2
MDNY	Mudanya-Bursa	72.50	312	eP	P	14 13 12.7	+4.1
ISK	Istanbul-Kandi	72.53	313	eP	P	14 13 08.1	-0.6
ISK	Istanbul-Kandi	72.53	313	P	P	14 13 08.0	-0.7
ISK	Istanbul-Kandi	72.53	313	P	P	14 13 08.0	-0.7
ISK	Istanbul-Kandi	72.53	313	P	P	14 13 08.0	-0.7
ARMT	Armutlu	72.56	312	eP	P	14 13 08.5	-0.5
KLYT	Kilyos	72.58	313	eP	P	14 13 07.8	-1.2
AYDB	Zeytinkoy-Aydi	72.73	309	eP	P	14 13 17.3	+7.1
TIXI	Tiksi	72.77	10	LR	LR	14 48 23.0	
	comp=Z,8µm,18.5s,baz=222,slow=38						
TIXI	Tiksi	72.77	10	c eP	P	14 13 08.2	-1.4
TIXI				pmax	pmax		
	comp=Z,174nm,1.2s						
TIXI	Tiksi	72.77	10	eP	P	14 13 07.8	-1.7
	comp=Z,145nm,1.1s						
KARP	Karpathos	72.84	307	eP	P	14 13 10.2	-0.6
KARP	Karpathos	72.84	307	P	P	14 13 10.7	-0.1
KARP	Karpathos	72.84	307	eP	P	14 13 10.0	-0.8
	comp=Z,151nm,1.3s						
KARP				LR	LR		
	comp=Z,2µm,20.0s						
KCTX	Karacabey (Bur	72.87	312	eP	P	14 13 08.9	-1.9
CTKS	Kestanelik-??a	72.97	313	eP	P	14 13 13.3	+1.9
BODT	Bodrum	73.01	308	eP	P	14 13 18.1	+6.4
BALB	Balikesir	73.09	311	eP	P	14 13 06.4	-5.7
MAW	Mawson	73.12	193	P	P	14 13 10.7	-1.0
	comp=Z,10nm,0.9s,baz=48,slow=8.2,SNR=5.0						
MAW				LR	LR	14 41 09.8	
	comp=Z,4µm,18.2s,baz=32,slow=32						
MAW	Mawson	73.12	193	eP	P	14 13 13.5	+1.8
MAW				pmax	pmax		
	comp=Z,12nm,1.2s						
MAW	Mawson	73.12	193	eP	P	14 13 10.3	-1.3
	comp=Z,12nm,1.2s						
EDC	Edincik	73.25	312	eP	P	14 13 10.8	-2.3
KLMR	Klimovskoe	73.35	334	eP	P	14 13 09.3	-3.9
KLMR				e*SP	pP	14 13 22.2	-0.8
KLMR				e		14 15 53.9	
KLMR				eS	S	14 22 32.8	-7.1
KLMR				pmax	pmax		
	comp=Z,179nm,1.3s						
KLMR				MLR	MLR		
	comp=Z,2µm,18.0s						
SEY	Seymchan	73.38	23	⇓iP	P	14 13 13.2	-0.1
TLCR		73.70	317	⇓iP	P	14 13 16.0	+0.4
TLCR		73.70	317	⇓P	P	14 13 16.0	+0.4
PSN	Preselentsi	73.77	315	eP	P	14 13 15.5	-0.5
PHSR	Pinarhisar	73.78	313	eP	P	14 13 15.2	-1.0
TIRR	Tirgusor	73.80	316	⇑iP	P	14 13 14.8	-1.4
TIRR	Tirgusor	73.80	316	⇑P	P	14 13 14.8	-1.4
TIRR	Tirgusor	73.80	316	eP	P	14 13 14.1	-2.0
	comp=Z,147nm,1.1s						
LBTB	Lobatse	74.05	244	P	P	14 13 18.8	+0.6
	comp=Z,20nm,1.1s,baz=103,slow=6.3,SNR=10						
LBTB	Lobatse	74.05	244	eP	P	14 13 16.5	-1.7
	comp=Z,84nm,1.0s						
MSAB	Monastry St. A	74.12	315	⇓iP	P	14 13 16.9	-1.2
LAST	Lasithi	74.13	306	eP	P	14 13 18.3	-0.1
	comp=Z,94nm,1.1s						
LAST				LR	LR		
	comp=Z,3µm,21.0s						
KIS	Kishinev	74.16	319	eP	P	14 13 18.0	-0.2
	comp=Z,200nm,1.4s						
KIS				iS	SKiKP	14 22 44.0	0.0
	comp=Z,2µm,10.0s						
KIS	Kishinev	74.16	319	eP	P	14 13 18.0	-0.2
KIS				i		14 13 26.0	
KIS				e		14 17 52.0	
KIS				iS	SKiKP	14 22 44.0	0.0
KIS				eSS	SS	14 27 36.0	+0.8
KIS				pmax	pmax		
	comp=Z,200nm,1.4s						
KIS				smax	smax		
	comp=N,2µm,10.0s						
KIS				MLR	MLR		
	comp=Z,3µm,20.0s						
KIS				MLR	MLR		
	comp=N,2µm,21.0s						
KIS				MLR	MLR		
	comp=Z,2µm,22.0s						
CFR	Carcaliu	74.16	317	⇑iP	P	14 13 17.4	-0.9
CFR	Carcaliu	74.16	317	⇑P	P	14 13 17.4	-0.9
HARR	Harsova	74.19	316	⇑iP	P	14 13 16.9	-1.5
HARR	Harsova	74.19	316	⇑P	P	14 13 16.9	-1.5
PRD	Provadia	74.22	315	eP	P	14 13 18.0	-0.6
ERIK	Erikli-Kesan	74.33	312	eP	P	14 13 18.9	-0.4
SANT	Santorini	74.35	307	PFAKE		14 13 30.0	+10
SANT				LR	LR		
	comp=Z,2µm,18.0s						
EDRB	Edirne	74.40	313	eP	P	14 13 18.7	-1.1
EDRB	Edirne	74.40	313	P	P	14 13 19.4	-0.3
EDRB	Edirne	74.40	313	P	P	14 13 19.4	-0.3
LEOM	Leova	74.40	318	⇑iP	P	14 13 19.3	-0.4
LEOM	Leova	74.40	318	⇑P	P	14 13 19.3	-0.4
ENEZ	Enez	74.61	312	eP	P	14 13 11.9	-9.1
IDI	Anoyia	74.63	306	eP	P	14 13 21.2	-0.1
	comp=Z,188nm,1.3s						
IDI				LR	LR		
	comp=Z,3µm,19.0s						
GADA	Gvkgeada	74.69	311	eP	P	14 13 15.4	-6.1
ALN	Alexandroupoli	74.72	312	eP	P	14 13 18.4	-3.2
ALN	Alexandroupoli	74.72	312	P	P	14 13 20.9	-0.7
ALN	Alexandroupoli	74.72	312	P	P	14 13 20.9	-0.7
ALN	Alexandroupoli	74.72	312	P	P	14 13 20.9	-0.7
SORM	Soroca	74.76	320	⇑iP	P	14 13 21.7	0.0
SORM	Soroca	74.76	320	⇑P	P	14 13 21.7	0.0
AKASG	Malin Array Be	74.90	322	P	P	14 13 20.6	-1.8
	comp=Z,7.3nm,0.5s,baz=89,slow=4.8,SNR=75						
AKASG				PP	PP	14 16 09.7	-0.6
	comp=Z,2.9nm,0.7s,baz=93,slow=6.9,SNR=4.2						
AKASG				S	S	14 22 52.4	-5.2
	comp=Z,0.2nm,0.3s,baz=100,slow=11,SNR=4.4						
AKBB	Malin Array Si	74.90	322	eP	P	14 13 20.4	-2.1
AKBB	Malin Array Si	74.90	322	eP	P	14 13 20.1	-2.3
	comp=Z,152nm,1.2s						
AKBB				LR	LR		
	comp=Z,3µm,22.0s						
KIEV	Kiev	74.91	322	c iP	P	14 13 21.5	-1.0
KIEV				pmax	pmax		
	comp=Z,62nm,1.4s						
KIEV	Kiev	74.91	322	eP	P	14 13 20.6	-1.9
	comp=Z,149nm,1.2s						
KIEV				LR	LR		
	comp=Z,3µm,22.0s						
PETR	Petresti	74.91	317	⇑iP	P	14 13 31.5	+8.9
AK11	Malin Array Si	74.93	322	eP	P	14 13 20.7	-2.0
BOSA	Boshof	74.97	240	P	P	14 13 23.4	-0.1
	comp=Z,49nm,1.4s,baz=58,slow=5.6,SNR=6.9						
BOSA				LR	LR	14 41 16.1	
	comp=Z,4µm,20.7s,baz=58,slow=32						
BOSA	Boshof	74.97	240	eP	P	14 13 21.9	-1.6
	comp=Z,68nm,1.1s						
GRER		75.00	317	⇑iP	P	14 13 23.2	0.0
SMTH	Samothraki Isl	75.02	311	P	P	14 13 22.4	-1.0
SMTH	Samothraki Isl	75.02	311	eP	P	14 13 22.4	-1.0
ISR	Istrita	75.24	316	⇑iP	P	14 13 32.2	+7.5
ISR	Istrita	75.24	316	⇑P	P	14 13 32.2	+7.5
SZH	Strazhica	75.28	314	eP	P	14 13 24.0	-0.8
VRI	Vrincioaia	75.28	317	⇑iP	P	14 13 24.4	-0.4
VRI	Vrincioaia	75.28	317	⇑P	P	14 13 24.4	-0.4
PLOR	Plostina	75.33	317	⇑iP	P	14 13 25.3	+0.1
PLOR	Plostina	75.33	317	⇑P	P	14 13 25.3	+0.1
SULR		75.35	316	⇑iP	P	14 13 26.1	+0.9
TESR	Tescani	75.48	318	⇓iP	P	14 13 25.3	-0.7
TMCR	Tamitsa	75.52	337	eP	P	14 13 24.5	-1.2
TMCR				pmax	pmax		
	comp=Z,263nm,1.1s						
SECR		75.55	316	⇑iP	P	14 13 28.2	+1.8

MLR	Muntele Rosu	75.74	317	⇑iP	P	14 13 27.0	-0.6
MLR	Muntele Rosu	75.74	317	⇑P	P	14 13 27.0	-0.6
MLR	Muntele Rosu	75.74	317	eP	P	14 13 27.3	-0.3
	comp=Z,443nm,1.4s						
MLR				LR	LR		
	comp=Z,2µm,20.0s						
RZN	Rozhen	75.85	313	eP	P	14 13 27.0	-1.4
KAVA	Kavala	75.88	312	P	P	14 13 27.4	-0.9
KAVA	Kavala	75.88	312	eP	P	14 13 27.4	-0.9
PRAR	RASCA	75.96	319	⇑iP	P	14 13 28.2	-0.5
HUMR	Humele	76.21	315	⇑iP	P	14 13 37.4	+7.3
DOPR	Dopca	76.22	317	⇑iP	P	14 13 30.8	+0.6
GOLR		76.28	316	⇑iP	P	14 13 39.5	+9.0
MTUR	Matau	76.29	316	⇓iP	P	14 13 30.2	-0.5
MTUR	Matau	76.29	316	⇓P	P	14 13 30.2	-0.5
PAIG	Paliouri	76.32	311	P	P	14 13 33.2	+2.4
PAIG	Paliouri	76.32	311	eP	P	14 13 33.2	+2.4
PAIG	Paliouri	76.32	311	eP	P	14 13 33.2	+2.4
VOIR		76.34	316	⇑iP	P	14 13 29.2	-1.8
VOIR		76.34	316	⇑P	P	14 13 29.2	-1.8
PGB	Panagyurishte	76.41	313	eP	P	14 13 30.0	-1.4
NVR	Nevrokopi	76.42	312	P	P	14 13 30.3	-1.2
NVR	Nevrokopi	76.42	312	P	P	14 13 30.3	-1.2
ARR	Arges	76.61	316	⇓iP	P	14 13 32.6	+0.1
BURAR	Bucovina Array	76.69	319	⇑iP	P	14 13 32.5	-0.4
BURAR	Bucovina Array	76.69	319	⇑P	P	14 13 32.5	-0.4
BUR08	Bucovina Ar. S	76.70	319	eP	P	14 13 32.5	-0.5
MICGM	Minsk	76.75	326	⇑eP	P	14 13 32.0	-1.0
MICGM				PM		14 13 33.0	
	comp=Z,0.2nm,1.0s						
MICGM				eS	S	14 23 12.0	-5.9
MICGM				eLR	LR	14 47 48.0	
MICGM				LRM	MLR	14 54 04.0	
	comp=Z,4.2nm,18.0s						
MICGM				LRM	MLR	14 54 08.0	
	comp=E,4.1nm,18.0s						
MNK	Minsk	76.75	326	⇑eP	P	14 13 32.0	-1.0
MNK				eS	S	14 23 12.0	-5.9
MNK				pmax	pmax		
	comp=Z,200nm,1.0s						
TNR	Turnu Rosu	76.92	317	⇓iP	P	14 13 27.9	-6.3
TNR	Turnu Rosu	76.92	317	⇓P	P	14 13 27.9	-6.3
GUR	Goura	77.05	308	P	P	14 13 33.3	-1.8
GUR	Goura	77.05	308	eP	P	14 13 33.3	-1.8
PUL	Pulkovo	77.10	331	⇑iP	P	14 13 35.9	+1.1
PUL				pmax	pmax		
	comp=Z,120nm,0.8s						
KNT	Kendrikon	77.11	312	P	P	14 13 34.3	-1.0
KNT	Kendrikon	77.11	312	P	P	14 13 34.3	-1.0
KNT	Kendrikon	77.11	312	P	P	14 13 34.3	-1.0
VTS	Vitosha	77.12	313	⇑iP	P	14 13 33.3	-2.2
VTS	Vitosha	77.12	313	P	P	14 13 34.5	-1.0
VTS	Vitosha	77.12	313	⇑P	P	14 13 33.3	-2.2
VTS	Vitosha	77.12	313	eP	P	14 13 34.0	-1.5
VTS	Vitosha	77.12	313	eP	P	14 13 34.0	-1.5
	comp=Z,132nm,1.3s						
VTS				LR	LR		
	comp=Z,2µm,19.0s						
ARCR	ARCALIA	77.15	318	⇑iP	P	14 13 44.6	+9.2
KLV	Kalavryta, Ach	77.21	309	P	P	14 13 33.9	-2.1
KLV	Kalavryta, Ach	77.21	309	eP	P	14 13 33.9	-2.1
LOT	Lotru	77.23	316	⇑iP	P	14 13 36.1	+0.1
LIT	Litokhoron	77.25	311	P	P	14 13 34.5	-1.6
LIT	Litokhoron	77.25	311	eP	P	14 13 34.5	-1.6
LIT	Litokhoron	77.25	311	eP	P	14 13 34.5	-1.6
LAKA	Lakka	77.37	309	P	P	14 13 37.0	+0.1
LAKA	Lakka	77.37	309	eP	P	14 13 37.0	+0.1
VAY	Valandovo	77.38	312	eP	P	14 13 35.1	-1.7
NACGM	Naroch	77.48	326	eP	P	14 13 36.0	-1.0
NACGM				eP	P	14 13 36.0	-1.0
NACGM				PM		14 13 47.0	
	comp=Z,0.3nm,1.0s						
NACGM				ePP	PP	14 15 08.0	-84
NACGM				eS	S	14 23 22.0	-3.8
NACGM				ePS	PnS	14 24 11.0	+2.7
NACGM				eSS	SS	14 27 54.0	-31
NACGM				eSSS	SSS	14 34 10.0	
NACGM				eLQ	LQ	14 40 11.0	
NACGM				eLR	LR	14 48 12.0	
NACGM				LRM	MLR	14 53 07.0	
	comp=Z,3.5nm,20.0s						
CJR	Cluj-Napoca	77.58	317	⇓iP	P	14 13 39.2	+1.3
CJR	Cluj-Napoca	77.58	317	⇓P	P	14 13 39.2	+1.3
IDID	Didziasalis	77.61	327	eP	P	14 13 37.6	-0.2
IDID				IAmb	IAmb	14 13 48.7	
	comp=Z,54nm,1.1s						
BMR	Baia Mare	77.84	318	⇑iP	P	14 13 40.3	+1.1
BMR	Baia Mare	77.84	318	⇑P	P	14 13 40.3	+1.1
DEV	Deva	77.90	317	⇑iP	P	14 13 40.6	+1.0
DEV	Deva	77.90	317	⇑P	P	14 13 40.6	+1.0
IIGN	Ignalina	77.90	326	eP	P	14 13 39.2	-0.2
IIGN				IAmb	IAmb	14 13 50.4	
	comp=Z,44nm,0.9s						
GZR	Gura Zlata	77.91	316	⇓iP	P	14 13 39.0	-0.7
GZR	Gura Zlata	77.91	316	⇓P	P	14 13 39.0	-0.7
LVV	L'vov	77.92	321	⇓iP	P	14 13 39.0	-0.6
LVV				e		14 13 53.2	
LVV				eS	S	14 23 28.6	-2.2
IZAR	Zarasai	77.99	327	eP	P	14 13 39.7	-0.2
IZAR				IAmb	IAmb	14 13 50.8	
	comp=Z,49nm,1.1s						
ISAL	Salakas	78.01	327	eP	P	14 13 39.8	-0.2
ISAL				IAmb	IAmb	14 13 51.0	
	comp=Z,62nm,1.2s						
PDO	Prodromos	78.04	309	P	P	14 13 39.6	-0.9
DRGR		78.20	317	⇑iP	P	14 13 41.5	+0.2
DRGR		78.20	317	⇑P	P	14 13 41.5	+0.2
WKZ	Wanaka	78.36	136	PFAKE		14 13 50.0	+7.8
WKZ				LR	LR		
	comp=Z,9µm,21.0s						
LVZ	Lovozero	78.42	340c	iP	P	14 13 42.0	-0.1
LVZ				pmax	pmax		
	comp=Z,86nm,1.2s						
LVZ	Lovozero	78.42	340	eP	P	14 13 41.2	-0.9
	comp=Z,259nm,1.6s						
LVZ				LR	LR		
	comp=Z,6µm,21.0s						
VSU	Vasula	78.46	330c	iP	P	14 13 42.0	-0.4
VSU				pmax	pmax		
	comp=Z,131nm,1.0s						
MDVR	Moldovita	78.55	315	⇓iP	P	14 13 41.9	-1.4
TRPA	Tarpa	78.55	319	⇑eP	P	14 13 43.6	+0.5
FOZ	Fox Glacier	78.61	135	PFAKE		14 13 50.0	+6.5
FOZ				LR	LR		
	comp=Z,10µm,22.0s						
OHR	Ohrid	78.67	312	eP	P	14 13 32.4	-12
APA	Apatity	78.72	339	⇑iP	P	14 13 44.0	+0.4
APA				i		14 13 52.6	
APA				i S	S	14 23 40.0	+1.3
APA				i PS	PnS	14 24 18.0	-5.6
APA				i SS	SS	14 28 44.0	+0.8
APA				pmax	pmax		
	comp=Z,78nm,1.0s						
KWP	Kalwaria Pacla	78.72	320	eP	P	14 13 44.3	+0.2
KWP				eS	S	14 23 37.7	-1.8
KWP				LMZ	LR	14 53 33.9	
KWP	Kalwaria Pacla	78.72	320	eP	P	14 13 44.3	+0.2
KWP				eS	S	14 23 37.7	-1.8
KWP				MLR	MLR		
	comp=Z,2µm,25.3s						
BZS	Buzias	78.75	316	⇓iP	P	14 13 44.0	-0.3
BZS	Buzias	78.75	316	⇓P	P	14 13 44.0	-0.3
UZH	Uzhgorod	78.81	319	⇑iP	P	14 13 43.7	-0.8
UZH				i		14 13 51.5	
UZH				e		14 16 50.7	
UZH				ePPP	PPP	14 18 38.9	
UZH				i S	S	14 23 37.5	-2.8
UZH				i		14 23 55.3	
UZH				i PS	PnS	14 24 20.9	-4.5
SIRR	Siria	78.82	317	⇓iP	P	14 13 45.8	+1.1
KOLS	Kolonicke sedl	78.87	320	eP	P	14 13 45.6	+0.7
KOLS				e		14 13 55.2	
KOLS				eS	S	14 23 39.6	-1.5
KOLS				pmax	pmax		
	comp=Z,82nm,1.2s						
KOLS	Kolonicke sedl	78.87	320	eP	P	14 13 45.6	+0.7
KOLS				e		14 13 55.2	
KOLS				eS	S	14 23 39.6	-1.5
LBZ	Lake Benmore	79.06	136	PFAKE		14 14 00.0	+14
LBZ				LR	LR		
	comp=Z,7µm,22.0s						
SUW	Suwalki	79.31	325	eP	P	14 13 46.3	-0.8
SUW				LMZ	LR	14 54 52.5	
SUW	Suwalki	79.31	325	eP	P	14 13 46.4	-0.7
SUR	Sutherland	79.38	237	P	P	14 13 49.6	+1.4
	comp=Z,2.6nm,1.2s,baz=116,slow=10,SNR=6.2						
SUR	Sutherland	79.38	237	eP	P	14 13 48.8	+0.5
	comp=Z,218nm,1.2s						
SUR				LR	LR		
	comp=Z,6µm,18.0s						
TIR	Tirane	79.40	312	PFAKE		14 14 00.0	+12
TIR				LR	LR		
	comp=Z,3µm,19.0s						
PVY	Plav	79.49	313	eP	P	14 13 47.6	-1.0
RPZ	Rata Peaks	79.53	135	P	P	14 13 48.5	-0.1
	comp=Z,38nm,1.0s,baz=279,slow=12,SNR=1.5						
RPZ	Rata Peaks	79.53	135	eP	P	14 13 48.4	-0.1
	comp=Z,162nm,1.2s						
RPZ				LR	LR		
	comp=Z,12µm,22.0s						
ODZ	Otahua Downs	79.53	136	PFAKE		14 14 00.0	+11
ODZ				LR	LR		
	comp=Z,8µm,21.0s						
IVA	Berane	79.57	313	eP	P	14 13 48.4	-0.6
FIA1	FINESS Array S	79.61	332	eP	P	14 13 47.7	-0.9
FINES	FINESS Array B	79.61	332	P	P	14 13 47.5	-1.1
	comp=Z,14nm,0.5s,baz=106,slow=5.3,SNR=86						
FINES				LR	LR	14 52 34.1	
	comp=Z,4µm,20.4s,baz=110,slow=38						
STHS	Stebnicka Huta	79.62	320	eP	P	14 13 49.4	+0.4
STHS				e		14 13 59.4	
STHS				pmax	pmax		
	comp=Z,26nm,1.1s						
STHS	Stebnicka Huta	79.62	320	eP	P	14 13 49.4	+0.4
STHS				e		14 13 59.4	
STHS				e		14 14 11.1	
OUZ	Omahuta	79.87	126	eP	P	14 13 53.8	+3.2
OUZ				LR	LR		
	comp=Z,13µm,21.0s						
ULC	Ulcinj	79.94	312	⇑iP	P	14 13 51.0	+0.1
KECS	Kecovo	79.97	319	eP	P	14 13 50.3	-0.6
KECS				e		14 13 59.6	
KECS				pmax	pmax		
	comp=Z,24nm,1.5s						
KECS	Kecovo	79.97	319	eP	P	14 13 50.3	-0.6
KECS				e		14 13 59.6	
TTG	Podgorica	79.98	313	⇑iP	P	14 13 50.2	-0.9
PLE	Pljevlja	80.00	314	eP	P	14 13 50.5	-0.8
DRME	Dracevica, Mon	80.01	312	⇑iP	P	14 13 50.5	-0.7
OXZ	Oxford	80.15	134	PFAKE		14 14 00.0	+8.0
OXZ				LR	LR		
	comp=Z,9µm,21.0s						
LTZ	Lake Taylor	80.21	134	PFAKE		14 14 00.0	+7.7
LTZ				LR	LR		
	comp=Z,11µm,22.0s						
NKY	Niksic	80.22	313	⇑iP	P	14 13 51.8	-0.7
NIE	Niedzica	80.23	320	eP	P	14 13 52.8	+0.5
NIE				eS	S	14 23 56.0	+0.5
NIE				LMZ	LR	14 55 16.0	
NIE	Niedzica	80.23	320	eP	P	14 13 52.8	+0.5
NIE				eS	S	14 23 56.1	+0.5
BUM	Brajici-Budva	80.23	313	⇑iP	P	14 13 52.6	0.0
CEME	Cevo	80.25	313	⇑iP	P	14 13 51.9	-0.7
NKME	Niksic	80.25	313	⇑iP	P	14 13 51.6	-1.0
PSZ	Piszkesteto	80.27	318	⇑eP	P	14 13 52.6	0.0
PSZ	Piszkesteto	80.27	318	eP	P	14 13 51.6	-1.0
PSZ	Piszkesteto	80.27	318	eP	P	14 13 51.4	-1.3
	comp=Z,293nm,1.4s						
PSZ				LR	LR		
	comp=Z,2µm,21.0s						
PKS6	Bocsa	80.31	317	⇓eP	P	14 13 53.9	+1.2
BEL	Belsk	80.32	322	eP	P	14 13 52.7	+0.1
BEL				LMZ	LR	14 56 06.3	
BEL	Belsk	80.32	322	eP	P	14 13 52.8	+0.1
UPM	Unac-Piva	80.33	313	eP	P	14 13 52.2	-1.0
SYO	Syowa Base	80.40	198	⇓iP	P	14 13 52.4	-0.3
THZ	Tophouse	80.47	133	eP	P	14 13 54.1	+0.2
	comp=Z,112nm,1.2s						
PKS2	Kecel	80.53	317	eP	P	14 13 54.4	+0.5
HCY	Herceg Novi	80.55	313	⇑iP	P	14 13 54.1	0.0
BRY	Bratogost	80.56	313	eP	P	14 13 53.3	-1.1
CRLZ	Canterbury Las	80.61	135	PFAKE		14 14 00.0	+5.6
CRLZ				LR	LR		
	comp=Z,7µm,21.0s						
PKS7	Kunszentmiklos	80.64	317	⇑eP	P	14 13 54.5	0.0
MQZ	McQueen's Vall	80.66	135	PFAKE		14 14 00.0	+5.3
MQZ				LR	LR		
	comp=Z,9µm,21.0s						
OJC	Ojcow	80.67	321	eP	P	14 13 54.8	+0.1
OJC				eS	S	14 23 58.3	-1.8
OJC				LMZ	LR	14 56 07.0	
OJC	Ojcow	80.67	321	eP	P	14 13 54.8	+0.1
OJC				eS	S	14 23 58.4	-1.7
OJC	Ojcow	80.67	321	eP	P	14 13 53.8	-0.9
	comp=Z,143nm,1.3s						
TSUM	Tsumeb	80.71	250	P	P	14 13 52.8	-2.8
	comp=Z,4.7nm,0.6s,baz=61,slow=3.5,SNR=12						
TSUM				LR	LR	14 46 11.7	
	comp=Z,1µm,20.0s,baz=64,slow=33						
TSUM	Tsumeb	80.71	250	ePKPdf	P	14 13 52.3	-3.3
LANS	Liptovska Anna	80.73	319	eP	P	14 13 56.0	+1.0
LANS				e		14 14 03.2	
LANS	Liptovska Anna	80.73	319	eP	P	14 13 56.0	+1.0
LANS				e		14 14 03.2	
BILL	Bilibino	80.77	21c	iP	P	14 13 54.6	-0.2
BILL				i		14 14 01.7	
BILL				i		14 17 00.8	
BILL				eS	S	14 24 01.2	+0.8
BILL				i SS	SS	14 29 15.9	+1.9
BILL				pmax	pmax		
	comp=Z,34nm,1.7s						
BILL				MLR	MLR		
	comp=Z,19µm,17.0s						
BILL	Bilibino	80.77	21	eP	P	14 13 54.2	-0.6
	comp=Z,51nm,1.1s						
BILL				LR	LR		
	comp=Z,18µm,18.0s						
SMY	Shemya	80.80	37	eP	P	14 13 55.2	0.0
SMY	Shemya	80.80	37	eP	P	14 13 55.2	0.0
VYHS	Vyhne	81.05	319	eP	P	14 13 56.7	0.0
VYHS				e		14 14 05.1	
VYHS				eS	S	14 24 02.7	-1.4
VYHS				pmax	pmax		
	comp=Z,24nm,1.4s						
VYHS	Vyhne	81.05	319	eP	P	14 13 56.7	0.0
VYHS				e		14 14 05.1	
VYHS				eS	S	14 24 02.7	-1.4
VYHS				eSS	SS	14 29 27.7	+8.6
KHZ	Kahutara	81.06	133	eP	P	14 13 56.6	-0.2
	comp=Z,142nm,1.2s						
KHZ				LR	LR		
	comp=Z,10µm,21.0s						
KLNR	Kaliningrad	81.13	325	P	P	14 13 56.1	-0.8
KLNR				pmax	pmax		
	comp=Z,444nm,1.8s						
PKS9	Tamasi	81.18	317	⇑eP	P	14 13 57.6	+0.2
PKSG		81.21	318	⇑eP	P	14 13 57.7	+0.2
CSKK	Csˆ‡kako	81.29	318	⇓eP	P	14 13 58.1	+0.1
HIZ	Hauiti	81.39	129	PFAKE		14 14 10.0	+11
HIZ				LR	LR		
	comp=Z,9µm,22.0s						
PKST	Tˆ's	81.43	317	⇑eP	P	14 13 58.4	-0.4
TIP	Timpagrande	81.54	309	eP	P	14 13 59.3	-0.3
	comp=Z,193nm,1.4s						
TIP				LR	LR		
	comp=Z,2µm,22.0s						
OKC	Ostrava-Krasne	81.68	320	eP	P	14 14 00.0	0.0
OKC				epP	PcP	14 14 07.2	+1.5
OKC				ex	x	14 14 19.6	
OKC				eS	S	14 24 10.0	-0.5
OKC				AMS	AMS	14 59 40.0	
	comp=Z,2µm,16.9s						
OKC	Ostrava-Krasne	81.68	320	eP	P	14 14 00.0	0.0
OKC				e		14 14 07.2	
OKC				eS	S	14 24 10.0	-0.5
OKC				MLR	MLR		
	comp=Z,2µm,16.9s						
RAC	Raciborz	81.68	320	eP	P	14 14 00.8	+0.8
RAC				eS	S	14 24 09.7	-0.8
KEV	Kevo	81.69	341	eP	P	14 13 59.6	0.0
KEV	Kevo	81.69	341	eP	P	14 13 59.2	-0.4
	comp=Z,76nm,1.1s						
KEV				LR	LR		
	comp=Z,6µm,22.0s						
SNZO	South Karori	81.72	132	PFAKE		14 14 10.0	+10
SNZO				LR	LR		
	comp=Z,9µm,22.0s						
MSVF	Nonsavu	81.81	108	eP	P	14 14 02.5	+1.1
MSVF	Nonsavu	81.81	108	eP	P	14 14 02.5	+1.1
MORC	Moravsky Berou	82.06	320	eP	P	14 14 01.7	-0.4
MORC	Moravsky Berou	82.06	320	eP	P	14 14 01.1	-1.0
	comp=Z,473nm,1.2s						
MORC				LR	LR		
	comp=Z,7µm,20.0s						
ARA0	ARCESS Array S	82.12	340	eP	P	14 14 00.8	-1.1
ARCES	ARCESS Array B	82.12	340	P	P	14 14 01.0	-0.9
	comp=Z,81nm,1.0s,baz=93,slow=4.8,SNR=106						
ARCES				PP	PP	14 17 11.1	+0.9
	comp=Z,17nm,1.1s,baz=109,slow=14,SNR=3.5						
ARCES				LR	LR	14 54 52.4	
	comp=Z,4µm,19.9s,baz=110,slow=39						
ARE0	ARCESS Array S	82.12	340	eP	P	14 14 02.2	+0.2
ARE0				IAMs_20	IAMs_20	14 54 22.6	
	comp=Z,6µm,22.0s						
ARE0	ARCESS Array S	82.12	340	eP	P	14 14 01.2	-0.7
	comp=Z,112nm,1.1s						
ARE0				LR	LR		
	comp=Z,6µm,22.0s						
BEHE	Becsehely	82.20	317	⇑eP	P	14 14 03.5	+0.7
CUC	Castrocucco	82.33	310	eP	P	14 14 02.5	-1.2
	comp=Z,66nm,1.2s						
CUC				LR	LR		
	comp=Z,2µm,20.0s						
HEF	Hetta	82.46	339	eP	P	14 14 03.9	+0.2
SOP	Sopron	82.47	318	⇓eP	P	14 14 04.5	+0.3
VRAC	Vranov	82.62	319	⇑iP	P	14 14 03.5	-1.4
VRAC	Vranov	82.62	319	⇑P	P	14 14 03.6	-1.4
BKZ	Black Stump Fm	82.75	130	eP	P	14 14 05.6	-0.3
	comp=Z,157nm,1.1s						
BKZ				LR	LR		
	comp=Z,9µm,20.0s						
KTK1	Kautokeino	82.76	340	eP	P	14 14 05.5	+0.3
BFZ	Birch Farm	82.78	131	PFAKE		14 14 20.0	+14
BFZ				LR	LR		
	comp=Z,10µm,20.0s						
DPC	Dobruska-Polom	82.90	320	eP	P	14 14 06.6	+0.1
DPC				epP	pP	14 14 14.1	-2.3
DPC				ex	x	14 14 25.3	
DPC				eS	S	14 24 24.3	+1.1
DPC				AMS	AMS	14 57 50.0	
	comp=Z,3µm,19.5s						
DPC	Dobruska-Polom	82.90	320	eP	P	14 14 06.6	+0.1
DPC				e		14 14 14.1	
DPC				e		14 14 25.3	
DPC				eS	S	14 24 24.3	+1.1
DPC				MLR	MLR		
	comp=Z,3µm,19.5s						
KSP	Ksiaz	82.97	321	eP	P	14 14 07.1	+0.3
KSP				eS	S	14 24 21.8	-2.0
KSP				LMZ	LR	14 58 04.3	
KSP	Ksiaz	82.97	321	eP	P	14 14 07.2	+0.4
KSP				eS	S	14 24 21.8	-2.0
GROS	Grobnik	83.08	316	i P	P	14 14 07.4	-0.1
GROS				i		14 14 15.7	
WDD	Wied Dalam	83.09	306	PFAKE		14 14 20.0	+12
WDD				LR	LR		
	comp=Z,3µm,18.0s						
URZ	Urewera	83.11	129	P	P	14 14 06.9	-0.8
	comp=Z,13nm,0.8s,baz=196,slow=1.6,SNR=6.3						
URZ	Urewera	83.11	129	eP	P	14 14 06.6	-1.0
	comp=Z,72nm,1.0s						
URZ				LR	LR		
	comp=Z,9µm,21.0s						
UPC	Upice	83.12	321	eS	S	14 24 23.4	-1.8
UPC				AMS	AMS	14 57 10.0	
	comp=Z,3µm,18.6s						
BOJS	Bojanci	83.17	315	i P	P	14 14 08.0	+0.1
BOJS				i		14 14 16.4	
TREC	Trest	83.34	319	AMS	AMS	15 02 20.0	
	comp=Z,2µm,18.3s						
VISS	Visnje	83.48	316	i P	P	14 14 09.7	+0.1
VISS				i		14 14 18.0	
KIF	Kilpisjarvi	83.61	339	eP	P	14 14 10.5	+0.9
GOPC	GO Pecny, Ondr	83.85	320	eP	P	14 14 11.7	+0.4
GOPC				epP	pP	14 14 18.7	-2.6
GOPC				eS	S	14 24 33.2	+0.5
GOPC				AMS	AMS	14 58 40.0	
	comp=Z,3µm,18.9s						
GOPC	GO Pecny, Ondr	83.85	320	eP	P	14 14 11.7	+0.4
GOPC				e		14 14 18.7	
GOPC				eS	S	14 24 33.2	+0.5
GOPC				MLR	MLR		
	comp=Z,3µm,18.9s						
MXZ	Matakaoa Point	83.96	128	PFAKE		14 14 20.0	+7.9
MXZ				LR	LR		
	comp=Z,7µm,20.0s						
PRU	Pruhonice	84.01	320	eP	P	14 14 11.9	-0.2
PRU				epP	pP	14 14 19.2	-2.9
PRU				ex	x	14 14 27.2	
PRU				ex	x	14 17 35.5	
PRU				eS	S	14 24 34.5	+0.2
PRU				ePS	PnS	14 25 33.6	+3.6
PRU				AMS	AMS	14 58 40.0	
	comp=Z,3µm,18.8s						
PRU	Pruhonice	84.01	320	eP	P	14 14 11.9	-0.2
PRU				e		14 14 19.2	
PRU				e		14 14 27.2	
PRU				eS	S	14 24 34.5	+0.2
PRU				ePS	PnS	14 25 33.6	+3.6
PRU				MLR	MLR		
	comp=Z,3µm,18.8s						
JAVS	Javornik	84.03	316	i P	P	14 14 11.7	-0.8
JAVS				i		14 14 20.4	
PVCC	Panska Ves	84.04	320	eP	P	14 14 12.9	+0.7
PVCC				AMS	AMS	14 58 40.0	
	comp=Z,3µm,19.2s						
PVCC	Panska Ves	84.04	320	eP	P	14 14 12.9	+0.7
PVCC				MLR	MLR		
	comp=Z,3µm,19.2s						
PRA	Prague	84.09	320	eP	P	14 14 13.2	+0.7
PRA				AMS	AMS	14 58 40.0	
	comp=Z,2µm,17.8s						
PRA	Prague	84.09	320	eP	P	14 14 13.2	+0.7
PRA				MLR	MLR		
	comp=Z,2µm,17.8s						
TRI	Trieste	84.23	316	eP	P	14 14 12.7	-0.6
TRI	Trieste	84.23	316	eP	P	14 14 12.0	-1.3
	comp=Z,77nm,1.2s						
TRI				LR	LR		
	comp=Z,2µm,22.0s						
HOPEN	Hopen	84.30	347	eP	P	14 14 13.5	+0.5
TRO	Tromso	84.39	340	eP	P	14 14 13.9	+0.4
TRO				IAMs_20	IAMs_20	14 56 57.0	
	comp=Z,6µm,18.7s						
BRG	Berggiesshubel	84.46	321	i P	P	14 14 14.5	+0.1
	comp=Z,42nm,1.3s						
BRG				i		14 14 23.5	
	comp=Z,112nm,1.4s						
BRG				ePP	PP	14 17 20.1	-10
	comp=Z,30nm,1.5s						
BRG				S	S	14 24 34.0	-4.7
BRG				SS	SS	14 30 12.0	+2.5
	comp=N,2µm,20.4s						
	comp=E,3µm,21.0s						
	comp=Z,4µm,21.0s						
BRG	Berggiesshubel	84.46	321	i P	P	14 14 14.5	+0.1
BRG				i		14 14 23.5	
BRG				S	S	14 24 34.0	-4.7
BRG				SS	SS	14 30 12.0	+2.5
BRG				pmax	pmax		
	comp=Z,42nm,1.3s						
BRG				pmax	pmax		
	comp=Z,112nm,1.4s						
BRG				pmax	pmax		
	comp=Z,30nm,1.5s						
BRG				MLR	MLR		
	comp=N,2µm,20.4s						
BRG				MLR	MLR		
	comp=E,3µm,21.0s						
BRG				MLR	MLR		
	comp=Z,4µm,21.0s						
GEC2	GERESS Array S	84.47	319	eP	P	14 14 14.2	-0.4
GEC2	GERESS Array S	84.47	319	eP	P	14 14 13.9	-0.7
	comp=Z,215nm,1.3s						
GEC2				LR	LR		
	comp=Z,2µm,19.0s						
GERES	GERESS Array B	84.47	319	P	P	14 14 13.8	-0.8
	comp=Z,31nm,1.1s,baz=95,slow=4.6,SNR=65						
GERES				S	S	14 24 39.2	0.0
	comp=Z,0.3nm,0.2s,baz=93,slow=7.0,SNR=2.0						

KHC **Kasperske Hory** **84.57 319** *e*P **P** **14 14 14.6 -0.4**
KHC *e*pP **pP** **14 14 22.2 -2.8**
KHC *e*S **S** **14 24 40.8 +0.8**
KHC AMS AMS 15 03 10.0
comp=Z,3µm,18.1s
KHC **Kasperske Hory** **84.57 319** *e*P **P** **14 14 14.6 -0.4**
KHC *e* 14 14 22.2
KHC *e*S **S** **14 24 40.8 +0.8**
KHC MLR MLR
comp=Z,3µm,18.1s
KHC **Kasperske Hory** **84.57 319** *e*P **P** **14 14 13.8 -1.3**
comp=Z,34nm,1.7s
KHC LR LR
comp=Z,900nm,22.0s
CLL **Collm** **85.08 321** ⇓ *i*P **P** **14 14 16.9 -0.6**
comp=Z,32nm,1.2s
CLL *e*Plp 14 14 21.0
comp=Z,500nm,21.4s
CLL *i* 14 14 24.9
comp=Z,53nm,1.2s
CLL *i* 14 14 33.3
CLL *e*PP PP 14 17 43.0 +8.2
CLL *e*S **S** **14 24 44.0 -0.9**
comp=N,2µm,25.3s
CLL *e*S **S** **14 24 44.0 -0.9**
comp=E,300nm,29.2s
CLL *e* 14 26 04.0
CLL *e*PPS PPS 14 26 28.0
CLL *e*SS **SS** **14 30 12.0 -6.6**
CLL *e* 14 31 36.0
CLL *e*SSS SSS 14 33 47.0
CLL *e* 14 35 00.0
CLL *e*SSSS 14 36 18.0
CLL LmV 14 59 00.0
comp=Z,2µm,21.7s
CLL **Collm** **85.08 321** ⇓ *i*P **P** **14 14 16.9 -0.6**
CLL *i* 14 14 24.9
CLL *e*S **S** **14 24 44.0 -0.9**
CLL pmax pmax
comp=Z,32nm,1.2s
CLL MLR MLR
comp=Z,2µm,21.7s
CLL **Collm** **85.08 321** *e*P **P** **14 14 16.6 -0.8**
comp=Z,66nm,1.2s
CLL LR LR
comp=Z,2µm,20.0s
RGN **Rugen** **85.10 324** PFAKE 14 14 30.0 +13
RGN LR LR
comp=Z,2µm,19.0s
NKC **Novy Kostel** **85.37 320** *e*P **P** **14 14 19.2 +0.2**
NKC *e*pP **pP** **14 14 26.2 -2.8**
NKC *ex* x 14 14 33.3
NKC AMS AMS 14 59 40.0
comp=Z,3µm,19.4s
NKC **Novy Kostel** **85.37 320** *e*P **P** **14 14 19.2 +0.2**
NKC *e* 14 14 26.2
NKC *e* 14 14 33.3
NKC MLR MLR
comp=Z,3µm,19.4s
STEI **Steigen** **85.46 338** *e*P **P** **14 14 19.6 +0.6**
LOF **Lofoten** **86.11 338** *e*P **P** **14 14 21.5 -0.7**
GRFO **Grafenberg** **86.14 320** *e*P **P** **14 14 23.8 +1.0**
GRFO **Grafenberg** **86.14 320** *e*P **P** **14 14 22.3 -0.5**
comp=Z,149nm,1.3s
GRFO LR LR
comp=Z,4µm,19.0s
VNDA **Vanda** **86.25 169** P **P** **14 14 22.9 +0.1**
comp=Z,2.1nm,1.0s,baz=319,slow=7.8,SNR=2.8
VNDA S **S** **14 24 55.2 -0.2**
comp=Z,0.4nm,0.6s,baz=225,slow=5.7,SNR=4.3
VNDA LR LR 14 50 14.2
comp=Z,5µm,18.4s,baz=312,slow=34
VNDA **Vanda** **86.25 169** *e*P **P** **14 14 22.4 -0.3**
VNDA S **S** **14 24 55.2 -0.2**
VNDA pmax pmax
comp=Z,55nm,1.4s
VNDA **Vanda** **86.25 169** *e*P **P** **14 14 22.4 -0.3**
comp=Z,55nm,1.4s
VNDA S **S** **14 24 55.2 -0.2**
NC405 **NORSAR Array S** **86.38 331** *e*P **P** **14 14 23.8 +0.1**
NC602 **NORSAR Array S** **86.44 331** *e*P **P** **14 14 24.0 0.0**
NC602 IAMs_20 IAMs_20 14 58 23.7
comp=Z,5µm,22.4s
NC602 **NORSAR Array S** **86.44 331** *e*P **P** **14 14 23.4 -0.6**
NSS **Namsos** **86.47 334** *e*P **P** **14 14 24.2 +0.2**
NSS IAMs_20 IAMs_20 14 59 13.0
comp=Z,5µm,22.3s
SPA0 **Spitsbergen Ar** **86.53 348** *e*P **P** **14 14 24.2 +0.1**
SPA0 IAMs_20 IAMs_20 14 57 28.3
comp=Z,7µm,22.0s
SPA0 **Spitsbergen Ar** **86.53 348** *e*P **P** **14 14 23.4 -0.8**
NC303 **NORSAR Array S** **86.55 331** *e*P **P** **14 14 24.1 -0.5**
VLC **Villacollemand** **86.56 314** PFAKE 14 14 30.0 +5.0
VLC LR LR
comp=Z,900nm,20.0s
NB201 **NORSAR Array S** **86.58 331** *e*P **P** **14 14 24.1 -0.6**
NB2 **NORSAR Subarra** **86.62 331** P **P** **14 14 23.9 -1.1**
comp=Z,54nm,1.0s,baz=90,slow=4.8
NB2 **NORSAR Subarra** **86.62 331** P **P** **14 14 23.9 -1.1**
baz=90,slow=4.8
NOA **NORSAR Array B** **86.62 331** P **P** **14 14 23.8 -1.1**
comp=Z,21nm,0.9s,baz=93,slow=4.9,SNR=21
NOA PP **PP** **14 17 49.1 +2.1**
comp=Z,20nm,1.1s,baz=86,slow=7.9,SNR=3.6
NOA LR LR 14 58 49.0
comp=Z,1µm,18.5s,baz=95,slow=40
FUORN **Ofenpass-Fuorn** **86.70 316** *e*P **P** **14 14 25.3 -0.7**
comp=Z,124nm,1.2s
FUORN LR LR
comp=Z,2µm,20.0s
NAO01 **NORSAR Array S** **86.77 331** *e*P **P** **14 14 25.9 +0.2**
NBO02 **NORSAR Array S** **86.79 331** *e*P **P** **14 14 25.3 -0.5**
NBO00 **NORSAR Array S** **86.83 331** *e*P **P** **14 14 25.1 -0.8**
NC204 **NORSAR Array S** **86.85 331** *e*P **P** **14 14 25.3 -0.8**
DAVOX **Davos/Dischmat** **86.96 317** LR LR 14 59 16.6
comp=Z,609nm,21.6s,baz=72,slow=40
VSL **Villasalto** **87.27 309** *e*P **P** **14 14 27.9 -0.7**
comp=Z,129nm,1.4s
VSL LR LR
comp=Z,800nm,19.0s
KEST **Kesra** **87.29 306** P **P** **14 14 30.0 +1.2**
comp=Z,14nm,0.9s,baz=0.0,slow=4.0,SNR=5.6
KEST **Kesra** **87.29 306** *e*P **P** **14 14 28.2 -0.6**
comp=Z,128nm,1.2s
KEST LR LR
comp=Z,3µm,20.0s
TUE **Stuetta** **87.33 316** *e*P **P** **14 14 28.1 -0.8**
comp=Z,92nm,1.5s
TUE LR LR
comp=Z,2µm,22.0s
SBA **Scott Base** **87.35 169** *e*P **P** **14 14 29.1 +1.0**
SBA pmax pmax
comp=Z,54nm,1.2s
SBA MLR MLR
comp=Z,4µm,20.0s
SBA **Scott Base** **87.35 169** *e*P **P** **14 14 29.1 +1.0**
comp=Z,54nm,1.2s
SBA LR LR
comp=Z,4µm,20.0s
KONO **Kongsberg** **87.37 329** *e*P **P** **14 14 28.7 +0.1**
KONO pmax pmax
comp=Z,123nm,1.3s
KONO MLR MLR
comp=Z,4µm,19.0s
KONO **Kongsberg** **87.37 329** *e*P **P** **14 14 28.7 +0.1**
comp=Z,123nm,1.3s
KONO LR LR
comp=Z,4µm,19.0s
STU **Stuttgart** **87.45 319** PFAKE 14 14 40.0 +11
STU LR LR
comp=Z,2µm,22.0s
KBS **Kingsbay** **87.49 349** *e*P **P** **14 14 29.0 +0.2**
KBS **Kingsbay** **87.49 349** *e*P **P** **14 14 29.0 +0.2**
comp=Z,70nm,1.1s
KBS LR LR
comp=Z,6µm,20.0s
MUD **Monsted U'grnd** **87.54 326** *i* P **P** **14 14 30.5 +1.1**
comp=Z,138nm,1.4s
MUD **Monsted U'grnd** **87.54 326** *i* P **P** **14 14 30.5 +1.1**
MUD pmax pmax
comp=Z,140nm,1.4s
BFO **Black Forest** **88.02 318** *i* P **P** **14 14 32.0 0.0**
BFO **Black Forest** **88.02 318** *e*P **P** **14 14 30.2 -1.8**
comp=Z,38nm,1.2s
BFO LR LR
comp=Z,2µm,20.0s

LANF **Langenberg** **88.36 319** *e*P **P** **14 14 33.9 +0.3**
REVF **Revere** **88.74 314** *e*P **P** **14 14 35.4 -0.1**
SENIN **Lac Senin/Sane** **88.74 316** *e*P **P** **14 14 35.1 -0.6**
comp=Z,104nm,1.4s
LUCF **Luceram** **88.75 314** ⇑ *e*P **P** **14 14 36.3 +0.7**
ABSA **Djebel Ababsia** **88.80 306** P P 14 14 41.2 +5.2
ECH **Echery** **88.81 318** ⇑ *e*P **P** **14 14 35.4 -0.3**
MOF **Molkenrain** **88.83 318** *e*P **P** **14 14 35.6 -0.3**
CMAH **Djebel Manchou** **88.84 306** P **P** **14 14 37.0 +0.8**
MVIF **Mont Vial** **88.89 314** ⇑ *e*P **P** **14 14 36.5 +0.1**
WTSB **Winterswijk** **88.96 322** *e*P **P** 14 14 44.9 +8.7
comp=Z,170nm,1.3s
LOMF **Lomont** **89.05 317** ⇑ *e*P **P** **14 14 36.7 -0.2**
GAMB **Gambell** **89.05 26** *e*P **P** **14 14 36.4 0.0**
comp=Z,139nm,1.4s
GAMB LR LR
comp=Z,6µm,21.0s
CALN **Calern** **89.09 314** ⇑ *e*P **P** **14 14 37.4 +0.1**
RSL **Roselend** **89.23 315** *e*P **P** **14 14 37.8 -0.1**
CKFL **Kef-Lekhel** **89.41 306** P P 14 14 48.4 +9.5
WLF **Walferdange** **89.43 319** P **P** **14 14 39.9 +1.3**
comp=Z,86nm,1.5s
WLF AP **pP** **14 14 48.2 -0.4**
WLF **Walferdange** **89.43 319** *e*P **P** **14 14 39.1 +0.6**
WLF **Walferdange** **89.43 319** *e*P **P** **14 14 38.5 0.0**
comp=Z,158nm,1.3s
WLF LR LR
comp=Z,3µm,20.0s
MEM **Membach** **89.49 320** P **P** **14 14 38.8 0.0**
comp=Z,46nm,1.4s
MEM AP **pP** **14 14 48.0 -0.9**
HGN **Heimansgroeve** **89.54 321** *e*P P 14 14 47.7 +8.7
comp=Z,93nm,1.2s
THEF **Thy Montfort** **89.59 318** ⇑ *e*P **P** **14 14 39.1 -0.2**
CASM **Ain Smara** **89.60 306** P P 14 14 49.4 +10
GDM **Grand'Maison** **89.60 315** ⇑ *e*P **P** **14 14 39.7 0.0**
CTEI **Djebel Teioual** **89.67 306** P **P** **14 14 41.5 +1.3**
GRN **Grenoble** **89.86 315** ⇑ *e*P **P** **14 14 41.1 +0.3**
BCLA **Clavier** **89.95 320** P **P** **14 14 41.1 +0.2**
comp=Z,49nm,1.5s
BCLA AP **pP** **14 14 50.0 -1.0**
NVL **N'lazarevskaya** **89.99 199** *e*P **P** **14 14 42.0 +1.3**
NVL *e**PP **pP** **14 14 51.1 +0.4**
NVL *e**SP **sP** **14 14 54.2 -0.1**
NVL *e*S **SKSac** **14 25 07.9 -1.0**
NVL *e*SS **SS** **14 31 36.8 +7.5**
DFRA **Djebel Bou Aff** **90.08 306** P **P** **14 14 43.8 +1.7**
DOU **Dourbes** **90.42 320** P **P** **14 14 44.2 +1.1**
comp=Z,44nm,1.4s
DOU AP **pP** **14 14 52.1 -1.1**
SET **Setif** **90.48 306** P **P** **14 14 46.0 +2.1**
SNF **Seneffe** **90.60 320** P **P** **14 14 45.0 +1.1**
SNF AP **pP** **14 14 53.3 -0.7**
SSB **Saint Sauveur** **90.71 315** *e*P **P** **14 14 44.8 +0.1**
SSB **Saint Sauveur** **90.71 315** *e*P **P** **14 14 45.3 +0.6**
SSB **Saint Sauveur** **90.71 315** *e*P **P** **14 14 44.0 -0.7**
comp=Z,66nm,1.2s
TAM **Tamanrasset** **90.90 293** *e*P **P** **14 14 47.4 +1.2**
TAM **Tamanrasset** **90.90 293** *e*P **P** **14 14 46.8 +0.6**
comp=Z,120nm,1.3s
TAM LR LR
comp=Z,3µm,21.0s
NIKH **Nikolski High** **91.11 37** PFAKE 14 15 00.0 +14
NIKH LR LR
comp=Z,3µm,21.0s
PLDF **La Plantade** **91.31 316** ⇑ *e*P **P** **14 14 48.8 +1.3**
AFI **Afiamalu** **91.41 104** P **P** **14 14 51.0 +2.4**
comp=Z,51nm,1.1s,baz=277,slow=12,SNR=4.3
AFI **Afiamalu** **91.41 104** P **P** **14 14 51.0 +2.4**
QSPA **South Pole Qui** **91.57 180** PFAKE 14 15 00.0 +12
QSPA LR LR
comp=Z,4µm,18.0s
LBL **Lubilhac** **91.62 315** *e*P **P** **14 14 50.6 +1.6**
AGO **Saint Agoulin** **91.65 316** ⇑ *e*P **P** **14 14 51.4 +2.4**
SJAF **Saint Jean de** **92.08 312** *e*P **P** **14 14 50.9 -0.2**
LRDF **Laroque-de-Fa** **92.30 313** ⇑ *e*P **P** **14 14 52.3 +0.2**
FILF **Fillols** **92.31 313** ⇑ *e*P **P** **14 14 53.1 +0.9**
UNV **Unalaska Valle** **92.44 36** PFAKE 14 15 00.0 +7.6
UNV LR LR
comp=Z,3µm,20.0s
CARF **Carcanieres** **92.63 313** *e*P **P** **14 14 53.5 -0.3**
VALF **Valcebollere** **92.72 312** *e*P **P** **14 14 54.9 +0.7**
CWF **Charnwood Fore** **93.85 323** *e*P **P** **14 14 59.6 +0.6**
comp=Z,58nm,1.3s
CWF LR LR
comp=Z,2µm,22.0s
DAG **Danmarks Havn** **94.17 348** *i* P **P** **14 14 58.9 -1.1**
comp=Z,30nm,1.1s
DAG **Danmarks Havn** **94.17 348** *i* P **P** **14 14 58.9 -1.1**
DAG pmax pmax
comp=Z,38nm,1.1s
EKA **Eskdalemuir Ar** **94.54 326** PKKP **PKKPbc** **14 32 03.2 +0.5**
comp=Z,1.2nm,0.7s,baz=340,slow=7.5,SNR=3.9
TOC2 **Torodi Ar. Sit** **94.94 283** PFAKE 14 15 10.0 +5.2
TOC2 LR LR
comp=Z,5µm,19.0s
TOC3 **Torodi Ar. Sit** **94.94 283** PFAKE 14 15 10.0 +5.2
TOC3 LR LR
comp=Z,5µm,19.0s
TOB2 **Torodi Ar. Sit** **94.95 283** PFAKE 14 15 10.0 +5.2
TOB2 LR LR
comp=Z,5µm,20.0s
TOB3 **Torodi Ar. Sit** **94.96 283** PFAKE 14 15 10.0 +5.1
TOB3 LR LR
comp=Z,5µm,20.0s
TOC1 **Torodi Ar. Sit** **94.96 283** PFAKE 14 15 10.0 +5.1
TOC1 LR LR
comp=Z,6µm,20.0s
TOC4 **Torodi Ar. Sit** **94.96 283** PFAKE 14 15 10.0 +5.1
TOC4 LR LR
comp=Z,5µm,20.0s
TOB1 **Torodi Ar. Sit** **94.97 283** PFAKE 14 15 10.0 +5.1
TOB1 LR LR
comp=Z,6µm,19.0s
TORD **Torodi Ar. Bea** **94.97 283** PP PP 14 19 02.9 +8.5
comp=Z,25nm,1.3s,baz=82,slow=4.6,SNR=9.3
TORD PKKP PKKPdf 14 32 09.5 +9.0
comp=Z,2.0nm,1.1s,baz=268,slow=2.7,SNR=4.7
TORD LR LR 14 57 01.5
comp=Z,5µm,19.0s,baz=95,slow=35
TOA1 **Torodi Ar. Sit** **94.97 283** PFAKE 14 15 10.0 +5.1
TOA1 LR LR
comp=Z,5µm,19.0s
TOB4 **Torodi Ar. Sit** **94.98 283** PFAKE 14 15 10.0 +5.1
TOB4 LR LR
comp=Z,5µm,20.0s
TOB5 **Torodi Ar. Sit** **94.98 283** PFAKE 14 15 10.0 +5.0
TOB5 LR LR
comp=Z,6µm,19.0s
TOC7 **Torodi Ar. Sit** **94.98 283** PFAKE 14 15 10.0 +5.0
TOC7 LR LR
comp=Z,5µm,19.0s
TOC5 **Torodi Ar. Sit** **94.99 283** PFAKE 14 15 10.0 +5.0
TOC5 LR LR
comp=Z,6µm,19.0s
TTA **Tatalina** **96.15 26** *e*P **P** **14 15 09.6 +0.2**
TTA pmax pmax
comp=Z,47nm,1.4s
TTA **Tatalina** **96.15 26** *e*P **P** **14 15 09.6 +0.2**
comp=Z,47nm,1.4s
TT01 **Tatalina** **96.15 26** *e*P **P** **14 15 08.9 -0.4**
SVW2 **Sparrevohn** **96.85 28** *e*P **P** **14 15 12.4 -0.1**
comp=Z,58nm,1.5s
SVW2 LR LR
comp=Z,5µm,18.0s
COLD **Coldfoot** **97.10 21** *e*P Pdif 14 15 13.8 +0.2
comp=Z,39nm,1.5s
COLD LR LR
comp=Z,20µm,18.0s
ES19 **SONSECA Array** **97.48 310** *e*P **P** **14 15 14.7 -1.2**
ESDC **Sonseca Array** **97.53 310** P Pdif 14 15 16.7 +0.5
comp=Z,0.3nm,0.3s,baz=57,slow=3.8,SNR=6.0
ESDC PP **PP** **14 19 12.7 -0.9**
comp=Z,0.3nm,0.3s,baz=79,slow=6.9,SNR=2.8
ESDC LR LR 15 03 13.0
comp=Z,429nm,19.8s,baz=145,slow=38
ESLA **Sonseca Array** **97.53 310** PFAKE 14 15 30.0 +14
ESLA LR LR
comp=Z,1µm,18.0s
MLY **Manley** **97.70 23** *e*P **P** **14 15 16.2 -0.1**
comp=Z,37nm,1.4s
MLY LR LR
comp=Z,8µm,18.0s
CAST **Castle Rocks** **97.70 25** *e*P **P** **14 15 16.2 -0.1**
comp=Z,56nm,1.2s

CAST LR LR
comp=Z,5µm,19.0s
PPLA **Purkeypile** **97.83 26** *e*P Pdif 14 15 17.1 0.0
comp=Z,67nm,1.5s
PPLA LR LR
comp=Z,6µm,21.0s
PAB **San Pablo** **97.84 310** PFAKE 14 15 30.0 +12
PAB LR LR
comp=Z,1µm,21.0s
BPAW **Bear Paw Mtn.** **97.93 24** *e*P **P** **14 15 17.0 -0.3**
comp=Z,72nm,1.2s
BPAW LR LR
comp=Z,5µm,21.0s
KTH **Kantishna Hill** **98.15 25** *e*P Pdif 14 15 19.9 +1.5
KTH LR LR
comp=Z,5µm,18.0s
TRF **Thorofare Moun** **98.45 25** *e*P Pdif 14 15 20.2 +0.3
comp=Z,25nm,1.1s
TRF LR LR
comp=Z,6µm,20.0s
SPU **Mount Spurr** **98.46 27** *e*P **P** **14 15 18.9 -0.9**
MDM **Murphy Dome** **98.71 23** *e*P Pdif 14 15 21.6 +0.7
comp=Z,25nm,1.2s
MDM LR LR
comp=Z,7µm,19.0s
COLA **College** **98.90 23** PFAKE 14 15 30.0 +8.4
COLA LR LR
comp=Z,7µm,20.0s
MCK **McKinley** **98.91 24** *e*P Pdif 14 15 21.8 +0.1
MCK **McKinley** **98.91 24** *e*P **P** **14 15 21.0 -0.7**
comp=Z,54nm,1.2s
MCK LR LR
comp=Z,6µm,18.0s
CCB **Clear Creek Bu** **99.00 23** PFAKE 14 15 30.0 +7.9
CCB LR LR
comp=Z,6µm,18.0s
RND **Reindeer** **99.06 25** *e*P **Pdif** **14 15 22.4 -0.1**
RND pmax pmax
comp=Z,37nm,1.3s
RND MLR MLR
comp=Z,7µm,18.0s
RND **Reindeer** **99.06 25** *e*P **Pdif** **14 15 22.4 -0.1**
comp=Z,37nm,1.3s
RND LR LR
comp=Z,7µm,18.0s
OHAK **Old Harbor** **99.10 31** PFAKE 14 15 30.0 +7.4
OHAK LR LR
comp=Z,6µm,18.0s
FYU **Fort Yukon** **99.17 21** PFAKE 14 15 30.0 +7.3
FYU LR LR
comp=Z,14µm,18.0s
PBRG **Braganca** **99.26 313** *e*Pdif **Pdif** **14 15 35.2 +11**
KDAK **Kodiak Island** **99.29 31** PFAKE 14 15 30.0 +6.5
KDAK LR LR
comp=Z,5µm,20.0s
IL1 **Eielson Array** **99.31 23** *e*P **Pdif** **14 15 21.6 -1.9**
ILAR **Eielson Array** **99.31 23** P **Pdif** **14 15 21.5 -2.0**
comp=Z,0.9nm,0.8s,baz=312,slow=5.3,SNR=7.9
ILAR PP PP 14 19 17.3 -9.0
comp=Z,14nm,1.2s,baz=286,slow=7.3,SNR=7.4
ILAR PKKP **PKKPdf** **14 31 55.1 +1.6**
comp=Z,2.9nm,1.1s,baz=148,slow=2.6,SNR=9.2
ILAR LR LR 15 07 10.6
comp=Z,4µm,19.4s,baz=316,slow=40
HDA **Harding Lake** **99.44 23** PFAKE 14 15 30.0 +5.9
HDA LR LR
comp=Z,7µm,20.0s
BRLK **Bradley Lake** **99.48 28** PFAKE 14 15 30.0 +5.6
BRLK LR LR
comp=Z,6µm,18.0s
RC01 **Rabbit Creek A** **99.54 27** *e*Pdif **Pdif** **14 15 22.8 -1.8**
comp=Z,27nm,1.0s
RC01 LR LR
comp=Z,6µm,19.0s
MVO **Moncorvo** **99.59 312** *e*Pdif **Pdif** **14 15 24.9 -0.5**
PMR **Palmer** **99.63 26** *e*P **Pdif** **14 15 24.8 -0.1**
PMR pmax pmax
comp=Z,45nm,1.6s
PMR MLR MLR
comp=Z,4µm,21.0s
PMR **Palmer** **99.63 26** *e*Pdif **Pdif** **14 15 24.8 -0.1**
comp=Z,45nm,1.6s
PMR LR LR
comp=Z,4µm,21.0s
SML **Sawmill** **99.90 26** *e*P **Pdif** **14 15 25.1 -1.1**
SML pmax pmax
comp=Z,10.0nm,1.2s
SML MLR MLR
comp=Z,4µm,18.0s
SML **Sawmill** **99.90 26** *e*Pdif **Pdif** **14 15 25.1 -1.1**
comp=Z,9.5nm,1.2s
SML LR LR
comp=Z,4µm,18.0s
SEW **Seward** **100.03 28** PFAKE 14 15 40.0 +13
SEW LR LR
comp=Z,6µm,20.0s
MTE **Manteigas** **100.12 311** *e*Pdif **Pdif** **14 15 35.5 +7.8**
MTE **Manteigas** **100.12 311** *e*PP PP 14 19 38.4 +5.1
POLO **Lamas de Olo** **100.12 312** *e*Pdif **Pdif** **14 15 33.7 +6.0**
PBAR **Barrancos** **100.14 309** *e*Pdif **Pdif** **14 15 36.3 +8.6**
PBAR **Barrancos** **100.14 309** *e*PP PP 14 19 32.9 +0.4
PMRV **Marv??o** **100.18 310** *e*Pdif **Pdif** **14 15 30.3 +2.3**
PMRV **Marv??o** **100.18 310** *e*PP PP 14 19 36.2 +2.4
SCM **Sheep Creek Mo** **100.33 26** PFAKE 14 15 40.0 +12
SCM LR LR
comp=Z,8µm,18.0s
PGAV **Gavieira, Arco** **100.35 313** *e*Pdif **Pdif** **14 15 35.3 +6.6**
PGAV **Gavieira, Arco** **100.35 313** *e*PP PP 14 19 37.9 +2.8
PESTR **Estremoz** **100.44 310** *e*Pdif **Pdif** **14 15 30.3 +1.2**
PESTR **Estremoz** **100.44 310** *e*PP PP 14 19 40.9 +5.1
PAX **Paxson** **100.64 24** PFAKE 14 15 40.0 +10
PAX LR LR
comp=Z,6µm,18.0s
PVAQ **Vaqueiros** **100.80 308** *e*Pdif **Pdif** **14 15 36.9 +6.2**
PVAQ **Vaqueiros** **100.80 308** *e*PP PP 14 19 41.0 +2.5
SUMG **Summit** **100.85 348** *i* P **Pdif** **14 15 31.4 +0.7**
SUMG **Summit** **100.85 348** *e*P **Pdif** **14 15 31.4 +0.7**
PMTG **Montargil** **100.89 310** *e*PP PP 14 19 39.7 +0.6
PBDV **Barranco-do-Ve** **101.00 308** *e*Pdif **Pdif** **14 15 44.7 +13**
PBDV **Barranco-do-Ve** **101.00 308** *e*PP PP 14 19 38.4 -1.7
DIV **Divide** **101.30 26** PFAKE 14 15 40.0 +7.5
DIV LR LR
comp=Z,7µm,18.0s
PNCL **Nicolau / Gran** **101.30 309** *e*Pdif **Pdif** **14 15 43.5 +11**
PNCL **Nicolau / Gran** **101.30 309** *e*PP PP 14 19 40.1 -2.2
MENT **Mentasta** **101.38 24** *e*Pdif **Pdif** **14 15 34.2 +1.4**
MENT LR LR
comp=Z,4µm,18.0s
MORF **Marmelete** **101.55 308** *e*Pdif **Pdif** **14 15 45.8 +12**
MORF **Marmelete** **101.55 308** *e*PP PP 14 19 48.7 +4.4
EYAK **Cordova Ski Ar** **101.55 27** PFAKE 14 15 40.0 +6.5
EYAK LR LR
comp=Z,9µm,19.0s
KIC **Kosan Boka** **101.65 277** *e*PKP2 **Pdif** **14 15 38.0 +3.0**
comp=Z,64nm,1.6s
PMAFR **Mafra** **101.72 310** *e*PP PP 14 19 39.5 -5.9
DBIC **Dimbokro** **101.75 277** PP PP 14 19 52.5 +6.1
comp=Z,9.1nm,1.1s,baz=70,slow=11,SNR=5.1
DBIC **Dimbokro** **101.75 277** *e*P **Pdif** **14 15 37.2 +1.8**
DBIC **Dimbokro** **101.75 277** *e*Pdif **Pdif** **14 15 37.2 +1.8**
DBIC PP **PP** **14 19 52.5 +6.1**
BMRM **Bremner River** **101.88 26** *e*Pdif **Pdif** **14 15 36.0 +1.0**
comp=Z,42nm,1.3s
BMRM LR LR
comp=Z,6µm,18.0s
TIC **Toumodi** **101.92 277** *e*PKP2 **Pdif** **14 15 37.6 +1.4**
LIC **Lamto** **101.94 277** *e*PKP2 **Pdif** **14 15 36.7 +0.4**
INK **Inuvik** **102.07 17** PKKP **PKKPbc** **14 31 44.0 +1.9**
comp=Z,2.3nm,1.1s,baz=307,slow=29,SNR=5.1
RAGM **Ragged Mountai** **102.11 27** PFAKE 14 15 50.0 +14
RAGM LR LR
comp=Z,12µm,18.0s
SKAG **Skagway** **106.64 25** PFAKE 14 20 20.0
SKAG LR LR
comp=Z,6µm,20.0s
PMOZ **Porto Moniz, M** **109.39 306** *e*PP PP 14 20 45.1 +2.7
WRAK **Wrangell Islan** **109.70 27** PFAKE 14 20 20.0
WRAK LR LR
comp=Z,5µm,18.0s
YKA **Yellowknife Ar** **111.69 15** Pdiff **Pdif** **14 16 20.5 +1.9**
comp=Z,0.5nm,0.9s,baz=321,slow=4.8,SNR=4.1
YKA PKKPbc **PKKPbc** **14 31 09.6 -2.4**
comp=Z,0.6nm,1.0s,baz=152,slow=3.4,SNR=3.9
YKA PKKPab **PKKPab** **14 31 15.5 -4.5**
comp=Z,2.2nm,1.0s,baz=146,slow=3.1,SNR=10

YKA PKKP **PKKPdf** **14 31 32.7 +2.3**
comp=Z,1.1nm,0.9s,baz=146,slow=3.5,SNR=5.0
TBI **Tubuai** **112.06 114** *e*Pdif **Pdif** **14 16 16.8 -4.2**
comp=Z,73nm,25.5s
TBI **Tubuai** **112.06 114** *e*PP PP 14 20 57.1 -4.8
comp=Z,319nm,27.8s
TBI *e*Sdif Sdif 14 28 37.8 -3.3
comp=Z,1µm,28.5s
TBI **Tubuai** **112.06 114** *e*PS PS 14 30 31.5 -4.3
comp=Z,731nm,27.2s
TBI *e*SS SS 14 36 41.5 +3.0
comp=Z,3µm,27.2s
TBI **Tubuai** **112.06 114** *e*LQ LQ 14 48 56.7
comp=Z,4µm,40.2s
TBI *e*LR LR 14 53 48.6
comp=Z,5µm,24.0s
PPT2 **Papeete2** **112.64 108** *e*Pdif **Pdif** **14 16 25.6 +1.8**
comp=Z,105nm,26.2s
PPT2 **Papeete2** **112.64 108** *e*PP PP 14 20 57.4 -8.9
comp=Z,360nm,25.8s
PPT2 *e*Sdif Sdif 14 28 42.6 -3.7
comp=Z,2µm,26.2s
PPT2 **Papeete2** **112.64 108** *e*PS PS 14 30 38.3 -3.2
comp=Z,1µm,28.8s
PPT2 **Papeete2** **112.64 108** *e*LQ LQ 14 49 12.0
comp=Z,7µm,38.8s
PPT2 *e*LR LR 14 54 05.4
comp=Z,4µm,23.0s
HOPE **Hope Point** **115.31 208** PFAKE 14 20 30.0 +6.9
HOPE LR LR
comp=Z,11µm,21.0s
B06A **Marblemount** **119.86 29** PFAKE 14 20 40.0 +8.0
B06A LR LR
comp=Z,3µm,18.0s
B08A **Colville Reser** **120.98 28** PFAKE 14 20 40.0 +5.7
B08A LR LR
comp=Z,4µm,20.0s
LTY **Liberty** **121.13 29** PFAKE 14 20 40.0 +5.3
LTY LR LR
comp=Z,3µm,20.0s
FFC **Flin Flon** **121.65 13** *e*PKIKP **PKPdf** **14 20 35.1 -0.2**
FFC MLR MLR
comp=Z,4µm,19.0s
FFC **Flin Flon** **121.65 13** *e*PKPdf **PKPdf** **14 20 35.1 -0.2**
FFC LR LR
comp=Z,4µm,19.0s
C09A **Chrisman Ranch** **121.88 27** PFAKE 14 20 50.0 +14
C09A LR LR
comp=Z,5µm,19.0s
NEW **Newport** **122.06 26** PFAKE 14 20 50.0 +14
NEW LR LR
comp=Z,6µm,18.0s
D08A **Wollman Farm,** **122.12 28** PFAKE 14 20 50.0 +14
D08A LR LR
comp=Z,3µm,18.0s
SCHQ **Schefferville** **122.20 349** PP PP 14 22 09.4 -1.3
comp=Z,11nm,1.1s,baz=22,slow=9.7,SNR=2.4
SCHQ **Schefferville** **122.20 349** PP PP 14 22 09.4 -1.3
SCHQ LR LR
comp=Z,3µm,20.0s
TAOE **Nuku Hiva Isla** **122.53 99** *e*PS PS 14 32 07.6 -3.6
comp=Z,820nm,26.2s
TAOE **Nuku Hiva Isla** **122.53 99** *e*LR LR 14 58 41.3
comp=Z,2µm,23.3s
BSMT **Bassoo Peak** **123.39 25** *e*PKPdf **PKPdf** **14 20 39.3 +0.1**
F10A **Beach Ranch, E** **123.71 28** *e*PKPdf **PKPdf** **14 20 39.9 +0.2**
F10A LR LR
comp=Z,4µm,21.0s
YBH **Yreka Blue Hor** **123.74 35** PFAKE 14 20 50.0 +10
YBH LR LR
comp=Z,3µm,18.0s
M02C **Callahan** **123.87 36** P **PKPdf** **14 20 41.1 +1.0**
baz=309
SWMT **Swartz Lake** **123.99 25** *e*PKPdf **PKPdf** **14 20 39.9 -0.4**
K05A **Summer Lake** **124.11 33** *e*PKPdf **PKPdf** **14 20 41.1 +0.4**
N02D **Trinity Center** **124.22 36** P **PKPdf** **14 20 40.7 -0.1**
baz=309
BMO **Blue Mountains** **124.49 29** PFAKE 14 20 50.0 +8.8
BMO LR LR
comp=Z,3µm,22.0s
MSO **Missoula** **124.55 26** P **PKPdf** **14 20 41.0 -0.3**
baz=321
MSO **Missoula** **124.55 26** *e*PKPdf **PKPdf** **14 20 41.5 +0.3**
MSO LR LR
comp=Z,7µm,18.0s
CHMT **Chamberlain Mo** **124.77 25** *e*PKPdf **PKPdf** **14 20 41.0 -0.9**
MOD **Modoc Plateau** **124.99 34** *e*PKPdf **PKPdf** **14 20 42.1 -0.3**
RKT **Rikitea** **125.15 117** *e*PP PP 14 22 27.2 -5.2
comp=Z,262nm,28.8s
RKT *e*Sdif Sdif 14 30 30.8 +0.5
comp=Z,543nm,27.5s
RKT **Rikitea** **125.15 117** *e*PS PS 14 32 29.6 -4.1
comp=Z,374nm,28.2s
RKT *e*SS SS 14 39 29.0 +1.2
comp=Z,2µm,30.0s
RKT **Rikitea** **125.15 117** *e*LQ LQ 14 54 27.9
comp=Z,2µm,36.5s
RKT *e*LR LR 14 59 16.1
comp=Z,4µm,25.2s
O03D **Paynes Creek** **125.18 36** P **PKPdf** **14 20 42.5 -0.2**
baz=310
EGMT **Eagleton** **125.26 22** P **PKPdf** **14 20 43.1 +0.5**
baz=326
EGMT **Eagleton** **125.26 22** *e*PKPdf **PKPdf** **14 20 42.3 -0.3**
EGMT LR LR
comp=Z,5µm,22.0s
WVOR **Wild Horse Val** **125.53 32** *e*PKIKP **PKPdf** **14 20 43.4 +0.1**
WVOR **Wild Horse Val** **125.53 32** *e*PKPdf **PKPdf** **14 20 43.4 +0.1**
ORV **Oroville** **125.83 37** PFAKE 14 20 50.0 +6.2
ORV LR LR
comp=Z,2µm,18.0s
EFI **East Falkland** **125.97 199** PFAKE 14 20 50.0 +6.4
EFI LR LR
comp=Z,2µm,20.0s
MFID **Camas Ranch** **126.27 29** *e*PKPdf **PKPdf** **14 20 44.8 +0.1**
DLMT **Dillon** **126.28 26** *e*PKPdf **PKPdf** **14 20 44.8 +0.1**
DLMT LR LR
comp=Z,5µm,19.0s
BOZ **Bozeman (W)** **126.46 25** P **PKPdf** **14 20 45.2 +0.2**
baz=323
BOZ **Bozeman (W)** **126.46 25** *e*PKIKP **PKPdf** **14 20 44.8 -0.3**
BOZ MLR MLR
comp=Z,6µm,18.0s
BOZ **Bozeman (W)** **126.46 25** *e*PKPdf **PKPdf** **14 20 44.8 -0.3**
BOZ LR LR
comp=Z,6µm,18.0s
AFDM **Forest Hills D** **126.53 37** *e*PKPdf **PKPdf** **14 20 45.0 -0.2**
MCMT **McKenzie Canyo** **126.58 26** *e*PKPdf **PKPdf** **14 20 44.6 -0.9**
DGMT **Dagmar** **126.76 18** P **PKPdf** **14 20 45.8 +0.5**
baz=333
DGMT **Dagmar** **126.76 18** *e*PKPdf **PKPdf** **14 20 44.6 -0.7**
DGMT LR LR
comp=Z,10µm,18.0s
HLID **Hailey** **126.84 28** P **PKPdf** **14 20 46.6 +0.8**
baz=319
HLID **Hailey** **126.84 28** *e*PKPdf **PKPdf** **14 20 45.7 -0.2**
HLID LR LR
comp=Z,7µm,20.0s
A26A **Wade Farm, Ken** **126.99 16** P **PKPdf** **14 20 46.5 +0.7**
baz=336
ULM **Lac du Bonnet** **127.12 10** PKP **PKPdf** **14 20 45.1 -0.8**
comp=Z,11nm,0.9s,baz=330,slow=2.7,SNR=14
ULM PP **PP** **14 22 44.5 +0.8**
comp=Z,2.7nm,0.8s,baz=352,slow=5.8,SNR=2.3
ULM **Lac du Bonnet** **127.12 10** *e*PKPdf **PKPdf** **14 20 45.7 -0.2**
ULM PP **PP** **14 22 44.5 +0.8**
ULM LR LR
comp=Z,9µm,21.0s
QLMT **Earthquake Lak** **127.20 25** *e*PKPdf **PKPdf** **14 20 46.7 +0.1**
CMB **Columbia Colle** **127.47 37** PFAKE 14 21 00.0 +13
CMB LR LR
comp=Z,2µm,21.0s
YMR **Madison River** **127.53 25** *e*PKPdf **PKPdf** **14 20 47.5 +0.3**
YMR LR LR
comp=Z,7µm,18.0s
YNR **Norris Junctio** **127.61 25** PFAKE 14 21 00.0 +13
YNR LR LR
comp=Z,9µm,18.0s
LAO **LASA Array** **127.67 20** P **PKPdf** **14 20 47.5 +0.3**
baz=330
LAO **LASA Array** **127.67 20** *e*PKPdf **PKPdf** **14 20 46.5 -0.7**
LAO LR LR
comp=Z,3µm,20.0s
A29A **Manning Farm,** **127.68 14** P **PKPdf** **14 20 47.6 +0.5**
baz=339
YFT **Old Faithful** **127.76 25** PFAKE 14 21 00.0 +12
YFT LR LR
comp=Z,24µm,18.0s
B28A **Dugan Ranch, T** **127.84 15** P **PKPdf** **14 20 48.0 +0.6**
baz=338
LKWY **Lake** **127.85 25** PFAKE 14 21 00.0 +12
LKWY LR LR
comp=Z,16µm,18.0s
RLMT **Red Lodge** **127.86 24** P **PKPdf** **14 20 48.4 +0.6**
baz=326
RLMT **Red Lodge** **127.86 24** *e*PKPdf **PKPdf** **14 20 48.0 +0.1**
RLMT LR LR
comp=Z,7µm,18.0s
A30A **Hoffart Farm,** **127.88 13** P **PKPdf** **14 20 47.5 +0.1**
baz=340
H17A **Grant Village** **127.91 25** P **PKPdf** **14 20 49.5 +1.5**
baz=324
C26A **Wahner Farm, P** **127.95 16** P **PKPdf** **14 20 48.0 +0.3**
baz=335
FLWY **Flagg Ranch** **128.11 25** PFAKE 14 21 00.0 +12
FLWY LR LR
comp=Z,3µm,19.0s
B30A **Myrvik Farm, E** **128.33 13** P **PKPdf** **14 20 48.9 +0.6**
baz=340
MOOW **Moose Ponds** **128.36 26** *e*PKPdf **PKPdf** **14 20 48.6 -0.3**
MOOW LR LR
comp=Z,4µm,18.0s
NV01 **Mina Array Sit** **128.45 36** *e*PKPdf **PKPdf** **14 20 49.1 -0.1**
NVAR **Mina Array Bea** **128.45 36** PKP **PKPdf** **14 20 49.6 +0.4**
comp=Z,5.8nm,1.0s,baz=231,slow=4.3,SNR=4.2
A33A **Warroad** **128.47 11** P **PKPdf** **14 20 48.5 -0.1**
baz=344
ELK **Elko** **128.52 31** *e*PKIKP **PKPdf** **14 20 49.5 +0.2**
ELK **Elko** **128.52 31** *e*PKPdf **PKPdf** **14 20 49.5 +0.2**
LOHW **Long Hollow** **128.53 26** *e*PKPdf **PKPdf** **14 20 49.5 +0.3**
LOHW LR LR
comp=Z,4µm,18.0s
NV11 **Mina Array Sit** **128.53 35** PFAKE 14 21 00.0 +11
NV11 LR LR
comp=Z,3µm,18.0s
D26A **Manning** **128.57 17** P **PKPdf** **14 20 49.3 +0.4**
baz=335
SNOW **Snow King Moun** **128.59 26** *e*PKPdf **PKPdf** **14 20 47.9 -1.5**
SNOW LR LR
comp=Z,5µm,20.0s
MDND **Maddock** **128.59 14** P **PKPdf** **14 20 49.4 +0.5**
baz=338
MDND **Maddock** **128.59 14** *e*PKPdf **PKPdf** **14 20 47.9 -1.0**
MDND LR LR
comp=Z,4µm,18.0s
REDW **Red Top Meadow** **128.62 26** *e*PKPdf **PKPdf** **14 20 49.2 -0.2**
REDW LR LR
comp=Z,5µm,20.0s
D28A **Regan** **128.95 15** P **PKPdf** **14 20 50.4 +0.8**
baz=337
HVU **Hansel Valley** **128.98 29** *e*PKIKP **PKPdf** **14 20 49.5 -0.5**
HVU MLR MLR
comp=Z,4µm,18.0s
HVU **Hansel Valley** **128.98 29** *e*PKPdf **PKPdf** **14 20 49.5 -0.5**
HVU LR LR
comp=Z,4µm,18.0s
AHID **Auburn Hatcher** **128.99 27** PFAKE 14 21 00.0 +10
AHID LR LR
comp=Z,6µm,19.0s
AGMN **Agassiz Nation** **128.99 11** P **PKPdf** **14 20 49.4 -0.2**
baz=343
AGMN **Agassiz Nation** **128.99 11** *e*PKPdf **PKPdf** **14 20 48.3 -1.3**
AGMN *e*PP **PP** **14 22 49.9 -6.1**
AGMN LR LR
comp=Z,5µm,18.0s
C30A **Mose, Pekin** **129.00 14** P **PKPdf** **14 20 50.1 +0.5**
baz=340
C31A **Landan Farms,** **129.08 13** P **PKPdf** **14 20 49.8 0.0**
baz=341
B35A **Bob, Littlefor** **129.31 9** P **PKPdf** **14 20 50.8 +0.6**
baz=346
D29A **Pettibone, Tap** **129.32 15** P **PKPdf** **14 20 49.3 -1.0**
baz=338
SPUT **South Promonto** **129.50 29** PFAKE 14 21 00.0 +9.0
SPUT LR LR
comp=Z,4µm,20.0s
BGU **Big Grassy Mou** **129.51 30** *e*PKPdf **PKPdf** **14 20 51.4 +0.4**
BGU LR LR
comp=Z,6µm,20.0s
BW06 **Boulder Array** **129.67 25** P **PKPdf** **14 20 51.9 +0.5**
baz=324
BW06 **Boulder Array** **129.67 25** *e*PKPdf **PKPdf** **14 20 50.2 -1.1**
BW06 *e*PKPdf **PKiKP** **14 20 50.4 -1.7**
BW06 LR LR
comp=Z,4µm,18.0s
PD31 **Pinedale Array** **129.67 25** *e*PKPdf **PKPdf** **14 20 51.1 -0.2**
PDAR **Pinedale Array** **129.67 25** PKP **PKPdf** **14 20 48.4 -3.0**
comp=Z,4.9nm,1.1s,baz=268,slow=1.4,SNR=16
PDAR PP **PP** **14 22 55.7 -5.4**
comp=Z,5.9nm,1.2s,baz=311,slow=2.0,SNR=3.2
HWUT **Hardware Ranch** **129.69 28** *e*PKPdf **PKPdf** **14 20 51.8 +0.4**
HWUT LR LR
comp=Z,5µm,18.0s
C35A **Jirik Farms, M** **129.91 10** P **PKPdf** **14 20 51.3 0.0**
baz=346
E30A **Jud** **130.02 14** P **PKPdf** **14 20 51.3 -0.3**
baz=339
EYMN **Ely** **130.05 8** P **PKPdf** **14 20 51.8 +0.2**
baz=349
R11A **Troy Canyon, C** **130.05 34** P **PKPdf** **14 20 52.7 +0.6**
baz=315
R11A **Troy Canyon, C** **130.05 34** *e*PKPdf **PKPdf** **14 20 52.3 +0.2**
R11A LR LR
comp=Z,3µm,21.0s
TCUT **Toone Canyon** **130.14 28** *e*PKPdf **PKPdf** **14 20 53.1 +0.8**
TCUT LR LR
comp=Z,5µm,20.0s
DUG **Dugway, Tooele** **130.17 30** P **PKPdf** **14 20 53.1 +0.8**
baz=319
DAC **Darwin (Calif)** **130.31 37** *e*PKIKP **PKPdf** **14 20 52.3 -0.4**
DAC **Darwin (Calif)** **130.31 37** *e*PKPdf **PKPdf** **14 20 52.3 -0.4**
CTU **Camp Tracy** **130.31 29** PFAKE 14 21 00.0 +7.4
CTU LR LR
comp=Z,3µm,20.0s
F29A **Eureka** **130.40 16** P **PKPdf** **14 20 52.1 -0.3**
baz=338
D35A **Remer** **130.50 10** P **PKPdf** **14 20 52.4 -0.1**
baz=345
JLU **Jordanelle** **130.52 29** *e*PKPdf **PKPdf** **14 20 53.1 0.0**
JLU LR LR
comp=Z,4µm,18.0s
F30A **Leola** **130.61 15** P **PKPdf** **14 20 52.7 -0.1**
baz=339
TPNV **Topopah Spring** **130.65 36** *e*PKIKP **PKPdf** **14 20 53.1 -0.2**
TPNV MLR MLR
comp=Z,2µm,19.0s
TPNV **Topopah Spring** **130.65 36** *e*PKPdf **PKPdf** **14 20 53.1 -0.2**
TPNV LR LR
comp=Z,2µm,19.0s
RSSD **Black Hills** **130.66 20** *e*PKIKP **PKPdf** **14 20 52.6 -0.6**
RSSD MLR MLR
comp=Z,4µm,19.0s
RSSD **Black Hills** **130.66 20** *e*PKPdf **PKPdf** **14 20 52.6 -0.6**
RSSD LR LR
comp=Z,4µm,19.0s
E33A **Westby DABS, E** **130.68 12** P **PKPdf** **14 20 52.8 -0.1**
baz=343
NLU **North Lily Min** **130.72 30** *e*PKPdf **PKPdf** **14 20 53.1 -0.3**
NLU LR LR
comp=Z,4µm,18.0s
PSUT **Pine Spring** **130.86 32** *e*SKPbc **SKPab** **14 24 17.1 +1.2**
PSUT LR LR
comp=Z,4µm,19.0s
MPU **Maple Canyon** **130.89 29** PFAKE 14 21 00.0 +6.3
MPU LR LR
comp=Z,4µm,19.0s
K22A **Casper** **131.01 23** P **PKPdf** **14 20 55.0 +1.1**
baz=328
K22A **Casper** **131.01 23** *e*PKPdf **PKPdf** **14 20 54.2 +0.4**
K22A LR LR
comp=Z,4µm,20.0s
E36A **McGregor** **131.18 10** P **PKPdf** **14 20 53.8 0.0**
baz=346
G30A **Faulkton** **131.23 15** P **PKPdf** **14 20 54.1 +0.1**
baz=338
F33A **5 Mile Ranch,** **131.25 13** P **PKPdf** **14 20 54.0 +0.1**
baz=342
MWC **Mount Wilson** **131.36 40** PFAKE 14 21 00.0 +5.3
MWC LR LR
comp=Z,2µm,21.0s
GSC **Goldstone, Bar** **131.43 38** *e*SKPbc **SKPab** **14 24 18.7 +0.5**
TMUT **Trail Mountain** **131.65 30** *e*PKPdf **PKPdf** **14 20 55.5 +0.1**
TMUT LR LR
comp=Z,4µm,18.0s
P17A **Butcher Ranch,** **131.74 29** PFAKE 14 21 10.0 +15
P17A LR LR
comp=Z,4µm,20.0s
MSU **Marysvale** **131.76 31** *e*PP PP 14 23 16.4 +1.6
F36A **Milaca** **131.77 10** P **PKPdf** **14 20 54.7 -0.3**
baz=346
PKME **Peaks-Kenny Pk** **131.78 347** PFAKE 14 21 00.0 +5.1
PKME LR LR
comp=Z,5µm,19.0s
CCUT **Cedar City** **131.85 33** PFAKE 14 21 10.0 +14
CCUT LR LR
comp=Z,3µm,19.0s
P18A **Preston Nutter** **131.86 29** *e*PKPdf **PKPdf** **14 20 55.2 -0.5**
P18A LR LR
comp=Z,5µm,18.0s
SRU **San Rafael Swe** **132.13 29** *e*PKIKP **PKPdf** **14 20 55.6 -0.5**
SRU MLR MLR
comp=Z,3µm,18.0s
SRU **San Rafael Swe** **132.13 29** *e*PKPdf **PKPdf** **14 20 55.6 -0.5**
SRU LR LR
comp=Z,3µm,18.0s
COWI **Conover** **132.15 6** PFAKE 14 21 10.0 +14
COWI LR LR
comp=Z,7µm,20.0s
LCMT **Little Creek M** **132.30 33** *e*PKPdf **PKPdf** **14 20 56.0 -0.4**
LCMT LR LR
comp=Z,3µm,19.0s
O20A **White River Ci** **132.38 26** *e*PKPdf **PKPdf** **14 20 55.7 -0.8**
O20A LR LR
comp=Z,5µm,18.0s
PKCU **Pink Cliffs** **132.49 32** PFAKE 14 21 10.0 +13
PKCU LR LR
comp=Z,4µm,20.0s
SPMN **Marine on St.** **132.51 10** PFAKE 14 21 10.0 +14
SPMN LR LR
comp=Z,5µm,22.0s
KNB **Kanab** **132.53 33** *e*PKIKP **PKPdf** **14 20 59.3 +2.4**
KNB MLR MLR
comp=Z,3µm,18.0s
KNB **Kanab** **132.53 33** *e*PKPdf **PKPdf** **14 20 59.3 +2.4**
KNB LR LR
comp=Z,3µm,18.0s
PHWY **Pilot Hill** **132.58 23** PFAKE 14 21 10.0 +13
PHWY LR LR
comp=Z,3µm,20.0s
LDFC **Landfair** **132.61 37** PFAKE 14 21 10.0 +13
LDFC LR LR
comp=Z,3µm,19.0s
PLM **Palomar** **132.68 40** *e*PKHKP PKPpre 14 20 43.7
PLM **Palomar** **132.68 40** *e*PKPpre PKPpre 14 20 43.7
SNDA **J Saunders Pla** **132.71 39** *e*PKPpre PKPpre 14 20 48.4
PFO **Pinyon Flats O** **132.76 39** PKIKP **PKPdf** **14 20 58.0 +0.6**
PFO MLR MLR
comp=Z,2µm,21.0s
PFO **Pinyon Flats O** **132.76 39** PKPdf **PKPdf** **14 20 58.0 +0.6**
PFO LR LR
comp=Z,2µm,21.0s
BELC **Belle Mtn. Jos** **132.79 38** *e*PKPpre PKPpre 14 20 45.5
DPP **Dos Picos Cty** **132.85 40** *e*PKPpre PKPpre 14 20 47.5
RCBR **Riachuelo** **133.00 264** PFAKE 14 21 10.0 +12
RCBR LR LR
comp=Z,2µm,18.0s
ECSD **EROS Data Cent** **133.18 14** *e*PKPdf **PKPdf** **14 20 56.3 -1.3**
ECSD LR LR
comp=Z,4µm,22.0s
BAR **Barrett** **133.23 40** *e*SKPbc **SKPab** **14 24 26.4 +0.4**
LBNH **Lisbon** **133.30 349** PFAKE 14 21 10.0 +12
LBNH LR LR
comp=Z,4µm,20.0s
W13A **Hualapai Mount** **133.31 36** *e*PKPdf **PKPdf** **14 20 58.3 -0.1**
W13A LR LR
comp=Z,3µm,21.0s
LONY **Lake Ozonia** **133.37 352** PFAKE 14 21 10.0 +12
LONY LR LR
comp=Z,3µm,19.0s
GLMI **Grayling** **133.72 2** PFAKE 14 21 10.0 +11
GLMI LR LR
comp=Z,6µm,19.0s
SMCO **Snowmass** **133.72 26** *e*PP PP 14 23 25.7 -1.7
SMCO LR LR
comp=Z,6µm,18.0s
ISCO **Idaho Springs** **133.79 24** *e*PP PP 14 23 26.6 -1.0
ISCO LR LR
comp=Z,5µm,18.0s
NCB **Newcomb** **133.95 351** PFAKE 14 21 10.0 +11
NCB LR LR
comp=Z,4µm,20.0s
GLA **Glamis** **134.16 38** PFAKE 14 21 10.0 +10
GLA LR LR
comp=Z,2µm,19.0s
WUAZ **Wupatki** **134.43 33** *e*PKPdf **PKPdf** **14 20 58.9 -1.6**
WUAZ LR LR
comp=Z,3µm,19.0s
ACCN **Adirondack Com** **134.44 351** PFAKE 14 21 10.0 +10
ACCN LR LR
comp=Z,3µm,19.0s
MVCO **Mesa Verde** **134.61 29** *e*PKPdf **PKPdf** **14 21 01.6 +0.8**
MVCO LR LR
comp=Z,6µm,18.0s
Y14A **Wickenburg** **134.64 36** *e*PP PP 14 23 34.4 +1.1
Y14A LR LR
comp=Z,9µm,20.0s
Q24A **Divide** **134.68 25** PFAKE 14 21 10.0 +8.9
Q24A LR LR
comp=Z,4µm,18.0s
HRV **Adam Dziewonsk** **134.90 348** PFAKE 14 21 10.0 +9.1
HRV LR LR
comp=Z,3µm,20.0s
BGNE **Belgrade** **134.96 16** *e*PKPdf **PKPdf** **14 21 00.2 -0.9**
BGNE LR LR
comp=Z,5µm,18.0s
113A **Mohawk Valley,** **135.00 38** PFAKE 14 21 10.0 +8.6
113A LR LR
comp=Z,2µm,19.0s
JFWS **Jewell Farm** **135.16 8** *e*PP PP 14 23 34.5 -1.0
JFWS LR LR
comp=Z,7µm,20.0s
X16A **Lo Mia Camp, P** **135.20 34** *e*PKPdf **PKPdf** **14 21 00.1 -1.9**
X16A LR LR
comp=Z,5µm,19.0s
SDCO **Great Sand Dun** **135.56 26** PFAKE 14 21 10.0 +7.3
SDCO LR LR
comp=Z,4µm,18.0s
W18A **Petrified Fore** **135.61 32** PFAKE 14 21 10.0 +7.3
W18A LR LR
comp=Z,3µm,20.0s
MMNY **Mt. Morris Dam** **135.62 355** PFAKE 14 21 10.0 +7.8
MMNY LR LR
comp=Z,12µm,18.0s
KSCO **Kaye Shedlock'** **135.64 22** PFAKE 14 21 10.0 +7.4
KSCO LR LR
comp=Z,7µm,18.0s
SCIA **State Center** **135.65 11** PFAKE 14 21 10.0 +7.7
SCIA LR LR
comp=Z,5µm,22.0s
BINY **Binghamton** **135.93 353** PFAKE 14 21 10.0 +7.1
BINY LR LR
comp=Z,4µm,21.0s
X18A **Snowflake** **135.94 33** PFAKE 14 21 10.0 +6.6
X18A LR LR
comp=Z,3µm,18.0s
AAM **Ann Arbor** **136.26 1** PFAKE 14 21 10.0 +6.5
AAM LR LR
comp=Z,5µm,20.0s
ERPA **Erie** **136.38 357** PFAKE 14 21 10.0 +6.3
ERPA LR LR
comp=Z,5µm,21.0s
KSPA **Keystone Colle** **136.54 352** PFAKE 14 21 10.0 +6.0
KSPA LR LR
comp=Z,3µm,18.0s
PAL **Palisades** **136.79 350** PFAKE 14 21 10.0 +5.5
PAL LR LR
comp=Z,3µm,20.0s
ODNJ **Ogdensburg** **136.83 351** PFAKE 14 21 10.0 +5.5
ODNJ LR LR
comp=Z,4µm,18.0s
CBKS **Cedar Bluff** **136.84 19** PFAKE 14 21 10.0 +5.3
CBKS LR LR
comp=Z,5µm,18.0s
TUC **Tucson** **137.11 36** P **PKPdf** **14 21 06.1 +0.7**
baz=317
TUC **Tucson** **137.11 36** *e*PKIKP **PKPdf** **14 21 05.9 +0.5**
TUC MLR MLR

comp=Z,3µm,18.0s
TUC **Tucson** **137.11** **36** *e*PKPdf **PKPdf** **14 21 05.9 +0.5**
TUC LR LR
comp=Z,3µm,18.0s
BRNJ **Basking Ridge** **137.22** **351** PFAKE 14 21 10.0 +4.8
BRNJ LR LR
comp=Z,5µm,22.0s
P35A **Duane Minner,** **137.29** **15** P **PKPdf** **14 21 05.3 -0.2**
baz=340
ANMO **Albuquerque** **137.41** **29** *e*PKIKP **PKPdf** **14 21 05.4 -0.7**
ANMO MLR MLR
comp=Z,5µm,19.0s
ANMO **Albuquerque** **137.41** **29** *e*PKPdf **PKPdf** **14 21 05.3 -0.7**
ANMO LR LR
comp=Z,5µm,19.0s
LAZ **Ladron** **137.50** **30** *e*PKPdf **PKPdf** **14 21 05.8 -0.4**
KSU1 **Kansas State U** **137.53** **16** *e*PP PP 14 23 48.7 -2.0
KSU1 LR LR
comp=Z,8µm,18.0s
HDIL **Hopedale** **137.60** **7** PFAKE 14 21 20.0 +14
HDIL LR LR
comp=Z,5µm,20.0s
SSPA **Standing Stone** **137.69** **354** *e*PKPdf **PKPdf** **14 21 06.0 -0.2**
SSPA LR LR
comp=Z,5µm,18.0s
Y22D **IRIS PASSCAL I** **137.87** **30** PFAKE 14 21 20.0 +13
Y22D LR LR
comp=Z,5µm,20.0s
SFIN **Lafayette** **138.01** **5** PFAKE 14 21 20.0 +13
SFIN LR LR
comp=Z,6µm,19.0s
R34A **Isabella, Hill** **138.09** **17** P PKPpre 14 21 00.2
baz=338
ACSO **Alum Creek Sta** **138.34** **0** *e*PP PP 14 23 57.6 +2.2
ACSO LR LR
comp=Z,4µm,20.0s
Q39A **Willow Grove F** **138.46** **12** P PKPpre 14 20 59.9
baz=345
121A **Cookes Peak, D** **138.62** **33** *e*PKPdf **PKPdf** **14 21 07.3 -1.1**
319A **Douglas** **138.66** **35** *e*PKPdf **PKPdf** **14 21 10.1 +1.7**
319A LR LR
comp=Z,3µm,20.0s
SDMD **Soldier's Deli** **138.79** **353** PFAKE 14 21 20.0 +12
SDMD LR LR
comp=Z,2µm,18.0s
MCWV **Mont Chateau** **138.82** **357** PFAKE 14 21 20.0 +12
MCWV LR LR
comp=Z,3µm,21.0s
TRQA **Tornquist** **139.01** **205** PFAKE 14 21 20.0 +11
TRQA LR LR
comp=Z,4µm,20.0s
R38A **Fenwick Farm,** **139.08** **13** P PKPpre 14 21 02.2
baz=343
BLO **Bloomington** **139.25** **4** PFAKE 14 21 20.0 +11
BLO LR LR
comp=Z,6µm,21.0s
R40A **Maddies Statio** **139.33** **11** P PKPpre 14 21 02.4
baz=346
HSIG **139.33** **39** PFAKE 14 21 20.0 +10
HSIG LR LR
comp=Z,3µm,18.0s
SLM **Saint Louis** **139.35** **9** PFAKE 14 21 20.0 +11
SLM LR LR
comp=Z,5µm,18.0s
SPB **Sao Paulo** **139.36** **235** PFAKE 14 21 20.0 +10
SPB LR LR
comp=Z,2µm,18.0s
PLCA **Paso Flores** **139.52** **194** PKP **PKPdf** **14 21 09.7 +0.1**
comp=Z,10.0nm,1.1s,baz=199,slow=2.8,SNR=5.5
OLIL **Olney** **139.54** **6** PFAKE 14 21 20.0 +10
OLIL LR LR
comp=Z,6µm,20.0s
AMTX **Amarillo** **139.60** **24** PFAKE 14 21 20.0 +10
AMTX LR LR
comp=Z,4µm,19.0s
SRIG **Santa Rosalia** **139.62** **42** PFAKE 14 21 20.0 +10
SRIG LR LR
comp=Z,2µm,21.0s
U34A **Anderson Ranch** **139.73** **18** *e*PKPdf **PKPdf** **14 21 08.7 -1.3**
U34A LR LR
comp=Z,5µm,18.0s
V32A **Arapaho** **139.87** **21** P PKPpre 14 21 04.3
baz=334
MSTX **Muleshoe** **139.92** **26** P PKPpre 14 21 04.4
baz=328
MSTX **Muleshoe** **139.92** **26** *e*PKPpre PKPpre 14 21 01.2
MSTX LR LR
comp=Z,4µm,20.0s
S40A **Lebanon** **139.95** **12** P PKPpre 14 21 04.4
baz=345
CBN **Corbin Frederi** **140.04** **353** PFAKE 14 21 20.0 +9.5
CBN LR LR
comp=Z,4µm,18.0s
T38A **Diamond** **140.08** **14** P PKPpre 14 21 02.9
baz=342
WCI **Wyandotte Cave** **140.21** **4** *e*PKIKP **PKPdf** **14 21 10.7 -0.2**
WCI MLR MLR
comp=Z,6µm,19.0s
WCI **Wyandotte Cave** **140.21** **4** *e*PKPdf **PKPdf** **14 21 10.7 -0.2**
WCI LR LR
comp=Z,6µm,19.0s
V34A **Guthrie** **140.28** **19** *e*PKPpre PKPpre 14 21 07.5
V34A LR LR
comp=Z,5µm,19.0s
T39A **Clever** **140.31** **13** P PKPpre 14 21 04.4
baz=344
USIN **University of** **140.35** **6** PFAKE 14 21 20.0 +8.9
USIN LR LR
comp=Z,5µm,19.0s
T40A **Mansfield** **140.38** **12** P PKPpre 14 21 04.6
baz=345
SIUC **Southern Illin** **140.41** **8** *e*PP PP 14 24 08.6 +0.4
SIUC LR LR
comp=Z,4µm,20.0s
U37A **Salina** **140.46** **16** P PKPpre 14 21 05.1
baz=341
MNTX **Cornudas Mount** **140.54** **31** P PKPpre 14 21 06.4
baz=323
MNTX **Cornudas Mount** **140.54** **31** *e*PKPpre PKPpre 14 21 04.6
MNTX LR LR
comp=Z,5µm,19.0s
U38A **Gravette** **140.62** **15** P PKPpre 14 21 04.9
baz=342
TUL1 **Leonard** **140.74** **17** PFAKE 14 21 20.0 +8.1
TUL1 LR LR
comp=Z,7µm,18.0s
W34A **Bridge Creek,** **140.75** **19** PFAKE 14 21 20.0 +8.1
W34A LR LR
comp=Z,6µm,19.0s
V36A **Jenks** **140.81** **17** P PKPpre 14 21 05.9
baz=339
WMOK **Wichita Mounta** **140.85** **21** *e*PKHKP PKPpre 14 21 04.5
WMOK MLR MLR
comp=Z,4µm,18.0s
WMOK **Wichita Mounta** **140.85** **21** *e*PKPpre PKPpre 14 21 04.5
WMOK LR LR
comp=Z,4µm,18.0s
HHAR **Hobbs** **140.88** **14** PFAKE 14 21 20.0 +7.8
HHAR LR LR
comp=Z,6µm,20.0s
U39A **Green Forest** **140.90** **14** P PKPpre 14 21 05.7
baz=343
V37A **Hulbert** **140.95** **16** P PKPpre 14 21 05.9
baz=340
U40A **Yellville** **141.07** **13** P PKPpre 14 21 07.2
baz=344
V38A **Canehill** **141.16** **15** P PKPpre 14 21 06.1
baz=342
BLA **Blacksburg** **141.29** **357** PFAKE 14 21 20.0 +7.1
BLA LR LR
comp=Z,5µm,19.0s
V39A **Pettigrew** **141.38** **14** P PKPpre 14 21 06.5
baz=343
V40A **Witts Springs** **141.60** **13** P PKPpre 14 21 08.6
baz=344
PVMO **Portageville** **141.61** **9** PFAKE 14 21 20.0 +6.6
PVMO LR LR
comp=Z,4µm,20.0s
X35A **Drake** **141.78** **19** P PKPpre 14 21 08.6
baz=337
X36A **Centrahoma** **141.82** **18** P PKPpre 14 21 09.1
baz=338
W38A **Poteau** **141.88** **16** P PKPpre 14 21 09.7
baz=341
Y34A **Reagan Ranch,** **141.91** **20** P PKPpre 14 21 09.4
baz=336

TZTN **Tazewell** **142.01** **1** *e*PKPdf **PKPdf** **14 21 11.5 -2.7**
TZTN LR LR
comp=Z,5µm,21.0s
BBSR **BB Station** **142.07** **335** PFAKE 14 21 20.0 +5.7
BBSR LR LR
comp=Z,2µm,19.0s
X37A **Clayton** **142.09** **17** P PKPpre 14 21 09.8
baz=340
W40A **Ferguson Farm,** **142.13** **14** P PKPpre 14 21 10.2
baz=343
WVT **Waverly** **142.14** **7** *e*PKHKP PKPpre 14 21 06.6
WVT MLR MLR
comp=Z,6µm,20.0s
WVT **Waverly** **142.14** **7** *e*PKPpre PKPpre 14 21 06.6
WVT LR LR
comp=Z,6µm,20.0s
Z33A **Whitaker Ranch** **142.15** **22** P PKPpre 14 21 10.8
baz=334
X38A **Whitesboro** **142.18** **16** P PKPpre 14 21 10.1
baz=340
WHAR **Wooly Hollow** **142.22** **13** *e*PKPpre PKPpre 14 21 08.9
WHAR *e*PP **PP** **14 24 15.4 -3.9**
WHAR LR LR
comp=Z,4µm,18.0s
ABTX **Abilene, Hawle** **142.40** **24** P **PKPdf** **14 21 11.1 -3.9**
baz=332
ABTX **Abilene, Hawle** **142.40** **24** *e*PKPpre PKPpre 14 21 10.8
ABTX LR LR
comp=Z,5µm,18.0s
Y36A **Durant** **142.46** **19** P PKPpre 14 21 11.9
baz=338
X39A **Fountain Ranch** **142.52** **15** P PKPpre 14 21 11.7
baz=341
Y37A **Hugo** **142.59** **18** P **PKPdf** **14 21 12.3 -3.0**
baz=339
MIAR **Mount Ida** **142.62** **15** P PKPpre 14 21 11.4
baz=342
MIAR **Mount Ida** **142.62** **15** *e*PKIKP PKPpre 14 21 10.9
MIAR MLR MLR
comp=Z,5µm,18.0s
MIAR **Mount Ida** **142.62** **15** *e*PKPpre PKPpre 14 21 10.9
MIAR LR LR
comp=Z,5µm,18.0s
Z35A **Perchaven, San** **142.66** **20** P PKPpre 14 21 11.9
baz=336
UALR **University of** **142.70** **13** *e*PKPpre PKPpre 14 21 11.8
UALR LR LR
comp=Z,4µm,20.0s
MET **Memphis--Engin** **142.84** **10** PFAKE 14 21 30.0 +14
MET LR LR
comp=Z,5µm,18.0s
X40A **Basin Creek Fa** **142.86** **14** P **PKPdf** **14 21 12.2 -3.5**
baz=344
TKL **Tuckaleechee C** **142.89** **1** PFAKE 14 21 30.0 +14
TKL LR LR
comp=Z,6µm,21.0s
BDFB **Brasilia** **142.96** **246** PKP **PKPdf** **14 21 17.7 +1.2**
comp=Z,3.2nm,0.5s,baz=144,slow=5.2,SNR=4.1
BDFB **Brasilia** **142.96** **246** PKIKP **PKPdf** **14 21 17.7 +1.2**
BDFB MLR MLR
comp=Z,5µm,20.0s
BDFB **Brasilia** **142.96** **246** PKP **PKPdf** **14 21 17.7 +1.2**
BDFB LR LR
comp=Z,5µm,20.0s
CNNC **Cliffs of the** **143.03** **353** PFAKE 14 21 30.0 +14
CNNC LR LR
comp=Z,6µm,20.0s
Y39A **Lockesburg** **143.06** **16** P PKPbc 14 21 13.0 +0.2
baz=341
CPCT **Cooper Cave** **143.08** **2** PFAKE 14 21 30.0 +14
CPCT LR LR
comp=Z,3µm,20.0s
Y40A **Okolona** **143.21** **15** P PKPbc 14 21 13.2 0.0
baz=343
233A **Rising Star** **143.23** **23** P PKPbc 14 21 13.9 +0.5
baz=333
SWET **Sewanee** **143.23** **4** PFAKE 14 21 30.0 +14
SWET LR LR
comp=Z,2µm,18.0s
TX31 **Lajitas Ar. Si** **143.32** **31** *e*PKPpre PKPpre 14 21 12.9
TXAR **Lajitas Array** **143.32** **31** PKP PKPbc 14 21 13.6 -0.3
comp=Z,45nm,1.3s,baz=276,slow=2.3,SNR=53
TXAR PP **PP** **14 24 27.3 +0.6**
comp=Z,6.6nm,1.1s,baz=325,slow=4.5,SNR=4.1
KMSC **Kings Mountain** **143.39** **358** PFAKE 14 21 30.0 +13
KMSC LR LR
comp=Z,6µm,18.0s
Z38A **Mt. Pleasant** **143.46** **17** P PKPbc 14 21 14.7 +0.7
baz=340
OXF **Oxford** **143.52** **9** PFAKE 14 21 30.0 +13
OXF LR LR
comp=Z,4µm,20.0s
234A **Clairette** **143.53** **22** P PKPab 14 21 13.7 +0.4
baz=334
WLAR **White Oak Lake** **143.56** **15** *e*PKPdf PKPbc 14 21 14.1 -0.1
WLAR LR LR
comp=Z,6µm,19.0s
CCAR **Cane Creek** **143.65** **13** PFAKE 14 21 30.0 +13
CCAR LR LR
comp=Z,5µm,20.0s
Z39A **Irene McRaven,** **143.70** **16** P PKPbc 14 21 14.9 +0.3
baz=341
WHTX **Lake Whitney,** **143.80** **21** P PKPab 14 21 14.1 -0.2
baz=335
WHTX **Lake Whitney,** **143.80** **21** *e*PKPpre PKPpre 14 21 13.1
WHTX LR LR
comp=Z,6µm,19.0s
333A **Richland Sprin** **143.81** **24** P PKPab 14 21 14.1 -0.3
baz=332
137A **Heron Place, G** **143.83** **19** P PKPbc 14 21 15.3 +0.2
baz=338
Z40A **Long Farm, Mag** **143.89** **15** P PKPbc 14 21 15.7 +0.5
baz=342
138A **Matatall Enter** **143.98** **18** P PKPbc 14 21 16.0 +0.5
baz=339
Z41A **Richland Creek** **144.04** **14** P PKPbc 14 21 15.8 +0.1
baz=343
HPIG **144.07** **36** *e*PKPdf PKPbc 14 21 16.3 0.0
HPIG LR LR
comp=Z,3µm,20.0s
334A **Lometa** **144.09** **23** P **PKPab** **14 21 15.1 -0.4**
baz=333
236A **Katherine and** **144.12** **20** P **PKPab** **14 21 15.2 -0.3**
baz=336
139A **Bunkhouse Ranc** **144.16** **17** P **PKPab** **14 21 15.8 +0.2**
baz=340
JCT **Junction City** **144.20** **26** P **PKPab** **14 21 16.1 +0.2**
baz=330
JCT **Junction City** **144.20** **26** *e*PKIKP **PKPab** **14 21 15.5 -0.5**
JCT MLR MLR
comp=Z,2µm,22.0s
JCT **Junction City** **144.20** **26** *e*PKPdf **PKPab** **14 21 15.5 -0.5**
JCT LR LR
comp=Z,2µm,22.0s
JSC **Jenkinsville** **144.25** **358** PFAKE 14 21 30.0 +12
JSC LR LR
comp=Z,4µm,20.0s
433A **Art** **144.26** **24** P **PKPab** **14 21 15.5 -0.7**
baz=332
237A **Washetta, Mont** **144.36** **19** P PKPbc 14 21 16.7 0.0
baz=338
140A **Cam and Jess,** **144.43** **16** P PKPbc 14 21 17.0 +0.1
baz=342
335A **Moody** **144.45** **22** P **PKPab** **14 21 16.3 -0.5**
baz=334
434A **Burnet** **144.54** **23** P **PKPab** **14 21 16.7 -0.5**
baz=333
336A **Riesel** **144.56** **21** P **PKPab** **14 21 16.8 -0.4**
baz=336
238A **Jacksonville** **144.58** **18** P PKPbc 14 21 17.9 +0.5
baz=339
141A **Papa Simpson,** **144.64** **15** P PKPbc 14 21 17.8 +0.2
baz=343
239A **Gary** **144.76** **17** P PKPbc 14 21 18.1 +0.1
baz=340
435B **Jarrell** **144.84** **22** P **PKPab** **14 21 17.5 -0.7**
baz=334
533A **Kerrville** **144.88** **25** P **PKPab** **14 21 17.9 -0.6**
baz=331
143A **Socs Landing,** **144.90** **13** P PKPbc 14 21 18.6 +0.2
baz=345
142A **Monroe** **144.93** **13** P PKPbc 14 21 18.7 +0.3
baz=344
NATX **Nacogdoches** **144.94** **18** P PKPbc 14 21 19.0 +0.4
baz=339
NATX **Nacogdoches** **144.94** **18** *e*PKPbc **PKPab** **14 21 18.0 -0.6**
NATX LR LR

comp=Z,7µm,18.0s
240A **Hunter Patters** **144.94** **16** P PKPbc 14 21 18.9 +0.3
baz=341
337A **Centerville** **144.96** **20** P PKPbc 14 21 18.9 +0.3
baz=337
338A **Crockett** **145.11** **19** P **PKPab** **14 21 19.3 +0.1**
baz=338
436A **Wall Ranch, Ga** **145.14** **21** P **PKPbc** **14 21 19.1 -0.1**
baz=335
534A **Blanco** **145.15** **24** P **PKPbc** **14 21 18.9 -0.4**
baz=332
144A **Alexander Plac** **145.17** **11** P **PKPdf** **14 21 19.9 +0.1**
baz=347
241A **Mo Tay, Goldon** **145.19** **15** P **PKPdf** **14 21 20.0 +0.1**
baz=342
145A **Houston Renfro** **145.29** **11** P **PKPdf** **14 21 20.3 +0.3**
baz=348
LRAL **Lakeview Retre** **145.30** **6** *e*PKPbc **PKPbc** **14 21 17.9 -1.7**
LRAL LR LR
comp=Z,6µm,18.0s
CPUP **Villa Florida** **145.30** **223** PKPbc **PKPbc** **14 21 19.6 -0.3**
comp=Z,29nm,1.1s,baz=98,slow=4.1,SNR=22
CPUP **Villa Florida** **145.30** **223** *e*PKIKP **PKPbc** **14 21 18.9 -1.0**
CPUP **Villa Florida** **145.30** **223** *e*PKPbc **PKPbc** **14 21 18.9 -1.0**
437A **Phantom Ranch,** **145.32** **20** P **PKPdf** **14 21 20.3 +0.2**
baz=336
242A **Grayson** **145.34** **14** P **PKPdf** **14 21 20.5 +0.4**
baz=344
633A **Saathoff Ranch** **145.35** **26** P **PKPbc** **14 21 19.9 -0.2**
baz=331
NHSC **New Hope** **145.36** **356** *e*PKPbc **PKPbc** **14 21 19.4 -0.5**
NHSC LR LR
comp=Z,6µm,20.0s
339A **Huntington** **145.37** **18** P **PKPbc** **14 21 19.6 -0.4**
baz=339
146A **Union** **145.41** **9** P **PKPbc** **14 21 20.0 -0.1**
baz=349
340A **Bronson** **145.49** **17** P **PKPdf** **14 21 20.4 0.0**
baz=340
535A **Dale** **145.51** **23** P **PKPdf** **14 21 20.0 -0.4**
baz=334
VBMS **Vicksburg** **145.56** **12** P **PKPab** **14 21 20.9 +0.1**
baz=346
VBMS **Vicksburg** **145.56** **12** PFAKE 14 21 30.0 +9.2
VBMS LR LR
comp=Z,6µm,21.0s
RGRS **Roger Stewart** **145.56** **356** *e*PKPdf **PKPab** **14 21 20.6 -0.1**
438A **Sam Houston St** **145.62** **19** P **PKPab** **14 21 21.3 +0.2**
baz=337
536A **Bastrop** **145.67** **22** P **PKPdf** **14 21 20.7 0.0**
baz=334
244A **Avery, Jackson** **145.69** **12** P **PKPab** **14 21 21.5 +0.2**
baz=346
341A **Kurthwood** **145.78** **16** P **PKPab** **14 21 21.6 0.0**
baz=342
439A **Center Grove,** **145.81** **18** P **PKPab** **14 21 21.8 0.0**
baz=339
245A **Little AP, Sta** **145.86** **11** P **PKPab** **14 21 22.1 +0.2**
baz=348
537A **Green Hill Far** **145.94** **21** P **PKPab** **14 21 22.6 +0.3**
baz=336
733A **Divot King Ran** **145.94** **26** P **PKPab** **14 21 22.5 +0.2**
baz=330
342A **Flagon Creek P** **145.96** **15** P **PKPab** **14 21 22.7 +0.4**
baz=343
635A **Leesville** **146.00** **24** P **PKPab** **14 21 22.3 -0.2**
baz=333
832A **Faith Ranch, C** **146.00** **28** P **PKPab** **14 21 23.0 +0.4**
baz=328
246A **Jackson Lee, B** **146.01** **10** P **PKPab** **14 21 22.6 +0.1**
baz=349
538A **Harpers Horsep** **146.10** **20** P **PKPab** **14 21 23.3 +0.5**
baz=337
440A **Kirbyville** **146.10** **17** P **PKPab** **14 21 23.1 +0.2**
baz=340
734A **La Parita Cree** **146.15** **25** P **PKPbc** **14 21 22.3 -0.2**
baz=331
636A **Smothers Creek** **146.20** **23** P **PKPab** **14 21 23.6 +0.3**
baz=334
HKT **Hockley** **146.23** **21** *e*PKP2 **PKPdf** **14 21 22.0 +0.4**
HKT MLR MLR
comp=Z,5µm,20.0s
HKT **Hockley** **146.23** **21** *e*PKPdf **PKPdf** **14 21 21.9 +0.4**
HKT LR LR
comp=Z,5µm,20.0s
833A **Chaparral WMA,** **146.24** **27** P **PKPab** **14 21 23.6 +0.1**
baz=329
344A **Westbrook Farm** **146.25** **12** P **PKPab** **14 21 23.6 +0.2**
baz=346
441A **DeRidder** **146.32** **16** P **PKPab** **14 21 23.8 +0.2**
baz=341
735A **Kenedy** **146.46** **24** P **PKPab** **14 21 24.1 -0.2**
baz=332
637A **Eagle Lake** **146.51** **22** P **PKPab** **14 21 25.0 +0.5**
baz=335
345A **Thompson Farm,** **146.53** **11** P **PKPab** **14 21 24.2 -0.3**
baz=347
346A **Big Creek Wild** **146.56** **10** P **PKPbc** **14 21 23.8 +0.2**
baz=348
736A **Circle Diamond** **146.67** **23** P **PKPab** **14 21 25.7 +0.6**
baz=334
347A **Saraland** **146.70** **9** P **PKPab** **14 21 24.8 -0.3**
baz=350
834A **Tilden** **146.78** **26** P **PKPab** **14 21 25.9 +0.3**
baz=331
348A **Jackson** **146.79** **8** P **PKPbc** **14 21 24.8 +0.5**
baz=351
638A **Rosharon** **146.85** **20** P **PKPab** **14 21 26.1 +0.3**
baz=337
933A **Laredo** **146.90** **27** P **PKPab** **14 21 25.8 -0.2**
baz=329
444A **Pine Grove** **146.96** **13** P **PKPab** **14 21 25.5 -0.7**
baz=346
TIGA **Tifton** **147.10** **1** P **PKPbc** **14 21 25.5 +0.3**
baz=359
TIGA **Tifton** **147.10** **1** *e*PKPbc **PKPbc** **14 21 25.8 +0.6**
TIGA LR LR
comp=Z,4µm,18.0s
BRAL **Brewton** **147.13** **7** *e*PKPbc **PKPbc** **14 21 25.2 -0.1**
BRAL LR LR
comp=Z,6µm,19.0s
934A **Benavides** **147.25** **26** P **PKPab** **14 21 27.5 +0.1**
baz=330
KVTX **Kingsville** **147.57** **25** PFAKE 14 21 30.0 +1.4
KVTX LR LR
comp=Z,3µm,19.0s
034A **Hebbronville** **147.63** **27** P **PKPab** **14 21 29.0 +0.1**
baz=330
035A **Encino** **148.01** **26** P **PKPab** **14 21 29.8 -0.6**
baz=330
ZAIG **Zacatecas** **149.04** **37** *e*PKPbc **PKPbc** **14 21 31.8 +0.8**
ZAIG LR LR
comp=Z,3µm,19.0s
DWPF **Disney Wildern** **150.40** **358** PFAKE 14 21 40.0 0.0
DWPF LR LR
comp=Z,3µm,21.0s
LCO **Las Campanas** **150.42** **202** *e*PKPdf **PKPdf** **14 21 28.3 -0.6**
LCO *e*PKPbc **PKPbc** **14 21 33.9 -0.3**
LCO LR LR
comp=Z,2µm,21.0s
ANWB **Willy Bob** **151.76** **314** PFAKE 14 21 40.0 +2.8
ANWB LR LR
comp=Z,2µm,20.0s
MOIG **Morelia** **152.19** **40** PFAKE 14 21 40.0 +1.5
MOIG LR LR
comp=Z,4µm,18.0s
SMRT **St. Maarten** **152.42** **316** PFAKE 14 21 40.0 +1.3
SMRT LR LR
comp=Z,2µm,21.0s
GDHS **Morne Mazeau,** **152.63** **311** *e*PKPbc **PKPbc** **14 21 39.0 -0.3**
SEUS **St. Eustatius** **152.73** **315** PFAKE 14 21 40.0 +0.6
SEUS LR LR
comp=Z,3µm,21.0s
SABA **Saba** **152.83** **316** PFAKE 14 21 40.0 +0.4
SABA LR LR
comp=Z,3µm,21.0s
FDF **Fort de France** **153.08** **308** PFAKE 14 21 40.0 -0.3
FDF LR LR
comp=Z,2µm,20.0s
STVI **Saint Thomas** **153.47** **319** PFAKE 14 21 40.0 -1.0
STVI LR LR
comp=Z,2µm,21.0s
UNM **Universidad Na** **153.70** **37** PFAKE 14 21 40.0 -1.8
UNM LR LR
comp=Z,3µm,20.0s
CBYP **Canovanas** **154.11** **321** PFAKE 14 21 40.0 -2.5
CBYP LR LR

	comp=Z,3μm,21.0s						
HUMP	Col San Antoni	154.20	320	ePKPbc	PKPbc	14 21 41.6	-0.9
HUMP				LR	LR		
	comp=Z,3μm,21.0s						
SIV	San Ignacio	154.25	235	PKPbc	PKPbc	14 21 41.2	-1.6
	comp=Z,7.1nm,1.1s,baz=164,slow=0.8,SNR=9.1						
SIV				PP	PP	14 25 40.3	+9.0
	comp=Z,3.2nm,0.7s,baz=191,slow=3.3,SNR=3.5						
GRTK	Grand Turk	154.31	334	PFAKE		14 21 40.0	-2.7
GRTK				LR	LR		
	comp=Z,4μm,20.0s						
SJG	San Juan	154.42	321	PFAKE		14 21 40.0	-3.0
SJG				LR	LR		
	comp=Z,2μm,22.0s						
MPR	Mayaguez	154.95	323	PFAKE		14 21 50.0	+5.8
MPR				LR	LR		
	comp=Z,2μm,20.0s						
PB10	IPOC Station P	155.21	208	PFAKE		14 21 50.0	-10
PB10				LR	LR		
	comp=Z,2μm,21.0s						
SDDR	Presa de Saban	156.59	332	ePKPab	PKPab	14 22 07.1	+0.6
SDDR				LR	LR		
	comp=Z,4μm,20.0s						
PTGA	Pitinga	157.13	272	PKP	PKPdf	14 21 38.6	+0.1
	comp=Z,4.6nm,0.8s,baz=45,slow=2.9,SNR=4.4						
PTGA				PKPab	PKPab	14 22 12.2	+3.0
	comp=Z,6.6nm,0.8s,baz=198,slow=6.4,SNR=3.0						
PTGA	Pitinga	157.13	272	PKP	PKPdf	14 21 38.6	+0.1
PTGA				PKPab	PKPab	14 22 12.2	+3.0
PTGA				LR	LR		
	comp=Z,3μm,18.0s						
GTBY	Guantanamo Bay	157.28	341	PFAKE		14 21 50.0	+12
GTBY				LR	LR		
	comp=Z,3μm,18.0s						
TEIG	Tepich	157.63	14	PFAKE		14 21 50.0	+11
TEIG				LR	LR		
	comp=Z,3μm,21.0s						
SAML	Samuel	159.14	249	ePKPdf	PKPdf	14 21 40.7	-0.2
SAML				LR	LR		
	comp=Z,1μm,20.0s						
LPAZ	La Paz	159.47	224	PKP	PKPdf	14 21 42.3	+0.3
	comp=Z,7.3nm,1.2s,baz=49,slow=1.2,SNR=9.9						
LPAZ				PP	PP	14 26 03.8	+3.5
	comp=Z,1.3nm,0.8s,baz=180,slow=5.1,SNR=2.8						
LPAZ	La Paz	159.47	224	ePKIKP	PKPdf	14 21 41.7	-0.3
LPAZ	La Paz	159.47	224	ePKPdf	PKPdf	14 21 41.7	-0.3
MTDJ	Mount Denham	159.59	345	PFAKE		14 21 50.0	+8.6
MTDJ				LR	LR		
	comp=Z,3μm,20.0s						
CCIG	Comitan	159.97	27	ePKPab	PKPab	14 22 22.0	+0.7
SDV	Santo Domingo	163.97	311	PKP	PKPdf	14 21 45.5	-0.7
	comp=Z,4.8nm,0.8s,baz=316,slow=3.0,SNR=4.1						
SDV				PKPab	PKPab	14 22 39.6	+0.6
	comp=Z,6.8nm,0.9s,baz=4.2,slow=4.6,SNR=4.4						
SDV				PP	PP	14 26 30.6	+6.4
	comp=Z,5.6nm,0.8s,baz=14,slow=5.5,SNR=3.8						
SDV	Santo Domingo	163.97	311	ePKPdf	PKPdf	14 21 44.4	-1.8
SDV				PKPab	PKPab	14 22 39.6	+0.6
GRMC	Gramalote, San	166.35	313	eP	PKPdf	14 21 54.5	+6.3
BARC	Barichara	167.37	310	eP	PKPpre	14 21 44.2	
BRRC	Barranca, Sant	167.43	314	eP	PKPdf	14 21 47.1	-1.7
MOTC	Monteria, Cord	167.43	325	eP	PKPpre	14 21 40.1	
CHIC	Chingaza	168.99	304	eP	PKPdf	14 21 56.1	+5.7
ROSC	El Rosal	169.34	307	PKP	PKPdf	14 21 50.5	0.0
	comp=Z,3.6nm,0.3s,baz=182,slow=2.8,SNR=4.4						
HELC	Santa Helena	169.35	317	eP	PKPdf	14 21 47.9	-2.6
FLOC	Florencia	172.15	294	eP	PKPdf	14 21 49.5	-2.1
ATAH	Atahualpa	172.97	219	PKP	PKPdf	14 21 53.0	+0.5
	comp=Z,9.5nm,1.1s,baz=152,slow=3.7,SNR=2.9						
OTAV	Otavalo	175.25	293	ePKPdf	PKPdf	14 21 52.5	-0.8
OTAV	Otavalo	175.25	293	eP	PKPdf	14 21 51.7	-1.6
OTAV				eP	pPKPdf	14 22 03.5	-0.2

JMA 06 14:03:38.2±0.3, 37°.60N×143°.50E, h33km, M3.6, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
JIO	Ouri	1.90	297	eS	Sn	14 04 32.6	+1.5
JFK	Kawauchi	2.10	264	P	Pn	14 04 11.8	+0.7
JFK				eS	Sn	14 04 37.2	+1.1
JMM	Marumori	2.16	278	P	Pn	14 04 14.0	+2.1
JMM				S	Sn	14 04 39.3	+1.8
ONAJ	Iwakimizuishiy	2.21	258	P	Pn	14 04 14.3	+1.7
ONAJ				eS	Sn	14 04 39.8	+1.0
JMK	Ichinoseki	2.25	308	P	Pn	14 04 15.4	+2.4
JOU	Okura	2.37	290	P	Pn	14 04 15.4	+0.7
JOU				eS	Sn	14 04 45.3	+2.6
JFT	Otama	2.52	269	P	Pn	14 04 18.9	+2.1
JFT				eS	Sn	14 04 48.9	+2.6
JOM	Ohasama	2.55	318	P	Pn	14 04 18.8	+1.6
JOM				S	Sn	14 04 47.9	+0.8
JYK	Kaneyama	2.80	299	P	Pn	14 04 22.8	+2.1
JYK				eS	Sn	14 04 55.5	+2.2
JANG	Nango	3.17	331	eS	Sn	14 05 00.9	-1.6
JAG	Ashikaga	3.44	251	P	Pn	14 04 31.6	+2.1
JAG				eS	Sn	14 05 11.4	+2.2
JRY	Ryogami san	4.01	248	P	Pn	14 04 38.6	+1.2
JRY				S	Sn	14 05 23.2	-0.1
JOD2	Odawara 2	4.25	238	P	Pn	14 04 41.1	+0.4
JOD2				eS	Sn	14 05 28.3	-0.9
MAT	Matsushiro	4.36	258	P	Pn	14 04 45.5	+3.3
MAT				S	Sn	14 05 35.6	+3.7

MAN 06 14:03:57, 17°.79N×120°.69E, h35km, mb3.9, ML2.7, MS2.3, 1D, Luzon

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
ABRA	Dolores	0.14	171	eP	Pn	14 04 05.2	+1.9
ABRA				eS	Sn	14 04 09.2	+1.6
APYP	Conner	0.53	82	eP	Pn	14 04 10.3	+2.2
APYP				eS	Sn	14 04 18.1	+2.2
PIP	Pasuquin	0.54	353	⇓iP	Pn	14 04 10.0	+1.8

CSEM 06 14:05:18.3, 41°.45N×44°.47E, h0km, ML1.9

TIF 06 14:05:18.3, 41°.45N×44°.47E, h0km±1km, Western Caucasus

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
KZR	Kazreti	0.08	212	P	Pg	14 05 20.1	+0.4
KZR				S	Sg	14 05 21.8	+1.1
KZR	Kazreti	0.08	212	P	Pg	14 05 20.1	+0.4
KZR				S	Sg	14 05 21.8	+1.1
TBLG	Delisi	0.35	35	P	Pn	14 05 29.4	-1.3
TBLG				S	Sb	14 05 35.7	+2.3
TBLG	Delisi	0.35	35	P	Pn	14 05 29.4	-1.2
TBLG				S	Sb	14 05 35.7	+2.2
DGRG	David-gareji	0.68	89	P	Pb	14 05 33.7	+0.6
DGRG				S	Sn	14 05 45.4	-1.1
DGRG	David-gareji	0.68	89	P	Pb	14 05 33.7	+0.7
DGRG				S	Sn	14 05 45.4	-1.1
AKH	Akhalkalaki	0.74	267	P	Pb	14 05 33.2	-0.8
AKH				S	Sb	14 05 43.3	-1.4
AKH	Akhalkalaki	0.74	267	P	Pg	14 05 33.2	+0.8
AKH				S	Sg	14 05 43.3	+1.4
ONI	Oni	1.37	327	P	Pb	14 05 45.5	+0.7
ONI				S	Sn	14 06 04.1	+0.4

ISCJB 06 14:11:58.7±0.6, 36°.62N±0°.03×70°.96E±0°.06, h88km±6km, mb4.0/16, Error ellipse: s-maj=8.2km s-min=4.4km az=163.4

NEIC 06 14:11:60.0±0.4, 36°.63N×70°.98E, mb4.7/2, Error ellipse: s-maj=8.6km s-min=6.6km az=127.0

IDC 06 14:11:59.4±0.8, 36°.53N×70°.99E, h75km±7km, mb3.8/15, mb1 3.9/19, mb1mx3.7/51, mbtmp4.1/19, MS4.6/1, Ms1 4.6/1, ms1mx3.6/56, Error ellipse: s-maj=13.5km s-min=13.1km az=56.0

NNC 06 14:12:03.8±7.6, 36°.97N×70°.43E, h133km±106km, mb3.6, mpv4.5, Error ellipse: s-maj=69.4km s-min=35.3km az=155.0

ISC 06 14:11:59.0±0.5, 36°.56N±0°.05×70°.85E±0°.05, h74km±6km, h73km:pP-P, n65, σ2s.09/78, mb4.0/16, 5C-3D, Hindu Kush region

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
KBL	Kabul	2.50	217	ePn	Pn	14 12 42.3	+4.7
DZET	Dzherino	2.75	325	⇑P	Pn	14 12 41.5	+0.6
	141nm,0.4s						
CEP	Cherat	2.87	162	P	Pn	14 12 46.7	+4.1
CHCP	Chirah Chowk	3.51	145	P	Pn	14 12 54.9	+3.7
THW	Thamme Wali	3.83	169	P	Pn	14 12 58.5	+2.9
SFK	Sufi-Kurgan	4.03	30	⇑P	Pn	14 13 01.7	+3.3
	59nm,0.4s						
SFK				S	Sn	14 13 46.5	+2.0
MNAS	Manas	6.05	12	⇓P	Pn	14 13 26.5	+0.5
	13nm,0.5s						
MNAS				⇑S	Sn	14 14 32.6	-1.3
	24nm,0.4s						
DHRM	DHARAMSHALA	6.23	132	eP	Pn	14 13 30.1	+1.6
DHRM				eS	Sn	14 14 36.5	-1.9
DHRM				IAML		14 14 40.2	
	comp=N,1μm,0.4s						
DHRM				IAML		14 14 40.4	
	comp=E,2μm,0.4s						
EKS2	Erkin-Say	6.50	19	ePn	Pn	14 13 32.8	+0.8
JWA	Jwalamukhi	6.53	134	eP	Pn	14 13 35.0	+2.7
JWA				eS	Sn	14 14 42.0	-3.3
KK31	Karatay Array	6.54	358	⇓P	Pn	14 13 32.7	+0.2
	comp=E,18nm,0.3s,baz=182,slow=13						
KK31				⇑S	Sn	14 14 42.9	-2.7
	comp=E,27nm,0.4s,baz=192,slow=24,SNR=4.6						
KKAR	Karatay Array	6.54	358	ePn	Pn	14 13 32.6	+0.1
AAK	Ala-Archa	6.69	24	P	Pn	14 13 35.9	+1.3
	comp=E,11nm,0.3s,baz=145,slow=4.9,SNR=65						
AAK				S	Sn	14 14 49.3	-0.1
	comp=E,7.0nm,0.3s,baz=336,slow=16,SNR=1.9						
AAK	Ala-Archa	6.69	24	⇑P	Pn	14 13 36.2	+1.6
	comp=E,15nm,0.4s						
AAK				⇓S	Sn	14 14 50.2	+0.8
	comp=E,29nm,0.5s						
SDNR	Sundarnagar	7.16	133	eP	Pn	14 13 43.0	+1.9
TKM2	Tokmak 2	7.33	28	ePn	Pn	14 13 44.1	+0.6
SMLA	Simla	7.55	134	iP	Pn	14 13 47.1	+0.8
SMLA				iS	Sn	14 15 07.3	-3.1
SMLA				iS	Sn	14 15 07.6	-2.7
DDI	Dehra Dun	8.66	134	eS	Sn	14 15 33.0	-4.6
DDI				IAML		14 15 35.1	
	comp=N,344nm,0.5s						
DDI				IAML		14 15 36.6	
	comp=E,472nm,0.8s						
NDI	New Delhi	9.51	144	eP	Pn	14 14 16.0	+2.8
NDI				ex	x	14 15 50.0	
GEYT	Alibeck	10.24	281	P	Pn	14 14 22.0	-1.0
	comp=E,1.8nm,0.3s,baz=101,slow=15,SNR=9.9						
GEYT				S	Sn	14 16 09.6	-6.6
	comp=E,7.2nm,0.3s,baz=139,slow=14,SNR=3.7						
PYUN	Piuthan	13.28	126	eP	Pn	14 15 01.9	-2.7
	comp=E,55nm,0.5s						
MK32	Makanchi Array	13.31	36	ePn	Pn	14 15 04.0	-0.7
MKAR	Makanchi Array	13.31	36	P	Pn	14 15 04.0	-0.7
	comp=E,0.4nm,0.3s,baz=226,slow=15,SNR=6.6						
KOLN	Koldanda	13.90	125	eP	Pn	14 15 09.9	-2.8
	comp=E,22nm,0.3s						
GKN	Gorkha	14.44	122	eP	Pn	14 15 17.8	-2.0
	comp=E,76nm,0.4s						
BHPL	Bhopal	14.44	155	eP	Pn	14 15 19.8	+0.1
BHPL				ex	x	14 17 48.9	
AB31	Akbulak array	14.97	331	P	Pn	14 15 21.7	-4.6
ABKAR	Akbulak array	14.97	331	ePn	Pn	14 15 23.5	-2.7
	comp=E,6.4nm,0.3s						
KKN	Kakani	15.02	122	eP	Pn	14 15 25.2	-2.0
KURBB	Kurchatov Arra	15.11	19	P	Pn	14 15 27.0	-0.9
	comp=E,0.1nm,0.3s,baz=207,slow=10,SNR=3.8						
PKIN	Phulchoki	15.23	122	eP	Pn	14 15 28.0	-2.0
GUN	Gumba	15.36	120	eP	Pn	14 15 29.8	-1.9
	comp=E,45nm,0.5s						
RAMN	Ramite	16.45	121	eP	Pn	14 15 42.7	-2.7
	comp=E,25nm,0.5s						
BVAR	Borovoye Array	16.47	359	P	Pn	14 15 43.7	-1.4
	comp=E,2.6nm,0.3s,baz=173,slow=11,SNR=13						
AKTO	Aktyubinsk	16.66	330	P	Pn	14 15 46.3	-1.3
	comp=E,2.4nm,0.3s,baz=135,slow=11,SNR=13						
TAPN	Taplejung	16.98	118	eP	Pn	14 15 49.9	-2.2
ZAA0	Zalesovo Array	19.91	25	eP	P	14 16 23.5	-0.9
ZALV	Zalesovo Beam	19.91	25	P	P	14 16 23.5	-0.9
	comp=E,4.1nm,0.3s,baz=208,slow=10,SNR=31						
ZAA1	Zalesovo Array	19.91	25	eP	P	14 16 23.5	-0.9
SHL	Shillong	21.05	115	eP	P	14 16 37.5	+0.4
ARU	Arti	21.53	341	P	P	14 16 42.6	+0.8
	comp=E,2.6nm,0.3s,baz=154,slow=10,SNR=3.5						
ARU	Arti	21.53	341	eP	P	14 16 42.3	+0.5
	comp=E,43nm,1.6s						
KBZ	Khabaz	22.46	297	P	P	14 16 55.5	+3.6
	comp=E,6.2nm,1.0s,baz=190,slow=6.1,SNR=6.1						
SONA0	Songino Array	28.40	55	eP	P	14 17 46.7	+0.3
	comp=E,43nm,2.0s						
SONM	Songino Array	28.40	55	P	P	14 17 46.7	+0.3
	comp=E,1.3nm,0.5s,baz=265,slow=8.8,SNR=7.1						
BR101	Keskin Array S	29.30	288	epP	pP	14 18 14.9	+3.0
BRTR	Keskin Array B	29.30	288	pP	pP	14 18 14.9	+3.0
	comp=E,1.9nm,0.7s,baz=99,slow=8.6,SNR=4.4						
CMAR	Chiang Mai Arr	30.59	119	P	P	14 18 06.8	+0.8
	comp=E,0.5nm,0.4s,baz=304,slow=6.4,SNR=2.9						
AKASG	Malin Array Be	32.81	309	P	P	14 18 26.4	+1.3
	comp=E,1.2nm,0.5s,baz=84,slow=12,SNR=4.4						
FIA0	FINESS Array S	37.36	326	eP	P	14 19 05.0	+1.0
FINES	FINESS Array B	37.36	326	P	P	14 19 05.0	+1.0
	comp=E,0.9nm,0.4s,baz=124,slow=8.7,SNR=3.5						
ARCES	ARCESS Array B	41.04	338	P	P	14 19 35.7	+1.0
	comp=E,3.2nm,0.8s,baz=111,slow=8.1,SNR=13						
HFS	Hagfors	42.94	322	LR	LR	14 41 10.0	
	comp=E,715nm,19.9s,baz=16,slow=41						
NB200	NORSAR Array S	44.26	323	eP	P	14 20 01.6	+0.8
NB200				epP	pP	14 20 20.7	+1.7
NOA	NORSAR Array B	44.26	323	P	P	14 20 01.6	+0.8
	comp=E,1.3nm,0.6s,baz=96,slow=7.7,SNR=3.3						
NOA				pP	pP	14 20 20.7	+1.7
	comp=E,0.8nm,0.6s,baz=92,slow=8.3,SNR=1.3						
KLR	Kul'dur	45.21	54	P	P	14 20 08.2	-0.3
	comp=E,1.4nm,0.4s,baz=301,slow=8.2,SNR=7.3						
TOA1	Torodi Ar. Sit	65.59	269	eP	P	14 22 35.4	+0.1
TOA1				epP	pP	14 22 54.9	+0.3
TORD	Torodi Ar. Bea	65.59	269	P	P	14 22 35.4	+0.1
	comp=E,0.6nm,0.5s,baz=56,slow=6.3,SNR=6.4						
TORD				pP	pP	14 22 54.9	+0.3
	comp=E,1.7nm,0.8s,baz=53,slow=5.3,SNR=3.6						
MATP	Matopo	69.37	222	P	P	14 23 00.2	+1.1
	comp=E,1.0nm,0.5s,baz=26,slow=7.6,SNR=3.8						
ILAR	Eielson Array	74.75	16	P	P	14 23 30.8	+0.3
	comp=E,1.3nm,1.1s,baz=345,slow=3.1,SNR=4.0						
YKA	Yellowknife Ar	81.19	3	P	P	14 24 07.0	+0.9
	comp=E,2.1nm,0.5s,baz=351,slow=5.4,SNR=35						
YKB5	Yellowknife Ar	81.19	3	eP	P	14 24 06.9	+0.7
WR1	Warramunga Arr	82.13	122	eP	P	14 24 10.7	-1.1
WR1				epP	pP	14 24 32.0	+0.3
WRA	Warramunga Arr	82.13	122	P	P	14 24 10.7	-1.1
	comp=E,0.8nm,0.6s,baz=325,slow=4.9,SNR=16						
WRA				pP	pP	14 24 32.1	+0.3
	comp=E,0.3nm,0.4s,baz=323,slow=5.2,SNR=1.4						
ASAR	Alice Springs	84.39	125	P	P	14 24 22.5	-0.9
	comp=E,0.9nm,0.7s,baz=312,slow=4.9,SNR=10						

IDC 06 14:17:02.5±2.2, 1°.89N×97°.06E, h0km, mb3.8/4, mb1 3.8/4, mb1mx3.5/46, mbtmp3.8/4, ML2.4/1, Error ellipse: s-maj=56.3km s-min=26.9km az=48.0, Northern Sumatera

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
PSI	Prapat	2.07	64	Pn	Pn	14 17 38.4	-0.3
	1.5nm,0.3s,baz=226,slow=18,SNR=4.0						
PSI				Sn	Sn	14 18 00.0	-5.2
	2.6nm,0.3s,baz=184,slow=19,SNR=3.6						
CMAR	Chiang Mai Arr	16.57	6	Pn	P	14 21 00.5	+1.5
	0.3nm,0.3s,baz=195,slow=10,SNR=3.2						
H08S2	Diego Garcia H	26.27	249	T	T	14 49 33.8	
	baz=70,slow=75,SNR=69						
H08S3	Diego Garcia H	26.27	249	T	T	14 49 33.9	
	baz=70,slow=75,SNR=67						
H08S1	Diego Carcia H	26.29	249	T	T	14 49 35.1	
	baz=70,slow=75,SNR=79						
WRA	Warramunga Arr	42.52	123	P	P	14 24 59.9	-0.3
	0.7nm,0.9s,baz=305,slow=8.3,SNR=3.5						
SONM	Songino Array	46.47	9	P	P	14 25 31.2	-0.3
	1.2nm,0.9s,baz=198,slow=7.4,SNR=4.0						
MKAR	Makanchi Array	46.54	346	P	P	14 25 32.1	+0.2
	0.7nm,0.6s,baz=163,slow=8.9,SNR=8.2						
ZALV	Zalesovo Beam	52.86	351	P	P	14 26 19.5	-0.4
	0.8nm,0.3s,baz=183,slow=6.6,SNR=3.3						

IDC 06 14:24:09.9±1.7, 1°.15N×96°.55E, h0km, mb3.4/5, mb1 3.5/6, mb1mx3.3/49, mbtmp3.4/6, ML2.8/1, Error ellipse: s-maj=55.1km s-min=20.9km az=54.0

ISCJB 06 14:24:13.7±0.9, 1°.53N±0°.06×96°.89E±0°.07, h28km, mb3.4/5, Error ellipse: s-maj=11.0km s-min=7.5km az=155.7

DJA 06 14:24:14.5±1.1, 2°N±4°×9°7E±°, h20km±9km, M3.5/3, MLv3.5/3

ISC 06 14:24:16.1±1.3, 1°.59N±0°.06×97°.1E±0°.1, h28km, n11, σ1s.02/12, mb3.2/5, Northern Sumatera

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
GSI	Gunungsitoli	0.57	119	P	Pb	14 24 27.9	+0.3
GSI				S	Sn	14 24 37.1	+0.2
TPTI		1.67	4	P	Pn	14 24 42.9	-0.5
PBSI	Pulau Batu	2.03	144	P	Pn	14 24 48.5	+0.1
KCSI	Kotacane, Aceh	2.04	20	P	Pn	14 24 42.9	-5.7
KCSI				S	Sn	14 25 13.6	+0.3
PSI	Prapat	2.21	57	Pn	Pb	14 24 57.1	+1.7
	1.6nm,0.3s,baz=211,slow=5.9,SNR=5.4						
TSI	Tuntungan	2.42	38	P	Pn	14 24 44.4	-9.3
TSI				S	Sb	14 25 26.4	-1.8
WRA	Warramunga Arr	42.34	122	P	P	14 32 07.7	-0.4
	0.2nm,0.5s,baz=302,slow=8.9,SNR=3.6						
ASAR	Alice Springs	43.73	127	P	P	14 32 18.4	-0.8
	0.3nm,0.9s,baz=299,slow=7.3,SNR=4.0						
MKAR	Makanchi Array	46.84	346	P	P	14 32 44.5	+1.0
	0.7nm,0.6s,baz=159,slow=7.1,SNR=9.4						
KURBB	Kurchatov Arra	51.33	345	P	P	14 33 18.5	+0.8
	0.1nm,0.3s,baz=170,slow=6.3,SNR=2.3						
ZALV	Zalesovo Beam	53.16	351	P	P	14 33 30.6	-0.7
	0.7nm,0.4s,baz=147,slow=8.2,SNR=2.4						

DJA 06 14:30:59.9±0.4, 2°N±2°×9°8E±°, h10km, M3.4/6, MLv3.4/6

IDC 06 14:31:03.7±1.0, 1°.51N×97°.01E, h27km±4km, mb3.7/9, mb1 3.7/10, mb1mx3.5/49, mbtmp3.8/10, ML3.2/2, Error ellipse: s-maj=36.5km s-min=14.6km az=57.0

ISC 06 14:31:04.6±0.8, 1°.70N±0°.07×97°.3E±0°.1, h30km, n20, σ1s.01/25, mb4.0/9, Northern Sumatera

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
GSI	Gunungsitoli	0.47	148	P	Pn	14 31 15.7	+0.5
GSI				S	Sn	14 31 25.0	+2.5
TPTI		1.55	354	P	Pn	14 31 29.5	-0.7
TPTI				S	Sb	14 31 58.7	+6.7
KCSI	Kotacane, Aceh	1.86	14	P	Pn	14 31 27.8	-6.6
KCSI				S	Sn	14 31 45.7	-11
PSI	Prapat	1.93	56	Pn	Pb	14 31 39.6	+0.4
	0.9nm,0.3s,baz=174,slow=10,SNR=3.5						
PBSI	Pulau Batu	1.99	151	P	Pn	14 31 35.9	-0.3
PBSI				S	Sn	14 31 59.7	-0.4
MNSI	Mandailing Nat	2.42	112	P	Pb	14 31 44.8	-2.7
CMAR	Chiang Mai Arr	16.73	5	Pn	P	14 34 58.2	-0.7
	0.1nm,0.3s,baz=194,slow=12,SNR=6.6						
H08S2	Diego Garcia H	26.46	249	T	T	15 03 37.6	
	baz=70,slow=76,SNR=359						
H08S3	Diego Garcia H	26.46	249	T	T	15 03 37.9	
	baz=70,slow=76,SNR=475						
H08S1	Diego Carcia H	26.48	249	T	T	15 03 42.2	
	baz=70,slow=76,SNR=437						
WRA	Warramunga Arr	42.19	123	P	P	14 38 54.8	-0.3
	0.5nm,0.5s,baz=303,slow=9.0,SNR=6.1						
ASAR	Alice Springs	43.59	128	P	P	14 39 06.4	0.0
	0.5nm,0.7s,baz=298,slow=7.3,SNR=5.3						
ASAR				PcP	PcP	14 40 54.0	+0.2
	0.3nm,0.6s,baz=256,slow=5.0,SNR=4.5						
KSRS	Korea Array	45.36	35	pP	pP	14 39 30.4	+1.1
	1.1nm,0.7s,baz=213,slow=8.7,SNR=3.5						
SONM	Songino Array	46.62	8	P	P	14 39 31.3	+1.1
	0.7nm,0.5s,baz=186,slow=8.9,SNR=7.6						
SONM				pP	pP	14 39 38.8	-0.4
	0.5nm,0.4s,baz=194,slow=11,SNR=4.6						
MKAR	Makanchi Array	46.79	346	P	P	14 39 32.1	+0.7
	1.3nm,0.5s,baz=160,slow=8.2,SNR=15						
MKAR				pP	pP	14 39 40.5	+0.1
	0.7nm,0.4s,baz=173,slow=8.9,SNR=7.4						
KURBB	Kurchatov Arra	51.28	345	P	P	14 40 06.6	+0.9
	0.9nm,0.5s,baz=167,slow=6.2,SNR=4.1						
KURBB				pP	pP	14 40 14.8	0.0
	1.4nm,0.7s,baz=168,slow=7.0,SNR=5.3						
ZALV	Zalesovo Beam	53.09	351	P	P	14 40 19.7	+0.6
	0.9nm,0.3s,baz=171,slow=4.5,SNR=4.1						
ZALV				pP	pP	14 40 27.8	-0.4
	1.1nm,0.3s,baz=181,slow=5.9,SNR=5.2						
STKA	Stephens Creek	53.60	132	P	P	14 40 23.8	+0.5
	1.6nm,0.7s,baz=287,slow=4.9,SNR=4.6						
STKA				pP	pP	14 40 33.5	+1.1
	1.5nm,0.8s,baz=349,slow=5.2,SNR=2.4						
FINES	FINESS Array B	79.62	332	P	P	14 43 08.3	-0.5
	0.7nm,0.7s,baz=132,slow=4.1,SNR=4.2						
FINES				pP	PcP	14 43 15.9	-0.7
	1.2nm,0.9s,baz=116,slow=6.6,SNR=2.0						
ARCES	ARCESS Array B	82.11	340	P	P	14 43 21.9	-0.1
	1.9nm,0.8s,baz=79,slow=4.7,SNR=3.6						
ARCES				pP	pP	14 43 30.2	-1.3
	2.1nm,0.8s,baz=72,slow=4.0,SNR=1.7						

IDC 06 14:41:30.0±4.1, 1°.91N×96°.74E, h0km, mb3.6/4, mb1 3.7/4, mb1mx3.3/61, mbtmp3.6/4, Error ellipse: s-maj=160.4km s-min=27.6km az=57.0

DJA 06 14:41:37.0±0.7, 1°N±4°×9°7E±°, h27km±6km, M2.9/6, MLv2.9/6

ISC 06 14:41:31.7±1.6, 1°.32N±0°.10×96°.9E±0°.2, h35km, n11, σ2s.18/8, mb3.8/4, Off west coast of northern Sumatera

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
GSI	Gunungsitoli	0.73	91	P	Pn	14 41 44.1	-1.4
TPTI		1.95	10	P	Pn	14 42 07.6	+5.2
TPTI				S	Sn	14 42 29.2	+3.5
PBSI	Pulau Batu	1.98	134	P	Pn	14 42 04.4	+1.7
PBSI				S	Sn	14 42 27.2	+0.9
MNSI	Mandailing Nat	2.78	101	P	Pn	14 42 14.2	+0.5
H08S2	Diego Garcia H	25.88	250	T	T	15 14 08.4	
	baz=70,slow=75,SNR=181						
H08S3	Diego Garcia H	25.88	250	T	T	15 14 07.4	
	baz=70,slow=75,SNR=165						
H08S1	Diego Carcia H	25.89	250	T	T	15 14 06.3	
	baz=70,slow=75,SNR=203						
WRA	Warramunga Arr	42.40	122	P	P	14 49 29.8	+6.6
	0.2nm,0.4s,baz=299,slow=8.5,SNR=3.2						
MKAR	Makanchi Array	47.04	346	P	P	14 49 59.8	0.0
	0.7nm,0.7s,baz=166,slow=7.7,SNR=7.6						
SONM	Songino Array	47.06	9	P	P	14 49 59.4	-0.7
	0.7nm,0.8s,baz=180,slow=8.4,SNR=5.7						
ZALV	Zalesovo Beam	53.38	351	P	P	14 50 45.4	-2.3
	0.5nm,0.3s,baz=156,slow=7.9,SNR=4.3						

ISCJB 06 14:43:48.7±1.4, 27°.1N±0°.1×143°.5E±0°.1, h10km, mb4.1/4, MS4.4/2, Error ellipse: s-maj=21.5km s-min=15.3km az=177.4

IDC 06 14:43:49.4±1.8, 27°.13N×143°.35E, h0km, mb3.6/2, mb1 3.7/4, mb1mx3.3/55, mbtmp3.5/4, ML3.4/2, MS4.4/2, Ms1 4.4/2, ms1mx3.5/48, Error ellipse: s-maj=30.5km s-min=26.1km az=56.0

ISC 06 14:43:50.6±1.6, 27°.2N±0°.1×143°.4E±0°.1, h10km, n9, σ1s.13/7, mb4.0/4, Bonin Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
JCJ	Chichijima	1.06	264	Pn	Pn	14 44 11.8	+0.2
	baz=4.5,slow=11						
JCJ				Sn	Sn	14 44 26.1	-0.3
	baz=255,slow=20						
MJAR	Matsushiro Arr	10.29	336	Pn	Pn	14 46 17.3	-0.9
	0.3nm,0.3s,baz=157,slow=10,SNR=4.7						
KSRS	Korea Array	16.56	312	Pn	P	14 47 44.6	-0.8
	0.1nm,0.3s,baz=120,slow=12,SNR=3.3						
SONM	Songino Array	35.37	316	P	P	14 50 48.2	+1.8
	0.3nm,0.7s,baz=107,slow=8.1,SNR=2.6						
BATI	Baumata	41.82	210	LR	LR	15 05 27.5	
	comp=Z,519nm,21.8s,baz=332,slow=31						
WRA	Warramunga Arr	47.68	192	P	P	14 52 26.9	-0.5
	0.8nm,0.6s,baz=13,slow=8.6,SNR=7.6						
KURBB	Kurchatov Arra	53.72	314	P	P	14 53 12.9	+0.2
	5.4nm,0.2s,baz=90,slow=8.0,SNR=9.8						
DZM	Mont Dzumac	53.84	153	LR	LR	15 14 41.4	
	comp=Z,398nm,18.3s,baz=205,slow=34						

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
FINES	**FINESS Array B**	**78.31**	**334**	P	P	14 55 56.1	+5.5
	1.7nm,0.9s,baz=62,slow=3.3,SNR=4.1						

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*ISCJB **06** 14:51:03.8±0.7, 33°.27S±0°.05×72°.56W±0°.06, h14km, mb4.0/3, Error ellipse: s-maj=7.4km s-min=6.6km az=9.3*
*IDC **06** 14:51:03.9±1.8, 33°.20S×72°.34W, h0km, mb3.6/2, mb1 3.9/4, mb1mx3.7/27, mbtmp3.6/4, ML3.9/2, Error ellipse: s-maj=65.8km s-min=33.2km az=78.0*
*GUC **06** 14:51:04.4±0.4, 33°.26S×72°.52W, h25km±41km, ML3.7*
*NEIC **06** 14:51:05.5±0.7, 33°.13S×72°.29W, h10km, mb4.8/1, Error ellipse: s-maj=16.1km s-min=10.2km az=85.0*
ISC 06 14:51:05.0±1.0**, 33°.20S**±0°.06×**72°.39W**±0°.07**, h14**km**, n22, σ1s.52**/26**, mb4.0**/3**, 1C-1D, Off coast of central Chile**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
ROC1	**El Roble**	**1.17**	**80**	*e*Pn	**Pn**	**14 51 27.2**	**-0.1**
ROCH	**El Roble**	**1.18**	**79**⇑	*e*P	**Pn**	**14 51 27.3**	**0.0**
ROCH				*e*S	**Sn**	**14 51 45.0**	**+1.7**
ROCH				IAML		14 51 53.2	
	comp=N,2μm,0.5s						
CHPI	**Pichilemu**	**1.23**	**165**	*e*P	Pn	14 51 25.4	-2.4
CHPI				*e*S	**Sb**	**14 51 41.2**	**-2.7**
PEL	**Peldehue**	**1.43**	**88**⇓	*e*P	**Pb**	**14 51 30.9**	**-0.6**
PEL				*e*S	**Sg**	**14 51 51.2**	**+0.1**
PEL				IAML		14 51 58.2	
	comp=E,2μm,0.5s						
CLCH	**Cerro Calan**	**1.56**	**98**	*e*P	**Pb**	**14 51 33.2**	**-0.6**
CLCH				*e*S	**Sg**	**14 51 54.6**	**-0.8**
CLCH				IAML		14 52 04.1	
	comp=E,2μm,0.5s						
AUSP	**Uspallata**	**2.71**	**70**	*e*P	**Pb**	**14 51 51.7**	**-1.8**
AUSP				*e*S	**Sg**	**14 52 30.7**	**-1.4**
ARCO	**CERRO ARCO**	**2.92**	**84**	*e*P	**Pb**	**14 51 55.2**	**-1.9**
ARCO				IAML		14 52 45.2	
	comp=Z,110nm,0.5s						
RTLS	**Leoncito**	**2.96**	**63**	*e*P	**Pb**	**14 51 55.1**	**-2.6**
AAGR	**Agrelo**	**2.99**	**89**	*e*P	**Pb**	**14 51 57.1**	**-1.1**
ASAL	**Salagasta**	**3.05**	**80**	*e*P	**Pb**	**14 51 56.9**	**-2.2**
AMOG	**MOGNA**	**4.00**	**57**	*e*P	**Pn**	**14 52 08.3**	**+2.3**
AMOG				*i* P	Pb	14 52 09.3	-6.1
LCO	**Las Campanas**	**4.42**	**20**	*e*Pn	**Pn**	**14 52 10.7**	**-1.2**
AVFE	**Valle Fertil**	**4.90**	**60**	*e*P	**Pn**	**14 52 20.9**	**+2.5**
AVFE				IAML		14 53 45.7	
	comp=Z,21nm,0.7s						
VCA	**Vinchina**	**5.71**	**40**	IAML		14 54 10.8	
	comp=Z,29nm,0.5s						
ACLC	**CERRO LA CRUZ**	**5.98**	**53**	*e*P	**Pn**	**14 52 34.6**	**+1.3**
ACLC				IAML		14 54 20.7	
	comp=Z,17nm,0.6s						
PLCA	**Paso Flores**	**7.67**	**169**	Pn	**Pn**	**14 52 57.1**	**+0.8**
	comp=Z,0.8nm,0.3s,baz=347,slow=13,SNR=24						
PLCA				Sn	Sn	14 54 35.4	+12
	comp=Z,0.1nm,0.3s,baz=89,slow=21,SNR=0.9						
LPAZ	**La Paz**	**17.27**	**14**	P	**P**	**14 55 07.9**	**0.0**
	comp=Z,0.1nm,0.3s,baz=169,slow=12,SNR=3.7						
LPAZ	**La Paz**	**17.27**	**14**	*e*Pn	**Pn**	**14 55 06.4**	**0.0**
LPAZ				*e*P	**P**	**14 55 07.9**	**0.0**
LTX	**Lajitas**	**68.89**	**331**	*e*P	**P**	**15 02 10.7**	**+1.3**
TXAR	**Lajitas Array**	**68.89**	**331**	P	**P**	**15 02 10.7**	**+1.3**
	comp=Z,0.2nm,0.4s,baz=146,slow=8.3,SNR=3.7						
TORD	**Torodi Ar. Bea**	**84.21**	**70**	P	**P**	**15 03 37.2**	**+0.8**
	comp=Z,0.9nm,0.9s,baz=269,slow=3.8,SNR=4.3						
TOA1	**Torodi Ar. Sit**	**84.21**	**70**	*e*P	**P**	**15 03 37.2**	**+0.8**
	comp=Z,10.0nm,1.6s						

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*ISCJB **06** 14:54:09.3±1.1, 26°.6N±0°.2×143°.7E±0°.1, h10km, mb3.8/6, Error ellipse: s-maj=26.0km s-min=13.8km az=25.5*
*IDC **06** 14:54:10.1±1.5, 26°.63N×143°.63E, h0km, mb3.8/6, mb1 3.8/8, mb1mx3.5/66, mbtmp3.7/8, ML3.4/2, Error ellipse: s-maj=38.8km s-min=24.5km az=53.0*
ISC 06 14:54:11.5±1.2**, 26°.7N**±0°.2×**143°.6E**±0°.1**, h10**km**, n9, σ0s.98**/10**, mb3.8**/6**, Bonin Islands region**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
JCJ	**Chichijima**	**1.34**	**287**	Pn	**Pg**	**14 54 36.9**	**-0.3**
	29nm,0.3s,baz=99,slow=23,SNR=7.9						
JCJ				Sn	**Sg**	**14 54 55.0**	**+0.3**
	88nm,0.3s,baz=109,slow=22,SNR=23						
MJAR	**Matsushiro Arr**	**10.84**	**336**	Pn	**Pn**	**14 56 45.2**	**-1.5**
	0.3nm,0.3s,baz=153,slow=10,SNR=4.0						
KSRS	**Korea Array**	**17.06**	**313**	Pn	**P**	**14 58 11.4**	**-0.5**
	0.1nm,0.3s,baz=122,slow=13,SNR=4.1						
SONM	**Songino Array**	**35.89**	**316**	P	**P**	**15 01 13.3**	**+1.5**
	0.3nm,0.6s,baz=108,slow=8.8,SNR=3.0						
WRA	**Warramunga Arr**	**47.23**	**192**	P	**P**	**15 02 44.0**	**-0.8**
	0.6nm,0.7s,baz=15,slow=7.7,SNR=4.7						
MKAR	**Makanchi Array**	**51.71**	**310**	P	**P**	**15 03 19.4**	**+0.6**
	0.7nm,0.6s,baz=85,slow=9.6,SNR=6.4						
KURBB	**Kurchatov Arra**	**54.23**	**315**	P	**P**	**15 03 37.8**	**+0.5**
	1.4nm,0.5s,baz=90,slow=7.6,SNR=14						
BVAR	**Borovoye Array**	**59.20**	**318**	P	**P**	**15 04 12.7**	**+0.1**
	0.4nm,0.4s,baz=76,slow=6.0,SNR=4.6						
FINES	**FINESS Array B**	**78.86**	**334**	P	**P**	**15 06 15.3**	**+0.7**
	1.2nm,0.8s,baz=88,slow=4.6,SNR=3.0						

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*IDC **06** 14:55:27.6±1.1, 30°.25S×177°.58W, h0km, mb4.5/4, mb1 4.5/6, mb1mx4.0/35, mbtmp4.4/6, ML3.6/2, Error ellipse: s-maj=36.6km s-min=26.8km az=149.0*
*ISCJB **06** 14:55:30.6±4.1, 30°.5S±0°.1×177°.6W±0°.6, h33km, mb4.3/4, Error ellipse: s-maj=74.6km s-min=13.3km az=5.1*
ISC 06 14:55:32.4±1.2**, 30°.4S**±0°.1×**177°.6W**±0°.2**, h33**km**, n14, σ1s.15**/16**, mb4.5**/4**, Kermadec Islands**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
URZ	**Urewera**	**8.99**	**208**	Pn	**Pn**	**14 57 38.5**	**-1.4**
	0.5nm,0.3s,baz=54,slow=18,SNR=8.3						
URZ				Sn	**Sn**	**14 59 20.1**	**+0.2**
	3.6nm,0.3s,baz=210,slow=22,SNR=20						
RPZ	**Rata Peaks**	**16.07**	**211**	Pn	**Pn**	**14 59 16.3**	**+0.4**
	0.3nm,0.3s,baz=325,slow=1.9,SNR=2.9						
RPZ				Sn	Sn	15 02 01.5	-12
	0.6nm,0.3s,baz=351,slow=9.4,SNR=3.6						
CTA	**Charters Tower**	**34.18**	**279**	P	**P**	**15 02 15.7**	**+0.8**
	3.4nm,0.6s,baz=98,slow=10,SNR=10.0						
STKA	**Stephens Creek**	**34.85**	**257**	P	**P**	**15 02 21.9**	**+1.3**
	5.3nm,0.8s,baz=100,slow=10,SNR=17						
ASAR	**Alice Springs**	**43.49**	**267**	P	**P**	**15 03 31.7**	**-1.2**
	1.4nm,0.4s,baz=106,slow=7.3,SNR=40						
ASAR				PcP	**PcP**	**15 05 21.7**	**+1.1**
	0.3nm,0.6s,baz=116,slow=4.3,SNR=3.4						
WRA	**Warramunga Arr**	**44.48**	**272**	P	**P**	**15 03 39.4**	**-1.4**
	4.1nm,0.6s,baz=110,slow=8.1,SNR=56						
MKAR	**Makanchi Array**	**118.07**	**310**	PKP	**PKPdf**	**15 14 14.4**	**-1.2**
	0.2nm,0.6s,baz=158,slow=0.8,SNR=3.6						
BVAR	**Borovoye Array**	**126.68**	**316**	PKP	**PKPdf**	**15 14 31.6**	**-0.3**
	0.6nm,0.5s,baz=60,slow=3.6,SNR=4.0						
FINES	**FINESS Array B**	**145.28**	**340**	PKPbc	**PKPbc**	**15 15 04.6**	**-1.2**
	6.1nm,0.6s,baz=65,slow=3.5,SNR=25						
HFS	**Hagfors**	**149.32**	**349**	PKPbc	**PKPbc**	**15 15 18.0**	**+0.8**
	1.7nm,0.7s,baz=78,slow=7.7,SNR=5.7						
AKASG	**Malin Array Be**	**151.54**	**323**	PKPbc	**PKPbc**	**15 15 21.9**	**-0.8**
	1.1nm,0.3s,baz=48,slow=2.6,SNR=6.2						
MMAI	**Mount Meron Ar**	**151.90**	**284**	PKPbc	**PKPbc**	**15 15 25.1**	**+0.9**
	1.5nm,0.5s,baz=82,slow=6.0,SNR=5.4						
BRTR	**Keskin Array B**	**152.94**	**299**	PKPbc	**PKPbc**	**15 15 26.2**	**-0.3**
	0.4nm,0.5s,baz=144,slow=5.8,SNR=2.5						
TORD	**Torodi Ar. Bea**	**162.81**	**178**	PKPab	**PKPab**	**15 16 22.2**	**+1.7**
	1.0nm,0.7s,baz=171,slow=3.5,SNR=5.5						

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*DJA **06** 15:04:29.0±0.6, 10°S±7°×10°8E±°, h10km, M4.3/11, MLv4.3/11*
*NEIC **06** 15:04:29.4±0.6, 9°.86S×107°.60E, h10km, mb4.4/6, Error ellipse: s-maj=14.7km s-min=10.6km az=212.0*
*IDC **06** 15:04:34.6±0.9, 9°.64S×107°.90E, h34km±4km, mb3.8/11, mb1 3.9/12, mb1mx3.7/47, mbtmp4.0/12, ML3.7/1, Error ellipse: s-maj=35.6km s-min=12.4km az=52.0*
ISC 06 15:04:32.4±0.6**, 9°.82S**±0°.08×**107°.69E**±0°.09**, h26**km±2km**, h25**km**:pP-P, n40, σ0s.98**/52**, mb4.0**/14**, South of Jawa**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
XMIS	**Christmas Isla**	**2.11**	**252**	*e*Pn	Pn	15 04 59.9	-6.3
CISI	**Cisompet, Garu**	**2.25**	**3**	P	**Pn**	**15 05 06.8**	**-1.4**
CISI	**Cisompet, Garu**	**2.25**	**3**	*e*Pn	Pn	15 05 03.3	-4.8
CNJI	**Cibinong**	**2.56**	**347**	P	**Pn**	**15 05 10.7**	**-1.6**
KPJI	**Karang Pucung**	**2.76**	**26**	P	**Pn**	**15 05 15.7**	**+0.7**
LEM	**Lembang**	**2.98**	**359**	Pn	**Pb**	**15 05 23.8**	**-1.1**
	37nm,0.3s,baz=174,slow=12,SNR=26						
LEM				Sn	**Sn**	**15 05 55.5**	**+2.4**
	24nm,0.3s,baz=154,slow=22,SNR=4.4						
LEM	**Lembang**	**2.98**	**359**	P	**Pb**	**15 05 23.8**	**-1.1**
DBJI	**Dramaga**	**3.38**	**344**	P	**Pn**	**15 05 23.2**	**-0.4**
UGM	**Wanagama**	**3.38**	**56**	*e*Pn	**Pn**	**15 05 24.1**	**+0.5**
PWJI	**Pagerwojo**	**4.44**	**67**	P	**Pn**	**15 05 38.2**	**0.0**
JAGI	**Jajag, Banyuwa**	**6.52**	**79**	*e*Pn	**Pn**	**15 06 05.3**	**-1.5**
FITZ	**Fitzroy Crossi**	**19.25**	**117**	P	**Pn**	**15 08 56.0**	**-0.2**
	0.2nm,0.3s,baz=308,slow=4.5,SNR=4.7						
FITZ	**Fitzroy Crossi**	**19.25**	**117**	*e*P	**P**	**15 08 55.2**	**+0.1**
	38nm,1.9s						
WR1	**Warramunga Arr**	**27.61**	**114**	*e*P	**P**	**15 10 17.2**	**-0.8**
	15nm,1.3s						
WR1				*e*pP	**sP**	**15 10 28.8**	**-0.1**
WR1				*e*PcP	**PcP**	**15 13 35.7**	**+0.3**
WRA	**Warramunga Arr**	**27.61**	**114**	P	**P**	**15 10 17.3**	**-0.8**
	1.5nm,0.6s,baz=285,slow=11,SNR=13						
WRA				pP	**sP**	**15 10 28.8**	**0.0**
	0.9nm,0.6s,baz=287,slow=11,SNR=3.9						
WRA				PcP	**PcP**	**15 13 35.7**	**+0.3**
	0.8nm,1.1s,baz=305,slow=1.5,SNR=5.3						
AS31	**Alice Springs**	**28.56**	**122**	*e*PcP	**PcP**	**15 13 38.0**	**+0.2**
ASAR	**Alice Springs**	**28.56**	**122**	P	**P**	**15 10 28.0**	**+1.5**
	1.4nm,0.6s,baz=298,slow=9.1,SNR=27						
ASAR				PcP	**PcP**	**15 13 38.0**	**+0.2**
	0.5nm,0.7s,baz=289,slow=2.0,SNR=8.7						
CMAR	**Chiang Mai Arr**	**29.39**	**343**	P	**P**	**15 10 34.4**	**+0.5**
	0.3nm,0.7s,baz=186,slow=7.9,SNR=4.5						
H08S2	**Diego Garcia H**	**34.85**	**271**	T	T	15 48 59.4	
	baz=95						
H08S3	**Diego Garcia H**	**34.86**	**271**	T	T	15 49 01.8	
	baz=95						
H08S1	**Diego Carcia H**	**34.87**	**271**	T	T	15 49 04.2	
	baz=95						
STKA	**Stephens Creek**	**38.28**	**130**	P	**P**	**15 11 50.8**	**-0.1**
	3.6nm,0.6s,baz=302,slow=8.7,SNR=12						
STKA				pP	**sP**	**15 12 01.5**	**-0.3**
	2.9nm,0.9s,baz=343,slow=8.4,SNR=3.4						
STKA	**Stephens Creek**	**38.28**	**130**	*e*P	**P**	**15 11 50.4**	**-0.5**
	7.2nm,1.9s						
STKA				pP	**sP**	**15 12 01.5**	**-0.3**
LSA	**Lhasa**	**42.40**	**338**	*e*P	**P**	**15 12 26.2**	**+0.7**
	6.5nm,0.8s						
MJAR	**Matsushiro Arr**	**54.32**	**30**	P	**P**	**15 13 55.3**	**-1.5**
	0.6nm,0.5s,baz=187,slow=6.1,SNR=3.6						
MJAR				pP	**pP**	**15 14 04.8**	**0.0**
	1.4nm,0.7s,baz=208,slow=8.0,SNR=3.4						
SONA0	**Songino Array**	**57.41**	**359**	*e*P	**P**	**15 14 19.0**	**+0.1**
SONA0				*e*pP	**sP**	**15 14 29.6**	**-0.4**
SONM	**Songino Array**	**57.41**	**359**	P	**P**	**15 14 19.0**	**+0.1**
	0.7nm,0.6s,baz=168,slow=7.6,SNR=5.3						
SONM				pP	**sP**	**15 14 29.6**	**-0.4**
	1.2nm,0.8s,baz=166,slow=9.6,SNR=5.6						
MK01	**Makanchi Array**	**60.73**	**340**	*e*P	**P**	**15 14 42.3**	**+0.5**
MK32	**Makanchi Array**	**60.76**	**340**	*e*P	**P**	**15 14 42.1**	**+0.1**
MK32				*e*pP	**sP**	**15 14 53.5**	**+0.4**
MKAR	**Makanchi Array**	**60.76**	**340**	P	**P**	**15 14 42.1**	**+0.1**
	0.7nm,0.5s,baz=148,slow=8.0,SNR=8.5						
MKAR				pP	**sP**	**15 14 53.5**	**+0.4**
	2.8nm,0.8s,baz=149,slow=7.0,SNR=11						
KLR	**Kul'dur**	**62.49**	**18**	P	**P**	**15 14 53.1**	**-0.5**
	2.3nm,0.6s,baz=195,slow=4.5,SNR=7.1						
KLR				pP	**sP**	**15 15 03.0**	**-1.7**
	3.0nm,0.6s,baz=198,slow=4.9,SNR=6.2						
BVAR	**Borovoye Array**	**70.22**	**337**	P	**P**	**15 15 43.6**	**+0.6**
	0.7nm,0.7s,baz=141,slow=7.4,SNR=3.5						
BVAR				pP	**sP**	**15 15 58.2**	**+4.0**
	1.9nm,0.7s,baz=139,slow=7.7,SNR=8.4						
ABKAR	**Akbulak array**	**72.17**	**329**	*e*P	**P**	**15 15 54.6**	**-0.3**
ARU	**Arti**	**77.45**	**335**	P	**P**	**15 16 26.0**	**+0.7**
	1.1nm,0.3s,baz=125,slow=4.3,SNR=3.6						
ARU	**Arti**	**77.45**	**335**	*e*P	**P**	**15 16 25.2**	**-0.1**
	4.7nm,1.1s						
TIXI	**Tiksi**	**82.51**	**7**	*e*P	**P**	**15 16 51.7**	**-0.7**
	3.2nm,0.7s						
BR101	**Keskin Array S**	**84.20**	**312**	*e*P	**P**	**15 17 02.8**	**+0.8**
BR101				*e*pP	**sP**	**15 17 12.7**	**-0.7**
BRTR	**Keskin Array B**	**84.20**	**312**	P	**P**	**15 17 02.8**	**+0.8**
	1.1nm,0.9s,baz=134,slow=7.1,SNR=4.2						
BRTR				pP	**sP**	**15 17 12.7**	**-0.7**
	1.0nm,0.8s,baz=137,slow=6.1,SNR=3.2						
YKA	**Yellowknife Ar**	**119.25**	**21**	PKP	**PKPdf**	**15 23 18.6**	**-0.3**
	0.1nm,0.5s,baz=263,slow=1.2,SNR=3.5						
TXAR	**Lajitas Array**	**144.83**	**52**	PKP	**PKPdf**	**15 24 07.6**	**-0.4**
	0.8nm,0.7s,baz=295,slow=2.3,SNR=7.2						
TXAR				pPKP	PKiKP	15 24 19.1	+7.3
	0.7nm,0.7s,baz=250,slow=0.9,SNR=4.5						

IDC 06 15:09:44.9±6.0**, 6°.53S**×**146°.78E, h62**km±63km**, mb3.0**/2**, mb1 3.3**/4**, mb1mx3.1**/29**, mbtmp3.3**/4**, ML2.8**/1**, Error ellipse: s-maj=67.1km s-min=42.0km az=86.0, Eastern New Guinea region**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**2.88**	**172**	P	Pn	15 10 28.9	+0.4
	2.4nm,0.3s,baz=340,slow=7.2,SNR=12						
PMG				S	Sn	15 11 02.5	+0.6
	9.8nm,0.3s,baz=123,slow=23,SNR=28						
WRA	**Warramunga Arr**	**17.99**	**221**	P	P	15 13 48.9	-1.7
	0.0nm,0.3s,baz=47,slow=12,SNR=3.8						
ASAR	**Alice Springs**	**21.06**	**215**	P	P	15 14 24.5	+0.4
	0.5nm,0.8s,baz=50,slow=9.2,SNR=3.9						
CMAR	**Chiang Mai Arr**	**53.30**	**299**	P	P	15 18 58.0	-0.2
	0.6nm,0.5s,baz=119,slow=5.9,SNR=5.1						
TORD	**Torodi Ar. Bea**	**145.00**	**284**	PKPbc	PKPbc	15 29 15.3	-0.4
	1.0nm,0.8s,baz=55,slow=3.0,SNR=5.5						

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*ISCJB **06** 15:21:49.1±0.8, 37°.08N±0°.05×142°.62E±0°.07, h9km, mb3.4/4, Error ellipse: s-maj=8.1km s-min=7.6km az=141.6*
*IDC **06** 15:21:50.3±1.2, 37°.06N×142°.56E, h0km, mb3.4/4, mb1 3.6/6, mb1mx3.3/33, mbtmp3.4/6, ML3.4/2, Error ellipse: s-maj=35.2km s-min=22.5km az=114.0*
*JMA **06** 15:21:51.0±0.2, 37°.17N×142°.61E, h27km, M3.7*
ISC 06 15:21:51.2±1.1**, 37°.15N**±0°.06×**142°.42E**±0°.07**, h9**km**, n22, σ1s.38**/21**, mb3.4**/4**, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**1.25**	**280**	P	**Pg**	**15 22 15.8**	**+0.5**
ONAJ	**Iwakimizuishiy**	**1.30**	**268**	P	**Pg**	**15 22 16.0**	**-0.1**
ONAJ				S	**Sn**	**15 22 34.3**	**+1.2**
JMM	**Marumori**	**1.48**	**299**	P	**Pn**	**15 22 17.3**	**-0.7**
JIO	**Ouri**	**1.55**	**327**	P	**Pn**	**15 22 18.2**	**-0.8**
JFT	**Otama**	**1.70**	**283**	P	**Pn**	**15 22 21.5**	**+0.4**
JFT				S	**Sg**	**15 22 45.1**	**-0.8**
JOU	**Okura**	**1.84**	**312**	P	**Pn**	**15 22 22.8**	**-0.3**
JMK	**Ichinoseki**	**2.03**	**333**	P	**Pn**	**15 22 25.8**	**+0.2**
JYK	**Kaneyama**	**2.40**	**318**	P	**Pn**	**15 22 31.4**	**+0.7**
JAG	**Ashikaga**	**2.49**	**254**	P	**Pn**	**15 22 33.5**	**+1.6**
JAG				S	**Sb**	**15 23 04.5**	**-2.4**
MJAR	**Matsushiro Arr**	**3.43**	**261**	Pn	**Pn**	**15 22 47.7**	**+2.8**
	2.2nm,0.3s,baz=88,slow=14,SNR=14						
MAT	**Matsushiro**	**3.43**	**261**	P	**Pn**	**15 22 47.5**	**+2.6**
MAT				S	**Sb**	**15 23 32.2**	**-1.9**
JHJ	**Hachijo jima 2**	**4.57**	**209**	Pn	**Pn**	**15 22 60.0**	**-0.5**
	7.8nm,0.3s,baz=323,slow=22,SNR=13						
JHJ				Sn	**Sn**	**15 23 52.0**	**-1.7**
	7.6nm,0.3s,baz=87,slow=23,SNR=1.7						
H11N2	**WAKE ISLAND Hy**	**27.52**	**122**	T	T	15 56 26.1	
	baz=315,slow=75,SNR=12						
H11N1	**WAKE ISLAND Hy**	**27.53**	**122**	T	T	15 56 26.5	
	baz=315,slow=75,SNR=11						
H11N3	**WAKE ISLAND Hy**	**27.54**	**122**	T	T	15 56 28.0	
	baz=315,slow=75,SNR=9.2						
H11S1	**WAKE ISLAND Hy**	**28.26**	**124**	T	T	15 57 20.7	
	baz=317,slow=76,SNR=6.3						
H11S3	**WAKE ISLAND Hy**	**28.26**	**125**	T	T	15 57 20.4	
	baz=317,slow=76,SNR=8.8						
H11S2	**WAKE ISLAND Hy**	**28.27**	**125**	T	T	15 57 20.6	
	baz=317,slow=76,SNR=8.3						
MKAR	**Makanchi Array**	**44.74**	**302**	P	**P**	**15 30 05.5**	**+0.7**
	0.2nm,0.6s,baz=91,slow=7.2,SNR=2.6						
ILAR	**Eielson Array**	**48.96**	**32**	P	**P**	**15 30 38.1**	**+0.5**
	0.5nm,0.9s,baz=254,slow=6.5,SNR=3.2						
WRA	**Warramunga Arr**	**57.30**	**189**	P	**P**	**15 31 39.2**	**-0.2**
	0.5nm,0.6s,baz=4.1,slow=7.2,SNR=8.4						
ASAR	**Alice Springs**	**61.02**	**189**	P	**P**	**15 32 05.3**	**+0.2**
	0.1nm,0.4s,baz=0.6,slow=6.3,SNR=4.4						

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*ISCJB **06** 15:25:04.1±1.1, 35°.74N±0°.06×141°.3E±0°.1, h46km±8km, mb3.4/4, Error ellipse: s-maj=15.7km s-min=7.7km az=157.1*
*JMA **06** 15:25:04.2±0.1, 35°.83N×141°.33E, h41km±2km, M3.0*
*IDC **06** 15:25:05.5±5.0, 35°.68N×141°.42E, h38km±43km, mb3.2/4, mb1 3.4/6, mb1mx3.2/34, mbtmp3.4/6, ML3.2/2, Error ellipse: s-maj=46.9km s-min=22.2km az=88.0*
ISC 06 15:25:03.7±1.1**, 35°.77N**±0°.06×**141°.41E**±0°.08**, h28**km±5km**, n19, σ1s.05**/20**, mb3.4**/4**, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.45**	**262**	P	**Pb**	**15 25 13.6**	**+0.4**
CHOJ				S	**Sb**	**15 25 20.6**	**+0.9**
JHO	**Hitachi**	**1.08**	**321**	P	**Pn**	**15 25 21.9**	**-1.1**
JYT	**Yasato**	**1.08**	**295**	P	**Pn**	**15 25 21.9**	**-1.1**
JYT				S	**Sn**	**15 25 34.9**	**-2.2**
BSO1	**Boso 1**	**1.17**	**198**	P	**Pb**	**15 25 24.9**	**0.0**
BSO3	**Boso 3**	**1.21**	**217**	P	**Pb**	**15 25 25.3**	**-0.5**
JAG	**Ashikaga**	**1.71**	**293**	P	**Pn**	**15 25 31.0**	**-0.7**
JAG				S	**Sn**	**15 25 52.0**	**-0.6**
MJAR	**Matsushiro Arr**	**2.70**	**288**	Pn	**Pn**	**15 25 46.3**	**+1.0**
	2.5nm,0.3s,baz=92,slow=13,SNR=11						
MAT	**Matsushiro**	**2.70**	**288**	P	**Pn**	**15 25 46.1**	**+0.8**
MAT				*e*S	**Sn**	**15 26 17.5**	**+0.4**
JHJ	**Hachijo jima 2**	**2.96**	**207**	Pn	**Pn**	**15 25 49.4**	**+0.5**
	15nm,0.3s,baz=324,slow=19,SNR=11						
JHJ				Sn	**Sn**	**15 26 21.4**	**-2.1**
	42nm,0.3s,baz=91,slow=23,SNR=14						
H11N2	**WAKE ISLAND Hy**	**27.53**	**119**	T	T	15 59 49.3	
	baz=311,slow=75,SNR=27						
H11N1	**WAKE ISLAND Hy**	**27.53**	**119**	T	T	15 59 50.2	
	baz=311,slow=75,SNR=18						
H11N3	**WAKE ISLAND Hy**	**27.55**	**119**	T	T	15 59 51.5	
	baz=311,slow=75,SNR=20						
H11S1	**WAKE ISLAND Hy**	**28.20**	**121**	T	T	16 00 37.2	
	baz=313,slow=75,SNR=16						
H11S3	**WAKE ISLAND Hy**	**28.20**	**121**	T	T	16 00 37.9	
	baz=313,slow=75,SNR=21						
H11S2	**WAKE ISLAND Hy**	**28.21**	**121**	T	T	16 00 38.3	
	baz=313,slow=75,SNR=13						
MKAR	**Makanchi Array**	**44.79**	**303**	P	**P**	**15 33 15.7**	**+0.8**
	0.3nm,0.7s,baz=86,slow=8.4,SNR=3.2						
MKAR				pP	**sP**	**15 33 26.2**	**-0.5**
	0.7nm,0.6s,baz=96,slow=7.8,SNR=7.4						
ILAR	**Eielson Array**	**50.57**	**32**	P	**P**	**15 34 00.3**	**+0.8**
	0.5nm,1.0s,baz=256,slow=6.4,SNR=3.2						
WRA	**Warramunga Arr**	**55.81**	**188**	P	**P**	**15 34 38.2**	**-0.2**
	0.6nm,0.7s,baz=7.8,slow=7.7,SNR=8.5						
WRA				pP	**sP**	**15 34 50.2**	**-0.1**
	0.4nm,0.6s,baz=6.3,slow=8.3,SNR=2.4						
ASAR	**Alice Springs**	**59.54**	**188**	P	**P**	**15 35 04.5**	**-0.2**
	0.3nm,0.9s,baz=16,slow=12,SNR=5.7						

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*ISCJB **06** 15:31:11.9±1.0, 36°.56N±0°.04×141°.30E±0°.09, h32km, mb3.5/4, Error ellipse: s-maj=10.7km s-min=5.5km az=167.4*
*JMA **06** 15:31:13.4±0.1, 36°.55N×141°.18E, h45km±2km, M3.3*
*IDC **06** 15:31:17.3±5.8, 36°.46N×141°.01E, h62km±38km, mb3.3/4, mb1 3.4/7, mb1mx3.1/37, mbtmp3.6/7, ML2.8/3, Error ellipse: s-maj=75.1km s-min=14.7km az=76.0*
ISC 06 15:31:13.6±1.1**, 36°.55N**±0°.06×**141°.25E**±0°.09**, h32**km**, n19, σ1s.13**/19**, mb3.5**/4**, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
JHO	**Hitachi**	**0.55**	**276**	P	**Pb**	**15 31 24.2**	**-0.8**
JHO				*e*S	**Sb**	**15 31 31.8**	**-0.9**
ONAJ	**Iwakimizuishiy**	**0.66**	**327**	P	**Pb**	**15 31 25.6**	**-1.2**
ONAJ				S	**Sb**	**15 31 34.0**	**-1.7**
CHOJ	**Chosi**	**0.90**	**200**	P	**Pn**	**15 31 29.4**	**-0.7**
CHOJ				S	**Sn**	**15 31 40.9**	**-1.1**
JCN	**Nagara**	**1.41**	**217**	P	**Pn**	**15 31 37.7**	**+0.6**
MJAR	**Matsushiro Arr**	**2.45**	**271**	P	**Pn**	**15 31 51.7**	**+0.3**
	10nm,0.3s,baz=109,slow=9.7,SNR=134						
MAT	**Matsushiro**	**2.45**	**271**	P	**Pn**	**15 31 51.6**	**+0.2**
MAT				*e*S	**Sn**	**15 32 21.5**	**+1.3**
MAT	**Matsushiro**	**2.45**	**271**	S	**Sn**	**15 32 19.4**	**-0.8**
JHJ	**Hachijo jima 2**	**3.63**	**200**	P	**Pn**	**15 32 08.9**	**+1.3**
	4.6nm,0.3s,baz=158,slow=22,SNR=14						
JHJ				S	**Sn**	**15 32 49.5**	**+0.2**
	8.7nm,0.3s,baz=178,slow=23,SNR=6.0						
USRK	**Ussuriysk Ar.**	**10.40**	**320**	P	**Pn**	**15 33 43.2**	**+2.8**
	0.1nm,0.3s,baz=123,slow=14,SNR=5.0						
SONM	**Songino Array**	**27.95**	**305**	P	**P**	**15 37 01.1**	**-0.1**
	0.7nm,0.6s,baz=111,slow=9.0,SNR=5.7						
H11N2	**WAKE ISLAND Hy**	**28.02**	**120**	T	T	16 06 28.8	
	baz=313,slow=75,SNR=26						
H11N1	**WAKE ISLAND Hy**	**28.03**	**120**	T	T	16 06 28.1	
	baz=313,slow=75,SNR=25						
H11N3	**WAKE ISLAND Hy**	**28.04**	**120**	T	T	16 06 30.0	
	baz=313,slow=75,SNR=18						
H11S1	**WAKE ISLAND Hy**	**28.71**	**122**	T	T	16 07 30.2	
	baz=314,slow=76,SNR=16						
H11S3	**WAKE ISLAND Hy**	**28.71**	**122**	T	T	16 07 30.9	
	baz=314,slow=76,SNR=15						
H11S2	**WAKE ISLAND Hy**	**28.73**	**122**	T	T	16 07 31.4	
	baz=314,slow=76,SNR=11						
ZALV	**Zalesovo Beam**	**42.14**	**313**	P	**P**	**15 39 02.4**	**-0.4**
	0.6nm,0.4s,baz=90,slow=8.4,SNR=3.8						
MKAR	**Makanchi Array**	**44.26**	**302**	P	**P**	**15 39 19.8**	**-0.3**
	0.3nm,0.5s,baz=80,slow=10,SNR=4.5						
WRA	**Warramunga Arr**	**56.56**	**188**	P	**P**	**15 40 52.6**	**-0.6**
	0.3nm,0.5s,baz=4.3,slow=7.4,SNR=4.2						
WRA				pP	**sP**	**15 41 07.0**	**+0.3**
	0.2nm,0.4s,baz=4.1,slow=7.2,SNR=1.6						

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*CSEM **06** 15:31:24.5±0.9, 38°.66N×28°.16E, h2km, MD2.6, Error ellipse: s-maj=21.5km s-min=6.6km az=139.0*
*ISCJB **06** 15:31:26.2±1.4, 38°.57N±0°.08×28°.26E±0°.08, h10km, Error ellipse: s-maj=14.0km s-min=5.4km az=143.5*
*DDA **06** 15:31:26.0, 38°.57N×28°.31E, h7km, Md2.6*
ISC 06 15:31:25.1±1.6**, 38°.62N**±0°.08×**28°.20E**±0°.07**, h10**km**, n10, σ0s.64**/17**, Turkey**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
KULA	**Kula-Manisa**	**0.37**	**106**	*e*PG	**Pg**	**15 31 32.5**	**0.0**
KULA				*e*SG	**Sg**	**15 31 36.5**	**-1.0**
KULA	**Kula-Manisa**	**0.37**	**106**	*e*Pg	**Pg**	**15 31 32.5**	**0.0**
AYDB	**Zeytinkoy-Aydi**	**0.72**	**200**	*e*PG	**Pg**	**15 31 38.2**	**-0.8**
AYDB	**Zeytinkoy-Aydi**	**0.72**	**200**	*e*Pg	**Pg**	**15 31 38.2**	**-0.8**
AYDN	**Tasoluk**	**0.99**	**195**	*i* P	**Pb**	**15 31 44.6**	**+0.2**
AYDN				*i* S	**Sb**	**15 31 58.4**	**+0.8**
AYDN	**Tasoluk**	**0.99**	**195**	P	**Pb**	**15 31 44.6**	**+0.2**
AYDN				S	**Sb**	**15 31 58.4**	**+0.8**
KHAL	**Karahalli**	**1.04**	**104**	*i* P	**Pn**	**15 31 46.4**	**+0.5**
KHAL				*i* S	**Sg**	**15 31 57.9**	**-0.8**
KHAL	**Karahalli**	**1.04**	**104**	P	**Pn**	**15 31 46.4**	**+0.5**
KHAL				S	**Sg**	**15 31 57.9**	**-0.8**
GDZ	**Gediz**	**1.10**	**65**	*i* P	**Pg**	**15 31 45.9**	**-0.4**
GDZ				*i* S	**Sn**	**15 32 01.9**	**-0.1**
GDZ	**Gediz**	**1.10**	**65**	P	**Pg**	**15 31 45.9**	**-0.4**
GDZ				S	**Sn**	**15 32 01.9**	**-0.1**

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*IDC **06** 15:36:14.5±3.1, 39°.09N×142°.98E, h0km, mb3.3/2, mb1 3.4/4, mb1mx3.1/34, mbtmp3.2/4, ML2.5/2, Error ellipse: s-maj=71.3km s-min=32.3km az=64.0*
*ISCJB **06** 15:36:23.6±1.3, 38°.88N±0°.05×142°.1E±0°.1, h51km, mb3.2/2, Error ellipse: s-maj=12.8km s-min=7.5km az=10.4*
*JMA **06** 15:36:24.2±0.1, 38°.87N×142°.03E, h47km±1km, M3.3*
JMA Felt I J1.
ISC 06 15:36:24.4±1.7**, 38°.89N**±0°.07×**142°.1E**±0°.1**, h51**km**, n18, σ1s.51**/17**, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**0.36**	**302**	P	**Pn**	**15 36 33.6**	**-0.6**
JMK	**Ichinoseki**	**0.66**	**276**	P	**Pn**	**15 36 37.0**	**-0.6**
JMK				S	**Sn**	**15 36 46.0**	**-1.3**
JIO	**Ouri**	**0.71**	**233**	P	**Pn**	**15 36 37.2**	**-1.0**
JIO				S	**Sn**	**15 36 46.0**	**-2.3**
JOM	**Ohasama**	**0.84**	**315**	P	**Pn**	**15 36 39.7**	**-0.3**
JOM				S	**Sn**	**15 36 50.6**	**-0.8**
JOU	**Okura**	**1.21**	**245**	P	**Pn**	**15 36 44.4**	**-0.6**
JOU				S	**Sn**	**15 36 59.2**	**-1.2**

Code	Station Name	Δ°	AZ°	Op	ISC	Time	Res
JRG	Rokugo	1.22	295	P	Pn	15 36 45.0	-0.1
JYK	Kaneyama	1.33	272	P	Pn	15 36 46.2	-0.4
MAT	Matsushiro	3.85	234	P	Pn	15 37 23.4	+2.3
MAT				*e*S	Sn	15 38 06.5	+1.4
MJAR	Matsushiro Arr	3.85	234	Pn	Pn	15 37 24.1	+3.1
	0.8nm,0.3s,baz=36,slow=12,SNR=5.9						
USRK	Ussuriysk Ar.	9.23	308	Pn	Pn	15 38 36.8	+2.0
	0.1nm,0.3s,baz=114,slow=14,SNR=3.0						
H11N2	WAKE ISLAND Hy	28.71	125	T	T	16 12 42.2	
	baz=317,slow=76,SNR=19						
H11N1	WAKE ISLAND Hy	28.72	125	T	T	16 12 43.1	
	baz=317,slow=76,SNR=26						
H11N3	WAKE ISLAND Hy	28.73	125	T	T	16 12 44.4	
	baz=317,slow=76,SNR=22						
H11S1	WAKE ISLAND Hy	29.49	127	T	T	16 13 40.9	
	baz=319,slow=76,SNR=31						
H11S3	WAKE ISLAND Hy	29.49	127	T	T	16 13 40.8	
	baz=319,slow=76,SNR=37						
H11S2	WAKE ISLAND Hy	29.51	127	T	T	16 13 41.9	
	baz=319,slow=76,SNR=28						
MKAR	Makanchi Array	43.59	301	P	P	15 44 23.7	+0.3
	0.2nm,0.5s,baz=84,slow=9.7,SNR=3.6						
WRA	Warramunga Arr	58.96	188	P	P	15 46 18.1	-0.5
	0.3nm,0.8s,baz=5.2,slow=6.9,SNR=5.1						

*MDD **06** 15:37:13.8±3.7, 32°.27N×7°.56W, h0km, mb3.7/4, Error ellipse: s-maj=48.9km s-min=28.2km az=72.0, PRXIMO*
*INMG **06** 15:37:13.8±0.8, 32°.11N×8°.05W, h31km, ML2.5, Error ellipse: s-maj=12.4km s-min=7.3km az=90.0*
*CSEM **06** 15:37:18.1±0.4, 32°.49N×7°.47W, h20km, mb3.7, Error ellipse: s-maj=9.9km s-min=6.0km az=66.0*
ISC 06 15:37:17.1±4.2**, 32°.5N**±0°.2×**7°.5W**±0°.1**, h10km, n20, σ0s.48**/35**, Morocco**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PVAQ	Vaqueiros	4.88	358	*e*Pn	Pn	15 38 30.4	-0.1
PVAQ				*e*Sn	Sn	15 39 27.3	+0.3
PVAQ				A	A	15 39 32.4	
	3.7nm,0.7s						
PVAQ	Vaqueiros	4.88	358	P	Pn	15 38 30.4	-0.1
PVAQ				S	Sn	15 39 27.3	+0.3
	3.7nm,0.7s						
PVAQ	Vaqueiros	4.88	358	P	Pn	15 38 30.4	-0.1
PVAQ				S	Sn	15 39 27.3	+0.3
	3.7nm,0.7s						
EGRO	El Granado	5.00	360	P	Pn	15 38 32.6	+0.4
	0.2nm,0.1s,SNR=7.9						
EGRO				S	Sn	15 39 30.2	+0.1
	0.5nm,0.2s,SNR=7.9						
EGRO	El Granado	5.00	360	P	Pn	15 38 32.6	+0.4
	0.2nm,0.1s,SNR=7.9						
EGRO				S	Sn	15 39 30.2	+0.1
	0.5nm,0.2s,SNR=7.9						
PCVE	Castro Verde	5.12	355	*e*Pn	Pn	15 38 33.8	-0.1
PCVE				*e*Sn	Sn	15 39 32.8	-0.3
PCVE				A	A	15 39 34.6	
	3.8nm,0.7s						
PCVE	Castro Verde	5.12	355	P	Pn	15 38 33.8	-0.1
PCVE				S	Sn	15 39 32.8	-0.3
	3.8nm,0.7s						
PCVE	Castro Verde	5.12	355	P	Pn	15 38 33.8	-0.1
PCVE				S	Sn	15 39 32.8	-0.3
	3.8nm,0.7s						
EMIN	Mina Concepcio	5.28	7	P	Pn	15 38 36.3	+0.3
	0.7nm,0.1s,SNR=7.9						
EMIN				S	Sn	15 39 36.0	-0.9
	0.5nm,0.1s,SNR=7.9						
EMIN	Mina Concepcio	5.28	7	P	Pn	15 38 36.3	+0.3
	0.7nm,0.1s,SNR=7.9						
EMIN				S	Sn	15 39 36.0	-0.9
	0.5nm,0.1s,SNR=7.9						
MESJ	Messejana	5.35	354	*e*Sn	Sn	15 39 37.8	-0.7
MESJ	Messejana	5.35	354	S	Sn	15 39 37.8	-0.7
MESJ	Messejana	5.35	354	S	Sn	15 39 37.8	-0.7
PBAR	Barrancos	5.66	3	*e*Pn	Pn	15 38 41.5	+0.3
PBAR				*e*Sn	Sn	15 39 46.9	+0.7
PBAR				A	A	15 39 57.7	
	4.2nm,0.6s						
PBAR	Barrancos	5.66	3	P	Pn	15 38 41.5	+0.3
PBAR				S	Sn	15 39 46.9	+0.7
	4.2nm,0.6s						
PBAR	Barrancos	5.66	3	P	Pn	15 38 41.5	+0.3
PBAR				S	Sn	15 39 46.9	+0.7
	4.2nm,0.6s						
ECAB	El Cabril	5.79	16	P	Pn	15 38 43.7	+0.6
	1.0nm,0.2s,SNR=7.9						
ECAB				S	Sn	15 39 49.1	-0.5
	0.1nm,0.1s,SNR=7.9						
ECAB	El Cabril	5.79	16	P	Pn	15 38 43.7	+0.6
	1.0nm,0.2s,SNR=7.9						
ECAB				S	Sn	15 39 49.1	-0.5
	0.1nm,0.1s,SNR=7.9						
ENIJ	Nijar	6.20	43	P	Pn	15 38 48.6	-0.1
	0.1nm,0.0s,SNR=7.9						
ENIJ	Nijar	6.20	43	P	Pn	15 38 48.6	-0.1
	0.1nm,0.0s,SNR=7.9						

*NIED **06** 15:56:00, 37°.10N×141°.20E, h56km, Mw4.6 Best double couple: $M_0$8.51000×10^15 NP1:ϕ_s322.00000°, δ26.00000°, λ155.00000°. NP2:ϕ_s75.00000°, δ79.00000°, λ66.00000°.*
*ISCJB **06** 15:56:28.2±1.0, 37°.01N±0°.04×141°.4E±0°.1, h48km±7km, mb3.6/11, Error ellipse: s-maj=13.8km s-min=6.8km az=4.0*
*JMA **06** 15:56:30.2±0.1, 37°.05N×141°.19E, h50km±1km, M3.9*
JMA Felt II J1.
*IDC **06** 15:56:32.4±2.8, 36°.91N×141°.15E, h69km±26km, mb3.4/11, mb1 3.5/13, mb1mx3.3/48, mbtmp3.7/13, Error ellipse: s-maj=25.8km s-min=14.6km az=74.0*
ISC 06 15:56:28.7±1.0**, 37°.04N**±0°.04×**141°.34E**±0°.07**, h33**km±5km**, n28, σ0s.94**/28**, mb3.8**/11**, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	Iwakimizuishiy	0.44	278	P	Pn	15 56 39.5	+0.7
ONAJ				S	Sn	15 56 45.9	+0.3
JFK	Kawauchi	0.49	311	P	Pn	15 56 40.2	+0.7
JFK				S	Sn	15 56 47.0	0.0
JHO	Hitachi	0.76	235	P	Pb	15 56 43.1	-0.4
JHO				S	Sb	15 56 52.5	-1.0
JFT	Otama	0.93	301	P	Pb	15 56 46.5	+0.1
JFT				S	Sn	15 56 57.7	0.0
JMM	Marumori	0.93	332	P	Pb	15 56 46.1	-0.3
JMM				S	Sn	15 56 57.5	-0.2
JFY	Yanaizu	1.35	286	P	Pn	15 56 52.0	+0.6
MJAR	Matsushiro Arr	2.56	260	P	Pn	15 57 08.7	+0.8
	7.7nm,0.3s,baz=96,slow=28,SNR=34						
MAT	Matsushiro	2.56	260	P	Pn	15 57 08.9	+0.9
MAT				S	Sn	15 57 40.3	+2.2
JHJ	Hachijo jima 2	4.12	199	P	Pn	15 57 30.8	+1.4
	31nm,0.3s,baz=331,slow=22,SNR=20						
JHJ				S	Sn	15 58 16.0	-0.4
	33nm,0.3s,baz=91,slow=23,SNR=6.8						
USRK	Ussuriysk Ar.	10.08	318	P	Pn	15 58 57.1	+6.1
	0.3nm,0.3s,baz=137,slow=13,SNR=14						
KSRS	Korea Array	10.71	276	P	Pn	15 59 05.2	+5.5
	0.1nm,0.3s,baz=86,slow=12,SNR=4.4						
SONM	Songino Array	27.73	304	P	P	16 02 14.0	-0.2
	1.0nm,0.5s,baz=98,slow=8.2,SNR=11						
H11N2	WAKE ISLAND Hy	28.20	121	T	T	16 31 56.9	
	baz=313,slow=75,SNR=42						
H11N1	WAKE ISLAND Hy	28.21	121	T	T	16 31 54.4	
	baz=313,slow=75,SNR=31						
H11N3	WAKE ISLAND Hy	28.22	121	T	T	16 31 56.3	
	baz=313,slow=75,SNR=11						
H11S1	WAKE ISLAND Hy	28.91	123	T	T	16 32 52.3	
	baz=315,slow=75,SNR=9.0						
H11S3	WAKE ISLAND Hy	28.91	123	T	T	16 32 51.6	
	baz=315,slow=75,SNR=7.5						
H11S2	WAKE ISLAND Hy	28.93	123	T	T	16 32 47.2	
	baz=315,slow=75,SNR=7.9						
ZALV	Zalesovo Beam	41.87	312	P	P	16 04 15.3	-0.2
	1.4nm,0.5s,baz=90,slow=7.2,SNR=5.7						
MKAR	Makanchi Array	44.06	302	P	P	16 04 32.8	-0.7
	0.4nm,0.5s,baz=84,slow=11,SNR=7.8						
KURBB	Kurchatov Arra	45.95	308	P	P	16 04 47.3	-1.0
	1.3nm,0.5s,baz=82,slow=7.8,SNR=16						
ILAR	Eielson Array	49.52	32	P	P	16 05 16.8	+1.0
	0.7nm,0.7s,baz=274,slow=6.7,SNR=8.2						
BVAR	Borovoye Array	50.52	312	P	P	16 05 23.0	-0.6
	0.5nm,0.5s,baz=83,slow=6.4,SNR=5.3						
WRA	Warramunga Arr	57.06	188	P	P	16 06 11.0	-0.7
	0.2nm,0.5s,baz=5.7,slow=7.3,SNR=4.8						
ASAR	Alice Springs	60.79	188	P	P	16 06 35.3	-2.2
	0.2nm,0.8s,baz=13,slow=8.9,SNR=2.8						
ASAR				pP	sP	16 06 52.0	+0.6
	0.3nm,0.8s,baz=11,slow=8.4,SNR=3.3						
YKA	Yellowknife Ar	63.83	30	P	P	16 06 58.2	+0.8
	0.2nm,0.7s,baz=301,slow=6.6,SNR=4.2						
FINES	FINESS Array B	68.78	332	P	P	16 07 29.8	+0.7
	2.7nm,1.1s,baz=46,slow=12,SNR=2.9						
AKASG	Malin Array Be	74.25	322	P	P	16 08 01.5	-0.8
	0.1nm,0.3s,baz=45,slow=6.7,SNR=3.2						

*IDC **06** 15:56:58.6±8.0, 40°.89S×176°.62E, h0km, mb3.1/2, mb1 3.4/2, mb1mx3.3/29, mbtmp3.1/2, Error ellipse: s-maj=551.0km s-min=60.5km az=1.0*
*ISCJB **06** 15:57:13.3±0.6, 43°.58S±0°.03×172°.86E±0°.05, h15km±4km, mb3.0/2, Error ellipse: s-maj=6.7km s-min=4.2km az=136.5*
*NEIC **06** 15:57:15.4, 43°.53S×172°.72E, h10km, ML4.0(WEL), After WEL.*
NEIC Felt widely in the Christchurch area.
*WEL **06** 15:57:15.5±0.1, 43°.53S×172°.71E, h10km, ML4.0/23, Error ellipse: s-maj=0.9km s-min=0.4km az=90.0*
WEL Felt in the Canterbury region, maximum reported intensity MM 5.
ISC 06 15:57:14.4±1.0**, 43°.52S**±0°.03×**172°.81E**±0°.04**, h8**km±8km**, n58, σ1s.16**/64**, 4C-5D, South Island**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CRLZ	Canterbury Las	0.14	248	⇑*e*PG	Pg	15 57 17.8	+0.3
CRLZ				SG	Sg	15 57 19.6	0.0
CRLZ				SG		15 57 19.6	
CRLZ				AML	AML	15 57 19.6	
CRLZ				AML	AML	15 57 19.6	
CRLZ	Canterbury Las	0.14	248	*e*Pg	Pg	15 57 17.8	+0.3
CRLZ				*e*Sg	Sg	15 57 19.6	0.0
MQZ	McQueen's Vall	0.22	211	⇑PG	Pg	15 57 19.4	+0.6
MQZ				SG	Sg	15 57 22.2	+0.5
MQZ				AML	AML	15 57 22.5	
MQZ	McQueen's Vall	0.22	211	*e*Pg	Pg	15 57 19.4	+0.6
OXZ	Oxford	0.59	289	⇓P*	Pg	15 57 25.7	-0.2
OXZ				S*	Sg	15 57 33.5	-0.1
OXZ	Oxford	0.59	289	*e*Pg	Pg	15 57 25.5	-0.4
LTZ	Lake Taylor	0.84	332	⇓P*	Pg	15 57 31.3	+0.8
LTZ				S*	Sb	15 57 42.4	-0.3
LTZ				AML	AML	15 57 43.6	
LTZ	Lake Taylor	0.84	332	*e*Pg	Pg	15 57 31.1	+0.6
KHZ	Kahutara	1.23	26	P*	Pn	15 57 37.1	-0.8
KHZ	Kahutara	1.23	26	*e*Pn	Pn	15 57 37.6	-0.3
INZ	Inchbonnie	1.28	308	⇓P*	Pn	15 57 37.2	-1.4
RPZ	Rata Peaks	1.29	261	⇓P*	Pn	15 57 37.3	-1.5
RPZ				AML	AML	15 58 03.9	
RPZ				AML	AML	15 58 05.9	
RPZ	Rata Peaks	1.29	261	*e*Sn	Sn	15 58 03.9	+7.7
WVZ	Waitaha Valley	1.57	286	PN	Pn	15 57 41.6	-1.1
WVZ				AML	AML	15 58 09.6	
WVZ				AML	AML	15 58 10.8	
THZ	Tophouse	1.76	2	⇑PN	Pn	15 57 44.8	-0.5
THZ				AML	AML	15 58 09.1	
THZ				AML	AML	15 58 21.1	
THZ	Tophouse	1.76	2	*e*Pn	Pn	15 57 44.8	-0.5
DSZ	Denniston Nort	1.92	337	⇑PN	Pn	15 57 47.3	-0.3
DSZ				AML	AML	15 58 12.6	
DSZ				AML	AML	15 58 15.5	
DSZ	Denniston Nort	1.92	337	*e*Pn	Pn	15 57 47.3	-0.3
DSZ				*e*Sn	Sn	15 58 12.6	+0.7
DSZ				*e*Sg	Sg	15 58 15.5	-0.7
BSWZ	Blackbirch Sta	1.97	24	PN	Pn	15 57 47.9	-0.2
BSWZ				AML	AML	15 58 32.2	
BSWZ				AML	AML	15 58 38.7	
LBZ	Lake Benmore	2.08	245	PN	Pn	15 57 48.7	-1.0
LBZ				AML	AML	15 58 28.8	
LBZ				AML	AML	15 58 28.8	
LBZ				AML	AML	15 58 31.2	
LBZ				AML	AML	15 58 33.7	
LBZ	Lake Benmore	2.08	245	*e*Pn	Pn	15 57 48.9	-0.8
LBZ				*e*Lg	Lg	15 58 33.8	
FOZ	Fox Glacier	2.17	269	PN	Pn	15 57 51.1	+0.1
FOZ				AML	AML	15 58 29.5	
FOZ				AML	AML	15 58 31.0	
FOZ	Fox Glacier	2.17	269	*e*Pn	Pn	15 57 51.0	+0.1
FOZ				*e*Sn	Sg	15 58 31.0	+6.7
ODZ	Otahua Downs	2.17	225	⇓PN	Pn	15 57 49.8	-1.2
ODZ				AML	AML	15 58 29.4	
ODZ				AML	AML	15 58 35.8	
ODZ	Otahua Downs	2.17	225	*e*Pn	Pn	15 57 49.8	-1.2
ODZ				*e*Lg	Lg	15 58 35.8	
NNZ	Nelson	2.34	11	PN	Pn	15 57 53.3	+0.1
NNZ				AML	AML	15 58 44.3	
NNZ				AML	AML	15 58 48.4	
TCW	Tory Channel	2.55	26	*e*PN	Pn	15 57 55.4	-0.8
TCW				AML	AML	15 58 44.4	
TCW				AML	AML	15 58 44.4	
SNZO	South Karori	2.62	33	*e*Pn	Pn	15 57 56.4	-0.7
QRZ	Quartz Range	2.70	356	*e*PN	Pn	15 57 57.7	-0.5
QRZ				AML	AML	15 58 30.3	
QRZ				AML	AML	15 58 49.2	
QRZ	Quartz Range	2.70	356	*e*Pn	Pn	15 57 57.9	-0.4
QRZ				*e*Sn	Sn	15 58 30.4	-0.7
QRZ				*e*Lg	Lg	15 58 49.2	
CAW	Cannon Point	2.94	36	*e*Pn	Pn	15 58 00.6	-0.9
CAW				*e*Sn	Sn	15 58 37.3	+0.4
JCZ	Jackson Bay	2.96	258	PN	Pn	15 58 01.6	-0.3
JCZ				AML	AML	15 58 55.8	
JCZ				AML	AML	15 58 57.6	
JCZ	Jackson Bay	2.96	258	*e*Pn	Pn	15 58 01.6	-0.3
JCZ				*e*Lg	Lg	15 58 57.6	
WKZ	Wanaka	3.02	243	PN	Pn	15 58 01.6	-1.0
WKZ				AML	AML	15 58 54.5	
WKZ				AML	AML	15 59 02.3	
WKZ	Wanaka	3.02	243	*e*Pn	Pn	15 58 01.3	-1.4
WKZ				*e*Lg	Lg	15 59 02.3	
EAZ	Earnscleugh	3.04	235	PN	Pn	15 58 01.5	-1.3
EAZ				AML	AML	15 58 53.1	
EAZ				AML	AML	15 58 53.1	
EAZ				AML	AML	15 58 54.0	
EAZ				AML	AML	15 59 01.8	
EAZ	Earnscleugh	3.04	235	*e*Pn	Pn	15 58 01.6	-1.3
EAZ				*e*Lg	Lg	15 59 01.8	
MTW	Mount Morrison	3.09	41	PN	Pn	15 58 02.3	-1.3
MTW				AML	AML	15 58 45.2	
MTW				AML	AML	15 59 21.1	
MTW	Mount Morrison	3.09	41	*e*Sn	Sn	15 58 45.2	+4.4
OGWZ	Otaki Gorge	3.22	34	PN	Pn	15 58 04.3	-1.0
TUZ	Tuapeka	3.32	222	PN	Pn	15 58 05.5	-1.2
TUZ				AML	AML	15 59 06.5	
TUZ				AML	AML	15 59 12.2	
MRZ	Mangatainoka R	3.52	37	PN	Pn	15 58 08.2	-1.3
MRZ				AML	AML	15 58 58.9	
MRZ				AML	AML	15 59 04.6	
MRZ	Mangatainoka R	3.52	37	*e*Pn	Pn	15 58 08.2	-1.3
MRZ				*e*Sn	Sb	15 58 58.9	-1.1
MRZ				*e*Sg	Sg	15 59 04.5	-3.1
TIWZ	Tintock	3.57	41	AML	AML	15 58 53.1	
TIWZ				AML	AML	15 58 55.7	
MSZ	Milford Sound	3.70	250	*e*PN	Pn	15 58 10.2	-1.6
MSZ				AML	AML	15 59 15.8	
MSZ				AML	AML	15 59 17.0	
MSZ	Milford Sound	3.70	250	*e*Pn	Pn	15 58 10.3	-1.6
MSZ				*e*Lg	Lg	15 59 17.0	
BFZ	Birch Farm	3.82	43	*e*Pn	Pn	15 58 12.3	-1.3
MLZ	Mavora Lakes	3.83	240	*e*PN	Pn	15 58 12.0	-1.7
MLZ	Mavora Lakes	3.83	240	*e*Pn	Pn	15 58 12.9	-0.8
SYZ	Scrubby Hill	3.98	219	AML	AML	15 59 31.8	
SYZ				AML	AML	15 59 33.2	
DCZ	Deep Cove	4.49	242	*e*Pn	Pn	15 58 21.6	-1.1
WNVZ	Wahianoa	4.69	28	PN	Pn	15 58 26.3	+0.7
BKZ	Black Stump Fm	5.16	34	*e*Pn	Pn	15 58 30.7	-1.3
HIZ	Hauiti	5.24	18	*e*Pn	Pn	15 58 33.4	+0.4
URZ	Urewera	6.18	33	*e*Pn	Pn	15 58 44.1	-2.0
ASAR	Alice Springs	37.54	289	P	P	16 04 31.3	+2.1
	0.2nm,0.5s,baz=124,slow=7.4,SNR=5.9						
WRA	Warramunga Arr	39.78	294	P	P	16 04 47.6	-0.4
	0.2nm,0.6s,baz=135,slow=7.8,SNR=3.6						
FINES	FINESS Array B	153.38	324	PKPbc	PKPdf	16 16 56.2	-8.3
	0.8nm,0.5s,baz=66,slow=3.5,SNR=7.1						

IDC 06 16:03:26.0±1.5**, 27°.82N×97°.06E, h0**km**, mb3.3**/5**, mb1 3.5**/5**, mb1mx3.3**/50**, mbtmp3.3**/5**, Error ellipse: s-maj=70.8km s-min=22.0km az=64.0, Myanmar-India border region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CMAR	Chiang Mai Arr	9.48	169	Pn	Pn	16 05 48.5	+4.7
	0.0nm,0.3s,baz=340,slow=12,SNR=5.9						
SONM	Songino Array	21.27	18	P	P	16 08 13.9	-0.1
	1.0nm,0.6s,baz=200,slow=11,SNR=7.5						
MKAR	Makanchi Array	22.22	332	P	P	16 08 22.1	-2.0
	0.1nm,0.4s,baz=148,slow=12,SNR=2.9						
KURBB	Kurchatov Arra	26.77	333	P	P	16 09 08.6	+1.2
	1.0nm,0.9s,baz=149,slow=11,SNR=8.0						
WRA	Warramunga Arr	59.63	139	P	P	16 13 31.9	-0.2
	0.4nm,0.8s,baz=321,slow=8.2,SNR=5.5						
ASAR	Alice Springs	62.32	142	P	P	16 13 50.3	0.0
	0.1nm,0.4s,baz=319,slow=6.1,SNR=2.5						

*ISK **06** 16:05:13.3, 37°.18N×28°.16E, h16km, MD2.7*
*DDA **06** 16:05:14.1, 37°.24N×28°.24E, h7km, Md2.6*
*CSEM **06** 16:05:14.4±0.2, 37°.21N×28°.20E, h8km, MD2.7, Error ellipse: s-maj=8.0km s-min=4.3km az=36.0*
ISC 06 16:05:13.8±0.9**, 37°.14N**±0°.05×**28°.11E**±0°.06**, h12**km±7km**, n20, σ0s.47**/30**, Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
YER	Yerkesik	0.14	91	*e*PG	Pg	16 05 17.0	-0.3
YER				*e*SG	Sb	16 05 19.9	+0.1
YER	Yerkesik	0.14	91	*e*Pg	Pg	16 05 17.0	-0.3
YER				*e*Sg	Sb	16 05 19.9	+0.1
TURN	Turunc	0.48	123	*i* P	Pg	16 05 22.6	-0.5
TURN				*i* S	Sb	16 05 30.2	-0.8
TURN	Turunc	0.48	123	P	Pg	16 05 22.6	-0.5
TURN				S	Sb	16 05 30.2	-0.8
BDRM	Kayabasi	0.53	262	*i* P	Pn	16 05 27.3	+0.1
BDRM				*i* S	Sn	16 05 36.7	+0.6
BDRM	Kayabasi	0.53	262	P	Pn	16 05 27.3	+0.1
BDRM				S	Sn	16 05 36.7	+0.6
DALY	Dalyan (Mu˜la	0.54	126	*e*PG	Pg	16 05 24.2	-0.2
DALY				*e*SG	Sb	16 05 32.8	-0.1
DALY	Dalyan (Mu˜la	0.54	126	*e*Pg	Pg	16 05 24.2	-0.2
DALY				*e*Sg	Sb	16 05 32.8	-0.1
AYDN	Tasoluk	0.55	341	*i* P	Pg	16 05 24.2	-0.4
AYDN				*i* S	Sg	16 05 31.6	-0.3
AYDN	Tasoluk	0.55	341	P	Pg	16 05 24.2	-0.4
AYDN				S	Sg	16 05 31.6	-0.3
BODT	Bodrum	0.64	263	*e*PG	Pb	16 05 27.2	+0.4
BODT	Bodrum	0.64	263	*e*Pg	Pb	16 05 27.3	+0.4
AYDB	Zeytinkoy-Aydi	0.82	348	*e*PG	Pg	16 05 29.2	-0.6
AYDB	Zeytinkoy-Aydi	0.82	348	*e*Pg	Pg	16 05 29.2	-0.6
FETY	Fethiye	0.93	122	*e*PG	Pg	16 05 31.3	-0.4
FETY	Fethiye	0.93	122	*e*Pg	Pg	16 05 31.3	-0.4
GOLH	Golhisar	1.17	85	*i* P	Pg	16 05 36.7	+0.5
GOLH				*i* S	Sn	16 05 56.5	+4.6
GOLH	Golhisar	1.17	85	P	Pg	16 05 36.7	+0.5
AKAS	Kas	1.51	126	*i* P	Pg	16 05 42.3	-0.4
AKAS				*i* S	Sg	16 06 08.2	+5.9
AKAS	Kas	1.51	126	P	Pg	16 05 42.3	-0.4

*IDC **06** 16:05:59.7±0.6, 38°.16N×144°.25E, h0km, mb3.9/20, mb1 4.0/26, mb1mx4.0/45, mbtmp3.9/26, ML3.5/6, MS3.5/1, Ms1 3.5/1, ms1mx2.7/50, Error ellipse: s-maj=16.2km s-min=13.0km az=127.0*
*NIED **06** 16:06:00, 38°.30N×144°.10E, h8km, Mw4.1 Best double couple: $M_0$1.41000×10^15 NP1:ϕ_s20.00000°, δ30.00000°, λ-75.00000°. NP2:ϕ_s183.00000°, δ61.00000°, λ-98.00000°.*
*JMA **06** 16:06:02.7±0.2, 38°.27N×144°.09E, h45km, M4.4*
*ISCJB **06** 16:06:03.4±0.4, 38°.26N±0°.04×144°.04E±0°.04, h33km, mb3.9/24, Error ellipse: s-maj=5.2km s-min=3.9km az=162.8*
*NEIC **06** 16:06:04.8±0.3, 38°.17N×144°.18E, h35km, mb4.6/5, Error ellipse: s-maj=8.4km s-min=5.7km az=144.0*
ISC 06 16:06:05.1±0.5**, 38°.32N**±0°.05×**144°.08E**±0°.06**, h35**km**, n74, σ1s.15**/87**, mb3.9**/24**, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	Ofunato	2.03	293	P	Pn	16 06 36.0	-0.9
JIO	Ouri	2.15	274	P	Pn	16 06 37.0	-1.5
JIO				S	Sn	16 07 02.4	-1.5
JMK	Ichinoseki	2.33	287	P	Pn	16 06 40.3	-0.6
JMK				*e*S	Sn	16 07 08.2	0.0
JTH	Tanohata	2.36	314	P	Pn	16 06 40.3	-1.1
JTH				*e*S	Sn	16 07 08.9	-0.2
JOM	Ohasama	2.46	299	P	Pn	16 06 42.3	-0.4
JMM	Marumori	2.63	261	P	Pn	16 06 43.9	-1.2
JMM				*e*S	Sn	16 07 13.8	-2.0
JOU	Okura	2.69	272	P	Pn	16 06 45.4	-0.5
JOU				*e*S	Sn	16 07 16.8	-0.4
JFK	Kawauchi	2.71	250	P	Pn	16 06 44.2	-2.0
JANG	Nango	2.85	317	P	Pn	16 06 47.5	-0.7
JANG				*e*S	Sn	16 07 21.0	-0.3
JRG	Rokugo	2.90	293	P	Pn	16 06 48.8	+0.1
JRG				*e*S	Sn	16 07 23.3	+1.0
JYK	Kaneyama	2.97	283	P	Pn	16 06 49.5	-0.3
JFT	Otama	3.07	256	P	Pn	16 06 50.6	-0.5
JTM	Tenmabayashi	3.39	318	P	Pn	16 06 55.0	-0.5
JTM				S	Sn	16 07 33.0	-1.4
ERM	Erimo	3.75	349	*e*Pn	Pn	16 06 59.7	-0.8
ERM				*e*Sn	Sn	16 07 41.8	-1.7
JOT	Ohata	3.84	324	P	Pn	16 07 02.1	+0.3
JOT				*e*S	Sn	16 07 43.4	-2.3
JNBK	Urakawa-nobuka	4.08	346	P	Pn	16 07 04.5	-0.5
JKB	Kayabe	4.26	328	P	Pn	16 07 07.6	+0.2
JKB				S	Sn	16 07 53.1	-2.8
JCH	Churui	4.32	353	P	Pn	16 07 07.0	-1.3
JCH				*e*S	Sn	16 07 54.4	-3.0
JRY	Ryogami san	4.73	242	P	Pn	16 07 12.6	-1.4
MJAR	Matsushiro Arr	5.00	251	Pn	Pn	16 07 17.7	0.0
	9.8nm,0.3s,baz=64,slow=9.7,SNR=61						
MJAR				Sn	Sn	16 08 13.4	-0.8
	baz=84,slow=27,SNR=3.3						
MAJO	Matsushiro	5.00	251	*e*Pn	Pn	16 07 17.8	+0.1
MAT	Matsushiro	5.00	251	P	Pn	16 07 17.8	+0.1
MAT				S	Sn	16 08 12.5	-1.8
JHJ2	Mitsune	6.25	215	*e*Pn	Pn	16 07 30.7	-4.1
JHJ2				*e*Sn	Sn	16 08 35.5	-9.5
JHJ	Hachijo jima 2	6.26	215	Pn	Pn	16 07 31.1	-3.9
	15nm,0.3s,baz=3.8,slow=20,SNR=19						
JHJ				Sn	Sn	16 08 35.0	-10
	36nm,0.3s,baz=87,slow=22,SNR=12						
INU	Inuyama	6.39	244	*e*Pn	Pn	16 07 35.8	-1.0
USRK	Ussuriysk Ar.	10.82	307	Pn	Pn	16 08 38.2	+0.7
	0.4nm,0.3s,baz=119,slow=14,SNR=7.5						
JNU	Nakatsue	11.91	248	Pn	Pn	16 08 52.2	-0.3
	0.2nm,0.3s,baz=228,slow=12,SNR=2.9						
JNU	Nakatsue	11.91	248	*e*Pn	Pn	16 08 51.9	-0.6
KSRS	Korea Array	12.80	271	Pn	Pn	16 09 06.0	+1.6
	0.2nm,0.3s,baz=80,slow=14,SNR=5.3						
KS15	Wonju Array Si	12.83	271	*e*Pn	Pn	16 09 05.7	+0.8
KSAR	Wonju Array Be	12.83	271	Pn	Pn	16 09 06.0	+1.1
KLR	Kul'dur	14.06	325	Pn	Pn	16 09 20.9	-0.7
	0.1nm,0.3s,baz=153,slow=14,SNR=2.1						
KLR				LR	LR	16 14 36.0	
	comp=Z,182nm,21.2s,baz=122,slow=36						
MA2	Magadan	21.70	9	P	P	16 10 53.4	+0.7
	3.0nm,0.6s,baz=214,slow=10,SNR=8.8						
SEY	Seymchan	25.15	9	P	P	16 11 28.3	+1.6
	2.5nm,0.8s,baz=193,slow=9.1,SNR=26						
YAK	Yakutsk	25.34	344	P	P	16 11 29.8	+1.4
	0.9nm,0.4s,baz=357,slow=23,SNR=4.4						
YAK	Yakutsk	25.34	344	*e*P	P	16 11 29.4	+1.0
	13nm,0.7s						
SONA0	Songino Array	28.87	301	*e*P	P	16 12 02.1	+1.6
	6.9nm,1.5s						
SONM	Songino Array	28.87	301	P	P	16 12 02.1	+1.6
	0.9nm,0.8s,baz=91,slow=10,SNR=5.5						
ZAA1	Zalesovo Array	42.63	311	*e*P	P	16 14 00.4	+2.6
ZAA1				*e*PcP	PcP	16 15 49.8	+0.4
ZALV	Zalesovo Beam	42.63	311	P	P	16 14 00.4	+2.6
	0.5nm,0.5s,baz=60,slow=8.5,SNR=3.0						
ZALV				PcP	PcP	16 15 49.8	+0.4
	1.3nm,0.7s,baz=89,slow=3.2,SNR=4.7						
CMAR	Chiang Mai Arr	43.86	256	P	P	16 14 10.2	+2.0

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
	0.4nm,0.8s,baz=43,slow=8.8,SNR=5.1						
MK01	**Makanchi Array**	**45.24**	**301**	*e*P	**P**	**16 14 19.9**	**+1.0**
MK31	**Makanchi Array**	**45.24**	**301**	*e*P	**P**	**16 14 20.0**	**+1.1**
MK32	**Makanchi Array**	**45.24**	**301**	*e*P	**P**	**16 14 20.1**	**+1.2**
MKAR	**Makanchi Array**	**45.24**	**301**	P	**P**	**16 14 20.1**	**+1.2**
	0.4nm,0.4s,baz=86,slow=8.6,SNR=6.1						
KURK	**Kurchatov**	**46.81**	**308**	*e*P	**P**	**16 14 32.3**	**+1.1**
KURBB	**Kurchatov Arra**	**46.89**	**307**	P	**P**	**16 14 32.3**	**+0.5**
	0.5nm,0.3s,baz=84,slow=8.3,SNR=4.4						
ILAR	**Eielson Array**	**47.27**	**33**	P	**P**	**16 14 34.4**	**-0.2**
	1.1nm,0.9s,baz=253,slow=7.2,SNR=8.2						
ILB	**Eielson Array**	**47.27**	**33**	*e*P	**P**	**16 14 34.4**	**-0.2**
TKM2	**Tokmak 2**	**50.88**	**298**	*e*P	**P**	**16 15 04.5**	**+1.7**
	5.1nm,1.1s						
WR1	**Warramunga Arr**	**58.67**	**191**	*e*P	**P**	**16 15 57.5**	**-1.6**
	28nm,1.6s						
WR1				*e*PcP	**PcP**	**16 16 48.7**	**-0.1**
WRA	**Warramunga Arr**	**58.67**	**191**	P	**P**	**16 15 57.5**	**-1.6**
	2.1nm,0.7s,baz=12,slow=7.3,SNR=22						
WRA				PcP	**PcP**	**16 16 48.7**	**-0.1**
	0.6nm,0.6s,baz=5.3,slow=4.6,SNR=5.6						
YKA	**Yellowknife Ar**	**61.62**	**31**	P	**P**	**16 16 18.8**	**0.0**
	0.4nm,0.7s,baz=303,slow=6.7,SNR=8.2						
ASAR	**Alice Springs**	**62.40**	**191**	P	**P**	**16 16 23.2**	**-1.2**
	0.7nm,0.7s,baz=18,slow=8.2,SNR=12						
FIA0	**FINESS Array S**	**68.65**	**333**	*e*P	**P**	**16 17 05.1**	**+0.7**
FINES	**FINESS Array B**	**68.65**	**333**	P	**P**	**16 17 05.1**	**+0.7**
	2.3nm,1.0s,baz=30,slow=5.0,SNR=4.2						
NV01	**Mina Array Sit**	**72.52**	**55**	*e*P	**P**	**16 17 29.4**	**+0.7**
NVAR	**Mina Array Bea**	**72.52**	**55**	P	**P**	**16 17 29.5**	**+0.8**
	2.7nm,0.7s,baz=286,slow=6.8,SNR=17						
NB200	**NORSAR Array S**	**73.80**	**338**	*e*P	**P**	**16 17 36.5**	**+0.9**
NOA	**NORSAR Array B**	**73.80**	**338**	P	**P**	**16 17 36.5**	**+0.9**
	0.9nm,0.8s,baz=76,slow=4.2,SNR=3.8						
AKASG	**Malin Array Be**	**74.55**	**323**	P	**P**	**16 17 40.9**	**+0.7**
	0.2nm,0.3s,baz=44,slow=6.0,SNR=4.7						
AKBB	**Malin Array Si**	**74.55**	**323**	*e*P	**P**	**16 17 40.9**	**+0.7**
	5.3nm,0.6s						
BW06	**Boulder Array**	**75.25**	**47**	*e*P	**P**	**16 17 45.0**	**+0.4**
PD31	**Pinedale Array**	**75.25**	**47**	*e*P	**P**	**16 17 43.1**	**-1.6**
PDAR	**Pinedale Array**	**75.25**	**47**	P	**P**	**16 17 45.1**	**+0.5**
	1.6nm,0.6s,baz=271,slow=1.8,SNR=18						
ULM	**Lac du Bonnet**	**77.25**	**35**	P	**P**	**16 17 56.0**	**+0.4**
	1.3nm,0.7s,baz=80,slow=9.5,SNR=2.9						
GERES	**GERESS Array B**	**82.70**	**330**	P	**P**	**16 18 25.9**	**+0.8**
	0.5nm,0.7s,baz=53,slow=6.7,SNR=2.4						
LTX	**Lajitas**	**87.66**	**54**	*e*P	**P**	**16 18 50.4**	**+0.1**
TXAR	**Lajitas Array**	**87.66**	**54**	P	**P**	**16 18 50.4**	**+0.1**
	0.3nm,0.5s,baz=305,slow=3.2,SNR=3.6						
TORD	**Torodi Ar. Bea**	**117.86**	**318**	PKP	**PKPdf**	**16 24 47.3**	**-1.1**
	0.1nm,0.6s,baz=13,slow=2.6,SNR=2.5						
VNA2	**Neumayer--Watz**	**144.13**	**196**	PKP	**PKPdf**	**16 25 33.6**	**-2.3**
	baz=120,slow=0.9						
LPAZ	**La Paz**	**144.22**	**61**	PKP	**PKPdf**	**16 25 37.7**	**-0.8**
	0.6nm,0.6s,baz=331,slow=2.7,SNR=2.8						
VNA3	**Neumayer Olymp**	**144.34**	**194**	PKP	**PKPdf**	**16 25 34.1**	**-2.2**
VNA1	**Neumayer--Stat**	**144.53**	**195**	PKP	**PKPdf**	**16 25 35.3**	**-1.2**

IDC 06 16:21:34.4±7.1**, 19°.43S×179°.86E, h0km, mb3.8**/4**, mb1 3.8**/4**, mb1mx3.6**/34**, mbtmp3.7**/4**, Error ellipse: s-maj=197.8km s-min=56.9km az=125.0, South of Fiji Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
STKA	**Stephens Creek**	**36.47**	**242**	P	P	16 28 41.3	-0.1
	0.8nm,0.6s,baz=90,slow=10,SNR=2.5						
WRA	**Warramunga Arr**	**42.76**	**261**	P	P	16 29 33.9	-0.1
	0.2nm,0.3s,baz=96,slow=7.8,SNR=11						
ASAR	**Alice Springs**	**42.81**	**256**	P	P	16 29 34.2	-0.3
	0.9nm,0.8s,baz=97,slow=8.0,SNR=9.2						
SONM	**Songino Array**	**93.64**	**320**	P	P	16 34 52.7	-0.1
	0.6nm,0.7s,baz=112,slow=2.0,SNR=3.6						

*NIED **06** 16:25:00, 38°.40N×142°.20E, h38km, Mw4.4 Best double couple: $M_0$3.89000×10^15 NP1:ϕ_s271.00000°, δ22.00000°, λ-179.00000°. NP2:ϕ_s180.00000°, δ90.00000°, λ-68.00000°.*

*IDC **06** 16:25:35.0±0.5, 38°.33N×142°.14E, h0km, mb4.3/26, mb1 4.5/29, mb1mx4.4/46, mbtmp4.4/29, ML4.8/2, MS3.6/7, Ms1 3.6/7, ms1mx3.2/49, Error ellipse: s-maj=15.0km s-min=12.0km az=95.0*

*BJI **06** 16:25:37.3, 38°.24N×142°.23E, h36km, mb4.8/59, mB5.0/39, Ms4.5/28, Ms7 4.2/28*

*ISCJB **06** 16:25:37.2±0.8, 38°.32N±0°.03×142°.25E±0°.04, h28km±4km, mb4.5/82, MS4.0/8, Error ellipse: s-maj=5.6km s-min=4.0km az=35.3*

*MOS **06** 16:25:38.5±1.0, 38°.38N×142°.27E, h36km, mb4.9/33, Error ellipse: s-maj=8.3km s-min=5.5km az=103.1*

*JMA **06** 16:25:39.5±0.2, 38°.39N×142°.14E, h39km±3km, M4.5*

JMA Felt III J1.

*NEIC **06** 16:25:41.2±0.6, 38°.32N×142°.16E, h45km±5km, mb4.8/30, Error ellipse: s-maj=6.3km s-min=4.7km az=118.0*

NEIC Recorded [3 JMA] in Miyagi.

ISC 06 16:25:38.7±0.8**, 38°.34N**±0°.04**×142°.25E**±0°.04**, h27**km±4km**, n195, σ1s.35**/218**, mb4.6**/86**, MS3.9**/8**, 4C-5D, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**0.72**	**279**	P	**Pb**	**16 25 52.0**	**-0.6**
JIO				S	**Sb**	**16 26 00.2**	**-1.9**
OFUJ	**Ofunato**	**0.87**	**329**	P	**Pb**	**16 25 54.1**	**-1.1**
JMK	**Ichinoseki**	**1.01**	**307**	P	**Pn**	**16 25 56.2**	**-1.0**
JMK				S	**Sb**	**16 26 08.1**	**-2.4**
JMM	**Marumori**	**1.24**	**248**	P	**Pn**	**16 25 59.5**	**-0.9**
JMM				S	**Sn**	**16 26 14.3**	**-2.0**
JOU	**Okura**	**1.25**	**272**	P	**Pn**	**16 26 00.0**	**-0.5**
JOU				S	**Sn**	**16 26 15.0**	**-1.4**
JOM	**Ohasama**	**1.36**	**327**	P	**Pn**	**16 26 01.6**	**-0.3**
JOM				*e*S	**Sn**	**16 26 17.8**	**-1.3**
JFK	**Kawauchi**	**1.46**	**229**	P	**Pn**	**16 26 02.5**	**-0.9**
JFK				S	**Sn**	**16 26 19.1**	**-2.6**
MJAR	**Matsushiro Arr**	**3.68**	**242**	Pn	**Pn**	**16 26 35.2**	**+1.2**
	17nm,0.3s,baz=69,slow=11,SNR=95						
MJAR				LR	LR	16 28 14.4	
	comp=Z,1µm,18.3s,baz=60,slow=44						
MAJO	**Matsushiro**	**3.68**	**242**	*c i*P	**Pn**	**16 26 35.3**	**+1.3**
MAJO	**Matsushiro**	**3.68**	**242**	*e*Pn	**Pn**	**16 26 35.2**	**+1.2**
MAT	**Matsushiro**	**3.68**	**242**	P	**Pn**	**16 26 35.2**	**+1.2**
MAT				*e*S	**Sn**	**16 27 21.2**	**+4.7**
ERM	**Erimo**	**3.74**	**10**	*d i*P	**Pn**	**16 26 36.2**	**+1.6**
ERM	**Erimo**	**3.74**	**10**	*e*Pn	**Pn**	**16 26 35.8**	**+1.1**
INU	**Inuyama**	**5.15**	**236**	*e*Pn	**Pn**	**16 26 56.5**	**+2.4**
JHJ2	**Mitsune**	**5.58**	**202**	*e*Pn	**Pn**	**16 26 59.7**	**-0.3**
JHJ	**Hachijo jima 2**	**5.58**	**202**	Pn	**Pn**	**16 27 00.0**	**0.0**
	66nm,0.3s,baz=334,slow=22,SNR=44						
JHJ				Sn	**Sn**	**16 28 00.4**	**-2.9**
	53nm,0.3s,baz=14,slow=22,SNR=6.2						
JHJ				LR	LR	16 29 26.0	
	comp=Z,186nm,21.1s,baz=82,slow=42						
YUK	**Yuzh-Kuril'sk**	**6.31**	**24**	*e*P	**Pn**	**16 27 09.6**	**-0.3**
YUK				*e*S	**Sn**	**16 28 16.7**	**-4.4**
YUK				pmax	pmax		
	comp=Z,110nm,0.4s						
YUK				pmax	pmax		
	comp=E,32nm,0.2s						
YUK				pmax	pmax		
	comp=N,85nm,0.3s						
SHO	**Shikotan**	**6.52**	**31**	*e*P	**Pn**	**16 27 11.1**	**-1.7**
SHO				*e*S	Sn	16 28 19.2	-7.0
SHO				pmax	pmax		
	comp=Z,45nm,0.5s						
SHO				pmax	pmax		
	comp=E,38nm,0.3s						
SHO				pmax	pmax		
	comp=N,9.0nm,0.5s						
KUR	**Kuril'sk**	**8.06**	**30**	*e*P	**Pn**	**16 27 33.3**	**-0.7**
KUR				*e*S	**Sn**	**16 28 59.7**	**-4.5**
KUR				pmax	pmax		
	comp=N,19nm,0.6s						
KUR				pmax	pmax		
	comp=E,12nm,0.6s						
KUR				pmax	pmax		
	comp=Z,22nm,0.6s						
KUR				smax	smax		
	comp=N,42nm,0.5s						
KUR				smax	smax		
	comp=E,67nm,0.5s						
YSS	**Yuzh-Sakhalins**	**8.62**	**2**	⇓*i*P	**Pn**	**16 27 44.4**	**+2.8**
USRK	**Ussuriysk Ar.**	**9.69**	**310**	Pn	**Pn**	**16 27 57.4**	**+1.0**
	comp=E,0.7nm,0.3s,baz=124,slow=14,SNR=21						
USRK				LR	LR	16 31 29.3	
	comp=E,350nm,18.8s,baz=111,slow=37						
JNU	**Nakatsue**	**10.61**	**244**	Pn	**Pn**	**16 28 12.1**	**+3.1**
	comp=E,1.6nm,0.3s,baz=62,slow=3.6,SNR=26						
JNU				LR	LR	16 32 35.8	
	comp=E,549nm,19.6s,baz=60,slow=40						
JNU	**Nakatsue**	**10.61**	**244**	*e*Pn	**Pn**	**16 28 11.5**	**+2.5**
CBIJ	**Chichi jima**	**11.21**	**180**	Pn	**Pn**	**16 28 16.6**	**-0.7**
CBIJ				Sn	Sn	16 30 06.5	-15
JCJ	**Chichijima**	**11.21**	**180**	Pn	**Pn**	**16 28 16.6**	**-0.7**
	comp=E,10.0nm,0.3s,baz=6.7,slow=18,SNR=3.9						
JCJ				Sn	Sn	16 30 06.5	-15
	comp=E,3.6nm,0.3s,baz=270,slow=19,SNR=3.2						
KSRS	**Korea Array**	**11.36**	**270**	Pn	Pn	16 28 22.5	+3.3
	comp=E,0.4nm,0.3s,baz=82,slow=13,SNR=14						
KSRS				LR	LR	16 32 30.6	
	comp=E,261nm,18.7s,baz=92,slow=37						
MDJ	**Mudanjiang**	**11.37**	**307**	P	**Pn**	**16 28 22.0**	**+2.6**
MDJ				pmax	pmax		
	comp=E,10.0nm,1.0s						
MDJ				pmax	pmax		
	comp=E,75nm,4.5s						
KSAR	**Wonju Array Be**	**11.39**	**270**	P	**Pn**	**16 28 22.5**	**+2.8**
KSAR	**Wonju Array Be**	**11.39**	**270**	Pn	**Pn**	**16 28 22.5**	**+2.8**
KLR	**Kul'dur**	**13.25**	**329**	Pn	**Pn**	**16 28 45.2**	**+0.2**
	comp=E,0.1nm,0.3s,baz=130,slow=17,SNR=2.8						
KLR				LR	LR	16 33 36.3	
	comp=E,170nm,18.6s,baz=120,slow=36						
DL2	**Dalian**	**16.13**	**278**	P	**P**	**16 29 25.3**	**-1.3**
DL2				pmax	pmax		
	comp=E,73nm,1.0s						
TIA	**Tai'an**	**20.09**	**272**	*e*P	**P**	**16 30 09.2**	**-1.1**
TIA				pmax	pmax		
	comp=E,20nm,0.8s						
NJ2	**Nanjing**	**20.10**	**259**	*e*P	**P**	**16 30 10.2**	**-0.1**
NJ2				pmax	pmax		
	comp=E,21nm,0.5s						
BJI	**Beijing**	**20.26**	**283**	P	**P**	**16 30 11.4**	**-0.7**
BJI				pmax	pmax		
	comp=E,14nm,0.7s						
MA2	**Magadan**	**21.94**	**12**	P	**P**	**16 30 31.0**	**+1.0**
	comp=E,5.6nm,0.7s,baz=223,slow=9.1,SNR=12						
MA2	**Magadan**	**21.94**	**12**	*e*P	**P**	**16 30 31.1**	**+1.1**
MA2				pmax	pmax		
	comp=Z,40nm,0.6s						
MA2	**Magadan**	**21.94**	**12**	*e*P	**P**	**16 30 31.1**	**+1.1**
	comp=Z,40nm,0.6s						
HHC	**Hu-ho-hao-te**	**23.72**	**286**	*e*P	**P**	**16 30 46.9**	**-1.8**
HHC				S	**S**	**16 35 00.7**	**-1.5**
HHC				SS	**SnSn**	**16 35 46.6**	**+5.7**
HHC				pmax	pmax		
	comp=Z,10.0nm,1.0s						
HHC				pmax	pmax		
	comp=Z,110nm,4.1s						
HHC				LR	LR		
	comp=Z,840nm,12.1s						
HHC				LR	LR		
	comp=Z,900nm,13.8s						
HHC				LR	LR		
	comp=Z,880nm,14.0s						
TPUB	**Ta-pu**	**23.78**	**237**	*e*P	**P**	**16 30 46.8**	**-2.4**
	comp=Z,24nm,0.8s						
TWG	**Pinlang**	**23.83**	**236**	*e*P	**P**	**16 30 48.0**	**-1.7**
	comp=Z,137nm,0.9s						
WHN	**Wuhan**	**24.23**	**260**	P	**P**	**16 30 52.5**	**-0.8**
WHN				S	**S**	**16 35 09.0**	**-1.2**
WHN				pmax	pmax		
	comp=Z,50nm,0.8s						
WHN				LR	LR		
	comp=Z,610nm,20.6s						
CIT	**Chita**	**24.23**	**314**	*e*P	**P**	**16 30 53.4**	**+0.2**
CIT				*e*		16 31 00.5	
YAK	**Yakutsk**	**24.95**	**346**	P	**P**	**16 30 58.8**	**-0.7**
	comp=Z,1.6nm,0.2s,baz=147,slow=16,SNR=10						
YAK	**Yakutsk**	**24.95**	**346**	*e*P	**P**	**16 30 59.9**	**+0.3**
YAK				pmax	pmax		
	comp=N,6.0nm,1.2s						
YAK				pmax	pmax		
	comp=Z,7.0nm,0.8s						
YAK	**Yakutsk**	**24.95**	**346**	*e*P	**P**	**16 30 57.9**	**-1.7**
	comp=Z,38nm,0.8s						
SEY	**Seymchan**	**25.38**	**11**	P	**P**	**16 31 05.8**	**+2.4**
	comp=Z,4.3nm,0.7s,baz=203,slow=8.0,SNR=28						
BOD	**Bodaibo**	**26.80**	**326**	*e*P	**P**	**16 31 15.5**	**-0.9**
BOD				pmax	pmax		
	comp=Z,6.0nm,0.9s						
XAN	**Xi'an**	**27.15**	**271**	P	**P**	**16 31 19.2**	**-0.7**
XAN				pmax	pmax		
	comp=Z,13nm,0.5s						
XAN				pmax	pmax		
	comp=Z,51nm,9.6s						
SONA1	**Songino Array**	**27.63**	**302**	*e*P	**P**	**16 31 23.4**	**-0.7**
SONM	**Songino Array**	**27.64**	**302**	P	**P**	**16 31 23.5**	**-0.6**
	comp=Z,1.8nm,0.7s,baz=108,slow=9.0,SNR=10						
ENH	**Enshi**	**28.12**	**263**	*e*P	**P**	**16 31 27.4**	**-1.2**
	comp=Z,65nm,1.0s						
H11N2	**WAKE ISLAND Hy**	**28.29**	**124**	T	T	17 01 44.7	
	baz=316,slow=75,SNR=980						
H11N1	**WAKE ISLAND Hy**	**28.29**	**124**	T	T	17 01 48.2	
	baz=316,slow=75,SNR=1464						
H11N3	**WAKE ISLAND Hy**	**28.30**	**124**	T	T	17 01 48.9	
	baz=316,slow=75,SNR=1151						
H11S1	**WAKE ISLAND Hy**	**29.05**	**126**	T	T	17 02 48.2	
	baz=318,slow=76,SNR=684						
H11S3	**WAKE ISLAND Hy**	**29.05**	**126**	T	T	17 02 43.7	
	baz=318,slow=76,SNR=857						
H11S2	**WAKE ISLAND Hy**	**29.07**	**126**	T	T	17 02 42.9	
	baz=318,slow=76,SNR=558						
TLY	**Talaya**	**30.00**	**309**	P	**P**	**16 31 44.6**	**-0.4**
	comp=Z,4.1nm,0.6s,baz=180,slow=3.2,SNR=7.8						
TLY	**Talaya**	**30.00**	**309**	*e*P	**P**	**16 31 44.9**	**-0.1**
TLY				pmax	pmax		
	comp=Z,10.0nm,1.0s						
TLY				MLR	MLR		
	comp=Z,127nm,15.0s						
TLY	**Talaya**	**30.00**	**309**	*e*P	**P**	**16 31 44.3**	**-0.7**
	comp=Z,6.9nm,0.8s						
ZAK	**Zakamensk**	**30.01**	**306**	*e*P	**P**	**16 31 44.4**	**-0.8**
ZAK				pmax	pmax		
	comp=Z,7.0nm,1.0s						
LZH	**Lanzhou**	**30.52**	**278**	*e*P	**P**	**16 31 50.0**	**0.0**
LZH				pP	pP	16 31 59.3	+1.5
LZH				sP	sP	16 32 05.7	+4.6
LZH				pmax	pmax		
	comp=Z,25nm,1.0s						
LZH				pmax	pmax		
	comp=Z,140nm,4.2s						
MOY	**Mondy**	**31.63**	**308**	*e*P	**P**	**16 31 59.8**	**+0.4**
MOY				pmax	pmax		
	comp=Z,2.0nm,1.0s						
GYA	**Guiyang**	**32.11**	**259**	⇑*i*P	**P**	**16 32 02.8**	**-1.1**
GYA				pP	sP	16 32 17.0	+1.9
GYA				PP	**PnPn**	**16 33 11.4**	**+1.5**
GYA				PcP	**PcP**	**16 34 53.8**	**+1.0**
GYA				S	**S**	**16 37 11.0**	**-3.9**
GYA				sS	sS	16 37 32.6	+4.8
GYA				ScP	**ScP**	**16 38 32.2**	**-2.3**
GYA				SS	**SnSn**	**16 39 05.5**	**-0.3**
GYA				ScS	**ScS**	**16 42 29.2**	**-4.3**
GYA				pmax	pmax		
	comp=Z,20nm,0.7s						
GYA				pmax	pmax		
	comp=Z,120nm,6.0s						
GYA				LR	LR		
	comp=Z,580nm,16.0s						
GYA				LR	LR		
	comp=Z,550nm,16.2s						
GYA				LR	LR		
	comp=Z,530nm,16.6s						
CD2	**Chengdu**	**32.35**	**269**	P	**P**	**16 32 04.5**	**-1.5**
CD2				pmax	pmax		
	comp=Z,1.0nm,0.5s						
BILL	**Bilibino**	**32.59**	**17**	*i* P	**P**	**16 32 08.1**	**+0.6**
BILL				pmax	pmax		
	comp=Z,7.0nm,1.5s						
GTA	**Gaotai**	**32.84**	**285**	*e*P	**P**	**16 32 10.5**	**+0.3**
GTA				pP	sP	16 32 23.4	+2.1
GTA				sP	pP	16 32 27.4	+9.3
GTA				S	**S**	**16 37 24.9**	**-1.1**
GTA				sS	sS	16 37 45.8	+6.8
GTA				SS	**SnSn**	**16 39 27.2**	**+4.0**
GTA				pmax	pmax		
	comp=Z,8.0nm,1.1s						
GTA				pmax	pmax		
	comp=Z,220nm,4.5s						
GTA				LR	LR		
	comp=Z,100nm,16.6s						
GTA				LR	LR		
	comp=Z,220nm,19.0s						
GTA				LR	LR		
	comp=Z,310nm,18.5s						
TIXI	**Tiksi**	**34.08**	**352**	⇓*i*P	**P**	**16 32 20.4**	**-0.1**
TIXI				pmax	pmax		
	comp=Z,7.0nm,2.5s						
TIXI	**Tiksi**	**34.08**	**352**	*e*P	**P**	**16 32 20.0**	**-0.4**
	comp=Z,14nm,1.8s						
KMI	**Kunming**	**35.83**	**260**	P	**P**	**16 32 37.2**	**+0.8**
KMI				pP	sP	16 32 50.4	+2.9
KMI				sP	pP	16 32 55.4	+11
KMI				pmax	pmax		
	comp=Z,18nm,0.8s						
KMI				pmax	pmax		
	comp=Z,36nm,5.7s						
KMI				LR	LR		
	comp=Z,81nm,18.9s						
KMI				LR	LR		
	comp=Z,140nm,19.8s						
KMI				LR	LR		
	comp=Z,180nm,17.7s						
KRAR	**Krasnoyarsk**	**37.00**	**315**	P	**P**	**16 32 45.0**	**-0.7**
KRAR				pmax	pmax		
	comp=Z,18nm,1.0s						
CRAI	**Chiangrai**	**40.34**	**256**	P	**P**	**16 33 13.4**	**-0.8**
	comp=Z,35nm,0.8s						
WMQ	**Urumqi**	**40.86**	**296**	P	**P**	**16 33 19.8**	**+1.5**
WMQ				pP	sP	16 33 30.6	+1.1
WMQ				sP	pP	16 33 38.0	+12
WMQ				PP	**PnPn**	**16 34 57.7**	**+0.8**
WMQ				PcP	**PcP**	**16 35 20.7**	**+2.0**
WMQ				S	**S**	**16 39 25.3**	**-2.7**
WMQ				sS	sS	16 39 47.8	+6.7
WMQ				pmax	pmax		
	comp=Z,19nm,0.8s						
WMQ				pmax	pmax		
	comp=Z,90nm,5.6s						
WMQ				LR	LR		
	comp=Z,100nm,25.0s						
WMQ				LR	LR		
	comp=Z,19nm,28.8s						
WMQ				LR	LR		
	comp=Z,97nm,23.0s						
ZAA0	**Zalesovo Array**	**41.54**	**311**	*e*P	**P**	**16 33 22.8**	**-0.8**
ZALV	**Zalesovo Beam**	**41.54**	**311**	P	**P**	**16 33 23.9**	**+0.2**
	comp=Z,8.3nm,0.5s,baz=86,slow=7.7,SNR=36						
ZALV				PcP	**PcP**	**16 35 20.7**	**+0.1**
	comp=Z,1.1nm,0.3s,baz=113,slow=3.9,SNR=4.1						
UTTA	**Uttaradit**	**41.69**	**252**	P	**P**	**16 33 26.6**	**+1.3**
	comp=Z,2.5nm,0.9s						
LAMP	**Lampang**	**41.92**	**254**	P	**P**	**16 33 28.9**	**+1.7**
	comp=Z,3.2nm,0.9s						
PBKT	**Sadao Pong**	**42.12**	**251**	P	**P**	**16 33 29.8**	**+1.0**
	comp=Z,5.4nm,1.0s						
CMMT	**Chiang Mai**	**42.26**	**255**	P	**P**	**16 33 29.9**	**-0.1**
	comp=Z,10nm,0.8s						
CHTO	**Chiang Mai**	**42.26**	**255**	P	**P**	**16 33 30.0**	**0.0**
	comp=Z,47nm,0.8s						
CHTO	**Chiang Mai**	**42.26**	**255**	*e*P	**P**	**16 33 29.8**	**-0.2**
CHTO				pmax	pmax		
	comp=Z,8.0nm,0.8s						
CHTO	**Chiang Mai**	**42.26**	**255**	*e*P	**P**	**16 33 29.8**	**-0.2**
	comp=Z,8.1nm,0.8s						
NRIK	**Noril'sk**	**42.37**	**335**	P	**P**	**16 33 29.9**	**-0.3**
	comp=Z,3.1nm,0.3s,baz=109,slow=6.5,SNR=9.4						
NVS	**Novosibirsk**	**42.43**	**313**	*e*P	**P**	**16 33 31.1**	**+0.2**
NVS				pmax	pmax		
	comp=Z,9.0nm,1.0s						
NVS				pmax	pmax		
	comp=E,6.0nm,0.9s						
CM31	**Chiang Mai Arr**	**42.48**	**255**	*e*P	**P**	**16 33 31.6**	**-0.1**
CMAR	**Chiang Mai Arr**	**42.48**	**255**	P	**P**	**16 33 31.3**	**-0.4**
	comp=E,2.5nm,0.7s,baz=44,slow=7.3,SNR=33						
CMAR				PcP	**PcP**	**16 35 24.9**	**+0.5**
	comp=E,0.4nm,0.6s,baz=16,slow=3.0,SNR=4.0						
CM01	**Chiang Mai Arr**	**42.49**	**255**	*e*P	**P**	**16 33 31.6**	**-0.2**
LSA	**Lhasa**	**42.76**	**274**	*e*P	**P**	**16 33 34.9**	**+0.3**
LSA				pmax	pmax		
	comp=Z,7.0nm,0.6s						
LSA	**Lhasa**	**42.76**	**274**	*e*P	**P**	**16 33 34.9**	**+0.3**
	comp=Z,6.7nm,0.6s						
MHMT	**Maesarieng**	**43.41**	**255**	P	**P**	**16 33 40.0**	**+0.7**
	comp=Z,12nm,0.8s						
MK01	**Makanchi Array**	**44.00**	**301**	*e*P	**P**	**16 33 43.2**	**-0.5**
MK31	**Makanchi Array**	**44.00**	**301**	*e*P	**P**	**16 33 43.5**	**-0.3**
MK31	**Makanchi Array**	**44.00**	**301**	*e*P	**P**	**16 33 43.5**	**-0.3**
MKAR	**Makanchi Array**	**44.00**	**301**	P	**P**	**16 33 43.7**	**-0.1**
	comp=Z,2.9nm,0.8s,baz=87,slow=11,SNR=21						
MAKZ	**Makanchi**	**44.21**	**301**	*e*P	**P**	**16 33 44.9**	**-0.6**
MAKZ				pmax	pmax		
	comp=Z,8.0nm,0.8s						
MAKZ	**Makanchi**	**44.21**	**301**	*e*P	**P**	**16 33 44.9**	**-0.6**
	comp=Z,8.1nm,0.8s						
KURK	**Kurchatov**	**45.66**	**307**	*e*P	**P**	**16 33 56.6**	**-0.3**
KURK				pmax	pmax		
	comp=Z,19nm,0.8s						
KURK	**Kurchatov**	**45.66**	**307**	*e*P	**P**	**16 33 56.6**	**-0.3**
	comp=Z,19nm,0.8s						
TAPN	**Taplejung**	**46.52**	**273**	*e*P	**P**	**16 34 04.7**	**+0.3**
	comp=Z,20nm,0.6s						
ODAN	**Odare**	**47.00**	**273**	*e*P	**P**	**16 34 08.3**	**+0.2**
	comp=Z,25nm,0.7s						
MDM	**Murphy Dome**	**47.46**	**33**	*e*P	**P**	**16 34 12.9**	**+2.0**
	comp=Z,28nm,1.9s						
RAMN	**Ramite**	**47.58**	**273**	*e*P	**P**	**16 34 12.6**	**0.0**
	comp=Z,79nm,0.9s						
GUN	**Gumba**	**47.70**	**275**	*e*P	**P**	**16 34 13.8**	**+0.2**
	comp=Z,21nm,0.3s						
IL1	**Eielson Array**	**48.04**	**33**	*e*P	**P**	**16 34 16.2**	**+0.9**
ILAR	**Eielson Array**	**48.04**	**33**	P	**P**	**16 34 16.5**	**+1.2**
	comp=Z,1.7nm,0.7s,baz=266,slow=6.3,SNR=17						
KKN	**Kakani**	**48.22**	**275**	*e*P	**P**	**16 34 17.8**	**+0.3**
	comp=Z,56nm,0.8s						
PKIN	**Phulchoki**	**48.23**	**275**	*e*P	**P**	**16 34 17.4**	**-0.2**
	comp=Z,13nm,0.7s						
DMN	**Daman**	**48.44**	**275**	*e*P	**P**	**16 34 19.4**	**+0.2**
	comp=Z,8.6nm,0.5s						
GKN	**Gorkha**	**48.63**	**276**	*e*P	**P**	**16 34 20.5**	**0.0**
	comp=Z,68nm,0.9s						
KOLN	**Koldanda**	**49.55**	**276**	*e*P	**P**	**16 34 27.2**	**-0.4**
	comp=Z,24nm,0.6s						
TKM2	**Tokmak 2**	**49.60**	**298**	*e*P	**P**	**16 34 28.2**	**+0.3**
TKM2				pmax	pmax		
	comp=Z,12nm,1.3s						
TKM2	**Tokmak 2**	**49.60**	**298**	*e*P	**P**	**16 34 28.2**	**+0.3**
	comp=Z,12nm,1.3s						
PYUN	**Piuthan**	**49.87**	**277**	*e*P	**P**	**16 34 30.5**	**+0.4**
	comp=Z,80nm,0.9s						
VOSK	**Vostochnaya**	**49.91**	**311**	*e*P	**P**	**16 34 29.5**	**-0.3**
VOSK				pmax	pmax		
	comp=Z,8.0nm,1.2s						
VOSK	**Vostochnaya**	**49.91**	**311**	*e*P	**P**	**16 34 29.5**	**-0.3**
	comp=Z,8.0nm,1.2s						
BRVK	**Borovoye**	**50.25**	**312**	⇓*e*P	**P**	**16 34 32.7**	**+0.3**
BRVK				pmax	pmax		
	comp=Z,3.0nm,0.8s						
BRVK	**Borovoye**	**50.25**	**312**	*e*P	**P**	**16 34 32.4**	**0.0**
	comp=Z,4.6nm,0.9s						
IPM	**Ipoh**	**50.39**	**239**	*e*P	**P**	**16 34 33.6**	**-0.3**
	comp=Z,13nm,0.8s						
AAK	**Ala-Archa**	**50.46**	**298**	*e*P	**P**	**16 34 34.1**	**-0.3**
AAK				pmax	pmax		
	comp=Z,3.0nm,0.5s						
AAK	**Ala-Archa**	**50.46**	**298**	*e*P	**P**	**16 34 34.1**	**-0.3**
	comp=Z,3.0nm,0.5s						
KSH	**Kashi**	**50.49**	**293**	*e*P	**P**	**16 34 37.3**	**+2.7**
KSH				*e*pP	sP	16 34 49.6	+3.7
KSH				*e*sP	pP	16 34 55.2	+12
KSH				*e*PcP	**PcP**	**16 35 54.6**	**+2.2**
KSH				S	**S**	**16 41 47.3**	**+0.4**
KSH				sS	sS	16 42 08.8	+8.5
KSH				ScS	**ScS**	**16 44 22.1**	**-1.7**
KSH				SS	**SS**	**16 45 22.4**	**+1.8**
KSH				pmax	pmax		
	comp=Z,170nm,5.7s						
KSH				LR	LR		
	comp=Z,100nm,6.6s						
KSH				LR	LR		
	comp=Z,170nm,5.1s						
KSH				LR	LR		
	comp=Z,190nm,7.4s						
ZRNK	**Zerenda**	**51.02**	**312**	*e*P	**P**	**16 34 38.0**	**-0.2**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
ZRNK				pmax	pmax		
	comp=Z,5.0nm,0.6s						
ZRNK	**Zerenda**	**51.02**	**312**	*e*P	**P**	**16 34 38.0**	**-0.2**
	comp=Z,5.4nm,0.6s						
PSI	**Prapat**	**53.03**	**239**	*e*P	**P**	**16 34 53.9**	**+0.1**
PSI				pmax	pmax		
	comp=Z,7.0nm,0.6s						
PSI	**Prapat**	**53.03**	**239**	*e*P	**P**	**16 34 53.9**	**+0.1**
	comp=Z,6.7nm,0.6s						
SVE	**Sverdlovsk**	**54.61**	**318**	*e*P	**P**	**16 35 04.8**	**+0.2**
GSI	**Gunungsitoli**	**55.04**	**239**	*e*P	**P**	**16 35 07.9**	**-0.3**
	comp=Z,15nm,0.6s						
ARU	**Arti**	**55.83**	**318**	*e*P	**P**	**16 35 13.4**	**0.0**
ARU				pmax	pmax		
	comp=Z,7.0nm,0.7s						
ARU	**Arti**	**55.83**	**318**	*e*P	**P**	**16 35 13.4**	**0.0**
	comp=Z,7.3nm,0.7s						
ABKAR	**Akbulak array**	**57.61**	**310**	*e*P	**P**	**16 35 25.8**	**-0.3**
WRA	**Warramunga Arr**	**58.45**	**189**	P	**P**	**16 35 32.0**	**-0.3**
	comp=Z,2.5nm,0.4s,baz=5.5,slow=7.1,SNR=20						
WRA	**Warramunga Arr**	**58.45**	**189**	*i* P	**P**	**16 35 32.4**	**+0.1**
WRA				pmax	pmax		
	comp=Z,2.0nm,0.4s						
HYB	**Hyderabad**	**58.91**	**268**	*i* P	**P**	**16 35 36.0**	**+0.3**
TMCR	**Tamitsa**	**61.92**	**331**	*e*P	**P**	**16 35 55.3**	**-0.2**
TMCR				pmax	pmax		
	comp=Z,9.0nm,0.4s						
AS01	**Alice Springs**	**62.17**	**189**	*e*P	**P**	**16 35 58.2**	**+0.5**
ASAR	**Alice Springs**	**62.17**	**189**	P	**P**	**16 35 58.4**	**+0.7**
	comp=Z,1.0nm,0.4s,baz=13,slow=10,SNR=14						
YKA	**Yellowknife Ar**	**62.35**	**31**	P	**P**	**16 35 59.3**	**+0.8**
	comp=Z,0.8nm,0.6s,baz=304,slow=6.5,SNR=17						
ARCES	**ARCESS Array B**	**63.01**	**339**	P	**P**	**16 36 01.7**	**-1.1**
	comp=Z,3.2nm,0.9s,baz=57,slow=7.4,SNR=9.2						
KLMR	**Klimovskoe**	**63.01**	**328**	*e*P	**P**	**16 36 00.7**	**-2.2**
KLMR				pmax	pmax		
	comp=Z,20nm,1.7s						
GEYT	**Alibeck**	**63.79**	**299**	P	**P**	**16 36 08.4**	**-0.1**
	comp=Z,2.3nm,0.6s,baz=356,slow=4.5,SNR=6.4						
OBN	**Obninsk**	**67.45**	**323**	*i* P	**P**	**16 36 31.0**	**-0.7**
OBN				*i*		16 39 00.2	
OBN				pmax	pmax		
	comp=Z,7.0nm,0.9s						
FIA1	**FINESS Array S**	**67.97**	**332**	*e*P	**P**	**16 36 34.8**	**-0.1**
	comp=Z,12nm,0.8s						
FINES	**FINESS Array B**	**67.97**	**332**	P	**P**	**16 36 35.0**	**0.0**
	comp=Z,9.7nm,0.7s,baz=46,slow=8.2,SNR=34						
FINES	**FINESS Array B**	**67.97**	**332**	*i* P	**P**	**16 36 35.2**	**+0.3**
FINES				pmax	pmax		
	comp=Z,10.0nm,0.7s						
VSU	**Vasula**	**69.67**	**330**	⇑*i*P	**P**	**16 36 45.9**	**+0.4**
VSU				pmax	pmax		
	comp=Z,22nm,0.7s						
STKA	**Stephens Creek**	**69.86**	**181**	P	**P**	**16 36 47.3**	**+0.4**
	comp=Z,1.3nm,0.6s,baz=360,slow=8.3,SNR=6.2						
KIV	**Kislovodsk**	**70.55**	**311**	*e*P	**P**	**16 36 53.2**	**+1.8**
KIV				pmax	pmax		
	comp=Z,16nm,1.1s						
KIV	**Kislovodsk**	**70.55**	**311**	*e*P	**P**	**16 36 52.2**	**+0.8**
	comp=Z,14nm,0.7s						
KBZ	**Khabaz**	**70.56**	**311**	P	**P**	**16 36 51.8**	**+0.6**
	comp=Z,4.6nm,0.7s,baz=78,slow=4.4,SNR=16						
NEY	**Neytrino**	**70.94**	**310**	⇓*e*P	**P**	**16 36 55.0**	**+1.2**
NEY				pmax	pmax		
	comp=Z,1.0nm,0.8s						
NB2	**NORSAR Subarra**	**73.24**	**337**	P	**P**	**16 37 07.3**	**+0.2**
	comp=Z,3.1nm,0.6s,baz=38,slow=6.2						
NOA	**NORSAR Array B**	**73.24**	**337**	P	**P**	**16 37 07.4**	**+0.3**
	comp=Z,3.7nm,0.6s,baz=39,slow=6.0,SNR=17						
NOA				LR	LR	17 11 40.0	
	comp=Z,36nm,21.7s,baz=40,slow=38						
AKASG	**Malin Array Be**	**73.67**	**322**	P	**P**	**16 37 09.7**	**-0.1**
	comp=Z,4.6nm,0.5s,baz=47,slow=5.9,SNR=46						
AKASG	**Malin Array Be**	**73.67**	**322**	*i* P	**P**	**16 37 09.6**	**-0.2**
AKASG				pmax	pmax		
	comp=Z,5.0nm,0.5s						
AKBB	**Malin Array Si**	**73.67**	**322**	*e*P	**P**	**16 37 09.4**	**-0.4**
AKBB				pmax	pmax		
	comp=Z,10.0nm,0.8s						
AKBB	**Malin Array Si**	**73.67**	**322**	*e*P	**P**	**16 37 09.4**	**-0.4**
	comp=Z,10nm,0.8s						
NVAR	**Mina Array Bea**	**73.68**	**54**	P	**P**	**16 37 10.3**	**0.0**
	comp=Z,1.6nm,0.8s,baz=283,slow=6.3,SNR=7.5						
KIEV	**Kiev**	**73.68**	**322**	⇑*e*P	**P**	**16 37 09.7**	**-0.1**
KIEV				pmax	pmax		
	comp=Z,9.0nm,0.8s						
KIEV	**Kiev**	**73.68**	**322**	*e*P	**P**	**16 37 09.5**	**-0.4**
	comp=Z,8.3nm,0.8s						
AK11	**Malin Array Si**	**73.71**	**322**	*e*P	**P**	**16 37 09.6**	**-0.4**
MOOW	**Moose Ponds**	**74.99**	**46**	*e*P	**P**	**16 37 19.1**	**+1.2**
	comp=Z,1.5nm,1.1s						
BW06	**Boulder Array**	**76.28**	**46**	*e*P	**P**	**16 37 26.2**	**+0.8**
PD31	**Pinedale Array**	**76.28**	**46**	*e*P	**P**	**16 37 26.2**	**+0.8**
PDAR	**Pinedale Array**	**76.28**	**46**	P	**P**	**16 37 26.6**	**+1.2**
	comp=Z,1.9nm,0.6s,baz=264,slow=0.9,SNR=24						
BUR08	**Bucovina Ar. S**	**77.69**	**322**	*e*P	**P**	**16 37 33.3**	**+0.3**
ULM	**Lac du Bonnet**	**78.05**	**34**	P	**P**	**16 37 35.1**	**+0.3**
	comp=Z,1.8nm,0.8s,baz=16,slow=6.0,SNR=3.5						
BRTR	**Keskin Array B**	**78.48**	**312**	P	**P**	**16 37 37.7**	**+0.1**
	comp=Z,1.0nm,0.6s,baz=71,slow=3.0,SNR=5.1						
BR231	**Keskin MP Arra**	**78.91**	**312**	*e*P	**P**	**16 37 37.8**	**-2.1**
PV10	**Paradox Valley**	**79.42**	**49**	*e*P	**P**	**16 37 42.5**	**-0.4**
MORC	**Moravsky Berou**	**79.63**	**327**	*e*P	**P**	**16 37 43.8**	**+0.2**
MORC				pmax	pmax		
	comp=Z,13nm,0.7s						
MORC	**Moravsky Berou**	**79.63**	**327**	*e*P	**P**	**16 37 43.8**	**+0.2**
	comp=Z,13nm,0.7s						
DPC	**Dobruska-Polom**	**79.70**	**328**	*e*P	**P**	**16 37 45.1**	**+1.1**
DPC				*e*pP	**sP**	**16 37 54.2**	**-1.4**
DPC	**Dobruska-Polom**	**79.70**	**328**	*e*P	**P**	**16 37 45.1**	**+1.1**
DPC				*e*		16 37 54.2	
VYHS	**Vyhne**	**80.03**	**326**	*e*P	**P**	**16 37 46.5**	**+0.8**
VYHS	**Vyhne**	**80.03**	**326**	*e*P	**P**	**16 37 46.5**	**+0.8**
BRG	**Berggiesshubel**	**80.27**	**330**	*e*P	**P**	**16 37 47.3**	**+0.4**
	comp=Z,4.6nm,0.9s						
BRG	**Berggiesshubel**	**80.27**	**330**	*e*P	**P**	**16 37 47.3**	**+0.4**
BRG				pmax	pmax		
	comp=Z,5.0nm,0.9s						
CLL	**Collm**	**80.29**	**330**	*e*P	**P**	**16 37 46.0**	**-1.0**
	comp=Z,4.0nm,0.9s						
CLL				*i*		16 37 57.6	
	comp=Z,6.0nm,0.9s						
CLL				*e*		16 38 02.0	
CLL	**Collm**	**80.29**	**330**	*e*P	**P**	**16 37 46.0**	**-1.0**
CLL				*i*		16 37 57.6	
CLL				pmax	pmax		
	comp=Z,4.0nm,0.9s						
CONA	**Conrad Observa**	**81.75**	**327**	*i* PcP	**P**	**16 37 56.4**	**+1.4**
	comp=Z,3.1nm,0.8s						
KHC	**Kasperske Hory**	**81.78**	**329**	*e*P	**P**	**16 37 55.7**	**+0.7**
KHC				*e*x	x	16 38 04.2	
KHC	**Kasperske Hory**	**81.78**	**329**	*e*P	**P**	**16 37 55.7**	**+0.7**
KHC				*e*		16 38 04.2	
KHC	**Kasperske Hory**	**81.78**	**329**	*e*P	**P**	**16 37 55.7**	**+0.7**
	comp=Z,5.0nm,1.6s						
GERES	**GERESS Array B**	**81.95**	**329**	P	**P**	**16 37 56.5**	**+0.4**
	comp=Z,0.4nm,0.5s,baz=19,slow=4.8,SNR=5.6						
VTS	**Vitosha**	**82.26**	**319**	*e*P	**P**	**16 37 58.7**	**+0.8**
VTS				pmax	pmax		
	comp=Z,4.0nm,0.7s						
VTS	**Vitosha**	**82.26**	**319**	*e*P	**P**	**16 37 58.7**	**+0.8**
	comp=Z,3.7nm,0.7s						
SOKA	**Soboth**	**83.08**	**326**	*i* PcP	**P**	**16 38 02.7**	**+0.7**
	comp=Z,3.4nm,0.7s						
KBA	**Koelnbreinsper**	**83.49**	**328**	*i* PcP	**P**	**16 38 04.9**	**+0.8**
	comp=Z,3.2nm,0.8s						
RETA	**Reutte**	**84.22**	**329**	*i* PcP	**P**	**16 38 08.3**	**+0.5**
	comp=Z,8.5nm,0.9s						
BFO	**Black Forest**	**84.49**	**331**	*e*P	**P**	**16 38 09.3**	**+0.2**
BFO	**Black Forest**	**84.49**	**331**	*e*P	**P**	**16 38 09.3**	**+0.2**
FETA	**Feichten**	**84.61**	**329**	*i* P	P	16 38 05.4	-4.5
	comp=Z,2.5nm,0.8s						
FUORN	**Ofenpass-Fuorn**	**85.12**	**329**	*e*P	**P**	**16 38 12.8**	**+0.2**
	comp=Z,7.2nm,0.7s						
TXAR	**Lajitas Array**	**88.80**	**53**	P	**P**	**16 38 30.8**	**+0.2**
	comp=Z,1.1nm,0.6s,baz=309,slow=2.6,SNR=10						
LPAZ	**La Paz**	**145.46**	**59**	PKPbc	**PKPab**	**16 45 16.4**	**+0.7**
	comp=Z,2.2nm,0.5s,baz=323,slow=3.0,SNR=9.1						

*IDC **06** 16:27:39.7±3.2, 23.°44S×179.°93W, h504km±30km, mb3.6/9, mb1 3.8/10, mb1mx3.5/27, mbtmp4.5/10, Error ellipse: s-maj=28.4km s-min=19.6km az=68.0*

ISC 06 16:27:44.3±1.1**, 23.°8S**±0.°1×**179.°7E**±0.°2**, h548**km**, n14, σ1.s96**/17**, mb4.2**/9**, South of Fiji Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
URZ	**Urewera**	**14.64**	**188**	P	**P**	**16 30 49.4**	**-0.5**
	1.8nm,0.3s,baz=307,slow=2.9,SNR=12						
URZ				S	**S**	**16 33 20.4**	**-2.4**
	1.3nm,0.3s,baz=86,slow=18,SNR=6.5						
CTA	**Charters Tower**	**31.21**	**270**	P	**P**	**16 33 21.2**	**+1.7**
	28nm,0.4s,baz=94,slow=11,SNR=82						
PMG	**Port Moresby**	**34.20**	**289**	P	**P**	**16 33 43.8**	**-0.9**
	22nm,0.8s,baz=128,slow=6.5,SNR=5.8						
STKA	**Stephens Creek**	**34.54**	**248**	P	**P**	**16 33 48.9**	**+1.5**
	2.9nm,0.5s,baz=96,slow=10,SNR=17						
ASAR	**Alice Springs**	**41.80**	**261**	P	**P**	**16 34 47.5**	**+0.9**
	5.5nm,0.5s,baz=96,slow=7.2,SNR=209						
ASAR				ScP	**ScP**	**16 39 32.0**	**+3.8**
	1.5nm,0.7s,baz=108,slow=4.5,SNR=11						
WRA	**Warramunga Arr**	**42.16**	**266**	P	**P**	**16 34 49.7**	**+0.3**
	11nm,0.5s,baz=92,slow=8.5,SNR=501						
WRA				S	**S**	**16 40 26.6**	**-3.5**
	0.9nm,1.0s,baz=101,slow=13,SNR=2.7						
VNDA	**Vanda**	**54.51**	**185**	P	**P**	**16 36 21.4**	**+1.2**
	0.7nm,0.7s,baz=358,slow=7.4,SNR=4.3						
MJAR	**Matsushiro Arr**	**71.62**	**326**	P	**P**	**16 38 08.7**	**-2.0**
	2.2nm,0.8s,baz=155,slow=5.0,SNR=5.9						
USRK	**Ussuriysk Ar.**	**80.50**	**327**	P	**P**	**16 38 58.3**	**-1.0**
	1.1nm,0.6s,baz=138,slow=4.6,SNR=3.9						
CMAR	**Chiang Mai Arr**	**89.23**	**290**	P	**P**	**16 39 44.8**	**+2.2**
	0.8nm,0.8s,baz=149,slow=3.4,SNR=7.9						
FINES	**FINESS Array B**	**138.22**	**341**	PKP	**PKPdf**	**16 46 06.2**	**-0.5**
	0.4nm,0.5s,baz=72,slow=6.4,SNR=4.2						
AKASG	**Malin Array Be**	**144.70**	**327**	PKP	**PKPdf**	**16 46 17.4**	**-1.2**
	1.4nm,0.4s,baz=44,slow=3.9,SNR=17						
BRTR	**Keskin Array B**	**147.28**	**307**	PKPbc	**PKPbc**	**16 46 26.1**	**-0.7**
	1.3nm,0.6s,baz=97,slow=2.9,SNR=2.6						
TORD	**Torodi Ar. Bea**	**169.29**	**190**	PKPab	**PKPab**	**16 48 06.0**	**+0.2**
	0.5nm,0.8s,baz=171,slow=4.9,SNR=2.9						

*KRNET **06** 16:41:00.0±0.1, 40.°56N×72.°33E, h23km, mb2.5*
*NNC **06** 16:41:02.6±1.5, 40.°49N×72.°40E, h0km, mb3.4, mpv3.0, Error ellipse: s-maj=18.6km s-min=7.7km az=45.0*
*SOME **06** 16:41:05.4, 40.°80N×72.°18E, h5km*

ISC 06 16:41:00.6±1.5**, 40.°54N**±0.°04×**72.°40E**±0.°03**, h5**km±13km**, n21, σ1.s10**/35**, 19C-7D, Kyrgyzstan**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
SFK	**Sufi-Kurgan**	**0.99**	**122**	⇑*i*P	**Pb**	**16 41 20.7**	**+0.3**
	baz=121						
SFK				⇑*i*S	**Sn**	**16 41 35.0**	**-1.0**
	baz=121						
SFK	**Sufi-Kurgan**	**0.99**	**122**	⇑P	**Pb**	**16 41 20.9**	**+0.4**
	6.0nm,0.2s						
SFK				⇓S	**Sn**	**16 41 34.8**	**-1.1**
	26nm,0.2s						
BTK	**Batken**	**1.30**	**249**	⇑*i*P	**Pn**	**16 41 24.5**	**-1.0**
	baz=247						
BTK				⇑*i*S	**Sb**	**16 41 41.9**	**-0.8**
	baz=247						
AML	**Almayashu**	**1.86**	**31**	⇓*i*P	**Pn**	**16 41 34.1**	**+0.6**
	baz=32						
AML				⇓*i*S	**Sb**	**16 41 59.9**	**+0.8**
	baz=32						
MNAS	**Manas**	**1.94**	**2**	⇑*i*P	**Pb**	**16 41 35.3**	**-1.3**
	baz=4.0						
MNAS				⇑*i*S	**Sb**	**16 42 01.5**	**+0.3**
	baz=4.0						
MNAS	**Manas**	**1.94**	**2**	⇓Pn	**Pb**	**16 41 35.9**	**-0.7**
	8.1nm,0.5s						
MNAS				⇑Lg	Lg	16 42 02.5	
	15nm,0.3s						
ARLS	**Aral**	**1.96**	**47**	⇑*i*P	**Pn**	**16 41 35.4**	**+0.8**
	baz=48						
ARLS				⇑*i*S	**Sb**	**16 42 02.5**	**+0.9**
	baz=48						
MRKS	**Merke**	**2.29**	**15**	*e*P	**Pb**	**16 41 41.7**	**-0.7**
	6.2nm,0.4s						
MRKS				*e*S	**Sn**	**16 42 08.1**	**+0.5**
	20nm,0.3s						
UCH	**Uchtor**	**2.32**	**43**	⇑*i*P	**Pb**	**16 41 42.0**	**-1.1**
	baz=44						
UCH				⇑*i*S	**Sb**	**16 42 12.2**	**0.0**
	baz=44						
EKS2	**Erkin-Say**	**2.36**	**26**	⇑*i*P	**Pb**	**16 41 42.8**	**-0.8**
	baz=27						
EKS2				⇑*i*S	**Sb**	**16 42 13.1**	**+0.1**
	baz=27						
IUG	**Iuzhnay**	**2.40**	**313**	*e*P	**Pb**	**16 41 44.5**	**+0.2**
	19nm,0.2s						
IUG				*e*S	**Sb**	**16 42 13.3**	**-0.9**
	49nm,0.2s						
AAK	**Ala-Archa**	**2.61**	**36**	⇓*i*P	**Pb**	**16 41 48.6**	**+0.6**
	baz=37						
AAK				⇓*i*S	**Sb**	**16 42 20.2**	**-0.3**
	baz=37						
AAK	**Ala-Archa**	**2.61**	**36**	Pg	**Pg**	**16 41 53.7**	**+3.1**
	3.8nm,0.3s						
AAK				Lg	Lg	16 42 23.3	
	13nm,0.4s						
KK31	**Karatay Array**	**2.92**	**332**	Pn	**Pb**	**16 41 52.8**	**-0.4**
	1.2nm,0.2s,baz=153,slow=17,SNR=17						
KK31				⇑Sn	**Sb**	**16 42 28.8**	**-0.5**
	3.7nm,0.3s,baz=156,slow=30,SNR=5.6						
BRLS	**Borolday**	**3.03**	**319**	*e*P	**Pb**	**16 41 56.5**	**+1.5**
	2.4nm,0.4s						
BRLS				*e*S	**Sb**	**16 42 33.4**	**+1.2**
	4.5nm,0.3s						
DZET	**Dzherino**	**3.26**	**239**	⇑Pn	**Pn**	**16 41 53.9**	**+1.5**
	2.4nm,0.4s						
DZET				⇑Lg	Lg	16 42 45.4	
	7.3nm,0.4s						
TKM2	**Tokmak 2**	**3.37**	**44**	⇑Pn	**Pb**	**16 42 02.2**	**+1.2**
	2.2nm,0.5s						
TKM2				⇑Lg	Lg	16 42 47.7	
	6.9nm,0.5s						
KST	**Kastek**	**3.65**	**46**	*e*P	**Pg**	**16 42 10.1**	**-0.4**
	1.6nm,0.3s						
KST				*e*S	**Sg**	**16 42 56.7**	**-1.2**
	5.9nm,0.2s						
DGS	**Degeres**	**3.69**	**42**	*e*P	**Pg**	**16 42 10.5**	**-0.7**
	3.7nm,0.7s						
DGS				*e*S	**Sg**	**16 42 57.7**	**-1.3**
	8.4nm,0.5s						
KTBS	**Karatobe**	**4.49**	**44**	*e*P	Pg	16 42 24.7	-1.9
KTBS				*e*S	**Sg**	**16 43 22.8**	**-2.0**
PDGK	**Podgornoye**	**5.97**	**60**	⇓Lg	Lg	16 44 13.3	
	3.2nm,0.8s						

*ISCJB **06** 16:45:24.2±0.5, 49.°89N±0.°04×18.°38E±0.°03, h0km, Error ellipse: s-maj=5.2km s-min=2.5km az=12.9*
*IPEC **06** 16:45:25.7±0.2, 49.°83N×18.°51E, h0km, ML1.8/4, Error ellipse: s-maj=2.1km s-min=1.1km az=161.0*
*CSEM **06** 16:45:25.3±0.4, 49.°95N×18.°40E, h1km, ML2.5/7, Error ellipse: s-maj=10.2km s-min=5.0km az=174.0*
*PRU **06** 16:45:26.8, 49.°85N×18.°40E, h0km*

ISC 06 16:45:26.2±0.8**, 49.°80N**±0.°04×**18.°48E**±0.°02**, h0**km**, n25, σ0.s85**/43**, Czech and Slovak Republics**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
OKC	**Ostrava-Krasne**	**0.22**	**279**	*e*PG	**Pg**	**16 45 30.4**	**+0.1**
OKC				*e*SG	**Sg**	**16 45 33.5**	**+0.3**
	comp=Z,128nm,0.3s						
OKC	**Ostrava-Krasne**	**0.22**	**279**	Pg	**Pg**	**16 45 30.4**	**+0.1**
OKC				Sg	**Sg**	**16 45 33.5**	**+0.3**
	128nm,0.3s						
MORC	**Moravsky Berou**	**0.61**	**268**	*e*Pg	**Pg**	**16 45 37.3**	**-0.5**
MORC				*e*Sg	**Sg**	**16 45 45.6**	**-0.1**
	29nm,0.3s						
LANS	**Liptovska Anna**	**0.92**	**135**	*e*PG	**Pb**	**16 45 44.6**	**-0.4**
LANS				*e*SG	**Sn**	**16 46 00.4**	**+0.1**
LANS				*e*PG		16 47 59.2	
LANS				*e*SG		16 48 12.2	
OJC	**Ojcow**	**0.95**	**63**	*e*Pg	**Pg**	**16 45 43.5**	**-0.8**
OJC				*e*Sg	**Sg**	**16 45 56.7**	**+0.1**
OJC	**Ojcow**	**0.95**	**63**	*e*Pg	**Pg**	**16 45 43.5**	**-0.8**
OJC				*e*Sg	**Sg**	**16 45 56.7**	**+0.1**
JAVC	**Velka Javorina**	**1.08**	**210**	*e*Sg	**Sn**	**16 46 05.2**	**+0.8**
	7.9nm,0.4s						
NIE	**Niedzica**	**1.24**	**107**	*e*Pg	**Pn**	**16 45 50.8**	**0.0**
NIE				*e*Sg	**Sn**	**16 46 09.4**	**+1.1**
NIE	**Niedzica**	**1.24**	**107**	*e*Pg	**Pn**	**16 45 50.8**	**0.0**
NIE				*e*Sg	**Sn**	**16 46 09.4**	**+1.1**
VRAC	**Vranov**	**1.32**	**249**	*e*Pg	**Pg**	**16 45 50.9**	**-0.6**
VRAC				*e*Sg	**Sg**	**16 46 08.5**	**-0.2**
	13nm,0.3s						
VYHS	**Vyhne**	**1.33**	**170**	*e*PN	**Pg**	**16 45 51.7**	**+0.1**
VYHS				*e*SN	**Sn**	**16 46 10.1**	**-0.3**
VYHS				*e*LG	Lg	16 46 13.5	
DPC	**Dobruska-Polom**	**1.49**	**292**	*e*PG	**Pn**	**16 45 53.1**	**-1.2**
DPC				*e*SG	**Sg**	**16 46 13.0**	**-1.1**
	comp=Z,8.2nm,0.3s						
DPC	**Dobruska-Polom**	**1.49**	**292**	Pg	**Pn**	**16 45 53.1**	**-1.2**
DPC				Sg	**Sg**	**16 46 13.0**	**-1.1**
	8.2nm,0.3s						
KRUC	**Moravsky**	**1.55**	**242**	*e*Pg	**Pn**	**16 45 54.4**	**-0.6**
KRUC				*e*Sg	**Sn**	**16 46 15.3**	**-0.5**
	6.6nm,0.2s						
UPC	**Upice**	**1.74**	**295**	*e*PG	**Pn**	**16 45 57.3**	**-0.3**
UPC				*e*SG	**Sn**	**16 46 20.3**	**-0.1**
	comp=Z,4.8nm,0.4s						
UPC	**Upice**	**1.74**	**295**	Pg	**Pn**	**16 45 57.3**	**-0.3**
KECS	**Kecovo**	**1.86**	**134**	*e*PG	**Pg**	**16 46 01.6**	**-0.3**
KECS				*e*SN	**Sn**	**16 46 23.5**	**-0.1**
KECS				*e*LG	Lg	16 46 29.0	
GOPC	**GO Pecny, Ondr**	**2.39**	**274**	*e*PG	**Pn**	**16 46 07.9**	**+1.3**
GOPC				*e*SG	**Sb**	**16 46 39.6**	**-0.6**
GOPC	**GO Pecny, Ondr**	**2.39**	**274**	Pg	**Pn**	**16 46 07.9**	**+1.3**
GOPC				Sg	**Sb**	**16 46 39.6**	**-0.6**
PRU	**Pruhonice**	**2.55**	**276**	*e*SG	**Sb**	**16 46 44.5**	**-0.3**
	comp=Z,2.5nm,0.3s						
PRU	**Pruhonice**	**2.55**	**276**	Sg	**Sb**	**16 46 44.5**	**-0.3**
	2.5nm,0.3s						
PVCC	**Panska Ves**	**2.62**	**288**	*e*SG	**Sb**	**16 46 47.5**	**+0.9**
	comp=Z,7.4nm,0.2s						
BRG	**Berggiesshubel**	**3.10**	**292**	SG	**Sb**	**16 47 02.5**	**+2.1**
	3.9nm,0.4s						
KHC	**Kasperske Hory**	**3.27**	**260**	*e*PG	**Pb**	**16 46 26.1**	**+1.1**
KHC				*e*SG	**Sg**	**16 47 08.8**	**-2.3**
	comp=Z,3.2nm,0.4s						
KHC	**Kasperske Hory**	**3.27**	**260**	Pg	**Pb**	**16 46 26.1**	**+1.1**

*IDC **06** 16:51:49.9±1.4, 51.°62N×176.°87W, h0km, mb3.7/15, mb1 3.8/15, mb1mx3.6/72, mbtmp3.7/15, Error ellipse: s-maj=43.7km s-min=18.1km az=170.0*
*ISCJB **06** 16:51:53.9±0.7, 51.°26N±0.°07×176.°85W±0.°06, h48km, mb3.7/14, Error ellipse: s-maj=9.8km s-min=4.8km az=166.5*
*NEIC **06** 16:51:54.2, 51.°25N×176.°81W, h26km, ML3.4(AEIC), After AEIC.*

ISC 06 16:51:56.0±0.8**, 51.°4N**±0.°1×**176.°87W**±0.°04**, h48**km**, n43, σ0.s87**/44**, mb3.7**/14**, Andreanof Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
KIKV	**Kanaga Island**	**0.49**	**337**	P	**Pn**	**16 52 07.0**	**0.0**
KIRH	**Kanaga Island**	**0.49**	**343**	P	**Pn**	**16 52 07.6**	**+0.6**
ETKA	**Kagalaska Isla**	**0.52**	**33**	P	**Pn**	**16 52 06.9**	**-0.4**
ETKA				S	**Sn**	**16 52 15.4**	**-0.1**
ADAG	**Mount Adagdak**	**0.58**	**17**	P	**Pn**	**16 52 08.7**	**+0.7**
TAPA	**Tanaga Point A**	**0.71**	**304**	P	**Pn**	**16 52 09.6**	**-0.1**
TAFL	**Tanaga Flats**	**0.72**	**297**	P	**Pn**	**16 52 09.7**	**-0.2**
GSCK	**Great Sitkin C**	**0.73**	**37**	P	**Pn**	**16 52 10.0**	**0.0**
GSTD	**Great Sitkin T**	**0.77**	**35**	P	**Pn**	**16 52 10.6**	**0.0**
GSTD				S	**Sn**	**16 52 22.7**	**+1.4**
GSMY	**Great Sitkin M**	**0.80**	**39**	P	**Pn**	**16 52 10.8**	**-0.1**
GSTR	**Great Sitkin T**	**0.83**	**37**	P	**Pn**	**16 52 11.8**	**+0.4**
TASE	**Tanaga Southea**	**0.83**	**300**	P	**Pn**	**16 52 11.7**	**+0.2**
TAFP	**Tanaga Falls P**	**0.84**	**305**	P	**Pn**	**16 52 11.5**	**0.0**
TAFP				S	**Sn**	**16 52 23.5**	**+0.7**
TANO	**Tanaga North**	**0.92**	**302**	P	**Pn**	**16 52 13.2**	**+0.6**
GALAA	**Gareloi Lava P**	**1.23**	**286**	P	**Pn**	**16 52 16.7**	**-0.1**
ATKA	**Atka Island**	**1.83**	**64**	P	**Pn**	**16 52 23.8**	**-1.1**
ATKA				S	**Sn**	**16 52 49.1**	**+2.2**
KOWE	**Korovin West**	**1.87**	**59**	P	**Pn**	**16 52 26.4**	**+0.9**
KOKL	**Mount Kliuchef**	**1.88**	**60**	P	**Pn**	**16 52 26.3**	**+0.6**
KOFP	**Korovin Flat P**	**1.92**	**63**	P	**Pn**	**16 52 25.8**	**-0.3**
KDAK	**Kodiak Island**	**15.39**	**56**	Pn	P	16 55 44.0	+11
	0.5nm,0.3s,baz=269,slow=6.1,SNR=1.7						
SEY	**Seymchan**	**20.03**	**317**	P	**Pn**	**16 56 25.9**	**-0.7**
	0.0nm,0.3s,baz=115,slow=14,SNR=2.9						
ILAR	**Eielson Array**	**20.45**	**38**	P	**P**	**16 56 28.1**	**-1.0**
	0.4nm,0.6s,baz=238,slow=8.4,SNR=3.0						
INK	**Inuvik**	**26.73**	**35**	P	**P**	**16 57 29.9**	**-0.5**
	0.3nm,0.3s,baz=253,slow=19,SNR=1.8						
KLR	**Kul'dur**	**32.33**	**287**	P	**P**	**16 58 19.9**	**-0.3**
	1.3nm,0.5s,baz=60,slow=10,SNR=6.2						
H11N2	**WAKE ISLAND Hy**	**34.12**	**208**	T	T	17 35 01.6	
	baz=18,slow=76,SNR=98						
H11N3	**WAKE ISLAND Hy**	**34.12**	**208**	T	T	17 34 58.9	
	baz=18,slow=76,SNR=76						
H11N1	**WAKE ISLAND Hy**	**34.13**	**208**	T	T	17 34 59.2	
	baz=18,slow=76,SNR=86						
YKA	**Yellowknife Ar**	**34.32**	**47**	P	**P**	**16 58 35.4**	**-2.0**
	0.1nm,0.5s,baz=283,slow=8.6,SNR=3.2						
YKA				PcP	**PcP**	**17 01 13.6**	**+1.3**
	0.2nm,0.4s,baz=283,slow=3.2,SNR=5.9						
USRK	**Ussuriysk Ar.**	**34.49**	**278**	P	**P**	**16 58 38.8**	**-0.3**
	1.1nm,0.6s,baz=91,slow=10,SNR=2.4						
H11S1	**WAKE ISLAND Hy**	**35.33**	**208**	T	T	17 36 29.8	
	baz=18,slow=76,SNR=54						
H11S2	**WAKE ISLAND Hy**	**35.34**	**208**	T	T	17 36 35.7	
	baz=18,slow=76,SNR=39						
H11S3	**WAKE ISLAND Hy**	**35.34**	**208**	T	T	17 36 36.3	
	baz=18,slow=76,SNR=31						
KSRS	**Korea Array**	**40.85**	**272**	P	**P**	**16 59 34.1**	**+1.3**
	1.1nm,0.9s,baz=62,slow=8.8,SNR=3.0						
SONM	**Songino Array**	**47.70**	**298**	P	**P**	**17 00 28.6**	**+1.0**
	0.4nm,0.4s,baz=39,slow=9.3,SNR=3.1						
ZALV	**Zalesovo Beam**	**54.87**	**314**	PcP	**PcP**	**17 02 23.2**	**+0.6**
	0.5nm,0.4s,baz=41,slow=4.6,SNR=5.2						
TXAR	**Lajitas Array**	**57.45**	**83**	P	**P**	**17 01 40.5**	**+0.6**
	0.2nm,0.7s,baz=292,slow=4.8,SNR=2.4						
KURBB	**Kurchatov Arra**	**59.96**	**315**	P	**P**	**17 01 56.2**	**-0.7**
	0.2nm,0.5s,baz=40,slow=6.6,SNR=4.5						
KURBB				PcP	**PcP**	**17 02 42.6**	**-0.1**
	0.4nm,0.8s,baz=43,slow=3.7,SNR=5.0						
MKAR	**Makanchi Array**	**60.94**	**309**	P	**P**	**17 02 01.9**	**-1.8**
	0.1nm,0.3s,baz=64,slow=5.8,SNR=2.2						
MKAR				PcP	**PcP**	**17 02 47.2**	**+0.5**
	0.3nm,0.5s,baz=39,slow=4.2,SNR=3.7						
BVAR	**Borovoye Array**	**61.62**	**321**	P	**P**	**17 02 08.8**	**+0.6**
	1.6nm,0.5s,baz=56,slow=7.1,SNR=16						
BVAR				PcP	**PcP**	**17 02 49.8**	**+0.4**
	0.7nm,0.5s,baz=48,slow=2.3,SNR=4.6						
ARU	**Arti**	**63.19**	**329**	P	**P**	**17 02 17.1**	**-1.5**
	1.1nm,0.3s,baz=50,slow=7.9,SNR=2.7						
AKTO	**Aktyubinsk**	**68.33**	**326**	P	**P**	**17 02 52.0**	**+0.2**
	0.4nm,0.4s,baz=63,slow=6.8,SNR=4.1						
CMAR	**Chiang Mai Arr**	**72.21**	**277**	P	**P**	**17 03 16.8**	**+0.8**
	0.5nm,0.8s,baz=16,slow=6.3,SNR=5.8						
BRTR	**Keskin Array B**	**85.39**	**337**	P	**P**	**17 04 28.2**	**+0.1**
	0.7nm,0.7s,baz=98,slow=3.9,SNR=4.2						
TORD	**Torodi Ar. Bea**	**115.68**	**2**	PKP	**PKPdf**	**17 10 32.2**	**-0.9**
	0.1nm,0.4s,baz=352,slow=1.6,SNR=1.4						

*ATH **06** 16:55:33.6, 37.°09N×21.°17E, h13km±1km, ML3.6/6, Error ellipse: s-maj=2.9km s-min=1.2km az=44.0*
*THE **06** 16:55:34.8, 37.°15N×21.°22E, h0km±2km, ML3.7/11, Error ellipse: s-maj=2.2km s-min=0.7km az=212.0*
*CSEM **06** 16:55:35.1±0.5, 37.°13N×21.°22E, h10km, ML3.9, Error ellipse: s-maj=10.4km s-min=5.1km az=43.0*

ISC 06 16:55:33.4±1.3**, 37.°03N**±0.°05×**21.°17E**±0.°04**, h22**km±7km**, n81, σ1.s05**/112**, Southern Greece**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
PYL	**PYLOS**	**0.48**	**106**	P	**Pn**	**16 55 43.8**	**-1.2**
PYL				S	**Sn**	**16 55 52.1**	**-0.6**
PYL	**PYLOS**	**0.48**	**106**	P	**Pn**	**16 55 43.9**	**-1.0**
PYL				S	**Sn**	**16 55 51.7**	**-1.0**
PYL	**PYLOS**	**0.48**	**106**	P	**Pn**	**16 55 44.0**	**-1.0**
PYL				AML	AML	16 55 53.1	
	comp=N,11058μm,0.4s						
PYL				S	**Sn**	**16 55 53.5**	**+0.7**
PYL				AML	AML	16 55 53.5	
	comp=E,15344μm,0.3s						
ITM	**Ithomi**	**0.63**	**76**	P	**Pb**	**16 55 45.0**	**-0.7**
ITM				S	**Sb**	**16 55 53.9**	**-0.2**
ITM	**Ithomi**	**0.63**	**76**	P	**Pb**	**16 55 45.0**	**-0.7**
ITM				S	**Sb**	**16 55 54.2**	**+0.1**
ITM	**Ithomi**	**0.63**	**76**	P	**Pb**	**16 55 45.0**	**-0.7**
ITM				S	**Sb**	**16 55 54.2**	**+0.1**
ITM				AML	AML	16 55 54.9	
	comp=N,10320μm,0.3s						
ITM				AML	AML	16 55 57.6	

	comp=E,11331µm,0.4s						
AMT	**Artemida-Makis**	**0.66**	**41**	P	**Pb**	**16 55 45.1**	**-1.2**
AMT				S	**Sb**	**16 55 54.2**	**-0.9**
AMT	**Artemida-Makis**	**0.66**	**41**	P	**Pb**	**16 55 45.7**	**-0.6**
AMT				S	**Sb**	**16 55 54.2**	**-0.9**
AMT	**Artemida-Makis**	**0.66**	**41**	P	**Pb**	**16 55 45.7**	**-0.6**
AMT				S	**Sb**	**16 55 55.0**	**-0.1**
AMT				AML	AML	16 55 56.3	
	comp=N,25872µm,0.6s						
AMT				AML	AML	16 55 57.4	
	comp=E,20970µm,0.5s						
DRO	**Drossia**	**1.01**	**25**	P	**Pb**	**16 55 51.3**	**-1.0**
DRO				S	**Sn**	**16 56 05.5**	**-0.5**
DRO	**Drossia**	**1.01**	**25**	P	**Pb**	**16 55 51.3**	**-1.0**
DRO				S	**Sn**	**16 56 05.4**	**-0.5**
DRO	**Drossia**	**1.01**	**25**	P	**Pb**	**16 55 50.9**	**-1.4**
DRO				S	**Sn**	**16 56 05.5**	**-0.5**
DRO				AML	AML	16 56 12.9	
	comp=E,10911µm,0.4s						
DRO				AML	AML	16 56 14.4	
	comp=N,8406µm,0.8s						
VLX	**Vlachokerasia**	**1.03**	**70**	P	**Pn**	**16 55 52.5**	**-0.1**
VLX				S	**Sn**	**16 56 06.2**	**-0.1**
VLX	**Vlachokerasia**	**1.03**	**70**	P	**Pn**	**16 55 52.8**	**+0.2**
VLX				S	**Sn**	**16 56 06.2**	**-0.1**
VLX	**Vlachokerasia**	**1.03**	**70**	P	**Pn**	**16 55 52.7**	**+0.2**
VLX				S	**Sb**	**16 56 05.1**	**-0.5**
VLX				AML	AML	16 56 09.5	
	comp=E,10956µm,0.6s						
VLX				AML	AML	16 56 13.4	
	comp=N,8125µm,0.9s						
RLS	**Riolos of Patr**	**1.05**	**13**	P	**Pb**	**16 55 52.2**	**-0.7**
RLS				S	**Sb**	**16 56 05.3**	**-0.9**
RLS	**Riolos of Patr**	**1.05**	**13**	P	**Pb**	**16 55 52.4**	**-0.5**
RLS				S	**Sb**	**16 56 05.3**	**-0.9**
RLS	**Riolos of Patr**	**1.05**	**13**	S	**Sn**	**16 56 07.3**	**+0.5**
RLS				AML	AML	16 56 11.3	
	comp=E,3542µm,0.5s						
RLS				AML	AML	16 56 14.0	
	comp=N,3487µm,0.4s						
KFL	**Anninata**	**1.12**	**345**	P	**Pn**	**16 55 53.6**	**-0.1**
KFL				S	**Sn**	**16 56 09.5**	**+1.1**
KFL	**Anninata**	**1.12**	**345**	P	**Pn**	**16 55 53.4**	**-0.3**
KFL				S	**Sb**	**16 56 07.2**	**-0.9**
KFL	**Anninata**	**1.12**	**345**	P	**Pn**	**16 55 53.4**	**-0.3**
KFL				S	**Sb**	**16 56 07.2**	**-0.9**
AXS	**Araxos**	**1.17**	**8**	P	**Pb**	**16 55 54.8**	**-0.2**
AXS	**Araxos**	**1.17**	**8**	P	**Pb**	**16 55 54.8**	**-0.2**
AXS	**Araxos**	**1.17**	**8**	P	**Pb**	**16 55 54.8**	**-0.2**
VLS	**Valsamata**	**1.23**	**338**	P	**Pb**	**16 55 55.6**	**-0.4**
VLS				S	**Sn**	**16 56 13.5**	**+2.2**
VLS	**Valsamata**	**1.23**	**338**	P	**Pb**	**16 55 55.6**	**-0.4**
VLS				S	**Sn**	**16 56 13.3**	**+2.0**
KLV	**Kalavryta, Ach**	**1.28**	**38**	P	**Pn**	**16 55 55.9**	**0.0**
KLV				S	**Sb**	**16 56 12.9**	**+0.1**
KLV	**Kalavryta, Ach**	**1.28**	**38**	P	**Pn**	**16 55 56.0**	**0.0**
KLV				S	**Sb**	**16 56 12.9**	**+0.1**
KLV	**Kalavryta, Ach**	**1.28**	**38**	P	**Pn**	**16 55 56.0**	**0.0**
GUR	**Goura**	**1.30**	**46**	P	**Pn**	**16 55 56.2**	**-0.1**
GUR				S	**Sb**	**16 56 14.9**	**+1.4**
GUR	**Goura**	**1.30**	**46**	P	**Pn**	**16 55 56.2**	**-0.1**
GUR				S	**Sb**	**16 56 14.9**	**+1.4**
GUR	**Goura**	**1.30**	**46**	P	**Pn**	**16 55 55.9**	**-0.4**
LAKA	**Lakka**	**1.37**	**28**	P	**Pb**	**16 55 57.8**	**-0.5**
LAKA	**Lakka**	**1.37**	**28**	P	**Pb**	**16 55 57.8**	**-0.5**
LAKA	**Lakka**	**1.37**	**28**	P	**Pb**	**16 55 59.2**	**+0.9**
RODI	**Rodini**	**1.41**	**24**	P	**Pb**	**16 56 00.6**	**+1.5**
RODI	**Rodini**	**1.41**	**24**	P	**Pb**	**16 56 00.6**	**+1.5**
VLI	**Veliai**	**1.46**	**102**	P	**Pb**	**16 56 01.2**	**+1.4**
VLI	**Veliai**	**1.46**	**102**	P	**Pb**	**16 56 01.2**	**+1.4**
VLI	**Veliai**	**1.46**	**102**	P	**Pb**	**16 56 01.2**	**+1.4**
EFP	**Efpalio**	**1.51**	**23**	P	**Pb**	**16 56 02.0**	**+1.3**
EFP	**Efpalio**	**1.51**	**23**	P	**Pb**	**16 56 02.0**	**+1.3**
SERG	**Sergoula**	**1.55**	**27**	P	**Pb**	**16 56 01.2**	**-0.2**
SERG	**Sergoula**	**1.55**	**27**	P	**Pb**	**16 56 01.2**	**-0.2**
THAL	**Thalero**	**1.56**	**49**	P	**Pb**	**16 56 03.0**	**+1.5**
THAL	**Thalero**	**1.56**	**49**	P	**Pb**	**16 56 03.0**	**+1.5**
KALE	**Kalithea**	**1.56**	**29**	P	**Pb**	**16 56 01.0**	**-0.6**
KALE	**Kalithea**	**1.56**	**29**	P	**Pb**	**16 56 01.5**	**-0.1**
KALE	**Kalithea**	**1.56**	**29**	P	**Pb**	**16 56 01.5**	**-0.1**
PDO	**Prodromos**	**1.56**	**1**	P	**Pb**	**16 56 01.1**	**-0.5**
PDO				S	**Sb**	**16 56 21.6**	**+0.6**
PDO	**Prodromos**	**1.56**	**1**	P	**Pb**	**16 56 01.1**	**-0.5**
PDO				S	**Sb**	**16 56 21.6**	**+0.6**
PDO	**Prodromos**	**1.56**	**1**	P	**Pb**	**16 56 00.6**	**-1.0**
PVO	**Paravola**	**1.61**	**10**	P	**Pb**	**16 56 04.5**	**+2.2**
PVO	**Paravola**	**1.61**	**10**	P	**Pb**	**16 56 04.5**	**+2.2**
KRND	**KRANIDI**	**1.62**	**77**	P	**Pb**	**16 56 03.6**	**+1.0**
KRND	**KRANIDI**	**1.62**	**77**	P	**Pb**	**16 56 03.6**	**+1.0**
KRND	**KRANIDI**	**1.62**	**77**	P	**Pb**	**16 56 04.3**	**+1.7**
ANX	**Ano Chora**	**1.67**	**21**	P	**Pb**	**16 56 02.9**	**-0.6**
ANX	**Ano Chora**	**1.67**	**21**	P	**Pb**	**16 56 02.9**	**-0.6**
DID	**Didima**	**1.72**	**73**	P	**Pb**	**16 56 05.1**	**+0.8**
DID	**Didima**	**1.72**	**73**	P	**Pb**	**16 56 05.1**	**+0.8**
DID	**Didima**	**1.72**	**73**	P	**Pb**	**16 56 05.2**	**+0.8**
LTK	**Loutraki**	**1.74**	**55**	P	**Pb**	**16 56 04.2**	**-0.4**
LTK	**Loutraki**	**1.74**	**55**	P	**Pb**	**16 56 04.2**	**-0.4**
DSF	**Desfina**	**1.75**	**38**	P	**Pb**	**16 56 05.2**	**+0.4**
DSF	**Desfina**	**1.75**	**38**	P	**Pb**	**16 56 05.2**	**+0.4**
LKD2	**Lefkada island**	**1.80**	**347**	P	**Pb**	**16 56 05.1**	**-0.5**
LKD2				S	**Sb**	**16 56 28.1**	**+0.3**
LKD2	**Lefkada island**	**1.80**	**347**	P	**Pb**	**16 56 05.1**	**-0.5**
LKD2				S	**Sb**	**16 56 28.1**	**+0.3**
LKD2	**Lefkada island**	**1.80**	**347**	P	**Pb**	**16 56 05.8**	**+0.1**
EVR	**Evrytania**	**1.95**	**15**	P	**Pb**	**16 56 10.5**	**+2.3**
EVR	**Evrytania**	**1.95**	**15**	P	**Pb**	**16 56 10.5**	**+2.3**
VIL2	**Platees**	**2.04**	**54**	P	**Pb**	**16 56 09.1**	**-0.7**
VILL	**Villia**	**2.05**	**56**	P	**Pb**	**16 56 09.2**	**-0.7**
VILL	**Villia**	**2.05**	**56**	P	**Pb**	**16 56 09.1**	**-0.8**
DSL	**Palaion Diasel**	**2.10**	**359**	P	**Pb**	**16 56 11.2**	**+0.4**
DSL	**Palaion Diasel**	**2.10**	**359**	P	**Pb**	**16 56 11.2**	**+0.4**
LKR	**Lokris**	**2.17**	**41**	P	**Pb**	**16 56 10.3**	**-1.7**
LKR	**Lokris**	**2.17**	**41**	P	**Pb**	**16 56 10.3**	**-1.7**
THL	**Klokotos Trika**	**2.62**	**15**	P	**Pn**	**16 56 16.6**	**+2.3**
THL	**Klokotos Trika**	**2.62**	**15**	P	**Pn**	**16 56 16.5**	**+2.3**
STON	**Ston**	**6.41**	**337**	*i* Pn	**Pn**	**16 57 06.2**	**-0.2**
STON				Sn	**Sn**	**16 58 15.2**	**-3.7**

*IDC **06** 16:58:27.3±0.9, 30°.83S×177°.86W, h0km, mb4.2/5, mb1 4.4/6, mb1mx4.0/42, mbtmp4.2/6, ML3.2/1, MS3.4/1, Ms1 3.4/1, ms1mx2.8/34, Error ellipse: s-maj=39.9km s-min=22.7km az=157.0*

*ISCJB **06** 16:58:33.0±1.2, 31°.12S±0°.10×178°.0W±0°.2, h46km, mb4.2/5, Error ellipse: s-maj=26.0km s-min=11.8km az=18.4*

ISC 06 16:58:33.9±0.8**, 31°.0S**±0°.1×**177°.9W**±0°.2**, h46km, n20, σ0s79**/20**, mb4.1**/5**, 1C, Kermadec Islands region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
URZ	**Urewera**	**8.29**	**208**	Pn	**Pn**	**17 00 30.7**	**-0.9**
	0.3nm,0.3s,baz=270,slow=5.1,SNR=4.6						
URZ				Sn	**Sn**	**17 02 03.7**	**-0.2**
	0.6nm,0.3s,baz=10,slow=6.8,SNR=3.2						
DZM	**Mont Dzumac**	**16.57**	**299**	LR	LR	17 07 00.7	
	comp=Z,126nm,18.1s,baz=212,slow=31						
CTA	**Charters Tower**	**33.97**	**280**	P	**P**	**17 05 12.6**	**-0.6**
	6.3nm,0.8s,baz=105,slow=10,SNR=7.1						
STKA	**Stephens Creek**	**34.40**	**258**	P	**P**	**17 05 19.0**	**+2.2**
	6.3nm,0.7s,baz=92,slow=8.7,SNR=14						
ASAR	**Alice Springs**	**43.14**	**268**	P	**P**	**17 06 30.1**	**-0.1**
	1.6nm,0.7s,baz=105,slow=7.8,SNR=18						
WRA	**Warramunga Arr**	**44.19**	**273**	P	**P**	**17 06 38.2**	**-0.4**
	1.4nm,0.3s,baz=111,slow=8.1,SNR=23						
SYO	**Syowa Base**	**76.52**	**193**	⇑*e*P	**P**	**17 10 19.4**	**+0.7**
NVAR	**Mina Array Bea**	**88.65**	**43**	P	**P**	**17 11 22.9**	**+0.5**
	0.5nm,0.7s,baz=219,slow=7.0,SNR=2.9						
YKA	**Yellowknife Ar**	**105.98**	**26**	PKiKP	**PKiKP**	**17 16 52.0**	**+0.1**
	0.1nm,0.3s,baz=260,slow=1.7,SNR=3.0						
MKAR	**Makanchi Array**	**118.22**	**310**	PKP	**PKPdf**	**17 17 14.9**	**-0.9**
	0.1nm,0.4s,baz=208,slow=1.7,SNR=4.1						
ZALV	**Zalesovo Beam**	**118.54**	**318**	PKP	**PKPdf**	**17 17 15.4**	**-0.7**
	0.3nm,0.4s,baz=93,slow=3.2,SNR=2.4						
KURBB	**Kurchatov Arra**	**121.56**	**313**	PKP	**PKPdf**	**17 17 21.2**	**-0.8**
	0.2nm,0.4s,baz=105,slow=1.9,SNR=6.0						
ARCES	**ARCESS Array B**	**139.21**	**348**	PKP	**PKPdf**	**17 17 54.5**	**-0.3**
	1.0nm,0.7s,baz=336,slow=2.0,SNR=3.6						
KBZ	**Khabaz**	**145.51**	**303**	PKPbc	**PKPdf**	**17 18 06.6**	**-0.1**
	1.7nm,0.9s,baz=121,slow=5.9,SNR=3.4						
FINES	**FINESS Array B**	**145.75**	**340**	PKPbc	**PKPdf**	**17 18 06.2**	**-0.4**
	6.6nm,0.7s,baz=52,slow=3.7,SNR=31						
NB2	**NORSAR Subarra**	**149.38**	**351**	PKP	**PKPbc**	**17 18 16.8**	**-0.3**
	comp=Z,1.0nm,0.6s,baz=17,slow=2.6						
NOA	**NORSAR Array B**	**149.38**	**351**	PKPbc	**PKPbc**	**17 18 17.3**	**+0.2**
	comp=Z,0.7nm,0.5s,baz=15,slow=4.1,SNR=3.6						
AKASG	**Malin Array Be**	**151.83**	**322**	PKPbc	**PKPbc**	**17 18 22.7**	**-0.5**
	comp=Z,0.8nm,0.4s,baz=49,slow=2.8,SNR=9.2						
BRTR	**Keskin Array B**	**152.95**	**297**	PKPbc	**PKPbc**	**17 18 25.7**	**-0.6**
	comp=Z,0.4nm,0.5s,baz=128,slow=2.2,SNR=3.2						
TORD	**Torodi Ar. Bea**	**162.21**	**179**	PKPab	**PKPab**	**17 19 18.7**	**+0.9**
	comp=Z,1.0nm,0.7s,baz=179,slow=5.0,SNR=5.7						

*NIED **06** 17:13:00, 24°.30N×123°.50E, h32km, Mw4.0 Best double couple: $M_0$1.18000×10^15 NP1:φs65.00000°, δ47.00000°, λ62.00000°. NP2:φs283.00000°, δ50.00000°, λ117.00000°.*

*ISCJB **06** 17:13:58.7±0.5, 24°.26N±0°.07×123°.46E±0°.03, h53km±3km, mb3.6/12, Error ellipse: s-maj=11.1km s-min=4.6km az=177.4*

*JMA **06** 17:13:59.7, 24°.29N×123°.51E, h45km±1km, M3.7*

JMA Felt I J1.

*IDC **06** 17:13:59.8±3.5, 24°.33N×123°.44E, h48km±34km, mb3.4/12, mb1 3.7/13, mb1mx3.5/36, mbtmp3.7/13, ML3.4/1, MS3.2/1, Ms1 3.2/1, ms1mx2.5/30, Error ellipse: s-maj=25.0km s-min=16.1km az=63.0*

ISC 06 17:13:59.2±0.8**, 24°.25N**±0°.08×**123°.47E**±0°.03**, h44km**±7km**, n27, σ0s86**/40**, mb3.6**/12**, Southwestern Ryukyu Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
IRIF	**Iriomote-Funau**	**0.25**	**71**	P	**Pn**	**17 14 07.4**	**0.0**
IRIF				S	**Sn**	**17 14 13.1**	**0.0**
HATJ	**Hateruma jima**	**0.36**	**122**	P	**Pn**	**17 14 08.8**	**+0.3**
HATJ				S	**Sn**	**17 14 15.3**	**+0.3**
YOJ	**Yonaguni jima**	**0.47**	**297**	P	**Pn**	**17 14 10.5**	**+0.7**
YOJ				*e*S	**Sn**	**17 14 17.9**	**+0.7**
JKRS	**Kuro-shima**	**0.49**	**92**	P	**Pn**	**17 14 10.3**	**+0.2**
JKRS				S	**Sn**	**17 14 18.1**	**+0.4**
JYNG	**Yonagunijimaku**	**0.52**	**293**	P	**Pn**	**17 14 11.1**	**+0.7**
JYNG				S	**Sn**	**17 14 19.0**	**+0.7**
JIJ	**Ishigaki jima**	**0.62**	**80**	P	**Pn**	**17 14 11.6**	**-0.2**
JIJ				S	**Sn**	**17 14 20.0**	**-0.8**
JISG	**Ishigakijimahi**	**0.84**	**66**	P	**Pn**	**17 14 14.6**	**0.0**
JISG				S	**Sn**	**17 14 25.4**	**-0.4**
JTJ	**Tarama**	**1.19**	**71**	P	**Pn**	**17 14 19.8**	**+0.4**
JTJ				*e*S	**Sn**	**17 14 34.3**	**-0.1**
JIRB	**Irabujima**	**1.65**	**69**	P	**Pn**	**17 14 26.3**	**+0.5**
JIRB				*e*S	**Sn**	**17 14 46.2**	**+0.4**
JIKM	**Ikemajima**	**1.75**	**67**	P	**Pn**	**17 14 27.6**	**+0.5**
JIKM				*e*S	**Sn**	**17 14 48.6**	**+0.4**
JMJ	**Miyako jima 2**	**1.75**	**71**	P	**Pn**	**17 14 28.9**	**+1.8**
JMJ				S	**Sn**	**17 14 50.1**	**+1.8**
JOGS	**Gusukube**	**1.83**	**74**	P	**Pn**	**17 14 30.1**	**+1.8**
JOGS				*e*S	**Sn**	**17 14 52.3**	**+2.0**
JKE	**Kume jima 2**	**3.64**	**55**	P	**Pn**	**17 14 54.2**	**+1.1**
JOW	**Kunigami**	**5.04**	**58**	P	**Pn**	**17 15 11.9**	**-0.5**
	3.0nm,0.3s,baz=113,slow=24,SNR=7.6						
JOW				S	**Sn**	**17 16 10.8**	**+1.5**
	1.7nm,0.3s,baz=306,slow=19,SNR=2.0						
JNU	**Nakatsue**	**10.97**	**35**	LR	LR	17 20 38.2	
	comp=Z,110nm,19.7s,baz=296,slow=36						
SONM	**Songino Array**	**27.16**	**334**	P	**P**	**17 19 38.6**	**0.0**
	0.2nm,0.4s,baz=146,slow=6.6,SNR=3.8						
MKAR	**Makanchi Array**	**39.75**	**315**	P	**P**	**17 21 27.5**	**-0.1**
	0.6nm,0.5s,baz=97,slow=10,SNR=11						
ZALV	**Zalesovo Beam**	**41.34**	**326**	P	**P**	**17 21 39.5**	**-1.1**
	0.8nm,0.4s,baz=121,slow=7.5,SNR=4.4						
KURBB	**Kurchatov Arra**	**43.41**	**319**	P	**P**	**17 21 56.3**	**-1.2**
	0.4nm,0.3s,baz=114,slow=9.1,SNR=6.5						
WRA	**Warramunga Arr**	**45.19**	**166**	P	**P**	**17 22 11.9**	**-0.1**
	0.3nm,0.4s,baz=347,slow=8.7,SNR=7.8						
ASAR	**Alice Springs**	**48.70**	**167**	P	**P**	**17 22 40.5**	**+1.1**
	0.3nm,0.5s,baz=353,slow=7.1,SNR=15						
ASAR				PcP	**PcP**	**17 24 04.3**	**+0.3**
	0.2nm,0.5s,baz=348,slow=3.8,SNR=4.5						
ILAR	**Eielson Array**	**68.19**	**27**	P	**P**	**17 24 53.8**	**-0.9**
	0.2nm,0.6s,baz=264,slow=5.0,SNR=3.0						
BRTR	**Keskin Array B**	**74.81**	**307**	P	**P**	**17 25 35.3**	**0.0**
	0.5nm,0.7s,baz=52,slow=12,SNR=3.2						
NOA	**NORSAR Array B**	**79.13**	**333**	P	**P**	**17 25 58.5**	**-0.6**
	0.6nm,0.5s,baz=57,slow=5.2,SNR=2.8						
YKA	**Yellowknife Ar**	**82.09**	**23**	P	**P**	**17 26 14.5**	**-0.3**
	1.0nm,0.5s,baz=304,slow=5.2,SNR=22						
GERES	**GERESS Array B**	**84.11**	**321**	P	**P**	**17 26 25.6**	**0.0**
	0.4nm,0.6s,baz=75,slow=5.2,SNR=4.0						
NVAR	**Mina Array Bea**	**94.95**	**44**	P	**P**	**17 27 17.7**	**+0.3**
	0.2nm,0.4s,baz=275,slow=4.2,SNR=2.3						

*ISCJB **06** 17:25:05.6±0.9, 9°.84S±0°.08×107°.31E±0°.07, h23km, mb3.6/5, Error ellipse: s-maj=13.4km s-min=7.5km az=37.4*

*DJA **06** 17:25:05.3±0.3, 10°S±4°×10°7E±°, h10km, M4.5/21, mB5.2/1, mb4.8/6, MLv4.3/10, MLv4.4/21, Mw(mB)4.6/1*

*IDC **06** 17:25:21.4±4.2, 9°.12S×108°.24E, h118km±27km, mb3.4/5, mb1 3.5/6, mb1mx3.3/30, mbtmp3.8/6, Error ellipse: s-maj=114.7km s-min=16.8km az=53.0*

ISC 06 17:25:08.0±0.9**, 9°.79S**±0°.08×**107°.33E**±0°.08**, h23km, n28, σ0s90**/26**, mb3.7**/5**, South of Jawa**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CISI	**Cisompet, Garu**	**2.27**	**12**	P	**Pn**	**17 25 43.1**	**-1.1**
CMJI	**Cimerak**	**2.28**	**29**	P	**Pn**	**17 25 42.7**	**-1.6**
CNJI	**Cibinong**	**2.47**	**355**	P	**Pn**	**17 25 45.5**	**-1.4**
SKJI	**Sukabumi**	**2.87**	**345**	P	**Pn**	**17 25 52.4**	**0.0**
KPJI	**Karang Pucung**	**2.91**	**33**	P	**Pn**	**17 25 53.5**	**+0.5**
LEM	**Lembang**	**2.96**	**6**	P	**Pb**	**17 26 00.1**	**-0.1**
	18nm,0.3s,baz=88,slow=5.6,SNR=28						
LEM				S	**Sb**	**17 26 37.7**	**+1.7**
	21nm,0.3s,baz=353,slow=14,SNR=5.8						
LEM	**Lembang**	**2.96**	**6**	P	**Pn**	**17 25 54.4**	**+0.6**
DBJI	**Dramaga**	**3.26**	**350**	P	**Pn**	**17 25 58.9**	**+1.0**
CGJI	**Cibinong**	**3.54**	**333**	P	**Pn**	**17 26 01.9**	**+0.2**
UGM	**Wanagama**	**3.67**	**60**	P	**Pn**	**17 26 03.0**	**-0.5**
PCJI	**Pacitan**	**4.12**	**68**	P	**Pn**	**17 26 09.3**	**-0.3**
PWJI	**Pagerwojo**	**4.76**	**69**	P	**Pn**	**17 26 18.6**	**+0.2**
UWJI	**Ujung Watu**	**4.91**	**47**	P	**Pn**	**17 26 20.8**	**+0.4**
	105nm,1.1s,0.4nm						
GMJI	**Gumukmas**	**6.23**	**77**	P	**Pn**	**17 26 38.8**	**+0.2**
	38nm,0.7s,0.2nm						
JAGI	**Jajag, Banyuwa**	**6.87**	**80**	P	**Pn**	**17 26 47.3**	**-0.1**
	54nm,0.8s,2µm0.4nm0.4nm						
MNAI	**Manna**	**6.92**	**321**	P	**Pn**	**17 26 47.6**	**-0.5**
	157nm,1.0s,0.8nm0.8nm						
ABJI	**Asem Bagus**	**7.11**	**74**	P	**Pn**	**17 26 51.0**	**+0.3**
	60nm,0.6s,0.3nm0.3nm						
FITZ	**Fitzroy Crossi**	**19.59**	**117**	S	S	17 32 58.9	-16
	0.2nm,0.3s,baz=352,slow=18,SNR=1.8						
WRA	**Warramunga Arr**	**27.95**	**114**	P	**P**	**17 30 56.6**	**-0.4**
	0.3nm,0.5s,baz=287,slow=11,SNR=4.9						
ASAR	**Alice Springs**	**28.88**	**122**	P	**P**	**17 31 05.7**	**+0.4**
	0.5nm,0.8s,baz=298,slow=8.0,SNR=8.0						
ASAR				PcP	**PcP**	**17 34 15.5**	**+1.0**
	0.2nm,0.9s,baz=327,slow=2.8,SNR=5.1						
H08S2	**Diego Garcia H**	**34.49**	**271**	T	T	18 09 44.9	
	baz=96						
H08S3	**Diego Garcia H**	**34.50**	**271**	T	T	18 10 05.9	
	baz=96						
H08S1	**Diego Carcia H**	**34.51**	**271**	T	T	18 09 54.6	
	baz=96						
STKA	**Stephens Creek**	**38.58**	**130**	P	**P**	**17 32 29.6**	**+0.1**
	2.8nm,0.9s,baz=306,slow=8.7,SNR=5.8						
SONM	**Songino Array**	**57.37**	**359**	P	**P**	**17 34 52.6**	**-2.0**
	0.5nm,0.7s,baz=177,slow=5.8,SNR=4.0						
MKAR	**Makanchi Array**	**60.60**	**341**	P	**P**	**17 35 16.8**	**-0.2**
	0.8nm,0.6s,baz=141,slow=7.7,SNR=10						
YKA	**Yellowknife Ar**	**119.34**	**21**	PKP	**PKPdf**	**17 43 55.2**	**0.0**
	0.2nm,0.5s,baz=338,slow=1.7,SNR=3.7						
TXAR	**Lajitas Array**	**145.09**	**52**	PKP	**PKPdf**	**17 44 45.6**	**+1.2**
	0.4nm,0.7s,baz=268,slow=1.5,SNR=5.1						

*NIED **06** 17:25:00, 38°.50N×144°.70E, h5km, Mw3.8 Best double couple: $M_0$6.17000×10^14 NP1:φs22.00000°, δ27.00000°, λ-72.00000°. NP2:φs182.00000°, δ64.00000°, λ-99.00000°.*

*IDC **06** 17:25:12.5±0.7, 38°.35N×144°.94E, h0km, mb3.6/13, mb1 3.8/16, mb1mx3.7/39, mbtmp3.7/16, ML3.3/3, MS2.9/1, Ms1 2.9/1, ms1mx2.4/31, Error ellipse: s-maj=21.7km s-min=15.9km az=119.0*

*ISCJB **06** 17:25:15.4±0.5, 38°.49N±0°.04×144°.66E±0°.04, h29km, mb3.6/13, Error ellipse: s-maj=5.9km s-min=4.4km az=163.5*

*JMA **06** 17:25:15.9±0.2, 38°.49N×144°.67E, h46km, M4.3*

ISC 06 17:25:17.1±0.7**, 38°.50N**±0°.06×**144°.72E**±0°.07**, h29km, n38, σ1s56**/49**, mb3.6**/13**, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**2.45**	**285**	P	**Pn**	**17 25 54.3**	**-0.8**
JTH	**Tanohata**	**2.64**	**304**	P	**Pn**	**17 25 56.7**	**-1.0**
JTH				*e*S	**Sn**	**17 26 26.9**	**-1.9**
JIO	**Ouri**	**2.65**	**270**	P	**Pn**	**17 25 56.8**	**-1.0**
JIO				*e*S	**Sn**	**17 26 27.4**	**-1.5**
JMK	**Ichinoseki**	**2.77**	**280**	P	**Pn**	**17 25 59.1**	**-0.5**
JOM	**Ohasama**	**2.84**	**291**	P	**Pn**	**17 26 00.0**	**-0.5**
JOM				S	**Sn**	**17 26 32.8**	**-0.9**
JANG	**Nango**	**3.10**	**308**	P	**Pn**	**17 26 02.9**	**-1.2**
JANG				*e*S	**Sn**	**17 26 38.3**	**-2.0**
JMM	**Marumori**	**3.16**	**260**	P	**Pn**	**17 26 03.9**	**-1.0**
JMM				*e*S	**Sn**	**17 26 39.2**	**-2.4**
JOU	**Okura**	**3.19**	**269**	P	**Pn**	**17 26 04.8**	**-0.5**
JOU				*e*S	**Sn**	**17 26 40.8**	**-1.5**
JFK	**Kawauchi**	**3.25**	**251**	P	**Pn**	**17 26 04.4**	**-1.7**
JRG	**Rokugo**	**3.31**	**287**	P	**Pn**	**17 26 06.9**	**0.0**
JRG				*e*S	**Sn**	**17 26 45.3**	**0.0**
JYK	**Kaneyama**	**3.44**	**278**	P	**Pn**	**17 26 08.6**	**-0.1**
JYK				*e*S	**Sn**	**17 26 48.2**	**-0.2**
JFT	**Otama**	**3.60**	**255**	P	**Pn**	**17 26 11.0**	**+0.1**
JFT				*e*S	**Sn**	**17 26 50.8**	**-1.7**
JTM	**Tenmabayashi**	**3.62**	**310**	P	**Pn**	**17 26 10.8**	**-0.5**
JTM				*e*S	**Sn**	**17 26 50.9**	**-2.2**
JNBK	**Urakawa-nobuka**	**4.06**	**339**	P	**Pn**	**17 26 16.7**	**-0.5**
JNBK				*e*S	**Sn**	**17 27 01.6**	**-2.2**
JCH	**Churui**	**4.24**	**346**	P	**Pn**	**17 26 17.9**	**-1.7**
JCH				*e*S	**Sn**	**17 27 03.3**	**-4.8**
JKB	**Kayabe**	**4.40**	**321**	P	**Pn**	**17 26 22.9**	**+1.0**
JRY	**Ryogami san**	**5.26**	**244**	P	**Pn**	**17 26 32.6**	**-1.2**
JRY				*e*S	**Sn**	**17 27 29.3**	**-4.2**
MJAR	**Matsushiro Arr**	**5.53**	**251**	Pn	**Pn**	**17 26 37.9**	**+0.4**
	2.1nm,0.3s,baz=58,slow=8.9,SNR=24						
MJAR				LR	LR	17 29 03.8	
	comp=Z,107nm,19.5s,baz=105,slow=41						
MAT	**Matsushiro**	**5.53**	**251**	P	**Pn**	**17 26 38.1**	**+0.6**
MAT				S	**Sn**	**17 27 40.5**	**+0.3**
JHJ	**Hachijo jima 2**	**6.70**	**218**	Pn	**Pn**	**17 26 51.7**	**-1.9**
	6.4nm,0.3s,baz=326,slow=21,SNR=7.9						
JHJ				Sn	Sn	17 28 01.2	-7.7
	8.3nm,0.3s,baz=86,slow=19,SNR=4.2						
USRK	**Ussuriysk Ar.**	**11.13**	**305**	Pn	**Pn**	**17 27 57.0**	**+2.8**
	0.3nm,0.3s,baz=102,slow=14,SNR=6.0						
MA2	**Magadan**	**21.44**	**8**	P	**P**	**17 30 02.7**	**+0.1**
	1.5nm,0.8s,baz=194,slow=17,SNR=3.5						
SEY	**Seymchan**	**24.90**	**8**	P	**P**	**17 30 38.8**	**+1.6**
	2.9nm,0.8s,baz=183,slow=7.4,SNR=13						
YAK	**Yakutsk**	**25.31**	**343**	P	**P**	**17 30 41.9**	**+1.0**
	0.4nm,0.3s,baz=343,slow=20,SNR=3.9						
H11N2	**WAKE ISLAND Hy**	**26.81**	**128**	T	T	17 58 47.1	
	baz=323						
H11N1	**WAKE ISLAND Hy**	**26.82**	**128**	T	T	17 58 44.2	
	baz=323,slow=74						
H11N3	**WAKE ISLAND Hy**	**26.83**	**128**	T	T	17 58 47.9	
	baz=323,slow=74						
ZALV	**Zalesovo Beam**	**42.89**	**311**	PcP	**PcP**	**17 35 03.6**	**+0.5**
	0.7nm,0.4s,baz=84,slow=3.2,SNR=3.8						
MKAR	**Makanchi Array**	**45.57**	**301**	P	**P**	**17 33 35.6**	**+1.3**
	0.6nm,0.8s,baz=82,slow=8.6,SNR=5.7						
ILAR	**Eielson Array**	**46.84**	**33**	P	**P**	**17 33 43.0**	**-1.0**
	0.5nm,0.8s,baz=259,slow=5.9,SNR=4.9						
WRA	**Warramunga Arr**	**58.95**	**191**	P	**P**	**17 35 12.1**	**-1.7**
	1.0nm,0.7s,baz=13,slow=7.0,SNR=6.1						
YKA	**Yellowknife Ar**	**61.21**	**31**	P	**P**	**17 35 28.1**	**-0.7**
	0.2nm,0.7s,baz=304,slow=6.6,SNR=3.7						
ASAR	**Alice Springs**	**62.67**	**191**	P	**P**	**17 35 38.6**	**-0.5**
	0.6nm,0.8s,baz=5.7,slow=5.0,SNR=6.0						
FINES	**FINESS Array B**	**68.71**	**333**	P	**P**	**17 36 19.0**	**+1.4**
	1.6nm,0.8s,baz=27,slow=13,SNR=4.3						
KBZ	**Khabaz**	**71.91**	**312**	P	**P**	**17 36 38.9**	**+1.4**
	1.2nm,0.9s,baz=20,slow=12,SNR=2.4						
NVAR	**Mina Array Bea**	**72.01**	**55**	P	**P**	**17 36 38.5**	**+0.1**
	0.4nm,0.6s,baz=289,slow=5.6,SNR=3.5						
PDAR	**Pinedale Array**	**74.76**	**47**	P	**P**	**17 36 55.3**	**+0.6**
	0.2nm,0.5s,baz=274,slow=2.4,SNR=2.7						
TXAR	**Lajitas Array**	**87.14**	**54**	P	**P**	**17 38 00.8**	**+0.1**
	0.1nm,0.4s,baz=298,slow=5.8,SNR=2.4						

*NIED **06** 17:45:00, 39°.40N×143°.60E, h14km, Mw3.8 Best double couple: $M_0$5.20000×10^14 NP1:φs202.00000°, δ42.00000°, λ110.00000°. NP2:φs355.00000°, δ51.00000°, λ73.00000°.*

*IDC **06** 17:45:38.5±1.0, 39°.18N×143°.74E, h0km, mb3.6/10, mb1 3.8/14, mb1mx3.6/36, mbtmp3.7/14, ML2.6/4, MS3.1/3, Ms1 3.1/3, ms1mx2.6/45, Error ellipse: s-maj=23.6km s-min=17.4km az=132.0*

*ISCJB **06** 17:45:39.6±0.6, 39°.41N±0°.04×143°.67E±0°.05, h11km, mb3.5/9, MS3.4/2, Error ellipse: s-maj=6.9km s-min=4.3km az=136.9*

*JMA **06** 17:45:41.9±0.2, 39°.39N×143°.60E, h24km, M3.9*

ISC 06 17:45:40.7±0.8**, 39°.37N**±0°.06×**143°.70E**±0°.07**, h11km, n35, σ1s73**/38**, mb3.6**/9**, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MIYJ	**Miyakonagasawa**	**1.47**	**279**	P	**Pn**	**17 46 06.2**	**-1.0**
MIYJ				*e*S	**Sn**	**17 46 23.1**	**-3.3**
JTH	**Tanohata**	**1.53**	**292**	P	**Pn**	**17 46 07.0**	**-0.9**
JTH				*e*S	**Sn**	**17 46 25.8**	**-2.0**
OFUJ	**Ofunato**	**1.60**	**260**	P	**Pn**	**17 46 08.1**	**-0.9**
JOM	**Ohasama**	**1.87**	**274**	P	**Pn**	**17 46 12.3**	**-0.3**
JOM				*e*S	**Sn**	**17 46 34.8**	**-1.4**
JANG	**Nango**	**1.96**	**302**	P	**Pn**	**17 46 12.9**	**-1.0**
JMK	**Ichinoseki**	**1.97**	**259**	P	**Pn**	**17 46 13.7**	**-0.3**
JYK	**Kaneyama**	**2.64**	**261**	P	**Pn**	**17 46 23.4**	**+0.2**
JNBK	**Urakawa-nobuka**	**3.00**	**346**	P	**Pn**	**17 46 29.0**	**+0.9**
JNBK				S	**Sn**	**17 47 03.4**	**-0.6**
JFT	**Otama**	**3.22**	**236**	*e*S	**Sn**	**17 47 08.5**	**-1.2**
JKB	**Kayabe**	**3.23**	**322**	P	**Pn**	**17 46 32.9**	**+1.5**
JKB				*e*S	**Sn**	**17 47 07.1**	**-2.7**
JCH	**Churui**	**3.25**	**356**	P	**Pn**	**17 46 31.3**	**-0.3**
JCH				S	**Sn**	**17 47 08.8**	**-1.5**
JAK	**Akkeshi**	**3.70**	**11**	P	**Pn**	**17 46 37.0**	**-0.8**
JAK				S	**Sn**	**17 47 18.9**	**-2.5**
JFR	**Furan**	**3.88**	**348**	P	**Pn**	**17 46 41.7**	**+1.4**
JAR	**Ashorobuto**	**3.92**	**1**	P	**Pn**	**17 46 40.3**	**-0.6**
JAR				S	**Sn**	**17 47 23.5**	**-3.4**
NEM2	**Nemuro 2**	**4.28**	**20**	P	**Pn**	**17 46 44.3**	**-1.4**
NEM2				S	**Sn**	**17 47 31.2**	**-4.4**
MJAR	**Matsushiro Arr**	**5.18**	**239**	Pn	**Pn**	**17 46 59.5**	**+1.4**
	1.6nm,0.3s,baz=38,slow=12,SNR=24						
JHJ	**Hachijo jima 2**	**6.99**	**208**	Pn	**Pn**	**17 47 20.2**	**-2.9**
	2.0nm,0.3s,baz=68,slow=19,SNR=4.4						
JHJ				Sn	Sn	17 48 33.9	-8.6
	3.7nm,0.3s,baz=107,slow=20,SNR=2.8						
USRK	**Ussuriysk Ar.**	**9.99**	**303**	Pn	**Pn**	**17 48 05.5**	**+1.4**
	0.2nm,0.3s,baz=95,slow=18,SNR=3.9						
KSRS	**Korea Array**	**12.53**	**266**	LR	LR	17 52 51.1	
	comp=Z,25nm,20.2s,baz=145,slow=34						
KLR	**Kul'dur**	**13.04**	**323**	Pn	**Pn**	**17 48 48.4**	**+2.6**
	0.1nm,0.3s,baz=180,slow=16,SNR=2.0						
PETK	**Petropavlovsk-**	**16.77**	**30**	Pn	**P**	**17 49 38.6**	**+1.1**
	0.0nm,0.3s,baz=206,slow=16,SNR=3.0						
MA2	**Magadan**	**20.72**	**10**	P	Pn	17 50 22.5	-0.7
	1.0nm,0.3s,baz=210,slow=16,SNR=4.4						
SEY	**Seymchan**	**24.17**	**10**	P	**P**	**17 50 58.1**	**+1.5**
	0.7nm,0.3s,baz=170,slow=17,SNR=6.1						
H11N2	**WAKE ISLAND Hy**	**27.97**	**128**	T	T	18 21 03.8	
	baz=320						
H11N1	**WAKE ISLAND Hy**	**27.98**	**128**	T	T	18 20 51.3	
	baz=320						
H11N3	**WAKE ISLAND Hy**	**27.99**	**128**	T	T	18 20 52.3	
	baz=320						
SONM	**Songino Array**	**28.08**	**300**	P	**P**	**17 51 33.0**	**+0.6**
	0.4nm,0.5s,baz=83,slow=9.2,SNR=5.1						
ZALV	**Zalesovo Beam**	**41.72**	**311**	P	**P**	**17 53 29.4**	**0.0**
	0.5nm,0.4s,baz=99,slow=9.2,SNR=3.4						
NRIK	**Noril'sk**	**41.94**	**334**	LR	LR	18 10 58.0	
	comp=Z,59nm,18.1s,baz=120,slow=36						
CMAR	**Chiang Mai Arr**	**43.84**	**255**	P	**P**	**17 53 46.3**	**-0.7**
	0.3nm,0.9s,baz=31,slow=8.9,SNR=3.1						
MKAR	**Makanchi Array**	**44.45**	**301**	P	**P**	**17 53 52.0**	**+0.4**
	0.9nm,0.8s,baz=86,slow=10.0,SNR=8.7						
ILAR	**Eielson Array**	**46.56**	**34**	P	**P**	**17 54 09.5**	**+1.5**
	0.6nm,0.8s,baz=263,slow=6.9,SNR=5.1						
WRA	**Warramunga Arr**	**59.65**	**190**	P	**P**	**17 55 43.8**	**-1.1**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
	0.6nm,0.9s,baz=9.3,slow=7.5,SNR=5.7						
YKA	Yellowknife Ar	60.88	31	P	P	17 55 53.0	+0.1
	0.2nm,0.5s,baz=301,slow=6.4,SNR=3.8						
PDAR	Pinedale Array	74.75	47	P	P	17 57 20.1	-0.9
	0.3nm,0.5s,baz=273,slow=1.4,SNR=4.8						
PDAR				LR	LR	18 30 09.6	
	comp=Z,18nm,19.5s,baz=87,slow=36						

NIED 06 17:55:00, 36°.90N×140°.50E, h5km, Mw3.7 Best double couple: M0 4.45000×10^14 NP1:φs349.00000°, δ28.00000°, λ-110.00000°. NP2:φs192.00000°, δ64.00000°, λ-80.00000°.
ISCJB 06 17:55:16.9±0.6, 36°.91N±0°.05×140°.66E±0°.07, h10km, mb3.6/10, Error ellipse: s-maj=8.4km s-min=6.3km az=39.1
IDC 06 17:55:16.4±0.8, 36°.94N×140°.63E, h0km, mb3.6/10, mb1 3.8/11, mb1mx3.6/45, mbtmp3.7/11, ML3.4/1, Error ellipse: s-maj=21.3km s-min=16.3km az=109.0
JMA 06 17:55:18.5, 36°.88N×140°.52E, h5km±2km, M3.5 Broadband fault plane solution: P waves. NP1: φs172.00000°, δ45.00000°, λ-97.00000°. NP2:φs2.00000°, δ45.00000°, λ-83.00000°. Principal axes: T Plg0.0000°, Azm267.0000°; N Plg5.0000°, Azm177.0000°; P Plg85.0000°, Azm357.0000°;
JMA Felt II J1.
ISC 06 17:55:18.2±0.6, 36°.90N±0°.05×140°.54E±0°.06, h10km, n21, σ1s09/19, mb3.7/10, 2C, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
ONAJ	Iwakimizuishiy	0.29	47	⇑P	Pg	17 55 24.7	+0.7
ONAJ				S	Sg	17 55 29.4	+1.4
JHO	Hitachi	0.29	175	⇑P	Pg	17 55 23.9	-0.2
MJAR	Matsushiro Arr	1.90	260	Pn	Pn	17 55 51.3	+0.5
	31nm,0.3s,baz=82,slow=16,SNR=146						
MJAR				Sn	Sb	17 56 16.8	0.0
	71nm,0.3s,baz=83,slow=28,SNR=33						
MAT	Matsushiro	1.91	260	P	Pn	17 55 51.9	+1.2
MAT				S	Sb	17 56 17.3	+0.4
JHJ	Hachijo jima 2	3.83	189	Pn	Pn	17 56 17.5	+0.3
	6.5nm,0.3s,baz=66,slow=20,SNR=4.7						
JHJ				Sn	Sn	17 57 04.4	+2.2
	16nm,0.3s,baz=216,slow=21,SNR=4.1						
MA2	Magadan	23.63	13	P	P	18 00 29.3	0.0
	0.8nm,0.3s,baz=186,slow=19,SNR=4.1						
SONM	Songino Array	27.27	304	P	P	18 01 03.3	+0.5
	0.6nm,0.8s,baz=99,slow=9.6,SNR=3.9						
H11N2	WAKE ISLAND Hy	28.69	119	T	T	18 31 04.5	
	baz=313,slow=75,SNR=25						
H11N1	WAKE ISLAND Hy	28.70	119	T	T	18 31 04.9	
	baz=313,slow=75,SNR=60						
H11N3	WAKE ISLAND Hy	28.71	119	T	T	18 31 05.2	
	baz=313,slow=75,SNR=37						
H11S1	WAKE ISLAND Hy	29.39	121	T	T	18 31 54.6	
	baz=314,slow=76,SNR=63						
H11S3	WAKE ISLAND Hy	29.39	122	T	T	18 31 54.8	
	baz=314,slow=76,SNR=46						
H11S2	WAKE ISLAND Hy	29.40	122	T	T	18 31 55.1	
	baz=314,slow=76,SNR=31						
ZALV	Zalesovo Beam	41.48	312	P	P	18 03 04.7	-0.4
	0.7nm,0.5s,baz=99,slow=8.9,SNR=3.5						
MKAR	Makanchi Array	43.59	302	P	P	18 03 23.0	+0.6
	0.3nm,0.5s,baz=93,slow=7.2,SNR=7.4						
ILAR	Eielson Array	49.98	32	P	P	18 04 13.1	+1.0
	0.3nm,0.6s,baz=282,slow=6.3,SNR=4.2						
WRA	Warramunga Arr	56.84	187	P	P	18 05 02.6	-0.3
	1.4nm,0.9s,baz=4.1,slow=7.3,SNR=7.4						
ASAR	Alice Springs	60.57	187	P	P	18 05 29.2	+0.3
	0.5nm,0.7s,baz=17,slow=7.8,SNR=6.4						
ARCES	ARCESS Array B	63.87	339	P	P	18 05 48.7	-1.7
	1.7nm,0.7s,baz=54,slow=6.1,SNR=3.8						
YKA	Yellowknife Ar	64.27	30	P	P	18 05 51.4	-1.9
	0.2nm,0.8s,baz=275,slow=6.8,SNR=3.1						
TXAR	Lajitas Array	90.76	52	P	P	18 08 20.6	-1.2
	0.3nm,0.6s,baz=316,slow=2.5,SNR=4.2						

IDC 06 18:05:17.6±2.9, 37°.73N×144°.20E, h0km, mb3.4/3, mb1 3.6/4, mb1mx3.3/46, mbtmp3.4/4, ML2.8/1, MS2.2/1, Ms1 2.2/1, ms1mx2.0/31, Error ellipse: s-maj=74.8km s-min=31.4km az=56.0
ISCJB 06 18:05:20.9±0.9, 37°.84N±0°.05×143°.91E±0°.07, h33km, mb3.5/3, Error ellipse: s-maj=7.9km s-min=7.3km az=35.9
JMA 06 18:05:22.0±0.2, 37°.85N×143°.83E, h42km, M3.5
ISC 06 18:05:22.3±1.3, 37°.86N±0°.07×143°.96E±0°.09, h35km, n19, σ1s30/25, mb3.6/3, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
JIO	Ouri	2.14	287	P	Pn	18 05 55.1	-0.4
JIO				eS	Sn	18 06 19.3	-1.5
OFUJ	Ofunato	2.17	305	P	Pn	18 05 55.6	-0.3
JMK	Ichinoseki	2.41	298	P	Pn	18 05 59.2	0.0
JMK				eS	Sn	18 06 27.1	-0.4
JFK	Kawauchi	2.50	260	eS	Sn	18 06 27.5	-2.2
JMM	Marumori	2.50	271	P	Pn	18 06 00.2	-0.3
JMM				S	Sn	18 06 28.0	-1.8
JOM	Ohasama	2.64	309	P	Pn	18 06 02.6	+0.3
JOM				eS	Sn	18 06 32.5	-0.6
JTH	Tanohata	2.64	322	P	Pn	18 06 03.1	+0.7
JFT	Otama	2.89	264	eS	Sn	18 06 38.8	-0.6
JYK	Kaneyama	3.02	292	P	Pn	18 06 08.3	+0.7
JRG	Rokugo	3.02	302	P	Pn	18 06 08.8	+1.2
JANG	Nango	3.15	324	P	Pn	18 06 10.2	+0.8
JTM	Tenmabayashi	3.68	323	S	Sn	18 06 57.6	-1.3
JRY	Ryogami san	4.45	247	P	Pn	18 06 26.0	-1.3
JNBK	Urakawa-nobuka	4.51	349	P	Pn	18 06 28.6	+0.5
JNBK				eS	Sn	18 07 17.4	-1.9
JCH	Churui	4.77	355	P	Pn	18 06 31.1	-0.6
JCH				S	Sn	18 07 22.6	-3.1
MJAR	Matsushiro Arr	4.77	256	Pn	Pn	18 06 32.7	+1.0
	0.4nm,0.3s,baz=81,slow=10,SNR=2.2						
MJAR				LR	LR	18 08 57.9	
	comp=Z,23nm,19.2s,baz=130,slow=45						
MKAR	Makanchi Array	45.40	302	P	P	18 13 39.5	+2.1
	0.2nm,0.5s,baz=80,slow=9.7,SNR=3.5						
WRA	Warramunga Arr	58.20	191	P	P	18 15 12.9	0.0
	0.8nm,0.9s,baz=13,slow=7.2,SNR=4.3						
ASAR	Alice Springs	61.92	190	P	P	18 15 38.3	-0.1
	0.4nm,0.8s,baz=13,slow=8.0,SNR=4.4						

IDC 06 18:05:39.2±2.3, 10°.33S×107°.48E, h0km, mb3.7/5, mb1 3.8/6, mb1mx3.5/38, mbtmp3.7/6, ML4.3/1, Error ellipse: s-maj=85.8km s-min=19.6km az=56.0
ISCJB 06 18:05:41.2±0.9, 9°.94S±0°.07×107°.68E±0°.07, h23km, mb3.6/5, Error ellipse: s-maj=12.0km s-min=8.1km az=135.3
DJA 06 18:05:43.0±0.4, 10°S±4°×10°8E±°, h10km, M4.2/19, mB5.1/1, mb4.5/5, MLv4.2/8, MLv4.1/19, Mw(mB)4.4/1
ISC 06 18:05:43.3±1.1, 9°.90S±0°.08×107°.70E±0°.08, h23km, n19, σ1s12/21, mb3.7/5, South of Jawa

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
CMJI	Cimerak	2.23	20	P	Pn	18 06 18.0	-0.8
CMJI				S	Sn	18 06 43.8	-1.8
CISI	Cisompet, Garu	2.33	3	P	Pn	18 06 19.9	-0.4
CNJI	Cibinong	2.63	348	P	Pn	18 06 23.8	-0.6
KPJI	Karang Pucung	2.83	26	P	Pn	18 06 28.0	+1.0
LEM	Lembang	3.05	359	Pn	Pb	18 06 36.7	-0.4
	30nm,0.3s,baz=105,slow=16,SNR=44						
LEM				Sn	Sb	18 07 14.2	+0.3
	10nm,0.3s,baz=94,slow=6.3,SNR=5.4						
LEM	Lembang	3.05	359	P	Pb	18 06 37.2	+0.2
UGM	Wanagama	3.42	55	P	Pn	18 06 34.1	-1.1
CGJI	Cibinong	3.82	329	P	Pn	18 06 40.6	-0.1
PCJI	Pacitan	3.83	64	P	Pn	18 06 41.3	+0.4
PWJI	Pagerwojo	4.46	66	P	Pn	18 06 49.7	+0.1
GMJI	Gumukmas	5.90	75	P	Pn	18 07 10.3	+1.0
	28nm,0.6s,0.2nm0.2nm						
MDSI	Maura Dua	6.41	327	P	Pn	18 07 16.0	-0.3
	4.9nm,0.6s,0.0nm0.0nm						
JAGI	Jajag, Banyuwa	6.53	78	P	Pn	18 07 19.3	+1.3
	45nm,0.8s,1μm0.3nm0.3nm						
ABJI	Asem Bagus	6.79	73	P	Pn	18 07 23.1	+1.6
	46nm,1.2s,0.2nm0.2nm						
WRA	Warramunga Arr	27.57	114	P	P	18 11 28.7	-0.1
	0.5nm,0.9s,baz=286,slow=10,SNR=2.9						
ASAR	Alice Springs	28.51	122	P	P	18 11 36.2	-1.0
	0.5nm,1.1s,baz=297,slow=8.2,SNR=3.5						
STKA	Stephens Creek	38.23	130	P	P	18 12 60.0	-1.7
	0.6nm,0.4s,baz=326,slow=9.4,SNR=4.6						
SONM	Songino Array	57.49	359	P	P	18 15 31.8	+1.2
	0.7nm,0.6s,baz=178,slow=6.7,SNR=5.6						
MKAR	Makanchi Array	60.83	340	P	P	18 15 55.9	+2.2
	0.7nm,0.5s,baz=153,slow=7.9,SNR=12						

IDC 06 18:11:29.7±1.5, 2°.50N×126°.01E, h0km, mb3.6/4, mb1 3.8/4, mb1mx3.4/45, mbtmp3.6/4, Error ellipse: s-maj=157.5km s-min=22.1km az=65.0, Northern Molucca Sea

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
WRA	Warramunga Arr	23.76	160	P	P	18 16 43.6	-0.4
	0.6nm,0.3s,baz=338,slow=10,SNR=17						
ASAR	Alice Springs	27.13	164	P	P	18 17 15.4	+0.7
	0.3nm,0.6s,baz=357,slow=7.6,SNR=10						
ASAR				PcP	PcP	18 20 35.7	-0.1
	0.3nm,0.9s,baz=351,slow=2.2,SNR=3.5						
STKA	Stephens Creek	37.26	158	P	P	18 18 42.9	-0.5
	1.5nm,0.7s,baz=311,slow=8.3,SNR=4.3						
MKAR	Makanchi Array	58.15	326	P	P	18 21 25.3	-0.1
	0.3nm,0.4s,baz=117,slow=8.0,SNR=12						

MAN 06 18:22:56, 17°.03N×120°.47E, h20km, mb4.1, ML2.9, MS2.6, 1D, Luzon

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
ABRA	Dolores	0.66	20	eP	Pb	18 23 09.5	+0.6
ABRA				eS	Sb	18 23 17.9	+0.3
APYP	Conner	1.11	41	eP	Pb	18 23 18.1	+1.5
APYP				eS	Sn	18 23 31.7	+0.6
CAUP	Cauayan	1.30	93	eP	Pn	18 23 18.9	-0.1
PIP	Pasuquin	1.30	6	⇓iP	Pn	18 23 18.8	-0.3
PIP				eS	Sn	18 23 30.0	-5.9

IDC 06 18:24:52.2±63.0, 11°.87S×167°.11E, h0km, mb3.5/3, mb1 3.7/3, mb1mx3.4/28, mbtmp3.5/3, Error ellipse: s-maj=1078.0km s-min=113.1km az=61.0, Santa Cruz Islands

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
STKA	Stephens Creek	30.80	226	P	P	18 31 09.8	0.0
	1.7nm,1.1s,baz=72,slow=16,SNR=2.6						
WRA	Warramunga Arr	32.48	252	P	P	18 31 24.8	0.0
	0.2nm,0.5s,baz=82,slow=9.3,SNR=2.6						
ASAR	Alice Springs	33.64	245	P	P	18 31 34.8	-0.2
	0.3nm,0.8s,baz=83,slow=9.2,SNR=4.2						

ISCJB 06 18:30:15.7±0.5, 32°.63N±0°.05×115°.90W±0°.03, h12km±5km, Error ellipse: s-maj=7.7km s-min=4.5km az=179.3
ECX 06 18:30:16.6±0.6, 32°.62N×115°.89W, h4km, MD2.7, ML2.9
MEX 06 18:30:17.5±0.7, 32°.57N×115°.83W, h16km±18km, MD3.7
ISC 06 18:30:14.7±1.0, 32°.59N±0°.03×115°.87W±0°.03, h18km±4km, n19, σ0s84/28, 8C-3D, California-Baja California border region

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
YUH	Yuha Desert	0.07	322	⇑iP	Pg	18 30 17.8	-0.3
SGL	Mount Signal	0.14	66	⇑iP	Pb	18 30 19.0	+0.6
RMX	La Rumorosa	0.17	273	⇑eP	Pg	18 30 19.4	0.0
RMX				eS	Sg	18 30 22.2	-0.4
RMX				⇑e		18 30 22.4	
RMX				AML	AML	18 30 22.4	
	comp=N,2μm,0.1s						
IBP	Imperial Bould	0.20	290	⇑eP	Pb	18 30 20.1	+0.4
ERPC	Ernies Place	0.23	50	⇑iP	Pb	18 30 20.9	+0.6
COK	Cook Ranch	0.28	26	⇓iP	Pb	18 30 21.5	+0.3
DREC	Desert Rsrch C	0.42	59	eP	Pb	18 30 24.5	+0.9
CPBX	Cerro Prieto	0.51	110	eP	Pb	18 30 26.3	+1.2
CPBX				⇑e		18 30 37.5	
CPBX				AML	AML	18 30 37.5	
	comp=E,2μm,0.3s						
MBIG	Mexicali	0.60	108	eP	Pn	18 30 28.1	-0.2
BAR	Barrett	0.68	278	⇑eP	Pb	18 30 28.6	+0.6
TJIG	Tijuana	0.70	257	eP	Pb	18 30 28.9	+0.6
TJIG				eS	Sg	18 30 37.9	+0.3
CBX	Cerro Bola	0.72	248	eP	Pb	18 30 29.9	+1.0
CBX				eS	Sb	18 30 39.4	+0.9
CBX	Cerro Bola	0.72	248	eP	Pb	18 30 29.7	+0.9
CBX				eS	Sg	18 30 38.5	0.0
SDRC	San Diego Road	0.91	279	eP	Pg	18 30 32.7	+0.2
ECNX	Esteban Cantu	1.12	214	eP	Pg	18 30 36.5	+0.2
ECNX				eS	Sg	18 30 51.3	+0.3
ZAX	El Zacaton	1.13	198	eP	Pg	18 30 36.6	0.0
ZAX				eS	Sg	18 30 52.0	+0.7
ECBX	El Chinero	1.32	148	eP	Pg	18 30 40.3	+0.2
ECBX				eS	Sg	18 30 57.8	+0.5
ECBX				AML	AML	18 30 59.3	
	comp=E,110nm,0.4s						
ECBX				⇓e		18 30 59.3	
ECBX				⇓e		18 30 59.4	
ECBX				AML	AML	18 30 59.4	
	comp=N,168nm,0.6s						
SPIG	San Pedro Mart	1.58	167	eP	Pb	18 30 43.7	+0.1
SPIG				i S	Sn	18 30 59.4	-2.9
SPX	San Pedro Mart	1.58	167	eP	Pg	18 30 44.7	-0.4
SPX				eS	Sg	18 31 06.5	+0.7

NIED 06 18:33:00, 37°.50N×141°.80E, h11km, Mw3.2 Best double couple: M0 7.56000×10^13 NP1:φs242.00000°, δ45.00000°, λ-143.00000°. NP2:φs124.00000°, δ65.00000°, λ-51.00000°.
JMA 06 18:33:05.8±0.2, 37°.53N×141°.82E, h33km±3km, M3.5, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
JFK	Kawauchi	0.77	258	P	Pn	18 33 20.3	-0.1
JFK				S	Sn	18 33 30.2	-0.6
JMM	Marumori	0.88	293	P	Pn	18 33 21.8	-0.1
JMM				S	Sn	18 33 33.0	-0.5
ONAJ	Iwakimizuishiy	0.92	243	P	Pn	18 33 22.3	-0.2
ONAJ				S	Sn	18 33 34.1	-0.5
JIO	Ouri	0.99	338	P	Pn	18 33 23.2	-0.2
JIO				S	Sn	18 33 35.1	-1.2
JFT	Otama	1.18	270	P	Pb	18 33 27.1	-0.6
JFT				eS	Sb	18 33 42.4	-0.2
JOU	Okura	1.24	313	P	Pn	18 33 27.6	+0.8
JHO	Hitachi	1.36	228	P	Pn	18 33 28.3	-0.1

IDC 06 18:39:52.3±1.5, 5°.52S×130°.58E, h0km, mb3.9/3, mb1 4.3/7, mb1mx3.8/39, mbtmp4.2/7, ML4.3/4, MS3.9/1, Ms1 3.9/1, ms1mx2.4/52, Error ellipse: s-maj=47.5km s-min=21.1km az=71.0
ISCJB 06 18:40:08.7±0.5, 6°.25S±0°.04×130°.01E±0°.06, h146km, mb3.6/3, Error ellipse: s-maj=7.9km s-min=5.5km az=6.8
NEIC 06 18:40:09.3±1.1, 6°.15S×130°.02E, h149km±15km, mb4.5/2, Error ellipse: s-maj=15.9km s-min=12.2km az=95.0
DJA 06 18:40:11.0±0.4, 6°S±3°×13°0E±°, h173km±11km, M4.5/15, mb4.6/7, mB5.3/4, MLv4.5/15, Mw(mB)4.7/4
ISC 06 18:40:09.5±0.8, 6°.19S±0°.07×129°.93E±0°.07, h146km, n22, σ2s31/23, mb3.9/3, Banda Sea

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
BNDI	Bandanaira	1.66	359	P	Pn	18 40 43.2	+2.7
SAUI	Saumlaki	2.24	143	P	Pn	18 40 51.8	+4.5
SAUI				S	Sn	18 41 22.1	+5.8
MSAI	Masohi	3.00	341	P	Pn	18 40 58.5	+1.9
FAKI	Fak Fak	3.99	36	P	Pn	18 41 08.7	-0.8
FAKI	Fak Fak	3.99	36	ePn	Pn	18 41 08.5	-1.0
NLAI	Namlea	4.07	316	P	Pn	18 41 12.8	+2.3
KMPI	Kaimana, Papua	4.53	56	P	Pn	18 41 16.9	+0.3
SWI	Sorong	5.46	14	P	Pn	18 41 27.4	-1.5
	58nm,0.8s,4μm0.8nm						
SANI	Sanana	5.69	316	P	Pn	18 41 34.8	+2.8
	27nm,0.7s,0.1nm						
LBMI	Labuha	6.02	336	P	Pn	18 41 37.4	+0.9
	82nm,0.8s,889nm0.3nm						
RKPI	Ransiki, Papua	6.29	43	P	Pn	18 41 40.3	+0.2
	351nm,0.8s,7μm1.7nm						
SOEI	Soe	6.63	237	P	Pn	18 41 46.0	+1.3
	36nm,1.1s,0.1nm						
SOEI	Soe	6.63	237	ePn	Pn	18 41 47.0	+2.3
	22nm,0.6s						
BATI	Baumata	7.37	237	Pn	Pn	18 41 55.8	+1.3
	4.7nm,0.3s,baz=106,slow=24,SNR=12						
BATI				Sn	Sn	18 43 16.8	-0.1
	6.4nm,0.3s,baz=104,slow=24,SNR=5.8						
FITZ	Fitzroy Crossi	12.56	199	Pn	Pn	18 43 02.3	-0.8
	2.3nm,0.3s,baz=22,slow=10,SNR=19						
FITZ				Sn	Sn	18 45 13.9	-8.1
	1.4nm,0.3s,baz=333,slow=4.5,SNR=5.1						
WRAB	Tennant Creek	14.32	163	eP	Pn	18 43 24.8	-0.9
	7.8nm,0.4s						
WRA	Warramunga Arr	14.33	163	Pn	Pn	18 43 24.4	-1.3
	0.5nm,0.3s,baz=343,slow=13,SNR=32						
WRA				Sn	Sn	18 45 55.9	-8.8
	2.8nm,0.3s,baz=350,slow=18,SNR=9.1						
ASAR	Alice Springs	17.79	168	P	Pn	18 44 09.1	+1.0
	2.2nm,0.3s,baz=342,slow=9.8,SNR=192						
ASAR				S	S	18 47 18.6	-5.5
	0.3nm,0.3s,baz=333,slow=15,SNR=4.5						
STKA	Stephens Creek	27.79	158	P	P	18 45 45.1	+0.3
	1.1nm,0.4s,baz=329,slow=7.6,SNR=3.1						
JCJ	Chichijima	35.15	19	LR	LR	18 58 48.9	
	comp=Z,218nm,21.7s,baz=15,slow=33						
CMAR	Chiang Mai Arr	39.16	309	P	P	18 47 22.5	-0.8
	0.4nm,0.7s,baz=126,slow=8.7,SNR=4.5						
MKAR	Makanchi Array	67.51	327	P	P	18 50 49.4	-0.5
	1.2nm,0.6s,baz=125,slow=8.0,SNR=18						

NEIC 06 18:40:14.4, 17°.48N×94°.50W, h152km, MD4.0(MEX), After MEX.
MEX 06 18:40:15.1±0.6, 17°.47N×94°.51W, h144km±9km, MD4.0, Chiapas

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
TGIG		1.49	117	eP	Pn	18 40 42.9	-1.3
TGIG				eS	Sn	18 41 04.7	-1.7
TGIG		1.49	117	eP	Pn	18 40 42.9	-1.3
TGIG				eS	Sn	18 41 04.7	-1.7
PCIG		2.15	145	eP	Pn	18 40 50.4	-1.2
PCIG				eS	Sn	18 41 17.4	-2.3
PCIG		2.15	145	eP	Pn	18 40 50.4	-1.2
PCIG				eS	Sn	18 41 17.4	-2.3
OXBJ	Oaxaca	2.16	260	eP	Pn	18 40 50.3	-1.7
OXBJ				eS	Sn	18 41 18.4	-1.8
VHO	Vista Hermosa	2.16	260	eP	Pn	18 40 50.7	-1.3
VHO				eS	Sn	18 41 19.9	-0.5
VHO	Vista Hermosa	2.16	260	eP	Pn	18 40 50.7	-1.3
VHO				eS	Sn	18 41 18.9	-1.5
HUIG	Huatulco	2.29	222	eP	Pn	18 40 49.3	-4.0
HUIG				i S	Sn	18 41 20.3	-2.4
HUIG	Huatulco	2.29	222	eP	Pn	18 40 49.3	-4.0
HUIG				i S	Sn	18 41 20.3	-2.4
CCIG	Comitan	2.56	117	eP	Pn	18 40 55.6	-1.2
CCIG				eS	Sn	18 41 26.7	-2.2
CCIG	Comitan	2.56	117	eP	Pn	18 40 55.6	-1.2
CCIG				eS	Sn	18 41 26.7	-2.2
TPIG	Tehuac#an	2.88	290	i P	Pn	18 40 59.8	-1.0
TPIG				eS	Sn	18 41 33.8	-2.3
TPIG	Tehuac#an	2.88	290	i P	Pn	18 40 59.8	-1.0
TPIG				eS	Sn	18 41 33.8	-2.3
PNIG	Pinotepa	3.63	253	eP	Pn	18 41 06.3	-4.1
PNIG				i S	Sn	18 41 47.4	-5.8
PNIG	Pinotepa	3.63	253	eP	Pn	18 41 06.3	-4.1
PNIG				i S	Sn	18 41 47.4	-5.8
TLIG	Tlapa	3.88	272	eP	Pn	18 41 10.6	-3.1

ISCJB 06 18:45:30.5±1.6, 20°.8S±0°.5×178°.7W±0°.3, h579km, mb3.5/9, Error ellipse: s-maj=76.0km s-min=16.5km az=156.7
IDC 06 18:45:33.5±5.0, 20°.84S×178°.67W, h608km±54km, mb3.0/9, mb1 3.3/9, mb1mx3.1/33, mbtmp4.0/9, Error ellipse: s-maj=72.1km s-min=23.9km az=153.0
ISC 06 18:45:30.6±1.5, 20°.9S±0°.5×178°.6W±0°.3, h579km, n13, σ1s01/15, mb3.6/9, Fiji Islands region

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
CTA	Charters Tower	32.94	265	P	P	18 51 19.1	+0.4
	2.4nm,0.5s,baz=90,slow=10,SNR=6.0						
ASAR	Alice Springs	43.92	257	P	P	18 52 47.8	+0.3
	2.5nm,0.5s,baz=97,slow=7.6,SNR=22						
ASAR				PcP	PcP	18 54 20.9	+0.4
	0.6nm,0.6s,baz=100,slow=4.3,SNR=5.6						
WRA	Warramunga Arr	44.03	263	P	P	18 52 48.0	-0.2
	0.9nm,0.4s,baz=97,slow=7.3,SNR=19						
WRA				PcP	PcP	18 54 20.1	-0.7
	0.6nm,0.9s,baz=102,slow=2.7,SNR=3.7						
NVAR	Mina Array Bea	81.66	44	P	P	18 56 50.5	+1.1
	0.8nm,1.0s,baz=236,slow=11,SNR=4.2						
SEY	Seymchan	86.62	347	P	P	18 57 13.2	+0.4
	0.5nm,0.4s,baz=68,slow=24,SNR=5.8						
TXAR	Lajitas Array	87.70	58	P	P	18 57 19.0	+0.2
	0.3nm,0.7s,baz=206,slow=6.0,SNR=3.2						
ILAR	Eielson Array	88.80	13	P	P	18 57 22.1	-0.9
	0.3nm,0.5s,baz=219,slow=7.0,SNR=3.5						
PDAR	Pinedale Array	89.59	43	P	P	18 57 28.9	+1.4
	0.3nm,0.6s,baz=222,slow=3.0,SNR=3.9						
CMAR	Chiang Mai Arr	89.75	290	P	P	18 57 29.5	+1.0
	0.9nm,1.0s,baz=133,slow=2.2,SNR=7.1						
ARCES	ARCESS Array B	129.20	349	PKP	PKPdf	19 03 32.7	-0.3
	2.6nm,1.0s,baz=32,slow=4.8,SNR=3.8						
AKASG	Malin Array Be	143.09	330	PKP	PKPdf	19 03 57.1	-2.0
	2.1nm,0.5s,baz=43,slow=4.3,SNR=12						
BRTR	Keskin Array B	146.70	312	PKPbc	PKPbc	19 04 07.5	-1.1
	0.7nm,0.7s,baz=128,slow=5.0,SNR=4.7						
GERES	GERESS Array B	150.42	343	PKPbc	PKPbc	19 04 16.5	-0.9
	0.1nm,0.3s,baz=76,slow=5.6,SNR=3.8						

CSEM 06 18:49:56.1, 37°.44N×20°.54E, h28km, ML1.8/3
ATH 06 18:49:56.1, 37°.44N×20°.54E, h28km±2km, ML1.8/2, Error ellipse: s-maj=3.0km s-min=1.2km az=47.0, Ionian Sea

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
KFL	Anninata	0.69	16	P	Pn	18 50 10.2	+0.1
KFL	Anninata	0.69	16	P	Pn	18 50 10.2	+0.1
VLS	Valsamata	0.74	3	P	Pb	18 50 09.9	-0.5
VLS				S	Sn	18 50 21.8	+0.8
AMT	Artemida-Makis	0.93	84	P	Pb	18 50 14.5	+0.9
AMT				S	Sn	18 50 26.6	+0.8
AMT	Artemida-Makis	0.93	84	P	Pb	18 50 14.5	+0.8
AMT				S	Sn	18 50 26.6	+0.8
AMT				AML	AML	18 50 38.0	
	comp=N,107μm,0.8s						
AMT				AML	AML	18 50 45.7	
	comp=E,166μm,1.5s						
DRO	Drossia	1.06	61	P	Pb	18 50 17.2	+1.4
DRO				S	Sb	18 50 31.1	+1.9
DRO	Drossia	1.06	61	P	Pb	18 50 17.2	+1.4
DRO				S	Sb	18 50 31.1	+1.9
DRO				AML	AML	18 50 54.8	
	comp=N,166μm,2.2s						
DRO				AML	AML	18 51 12.3	
	comp=E,139μm,1.8s						
PYL	PYLOS	1.10	119	P	Pb	18 50 17.0	+0.5
PYL	PYLOS	1.10	119	P	Pb	18 50 17.1	+0.6
ITM	Ithomi	1.13	103	P	Pb	18 50 17.9	+0.9
ITM				S	Sb	18 50 33.4	+2.0
ITM	Ithomi	1.13	103	P	Pb	18 50 17.9	+0.9
ITM				S	Sb	18 50 33.4	+2.0
PDO	Prodromos	1.26	23	P	Pb	18 50 19.4	+0.2
PDO	Prodromos	1.26	23	P	Pb	18 50 19.4	+0.2
LKD2	Lefkada island	1.35	4	P	Pb	18 50 20.7	0.0
LKD2	Lefkada island	1.35	4	P	Pb	18 50 20.7	0.0

JMA 06 18:52:01.1±0.2, 38°.03N×143°.94E, h46km, M4.0, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
OFUJ	Ofunato	2.07	301	P	Pn	18 52 34.5	+1.2
JIO	Ouri	2.08	283	P	Pn	18 52 34.7	+1.2
JIO				eS	Sn	18 52 59.1	+0.9
JMK	Ichinoseki	2.32	294	S	Sn	18 53 06.6	+2.4
JMM	Marumori	2.49	267	P	Pn	18 52 40.3	+1.1

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
JMM				S	Sn	18 53 09.0	+0.7
JTH	Tanohata	2.50	320	P	Pn	18 52 41.0	+1.7
JTH				eS	Sn	18 53 09.2	+0.7
JFK	Kawauchi	2.52	256	eS	Sn	18 53 09.3	+0.2
JOM	Ohasama	2.52	306	P	Pn	18 52 40.6	+1.0
JOM				S	Sn	18 53 10.7	+1.6
JFT	Otama	2.90	261	eS	Sn	18 53 20.2	+1.8
JRG	Rokugo	2.92	299	eS	Sn	18 53 21.9	+2.9
JANG	Nango	3.00	322	eS	Sn	18 53 20.4	-0.5
JTM	Tenmabayashi	3.54	322	eS	Sn	18 53 33.9	-0.2
JNBK	Urakawa-nobuka	4.34	348	P	Pn	18 53 05.4	+0.9
JNBK				eS	Sn	18 53 53.1	-0.7
JRY	Ryogami san	4.50	245	P	Pn	18 53 07.8	+1.0
JCH	Churui	4.60	355	P	Pn	18 53 08.0	-0.1
JCH				eS	Sn	18 53 57.0	-3.2

*NIED **06** 18:59:00, 38.°00N×143.°50E, h8km, Mw3.8 Best double couple: $M_0$5.69000×10^{14} NP1:ϕ_s342.00000°, δ61.00000°, λ-175.00000°. NP2:ϕ_s250.00000°, δ85.00000°, λ-29.00000°.*
*IDC **06** 18:59:03.1±2.3, 37.°73N×143.°92E, h0km, mb3.5/4, mb1 3.6/8, mb1mx3.4/66, mbtmp3.6/8, ML3.2/4, MS2.7/1, Ms1 2.7/1, ms1mx2.0/55, Error ellipse: s-maj=44.4km s-min=25.8km az=144.0*
*JMA **06** 18:59:07.4±0.3, 37.°98N×143.°52E, h30km, M3.8*
ISC 06 18:59:08.3±1.8, **38.°03N**±0.°09×**143.°6E**±0.°1, **h19**km, **n30**, σ**1.°46**/30, **mb3.5**/4, **Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
JIO	Ouri	1.79	284	P	Pn	18 59 37.1	-1.1
JIO				eS	Sn	18 59 58.7	-1.8
OFUJ	Ofunato	1.82	306	P	Pn	18 59 37.9	-0.6
JMK	Ichinoseki	2.06	297	P	Pn	18 59 41.1	-0.7
JMM	Marumori	2.20	266	P	Pn	18 59 42.4	-1.4
JMM				eS	Sn	19 00 08.4	-2.0
JFK	Kawauchi	2.24	253	P	Pn	18 59 42.3	-2.0
JOM	Ohasama	2.29	310	P	Pn	18 59 44.5	-0.5
JOU	Okura	2.31	279	P	Pn	18 59 45.0	-0.3
JTH	Tanohata	2.32	326	P	Pn	18 59 46.0	+0.6
JFT	Otama	2.61	260	P	Pn	18 59 48.1	-1.4
JFT				eS	Sn	19 00 19.2	-1.4
JRG	Rokugo	2.67	302	P	Pn	18 59 50.0	-0.2
JYK	Kaneyama	2.67	290	P	Pn	18 59 49.9	-0.3
JANG	Nango	2.83	326	P	Pn	18 59 52.9	+0.5
JTM	Tenmabayashi	3.36	326	eS	Sn	19 00 37.9	-1.2
JRY	Ryogami san	4.24	243	P	Pn	19 00 10.5	-1.4
JNBK	Urakawa-nobuka	4.29	352	P	Pn	19 00 12.8	+0.3
JNBK				eS	Sn	19 00 59.8	-2.1
JKB	Kayabe	4.31	334	P	Pn	19 00 14.3	+1.5
MJAR	Matsushiro Arr	4.52	252	Pn	Pn	19 00 16.1	+0.3
	2.0nm,0.3s,baz=91,slow=16,SNR=13						
MJAR				Sn	Sn	19 01 09.7	+1.8
	0.7nm,0.3s,baz=76,slow=41,SNR=5.0						
MAT	Matsushiro	4.53	252	P	Pn	19 00 17.1	+1.3
MAT				S	Sn	19 01 07.3	-0.6
JCH	Churui	4.58	358	P	Pn	19 00 15.3	-1.2
JCH				eS	Sn	19 01 05.3	-3.8
JHJ	Hachijo jima 2	5.79	213	Pn	Pn	19 00 29.1	-4.0
	4.5nm,0.3s,baz=312,slow=23,SNR=14						
JHJ				Sn	Sn	19 01 29.7	-9.4
	8.0nm,0.3s,baz=72,slow=19,SNR=6.6						
USRK	Ussuriysk Ar.	10.68	309	Pn	Pn	19 01 44.5	+4.3
	0.3nm,0.3s,baz=97,slow=12,SNR=4.6						
JNU	Nakatsue	11.43	248	LR	LR	19 06 29.3	
	comp=Z,34nm,20.1s,baz=310,slow=38						
KSRS	Korea Array	12.40	272	Pn	Pn	19 02 05.5	+1.8
	0.2nm,0.3s,baz=84,slow=15,SNR=3.7						
H11N2	WAKE ISLAND Hy	27.26	125	T	T	19 33 01.4	
	baz=317,slow=74,SNR=6.0						
H11N1	WAKE ISLAND Hy	27.27	125	T	T	19 33 02.6	
	baz=317,slow=74,SNR=4.4						
H11N3	WAKE ISLAND Hy	27.28	125	T	T	19 33 03.1	
	baz=317,slow=74,SNR=5.4						
SONM	Songino Array	28.68	302	P	P	19 05 04.8	+0.7
	0.8nm,0.8s,baz=89,slow=8.4,SNR=5.8						
ZALV	Zalesovo Beam	42.52	312	P	P	19 07 03.6	+1.3
	1.0nm,0.5s,baz=95,slow=8.4,SNR=5.0						
MKAR	Makanchi Array	45.05	302	P	P	19 07 23.0	+0.2
	0.5nm,0.8s,baz=85,slow=9.7,SNR=5.6						
ILAR	Eielson Array	47.73	33	P	P	19 07 42.1	-1.4
	0.2nm,0.8s,baz=276,slow=8.0,SNR=2.5						

IDC 06 19:04:00.7±13.0, **3.°93S**×**151.°04E**, **h75**km±124km, **mb3.3**/3, **mb1 3.6**/3, **mb1mx3.0**/54, **mbtmp3.6**/3, **Error ellipse: s-maj=86.9km s-min=38.8km az=122.0, New Ireland region**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
WRA	Warramunga Arr	22.77	224	P	P	19 08 57.8	+0.6
	2.4nm,0.4s,baz=50,slow=10.0,SNR=24						
ASAR	Alice Springs	25.67	219	P	P	19 09 23.4	-0.5
	0.4nm,0.4s,baz=56,slow=8.9,SNR=7.1						
MKAR	Makanchi Array	78.52	319	P	P	19 15 53.9	-0.1
	0.1nm,0.5s,baz=101,slow=7.5,SNR=1.7						
TORD	Torodi Ar. Bea	148.37	289	PKPbc	PKPbc	19 23 39.2	-0.4
	0.2nm,0.3s,baz=79,slow=4.3,SNR=4.2						

*IDC **06** 19:04:23.8±4.3, 3.°12S×131.°10E, h0km, mb3.5/2, mb1 3.8/3, mb1mx3.4/58, mbtmp3.6/3, ML3.5/1, MS4.4/1, Ms1 4.4/1, ms1mx2.7/30, Error ellipse: s-maj=311.8km s-min=28.2km az=72.0*
*ISCJB **06** 19:04:28.6±0.7, 3.°31S±0.°08×130.°68E±0.°08, h33km, mb3.5/1, MS4.5/1, Error ellipse: s-maj=11.2km s-min=11.1km az=26.7*
*DJA **06** 19:04:28.7±0.5, 3°S±6°×13°1E±°, h10km, M3.3/7, MLv3.3/6, MLv3.4/7*
ISC 06 19:04:29.8±1.1, **3.°27S**±0.°07×**130.°66E**±0.°07, **h35**km, **n11**, σ**1.°04**/9, **Seram**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
BNDI	Bandanaira	1.46	211	P	Pn	19 04 54.3	+0.7
FAKI	Fak Fak	1.62	78	P	Pn	19 04 56.9	+1.0
MSAI	Masohi	1.73	267	P	Pn	19 04 58.2	+0.8
SWI	Sorong	2.46	14	P	Pn	19 05 08.1	+0.6
NLAI	Namlea	3.56	270	P	Pn	19 05 23.9	+1.4
LBMI	Labuha	4.10	310	P	Pn	19 05 29.6	-0.4
FITZ	Fitzroy Crossi	15.54	198	LR	LR	19 14 30.2	
	comp=Z,45nm,19.4s,baz=38,slow=38						
WRA	Warramunga Arr	16.95	168	P	Pn	19 08 23.1	-1.4
	0.2nm,0.3s,baz=350,slow=12,SNR=8.6						
ASAR	Alice Springs	20.52	171	P	P	19 09 04.8	-0.3
	2.3nm,0.5s,baz=352,slow=10,SNR=23						
MKAR	Makanchi Array	65.51	326	P	P	19 15 09.8	+0.1
	0.2nm,0.4s,baz=129,slow=7.4,SNR=6.6						
AKASG	Malin Array Be	99.77	321	LR	LR	20 07 22.0	
	comp=Z,161nm,18.7s,baz=30,slow=38						

IDC 06 19:08:43.2±1.9, **3.°76N**×**126.°95E**, **h0**km, **mb3.3**/4, **mb1 3.5**/4, **mb1mx3.2**/68, **mbtmp3.3**/4, **Error ellipse: s-maj=171.5km s-min=23.0km az=67.0, Talaud Islands**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
WRA	Warramunga Arr	24.65	163	P	P	19 14 05.3	-0.5
	0.4nm,0.4s,baz=343,slow=10,SNR=6.5						
ASAR	Alice Springs	28.09	166	P	P	19 14 37.4	+0.5
	0.1nm,0.5s,baz=340,slow=11,SNR=4.1						
MKAR	Makanchi Array	57.66	325	P	P	19 18 35.7	+0.3
	0.1nm,0.4s,baz=122,slow=7.4,SNR=4.7						
KURBB	Kurchatov Arra	61.83	327	P	P	19 19 03.6	-0.4
	0.3nm,0.7s,baz=127,slow=5.6,SNR=6.1						

*ISCJB **06** 19:14:35.3±0.4, 40.°35N±0.°03×27.°45E±0.°04, h10km±4km, Error ellipse: s-maj=6.2km s-min=5.1km az=138.1*
*CSEM **06** 19:14:35.5±0.1, 40.°35N×27.°45E, h11km±1km, MD2.8, Error ellipse: s-maj=2.6km s-min=1.9km az=48.0*
*ISK **06** 19:14:35.2, 40.°36N×27.°45E, h12km, MD2.8*
*DDA **06** 19:14:35.2, 40.°34N×27.°47E, h7km, Ml2.9*
ISC 06 19:14:34.9±0.9, **40.°35N**±0.°02×**27.°45E**±0.°02, **h17**km±6km, **n51**, σ**0.°34**/55, **Turkey**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
KNL	Bal˜–kesir	0.10	143	i P	Pb	19 14 37.7	-0.8
KRBG	Karabiga-Canak	0.12	290	PG	Pg	19 14 38.8	+0.1
KRBG				SG	Sg	19 14 41.2	0.0
KRBG	Karabiga-Canak	0.12	290	i Pg	Pg	19 14 38.8	+0.1
KRBG				i Sg	Sg	19 14 41.2	0.0
MRMT	Marmara Adasi	0.28	25	ePG	Pg	19 14 41.2	+0.1
MRMT				eSG	Sg	19 14 45.2	-0.1
MRMT	Marmara Adasi	0.28	25	ePg	Pg	19 14 41.2	+0.1
MRMT				eSg	Sg	19 14 45.2	-0.1
EDC	Edincik	0.32	91	ePG	Pg	19 14 42.0	+0.3
EDC	Edincik	0.32	91	ePg	Pg	19 14 42.0	+0.3
GONE	Gonen-Balikesi	0.36	149	ePG	Pg	19 14 42.6	+0.2
GONE	Gonen-Balikesi	0.36	149	ePg	Pg	19 14 42.6	+0.2
RKY	Sarkoy-Tekirda	0.39	329	ePG	Pb	19 14 43.6	+0.1
RKY	Sarkoy-Tekirda	0.39	329	ePg	Pb	19 14 43.6	+0.1
SART	Tekirdag	0.39	329	i P	Pb	19 14 43.7	+0.2
SART	Tekirdag	0.39	329	P	Pb	19 14 43.7	+0.2
BALY	Balya	0.62	168	i P	Pb	19 14 47.3	-0.1
BALY	Balya	0.62	168	P	Pb	19 14 47.3	-0.1
TKR	Tekirdag	0.64	6	ePG	Pg	19 14 48.0	+0.4
TKR	Tekirdag	0.64	6	ePg	Pg	19 14 48.0	+0.4
KCTX	Karacabey (Bur	0.70	97	ePG	Pg	19 14 49.2	+0.5
KCTX	Karacabey (Bur	0.70	97	ePg	Pg	19 14 49.2	+0.5
ERIK	Erikli-Kesan	0.78	294	ePG	Pb	19 14 50.1	+0.1
ERIK	Erikli-Kesan	0.78	294	ePg	Pb	19 14 50.1	+0.1
BALB	Balikesir	0.79	155	ePG	Pn	19 14 51.0	-0.2
BALB	Balikesir	0.79	155	ePg	Pn	19 14 51.0	-0.2
CRLT	Corlu	0.81	16	ePG	Pg	19 14 51.0	+0.3
CRLT	Corlu	0.81	16	ePg	Pg	19 14 51.0	+0.3
DURS	Dursunbey	1.09	133	i P	Pb	19 14 55.5	+0.1
DURS	Dursunbey	1.09	133	P	Pb	19 14 55.5	+0.1
MDNY	Mudanya-Bursa	1.10	89	ePN	Pg	19 14 56.7	+0.5
MDNY	Mudanya-Bursa	1.10	89	ePn	Pg	19 14 56.7	+0.5
ARMT	Armutlu	1.10	78	ePN	Pg	19 14 56.7	+0.4
ARMT	Armutlu	1.10	78	ePn	Pg	19 14 56.7	+0.4
GADA	Gvkgeada	1.19	263	ePN	Pg	19 14 58.2	+0.2
GADA	Gvkgeada	1.19	263	ePn	Pg	19 14 58.2	+0.2
ALN	Alexandroupoli	1.20	298	ePN	Pg	19 14 58.3	+0.3
ALN	Alexandroupoli	1.20	298	ePn	Pg	19 14 58.3	+0.3
CTKS	Kestanelik-??a	1.20	42	ePN	Pg	19 14 57.7	-0.3
CTKS	Kestanelik-??a	1.20	42	ePn	Pg	19 14 57.7	-0.3
CTYL	Yalikoy Yolu	1.29	29	ePN	Pg	19 14 59.7	-0.2
CTYL	Yalikoy Yolu	1.29	29	ePn	Pg	19 14 59.7	-0.2
BGKT	Bogazkoy	1.30	50	ePN	Pb	19 14 59.0	0.0
BGKT	Bogazkoy	1.30	50	ePn	Pb	19 14 59.0	0.0
KLYT	Kilyos	1.51	53	ePN	Pb	19 15 02.7	+0.2
KLYT	Kilyos	1.51	53	ePn	Pb	19 15 02.7	+0.2
IZI	Iznik	1.55	90	ePN	Pb	19 15 03.9	+0.7
IZI	Iznik	1.55	90	ePn	Pb	19 15 03.9	+0.7
EDRB	Edirne	1.58	341	ePN	Pb	19 15 03.5	-0.3
EDRB	Edirne	1.58	341	ePn	Pb	19 15 03.5	-0.3
TVSB	Tavsanli	1.79	120	ePN	Pb	19 15 07.5	+0.1
TVSB	Tavsanli	1.79	120	ePn	Pb	19 15 07.5	+0.1
SILT	Sile	1.85	64	ePN	Pb	19 15 07.5	-0.8
SILT	Sile	1.85	64	ePn	Pb	19 15 07.5	-0.8

*ISN **06** 19:17:10.0±3.8, 34.°32N×45.°53E, h0km±37km, ML4.4*
*IDC **06** 19:17:13.9±0.5, 34.°27N×45.°60E, h0km, mb4.2/30, mb1 4.2/41, mb1mx4.1/70, mbtmp4.2/41, ML3.9/9, MS3.1/10, Ms1 3.1/10, ms1mx2.8/62, Error ellipse: s-maj=12.2km s-min=9.4km az=155.0*
*BJI **06** 19:17:13.4, 34.°52N×45.°01E, h15km, mb4.3/5, mB4.9/1, Ms4.3/2, Ms7 4.2/2*
*MOS **06** 19:17:16.9±1.3, 34.°20N×45.°59E, h33km, mb4.3/14, Error ellipse: s-maj=8.3km s-min=4.9km az=103.0*
*THR **06** 19:17:16.1±0.4, 34.°32N×45.°46E, h14km±6km, ML4.3*
*CSEM **06** 19:17:16.2±0.2, 34.°29N×45.°52E, h10km, mb4.2/17, Ms3.3, Error ellipse: s-maj=6.3km s-min=3.6km az=2.0*
*NEIC **06** 19:17:17.5, 34.°31N×45.°53E, h5km, mb4.1/10, MN4.4(TEH), After TEH.*
*TEH **06** 19:17:17.5, 34.°31N×45.°53E, h5km, ML4.4*
*NSSC **06** 19:17:18.4±1.5, 34.°06N×45.°39E, h31km±152km, MD3.2, ML3.8*
*DSN **06** 19:17:27.4±1.6, 34.°15N×46.°79E, h16km, Error ellipse: s-maj=30.1km s-min=10.9km az=61.0*
ISC 06 19:17:15.9±0.9, **34.°30N**±0.°05×**45.°48E**±0.°03, **h13**km±5km, **n289**, σ**1.°73**/290, **mb4.2**/43, **MS3.0**/5, **16C-10D**, **Iran-Iraq border region**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
IDHR	Dehrash	0.85	62	ePg	Pg	19 17 30.8	-1.6
IDHR				eSg	Sg	19 17 42.4	-1.1
IDHR				eAMB	AMB	19 17 43.5	
	comp=Z,27μm,0.3s						
IGHG	Ghaleghazi	0.90	88	ePg	Pg	19 17 33.1	-0.3
IGHG				eSg	Sg	19 17 45.1	-0.1
IGHG				eAMB	AMB	19 17 47.6	
	comp=Z,49μm,0.3s						
ILIN	Lien	1.37	63	ePg	Pn	19 17 40.4	-0.6
ILIN				eSg	Sn	19 17 59.0	-0.2
ILIN				eAMB	AMB	19 18 02.5	
	comp=Z,71μm,0.3s						
ILIN	Lien	1.37	63	ePg	Pn	19 17 40.4	-0.6
ILIN				eSg	Sn	19 17 59.0	-0.2
BHD	Baghdad	1.37	222	i Pg	Pn	19 17 40.0	-0.8
	baz=42						
BHD				eSg	Sg	19 18 02.0	+1.9
BHD				AMP		21 01 17.1	
	comp=Z,7μm,4.0s						
SNGE	Sanandaj	1.73	62	ePg	Pb	19 17 48.0	+0.3
SNGE				eSg	Sg	19 18 11.4	-0.2
SNGE				AML	AML	19 18 14.0	
	comp=N,4μm,0.7s						
SNGE				AML	AML	19 18 17.2	
	comp=E,4μm,0.6s						
SNGE	Sanandaj	1.73	62	eP	Pb	19 17 48.0	+0.3
SNGE				eSg	Sg	19 18 11.4	-0.2
IBZA	Bozab	1.98	84	ePn	Pb	19 17 51.5	-0.4
IBZA				eSg	Sg	19 18 18.1	-1.4
IBZA				eAMB	AMB	19 18 19.9	
	comp=Z,70μm,0.4s						
IBZA	Bozab	1.98	84	ePn	Pb	19 17 51.5	-0.4
MSL	Mosul	2.85	318	ePn	Pn	19 18 00.0	-1.1
MSL				eSn	Sn	19 18 32.0	-3.4
MSL				AML	AML	19 20 07.7	
	comp=Z,2μm,8.7s						
CUKT	Cukurca	3.31	333	eP	Pn	19 18 09.7	+2.1
CUKT	Cukurca	3.31	333	eP	Pn	19 18 09.7	+2.1
ZNJK	Zanjan	3.53	47	ePn	Pn	19 18 12.9	+2.3
ZNJK	Zanjan	3.53	47	eP	Pn	19 18 13.0	+2.3
SHGR	Shooshtar-Gavs	3.54	127	ePn	Pn	19 18 13.1	+2.5
SHGR	Shooshtar-Gavs	3.54	127	eP	Pn	19 18 13.1	+2.5
HKR	Hakkari	3.56	337	eP	Pn	19 18 13.2	+2.1
HKR	Hakkari	3.56	337	eP	Pn	19 18 13.2	+2.1
IBST	Bostanabad	3.58	18	ePn	Pn	19 18 13.2	+1.8
IBST				eAMB	AMB	19 19 10.1	
	comp=Z,6μm,0.3s						
IBST	Bostanabad	3.58	18	ePn	Pn	19 18 13.2	+1.8
KHMZ	Khomeyn	3.76	97	eP	Pn	19 18 16.2	+2.4
KHMZ				AML	AML	19 19 29.4	
	comp=E,249nm,0.6s						
KHMZ	Khomeyn	3.76	97	eP	Pn	19 18 16.3	+2.4
ASAO	Ashtian	3.77	85	ePn	Pn	19 18 16.2	+2.3
ASAO	Ashtian	3.77	85	eP	Pn	19 18 16.5	+2.6
ASAO				eS	Sn	19 18 59.7	+1.4
ITBZ	Tabriz	3.96	8	ePn	Pn	19 18 18.1	+1.5
ITBZ				eAMB	AMB	19 18 32.7	
	comp=Z,4μm,0.2s						
ITBZ	Tabriz	3.96	8	ePn	Pn	19 18 18.1	+1.5
ISHB	Shabestar	3.98	2	ePn	Pn	19 18 18.4	+1.6
ISHB				eAMB	AMB	19 19 28.9	
	comp=Z,7μm,0.3s						
IHRS	Heris	4.21	17	ePn	Pn	19 18 22.0	+2.0
IHRS				eAMB	AMB	19 19 36.3	
	comp=Z,4μm,0.3s						
IHRS	Heris	4.21	17	ePn	Pn	19 18 22.0	+2.0
MZRK	Al-Mazaregh	4.24	292	AML	AML	19 19 44.5	
	comp=Z,331nm,0.6s						
IMRD	Marand	4.41	2	ePn	Pn	19 18 24.8	+2.1
IMRD				eAMB	AMB	19 19 52.9	
	comp=Z,5μm,0.4s						
IMRD	Marand	4.41	2	ePn	Pn	19 18 24.8	+2.1
IMHD	Mahdasht	4.48	71	ePn	Pn	19 18 25.1	+1.5
IMHD				eAMB	AMB	19 20 00.9	
	comp=Z,945nm,0.3s						
IMHD	Mahdasht	4.48	71	ePn	Pn	19 18 25.1	+1.5
VANB	Van	4.61	339	eP	Pn	19 18 28.5	+3.1
VANB	Van	4.61	339	eP	Pn	19 18 28.5	+3.1
IPIR	Pirpir	4.80	108	ePn	Pn	19 18 29.6	+1.4
IPIR				eAMB	AMB	19 19 35.2	
	comp=Z,3μm,0.2s						
IPIR	Pirpir	4.80	108	ePn	Pn	19 18 29.6	+1.4
SFNV	Sufian	4.87	297	eP	Pn	19 18 31.2	+2.3
SFNV				eS	Sn	19 19 24.4	-0.8
SFNV				AML	AML	19 20 08.4	
	comp=Z,486nm,0.5s						
SFNV	Sufian	4.87	297	eP	Pn	19 18 31.2	+2.3
SFNV				eS	Sn	19 19 25.6	+0.4
	comp=Z,486nm,0.5s						
GRMI	Germi	4.90	23	ePn	Pn	19 18 31.4	+2.0
GRMI	Germi	4.90	23	eP	Pn	19 18 31.6	+2.2
QAM	Ghamsar	4.98	95	ePn	Pn	19 18 32.5	+1.9
QAM				eAMB	AMB	19 19 33.5	
	comp=Z,3μm,0.3s						
CLDR	Caldiran	5.00	346	eP	Pn	19 18 33.4	+2.6
CLDR	Caldiran	5.00	346	eP	Pn	19 18 33.4	+2.6
SVAN	Silvan-Diyarba	5.17	319	eP	Pn	19 18 35.9	+2.8
SVAN	Silvan-Diyarba	5.17	319	eP	Pn	19 18 35.9	+2.8
IKLH	Kolahrood	5.17	99	ePn	Pn	19 18 35.4	+2.1
IKLH				eAMB	AMB	19 19 44.2	
	comp=Z,2μm,0.3s						
IKLH	Kolahrood	5.17	99	ePn	Pn	19 18 35.4	+2.1
IVRN	Varamin	5.20	81	ePn	Pn	19 18 34.6	+1.1
IVRN				eAMB	AMB	19 20 28.8	
	comp=Z,2μm,0.4s						
IVRN	Varamin	5.20	81	ePn	Pn	19 18 34.6	+1.1
IAFJ	Afjeh	5.34	71	eAMB	AMB	19 19 38.1	
	comp=Z,2μm,0.1s						
MNKR	ALMNKUR	5.34	290	eP	Pn	19 18 37.9	+2.5
MNKR				eS	Sn	19 19 33.9	-3.0
MNKR				AML	AML	19 20 12.7	
	comp=Z,1μm,0.4s						
MNKR	ALMNKUR	5.34	290	eP	Pn	19 18 37.9	+2.5
MNKR				eS	Sn	19 19 33.9	-3.0
	comp=Z,109nm,0.6s						
KSRV	Kasrt alli	5.53	288	AML	AML	19 20 33.3	
	comp=Z,109nm,0.6s						
DIY	Diyarbakir	5.56	312	eP	Pn	19 18 42.1	+3.6
AGRB	Hanur-Agry	5.63	340	eP	Pn	19 18 41.6	+2.1
AGRB	Hanur-Agry	5.63	340	eP	Pn	19 18 41.6	+2.1
DYBB	Diyarbakir	5.65	312	eP	Pn	19 18 42.1	+2.4
IGAR	Gharneh	5.81	107	ePn	Pn	19 18 43.0	+1.0
IGAR				eAMB	AMB	19 19 51.6	
	comp=Z,2μm,0.3s						
VRTB	Varto-Mus	5.83	328	eP	Pn	19 18 44.5	+2.3
VRTB	Varto-Mus	5.83	328	eP	Pn	19 18 44.5	+2.3
GNI	Garni	5.87	354	Pn	Pn	19 18 45.2	+2.4
	comp=Z,1.4nm,0.3s,baz=218,slow=8.3,SNR=6.2						
GNI				Lg	Lg	19 20 30.9	
	baz=180,slow=20,SNR=2.4						
GNI				LR	LR	19 20 54.6	
	comp=Z,94nm,18.2s,baz=164,slow=37						
GNI	Garni	5.87	354	eP	Pn	19 18 45.2	+2.4
GNI				pmax	pmax		
	comp=Z,322nm,0.8s						
GNI	Garni	5.87	354	eP	Pn	19 18 45.2	+2.4
	comp=Z,322nm,0.8s						
GNI	Garni	5.87	354	ePn	Pn	19 18 45.2	+2.4
	comp=Z,322nm,0.8s						
GNI				Lg	Lg	19 20 30.9	
IZEF	Zefreh	5.89	102	ePn	Pn	19 18 44.4	+1.3
IZEF				eAMB	AMB	19 19 57.5	
	comp=Z,639nm,0.3s						
IZEF	Zefreh	5.89	102	ePn	Pn	19 18 44.4	+1.3
BNGB	Bingˆ¶l	6.07	322	eP	Pn	19 18 47.8	+2.4
BINT	Bingol	6.08	320	eP	Pn	19 18 47.8	+2.2
IRAM	Ramesheh	6.30	111	ePn	Pn	19 18 49.1	+0.3
IRAM				eAMB	AMB	19 20 10.9	
	comp=Z,809nm,0.3s						
IRAM	Ramesheh	6.30	111	ePn	Pn	19 18 49.1	+0.3
SVRC	Sivrice-ELAZID	6.43	311	eP	Pn	19 18 52.6	+2.1
SVRC	Sivrice-ELAZID	6.43	311	eP	Pn	19 18 52.6	+2.1
PTK	Pertek	6.71	315	eP	Pn	19 18 56.5	+2.2
PTK	Pertek	6.71	315	eP	Pn	19 18 56.5	+2.2
ROOS	tl_alroos	6.78	271	eP	Pn	19 18 56.8	+1.5
ROOS				eS	Sn	19 20 06.0	-6.4
ROOS				AML	AML	19 21 01.8	
	comp=E,234nm,0.6s						
ROOS				AML	AML	19 21 14.1	
	comp=N,245nm,0.6s						
ROOS	tl_alroos	6.78	271	eP	Pn	19 18 56.8	+1.5
ZALF	Zalf	6.93	261	eP	Pn	19 18 58.2	+1.0
ZALF				eS	Sn	19 20 10.0	-6.0
ZALF				AML	AML	19 21 15.9	
	comp=E,79nm,0.6s						
ZALF				AML	AML	19 21 22.0	
	comp=N,151nm,0.6s						
ZALF	Zalf	6.93	261	eP	Pn	19 18 58.2	+1.0
DGRG	David-gareji	7.14	359	P	Pg	19 19 30.2	-2.3
TBLG	Delisi	7.44	356	P	Pb	19 19 28.9	+4.1
MARH	Ras Al Marh	7.46	270	eP	Pn	19 19 07.0	+2.3
MARH				eS	Sn	19 20 23.7	-5.8
MARH				AML	AML	19 21 38.4	
	comp=E,129nm,0.6s						
MARH				AML	AML	19 21 45.8	
	comp=N,113nm,0.6s						
MARH	Ras Al Marh	7.46	270	eP	Pn	19 19 07.5	+2.7
SALA	Sala	7.47	260	eP	Pn	19 19 06.4	+1.6
SALA				AML	AML	19 21 32.9	
	comp=N,233nm,0.7s						
SALA	Sala	7.47	260	eP	Pn	19 19 06.4	+1.6
ASF	Jabal al Asfar	7.50	256	Pn	Pn	19 19 05.7	+0.6
	comp=N,1.4nm,0.3s,baz=358,slow=11,SNR=10						
ASF				Lg	Lg	19 21 14.7	
	comp=N,5.1nm,0.3s,baz=206,slow=23,SNR=6.2						
HAWK	Haweek	7.50	274	eP	Pn	19 19 06.7	+1.6
HAWK				AML	AML	19 21 32.9	
	comp=E,94nm,0.6s						
HAWK				AML	AML	19 21 34.5	
	comp=N,51nm,0.7s						
HAWK	Haweek	7.50	274	eP	Pn	19 19 06.7	+1.6
WRDH	Warideh	7.55	282	eP	Pn	19 19 07.5	+1.8
WRDH				eS	Sn	19 20 27.2	-4.0
WRDH				AML	AML	19 21 29.0	
	comp=E,62nm,0.7s						
WRDH				AML	AML	19 21 40.9	
	comp=N,99nm,0.6s						
WRDH	Warideh	7.55	282	eP	Pn	19 19 07.5	+1.8
DRWC	Darouich	7.55	290	eP	Pn	19 19 07.3	+1.5
DRWC				eS	Sn	19 20 26.8	-4.6
DRWC				AML	AML	19 21 44.0	
	comp=N,73nm,0.6s						
DRWC				AML	AML	19 21 49.0	
	comp=E,108nm,0.6s						
DRWC	Darouich	7.55	290	eP	Pn	19 19 07.0	+1.2
BIDA	Albida	7.58	278	eP	Pn	19 19 07.7	+1.5
BIDA				eS	Sn	19 20 27.0	-5.0
BIDA				AML	AML	19 21 41.7	
	comp=N,144nm,0.6s						
BIDA				AML	AML	19 22 07.7	
	comp=E,174nm,0.6s						
BIDA	Albida	7.58	278	eP	Pn	19 19 07.7	+1.5
BTCH	Batrach	7.59	286	eP	Pn	19 19 07.6	+1.4
BTCH				eS	Sn	19 20 28.4	-3.8
BTCH				AML	AML	19 21 39.6	
	comp=E,188nm,0.6s						
BTCH				AML	AML	19 21 39.8	
	comp=N,202nm,0.6s						
BTCH	Batrach	7.59	286	eP	Pn	19 19 07.6	+1.4
TOTH	TOTAH	7.59	265	eP	Pn	19 19 07.0	+0.7
TOTH				eS	Sn	19 20 25.4	-6.8
TOTH				AML	AML	19 21 35.1	
	comp=E,120nm,0.6s						
TOTH				AML	AML	19 21 42.5	
	comp=N,114nm,0.7s						
TOTH				AML	AML	19 21 56.0	
	comp=Z,71nm,0.7s						
TOTH	TOTAH	7.59	265	eP	Pn	19 19 06.4	+0.1
ARNB	Al Arnab	7.95	284	eP	Pn	19 19 12.6	+1.4
ARNB				eS	Sn	19 20 35.7	-5.4
ARNB				AML	AML	19 21 45.3	
	comp=E,98nm,0.5s						
ARNB				AML	AML	19 21 54.4	
	comp=N,90nm,0.6s						
ARNB	Al Arnab	7.95	284	eP	Pn	19 19 12.6	+1.4
BRBR	Barbar	7.97	266	eP	Pn	19 19 12.5	+0.8
BRBR				eS	Sn	19 20 35.0	-6.9
BRBR				AML	AML	19 21 48.4	
	comp=N,143nm,0.7s						
BRBR				AML	AML	19 21 49.9	
	comp=E,123nm,0.6s						
BRBR	Barbar	7.97	266	eP	Pn	19 19 12.5	+0.8

TCHB **Talchebab** 8.11 261 *e*P Pn 19 19 13.6 +0.2
TCHB *e*S Sn 19 20 36.8 -8.2
TCHB AML AML 19 21 56.7
comp=E,222nm,0.7s
TCHB AML AML 19 22 06.9
comp=N,102nm,0.6s
TCHB Talchebab 8.11 261 *e*P **Pn 19 19 13.6 +0.2**
GUDG Gudauri 8.19 355 P Pn 19 19 20.6 +5.9
IMEH Mehriz 8.21 108 *e*Pn **Pn 19 19 15.2 +0.2**
IMEH *e*AMB AMB 19 21 14.7
comp=Z,248nm,0.3s
IMEH Mehriz 8.21 108 *e*Pn **Pn 19 19 15.2 +0.2**
ONI Oni 8.43 350 P Pn 19 19 23.2 +5.4
MMAI Mount Meron Ar 8.50 264 Pn **Pn 19 19 20.9 +2.2**
comp=Z,1.9nm,0.3s,baz=65,slow=16,SNR=11
MMAI Lg Lg 19 21 49.4
comp=Z,5.8nm,0.3s,baz=81,slow=30,SNR=5.3
MMAI LR LR 19 23 28.9
comp=Z,99nm,19.7s,baz=70,slow=44
ZEI Tsey 8.57 352 *e*P Pn 19 19 25.1 +5.3
ZEI pmax pmax
comp=Z,10.0nm,0.7s
NEY Neytrino 9.19 347⇑ *e*P Pn 19 19 34.4 +6.1
NEY pmax pmax
comp=Z,5.0nm,0.8s
NCK Nalchik 9.30 351⇑ *e*P Pn 19 19 34.0 +4.3
NCK pmax pmax
comp=Z,10.0nm,0.6s
NCK Nalchik 9.30 351 *e*P Pn 19 19 34.0 +4.3
comp=Z,10.0nm,0.6s
KBZ Khabaz 9.63 349 Pn Pn 19 19 39.4 +5.3
comp=Z,0.1nm,0.3s,baz=184,slow=7.4,SNR=9.7
KVAR Kislovodsk Arr 9.88 348 Pn Pn 19 19 43.0 +5.3
baz=160,slow=12,SNR=4.9
KVAR LR LR 19 23 32.4
comp=Z,59nm,18.6s,baz=131,slow=38
KIV Kislovodsk 9.88 348 *e*P Pn 19 19 33.9 -3.8
KIV pmax pmax
comp=Z,6.0nm,1.0s
KIV MLR MLR
comp=Z,36nm,9.0s
KIV Kislovodsk 9.88 348 *e*Pn Pn 19 19 41.1 +3.4
comp=Z,7.7nm,0.6s
KIV Kislovodsk 9.88 348 *e*Pn Pn 19 19 41.1 +3.4
comp=Z,7.7nm,0.6s
EIL Elat 10.06 246 Pn **Pn 19 19 42.0 +1.9**
comp=Z,1.2nm,0.3s,baz=95,slow=5.9,SNR=10.0
EIL Lg Lg 19 22 37.7
comp=Z,1.5nm,0.3s,baz=74,slow=12,SNR=4.1
EIL LR LR 19 24 30.3
comp=Z,80nm,20.1s,baz=64,slow=43
GEYT Alibeck 10.85 67 Pn **Pn 19 19 51.0 +0.1**
comp=Z,0.2nm,0.3s,baz=274,slow=19,SNR=7.1
BRTR Keskin Array B 10.90 303 Pn Pn 19 19 58.6 +6.9
comp=Z,0.1nm,0.3s,baz=93,slow=6.1,SNR=3.7
ANN Anapa 12.18 332 *e*P Pn 19 20 05.5 -3.5
ANN pmax pmax
comp=Z,30nm,1.3s
BANOM Banah 12.54 129 *i* P **Pn 19 20 12.5 -1.6**
SNR=29
BANOM S Sn 19 22 25.0 -8.8
NAZ Nazwa, Dubai 12.82 134 P **Pn 19 20 17.9 0.0**
NAZ S Sn 19 22 29.9 -11
ASUD Al Ashush, Dub 12.90 136 *i* P **Pn 19 20 19.3 +0.3**
SNR=10
FAQ Al Faqa, Dubai 12.96 135 *i* P **Pn 19 20 19.7 -0.1**
SNR=8.4
HATD Hatta, Dubai 13.22 133 *i* P **Pn 19 20 22.7 -0.7**
SNR=11
ASHO Ashiyiah 13.28 133 *i* P **Pn 19 20 23.5 -0.8**
SNR=22
ASHO Ashiyiah 13.28 133 P **Pn 19 20 23.7 -0.6**
SNR=22
WSAR Wadi Sarin 15.93 130 Pn **Pn 19 20 57.6 -2.3**
comp=Z,1.4nm,0.3s,baz=328,slow=11,SNR=19
MSAB Monastry St. A 16.79 311⇑ *i*P **Pn 19 21 06.2 -4.4**
IDI Anoyia 16.94 279 P **P 19 21 15.5 +0.8**
comp=Z,0.6nm,0.3s,baz=98,slow=14,SNR=5.1
VRH Novokhopyorsk 17.11 352 *e*P **P 19 21 15.6 -0.8**
VRH pmax pmax
comp=Z,10.0nm,0.7s
VRH Novokhopyorsk 17.11 352 *e*P **P 19 21 15.6 -0.8**
comp=Z,10.0nm,0.7s
CFR Carcaliu 17.17 314⇑ *i*P **Pn 19 21 15.9 +0.6**
CFR Carcaliu 17.17 314⇑⇑P **Pn 19 21 16.0 +0.6**
CFR Carcaliu 17.17 314 P **Pn 19 21 16.0 +0.6**
VSR Storozhevoye 17.52 347 *e*P **P 19 21 20.5 -0.3**
VSR pmax pmax
comp=Z,20nm,1.5s
VSR Storozhevoye 17.52 347 *e*P **P 19 21 20.5 -0.3**
comp=Z,20nm,1.5s
VRI Vrincioaia 18.37 315⇓ *i*P **P 19 21 33.5 +3.2**
VRI Vrincioaia 18.37 315⇓⇓P **P 19 21 33.5 +3.2**
VRI Vrincioaia 18.37 315 P **P 19 21 33.5 +3.2**
ABKAR Akbulak array 18.38 31 *e*P **Pn 19 21 30.3 -0.1**
comp=Z,14nm,0.9s
ABKAR Akbulak array 18.38 31 *e*P **Pn 19 21 30.3 -0.1**
comp=Z,14nm,0.9s
PLOR Plostina 18.41 314⇑ *i*P **Pn 19 21 33.1 +2.3**
PLOR Plostina 18.41 314⇑⇑P **Pn 19 21 33.1 +2.3**
PLOR Plostina 18.41 314 P **Pn 19 21 33.1 +2.3**
RBK Rabkut 18.46 153 P **P 19 21 29.2 -2.2**
SNR=6.9
AKTK Aktyubinsk 18.55 26 P **P 19 21 32.2 -0.1**
AKTO Aktyubinsk 18.55 26 P **P 19 21 32.2 -0.1**
comp=Z,0.7nm,0.3s,baz=209,slow=12,SNR=48
AKTO LR LR 19 29 52.8
comp=Z,30nm,19.7s,baz=235,slow=41
MLR Muntele Rosu 18.65 313 Pn **Pn 19 21 37.3 +3.6**
comp=Z,0.1nm,0.3s,baz=172,slow=15,SNR=2.3
MLR Muntele Rosu 18.65 313⇓⇓ *i*P **Pn 19 21 37.4 +3.6**
TESR Tescani 18.77 316⇓ *i*P **Pn 19 21 37.3 +2.1**
LPSR Galich'ya Gora 18.89 348 *e*P **P 19 21 34.9 -1.0**
LPSR pmax pmax
comp=Z,10.0nm,0.6s
LPSR Galich'ya Gora 18.89 348 *e*P **P 19 21 34.9 -1.0**
comp=Z,10.0nm,0.6s
VOIR 19.17 312⇑ *i*P **Pn 19 21 42.0 +1.9**
VOIR 19.17 312⇑⇑P **Pn 19 21 42.1 +2.0**
VOIR 19.17 312 P **Pn 19 21 42.1 +2.0**
ARR Arges 19.40 311⇓⇓ *i*P **Pn 19 21 44.5 +1.7**
LOT Lotru 19.98 310⇑ *i*P **Pn 19 21 49.9 +0.2**
BURAR Bucovina Array 20.20 317⇓ *i*P Pn 19 21 51.9 -0.4
BURAR Bucovina Array 20.20 317 ⇓⇓P Pn 19 21 51.9 -0.4
AKASG Malin Array Be 20.23 329 P **P 19 21 50.8 +0.2**
comp=Z,1.2nm,0.4s,baz=141,slow=9.0,SNR=13
AKASG LR LR 19 30 15.7
comp=Z,46nm,20.2s,baz=35,slow=38
AKASG Malin Array Be 20.23 329 *i* P **P 19 21 50.9 +0.3**
AKASG pmax pmax
comp=Z,2.0nm,0.4s
AKASG Malin Array Be 20.23 329 *i* P **P 19 21 50.9 +0.3**
comp=Z,2.0nm,0.4s
KIEV Kiev 20.23 329⇑ *e*P **P 19 21 50.5 -0.1**
KIEV pmax pmax
comp=Z,12nm,1.7s
KIEV Kiev 20.23 329 *e*P **P 19 21 50.8 +0.2**
comp=Z,6.5nm,0.6s
KIEV Kiev 20.23 329 *e*P **P 19 21 50.8 +0.2**
comp=Z,6.5nm,0.6s
BOLS Boljevac 20.54 305 *e*P **P 19 21 54.8 +0.8**
GZR Gura Zlata 20.58 309⇓⇓ *i*P Pn 19 21 58.0 +1.2
SELS Selova 20.92 302 *e*P **P 19 21 58.2 0.0**
MDVR Moldovita 21.04 307⇑ *i*P **P 19 22 01.8 +2.4**
DRGR 21.24 313⇓ *i*P **P 19 22 05.7 +4.0**
DRGR 21.24 313⇓⇓P **P 19 22 05.7 +4.0**
KKAR Karatay Array 21.36 58 *e*P **P 19 22 03.4 +0.4**
KKAR Karatay Array 21.36 58 *e*P **P 19 22 03.4 +0.4**
KKAR Karatay Array 21.36 58 *e*P **P 19 22 03.4 +0.4**
GRUS Gruza 21.41 304 *e*P **P 19 22 01.8 -1.6**
SIRR Siria 21.66 311⇑ *i*P **P 19 22 10.5 +4.4**
IVAS Ivanjica 21.70 303 *e*P **P 19 22 09.9 +3.3**
OBN Obninsk 21.72 346 P **P 19 22 05.3 -1.3**
comp=Z,14nm,0.4s,baz=242,slow=23,SNR=3.1
OBN LR LR 19 31 47.4
comp=Z,62nm,18.1s,baz=128,slow=40
OBN Obninsk 21.72 346 *i* P **P 19 22 05.8 -0.8**
OBN *i* 19 22 27.1
OBN pmax pmax
comp=Z,11nm,0.9s
OBN MLR MLR
comp=Z,62nm,16.0s
OBN Obninsk 21.72 346 *i* P **P 19 22 05.8 -0.8**
comp=Z,11nm,0.9s
TEKS Tekeris 22.42 305 *e*P **P 19 22 16.2 +1.9**

KOLS Kolonicke sedl 22.57 317 *e*P **P 19 22 19.6 +3.8**
KOLS pmax pmax
comp=Z,5.0nm,1.0s
KOLS Kolonicke sedl 22.57 317 *e*P **P 19 22 19.6 +3.8**
KECS Kecovo 23.37 315 *e*P **P 19 22 26.4 +2.3**
KECS pmax pmax
comp=Z,4.0nm,1.3s
KECS Kecovo 23.37 315 *e*P **P 19 22 26.4 +2.3**
comp=Z,4.0nm,1.3s
KECS Kecovo 23.37 315 *e*P **P 19 22 26.4 +2.3**
EKS2 Erkin-Say 23.59 61 *e*P **P 19 22 27.6 +1.0**
EKS2 pmax pmax
comp=Z,3.0nm,0.7s
EKS2 Erkin-Say 23.59 61 *e*P **P 19 22 27.5 +1.0**
comp=Z,2.9nm,0.7s
EKS2 Erkin-Say 23.59 61 *e*P **P 19 22 27.6 +1.0**
comp=Z,2.9nm,0.7s
ARU Arti 23.88 18 P **P 19 22 28.8 -0.2**
comp=Z,2.2nm,0.6s,baz=172,slow=8.4,SNR=6.3
ARU LR LR 19 34 09.6
comp=Z,51nm,19.9s,baz=184,slow=42
ARU Arti 23.88 18*c* *i*P **P 19 22 28.2 -0.8**
ARU S **S 19 26 43.6 -1.1**
ARU pmax pmax
comp=Z,8.0nm,1.7s
ARU Arti 23.88 18 *e*P **P 19 22 29.0 0.0**
comp=Z,4.4nm,0.7s
ARU S **S 19 26 43.6 -1.1**
ARU Arti 23.88 18 *e*P **P 19 22 29.0 0.0**
comp=Z,4.5nm,0.7s
AAK Ala-Archa 24.11 61 P **P 19 22 29.9 -1.5**
comp=Z,0.6nm,0.5s,baz=228,slow=12,SNR=2.2
AAK PcP **PcP 19 26 13.6 +1.1**
comp=Z,2.0nm,0.7s,baz=168,slow=4.1,SNR=7.6
AAK Ala-Archa 24.11 61 *e*P **P 19 22 31.4 -0.1**
comp=Z,3.6nm,1.1s
AAK Ala-Archa 24.11 61 *e*P **P 19 22 31.4 -0.1**
comp=Z,3.6nm,1.1s
AAK PcP **PcP 19 26 13.6 +1.1**
LANS Liptovska Anna 24.27 316 *e*P **P 19 22 35.0 +2.2**
LANS Liptovska Anna 24.27 316 *e*P **P 19 22 35.0 +2.2**
LANS Liptovska Anna 24.27 316 *e*P **P 19 22 35.0 +2.2**
KSH Kashi 24.87 69 *e*P **P 19 22 38.4 0.0**
TKM2 Tokmak 2 24.96 61 *e*P **P 19 22 39.3 +0.1**
TKM2 pmax pmax
comp=Z,3.0nm,0.8s
TKM2 Tokmak 2 24.96 61 *e*P **P 19 22 39.3 +0.1**
comp=Z,3.3nm,0.8s
TKM2 Tokmak 2 24.96 61 *e*P **P 19 22 39.3 +0.1**
comp=Z,3.3nm,0.8s
OKC Ostrava-Krasne 25.36 316 *e*P **P 19 22 43.3 +0.8**
OKC Ostrava-Krasne 25.36 316 *e*P **P 19 22 43.3 +0.8**
OKC Ostrava-Krasne 25.36 316 *e*P **P 19 22 43.3 +0.8**
BOJS Bojanci 25.60 305 *i* P **P 19 22 46.0 +1.2**
BOJS Bojanci 25.60 305 *i* P **P 19 22 46.0 +1.2**
BRVK Borovoye 25.73 36⇑ *i*P **P 19 22 46.2 +0.3**
BRVK pmax pmax
comp=Z,4.0nm,0.7s
BRVK Borovoye 25.73 36 *i* P **P 19 22 46.2 +0.3**
comp=Z,4.0nm,0.7s
BVAR Borovoye Array 25.77 36 P **P 19 22 46.9 +0.6**
comp=Z,8.3nm,0.6s,baz=242,slow=8.0,SNR=59
BVAR PcP **PcP 19 26 16.7 +0.9**
comp=Z,1.3nm,0.8s,baz=232,slow=1.7,SNR=4.6
ARSA Arzberg 25.94 309 pP pP 19 22 54.2 +2.5
comp=Z,2.8nm,0.8s
CONA Conrad Observa 25.95 311 *i* P **P 19 22 49.2 +1.1**
comp=Z,7.4nm,1.2s
CONA Conrad Observa 25.95 311 P **P 19 22 49.2 +1.1**
comp=Z,7.4nm,1.2s
VISS Visnje 25.96 305 *i* P **P 19 22 52.4 +4.3**
VRAC Vranov 26.04 314 LR LR 19 34 53.3
comp=Z,50nm,19.9s,baz=110,slow=40
OBKA Obir 26.35 307 *i* P **P 19 22 51.5 -0.2**
comp=Z,8.7nm,1.7s
OBKA Obir 26.35 307 P **P 19 22 51.5 -0.2**
comp=Z,8.7nm,1.7s
JAVS Javornik 26.50 305 *i* P **P 19 22 54.3 +1.2**
JAVS Javornik 26.50 305 *i* P **P 19 22 54.3 +1.2**
DPC Dobruska-Polom 26.64 316 *e*P **P 19 22 54.7 +0.5**
DPC *e*pP **pP 19 22 58.0 0.0**
DPC Dobruska-Polom 26.64 316 *e*P **P 19 22 54.7 +0.5**
DPC Dobruska-Polom 26.64 316 *e*P **P 19 22 54.7 +0.5**
KLMR Klimovskoe 26.85 354 *e*P **P 19 22 53.4 -2.5**
KLMR pmax pmax
comp=Z,13nm,1.3s
MOA Molln 26.94 310 *i* P **P 19 22 58.7 +1.8**
comp=Z,4.3nm,0.9s
MOA Molln 26.94 310 P **P 19 22 58.7 +1.8**
comp=Z,4.3nm,0.9s
VSU Vasula 27.22 338⇓⇓ *e*P **P 19 22 58.7 -0.5**
VSU pmax pmax
comp=Z,32nm,0.8s
VSU Vasula 27.22 338 *e*P **P 19 22 59.0 -0.2**
SNR=152
GERES GERESS Array B 27.62 311 P **P 19 23 04.8 +1.7**
comp=Z,0.3nm,0.5s,baz=96,slow=9.0,SNR=3.9
MTSE Matsula 28.36 336 *e*P **P 19 23 09.6 +0.2**
SNR=152
CLL Collm 28.95 316 *i* P **P 19 23 15.0 +0.2**
CLL *e* 19 24 01.0
CLL Collm 28.95 316 *i* P **P 19 23 15.0 +0.2**
CLL Collm 28.95 316 *i* P **P 19 23 15.0 +0.2**
KURBB Kurchatov Arra 29.03 46 P **P 19 23 16.7 +1.2**
comp=Z,3.9nm,0.7s,baz=253,slow=8.9,SNR=38
KURBB PcP **PcP 19 26 24.4 +0.8**
comp=Z,1.1nm,0.7s,baz=242,slow=2.7,SNR=8.2
KURK Kurchatov 29.11 46 *e*P **P 19 23 16.7 +0.5**
KURK 19 26 24.4
KURK pmax pmax
comp=Z,41nm,1.4s
KURK Kurchatov 29.11 46 *e*P **P 19 23 16.7 +0.5**
comp=Z,41nm,1.4s
KURK Kurchatov 29.11 46 PcP **PcP 19 26 24.4 +0.6**
KURK Kurchatov 29.11 46 *e*P **P 19 23 16.7 +0.5**
comp=Z,41nm,1.4s
KURK PcP **PcP 19 26 24.4 +0.6**
MEF Metsahovi 29.35 339 *e*P **P 19 23 18.3 +0.1**
SNR=152
KEST Kesra 29.53 283 P **P 19 23 20.5 +0.3**
comp=Z,3.1nm,0.8s,baz=161,slow=18,SNR=2.7
DAVOX Davos/Dischmat 29.53 306 LR LR 19 36 19.9
comp=Z,71nm,18.1s,baz=94,slow=39
FINES FINESS Array B 29.87 341 P **P 19 23 22.5 -0.3**
comp=Z,2.2nm,0.4s,baz=147,slow=10,SNR=42
FINES PcP **PcP 19 26 24.7 -0.8**
comp=Z,1.2nm,0.7s,baz=134,slow=4.0,SNR=3.7
MKAR Makanchi Array 30.35 55 P **P 19 23 28.1 +0.8**
comp=Z,1.3nm,0.6s,baz=253,slow=11,SNR=16
RAF Rauma 30.79 338 *e*P **P 19 23 30.6 -0.4**
SNR=153
HFS Hagfors 33.09 331 P **P 19 23 51.5 +0.4**
comp=Z,1.1nm,0.5s,baz=128,slow=9.6,SNR=49
NVS Novosibirsk 33.26 40 *e*P **P 19 23 53.0 +0.3**
NVS Novosibirsk 33.26 40 *e*P **P 19 23 53.0 +0.3**
ZALV Zalesovo Beam 33.81 42 P **P 19 23 57.2 -0.3**
comp=Z,1.2nm,0.3s,baz=248,slow=9.9,SNR=14
NB2 NORSAR Subarra 34.61 331 P **P 19 24 03.7 -0.8**
comp=Z,2.2nm,0.7s,baz=125,slow=8.6
NB2 NORSAR Subarra 34.61 331 P **P 19 24 03.7 -0.8**
comp=Z,2.2nm,0.7s,SNR=6.9
NOA NORSAR Array B 34.61 331 P **P 19 24 04.1 -0.4**
comp=Z,1.7nm,0.6s,baz=124,slow=8.6,SNR=7.9
ARCES ARCESS Array B 36.99 348 P **P 19 24 24.2 -0.5**
comp=Z,2.6nm,0.4s,baz=157,slow=7.9,SNR=43
LSA Lhasa 38.76 84 *e*P **P 19 24 40.7 0.0**
LSA pmax pmax
comp=Z,3.0nm,0.8s
LSA Lhasa 38.76 84 *e*P **P 19 24 40.7 0.0**
comp=Z,2.7nm,0.8s
LSA Lhasa 38.76 84 *e*P **P 19 24 40.7 0.0**
comp=Z,2.7nm,0.8s
EKA Eskdalemuir Ar 39.38 317 P **P 19 24 45.2 +0.2**
comp=Z,1.4nm,0.4s,baz=105,slow=8.4,SNR=10
EKA PcP **PcP 19 26 51.8 -1.3**
comp=Z,2.0nm,0.9s,baz=114,slow=6.3,SNR=3.4
ESDC Sonseca Array 39.45 293 P **P 19 24 47.0 +1.1**
comp=Z,1.1nm,0.6s,baz=72,slow=8.8,SNR=6.4
ESDC Sonseca Array 39.45 293 P **P 19 24 47.0 +1.1**
NRIK Noril'sk 42.06 21 P **P 19 25 07.6 +0.7**
comp=Z,5.2nm,0.5s,baz=257,slow=4.1,SNR=5.6
TORD Torodi Ar. Bea 44.85 253 P **P 19 25 31.1 +1.1**
comp=Z,1.1nm,0.8s,baz=46,slow=6.8,SNR=7.3
SPITS Spitsbergen Ar 45.73 352 P **P 19 25 37.1 +0.7**
comp=Z,5.8nm,0.4s,baz=148,slow=13,SNR=87
CHTO Chiang Mai 49.71 94 *e*P **P 19 26 07.2 -0.8**
CHTO pmax pmax
comp=Z,4.0nm,0.8s
CHTO Chiang Mai 49.71 94 *e*P **P 19 26 07.2 -0.8**
comp=Z,3.7nm,0.8s
CHTO Chiang Mai 49.71 94 *e*P **P 19 26 07.2 -0.8**
comp=Z,3.7nm,0.8s
CMAR Chiang Mai Arr 49.88 94 P **P 19 26 07.0 -2.3**
comp=Z,2.7nm,0.7s,baz=295,slow=8.6,SNR=21
CMAR Chiang Mai Arr 49.88 94 P **P 19 26 07.0 -2.3**
CMAR Chiang Mai Arr 49.88 94 P **P 19 26 07.0 -2.3**
DBIC Dimbokro 53.87 251 P **P 19 26 40.5 +1.5**
comp=Z,1.1nm,0.5s,baz=19,slow=11,SNR=6.6
MATP Matopo 56.77 199 P **P 19 26 59.9 0.0**
comp=Z,2.5nm,0.7s,baz=20,slow=8.0,SNR=8.2
KSAR Wonju Array Be 64.75 61 P **P 19 27 53.7 -0.3**
KSAR Wonju Array Be 64.75 61 P **P 19 27 53.7 -0.3**
KSAR Wonju Array Be 64.75 61 P **P 19 27 53.7 -0.3**
KSRS Korea Array 64.77 61 P **P 19 27 53.7 -0.5**
comp=Z,1.4nm,0.7s,baz=283,slow=7.4,SNR=5.2
BOSA Boshof 65.43 200 P **P 19 27 58.8 +0.2**
comp=Z,2.4nm,0.7s,baz=19,slow=6.9,SNR=6.8
SEY Seymchan 67.13 28 P **P 19 28 07.9 -1.0**
comp=Z,6.1nm,0.7s,baz=261,slow=8.0,SNR=5.5
SEY Seymchan 67.13 28 P **P 19 28 09.4 +0.5**
SEY Seymchan 67.13 28 P **P 19 28 09.4 +0.5**
RES Resolute Bay 68.20 349 P **P 19 28 15.8 +0.2**
comp=Z,0.6nm,0.5s,baz=50,slow=10,SNR=3.6
BILL Bilibino 68.88 20 *e*P **P 19 28 17.6 -2.3**
BILL *i* 19 30 48.3
BILL pmax pmax
comp=Z,5.0nm,0.9s
FRB Frobisher Bay 69.36 334 P **P 19 28 23.5 +0.7**
comp=Z,12nm,0.9s,baz=56,slow=6.5,SNR=8.0
SCHQ Schefferville 74.00 326 P **P 19 28 50.0 -1.0**
comp=Z,2.8nm,0.5s,baz=48,slow=16,SNR=2.6
INK Inuvik 77.70 360 P **P 19 29 11.7 -0.2**
comp=Z,1.2nm,0.5s,baz=30,slow=11,SNR=4.7
PPLA Purkeypile 82.11 8 *e*P **P 19 29 36.2 +0.1**
PPLA Purkeypile 82.11 8 *e*P **P 19 29 36.2 +0.1**
YKA Yellowknife Ar 82.22 351 P **P 19 29 35.7 -0.7**
comp=Z,0.6nm,0.4s,baz=8.5,slow=5.3,SNR=13

NIED ***06*** *19:17:00,44.70N×149.00E,h35km,Mw3.9 Best double couple: M0 9.19000×10^14 NP1:φ=233.00000°,δ=24.00000°, λ=122.00000°. NP2:φ=19.00000°,δ=70.00000°,λ=77.00000°.*
MOS ***06*** *19:17:29.9±1.2,44.44N×149.06E,h40km,mb4.0/7, Error ellipse: s-maj=15.1km s-min=13.1km az=90.6*
IDC ***06*** *19:17:30.0±0.9,45.28N×148.94E,h0km,mb3.7/17, mb1 3.9/18,mb1mx3.7/67,mbtmp3.7/18,ML1.7/1, Error ellipse: s-maj=27.0km s-min=18.2km az=171.0*
ISCJB ***06*** *19:17:30.5±1.0,44.38N±0.06×149.01E±0.08,h44km±8km, mb3.6/18, Error ellipse: s-maj=12.5km s-min=6.5km az=138.3*
JMA ***06*** *19:17:30.3±0.8,44.69N×148.96E,h30km,M4.2*
SKHL ***06*** *19:17:31.1±0.5,44.38N×149.13E,h51km±5km,mb4.6/3*
ISC 06 19:17:31.6±0.8, 44°38N±0.07×149°0E±0.1, h39km±4km, n51,σ1°12/55, mb3.7/18, 1C-4D, Kuril Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
KUR	**Kuril'sk**	**1.20**	**316**	*i* P	**Pn**	**19 17 51.1**	**-0.6**
KUR				AMB	AMB	19 17 51.7	
	100nm,0.6s						
KUR				AMB	AMB	19 17 51.7	
	110nm,0.6s						
KUR				AMB	AMB	19 17 51.7	
	230nm,0.6s						
KUR				*e*S	**Sn**	**19 18 05.8**	**-0.9**
KUR				A	A	19 18 06.8	
	690nm,0.4s						
KUR				A	A	19 18 06.8	
	350nm,0.4s						
KUR	**Kuril'sk**	**1.20**	**316**	*d* iPN	**Pn**	**19 17 51.1**	**-0.6**
KUR				*i* S	**Sn**	**19 18 06.0**	**-0.7**
KUR				pmax	pmax		
	comp=N,100nm,0.6s						
KUR				pmax	pmax		
	comp=E,106nm,0.6s						
KUR				pmax	pmax		
	comp=Z,330nm,0.6s						
KUR				smax	smax		
	comp=N,693nm,0.5s						
KUR				smax	smax		
	comp=E,351nm,0.5s						
SHO	**Shikotan**	**1.67**	**253**	*e*P	**Pn**	**19 17 57.4**	**-0.9**
SHO				AMB	AMB	19 18 00.9	
	comp=E,130nm,0.2s						
SHO				*e*S	**Sn**	**19 18 17.1**	**-1.4**
SHO				A	A	19 18 24.2	
	comp=E,870nm,0.4s						
SHO				A	A	19 18 24.2	
	comp=E,680nm,0.4s						
SHO	**Shikotan**	**1.67**	**253**	*d* iPN	**Pn**	**19 17 56.5**	**-1.8**
SHO				*i* S	**Sn**	**19 18 16.9**	**-1.6**
SHO				pmax	pmax		
	comp=Z,126nm,0.5s						
SHO				pmax	pmax		
	comp=E,51nm,0.4s						
SHO				pmax	pmax		
	comp=N,21nm,0.2s						
SHO				smax	smax		
	comp=E,1μm,0.5s						
SHO				smax	smax		
	comp=N,1μm,0.6s						
YUK	**Yuzh-Kuril'sk**	**2.31**	**263**	*i* P	**Pn**	**19 18 06.7**	**-0.4**
YUK				AMB	AMB	19 18 09.8	
	comp=N,400nm,0.5s						
YUK				AMB	AMB	19 18 09.8	
	comp=N,160nm,0.5s						
YUK				*i* S	**Sn**	**19 18 33.8**	**-0.5**
YUK				A	A	19 18 41.0	
	comp=N,640nm,0.6s						
YUK				A	A	19 18 41.0	
	comp=N,700nm,0.6s						
YUK	**Yuzh-Kuril'sk**	**2.31**	**263**	*d* iPN	**Pn**	**19 18 06.6**	**-0.5**
YUK				*i* S	**Sn**	**19 18 33.8**	**-0.5**
YUK				pmax	pmax		
	comp=Z,225nm,0.2s						
YUK				pmax	pmax		
	comp=N,58nm,0.1s						
YUK				pmax	pmax		
	comp=E,31nm,0.2s						
YUK				smax	smax		
	comp=N,635nm,0.6s						
YUK				smax	smax		
	comp=E,728nm,0.4s						
NEM2	**Nemuro 2**	**2.59**	**248**	P	**Pn**	**19 18 10.2**	**-0.7**
NEM2				*e*S	**Sn**	**19 18 39.3**	**-1.8**
JRA	**Rausu**	**2.86**	**262**	P	**Pn**	**19 18 14.7**	**+0.2**
JRA				*e*S	**Sn**	**19 18 47.6**	**0.0**
JNK	**Nakash**	**3.22**	**257**	P	**Pn**	**19 18 19.2**	**-0.4**
JAK	**Akkeshi**	**3.44**	**248**	P	**Pn**	**19 18 22.0**	**-0.6**
JAK				*e*S	**Sn**	**19 19 01.5**	**-0.6**
JTKR	**Abashiri--Toko**	**3.72**	**265**	P	**Pn**	**19 18 28.5**	**+2.1**
JAR	**Ashorobuto**	**3.96**	**256**	P	**Pn**	**19 18 30.8**	**+1.0**
JAR				*e*S	**Sn**	**19 19 17.3**	**+2.3**
JOB	**Onbets**	**4.06**	**250**	P	**Pn**	**19 18 31.3**	**+0.2**
JOB				*e*S	**Sn**	**19 19 17.3**	**0.0**
HRK	**Horoka**	**4.37**	**260**	*e*P	**Pn**	**19 18 37.4**	**+2.0**
JKK2	**Kamakawa 2**	**4.56**	**266**	P	**Pn**	**19 18 40.2**	**+2.2**
ERM	**Erimo**	**4.91**	**243**	*e*P	**Pn**	**19 18 44.5**	**+1.8**
ERM	**Erimo**	**4.91**	**243**⇓⇓ *e*PN		**Pn**	**19 18 44.5**	**+1.8**
YSS	**Yuzh-Sakhalins**	**5.10**	**303**	*e*P	**Pn**	**19 18 46.4**	**+1.0**
TYV	**Tymovskoe**	**7.79**	**329**	*e*P	**Pn**	**19 19 23.9**	**+1.7**
SKR	**Severo-Kuril's**	**7.92**	**35**	*e*P	**Pn**	**19 19 24.8**	**+0.9**
USRK	**Ussurisyk Ar.**	**12.23**	**275**	Pn	**Pn**	**19 20 23.1**	**+0.1**
	comp=E,0.1nm,0.3s,baz=83,slow=12,SNR=2.4						
SEY	**Seymchan**	**18.69**	**5**	P	**P**	**19 21 46.1**	**-0.1**
	comp=E,0.1nm,0.3s,baz=210,slow=12,SNR=7.7						
SEY	**Seymchan**	**18.69**	**5**⇑	*e*P	**P**	**19 21 46.3**	**+0.1**
H11N2	**WAKE ISLAND Hy**	**28.73**	**143**	T	T	19 54 19.2	
	baz=336						
H11N1	**WAKE ISLAND Hy**	**28.75**	**143**	T	T	19 54 20.2	
	baz=336						
H11N3	**WAKE ISLAND Hy**	**28.75**	**143**	T	T	19 54 20.7	
	baz=336						
SONM	**Songino Array**	**29.49**	**292**	P	**P**	**19 23 32.1**	**+0.1**
	comp=E,0.4nm,0.8s,baz=88,slow=7.8,SNR=3.3						
H11S1	**WAKE ISLAND Hy**	**29.74**	**145**	T	T	19 55 31.5	
	baz=334,slow=76,SNR=20						
H11S3	**WAKE ISLAND Hy**	**29.75**	**145**	T	T	19 55 30.1	
	baz=334,slow=76,SNR=22						
H11S2	**WAKE ISLAND Hy**	**29.76**	**145**	T	T	19 55 31.2	

Code	Station Name	Δ°	AZ°	Op	ISC	Time	Res
	baz=334,slow=76,SNR=14						
ILAR	**Eielson Array**	**40.17**	**37**	P	**P**	**19 25 03.0**	**-0.5**
	comp=E,0.2nm,0.6s,baz=288,slow=9.4,SNR=3.7						
MKAR	**Makanchi Array**	**45.50**	**298**	P	**P**	**19 25 46.7**	**-0.3**
	comp=E,0.2nm,0.4s,baz=73,slow=9.8,SNR=4.8						
KURK	**Kurchatov**	**46.31**	**304**	*e*P	**P**	**19 25 53.6**	**+0.4**
KURK	**Kurchatov**	**46.31**	**304**	P	**P**	**19 25 53.6**	**+0.4**
KURK				pmax	pmax		
	comp=Z,1.0nm,0.5s						
KURBB	**Kurchatov Arra**	**46.40**	**304**	P	**P**	**19 25 53.6**	**-0.3**
	comp=Z,0.5nm,0.5s,baz=74,slow=8.1,SNR=6.3						
RES	**Resolute Bay**	**53.97**	**17**	P	**P**	**19 26 48.2**	**-2.6**
	comp=Z,1.0nm,0.8s,baz=284,slow=4.2,SNR=2.5						
YKA	**Yellowknife Ar**	**54.52**	**35**	P	**P**	**19 26 54.1**	**-0.9**
	comp=Z,0.2nm,0.7s,baz=299,slow=6.7,SNR=3.2						
FINES	**FINESS Array B**	**64.93**	**334**	P	**P**	**19 28 05.0**	**-1.6**
	comp=Z,0.8nm,0.6s,baz=53,slow=9.8,SNR=4.2						
FINES	**FINESS Array B**	**64.93**	**334**	*e*P	**P**	**19 28 07.7**	**+1.1**
FINES	**FINESS Array B**	**64.93**	**334**	*e*P	**P**	**19 28 07.7**	**+1.1**
FINES				pmax	pmax		
	comp=Z,1.0nm,0.6s						
GEYT	**Alibeck**	**65.32**	**300**	P	**P**	**19 28 09.1**	**-0.6**
	comp=Z,0.8nm,0.5s,baz=46,slow=6.4,SNR=3.8						
NVAR	**Mina Array Bea**	**66.09**	**59**	P	**P**	**19 28 15.6**	**+0.8**
	comp=Z,0.3nm,0.5s,baz=297,slow=8.0,SNR=2.8						
PDAR	**Pinedale Array**	**68.46**	**51**	P	**P**	**19 28 30.4**	**+0.6**
	comp=Z,0.3nm,0.6s,baz=274,slow=6.2,SNR=2.8						
ASAR	**Alice Springs**	**69.12**	**195**	P	P	19 28 43.7	+10
	comp=Z,0.6nm,0.8s,baz=5.6,slow=6.6,SNR=3.0						
NOA	**NORSAR Array B**	**69.50**	**340**	P	**P**	**19 28 35.7**	**+0.1**
	comp=Z,0.4nm,0.4s,baz=30,slow=6.4,SNR=3.1						
KBZ	**Khabaz**	**70.39**	**312**	P	**P**	**19 28 42.2**	**+0.8**
	comp=Z,2.7nm,1.0s,baz=329,slow=4.3,SNR=5.5						
AKASG	**Malin Array Be**	**71.87**	**325**	P	**P**	**19 28 50.0**	**-0.1**
	comp=Z,0.5nm,0.4s,baz=35,slow=6.2,SNR=6.2						
AKASG	**Malin Array Be**	**71.87**	**325**	*e*P	**P**	**19 28 50.3**	**+0.1**
BRTR	**Keskin Array B**	**78.09**	**315**	P	**P**	**19 29 26.5**	**0.0**
	comp=Z,0.5nm,0.8s,baz=54,slow=7.3,SNR=2.9						
GERES	**GERESS Array B**	**79.26**	**332**	P	**P**	**19 29 32.7**	**-0.1**
	comp=Z,0.3nm,0.4s,baz=48,slow=5.8,SNR=4.1						
TXAR	**Lajitas Array**	**81.16**	**58**	P	**P**	**19 29 44.6**	**+1.3**
	comp=Z,0.5nm,0.5s,baz=302,slow=3.7,SNR=6.1						

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*NIED **06** 19:18:00, 37.°40N×143.°60E, h8km, Mw4.0 Best double couple: $M_0$1.02000×10^{15} NP1:ϕ_s346.00000°, δ41.00000°, λ-149.00000°. NP2:ϕ_s232.00000°, δ70.00000°, λ-54.00000°.*
*IDC **06** 19:18:00.3±0.7, 37.°30N×143.°89E, h0km, mb3.9/14, mb1 4.0/18, mb1mx3.7/68, mbtmp3.9/18, ML3.8/3, Error ellipse: s-maj=19.1km s-min=14.6km az=101.0*
*ISCJB **06** 19:18:03.8±0.5, 37.°37N±0.°04×143.°62E±0.°04, h33km, mb3.9/16, Error ellipse: s-maj=5.5km s-min=4.4km az=141.9*
*JMA **06** 19:18:04.6±0.2, 37.°43N×143.°56E, h46km, M4.3*
*NEIC **06** 19:18:05.8±0.6, 37.°38N×143.°77E, h35km, mb4.6/1, Error ellipse: s-maj=11.9km s-min=9.6km az=145.0*
ISC 06 19:18:05.6±0.7**, 37.°37N**±0.°05×**143.°65E**±0.°07**, h35km, n39,** σ**1.ˢ49**/54**, mb4.0**/16**, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
JIO	**Ouri**	**2.12**	**302**	P	**Pn**	**19 18 37.3**	**-1.1**
JIO				S	**Sn**	**19 19 01.7**	**-1.8**
JFK	**Kawauchi**	**2.21**	**271**	P	**Pn**	**19 18 38.9**	**-0.9**
ONAJ	**Iwakimizuishiy**	**2.29**	**264**	P	**Pn**	**19 18 40.3**	**-0.6**
ONAJ				S	**Sn**	**19 19 06.2**	**-1.7**
JMM	**Marumori**	**2.32**	**283**	P	**Pn**	**19 18 40.4**	**-0.8**
JMM				S	**Sn**	**19 19 07.0**	**-1.5**
JMK	**Ichinoseki**	**2.48**	**310**	P	**Pn**	**19 18 42.4**	**-1.1**
JMK				S	**Sn**	**19 19 11.2**	**-1.3**
JFT	**Otama**	**2.64**	**274**	P	**Pn**	**19 18 45.8**	**+0.1**
JFT				S	**Sn**	**19 19 15.2**	**-1.2**
JOM	**Ohasama**	**2.80**	**319**	P	**Pn**	**19 18 46.5**	**-1.3**
JOM				S	**Sn**	**19 19 17.8**	**-2.6**
JYK	**Kaneyama**	**3.02**	**302**	P	**Pn**	**19 18 50.3**	**-0.6**
JANG	**Nango**	**3.43**	**332**	P	**Pn**	**19 18 55.6**	**-0.9**
BSO1	**Boso 1**	**3.47**	**219**	P	**Pn**	**19 18 56.4**	**-0.1**
BSO1				S	**Sn**	**19 19 37.2**	**+1.1**
JAG	**Ashikaga**	**3.49**	**256**	P	**Pn**	**19 18 57.3**	**-0.1**
JAG				S	**Sn**	**19 19 36.3**	**-1.1**
JRY	**Ryogami san**	**4.04**	**252**	P	**Pn**	**19 19 04.8**	**-0.2**
JRY				S	**Sn**	**19 19 48.4**	**-2.8**
JOD2	**Odawara 2**	**4.24**	**242**	P	**Pn**	**19 19 07.6**	**0.0**
JOD2				S	**Sn**	**19 19 53.5**	**-2.4**
JSD	**Sado**	**4.32**	**281**	P	**Pn**	**19 19 09.0**	**+0.2**
MJAR	**Matsushiro Arr**	**4.43**	**261**	Pn	**Pn**	**19 19 11.6**	**+1.3**
	6.6nm,0.3s,baz=90,slow=15,SNR=47						
MJAR				Sn	**Sn**	**19 20 01.4**	**+0.7**
	3.0nm,0.3s,baz=52,slow=24,SNR=11						
MAJO	**Matsushiro**	**4.43**	**261**	*e*P	**Pn**	**19 19 11.4**	**+1.1**
MAT	**Matsushiro**	**4.43**	**261**	P	**Pn**	**19 19 12.4**	**+2.1**
MAT				S	**Sn**	**19 20 01.1**	**+0.4**
JYN	**Shimob**	**4.52**	**247**	P	**Pn**	**19 19 12.5**	**+1.0**
JYN				S	**Sn**	**19 20 02.1**	**-0.8**
JHJ	**Hachijo jima 2**	**5.29**	**218**	Pn	**Pn**	**19 19 20.4**	**-1.6**
	16nm,0.3s,baz=331,slow=23,SNR=18						
JHJ				Sn	**Sn**	**19 20 16.9**	**-4.9**
	30nm,0.3s,baz=53,slow=20,SNR=7.1						
USRK	**Ussuriysk Ar.**	**11.16**	**311**	Pn	**Pn**	**19 20 43.5**	**+1.0**
	0.3nm,0.3s,baz=108,slow=12,SNR=9.0						
KSRS	**Korea Array**	**12.51**	**275**	Pn	**Pn**	**19 21 04.0**	**+3.0**
	0.1nm,0.3s,baz=89,slow=14,SNR=12						
KSAR	**Wonju Array Be**	**12.54**	**275**	Pn	**Pn**	**19 21 04.0**	**+2.6**
KLR	**Kul'dur**	**14.66**	**328**	Pn	**Pn**	**19 21 28.4**	**-1.9**
	0.3nm,0.3s,baz=128,slow=13,SNR=8.4						
SEY	**Seymchan**	**26.15**	**9**	P	**P**	**19 23 36.2**	**+0.1**
	1.1nm,0.6s,baz=197,slow=19,SNR=4.3						
SONM	**Songino Array**	**29.09**	**303**	P	**P**	**19 24 03.8**	**+0.9**
	0.9nm,0.8s,baz=96,slow=8.0,SNR=6.3						
GTA	**Gaotai**	**34.17**	**287**	*e*P	**P**	**19 24 46.9**	**-0.7**
GTA				pP	pP	19 24 51.1	-6.6
GTA				sP	sP	19 24 53.9	-8.0
GTA				pmax	pmax		
	comp=Z,2.0nm,1.0s						
ZALV	**Zalesovo Beam**	**43.01**	**312**	P	**P**	**19 26 02.4**	**+1.0**
	comp=Z,0.4nm,0.4s,baz=83,slow=7.5,SNR=3.8						
ZALV				PcP	**PcP**	**19 27 50.6**	**-0.5**
	comp=Z,0.8nm,0.5s,baz=97,slow=4.9,SNR=3.3						
MKAR	**Makanchi Array**	**45.45**	**302**	P	**P**	**19 26 23.8**	**+2.7**
	comp=Z,0.7nm,0.7s,baz=84,slow=12,SNR=6.4						
KURK	**Kurchatov**	**47.13**	**308**	*e*P	**P**	**19 26 34.5**	**+0.4**
	comp=Z,4.7nm,0.7s						
KURBB	**Kurchatov Arra**	**47.20**	**308**	P	**P**	**19 26 36.1**	**+1.5**
	comp=Z,2.0nm,0.7s,baz=83,slow=8.2,SNR=9.2						
ILAR	**Eielson Array**	**48.26**	**33**	P	**P**	**19 26 42.1**	**-0.5**
	comp=Z,1.3nm,0.8s,baz=267,slow=6.7,SNR=11						
BVAR	**Borovoye Array**	**51.66**	**312**	P	**P**	**19 27 09.6**	**+0.9**
	comp=Z,0.4nm,0.7s,baz=61,slow=12,SNR=1.9						
INK	**Inuvik**	**53.27**	**27**	P	**P**	**19 27 20.2**	**-0.1**
	comp=Z,1.6nm,0.7s,baz=308,slow=4.3,SNR=3.9						
WRA	**Warramunga Arr**	**57.67**	**190**	P	**P**	**19 27 52.3**	**-0.2**
	comp=Z,2.8nm,0.6s,baz=11,slow=7.3,SNR=30						
ASAR	**Alice Springs**	**61.40**	**190**	P	**P**	**19 28 18.2**	**+0.1**
	comp=Z,1.4nm,0.7s,baz=9.6,slow=8.4,SNR=18						
RES	**Resolute Bay**	**61.83**	**15**	P	**P**	**19 28 20.7**	**+0.2**
	comp=Z,1.6nm,0.7s,baz=256,slow=4.2,SNR=5.9						
YKA	**Yellowknife Ar**	**62.62**	**31**	P	**P**	**19 28 26.2**	**+0.3**
	comp=Z,0.3nm,0.8s,baz=297,slow=7.3,SNR=3.8						
STKA	**Stephens Creek**	**68.91**	**182**	P	**P**	**19 29 06.3**	**-0.4**
	comp=Z,1.3nm,0.7s,baz=352,slow=9.1,SNR=4.6						
HFS	**Hagfors**	**74.51**	**337**	P	**P**	**19 29 41.1**	**+1.0**
	comp=Z,1.8nm,0.8s,baz=14,slow=6.7,SNR=2.2						

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*NIED **06** 19:20:00, 39.°30N×143.°90E, h14km, Mw4.8 Best double couple: $M_0$1.72000×10^{16} NP1:ϕ_s188.00000°, δ35.00000°, λ85.00000°. NP2:ϕ_s14.00000°, δ56.00000°, λ93.00000°.*
*JMA **06** 19:20:11.7±0.2, 39.°33N×143.°90E, h0km, M4.9*
JMA Felt I J1.
*IDC **06** 19:20:15.0±0.5, 39.°32N×143.°63E, h0km, mb4.5/44, mb1 4.6/51, mb1mx4.5/66, mbtmp4.5/51, ML3.7/7, MS3.9/8, Ms1 3.8/8, ms1mx3.5/32, Error ellipse: s-maj=13.0km s-min=10.6km az=135.0*
*ISCJB **06** 19:20:15.9±1.1, 39.°37N±0.°03×143.°58E±0.°05, h14km±6km, mb4.7/109, MS4.6/23, Error ellipse: s-maj=7.0km s-min=3.7km az=37.4*
*MOS **06** 19:20:18.8±1.1, 39.°47N×143.°53E, h32km, mb5.0/34, MS4.4/10, Error ellipse: s-maj=7.3km s-min=4.3km az=107.9*
*NEIC **06** 19:20:20.2±0.3, 39.°32N×143.°52E, h35km, mb4.9/15, Error ellipse: s-maj=8.2km s-min=5.3km az=126.0*
*BJI **06** 19:20:25.6, 39.°48N×142.°77E, h59km, mb4.9/60, mB5.2/42, Ms4.7/53, Ms7 4.6/49*
ISC 06 19:20:19.0±0.5**, 39.°40N**±0.°04×**143.°53E**±0.°05**, h26km**±2km**, h25km:pP-P, n253,** σ**1.ˢ50**/274**, mb4.8**/111**, MS4.8**/23**, 20C-20D, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
MIYJ	**Miyakonagasawa**	**1.33**	**278**	P	**Pn**	**19 20 41.9**	**0.0**
MIYJ				*e*S	**Sb**	**19 21 03.1**	**+3.1**
JTH	**Tanohata**	**1.39**	**293**	P	**Pn**	**19 20 42.7**	**0.0**
OFUJ	**Ofunato**	**1.48**	**258**	P	**Pn**	**19 20 43.7**	**-0.2**
JOM	**Ohasama**	**1.73**	**273**	P	**Pn**	**19 20 47.7**	**+0.3**
JANG	**Nango**	**1.83**	**303**	P	**Pn**	**19 20 48.2**	**-0.5**
JMK	**Ichinoseki**	**1.85**	**257**	P	**Pn**	**19 20 49.2**	**+0.2**
JYK	**Kaneyama**	**2.51**	**260**	P	**Pn**	**19 20 58.8**	**+0.7**
ERM	**Erimo**	**2.62**	**354** *c*	*i*P	**Pn**	**19 20 59.4**	**-0.3**
JOT	**Ohata**	**2.74**	**317**	P	**Pn**	**19 21 01.8**	**+0.6**
JNBK	**Urakawa-nobuka**	**2.93**	**349**	P	**Pn**	**19 21 04.0**	**+0.1**
JNBK				*e*S	**Sn**	**19 21 40.0**	**+1.7**
JFT	**Otama**	**3.13**	**234**	P	**Pn**	**19 21 06.3**	**-0.4**
JFT				S	**Sn**	**19 21 43.4**	**+0.1**
JCH	**Churui**	**3.21**	**358**	P	**Pn**	**19 21 07.4**	**-0.3**
JCH				*e*S	**Sn**	**19 21 45.3**	**+0.2**
JAW	**Awa shima**	**3.47**	**256**	P	**Pn**	**19 21 12.2**	**+0.9**
YUK	**Yuzh-Kuril'sk**	**4.95**	**20**	*e*P	**Pn**	**19 21 29.3**	**-2.3**
YUK				*e*S	**Sn**	**19 22 23.1**	**-4.8**
YUK				pmax	pmax		
	comp=Z,274nm,0.3s						
YUK				pmax	pmax		
	comp=N,56nm,0.2s						
YUK				pmax	pmax		
	comp=E,117nm,0.3s						
YUK				MLR	MLR		
	comp=Z,2μm,17.0s						
YUK				MLR	MLR		
	comp=N,3μm,10.0s						
YUK				MLR	MLR		
	comp=E,3μm,11.0s						
MJAR	**Matsushiro Arr**	**5.08**	**237**	Pn	**Pn**	**19 21 34.7**	**+1.2**
	comp=E,15nm,0.3s,baz=43,slow=12,SNR=99						
MJAR				LR	LR	19 23 25.8	
	comp=E,779nm,21.2s,baz=60,slow=38						
MAJO	**Matsushiro**	**5.08**	**237** *c*	*i*P	**Pn**	**19 21 34.7**	**+1.2**
MAT	**Matsushiro**	**5.08**	**237**	P	**Pn**	**19 21 34.5**	**+1.0**
MAT				*e*S	**Sn**	**19 22 33.1**	**+1.7**
SHO	**Shikotan**	**5.10**	**28**	*e*P	Pn	19 21 30.3	-3.4
SHO				*e*S	Sn	19 22 24.0	-7.7
SHO				pmax	pmax		
	comp=Z,66nm,0.3s						
SHO				pmax	pmax		
	comp=N,34nm,0.4s						
SHO				pmax	pmax		
	comp=E,26nm,0.3s						
KUR	**Kuril'sk**	**6.65**	**27**	*e*P	**Pn**	**19 21 54.1**	**-0.9**
KUR				*e*S	Sn	19 23 03.3	-6.6
KUR				pmax	pmax		
	comp=N,33nm,0.4s						
KUR				pmax	pmax		
	comp=E,27nm,0.4s						
KUR				pmax	pmax		
	comp=Z,79nm,0.4s						
JHJ2	**Mitsune**	**6.96**	**207**	*e*P	**Pn**	**19 21 56.4**	**-2.8**
	comp=Z,89nm,0.8s						
JHJ	**Hachijo jima 2**	**6.96**	**207**	Pn	**Pn**	**19 21 58.0**	**-1.3**
	comp=Z,15nm,0.3s,baz=66,slow=10.0,SNR=9.3						
JHJ				Sn	Sn	19 23 09.5	-8.2
	comp=Z,38nm,0.3s,baz=68,slow=23,SNR=7.7						
YSS	**Yuzh-Sakhalins**	**7.57**	**356** ⇑	*e*P	**Pn**	**19 22 08.4**	**+0.9**
YSS				*e*S	**Sn**	**19 23 26.9**	**-5.5**
YSS				pmax	pmax		
	comp=Z,30nm,1.0s						
YSS				MLR	MLR		
	comp=Z,4μm,11.0s						
YSS				MLR	MLR		
	comp=N,3μm,12.0s						
YSS				MLR	MLR		
	comp=E,2μm,11.0s						
YSS	**Yuzh-Sakhalins**	**7.57**	**356**	*e*P	**Pn**	**19 22 07.2**	**-0.3**
	comp=E,35nm,0.6s						
VLA	**Vladivostok**	**9.52**	**297**	P	**Pn**	**19 22 37.0**	**+2.7**
USRK	**Ussuriysk Ar.**	**9.86**	**303**	Pn	**Pn**	**19 22 41.0**	**+2.0**
	comp=E,3.4nm,0.3s,baz=112,slow=14,SNR=35						
HABR	**Khabarovsk**	**10.93**	**329**	*e*P	**Pn**	**19 22 51.9**	**-1.6**
HABR				*e*S	**Sn**	**19 24 52.6**	**-2.2**
HABR				pmax	pmax		
	comp=Z,52nm,1.8s						
HABR				pmax	pmax		
	comp=Z,16nm,1.6s						
HABR				pmax	pmax		
	comp=E,36nm,1.6s						
HABR				MLR	MLR		
	comp=Z,968nm,15.0s						
TYV	**Tymovskoe**	**11.47**	**357**	*e*P	**Pn**	**19 23 01.5**	**+0.4**
TYV				pmax	pmax		
	comp=Z,11nm,0.8s						
TYV				MLR	MLR		
	comp=E,4μm,18.0s						
TYV				MLR	MLR		
	comp=Z,2μm,20.0s						
MDJ	**Mudanjiang**	**11.60**	**301**	*e*P	**Pn**	**19 23 04.5**	**+1.7**
	comp=Z,60nm,1.1s						
JNU	**Nakatsue**	**11.97**	**242**	Pn	**Pn**	**19 23 07.2**	**-0.8**
	comp=Z,0.5nm,0.3s,baz=40,slow=8.7,SNR=12						
JCJ	**Chichijima**	**12.33**	**186**	Sn	Sn	19 25 12.4	-17
	baz=3.6,slow=19						
KSRS	**Korea Array**	**12.39**	**266**	Pn	**Pn**	**19 23 13.9**	**+0.2**
	comp=Z,0.3nm,0.3s,baz=82,slow=13,SNR=27						
KSAR	**Wonju Array Be**	**12.43**	**266**	P	**Pn**	**19 23 13.9**	**-0.2**
KSAR	**Wonju Array Be**	**12.43**	**266**	Pn	**Pn**	**19 23 13.9**	**-0.2**
KLR	**Kul'dur**	**12.93**	**323**	Pn	**Pn**	**19 23 20.9**	**-0.1**
	comp=Z,0.3nm,0.3s,baz=141,slow=14,SNR=12						
KLR				LR	LR	19 28 39.6	
	comp=Z,1μm,18.6s,baz=128,slow=39						
NKL	**Nikolayevsk**	**13.89**	**353**	*e*P	**Pn**	**19 23 33.0**	**-1.0**
NKL				pmax	pmax		
	comp=Z,22nm,1.0s						
NKL				MLR	MLR		
	comp=N,1μm,15.0s						
NKL				MLR	MLR		
	comp=E,700nm,15.0s						
NKL				MLR	MLR		
	comp=Z,2μm,15.0s						
CN2	**Changchun**	**14.22**	**294**	*e*P	**Pn**	**19 23 39.7**	**+1.1**
CN2				*e*S	Sn	19 26 09.2	-6.2
CN2				pmax	pmax		
	comp=Z,10.0nm,0.6s						
CN2				pmax	pmax		
	comp=Z,200nm,4.0s						
CN2				LR	LR		
	comp=Z,900nm,13.0s						
CN2				LR	LR		
	comp=Z,1μm,13.0s						
CN2				LR	LR		
	comp=Z,1μm,14.0s						
SNY	**Shenyang**	**15.34**	**285**	⇓P	**Pn**	**19 23 54.9**	**+1.2**
SNY				S	Sn	19 26 24.4	-18
SNY				pmax	pmax		
	comp=Z,11nm,1.6s						
SNY				pmax	pmax		
	comp=Z,410nm,10.6s						
SNY				LR	LR		
	comp=Z,900nm,14.5s						
SNY				LR	LR		
	comp=Z,2μm,15.5s						
SNY				LR	LR		
	comp=Z,2μm,14.5s						
PETK	**Petropavlovsk-**	**16.80**	**31**	Pn	**Pn**	**19 24 13.0**	**+0.7**
	comp=Z,0.2nm,0.3s,baz=204,slow=10,SNR=4.2						
PETK				LR	LR	19 30 03.4	
	comp=Z,256nm,21.7s,baz=218,slow=35						
PET	**Petropavlovsk**	**17.13**	**32**	*e*P	**P**	**19 24 18.8**	**+0.9**
PET				*e*S	**Sn**	**19 27 25.4**	**-0.5**
PET				MLR	MLR		
	comp=Z,900nm,20.0s						
PET				MLR	MLR		
	comp=Z,500nm,17.0s						
HIA	**Hailar**	**19.59**	**308**	*e*P	**P**	**19 24 43.0**	**-2.1**
HIA				pmax	pmax		
	comp=Z,37nm,0.7s						
HIA	**Hailar**	**19.59**	**308**	*e*P	**P**	**19 24 43.0**	**-2.1**
	comp=Z,37nm,0.7s						
MA2	**Magadan**	**20.71**	**10**	P	**P**	**19 24 58.2**	**+1.2**
	comp=Z,24nm,0.7s,baz=216,slow=8.5,SNR=38						
MA2				LR	LR	19 34 29.9	
	comp=Z,498nm,18.3s,baz=224,slow=41						
MA2	**Magadan**	**20.71**	**10**	*e*P	**P**	**19 24 57.6**	**+0.6**
MA2				pmax	pmax		
	comp=Z,207nm,0.7s						
MA2	**Magadan**	**20.71**	**10**	*e*P	**P**	**19 24 57.6**	**+0.6**
	comp=Z,207nm,0.7s						
BJT	**Baijiatuau**	**21.03**	**280**	*e*P	**P**	**19 24 59.0**	**-1.7**
BJT				pmax	pmax		
	comp=Z,37nm,0.8s						
BJT	**Baijiatuau**	**21.03**	**280**	*e*P	**P**	**19 24 59.0**	**-1.7**
	comp=Z,37nm,0.8s						
TIA	**Tai'an**	**21.08**	**270**	⇓P	**P**	**19 24 59.8**	**-1.5**
TIA				S	**S**	**19 28 48.8**	**-5.8**
TIA				pmax	pmax		
	comp=Z,30nm,0.8s						
TIA				LR	LR		
	comp=Z,500nm,13.2s						
TIA				LR	LR		
	comp=Z,2μm,12.6s						
TIA				LR	LR		
	comp=Z,3μm,13.0s						
TATO	**Taipei**	**23.47**	**239**	*e*P	**P**	**19 25 25.9**	**-0.7**
YHNB	**Yeheng**	**23.75**	**238**	*e*P	**P**	**19 25 27.1**	**-2.3**
	comp=Z,29nm,0.8s						
SEY	**Seymchan**	**24.16**	**10**	P	**P**	**19 25 34.0**	**+1.3**
	comp=Z,20nm,0.8s,baz=192,slow=6.5,SNR=53						
YAK	**Yakutsk**	**24.19**	**344**	P	**P**	**19 25 32.3**	**-0.6**
	comp=Z,4.0nm,0.6s,baz=331,slow=22,SNR=14						
YAK	**Yakutsk**	**24.19**	**344**	*e*P	**P**	**19 25 32.2**	**-0.8**
YAK				*e**PP	**pP**	**19 25 38.4**	**-2.2**
YAK				*e*		19 26 00.3	
YAK				*e*S	**S**	**19 29 46.2**	**-3.2**
YAK				*e**SS	**sS**	**19 30 03.3**	**+1.5**
YAK				*e*SSS	SSS	19 30 39.6	
YAK				pmax	pmax		
	comp=N,22nm,1.2s						
YAK				pmax	pmax		
	comp=E,8.0nm,1.0s						
YAK				pmax	pmax		
	comp=Z,52nm,0.9s						
YAK				pmax	pmax		
	comp=Z,24nm,0.6s						
YAK				smax	smax		
	comp=E,170nm,2.7s						
YAK				smax	smax		
	comp=N,129nm,2.1s						
YAK				MLR	MLR		
	comp=Z,514nm,14.0s						
YAK				MLR	MLR		
	comp=N,328nm,13.0s						
YAK				MLR	MLR		
	comp=E,414nm,18.0s						
CIT	**Chita**	**24.24**	**311**	*e*P	**P**	**19 25 32.4**	**-1.3**
CIT				*e*		19 25 42.9	
CIT				*e*		19 26 11.7	
CIT				pmax	pmax		
	comp=Z,143nm,1.1s						
SSLB	**Suanglung**	**24.64**	**237**	*e*P	**P**	**19 25 35.2**	**-2.4**
	comp=Z,23nm,0.8s						
YULB	**Yu-li**	**24.70**	**236**	*e*P	**P**	**19 25 37.5**	**-0.5**
	comp=Z,20nm,0.8s						
TPUB	**Ta-pu**	**25.20**	**237**	*e*P	**P**	**19 25 38.5**	**-4.0**
	comp=Z,40nm,1.0s						
TWG	**Pinlang**	**25.25**	**236**	*e*P	**P**	**19 25 44.4**	**+1.4**
	comp=Z,117nm,0.9s						
QZH	**Quanzhou**	**25.45**	**243** ⇓	*i*P	**P**	**19 25 43.9**	**-0.9**
QZH				S	**S**	**19 30 06.0**	**-4.3**
QZH				LR	LR		
	comp=Z,2μm,13.8s						
QZH				LR	LR		
	comp=Z,2μm,16.3s						
QZH				LR	LR		
	comp=Z,3μm,13.7s						
BOD	**Bodaibo**	**26.51**	**324** ⇑	*i*P	**P**	**19 25 54.4**	**+0.3**
BOD				pmax	pmax		
	comp=Z,51nm,1.0s						
SONM	**Songino Array**	**27.95**	**300**	P	**P**	**19 26 08.6**	**+1.2**
	comp=Z,9.0nm,0.7s,baz=93,slow=8.4,SNR=40						
H11N2	**WAKE ISLAND Hy**	**28.10**	**127**	T	T	19 55 23.5	
	baz=321						
H11N1	**WAKE ISLAND Hy**	**28.11**	**128**	T	T	19 55 24.6	
	baz=321						
H11N3	**WAKE ISLAND Hy**	**28.12**	**127**	T	T	19 55 24.0	
	baz=321						
XAN	**Xi'an**	**28.14**	**270**	P	**P**	**19 26 10.1**	**+1.1**
XAN				PP	**PnPn**	**19 26 59.7**	**+2.6**
XAN				sS	S	19 31 09.7	+17
XAN				pmax	pmax		
	comp=Z,18nm,0.8s						
XAN				pmax	pmax		
	comp=Z,140nm,7.2s						
XAN				LR	LR		
	comp=Z,350nm,12.3s						
XAN				LR	LR		
	comp=Z,790nm,13.1s						
XAN				LR	LR		
	comp=Z,980nm,13.1s						
IRK	**Irkutsk**	**29.83**	**309**	*e*P	**P**	**19 26 24.0**	**+0.2**
IRK				pmax	pmax		
	comp=Z,39nm,1.7s						
TLY	**Talaya**	**30.13**	**307**	P	**P**	**19 26 27.2**	**+0.7**
	comp=Z,8.3nm,0.9s,baz=119,slow=7.2,SNR=11						
TLY	**Talaya**	**30.13**	**307**	*e*P	**P**	**19 26 27.5**	**+1.0**
TLY				*e*		19 27 47.4	
TLY				*e*SS	SS	19 33 28.8	-3.3
TLY				pmax	pmax		
	comp=Z,13nm,1.1s						
TLY				MLR	MLR		
	comp=Z,510nm,11.0s						
ZAK	**Zakamensk**	**30.20**	**305**	*e*P	**P**	**19 26 28.1**	**+0.9**
ZAK				pmax	pmax		
	comp=Z,13nm,1.1s						
BILL	**Bilibino**	**31.29**	**16**	*e*P	**P**	**19 26 34.6**	**-1.9**
BILL				pmax	pmax		
	comp=Z,4.0nm,1.0s						
LZH	**Lanzhou**	**31.38**	**277**	*e*P	P	19 26 42.6	+4.7
LZH				pP	sP	19 26 50.8	+2.1
LZH				sP	pP	19 26 53.9	+8.4
LZH				pmax	pmax		
	comp=Z,34nm,1.0s						
LZH				pmax	pmax		
	comp=Z,160nm,4.0s						
LZH				LR	LR		
	comp=Z,740nm,12.7s						
LZH				LR	LR		
	comp=Z,2μm,12.5s						
LZH				LR	LR		
	comp=Z,2μm,13.0s						
MOY	**Mondy**	**31.77**	**307**	*e*P	**P**	**19 26 42.2**	**+1.2**
MOY				pmax	pmax		
	comp=Z,35nm,1.9s						
TIXI	**Tiksi**	**33.16**	**352**	P	**P**	**19 26 52.2**	**-0.7**
	comp=Z,2.7nm,0.4s,baz=305,slow=3.3,SNR=22						
TIXI	**Tiksi**	**33.16**	**352** ⇓	*e*P	**P**	**19 26 52.5**	**-0.4**
TIXI				pmax	pmax		
	comp=Z,10.0nm,2.5s						
TIXI	**Tiksi**	**33.16**	**352** ⇓	*e*P	**P**	**19 26 52.5**	**-0.4**
TIXI				pmax	pmax		
	comp=Z,10.0nm,2.5s						
TIXI	**Tiksi**	**33.16**	**352**	*e*P	**P**	**19 26 52.5**	**-0.4**
	comp=Z,10.0nm,2.5s						
TIXI	**Tiksi**	**33.16**	**352**	*e*P	**P**	**19 26 52.4**	**-0.5**
	comp=Z,4.7nm,0.8s						
GYA	**Guiyang**	**33.29**	**258** ⇑	*i*P	**P**	**19 26 54.3**	**-0.4**
GYA				pmax	pmax		
	comp=Z,40nm,1.0s						
GTA	**Gaotai**	**33.53**	**284**	⇑P	**P**	**19 26 57.7**	**+1.1**
GTA				pP	sP	19 27 06.8	-0.6
GTA				PcP	PcP	19 29 43.4	+6.4
GTA				S	**S**	**19 32 14.4**	**-2.7**
GTA				sS	sS	19 32 29.4	-0.4
GTA				SS	**SnSn**	**19 34 12.7**	**-7.6**
GTA				pmax	pmax		
	comp=Z,39nm,1.3s						
GTA				pmax	pmax		
	comp=Z,140nm,5.2s						
GTA				LR	LR		
	comp=Z,410nm,14.7s						
GTA				LR	LR		
	comp=Z,1μm,16.2s						
GTA				LR	LR		
	comp=Z,1μm,16.6s						
KRAR	**Krasnoyarsk**	**36.97**	**314** ⇑	*e*P	**P**	**19 27 26.0**	**+0.2**
KRAR				pmax	pmax		
	comp=Z,4.0nm,0.3s						
KMI	**Kunming**	**36.99**	**260**	P	**P**	**19 27 26.7**	**0.0**

KMI PP PnPn 19 28 55.4 +4.0
KMI S S 19 33 10.5 -0.3
KMI sS sS 19 33 25.9 +2.4
KMI pmax pmax
comp=Z,14nm,1.1s
KMI pmax pmax
comp=Z,250nm,4.9s
KMI LR LR
comp=Z,400nm,14.3s
KMI LR LR
comp=Z,510nm,15.6s
KMI LR LR
comp=Z,480nm,13.3s
ZALV Zalesovo Beam 41.60 310 P P 19 28 05.2 +0.7
comp=Z,17nm,0.6s,baz=92,slow=7.8,SNR=59
ZALV PcP PcP 19 30 00.3 -0.8
comp=Z,4.1nm,0.7s,baz=123,slow=3.8,SNR=4.5
NRIK Noril'sk 41.84 334 P P 19 28 06.9 +0.6
comp=Z,2.7nm,0.5s,baz=97,slow=10.0,SNR=5.0
NVS Novosibirsk 42.45 312‖ *i*P P 19 28 12.7 +1.2
NVS *e* 19 28 22.8
NVS *e*S S 19 34 33.1 +1.6
NVS pmax pmax
comp=Z,17nm,0.9s
NVS pmax pmax
comp=E,13nm,0.9s
NVS smax smax
comp=E,12nm,1.7s
LSA Lhasa 43.68 274 P P 19 28 24.3 +2.0
LSA pmax pmax
comp=E,5.0nm,0.7s
CMAR Chiang Mai Arr 43.72 255 P P 19 28 23.1 +1.0
comp=E,2.8nm,0.8s,baz=44,slow=6.8,SNR=18
CMAR Chiang Mai Arr 43.72 255 *i* P P 19 28 22.8 +0.7
CMAR pmax pmax
comp=Z,3.0nm,0.8s
MK31 Makanchi Array 44.31 300 *i* P P 19 28 27.2 +0.6
MK31 pmax pmax
comp=Z,13nm,0.7s
MKAR Makanchi Array 44.31 300 P P 19 28 27.4 +0.7
comp=Z,12nm,0.8s,baz=83,slow=9.4,SNR=54
KURK Kurchatov 45.82 307 P P 19 28 38.7 +0.2
KURK pmax pmax
comp=Z,62nm,0.6s
KURK Kurchatov 45.82 307 P P 19 28 39.9 +1.4
KURBB Kurchatov Arra 45.90 306 P P 19 28 39.9 +0.8
comp=Z,28nm,0.7s,baz=81,slow=8.3,SNR=102
ILAR Eielson Array 46.60 34 P P 19 28 45.0 +0.5
comp=Z,1.6nm,0.6s,baz=259,slow=6.8,SNR=15
ILAR Eielson Array 46.60 34 P P 19 28 45.0 +0.5
PDGK Podgornoye 47.18 297 P P 19 28 49.2 0.0
PDGK pmax pmax
comp=Z,10.0nm,0.7s
TAPN Taplejung 47.46 273 *e*P P 19 28 53.1 +1.1
comp=Z,52nm,1.1s
ODAN Odare 47.95 273 *e*P P 19 28 56.5 +0.7
comp=Z,46nm,0.9s
RAMN Ramite 48.52 273 *e*P P 19 29 00.9 +0.8
comp=Z,124nm,0.9s
GUN Gumba 48.60 275 *e*P P 19 29 01.8 +0.9
comp=Z,133nm,0.8s
KKN Kakani 49.12 275 *e*P P 19 29 05.6 +0.8
comp=Z,55nm,0.6s
PKIN Phulchoki 49.14 275 *e*P P 19 29 05.3 +0.4
comp=Z,34nm,0.9s
DMN Daman 49.34 275 *e*P P 19 29 07.3 +0.8
comp=Z,48nm,0.9s
GKN Gorkha 49.51 276 *e*P P 19 29 08.5 +0.8
comp=Z,82nm,1.1s
CHKZ Chkalovo 49.94 312 P P 19 29 10.7 +0.4
CHKZ pmax pmax
comp=Z,17nm,0.9s
VOSK Vostochnaya 49.97 311 P P 19 29 11.2 +0.6
VOSK pmax pmax
comp=Z,25nm,1.2s
TKM2 Tokmak 2 50.00 297 P P 19 29 12.2 +1.0
TKM2 pmax pmax
comp=Z,19nm,0.8s
TKM2 Tokmak 2 50.00 297 *e*P P 19 29 12.2 +1.0
comp=Z,18nm,0.7s
BVA0 Borovoye Array 50.24 311 *i* P P 19 29 13.4 +0.8
BVA0 pmax pmax
comp=Z,12nm,0.6s
BVAR Borovoye Array 50.24 311 P P 19 29 13.5 +0.9
comp=Z,12nm,0.8s,baz=75,slow=8.1,SNR=37
BRVK Borovoye 50.29 311*c* *i*P P 19 29 13.9 +0.9
BRVK pmax pmax
comp=Z,14nm,0.8s
OTUK Ortayu 50.41 305 P P 19 29 14.6 +0.5
OTUK pmax pmax
comp=Z,12nm,1.1s
KOLN Koldanda 50.43 276 *e*P P 19 29 15.6 +0.9
comp=Z,60nm,1.0s
FRU Bishkek 50.70 298 *e*P P 19 29 16.0 -0.4
FRU *i* 19 29 26.0
FRU *e* 19 31 17.0
FRU pmax pmax
comp=Z,63nm,2.2s
PYUN Piuthan 50.74 277 *e*P P 19 29 18.1 +1.1
comp=Z,161nm,0.9s
AAK Ala-Archa 50.86 297 P P 19 29 18.1 +0.5
comp=Z,1.7nm,0.5s,baz=103,slow=5.6,SNR=13
AAK Ala-Archa 50.86 297*c* *i*P P 19 29 18.3 +0.6
KSH Kashi 50.99 293 P P 19 29 23.2 +4.6
KSH *e*PcP PcP 19 30 39.9 +5.3
KSH *e*ScP **ScP 19 34 23.5 -5.6**
KSH S S 19 36 26.1 -8.1
KSH pmax pmax
comp=Z,7.0nm,0.7s
KSH pmax pmax
comp=Z,83nm,3.6s
KSH LR LR
comp=Z,150nm,5.8s
KSH LR LR
comp=Z,440nm,14.3s
KSH LR LR
comp=Z,690nm,15.2s
ZRNK Zerenda 51.06 311 P P 19 29 19.7 +0.8
ZRNK pmax pmax
comp=Z,20nm,0.8s
EKS2 Erkin-Say 51.34 298 *e*P P 19 29 21.6 +0.3
EKS2 Erkin-Say 51.34 298 *e*P P 19 29 21.6 +0.3
INK Inuvik 51.52 28 P P 19 29 22.3 +0.3
comp=Z,3.8nm,0.7s,baz=261,slow=8.7,SNR=7.7
MNAS Manas 52.28 298 P P 19 29 29.1 +0.8
MNAS pmax pmax
comp=Z,11nm,0.7s
SFK Sufi-Kurgan 52.54 295 P P 19 29 31.0 +0.6
SFK pmax pmax
comp=Z,20nm,1.2s
KK31 Karatay Array 53.40 299 *i* P P 19 29 36.5 +0.1
KK31 pmax pmax
comp=Z,5.0nm,0.8s
KKAR Karatay Array 53.40 299 *e*P P 19 29 36.5 +0.1
KKAR pmax pmax
comp=Z,5.0nm,0.7s
KKAR Karatay Array 53.40 299 *e*P P 19 29 36.5 +0.1
comp=Z,4.8nm,0.7s
PSI Prapat 54.43 240 P P 19 29 44.4 0.0
comp=Z,5.4nm,0.6s,baz=11,slow=6.5,SNR=5.9
SVE Sverdlovsk 54.49 318*de*P P 19 29 45.5 +1.4
SVE pmax pmax
comp=Z,35nm,0.9s
SVE MLR MLR
comp=Z,1μm,14.0s
ARU Arti 55.70 318 P P 19 29 53.7 +0.8
comp=Z,14nm,0.7s,baz=60,slow=3.1,SNR=28
DLBC Dease Lake 55.74 39 P P 19 29 53.9 +0.7
comp=Z,3.3nm,0.8s,baz=300,slow=6.9,SNR=6.6
GSI Gunungsitoli 56.44 240 *e*P P 19 29 57.9 -0.7
comp=Z,39nm,1.2s
ABKAR Akbulak array 57.70 310 *e*P P 19 30 03.9 -3.2
comp=Z,799nm,0.6s
AKTO Aktyubinsk 58.34 311 P P 19 30 12.3 +0.7
comp=Z,5.7nm,0.8s,baz=71,slow=12,SNR=17
AKTO Aktyubinsk 58.34 311 P P 19 30 11.9 +0.2
AKTO pmax pmax
comp=Z,8.0nm,0.8s
WRA Warramunga Arr 59.66 190 P P 19 30 19.2 -1.8
comp=Z,2.5nm,0.8s,baz=8.0,slow=7.0,SNR=12
RES Resolute Bay 59.89 15 P P 19 30 22.0 0.0
comp=Z,3.5nm,0.7s,baz=307,slow=6.8,SNR=13
RES Resolute Bay 59.89 15 P P 19 30 22.0 0.0
HYB Hyderabad 59.93 268 *i* P P 19 30 23.0 -0.2
YKA Yellowknife Ar 60.92 31 P P 19 30 29.8 +0.6
comp=Z,1.3nm,0.6s,baz=302,slow=6.5,SNR=12

TMCR Tamitsa 61.47 331 *e*P P 19 30 33.3 +0.5
TMCR pmax pmax
comp=Z,10.0nm,0.4s
ARCES ARCESS Array B 62.37 339 P P 19 30 39.0 +0.1
comp=Z,1.4nm,0.8s,baz=64,slow=8.1,SNR=2.7
ARCES ARCESS Array B 62.37 339 P P 19 30 39.0 +0.1
KLMR Klimovskoe 62.65 328 *e*P P 19 30 38.9 -1.9
KLMR *e**PP **pP** 19 30 49.1 +0.2
KLMR *e* 19 32 56.6
KLMR pmax pmax
comp=Z,17nm,1.5s
ASAR Alice Springs 63.38 190 P P 19 30 45.4 -0.7
comp=Z,1.3nm,0.7s,baz=12,slow=6.4,SNR=12
DAG Danmarks Havn 63.55 355 *i* P P 19 30 47.2 +0.6
comp=Z,4.9nm,0.9s
DAG Danmarks Havn 63.55 355 *i* P P 19 30 47.2 +0.6
DAG pmax pmax
comp=Z,4.0nm,0.9s
GEYT Alibeck 64.15 299 P P 19 30 51.9 +0.6
comp=Z,5.9nm,0.7s,baz=29,slow=3.4,SNR=14
MOS Moscow 66.34 324 *e*P P 19 31 04.2 -0.8
MOS *e* 19 31 33.3
MOS MLR MLR
comp=Z,700nm,17.0s
VRH Novokhopyorsk 66.94 318 *e*P P 19 31 08.1 -0.8
VRH *e**SP **sP** 19 31 19.0 -1.1
VRH pmax pmax
comp=Z,10.0nm,0.6s
OBN Obninsk 67.19 323 *i* P P 19 31 09.9 -0.6
OBN pmax pmax
comp=Z,16nm,1.7s
FINES FINESS Array B 67.49 333 P P 19 31 12.7 +0.5
comp=Z,7.6nm,0.8s,baz=47,slow=8.4,SNR=17
FINES FINESS Array B 67.49 333 *i* P P 19 31 13.0 +0.7
FINES pmax pmax
comp=Z,8.0nm,0.8s
LPSR Galich'ya Gora 67.55 320 *e*P P 19 31 12.6 -0.2
LPSR pmax pmax
comp=Z,10.0nm,1.1s
LPSR MLR MLR
comp=Z,470nm,14.0s
VSR Storozhevoye 68.24 319 *e*P P 19 31 16.3 -0.9
VSR *e**SP **sP** 19 31 27.6 -0.8
VSR pmax pmax
comp=Z,10.0nm,1.1s
SUMG Summit 68.31 1 *i* P P 19 31 19.1 +1.3
SUMG pmax pmax
comp=Z,4.8nm,0.9s
SUMG Summit 68.31 1 *i* P P 19 31 19.1 +1.3
SUMG pmax pmax
comp=Z,5.0nm,0.9s
VSU Vasula 69.25 330‖ *e*P P 19 31 23.9 +0.6
VSU pmax pmax
comp=Z,65nm,2.5s
GOF Gofitskoye 69.75 312⇑ *e*P P 19 31 28.3 +1.6
GOF pmax pmax
comp=Z,43nm,1.3s
NCK Nalchik 70.34 310‖ *e*P P 19 31 32.0 +1.6
NCK pmax pmax
comp=Z,20nm,0.9s
ZEI Tsey 70.58 310 *e*P P 19 31 30.2 -1.9
ZEI pmax pmax
comp=Z,16nm,0.8s
KVAR Kislovodsk Arr 70.60 311 P P 19 31 33.8 +1.7
comp=Z,23nm,0.9s,baz=83,slow=8.1,SNR=14
KIV Kislovodsk 70.61 311 *e*P P 19 31 33.4 +1.3
KIV pmax pmax
comp=Z,46nm,1.1s
KIV Kislovodsk 70.61 311 *e*P P 19 31 33.4 +1.3
comp=Z,42nm,1.0s
KBZ Khabaz 70.62 311 P P 19 31 33.5 +1.5
comp=Z,13nm,0.9s,baz=60,slow=3.7,SNR=25
STKA Stephens Creek 70.94 182 P P 19 31 34.5 +0.6
comp=Z,1.9nm,0.8s,baz=336,slow=12,SNR=3.9
STKA LR LR 20 06 16.8
comp=Z,47nm,19.1s,baz=25,slow=39
NEY Neytrino 71.00 311⇑ *e*P P 19 31 36.6 +2.0
NEY pmax pmax
comp=Z,3.0nm,1.4s
GNI Garni 71.62 307 P P 19 31 39.8 +1.5
comp=Z,3.7nm,0.8s,baz=182,slow=4.4,SNR=4.3
AKH Akhalkalaki 71.64 309‖ *i*P P 19 31 40.0 +1.5
NACGM Naroch 71.65 327 *e* P 19 31 39.0 +0.9
CHVG Ch'k'valeri 71.69 310‖ *i*P P 19 31 39.1 +0.5
NVAR Mina Array Bea 72.25 55 P P 19 31 43.3 +1.0
comp=Z,3.0nm,0.9s,baz=284,slow=6.3,SNR=13
HFS Hagfors 72.60 336 P P 19 31 44.3 +0.6
comp=Z,3.9nm,0.6s,baz=47,slow=6.5,SNR=14
NB2 NORSAR Subarra 72.63 338 P P 19 31 44.4 +0.5
comp=Z,0.7nm,0.6s,baz=32,slow=6.5
NOA NORSAR Array B 72.63 338 P P 19 31 44.6 +0.7
comp=Z,4.5nm,0.7s,baz=38,slow=6.0,SNR=14
ANN Anapa 73.08 314 *e*P P 19 31 45.4 -1.3
ANN *e**PP **pP** 19 31 55.8 +0.9
ANN *e*S S 19 41 10.2 -2.2
ANN *e*SS SS 19 45 53.6 +0.9
ANN pmax pmax
comp=Z,31nm,1.1s
AKASG Malin Array Be 73.43 323 P P 19 31 49.0 +0.3
comp=Z,4.5nm,0.6s,baz=44,slow=6.1,SNR=30
AKASG Malin Array Be 73.43 323 *i* P P 19 31 49.0 +0.3
AKASG pmax pmax
comp=Z,4.0nm,0.6s
KIEV Kiev 73.44 323⇑ *i*P P 19 31 48.8 0.0
KIEV pmax pmax
comp=Z,8.0nm,0.8s
KIEV Kiev 73.44 323 *e*P P 19 31 48.9 +0.1
comp=Z,9.0nm,0.8s
PDAR Pinedale Array 74.83 47 P P 19 31 57.4 +0.1
comp=Z,1.2nm,0.7s,baz=274,slow=2.4,SNR=8.3
PDAR LR LR 20 06 45.1
comp=Z,21nm,18.4s,baz=332,slow=37
BORG Borgarnes 75.50 353 *i* P P 19 32 03.6 +3.1
ULM Lac du Bonnet 76.61 35 P P 19 32 06.4 -0.7
comp=Z,0.7nm,0.3s,baz=280,slow=6.1,SNR=3.5
KWP Kalwaria Pacla 77.16 325 *e*P P 19 32 12.1 +1.9
KWP Kalwaria Pacla 77.16 325 *e*P P 19 32 12.2 +2.0
BURAR Bucovina Array 77.47 322‖ *i*P P 19 32 12.8 +0.7
TESR Tescani 77.56 321‖ *i*P P 19 32 13.4 +0.9
CFR Carcaliu 77.76 319⇑ *i*P P 19 32 14.2 +0.6
KOLS Kolonicke sedl 77.86 325 *e*P P 19 32 15.3 +1.1
KOLS pmax pmax
comp=Z,6.0nm,1.2s
KOLS Kolonicke sedl 77.86 325 *e*P P 19 32 15.3 +1.1
STHS Stebnicka Huta 77.96 326 *e*P P 19 32 16.7 +2.0
STHS pmax pmax
comp=Z,6.0nm,1.2s
STHS Stebnicka Huta 77.96 326 *e*P P 19 32 16.7 +2.0
VRI Vrincioaia 77.98 320⇑ *i*P P 19 32 15.5 +0.6
OJC Ojcow 77.98 327 *e*P P 19 32 16.4 +1.6
OJC Ojcow 77.98 327 *e*P P 19 32 16.5 +1.6
UZH Uzhgorod 78.08 325 *e*P P 19 32 15.1 -0.2
UZH *e* 19 32 23.1
UZH *e* 19 32 25.3
BMR Baia Mare 78.23 323‖ *i*P P 19 32 17.0 +0.8
ARCR ARCALIA 78.26 322‖ *i*P P 19 32 18.7 +2.3
NIE Niedzica 78.37 326 *e*P P 19 32 18.6 +1.6
NIE Niedzica 78.37 326 *e*P P 19 32 18.7 +1.7
BRTR Keskin Array B 78.51 312 P P 19 32 18.9 +0.7
comp=Z,1.5nm,0.8s,baz=70,slow=4.1,SNR=8.6
BRTR PP PP 19 35 16.7 +1.5
comp=Z,1.1nm,0.9s,baz=60,slow=7.3,SNR=3.6
DOPR Dopca 78.57 321‖ *i*P P 19 32 19.3 +1.2
MSAB Monastry St. A 78.68 319‖ *i*P P 19 32 18.9 +0.2
LANS Liptovska Anna 78.93 326 *e*P P 19 32 21.5 +1.4
LANS Liptovska Anna 78.93 326 *e*P P 19 32 21.5 +1.4
OKC Ostrava-Krasne 78.97 327 AMS AMS 20 10 20.0
comp=Z,600nm,17.9s
KECS Kecovo 78.99 325 *e*P P 19 32 21.4 +1.0
KECS pmax pmax
comp=Z,2.0nm,0.9s
KECS Kecovo 78.99 325 *e*P P 19 32 21.4 +1.0
VOIR 79.11 321‖ *i*P P 19 32 22.5 +1.3
DPC Dobruska-Polom 79.32 329 *e*P P 19 32 23.7 +1.5
DPC *e*PCP **pP** 19 32 28.8 -1.7
DPC *e*pP **sP** 19 32 34.2 +0.7
DPC Dobruska-Polom 79.32 329 *e*P P 19 32 23.7 +1.5
DPC *e* 19 32 28.8
DPC *e* 19 32 34.2
UPC Upice 79.32 329 *e*P P 19 32 23.4 +1.2
UPC Upice 79.32 329 *e*P P 19 32 23.4 +1.2
ARR Arges 79.37 321‖ *i*P P 19 32 24.7 +2.1
PSZ Piszkesteto 79.68 325 *e*P P 19 32 25.3 +1.0
PSZ pmax pmax
comp=Z,6.0nm,0.8s

PSZ Piszkesteto 79.68 325 *e*P P 19 32 25.3 +1.0
comp=Z,5.8nm,0.8s
VYHS Vyhne 79.70 326 *e*P P 19 32 25.3 +1.0
VYHS pmax pmax
comp=Z,4.0nm,1.2s
VYHS Vyhne 79.70 326 *e*P P 19 32 25.3 +1.0
BRG Berggiesshubel 79.84 330 *e*(P) P 19 32 25.9 +0.9
comp=Z,5.4nm,1.2s
BRG Berggiesshubel 79.84 330 *e*P P 19 32 25.9 +0.9
BRG pmax pmax
comp=Z,5.0nm,1.2s
CLL Collm 79.85 331⇑ *i*P P 19 32 25.4 +0.4
comp=Z,7.0nm,0.9s
CLL *e*S S 19 42 30.0 +3.6
CLL LmH 20 06 00.0
comp=N,300nm,19.3s
CLL LmH 20 06 00.0
comp=E,500nm,19.8s
CLL LmV 20 12 00.0
comp=Z,300nm,20.3s
CLL Collm 79.85 331⇑ *i*P P 19 32 25.4 +0.4
CLL *e*S S 19 42 30.0 +3.6
CLL pmax pmax
comp=Z,7.0nm,0.9s
CLL MLR MLR
comp=Z,300nm,20.3s
PVCC Panska Ves 79.87 330 AMS AMS 20 11 00.0
comp=Z,400nm,16.9s
VRAC Vranov 80.02 328 P P 19 32 27.7 +1.7
comp=Z,6.8nm,0.3s,baz=31,slow=5.9,SNR=7.2
VRAC LR LR 20 11 14.9
comp=Z,317nm,19.7s,baz=7.0,slow=38
VRAC Vranov 80.02 328‖ *i*P P 19 32 25.7 -0.3
GZR Gura Zlata 80.24 322⇑ *i*P P 19 32 28.6 +1.3
GOPC GO Pecny, Ondr 80.27 329 AMS AMS 20 11 00.0
comp=Z,400nm,20.1s
PRU Pruhonice 80.31 329 *e*P P 19 32 28.7 +1.2
PRU AMS AMS 20 11 20.0
comp=Z,400nm,17.2s
PRU Pruhonice 80.31 329 *e*P P 19 32 28.7 +1.2
PRU MLR MLR
comp=Z,400nm,17.2s
TREC Trest 80.48 328 AMS AMS 20 11 20.0
BZS Buzias 80.62 323⇑ *i*P P 19 32 30.0 +0.7
MDVR Moldovita 81.20 322‖ *i*P P 19 32 33.0 +0.5
KHC Kasperske Hory 81.38 329 *e*P P 19 32 34.3 +1.0
KHC *e*PCP **pP** 19 32 41.1 -0.5
KHC *e*pP **sP** 19 32 43.3 -1.3
KHC AMS AMS 20 12 00.0
comp=Z,400nm,18.8s
KHC Kasperske Hory 81.38 329 *e*P P 19 32 34.3 +1.0
KHC *e* 19 32 43.3
KHC MLR MLR
comp=Z,400nm,18.8s
CONA Conrad Observa 81.40 327 *i* P P 19 32 35.1 +1.6
comp=Z,5.3nm,0.9s
EKA Eskdalemuir Ar 81.44 341 P P 19 32 34.3 +0.9
comp=Z,1.5nm,0.7s,baz=21,slow=5.4,SNR=3.5
ASF Jabal al Asfar 81.55 305 P P 19 32 35.3 +0.8
comp=Z,3.4nm,0.8s,baz=31,slow=2.3,SNR=5.8
GERES GERESS Array B 81.56 329 P P 19 32 34.9 +0.6
comp=Z,1.7nm,0.8s,baz=46,slow=5.8,SNR=12
VTS Vitosha 82.10 320⇑ *i*P P 19 32 38.7 +1.3
SOKA Soboth 82.73 327 *i* P P 19 32 41.4 +0.9
comp=Z,10nm,0.8s
KBA Koelnbreinsper 83.11 328 *i* PcP P 19 32 44.5 +1.9
comp=Z,6.7nm,0.9s
VISS Visnje 83.51 327 *i* P P 19 32 44.9 +0.4
BOJS Bojanci 83.57 326 *e*P P 19 32 45.7 +1.0
JAVS Javornik 83.77 327 *i* P P 19 32 45.4 -0.4
MOTA Moosalm 83.79 330 *i* PcP **PcP** 19 32 48.5 -1.6
BFO Black Forest 84.03 332 *i* P P 19 32 49.4 +2.3
DAVA Damuels 84.31 330 *i* PcP P 19 32 49.7 +0.9
comp=Z,10nm,0.9s
EIL Eilat 84.46 304 P P 19 32 50.6 +1.1
comp=Z,6.8nm,0.9s,baz=355,slow=5.6,SNR=5.2
DAVOX Davos/Dischmat 84.73 330 P P 19 32 51.8 +0.9
comp=Z,3.5nm,0.8s,baz=334,slow=2.7,SNR=5.5
TUE Stuetta 85.19 330 *e*P P 19 32 53.0 -0.3
comp=Z,6.2nm,0.8s
TXAR Lajitas Array 87.37 54 P P 19 33 03.5 -0.7
comp=Z,0.7nm,0.8s,baz=312,slow=3.7,SNR=6.3
TKL Tuckaleechee C 93.49 37 LR LR 20 16 55.6
comp=Z,30nm,22.0s,baz=323,slow=36
TORD Torodi Ar. Bea 116.77 318 PP PP 19 40 08.6 -0.3
comp=Z,1.8nm,1.0s,baz=41,slow=5.7,SNR=6.3
SNAA Sanae 143.50 197 PKP **PKPdf** 19 39 49.9 -0.2
VNA2 Neumayer--Watz 145.06 196 PKP **PKPbc** 19 39 51.8 -0.4
baz=132,slow=2.5

*ISCJB **06** 19:23:27.6±0.6, 37.89N±0.03×27.31E±0.05, h6km±9km,*
Error ellipse: s-maj=6.8km s-min=4.7km az=167.0
*CSEM **06** 19:23:27.8±0.1, 37.89N×27.30E, h2km, MD2.6, Error*
ellipse: s-maj=3.7km s-min=2.4km az=77.0
*DDA **06** 19:23:27.7, 37.87N×27.32E, h7km, Md2.6*
*ISK **06** 19:23:27.6, 37.92N×27.33E, h11km, MD2.5*
ISC 06 19:23:27.8±1.0, **37.88N**±0.02×**27.30E**±0.03, **h8**km±12km,
n14, σ0**.24**/25, **Turkey**

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
GCAM	**G?zelcaml?**	**0.19**	**195**	*i* P		**Pg**	**19 23 31.3**	**-0.3**
GCAM				*i* S		**Sg**	**19 23 34.5**	**+0.3**
GCAM	**G?zelcaml?**	**0.19**	**195**	P		**Pg**	**19 23 31.3**	**-0.3**
GCAM				S		**Sg**	**19 23 34.5**	**+0.3**
AYDB	**Zeytinkoy-Aydi**	**0.47**	**82**	*e*PG		**Pg**	**19 23 36.9**	**-0.1**
AYDB				*e*SG		**Sg**	**19 23 43.4**	**+0.1**
AYDB	**Zeytinkoy-Aydi**	**0.47**	**82**	*e*Pg		**Pg**	**19 23 36.9**	**-0.1**
AYDB				*e*Sg		**Sg**	**19 23 43.4**	**+0.1**
AYDN	**Tasoluk**	**0.51**	**115**	*i* P		**Pg**	**19 23 37.8**	**+0.1**
AYDN				*i* S		**Sg**	**19 23 44.3**	**-0.1**
AYDN	**Tasoluk**	**0.51**	**115**	P		**Pg**	**19 23 37.8**	**+0.1**
AYDN				S		**Sg**	**19 23 44.3**	**-0.1**
IZM	**Izmir**	**0.52**	**357**	*e*PG		**Pg**	**19 23 37.5**	**-0.4**
IZM				*e*SG		**Sg**	**19 23 44.6**	**0.0**
IZM	**Izmir**	**0.52**	**357**	*e*Pg		**Pg**	**19 23 37.5**	**-0.4**
IZM				*e*Sg		**Sg**	**19 23 44.7**	**0.0**
BLCB	**Balcova**	**0.54**	**338**	*e*PG		**Pg**	**19 23 38.2**	**-0.1**
BLCB				*e*SG		**Sg**	**19 23 46.0**	**+0.6**
BLCB	**Balcova**	**0.54**	**338**	*e*Pg		**Pg**	**19 23 38.2**	**-0.1**
BODT	**Bodrum**	**0.82**	**179**	*e*PG		**Pb**	**19 23 44.4**	**+0.1**
BODT	**Bodrum**	**0.82**	**179**	*e*Pg		**Pb**	**19 23 44.4**	**+0.1**
BDRM	**Kayabasi**	**0.82**	**172**	*i* P		**Pg**	**19 23 43.4**	**-0.2**
BDRM				*i* S		**Sb**	**19 23 55.5**	**-0.1**
BDRM	**Kayabasi**	**0.82**	**172**	P		**Pg**	**19 23 43.4**	**-0.2**
BDRM				S		**Sb**	**19 23 55.5**	**-0.1**

*JMA **06** 19:30:01.2±0.1, 24.39N×121.88E, h39km±5km, M2.2*
*ISCJB **06** 19:30:02.1±0.3, 24.47N±0.02×121.95E±0.02, h23km±3km,*
Error ellipse: s-maj=3.5km s-min=2.5km az=145.3
*TAP **06** 19:30:02.3, 24.48N×121.87E, h18km, ML2.9, D*
ISC 06 19:30:01.8±1.0, **24.45N**±0.02×**121.94E**±0.02, **h20**km±3km,
n41, σ0**.47**/80, **Taiwan**

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
TWC	**Suao**	**0.18**	**331**	*i* P		**Pg**	**19 30 06.8**	**+0.2**
	baz=354							
TWC				*i* S		**Sg**	**19 30 10.3**	**+0.5**
	baz=354							
ENA	**Nanau**	**0.19**	**262**	*i* P		**Pg**	**19 30 06.5**	**-0.2**
	baz=246							
ENA				S		**Sg**	**19 30 09.9**	**-0.1**
	baz=246							
TWE	**Neicheng**	**0.37**	**317**	*i* P		**Pg**	**19 30 09.4**	**-0.1**
	baz=324							
TWE				S		**Sg**	**19 30 14.0**	**-0.9**
	baz=324							
ENTT	**Nioudou**	**0.39**	**298**	P		**Pg**	**19 30 09.9**	**-0.2**
	baz=300							
ENTT				*i* S		**Sg**	**19 30 15.4**	**-0.2**
	baz=300							
TWD	**Chiawan**	**0.49**	**221**	P		**Pb**	**19 30 11.7**	**-0.1**
	baz=211							
TWD				S		**Sb**	**19 30 19.8**	**+1.3**
	baz=211							
NNS	**Nan Shan**	**0.52**	**269**	P		**Pb**	**19 30 12.3**	**0.0**
	baz=265							
NNS				S		**Sg**	**19 30 18.9**	**-0.7**
	baz=265							
TWB1	**Santiao Chiao**	**0.55**	**4**	*e*P		**Pg**	**19 30 13.3**	**+0.4**
	baz=12							

TWB1				eS	Sb	19 30 20.5	+0.2
	baz=12						
HWA	Hwalien	0.57	213	eP	Pg	19 30 13.6	+0.4
	baz=205						
HWA				eS	Sn	19 30 22.6	-0.9
	baz=205						
NSK	Sanguang	0.58	293	iP	Pb	19 30 12.7	-0.6
	baz=293						
NSK				iS	Sb	19 30 20.1	-0.9
	baz=293						
TWA	Mucha	0.62	328	eP	Pb	19 30 13.9	0.0
	baz=332						
TWA				S	Sg	19 30 22.8	+0.3
	baz=332						
NWF	Wu-fen Shan	0.63	347	P	Pg	19 30 14.6	+0.2
	baz=351						
NWF				iS	Sg	19 30 23.3	+0.3
	baz=351						
WHF	Hehuan Shan	0.69	244	P	Pb	19 30 15.0	-0.4
	baz=238						
WHF				S	Sg	19 30 24.9	0.0
	baz=238						
TAP1	Taipei	0.70	327	P	Pg	19 30 15.8	+0.2
	baz=329						
TAP1				eS	Sg	19 30 25.4	+0.5
	baz=329						
TAP	Taipei	0.71	326	eP	Pb	19 30 15.6	+0.2
	baz=329						
TAP				eS	Sg	19 30 25.6	+0.4
	baz=329						
TWT	Tachien	0.73	254	eP	Pg	19 30 16.2	0.0
	baz=250						
TWT				eS	Sg	19 30 25.9	-0.1
	baz=250						
ESL	Shilin	0.79	216	P	Pb	19 30 16.3	-0.6
	baz=210						
ESL				eS	Sn	19 30 28.9	-0.1
	baz=210						
TWS1	Kuangyinshan	0.80	324	eP	Pb	19 30 17.2	+0.1
	baz=326						
TWS1				eS	Sg	19 30 28.4	+0.2
	baz=326						
NSTT	Nanjuang	0.88	282	P	Pg	19 30 18.9	0.0
	baz=281						
NSTT				S	Sg	19 30 30.5	-0.1
	baz=281						
TWY	Chenhua	0.88	339	P	Pn	19 30 19.1	+0.1
	baz=343						
TWY				eS	Sn	19 30 31.1	-0.1
	baz=343						
JYNG	Yonagunijimaku	0.91	90	P	Pb	19 30 18.3	-0.7
JYNG				eS	Sn	19 30 32.0	-0.1
YOJ	Yonaguni jima	0.97	89	P	Pb	19 30 19.7	-0.3
YOJ				eS	Sn	19 30 33.6	0.0
TWQ1	Liyutan	1.07	265	eP	Pg	19 30 22.6	0.0
	baz=262						
TWQ1				eS	Sn	19 30 36.4	+0.3
	baz=262						
EHY	Hungye	1.10	211	eP	Pb	19 30 22.3	+0.1
	baz=207						
EHY				eS	Sg	19 30 38.6	+0.9
	baz=207						
SMLT	Sun Moon Lake	1.11	239	eP	Pn	19 30 22.2	-0.1
	baz=236						
SMLT				eS	Sg	19 30 37.8	-0.2
	baz=236						
TYC	Yuchr	1.13	241	eP	Pn	19 30 22.3	-0.3
	baz=238						
TYC				eS	Sg	19 30 38.1	-0.6
	baz=238						
TWF1	Yuli	1.25	208	eP	Pb	19 30 24.5	-0.2
	baz=204						
TWF1				eS	Sg	19 30 42.2	0.0
	baz=204						
YUS	Yu-Shan	1.32	224	eP	Pb	19 30 25.9	-0.3
	baz=220						
YUS				eS	Sb	19 30 43.2	+0.2
	baz=220						
ALS	Alishan	1.40	228	eP	Pn	19 30 26.7	+0.2
	baz=225						
ALS				eS	Sn	19 30 44.4	-0.2
	baz=225						
CHN5	Tsauling	1.44	234	eP	Pb	19 30 27.8	-0.2
	baz=231						
CHN5				eS	Sb	19 30 45.9	-0.1
	baz=231						
CHKT	Chengkung	1.45	202	eP	Pb	19 30 28.3	+0.2
	baz=198						
CHKT				eS	Sb	19 30 46.2	+0.1
	baz=198						
WGK	Gukeng	1.48	239	eP	Pb	19 30 28.4	-0.1
	baz=236						
WGK				eS	Sn	19 30 45.7	-0.3
	baz=236						
ELDTW	Lidau	1.52	214	eP	Pn	19 30 28.4	+0.5
	baz=211						
ELDTW				eS	Sb	19 30 47.6	-0.7
	baz=211						
IRIF	Iriomote-Funau	1.63	94	P	Pn	19 30 28.7	-0.7
IRIF				eS	Sn	19 30 49.5	-0.4
CHN4	Tsaushan	1.65	229	eP	Pb	19 30 31.5	-0.1
	baz=226						
CHN4				eS	Sn	19 30 50.8	+0.3
	baz=226						
STYT	Tauyuan	1.68	220	eP	Pb	19 30 31.1	-1.0
	baz=217						
STYT				eS	Sn	19 30 51.7	+0.5
	baz=217						
WTP	Ta-pu	1.71	226	eP	Pb	19 30 31.9	-0.7
	baz=223						
WTP				eS	Sn	19 30 51.9	-0.1
	baz=223						
CHN1	Nanshi	1.81	226	eP	Pb	19 30 33.5	-0.8
	baz=223						
CHN1				eS	Sn	19 30 54.4	+0.1
	baz=223						
JKRS	Kuro-shima	1.90	96	P	Pn	19 30 33.6	+0.5
JKRS				eS	Sn	19 30 57.0	+0.6
JIJ	Ishigaki jima	2.01	92	eS	Sn	19 30 58.2	-0.9
SSD	Sandimen	2.08	216	eP	Pn	19 30 36.4	+0.7
	baz=213						
SSD				eS	Sn	19 31 02.1	+1.1
	baz=213						
JISG	Ishigakijimahi	2.16	86	eS	Sn	19 31 02.4	-0.5

IDC 06 19:41:36.2±1.6**, 6°.26S**×**130°.14E, h0**km**, mb3.8**/2**, mb1 4.2**/6**, mb1mx3.7**/43**, mbtmp4.1**/6**, ML4.3**/3**, Error ellipse: s-maj=46.8km s-min=23.5km az=74.0, Banda Sea**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BATI	Baumata	7.51	238	Pn	Pn	19 43 29.3	+2.1
	baz=88,slow=24,SNR=2.7						
BATI				Sn	Sn	19 44 46.8	-6.4
	5.2nm,0.3s,baz=97,slow=24,SNR=10						
FITZ	Fitzroy Crossi	12.56	200	Pn	Pn	19 44 34.5	-1.8
	1.1nm,0.3s,baz=25,slow=12,SNR=25						
FITZ				Sn	Sn	19 46 38.8	-18
	1.5nm,0.3s,baz=94,slow=19,SNR=7.2						
WRA	Warramunga Arr	14.20	164	Pn	Pn	19 44 57.8	-1.0
	1.9nm,0.3s,baz=344,slow=14,SNR=34						
WRA				Sn	Sn	19 47 22.9	-14
	2.3nm,0.3s,baz=330,slow=23,SNR=11						
ASAR	Alice Springs	17.68	169	P	Pn	19 45 43.4	-0.7
	0.8nm,0.3s,baz=348,slow=11,SNR=90						
ASAR				S	Sn	19 48 45.2	-17
	0.3nm,0.3s,baz=54,slow=30,SNR=4.2						
STKA	Stephens Creek	27.64	159	P	P	19 47 26.5	+0.7
	0.6nm,0.5s,baz=332,slow=12,SNR=2.9						
MKAR	Makanchi Array	67.69	327	P	P	19 52 35.2	-0.2
	0.5nm,0.5s,baz=123,slow=7.0,SNR=16						

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*NIED **06** 19:46:00, 36°.30N×142°.60E, h26km, Mw3.7 Best double couple: M₀4.55000×10^14 NP1:φs90.00000°, δ8.00000°, λ-58.00000°. NP2:φs237.00000°, δ83.00000°, λ-94.00000°.*
*IDC **06** 19:46:12.6±0.7, 36°.29N×143°.10E, h0km, mb3.7/10, mb1 3.9/14, mb1mx3.7/48, mbtmp3.8/14, ML3.2/4, MS2.9/1, Ms1 2.9/1, ms1mx2.4/64, Error ellipse: s-maj=19.1km s-min=17.9km az=131.0*
*ISCJB **06** 19:46:15.3±0.6, 36°.29N±0°.07×142°.80E±0°.06, h29km, mb3.7/10, Error ellipse: s-maj=9.5km s-min=7.0km az=2.5*
*JMA **06** 19:46:18.2±0.3, 36°.35N×142°.55E, h69km, M3.6*
ISC 06 19:46:17.0±0.7**, 36°.28N**±0°.06×**142°.79E**±0°.07**, h29**km**, n29, σ1s.75**/27**, mb3.8**/10**, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	Chosi	1.67	250	P	Pn	19 46 43.9	-0.4
ONAJ	Iwakimizuishiy	1.80	298	P	Pn	19 46 44.6	-1.5
JHO	Hitachi	1.82	281	P	Pn	19 46 45.0	-1.4
JHO				S	Sn	19 47 05.6	-2.9
JFK	Kawauchi	1.88	306	P	Pn	19 46 45.9	-1.3
BSO1	Boso 1	2.20	223	P	Pn	19 46 51.4	+0.3
JMM	Marumori	2.25	315	P	Pn	19 46 50.9	-1.3
JFT	Otama	2.32	303	P	Pn	19 46 52.9	-0.4
JAG	Ashikaga	2.70	274	P	Pn	19 46 57.5	-0.9
JAG				S	Sn	19 47 26.4	-3.8
MJAR	Matsushiro Arr	3.71	275	Pn	Pn	19 47 12.0	-0.3
	5.2nm,0.3s,baz=105,slow=8.4,SNR=48						
MAT	Matsushiro	3.71	275	P	Pn	19 47 12.4	+0.1
MAT				eS	Sn	19 47 55.3	+0.2
JHJ	Hachijo jima 2	4.01	219	Pn	Pn	19 47 16.0	-0.5
	22nm,0.3s,baz=355,slow=20,SNR=36						
JHJ				Sn	Sn	19 47 58.6	-4.0
	69nm,0.3s,baz=107,slow=19,SNR=12						
USRK	Ussuriysk Ar.	11.42	317	Pn	Pn	19 48 59.9	+1.8
	0.2nm,0.3s,baz=131,slow=17,SNR=4.5						
KSRS	Korea Array	11.97	280	Pn	Pn	19 49 07.5	+1.9
	0.1nm,0.3s,baz=94,slow=12,SNR=6.4						
KSRS				LR	LR	19 53 20.4	
	comp=Z,53nm,18.1s,baz=82,slow=35						
H11N2	WAKE ISLAND Hy	26.81	121	T	T	20 20 06.0	
	baz=313						
H11N1	WAKE ISLAND Hy	26.82	122	T	T	20 20 04.3	
	baz=313						
H11N3	WAKE ISLAND Hy	26.83	121	T	T	20 20 04.9	
	baz=313						
H11S1	WAKE ISLAND Hy	27.52	124	T	T	20 21 00.4	
	baz=302						
H11S3	WAKE ISLAND Hy	27.52	124	T	T	20 21 01.5	
	baz=302						
H11S2	WAKE ISLAND Hy	27.54	124	T	T	20 21 00.9	
	baz=302						
SONM	Songino Array	29.12	305	P	P	19 52 17.3	+1.9
	1.8nm,0.7s,baz=106,slow=8.7,SNR=17						
ZALV	Zalesovo Beam	43.24	313	P	P	19 54 17.1	+1.7
	1.0nm,0.5s,baz=91,slow=8.9,SNR=4.6						
MKAR	Makanchi Array	45.46	303	P	P	19 54 35.0	+1.7
	2.3nm,0.7s,baz=93,slow=8.0,SNR=23						
ILAR	Eielson Array	49.54	32	P	P	19 55 03.5	-1.2
	0.3nm,0.9s,baz=250,slow=6.1,SNR=2.5						
WRA	Warramunga Arr	56.49	190	P	P	19 55 56.9	+0.5
	0.5nm,0.4s,baz=8.1,slow=7.6,SNR=6.5						
ASAR	Alice Springs	60.22	189	P	P	19 56 23.4	+1.0
	0.3nm,0.4s,baz=2.6,slow=6.4,SNR=14						
YKA	Yellowknife Ar	63.90	30	P	P	19 56 46.4	-0.3
	0.1nm,0.7s,baz=305,slow=6.3,SNR=3.5						
FINES	FINESS Array B	69.99	333	P	P	19 57 26.3	+0.9
	1.7nm,0.8s,baz=350,slow=7.3,SNR=3.3						
NVAR	Mina Array Bea	74.54	54	P	P	19 57 51.2	-2.2
	0.3nm,0.6s,baz=284,slow=2.5,SNR=2.8						
TXAR	Lajitas Array	89.69	53	P	P	19 59 12.0	-0.6
	0.2nm,0.5s,baz=325,slow=1.4,SNR=2.6						

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*IDC **06** 20:00:31.2±1.9, 10°.15S×107°.33E, h0km, mb3.5/5, mb1 3.7/6, mb1mx3.5/44, mbtmp3.6/6, ML4.0/1, Error ellipse: s-maj=76.1km s-min=22.8km az=50.0*
*ISCJB **06** 20:00:33.2±1.1, 9°.83S±0°.10×107°.53E±0°.08, h23km, mb3.5/5, Error ellipse: s-maj=15.8km s-min=9.6km az=33.4*
*DJA **06** 20:00:33.4±1.7, 10°S±15°×10°7E±°, h10km, M4.1/12, mb4.2/2, MLv4.1/12*
ISC 06 20:00:35.3±1.3**, 9°.77S**±0°.09×**107°.49E**±0°.09**, h23**km**, n17, σ1s.20**/18**, mb3.6**/5**, South of Jawa**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CMJI	Cimerak	2.19	26	P	Pn	20 01 09.5	-0.8
CISI	Cisompet, Garu	2.22	8	P	Pn	20 01 09.8	-1.0
CNJI	Cibinong	2.47	352	P	Pn	20 01 13.0	-1.2
KPJI	Karang Pucung	2.81	31	P	Pn	20 01 19.6	+0.8
LEM	Lembang	2.93	2	Pn	Pb	20 01 26.1	-0.8
	15nm,0.3s,baz=52,slow=10,SNR=29						
LEM				Sn	Sb	20 02 03.0	+0.6
	8.9nm,0.3s,baz=28,slow=17,SNR=4.1						
LEM	Lembang	2.93	2	P	Pb	20 01 26.4	-0.5
UGM	Wanagama	3.52	59	P	Pn	20 01 27.4	-1.3
CGJI	Cibinong	3.60	330	P	Pn	20 01 29.1	-0.7
PCJI	Pacitan	3.96	67	P	Pn	20 01 34.9	+0.2
PWJI	Pagerwojo	4.60	68	P	Pn	20 01 43.3	-0.2
GMJI	Gumukmas	6.07	76	P	Pn	20 02 04.3	+0.6
	26nm,2.4s,0.1nm						
JAGI	Jajag, Banyuwa	6.70	79	P	Pn	20 02 10.9	-1.5
WRA	Warramunga Arr	27.81	114	P	P	20 06 22.1	-1.0
	0.5nm,0.7s,baz=287,slow=11,SNR=3.5						
ASAR	Alice Springs	28.75	122	P	P	20 06 30.6	-0.9
	0.4nm,0.9s,baz=301,slow=9.1,SNR=2.7						
MKAR	Makanchi Array	60.64	340	P	P	20 10 44.6	+0.1
	0.4nm,0.4s,baz=147,slow=8.7,SNR=15						
KURBB	Kurchatov Arra	65.20	340	P	P	20 11 16.8	+2.1
	0.4nm,0.8s,baz=157,slow=5.5,SNR=3.6						
BVAR	Borovoye Array	70.09	337	P	P	20 11 47.9	+2.4
	0.4nm,0.7s,baz=134,slow=6.2,SNR=3.7						

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*ISCJB **06** 20:01:02.5±0.7, 39°.60N±0°.05×33°.40E±0°.06, h12km±8km, Error ellipse: s-maj=10.3km s-min=6.3km az=138.5*
*CSEM **06** 20:01:02.2±0.1, 39°.60N×33°.40E, h15km, MD2.6, Error ellipse: s-maj=3.8km s-min=2.7km az=159.0*
*DDA **06** 20:01:02.4, 39°.59N×33°.40E, h7km, Md2.6*
*ISK **06** 20:01:02.2, 39°.55N×33°.25E, h30km, MD2.4*
ISC 06 20:01:02.4±0.9**, 39°.59N**±0°.04×**33°.38E**±0°.04**, h17**km±9km**, n18, σ0s.48**/29**, Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BBAL	Bala	0.20	256	iP	Pg	20 01 07.3	-0.1
BBAL				iS	Sg	20 01 10.6	-0.1
BBAL	Bala	0.20	256	P	Pg	20 01 07.3	-0.1
BBAL				S	Sg	20 01 10.6	-0.1
AFSR	Af¯ar-Bala (A	0.28	238	ePG	Pg	20 01 08.7	+0.2
AFSR				eSG	Sg	20 01 13.1	+0.4
AFSR	Af¯ar-Bala (A	0.28	238	ePg	Pg	20 01 08.7	+0.2
AFSR				eSg	Sg	20 01 13.1	+0.4
KKUL	Konya-Kulu	0.55	220	iP	Pg	20 01 13.8	+0.4
KKUL				iS	Sb	20 01 22.0	+0.6
KKUL	Konya-Kulu	0.55	220	P	Pg	20 01 13.8	+0.4
KKUL				S	Sb	20 01 22.0	+0.6
LOD	Lodumlu	0.56	302	ePG	Pg	20 01 13.7	+0.2
LOD	Lodumlu	0.56	302	ePg	Pg	20 01 13.7	+0.2
SERE	Sereflikochisa	0.66	167	ePG	Pg	20 01 15.8	+0.3
SERE	Sereflikochisa	0.66	167	ePg	Pg	20 01 15.8	+0.3
CDAG	Cicekdag	0.77	87	iP	Pb	20 01 16.9	-0.6
CDAG				iS	Sb	20 01 27.9	+0.2
CDAG	Cicekdag	0.77	87	P	Pb	20 01 16.9	-0.6
CDAG				S	Sb	20 01 27.9	+0.2
AKSY	AKSARAY - Alti	0.99	162	iP	Pb	20 01 20.9	-0.3
AKSY				iS	Sb	20 01 33.2	-0.7
AKSY	AKSARAY - Alti	0.99	162	P	Pb	20 01 20.9	-0.3
AKSY				S	Sb	20 01 33.2	-0.7
CORM	Corum	1.13	58	ePN	Pn	20 01 23.6	0.0
CORM	Corum	1.13	58	ePn	Pn	20 01 23.6	0.0
COAL	Corum-Alaca	1.40	61	iP	Pn	20 01 27.1	-0.4
COAL				iS	Sg	20 01 49.1	+1.3
COAL	Corum-Alaca	1.40	61	P	Pn	20 01 27.0	-0.4

JMA 06 20:02:38.1±0.3**, 37°.57N**×**144°.04E, h11**km**, M3.7, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	Ouri	2.30	293	P	Pn	20 03 17.1	+1.1
JIO				S	Sn	20 03 45.5	+1.2
OFUJ	Ofunato	2.40	310	P	Pn	20 03 18.7	+1.4
JMK	Ichinoseki	2.61	303	S	Sn	20 03 54.1	+2.1
JOU	Okura	2.78	288	P	Pn	20 03 24.2	+1.6
JOM	Ohasama	2.87	312	P	Pn	20 03 25.8	+2.0
JOM				S	Sn	20 04 00.4	+2.0
JTH	Tanohata	2.91	325	P	Pn	20 03 26.2	+1.8
JFT	Otama	2.94	270	P	Pn	20 03 25.8	+1.0
JYK	Kaneyama	3.19	296	P	Pn	20 03 30.2	+1.9
JANG	Nango	3.42	326	P	Pn	20 03 33.0	+1.6
JANG				S	Sn	20 04 12.7	+0.8
JTM	Tenmabayashi	3.96	325	S	Sn	20 04 26.0	+0.9

IDC 06 20:08:12.3±2.1**, 36°.96S**×**73°.75W, h0**km**, mb3.5**/2**, mb1 3.8**/3**, mb1mx3.5**/32**, mbtmp3.5**/3**, ML3.4**/1**, MS3.2**/3**, Ms1 3.2**/3**, ms1mx2.9**/18**, Error ellipse: s-maj=78.8km s-min=21.2km az=65.0, Near coast of central Chile**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PLCA	Paso Flores	4.52	147	Pn	Pn	20 09 22.1	0.0
	0.4nm,0.3s,baz=329,slow=14,SNR=7.9						
PLCA				Lg	Lg	20 10 36.0	
	0.7nm,0.3s,baz=248,slow=19,SNR=4.5						
PLCA				LR	LR	20 10 59.7	
	comp=Z,98nm,18.1s,baz=340,slow=37						
CPUP	Villa Florida	17.51	57	LR	LR	20 20 08.3	
	comp=Z,72nm,20.6s,baz=225,slow=41						
LPAZ	La Paz	21.18	15	P	P	20 13 00.1	+0.1
	1.4nm,0.6s,baz=186,slow=9.2,SNR=5.9						
ATAH	Atahualpa	29.99	351	LR	LR	20 24 14.8	
	comp=Z,157nm,19.7s,baz=93,slow=32						
TXAR	Lajitas Array	71.67	333	P	P	20 19 36.0	0.0
	0.4nm,0.8s,baz=145,slow=6.5,SNR=4.0						

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*BJI **06** 20:16:18.8, 4°.14S×131°.25E, h10km, mb4.6/33, mB5.1/21, Ms4.9/5, Ms7 4.6/5*
*IDC **06** 20:16:23.5±0.5, 3°.73S×130°.79E, h0km, mb4.5/26, mb1 4.5/28, mb1mx4.5/42, mbtmp4.5/28, ML3.4/2, MS3.9/15, Ms1 3.9/15, ms1mx3.5/46, Error ellipse: s-maj=20.0km s-min=11.2km az=81.0*
*ISCJB **06** 20:16:26.2±0.3, 3°.72S±0°.04×130°.86E±0°.03, h30km, mb4.7/53, MS3.9/13, Error ellipse: s-maj=5.3km s-min=4.7km az=33.4*
*DJA **06** 20:16:26.9±1.0, 4°S±3°×13°1E±°, h30km±12km, M4.9/13, mb5.3/9, mB5.3/9, MLv4.9/13, Mw(mB)4.7/9*
*NEIC **06** 20:16:28.9±0.7, 3°.67S×130°.88E, h36km±7km, mb4.8/18, Error ellipse: s-maj=7.2km s-min=5.6km az=49.0*
ISC 06 20:16:28.0±0.4**, 3°.75S**±0°.05×**130°.88E**±0°.06**, h30**km**, n121, σ1s.31**/103**, mb4.7**/53**, MS3.8**/13**, 1D, Seram**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BNDI	Bandanaira	1.23	232	P	Pn	20 16 46.8	-2.4
FAKI	Fak Fak	1.60	59	P	Pn	20 16 54.5	+0.2
FAKI	Fak Fak	1.60	59	ePn	Pn	20 16 54.4	+0.1
MSAI	Masohi	1.98	282	P	Pn	20 16 57.1	-2.5
KMPI	Kaimana, Papua	2.82	88	P	Pn	20 17 12.1	+1.0
SWI	Sorong	2.90	8	P	Pn	20 17 10.7	-1.4
NLAI	Namlea	3.80	278	P	Pn	20 17 26.2	+1.6
RKPI	Ransiki, Papua	3.98	56	P	Pn	20 17 26.5	-0.5
SAUI	Saumlaki	4.22	174	P	Pn	20 17 32.4	+2.0
LBMI	Labuha	4.58	312	P	Pn	20 17 33.9	-1.3
SANI	Sanana	5.17	289	P	Pn	20 17 43.2	-0.1
	241nm,0.6s,2μm0.9nm						
TNTI	Ternate	5.70	322	P	Pn	20 17 48.8	-1.9
	165nm,0.8s,2μm0.5nm						
TNTI	Ternate	5.70	322	ePn	Pn	20 17 49.7	-1.0
	127nm,0.8s						
LUWI	Luwuk	8.53	288	P	Pn	20 18 31.0	+1.4
	175nm,1.0s,2μm						
LUWI	Luwuk	8.53	288	ePn	Pn	20 18 27.8	-1.9
	135nm,0.8s						
SOEI	Soe	8.87	227	P	Pn	20 18 39.5	+5.2
SOEI	Soe	8.87	227	ePn	Pn	20 18 36.3	+2.0
	219nm,1.0s						
GENI	Genyem	9.35	83	P	Pn	20 18 35.3	-5.5
	98nm,0.9s,2μm						
BATI	Baumata	9.61	228	Pn	Pn	20 18 48.5	+4.2
	4.7nm,0.3s,baz=89,slow=23,SNR=16						
BATI	Baumata	9.61	228	P	Pn	20 18 48.7	+4.3
APSI	Ampana	9.64	287	P	Pn	20 18 43.0	-1.8
	206nm,0.8s,2μm						
MRSI	Marisa	9.87	295	P	Pn	20 18 48.3	+0.4
	106nm,0.5s,1μm						
BSSI	Bau Bau, Buton	10.62	257	P	Pn	20 18 57.5	-0.7
	109nm,1.4s,2μm						
TTSI	Tana Toraja	11.06	273	P	Pn	20 19 08.6	+4.3
SPSI	Sidrap Palu	11.08	269	P	Pn	20 19 08.8	+4.2
KAPI	Kappang	11.16	263	Pn	Pn	20 19 08.2	+2.6
	3.6nm,0.3s,baz=86,slow=6.7,SNR=17						
KAPI				LR	LR	20 24 38.5	
	comp=Z,963nm,19.6s,baz=93,slow=45						
KAPI	Kappang	11.16	263	ePn	Pn	20 19 07.9	+2.3
	63nm,0.7s						
DAV	Davao City (W)	11.98	334	LR	LR	20 24 43.9	
	comp=Z,724nm,21.1s,baz=152,slow=42						
WSI	Waingapu	12.04	240	P	P	20 19 32.0	+1.8
KBKI	Kotabaru	14.69	271	P	P	20 20 01.2	+1.5
FITZ	Fitzroy Crossi	15.15	199	Pn	Pn	20 19 58.5	-1.6
	0.8nm,0.3s,baz=34,slow=13,SNR=9.6						
FITZ				Sn	Sn	20 22 38.0	-9.1
	0.7nm,0.3s,baz=183,slow=18,SNR=3.1						
FITZ				LR	LR	20 26 18.5	
	comp=Z,535nm,20.3s,baz=25,slow=39						
FITZ	Fitzroy Crossi	15.15	199	eP	Pn	20 19 55.8	-4.3
	13nm,0.6s						
FITZ				Sn	Sn	20 22 38.0	-9.1
COEN	Coen	15.81	131	eP	Pn	20 20 07.8	-0.9
	40nm,0.7s						
BBKI	Banjar Baru	16.01	271	P	Pn	20 20 12.2	+1.0
WRAB	Tennant Creek	16.44	168	eP	Pn	20 20 11.0	-5.6
	94nm,1.0s						
WRA	Warramunga Arr	16.44	168	Pn	Pn	20 20 11.5	-5.2
	1.3nm,0.3s,baz=351,slow=13,SNR=35						
WRA				Sn	Sn	20 23 10.1	-8.4
	1.8nm,0.3s,baz=345,slow=24,SNR=5.6						
PMG	Port Moresby	17.12	110	P	Pn	20 20 25.6	+0.4
	0.7nm,0.3s,baz=314,slow=6.5,SNR=4.3						
KKM	Kota Kinabalu	17.58	304	eP	Pn	20 20 29.7	-1.4
	96nm,1.1s						
ASAR	Alice Springs	20.01	172	P	P	20 20 58.8	+0.3
	41nm,0.5s,baz=351,slow=10,SNR=208						
ASAR				S	S	20 24 37.8	-4.3
	7.5nm,0.8s,baz=0.3,slow=24,SNR=4.5						
ASAR				LR	LR	20 29 55.7	
	comp=Z,425nm,18.1s,baz=358,slow=40						
KSM	Kuching	21.20	284	eP	P	20 21 11.5	0.0
	54nm,0.9s						
CTA	Charters Tower	22.10	139	P	P	20 21 22.9	+1.9
	11nm,0.8s,baz=318,slow=12,SNR=4.0						
CTAO	Charters Tower	22.10	139	eP	P	20 21 23.5	+2.5
	18nm,0.8s						
BBOO	Buckleboo	29.31	171	eP	P	20 22 27.5	-0.5
	13nm,0.8s						
STKA	Stephens Creek	29.74	161	P	P	20 22 32.1	+0.3
	5.8nm,0.4s,baz=342,slow=7.9,SNR=39						
JOW	Kunigami	30.51	355	LR	LR	20 34 33.5	
	comp=Z,171nm,19.0s,baz=190,slow=36						
IPM	Ipoh	30.93	285	eP	P	20 22 42.0	-0.6
	59nm,1.2s						
KULM	Kulim	31.50	286	eP	P	20 22 48.2	+0.6
	30nm,1.3s						
NWAO	Narrogin (SRO)	31.71	202	P	P	20 22 48.2	-1.0
	6.9nm,0.5s,baz=20,slow=0.0,SNR=12						
PSI	Prapat	32.59	281	P	P	20 22 55.6	-1.7
	3.8nm,0.5s,baz=121,slow=5.0,SNR=7.7						
CHBT	CHBT	32.76	300	P	P	20 23 01.3	+2.7
	36nm,1.4s						
TRTT	Trang	33.17	290	P	P	20 23 03.6	+1.3
	30nm,0.9s						
SKNT	Sakolnakorn	33.61	309	P	P	20 23 12.4	+6.4
KHON	Khomkaen	34.17	306	P	P	20 23 11.9	+1.0
	20nm,1.1s						
SURT	Suratani	34.38	292	P	P	20 23 13.7	+0.9
	9.8nm,1.2s						
PKDT	Phuket	34.46	290	P	P	20 23 14.5	+1.0
	32nm,1.1s						
PBKT	Sadao Pong	35.80	305	P	P	20 23 34.9	+10
SRDT	SRDT	36.26	300	P	P	20 23 32.8	+3.9
	57nm,1.0s,4μm						
PHIT	Phitsanulok	36.57	306	P	P	20 23 36.5	+5.0
	26nm,0.9s						
UTTA	Uttaradit	36.75	306	P	P	20 23 37.3	+4.2
	5.0nm,0.9s,46nm						
LAMP	Lampang	37.91	307	P	P	20 23 51.0	+8.1
CRAI	Chiangrai	38.27	310	P	P	20 23 45.7	-0.3
	111nm,0.9s						
CMAR	Chiang Mai Arr	38.43	306	P	P	20 23 47.2	-0.1
	5.1nm,0.9s,baz=134,slow=7.2,SNR=14						
CMMT	Chiang Mai	38.61	307	P	P	20 23 49.6	+0.8
	19nm,1.1s						
CHTO	Chiang Mai	38.62	307	P	P	20 23 49.7	+0.8

Code	Station Name	Δ°	AZ°	Phase Op	Phase ISC	Time h m s	Res ISC
	83nm,1.1s						
MHMT	Maesarieng	39.10	305	P	P	20 24 00.2	+7.2
ENH	Enshi	39.54	330	eP	P	20 23 54.6	-1.8
	8.7nm,0.9s						
KMI	Kunming	39.63	318	P	P	20 23 57.9	+0.4
KMI				pmax	pmax		
	comp=Z,15nm,1.4s						
MJAR	Matsushiro Arr	40.67	9	P	P	20 24 03.9	-1.8
	1.4nm,0.7s,baz=185,slow=9.4,SNR=4.8						
MAJO	Matsushiro	40.67	9	eP	P	20 24 05.3	-0.4
	12nm,1.0s						
KSAR	Wonju Array Be	41.08	356	P	P	20 24 09.6	+0.6
KSRS	Korea Array	41.09	356	P	P	20 24 09.6	+0.5
	2.3nm,0.8s,baz=180,slow=9.1,SNR=7.9						
XAN	Xi'an	42.92	333	P	P	20 24 24.5	+0.3
XAN				pmax	pmax		
	comp=Z,8.0nm,1.1s						
LZH	Lanzhou	47.01	330	eP	P	20 24 58.5	+1.6
LZH				pP	pP	20 25 05.8	-0.1
LZH				sP	sP	20 25 09.3	-0.2
LZH				pmax	pmax		
	comp=Z,83nm,1.5s						
LZH				pmax	pmax		
	comp=Z,290nm,4.5s						
USRK	Ussuriysk Ar.	47.74	1	P	P	20 25 01.9	-0.3
	2.1nm,0.6s,baz=182,slow=7.2,SNR=5.5						
MDJ	Mudanjiang	48.16	359	P	P	20 25 05.4	-0.1
	17nm,1.1s						
GTA	Gaotai	51.60	329	eP	P	20 25 31.7	-0.2
GTA				pP	pP	20 25 40.1	-0.9
GTA				sP	sP	20 25 44.2	-0.4
GTA				pmax	pmax		
	comp=Z,3.0nm,0.9s						
GTA				pmax	pmax		
	comp=Z,60nm,5.0s						
GTA				LR	LR		
	comp=N,150nm,17.6s						
GTA				LR	LR		
	comp=E,130nm,15.2s						
GTA				LR	LR		
	comp=Z,120nm,16.2s						
TAPN	Taplejung	51.85	309	eP	P	20 25 33.7	-0.5
	46nm,1.0s						
ODAN	Odare	51.86	309	eP	P	20 25 33.7	-0.5
	58nm,0.9s						
RAMN	Ramite	52.52	308	eP	P	20 25 38.7	-0.4
	80nm,0.9s						
KLR	Kul'dur	52.77	1	P	P	20 25 40.4	+0.2
	3.1nm,0.8s,baz=167,slow=4.2,SNR=6.2						
GUN	Gumba	53.54	309	eP	P	20 25 46.6	-0.1
	46nm,0.7s						
PKIN	Phulchoki	53.76	308	eP	P	20 25 46.9	-1.4
	11nm,0.8s						
KKN	Kakani	53.95	308	eP	P	20 25 49.3	-0.3
	33nm,0.9s						
DMN	Daman	54.01	308	eP	P	20 25 49.3	-0.7
	56nm,1.0s						
GKN	Gorkha	54.55	308	eP	P	20 25 53.1	-0.8
	44nm,1.0s						
KOLN	Koldanda	55.26	308	eP	P	20 25 58.8	-0.3
	29nm,0.8s						
SONM	Songino Array	55.68	340	P	P	20 26 01.3	-0.3
	5.3nm,1.1s,baz=165,slow=6.5,SNR=18						
SONM				LR	LR	20 52 00.0	
	comp=Z,76nm,20.7s,baz=173,slow=38						
HYB	Hyderabad	55.74	294	i P	P	20 26 02.0	-0.5
PYUN	Piuthan	55.89	308	eP	P	20 26 02.6	-1.0
	83nm,1.1s						
YAK	Yakutsk	65.61	359	P	P	20 27 08.9	+0.2
	1.5nm,0.4s,baz=233,slow=20,SNR=2.4						
MKAR	Makanchi Array	66.03	326	P	P	20 27 12.0	+0.1
	5.0nm,0.5s,baz=120,slow=8.5,SNR=80						
MKAR				LR	LR	20 59 22.2	
	comp=Z,54nm,18.5s,baz=134,slow=39						
KSH	Kashi	66.26	316	P	P	20 27 18.2	+4.5
KSH				pP	pP	20 27 23.4	+0.4
KSH				esP	sP	20 27 25.5	-1.1
KSH				S	S	20 36 04.5	+3.2
KSH				ScS	ScS	20 37 11.2	+2.8
KSH				SS	SS	20 40 25.3	+7.3
KSH				pmax	pmax		
	comp=Z,7.0nm,0.9s						
KSH				pmax	pmax		
	comp=Z,190nm,5.3s						
KSH				LR	LR		
	comp=N,150nm,5.4s						
KSH				LR	LR		
	comp=E,190nm,5.5s						
KSH				LR	LR		
	comp=Z,130nm,6.3s						
TKM2	Tokmak 2	68.08	319	eP	P	20 27 25.6	+0.3
	6.8nm,0.8s						
SEY	Seymchan	68.47	10	P	P	20 27 27.6	+0.6
	4.9nm,0.8s,baz=193,slow=4.3,SNR=17						
AAK	Ala-Archa	68.66	319	eP	P	20 27 30.4	+1.5
	11nm,1.3s						
ZALV	Zalesovo Beam	69.09	333	P	P	20 27 30.5	-0.6
	2.0nm,0.4s,baz=132,slow=6.1,SNR=22						
ZALV				LR	LR	20 59 12.4	
	comp=Z,52nm,20.7s,baz=24,slow=37						
KURK	Kurchatov	70.24	328	eP	P	20 27 37.4	-0.8
	44nm,0.9s						
KKAR	Karatay Array	71.51	318	eP	P	20 27 46.0	-0.2
	5.4nm,1.0s						
WSAR	Wadi Sarin	75.26	295	LR	LR	21 06 02.5	
	comp=Z,46nm,18.2s,baz=102,slow=40						
TIXI	Tiksi	75.27	359	P	P	20 28 07.5	-0.2
	2.4nm,0.8s,baz=196,slow=2.8,SNR=8.8						
TIXI	Tiksi	75.27	359	eP	P	20 28 07.5	-0.2
	3.8nm,0.6s						
VNDA	Vanda	75.55	173	P	P	20 28 09.2	-0.1
	2.6nm,0.8s,baz=290,slow=19,SNR=11						
VNDA				LR	LR	21 02 20.2	
	comp=Z,157nm,18.8s,baz=336,slow=36						
BRVK	Borovoye	75.88	327	eP	P	20 28 11.5	-0.1
	31nm,1.3s						
MAW	Mawson	78.27	201	P	P	20 28 24.8	+0.1
	12nm,1.0s,baz=79,slow=10,SNR=4.7						
NRIK	Noril'sk	78.64	346	P	P	20 28 26.9	+0.1
	4.6nm,0.7s,baz=146,slow=7.2,SNR=4.5						
NRIK				LR	LR	21 08 29.0	
	comp=Z,54nm,18.7s,baz=138,slow=40						
GEYT	Alibeck	78.81	310	P	P	20 28 28.1	-0.2
	4.2nm,0.7s,baz=116,slow=3.4,SNR=5.9						
AKTO	Aktyubinsk	82.06	322	LR	LR	21 07 30.3	
	comp=Z,39nm,19.8s,baz=125,slow=37						
OPO	Ambohidratompo	82.84	252	P	P	20 28 50.5	0.0
	5.8nm,0.7s,baz=83,slow=4.7,SNR=6.7						
ARU	Arti	83.43	328	P	P	20 28 52.4	-0.1
	3.5nm,0.8s,baz=107,slow=5.8,SNR=6.3						
SYO	Syowa Base	86.99	201⇓	eP	P	20 29 09.0	-1.0
ILAR	Eielson Array	90.06	25	P	P	20 29 24.7	0.0
	0.6nm,0.6s,baz=250,slow=4.6,SNR=6.9						
ILAR				LR	LR	21 02 17.5	
	comp=Z,33nm,21.9s,baz=260,slow=31						
KVAR	Kislovodsk Arr	91.27	314	LR	LR	21 16 06.9	
	comp=Z,29nm,20.4s,slow=39						
KMBO	Kilima Mbogo	93.54	269	P	P	20 29 43.1	+0.9
	1.2nm,0.7s,baz=77,slow=5.9,SNR=3.6						
KMBO				LR	LR	21 08 54.6	
	comp=Z,88nm,20.6s,baz=84,slow=34						
INK	Inuvik	95.54	22	P	P	20 29 48.9	-1.0
	1.9nm,1.1s,baz=270,slow=5.1,SNR=3.7						
ARCES	ARCESS Array B	98.85	340	P	P	20 30 04.3	-0.6
	3.5nm,0.9s,baz=94,slow=5.4,SNR=4.2						
TXAR	Lajitas Array	122.49	57	PKP	PKPdf	20 35 21.6	+0.3
	0.5nm,0.8s,baz=274,slow=2.6,SNR=4.3						
TORD	Torodi Ar. Bea	128.96	284	PKP	PKPdf	20 35 33.9	-0.1
	2.5nm,0.8s,baz=70,slow=1.8,SNR=12						
DBIC	Dimbokro	135.83	276	PKP	PKPdf	20 35 46.2	-0.7
	3.4nm,0.9s,baz=72,slow=3.2,SNR=3.8						
BBTS	Babate	146.11	291	PKPbc	PKPbc	20 36 06.6	+0.4
	12nm,0.5s,baz=319,slow=2.5,SNR=3.5						
CPUP	Villa Florida	149.06	166	PKPbc	PKPbc	20 36 14.6	+0.5
	5.3nm,0.9s,baz=188,slow=1.7,SNR=7.5						
LPAZ	La Paz	152.62	137	PKPbc	PKPbc	20 36 24.1	+0.6
	5.4nm,1.0s,baz=314,slow=1.9,SNR=10						

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*IDC **06** 20:16:48.0±1.5, 10°.27S×107°.17E, h0km, mb4.2/5, mb1 4.5/6, mb1mx3.9/48, mbtmp4.3/6, ML4.2/1, MS3.8/2, Ms1 3.8/2, ms1mx3.0/48, Error ellipse: s-maj=59.4km s-min=21.1km az=52.0*

*ISCJB **06** 20:16:50.2±0.7, 9°.93S±0°.08×107°.61E±0°.05, h23km, mb4.1/7, MS4.2/1, Error ellipse: s-maj=11.1km s-min=7.3km az=14.1*

*NEIC **06** 20:16:50.1±0.7, 9°.90S×107°.55E, h10km, mb4.0/2, Error ellipse: s-maj=15.8km s-min=12.6km az=195.0*

*DJA **06** 20:16:50.4±0.5, 10°S±5°×10°8E±°, h10km, M4.7/18, mb4.9/5, mB5.6/3, MLv4.5/18, Mw(mB)5.1/3*

ISC 06 20:16:53.2±0.9**, 9°.79S**±0°.08×**107°.69E**±0°.07**, h23km, n31, σ1°.17/28, mb4.2/7, South of Jawa**

Code	Station Name	Δ°	AZ°	Phase Op	Phase ISC	Time h m s	Res ISC
XMIS	Christmas Isla	2.12	251	ePn	Pn	20 17 21.8	-5.4
CMJI	Cimerak	2.13	21	P	Pn	20 17 23.9	-3.5
CISI	Cisompet, Garu	2.23	3	P	Pn	20 17 27.5	-1.3
CISI	Cisompet, Garu	2.23	3	ePn	Pn	20 17 27.2	-1.6
CNJI	Cibinong	2.53	347	P	Pn	20 17 31.1	-1.8
KPJI	Karang Pucung	2.74	27	P	Pn	20 17 36.7	+1.0
LEM	Lembang	2.95	359	Pn	Pb	20 17 44.7	-0.5
	21nm,0.3s,baz=184,slow=19,SNR=77						
LEM				Sn	Sb	20 18 22.0	+1.1
	35nm,0.3s,baz=341,slow=22,SNR=24						
LEM				LR	LR	20 19 28.6	
	comp=Z,608nm,18.2s,baz=194,slow=47						
LEM	Lembang	2.95	359	P	Pb	20 17 45.1	-0.1
DBJI	Dramaga	3.35	344	P	Pn	20 17 46.0	+1.8
UGM	Wanagama	3.37	57	P	Pn	20 17 44.1	-0.4
CGJI	Cibinong	3.73	328	P	Pn	20 17 49.0	-0.3
WOJI	Wonogiri, Jawa	3.74	59	P	Pn	20 17 50.6	+1.0
PCJI	Pacitan	3.80	66	P	Pb	20 18 01.9	+2.4
PWJI	Pagerwojo	4.43	67	P	Pn	20 17 59.6	+0.5
NGJI	Ngawi	4.44	57	P	Pb	20 18 08.5	-2.1
GMJI	Gumukmas	5.88	76	P	Pn	20 18 21.1	+2.1
	52nm,1.0s,0.3nm						
LWLI	Liwa	5.96	323	P	Pb	20 18 37.2	+0.8
MDSI	Maura Dua	6.32	326	P	Pb	20 18 34.2	-8.3
JAGI	Jajag, Banyuwa	6.52	79	P	Pn	20 18 28.3	+0.5
	64nm,0.9s,0.5nm						
JAGI	Jajag, Banyuwa	6.52	79	ePn	Pn	20 18 26.9	-0.9
	45nm,0.5s						
TWSI	Taliwang, Sumb	9.14	84	P	Pn	20 19 04.6	+0.9
	44nm,1.0s,2μm						
PLAI	Plampang	10.01	85	P	Pn	20 19 15.9	+0.3
WRA	Warramunga Arr	27.62	114	P	P	20 22 38.9	-0.3
	5.6nm,0.8s,baz=286,slow=11,SNR=3.1						
CMAR	Chiang Mai Arr	29.37	343	P	P	20 22 54.5	-0.2
	1.7nm,1.1s,baz=183,slow=8.7,SNR=12						
STKA	Stephens Creek	38.30	130	P	P	20 24 12.0	-0.2
	8.2nm,0.8s,baz=315,slow=10.0,SNR=3.2						
LSA	Lhasa	42.37	338	eP	P	20 24 47.0	+0.6
	4.5nm,0.9s						
MKAR	Makanchi Array	60.73	340	P	P	20 27 03.4	+0.4
	1.9nm,0.9s,baz=146,slow=7.5,SNR=11						
ABKAR	Akbulak array	72.15	329	eP	P	20 28 15.5	-0.4
	0.6nm,0.6s						
BRTR	Keskin Array B	84.18	312	P	P	20 29 21.7	-1.4
	0.9nm,0.8s,baz=127,slow=6.0,SNR=5.2						
FINES	FINESS Array B	94.54	332	LR	LR	21 19 01.3	
	comp=Z,78nm,18.5s,baz=130,slow=39						
TXAR	Lajitas Array	144.82	52	PKPbc	PKPdf	20 36 29.1	0.0
	0.9nm,0.8s,baz=298,slow=1.9,SNR=5.7						

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*ISCJB **06** 20:21:40.3±1.2, 9°.6S±0°.2×75°.7W±0°.2, h41km, mb4.2/5, MS3.8/2, Error ellipse: s-maj=31.8km s-min=14.5km az=44.9*

*IDC **06** 20:21:46.2±2.3, 9°.68S×75°.51W, h78km±19km, mb3.9/5, mb1 3.8/9, mb1mx3.5/49, mbtmp4.0/9, MS3.6/3, Ms1 3.6/3, ms1mx3.0/31, Error ellipse: s-maj=57.7km s-min=14.4km az=35.0*

ISC 06 20:21:42.3±1.3**, 9°.6S**±0°.2×**75°.6W**±0°.2**, h41km, n12, σ0°.43/9, mb4.3/5, Central Peru**

Code	Station Name	Δ°	AZ°	Phase Op	Phase ISC	Time h m s	Res ISC
ATAH	Atahualpa	3.64	311	P	Pn	20 22 43.0	+6.5
	3.5nm,0.3s,baz=216,slow=1.7,SNR=7.7						
ATAH				S	Sn	20 23 27.8	+9.3
	10nm,0.3s,baz=94,slow=17,SNR=5.2						
LPAZ	La Paz	9.91	133	P	Pn	20 24 03.2	+0.3
	0.0nm,0.3s,baz=328,slow=13,SNR=2.4						
SIV	San Ignacio	15.57	116	P	Pn	20 25 18.7	-0.4
	0.2nm,0.3s,baz=301,slow=12,SNR=3.0						
SIV				LR	LR	20 31 37.2	
	comp=Z,86nm,21.5s,baz=355,slow=38						
PTGA	Pitinga	17.87	62	P	P	20 25 48.8	+0.5
	0.4nm,0.3s,baz=186,slow=9.2,SNR=2.3						
BDFB	Brasilia	27.60	105	LR	LR	20 39 13.8	
	comp=Z,90nm,18.5s,baz=284,slow=38						
ELK	Elko	61.95	327	LR	LR	20 59 06.1	
	comp=Z,195nm,19.8s,baz=315,slow=36						
ULM	Lac du Bonnet	62.11	345	P	P	20 31 58.9	-0.1
	4.2nm,0.8s,baz=162,slow=7.8,SNR=7.8						
DBIC	Dimbokro	72.32	80	P	P	20 33 04.1	-0.3
	1.6nm,0.6s,baz=250,slow=5.8,SNR=4.3						
YKA	Yellowknife Ar	77.87	343	P	P	20 33 35.6	+0.2
	0.4nm,0.5s,baz=139,slow=5.9,SNR=16						
TORD	Torodi Ar. Bea	80.00	75	P	P	20 33 47.8	-0.3
	3.4nm,0.9s,baz=263,slow=5.6,SNR=17						
INK	Inuvik	87.60	342	P	P	20 34 26.1	+0.3
	1.6nm,0.7s,baz=110,slow=5.7,SNR=5.4						
KSRS	Korea Array	145.02	326	PKPbc	PKPbc	20 41 14.5	-0.5
	2.3nm,0.7s,baz=48,slow=3.7,SNR=6.3						

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*NIED **06** 20:23:00, 36°.70N×142°.40E, h11km, Mw3.3 Best double couple: M₀1.18000×10^14 NP1:φs230.00000°, δ17.00000°, λ115.00000°. NP2:φs24.00000°, δ74.00000°, λ82.00000°.*

JMA 06 20:23:25.2±0.2**, 36°.69N**×**142°.43E, h19km, M3.5, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase Op	Phase ISC	Time h m s	Res ISC
ONAJ	Iwakimizuishiy	1.37	288	P	Pn	20 23 49.7	+0.3
JFK	Kawauchi	1.42	299	P	Pn	20 23 50.1	+0.1
JHO	Hitachi	1.50	268	P	Pn	20 23 51.5	+0.4
JMM	Marumori	1.76	312	P	Pb	20 23 55.8	-1.0
JFT	Otama	1.87	297	P	Pb	20 23 57.6	-1.1
JFT				eS	Sb	20 24 20.5	-1.2
JIO	Ouri	1.96	334	P	Pn	20 23 58.6	+1.2
MAT	Matsushiro	3.40	269	P	Pn	20 24 19.6	+2.3
MAT				eS	Sn	20 24 55.4	-1.7

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*IDC **06** 20:31:57.8±1.9, 37°.67N×141°.78E, h0km, mb3.5/1, mb1 3.9/3, mb1mx3.3/64, mbtmp3.9/3, ML2.8/3, Error ellipse: s-maj=49.6km s-min=27.1km az=134.0*

*ISCJB **06** 20:32:03.8±1.7, 37°.26N±0°.05×141°.77E±0°.09, h33km±8km, mb3.6/1, Error ellipse: s-maj=12.5km s-min=7.6km az=175.5*

*JMA **06** 20:32:07.1±0.2, 37°.32N×141°.57E, h43km±2km, M3.1*

ISC 06 20:32:04.6±2.1**, 37°.31N**±0°.06×**141°.72E**±0°.10**, h28km**±14km**, n10, σ1°.14/16, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase Op	Phase ISC	Time h m s	Res ISC
JFK	Kawauchi	0.67	275	P	Pn	20 32 18.5	+0.2
JFK				S	Sb	20 32 26.8	0.0
ONAJ	Iwakimizuishiy	0.76	254	P	Pn	20 32 19.9	+0.4
ONAJ				S	Sb	20 32 28.9	-0.5
JMM	Marumori	0.92	307	P	Pb	20 32 22.2	+0.3
JMM				S	Sb	20 32 33.3	-0.5
JFT	Otama	1.12	281	P	Pb	20 32 25.6	+0.3
JFT				S	Sn	20 32 38.7	-0.1
JHO	Hitachi	1.16	233	P	Pn	20 32 25.2	+0.3
JHO				S	Sn	20 32 38.4	-1.3
JIO	Ouri	1.18	346	S	Sn	20 32 39.9	-0.4
MJAR	Matsushiro Arr	2.91	256	Pn	Pn	20 32 47.3	-1.8
	0.6nm,0.3s,baz=76,slow=14,SNR=5.4						
MJAR				Sn	Sn	20 33 25.8	+2.6
	1.3nm,0.3s,baz=71,slow=18,SNR=5.4						
JHJ	Hachijo jima 2	4.47	201	Pn	Pn	20 33 11.3	+0.8
	3.4nm,0.3s,baz=45,slow=20,SNR=3.5						
JHJ				Sn	Sn	20 34 00.2	-1.4
	0.6nm,0.3s,baz=44,slow=18,SNR=2.0						
PETK	Petropavlovsk-	19.33	30	P	P	20 36 20.7	-6.8
	0.1nm,0.3s,baz=236,slow=10,SNR=3.9						
WRA	Warramunga Arr	57.37	188	P	P	20 41 50.5	+0.2
	0.6nm,1.0s,baz=6.0,slow=7.2,SNR=5.0						

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*IDC **06** 20:40:23.7±1.6, 0°.58N×125°.59E, h0km, mb3.7/4, mb1 3.9/4, mb1mx3.5/42, mbtmp3.8/4, Error ellipse: s-maj=170.4km s-min=22.1km az=63.0*

*DJA **06** 20:40:28.8±1.9, 1°N±14°×12°6E±°, h176km±46km, M4.1/6, MLv4.1/6*

*ISCJB **06** 20:40:31.5±1.1, 0°.4N±0°.1×125°.57E±0°.09, h73km, mb3.7/4, Error ellipse: s-maj=18.9km s-min=9.0km az=31.4*

ISC 06 20:40:32.9±1.1**, 0°.4N**±0°.1×**125°.58E**±0°.08**, h73km, n10, σ1°.37/11, mb3.8/4, Northern Molucca Sea**

Code	Station Name	Δ°	AZ°	Phase Op	Phase ISC	Time h m s	Res ISC
LBMI	Labuha	2.17	118	P	Pn	20 41 07.3	+0.3
LUWI	Luwuk	3.14	243	P	Pn	20 41 21.4	+1.3
MRSI	Marisa	3.64	272	P	Pn	20 41 25.6	-1.3
NLAI	Namlea	3.90	157	P	Pn	20 41 29.8	-0.6
NLAI				S	Sn	20 42 12.7	-2.3
APSI	Ampana	4.13	252	P	Pn	20 41 33.5	-0.1
WRA	Warramunga Arr	21.94	157	P	P	20 45 20.2	-0.4
	1.5nm,0.5s,baz=336,slow=10,SNR=14						
ASAR	Alice Springs	25.23	162	P	P	20 45 53.7	+1.5
	1.3nm,0.7s,baz=337,slow=8.7,SNR=14						
STKA	Stephens Creek	35.48	156	P	P	20 47 23.9	+1.3
	1.5nm,0.8s,baz=336,slow=10.0,SNR=3.1						
MKAR	Makanchi Array	59.68	327	P	P	20 50 28.8	-1.0
	0.3nm,0.3s,baz=124,slow=7.8,SNR=9.4						
TORD	Torodi Ar. Bea	122.79	286	PKP	PKPdf	20 59 22.5	+0.9
	0.3nm,1.0s,baz=86,slow=3.4,SNR=2.5						

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*ISCJB **06** 20:56:43.5±1.3, 37°.05N±0°.05×141°.08E±0°.09, h10km±6km, mb3.3/4, Error ellipse: s-maj=12.5km s-min=7.6km az=9.9*

*IDC **06** 20:56:43.8±1.8, 36°.99N×141°.08E, h0km, mb3.3/4, mb1 3.4/5, mb1mx3.2/66, mbtmp3.2/5, ML3.0/1, Error ellipse: s-maj=40.8km s-min=23.9km az=54.0*

*JMA **06** 20:56:46.3, 37°.10N×140°.81E, h7km±1km, M2.9*

JMA Felt II J1.

ISC 06 20:56:45.2±1.4**, 37°.04N**±0°.07×**140°.85E**±0°.07**, h7km**±10km**, n10, σ0°.71/15, mb3.4/4, Eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase Op	Phase ISC	Time h m s	Res ISC
ONAJ	Iwakimizuishiy	0.08	325	P	Pg	20 56 47.5	+0.3
JFK	Kawauchi	0.33	3	P	Pg	20 56 51.8	+0.1
JFK				S	Sg	20 56 55.7	-0.3
JHO	Hitachi	0.48	208	P	Pb	20 56 56.2	+0.1
JHO				S	Sb	20 57 03.2	-0.2
JFT	Otama	0.63	319	P	Pg	20 56 57.5	+0.1
JFT				S	Sg	20 57 05.2	-0.5
MJAR	Matsushiro Arr	2.18	258	Pn	Pb	20 57 24.2	-0.9
	4.1nm,0.3s,baz=81,slow=17,SNR=26						
MJAR				Sn	Sb	20 57 52.2	-0.1
	4.1nm,0.3s,baz=88,slow=27,SNR=14						
MAT	Matsushiro	2.18	258	P	Pb	20 57 25.0	-0.1
MAT				S	Sb	20 57 53.0	+0.7
MKAR	Makanchi Array	43.74	302	P	P	21 04 52.4	+1.2
	0.1nm,0.5s,baz=81,slow=8.9,SNR=2.7						
KURBB	Kurchatov Arra	45.65	308	P	P	21 05 06.6	+0.3
	0.3nm,0.5s,baz=82,slow=8.0,SNR=5.3						
WRA	Warramunga Arr	57.01	187	P	P	21 06 32.1	+0.4
	0.3nm,0.8s,baz=5.5,slow=7.3,SNR=4.5						
ASAR	Alice Springs	60.73	187	P	P	21 06 56.1	-1.4
	0.2nm,0.5s,baz=7.0,slow=8.4,SNR=3.0						

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*IDC **06** 20:56:55.4±1.0, 37°.43N×144°.13E, h0km, mb3.7/9, mb1 3.8/12, mb1mx3.6/68, mbtmp3.7/12, ML3.7/3, Error ellipse: s-maj=25.0km s-min=18.7km az=106.0*

*ISCJB **06** 20:56:58.2±0.8, 37°.30N±0°.09×144°.0E±0°.1, h33km, mb3.7/9, Error ellipse: s-maj=14.4km s-min=9.6km az=143.3*

ISC 06 20:57:00.3±1.0**, 37°.3N**±0°.1×**144°.1E**±0°.1**, h35km, n12, σ1°.34/14, mb3.8/9, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase Op	Phase ISC	Time h m s	Res ISC
MJAR	Matsushiro Arr	4.77	263	Pn	Pn	20 58 09.1	-0.6
	6.3nm,0.3s,baz=88,slow=15,SNR=7.9						
MJAR				Sn	Sn	20 59 03.2	-0.5
	baz=37,slow=47,SNR=3.4						
JHJ	Hachijo jima 2	5.45	222	Pn	Pn	20 58 18.5	-0.5
	8.8nm,0.3s,baz=47,slow=19,SNR=5.2						
JHJ				Sn	Sn	20 59 18.2	-2.3
	26nm,0.3s,baz=68,slow=20,SNR=7.1						
KSRS	Korea Array	12.87	276	Pn	Pn	21 00 01.7	+1.1
	0.2nm,0.3s,baz=79,slow=14,SNR=2.6						
SEY	Seymchan	26.18	9	P	P	21 02 30.3	-0.9
	2.0nm,0.7s,baz=187,slow=5.2,SNR=7.6						
SONM	Songino Array	29.43	303	P	P	21 03 01.7	+1.1
	0.5nm,0.9s,baz=99,slow=11,SNR=2.6						
ZALV	Zalesovo Beam	43.33	312	P	P	21 04 58.1	-0.6
	0.4nm,0.3s,baz=88,slow=7.6,SNR=2.4						
CMAR	Chiang Mai Arr	43.63	257	P	P	21 05 02.4	+0.9
	0.2nm,0.3s,baz=47,slow=7.7,SNR=3.1						
MKAR	Makanchi Array	45.79	302	P	P	21 05 17.0	-1.5
	0.3nm,0.7s,baz=83,slow=9.8,SNR=4.2						
KURBB	Kurchatov Arra	47.53	308	P	P	21 05 31.0	-0.9
	0.7nm,0.5s,baz=81,slow=7.8,SNR=7.4						
ILAR	Eielson Array	48.14	33	P	P	21 05 35.4	-1.1
	1.0nm,0.7s,baz=260,slow=6.5,SNR=9.2						
WRA	Warramunga Arr	57.66	191	P	P	21 06 48.3	+1.2
	1.0nm,0.6s,baz=13,slow=7.2,SNR=6.5						
ASAR	Alice Springs	61.38	191	P	P	21 07 14.7	+1.9
	0.8nm,0.7s,baz=19,slow=7.8,SNR=7.1						

JMA 06 20:57:15.4±0.1**, 38°.73N**×**142°.02E, h42km**±2km**, M2.7, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase Op	Phase ISC	Time h m s	Res ISC
OFUJ	Ofunato	0.44	322	P	Pn	20 57 25.6	+0.1
JMK	Ichinoseki	0.66	290	S	Sn	20 57 37.8	+0.1
MIYJ	Miyakonagasawa	0.86	350	P	Pn	20 57 30.9	-0.2
MIYJ				S	Sn	20 57 42.2	-0.3
JOM	Ohasama	0.93	323	S	Sn	20 57 45.3	+1.0
MAT	Matsushiro	3.73	235	P	Pn	20 58 10.0	-0.5
MAT				S	Sn	20 59 02.0	+8.8

IDC 06 20:58:10.4±2.3**, 1°.00S**×**146°.04E, h0km, mb3.5/4, mb1 3.6/5, mb1mx3.4/48, mbtmp3.4/5, ML2.0/1, Error ellipse: s-maj=47.6km s-min=30.2km az=94.0, Admiralty Islands region**

Code	Station Name	Δ°	AZ°	Phase Op	Phase ISC	Time h m s	Res ISC
JAY	Jayapura	5.54	254	Pn	Pn	20 59 33.4	-0.8
	0.1nm,0.3s,baz=156,slow=23,SNR=2.4						
JAY				Sn	Sn	21 00 40.7	+2.0
	0.1nm,0.3s,baz=151,slow=23,SNR=2.6						
WRA	Warramunga Arr	22.04	211	P	P	21 03 06.6	-0.2
	0.8nm,0.6s,baz=32,slow=11,SNR=3.9						
ASAR	Alice Springs	25.42	207	P	P	21 03 40.1	+0.1
	1.1nm,0.8s,baz=34,slow=9.0,SNR=7.8						
H11S3	WAKE ISLAND Hy	28.06	45	T	T	21 33 13.8	
	baz=228,slow=75,SNR=37						
H11S2	WAKE ISLAND Hy	28.07	45	T	T	21 33 11.8	
	baz=228,slow=75,SNR=20						
H11S1	WAKE ISLAND Hy	28.08	45	T	T	21 33 17.5	
	baz=228,slow=75,SNR=19						
H11N1	WAKE ISLAND Hy	29.02	44	T	T	21 34 22.0	
	baz=226,slow=76,SNR=9.8						
H11N2	WAKE ISLAND Hy	29.03	44	T	T	21 34 31.7	
	baz=226,slow=76,SNR=15						
H11N3	WAKE ISLAND Hy	29.03	44	T	T	21 34 24.2	
	baz=226,slow=76,SNR=6.5						
CMAR	Chiang Mai Arr	50.16	295	P	P	21 07 08.6	+0.5
	0.5nm,0.7s,baz=109,slow=6.6,SNR=4.6						
KURBB	Kurchatov Arra	76.68	323	P	P	21 10 03.0	-0.3
	0.4nm,0.9s,baz=107,slow=4.8,SNR=3.3						

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*IDC **06** 20:59:38.8±0.6, 34°.39N×45°.48E, h0km, mb3.9/25, mb1 4.0/33, mb1mx3.9/66, mbtmp3.9/33, ML3.3/8, MS3.1/8, Ms1 3.2/8, ms1mx2.9/49, Error ellipse: s-maj=13.9km s-min=10.2km az=156.0*

*ISCJB **06** 20:59:39.5±0.2, 34°.21N±0°.03×45°.49E±0°.02, h18km, mb4.0/37, MS3.2/4, Error ellipse: s-maj=4.2km s-min=2.6km az=9.9*

*BJI **06** 20:59:40.0, 34°.40N×45°.60E, h10km, mb4.1/8, mB5.0/3, Ms4.6/2, Ms7 4.2/2*

*THR **06** 20:59:40.2±0.5, 34°.33N×45°.42E, h14km±7km, ML4.2*

*NSSC **06** 20:59:41.7±1.5, 34°.08N×45°.38E, h10km±142km, MD3.1, ML3.8*

*CSEM **06** 20:59:41.2±0.2, 34°.33N×45°.55E, h15km, mb4.1/28, Error*

ellipse: s-maj=6.6km s-min=4.0km az=11.0
MOS ***06*** *20:59:41.0±1.3,34.°19N×45.°53E,h33km,mb4.2/26,Error*
ellipse: s-maj=9.9km s-min=5.0km az=101.5
TEH ***06*** *20:59:42.4,34.°36N×45.°56E,h5km,ML4.2*
DSN ***06*** *20:59:50.7±0.9,34.°03N×46.°49E,h16km,mb3.9,Error*
ellipse: s-maj=14.7km s-min=4.1km az=69.0
VIE ***06*** *20:59:50.1,34.°42N×45.°45E,h85km,mb3.7/14*
ISN ***06*** *21:00:04.9±403.0,34.°16N×45.°49E,h0km±999km,ML4.2*
ISC 06 20:59:41.2±0.4,**34.°29N**±0.°05×**45.°50E**±0.°03,**h18km,n248,**
σ**1§67**/235,**mb4.0**/37,**MS3.2**/4,**12C-10D,Iran-Iraq border region**

Code Station Name Δ° AZ° Phase ID Op ISC Time h m s Res ISC
IDHR Dehrash 0.83 61 ePg Pb 20 59 54.4 -2.9
IDHR eAMB AMB 21 00 08.4
comp=Z,98μm,0.2s
IDHR Dehrash 0.83 61 ePg Pb 20 59 54.4 -2.9
IGHG Ghaleghazi 0.88 87 ePg Pb 20 59 57.1 -1.0
IGHG eSg Sb 21 00 09.5 -0.2
IGHG eAMB AMB 21 00 21.9
comp=Z,61μm,0.3s
IGHG Ghaleghazi 0.88 87 ePg Pb 20 59 57.1 -1.0
IGHG eSg Sb 21 00 09.5 -0.2
ILIN Lien 1.36 62 eAMB AMB 21 00 25.6
comp=Z,25μm,0.2s
ILIN ePg Pn 21 00 04.8 -0.7
BHD Baghdad 1.39 223 i Pg Pg 21 00 14.0 +6.1
baz=44
BHD eSg Sg 21 00 34.0 +8.0
SNGE Sanandaj 1.72 62 ePg Pb 21 00 12.2 0.0
SNGE eSg Sg 21 00 36.1 -0.4
SNGE AML AML 21 00 39.1
comp=E,2μm,0.7s
SNGE AML AML 21 00 39.4
comp=N,4μm,0.6s
SNGE Sanandaj 1.72 62 eP Pb 21 00 12.3 0.0
SNGE eSg Sg 21 00 36.2 -0.4
IBZA Bozab 1.96 84 ePn Pb 21 00 15.7 -0.8
IBZA eSg Sb 21 00 41.6 +0.9
IBZA eAMB AMB 21 00 50.4
comp=Z,25μm,0.4s
IBZA Bozab 1.96 84 ePn Pb 21 00 15.7 -0.8
IBZA eSg Sb 21 00 41.6 +0.9
MSL Mosul 2.87 318 ePn Pg 21 01 15.0 +39
MSL i Sn Sg 21 01 45.0 +32
CUKT Cukurca 3.33 333 eP Pn 21 00 35.5 +3.2
CUKT Cukurca 3.33 333 eP Pn 21 00 35.6 +3.2
ZNJK Zanjan 3.52 47 ePn Pn 21 00 37.0 +1.8
ZNJK Zanjan 3.52 47 ePn Pn 21 00 37.0 +1.8
SHGR Shooshtar-Gavs 3.52 127 ePn Pn 21 00 37.5 +2.5
SHGR Shooshtar-Gavs 3.52 127 ePn Pn 21 00 37.5 +2.5
HKR Hakkari 3.58 337 eP Pn 21 00 40.0 +4.1
HKR Hakkari 3.58 337 eP Pn 21 00 40.0 +4.1
IBST Bostanabad 3.58 18 eAMB AMB 21 01 37.2
comp=Z,5μm,0.2s
ASAO Ashtian 3.75 85 ePn Pn 21 00 41.0 +2.6
ASAO eSg Sg 21 01 38.8 -2.8
ASAO AML AML 21 01 50.2
comp=N,209nm,0.8s
ASAO Ashtian 3.75 85 ePn Pn 21 00 41.0 +2.6
ASAO eSg Sg 21 01 38.8 -2.8
ITBZ Tabriz 3.96 7 ePn Pn 21 00 42.0 +0.7
ITBZ eAMB AMB 21 01 52.3
comp=Z,4μm,0.2s
ITBZ Tabriz 3.96 7 ePn Pn 21 00 42.0 +0.7
ISHB Shabestar 3.98 1 ePn Pn 21 00 42.6 +1.0
ISHB eAMB AMB 21 01 60.0
comp=Z,5μm,0.3s
IHRS Heris 4.20 17 ePn Pn 21 00 46.2 +1.6
IHRS eAMB AMB 21 01 57.0
comp=Z,4μm,0.6s
IHRS Heris 4.20 17 ePn Pn 21 00 46.2 +1.6
IMRD Marand 4.41 2 ePn Pn 21 00 49.1 +1.7
IMRD eAMB AMB 21 02 08.3
comp=Z,6μm,0.4s
IMRD Marand 4.41 2 ePn Pn 21 00 49.1 +1.7
VANB Van 4.62 339 eP Pn 21 00 54.1 +4.0
VANB Van 4.62 339 eP Pn 21 00 54.1 +3.9
IPIR Pirpir 4.78 108 ePn Pn 21 00 54.3 +1.7
IPIR eAMB AMB 21 01 56.1
comp=Z,3μm,0.3s
IPIR Pirpir 4.78 108 ePn Pn 21 00 54.3 +1.7
GRMI Germi 4.90 22 ePn Pn 21 00 55.6 +1.6
GRMI eSg Sb 21 02 11.9 +6.8
GRMI Germi 4.90 22 ePn Pn 21 00 55.7 +1.6
CLDR Caldiran 5.00 346 eP Pn 21 00 57.9 +2.3
CLDR Caldiran 5.00 346 eP Pn 21 00 57.9 +2.3
IKLH Kolahrood 5.15 99 ePn Pn 21 00 59.9 +2.3
IKLH eAMB AMB 21 02 12.7
comp=Z,2μm,0.4s
IKLH Kolahrood 5.15 99 ePn Pn 21 00 59.9 +2.3
IVRN Varamin 5.18 80 ePn Pn 21 00 58.9 +1.0
IVRN eAMB AMB 21 01 21.3
comp=Z,2μm,0.4s
IVRN Varamin 5.18 80 ePn Pn 21 00 58.9 +1.0
SVAN Silvan-Diyarba 5.19 319 eP Pn 21 01 00.8 +2.9
SVAN Silvan-Diyarba 5.19 319 eP Pn 21 01 00.8 +2.9
MNKR ALMNKUR 5.37 290 eP Pn 21 01 02.6 +2.2
MNKR eS Sn 21 02 01.3 -0.4
MNKR AML AML 21 02 40.8
comp=Z,687nm,0.4s
MNKR ALMNKUR 5.37 290 eP Pn 21 01 02.6 +2.2
IDMV Damavand 5.51 75 eAMB AMB 21 01 24.0
comp=Z,1μm,0.5s
IDMV ePn Pn 21 01 03.9 +1.2
AGRB Hanur-Agry 5.64 340 eP Pn 21 01 09.1 +4.8
DYBB Diyarbakir 5.67 312 eP Pn 21 01 07.1 +2.5
IGAR Gharneh 5.79 107 ePn Pn 21 01 07.4 +1.0
IGAR eAMB AMB 21 02 15.7
comp=Z,2μm,0.3s
IZEF Zefreh 5.87 102 ePn Pn 21 01 09.1 +1.6
IZEF eAMB AMB 21 02 29.2
comp=Z,582nm,0.3s
IZEF Zefreh 5.87 102 ePn Pn 21 01 09.1 +1.6
GNI Garni 5.88 354 Pn Pn 21 01 09.2 +1.7
comp=Z,0.9nm,0.3s,baz=220,slow=4.9,SNR=5.4
GNI Lg Lg 21 02 43.5
comp=Z,0.7nm,0.3s,baz=350,slow=11,SNR=3.4
GNI LR LR 21 03 08.7
comp=Z,44nm,20.1s,baz=166,slow=36
BNGB Bingˆ¶l 6.08 322 eP Pn 21 01 11.6 +1.3
IFIR Firoozkooh 6.10 75 ePn Pn 21 01 12.6 +1.9
IFIR eAMB AMB 21 01 30.8
comp=Z,244nm,0.2s
IFIR Firoozkooh 6.10 75 ePn Pn 21 01 12.6 +1.9
IRAM Ramesheh 6.29 111 ePn Pn 21 01 13.5 +0.3
IRAM eAMB AMB 21 02 28.2
comp=Z,1μm,0.4s
IRAM Ramesheh 6.29 111 ePn Pn 21 01 13.5 +0.3
SVRC Sivrice-ELAZID 6.45 311 eP Pn 21 01 17.5 +2.1
PTK Pertek 6.72 315 eP Pn 21 01 20.4 +1.2
ROOS tl_alroos 6.80 271 eP Pn 21 01 21.8 +1.6
ROOS eS Sn 21 02 33.8 -3.5
ROOS AML AML 21 03 25.9
comp=E,221nm,0.6s
ROOS AML AML 21 03 31.2
comp=N,281nm,0.7s
ROOS tl_alroos 6.80 271 eP Pn 21 01 21.8 +1.6
ZALF Zalf 6.95 261 eP Pn 21 01 22.9 +0.8
ZALF eS Sn 21 02 35.6 -5.1
ZALF Zalf 6.95 261 eP Pn 21 01 23.0 +0.8
DGRG David-gareji 7.14 359 P Pb 21 01 40.9 -3.8
AKH Akhalkalaki 7.28 348 P Pn 21 01 31.0 +4.2
AKH Akhalkalaki 7.28 348 P Pn 21 01 30.9 +4.1
AKH Akhalkalaki 7.28 348 P Pn 21 01 30.9 +4.1
TBLG Delisi 7.45 356 P Pn 21 01 34.4 +5.4
TBLG Delisi 7.45 356 P Pn 21 01 34.4 +5.4
TBLG Delisi 7.45 356 P Pn 21 01 34.4 +5.4
MARH Ras Al Marh 7.48 270 eP Pn 21 01 31.4 +1.7
MARH eS Sn 21 02 50.1 -4.2
MARH AML AML 21 03 56.5
comp=N,82nm,0.7s
MARH AML AML 21 04 05.7
comp=E,94nm,0.7s
MARH Ras Al Marh 7.48 270 eP Pn 21 01 31.4 +1.7
SALA Sala 7.49 260 eP Pn 21 01 31.0 +1.3
SALA eS Sn 21 02 49.4 -5.0
SALA AML AML 21 03 55.8
comp=N,250nm,0.7s
SALA AML AML 21 04 06.7
comp=E,11nm,0.7s
SALA Sala 7.49 260 eP Pn 21 01 31.0 +1.3
ASF Jabal al Asfar 7.51 256 Pn Pn 21 01 30.8 +0.9
comp=E,0.9nm,0.3s,baz=29,slow=13,SNR=7.8
ASF Lg Lg 21 03 39.2
comp=E,2.4nm,0.3s,baz=24,slow=19,SNR=4.5
HAWK Haweek 7.52 274 eP Pn 21 01 30.9 +0.9
HAWK eS Sn 21 02 50.8 -4.2
HAWK AML AML 21 03 48.1
comp=E,77nm,0.6s
HAWK AML AML 21 03 57.4
comp=N,38nm,0.7s
HAWK Haweek 7.52 274 eP Pn 21 01 29.7 -0.4
WRDH Warideh 7.57 282 eP Pn 21 01 31.8 +1.2
WRDH eS Sn 21 02 52.1 -3.9
WRDH Warideh 7.57 282 eP Pn 21 01 31.8 +1.2
ILIC ilic-Erzincan 7.57 315 eP Pn 21 01 34.1 +3.4
DRWC Darouich 7.57 290 eP Pn 21 01 32.3 +1.5
DRWC eS Sn 21 02 52.9 -3.3
DRWC AML AML 21 04 08.2
comp=N,56nm,0.6s
DRWC AML AML 21 04 14.9
comp=E,75nm,0.7s
DRWC Darouich 7.57 290 eP Pn 21 01 32.3 +1.5
BIDA Albida 7.60 278 eP Pn 21 01 32.1 +1.0
BIDA eS Sn 21 02 53.6 -3.2
BIDA AML AML 21 03 58.4
comp=E,128nm,0.6s
BIDA AML AML 21 04 18.4
comp=N,93nm,0.6s
BIDA Albida 7.60 278 eP Pn 21 01 31.5 +0.4
BTCH Batrach 7.61 286 eP Pn 21 01 32.6 +1.4
BTCH eS Sn 21 02 53.9 -3.1
BTCH AML AML 21 04 02.2
comp=N,180nm,0.7s
BTCH AML AML 21 04 18.6
comp=E,164nm,0.7s
BTCH Batrach 7.61 286 eP Pn 21 01 31.6 +0.4
TOTH TOTAH 7.61 266 eP Pn 21 01 32.2 +1.0
TOTH eS Sn 21 02 51.0 -6.0
TOTH AML AML 21 03 59.0
comp=E,109nm,0.6s
TOTH AML AML 21 04 06.6
comp=N,86nm,0.7s
TOTH TOTAH 7.61 266 eP Pn 21 01 32.2 +1.0
ARNB Al Arnab 7.97 284 eP Pn 21 01 38.6 +2.5
ARNB eS Sn 21 03 02.1 -3.8
ARNB AML AML 21 04 07.8
comp=E,94nm,0.6s
ARNB AML AML 21 04 19.0
comp=N,83nm,0.6s
ARNB Al Arnab 7.97 284 eP Pn 21 01 38.6 +2.5
BRBR Barbar 8.00 266 eP Pn 21 01 38.2 +1.6
BRBR eS Sn 21 03 01.3 -5.4
BRBR AML AML 21 04 08.8
comp=N,169nm,0.7s
BRBR AML AML 21 04 16.0
comp=E,97nm,0.7s
BRBR Barbar 8.00 266 eP Pn 21 01 38.2 +1.6
TCHB Talchebab 8.13 261 eP Pn 21 01 40.0 +1.7
TCHB eS Sn 21 03 03.2 -6.6
TCHB AML AML 21 04 24.8
comp=N,158nm,0.7s
TCHB AML AML 21 04 26.0
comp=E,182nm,0.7s
TCHB Talchebab 8.13 261 eP Pn 21 01 40.0 +1.7
ONI Oni 8.44 350 P Pn 21 01 48.1 +5.5
ONI Oni 8.44 350 P Pn 21 01 48.1 +5.5
MMAI Mount Meron Ar 8.52 264 Pn Pn 21 01 44.0 +0.3
comp=E,1.1nm,0.3s,baz=73,slow=17,SNR=7.6
MMAI Lg Lg 21 04 07.1
comp=E,3.4nm,0.3s,baz=107,slow=35,SNR=4.4
MMAI LR LR 21 05 46.3
comp=E,126nm,18.3s,baz=50,slow=43
ZEI Tsey 8.57 352 eP Pn 21 01 51.2 +6.7
ZEI pmax pmax
comp=Z,9.0nm,0.8s
NEY Neytrino 9.20 347 P Pn 21 01 58.0 +4.9
NEY Neytrino 9.20 347 P Pn 21 01 58.0 +4.9
NCK Nalchik 9.31 351 P Pn 21 02 01.0 +6.6
NCK Nalchik 9.31 351 P Pn 21 02 01.0 +6.6
KBZ Khabaz 9.64 349 Pn Pn 21 02 01.7 +2.8
comp=Z,0.1nm,0.3s,baz=167,slow=13,SNR=2.5
KVAR Kislovodsk Arr 9.89 348 Pn Pn 21 02 03.7 +1.1
baz=148,slow=2.7,SNR=2.6
KIV Kislovodsk 9.89 348 eP Pn 21 02 00.2 -2.3
KIV pmax pmax
comp=Z,6.0nm,1.1s
KIV MLR MLR
comp=Z,10.0nm,9.0s
KIV Kislovodsk 9.89 348 eP Pn 21 02 00.2 -2.3
comp=Z,10.0nm,9.0s
EIL Elat 10.07 246 Pn Pn 21 02 06.6 +1.6
comp=Z,0.6nm,0.3s,baz=83,slow=6.1,SNR=4.6
EIL Lg Lg 21 05 05.9
comp=Z,0.7nm,0.3s,baz=63,slow=13,SNR=4.4
EIL LR LR 21 06 57.5
comp=Z,157nm,18.6s,baz=60,slow=44
GEYT Alibeck 10.83 67 Pn Pn 21 02 16.1 +0.7
comp=Z,0.4nm,0.3s,baz=259,slow=15,SNR=3.6
GEYT LR LR 21 07 16.1
comp=Z,145nm,20.5s,baz=220,slow=42
BRTR Keskin Array B 10.92 303 Pn Pn 21 02 18.5 +1.8
comp=Z,0.0nm,0.3s,baz=119,slow=12,SNR=2.3
ANN Anapa 12.19 332 eP Pn 21 02 32.0 -1.9
ANN pmax pmax
comp=Z,22nm,0.9s
ANN MLR MLR
comp=Z,215nm,14.0s
ANN MLR MLR
comp=E,147nm,14.0s
ANN MLR MLR
comp=N,124nm,14.0s
ANN Anapa 12.19 332 eP Pn 21 02 32.0 -1.9
comp=N,124nm,14.0s
BANOM Banah 12.52 129 i P Pn 21 02 37.5 -1.0
SNR=22
BANOM S Sn 21 04 48.8 -8.8
BANOM Banah 12.52 129 P Pn 21 02 37.5 -1.0
SNR=22
NAZ Nazwa, Dubai 12.80 134 i P Pn 21 02 42.2 -0.1
SNR=6.2
NAZ Nazwa, Dubai 12.80 134 P Pn 21 02 42.2 -0.1
SNR=6.2
ASUD Al Ashush, Dub 12.88 136 i P Pn 21 02 43.7 +0.3
SNR=12
ASUD Al Ashush, Dub 12.88 136 P Pn 21 02 43.7 +0.3
SNR=12
FAQ Al Faqa, Dubai 12.94 135 P Pn 21 02 43.7 -0.5
FAQ S Sn 21 05 01.4 -6.4
FAQ Al Faqa, Dubai 12.94 135 P Pn 21 02 43.7 -0.5
HATD Hatta, Dubai 13.21 133 i P Pn 21 02 46.8 -1.0
SNR=8.4
HATD Hatta, Dubai 13.21 133 P Pn 21 02 46.8 -1.0
SNR=8.4
ASHO Ashiyiah 13.27 133 i P Pn 21 02 47.7 -1.0
SNR=10
ASHO Ashiyiah 13.27 133 P Pn 21 02 47.7 -1.0
SNR=10
WSAR Wadi Sarin 15.91 130 Pn Pn 21 03 22.7 -1.6
comp=N,0.7nm,0.3s,baz=8.0,slow=9.4,SNR=16
WSAR Sn Sn 21 06 11.2 -9.2
comp=N,0.2nm,0.3s,baz=137,slow=20,SNR=6.4
MSAB Monastry St. A 16.81 311⇑iP P 21 03 41.5 +3.9
IDI Anoyia 16.96 279 Pn P 21 03 40.5 +1.1
comp=N,0.8nm,0.3s,baz=89,slow=14,SNR=5.3
VRH Novokhopyorsk 17.12 352 eP Pn 21 03 39.6 +0.2
VRH Novokhopyorsk 17.12 352 eP Pn 21 03 39.6 +0.2
VSR Storozhevoye 17.53 347 eP Pn 21 03 44.7 +0.2
VSR Storozhevoye 17.53 347 eP Pn 21 03 44.7 +0.2
VRI Vrincioaia 18.39 315⇓iP Pn 21 04 07.8 +13
PLOR Plostina 18.43 314⇓iP Pn 21 04 03.4 +7.8
PLOR Plostina 18.43 314 ⇓P Pn 21 04 03.4 +7.8
PLOR Plostina 18.43 314 P Pn 21 04 03.4 +7.8
AKTK Aktyubinsk 18.55 26 P P 21 03 55.9 -0.9
AKTO Aktyubinsk 18.55 26 P P 21 03 55.9 -0.8
comp=N,0.2nm,0.3s,baz=211,slow=12,SNR=12
LPSR Galich'ya Gora 18.90 348 eP P 21 04 00.2 -0.3
LPSR pmax pmax
comp=Z,10.0nm,0.9s
LPSR Galich'ya Gora 18.90 348 eP P 21 04 00.2 -0.3
comp=Z,10.0nm,0.9s
VOIR 19.19 312⇑iP Pn 21 04 04.6 -0.3
VOIR 19.19 312 ⇑P Pn 21 04 04.6 -0.3
VOIR 19.19 312 P Pn 21 04 04.6 -0.3
DOPR Dopca 19.24 313⇓iP P 21 04 04.3 -0.1
VTS Vitosha 19.29 302⇓iP Pn 21 04 08.2 +2.0
VTS Vitosha 19.29 302 ⇓P Pn 21 04 08.2 +2.0
VTS Vitosha 19.29 302 P Pn 21 04 08.2 +2.0
ARR Arges 19.41 311⇑iP Pn 21 04 08.9 +1.3
LOT Lotru 19.99 310⇑iP Pn 21 04 14.6 +0.1
BURAR Bucovina Array 20.21 317⇑iP Pn 21 04 16.4 -0.7
BURAR Bucovina Array 20.21 317 ⇑P Pn 21 04 16.4 -0.7
AKASG Malin Array Be 20.25 329 P P 21 04 14.4 -0.9
comp=Z,0.9nm,0.4s,baz=139,slow=9.0,SNR=11
AKASG Malin Array Be 20.25 329 eP Pn 21 04 17.0 -0.3
AKASG pmax pmax
comp=Z,1.0nm,0.4s
AKASG Malin Array Be 20.25 329 eP Pn 21 04 17.0 -0.3
comp=Z,1.0nm,0.4s
KIEV Kiev 20.25 329⇓eP Pn 21 04 16.6 -0.7
KIEV pmax pmax
comp=Z,9.0nm,1.1s
KIEV Kiev 20.25 329 eP Pn 21 04 16.6 -0.7
comp=Z,9.0nm,1.1s
GZR Gura Zlata 20.60 309⇑iP P 21 04 20.2 +0.9
MDVR Moldovita 21.05 307⇑iP P 21 04 25.5 +1.3
SIRR Siria 21.68 311⇑iP P 21 04 34.4 +3.6
OBN Obninsk 21.73 346 i P P 21 04 31.7 +0.5
OBN pmax pmax
comp=Z,9.0nm,0.9s
OBN Obninsk 21.73 346 i P P 21 04 31.7 +0.5
comp=Z,9.0nm,0.9s
UZH Uzhgorod 22.41 317 eP P 21 04 37.4 -1.3
UZH e 21 04 42.8
UZH e 21 04 52.0
UZH e 21 05 18.4
UZH Uzhgorod 22.41 317 eP P 21 04 37.4 -1.3
KOLS Kolonicke sedl 22.58 317 eP P 21 04 41.0 +0.5
KOLS pmax pmax
comp=Z,25nm,2.0s
KOLS Kolonicke sedl 22.58 317 eP P 21 04 41.0 +0.5
comp=Z,25nm,2.0s
KOLS Kolonicke sedl 22.58 317 eP P 21 04 41.0 +0.5
KECS Kecovo 23.38 315 eP P 21 04 48.9 +0.1
KECS pmax pmax
comp=Z,4.0nm,1.3s
KECS Kecovo 23.38 315 eP P 21 04 48.9 +0.1
comp=Z,4.0nm,1.3s
KECS Kecovo 23.38 315 eP P 21 04 48.9 +0.1
ARU Arti 23.88 18 P P 21 04 53.0 -0.5
comp=Z,0.5nm,0.3s,baz=203,slow=6.1,SNR=2.7
ARU Arti 23.88 18d iP P 21 04 52.5 -1.0
ARU 21 05 20.3
ARU S S 21 09 07.7 -0.9
ARU pmax pmax
comp=Z,5.0nm,1.7s
ARU Arti 23.88 18 i P P 21 04 52.5 -1.0
comp=Z,5.0nm,1.7s
ARU S S 21 09 07.7 -0.9
AAK Ala-Archa 24.09 61 P P 21 04 57.3 +1.5
comp=Z,0.3nm,0.3s,baz=249,slow=6.1,SNR=4.4
AAK Ala-Archa 24.09 61⇑eP P 21 05 00.2 +4.4
AAK pmax pmax
comp=Z,6.0nm,1.9s
AAK Ala-Archa 24.09 61 eP P 21 05 00.2 +4.4
comp=Z,6.0nm,1.9s
LANS Liptovska Anna 24.29 316 eP P 21 04 58.3 +0.8
LANS Liptovska Anna 24.29 316 eP P 21 04 58.3 +0.8
LANS Liptovska Anna 24.29 316 eP P 21 04 58.3 +0.8
VYHS Vyhne 24.37 314 eP P 21 04 59.2 +1.1
VYHS pmax pmax
comp=Z,16nm,2.6s
VYHS Vyhne 24.37 314 eP P 21 04 59.2 +1.1
comp=Z,16nm,2.6s
VYHS Vyhne 24.37 314 eP P 21 04 59.2 +1.1
KSH Kashi 24.85 69 P P 21 05 07.6 +4.9
KSH pmax pmax
comp=Z,4.0nm,0.8s
BRVK Borovoye 25.73 36 eP P 21 05 10.8 +0.5
BRVK pmax pmax
comp=Z,4.0nm,1.2s
BRVK Borovoye 25.73 36 eP P 21 05 10.8 +0.5
comp=Z,4.0nm,1.2s
BVAR Borovoye Array 25.76 36 P P 21 05 10.9 +0.3
comp=Z,2.5nm,0.6s,baz=242,slow=8.2,SNR=21
CONA Conrad Observa 25.97 311 i P P 21 05 15.6 +2.8
comp=Z,6.6nm,1.1s
CONA Conrad Observa 25.97 311 P P 21 05 15.6 +2.8
comp=Z,6.6nm,1.1s
VRAC Vranov 26.05 314 P P 21 05 12.9 -0.5
comp=Z,1.5nm,0.5s,baz=136,slow=6.7,SNR=3.2
DPC Dobruska-Polom 26.65 316 eP P 21 05 19.3 +0.5
DPC Dobruska-Polom 26.65 316 eP P 21 05 19.3 +0.5
DPC Dobruska-Polom 26.65 316 eP P 21 05 19.3 +0.5
KLMR Klimovskoe 26.86 354 eP P 21 05 16.8 -3.6
KLMR pmax pmax
comp=Z,10.0nm,1.4s
MOA Molln 26.96 310 P P 21 05 21.1 -0.5
comp=Z,4.3nm,1.0s
MOA Molln 26.96 310 P P 21 05 21.1 -0.5
comp=Z,4.3nm,1.0s
VSU Vasula 27.23 338⇑eP P 21 05 23.2 -0.6
VSU pmax pmax
comp=Z,65nm,1.9s
VSU Vasula 27.23 338 eP P 21 05 23.2 -0.6
comp=Z,65nm,1.9s
GERES GERESS Array B 27.64 311 P P 21 05 26.8 -1.0
comp=Z,0.2nm,0.6s,baz=91,slow=8.2,SNR=3.3
KURBB Kurchatov Arra 29.01 46 P P 21 05 39.8 -0.1
comp=Z,1.4nm,0.8s,baz=253,slow=8.8,SNR=11
KURBB PcP PcP 21 08 48.5 +0.5
comp=Z,0.3nm,0.7s,baz=243,slow=2.9,SNR=6.1
KURK Kurchatov 29.10 46 P P 21 05 39.8 -0.8
KURK 21 08 48.5
KURK pmax pmax
comp=Z,1.0nm,0.8s
KURK Kurchatov 29.10 46 P P 21 05 39.8 -0.8
comp=Z,1.0nm,0.8s
KURK Kurchatov 29.10 46 PcP PcP 21 08 48.5 +0.3
FINES FINESS Array B 29.88 341 P P 21 05 46.8 -0.6
comp=Z,1.3nm,0.5s,baz=147,slow=11,SNR=12
FINES FINESS Array B 29.88 341 eP P 21 05 46.5 -0.9
FINES pmax pmax
comp=Z,1.0nm,0.5s
FINES FINESS Array B 29.88 341 eP P 21 05 46.5 -0.9
comp=Z,1.0nm,0.5s
MKAR Makanchi Array 30.34 55 P P 21 05 52.6 +0.9
comp=Z,1.2nm,0.7s,baz=253,slow=6.2,SNR=12
ZALV Zalesovo Beam 33.80 42 P P 21 06 21.8 -0.2
comp=Z,0.9nm,0.3s,baz=233,slow=9.1,SNR=5.2
ZALV LR LR 21 20 44.6
comp=Z,31nm,18.8s,baz=40,slow=38
ZALV Zalesovo Beam 33.80 42 eP P 21 06 22.2 +0.3
ZALV pmax pmax
comp=Z,1.0nm,0.3s
ZALV Zalesovo Beam 33.80 42 eP P 21 06 22.2 +0.3
comp=Z,1.0nm,0.3s
NB2 NORSAR Subarra 34.63 331 P P 21 06 27.9 -1.2
comp=Z,1.2nm,0.6s,baz=124,slow=8.6
NB2 NORSAR Subarra 34.63 331 P P 21 06 27.9 -1.2
baz=124,slow=8.6
NB2 NORSAR Subarra 34.63 331 P P 21 06 27.9 -1.2
comp=Z,1.2nm,0.6s,SNR=5.6
NOA NORSAR Array B 34.63 331 P P 21 06 28.0 -1.1
comp=Z,1.5nm,0.6s,baz=125,slow=8.7,SNR=6.4
NOA LR LR 21 21 57.6
comp=Z,49nm,19.1s,baz=70,slow=39
HEF Hetta 36.34 347 eP P 21 06 43.2 -0.5
HEF Hetta 36.34 347 eP P 21 06 43.2 -0.5
SNR=30
KTK1 Kautokeino 36.94 347 eP P 21 06 48.3 -0.5
KTK1 Kautokeino 36.94 347 eP P 21 06 48.3 -0.5
SNR=30
KEV Kevo 36.96 349 eP P 21 06 49.0 +0.1
KEV Kevo 36.96 349 eP P 21 06 49.0 +0.1
SNR=30
ARCES ARCESS Array B 37.00 348 P P 21 06 48.5 -0.8
comp=Z,2.1nm,0.6s,baz=172,slow=7.9,SNR=14
ARE0 ARCESS Array S 37.00 348 eP P 21 06 48.7 -0.5
ARE0 ARCESS Array S 37.00 348 eP P 21 06 48.7 -0.5
SNR=30
KIF Kilpisjarvi 37.42 346 eP P 21 06 52.2 -0.5
KIF Kilpisjarvi 37.42 346 eP P 21 06 52.2 -0.5
SNR=30
TRO Tromso 38.32 345 eP P 21 06 59.6 -0.7
TRO Tromso 38.32 345 eP P 21 06 59.6 -0.7
SNR=29
ESDC Sonseca Array 39.47 293 P P 21 07 10.4 -0.2
comp=Z,0.8nm,0.7s,baz=72,slow=8.6,SNR=7.2
NRIK Noril'sk 42.05 21 P P 21 07 31.3 0.0
comp=Z,2.4nm,0.7s,baz=220,slow=6.4,SNR=3.8

Code	Station Name	Δ°	AZ°	Op	ISC	Time	Res
GTA	Gaotai	43.21	67	eP	P	21 07 42.7	+1.3
GTA				pP	pP	21 07 47.5	+0.5
GTA				sP	sP	21 07 50.1	+0.9
GTA				pmax	pmax		
	comp=Z,3.0nm,1.0s						
TORD	Torodi Ar. Bea	44.86	253	P	P	21 07 55.2	+0.5
	comp=Z,1.5nm,0.9s,baz=48,slow=8.2,SNR=9.9						
SPITS	Spitsbergen Ar	45.74	352	P	P	21 08 00.6	-0.3
	comp=Z,1.9nm,0.3s,baz=142,slow=11,SNR=52						
SONM	Songino Array	46.70	54	P	P	21 08 08.3	-0.7
	comp=Z,0.3nm,0.8s,baz=288,slow=7.8,SNR=2.8						
CMAR	Chiang Mai Arr	49.87	94	P	P	21 08 32.7	-0.9
	comp=Z,1.8nm,0.7s,baz=295,slow=8.3,SNR=19						
CMAR				LR	LR	21 33 38.7	
	comp=Z,20nm,19.9s,baz=295,slow=41						
DBIC	Dimbokro	53.89	251	P	P	21 09 03.5	-0.1
	comp=Z,2.6nm,0.9s,baz=28,slow=10,SNR=5.4						
TIXI	Tiksi	55.79	22	P	P	21 09 16.3	-0.3
	comp=Z,0.8nm,0.4s,baz=354,slow=5.3,SNR=3.5						
TIXI	Tiksi	55.79	22⇓	eP	P	21 09 16.0	-0.6
TIXI				pmax	pmax		
	comp=Z,3.0nm,1.2s						
TIXI	Tiksi	55.79	22	eP	P	21 09 16.0	-0.6
	comp=Z,3.0nm,1.2s						
KSRS	Korea Array	64.75	61	P	P	21 10 18.6	+0.1
	comp=Z,0.7nm,0.5s,baz=285,slow=7.4,SNR=4.9						
BOSA	Boshof	65.44	200	P	P	21 10 24.6	+1.6
	comp=Z,2.7nm,0.6s,baz=1.5,slow=8.1,SNR=8.6						
SEY	Seymchan	67.12	28	P	P	21 10 34.1	+0.8
	comp=Z,3.3nm,0.7s,baz=277,slow=8.1,SNR=17						
SEY	Seymchan	67.12	28⇓	iP	P	21 10 34.5	+1.2
SEY	Seymchan	67.12	28	iP	P	21 10 34.5	+1.2
MA2	Magadan	68.17	32	LR	LR	21 44 45.5	
	comp=Z,30nm,19.8s,baz=303,slow=40						
MA2	Magadan	68.17	32	P	P	21 10 40.9	+0.9
MA2	Magadan	68.17	32	P	P	21 10 40.9	+0.9
BILL	Bilibino	68.88	20	eP	P	21 10 43.1	-1.2
BILL				pmax	pmax		
	comp=Z,3.0nm,1.0s						
BILL	Bilibino	68.88	20	eP	P	21 10 43.1	-1.2
	comp=Z,3.0nm,1.0s						
ILAR	Eielson Array	80.78	5	P	P	21 11 52.6	-0.7
	comp=Z,1.0nm,0.8s,baz=328,slow=4.4,SNR=10						
ILAR	Eielson Array	80.78	5	eP	P	21 11 53.7	+0.5
ILAR				pmax	pmax		
	comp=Z,1.0nm,0.8s						
ILAR	Eielson Array	80.78	5	eP	P	21 11 53.7	+0.5
	comp=Z,1.0nm,0.8s						
YKA	Yellowknife Ar	82.22	351	P	P	21 12 00.3	-0.6
	comp=Z,0.8nm,0.9s,baz=16,slow=5.9,SNR=10						

IDC 06 21:05:42.7±9.6**, 6°.28S×154°.25E, h108**km±68km**, mb3.4**/2**, mb1 3.6**/3**, mb1mx3.1**/38**, mbtmp3.8**/3**, ML1.9**/1**, MS2.7**/1**, Ms1 2.7**/1**, ms1mx2.3**/21**, Error ellipse: s-maj=99.9km s-min=57.4km az=125.0, Bougainville-Solomon Islands region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HNR	Honiara	6.45	119	LR	LR	21 09 12.8	
	comp=Z,64nm,18.3s,baz=197,slow=33						
PMG	Port Moresby	7.68	246	P	Pn	21 07 31.7	-0.3
	1.1nm,0.3s,baz=51,slow=14,SNR=2.9						
PMG				S	Sn	21 08 58.7	+1.3
	0.9nm,0.3s,baz=97,slow=20,SNR=2.5						
WRA	Warramunga Arr	23.63	233	P	P	21 10 44.3	0.0
	2.1nm,0.6s,baz=58,slow=9.4,SNR=18						
ASAR	Alice Springs	26.11	226	P	P	21 11 06.6	-0.2
	0.3nm,0.4s,baz=59,slow=9.5,SNR=7.9						
TORD	Torodi Ar. Bea	152.12	286	PKPbc	PKPbc	21 25 26.6	0.0
	0.3nm,0.6s,baz=90,slow=1.6,SNR=5.3						

IDC 06 21:09:06.9±7.0**, 4°.31S×134°.61E, h0**km**, mb3.2**/1**, mb1 3.4**/3**, mb1mx3.2**/35**, mbtmp3.2**/3**, ML3.0**/2**, Error ellipse: s-maj=378.5km s-min=31.5km az=79.0, Irian Jaya region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	Warramunga Arr	15.54	181	Pn	Pn	21 12 46.7	-0.7
	0.1nm,0.3s,baz=360,slow=12,SNR=2.9						
ASAR	Alice Springs	19.25	182	P	P	21 13 33.4	+0.4
	0.1nm,0.3s,baz=5.7,slow=11,SNR=5.3						
MKAR	Makanchi Array	68.62	324	P	P	21 20 12.0	0.0
	0.1nm,0.4s,baz=108,slow=4.7,SNR=2.9						

*ISN **06** 21:22:21.5±2.2, 34°.38N×45°.63E, h5km±21km, ML3.9*
*IDC **06** 21:22:27.9±0.8, 34°.36N×45°.57E, h0km, mb3.7/11, mb1 3.7/17, mb1mx3.6/49, mbtmp3.7/17, ML3.6/5, MS2.6/5, Ms1 2.5/5, ms1mx2.4/57, Error ellipse: s-maj=17.7km s-min=13.2km az=146.0*
*ISCJB **06** 21:22:28.5±0.2, 34°.13N±0°.03×45°.39E±0°.02, h18km, mb3.6/10, Error ellipse: s-maj=4.5km s-min=2.2km az=1.1*
*NSSC **06** 21:22:28.7±1.5, 34°.30N×45°.75E, h30km±220km, MD3.1, ML3.2*
*THR **06** 21:22:29.4±0.6, 34°.34N×45°.43E, h14km±9km, ML3.9*
*CSEM **06** 21:22:30.3±0.2, 34°.21N×45°.51E, h10km, ML3.9, Error ellipse: s-maj=6.8km s-min=3.7km az=8.0*
*TEH **06** 21:22:31.4, 34°.34N×45°.55E, h5km, ML3.9*
*OMAN **06** 21:22:39.3±10.0, 33°.47N×45°.73E, h36km±76km, Error ellipse: s-maj=121.7km s-min=85.7km az=159.0*
*DSN **06** 21:22:40.3±1.9, 33°.72N×46°.28E, h15km, Error ellipse: s-maj=83.8km s-min=11.3km az=33.0*
ISC 06 21:22:30.2±0.5**, 34°.26N**±0°.05×**45°.47E**±0°.04**, h18**km**, n118,** σ**1.64**/137**, mb3.6**/10**, Iran-Iraq border region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
IDHR	Dehrash	0.87	60	ePg	Pb	21 22 43.9	-3.1
IDHR				eAMB	AMB	21 22 58.7	
	comp=Z,76μm,0.1s						
IGHG	Ghaleghazi	0.91	85	ePg	Pb	21 22 46.4	-1.2
IGHG				eSg	Sb	21 22 59.1	-0.4
IGHG				eAMB	AMB	21 23 01.9	
	comp=Z,53μm,0.2s						
BHD	Baghdad	1.34	223	ePg	Pb	21 22 55.0	+0.2
	baz=43						
BHD				eSg	Sg	21 23 18.6	+4.9
ILIN	Lien	1.40	62	ePg	Pn	21 22 53.7	-1.3
ILIN				eAMB	AMB	21 22 58.1	
	comp=Z,15μm,0.1s						
SNGE	Sanandaj	1.75	61	ePg	Pn	21 23 01.2	+1.2
SNGE				eSg	Sb	21 23 25.2	+1.4
SNGE				AML	AML	21 23 27.2	
	comp=N,1μm,1.0s						
SNGE				AML	AML	21 23 27.4	
	comp=E,616nm,0.6s						
SNGE	Sanandaj	1.75	61	eP	Pn	21 23 01.2	+1.2
SNGE				eSg	Sb	21 23 25.2	+1.4
IBZA	Bozab	1.99	83	eSg	Sb	21 23 31.1	+0.5
IBZA				ePn	Pb	21 23 05.4	-0.6
IBZA				eAMB	AMB	21 23 34.5	
	comp=Z,15μm,0.2s						
MSL	Mosul	2.88	319	ePn	Pn	21 23 10.0	-5.2
MSL				i Sn	Sn	21 23 40.0	-9.3
CUKT	Cukurca	3.34	334	eP	Pn	21 23 23.1	+1.4
CUKT	Cukurca	3.34	334	eP	Pn	21 23 23.1	+1.4
SHGR	Shooshtar-Gavs	3.52	127	ePn	Pn	21 23 26.8	+2.8
SHGR				AML	AML	21 24 46.1	
	comp=E,384nm,0.6s						
SHGR				AML	AML	21 24 46.3	
	comp=N,323nm,0.7s						
SHGR	Shooshtar-Gavs	3.52	127	ePn	Pn	21 23 26.8	+2.8
ZNJK	Zanjan	3.56	47	ePn	Pn	21 23 26.3	+1.5
ZNJK	Zanjan	3.56	47	ePn	Pn	21 23 26.3	+1.5
HKR	Hakkari	3.59	338	eP	Pn	21 23 26.6	+1.4
HKR	Hakkari	3.59	338	eP	Pn	21 23 26.6	+1.4
IBST	Bostanabad	3.62	18	eAMB	AMB	21 24 26.2	
	comp=Z,772nm,0.2s						
ASAO	Ashtian	3.78	84	ePn	Pn	21 23 30.0	+2.2
ASAO				AML	AML	21 24 39.2	
	comp=N,135nm,0.8s						
ASAO	Ashtian	3.78	84	ePn	Pn	21 23 30.0	+2.2
ASAO				eS	Sn	21 24 14.3	+2.4
ITBZ	Tabriz	4.00	8	ePn	Pn	21 23 31.7	+0.9
ITBZ				eAMB	AMB	21 23 44.7	
	comp=Z,612nm,0.2s						
ITBZ	Tabriz	4.00	8	ePn	Pn	21 23 31.7	+0.9
ISHB	Shabestar	4.02	2	ePn	Pn	21 23 31.6	+0.5
ISHB				eAMB	AMB	21 24 44.9	
	comp=Z,1μm,0.2s						
IMRD	Marand	4.45	2	ePn	Pn	21 23 38.4	+1.5
IMRD				eAMB	AMB	21 25 05.8	
	comp=Z,1μm,0.4s						
IMRD	Marand	4.45	2	ePn	Pn	21 23 38.4	+1.5
VANB	Van	4.64	339	eP	Pn	21 23 40.9	+1.4
VANB	Van	4.64	339	eP	Pn	21 23 40.9	+1.4
IPIR	Pirpir	4.79	108	ePn	Pn	21 23 42.7	+0.9
IPIR				eAMB	AMB	21 24 45.1	
	comp=Z,3μm,0.3s						
IPIR	Pirpir	4.79	108	ePn	Pn	21 23 42.7	+0.9
GHVR	GHOM	4.82	86	ePn	Pn	21 23 43.7	+1.7
GHVR	GHOM	4.82	86	eP	Pn	21 23 43.7	+1.7
GRMI	Germi	4.94	23	ePn	Pn	21 23 44.7	+1.1
GRMI	Germi	4.94	23	ePn	Pn	21 23 44.7	+1.1
QAM	Ghamsar	4.98	94	ePn	Pn	21 23 46.5	+2.2
QAM				eAMB	AMB	21 24 54.9	
	comp=Z,1μm,0.2s						
CLDR	Caldiran	5.03	346	eP	Pn	21 23 47.2	+2.2
CLDR	Caldiran	5.03	346	eP	Pn	21 23 47.2	+2.2
IKLH	Kolahrood	5.17	99	ePn	Pn	21 23 49.4	+2.4
IKLH				eAMB	AMB	21 24 53.0	
	comp=Z,1μm,0.3s						
IKLH	Kolahrood	5.17	99	ePn	Pn	21 23 49.4	+2.4
IVRN	Varamin	5.21	80	ePn	Pn	21 23 47.9	+0.6
IVRN				eAMB	AMB	21 24 10.2	
	comp=Z,1μm,0.5s						
IVRN	Varamin	5.21	80	ePn	Pn	21 23 47.9	+0.6
MNKR	ALMNKUR	5.35	290	eP	Pn	21 23 51.3	+2.1
MNKR				eS	Sn	21 24 48.8	-1.6
MNKR				AML	AML	21 25 29.9	
	comp=Z,211nm,0.4s						
MNKR	ALMNKUR	5.35	290	eP	Pn	21 23 51.3	+2.1
MNKR				eS	Sn	21 24 48.8	-1.6
	comp=Z,211nm,0.4s						
KSRV	Kasrt alli	5.54	289	eP	Pn	21 23 52.4	+0.6
KSRV				AML	AML	21 25 38.7	
	comp=N,42nm,0.5s						
KSRV				AML	AML	21 25 48.2	
	comp=Z,23nm,0.5s						
KSRV	Kasrt alli	5.54	289	eP	Pn	21 23 52.7	+0.9
IDMV	Damavand	5.55	74	ePn	Pn	21 23 52.9	+0.7
IDMV				eAMB	AMB	21 24 13.1	
	comp=Z,568nm,0.4s						
IDMV	Damavand	5.55	74	ePn	Pn	21 23 52.9	+0.7
AGRB	Hanur-Agry	5.66	340	eP	Pn	21 23 55.5	+1.8
AGRB	Hanur-Agry	5.66	340	eP	Pn	21 23 55.5	+1.8
DYBB	Diyarbakir	5.67	312	eP	Pn	21 24 01.4	+7.7
IGAR	Gharneh	5.80	107	ePn	Pn	21 23 56.9	+1.3
IGAR				eAMB	AMB	21 25 04.7	
	comp=Z,2μm,0.3s						
VRTB	Varto-Mus	5.86	328	eP	Pn	21 23 59.3	+3.0
VRTB	Varto-Mus	5.86	328	eP	Pn	21 23 59.3	+3.0
IZEF	Zefreh	5.88	101	ePn	Pn	21 23 58.3	+1.5
IZEF				eAMB	AMB	21 25 18.2	
	comp=Z,576nm,0.4s						
IZEF	Zefreh	5.88	101	ePn	Pn	21 23 58.3	+1.5
GNI	Garni	5.91	355	Pn	Pn	21 24 00.4	+3.5
	comp=Z,0.2nm,0.3s,baz=173,slow=8.1,SNR=1.7						
GNI				Lg	Lg	21 25 29.7	
	comp=Z,0.3nm,0.3s,baz=287,slow=6.1,SNR=4.0						
GNI				LR	LR	21 25 58.1	
	comp=Z,13nm,20.1s,baz=166,slow=36						
BNGB	Bingˆ¶l	6.09	322	eP	Pn	21 24 04.1	+4.6
IFIR	Firoozkooh	6.14	75	eAMB	AMB	21 24 03.4	
	comp=Z,202nm,0.1s						
IFIR				ePn	Pn	21 24 01.4	+1.2
IRAM	Ramesheh	6.30	111	ePn	Pn	21 24 02.3	-0.1
IRAM				eAMB	AMB	21 25 17.2	
	comp=Z,961nm,0.4s						
IRAM	Ramesheh	6.30	111	ePn	Pn	21 24 02.3	-0.1
ROOS	tl_alroos	6.78	272	eP	Pn	21 24 10.7	+1.8
ROOS				eS	Sn	21 25 23.6	-2.0
ROOS				AML	AML	21 26 12.4	
	comp=E,41nm,0.5s						
ROOS				AML	AML	21 26 25.1	
	comp=N,65nm,0.7s						
ROOS	tl_alroos	6.78	272	eP	Pn	21 24 10.7	+1.8
ROOS				eS	Sn	21 25 23.6	-2.0
	comp=N,65nm,0.7s						
ZALF	Zalf	6.92	261	eP	Pn	21 24 12.5	+1.7
ZALF				eS	Sn	21 25 28.4	-0.6
ZALF				AML	AML	21 26 24.9	
	comp=N,32nm,0.7s						
ZALF				AML	AML	21 26 39.3	
	comp=E,27nm,0.7s						
ZALF	Zalf	6.92	261	eP	Pn	21 24 12.5	+1.7
ZALF				eS	Sn	21 25 28.5	-0.6
	comp=E,27nm,0.7s						
MARH	Ras Al Marh	7.46	271	eP	Pn	21 24 20.7	+2.3
MARH				eS	Sn	21 25 41.2	-1.5
MARH				AML	AML	21 26 59.7	
	comp=E,23nm,0.8s						
MARH				AML	AML	21 27 05.8	
	comp=N,30nm,0.7s						
MARH	Ras Al Marh	7.46	271	eP	Pn	21 24 21.7	+3.3
MARH				eS	Sn	21 25 41.2	-1.5
	comp=N,30nm,0.7s						
SALA	Sala	7.46	260	eP	Pn	21 24 19.7	+1.3
SALA				eS	Sn	21 25 41.3	-1.3
SALA				AML	AML	21 26 45.8	
	comp=N,70nm,0.8s						
SALA				AML	AML	21 27 04.7	
	comp=E,3.4nm,0.9s						
SALA	Sala	7.46	260	eP	Pn	21 24 19.7	+1.3
SALA				eS	Sn	21 25 41.3	-1.3
	comp=E,3.0nm,0.9s						
ASF	Jabal al Asfar	7.48	256	Pn	Pn	21 24 20.0	+1.5
	comp=E,0.5nm,0.3s,baz=12,slow=5.2,SNR=7.4						
ASF				Lg	Lg	21 26 29.1	
	comp=E,1.1nm,0.3s,baz=41,slow=20,SNR=4.4						
HAWK	Haweek	7.50	275	eP	Pn	21 24 20.7	+1.9
HAWK				eS	Sn	21 25 41.6	-1.8
HAWK				AML	AML	21 26 48.5	
	comp=E,24nm,0.7s						
HAWK				AML	AML	21 26 56.2	
	comp=N,11nm,0.7s						
HAWK	Haweek	7.50	275	eP	Pn	21 24 20.7	+1.9
HAWK				eS	Sn	21 25 41.6	-1.8
	comp=N,11nm,0.7s						
WRDH	Warideh	7.55	282	eP	Pn	21 24 20.5	+1.1
WRDH				eS	Sn	21 25 42.8	-1.8
WRDH				AML	AML	21 26 41.8	
	comp=E,13nm,0.6s						
WRDH				AML	AML	21 26 55.8	
	comp=N,32nm,0.8s						
WRDH	Warideh	7.55	282	eP	Pn	21 24 20.5	+1.1
WRDH				eS	Sn	21 25 42.8	-1.8
	comp=N,32nm,0.8s						
DRWC	Darouich	7.56	291	eP	Pn	21 24 21.4	+1.8
DRWC				eS	Sn	21 25 41.8	-3.1
DRWC				AML	AML	21 26 58.9	
	comp=E,26nm,0.6s						
DRWC				AML	AML	21 26 59.4	
	comp=N,15nm,0.7s						
DRWC	Darouich	7.56	291	eP	Pn	21 24 21.4	+1.8
BIDA	Albida	7.58	278	eP	Pn	21 24 21.3	+1.5
BIDA				eS	Sn	21 25 43.4	-2.0
BIDA				AML	AML	21 27 07.5	
	comp=N,41nm,0.6s						
BIDA				AML	AML	21 27 13.1	
	comp=E,39nm,0.9s						
BIDA	Albida	7.58	278	eP	Pn	21 24 21.3	+1.5
BIDA				eS	Sn	21 25 43.4	-2.0
	comp=E,35nm,0.7s						
TOTH	TOTAH	7.58	266	AML	AML	21 26 49.5	
	comp=N,28nm,0.7s						
TOTH				AML	AML	21 27 12.5	
	comp=E,35nm,0.7s						
BTCH	Batrach	7.59	286	eP	Pn	21 24 21.5	+1.5
BTCH				eS	Sn	21 25 43.1	-2.5
BTCH				AML	AML	21 27 04.3	
	comp=E,49nm,0.7s						
BTCH				AML	AML	21 27 09.7	
	comp=N,37nm,0.6s						
BTCH	Batrach	7.59	286	eP	Pn	21 24 21.5	+1.5
BTCH				eS	Sn	21 25 43.1	-2.5
	comp=N,37nm,0.6s						
ARNB	Al Arnab	7.95	284	eP	Pn	21 24 26.1	+1.1
ARNB				eS	Sn	21 25 53.0	-1.5
ARNB				AML	AML	21 27 05.5	
	comp=E,21nm,0.7s						
ARNB				AML	AML	21 27 29.3	
	comp=N,22nm,0.7s						
ARNB	Al Arnab	7.95	284	eP	Pn	21 24 26.1	+1.1
ARNB				eS	Sn	21 25 53.0	-1.5
	comp=N,22nm,0.7s						
BRBR	Barbar	7.97	267	eP	Pn	21 24 26.7	+1.4
BRBR				eS	Sn	21 25 52.6	-2.5
BRBR				AML	AML	21 27 02.7	
	comp=E,29nm,0.6s						
BRBR				AML	AML	21 27 12.3	
	comp=N,38nm,0.7s						
BRBR	Barbar	7.97	267	eP	Pn	21 24 26.7	+1.4
BRBR				eS	Sn	21 25 52.6	-2.5
	comp=N,38nm,0.7s						
TCHB	Talchebab	8.10	261	eP	Pn	21 24 29.8	+2.9
TCHB				eS	Sn	21 25 55.6	-2.4
TCHB				AML	AML	21 27 09.7	
	comp=E,68nm,0.7s						
TCHB				AML	AML	21 27 13.4	
	comp=N,37nm,0.7s						
TCHB	Talchebab	8.10	261	eP	Pn	21 24 29.8	+2.9
TCHB				eS	Sn	21 25 55.6	-2.4
	comp=N,37nm,0.7s						
MMAI	Mount Meron Ar	8.49	264	Pn	Pn	21 24 33.3	+1.0
	comp=N,0.5nm,0.3s,baz=67,slow=16,SNR=4.2						
MMAI				Lg	Lg	21 27 03.1	
	comp=N,1.6nm,0.3s,baz=66,slow=26,SNR=5.7						
MMAI				LR	LR	21 28 18.8	
	comp=N,40nm,21.9s,baz=65,slow=41						
KBZ	Khabaz	9.66	349	LR	LR	21 29 31.4	
	comp=N,29nm,19.3s,baz=163,slow=44						
EIL	Elat	10.04	246	Pn	Pn	21 24 55.0	+1.4
	comp=N,0.3nm,0.3s,baz=34,slow=15,SNR=3.8						
EIL				Lg	Lg	21 27 57.5	
	comp=N,0.2nm,0.3s,baz=27,slow=18,SNR=3.5						
EIL				LR	LR	21 29 29.4	
	comp=N,53nm,18.9s,baz=62,slow=42						
GEYT	Alibeck	10.87	67	LR	LR	21 29 12.0	
	comp=N,55nm,18.6s,baz=225,slow=38						
BANOM	Banah	12.52	129	i P	Pn	21 25 26.3	-1.3
	SNR=28						
BANOM				S	Sn	21 27 37.4	-9.2
BANOM	Banah	12.52	129	P	Pn	21 25 26.1	-1.5
	SNR=7.5						
BANOM	Banah	12.52	129	Pn	Pn	21 25 26.1	-1.5
	SNR=7.5						
BANOM	Banah	12.52	129	P	Pn	21 25 26.1	-1.5
	SNR=7.5						
NAZ	Nazwa, Dubai	12.80	134	i P	Pn	21 25 30.5	-0.8
	SNR=9.2						
ASUD	Al Ashush, Dub	12.87	136	i P	Pn	21 25 32.4	+0.1
	SNR=12						
FAQ	Al Faqa, Dubai	12.94	134	P	Pn	21 25 31.1	-2.1
HATD	Hatta, Dubai	13.20	133	i P	Pn	21 25 36.2	-0.7
	SNR=5.4						
ASHO	Ashiyiah	13.26	133	i P	Pn	21 25 36.6	-1.0
	SNR=20						
ASHO	Ashiyiah	13.26	133	Pn	Pn	21 25 36.7	-1.0
	SNR=20						
ASHO	Ashiyiah	13.26	133	Pn	Pn	21 25 36.7	-1.0
	SNR=20						
ASHO	Ashiyiah	13.26	133	P	Pn	21 25 36.7	-1.0
	SNR=20						
WSAR	Wadi Sarin	15.91	130	Pn	Pn	21 26 11.6	-1.7
	comp=N,0.7nm,0.3s,baz=320,slow=4.2,SNR=19						
WSAR				Sn	Sn	21 28 54.2	-15
	comp=N,0.3nm,0.3s,baz=343,slow=11,SNR=2.7						
RBK	Rabkut	18.43	153	P	P	21 26 42.7	-2.0
	SNR=7.3						
RBK	Rabkut	18.43	153	P	P	21 26 42.7	-2.0
	SNR=7.3						
RBK	Rabkut	18.43	153	P	P	21 26 42.7	-2.0
	SNR=7.3						
AKTO	Aktyubinsk	18.59	26	P	P	21 26 45.4	-0.9
	comp=N,0.2nm,0.3s,baz=216,slow=10.0,SNR=6.3						
AKASG	Malin Array Be	20.26	329	P	P	21 27 03.9	-0.6
	comp=N,0.3nm,0.4s,baz=138,slow=9.8,SNR=3.8						
KOLS	Kolonicke sedl	22.59	317	eP	P	21 27 32.0	+2.4
KECS	Kecovo	23.39	315	eP	P	21 27 39.4	+1.6
BVAR	Borovoye Array	25.80	36	P	P	21 27 59.9	-0.1
	comp=N,1.0nm,0.8s,baz=190,slow=32,SNR=8.8						
KURBB	Kurchatov Arra	29.06	46	P	P	21 28 29.3	0.0
	comp=N,0.6nm,0.8s,baz=252,slow=9.0,SNR=7.2						
FINES	FINESS Array B	29.91	341	P	P	21 28 35.7	-0.9
	comp=N,0.6nm,0.5s,baz=142,slow=9.6,SNR=7.4						
MKAR	Makanchi Array	30.38	55	P	P	21 28 40.5	-0.5
	comp=N,0.3nm,0.7s,baz=251,slow=9.6,SNR=3.7						
ZALV	Zalesovo Beam	33.84	42	P	P	21 29 11.1	-0.2
	comp=N,0.4nm,0.3s,baz=251,slow=10,SNR=2.6						
ARCES	ARCESS Array B	37.03	348	P	P	21 29 37.8	-0.8
	comp=N,1.3nm,0.7s,baz=164,slow=8.1,SNR=14						
TORD	Torodi Ar. Bea	44.83	253	P	P	21 30 44.7	+1.3
	comp=N,0.5nm,1.1s,baz=208,slow=4.9,SNR=4.2						
CMAR	Chiang Mai Arr	49.89	94	P	P	21 31 22.1	-0.8
	comp=N,0.7nm,0.8s,baz=299,slow=8.9,SNR=7.2						
BOSA	Boshof	65.39	200	P	P	21 33 13.5	+1.7
	comp=N,2.7nm,0.8s,baz=5.7,slow=10,SNR=4.7						
ILAR	Eielson Array	80.82	5	P	P	21 34 42.2	-0.3
	comp=N,0.3nm,0.9s,baz=342,slow=5.7,SNR=3.4						

JMA 06 21:35:34.8±0.3**, 38°.25N×144°.39E, h32**km**, M3.9, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	Ofunato	2.29	292	P	Pn	21 36 11.7	+1.4
JMK	Ichinoseki	2.58	287	S	Sn	21 36 47.2	+2.6
JTH	Tanohata	2.59	311	P	Pn	21 36 16.1	+1.6
JTH				eS	Sn	21 36 46.6	+1.8
JOM	Ohasama	2.71	298	P	Pn	21 36 18.5	+2.4
JOM				S	Sn	21 36 50.1	+2.3
JMM	Marumori	2.87	263	P	Pn	21 36 19.2	+1.0
JMM				S	Sn	21 36 52.3	+0.7
JOU	Okura	2.93	273	P	Pn	21 36 21.6	+2.4
JOU				S	Sn	21 36 55.4	+2.1
JANG	Nango	3.08	314	P	Pn	21 36 22.4	+1.2
JANG				eS	Sn	21 36 58.2	+1.3
JRG	Rokugo	3.15	292	P	Pn	21 36 24.6	+2.5
JRG				eS	Sn	21 37 02.1	+3.5
JYK	Kaneyama	3.23	283	P	Pn	21 36 25.5	+2.3
JYK				eS	Sn	21 37 03.6	+3.0
JFT	Otama	3.29	258	P	Pn	21 36 25.7	+1.6
JFT				S	Sn	21 37 03.8	+1.7
JTM	Tenmabayashi	3.61	316	P	Pn	21 36 31.0	+2.6
JTM				eS	Sn	21 37 10.8	+0.9

*ISCJB **06** 21:37:58.0±0.5, 39°.13N±0°.03×40°.40E±0°.03, h6km±5km, Error ellipse: s-maj=6.2km s-min=3.6km az=25.7*
*DDA **06** 21:37:57.7, 39°.13N×40°.43E, h7km, Md2.8*
*CSEM **06** 21:37:57.7±0.1, 39°.13N×40°.40E, h5km, MD2.8, Error ellipse: s-maj=3.4km s-min=3.0km az=20.0*
*ISK **06** 21:37:57.6, 39°.12N×40°.42E, h8km, MD2.8*
ISC 06 21:37:58.0±1.0**, 39°.12N**±0°.03×**40°.40E**±0°.02**, h9**km±10km**, n26,** σ**0.34**/36**, Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BGOL	Bingol	0.25	122	i P	Pg	21 38 02.8	-0.2
BGOL				i S	Sg	21 38 06.5	+0.2
BGOL	Bingol	0.25	122	P	Pg	21 38 02.8	-0.2
BNGB	Bingˆ¶l	0.25	121	ePG	Pg	21 38 02.9	-0.2
BNGB				eSG	Sg	21 38 06.6	+0.1
BINT	Bingol	0.25	165	ePg	Pg	21 38 02.9	-0.2
BINT				eSg	Sg	21 38 06.6	0.0
BNGL	BINGOL	0.60	106	i P	Pg	21 38 10.1	+0.3
BNGL				i S	Sb	21 38 19.8	+0.2
TNCL	Tunceli-Merkez	0.67	270	i P	Pg	21 38 11.1	+0.1
TNCL				i S	Sb	21 38 20.8	-0.6
TNCL	Tunceli-Merkez	0.67	270	P	Pg	21 38 11.1	+0.1
ERZN	Erzincan	0.70	312	ePG	Pg	21 38 12.0	+0.4
ERZN				eSG	Sb	21 38 22.3	-0.1
VRTB	Varto-Mus	0.82	87	ePG	Pg	21 38 13.8	0.0
VRTB				eSG	Sb	21 38 25.2	-0.6
VRTB	Varto-Mus	0.82	87	ePg	Pg	21 38 13.8	0.0
VRTB				eSg	Sb	21 38 25.2	-0.6
PTK	Pertek	0.82	254	ePG	Pg	21 38 13.9	+0.1
PTK	Pertek	0.82	254	ePg	Pg	21 38 13.9	+0.1
KOPT	Kop Dagi	0.90	5	i P	Pg	21 38 15.0	-0.3
KOPT	Kop Dagi	0.90	5	P	Pg	21 38 15.0	-0.3
SVRC	Sivrice-ELAZID	1.13	230	ePN	Pb	21 38 20.0	+0.1
SVRC	Sivrice-ELAZID	1.13	230	ePn	Pb	21 38 20.0	+0.1
DYBB	Diyarbakir	1.18	190	ePN	Pn	21 38 20.9	0.0
DIY	Diyarbakir	1.23	187	ePn	Pn	21 38 20.9	-0.6
BAYT	Aydˆ–ntepe-Bay	1.29	351	ePN	Pb	21 38 22.6	+0.1
BAYT	Aydˆ–ntepe-Bay	1.29	351	ePn	Pb	21 38 22.6	+0.1

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
BTMN	**Batman**	**1.40**	**151**	*i* P	**Pb**	**21 38 24.4**	**0.0**
BTMN				*i* S	**Sg**	**21 38 43.9**	**+0.8**
BTMN	**Batman**	**1.40**	**151**	P	**Pb**	**21 38 24.4**	**0.0**
BTMN				S	**Sg**	**21 38 43.9**	**+0.8**
ILIC	**ilic-Erzincan**	**1.46**	**284**	*e*PN	**Pb**	**21 38 25.2**	**-0.2**
ILIC	**ilic-Erzincan**	**1.46**	**284**	*e*Pn	**Pb**	**21 38 25.3**	**-0.2**
AGRB	**Hanur-Agry**	**2.06**	**76**	*e*PN	**Pn**	**21 38 33.3**	**+0.3**
AGRB	**Hanur-Agry**	**2.06**	**76**	*e*Pn	**Pn**	**21 38 33.3**	**+0.3**

NIED ***06*** *21:43:00, 36°.40N×142°.00E, h17^{km}, Mw3.5 Best double couple: $M_0$2.13000×10^{14} NP1:ϕ_s349.00000°, δ51.00000°, λ-52.00000°. NP2:ϕ_s118.00000°, δ53.00000°, λ-127.00000°.*
IDC ***06*** *21:43:27.3±1.4, 36°.39N×142°.13E, h0^{km}, mb3.7/5, mb1 3.8/8, mb1mx3.5/58, mbtmp3.7/8, ML3.7/3, Error ellipse: s-maj=29.4km s-min=24.4km az=78.0*
ISCJB ***06*** *21:43:28.5±0.8, 36°.39N±0°.06×142°.09E±0°.07, h19^{km}, mb3.6/5, Error ellipse: s-maj=8.0km s-min=7.7km az=164.8*
JMA ***06*** *21:43:29.1±0.3, 36°.40N×141°.99E, h11^{km}, M3.7*
ISC 06 21:43:30.0±1.1**, 36°.31N**±0°.07×**142°.02E**±0°.09**, h19**^{km}**, n22,** σ**0^{s}.73**/20**, mb3.6**/5**, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**1.12**	**238**	P	**Pb**	**21 43 50.6**	**-0.2**
CHOJ				S	**Sn**	**21 44 06.0**	**+0.4**
JHO	**Hitachi**	**1.21**	**285**	P	**Pn**	**21 43 50.8**	**-1.1**
JHO				S	**Sn**	**21 44 07.2**	**-0.6**
JYT	**Yasato**	**1.48**	**267**	P	**Pn**	**21 43 55.4**	**-0.2**
JYT				S	**Sn**	**21 44 14.5**	**+0.1**
JCN	**Nagara**	**1.73**	**239**	P	**Pb**	**21 44 01.6**	**+0.5**
BSO1	**Boso 1**	**1.86**	**208**	P	**Pb**	**21 44 01.6**	**-1.5**
BSO4	**Boso 4**	**1.91**	**227**	P	**Pb**	**21 44 03.0**	**-1.0**
BSO3	**Boso 3**	**1.95**	**220**	P	**Pb**	**21 44 03.2**	**-1.5**
MJAR	**Matsushiro Arr**	**3.08**	**275**	Pn	**Pn**	**21 44 18.0**	**+0.3**
	11nm,0.3s,baz=94,slow=8.9,SNR=66						
MAT	**Matsushiro**	**3.09**	**275**	P	**Pn**	**21 44 18.1**	**+0.4**
MAT				*e*S	**Sn**	**21 44 54.0**	**-0.1**
JHJ	**Hachijo jima 2**	**3.68**	**211**	Pn	**Pn**	**21 44 26.4**	**+0.5**
	39nm,0.3s,baz=6.2,slow=10,SNR=34						
JHJ				Sn	**Sn**	**21 45 08.8**	**0.0**
	20nm,0.3s,baz=59,slow=19,SNR=4.0						
KSRS	**Korea Array**	**11.35**	**280**	Pn	Pn	21 46 13.8	+2.8
	0.2nm,0.3s,baz=94,slow=14,SNR=3.0						
H11N2	**WAKE ISLAND Hy**	**27.36**	**120**	T	T	22 17 51.3	
	baz=313,slow=75,SNR=11						
H11N1	**WAKE ISLAND Hy**	**27.37**	**120**	T	T	22 17 51.4	
	baz=313,slow=75,SNR=9.4						
H11N3	**WAKE ISLAND Hy**	**27.38**	**120**	T	T	22 17 50.5	
	baz=313,slow=75,SNR=9.3						
H11S1	**WAKE ISLAND Hy**	**28.06**	**123**	T	T	22 18 42.8	
	baz=314,slow=76,SNR=5.9						
H11S3	**WAKE ISLAND Hy**	**28.06**	**123**	T	T	22 18 51.6	
	baz=314,slow=76,SNR=6.8						
H11S2	**WAKE ISLAND Hy**	**28.07**	**123**	T	T	22 18 48.6	
	baz=314,slow=76,SNR=6.0						
SONM	**Songino Array**	**28.60**	**305**	P	**P**	**21 49 25.2**	**+0.2**
	1.4nm,0.5s,baz=106,slow=8.5,SNR=13						
ZALV	**Zalesovo Beam**	**42.76**	**313**	P	**P**	**21 51 25.8**	**-0.2**
	0.5nm,0.3s,baz=87,slow=7.5,SNR=4.3						
MKAR	**Makanchi Array**	**44.92**	**303**	P	**P**	**21 51 43.7**	**+0.3**
	0.7nm,0.7s,baz=86,slow=11,SNR=8.4						
WRA	**Warramunga Arr**	**56.42**	**189**	P	**P**	**21 53 11.3**	**+0.9**
	0.3nm,0.4s,baz=5.9,slow=7.0,SNR=7.4						
YKA	**Yellowknife Ar**	**64.18**	**30**	P	**P**	**21 54 02.8**	**-0.1**
	0.1nm,0.5s,baz=297,slow=5.8,SNR=4.0						

IDC 06 21:48:47.4±1.4**, 2°.16N**×**127°.73E, h0**^{km}**, mb3.8**/6**, mb1 4.0**/6**, mb1mx3.7**/48**, mbtmp3.9**/6**, Error ellipse: s-maj=143.3km s-min=17.3km az=68.0, Northern Molucca Sea**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**22.90**	**164**	P	P	21 53 52.0	-1.0
	3.6nm,0.6s,baz=343,slow=9.7,SNR=48						
ASAR	**Alice Springs**	**26.36**	**167**	P	P	21 54 24.4	-1.1
	1.0nm,0.3s,baz=343,slow=7.7,SNR=15						
STKA	**Stephens Creek**	**36.32**	**160**	P	P	21 55 53.5	+0.4
	0.8nm,0.5s,baz=335,slow=13,SNR=3.7						
SONM	**Songino Array**	**49.10**	**341**	P	P	21 57 37.2	+0.5
	0.5nm,0.8s,baz=152,slow=9.4,SNR=2.4						
MKAR	**Makanchi Array**	**59.41**	**325**	P	P	21 58 51.6	-0.2
	0.7nm,0.3s,baz=117,slow=7.8,SNR=19						
BVAR	**Borovoye Array**	**69.17**	**327**	P	P	21 59 56.6	+0.9
	0.4nm,0.5s,baz=108,slow=4.3,SNR=3.0						

NIED ***06*** *21:49:00, 36°.60N×143°.30E, h5^{km}, Mw3.8 Best double couple: $M_0$5.57000×10^{14} NP1:ϕ_s22.00000°, δ39.00000°, λ-75.00000°. NP2:ϕ_s183.00000°, δ53.00000°, λ-102.00000°.*
IDC ***06*** *21:49:21.9±0.7, 36°.40N×143°.44E, h0^{km}, mb3.9/13, mb1 4.1/15, mb1mx3.8/67, mbtmp3.9/15, ML3.9/2, MS2.8/6, Ms1 2.8/6, ms1mx2.6/55, Error ellipse: s-maj=21.9km s-min=16.6km az=111.0*
ISCJB ***06*** *21:49:25.2±0.4, 36°.43N±0°.03×143°.28E±0°.04, h33^{km}, mb4.1/18, MS2.9/1, Error ellipse: s-maj=4.8km s-min=4.4km az=160.4*
JMA ***06*** *21:49:26.3±0.2, 36°.55N×143°.28E, h54^{km}, M4.2*
NEIC ***06*** *21:49:27.3±2.3, 36°.42N×143°.36E, h35^{km}±8^{km}, mb4.6/5, Error ellipse: s-maj=16.1km s-min=12.1km az=128.0*
ISC 06 21:49:27.2±0.6**, 36°.44N**±0°.05×**143°.29E**±0°.07**, h35**^{km}**, n58,** σ**1^{s}.32**/65**, mb4.1**/18**, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**2.10**	**250**	P	**Pn**	**21 50 00.6**	**+0.7**
CHOJ				*e*S	**Sn**	**21 50 25.1**	**+0.3**
ONAJ	**Iwakimizuishiy**	**2.11**	**289**	P	**Pn**	**21 49 59.7**	**-0.3**
JFK	**Kawauchi**	**2.15**	**296**	P	**Pn**	**21 49 59.6**	**-0.9**
JFK				S	**Sn**	**21 50 24.3**	**-1.7**
JHO	**Hitachi**	**2.20**	**275**	P	**Pn**	**21 50 00.8**	**-0.4**
JHO				S	**Sn**	**21 50 25.9**	**-1.3**
JMM	**Marumori**	**2.45**	**306**	P	**Pn**	**21 50 03.8**	**-0.9**
JMM				S	**Sn**	**21 50 32.2**	**-1.2**
JIO	**Ouri**	**2.54**	**323**	P	**Pn**	**21 50 04.5**	**-1.3**
JIO				S	**Sn**	**21 50 32.5**	**-3.0**
BSO1	**Boso 1**	**2.59**	**227**	P	**Pn**	**21 50 06.9**	**+0.8**
JFT	**Otama**	**2.60**	**295**	P	**Pn**	**21 50 07.2**	**+0.5**
JFT				S	**Sn**	**21 50 37.2**	**+0.1**
JOU	**Okura**	**2.84**	**313**	S	**Sn**	**21 50 42.2**	**-0.9**
OFUJ	**Ofunato**	**2.93**	**335**	P	**Pn**	**21 50 09.3**	**-2.0**
JMK	**Ichinoseki**	**3.00**	**327**	P	**Pn**	**21 50 11.0**	**-1.2**
JMK				S	**Sn**	**21 50 44.2**	**-2.7**
JAG	**Ashikaga**	**3.09**	**271**	P	**Pn**	**21 50 14.3**	**+0.8**
JYK	**Kaneyama**	**3.40**	**318**	P	**Pn**	**21 50 17.2**	**-0.5**
JYK				*e*S	**Sn**	**21 50 55.6**	**-1.1**
MJAR	**Matsushiro Arr**	**4.09**	**273**	Pn	**Pn**	**21 50 27.8**	**+0.5**
	3.5nm,0.3s,baz=83,slow=9.1,SNR=20						
MJAR				LR	LR	21 52 17.4	
	comp=Z,123nm,19.1s,baz=120,slow=42						
MAJO	**Matsushiro**	**4.10**	**273**	*e*Pn	**Pn**	**21 50 29.6**	**+2.2**
MAJO				*e*Sn	Sn	21 51 07.3	-6.7
JHJ2	**Mitsune**	**4.38**	**222**	*e*Pn	**Pn**	**21 50 30.1**	**-1.0**
JHJ2				*e*Sn	**Sn**	**21 51 19.0**	**-1.9**
JHJ	**Hachijo jima 2**	**4.39**	**222**	Pn	**Pn**	**21 50 30.7**	**-0.7**
	40nm,0.3s,baz=311,slow=14,SNR=44						
JHJ				Sn	**Sn**	**21 51 19.2**	**-2.1**
	98nm,0.3s,baz=200,slow=20,SNR=12						
INU	**Inuyama**	**5.21**	**260**	*e*Pn	**Pn**	**21 50 43.4**	**+0.9**
INU				*e*Sn	**Sn**	**21 51 39.3**	**-2.1**
ERM	**Erimo**	**5.57**	**359**	*e*Pn	**Pn**	**21 50 44.6**	**-2.9**
ERM				*e*Sn	Sn	21 51 40.5	-10
CBIJ	**Chichi jima**	**9.36**	**186**	*e*Pn	**Pn**	**21 51 37.4**	**-2.2**
CBIJ				*e*Sn	Sn	21 53 12.1	-12
JNU	**Nakatsue**	**10.73**	**256**	LR	LR	21 56 32.6	
	comp=Z,46nm,20.2s,baz=130,slow=40						
JNU	**Nakatsue**	**10.73**	**256**	*e*Pn	**Pn**	**21 51 56.0**	**-2.3**
USRK	**Ussuriysk Ar.**	**11.59**	**315**	LR	LR	21 56 34.8	
	comp=Z,52nm,19.6s,baz=263,slow=37						
KSRS	**Korea Array**	**12.34**	**279**	LR	LR	21 56 37.1	
	comp=Z,50nm,19.8s,baz=69,slow=35						
KLR	**Kul'dur**	**15.31**	**330**	LR	LR	21 59 13.7	
	comp=Z,13nm,18.7s,baz=153,slow=38						
BJT	**Baijiatuau**	**21.57**	**288**	*e*P	**P**	**21 54 13.4**	**-0.2**
	6.3nm,0.6s						
TATO	**Taipei**	**21.90**	**245**	*e*P	**P**	**21 54 12.8**	**-4.5**
	279nm,1.6s						
ENH	**Enshi**	**28.80**	**268**	*e*pP	pP	21 55 27.0	-5.0
SONA0	**Songino Array**	**29.37**	**304**	*e*P	**P**	**21 55 27.9**	**+1.0**
SONM	**Songino Array**	**29.37**	**304**	P	**P**	**21 55 28.0**	**+1.0**
	0.7nm,0.8s,baz=102,slow=8.7,SNR=5.7						
BILL	**Bilibino**	**34.19**	**15**	*e*P	**P**	**21 56 09.5**	**+0.6**
	14nm,1.7s						
CMAR	**Chiang Mai Arr**	**42.82**	**257**	LR	LR	22 17 41.7	
	comp=Z,15nm,18.7s,baz=130,slow=40						
ZAA1	**Zalesovo Array**	**43.43**	**313**	*e*P	**P**	**21 57 26.8**	**+0.5**
ZAA1				*e*PP	**PcP**	**21 59 14.2**	**+0.1**
ZALV	**Zalesovo Beam**	**43.43**	**313**	P	**P**	**21 57 26.8**	**+0.5**
	0.9nm,0.5s,baz=81,slow=8.9,SNR=5.3						
ZALV				PcP	**PcP**	**21 59 14.2**	**+0.1**
	0.4nm,0.3s,baz=96,slow=2.6,SNR=3.5						
MK32	**Makanchi Array**	**45.71**	**303**	*e*P	**P**	**21 57 45.0**	**+0.3**
MKAR	**Makanchi Array**	**45.71**	**303**	P	**P**	**21 57 45.0**	**+0.3**
	0.5nm,0.7s,baz=88,slow=8.9,SNR=6.9						
KURK	**Kurchatov**	**47.48**	**309**	*e*P	**P**	**21 57 59.7**	**+1.3**
	4.2nm,0.9s						
ILAR	**Eielson Array**	**49.19**	**32**	P	**P**	**21 58 10.6**	**-0.9**
	0.8nm,0.9s,baz=268,slow=7.4,SNR=6.0						
ILB	**Eielson Array**	**49.19**	**32**	*e*P	**P**	**21 58 10.6**	**-0.9**
INK	**Inuvik**	**54.23**	**27**	P	**P**	**21 58 49.0**	**0.0**
	0.9nm,0.5s,baz=303,slow=4.5,SNR=7.0						
GSI	**Gunungsitoli**	**54.81**	**241**	*e*P	**P**	**21 58 55.2**	**+1.3**
	7.1nm,0.9s						
WR1	**Warramunga Arr**	**56.71**	**190**	*e*P	**P**	**21 59 07.2**	**-0.1**
WRA	**Warramunga Arr**	**56.71**	**190**	P	**P**	**21 59 07.2**	**-0.1**
	4.0nm,0.7s,baz=7.9,slow=7.3,SNR=24						
ABKAR	**Akbulak array**	**59.47**	**311**	*e*P	**P**	**21 59 27.7**	**+1.3**
AS31	**Alice Springs**	**60.43**	**190**	*e*P	**P**	**21 59 33.1**	**-0.1**
ASAR	**Alice Springs**	**60.43**	**190**	P	**P**	**21 59 33.1**	**-0.1**
	1.9nm,0.7s,baz=12,slow=8.6,SNR=15						
RES	**Resolute Bay**	**62.80**	**15**	P	**P**	**21 59 48.8**	**+0.3**
	1.0nm,0.8s,baz=304,slow=8.5,SNR=5.2						
YKA	**Yellowknife Ar**	**63.56**	**30**	P	**P**	**21 59 53.9**	**+0.1**
	0.4nm,0.8s,baz=300,slow=6.6,SNR=5.9						
YKB5	**Yellowknife Ar**	**63.56**	**30**	*e*P	**P**	**21 59 53.9**	**+0.1**
FIA0	**FINESS Array S**	**70.04**	**333**	*e*P	**P**	**22 00 36.1**	**+1.1**
FINES	**FINESS Array B**	**70.04**	**333**	P	**P**	**22 00 36.1**	**+1.1**
	3.1nm,1.1s,baz=55,slow=7.2,SNR=4.2						
NB2	**NORSAR Subarra**	**75.31**	**338**	P	**P**	**22 01 07.4**	**+1.0**
	comp=Z,1.9nm,0.7s,baz=39,slow=5.9						
NB200	**NORSAR Array S**	**75.31**	**338**	*e*P	**P**	**22 01 07.1**	**+0.6**
NOA	**NORSAR Array B**	**75.31**	**338**	P	**P**	**22 01 07.1**	**+0.6**
	comp=Z,1.5nm,0.7s,baz=39,slow=5.8,SNR=5.2						
AKASG	**Malin Array Be**	**75.68**	**323**	P	**P**	**22 01 09.3**	**+0.6**
	comp=Z,0.6nm,0.4s,baz=48,slow=6.1,SNR=6.9						
AKBB	**Malin Array Si**	**75.68**	**323**	*e*P	**P**	**22 01 09.3**	**+0.6**
LTX	**Lajitas**	**89.28**	**53**	*e*P	**P**	**22 02 20.1**	**0.0**
TXAR	**Lajitas Array**	**89.28**	**53**	P	**P**	**22 02 20.1**	**0.0**
	comp=Z,0.3nm,0.6s,baz=270,slow=3.6,SNR=3.7						

IDC 06 22:01:44.3±2.0**, 6°.61S**×**129°.36E, h0**^{km}**, mb3.2**/1**, mb1 3.5**/3**, mb1mx3.3**/34**, mbtmp3.3**/3**, ML3.5**/2**, Error ellipse: s-maj=118.0km s-min=31.0km az=68.0, Banda Sea**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**14.11**	**160**	Pn	Pn	22 05 04.5	-1.0
	0.2nm,0.3s,baz=339,slow=13,SNR=14						
ASAR	**Alice Springs**	**17.51**	**166**	P	P	22 05 50.7	-0.6
	0.2nm,0.3s,baz=347,slow=10,SNR=10						
MKAR	**Makanchi Array**	**67.55**	**327**	P	P	22 12 42.6	0.0
	0.1nm,0.4s,baz=117,slow=8.2,SNR=2.5						

MOS ***06*** *22:11:04.4±1.0, 53°.25N×156°.44E, h408^{km}, mb4.2/1, Error ellipse: s-maj=56.9km s-min=14.6km az=60.9*
KRSC 06 22:11:10.9±3.1**, 53°.55N**×**156°.87E, h353**^{km}±30^{km}**, ML4.2, Kamchatka Peninsula**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
GNL	**Ganaly**	**0.65**	**77**	*e*P	Pn	22 11 55.8	-0.1
GNL	**Ganaly**	**0.65**	**77**	PN	Pn	22 11 55.8	-0.1
SMAR	**Somma**	**1.19**	**103**	*e*P	Pn	22 11 59.2	+1.2
SMAR	**Somma**	**1.19**	**103**	PN	Pn	22 11 59.2	+1.2
UGLR	**Uglovaya**	**1.22**	**105**	*e*P	Pn	22 12 00.0	+2.0
SDLR	**Sedlovina**	**1.23**	**102**	*e*P	Pn	22 11 59.2	+1.1
SDLR	**Sedlovina**	**1.23**	**102**	PN	Pn	22 11 59.2	+1.1
RUS	**Russkaya**	**1.49**	**138**	*e*P	Pn	22 11 59.1	-0.2
RUS				*e*S	S	22 12 38.2	+0.1
RUS	**Russkaya**	**1.49**	**138**	PN	Pn	22 11 59.1	-0.2
RUS				S	S	22 12 38.2	+0.1
NLC	**Nalytchevo**	**1.53**	**103**	*e*S	S	22 12 39.7	+1.3
TUMR	**Tumrok**	**2.58**	**46**	*e*P	Pn	22 12 09.6	+2.7
TUMR	**Tumrok**	**2.58**	**46**	PN	Pn	22 12 09.6	+2.7
ESO	**Esso**	**2.61**	**23**	*e*P	Pn	22 12 06.6	-0.4
ESO	**Esso**	**2.61**	**23**	PN	Pn	22 12 06.6	-0.4
KMNR	**Kamenistaya**	**2.95**	**40**	*e*P	Pn	22 12 12.1	+2.1
KMNR	**Kamenistaya**	**2.95**	**40**	PN	Pn	22 12 12.1	+2.1
MKZ	**Mys Kozlova**	**3.04**	**69**	*e*P	Pn	22 12 10.8	+0.1
MKZ	**Mys Kozlova**	**3.04**	**69**	PN	Pn	22 12 10.8	+0.1
ZLN	**Zelenaya**	**3.36**	**41**	*e*P	Pn	22 12 16.0	+2.2
ZLN	**Zelenaya**	**3.36**	**41**	PN	Pn	22 12 16.0	+2.2
LGNR	**Loginova**	**3.37**	**39**	*e*P	Pn	22 12 16.1	+2.1
LGNR	**Loginova**	**3.37**	**39**	PN	Pn	22 12 16.1	+2.1
CIRR	**Tsirk**	**3.41**	**40**	*e*P	Pn	22 12 16.5	+2.2
CIRR	**Tsirk**	**3.41**	**40**	PN	Pn	22 12 16.5	+2.2
KRSR	**Krestovskiy**	**3.42**	**37**	*e*P	Pn	22 12 15.7	+1.4
KRSR	**Krestovskiy**	**3.42**	**37**	PN	Pn	22 12 15.7	+1.4
SMKR	**Semkarok**	**4.03**	**39**	*e*P	Pn	22 12 22.4	+2.1
SMKR	**Semkarok**	**4.03**	**39**	PN	Pn	22 12 22.4	+2.1
KBTR	**Krutoberegovo**	**4.35**	**50**	*e*P	Pn	22 12 23.4	-0.1
KBTR				*e*S	S	22 13 18.4	-3.8
KBTR	**Krutoberegovo**	**4.35**	**50**	PN	Pn	22 12 23.4	-0.1
BKI	**Bering**	**5.57**	**69**	*e*S	S	22 13 46.1	-0.3

NIED ***06*** *22:17:00, 37°.70N×142°.10E, h59^{km}, Mw3.6 Best double couple: $M_0$2.62000×10^{14} NP1:ϕ_s248.00000°, δ59.00000°, λ-19.00000°. NP2:ϕ_s348.00000°, δ74.00000°, λ-148.00000°.*
JMA 06 22:17:59.0±0.2**, 37°.72N**×**142°.09E, h21**^{km}±3^{km}**, M3.7, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**0.94**	**322**	P	Pb	22 18 16.2	-0.3
JIO				S	Sb	22 18 27.6	-0.9
JFK	**Kawauchi**	**1.03**	**250**	P	Pb	22 18 17.9	-0.2
JFK				S	Sb	22 18 31.3	+0.1
JMM	**Marumori**	**1.04**	**278**	P	Pb	22 18 18.0	-0.2
JMM				*e*S	Sb	22 18 31.5	+0.1
ONAJ	**Iwakimizuishiy**	**1.20**	**239**	P	Pn	22 18 20.4	-0.2
ONAJ				*e*S	Sb	22 18 35.4	-0.7
JOU	**Okura**	**1.30**	**300**	P	Pn	22 18 22.1	+0.2
JFT	**Otama**	**1.41**	**262**	P	Pb	22 18 24.3	-0.2
JFT				S	Sb	22 18 42.3	+0.3

ISCJB ***06*** *22:20:12.8±1.3, 36°.40N±0°.07×28°.83E±0°.08, h5^{km}±11^{km}, Error ellipse: s-maj=13.6km s-min=8.3km az=33.8*
DDA ***06*** *22:20:12.2, 36°.31N×28°.68E, h7^{km}, Md2.6*
CSEM ***06*** *22:20:13.8±0.6, 36°.48N×28°.83E, h8^{km}, MD2.7, Error ellipse: s-maj=17.0km s-min=7.3km az=18.0*
ISK ***06*** *22:20:14.5, 36°.64N×28°.83E, h12^{km}, MD2.7*
ISC 06 22:20:14.4±1.3**, 36°.57N**±0°.07×**28°.90E**±0°.03**, h14**^{km}±10^{km}**, n20,** σ**0^{s}.83**/28**, Dodecanese Islands**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
FETY	**Fethiye**	**0.16**	**66**	*e*PG	**Pb**	**22 20 19.4**	**+0.2**
FETY				*e*SG	**Sb**	**22 20 22.6**	**+0.2**
FETY	**Fethiye**	**0.16**	**66**	*e*Pg	**Pb**	**22 20 19.4**	**+0.2**
FETY				*e*Sg	**Sb**	**22 20 22.7**	**+0.2**
DALY	**Dalyan (Mu˜la**	**0.32**	**322**	*e*PG	**Pg**	**22 20 19.7**	**-1.2**
DALY	**Dalyan (Mu˜la**	**0.32**	**322**	*e*Pg	**Pg**	**22 20 19.7**	**-1.2**
TURN	**Turunc**	**0.39**	**322**	*i* P	**Pb**	**22 20 23.5**	**+0.5**
TURN				*i* S	**Sn**	**22 20 32.2**	**-0.4**
TURN	**Turunc**	**0.39**	**322**	P	**Pb**	**22 20 23.5**	**+0.5**
TURN				S	**Sn**	**22 20 32.2**	**-0.4**
AKAS	**Kas**	**0.66**	**120**	*i* P	**Pg**	**22 20 26.8**	**-0.6**
AKAS	**Kas**	**0.66**	**120**	P	**Pg**	**22 20 26.8**	**-0.6**
YER	**Yerkesik**	**0.75**	**319**	*e*PG	**Pg**	**22 20 27.9**	**-1.0**
YER	**Yerkesik**	**0.75**	**319**	*e*Pg	**Pg**	**22 20 28.0**	**-1.0**
ELL	**Elmali**	**0.83**	**77**	*e*PG	**Pn**	**22 20 31.8**	**0.0**
ELL	**Elmali**	**0.83**	**77**	*e*Pg	**Pn**	**22 20 31.8**	**0.0**
BDRM	**Kayabasi**	**1.27**	**293**	*i* P	**Pg**	**22 20 39.5**	**+0.7**
BDRM				*i* S	**Sb**	**22 20 53.5**	**-0.7**
BDRM	**Kayabasi**	**1.27**	**293**	P	**Pg**	**22 20 39.5**	**+0.7**
BDRM				S	**Sb**	**22 20 53.5**	**-0.7**
AYDN	**Tasoluk**	**1.36**	**324**	*i* P	**Pb**	**22 20 40.2**	**+0.5**
AYDN				*i* S	**Sg**	**22 20 60.0**	**+1.7**
AYDN	**Tasoluk**	**1.36**	**324**	P	**Pb**	**22 20 40.2**	**+0.5**
AYDN				S	**Sg**	**22 21 00.0**	**+1.7**
BODT	**Bodrum**	**1.36**	**292**	*e*PN	**Pn**	**22 20 38.3**	**-0.7**
BODT	**Bodrum**	**1.36**	**292**	*e*Pn	**Pn**	**22 20 38.3**	**-0.7**
AYDB	**Zeytinkoy-Aydi**	**1.59**	**330**	*e*PN	**Pn**	**22 20 41.9**	**-0.3**
AYDB	**Zeytinkoy-Aydi**	**1.59**	**330**	*e*Pn	**Pn**	**22 20 41.9**	**-0.3**

MEX 06 22:25:14.5±0.5**, 27°.88N**×**111°.92W, h11**^{km}±8^{km}**, MD3.6, Gulf of California**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
SRIG	**Santa Rosalia**	**0.63**	**207**	*e*P	Pg	22 25 24.7	-2.0
SRIG				*i* S	Sg	22 25 33.7	-1.2
GUYB	**Guaymas**	**0.93**	**89**	*e*P	Pg	22 25 30.1	-2.3
GUYB				*e*S	Sg	22 25 41.2	-3.3
HSIG		**1.42**	**37**	*e*P	Pn	22 25 36.6	-3.7
HSIG				*e*S	Sn	22 25 54.0	-5.0

NIED ***06*** *22:25:00, 37°.90N×141°.70E, h50^{km}, Mw4.2 Best double couple: $M_0$2.02000×10^{15} NP1:ϕ_s148.00000°, δ3.00000°, λ52.00000°. NP2:ϕ_s6.00000°, δ87.00000°, λ92.00000°.*
ISCJB ***06*** *22:25:34.7±0.7, 37°.92N±0°.04×141°.70E±0°.08, h58^{km}±5^{km}, mb4.0/24, MS3.2/7, Error ellipse: s-maj=10.4km s-min=5.2km az=18.0*
JMA ***06*** *22:25:35.4±0.1, 37°.91N×141°.67E, h48^{km}±2^{km}, M4.2*
JMA Felt II J1.
IDC ***06*** *22:25:37.6±2.0, 37°.87N×141°.62E, h70^{km}±18^{km}, mb3.7/24, mb1 3.8/30, mb1mx3.7/81, mbtmp4.0/30, MS3.1/13, Ms1 3.1/13, ms1mx2.9/59, Error ellipse: s-maj=17.5km s-min=12.8km az=81.0*
ISC 06 22:25:35.8±1.2**, 37°.92N**±0°.04×**141°.70E**±0°.08**, h52**^{km}±10^{km}**, n51,** σ**1^{s}.05**/52**, mb4.0**/24**, MS3.3**/7**, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**0.60**	**333**	P	**Pn**	**22 25 47.8**	**-0.6**
JIO				S	**Sn**	**22 25 56.2**	**-1.3**
JMM	**Marumori**	**0.72**	**266**	P	**Pn**	**22 25 49.0**	**-0.9**
JMM				S	**Sn**	**22 25 58.7**	**-1.4**
JFK	**Kawauchi**	**0.85**	**230**	P	**Pn**	**22 25 50.7**	**-1.1**
JFK				S	**Sn**	**22 26 01.6**	**-1.8**
JOU	**Okura**	**0.93**	**299**	P	**Pn**	**22 25 52.1**	**-0.6**
JOU				S	**Sn**	**22 26 04.1**	**-1.0**
JMK	**Ichinoseki**	**1.10**	**340**	P	**Pn**	**22 25 54.7**	**-0.2**
JMK				S	**Sn**	**22 26 08.1**	**-0.9**
JFT	**Otama**	**1.15**	**250**	P	**Pn**	**22 25 55.5**	**-0.2**
JFT				S	**Sn**	**22 26 10.4**	**0.0**
JYS	**Shirataka**	**1.32**	**284**	P	**Pn**	**22 25 57.6**	**-0.4**
JYS				*e*S	**Sn**	**22 26 14.9**	**+0.4**
JYK	**Kaneyama**	**1.45**	**314**	P	**Pn**	**22 25 59.5**	**-0.2**
JYK				*e*S	**Sn**	**22 26 17.4**	**-0.2**
JOM	**Ohasama**	**1.58**	**349**	P	**Pn**	**22 26 01.5**	**0.0**
JOM				S	**Sn**	**22 26 20.3**	**-0.5**
MJAR	**Matsushiro Arr**	**3.10**	**245**	P	**Pn**	**22 26 23.1**	**+0.8**
	4.3nm,0.3s,baz=64,slow=11,SNR=39						
MJAR				LR	LR	22 27 51.4	
	comp=Z,432nm,20.4s,baz=60,slow=44						
MAT	**Matsushiro**	**3.11**	**245**	P	**Pn**	**22 26 23.2**	**+0.8**
MAT				*e*S	**Sn**	**22 26 59.9**	**+1.6**
JHJ	**Hachijo jima 2**	**5.04**	**199**	P	**Pn**	**22 26 50.1**	**+1.2**
	7.1nm,0.3s,baz=137,slow=23,SNR=14						
JHJ				S	**Sn**	**22 27 44.0**	**-1.8**
	22nm,0.3s,baz=82,slow=21,SNR=4.9						
JHJ				LR	LR	22 28 49.1	
	comp=Z,71nm,20.1s,baz=82,slow=39						
USRK	**Ussuriysk Ar.**	**9.64**	**314**	P	**Pn**	**22 27 53.7**	**+1.8**
	1.2nm,0.3s,baz=119,slow=14,SNR=14						
USRK				LR	LR	22 31 14.6	
	comp=Z,145nm,21.8s,baz=143,slow=35						
JNU	**Nakatsue**	**10.03**	**245**	P	**Pn**	**22 27 59.7**	**+2.4**
	0.3nm,0.3s,baz=52,slow=12,SNR=4.2						
JNU				LR	LR	22 32 13.5	
	comp=Z,189nm,20.1s,baz=120,slow=40						
KSRS	**Korea Array**	**10.93**	**272**	P	**Pn**	**22 28 12.3**	**+2.9**
	0.2nm,0.3s,baz=84,slow=13,SNR=14						
KSRS				LR	LR	22 32 04.7	
	comp=Z,101nm,21.2s,baz=98,slow=36						
KLR	**Kul'dur**	**13.39**	**331**	P	**Pn**	**22 28 45.0**	**+1.9**
	0.1nm,0.3s,baz=337,slow=5.0,SNR=2.8						
PETK	**Petropavlovsk-**	**18.81**	**31**	LR	LR	22 36 14.5	
	comp=Z,48nm,21.9s,baz=219,slow=34						
MA2	**Magadan**	**22.44**	**12**	LR	LR	22 39 37.0	
	comp=Z,15nm,18.6s,baz=280,slow=37						
SEY	**Seymchan**	**25.88**	**11**	P	**P**	**22 31 03.0**	**+0.6**
	1.4nm,0.3s,baz=207,slow=22,SNR=4.7						
SONM	**Songino Array**	**27.49**	**302**	P	**P**	**22 31 16.8**	**-0.4**
	1.2nm,0.6s,baz=97,slow=9.0,SNR=9.7						
SONM				LR	LR	22 42 17.1	
	comp=Z,43nm,18.7s,baz=77,slow=36						
H11N2	**WAKE ISLAND Hy**	**28.42**	**123**	T	T	23 01 39.7	
	baz=316,slow=75,SNR=991						
H11N1	**WAKE ISLAND Hy**	**28.43**	**123**	T	T	23 01 46.2	
	baz=316,slow=75,SNR=636						
H11N3	**WAKE ISLAND Hy**	**28.44**	**123**	T	T	23 01 44.8	
	baz=316,slow=75,SNR=847						
H11S1	**WAKE ISLAND Hy**	**29.16**	**125**	T	T	23 02 42.3	
	baz=317,slow=76,SNR=95						
H11S3	**WAKE ISLAND Hy**	**29.16**	**125**	T	T	23 02 37.7	
	baz=317,slow=76,SNR=202						
H11S2	**WAKE ISLAND Hy**	**29.18**	**125**	T	T	23 02 38.0	
	baz=317,slow=76,SNR=139						
ZALV	**Zalesovo Beam**	**41.49**	**312**	P	**P**	**22 33 17.1**	**-0.4**
	2.6nm,0.5s,baz=86,slow=6.7,SNR=14						
CMAR	**Chiang Mai Arr**	**41.94**	**255**	P	**P**	**22 33 21.7**	**+0.1**
	0.5nm,0.3s,baz=60,slow=5.5,SNR=3.6						
MKAR	**Makanchi Array**	**43.84**	**301**	P	**P**	**22 33 36.5**	**-0.3**
	2.0nm,0.7s,baz=85,slow=9.6,SNR=25						
MKAR				LR	LR	22 54 30.8	
	comp=Z,9.9nm,19.5s,baz=7.5,slow=40						
KURBB	**Kurchatov Arra**	**45.64**	**307**	P	**P**	**22 33 50.7**	**-0.2**
	3.9nm,0.4s,baz=81,slow=8.0,SNR=63						
RAMN	**Ramite**	**47.17**	**273**	*e*P	**P**	**22 34 01.7**	**-1.8**
	6.2nm,0.5s						
ILAR	**Eielson Array**	**48.63**	**33**	P	**P**	**22 34 14.3**	**+0.3**
	0.5nm,0.8s,baz=263,slow=5.5,SNR=4.8						
HNR	**Honiara**	**50.10**	**156**	LR	LR	22 56 21.3	
	comp=Z,31nm,19.0s,baz=346,slow=37						
BVAR	**Borovoye Array**	**50.15**	**312**	P	**P**	**22 34 25.4**	**-0.4**
	0.8nm,0.4s,baz=76,slow=7.5,SNR=7.9						
AAK	**Ala-Archa**	**50.27**	**298**	P	**P**	**22 34 26.6**	**-0.5**
	1.6nm,0.7s,baz=135,slow=5.8,SNR=11						
ARU	**Arti**	**55.85**	**318**	P	**P**	**22 35 06.3**	**-1.3**
	1.4nm,0.3s,baz=67,slow=8.9,SNR=6.2						
ARU				LR	LR	23 01 21.8	
	comp=Z,31nm,18.2s,baz=56,slow=38						
WRA	**Warramunga Arr**	**57.97**	**188**	P	**P**	**22 35 22.5**	**-0.5**
	0.7nm,0.7s,baz=7.2,slow=7.3,SNR=4.9						
AKTO	**Aktyubinsk**	**58.25**	**312**	P	**P**	**22 35 23.9**	**-0.8**
	1.4nm,0.7s,baz=66,slow=9.8,SNR=3.9						
ASAR	**Alice Springs**	**61.70**	**188**	P	**P**	**22 35 49.3**	**+0.7**
	0.4nm,0.6s,baz=12,slow=5.1,SNR=3.8						
YKA	**Yellowknife Ar**	**62.93**	**30**	P	**P**	**22 35 56.8**	**+0.4**
	0.2nm,0.5s,baz=303,slow=6.7,SNR=5.5						
GEYT	**Alibeck**	**63.61**	**299**	P	**P**	**22 36 01.4**	**+0.1**
	1.7nm,0.7s,baz=35,slow=5.4,SNR=4.8						
FINES	**FINESS Array B**	**68.14**	**332**	P	**P**	**22 36 29.5**	**-0.4**
	1.8nm,0.6s,baz=38,slow=9.6,SNR=9.1						
KBZ	**Khabaz**	**70.50**	**311**	P	**P**	**22 36 44.2**	**-0.7**
	2.3nm,0.9s,baz=298,slow=6.2,SNR=4.7						
HFS	**Hagfors**	**73.37**	**336**	P	**P**	**22 37 01.2**	**-0.6**
	2.9nm,0.9s,baz=20,slow=4.6,SNR=4.0						
NOA	**NORSAR Array B**	**73.46**	**337**	P	**P**	**22 37 02.6**	**+0.2**
	1.1nm,0.8s,baz=50,slow=8.3,SNR=2.9						
AKASG	**Malin Array Be**	**73.73**	**322**	P	**P**	**22 37 03.6**	**-0.5**
	1.7nm,0.5s,baz=46,slow=6.0,SNR=12						
AKASG				LR	LR	23 09 57.4	
	comp=Z,20nm,21.7s,baz=35,slow=36						
PDAR	**Pinedale Array**	**76.89**	**46**	P	**P**	**22 37 23.3**	**+0.6**
	0.3nm,0.6s,baz=250,slow=2.6,SNR=3.2						
BRTR	**Keskin Array B**	**78.43**	**312**	P	**P**	**22 37 30.4**	**-0.8**
	0.7nm,0.6s,baz=64,slow=2.9,SNR=4.5						
MMAI	**Mount Meron Ar**	**81.64**	**305**	P	**P**	**22 37 49.4**	**+0.9**
	1.1nm,0.6s,baz=358,slow=5.8,SNR=4.0						
PPT	**Papeete**	**84.83**	**117**	LR	LR	23 06 35.0	

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
	comp=Z,41nm,21.3s,baz=288,slow=29						
TXAR	**Lajitas Array**	**89.40**	**53**	P	**P**	**22 38 27.5**	**+0.2**
	0.3nm,0.6s,baz=291,slow=2.2,SNR=5.2						

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*IDC **06** 22:26:00.9±1.7, 10°.49S×107°.33E, h0km, mb3.7/8, mb1 3.9/9, mb1mx3.6/58, mbtmp3.8/9, ML4.7/1, MS2.7/1, Ms1 2.7/1, ms1mx2.2/41, Error ellipse: s-maj=72.4km s-min=16.4km az=52.0*

*ISCJB **06** 22:26:03.8±0.4, 10°.03S±0°.05×107°.84E±0°.05, h22km, mb4.3/12, Error ellipse: s-maj=7.8km s-min=6.3km az=38.8*

*NEIC **06** 22:26:03.3±0.5, 10°.19S×107°.77E, h10km, mb4.7/2, Error ellipse: s-maj=11.6km s-min=7.3km az=209.0*

*DJA **06** 22:26:04.1±0.6, 10°S±6°×10°8E±°, h10km, M4.7/16, mB5.5/1, mb5.0/1, MLv4.5/16, Mw(mB)4.9/1*

ISC 06 22:26:05.3±0.6**, 10°.03S**±0°.05×**107°.80E**±0°.05**, h22km, n49, σ1s.56**/48**, mb4.0**/12**, 1C, South of Jawa**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
XMIS	**Christmas Isla**	**2.16**	**258**	ePn	**Pn**	**22 26 39.5**	**-0.5**
XMIS				eSn	**Sn**	**22 27 01.2**	**-5.0**
CMJI	**Cimerak**	**2.33**	**16**	P	**Pn**	**22 26 41.2**	**-1.1**
CISI	**Cisompet, Garu**	**2.46**	**0**	P	**Pn**	**22 26 42.9**	**-1.3**
CISI	**Cisompet, Garu**	**2.46**	**0**	ePn	**Pn**	**22 26 43.5**	**-0.7**
CISI				eSn	**Sn**	**22 27 11.2**	**-2.4**
CNJI	**Cibinong**	**2.79**	**346**	P	**Pn**	**22 26 47.8**	**-0.8**
KPJI	**Karang Pucung**	**2.91**	**23**	P	**Pn**	**22 26 50.9**	**+0.6**
LEM	**Lembang**	**3.19**	**357**	Pn	**Pb**	**22 27 00.7**	**-0.7**
	68nm,0.3s,baz=168,slow=4.7,SNR=26						
LEM				Sn	**Sb**	**22 27 39.4**	**-0.6**
	32nm,0.3s,baz=355,slow=19,SNR=6.6						
LEM				LR	LR	22 29 03.5	
	comp=Z,93nm,18.7s,baz=157,slow=50						
LEM	**Lembang**	**3.19**	**357**	P	**Pb**	**22 27 00.2**	**-1.2**
SKJI	**Sukabumi**	**3.25**	**338**	P	Pb	22 27 14.1	+12
UGM	**Wanagama**	**3.42**	**52**	P	**Pn**	**22 26 56.3**	**-1.0**
UGM	**Wanagama**	**3.42**	**52**	ePn	**Pn**	**22 26 57.1**	**-0.2**
UGM				eSn	**Sn**	**22 27 32.1**	**-5.1**
DBJI	**Dramaga**	**3.61**	**343**	P	**Pn**	**22 27 00.8**	**+0.8**
WOJI	**Wonogiri, Jawa**	**3.78**	**55**	P	**Pn**	**22 27 01.3**	**-1.0**
PCJI	**Pacitan**	**3.80**	**62**	P	**Pn**	**22 27 02.0**	**-0.6**
CGJI	**Cibinong**	**3.99**	**328**	P	**Pn**	**22 27 05.4**	**+0.3**
PWJI	**Pagerwojo**	**4.43**	**64**	P	**Pn**	**22 27 11.6**	**+0.4**
JAGI	**Jajag, Banyuwa**	**6.46**	**77**	P	**Pn**	**22 27 39.7**	**+0.5**
JAGI	**Jajag, Banyuwa**	**6.46**	**77**	ePn	**Pn**	**22 27 39.6**	**+0.5**
JAGI				eSn	Sn	22 28 43.7	-8.6
MNAI	**Manna**	**7.41**	**319**	ePn	**Pn**	**22 27 51.4**	**-0.8**
MNAI				eSn	Sn	22 29 07.7	-7.9
KAPI	**Kappang**	**12.85**	**68**	ePn	P	22 29 12.8	-4.6
WRA	**Warramunga Arr**	**27.42**	**114**	P	**P**	**22 31 49.2**	**-0.5**
	1.0nm,1.0s,baz=287,slow=11,SNR=5.3						
WR1	**Warramunga Arr**	**27.42**	**114**	eP	**P**	**22 31 49.2**	**-0.5**
ASAR	**Alice Springs**	**28.35**	**122**	P	**P**	**22 31 57.7**	**-0.3**
	0.2nm,0.3s,baz=305,slow=8.7,SNR=3.1						
AS31	**Alice Springs**	**28.36**	**122**	eP	**P**	**22 31 57.7**	**-0.3**
CM31	**Chiang Mai Arr**	**29.63**	**343**	eP	**P**	**22 32 10.4**	**+1.1**
CMAR	**Chiang Mai Arr**	**29.63**	**343**	P	**P**	**22 32 10.4**	**+1.1**
	0.5nm,0.4s,baz=179,slow=7.1,SNR=3.7						
SSLB	**Suanglung**	**35.99**	**21**	eP	**P**	**22 33 06.2**	**+1.4**
	13nm,1.0s						
STKA	**Stephens Creek**	**38.06**	**130**	P	**P**	**22 33 23.8**	**+1.3**
	1.5nm,0.4s,baz=312,slow=7.5,SNR=7.6						
ODAN	**Odare**	**41.68**	**332**	eP	P	22 33 56.7	+3.9
TAPN	**Taplejung**	**41.96**	**333**	eP	**P**	**22 33 56.4**	**+1.3**
	3.5nm,0.4s						
GUN	**Gumba**	**43.28**	**331**	eP	**P**	**22 34 04.9**	**-1.0**
	13nm,0.5s						
KKN	**Kakani**	**43.47**	**330**	eP	**P**	**22 34 08.6**	**+1.3**
	10.0nm,0.7s						
GKN	**Gorkha**	**43.96**	**330**	eP	**P**	**22 34 11.5**	**+0.3**
	25nm,1.1s						
KOLN	**Koldanda**	**44.29**	**329**	eP	P	22 34 17.0	+3.1
	14nm,1.1s						
PYUN	**Piuthan**	**44.87**	**328**	eP	**P**	**22 34 20.4**	**+1.9**
	21nm,0.9s						
SONA0	**Songino Array**	**57.62**	**359**	eP	**P**	**22 35 55.8**	**+2.0**
SONM	**Songino Array**	**57.62**	**359**	P	**P**	**22 35 55.8**	**+2.0**
	0.8nm,0.6s,baz=172,slow=8.5,SNR=7.7						
MCQ	**Macquarie Isla**	**59.94**	**148**	eP	**P**	**22 36 07.0**	**-2.7**
	568nm,1.9s						
TKM2	**Tokmak 2**	**60.35**	**333**	eP	**P**	**22 36 13.8**	**+0.9**
	2.7nm,0.6s						
MK32	**Makanchi Array**	**60.99**	**340**	eP	**P**	**22 36 18.3**	**+1.3**
MKAR	**Makanchi Array**	**60.99**	**340**	P	**P**	**22 36 18.3**	**+1.3**
	0.8nm,0.6s,baz=149,slow=7.8,SNR=7.3						
UOSS	**Minazif**	**61.13**	**306**	eP	**P**	**22 36 16.6**	**-1.8**
PYZ	**Puysegur Point**	**61.43**	**137**	eP	P	22 36 15.5	-4.5
	434nm,1.5s						
KURBB	**Kurchatov Arra**	**65.56**	**340**	P	**P**	**22 36 47.9**	**+0.8**
	0.3nm,0.6s,baz=150,slow=6.7,SNR=2.7						
KURK	**Kurchatov**	**65.60**	**340**	eP	**P**	**22 36 47.9**	**+0.5**
BVAR	**Borovoye Array**	**70.45**	**337**	P	**P**	**22 37 17.9**	**+0.1**
	0.5nm,0.8s,baz=120,slow=5.2,SNR=2.4						
ABKAR	**Akbulak array**	**72.41**	**329**	eP	**P**	**22 37 30.6**	**+0.9**
SYO	**Syowa Base**	**72.95**	**200**	⇑eP	**P**	**22 37 33.6**	**+0.9**
TXAR	**Lajitas Array**	**144.87**	**52**	PKPbc	**PKPdf**	**22 45 41.9**	**+0.4**
	0.6nm,0.8s,baz=277,slow=1.5,SNR=5.8						

IDC 06 22:35:19.4±7.6**, 23°.18S**×**179°.96E, h544**km±80km**, mb3.3**/5**, mb1 3.5**/5**, mb1mx3.0**/44**, mbtmp4.2**/5**, Error ellipse: s-maj=106.8km s-min=44.6km az=167.0, South of Fiji Islands**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
CTA	**Charters Tower**	**31.45**	**269**	P	P	22 40 57.5	+0.7
	5.2nm,0.4s,baz=94,slow=12,SNR=9.0						
STKA	**Stephens Creek**	**34.96**	**247**	P	P	22 41 26.9	+0.5
	0.8nm,0.2s,baz=109,slow=14,SNR=3.7						
ASAR	**Alice Springs**	**42.12**	**260**	P	P	22 42 24.1	-0.5
	1.8nm,0.7s,baz=101,slow=8.2,SNR=16						
WRA	**Warramunga Arr**	**42.43**	**265**	P	P	22 42 25.8	-1.1
	2.8nm,0.7s,baz=92,slow=8.3,SNR=21						
TXAR	**Lajitas Array**	**90.08**	**58**	P	P	22 47 21.9	0.0
	0.4nm,0.8s,baz=214,slow=8.6,SNR=3.6						
BVAR	**Borovoye Array**	**119.88**	**319**	PKP	PKPdf	22 53 06.4	-1.5
	0.2nm,0.3s,baz=108,slow=4.0,SNR=3.1						
FINES	**FINESS Array B**	**137.76**	**342**	PKP	PKPdf	22 53 40.1	-1.4
	1.8nm,1.0s,baz=77,slow=3.0,SNR=2.7						
AKASG	**Malin Array Be**	**144.35**	**328**	PKP	PKPbc	22 53 51.8	-1.7
	0.4nm,0.3s,baz=45,slow=4.2,SNR=6.3						
BRTR	**Keskin Array B**	**147.12**	**308**	PKPbc	PKPbc	22 54 01.7	-0.2
	0.5nm,0.7s,baz=77,slow=6.2,SNR=3.0						
MMAI	**Mount Meron Ar**	**147.37**	**295**	PKPbc	PKPbc	22 54 03.4	+0.7
	0.9nm,0.5s,baz=92,slow=4.3,SNR=3.6						

IDC 06 22:37:27.8±4.1**, 3°.01S**×**131°.10E, h0km, mb3.3**/2**, mb1 3.6**/3**, mb1mx3.3**/50**, mbtmp3.4**/3**, ML3.6**/1**, MS2.7**/1**, Ms1 2.7**/1**, ms1mx2.3**/20**, Error ellipse: s-maj=291.5km s-min=27.9km az=72.0, Irian Jaya region**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
KAPI	**Kappang**	**11.50**	**260**	LR	LR	22 44 30.7	
	comp=Z,43nm,20.8s,baz=87,slow=37						
WRA	**Warramunga Arr**	**17.12**	**170**	P	Pn	22 41 28.5	-0.2
	0.2nm,0.3s,baz=350,slow=11,SNR=7.0						
ASAR	**Alice Springs**	**20.71**	**173**	P	P	22 42 09.8	-0.1
	0.6nm,0.4s,baz=351,slow=11,SNR=11						
MKAR	**Makanchi Array**	**65.55**	**325**	P	P	22 48 13.3	+0.1
	0.3nm,0.8s,baz=113,slow=8.2,SNR=2.8						

JMA 06 22:41:33.0, 36°.83N×**140°.53E, h5**km±1km**, M2.7, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
JHO	**Hitachi**	**0.22**	**172**	P	Pg	22 41 37.4	+0.1
JHO				S	Sg	22 41 40.7	+0.5
ONAJ	**Iwakimizuishiy**	**0.35**	**38**	P	Pg	22 41 39.8	+0.1
ONAJ				S	Sg	22 41 44.9	+0.6
JFK	**Kawauchi**	**0.60**	**27**	P	Pg	22 41 44.3	-0.3
JFT	**Otama**	**0.70**	**347**	P	Pg	22 41 47.0	+0.5
JFT				S	Sg	22 41 56.3	+0.6
JMM	**Marumori**	**1.05**	**11**	P	Pg	22 41 52.5	-0.8
JMM				S	Sg	22 42 06.5	-0.4
MAT	**Matsushiro**	**1.89**	**262**	P	Pn	22 42 06.7	+0.8
MAT				S	Sb	22 42 31.4	-0.5

JMA 06 22:56:05.0±0.4**, 37°.82N**×**142°.57E, h0**km±4km**, M4.0, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**1.15**	**304**	P	Pb	22 56 27.5	-0.3
JMM	**Marumori**	**1.41**	**272**	P	Pn	22 56 31.2	-0.7
JFK	**Kawauchi**	**1.42**	**252**	P	Pb	22 56 32.6	+0.2
JFK				eS	Sn	22 56 51.9	+0.4
JMK	**Ichinoseki**	**1.55**	**317**	P	Pn	22 56 34.1	+0.3
JOU	**Okura**	**1.60**	**290**	P	Pb	22 56 35.0	-0.4
JOU				eS	Sg	22 56 56.9	+0.5
JOM	**Ohasama**	**1.93**	**329**	P	Pn	22 56 39.5	+0.4
JOM				eS	Sb	22 57 04.9	-0.8
JYS	**Shirataka**	**2.02**	**282**	P	Pb	22 56 41.8	-0.8
JYS				S	Sb	22 57 08.4	+0.2
JYK	**Kaneyama**	**2.06**	**303**	P	Pn	22 56 41.3	+0.5
JYK				eS	Sn	22 57 08.2	+1.1
JRG	**Rokugo**	**2.19**	**317**	P	Pb	22 56 44.1	-1.3
JYA	**Atsumi**	**2.38**	**290**	eS	Sb	22 57 17.2	-1.4

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*ISCJB **06** 23:00:17.0±0.5, 31°.25N±0°.04×115°.63W±0°.04, h8km±7km, Error ellipse: s-maj=7.8km s-min=5.1km az=20.4*

*ECX **06** 23:00:18.1±0.5, 31°.24N×115°.62W, h5km, MD3.2, ML3.4*

*MEX **06** 23:00:19.1±0.8, 31°.14N×115°.68W, h6km±21km, MD3.6*

ISC 06 23:00:16.8±1.1**, 31°.28N**±0°.03×**115°.66W**±0°.04**, h5**km±11km**, n24, σ0s.59**/39**, 3C-2D, Baja California**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
SPIG	**San Pedro Mart**	**0.29**	**145**	eP	**Pg**	**23 00 22.7**	**+0.2**
SPIG				eS	**Sg**	**23 00 26.2**	**-0.1**
SPIG	**San Pedro Mart**	**0.29**	**145**	eP	**Pg**	**23 00 22.7**	**+0.2**
SPIG				eS	**Sg**	**23 00 26.2**	**-0.1**
SPX	**San Pedro Mart**	**0.29**	**145**	⇓eP	**Pg**	**23 00 22.8**	**+0.3**
SPX				eS	**Sg**	**23 00 26.3**	**-0.1**
ECBX	**El Chinero**	**0.55**	**70**	⇑eP	**Pg**	**23 00 27.6**	**+0.3**
ECBX				eS	**Sg**	**23 00 34.7**	**+0.2**
ECBX				AML	AML	23 00 36.0	
	comp=E,2μm,0.7s						
ECBX				⇓e		23 00 36.0	
ZAX	**El Zacaton**	**0.57**	**294**	eP	**Pg**	**23 00 28.6**	**+0.8**
ZAX				eS	**Sb**	**23 00 37.4**	**-0.5**
ZAX				⇑e		23 00 42.3	
ZAX				AML	AML	23 00 42.3	
	comp=N,2μm,0.5s						
PBX	**Punta Banda**	**1.02**	**297**	eP	**Pg**	**23 00 36.5**	**+0.1**
PBX				eS	**Sb**	**23 00 51.1**	**+0.4**
CBX	**Cerro Bola**	**1.34**	**320**	eP	**Pn**	**23 00 42.1**	**-0.2**
CBX				eS	**Sn**	**23 01 00.5**	**-0.1**
CBX				AML	AML	23 01 07.7	
	comp=N,836nm,0.4s						
CBX				⇑e		23 01 07.7	
CBX	**Cerro Bola**	**1.34**	**320**	eP	**Pn**	**23 00 42.1**	**-0.2**
CBX				eS	**Sg**	**23 00 59.5**	**-0.3**
RMX	**La Rumorosa**	**1.36**	**345**	eP	**Pn**	**23 00 42.6**	**0.0**
RMX				eS	**Sn**	**23 01 01.6**	**+0.4**
IBP	**Imperial Bould**	**1.42**	**345**	Pb	**Pg**	**23 00 44.3**	**+0.3**
	baz=164,SNR=82						
IBP				S	**Sg**	**23 01 03.1**	**+0.6**
	baz=164						
TJIG	**Tijuana**	**1.44**	**323**	eP	**Pn**	**23 00 43.7**	**+0.2**
TJIG	**Tijuana**	**1.44**	**323**	eP	**Pn**	**23 00 43.7**	**+0.2**
TJIG				eS	**Sn**	**23 01 02.8**	**0.0**
BAR	**Barrett**	**1.64**	**328**	eP	**Pb**	**23 00 47.2**	**-0.3**
SWSC	**Sam W. Stewart**	**1.66**	**356**	Pb	**Pg**	**23 00 48.6**	**0.0**
	baz=175,SNR=37						
MONP2	**Monument Peak**	**1.73**	**338**	Pb	**Pb**	**23 00 49.2**	**0.0**
	baz=158,SNR=70						
MONP2				Sb	**Sg**	**23 01 12.8**	**+0.3**
	baz=158						
SDRC	**San Diego Road**	**1.81**	**323**	eP	**Pb**	**23 00 50.0**	**-0.5**
GLA	**Glamis**	**1.90**	**22**	P	**Pn**	**23 00 49.9**	**0.0**
	baz=201						
109C	**Camp Elliot, M**	**2.02**	**323**	Pb	**Pb**	**23 00 53.4**	**-0.6**
	baz=142,SNR=6.5						
109C				Sb	**Sb**	**23 01 20.2**	**+0.8**
	baz=142						
BC3	**Big Chuckawall**	**2.37**	**4**	P	**Pn**	**23 00 57.0**	**+0.5**
	baz=183						
PFO	**Pinyon Flats O**	**2.42**	**344**	P	**Pn**	**23 00 57.5**	**+0.4**
	baz=163						
PFO				Sb	**Sg**	**23 01 34.2**	**-0.3**
	baz=163						
214A	**Organ Pipe Nat**	**2.52**	**74**	P	**Pn**	**23 00 57.9**	**-0.5**
	baz=254						
MURC	**Murrieta**	**2.65**	**331**	Pb	**Pb**	**23 01 04.2**	**-0.6**
	baz=150						
MURC				Sb	**Sb**	**23 01 38.8**	**+1.1**
	baz=150						
BELC	**Belle Mtn. Jos**	**2.72**	**354**	P	**Pn**	**23 01 01.1**	**-0.3**
	baz=173						
BBRC	**Big Bear Solar**	**3.15**	**341**	Sb	**Sg**	**23 01 55.7**	**-2.4**
	baz=160						

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*IDC **06** 23:14:37.7±0.6, 27°.19N×143°.50E, h0km, mb3.9/21, mb1 4.1/22, mb1mx4.0/41, mbtmp3.9/22, ML4.0/1, MS2.8/2, Ms1 2.8/2, ms1mx2.3/49, Error ellipse: s-maj=16.7km s-min=15.0km az=113.0*

*ISCJB **06** 23:14:40.9±0.4, 27°.16N±0°.06×143°.49E±0°.05, h35km, mb4.1/27, MS2.8/1, Error ellipse: s-maj=8.8km s-min=6.0km az=163.5*

*NEIC **06** 23:14:42.8±0.3, 27°.20N×143°.45E, h35km, mb4.9/3, Error ellipse: s-maj=8.5km s-min=7.5km az=113.0*

ISC 06 23:14:42.8±0.6**, 27°.18N**±0°.09×**143°.41E**±0°.08**, h35km, n52, σ1s.05**/49**, mb4.1**/27**, Bonin Islands region**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
CBIJ	**Chichi jima**	**1.10**	**266**	Pn	**Pn**	**23 15 00.6**	**-1.0**
CBIJ				Sn	**Sn**	**23 15 15.8**	**+0.2**
JCJ	**Chichijima**	**1.10**	**266**	Pn	**Pn**	**23 15 00.6**	**-1.0**
	82nm,0.3s,baz=264,slow=22,SNR=39						
JCJ				Sn	**Sn**	**23 15 15.8**	**+0.2**
	68nm,0.3s,baz=282,slow=23,SNR=10						
MJAR	**Matsushiro Arr**	**10.32**	**336**	Pn	**Pn**	**23 17 05.8**	**-2.6**
	1.2nm,0.3s,baz=149,slow=12,SNR=9.4						
MAJO	**Matsushiro**	**10.33**	**336**	ePn	Pn	23 17 03.0	-5.5
MAT	**Matsushiro**	**10.33**	**336**	P	**Pn**	**23 17 07.8**	**-0.6**
GUMO	**Guam**	**13.59**	**174**	LR	LR	23 22 20.4	
	comp=Z,33nm,20.8s,baz=101,slow=34						
KSRS	**Korea Array**	**16.60**	**312**	Pn	Pn	23 18 28.0	-4.8
	0.6nm,0.3s,baz=315,slow=16,SNR=4.8						
KS15	**Wonju Array Si**	**16.62**	**312**	ePn	Pn	23 18 28.0	-5.0
KSAR	**Wonju Array Be**	**16.62**	**312**	Pn	Pn	23 18 28.0	-5.0
KLR	**Kul'dur**	**23.79**	**341**	P	**P**	**23 19 52.5**	**+0.4**
	1.4nm,0.8s,baz=146,slow=11,SNR=4.1						
SONA0	**Songino Array**	**35.41**	**316**	eP	**P**	**23 21 36.5**	**+1.0**
SONM	**Songino Array**	**35.41**	**316**	P	**P**	**23 21 36.5**	**+1.0**
	0.7nm,0.9s,baz=113,slow=8.0,SNR=4.4						
SONM				LR	LR	23 35 47.6	
	comp=Z,18nm,19.6s,baz=144,slow=36						
MTN	**Manton Dam**	**41.53**	**198**	eP	**P**	**23 22 25.5**	**-1.4**
	18nm,1.1s						
CM31	**Chiang Mai Arr**	**41.72**	**268**	eP	**P**	**23 22 29.8**	**+1.2**
CMAR	**Chiang Mai Arr**	**41.72**	**268**	P	**P**	**23 22 29.8**	**+1.2**
	0.4nm,0.3s,baz=92,slow=8.1,SNR=4.1						
TIXI	**Tiksi**	**45.24**	**354**	P	**P**	**23 22 56.1**	**-0.2**
	1.2nm,0.5s,baz=168,slow=1.9,SNR=4.4						
WRAB	**Tennant Creek**	**47.65**	**192**	eP	**P**	**23 23 12.9**	**-2.9**
	32nm,0.7s						
WR1	**Warramunga Arr**	**47.66**	**192**	eP	**P**	**23 23 16.2**	**+0.3**
WRA	**Warramunga Arr**	**47.66**	**192**	P	**P**	**23 23 16.2**	**+0.3**
	4.9nm,0.6s,baz=12,slow=8.4,SNR=20						
ZAA1	**Zalesovo Array**	**50.14**	**319**	eP	**P**	**23 23 34.8**	**+0.3**
ZALV	**Zalesovo Beam**	**50.14**	**319**	P	**P**	**23 23 34.8**	**+0.3**
	0.3nm,0.3s,baz=116,slow=9.8,SNR=3.3						
MK32	**Makanchi Array**	**51.26**	**310**	eP	**P**	**23 23 44.3**	**+1.1**
MKAR	**Makanchi Array**	**51.26**	**310**	P	**P**	**23 23 44.3**	**+1.1**
	0.6nm,0.8s,baz=85,slow=9.7,SNR=5.3						
AS31	**Alice Springs**	**51.38**	**191**	eP	**P**	**23 23 44.3**	**+0.1**
ASAR	**Alice Springs**	**51.38**	**191**	P	**P**	**23 23 44.3**	**+0.1**
	0.6nm,0.6s,baz=15,slow=15,SNR=11						
KURK	**Kurchatov**	**53.70**	**314**	P	**P**	**23 24 02.3**	**+1.2**
KURBB	**Kurchatov Arra**	**53.76**	**314**	P	**P**	**23 24 02.3**	**+0.8**
	1.7nm,0.5s,baz=91,slow=7.7,SNR=21						
BPAW	**Bear Paw Mtn.**	**55.26**	**29**	eP	**P**	**23 24 10.7**	**-1.6**
	28nm,2.0s						
MLY	**Manley**	**55.52**	**28**	eP	**P**	**23 24 12.7**	**-1.4**
	28nm,2.0s						
SCM	**Sheep Creek Mo**	**56.66**	**32**	eP	**P**	**23 24 21.5**	**-0.9**
	59nm,1.8s						
ILAR	**Eielson Array**	**57.11**	**29**	P	**P**	**23 24 24.2**	**-1.2**
	1.2nm,0.8s,baz=251,slow=5.9,SNR=8.0						
ILB	**Eielson Array**	**57.11**	**29**	eP	**P**	**23 24 24.2**	**-1.2**
KLU	**Klutina**	**57.30**	**33**	eP	**P**	**23 24 28.2**	**+1.2**
	16nm,1.4s						
BVAR	**Borovoye Array**	**58.72**	**317**	P	**P**	**23 24 37.3**	**+0.4**
	1.3nm,0.6s,baz=70,slow=7.6,SNR=5.5						
STKA	**Stephens Creek**	**58.76**	**182**	P	**P**	**23 24 37.0**	**-0.2**
	1.5nm,0.7s,baz=325,slow=6.3,SNR=3.3						
KKAR	**Karatay Array**	**59.92**	**306**	eP	**P**	**23 24 43.4**	**-2.0**
INK	**Inuvik**	**62.50**	**25**	P	**P**	**23 25 02.8**	**+0.5**
	0.5nm,0.5s,baz=275,slow=13,SNR=3.2						
DLBC	**Dease Lake**	**65.51**	**35**	P	**P**	**23 25 23.3**	**+0.9**
	1.5nm,0.8s,baz=320,slow=8.0,SNR=3.8						
ABKAR	**Akbulak array**	**65.82**	**314**	eP	**P**	**23 25 25.8**	**+1.3**
YKA	**Yellowknife Ar**	**71.54**	**29**	P	**P**	**23 25 59.7**	**-0.2**
	0.6nm,0.7s,baz=293,slow=6.0,SNR=9.5						
FIA0	**FINESS Array S**	**78.35**	**334**	eP	**P**	**23 26 39.5**	**+0.3**
FINES	**FINESS Array B**	**78.35**	**334**	P	**P**	**23 26 39.5**	**+0.3**
	2.9nm,1.1s,baz=78,slow=3.4,SNR=4.6						
KBZ	**Khabaz**	**78.75**	**313**	P	**P**	**23 26 42.5**	**+0.8**
	2.5nm,0.9s,baz=41,slow=4.3,SNR=5.2						
NV01	**Mina Array Sit**	**79.60**	**52**	eP	**P**	**23 26 46.4**	**-0.5**
NVAR	**Mina Array Bea**	**79.60**	**52**	P	**P**	**23 26 46.4**	**-0.5**
	0.3nm,0.4s,baz=275,slow=9.6,SNR=4.1						
AKASG	**Malin Array Be**	**83.19**	**324**	P	**P**	**23 27 05.3**	**0.0**
	0.2nm,0.3s,baz=58,slow=4.3,SNR=3.3						
AKBB	**Malin Array Si**	**83.19**	**324**	eP	**P**	**23 27 05.3**	**0.0**
PD31	**Pinedale Array**	**83.38**	**45**	eP	**P**	**23 27 06.5**	**-0.2**
PDAR	**Pinedale Array**	**83.38**	**45**	P	**P**	**23 27 06.5**	**-0.2**
	0.4nm,0.8s,baz=282,slow=4.4,SNR=3.5						
LTX	**Lajitas**	**94.67**	**54**	eP	**P**	**23 28 01.9**	**+1.1**
TXAR	**Lajitas Array**	**94.67**	**54**	P	**P**	**23 28 01.9**	**+1.1**
	0.3nm,0.6s,baz=347,slow=3.7,SNR=4.6						
LPAZ	**La Paz**	**148.84**	**76**	PKPbc	**PKPbc**	**23 34 28.0**	**-0.2**
	0.6nm,0.4s,baz=34,slow=1.6,SNR=3.0						

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*ISCJB **06** 23:16:55.2±0.6, 35°.42N±0°.04×141°.21E±0°.08, h33km, mb3.9/9, MS3.1/3, Error ellipse: s-maj=8.8km s-min=5.6km az=179.7*

*JMA **06** 23:16:55.3±0.1, 35°.42N×141°.21E, h26km±1km, M3.2*

*IDC **06** 23:16:59.8±2.7, 35°.37N×140°.94E, h59km±24km, mb3.7/9, mb1 3.8/11, mb1mx3.4/44, mbtmp3.9/11, ML3.2/2, MS2.8/4, Ms1 2.8/4, ms1mx2.6/47, Error ellipse: s-maj=32.1km s-min=13.9km az=86.0*

ISC 06 23:16:56.7±0.8**, 35°.46N**±0°.04×**141°.03E**±0°.08**, h33km, n27, σ1s.03**/21**, mb4.0**/9**, MS2.6**/3**, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.28**	**330**	P	**Pn**	**23 17 03.9**	**-0.6**
CHOJ				S	**Sn**	**23 17 09.9**	**+0.8**
KTR	**Katsuura**	**0.66**	**242**	P	**Pb**	**23 17 10.1**	**+0.1**
KTR				S	**Sb**	**23 17 19.7**	**+0.7**
BSO4	**Boso 4**	**0.74**	**231**	P	**Pb**	**23 17 11.1**	**0.0**
BSO3	**Boso 3**	**0.78**	**213**	P	**Pb**	**23 17 11.0**	**-0.8**
BSO1	**Boso 1**	**0.81**	**183**	P	**Pn**	**23 17 10.0**	**-1.3**
JYT	**Yasato**	**1.02**	**319**	P	**Pb**	**23 17 15.9**	**-0.1**
JYT				S	**Sb**	**23 17 30.2**	**+1.0**
JHO	**Hitachi**	**1.21**	**342**	P	**Pb**	**23 17 17.8**	**-1.3**
MJAR	**Matsushiro Arr**	**2.53**	**296**	P	**Pb**	**23 17 38.5**	**-3.0**
	2.9nm,0.3s,baz=96,slow=13,SNR=11						
MJAR				LR	LR	23 18 58.6	
	comp=Z,120nm,20.5s,baz=125,slow=48						
JHJ	**Hachijo jima 2**	**2.55**	**204**	P	Pb	23 17 38.0	-3.9
	24nm,0.3s,baz=74,slow=15,SNR=4.3						
JHJ				S	**Sn**	**23 18 06.0**	**+0.3**
	32nm,0.3s,baz=223,slow=21,SNR=4.3						
KLR	**Kul'dur**	**15.36**	**336**	LR	LR	23 26 18.3	
	comp=Z,63nm,18.7s,baz=132,slow=36						
PETK	**Petropavlovsk-**	**21.21**	**29**	LR	LR	23 29 43.1	
	comp=Z,23nm,21.9s,baz=148,slow=36						
MA2	**Magadan**	**24.95**	**12**	P	**P**	**23 22 18.0**	**+1.1**
	4.7nm,0.2s,baz=226,slow=5.5,SNR=5.8						
MA2				LR	LR	23 32 36.7	
	comp=Z,20nm,20.4s,baz=308,slow=37						
H11N2	**WAKE ISLAND Hy**	**27.65**	**118**	T	T	23 51 45.2	
	baz=310,slow=75,SNR=25						
H11N1	**WAKE ISLAND Hy**	**27.66**	**118**	T	T	23 51 47.7	
	baz=310,slow=75,SNR=15						
H11N3	**WAKE ISLAND Hy**	**27.67**	**118**	T	T	23 51 45.9	
	baz=310,slow=75,SNR=19						
H11S1	**WAKE ISLAND Hy**	**28.30**	**120**	T	T	23 52 29.6	
	baz=312,slow=75,SNR=90						
H11S3	**WAKE ISLAND Hy**	**28.30**	**120**	T	T	23 52 30.5	
	baz=312,slow=75,SNR=103						
H11S2	**WAKE ISLAND Hy**	**28.32**	**120**	T	T	23 52 19.2	
	baz=312,slow=75,SNR=68						
DAV	**Davao City (W)**	**31.62**	**210**	LR	LR	23 38 14.4	
	comp=Z,527nm,18.2s,baz=268,slow=40						
ZALV	**Zalesovo Beam**	**42.76**	**314**	P	**P**	**23 24 49.8**	**-1.0**
	1.3nm,0.6s,baz=95,slow=6.7,SNR=5.1						
MKAR	**Makanchi Array**	**44.71**	**303**	P	**P**	**23 25 06.9**	**+0.3**
	0.9nm,0.7s,baz=92,slow=9.1,SNR=7.7						
KURBB	**Kurchatov Arra**	**46.74**	**309**	P	**P**	**23 25 22.6**	**+0.1**
	0.8nm,0.3s,baz=84,slow=7.9,SNR=3.2						
ILAR	**Eielson Array**	**50.99**	**32**	P	**P**	**23 25 55.5**	**+0.6**
	0.4nm,0.7s,baz=274,slow=5.4,SNR=3.2						
WRA	**Warramunga Arr**	**55.46**	**188**	P	**P**	**23 26 27.9**	**-0.3**
	1.1nm,0.7s,baz=4.5,slow=7.7,SNR=6.1						
ASAR	**Alice Springs**	**59.19**	**188**	P	**P**	**23 26 54.3**	**-0.2**
	0.3nm,0.5s,baz=9.9,slow=11,SNR=3.5						
FINES	**FINESS Array B**	**70.06**	**332**	P	**P**	**23 28 05.7**	**+0.6**
	1.4nm,0.7s,baz=116,slow=4.4,SNR=4.0						
NOA	**NORSAR Array B**	**75.52**	**337**	P	**P**	**23 28 38.1**	**+0.6**
	1.2nm,0.7s,baz=28,slow=4.3,SNR=3.1						

IDC 06 23:32:36.3±1.7**, 5°.16N**×**125°.97E, h0km, mb3.5**/4**, mb1 3.6**/4**, mb1mx3.3**/47**, mbtmp3.5**/4**, Error ellipse: s-maj=165.8km s-min=26.7km az=68.0, Mindanao**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**26.27**	**162**	P	P	23 38 13.6	0.0
	0.4nm,0.6s,baz=342,slow=11,SNR=4.5						
SONM	**Songino Array**	**45.71**	**342**	P	P	23 40 59.4	0.0
	0.2nm,0.3s,baz=134,slow=6.2,SNR=2.9						
MKAR	**Makanchi Array**	**55.96**	**325**	P	P	23 42 16.5	0.0
	0.3nm,0.5s,baz=120,slow=8.0,SNR=8.0						
KURBB	**Kurchatov Arra**	**60.13**	**327**	P	P	23 42 45.3	-0.3
	0.3nm,0.6s,baz=125,slow=7.3,SNR=5.4						

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*ISCJB **06** 23:34:52.3±0.3, 28°.67S±0°.03×20°.54E±0°.03, h10km, mb4.3/22, MS3.5/3, Error ellipse: s-maj=5.1km s-min=3.7km az=160.8*

*PRE **06** 23:34:52.8±2.6, 28°.75S×20°.46E, h5km, ML4.8*

*IDC **06** 23:34:52.7±0.8, 28°.70S×20°.23E, h0km, mb4.0/13, mb1 4.2/16, mb1mx4.0/49, mbtmp4.1/16, ML3.0/3, MS3.7/5, Ms1 3.6/5, ms1mx3.2/31, Error ellipse: s-maj=24.1km s-min=18.9km az=79.0*

*NEIC **06** 23:34:53.2±0.3, 28°.72S×20°.32E, h5km, mb4.6/9, Error ellipse: s-maj=9.8km s-min=7.3km az=83.0*

ISC 06 23:34:53.9±0.5**, 28°.71S**±0°.04×**20°.48E**±0°.05**, h10km, n52, σ1s.46**/63**, mb4.4**/21**, MS3.3**/3**, South Africa**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
UPI	**Upington**	**0.77**	**63**	eP	**Pg**	**23 35 09.6**	**+0.9**
UPI				eS	**Sb**	**23 35 20.8**	**+0.9**
UPI				AML	AML	23 35 21.3	
	comp=Z,4μm,0.3s						
KOMG	**Komaggas**	**2.83**	**247**	eP	**Pn**	**23 35 39.2**	**+0.1**
KOMG				eS	**Sn**	**23 36 15.1**	**+1.8**
KOMG				AML	AML	23 36 19.0	
	comp=Z,4μm,0.6s						
SUR	**Sutherland**	**3.67**	**176**	Pn	**Pn**	**23 35 51.3**	**+0.4**
	comp=Z,1.1nm,0.3s,baz=354,slow=12,SNR=218						
SUR				Pg	**Pb**	**23 36 00.2**	**+1.3**
	comp=Z,3.1nm,0.3s,baz=349,slow=15,SNR=39						
SUR				Lg	Lg	23 36 43.9	
	comp=Z,14nm,0.3s,baz=268,slow=16,SNR=14						
SUR	**Sutherland**	**3.67**	**176**	ePn	**Pn**	**23 35 51.3**	**+0.4**
SUR				eSn	**Sn**	**23 36 35.2**	**+0.9**
BOSA	**Boshof**	**4.20**	**90**	Pn	**Pn**	**23 35 59.9**	**+1.7**
	comp=Z,1.9nm,0.3s,baz=268,slow=13,SNR=47						
BOSA				Sn	**Sn**	**23 36 47.9**	**+0.5**
	comp=Z,32nm,0.3s,baz=252,slow=13,SNR=8.6						
BOSA				Lg	Lg	23 37 04.4	
	comp=Z,111nm,0.3s,baz=0.3,slow=17,SNR=23						

Code	Station Name	Δ°	AZ°	Op	ISC	Time	Res
SWZ	**Schweizer**	**4.56**	**72**	eP	**Pn**	**23 36 03.1**	**0.0**
SWZ				eS	**Sn**	**23 36 54.4**	**-1.8**
SWZ				AML	AML	23 37 20.5	
	comp=Z,605nm,0.7s						
HVD	**Gariep Dam**	**4.76**	**115**	eP	**Pn**	**23 36 07.9**	**+2.0**
HVD				eS	**Sn**	**23 37 00.5**	**-0.7**
HVD				AML	AML	23 37 36.7	
	comp=Z,340nm,0.5s						
LBTB	**Lobatse**	**5.87**	**52**	Pn	**Pn**	**23 36 21.6**	**+0.5**
	comp=Z,12nm,0.3s,baz=244,slow=12,SNR=81						
LBTB				Sn	**Sn**	**23 37 26.0**	**-2.6**
	comp=Z,23nm,0.3s,baz=331,slow=24,SNR=8.4						
LBTB				Lg	Lg	23 37 55.5	
	comp=Z,61nm,0.3s,baz=337,slow=23,SNR=26						
LBTB				LR	LR	23 38 47.2	
	comp=Z,625nm,18.5s,baz=244,slow=39						
ELIM	**Elim**	**5.90**	**186**	eP	**Pn**	**23 36 20.6**	**-0.8**
ELIM				eS	Sn	23 37 24.3	-4.9
ELIM				AML	AML	23 38 02.4	
	comp=Z,1μm,0.5s						
PRYS	**Parys**	**6.35**	**75**	eP	**Pn**	**23 36 27.6**	**-0.2**
PRYS				eS	**Sn**	**23 37 38.7**	**-1.7**
PRYS				AML	AML	23 38 18.3	
	comp=Z,181nm,0.5s						
KSR	**Koster**	**6.38**	**65**	eP	**Pn**	**23 36 28.3**	**0.0**
KSR				eS	**Sn**	**23 37 38.3**	**-3.0**
KSR				AML	AML	23 38 13.4	
	comp=Z,84nm,0.6s						
BUFB	**Buffelsbos**	**6.54**	**147**	eP	**Pn**	**23 36 30.2**	**+0.1**
BUFB				eS	**Sn**	**23 37 40.9**	**-3.8**
BUFB				AML	AML	23 38 21.2	
	comp=Z,240nm,0.5s						
WDLM	**Western Deep L**	**6.57**	**71**	eP	**Pn**	**23 36 30.3**	**-0.5**
WDLM				eS	**Sn**	**23 37 44.3**	**-1.7**
WDLM				AML	AML	23 38 19.4	
	comp=Z,358nm,0.4s						
GRM	**Grahamstown**	**6.92**	**133**	eP	**Pn**	**23 36 35.7**	**+0.3**
GRM				eS	**Sn**	**23 37 50.8**	**-3.4**
GRM				AML	AML	23 38 40.2	
	comp=Z,192nm,0.6s						
TSUM	**Tsumeb**	**9.83**	**344**	Pn	Pn	23 37 12.5	-2.9
	comp=Z,1.8nm,0.3s,baz=170,slow=10,SNR=26						
TSUM				Sn	Sn	23 39 00.8	-5.2
	comp=Z,2.3nm,0.3s,baz=66,slow=22,SNR=11						
TSUM				Lg	Lg	23 39 54.5	
	comp=Z,14nm,0.3s,baz=54,slow=18,SNR=8.1						
TSUM	**Tsumeb**	**9.83**	**344**	ePn	**Pn**	**23 37 14.0**	**-1.5**
TSUM				eSn	Sn	23 38 57.5	-8.5
TSUM				Lg	Lg	23 39 54.5	
POGA	**Pongola**	**9.93**	**85**	eP	**Pn**	**23 37 18.6**	**+1.9**
POGA				eS	**Sn**	**23 39 04.1**	**-4.2**
POGA				AML	AML	23 40 36.5	
	comp=Z,67nm,0.6s						
MSNA	**Messina**	**10.70**	**56**	eP	**Pn**	**23 37 27.3**	**0.0**
MSNA				eS	Sn	23 39 21.5	-5.7
MSNA				AML	AML	23 40 32.9	
	comp=Z,64nm,0.6s						
LSZ	**Lusaka**	**15.15**	**30**	Pn	**Pn**	**23 38 25.6**	**-2.7**
	comp=Z,2.1nm,0.3s,baz=208,slow=12,SNR=31						
LSZ				Sn	Sn	23 41 06.4	-10
	comp=Z,0.8nm,0.3s,baz=146,slow=22,SNR=6.6						
LSZ				Lg	Lg	23 42 43.8	
	comp=Z,0.3nm,0.3s,baz=340,slow=7.9,SNR=6.2						
LSZ				LR	LR	23 44 15.9	
	comp=Z,421nm,18.5s,baz=204,slow=37						
KMBO	**Kilima Mbogo**	**31.77**	**33**	P	**P**	**23 41 20.9**	**+2.1**
	comp=Z,0.5nm,0.2s,baz=211,slow=19,SNR=3.0						
KMBO				LR	LR	23 54 22.5	
	comp=Z,270nm,18.3s,baz=88,slow=37						
KIC	**Kosan Boka**	**42.50**	**321**	eP	**P**	**23 42 49.3**	**-0.3**
	comp=Z,8.9nm,0.7s						
LIC	**Lamto**	**42.55**	**321**	eP	P	23 42 53.4	+3.4
	comp=Z,42nm,1.4s						
DBIC	**Dimbokro**	**42.82**	**321**	P	**P**	**23 42 51.2**	**-1.0**
	comp=Z,6.5nm,0.8s,baz=131,slow=11,SNR=11						
DBIC				LR	LR	23 59 20.5	
	comp=Z,34nm,18.6s,baz=137,slow=34						
DBIC	**Dimbokro**	**42.82**	**321**	eP	**P**	**23 42 51.2**	**-1.0**
	comp=Z,6.0nm,0.8s						
TIC	**Toumodi**	**42.89**	**321**	eP	**P**	**23 42 52.4**	**-0.4**
SNAA	**Sanae**	**44.88**	**190**	eP	**P**	**23 43 08.1**	**-0.1**
	comp=Z,6.0nm,1.0s						
TORD	**Torodi Ar. Bea**	**45.40**	**334**	P	**P**	**23 43 12.3**	**-0.6**
	comp=Z,4.6nm,1.0s,baz=162,slow=8.5,SNR=19						
TORD				LR	LR	00 02 06.2	
	comp=Z,34nm,18.1s,baz=265,slow=36						
TOA1	**Torodi Ar. Sit**	**45.41**	**334**	eP	**P**	**23 43 12.3**	**-0.7**
TAM	**Tamanrasset**	**53.19**	**343**	eP	**P**	**23 44 12.6**	**+0.1**
	comp=Z,6.9nm,1.3s						
QSPA	**South Pole Qui**	**61.49**	**180**	eP	**P**	**23 45 10.2**	**-0.5**
	comp=Z,21nm,1.9s						
TRQA	**Tornquist**	**67.39**	**238**	eP	**P**	**23 45 48.1**	**-1.5**
	comp=Z,25nm,1.5s						
BRTR	**Keskin Array B**	**69.18**	**11**	P	**P**	**23 46 00.8**	**+0.2**
	comp=Z,0.6nm,0.9s,baz=186,slow=7.1,SNR=4.0						
BR101	**Keskin Array S**	**69.18**	**11**	eP	**P**	**23 46 00.8**	**+0.2**
ESDC	**Sonseca Array**	**71.74**	**340**	P	**P**	**23 46 16.1**	**-0.2**
	comp=Z,1.5nm,0.7s,baz=162,slow=6.5,SNR=12						
COCO	**West Island**	**72.37**	**94**	eP	**P**	**23 46 20.0**	**-0.5**
	comp=Z,730nm,1.9s						
MLR	**Muntele Rosu**	**74.01**	**4**	P	**P**	**23 46 30.3**	**+0.7**
	comp=Z,0.5nm,0.6s,baz=285,slow=8.2,SNR=4.1						
MLR	**Muntele Rosu**	**74.01**	**4**	eP	**P**	**23 46 30.3**	**+0.7**
	comp=Z,3.8nm,0.8s						
TRI	**Trieste**	**74.32**	**355**	eP	P	23 46 28.3	-2.9
	comp=Z,8.8nm,1.3s						
GEYT	**Alibeck**	**75.08**	**30**	P	**P**	**23 46 37.5**	**+1.6**
	comp=Z,1.2nm,0.7s,baz=15,slow=2.3,SNR=4.1						
KIV	**Kislovodsk**	**75.12**	**16**	eP	**P**	**23 46 37.4**	**+1.3**
	comp=Z,9.7nm,1.3s						
KVAR	**Kislovodsk Arr**	**75.12**	**16**	P	**P**	**23 46 37.4**	**+1.3**
	comp=Z,1.5nm,0.6s,baz=153,slow=2.3,SNR=2.8						
GERES	**GERESS Array B**	**77.44**	**355**	P	**P**	**23 46 51.2**	**+2.1**
	comp=Z,0.2nm,0.4s,baz=126,slow=5.0,SNR=3.2						
AKASG	**Malin Array Be**	**79.44**	**6**	P	**P**	**23 47 00.1**	**+0.1**
	comp=Z,0.3nm,0.3s,baz=184,slow=4.9,SNR=6.1						
AKBB	**Malin Array Si**	**79.44**	**6**	eP	**P**	**23 47 00.1**	**+0.1**
LPAZ	**La Paz**	**81.16**	**256**	P	**P**	**23 47 09.4**	**-1.6**
	comp=Z,0.7nm,0.7s,baz=139,slow=11,SNR=2.9						
ABKAR	**Akbulak array**	**85.22**	**25**	eP	**P**	**23 47 31.5**	**+1.2**
ARU	**Arti**	**90.76**	**20**	P	**P**	**23 47 57.0**	**+0.3**
	comp=Z,0.4nm,0.3s,baz=193,slow=2.1,SNR=3.7						
ARU	**Arti**	**90.76**	**20**	eP	**P**	**23 47 57.0**	**+0.3**
	comp=Z,18nm,2.0s						
ZALV	**Zalesovo Beam**	**99.25**	**33**	P	**Pdif**	**23 48 37.1**	**+1.5**
	comp=Z,0.4nm,0.3s,baz=208,slow=4.9,SNR=4.0						
ZAA1	**Zalesovo Array**	**99.25**	**33**	eP	**Pdif**	**23 48 37.1**	**+1.5**
YKA	**Yellowknife Ar**	**135.40**	**332**	PKP	**PKPdf**	**23 54 13.9**	**+0.5**
	comp=Z,0.6nm,0.8s,baz=50,slow=2.1,SNR=6.4						
PDAR	**Pinedale Array**	**137.68**	**303**	PKP	**PKPdf**	**23 54 18.4**	**-0.1**
	comp=Z,0.5nm,0.8s,baz=95,slow=6.4,SNR=5.2						

*DDA **06** 23:38:20.8, 40°.25N×37°.93E, h7km, Md2.6*
*ISK **06** 23:38:20.2, 40°.18N×37°.91E, h5km, MD2.6*
*ISCJB **06** 23:38:21.3±0.5, 40°.25N±0°.03×37°.87E±0°.04, h12km±5km, Error ellipse: s-maj=5.6km s-min=4.7km az=163.9*
*CSEM **06** 23:38:21.0±0.1, 40°.25N×37°.89E, h15km, MD2.6, Error ellipse: s-maj=3.7km s-min=3.0km az=142.0*
ISC 06 23:38:21.2±1.0**, 40°.25N**±0°.03×**37°.89E**±0°.03**, h16**km±9km**, n21, σ0s.44**/33**, Turkey**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
SUSE	**Susehri**	**0.24**	**99**	i P	**Pb**	**23 38 27.2**	**-0.2**
SUSE				i S	**Sb**	**23 38 31.8**	**+0.3**
SUSE	**Susehri**	**0.24**	**99**	P	**Pb**	**23 38 27.2**	**-0.2**
SUSE				S	**Sb**	**23 38 31.8**	**+0.3**
CUZAR	**Zara_SIVAS**	**0.37**	**194**	i P	**Pg**	**23 38 28.7**	**-0.1**
CUZAR				i S	**Sg**	**23 38 34.2**	**+0.2**
CUZAR	**Zara_SIVAS**	**0.37**	**194**	P	**Pg**	**23 38 28.7**	**-0.1**
CUZAR				S	**Sg**	**23 38 34.2**	**+0.2**
RSDY	**Resadiye-TOKAT**	**0.45**	**290**	ePG	**Pg**	**23 38 30.4**	**+0.1**
RSDY				eSG	**Sb**	**23 38 37.6**	**+0.2**
RSDY	**Resadiye-TOKAT**	**0.45**	**290**	ePg	**Pg**	**23 38 30.4**	**+0.1**
RSDY				eSg	**Sb**	**23 38 37.6**	**+0.2**
ORDU	**Ordu-Boztepe**	**0.74**	**358**	i P	**Pg**	**23 38 34.9**	**-0.8**
ORDU				i S	**Sb**	**23 38 46.4**	**+0.6**
ORDU	**Ordu-Boztepe**	**0.74**	**358**	P	**Pg**	**23 38 34.9**	**-0.8**
ORDU				S	**Sb**	**23 38 46.4**	**+0.6**
SVSK	**Karacayir**	**0.76**	**245**	ePG	**Pg**	**23 38 35.1**	**-0.8**
SVSK				eSG	**Sg**	**23 38 45.9**	**0.0**
SVSK	**Karacayir**	**0.76**	**245**	ePg	**Pg**	**23 38 35.1**	**-0.8**
ESPY	**Espiye-Giresun**	**0.93**	**43**	ePG	**Pg**	**23 38 39.0**	**-0.2**
ESPY	**Espiye-Giresun**	**0.93**	**43**	ePg	**Pg**	**23 38 39.0**	**-0.2**
CUKAN	**kangal_SIVAS**	**0.98**	**199**	i P	**Pb**	**23 38 39.7**	**-0.2**
CUKAN				i S	**Sn**	**23 38 54.1**	**-0.1**
CUKAN	**kangal_SIVAS**	**0.98**	**199**	P	**Pb**	**23 38 39.7**	**-0.2**
CUKAN				S	**Sn**	**23 38 54.1**	**-0.1**
KELT	**Kelkit**	**1.05**	**95**	i P	**Pb**	**23 38 40.7**	**-0.4**
KELT				i S	**Sb**	**23 38 54.6**	**-0.2**
KELT	**Kelkit**	**1.05**	**95**	P	**Pb**	**23 38 40.7**	**-0.4**
KELT				S	**Sb**	**23 38 54.6**	**-0.2**
REFA	**Refahiye_ERZ˜**	**1.09**	**141**	i P	Pb	23 38 35.4	-6.3
REFA				i S	Sb	23 38 45.5	-10
GUMT	**Gumushane**	**1.24**	**80**	ePN	**Pn**	**23 38 44.1**	**+0.2**
GUMT	**Gumushane**	**1.24**	**80**	ePn	**Pn**	**23 38 44.1**	**+0.2**
BAYT	**Ayd˜–ntepe-Bay**	**1.73**	**84**	ePN	**Pn**	**23 38 51.5**	**+0.7**
BAYT	**Ayd˜–ntepe-Bay**	**1.73**	**84**	ePn	**Pn**	**23 38 51.5**	**+0.7**

JMA 06 23:41:33.0±0.1**, 39°.94N**×**142°.45E, h36**km±1km**, M3.6, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
JTH	**Tanohata**	**0.45**	**270**	P	Pn	23 41 42.9	+0.1
JTH				S	Sn	23 41 49.8	0.0
MIYJ	**Miyakonagasawa**	**0.61**	**233**	P	Pn	23 41 44.8	-0.4
MIYJ				S	Sn	23 41 53.2	-0.5
JANG	**Nango**	**0.84**	**301**	P	Pn	23 41 48.0	-0.3
JKZ	**Kuzumaki**	**0.86**	**273**	P	Pn	23 41 49.2	+0.6
JKZ				eS	Sn	23 42 00.3	+0.2
JOM	**Ohasama**	**1.01**	**243**	P	Pn	23 41 50.9	+0.3
JOM				eS	Sn	23 42 04.1	+0.6
OFUJ	**Ofunato**	**1.05**	**215**	P	Pn	23 41 51.3	+0.1
JTM	**Tenmabayashi**	**1.35**	**309**	P	Pn	23 41 56.2	+0.9
JTM				eS	Sn	23 42 13.2	+1.2
JMK	**Ichinoseki**	**1.37**	**224**	P	Pn	23 41 56.3	+0.7
JAH	**Hinai**	**1.41**	**281**	P	Pn	23 41 57.1	+0.9

DJA 06 23:43:25.8±0.6**, 9°S**±5°×**12°1E**±°**, h62**km±13km**, M3.6**/8**, MLv3.6**/8**, Savu Sea**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
EDFI	**Ende, Flores**	**0.58**	**53**	P	Pn	23 43 40.0	+1.1
MMRI	**Maumere**	**1.11**	**65**	P	Pn	23 43 46.0	+0.7
BASI	**Baing, Sumba**	**1.28**	**210**	P	Pn	23 43 47.8	+0.2
BATI	**Baumata**	**2.65**	**115**	P	Pn	23 44 05.5	-0.7
BSSI	**Bau Bau, Buton**	**3.03**	**346**	P	Pn	23 44 11.0	-0.3
SOEI	**Soe**	**3.08**	**102**	P	Pn	23 44 12.2	+0.1
PLAI	**Plampang**	**3.41**	**274**	P	Pn	23 44 16.6	0.0
TWSI	**Taliwang, Sumb**	**4.30**	**274**	P	Pn	23 44 28.7	-0.1

*NIED **06** 23:49:00, 37°.40N×141°.60E, h11km, Mw3.8 Best double couple: M0 6.10000×10^14 NP1: φs 241.00000°, δ19.00000°, λ-63.00000°. NP2: φs 33.00000°, δ73.00000°, λ-99.00000°.*
*IDC **06** 23:49:26.6±1.1, 37°.24N×141°.54E, h0km, mb4.0/18, mb1 4.0/21, mb1mx3.8/69, mbtmp3.9/21, ML3.2/3, MS2.7/4, Ms1 2.7/4, ms1mx2.4/53, Error ellipse: s-maj=26.0km s-min=17.2km az=168.0*
*ISCJB **06** 23:49:30.6±1.0, 37°.35N±0°.03×141°.54E±0°.05, h33km±6km, mb4.2/26, Error ellipse: s-maj=7.2km s-min=5.3km az=23.2*
*JMA **06** 23:49:30.9±0.1, 37°.38N×141°.56E, h32km±2km, M4.2*
JMA Felt II J1.
*NEIC **06** 23:49:32.3±0.3, 37°.30N×141°.48E, h35km, mb4.7/9, Error ellipse: s-maj=8.3km s-min=5.3km az=155.0*
ISC 06 23:49:31.5±1.6**, 37°.36N**±0°.04×**141°.50E**±0°.07**, h29**km±10km**, n66, σ1s.24**/67**, mb4.2**/26**, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**0.49**	**271**	P	**Pb**	**23 49 41.9**	**+0.1**
JFK				S	**Sb**	**23 49 49.5**	**+0.6**
ONAJ	**Iwakimizuishiy**	**0.61**	**245**	P	**Pn**	**23 49 43.4**	**-0.8**
JMM	**Marumori**	**0.75**	**312**	P	**Pn**	**23 49 45.3**	**-0.8**
JMM				S	**Sn**	**23 49 55.7**	**-0.8**
JFT	**Otama**	**0.94**	**280**	P	**Pb**	**23 49 49.3**	**+0.2**
JFT				S	**Sb**	**23 50 02.2**	**+1.0**
JHO	**Hitachi**	**1.05**	**225**	P	**Pn**	**23 49 49.9**	**-0.3**
JHO				S	**Sn**	**23 50 03.7**	**-0.2**
JIO	**Ouri**	**1.10**	**354**	P	**Pn**	**23 49 49.3**	**-1.5**
JIO				S	**Sn**	**23 50 02.8**	**-2.2**
JOU	**Okura**	**1.20**	**327**	P	**Pn**	**23 49 52.4**	**+0.1**
JOU				S	**Sb**	**23 50 08.4**	**-0.3**
MJAR	**Matsushiro Arr**	**2.76**	**254**	Pn	**Pn**	**23 50 11.7**	**-1.9**
	5.0nm,0.3s,baz=78,slow=15,SNR=17						
MJAR				LR	LR	23 50 50.3	
	comp=Z,26nm,19.9s,baz=70,slow=31						
MJAR				Sn	**Sb**	**23 50 51.3**	**-2.1**
	24nm,0.3s,baz=85,slow=30,SNR=8.0						
MAJO	**Matsushiro**	**2.76**	**254**	ePn	**Pn**	**23 50 14.2**	**+0.6**
MAJO				eSn	**Sn**	**23 50 44.9**	**-1.1**
MAT	**Matsushiro**	**2.76**	**254**	P	**Pn**	**23 50 16.2**	**+2.5**
MAT				S	**Sb**	**23 50 52.1**	**-1.3**
INU	**Inuyama**	**4.13**	**242**	ePn	Pn	23 50 36.2	+3.6
INU				eSn	**Sn**	**23 51 23.6**	**+3.7**
JHJ2	**Mitsune**	**4.46**	**198**	ePn	**Pn**	**23 50 38.1**	**+1.0**
JHJ2				eSn	**Sn**	**23 51 24.1**	**-3.8**
JHJ	**Hachijo jima 2**	**4.46**	**199**	Pn	Pn	23 50 33.4	-3.6
	4.7nm,0.3s,baz=72,slow=20,SNR=2.2						
JHJ				Sn	**Sn**	**23 51 27.4**	**-0.5**
	30nm,0.3s,baz=66,slow=22,SNR=6.0						
JNU	**Nakatsue**	**9.66**	**247**	LR	LR	23 55 58.4	
	comp=Z,83nm,18.4s,baz=122,slow=41						
USRK	**Ussuriysk Ar.**	**9.93**	**316**	Pn	**Pn**	**23 51 51.4**	**-0.7**
	baz=144,slow=12,SNR=2.2						
KSRS	**Korea Array**	**10.80**	**275**	Pn	**Pn**	**23 52 04.0**	**0.0**
	0.1nm,0.3s,baz=85,slow=14,SNR=4.7						
KSRS				LR	LR	23 56 00.7	
	comp=Z,58nm,19.3s,baz=92,slow=36						
KS15	**Wonju Array Si**	**10.83**	**275**	ePn	**Pn**	**23 52 04.0**	**-0.4**
KSAR	**Wonju Array Be**	**10.83**	**275**	Pn	**Pn**	**23 52 04.0**	**-0.4**
KLR	**Kul'dur**	**13.81**	**332**	LR	LR	23 58 05.3	
	comp=Z,46nm,18.5s,baz=134,slow=37						
JOW	**Kunigami**	**15.34**	**231**	ePn	**Pn**	**23 53 06.6**	**+0.8**
	168nm,1.6s						
SSLB	**Suanglung**	**22.20**	**238**	eP	**P**	**23 54 22.1**	**-3.4**
	33nm,0.7s						
SONA0	**Songino Array**	**27.66**	**303**	eP	**P**	**23 55 16.8**	**+0.1**
SONM	**Songino Array**	**27.66**	**303**	P	**P**	**23 55 16.8**	**+0.1**
	1.8nm,0.7s,baz=99,slow=9.1,SNR=13						
H11N2	**WAKE ISLAND Hy**	**28.26**	**121**	T	T	00 24 42.2	
	baz=314,slow=75,SNR=89						
H11N1	**WAKE ISLAND Hy**	**28.27**	**121**	T	T	00 24 39.4	
	baz=314,slow=75,SNR=76						
H11N3	**WAKE ISLAND Hy**	**28.28**	**121**	T	T	00 24 43.6	
	baz=314,slow=75,SNR=68						
H11S1	**WAKE ISLAND Hy**	**28.98**	**123**	T	T	00 25 35.1	
	baz=316,slow=76,SNR=73						
H11S3	**WAKE ISLAND Hy**	**28.98**	**124**	T	T	00 25 46.0	
	baz=316,slow=76,SNR=70						
H11S2	**WAKE ISLAND Hy**	**29.00**	**124**	T	T	00 25 40.8	
	baz=316,slow=76,SNR=48						
FALS	**False Pass**	**40.83**	**46**	eP	**P**	**23 57 11.7**	**+1.6**
	3μm,0.6s						
ZAA1	**Zalesovo Array**	**41.74**	**312**	eP	**P**	**23 57 18.8**	**+1.1**
ZALV	**Zalesovo Beam**	**41.74**	**312**	P	**P**	**23 57 18.8**	**+1.1**
	2.1nm,0.5s,baz=76,slow=6.3,SNR=13						
MK32	**Makanchi Array**	**44.00**	**302**	eP	**P**	**23 57 37.3**	**+1.2**
MKAR	**Makanchi Array**	**44.00**	**302**	P	**P**	**23 57 37.3**	**+1.2**
	3.0nm,0.8s,baz=88,slow=9.5,SNR=34						
MKAR	**Makanchi Array**	**44.00**	**302**	eP	**P**	**23 57 37.1**	**+1.0**
MAKZ	**Makanchi**	**44.21**	**302**	eP	**P**	**23 57 38.9**	**+1.1**
	2.8nm,0.7s						
KURK	**Kurchatov**	**45.78**	**308**	eP	**P**	**23 57 50.6**	**+0.4**
	10nm,0.9s						
KURBB	**Kurchatov Arra**	**45.85**	**308**	P	**P**	**23 57 51.1**	**+0.4**
	2.8nm,0.4s,baz=82,slow=7.9,SNR=26						
ILAR	**Eielson Array**	**49.18**	**33**	P	**P**	**23 58 17.0**	**+0.5**
	0.6nm,0.8s,baz=268,slow=6.0,SNR=4.8						
ILB	**Eielson Array**	**49.18**	**33**	eP	**P**	**23 58 17.0**	**+0.5**
TKM2	**Tokmak 2**	**49.53**	**298**	eP	**P**	**23 58 21.3**	**+1.6**
	17nm,1.4s						
VOSK	**Vostochnaya**	**50.11**	**312**	eP	**P**	**23 58 24.2**	**+0.5**
	2.3nm,0.8s						
AAK	**Ala-Archa**	**50.39**	**298**	P	**P**	**23 58 26.7**	**+0.5**
	0.7nm,0.3s,baz=146,slow=5.0,SNR=7.0						
BVAR	**Borovoye Array**	**50.40**	**312**	P	**P**	**23 58 25.6**	**-0.2**
	0.8nm,0.5s,baz=84,slow=6.7,SNR=7.7						
ZRNK	**Zerenda**	**51.23**	**312**	eP	**P**	**23 58 32.8**	**+0.6**
	3.2nm,1.1s						
ARU	**Arti**	**56.16**	**318**	P	**P**	**23 59 08.5**	**+0.4**
	2.5nm,0.4s,baz=94,slow=4.4,SNR=5.8						
WRAB	**Tennant Creek**	**57.38**	**188**	eP	**P**	**23 59 14.4**	**-2.7**
	23nm,0.7s						
ABKAR	**Akbulak array**	**57.78**	**310**	eP	**P**	**23 59 20.0**	**+0.3**
AKTO	**Aktyubinsk**	**58.51**	**312**	P	**P**	**23 59 24.9**	**+0.2**
	0.8nm,0.4s,baz=77,slow=11,SNR=5.3						
YKA	**Yellowknife Ar**	**63.49**	**30**	P	**P**	**23 59 59.2**	**+0.8**
	0.2nm,0.7s,baz=301,slow=7.1,SNR=2.7						
YKB5	**Yellowknife Ar**	**63.49**	**30**	eP	**P**	**23 59 59.2**	**+0.8**
FIA0	**FINESS Array S**	**68.56**	**332**	eP	**P**	**00 00 31.1**	**+0.1**
FINES	**FINESS Array B**	**68.56**	**332**	P	**P**	**00 00 31.1**	**+0.1**
	0.8nm,0.3s,baz=39,slow=9.4,SNR=9.0						
HFS	**Hagfors**	**73.82**	**336**	P	**P**	**00 01 03.6**	**+0.8**
	2.7nm,1.0s,baz=54,slow=7.5,SNR=4.9						
NB200	**NORSAR Array S**	**73.91**	**337**	eP	**P**	**00 01 03.2**	**-0.2**
NOA	**NORSAR Array B**	**73.91**	**337**	P	**P**	**00 01 03.2**	**-0.2**
	0.6nm,0.6s,baz=39,slow=6.1,SNR=2.8						
AKASG	**Malin Array Be**	**74.08**	**322**	P	**P**	**00 01 04.6**	**+0.1**
	1.3nm,0.4s,baz=45,slow=5.9,SNR=6.5						
AKBB	**Malin Array Si**	**74.08**	**322**	eP	**P**	**00 01 04.6**	**+0.1**
NV01	**Mina Array Sit**	**74.74**	**53**	eP	**P**	**00 01 08.8**	**-0.1**
NVAR	**Mina Array Bea**	**74.74**	**53**	P	**P**	**00 01 08.8**	**-0.1**
	0.3nm,0.3s,baz=305,slow=7.8,SNR=2.5						
PD31	**Pinedale Array**	**77.39**	**46**	eP	**P**	**00 01 24.6**	**+0.6**
PDAR	**Pinedale Array**	**77.39**	**46**	P	**P**	**00 01 24.5**	**+0.6**
	0.2nm,0.5s,baz=253,slow=0.9,SNR=2.6						
CHNC	**Chino**	**77.76**	**57**	eP	P	00 01 21.5	-4.3
GERES	**GERESS Array B**	**82.47**	**328**	P	**P**	**00 01 51.1**	**0.0**
	0.2nm,0.3s,baz=56,slow=7.5,SNR=2.5						
LTX	**Lajitas**	**89.87**	**52**	eP	**P**	**00 02 27.8**	**-0.1**
TXAR	**Lajitas Array**	**89.87**	**52**	P	**P**	**00 02 27.8**	**-0.1**
	0.2nm,0.7s,baz=302,slow=2.0,SNR=3.0						

*IDC **06** 23:49:33.1±0.4, 3°.06N×126°.86E, h0km, mb4.7/42, mb1 4.7/42, mb1mx4.7/50, mbtmp4.7/42, MS4.1/17, Ms1 4.1/17, ms1mx3.7/50, Error ellipse: s-maj=17.4km s-min=8.7km az=78.0*
*MOS **06** 23:49:36.9±1.1, 3°.11N×126°.76E, h33km, mb5.3/45, MS4.1/8, Error ellipse: s-maj=10.5km s-min=5.5km az=111.2*
*DJA **06** 23:49:38.8±0.8, 3°N±7°×12°7E±°, h10km, M4.9/15, mb5.0/15, mB5.4/7, MLv4.9/10, Mw(mB)4.8/7*
*BJI **06** 23:49:38.7, 3°.19N×126°.92E, h52km, mb4.9/52, mB5.1/41, Ms4.6/29, Ms7 4.3/31*
*ISCJB **06** 23:49:40.0±0.5, 3°.10N±0°.03×126°.96E±0°.03, h64km±5km, mb4.9/135, Error ellipse: s-maj=5.9km s-min=3.9km az=149.7*
*GCMT **06** 23:49:41.9±0.3, 3°.00N×127°.16E, h28km, MW5.0/59, Moment Tensor Solution. s41,c52; s59,c82; Duration: 0 Moment tensor: Scale 10^16 Nm; Mrr 3.78±.20; Mθθ -0.03±.12; Mφφ -3.74±.14; Mrθ 1.06±.21; Mθφ -0.94±.09; Mφr 1.27±.22; Best double couple: M0 4.21300×10^16 NP1: φs 24.00000°, δ56.00000°, λ102.00000°. NP2: φs 183.00000°, δ35.00000°, λ73.00000°. Principal axes: T 4.1850, Plg75.0000°, Azm329.0000°; N 0.0620, Plg10.0000°, Azm197.0000°; P -4.2410, Plg11.0000°, Azm105.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
*NEIC **06** 23:49:41.7±0.8, 3°.07N×126°.98E, h61km±7km, mb5.0/61 Error ellipse: s-maj=7.5km s-min=5.1km az=63.0*
*KLM **06** 23:49:45.1, 3°.47N×127°.04E, h100km, mb4.9, MS5.6*
ISC 06 23:49:40.2±0.5**, 3°.14N**±0°.04×**126°.89E**±0°.05**, h46**km±4km**, n375, σ1s.47**/384**, mb4.9**/132**, MS4.2**/32**, 23C-14D, Talaud Islands**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
SGSI	**Sangihe**	**1.46**	**292**	P	**Pn**	**23 50 05.3**	**+1.2**
TNTI	**Ternate**	**2.40**	**168**	P	**Pn**	**23 50 17.2**	**+0.2**
TNTI	**Ternate**	**2.40**	**168**	ePn	**Pn**	**23 50 15.6**	**-1.4**
TNTI				eSn	**Sn**	**23 50 45.1**	**0.0**
LBMI	**Labuha**	**3.80**	**171**	P	**Pn**	**23 50 37.6**	**+1.3**
DAV	**Davao City (W)**	**4.12**	**342**	Pn	**Pn**	**23 50 42.3**	**+1.7**
	16nm,0.3s,baz=123,slow=9.4,SNR=2.9						
DAV				Sn	Sn	23 51 37.9	+10
	102nm,0.3s,baz=271,slow=19,SNR=5.5						
DMPH	**Davao City--Mi**	**4.15**	**341**	⇑eP	Pn	23 50 47.1	+6.0
DMPH				eS	Sn	23 51 49.2	+21
KCP	**Kidapawan**	**4.24**	**335**	⇓eP	**Pn**	**23 50 43.1**	**+0.7**
SANI	**Sanana**	**5.23**	**190**	P	**Pn**	**23 50 55.6**	**-0.3**
	61nm,1.1s,1μm0.3nm						
MRSI	**Marisa**	**5.60**	**242**	P	Pn	23 51 06.5	+5.5
	286nm,0.9s,3μm0.9nm						
LUWI	**Luwuk**	**5.84**	**225**	P	Pn	23 51 09.4	+5.1
	380nm,0.9s,4μm2.0nm						
LUWI	**Luwuk**	**5.84**	**225**	ePn	Pn	23 51 07.9	+3.6
LUWI				eSg	Sn	23 52 41.1	+31
SWI	**Sorong**	**5.91**	**132**	P	**Pn**	**23 51 07.1**	**+1.9**
	124nm,1.0s,1μm0.4nm						
NLAI	**Namlea**	**6.34**	**178**	P	**Pn**	**23 51 13.3**	**+2.2**
	55nm,0.8s,0.3nm						
APSI	**Ampana**	**6.60**	**233**	P	Pn	23 51 20.0	+5.3
	375nm,1.1s,4μm1.2nm						
FAKI	**Fak Fak**	**8.06**	**138**	ePn	**Pn**	**23 51 34.0**	**-0.7**
MYLDM	**Lahad Datu**	**8.61**	**284**	⇓P	Pn	23 51 47.5	+5.3
MYLDM	**Lahad Datu**	**8.61**	**284**	ePn	Pn	23 51 47.4	+5.2
TTSI	**Tana Toraja**	**9.36**	**229**	P	Pn	23 51 58.5	+5.9
	84nm,1.1s						
SDKM	**Sandakan**	**9.98**	**285**	⇓P	Pn	23 52 05.7	+4.7
SPSI	**Sidrap Palu**	**10.02**	**225**	P	Pn	23 52 07.4	+5.8
	31nm,1.5s						
KAPI	**Kappang**	**10.79**	**221**	Pn	**Pn**	**23 52 12.5**	**+0.4**
	baz=97,slow=8.1,SNR=3.4						
KKM	**Kota Kinabalu**	**11.02**	**286**	⇓P	Pn	23 52 21.2	+5.8
KKM	**Kota Kinabalu**	**11.02**	**286**	ePn	Pn	23 52 19.5	+4.1
KBKI	**Kotabaru**	**12.48**	**239**	P	P	23 52 52.0	+6.1
MMRI	**Maumere**	**12.58**	**202**	ePn	Pn	23 52 32.1	-4.5
SOEI	**Soe**	**13.07**	**191**	ePn	**Pn**	**23 52 44.3**	**+0.8**
BATI	**Baumata**	**13.64**	**194**	Pn	**P**	**23 52 56.8**	**-2.0**
	0.2nm,0.3s,baz=287,slow=19,SNR=2.1						
GENI	**Genyem**	**14.45**	**113**	P	**P**	**23 53 09.8**	**+2.0**
SBUM	**Sibu**	**14.66**	**268**	⇓P	**P**	**23 53 09.8**	**-0.4**
SBUM	**Sibu**	**14.66**	**268**	ePn	**P**	**23 53 09.3**	**-0.9**
JAY	**Jayapura**	**14.91**	**112**	Pn	**Pn**	**23 53 09.8**	**+1.6**
	0.1nm,0.3s,baz=270,slow=20,SNR=3.5						
JAY	**Jayapura**	**14.91**	**112**	P	**P**	**23 53 16.2**	**+3.2**
PLAI	**Plampang**	**14.96**	**217**	P	**P**	**23 53 15.3**	**+1.8**
	333nm,0.8s,3μm						
TWSI	**Taliwang, Sumb**	**15.45**	**220**	P	**P**	**23 53 21.9**	**+3.0**
	131nm,1.2s						
STKI	**Sintang**	**15.70**	**259**	P	**P**	**23 53 25.0**	**+3.3**
	82nm,1.1s						
MTN	**Manton Dam**	**16.43**	**165**	P	**Pn**	**23 53 26.1**	**-1.5**
	baz=16,SNR=7.3						
MTN	**Manton Dam**	**16.43**	**165**	ePn	**Pn**	**23 53 25.7**	**-1.9**
	33nm,0.6s						
KSM	**Kuching**	**16.65**	**265**	ePn	**P**	**23 53 34.1**	**+1.9**
	40nm,0.7s						
KDU	**Kakadu**	**16.67**	**161**	P	**Pn**	**23 53 30.9**	**+0.2**
	baz=16,SNR=7.5						
JAGI	**Jajag, Banyuwa**	**17.15**	**228**	P	**P**	**23 53 42.1**	**+4.3**
JAGI	**Jajag, Banyuwa**	**17.15**	**228**	ePn	**P**	**23 53 39.7**	**+1.9**
	69nm,0.8s						
KNRA	**Kununurra**	**18.79**	**174**	P	**P**	**23 53 54.5**	**-1.3**
	baz=19						
TWG	**Pinlang**	**20.36**	**344**	eP	**P**	**23 54 10.1**	**-2.9**
	134nm,0.7s						
GUMO	**Guam**	**20.58**	**59**	LR	LR	00 01 27.8	
	comp=Z,622nm,21.2s,baz=246,slow=35						
TPUB	**Ta-pu**	**20.94**	**344**	eP	**P**	**23 54 16.7**	**-2.5**
	74nm,0.7s						
FITZ	**Fitzroy Crossi**	**21.14**	**183**	P	**P**	**23 54 20.2**	**-1.2**
	14nm,0.7s,baz=29,slow=10,SNR=17						
FITZ	**Fitzroy Crossi**	**21.14**	**183**	P	**P**	**23 54 20.2**	**-1.2**
	baz=21,SNR=9.6						
FITZ	**Fitzroy Crossi**	**21.14**	**183**	eP	**P**	**23 54 20.1**	**-1.2**
	28nm,1.0s						
SSLB	**Suanglung**	**21.32**	**345**	eP	**P**	**23 54 20.1**	**-3.1**
	33nm,0.7s						
LEM	**Lembang**	**21.63**	**243**	P	P	23 54 36.4	+9.5
	67nm,0.7s,baz=38,slow=8.6,SNR=11						
LEM				LR	LR	00 05 15.0	
	comp=Z,830nm,18.4s,baz=36,slow=44						
CISI	**Cisompet, Garu**	**21.79**	**241**	eP	**P**	**23 54 31.5**	**+3.0**
	48nm,0.6s						
YHNB	**Yeheng**	**22.06**	**347**	eP	**P**	**23 54 28.7**	**-2.6**
	42nm,0.8s						
MYKOM	**Kota Tinggi**	**23.05**	**267**	eP	**P**	**23 54 43.2**	**+1.3**
	19nm,0.8s						
QZH	**Quanzhou**	**23.11**	**341**	P	**P**	**23 54 37.6**	**-4.6**
QZH				S	**S**	**23 58 47.3**	**-2.8**

QZH LR LR
comp=Z,2μm,17.6s
COEN Coen 23.44 137 *e*P **P 23 54 43.8 -1.7**
138nm,1.8s
KTGM Kuala Trenggan 23.79 276 ⇑P **P 23 54 49.5 +0.6**
WB0 Warramunga Arr 23.93 162 P **P 23 54 47.5 -2.6**
baz=24
WRAB Tennant Creek 24.07 163 *c i*P **P 23 54 48.9 -2.5**
WRAB pmax pmax
comp=Z,115nm,1.0s
WRAB Tennant Creek 24.07 163 *e*P **P 23 54 49.5 -1.9**
comp=Z,68nm,1.1s
WR1 Warramunga Arr 24.08 163 *e*P **P 23 54 48.5 -2.9**
WR1 *e*PcP **PcP 23 58 33.0 +0.8**
WR1 *e*S **S 23 59 07.8 +1.8**
WRA Warramunga Arr 24.08 163 P **P 23 54 48.5 -2.9**
comp=Z,38nm,0.8s,baz=342,slow=10,SNR=28
WRA PcP **PcP 23 58 33.0 +0.8**
comp=Z,1.1nm,0.3s,baz=346,slow=3.0,SNR=4.8
WRA S **S 23 59 07.8 +1.8**
comp=Z,9.5nm,0.9s,baz=348,slow=18,SNR=6.1
MBWA Marble Bar 25.14 196 *e*P **P 23 55 00.9 -0.2**
comp=Z,67nm,1.0s
FRIM Kepong 25.22 271 ⇑P **P 23 55 03.0 +1.0**
CHBT CHBT 26.10 293 P **P 23 55 10.7 +0.8**
comp=Z,32nm,1.2s
SKNT Sakolnakorn 26.36 303 P **P 23 55 14.1 +1.8**
comp=Z,26nm,0.9s
QIS Mount Isa 26.65 153 P **P 23 55 14.1 -0.7**
baz=26,SNR=5.6
AS31 Alice Springs 27.50 166 *e*P **P 23 55 20.6 -1.9**
AS31 *e*PcP **PcP 23 58 40.2 +0.2**
ASAR Alice Springs 27.50 166 P **P 23 55 20.6 -1.9**
comp=Z,3.4nm,0.6s,baz=335,slow=6.6,SNR=24
ASAR PcP **PcP 23 58 40.2 +0.2**
comp=Z,2.8nm,0.8s,baz=348,slow=2.7,SNR=6.7
PSI Prapat 27.93 270 P **P 23 55 27.1 +0.6**
comp=Z,2.2nm,0.4s,baz=100,slow=12,SNR=2.1
PSI LR LR 00 08 28.9
comp=Z,719nm,19.6s,baz=94,slow=41
PSI Prapat 27.93 270 *e*P **P 23 55 27.1 +0.6**
PSI pmax pmax
comp=Z,18nm,1.3s
PSI Prapat 27.93 270 *e*P **P 23 55 27.1 +0.6**
comp=Z,18nm,1.3s
SURT Suratani 28.51 283 P **P 23 55 32.9 +1.3**
comp=Z,5.3nm,0.7s
PBKT Sadao Pong 28.75 299 P **P 23 55 35.8 +2.1**
comp=Z,19nm,1.2s,comp=Z,3μm
PKDT Phuket 28.80 281 P **P 23 55 35.3 +1.2**
comp=Z,32nm,0.7s,comp=Z,3μm
GSI Gunungsitoli 29.34 267 *e*P **P 23 55 40.2 +1.2**
comp=Z,10nm,0.8s
SRDT SRDT 29.57 294 P **P 23 55 42.7 +1.7**
comp=Z,26nm,0.7s
UTTA Uttaradit 29.62 301 P **P 23 55 41.9 +0.6**
comp=Z,2.9nm,0.8s
WHN Wuhan 29.73 338 P **P 23 55 45.3 +3.2**
WHN LR LR
comp=Z,2μm,19.1s
WHN LR LR
comp=Z,830nm,16.0s
WHN LR LR
comp=Z,2μm,20.8s
NJ2 Nanjing 29.74 346 *e*P P 23 55 36.5 -5.7
NJ2 pmax pmax
comp=Z,11nm,0.7s
JNU Nakatsue 30.06 7 P **P 23 55 43.8 -1.4**
comp=Z,15nm,0.8s,baz=198,slow=1.0,SNR=7.5
JNU Nakatsue 30.06 7 *e*P P 23 55 40.2 -4.9
comp=Z,28nm,1.0s
GYA Guiyang 30.23 322 ⇑*i*P **P 23 55 47.8 +1.0**
GYA pP sP 23 56 02.0 -2.5
GYA PP **PnPn 23 56 48.9 +3.0**
GYA PcP **PcP 23 58 46.4 -0.6**
GYA S **S 00 00 43.2 -0.2**
GYA sS sS 00 01 08.0 +4.1
GYA ScP **ScP 00 02 22.3 -3.4**
GYA ScS **ScS 00 06 17.0 -4.7**
GYA pmax pmax
comp=Z,20nm,0.7s
GYA pmax pmax
comp=Z,120nm,6.0s
GYA LR LR
comp=Z,550nm,16.1s
GYA LR LR
comp=Z,520nm,16.4s
GYA LR LR
comp=Z,540nm,16.5s
LAMP Lampang 30.75 302 P **P 23 55 52.5 +1.1**
comp=Z,37nm,0.8s
CRAI Chiangrai 30.93 305 P **P 23 55 52.8 -0.2**
comp=Z,6.5nm,1.2s
CM31 Chiang Mai Arr 31.31 301 *e*P **P 23 55 56.2 0.0**
CM31 *e*PcP **PcP 23 58 51.9 +2.0**
CMAR Chiang Mai Arr 31.31 301 P **P 23 55 56.2 0.0**
comp=Z,5.0nm,0.7s,baz=114,slow=6.8,SNR=18
CMAR PcP **PcP 23 58 51.9 +2.0**
comp=Z,0.8nm,0.3s,baz=163,slow=1.4,SNR=6.3
CMAR LR LR 00 08 41.6
comp=Z,94nm,20.9s,baz=125,slow=37
CMMT Chiang Mai 31.46 302 P **P 23 55 57.4 -0.2**
comp=Z,14nm,1.3s
CHTO Chiang Mai 31.46 302 P **P 23 55 57.4 -0.3**
comp=Z,60nm,1.4s
CHTO Chiang Mai 31.46 302 *e*P **P 23 55 57.3 -0.3**
CHTO pmax pmax
comp=Z,9.0nm,0.8s
CHTO Chiang Mai 31.46 302 *e*P **P 23 55 57.3 -0.3**
comp=Z,8.9nm,0.8s
ENH Enshi 31.62 330 *e*P **P 23 55 59.1 +0.2**
comp=Z,14nm,0.8s
CMAI Chiengmai2 31.88 304 P **P 23 56 03.8 +2.3**
comp=Z,72nm,0.8s
KMI Kunming 31.91 315 P **P 23 56 01.1 -0.6**
KMI pP sP 23 56 19.4 -0.1
KMI sP pP 23 56 25.7 +12
KMI S **S 00 01 07.2 -2.7**
KMI SS **SnSn 00 03 05.1 +3.6**
KMI pmax pmax
comp=Z,7.0nm,0.7s
KMI pmax pmax
comp=Z,59nm,5.5s
KMI LR LR
comp=Z,260nm,19.4s
KMI LR LR
comp=Z,270nm,22.7s
KMI LR LR
comp=Z,370nm,25.8s
MHMT Maesarieng 32.06 300 P **P 23 56 03.8 +0.9**
comp=Z,13nm,0.7s
JHJ Hachijo jima 2 32.18 21 LR LR 00 09 15.7
comp=Z,141nm,18.5s,baz=232,slow=37
INU Inuyama 33.40 15 *e*P **P 23 56 14.2 -0.2**
comp=Z,21nm,1.0s
MORW Morawa 33.67 197 P **P 23 56 16.1 -0.7**
baz=34
KSRS Korea Array 34.16 1 P **P 23 56 21.7 +0.7**
comp=Z,4.5nm,0.8s,baz=178,slow=10,SNR=17
MAJO Matsushiro 34.84 16 P **P 23 56 28.0 +1.1**
MAJO pmax pmax
comp=Z,56nm,1.0s
MJAR Matsushiro Arr 34.84 16 P **P 23 56 25.4 -1.5**
comp=Z,2.9nm,0.6s,baz=182,slow=9.8,SNR=7.6
MJAR PcP **PcP 23 58 59.5 +0.2**
comp=Z,1.1nm,0.4s,baz=185,slow=2.2,SNR=5.1
MJAR LR LR 00 09 01.2
comp=Z,276nm,20.1s,baz=190,slow=33
BLDU Ballidu 34.94 195 P **P 23 56 26.7 -1.1**
baz=35
XAN Xi'an 35.01 333 P P 23 56 23.5 -5.0
XAN Xi'an 35.01 333 pP pP 23 56 38.0 -2.8
XAN Xi'an 35.01 333 sP sP 23 56 44.5 -1.8
XAN Xi'an 35.01 333 PP PP 23 57 39.5 -9.1
XAN pmax pmax
comp=Z,4.0nm,1.1s
XAN pmax pmax
comp=Z,39nm,4.1s
XAN LR LR
comp=N,290nm,19.7s
XAN LR LR
comp=E,360nm,23.2s
XAN LR LR
comp=Z,440nm,20.8s
CD2 Chengdu 35.21 324 P **P 23 56 28.2 -2.0**
CD2 pP pP 23 56 42.4 -0.2
CD2 PP **PnPn 23 57 49.5 +0.3**
CD2 S **S 00 01 59.6 -1.1**
CD2 sS sS 00 02 24.2 +2.9
CD2 pmax pmax
comp=Z,20nm,0.6s
CD2 pmax pmax
comp=Z,120nm,5.9s
CD2 LR LR
comp=Z,430nm,22.6s
CD2 LR LR
comp=Z,530nm,19.0s
EIDS Eidsvold 36.79 142 *e*P **P 23 56 42.3 -1.5**
comp=Z,21nm,0.9s
BBOO Buckleboo 36.79 167 *e*P **P 23 56 42.1 -1.5**
comp=Z,21nm,1.0s
STKA Stephens Creek 37.52 159 P **P 23 56 48.3 -1.6**
comp=Z,22nm,0.7s,baz=341,slow=7.5,SNR=54
STKA PcP **PcP 23 59 08.0 +0.6**
comp=Z,7.2nm,0.7s,baz=346,slow=7.6,SNR=3.5
STKA LR LR 00 14 48.6
comp=Z,288nm,18.2s,baz=334,slow=40
BJT Baijiatuan 37.98 347 *e*P **P 23 56 54.6 +1.0**
BJT pmax pmax
comp=Z,40nm,0.9s
BJT Baijiatuan 37.98 347 *e*P **P 23 56 54.6 +1.0**
comp=Z,40nm,0.9s
SNY Shenyang 38.63 356 ⇑P **P 23 56 59.5 +0.4**
SNY pmax pmax
comp=Z,20nm,1.2s
SNY pmax pmax
comp=Z,290nm,4.1s
SNY LR LR
comp=Z,360nm,22.9s
SNY LR LR
comp=Z,250nm,15.6s
SNY LR LR
comp=Z,390nm,24.4s
CMSA Cobar Meteorol 38.85 154 P **P 23 57 00.7 -0.3**
baz=39
LZH Lanzhou 39.09 330 *e*P **P 23 57 04.7 +1.5**
LZH pP sP 23 57 18.5 -2.6
LZH PP **PnPn 23 58 39.0 +2.7**
LZH pmax pmax
comp=Z,32nm,1.1s
LZH pmax pmax
comp=Z,150nm,5.5s
LZH LR LR
comp=Z,2μm,17.3s
LZH LR LR
comp=Z,660nm,16.4s
LZH LR LR
comp=Z,710nm,18.0s
HHC Hu-ho-hao-te 40.01 342 *e*P **P 23 57 09.0 -1.7**
HHC S S 00 03 05.9 -7.3
HHC pmax pmax
comp=Z,43nm,1.1s
HHC pmax pmax
comp=Z,120nm,6.0s
HHC LR LR
comp=Z,310nm,15.3s
HHC LR LR
comp=Z,410nm,15.7s
HHC LR LR
comp=Z,380nm,14.9s
ARMA Armidale 40.89 146 *e*P **P 23 57 17.2 -0.9**
comp=Z,126nm,2.0s
USRK Ussuriysk Ar. 41.14 6 P **P 23 57 20.6 +0.8**
comp=Z,6.1nm,0.7s,baz=199,slow=6.9,SNR=14
USRK LR LR 00 12 47.0
comp=Z,156nm,21.4s,baz=171,slow=34
MDJ Mudanjiang 41.38 3 P **P 23 57 22.0 +0.2**
MDJ pmax pmax
comp=Z,13nm,1.0s
MDJ pmax pmax
comp=Z,100nm,3.8s
MDJ Mudanjiang 41.38 3 *e*P **P 23 57 23.0 +1.2**
comp=Z,28nm,0.8s
LSA Lhasa 42.95 312 P **P 23 57 36.0 +0.6**
LSA pmax pmax
comp=Z,19nm,0.6s
LSA Lhasa 42.95 312 *e*P **P 23 57 36.2 +0.8**
LSA pmax pmax
comp=Z,12nm,0.8s
LSA Lhasa 42.95 312 *e*P **P 23 57 36.2 +0.8**
comp=Z,12nm,0.8s
GTA Gaotai 43.68 329 *e*P **P 23 57 40.1 -0.7**
GTA pP pP 23 57 53.2 -0.2
GTA sP sP 23 58 01.0 +2.2
GTA PcP **PcP 23 59 28.9 +1.5**
GTA S **S 00 04 06.6 -1.1**
GTA sS sS 00 04 33.0 +4.2
GTA SS SS 00 07 14.5 -10
GTA pmax pmax
comp=Z,5.0nm,0.9s
GTA pmax pmax
comp=Z,91nm,5.0s
GTA LR LR
comp=Z,260nm,22.8s
GTA LR LR
comp=Z,460nm,22.8s
GTA LR LR
comp=Z,500nm,22.8s
YUK Yuzh-Kuril'sk 44.05 20 *e*P **P 23 57 42.2 -1.3**
YUK *e* 23 59 22.6
YUK *e*PPP PPP 00 00 07.1
YUK *e*S **S 00 04 08.3 -4.3**
YUK *e*SS **ScS 00 07 40.7 +2.4**
YUK pmax pmax
comp=Z,149nm,1.5s
YUK MLR MLR
comp=Z,269nm,19.0s
TAPN Taplejung 44.49 307 *e*P **P 23 57 47.4 -0.3**
comp=Z,31nm,0.7s
ODAN Odare 44.54 306 *e*P **P 23 57 46.5 -1.5**
comp=Z,46nm,0.6s
RAMN Ramite 45.22 306 *e*P **P 23 57 52.7 -0.7**
comp=Z,46nm,0.8s
HABR Khabarovsk 45.71 8 *e*P **P 23 57 55.0 -1.6**
HABR *e**PP **pP 23 58 08.5 -0.7**
HABR *e* 23 59 32.0
HABR *e* 23 59 43.0
HABR *e*S **S 00 04 35.2 -1.2**
HABR *e* 00 04 57.9
HABR *e* 00 07 46.2
HABR *e*SSS SSS 00 08 53.4
HABR pmax pmax
comp=Z,43nm,1.9s
HABR MLR MLR
comp=Z,168nm,18.0s
YSS Yuzh-Sakhalins 45.77 15 *e*P P 23 57 44.0 -13
KLR Kul'dur 46.11 4 P **P 23 57 59.3 -0.5**
comp=Z,9.5nm,0.9s,baz=216,slow=6.4,SNR=15
KLR Kul'dur 46.11 4 *e*P **P 23 57 59.3 -0.5**
KLR Kul'dur 46.11 4 *e*P **P 23 57 59.3 -0.5**
GUN Gumba 46.20 306 *e*P **P 23 58 00.9 -0.4**
comp=Z,51nm,0.7s
HIA Hailar 46.36 354 *e*P **P 23 58 03.0 +1.2**
HIA pmax pmax
comp=Z,39nm,1.4s
HIA Hailar 46.36 354 *e*P **P 23 58 03.0 +1.2**
comp=Z,38nm,1.4s
PKIN Phulchoki 46.45 306 *e*P **P 23 58 02.3 -0.8**
comp=Z,11nm,0.7s
KKN Kakani 46.63 306 *e*P **P 23 58 03.9 -0.6**
comp=Z,30nm,0.9s
DMN Daman 46.70 306 *e*P **P 23 58 04.7 -0.4**
comp=Z,35nm,0.8s
GKN Gorkha 47.24 306 *e*P **P 23 58 08.6 -0.6**
comp=Z,31nm,0.8s
SONA0 Songino Array 47.91 341 *e*P **P 23 58 14.0 0.0**
SONA0 *e*PcP **PcP 23 59 42.2 +0.3**
SONM Songino Array 47.91 341 P **P 23 58 14.0 0.0**
comp=Z,3.6nm,0.8s,baz=157,slow=7.9,SNR=26
SONM PcP **PcP 23 59 42.2 +0.3**
comp=Z,3.4nm,0.9s,baz=160,slow=3.6,SNR=3.8
KOLN Koldanda 47.99 305 *e*P **P 23 58 14.3 -0.8**
comp=Z,72nm,0.6s
PYUN Piuthan 48.61 305 *e*P **P 23 58 19.3 -0.6**
comp=Z,109nm,0.8s
HYB Hyderabad 49.46 290 *i*P **P 23 58 26.0 -0.3**
HYB *e* 23 58 42.5
ZAK Zakamensk 51.13 341 *e*P **P 23 58 39.3 +0.8**
ZAK *e* 23 59 54.0
ZAK pmax pmax
comp=Z,5.0nm,1.6s
ZAK pmax pmax
comp=Z,5.0nm,1.3s
NKL Nikolayevsk 51.14 11 *e*P **P 23 58 38.0 -0.3**
NKL pmax pmax
comp=N,10.0nm,0.9s
NKL pmax pmax
comp=Z,40nm,0.9s
TLY Talaya 52.14 342 P **P 23 58 45.6 -0.2**
comp=Z,1.4nm,0.3s,baz=170,slow=6.7,SNR=6.2
TLY Talaya 52.14 342 *e*P **P 23 58 46.6 +0.7**
TLY pmax pmax
comp=Z,18nm,2.0s
TLY Talaya 52.14 342 *e*P **P 23 58 47.4 +1.5**
MOY Mondy 52.99 340 *e*P **P 23 58 53.4 +1.1**
MOY pmax pmax
comp=Z,28nm,2.0s
WMQ Urumqi 53.30 325 *e*P **P 23 58 54.3 -0.3**
WMQ sP sP 23 59 16.3 +3.4
WMQ PcP **PcP 00 00 02.2 +0.4**
WMQ S S 00 06 14.6 -8.4
WMQ pmax pmax
comp=Z,6.0nm,0.8s
WMQ pmax pmax
comp=Z,43nm,3.8s
WMQ LR LR
comp=Z,300nm,28.0s
WMQ LR LR
comp=Z,160nm,27.0s
BOD Bodaibo 55.47 352 ⇓*e*P P 23 58 58.9 -11
BOD *i* 23 59 10.5
BOD pmax pmax
comp=Z,26nm,1.2s
PEA0 Petropavlovsk- 55.92 22 *e*P **P 23 59 13.7 +0.3**
PEA0B Petropavlovsk- 55.92 22 *e*P **P 23 59 14.1 +0.7**
PETK Petropavlovsk- 55.92 22 P **P 23 59 14.2 +0.8**
comp=Z,21nm,0.9s,baz=184,slow=5.8,SNR=12
PETK LR LR 00 23 02.5
comp=Z,76nm,20.6s,baz=218,slow=36
PEA1 Petropavlovsk- 55.92 22 *e*P **P 23 59 14.2 +0.8**
PET Petropavlovsk 56.21 22 *e*P **P 23 59 17.1 +1.7**
PET *e*S **S 00 07 00.5 -1.1**
PET *e*SS **SS 00 10 50.9 +2.1**
PET pmax pmax
comp=Z,16nm,1.1s
PET MLR MLR
comp=Z,100nm,20.0s
OUZ Omahuta 58.04 135 *e*P **P 23 59 27.0 -1.7**
comp=Z,100nm,1.7s
MK01 Makanchi Array 58.11 325 *e*P **P 23 59 28.4 -0.6**
MK31 Makanchi Array 58.13 325 *e*P **P 23 59 28.9 -0.3**
MK31 Makanchi Array 58.13 325 *e*P **P 23 59 28.9 -0.3**
MK32 Makanchi Array 58.13 325 *e*P **P 23 59 28.8 -0.4**
MKAR Makanchi Array 58.13 325 P **P 23 59 28.8 -0.4**
comp=Z,9.6nm,0.6s,baz=120,slow=7.7,SNR=65
MKAR LR LR 00 26 39.8
comp=Z,280nm,20.4s,baz=107,slow=38
MKAR Makanchi Array 58.13 325 *e*P **P 23 59 28.9 -0.3**
MAKZ Makanchi 58.31 325 *e*P **P 23 59 30.0 -0.5**
MAKZ pmax pmax
comp=Z,12nm,0.8s
MAKZ Makanchi 58.31 325 *e*P **P 23 59 30.0 -0.5**
comp=Z,12nm,0.8s
KSH Kashi 58.57 315 P **P 23 59 33.6 +1.1**
KSH *e*pP sP 23 59 49.4 -1.5
KSH *e*sP pP 23 59 56.4 +11
KSH S **S 00 07 33.1 -0.3**
KSH ScS **ScS 00 09 15.2 -3.6**
KSH SS **SS 00 11 27.7 +0.9**
KSH pmax pmax
comp=Z,11nm,1.3s
KSH pmax pmax
comp=Z,140nm,4.4s
KSH LR LR
comp=Z,120nm,5.0s
KSH LR LR
comp=Z,100nm,5.2s
KSH LR LR
comp=Z,140nm,9.7s
YAK Yakutsk 58.79 2 P **P 23 59 34.1 +0.7**
comp=Z,2.2nm,0.3s,baz=355,slow=22,SNR=6.2
YAK Yakutsk 58.79 2 *e*P **P 23 59 33.6 +0.2**
YAK *e**PP **pP 23 59 43.6 -2.9**
YAK *e* 00 00 17.2
YAK *e* 00 01 44.8
YAK *e*S **S 00 07 39.6 +4.4**
YAK *e**SS **sS 00 07 55.1 -1.9**
YAK *e*SS **SS 00 11 35.8 +6.7**
YAK pmax pmax
comp=Z,82nm,1.5s
YAK pmax pmax
comp=N,18nm,1.3s
YAK pmax pmax
comp=E,18nm,1.4s
YAK pmax pmax
comp=Z,255nm,4.1s
YAK pmax pmax
comp=N,146nm,4.3s
YAK pmax pmax
comp=E,131nm,4.2s
YAK smax smax
comp=N,74nm,3.8s
YAK smax smax
comp=E,203nm,4.4s
YAK Yakutsk 58.79 2 *e*P **P 23 59 34.1 +0.7**
comp=E,92nm,1.1s
MA2 Magadan 59.24 14 P **P 23 59 37.2 +0.6**
comp=E,11nm,0.8s,baz=230,slow=6.0,SNR=12
TKM2 Tokmak 2 60.29 319 *e*P **P 23 59 44.4 -0.1**
TKM2 pmax pmax
comp=Z,17nm,1.4s
TKM2 Tokmak 2 60.29 319 *e*P **P 23 59 44.4 -0.1**
comp=Z,17nm,1.4s
AAK Ala-Archa 60.90 318 P **P 23 59 48.6 +0.1**
comp=Z,1.7nm,0.6s,baz=148,slow=10,SNR=7.3
AAK Ala-Archa 60.90 318 P **P 23 59 48.0 -0.5**
AAK pmax pmax
comp=Z,19nm,1.7s
ZALV Zalesovo Beam 61.18 333 P **P 23 59 49.0 -1.0**
comp=Z,5.3nm,0.6s,baz=132,slow=6.2,SNR=18
ZALV LR LR 00 29 14.0
comp=Z,118nm,19.5s,baz=123,slow=39
ZAA1 Zalesovo Array 61.19 333 *e*P **P 23 59 49.0 -1.0**
KBL Kabul 62.01 308 *e*P **P 23 59 55.6 -0.6**
KBL pmax pmax
comp=Z,8.0nm,0.8s
KBL Kabul 62.01 308 *e*P **P 23 59 55.6 -0.6**
comp=Z,8.0nm,0.8s
URZ Urewera 62.01 137 LR LR 00 27 18.0
comp=Z,443nm,19.8s,baz=315,slow=36
KURBB Kurchatov Arra 62.32 327 P **P 23 59 57.2 -0.5**
comp=Z,16nm,0.7s,baz=128,slow=6.3,SNR=119
KURK Kurchatov 62.32 328 *e*P **P 23 59 56.9 -0.9**
KURK pmax pmax
comp=Z,29nm,0.7s
KURK Kurchatov 62.32 328 *e*P **P 23 59 56.9 -0.9**
comp=Z,29nm,0.7s
NVS Novosibirsk 62.47 333 *e*P **P 23 59 58.1 -0.5**
NVS *e*S **S 00 08 23.8 +1.4**
NVS pmax pmax
comp=Z,8.0nm,0.6s
NVS pmax pmax
comp=N,8.0nm,0.9s
NVS pmax pmax
comp=E,6.0nm,0.6s
NVS smax smax
comp=N,9.0nm,1.8s
SEY Seymchan 62.57 13 P **P 00 00 00.1 +0.9**
comp=N,4.9nm,0.8s,baz=206,slow=6.2,SNR=14
SEY Seymchan 62.57 13 ⇑*e*P **P 00 00 00.3 +1.1**
KKAR Karatay Array 63.77 317 *e*P **P 00 00 06.8 -0.8**
KKAR Karatay Array 63.77 317 *e*P **P 00 00 06.8 -0.8**
VOSK Vostochnaya 67.44 327 *e*P **P 00 00 30.3 -0.8**
VOSK pmax pmax
comp=Z,12nm,0.6s
VOSK Vostochnaya 67.44 327 *e*P **P 00 00 30.3 -0.8**
comp=Z,12nm,0.6s
BVAR Borovoye Array 67.90 327 P **P 00 00 33.6 -0.3**
comp=Z,5.8nm,0.7s,baz=137,slow=10,SNR=44
BRVK Borovoye 67.97 327 *c i*P **P 00 00 33.9 -0.5**
BRVK pmax pmax
comp=Z,7.0nm,0.6s
BRVK Borovoye 67.97 327 *e*P **P 00 00 34.0 -0.3**
comp=Z,15nm,0.9s
TIXI Tiksi 68.43 1 P **P 00 00 36.0 -0.8**
comp=Z,7.5nm,0.6s,baz=177,slow=3.6,SNR=18
TIXI Tiksi 68.43 1 ⇑*i*P **P 00 00 35.5 -1.3**
TIXI pmax pmax

comp=Z,25nm,1.7s
TIXI Tiksi 68.43 1 *e*P **P 00 00 36.6 -0.2**
ZRNK Zerenda 68.62 327 *e*P **P 00 00 38.0 -0.4**
ZRNK pmax pmax
comp=Z,14nm,0.6s
ZRNK Zerenda 68.62 327 *e*P **P 00 00 38.0 -0.4**
comp=Z,14nm,0.6s
BILL Bilibino 70.08 15 P **P 00 00 47.7 +0.5**
NRIK Noril'sk 71.04 346 P **P 00 00 53.5 +0.5**
comp=Z,17nm,0.7s,baz=131,slow=6.1,SNR=67
NRIK LR LR 00 35 08.6
comp=Z,187nm,19.1s,baz=123,slow=38
GEYT Alibeck 71.38 309 P **P 00 00 55.2 -0.6**
comp=Z,4.1nm,0.8s,baz=116,slow=6.8,SNR=9.6
ABKAR Akbulak array 72.70 321 *e*P **P 00 01 03.0 -0.4**
AKTO Aktyubinsk 74.22 322 P **P 00 01 12.2 -0.1**
comp=Z,7.7nm,0.6s,baz=100,slow=7.7,SNR=42
SVE Sverdlovsk 74.54 329 *de*P **P 00 01 14.0 0.0**
SVE pmax pmax
comp=Z,38nm,1.1s
ARU Arti 75.52 328 P **P 00 01 19.2 -0.4**
comp=Z,17nm,0.6s,baz=98,slow=2.5,SNR=49
ARU Arti 75.52 328 *c i*P **P 00 01 19.1 -0.5**
ARU 00 04 05.9
ARU S **S 00 10 56.3 -0.4**
ARU SS **SS 00 15 43.0 -5.1**
ARU pmax pmax
comp=Z,32nm,1.0s
ARU Arti 75.52 328 *e*P **P 00 01 19.2 -0.4**
comp=Z,23nm,0.7s
SOKR Solikamsk 77.31 331 ⇑*i*P **P 00 01 27.3 -2.3**
SOKR pmax pmax
comp=Z,24nm,1.5s
RAYN Ar Rayn 80.86 293 *e*P **P 00 01 49.8 -0.1**
comp=Z,4.9nm,0.7s
TT01 Tatalina 81.35 27 *e*P **P 00 01 52.6 +0.9**
TTA Tatalina 81.36 27 *e*P **P 00 01 52.9 +1.1**
TTA pmax pmax
comp=Z,16nm,1.3s
TTA Tatalina 81.36 27 *e*P **P 00 01 52.9 +1.1**
comp=Z,16nm,1.3s
GNI Garni 81.98 310 P **P 00 01 55.4 -0.3**
comp=Z,2.7nm,0.8s,baz=224,slow=3.6,SNR=4.1
GNI Garni 81.98 310 *e*P **P 00 01 58.6 +2.8**
comp=Z,12nm,1.0s
KDAK Kodiak Island 82.31 32 P P 00 02 12.5 +16
comp=Z,11nm,0.7s,baz=264,slow=5.7,SNR=12
KDAK Kodiak Island 82.31 32 *i* P **P 00 01 58.7 +1.9**
ZEI Tsey 82.73 313 *e*P **P 00 01 57.9 -1.7**
ZEI pmax pmax
comp=Z,14nm,0.8s
VNDA Vanda 82.82 173 P **P 00 01 58.1 -1.0**
comp=Z,5.6nm,0.8s,baz=183,slow=19,SNR=10
NCK Nalchik 82.98 313 ⇓*e*P **P 00 02 01.1 +0.4**
NCK pmax pmax
comp=Z,2.0nm,0.2s
CAST Castle Rocks 83.19 27 *e*P **P 00 02 02.6 +1.2**
comp=Z,14nm,1.0s
MAW Mawson 83.26 200 P **P 00 02 00.9 -0.6**
comp=Z,4.6nm,0.8s,baz=226,slow=2.7,SNR=4.2
KBZ Khabaz 83.50 313 P **P 00 02 02.5 -0.8**
comp=Z,2.8nm,0.8s,baz=35,slow=1.7,SNR=5.3
KBZ LR LR 00 45 20.5
comp=Z,60nm,19.6s,baz=72,slow=40
KVAR Kislovodsk Arr 83.65 314 P **P 00 02 05.1 +0.9**
comp=Z,5.0nm,0.9s,baz=161,slow=1.1,SNR=3.9
KIV Kislovodsk 83.66 314 *e*P **P 00 02 05.4 +1.2**
KIV pmax pmax
comp=Z,7.0nm,1.1s
KIV MLR MLR
comp=Z,80nm,19.0s
KIV Kislovodsk 83.66 314 *e*P **P 00 02 05.1 +0.9**
comp=Z,7.3nm,1.0s
KTH Kantishna Hill 83.72 27 *e*P **P 00 02 05.5 +1.4**
comp=Z,46nm,1.7s
BPAW Bear Paw Mtn. 83.75 26 *e*P **P 00 02 05.4 +1.2**
comp=Z,23nm,1.4s
MLY Manley 83.95 25 *e*P **P 00 02 06.6 +1.4**
comp=Z,11nm,1.0s
TRF Thorofare Moun 84.00 27 *e*P **P 00 02 06.1 +0.4**
comp=Z,25nm,1.3s
RC01 Rabbit Creek A 84.06 29 *e*P **P 00 02 06.3 +0.5**
comp=Z,21nm,1.0s
COLD Coldfoot 84.37 23 *e*P **P 00 02 09.2 +1.9**
comp=Z,14nm,1.0s
PMR Palmer 84.39 29 *e*P **P 00 02 08.0 +0.6**
PMR pmax pmax
comp=Z,31nm,1.2s
PMR Palmer 84.39 29 *e*P **P 00 02 08.0 +0.6**
comp=Z,30nm,1.2s
VRH Novokhopyorsk 84.54 321 *e*P **P 00 02 07.8 -0.6**
VRH pmax pmax
comp=Z,30nm,0.9s
MCK McKinley 84.62 26 *e*P **P 00 02 09.5 +0.9**
MCK pmax pmax
comp=Z,16nm,1.0s
MCK McKinley 84.62 26 *e*P **P 00 02 09.5 +0.9**
comp=Z,16nm,1.0s
RND Reindeer 84.64 27 *e*P **P 00 02 08.9 +0.2**
RND pmax pmax
comp=Z,22nm,1.2s
RND Reindeer 84.64 27 *e*P **P 00 02 08.9 +0.2**
comp=Z,22nm,1.2s
SML Sawmill 84.78 28 *e*P **P 00 02 10.4 +0.9**
SML pmax pmax
comp=Z,76nm,1.6s
SML Sawmill 84.78 28 *e*P **P 00 02 10.4 +0.9**
comp=Z,76nm,1.6s
PPT Papeete 84.78 108 LR LR 00 32 53.8
comp=Z,82nm,21.8s,baz=178,slow=31
PPT2 Papeete2 84.79 108 *e*LR LR 00 29 06.0
comp=Z,217nm,25.2s
WRH Wood River Hil 85.04 26 *e*P **P 00 02 11.4 +0.7**
comp=Z,32nm,1.7s
MZRK Al-Mazaregh 85.12 306 *e*P **P 00 02 12.1 +0.4**
CCB Clear Creek Bu 85.17 26 *e*P **P 00 02 11.6 +0.3**
comp=Z,17nm,1.4s
SCM Sheep Creek Mo 85.26 28 *e*P **P 00 02 13.5 +1.6**
SCM pmax pmax
comp=Z,96nm,1.8s
SCM Sheep Creek Mo 85.26 28 *e*P **P 00 02 13.5 +1.6**
comp=Z,96nm,1.8s
TBI Tubuai 85.41 114 *e*LR LR 00 29 16.7
comp=Z,243nm,26.8s
ILAR Eielson Array 85.57 25 P **P 00 02 13.3 0.0**
comp=Z,0.7nm,0.8s,baz=267,slow=7.4,SNR=6.0
ILB Eielson Array 85.57 25 *e*P **P 00 02 13.3 0.0**
DIV Divide 85.99 29 *e*P **P 00 02 17.6 +2.1**
comp=Z,43nm,1.4s
KLMR Klimovskoe 85.99 331 *e*P P 00 02 11.6 -3.9
KLMR pmax pmax
comp=Z,14nm,0.8s
VSR Storozhevoye 86.14 321 *e*P **P 00 02 14.8 -1.6**
VSR pmax pmax
comp=Z,20nm,0.9s
MNKR ALMNKUR 86.25 306 *e*P **P 00 02 17.9 +0.6**
LPSR Galich'ya Gora 86.28 322 *e*P **P 00 02 16.9 -0.2**
LPSR pmax pmax
comp=Z,20nm,0.7s
KSRV Kasrt alli 86.46 306 *e*P **P 00 02 18.8 +0.4**
DOT Dot Lake 86.79 27 *e*P P 00 02 15.0 -4.4
comp=Z,66nm,1.6s
OBN Obninsk 87.63 325 P **P 00 02 22.5 -1.0**
comp=Z,15nm,0.7s,baz=115,slow=4.3,SNR=6.6
OBN Obninsk 87.63 325 ⇑*e*P **P 00 02 22.9 -0.6**
OBN pmax pmax
comp=Z,50nm,1.7s
OBN Obninsk 87.63 325 *e*P **P 00 02 22.5 -1.0**
comp=Z,22nm,0.9s
FURI Furi 87.75 279 *e*P **P 00 02 28.4 +2.9**
comp=Z,46nm,1.5s
BTCH Batrach 88.52 306 *e*P **P 00 02 27.6 -0.8**
WRDH Warideh 88.58 305 *e*P **P 00 02 28.8 +0.1**
MARH Ras Al Marh 88.60 304 *e*P **P 00 02 28.5 -0.6**
TOTH TOTAH 88.68 303 *e*P **P 00 02 27.6 -1.5**
BIDA Albida 88.68 305 *e*P P 00 02 25.1 -4.0
SLNF Slenfeh 88.73 305 *e*P **P 00 02 29.1 -0.4**
ARNB Al Arnab 88.92 306 *e*P **P 00 02 28.5 -1.8**
BRBR Barbar 89.07 303 *e*P **P 00 02 30.3 -0.9**
KMBO Kilima Mbogo 89.69 269 P **P 00 02 34.4 -0.1**
comp=Z,6.2nm,0.9s,baz=60,slow=5.9,SNR=12
KMBO Kilima Mbogo 89.69 269 *e*P **P 00 02 34.4 -0.1**
KMBO pmax pmax
comp=Z,7.0nm,1.0s
KMBO Kilima Mbogo 89.69 269 *e*P **P 00 02 34.4 -0.1**
comp=Z,7.1nm,1.0s

BR101 Keskin Array S 90.52 310 *e*P **P 00 02 37.6 -0.1**
BRTR Keskin Array B 90.52 310 P **P 00 02 37.6 -0.1**
comp=Z,3.5nm,1.0s,baz=120,slow=5.0,SNR=12
BRTR LR LR 00 49 43.0
comp=Z,29nm,20.7s,baz=71,slow=40
INK Inuvik 90.65 22 P **P 00 02 37.5 0.0**
comp=Z,2.2nm,1.0s,baz=280,slow=4.3,SNR=5.0
INK PP **PP 00 06 16.6 +3.8**
comp=Z,1.2nm,0.9s,baz=232,slow=6.7,SNR=3.4
ARCES ARCESS Array B 91.06 340 P **P 00 02 38.0 -1.4**
comp=Z,3.9nm,0.7s,baz=37,slow=17,SNR=3.9
ARCES ARCESS Array B 91.06 340 P **P 00 02 38.0 -1.4**
CSS Mathiatis 91.14 305 *e*P **P 00 02 40.5 0.0**
comp=Z,2.6nm,0.9s
SYO Syowa Base 91.93 201 ⇑*e*P **P 00 02 42.8 -0.6**
FIA0 FINESS Array S 92.42 332 *e*P **P 00 02 44.7 -1.2**
FIA0 FINESS Array S 92.42 332 *e*P **P 00 02 44.7 -1.2**
FINES FINESS Array B 92.42 332 P **P 00 02 44.7 -1.2**
comp=Z,1.2nm,0.6s,baz=150,slow=4.2,SNR=2.8
AKASG Malin Array Be 92.45 321 P **P 00 02 44.4 -1.8**
comp=Z,1.4nm,0.5s,baz=71,slow=4.1,SNR=10
AKASG Malin Array Be 92.45 321 *i* P **P 00 02 45.4 -0.8**
AKASG pmax pmax
comp=Z,1.0nm,0.5s
AKBB Malin Array Si 92.45 321 *e*P **P 00 02 44.4 -1.8**
AKBB Malin Array Si 92.45 321 *e*P **P 00 02 44.4 -1.8**
KIEV Kiev 92.46 321 ⇓*e*P **P 00 02 44.3 -1.9**
KIEV pmax pmax
comp=Z,8.0nm,1.5s
QSPA South Pole Qui 93.05 180 *e*P **P 00 02 50.4 +1.7**
TAOE Nuku Hiva Isla 93.40 99 *e*LR LR 00 32 57.9
comp=Z,359nm,24.2s
TIRR Tirgusor 93.86 315 ⇑*i*P **P 00 02 52.9 0.0**
TIRR Tirgusor 93.86 315 ⇑P **P 00 02 52.9 0.0**
TESR Tescani 94.78 317 ⇓*i*P **P 00 02 56.8 -0.2**
VRI Vrincioaia 94.83 316 ⇑*i*P **P 00 02 57.5 +0.2**
VRI Vrincioaia 94.83 316 ⇑P **P 00 02 57.5 +0.2**
PLOR Plostina 94.88 316 ⇓*i*P **P 00 02 57.5 -0.1**
PLOR Plostina 94.88 316 ⇓P **P 00 02 57.5 -0.1**
ISR Istrita 95.08 316 ⇑*i*P **P 00 02 59.3 +0.8**
ISR Istrita 95.08 316 ⇑P **P 00 02 59.3 +0.8**
MLR Muntele Rosu 95.43 316 P **P 00 02 58.9 -1.3**
comp=Z,0.7nm,0.7s,baz=307,slow=1.2,SNR=10
MLR Muntele Rosu 95.43 316 ⇑*i*P **P 00 03 00.1 -0.1**
MLR Muntele Rosu 95.43 316 *e*P **P 00 02 58.9 -1.3**
MLR pmax pmax
comp=Z,24nm,1.7s
MLR Muntele Rosu 95.43 316 *e*P **P 00 02 58.9 -1.3**
comp=Z,24nm,1.7s
BURAR Bucovina Array 95.54 318 ⇓*i*P **P 00 03 00.3 -0.3**
BURAR Bucovina Array 95.54 318 ⇓P **P 00 03 00.3 -0.3**
VOIR 96.06 316 ⇑*i*P **P 00 03 02.8 -0.2**
VOIR 96.06 316 ⇑P **P 00 03 02.9 -0.1**
LOT Lotru 96.94 316 ⇑*i*P **P 00 03 05.9 -1.2**
UZH Uzhgorod 97.25 320 *e*P Pdif 00 03 08.4 +0.1
UZH *e* 00 03 18.4
UZH *i* 00 03 25.8
RES Resolute Bay 98.36 10 P **P 00 03 11.9 -0.8**
comp=Z,2.2nm,0.9s,baz=335,slow=8.1,SNR=6.6
NB2 NORSAR Subarra 99.38 334 P **Pdif 00 03 15.9 -1.7**
comp=Z,1.2nm,0.7s,baz=66,slow=4.8
NB200 NORSAR Array S 99.38 334 *e*P **Pdif 00 03 15.2 -2.3**
NOA NORSAR Array B 99.38 334 P **Pdif 00 03 15.2 -2.3**
comp=Z,1.6nm,0.7s,baz=67,slow=4.6,SNR=5.8
NOA LR LR 00 53 07.5
comp=Z,101nm,18.4s,baz=270,slow=38
YKA Yellowknife Ar 99.97 24 P **Pdif 00 03 20.3 +0.3**
comp=Z,0.6nm,0.8s,baz=301,slow=4.6,SNR=8.3
YKB5 Yellowknife Ar 99.97 24 *e*Pdif **Pdif 00 03 20.3 +0.3**
BRG Berggiesshubel 101.80 323 *e*P **Pdif 00 03 26.8 -1.7**
comp=Z,2.6nm,1.1s
BRG Berggiesshubel 101.80 323 *e*P **Pdif 00 03 26.8 -1.7**
BRG pmax pmax
comp=Z,3.0nm,1.1s
CLL Collm 102.21 324 *e*Pdif **Pdif 00 03 26.0 -4.3**
CLL *e* 00 03 36.0
CLL LmV 01 00 00.0
comp=Z,100nm,20.5s
CLL Collm 102.21 324 *e*P **Pdif 00 03 26.0 -4.3**
GERES GERESS Array B 102.64 322 PKiKP **PKiKP 00 07 55.1 +1.8**
comp=Z,0.5nm,0.8s,baz=29,slow=3.0,SNR=4.3
C09A Chrisman Ranch 104.04 39 *e*Pdif **Pdif 00 03 34.7 -3.9**
TPNV Topopah Spring 109.20 49 *e*P **Pdif 00 03 59.4 -2.6**
TPNV Topopah Spring 109.20 49 *e*Pdif **Pdif 00 03 59.4 -2.6**
PD31 Pinedale Array 111.69 41 *e*PKiKP **PKiKP 00 08 10.3 -0.2**
PDAR Pinedale Array 111.69 41 PKiKP **PKiKP 00 08 10.3 -0.2**
comp=Z,0.3nm,0.7s,baz=180,slow=1.8,SNR=2.6
ULM Lac du Bonnet 115.40 29 PKP **PKPdf 00 08 16.8 -0.2**
comp=Z,0.9nm,0.5s,baz=298,slow=2.6,SNR=3.1
ECSD EROS Data Cent 119.18 35 P **PKPdf 00 08 24.8 +0.3**
baz=308
ECSD EROS Data Cent 119.18 35 *e*PKPdf **PKPdf 00 08 25.0 +0.5**
F36A Milaca 119.50 31 P **PKPdf 00 08 25.3 +0.2**
baz=312
MNTX Cornudas Mount 119.50 51 *e*PKPdf **PKPdf 00 08 26.9 +1.4**
POLO Lamas de Olo 119.51 322 *e*PKP **PKPdf 00 08 26.5 +1.2**
PVRL Vila Real 119.52 322 *e*PKP **PKPdf 00 08 26.5 +1.2**
H35A Sunnyside Ranc 119.57 33 P **PKPdf 00 08 25.8 +0.6**
baz=310
MTE Manteigas 119.92 321 *e*PKP **PKPdf 00 08 27.2 +1.1**
PCBR Castelo Branco 120.19 320 *e*PKP **PKPdf 00 08 26.5 0.0**
PMRV Marv??o 120.37 320 *e*PKP **PKPdf 00 08 27.7 +0.8**
MSTX Muleshoe 120.46 47 P **PKPdf 00 08 27.7 +0.3**
baz=298
J36A Seneca 1, Swea 120.72 34 P **PKPdf 00 08 27.9 +0.4**
baz=310
I37A Lemond, Waseca 120.79 33 P **PKPdf 00 08 28.0 +0.4**
baz=311
J37A Redenius Farm, 121.17 34 P **PKPdf 00 08 28.7 +0.4**
baz=311
LTX Lajitas 121.83 53 *e*PKIKP **PKPdf 00 08 30.6 +0.5**
LTX Lajitas 121.83 53 *e*PKPdf **PKPdf 00 08 30.6 +0.5**
TXAR Lajitas Array 121.83 53 PKP **PKPdf 00 08 30.6 +0.5**
comp=Z,0.9nm,0.7s,baz=199,slow=0.7,SNR=13
WMOK Wichita Mounta 122.94 45 *e*PKIKP **PKPdf 00 08 33.8 +1.7**
WMOK Wichita Mounta 122.94 45 *e*PKPdf **PKPdf 00 08 33.8 +1.7**
TORD Torodi Ar. Bea 123.25 288 PKP **PKPdf 00 08 32.9 -0.2**
comp=Z,5.4nm,0.7s,baz=59,slow=2.0,SNR=41
TORD Torodi Ar. Bea 123.25 288 PKP **PKPdf 00 08 32.9 -0.2**
TOA1 Torodi Ar. Sit 123.25 288 *e*PKPdf **PKPdf 00 08 32.9 -0.2**
JCT Junction City 124.33 50 P **PKPdf 00 08 35.5 +0.6**
baz=298
JCT Junction City 124.33 50 *e*PKIKP **PKPdf 00 08 35.8 +1.0**
JCT Junction City 124.33 50 *e*PKPdf **PKPdf 00 08 35.8 +1.0**
333A Richland Sprin 124.53 48 P **PKPdf 00 08 35.4 +0.3**
baz=300
R39A Chumby, Stover 124.67 38 P **PKPdf 00 08 35.5 +0.4**
baz=309
X36A Centrahoma 124.72 43 P **PKPdf 00 08 36.3 +0.9**
baz=304
V37A Hulbert 124.79 41 P **PKPdf 00 08 35.4 -0.1**
baz=306
S39A Bolivar 124.88 39 P **PKPdf 00 08 35.8 +0.2**
baz=308
Y36A Durant 125.14 44 P **PKPdf 00 08 37.1 +0.9**
baz=303
R40A Maddies Statio 125.15 37 P **PKPdf 00 08 36.6 +0.5**
baz=310
832A Faith Ranch, C 125.21 52 P **PKPdf 00 08 37.7 +1.2**
baz=297
T39A Clever 125.25 39 P **PKPdf 00 08 36.6 +0.2**
baz=308
V38A Canehill 125.29 41 P **PKPdf 00 08 36.2 -0.3**
baz=306
534A Blanco 125.55 49 P **PKPdf 00 08 37.8 +0.7**
baz=299
U39A Green Forest 125.58 40 P **PKPdf 00 08 37.0 0.0**
baz=307
T40A Mansfield 125.72 39 P **PKPdf 00 08 37.8 +0.6**
baz=309
U40A Yellville 126.00 40 P **PKPdf 00 08 37.7 -0.1**
baz=308
X39A Fountain Ranch 126.28 42 P **PKPdf 00 08 39.6 +1.2**
baz=306
V40A Witts Springs 126.35 40 P **PKPdf 00 08 39.2 +0.7**
baz=308
DBIC Dimbokro 130.85 282 PKP **PKPdf 00 08 47.9 +0.3**
comp=Z,6.7nm,1.0s,baz=130,slow=2.0,SNR=8.1
TKL Tuckaleechee C 131.91 34 *e*PKIKP **PKPdf 00 08 50.8 +1.7**
TKL Tuckaleechee C 131.91 34 *e*PKPdf **PKPdf 00 08 50.8 +1.7**
PLCA Paso Flores 139.40 160 PKP **PKPdf 00 09 02.9 -0.1**
comp=Z,2.4nm,0.7s,baz=204,slow=4.3,SNR=6.2
TRQA Tornquist 144.31 168 *e*PKPdf **PKPdf 00 09 11.0 -0.8**
LCO Las Campanas 149.31 149 *e*PKPbc **PKPbc 00 09 25.7 +0.6**
CPUP Villa Florida 156.59 170 PKPab **PKPab 00 10 00.5 +0.7**

comp=Z,3.1nm,0.8s,baz=122,slow=3.5,SNR=4.6
LPAZ La Paz 160.28 132 PKP **PKPdf 00 09 37.8 +1.4**
comp=Z,1.5nm,0.7s,baz=270,slow=3.0,SNR=5.6
SAML Samuel 168.44 120 *e*PKPdf **PKPdf 00 09 43.9 +0.9**

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*ISCJB **06** 23:51:13.2±0.4, 69°.21N±0°.03×144°.21W±0°.08, h14km, mb3.7/4, Error ellipse: s-maj=4.8km s-min=3.4km az=142.9*
*PGC **06** 23:51:14.0±17.0, 69°.52N×144°.86W, h20km, ML3.5/1, 155km Ese of Prudhoe Bay, Ak Northern Alaska*
*IDC **06** 23:51:15.0±1.4, 69°.15N×144°.75W, h0km, mb3.7/4, mb1 3.8/8, mb1mx3.5/62, mbtmp3.6/8, ML3.3/4, Error ellipse: s-maj=23.0km s-min=18.5km az=47.0*
*NEIC **06** 23:51:16.1, 69°.15N×144°.81W, h14km, ML3.3(AEIC), After AEIC.*
ISC 06 23:51:13.2±0.8**, 69°.30N**±0°.06×**144°.41W**±0°.04**, h14km, n67,** σ**1s.64**/72**, mb3.8**/4**, Northern Alaska**

Code Station Name Δ° AZ° Phase ID (Op ISC) Time (h m s) Res (ISC)
PS01 TAPS Pump Stn 1.75 305 P **Pb 23 51 45.5 +0.5**
PS01 S **Sg 23 52 08.4 -0.9**
BM3 Burnt Mountain 1.89 182 P **Pn 23 51 45.8 +0.7**
FYU Fort Yukon 2.77 187 P **Pn 23 51 57.6 +0.6**
FYU S **Sn 23 52 31.0 +0.9**
COLD Coldfoot 3.00 229 Pn **Pn 23 52 00.7 +0.4**
COLD Coldfoot 3.00 229 P **Pn 23 52 00.6 +0.4**
COLD S **Sn 23 52 35.8 -0.1**
PS05 TAPS Pump Stn5 3.43 226 P **Pn 23 52 07.0 +0.9**
INK Inuvik 4.08 99 Pn Pn 23 52 19.7 +4.6
0.6nm,0.3s,baz=280,slow=19,SNR=24
INK Sn **Sb 23 53 09.9 -3.9**
1.7nm,0.3s,baz=261,slow=12,SNR=7.3
INK Lg Lg 23 53 26.2
2.1nm,0.3s,baz=137,slow=10,SNR=4.7
INK Inuvik 4.08 99 Pn Pn 23 52 19.8 +4.7
INK Sn **Sn 23 53 07.7 +5.2**
INK Inuvik 4.08 99 P Pb 23 52 20.0 -4.7
INK S **Sb 23 53 10.2 -3.6**
MDM Murphy Dome 4.61 201 P **Pn 23 52 22.6 +0.3**
MDM S **Sn 23 53 14.8 -0.8**
IL1 Eielson Array 4.65 193 P **Pn 23 52 23.4 +0.5**
ILAR Eielson Array 4.65 193 Pn **Pn 23 52 22.9 -0.1**
1.7nm,0.3s,baz=4.4,slow=12,SNR=46
ILAR Sn **Sn 23 53 15.9 -0.7**
3.4nm,0.3s,baz=296,slow=27,SNR=5.2
ILAR Lg Lg 23 53 33.7
4.8nm,0.3s,baz=23,slow=19,SNR=5.4
EGAK Eagle 4.72 163 P **Pn 23 52 26.1 +2.2**
CCB Clear Creek Bu 4.86 197 P **Pn 23 52 25.8 0.0**
IM3 Indian Mountai 4.88 231 P **Pn 23 52 26.0 0.0**
MLY Manley 4.94 213 P **Pn 23 52 27.8 +0.8**
WRH Wood River Hil 5.06 198 P **Pn 23 52 29.2 +0.6**
DAWY Dawson 5.62 157 Pn **Pn 23 52 38.4 +2.1**
DAWY Sn **Sn 23 53 39.4 -1.3**
DAWY Dawson 5.62 157 P **Pn 23 52 38.6 +2.3**
DOT Dot Lake 5.68 178 Pn **Pn 23 52 38.5 +1.4**
DOT Sn **Sn 23 53 43.2 +1.2**
DOT Dot Lake 5.68 178 P **Pn 23 52 39.1 +2.0**
BPAW Bear Paw Mtn. 5.83 210 P **Pn 23 52 40.5 +1.3**
MCK McKinley 5.88 200 P **Pn 23 52 41.5 +1.7**
KTH Kantishna Hill 6.33 207 P **Pn 23 52 47.5 +1.4**
BCA3 Beaver Creek A 6.35 169 P **Pn 23 52 48.5 +2.2**
DHY Denali Highway 6.37 192 P **Pn 23 52 48.5 +1.9**
PAX Paxson 6.37 184 Pn **Pn 23 52 48.2 +1.5**
PAX Sn **Sn 23 53 59.0 -0.2**
PAX Paxson 6.37 184 P **Pn 23 52 48.5 +1.9**
SMPN Simpson Lake 6.54 91 Pn Pn 23 52 53.8 +5.0
BVCY Beaver Creek 7.07 166 Pn **Pn 23 52 58.8 +2.6**
YUK1 Sand Pete Hill 7.35 166 Pn **Pn 23 53 02.1 +2.0**
YUK2 White River 7.69 167 Pn **Pn 23 53 06.5 +1.8**
YUK3 Moose Creek 7.73 166 Pn **Pn 23 53 07.5 +2.1**
CTGM Chitina Glacie 8.47 170 Pn **Pn 23 53 17.9 +2.5**
YUK5 Granite Creek 8.65 158 Pn **Pn 23 53 20.0 +2.1**
YUK6 Outpost Mounta 8.77 160 Pn **Pn 23 53 22.1 +2.5**
HYT Haines Junctio 8.99 158 Pn **Pn 23 53 23.9 +1.4**
YUK7 Dusty Glacier 9.19 160 Pn Pn 23 53 28.8 +3.3
WHY Whitehorse 9.55 151 Pn **Pn 23 53 31.9 +1.6**
KUKN Kugluktuk,NWT 10.78 84 Pn **Pn 23 53 48.9 +2.0**
DLBC Dease Lake 12.56 143 Pn **Pn 23 54 11.3 0.0**
0.1nm,0.3s,baz=350,slow=17,SNR=2.0
YKR1 Yellowknife Ar 13.71 105 Pn **Pn 23 54 27.2 +0.4**
YKR1 Sn Sn 23 56 50.8 -7.7
YKR2 Yellowknife Ar 13.72 105 Pn **Pn 23 54 27.4 +0.4**
YKR3 Yellowknife Ar 13.74 105 Pn **Pn 23 54 27.9 +0.6**
YKB0 Yellowknife Ar 13.75 105 Pn **Pn 23 54 27.8 +0.4**
YKR4 Yellowknife Ar 13.76 105 Pn **Pn 23 54 27.5 0.0**
YKR4 Sn Sn 23 56 52.7 -7.1
YKB9 Yellowknife Ar 13.76 105 Pn **Pn 23 54 27.7 +0.1**
YKR5 Yellowknife Ar 13.77 105 Pn **Pn 23 54 28.2 +0.4**
YKW3 Yellowknife Ar 13.77 105 Pn **Pn 23 54 27.9 +0.2**
YKW3 Sn Sn 23 56 51.7 -8.5
YKB8 Yellowknife Ar 13.78 105 Pn **Pn 23 54 28.2 +0.4**
YKB8 Sn Sn 23 56 52.7 -7.6
YKR6 Yellowknife Ar 13.79 105 Pn **Pn 23 54 28.8 +0.8**
YKR6 Sn Sn 23 56 53.3 -7.3
YKB7 Yellowknife Ar 13.79 105 Pn **Pn 23 54 28.5 +0.6**
YKR7 Yellowknife Ar 13.80 105 Pn **Pn 23 54 28.6 +0.5**
YKB6 Yellowknife Ar 13.81 105 Pn **Pn 23 54 28.5 +0.3**
YKA Yellowknife Ar 13.82 105 Pn **Pn 23 54 29.1 +0.8**
0.2nm,0.3s,baz=308,slow=13,SNR=13
YKA Sn **Sn 23 56 57.2 -4.2**
0.2nm,0.3s,baz=313,slow=22,SNR=6.4
YKR8 Yellowknife Ar 13.82 105 Pn **Pn 23 54 28.6 +0.3**
YKB4 Yellowknife Ar 13.84 105 Pn **Pn 23 54 29.0 +0.4**
YKR9 Yellowknife Ar 13.84 105 Pn **Pn 23 54 29.4 +0.7**
YKB3 Yellowknife Ar 13.85 105 Pn **Pn 23 54 29.4 +0.6**
YKB2 Yellowknife Ar 13.87 105 Pn **Pn 23 54 30.1 +1.0**
RES Resolute Bay 15.76 48 Pn **P 23 54 56.7 -1.6**
0.3nm,0.3s,baz=243,slow=9.8,SNR=11
RES Sn **Sn 23 57 47.0 -1.5**
0.3nm,0.3s,baz=179,slow=22,SNR=6.6
RES Resolute Bay 15.76 48 Pn **P 23 54 56.4 -1.8**
RES Sn Sn 23 57 39.9 -8.5
WHFN White Fish Lak 16.41 96 Pn **Pn 23 55 02.4 -0.3**
PDAR Pinedale Array 32.09 128 P P 23 57 43.9 +4.2
0.2nm,0.5s,baz=294,slow=6.7,SNR=2.7
NVAR Mina Array Bea 33.97 142 P **P 23 57 58.5 +2.4**
0.4nm,0.3s,baz=302,slow=6.9,SNR=2.9
ARCES ARCESS Array B 41.25 5 P P 23 59 01.9 +4.8
4.1nm,1.1s,baz=336,slow=7.9,SNR=2.8
FINES FINESS Array B 49.37 6 P P 00 00 06.8 +5.4
0.6nm,0.7s,baz=0.0,slow=9.5,SNR=5.8

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*DDA **07** 00:00:57.8, 38°.71N×30°.76E, h7km, Md2.7*
*ISK **07** 00:00:57.8, 38°.71N×30°.77E, h5km, MD2.9*
*ISCJB **07** 00:00:58.4±0.5, 38°.71N±0°.03×30°.77E±0°.03, h7km±5km, Error ellipse: s-maj=5.5km s-min=4.2km az=167.3*
*CSEM **07** 00:00:58.2±0.1, 38°.70N×30°.77E, h5km, MD2.7, Error ellipse: s-maj=3.5km s-min=2.7km az=168.0*
ISC 07 00:00:58.1±0.8**, 38°.70N**±0°.03×**30°.79E**±0°.02**, h14km**±6km**, n32,** σ**0s.54**/46**, Turkey**

Code Station Name Δ° AZ° Phase ID (Op ISC) Time (h m s) Res (ISC)
BOLV Bolvadin 0.13 84 *i* P **Pg 00 01 01.8 0.0**
BOLV *i* S **Sg 00 01 04.1 -0.1**
BOLV Bolvadin 0.13 84 P **Pg 00 01 01.8 0.0**
BOLV S **Sg 00 01 04.1 -0.1**
SHUT Suhut-Afyon 0.24 231 *e*PG **Pg 00 01 03.1 -0.2**
SHUT *e*SG **Sg 00 01 06.7 -0.2**
SHUT Suhut-Afyon 0.24 231 *e*Pg **Pg 00 01 03.2 -0.2**
SHUT *e*Sg **Sg 00 01 06.7 -0.2**
AUKIR K˜–rka- Seyitg 0.61 341 *i* P **Pg 00 01 10.1 +0.1**
AUKIR *i* S **Sb 00 01 18.5 -0.5**
AUKIR K˜–rka- Seyitg 0.61 341 P **Pg 00 01 10.1 +0.1**
AUKIR S **Sb 00 01 18.5 -0.5**
ESKT Eskisehir 0.82 3 *i* P **Pg 00 01 13.0 -1.0**
ESKT *i* S **Sb 00 01 25.6 +0.5**
SEYT Eskypehyr 0.82 3 P **Pg 00 01 13.0 -1.0**
SEYT S **Sb 00 01 25.6 +0.5**
KIZT Kizilcal 0.87 78 *e*PG **Pb 00 01 15.4 +0.3**
KIZT *e*SG **Sn 00 01 27.9 -0.8**
KIZT Kizilcal 0.87 78 *e*Pg **Pb 00 01 15.4 +0.3**
KIZT *e*Sg **Sn 00 01 27.9 -0.8**
SVRH Sivrihisar-ESK 0.94 37 *e*PG **Pg 00 01 16.2 -0.1**
SVRH *e*SG **Sn 00 01 29.7 -0.5**
SVRH Sivrihisar-ESK 0.94 37 *e*Pg **Pg 00 01 16.2 -0.1**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
SVRH				eSg	Sn	00 01 29.7	-0.5
KDHN	Kadinhani	1.06	100	i P	Pb	00 01 17.9	-0.3
KDHN				i S	Sn	00 01 33.0	-0.2
KDHN	Kadinhani	1.06	100	P	Pb	00 01 17.9	-0.3
KDHN				S	Sn	00 01 33.0	-0.2
KHAL	Karahalli	1.07	252	i P	Pb	00 01 17.9	-0.5
KHAL	Karahalli	1.07	252	P	Pb	00 01 17.9	-0.5
GDZ	Gediz	1.09	291	i P	Pg	00 01 19.5	+0.4
GDZ	Gediz	1.09	291	P	Pg	00 01 19.5	+0.4
TVSB	Tavsanli	1.27	306	ePN	Pg	00 01 22.2	-0.4
TVSB	Tavsanli	1.27	306	ePn	Pg	00 01 22.2	-0.4
KONT	Konya--Tatoy	1.45	121	ePN	Pg	00 01 25.7	-0.3
KONT	Konya--Tatoy	1.45	121	ePn	Pg	00 01 25.7	-0.3
KULA	Kula-Manisa	1.68	264	ePN	Pb	00 01 28.4	-0.4
KULA	Kula-Manisa	1.68	264	ePn	Pb	00 01 28.4	-0.4
GULT	Gulveren	1.74	353	ePN	Pb	00 01 29.4	-0.5
GULT	Gulveren	1.74	353	ePn	Pb	00 01 29.4	-0.5
MDUB	Mudurnu	1.79	10	ePN	Pb	00 01 30.7	-0.1
MDUB	Mudurnu	1.79	10	ePn	Pb	00 01 30.7	-0.1
AFSR	Af¯ar-Bala (A	1.93	67	ePN	Pb	00 01 32.6	-0.5
AFSR	Af¯ar-Bala (A	1.93	67	ePn	Pb	00 01 32.6	-0.5
ARMT	Armutlu	2.38	322	ePN	Pn	00 01 38.1	+1.4
ARMT	Armutlu	2.38	322	ePn	Pn	00 01 38.2	+1.4

*IDC **07** 00:16:36.3±0.5, 27°.20N×143°.47E, h0km, mb4.1/22, mb1 4.3/26, mb1mx4.1/55, mbtmp4.1/26, ML3.8/4, Error ellipse: s-maj=13.5km s-min=11.9km az=106.0*
*JMA **07** 00:16:37.8±0.1, 27°.53N×143°.41E, h10km±2km, M4.8*
*ISCJB **07** 00:16:40.5±0.5, 27°.47N±0°.04×143°.40E±0°.05, h33km, mb4.2/28, Error ellipse: s-maj=7.2km s-min=4.4km az=36.6*
*NEIC **07** 00:16:41.6±0.3, 27°.23N×143°.39E, h35km, mb4.8/5, Error ellipse: s-maj=7.9km s-min=6.3km az=84.0*
ISC 07 00:16:42.0±0.5, **27°.34N**±0°.06×**143°.37E**±0°.07, **h35**km, **n48**, σ1s.29/59, **mb4.2**/28, **Bonin Islands region**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
CBIJ	Chichi jima	1.08	257	P	Pn	00 16 59.6	-1.1
CBIJ				eS	Sn	00 17 15.1	+0.6
CBIJ	Chichi jima	1.08	257	Pn	Pn	00 16 59.7	-1.0
CBIJ				Sn	Sn	00 17 15.1	+0.6
JCJ	Chichijima	1.08	257	Pn	Pn	00 16 59.7	-1.0
	98nm,0.3s,baz=353,slow=8.1,SNR=29						
JCJ				Sn	Sn	00 17 15.1	+0.6
	176nm,0.3s,baz=276,slow=22,SNR=15						
JCJ				LR	LR	00 17 38.8	
	comp=Z,572nm,20.9s,baz=119,slow=54						
JHHJ	Haha-jima-NKT	1.28	237	P	Pn	00 17 03.5	+0.1
JHHJ				eS	Sn	00 17 21.9	+2.6
JHJ	Hachijo jima 2	6.54	333	Pn	Pn	00 18 15.1	-0.6
	11nm,0.3s,baz=73,slow=19,SNR=3.7						
JHJ				Sn	Sn	00 19 31.2	+2.1
	6.6nm,0.3s,baz=72,slow=20,SNR=2.6						
BSO3	Boso 3	7.83	342	P	Pn	00 18 31.2	-2.0
BSO4	Boso 4	8.06	342	P	Pn	00 18 35.6	-0.8
BSO4				eS	Sn	00 20 04.6	-1.6
JOD2	Odawara 2	8.71	336	P	Pn	00 18 44.5	-0.9
JHU	Hanno	9.17	339	P	Pn	00 18 50.7	-1.1
JHU				S	Sn	00 20 30.3	-3.5
JRY	Ryogami san	9.45	337	P	Pn	00 18 54.9	-0.7
JRY				eS	Sn	00 20 37.7	-2.9
JAG	Ashikaga	9.65	341	P	Pn	00 18 57.1	-1.2
MJAR	Matsushiro Arr	10.17	336	Pn	Pn	00 19 04.8	-0.6
	3.4nm,0.3s,baz=156,slow=11,SNR=21						
MAJO	Matsushiro	10.17	336	ePn	Pn	00 19 05.0	-0.5
	13nm,0.5s						
MAT	Matsushiro	10.17	336	P	Pn	00 19 05.2	-0.3
MAT				eS	Sn	00 20 54.5	-3.7
KSRS	Korea Array	16.47	312	Pn	Pn	00 20 31.0	+0.7
	0.3nm,0.3s,baz=119,slow=11,SNR=6.4						
KSAR	Wonju Array Be	16.49	312	Pn	Pn	00 20 31.0	+0.4
USRK	Ussuriysk Ar.	19.16	334	P	Pn	00 21 03.5	+0.2
	0.3nm,0.3s,baz=146,slow=12,SNR=9.5						
KLR	Kul'dur	23.63	341	P	P	00 21 50.8	+1.0
	1.6nm,0.3s,baz=172,slow=9.6,SNR=9.6						
SONM	Songino Array	35.28	315	P	P	00 23 34.2	+0.7
	0.7nm,0.4s,baz=124,slow=8.5,SNR=9.1						
CMAR	Chiang Mai Arr	41.69	267	P	P	00 24 28.0	+0.4
	0.6nm,0.4s,baz=77,slow=5.1,SNR=3.8						
TIXI	Tiksi	45.08	354	P	P	00 24 55.1	+0.9
	2.7nm,0.6s,baz=141,slow=5.4,SNR=9.6						
WRAB	Tennant Creek	47.80	191	eP	P	00 25 14.2	-2.0
	15nm,0.6s						
WRA	Warramunga Arr	47.81	191	P	P	00 25 14.6	-1.6
	12nm,0.6s,baz=12,slow=8.4,SNR=29						
WRA				PcP	PcP	00 26 44.8	+0.1
	0.6nm,0.3s,baz=5.7,slow=3.5,SNR=2.5						
FITZ	Fitzroy Crossi	48.34	203	P	P	00 25 19.5	-0.7
	1.5nm,0.5s,baz=22,slow=5.4,SNR=3.6						
ZALV	Zalesovo Beam	50.00	319	P	P	00 25 33.7	+1.0
	1.2nm,0.5s,baz=94,slow=8.6,SNR=6.2						
ZALV				PcP	PcP	00 26 52.8	+0.5
	0.8nm,0.4s,baz=130,slow=4.3,SNR=3.1						
GSI	Gunungsitoli	50.92	247	eP	P	00 25 39.5	-0.6
	4.8nm,0.4s						
MKAR	Makanchi Array	51.13	309	P	P	00 25 42.1	+0.7
	0.4nm,0.4s,baz=91,slow=9.7,SNR=10						
ASAR	Alice Springs	51.53	191	P	P	00 25 42.1	-2.4
	1.7nm,0.6s,baz=9.1,slow=7.2,SNR=15						
NRIK	Noril'sk	52.81	338	P	P	00 25 54.7	+1.3
	1.5nm,0.4s,baz=116,slow=4.7,SNR=4.1						
KURK	Kurchatov	53.57	314	eP	P	00 25 59.9	+0.6
	7.5nm,0.6s						
ILAR	Eielson Array	56.99	29	P	P	00 26 23.1	-0.7
	1.9nm,0.9s,baz=261,slow=6.0,SNR=13						
BVAR	Borovoye Array	58.58	317	P	P	00 26 36.3	+1.1
	1.5nm,0.4s,baz=88,slow=7.2,SNR=12						
STKA	Stephens Creek	58.91	182	P	P	00 26 35.5	-2.0
	2.3nm,0.7s,baz=354,slow=9.3,SNR=7.1						
INK	Inuvik	62.37	25	P	P	00 27 00.9	+0.2
	1.2nm,0.4s,baz=296,slow=4.5,SNR=12						
DLBC	Dease Lake	65.40	35	P	P	00 27 20.1	-0.8
	1.1nm,0.8s,baz=270,slow=9.1,SNR=2.4						
ABKAR	Akbulak array	65.68	314	eP	P	00 27 22.8	0.0
	2.0nm,0.5s						
YKA	Yellowknife Ar	71.42	29	P	P	00 27 58.4	0.0
	1.3nm,0.8s,baz=294,slow=6.0,SNR=15						
RES	Resolute Bay	71.57	14	P	P	00 27 59.8	+0.8
	1.2nm,0.7s,baz=318,slow=3.6,SNR=5.2						
FINES	FINESS Array B	78.19	334	P	P	00 28 38.0	+0.4
	0.7nm,0.4s,baz=79,slow=4.9,SNR=14						
KBZ	Khabaz	78.61	313	P	P	00 28 41.4	+1.2
	4.0nm,0.9s,baz=102,slow=4.3,SNR=6.8						
NVAR	Mina Array Bea	79.53	52	P	P	00 28 46.4	+0.7
	1.2nm,0.9s,baz=270,slow=8.1,SNR=3.5						
AKASG	Malin Array Be	83.04	324	P	P	00 29 03.9	+0.1
	1.0nm,0.4s,baz=50,slow=5.0,SNR=12						
PDAR	Pinedale Array	83.29	45	P	P	00 29 05.2	-0.3
	0.5nm,0.9s,baz=298,slow=1.9,SNR=3.3						
RAYN	Ar Rayn	86.01	294	eP	P	00 29 20.1	+0.7
	3.4nm,0.7s						
TXAR	Lajitas Array	94.61	54	P	P	00 30 00.4	+0.7
	0.5nm,0.7s,baz=348,slow=2.1,SNR=6.9						
TORD	Torodi Ar. Bea	125.21	312	PKP	PKPdf	00 35 39.6	-0.1
	0.2nm,0.8s,baz=30,slow=0.9,SNR=7.2						
LPAZ	La Paz	148.84	76	PKPbc	PKPbc	00 36 27.2	-0.1
	2.3nm,0.6s,baz=278,slow=4.8,SNR=4.5						
PLCA	Paso Flores	149.08	124	PKPbc	PKPbc	00 36 26.4	-0.3
	0.6nm,0.5s,baz=263,slow=6.1,SNR=5.3						

*ISK **07** 00:17:10.6, 36°.09N×36°.08E, h8km, MD2.7*
*ISCJB **07** 00:17:11.9±0.5, 36°.13N±0°.02×36°.05E±0°.04, h13km±4km, Error ellipse: s-maj=6.0km s-min=4.0km az=174.7*
*NSSC **07** 00:17:11.7±1.2, 36°.15N×36°.04E, h12km±4km, MD1.1, ML1.6*
*CSEM **07** 00:17:12.0±0.1, 36°.12N×36°.08E, h12km, ML1.6, Error ellipse: s-maj=3.5km s-min=2.0km az=85.0*
ISC 07 00:17:11.9±0.9, **36°.13N**±0°.02×**36°.07E**±0°.03, **h14**km±7km, **n23**, σ0s.34/40, **Jordan-Syria region**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
TAHT	Tahtakopru-Hat	0.26	20	ePG	Pg	00 17 17.3	-0.3
TAHT				eSG	Sg	00 17 21.6	+0.2
TAHT	Tahtakopru-Hat	0.26	20	ePg	Pg	00 17 17.3	-0.3
TAHT				eSg	Sg	00 17 21.6	+0.2
ARNB	Al Arnab	0.28	197	eP	Pg	00 17 18.0	+0.2
ARNB				eS	Sg	00 17 21.8	0.0
ARNB				AML	AML	00 17 23.1	
	comp=E,52nm,0.5s						
ARNB				AML	AML	00 17 23.3	
	comp=N,41nm,0.5s						
ARNB	Al Arnab	0.28	197	eP	Pg	00 17 17.8	0.0
ARNB				eS	Sg	00 17 21.8	0.0
	comp=N,41nm,0.5s						
BTCH	Batrach	0.33	106	eP	Pb	00 17 19.4	-0.1
BTCH				eS	Sb	00 17 24.5	-0.1
BTCH				AML	AML	00 17 25.6	
	comp=E,119nm,0.2s						
BTCH				AML	AML	00 17 25.7	
	comp=N,153nm,0.5s						
BTCH	Batrach	0.33	106	eP	Pb	00 17 19.4	-0.1
BTCH				eS	Sb	00 17 24.5	-0.1
	comp=N,153nm,0.5s						
SLNF	Slenfeh	0.54	167	eP	Pg	00 17 22.6	-0.1
SLNF				eS	Sb	00 17 30.8	-0.2
SLNF				AML	AML	00 17 34.4	
	comp=E,59nm,0.5s						
SLNF				AML	AML	00 17 34.4	
	comp=N,70nm,0.4s						
SLNF	Slenfeh	0.54	167	eP	Pg	00 17 22.6	-0.1
SLNF				eS	Sg	00 17 30.1	+0.2
	comp=N,70nm,0.4s						
WRDH	Warideh	0.68	156	eP	Pb	00 17 25.3	-0.2
WRDH				eS	Sb	00 17 34.6	0.0
WRDH				AML	AML	00 17 35.7	
	comp=N,28nm,0.4s						
WRDH				AML	AML	00 17 39.0	
	comp=E,14nm,0.2s						
WRDH	Warideh	0.68	156	eP	Pb	00 17 25.3	-0.2
WRDH				eS	Sb	00 17 34.7	0.0
	comp=E,14nm,0.2s						
DRWC	Darouich	0.69	44	eP	Pg	00 17 25.0	-0.4
DRWC				eS	Sg	00 17 34.3	-0.1
DRWC				AML	AML	00 17 38.6	
	comp=E,20nm,0.2s						
DRWC				AML	AML	00 17 39.0	
	comp=N,12nm,0.3s						
DRWC	Darouich	0.69	44	eP	Pg	00 17 25.0	-0.4
DRWC				eS	Sg	00 17 34.3	-0.1
	comp=N,12nm,0.3s						
KRTS	Karatas	0.72	309	ePG	Pg	00 17 25.1	-0.8
KRTS				eSG	Sb	00 17 36.4	+0.6
BIDA	Albida	1.13	170	eP	Pb	00 17 32.6	-0.6
BIDA				eS	Sb	00 17 47.9	+0.2
BIDA				AML	AML	00 17 51.0	
	comp=N,31nm,0.5s						
BIDA				AML	AML	00 17 51.1	
	comp=E,36nm,0.3s						
BIDA	Albida	1.13	170	eP	Pb	00 17 32.6	-0.6
BIDA				eS	Sb	00 17 47.9	+0.2
	comp=E,36nm,0.3s						
KOZT	Kozan	1.36	352	ePN	Pb	00 17 37.2	0.0
KOZT	Kozan	1.36	352	ePn	Pb	00 17 37.2	0.0
MERS	Mersin	1.45	301	ePN	Pn	00 17 38.1	+0.4
MERS	Mersin	1.45	301	ePn	Pn	00 17 38.1	+0.4
KMRS	Kahramanmaras	1.53	26	ePN	Pn	00 17 39.4	+0.6
KMRS	Kahramanmaras	1.53	26	ePn	Pn	00 17 39.4	+0.6
HAWK	Haweek	1.62	170	eP	Pn	00 17 40.6	+0.5
HAWK				eS	Sn	00 18 00.7	-0.2
HAWK				AML	AML	00 18 03.7	
	comp=N,4.7nm,0.2s						
HAWK				AML	AML	00 18 04.8	
	comp=E,6.8nm,0.4s						
HAWK	Haweek	1.62	170	eP	Pn	00 17 40.6	+0.5
HAWK				eS	Sn	00 18 00.6	-0.2
	comp=E,7.0nm,0.4s						

*CSEM **07** 00:24:50.8±0.2, 36°.35N×36°.99E, h8km, ML1.3, Error ellipse: s-maj=5.7km s-min=3.1km az=127.0*
*NSSC **07** 00:24:51.0±0.8, 36°.35N×36°.94E, h0km±5km, MD0.9, ML1.3*
*DDA **07** 00:24:51.3, 36°.35N×37°.09E, h5km, Md2.7*
ISC 07 00:24:50.9±1.2, **36°.33N**±0°.03×**36°.98E**±0°.04, **h11**km±9km, **n16**, σ0s.34/30, **Jordan-Syria region**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
DRWC	Darouich	0.39	319	eP	Pg	00 24 58.2	-0.4
DRWC				eS	Sg	00 25 03.8	0.0
DRWC				AML	AML	00 25 25.6	
	comp=E,23nm,0.6s						
DRWC				AML	AML	00 25 26.2	
	comp=N,20nm,0.6s						
DRWC	Darouich	0.39	319	eP	Pg	00 24 58.2	-0.4
DRWC				eS	Sg	00 25 03.8	0.0
	comp=N,20nm,0.6s						
KUZU	Kuzuini	0.45	9	i P	Pg	00 24 59.7	0.0
KUZU	Kuzuini	0.45	9	P	Pg	00 24 59.7	0.0
BTCH	Batrach	0.51	236	eP	Pg	00 25 00.9	0.0
BTCH				eS	Sg	00 25 08.0	+0.3
BTCH				AML	AML	00 25 15.2	
	comp=N,22nm,0.4s						
BTCH				AML	AML	00 25 22.6	
	comp=E,27nm,0.6s						
BTCH	Batrach	0.51	236	eP	Pg	00 25 00.9	0.0
BTCH				eS	Sg	00 25 08.0	+0.3
	comp=E,27nm,0.6s						
KAMA	Osmaniye	0.89	344	i P	Pb	00 25 08.6	+0.2
KAMA				i S	Sb	00 25 20.2	-0.3
WRDH	Warideh	0.94	210	eP	Pb	00 25 09.4	+0.1
WRDH				eS	Sn	00 25 22.9	-0.7
WRDH				AML	AML	00 25 28.1	
	comp=E,7.6nm,0.2s						
WRDH				AML	AML	00 25 31.9	
	comp=N,11nm,0.5s						
WRDH	Warideh	0.94	210	eP	Pb	00 25 09.4	+0.1
WRDH				eS	Sn	00 25 22.9	-0.7
	comp=N,11nm,0.5s						
ARNB	Al Arnab	0.94	241	eP	Pg	00 25 09.0	0.0
ARNB				eS	Sb	00 25 22.3	+0.4
ARNB				AML	AML	00 25 26.0	
	comp=E,11nm,0.2s						
ARNB				AML	AML	00 25 27.0	
	comp=N,10nm,0.2s						
ARNB	Al Arnab	0.94	241	eP	Pg	00 25 09.0	0.0
ARNB				eS	Sb	00 25 22.3	+0.4
	comp=N,10.0nm,0.2s						
SLNF	Slenfeh	0.96	220	eP	Pg	00 25 09.2	-0.1
SLNF				eS	Sn	00 25 23.9	-0.3
SLNF				AML	AML	00 25 28.5	
	comp=E,15nm,0.4s						
SLNF				AML	AML	00 25 33.7	
	comp=N,23nm,0.5s						
SLNF	Slenfeh	0.96	220	eP	Pg	00 25 09.2	-0.1
SLNF				eS	Sn	00 25 24.4	+0.2
	comp=N,23nm,0.5s						
AYKD	Aykdinkavak	1.09	353	i P	Pn	00 25 12.4	+0.2
AYKD				i S	Sn	00 25 27.7	+0.3
SURC	SANLIURFA_SURC	1.42	67	i P	Pn	00 25 16.4	-0.4
SURC				i S	Sb	00 25 36.1	+0.5
SURC	SANLIURFA_SURC	1.42	67	P	Pn	00 25 16.4	-0.4
SURC				S	Sb	00 25 36.1	+0.5

IDC 07 00:24:57.6±3.2, **0°.36N**×**99°.52E**, **h0**km, **mb3.7**/5, **mb1 3.8**/5, **mb1mx3.5**/29, **mbtmp3.7**/5, **Error ellipse: s-maj=140.6km s-min=25.9km az=53.0, Northern Sumatera**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
WRA	Warramunga Arr	39.63	123	P	P	00 32 31.4	-0.1
	0.4nm,0.4s,baz=302,slow=9.0,SNR=2.2						
SONM	Songino Array	47.66	6	P	P	00 33 35.9	0.0
	0.4nm,0.7s,baz=188,slow=9.3,SNR=3.9						
MKAR	Makanchi Array	48.64	344	P	P	00 33 44.1	+0.8
	0.6nm,0.4s,baz=160,slow=8.4,SNR=19						
ZALV	Zalesovo Beam	54.77	349	P	P	00 34 28.3	-0.8
	0.5nm,0.3s,baz=156,slow=7.4,SNR=2.8						
BVAR	Borovoye Array	57.82	340	P	P	00 34 50.4	-0.4
	1.1nm,0.5s,baz=153,slow=9.5,SNR=8.0						

*ISCJB **07** 00:26:44.0±0.5, 41°.64S±0°.08×16°.3W±0°.1, h10km, mb4.6/14, MS3.9/17, Error ellipse: s-maj=15.3km s-min=12.2km az=178.3*
*IDC **07** 00:26:45.0±0.8, 41°.55S×16°.26W, h0km, mb4.2/8, mb1 4.3/8, mb1mx4.1/21, mbtmp4.2/8, MS3.9/16, Ms1 3.9/16, ms1mx3.7/29, Error ellipse: s-maj=29.8km s-min=22.3km az=78.0*
*NEIC **07** 00:26:45.7±0.3, 41°.61S×16°.35W, h10km, mb5.1/7, Error ellipse: s-maj=13.9km s-min=11.9km az=97.0*
*GCMT **07** 00:26:45.7±0.5, 41°.89S×16°.29W, h23km±1km, MW5.0/55, Moment Tensor Solution. s35,c40; s55,c71; Duration: 0 Moment tensor: Scale 10^{16}Nm; M_{rr}-3.56±.27; $M_{\theta\theta}$1.55±.22; $M_{\phi\phi}$2.01±.19; $M_{r\theta}$1.44±.31; $M_{\theta\phi}$-0.95±.12; $M_{\phi r}$0.19±.26; Best double couple: $M_0$3.41400×10^{16} NP1:ϕ_s305.00000°, δ54.00000°, λ-107.00000°. NP2: ϕ_s153.00000°, δ40.00000°, λ-68.00000°. Principal axes: T 2.8580, Plg7.0000°, Azm47.0000°; N 1.1110, Plg14.0000°, Azm315.0000°; P -3.9690, Plg74.0000°, Azm164.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
ISC 07 00:26:45.7±0.5, **41°.6S**±0°.1×**16°.3W**±0°.1, **h10**km, **n57**, σ1s.03/32, **mb4.5**/14, **MS4.0**/17, **1D, Southern Mid-Atlantic Ridge**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
SNAA	Sanae	30.84	172	eP	P	00 32 59.6	-1.9
	19nm,1.6s						
SUR	Sutherland	30.85	85	LR	LR	00 42 32.1	
	comp=Z,14nm,21.0s,baz=169,slow=31						
H10S2	ASCENSION HYDR	32.58	3	T	T	01 07 49.9	
	baz=182,slow=75,SNR=72						
H10S3	ASCENSION HYDR	32.59	3	T	T	01 07 43.7	
	baz=182,slow=75,SNR=91						
H10S1	ASCENSION HYDR	32.60	3	T	T	01 07 44.6	
	baz=182,slow=75,SNR=106						
H10N1	ASCENSION HYDR	33.70	3	T	T	01 09 25.0	
	baz=190,slow=78,SNR=5.7						
H10N3	ASCENSION HYDR	33.70	3	T	T	01 09 07.1	
	baz=190,slow=78,SNR=65						
H10N2	ASCENSION HYDR	33.71	3	T	T	01 09 24.6	
	baz=190,slow=78,SNR=21						
PMSA	Palmer Station	35.50	213	eP	P	00 33 43.3	+1.2
	220nm,1.6s						
BOSA	Boshof	36.05	82	LR	LR	00 47 06.2	
	comp=Z,105nm,18.4s,baz=170,slow=34						
TSUM	Tsumeb	36.44	63	eP	P	00 33 51.2	+0.3
	12nm,1.4s						
CPUP	Villa Florida	36.92	281	P	P	00 33 56.2	+1.5
	2.2nm,0.7s,baz=122,slow=10,SNR=4.1						
CPUP				LR	LR	00 47 45.5	
	comp=Z,225nm,18.8s,baz=136,slow=34						
BDFB	Brasilia	37.66	304	P	P	00 34 01.7	+0.6
	2.1nm,0.7s,baz=207,slow=3.1,SNR=4.3						
BDFB				LR	LR	00 46 15.1	
	comp=Z,128nm,20.7s,baz=100,slow=31						
LBTB	Lobatse	38.32	78	LR	LR	00 46 42.5	
	comp=Z,231nm,20.9s,baz=186,slow=31						
SYO	Syowa Base	39.74	152	⇓eP	P	00 34 16.7	-1.3
PLCA	Paso Flores	40.26	253	LR	LR	00 51 04.9	
	comp=Z,180nm,18.3s,baz=152,slow=36						
MAW	Mawson	48.29	150	P	P	00 35 28.6	+2.0
	3.9nm,0.8s,baz=262,slow=14,SNR=2.8						
MAW				LR	LR	00 51 30.3	
	comp=Z,77nm,20.3s,baz=238,slow=31						
QSPA	South Pole Qui	48.62	180	eP	P	00 35 20.7	-8.6
QSPA				esP	pP	00 35 30.6	-1.9
DBIC	Dimbokro	49.21	15	P	P	00 35 34.5	+0.3
	13nm,1.3s,baz=175,slow=14,SNR=3.7						
DBIC	Dimbokro	49.21	15	eP	P	00 35 34.5	+0.3
	26nm,1.4s						
LPAZ	La Paz	50.99	284	LR	LR	00 56 34.3	
	comp=Z,182nm,20.7s,baz=146,slow=35						
PTGA	Pitinga	56.59	304	LR	LR	00 58 10.5	
	comp=Z,109nm,19.0s,baz=152,slow=33						
TORD	Torodi Ar. Bea	56.99	21	P	P	00 36 31.7	+0.3
	2.9nm,1.2s,baz=193,slow=5.8,SNR=8.1						
TORD				LR	LR	00 56 21.3	
	comp=Z,109nm,21.6s,baz=130,slow=31						
TOA1	Torodi Ar. Sit	56.99	21	eP	P	00 36 31.8	+0.2
OPO	Ambohidratompo	58.20	87	LR	LR	00 59 09.5	
	comp=Z,58nm,18.6s,baz=186,slow=33						
VNDA	Vanda	61.11	180	P	P	00 37 00.7	+1.4
	2.0nm,1.0s,baz=194,slow=7.7,SNR=5.4						
KMBO	Kilima Mbogo	62.74	65	LR	LR	01 01 02.8	
	comp=Z,133nm,21.5s,baz=106,slow=33						
ATAH	Atahualpa	64.54	284	LR	LR	01 04 38.9	
	comp=Z,188nm,18.9s,baz=214,slow=35						
OTAV	Otavalo	69.67	289	eP	P	00 37 55.5	-0.7
	6.9nm,1.4s						
ROSC	El Rosal	70.11	296	LR	LR	01 07 14.9	
	comp=Z,210nm,20.7s,baz=136,slow=35						
GDHS	Morne Mazeau,	71.30	314	eP	P	00 38 03.5	-2.0
	93nm,1.1s						
SJG	San Juan	75.22	311	LR	LR	01 11 44.9	
	comp=Z,40nm,18.1s,baz=323,slow=36						
LRS	Lares	75.75	311	eP	P	00 38 29.9	-1.8
PAYG	Puerto Ayora	77.61	280	eP	P	00 38 37.6	-4.8
	47nm,1.2s						
KEST	Kesra	80.51	21	LR	LR	01 10 19.9	
	comp=Z,105nm,22.0s,baz=336,slow=32						
ESDC	Sonseca Array	81.71	10	P	P	00 39 05.5	+1.4
	1.4nm,0.9s,baz=187,slow=5.6,SNR=7.1						
H01W2	Cape Leeuwin H	91.29	141	T	T	02 22 14.7	
	baz=215,slow=76,SNR=5.4						
H01W1	Cape Leeuwin H	91.31	141	T	T	02 22 09.2	
	baz=215,slow=76,SNR=7.6						
H01W3	Cape Leeuwin H	91.31	141	T	T	02 22 10.9	
	baz=215,slow=76,SNR=4.9						
BR101	Keskin Array S	92.83	36	eP	P	00 39 58.1	-0.3
BRTR	Keskin Array B	92.83	36	P	P	00 39 58.1	-0.3
	0.5nm,0.8s,baz=195,slow=9.0,SNR=4.9						
GERES	GERESS Array B	93.91	19	LR	LR	01 17 56.0	
	comp=Z,25nm,21.7s,baz=326,slow=33						
N16A	Rees Ranch, Co	118.85	300	ePKPdf	PKPdf	00 45 33.8	-0.4
MK32	Makanchi Array	123.91	55	ePKPdf	PKPdf	00 45 43.6	+0.1
MKAR	Makanchi Array	123.91	55	PKP	PKPdf	00 45 43.6	+0.1
	0.2nm,0.7s,baz=278,slow=4.2,SNR=2.9						
YKA	Yellowknife Ar	129.53	323	PKP	PKPdf	00 45 53.4	-0.2
	1.2nm,0.9s,baz=106,slow=2.1,SNR=16						
YKB5	Yellowknife Ar	129.53	323	ePKPdf	PKPdf	00 45 53.4	-0.2
SONA0	Songino Array	139.64	61	ePKPdf	PKPdf	00 46 13.3	+0.1
SONM	Songino Array	139.64	61	PKP	PKPdf	00 46 13.3	+0.1
	0.8nm,0.9s,baz=228,slow=1.8,SNR=5.7						
ILAR	Eielson Array	143.81	327	PKP	PKPdf	00 46 18.5	-1.5
	0.9nm,0.9s,baz=68,slow=5.0,SNR=6.5						
ILB	Eielson Array	143.81	327	ePKPdf	PKPdf	00 46 18.5	-1.5
WRH	Wood River Hil	144.39	326	ePKPdf	PKPbc	00 46 19.5	0.0
MLY	Manley	145.30	328	ePKPbc	PKPab	00 46 22.5	-0.1
TIXI	Tiksi	145.36	19	ePKPdf	PKPab	00 46 22.6	0.0
TRF	Thorofare Moun	145.62	325	ePKPdf	PKPab	00 46 24.2	+0.2
BPAW	Bear Paw Mtn.	145.71	326	ePKPdf	PKPab	00 46 23.7	-0.4
KTH	Kantishna Hill	145.86	325	ePKPdf	PKPbc	00 46 23.7	-0.6

MAN 07 00:51:44, 17°.65N×120°.92E, h49km, mb4.1, ML2.9, MS2.6, 1C-1D, Luzon

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
ABRA	Dolores	0.20	269	eP	Pn	00 51 54.1	+1.9
ABRA				eS	Sn	00 51 59.3	+1.3
APYP	Conner	0.37	56	eP	Pn	00 51 52.7	-1.1
APYP				eS	Sn	00 51 57.1	-3.6
SIPP	Brgy, Tapao	0.51	302	⇑eP	Pn	00 51 58.5	+3.1
SIPP				eS	Sn	00 52 03.7	+0.2
PIP	Pasuquin	0.73	337	⇓iP	Pn	00 52 00.6	+2.5
PIP				eS	Sn	00 52 11.8	+3.5
CVP	Callao Caves	0.86	87	eP	Pn	00 52 01.9	+2.0
CVP				eS	Sn	00 52 13.2	+1.7
CAUP	Cauayan	1.12	129	eP	Pn	00 52 10.7	+7.4

JMA 07 00:51:58.6±0.1, **35°.89N**×**140°.96E**, **h17**km±2km, **M3.4**, **1C, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
CHOJ	Chosi	0.20	204	⇑P	Pg	00 52 03.3	-0.2
CHOJ				S	Sg	00 52 06.7	-0.1
JHO	Hitachi	0.79	336	P	Pb	00 52 13.5	-0.3
MAT	Matsushiro	2.32	287	P	Pn	00 52 36.4	+0.4
MAT				S	Sb	00 53 08.5	+0.1

*ISCJB **07** 00:53:43.7±0.4, 28°.76N±0°.05×139°.71E±0°.10, h423km, mb3.4/17, Error ellipse: s-maj=12.3km s-min=5.5km az=158.2*
*IDC **07** 00:53:44.2±0.7, 28°.69N×139°.68E, h415km±9km, mb3.2/17, mb1 3.3/19, mb1mx3.2/45, mbtmp3.9/19, Error ellipse: s-maj=20.5km s-min=12.1km az=70.0*
*JMA **07** 00:53:44.5±0.1, 28°.86N×140°.15E, h435km, M3.6*
ISC 07 00:53:44.7±0.5, **28°.78N**±0°.07×**139°.8E**±0°.1, **h423**km, **n26**,

σ1§22/35,mb3.4/17,Bonin Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CBIJ	Chichi jima	2.71	128	P	P	00 54 47.3	-0.2
CBIJ				S	S	00 55 36.7	-1.6
JCJ	Chichijima	2.71	128	P	P	00 54 47.4	-0.1
	74nm,0.3s,baz=353,slow=17,SNR=38						
JCJ				S	S	00 55 36.7	-1.7
	97nm,0.3s,baz=308,slow=23,SNR=19						
JHHJ	Haha-jima-NKT	3.02	135	P	P	00 54 49.6	-0.2
JHHJ				eS	S	00 55 41.6	-1.0
BSO3	Boso 3	6.04	6	eS	S	00 56 33.5	-0.8
JRY	Ryogami san	7.25	354	P	P	00 55 32.0	+0.2
JRY				eS	S	00 56 56.6	-2.4
JAG	Ashikaga	7.63	358	P	P	00 55 35.2	-0.6
JAG				eS	S	00 57 02.7	-3.8
USRK	Ussuriysk Ar.	16.60	340	P	P	00 57 14.9	+1.6
	0.8nm,0.3s,baz=146,slow=10,SNR=14						
SONM	Songino Array	32.03	316	P	P	00 59 34.9	+0.5
	0.8nm,0.4s,baz=128,slow=7.7,SNR=11						
SONM				PcP	PcP	01 02 13.6	+1.5
	0.3nm,0.5s,baz=64,slow=1.4,SNR=3.1						
TLY	Talaya	35.30	321	P	P	01 00 03.1	+1.1
	baz=238,slow=15						
ZALV	Zalesovo Beam	46.83	318	P	P	01 01 33.5	-0.8
	0.4nm,0.4s,baz=87,slow=5.2,SNR=3.7						
ZALV				PcP	PcP	01 02 58.9	-0.4
	0.3nm,0.3s,baz=111,slow=2.0,SNR=4.2						
MKAR	Makanchi Array	47.77	309	P	P	01 01 41.3	-0.4
	0.9nm,0.7s,baz=88,slow=9.0,SNR=11						
MKAR				PcP	pP	01 03 03.2	-1.7
	0.5nm,0.5s,baz=92,slow=4.3,SNR=7.9						
MKAR				ScP	ScP	01 06 15.5	-0.6
	0.1nm,0.4s,baz=85,slow=3.8,SNR=3.9						
WRA	Warramunga Arr	48.72	187	P	P	01 01 49.0	-0.1
	0.7nm,0.4s,baz=5.8,slow=7.5,SNR=4.0						
NRIK	Noril'sk	50.31	339	P	P	01 02 00.4	+0.2
	1.5nm,0.4s,baz=122,slow=9.2,SNR=3.7						
ASAR	Alice Springs	52.45	187	P	P	01 02 15.7	-0.7
	0.4nm,0.5s,baz=15,slow=13,SNR=5.9						
ILAR	Eielson Array	57.27	29	P	P	01 02 51.0	+1.1
	0.3nm,0.4s,baz=248,slow=5.9,SNR=6.9						
STKA	Stephens Creek	60.35	178	P	P	01 03 11.4	+0.2
	0.5nm,0.4s,baz=356,slow=13,SNR=2.8						
ARCES	ARCESS Array B	71.25	340	P	P	01 04 20.1	+0.8
	1.6nm,0.7s,baz=80,slow=8.4,SNR=14						
YKA	Yellowknife Ar	71.67	28	P	P	01 04 23.2	+1.4
	0.2nm,0.4s,baz=294,slow=5.7,SNR=5.2						
KBZ	Khabaz	75.31	312	P	P	01 04 43.7	+0.7
	3.2nm,0.7s,baz=71,slow=5.7,SNR=8.3						
FINES	FINESS Array B	75.50	333	P	P	01 04 44.0	+0.2
	1.3nm,0.3s,baz=72,slow=4.8,SNR=28						
AKASG	Malin Array Be	80.00	323	P	P	01 05 08.4	-0.1
	0.6nm,0.4s,baz=51,slow=5.4,SNR=6.1						
NOA	NORSAR Array B	81.25	337	P	P	01 05 14.7	-0.2
	1.1nm,0.9s,baz=38,slow=5.0,SNR=3.2						
BRTR	Keskin Array B	83.30	312	P	P	01 05 25.9	-0.1
	0.7nm,0.6s,baz=72,slow=4.7,SNR=5.5						
GERES	GERESS Array B	88.97	328	P	P	01 05 52.0	-1.0
	0.2nm,0.3s,baz=46,slow=2.8,SNR=3.3						
TXAR	Lajitas Array	96.27	52	P	P	01 06 28.6	+1.7
	0.1nm,0.5s,baz=299,slow=1.9,SNR=2.6						
TORD	Torodi Ar. Bea	121.88	310	PKP	PKPdf	01 11 49.9	-0.5
	0.5nm,0.6s,baz=48,slow=1.9,SNR=12						

CASC 07 00:59:13.8±2.1,8°.97N×83°.97W,h1km±9km,MD4.2,1C-3D, Costa Rica

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
QCR	Quepos	0.49	337⇓	iP	Pg	00 59 23.5	+0.2
QCR				eS	Sb	00 59 32.0	-1.0
BUS	Buena Vista	0.62	19⇓	iP	Pb	00 59 26.9	-0.8
BUS				eS	Sb	00 59 38.0	+0.9
URSC	Urasca	0.88	12⇓	iP	Pg	00 59 31.3	+0.6
URSC				eS	Sn	00 59 45.9	-1.2
CGA2	Cerro Gallo 2	1.15	335	eP	Pg	00 59 34.8	-1.1
CGA2				eS	Sg	00 59 51.2	+0.3
BRU2	Volcan	1.27	98⇑	iP	Pg	00 59 38.2	-0.1
BRU2				i S	Sn	00 59 57.3	+0.6
TBS2		1.31	98	i P	Pg	00 59 39.0	+0.1
TBS2				i S	Sn	00 59 57.8	+0.3
JCR	Jicaral	1.43	308	eP	Pn	00 59 39.7	-1.3
JCR				eS	Sn	01 00 01.6	+1.1
PNME	Penonome	3.63	97	eP	Pn	01 00 10.9	-0.3
AZU	Azuero	3.84	107	eP	Pn	01 00 13.7	-0.3
ZANG	Zanguenga, Cho	4.05	90	eP	Pn	01 00 17.8	+0.8
BCIP	Isla Barro Col	4.08	87	i P	Pn	01 00 18.2	+0.8

MAN 07 01:05:55,17°.04N×121°.75E,h69km,mb3.8,ML2.5,MS2.1, 1C-1D,Luzon

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CAUP	Cauayan	0.12	141	eP	Pn	01 06 06.3	+1.1
CVP	Callao Caves	0.67	6	eP	Pn	01 06 12.2	+2.7
CVP				eS	Sn	01 06 22.8	+2.7
ABRA	Dolores	1.16	302	eP	Pn	01 06 16.4	+1.0
BCPH	Baguio City Da	1.29	240⇑	iP	Pn	01 06 17.4	0.0
BCPH				i S	Sn	01 06 35.4	+1.3
BALP	Baler	1.30	187	eP	Pn	01 06 19.3	+2.0
BALP				eS	Sn	01 06 32.6	-1.4
PCPH	Palayan	1.59	203⇓	eP	Pn	01 06 23.1	+1.9

IDC 07 01:08:19.3±2.9,14°.58S×178°.14W,h334km±34km, mb3.2/6,mb1 3.6/7,mb1mx3.2/35,mbtmp3.9/7,Error ellipse: s-maj=72.7km s-min=14.7km az=150.0,Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AFI	Afiamalu	6.20	85	P	Pn	01 09 51.9	-0.2
	5.6nm,0.3s,baz=238,slow=12,SNR=6.9						
STKA	Stephens Creek	40.53	238	P	P	01 15 27.1	-0.1
	1.6nm,0.4s,baz=70,slow=10,SNR=6.8						
WRA	Warramunga Arr	45.58	256	P	P	01 16 07.2	-0.3
	0.7nm,0.5s,baz=91,slow=7.9,SNR=6.9						
WRA				PcP	PcP	01 17 37.7	-2.0
	0.5nm,0.3s,baz=105,slow=3.7,SNR=2.7						
ASAR	Alice Springs	46.02	251	P	P	01 16 11.1	+0.2
	15nm,0.5s,baz=84,slow=8.4,SNR=217						
ASAR				PcP	PcP	01 17 40.7	-0.6
	0.4nm,0.4s,baz=100,slow=4.2,SNR=3.7						
ILAR	Eielson Array	82.61	13	P	P	01 20 05.2	-0.1
	1.3nm,0.9s,baz=230,slow=8.0,SNR=7.0						
TXAR	Lajitas Array	84.01	58	P	P	01 20 13.7	+0.4
	0.8nm,0.7s,baz=223,slow=6.4,SNR=12						
PDAR	Pinedale Array	84.77	44	P	P	01 20 16.8	-0.2
	0.4nm,0.5s,baz=225,slow=2.8,SNR=5.5						
YKA	Yellowknife Ar	91.22	25	P	P	01 20 46.5	-0.1
	0.1nm,0.4s,baz=282,slow=4.5,SNR=5.3						
MMAI	Mount Meron Ar	144.46	307	PKP	PKPdf	01 27 17.4	+0.6
	0.7nm,0.5s,baz=66,slow=3.9,SNR=3.9						

JMA 07 01:12:04.1±0.1,37°.42N×141°.53E,h42km±2km,M3.6, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	Kawauchi	0.53	264	P	Pn	01 12 15.2	-0.1
JFK				S	Sn	01 12 22.8	-0.4
ONAJ	Iwakimizuishiy	0.67	242	P	Pn	01 12 17.0	-0.2
ONAJ				S	Sn	01 12 26.3	-0.2
JMM	Marumori	0.73	307	P	Pn	01 12 18.0	-0.1
JMM				S	Sn	01 12 27.8	-0.3
JFT	Otama	0.95	276	P	Pn	01 12 21.9	+0.8
JFT				S	Sn	01 12 34.4	+0.9
JIO	Ouri	1.04	352	P	Pn	01 12 22.0	-0.2
JIO				S	Sn	01 12 34.3	-1.3
JHO	Hitachi	1.11	224	P	Pn	01 12 22.7	-0.6
JHO				S	Sn	01 12 36.6	-0.8
JOU	Okura	1.17	324	P	Pn	01 12 24.4	+0.4
JOU				S	Sn	01 12 39.5	+0.8
JYS	Shirataka	1.41	305	P	Pn	01 12 28.2	+0.9
JYS				S	Sn	01 12 45.7	+1.0

IDC 07 01:12:52.6±0.5,35°.58N×141°.87E,h0km,mb4.1/26, mb1 4.2/31,mb1mx4.1/49,mbtmp4.1/31,ML3.3/4,MS3.4/18, Ms1 3.4/18,ms1mx3.2/49,Error ellipse: s-maj=15.8km s-min=12.2km az=99.0
ISCJB 07 01:12:54.0±0.4,35°.57N±0°.04×141°.93E±0°.05,h22km, mb4.2/30,MS3.4/13,Error ellipse: s-maj=6.2km s-min=5.5km az=34.7
JMA 07 01:12:54.2±0.2,35°.69N×141°.93E,h20km±3km,M3.8
NEIC 07 01:12:57.7±0.4,35°.61N×141°.88E,h35km,mb4.5/5,Error ellipse: s-maj=9.3km s-min=7.6km az=88.0
ISC 07 01:12:55.6±0.5,35°.54N±0°.05×141°.84E±0°.06,h22km,n65, σ1§15/61,mb4.2/30,MS3.5/13,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	Chosi	0.81	282	P	Pb	01 13 10.4	-0.6
CHOJ				eS	Sb	01 13 21.9	+0.4
BSO1	Boso 1	1.13	219	P	Pb	01 13 16.9	+0.8
BSO3	Boso 3	1.31	236	P	Pb	01 13 20.0	+0.6
JHJ	Hachijo jima 2	2.96	216	Pn	Pn	01 13 41.8	+0.6
	56nm,0.3s,baz=69,slow=20,SNR=12						
JHJ				Sn	Sn	01 14 18.2	+2.2
	126nm,0.3s,baz=57,slow=19,SNR=12						
MJAR	Matsushiro Arr	3.10	290	Pn	Pn	01 13 44.3	+1.0
	8.2nm,0.3s,baz=93,slow=8.6,SNR=12						
MAJO	Matsushiro	3.10	290	Pn	Pn	01 13 43.9	+0.6
MAJO				eS	Sn	01 14 15.8	-3.9
MAT	Matsushiro	3.10	290	P	Pn	01 13 44.8	+1.5
MAT				eS	Sn	01 14 18.5	-1.2
ERM	Erimo	6.54	9	Pn	Pn	01 14 26.4	-4.1
ERM				eS	Sn	01 15 37.4	-6.9
CBIJ	Chichi jima	8.43	178	ePn	Pn	01 14 55.9	-0.5
CBIJ				eS	Sn	01 16 26.8	-4.0
JCJ	Chichijima	8.43	178	Pn	Pn	01 14 55.7	-0.7
	baz=282,slow=20						
JCJ				Sn	Sn	01 16 28.4	-2.5
	baz=288,slow=20						
JNU	Nakatsue	9.38	258	LR	LR	01 18 59.1	
	comp=Z,214nm,21.3s,baz=297,slow=39						
KSRS	Korea Array	11.36	284	LR	LR	01 18 59.0	
	comp=Z,42nm,20.0s,baz=78,slow=32						
USRK	Ussuriysk Ar.	11.48	322	Pn	Pn	01 15 38.5	+0.4
	0.2nm,0.3s,baz=134,slow=19,SNR=5.0						
USRK				LR	LR	01 19 46.7	
	comp=Z,140nm,19.5s,baz=102,slow=36						
JOW	Kunigami	14.48	237	LR	LR	01 21 53.4	
	comp=Z,104nm,20.3s,baz=171,slow=37						
KLR	Kul'dur	15.55	335	Pn	Pn	01 16 32.1	-1.3
	0.1nm,0.3s,baz=145,slow=16,SNR=2.6						
KLR				LR	LR	01 22 25.1	
	comp=Z,129nm,19.3s,baz=146,slow=37						
PETK	Petropavlovsk-	20.82	28	P	P	01 17 34.7	-0.8
	3.7nm,0.8s,baz=198,slow=13,SNR=2.6						
PETK				LR	LR	01 26 07.7	
	comp=Z,78nm,21.2s,baz=221,slow=38						
GUMO	Guam	22.03	172	LR	LR	01 26 58.1	
	comp=Z,26nm,21.1s,baz=220,slow=38						
MA2	Magadan	24.74	11	P	P	01 18 15.5	+0.3
	2.7nm,0.5s,baz=223,slow=12,SNR=4.3						
MA2				LR	LR	01 29 16.1	
	comp=Z,94nm,18.1s,baz=258,slow=40						
H11N2	WAKE ISLAND Hy	27.11	119	T	T	01 46 56.3	
	baz=311,slow=75,SNR=145						
H11N1	WAKE ISLAND Hy	27.12	119	T	T	01 46 57.0	
	baz=311,slow=75,SNR=143						
H11N3	WAKE ISLAND Hy	27.13	119	T	T	01 46 57.7	
	baz=311,slow=75,SNR=135						
YAK	Yakutsk	27.59	348	LR	LR	01 30 05.0	
	comp=Z,102nm,18.2s,baz=138,slow=38						
H11S1	WAKE ISLAND Hy	27.78	121	T	T	01 47 42.6	
	baz=314,slow=75,SNR=92						
H11S3	WAKE ISLAND Hy	27.78	121	T	T	01 47 46.7	
	baz=314,slow=75,SNR=94						
H11S2	WAKE ISLAND Hy	27.80	121	T	T	01 47 47.8	
	baz=314,slow=75,SNR=66						
SEY	Seymchan	28.19	10	P	P	01 18 46.7	+0.5
	0.7nm,0.3s,baz=197,slow=6.3,SNR=6.4						
SONM	Songino Array	28.92	306	P	P	01 18 53.7	+0.7
	1.9nm,0.6s,baz=107,slow=8.6,SNR=17						
SONM				PcP	PcP	01 22 02.2	+0.5
	0.2nm,0.5s,baz=127,slow=2.9,SNR=2.7						
TIXI	Tiksi	36.81	353	P	P	01 20 01.2	-0.2
	2.2nm,0.6s,baz=161,slow=4.3,SNR=3.6						
TIXI				LR	LR	01 37 31.6	
	comp=Z,113nm,18.2s,baz=163,slow=40						
CMAR	Chiang Mai Arr	41.48	257	LR	LR	01 39 23.7	
	comp=Z,47nm,18.2s,baz=50,slow=38						
ZALV	Zalesovo Beam	43.18	314	P	P	01 20 54.5	0.0
	2.1nm,0.5s,baz=97,slow=7.4,SNR=9.8						
ZALV				PcP	PcP	01 22 43.3	-0.4
	1.3nm,0.6s,baz=120,slow=2.0,SNR=3.8						
MKAR	Makanchi Array	45.21	303	P	P	01 21 11.3	+0.4
	3.7nm,0.7s,baz=91,slow=9.4,SNR=26						
MKAR				PcP	PcP	01 22 50.2	-0.6
	0.4nm,0.7s,baz=90,slow=1.4,SNR=2.0						
KURK	Kurchatov	47.13	309	eP	P	01 21 25.3	-0.6
	23nm,0.8s						
ILAR	Eielson Array	50.57	32	P	P	01 21 52.3	+0.1
	2.2nm,0.8s,baz=264,slow=6.5,SNR=23						
TKM2	Tokmak 2	50.65	300	eP	P	01 21 54.4	+1.1
	2.7nm,0.5s						
BVAR	Borovoye Array	51.83	313	P	P	01 22 01.9	+0.1
	1.3nm,0.7s,baz=88,slow=7.9,SNR=9.5						
BVAR				PcP	PcP	01 23 15.0	+0.5
	1.3nm,0.7s,baz=72,slow=4.8,SNR=4.2						
BRVK	Borovoye	51.89	313	eP	P	01 22 02.4	+0.2
	6.1nm,1.1s						
INK	Inuvik	55.56	27	P	P	01 22 29.2	+0.4
	1.3nm,0.8s,baz=275,slow=6.0,SNR=6.0						
WRAB	Tennant Creek	55.63	189	eP	P	01 22 29.3	-0.5
WRA	Warramunga Arr	55.64	189	P	P	01 22 30.4	+0.5
	6.5nm,0.8s,baz=8.4,slow=7.4,SNR=24						
ABKAR	Akbulak array	59.16	311	eP	P	01 22 54.0	-0.6
	2.3nm,0.5s						
ASAR	Alice Springs	59.37	188	P	P	01 22 57.0	+0.9
	2.2nm,0.6s,baz=7.9,slow=6.7,SNR=23						
AKTO	Aktyubinsk	59.93	313	P	P	01 23 00.2	+0.4
	1.7nm,0.7s,baz=90,slow=7.7,SNR=6.8						
SPITS	Spitsbergen Ar	62.05	349	LR	LR	01 52 48.6	
	comp=Z,57nm,18.3s,baz=45,slow=39						
RES	Resolute Bay	63.96	14	eP	P	01 23 26.4	-0.1
	5.0nm,0.9s						
YKA	Yellowknife Ar	64.92	30	P	P	01 23 33.0	0.0
	0.9nm,0.8s,baz=301,slow=6.5,SNR=13						
YKA	Yellowknife Ar	64.92	30	P	P	01 23 33.0	0.0
ARCES	ARCESS Array B	65.51	340	LR	LR	01 58 12.0	
	comp=Z,28nm,18.4s,baz=16,slow=42						
STKA	Stephens Creek	67.07	180	P	P	01 23 48.2	+1.2
	1.1nm,0.7s,baz=342,slow=13,SNR=3.2						
STKA				LR	LR	01 54 30.7	
	comp=Z,26nm,18.6s,baz=24,slow=37						
FINES	FINESS Array B	70.29	333	P	P	01 24 06.9	0.0
	2.1nm,0.7s,baz=74,slow=6.8,SNR=7.2						
FINES				PcP	PcP	01 24 27.8	-0.7
	0.8nm,0.4s,baz=75,slow=4.0,SNR=6.8						
FINES				LR	LR	01 55 51.6	
	comp=Z,25nm,19.4s,baz=24,slow=37						
WSAR	Wadi Sarin	71.59	286	P	P	01 24 16.3	+0.9
	1.5nm,0.6s,baz=45,slow=7.1,SNR=2.6						
KBZ	Khabaz	72.13	311	P	P	01 24 19.6	+1.3
	1.1nm,0.8s,baz=49,slow=6.3,SNR=3.3						
GNI	Garni	72.87	307	P	P	01 24 24.8	+1.7
	1.8nm,0.8s,baz=234,slow=15,SNR=2.0						
AKASG	Malin Array Be	75.69	323	P	P	01 24 38.8	-0.2
	1.7nm,0.4s,baz=47,slow=5.6,SNR=14						
NB2	NORSAR Subarra	75.69	338	P	P	01 24 38.8	-0.1
	comp=Z,0.8nm,0.6s,baz=39,slow=6.2						
NOA	NORSAR Array B	75.69	338	P	P	01 24 39.1	+0.2
	comp=Z,1.6nm,0.8s,baz=39,slow=5.7,SNR=5.2						
PDAR	Pinedale Array	78.47	45	P	P	01 24 55.9	+0.8
	comp=Z,0.4nm,0.5s,baz=238,slow=2.0,SNR=5.6						
BRTR	Keskin Array B	80.10	312	P	P	01 25 05.0	+1.0
	comp=Z,1.4nm,0.8s,baz=106,slow=2.7,SNR=9.8						
BRTR				LR	LR	02 02 43.3	
	comp=Z,12nm,18.5s,baz=285,slow=37						
DPC	Dobruska-Polom	81.90	328	eP	P	01 25 14.7	+1.4
MMAI	Mount Meron Ar	83.11	306	P	P	01 25 20.4	+0.5
	comp=Z,1.1nm,0.7s,baz=46,slow=4.2,SNR=3.6						
KHC	Kasperske Hory	83.99	329	eP	P	01 25 24.7	+0.6
KHC				ePCP	pP	01 25 29.8	-1.5
GERES	GERESS Array B	84.16	329	P	P	01 25 25.1	0.0
	comp=Z,0.7nm,0.5s,baz=38,slow=5.0,SNR=9.8						
GERES				LR	LR	02 04 22.3	
	comp=Z,25nm,18.8s,baz=344,slow=37						
SCHQ	Schefferville	86.67	16	LR	LR	02 08 43.7	
	comp=Z,34nm,18.4s,baz=24,slow=39						
TXAR	Lajitas Array	90.76	53	P	P	01 25 58.6	+1.4
	comp=Z,0.6nm,0.7s,baz=296,slow=3.7,SNR=8.4						
TORD	Torodi Ar. Bea	118.62	315	PKP	PKPdf	01 31 42.4	0.0
	comp=Z,0.6nm,0.9s,baz=13,slow=1.7,SNR=2.9						
LPAZ	La Paz	147.12	62	PKPbc	PKPab	01 32 38.0	-1.7
	comp=Z,1.2nm,0.6s,baz=268,slow=6.4,SNR=4.4						

MOS 07 01:22:33.6±1.3,43°.74N×147°.37E,h58km,mb4.1/2,Error ellipse: s-maj=22.4km s-min=13.3km az=101.0
SKHL 07 01:22:33.5±0.4,43°.68N×147°.56E,h61km±2km,mb4.7/3
ISCJB 07 01:22:34.7±0.8,43°.82N±0°.07×147°.32E±0°.08,h59km±6km, mb3.7/7,Error ellipse: s-maj=13.8km s-min=5.2km az=140.7
JMA 07 01:22:35.9±0.2,43°.69N×147°.24E,h35km,M4.1
IDC 07 01:23:28.2±3.1,45°.90N×146°.05E,h542km±52km,mb2.8/7, mb1 3.2/8,mb1mx2.8/49,mbtmp3.8/8,Error ellipse: s-maj=39.7km s-min=24.8km az=166.0
ISC 07 01:22:35.0±1.2,43°.79N±0°.07×147°.38E±0°.07,h49km±9km, n43,σ1§10/58,mb3.7/7,2C-1D,Kuril Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SHO	Shikotan	0.41	282	eP	Pn	01 22 45.6	+0.5
SHO				AMB	AMB	01 22 45.9	
	1µm,0.3s						
SHO				eS	Sn	01 22 52.7	+0.4
SHO				A	A	01 22 53.0	
	12µm,0.3s						
SHO				A	A	01 22 53.0	
	5µm,0.3s						
SHO	Shikotan	0.41	282c	iPN	Pn	01 22 45.5	+0.5
SHO				i S	Sn	01 22 52.5	+0.2
SHO				pmax	pmax		
	comp=Z,1µm,0.3s						
SHO				pmax	pmax		
	comp=N,302nm,0.2s						
SHO				pmax	pmax		
	comp=E,431nm,0.2s						
SHO				smax	smax		
	comp=N,13µm,0.2s						
SHO				smax	smax		
	comp=E,9µm,0.3s						
YUK	Yuzh-Kuril'sk	1.12	283	i P	Pn	01 22 53.0	-1.3
YUK				AMB	AMB	01 22 55.6	
	comp=E,310nm,0.3s						
YUK				i S	Sn	01 23 07.3	-1.4
YUK				A	A	01 23 09.6	
	comp=E,4µm,0.6s						
YUK	Yuzh-Kuril'sk	1.12	283c	iPN	Pn	01 22 54.3	0.0
YUK				i S	Sn	01 23 07.3	-1.4
YUK				pmax	pmax		
	comp=Z,624nm,0.2s						
YUK				pmax	pmax		
	comp=N,170nm,0.1s						
YUK				pmax	pmax		
	comp=E,225nm,0.1s						
YUK				smax	smax		
	comp=N,2µm,0.1s						
YUK				smax	smax		
	comp=E,2µm,0.2s						
NEM2	Nemuro 2	1.26	251	P	Pn	01 22 56.1	-0.1
NEM2				eS	Sn	01 23 10.6	-1.4
KUR	Kuril'sk	1.49	13	eP	Pn	01 22 58.6	-0.7
KUR				AMB	AMB	01 23 00.8	
	comp=E,60nm,0.2s						
KUR				i S	Sn	01 23 17.7	+0.1
KUR				A	A	01 23 20.3	
	comp=E,1µm,0.5s						
KUR				A	A	01 23 20.3	
	comp=E,370nm,0.5s						
KUR	Kuril'sk	1.49	13d	iPN	Pn	01 23 00.2	+0.9
KUR				i S	Sn	01 23 17.6	0.0
KUR				pmax	pmax		
	comp=N,22nm,0.1s						
KUR				pmax	pmax		
	comp=E,31nm,0.1s						
KUR				pmax	pmax		
	comp=Z,109nm,0.1s						
KUR				smax	smax		
	comp=N,3µm,0.2s						
KUR				smax	smax		
	comp=E,870nm,0.2s						
JRA	Rausu	1.64	276	P	Pn	01 23 02.0	+0.7
JRA				eS	Sn	01 23 20.9	-0.3
JNK	Nakash	1.94	265	P	Pn	01 23 05.8	+0.3
JNK				eS	Sn	01 23 28.5	-0.1
JAK	Akkeshi	2.11	249	P	Pn	01 23 07.9	+0.1
JAK				eS	Sn	01 23 31.3	-1.4
JTKR	Abashiri--Toko	2.52	275	P	Pn	01 23 14.4	+1.0
JAR	Ashorobuto	2.67	261	P	Pn	01 23 16.3	+0.8
JAR				eS	Sn	01 23 46.7	+0.1
JOB	Onbets	2.73	252	P	Pn	01 23 17.0	+0.7
JOB				eS	Sn	01 23 47.8	-0.3
JMP	Maruseppu	2.91	276	P	Pn	01 23 20.2	+1.3
HRK	Horoka	3.10	266	eP	Pn	01 23 23.3	+1.8
JCH	Churui	3.16	250	P	Pn	01 23 22.1	-0.1
JCH				eS	Sn	01 23 58.2	-0.5
JKK2	Kamakawa 2	3.35	273	P	Pn	01 23 27.0	+2.1
JFR	Furan	3.54	262	P	Pn	01 23 29.3	+1.9
JFR				eS	Sn	01 24 09.5	+1.5
JEM	Erimo	3.57	242	P	Pn	01 23 30.2	+2.4
JEM				eS	Sn	01 24 10.9	+2.2
JSE	Soyaes	3.63	291	P	Pn	01 23 29.8	+1.1
JNBK	Urakawa-nobuka	3.71	248	P	Pn	01 23 30.0	+0.3
YSS	Yuzh-Sakhalins	4.54	316	eP	Pn	01 23 41.2	0.0
YSS	Yuzh-Sakhalins	4.54	316	ePN	Pn	01 23 42.9	+1.7
TYV	Tymovskoe	7.77	337	eP	Pn	01 24 27.6	+2.2
TYV	Tymovskoe	7.77	337	ePN	Pn	01 24 28.1	+2.7
SEY	Seymchan	19.40	7	P	P	01 26 55.0	-1.7
	comp=E,0.1nm,0.3s,baz=187,slow=11,SNR=7.2						
SEY	Seymchan	19.40	7	P	P	01 26 55.0	-1.7
SONM	Songino Array	28.61	293	P	P	01 28 26.1	-0.5
	comp=E,0.3nm,0.5s,baz=93,slow=7.2,SNR=2.7						
SONM	Songino Array	28.61	293	P	P	01 28 26.1	-0.5
ILAR	Eielson Array	41.36	36	P	P	01 30 15.7	-0.1
	comp=E,1.4nm,0.8s,baz=253,slow=6.8,SNR=12						
ILAR	Eielson Array	41.36	36	eP	P	01 30 15.7	-0.1
ILAR	Eielson Array	41.36	36	P	P	01 30 15.7	-0.1
ILAR				pmax	pmax		
	comp=Z,1.0nm,0.8s						
INK	Inuvik	46.29	30	P	P	01 30 55.1	-0.1
	comp=Z,2.0nm,0.4s,baz=283,slow=9.1,SNR=20						
INK	Inuvik	46.29	30	eP	P	01 30 55.1	-0.1
INK	Inuvik	46.29	30	P	P	01 30 55.1	-0.1
YKA	Yellowknife Ar	55.68	34	P	P	01 32 05.6	-0.2
	comp=Z,0.8nm,0.7s,baz=298,slow=6.7,SNR=19						
YKA	Yellowknife Ar	55.68	34	eP	P	01 32 05.6	-0.2
YKA	Yellowknife Ar	55.68	34	P	P	01 32 05.6	-0.2
YKA				pmax	pmax		
	comp=Z,1.0nm,0.6s						
NVAR	Mina Array Bea	67.42	58	P	P	01 33 26.5	+0.9
	comp=Z,0.4nm,0.3s,baz=316,slow=5.0,SNR=3.6						
PDAR	Pinedale Array	69.76	50	P	P	01 33 39.9	-0.2
	comp=Z,0.3nm,0.6s,baz=256,slow=3.6,SNR=2.9						
TXAR	Lajitas Array	82.49	56	P	P	01 34 52.8	+0.3
	comp=Z,0.3nm,0.6s,baz=293,slow=5.3,SNR=4.3						
TXAR	Lajitas Array	82.49	56	eP	P	01 34 52.8	+0.3
TXAR	Lajitas Array	82.49	56	P	P	01 34 52.8	+0.3

JMA 07 01:25:00.2±0.1,38°.49N×142°.09E,h39km±2km,M3.5
ISC 07 01:25:03.0±2.8,38°.59N±0°.07×141°.9E±0°.2,h27km±12km, n12,σ1§45/12,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	Ouri	0.48	254	P	Pb	01 25 12.0	-0.9
JIO				S	Sb	01 25 20.0	+0.4
OFUJ	Ofunato	0.53	337	P	Pb	01 25 13.3	-0.5
JMK	Ichinoseki	0.66	303	P	Pn	01 25 15.5	-1.1
JMK				S	Sb	01 25 26.4	+1.5
MIYJ	Miyakonagasawa	0.99	355	P	Pn	01 25 19.0	-2.1
JOM	Ohasama	1.01	331	P	Pn	01 25 20.7	-0.7
JOM				S	Sn	01 25 35.4	+0.6
JOU	Okura	1.02	258	P	Pn	01 25 20.1	-1.4
JOU				S	Sn	01 25 34.4	-0.6
JMM	Marumori	1.15	231	P	Pn	01 25 20.1	-3.2
JMM				eS	Sn	01 25 35.7	-2.5
JYK	Kaneyama	1.27	285	P	Pn	01 25 24.6	-0.4
JYS	Shirataka	1.51	256	P	Pn	01 25 27.0	-1.3
JYS				S	Sn	01 25 46.8	-0.3
JFT	Otama	1.65	230	P	Pn	01 25 28.4	-1.8
MJAR	Matsushiro Arr	3.59	236	P	Pn	01 25 57.9	+0.9
	2.1nm,0.3s,baz=36,slow=13,SNR=14						
MAT	Matsushiro	3.60	237	P	Pn	01 25 58.2	+1.2

MAT S Sn 01 26 40.2 +1.6

IDC 07 01:27:32.2±1.9**, 2°.80N×126°.36E, h0km, mb3.4**/4**, mb1 3.5**/4**, mb1mx3.3**/47**, mbtmp3.4**/4**, Error ellipse: s-maj=195.7km s-min=21.0km az=66.0, Northern Molucca Sea**

Code Station Name Δ° AZ° Phase ID Op ISC Time h m s Res ISC
WRA Warramunga Arr 23.93 161 P P 01 32 46.3 -1.8
0.7nm,0.6s,baz=340,slow=10,SNR=3.6
ASAR Alice Springs 27.32 165 P P 01 33 20.8 +1.8
0.2nm,0.5s,baz=345,slow=6.7,SNR=3.5
MKAR Makanchi Array 58.10 326 P P 01 37 27.6 0.0
0.1nm,0.3s,baz=126,slow=7.3,SNR=2.6
KURBB Kurchatov Arra 62.32 328 P P 01 37 56.0 -0.3
0.3nm,0.6s,baz=123,slow=5.5,SNR=3.2

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*THR **07** 01:27:47.2±0.4, 33°.19N×48°.54E, h18km±5km, ML3.7*
*IDC **07** 01:27:48.0±1.1, 33°.21N×48°.55E, h0km, mb3.8/18, mb1 3.9/25, mb1mx3.8/48, mbtmp3.8/25, ML3.5/5, MS3.2/5, Ms1 3.2/5, ms1mx2.6/59, Error ellipse: s-maj=26.9km s-min=12.5km az=162.0*
*NEIC **07** 01:27:48.2, 33°.17N×48°.63E, h18km, mb4.1/4, ML3.8(THR), After THR.*
*ISCJB **07** 01:27:48.8±0.3, 33°.02N±0°.04×48°.60E±0°.03, h19km, mb3.9/25, MS3.5/2, Error ellipse: s-maj=6.0km s-min=3.9km az=175.4*
*CSEM **07** 01:27:49.8±0.2, 33°.04N×48°.66E, h15km, ML3.8, Error ellipse: s-maj=7.3km s-min=5.2km az=9.0*
*TEH **07** 01:27:51.0, 32°.96N×48°.67E, h19km, ML3.8*
ISC 07 01:27:49.6±0.4**, 33°.12N**±0°.03×**48°.69E**±0°.02**, h19km, n93, σ1s.65**/76**, mb4.0**/25**, 5C-3D, Western Iran**

Code Station Name Δ° AZ° Phase ID Op ISC Time h m s Res ISC
IKMR Kamar-syah 0.47 327 *e*Pg Pg 01 27 54.8 -4.4
IKMR *e*AMB AMB 01 28 06.2
comp=Z,99nm,0.1s
IKMR Kamar-syah 0.47 327 *e*Pg Pg 01 27 54.8 -4.4
IKFM Kafar-mosalman 0.81 300 *e*AMB AMB 01 28 21.9
comp=Z,99nm,0.1s
IKFM *e*Pg **Pn 01 28 03.7 -2.2**
SHGR Shooshtar-Gavs 1.02 175 *e*Pg **Pb 01 28 07.8 -0.7**
SHGR *e*Sg **Sn 01 28 22.7 +0.2**
SHGR AML AML 01 28 32.6
comp=N,1μm,0.6s
SHGR Shooshtar-Gavs 1.02 175 *e*P **Pb 01 28 07.9 -0.7**
SHGR *e*Sg **Sn 01 28 22.7 +0.2**
ASAO Ashtian 1.81 38 *e*Pg **Pb 01 28 20.6 -1.5**
ASAO *e*Sg **Sg 01 28 45.4 -2.5**
ASAO AML AML 01 28 52.8
comp=N,913nm,0.5s
ASAO Ashtian 1.81 38 *e*P **Pb 01 28 20.6 -1.5**
IPIR Pirpir 1.91 103 *e*Pn **Pb 01 28 22.5 -1.4**
IPIR *e*Sg **Sg 01 28 50.4 -0.7**
IPIR *e*AMB AMB 01 28 53.9
comp=Z,8μm,0.3s
IPIR Pirpir 1.91 103 *e*Pn **Pb 01 28 22.5 -1.4**
IPIR *e*Sg **Sg 01 28 50.4 -0.7**
IGHG Ghaleghazi 2.14 305 *e*Pn Pg 01 28 26.8 -3.8
IGHG *e*Sg Sg 01 29 01.4 +3.0
IGHG *e*AMB AMB 01 29 15.2
comp=Z,7μm,0.3s
IGHG Ghaleghazi 2.14 305 *e*Pn Pg 01 28 26.8 -3.8
IGHG *e*Sg Sg 01 29 01.4 +3.0
ILIN Lien 2.29 322 *e*Pn Pg 01 28 29.6 -4.0
ILIN *e*Sg **Sg 01 29 05.5 +2.1**
ILIN *e*AMB AMB 01 29 12.3
comp=Z,6μm,0.4s
ILIN Lien 2.29 322 *e*Pn Pg 01 28 29.6 -4.0
ILIN *e*Sg **Sg 01 29 05.5 +2.1**
QAM Ghamsar 2.39 74 *e*Pn **Pb 01 28 30.3 -1.8**
QAM *e*AMB AMB 01 29 08.9
comp=Z,6μm,0.2s
IDHR Dehrash 2.48 310 *e*Pn **Pb 01 28 31.5 -2.1**
IDHR *e*AMB AMB 01 29 22.0
comp=Z,5μm,0.2s
IDHR Dehrash 2.48 310 *e*Pn **Pb 01 28 31.5 -2.1**
IGAR Gharneh 2.92 103 *e*Pn **Pn 01 28 36.2 +1.1**
IGAR *e*AMB AMB 01 29 25.2
comp=Z,2μm,0.4s
IMHD Mahdasht 3.04 32 *e*Pn **Pb 01 28 40.4 -2.7**
IMHD *e*AMB AMB 01 29 28.6
comp=Z,1μm,0.3s
IMHD Mahdasht 3.04 32 *e*Pn **Pb 01 28 40.4 -2.7**
IZEF Zefreh 3.07 93 *e*Pn **Pn 01 28 38.8 +1.5**
IZEF *e*AMB AMB 01 29 32.0
comp=Z,1μm,0.3s
IZEF Zefreh 3.07 93 *e*Pn **Pn 01 28 38.8 +1.5**
IVRN Varamin 3.14 53 *e*Pn Pb 01 28 41.2 -3.6
IVRN *e*AMB AMB 01 29 33.5
comp=Z,2μm,0.3s
IVRN Varamin 3.14 53 *e*Pn Pb 01 28 41.2 -3.6
IRAM Ramesheh 3.39 112 *e*Pn **Pn 01 28 41.7 +0.1**
IRAM *e*AMB AMB 01 29 46.8
comp=Z,2μm,0.6s
IRAM Ramesheh 3.39 112 *e*Pn **Pn 01 28 41.7 +0.1**
NASN Na'in 3.48 94 *e*Pn **Pn 01 28 44.6 +1.6**
NASN Na'in 3.48 94 *e*P **Pn 01 28 44.6 +1.6**
IDMV Damavand 3.69 48 *e*Pn Pn 01 28 48.1 +2.2
IDMV *e*AMB AMB 01 30 09.6
comp=Z,3μm,0.6s
IDMV Damavand 3.69 48 *e*Pn Pn 01 28 48.1 +2.2
IFIR Firoozkooh 4.20 52 *e*Pn Pn 01 28 55.7 +2.9
IFIR *e*AMB AMB 01 29 14.8
comp=Z,453nm,0.2s
IFIR Firoozkooh 4.20 52 *e*Pn Pn 01 28 55.7 +2.9
GNI Garni 7.70 337 Pn Pn 01 29 44.2 +3.5
comp=Z,0.2nm,0.3s,baz=134,slow=19,SNR=2.5
GNI Lg Lg 01 31 57.1
comp=Z,0.2nm,0.3s,baz=32,slow=19,SNR=1.7
GNI LR LR 01 33 07.7
comp=Z,117nm,21.0s,baz=148,slow=42
GEYT Alibeck 9.06 55 Pn Pn 01 30 02.7 +3.4
comp=Z,0.5nm,0.3s,baz=257,slow=13,SNR=3.0
GEYT LR LR 01 34 15.4
comp=Z,93nm,20.4s,baz=180,slow=43
RAYN Ar Rayn 9.97 197 *e*Pn **Pn 01 30 10.5 -1.3**
comp=Z,26nm,0.8s
RAYN Ar Rayn 9.97 197 *e*Pn **Pn 01 30 10.5 -1.3**
comp=Z,26nm,0.8s
RAYN *e*S **Sn 01 31 58.5 -4.7**
ASF Jabal al Asfar 9.99 268 Pn **Pn 01 30 12.3 +0.2**
comp=Z,1.0nm,0.3s,baz=90,slow=3.0,SNR=16
ASF Sn **Sn 01 32 01.5 -2.2**
comp=Z,0.2nm,0.3s,baz=213,slow=15,SNR=1.7
ASF Lg Lg 01 33 22.0
comp=Z,0.0nm,0.3s,baz=213,slow=20,SNR=2.3
MMAI Mount Meron Ar 11.15 273 Pn Pn 01 30 30.6 +2.6
comp=Z,0.3nm,0.3s,baz=93,slow=12,SNR=3.3
KVAR Kislovodsk Arr 11.79 338 LR LR 01 35 59.2
comp=Z,68nm,20.9s,baz=179,slow=42
EIL Elat 12.23 257 Pn **Pn 01 30 43.3 +0.6**
comp=Z,0.5nm,0.3s,baz=110,slow=11,SNR=5.5
EIL Lg Lg 01 34 25.5
comp=Z,0.2nm,0.3s,baz=344,slow=21,SNR=3.6
WSAR Wadi Sarin 13.18 136 Pn **Pn 01 30 53.1 -2.6**
comp=Z,0.5nm,0.3s,baz=329,slow=12,SNR=7.5
BRTR Keskin Array B 13.78 303 Pn Pn 01 31 05.1 +1.0
comp=Z,0.0nm,0.3s,baz=72,slow=16,SNR=2.8
ABKAR Akbulak array 18.17 24 *e*Pn **Pn 01 31 58.6 -2.1**
comp=Z,0.9nm,0.6s
AKTO Aktyubinsk 18.62 19 P **Pn 01 32 07.4 +1.3**
comp=Z,0.1nm,0.3s,baz=200,slow=15,SNR=6.1
IDI Anoyia 19.79 283 P **Pn 01 32 19.4 -1.0**
comp=Z,0.9nm,0.3s,baz=79,slow=16,SNR=5.3
KKAR Karatay Array 19.80 53 *e*P **Pn 01 32 21.5 +1.0**
comp=Z,0.2nm,0.4s
KKAR Karatay Array 19.80 53 *e*P **Pn 01 32 21.4 +1.0**
comp=Z,0.2nm,0.4s
VRI Vrincioaia 21.11 313⇑*i*P **P 01 32 34.6 +1.6**
PLOR Plostina 21.15 313⇑*i*P **P 01 32 35.7 +2.3**
MLR Muntele Rosu 21.41 312 P **P 01 32 38.8 +2.4**
comp=Z,1.2nm,0.8s,baz=260,slow=4.7,SNR=7.4
MLR Muntele Rosu 21.41 312⇑*i*P P 01 32 42.2 +5.8
TESR Tescani 21.48 315⇓*i*P **P 01 32 37.9 +1.0**
VOIR 21.95 311⇑*i*P **P 01 32 44.5 +2.4**
DOPR Dopca 21.98 313⇑*i*P **P 01 32 44.2 +1.9**
ATD Arta Tunnel 22.15 195 LR LR 01 42 08.3
comp=Z,49nm,18.2s,baz=9.5,slow=39
AAK Ala-Archa 22.40 57 P **P 01 32 50.5 +3.4**
comp=Z,1.2nm,1.0s,baz=222,slow=16,SNR=3.0
AKASG Malin Array Be 22.65 327 P **P 01 32 50.1 +0.7**
comp=Z,0.5nm,0.4s,baz=132,slow=9.4,SNR=8.5
KSH Kashi 22.84 66 P **P 01 32 52.5 +0.8**
KSH pmax pmax
comp=Z,16nm,1.1s
BURAR Bucovina Array 22.89 316⇓*i*P **P 01 32 53.3 +1.2**
TKM2 Tokmak 2 23.26 57 *e*P **P 01 32 58.9 +2.8**
comp=Z,8.4nm,1.3s
TKM2 Tokmak 2 23.26 57 *e*P **P 01 32 58.9 +2.8**
comp=Z,8.4nm,1.3s
MDVR Moldovita 23.88 307⇓*i*P **P 01 33 03.7 +1.8**
ARU Arti 24.29 13 P **P 01 33 06.0 +0.6**
comp=Z,0.9nm,0.3s,baz=270,slow=20,SNR=2.1
BRVK Borovoye 25.23 31 *e*P **P 01 33 15.2 +1.1**
comp=Z,9.7nm,1.1s
BRVK Borovoye 25.23 31 *e*P **P 01 33 15.2 +1.1**
comp=Z,9.7nm,1.1s
KOLS Kolonicke sedl 25.25 317 *e*P **P 01 33 17.0 +2.7**
BVAR Borovoye Array 25.26 32 P **P 01 33 15.3 +0.9**
comp=Z,3.1nm,0.8s,baz=212,slow=8.1,SNR=9.9
STHS Stebnicka Huta 26.07 317 *e*P P 01 33 28.0 +6.2
LANS Liptovska Anna 26.99 315 *e*P P 01 33 37.6 +7.5
KURBB Kurchatov Arra 28.01 42 P **P 01 33 40.0 +0.9**
comp=Z,0.8nm,0.7s,baz=248,slow=9.3,SNR=4.2
KURK Kurchatov 28.10 42 P **P 01 33 40.0 +0.1**
KURK Kurchatov 28.10 42 P **P 01 33 40.0 +0.1**
MKAR Makanchi Array 28.91 52 P **P 01 33 48.8 +1.6**
comp=Z,1.2nm,0.9s,baz=248,slow=8.4,SNR=9.8
GERES GERESS Array B 30.40 312 P **P 01 34 00.7 +0.2**
comp=Z,0.2nm,0.5s,baz=191,slow=4.6,SNR=2.8
FINES FINESS Array B 31.88 340 P **P 01 34 13.1 -0.1**
comp=Z,3.2nm,1.0s,baz=131,slow=17,SNR=4.3
ZALV Zalesovo Beam 32.93 40 P **P 01 34 23.6 +1.0**
comp=Z,3.0nm,0.9s,baz=261,slow=9.9,SNR=9.6
NOA NORSAR Array B 36.94 330 P **P 01 34 57.2 +0.1**
comp=Z,0.7nm,0.7s,baz=124,slow=7.0,SNR=2.5
TAM Tamanrasset 39.25 266 *e*P **P 01 35 18.5 +1.2**
comp=Z,3.6nm,1.0s
TAM Tamanrasset 39.25 266 *e*P **P 01 35 18.5 +1.2**
comp=Z,3.6nm,1.0s
ESDC Sonseca Array 42.37 294 P **P 01 35 42.8 +0.1**
comp=Z,0.1nm,0.3s,baz=79,slow=6.7,SNR=4.2
SONM Songino Array 45.26 53 P **P 01 36 07.6 +1.7**
comp=Z,0.3nm,0.7s,baz=281,slow=10,SNR=3.3
TORD Torodi Ar. Bea 47.12 256 P **P 01 36 21.1 +0.5**
comp=Z,6.4nm,0.8s,baz=53,slow=8.0,SNR=44
DBIC Dimbokro 56.08 254 P **P 01 37 28.5 +0.8**
comp=Z,2.2nm,0.6s,baz=40,slow=9.0,SNR=5.5
KIC Kosan Boka 56.16 254 *e*P **P 01 37 28.6 +0.2**
comp=Z,20nm,1.0s
TIC Toumodi 56.22 254 *e*P P 01 37 30.9 +2.1
LIC Lamto 56.47 254 *e*P **P 01 37 28.5 -2.1**
comp=Z,31nm,1.1s
KSAR Wonju Array Be 62.97 61 P P 01 38 17.9 +2.9
KSAR Wonju Array Be 62.97 61 P P 01 38 17.9 +2.9
KSRS Korea Array 62.99 61 P P 01 38 17.9 +2.7
comp=Z,0.9nm,0.5s,baz=274,slow=7.4,SNR=2.9
SEY Seymchan 66.88 29 P **P 01 38 40.5 +0.5**
comp=Z,1.7nm,0.7s,baz=279,slow=7.5,SNR=5.2
JNU Nakatsue 66.95 65 LR LR 02 11 29.0
comp=Z,83nm,19.9s,baz=116,slow=39
ILAR Eielson Array 81.67 7 P **P 01 40 06.4 +0.2**
comp=Z,1.1nm,1.0s,baz=329,slow=4.1,SNR=6.9
YKA Yellowknife Ar 83.77 352 P **P 01 40 17.0 -0.1**
comp=Z,0.6nm,0.9s,baz=12,slow=4.7,SNR=9.4
YKA Yellowknife Ar 83.77 352 P **P 01 40 17.0 -0.1**

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*NIED **07** 01:42:00, 39°.10N×142°.40E, h56km, Mw4.3 Best double couple: M₀3.36000×10^15 NP1:φs42.00000°, δ36.00000°, λ13.00000°. NP2:φs302.00000°, δ83.00000°, λ125.00000°.*
JMA 07 01:42:38.3±0.1**, 39°.07N×142°.40E, h31km**±2km**, M3.6, Near east coast of eastern Honshu**

Code Station Name Δ° AZ° Phase ID Op ISC Time h m s Res ISC
OFUJ Ofunato 0.57 271 P Pb 01 42 49.6 -0.3
MIYJ Miyakonagasawa 0.68 319 P Pb 01 42 51.0 -0.7
MIYJ S Sb 01 42 59.8 -1.0
JMK Ichinoseki 0.93 263 P Pn 01 42 55.1 -0.1
JMK S Sn 01 43 07.4 0.0
JOM Ohasama 0.95 295 P Pn 01 42 55.8 +0.3
JOM S Sn 01 43 08.0 0.0
JIO Ouri 1.03 234 P Pn 01 42 55.9 -0.6
JIO S Sn 01 43 08.5 -1.3
JKZ Kuzumaki 1.23 318 P Pn 01 42 59.9 +0.5
JKZ *e*S Sb 01 43 16.0 -0.6
JRG Rokugo 1.41 284 P Pb 01 43 03.4 -0.6
JANG Nango 1.47 333 P Pn 01 43 03.3 +0.6
JOU Okura 1.53 243 P Pn 01 43 04.1 +0.6
JOU S Sn 01 43 23.4 +1.1
JYK Kaneyama 1.60 265 P Pn 01 43 05.7 +1.3
JMM Marumori 1.74 227 P Pn 01 43 06.7 +0.3
JMM *e*S Sn 01 43 27.9 +0.4
JYS Shirataka 2.02 246 P Pn 01 43 11.4 +1.2

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*NIED **07** 01:58:00, 37°.30N×143°.70E, h5km, Mw3.7 Best double couple: M₀4.38000×10^14 NP1:φs17.00000°, δ37.00000°, λ-82.00000°. NP2:φs187.00000°, δ53.00000°, λ-96.00000°.*
*IDC **07** 01:58:35.0±0.8, 37°.14N×143°.85E, h0km, mb3.7/11, mb1 3.9/16, mb1mx3.8/51, mbtmp3.8/16, ML3.6/4, MS3.9/1, Ms1 3.9/1, ms1mx2.6/41, Error ellipse: s-maj=21.1km s-min=15.8km az=119.0*
*ISCJB **07** 01:58:38.3±0.6, 37°.25N±0°.05×143°.69E±0°.05, h33km, mb3.8/11, MS4.0/1, Error ellipse: s-maj=7.2km s-min=5.3km az=169.7*
*JMA **07** 01:58:38.1±0.2, 37°.27N×143°.69E, h46km, M3.9*
ISC 07 01:58:39.7±0.8**, 37°.21N**±0°.05×**143°.72E**±0°.08**, h35km, n30, σ1s.52**/34**, mb3.6**/11**, Off east coast of Honshu**

Code Station Name Δ° AZ° Phase ID Op ISC Time h m s Res ISC
JIO Ouri 2.25 304 P **Pn 01 59 13.2 -1.2**
JIO S **Sn 01 59 38.6 -2.4**
JFK Kawauchi 2.27 275 P **Pn 01 59 14.1 -0.7**
JFK *e*S **Sn 01 59 40.2 -1.4**
ONAJ Iwakimizuishiy 2.34 268 P **Pn 01 59 14.7 -0.9**
ONAJ S **Sn 01 59 41.9 -1.2**
JMM Marumori 2.42 287 P **Pn 01 59 15.6 -1.1**
JMM S **Sn 01 59 43.7 -1.4**
OFUJ Ofunato 2.47 320 P **Pn 01 59 16.0 -1.5**
JHO Hitachi 2.59 258 P **Pn 01 59 18.5 -0.6**
JOU Okura 2.68 296 P **Pn 01 59 20.0 -0.4**
JFT Otama 2.71 278 P **Pn 01 59 21.0 +0.2**
JFT S **Sn 01 59 52.7 +0.3**
CHOJ Chosi 2.75 238 P **Pn 01 59 21.0 -0.3**
JOM Ohasama 2.96 321 P **Pn 01 59 22.8 -1.4**
JOM S **Sn 01 59 55.9 -2.6**
JAG Ashikaga 3.51 258 P **Pn 01 59 32.0 +0.3**
JRY Ryogami san 4.05 254 P **Pn 01 59 38.9 -0.3**
MJAR Matsushiro Arr 4.47 263 Pn **Pn 01 59 46.1 +1.2**
8.6nm,0.3s,baz=90,slow=16,SNR=31
MJAR Sn **Sn 02 00 36.8 +1.1**
1.5nm,0.3s,baz=91,slow=26,SNR=6.6
MJAR LR LR 02 02 08.8
comp=Z,50nm,18.7s,baz=80,slow=47
MAT Matsushiro 4.47 263 P **Pn 01 59 46.5 +1.6**
MAT S **Sn 02 00 37.5 +1.8**
JHJ Hachijo jima 2 5.20 219 Pn **Pn 01 59 53.8 -1.2**
14nm,0.3s,baz=54,slow=19,SNR=6.8
JHJ Sn **Sn 02 00 48.1 -5.5**
27nm,0.3s,baz=89,slow=22,SNR=5.8
USRK Ussuriysk Ar. 11.31 312 Pn Pn 02 01 20.4 +1.7
0.2nm,0.3s,baz=134,slow=14,SNR=4.7
KSRS Korea Array 12.58 276 Pn **Pn 02 01 36.1 0.0**
0.1nm,0.3s,baz=93,slow=12,SNR=8.8
KLR Kul'dur 14.83 328 Pn **Pn 02 02 05.8 -0.8**
0.1nm,0.3s,baz=130,slow=9.6,SNR=4.5
SEY Seymchan 26.30 9 P **P 02 04 12.6 +0.9**
0.5nm,0.3s,baz=173,slow=9.9,SNR=4.6
SONM Songino Array 29.23 303 P P 02 04 40.2 +2.0
0.9nm,0.9s,baz=96,slow=8.8,SNR=4.7
CMAR Chiang Mai Arr 43.33 257 P P 02 06 40.2 +1.7
0.9nm,0.3s,baz=34,slow=6.6,SNR=3.4
MKAR Makanchi Array 45.59 302 P **P 02 06 57.1 +0.9**
0.9nm,0.7s,baz=88,slow=8.6,SNR=8.8
ILAR Eielson Array 48.36 32 P **P 02 07 18.6 +1.1**
0.6nm,0.8s,baz=257,slow=5.7,SNR=6.1
INK Inuvik 53.39 27 P **P 02 07 56.0 +0.7**
0.4nm,0.6s,baz=319,slow=7.5,SNR=4.4
WRA Warramunga Arr 57.52 190 P **P 02 08 25.4 -0.2**
1.8nm,0.6s,baz=10,slow=7.3,SNR=8.5
ASAR Alice Springs 61.25 190 P **P 02 08 51.4 +0.1**
1.1nm,0.6s,baz=16,slow=7.2,SNR=11
RES Resolute Bay 61.97 15 P **P 02 08 55.6 +0.1**
0.3nm,0.6s,baz=307,slow=17,SNR=3.3
FINES FINESS Array B 69.51 333 P **P 02 09 45.2 +0.9**
1.0nm,0.9s,baz=46,slow=8.1,SNR=2.5
AKASG Malin Array Be 75.28 323 LR LR 02 47 58.4
comp=Z,65nm,18.9s,baz=70,slow=39
TXAR Lajitas Array 88.55 54 P P 02 11 30.5 +1.4
0.2nm,0.7s,baz=310,slow=4.4,SNR=3.4

IDC 07 01:59:57.9±4.4**, 21°.28S×172°.45W, h0km, mb4.1**/4**, mb1 4.3**/4**, mb1mx3.8**/37**, mbtmp4.1**/4**, Error ellipse: s-maj=288.2km s-min=34.7km az=156.0, Tonga Islands region**

Code Station Name Δ° AZ° Phase ID Op ISC Time h m s Res ISC
CTA Charters Tower 38.58 264 P P 02 07 23.6 +0.7
3.5nm,0.3s,baz=92,slow=11,SNR=5.6
ASAR Alice Springs 49.39 257 P P 02 08 48.5 -1.2
0.4nm,0.3s,baz=92,slow=8.4,SNR=10
WRA Warramunga Arr 49.63 261 P P 02 08 51.9 +0.3
1.1nm,0.3s,baz=99,slow=7.0,SNR=5.6
PDAR Pinedale Array 86.05 41 P P 02 12 40.8 +0.1
0.1nm,0.3s,baz=208,slow=3.7,SNR=3.8

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*NIED **07** 02:02:00, 42°.20N×144°.50E, h32km, Mw4.3 Best double couple: M₀2.78000×10^15 NP1:φs260.00000°, δ26.00000°, λ126.00000°. NP2:φs42.00000°, δ69.00000°, λ74.00000°.*
*IDC **07** 02:02:16.0±0.9, 42°.33N×144°.34E, h0km, mb3.9/15, mb1 4.1/16, mb1mx3.9/42, mbtmp3.9/16, ML3.8/1, MS3.4/9, Ms1 3.4/9, ms1mx3.1/46, Error ellipse: s-maj=24.3km s-min=18.0km az=155.0*
*ISCJB **07** 02:02:19.2±0.6, 42°.12N±0°.05×144°.52E±0°.05, h46km±5km, mb4.0/21, MS3.5/8, Error ellipse: s-maj=9.1km s-min=4.0km az=142.2*
*MOS **07** 02:02:19.4±0.9, 42°.09N×144°.46E, h49km, mb4.2/13, Error ellipse: s-maj=13.7km s-min=8.5km az=80.1*
*NEIC **07** 02:02:21.0±1.5, 42°.21N×144°.44E, h38km±14km, mb4.5/2, Error ellipse: s-maj=15.7km s-min=12.5km az=109.0*
*JMA **07** 02:02:20.2, 42°.22N×144°.50E, h39km±1km, M4.3*
*SKHL **07** 02:02:21.4±1.1, 42°.17N×144°.46E, h60km±3km, mb4.6/6*
ISC 07 02:02:21.2±1.0**, 42°.21N**±0°.07×**144°.46E**±0°.05**, h40km**±8km**, n77, σ1s.19**/75**, mb4.0**/23**, MS3.5**/8**, 4C-3D, Hokkaido region**

Code Station Name Δ° AZ° Phase ID Op ISC Time h m s Res ISC
JAK Akkeshi 0.81 12 ⇓P **Pn 02 02 35.0 -1.1**
JAK *e*S **Sn 02 02 46.6 -0.3**
JOB Onbets 0.83 327 P **Pn 02 02 35.9 -0.6**
MYR Moyori 0.88 276 *e*P **Pn 02 02 36.8 -0.2**
MYR *e*S **Sn 02 02 49.6 +1.0**
JCH Churui 0.91 297 ⇑P **Pn 02 02 36.8 -0.7**
JCH *e*S **Sn 02 02 49.5 +0.1**
JEM Erimo 0.99 259 P **Pn 02 02 38.2 -0.3**
ERM Erimo 0.99 259 *e*P **Pn 02 02 38.3 -0.2**
ERM Erimo 0.99 259 *e*PN **Pn 02 02 38.3 -0.2**
ERM *e*S **Sn 02 02 51.2 -0.1**
ERM Erimo 0.99 259 *e*Pg **Pn 02 02 38.3 -0.2**
ERM *e*S **Sn 02 02 51.2 -0.1**
JAR Ashorobuto 1.20 335 P **Pn 02 02 40.7 -0.8**
JNBK Urakawa-nobuka 1.27 274 P **Pn 02 02 41.9 -0.5**
JNK Nakash 1.39 8 P **Pn 02 02 42.8 -1.3**
NEM2 Nemuro 2 1.49 39 P **Pn 02 02 44.6 -0.9**
NEM2 *e*S **Sn 02 03 03.4 -0.4**
YUK Yuzh-Kuril'sk 2.10 29 *e*P **Pn 02 02 54.4 +0.7**
YUK AMB AMB 02 02 57.2
170nm,0.2s
YUK *i* S **Sn 02 03 18.6 0.0**
YUK A A 02 03 23.3
3μm,0.7s
YUK Yuzh-Kuril'sk 2.10 29*c i*PN **Pn 02 02 54.4 +0.7**
YUK *i* S **Sn 02 03 19.7 +1.1**
YUK pmax pmax
comp=Z,302nm,0.5s
YUK pmax pmax
comp=E,142nm,0.2s
YUK pmax pmax
comp=N,152nm,0.5s
YUK smax smax
comp=N,2μm,0.5s
YUK smax smax
comp=E,2μm,0.5s
SHO Shikotan 2.41 45 *i* P **Pn 02 02 58.0 0.0**
SHO AMB AMB 02 03 02.3
comp=E,690nm,1.0s
SHO *e*S **Sn 02 03 25.2 -1.0**
SHO A A 02 03 29.3
comp=E,830nm,0.3s
SHO A A 02 03 29.3
comp=E,510nm,0.3s
SHO Shikotan 2.41 45*c i*PN **Pn 02 02 58.0 0.0**
SHO *i* S **Sn 02 03 25.4 -0.8**
SHO pmax pmax
comp=N,72nm,0.4s
SHO pmax pmax
comp=E,73nm,0.4s
SHO pmax pmax
comp=Z,111nm,0.4s
SHO smax smax
comp=E,632nm,0.3s
SHO smax smax
comp=N,1μm,0.5s
KUR Kuril'sk 3.91 38 *e*P **Pn 02 03 19.8 +1.2**
KUR AMB AMB 02 03 21.3
comp=N,70nm,0.4s
KUR *e*S **Sn 02 04 03.3 +0.1**
KUR A A 02 04 23.6
comp=N,330nm,0.6s
KUR Kuril'sk 3.91 38⇑*i*PN **Pn 02 03 19.8 +1.2**
KUR *i* S **Sn 02 04 04.6 +1.4**
KUR pmax pmax
comp=Z,65nm,0.6s
KUR pmax pmax
comp=N,25nm,0.1s
KUR pmax pmax
comp=E,40nm,0.1s
KUR smax smax
comp=E,148nm,0.8s
KUR smax smax
comp=N,103nm,0.5s
YSS Yuzh-Sakhalins 4.90 346 *e*P **Pn 02 03 34.6 +2.3**
YSS Yuzh-Sakhalins 4.90 346 *e*PN Pn 02 03 40.7 +8.4
YSS pmax pmax
comp=Z,130nm,1.1s
MAJO Matsushiro 7.44 223 *e*PN **Pn 02 04 06.0 -1.3**
MAJO pmax pmax
comp=Z,12nm,0.8s
MAJO Matsushiro 7.44 223 *e*Pn **Pn 02 04 06.0 -1.3**
comp=Z,12nm,0.8s
MAT Matsushiro 7.44 223 P **Pn 02 04 06.9 -0.4**
MAT *e*S **Sn 02 05 28.8 -1.6**
MJAR Matsushiro Arr 7.44 223 Pn **Pn 02 04 06.5 -0.8**
comp=Z,1.4nm,0.3s,baz=25,slow=13,SNR=7.9
TYV Tymovskoe 8.75 352 *e*P Pn 02 04 29.0 +4.0
TYV Tymovskoe 8.75 352 *e*PN Pn 02 04 31.2 +6.2
NKL Nikolayevsk 11.24 348 *e*P **Pn 02 05 01.6 +2.5**
NKL Nikolayevsk 11.24 348 *e*PN Pn 02 05 03.0 +3.9
NKL MLR MLR
comp=Z,500nm,18.0s
KLR Kul'dur 11.31 313 Pn **Pn 02 05 02.0 +1.8**
comp=Z,0.1nm,0.3s,baz=121,slow=16,SNR=13
KLR LR LR 02 09 58.0
comp=Z,334nm,18.8s,baz=124,slow=41
EKMR Ekimchan 13.33 329 *e*P **Pn 02 05 29.5 +1.8**
EKMR AMB AMB 02 05 36.6
comp=Z,4.0nm,0.6s
KSRS Korea Array 13.56 255 LR LR 02 10 37.3
comp=Z,105nm,19.5s,baz=74,slow=37
BMKR Bomnak 16.19 326 *e*P **Pn 02 06 05.5 -0.1**
BMKR AMB AMB 02 06 10.6
comp=Z,3.0nm,0.8s
KROS Kirovskiy 16.82 323 *e*P **Pn 02 06 11.6 -1.9**
MA2 Magadan 17.82 11 LR LR 02 13 36.9
comp=Z,50nm,19.3s,baz=259,slow=38
SEY Seymchan 21.28 10 P **P 02 07 01.1 -2.7**

Code	Station Name	Δ°	AZ°	Op	ISC	Time	Res
	comp=Z,2.1nm,0.6s,baz=190,slow=12,SNR=5.2						
SONM	**Songino Array**	**27.29**	**295**	P	**P**	**02 08 02.0**	**+0.1**
	comp=Z,2.3nm,0.6s,baz=79,slow=8.5,SNR=13						
SONM				LR	LR	02 19 53.3	
	comp=Z,133nm,18.9s,baz=140,slow=39						
SONM	**Songino Array**	**27.29**	**295**	P	**P**	**02 08 02.0**	**+0.1**
SONM				pmax	pmax		
	comp=Z,2.0nm,0.6s						
SONM				MLR	MLR		
	comp=Z,133nm,18.9s						
GUMO	**Guam**	**28.52**	**179**	LR	LR	02 17 53.3	
	comp=Z,42nm,21.7s,baz=16,slow=33						
TLY	**Talaya**	**29.09**	**303**	LR	LR	02 20 08.1	
	comp=Z,72nm,21.3s,baz=96,slow=37						
ZAK	**Zakamensk**	**29.29**	**300**	*e*P	**P**	**02 08 19.6**	**0.0**
ZAK				pmax	pmax		
	comp=Z,4.0nm,1.0s						
H11N2	**WAKE ISLAND Hy**	**29.36**	**133**	T	T	02 39 04.5	
	SNR=25						
H11N1	**WAKE ISLAND Hy**	**29.38**	**133**	T	T	02 39 40.8	
	baz=325,slow=74,SNR=21						
H11N3	**WAKE ISLAND Hy**	**29.38**	**133**	T	T	02 39 44.0	
	baz=188,slow=74,SNR=72						
H11S1	**WAKE ISLAND Hy**	**30.26**	**135**	T	T	02 40 57.2	
	baz=328,slow=76,SNR=81						
H11S3	**WAKE ISLAND Hy**	**30.26**	**135**	T	T	02 40 56.2	
	baz=328,slow=76,SNR=31						
H11S2	**WAKE ISLAND Hy**	**30.28**	**135**	T	T	02 40 56.7	
	baz=328,slow=76,SNR=45						
GTA	**Gaotai**	**33.62**	**280**	*e*P	**P**	**02 09 00.4**	**+2.6**
GTA				pP	pP	02 09 04.3	-4.6
GTA				sP	sP	02 09 07.3	-6.4
GTA				S	**S**	**02 14 13.8**	**-4.0**
GTA				pmax	pmax		
	comp=Z,5.0nm,0.8s						
GTA				pmax	pmax		
	comp=Z,82nm,4.8s						
GTA				LR	LR		
	comp=N,160nm,14.3s						
GTA				LR	LR		
	comp=E,120nm,16.2s						
GTA				LR	LR		
	comp=Z,130nm,20.9s						
ZALV	**Zalesovo Beam**	**40.37**	**308**	P	**P**	**02 09 54.2**	**-0.6**
	comp=Z,0.9nm,0.3s,baz=81,slow=9.2,SNR=8.2						
MKAR	**Makanchi Array**	**43.56**	**298**	P	**P**	**02 10 20.6**	**-0.4**
	comp=Z,1.0nm,0.6s,baz=84,slow=8.6,SNR=9.7						
MKAR				LR	LR	02 30 03.9	
	comp=Z,49nm,19.1s,baz=24,slow=38						
ILAR	**Eielson Array**	**43.89**	**35**	P	**P**	**02 10 23.4**	**0.0**
	comp=Z,1.9nm,1.1s,baz=264,slow=6.0,SNR=9.2						
INK	**Inuvik**	**48.72**	**29**	P	**P**	**02 11 01.4**	**+0.2**
	comp=Z,0.8nm,0.5s,baz=333,slow=4.2,SNR=11						
ARU	**Arti**	**54.12**	**317**	*e*P	**P**	**02 11 41.1**	**-0.7**
ARU	**Arti**	**54.12**	**317**	P	**P**	**02 11 41.1**	**-0.7**
ABKAR	**Akbulak array**	**56.48**	**309**	*e*P	**P**	**02 11 58.9**	**0.0**
	comp=Z,2.3nm,0.6s						
RES	**Resolute Bay**	**57.00**	**16**	*e*P	**P**	**02 12 01.9**	**-0.3**
RES				pmax	pmax		
	comp=Z,9.0nm,1.3s						
RES	**Resolute Bay**	**57.00**	**16**	*e*P	**P**	**02 12 01.9**	**-0.3**
	comp=Z,8.6nm,1.3s						
YKA	**Yellowknife Ar**	**58.17**	**32**	P	**P**	**02 12 10.4**	**-0.2**
	comp=Z,0.5nm,0.8s,baz=301,slow=7.0,SNR=6.5						
FINES	**FINESS Array B**	**65.34**	**332**	P	**P**	**02 12 58.3**	**-0.4**
	comp=Z,2.0nm,0.5s,baz=43,slow=7.5,SNR=17						
ASAR	**Alice Springs**	**66.26**	**191**	P	**P**	**02 13 05.8**	**+0.6**
	comp=Z,0.7nm,0.8s,baz=1.3,slow=5.5,SNR=5.0						
KIV	**Kislovodsk**	**69.30**	**311**	*e*P	P	02 13 12.8	-11
KIV				pmax	pmax		
	comp=Z,7.0nm,1.0s						
KIV				MLR	MLR		
	comp=Z,109nm,18.0s						
KBZ	**Khabaz**	**69.32**	**311**	P	**P**	**02 13 24.8**	**+0.5**
	comp=Z,1.0nm,0.9s,baz=50,slow=3.0,SNR=4.7						
KBZ				LR	LR	02 47 34.4	
	comp=Z,53nm,20.1s,baz=64,slow=39						
NB2	**NORSAR Subarra**	**70.31**	**338**	P	**P**	**02 13 29.7**	**-0.4**
	comp=Z,4.2nm,0.8s,baz=35,slow=6.2						
NOA	**NORSAR Array B**	**70.31**	**338**	P	**P**	**02 13 29.8**	**-0.4**
	comp=Z,1.5nm,0.8s,baz=34,slow=6.2,SNR=4.2						
AKASG	**Malin Array Be**	**71.63**	**323**	P	**P**	**02 13 36.7**	**-1.5**
	comp=Z,1.2nm,0.7s,baz=42,slow=5.9,SNR=5.8						
PDAR	**Pinedale Array**	**72.41**	**48**	P	**P**	**02 13 45.4**	**+1.9**
	comp=Z,0.2nm,0.6s,baz=324,slow=4.5,SNR=2.6						
STKA	**Stephens Creek**	**73.77**	**183**	LR	LR	02 47 39.1	
	comp=Z,22nm,20.1s,baz=30,slow=37						
DPC	**Dobruska-Polom**	**77.29**	**329**	*e*pP	pP	02 14 23.3	0.0
CLL	**Collm**	**77.74**	**331**	*e*P	**P**	**02 14 12.9**	**-0.7**
CLL	**Collm**	**77.74**	**331**	*i* P	**P**	**02 14 12.9**	**-0.7**
	comp=Z,2.0nm,0.8s						
CLL				⇓*i*		02 14 25.5	
	comp=Z,7.0nm,1.0s						
CLL	**Collm**	**77.74**	**331**	⇓*i*P	**P**	**02 14 12.9**	**-0.7**
CLL				*i*		02 14 25.5	
CLL				pmax	pmax		
	comp=Z,2.0nm,0.8s						
KHC	**Kasperske Hory**	**79.32**	**330**	*e*P	**P**	**02 14 22.9**	**+0.4**
KHC				*e*pP	**pP**	**02 14 33.5**	**-1.1**
KHC	**Kasperske Hory**	**79.32**	**330**	*e*P	**P**	**02 14 22.9**	**+0.4**
KHC				*e*		02 14 33.5	
GERES	**GERESS Array B**	**79.51**	**329**	P	**P**	**02 14 23.9**	**+0.4**
	comp=Z,0.4nm,0.6s,baz=12,slow=6.8,SNR=4.9						
KBA	**Koelnbreinsper**	**81.10**	**329**	*e*PcP	**P**	**02 14 35.0**	**+2.8**
	comp=Z,4.2nm,0.9s						
MOTA	**Moosalm**	**81.73**	**330**	*i* PcP	**P**	**02 14 37.3**	**+1.8**
FETA	**Feichten**	**82.14**	**330**	PcP	**P**	**02 14 39.0**	**+1.3**
	comp=Z,3.7nm,1.2s						
TXAR	**Lajitas Array**	**85.15**	**54**	P	**P**	**02 14 54.8**	**+1.5**
	comp=Z,0.4nm,0.7s,baz=282,slow=3.5,SNR=5.4						

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*NIED **07** 02:11:00, 37°.30N×141°.40E, h56km, Mw3.9 Best double couple: M0 6.69000×10^{14} NP1:φs 193.00000°, δ33.00000°, λ86.00000°. NP2:φs 17.00000°, δ57.00000°, λ92.00000°.*
*IDC **07** 02:11:26.3±0.9, 37°.34N×141°.50E, h0km, mb3.6/7, mb1 3.8/9, mb1mx3.6/42, mbtmp3.6/9, ML3.3/2, MS2.5/1, Ms1 2.5/1, ms1mx2.2/57, Error ellipse: s-maj=24.0km s-min=19.0km az=145.0*
*ISCJB **07** 02:11:30.4±0.9, 37°.27N±0°.04×141°.54E±0°.09, h44km±9km, mb3.6/7, Error ellipse: s-maj=11.8km s-min=6.7km az=14.5*
*JMA **07** 02:11:32.0±0.1, 37°.29N×141°.41E, h44km±1km, M3.6*
JMA Felt II J1.
ISC 07 02:11:30.5±1.6**, 37°.30N**±0°.05×**141°.55E**±0°.07**, h29**km±11km**, n18, σ0.s94**/25**, mb3.7**/7**, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**0.54**	**277**	P	**Pb**	**02 11 42.0**	**+0.4**
JFK				S	**Sb**	**02 11 49.1**	**-0.1**
ONAJ	**Iwakimizuishiy**	**0.63**	**252**	P	**Pb**	**02 11 43.2**	**+0.1**
ONAJ				S	**Sb**	**02 11 51.1**	**-0.6**
JMM	**Marumori**	**0.82**	**313**	P	**Pn**	**02 11 46.1**	**0.0**
JMM				S	**Sb**	**02 11 56.4**	**-0.7**
JFT	**Otama**	**0.99**	**283**	P	**Pn**	**02 11 48.8**	**+0.4**
JFT				S	**Sn**	**02 12 00.7**	**-0.7**
JHO	**Hitachi**	**1.04**	**229**	P	**Pn**	**02 11 48.7**	**-0.4**
JIO	**Ouri**	**1.16**	**352**	P	**Pn**	**02 11 51.5**	**+0.7**
JIO				S	**Sn**	**02 12 05.2**	**-0.5**
MJAR	**Matsushiro Arr**	**2.78**	**255**	Pn	**Pn**	**02 12 13.6**	**+0.5**
	2.7nm,0.3s,baz=81,slow=16,SNR=8.0						
MJAR				Sn	**Sn**	**02 12 46.0**	**+0.4**
	3.0nm,0.3s,baz=97,slow=16,SNR=5.0						
MJAR				LR	LR	02 13 32.7	
	comp=Z,92nm,19.9s,baz=75,slow=46						
MAT	**Matsushiro**	**2.78**	**255**	P	**Pn**	**02 12 14.0**	**+0.9**
MAT				S	**Sn**	**02 12 48.5**	**+2.8**
JHJ	**Hachijo jima 2**	**4.42**	**200**	Pn	**Pn**	**02 12 36.6**	**+1.1**
	10nm,0.3s,baz=60,slow=22,SNR=5.4						
JHJ				Sn	**Sn**	**02 13 24.5**	**-1.4**
	13nm,0.3s,baz=48,slow=23,SNR=4.1						
USRK	**Ussuriysk Ar.**	**10.00**	**317**	Pn	Pn	02 13 56.3	+4.2
	0.1nm,0.3s,baz=140,slow=17,SNR=4.3						
SONM	**Songino Array**	**27.73**	**304**	P	**P**	**02 17 15.1**	**-1.2**
	0.9nm,0.6s,baz=103,slow=8.4,SNR=7.4						
ZALV	**Zalesovo Beam**	**41.82**	**312**	P	**P**	**02 19 16.8**	**-0.6**
	0.9nm,0.4s,baz=77,slow=6.7,SNR=6.1						
MKAR	**Makanchi Array**	**44.07**	**302**	P	**P**	**02 19 35.2**	**-0.5**
	0.7nm,0.6s,baz=84,slow=9.5,SNR=8.2						
ILAR	**Eielson Array**	**49.21**	**32**	P	**P**	**02 20 16.2**	**+0.6**
	0.4nm,0.7s,baz=265,slow=6.8,SNR=5.2						
WRA	**Warramunga Arr**	**57.34**	**188**	P	**P**	**02 21 15.1**	**-0.7**
	0.7nm,0.8s,baz=4.4,slow=7.0,SNR=2.4						
YKA	**Yellowknife Ar**	**63.52**	**30**	P	**P**	**02 21 58.1**	**+0.5**
	0.2nm,0.7s,baz=300,slow=6.6,SNR=3.4						
TXAR	**Lajitas Array**	**89.87**	**52**	P	**P**	**02 24 27.4**	**+0.5**
	0.1nm,0.5s,baz=290,slow=5.4,SNR=2.7						
LPAZ	**La Paz**	**146.46**	**59**	PKPbc	**PKPbc**	**02 31 10.1**	**+0.1**
	0.6nm,0.5s,baz=315,slow=5.7,SNR=3.0						

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*DDA **07** 02:31:19.7, 36°.44N×28°.78E, h7km, Md2.8*
*ISCJB **07** 02:31:20.0±1.0, 36°.46N±0°.06×28°.80E±0°.05, h4km±7km, Error ellipse: s-maj=9.5km s-min=6.1km az=10.5*
*CSEM **07** 02:31:20.6±0.4, 36°.49N×28°.82E, h10km, MD2.6, Error ellipse: s-maj=9.3km s-min=5.0km az=11.0*
*ISK **07** 02:31:20.9, 36°.56N×28°.83E, h11km, MD2.6*
ISC 07 02:31:20.7±1.1**, 36°.52N**±0°.05×**28°.83E**±0°.03**, h14**km±7km**, n24, σ0.s52**/36**, Dodecanese Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
FETY	**Fethiye**	**0.24**	**60**	*e*PG	**Pg**	**02 31 25.8**	**-0.2**
FETY				*e*SG	**Sg**	**02 31 29.8**	**+0.3**
FETY	**Fethiye**	**0.24**	**60**	*e*Pg	**Pg**	**02 31 25.8**	**-0.2**
FETY				*e*Sg	**Sg**	**02 31 29.8**	**+0.3**
DALY	**Dalyan (Mu˜la**	**0.33**	**335**	*e*PG	**Pg**	**02 31 27.1**	**-0.5**
DALY				*e*SG	**Sg**	**02 31 32.5**	**+0.3**
DALY	**Dalyan (Mu˜la**	**0.33**	**335**	*e*Pg	**Pg**	**02 31 27.1**	**-0.5**
DALY				*e*Sg	**Sg**	**02 31 32.5**	**+0.3**
TURN	**Turunc**	**0.40**	**333**	*i* P	**Pb**	**02 31 30.2**	**+0.6**
TURN				*i* S	**Sn**	**02 31 38.7**	**-0.7**
TURN	**Turunc**	**0.40**	**333**	P	**Pb**	**02 31 30.2**	**+0.6**
TURN				S	**Sn**	**02 31 38.7**	**-0.7**
AKAS	**Kas**	**0.69**	**114**	*i* P	**Pg**	**02 31 33.4**	**-0.8**
AKAS	**Kas**	**0.69**	**114**	P	**Pg**	**02 31 33.4**	**-0.8**
YER	**Yerkesik**	**0.76**	**325**	*e*PG	**Pg**	**02 31 34.8**	**-0.7**
YER	**Yerkesik**	**0.76**	**325**	*e*Pg	**Pg**	**02 31 34.8**	**-0.7**
ELL	**Elmali**	**0.90**	**75**	*e*PG	**Pn**	**02 31 38.9**	**-0.2**
ELL	**Elmali**	**0.90**	**75**	*e*Pg	**Pn**	**02 31 38.9**	**-0.2**
GOLH	**Golhisar**	**0.93**	**39**	*i* P	**Pg**	**02 31 38.3**	**-0.5**
GOLH				*i* S	**Sn**	**02 31 53.5**	**+0.9**
GOLH	**Golhisar**	**0.93**	**39**	P	**Pg**	**02 31 38.3**	**-0.5**
GOLH				S	**Sn**	**02 31 53.5**	**+0.9**
BDRM	**Kayabasi**	**1.24**	**297**	*i* P	**Pn**	**02 31 43.2**	**-0.4**
BDRM				*i* S	**Sn**	**02 32 00.2**	**+0.1**
BDRM	**Kayabasi**	**1.24**	**297**	P	**Pn**	**02 31 43.2**	**-0.4**
BDRM				S	**Sn**	**02 32 00.2**	**+0.1**
NIS1	**Nisyros Isl.**	**1.33**	**274**	*e*PN	**Pg**	**02 31 46.9**	**+0.5**
NIS1	**Nisyros Isl.**	**1.33**	**274**	*e*Pn	**Pg**	**02 31 46.9**	**+0.5**
BODT	**Bodrum**	**1.33**	**295**	*e*PN	**Pg**	**02 31 45.8**	**-0.6**
BODT	**Bodrum**	**1.33**	**295**	*e*Pn	**Pg**	**02 31 45.8**	**-0.6**
AYDN	**Tasoluk**	**1.37**	**327**	*i* P	**Pb**	**02 31 46.0**	**-0.2**
AYDN				*i* S	**Sb**	**02 32 03.8**	**+0.2**
AYDN	**Tasoluk**	**1.37**	**327**	P	**Pb**	**02 31 46.0**	**-0.2**
AYDN				S	**Sb**	**02 32 03.8**	**+0.2**
AYDB	**Zeytinkoy-Aydi**	**1.61**	**333**	*e*PN	**Pn**	**02 31 48.8**	**-0.1**
AYDB	**Zeytinkoy-Aydi**	**1.61**	**333**	*e*Pn	**Pn**	**02 31 48.8**	**-0.1**

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*ISCJB **07** 02:34:49.4±0.5, 35°.28N±0°.01×92°.41W±0°.02, h8km±4km, Error ellipse: s-maj=2.1km s-min=1.9km az=25.0*
*NEIC **07** 02:34:50.0, 35°.23N×92°.37W, h6km, MW3.4, Moment Tensor Solution. s12 Moment tensor: Scale 10^{14}Nm; Mrr-0.12; Mθθ1.36; Mφφ-1.24; Mrθ0.23; Mθφ1.01; Mφr0.74; Best double couple: M0 1.80000×10^{14} NP1:φs 115.00000°, δ65.00000°, λ-5.00000°. NP2:φs 207.00000°, δ85.00000°, λ-155.00000°. Principal axes: T 1.8200, Plg14.0000°, Azm338.0000°; N 0.0000, Plg65.0000°, Azm217.0000°; P -1.8200, Plg21.0000°, Azm74.0000°; After CERI.*
NEIC Felt [IV] at Greenbrier; [III] at Damascus and Vilonia; [II] at Conway, Little Rock, Mountain Home and Mountain View. Also felt at Alpena, Arkadelphia, Benton, Cabot, Cave City, Choctaw, Enola, Fayetteville, Fort Smith, Hardy, Harrison, Huntsville, Kingston, Lakeview, Mabelvale, Maumelle, Mayflower, North Little Rock, Prairie Grove, Quitman and Rogers.
ISC 07 02:34:49.6±1.0**, 35°.29N**±0°.02×**92°.42W**±0°.02**, h7**km±8km**, n249, σ1.s64**/295**, Arkansas**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
WHAR	**Wooly Hollow**	**0.11**	**90**	*e*Pg	**Pg**	**02 34 52.4**	**+0.4**
UALR	**University of**	**0.52**	**173**	*e*Pg	**Pg**	**02 34 59.9**	**+0.3**
W40A	**Ferguson Farm,**	**0.54**	**260**	P	**Pg**	**02 35 01.1**	**+1.2**
	baz=85,SNR=565						
W40A				S	**Sb**	**02 35 09.7**	**+0.4**
	baz=85						
V40A	**Witts Springs**	**0.61**	**328**	P	**Pb**	**02 35 02.9**	**+0.3**
	baz=146,SNR=1000						
V40A				S	**Sb**	**02 35 12.1**	**+0.7**
	baz=146						
X40A	**Basin Creek Fa**	**0.87**	**203**	P	**Pg**	**02 35 06.2**	**-0.1**
	baz=27						
X40A				S	**Sg**	**02 35 18.0**	**+0.5**
	baz=27						
W39A	**Magazine**	**1.12**	**266**	P	**Pg**	**02 35 11.8**	**+0.8**
	baz=88,SNR=180						
W39A				S	**Sn**	**02 35 28.0**	**+0.7**
	baz=88						
U40A	**Yellville**	**1.12**	**342**	P	**Pb**	**02 35 12.1**	**+0.8**
	baz=160,SNR=1000						
V39A	**Pettigrew**	**1.14**	**299**	P	**Pb**	**02 35 12.5**	**+0.9**
	baz=120,SNR=1000						
V39A				S	**Sb**	**02 35 28.4**	**+1.8**
	baz=120						
MIAR	**Mount Ida**	**1.20**	**232**	P	**Pg**	**02 35 12.9**	**+0.3**
	baz=55						
MIAR				S	**Sb**	**02 35 29.3**	**+0.8**
	baz=55						
MIAR	**Mount Ida**	**1.20**	**232**	*e*Pn	**Pg**	**02 35 12.9**	**+0.3**
MIAR				*e*S	**Sb**	**02 35 29.5**	**+1.0**
U39A	**Green Forest**	**1.39**	**322**	P	**Pb**	**02 35 16.8**	**+0.9**
	baz=141,SNR=1000						
U39A				S	**Sg**	**02 35 36.1**	**+1.8**
	baz=141						
Y40A	**Okolona**	**1.46**	**209**	P	**Pn**	**02 35 16.9**	**+0.6**
	baz=31						
Y40A				S	**Sb**	**02 35 36.2**	**+0.4**
	baz=31						
HBAR	**Harrisburg**	**1.47**	**79**	*e*Pn	**Pn**	**02 35 16.7**	**+0.3**
CCAR	**Cane Creek**	**1.47**	**158**	*e*Pn	**Pn**	**02 35 16.6**	**+0.1**
QUAR	**Qualls**	**1.49**	**76**	*e*Pn	**Pn**	**02 35 17.3**	**+0.5**
HHAR	**Hobbs**	**1.58**	**309**	*e*Pn	**Pb**	**02 35 20.0**	**+0.8**
X39A	**Fountain Ranch**	**1.59**	**241**	P	**Pb**	**02 35 19.5**	**+0.1**
	baz=63,SNR=1000						
X39A				S	**Sg**	**02 35 42.1**	**+1.3**
	baz=63						
WLAR	**White Oak Lake**	**1.70**	**200**	*e*Pn	**Pn**	**02 35 19.0**	**-0.6**
WLAR				*e*Sn	**Sn**	**02 35 42.3**	**+0.7**
V38A	**Canehill**	**1.71**	**290**	P	**Pb**	**02 35 22.1**	**+0.6**
	baz=110,SNR=388						
V38A				S	**Sg**	**02 35 46.0**	**+1.2**
	baz=110						
W38A	**Poteau**	**1.73**	**263**	P	**Pb**	**02 35 22.1**	**+0.4**
	baz=84,SNR=1000						
W38A				S	**Sg**	**02 35 46.6**	**+1.4**
	baz=84						
T40A	**Mansfield**	**1.86**	**358**	P	**Pb**	**02 35 24.4**	**+0.5**
	baz=176,SNR=685						
T40A				S	**Sg**	**02 35 49.7**	**+0.3**
	baz=176						
T39A	**Clever**	**1.90**	**336**	P	**Pb**	**02 35 24.8**	**+0.3**
	baz=155,SNR=606						
Y39A	**Lockesburg**	**1.93**	**226**	P	**Pn**	**02 35 23.8**	**+1.0**
	baz=47,SNR=142						
Y39A				S	**Sb**	**02 35 49.9**	**+0.6**
	baz=47						
U38A	**Gravette**	**1.96**	**306**	P	**Pb**	**02 35 25.7**	**0.0**
	baz=126,SNR=188						
SFTN	**Shelby Forest**	**1.97**	**87**	*e*Pn	**Pn**	**02 35 23.7**	**+0.4**
SFTN				*e*Sn	**Sb**	**02 35 50.6**	**+0.1**
DLAR	**Dell**	**2.04**	**75**	*e*Pn	**Pn**	**02 35 25.3**	**+1.0**
DLAR				*e*Sn	**Sb**	**02 35 53.1**	**+0.7**
MET	**Memphis--Engin**	**2.05**	**94**	*e*Pn	**Pn**	**02 35 24.9**	**+0.5**
MET				*e*Sn	**Sn**	**02 35 50.5**	**+0.3**
X38A	**Whitesboro**	**2.07**	**253**	Pb	**Pb**	**02 35 28.7**	**+1.2**
	baz=74,SNR=698						
X38A				Sb	**Sg**	**02 35 57.3**	**+1.2**
	baz=74						
GNAR	**Gosnell**	**2.07**	**70**	*e*Pn	**Pn**	**02 35 25.9**	**+1.2**
Z40A	**Long Farm, Mag**	**2.18**	**202**	P	**Pn**	**02 35 26.9**	**+0.7**
	baz=23						
PBMO	**Poplar Bluff**	**2.19**	**47**	*e*Pn	**Pb**	**02 35 28.7**	**-0.9**
PBMO				*e*Sn	**Sb**	**02 35 56.8**	**-0.2**
V37A	**Hulbert**	**2.29**	**286**	P	**Pn**	**02 35 30.2**	**+2.4**
	baz=105,SNR=207						
S40A	**Lebanon**	**2.31**	**358**	P	**Pn**	**02 35 30.1**	**+2.1**
	baz=177,SNR=303						
S40A				S	**Sb**	**02 36 00.9**	**+0.7**
	baz=177						
T38A	**Diamond**	**2.31**	**320**	P	**Pn**	**02 35 30.5**	**+2.4**
	baz=138,SNR=65						
Y38A	**Idabel**	**2.34**	**235**	P	**Pn**	**02 35 30.2**	**+1.8**
	baz=55,SNR=51						
Y38A				S	**Sb**	**02 36 00.4**	**-0.8**
	baz=55						
CWPT	**Cottonwood Poi**	**2.39**	**72**	*e*Pn	**Pn**	**02 35 30.6**	**+1.5**
WADM	**Wardell**	**2.39**	**63**	*e*Pn	**Pb**	**02 35 32.1**	**-0.8**
U37A	**Salina**	**2.45**	**298**	P	**Pn**	**02 35 32.1**	**+2.0**
	baz=117,SNR=89						
W37B	**Quinton**	**2.47**	**267**	P	**Pn**	**02 35 32.1**	**+1.9**
	baz=87,SNR=117						
S39A	**Bolivar**	**2.50**	**343**	P	**Pn**	**02 35 33.2**	**+2.5**
	baz=162,SNR=145						
EBZ	**Ebenezer Churc**	**2.52**	**93**	*e*Pn	**Pn**	**02 35 31.5**	**+0.5**
X37A	**Clayton**	**2.52**	**255**	P	**Pn**	**02 35 33.0**	**+2.0**
	baz=74,SNR=176						
HALT	**Halls**	**2.59**	**75**	*e*Pn	**Pn**	**02 35 32.5**	**+0.6**
OXF	**Oxford**	**2.60**	**107**	*e*Pn	**Pn**	**02 35 32.0**	**0.0**
OXF				*e*S	**Sb**	**02 36 07.7**	**-0.9**
S38A	**Stockton**	**2.62**	**333**	P	**Pn**	**02 35 34.5**	**+2.1**
	baz=152,SNR=100						
RELT	**Roellen**	**2.65**	**73**	*e*Pn	**Pn**	**02 35 34.2**	**+1.5**
141A	**Papa Simpson,**	**2.71**	**189**	P	**Pn**	**02 35 33.7**	**+0.2**
	baz=9.5						
143A	**Socs Landing,**	**2.72**	**162**	P	**Pn**	**02 35 33.8**	**+0.2**
	baz=343,SNR=17						
T37A	**Cheneyville 18**	**2.72**	**313**	P	**Pn**	**02 35 35.4**	**+1.6**
	baz=132,SNR=110						
GLST	**Glass**	**2.73**	**68**	*e*Pn	**Pn**	**02 35 35.7**	**+1.9**
GLAT	**Glass**	**2.73**	**68**	*e*Pn	**Pn**	**02 35 34.8**	**+0.9**
142A	**Monroe**	**2.76**	**172**	P	**Pn**	**02 35 34.8**	**+0.6**
	baz=353						
TUL1	**Leonard**	**2.81**	**284**	P	**Pn**	**02 35 37.3**	**+2.3**
	baz=102,SNR=27						
TUL1	**Leonard**	**2.81**	**284**	*e*Pn	**Pn**	**02 35 37.3**	**+2.3**
TUL1				*e*S	**Sn**	**02 36 05.5**	**-3.7**
U36A	**Oologah**	**2.91**	**293**	P	**Pn**	**02 35 38.4**	**+2.2**
	baz=112,SNR=12						
V36A	**Jenks**	**2.91**	**281**	P	**Pn**	**02 35 39.0**	**+2.6**
	baz=100,SNR=20						
Z38A	**Mt. Pleasant**	**2.94**	**227**	P	**Pn**	**02 35 38.3**	**+1.6**
	baz=47,SNR=12						
Y37A	**Hugo**	**2.94**	**245**	P	**Pn**	**02 35 38.9**	**+2.2**
	baz=64,SNR=20						
R40A	**Maddies Statio**	**3.00**	**2**	P	**Pn**	**02 35 39.8**	**+2.2**
	baz=182,SNR=42						
R39A	**Chumby, Stover**	**3.06**	**351**	P	**Pn**	**02 35 40.8**	**+2.4**
	baz=170,SNR=50						
139A	**Bunkhouse Ranc**	**3.08**	**213**	P	**Pn**	**02 35 39.9**	**+1.3**
	baz=33						
W36A	**Wetumka**	**3.12**	**268**	P	**Pn**	**02 35 41.0**	**+1.8**
	baz=87,SNR=8.3						
R38A	**Fenwick Farm,**	**3.13**	**338**	P	**Pn**	**02 35 41.4**	**+2.1**
	baz=157,SNR=23						
144A	**Alexander Plac**	**3.13**	**147**	P	**Pn**	**02 35 40.1**	**+0.7**
	baz=329						
S37A	**Fort Scott**	**3.13**	**323**	P	**Pn**	**02 35 41.7**	**+2.3**
	baz=141,SNR=23						
242A	**Grayson**	**3.23**	**176**	P	**Pn**	**02 35 40.8**	**+0.1**
	baz=357						
241A	**Mo Tay, Goldon**	**3.29**	**187**	P	**Pn**	**02 35 41.8**	**+0.3**
	baz=8.0						
X36A	**Centrahoma**	**3.31**	**259**	P	**Pn**	**02 35 44.0**	**+2.2**
	baz=77,SNR=17						
T36A	**Boggs Farm, Ca**	**3.31**	**303**	P	**Pn**	**02 35 44.0**	**+2.2**
	baz=122,SNR=27						
Z37A	**Pogue Cattle C**	**3.37**	**233**	P	**Pn**	**02 35 44.7**	**+2.0**
	baz=52						
145A	**Houston Renfro**	**3.39**	**142**	P	**Pn**	**02 35 43.5**	**+0.6**
	baz=323,SNR=6.2						
138A	**Matatall Enter**	**3.43**	**221**	P	**Pn**	**02 35 44.9**	**+1.4**
	baz=40,SNR=6.8						
VBMS	**Vicksburg**	**3.45**	**152**	P	**Pn**	**02 35 44.2**	**+0.5**
	baz=334						
Y36A	**Durant**	**3.47**	**248**	P	**Pn**	**02 35 46.2**	**+2.2**
	baz=66						
S36A	**Lake Cedric, C**	**3.52**	**315**	P	**Pn**	**02 35 46.8**	**+2.1**
	baz=133,SNR=9.3						
SIUC	**Southern Illin**	**3.54**	**46**	*e*Pn	**Pn**	**02 35 47.0**	**+2.1**
244A	**Avery, Jackson**	**3.55**	**155**	P	**Pn**	**02 35 45.2**	**+0.1**
	baz=337						
R37A	**Teagarden Farm**	**3.58**	**328**	P	**Pn**	**02 35 47.4**	**+1.9**
	baz=147,SNR=16						
V35A	**Meyer Ranch, C**	**3.63**	**279**	P	**Pn**	**02 35 48.1**	**+1.9**
	baz=97,SNR=16						
W35A	**Tecumseh**	**3.65**	**269**	P	**Pn**	**02 35 47.9**	**+1.4**
	baz=87,SNR=12						
U35A	**Pawnee**	**3.66**	**288**	P	**Pn**	**02 35 48.4**	**+1.7**
	baz=106,SNR=11						
239A	**Gary**	**3.68**	**208**	P	**Pn**	**02 35 48.1**	**+1.2**
	baz=28,SNR=5.9						
T35A	**Sooner Cattle**	**3.69**	**297**	P	**Pn**	**02 35 49.1**	**+2.0**
	baz=115,SNR=23						
Q40A	**Laux Farm, Aux**	**3.71**	**4**	P	**Pn**	**02 35 49.2**	**+1.9**
	baz=184,SNR=21						
SLM	**Saint Louis**	**3.77**	**27**	*e*Pb	**Pb**	**02 35 58.4**	**+1.9**
Q39A	**Willow Grove F**	**3.77**	**353**	P	**Pn**	**02 35 50.0**	**+1.8**
	baz=172,SNR=8.1						
Q38A	**Cooks Store, C**	**3.79**	**346**	P	**Pn**	**02 35 50.5**	**+2.1**
	baz=165,SNR=10						
WVT	**Waverly**	**3.83**	**76**	*e*Pn	**Pn**	**02 35 49.6**	**+0.6**
X35A	**Drake**	**3.85**	**258**	P	**Pn**	**02 35 50.5**	**+1.3**
	baz=76,SNR=7.7						
146A	**Union**	**3.85**	**132**	P	**Pn**	**02 35 49.9**	**+0.6**
	baz=314						
245A	**Little AP, Sta**	**3.87**	**146**	P	**Pn**	**02 35 50.1**	**+0.5**
	baz=328						
R36A	**Gordon, Harris**	**3.91**	**322**	P	**Pn**	**02 35 52.2**	**+2.1**
	baz=140,SNR=19						
Q37A	**Longview Farm,**	**3.93**	**336**	P	**Pn**	**02 35 52.7**	**+2.4**
	baz=155,SNR=12						
S35A	**Otter Creek Ra**	**3.94**	**308**	P	**Pn**	**02 35 52.4**	**+1.9**
	baz=126,SNR=11						
NATX	**Nacogdoches**	**3.99**	**209**	*e*Pn	**Pn**	**02 35 52.0**	**+0.9**
NATX				*e*S	**Sn**	**02 36 35.8**	**-2.3**
341A	**Kurthwood**	**4.00**	**189**	P	**Pn**	**02 35 52.3**	**+1.0**
	baz=9.5,SNR=12						
Y35A	**Marietta**	**4.05**	**251**	P	**Pn**	**02 35 53.7**	**+1.7**
	baz=70,SNR=8.3						
340A	**Bronson**	**4.05**	**198**	P	**Pn**	**02 35 53.2**	**+1.1**
	baz=18						
V34A	**Guthrie**	**4.19**	**279**	P	**Pn**	**02 35 55.6**	**+1.7**
	baz=97,SNR=16						
V34A	**Guthrie**	**4.19**	**279**	*e*Pn	**Pn**	**02 35 55.8**	**+1.9**
V34A				*e*S	**Sg**	**02 37 03.4**	**-0.7**
P39A	**Salisbury**	**4.20**	**356**	P	**Pn**	**02 35 55.7**	**+1.6**
	baz=176						
T34A	**McClaskey Farm**	**4.22**	**296**	P	**Pn**	**02 35 56.0**	**+1.6**
	baz=113						
P40A	**Paris**	**4.24**	**4**	P	**Pn**	**02 35 56.3**	**+1.7**
	baz=184,SNR=32						
246A	**Jackson Lee, B**	**4.27**	**139**	P	**Pn**	**02 35 55.5**	**+0.5**
	baz=321						
U34A	**Anderson Ranch**	**4.31**	**287**	*e*Pn	**Pn**	**02 35 58.2**	**+2.7**
U34A				*e*S	**Sg**	**02 37 05.7**	**-2.2**
237A	**Washetta, Mont**	**4.33**	**222**	P	**Pn**	**02 35 57.3**	**+1.5**
	baz=41,SNR=11						
W34A	**Bridge Creek,**	**4.38**	**271**	P	**Pn**	**02 35 57.6**	**+1.1**
	baz=88						
W34A	**Bridge Creek,**	**4.38**	**271**	*e*Pn	**Pn**	**02 35 56.9**	**+0.3**
W34A				*e*Pg	**Pg**	**02 36 11.5**	**-2.0**
W34A				*e*S	**Sg**	**02 37 08.6**	**-1.6**
Q36A	**Arnold C. Orve**	**4.39**	**327**	P	**Pn**	**02 35 59.1**	**+2.3**
	baz=146						
P38A	**Dawn**	**4.42**	**349**	P	**Pn**	**02 35 58.4**	**+1.3**
	baz=168,SNR=22						
136A	**Ennis**	**4.42**	**232**	P	**Pn**	**02 35 57.9**	**+0.8**
	baz=50						
345A	**Thompson Farm,**	**4.45**	**153**	P	**Pn**	**02 35 57.6**	**+0.1**
	baz=334						
Z35A	**Perchaven, San**	**4.45**	**245**	P	**Pn**	**02 35 58.9**	**+1.4**
	baz=63						
S34A	**Willow Spring**	**4.48**	**304**	P	**Pn**	**02 35 59.5**	**+1.6**
	baz=121						
X34A	**Smith Ranch, M**	**4.50**	**263**	P	**Pn**	**02 35 59.3**	**+1.2**
	baz=80						
P37A	**Lathrop**	**4.56**	**341**	P	**Pn**	**02 36 01.0**	**+2.0**
	baz=160,SNR=8.9						
Y34A	**Reagan Ranch,**	**4.59**	**255**	P	**Pn**	**02 36 00.8**	**+1.3**
	baz=72						

338A	**Crockett** baz=32	**4.61**	**212**	P	**Pn**	**02 36 00.5 +0.9**
346A	**Big Creek Wild** baz=329	**4.61**	**147**	P	**Pn**	**02 35 60.0 +0.2**
440A	**Kirbyville** baz=16	**4.71**	**196**	P	**Pn**	**02 36 01.8 +0.7**
444A	**Pine Grove** baz=344	**4.78**	**162**	P	**Pn**	**02 36 02.8 +0.9**
V33A	**Lossen Ranch,** baz=95	**4.81**	**278**	P	**Pn**	**02 36 03.9 +1.4**
O40A	**La Belle** baz=185,SNR=12	**4.84**	**5**	P	**Pn**	**02 36 04.7 +1.8**
P36A	**Good Intent, A** baz=152,SNR=20	**4.86**	**334**	P	**Pn**	**02 36 05.2 +2.1**
O38A	**Galt** baz=170,SNR=14	**4.89**	**351**	P	**Pn**	**02 36 05.7 +2.2**
439A	**Center Grove,** baz=24	**4.90**	**204**	P	**Pn**	**02 36 05.1 +1.5**
R34A	**Isabella, Hill** baz=127,SNR=9.2	**4.90**	**309**	P	**Pn**	**02 36 05.7 +2.0**
337A	**Centerville** baz=36	**4.91**	**217**	P	**Pn**	**02 36 04.9 +1.1**
Z34A	**Collier Ranch,** baz=66	**4.93**	**249**	P	**Pn**	**02 36 05.4 +1.3**
W33A	**Caddo, Fort Co** baz=87,SNR=9.0	**4.95**	**270**	P	**Pn**	**02 36 06.6 +2.2**
O39A	**Kirksville** baz=178,SNR=8.0	**4.96**	**359**	P	**Pn**	**02 36 05.7 +1.3**
LRAL	**Lakeview Retre**	**5.03**	**115**	*e*Pn	**Pn**	**02 36 05.3 -0.1**
LRAL				*e*S	**Sb**	**02 37 22.2 +3.6**
S33A	**Kaszmaul Farm,** baz=116	**5.05**	**299**	P	**Pn**	**02 36 07.6 +1.8**
O37A	**Wolven Farm, M** baz=164	**5.06**	**345**	P	**Pn**	**02 36 07.4 +1.6**
KSU1	**Kansas State U** baz=138	**5.06**	**320**	P	**Pn**	**02 36 07.6 +1.7**
KSU1	**Kansas State U**	**5.06**	**320**	*e*Pn	**Pn**	**02 36 07.1 +1.2**
KSU1				*e*Pg	Pg	02 36 23.6 -2.9
KSU1				*e*S	**Sg**	**02 37 30.4 -1.7**
P35A	**Duane Minner,** baz=145	**5.11**	**327**	P	**Pn**	**02 36 07.9 +1.4**
Q34A	**Chapman** baz=134,SNR=5.1	**5.12**	**316**	P	**Pn**	**02 36 07.9 +1.2**
O36A	**Bolckow** baz=156,SNR=7.4	**5.24**	**338**	P	**Pn**	**02 36 10.2 +1.9**
WMOK	**Wichita Mounta**	**5.25**	**266**	*e*Pn	**Pn**	**02 36 10.1 +1.6**
WMOK				*e*Pg	Pb	02 36 24.9 +3.3
WMOK				*e*S	**Sg**	**02 37 33.5 -4.5**
Y33A	**Hilltop Ranch,** baz=75	**5.27**	**258**	P	**Pn**	**02 36 10.5 +1.7**
SWET	**Sewanee**	**5.31**	**89**	*e*Pn	**Pn**	**02 36 10.1 +0.7**
WHTX	**Lake Whitney,** baz=51	**5.33**	**233**	P	**Pn**	**02 36 10.6 +1.0**
WHTX	**Lake Whitney,**	**5.33**	**233**	*e*Pn	**Pn**	**02 36 10.2 +0.6**
WHTX				*e*S	**Sn**	**02 37 13.6 +2.2**
336A	**Riesel** baz=43	**5.37**	**225**	P	**Pn**	**02 36 11.3 +1.2**
P34A	**Walnut Farm, R** baz=139,SNR=14	**5.51**	**322**	P	**Pn**	**02 36 13.6 +1.6**
N38A	**Joes South For** baz=173,SNR=5.2	**5.53**	**354**	P	**Pn**	**02 36 13.9 +1.6**
N39A	**Derby Farms, D** baz=179	**5.58**	**359**	P	**Pn**	**02 36 14.6 +1.6**
W32A	**Sentinel** baz=87,SNR=15	**5.59**	**270**	P	**Pn**	**02 36 14.6 +1.4**
Z33A	**Whitaker Ranch** baz=68,SNR=16	**5.62**	**251**	P	**Pn**	**02 36 15.0 +1.5**
N37A	**Lee Faris, Mou** baz=165	**5.64**	**346**	P	**Pn**	**02 36 16.1 +2.3**
O35A	**Humboldt** baz=150,SNR=7.2	**5.68**	**332**	P	**Pn**	**02 36 16.2 +1.8**
Q33A	**Connelly Farm,** baz=129,SNR=10	**5.69**	**312**	P	**Pn**	**02 36 16.5 +2.0**
X32A	**Elmer** baz=80	**5.71**	**263**	P	**Pn**	**02 36 16.9 +2.1**
WCI	**Wyandotte Cave**	**5.73**	**57**	*e*Pn	**Pn**	**02 36 16.3 +1.2**
WCI				*e*S	**Sb**	**02 37 44.0 +5.2**
S32A	**Newby Ranch, P** baz=113	**5.77**	**297**	P	**Pn**	**02 36 17.0 +1.3**
234A	**Clairette** baz=54,SNR=13	**5.78**	**237**	P	**Pn**	**02 36 16.6 +0.8**
335A	**Moody** baz=46,SNR=13	**5.79**	**228**	P	**Pn**	**02 36 17.1 +1.2**
HDIL	**Hopedale** baz=206	**5.81**	**24**	P	**Pn**	**02 36 17.8 +1.6**
HDIL	**Hopedale**	**5.81**	**24**	*e*Pn	**Pn**	**02 36 18.1 +2.0**
HDIL				*e*S	**Sn**	**02 37 23.7 +0.7**
R32A	**Long Quarter,** baz=120,SNR=7.3	**5.93**	**304**	P	**Pn**	**02 36 19.2 +1.4**
BLO	**Bloomington**	**6.10**	**49**	*e*Pn	**Pn**	**02 36 22.7 +2.6**
BLO				*e*Sb	Sg	02 37 58.0 -7.3
N35A	**Tabor** baz=154,SNR=11	**6.11**	**336**	P	**Pn**	**02 36 22.2 +1.9**
Q32A	**Meitler Ranch,** baz=125,SNR=9.8	**6.14**	**309**	P	**Pn**	**02 36 22.2 +1.5**
M38A	**Pleasantville** baz=174	**6.15**	**355**	P	**Pn**	**02 36 22.4 +1.6**
M37A	**Trindle Farm,** baz=167	**6.24**	**349**	P	**Pn**	**02 36 24.5 +2.4**
334A	**Lometa** baz=50,SNR=17	**6.26**	**233**	P	**Pn**	**02 36 23.3 +0.9**
O33A	**Hebron** baz=138,SNR=11	**6.29**	**321**	P	**Pn**	**02 36 24.6 +1.8**
233A	**Rising Star** baz=58	**6.31**	**241**	P	**Pn**	**02 36 23.9 +0.8**
N34A	**Lincoln** baz=148	**6.40**	**331**	P	**Pn**	**02 36 26.2 +1.9**
CPCT	**Cooper Cave**	**6.46**	**86**	*e*Pn	**Pn**	**02 36 26.6 +1.5**
P32A	**Huiting Farm,** baz=130	**6.54**	**313**	P	**Pn**	**02 36 27.8 +1.6**
ABTX	**Abilene, Hawle** baz=65	**6.56**	**248**	P	**Pn**	**02 36 27.7 +1.1**
ABTX	**Abilene, Hawle**	**6.56**	**248**	*e*Pn	**Pn**	**02 36 27.4 +0.9**
ABTX				*e*Pg	**Pb**	**02 36 45.9 +1.8**
ABTX				*e*S	**Sn**	**02 37 37.2 -4.4**
SFIN	**Lafayette** baz=221	**6.60**	**38**	P	**Pn**	**02 36 28.8 +1.8**
SFIN	**Lafayette** 18nm,0.6s	**6.60**	**38**	*e*Pn	**Pn**	**02 36 29.1 +2.1**
SFIN				*e*S	**Sn**	**02 37 43.5 +1.0**
434A	**Burnet** baz=47	**6.63**	**229**	P	**Pn**	**02 36 28.0 +0.5**
SCIA	**State Center** 9.9nm,0.4s	**6.64**	**355**	*e*Pn	**Pn**	**02 36 27.7 +0.2**
SCIA				*e*S	Sg	02 38 15.5 -7.1
M35A	**Neola** baz=156	**6.68**	**338**	P	**Pn**	**02 36 29.6 +1.5**
333A	**Richland Sprin** baz=53,SNR=10	**6.77**	**236**	P	**Pn**	**02 36 29.9 +0.6**
O32A	**Brockman Farm,** baz=135	**6.79**	**319**	P	**Pn**	**02 36 31.3 +1.7**
CBKS	**Cedar Bluff** baz=119,SNR=18	**6.82**	**303**	P	**Pn**	**02 36 31.5 +1.3**
CBKS	**Cedar Bluff**	**6.82**	**303**	*e*Pn	**Pn**	**02 36 31.3 +1.1**
CBKS				*e*S	**Sg**	**02 38 25.1 -3.6**
L37A	**Phoenix Point,** baz=171	**6.90**	**352**	P	**Pn**	**02 36 32.7 +1.5**
M34A	**Aspy Farms, Fr** baz=151	**7.01**	**333**	P	**Pn**	**02 36 35.0 +2.3**
N32A	**Stulken Farm,** baz=138	**7.16**	**321**	P	**Pn**	**02 36 36.4 +1.6**
433A	**Art** baz=50,SNR=10.0	**7.20**	**233**	P	**Pn**	**02 36 36.0 +0.8**
TZTN	**Tazewell**	**7.31**	**78**	*e*Pn	**Pn**	**02 36 36.9 +0.2**
TZTN				*e*S	**Sg**	**02 38 38.3 -5.9**
O31A	**Woolen Ranch,** baz=130	**7.31**	**314**	P	**Pn**	**02 36 37.9 +1.1**
534A	**Blanco** baz=43	**7.32**	**226**	P	**Pn**	**02 36 37.1 +0.2**
L34A	**Svendsen Farm,** baz=154,SNR=21	**7.35**	**336**	P	**Pn**	**02 36 38.9 +1.6**
635A	**Leesville** baz=37	**7.42**	**219**	P	**Pn**	**02 36 38.9 +0.5**
736A	**Circle Diamond** baz=31	**7.44**	**213**	P	**Pn**	**02 36 39.8 +1.2**
K37A	**Belmond** baz=172	**7.53**	**353**	P	**Pn**	**02 36 41.7 +2.0**
N31A	**Bailey Ranch,** baz=135	**7.55**	**319**	P	**Pn**	**02 36 42.1 +2.0**
BGNE	**Belgrade** baz=142,SNR=9.7	**7.58**	**325**	P	**Pn**	**02 36 42.0 +1.4**
BGNE	**Belgrade**	**7.58**	**325**	*e*Pn	**Pn**	**02 36 42.3 +1.8**
BGNE				*e*Pg	Pg	02 37 09.6 -5.2
BGNE				*e*S	**Sg**	**02 38 49.5 -3.5**
AMTX	**Amarillo** baz=85	**7.60**	**270**	P	**Pn**	**02 36 42.1 +1.3**
AMTX	**Amarillo**	**7.60**	**270**	*e*Pn	**Pn**	**02 36 41.7 +0.9**
AMTX				*e*Pg	Pg	02 37 10.2 -4.9
AMTX				*e*S	**Sn**	**02 38 08.8 +1.5**
533A	**Kerrville** baz=46	**7.62**	**229**	P	**Pn**	**02 36 42.3 +1.2**
GOGA	**Godfrey**	**7.64**	**102**	*e*Pn	**Pn**	**02 36 40.3 -1.1**
GOGA				*e*S	**Sn**	**02 38 11.6 +3.5**
K35A	**Storm Lake** baz=162	**7.74**	**344**	P	**Pn**	**02 36 45.0 +2.4**
JFWS	**Jewell Farm**	**7.80**	**12**	*e*Pn	**Pn**	**02 36 45.5 +2.1**
JFWS				*e*S	**Sn**	**02 38 10.1 -1.9**
JCT	**Junction City** baz=51,SNR=11	**7.84**	**234**	P	**Pn**	**02 36 44.6 +0.5**
JCT	**Junction City**	**7.84**	**234**	*e*Pn	**Pn**	**02 36 44.4 +0.2**
JCT				*e*S	**Sn**	**02 38 11.1 -2.1**
735A	**Kenedy** baz=34	**7.88**	**217**	P	**Pn**	**02 36 45.3 +0.7**
K34A	**Le Mars** baz=158	**7.92**	**340**	P	**Pn**	**02 36 47.0 +1.8**
M31A	**Lambtecht Ranc** baz=138,SNR=11	**7.94**	**322**	P	**Pn**	**02 36 47.1 +1.6**
L32A	**Elgin** baz=145	**8.00**	**329**	P	**Pn**	**02 36 48.0 +1.7**
K33A	**Hardington** baz=152	**8.13**	**335**	P	**Pn**	**02 36 49.5 +1.5**
633A	**Saathoff Ranch** baz=43	**8.15**	**226**	P	**Pn**	**02 36 48.5 +0.2**
J35A	**Milford** baz=164	**8.35**	**346**	P	**Pn**	**02 36 52.4 +1.3**
J34A	**George** baz=160	**8.44**	**342**	P	**Pn**	**02 36 53.8 +1.5**
N29A	**Votaw Ranch, W** baz=128	**8.50**	**313**	P	**Pn**	**02 36 55.0 +1.8**
L31A	**Butterfield Fa** baz=142	**8.51**	**326**	P	**Pn**	**02 36 54.8 +1.6**
MSTX	**Muleshoe**	**8.63**	**264**	*e*Pn	**Pn**	**02 36 55.0 -0.1**
MSTX				*e*S	**Sn**	**02 38 28.5 -4.2**
L30A	**Spencer Herefo** baz=137	**8.76**	**322**	P	**Pn**	**02 36 58.2 +1.4**
M29A	**Burnside Ranch** baz=131	**8.93**	**316**	P	**Pn**	**02 37 00.8 +1.7**
ECSD	**EROS Data Cent** baz=158,SNR=28	**9.03**	**340**	P	**Pn**	**02 37 01.6 +1.2**
ECSD	**EROS Data Cent**	**9.03**	**340**	*e*Pn	**Pn**	**02 37 01.4 +1.0**
ECSD				*e*S	Sn	02 38 36.5 -5.8
I34A	**Hadley** baz=162	**9.13**	**344**	P	**Pn**	**02 37 03.4 +1.6**
833A	**Chaparral WMA,** baz=39	**9.13**	**222**	P	**Pn**	**02 37 02.9 +1.2**
L29A	**Maesberg Ranch** baz=134	**9.24**	**319**	P	**Pn**	**02 37 05.2 +1.9**
K30A	**Basset** baz=140	**9.25**	**325**	P	**Pn**	**02 37 05.2 +1.7**
H36A	**Jessenland, He** baz=172	**9.35**	**353**	P	**Pn**	**02 37 06.9 +2.2**
J31A	**Geddes** baz=146	**9.37**	**330**	P	**Pn**	**02 37 06.8 +1.8**
OGNE	**Ogallala** baz=124	**9.44**	**310**	P	**Pn**	**02 37 07.2 +1.1**
I32A	**Karley and Nic** baz=154	**9.55**	**338**	P	**Pn**	**02 37 08.4 +1.0**
H35A	**Sunnyside Ranc** baz=168	**9.58**	**350**	P	**Pn**	**02 37 09.5 +1.6**
K29A	**Lazy Trails An** baz=138,SNR=6.2	**9.66**	**323**	P	**Pn**	**02 37 10.8 +1.8**
J30A	**Dallas** baz=143,SNR=7.8	**9.71**	**328**	P	**Pn**	**02 37 10.8 +1.1**
H34A	**Spellman Lake,** baz=163	**9.71**	**346**	P	**Pn**	**02 37 11.4 +1.7**
BLA	**Blacksburg**	**9.88**	**75**	*e*Pn	**Pn**	**02 37 09.9 -2.2**
BLA				*e*S	Sn	02 39 46.7 +43
I31A	**Royce, Wessing** baz=150	**9.91**	**334**	P	**Pn**	**02 37 13.6 +1.1**
SPMN	**Marine on St.** baz=178	**9.93**	**358**	P	**Pn**	**02 37 13.9 +1.2**
SPMN	**Marine on St.**	**9.93**	**358**	*e*Pn	**Pn**	**02 37 11.9 -0.8**
SPMN				*e*S	Sn	02 38 59.1 -5.2
H33A	**Prehn Over Nor** baz=159	**9.95**	**342**	P	**Pn**	**02 37 14.3 +1.4**
H32A	**Carlson Farm,** baz=156	**9.97**	**339**	P	**Pn**	**02 37 14.7 +1.4**
J29A	**Okreek** baz=140	**10.15**	**325**	P	**Pn**	**02 37 17.3 +1.5**
I30A	**Oacoma** baz=146	**10.16**	**330**	P	**Pn**	**02 37 16.6 +0.7**
K28A	**Ten Mile Ranch** baz=134	**10.16**	**320**	P	**Pn**	**02 37 16.8 +0.8**
J28A	**Allard Ranch,** baz=137,SNR=6.4	**10.60**	**323**	P	**Pn**	**02 37 23.0 +1.1**
I29A	**Vivian Onida** baz=143	**10.62**	**328**	P	**Pn**	**02 37 22.6 +0.4**
F35A	**Swanville** baz=170	**10.68**	**352**	P	**Pn**	**02 37 23.5 +0.5**
TX31	**Lajitas Ar. Si**	**11.21**	**241**	*e*Pn	**Pn**	**02 37 30.1 -0.2**
ISCO	**Idaho Springs**	**11.39**	**297**	*e*Pn	**Pn**	**02 37 34.9 +1.9**
MNTX	**Cornudas Mount**	**11.39**	**255**	*e*Pn	**Pn**	**02 37 33.9 +1.1**
MNTX				*e*S		02 40 49.6
AGMN	**Agassiz Nation**	**13.25**	**350**	*e*Pn	**Pn**	**02 37 56.5 -1.5**
AGMN				*e*S	Sn	02 40 19.6 -5.9
BZMT	**Bozeman Pass**	**17.35**	**312**	*e*Pn	**P**	**02 38 54.9 +1.1**

DDA ***07*** *02:36:46.0,38°.94N×38°.57E,h7km,Md2.6*
ISK ***07*** *02:36:45.6,38°.94N×38°.58E,h5km,MD2.6*
ISCJB ***07*** *02:36:46.1±0.2,38°.94N±0°.03×38°.57E±0°.05,h1km±18km, Error ellipse: s-maj=7.0km s-min=4.8km az=167.7*
CSEM ***07*** *02:36:46.1±0.2,38°.94N×38°.58E,h2km,MD2.6,Error ellipse: s-maj=5.0km s-min=3.9km az=59.0*

ISC 07 02:36:45.7±1.2,38°.92N±0°.04×38°.61E±0°.04,h8km±16km, n13,σ0s39/22,Turkey

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
KEMA	**Kemaliye**	**0.36**	**345**	*i* P	**Pg**	**02 36 52.4**	**-0.4**
KEMA				*i* S	**Sg**	**02 36 57.9**	**+0.4**
KEMA	**Kemaliye**	**0.36**	**345**	P	**Pg**	**02 36 52.4**	**-0.4**
KEMA				S	**Sg**	**02 36 57.9**	**+0.4**
ELZG	**Elazig**	**0.52**	**145**	*i* P	**Pb**	**02 36 56.9**	**-0.3**
ELZG				*i* S	**Sb**	**02 37 05.3**	**+0.4**
ELZG	**Elazig**	**0.52**	**145**	P	**Pb**	**02 36 56.9**	**-0.3**
ELZG				S	**Sb**	**02 37 05.3**	**+0.4**
ILIC	**ilic-Erzincan**	**0.53**	**356**	*e*PG	**Pg**	**02 36 56.4**	**+0.4**
ILIC				*e*SG	**Sg**	**02 37 03.4**	**+0.4**
PTK	**Pertek**	**0.61**	**93**	*e*PG	**Pb**	**02 36 58.2**	**-0.6**
PTK				*e*SG	**Sb**	**02 37 08.0**	**+0.3**
PTK	**Pertek**	**0.61**	**93**	*e*Pg	**Pb**	**02 36 58.2**	**-0.6**
PTK				*e*Sg	**Sb**	**02 37 08.0**	**+0.3**
SVRC	**Sivrice-ELAZID**	**0.77**	**135**	*e*PG	**Pb**	**02 37 01.2**	**-0.3**
SVRC	**Sivrice-ELAZID**	**0.77**	**135**	*e*Pg	**Pb**	**02 37 01.2**	**-0.3**
AKCD	**Akcadag**	**0.83**	**221**	*i* P	**Pg**	**02 37 01.6**	**0.0**
AKCD				*i* S	**Sb**	**02 37 13.9**	**+0.1**
AKCD	**Akcadag**	**0.83**	**221**	P	**Pg**	**02 37 01.6**	**0.0**
AKCD				S	**Sb**	**02 37 13.9**	**+0.1**
SVSK	**Karacayir**	**1.60**	**309**	*e*PN	**Pb**	**02 37 15.2**	**-0.3**
SVSK	**Karacayir**	**1.60**	**309**	*e*Pn	**Pb**	**02 37 15.2**	**-0.3**

NIED ***07*** *02:40:00,36°.60N×140°.90E,h50km,Mw4.8 Best double couple: M0 1.81000×10^16 NP1:φs175.00000°,δ10.00000°, λ51.00000°. NP2:φs35.00000°,δ82.00000°,λ96.00000°.*
BJI ***07*** *02:40:43.0,36°.39N×141°.03E,h49km,mb4.9/59,mB5.0/42, Ms4.4/44,Ms7 4.2/44*
MOS ***07*** *02:40:45.1±0.8,36°.83N×140°.67E,h31km,mb5.2/93, MS4.0/22,Error ellipse: s-maj=6.8km s-min=4.0km az=103.4*
JMA ***07*** *02:40:46.6±0.1,36°.54N×140°.89E,h51km±1km,M4.9 JMA Felt IV J1.*
ISCJB ***07*** *02:40:47.3±0.3,36°.61N±0°.03×140°.72E±0°.03,h57km±2km, mb4.8/214,MS4.1/38,Error ellipse: s-maj=4.7km s-min=3.0km az=150.8*
IDC ***07*** *02:40:48.7±1.3,36°.52N×140°.82E,h63km±11km,mb4.6/47, mb1 4.6/51,mb1mx4.6/67,mbtmp4.9/51,MS4.1/25, Ms1 4.1/25,ms1mx3.9/49,Error ellipse: s-maj=9.3km s-min=8.2km az=81.0*
NEIC ***07*** *02:40:48.2±0.6,36°.59N×140°.71E,h53km±4km,mb4.9/111, Error ellipse: s-maj=5.1km s-min=3.3km az=157.0*
NEIC Recorded [4 JMA] in Ibaraki.

ISC 07 02:40:46.2±0.5,36°.56N±0°.03×140°.88E±0°.04,h41km±3km, h41km:pP-P,n496,σ1s25/522,mb4.9/214,MS4.2/39, 31C-21D,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JHO	**Hitachi**	**0.26**	**282**	P	**Pn**	**02 40 55.6**	**+1.5**
JHO				S	**Sn**	**02 41 01.7**	**+2.0**
ONAJ	**Iwakimizuishiy**	**0.55**	**353**	P	**Pn**	**02 40 58.4**	**+0.7**
ONAJ				S	**Sn**	**02 41 06.7**	**+0.9**
JYT	**Yasato**	**0.65**	**240**	P	**Pn**	**02 40 59.6**	**+0.7**
JYT				S	**Sn**	**02 41 08.8**	**+0.8**
JFK	**Kawauchi**	**0.81**	**359**	P	**Pn**	**02 41 01.5**	**+0.3**
JFK				S	**Sn**	**02 41 12.1**	**+0.1**
JFT	**Otama**	**1.05**	**336**	P	**Pn**	**02 41 06.1**	**+1.6**
JFT				S	**Sn**	**02 41 19.8**	**+1.8**
JAG	**Ashikaga**	**1.16**	**264**	P	**Pn**	**02 41 06.8**	**+0.9**
JAG				S	**Sn**	**02 41 21.2**	**+0.6**
JFY	**Yanaizu**	**1.27**	**312**	P	**Pn**	**02 41 08.7**	**+1.3**
JFY				S	**Sn**	**02 41 25.1**	**+1.8**
JMM	**Marumori**	**1.31**	**357**	P	**Pn**	**02 41 08.8**	**+0.8**
JMM				S	**Sn**	**02 41 25.8**	**+1.6**
JKT	**Katashina**	**1.33**	**280**	P	**Pn**	**02 41 09.6**	**+1.2**
JKT				S	**Sn**	**02 41 26.7**	**+1.8**
MJAR	**Matsushiro Arr** 260nm,0.3s,baz=95,slow=9.1,SNR=1487	**2.15**	**270**	P	**Pn**	**02 41 21.1**	**+1.6**
MJAR	261nm,0.3s,baz=147,slow=13,SNR=11			S	**Sn**	**02 41 47.5**	**+2.4**
MJAR	comp=Z,3μm,21.7s,baz=105,slow=45			LR	LR	02 42 22.3	
MAJO	**Matsushiro**	**2.16**	**270**	*d* iP	**Pn**	**02 41 21.7**	**+2.1**
MAJO	**Matsushiro**	**2.16**	**270**	*e*Pn	**Pn**	**02 41 21.5**	**+1.9**
MAT	**Matsushiro**	**2.16**	**270**	P	**Pn**	**02 41 20.7**	**+1.1**
MAT				S	**Sn**	**02 41 49.2**	**+4.1**
INU	**Inuyama**	**3.36**	**250**	*e*Pn	**Pn**	**02 41 38.6**	**+2.4**
JHJ	**Hachijo jima 2** 193nm,0.3s,baz=85,slow=5.3,SNR=50	**3.55**	**195**	P	**Pn**	**02 41 40.0**	**+1.3**
JHJ	160nm,0.3s,baz=67,slow=23,SNR=5.9			S	**Sn**	**02 42 20.1**	**+0.7**
JHJ	comp=Z,194nm,20.7s,baz=22,slow=28			LR	LR	02 42 25.8	
JHJ2	**Mitsune**	**3.55**	**195**	*e*Pn	**Pn**	**02 41 39.3**	**+0.6**
JHJ2				*e*Sn	**Sn**	**02 42 18.4**	**-1.0**
ERM	**Erimo**	**5.73**	**17**	*e*P	**Pn**	**02 42 08.8**	**+0.2**
ERM				*e*		02 43 11.9	
ERM	**Erimo**	**5.73**	**17**	*e*Pn	**Pn**	**02 42 08.8**	**+0.2**
ERM				*e*Sn	**Sn**	**02 43 11.9**	**-1.2**
YUK	**Yuzh-Kuril'sk**	**8.38**	**25**	*d* iP	**Pn**	**02 42 43.8**	**-1.2**
YUK				*i* S	Sn	02 44 11.4	-6.8
YUK	comp=Z,167nm,0.4s			pmax	pmax		
YUK	comp=N,23nm,0.3s			pmax	pmax		
YUK	comp=E,32nm,0.5s			pmax	pmax		
SHO	**Shikotan**	**8.60**	**30**	*d* iP	**Pn**	**02 42 46.9**	**-1.1**
SHO	comp=Z,118nm,0.4s			pmax	pmax		
SHO	comp=N,52nm,0.5s			pmax	pmax		
SHO	comp=E,108nm,0.5s			pmax	pmax		
JNU	**Nakatsue** comp=E,1.4nm,0.3s,baz=76,slow=8.6,SNR=11	**8.91**	**250**	P	**Pn**	**02 42 54.4**	**+2.1**
JNU	comp=E,891nm,18.4s,baz=108,slow=39			LR	LR	02 46 36.8	
JNU	**Nakatsue**	**8.91**	**250**	*e*Pn	**Pn**	**02 42 54.2**	**+1.8**
CBIJ	**Chichi jima**	**9.50**	**173**	*e*Pn	**Pn**	**02 42 58.7**	**-1.7**
JCJ	**Chichijima** comp=E,47nm,0.3s,baz=312,slow=5.0,SNR=19	**9.50**	**173**	P	**Pn**	**02 42 58.1**	**-2.2**
VLA	**Vladivostok**	**9.53**	**316**	*d* iP	Pn	02 43 06.6	+5.9
KUR	**Kuril'sk**	**10.15**	**29**	*d* iP	**Pn**	**02 43 09.2**	**0.0**
KUR				*i* S	Sn	02 44 54.7	-6.8
KUR	comp=Z,50nm,0.4s			pmax	pmax		
KUR	comp=N,22nm,0.5s			pmax	pmax		
KUR	comp=E,13nm,0.4s			pmax	pmax		
KUR	comp=E,166nm,0.6s			smax	smax		
KUR	comp=N,116nm,0.5s			smax	smax		
KUR	comp=N,270nm,4.2s			smax	smax		
KUR	comp=E,381nm,4.2s			smax	smax		
USRK	**Ussuriysk Ar.** comp=E,6.2nm,0.3s,baz=134,slow=12,SNR=59	**10.21**	**321**	P	Pn	02 43 14.0	+4.0
USRK				LR	LR	02 46 55.0	
KSRS	**Korea Array** comp=E,1.2nm,0.3s,baz=94,slow=14,SNR=36	**10.41**	**279**	P	Pn	02 43 17.7	+5.0
KSRS	comp=E,1μm,21.9s,baz=87,slow=35			LR	LR	02 46 56.2	
KS01	**Wonju Array Si**	**10.43**	**279**	*e*Pn	Pn	02 43 16.9	+3.8
KS01				*e*Sn	**Sn**	**02 45 05.5**	**-3.1**
KS15	**Wonju Array Si**	**10.44**	**279**	*e*Pn	Pn	02 43 17.4	+4.2
KSAR	**Wonju Array Be**	**10.44**	**279**	P	Pn	02 43 17.7	+4.5
KSAR	**Wonju Array Be**	**10.44**	**279**	P	Pn	02 43 17.7	+4.5
YSS	**Yuzh-Sakhalins**	**10.48**	**7**	⇓*e*P	**Pn**	**02 43 13.2**	**-0.5**
YSS				*e*S	Sn	02 45 03.5	-6.2
YSS	comp=Z,100nm,0.7s			pmax	pmax		
YSS	comp=Z,900nm,16.0s			MLR	MLR		
YSS	**Yuzh-Sakhalins**	**10.48**	**7**	*e*Pn	**Pn**	**02 43 13.6**	**-0.2**
MDJ	**Mudanjiang**	**11.76**	**317**	P	Pn	02 43 36.9	+5.7
MDJ	comp=Z,47nm,1.0s			pmax	pmax		
MDJ	comp=Z,220nm,4.7s			pmax	pmax		
MDJ	comp=Z,570nm,15.6s			LR	LR		
MDJ	comp=Z,440nm,16.5s			LR	LR		
MDJ	comp=Z,950nm,21.4s			LR	LR		
MDJ	**Mudanjiang**	**11.76**	**317**	*e*Pn	Pn	02 43 36.3	+5.1
HABR	**Khabarovsk**	**12.66**	**342**	*e*P	**Pn**	**02 43 41.7**	**-1.7**
HABR				*e*S	**Sn**	**02 46 01.3**	**-1.6**
HABR	comp=Z,116nm,2.3s			pmax	pmax		
HABR	comp=N,135nm,2.2s			pmax	pmax		
HABR	comp=Z,194nm,14.0s			MLR	MLR		
CN2	**Changchun**	**13.83**	**306**	*e*P	Pn	02 44 02.9	+3.4
CN2				*e*sP	P	02 44 18.4	+11
CN2				*e*S	**Sn**	**02 46 36.6**	**+5.0**
CN2	comp=Z,10.0nm,0.7s			pmax	pmax		
CN2	comp=Z,200nm,4.0s			pmax	pmax		
CN2	comp=Z,300nm,15.0s			LR	LR		
CN2	comp=Z,500nm,15.0s			LR	LR		
CN2	comp=Z,500nm,20.0s			LR	LR		
KLR	**Kul'dur** comp=Z,0.3nm,0.3s,baz=135,slow=12,SNR=12	**14.31**	**335**	P	**Pn**	**02 44 04.8**	**-1.2**
TYV	**Tymovskoe**	**14.36**	**5**	*e*P	Pn	02 44 03.0	-3.6
TYV	comp=Z,32nm,0.6s			pmax	pmax		
TYV	comp=N,1μm,16.0s			MLR	MLR		
TYV	comp=Z,2μm,17.0s			MLR	MLR		
SNY	**Shenyang**	**14.41**	**297**	⇑P	**Pn**	**02 44 08.7**	**+1.4**
SNY	comp=Z,25nm,1.2s			pmax	pmax		
SNY	comp=Z,500nm,15.8s			LR	LR		
SNY	comp=Z,840nm,17.2s			LR	LR		
SNY	comp=Z,1μm,17.1s			LR	LR		
DL2	**Dalian**	**15.42**	**285**	P	**P**	**02 44 24.0**	**-0.6**
DL2				S	**Sn**	**02 47 06.1**	**-4.2**
DL2	comp=Z,56nm,0.9s			pmax	pmax		
DL2	comp=Z,400nm,3.7s			pmax	pmax		
DL2	comp=Z,650nm,15.6s			LR	LR		
DL2	comp=Z,1μm,16.4s			LR	LR		
NKL	**Nikolayevsk**	**16.59**	**360**	*e*P	**Pn**	**02 44 32.0**	**-3.5**

NKL pmax pmax
comp=N,10.0nm,0.9s
NKL pmax pmax
comp=Z,26nm,0.9s
SKR Severo-Kuril's 17.86 33 ⇓*i*P P 02 44 52.4 +0.8
NJ2 Nanjing 18.74 263 *e*P P 02 45 00.4 -1.0
NJ2 pmax pmax
comp=Z,16nm,0.6s
TIA Tai'an 19.13 276 ⇓P P 02 45 04.6 -1.1
TIA pmax pmax
comp=Z,30nm,1.2s
BJI Beijing 19.68 288 P P 02 45 11.1 -0.6
BJI S S 02 48 43.3 -8.1
BJI pmax pmax
comp=Z,24nm,0.8s
BJI pmax pmax
comp=Z,230nm,4.3s
BJI LR LR
comp=Z,330nm,15.9s
BJT Baijiatuau 19.69 288 *e*P P 02 45 10.9 -0.9
BJT pmax pmax
comp=Z,26nm,0.7s
BJT Baijiatuau 19.69 288 *e*P P 02 45 10.9 -0.9
comp=Z,26nm,0.7s
PEA0 Petropavlovsk- 20.31 30 *e*P P 02 45 18.2 -0.2
PETK Petropavlovsk- 20.31 30 P Pn 02 45 20.1 -0.6
comp=Z,30nm,1.0s,baz=212,slow=8.2,SNR=11
PETK Petropavlovsk- 20.31 30 P Pn 02 45 20.1 -0.6
PETK pmax pmax
comp=Z,29nm,1.0s
PET Petropavlovsk 20.64 32 *e*P Pn 02 45 24.0 -0.5
PET *e*S **S 02 49 07.3 -2.9**
PET pmax pmax
comp=Z,63nm,1.1s
PET MLR MLR
comp=Z,200nm,16.0s
WHN Wuhan 22.88 263 ⇓P P 02 45 44.5 -1.6
WHN pmax pmax
comp=Z,48nm,0.6s
WHN LR LR
comp=Z,1μm,16.0s
CLNS Chul'man 22.95 337 *e*P P 02 45 44.0 -2.7
CLNS pmax pmax
comp=Z,19nm,1.2s
CLNS pmax pmax
comp=N,16nm,1.1s
CLNS pmax pmax
comp=E,10.0nm,0.8s
HHC Hu-ho-hao-te 23.23 290 *e*P P 02 45 50.4 +0.7
HHC S S 02 49 49.4 -9.3
HHC pmax pmax
comp=E,20nm,0.8s
HHC pmax pmax
comp=E,130nm,4.7s
HHC LR LR
comp=E,890nm,10.9s
HHC LR LR
comp=E,1μm,13.8s
HHC LR LR
comp=E,150nm,12.7s
MA2 Magadan 23.91 12 P P **02 45 55.8 0.0**
comp=E,36nm,1.0s,baz=217,slow=8.3,SNR=21
XAN Xi'an 26.15 274 P P 02 46 16.3 -0.2
XAN pP pP 02 46 28.3 +0.6
XAN sP sP 02 46 33.8 +1.1
XAN PP **PnPn 02 46 58.5 +2.3**
XAN S **S 02 50 40.6 -4.8**
XAN sS sS 02 51 00.3 -3.9
XAN pmax pmax
comp=E,11nm,0.9s
XAN LR LR
comp=E,190nm,14.6s
XAN LR LR
comp=E,270nm,17.5s
XAN LR LR
comp=E,300nm,17.5s
YAK Yakutsk 26.45 348 P P **02 46 18.3 -0.5**
comp=E,3.6nm,0.4s,baz=334,slow=22,SNR=10
YAK Yakutsk 26.45 348 *e*P P 02 46 18.0 -0.8
YAK *e**PP **pP 02 46 29.5 -0.5**
YAK *e* 02 46 56.7
YAK *e* 02 49 40.4
YAK *e*S **S 02 50 47.4 -2.0**
YAK *e*SS **SnSn 02 51 52.8 -0.2**
YAK *e* 02 57 05.7
YAK pmax pmax
comp=Z,108nm,1.1s
YAK pmax pmax
comp=N,49nm,1.3s
YAK pmax pmax
comp=E,18nm,1.4s
YAK pmax pmax
comp=Z,41nm,1.0s
YAK pmax pmax
comp=N,14nm,0.9s
YAK pmax pmax
comp=E,35nm,1.1s
YAK smax smax
comp=N,223nm,3.0s
YAK smax smax
comp=E,205nm,3.7s
YAK MLR MLR
comp=Z,503nm,18.0s
YAK MLR MLR
comp=E,220nm,19.0s
YAK MLR MLR
comp=N,579nm,24.0s
YAK Yakutsk 26.45 348 *e*P P 02 46 18.5 -0.3
comp=N,77nm,0.7s
ENH Enshi 26.87 266 *e*P P 02 46 22.2 -0.8
comp=N,47nm,0.8s
ULN Ulaanbaatar 27.28 305 *de*P P 02 46 26.3 -0.3
ULN pmax pmax
comp=Z,22nm,0.8s
ULN Ulaanbaatar 27.28 305 *e*P P 02 46 26.5 -0.2
comp=Z,20nm,0.8s
ULN Ulaanbaatar 27.28 305 P P **02 46 26.4 -0.3**
SNR=12
ULN Ulaanbaatar 27.28 305 P P **02 46 26.4 -0.3**
SNR=12
SEY Seymchan 27.34 11 P P **02 46 29.4 +2.5**
comp=Z,56nm,0.9s,baz=202,slow=7.6,SNR=36
SEY Seymchan 27.34 11⇓*e*P P 02 46 28.2 +1.3
SONA1 Songino Array 27.70 305 *e*P P 02 46 30.1 -0.3
SONM Songino Array 27.70 305 P P **02 46 30.2 -0.3**
comp=Z,19nm,0.6s,baz=106,slow=9.0,SNR=50
SONM ScP **ScP 02 53 22.9 -0.9**
comp=Z,1.5nm,1.1s,baz=90,slow=4.4,SNR=4.8
SONM LR LR 02 57 30.4
comp=Z,286nm,21.6s,baz=96,slow=36
BOD Bodaibo 27.71 329⇓*i*P P 02 46 29.5 -0.7
BOD pmax pmax
comp=Z,20nm,0.8s
H11N2 WAKE ISLAND Hy 28.28 119 T T 03 16 38.7
baz=313,slow=75,SNR=338
H11N1 WAKE ISLAND Hy 28.29 119 T T 03 16 35.8
baz=313,slow=75,SNR=518
H11N3 WAKE ISLAND Hy 28.30 119 T T 03 16 37.9
baz=313,slow=75,SNR=87
H11S1 WAKE ISLAND Hy 28.97 121 T T 03 17 31.8
baz=314,slow=76,SNR=1143
H11S3 WAKE ISLAND Hy 28.97 121 T T 03 17 31.5
baz=314,slow=76,SNR=906
H11S2 WAKE ISLAND Hy 28.98 121 T T 03 17 25.4
baz=314,slow=76,SNR=426
LZH Lanzhou 29.73 280 *e*P P 02 46 49.3 +0.6
LZH pP sP 02 47 04.2 -0.7
LZH PP **PnPn 02 47 43.0 -2.1**
LZH *e*S S 02 51 32.0 -10
LZH pmax pmax
comp=Z,27nm,1.0s
LZH pmax pmax
comp=Z,100nm,4.0s
LZH LR LR
comp=Z,410nm,14.8s
LZH LR LR
comp=Z,680nm,15.2s
LZH LR LR
comp=Z,790nm,15.6s
ZAK Zakamensk 30.24 309 *e*P P 02 46 52.5 -0.4
ZAK pmax pmax
comp=Z,12nm,1.0s
TLY Talaya 30.33 312 P P **02 46 53.9 +0.3**
comp=Z,8.8nm,0.6s,baz=118,slow=6.4,SNR=19
TLY LR LR 02 59 43.4
comp=Z,346nm,18.8s,baz=106,slow=37
TLY Talaya 30.33 312 *e*P P 02 46 53.9 +0.3
TLY pmax pmax
comp=Z,13nm,0.9s
TLY MLR MLR
comp=Z,332nm,18.0s
TLY Talaya 30.33 312 *e*P P 02 46 53.8 +0.2
comp=Z,23nm,1.2s
TLY Talaya 30.33 312 P P **02 46 53.9 +0.3**
SNR=7.8
TLY P P **02 46 53.9 +0.3**
SNR=7.8
TLY Talaya 30.33 312 P P **02 46 53.9 +0.3**
SNR=7.8
GYA Guiyang 30.72 261⇑*i*P P 02 46 56.0 -1.5
GYA pP sP 02 47 12.2 -1.5
GYA PcP **PcP 02 49 57.4 +2.9**
GYA S **S 02 51 57.8 +0.1**
GYA sS sS 02 52 19.0 +2.5
GYA ScP **ScP 02 53 33.6 -0.2**
GYA SS **SnSn 02 53 41.2 +3.0**
GYA ScS **ScS 02 57 29.0 -1.6**
GYA pmax pmax
comp=Z,20nm,0.7s
GYA pmax pmax
comp=Z,130nm,5.6s
GYA LR LR
comp=Z,560nm,16.3s
GYA LR LR
comp=Z,530nm,16.6s
GYA LR LR
comp=Z,540nm,16.2s
CD2 Chengdu 31.25 271 P P 02 47 02.1 +0.1
CD2 sP sP 02 47 20.8 +2.5
CD2 S **S 02 52 05.2 -0.6**
CD2 sS sS 02 52 27.2 +2.6
CD2 pmax pmax
comp=Z,50nm,0.7s
CD2 pmax pmax
comp=Z,170nm,5.1s
CD2 LR LR
comp=Z,580nm,16.7s
CD2 LR LR
comp=Z,630nm,16.7s
MOY Mondy 31.93 311 *e*P P 02 47 07.7 -0.1
GTA Gaotai 32.30 288 *e*P P 02 47 10.6 -0.6
GTA pP pP 02 47 22.9 +0.3
GTA sP sP 02 47 28.3 +0.8
GTA PcP **PcP 02 49 59.2 +0.6**
GTA S **S 02 52 21.3 -0.8**
GTA sS sS 02 52 40.6 -0.4
GTA SS **SnSn 02 54 17.7 +1.5**
GTA pmax pmax
comp=Z,6.0nm,1.1s
GTA pmax pmax
comp=Z,80nm,6.4s
GTA LR LR
comp=Z,260nm,16.6s
GTA LR LR
comp=Z,260nm,18.5s
GTA LR LR
comp=Z,270nm,19.0s
KMI Kunming 34.47 262 P P **02 47 29.4 -1.0**
KMI pP pP 02 47 37.3 -4.4
KMI sP sP 02 47 41.9 -4.8
KMI pmax pmax
comp=Z,17nm,1.2s
KMI LR LR
comp=Z,140nm,12.1s
KMI LR LR
comp=Z,430nm,14.1s
KMI LR LR
comp=Z,390nm,16.1s
BILL Bilibino 34.60 16⇓*e*P P 02 47 31.0 +0.2
BILL *i* 02 48 45.8
BILL *e*SS SS 02 55 12.4 -15
BILL pmax pmax
comp=Z,10.0nm,1.0s
BILL MLR MLR
comp=Z,116nm,18.0s
BILL Bilibino 34.60 16 *e*P P 02 47 30.6 -0.1
comp=Z,9.9nm,1.0s
TIXI Tiksi 35.71 354 P P **02 47 40.0 -0.2**
comp=Z,12nm,0.6s,baz=144,slow=5.6,SNR=25
TIXI Tiksi 35.71 354⇑*i*P P 02 47 39.6 -0.6
TIXI pmax pmax
comp=Z,20nm,1.0s
TIXI MLR MLR
comp=Z,220nm,19.0s
TIXI Tiksi 35.71 354 *e*P P 02 47 39.7 -0.5
comp=Z,18nm,1.0s
KRAR Krasnoyarsk 37.52 317⇓*e*P P 02 47 54.1 -1.7
KRAR pmax pmax
comp=Z,46nm,1.0s
SKNT Sakolnakorn 37.98 249 P P **02 48 01.1 +1.0**
comp=Z,15nm,1.5s,comp=Z,3μm
KHON Khonkaen 39.24 249 P P **02 48 12.1 +1.4**
comp=Z,13nm,0.8s
CMAI Chiengmai2 40.06 257 P P **02 48 18.2 +0.5**
comp=Z,11nm,0.9s
UTTA Uttaradit 40.13 253 P P **02 48 18.3 +0.2**
comp=Z,5.9nm,0.8s
LAMP Lampang 40.39 255 P P **02 48 20.8 +0.5**
comp=Z,5.3nm,0.7s
PBKT Sadao Pong 40.51 251 P P **02 48 21.4 +0.2**
comp=Z,24nm,1.0s,comp=Z,3μm
WMQ Urumqi 40.68 297 P P **02 48 23.7 +1.2**
WMQ pP pP 02 48 37.2 +3.2
WMQ PP **PnPn 02 50 02.3 +1.5**
WMQ S **S 02 54 32.5 +2.8**
WMQ sS sS 02 54 54.7 +5.8
WMQ SS **SS 02 57 30.7 -0.2**
WMQ pmax pmax
comp=Z,40nm,0.8s
WMQ pmax pmax
comp=Z,65nm,4.8s
WMQ LR LR
comp=Z,47nm,20.4s
WMQ LR LR
comp=Z,95nm,25.2s
WMQ LR LR
comp=Z,120nm,22.0s
CMMT Chiang Mai 40.76 256 P P **02 48 23.8 +0.4**
comp=Z,9.3nm,0.9s
CHTO Chiang Mai 40.76 256 P P **02 48 23.9 +0.5**
comp=Z,44nm,0.9s
CHTO Chiang Mai 40.76 256 *e*P P 02 48 23.4 +0.1
CHTO pmax pmax
comp=Z,9.0nm,0.9s
CHTO Chiang Mai 40.76 256 *e*P P 02 48 23.4 +0.1
comp=Z,9.0nm,0.9s
CMAR Chiang Mai Arr 40.97 255 P P **02 48 25.0 0.0**
comp=Z,3.4nm,0.6s,baz=51,slow=5.1,SNR=16
CMAR LR LR 03 07 30.3
comp=Z,156nm,18.5s,baz=53,slow=39
CM01 Chiang Mai Arr 40.97 255 *e*P P 02 48 24.8 -0.3
ZAA0 Zalesovo Array 41.92 313 *e*P P 02 48 32.1 -0.4
ZALV Zalesovo Beam 41.92 313 P P **02 48 32.5 0.0**
comp=Z,52nm,0.6s,baz=91,slow=6.5,SNR=193
ZALV PcP **PcP 02 50 26.6 -0.7**
comp=Z,3.3nm,0.7s,baz=98,slow=4.0,SNR=3.3
ZALV LR LR 03 06 51.8
comp=Z,185nm,18.1s,baz=62,slow=37
ZALV Zalesovo Beam 41.92 313 P P **02 48 32.5 0.0**
ZALV 02 50 26.6
ZALV pmax pmax
comp=Z,51nm,0.6s
ZALV pmax pmax
comp=Z,3.0nm,0.7s
ZALV MLR MLR
comp=Z,185nm,18.1s
NVS Novosibirsk 42.86 314⇓*i*P P 02 48 40.3 +0.2
NVS pmax pmax
comp=Z,55nm,1.0s
NVS pmax pmax
comp=N,8.0nm,0.9s
NVS pmax pmax
comp=E,41nm,1.1s
NRIK Noril'sk 43.52 336 P P **02 48 44.6 -0.6**
comp=E,6.2nm,0.6s,baz=158,slow=3.4,SNR=7.6
NRIK LR LR 03 08 26.4
comp=E,264nm,18.8s,baz=111,slow=38
MK31 Makanchi Array 44.01 302 *i* P P 02 48 49.4 -0.1
MK31 pmax pmax
comp=Z,20nm,0.7s
MKAR Makanchi Array 44.01 302 P P **02 48 49.5 -0.1**
comp=Z,25nm,0.8s,baz=84,slow=11,SNR=102
MKAR LR LR 03 07 58.8
comp=Z,216nm,18.1s,baz=78,slow=37
MKAR Makanchi Array 44.01 302 *e*P P 02 48 49.6 +0.1
MKAR Makanchi Array 44.01 302 *e*P P 02 48 49.6 +0.1
MAKZ Makanchi 44.22 303 *e*P P 02 48 51.3 +0.1
MAKZ pmax pmax
comp=Z,22nm,0.8s
MAKZ Makanchi 44.22 303 *e*P P 02 48 51.3 +0.1
comp=Z,22nm,0.8s
TAPN Taplejung 45.55 274 *e*P P 02 49 02.3 0.0
comp=Z,29nm,0.6s
KURK Kurchatov 45.89 308 P P **02 49 04.5 +0.2**
KURK pmax pmax
comp=Z,21nm,0.6s
KURK Kurchatov 45.89 308 *e*P P 02 49 04.0 -0.4
comp=Z,36nm,0.7s
KURK Kurchatov 45.89 308 P P **02 49 04.1 -0.2**
SNR=19
KURK P P **02 49 04.1 -0.2**
SNR=19
KURK Kurchatov 45.89 308 P P **02 49 04.1 -0.2**
SNR=19
KURBB Kurchatov Arra 45.96 308 P P **02 49 04.5 -0.4**
comp=Z,21nm,0.6s,baz=85,slow=8.4,SNR=191
ODAN Odare 46.02 274 *e*P P 02 49 06.1 +0.1
comp=Z,24nm,0.5s
SVW2 Sparrevohn 46.16 37 *e*P P 02 49 08.5 +2.2
comp=Z,15nm,0.9s
RAMN Ramite 46.62 274 *e*P P 02 49 10.6 0.0
comp=Z,128nm,0.7s
PDGK Podgornoye 46.63 298 P P **02 49 10.1 -0.1**
PDGK pmax pmax
comp=Z,47nm,0.8s
GUN Gumba 46.78 276 *e*P P 02 49 12.3 +0.2
comp=Z,102nm,0.9s
SURT Suratani 46.99 245 P P **02 49 14.4 +1.0**
comp=Z,5.5nm,1.0s
KKN Kakani 47.31 276 *e*P P 02 49 16.2 +0.2
comp=Z,84nm,1.0s
RSO Redoubt South 47.54 38 *e*P P 02 49 20.9 +3.6
GKN Gorkha 47.73 277 *e*P P 02 49 19.4 +0.1
comp=Z,145nm,1.0s
KDAK Kodiak Island 47.74 42 *i* P P 02 49 19.5 +0.9
CAST Castle Rocks 47.86 34 *e*P P 02 49 22.1 +2.5
comp=Z,5.2nm,0.7s
PKDT Phuket 48.05 244 P P **02 49 23.4 +1.8**
comp=Z,34nm,1.0s
BPAW Bear Paw Mtn. 48.36 33 *e*P P 02 49 24.9 +1.6
comp=Z,15nm,1.3s
KTH Kantishna Hill 48.38 34 *e*P P 02 49 25.5 +1.9
comp=Z,17nm,1.1s
MLY Manley 48.48 32 *e*P P 02 49 25.7 +1.3
comp=Z,47nm,2.0s
KOLN Koldanda 48.66 277 *e*P P 02 49 26.7 +0.2
comp=Z,52nm,1.0s
TRF Thorofare Moun 48.66 34 *e*P P 02 49 26.1 +0.2
comp=Z,8.4nm,0.9s
COLD Coldfoot 48.77 29 *e*P P 02 49 28.4 +1.9
comp=Z,6.9nm,1.1s
RC01 Rabbit Creek A 49.00 37 *e*P P 02 49 29.5 +1.2
comp=Z,14nm,0.9s
PYUN Piuthan 49.01 278 *e*P P 02 49 29.4 +0.2
comp=Z,163nm,0.8s
PMR Palmer 49.26 36 *e*P P 02 49 31.5 +1.2
PMR pmax pmax
comp=Z,18nm,1.3s
PMR Palmer 49.26 36 *e*P P 02 49 31.5 +1.2
comp=Z,18nm,1.3s
MCK McKinley 49.27 34 *e*P P 02 49 32.2 +1.9
MCK pmax pmax
comp=Z,15nm,1.1s
MCK McKinley 49.27 34 *e*P P 02 49 32.2 +1.9
comp=Z,15nm,1.1s
RND Reindeer 49.31 34 *e*P P 02 49 32.1 +1.3
RND pmax pmax
comp=Z,9.0nm,1.0s
RND Reindeer 49.31 34 *e*P P 02 49 32.1 +1.3
comp=Z,9.4nm,1.0s
TKM2 Tokmak 2 49.48 299 *e*P P 02 49 33.5 +0.9
TKM2 pmax pmax
comp=Z,20nm,0.8s
TKM2 Tokmak 2 49.48 299 *e*P P 02 49 33.5 +0.9
comp=Z,20nm,0.8s
MDM Murphy Dome 49.54 32 *e*P P 02 49 34.4 +1.9
comp=Z,19nm,1.1s
WRH Wood River Hil 49.62 33 *e*P P 02 49 34.6 +1.6
comp=Z,6.1nm,0.9s
SML Sawmill 49.63 36 *e*P P 02 49 34.3 +1.1
SML pmax pmax
comp=Z,12nm,0.9s
SML Sawmill 49.63 36 *e*P P 02 49 34.3 +1.1
comp=Z,12nm,0.9s
COLA College 49.71 32 *c i*P P 02 49 35.7 +2.1
COLA pmax pmax
comp=Z,10.0nm,0.8s
COLA College 49.71 32 *e*P P 02 49 34.7 +1.0
comp=Z,14nm,0.9s
CCB Clear Creek Bu 49.73 32 *e*P P 02 49 35.6 +1.7
comp=Z,17nm,1.8s
HDA Harding Lake 50.11 33 *e*P P 02 49 36.8 0.0
comp=Z,16nm,1.0s
IL1 Eielson Array 50.12 32 *e*P P 02 49 37.6 +0.7
ILAR Eielson Array 50.12 32 P P **02 49 37.7 +0.8**
comp=Z,8.9nm,0.8s,baz=271,slow=6.3,SNR=93
ILB Eielson Array 50.12 32 *e*P P 02 49 37.6 +0.7
FRU Bishkek 50.20 299 *e*P P 02 49 36.5 -1.3
KSH Kashi 50.21 294 P P 02 49 42.3 +4.2
KSH *e*sP sP 02 50 00.1 +5.4
KSH *e*PP PP 02 51 39.9 +6.5
KSH *e*ScP **ScP 02 54 51.5 +2.3**
KSH S **S 02 56 51.4 +4.0**
KSH pmax pmax
comp=Z,22nm,0.8s
KSH pmax pmax
comp=Z,110nm,4.4s
KSH LR LR
comp=Z,140nm,10.4s
KSH LR LR
comp=Z,160nm,5.3s
KSH LR LR
comp=Z,220nm,6.0s
VOSK Vostochnaya 50.28 312 *e*P P 02 49 38.0 -0.3
VOSK pmax pmax
comp=Z,34nm,0.8s
VOSK Vostochnaya 50.28 312 *e*P P 02 49 38.0 -0.3
comp=Z,34nm,0.8s
CHKZ Chkalovo 50.33 313 P P **02 49 37.8 -0.7**
CHKZ pmax pmax
comp=Z,47nm,1.4s
AAK Ala-Archa 50.34 299 P P **02 49 39.3 +0.3**
comp=Z,9.0nm,0.7s,baz=125,slow=5.4,SNR=19
AAK Ala-Archa 50.34 299 *c i*P P 02 49 39.1 0.0
AAK pmax pmax
comp=Z,13nm,0.6s
AAK Ala-Archa 50.34 299 *e*P P 02 49 38.7 -0.4
comp=Z,8.2nm,0.8s
AAK *e*PcP **PcP 02 50 56.6 -0.7**
OTUK Ortayu 50.36 306 P P **02 49 38.7 -0.2**
OTUK pmax pmax
comp=Z,33nm,1.0s
BVA0 Borovoye Array 50.58 313 *i* P P 02 49 39.6 -0.9
BVA0 pmax pmax
comp=Z,12nm,0.7s
BVAR Borovoye Array 50.58 313 P P **02 49 40.3 -0.1**
comp=Z,11nm,0.6s,baz=75,slow=6.8,SNR=52
BRVK Borovoye 50.64 313 *c i*P P 02 49 40.7 -0.2
BRVK pmax pmax
comp=Z,27nm,1.0s
BRVK Borovoye 50.64 313 *e*P P 02 49 40.8 0.0
comp=Z,27nm,1.0s
BRVK Borovoye 50.64 313 P P **02 49 40.9 0.0**
SNR=8.3
BRVK P P **02 49 40.9 0.0**
SNR=8.3
BRVK Borovoye 50.64 313 P P **02 49 40.9 0.0**
SNR=8.3
FYU Fort Yukon 50.73 30 *e*P P 02 49 42.9 +1.5
comp=Z,53nm,1.7s
KLU Klutina 50.80 36 *e*P P 02 49 43.8 +1.6
comp=Z,20nm,1.3s
EKS2 Erkin-Say 50.84 299 *e*P P 02 49 43.0 +0.2
EKS2 pmax pmax
comp=Z,8.0nm,0.9s
EKS2 Erkin-Say 50.84 299 *e*P P 02 49 43.0 +0.2
comp=Z,7.6nm,0.9s
PSI Prapat 51.18 239 P P **02 49 45.6 0.0**
comp=Z,8.5nm,0.8s,baz=356,slow=6.7,SNR=9.9

PSI Prapat 51.18 239 eP P 02 49 44.4 -1.2
comp=Z,8.6nm,0.8s
ZRNK Zerenda 51.41 313 P P 02 49 46.7 0.0
ZRNK pmax pmax
comp=Z,27nm,0.8s
ZRNK Zerenda 51.41 313 eP P 02 49 46.7 0.0
comp=Z,28nm,0.8s
DOT Dot Lake 51.44 33 eP P 02 49 48.0 +1.2
comp=Z,15nm,0.7s
MENT Mentasta 51.67 34 eP P 02 49 50.7 +2.2
comp=Z,10nm,0.8s
MNAS Manas 51.79 299 P P 02 49 50.4 +0.5
MNAS pmax pmax
comp=Z,36nm,0.9s
SFK Sufi-Kurgan 51.86 296 P P 02 49 50.7 +0.2
SFK pmax pmax
comp=Z,38nm,1.2s
EGAK Eagle 52.57 32 eP P 02 49 56.4 +1.3
comp=Z,6.0nm,0.7s
KK31 Karatay Array 53.00 300 i P P 02 49 59.0 +0.3
KK31 pmax pmax
comp=Z,24nm,0.9s
KKAR Karatay Array 53.00 300 eP P 02 49 59.0 +0.3
KKAR Karatay Array 53.00 300 eP P 02 49 59.0 +0.3
GSI Gunungsitoli 53.19 239 eP P 02 50 00.4 0.0
comp=Z,153nm,1.4s
INK Inuvik 55.00 27 P P 02 50 14.2 +1.3
comp=Z,14nm,0.7s,baz=300,slow=7.0,SNR=103
SVE Sverdlovsk 55.22 319d iP P 02 50 14.9 +0.3
SVE pmax pmax
comp=Z,57nm,0.9s
ARU Arti 56.44 319 P P 02 50 23.2 -0.1
comp=Z,38nm,0.5s,baz=81,slow=4.3,SNR=71
ARU Arti 56.44 319 eP P 02 50 22.5 -0.9
comp=Z,72nm,0.9s
SOKR Solikamsk 56.45 323d iP P 02 50 22.0 -1.3
SOKR pmax pmax
comp=Z,30nm,1.2s
SOKR MLR MLR
comp=Z,308nm,22.0s
WRA Warramunga Arr 56.53 187 P P 02 50 23.8 -0.6
comp=Z,8.4nm,0.6s,baz=4.2,slow=7.4,SNR=38
KBL Kabul 57.19 291 eP P 02 50 28.9 -0.4
KBL pmax pmax
comp=Z,30nm,0.6s
KBL Kabul 57.19 291 eP P 02 50 28.9 -0.4
comp=Z,30nm,0.6s
HYB Hyderabad 57.77 268 i P P 02 50 33.0 -0.3
AB31 Akbulak array 57.92 310 i P P 02 50 33.4 -0.5
AB31 pmax pmax
comp=Z,22nm,0.6s
ABKAR Akbulak array 57.92 310 eP P 02 50 33.7 -0.3
AKTO Aktyubinsk 58.68 312 P P 02 50 38.6 -0.6
comp=Z,13nm,0.8s,baz=77,slow=11,SNR=32
AKTO LR LR 03 16 49.2
comp=Z,163nm,18.8s,slow=37
AS01 Alice Springs 60.25 187 eP P 02 50 49.9 -0.4
AS31 Alice Springs 60.26 187 eP P 02 50 49.9 -0.5
comp=Z,2.4nm,0.8s
ASAR Alice Springs 60.26 187 P P 02 50 50.0 -0.3
comp=Z,3.5nm,0.8s,baz=10,slow=5.7,SNR=28
ASAR LR LR 03 16 08.8
comp=Z,55nm,20.6s,baz=20,slow=35
SPITS Spitsbergen Ar 60.91 349 P P 02 50 54.8 +0.7
comp=Z,5.5nm,0.7s,baz=84,slow=7.6,SNR=15
KBS Kingsbay 61.05 350 eP P 02 50 55.8 +0.7
KBS pmax pmax
comp=Z,25nm,1.0s
KBS Kingsbay 61.05 350 eP P 02 50 55.8 +0.7
comp=Z,25nm,1.0s
TMCR Tamitsa 62.96 331 eP P 02 51 07.7 -0.3
TMCR pmax pmax
comp=Z,23nm,1.0s
RES Resolute Bay 63.17 14 P P 02 51 09.4 +0.1
comp=Z,16nm,0.9s,baz=307,slow=6.4,SNR=52
GEYT Alibeck 63.69 299 P P 02 51 13.2 -0.2
comp=Z,14nm,0.8s,baz=33,slow=3.5,SNR=23
GEYT LR LR 03 20 59.9
comp=Z,158nm,18.6s,baz=65,slow=38
KLMR Klimovskoe 63.93 328 eP P 02 51 11.5 -3.0
KLMR e*PP pP 02 51 26.0 -0.7
KLMR 02 53 30.9
KLMR pmax pmax
comp=Z,16nm,0.7s
ARCES ARCESS Array B 64.29 339 P P 02 51 16.8 0.0
comp=Z,7.2nm,0.8s,baz=48,slow=8.0,SNR=26
ARCES LR LR 03 22 48.6
comp=Z,140nm,18.4s,baz=52,slow=39
YKW3 Yellowknife Ar 64.39 30 eP P 02 51 17.3 -0.2
comp=Z,19nm,1.7s
YKA Yellowknife Ar 64.43 30 P P 02 51 18.3 +0.5
comp=Z,2.5nm,0.7s,baz=303,slow=6.7,SNR=42
YKB5 Yellowknife Ar 64.43 30 eP P 02 51 17.6 -0.2
DAG Danmarks Havn 66.21 355 i P P 02 51 28.8 -0.3
comp=Z,12nm,1.0s
DAG Danmarks Havn 66.21 355 i P P 02 51 28.8 -0.3
DAG pmax pmax
comp=Z,12nm,1.0s
MOS Moscow 67.38 323 eP P 02 51 35.7 -1.1
VRH Novokhopyorsk 67.65 318 eP P 02 51 37.7 -0.9
VRH pmax pmax
comp=Z,20nm,0.6s
STKA Stephens Creek 68.08 179 P P 02 51 41.7 +0.3
comp=Z,5.3nm,0.7s,baz=329,slow=6.7,SNR=12
OBN Obninsk 68.22 323 P P 02 51 41.8 -0.3
comp=Z,10nm,0.4s,baz=19,slow=22,SNR=5.9
OBN Obninsk 68.22 323c iP P 02 51 41.5 -0.6
OBN e 02 51 59.3
OBN e 02 54 09.3
OBN eS S 03 00 36.4 -2.9
OBN eSS SS 03 05 08.2 +6.3
OBN pmax pmax
comp=Z,19nm,1.2s
OBN MLR MLR
comp=Z,136nm,17.0s
LPSR Galich'ya Gora 68.39 320 eP P 02 51 42.4 -0.9
LPSR pmax pmax
comp=Z,30nm,1.1s
KULLO Kullorsuaq 68.49 5 i P P 02 51 43.4 -0.1
comp=Z,12nm,0.9s
KULLO Kullorsuaq 68.49 5 i P P 02 51 43.4 -0.1
KULLO pmax pmax
comp=Z,12nm,0.9s
VSR Storozhevoye 69.01 319 eP P 02 51 46.2 -0.9
VSR pmax pmax
comp=Z,40nm,1.2s
FINES FINESS Array B 69.04 332 P P 02 51 46.9 -0.3
comp=Z,16nm,0.7s,baz=46,slow=8.2,SNR=50
FINES LR LR 03 24 19.6
comp=Z,186nm,18.4s,baz=40,slow=38
GOF Gofitskoye 70.09 312⇑eP P 02 51 54.4 +0.5
GOF pmax pmax
comp=Z,52nm,0.8s
WSAR Wadi Sarin 70.58 285 P P 02 51 58.1 +0.8
comp=Z,13nm,1.0s,baz=68,slow=12,SNR=6.3
GUDG Gudauri 70.58 309 P P 02 51 58.3 +1.0
NCK Nalchik 70.58 310⇑iP P 02 51 57.8 +0.8
NCK pmax pmax
comp=Z,22nm,0.8s
VSU Vasula 70.65 329c iP P 02 51 56.8 -0.2
VSU pmax pmax
comp=Z,64nm,0.8s
NEW Newport 70.77 44 eP P 02 51 59.4 +1.3
NEW pmax pmax
comp=Z,6.0nm,1.0s
NEW Newport 70.77 44 eP P 02 51 59.4 +1.3
comp=Z,5.8nm,1.0s
ZEI Tsey 70.77 309 eP P 02 51 56.9 -1.5
ZEI pmax pmax
comp=Z,40nm,1.0s
TBLG Delisi 70.81 308 P P 02 51 59.8 +1.3
TBLG Delisi 70.81 308 P P 02 51 59.7 +1.3
KBZ Khabaz 70.89 311 P P 02 51 58.9 +0.1
comp=Z,25nm,0.8s,baz=54,slow=3.5,SNR=53
KBZ LR LR 03 24 14.0
comp=Z,118nm,19.7s,baz=48,slow=37
KVAR Kislovodsk Arr 70.89 311 P P 02 51 58.9 -0.1
comp=Z,39nm,1.0s,baz=183,slow=2.5,SNR=20
KVAR LR LR 03 25 06.2
comp=Z,106nm,20.4s,baz=30,slow=38
KIV Kislovodsk 70.90 311 P P 02 51 59.3 +0.4
KIV Kislovodsk 70.90 311 eP P 02 51 59.0 0.0
KIV pmax pmax
comp=Z,63nm,0.9s
KIV MLR MLR
comp=Z,87nm,18.0s

KIV Kislovodsk 70.90 311 eP P 02 51 59.1 +0.2
comp=Z,60nm,0.9s
KIV Kislovodsk 70.90 311 P P 02 51 59.4 +0.4
SNR=10
KIV Kislovodsk 70.90 311 P P 02 51 59.4 +0.4
SNR=10
BANOM Banah 70.96 288 i P P 02 51 59.9 +0.4
SNR=12
BANOM Banah 70.96 288 P P 02 52 00.3 +0.7
SNR=6.0
BANOM Banah 70.96 288 P P 02 52 00.3 +0.7
SNR=6.0
SUMG Summit 71.16 360 i P P 02 52 01.5 +1.0
SUMG Summit 71.16 360 i P P 02 52 01.5 +1.0
SUMG Summit 71.16 360 eP P 02 52 01.3 +0.9
comp=Z,17nm,0.9s
NEY Neytrino 71.25 310⇓iP P 02 52 01.8 +0.5
NEY pmax pmax
comp=Z,3.0nm,0.9s
UOSS Minazif 71.55 288 eP P 02 52 03.3 +0.2
comp=Z,1.0nm,0.9s
GNI Garni 71.65 307 P P 02 52 04.8 +1.1
comp=Z,14nm,0.8s,baz=349,slow=5.1,SNR=6.7
GNI LR LR 03 25 57.5
comp=Z,61nm,18.4s,baz=86,slow=38
GNI Garni 71.65 307 i P P 02 52 04.5 +0.8
SNR=11
GNI Garni 71.65 307c iP P 02 52 04.3 +0.6
GNI pmax pmax
comp=Z,120nm,1.2s
GNI Garni 71.65 307 eP P 02 52 04.5 +0.8
comp=Z,21nm,0.8s
HATD Hatta, Dubai 71.67 288 i P P 02 52 04.3 +0.4
SNR=7.4
AKH Akhalkalaki 71.77 308⇑iP P 02 52 05.3 +0.9
ASHO Ashiyiah 71.80 288 i P P 02 52 04.9 +0.2
SNR=8.0
CHVG Ch'k'valeri 71.94 310⇑iP P 02 52 03.0 -2.2
FAQ Al Faqa, Dubai 72.12 288 P P 02 52 06.4 -0.2
ARQ Araqi 72.16 286 P P 02 52 06.9 0.0
SNR=5.2
ARQ Araqi 72.16 286 P P 02 52 06.9 0.0
SNR=5.2
ASUD Al Ashush, Dub 72.39 288 P P 02 52 08.5 +0.3
BMO Blue Mountains 72.56 47 eP P 02 52 09.8 +0.8
comp=Z,6.3nm,0.9s
NACGM Naroch 72.89 327 e P 02 52 11.0 +0.4
SWMT Swartz Lake 72.93 43 eP P 02 52 13.3 +2.1
MFID Camas Ranch 74.26 47 eP P 02 52 21.0 +1.9
comp=Z,6.7nm,1.0s
FFC Flin Flon 74.33 32 eP P 02 52 19.2 +0.1
FFC pmax pmax
comp=Z,13nm,1.1s
FFC Flin Flon 74.33 32 eP P 02 52 19.2 +0.1
comp=Z,13nm,1.1s
AKASG Malin Array Be 74.41 322 P P 02 52 18.8 -0.8
comp=Z,14nm,0.5s,baz=46,slow=6.0,SNR=80
AKASG LR LR 03 27 55.1
comp=Z,257nm,19.1s,baz=50,slow=38
AKASG Malin Array Be 74.41 322 i P P 02 52 19.2 -0.4
AKASG pmax pmax
comp=Z,14nm,0.5s
AKBB Malin Array Si 74.41 322 eP P 02 52 18.7 -0.9
AKBB Malin Array Si 74.41 322 eP P 02 52 18.7 -0.9
KIEV Kiev 74.42 322 eP P 02 52 19.1 -0.6
KIEV pmax pmax
comp=Z,27nm,1.1s
KIEV Kiev 74.42 322 eP P 02 52 19.1 -0.6
comp=Z,27nm,1.1s
AK11 Malin Array Si 74.46 322 eP P 02 52 19.6 -0.3
NB2 NORSAR Subarra 74.46 337 P P 02 52 19.4 -0.4
comp=Z,10nm,0.6s,baz=39,slow=6.2
NB2 NORSAR Subarra 74.46 337 P P 02 52 19.4 -0.4
baz=39,slow=6.2
NOA NORSAR Array B 74.46 337 P P 02 52 19.6 -0.2
comp=Z,12nm,0.7s,baz=39,slow=5.9,SNR=45
NOA LR LR 03 28 17.4
comp=Z,150nm,18.9s,baz=45,slow=38
NOA NORSAR Array B 74.46 337 P P 02 52 19.6 -0.2
NOA pmax pmax
comp=Z,11nm,0.7s
NOA MLR MLR
comp=Z,150nm,18.9s
CMB Columbia Colle 74.49 54 eP P 02 52 21.5 +1.1
CMB pmax pmax
comp=Z,11nm,0.9s
CMB Columbia Colle 74.49 54 eP P 02 52 21.5 +1.1
comp=Z,11nm,0.9s
LRM Limekiln Ridge 74.78 44 eP P 02 52 23.6 +1.4
WAKR Walker 74.84 53 eP P 02 52 21.4 -1.2
WAKR ePP PP 02 54 59.5 -10
EGMT Eagleton 74.91 41 eP P 02 52 24.1 +1.5
comp=Z,15nm,1.2s
HLID Hailey 75.01 47 eP P 02 52 25.7 +2.2
comp=Z,6.4nm,1.1s
BOZ Bozeman (W) 75.35 44 eP P 02 52 27.7 +2.3
BOZ pmax pmax
comp=Z,8.0nm,0.9s
BOZ Bozeman (W) 75.35 44 eP P 02 52 27.6 +2.3
comp=Z,8.3nm,0.9s
SIM Simferopol' 75.37 315 P P 02 52 25.4 +0.1
SIM pmax pmax
comp=Z,19nm,0.7s
NV01 Mina Array Sit 75.61 53 eP P 02 52 27.8 +0.7
NVAR Mina Array Bea 75.61 53 P P 02 52 28.6 +1.6
comp=Z,3.5nm,0.7s,baz=277,slow=6.6,SNR=14
ELK Elko 76.18 49 eP P 02 52 32.0 +1.7
ELK pmax pmax
comp=Z,6.0nm,1.0s
ELK Elko 76.18 49 eP P 02 52 32.0 +1.7
comp=Z,5.9nm,1.0s
SFJD Kangerlussuaq 76.39 5 i P P 02 52 29.1 -1.6
comp=Z,5.3nm,0.8s
SFJD Kangerlussuaq 76.39 5 i P P 02 52 29.1 -1.6
SFJD pmax pmax
comp=Z,5.0nm,0.8s
MZRK Al-Mazaregh 76.74 305 eP P 02 52 32.9 -0.4
SFNV Sufian 76.75 306 eP P 02 52 33.4 0.0
IMW Indian Meadow 76.81 45 eP P 02 52 35.6 +1.7
comp=Z,10nm,1.0s
FXWY Fox Creek 76.92 45 eP P 02 52 37.2 +2.7
comp=Z,6.6nm,1.0s
RLMT Red Lodge 76.98 43 eP P 02 52 37.7 +3.0
comp=Z,6.6nm,1.0s
MOOW Moose Ponds 77.01 45 eP P 02 52 36.5 +1.6
comp=Z,8.2nm,1.2s
REDW Red Top Meadow 77.19 45 eP P 02 52 37.1 +1.2
comp=Z,8.3nm,1.1s
DAC Darwin (Calif) 77.33 54 eP P 02 52 38.8 +2.0
DAC pmax pmax
comp=Z,6.0nm,0.9s
DAC Darwin (Calif) 77.33 54 eP P 02 52 38.8 +2.0
comp=Z,5.5nm,0.9s
FRB Frobisher Bay 77.33 13 P P 02 52 36.3 +0.3
comp=Z,16nm,0.8s,baz=342,slow=4.3,SNR=14
R11A Troy Canyon, C 77.39 52 eP P 02 52 38.7 +1.6
comp=Z,10nm,0.9s
LVV L'vov 77.51 324 eP P 02 52 37.4 +0.1
LAO LASA Array 77.61 40 eP P 02 52 39.9 +1.8
comp=Z,28nm,1.4s
TPNV Topopah Spring 77.80 53 eP P 02 52 39.5 +0.1
TPNV pmax pmax
comp=Z,14nm,0.8s
TPNV Topopah Spring 77.80 53 eP P 02 52 39.5 +0.1
comp=Z,14nm,0.8s
KSRV Kasrt alli 77.80 306 eP P 02 52 39.5 +0.2
HWUT Hardware Ranch 77.86 47 eP P 02 52 40.5 +0.8
comp=Z,12nm,1.0s
DUG Dugway, Tooele 77.99 49 eP P 02 52 41.5 +1.2
DUG pmax pmax
comp=Z,10.0nm,0.8s
DUG Dugway, Tooele 77.99 49 eP P 02 52 41.5 +1.2
comp=Z,10nm,0.8s
KWP Kalwaria Pacla 78.27 324 eP P 02 52 42.4 +0.9
KWP Kalwaria Pacla 78.27 324 eP P 02 52 42.5 +0.9
BW06 Boulder Array 78.30 45 eP P 02 52 42.3 +0.2
comp=Z,4.2nm,0.8s
PD31 Pinedale Array 78.30 45 eP P 02 52 42.9 +0.7
PDAR Pinedale Array 78.30 45 P P 02 52 43.3 +1.1
comp=Z,1.5nm,0.5s,baz=268,slow=1.2,SNR=16
PSUT Pine Spring 78.36 51 eP P 02 52 44.4 +1.9
comp=Z,8.2nm,0.9s
BUR08 Bucovina Ar. S 78.41 322 eP P 02 52 42.1 -0.4
BURAR Bucovina Array 78.42 322⇑iP P 02 52 42.7 +0.2
TESR Tescani 78.43 320⇑iP P 02 52 42.5 0.0
CFR Carcaliu 78.52 318⇑iP P 02 52 42.8 -0.1

NLU North Lily Min 78.58 49 eP P 02 52 45.6 +1.9
comp=Z,7.1nm,0.9s
MPU Maple Canyon 78.81 48 eP P 02 52 45.9 +0.9
comp=Z,11nm,0.9s
VRI Vrincioaia 78.81 319⇓iP P 02 52 44.6 0.0
TIRR Tirgusor 78.84 318⇑iP P 02 52 44.2 -0.5
BR131 Keskin Array S 78.85 311 eP P 02 52 45.0 -0.1
BR131 ePP PP 02 55 38.9 -4.5
BRTR Keskin Array B 78.85 311 P P 02 52 45.0 -0.1
comp=Z,5.3nm,0.8s,baz=116,slow=4.4,SNR=34
BRTR PP PP 02 55 42.5 -0.9
comp=Z,1.4nm,0.9s,baz=59,slow=7.4,SNR=3.7
BRTR LR LR 03 32 11.5
comp=Z,54nm,18.1s,baz=29,slow=39
DRWC Darouich 78.86 307 eP P 02 52 45.1 0.0
PLOR Plostina 78.86 319⇓iP P 02 52 45.5 +0.6
KOLS Kolonicke sedl 78.96 324 eP P 02 52 45.6 +0.3
KOLS e 02 52 52.0
KOLS pmax pmax
comp=Z,6.0nm,1.0s
KOLS Kolonicke sedl 78.96 324 eP P 02 52 45.6 +0.3
KOLS ePCP PcP 02 52 52.0 -1.8
STHS Stebnicka Huta 79.10 325 eP P 02 52 47.4 +1.3
STHS e 02 53 05.4
STHS pmax pmax
comp=Z,8.0nm,0.8s
STHS Stebnicka Huta 79.10 325 eP P 02 52 47.4 +1.3
STHS e 02 53 05.4
UZH Uzhgorod 79.16 324⇑iP P 02 52 47.0 +0.6
UZH e 02 52 54.2
OJC Ojcow 79.20 326 eP P 02 52 47.1 +0.5
OJC Ojcow 79.20 326 eP P 02 52 47.1 +0.5
OJC Ojcow 79.20 326 eP P 02 52 46.5 -0.1
comp=Z,21nm,1.0s
ARCR ARCALIA 79.21 322⇑iP P 02 52 48.1 +1.3
BMR Baia Mare 79.23 322⇑iP P 02 52 47.5 +0.6
ANTO Ankara 79.27 312 eP P 02 52 48.0 +0.7
ANTO pmax pmax
comp=Z,14nm,0.9s
ANTO Ankara 79.27 312 eP P 02 52 48.0 +0.7
comp=Z,14nm,0.9s
BTCH Batrach 79.35 307 eP P 02 52 43.8 -4.0
MSAB Monastry St. A 79.40 318⇑iP P 02 52 48.5 +0.7
ISR Istrita 79.41 319⇑iP P 02 52 48.8 +0.9
MSU Marysvale 79.41 50 eP P 02 52 49.6 +1.3
MSU Marysvale 79.41 50 eP P 02 52 49.6 +1.3
DOPR Dopca 79.44 320⇑iP P 02 52 49.1 +1.0
MLR Muntele Rosu 79.47 320 P P 02 52 48.6 +0.2
comp=Z,0.6nm,0.7s,baz=144,slow=18,SNR=3.0
MLR Muntele Rosu 79.47 320⇓iP P 02 52 49.1 +0.7
NIE Niedzica 79.54 325 eP P 02 52 49.4 +0.9
NIE Niedzica 79.54 325 eP P 02 52 49.5 +0.9
PFO Pinyon Flats O 79.66 56 eP P 02 52 50.7 +1.1
PFO pmax pmax
comp=Z,13nm,1.1s
PFO Pinyon Flats O 79.66 56 eP P 02 52 50.7 +1.1
comp=Z,13nm,1.1s
LCMT Little Creek M 79.68 51 eP P 02 52 51.2 +1.5
comp=Z,11nm,0.9s
P17A Butcher Ranch, 79.69 48 eP P 02 52 52.5 +2.8
comp=Z,16nm,0.9s
ARNB Al Arnab 79.77 307 eP P 02 52 50.0 -0.2
SLNF Slenfeh 79.77 307 eP P 02 52 49.6 -0.6
P18A Preston Nutter 79.89 48 eP P 02 52 52.7 +1.8
comp=Z,9.1nm,0.8s
KNB Kanab 79.94 51 eP P 02 52 54.2 +3.1
KNB pmax pmax
comp=Z,18nm,1.2s
KNB Kanab 79.94 51 eP P 02 52 54.2 +3.1
comp=Z,18nm,1.2s
VOIR 79.97 320⇑iP P 02 52 52.2 +1.2
PKCU Pink Cliffs 79.99 51 eP P 02 52 53.1 +1.5
comp=Z,46nm,1.9s
SRU San Rafael Swe 80.05 48 eP P 02 52 53.8 +2.1
SRU pmax pmax
comp=Z,18nm,0.8s
SRU San Rafael Swe 80.05 48 eP P 02 52 53.8 +2.1
comp=Z,18nm,0.8s
BIDA Albida 80.06 306 eP P 02 52 50.6 -1.1
BAR Barrett 80.07 57 eP P 02 52 54.9 +3.2
comp=Z,13nm,0.9s
LANS Liptovska Anna 80.11 325 eP P 02 52 52.7 +1.0
LANS Liptovska Anna 80.11 325 eP P 02 52 52.7 +1.0
LANS e 02 53 11.0
KECS Kecovo 80.12 324 eP P 02 52 51.2 -0.4
KECS e 02 53 08.1
KECS pmax pmax
comp=Z,2.0nm,0.9s
KECS Kecovo 80.12 324 eP P 02 52 51.2 -0.4
KECS epP sP 02 53 08.0 -0.8
ULM Lac du Bonnet 80.13 33 P P 02 52 52.1 +0.4
comp=Z,2.1nm,0.6s,baz=326,slow=6.6,SNR=6.3
OKC Ostrava-Krasne 80.21 326 eP P 02 52 52.4 +0.3
OKC Ostrava-Krasne 80.21 326 eP P 02 52 52.4 +0.3
ARR Arges 80.24 320⇑iP P 02 52 53.5 +1.1
KSP Ksiaz 80.28 328 eP P 02 52 53.1 +0.6
KSP Ksiaz 80.28 328 eP P 02 52 53.1 +0.6
RAYN Ar Rayn 80.44 292 eP P 02 52 53.0 -0.8
comp=Z,21nm,1.0s
W13A Hualapai Mount 80.44 53 eP P 02 52 53.2 -0.8
comp=Z,4.7nm,0.9s
MARH Ras Al Marh 80.56 305 eP P 02 52 51.9 -2.8
DPC Dobruska-Polom 80.63 328 eP P 02 52 54.9 +0.5
DPC ePCP PcP 02 53 02.2 +1.0
DPC epP sP 02 53 11.9 +0.3
DPC ePP PP 02 55 54.5 -3.3
DPC Dobruska-Polom 80.63 328 eP P 02 52 54.9 +0.5
DPC e 02 53 02.2
DPC e 02 53 11.9
DPC e 02 55 54.5
UPC Upice 80.65 328 eP P 02 52 54.8 +0.3
UPC Upice 80.65 328 eP P 02 52 54.8 +0.3
ZALF Zalf 80.67 304 eP P 02 52 57.0 +2.1
O20A White River Ci 80.75 47 eP P 02 52 56.6 +1.1
comp=Z,11nm,0.9s
PSZ Piszkesteto 80.80 324 eP P 02 52 55.7 +0.3
PSZ pmax pmax
comp=Z,13nm,0.9s
PSZ Piszkesteto 80.80 324 eP P 02 52 55.7 +0.3
comp=Z,13nm,0.9s
Y12C Blythe 80.86 55 eP P 02 52 57.5 +1.7
comp=Z,16nm,1.0s
VYHS Vyhne 80.87 325 eP P 02 52 56.2 +0.5
VYHS e 02 53 13.7
VYHS pmax pmax
comp=Z,3.0nm,0.9s
VYHS Vyhne 80.87 325 eP P 02 52 56.2 +0.5
VYHS e 02 53 13.7
TOTH TOTAH 81.00 305 eP P 02 52 52.7 -4.0
GZR Gura Zlata 81.17 321⇑iP P 02 52 57.3 -0.1
BRG Berggiesshubel 81.25 329 eP P 02 52 57.6 0.0
comp=Z,10.0nm,1.0s
BRG e 02 53 15.9
comp=Z,12nm,1.1s
BRG Berggiesshubel 81.25 329 eP P 02 52 57.6 0.0
BRG pmax pmax
comp=Z,10.0nm,1.0s
BRG pmax pmax
comp=Z,12nm,1.1s
PVCC Panska Ves 81.25 329 eP P 02 52 58.2 +0.6
PVCC epP sP 02 53 15.7 +0.9
PVCC Panska Ves 81.25 329 eP P 02 52 58.2 +0.6
PVCC e 02 53 15.7
PV09 Paradox Valley 81.27 48 eP P 02 53 00.3 +1.9
PV09 ePP PP 02 56 02.6 -1.1
BRBR Barbar 81.29 305 eP P 02 52 53.9 -4.5
CLL Collm 81.30 330⇑iP P 02 52 57.7 -0.2
comp=Z,17nm,0.9s
CLL i 02 53 16.1
comp=Z,21nm,1.1s
CLL ePP PP 02 55 58.0 -5.1
CLL LmV 03 32 00.0
comp=Z,100nm,18.2s
CLL Collm 81.30 330⇑iP P 02 52 57.7 -0.2
CLL pmax pmax
comp=Z,17nm,0.9s
CLL Collm 81.30 330 eP P 02 52 57.6 -0.2
comp=Z,23nm,1.0s
PV10 Paradox Valley 81.41 48 eP P 02 53 01.5 +2.5
ASF Jabal al Asfar 81.42 304 P P 02 53 00.1 +1.1
comp=Z,2.9nm,0.8s,baz=356,slow=5.2,SNR=7.3
PV05 Paradox Valley 81.56 49 eP P 02 53 02.3 +2.4
N23A Red Feather La 81.57 45 eP P 02 53 01.9 +2.0
comp=Z,17nm,1.1s

BZS	Buzias	81.60	322⇑	iP	P	02 52 59.5	-0.1
GOPC	GO Pecny, Ondr	81.62	328	eP	P	02 53 00.0	+0.4
GOPC				AMS	AMS	03 32 50.0	
GOPC	GO Pecny, Ondr	81.62	328	eP	P	02 53 00.0	+0.4
PRA	Prague	81.65	328	eP	P	02 53 00.2	+0.4
PRA				epP	sP	02 53 18.9	+1.9
PRA	Prague	81.65	328	eP	P	02 53 00.2	+0.4
PRU	Pruhonice	81.67	328	eP	P	02 53 00.3	+0.4
PRU				epP	sP	02 53 17.9	+0.8
PRU	Pruhonice	81.67	328	eP	P	02 53 00.3	+0.4
PRU				e		02 53 17.9	
Y14A	Wickenburg	81.73	54	eP	P	02 53 03.0	+2.4
	comp=Z,30nm,0.8s						
TREC	Trest	81.78	327	eP	P	02 53 00.8	+0.3
TREC				AMS	AMS	03 31 10.0	
	comp=Z,300nm,18.7s						
TREC	Trest	81.78	327	eP	P	02 53 00.8	+0.3
TREC				MLR	MLR		
	comp=Z,300nm,18.7s						
WUAZ	Wupatki	81.79	52	eP	P	02 53 02.3	+1.2
	comp=Z,15nm,0.9s						
PV01	Paradox Valley	81.84	48	eP	P	02 53 02.6	+1.2
MMAI	Mount Meron Ar	81.89	305	P	P	02 53 02.2	+0.7
	comp=Z,7.8nm,0.8s,baz=56,slow=7.4,SNR=22						
CSS	Mathiatis	82.02	308	eP	P	02 53 01.8	-0.2
	comp=Z,2.7nm,0.9s						
SMCO	Snowmass	82.11	47	eP	P	02 53 04.4	+1.4
	comp=Z,6.6nm,0.9s						
MDVR	Moldovita	82.14	321⇑	iP	P	02 53 02.4	-0.1
NKC	Novy Kostel	82.35	329	eP	P	02 53 03.7	+0.2
NKC				epP	sP	02 53 22.4	+1.7
NKC	Novy Kostel	82.35	329	eP	P	02 53 03.7	+0.2
MVCO	Mesa Verde	82.49	49	eP	P	02 53 06.3	+1.6
	comp=Z,11nm,0.8s						
ISCO	Idaho Springs	82.49	45	eP	P	02 53 06.8	+2.0
ISCO				pmax	pmax		
	comp=Z,18nm,1.8s						
ISCO	Idaho Springs	82.49	45	eP	P	02 53 06.8	+2.0
	comp=Z,18nm,1.8s						
CONA	Conrad Observa	82.64	326	i P	P	02 53 05.8	+0.7
	comp=Z,8.2nm,1.3s						
KHC	Kasperske Hory	82.72	328	eP	P	02 53 05.7	+0.2
KHC				epP	sP	02 53 24.4	+1.7
KHC				ex	x	02 53 35.0	
KHC	Kasperske Hory	82.72	328	eP	P	02 53 05.7	+0.2
KHC	Kasperske Hory	82.72	328	eP	P	02 53 05.1	-0.4
	comp=Z,4.1nm,0.9s						
GERES	GERESS Array B	82.89	328	P	P	02 53 06.2	-0.3
	comp=Z,3.1nm,0.7s,baz=37,slow=5.7,SNR=27						
GERES				PP	PP	02 56 18.6	+2.2
	comp=Z,0.5nm,0.8s,baz=46,slow=7.6,SNR=3.5						
GERES				LR	LR	03 32 23.5	
	comp=Z,88nm,18.7s,baz=36,slow=37						
VTS	Vitosha	82.89	319⇑	iP	P	02 53 07.2	+0.6
VTS	Vitosha	82.89	319	eP	P	02 53 06.6	0.0
VTS				pmax	pmax		
	comp=Z,8.0nm,0.8s						
VTS	Vitosha	82.89	319	eP	P	02 53 06.6	0.0
	comp=Z,7.7nm,0.8s						
S22A	4UR Ranch, Cre	83.14	48	eP	P	02 53 10.3	+2.1
	comp=Z,9.3nm,0.9s						
S22A				ePP	PP	02 56 13.8	-5.3
GRFO	Grafenberg	83.27	330	eP	P	02 53 09.1	+0.8
GRFO				pmax	pmax		
	comp=Z,25nm,1.0s						
GRFO	Grafenberg	83.27	330	eP	P	02 53 09.1	+0.8
	comp=Z,25nm,1.0s						
ARSA	Arzberg	83.30	326	i P	P	02 53 09.0	+0.6
	comp=Z,4.2nm,1.2s						
X18A	Snowflake	83.32	52	eP	P	02 53 10.5	+1.5
	comp=Z,6.1nm,0.9s						
MOA	Molln	83.41	327	i P	P	02 53 09.5	+0.5
	comp=Z,7.3nm,1.5s						
EKA	Eskdalemuir Ar	83.44	340	P	P	02 53 08.9	0.0
	comp=Z,1.0nm,0.5s,baz=21,slow=5.7,SNR=8.2						
SDCO	Great Sand Dun	83.92	47	eP	P	02 53 14.8	+2.6
	comp=Z,5.6nm,0.9s						
SOKA	Soboth	83.95	326	i P	P	02 53 11.9	0.0
	comp=Z,11nm,0.9s						
TUC	Tucson	84.20	54	eP	P	02 53 14.6	+1.1
TUC				pmax	pmax		
	comp=Z,6.0nm,0.8s						
TUC	Tucson	84.20	54	eP	P	02 53 14.6	+1.1
	comp=Z,5.8nm,0.8s						
EIL	Elat	84.28	303	P	P	02 53 13.9	+0.1
	comp=Z,9.8nm,0.9s,baz=0.0,slow=3.0,SNR=9.5						
PMOR	Pomariorio Ree	84.38	113	eT	T	04 25 35.2	
	comp=Z,19nm,0.2s						
KBA	Koelnbreinsper	84.40	327	i P	P	02 53 13.6	-0.7
	comp=Z,4.3nm,1.0s						
PDKS	Podkum	84.43	325	i P	P	02 53 13.8	-0.5
ECSD	EROS Data Cent	84.55	38	eP	P	02 53 15.4	+0.5
	comp=Z,6.6nm,1.0s						
LJU	Ljubljana	84.66	326	i P	P	02 53 15.0	-0.4
PPT	Papeete	84.80	116	LR	LR	03 23 17.9	
	comp=Z,167nm,21.6s,baz=352,slow=30						
PPT2	Papeete2	84.82	116	eLR	LR	03 19 57.8	
	comp=Z,377nm,24.8s						
PPT2	Papeete2	84.82	116	eT	T	04 26 08.5	
	comp=Z,2.9nm,0.3s						
T25A	Trinidad	84.97	47	eP	P	02 53 18.3	+0.9
	comp=Z,11nm,0.8s						
JAVS	Javornik	84.98	326	i P	P	02 53 15.9	-1.2
ABTA	Abfaltersbach	85.02	327	i P	P	02 53 16.6	-0.7
	comp=Z,2.6nm,1.0s						
RETA	Reutte	85.19	329	i P	P	02 53 18.1	-0.1
	comp=Z,8.7nm,1.0s						
ANMO	Albuquerque	85.22	50	eP	P	02 53 20.1	+1.4
ANMO				pmax	pmax		
	comp=Z,11nm,1.0s						
ANMO	Albuquerque	85.22	50	eP	P	02 53 20.1	+1.4
	comp=Z,11nm,1.0s						
BFO	Black Forest	85.51	330	i P	P	02 53 19.6	0.0
BFO	Black Forest	85.51	330	eP	P	02 53 19.3	-0.3
	comp=Z,14nm,0.9s						
FETA	Feichten	85.57	328	i P	P	02 53 19.9	-0.2
	comp=Z,4.9nm,1.0s						
DAVA	Damuels	85.71	329	i P	P	02 53 20.5	-0.3
	comp=Z,13nm,1.0s						
319A	Douglas	85.78	54	eP	P	02 53 22.9	+1.5
	comp=Z,9.3nm,0.9s						
SCHQ	Schefferville	85.91	16	P	P	02 53 22.1	+0.6
	comp=Z,7.2nm,0.9s,baz=337,slow=4.1,SNR=3.8						
FUORN	Ofenpass-Fuorn	86.08	328	eP	P	02 53 23.1	+0.2
	comp=Z,12nm,0.9s						
TAOE	Nuku Hiva Isla	86.47	104	eLR	LR	03 20 34.5	
	comp=Z,272nm,23.8s						
TBI	Tubuai	88.65	120	eLR	LR	03 21 34.8	
	comp=Z,249nm,28.2s						
TBI	Tubuai	88.65	120	eT	T	04 30 54.7	
	comp=Z,21nm,0.3s						
TX31	Lajitas Ar. Si	90.75	52	eP	P	02 53 46.1	+1.0
TXAR	Lajitas Array	90.75	52	P	P	02 53 45.9	+0.8
	comp=Z,1.8nm,0.8s,baz=295,slow=3.6,SNR=15						
ABTX	Abilene, Hawle	90.92	47	eP	P	02 53 44.8	-1.0
	comp=Z,13nm,1.1s						
HPIG		91.08	55	eP	P	02 53 47.9	+1.1
	comp=Z,4.7nm,0.6s						
KEST	Kesra	95.14	322	LR	LR	03 41 11.1	
	comp=Z,107nm,18.7s,baz=299,slow=38						
ESDC	Sonseca Array	97.53	333	LR	LR	03 41 35.8	
	comp=Z,104nm,20.5s,baz=35,slow=37						
TORD	Torodi Ar. Bea	117.36	314	PKP	PKPdf	02 59 26.8	-0.9
	comp=Z,0.5nm,0.8s,baz=47,slow=2.0,SNR=10						
DBIC	Dimbokro	126.34	316	PKP	PKPdf	02 59 44.3	-0.6
	comp=Z,1.9nm,0.8s,baz=349,slow=7.0,SNR=3.9						
SAML	Samuel	144.88	44	ePKPbc	PKPab	03 00 17.2	-1.1
LPAZ	La Paz	147.30	60	PKPbc	PKPab	03 00 27.4	-0.8
	comp=Z,3.7nm,0.9s,baz=14,slow=5.0,SNR=9.5						
LPAZ	La Paz	147.30	60	ePKP2	PKPab	03 00 27.3	-0.9
LPAZ	La Paz	147.30	60	ePKPbc	PKPab	03 00 27.3	-0.9
SIV	San Ignacio	151.72	49	PKPbc	PKPbc	03 00 36.7	+0.1
	comp=Z,3.3nm,0.6s,baz=298,slow=3.7,SNR=7.0						
SIV				PKPab	PKPab	03 00 44.8	-0.6
	comp=Z,2.0nm,0.5s,baz=37,slow=2.9,SNR=3.8						
LCO	Las Campanas	152.49	83	ePKPbc	PKPbc	03 00 39.5	+1.1
BDFB	Brasilia	157.71	23	PKPab	PKPab	03 01 11.1	+0.1
	comp=Z,2.3nm,0.9s,baz=0.8,slow=10,SNR=3.8						

*IDC **07** 03:07:54.5±1.2, 37°.95N×143°.61E, h0km, mb3.6/4, mb1 3.8/6, mb1mx3.4/59, mbtmp3.7/6, ML3.4/2, MS2.6/2, Ms1 2.6/2, ms1mx2.3/39, Error ellipse: s-maj=32.8km s-min=23.0km az=119.0*

*ISCJB **07** 03:07:55.3±1.0, 37°.9N±0°.1×143°.6E±0°.1, h19km, mb3.8/4, MS2.5/1, Error ellipse: s-maj=20.5km s-min=11.9km az=156.0*

ISC 07 03:07:57.3±1.2**, 37°.8N**±0°.1×**143°.6E**±0°.1**, h19km, n7, σ1.55s/8, mb3.8/4, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MJAR	Matsushiro Arr	4.52	255	Pn	Pn	03 09 05.4	+0.6
	1.0nm,0.3s,baz=67,slow=9.5,SNR=6.9						
MJAR				Sn	Sn	03 09 57.3	+0.5
	0.5nm,0.3s,baz=87,slow=26,SNR=3.1						
MJAR				LR	LR	03 11 16.4	
	comp=Z,80nm,18.2s,baz=170,slow=45						
JHJ	Hachijo jima 2	5.65	215	Pn	Pn	03 09 21.4	+1.1
	5.6nm,0.3s,baz=229,slow=19,SNR=2.7						
JHJ				Sn	Sn	03 10 21.9	-2.6
	6.2nm,0.3s,baz=269,slow=23,SNR=3.6						
JAY	Jayapura	40.22	185	LR	LR	03 30 48.1	
	comp=Z,7.5nm,20.0s,baz=122,slow=34						
KURBB	Kurchatov Arra	46.92	308	P	P	03 16 25.4	-1.0
	0.4nm,0.6s,baz=82,slow=7.9,SNR=5.7						
ILAR	Eielson Array	47.88	33	P	P	03 16 33.3	-0.4
	0.7nm,0.7s,baz=269,slow=6.0,SNR=6.9						
WRA	Warramunga Arr	58.12	190	P	P	03 17 50.0	+0.4
	0.5nm,0.3s,baz=10,slow=7.1,SNR=4.5						
ASAR	Alice Springs	61.84	190	P	P	03 18 16.5	+1.3
	0.5nm,0.7s,baz=20,slow=5.9,SNR=4.6						

*ISCJB **07** 03:11:48.5±0.9, 27°.2N±0°.1×143°.48E±0°.10, h10km, mb3.8/6, Error ellipse: s-maj=20.4km s-min=11.7km az=167.4*

*IDC **07** 03:11:49.1±1.0, 27°.20N×143°.39E, h0km, mb3.7/6, mb1 3.9/6, mb1mx3.6/48, mbtmp3.7/6, Error ellipse: s-maj=23.9km s-min=19.7km az=144.0*

ISC 07 03:11:50.6±1.1**, 27°.2N**±0°.2×**143°.4E**±0°.1**, h10km, n7, σ0.52s/8, mb3.8/6, Bonin Islands region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JCJ	Chichijima	1.07	265	Pn	Pn	03 12 11.7	0.0
	baz=49,slow=19						
JCJ				Sn	Sn	03 12 26.2	-0.5
	40nm,0.3s,baz=275,slow=23,SNR=6.1						
WRA	Warramunga Arr	47.67	192	P	P	03 20 27.6	+0.2
	1.9nm,0.6s,baz=12,slow=8.3,SNR=9.0						
ASAR	Alice Springs	51.39	191	P	P	03 20 55.6	0.0
	0.5nm,0.7s,baz=1.8,slow=5.5,SNR=6.9						
KURBB	Kurchatov Arra	53.73	314	P	P	03 21 13.2	+0.4
	0.5nm,0.5s,baz=91,slow=7.7,SNR=9.4						
BVAR	Borovoye Array	58.69	317	P	P	03 21 49.0	+0.8
	0.5nm,0.5s,baz=77,slow=6.4,SNR=3.8						
INK	Inuvik	62.49	25	P	P	03 22 13.7	-0.1
	0.5nm,0.7s,baz=293,slow=4.7,SNR=3.7						
YKA	Yellowknife Ar	71.54	29	P	P	03 23 10.9	-0.5
	0.3nm,0.7s,baz=294,slow=6.1,SNR=5.3						

*IDC **07** 03:12:04.5±0.7, 15°.09S×173°.41W, h0km, mb4.2/11, mb1 4.5/11, mb1mx4.2/40, mbtmp4.2/11, MS3.7/22, Ms1 3.8/22, ms1mx3.7/36, Error ellipse: s-maj=34.2km s-min=16.3km az=130.0*

*NEIC **07** 03:12:05.7±0.4, 15°.06S×173°.33W, h10km, mb4.4/3, Error ellipse: s-maj=23.0km s-min=10.1km az=135.0*

*ISCJB **07** 03:12:07.3±0.5, 15°.1S±0°.1×173°.5W±0°.1, h30km, mb4.3/15, MS3.8/21, Error ellipse: s-maj=25.0km s-min=12.2km az=40.2*

ISC 07 03:12:09.0±0.6**, 15°.1S**±0°.2×**173°.5W**±0°.2**, h30km, n47, σ0.82s/23, mb4.3/15, MS3.8/21, Tonga Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AFI	Afiamalu	2.01	54	Pn	Pn	03 12 35.1	-5.8
	333nm,0.3s,baz=107,slow=0.8,SNR=271						
AFI				Sn	Sn	03 12 52.6	-13
	482nm,0.3s,baz=206,slow=9.2,SNR=18						
RAR	Rarotonga	14.36	117	LR	LR	03 19 52.0	
	comp=Z,193nm,20.7s,baz=293,slow=33						
DZM	Mont Dzumac	20.26	247	LR	LR	03 22 43.2	
	comp=Z,112nm,18.9s,baz=202,slow=32						
URZ	Urewera	24.53	198	P	P	03 17 24.2	-1.8
	8.6nm,0.3s,baz=308,slow=4.1,SNR=11						
URZ				LR	LR	03 25 48.9	
	comp=Z,293nm,21.9s,baz=32,slow=34						
URZ	Urewera	24.53	198	eP	P	03 17 25.2	-0.7
	7.3nm,0.8s						
HNR	Honiara	26.58	279	LR	LR	03 26 55.4	
	comp=Z,106nm,18.1s,baz=130,slow=34						
H11S2	WAKE ISLAND Hy	38.67	329	T	T	04 01 02.8	
H11S3	WAKE ISLAND Hy	38.69	329	T	T	04 01 03.8	
	baz=150,slow=74,SNR=25						
H11S1	WAKE ISLAND Hy	38.69	329	T	T	04 01 01.3	
	baz=296,slow=74,SNR=19						
H11N3	WAKE ISLAND Hy	39.62	330	T	T	04 02 21.6	
	baz=150,slow=76,SNR=28						
H11N1	WAKE ISLAND Hy	39.62	330	T	T	04 02 23.3	
	baz=150,slow=76,SNR=26						
H11N2	WAKE ISLAND Hy	39.64	330	T	T	04 02 24.7	
	baz=150,slow=76,SNR=30						
STKA	Stephens Creek	44.14	240	P	P	03 20 14.9	-0.2
	4.6nm,0.8s,baz=66,slow=6.4,SNR=10						
STKA				LR	LR	03 36 10.3	
	comp=Z,70nm,20.5s,baz=30,slow=33						
WRAB	Tennant Creek	49.85	257	eP	P	03 20 59.8	-0.1
	0.9nm,0.5s						
WRA	Warramunga Arr	49.86	257	P	P	03 20 59.7	-0.2
	1.3nm,0.4s,baz=91,slow=7.0,SNR=8.5						
GUMO	Guam	50.12	303	LR	LR	03 36 39.2	
	comp=Z,36nm,20.7s,baz=130,slow=29						
ASAR	Alice Springs	50.15	252	P	P	03 21 02.0	-0.1
	3.0nm,0.3s,baz=89,slow=7.4,SNR=66						
ASAR				LR	LR	03 40 51.2	
	comp=Z,76nm,20.4s,baz=97,slow=34						
VNDA	Vanda	63.67	186	P	P	03 22 38.3	+1.3
	4.0nm,0.9s,baz=4.8,slow=5.7,SNR=13						
JHJ	Hachijo jima 2	65.50	318	LR	LR	03 48 08.1	
	comp=Z,44nm,18.6s,baz=30,slow=33						
MJAR	Matsushiro Arr	68.67	320	LR	LR	03 47 10.0	
	comp=Z,99nm,21.6s,baz=145,slow=31						
JNU	Nakatsue	71.55	313	LR	LR	03 47 56.0	
	comp=Z,51nm,21.3s,baz=115,slow=30						
PETK	Petropavlovsk-	72.32	342	LR	LR	03 54 57.5	
	comp=Z,17nm,18.6s,baz=138,slow=36						
NVAR	Mina Array Bea	74.14	42	P	P	03 23 43.2	+0.2
	0.6nm,0.6s,baz=249,slow=6.6,SNR=2.6						
NVAR				LR	LR	03 48 41.7	
	comp=Z,138nm,20.0s,baz=278,slow=30						
KDAK	Kodiak Island	74.63	11	LR	LR	03 48 45.8	
	comp=Z,175nm,20.5s,baz=196,slow=30						
QSPA	South Pole Qui	74.95	180	eP	P	03 23 47.5	+0.3
	52nm,1.1s						
KSRS	Korea Array	75.90	316	LR	LR	03 51 52.5	
	comp=Z,36nm,20.5s,baz=120,slow=31						
USRK	Ussuriysk Ar.	77.11	323	LR	LR	03 51 11.2	
	comp=Z,100nm,21.2s,baz=130,slow=30						
MA2	Magadan	79.86	342	LR	LR	03 55 10.3	
	comp=Z,47nm,20.6s,baz=141,slow=32						
TXAR	Lajitas Array	80.49	56	P	P	03 24 18.2	-0.4
	0.9nm,1.1s,baz=250,slow=6.5,SNR=5.0						
COLA	College	82.07	11	eP	P	03 24 26.1	0.0
	15nm,1.0s						
PDAR	Pinedale Array	82.08	42	P	P	03 24 26.5	-0.4
	1.0nm,1.0s,baz=205,slow=3.1,SNR=4.0						
ILAR	Eielson Array	82.16	11	P	P	03 24 26.0	-0.5
	2.9nm,1.1s,baz=205,slow=5.6,SNR=10						
ILAR				LR	LR	03 52 35.8	
	comp=Z,81nm,20.4s,baz=223,slow=30						
BOZ	Bozeman (W)	82.21	39	eP	P	03 24 27.6	+0.1
	6.7nm,1.5s						
INK	Inuvik	87.99	14	P	P	03 24 55.6	-0.1
	2.0nm,1.0s,baz=194,slow=3.6,SNR=4.1						
MAW	Mawson	88.06	199	LR	LR	04 00 27.4	
	comp=Z,67nm,21.7s,baz=238,slow=33						
YKA	Yellowknife Ar	89.84	23	P	P	03 25 04.4	-0.1
	1.3nm,1.0s,baz=236,slow=4.5,SNR=13						
CMAR	Chiang Mai Arr	92.47	288	LR	LR	04 01 13.4	
	comp=Z,18nm,21.8s,baz=190,slow=32						
ULM	Lac du Bonnet	93.73	39	LR	LR	03 59 10.5	
	comp=Z,94nm,20.4s,baz=308,slow=30						
SONM	Songino Array	94.58	318	LR	LR	04 00 39.5	
	comp=Z,50nm,21.0s,baz=134,slow=31						
TLY	Talaya	97.36	321	LR	LR	04 06 30.1	
	comp=Z,44nm,18.3s,baz=94,slow=34						
KHC	Kasperske Hory	145.57	352	ePKP	PKPdf	03 31 44.0	-0.4
KHC				ex	x	03 31 57.0	
KHC				ex	x	03 32 06.3	
KMBO	Kilima Mbogo	145.62	245	PKPbc	PKPab	03 31 47.3	+1.0
	1.0nm,0.4s,baz=163,slow=7.0,SNR=3.4						
GERES	GERESS Array B	145.83	352	PKPbc	PKPab	03 31 45.9	0.0
	0.6nm,0.7s,baz=42,slow=2.2,SNR=7.6						
BRTR	Keskin Array B	145.88	321	PKPbc	PKPab	03 31 47.1	+0.6
	3.6nm,0.8s,baz=81,slow=2.5,SNR=20						
CONA	Conrad Observa	146.36	349	i pPKPbc	PKPab	03 31 48.9	+1.0
	5.6nm,1.5s						
RETA	Reutte	147.51	355	i pPKPab	PKPab	03 31 54.1	+1.7
	9.4nm,1.7s						
SOKA	Soboth	147.72	349	i PKPbc	PKPbc	03 31 49.6	-1.4
	7.0nm,1.5s						

*NIED **07** 03:24:00, 37°.80N×142°.10E, h5km, Mw3.4 Best double couple: $M_0$1.41000×10^{14} NP1:ϕ_s331.00000°, δ66.00000°, λ-177.00000°. NP2:ϕ_s240.00000°, δ87.00000°, λ-24.00000°.*

*IDC **07** 03:24:27.1±2.3, 37°.80N×142°.72E, h0km, mb3.7/3, mb1 3.8/6, mb1mx3.5/33, mbtmp3.8/6, ML3.3/3, Error ellipse: s-maj=44.8km s-min=25.9km az=69.0*

*JMA **07** 03:24:32.1±0.2, 37°.77N×142°.14E, h27km±4km, M3.7*

ISC 07 03:24:31.1±2.6**, 37°.72N**±0°.04×**142°.08E**±0°.08**, h13km**±14km**, n20, σ1.11s/27, mb3.7/3, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	Ouri	0.93	322	P	Pb	03 24 49.1	0.0
JIO				S	Sg	03 25 00.8	-0.5
JFK	Kawauchi	1.02	250	P	Pn	03 24 51.3	+0.1
JFK				S	Sn	03 25 05.1	-0.3
JMM	Marumori	1.03	279	P	Pn	03 24 51.3	+0.1
JMM				eS	Sg	03 25 05.0	+0.6
ONAJ	Iwakimizuishiy	1.19	239	S	Sb	03 25 09.3	+0.4
JOU	Okura	1.29	300	P	Pb	03 24 55.3	+0.1
JFT	Otama	1.40	262	S	Sg	03 25 16.3	+0.1
JMK	Ichinoseki	1.40	331	P	Pn	03 24 56.0	-0.4
JMK				eS	Sn	03 25 12.7	-2.0
JYS	Shirataka	1.67	288	P	Pb	03 25 01.5	-0.2
JYS				S	Sg	03 25 24.2	-0.6
JYK	Kaneyama	1.81	312	P	Pn	03 25 02.5	+0.6
JOM	Ohasama	1.85	341	P	Pn	03 25 03.4	+0.8
JFY	Yanaizu	1.91	261	S	Sb	03 25 30.1	+0.4
JRG	Rokugo	2.02	326	P	Pn	03 25 05.5	+0.6
JYA	Atsumi	2.06	296	P	Pn	03 25 06.4	+1.0
MJAR	Matsushiro Arr	3.31	250	Pn	Pb	03 25 27.3	-2.3
	2.6nm,0.3s,baz=67,slow=12,SNR=6.5						
MJAR				Sn	Sb	03 26 12.4	+2.6
	1.7nm,0.3s,baz=89,slow=27,SNR=4.5						
MAT	Matsushiro	3.31	250	P	Pb	03 25 28.4	-1.3
MAT				S	Sb	03 26 09.9	0.0
JHJ	Hachijo jima 2	4.96	203	Pn	Pn	03 25 46.8	+1.6
	12nm,0.3s,baz=96,slow=23,SNR=4.5						
JHJ				Sn	Sn	03 26 41.2	-1.3
	9.5nm,0.3s,baz=328,slow=21,SNR=3.3						
USRK	Ussuriysk Ar.	10.00	313	Pn	Pn	03 26 58.6	+4.2
	0.4nm,0.3s,baz=136,slow=15,SNR=5.1						
SONM	Songino Array	27.85	303	P	P	03 30 21.8	+1.4
	0.9nm,0.7s,baz=101,slow=8.7,SNR=5.4						
MKAR	Makanchi Array	44.21	302	P	P	03 32 39.9	+0.1
	0.2nm,0.3s,baz=93,slow=9.0,SNR=3.6						
WRA	Warramunga Arr	57.81	189	P	P	03 34 21.6	-0.6
	0.6nm,0.6s,baz=7.0,slow=7.6,SNR=3.7						

*DDA **07** 03:28:14.6, 36°.45N×28°.78E, h7km, Md3.0*

*ATH **07** 03:28:15.0, 36°.56N×28°.79E, h17km±5km, ML2.6/2, Error ellipse: s-maj=7.0km s-min=1.6km az=188.0*

*ISCJB **07** 03:28:15.1±0.6, 36°.48N±0°.03×28°.81E±0°.03, h4km±4km, Error ellipse: s-maj=5.8km s-min=4.0km az=170.2*

*CSEM **07** 03:28:15.3±0.2, 36°.47N×28°.81E, h8km, MD2.9, Error ellipse: s-maj=3.6km s-min=2.3km az=7.0*

*ISK **07** 03:28:15.1, 36°.52N×28°.81E, h10km, MD2.9*

ISC 07 03:28:14.7±1.2**, 36°.46N**±0°.03×**28°.79E**±0°.02**, h1km**±10km**, n39, σ0.64s/63, Dodecanese Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FETY	Fethiye	0.30	53	ePG	Pg	03 28 20.5	0.0
FETY				eSG	Sg	03 28 24.5	+0.2
FETY	Fethiye	0.30	53	ePg	Pg	03 28 20.5	0.0
FETY				eSg	Sg	03 28 24.5	+0.2
DALY	Dalyan (Mu˜la	0.38	343	ePG	Pg	03 28 22.0	+0.1
DALY				eSG	Sg	03 28 26.9	+0.1
DALY	Dalyan (Mu˜la	0.38	343	ePg	Pg	03 28 22.0	+0.1
DALY				eSg	Sg	03 28 26.9	+0.1
TURN	Turunc	0.44	340	i P	Pb	03 28 25.0	-0.3
TURN				i S	Sb	03 28 33.7	+1.3
TURN	Turunc	0.44	340	P	Pb	03 28 25.0	-0.3
TURN				S	Sb	03 28 33.7	+1.3
ARG	Arkhangelos	0.58	246	P	Pb	03 28 27.7	0.0
ARG				S	Sb	03 28 36.5	0.0
AKAS	Kas	0.70	108	i P	Pg	03 28 28.2	+0.1
AKAS	Kas	0.70	108	P	Pg	03 28 28.2	+0.1
KSL	Kastellorizon	0.71	115	P	Pb	03 28 29.2	-0.7
YER	Yerkesik	0.79	329	ePG	Pg	03 28 30.1	+0.2
YER				eSG	Sg	03 28 40.3	+0.2
YER	Yerkesik	0.79	329	ePg	Pg	03 28 30.1	+0.2
YER				eSg	Sg	03 28 40.3	+0.2
ELL	Elmali	0.95	72	ePG	Pb	03 28 33.2	-0.8
ELL	Elmali	0.95	72	ePg	Pb	03 28 33.2	-0.8
GOLH	Golhisar	1.00	38	i P	Pg	03 28 33.9	0.0
GOLH				i S	Sb	03 28 48.3	-0.2
GOLH	Golhisar	1.00	38	P	Pg	03 28 33.8	0.0
GOLH				S	Sb	03 28 48.3	-0.2
BDRM	Kayabasi	1.24	300	i P	Pg	03 28 38.4	-0.1
BDRM				i S	Sb	03 28 55.4	0.0
BDRM	Kayabasi	1.24	300	P	Pg	03 28 38.4	-0.1
BDRM				S	Sb	03 28 55.4	0.0
NIS1	Nisyros Isl.	1.30	277	ePN	Pn	03 28 40.0	-0.1
NIS1	Nisyros Isl.	1.30	277	ePn	Pn	03 28 40.0	-0.1
NIS1				S	Sg	03 28 56.8	+0.2
NIS1	Nisyros Isl.	1.30	277	P	Pb	03 28 40.1	+0.1
NIS1				S	Sg	03 28 56.8	+0.2
NIS1				AML	AML	03 29 01.6	
	comp=E,855μm,0.4s						
NIS1				AML	AML	03 29 05.3	
	comp=N,846μm,0.5s						
DENT	Denizli	1.31	9	ePN	Pn	03 28 39.5	-0.7
DENT	Denizli	1.31	9	ePn	Pn	03 28 39.5	-0.7
BODT	Bodrum	1.33	297	ePN	Pn	03 28 39.8	-0.6
BODT	Bodrum	1.33	297	ePn	Pn	03 28 39.8	-0.6
KORT	Korkueli	1.37	66	i P	Pg	03 28 41.4	+0.4
KORT				i S	Sn	03 29 03.4	+3.4
KORT	Korkueli	1.37	66	P	Pg	03 28 41.4	+0.4
AYDN	Tasoluk	1.40	329	i P	Pn	03 28 41.3	-0.2
AYDN				i S	Sn	03 29 00.8	+0.1
AYDN	Tasoluk	1.40	329	P	Pn	03 28 41.3	-0.2
AYDN				S	Sn	03 29 00.8	+0.1
AYDB	Zeytinkoy-Aydi	1.65	335	ePN	Pn	03 28 45.1	+0.1
AYDB	Zeytinkoy-Aydi	1.65	335	ePn	Pn	03 28 45.1	+0.1
GCAM	G?zelcaml?	1.76	315	i P	Pn	03 28 46.5	+0.2
GCAM				i S	Sb	03 29 10.5	+0.3
GCAM	G?zelcaml?	1.76	315	P	Pn	03 28 46.5	+0.2
GCAM				S	Sb	03 29 10.5	+0.3
KHAL	Karahalli	1.99	16	i P	Pn	03 28 49.0	-0.6
KHAL				i S	Sn	03 29 15.1	-0.2
KHAL	Karahalli	1.99	16	P	Pn	03 28 49.0	-0.6
KHAL				S	Sn	03 29 15.1	-0.2
SMG	Samos	2.00	309	P	Pn	03 28 49.5	-0.1
SMG				S	Sn	03 29 14.2	-1.1
SMG	Samos	2.00	309	P	Pn	03 28 49.5	-0.1
SMG				S	Sn	03 29 14.2	-1.1
SMG				AML	AML	03 29 19.0	
	comp=N,229μm,0.3s						
SMG				AML	AML	03 29 20.2	
	comp=E,195μm,0.6s						
BLCB	Balcova	2.37	325	ePN	Pn	03 28 54.4	-0.4
BLCB	Balcova	2.37	325	ePn	Pn	03 28 54.4	-0.4

DJA 07 03:35:10.2±1.1**, 1°N**±6°×**11°9E**±°**, h10km, M4.0**/5**, MLv4.0**/5**, Minahassa Peninsula, Sulawesi**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MRSI	Marisa	2.61	92	P	Pn	03 35 53.5	+1.0
MRSI				S	Sb	03 36 27.5	-1.8
APSI	Ampana	2.73	122	P	Pn	03 35 51.8	-2.4
APSI				S	Sn	03 36 27.5	+0.2
TTSI	Tana Toraja	3.60	172	P	Pn	03 36 06.5	+0.3

Code	Station Name	Δ°	AZ°	Op	ISC	Time	Res
TTSI				S	Sn	03 36 51.5	+2.7
LUWI	Luwuk	3.79	115	P	Pn	03 36 06.2	-2.5
SPSI	Sidrap Palu	4.51	174	P	Pn	03 36 19.2	+0.6

*IDC **07** 03:42:49.9±5.0, 37°.97N×74°.08E, h139^{km}±37^{km}, mb3.1/4, mb1 3.2/10, mb1mx3.0/51, mbtmp3.6/10, Error ellipse: s-maj=48.3km s-min=24.3km az=169.0*

*ISCJB **07** 03:42:51.4±1.0, 38°.30N±0°.08×73°.99E±0°.08, h150^{km}, mb3.2/4, Error ellipse: s-maj=11.7km s-min=7.9km az=147.6*

*NNC **07** 03:42:54.6±3.1, 38°.54N×73°.80E, h172^{km}±18^{km}, mb2.5, mpv3.6, Error ellipse: s-maj=29.9km s-min=15.2km az=140.0*

ISC 07 03:42:53.1±1.3**, 38°.4N**±0°.1**×73°.97E**±0°.08**, h150^{km}, n17, σ1^{s}88**/24**, mb3.1**/4**, 9C-4D, Tajikistan-Xinjiang border region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SFK	Sufi-Kurgan	1.66	348	⇑P	Pn	03 43 25.6	+1.0
	11nm,0.1s						
SFK				⇑S	Sn	03 43 50.6	+1.7
	85nm,0.2s						
DZET	Dzherino	4.05	278	⇑P	Pn	03 43 54.1	+0.1
	1.5nm,0.2s						
DZET				⇓S	Sn	03 44 40.5	-0.9
	26nm,0.5s						
MNAS	Manas	4.24	345	⇓P	Pn	03 43 57.7	+1.0
	14nm,0.4s						
MNAS				⇓S	Sn	03 44 46.4	+0.3
	21nm,0.5s						
AAK	Ala-Archa	4.26	5	P	Pn	03 43 58.4	+1.5
	2.7nm,0.3s,baz=142,slow=6.6,SNR=30						
AAK				S	Sn	03 44 40.8	-5.7
	1.0nm,0.3s,baz=166,slow=13,SNR=4.4						
AAK	Ala-Archa	4.26	5	⇑P	Pn	03 43 57.0	+0.1
	1.9nm,0.3s						
AAK				⇑S	Sn	03 44 48.1	+1.6
	7.8nm,0.8s						
TKM2	Tokmak 2	4.70	15	⇑P	Pn	03 44 03.4	+0.7
	8.4nm,0.7s						
TKM2				⇑S	Sn	03 44 55.4	-1.4
	4.9nm,0.6s						
KK31	Karatay Array	5.39	332	⇓P	Pn	03 44 12.7	+1.0
	2.4nm,0.3s,baz=150,slow=12,SNR=74						
KK31				⇑S	Sn	03 45 09.0	-4.0
	5.1nm,0.3s,baz=142,slow=25,SNR=5.6						
MKAR	Makanchi Array	10.40	33	P	Pn	03 45 18.4	+0.1
	0.1nm,0.3s,baz=208,slow=15,SNR=7.6						
KURBB	Kurchatov Arra	12.66	13	P	P	03 45 51.8	-1.3
	0.1nm,0.3s,baz=204,slow=10,SNR=9.9						
AB31	Akbulak array	14.82	322	P	Pn	03 46 14.7	-0.4
	0.2nm,0.3s,baz=129,slow=13,SNR=13						
AB31				⇑S	Sn	03 48 51.3	-8.2
	0.4nm,0.6s,baz=154,slow=22,SNR=4.0						
BVAR	Borovoye Array	14.85	352	P	P	03 46 19.6	+2.2
	0.3nm,0.3s,baz=153,slow=10.0,SNR=11						
AKTO	Aktyubinsk	16.54	322	P	Pn	03 46 37.2	+1.1
	0.2nm,0.3s,baz=118,slow=14,SNR=5.3						
ZALV	Zalesovo Beam	17.25	22	P	P	03 46 44.0	+0.1
	0.4nm,0.3s,baz=218,slow=12,SNR=8.2						
SONM	Songino Array	25.33	58	P	P	03 48 05.7	-0.3
	0.3nm,0.7s,baz=243,slow=9.5,SNR=3.3						
ARCES	ARCESS Array B	40.34	336	P	P	03 50 17.0	+1.5
	2.3nm,0.8s,baz=113,slow=9.1,SNR=3.2						
TORD	Torodi Ar. Bea	68.11	270	P	P	03 53 35.7	-1.3
	0.1nm,0.3s,baz=52,slow=5.9,SNR=7.4						
YKA	Yellowknife Ar	79.23	4	P	P	03 54 40.9	-0.2
	0.2nm,0.5s,baz=346,slow=5.6,SNR=6.1						

IDC 07 03:43:05.8±1.3**, 22°.20N×144°.47E, h0^{km}, mb3.8**/6**, mb1 3.9**/6**, mb1mx3.5**/40**, mbtmp3.8**/6**, Error ellipse: s-maj=43.7km s-min=27.8km az=90.0, Volcano Islands region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	Warramunga Arr	43.03	194	P	P	03 51 07.3	-0.1
	0.3nm,0.3s,baz=15,slow=8.8,SNR=3.0						
MKAR	Makanchi Array	55.24	312	P	P	03 52 41.1	+0.3
	0.4nm,0.4s,baz=89,slow=8.6,SNR=6.2						
KURBB	Kurchatov Arra	57.98	317	P	P	03 53 00.2	+0.1
	0.6nm,0.5s,baz=92,slow=7.7,SNR=8.1						
ILAR	Eielson Array	61.06	27	P	P	03 53 21.3	+0.1
	0.2nm,0.6s,baz=268,slow=5.5,SNR=3.7						
BVAR	Borovoye Array	63.07	319	P	P	03 53 35.0	+0.1
	1.2nm,0.4s,baz=88,slow=7.6,SNR=9.3						
FINES	FINESS Array B	83.24	335	P	P	03 55 33.3	-0.7
	0.6nm,0.4s,baz=64,slow=3.2,SNR=9.9						

IDC 07 03:53:50.6±1.1**, 18°.97N×145°.63E, h0^{km}, mb3.8**/8**, mb1 4.1**/8**, mb1mx3.7**/38**, mbtmp3.8**/8**, Error ellipse: s-maj=42.0km s-min=25.0km az=112.0, Mariana Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PETK	Petropavlovsk-	35.34	13	P	P	04 00 47.8	+0.2
	5.2nm,0.9s,baz=210,slow=8.6,SNR=3.6						
WRA	Warramunga Arr	40.23	197	P	P	04 01 29.3	+0.1
	0.6nm,0.3s,baz=20,slow=8.6,SNR=2.8						
MKAR	Makanchi Array	58.23	314	P	P	04 03 47.6	+0.8
	0.2nm,0.4s,baz=97,slow=5.8,SNR=2.9						
ILAR	Eielson Array	63.43	26	P	P	04 04 22.4	+0.5
	0.4nm,0.6s,baz=251,slow=5.3,SNR=5.2						
INK	Inuvik	69.15	23	P	P	04 04 59.1	+0.6
	0.4nm,0.6s,baz=280,slow=4.4,SNR=4.0						
YKA	Yellowknife Ar	77.78	28	P	P	04 05 49.3	-0.1
	0.5nm,0.5s,baz=288,slow=5.5,SNR=12						
NVAR	Mina Array Bea	83.03	52	P	P	04 06 18.1	-0.3
	0.7nm,0.7s,baz=278,slow=6.3,SNR=4.1						
FINES	FINESS Array B	86.61	335	P	P	04 06 33.8	-2.0
	0.4nm,0.3s,baz=60,slow=6.0,SNR=7.5						

*IDC **07** 03:59:59.1±0.6, 27°.19N×143°.41E, h0^{km}, mb4.0/17, mb1 4.2/20, mb1mx4.0/48, mbtmp4.0/20, ML3.6/3, MS2.6/1, Ms1 2.6/1, ms1mx2.2/49, Error ellipse: s-maj=16.3km s-min=14.7km az=85.0*

*ISCJB **07** 04:00:02.0±0.6, 27°.22N±0°.07×143°.47E±0°.06, h33^{km}, mb4.1/20, MS2.4/1, Error ellipse: s-maj=10.3km s-min=7.3km az=158.8*

*NEIC **07** 04:00:04.5±0.4, 27°.22N×143°.35E, h35^{km}, mb4.6/2, Error ellipse: s-maj=12.0km s-min=8.9km az=71.0*

ISC 07 04:00:04.5±0.7**, 27°.23N**±0°.09**×143°.34E**±0°.08**, h35^{km}, n30, σ0^{s}78**/34**, mb4.2**/20**, Bonin Islands region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CBIJ	Chichi jima	1.04	263	*e*Pg	Pn	04 00 22.0	-0.6
CBIJ				*e*S	Sn	04 00 36.3	+0.4
JCJ	Chichijima	1.04	263	Pn	Pn	04 00 22.1	-0.4
	133nm,0.3s,baz=91,slow=22,SNR=41						
JCJ				Sn	Sn	04 00 36.7	+0.8
	178nm,0.3s,baz=288,slow=23,SNR=23						
JCJ				LR	LR	04 00 59.7	
	comp=Z,415nm,19.6s,baz=107,slow=55						
MJAR	Matsushiro Arr	10.26	336	Pn	Pn	04 02 27.6	-1.6
	1.8nm,0.3s,baz=153,slow=11,SNR=13						
MAJO	Matsushiro	10.26	336	*e*Pn	Pn	04 02 28.3	-0.9
	13nm,0.8s						
MAT	Matsushiro	10.26	336	P	Pn	04 02 28.6	-0.6
KSRS	Korea Array	16.52	312	Pn	P	04 03 55.3	-0.5
	0.4nm,0.3s,baz=122,slow=12,SNR=14						
KSAR	Wonju Array Be	16.54	312	Pn	P	04 03 55.3	-0.7
USRK	Ussuriysk Ar.	19.25	335	P	Pn	04 04 26.9	-0.1
	0.3nm,0.3s,baz=159,slow=12,SNR=12						
KLR	Kul'dur	23.73	341	P	P	04 05 13.5	+0.3
	2.0nm,0.5s,baz=146,slow=11,SNR=7.4						
KLR				LR	LR	04 14 56.7	
	comp=Z,15nm,21.0s,baz=119,slow=38						
SONM	Songino Array	35.34	316	P	P	04 06 56.4	-0.1
	1.3nm,0.8s,baz=119,slow=8.1,SNR=6.6						
TLY	Talaya	38.49	320	P	P	04 07 24.2	+1.0
	3.7nm,0.6s,baz=153,slow=3.1,SNR=8.2						
WRA	Warramunga Arr	47.70	191	P	P	04 08 37.6	-0.2
	3.7nm,0.6s,baz=12,slow=8.4,SNR=15						
ZALV	Zalesovo Beam	50.07	319	P	P	04 08 56.4	+0.7
	1.6nm,0.6s,baz=99,slow=7.8,SNR=9.2						
ZALV				PcP	PcP	04 10 15.6	+0.6
	0.9nm,0.5s,baz=104,slow=6.1,SNR=3.2						
MKAR	Makanchi Array	51.19	310	P	P	04 09 04.6	+0.3
	0.3nm,0.3s,baz=89,slow=9.2,SNR=5.8						
MKAR				PcP	PcP	04 10 20.0	+0.6
	0.2nm,0.5s,baz=106,slow=4.7,SNR=2.6						
ASAR	Alice Springs	51.41	191	P	P	04 09 05.5	-0.6
	0.7nm,0.8s,baz=3.2,slow=5.3,SNR=10						
NRIK	Noril'sk	52.90	338	P	P	04 09 17.0	+0.3
	1.8nm,0.5s,baz=117,slow=10,SNR=4.3						
KURK	Kurchatov	53.63	314	*e*P	P	04 09 22.1	-0.2
	9.4nm,0.7s						
ILAR	Eielson Array	57.10	29	P	P	04 09 45.1	-2.0
	0.8nm,0.9s,baz=257,slow=5.3,SNR=6.1						
STKA	Stephens Creek	58.80	182	P	P	04 09 58.3	-0.9
	2.1nm,0.9s,baz=25,slow=5.5,SNR=3.8						
KKAR	Karatay Array	59.84	306	*e*P	P	04 10 07.1	+0.5
	3.5nm,0.6s						
INK	Inuvik	62.48	25	P	P	04 10 23.9	0.0
	0.7nm,0.8s,baz=262,slow=2.0,SNR=4.1						
ABKAR	Akbulak array	65.74	314	*e*P	P	04 10 45.8	+0.1
	3.3nm,0.7s						
YKA	Yellowknife Ar	71.53	29	P	P	04 11 21.4	-0.1
	0.4nm,0.6s,baz=292,slow=6.0,SNR=8.4						
FINES	FINESS Array B	78.28	334	P	P	04 12 00.9	+0.3
	2.1nm,0.9s,baz=66,slow=4.8,SNR=8.6						
KBZ	Khabaz	78.67	313	P	P	04 12 04.0	+0.9
	4.7nm,0.8s,baz=84,slow=3.9,SNR=11						
AKASG	Malin Array Be	83.12	324	P	P	04 12 26.4	-0.3
	1.5nm,0.6s,baz=51,slow=5.3,SNR=13						
BRTR	Keskin Array B	86.67	313	P	P	04 12 44.1	-0.8
	0.7nm,0.8s,baz=90,slow=4.9,SNR=3.8						
TXAR	Lajitas Array	94.70	54	P	P	04 13 24.0	+1.4
	0.1nm,0.4s,baz=296,slow=2.1,SNR=3.5						
TORD	Torodi Ar. Bea	125.27	312	PKP	PKPdf	04 19 02.5	+0.3
	0.3nm,0.8s,baz=88,slow=2.5,SNR=2.9						
LPAZ	La Paz	148.89	76	PKPbc	PKPbc	04 19 51.0	+1.0
	0.9nm,0.8s,baz=270,slow=2.0,SNR=2.7						

JMA 07 04:08:13.8±0.1**, 39°.10N×142°.40E, h33^{km}**±1^{km}**, M3.5, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	Ofunato	0.57	268	P	Pb	04 08 25.2	-0.3
OFUJ				S	Sb	04 08 33.2	-0.3
MIYJ	Miyakonagasawa	0.66	317	P	Pn	04 08 26.2	-0.5
MIYJ				*e*S	Sb	04 08 35.2	-0.6
JMK	Ichinoseki	0.93	261	P	Pn	04 08 30.8	+0.3
JMK				S	Sn	04 08 43.0	+0.3
JOM	Ohasama	0.94	294	P	Pn	04 08 31.0	+0.4
JOM				S	Sn	04 08 43.3	+0.4
JIO	Ouri	1.04	232	P	Pn	04 08 31.7	-0.4
JIO				S	Sn	04 08 44.6	-0.9
JKZ	Kuzumaki	1.21	317	P	Pn	04 08 35.1	+0.6
JKZ				S	Sn	04 08 50.4	+0.7
JRG	Rokugo	1.40	283	P	Pb	04 08 38.3	-1.1
JANG	Nango	1.44	332	P	Pn	04 08 38.4	+0.8
JANG				*e*S	Sn	04 08 56.3	+0.9
JOU	Okura	1.54	242	P	Pn	04 08 40.2	+1.2
JOU				S	Sb	04 08 59.7	-1.3
JYK	Kaneyama	1.60	264	P	Pn	04 08 40.9	+1.1
MAT	Matsushiro	4.19	234	P	Pn	04 09 20.5	+5.1

*NIED **07** 04:10:00, 38°.40N×142°.20E, h35^{km}, Mw3.6 Best double couple: $M_0$2.97000×10^{14} NP1:ϕ_s296.00000°, δ43.00000°, λ-64.00000°. NP2:ϕ_s82.00000°, δ52.00000°, λ-112.00000°.*

*IDC **07** 04:10:38.6±1.0, 38°.30N×142°.48E, h0^{km}, mb3.6/7, mb1 3.8/8, mb1mx3.5/42, mbtmp3.6/8, ML3.0/1, MS2.5/1, Ms1 2.5/1, ms1mx2.1/53, Error ellipse: s-maj=27.0km s-min=25.7km az=121.0*

*JMA **07** 04:10:42.8±0.1, 38°.35N×142°.23E, h31^{km}±2^{km}, M3.8*

ISC 07 04:10:39.5±2.7**, 38°.36N**±0°.06**×142°.32E**±0°.08**, h5^{km}**±15^{km}**, n27, σ1^{s}06**/29**, mb3.8**/7**, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	Ouri	0.77	277	P	Pb	04 10 56.0	+0.6
JIO				S	Sg	04 11 05.2	+0.9
OFUJ	Ofunato	0.88	325	P	Pn	04 10 58.5	-0.1
JMK	Ichinoseki	1.05	305	P	Pn	04 11 00.7	-0.1
MIYJ	Miyakonagasawa	1.28	342	P	Pn	04 11 04.2	+0.2
MIYJ				S	Sg	04 11 19.8	-0.8
JOU	Okura	1.30	271	P	Pb	04 11 04.4	-0.1
JOU				S	Sg	04 11 20.2	-1.2
JOM	Ohasama	1.37	324	P	Pb	04 11 06.0	+0.4
JOM				S	Sg	04 11 23.5	-0.1
JYK	Kaneyama	1.64	291	P	Pb	04 11 09.7	-0.4
JYK				*e*S	Sn	04 11 29.2	-1.1
JRG	Rokugo	1.68	309	P	Pb	04 11 11.0	+0.2
JFT	Otama	1.78	243	P	Pn	04 11 10.7	-0.2
JFT				S	Sn	04 11 31.2	-2.7
JYS	Shirataka	1.78	266	P	Pn	04 11 11.0	+0.1
JKZ	Kuzumaki	1.80	335	P	Pb	04 11 12.7	-0.2
JKZ				*e*S	Sn	04 11 35.0	+0.6
JANG	Nango	2.11	343	P	Pb	04 11 17.2	-1.0
JANG				*e*S	Sn	04 11 42.8	+0.8
MJAR	Matsushiro Arr	3.74	242	Pn	Pn	04 11 40.6	+2.7
	1.2nm,0.3s,baz=61,slow=10,SNR=4.4						
MJAR				LR	LR	04 13 31.1	
	comp=Z,56nm,18.3s,baz=35,slow=45						
H11N2	WAKE ISLAND Hy	28.25	124	T	T	04 44 34.4	
	baz=317,slow=76,SNR=16						
H11N1	WAKE ISLAND Hy	28.26	124	T	T	04 44 35.9	
	baz=317,slow=76,SNR=8.6						
H11N3	WAKE ISLAND Hy	28.27	124	T	T	04 44 31.9	
	baz=317,slow=76,SNR=18						
H11S1	WAKE ISLAND Hy	29.01	126	T	T	04 45 35.0	
	baz=318,slow=76,SNR=7.8						
H11S3	WAKE ISLAND Hy	29.02	126	T	T	04 45 36.6	
	baz=318,slow=76,SNR=6.3						
H11S2	WAKE ISLAND Hy	29.03	126	T	T	04 45 36.0	
	baz=318,slow=76,SNR=5.4						
ZALV	Zalesovo Beam	41.57	311	P	P	04 18 27.9	0.0
	0.7nm,0.3s,baz=68,slow=8.3,SNR=2.9						
MKAR	Makanchi Array	44.04	301	P	P	04 18 50.1	+2.0
	0.2nm,0.3s,baz=90,slow=8.1,SNR=3.0						
ILAR	Eielson Array	47.99	33	P	P	04 19 19.3	+0.3
	0.4nm,0.8s,baz=256,slow=5.5,SNR=4.1						
WRA	Warramunga Arr	58.47	189	P	P	04 20 35.4	-1.1
	0.3nm,0.3s,baz=5.0,slow=7.5,SNR=2.2						
FINES	FINESS Array B	67.98	332	P	P	04 21 39.3	+0.2
	0.8nm,0.7s,baz=30,slow=12,SNR=3.4						
AKASG	Malin Array Be	73.69	322	P	P	04 22 13.8	-0.2
	0.5nm,0.6s,baz=40,slow=5.5,SNR=4.3						
TXAR	Lajitas Array	88.75	53	P	P	04 23 34.6	+0.1
	0.5nm,1.0s,baz=335,slow=1.3,SNR=2.8						
LPAZ	La Paz	145.40	59	PKPbc	PKPbc	04 30 18.6	-0.9
	0.8nm,0.3s,baz=296,slow=5.2,SNR=6.2						

MEX 07 04:10:51.4±1.1**, 18°.08N×102°.17W, h16^{km}**±35^{km}**, MD3.7, Michoacan**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ZIIG	Zihuatanejo	0.82	125	*e*P	Pb	04 11 05.0	-2.2
ZIIG				*e*S	Sb	04 11 13.8	-4.2
MMIG	Aquila	1.14	281	*e*P	Pn	04 11 08.5	-4.2
MMIG				*e*S	Sb	04 11 22.8	-4.5
ARIG	Puente Sto Nin	1.74	83	*e*P	Pn	04 11 17.3	-3.7
ARIG				*e*S	Sn	04 11 37.8	-5.1

*IDC **07** 04:11:14.7±1.1, 46°.11N×129°.67W, h0^{km}, mb3.8/9, mb1 4.0/15, mb1mx3.8/48, mbtmp3.8/15, ML3.7/5, MS3.6/13, Ms1 3.6/13, ms1mx3.2/47, Error ellipse: s-maj=27.2km s-min=12.7km az=42.0*

*ISCJB **07** 04:11:15.2±0.5, 46°.20N±0°.04×129°.73W±0°.06, h10^{km}, mb4.2/17, MS3.6/7, Error ellipse: s-maj=6.9km s-min=4.5km az=139.2*

*NEIC **07** 04:11:17.0±0.6, 46°.22N×129°.75W, h10^{km}, mb4.2/34, Error ellipse: s-maj=8.6km s-min=5.0km az=49.0*

ISC 07 04:11:16.4±0.8**, 46°.14N**±0°.09**×129°.80W**±0°.08**, h10^{km}, n132, σ1^{s}39**/112**, mb4.3**/18**, MS3.5**/7**, Off coast of Washington**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
NLWA	Neilton Lookou	4.26	71	*e*Pn	Pn	04 12 19.4	-1.9
NLWA				*e*S	Sn	04 13 13.0	+1.9
E03A	Lebam	4.34	82	*e*Pn	Pn	04 12 20.5	-1.8
OBC	Olympics--Boni	4.34	62	P	Pn	04 12 21.3	-1.2
COR	Corvallis	4.83	106	*e*Pn	Pn	04 12 24.9	-4.2
HDW	Hoodsport	4.86	69	P	Pn	04 12 28.9	-0.8
PGC	Sidney	4.99	57	*e*Pn	Pn	04 12 29.4	-1.8
F04A	Amboy	5.14	90	*e*Pn	Pn	04 12 30.6	-2.8
MCW	Mount Constitu	5.37	59	P	Pn	04 12 35.4	-1.1
RVC	Mount Rainier-	5.46	79	P	Pn	04 12 37.2	-0.6
D05A	Enumclaw	5.48	76	*e*Pn	Pn	04 12 37.8	-0.3
H04A	Detroit Lake	5.55	102	*e*Pn	Pn	04 12 37.8	-1.3
LON	Longmire	5.55	81	P	Pn	04 12 38.3	-0.9
OBSR	Observation Ro	5.56	79	*e*Pn	Pn	04 12 38.7	-0.8
FMW	Mount Fremont	5.66	79	P	Pn	04 12 40.0	-0.7
HUMO	Hull Mountain	6.04	123	*e*Pn	Pn	04 12 45.0	-0.9
RPW	Rockport	6.09	65	*e*Pn	Pn	04 12 46.2	-0.3
B06A	Marblemount	6.13	64	*e*Pn	Pn	04 12 46.6	-0.4
BBB	Bella Bella	6.15	10	Pn	Pn	04 12 48.6	+1.4
	3.1nm,0.3s,baz=200,slow=11,SNR=18						
TWW	Teanaway	6.23	78	P	Pn	04 12 48.4	-0.1
WRW	Wenatchee Ridg	6.33	71	P	Pn	04 12 49.5	-0.4
LTY	Liberty	6.38	77	*e*Pn	Pn	04 12 49.9	-0.6
YBH	Yreka Blue Hor	6.75	128	Pn	Pn	04 12 56.3	+0.7
	0.1nm,0.3s,baz=168,slow=18,SNR=3.5						
YBH				LR	LR	04 15 11.8	
	comp=Z,470nm,18.8s,baz=316,slow=36						
YBH	Yreka Blue Hor	6.75	128	*e*Pn	Pn	04 12 57.9	+2.3
HAWA	Hanford	7.12	84	*e*Pn	Pn	04 12 59.7	-0.9
B08A	Colville Reser	7.46	69	*e*Pn	Pn	04 13 02.6	-2.7
BMO	Blue Mountains	8.87	94	*e*Pn	Pn	04 13 26.1	+1.5
	20nm,1.7s						
NEW	Newport	8.89	72	Pn	Pn	04 13 22.9	-2.0
	0.3nm,0.3s,baz=253,slow=10,SNR=5.5						
NEW				LR	LR	04 16 48.7	
	comp=Z,318nm,19.8s,baz=278,slow=38						
NEW	Newport	8.89	72	*e*Pn	Pn	04 13 22.0	-2.8
MFID	Camas Ranch	10.30	100	*e*Pn	Pn	04 13 45.3	+1.0
MFID				*e*S	Sn	04 15 39.0	-0.8
SWMT	Swartz Lake	10.91	77	*e*Pn	Pn	04 13 52.6	-0.1
MSO	Missoula	10.96	81	*e*Pn	Pn	04 13 52.9	-0.4
HLID	Hailey	11.22	98	*e*Pn	Pn	04 13 58.5	+1.5
NV01	Mina Array Sit	11.47	128	*e*Pn	Pn	04 14 01.6	+1.1
NVAR	Mina Array Bea	11.47	128	Pn	Pn	04 14 00.4	-0.1
	0.1nm,0.3s,baz=298,slow=12,SNR=5.2						
NVAR				LR	LR	04 17 58.5	
	comp=Z,250nm,19.8s,baz=331,slow=35						
ELK	Elko	11.87	112	*e*Pn	Pn	04 14 08.4	+2.5
MCMT	McKenzie Canyo	11.97	90	*e*Pn	Pn	04 14 08.5	+1.3
DLMT	Dillon	12.04	88	*e*Pn	Pn	04 14 10.4	+2.2
DLBC	Dease Lake	12.32	359	LR	LR	04 18 38.9	
	comp=Z,186nm,18.5s,baz=141,slow=36						
BOZ	Bozeman (W)	12.67	86	*e*Pn	Pn	04 14 17.9	+1.1
QLMT	Earthquake Lak	12.96	89	*e*Pn	Pn	04 14 22.2	+1.5
HVU	Hansel Valley	13.01	103	*e*Pn	Pn	04 14 23.8	+2.4
R11A	Troy Canyon, C	13.08	121	*e*Pn	Pn	04 14 24.4	+2.0
BGU	Big Grassy Mou	13.23	107	*e*Pn	Pn	04 14 25.9	+1.5
YMR	Madison River	13.32	90	*e*Pn	Pn	04 14 28.8	+3.1
YFT	Old Faithful	13.46	90	*e*Pn	P	04 14 35.9	-1.1
YNR	Norris Junctio	13.51	89	*e*Pn	Pn	04 14 30.3	+2.1
TPNV	Topopah Spring	13.67	127	*e*Pn	Pn	04 14 32.8	+2.4
MOOW	Moose Ponds	13.71	93	*e*Pn	P	04 14 35.9	-3.8
LKWY	Lake	13.73	90	*e*Pn	Pn	04 14 35.4	+4.1
DUG	Dugway, Tooele	13.74	110	*e*Pn	Pn	04 14 32.2	+0.9
REDW	Red Top Meadow	13.75	95	*e*Pn	Pn	04 14 34.2	+2.7
AHID	Auburn Hatcher	13.77	97	*e*Pn	Pn	04 14 34.5	+2.7
EGMT	Eagleton	13.79	75	*e*Pn	Pn	04 14 35.6	+3.7
HWUT	Hardware Ranch	13.90	102	*e*Pn	Pn	04 14 37.3	+3.7
BMUT	Black Mountain	13.98	101	*e*Pn	Pn	04 14 26.8	-8.0
GCMT	Greycliff	14.01	84	*e*Pn	Pn	04 14 36.2	+1.2
NLU	North Lily Min	14.35	109	*e*Pn	Pn	04 14 39.9	+0.2
RLMT	Red Lodge	14.40	87	*e*Pn	Pn	04 14 43.9	+3.5
WMUT	West Mountain	14.44	108	*e*Pn	Pn	04 14 34.7	-6.3
WMUT				*e*Sn	Sn	04 17 15.2	-6.1
BW06	Boulder Array	14.84	96	*e*Pn	Pn	04 14 47.1	+0.7
PD31	Pinedale Array	14.84	96	*e*Pn	Pn	04 14 49.2	+2.8
PDAR	Pinedale Array	14.84	96	Pn	Pn	04 14 47.8	+1.3
	0.1nm,0.3s,baz=282,slow=10,SNR=7.8						
MSU	Marysvale	15.08	114	*e*Pn	Pn	04 14 45.3	-4.3
TMUT	Trail Mountain	15.26	110	*e*Pn	Pn	04 14 52.7	+0.5
	14nm,1.3s						
LCMT	Little Creek M	15.36	121	*e*Pn	Pn	04 14 54.2	+0.9
	5.4nm,1.0s						
P17A	Butcher Ranch,	15.47	109	*e*Pn	P	04 14 60.0	+0.6
	13nm,1.6s						
KNB	Kanab	15.61	120	*e*Pn	Pn	04 14 52.3	-4.3
	40nm,1.9s						
P18A	Preston Nutter	15.72	107	*e*Pn	P	04 15 03.4	+1.2
	22nm,1.6s						
SRU	San Rafael Swe	15.81	110	*e*Pn	P	04 15 04.1	+1.1
	15nm,1.1s						
PFO	Pinyon Flats O	16.14	136	LR	LR	04 20 59.6	
	comp=Z,125nm,19.6s,baz=310,slow=36						
LAO	LASA Array	16.26	80	*e*Pn	Pn	04 15 05.0	+0.2
	52nm,1.5s						
W13A	Hualapai Mount	16.32	127	*e*Pn	Pn	04 15 06.5	+0.6
	32nm,1.7s						
BORC	Borrego Spring	16.44	137	*e*Pn	P	04 15 14.5	+4.6
O20A	White River Ci	16.82	103	*e*Pn	P	04 15 15.4	+1.2
	57nm,1.9s						
K22A	Casper	16.98	93	*e*Pn	P	04 15 17.5	+1.5
	48nm,1.8s						
PV09	Paradox Valley	17.05	109	*e*Pn	Pn	04 15 14.7	-0.5
PV05	Paradox Valley	17.31	110	*e*Pn	P	04 15 21.2	+1.5
WUAZ	Wupatki	17.48	121	*e*Pn	Pn	04 15 20.9	+0.6
	30nm,1.5s						
DGMT	Dagmar	17.50	73	*e*Pn	Pn	04 15 19.9	-0.4
	63nm,1.8s						
PV01	Paradox Valley	17.62	109	*e*Pn	Pn	04 15 21.3	-0.9
N23A	Red Feather La	18.05	98	*e*Pn	P	04 15 28.6	+0.7
	29nm,1.6s						
SMCO	Snowmass	18.14	104	*e*Pn	P	04 15 30.7	+1.7
	13nm,1.4s						
KDAK	Kodiak Island	18.14	318	LR	LR	04 20 50.0	
	comp=Z,222nm,18.1s,baz=165,slow=32						
MVCO	Mesa Verde	18.20	112	*e*Pn	Pn	04 15 26.7	-2.6
	20nm,1.4s						
PHWY	Pilot Hill	18.22	97	*e*Pn	Pn	04 15 29.0	-0.6
	7.1nm,1.1s						
YKA	Yellowknife Ar	18.54	22	P	P	04 15 32.9	+0.1
	baz=210,slow=11,SNR=18						
YKB5	Yellowknife Ar	18.54	22	*e*P	Pn	04 15 34.8	+1.7
YKW3	Yellowknife Ar	18.59	22	*e*P	Pn	04 15 34.6	+0.9
	17nm,1.6s						
ISCO	Idaho Springs	18.76	101	*e*P	P	04 15 35.9	+0.1
	15nm,1.4s						
S22A	4UR Ranch, Cre	18.98	108	*e*P	P	04 15 39.0	+0.7
	15nm,1.8s						
FFC	Flin Flon	19.58	54	*e*P	P	04 15 44.3	-0.1
	41nm,1.4s						
SDCO	Great Sand Dun	19.87	106	*e*P	P	04 15 48.3	+0.4
	18nm,1.8s						
TUC	Tucson	20.12	127	*e*P	P	04 15 49.2	-1.3
	16nm,1.5s						
LAZ	Ladron	20.81	116	*e*P	P	04 15 58.6	+0.5
ANMO	Albuquerque	20.89	114	P	P	04 15 58.7	-0.2
	5.5nm,1.1s,baz=324,slow=11,SNR=8.6						
ANMO				LR	LR	04 24 42.5	
	comp=Z,195nm,18.3s,baz=325,slow=39						
ANMO	Albuquerque	20.89	114	*e*P	P	04 15 58.7	-0.2
	11nm,1.3s						
IL1	Eielson Array	20.90	339	*e*P	P	04 15 58.8	+0.2
ILAR	Eielson Array	20.90	339	P	P	04 15 59.1	+0.5
	3.2nm,0.9s,baz=150,slow=9.2,SNR=29						
ILB	Eielson Array	20.90	339	*e*P	P	04 15 59.8	+1.1
T25A	Trinidad	20.92	106	*e*P	P	04 15 59.9	+0.6
	19nm,1.0s						
CCB	Clear Creek Bu	21.03	338	*e*P	P	04 16 00.8	+0.9
	5.7nm,0.9s						
LPM	Los Pinos Moun	21.19	116	*e*P	P	04 16 02.6	+0.4
BNM	Barren Site	21.29	116	*e*P	P	04 16 03.5	+0.2
319A	Douglas	21.66	126	*e*P	P	04 16 08.4	+1.2
	24nm,1.1s						
121A	Cookes Peak, D	21.69	121	*e*P	P	04 16 07.8	+0.3
INK	Inuvik	22.31	356	P	P	04 16 13.3	-0.3
	2.6nm,1.2s,baz=189,slow=9.4,SNR=2.9						
ULM	Lac du Bonnet	22.86	67	P	P	04 16 18.8	-0.9
	3.0nm,0.8s,baz=278,slow=12,SNR=3.6						
ULM				LR	LR	04 25 25.2	
	comp=Z,166nm,19.4s,baz=323,slow=37						
ULM	Lac du Bonnet	22.86	67	*e*P	P	04 16 19.4	-0.3
BGNE	Belgrade	23.25	90	*e*P	P	04 16 23.9	+0.1
	69nm,1.5s						
ECSD	EROS Data Cent	23.52	84	*e*P	P	04 16 25.8	-0.7
	16nm,1.2s						
MSTX	Muleshoe	23.87	111	*e*P	P	04 16 29.2	-0.8
	31nm,1.5s						
AMTX	Amarillo	24.03	108	*e*P	P	04 16 31.1	-0.5
	23nm,1.3s						

FCC	Fort Churchill	24.82	46	eP	P	04 16 38.1	-0.3
	2.1nm,0.7s						
EYMN	Ely	25.99	72	eP	P	04 16 49.6	+0.5
	26nm,1.3s						
WMOK	Wichita Mounta	26.05	105	eP	P	04 16 49.0	-0.8
	10.0nm,1.1s						
TX31	Lajitas Ar. Si	26.44	120	eP	P	04 16 52.8	-0.7
TXAR	Lajitas Array	26.44	120	P	P	04 16 52.6	-0.9
	2.1nm,1.0s,baz=303,slow=8.7,SNR=12						
TXAR				LR	LR	04 28 11.9	
	comp=Z,131nm,19.9s,baz=0.0,slow=39						
LPIG	La Paz	27.02	138	LR	LR	04 26 53.2	
	comp=Z,65nm,19.2s,baz=196,slow=35						
TIGA	Tifton	38.34	96	eP	P	04 18 36.1	-1.3
	19nm,0.3s						
SCHQ	Schefferville	39.73	54	LR	LR	04 35 15.7	
	comp=Z,111nm,18.8s,baz=19,slow=36						
SEY	Seymchan	45.07	321	P	P	04 19 30.8	-1.3
	0.5nm,0.3s,baz=113,slow=6.3,SNR=3.9						
H11N2	WAKE ISLAND Hy	57.63	265	T	T	05 23 16.9	
	baz=47,slow=76,SNR=60						
H11N3	WAKE ISLAND Hy	57.63	265	T	T	05 23 16.9	
	baz=47,slow=76,SNR=93						
H11N1	WAKE ISLAND Hy	57.64	265	T	T	05 23 18.2	
	baz=47,slow=76,SNR=79						
H11S1	WAKE ISLAND Hy	58.59	264	T	T	05 24 29.1	
	baz=47,slow=75,SNR=306						
H11S2	WAKE ISLAND Hy	58.60	264	T	T	05 24 30.3	
	baz=47,slow=75,SNR=333						
H11S3	WAKE ISLAND Hy	58.61	264	T	T	05 24 30.7	
	baz=47,slow=75,SNR=128						
SONM	Songino Array	74.31	324	P	P	04 22 54.1	+0.2
	1.2nm,1.0s,baz=29,slow=6.8,SNR=5.2						
SONM				LR	LR	04 54 46.9	
	comp=Z,53nm,18.2s,baz=138,slow=35						
ZALV	Zalesovo Beam	76.03	340	P	P	04 23 05.4	+1.9
	0.9nm,0.4s,baz=24,slow=11,SNR=2.9						
MKAR	Makanchi Array	83.25	338	P	P	04 23 42.0	-0.9
	0.2nm,0.3s,baz=46,slow=6.2,SNR=3.4						
ABKAR	Akbulak array	84.61	354	eP	P	04 23 49.4	-0.4
	2.2nm,0.9s						
BDFB	Brasilia	95.56	107	LR	LR	05 11 55.2	
	comp=Z,22nm,19.0s,baz=232,slow=38						

*NIED **07** 04:18:00, 42°.20N×144°.50E, h20km, Mw3.7 Best double couple: $M_0$3.65000×10^{14} NP1:ϕ_s315.00000°, δ41.00000°, λ-105.00000°. NP2:ϕ_s154.00000°, δ51.00000°, λ-78.00000°.*

JMA 07 04:18:39.1, 42°.22N×144°.51E, h40km±1km, M3.6, Hokkaido region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JAK	Akkeshi	0.79	10	P	Pn	04 18 54.0	+0.3
JOB	Onbets	0.85	324	P	Pn	04 18 54.8	+0.3
JOB				eS	Sn	04 19 07.6	+1.9
JCH	Churui	0.94	295	P	Pn	04 18 55.8	0.0
JCH				eS	Sn	04 19 08.4	+0.4
JEM	Erimo	1.03	259	P	Pn	04 18 57.1	+0.1
JEM				eS	Sn	04 19 11.2	+1.0
JAR	Ashorobuto	1.21	333	P	Pn	04 18 59.8	+0.3
JNBK	Urakawa-nobuka	1.31	273	P	Pn	04 19 00.9	+0.1
JNK	Nakash	1.37	6	P	Pn	04 19 01.8	0.0
NEM2	Nemuro 2	1.46	38	P	Pn	04 19 03.8	+0.9

IDC 07 04:22:44.4±67.0, 22°.30S×177°.29W, h0km, mb3.9/3, mb1 4.1/3, mb1mx3.7/23, mbtmp3.9/3, MS3.6/3, Ms1 3.5/3, ms1mx2.8/34, Error ellipse: s-maj=1234.0km s-min=169.4km az=86.0, South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HNR	Honiara	25.32	297	LR	LR	04 37 17.9	
	comp=Z,54nm,20.6s,baz=236,slow=34						
STKA	Stephens Creek	37.64	246	P	P	04 30 01.7	+0.4
	1.3nm,0.4s,baz=100,slow=10,SNR=7.1						
STKA				LR	LR	04 43 42.2	
	comp=Z,62nm,18.1s,baz=25,slow=33						
ASAR	Alice Springs	44.78	258	P	P	04 30 59.8	-0.4
	0.9nm,0.5s,baz=94,slow=7.7,SNR=9.3						
WRA	Warramunga Arr	45.04	264	P	P	04 31 01.9	-0.3
	0.8nm,0.4s,baz=104,slow=8.4,SNR=5.3						
NEW	Newport	88.44	35	LR	LR	05 07 03.8	
	comp=Z,79nm,20.7s,baz=143,slow=30						

*MOS **07** 04:30:52.8±1.3, 48°.76N×155°.64E, h244km, mb4.4/1, Error ellipse: s-maj=99.9km s-min=10.6km az=74.2*
*SKHL **07** 04:30:52.9±0.6, 48°.88N×154°.99E, h195km±13km, mb4.3/1, msh4.9/1*

KRSC 07 04:30:52.8±1.9, 48°.76N×155°.64E, h244km±19km, ML4.3, Kuril Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SKR	Severo-Kuril's	1.95	9	eP	Pn	04 31 34.6	+0.4
SKR				eS	S	04 32 07.4	+0.4
SKR	Severo-Kuril's	1.95	9	eP	Pn	04 31 32.6	-1.6
SKR				AMB	AMB	04 31 33.5	
	90nm,0.5s						
SKR				eS	S	04 32 04.0	-3.0
SKR				A	A	04 32 12.5	
	120nm,0.2s						
SKR	Severo-Kuril's	1.95	9	ePN	Pn	04 31 32.9	-1.3
SKR				pmax	pmax		
	comp=Z,90nm,0.5s						
PAU	Pauzhetka	2.82	15	eP	Pn	04 31 42.9	+0.1
PAU				eS	S	04 32 21.4	-1.0
PAU	Pauzhetka	2.82	15	eP	Pn	04 31 42.9	+0.1
PAU				eS	S	04 32 21.4	-1.0
PAU	Pauzhetka	2.82	15	PN	Pn	04 31 42.9	+0.1
PAU				S	S	04 32 21.4	-1.0
ASAK	Asacha	3.91	21	eP	Pn	04 31 57.9	+2.7
RUS	Russkaya	4.11	25	eP	Pn	04 31 59.7	+2.2
RUS				eS	S	04 32 49.7	+0.8
RUS	Russkaya	4.11	25	eP	Pn	04 31 59.7	+2.2
RUS	Russkaya	4.11	25	PN	Pn	04 31 59.7	+2.2
RUS				S	S	04 32 49.7	+0.8
UGLR	Uglovaya	4.89	23	eP	Pn	04 32 09.5	+2.5
AVH	Avacha	4.92	22	eP	Pn	04 32 09.2	+1.8
AVH	Avacha	4.92	22	eP	Pn	04 32 09.2	+1.8
AVH	Avacha	4.92	22	PN	Pn	04 32 09.2	+1.8
SMAR	Somma	4.94	23	eP	Pn	04 32 09.7	+2.0
SMAR	Somma	4.94	23	PN	Pn	04 32 09.7	+2.0
KRER	Koryakskii	4.96	22	eP	Pn	04 32 10.6	+2.7
KRER				eS	S	04 33 07.9	+0.1
SDLR	Sedlovina	4.97	23	eP	Pn	04 32 10.0	+2.0
SDLR				eS	S	04 33 07.8	-0.1
SDLR	Sedlovina	4.97	23	PN	Pn	04 32 10.0	+2.0
SDLR				S	S	04 33 07.8	-0.1
NLC	Nalytchevo	5.00	27	eS	S	04 33 07.1	-1.3
GNL	Ganaly	5.15	15	eP	Pn	04 32 11.5	+1.3
GNL	Ganaly	5.15	15	PN	Pn	04 32 11.5	+1.3
SPN	Mys Shipunski	5.16	31	eP	Pn	04 32 12.8	+2.7
SPN				eS	S	04 33 10.5	-1.3
SPN	Mys Shipunski	5.16	31	eP	Pn	04 32 12.8	+2.7
SPN	Mys Shipunski	5.16	31	PN	Pn	04 32 12.8	+2.7
SPN				S	S	04 33 10.5	-1.3
MKZ	Mys Kozlova	6.93	31	eP	Pn	04 32 33.8	+1.5
MKZ				eS	S	04 33 48.8	-3.3
MKZ	Mys Kozlova	6.93	31	eP	Pn	04 32 33.8	+1.5
MKZ	Mys Kozlova	6.93	31	PN	Pn	04 32 33.8	+1.5
MKZ				S	S	04 33 48.8	-3.3
KBTR	Krutoberegovo	8.65	28	eP	Pn	04 32 54.7	+0.6
KBTR	Krutoberegovo	8.65	28	PN	Pn	04 32 54.7	+0.6

*ISCJB **07** 04:41:02.4±1.6, 36°.76N±0°.10×27°.55E±0°.07, h30km±7km, Error ellipse: s-maj=17.1km s-min=7.9km az=23.2*
*CSEM **07** 04:41:02.8±0.4, 36°.80N×27°.64E, h20km, MD2.6, Error ellipse: s-maj=8.5km s-min=7.3km az=168.0*
*ISK **07** 04:41:06.0, 37°.18N×27°.52E, h24km, MD2.1*
*DDA **07** 04:41:06.1, 36°.96N×27°.49E, h6km, Md2.6*

ISC 07 04:41:04.2±1.2, 36°.88N±0°.05×27°.69E±0°.03, h10km±9km, n15, σ1§33/27, Dodecanese Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BDRM	Kayabasi	0.27	313	i P	Pg	04 41 08.6	-1.1
BDRM				i S	Sg	04 41 14.9	+1.5
BDRM	Kayabasi	0.27	313	P	Pg	04 41 08.6	-1.1
BDRM				S	Sg	04 41 14.9	+1.5
BODT	Bodrum	0.35	301	ePG	Pg	04 41 11.4	+0.2
BODT				eSG	Sb	04 41 16.6	-1.6
BODT	Bodrum	0.35	301	ePg	Pg	04 41 11.4	+0.2
BODT				eSg	Sb	04 41 16.6	-1.6
NIS1	Nisyros Isl.	0.50	236	ePG	Pn	04 41 19.5	+2.1
YER	Yerkesik	0.54	62	ePG	Pn	04 41 18.8	+0.8
YER				eSG	Sn	04 41 28.1	+1.0
YER	Yerkesik	0.54	62	ePg	Pn	04 41 18.8	+0.8
YER				eSg	Sn	04 41 28.1	+1.0
TURN	Turunc	0.73	91	i P	Pg	04 41 17.6	-0.8
TURN				i S	Sg	04 41 29.0	+1.0
TURN	Turunc	0.73	91	P	Pg	04 41 17.6	-0.8
TURN				S	Sg	04 41 29.0	+1.0
AYDN	Tasoluk	0.79	11	i P	Pg	04 41 20.5	+1.0
AYDN				i S	Sg	04 41 31.2	+1.4
AYDN	Tasoluk	0.79	11	P	Pg	04 41 20.5	+1.0
AYDN				S	Sg	04 41 31.2	+1.4
GCAM	G?zelcaml?	0.89	336	i P	Pg	04 41 20.9	-0.5
GCAM				i S	Sb	04 41 33.4	-0.4
GCAM	G?zelcaml?	0.89	336	P	Pg	04 41 20.9	-0.5
GCAM				S	Sb	04 41 33.3	-0.4
AYDB	Zeytinkoy-Aydi	1.07	9	ePG	Pb	04 41 22.6	-2.3
AYDB	Zeytinkoy-Aydi	1.07	9	ePg	Pb	04 41 22.6	-2.3

*ISN **07** 04:47:30.3±7.8, 34°.08N×45°.36E, h0km±78km*
*IDC **07** 04:47:33.4±0.5, 34°.33N×45°.70E, h0km, mb4.4/30, mb1 4.4/40, mb1mx4.3/56, mbtmp4.3/40, ML4.2/7, MS3.3/14, Ms1 3.3/14, ms1mx3.1/51, Error ellipse: s-maj=12.2km s-min=8.8km az=162.0*
*BJI **07** 04:47:33.4, 34°.40N×45°.60E, h10km, mb4.7/29, mB4.9/18, Ms4.4/7, Ms7 4.2/7*
*ISCJB **07** 04:47:34.9±0.6, 34°.38N±0°.02×45°.53E±0°.02, h22km±4km, mb4.5/64, MS3.3/9, Error ellipse: s-maj=3.0km s-min=2.4km az=166.6*
*NSSC **07** 04:47:34.1±1.4, 34°.34N×45°.46E, h0km±34km, MD3.0, ML4.0*
*TEH **07** 04:47:35.6, 34°.38N×45°.48E, h2km, ML4.6*
*CSEM **07** 04:47:35.7±0.1, 34°.34N×45°.57E, h15km, mb4.5/35, Error ellipse: s-maj=3.9km s-min=2.8km az=173.0*
*AZER **07** 04:47:36.0±0.3, 34°.43N×45°.58E, h10km, Error ellipse: s-maj=2.5km s-min=2.1km az=125.0*
*MOS **07** 04:47:36.2±1.5, 34°.24N×45°.71E, h33km, mb4.7/36, Error ellipse: s-maj=7.8km s-min=4.5km az=102.6*
*THR **07** 04:47:36.3±0.3, 34°.36N×45°.56E, h17km±4km, ML4.4*
*NEIC **07** 04:47:36.4, 34°.36N×45°.57E, h18km, mb4.6/14, ML4.4(THR), MN4.6(TEH), After THR.*
*DSN **07** 04:47:46.6±2.0, 34°.09N×46°.60E, h30km, Error ellipse: s-maj=34.8km s-min=12.0km az=61.0*

ISC 07 04:47:35.4±0.9, 34°.29N±0°.03×45°.57E±0°.03, h15km±5km, n399, σ1§57/439, mb4.5/69, MS3.2/9, 42C-29D, Iran-Iraq border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
IDHR	Dehrash	0.79	59	ePg	Pg	04 47 49.9	-0.9
IDHR				eSg	Sb	04 48 01.1	-0.4
IDHR				eAMB	AMB	04 48 03.8	
	comp=Z,80µm,0.2s						
IDHR	Dehrash	0.79	59	ePg	Pg	04 47 49.9	-0.9
IDHR				eSg	Sb	04 48 01.1	-0.4
IGHG	Ghaleghazi	0.83	87	ePg	Pb	04 47 52.2	+0.6
IGHG				eAMB	AMB	04 48 11.8	
	comp=Z,69µm,0.3s						
IGHG	Ghaleghazi	0.83	87	ePg	Pb	04 47 52.2	+0.6
ILIN	Lien	1.31	61	ePg	Pb	04 47 59.9	+0.1
ILIN				eAMB	AMB	04 48 21.2	
	comp=Z,89µm,0.3s						
ILIN	Lien	1.31	61	ePg	Pb	04 47 59.9	+0.1
BHD	Baghdad	1.42	225	i Pg	Pn	04 47 53.2	-7.5
	baz=45						
BHD				eSg	Sn	04 48 11.0	-8.2
IKOM	Komasi	1.61	94	eAMB	AMB	04 48 32.7	
	comp=Z,52µm,0.3s						
IKOM				ePn	Pg	04 48 06.2	-0.2
SNGE	Sanandaj	1.67	61	ePg	Pb	04 48 06.5	+0.5
SNGE				eSg	Sg	04 48 28.5	-0.7
SNGE				AML	AML	04 48 33.4	
	comp=E,7µm,0.6s						
SNGE				AML	AML	04 48 34.0	
	comp=N,7µm,0.6s						
SNGE	Sanandaj	1.67	61	ePn	Pg	04 48 06.7	-0.8
SNGE				eSg	Sg	04 48 28.5	-0.7
IBZA	Bozab	1.90	84	ePn	Pb	04 48 10.1	+0.1
IBZA				eAMB	AMB	04 48 41.4	
	comp=Z,67µm,0.2s						
MSL	Mosul	2.91	317	ePn	Pb	04 48 25.0	-2.0
MSL				i Sn	Sn	04 48 52.2	-3.7
CUKT	Cukurca	3.35	332	eP	Pn	04 48 29.7	+2.3
CUKT	Cukurca	3.35	332	eP	Pn	04 48 29.7	+2.3
SHGR	Shooshtar-Gavs	3.48	128	ePn	Pn	04 48 32.3	+3.4
SHGR				AML	AML	04 49 52.1	
	comp=N,498nm,0.6s						
SHGR	Shooshtar-Gavs	3.48	128	ePn	Pn	04 48 32.3	+3.4
ZNJK	Zanjan	3.48	46	ePn	Pn	04 48 31.4	+2.2
ZNJK	Zanjan	3.48	46	ePn	Pn	04 48 31.4	+2.2
HKR	Hakkari	3.60	336	eP	Pn	04 48 25.5	-5.4
HKR	Hakkari	3.60	336	eP	Pn	04 48 25.5	-5.4
KHMZ	Khomeyn	3.69	97	ePn	Pn	04 48 35.0	+2.9
KHMZ	Khomeyn	3.69	97	ePn	Pn	04 48 35.0	+2.9
ASAO	Ashtian	3.69	85	ePn	Pn	04 48 35.0	+2.8
ASAO				eSg	Sg	04 49 31.3	-2.7
ASAO	Ashtian	3.69	85	ePn	Pn	04 48 35.0	+2.8
ASAO				eSg	Sg	04 49 31.3	-2.7
IRAZ	Razeghan	3.75	72	ePn	Pn	04 48 35.1	+2.1
IRAZ				eAMB	AMB	04 49 53.5	
	comp=Z,8µm,0.4s						
IRAZ	Razeghan	3.75	72	ePn	Pn	04 48 35.1	+2.1
IPIR	Pirpir	4.73	108	ePn	Pn	04 48 46.9	+0.4
IPIR				eAMB	AMB	04 49 50.7	
	comp=Z,5µm,0.3s						
IPIR	Pirpir	4.73	108	ePn	Pn	04 48 46.9	+0.4
GHVR	GHOM	4.74	86	ePn	Pn	04 48 48.6	+2.2
GHVR				AML	AML	04 50 21.7	
	comp=N,190nm,0.7s						
GHVR				AML	AML	04 50 27.9	
	comp=E,239nm,0.8s						
GHVR	GHOM	4.74	86	ePn	Pn	04 48 48.6	+2.2
NAX	Nakhchivan	4.87	359	⇑P	Pn	04 48 47.4	-0.8
NAX				⇑S	Sn	04 49 43.8	-0.6
NAX	Nakhchivan	4.87	359	P	Pn	04 48 47.4	-0.8
NAX				S	Sn	04 49 43.8	-0.6
LRK	Lerik	4.88	26	⇑P	Pn	04 48 47.3	-1.1
LRK				⇓S	Sn	04 49 44.0	-0.7
LRK	Lerik	4.88	26	P	Pn	04 48 47.3	-1.1
KBSD	Kabsdagh	4.91	305	eP	Pn	04 48 48.9	+0.3
KBSD				eS	Sn	04 49 42.4	-2.8
KBSD				AML	AML	04 50 18.4	
	comp=Z,651nm,0.7s						
KBSD	Kabsdagh	4.91	305	eP	Pn	04 48 49.6	+0.9
KBSD				eS	Sn	04 49 42.4	-2.8
	comp=Z,651nm,0.7s						
SFNV	Sufian	4.94	297	eP	Pn	04 48 49.9	+0.7
SFNV				eS	Sn	04 49 42.5	-3.6
SFNV				AML	AML	04 49 48.8	
	comp=Z,859nm,0.4s						
SFNV	Sufian	4.94	297	eP	Pn	04 48 49.8	+0.7
SFNV				eS	Sn	04 49 42.5	-3.6
	comp=Z,859nm,0.4s						
ASTR	Astara	4.99	30	⇓P	Pn	04 48 48.3	-1.4
ASTR				⇓S	Sn	04 49 45.2	-1.9
ASTR	Astara	4.99	30	P	Pn	04 48 48.3	-1.4
ASTR				S	Sn	04 49 45.2	-1.9
CLDR	Caldiran	5.02	345	eP	Pn	04 48 47.3	-3.1
CLDR	Caldiran	5.02	345	eP	Pn	04 48 47.3	-3.1
IKLH	Kolahrood	5.09	99	ePn	Pn	04 48 54.3	+2.8
IKLH				eAMB	AMB	04 50 03.4	
	comp=Z,3µm,0.2s						
MAKU	Maku	5.10	352	ePn	Pn	04 48 53.5	+2.0
MAKU	Maku	5.10	352	ePn	Pn	04 48 53.5	+2.0
LKRN	Lenkeran, Azer	5.11	29	⇑P	Pn	04 48 51.0	-0.4
LKRN				⇑S	Sn	04 49 49.7	-0.4
LKRN	Lenkeran, Azer	5.11	29	P	Pn	04 48 51.0	-0.4
IVRN	Varamin	5.12	80	ePn	Pn	04 48 53.4	+1.7
IVRN				eAMB	AMB	04 49 22.2	
	comp=Z,2µm,0.3s						
IVRN	Varamin	5.12	80	ePn	Pn	04 48 53.4	+1.7
MAZI	Mazidag	5.22	309	eP	Pn	04 48 56.4	+3.3
MAZI	Mazidag	5.22	309	eP	Pn	04 48 56.4	+3.3
SVAN	Silvan-Diyarba	5.23	319	eP	Pn	04 48 49.8	-3.3
SVAN	Silvan-Diyarba	5.23	319	eP	Pn	04 48 49.8	-3.3
MNKR	ALMNKUR	5.42	289	eP	Pn	04 48 55.7	0.0
MNKR				eS	Sn	04 49 53.5	-4.3
MNKR				AML	AML	04 50 15.1	
	comp=Z,1µm,0.3s						
MNKR	ALMNKUR	5.42	289	eP	Pn	04 48 57.1	+1.4
GLBA	Clilabad	5.43	24	⇑P	Pn	04 48 55.4	-0.5
GLBA				⇑S	Sn	04 49 57.8	-0.3
GLBA	Clilabad	5.43	24	P	Pn	04 48 55.4	-0.5
GLBA				S	Sn	04 49 57.8	-0.3
IDMV	Damavand	5.46	75	ePn	Pn	04 48 58.3	+1.8
IDMV				eAMB	AMB	04 49 18.8	
	comp=Z,2µm,0.3s						
IDMV	Damavand	5.46	75	ePn	Pn	04 48 58.3	+1.8
KSRV	Kasrt alli	5.61	288	eP	Pn	04 48 56.7	-1.7
AGRB	Hanur-Agry	5.66	339	eP	Pn	04 48 53.0	-6.2
DYBB	Diyarbakir	5.71	311	eP	Pn	04 49 00.9	+1.1
IZEF	Zefreh	5.81	102	ePn	Pn	04 49 03.1	+1.8
IZEF				eAMB	AMB	04 50 16.7	
	comp=Z,1µm,0.3s						
IZEF	Zefreh	5.81	102	ePn	Pn	04 49 03.1	+1.8
VRTB	Varto-Mus	5.88	327	eP	Pn	04 48 55.3	-6.8
GNI	Garni	5.88	354	Pn	Pn	04 49 05.0	+2.8
	comp=Z,2.1nm,0.3s,baz=284,slow=6.2,SNR=5.3						
GNI				Lg	Lg	04 50 43.0	
	comp=Z,2.0nm,0.3s,baz=24,slow=22,SNR=3.1						
GNI	Garni	5.88	354	eP	Pn	04 49 03.1	+0.9
GNI				eS	Sn	04 50 12.8	+3.4
GNI				pmax	pmax		
	comp=Z,474nm,0.8s						
GNI	Garni	5.88	354	eP	Pn	04 49 03.1	+0.9
	comp=Z,474nm,0.8s						
GNI	Garni	5.88	354	ePn	Pn	04 49 03.1	+0.9
	comp=Z,474nm,0.8s						
GNI				eS	Sn	04 50 12.8	+3.4
GNI				Lg	Lg	04 50 43.0	
IFIR	Firoozkooh	6.05	75	eAMB	AMB	04 49 10.0	
	comp=Z,737nm,0.1s						
IFIR				ePn	Pn	04 49 06.1	+1.5
BRDA	Brd	6.10	12	⇓S	Sn	04 50 14.1	-0.3
BRDA	Brd	6.10	12	S	Sn	04 50 14.1	-0.3
BNGB	Bingˆ¶l	6.12	321	eP	Pn	04 49 00.7	-4.7
IALA	Alasht	6.19	71	ePn	Pn	04 49 11.2	+4.6
IALA				eAMB	AMB	04 49 49.2	
	comp=Z,915nm,0.2s						
ZRD	Zardab	6.21	15	⇓P	Pn	04 49 06.0	-0.5
ZRD				⇓S	Sn	04 50 15.3	-1.9
ZRD	Zardab	6.21	15	P	Pn	04 49 06.0	-0.5
ZRD				S	Sn	04 50 15.3	-1.9
IRAM	Ramesheh	6.23	112	ePn	Pn	04 49 08.6	+1.5
IRAM				eAMB	AMB	04 50 23.3	
	comp=Z,1µm,0.3s						
IRAM	Ramesheh	6.23	112	ePn	Pn	04 49 08.6	+1.5
ALIB	Äli-Bayra	6.29	25	⇓S	Sn	04 50 18.7	-0.4
ALIB	Äli-Bayra	6.29	25	S	Sn	04 50 18.7	-0.4
GANJ	Ganja	6.37	5	⇓P	Pn	04 49 08.4	-0.4
GANJ				⇓S	Sn	04 50 21.0	-0.2
GANJ	Ganja	6.37	5	P	Pn	04 49 08.4	-0.4
GANJ				S	Sn	04 50 21.0	-0.2
GDB	GEDABAY	6.42	1	⇑P	Pn	04 49 06.2	-3.4
GDB				⇑S	Sn	04 50 18.4	-4.3
SVRC	Sivrice-ELAZID	6.50	311	eP	Pn	04 49 11.5	+0.9
SVRC	Sivrice-ELAZID	6.50	311	eP	Pn	04 49 11.5	+0.9
QZX	Qazax, Azerbai	6.76	359	⇓P	Pn	04 49 13.3	-0.7
QZX				⇑S	Sn	04 50 30.2	-0.6
QZX	Qazax, Azerbai	6.76	359	P	Pn	04 49 13.3	-0.7
QZX				S	Sn	04 50 30.2	-0.6
PTK	Pertek	6.76	315	eP	Pn	04 49 13.4	-1.0
PTK	Pertek	6.76	315	eP	Pn	04 49 13.4	-1.0
GBS	Qobustan	6.78	22	⇓P	Pn	04 49 10.3	-4.2
GBS				⇑S	Sn	04 50 24.9	-6.6
IML	Ismayilli	6.81	17	⇑P	Pn	04 49 14.4	-0.5
IML				⇑S	Sn	04 50 31.8	-0.4
IML	Ismayilli	6.81	17	P	Pn	04 49 14.4	-0.5
IML				S	Sn	04 50 31.8	-0.4
ROOS	tl_alroos	6.86	271	eP	Pn	04 49 16.0	+0.4
ROOS				eS	Sn	04 50 29.8	-3.6
ROOS				AML	AML	04 51 20.6	
	comp=E,386nm,0.6s						
ROOS				AML	AML	04 51 23.9	
	comp=N,333nm,0.6s						
ROOS	tl_alroos	6.86	271	eP	Pn	04 49 16.0	+0.4
PQL	Pirkuli	6.92	19	⇓P	Pn	04 49 16.2	-0.1
PQL				⇓S	Sn	04 50 34.2	-0.6
PQL	Pirkuli	6.92	19	P	Pn	04 49 16.2	-0.1
PQL				S	Sn	04 50 34.2	-0.6
RABH	Abou Rabah	6.92	274	eP	Pn	04 49 17.1	+0.8
RABH				eS	Sn	04 50 30.4	-4.5
RABH				AML	AML	04 51 42.3	
	comp=N,164nm,0.7s						
RABH				AML	AML	04 51 47.2	
	comp=E,129nm,0.7s						
RABH	Abou Rabah	6.92	274	eP	Pn	04 49 17.1	+0.8
IANJ	Anjilo	6.96	78	ePn	Pn	04 49 17.8	+0.8
IANJ				eAMB	AMB	04 51 47.4	
	comp=Z,563nm,0.4s						
IANJ	Anjilo	6.96	78	ePn	Pn	04 49 17.8	+0.8
ZALF	Zalf	7.01	261	eP	Pn	04 49 17.3	-0.2
ZALF				eS	Sn	04 50 33.7	-3.3
ZALF				AML	AML	04 51 25.8	
	comp=N,228nm,0.6s						
ZALF				AML	AML	04 51 40.3	
	comp=E,110nm,0.7s						
ZALF	Zalf	7.01	261	eP	Pn	04 49 17.3	-0.2
SEKA	Sheki	7.02	10	⇓P	Pn	04 49 17.3	-0.5
SEKA				⇑S	Sn	04 50 36.9	-0.5
SEKA	Sheki	7.02	10	P	Pn	04 49 17.3	-0.5
SEKA				S	Sn	04 50 36.9	-0.5
ATGJ	Altiaghaj	7.08	21	⇓P	Pn	04 49 17.9	-0.7
ATGJ				⇑S	Sn	04 50 38.3	-0.5
ATGJ	Altiaghaj	7.08	21	P	Pn	04 49 17.9	-0.7
ATGJ				S	Sn	04 50 38.3	-0.5
DGRG	David-gareji	7.15	359	P	Pn	04 49 24.4	+4.9
DGRG	David-gareji	7.15	359	P	Pn	04 49 24.4	+4.9
XNQ	Khinaliq	7.16	16	⇑P	Pn	04 49 19.5	-0.3
XNQ				⇑S	Sn	04 50 41.1	+0.1
XNQ	Khinaliq	7.16	16	P	Pn	04 49 19.5	-0.3
XNQ				S	Sn	04 50 41.1	+0.1
SIZA	Siyzn	7.27	20	⇓P	Pn	04 49 20.6	-0.5
SIZA				⇓S	Sn	04 50 43.5	+0.1
SIZA	Siyzn	7.27	20	P	Pn	04 49 20.6	-0.5
SIZA				S	Sn	04 50 43.5	+0.1
KFRA	Kufra	7.28	280	eP	Pn	04 49 21.7	+0.4
KFRA				eS	Sn	04 50 38.6	-5.1
KFRA				AML	AML	04 51 52.8	
	comp=N,488nm,0.5s						
KFRA				AML	AML	04 52 12.1	
	comp=E,302nm,0.7s						
KFRA	Kufra	7.28	280	eP	Pn	04 49 21.7	+0.4
ZKTA	Zakatala	7.38	6	⇑P	Pn	04 49 22.0	-0.7
ZKTA				⇑S	Sn	04 50 45.8	-0.3
QUBA	Quba, Azerbaij	7.42	17	⇓P	Pn	04 49 22.5	-0.7
QUBA				⇓S	Sn	04 50 46.1	-1.0
QUBA	Quba, Azerbaij	7.42	17	P	Pn	04 49 22.5	-0.7
QUBA				S	Sn	04 50 46.1	-1.0
BAYT	Ayd˜–ntepe-Bay	7.47	326	eP	Pn	04 49 18.8	-5.2
MARH	Ras Al Marh	7.54	271	eP	Pn	04 49 25.2	+0.1
SALA	Sala	7.55	260	eP	Pn	04 49 25.7	+0.6
SALA				eS	Sn	04 50 46.3	-4.2
SALA				AML	AML	04 51 44.2	
	comp=E,18nm,0.6s						
SALA				AML	AML	04 52 00.2	
	comp=N,583nm,1.0s						
SALA	Sala	7.55	260	eP	Pn	04 49 25.7	+0.6
ASF	Jabal al Asfar	7.57	256	Pn	Pn	04 49 25.7	+0.4
	comp=N,2.2nm,0.3s,baz=348,slow=7.0,SNR=14						
ASF				Lg	Lg	04 51 38.4	
	comp=N,4.9nm,0.3s,baz=36,slow=21,SNR=10						
ASF				LR	LR	04 53 14.6	
	comp=N,439nm,19.1s,baz=32,slow=44						
HAWK	Haweek	7.58	274	eP	Pn	04 49 26.1	+0.6
HAWK				eS	Sn	04 50 45.4	-5.8
HAWK				AML	AML	04 51 42.8	
	comp=E,112nm,0.7s						
HAWK				AML	AML	04 51 53.4	
	comp=N,76nm,0.7s						
HAWK	Haweek	7.58	274	eP	Pn	04 49 26.1	+0.6
WRDH	Warideh	7.62	282	eP	Pn	04 49 25.9	-0.1
WRDH				eS	Sn	04 50 46.9	-5.2
WRDH				AML	AML	04 51 53.6	

comp=N,157nm,0.6s
WRDH AML AML 04 51 54.8

comp=E,92nm,0.6s
WRDH Warideh 7.62 282 *e*P **Pn** **04 49 25.9 -0.1**
DRWC Darouich 7.63 290 *e*P **Pn** **04 49 25.6 -0.5**
DRWC *e*S Sn 04 50 46.5 -5.8
DRWC AML AML 04 51 45.8

comp=N,78nm,0.5s
DRWC AML AML 04 52 15.0

comp=E,138nm,0.6s
DRWC Darouich 7.63 290 *e*P **Pn** **04 49 25.6 -0.5**
BIDA Albida 7.66 278 *e*P **Pn** **04 49 26.8 +0.3**
BIDA *e*S **Sn** **04 50 48.7 -4.4**
BIDA AML AML 04 52 09.2

comp=E,246nm,0.7s
BIDA AML AML 04 52 19.1

comp=N,230nm,0.7s
BIDA Albida 7.66 278 *e*P **Pn** **04 49 26.8 +0.3**
BTCH Batrach 7.66 286 *e*P **Pn** **04 49 25.9 -0.7**
BTCH *e*S **Sn** **04 50 48.3 -4.9**
BTCH AML AML 04 52 09.9

comp=E,282nm,0.6s
BTCH AML AML 04 52 15.3

comp=N,353nm,0.7s
BTCH Batrach 7.66 286 *e*P **Pn** **04 49 24.9 -1.7**
TOTH TOTAH 7.67 266 *e*P **Pn** **04 49 26.2 -0.4**
TOTH *e*S **Sn** **04 50 48.2 -5.0**
TOTH AML AML 04 51 47.0

comp=E,164nm,0.6s
TOTH AML AML 04 51 59.5

comp=N,144nm,0.6s
TOTH TOTAH 7.67 266 *e*P **Pn** **04 49 26.2 -0.4**
HWQ Hawqa 7.97 273 *e*P **Pn** **04 49 32.8 +2.0**
HWQ Hawqa 7.97 273 *e*P **Pn** **04 49 32.8 +2.0**
ARNB Al Arnab 8.02 284 *e*P **Pn** **04 49 31.1 -0.4**
ARNB *e*S **Sn** **04 50 57.3 -4.7**
ARNB AML AML 04 52 12.0

comp=E,125nm,0.7s
ARNB AML AML 04 52 25.4

comp=N,128nm,0.7s
ARNB Al Arnab 8.02 284 *e*P **Pn** **04 49 31.1 -0.4**
BRBR Barbar 8.05 266 *e*P **Pn** **04 49 31.9 -0.1**
BRBR *e*S **Sn** **04 50 58.2 -4.7**
BRBR AML AML 04 52 01.9

comp=N,241nm,0.6s
BRBR AML AML 04 52 10.4

comp=E,199nm,0.7s
BRBR Barbar 8.05 266 *e*P **Pn** **04 49 32.0 -0.1**
RCY Rachaya 8.13 267 *e*P **Pn** **04 49 34.1 +1.0**
TCHB Talchebab 8.18 261 *e*P **Pn** **04 49 34.0 +0.3**
TCHB *e*S **Sn** **04 51 00.7 -5.3**
TCHB AML AML 04 52 11.5

comp=E,292nm,0.7s
TCHB AML AML 04 52 19.5

comp=N,260nm,0.7s
TCHB Talchebab 8.18 261 *e*P **Pn** **04 49 34.0 +0.3**
DQRL Deir Qamar 8.33 269 *e*P **Pn** **04 49 37.2 +1.5**
DQRL Deir Qamar 8.33 269 *e*P **Pn** **04 49 37.2 +1.5**
MMAI Mount Meron Ar 8.57 264 Pn **Pn** **04 49 39.4 +0.3**
comp=N,3.8nm,0.3s,baz=68,slow=15,SNR=9.0
MMAI Lg Lg 04 52 09.2

comp=N,8.9nm,0.3s,baz=52,slow=50,SNR=4.9
MMAI LR LR 04 53 45.8

comp=N,271nm,19.1s,baz=60,slow=43
ZEI Tsey 8.58 352 *e*P Pn 04 49 44.2 +4.9
ZEI pmax pmax

comp=Z,15nm,0.6s
NEY Neytrino 9.21 347‖ *e*P Pn 04 49 53.7 +5.8
KBZ Khabaz 9.65 348 Pn Pn 04 49 58.2 +4.6
comp=Z,0.1nm,0.3s,baz=175,slow=9.8,SNR=7.1
KVAR Kislovodsk Arr 9.90 348 LR LR 04 54 41.0
comp=Z,151nm,21.8s,baz=138,slow=43
KIV Kislovodsk 9.90 348 *e*P Pn 04 50 02.8 +5.5
KIV pmax pmax

comp=Z,20nm,1.0s
KIV MLR MLR

comp=Z,45nm,9.0s
EIL Elat 10.13 246 Pn **Pn** **04 50 02.0 +1.7**
comp=Z,0.9nm,0.3s,baz=117,slow=9.8,SNR=4.4
EIL Lg Lg 04 53 03.0

comp=Z,1.9nm,0.3s,baz=270,slow=12,SNR=3.1
EIL LR LR 04 54 47.6

comp=Z,210nm,19.6s,baz=64,slow=42
EIL Elat 10.13 246 Pn **Pn** **04 50 02.0 +1.7**
RAYN Ar Rayn 10.73 180 *e*Pn **Pn** **04 50 07.7 -0.9**
comp=Z,15nm,0.7s
RAYN Ar Rayn 10.73 180 *e*Pn **Pn** **04 50 07.7 -0.9**
comp=Z,15nm,0.7s
RAYN *e*S **Sn** **04 52 05.0 -3.6**
GEYT Alibeck 10.78 67 Pn **Pn** **04 50 10.0 +0.7**
comp=Z,0.2nm,0.3s,baz=259,slow=15,SNR=6.4
BRTR Keskin Array B 10.97 303 Pn Pn 04 50 17.4 +5.5
comp=Z,0.1nm,0.3s,baz=119,slow=11,SNR=9.6
BANOM Banah 12.47 129 *i* P **Pn** **04 50 31.4 -1.1**
SNR=44
BANOM S Sn 04 52 43.7 -7.5
BANOM Banah 12.47 129 P **Pn** **04 50 31.4 -1.1**
SNR=18
BANOM Banah 12.47 129 P **Pn** **04 50 31.4 -1.1**
SNR=18
BANOM Banah 12.47 129 Pn **Pn** **04 50 31.4 -1.1**
SNR=18
NAZ Nazwa, Dubai 12.76 134 *i* P **Pn** **04 50 36.7 +0.3**
SNR=28
ASUD Al Ashush, Dub 12.84 136 *i* P **Pn** **04 50 37.6 +0.1**
SNR=5.8
HATD Hatta, Dubai 13.16 133 *i* P **Pn** **04 50 41.5 -0.3**
SNR=22
HATD S Sn 04 52 57.8 -10
ASHO Ashiyiah 13.22 134 *i* P **Pn** **04 50 42.3 -0.5**
SNR=28
ASHO Ashiyiah 13.22 134 P **Pn** **04 50 42.4 -0.3**
SNR=28
ASHO Ashiyiah 13.22 134 P **Pn** **04 50 42.4 -0.3**
SNR=28
ARQ Araqi 14.52 136 Pn **Pn** **04 50 59.3 -1.2**
SNR=11
ARQ Araqi 14.52 136 P **Pn** **04 50 59.3 -1.2**
SNR=11
ARQ Araqi 14.52 136 Pn **Pn** **04 50 59.3 -1.2**
SNR=11
BSY Bisya 15.37 135 P **Pn** **04 51 10.0 -1.9**
SNR=12
BSY Bisya 15.37 135 Pn **Pn** **04 51 10.0 -1.9**
SNR=12
SMDO Samad 15.64 132 P **Pn** **04 51 14.1 -1.4**
SNR=32
WSAR Wadi Sarin 15.87 131 Pn **Pn** **04 51 17.0 -1.3**
comp=Z,2.4nm,0.3s,baz=320,slow=11,SNR=16
WSAR LR LR 04 58 56.4

comp=Z,61nm,18.2s,baz=316,slow=43
JMDO Jabal Madar 16.19 134 Pn **Pn** **04 51 21.7 -0.8**
SNR=9.4
JMDO Jabal Madar 16.19 134 P **Pn** **04 51 21.7 -0.8**
SNR=9.4
JMDO Jabal Madar 16.19 134 Pn **Pn** **04 51 21.7 -0.8**
SNR=9.4
TIRR Tirgusor 16.67 313‖ *i*P **P** **04 51 29.9 -0.9**
TIRR Tirgusor 16.67 313 ⇓P **P** **04 51 29.9 -0.9**
TIRR Tirgusor 16.67 313 P **P** **04 51 29.9 -0.9**
TIRR Tirgusor 16.67 313 *e*Pn **P** **04 51 31.5 +0.8**
comp=Z,13nm,1.1s
IDI Anoyia 17.02 279 P **P** **04 51 34.5 -0.2**
comp=Z,1.2nm,0.3s,baz=81,slow=15,SNR=5.5
VRH Novokhopyorsk 17.13 352 *e*P **Pn** **04 51 31.9 -2.2**
VRH pmax pmax

comp=Z,10.0nm,1.2s
CFR Carcaliu 17.23 314‖ *i*P **P** **04 51 39.7 +2.8**
CFR Carcaliu 17.23 314 ⇓P **P** **04 51 39.7 +2.8**
VSR Storozhevoye 17.54 347 *e*P **Pn** **04 51 39.2 -0.1**
VSR pmax pmax

comp=Z,20nm,1.0s
VSR Storozhevoye 17.54 347 *e*P **Pn** **04 51 39.2 -0.1**
comp=Z,20nm,1.0s
ABKAR Akbulak array 18.35 31 *e*Pn **P** **04 51 49.2 0.0**
comp=Z,9.1nm,0.5s
ABKAR Akbulak array 18.35 31 *e*Pn **P** **04 51 49.2 0.0**
comp=Z,9.1nm,0.5s
VRI Vrincioaia 18.43 314⇑ *i*P **Pn** **04 51 54.6 +4.3**
VRI Vrincioaia 18.43 314 ⇑P **Pn** **04 51 54.6 +4.3**
PLOR Plostina 18.47 314⇑ *i*P **Pn** **04 51 55.2 +4.4**
PLOR Plostina 18.47 314 ⇑P **Pn** **04 51 55.2 +4.4**
AKTK Aktyubinsk 18.53 26 P **P** **04 51 50.8 -0.4**
comp=Z,53nm,18.2s
AKTO Aktyubinsk 18.53 26 P **P** **04 51 50.8 -0.4**
comp=Z,1.5nm,0.3s,baz=208,slow=11,SNR=48
AKTO LR LR 05 01 05.2
comp=Z,53nm,18.2s,baz=237,slow=44
MLR Muntele Rosu 18.71 313 P **Pn** **04 51 55.7 +2.0**
comp=Z,0.1nm,0.3s,baz=157,slow=15,SNR=2.5
MLR Muntele Rosu 18.71 313⇑ *i*P **Pn** **04 51 54.5 +0.7**
MLR Muntele Rosu 18.71 313 ⇑P **Pn** **04 51 54.5 +0.7**
MLR Muntele Rosu 18.71 313 P **Pn** **04 51 54.5 +0.7**
TESR Tescani 18.83 316⇑ *i*P **Pn** **04 51 56.3 +1.2**
LPSR Galich'ya Gora 18.91 347 *e*P **P** **04 51 53.7 -1.7**
LPSR pmax pmax

comp=Z,40nm,0.8s
LPSR Galich'ya Gora 18.91 347 *e*P **P** **04 51 53.7 -1.7**
comp=Z,40nm,0.8s
VOIR 19.23 311⇑ *i*P **Pn** **04 52 01.2 +1.1**
VOIR 19.23 311 ⇑P **Pn** **04 52 01.2 +1.1**
VOIR 19.23 311 P **Pn** **04 52 01.2 +1.1**
DOPR Dopca 19.28 313⇑ *i*P **Pn** **04 52 02.9 +2.3**
ARR Arges 19.46 311⇑ *i*P **Pn** **04 52 03.0 +0.2**
LOT Lotru 20.04 310⇑ *i*P Pn 04 52 09.3 -0.4
BURAR Bucovina Array 20.25 317⇑ *i*P Pn 04 52 12.2 0.0
BURAR Bucovina Array 20.25 317 ⇑P Pn 04 52 12.2 0.0
AKASG Malin Array Be 20.28 329 *e*P **P** **04 52 09.7 -0.6**
comp=Z,2.1nm,0.3s,baz=138,slow=9.3,SNR=12
KIEV Kiev 20.28 329 *e*P **P** **04 52 09.4 -0.9**
KIEV pmax pmax

comp=Z,12nm,0.5s
KIEV Kiev 20.28 329 *e*P **P** **04 52 09.4 -0.9**
comp=Z,12nm,0.5s
KIEV Kiev 20.28 329 *e*P **P** **04 52 09.4 -0.9**
comp=Z,12nm,0.5s
GZR Gura Zlata 20.65 309⇑ *i*P **P** **04 52 15.0 +0.5**
KUBS Kucevo 20.99 306 *e*P **P** **04 52 18.6 +0.4**
MDVR Moldovita 21.10 307⇑ *i*P **P** **04 52 20.5 +1.1**
DRGR 21.30 313⇓ *i*P **P** **04 52 25.1 +3.5**
DRGR 21.30 313 ⇓P **P** **04 52 25.2 +3.6**
GRUS Gruza 21.47 304 *e*P **P** **04 52 25.4 +2.1**
SIRR Siria 21.72 311⇑ *i*P **P** **04 52 29.8 +3.8**
OBN Obninsk 21.75 346 P **P** **04 52 27.4 +1.3**
comp=Z,23nm,0.4s,baz=127,slow=10,SNR=2.4
OBN Obninsk 21.75 346‖ *e*P **P** **04 52 26.2 +0.1**
OBN *i* *PP sP 04 52 47.6 +15
OBN pmax pmax

comp=Z,24nm,1.4s
OBN Obninsk 21.75 346 *e*P **P** **04 52 26.2 +0.1**
comp=Z,24nm,1.4s
IVAS Ivanjica 21.77 303 *e*P **P** **04 52 27.9 +1.3**
TRUS Trudelj 21.79 305 *e*P **P** **04 52 25.3 -1.4**
MOS Moscow 22.14 348 *e*P **P** **04 52 32.3 +2.0**
MOS *e* 04 53 02.1
MOS pmax pmax

comp=Z,45nm,0.7s
MOS Moscow 22.14 348 *e*P **P** **04 52 32.3 +2.0**
comp=Z,45nm,0.7s
UZH Uzhgorod 22.45 317 *e*P P 04 52 39.8 +6.0
UZH *e* 04 52 45.0
UZH *i* 04 53 06.8
TEKS Tekeris 22.49 305 *e*P **P** **04 52 35.3 +1.1**
KOLS Kolonicke sedl 22.62 317 *e*P **P** **04 52 37.0 +1.4**
KOLS pmax pmax

comp=Z,10.0nm,1.0s
KOLS Kolonicke sedl 22.62 317 *e*P **P** **04 52 37.0 +1.4**
comp=Z,10.0nm,1.0s
KOLS Kolonicke sedl 22.62 317 *e*P **P** **04 52 37.0 +1.4**
ATD Arta Tunnel 22.80 187 LR LR 05 01 59.8
comp=Z,44nm,21.8s,baz=68,slow=38
KECS Kecovo 23.43 315 *e*P **P** **04 52 42.6 -1.3**
KECS pmax pmax

comp=Z,3.0nm,0.9s
KECS Kecovo 23.43 315 *e*P **P** **04 52 42.6 -1.3**
comp=Z,3.0nm,0.9s
KECS Kecovo 23.43 315 *e*P **P** **04 52 42.6 -1.3**
STHS Stebnicka Huta 23.45 317 *e*P **P** **04 52 45.4 +1.3**
STHS Stebnicka Huta 23.45 317 *e*P **P** **04 52 45.4 +1.3**
ARU Arti 23.86 18 P **P** **04 52 48.2 +0.1**
comp=Z,4.0nm,0.2s,baz=268,slow=5.5,SNR=5.3
ARU Arti 23.86 18*d* *i*P **P** **04 52 47.9 -0.1**
ARU S **S** **04 57 02.2 -1.2**
ARU pmax pmax

comp=Z,12nm,1.7s
ARU Arti 23.86 18 *e*P **P** **04 52 47.6 -0.4**
comp=Z,11nm,0.7s
NIE Niedzica 23.98 317 *e*P **P** **04 52 53.6 +4.3**
NIE Niedzica 23.98 317 *e*P **P** **04 52 53.6 +4.3**
AAK Ala-Archa 24.04 61 P **P** **04 52 49.9 -0.2**
comp=Z,1.5nm,0.6s,baz=190,slow=5.8,SNR=5.9
AAK PcP **PcP** **04 56 32.0 +0.5**
comp=Z,3.6nm,0.6s,baz=220,slow=2.5,SNR=8.2
AAK Ala-Archa 24.04 61 P **P** **04 52 49.9 -0.2**
AAK 04 56 32.0
AAK pmax pmax

comp=Z,1.0nm,0.4s
AAK pmax pmax

comp=Z,4.0nm,0.6s
AAK Ala-Archa 24.04 61 PcP **PcP** **04 56 32.0 +0.5**
comp=Z,4.0nm,0.6s
LANS Liptovska Anna 24.33 315 *e*P **P** **04 52 53.6 +1.1**
LANS Liptovska Anna 24.33 315 *e*P **P** **04 52 53.6 +1.1**
NACGM Naroch 24.42 333 *e* **P** **04 52 52.0 -1.2**
KSH Kashi 24.80 69 P **P** **04 52 56.0 -0.9**
KSH *e*pP pP 04 53 01.9 +0.4
KSH *e*PP **PnPn** **04 53 32.4 +3.2**
KSH *e*PcP **PcP** **04 56 35.2 +2.1**
KSH S **S** **04 57 13.2 -5.8**
KSH pmax pmax

comp=Z,11nm,0.8s
KSH pmax pmax

comp=Z,160nm,4.1s
KSH LR LR

comp=Z,140nm,6.3s
KSH LR LR

comp=Z,190nm,6.6s
KSH LR LR

comp=Z,180nm,6.8s
SUW Suwalki 25.24 328 *e*P **P** **04 52 59.9 -0.7**
SUW Suwalki 25.24 328 *e*P **P** **04 52 59.9 -0.7**
SUW Suwalki 25.24 328 *e*P **P** **04 53 00.0 -0.7**
BRVK Borovoye 25.70 36‖ *i*P **P** **04 53 05.5 +0.7**
BRVK pmax pmax

comp=Z,9.0nm,0.7s
BRVK Borovoye 25.70 36 *i* P **P** **04 53 05.5 +0.7**
comp=Z,9.0nm,0.7s
BVAR Borovoye Array 25.73 36 P **P** **04 53 05.0 -0.1**
comp=Z,18nm,0.7s,baz=240,slow=7.9,SNR=59
BVAR PcP **PcP** **04 56 35.5 +0.7**
comp=Z,1.9nm,0.6s,baz=257,slow=1.3,SNR=4.9
CONA Conrad Observa 26.02 311 *i* P **P** **04 53 10.4 +2.5**
comp=Z,9.5nm,1.2s
SOKA Soboth 26.14 307 *i* P **P** **04 53 10.9 +1.9**
comp=Z,4.3nm,0.9s
SOKA Soboth 26.14 307 P **P** **04 53 10.9 +1.9**
comp=Z,4.3nm,0.9s
DPC Dobruska-Polom 26.70 316 *e*P **P** **04 53 13.3 -0.6**
DPC *e*pP **pP** **04 53 18.2 -0.3**
DPC Dobruska-Polom 26.70 316 *e*P **P** **04 53 13.3 -0.6**
DPC *e* 04 53 18.2
DPC Dobruska-Polom 26.70 316 *e*P **P** **04 53 13.3 -0.6**
KLMR Klimovskoe 26.86 353 *e*P **P** **04 53 14.3 -0.9**
KLMR pmax pmax

comp=Z,11nm,1.0s
KLMR Klimovskoe 26.86 353 *e*P **P** **04 53 14.3 -0.9**
comp=Z,11nm,1.0s
MOA Molln 27.00 310 *i* P **P** **04 53 17.1 +0.4**
comp=Z,11nm,1.1s
MOA Molln 27.00 310 P **P** **04 53 17.1 +0.4**
comp=Z,11nm,1.1s
VSU Vasula 27.25 338‖ *e*P **P** **04 53 17.7 -1.0**
VSU pmax pmax

comp=Z,45nm,1.0s
VSU Vasula 27.25 338 *e*P **P** **04 53 17.7 -1.0**
comp=Z,45nm,1.0s
GERES GERESS Array B 27.68 311 P **P** **04 53 23.1 +0.2**
comp=Z,0.3nm,0.5s,baz=108,slow=3.2,SNR=3.5
MOTA Moosalm 28.91 307 *i* P **P** **04 53 34.4 +0.5**
MOTA Moosalm 28.91 307 P **P** **04 53 34.4 +0.5**
KURBB Kurchatov Arra 28.98 46 P **P** **04 53 34.2 0.0**
comp=Z,8.7nm,0.8s,baz=252,slow=9.0,SNR=68
KURBB PcP **PcP** **04 56 42.6 0.0**
comp=Z,2.1nm,0.6s,baz=245,slow=2.9,SNR=11
KURK Kurchatov 29.06 46 P **P** **04 53 34.2 -0.8**
KURK 04 56 42.6
KURK pmax pmax

comp=Z,9.0nm,0.8s
KURK pmax pmax

comp=Z,2.0nm,0.6s
KURK Kurchatov 29.06 46 PcP **PcP** **04 56 42.6 -0.2**
comp=Z,2.0nm,0.6s
KURK Kurchatov 29.06 46 P **P** **04 53 34.2 -0.8**
KURK PcP **PcP** **04 56 42.6 -0.2**
DAVOX Davos/Dischmat 29.60 306 P **P** **04 53 42.3 +2.3**
comp=Z,1.4nm,0.4s,baz=153,slow=14,SNR=3.4
KEST Kesra 29.60 283 P **P** **04 53 41.9 +1.8**
comp=Z,2.0nm,0.7s,baz=355,slow=7.5,SNR=3.0
KEST PcP **PcP** **04 56 46.0 +1.4**
comp=Z,1.4nm,0.4s,baz=352,slow=1.8,SNR=4.6
DAVA Damuels 29.71 307 *i* P **P** **04 53 40.0 -1.0**
comp=Z,3.5nm,0.5s
DAVA Damuels 29.71 307 P **P** **04 53 40.0 -1.0**
comp=Z,3.5nm,0.5s
FINES FINESS Array B 29.90 341 P **P** **04 53 41.5 -0.8**
comp=Z,3.3nm,0.6s,baz=148,slow=10,SNR=32
FINES PcP **PcP** **04 56 44.8 0.0**
comp=Z,0.9nm,0.5s,baz=124,slow=3.4,SNR=3.5
MKAR Makanchi Array 30.29 55 P **P** **04 53 46.3 +0.3**
comp=Z,1.8nm,0.5s,baz=253,slow=9.2,SNR=20
MKAR PcP **PcP** **04 56 45.7 -0.5**
comp=Z,0.6nm,0.6s,baz=247,slow=5.3,SNR=3.9
MKAR LR LR 05 09 18.8

comp=Z,46nm,18.4s,baz=196,slow=43
BNI Bardonecchia 31.53 302 *e*P P 04 53 45.1 -12
PYUN Piuthan 32.47 91 *e*P **P** **04 54 06.2 +0.6**
KOLN Koldanda 33.09 91 *e*P **P** **04 54 11.4 +0.4**
comp=Z,5.8nm,0.5s
HFS Hagfors 33.13 331 P **P** **04 54 10.3 -0.5**
comp=Z,12nm,0.5s,baz=134,slow=8.5,SNR=59
HFS LR LR 05 08 14.5

comp=Z,42nm,19.3s,baz=157,slow=37
NVS Novosibirsk 33.22 40 *e*P **P** **04 54 12.5 +1.0**
NVS pmax pmax

comp=Z,15nm,1.3s
NVS pmax pmax

comp=N,8.0nm,1.4s
WMQ Urumqi 33.75 61 *e*P **P** **04 54 17.3 +0.8**
WMQ pP sP 04 54 22.9 -0.1
WMQ sP pP 04 54 26.7 +5.6
WMQ pmax pmax

comp=N,4.0nm,0.6s
WMQ pmax pmax

comp=N,86nm,4.6s
ZALV Zalesovo Beam 33.76 42 P **P** **04 54 16.3 0.0**
comp=N,2.4nm,0.3s,baz=253,slow=9.0,SNR=17
ZALV LR LR 05 08 54.1

comp=N,49nm,18.4s,baz=258,slow=38
GKN Gorkha 33.87 90 *e*P **P** **04 54 18.1 +0.4**
comp=N,24nm,0.6s
APA Apatity 34.06 352⇑ *i*P **P** **04 54 18.0 -0.7**
APA MLR MLR

comp=Z,400nm,13.0s
NC602 NORSAR Array S 34.35 331 *e*P **P** **04 54 21.4 0.0**
NC602 IAmb IAmb 04 54 24.1

comp=Z,420nm,3.0s
HOMB Homborsund 34.39 326 *e*P **P** **04 54 21.3 -0.3**
DMN Daman 34.39 90 *e*P **P** **04 54 23.0 +0.6**
comp=Z,18nm,0.5s
KKN Kakani 34.47 90 *e*P **P** **04 54 23.5 +0.4**
comp=Z,15nm,0.5s
KONO Kongsberg 34.57 328 *e*P **P** **04 54 22.4 -0.9**
KONO IAmb IAmb 04 54 32.1

comp=Z,561nm,3.0s
PKIN Phulchoki 34.65 90 *e*P **P** **04 54 24.9 +0.3**
comp=Z,13nm,0.5s
NB2 NORSAR Subarra 34.66 331 P **P** **04 54 22.8 -1.2**
comp=Z,1.6nm,0.6s,baz=125,slow=8.6
NB2 NORSAR Subarra 34.66 331 P **P** **04 54 22.8 -1.2**
baz=125,slow=8.6
NB2 NORSAR Subarra 34.66 331 P **P** **04 54 22.8 -1.2**
comp=Z,1.6nm,0.6s,SNR=6.7
NOA NORSAR Array B 34.66 331 P **P** **04 54 22.8 -1.2**
comp=Z,2.1nm,0.6s,baz=125,slow=8.6,SNR=6.7
NOA LR LR 05 11 48.5

comp=Z,42nm,18.1s,baz=270,slow=42
GUN Gumba 34.93 89 *e*P **P** **04 54 27.7 +0.6**
comp=Z,106nm,1.0s
RAMN Ramite 35.87 90 *e*P **P** **04 54 35.2 +0.1**
comp=Z,54nm,0.6s
HEF Hetta 36.36 347 *e*P **P** **04 54 37.7 -0.9**
ODAN Odare 36.56 90 *e*P **P** **04 54 41.2 +0.2**
comp=Z,15nm,0.5s
TAPN Taplejung 36.64 89 *e*P **P** **04 54 42.5 +0.7**
comp=Z,33nm,0.6s
TAM Tamanrasset 36.78 263 *e*P **P** **04 54 45.7 +2.9**
TAM pmax pmax

comp=Z,8.0nm,0.9s
TAM Tamanrasset 36.78 263 *e*P **P** **04 54 45.7 +2.9**
comp=Z,7.7nm,0.9s
KTK1 Kautokeino 36.96 347 *e*P **P** **04 54 42.5 -1.1**
KTK1 Kautokeino 36.96 347 *e*P **P** **04 54 42.5 -1.1**
SNR=27
KEV Kevo 36.97 349 *e*P **P** **04 54 43.4 -0.3**
KEV Kevo 36.97 349 *e*P **P** **04 54 43.4 -0.3**
SNR=27
ARCES ARCESS Array B 37.01 348 P **P** **04 54 43.4 -0.7**
comp=Z,6.0nm,0.7s,baz=152,slow=8.2,SNR=57
ARCES LR LR 05 10 46.2

comp=Z,75nm,18.2s,baz=119,slow=38
ARE0 ARCESS Array S 37.01 348 *e*P **P** **04 54 43.7 -0.4**
ARE0 IAmb IAmb 04 54 46.5

comp=Z,30nm,1.4s
ARE0 ARCESS Array S 37.01 348 *e*P **P** **04 54 43.7 -0.4**
SNR=27
STOK Stokkvaagen 37.36 339 *e*P **P** **04 54 46.6 -0.4**
STOK IAmb IAmb 04 54 49.2

comp=N,9.8nm,1.1s
STOK Stokkvaagen 37.36 339 *e*P **P** **04 54 46.6 -0.4**
SNR=26
KIF Kilpisjarvi 37.43 346 *e*P **P** **04 54 47.0 -0.6**
KIF Kilpisjarvi 37.43 346 *e*P **P** **04 54 47.0 -0.6**
SNR=26
KONS Konsvik 37.45 339 *e*P **P** **04 54 47.3 -0.4**
KONS IAmb IAmb 04 54 57.4

comp=Z,31nm,1.2s
KONS Konsvik 37.45 339 *e*P **P** **04 54 47.3 -0.4**
SNR=26
HAMF Hammerfest 38.29 348 *e*P **P** **04 54 54.5 -0.3**
HAMF Hammerfest 38.29 348 *e*P **P** **04 54 54.5 -0.3**
SNR=26
TRO Tromso 38.33 345 *e*P **P** **04 54 54.8 -0.4**
TRO IAmb IAmb 04 54 59.0

comp=Z,67nm,1.4s
TRO Tromso 38.33 345 *e*P **P** **04 54 54.8 -0.4**
SNR=26
ESDC Sonseca Array 39.53 293 P **P** **04 55 05.7 -0.1**
comp=Z,2.3nm,0.7s,baz=77,slow=8.1,SNR=14
ESDC PcP **PcP** **04 57 14.6 +1.4**
comp=Z,0.2nm,0.3s,baz=61,slow=2.1,SNR=3.1
NRIK Noril'sk 42.03 21 P **P** **04 55 26.4 +0.5**
comp=Z,7.4nm,0.4s,baz=238,slow=5.8,SNR=17
GTA Gaotai 43.16 67 *e*P **P** **04 55 36.7 +1.0**
GTA pP sP 04 55 42.2 0.0
GTA sP pP 04 55 45.4 +5.0
GTA pmax pmax

comp=Z,6.0nm,1.0s
HOPEN Hopen 43.35 353 *e*P **P** **04 55 37.0 +0.5**
HOPEN IAmb IAmb 04 55 38.1

comp=Z,14nm,0.7s
HOPEN Hopen 43.35 353 *e*P **P** **04 55 37.0 +0.5**
SNR=25
ZAK Zakamensk 44.44 51 *e*P **P** **04 55 46.9 +1.2**
ZAK pmax pmax

comp=Z,2.0nm,1.4s
ZAK Zakamensk 44.44 51 *e*P **P** **04 55 46.9 +1.2**
comp=Z,2.0nm,1.4s
TLY Talaya 44.65 49 P **P** **04 55 49.2 +1.9**
TLY pmax pmax

comp=Z,4.0nm,1.7s
TLY Talaya 44.65 49 P **P** **04 55 49.2 +1.9**
comp=Z,4.0nm,1.7s
HSPB Hornsund (broa 44.89 351 *e*P **P** **04 55 49.0 +0.2**
HSPB IAmb IAmb 04 55 50.1

comp=Z,120nm,1.7s
HSPB Hornsund (broa 44.89 351 *e*P **P** **04 55 49.0 +0.2**
SNR=25
TORD Torodi Ar. Bea 44.92 253 P **P** **04 55 50.9 +1.1**
comp=Z,2.9nm,0.7s,baz=51,slow=8.3,SNR=13
TORD PcP **PcP** **04 57 32.7 +1.5**
comp=Z,0.5nm,0.6s,baz=29,slow=3.0,SNR=2.7
SPA0 Spitsbergen Ar 45.75 352 *e*P **P** **04 55 55.6 -0.1**
SPA0 IAmb IAmb 04 55 58.7

comp=Z,45nm,1.3s
SPA0 Spitsbergen Ar 45.75 352 *e*P **P** **04 55 55.6 -0.1**
SNR=25
SPITS Spitsbergen Ar 45.75 352 P **P** **04 55 54.9 -0.7**
comp=Z,8.0nm,0.4s,baz=143,slow=11,SNR=146

SONM	**Songino Array**	**46.66**	**54**	P	**P**	**04 56 02.2**	**-1.2**
	comp=Z,0.7nm,0.7s,baz=250,slow=4.3,SNR=4.5						
SONM				PcP	**PcP**	**04 57 37.0**	**+0.1**
	comp=Z,0.5nm,0.6s,baz=250,slow=5.2,SNR=3.0						
KBS	**Kingsbay**	**46.88**	**352**	*e*P	**P**	**04 56 04.4**	**0.0**
KBS				IAmb	IAmb	04 56 09.8	
	comp=Z,42nm,1.7s						
KBS	**Kingsbay**	**46.88**	**352**	*e*P	**P**	**04 56 04.5**	**0.0**
KBS				pmax	pmax		
	comp=Z,3.0nm,0.4s						
KBS	**Kingsbay**	**46.88**	**352**	*e*P	**P**	**04 56 04.5**	**0.0**
	comp=Z,3.0nm,0.4s						
KBS	**Kingsbay**	**46.88**	**352**	*e*P	**P**	**04 56 04.5**	**0.0**
	comp=Z,3.1nm,0.4s						
LZH	**Lanzhou**	**47.03**	**70**	*e*P	**P**	**04 56 07.7**	**+1.2**
LZH				pP	pP	04 56 12.4	+1.1
LZH				sP	sP	04 56 14.5	+1.4
LZH				pmax	pmax		
	comp=Z,39nm,1.1s						
LZH				pmax	pmax		
	comp=Z,89nm,6.1s						
ULN	**Ulaanbaatar**	**47.09**	**54***c*	*e*P	**P**	**04 56 07.4**	**+0.6**
ULN				pmax	pmax		
	comp=Z,5.0nm,0.8s						
ULN	**Ulaanbaatar**	**47.09**	**54**	*e*P	**P**	**04 56 07.3**	**+0.5**
	comp=Z,4.4nm,0.8s						
ULN	**Ulaanbaatar**	**47.09**	**54**	*e*P	**P**	**04 56 07.3**	**+0.5**
	comp=Z,4.4nm,0.8s						
CD2	**Chengdu**	**48.56**	**77**	P	**P**	**04 56 17.2**	**-1.1**
CD2				pmax	pmax		
	comp=Z,1.0nm,0.6s						
CHTO	**Chiang Mai**	**49.63**	**94**	*e*P	**P**	**04 56 26.2**	**-0.4**
CHTO				pmax	pmax		
	comp=Z,7.0nm,0.9s						
CHTO	**Chiang Mai**	**49.63**	**94**	*e*P	**P**	**04 56 26.2**	**-0.4**
	comp=Z,7.1nm,0.9s						
CHTO	**Chiang Mai**	**49.63**	**94**	*e*P	**P**	**04 56 26.2**	**-0.4**
	comp=Z,7.1nm,0.9s						
CMAR	**Chiang Mai Arr**	**49.81**	**94**	P	**P**	**04 56 27.3**	**-0.6**
	comp=Z,6.8nm,0.6s,baz=295,slow=8.5,SNR=36						
CMAR				LR	LR	05 21 13.6	
	comp=Z,21nm,19.1s,baz=265,slow=41						
BOD	**Bodaibo**	**50.46**	**40**	*e*P	**P**	**04 56 30.3**	**-2.0**
BOD				*e*		04 57 48.5	
BOD				pmax	pmax		
	comp=Z,8.0nm,1.5s						
BOD	**Bodaibo**	**50.46**	**40**	*e*P	**P**	**04 56 30.3**	**-2.0**
	comp=Z,8.0nm,1.5s						
BOD	**Bodaibo**	**50.46**	**40**	*e*PcP	**PcP**	**04 57 48.5**	**-1.8**
HHC	**Hu-ho-hao-te**	**51.62**	**62**	*e*P	**P**	**04 56 42.6**	**+1.2**
HHC				pmax	pmax		
	comp=Z,34nm,1.1s						
HHC				pmax	pmax		
	comp=Z,130nm,6.8s						
XAN	**Xi'an**	**51.62**	**71**	P	**P**	**04 56 41.4**	**-0.1**
XAN				pmax	pmax		
	comp=Z,20nm,0.7s						
XAN				pmax	pmax		
	comp=Z,22nm,4.1s						
DBIC	**Dimbokro**	**53.94**	**251**	P	**P**	**04 56 59.3**	**+0.5**
	comp=Z,2.0nm,0.7s,baz=31,slow=9.4,SNR=10						
DBIC				LR	LR	05 22 58.8	
	comp=Z,32nm,20.4s,baz=16,slow=39						
KIC	**Kosan Boka**	**54.04**	**251**	*e*PKP1	**P**	**04 57 00.4**	**+0.9**
	comp=Z,13nm,0.8s						
TIC	**Toumodi**	**54.08**	**251**	*e*PKP1	**P**	**04 57 00.4**	**+0.6**
LIC	**Lamto**	**54.35**	**251**	*e*PKP1	**P**	**04 57 01.3**	**-0.4**
TIXI	**Tiksi**	**55.77**	**22**	*e*P	**P**	**04 57 11.1**	**-0.1**
TIXI				pmax	pmax		
	comp=Z,5.0nm,0.6s						
TIXI	**Tiksi**	**55.77**	**22**	*e*P	**P**	**04 57 11.1**	**-0.1**
	comp=Z,5.1nm,0.6s						
TIXI	**Tiksi**	**55.77**	**22**	*e*P	**P**	**04 57 11.1**	**-0.1**
	comp=Z,5.1nm,0.6s						
NJ2	**Nanjing**	**60.10**	**70**	*e*P	**P**	**04 57 43.0**	**+0.8**
NJ2				pmax	pmax		
	comp=Z,17nm,0.5s						
KLR	**Kul'dur**	**62.63**	**47**	P	**P**	**04 57 58.1**	**-1.0**
	comp=Z,2.4nm,0.8s,baz=300,slow=6.2,SNR=8.4						
KLR	**Kul'dur**	**62.63**	**47**	P	**P**	**04 57 58.1**	**-1.0**
KLR				pmax	pmax		
	comp=Z,3.0nm,0.8s						
KLR	**Kul'dur**	**62.63**	**47**	P	**P**	**04 57 58.1**	**-1.0**
	comp=Z,3.0nm,0.8s						
KSAR	**Wonju Array Be**	**64.68**	**61**	P	**P**	**04 58 11.8**	**-1.0**
KSAR	**Wonju Array Be**	**64.68**	**61**	P	**P**	**04 58 11.8**	**-1.0**
KSAR	**Wonju Array Be**	**64.68**	**61**	P	**P**	**04 58 11.8**	**-1.0**
KSRS	**Korea Array**	**64.70**	**61**	P	**P**	**04 58 11.8**	**-1.2**
	comp=Z,3.2nm,0.7s,baz=286,slow=7.5,SNR=13						
USRK	**Ussuriysk Ar.**	**64.73**	**53**	P	**P**	**04 58 12.0**	**-1.0**
	comp=Z,3.9nm,0.7s,baz=279,slow=1.9,SNR=7.2						
BOSA	**Boshof**	**65.45**	**200**	P	**P**	**04 58 19.1**	**+1.3**
	comp=Z,4.3nm,0.6s,baz=18,slow=6.5,SNR=11						
NKL	**Nikolayevsk**	**66.22**	**41**	*e*P	**P**	**04 58 22.0**	**-0.4**
NKL	**Nikolayevsk**	**66.22**	**41**	*e*P	**P**	**04 58 22.0**	**-0.4**
SEY	**Seymchan**	**67.10**	**28**⇑	*i*P	**P**	**04 58 29.0**	**+1.1**
SEY	**Seymchan**	**67.10**	**28**	*i* P	**P**	**04 58 29.0**	**+1.1**
MA2	**Magadan**	**68.14**	**32**	P	**P**	**04 58 33.8**	**-0.7**
	comp=Z,2.5nm,0.5s,baz=259,slow=4.2,SNR=5.2						
BILL	**Bilibino**	**68.86**	**20**⇑	*i*P	**P**	**04 58 39.3**	**+0.3**
BILL				*e*		04 58 59.8	
BILL				pmax	pmax		
	comp=Z,8.0nm,1.0s						
BILL	**Bilibino**	**68.86**	**20**	*e*P	**P**	**04 58 39.2**	**+0.3**
	comp=Z,8.6nm,1.0s						
BILL	**Bilibino**	**68.86**	**20**	*e*P	**P**	**04 58 39.2**	**+0.3**
	comp=Z,8.7nm,1.0s						
SCHQ	**Schefferville**	**74.05**	**326**	P	**P**	**04 59 09.9**	**-0.5**
	comp=Z,2.4nm,0.6s,baz=39,slow=6.2,SNR=7.9						
COLD	**Coldfoot**	**78.09**	**6**	*e*P	**P**	**04 59 33.6**	**+0.4**
	comp=Z,5.8nm,0.8s						
COLD	**Coldfoot**	**78.09**	**6**	*e*P	**P**	**04 59 33.6**	**+0.4**
	comp=Z,5.8nm,0.8s						
COLA	**College**	**80.60**	**6***c*	*e*P	**P**	**04 59 47.6**	**+0.7**
COLA				pmax	pmax		
	comp=Z,9.0nm,0.8s						
COLA	**College**	**80.60**	**6**	*e*P	**P**	**04 59 47.6**	**+0.7**
	comp=Z,9.0nm,0.8s						
ILAR	**Eielson Array**	**80.78**	**5**	P	**P**	**04 59 48.0**	**0.0**
	comp=Z,2.2nm,0.8s,baz=316,slow=3.6,SNR=24						
DOT	**Dot Lake**	**82.09**	**4**	*e*P	**P**	**04 59 55.5**	**+0.5**
	comp=Z,14nm,0.6s						
DOT	**Dot Lake**	**82.09**	**4**	*e*P	**P**	**04 59 55.5**	**+0.5**
	comp=Z,14nm,0.6s						
YKA	**Yellowknife Ar**	**82.24**	**351**	P	**P**	**04 59 55.3**	**-0.4**
	comp=Z,1.2nm,0.5s,baz=8.1,slow=5.2,SNR=38						
SML	**Sawmill**	**83.58**	**7**	*e*P	**P**	**05 00 00.1**	**-2.6**
SML				pmax	pmax		
	comp=Z,3.0nm,0.9s						
SML	**Sawmill**	**83.58**	**7**	*e*P	**P**	**05 00 00.1**	**-2.6**
	comp=Z,3.1nm,0.9s						
DIV	**Divide**	**84.47**	**6**	*e*P	**P**	**05 00 07.9**	**+0.6**
	comp=Z,8.5nm,0.6s						
DIV	**Divide**	**84.47**	**6**	*e*P	**P**	**05 00 07.9**	**+0.6**
	comp=Z,8.5nm,0.6s						
KDAK	**Kodiak Island**	**87.01**	**10**	*i* P	**P**	**05 00 21.6**	**+1.7**
KDAK	**Kodiak Island**	**87.01**	**10**	*i* P	**P**	**05 00 21.6**	**+1.7**

IDC 07 04:53:22.7±2.5**,21°.64N×143°.36E,h324**km±25km**, mb3.2**/10**,mb1 3.3**/11**,mb1mx3.1**/57**,mbtmp4.0**/11**,Error ellipse: s-maj=57.4km s-min=14.2km az=80.0,Mariana Islands region**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
JCJ	**Chichijima**	**5.53**	**349**	P	Pn	04 54 47.3	+0.1
	7.9nm,0.3s,baz=299,slow=22,SNR=5.5						
KSRS	**Korea Array**	**20.66**	**323**	P	P	04 57 37.6	-0.9
	2.1nm,0.5s,baz=147,slow=8.3,SNR=9.7						
KLR	**Kul'dur**	**29.04**	**344**	P	P	04 58 54.0	+0.3
	4.2nm,0.6s,baz=165,slow=6.9,SNR=11						
SONM	**Songino Array**	**39.49**	**320**	P	P	05 00 23.7	+0.9
	0.2nm,0.4s,baz=132,slow=8.3,SNR=2.6						
WRA	**Warramunga Arr**	**42.26**	**193**	P	P	05 00 45.2	-0.2
	1.1nm,0.5s,baz=10,slow=8.6,SNR=4.5						
ASAR	**Alice Springs**	**45.97**	**192**	P	P	05 01 14.4	-0.2
	0.3nm,0.4s,baz=14,slow=9.6,SNR=4.2						
ZALV	**Zalesovo Beam**	**54.36**	**322**	P	P	05 02 16.4	-0.2
	0.5nm,0.3s,baz=117,slow=5.2,SNR=2.6						
MKAR	**Makanchi Array**	**54.86**	**313**	P	P	05 02 20.6	+0.3
	0.2nm,0.3s,baz=100,slow=7.0,SNR=3.1						
BVAR	**Borovoye Array**	**62.82**	**320**	P	P	05 03 14.4	-0.2
	1.6nm,0.3s,baz=102,slow=8.0,SNR=14						
ARCES	**ARCESS Array B**	**79.03**	**342**	P	P	05 04 51.3	+0.3
	2.0nm,0.9s,baz=69,slow=8.3,SNR=7.4						
FINES	**FINESS Array B**	**83.30**	**335**	P	P	05 05 12.4	-1.0
	0.6nm,0.5s,baz=90,slow=1.9,SNR=5.0						

NIED ***07*** *04:55:00,37°.20N×143°.50E,h8km,Mw3.7 Best double couple: $M_0$3.36000×10^{14} NP1:ϕ_s7.00000°,δ34.00000°, λ-70.00000°. NP2:ϕ_s164.00000°,δ58.00000°, λ-103.00000°.*
JMA 07 04:55:55.3±0.3**,37°.21N×143°.49E,h41**km**,M3.7,Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**2.09**	**275**	P	Pn	04 56 29.2	+1.3
JFK				*e*S	Sn	04 56 54.5	+1.8
JIO	**Ouri**	**2.10**	**307**	P	Pn	04 56 28.9	+0.9
JIO				S	Sn	04 56 53.9	+1.0
ONAJ	**Iwakimizuishiy**	**2.15**	**268**	P	Pn	04 56 29.7	+1.0
ONAJ				*e*S	Sn	04 56 55.4	+1.2
JMM	**Marumori**	**2.24**	**288**	P	Pn	04 56 31.1	+1.2
JMM				S	Sn	04 56 58.0	+1.7
JMK	**Ichinoseki**	**2.50**	**315**	S	Sn	04 57 04.3	+1.7
JFT	**Otama**	**2.53**	**278**	*e*S	Sn	04 57 06.1	+2.6
JOM	**Ohasama**	**2.84**	**323**	P	Pn	04 56 39.9	+1.7
JOM				*e*S	Sn	04 57 12.1	+0.9
JYK	**Kaneyama**	**3.00**	**306**	P	Pn	04 56 43.1	+2.7
JYK				*e*S	Sn	04 57 17.9	+2.8
JAG	**Ashikaga**	**3.33**	**258**	P	Pn	04 56 46.2	+1.3
JAG				S	Sn	04 57 24.2	+1.0
JANG	**Nango**	**3.52**	**335**	P	Pn	04 56 49.7	+2.3
JANG				*e*S	Sn	04 57 27.1	-0.6
JRY	**Ryogami san**	**3.88**	**253**	P	Pn	04 56 53.7	+1.3
JRY				*e*S	Sn	04 57 36.1	-0.7
MAT	**Matsushiro**	**4.29**	**263**	P	Pn	04 57 00.8	+2.8
MAT				S	Sn	04 57 50.1	+3.3

ISN ***07*** *04:57:44.5±20.0,34°.27N×45°.59E,h0km±170km,ML3.3*
CSEM ***07*** *04:57:46.6,34°.37N×45°.47E,h7km,ML3.3*
TEH 07 04:57:46.6,34°.37N×45°.47E,h7km**,ML3.3,Iran-Iraq border region**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
IDHR	**Dehrash**	**0.82**	**66**	*e*Pg	Pg	04 58 01.1	-1.4
IDHR				*e*Sg	Sg	04 58 12.4	-0.8
IDHR				*e*AMB	AMB	04 58 14.1	
	comp=Z,22μm,0.2s						
IDHR	**Dehrash**	**0.82**	**66**	*e*Pg	Pg	04 58 01.1	-1.4
IDHR				*e*Sg	Sg	04 58 12.4	-0.8
IGHG	**Ghaleghazi**	**0.91**	**92**	*e*AMB	AMB	04 58 04.2	
	comp=Z,15μm,0.1s						
IGHG				*e*Pg	Pg	04 58 02.0	-2.1
ILIN	**Lien**	**1.35**	**66**	*e*Pg	Pn	04 58 11.3	-0.8
ILIN				*e*AMB	AMB	04 58 14.4	
	comp=Z,6μm,0.1s						
ILIN	**Lien**	**1.35**	**66**	*e*Pg	Pn	04 58 11.3	-0.8
BHD	**Baghdad**	**1.43**	**220**	*e*Pg	Pn	04 58 05.0	-7.9
	baz=45						
BHD				*e*Sg	Sb	04 58 27.0	-4.8
IKOM	**Komasi**	**1.70**	**96**	*e*Pn	Pn	04 58 16.7	-0.1
IKOM				*e*Sg	Sb	04 58 39.8	-0.2
IKOM				*e*AMB	AMB	04 58 47.6	
	comp=Z,8μm,0.3s						
IKOM	**Komasi**	**1.70**	**96**	*e*Pn	Pn	04 58 16.7	-0.1
IKOM				*e*Sg	Sb	04 58 39.8	-0.2
IBZA	**Bozab**	**1.98**	**86**	*e*Pn	Pb	04 58 22.5	-0.6
IBZA				*e*AMB	AMB	04 58 53.6	
	comp=N,10μm,0.3s						
IBZA	**Bozab**	**1.98**	**86**	*e*Pn	Pb	04 58 22.5	-0.6
MSL	**Mosul**	**2.80**	**317**	*e*PN4		04 58 33.8	
MSL				*i* Sn	Sg	04 59 15.0	-1.4
IRAZ	**Razeghan**	**3.81**	**73**	*e*Pn	Pn	04 58 47.3	+1.4
IRAZ				*e*AMB	AMB	04 58 57.9	
	comp=Z,519nm,0.3s						
IRAZ	**Razeghan**	**3.81**	**73**	*e*Pn	Pn	04 58 47.3	+1.4

ISN ***07*** *05:07:58.5±2.4,34°.09N×45°.37E,h35km,ML3.6*
IDC ***07*** *05:07:59.7±1.5,34°.48N×45°.36E,h0km,mb3.7/14, mb1 3.8/16,mb1mx3.7/52,mbtmp3.7/16,ML3.4/2,MS2.9/2, Ms1 2.9/2,ms1mx2.4/38,Error ellipse: s-maj=35.1km s-min=15.3km az=160.0*
ISCJB ***07*** *05:08:00.4±0.4,34°.40N±0°.06×45°.44E±0°.03,h18km, mb3.6/13,Error ellipse: s-maj=9.4km s-min=4.0km az=177.4*
TEH ***07*** *05:08:00.5,34°.35N×45°.49E,h4km,ML3.6*
CSEM ***07*** *05:08:00.4±0.3,34°.37N×45°.53E,h2km,ML3.6,Error ellipse: s-maj=13.1km s-min=6.2km az=177.0*
THR ***07*** *05:08:02.5±0.5,34°.48N×45°.61E,h18km±7km,ML3.5*
NSSC ***07*** *05:08:02.4±1.2,34°.08N×45°.24E,h5km±999km,ML3.4*
ISC 07 05:08:01.2±0.6**,34°.31N**±0°.06×**45°.49E**±0°.04**,h18**km**,n62,** σ**1s89**/62**,mb3.6**/13**,Iran-Iraq border region**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
IDHR	**Dehrash**	**0.83**	**62**	*e*Pg	**Pb**	**05 08 14.7**	**-2.7**
IDHR				*e*Sg	**Sb**	**05 08 26.1**	**-2.2**
IDHR				*e*AMB	AMB	05 08 28.0	
	comp=Z,45μm,0.2s						
IDHR	**Dehrash**	**0.83**	**62**	*e*Pg	**Pb**	**05 08 14.7**	**-2.7**
IDHR				*e*Sg	**Sb**	**05 08 26.1**	**-2.2**
IGHG	**Ghaleghazi**	**0.89**	**88**	*e*Pg	**Pb**	**05 08 17.0**	**-1.3**
IGHG				*e*AMB	AMB	05 08 37.3	
	comp=Z,15μm,0.4s						
IGHG	**Ghaleghazi**	**0.89**	**88**	*e*Pg	**Pb**	**05 08 17.0**	**-1.3**
ILIN	**Lien**	**1.36**	**63**	*e*Pg	**Pn**	**05 08 25.0**	**-0.5**
ILIN				*e*AMB	AMB	05 08 29.0	
	comp=Z,9μm,0.1s						
ILIN	**Lien**	**1.36**	**63**	*e*Pg	**Pn**	**05 08 25.0**	**-0.5**
BHD	**Baghdad**	**1.39**	**222**	*i* Pg	Pn	05 08 18.0	-7.7
	baz=45						
BHD				*i* Sg	Sn	05 08 36.0	-7.6
IKOM	**Komasi**	**1.68**	**94**	*e*Pn	**Pb**	**05 08 31.3**	**-0.4**
IKOM				*e*AMB	AMB	05 09 06.7	
	comp=Z,14μm,0.3s						
IKOM	**Komasi**	**1.68**	**94**	*e*Pn	**Pb**	**05 08 31.3**	**-0.4**
SNGE	**Sanandaj**	**1.72**	**62**	*e*Pg	**Pb**	**05 08 31.5**	**-0.9**
SNGE				AML	AML	05 08 58.7	
	comp=N,844nm,0.6s						
SNGE				AML	AML	05 08 58.8	
	comp=E,753nm,0.6s						
SNGE	**Sanandaj**	**1.72**	**62**	*e*Pg	**Pb**	**05 08 31.5**	**-0.9**
IBZA	**Bozab**	**1.97**	**85**	*e*Pn	**Pn**	**05 08 34.4**	**+0.5**
IBZA				*e*AMB	AMB	05 09 06.1	
	comp=Z,5μm,0.3s						
IBZA	**Bozab**	**1.97**	**85**	*e*Pn	**Pn**	**05 08 34.4**	**+0.5**
MSL	**Mosul**	**2.85**	**318**	*e*Pn	Pn	05 08 38.0	-7.9
MSL				*i* Sn	Sn	05 09 05.0	-15
ZNJK	**Zanjan**	**3.51**	**47**	*e*Pn	**Pn**	**05 08 56.0**	**+0.8**
ZNJK	**Zanjan**	**3.51**	**47**	*e*Pn	**Pn**	**05 08 56.0**	**+0.8**
SHGR	**Shooshtar-Gavs**	**3.54**	**127**	*e*Sg	**Sg**	**05 09 54.2**	**-0.7**
ASAO	**Ashtian**	**3.75**	**85**	*e*Pn	**Pn**	**05 09 00.5**	**+1.9**
ASAO				*e*Sg	**Sb**	**05 09 56.1**	**+3.6**
ASAO				AML	AML	05 10 10.3	
	comp=N,46nm,1.0s						
ASAO	**Ashtian**	**3.75**	**85**	*e*Pn	**Pn**	**05 09 00.4**	**+1.9**
ASAO				*e*Sg	**Sb**	**05 09 56.1**	**+3.6**
IRAZ	**Razeghan**	**3.81**	**72**	*e*AMB	AMB	05 09 11.5	
	comp=Z,878nm,0.3s						
IPIR	**Pirpir**	**4.79**	**108**	*e*Pn	**Pn**	**05 09 12.3**	**-0.6**
IPIR				*e*AMB	AMB	05 10 15.7	
	comp=Z,590nm,0.3s						
IPIR	**Pirpir**	**4.79**	**108**	*e*Pn	**Pn**	**05 09 12.3**	**-0.6**
KBSD	**Kabsdagh**	**4.84**	**305**	*e*P	**Pn**	**05 09 15.2**	**+2.0**
SFNV	**Sufian**	**4.87**	**297**	*e*P	**Pn**	**05 09 16.6**	**+2.8**
GRMI	**Germi**	**4.89**	**23**	*e*Pn	**Pn**	**05 09 14.7**	**+0.7**
GRMI	**Germi**	**4.89**	**23**	*e*Pn	**Pn**	**05 09 14.7**	**+0.7**
IKLH	**Kolahrood**	**5.16**	**99**	*e*Pn	**Pn**	**05 09 20.0**	**+2.1**
IKLH				*e*AMB	AMB	05 11 01.4	
	comp=Z,668nm,0.5s						
IKLH	**Kolahrood**	**5.16**	**99**	*e*Pn	**Pn**	**05 09 20.0**	**+2.1**
IVRN	**Varamin**	**5.18**	**81**	*e*AMB	AMB	05 09 40.4	
	comp=Z,587nm,0.4s						
MNKR	**ALMNKUR**	**5.35**	**289**	*e*P	**Pn**	**05 09 21.6**	**+1.4**
MNKR	**ALMNKUR**	**5.35**	**289**	*e*P	**Pn**	**05 09 21.6**	**+1.4**
IDMV	**Damavand**	**5.52**	**75**	*e*Pn	**Pn**	**05 09 23.0**	**+0.2**
IDMV				*e*AMB	AMB	05 09 43.7	
	comp=Z,312nm,0.3s						
IDMV	**Damavand**	**5.52**	**75**	*e*Pn	**Pn**	**05 09 23.0**	**+0.2**
GNI	**Garni**	**5.86**	**354**	Pn	**Pn**	**05 09 25.9**	**-1.4**
	comp=Z,0.5nm,0.3s,baz=208,slow=18,SNR=2.3						
GNI				Pg	**Pb**	**05 09 46.2**	**+3.3**
	comp=Z,0.9nm,0.3s,baz=220,slow=9.6,SNR=4.7						
GNI				Lg	Lg	05 11 00.0	
	comp=Z,0.7nm,0.3s,baz=328,slow=12,SNR=2.2						
IZEF	**Zefreh**	**5.88**	**102**	*e*Pn	**Pn**	**05 09 30.6**	**+2.9**
IZEF				*e*AMB	AMB	05 11 21.4	
	comp=Z,134nm,0.4s						
IZEF	**Zefreh**	**5.88**	**102**	*e*Pn	**Pn**	**05 09 30.6**	**+2.9**
ZALF	**Zalf**	**6.94**	**261**	*e*P	**Pn**	**05 09 43.0**	**+0.8**
ZALF				*e*S	**Sn**	**05 10 54.3**	**-6.4**
ZALF				AML	AML	05 12 00.8	
	comp=N,59nm,0.7s						
ZALF				AML	AML	05 12 14.4	
	comp=E,38nm,0.7s						
ZALF	**Zalf**	**6.94**	**261**	*e*P	**Pn**	**05 09 43.0**	**+0.8**
SALA	**Sala**	**7.49**	**260**	*e*P	**Pn**	**05 09 49.9**	**+0.2**
SALA				AML	AML	05 12 15.1	
	comp=N,109nm,0.7s						
SALA				AML	AML	05 12 20.4	
	comp=E,6.4nm,0.6s						
SALA	**Sala**	**7.49**	**260**	*e*P	**Pn**	**05 09 49.9**	**+0.2**
ASF	**Jabal al Asfar**	**7.51**	**256**	Pn	**Pn**	**05 09 50.3**	**+0.4**
	comp=E,0.6nm,0.3s,baz=238,slow=1.5,SNR=6.3						
ASF				Pg	Pb	05 10 17.9	+6.9
	comp=E,0.4nm,0.3s,baz=11,slow=16,SNR=2.7						
ASF				Lg	Lg	05 11 55.3	
	comp=E,1.0nm,0.3s,baz=308,slow=0.3,SNR=3.3						
BTCH	**Batrach**	**7.59**	**286**	*e*P	**Pn**	**05 09 53.9**	**+2.8**
BTCH				*e*S	**Sn**	**05 11 13.0**	**-3.8**
BTCH				AML	AML	05 12 21.4	
	comp=N,106nm,0.7s						
BTCH				AML	AML	05 12 32.8	
	comp=E,93nm,0.6s						
BTCH	**Batrach**	**7.59**	**286**	*e*P	**Pn**	**05 09 53.9**	**+2.8**
MMAI	**Mount Meron Ar**	**8.51**	**264**	Pn	**Pn**	**05 10 06.2**	**+2.5**
	comp=E,0.9nm,0.3s,baz=78,slow=16,SNR=2.2						
MMAI				Lg	Lg	05 12 29.0	
	comp=E,2.0nm,0.3s,baz=90,slow=23,SNR=3.6						
MMAI				LR	LR	05 14 14.0	
	comp=E,78nm,18.2s,baz=65,slow=44						
KBZ	**Khabaz**	**9.62**	**349**	Pn	Pn	05 10 24.5	+5.8
	comp=E,0.0nm,0.3s,baz=142,slow=17,SNR=2.2						
EIL	**Elat**	**10.07**	**246**	Pg	Pg	05 11 10.8	
	comp=E,0.4nm,0.3s,baz=66,slow=12,SNR=2.5						
EIL				Lg	Lg	05 13 18.3	
	comp=E,0.6nm,0.3s,baz=68,slow=16,SNR=3.8						
GEYT	**Alibeck**	**10.83**	**67**	LR	LR	05 15 03.7	
	comp=E,65nm,20.4s,baz=230,slow=39						
AKTO	**Aktyubinsk**	**18.54**	**26**	P	**Pn**	**05 12 16.4**	**-0.6**
	comp=E,0.1nm,0.3s,baz=206,slow=9.7,SNR=4.9						
AKASG	**Malin Array Be**	**20.23**	**329**	P	**P**	**05 12 34.5**	**-0.7**
	comp=E,0.1nm,0.3s,baz=135,slow=10,SNR=5.3						
BVAR	**Borovoye Array**	**25.75**	**36**	P	**P**	**05 13 31.7**	**+1.1**
	comp=E,1.1nm,0.7s,baz=224,slow=8.3,SNR=8.2						
KURBB	**Kurchatov Arra**	**29.01**	**46**	P	**P**	**05 14 00.7**	**+0.8**
	comp=E,0.7nm,0.8s,baz=252,slow=8.9,SNR=6.2						
FINES	**FINESS Array B**	**29.87**	**341**	P	**P**	**05 14 06.2**	**-1.1**
	comp=E,0.8nm,0.6s,baz=140,slow=15,SNR=3.8						
MKAR	**Makanchi Array**	**30.34**	**55**	P	**P**	**05 14 13.6**	**+1.8**
	comp=E,0.3nm,0.4s,baz=245,slow=9.4,SNR=3.0						
HFS	**Hagfors**	**33.08**	**331**	P	**P**	**05 14 35.3**	**-0.4**
	comp=E,4.2nm,0.6s,baz=137,slow=13,SNR=10						
ZALV	**Zalesovo Beam**	**33.79**	**42**	P	**P**	**05 14 42.5**	**+0.6**
	comp=E,0.3nm,0.3s,baz=285,slow=7.3,SNR=2.3						
ARCES	**ARCESS Array B**	**36.98**	**348**	P	**P**	**05 15 08.9**	**-0.3**
	comp=E,1.7nm,0.8s,baz=164,slow=10.0,SNR=3.9						
EKA	**Eskdalemuir Ar**	**39.38**	**317**	P	**P**	**05 15 28.9**	**-0.6**
	comp=E,1.1nm,0.7s,baz=97,slow=8.8,SNR=4.5						
ESDC	**Sonseca Array**	**39.46**	**293**	P	**P**	**05 15 31.3**	**+0.8**
	comp=E,0.2nm,0.3s,baz=80,slow=9.4,SNR=4.0						
TORD	**Torodi Ar. Bea**	**44.86**	**253**	P	**P**	**05 16 15.2**	**+0.4**
	comp=E,0.5nm,0.8s,baz=49,slow=7.7,SNR=4.6						
SPITS	**Spitsbergen Ar**	**45.72**	**352**	P	**P**	**05 16 20.4**	**-0.4**
	comp=E,1.4nm,0.5s,baz=144,slow=11,SNR=18						
ILAR	**Eielson Array**	**80.77**	**5**	P	**P**	**05 20 12.8**	**-0.4**
	comp=E,0.4nm,0.8s,baz=342,slow=3.8,SNR=4.5						
YKA	**Yellowknife Ar**	**82.21**	**351**	P	**P**	**05 20 20.5**	**-0.4**
	comp=E,0.1nm,0.6s,baz=326,slow=32,SNR=4.7						

ISCJB ***07*** *05:10:53.4±0.5,38°.98N±0°.03×111°.44W±0°.04,h7km, mb3.1/1,Error ellipse: s-maj=5.1km s-min=4.4km az=43.1*
NEIC ***07*** *05:10:54.0,39°.00N×111°.38W,h7km,ML2.8(SLC),After SLC.*
IDC ***07*** *05:10:56.0±0.9,39°.04N×111°.36W,h0km,mb3.2/1, mb1 3.3/5,mb1mx3.2/61,mbtmp2.9/5,ML3.0/4,Error ellipse: s-maj=13.8km s-min=9.9km az=111.0*
ISC 07 05:10:55.8±0.7**,39°.00N**±0°.04×**111°.48W**±0°.03**,h7**km**,n53,** σ**1s70**/59**,Utah**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
DUG	**Dugway, Tooele**	**1.58**	**320**	P	**Pn**	**05 11 23.9**	**-0.4**
	baz=137						
DUG	**Dugway, Tooele**	**1.58**	**320**	*e*Pn	**Pn**	**05 11 23.8**	**-0.5**
PV04	**Paradox Valley**	**2.10**	**106**	*e*Pn	**Pn**	**05 11 31.8**	**+0.1**
PV01	**Paradox Valley**	**2.44**	**110**	*e*Pn	**Pn**	**05 11 36.2**	**-0.1**
HWUT	**Hardware Ranch**	**2.60**	**359**	*e*Pn	**Pn**	**05 11 39.5**	**+1.0**
HWUT				*e*Sg	**Sg**	**05 12 21.5**	**+2.0**
O20A	**White River Ci**	**2.75**	**65**	Pb	**Pn**	**05 11 42.1**	**+1.6**
	baz=246						
O20A	**White River Ci**	**2.75**	**65**	*e*Pn	**Pn**	**05 11 42.1**	**+1.6**
O20A				*e*Sn	**Sb**	**05 12 18.2**	**-1.2**
MVCO	**Mesa Verde**	**2.95**	**126**	Pb	**Pn**	**05 11 44.0**	**+0.6**
	baz=309						
MVCO	**Mesa Verde**	**2.95**	**126**	*e*Pn	**Pn**	**05 11 43.9**	**+0.6**
MVCO				*e*Sg	**Sg**	**05 12 30.0**	**-0.8**
R11A	**Troy Canyon, C**	**3.28**	**260**	P	**Pb**	**05 11 54.9**	**+0.5**
	baz=78						
R11A	**Troy Canyon, C**	**3.28**	**260**	Pn	**Pn**	**05 11 44.4**	**-3.4**
R11A				*e*Sg	**Sg**	**05 12 42.1**	**+1.0**
WUAZ	**Wupatki**	**3.48**	**179**	P	**Pn**	**05 11 53.4**	**+2.9**
	baz=360						
SMCO	**Snowmass**	**3.51**	**86**	*e*Pn	**Pn**	**05 11 51.8**	**+0.6**
SMCO				*e*Sg	**Sb**	**05 12 42.5**	**+0.9**
AHID	**Auburn Hatcher**	**3.77**	**4**	*e*Pn	**Pn**	**05 11 55.2**	**+0.6**
BW06	**Boulder Array**	**4.04**	**21**	P	**Pb**	**05 12 07.4**	**+0.1**
	baz=201						
BW06	**Boulder Array**	**4.04**	**21**	Pn	**Pn**	**05 11 59.0**	**+0.8**
PDAR	**Pinedale Array**	**4.04**	**21**	Pn	**Pn**	**05 11 58.9**	**+0.7**
	0.2nm,0.3s,baz=200,slow=7.7,SNR=7.8						
PDAR				Pg	**Pb**	**05 12 08.0**	**+0.6**
	0.4nm,0.3s,baz=200,slow=15,SNR=26						
PDAR				Lg	Lg	05 13 02.8	
	0.4nm,0.3s,baz=197,slow=23,SNR=3.6						
W18A	**Petrified Fore**	**4.12**	**160**	P	**Pb**	**05 12 10.3**	**+1.5**
	baz=342						
W18A	**Petrified Fore**	**4.12**	**160**	Pn	**Pn**	**05 12 01.5**	**+2.2**
REDW	**Red Top Meadow**	**4.38**	**6**	*e*Pn	**Pn**	**05 12 04.6**	**+1.6**
SNOW	**Snow King Moun**	**4.49**	**7**	Pn	Pn	05 11 59.1	-5.4
LOHW	**Long Hollow**	**4.66**	**8**	*e*Pn	Pn	05 12 01.4	-5.3
MOOW	**Moose Ponds**	**4.78**	**6**	*e*Pn	**Pn**	**05 12 06.2**	**-2.2**
SDCO	**Great Sand Dun**	**4.86**	**103**	P	**Pn**	**05 12 09.7**	**0.0**
	baz=287						
SDCO	**Great Sand Dun**	**4.86**	**103**	*e*Pn	**Pn**	**05 12 09.8**	**+0.1**
IMW	**Indian Meadow**	**4.91**	**5**	Pn	**Pn**	**05 12 06.1**	**-4.2**
PHWY	**Pilot Hill**	**5.16**	**62**	Pn	**Pn**	**05 12 10.9**	**-2.8**
	5.7nm,0.8s						
K22A	**Casper**	**5.24**	**44**	P	**Pn**	**05 12 15.4**	**+0.7**
	baz=227						
K22A	**Casper**	**5.24**	**44**	*e*Pn	**Pn**	**05 12 15.8**	**+1.1**
	25nm,0.8s						
NVAR	**Mina Array Bea**	**5.37**	**266**	Pn	**Pn**	**05 12 20.4**	**+3.9**
	0.1nm,0.3s,baz=77,slow=14,SNR=4.5						
NVAR				Pg	**Pb**	**05 12 30.5**	**+0.5**
	0.1nm,0.3s,baz=81,slow=14,SNR=5.0						
NVAR				Lg	Lg	05 13 40.3	
	0.1nm,0.3s,baz=122,slow=20,SNR=2.2						
ANMO	**Albuquerque**	**5.71**	**134**	Pn	**Pn**	**05 12 20.4**	**-0.8**
	0.4nm,0.3s,baz=311,slow=9.3,SNR=19						
ANMO				Pg	**Pg**	**05 12 41.0**	**-4.1**
	0.4nm,0.3s,baz=338,slow=14,SNR=7.9						
ANMO				Lg	Lg	05 13 50.3	
	0.2nm,0.3s,baz=172,slow=2.8,SNR=3.9						
ANMO	**Albuquerque**	**5.71**	**134**	P	**Pn**	**05 12 19.9**	**-1.3**
	baz=317						
TUC	**Tucson**	**6.70**	**175**	Pg	**Pg**	**05 13 01.3**	**-2.8**
	6.3nm,0.9s						
RSSD	**Black Hills**	**7.57**	**45**	P	**Pn**	**05 12 45.0**	**-1.8**
	baz=230						
RSSD	**Black Hills**	**7.57**	**45**	*e*Pn	**Pn**	**05 12 45.6**	**-1.2**
	5.6nm,1.0s						
H25A	**Fruitdale**	**8.13**	**44**	P	**Pn**	**05 12 53.3**	**-1.1**
	baz=229						
J27A	**Elkhorn Farm,**	**8.32**	**56**	P	**Pn**	**05 12 56.7**	**-0.2**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
	baz=242						
H26A	Fairpoint	8.59	46	P	Pn	05 13 00.8	+0.3
	baz=232						
LAO	LASA Array	8.60	25	P	Pn	05 13 00.2	-0.5
	baz=208						
G25A	Newell	8.61	41	P	Pn	05 13 00.6	-0.3
	baz=226						
SNCC	San Nicolas Is	8.67	231	P	Pn	05 13 01.9	+0.1
	baz=46						
J28A	Allard Ranch,	8.89	57	P	Pn	05 13 04.6	-0.2
	baz=243						
EGMT	Eagleton	9.11	7	P	Pn	05 13 09.2	+1.5
	baz=188						
G26A	Maurine	9.11	43	P	Pn	05 13 06.1	-1.7
	baz=229						
J29A	Okreek	9.49	59	P	Pn	05 13 13.2	+0.3
	baz=246						
F27A	Lemmon	9.80	42	P	Pn	05 13 15.6	-1.5
	baz=228						
D26A	Manning	10.40	37	P	Pn	05 13 24.1	-1.3
	baz=222						
E28A	Huff	10.95	43	P	Pn	05 13 31.2	-1.7
	baz=230						
TXAR	Lajitas Array	11.61	144	Pn	Pn	05 13 45.8	+3.8
	0.0nm,0.3s,baz=328,slow=12,SNR=3.2						
TXAR				Pg	Pg	05 14 31.3	
	0.0nm,0.3s,baz=342,slow=10,SNR=4.1						
H32A	Carlson Farm,	11.84	58	P	Pn	05 13 44.1	-1.0
	baz=247						
H33A	Prehn Over Nor	12.36	58	P	Pn	05 13 50.7	-1.5
	baz=248						
ULM	Lac du Bonnet	15.77	39	Pn	Pn	05 14 39.8	+1.5
	0.1nm,0.3s,baz=249,slow=13,SNR=3.7						
YKA	Yellowknife Ar	23.60	356	P	P	05 16 08.0	+1.1
	0.8nm,1.0s,baz=172,slow=9.6,SNR=11						

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*ISN **07** 05:15:57.1±0.3, 34°.92N×45°.03E, h0km, ML4.1*
*IDC **07** 05:16:10.4±0.8, 34°.38N×45°.51E, h0km, mb3.9/17, mb1 4.0/19, mb1mx3.8/58, mbtmp3.9/19, ML3.9/2, MS3.2/3, Ms1 3.2/3, ms1mx2.6/31, Error ellipse: s-maj=18.9km s-min=16.0km az=141.0*
*ISCJB **07** 05:16:11.7±0.5, 34°.40N±0°.06×45°.39E±0°.04, h18km, mb3.9/16, MS3.3/2, Error ellipse: s-maj=8.5km s-min=5.1km az=9.8*
*CSEM **07** 05:16:11.1±0.3, 34°.46N×45°.42E, h2km, ML4.1, Error ellipse: s-maj=8.7km s-min=5.7km az=14.0*
*THR **07** 05:16:12.0±0.3, 34°.36N×45°.48E, h15km±5km, ML4.0*
*TEH **07** 05:16:13.1, 34°.44N×45°.49E, h5km, ML4.1*
*NEIC **07** 05:16:13.0, 34°.44N×45°.49E, h5km, mb3.6/1, MN4.1(TEH), After TEH.*

ISC 07 05:16:13.7±0.5**, 34°.41N**±0°.05×**45°.59E**±0°.05**, h18km, n63, σ1s.42**/63**, mb3.9**/16**, Iran-Iraq border region**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
IDHR	Dehrash	0.71	66	ePg	Pb	05 16 26.6	-1.1
IDHR				eAMB	AMB	05 16 39.1	
	comp=Z,84μm,0.2s						
IDHR	Dehrash	0.71	66	ePg	Pb	05 16 26.6	-1.1
IGHG	Ghaleghazi	0.81	96	ePg	Pb	05 16 29.1	-0.3
IGHG				eAMB	AMB	05 16 44.0	
	comp=Z,97μm,0.2s						
IGHG	Ghaleghazi	0.81	96	ePg	Pb	05 16 29.1	-0.3
ILIN	Lien	1.24	66	ePg	Pn	05 16 36.6	+0.3
ILIN				eAMB	AMB	05 16 58.2	
	comp=Z,20μm,0.2s						
ILIN	Lien	1.24	66	ePg	Pn	05 16 36.6	+0.3
SNGE	Sanandaj	1.60	64	ePg	Pb	05 16 43.3	+0.5
SNGE				eSg	Sg	05 17 06.2	+0.9
SNGE				AML	AML	05 17 10.2	
	comp=E,1μm,0.8s						
SNGE				AML	AML	05 17 10.5	
	comp=N,2μm,0.7s						
SNGE	Sanandaj	1.60	64	ePn	Pb	05 16 43.3	+0.5
SNGE				eSg	Sg	05 17 06.2	+0.9
IKOM	Komasi	1.61	98	ePn	Pb	05 16 43.9	+1.0
IKOM				eSg	Sg	05 17 06.0	+0.4
IKOM				eAMB	AMB	05 17 09.7	
	comp=Z,73μm,0.3s						
IKOM	Komasi	1.61	98	ePn	Pb	05 16 43.9	+1.0
IKOM				eSg	Sg	05 17 06.0	+0.4
IBZA	Bozab	1.88	88	eAMB	AMB	05 17 18.1	
	comp=Z,27μm,0.2s						
MSL	Mosul	2.83	315	i Pg	Pn	05 16 45.0	-13
	baz=133						
MSL				eSG	Sn	05 17 18.5	-13
ZNJK	Zanjan	3.38	47	ePn	Pn	05 17 07.9	+2.1
ZNJK				eSg	Sg	05 18 00.7	-1.6
ZNJK	Zanjan	3.38	47	ePn	Pn	05 17 07.9	+2.1
ZNJK				eSg	Sg	05 18 00.7	-1.6
SHGR	Shooshtar-Gavs	3.54	130	ePn	Pn	05 17 09.1	+1.4
SHGR				AML	AML	05 18 29.1	
	comp=N,278nm,0.6s						
SHGR				AML	AML	05 18 29.1	
	comp=E,346nm,0.6s						
SHGR	Shooshtar-Gavs	3.54	130	ePn	Pn	05 17 08.8	+1.1
ASAO	Ashtian	3.67	87	ePn	Pn	05 17 11.7	+2.0
ASAO	Ashtian	3.67	87	ePn	Pn	05 17 11.7	+2.0
KHMZ	Khomeyn	3.69	99	ePn	Pn	05 17 11.9	+1.9
KHMZ	Khomeyn	3.69	99	ePn	Pn	05 17 11.9	+1.9
IRAZ	Razeghan	3.70	73	ePn	Pn	05 17 13.2	+3.1
IRAZ				eAMB	AMB	05 18 27.3	
	comp=Z,3μm,0.3s						
IRAZ	Razeghan	3.70	73	ePn	Pn	05 17 13.2	+3.1
IPIR	Pirpir	4.75	110	ePn	Pn	05 17 19.5	-5.2
IPIR				eAMB	AMB	05 18 23.0	
	comp=Z,3μm,0.4s						
GRMI	Germi	4.76	22	ePn	Pn	05 17 26.7	+2.1
GRMI	Germi	4.76	22	ePn	Pn	05 17 26.7	+2.1
IVRN	Varamin	5.09	82	ePn	Pn	05 17 30.4	+1.3
IVRN				eAMB	AMB	05 17 52.8	
	comp=Z,1μm,0.4s						
IVRN	Varamin	5.09	82	ePn	Pn	05 17 30.4	+1.3
IKLH	Kolahrood	5.10	101	ePn	Pn	05 17 31.0	+1.6
IKLH				eAMB	AMB	05 18 40.3	
	comp=Z,1μm,0.2s						
IKLH	Kolahrood	5.10	101	ePn	Pn	05 17 31.0	+1.6
IDMV	Damavand	5.41	76	ePn	Pn	05 17 35.1	+1.4
IDMV	Damavand	5.41	76	ePn	Pn	05 17 35.1	+1.4
IGAR	Gharneh	5.75	109	ePn	Pn	05 17 38.5	+0.1
IGAR				eAMB	AMB	05 18 47.8	
	comp=Z,2μm,0.3s						
GNI	Garni	5.76	354	Pn	Pn	05 17 44.4	+5.9
	comp=Z,0.8nm,0.3s,baz=99,slow=19,SNR=2.3						
GNI				Pg	Pb	05 17 58.6	+4.9
	comp=Z,1.0nm,0.3s,baz=63,slow=22,SNR=3.1						
GNI				Lg	Lg	05 19 13.4	
	comp=Z,0.4nm,0.3s,baz=288,slow=11,SNR=3.6						
IZEF	Zefreh	5.82	103	ePn	Pn	05 17 40.9	+1.6
IZEF				eAMB	AMB	05 18 53.3	
	comp=Z,565nm,0.3s						
IZEF	Zefreh	5.82	103	ePn	Pn	05 17 40.9	+1.6
ASF	Jabal al Asfar	7.61	255	Pn	Pn	05 18 05.2	+1.4
	comp=Z,0.4nm,0.3s,baz=19,slow=7.9,SNR=3.5						
ASF				Pg	Pb	05 18 38.3	+13
	comp=Z,0.4nm,0.3s,baz=28,slow=12,SNR=5.7						
ASF				Lg	Lg	05 20 12.9	
	comp=Z,1.5nm,0.3s,baz=206,slow=23,SNR=4.9						
MMAI	Mount Meron Ar	8.60	264	Pn	Pn	05 18 20.5	+3.1
	comp=Z,0.8nm,0.3s,baz=69,slow=13,SNR=3.1						
MMAI				Pg	Pg	05 18 50.2	
	comp=Z,0.6nm,0.3s,baz=80,slow=16,SNR=2.4						
MMAI				Lg	Lg	05 20 50.4	
	comp=Z,1.6nm,0.3s,baz=80,slow=29,SNR=5.3						
EIL	Elat	10.19	245	Pg	Pg	05 19 20.9	
	comp=Z,0.6nm,0.3s,baz=27,slow=13,SNR=3.6						
EIL				Lg	Lg	05 21 33.9	
	comp=Z,0.5nm,0.3s,baz=98,slow=10,SNR=4.1						
GEYT	Alibeck	10.71	67	LR	LR	05 23 47.9	
	comp=Z,88nm,18.5s,baz=140,slow=42						
WSAR	Wadi Sarin	15.94	131	Pn	Pn	05 19 54.2	-2.8
	comp=Z,1.4nm,0.3s,baz=5.5,slow=18,SNR=12						
ABKAR	Akbulak array	18.23	31	eP	P	05 20 26.7	+0.9
	comp=Z,3.5nm,0.7s						
ABKAR	Akbulak array	18.23	31	eP	P	05 20 26.7	+0.9
	comp=Z,3.5nm,0.7s						
AKTO	Aktyubinsk	18.41	26	P	Pn	05 20 28.1	+0.4
	comp=Z,0.1nm,0.3s,baz=221,slow=10,SNR=10						
AKASG	Malin Array Be	20.18	329	P	P	05 20 47.2	+0.1
	comp=Z,0.9nm,0.6s,baz=138,slow=9.3,SNR=3.6						
KECS	Kecovo	23.35	315	eP	P	05 21 22.2	+1.3
BVAR	Borovoye Array	25.62	36	P	P	05 21 42.5	+0.6
	comp=Z,1.9nm,0.6s,baz=233,slow=9.2,SNR=14						
KURBB	Kurchatov Arra	28.88	46	P	P	05 22 12.4	+1.2
	comp=Z,1.5nm,0.8s,baz=252,slow=9.0,SNR=11						
KURK	Kurchatov	28.96	46	P	P	05 22 12.4	+0.5
KURK	Kurchatov	28.96	46	P	P	05 22 12.4	+0.5
FINES	FINESS Array B	29.79	341	P	P	05 22 18.3	-0.8
	comp=Z,0.7nm,0.5s,baz=134,slow=9.9,SNR=3.4						
MKAR	Makanchi Array	30.21	55	P	P	05 22 24.3	+1.3
	comp=Z,0.3nm,0.5s,baz=263,slow=7.7,SNR=4.6						
HFS	Hagfors	33.03	331	P	P	05 22 47.1	-0.5
	comp=Z,1.6nm,0.7s,baz=139,slow=9.5,SNR=6.0						
ZALV	Zalesovo Beam	33.66	42	P	P	05 22 52.7	-0.5
	comp=Z,0.4nm,0.3s,baz=244,slow=6.1,SNR=3.7						
ARCES	ARCESS Array B	36.90	348	P	P	05 23 20.4	-0.5
	comp=Z,2.3nm,0.9s,baz=148,slow=6.0,SNR=4.5						
EKA	Eskdalemuir Ar	39.36	317	P	P	05 23 40.5	-1.2
	comp=Z,0.4nm,0.5s,baz=101,slow=10,SNR=3.6						
TORD	Torodi Ar. Bea	44.97	253	P	P	05 24 27.2	-0.8
	comp=Z,0.6nm,0.7s,baz=54,slow=6.2,SNR=6.2						
TORD				LR	LR	05 47 36.9	
	comp=Z,16nm,18.7s,baz=270,slow=42						
SPITS	Spitsbergen Ar	45.63	352	P	P	05 24 32.7	+0.2
	comp=Z,5.1nm,0.9s,baz=130,slow=13,SNR=18						
CMAR	Chiang Mai Arr	49.80	94	P	P	05 25 04.7	-0.9
	comp=Z,1.7nm,0.6s,baz=293,slow=8.7,SNR=7.3						
DBIC	Dimbokro	53.99	251	P	P	05 25 35.9	-1.0
	comp=Z,3.5nm,1.2s,baz=34,slow=3.6,SNR=3.7						
BOSA	Boshof	65.57	200	P	P	05 26 56.5	+0.2
	comp=Z,3.1nm,0.6s,baz=360,slow=4.5,SNR=7.5						
BOSA				LR	LR	05 56 35.9	
	comp=Z,31nm,18.1s,baz=210,slow=37						
SEY	Seymchan	66.98	28	P	P	05 27 05.0	+0.1
	comp=Z,1.9nm,0.5s,baz=276,slow=5.4,SNR=11						
ILAR	Eielson Array	80.66	5	P	P	05 28 23.8	-1.2
	comp=Z,0.4nm,0.8s,baz=337,slow=3.4,SNR=5.1						
YKA	Yellowknife Ar	82.12	351	P	P	05 28 31.4	-1.4
	comp=Z,0.2nm,0.5s,baz=357,slow=5.1,SNR=5.8						

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*ISN **07** 05:37:08.1±0.3, 34°.77N×45°.22E, h0km, ML3.5*
*CSEM **07** 05:37:18.6±0.7, 34°.55N×45°.67E, h2km, ML3.5, Error ellipse: s-maj=15.4km s-min=9.4km az=53.0*

TEH 07 05:37:19.0, 34°.33N×45°.62E, h7km, ML3.5, Iran-Iraq border region

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
IDHR	Dehrash	0.73	60	ePg	Pg	05 37 30.6	-2.5
IDHR				eSg	Sg	05 37 42.5	-0.2
IDHR				eAMB	AMB	05 37 43.2	
	comp=Z,32μm,0.2s						
IDHR	Dehrash	0.73	60	ePg	Pg	05 37 30.6	-2.5
IGHG	Ghaleghazi	0.79	90	ePg	Pg	05 37 32.9	-1.2
IGHG				eAMB	AMB	05 37 52.4	
	comp=Z,16μm,0.2s						
IGHG	Ghaleghazi	0.79	90	ePg	Pg	05 37 32.9	-1.2
ILIN	Lien	1.25	62	ePg	Pg	05 37 40.8	-2.3
ILIN				eAMB	AMB	05 37 45.1	
	comp=Z,6μm,0.1s						
ILIN	Lien	1.25	62	ePg	Pg	05 37 40.8	-2.3
IKOM	Komasi	1.57	95	ePn	Pn	05 37 47.4	-0.1
IKOM				eAMB	AMB	05 38 17.4	
	comp=Z,11μm,0.3s						
IKOM	Komasi	1.57	95	ePn	Pn	05 37 47.4	-0.1
SNGE	Sanandaj	1.61	61	ePg	Pn	05 37 47.2	-0.9
SNGE				eSg	Sb	05 38 10.3	+0.4
IBZA	Bozab	1.86	85	eSg	Sb	05 38 16.9	-0.1
IBZA				eAMB	AMB	05 38 22.0	
	comp=Z,6μm,0.3s						
IBZA	Bozab	1.86	85	eSg	Sb	05 38 16.9	-0.1
MSL	Mosul	2.91	316	ePg	Pn	05 38 01.0	-4.7
	baz=133						
MSL				eSg	Sn	05 38 38.0	-3.0
ZNJK	Zanjan	3.42	46	ePn	Pn	05 38 10.8	-2.2
IBST	Bostanabad	3.52	17	ePn	Pn	05 38 12.0	-2.3
IBST				eAMB	AMB	05 39 14.9	
	comp=N,440nm,0.3s						
IBST	Bostanabad	3.52	17	ePn	Pn	05 38 12.0	-2.3
ASAO	Ashtian	3.65	85	ePn	Pn	05 38 16.1	0.0
ASAO				eSg	Sg	05 39 14.4	-1.8
KHMZ	Khomeyn	3.65	98	ePn	Pn	05 38 16.4	+0.3
ISHB	Shabestar	3.94	360	ePn	Pb	05 38 24.9	-4.1
ISHB				eAMB	AMB	05 39 29.0	
	comp=E,1μm,0.3s						
IPIR	Pirpir	4.70	109	ePn	Pn	05 38 33.4	+2.8
IPIR				eAMB	AMB	05 39 30.6	
	comp=Z,600nm,0.4s						
IPIR	Pirpir	4.70	109	ePn	Pn	05 38 33.4	+2.8
GRMI	Germi	4.83	22	ePn	Pn	05 38 28.4	-3.8
IKLH	Kolahrood	5.06	100	ePn	Pn	05 38 35.2	-0.4
IKLH				eAMB	AMB	05 39 44.2	
	comp=Z,353nm,0.2s						
IKLH	Kolahrood	5.06	100	ePn	Pn	05 38 35.2	-0.4
IZEF	Zefreh	5.78	102	ePn	Pn	05 38 44.5	-0.9
IZEF				eAMB	AMB	05 39 54.7	
	comp=Z,100nm,0.2s						
IZEF	Zefreh	5.78	102	ePn	Pn	05 38 44.5	-0.9

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*ISCJB **07** 05:59:26.7±1.1, 32°.20S±0°.08×69°.58W±0°.08, h121km±11km, Error ellipse: s-maj=16.1km s-min=6.8km az=138.9*
*SJA **07** 05:59:26.7±0.6, 32°.19S×69°.57W, h113km±4km, ML2.7, MW2.8*
*GUC **07** 05:59:27.0±0.4, 32°.20S×69°.91W, h139km±15km, ML2.9*

ISC 07 05:59:27.6±1.9**, 32°.20S**±0°.07×**69°.57W**±0°.07**, h114km**±14km**, n17, σ0s.30**/20**, Mendoza Province**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
AUSP	Uspallata	0.15	99	eP	Pn	05 59 43.6	-0.1
AUSP				eS	Sn	05 59 56.1	+0.1
RTLS	Leoncito	0.46	30	eP	Pn	05 59 45.0	-0.1
ASAL	Salagasta	0.73	122	eP	Pn	05 59 46.6	-0.1
ARCO	CERRO ARCO	0.83	140	eP	Pn	05 59 47.9	+0.2
ARCO				IAML		06 00 04.4	
	comp=Z,390nm,0.2s						
RTCV	Cerro Valdivia	0.94	69	eP	Pn	05 59 48.2	-0.3
AAGR	Agrelo	1.08	145	eP	Pn	05 59 50.2	+0.1
RTLL	Cerro Villicun	1.27	47	eP	Pn	05 59 51.9	-0.2
PEL	Peldehue	1.33	225	i P	Pn	05 59 52.6	-0.1
PEL				i S	Sn	06 00 11.8	0.0
ROCH	El Roble	1.44	237	i P	Pn	05 59 53.9	-0.3
ROCH				i S	Sn	06 00 14.1	-0.3
ROCH				IAML		06 00 15.4	
	comp=E,187nm,0.1s						
CLCH	Cerro Calan	1.45	214	i P	Pn	05 59 54.1	+0.1
CLCH				i S	Sn	06 00 14.9	+0.7
ROC1	El Roble	1.45	237	eP	Pn	05 59 54.1	-0.2
AMOG	MOGNA	1.56	36	eP	Pn	05 59 55.3	-0.1
ANTU	Antumapu	1.63	213	i P	Pn	05 59 55.9	-0.4
ANTU				i S	Sn	06 00 18.4	+0.2
ANTU				IAML		06 00 21.7	
	comp=N,145nm,0.2s						
ACAN	Cantantal	2.02	93	eP	Pn	06 00 00.6	-0.4
AVFE	Valle Fertil	2.37	50	IAML		06 00 35.9	
	comp=Z,8.4nm,0.3s						
AGUA	GUANDACOL	2.86	19	eP	Pn	06 00 12.3	+0.4
VCA	Vinchina	3.65	19	IAML		06 01 09.6	
	comp=Z,21nm,1.4s						

TEH 07 06:00:08.1, 34°.47N×45°.48E, h3km, ML2.5, Iran-Iraq border region

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
IDHR	Dehrash	0.78	72	eAMB	AMB	06 00 34.8	
	comp=Z,3μm,0.2s						
IGHG	Ghaleghazi	0.91	98	ePg	Pg	06 00 24.1	-1.4
IGHG				eAMB	AMB	06 00 25.0	
	comp=Z,1μm,0.1s						
IGHG				eSg	Sg	06 00 36.5	-0.8
ILIN	Lien	1.30	69	ePg	Pg	06 00 32.0	-1.0
ILIN				eAMB	AMB	06 00 35.5	
	comp=Z,957nm,0.1s						
IKOM	Komasi	1.70	99	ePn	Pn	06 00 39.0	+0.2
IKOM				eAMB	AMB	06 01 04.3	
	comp=N,2μm,0.3s						

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*NIED **07** 06:04:00, 36°.70N×140°.60E, h5km, Mw3.4 Best double couple: Mo1.25000×10^14 NP1:φs3.00000°, δ34.00000°, λ-75.00000°. NP2:φs165.00000°, δ57.00000°, λ-100.00000°.*
*ISCJB **07** 06:04:44.0±1.0, 36°.60N±0°.04×140°.72E±0°.07, h11km±4km, mb3.7/2, Error ellipse: s-maj=10.4km s-min=5.4km az=33.8*
*IDC **07** 06:04:44.0±5.9, 36°.55N×140°.70E, h0km, mb3.5/2, mb1 3.8/2, mb1mx3.3/37, mbtmp3.5/2, Error ellipse: s-maj=124.7km s-min=28.7km az=24.0*
*JMA **07** 06:04:45.8, 36°.68N×140°.59E, h5km±1km, M3.6 Broadband fault plane solution: P waves. NP1: φs350.00000°, δ53.00000°, λ-100.00000°. NP2: φs186.00000°, δ39.00000°, λ-77.00000°. Principal axes: T Plg7.0000°, Azm87.0000°; N Plg8.0000°, Azm356.0000°; P Plg79.0000°, Azm218.0000°;*
JMA Felt II J1.

ISC 07 06:04:44.6±1.0**, 36°.66N**±0°.04×**140°.61E**±0°.05**, h12km**±6km**, n18, σ0s.45**/19**, 5C, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
JHO	Hitachi	0.06	215	⇑P	Pg	06 04 47.4	+0.3
JHO				S	Sg	06 04 48.6	-0.3
ONAJ	Iwakimizuishiy	0.47	19	⇑P	Pb	06 04 54.6	-0.2
ONAJ				S	Sb	06 05 01.3	-0.4
JYT	Yasato	0.55	218	⇑P	Pb	06 04 56.4	+0.2
JYT				S	Sb	06 05 03.6	-0.4
JSB	Shiboa	0.64	299	⇑P	Pb	06 04 58.1	+0.4
JFK	Kawauchi	0.73	16	⇑P	Pb	06 04 59.4	0.0
JFT	Otama	0.88	346	P	Pn	06 05 02.3	-0.6
JFT				S	Sb	06 05 13.9	+0.2
JAG	Ashikaga	0.96	256	P	Pg	06 05 03.4	+0.2
JAG				S	Sb	06 05 15.5	-0.4
JFY	Yanaizu	1.04	316	P	Pg	06 05 05.2	+0.5
MJAR	Matsushiro Arr	1.94	267	Pn	Pb	06 05 19.1	-0.8
	14nm,0.3s,baz=85,slow=9.3,SNR=19						
MJAR				Sn	Sb	06 05 44.4	+0.4
	29nm,0.3s,baz=77,slow=29,SNR=13						
MJAR				LR	LR	06 05 53.1	
	comp=Z,29nm,20.1s,baz=115,slow=35						
MAT	Matsushiro	1.94	267	P	Pb	06 05 19.4	-0.5
MAT				S	Sb	06 05 44.2	+0.1
H11N2	WAKE ISLAND Hy	28.52	119	T	T	06 40 25.3	
	baz=312,slow=75,SNR=69						
H11N1	WAKE ISLAND Hy	28.53	119	T	T	06 40 25.9	
	baz=312,slow=75,SNR=46						
H11N3	WAKE ISLAND Hy	28.54	119	T	T	06 40 26.6	
	baz=312,slow=75,SNR=50						
H11S1	WAKE ISLAND Hy	29.21	121	T	T	06 41 16.5	
	baz=314,slow=75,SNR=154						
H11S3	WAKE ISLAND Hy	29.21	121	T	T	06 41 16.6	
	baz=314,slow=75,SNR=136						
H11S2	WAKE ISLAND Hy	29.22	121	T	T	06 41 17.4	
	baz=314,slow=75,SNR=96						
WRA	Warramunga Arr	56.61	187	P	P	06 14 27.7	+0.3
	1.1nm,1.1s,baz=2.9,slow=7.4,SNR=3.2						
ASAR	Alice Springs	60.34	187	P	P	06 14 54.0	+0.6
	0.3nm,0.6s,baz=15,slow=4.0,SNR=3.4						

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*ISCJB **07** 06:13:21.7±0.3, 24°.38S±0°.06×179°.79E±0°.06, h517km, mb4.2/41, Error ellipse: s-maj=7.8km s-min=6.8km az=135.4*
*IDC **07** 06:13:21.2±1.6, 24°.37S×179°.96E, h503km±16km, mb3.6/18, mb1 3.8/20, mb1mx3.7/39, mbtmp4.5/20, Error ellipse: s-maj=14.0km s-min=13.4km az=22.0*
*BJI **07** 06:13:22.5, 24°.72S×179°.78E, h548km, mb4.5/6, mB4.9/3*
*NEIC **07** 06:13:23.7±0.7, 24°.22S×179°.73E, h530km±8km, mb4.4/20, Error ellipse: s-maj=10.3km s-min=7.4km az=135.0*

ISC 07 06:13:22.1±0.4**, 24°.35S**±0°.06×**179°.90E**±0°.08**, h517km, n82, σ1s.04**/94**, mb4.3**/41**, 2C, South of Fiji Islands**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
MSVF	Nonsavu	6.81	345	eP	P	06 15 07.0	-0.2
MSVF				eS	S	06 16 31.9	-1.2
DZM	Mont Dzumac	12.58	278	P	P	06 16 08.5	+1.6
	1.7nm,0.3s,baz=86,slow=16,SNR=22						
URZ	Urewera	14.07	189	P	P	06 16 19.6	-2.5
	2.9nm,0.3s,baz=248,slow=3.9,SNR=16						
URZ				S	S	06 18 48.6	-2.0
	0.8nm,0.3s,baz=29,slow=22,SNR=8.0						
URZ	Urewera	14.07	189	eP	P	06 16 25.1	+3.0
URZ				eS	S	06 18 54.3	+3.7
CTA	Charters Tower	31.39	271	P	P	06 19 01.4	+0.8
	14nm,0.3s,baz=92,slow=11,SNR=25						
STKA	Stephens Creek	34.47	249	P	P	06 19 27.1	+0.5
	2.7nm,0.5s,baz=98,slow=11,SNR=5.6						
PMG	Port Moresby	34.55	290	P	P	06 19 28.3	+0.9
	18nm,0.7s,baz=80,slow=6.4,SNR=8.8						
PMG	Port Moresby	34.55	290	eP	P	06 19 28.0	+0.6
	17nm,0.8s						
AS01	Alice Springs	41.83	261	eP	P	06 20 26.1	-0.6
AS31	Alice Springs	41.87	261	eP	P	06 20 26.5	-0.5
	2.3nm,1.2s						
ASAR	Alice Springs	41.87	261	P	P	06 20 27.0	0.0
	1.3nm,0.4s,baz=91,slow=7.4,SNR=18						
ASAR				ScP	ScP	06 25 12.9	+1.0
	0.2nm,0.3s,baz=103,slow=4.0,SNR=5.4						
ASAR				S	S	06 26 05.9	-1.7
	0.6nm,0.7s,baz=97,slow=14,SNR=4.3						
WB2	Warramunga Arr	42.27	267	eP	P	06 20 29.6	-0.6
	19nm,1.4s						
WRA	Warramunga Arr	42.28	267	P	P	06 20 29.9	-0.3
	5.1nm,0.4s,baz=103,slow=8.1,SNR=19						
WRA				ScP	ScP	06 25 16.9	+3.3
	4.9nm,0.8s,baz=98,slow=4.0,SNR=15						
WRA				S	S	06 26 10.8	-2.8
	3.1nm,1.0s,baz=102,slow=14,SNR=6.5						
JAY	Jayapura	43.61	294	P	P	06 20 40.0	-0.7
	1.4nm,0.5s,baz=0.2,slow=24,SNR=4.8						
FITZ	Fitzroy Crossi	50.70	266	P	P	06 21 34.3	+0.2
	2.2nm,0.6s,baz=114,slow=13,SNR=4.2						
SBA	Scott Base	53.92	183	eP	P	06 21 58.2	+1.9
	6.3nm,0.9s						
VNDA	Vanda	53.92	185	P	P	06 21 57.2	+0.9
	0.9nm,0.7s,baz=360,slow=8.6,SNR=6.3						
QSPA	South Pole Qui	65.73	180	eP	P	06 23 15.9	+0.6
	94nm,1.1s						
MJAR	Matsushiro Arr	72.22	326	P	P	06 23 54.6	0.0
	1.4nm,0.7s,baz=170,slow=4.9,SNR=4.2						
MAW	Mawson	77.30	200	P	P	06 24 22.5	-0.1
	3.4nm,0.5s,baz=110,slow=5.0,SNR=4.1						
KSRS	Korea Array	78.53	320	P	P	06 24 31.1	+1.4
	0.9nm,0.6s,baz=137,slow=6.5,SNR=3.8						
PETK	Petropavlovsk-	79.52	347	P	P	06 24 35.1	+0.5
	4.2nm,0.9s,baz=139,slow=4.9,SNR=4.4						
CN2	Changchun	84.19	324	eP	P	06 25 00.1	+1.4
CN2				pmax	pmax		
	comp=Z,10.0nm,0.5s						
SNAA	Sanae	84.22	179	P	P	06 24 58.0	-0.5
VNA3	Neumayer Olymp	84.43	177	P	P	06 24 58.9	-0.7
VNA2	Neumayer--Watz	84.85	178	P	P	06 25 00.5	-1.0
	baz=196,slow=3.9						
HSIG		85.05	55	eP	P	06 25 04.0	+0.8
	7.7nm,0.7s						
VNA1	Neumayer--Stat	85.09	177	P	P	06 25 02.3	-0.3
NVAR	Mina Array Bea	85.14	44	P	P	06 25 04.7	+0.9
	1.0nm,0.6s,baz=223,slow=7.4,SNR=4.6						
LDFC	Landfair	85.32	48	eP	P	06 25 04.9	+0.3
	12nm,0.8s						
TUC	Tucson	86.87	53	eP	P	06 25 13.3	+1.4
	7.4nm,0.9s						
KNB	Kanab	87.93	48	eP	P	06 25 17.7	+0.8
	4.7nm,1.0s						
PLCA	Paso Flores	88.02	134	P	P	06 25 18.0	+0.6
	2.6nm,1.1s,baz=211,slow=0.9,SNR=4.5						
HPIG		88.07	59	eP	P	06 25 18.5	+0.7
	3.3nm,0.7s						
X18A	Snowflake	88.61	51	eP	P	06 25 20.7	+0.5
	3.6nm,0.6s						
MFID	Camas Ranch	89.56	41	eP	P	06 25 24.7	+0.4
	5.8nm,0.9s						
CMAR	Chiang Mai Arr	89.59	290	P	P	06 25 26.8	+2.0
	0.8nm,0.4s,baz=140,slow=4.0,SNR=5.7						
TMUT	Trail Mountain	90.22	46	eP	P	06 25 28.7	+1.0
	9.4nm,0.8s						
HLID	Hailey	90.49	41	eP	P	06 25 29.0	+0.3
	3.0nm,1.0s						
MNTX	Cornudas Mount	90.55	55	eP	P	06 25 29.6	+0.5
	2.8nm,0.8s						
SRU	San Rafael Swe	90.58	47	eP	P	06 25 29.7	+0.5
	5.9nm,0.8s						
HHC	Hu-ho-hao-te	90.67	315	eP	P	06 25 28.6	-0.9
HHC				pmax	pmax		
	comp=Z,23nm,1.2s						

Code	Station Name	Δ°	AZ°	Op	ISC	Time	Res
HHC				pmax	pmax		
	comp=Z,100nm,7.5s						
TX31	**Lajitas Ar. Si**	**90.75**	**58**	*e*P	**P**	**06 25 31.0**	**+0.9**
TXAR	**Lajitas Array**	**90.75**	**58**	P	**P**	**06 25 31.1**	**+1.0**
	3.6nm,0.8s,baz=212,slow=6.6,SNR=45						
TCUT	**Toone Canyon**	**91.05**	**45**	*e*P	**P**	**06 25 31.7**	**+0.3**
	65nm,0.5s						
HWUT	**Hardware Ranch**	**91.20**	**44**	*e*P	**P**	**06 25 32.4**	**+0.4**
	6.4nm,1.3s						
CD2	**Chengdu**	**91.25**	**303**	P	**P**	**06 25 31.3**	**-1.0**
CD2				pmax	pmax		
	comp=Z,2.0nm,0.5s						
ANMO	**Albuquerque**	**91.31**	**52**	*e*P	**P**	**06 25 33.6**	**+0.9**
	3.8nm,1.1s						
S22A	**4UR Ranch, Cre**	**92.40**	**49**	*e*P	**P**	**06 25 38.3**	**+0.5**
	4.1nm,1.1s						
ILAR	**Eielson Array**	**92.49**	**14**	P	**P**	**06 25 36.4**	**-0.7**
	0.6nm,0.6s,baz=225,slow=5.7,SNR=8.9						
SMCO	**Snowmass**	**93.00**	**48**	*e*P	**P**	**06 25 40.6**	**0.0**
	2.3nm,0.9s						
PDAR	**Pinedale Array**	**93.08**	**44**	P	**P**	**06 25 41.0**	**+0.4**
	0.9nm,0.7s,baz=226,slow=4.0,SNR=8.4						
YKA	**Yellowknife Ar**	**100.81**	**25**	P	**Pdif**	**06 26 15.2**	**+0.6**
	0.1nm,0.5s,baz=234,slow=4.7,SNR=4.9						
YKA				PKiKP	**PKiKP**	**06 30 36.7**	**-0.3**
	0.1nm,0.5s,baz=262,slow=1.6,SNR=7.1						
MKAR	**Makanchi Array**	**112.39**	**313**	PKiKP	**PKiKP**	**06 30 57.7**	**-1.3**
	0.3nm,0.4s,baz=84,slow=2.6,SNR=5.5						
MKAR				PKKPbc	**PKKPbc**	**06 41 49.6**	**-1.7**
	0.4nm,0.6s,baz=302,slow=2.7,SNR=4.4						
MKAR				PKKPab	**PKKPab**	**06 41 59.3**	**-0.2**
	0.4nm,0.7s,baz=264,slow=2.9,SNR=3.7						
BDFB	**Brasilia**	**118.63**	**125**	PKP	**PKPdf**	**06 31 11.0**	**-1.1**
	1.4nm,0.7s,baz=263,slow=4.6,SNR=3.4						
VOSK	**Vostochnaya**	**120.35**	**318**	*e*PKPdf	**PKPdf**	**06 31 13.5**	**-0.7**
BOSA	**Boshof**	**121.96**	**206**	PKP	**PKPdf**	**06 31 18.5**	**+0.3**
	2.9nm,0.8s,baz=166,slow=4.2,SNR=3.0						
ARU	**Arti**	**127.19**	**323**	PKP	**PKPdf**	**06 31 27.4**	**+0.3**
	4.2nm,0.3s,baz=260,slow=9.1,SNR=7.0						
AKTO	**Aktyubinsk**	**128.56**	**316**	PKP	**PKPdf**	**06 31 29.6**	**-0.3**
	2.0nm,0.8s,baz=102,slow=0.9,SNR=5.1						
GEYT	**Alibeck**	**129.11**	**300**	PKP	**PKPdf**	**06 31 31.3**	**-0.2**
	1.1nm,0.4s,baz=150,slow=3.2,SNR=2.6						
ARCES	**ARCESS Array B**	**132.31**	**348**	PKP	**PKPdf**	**06 31 36.1**	**-0.4**
	1.5nm,0.6s,baz=42,slow=2.0,SNR=13						
TSUM	**Tsumeb**	**133.40**	**203**	PKP	**PKPdf**	**06 31 41.1**	**+0.8**
	1.9nm,0.9s,baz=233,slow=10,SNR=3.9						
FINES	**FINESS Array B**	**138.84**	**341**	PKhKP	PKPpre	06 31 40.3	
	0.9nm,0.5s,baz=116,slow=3.2,SNR=8.0						
FINES				PKP	**PKiKP**	**06 31 49.9**	**-1.3**
	1.5nm,0.6s,baz=81,slow=1.9,SNR=6.0						
FINES				SKPbc	**SKPbc**	**06 34 35.8**	**+0.9**
	2.2nm,0.7s,baz=85,slow=4.0,SNR=6.2						
KBZ	**Khabaz**	**140.00**	**310**	PKP	**PKPdf**	**06 31 52.0**	**+0.6**
	2.4nm,0.9s,baz=37,slow=10,SNR=2.9						
NB2	**NORSAR Subarra**	**142.51**	**351**	PKP	PKPpre	06 31 51.6	
	comp=Z,1.7nm,0.8s,baz=13,slow=3.5						
NOA	**NORSAR Array B**	**142.51**	**351**	PKhKP	PKPpre	06 31 51.8	
	comp=Z,3.5nm,0.9s,baz=16,slow=4.7,SNR=4.9						
NACGM	**Naroch**	**143.57**	**334**	*e*	PKPbc	06 31 56.0	-0.1
AKASG	**Malin Array Be**	**145.30**	**327**	PKPbc	**PKPbc**	**06 32 01.1**	**-0.4**
	comp=Z,2.7nm,0.5s,baz=44,slow=3.8,SNR=12						
BR131	**Keskin Array S**	**147.77**	**307**	*e*PKPdf	**PKPdf**	**06 32 04.7**	**-0.6**
BR131				*e*PKPbc	**PKPbc**	**06 32 08.9**	**0.0**
BRTR	**Keskin Array B**	**147.77**	**307**	PKPbc	**PKPbc**	**06 32 08.6**	**-0.3**
	comp=Z,2.6nm,0.7s,baz=141,slow=3.6,SNR=12						
BR231	**Keskin MP Arra**	**148.37**	**307**	*e*PKPbc	**PKPbc**	**06 32 09.4**	**-1.0**
BUR08	**Bucovina Ar. S**	**149.28**	**326**	*e*PKPbc	**PKPbc**	**06 32 13.0**	**+0.7**
OJC	**Ojcow**	**149.90**	**334**	*e*PKPbc	**PKPbc**	**06 32 13.5**	**-0.1**
OJC				*e*PKPab	**PKPab**	**06 32 21.2**	**-0.2**
UPC	**Upice**	**151.05**	**339**⇑	*e*PKP	**PKPbc**	**06 32 16.7**	**+0.4**
DPC	**Dobruska-Polom**	**151.08**	**338**⇑	*e*PKP	**PKPbc**	**06 32 17.0**	**+0.6**
MORC	**Moravsky Berou**	**151.12**	**336**	*e*PKPbc	**PKPbc**	**06 32 16.7**	**+0.2**
MORC				*e*PKPab	**PKPab**	**06 32 27.1**	**+0.5**
CLL	**Collm**	**151.26**	**343**	*i* P	**PKPbc**	**06 32 16.9**	**+0.2**
	comp=Z,15nm,0.8s						
CLL				*e*		06 32 27.0	
GERES	**GERESS Array B**	**153.25**	**340**	PKPbc	**PKPbc**	**06 32 20.7**	**-0.6**
	comp=Z,0.3nm,0.4s,baz=93,slow=2.7,SNR=5.2						
DBIC	**Dimbokro**	**161.84**	**165**	PKPab	**PKPab**	**06 33 13.6**	**0.0**
	comp=Z,1.4nm,0.7s,baz=24,slow=15,SNR=3.5						
ESDC	**Sonseca Array**	**164.38**	**11**	PKPab	**PKPab**	**06 33 24.0**	**-0.3**
	comp=Z,0.1nm,0.3s,baz=10,slow=22,SNR=5.6						
TOA0	**Torodi Ar. Sit**	**168.73**	**189**	*e*PKPdf	**PKPdf**	**06 32 29.2**	**-1.1**
TOA0				*e*PKPab	**PKPab**	**06 33 43.7**	**-0.3**
TORD	**Torodi Ar. Bea**	**168.73**	**189**	PKP	**PKPdf**	**06 32 29.1**	**-1.3**
	comp=Z,2.1nm,1.0s,baz=112,slow=0.5,SNR=7.9						
TORD				PKPab	**PKPab**	**06 33 43.5**	**-0.5**
	comp=Z,2.6nm,0.9s,baz=184,slow=3.6,SNR=12						

IDC 07 06:15:02.2±5.0**, 30°.15S**×**138°.33E, h0**km**, mb1 3.0**/3**, mb1mx3.0**/41**, mbtmp2.8**/3**, ML2.6**/3**, Error ellipse: s-maj=166.1km s-min=27.6km az=48.0, South Australia**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
STKA	**Stephens Creek**	**3.29**	**122**	Pn	Pn	06 15 55.0	0.0
	0.2nm,0.3s,baz=302,slow=14,SNR=2.9						
STKA				Sn	Sn	06 16 28.1	-6.8
	0.6nm,0.3s,baz=17,slow=21,SNR=3.8						
STKA				Lg	Lg	06 16 38.3	
	1.1nm,0.3s,baz=205,slow=21,SNR=6.6						
ASAR	**Alice Springs**	**7.57**	**328**	Pn	Pn	06 16 54.4	+0.5
	0.1nm,0.3s,baz=150,slow=12,SNR=4.3						
ASAR				Sn	Sn	06 18 22.0	+1.5
	0.1nm,0.3s,baz=160,slow=24,SNR=4.5						
WRA	**Warramunga Arr**	**10.79**	**340**	Pn	Pn	06 17 37.4	-0.7
	0.1nm,0.3s,baz=162,slow=12,SNR=1.5						

DDA ***07*** *06:15:34.9, 35°.96N×30°.18E, h9km, Md3.2*
ISK ***07*** *06:15:35.4, 35°.91N×29°.96E, h16km, MD3.1*
ISCJB ***07*** *06:15:36.6±1.0, 35°.90N±0°.05×30°.00E±0°.04, h28km±6km, Error ellipse: s-maj=9.0km s-min=6.1km az=179.6*
CSEM ***07*** *06:15:36.7±0.3, 35°.92N×29°.99E, h20km, MD3.2, Error ellipse: s-maj=7.6km s-min=4.8km az=179.0*
ISC 07 06:15:36.7±1.5**, 35°.94N**±0°.05×**29°.99E**±0°.03**, h19**km±3km**, n44, σ0ˢ.75**/62**, Eastern Mediterranean Sea**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
AKAS	**Kas**	**0.42**	**313**	*i* P	**Pb**	**06 15 45.8**	**0.0**
AKAS				*i* S	**Sb**	**06 15 52.8**	**+0.9**
AKAS	**Kas**	**0.42**	**313**	P	**Pb**	**06 15 45.8**	**0.0**
AKAS				S	**Sb**	**06 15 52.8**	**+0.9**
ELL	**Elmali**	**0.81**	**355**	*e*PG	**Pb**	**06 15 51.3**	**-0.9**
ELL				*e*SG	**Sn**	**06 16 04.3**	**-0.4**
ELL	**Elmali**	**0.81**	**355**	*e*Pg	**Pb**	**06 15 51.3**	**-0.9**
ELL				*e*Sg	**Sn**	**06 16 04.3**	**-0.4**
FETY	**Fethiye**	**1.01**	**314**	*e*PG	**Pb**	**06 15 55.5**	**-0.1**
FETY				*e*SG	**Sg**	**06 16 09.7**	**+0.1**
FETY	**Fethiye**	**1.01**	**314**	*e*Pg	**Pb**	**06 15 55.5**	**-0.1**
FETY				*e*Sg	**Sg**	**06 16 09.7**	**+0.1**
KORT	**Korkueli**	**1.09**	**15**	*i* P	**Pn**	**06 15 55.8**	**-1.3**
KORT				*i* S	**Sg**	**06 16 12.9**	**+0.5**
KORT	**Korkueli**	**1.09**	**15**	P	**Pn**	**06 15 55.8**	**-1.3**
KORT				S	**Sg**	**06 16 12.9**	**+0.5**
GOLH	**Golhisar**	**1.34**	**345**	*i* P	**Pb**	**06 16 01.0**	**-0.2**
GOLH				*i* S	**Sg**	**06 16 20.0**	**-0.1**
GOLH	**Golhisar**	**1.34**	**345**	P	**Pb**	**06 16 01.0**	**-0.2**
GOLH				S	**Sg**	**06 16 20.0**	**-0.1**
DALY	**Dalyan (Mu˜la**	**1.39**	**309**	*e*PN	**Pn**	**06 16 00.9**	**-0.1**
DALY	**Dalyan (Mu˜la**	**1.39**	**309**	*e*Pn	**Pn**	**06 16 00.9**	**-0.1**
TURN	**Turunc**	**1.45**	**310**	*i* P	**Pg**	**06 16 04.9**	**+0.1**
YER	**Yerkesik**	**1.82**	**311**	*e*PN	**Pn**	**06 16 06.7**	**-0.3**
YER	**Yerkesik**	**1.82**	**311**	*e*Pn	**Pn**	**06 16 06.7**	**-0.3**
GAZI	**Gazipasa**	**1.91**	**81**	*i* P	**Pn**	**06 16 08.6**	**+0.4**
GAZI				*i* S	**Sn**	**06 16 31.1**	**-0.7**
GAZI	**Gazipasa**	**1.91**	**81**	P	**Pn**	**06 16 08.6**	**+0.4**
GAZI				S	**Sn**	**06 16 31.0**	**-0.7**
ISP	**Isparta**	**1.92**	**13**	*e*PN	**Pn**	**06 16 09.4**	**+0.9**
ISP	**Isparta**	**1.92**	**13**	*e*Pn	**Pn**	**06 16 09.4**	**+0.9**
DENT	**Denizli**	**1.96**	**337**	*e*PN	**Pn**	**06 16 09.3**	**+0.3**
DENT	**Denizli**	**1.96**	**337**	*e*Pn	**Pn**	**06 16 09.3**	**+0.3**
BAGO	**Egridir - ISPA**	**2.14**	**17**	*i* P	**Pn**	**06 16 12.9**	**+1.4**
KARP	**Karpathos**	**2.33**	**261**	*e*PN	**Pn**	**06 16 14.0**	**-0.1**
KARP	**Karpathos**	**2.33**	**261**	*e*Pn	**Pn**	**06 16 14.0**	**-0.1**
BDRM	**Kayabasi**	**2.34**	**299**	*i* P	**Pn**	**06 16 15.0**	**+0.9**
BDRM	**Kayabasi**	**2.34**	**299**	P	**Pn**	**06 16 15.0**	**+0.9**
KHL	**Karahalli**	**2.40**	**351**	*e*PN	**Pn**	**06 16 15.8**	**+0.7**
KHL	**Karahalli**	**2.40**	**351**	*e*Pn	**Pn**	**06 16 15.8**	**+0.7**
AYDN	**Tasoluk**	**2.41**	**316**	*i* P	**Pn**	**06 16 15.5**	**+0.3**
AYDN				*i* S	**Sn**	**06 16 43.3**	**-0.9**
AYDN	**Tasoluk**	**2.41**	**316**	P	**Pn**	**06 16 15.5**	**+0.3**
AYDN				S	**Sn**	**06 16 43.3**	**-0.9**
BODT	**Bodrum**	**2.43**	**298**	*e*PN	**Pn**	**06 16 15.5**	**+0.1**
BODT	**Bodrum**	**2.43**	**298**	*e*Pn	**Pn**	**06 16 15.5**	**+0.1**
KHAL	**Karahalli**	**2.46**	**351**	*i* P	**Pn**	**06 16 14.6**	**-1.2**
KHAL				*i* S	**Sn**	**06 16 44.0**	**-1.4**
KHAL	**Karahalli**	**2.46**	**351**	P	**Pn**	**06 16 14.6**	**-1.2**
KHAL				S	**Sn**	**06 16 44.0**	**-1.4**
AYDB	**Zeytinkoy-Aydi**	**2.61**	**321**	*e*PN	**Pn**	**06 16 17.9**	**-0.1**
AYDB	**Zeytinkoy-Aydi**	**2.61**	**321**	*e*Pn	**Pn**	**06 16 17.9**	**-0.1**
KULA	**Kula-Manisa**	**2.78**	**338**	*e*PN	**Pn**	**06 16 21.2**	**+1.0**
KULA	**Kula-Manisa**	**2.78**	**338**	*e*Pn	**Pn**	**06 16 21.2**	**+1.0**
KDHN	**Kadinhani**	**3.08**	**33**	*i* P	**Pn**	**06 16 25.2**	**+0.8**
KDHN				*i* S	**Sn**	**06 17 00.6**	**-0.2**
KDHN	**Kadinhani**	**3.08**	**33**	P	**Pn**	**06 16 25.2**	**+0.8**
KDHN				S	**Sn**	**06 17 00.6**	**-0.2**
KERG	**Konya-Eregli**	**3.63**	**65**	*i* P	**Pn**	**06 16 31.9**	**-0.1**
KERG	**Konya-Eregli**	**3.63**	**65**	P	**Pn**	**06 16 31.9**	**-0.1**
ESKT	**Eskisehir**	**3.63**	**11**	*i* P	**Pn**	**06 16 33.7**	**+1.6**
SEYT	**Eskypehyr**	**3.63**	**11**	P	**Pn**	**06 16 33.7**	**+1.6**

ISCJB ***07*** *06:22:42.7±0.5, 59°.41S±0°.09×29°.2W±0°.2, h10km, mb4.3/16, MS3.9/13, Error ellipse: s-maj=15.4km s-min=9.6km az=40.5*
IDC ***07*** *06:22:43.2±0.6, 59°.39S×29°.29W, h0km, mb4.4/12, mb1 4.5/12, mb1mx4.3/25, mbtmp4.4/12, MS3.9/14, Ms1 3.9/14, ms1mx3.8/23, Error ellipse: s-maj=22.0km s-min=17.3km az=37.0*
NEIC ***07*** *06:22:44.5±0.4, 59°.45S×29°.23W, h10km, mb4.7/3, Error ellipse: s-maj=13.3km s-min=8.3km az=221.0*
ISC 07 06:22:44.5±0.5**, 59°.5S**±0°.1×**29°.2W**±0°.1**, h10**km**, n39, σ0ˢ.97**/24**, mb4.3**/15**, MS4.1**/13**, 1D, South Sandwich Islands region**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
SNAA	**Sanae**	**16.20**	**150**	*e*Pn	**Pn**	**06 26 30.0**	**-1.9**
	1μm,1.0s						
PMSA	**Palmer Station**	**16.98**	**237**	LR	LR	06 32 20.8	
	comp=Z,648nm,20.1s,baz=66,slow=34						
EFI	**East Falkland**	**17.95**	**283**	*e*P	**Pn**	**06 26 54.0**	**+0.1**
	111nm,1.4s						
USHA	**Ushuaia**	**21.54**	**265**	P	**P**	**06 27 34.0**	**+0.6**
	62nm,1.0s,baz=24,slow=10.0,SNR=2.5						
USHA				LR	LR	06 33 53.0	
	comp=Z,1μm,21.5s,baz=90,slow=31						
SYO	**Syowa Base**	**29.72**	**137**⇓	*e*P	P	06 28 46.0	-4.2
TRQA	**Tornquist**	**29.90**	**301**	*e*P	**P**	**06 28 52.1**	**-0.1**
	0.3nm,0.5s						
QSPA	**South Pole Qui**	**30.80**	**180**	*e*P	**P**	**06 28 59.8**	**-0.2**
	62nm,1.0s						
PLCA	**Paso Flores**	**31.75**	**288**	P	**P**	**06 29 06.6**	**-1.9**
	1.9nm,0.8s,baz=203,slow=7.7,SNR=3.5						
PLCA				LR	LR	06 41 34.9	
	comp=Z,449nm,18.7s,baz=169,slow=36						
MAW	**Mawson**	**38.10**	**142**	P	**P**	**06 30 02.8**	**0.0**
	18nm,1.0s,baz=238,slow=13,SNR=2.9						
MAW				LR	LR	06 44 21.1	
	comp=Z,275nm,19.1s,baz=236,slow=34						
CPUP	**Villa Florida**	**38.40**	**317**	P	**P**	**06 30 05.0**	**-0.8**
	2.0nm,0.8s,baz=156,slow=14,SNR=2.6						
CPUP				LR	LR	06 44 31.5	
	comp=Z,285nm,21.2s,baz=162,slow=34						
CPUP	**Villa Florida**	**38.40**	**317**	P	**P**	**06 30 05.0**	**-0.8**
VNDA	**Vanda**	**43.11**	**184**	P	**P**	**06 30 45.0**	**+0.8**
	3.2nm,0.9s,baz=185,slow=5.7,SNR=11						
VNDA				LR	LR	06 47 53.7	
	comp=Z,74nm,18.1s,baz=172,slow=35						
BDFB	**Brasilia**	**45.87**	**334**	LR	LR	06 48 37.9	
	comp=Z,62nm,19.0s,baz=92,slow=34						
BOSA	**Boshof**	**47.89**	**75**	LR	LR	06 46 19.8	
	comp=Z,82nm,20.2s,baz=214,slow=30						
LBTB	**Lobatse**	**51.06**	**72**	P	**P**	**06 31 46.9**	**+0.1**
	2.0nm,0.5s,baz=204,slow=8.5,SNR=4.9						
H10S2	**ASCENSION HYDR**	**51.58**	**19**	T	T	07 28 19.4	
	baz=189,slow=75,SNR=32						
H10S3	**ASCENSION HYDR**	**51.58**	**18**	T	T	07 28 18.9	
	baz=189,slow=75,SNR=37						
LPAZ	**La Paz**	**51.58**	**310**	P	**P**	**06 31 51.8**	**+0.4**
	1.0nm,0.8s,baz=188,slow=7.1,SNR=3.4						
LPAZ				LR	LR	06 55 06.3	
	comp=Z,75nm,19.6s,baz=148,slow=38						
H10S1	**ASCENSION HYDR**	**51.59**	**18**	T	T	07 28 20.8	
	baz=189,slow=75,SNR=37						
TSUM	**Tsumeb**	**52.30**	**61**	P	**P**	**06 31 55.6**	**-0.6**
	1.9nm,0.8s,baz=180,slow=10,SNR=3.1						
H10N1	**ASCENSION HYDR**	**52.69**	**18**	T	T	07 29 42.7	
	baz=189,SNR=14						
H10N3	**ASCENSION HYDR**	**52.70**	**18**	T	T	07 29 42.6	
	baz=189,SNR=27						
H10N2	**ASCENSION HYDR**	**52.71**	**18**	T	T	07 29 44.2	
	baz=189,SNR=21						
RCBR	**Riachuelo**	**53.73**	**352**	LR	LR	06 49 52.1	
	comp=Z,64nm,18.7s,baz=177,slow=30						
SAML	**Samuel**	**56.53**	**319**	*e*P	**P**	**06 32 25.9**	**-0.9**
	9.2nm,1.3s						
DBIC	**Dimbokro**	**68.71**	**26**	LR	LR	06 56 44.4	
	comp=Z,114nm,21.2s,baz=161,slow=30						
OTAV	**Otavalo**	**70.73**	**307**	*e*P	**P**	**06 34 02.0**	**+0.9**
	5.4nm,1.0s						
ROSC	**El Rosal**	**73.30**	**313**	LR	LR	07 06 54.0	
	comp=Z,136nm,21.2s,baz=208,slow=36						
TORD	**Torodi Ar. Bea**	**76.55**	**31**	P	**P**	**06 34 35.3**	**+0.7**
	1.7nm,0.6s,baz=197,slow=6.4,SNR=18						
TORD				LR	LR	07 01 03.9	
	comp=Z,41nm,20.7s,baz=270,slow=30						
KMBO	**Kilima Mbogo**	**77.25**	**70**	LR	LR	07 06 29.3	
	comp=Z,82nm,18.4s,baz=82,slow=34						
STKA	**Stephens Creek**	**88.70**	**172**	P	**P**	**06 35 38.8**	**+1.0**
	2.4nm,0.7s,baz=152,slow=15,SNR=6.7						
ASAR	**Alice Springs**	**96.03**	**164**	P	**P**	**06 36 11.4**	**-0.5**
	2.1nm,0.7s,baz=182,slow=4.0,SNR=5.9						
WRA	**Warramunga Arr**	**99.76**	**164**	P	**Pdif**	**06 36 30.2**	**+1.5**
	0.2nm,0.3s,baz=185,slow=4.6,SNR=6.9						
YKA	**Yellowknife Ar**	**137.93**	**316**	PKP	**PKPdf**	**06 42 07.7**	**+0.1**
	0.3nm,0.7s,baz=122,slow=2.2,SNR=7.8						
RES	**Resolute Bay**	**140.61**	**338**	PKhKP	PKPpre	06 42 08.7	
	0.8nm,0.7s,baz=170,slow=3.0,SNR=5.1						
SKAG	**Skagway**	**144.24**	**303**	*e*PKPdf	**PKPdf**	**06 42 19.6**	**+0.6**
INK	**Inuvik**	**147.66**	**318**	PKPbc	**PKPbc**	**06 42 26.3**	**-1.1**
	2.3nm,0.9s,baz=46,slow=2.7,SNR=6.3						
ILAR	**Eielson Array**	**151.44**	**307**	PKPbc	**PKPbc**	**06 42 38.1**	**+1.3**
	1.5nm,0.7s,baz=151,slow=1.9,SNR=15						
SONM	**Songino Array**	**151.79**	**94**	PKPbc	**PKPbc**	**06 42 39.4**	**+1.0**
	0.5nm,0.7s,baz=202,slow=2.9,SNR=2.6						

IDC ***07*** *06:31:26.2±0.9, 31°.34S×178°.20W, h0km, mb4.9/3, mb1 5.0/4, mb1mx4.3/36, mbtmp4.8/4, ML4.3/1, MS3.4/7, Ms1 3.4/7, ms1mx3.2/32, Error ellipse: s-maj=36.6km s-min=27.6km az=158.0*
ISCJB ***07*** *06:31:28.1±1.7, 31°.57S±0°.06×178°.1W±0°.3, h33km, mb4.8/7, MS3.4/5, Error ellipse: s-maj=32.1km s-min=7.7km az=6.1*
NEIC ***07*** *06:31:31.9±0.4, 31°.05S×178°.34W, h35km, mb4.7/1, Error ellipse: s-maj=14.2km s-min=11.0km az=78.0*
ISC 07 06:31:32.8±0.8**, 31°.49S**±0°.09×**178°.5W**±0°.2**, h35**km**, n50, σ2ˢ.12**/40**, mb4.7**/7**, MS3.5**/5**, 1C, Kermadec Islands region**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
MXZ	**Matakaoa Point**	**6.60**	**203**	*e*PN	**Pn**	**06 33 06.9**	**-0.4**
MXZ				SN	**Sn**	**06 34 23.4**	**+2.1**
HAZ	**Te Kaha**	**6.96**	**205**	PN	**Pn**	**06 33 12.5**	**+0.3**
HAZ				SN	**Sn**	**06 34 34.8**	**+4.8**
PKGZ	**Pakihiroa**	**6.98**	**203**	PN	**Pn**	**06 33 12.1**	**-0.4**
PUZ	**Puketiti**	**7.09**	**201**	PN	**Pn**	**06 33 12.8**	**-1.2**
PUZ				SN	**Sn**	**06 34 34.3**	**+1.0**
CNGZ	**Carnagh Statio**	**7.48**	**200**	PN	**Pn**	**06 33 18.9**	**-0.5**
MWZ	**Matawai**	**7.56**	**204**	PN	**Pn**	**06 33 19.2**	**-1.4**
MWZ				*e*SN	**Sn**	**06 34 46.3**	**+1.3**
OUZ	**Omahuta**	**7.58**	**238**	*e*Pn	Pn	06 33 29.1	+8.4
	98nm,0.3s						
URZ	**Urewera**	**7.65**	**207**	Pn	**Pn**	**06 33 20.7**	**-1.0**
	4.1nm,0.3s,baz=257,slow=2.0,SNR=19						
URZ				Sn	**Sn**	**06 34 49.3**	**+2.2**
	7.1nm,0.3s,baz=50,slow=23,SNR=11						
URZ	**Urewera**	**7.65**	**207**	PN	**Pn**	**06 33 20.7**	**-1.0**
URZ				SN	**Sn**	**06 34 48.7**	**+1.6**
RIGZ	**Rimuhau**	**7.82**	**202**	PN	**Pn**	**06 33 22.7**	**-1.3**
SNGZ	**Shannon Statio**	**8.03**	**204**	PN	**Pn**	**06 33 26.3**	**-0.7**
SNGZ				SN	**Sn**	**06 34 55.7**	**-0.8**
BFZ	**Birch Farm**	**10.11**	**203**	*e*SN	**Sn**	**06 35 41.4**	**-6.0**
MRZ	**Mangatainoka R**	**10.32**	**206**	*e*SN	**Sn**	**06 35 46.5**	**-6.3**
MSVF	**Nonsavu**	**14.04**	**346**	Pn	Pn	06 34 42.9	-6.5
DZM	**Mont Dzumac**	**16.36**	**301**	LR	LR	06 40 46.7	
	comp=Z,300nm,18.1s,baz=173,slow=34						
RAR	**Rarotonga**	**19.64**	**63**	LR	LR	06 44 12.6	
	comp=Z,55nm,18.3s,baz=276,slow=40						
TBI	**Tubuai**	**26.98**	**80**	*e*LR	LR	06 43 53.3	
	223nm,29.5s						
TBI	**Tubuai**	**26.98**	**80**	*e*T	T	07 05 04.1	
	34nm,0.3s						
EIDS	**Eidsvold**	**27.37**	**275**	*e*P	**P**	**06 37 13.6**	**-1.2**
	36nm,1.7s						
PAE	**Paea**	**29.59**	**69**	*e*T	T	07 08 09.4	
	15nm,0.3s						
PPT2	**Papeete2**	**29.63**	**69**	*e*LR	LR	06 45 15.9	
	165nm,25.8s						
PPT2	**Papeete2**	**29.63**	**69**	*e*T	T	07 08 13.3	
	9.1nm,0.3s						
PPT	**Papeete**	**29.64**	**69**	LR	LR	06 46 42.2	
	comp=Z,32nm,21.7s,baz=214,slow=31						
TVO	**Taravao**	**29.79**	**70**	*e*T	T	07 08 24.9	
	2.0nm,0.3s						
TIAR	**Tiarei**	**29.83**	**69**	*e*T	T	07 08 27.8	
	2.4nm,0.3s						
MEH	**Mehetia**	**30.69**	**71**	*e*T	T	07 09 33.5	
	30nm,0.3s						
PMOR	**Pomariorio Ree**	**32.42**	**67**	*e*T	T	07 11 39.7	
	2.7nm,0.2s						
VAH	**Vaihoa**	**32.49**	**67**	*e*T	T	07 11 45.3	
	57nm,0.2s						
STKA	**Stephens Creek**	**33.81**	**259**	P	**P**	**06 38 13.2**	**+1.6**
	5.4nm,0.8s,baz=108,slow=11,SNR=12						
STKA				LR	LR	06 49 40.3	
	comp=Z,122nm,21.8s,baz=32,slow=32						
RKT	**Rikitea**	**39.37**	**89**	*e*T	T	07 20 39.5	
	1.8nm,0.3s						
ASAR	**Alice Springs**	**42.62**	**268**	P	**P**	**06 39 26.8**	**+0.9**
	11nm,0.7s,baz=107,slow=7.8,SNR=87						
ASAR				LR	LR	06 55 58.6	
	comp=Z,59nm,20.1s,baz=128,slow=34						
WRAB	**Tennant Creek**	**43.70**	**274**	*e*P	**P**	**06 39 35.1**	**+0.4**
	43nm,0.8s						
WRA	**Warramunga Arr**	**43.71**	**274**	P	**P**	**06 39 35.1**	**+0.4**
	33nm,0.5s,baz=111,slow=8.1,SNR=154						
WRA				LR	LR	06 58 13.2	
	comp=Z,34nm,18.7s,baz=220,slow=36						
VNDA	**Vanda**	**46.97**	**186**	P	**P**	**06 40 02.1**	**+2.3**
	0.6nm,0.8s,baz=29,slow=5.8,SNR=5.4						
QSPA	**South Pole Qui**	**58.63**	**180**	*e*P	**P**	**06 41 28.2**	**+2.0**
	132nm,1.5s						
SYO	**Syowa Base**	**75.96**	**193**⇑	*e*X	**P**	**06 43 13.4**	**-2.2**
CMAR	**Chiang Mai Arr**	**93.34**	**289**	LR	LR	07 30 31.4	
	comp=Z,16nm,18.6s,baz=235,slow=38						
MKAR	**Makanchi Array**	**118.13**	**310**	PKP	**PKPdf**	**06 50 14.6**	**-1.2**
	0.3nm,0.3s,baz=105,slow=2.4,SNR=5.2						
KURK	**Kurchatov**	**121.47**	**313**	PKP	**PKPdf**	**06 50 20.6**	**-1.4**
KURBB	**Kurchatov Arra**	**121.51**	**313**	PKP	**PKPdf**	**06 50 20.6**	**-1.5**
	0.5nm,0.2s,baz=116,slow=1.9,SNR=2.4						
BVAR	**Borovoye Array**	**126.86**	**315**	PKP	**PKPdf**	**06 50 31.2**	**-1.1**
	0.7nm,0.3s,baz=131,slow=3.1,SNR=7.5						
ARCES	**ARCESS Array B**	**139.55**	**347**	PKhKP	PKPpre	06 50 48.2	
	1.7nm,0.8s,baz=20,slow=2.9,SNR=7.4						
KBZ	**Khabaz**	**145.33**	**303**	PKPbc	**PKPdf**	**06 51 06.4**	**-0.2**
	1.8nm,0.8s,baz=82,slow=8.0,SNR=4.3						
FINES	**FINESS Array B**	**146.00**	**339**	PKPbc	**PKPdf**	**06 51 06.7**	**-0.6**
	3.8nm,0.5s,baz=46,slow=4.6,SNR=28						
NB2	**NORSAR Subarra**	**149.75**	**351**	PKP	**PKPbc**	**06 51 17.3**	**-1.0**
	comp=Z,0.9nm,0.5s,baz=14,slow=2.6						
NOA	**NORSAR Array B**	**149.75**	**351**	PKPbc	**PKPbc**	**06 51 17.0**	**-1.2**
	comp=Z,0.5nm,0.3s,baz=20,slow=3.8,SNR=3.7						
AKASG	**Malin Array Be**	**151.88**	**321**	PKPbc	**PKPdf**	**06 51 20.8**	**+3.8**
	comp=Z,0.4nm,0.3s,baz=56,slow=3.5,SNR=3.1						
BRTR	**Keskin Array B**	**152.71**	**296**	PKPbc	**PKPbc**	**06 51 25.4**	**-0.6**
	comp=Z,0.8nm,0.7s,baz=177,slow=2.5,SNR=4.3						
DBIC	**Dimbokro**	**154.61**	**165**	PKPbc	**PKPbc**	**06 51 30.4**	**-0.2**
	comp=Z,2.5nm,1.0s,baz=282,slow=11,SNR=3.0						
TORD	**Torodi Ar. Bea**	**161.75**	**181**	PKP	**PKPdf**	**06 51 30.2**	**-0.6**
	comp=Z,0.6nm,0.8s,baz=172,slow=1.0,SNR=3.2						
TORD				PKPab	**PKPab**	**06 52 15.7**	**-0.3**
	comp=Z,2.4nm,0.8s,baz=180,slow=3.7,SNR=10						

NIED ***07*** *06:34:00, 37°.80N×142°.50E, h20km, Mw4.2 Best double couple: M₀2.46000×10^15 NP1:φs184.00000°, δ17.00000°, λ63.00000°. NP2:φs32.00000°, δ75.00000°, λ98.00000°.*
IDC ***07*** *06:34:19.9±0.6, 37°.89N×142°.51E, h0km, mb4.3/29, mb1 4.4/34, mb1mx4.3/55, mbtmp4.3/34, ML3.6/5, MS3.6/16, Ms1 3.6/16, ms1mx3.3/56, Error ellipse: s-maj=14.8km s-min=13.1km az=134.0*
JMA ***07*** *06:34:21.0±0.2, 37°.85N×142°.53E, h16km±3km, M4.4*
JMA Felt II J1.
ISCJB ***07*** *06:34:21.1±1.0, 37°.91N±0°.03×142°.59E±0°.04, h22km±6km, mb4.5/56, MS3.7/16, Error ellipse: s-maj=6.3km s-min=4.4km az=38.2*
MOS ***07*** *06:34:23.5±1.1, 38°.03N×142°.53E, h34km, mb4.7/36, Error ellipse: s-maj=8.8km s-min=5.8km az=100.5*
NEIC ***07*** *06:34:24.6±1.5, 37°.99N×142°.44E, h28km±10km, mb4.6/9, Error ellipse: s-maj=6.7km s-min=4.5km az=118.0*
ISC 07 06:34:21.9±2.1**, 37°.89N**±0°.05×**142°.51E**±0°.05**, h15**km±12km**, n134, σ1ˢ.22**/132**, mb4.6**/57**, MS3.8**/16**, 5C, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
JIO	**Ouri**	**1.08**	**302**	P	**Pb**	**06 34 41.6**	**-0.6**
JIO				S	**Sb**	**06 34 54.6**	**-1.5**
JMM	**Marumori**	**1.36**	**269**	P	**Pn**	**06 34 45.5**	**-0.9**
JMM				S	**Sb**	**06 35 04.4**	**+0.1**
JFK	**Kawauchi**	**1.40**	**249**	P	**Pn**	**06 34 45.9**	**-1.1**
JMK	**Ichinoseki**	**1.47**	**317**	P	**Pn**	**06 34 47.4**	**-0.4**
JMK				S	**Sb**	**06 35 07.3**	**-0.1**
JOU	**Okura**	**1.53**	**289**	P	**Pn**	**06 34 48.7**	**-0.1**
JFT	**Otama**	**1.77**	**258**	P	**Pb**	**06 34 52.2**	**-1.8**
JFT				*e*S	**Sn**	**06 35 13.4**	**-0.8**
JOM	**Ohasama**	**1.84**	**329**	P	**Pn**	**06 34 53.2**	**+0.1**
JOM				S	**Sb**	**06 35 17.4**	**-0.9**
JYS	**Shirataka**	**1.96**	**280**	P	**Pn**	**06 34 54.7**	**+0.1**
JYK	**Kaneyama**	**1.98**	**302**	P	**Pn**	**06 34 55.3**	**+0.4**
JRG	**Rokugo**	**2.10**	**316**	P	**Pn**	**06 34 57.1**	**+0.5**
JFY	**Yanaizu**	**2.28**	**259**	P	**Pn**	**06 34 59.7**	**+0.6**
JFY				S	**Sn**	**06 35 27.5**	**+0.6**
JYA	**Atsumi**	**2.31**	**288**	P	**Pn**	**06 34 59.8**	**+0.3**
MJAR	**Matsushiro Arr**	**3.69**	**250**	Pn	**Pn**	**06 35 19.4**	**+0.9**
	8.4nm,0.3s,baz=72,slow=12,SNR=36						
MJAR				Sn	**Sb**	**06 36 09.2**	**-2.2**
	9.0nm,0.3s,baz=75,slow=22,SNR=5.9						
MJAR				LR	LR	06 36 57.2	
	comp=Z,617nm,18.6s,baz=65,slow=43						
MAJO	**Matsushiro**	**3.69**	**250***c*	*i*P	**Pn**	**06 35 20.0**	**+1.6**
MAJO	**Matsushiro**	**3.69**	**250**	*e*Pn	**Pn**	**06 35 20.1**	**+1.6**
MAT	**Matsushiro**	**3.69**	**250**	P	Pn	06 35 21.2	+2.7
MAT				S	**Sb**	**06 36 08.4**	**-3.0**
ERM	**Erimo**	**4.15**	**7**	*e*P	**Pn**	**06 35 24.0**	**-0.7**
ERM				*e*		06 36 11.4	
ERM	**Erimo**	**4.15**	**7**	*e*Pn	**Pn**	**06 35 24.0**	**-0.7**
ERM				*e*Sn	**Sn**	**06 36 11.4**	**-1.5**
INU	**Inuyama**	**5.10**	**242**	*e*Pn	Pn	06 35 40.0	+2.2
JHJ2	**Mitsune**	**5.25**	**206**	*e*Pn	Pn	06 35 41.7	+1.8
JHJ2				*e*Sn	**Sn**	**06 36 39.9**	**-0.3**
JHJ	**Hachijo jima 2**	**5.26**	**206**	Pn	**Pn**	**06 35 40.0**	**+0.1**
	27nm,0.3s,baz=114,slow=23,SNR=11						
JHJ				Sn	**Sn**	**06 36 37.6**	**-2.7**
	45nm,0.3s,baz=50,slow=23,SNR=6.0						
YUK	**Yuzh-Kuril'sk**	**6.64**	**21***c*	*i*P	**Pn**	**06 35 58.7**	**-0.2**
YUK				*i* S	**Sn**	**06 37 08.8**	**-5.4**
YUK				pmax	pmax		
	comp=N,67nm,0.3s						
YUK				pmax	pmax		
	comp=E,51nm,0.3s						
YUK				pmax	pmax		
	comp=Z,100nm,0.3s						
SHO	**Shikotan**	**6.81**	**27***c*	*i*P	**Pn**	**06 35 58.5**	**-2.7**
SHO				*i* S	Sn	06 37 10.0	-8.4
SHO				pmax	pmax		
	comp=Z,29nm,0.6s						
SHO				pmax	pmax		
	comp=E,18nm,0.7s						
SHO				pmax	pmax		
	comp=N,7.0nm,0.3s						
KUR	**Kuril'sk**	**8.36**	**27**	*e*P	**Pn**	**06 36 21.0**	**-1.5**
KUR				*e*S	Sn	06 37 48.5	-8.1
KUR				pmax	pmax		

comp=N,43nm,0.3s
KUR pmax pmax
comp=Z,34nm,0.3s
KUR pmax pmax
comp=E,29nm,0.1s
YSS Yuzh-Sakhalins 9.06 1 *e*P Pn 06 36 33.2 +1.1
YSS Yuzh-Sakhalins 9.06 1 *e*Pn Pn 06 36 31.9 -0.1
USRK Ussuriysk Ar. 10.14 312 Pn Pn **06 36 48.6 +1.7**
comp=E,1.3nm,0.3s,baz=123,slow=14,SNR=18
USRK LR LR 06 40 28.3
comp=E,312nm,20.1s,baz=124,slow=36
JNU Nakatsue 10.61 247 Pn Pn **06 36 55.2 +1.7**
comp=E,0.3nm,0.3s,baz=9.7,slow=13,SNR=5.1
JNU LR LR 06 41 27.8
comp=E,214nm,18.3s,baz=115,slow=40
KSRS Korea Array 11.57 272 Pn Pn 06 37 11.0 +4.5
comp=E,0.3nm,0.3s,baz=87,slow=13,SNR=22
KSRS LR LR 06 41 31.3
comp=E,201nm,18.2s,baz=87,slow=37
KSAR Wonju Array Be 11.61 272 P Pn 06 37 11.0 +4.0
KSAR Wonju Array Be 11.61 272 Pn Pn 06 37 11.0 +4.0
KLR Kul'dur 13.74 329 Pn **Pn 06 37 34.9 -1.2**
comp=E,0.3nm,0.3s,baz=125,slow=14,SNR=9.0
KLR LR LR 06 42 54.1
comp=E,235nm,18.5s,baz=143,slow=37
CN2 Changchun 14.19 300 *e*P **Pn 06 37 44.5 +2.2**
CN2 pmax pmax
comp=Z,10.0nm,0.5s
TIA Tai'an 20.32 273 *e*P **P 06 38 55.2 -2.2**
TIA pmax pmax
comp=Z,20nm,1.3s
BJT Baijiatuau 20.58 284 *e*P **P 06 38 58.1 -2.1**
BJT pmax pmax
comp=Z,16nm,0.7s
BJT Baijiatuau 20.58 284 *e*P **P 06 38 58.1 -2.1**
comp=Z,16nm,0.7s
MA2 Magadan 22.34 11 P **P 06 39 19.1 +0.2**
comp=Z,8.9nm,0.6s,baz=214,slow=8.2,SNR=14
HHC Hu-ho-hao-te 24.05 287 *e*P **P 06 39 34.5 -2.0**
HHC S **S 06 43 48.8 -4.5**
HHC pmax pmax
comp=Z,15nm,0.8s
HHC pmax pmax
comp=Z,120nm,4.7s
HHC LR LR
comp=N,450nm,11.8s
HHC LR LR
comp=E,640nm,12.2s
HHC LR LR
comp=Z,470nm,11.3s
YAK Yakutsk 25.44 346 LR LR 06 50 31.6
comp=Z,103nm,18.3s,baz=160,slow=38
YAK Yakutsk 25.44 346 *e*P **P 06 39 48.9 +0.1**
YAK pmax pmax
comp=Z,17nm,0.9s
YAK pmax pmax
comp=N,15nm,1.5s
YAK pmax pmax
comp=E,5.0nm,1.0s
SEY Seymchan 25.79 10 P **P 06 39 53.6 +1.6**
comp=E,11nm,0.8s,baz=193,slow=6.7,SNR=32
BOD Bodaibo 27.29 326 *e*P **P 06 40 04.8 -0.8**
BOD pmax pmax
comp=Z,10.0nm,0.8s
XAN Xi'an 27.37 272 P **P 06 40 07.1 +0.4**
XAN pmax pmax
comp=Z,7.0nm,0.7s
XAN pmax pmax
comp=Z,61nm,5.5s
ULN Ulaanbaatar 27.61 303 *e*P **P 06 40 09.0 +0.2**
ULN pmax pmax
comp=Z,8.0nm,0.8s
ULN Ulaanbaatar 27.61 303 *e*P **P 06 40 09.0 +0.2**
comp=Z,7.7nm,0.8s
H11N2 WAKE ISLAND Hy 27.86 124 T T 07 10 44.5
baz=316,slow=75,SNR=301
H11N1 WAKE ISLAND Hy 27.87 124 T T 07 10 42.8
baz=316,slow=75,SNR=289
H11N3 WAKE ISLAND Hy 27.88 124 T T 07 10 45.6
baz=316,slow=75,SNR=234
SONA1 Songino Array 28.05 302 *e*P **P 06 40 13.1 +0.4**
SONM Songino Array 28.05 302 P **P 06 40 13.3 +0.6**
comp=Z,6.0nm,0.7s,baz=118,slow=8.2,SNR=32
ENH Enshi 28.28 264 *e*P **P 06 40 14.9 +0.1**
comp=Z,20nm,1.1s
H11S1 WAKE ISLAND Hy 28.62 126 T T 07 11 47.5
baz=318,slow=75,SNR=88
H11S3 WAKE ISLAND Hy 28.62 126 T T 07 11 45.8
baz=318,slow=75,SNR=150
H11S2 WAKE ISLAND Hy 28.64 126 T T 07 11 52.4
baz=318,slow=75,SNR=105
ZAK Zakamensk 30.44 307 *e*P **P 06 40 33.9 +0.1**
ZAK pmax pmax
comp=Z,5.0nm,1.1s
TLY Talaya 30.45 310 P **P 06 40 33.4 -0.3**
comp=Z,1.3nm,0.4s,baz=119,slow=9.9,SNR=5.2
TLY LR LR 06 53 31.9
comp=Z,161nm,18.4s,baz=114,slow=38
TLY Talaya 30.45 310 *e*P **P 06 40 34.7 +0.9**
TLY pmax pmax
comp=Z,7.0nm,1.2s
TLY MLR MLR
comp=Z,143nm,15.0s
LZH Lanzhou 30.79 279 *e*P P 06 40 41.4 +4.2
LZH pP sP 06 40 46.2 +2.6
LZH sP pP 06 40 48.1 +6.4
LZH pmax pmax
comp=Z,20nm,1.0s
LZH pmax pmax
comp=Z,89nm,4.8s
LZH LR LR
comp=E,490nm,19.0s
LZH LR LR
comp=Z,200nm,19.5s
GYA Guiyang 32.23 260 *e*P **P 06 40 50.4 +0.6**
GYA pmax pmax
comp=Z,10.0nm,0.8s
CD2 Chengdu 32.55 269 P **P 06 40 51.7 -0.8**
CD2 pmax pmax
comp=Z,1.0nm,0.5s
BILL Bilibino 32.96 16 *e*P **P 06 40 56.1 +0.5**
BILL *e* 06 42 08.6
BILL *e*PPP PPP 06 42 17.6
BILL pmax pmax
comp=Z,11nm,1.7s
GTA Gaotai 33.16 286 *e*P **P 06 40 59.0 +1.1**
GTA pP sP 06 41 09.4 +5.2
GTA sP pP 06 41 13.3 +11
GTA S **S 06 46 14.8 -2.1**
GTA sS sS 06 46 30.0 +5.6
GTA SS **SnSn 06 48 16.0 -0.1**
GTA pmax pmax
comp=Z,10.0nm,0.8s
GTA pmax pmax
comp=Z,150nm,5.9s
GTA LR LR
comp=N,160nm,15.7s
GTA LR LR
comp=E,190nm,18.1s
GTA LR LR
comp=Z,180nm,18.5s
TIXI Tiksi 34.55 352 P **P 06 41 10.7 +1.3**
comp=Z,0.9nm,0.2s,baz=121,slow=3.2,SNR=3.5
TIXI Tiksi 34.55 352 *e*P **P 06 41 11.6 +2.2**
TIXI pmax pmax
comp=Z,8.0nm,2.0s
KMI Kunming 35.96 261 P **P 06 41 20.8 -1.5**
KMI pP sP 06 41 27.3 -1.4
KMI pmax pmax
comp=Z,13nm,0.6s
KMI pmax pmax
comp=Z,47nm,3.1s
KMI LR LR
comp=N,100nm,15.3s
KMI LR LR
comp=E,140nm,16.7s
KMI LR LR
comp=Z,110nm,17.4s
MANU Manus Island 39.99 172 *e*P P 06 41 58.7 +2.6
comp=Z,98nm,0.2s
WMQ Urumqi 41.24 296 P **P 06 42 07.9 +1.6**
WMQ pP sP 06 42 18.1 +5.3
WMQ pmax pmax
comp=Z,8.0nm,0.6s
WMQ pmax pmax
comp=Z,33nm,4.8s
WMQ LR LR
comp=Z,17nm,17.8s
ZAA0 Zalesovo Array 41.99 312 *e*P **P 06 42 12.2 0.0**
ZALV Zalesovo Beam 41.99 312 P **P 06 42 12.6 +0.4**
comp=Z,6.6nm,0.4s,baz=89,slow=7.3,SNR=23
ZALV PcP **PcP 06 44 07.0 -0.2**
comp=Z,0.8nm,0.4s,baz=110,slow=1.2,SNR=3.8
ZALV LR LR 06 59 47.7
comp=Z,63nm,18.3s,baz=59,slow=36
CMAR Chiang Mai Arr 42.56 255 LR LR 07 00 32.2
comp=Z,30nm,18.6s,baz=80,slow=37
CM01 Chiang Mai Arr 42.57 255 *e*P **P 06 42 19.1 +1.8**
NRIK Noril'sk 42.86 335 P **P 06 42 19.0 -0.1**
comp=Z,2.5nm,0.5s,baz=112,slow=8.8,SNR=6.2
NRIK LR LR 07 01 10.1
comp=Z,136nm,19.0s,baz=110,slow=38
NVS Novosibirsk 42.89 313 *e*P **P 06 42 18.2 -1.3**
NVS pmax pmax
comp=Z,15nm,1.3s
NVS pmax pmax
comp=N,4.0nm,1.1s
NVS pmax pmax
comp=E,7.0nm,1.0s
MK01 Makanchi Array 44.41 302 *e*P **P 06 42 31.8 -0.1**
MK31 Makanchi Array 44.41 302 *e*P **P 06 42 31.9 -0.1**
MK31 Makanchi Array 44.41 302 *e*P **P 06 42 31.9 -0.1**
MKAR Makanchi Array 44.41 302 P **P 06 42 32.1 +0.2**
comp=E,4.0nm,0.6s,baz=87,slow=9.4,SNR=34
MKAR LR LR 07 02 06.1
comp=E,39nm,18.2s,baz=36,slow=38
MKAR Makanchi Array 44.41 302 *e*P **P 06 42 31.9 -0.1**
MKAR Makanchi Array 44.41 302 *e*P **P 06 42 31.9 -0.1**
MAKZ Makanchi 44.62 302 *e*P **P 06 42 33.6 0.0**
MAKZ pmax pmax
comp=Z,4.0nm,0.6s
MAKZ Makanchi 44.62 302 *e*P **P 06 42 33.5 0.0**
comp=Z,3.7nm,0.6s
KDAK Kodiak Island 45.88 43 P P 06 43 08.3 +25
comp=Z,5.2nm,0.6s,baz=272,slow=8.6,SNR=6.3
KURK Kurchatov 46.10 308 *e*P **P 06 42 45.0 -0.2**
KURK pmax pmax
comp=Z,17nm,0.7s
KURK Kurchatov 46.10 308 *e*P **P 06 42 45.0 -0.2**
comp=Z,17nm,0.7s
KURBB Kurchatov Arra 46.17 307 P **P 06 42 45.7 -0.1**
comp=Z,16nm,0.6s,baz=82,slow=8.0,SNR=122
ILAR Eielson Array 48.30 33 P **P 06 43 02.9 +0.7**
comp=Z,1.0nm,0.6s,baz=266,slow=6.7,SNR=9.9
TKM2 Tokmak 2 49.99 298 *e*P **P 06 43 16.1 +0.3**
TKM2 pmax pmax
comp=Z,8.0nm,0.8s
TKM2 Tokmak 2 49.99 298 *e*P **P 06 43 16.1 +0.3**
comp=Z,7.6nm,0.8s
VOSK Vostochnaya 50.37 311 *e*P **P 06 43 17.9 -0.2**
VOSK pmax pmax
comp=Z,6.0nm,1.0s
VOSK Vostochnaya 50.37 311 *e*P **P 06 43 17.9 -0.2**
comp=Z,6.0nm,1.0s
BVAR Borovoye Array 50.65 312 P **P 06 43 20.3 0.0**
comp=Z,2.3nm,0.5s,baz=69,slow=8.2,SNR=14
BVAR PcP **PcP 06 44 38.0 +0.4**
comp=Z,1.3nm,0.6s,baz=64,slow=3.4,SNR=4.3
BRVK Borovoye 50.70 312 *ce*P **P 06 43 21.0 +0.3**
BRVK pmax pmax
comp=Z,4.0nm,0.8s
BRVK Borovoye 50.70 312 *e*P **P 06 43 19.9 -0.8**
comp=Z,4.9nm,1.0s
AAK Ala-Archa 50.86 298 *e*P **P 06 43 22.3 +0.1**
AAK pmax pmax
comp=Z,13nm,1.4s
KSH Kashi 50.86 294 P P 06 43 27.1 +4.9
KSH *e*pP sP 06 43 39.7 +11
KSH S **S 06 50 41.9 +3.9**
KSH sS sS 06 51 03.2 +17
KSH pmax pmax
comp=Z,130nm,5.4s
INK Inuvik 53.23 27 P **P 06 43 40.1 +0.9**
comp=Z,0.7nm,0.5s,baz=287,slow=7.5,SNR=7.2
ARU Arti 56.30 318 P **P 06 44 02.0 +0.3**
comp=Z,3.5nm,0.3s,baz=88,slow=2.3,SNR=11
ARU Arti 56.30 318 *e*P **P 06 44 01.6 -0.1**
ARU pmax pmax
comp=Z,8.0nm,0.6s
ARU Arti 56.30 318 *e*P **P 06 44 01.6 -0.1**
comp=Z,8.0nm,0.6s
WRA Warramunga Arr 58.04 189 P **P 06 44 14.3 0.0**
comp=Z,2.3nm,0.6s,baz=6.5,slow=7.0,SNR=23
ABKAR Akbulak array 58.06 310 *e*P **P 06 44 13.7 -0.5**
AKTO Aktyubinsk 58.75 312 P **P 06 44 19.5 +0.4**
comp=Z,3.4nm,0.7s,baz=65,slow=12,SNR=12
RES Resolute Bay 61.55 15 P **P 06 44 38.1 +0.2**
comp=Z,3.3nm,0.7s,baz=312,slow=6.3,SNR=29
ASAR Alice Springs 61.76 189 P **P 06 44 40.5 +0.6**
comp=Z,0.8nm,0.7s,baz=18,slow=5.7,SNR=9.0
YKA Yellowknife Ar 62.63 31 P **P 06 44 45.7 +0.4**
comp=Z,0.4nm,0.6s,baz=300,slow=6.0,SNR=13
KLMR Klimovskoe 63.50 328 P **P 06 44 50.0 -1.1**
KLMR pmax pmax
comp=Z,15nm,1.6s
ARCES ARCESS Array B 63.50 340 P **P 06 44 51.6 +0.6**
comp=Z,2.7nm,0.9s,baz=57,slow=5.5,SNR=3.5
GEYT Alibeck 64.19 299 P **P 06 44 56.3 +0.2**
comp=Z,4.1nm,0.7s,baz=25,slow=3.8,SNR=5.1
OBN Obninsk 67.93 323 *e*P **P 06 45 20.9 +1.2**
OBN *e* 06 45 45.1
OBN *e* 06 47 49.3
OBN pmax pmax
comp=Z,5.0nm,0.9s
FINES FINESS Array B 68.46 332 P **P 06 45 23.1 +0.1**
comp=Z,4.6nm,0.7s,baz=49,slow=8.8,SNR=13
VSR Storozhevoye 68.86 319 *e*P **P 06 45 23.9 -1.8**
VSR pmax pmax
comp=Z,3.0nm,0.8s
YBH Yreka Blue Hor 69.13 53 P **P 06 45 28.1 +0.5**
comp=Z,0.8nm,0.8s,baz=155,slow=14,SNR=1.5
KIV Kislovodsk 71.00 311 *e*P **P 06 45 40.4 +1.3**
KIV pmax pmax
comp=Z,13nm,1.1s
KBZ Khabaz 71.00 311 P **P 06 45 39.9 +0.9**
comp=Z,4.1nm,0.7s,baz=81,slow=2.6,SNR=9.0
WSAR Wadi Sarin 71.49 285 LR LR 07 18 18.4
comp=Z,82nm,20.6s,baz=217,slow=37
NB2 NORSAR Subarra 73.73 338 P **P 06 45 54.7 -0.3**
comp=Z,1.8nm,0.6s,baz=39,slow=6.2
NOA NORSAR Array B 73.73 338 P **P 06 45 55.1 +0.1**
comp=Z,2.0nm,0.6s,baz=39,slow=6.0,SNR=7.7
NOA LR LR 07 21 10.6
comp=Z,34nm,19.3s,baz=20,slow=38
AKASG Malin Array Be 74.15 323 P **P 06 45 57.3 -0.3**
comp=Z,4.9nm,0.6s,baz=46,slow=6.1,SNR=18
KIEV Kiev 74.16 323 *e*P **P 06 45 57.5 -0.1**
KIEV pmax pmax
comp=Z,6.0nm,0.7s
BUR08 Bucovina Ar. S 78.17 322 *e*P **P 06 46 20.6 0.0**
ULM Lac du Bonnet 78.31 34 P **P 06 46 21.3 +0.1**
comp=Z,1.9nm,0.9s,baz=324,slow=8.7,SNR=2.3
BRTR Keskin Array B 78.93 312 P **P 06 46 25.3 +0.2**
comp=Z,0.6nm,0.4s,baz=120,slow=4.7,SNR=5.6
BRTR LR LR 07 27 25.6
comp=Z,22nm,18.4s,baz=213,slow=40
BR231 Keskin MP Arra 79.36 312 *e*P **P 06 46 26.1 -1.2**
LANS Liptovska Anna 79.75 326 *e*P **P 06 46 28.4 -0.8**
LANS Liptovska Anna 79.75 326 *e*P **P 06 46 28.4 -0.8**
VYHS Vyhne 80.51 326 *e*P **P 06 46 33.5 +0.2**
VYHS Vyhne 80.51 326 *e*P **P 06 46 33.5 +0.2**
CLL Collm 80.78 331 *e*P **P 06 46 35.0 +0.3**
CLL Collm 80.78 331 *e*P **P 06 46 35.0 +0.3**
VRAC Vranov 80.87 328 LR LR 07 24 17.8
comp=Z,78nm,18.9s,baz=206,slow=37
GERES GERESS Array B 82.44 329 P **P 06 46 43.5 -0.1**
comp=Z,0.9nm,0.6s,baz=35,slow=4.5,SNR=4.5
GERES LR LR 07 25 57.9
comp=Z,63nm,18.0s,baz=278,slow=38
TXAR Lajitas Array 88.91 53 P **P 06 47 16.4 +0.4**
comp=Z,0.4nm,0.8s,baz=314,slow=6.3,SNR=4.0
LPAZ La Paz 145.50 60 PKPbc **PKPab 06 54 01.0 0.0**
comp=Z,2.0nm,0.9s,baz=301,slow=1.2,SNR=7.2
LPAZ La Paz 145.50 60 PKIKP **PKPab 06 54 01.0 0.0**
LPAZ pmax pmax
comp=Z,2.0nm,0.9s

*NIED **07** 06:47:00,37.50N×141.70E,h11km,Mw3.9 Best double couple: M₀6.91000×10¹⁴ NP1:φs12.00000°,δ69.00000°, λ173.00000°. NP2:φs104.00000°,δ84.00000°,λ21.00000°.*

*IDC **07** 06:47:56.3±1.1,37.44N×141.69E,h0km,mb4.0/16, mb1 4.1/17,mb1mx3.9/45,mbtmp4.0/17,ML3.3/1,MS3.3/7, Ms1 3.4/7,ms1mx2.9/60,Error ellipse: s-maj=24.9km s-min=18.3km az=151.0*
*ISCJB **07** 06:47:57.2±1.0,37.42N±0.04×141.80E±0.06,h18km±6km, mb4.1/18,MS3.6/4,Error ellipse: s-maj=8.5km s-min=5.2km az=33.9*
*JMA **07** 06:47:59.0±0.2,37.45N×141.70E,h26km±2km,M4.1*
JMA Felt I J1.
*NEIC **07** 06:47:59.5±3.2,37.47N×141.69E,h19km±20km,mb4.3/3, Error ellipse: s-maj=10.7km s-min=6.4km az=132.0*
ISC 07 06:47:57.1±1.8,37.43N±0.04×141.68E±0.06,h4km±10km, n48,σ0°79/46,mb4.1/18,MS3.7/4,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
JFK	**Kawauchi**	**0.64**	**265**	P		**Pb**	**06 48 11.8**	**+0.9**
JFK				S		**Sb**	**06 48 20.5**	**+0.3**
ONAJ	**Iwakimizuishiy**	**0.78**	**245**	P		**Pb**	**06 48 13.7**	**+0.6**
ONAJ				*e*S		**Sb**	**06 48 24.1**	**+0.1**
JMM	**Marumori**	**0.83**	**302**	P		**Pb**	**06 48 14.2**	**+0.2**
JMM				S		**Sb**	**06 48 25.0**	**-0.5**
JIO	**Ouri**	**1.06**	**346**	P		**Pg**	**06 48 17.2**	**-0.1**
JIO				S		**Sg**	**06 48 30.7**	**-0.3**
JFT	**Otama**	**1.07**	**275**	P		**Pn**	**06 48 19.0**	**+0.1**
JFT				S		**Sb**	**06 48 32.9**	**+0.4**
JHO	**Hitachi**	**1.21**	**228**	P		**Pg**	**06 48 20.2**	**0.0**
JHO				S		**Sg**	**06 48 35.6**	**-0.3**
JOU	**Okura**	**1.23**	**320**	P		**Pn**	**06 48 21.0**	**-0.1**
JYS	**Shirataka**	**1.50**	**302**	P		**Pb**	**06 48 25.4**	**-0.1**
JYS				S		**Sb**	**06 48 45.1**	**+0.2**
JMK	**Ichinoseki**	**1.56**	**347**	P		**Pn**	**06 48 25.2**	**-0.4**
JFY	**Yanaizu**	**1.57**	**270**	P		**Pb**	**06 48 26.9**	**+0.2**
JFY				S		**Sb**	**06 48 47.2**	**+0.3**
MJAR	**Matsushiro Arr**	**2.92**	**253**	Pn		**Pn**	**06 48 45.7**	**+1.5**
	4.7nm,0.3s,baz=80,slow=15,SNR=30							
MJAR				Sn		**Sb**	**06 49 23.4**	**-2.2**
	9.2nm,0.3s,baz=66,slow=22,SNR=5.8							
MAJO	**Matsushiro**	**2.92**	**253**	*e*Pn		**Pn**	**06 48 45.2**	**+0.9**
ERM	**Erimo**	**4.72**	**14**	*e*Pn		**Pn**	**06 49 08.8**	**-0.1**
ERM				*e*Sn		**Sn**	**06 50 05.3**	**+1.3**
JNU	**Nakatsue**	**9.82**	**247**	LR		LR	06 53 54.3	
	comp=Z,46nm,18.3s,baz=114,slow=36							
USRK	**Ussuriysk Ar.**	**9.98**	**316**	Pn		**Pn**	**06 50 24.1**	**+3.0**
	0.4nm,0.3s,baz=131,slow=13,SNR=10							
JCJ	**Chichijima**	**10.31**	**177**	LR		LR	06 54 11.1	
	comp=Z,140nm,21.0s,baz=100,slow=36							
KLR	**Kul'dur**	**13.82**	**322**	LR		LR	06 55 46.1	
	comp=Z,57nm,19.2s,baz=324,slow=34							
BJT	**Baijiatuau**	**20.05**	**285**	*e*P		**P**	**06 52 30.8**	**-0.3**
	7.0nm,0.9s							
MA2	**Magadan**	**22.92**	**12**	P		**P**	**06 53 01.0**	**-0.8**
	2.3nm,0.3s,baz=223,slow=7.2,SNR=6.5							
YAK	**Yakutsk**	**25.73**	**347**	P		**P**	**06 53 27.6**	**-0.6**
	2.5nm,0.4s,baz=217,slow=20,SNR=2.9							
YAK				LR		LR	07 04 27.6	
	comp=Z,48nm,18.6s,baz=180,slow=38							
YAK	**Yakutsk**	**25.73**	**347**	*e*P		**P**	**06 53 27.8**	**-0.4**
SEY	**Seymchan**	**26.36**	**11**	P		**P**	**06 53 34.8**	**+0.9**
	1.2nm,0.3s,baz=186,slow=7.6,SNR=6.8							
SONM	**Songino Array**	**27.74**	**303**	P		**P**	**06 53 46.4**	**-0.4**
	1.6nm,0.7s,baz=106,slow=9.1,SNR=8.4							
H11N2	**WAKE ISLAND Hy**	**28.17**	**122**	T		T	07 23 14.0	
	baz=315,slow=75,SNR=177							
H11N1	**WAKE ISLAND Hy**	**28.18**	**122**	T		T	07 23 25.8	
	baz=315,slow=75,SNR=158							
H11N3	**WAKE ISLAND Hy**	**28.19**	**122**	T		T	07 23 22.1	
	baz=315,slow=75,SNR=121							
H11S1	**WAKE ISLAND Hy**	**28.90**	**124**	T		T	07 24 16.1	
	baz=316,slow=76,SNR=118							
H11S3	**WAKE ISLAND Hy**	**28.90**	**124**	T		T	07 24 12.5	
	baz=316,slow=76,SNR=130							
H11S2	**WAKE ISLAND Hy**	**28.92**	**124**	T		T	07 24 18.2	
	baz=316,slow=76,SNR=107							
ZALV	**Zalesovo Beam**	**41.81**	**312**	P		**P**	**06 55 47.2**	**-0.4**
	2.3nm,0.6s,baz=84,slow=6.6,SNR=9.2							
MKAR	**Makanchi Array**	**44.09**	**302**	P		**P**	**06 56 06.5**	**+0.3**
	2.3nm,0.8s,baz=88,slow=10,SNR=13							
KURK	**Kurchatov**	**45.86**	**308**	*e*P		**P**	**06 56 19.9**	**-0.2**
	12nm,0.5s							
KURBB	**Kurchatov Arra**	**45.93**	**308**	P		**P**	**06 56 20.5**	**-0.2**
	3.2nm,0.5s,baz=83,slow=8.1,SNR=14							
ILAR	**Eielson Array**	**49.05**	**33**	P		**P**	**06 56 43.9**	**-0.8**
	0.6nm,0.7s,baz=263,slow=6.7,SNR=7.2							
TKM2	**Tokmak 2**	**49.63**	**298**	*e*P		**P**	**06 56 50.6**	**+0.8**
	3.0nm,0.7s							
INK	**Inuvik**	**53.94**	**27**	P		**P**	**06 57 21.7**	**+0.4**
	0.6nm,0.5s,baz=302,slow=7.6,SNR=7.6							
WRAB	**Tennant Creek**	**57.47**	**188**	*e*P		**P**	**06 57 47.7**	**+0.5**
WRA	**Warramunga Arr**	**57.48**	**188**	P		**P**	**06 57 46.6**	**-0.6**
	0.5nm,0.4s,baz=5.0,slow=7.2,SNR=5.0							
ABKAR	**Akbulak array**	**57.85**	**310**	*e*P		**P**	**06 57 49.3**	**-0.4**
	2.1nm,0.6s							
AKTO	**Aktyubinsk**	**58.57**	**312**	P		**P**	**06 57 54.4**	**-0.3**
	1.4nm,0.7s,baz=71,slow=12,SNR=5.1							
YKA	**Yellowknife Ar**	**63.36**	**30**	P		**P**	**06 58 27.0**	**0.0**
	0.2nm,0.5s,baz=302,slow=6.5,SNR=7.6							
GEYT	**Alibeck**	**63.83**	**299**	LR		LR	07 26 46.3	
	comp=Z,31nm,18.4s,baz=340,slow=36							
FINES	**FINESS Array B**	**68.56**	**332**	P		**P**	**06 59 00.4**	**-0.1**
	2.2nm,0.6s,baz=76,slow=8.0,SNR=6.7							
NOA	**NORSAR Array B**	**73.90**	**337**	P		**P**	**06 59 33.0**	**+0.1**
	1.0nm,0.6s,baz=37,slow=6.0,SNR=4.0							
AKASG	**Malin Array Be**	**74.11**	**322**	P		**P**	**06 59 33.5**	**-0.8**
	1.2nm,0.4s,baz=46,slow=6.0,SNR=8.0							
NVAR	**Mina Array Bea**	**74.58**	**53**	LR		LR	07 24 13.1	
	comp=Z,90nm,21.7s,baz=192,slow=29							
ULM	**Lac du Bonnet**	**79.06**	**33**	LR		LR	07 36 55.9	
	comp=Z,47nm,19.7s,baz=108,slow=37							
TXAR	**Lajitas Array**	**89.71**	**53**	P		**P**	**07 00 57.1**	**+0.3**
	0.0nm,0.3s,baz=320,slow=2.7,SNR=3.9							

*IDC **07** 06:49:21.6±3.0,10.76S×164.03E,h0km,mb3.8/5, mb1 4.0/6,mb1mx3.7/35,mbtmp3.9/6,ML4.5/1,MS3.2/2, Ms1 3.2/2,ms1mx2.8/32,Error ellipse: s-maj=72.1km s-min=37.1km az=122.0*
ISC 07 06:49:27.7±1.5,10.3S±0.3×163.3E±0.1,h16km,n12, σ1°92/8,mb3.6/5,Bougainville-Solomon Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
HNR	**Honiara**	**3.41**	**285**	Pn		**Pb**	**06 50 26.7**	**-1.1**
	25nm,0.3s,baz=148,slow=1.4,SNR=10							
HNR				Sn		**Sb**	**06 51 12.4**	**+3.3**
	56nm,0.3s,baz=212,slow=8.6,SNR=5.2							
HNR	**Honiara**	**3.41**	**285**	*e*P		**Pb**	**06 50 26.0**	**-1.8**
HNR				*e*S		**Sg**	**06 51 16.0**	**-1.4**
DZM	**Mont Dzumac**	**12.06**	**166**	LR		LR	06 55 42.7	
	comp=Z,168nm,21.5s,baz=24,slow=33							
PMG	**Port Moresby**	**15.92**	**272**	LR		LR	06 59 06.6	
	comp=Z,56nm,18.8s,baz=112,slow=35							
WRA	**Warramunga Arr**	**29.49**	**248**	P		**P**	**06 55 31.8**	**+0.4**
	0.5nm,0.7s,baz=80,slow=8.9,SNR=5.0							
H11N1	**WAKE ISLAND Hy**	**30.06**	**7**	T		T	07 27 14.9	
	baz=190							
H11N3	**WAKE ISLAND Hy**	**30.07**	**7**	T		T	07 27 13.9	
	baz=190							
H11N2	**WAKE ISLAND Hy**	**30.08**	**7**	T		T	07 27 14.8	
	baz=190							
ASAR	**Alice Springs**	**30.99**	**241**	P		**P**	**06 55 44.7**	**0.0**
	0.4nm,0.5s,baz=68,slow=10,SNR=3.9							
CMAR	**Chiang Mai Arr**	**69.61**	**294**	P		P	07 00 40.1	+3.3
	0.8nm,0.3s,baz=131,slow=4.1,SNR=4.8							
SONM	**Songino Array**	**76.67**	**325**	P		**P**	**07 01 17.8**	**-0.3**
	0.6nm,0.7s,baz=147,slow=8.2,SNR=2.9							
MKAR	**Makanchi Array**	**91.35**	**317**	P		**P**	**07 02 33.9**	**+0.9**
	0.2nm,0.7s,baz=94,slow=6.3,SNR=2.9							

*MDD **07** 07:00:08.5±2.5,37.48N×14.47W,h0km,mb4.2/4,Error ellipse: s-maj=23.4km s-min=17.5km az=31.0,PRXIMO*
*INMG **07** 07:00:10.3±1.3,37.28N×14.77W,h0km,ML2.5,Error ellipse: s-maj=10.1km s-min=7.7km az=18.0*
*CSEM **07** 07:00:11.8±0.5,37.61N×14.14W,h5km,ML3.3/15,Error ellipse: s-maj=11.0km s-min=7.9km az=30.0*
ISC 07 07:00:06.1±3.7,37.49N±0.10×14.5W±0.2,h10km,n62, σ2°23/100,Azores-Cape St. Vincent Ridge

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
PMAFR	**Mafra**	**4.38**	**69**	*e*Pn		**Pn**	**07 01 14.9**	**+2.2**
PMAFR				*e*Sn		**Sn**	**07 02 05.1**	**+1.3**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
PMAFR				A	A	07 02 08.3	
	22nm,0.2s						
PMAFR	Mafra	4.38	69	Pn	Pn	07 01 14.9	+2.2
	3.6nm,0.2s,SNR=7.9						
PMAFR				Sn	Sn	07 02 03.9	+0.1
	26nm,0.2s,SNR=9.3						
PMAFR	Mafra	4.38	69	Pn	Pn	07 01 14.9	+2.2
	3.6nm,0.2s,SNR=7.9						
PMAFR				Sn	Sn	07 02 03.9	+0.1
	26nm,0.2s,SNR=9.3						
PTEO	Sao Teotonio	4.61	88	*e*Pn	Pn	07 01 17.7	+1.8
PTEO				*e*Sn	Sn	07 02 07.5	-2.0
PTEO				A	A	07 02 11.8	
	5.6nm,0.4s						
PTEO	Sao Teotonio	4.61	88	Pn	Pn	07 01 17.7	+1.8
PTEO				Sn	Sn	07 02 07.5	-2.0
	2.8nm,0.4s						
PTEO	Sao Teotonio	4.61	88	Pn	Pn	07 01 17.7	+1.8
PTEO				*e*Sn	Sn	07 02 07.5	-2.0
	5.6nm,0.4s						
PNCL	Nicolau / Gran	4.79	81	*e*Pn	Pn	07 01 20.6	+2.3
PNCL				*e*Sn	Sn	07 02 12.3	-1.5
PNCL				A	A	07 02 18.6	
	4.6nm,0.1s						
PNCL	Nicolau / Gran	4.79	81	*e*Pn	Pn	07 01 20.6	+2.3
PNCL				*e*Sn	Sn	07 02 12.3	-1.5
	4.6nm,0.1s						
PCVE	Castro Verde	5.15	86	*e*Pn	Pn	07 01 25.1	+1.8
PCVE				*e*Sn	Sn	07 02 20.7	-2.2
PCVE				A	A	07 02 25.5	
	3.3nm,0.5s						
PCVE	Castro Verde	5.15	86	Pn	Pn	07 01 25.1	+1.8
PCVE				Sn	Sn	07 02 20.7	-2.2
	3.3nm,0.5s						
PCVE	Castro Verde	5.15	86	Pn	Pn	07 01 25.1	+1.8
PCVE				*e*Sn	Sn	07 02 20.7	-2.2
	3.3nm,0.5s						
PMTG	Montargil	5.20	70	*e*Pn	Pn	07 01 26.7	+2.7
PMTG				*e*Sn	Sn	07 02 23.0	-1.0
PMTG				A	A	07 02 28.2	
	4.0nm,0.7s						
PMTG	Montargil	5.20	70	*e*Pn	Pn	07 01 26.7	+2.7
PMTG				*e*Sn	Sn	07 02 23.0	-1.0
	4.0nm,0.7s						
EVO	Evora	5.25	77	*e*Sn	Sn	07 02 24.4	-0.7
EVO				A	A	07 02 30.0	
	6.7nm,0.3s						
EVO	Evora	5.25	77	Sn	Sn	07 02 24.4	-0.7
	6.7nm,0.3s						
EVO	Evora	5.25	77	*e*Sn	Sn	07 02 24.4	-0.7
	6.7nm,0.3s						
PBDV	Barranco-do-Ve	5.26	91	*e*Sn	Sn	07 02 21.1	-4.4
PBDV				A	A	07 02 24.8	
	6.5nm,0.4s						
PBDV	Barranco-do-Ve	5.26	91	Sn	Sn	07 02 21.1	-4.4
	6.5nm,0.4s						
PBDV	Barranco-do-Ve	5.26	91	*e*Sn	Sn	07 02 21.1	-4.4
	6.5nm,0.4s						
PBEJ	Beja	5.30	82	*e*Sn	Sn	07 02 25.4	-1.1
PBEJ				A	A	07 02 29.3	
	3.1nm,0.1s						
PBEJ	Beja	5.30	82	Sn	Sn	07 02 25.4	-1.1
	1.6nm,0.1s						
PBEJ	Beja	5.30	82	*e*Sn	Sn	07 02 25.4	-1.1
	3.1nm,0.1s						
PCAS	Casmilo, Conde	5.36	60	*e*Pn	Pn	07 01 28.9	+2.7
PCAS				*e*Sn	Sn	07 02 28.4	+0.5
PCAS	Casmilo, Conde	5.36	60	*e*Pn	Pn	07 01 28.9	+2.7
PCAS				*e*Sn	Sn	07 02 28.4	+0.5
PVAQ	Vaqueiros	5.42	89	*e*Pn	Pn	07 01 28.6	+1.6
PVAQ				*e*Sn	Sn	07 02 27.4	-1.9
PVAQ				A	A	07 02 32.9	
	4.1nm,0.2s						
PVAQ	Vaqueiros	5.42	89	Pn	Pn	07 01 28.6	+1.6
PVAQ				Sn	Sn	07 02 27.4	-1.9
	4.1nm,0.2s						
PVAQ	Vaqueiros	5.42	89	Pn	Pn	07 01 28.6	+1.6
PVAQ				*e*Sn	Sn	07 02 27.4	-1.9
	4.1nm,0.2s						
EGRO	El Granado	5.60	87	Pn	Pn	07 01 31.5	+2.1
	0.4nm,0.1s,SNR=7.9						
EGRO				Sn	Sn	07 02 31.4	-2.4
	0.9nm,0.1s,SNR=5.6						
EGRO	El Granado	5.60	87	Pn	Pn	07 01 31.5	+2.1
	0.4nm,0.1s,SNR=7.9						
EGRO				Sn	Sn	07 02 31.4	-2.4
	0.9nm,0.1s,SNR=5.6						
PESTR	Estremoz	5.63	74	*e*Sn	Sn	07 02 34.3	-0.4
PESTR	Estremoz	5.63	74	Sn	Sn	07 02 34.3	-0.4
PESTR	Estremoz	5.63	74	Sn	Sn	07 02 34.3	-0.4
PMRV	Marv??o	5.92	69	*e*Pn	Pn	07 01 36.8	+2.9
PMRV				*e*Sn	Sn	07 02 41.0	-0.8
PMRV				A	A	07 02 44.3	
	3.1nm,0.2s						
PMRV	Marv??o	5.92	69	Pn	Pn	07 01 36.8	+2.9
PMRV				Sn	Sn	07 02 41.0	-0.8
	3.1nm,0.2s						
PMRV	Marv??o	5.92	69	Pn	Pn	07 01 36.8	+2.9
PMRV				*e*Sn	Sn	07 02 41.0	-0.8
	3.1nm,0.2s						
PBAR	Barrancos	5.96	81	*e*Pn	Pn	07 01 37.4	+2.9
PBAR				*e*Sn	Sn	07 02 41.0	-1.8
PBAR				A	A	07 02 45.1	
	3.9nm,0.2s						
PBAR	Barrancos	5.96	81	Pn	Pn	07 01 37.4	+2.9
PBAR				Sn	Sn	07 02 41.0	-1.8
	3.9nm,0.2s						
PBAR	Barrancos	5.96	81	Pn	Pn	07 01 37.4	+2.9
PBAR				*e*Sn	Sn	07 02 41.0	-1.8
	3.9nm,0.2s						
PCBR	Castelo Branco	5.99	65	*e*Sn	Sn	07 02 42.6	-0.9
PCBR	Castelo Branco	5.99	65	Sn	Sn	07 02 42.6	-0.9
PCBR	Castelo Branco	5.99	65	Sn	Sn	07 02 42.6	-0.9
EBAD	Badajoz	6.05	76	Sn	Sn	07 02 43.4	-1.7
	3.6nm,0.2s,SNR=7.9						
EBAD	Badajoz	6.05	76	Sn	Sn	07 02 43.4	-1.7
	3.6nm,0.2s,SNR=7.9						
EMIN	Mina Concepcio	6.24	85	Pn	Pn	07 01 40.2	+1.9
	0.4nm,0.2s,SNR=7.9						
EMIN				Sn	Sn	07 02 46.4	-3.2
	0.7nm,0.1s,SNR=7.9						
EMIN	Mina Concepcio	6.24	85	Pn	Pn	07 01 40.2	+1.9
	0.4nm,0.2s,SNR=7.9						
EMIN				Sn	Sn	07 02 46.4	-3.2
	0.7nm,0.1s,SNR=7.9						
POLO	Lamas de Olo	6.49	51	*e*Pn	Pn	07 01 43.9	+2.1
POLO				*e*Sn	Sn	07 02 53.9	-2.1
POLO	Lamas de Olo	6.49	51	*e*Pn	Pn	07 01 43.9	+2.1
POLO				*e*Sn	Sn	07 02 53.9	-2.1
PCAB	Cabril	6.55	48	*e*Pn	Pn	07 01 45.1	+2.5
PCAB	Cabril	6.55	48	Pn	Pn	07 01 45.1	+2.5
PCAB	Cabril	6.55	48	Pn	Pn	07 01 45.1	+2.5
PGAV	Gavieira, Arco	6.57	45	*e*Pn	Pn	07 01 45.0	+2.1
PGAV				*e*Sn	Sn	07 02 53.9	-4.1
PGAV	Gavieira, Arco	6.57	45	*e*Pn	Pn	07 01 45.0	+2.1
ELOB	Lobios	6.63	47	Pn	Pn	07 01 45.4	+1.7
	1.2nm,0.2s,SNR=4.0						
ELOB				Sn	Sn	07 02 56.1	-3.3
	0.5nm,0.1s,SNR=7.9						
ELOB	Lobios	6.63	47	Pn	Pn	07 01 45.4	+1.7
	1.2nm,0.2s,SNR=4.0						
EMAZ	Mazaricos	6.91	36	Pn	Pn	07 01 48.2	+0.8
	0.9nm,0.1s,SNR=7.9						
EMAZ				Sn	Sn	07 03 01.8	-4.3
	1.1nm,0.1s,SNR=7.9						
EMAZ	Mazaricos	6.91	36	Pn	Pn	07 01 48.2	+0.8
	0.9nm,0.1s,SNR=7.9						
ECAB	El Cabril	7.24	83	Pn	Pn	07 01 52.6	+0.6
	0.3nm,0.2s,SNR=4.0						
ECAB				Sn	Sn	07 03 11.5	-2.7
	0.2nm,0.1s,SNR=7.9						
ECAB	El Cabril	7.24	83	Pn	Pn	07 01 52.6	+0.6
	0.3nm,0.2s,SNR=4.0						
ECAB				Sn	Sn	07 03 11.5	-2.7
	0.2nm,0.1s,SNR=7.9						
EAGO	Agolada(Pontev	7.24	41	Pn	Pn	07 01 53.3	+1.3
	1.1nm,0.1s,SNR=7.9						
EAGO				Sn	Sn	07 03 09.0	-5.3
	0.7nm,0.1s,SNR=7.9						
EAGO	Agolada(Pontev	7.24	41	Pn	Pn	07 01 53.3	+1.3
	1.1nm,0.1s,SNR=7.9						
ECAL	Calabor	7.47	51	Pn	Pn	07 01 58.2	+3.0
	2.9nm,0.3s,SNR=7.9						
ECAL				Sn	Sn	07 03 18.2	-1.7
	0.5nm,0.1s,SNR=7.9						
ECAL	Calabor	7.47	51	Pn	Pn	07 01 58.2	+3.0
	2.9nm,0.3s,SNR=7.9						
ECAL				Sn	Sn	07 03 18.2	-1.7
	0.5nm,0.1s,SNR=7.9						

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*NEIC **07** 07:03:26.7±2.0, 33°.96S×179°.22E, h215^{km}±16^{km}, mb4.7/7, Error ellipse: s-maj=23.6km s-min=13.9km az=67.0*
*IDC **07** 07:03:28.6±3.7, 33°.92S×179°.24E, h234^{km}±28^{km}, mb3.9/7, mb1 4.1/8, mb1mx3.8/23, mbtmp4.6/8, Error ellipse: s-maj=38.1km s-min=14.8km az=44.0*
ISC 07 07:03:36.0±1.1**, 34°.50S**±0°.09×**178°.44E**±0°.09**, h250**^{km}**, n105,** σ**2**^{s}**26**/105**, mb4.3**/12**, South of Kermadec Islands**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
MXZ	Matakaoa Point	3.05	182	PN	Pn	07 04 30.3	+1.3
MXZ				SN	S	07 05 13.7	+2.7
HAZ	Te Kaha	3.29	189	PN	Pn	07 04 34.1	+2.6
HAZ				SN	S	07 05 22.3	+6.7
WMGZ	Waiomatatini S	3.31	180	PN	Pn	07 04 33.7	+1.9
WMGZ				SN	S	07 05 23.1	+7.0
PKGZ	Pakihiroa	3.39	185	PN	Pn	07 04 35.1	+2.3
PUZ	Puketiti	3.56	182	PN	Pn	07 04 36.1	+1.4
PUZ				SN	S	07 05 26.2	+4.9
TWGZ	Tauwhareparae	3.68	186	PN	Pn	07 04 39.2	+3.1
MWZ	Matawai	3.89	191	PN	Pn	07 04 40.4	+1.8
URZ	Urewera	3.90	196	P	Pn	07 04 40.5	+2.0
	52nm,0.3s,baz=279,slow=4.0,SNR=278						
URZ				S	S	07 05 34.8	+6.5
	65nm,0.3s,baz=34,slow=4.3,SNR=25						
URZ	Urewera	3.90	196	PN	Pn	07 04 40.4	+1.9
URZ	Urewera	3.90	196	Pn	Pn	07 04 37.1	-1.4
URZ				*e*S	S	07 05 33.4	+5.1
CNGZ	Carnagh Statio	3.98	183	PN	Pn	07 04 41.1	+1.6
OUZ	Omahuta	4.05	258	*e*Pn	Pn	07 04 46.3	+6.0
OUZ				*e*S	S	07 05 39.0	+7.6
RAGZ	Rawiri	4.07	191	PN	Pn	07 04 42.7	+2.0
RIGZ	Rimuhau	4.23	187	*e*PN	Pn	07 04 43.3	+0.9
PRRZ	Plateau Road	4.31	202	PN	Pn	07 04 48.3	+4.8
SNGZ	Shannon Statio	4.36	191	PN	Pn	07 04 45.9	+1.8
PRGZ	Paritu Road	4.43	186	PN	Pn	07 04 46.9	+2.0
KUTZ	Kaahu Road	4.50	207	PN	Pn	07 04 52.1	+6.4
RAHZ	Arahi	4.54	193	PN	Pn	07 04 47.6	+1.5
KNZ	Kokohu	4.55	188	PN	Pn	07 04 46.9	+0.7
MRHZ	Matea Rd	4.62	200	PN	Pn	07 04 50.7	+3.6
WHHZ	Waihua	4.67	192	PN	Pn	07 04 50.4	+2.7
ARHZ	Aropaoanui	4.89	193	PN	Pn	07 04 52.6	+2.2
BKZ	Black Stump Fm	4.91	198	PN	Pn	07 04 52.5	+1.8
HIZ	Hauiti	4.93	215	PN	Pn	07 04 57.0	+6.1
MCHZ	McNeill Hill	5.12	195	PN	Pn	07 04 54.5	+1.3
KWHZ	Kaweka Forest	5.17	198	*e*PN	Pn	07 04 54.6	+0.7
CKHZ	Cape Kidnapper	5.26	192	*e*PN	Pn	07 04 56.6	+1.7
FWVZ	Far West T-bar	5.28	205	PN	Pn	07 04 57.9	+2.6
WHVZ	Whangaehu Hut	5.29	205	PN	Pn	07 04 59.0	+3.5
TRVZ	Turoa	5.32	205	PN	Pn	07 04 59.7	+3.9
WNVZ	Wahianoa	5.33	204	PN	Pn	07 04 59.4	+3.6
BHHZ	Black Hill Sta	5.33	200	PN	Pn	07 04 57.9	+2.1
MOVZ	Moawhango	5.34	203	PN	Pn	07 04 58.6	+2.5
KRHZ	Kereru	5.39	197	PN	Pn	07 04 57.3	+0.8
MTVZ	Mangateitei	5.42	205	PN	Pn	07 05 00.6	+3.6
KAHZ	Kahuranaki	5.43	193	PN	Pn	07 04 57.6	+0.6
PXZ	Pawanui	5.66	192	PN	Pn	07 04 59.5	-0.2
PNHZ	Pukenui	5.69	198	*e*PN	Pn	07 05 00.7	+0.5
WPHZ	Waipukurau	5.77	195	PN	Pn	07 05 03.2	+1.9
TSZ	Takapari Road	5.89	199	PN	Pn	07 05 02.8	+0.1
WAZ	Wanganui	5.92	207	PN	Pn	07 05 06.2	+3.1
PRHZ	Porangahau	5.93	193	PN	Pn	07 05 03.2	0.0
DVHZ	Dannevirke	6.06	197	PN	Pn	07 05 05.6	+0.7
ANWZ	Angora Road	6.15	194	PN	Pn	07 05 07.1	+1.3
POWZ	Post Office Ro	6.25	199	PN	Pn	07 05 09.0	+1.8
PRWZ	Pori Road	6.35	197	PN	Pn	07 05 10.1	+1.7
BFZ	Birch Farm	6.41	195	*e*PN	Pn	07 05 09.6	+0.5
MRZ	Mangatainoka R	6.55	199	PN	Pn	07 05 10.2	-0.8
MRZ				SN	S	07 06 29.5	+2.4
TIWZ	Tintock	6.58	197	PN	Pn	07 05 12.9	+1.6
CPWZ	Castlepoint	6.64	195	PN	Pn	07 05 14.3	+2.3
HOWZ	Holdsworth Sta	6.79	199	PN	Pn	07 05 13.5	-0.5
OGWZ	Otaki Gorge	6.81	201	PN	Pn	07 05 14.1	-0.1
TMWZ	Te Maipa	6.89	196	PN	Pn	07 05 16.1	+0.9
KIW	Kapiti Island	6.94	203	PN	Pn	07 05 15.7	-0.1
MTW	Mount Morrison	7.04	198	PN	Pn	07 05 17.3	+0.2
CAW	Cannon Point	7.11	201	PN	Pn	07 05 17.4	-0.6
TRWZ	Traveller	7.22	197	PN	Pn	07 05 19.7	+0.4
DUWZ	D'Urville Isla	7.24	208	PN	Pn	07 05 19.8	+0.2
PAWZ	Paruwai Farm	7.27	198	PN	Pn	07 05 20.5	+0.5
MSWZ	Moikau Station	7.34	199	PN	Pn	07 05 20.8	-0.2
WEL	Wellington	7.36	202	PN	Pn	07 05 21.1	0.0
SNZO	South Karori	7.41	202	*e*Pn	Pn	07 05 21.8	+0.1
TCW	Tory Channel	7.46	205	PN	Pn	07 05 22.1	-0.3
PLWZ	Palliser	7.49	199	PN	Pn	07 05 23.1	+0.3
TUWZ	Tuamarina	7.77	206	PN	Pn	07 05 25.7	-0.6
NNZ	Nelson	7.80	209	*e*PN	Pn	07 05 27.1	+0.4
NNZ				*e*SN	S	07 06 57.6	+1.8
QRZ	Quartz Range	7.86	215	PN	Pn	07 05 28.3	+0.9
BSWZ	Blackbirch Sta	8.05	205	PN	Pn	07 05 30.0	+0.2
THZ	Tophouse	8.46	209	PN	Pn	07 05 35.1	+0.1
KHZ	Kahutara	8.78	204	*e*PN	Pn	07 05 38.1	-1.0
KHZ	Kahutara	8.78	204	*e*Pn	Pn	07 05 39.1	0.0
	455nm,0.6s						
DSZ	Denniston Nort	8.92	214	*e*PN	Pn	07 05 41.5	+0.7
LTZ	Lake Taylor	9.57	208	PN	Pn	07 05 48.7	-0.4
INZ	Inchbonnie	9.86	212	PN	Pn	07 05 52.1	-0.6
INZ				*e*SN	S	07 07 42.7	-0.9
OXZ	Oxford	10.12	208	PN	Pn	07 05 54.7	-1.2
OXZ				*e*SN	S	07 07 46.6	-2.9
MQZ	McQueen's Vall	10.23	204	PN	Pn	07 05 56.3	-1.0
MQZ				*e*SN	S	07 07 48.5	-3.5
WVZ	Waitaha Valley	10.45	213	PN	Pn	07 05 59.8	-0.4
RPZ	Rata Peaks	10.83	210	P	Pn	07 06 05.0	0.0
	9.7nm,0.3s,baz=269,slow=3.7,SNR=20						
RPZ				S	S	07 08 03.8	-2.5
	8.1nm,0.3s,baz=327,slow=23,SNR=12						
RPZ	Rata Peaks	10.83	210	*e*PN	Pn	07 06 04.7	-0.3
RPZ	Rata Peaks	10.83	210	*e*Pn	Pn	07 06 04.8	-0.2
FOZ	Fox Glacier	11.23	214	PN	Pn	07 06 09.3	-0.6
LBZ	Lake Benmore	11.74	210	PN	Pn	07 06 15.5	-0.8
ODZ	Otahua Downs	12.11	207	PN	Pn	07 06 20.6	-0.1
ODZ	Otahua Downs	12.11	207	*e*Pn	Pn	07 06 20.9	+0.2
JCZ	Jackson Bay	12.12	215	*e*PN	Pn	07 06 19.7	-1.4
MSVF	Nonsavu	16.71	359	*e*P	P	07 07 02.3	-12
	19nm,0.7s						
STKA	Stephens Creek	30.84	264	P	P	07 09 29.4	+0.4
	2.0nm,0.5s,baz=97,slow=8.6,SNR=5.3						
CTA	Charters Tower	31.84	288	P	P	07 09 37.6	-0.4
	16nm,0.5s,baz=117,slow=10,SNR=32						
CTAO	Charters Tower	31.84	288	*e*P	P	07 09 37.4	-0.6
	16nm,0.5s						
ASAR	Alice Springs	40.11	273	P	P	07 10 46.8	-1.0
	12nm,0.8s,baz=114,slow=7.6,SNR=88						
ASAR				S	S	07 16 34.8	-0.3
	0.3nm,0.5s,baz=120,slow=15,SNR=4.9						
WRAB	Tennant Creek	41.48	279	*e*P	P	07 10 57.2	-1.7
	9.2nm,0.6s						
WRA	Warramunga Arr	41.48	279	P	P	07 10 57.3	-1.8
	8.7nm,0.6s,baz=119,slow=7.5,SNR=49						
VNDA	Vanda	43.73	185	P	P	07 11 16.7	+0.5
	1.1nm,0.6s,baz=4.1,slow=7.4,SNR=9.4						
SBA	Scott Base	43.75	184	*e*P	P	07 11 16.8	+0.5
	4.7nm,0.7s						
FITZ	Fitzroy Crossi	49.53	275	*e*P	P	07 12 00.3	-1.5
	3.6nm,0.6s						
QSPA	South Pole Qui	55.62	180	*e*P	P	07 12 45.5	-0.3
	96nm,0.7s						
MAW	Mawson	67.40	202	P	P	07 14 03.2	-0.9
	3.5nm,0.5s,baz=153,slow=9.0,SNR=4.4						
SNAA	Sanae	74.12	180	*e*P	P	07 14 41.6	-3.0
	692nm,1.0s						
PLCA	Paso Flores	81.86	134	P	P	07 15 23.6	-4.0
	1.4nm,0.8s,baz=266,slow=7.0,SNR=5.5						
ARCES	ARCESS Array B	141.86	345	PKhKP	PKPpre	07 22 26.7	
	1.4nm,0.9s,baz=20,slow=3.0,SNR=3.4						
FINES	FINESS Array B	147.79	335	PKPbc	PKPdf	07 22 42.2	-5.1
	1.1nm,0.6s,baz=116,slow=3.2,SNR=6.0						
BRTR	Keskin Array B	151.57	291	PKPbc	PKPdf	07 22 54.2	0.0
	0.3nm,0.4s,baz=128,slow=4.0,SNR=3.7						
DBIC	Dimbokro	152.13	173	PKPbc	PKPdf	07 22 56.2	+0.6
	1.0nm,0.4s,baz=141,slow=2.5,SNR=7.6						
TORD	Torodi Ar. Bea	158.53	189	PKPab	PKPab	07 23 36.2	-4.0
	0.9nm,0.5s,baz=170,slow=4.5,SNR=11						

JMA 07 07:03:53.1±0.3**, 37°.38N**×**142°.54E, h0**^{km}**, M3.6, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
JFK	Kawauchi	1.33	270	P	Pg	07 04 18.2	-0.3
ONAJ	Iwakimizuishiy	1.42	259	P	Pn	07 04 19.5	-0.7
ONAJ				*e*S	Sn	07 04 39.7	+0.1
JIO	Ouri	1.43	319	P	Pn	07 04 19.7	-0.6
JIO				*e*S	Sn	07 04 39.6	-0.1
JMM	Marumori	1.47	290	P	Pn	07 04 20.0	-0.8
JMM				*e*S	Sn	07 04 41.0	+0.2
JFT	Otama	1.76	275	P	Pn	07 04 25.4	+0.6
JFT				*e*S	Sg	07 04 49.4	-0.2
JOU	Okura	1.78	304	P	Pn	07 04 25.6	+0.4
JOU				S	Sg	07 04 50.1	-0.2
JMK	Ichinoseki	1.88	327	P	Pn	07 04 27.3	+0.8
JYS	Shirataka	2.13	294	*e*S	Sn	07 04 57.7	+0.5
JOM	Ohasama	2.31	335	P	Pb	07 04 34.7	-0.9

JMA 07 07:04:14.4±0.3**, 32°.17N**×**137°.99E, h22**^{km}**, M2.7, Southeast of Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
TK01	Tokai 1	1.63	348	P	Pn	07 04 42.2	+0.8
TTO2	TONANKAI O.B.S	1.76	333	P	Pb	07 04 44.7	-1.1
TTO3	TONANKAI O.B.S	1.76	344	P	Pb	07 04 44.7	-1.2
TTO4	TONANKAI O.B.S	1.87	348	P	Pn	07 04 45.8	+0.9
TK03	Tokai 3	1.99	359	*e*S	Sb	07 05 13.2	-0.9
JWZ	Kozaga	2.35	306	P	Pn	07 04 52.9	+1.3
JWZ				*e*S	Sn	07 05 21.3	+1.5
JIE	Ise	2.46	334	P	Pn	07 04 54.6	+1.4
JKN2	Miekihoku	2.52	326	P	Pn	07 04 55.0	+1.1
JKN2				*e*S	Sn	07 05 25.3	+1.4

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*IDC **07** 07:12:19.9±0.9, 36°.42N×28°.81E, h0^{km}, mb3.9/8, mb1 4.0/16, mb1mx3.8/59, mbtmp3.8/16, ML3.6/8, MS3.2/1, Ms1 3.2/1, ms1mx2.3/62, Error ellipse: s-maj=16.9km s-min=14.9km az=5.0*
*DDA **07** 07:12:22.0, 36°.61N×28°.82E, h12^{km}, Ml3.8*
*ATH **07** 07:12:21.5, 36°.50N×28°.80E, h17^{km}±1^{km}, ML3.5/5, Error ellipse: s-maj=1.9km s-min=0.8km az=189.0*
*CSEM **07** 07:12:21.8±0.1, 36°.43N×28°.81E, h5^{km}, MD3.3, Error ellipse: s-maj=3.5km s-min=3.1km az=19.0*
*ISCJB **07** 07:12:21.4±0.5, 36°.43N±0°.02×28°.82E±0°.02, h9^{km}±4^{km}, mb3.7/8, MS3.2/1, Error ellipse: s-maj=3.5km s-min=2.7km az=162.7*
*THE **07** 07:12:22.5, 36°.40N×28°.77E, h2^{km}±1^{km}, ML3.8/5, Error ellipse: s-maj=1.5km s-min=0.7km az=164.0*
*ISK **07** 07:12:22.7, 36°.57N×28°.74E, h7^{km}, MD3.3*
*HLW **07** 07:12:24.7, 36°.31N×29°.08E, h33^{km}±16^{km}, Ml3.1*
ISC 07 07:12:21.7±0.8**, 36°.42N**±0°.02×**28°.81E**±0°.02**, h11**^{km}±5^{km}**, n154,** σ**1**^{s}**24**/197**, mb3.8**/8**, 5C-5D, Dodecanese Islands**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
DALY	Dalyan (Mu˜la	0.41	342	*e*PG	Pg	07 12 28.3	-1.6
DALY				*e*SG	Sg	07 12 34.2	-1.2
DALY	Dalyan (Mu˜la	0.41	342	*e*Pg	Pg	07 12 28.3	-1.6
DALY				*e*Sg	Sg	07 12 34.2	-1.2
ARG	Arkhangelos	0.59	250	P	Pg	07 12 33.0	-0.1
ARG				S	Sb	07 12 42.1	-0.3
ARG	Arkhangelos	0.59	250	P	Pg	07 12 33.0	-0.1
ARG				S	Sb	07 12 42.1	-0.3
AKAS	Kas	0.67	106	*i* P	Pb	07 12 35.7	+0.2
AKAS				*i* S	Sn	07 12 47.4	-0.5
AKAS	Kas	0.67	106	P	Pb	07 12 35.7	+0.2
AKAS				S	Sn	07 12 47.4	-0.5
KSL	Kastellorizon	0.68	113	P	Pb	07 12 35.8	+0.2
KSL				S	Sn	07 12 47.5	-0.4
KSL	Kastellorizon	0.68	113	P	Pb	07 12 35.9	+0.3
KSL				S	Sb	07 12 45.5	+0.5
KSL				AML	AML	07 12 53.0	
	comp=E,4753μm,0.5s						
KSL				AML	AML	07 12 55.9	
	comp=N,4138μm,0.6s						
ELL	Elmali	0.94	69	*e*PG	Pn	07 12 41.1	+0.1
ELL				*e*SG	Sn	07 12 55.3	+0.7
ELL	Elmali	0.94	69	*e*Pg	Pn	07 12 41.1	+0.1
GOLH	Golhisar	1.01	36	*i* P	Pg	07 12 40.7	-0.5
GOLH	Golhisar	1.01	36	P	Pg	07 12 40.7	-0.5
BDRM	Kayabasi	1.27	301	*i* P	Pn	07 12 44.9	-0.6
BDRM				*i* S	Sg	07 13 02.4	-0.3
BDRM	Kayabasi	1.27	301	P	Pn	07 12 44.9	-0.6
BDRM				S	Sg	07 13 02.4	-0.3
NIS1	Nisyros Isl.	1.33	278	*e*PN	Pb	07 12 46.9	+0.2
NIS1				*e*SN	Sg	07 13 05.1	+0.7
NIS1	Nisyros Isl.	1.33	278	P	Pn	07 12 46.2	0.0
NIS1				S	Sn	07 13 04.0	+0.1
NIS1	Nisyros Isl.	1.33	278	*e*Pn	Pb	07 12 46.9	+0.2
NIS1				S	Sn	07 13 04.0	+0.1
NIS1				*e*Sn	Sg	07 13 05.1	+0.7
NIS1	Nisyros Isl.	1.33	278	P	Pb	07 12 46.8	+0.2
NIS1				S	Sg	07 13 04.6	+0.2
NIS1				AML	AML	07 13 10.5	
	comp=N,14754μm,0.5s						
NIS1				AML	AML	07 13 12.7	
	comp=E,15148μm,0.5s						
DENT	Denizli	1.34	8	*e*PN	Pn	07 12 46.0	-0.5
DENT	Denizli	1.34	8	*e*Pn	Pn	07 12 46.0	-0.5
BODT	Bodrum	1.36	298	*e*PN	Pn	07 12 46.8	+0.1
BODT				*e*SN	Sb	07 13 04.8	0.0
BODT	Bodrum	1.36	298	P	Pn	07 12 46.8	+0.1
BODT				S	Sn	07 13 05.1	+0.2
BODT	Bodrum	1.36	298	P	Pn	07 12 46.8	+0.1
BODT				*e*Sn	Sb	07 13 04.8	0.0
BODT				S	Sn	07 13 05.1	+0.2
AYDN	Tasoluk	1.44	329	*i* P	Pn	07 12 48.3	+0.4
AYDN				*i* S	Sn	07 13 06.1	-0.8
AYDN	Tasoluk	1.44	329	P	Pn	07 12 48.3	+0.4
AYDN				S	Sn	07 13 06.1	-0.8
KARP	Karpathos	1.60	237	*e*PN	Pg	07 12 52.6	+0.3
KARP	Karpathos	1.60	237	P	Pn	07 12 50.4	+0.4
KARP				S	Sb	07 13 11.4	-0.1
KARP	Karpathos	1.60	237	P	Pn	07 12 50.4	+0.4
KARP	Karpathos	1.60	237	*e*Pn	Pg	07 12 52.6	+0.3
KARP				S	Sb	07 13 11.4	-0.1
KARP	Karpathos	1.60	237	P	Pg	07 12 52.2	-0.2
KARP				S	Sg	07 13 13.4	+0.4
KARP				AML	AML	07 13 20.6	
	comp=N,2372μm,0.8s						
KARP				AML	AML	07 13 21.4	
	comp=E,1541μm,0.7s						
BCK	Bucak	1.76	53	*e*PN	Pb	07 12 54.0	0.0
BCK	Bucak	1.76	53	*e*Pn	Pb	07 12 54.1	0.0
GCAM	G?zelcaml?	1.79	316	*i* P	Pn	07 12 53.3	+0.7
GCAM	G?zelcaml?	1.79	316	P	Pn	07 12 53.3	+0.7
ISP	Isparta	1.96	44	*e*PN	Pb	07 12 56.7	-0.7
ISP	Isparta	1.96	44	P	Pn	07 12 55.9	+0.9
ISP				S	Sb	07 13 21.6	-0.3
ISP	Isparta	1.96	44	P	Pn	07 12 55.9	+0.9
ISP	Isparta	1.96	44	*e*Pn	Pb	07 12 56.7	-0.7
ISP				S	Sb	07 13 21.6	-0.3
KHL	Karahalli	1.98	16	*e*PN	Pn	07 12 55.8	+0.5
KHL	Karahalli	1.98	16	*e*Pn	Pn	07 12 55.8	+0.5
KHAL	Karahalli	2.02	15	*i* P	Pn	07 12 56.0	+0.2
KHAL	Karahalli	2.02	15	P	Pn	07 12 56.0	+0.2
SMG	Samos	2.04	310	P	Pn	07 12 56.0	0.0
SMG				S	Sn	07 13 22.0	+0.6
SMG	Samos	2.04	310	P	Pn	07 12 56.2	+0.2
SMG				S	Sn	07 13 22.0	+0.6
SMG	Samos	2.04	310	P	Pn	07 12 56.2	+0.2
KULA	Kula-Manisa	2.09	357	*e*PN	Pn	07 12 56.9	0.0
KULA	Kula-Manisa	2.09	357	P	Pn	07 12 57.1	+0.3
KULA				S	Sn	07 13 24.2	+1.3
KULA	Kula-Manisa	2.09	357	P	Pn	07 12 57.1	+0.3
KULA				S	Sn	07 13 24.2	+1.3
BAGO	Egridir - ISPA	2.23	45	*i* P	Pn	07 13 00.2	+1.6
BLCB	Balcova	2.41	325	*e*PN	Pn	07 13 01.4	+0.3
BLCB	Balcova	2.41	325	*e*Pn	Pn	07 13 01.4	+0.3
ZKR	Zakros	2.48	239	P	Pb	07 13 04.8	-1.5
ZKR				S	Sb	07 13 35.6	-1.2
ZKR	Zakros	2.48	239	P	Pb	07 13 04.8	-1.5
ZKR				S	Sb	07 13 35.6	-1.2
ZKR				AML	AML	07 13 49.2	
	comp=E,1137μm,0.7s						
ZKR				AML	AML	07 13 55.9	
	comp=N,821μm,0.9s						

AKHS	Akhisar	2.58	342	iP	Pn	07 13 03.6	+0.2
AKHS	Akhisar	2.58	342	P	Pn	07 13 03.6	+0.2
AKS	Akhisar	2.58	342	ePN	Pn	07 13 03.3	-0.1
AKS	Akhisar	2.58	342	ePn	Pn	07 13 03.3	-0.1
DEMI	Demirci	2.62	358	iP	Pn	07 13 04.1	0.0
DEMI				iS	Sn	07 13 36.9	+1.0
DEMI	Demirci	2.62	358	P	Pn	07 13 04.1	0.0
DEMI				S	Sn	07 13 36.9	+1.0
APE	Apeiranthos	2.71	285	ePN	Pn	07 13 06.7	+1.4
APE	Apeiranthos	2.71	285	P	Pn	07 13 06.3	+1.0
APE	Apeiranthos	2.71	285	ePn	Pn	07 13 06.7	+1.4
APE	Apeiranthos	2.71	285	P	Pn	07 13 06.3	+1.0
GDZ	Gediz	2.72	11	iP	Pn	07 13 05.8	+0.3
GDZ	Gediz	2.72	11	P	Pn	07 13 05.8	+0.3
GAZI	Gazipasa	2.84	93	iP	Pn	07 13 08.2	+1.2
GAZI	Gazipasa	2.84	93	P	Pn	07 13 08.2	+1.2
NPS	Neapolis	2.84	247	P	Pn	07 13 08.3	+1.2
NPS	Neapolis	2.84	247	P	Pn	07 13 08.3	+1.2
NPS	Neapolis	2.84	247	P	Pn	07 13 08.8	+1.7
BOLV	Bolvadin	2.85	36	iP	Pn	07 13 08.6	+1.3
BOLV	Bolvadin	2.85	36	P	Pn	07 13 08.6	+1.3
CHOS	Chios island	2.94	313	ePN	Pn	07 13 09.2	+0.7
CHOS	Chios island	2.94	313	P	Pn	07 13 08.9	+0.4
CHOS	Chios island	2.94	313	P	Pn	07 13 08.9	+0.4
CHOS	Chios island	2.94	313	ePn	Pn	07 13 09.2	+0.7
CHOS	Chios island	2.94	313	P	Pn	07 13 08.8	+0.4
DKL	Dikili	3.05	331	ePN	Pn	07 13 10.6	+0.8
DKL	Dikili	3.05	331	ePn	Pn	07 13 10.6	+0.8
KMER	Konya-Meram	3.15	64	iP	Pn	07 13 13.6	+2.2
KMER	Konya-Meram	3.15	64	P	Pn	07 13 13.6	+2.2
DURS	Dursunbey	3.19	355	iP	Pn	07 13 12.1	+0.3
DURS	Dursunbey	3.19	355	P	Pn	07 13 12.1	+0.3
AYVA	Ayvalik	3.33	330	iP	Pn	07 13 14.2	+0.4
AYVA	Ayvalik	3.33	330	P	Pn	07 13 14.2	+0.4
KDHN	Kadinhani	3.36	50	iP	Pn	07 13 16.1	+1.8
KDHN	Kadinhani	3.36	50	P	Pn	07 13 16.1	+1.8
IDI	Anoyia	3.38	252	Pn	Pn	07 13 15.8	+1.3
	comp=N,8.8nm,0.3s,baz=61,slow=16,SNR=30						
IDI				Sn	Sn	07 13 56.6	+2.0
	comp=N,13nm,0.3s,baz=318,slow=16,SNR=12						
BALY	Balya	3.44	345	iP	Pn	07 13 15.6	+0.2
BALY	Balya	3.44	345	P	Pn	07 13 15.6	+0.2
KIZT	Kizilcal	3.46	44	ePN	Pn	07 13 17.2	+1.6
KIZT	Kizilcal	3.46	44	ePn	Pn	07 13 17.2	+1.6
PRK	Paraskevi	3.46	325	P	Pn	07 13 16.1	+0.5
PRK				S	Sn	07 13 57.4	+0.8
PRK	Paraskevi	3.46	325	P	Pn	07 13 16.1	+0.5
PRK				S	Sn	07 13 57.4	+0.8
SIVA	Sivas	3.54	248	ePN	Pn	07 13 20.1	+3.4
SIVA	Sivas	3.54	248	P	Pn	07 13 19.4	+2.7
SIVA				S	Sn	07 14 01.4	+2.8
SIVA	Sivas	3.54	248	P	Pn	07 13 19.4	+2.7
SIVA				S	Sn	07 14 01.4	+2.8
SIVA				AML	AML	07 14 17.5	
	comp=N,714µm,0.6s						
SIVA				AML	AML	07 14 18.6	
	comp=E,835µm,0.8s						
SIGR	SIGRI	3.64	321	ePN	Pn	07 13 19.2	+1.2
SIGR	SIGRI	3.64	321	P	Pn	07 13 18.3	+0.3
SIGR	SIGRI	3.64	321	P	Pn	07 13 18.3	+0.3
SIGR	SIGRI	3.64	321	ePn	Pn	07 13 19.2	+1.2
BORA	Eskisehir	3.69	20	iP	Pn	07 13 18.9	+0.1
BORA	Eskisehir	3.69	20	P	Pn	07 13 18.9	+0.1
BOZC	Bozcaada	4.05	328	iP	Pn	07 13 25.0	+1.4
KERG	Konya-Eregli	4.37	75	iP	Pn	07 13 30.5	+2.3
KERG	Konya-Eregli	4.37	75	P	Pn	07 13 30.5	+2.3
BRTR	Keskin Array B	5.04	48	Pn	Pn	07 13 38.3	+0.9
	comp=E,0.7nm,0.3s,baz=223,slow=15,SNR=22						
BRTR				Sn	Sn	07 14 38.2	+2.6
	comp=E,0.9nm,0.3s,baz=240,slow=25,SNR=7.5						
BCAM	Yenicaga	5.07	29	iP	Pn	07 13 39.4	+1.6
BCAM	Yenicaga	5.07	29	P	Pn	07 13 39.4	+1.6
HMAT	Matruh	5.50	196	P	Pn	07 13 44.5	+0.9
	baz=199						
HMAT				AMP		07 14 00.0	
	comp=E,30µm,0.7s,logA/T=4.6,baz=199						
HMAT				S	Sn	07 14 42.6	-4.3
	baz=199						
HMAT	Matruh	5.50	196	P	Pn	07 13 44.5	+0.9
SLUM	Salum	5.75	212	P	Pn	07 13 48.9	+1.8
	baz=215						
SLUM	Salum	5.75	212	P	Pn	07 13 48.8	+1.8
MMAI	Mount Meron Ar	6.40	120	Pn	Pn	07 13 55.1	-1.0
	comp=E,4.1nm,0.3s,baz=294,slow=12,SNR=7.0						
MMAI				Sn	Sn	07 15 06.8	-2.5
	comp=E,2.7nm,0.3s,baz=318,slow=21,SNR=3.3						
HNAT	Natroun	6.94	167	P	Pn	07 14 02.8	-0.6
	baz=168						
HNAT	Natroun	6.94	167	P	Pn	07 14 02.8	-0.6
KOT	Kottamia	6.95	158	P	Pn	07 14 02.9	-0.7
	baz=159						
KOT	Kottamia	6.95	158	P	Pn	07 14 02.9	-0.7
HSAF	As Saff	7.16	160	P	Pn	07 14 04.7	-1.8
	baz=162						
GLL	Jalalah	7.25	160	P	Pn	07 14 06.7	-0.9
	baz=161						
GLL	Jalalah	7.25	160	P	Pn	07 14 06.7	-0.9
SUZ	Suez	7.38	152	P	Pn	07 14 08.3	-1.1
	baz=153						
SUZ	Suez	7.38	152	P	Pn	07 14 08.3	-1.1
HNKL	Nakhl	7.79	145	P	Pn	07 14 13.8	-1.3
	baz=145						
HNKL	Nakhl	7.79	145	P	Pn	07 14 13.8	-1.3
ASF	Jabal al Asfar	7.92	120	Pn	Pn	07 14 16.3	-0.6
	comp=E,0.4nm,0.3s,baz=315,slow=11,SNR=2.9						
TIRR	Tirgusor	8.03	358	⇑iP	Pn	07 14 20.5	+2.2
EIL	Elat	8.48	141	Pn	Pn	07 14 23.8	-0.7
	comp=E,1.0nm,0.3s,baz=14,slow=1.7,SNR=7.3						
EIL				Sn	Sn	07 15 55.3	-4.8
	comp=E,1.7nm,0.3s,baz=311,slow=9.9,SNR=4.3						
CFR	Carcaliu	8.76	357	⇓iP	Pn	07 14 30.6	+2.3
GRB	Gharib	8.79	156	P	Pn	07 14 27.8	-1.0
	baz=157						
GRB	Gharib	8.79	156	P	Pn	07 14 27.8	-1.0
MLR	Muntele Rosu	9.32	347	Pn	Pn	07 14 37.2	+1.1
	comp=E,0.2nm,0.3s,baz=223,slow=5.4,SNR=9.1						
MLR	Muntele Rosu	9.32	347	⇓iP	Pn	07 14 37.4	+1.4
VOIR		9.44	344	⇑iP	Pn	07 14 39.9	+2.1
PLOR	Plostina	9.56	351	⇑iP	Pn	07 14 42.5	+3.2
VRI	Vrincioaia	9.57	351	⇓iP	Pn	07 14 41.7	+2.3
GRUS	Gruza	9.69	323	ePn	Pn	07 14 43.9	+2.8
DOPR	Dopca	9.88	346	⇓iP	Pn	07 14 46.1	+2.5
MDVR	Moldovita	9.94	329	⇓iP	Pn	07 14 46.6	+2.1
GZR	Gura Zlata	10.05	335	⇑iP	Pn	07 14 48.1	+2.0
TESR	Tescani	10.21	352	⇑iP	Pn	07 14 50.3	+2.1
TEKS	Tekeris	10.76	322	ePn	Pn	07 14 57.6	+1.9
KEST	Kesra	15.76	273	Pn	Pn	07 16 05.0	+1.3
	comp=E,0.1nm,0.3s,baz=103,slow=14,SNR=2.7						
GERES	GERESS Array B	16.63	323	Pn	P	07 16 16.4	-0.8
	comp=E,0.1nm,0.3s,baz=129,slow=12,SNR=18						
KHC	Kasperske Hory	16.88	324	eP	P	07 16 22.2	+2.2
KHC				epP	sP	07 16 25.0	+0.6
GEYT	Alibeck	23.36	77	P	P	07 17 31.5	+1.2
	comp=E,0.8nm,0.3s,baz=194,slow=3.0,SNR=2.6						
FINES	FINESS Array B	25.10	357	P	P	07 17 46.8	+0.6
	comp=E,5.8nm,0.6s,baz=158,slow=11,SNR=23						
HFS	Hagfors	25.65	342	P	P	07 17 49.9	-1.2
	comp=E,7.2nm,1.1s,baz=132,slow=8.0,SNR=2.6						
NOA	NORSAR Array B	27.05	341	P	P	07 18 03.9	-0.1
	comp=E,1.3nm,0.9s,baz=236,slow=14,SNR=3.0						
ARCES	ARCESS Array B	33.22	358	P	P	07 18 58.3	-0.1
	comp=E,2.1nm,0.9s,baz=190,slow=7.9,SNR=2.2						
TORD	Torodi Ar. Bea	33.60	233	P	P	07 19 01.6	-0.6
	comp=E,0.5nm,0.4s,baz=36,slow=8.6,SNR=6.1						
MKAR	Makanchi Array	40.60	58	P	P	07 20 01.2	-0.2
	comp=E,0.6nm,0.6s,baz=272,slow=8.1,SNR=7.0						
ZALV	Zalesovo Beam	41.98	47	LR	LR	07 42 31.8	
	comp=E,32nm,21.2s,baz=94,slow=43						
YKA	Yellowknife Ar	77.12	344	P	P	07 24 13.1	-1.8
	comp=E,0.2nm,0.7s,baz=29,slow=6.2,SNR=3.2						

*IDC **07** 07:16:10.0±0.5, 42.°18S×177.°68E, h0km, mb4.7/11, mb1 4.8/11, mb1mx4.6/30, mbtmp4.7/11, ML5.7/2, MS4.0/9, Ms1 4.0/9, ms1mx3.7/27, Error ellipse: s-maj=22.6km s-min=16.3km az=45.0*

*GCMT **07** 07:16:11.2±0.5, 42.°20S×177.°92E, h28km, MW4.9/55, Moment Tensor Solution. s33,c38; s55,c68; Duration: 0 Moment tensor: Scale 10^{16}Nm; M_{rr}-3.11±.18; $M_{\theta\theta}$2.32±.14; $M_{\phi\phi}$0.79±.10; $M_{r\theta}$-0.54±.19; $M_{\theta\phi}$0.69±.10; $M_{\phi r}$-0.72±.16; Best double couple: $M_0$2.98000×10^{16} NP1:ϕ_s61.00000°,δ53.00000°,λ-98.00000°. NP2: ϕ_s255.00000°,δ38.00000°,λ-79.00000°. Principal axes: T 2.6920, Plg8.0000°, Azm157.0000°; N 0.5780, Plg7.0000°, Azm66.0000°; P -3.2690, Plg80.0000°, Azm295.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

*NEIC **07** 07:16:11.2±0.2, 42.°24S×177.°64E, h10km, mb5.1/6, MW4.7, ML5.2(WEL) Error ellipse: s-maj=4.1km s-min=2.5km az=106.0, Moment Tensor Solution. s26 Moment tensor: Scale 10^{16}Nm; M_{rr}-1.44; $M_{\theta\theta}$0.84; $M_{\phi\phi}$0.60; $M_{r\theta}$-0.13; $M_{\theta\phi}$0.30; $M_{\phi r}$-0.11; Best double couple: $M_0$1.30000×10^{16} NP1:ϕ_s236.00000°,δ41.00000°, λ-89.00000°. NP2:ϕ_s55.00000°,δ49.00000°,λ-91.00000°. Principal axes: T 1.0500, Plg4.0000°, Azm146.0000°; N 0.4000, Plg0.0000°, Azm56.0000°; P -1.4500, Plg86.0000°, Azm319.0000°;*

NEIC Felt at Wellington.

*BJI **07** 07:16:12.3, 42.°20S×177.°50E, h14km, mb5.6/9, mB5.7/10, Ms5.5/7, Ms7 5.2/6*

*ISCJB **07** 07:16:13.0±0.3, 42.°23S±0.°02×177.°49E±0.°03, h33km, mb5.0/23, MS4.1/10, Error ellipse: s-maj=3.7km s-min=2.3km az=25.2*

*MOS **07** 07:16:13.8±1.5, 42.°25S×177.°49E, h30km, mb5.0/18, Error ellipse: s-maj=21.9km s-min=12.7km az=129.1*

*WEL **07** 07:16:15.7±0.2, 42.°22S×177.°43E, h33km, ML5.2/72, Error ellipse: s-maj=2.2km s-min=2.1km az=90.0*

WEL Felt from Taupo to Canterbury, maximum reported intensity MM 4.

ISC 07 07:16:14.4±2.0**, 42.°26S**±0.°04×**177.°59E**±0.°05**, h25**km±13km**, n394,** σ1s**68**/378**, mb5.0**/23**, MS4.0**/10**, 29C-16D, Off east coast of South Island**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
TRWZ	Traveller	1.67	301	PN	Pn	07 16 40.1	-1.9
TRWZ				SN	Sn	07 16 58.8	-3.8
TRWZ				AML	AML	07 17 05.1	
TRWZ	Traveller	1.67	301	Pn	Pn	07 16 40.1	-1.9
CPWZ	Castlepoint	1.71	322	PN	Pn	07 16 41.2	-1.3
CPWZ	Castlepoint	1.71	322	Pn	Pn	07 16 41.6	-0.9
PAWZ	Paruwai Farm	1.84	298	PN	Pn	07 16 42.8	-1.6
PAWZ				SN	Sn	07 17 02.8	-4.2
PAWZ				AML	AML	07 17 51.0	
PAWZ	Paruwai Farm	1.84	298	Pn	Pn	07 16 42.8	-1.6
PAWZ				Sn	Sn	07 17 02.8	-4.2
BFZ	Birch Farm	1.88	327	PN	Pn	07 16 42.7	-2.1
BFZ				AML	AML	07 17 10.4	
BFZ				AML	AML	07 17 35.5	
BFZ	Birch Farm	1.88	327	ePn	Pn	07 16 43.0	-1.9
PLWZ	Palliser	1.88	291	PN	Pn	07 16 43.1	-1.8
PLWZ				SN	Sn	07 17 02.8	-5.1
PLWZ	Palliser	1.88	291	Pn	Pn	07 16 43.1	-1.8
MTW	Mount Morrison	1.92	304	PN	Pn	07 16 43.6	-1.8
MTW				AML	AML	07 17 09.0	
MTW				AML	AML	07 17 10.7	
MTW	Mount Morrison	1.92	304	Pn	Pn	07 16 43.6	-1.8
MSWZ	Moikau Station	1.94	295	PN	Pn	07 16 43.9	-1.9
MSWZ				AML	AML	07 17 06.0	
MSWZ				AML	AML	07 17 06.3	
MSWZ	Moikau Station	1.94	295	Pn	Pn	07 16 43.9	-1.9
TIWZ	Tintock	1.96	319	PN	Pn	07 16 44.6	-1.5
TIWZ				SN	Sn	07 17 06.8	-3.1
TIWZ				AML	AML	07 17 11.1	
TIWZ	Tintock	1.96	319	Pn	Pn	07 16 44.6	-1.5
ANWZ	Angora Road	1.99	335	⇑PN	Pn	07 16 44.3	-2.0
HOWZ	Holdsworth Sta	2.07	310	⇑PN	Pn	07 16 45.9	-1.6
HOWZ				SN	Sn	07 17 07.9	-4.6
HOWZ	Holdsworth Sta	2.07	310	Pn	Pn	07 16 46.0	-1.6
HOWZ				Sn	Sn	07 17 07.9	-4.6
PRWZ	Pori Road	2.10	324	PN	Pn	07 16 46.3	-1.6
PRWZ	Pori Road	2.10	324	Pn	Pn	07 16 46.3	-1.6
PRHZ	Porangahau	2.12	340	PN	Pn	07 16 46.0	-2.2
PRHZ	Porangahau	2.12	340	Pn	Pn	07 16 46.0	-2.2
MRZ	Mangatainoka R	2.20	316	⇑PN	Pn	07 16 47.8	-1.6
MRZ				AML	AML	07 17 11.8	
MRZ				AML	AML	07 17 16.9	
MRZ	Mangatainoka R	2.20	316	Pn	Pn	07 16 47.8	-1.6
BHW	Baring Head	2.21	292	PN	Pn	07 16 47.7	-1.7
BHW				AML	AML	07 17 12.1	
BHW				AML	AML	07 17 16.7	
BHW	Baring Head	2.21	292	Pn	Pn	07 16 47.7	-1.7
CAW	Cannon Point	2.22	300	PN	Pn	07 16 47.5	-2.0
CAW				AML	AML	07 17 18.1	
CAW				AML	AML	07 17 18.3	
CAW	Cannon Point	2.22	300	Pn	Pn	07 16 47.5	-2.0
DVHZ	Dannevirke	2.24	331	PN	Pn	07 16 48.0	-1.8
DVHZ				SN	Sn	07 17 12.6	-4.1
DVHZ	Dannevirke	2.24	331	Pn	Pn	07 16 48.0	-1.8
DVHZ				Sn	Sn	07 17 12.6	-4.1
PXZ	Pawanui	2.30	346	⇓PN	Pn	07 16 48.3	-2.3
PXZ				AML	AML	07 17 21.1	
PXZ				AML	AML	07 17 24.9	
PXZ	Pawanui	2.30	346	Pn	Pn	07 16 48.3	-2.3
POWZ	Post Office Ro	2.32	323	PN	Pn	07 16 49.6	-1.3
POWZ	Post Office Ro	2.32	323	Pn	Pn	07 16 49.6	-1.3
OGWZ	Otaki Gorge	2.32	308	⇑PN	Pn	07 16 49.6	-1.4
OGWZ	Otaki Gorge	2.32	308	Pn	Pn	07 16 49.6	-1.4
WEL	Wellington	2.33	294	PN	Pn	07 16 49.4	-1.6
WEL	Wellington	2.33	294	P	Pn	07 16 49.6	-1.5
WEL	Wellington	2.33	294	Pn	Pn	07 16 49.5	-1.5
SNZO	South Karori	2.36	293	eSn	Sn	07 17 15.0	-4.6
WPHZ	Waipukurau	2.36	338	PN	Pn	07 16 49.7	-1.9
WPHZ	Waipukurau	2.36	338	Pn	Pn	07 16 49.7	-1.9
KIW	Kapiti Island	2.45	304	PN	Pn	07 16 51.6	-1.2
KIW				AML	AML	07 17 21.2	
KIW				AML	AML	07 17 22.2	
KIW	Kapiti Island	2.45	304	Pn	Pn	07 16 51.6	-1.2
TSZ	Takapari Road	2.52	330	PN	Pn	07 16 52.2	-1.5
TSZ				AML	AML	07 17 23.2	
TSZ				AML	AML	07 17 23.6	
TSZ	Takapari Road	2.52	330	Pn	Pn	07 16 52.2	-1.5
KAHZ	Kahuranaki	2.52	347	PN	Pn	07 16 51.7	-2.1
KAHZ	Kahuranaki	2.52	347	Pn	Pn	07 16 51.7	-2.1
CMWZ	Cape Campbell	2.57	280	⇑PN	Pn	07 16 53.5	-0.9
CMWZ				AML	AML	07 17 26.0	
CMWZ				AML	AML	07 17 26.7	
CMWZ	Cape Campbell	2.57	280	Pn	Pn	07 16 53.5	-0.9
PNHZ	Pukenui	2.57	335	⇓PN	Pn	07 16 52.6	-1.8
PNHZ	Pukenui	2.57	335	Pn	Pn	07 16 52.6	-1.8
CKHZ	Cape Kidnapper	2.63	351	PN	Pn	07 16 53.0	-2.2
CKHZ	Cape Kidnapper	2.63	351	Pn	Pn	07 16 53.0	-2.2
TCW	Tory Channel	2.69	292	PN	Pn	07 16 54.7	-1.4
TCW				AML	AML	07 17 26.9	
TCW				AML	AML	07 17 27.7	
KRHZ	Kereru	2.77	340	PN	Pn	07 16 55.7	-1.6
BSWZ	Blackbirch Sta	2.83	280	PN	Pn	07 16 56.3	-1.6
BSWZ				SN	Sn	07 17 26.8	-4.4
BSWZ				AML	AML	07 17 32.4	
BSWZ	Blackbirch Sta	2.83	280	Pn	Pn	07 16 56.4	-1.6
BSWZ				Sn	Sn	07 17 26.8	-4.4
TUWZ	Tuamarina	2.85	286	PN	Pn	07 16 56.5	-1.7
TUWZ				AML	AML	07 17 30.8	
TUWZ				AML	AML	07 17 31.3	
TUWZ	Tuamarina	2.85	286	Pn	Pn	07 16 56.5	-1.7
MCHZ	McNeill Hill	2.90	346	PN	Pn	07 16 57.1	-1.8
MCHZ	McNeill Hill	2.90	346	Pn	Pn	07 16 57.1	-1.8
BHHZ	Black Hill Sta	3.00	337	PN	Pn	07 16 59.1	-1.4
BHHZ	Black Hill Sta	3.00	337	Pn	Pn	07 16 59.1	-1.4
KHZ	Kahutara	3.01	266	PN	Pn	07 16 57.8	-2.6
KHZ	Kahutara	3.01	266	ePn	Pn	07 16 58.3	-2.1
KHZ				eSn	Sn	07 17 32.8	-2.9
ARHZ	Aropaoanui	3.03	351	PN	Pn	07 16 59.0	-1.7
ARHZ	Aropaoanui	3.03	351	Pn	Pn	07 16 59.0	-1.7
MHGZ	Mahia Peninsul	3.11	4	PN	Pn	07 16 58.7	-3.1
MHGZ	Mahia Peninsul	3.11	4	Pn	Pn	07 16 58.8	-3.1
DUWZ	D'Urville Isla	3.12	297	⇑PN	Pn	07 17 01.4	-0.6
DUWZ	D'Urville Isla	3.12	297	Pn	Pn	07 17 01.4	-0.6
MOVZ	Moawhango	3.17	333	PN	Pn	07 17 02.0	-0.8
MOVZ				AML	AML	07 17 40.3	
MOVZ				AML	AML	07 17 41.2	
MOVZ	Moawhango	3.17	333	Pn	Pn	07 17 02.0	-0.8
WAZ	Wanganui	3.19	321	⇓PN	Pn	07 17 03.4	+0.5
WAZ				AML	AML	07 17 42.6	
WAZ				AML	AML	07 17 42.8	
WAZ	Wanganui	3.19	321	Pn	Pn	07 17 03.5	+0.5
WHHZ	Waihua	3.19	355	PN	Pn	07 17 00.9	-2.1
BKZ	Black Stump Fm	3.20	344	⇑PN	Pn	07 17 01.0	-2.1
BKZ				AML	AML	07 17 39.7	
BKZ				AML	AML	07 17 40.9	
BKZ	Black Stump Fm	3.20	344	ePn	Pn	07 17 01.5	-1.7
BKZ				eSn	Sn	07 17 39.4	-1.2
KNZ	Kokohu	3.24	1	⇑PN	Pn	07 17 00.5	-3.1
KNZ				AML	AML	07 17 40.8	
KNZ				AML	AML	07 17 42.1	
KNZ	Kokohu	3.24	1	Pn	Pn	07 17 00.5	-3.1
MTVZ	Mangateitei	3.29	330	PN	Pn	07 17 04.5	0.0
MTVZ				AML	AML	07 17 45.1	
MTVZ				AML	AML	07 17 46.3	
MTVZ	Mangateitei	3.29	330	Pn	Pn	07 17 04.5	0.0
WNVZ	Wahianoa	3.30	332	PN	Pn	07 17 04.2	-0.4
WNVZ	Wahianoa	3.30	332	Pn	Pn	07 17 04.2	-0.4
NNZ	Nelson	3.32	287	⇓PN	Pn	07 17 03.5	-1.2
NNZ				AML	AML	07 17 43.2	
NNZ				AML	AML	07 17 55.2	
NNZ	Nelson	3.32	287	Pn	Pn	07 17 03.5	-1.2
TUVZ	Tukino	3.33	333	PN	Pn	07 17 04.8	-0.2
TUVZ				AML	AML	07 17 45.6	
TUVZ				AML	AML	07 17 45.9	
TUVZ	Tukino	3.33	333	Pn	Pn	07 17 04.8	-0.2
PRGZ	Paritu Road	3.34	4	⇑PN	Pn	07 17 01.8	-3.2
PRGZ	Paritu Road	3.34	4	Pn	Pn	07 17 01.9	-3.2
TRVZ	Turoa	3.34	332	PN	Pn	07 17 04.9	-0.4
TRVZ				AML	AML	07 17 06.6	
TRVZ				AML	AML	07 17 06.8	
TRVZ	Turoa	3.34	332	Pn	Pn	07 17 04.9	-0.4
WHVZ	Whangaehu Hut	3.34	332	PN	Pn	07 17 04.9	-0.4
DRZ	Dome Shelter	3.36	332	⇑PN	Pn	07 17 05.4	-0.1
DRZ				AML	AML	07 17 07.0	
DRZ				AML	AML	07 17 08.8	
DRZ	Dome Shelter	3.36	332	Pn	Pn	07 17 05.4	-0.1
RAHZ	Arahi	3.36	353	PN	Pn	07 17 03.3	-2.0
FWVZ	Far West T-bar	3.38	332	⇑PN	Pn	07 17 05.3	-0.4
FWVZ				AML	AML	07 17 07.7	
FWVZ				AML	AML	07 17 46.9	
FWVZ	Far West T-bar	3.38	332	Pn	Pn	07 17 05.3	-0.4
OTVZ	Oturere	3.42	334	PN	Pn	07 17 05.6	-0.7
OTVZ				AML	AML	07 17 11.7	
OTVZ				AML	AML	07 17 48.4	
PKVZ	Pokaka	3.42	329	⇑PN	Pn	07 17 06.2	0.0
PKVZ				AML	AML	07 17 07.6	
PKVZ				AML	AML	07 17 51.9	
PKVZ	Pokaka	3.42	329	Pn	Pn	07 17 06.2	0.0
NGZ	Ngauruhoe	3.43	333	PN	Pn	07 17 05.9	-0.6
NGZ				AML	AML	07 17 47.1	
NGZ				AML	AML	07 17 48.3	
NGZ	Ngauruhoe	3.43	333	Pn	Pn	07 17 05.9	-0.6
SNGZ	Shannon Statio	3.48	357	⇓PN	Pn	07 17 04.7	-2.3
SNGZ	Shannon Statio	3.48	357	Pn	Pn	07 17 04.7	-2.3
WTVZ	West Tongariro	3.49	333	⇑PN	Pn	07 17 06.7	-0.5
WTVZ				AML	AML	07 17 08.9	
WTVZ				AML	AML	07 17 48.8	
WTVZ	West Tongariro	3.49	333	Pn	Pn	07 17 06.7	-0.5
KRVZ	Karewarewa	3.49	334	PN	Pn	07 17 06.8	-0.4
KRVZ				AML	AML	07 17 10.1	
KRVZ				AML	AML	07 17 10.2	
THZ	Tophouse	3.53	277	PN	Pn	07 17 05.7	-1.9
THZ				AML	AML	07 17 48.3	
THZ				AML	AML	07 17 50.7	
THZ	Tophouse	3.53	277	ePn	Pn	07 17 05.8	-1.8
THZ				eSn	Sn	07 17 39.6	-9.0
MRHZ	Matea Rd	3.54	345	⇑PN	Pn	07 17 06.6	-1.1
RIGZ	Rimuhau	3.55	2	PN	Pn	07 17 04.9	-3.0
HATZ	Hinemaiaia	3.56	341	PN	Pn	07 17 06.5	-1.5
HATZ				AML	AML	07 17 14.3	
HATZ				AML	AML	07 17 49.4	
HATZ	Hinemaiaia	3.56	341	Pn	Pn	07 17 06.5	-1.5
TWVZ	Taurewa	3.58	332	PN	Pn	07 17 07.6	-0.8
TWVZ				AML	AML	07 17 12.8	
TWVZ				AML	AML	07 17 50.0	
TWVZ	Taurewa	3.58	332	Pn	Pn	07 17 07.6	-0.8
KATZ	Kakaramea	3.59	336	⇓PN	Pn	07 17 08.0	-0.5
KATZ				AML	AML	07 17 11.5	
KATZ				AML	AML	07 17 19.2	
KATZ	Kakaramea	3.59	336	Pn	Pn	07 17 08.0	-0.5
RATZ	Rangitukua	3.66	337	⇓PN	Pn	07 17 08.6	-0.9
RATZ				AML	AML	07 17 21.4	
RATZ				AML	AML	07 17 28.8	
RATZ	Rangitukua	3.66	337	Pn	Pn	07 17 08.6	-0.9
LREZ	Lake Rotokare	3.70	318	PN	Pn	07 17 10.3	+0.4
RAGZ	Rawiri	3.76	358	⇑PN	Pn	07 17 08.1	-2.8
RAGZ	Rawiri	3.76	358	Pn	Pn	07 17 08.1	-2.8
CNGZ	Carnagh Statio	3.80	7	PN	Pn	07 17 08.4	-2.9
CNGZ	Carnagh Statio	3.80	7	Pn	Pn	07 17 08.4	-2.9
VRZ	Vera Road	3.80	325	PN	Pn	07 17 11.1	-0.3
VRZ				AML	AML	07 17 55.3	
VRZ				AML	AML	07 18 00.2	
VRZ	Vera Road	3.80	325	Pn	Pn	07 17 11.1	-0.3
ALRZ	Allen Road	3.82	345	PN	Pn	07 17 09.8	-1.8
ALRZ	Allen Road	3.82	345	Pn	Pn	07 17 09.8	-1.8
TKGZ	Te Karaka	3.82	3	PN	Pn	07 17 08.2	-3.4
WATZ	Wairara	3.82	338	PN	Pn	07 17 10.2	-1.5
WATZ				AML	AML	07 17 24.3	
WATZ				AML	AML	07 17 24.8	
WATZ	Wairara	3.82	338	Pn	Pn	07 17 10.2	-1.5
PRRZ	Plateau Road	3.87	346	⇑PN	Pn	07 17 10.5	-1.8
PRRZ	Plateau Road	3.87	346	Pn	Pn	07 17 10.5	-1.8
CRLZ	Canterbury Las	3.88	249	⇑PN	Pn	07 17 10.3	-2.1
CRLZ				AML	AML	07 17 55.6	
CRLZ				AML	AML	07 17 57.2	
CRLZ	Canterbury Las	3.88	249	ePn	Pn	07 17 10.5	-1.8
CRLZ				eSn	Sn	07 17 52.5	-4.6
WPRZ	Whakapapatarin	3.89	343	⇓PN	Pn	07 17 11.0	-1.7
WPRZ	Whakapapatarin	3.89	343	Pn	Pn	07 17 11.0	-1.7
MQZ	McQueen's Vall	3.90	247	⇑PN	Pn	07 17 10.2	-2.5
MQZ				AML	AML	07 17 55.8	
MQZ				AML	AML	07 17 58.1	
MQZ	McQueen's Vall	3.90	247	ePn	Pn	07 17 10.2	-2.5
MQZ				eSn	Sn	07 17 54.4	-3.2
PREZ	Palmer Road	3.91	317	PN	Pn	07 17 13.9	+1.1
PREZ	Palmer Road	3.91	317	Pn	Pn	07 17 13.9	+1.1
MWZ	Matawai	3.92	359	⇑PN	Pn	07 17 09.8	-3.2
MWZ				AML	AML	07 17 55.4	
MWZ				AML	AML	07 17 59.3	
MWZ	Matawai	3.92	359	Pn	Pn	07 17 09.8	-3.2
LTZ	Lake Taylor	3.97	261	PN	Pn	07 17 11.5	-2.1
LTZ				AML	AML	07 17 57.6	
LTZ				AML	AML	07 17 58.1	
LTZ	Lake Taylor	3.97	261	ePn	Pn	07 17 11.8	-1.9
LTZ				eSn	Sn	07 17 56.4	-3.0
HRRZ	Handcock Road	3.99	345	⇓PN	Pn	07 17 12.6	-1.4
HRRZ	Handcock Road	3.99	345	Pn	Pn	07 17 12.7	-1.4
NEZ	North Egmont	4.00	317	PN	Pn	07 17 14.9	+0.8
NEZ	North Egmont	4.00	317	Pn	Pn	07 17 14.9	+0.8
KUTZ	Kaahu Road	4.00	340	⇑PN	Pn	07 17 12.5	-1.6
KUTZ	Kaahu Road	4.00	340	Pn	Pn	07 17 12.5	-1.6
RRRZ	Republican Roa	4.00	348	PN	Pn	07 17 12.0	-2.1
RRRZ	Republican Roa	4.00	348	Pn	Pn	07 17 12.0	-2.1
NMEZ	Namu Road	4.00	314	PN	Pn	07 17 14.9	+0.8
NMEZ	Namu Road	4.00	314	Pn	Pn	07 17 14.9	+0.8
DREZ	Durham Road	4.01	319	PN	Pn	07 17 14.8	+0.6
DREZ	Durham Road	4.01	319	Pn	Pn	07 17 14.8	+0.6
URZ	Urewera	4.01	355	Pn	Pn	07 17 11.6	-2.6
	422nm,0.3s,baz=216,slow=6.9,SNR=1535						
URZ				Sn	Sn	07 17 53.4	-7.1
	176nm,0.3s,baz=20,slow=12,SNR=17						
URZ				LR	LR	07 19 05.0	
	comp=Z,3µm,19.0s,baz=186,slow=44						
URZ	Urewera	4.01	355	⇑PN	Pn	07 17 11.7	-2.6
URZ				AML	AML	07 17 59.0	
URZ				AML	AML	07 17 59.3	
URZ	Urewera	4.01	355	ePn	Pn	07 17 11.6	-2.6
URZ				eSn	Sn	07 17 55.9	-4.5
KHEZ	Kahui Hut	4.02	316	PN	Pn	07 17 15.3	+0.9
KHEZ	Kahui Hut	4.02	316	Pn	Pn	07 17 15.3	+0.9
MHEZ	Mangahewa	4.04	321	PN	Pn	07 17 15.2	+0.6
MHEZ	Mangahewa	4.04	321	Pn	Pn	07 17 15.2	+0.6
QRZ	Quartz Range	4.06	289	PN	Pn	07 17 14.3	-0.6
QRZ				AML	AML	07 18 02.1	
QRZ				AML	AML	07 18 02.1	
QRZ				AML	AML	07 18 02.4	
QRZ				AML	AML	07 18 02.4	
QRZ	Quartz Range	4.06	289	Pn	Pn	07 17 14.3	-0.6
HSRZ	Hossack Road	4.08	345	PN	Pn	07 17 13.4	-1.7
TWGZ	Tauwhareparae	4.09	4	PN	Pn	07 17 12.4	-3.0
TWGZ	Tauwhareparae	4.09	4	Pn	Pn	07 17 12.4	-3.0
TARZ	Mount Tarawera	4.11	348	PN	Pn	07 17 13.7	-2.0
TARZ	Mount Tarawera	4.11	348	Pn	Pn	07 17 13.7	-2.0

PKE Pukeiti 4.11 317 PN **Pn** 07 17 16.4 **+0.8**
PKE AML AML 07 18 05.9
PKE AML AML 07 18 07.0
PKE Pukeiti 4.11 317 Pn **Pn** **07 17 16.4 +0.8**
HLRZ Highlands Stat 4.12 346 ⇓*e*PN **Pn** **07 17 14.5 -1.2**
EDRZ Edgecumbe 4.20 351 PN **Pn** **07 17 14.6 -2.3**
EDRZ AML AML 07 17 17.1
EDRZ AML AML 07 17 21.8
EDRZ Edgecumbe 4.20 351 Pn **Pn** **07 17 14.6 -2.3**
PUZ Puketiti 4.21 7 Pn Pn 07 17 13.5 -3.5
PUZ AML AML 07 18 01.8
PUZ AML AML 07 18 02.5
PUZ Puketiti 4.21 7 Pn Pn 07 17 13.5 -3.5
UTU Utuhina 4.22 345 ⇓PN **Pn** **07 17 15.5 -1.5**
UTU AML AML 07 17 20.2
UTU AML AML 07 17 28.3
UTU Utuhina 4.22 345 Pn **Pn** **07 17 15.5 -1.5**
OXZ Oxford 4.22 254 ⇑PN **Pn** **07 17 14.7 -2.4**
OXZ Oxford 4.22 254 *e*Pn **Pn** **07 17 15.0 -2.1**
OXZ *e*Sn **Sn** **07 18 01.1 -4.6**
TLZ Tolley Road 4.23 338 PN **Pn** **07 17 15.4 -1.8**
TLZ Tolley Road 4.23 338 Pn **Pn** **07 17 15.4 -1.8**
OMRZ Omania 4.25 347 PN **Pn** **07 17 15.4 -2.2**
OMRZ Omania 4.25 347 Pn **Pn** **07 17 15.4 -2.2**
HIZ Hauiti 4.29 330 PN **Pn** **07 17 16.9 -1.2**
HIZ AML AML 07 18 08.9
HIZ AML AML 07 18 09.8
HIZ Hauiti 4.29 330 *e*Pn **Pn** **07 17 17.1 -0.9**
MARZ Manawahe 4.33 350 PN **Pn** **07 17 16.5 -2.1**
MARZ Manawahe 4.33 350 Pn **Pn** **07 17 16.5 -2.1**
DSZ Denniston Nort 4.34 275 PN **Pn** **07 17 17.4 -1.4**
DSZ AML AML 07 18 08.3
DSZ AML AML 07 18 09.4
DSZ Denniston Nort 4.34 275 Pn **Pn** **07 17 17.4 -1.4**
KARZ Kaharoa 4.36 346 PN **Pn** **07 17 17.1 -1.9**
KARZ Kaharoa 4.36 346 Pn **Pn** **07 17 17.1 -1.9**
PKGZ Pakihiroa 4.38 5 PN Pn 07 17 16.1 -3.2
WMGZ Waiomatatini S 4.48 8 PN Pn 07 17 17.7 -3.0
WMGZ Waiomatatini S 4.48 8 Pn Pn 07 17 17.7 -3.0
OPRZ Ohinepanea 4.48 349 PN Pn 07 17 17.8 -2.9
OPRZ Ohinepanea 4.48 349 Pn Pn 07 17 17.8 -2.9
HAZ Te Kaha 4.50 2 Pn Pn 07 17 17.7 -3.3
INZ Inchbonnie 4.57 262 ⇓PN **Pn** **07 17 20.3 -1.6**
TGRZ Tauranga 4.64 347 *e*PN Pn 07 17 20.1 -2.8
TGRZ AML AML 07 17 25.9
TGRZ AML AML 07 17 32.0
TGRZ Tauranga 4.64 347 *e*Pn Pn 07 17 20.1 -2.8
MXZ Matakaoa Point 4.72 7 PN Pn 07 17 19.7 -4.3
MXZ AML AML 07 18 15.8
MXZ AML AML 07 18 16.1
MXZ Matakaoa Point 4.72 7 *e*Pn Pn 07 17 20.9 -3.1
WIZ White Island 4.74 356 PN Pn 07 17 20.7 -3.5
TOZ Tahuroa Road 4.80 340 AML AML 07 17 23.8
TOZ AML AML 07 17 54.7
RPZ Rata Peaks 5.01 251 Pn **Pn** **07 17 25.9 -2.1**
379nm,0.3s,baz=91,slow=2.4,SNR=775
RPZ Sn Sn 07 18 20.1 -5.0
175nm,0.3s,baz=130,slow=23,SNR=12
RPZ Rata Peaks 5.01 251 ⇓PN **Pn** **07 17 26.0 -1.9**
RPZ AML AML 07 18 22.5
RPZ AML AML 07 18 23.6
RPZ Rata Peaks 5.01 251 *e*Pn **Pn** **07 17 26.3 -1.7**
RPZ *e*Sn **Sn** **07 18 20.7 -4.4**
WVZ Waitaha Valley 5.12 259 ⇑PN **Pn** **07 17 28.2 -1.3**
WVZ AML AML 07 18 25.8
WVZ AML AML 07 18 26.1
WVZ Waitaha Valley 5.12 259 Pn **Pn** **07 17 28.2 -1.3**
MKAZ Moumakai 5.48 339 PN **Pn** **07 17 32.7 -1.7**
MKAZ AML AML 07 17 33.6
MKAZ AML AML 07 17 50.4
MKAZ Moumakai 5.48 339 Pn **Pn** **07 17 32.7 -1.7**
KBAZ Karaka Road Bo 5.56 337 PN **Pn** **07 17 34.4 -1.2**
KBAZ Karaka Road Bo 5.56 337 Pn **Pn** **07 17 34.4 -1.2**
AWAZ Awhitu Peninsu 5.67 335 PN **Pn** **07 17 35.8 -1.2**
ETAZ East Tamaki Re 5.69 338 PN **Pn** **07 17 35.6 -1.7**
ETAZ East Tamaki Re 5.69 338 Pn **Pn** **07 17 35.6 -1.7**
KUZ Kuaotunu 5.70 345 PN **Pn** **07 17 35.1 -2.2**
KUZ AML AML 07 17 35.6
KUZ AML AML 07 17 57.8
KUZ Kuaotunu 5.70 345 Pn **Pn** **07 17 35.1 -2.2**
ODZ Otahua Downs 5.76 239 ⇑PN **Pn** **07 17 36.6 -1.6**
ODZ AML AML 07 18 41.6
ODZ AML AML 07 18 42.0
ODZ Otahua Downs 5.76 239 *e*Pn **Pn** **07 17 36.6 -1.6**
ODZ *e*Sn **Sn** **07 18 40.6 -2.8**
WIAZ Waiheke Island 5.78 340 PN **Pn** **07 17 36.7 -1.8**
LBZ Lake Benmore 5.81 246 PN **Pn** **07 17 37.7 -1.2**
LBZ AML AML 07 18 43.0
LBZ AML AML 07 18 43.3
LBZ Lake Benmore 5.81 246 *e*Pn **Pn** **07 17 38.0 -0.9**
WTAZ Waiatarua 5.81 335 PN **Pn** **07 17 37.8 -1.2**
WTAZ Waiatarua 5.81 335 Pn **Pn** **07 17 37.8 -1.2**
FOZ Fox Glacier 5.85 255 PN **Pn** **07 17 38.3 -1.2**
FOZ AML AML 07 18 44.3
FOZ AML AML 07 18 44.7
FOZ Fox Glacier 5.85 255 *e*Pn **Pn** **07 17 38.7 -0.8**
RVAZ Riverhead Bore 5.96 336 ⇓PN **Pn** **07 17 39.9 -1.0**
RVAZ Riverhead Bore 5.96 336 Pn **Pn** **07 17 39.9 -1.0**
ABAZ Army Bay 6.04 338 PN **Pn** **07 17 40.7 -1.4**
ABAZ Army Bay 6.04 338 Pn **Pn** **07 17 40.7 -1.4**
HHSZ Highcliff Hill 6.21 232 PN **Pn** **07 17 42.8 -1.5**
HHSZ Highcliff Hill 6.21 232 Pn **Pn** **07 17 42.8 -1.5**
GRZ Great Barrier 6.23 344 PN **Pn** **07 17 42.7 -2.0**
JCZ Jackson Bay 6.69 251 PN **Pn** **07 17 49.4 -1.7**
JCZ AML AML 07 19 05.2
JCZ AML AML 07 19 05.8
JCZ Jackson Bay 6.69 251 Pn **Pn** **07 17 49.4 -1.7**
EAZ Earnscleugh 6.69 241 PN **Pn** **07 17 49.6 -1.4**
EAZ AML AML 07 19 04.0
EAZ AML AML 07 19 04.1
EAZ AML AML 07 19 04.3
EAZ AML AML 07 19 04.3
EAZ Earnscleugh 6.69 241 Pn **Pn** **07 17 49.6 -1.4**
WKZ Wanaka 6.74 245 PN **Pn** **07 17 50.3 -1.4**
WKZ AML AML 07 19 09.2
WKZ AML AML 07 19 13.2
WKZ Wanaka 6.74 245 *e*Pn **Pn** **07 17 50.3 -1.4**
WCZ Waipu Caves 6.80 337 PN **Pn** **07 17 51.3 -1.2**
WCZ AML AML 07 18 01.9
WCZ AML AML 07 18 14.7
WCZ Waipu Caves 6.80 337 Pn **Pn** **07 17 51.3 -1.2**
TUZ Tuapeka 6.82 235 ⇓PN **Pn** **07 17 51.4 -1.3**
TUZ AML AML 07 19 10.6
TUZ AML AML 07 19 11.3
TUZ Tuapeka 6.82 235 Pn **Pn** **07 17 51.4 -1.3**
SYZ Scrubby Hill 7.41 232 ⇓PN **Pn** **07 17 59.8 -1.1**
SYZ AML AML 07 19 21.5
SYZ AML AML 07 19 23.2
MSZ Milford Sound 7.43 248 AML AML 07 19 24.1
MSZ AML AML 07 19 25.3
MLZ Mavora Lakes 7.52 242 PN **Pn** **07 18 00.7 -1.8**
MLZ AML AML 07 19 25.5
MLZ AML AML 07 19 29.4
MLZ Mavora Lakes 7.52 242 *e*Pn **Pn** **07 18 01.3 -1.1**
OUZ Omahuta 7.69 335 PN **Pn** **07 18 03.5 -1.2**
OUZ AML AML 07 18 21.7
OUZ AML AML 07 18 26.2
OUZ Omahuta 7.69 335 *e*Pn **Pn** **07 18 04.0 -0.7**
OUZ *e*Sn **Sn** **07 19 31.9 +0.8**
WHZ Wether Hill Ro 7.84 239 PN **Pn** **07 18 05.0 -1.7**
WHZ AML AML 07 19 39.9
WHZ AML AML 07 19 43.5
WHZ Wether Hill Ro 7.84 239 *e*Pn **Pn** **07 18 05.0 -1.7**
WHZ *e*Sn **Sn** **07 19 32.1 -2.5**
DCZ Deep Cove 8.20 243 PN **Pn** **07 18 09.9 -1.7**
DCZ AML AML 07 19 40.7
DCZ AML AML 07 19 42.4
DCZ Deep Cove 8.20 243 *e*Pn **Pn** **07 18 10.4 -1.2**
APZ The Paps 8.24 233 PN **Pn** **07 18 11.1 -1.1**
APZ SN Sn 07 19 37.8 -6.8
APZ AML AML 07 19 43.1
APZ The Paps 8.24 233 Pn **Pn** **07 18 11.1 -1.1**
DZM Mont Dzumac 22.20 332 P **P** **07 21 09.2 +0.3**
26nm,1.2s,baz=157,slow=18,SNR=2.6
DZM LR LR 07 29 10.9
comp=Z,730nm,18.5s,baz=191,slow=35
MOO Moorlands 22.42 259 P **P** **07 21 12.1 +1.1**
baz=22
CMSA Cobar Meteorol 27.52 282 P **P** **07 22 00.1 +1.2**
baz=27,SNR=5.9

RAR Rarotonga 28.32 49 LR LR 07 31 18.2
comp=Z,229nm,18.6s,baz=259,slow=32
STKA Stephens Creek 30.34 278 P **P** **07 22 25.1 +1.1**
3.9nm,0.8s,baz=126,slow=9.8,SNR=8.5
STKA LR LR 07 33 55.4
comp=Z,250nm,19.0s,baz=170,slow=35
QLP Quilpie 31.41 289 P **P** **07 22 33.9 +0.4**
baz=31,SNR=4.9
TBI Tubuai 33.22 66 *e*LR LR 07 31 34.1
202nm,24.5s
TBI Tubuai 33.22 66 *e*T T 07 57 39.1
20nm,0.3s
BBOO Buckleboo 33.98 272 P **P** **07 22 55.8 -0.1**
baz=34,SNR=7.9
BBOO Buckleboo 33.98 272 *e*P **P** **07 22 56.0 +0.1**
21nm,0.9s
VNDA Vanda 35.96 186 P **P** **07 23 14.1 +1.6**
1.2nm,1.0s,baz=24,slow=8.1,SNR=3.8
VNDA LR LR 07 34 35.4
comp=Z,130nm,20.7s,baz=354,slow=31
PAE Paea 37.17 59 *e*T T 08 02 37.3
5.4nm,0.3s
PPT2 Papeete2 37.23 59 *e*LR LR 07 33 25.7
277nm,23.0s
PPT2 Papeete2 37.23 59 *e*T T 08 02 41.8
3.8nm,0.3s
PPT Papeete 37.25 59 LR LR 07 36 24.3
comp=Z,263nm,20.0s,baz=198,slow=33
TVO Taravao 37.29 59 *e*T T 08 02 46.1
1.7nm,0.3s
AS31 Alice Springs 40.57 283 *e*P **P** **07 23 51.2 -0.7**
ASAR Alice Springs 40.57 283 P **P** **07 23 51.1 -0.7**
9.7nm,0.6s,baz=124,slow=6.2,SNR=158
ASAR PcP **PcP** **07 25 51.2 -2.7**
1.8nm,0.7s,baz=131,slow=4.1,SNR=3.7
ASAR LR LR 07 40 59.2
comp=Z,353nm,18.0s,baz=127,slow=37
ASAR Alice Springs 40.57 283 P **P** **07 23 51.2 -0.7**
ASAR 07 25 51.2
ASAR pmax pmax
comp=Z,12nm,0.5s
ASAR pmax pmax
comp=Z,2.0nm,0.7s
ASAR MLR MLR
comp=Z,353nm,18.0s
COEN Coen 40.97 303 P **P** **07 23 54.5 -0.7**
baz=41,SNR=5.1
PMG Port Moresby 42.24 312 *e*P **P** **07 24 03.2 -2.4**
PMG pmax pmax
comp=Z,69nm,1.0s
WB2 Warramunga Arr 42.62 288 P **P** **07 24 07.8 -0.8**
baz=42
WRAB Tennant Creek 42.62 288 *e*P **P** **07 24 06.6 -2.1**
WRAB pmax pmax
comp=Z,35nm,0.9s
WRAB Tennant Creek 42.62 288 *e*P **P** **07 24 07.7 -1.0**
comp=Z,111nm,0.6s
WRA Warramunga Arr 42.62 288 P **P** **07 24 07.9 -0.9**
comp=Z,14nm,0.7s,baz=127,slow=7.8,SNR=92
WRA Warramunga Arr 42.62 288 P **P** **07 24 07.9 -0.9**
WRA pmax pmax
comp=Z,13nm,0.7s
RKT Rikitea 43.62 79 *e*T T 08 10 32.9
comp=Z,3.3nm,0.2s
WRKA Warakurna 43.85 277 P **P** **07 24 17.5 -1.2**
baz=44,SNR=26
QSPA South Pole Qui 47.87 180 *e*P **P** **07 24 51.9 +1.9**
comp=Z,77nm,1.0s
MTN Manton Dam 49.70 292 P **P** **07 25 03.8 -0.7**
baz=50
TAOE Nuku Hiva Isla 49.80 60 *e*LR LR 07 39 18.4
comp=Z,223nm,23.5s
FITZ Fitzroy Crossi 50.05 282 P **P** **07 25 06.7 -0.4**
baz=50,SNR=8.9
FITZ Fitzroy Crossi 50.05 282 *e*P **P** **07 25 06.7 -0.4**
comp=Z,16nm,0.7s
MAW Mawson 60.01 204 P **P** **07 26 19.0 +0.7**
comp=Z,9.2nm,0.9s,baz=144,slow=8.7,SNR=4.1
MAW Mawson 60.01 204 P **P** **07 26 19.0 +0.7**
SYO Syowa Base 64.77 195 ⇑*e*P **P** **07 26 48.4 -1.7**
SNAA Sanae 66.38 180 P **P** **07 27 00.8 +0.2**
SNAA Sanae 66.38 180 *e*P **P** **07 26 59.7 -0.9**
SNAA pmax pmax
comp=Z,252nm,1.2s
VNA3 Neumayer Olymp 66.69 177 P **P** **07 27 01.9 -0.6**
NVL N'lazarevskaya 66.81 185 *e*P **P** **07 27 02.9 -0.4**
VNA2 Neumayer--Watz 67.07 178 P **P** **07 27 05.5 +0.5**
baz=180,slow=6.5
PLCA Paso Flores 76.97 134 P **P** **07 28 05.1 +0.3**
comp=Z,5.2nm,0.8s,baz=271,slow=5.4,SNR=18
GSI Gunungsitoli 83.48 278 *e*P **P** **07 28 39.9 -0.3**
comp=Z,43nm,1.1s
KSRS Korea Array 91.34 323 P **P** **07 29 18.9 +1.4**
comp=Z,6.3nm,0.9s,baz=142,slow=5.2,SNR=13
KSRS LR LR 08 08 30.0
comp=Z,23nm,19.6s,baz=90,slow=34
KSRS Korea Array 91.34 323 P **P** **07 29 19.0 +1.4**
KSRS pmax pmax
comp=Z,6.0nm,0.9s
KSRS MLR MLR
comp=Z,23nm,19.6s
KSAR Wonju Array Be 91.35 323 P **P** **07 29 19.0 +1.4**
KSAR Wonju Array Be 91.35 323 P **P** **07 29 18.9 +1.4**
NJ2 Nanjing 91.53 313 *e*P **P** **07 29 19.6 +1.0**
NJ2 pmax pmax
comp=Z,18nm,0.7s
WHN Wuhan 92.89 310 P **P** **07 29 25.8 +0.9**
YSS Yuzh-Sakhalins 94.06 337 *e*P **P** **07 29 27.8 -2.0**
YSS pmax pmax
comp=Z,24nm,1.3s
CMAR Chiang Mai Arr 94.14 291 P **P** **07 29 31.8 +0.8**
comp=Z,6.2nm,0.7s,baz=156,slow=3.4,SNR=27
CHTO Chiang Mai 94.38 291 *e*P **P** **07 29 32.9 +0.8**
CHTO pmax pmax
comp=Z,5.0nm,0.9s
CHTO Chiang Mai 94.38 291 *e*P **P** **07 29 32.9 +0.8**
comp=Z,5.1nm,0.9s
GYA Guiyang 94.56 302 P **P** **07 29 33.8 +0.9**
GYA PP **PP** **07 33 24.5 +3.2**
GYA SKS **SKSac** **07 40 07.4 +0.8**
GYA S **S** **07 40 43.8 -0.3**
GYA SS **SS** **07 47 11.0 +3.0**
GYA pmax pmax
comp=Z,30nm,1.0s
GYA pmax pmax
comp=Z,120nm,6.9s
GYA LR LR
comp=Z,760nm,20.8s
GYA LR LR
comp=Z,630nm,20.4s
GYA LR LR
comp=Z,740nm,21.6s
CPUP Villa Florida 95.01 133 P **P** **07 29 34.9 -0.1**
comp=Z,3.2nm,0.7s,baz=232,slow=5.2,SNR=4.7
LPAZ La Paz 96.10 118 P **P** **07 29 40.6 -0.3**
comp=Z,1.1nm,0.7s,baz=165,slow=6.4,SNR=5.7
KMI Kunming 96.15 298 P P 07 29 44.4 +4.1
KMI pmax pmax
comp=Z,22nm,0.8s
PET Petropavlovsk 96.31 349 *e*P **P** **07 29 39.3 -0.7**
PET pmax pmax
comp=Z,54nm,1.1s
PETK Petropavlovsk- 96.53 348 LR LR 08 06 21.4
comp=Z,46nm,21.1s,baz=127,slow=31
CN2 Changchun 97.60 325 *e*P Pdif 07 29 48.0 +1.8
CD2 Chengdu 99.49 303 P **Pdif** **07 29 54.8 -0.2**
CD2 pmax pmax
comp=Z,1.0nm,0.6s
TXAR Lajitas Array 101.54 61 PKKPbc PKKPbc 07 46 11.9 +0.9
comp=Z,0.7nm,0.7s,baz=90,slow=3.6,SNR=6.6
HHC Hu-ho-hao-te 101.99 315 *e*P **Pdif** **07 30 07.9 +2.0**
HHC S **Sdif** **07 41 43.0 -3.6**
HHC pmax pmax
comp=Z,91nm,7.2s
HHC LR LR
comp=Z,170nm,17.7s
HHC LR LR
comp=Z,250nm,17.1s
HHC LR LR
comp=Z,100nm,17.8s
LZH Lanzhou 102.98 307 *e*P **Pdif** **07 30 13.0 +2.5**
LZH pP 07 30 17.9
LZH sP 07 30 20.6
ILAR Eielson Array 110.27 15 PKKPab PKKPab 07 45 54.2 +2.6
comp=Z,0.1nm,14.1s,baz=353,slow=3.8,SNR=9.7
INK Inuvik 116.14 18 PKP **PKPdf** **07 34 52.3 -1.7**
comp=Z,1.1nm,1.0s,baz=336,slow=2.3,SNR=3.8

INK PKKPbc **PKKPab** **07 45 26.9 +1.2**
comp=Z,1.0nm,0.9s,baz=20,slow=9.0,SNR=5.3
WMQ Urumqi 117.47 305 *e*PKP **PKPdf** **07 34 56.0 -1.4**
YKA Yellowknife Ar 117.59 29 PKP **PKPdf** **07 34 56.0 -0.9**
comp=Z,1.5nm,0.6s,baz=255,slow=1.7,SNR=50
YKA PKKPbc **PKKPab** **07 45 18.2 -1.5**
comp=Z,0.4nm,0.7s,baz=51,slow=4.2,SNR=7.0
TIXI Tiksi 118.71 344 *c i*PKIKP **PKPdf** **07 34 55.2 -3.6**
TIXI pmax pmax
comp=Z,2.0nm,1.2s
MKAR Makanchi Array 122.28 306 PKP **PKPdf** **07 35 05.2 -1.4**
comp=Z,1.4nm,0.6s,baz=101,slow=2.5,SNR=11
MKAR Makanchi Array 122.28 306 *c i*PKIKP **PKPdf** **07 35 05.1 -1.4**
MKAR pmax pmax
comp=Z,2.0nm,0.6s
KSH Kashi 122.70 296 *e*PKP **PKPdf** **07 35 06.9 -0.8**
KSH PKS **PKSdf** **07 38 43.1 -1.3**
KSH SKS **SKSdf** **07 42 17.5 -0.5**
KSH AMB AMB
comp=Z,170nm,4.8s
KSH LR LR
comp=Z,160nm,7.0s
KSH LR LR
comp=Z,190nm,9.4s
KSH LR LR
comp=Z,180nm,5.7s
ZALV Zalesovo Beam 124.17 314 PKP **PKPdf** **07 35 08.2 -1.7**
comp=Z,0.7nm,0.3s,baz=169,slow=1.5,SNR=4.9
AAK Ala-Archa 125.19 298 PKP **PKPdf** **07 35 11.2 -1.2**
comp=Z,1.2nm,0.5s,baz=151,slow=9.7,SNR=4.0
AAK Ala-Archa 125.19 298 *e*PKIKP **PKPdf** **07 35 09.0 -3.4**
KURK Kurchatov 126.22 309 PKIKP **PKPdf** **07 35 12.6 -1.2**
KURK pmax pmax
comp=Z,3.0nm,0.7s
KURK Kurchatov 126.22 309 PKP **PKPdf** **07 35 12.6 -1.2**
KURBB Kurchatov Arra 126.23 309 PKP **PKPdf** **07 35 12.6 -1.3**
comp=Z,3.3nm,0.7s,baz=118,slow=1.8,SNR=11
KKAR Karatay Array 128.02 297 *e*PKIKP **PKPdf** **07 35 17.5 -0.1**
KKAR Karatay Array 128.02 297 *e*PKPdf **PKPdf** **07 35 17.5 -0.1**
NRIK Noril'sk 128.80 333 PKP **PKPdf** **07 35 17.2 -1.0**
comp=Z,1.0nm,0.3s,baz=87,slow=4.5,SNR=4.8
BRVK Borovoye 131.88 309 *c i*PKIKP **PKPdf** **07 35 24.1 -0.5**
BRVK pmax pmax
comp=Z,8.0nm,2.5s
ABKAR Akbulak array 137.05 302 *e*PKPdf **PKPdf** **07 35 34.1 -0.3**
ARU Arti 139.22 312 *i*PKIKP **PKPdf** **07 35 38.6 +0.4**
ARU 07 38 30.2
LIC Lamto 144.04 176 *e*P **PKPab** **07 35 43.1 -2.4**
SFJD Kangerlussuaq 144.15 30 *i*P **PKPab** **07 35 43.5 -0.9**
comp=Z,11nm,0.9s
SFJD Kangerlussuaq 144.15 30 *i*PKIKP **PKPab** **07 35 43.5 -0.9**
SFJD pmax pmax
comp=Z,11nm,0.9s
KIC Kosan Boka 144.19 176 *e*P **PKPab** **07 35 46.0 -0.1**
comp=Z,34nm,1.0s
TIC Toumodi 144.46 176 *e*P **PKPab** **07 35 46.1 -1.0**
DBIC Dimbokro 144.49 176 PKP **PKPab** **07 35 46.3 -0.9**
comp=Z,9.3nm,0.8s,baz=156,slow=3.8,SNR=17
DAG Danmarks Havn 144.70 6 *i*P **PKPab** **07 35 44.4 -1.8**
comp=Z,6.2nm,0.8s
DAG *i* 07 35 56.0
DAG Danmarks Havn 144.70 6 *i*PKIKP **PKPab** **07 35 44.4 -1.8**
DAG *i* 07 35 56.0
GNI Garni 144.82 283 *i*PKIKP **PKPdf** **07 35 49.5 +0.6**
GNI pmax pmax
comp=Z,82nm,1.2s
SUMG Summit 145.06 18 *i*P **PKPbc** **07 35 47.8 -0.3**
comp=Z,25nm,0.8s
SUMG *i* 07 35 59.3
SUMG Summit 145.06 18 *i*PKIKP **PKPbc** **07 35 47.8 -0.3**
SUMG *i* 07 35 59.3
SUMG pmax pmax
comp=Z,25nm,0.8s
SUMG Summit 145.06 18 *e*PKPbc **PKPab** **07 35 48.0 -0.1**
ZEI Tsey 146.20 287 *i*PKP2 **PKPdf** **07 35 51.5 +0.2**
ZEI pmax pmax
comp=Z,62nm,1.5s
KBZ Khabaz 147.14 288 PKPbc **PKPbc** **07 35 54.4 -0.3**
comp=Z,6.9nm,1.0s,baz=151,slow=2.8,SNR=9.7
KVAR Kislovodsk Arr 147.34 289 PKPbc **PKPbc** **07 35 55.4 -0.1**
comp=Z,3.7nm,0.4s,baz=205,slow=2.2,SNR=5.1
KIV Kislovodsk 147.34 289 *e*PKIKP **PKPdf** **07 35 51.8 -1.2**
KIV pmax pmax
comp=Z,15nm,1.0s
ASF Jabal al Asfar 147.37 265 PKPbc **PKPbc** **07 35 55.8 -0.1**
comp=Z,2.1nm,0.4s,baz=302,slow=6.1,SNR=7.3
EIL Elat 147.51 259 PKPbc **PKPbc** **07 35 55.9 -0.3**
comp=Z,10nm,0.7s,baz=349,slow=2.6,SNR=9.6
LVZ Lovozero 147.61 335 *i*PKP2 **PKPdf** **07 35 53.5 +0.9**
LVZ pmax pmax
comp=Z,38nm,1.7s
TMCR Tamitsa 148.19 327 *e*PKP2 **PKPbc** **07 35 55.2 -1.7**
TMCR pmax pmax
comp=Z,48nm,1.2s
KEV Kevo 148.56 341 *e*PKP2 **PKPbc** **07 35 57.2 -0.5**
KEV Kevo 148.56 341 *e*PKPbc **PKPbc** **07 35 57.2 -0.5**
KLMR Klimovskoe 148.72 321 *e*PKIKP **PKPdf** **07 35 54.1 -0.4**
KLMR *e* 07 36 06.6
KLMR pmax pmax
comp=Z,53nm,1.0s
VRH Novokhopyorsk 148.88 302 *i*PKP2 **PKPbc** **07 35 57.8 -1.3**
VRH pmax pmax
comp=Z,30nm,0.8s
MMAI Mount Meron Ar 148.88 265 PKPbc **PKPbc** **07 36 00.3 +0.5**
comp=Z,8.2nm,0.7s,baz=104,slow=5.2,SNR=14
ARCES ARCESS Array B 149.09 341 PKPbc **PKPbc** **07 35 58.6 -0.5**
comp=Z,17nm,1.0s,baz=7.3,slow=1.3,SNR=19
VSR Storozhevoye 150.48 302 *i*PKIKP **PKPbc** **07 36 01.6 -1.4**
VSR *e* 07 36 12.9
VSR pmax pmax
comp=Z,50nm,1.4s
LPSR Galich'ya Gora 150.57 305 *i*PKIKP **PKPbc** **07 36 02.2 -1.0**
LPSR *e* 07 36 09.9
LPSR pmax pmax
comp=Z,30nm,1.1s
TORD Torodi Ar. Bea 150.78 188 PKP **PKPdf** **07 35 58.2 -1.1**
comp=Z,1.7nm,1.1s,baz=136,slow=1.7,SNR=5.5
TORD PKPbc **PKPbc** **07 36 04.0 -0.8**
comp=Z,9.5nm,0.9s,baz=162,slow=1.4,SNR=41
OBN Obninsk 151.64 310 *c i*PKIKP **PKPbc** **07 36 05.4 -0.2**
OBN pmax pmax
comp=Z,44nm,1.2s
BRTR Keskin Array B 152.80 277 PKPbc **PKPbc** **07 36 08.2 -0.7**
comp=Z,4.1nm,0.8s,baz=145,slow=5.9,SNR=18
BRTR PKPab **PKPab** **07 36 18.7 -1.4**
comp=Z,4.8nm,0.8s,baz=101,slow=2.6,SNR=5.5
FINES FINESS Array B 154.31 328 PKPbc **PKPbc** **07 36 10.4 -0.9**
comp=Z,4.7nm,0.8s,baz=101,slow=9.9,SNR=14
AKASG Malin Array Be 156.79 302 PKPab **PKPab** **07 36 35.2 -1.3**
comp=Z,0.3nm,0.3s,baz=74,slow=3.9,SNR=8.1
MLR Muntele Rosu 159.35 289 PKPab **PKPab** **07 36 47.6 -0.4**
comp=Z,0.4nm,0.4s,baz=339,slow=11,SNR=3.9
NB2 NORSAR Subarra 159.46 341 PKP **PKPab** **07 36 46.6 -1.1**
comp=Z,5.9nm,0.9s,baz=25,slow=3.5
NOA NORSAR Array B 159.46 341 PKPab **PKPab** **07 36 46.9 -0.8**
comp=Z,3.1nm,0.9s,baz=27,slow=4.0,SNR=5.9
KOLS Kolonicke sedl 161.53 300 *e*PKP2 **PKPab** **07 36 57.5 +0.3**
KOLS Kolonicke sedl 161.53 300 *e*PG **PKPab** **07 36 57.5 +0.3**
LANS Liptovska Anna 163.27 302 *e*PKP2 PKPab 07 37 13.4 +8.5
LANS Liptovska Anna 163.27 302 *e*PG PKPab 07 37 13.4 +8.5
BRG Berggiesshubel 165.86 313 *e*PKP **PKPab** **07 37 15.2 -0.9**
comp=Z,2.6nm,0.8s
BRG Berggiesshubel 165.86 313 *e*PKP2 **PKPab** **07 37 15.2 -0.9**
BRG pmax pmax
comp=Z,3.0nm,0.8s
CLL Collm 166.12 316 *i*PKPab **PKPab** **07 37 16.4 -0.8**
comp=Z,36nm,2.1s
CLL Collm 166.12 316 *i*PKP2 **PKPab** **07 37 16.4 -0.8**
CLL pmax pmax
comp=Z,36nm,2.1s
GERES GERESS Array B 166.94 306 PKPab **PKPab** **07 37 21.3 +0.2**
comp=Z,1.5nm,0.7s,baz=57,slow=4.9,SNR=7.3
KEST Kesra 168.78 238 PKPab **PKPab** **07 37 28.0 -1.5**
comp=Z,6.2nm,0.9s,baz=38,slow=8.4,SNR=4.5
DAVOX Davos/Dischmat 170.13 301 PKPab **PKPab** **07 37 35.0 -0.4**
comp=Z,2.0nm,0.5s,baz=127,slow=7.3,SNR=4.2
ESDC Sonseca Array 177.16 155 PKP **PKPdf** **07 36 22.4 +0.2**
comp=Z,0.2nm,0.3s,baz=232,slow=1.5,SNR=6.8

*IDC **07** 07:19:41.7±0.7, 36°.06N×143°.35E, h0km, mb3.7/9, mb1 3.9/12, mb1mx3.7/55, mbtmp3.7/12, ML3.1/3, MS3.1/3, Ms1 3.1/3, ms1mx2.6/36, Error ellipse: s-maj=22.2km s-min=18.3km az=105.0*
*ISCJB **07** 07:19:45.6±1.0, 36°.31N±0°.04×142°.91E±0°.07,*

h43km±11km, mb3.7/9, Error ellipse: s-maj=9.2km s-min=5.4km az=21.9

*JMA **07** 07:19:46.0±0.2, 36°30N×142°86E, h77km, M3.4*

ISC 07 07:19:47.8±1.4**, 36°31N**±0°05×**142°88E**±0°07**, h42**km±14km**, n36, σ1^{s}07**/33**, mb3.7**/9**, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
CHOJ	Chosi	1.75	250	P	Pn	07 20 14.9	-0.7
CHOJ				S	Sn	07 20 36.9	+0.3
ONAJ	Iwakimizuishiy	1.85	296	P	Pn	07 20 15.9	-1.1
ONAJ				eS	Sn	07 20 37.7	-1.5
JHO	Hitachi	1.89	280	P	Pn	07 20 16.5	-1.0
JHO				S	Sn	07 20 38.8	-1.2
JFK	Kawauchi	1.92	304	P	Pn	07 20 17.0	-1.0
BSO1	Boso 1	2.27	224	P	Pn	07 20 20.8	-1.4
BSO1				S	Sn	07 20 47.7	-1.0
JFT	Otama	2.37	301	P	Pn	07 20 23.6	-0.5
JFT				S	Sn	07 20 52.6	+0.7
JAG	Ashikaga	2.77	273	P	Pn	07 20 29.2	-0.4
JAG				S	Sn	07 21 01.0	-0.8
JMK	Ichinoseki	2.94	334	P	Pn	07 20 31.3	-0.7
JMK				eS	Sn	07 21 05.5	-0.6
JRY	Ryogami san	3.23	266	P	Pn	07 20 35.3	-0.7
JRY				eS	Sn	07 21 12.2	-1.0
JOD2	Odawara 2	3.25	252	P	Pn	07 20 35.9	-0.4
JOD2				eS	Sn	07 21 13.0	-0.8
JYK	Kaneyama	3.28	323	P	Pn	07 20 35.4	-1.2
JYK				eS	Sn	07 21 14.4	0.0
JOM	Ohasama	3.40	339	P	Pn	07 20 37.4	-0.8
JOM				eS	Sn	07 21 16.6	-0.6
JYN	Shimob	3.61	258	P	Pn	07 20 41.8	+0.6
JYN				eS	Sn	07 21 22.2	-0.5
MJAR	Matsushiro Arr	3.77	275	Pn	Pn	07 20 44.2	+0.8
	5.2nm,0.3s,baz=300,slow=25,SNR=20						
MAT	Matsushiro	3.77	275	P	Pn	07 20 44.0	+0.6
MAT				S	Sn	07 21 28.5	+1.9
MAT	Matsushiro	3.77	275	P	Pn	07 20 44.0	+0.6
JANG	Nango	4.19	346	P	Pn	07 20 48.7	-0.5
JANG				eS	Sn	07 21 35.0	-1.9
JNU	Nakatsue	10.38	256	LR	LR	07 27 08.0	
	comp=Z,70nm,18.3s,baz=136,slow=42						
USRK	Ussuriysk Ar.	11.45	317	Pn	Pn	07 22 32.0	+3.4
	0.1nm,0.3s,baz=126,slow=14,SNR=2.7						
USRK				LR	LR	07 27 36.4	
	comp=Z,80nm,18.7s,baz=139,slow=40						
KLR	Kul'dur	15.26	331	Pn	P	07 23 24.6	+0.2
	0.1nm,0.3s,baz=279,slow=13,SNR=3.3						
KLR				LR	LR	07 30 17.6	
	comp=Z,76nm,18.4s,baz=298,slow=41						
H11N2	WAKE ISLAND Hy	26.77	122	T	T	07 53 02.3	
	baz=311,slow=74						
H11N1	WAKE ISLAND Hy	26.77	122	T	T	07 53 04.4	
	baz=311,slow=74						
H11N3	WAKE ISLAND Hy	26.79	122	T	T	07 53 06.7	
	baz=311						
H11S1	WAKE ISLAND Hy	27.48	124	T	T	07 53 59.9	
	baz=319						
H11S3	WAKE ISLAND Hy	27.48	124	T	T	07 53 59.8	
	baz=319						
H11S2	WAKE ISLAND Hy	27.50	124	T	T	07 54 01.0	
	baz=319						
SONM	Songino Array	29.16	305	P	P	07 25 48.1	+3.1
	0.5nm,0.5s,baz=103,slow=9.1,SNR=4.5						
MKAR	Makanchi Array	45.50	303	P	P	07 28 08.0	+5.1
	0.5nm,0.5s,baz=98,slow=8.3,SNR=5.3						
ILAR	Eielson Array	49.48	32	P	P	07 28 33.5	+0.1
	0.4nm,0.7s,baz=264,slow=7.1,SNR=6.3						
INK	Inuvik	54.49	27	P	P	07 29 10.8	+0.1
	0.4nm,0.5s,baz=315,slow=7.7,SNR=6.0						
WRA	Warramunga Arr	56.53	190	P	P	07 29 24.4	-1.5
	2.5nm,0.7s,baz=9.5,slow=7.3,SNR=12						
WRA				PcP	PcP	07 30 22.0	-0.2
	0.3nm,0.7s,baz=6.4,slow=4.2,SNR=4.7						
ASAR	Alice Springs	60.25	189	P	P	07 29 50.6	-1.2
	1.6nm,0.7s,baz=11,slow=7.0,SNR=13						
YKA	Yellowknife Ar	63.84	30	P	P	07 30 14.8	-0.6
	0.2nm,0.7s,baz=299,slow=6.4,SNR=4.1						
PDAR	Pinedale Array	77.33	46	P	P	07 31 37.9	-0.3
	0.3nm,0.5s,baz=240,slow=1.8,SNR=4.4						
TXAR	Lajitas Array	89.62	53	P	P	07 32 41.2	-0.2
	0.3nm,0.7s,baz=264,slow=0.9,SNR=3.2						
LPAZ	La Paz	146.01	62	PKPbc	PKPdf	07 39 23.2	-0.2
	2.3nm,0.6s,baz=8.9,slow=11,SNR=8.8						

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*ISCJB **07** 07:19:50.2±0.6, 17°44N±0°08×94°55W±0°04, h169km±10km, Error ellipse: s-maj=13.7km s-min=5.5km az=3.5*

*NEIC **07** 07:19:53.4, 17°55N×94°52W, h152km, mb3.7/3, MD4.0(MEX), After MEX.*

*MEX **07** 07:19:53.4±0.6, 17°55N×94°52W, h152km±15km, MD4.0*

ISC 07 07:19:51.5±1.1**, 17°41N**±0°08×**94°57W**±0°04**, h159**km±15km**, n19, σ1^{s}29**/34**, Chiapas**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
TGIG		1.52	114	eP	Pn	07 20 22.6	+0.5
TGIG				eS	Sn	07 20 44.5	-1.1
TGIG		1.52	114	eP	Pn	07 20 22.6	+0.5
TGIG				eS	Sn	07 20 44.5	-1.1
OXBJ	Oaxaca	2.08	261	eP	Pn	07 20 29.6	+1.2
OXBJ				eS	Sn	07 20 58.6	+1.8
VHO	Vista Hermosa	2.09	261	eP	Pn	07 20 29.4	+0.9
VHO				eS	Sn	07 20 58.0	+1.1
VHO	Vista Hermosa	2.09	261	eP	Pn	07 20 29.4	+0.9
VHO				eS	Sn	07 20 58.0	+1.1
PCIG		2.13	142	iP	Pn	07 20 30.1	+1.3
PCIG				eS	Sn	07 20 58.1	+0.6
PCIG		2.13	142	iP	Pn	07 20 30.1	+1.3
PCIG				eS	Sn	07 20 58.1	+0.6
HUIG	Huatulco	2.20	222	eP	Pn	07 20 28.6	-0.9
HUIG				eS	Sn	07 20 59.8	+0.9
HUIG	Huatulco	2.20	222	eP	Pn	07 20 28.6	-0.9
HUIG				eS	Sn	07 20 59.8	+0.9
TPIG	Tehuac#an	2.84	291	iP	Pn	07 20 38.2	+0.7
TPIG				eS	Sn	07 21 12.1	-0.9
TPIG	Tehuac#an	2.84	291	iP	Pn	07 20 38.2	+0.7
TPIG				eS	Sn	07 21 12.1	-0.9
PNIG	Pinotepa	3.55	254	eP	Pn	07 20 44.8	-1.5
PNIG				eS	Sn	07 21 26.7	-2.1
PNIG	Pinotepa	3.55	254	eP	Pn	07 20 44.8	-1.5
PNIG				eS	Sn	07 21 26.7	-2.1
TLIG	Tlapa	3.82	273	eP	Pn	07 20 50.0	+0.2
TLIG				eS	Sn	07 21 34.6	-0.5
TEIG	Tepich	6.59	64	ePn	Pn	07 21 23.0	-3.1
TEIG				eSn	Sn	07 22 39.9	-0.5
MIAR	Mount Ida	17.09	3	ePn	P	07 23 39.4	-0.8
	1.9nm,0.6s						
MSTX	Muleshoe	18.06	338	ePn	Pn	07 23 53.5	+0.9
TUL1	Leonard	18.46	357	P	P	07 23 56.1	+1.0
	1.8nm,0.5s						
V34A	Guthrie	18.54	352	eP	P	07 23 54.5	-1.5
	4.6nm,0.6s						

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*NIED **07** 07:25:00, 37°40N×142°50E, h17km, Mw3.8 Best double couple: M0 4.85000×10^14 NP1: φs 356.00000°, δ27.00000°, λ-111.00000°. NP2: φs 199.00000°, δ65.00000°, λ-80.00000°.*

*JMA **07** 07:25:06.4±0.3, 37°36N×142°50E, h0km, M4.2*

*ISCJB **07** 07:25:07.1±1.9, 37°35N±0°05×142°48E±0°05, h0km±12km, mb3.7/11, MS2.9/1, Error ellipse: s-maj=8.4km s-min=6.5km az=167.5*

*IDC **07** 07:25:08.7±0.8, 37°26N×142°45E, h0km, mb3.7/11, mb1 3.9/13, mb1mx3.8/55, mbtmp3.7/13, ML2.8/2, MS2.9/2, Ms1 2.9/2, ms1mx2.5/42, Error ellipse: s-maj=21.0km s-min=17.5km az=118.0*

ISC 07 07:25:09.0±2.1**, 37°36N**±0°05×**142°33E**±0°07**, h0**km±12km**, n36, σ1^{s}15**/33**, mb3.7**/11**, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
JFK	Kawauchi	1.16	271	P	Pg	07 25 30.9	-0.2
ONAJ	Iwakimizuishiy	1.25	258	P	Pg	07 25 32.3	-0.6
ONAJ				S	Sn	07 25 52.1	+0.9
JMM	Marumori	1.32	293	P	Pg	07 25 33.1	-1.1
JIO	Ouri	1.34	325	P	Pg	07 25 33.3	-1.3
JIO				eS	Sb	07 25 52.5	0.0
JFT	Otama	1.59	276	P	Pn	07 25 38.1	-0.3
JFT				S	Sg	07 26 02.1	+2.0
JOU	Okura	1.65	308	P	Pn	07 25 38.9	-0.3
JOU				eS	Sn	07 26 00.9	-0.3
JMK	Ichinoseki	1.81	332	P	Pn	07 25 40.9	-0.5
JYS	Shirataka	1.99	296	P	Pn	07 25 44.4	+0.6
JFY	Yanaizu	2.09	272	P	Pn	07 25 46.2	+1.0
JYK	Kaneyama	2.20	316	P	Pn	07 25 46.5	-0.2
JYK				S	Sn	07 26 12.8	-1.7
JOM	Ohasama	2.26	339	P	Pn	07 25 48.2	+0.7
JRG	Rokugo	2.43	327	P	Pn	07 25 50.2	+0.3
JAG	Ashikaga	2.49	249	P	Pn	07 25 50.5	-0.2
MJAR	Matsushiro Arr	3.40	257	Pn	Pn	07 26 03.1	-0.1
	3.1nm,0.3s,baz=79,slow=16,SNR=15						
MAT	Matsushiro	3.40	257	P	Pn	07 26 04.7	+1.5
MAT				eS	Sb	07 26 48.2	-3.7
USRK	Ussuriysk Ar.	10.39	314	Pn	Pn	07 27 42.7	+3.6
	0.2nm,0.3s,baz=102,slow=13,SNR=6.0						
KSRS	Korea Array	11.46	275	Pn	Pn	07 27 58.3	+4.5
	0.2nm,0.3s,baz=94,slow=13,SNR=6.8						
KSRS				LR	LR	07 32 00.3	
	comp=Z,54nm,19.2s,baz=175,slow=36						
KLR	Kul'dur	14.12	330	Pn	P	07 28 39.4	+1.4
	0.1nm,0.3s,baz=128,slow=19,SNR=4.2						
GUMO	Guam	23.78	174	LR	LR	07 39 36.2	
	comp=Z,39nm,21.1s,baz=224,slow=37						
SEY	Seymchan	26.33	10	P	P	07 30 48.0	+1.8
	0.7nm,0.5s,baz=168,slow=18,SNR=6.3						
H11N2	WAKE ISLAND Hy	27.70	123	T	T	07 59 52.8	
	baz=315,slow=75,SNR=236						
H11N1	WAKE ISLAND Hy	27.71	123	T	T	07 59 49.5	
	baz=315,slow=75,SNR=161						
H11N3	WAKE ISLAND Hy	27.72	123	T	T	07 59 48.8	
	baz=315,slow=75,SNR=110						
SONM	Songino Array	28.21	303	P	P	07 31 04.3	+0.9
	1.9nm,0.8s,baz=100,slow=8.5,SNR=7.8						
H11S1	WAKE ISLAND Hy	28.43	125	T	T	08 00 42.7	
	baz=317,slow=76,SNR=113						
H11S3	WAKE ISLAND Hy	28.44	125	T	T	08 00 42.4	
	baz=317,slow=76,SNR=105						
H11S2	WAKE ISLAND Hy	28.45	125	T	T	08 00 44.7	
	baz=317,slow=76,SNR=103						
ZALV	Zalesovo Beam	42.23	312	P	P	07 33 04.0	+0.5
	1.2nm,0.5s,baz=73,slow=9.9,SNR=4.3						
MKAR	Makanchi Array	44.56	302	P	P	07 33 22.8	+0.4
	1.8nm,0.7s,baz=94,slow=8.9,SNR=8.7						
ILAR	Eielson Array	48.83	33	P	P	07 33 55.4	-0.2
	0.6nm,0.8s,baz=263,slow=6.3,SNR=6.2						
INK	Inuvik	53.76	27	P	P	07 34 32.3	-0.3
	0.4nm,0.5s,baz=299,slow=11,SNR=3.6						
WRA	Warramunga Arr	57.49	189	P	P	07 34 59.0	-0.8
	0.9nm,0.5s,baz=6.8,slow=7.3,SNR=15						
ASAR	Alice Springs	61.22	189	P	P	07 35 25.1	-0.5
	1.0nm,0.8s,baz=3.6,slow=6.7,SNR=9.9						
YKA	Yellowknife Ar	63.16	30	P	P	07 35 37.9	-0.3
	0.1nm,0.6s,baz=301,slow=6.7,SNR=3.1						
PDAR	Pinedale Array	76.92	46	P	P	07 37 03.5	+0.2
	0.2nm,0.5s,baz=222,slow=1.2,SNR=3.1						
TXAR	Lajitas Array	89.34	53	P	P	07 38 06.5	-1.1
	0.3nm,0.9s,baz=327,slow=4.8,SNR=3.1						

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*ATH **07** 07:33:42.6, 38°98N×26°50E, h25km±1km, ML3.1/4, Error ellipse: s-maj=3.4km s-min=1.0km az=257.0*

*DDA **07** 07:33:42.6, 38°98N×26°47E, h27km, Ml3.1*

*ISK **07** 07:33:43.0, 38°99N×26°49E, h14km, ML3.1*

*ISCJB **07** 07:33:43.1±0.4, 38°97N±0°02×26°49E±0°03, h6km±3km, Error ellipse: s-maj=4.2km s-min=3.0km az=151.3*

*THE **07** 07:33:43.4, 38°96N×26°47E, h1km±1km, ML2.9/5, Error ellipse: s-maj=1.4km s-min=0.5km az=230.0*

*CSEM **07** 07:33:43.6±0.1, 38°97N×26°49E, h10km, ML3.1, Error ellipse: s-maj=3.0km s-min=2.4km az=64.0*

ISC 07 07:33:43.5±0.9**, 38°97N**±0°02×**26°48E**±0°02**, h13**km±8km**, n88, σ0^{s}54**/117**, Aegean Sea**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
PRK	Paraskevi	0.32	330	P	Pg	07 33 50.0	-0.1
PRK				S	Sg	07 33 54.5	-0.1
PRK	Paraskevi	0.32	330	P	Pg	07 33 50.0	-0.1
PRK				S	Sg	07 33 54.5	-0.1
PRK	Paraskevi	0.32	330	P	Pg	07 33 50.4	+0.2
PRK				S	Sg	07 33 55.0	+0.4
PRK				AML	AML	07 33 55.4	
	comp=N,13865μm,0.5s						
PRK				AML	AML	07 33 57.3	
	comp=E,11290μm,0.7s						
DKL	Dikili	0.35	72	ePG	Pg	07 33 50.4	-0.2
DKL				eSG	Sg	07 33 55.5	+0.2
DKL	Dikili	0.35	72	ePg	Pg	07 33 50.4	-0.2
DKL				eSg	Sg	07 33 55.5	+0.2
AYVA	Ayvalik	0.38	26	iP	Pg	07 33 50.7	-0.5
AYVA	Ayvalik	0.38	26	P	Pg	07 33 50.7	-0.5
SIGR	SIGRI	0.54	297	ePG	Pg	07 33 54.1	-0.1
SIGR				eSG	Sb	07 34 02.0	-0.6
SIGR	SIGRI	0.54	297	P	Pg	07 33 54.0	-0.2
SIGR				S	Sg	07 34 01.8	+0.3
SIGR	SIGRI	0.54	297	ePg	Pg	07 33 54.1	-0.1
SIGR	SIGRI	0.54	297	P	Pg	07 33 54.4	+0.2
SIGR				S	Sg	07 34 01.8	+0.3
SIGR	SIGRI	0.54	297	P	Pg	07 33 54.4	+0.2
SIGR				S	Sb	07 34 02.1	-0.6
SIGR				AML	AML	07 34 02.9	
	comp=N,1288μm,0.6s						
SIGR				AML	AML	07 34 03.0	
	comp=E,1730μm,0.6s						
URLA	Izmir	0.61	171	iP	Pg	07 33 55.2	-0.3
URLA				iS	Sg	07 34 04.0	+0.4
URLA	Izmir	0.61	171	P	Pg	07 33 55.2	-0.3
URLA				S	Sg	07 34 04.0	+0.4
CHOS	Chios island	0.67	210	ePG	Pb	07 33 57.1	0.0
CHOS	Chios island	0.67	210	P	Pg	07 33 56.3	-0.3
CHOS				S	Sg	07 34 05.7	+0.3
CHOS	Chios island	0.67	210	P	Pg	07 33 56.5	-0.1
CHOS	Chios island	0.67	210	ePg	Pb	07 33 57.1	0.0
CHOS				S	Sg	07 34 05.7	+0.3
CHOS	Chios island	0.67	210	P	Pg	07 33 56.5	-0.1
CHOS				S	Sg	07 34 05.3	0.0
CHOS				AML	AML	07 34 09.3	
	comp=E,4390μm,0.3s						
CHOS				AML	AML	07 34 10.2	
	comp=N,2810μm,0.2s						
ZEY	˜zmir	0.73	179	iP	Pg	07 33 57.0	-0.6
BLCB	Balcova	0.73	143	ePG	Pg	07 33 57.6	-0.1
BLCB	Balcova	0.73	143	ePg	Pg	07 33 57.6	-0.1
IZM	Izmir	0.84	133	ePG	Pg	07 33 59.8	+0.1
IZM	Izmir	0.84	133	ePg	Pg	07 33 59.8	+0.1
EZN	Ezine	0.87	352	ePG	Pg	07 33 59.8	-0.5
EZN	Ezine	0.87	352	P	Pg	07 34 00.2	-0.1
EZN				S	Sb	07 34 12.8	+0.9
EZN	Ezine	0.87	352	ePg	Pg	07 33 59.8	-0.5
EZN	Ezine	0.87	352	P	Pg	07 34 00.2	-0.1
EZN				S	Sb	07 34 12.8	+0.9
BOZC	Bozcaada	0.93	339	iP	Pb	07 34 01.0	-0.6
AKS	Akhisar	1.04	94	ePG	Pb	07 34 03.5	0.0
AKS	Akhisar	1.04	94	ePg	Pb	07 34 03.5	0.0
AKHS	Akhisar	1.04	94	iP	Pb	07 34 03.3	-0.2
AKHS	Akhisar	1.04	94	P	Pb	07 34 03.3	-0.2
BALY	Balya	1.17	48	iP	Pn	07 34 05.5	-0.2
BALY	Balya	1.17	48	P	Pn	07 34 05.5	-0.2
BALB	Balikesir	1.28	58	ePN	Pn	07 34 06.7	-0.4
BALB	Balikesir	1.28	58	ePn	Pn	07 34 06.7	-0.4
SMG	Samos	1.29	167	P	Pb	07 34 07.5	-0.1
SMG				S	Sg	07 34 25.2	+0.2
SMG	Samos	1.29	167	P	Pb	07 34 07.5	-0.1
SMG				S	Sg	07 34 25.2	+0.2
SMG	Samos	1.29	167	P	Pn	07 34 06.1	-1.2
SMG				S	Sg	07 34 25.9	+0.8
SMG				AML	AML	07 34 27.6	
	comp=E,2977μm,0.3s						
SMG				AML	AML	07 34 27.9	
	comp=N,2976μm,0.3s						
LIA	Limnos Island	1.37	313	P	Pb	07 34 09.2	+0.2
LIA				S	Sg	07 34 27.9	+0.2
LIA	Limnos Island	1.37	313	P	Pb	07 34 08.6	-0.4
LIA				S	Sg	07 34 27.0	-0.7
GCAM	G?zelcaml?	1.40	155	iP	Pb	07 34 09.6	+0.1
GCAM	G?zelcaml?	1.40	155	P	Pb	07 34 09.6	+0.1
KRBG	Karabiga-Canak	1.56	24	ePN	Pn	07 34 10.7	-0.2
KRBG	Karabiga-Canak	1.56	24	ePn	Pn	07 34 10.7	-0.2
SMTH	Samothraki Isl	1.67	334	P	Pn	07 34 12.2	-0.3
SMTH				S	Sb	07 34 35.8	+0.7
SMTH	Samothraki Isl	1.67	334	P	Pn	07 34 12.2	-0.3
SMTH				S	Sb	07 34 35.8	+0.7
SMTH	Samothraki Isl	1.67	334	P	Pn	07 34 12.1	-0.3
DURS	Dursunbey	1.67	67	iP	Pn	07 34 12.5	-0.1
DURS	Dursunbey	1.67	67	P	Pn	07 34 12.5	-0.1
AYDN	Tasoluk	1.71	139	iP	Pn	07 34 12.7	-0.3
AYDN	Tasoluk	1.71	139	P	Pn	07 34 12.7	-0.3
DEMI	Demirci	1.74	87	iP	Pb	07 34 16.2	+0.7
DEMI	Demirci	1.74	87	P	Pb	07 34 16.2	+0.7
EDC	Edincik	1.74	37	ePN	Pn	07 34 13.3	-0.2
EDC	Edincik	1.74	37	ePn	Pn	07 34 13.3	-0.2
KULA	Kula-Manisa	1.77	104	ePN	Pn	07 34 13.9	0.0
KULA	Kula-Manisa	1.77	104	P	Pn	07 34 13.8	0.0
KULA				S	Sb	07 34 38.0	+0.1
KULA	Kula-Manisa	1.77	104	ePn	Pn	07 34 13.9	0.0
KULA				S	Sb	07 34 38.0	+0.1
DST	Dursunbey	1.78	68	ePN	Pn	07 34 14.0	0.0
DST	Dursunbey	1.78	68	ePn	Pn	07 34 14.0	0.0
RKY	Sarkoy-Tekirda	1.80	17	ePN	Pn	07 34 14.2	-0.2
RKY	Sarkoy-Tekirda	1.80	17	ePn	Pn	07 34 14.2	-0.2
SART	Tekirdag	1.80	17	iP	Pn	07 34 14.7	+0.3
SART	Tekirdag	1.80	17	P	Pn	07 34 14.7	+0.3
KESN	Edirne-Kesan	1.86	5	iP	Pn	07 34 14.8	-0.7
KESN				iS	Sb	07 34 40.1	-0.9
KESN	Edirne-Kesan	1.86	5	P	Pn	07 34 14.8	-0.7
KESN				S	Sb	07 34 40.1	-0.9
ALN	Alexandroupoli	1.96	350	ePN	Pn	07 34 16.4	0.0
ALN	Alexandroupoli	1.96	350	P	Pn	07 34 16.0	-0.4
ALN				S	Sb	07 34 42.5	-0.8
ALN	Alexandroupoli	1.96	350	P	Pn	07 34 16.0	-0.4
ALN	Alexandroupoli	1.96	350	ePn	Pn	07 34 16.4	0.0
ALN				S	Sb	07 34 42.5	-0.8
APE	Apeiranthos	2.04	202	ePN	Pn	07 34 18.1	+0.5
APE	Apeiranthos	2.04	202	P	Pn	07 34 16.5	-1.1
APE	Apeiranthos	2.04	202	ePn	Pn	07 34 18.1	+0.5
APE	Apeiranthos	2.04	202	P	Pn	07 34 16.5	-1.1
ORLT	Orhaneli	2.16	59	ePN	Pn	07 34 19.4	+0.1
ORLT	Orhaneli	2.16	59	ePn	Pn	07 34 19.4	+0.1
GDZ	Gediz	2.34	86	iP	Pb	07 34 24.0	-1.7
GDZ	Gediz	2.34	86	P	Pb	07 34 24.0	-1.7
ULDT	Uludag	2.37	59	iP	Pb	07 34 27.0	+0.9
ULDT	Uludag	2.37	59	P	Pb	07 34 27.0	+0.9
KHAL	Karahalli	2.43	103	iP	Pn	07 34 23.4	+0.3
KHAL	Karahalli	2.43	103	P	Pn	07 34 23.4	+0.3
IGD	Bursa	2.47	57	iP	Pb	07 34 28.3	+0.6
IZI	Iznik	2.69	58	ePN	Pn	07 34 27.0	+0.5
IZI	Iznik	2.69	58	ePn	Pn	07 34 27.0	+0.5
IVAS	Ivanjica	6.63	316	ePn	Pn	07 35 22.9	+2.2

WEL 07 07:38:03.6±0.4**, 42°14S**×**177°45E, h33**km**, ML3.7**/24**, 5C-6D, Error ellipse: s-maj=2.8km s-min=2.7km az=90.0, Off east coast of South Island**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
PAWZ	Paruwai Farm	1.69	296	⇓PN	Pn	07 38 30.3	-0.6
PAWZ				SN	Sn	07 38 50.2	-1.3
PAWZ				AML	AML	07 38 50.3	
BFZ	Birch Farm	1.72	328	PN	Pn	07 38 30.3	-0.9
BFZ				SN	Sn	07 38 51.3	-0.7
PLWZ	Palliser	1.74	289	PN	Pn	07 38 30.6	-0.9
PLWZ				SN	Sn	07 38 50.9	-1.6
MTW	Mount Morrison	1.76	303	PN	Pn	07 38 31.3	-0.4
TIWZ	Tintock	1.80	319	PN	Pn	07 38 32.2	-0.1
TIWZ				AML	AML	07 38 58.3	
TIWZ				AML	AML	07 38 59.6	
ANWZ	Angora Road	1.83	336	PN	Pn	07 38 31.8	-0.9
HOWZ	Holdsworth Sta	1.91	310	PN	Pn	07 38 33.5	-0.4
HOWZ				SN	Sn	07 38 55.3	-1.5
PRWZ	Pori Road	1.94	324	PN	Pn	07 38 33.8	-0.4
PRHZ	Porangahau	1.97	342	PN	Pn	07 38 34.0	-0.6
MRZ	Mangatainoka R	2.04	316	⇑PN	Pn	07 38 35.3	-0.3
MRZ				AML	AML	07 39 01.8	
MRZ				AML	AML	07 39 02.3	
CAW	Cannon Point	2.07	299	PN	Pn	07 38 35.2	-0.7
CAW				AML	AML	07 38 59.8	
CAW				AML	AML	07 39 02.5	
DVHZ	Dannevirke	2.08	332	PN	Pn	07 38 35.7	-0.5
PXZ	Pawanui	2.16	348	PN	Pn	07 38 36.6	-0.6
POWZ	Post Office Ro	2.16	323	PN	Pn	07 38 37.4	+0.1
OGWZ	Otaki Gorge	2.17	307	⇓PN	Pn	07 38 37.2	-0.1
WPHZ	Waipukurau	2.21	339	PN	Pn	07 38 37.7	-0.3
TSZ	Takapari Road	2.37	331	PN	Pn	07 38 39.9	-0.2
TSZ				AML	AML	07 39 10.4	
TSZ				AML	AML	07 39 10.8	
KAHZ	Kahuranaki	2.39	349	PN	Pn	07 38 39.5	-0.9
PNHZ	Pukenui	2.42	337	PN	Pn	07 38 40.2	-0.7
CKHZ	Cape Kidnapper	2.50	353	PN	Pn	07 38 40.8	-1.1
TCW	Tory Channel	2.55	290	PN	Pn	07 38 42.2	-0.5
TCW				SN	Sn	07 39 10.4	-2.2
TCW				AML	AML	07 39 10.6	
KRHZ	Kereru	2.63	341	⇓PN	Pn	07 38 43.5	-0.2
BSWZ	Blackbirch Sta	2.70	278	PN	Pn	07 38 43.8	-0.9
TUWZ	Tuamarina	2.72	284	PN	Pn	07 38 44.1	-0.8
TUWZ				AML	AML	07 39 17.6	
MCHZ	McNeill Hill	2.76	348	PN	Pn	07 38 44.8	-0.7
KWHZ	Kaweka Forest	2.83	344	PN	Pn	07 38 46.2	-0.3
BHHZ	Black Hill Sta	2.85	338	PN	Pn	07 38 46.6	-0.2
ARHZ	Aropaoanui	2.90	353	PN	Pn	07 38 46.5	-0.9
KHZ	Kahutara	2.92	263	PN	Pn	07 38 45.3	-2.3
MHGZ	Mahia Peninsul	3.01	7	PN	Pn	07 38 46.4	-2.5
MOVZ	Moawhango	3.02	334	PN	Pn	07 38 49.6	+0.4
MOVZ				AML	AML	07 39 27.7	
WAZ	Wanganui	3.03	321	⇓PN	Pn	07 38 51.0	+1.7
WAZ				AML	AML	07 38 53.3	
WAZ				AML	AML	07 40 16.1	
BKZ	Black Stump Fm	3.06	346	⇓PN	Pn	07 38 49.0	-0.7
BKZ				AML	AML	07 39 26.7	
BKZ				AML	AML	07 39 26.7	
WHHZ	Waihua	3.07	357	PN	Pn	07 38 48.8	-0.9
KNZ	Kokohu	3.12	3	PN	Pn	07 38 48.1	-2.3
MTVZ	Mangateitei	3.14	331	PN	Pn	07 38 51.9	+1.1
MTVZ				AML	AML	07 39 32.1	
MTVZ				AML	AML	07 39 32.6	
WNVZ	Wahianoa	3.15	333	PN	Pn	07 38 51.7	+0.8
TUVZ	Tukino	3.18	334	PN	Pn	07 38 52.6	+1.2
TUVZ				AML	AML	07 39 32.2	
TUVZ				AML	AML	07 39 32.6	
NNZ	Nelson	3.19	286	PN	Pn	07 38 51.1	-0.3
NNZ				AML	AML	07 39 16.9	
TRVZ	Turoa	3.19	332	⇑PN	Pn	07 38 52.6	+1.0
TRVZ				AML	AML	07 38 54.1	
TRVZ				AML	AML	07 39 32.2	
WHVZ	Whangaehu Hut	3.19	333	⇑PN	Pn	07 38 52.5	+0.9
FWVZ	Far West T-bar	3.23	333	⇑PN	Pn	07 38 52.9	+0.8
FWVZ				AML	AML	07 39 33.4	
FWVZ				AML	AML	07 39 34.6	
PRGZ	Paritu Road	3.23	6	PN	Pn	07 38 50.0	-2.0
RAHZ	Arahi	3.23	355	PN	Pn	07 38 50.9	-1.1
NGZ	Ngauruhoe	3.28	334	PN	Pn	07 38 53.5	+0.7
WTVZ	West Tongariro	3.34	334	PN	Pn	07 38 54.3	+0.7
WTVZ				AML	AML	07 39 36.1	
WTVZ				AML	AML	07 39 36.2	
KRVZ	Karewarewa	3.34	335	PN	Pn	07 38 54.3	+0.7
SNGZ	Shannon Statio	3.36	359	PN	Pn	07 38 52.2	-1.6
RITZ	Rihia Road	3.39	338	PN	Pn	07 38 54.8	+0.7
RITZ				AML	AML	07 38 59.6	
MRHZ	Matea Rd	3.40	346	PN	Pn	07 38 54.2	-0.2
THZ	Tophouse	3.41	275	PN	Pn	07 38 53.4	-1.1
THZ				AML	AML	07 39 36.3	
THZ				AML	AML	07 40 32.2	
RIGZ	Rimuhau	3.44	4	PN	Pn	07 38 52.6	-2.3
LREZ	Lake Rotokare	3.54	318	PN	Pn	07 38 58.1	+1.9
RAGZ	Rawiri	3.64	360	PN	Pn	07 38 55.8	-1.9
WATZ	Wairara	3.67	339	PN	Pn	07 38 57.9	-0.2
CNGZ	Carnagh Statio	3.70	9	PN	Pn	07 38 56.5	-1.9
TKGZ	Te Karaka	3.71	5	PN	Pn	07 38 56.7	-1.8
WPRZ	Whakapapatarin	3.75	344	PN	Pn	07 38 58.3	-0.8
MWZ	Matawai	3.81	1	⇓PN	Pn	07 38 57.5	-2.4
MWZ				AML	AML	07 39 43.4	
MWZ				AML	AML	07 39 43.4	
CRLZ	Canterbury Las	3.83	246	PN	Pn	07 38 58.4	-1.7
MQZ	McQueen's Vall	3.85	244	⇑PN	Pn	07 38 57.6	-2.9
MQZ				SN	Sn	07 39 39.4	-5.2
KHEZ	Kahui Hut	3.86	316	PN	Pn	07 39 02.9	+2.2
MHEZ	Mangahewa	3.88	321	PN	Pn	07 39 03.2	+2.3
LTZ	Lake Taylor	3.88	259	PN	Pn	07 38 59.4	-1.6
LTZ				AML	AML	07 39 43.9	
URZ	Urewera	3.89	356	PN	Pn	07 38 59.2	-1.8
URZ				AML	AML	07 39 44.9	
QRZ	Quartz Range	3.92	288	PN	Pn	07 39 02.0	+0.5
QRZ				AML	AML	07 39 20.7	

Code	Station Name	Δ°	AZ°	Op	ISC	Time	Res
QRZ				AML	AML	07 46 06.0	
TARZ	Mount Tarawera	3.97	349	PN	Pn	07 39 01.3	-0.9
TWGZ	Tauwhareparae	3.98	6	PN	Pn	07 39 00.6	-1.7
PUZ	Puketiti	4.11	9	PN	Pn	07 39 01.5	-2.6
HIZ	Hauiti	4.13	330	PN	Pn	07 39 04.3	0.0
OXZ	Oxford	4.16	252	PN	Pn	07 39 02.4	-2.3
DSZ	Denniston Nort	4.23	274	AML	AML	07 38 54.8	
DSZ				PN	Pn	07 39 05.3	-0.4
DSZ				AML	AML	07 40 29.4	
PKGZ	Pakihiroa	4.28	7	PN	Pn	07 39 04.1	-2.3
OPRZ	Ohinepanea	4.35	351	PN	Pn	07 39 05.4	-1.9
WMGZ	Waiomatatini S	4.38	10	PN	Pn	07 39 05.4	-2.4
HAZ	Te Kaha	4.39	3	PN	Pn	07 39 05.8	-2.1
INZ	Inchbonnie	4.48	261	PN	Pn	07 39 07.9	-1.3
ODZ	Otahua Downs	5.73	237	PN	Pn	07 39 23.9	-2.4
LBZ	Lake Benmore	5.76	245	PN	Pn	07 39 25.2	-1.5
LBZ				AML	AML	07 41 51.4	
FOZ	Fox Glacier	5.78	254	PN	Pn	07 39 26.3	-0.7
EAZ	Earnscleugh	6.66	240	PN	Pn	07 39 37.0	-2.0
TUZ	Tuapeka	6.80	233	PN	Pn	07 39 38.8	-2.2

IDC 07 07:57:54.5±1.8, 2°.85N×125°.56E, h0km, mb3.3/4, mb1 3.5/4, mb1mx3.3/45, mbtmp3.4/4, Error ellipse: s-maj=196.1km s-min=21.0km az=65.0, Talaud Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	Warramunga Arr	24.24	160	P	P	08 03 12.9	-0.4
	0.5nm,0.7s,baz=338,slow=11,SNR=12						
ASAR	Alice Springs	27.58	163	P	P	08 03 44.4	+0.8
	0.2nm,0.4s,baz=346,slow=6.2,SNR=4.1						
MKAR	Makanchi Array	57.62	326	P	P	08 07 46.2	-0.2
	0.2nm,0.4s,baz=132,slow=8.6,SNR=3.0						
KURBB	Kurchatov Arra	61.85	328	P	P	08 08 15.3	-0.2
	0.4nm,0.7s,baz=131,slow=6.4,SNR=5.2						

ISK 07 08:01:29.3, 36°.30N×28°.81E, h5km, MD2.7
ISCJB 07 08:01:31.0±1.0, 36°.31N±0°.05×28°.77E±0°.05, h4km±6km, Error ellipse: s-maj=8.3km s-min=6.5km az=6.8
CSEM 07 08:01:31.4±0.4, 36°.33N×28°.76E, h8km, MD3.0, Error ellipse: s-maj=7.9km s-min=6.0km az=5.0
DDA 07 08:01:31.7, 36°.41N×28°.75E, h7km, Md3.0
ISC 07 08:01:31.4±1.4, 36°.34N±0°.05×28°.82E±0°.03, h13km±10km, n29, σ0s.65/42, Dodecanese Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DALY	Dalyan (Mu˜la	0.49	345	ePG	Pg	08 01 40.7	-0.4
DALY	Dalyan (Mu˜la	0.49	345	ePg	Pg	08 01 40.7	-0.4
TURN	Turunc	0.56	342	i P	Pg	08 01 42.3	-0.1
TURN				i S	Sn	08 01 54.4	+0.3
TURN	Turunc	0.56	342	P	Pg	08 01 42.3	-0.1
AKAS	Kas	0.65	99	i P	Pn	08 01 46.0	-0.3
AKAS	Kas	0.65	99	P	Pn	08 01 46.0	-0.3
YER	Yerkesik	0.90	332	ePG	Pg	08 01 48.3	-0.5
YER				eSG	Sn	08 02 02.4	-0.3
YER	Yerkesik	0.90	332	ePg	Pg	08 01 48.3	-0.5
YER				eSg	Sn	08 02 02.4	-0.3
GOLH	Golhisar	1.08	34	i P	Pb	08 01 51.4	-0.5
GOLH				i S	Sn	08 02 08.5	+1.4
GOLH	Golhisar	1.08	34	P	Pb	08 01 51.4	-0.5
GOLH				S	Sn	08 02 08.5	+1.4
BDRM	Kayabasi	1.32	304	i P	Pn	08 01 54.8	-0.7
BDRM				i S	Sg	08 02 14.9	+1.0
BDRM	Kayabasi	1.32	304	P	Pn	08 01 54.8	-0.7
BDRM				S	Sg	08 02 14.9	+1.0
NIS1	Nisyros Isl.	1.35	282	ePN	Pb	08 01 56.4	0.0
NIS1	Nisyros Isl.	1.35	282	ePn	Pb	08 01 56.4	0.0
KORT	Korkueli	1.40	61	i P	Pg	08 01 58.0	-0.3
KORT				i S	Sg	08 02 22.6	+6.2
KORT	Korkueli	1.40	61	P	Pg	08 01 58.0	-0.3
BODT	Bodrum	1.41	301	ePN	Pn	08 01 57.0	+0.4
BODT	Bodrum	1.41	301	ePn	Pn	08 01 57.1	+0.4
DENT	Denizli	1.42	7	ePN	Pg	08 01 58.4	-0.4
DENT	Denizli	1.42	7	ePn	Pg	08 01 58.4	-0.4
AYDN	Tasoluk	1.52	331	i P	Pb	08 01 59.4	0.0
AYDN				i S	Sn	08 02 17.5	-0.4
AYDN	Tasoluk	1.52	331	P	Pb	08 01 59.4	0.0
AYDN				S	Sn	08 02 17.5	-0.4
KARP	Karpathos	1.56	240	ePN	Pn	08 01 58.8	0.0
KARP	Karpathos	1.56	240	ePn	Pn	08 01 58.8	0.0
GCAM	G?zelcaml?	1.86	317	i P	Pn	08 02 01.6	-1.2
GCAM				i S	Sb	08 02 28.9	+0.7
GCAM	G?zelcaml?	1.86	317	P	Pn	08 02 01.6	-1.2
GCAM				S	Sb	08 02 28.9	+0.7
KHAL	Karahalli	2.10	15	i P	Pn	08 02 07.1	+0.8
KHAL				i S	Sb	08 02 34.5	-0.8
KHAL	Karahalli	2.10	15	P	Pn	08 02 07.1	+0.8
KHAL				S	Sb	08 02 34.5	-0.8
ZEY	˜zmir	2.65	316	i P	Pb	08 02 18.4	-0.1

JMA 07 08:06:57.0, 36°.83N×140°.53E, h5km±1km, M2.5, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHO	Hitachi	0.22	172	P	Pg	08 07 01.4	+0.1
JHO				S	Sg	08 07 04.5	+0.3
ONAJ	Iwakimizuishiy	0.35	38	P	Pg	08 07 03.5	-0.2
ONAJ				S	Sg	08 07 08.8	+0.5
JFT	Otama	0.70	347	P	Pg	08 07 10.7	+0.2
JFT				S	Sg	08 07 20.5	+0.8
JMM	Marumori	1.05	11	P	Pg	08 07 17.0	-0.3
JMM				S	Sg	08 07 31.1	+0.2
JOU	Okura	1.54	4	S	Sb	08 07 46.0	+0.2
MAT	Matsushiro	1.89	262	P	Pn	08 07 30.9	+1.0
MAT				S	Sb	08 07 55.6	-0.3

IDC 07 08:09:27.3±5.7, 2°.62S×68°.39E, h0km, mb3.8/4, mb1 4.1/4, mb1mx3.5/51, mbtmp3.8/4, MS3.5/8, Ms1 3.5/8, ms1mx3.2/46, Error ellipse: s-maj=144.0km s-min=41.4km az=81.0, Carlsberg Ridge

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
H08N2	Diego Garcia H	4.50	145	T	T	08 16 01.0	
	baz=323,slow=75,SNR=1001						
H08N3	Diego Garcia H	4.52	145	T	T	08 15 58.4	
	baz=323,slow=75,SNR=870						
H08N1	Diego Carcia H	4.53	145	T	T	08 16 04.8	
	baz=323,slow=75,SNR=1095						
H08S3	Diego Garcia H	6.43	141	T	T	08 18 19.0	
	baz=306						
H08S1	Diego Carcia H	6.44	141	T	T	08 18 20.3	
	baz=306,slow=74						
H08S2	Diego Garcia H	6.45	141	T	T	08 18 20.1	
	baz=306,slow=74						
PSI	Prapat	31.00	80	LR	LR	08 26 28.0	
	comp=Z,127nm,19.4s,baz=202,slow=33						
KMBO	Kilima Mbogo	31.16	272	LR	LR	08 25 47.9	
	comp=Z,89nm,18.5s,baz=98,slow=32						
CMAR	Chiang Mai Arr	36.66	54	P	P	08 16 36.0	0.0
	0.8nm,0.4s,baz=245,slow=9.8,SNR=5.2						
CMAR				LR	LR	08 29 34.7	
	comp=Z,57nm,20.1s,baz=276,slow=33						
BOSA	Boshof	48.50	233	LR	LR	08 35 56.3	
	comp=Z,35nm,18.5s,baz=88,slow=33						
DAV	Davao City (W)	57.88	80	LR	LR	08 43 43.6	
	comp=Z,45nm,21.4s,baz=116,slow=36						
SONM	Songino Array	60.22	29	P	P	08 19 37.2	-0.1
	0.5nm,0.5s,baz=246,slow=7.2,SNR=4.5						
WRA	Warramunga Arr	66.52	111	P	P	08 20 19.5	-0.1
	1.0nm,0.7s,baz=288,slow=5.9,SNR=5.6						
ASAR	Alice Springs	66.56	115	P	P	08 20 19.9	+0.1
	0.6nm,0.8s,baz=282,slow=5.6,SNR=5.2						
KSRS	Korea Array	67.94	48	LR	LR	08 52 40.3	
	comp=Z,28nm,18.7s,baz=170,slow=38						
JNU	Nakatsue	68.75	53	LR	LR	08 50 49.4	
	comp=Z,23nm,18.1s,baz=305,slow=36						
STKA	Stephens Creek	74.37	122	LR	LR	08 51 32.2	
	comp=Z,37nm,19.0s,baz=29,slow=34						

NIED 07 08:25:00, 37°.60N×141°.90E, h14km, Mw4.0 Best double couple: M0 1.33000×10^15 NP1:φs358.00000°, δ31.00000°, λ-72.00000°. NP2:φs157.00000°, δ60.00000°, λ-101.00000°.
ISCJB 07 08:25:02.3±0.8, 37°.62N±0°.03×141°.96E±0°.04, h18km±5km, mb4.3/41, MS3.3/2, Error ellipse: s-maj=6.0km s-min=4.0km az=28.7
JMA 07 08:25:03.7±0.2, 37°.63N×141°.89E, h24km±3km, M4.3
JMA Felt I J1.
MOS 07 08:25:04.6±1.4, 37°.72N×142°.05E, h37km, mb4.4/26, Error ellipse: s-maj=9.6km s-min=6.5km az=89.6
NEIC 07 08:25:07.2±0.8, 37°.66N×141°.86E, h38km±7km, mb4.5/11, Error ellipse: s-maj=8.8km s-min=6.0km az=123.0
IDC 07 08:25:07.5±2.3, 37°.61N×141°.79E, h42km±22km, mb3.9/17, mb1 4.1/21, mb1mx3.9/48, mbtmp4.1/21, ML3.6/3, MS3.2/7, Ms1 3.2/7, ms1mx2.9/42, Error ellipse: s-maj=18.3km s-min=13.7km az=96.0
ISC 07 08:25:02.2±1.5, 37°.62N±0°.04×141°.91E±0°.05, h7km±8km, n104, σ1s.15/110, mb4.3/41, 4C-1D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	Kawauchi	0.86	253	P	Pb	08 25 19.6	0.0
JFK				eS	Sb	08 25 30.8	-0.6
JMM	Marumori	0.92	286	P	Pb	08 25 20.4	-0.1
JMM				S	Sg	08 25 31.9	0.0
JIO	Ouri	0.95	332	P	Pb	08 25 20.7	-0.3
JIO				S	Sg	08 25 32.2	-0.5
ONAJ	Iwakimizuishiy	1.03	240	P	Pg	08 25 21.9	0.0
ONAJ				eS	Sg	08 25 34.1	-1.1
JOU	Okura	1.24	308	P	Pg	08 25 26.1	+0.2
JOU				S	Sg	08 25 41.0	-1.0
JFT	Otama	1.26	266	P	Pb	08 25 26.3	0.0
JFT				eS	Sb	08 25 42.1	-0.6
JMK	Ichinoseki	1.44	338	P	Pn	08 25 28.1	-0.6
JMK				eS	Sn	08 25 45.4	-2.5
JYS	Shirataka	1.58	293	P	Pn	08 25 31.1	+0.4
JYS				S	Sn	08 25 51.3	-0.1
JFY	Yanaizu	1.77	264	P	Pb	08 25 34.2	-0.8
JFY				S	Sn	08 25 56.1	0.0
JYK	Kaneyama	1.78	317	P	Pn	08 25 33.2	-0.3
JYK				eS	Sn	08 25 56.1	-0.3
MJAR	Matsushiro Arr	3.15	251	P	Pn	08 25 53.9	+1.6
	8.1nm,0.3s,baz=78,slow=16,SNR=26						
MAJO	Matsushiro	3.15	251	eP	Pn	08 25 53.4	+1.1
MAJO				e		08 26 29.1	
MAJO	Matsushiro	3.15	251	ePn	Pn	08 25 53.4	+1.1
MAJO				eSn	Sn	08 26 29.1	-1.1
MAT	Matsushiro	3.15	251	P	Pn	08 25 53.6	+1.3
MAT				S	Sb	08 26 34.2	-3.0
ERM	Erimo	4.50	12	eP	Pn	08 26 10.5	-0.2
ERM				e		08 27 03.8	
ERM	Erimo	4.50	12	ePn	Pn	08 26 10.5	-0.2
ERM				eSn	Sn	08 27 03.8	+0.5
INU	Inuyama	4.55	242	ePn	Pn	08 26 13.9	+2.4
JHJ2	Mitsune	4.81	201	ePn	Pn	08 26 16.0	+0.9
JHJ2				eSn	Sn	08 27 09.5	-1.6
JHJ	Hachijo jima 2	4.81	202	P	Pn	08 26 15.7	+0.5
	15nm,0.3s,baz=80,slow=17,SNR=13						
JHJ				S	Sn	08 27 08.5	-2.7
	28nm,0.3s,baz=242,slow=22,SNR=6.1						
JHJ				LR	LR	08 28 29.1	
	comp=Z,140nm,20.3s,baz=143,slow=42						
YUK	Yuzh-Kuril'sk	7.08	24	eP	Pn	08 26 45.4	-0.8
YUK				eS	Sn	08 27 59.1	-7.7
YUK				pmax	pmax		
	comp=Z,67nm,0.4s						
YUK				pmax	pmax		
	comp=N,25nm,0.3s						
YUK				pmax	pmax		
	comp=E,31nm,0.3s						
SHO	Shikotan	7.28	29	eP	Pn	08 26 46.0	-2.9
SHO				eS	Sn	08 28 01.2	-11
SHO				pmax	pmax		
	comp=Z,25nm,0.5s						
SHO				pmax	pmax		
	comp=E,7.0nm,0.3s						
SHO				pmax	pmax		
	comp=N,12nm,0.7s						
KUR	Kuril'sk	8.82	29	eP	Pn	08 27 07.8	-2.3
KUR				eS	Sn	08 28 39.9	-10
YSS	Yuzh-Sakhalins	9.35	4	eP	Pn	08 27 18.5	+1.1
YSS	Yuzh-Sakhalins	9.35	4	ePn	Pn	08 27 18.5	+1.1
USRK	Ussuriysk Ar.	9.98	314	P	Pn	08 27 27.7	+1.7
	comp=N,0.2nm,0.3s,baz=121,slow=14,SNR=3.8						
JNU	Nakatsue	10.06	247	P	Pn	08 27 31.9	+4.7
	comp=N,0.5nm,0.3s,baz=60,slow=5.9,SNR=7.0						
JNU				LR	LR	08 31 44.9	
	comp=N,219nm,18.3s,baz=121,slow=40						
KSRS	Korea Array	11.11	273	P	Pn	08 27 48.0	+6.5
	comp=N,0.2nm,0.3s,baz=87,slow=14,SNR=12						
KSRS				LR	LR	08 31 50.7	
	comp=N,92nm,18.1s,baz=69,slow=36						
KSAR	Wonju Array Be	11.14	273	P	Pn	08 27 48.0	+6.0
KSAR	Wonju Array Be	11.14	273	P	Pn	08 27 48.0	+6.0
KLR	Kul'dur	13.74	331	P	Pn	08 28 20.3	+2.9
	comp=N,0.1nm,0.3s,baz=139,slow=11,SNR=2.4						
KLR				LR	LR	08 33 22.9	
	comp=N,62nm,18.4s,baz=320,slow=36						
CN2	Changchun	13.92	301	eP	Pn	08 28 21.6	+1.7
PETK	Petropavlovsk-	18.98	30	LR	LR	08 37 30.6	
	comp=N,45nm,18.3s,baz=147,slow=39						
NJ2	Nanjing	19.71	261	eP	P	08 29 31.8	-0.4
NJ2				pmax	pmax		
	comp=Z,11nm,0.5s						
MA2	Magadan	22.70	12	P	P	08 30 04.0	-0.3
	comp=Z,6.8nm,0.8s,baz=213,slow=7.9,SNR=12						
MA2				LR	LR	08 38 27.1	
	comp=Z,64nm,19.2s,baz=160,slow=35						
MA2	Magadan	22.70	12	eP	P	08 30 04.2	-0.1
MA2	Magadan	22.70	12	eP	P	08 30 04.2	-0.1
HHC	Hu-ho-hao-te	23.67	287	eP	P	08 30 14.4	-0.1
HHC				pmax	pmax		
	comp=Z,22nm,0.9s						
HHC				pmax	pmax		
	comp=Z,120nm,4.7s						
WHN	Wuhan	23.84	261	P	P	08 30 14.2	-1.8
SEY	Seymchan	26.14	11	P	P	08 30 37.6	+0.9
	comp=Z,5.1nm,0.9s,baz=183,slow=7.4,SNR=16						
SEY	Seymchan	26.14	11⇑	eP	P	08 30 36.8	+0.1
BOD	Bodaibo	27.25	327	eP	P	08 30 45.9	-0.9
BOD				pmax	pmax		
	comp=Z,5.0nm,0.8s						
ENH	Enshi	27.78	264	eP	P	08 30 51.8	-0.1
	comp=Z,8.8nm,0.3s						
SONM	Songino Array	27.80	303	P	P	08 30 51.5	-0.5
	comp=Z,1.2nm,0.6s,baz=109,slow=7.9,SNR=5.8						
TLY	Talaya	30.25	310	eP	P	08 31 15.3	+1.7
TLY				pmax	pmax		
	comp=Z,19nm,3.4s						
GYA	Guiyang	31.71	260	eP	P	08 31 26.8	-0.1
GYA				pmax	pmax		
	comp=Z,10.0nm,0.8s						
CD2	Chengdu	32.07	269	P	P	08 31 29.3	-0.6
CD2				pmax	pmax		
	comp=Z,1.0nm,0.5s						
GTA	Gaotai	32.77	286	eP	P	08 31 37.7	+1.6
GTA				pP	sP	08 31 44.4	+5.5
GTA				sP	pP	08 31 47.6	+9.5
GTA				pmax	pmax		
	comp=Z,5.0nm,1.0s						
BILL	Bilibino	33.36	16	eP	P	08 31 40.8	+0.1
BILL				pmax	pmax		
	comp=Z,2.0nm,1.1s						
TIXI	Tiksi	34.76	353	eP	P	08 31 50.4	-2.4
TIXI				pmax	pmax		
	comp=Z,9.0nm,2.4s						
KMI	Kunming	35.44	261	P	P	08 32 02.2	+2.7
KMI				pmax	pmax		
	comp=Z,14nm,1.3s						
WMQ	Urumqi	40.93	296	P	P	08 32 47.0	+1.6
WMQ				pP	sP	08 32 54.8	+6.5
WMQ				pmax	pmax		
	comp=Z,5.0nm,0.8s						
WMQ				pmax	pmax		
	comp=Z,47nm,4.6s						
ZAA0	Zalesovo Array	41.82	312	eP	P	08 32 52.5	0.0
ZALV	Zalesovo Beam	41.82	312	P	P	08 32 52.8	+0.4
	comp=Z,2.0nm,0.7s,baz=85,slow=6.2,SNR=5.7						
MK01	Makanchi Array	44.15	302	eP	P	08 33 10.7	-0.7
MK31	Makanchi Array	44.15	302	eP	P	08 33 11.7	+0.3
MK31	Makanchi Array	44.15	302	eP	P	08 33 11.7	+0.3
MKAR	Makanchi Array	44.15	302	P	P	08 33 11.6	+0.1
	comp=Z,1.7nm,0.7s,baz=86,slow=9.2,SNR=15						
MKAR	Makanchi Array	44.15	302	ceP	P	08 33 14.0	+2.6
MKAR				pmax	pmax		
	comp=Z,2.0nm,0.7s						
MKAR	Makanchi Array	44.15	302	eP	P	08 33 11.7	+0.3
MAKZ	Makanchi	44.36	302	eP	P	08 33 12.5	-0.6
MAKZ				pmax	pmax		
	comp=Z,5.0nm,1.1s						
MAKZ	Makanchi	44.36	302	eP	P	08 33 12.5	-0.6
	comp=Z,5.1nm,1.1s						
KURK	Kurchatov	45.89	308	eP	P	08 33 25.1	-0.1
KURK				pmax	pmax		
	comp=Z,12nm,0.8s						
KURK	Kurchatov	45.89	308	eP	P	08 33 25.1	-0.1
	comp=Z,12nm,0.8s						
ILAR	Eielson Array	48.79	33	P	P	08 33 48.0	+0.4
	comp=Z,2.1nm,0.9s,baz=268,slow=6.7,SNR=15						
ILB	Eielson Array	48.79	33	eP	P	08 33 48.2	+0.6
TKM2	Tokmak 2	49.70	298	eP	P	08 33 56.1	+0.9
TKM2				pmax	pmax		
	comp=Z,4.0nm,0.9s						
TKM2	Tokmak 2	49.70	298	eP	P	08 33 56.1	+0.9
	comp=Z,3.8nm,0.9s						
HNR	Honiara	49.76	156	LR	LR	08 56 13.0	
	comp=Z,50nm,18.2s,baz=168,slow=38						
VOSK	Vostochnaya	50.19	312	eP	P	08 33 58.5	+0.1
VOSK				pmax	pmax		
	comp=Z,20nm,1.9s						
VOSK	Vostochnaya	50.19	312	eP	P	08 33 58.5	+0.1
	comp=Z,20nm,1.9s						
BRVK	Borovoye	50.53	312	eP	P	08 34 00.8	-0.2
BRVK				pmax	pmax		
	comp=Z,6.0nm,3.1s						
KSH	Kashi	50.53	294	eP	P	08 34 07.7	+6.3
KSH				epP	sP	08 34 17.6	+13
KSH				esP	pP	08 34 21.7	+18
KSH				S	S	08 41 22.1	+6.2
ARU	Arti	56.19	318d	iP	P	08 34 42.4	-0.1
ARU						08 36 45.6	
ARU				S	S	08 42 31.6	-0.4
ARU				SS	SS	08 46 08.3	-10
ARU				pmax	pmax		
	comp=Z,12nm,1.7s						
WRAB	Tennant Creek	57.68	188	eP	P	08 34 54.4	+1.0
WRAB				pmax	pmax		
	comp=Z,8.0nm,1.1s						
WRAB	Tennant Creek	57.68	188	eP	P	08 34 54.4	+1.0
	comp=Z,8.3nm,1.1s						
WRA	Warramunga Arr	57.69	188	P	P	08 34 52.4	-1.1
	comp=Z,1.5nm,0.6s,baz=6.0,slow=7.4,SNR=20						
ABKAR	Akbulak array	57.87	310	eP	P	08 34 54.2	-0.4
	comp=Z,0.9nm,0.4s						
AKTO	Aktyubinsk	58.58	312	P	P	08 34 58.2	-1.4
	comp=Z,0.9nm,0.5s,baz=50,slow=9.1,SNR=5.9						
ASAR	Alice Springs	61.42	188	P	P	08 35 19.8	+0.6
	comp=Z,1.4nm,0.8s,baz=4.2,slow=6.2,SNR=11						
YKA	Yellowknife Ar	63.10	30	P	P	08 35 30.2	+0.2
	comp=Z,1.1nm,0.6s,baz=303,slow=6.5,SNR=38						
ARCES	ARCESS Array B	63.59	339	P	P	08 35 33.6	+0.4
	comp=Z,3.3nm,1.0s,baz=61,slow=7.5,SNR=2.8						
OBN	Obninsk	67.87	323	eP	P	08 36 05.8	+4.8
OBN				pmax	pmax		
	comp=Z,6.0nm,1.0s						
FINES	FINESS Array B	68.48	332	P	P	08 36 04.0	-0.8
	comp=Z,2.8nm,0.8s,baz=46,slow=8.2,SNR=8.0						
FINES	FINESS Array B	68.48	332	P	P	08 36 04.0	-0.8
FINES				pmax	pmax		
	comp=Z,3.0nm,0.8s						
KIV	Kislovodsk	70.82	311	eP	P	08 36 19.2	-0.5
KIV				pmax	pmax		
	comp=Z,12nm,1.1s						
FFC	Flin Flon	73.00	33	eP	P	08 36 32.7	+0.3
FFC				pmax	pmax		
	comp=Z,2.0nm,0.7s						
FFC	Flin Flon	73.00	33	eP	P	08 36 32.7	+0.3
	comp=Z,1.6nm,0.7s						
FCC	Fort Churchill	73.30	27	eP	P	08 36 33.9	-0.2
FCC				pmax	pmax		
	comp=Z,5.0nm,1.2s						
FCC	Fort Churchill	73.30	27	eP	P	08 36 33.9	-0.2
	comp=Z,5.2nm,1.2s						
HLID	Hailey	73.68	47	eP	P	08 36 38.4	+1.5
	comp=Z,1.2nm,0.8s						
NOA	NORSAR Array B	73.80	337	P	P	08 36 36.4	-0.7
	comp=Z,1.1nm,0.7s,baz=360,slow=2.7,SNR=3.4						
AKASG	Malin Array Be	74.08	322	P	P	08 36 38.4	-0.4
	comp=Z,0.6nm,0.4s,baz=45,slow=5.8,SNR=5.0						
AKASG	Malin Array Be	74.08	322c	eP	P	08 36 36.4	-2.4
AKASG				pmax	pmax		
	comp=Z,1.0nm,0.4s						
KIEV	Kiev	74.09	322	eP	P	08 36 37.3	-1.6
KIEV				pmax	pmax		
	comp=Z,14nm,2.0s						
NVAR	Mina Array Bea	74.32	54	P	P	08 36 42.0	+1.2
	comp=Z,2.0nm,0.8s,baz=316,slow=4.1,SNR=5.7						
DUG	Dugway, Tooele	76.67	49	eP	P	08 36 55.5	+1.4
DUG	Dugway, Tooele	76.67	49	eP	P	08 36 55.5	+1.4
PDAR	Pinedale Array	76.97	46	P	P	08 36 56.6	+0.7
	comp=Z,1.2nm,0.6s,baz=268,slow=1.8,SNR=16						
WUAZ	Wupatki	80.49	52	eP	P	08 37 16.8	+1.5
	comp=Z,8.0nm,1.4s						
CLL	Collm	80.79	330	eP	P	08 37 11.0	-5.4
CLL	Collm	80.79	330	eP	P	08 37 11.0	-5.4
ANMO	Albuquerque	83.91	50c	eP	P	08 37 33.7	+0.4
ANMO				pmax	pmax		
	comp=Z,2.0nm,1.0s						
TXAR	Lajitas Array	89.45	53	P	P	08 38 00.8	+0.5
	comp=Z,1.0nm,0.6s,baz=305,slow=2.9,SNR=10						
LPAZ	La Paz	146.06	59	PKPbc	PKPab	08 44 44.5	-0.2
	comp=Z,3.9nm,0.6s,baz=312,slow=2.4,SNR=18						

PLV 07 08:25:36.8±1.7, 21°.61N×100°.13E, h18km±26km, ML3.5
BKK 07 08:25:37.1±1.0, 21°N±7°×10°0E±°, h10km, M4.1/9, MLv4.1/9
ISC 07 08:25:35.8±1.7, 20°.66N±0°.08×99°.91E±0°.06, h1km±16km, n13, σ1s.21/20, Myanmar

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CRAI	Chiangrai	0.61	135	P	Pg	08 25 47.7	+0.2
CMAI	Chiengmai2	1.09	228	P	Pb	08 25 57.4	-0.2
CMAI				S	Sg	08 26 11.0	+0.1
CMMT	Chiang Mai	2.05	206	P	Pn	08 26 11.3	-0.2
CMMT				S	Sb	08 26 39.4	-0.5
CHTO	Chiang Mai	2.05	207	P	Pn	08 26 11.4	-0.1
CHTO				S	Sb	08 26 39.3	-0.6
LAMP	Lampang	2.15	187	P	Pn	08 26 13.0	+0.3
LAMP				S	Sb	08 26 41.3	-1.3
UTTA	Uttaradit	2.97	168	P	Pn	08 26 24.8	+0.8
UTTA				S	Sb	08 27 06.4	+0.2
DBV	Dienbien	3.00	75	ePg	Pg	08 26 34.0	+0.8
DBV				eSg	Sg	08 27 11.7	-0.4
DBV				AML	AML	08 27 17.0	
	comp=E,193nm,0.4s						
MHMT	Maesarieng	3.10	217	P	Pn	08 26 26.6	+0.7
MHMT				S	Sb	08 27 11.1	+1.0
MLVB	It Ong	3.32	65	ePg	Pg	08 26 52.2	+13
TGV	Tuan Giao	3.40	74	ePn	Pb	08 26 35.0	-1.8
TGV				eSg	Sg	08 27 25.5	+0.5
TGV				AML	AML	08 27 34.2	
	comp=N,116nm,0.6s						
PHIT	Phitsanulok	3.49	172	P	Pn	08 26 32.8	+1.6
PBKT	Sadao Pong	4.19	166	P	Pn	08 26 43.6	+2.8
UMPA	Umpang Tak	4.54	193	P	Pb	08 26 54.4	-2.0

IDC 07 08:38:21.3±46.0, 15°.75S×172°.27W, h0km, mb3.9/3, mb1 4.0/3, mb1mx3.6/36, mbtmp3.9/3, Error ellipse: s-maj=894.8km s-min=196.7km az=79.0, Samoa Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
STKA	Stephens Creek	44.81	241	P	P	08 46 37.0	-0.2
	0.3nm,0.3s,baz=94,slow=15,SNR=3.6						
WRA	Warramunga Arr	50.83	257	P	P	08 47 23.8	-0.3
	0.5nm,0.6s,baz=93,slow=7.1,SNR=6.3						
ASAR	Alice Springs	51.04	252	P	P	08 47 25.7	0.0
	2.6nm,0.6s,baz=89,slow=8.1,SNR=47						

NIED 07 08:39:00, 39°.20N×143°.00E, h5km, Mw3.9 Best double couple: M0 8.82000×10^14 NP1:φs25.00000°, δ32.00000°, λ-133.00000°. NP2:φs252.00000°, δ67.00000°, λ-67.00000°.
JMA 07 08:39:09.6±0.2, 39°.18N×143°.04E, h9km±2km, M3.6
IDC 07 08:39:11.9±0.9, 39°.45N×143°.03E, h0km, mb3.7/9,

mb1 3.9/10, mb1mx3.7/37, mbtmp3.7/10, ML3.4/1, MS2.9/4, Ms1 2.9/4, ms1mx2.5/47, Error ellipse: s-maj=28.8km s-min=17.5km az=116.0

ISC 07 08:39:12.0±2.2**, 39°.30N**±0°.06×**142°.87E**±0°.08**, h7**km±12km**, n31, σ1.49**/29**, mb3.7**/8**, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
MIYJ	Miyakonagasawa	0.86	289	P	Pb	08 39 28.9	-0.4
MIYJ				eS	Sn	08 39 42.5	-0.9
OFUJ	Ofunato	0.96	257	P	Pg	08 39 29.8	-0.6
JTH	Tanohata	1.01	310	P	Pb	08 39 31.3	-0.5
JOM	Ohasama	1.23	279	P	Pb	08 39 34.7	-1.0
JOM				eS	Sn	08 39 52.7	+0.1
JMK	Ichinoseki	1.33	256	P	Pn	08 39 35.6	-1.4
JMK				eS	Sn	08 39 54.5	-0.4
JKZ	Kuzumaki	1.37	301	P	Pn	08 39 37.3	-0.4
JKZ				eS	Sg	08 39 58.1	+2.0
JIO	Ouri	1.45	235	P	Pn	08 39 36.0	-2.7
JIO				eS	Sn	08 39 55.6	-2.4
JANG	Nango	1.50	316	P	Pn	08 39 38.7	-0.6
JANG				eS	Sg	08 40 01.2	+1.1
JRG	Rokugo	1.74	274	P	Pb	08 39 43.3	-0.9
JRG				eS	Sg	08 40 07.9	+0.1
JOU	Okura	1.96	242	P	Pn	08 39 45.0	-0.7
JOU				eS	Sn	08 40 10.4	-0.1
MJAR	Matsushiro Arr	4.60	235	Pn	Pn	08 40 23.9	+1.9
	1.7nm,0.3s,baz=41,slow=11,SNR=17						
MAT	Matsushiro	4.60	235	P	Pn	08 40 23.7	+1.7
MAT				eS	Sb	08 41 21.7	-6.9
USRK	Ussuriysk Ar.	9.49	305	LR	LR	08 45 08.5	
	comp=Z,82nm,19.9s,baz=152,slow=38						
KLR	Kul'dur	12.72	325	LR	LR	08 47 13.3	
	comp=Z,55nm,19.0s,baz=155,slow=38						
MA2	Magadan	20.91	11	P	P	08 43 53.3	-1.5
	3.6nm,0.5s,baz=198,slow=11,SNR=6.5						
SEY	Seymchan	24.36	11	P	P	08 44 30.8	+0.4
	3.2nm,0.8s,baz=181,slow=8.1,SNR=14						
GUMO	Guam	25.67	176	LR	LR	08 53 08.7	
	comp=Z,12nm,20.2s,baz=300,slow=32						
SONM	Songino Array	27.56	300	P	P	08 45 02.1	+2.5
	0.4nm,0.4s,baz=75,slow=11,SNR=2.8						
H11N2	WAKE ISLAND Hy	28.44	126	T	T	09 14 36.4	
	baz=319,slow=74,SNR=109						
H11N1	WAKE ISLAND Hy	28.45	126	T	T	09 14 35.1	
	baz=319,slow=74,SNR=71						
H11N3	WAKE ISLAND Hy	28.46	126	T	T	09 14 33.5	
	baz=319,slow=74,SNR=88						
H11S1	WAKE ISLAND Hy	29.24	128	T	T	09 15 40.3	
	baz=320,slow=76,SNR=15						
H11S3	WAKE ISLAND Hy	29.24	128	T	T	09 15 40.3	
	baz=320,slow=76,SNR=12						
H11S2	WAKE ISLAND Hy	29.26	128	T	T	09 15 39.6	
	baz=320,slow=76,SNR=6.9						
NRIK	Noril'sk	41.72	334	LR	LR	09 06 37.4	
	comp=Z,40nm,20.2s,baz=112,slow=40						
MKAR	Makanchi Array	43.93	300	P	P	08 47 19.3	-0.1
	0.2nm,0.2s,baz=89,slow=11,SNR=3.1						
ILAR	Eielson Array	46.98	33	P	P	08 47 42.8	-0.5
	0.7nm,0.8s,baz=268,slow=5.9,SNR=6.8						
INK	Inuvik	51.85	28	P	P	08 48 20.0	-0.4
	1.0nm,0.8s,baz=298,slow=5.9,SNR=3.9						
WRA	Warramunga Arr	59.47	189	P	P	08 49 17.8	+2.1
	1.2nm,0.8s,baz=7.0,slow=7.1,SNR=6.4						
YKA	Yellowknife Ar	61.28	31	P	P	08 49 25.6	-1.9
	0.1nm,0.6s,baz=306,slow=6.8,SNR=5.1						
ASAR	Alice Springs	63.19	189	P	P	08 49 43.6	+2.8
	0.5nm,0.9s,baz=21,slow=7.2,SNR=4.3						

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*NIED **07** 08:47:00, 36°.60N×142°.30E, h17km, Mw3.7 Best double couple: Mo4.65000×10^14 NP1:φs309.00000°, δ33.00000°, λ-115.00000°. NP2:φs158.00000°, δ60.00000°, λ-75.00000°.*

*IDC **07** 08:47:28.9±0.9, 36°.42N×142°.55E, h0km, mb3.7/7, mb1 3.9/9, mb1mx3.7/35, mbtmp3.7/9, ML3.9/2, Error ellipse: s-maj=26.2km s-min=19.2km az=115.0*

*JMA **07** 08:47:32.4±0.2, 36°.58N×142°.34E, h19km, M3.6*

ISC 07 08:47:30.9±3.5**, 36°.47N**±0°.05×**142°.44E**±0°.07**, h14**km±22km**, n24, σ1.20**/30**, mb3.7**/7**, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
ONAJ	Iwakimizuishiy	1.46	296	P	Pn	08 47 56.3	-0.6
ONAJ				eS	Sn	08 48 13.3	-2.6
CHOJ	Chosi	1.50	240	P	Pb	08 47 58.6	+0.2
JHO	Hitachi	1.52	276	P	Pn	08 47 57.7	+0.1
JHO				eS	Sn	08 48 15.7	-1.4
JFT	Otama	1.98	302	P	Pn	08 48 04.2	+0.2
JFT				eS	Sn	08 48 27.7	-1.0
BSO1	Boso 1	2.17	214	P	Pb	08 48 08.2	-1.5
BSO1				eS	Sb	08 48 35.0	-1.2
JOU	Okura	2.36	324	P	Pn	08 48 10.2	+1.0
JAG	Ashikaga	2.41	270	P	Pn	08 48 10.6	+0.7
JAG				eS	Sn	08 48 38.6	-0.6
JMK	Ichinoseki	2.66	339	eS	Sn	08 48 43.1	-2.2
JRY	Ryogami san	2.90	262	P	Pn	08 48 17.1	+0.5
JRY				eS	Sn	08 48 50.4	-0.9
JOD2	Odawara 2	2.98	247	P	Pn	08 48 18.5	+0.8
JOD2				eS	Sn	08 48 53.7	+0.4
MJAR	Matsushiro Arr	3.41	272	Pn	Pn	08 48 25.1	+1.4
	6.0nm,0.3s,baz=99,slow=8.7,SNR=32						
MAT	Matsushiro	3.41	272	P	Pn	08 48 25.5	+1.8
MAT				S	Sn	08 49 05.9	+1.9
JHJ	Hachijo jima 2	4.00	214	Pn	Pn	08 48 32.5	+0.8
	32nm,0.3s,baz=49,slow=23,SNR=24						
JHJ				Sn	Sn	08 49 17.2	-1.1
	36nm,0.3s,baz=281,slow=23,SNR=8.7						
MA2	Magadan	23.74	11	P	P	08 52 42.7	+0.3
	1.0nm,0.3s,baz=246,slow=13,SNR=3.7						
H11N2	WAKE ISLAND Hy	27.15	121	T	T	09 21 45.3	
	baz=314,slow=75,SNR=7.1						
H11N1	WAKE ISLAND Hy	27.16	121	T	T	09 21 46.2	
	baz=314,slow=75,SNR=7.4						
H11N3	WAKE ISLAND Hy	27.17	121	T	T	09 21 47.7	
	baz=314,slow=75,SNR=5.8						
SONM	Songino Array	28.78	305	P	P	08 53 29.8	+1.4
	1.7nm,0.8s,baz=105,slow=9.0,SNR=7.6						
MKAR	Makanchi Array	45.12	303	P	P	08 55 46.5	-0.2
	0.2nm,0.2s,baz=83,slow=9.9,SNR=5.7						
ILAR	Eielson Array	49.53	32	P	P	08 56 21.1	+0.4
	0.7nm,0.8s,baz=261,slow=7.1,SNR=7.4						
WRA	Warramunga Arr	56.63	189	P	P	08 57 12.1	-1.4
	0.5nm,0.6s,baz=7.5,slow=7.6,SNR=5.1						
ASAR	Alice Springs	60.36	189	P	P	08 57 40.1	+0.6
	0.8nm,1.0s,baz=3.4,slow=6.3,SNR=4.0						
YKA	Yellowknife Ar	63.88	30	P	P	08 58 03.0	+0.4
	0.1nm,0.7s,baz=304,slow=6.5,SNR=5.2						
LPAZ	La Paz	146.25	62	PKPbc	PKPbc	09 07 11.8	-0.3
	0.7nm,0.7s,baz=297,slow=2.3,SNR=3.5						

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*NIED **07** 08:52:00, 37°.00N×142°.30E, h14km, Mw3.6 Best double couple: Mo2.55000×10^14 NP1:φs151.00000°, δ71.00000°, λ174.00000°. NP2:φs243.00000°, δ84.00000°, λ19.00000°.*

*IDC **07** 08:52:43.0±1.2, 36°.84N×142°.56E, h0km, mb3.5/5, mb1 3.7/7, mb1mx3.5/36, mbtmp3.5/7, ML3.4/2, MS2.4/1, Ms1 2.4/1, ms1mx2.2/34, Error ellipse: s-maj=29.7km s-min=21.5km az=93.0*

*ISCJB **07** 08:52:43.2±0.8, 36°.95N±0°.04×142°.47E±0°.07, h10km, mb3.5/5, Error ellipse: s-maj=7.9km s-min=6.1km az=168.3*

*JMA **07** 08:52:43.4±0.2, 37°.00N×142°.35E, h0km, M3.9*

ISC 07 08:52:45.2±1.0**, 36°.96N**±0°.05×**142°.23E**±0°.07**, h10**km**, n25, σ1.33**/25**, mb3.5**/5**, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
ONAJ	Iwakimizuishiy	1.15	278	P	Pg	08 53 07.3	0.0
JFK	Kawauchi	1.16	291	P	Pn	08 53 07.5	+0.1
JFK				eS	Sn	08 53 24.0	+0.7
JHO	Hitachi	1.37	256	P	Pb	08 53 11.0	0.0
JMM	Marumori	1.46	309	P	Pn	08 53 11.5	-0.1
JMM				eS	Sb	08 53 31.4	+0.4
JFT	Otama	1.61	291	P	Pb	08 53 14.8	-0.2
JFT				eS	Sg	08 53 37.7	+0.8
JIO	Ouri	1.65	335	P	Pn	08 53 14.0	-0.2
JIO				eS	Sn	08 53 35.3	-0.2
JOU	Okura	1.88	319	P	Pn	08 53 18.1	+0.8
JYS	Shirataka	2.13	307	P	Pn	08 53 22.3	+1.5
JMK	Ichinoseki	2.15	339	P	Pn	08 53 21.8	+0.8
JAG	Ashikaga	2.29	257	P	Pn	08 53 24.6	+1.6
JYK	Kaneyama	2.45	324	P	Pn	08 53 26.6	+1.3
MJAR	Matsushiro Arr	3.25	264	Pn	Pb	08 53 40.3	-2.7
	3.7nm,0.3s,baz=84,slow=16,SNR=16						
MAT	Matsushiro	3.25	264	P	Pb	08 53 40.6	-2.4
MAT				S	Sb	08 54 20.7	-2.0
JHJ	Hachijo jima 2	4.32	208	Pn	Pn	08 53 52.0	+1.1
	6.5nm,0.3s,baz=245,slow=14,SNR=4.6						
JHJ				Sn	Sn	08 54 43.0	+1.7
	19nm,0.3s,baz=268,slow=22,SNR=5.7						
JHJ				LR	LR	08 55 57.0	
	comp=Z,45nm,19.1s,baz=78,slow=45						
H11N2	WAKE ISLAND Hy	27.55	122	T	T	09 27 29.9	
	baz=314,slow=75,SNR=26						
H11N1	WAKE ISLAND Hy	27.56	122	T	T	09 27 15.0	
	baz=314,slow=75,SNR=17						
H11N3	WAKE ISLAND Hy	27.57	122	T	T	09 27 31.1	
	baz=314,slow=75,SNR=14						
H11S1	WAKE ISLAND Hy	28.27	124	T	T	09 28 22.1	
	baz=316,slow=76,SNR=17						
H11S3	WAKE ISLAND Hy	28.27	124	T	T	09 28 16.7	
	baz=316,slow=76,SNR=16						
H11S2	WAKE ISLAND Hy	28.29	124	T	T	09 28 26.4	
	baz=316,slow=76,SNR=14						
SONM	Songino Array	28.37	304	P	P	08 58 41.4	+1.8
	0.6nm,0.7s,baz=116,slow=9.9,SNR=3.0						
MKAR	Makanchi Array	44.71	302	P	P	09 00 58.6	+0.2
	0.2nm,0.3s,baz=92,slow=12,SNR=4.1						
ILAR	Eielson Array	49.21	32	P	P	09 01 33.1	-0.2
	0.5nm,0.7s,baz=267,slow=6.2,SNR=4.9						
WRA	Warramunga Arr	57.08	189	P	P	09 02 30.7	-0.9
	0.2nm,0.3s,baz=7.0,slow=7.6,SNR=10						
ASAR	Alice Springs	60.80	189	P	P	09 02 55.4	-2.1
	0.2nm,0.7s,baz=12,slow=9.5,SNR=2.8						

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*CSEM **07** 09:08:05.8±0.3, 34°.49N×51°.27E, h10km, ML3.4, Error ellipse: s-maj=8.4km s-min=6.0km az=88.0*

TEH 07 09:08:06.5, 34°.48N×51°.30E, h7km, ML3.5, 4D, Northern and central Iran

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
GHVR	GHOM	0.01	212	ePg	Pg	09 08 07.1	-0.8
IVRN	Varamin	0.62	35	ePg	Pg	09 08 17.9	-0.6
IVRN				eAMB	AMB	09 08 18.3	
	comp=Z,22μm,0.1s						
IVRN	Varamin	0.62	35	ePg	Pg	09 08 17.9	-0.6
QAM	Ghamsar	0.73	171	ePg	Pg	09 08 19.9	-0.7
QAM				eAMB	AMB	09 08 41.5	
	comp=Z,33μm,0.2s						
QAM	Ghamsar	0.73	171	ePg	Pg	09 08 19.9	-0.7
IR3	Iran Long-Peri	1.01	347	ePg	Pg	09 08 25.2	-0.8
IR3	Iran Long-Peri	1.01	347	ePg	Pg	09 08 25.2	-0.8
ASAO	Ashtian	1.05	274	ePg	Pg	09 08 26.1	-0.6
IKLH	Kolahrood	1.19	169⇓	ePg	Pg	09 08 27.6	-1.7
IKLH				eSg	Sg	09 08 43.8	-0.8
IKLH				eAMB	AMB	09 08 45.3	
	comp=Z,14μm,0.1s						
IKLH	Kolahrood	1.19	169⇓	ePg	Pg	09 08 27.6	-1.7
IDMV	Damavand	1.25	29⇓	ePg	Pg	09 08 28.8	-1.6
IDMV				eAMB	AMB	09 08 52.6	
	comp=Z,5μm,0.1s						
IDMV	Damavand	1.25	29⇓	ePg	Pg	09 08 28.8	-1.6
DAMV	Damavand	1.27	26	ePn	Pg	09 08 29.2	-1.7
IMHD	Mahdasht	1.30	337	ePg	Pn	09 08 29.9	-1.4
IMHD				eAMB	AMB	09 08 50.3	
	comp=N,32μm,0.1s						
IMHD	Mahdasht	1.30	337	ePg	Pn	09 08 29.9	-1.4
KHMZ	Khomeyn	1.34	237	ePn	Pn	09 08 30.1	-1.7
IAFJ	Afjeh	1.41	14	eAMB	AMB	09 08 56.7	
	comp=Z,29μm,0.2s						
IRAZ	Razeghan	1.45	310	ePn	Pn	09 08 32.6	-0.8
IRAZ				eAMB	AMB	09 08 36.2	
	comp=Z,7μm,0.2s						
IRAZ	Razeghan	1.45	310	ePn	Pn	09 08 32.6	-0.8
THKV	Tehran--Karaj	1.47	347	ePn	Pn	09 08 32.5	-1.1
IFIR	Firoozkooh	1.66	46	ePn	Pn	09 08 35.9	-0.4
IFIR				eAMB	AMB	09 09 02.8	
	comp=Z,11μm,0.2s						
IFIR	Firoozkooh	1.66	46	ePn	Pn	09 08 35.9	-0.4
IZEF	Zefreh	1.80	151	ePn	Pn	09 08 37.9	-0.3
IZEF				eAMB	AMB	09 09 11.8	
	comp=Z,3μm,0.3s						
IZEF	Zefreh	1.80	151	ePn	Pn	09 08 37.9	-0.3
IPIR	Pirpir	1.83	191	ePn	Pb	09 08 39.7	-0.7
IPIR				eAMB	AMB	09 09 08.5	
	comp=Z,2μm,0.2s						
IPIR	Pirpir	1.83	191	ePn	Pb	09 08 39.7	-0.7
IPRN	Peran	1.95	26	ePn	Pb	09 08 42.6	+0.2
IPRN				eAMB	AMB	09 09 15.6	
	comp=N,14μm,0.2s						
IALA	Alasht	2.02	37	ePn	Pb	09 08 42.7	-1.0
IALA				eAMB	AMB	09 08 44.2	
	comp=Z,10μm,0.1s						
IALA	Alasht	2.02	37	ePn	Pb	09 08 42.7	-1.0
IGAR	Gharneh	2.17	163	ePn	Pb	09 08 44.7	-1.5
IGAR				eAMB	AMB	09 09 25.0	
	comp=Z,2μm,0.2s						
IANJ	Anjilo	2.36	65	ePn	Pn	09 08 45.7	-0.2
IANJ				eAMB	AMB	09 09 23.1	
	comp=Z,5μm,0.2s						
IANJ	Anjilo	2.36	65	ePn	Pn	09 08 45.7	-0.2
IKIA	Kiasar	2.60	48	ePn	Pb	09 08 52.0	-1.6
IKIA				eAMB	AMB	09 09 30.7	
	comp=Z,1μm,0.3s						
IKIA	Kiasar	2.60	48	ePn	Pb	09 08 52.0	-1.6
IRAM	Ramesheh	2.82	161	ePn	Pb	09 08 55.6	-1.7
IRAM				eAMB	AMB	09 09 05.2	
	comp=Z,1μm,0.2s						
IRAM	Ramesheh	2.82	161	ePn	Pb	09 08 55.6	-1.7
IGLO	Ghaloghah	2.88	45	ePn	Pn	09 08 55.3	+2.2
IGLO				eAMB	AMB	09 09 44.7	
	comp=Z,3μm,0.3s						

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*NSSC **07** 09:09:42.5±1.6, 34°.49N×36°.62E, h30km±13km, ML2.0*

*CSEM **07** 09:09:44.2, 34°.30N×36°.50E, h0km, ML3.1*

*GRAL **07** 09:09:44.2±0.3, 34°.30N×36°.50E, h0km±21km, MD3.1*

ISC 07 09:09:39.8±1.6**, 34°.49N**±0°.05×**36°.5E**±0°.1**, h9**km±13km**, n10, σ1.06**/16**, Jordan-Syria region**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
FKH	Fakeheh	0.26	200	eP	Pg	09 09 45.8	+0.7
HWQ	Hawqa	0.52	246	eP	Pb	09 09 52.3	+1.2
HWQ				eS	Sb	09 09 58.4	-0.4
HWQ	Hawqa	0.52	246	eP	Pb	09 09 52.3	+1.2
HWQ				eS	Sb	09 09 58.4	-0.4
BIDA	Albida	0.55	343	eP	Pn	09 09 53.5	-0.3
BIDA				eS	Sn	09 10 03.5	+0.3
BIDA				AML	AML	09 10 07.9	
	comp=E,51nm,0.6s						
BIDA				AML	AML	09 10 15.1	
	comp=N,133nm,0.3s						
WRDH	Warideh	1.02	355	eP	Pn	09 10 01.3	+1.0
WRDH				eS	Sn	09 10 14.9	+0.1
DQRL	Deir Qamar	1.11	225	eP	Pn	09 10 01.7	+0.1
DQRL	Deir Qamar	1.11	225	eP	Pn	09 10 01.7	+0.1
RCY	Rachaya	1.14	210	eP	Pb	09 10 01.6	-0.3
RCY				eS	Sg	09 10 14.4	-2.2
BRBR	Barbar	1.18	204	eP	Pn	09 10 03.6	+1.0
BTCH	Batrach	1.54	358	eP	Pg	09 10 09.4	0.0
BTCH				eS	Sn	09 10 26.1	-1.7

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*CSEM **07** 09:12:27.1, 39°.30N×28°.44E, h7km, MD2.7*

DDA 07 09:12:27.1, 39°.30N×28°.44E, h7km, Md2.7, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
DURS	Dursunbey	0.30	5	iP	Pg	09 12 29.9	-3.1
DURS				iS	Sg	09 12 36.0	-1.1
DURS	Dursunbey	0.30	5	iP	Pg	09 12 30.3	-2.8
DURS				iS	Sg	09 12 38.6	+1.4
DURS	Dursunbey	0.30	5	P	Pg	09 12 30.3	-2.8
DURS				S	Sg	09 12 38.6	+1.5
DEMI	Demirci	0.33	140	iP	Pg	09 12 22.0	-12
DEMI				iS	Sg	09 12 34.9	-3.2
DEMI	Demirci	0.33	140	iP	Pg	09 12 21.8	-12
DEMI				iS	Sg	09 12 33.5	-4.6
DEMI	Demirci	0.33	140	P	Pg	09 12 21.8	-12
DEMI				S	Sg	09 12 33.5	-4.5
GDZ	Gediz	0.84	104	iP	Pb	09 12 44.2	+0.2
GDZ				iS	Sn	09 13 02.5	+4.4
GDZ	Gediz	0.84	104	iP	Pg	09 12 42.5	-0.6
GDZ				iS	Sn	09 13 03.5	+5.4
GDZ	Gediz	0.84	104	P	Pg	09 12 42.5	-0.7
GDZ				S	Sn	09 13 03.5	+5.4
ULDT	Uludag	1.00	32	iP	Pg	09 12 44.7	-1.6
ULDT				iS	Sb	09 13 00.0	-0.3
ULDT	Uludag	1.00	32	iP	Pg	09 12 45.7	-0.5
ULDT				iS	Sg	09 12 59.8	+0.5
KHAL	Karahalli	1.24	138	iP	Pn	09 12 52.1	+1.2
KHAL				iS	Sn	09 13 16.2	+8.3
KHAL	Karahalli	1.24	138	P	Pn	09 12 52.2	+1.3
KHAL				S	Sn	09 13 16.2	+8.3

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*ATH **07** 09:14:46.9, 36°.50N×28°.80E, h19km±1km, ML2.8/7, Error ellipse: s-maj=1.8km s-min=0.8km az=181.0*

*DDA **07** 09:14:47.2, 36°.45N×28°.74E, h24km, Md3.1*

*ISCJB **07** 09:14:48.6±0.8, 36°.46N±0°.02×28°.78E±0°.03, h15km±5km, Error ellipse: s-maj=4.1km s-min=3.4km az=164.9*

*CSEM **07** 09:14:48.0±0.1, 36°.47N×28°.80E, h10km, MD3.1, Error ellipse: s-maj=3.7km s-min=2.8km az=161.0*

*ISK **07** 09:14:48.6, 36°.60N×28°.67E, h11km, MD3.1*

ISC 07 09:14:47.3±1.2**, 36°.49N**±0°.02×**28°.76E**±0°.02**, h1**km±10km**, n61, σ0.62**/94**, Dodecanese Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
TURN	Turunc	0.41	342	iP	Pb	09 14 57.4	+0.1
TURN				iS	Sb	09 15 05.7	+1.8
TURN	Turunc	0.41	342	P	Pb	09 14 57.4	+0.1
ARG	Arkhangelos	0.58	242	P	Pg	09 14 58.3	-0.1
ARG				S	Sb	09 15 08.6	-0.3
AKAS	Kas	0.73	110	iP	Pg	09 15 00.2	-1.1
AKAS				iS	Sb	09 15 12.8	-0.6
AKAS	Kas	0.73	110	P	Pg	09 15 00.2	-1.1
KSL	Kastellorizon	0.74	117	P	Pg	09 15 01.4	-0.2
KSL				S	Sg	09 15 10.8	-0.5
KSL				AML	AML	09 15 16.7	
	comp=E,739μm,0.4s						
KSL				AML	AML	09 15 16.8	
	comp=N,699μm,0.4s						
ELL	Elmali	0.96	74	ePG	Pn	09 15 08.1	+0.1
ELL				eSG	Sn	09 15 22.8	+0.4
ELL	Elmali	0.96	74	ePg	Pn	09 15 08.1	+0.1
GOLH	Golhisar	0.99	40	iP	Pg	09 15 05.8	-0.4
GOLH				iS	Sb	09 15 20.6	-0.2
GOLH	Golhisar	0.99	40	P	Pg	09 15 05.8	-0.4
GOLH				S	Sb	09 15 20.6	-0.2
BDRM	Kayabasi	1.20	299	iP	Pb	09 15 11.0	+0.1
BDRM				iS	Sn	09 15 28.1	-0.1
BDRM	Kayabasi	1.20	299	P	Pb	09 15 11.0	+0.1
BDRM				S	Sn	09 15 28.1	-0.1
NIS1	Nisyros Isl.	1.28	276	ePN	Pb	09 15 12.0	-0.2
NIS1	Nisyros Isl.	1.28	276	ePn	Pb	09 15 12.0	-0.2
NIS1	Nisyros Isl.	1.28	276	P	Pn	09 15 12.3	0.0
NIS1				S	Sn	09 15 30.1	0.0
NIS1	Nisyros Isl.	1.28	276	P	Pn	09 15 12.3	0.0
NIS1				S	Sn	09 15 30.1	0.0
NIS1				AML	AML	09 15 35.5	
	comp=N,1807μm,0.5s						
NIS1				AML	AML	09 15 35.6	
	comp=E,1310μm,0.7s						
DENT	Denizli	1.28	10	ePN	Pg	09 15 11.5	-0.4
DENT				eSN	Sb	09 15 28.8	-0.5
DENT	Denizli	1.28	10	ePn	Pg	09 15 11.5	-0.4
DENT				eSn	Sb	09 15 28.8	-0.5
BODT	Bodrum	1.30	297	ePN	Pg	09 15 11.9	-0.3
BODT				eSN	Sg	09 15 28.4	-0.6
BODT	Bodrum	1.30	297	ePn	Pg	09 15 11.9	-0.3
AYDN	Tasoluk	1.37	329	iP	Pn	09 15 13.6	0.0
AYDN				iS	Sn	09 15 32.8	+0.5
AYDN	Tasoluk	1.37	329	P	Pn	09 15 13.6	0.0
AYDN				S	Sn	09 15 32.8	+0.5
KORT	Korkueli	1.38	68	iP	Pb	09 15 14.0	+0.1
KORT				iS	Sn	09 15 34.4	+1.8
KORT	Korkueli	1.38	68	P	Pb	09 15 14.0	+0.1
UZP	Denizli	1.58	12	iS	Sg	09 15 41.1	+3.1
KARP	Karpathos	1.60	235	ePN	Pg	09 15 17.8	-0.1
KARP	Karpathos	1.60	235	P	Pn	09 15 16.6	-0.1
KARP	Karpathos	1.60	235	ePn	Pg	09 15 17.8	-0.1
KARP				S	Sg	09 15 39.3	+0.6
KARP	Karpathos	1.60	235	P	Pn	09 15 16.6	-0.1
KARP				S	Sg	09 15 39.3	+0.6
KARP				AML	AML	09 15 44.6	
	comp=N,357μm,0.2s						
KARP				AML	AML	09 15 45.0	
	comp=E,390μm,0.7s						
GCAM	G?zelcaml?	1.72	315	iP	Pn	09 15 18.1	-0.2
GCAM				iS	Sb	09 15 41.4	-0.4
GCAM	G?zelcaml?	1.72	315	P	Pn	09 15 18.1	-0.2
GCAM				S	Sb	09 15 41.4	-0.4
KHL	Karahalli	1.93	18	ePN	Pn	09 15 21.4	+0.1
KHL	Karahalli	1.93	18	ePn	Pn	09 15 21.4	+0.1
ISP	Isparta	1.94	46	ePN	Pn	09 15 22.2	+0.7
ISP	Isparta	1.94	46	ePn	Pn	09 15 22.2	+0.7
SMG	Samos	1.96	309	P	Pn	09 15 21.1	-0.6
SMG				S	Sn	09 15 47.0	+0.1
SMG	Samos	1.96	309	P	Pn	09 15 21.1	-0.6
SMG				S	Sn	09 15 47.0	+0.1
SMG				AML	AML	09 15 51.8	
	comp=E,251μm,0.6s						
SMG				AML	AML	09 15 52.3	
	comp=N,407μm,0.5s						
KHAL	Karahalli	1.97	17	iP	Pn	09 15 21.5	-0.4
KHAL				iS	Sb	09 15 48.3	-0.8
KHAL	Karahalli	1.97	17	P	Pn	09 15 21.5	-0.4
KHAL				S	Sb	09 15 48.3	-0.8
KULA	Kula-Manisa	2.03	358	ePN	Pn	09 15 22.2	-0.4
KULA	Kula-Manisa	2.03	358	ePn	Pn	09 15 22.2	-0.4
IZM	Izmir	2.25	328	ePN	Pn	09 15 25.4	-0.3
IZM	Izmir	2.25	328	ePn	Pn	09 15 25.4	-0.3
BLCB	Balcova	2.34	325	ePN	Pn	09 15 26.2	-0.6
BLCB	Balcova	2.34	325	ePn	Pn	09 15 26.2	-0.6
ZKR	Zakros	2.48	237	P	Pn	09 15 29.4	+0.6
ZKR	Zakros	2.48	237	P	Pn	09 15 29.4	+0.6
ZKR				S	Sn	09 15 60.0	+0.3
ZKR				AML	AML	09 16 13.6	
	comp=E,280μm,1.9s						
ZKR				AML	AML	09 16 14.9	
	comp=N,160μm,0.8s						
AKHS	Akhisar	2.50	343	iP	Pn	09 15 29.0	-0.1
AKHS				iS	Sn	09 15 58.6	-1.6
AKHS	Akhisar	2.50	343	P	Pn	09 15 29.0	-0.1
AKHS				S	Sn	09 15 58.7	-1.6
AKS	Akhisar	2.50	343	ePN	Pn	09 15 28.8	-0.3
AKS	Akhisar	2.50	343	ePn	Pn	09 15 28.8	-0.3
NPS	Neapolis	2.83	245	P	Pn	09 15 33.5	-0.2
NPS	Neapolis	2.83	245	P	Pn	09 15 33.5	-0.2
CHOS	Chios island	2.87	312	ePN	Pn	09 15 33.9	-0.3
CHOS	Chios island	2.87	312	ePn	Pn	09 15 33.9	-0.3
CHOS	Chios island	2.87	312	P	Pn	09 15 34.5	+0.3
CHOS				S	Sn	09 16 09.5	+0.1
CHOS	Chios island	2.87	312	P	Pn	09 15 34.5	+0.3
CHOS				S	Sn	09 16 09.5	+0.1
CHOS				AML	AML	09 16 13.7	
	comp=N,124μm,0.5s						
CHOS				AML	AML	09 16 14.7	
	comp=E,165μm,0.5s						
LAST	Lasithi	2.98	245	P	Pn	09 15 35.8	+0.1
LAST				S	Sn	09 16 12.5	+0.5
LAST	Lasithi	2.98	245	P	Pn	09 15 35.8	+0.1
IDI	Anoyia	3.36	250	P	Pn	09 15 41.3	+0.3
IDI				S	Sn	09 16 21.5	0.0
IDI	Anoyia	3.36	250	P	Pn	09 15 41.3	+0.3
IDI				S	Sn	09 16 21.5	0.0
IDI				AML	AML	09 16 26.9	
	comp=N,122μm,1.1s						
IDI				AML	AML	09 16 29.1	
	comp=E,106μm,1.6s						

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*IDC **07** 09:27:58.6±1.2, 37°.69N×142°.57E, h0km, mb3.5/5, mb1 3.7/6, mb1mx3.5/56, mbtmp3.5/6, ML3.4/1, Error ellipse: s-maj=30.4km s-min=25.2km az=88.0*

*ISCJB **07** 09:28:00.6±1.4, 37°.63N±0°.05×142°.29E±0°.08, h18km±8km, mb3.5/5, Error ellipse: s-maj=10.0km s-min=8.0km az=179.9*

*NIED **07** 09:28:00, 37°.60N×142°.20E, h29km, Mw3.6 Best double*

couple: $M_0$3.11000×10^{14} NP1:ϕ_s255.00000°,δ45.00000°, λ-12.00000°. NP2:ϕ_s354.00000°,δ82.00000°, λ-134.00000°.

*JMA **07** 09:28:02.7±0.2, 37°.65N×142°.16E, h20km±4km, M3.9*

ISC 07 09:27:59.3±2.3**, 37°.63N**±0°.05×**142°.19E**±0°.08**, h3**km±13km**, n21, σ1^{s}18**/24**, mb3.5**/5**, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
JIO	**Ouri**	**1.06**	**321**	P	**Pn**	**09 28 21.5**	**+0.5**
JIO				S	**Sb**	**09 28 34.8**	**+0.3**
JFK	**Kawauchi**	**1.08**	**256**	P	**Pn**	**09 28 22.0**	**+0.6**
JFK				S	**Sb**	**09 28 35.5**	**+0.3**
JMM	**Marumori**	**1.14**	**282**	P	**Pn**	**09 28 22.8**	**+0.7**
JMM				S	**Sb**	**09 28 36.7**	**0.0**
ONAJ	**Iwakimizuishiy**	**1.23**	**245**	P	**Pn**	**09 28 24.3**	**+0.9**
ONAJ				S	**Sg**	**09 28 39.2**	**+0.4**
JOU	**Okura**	**1.41**	**302**	P	**Pg**	**09 28 27.4**	**+1.0**
JOU				S	**Sg**	**09 28 45.0**	**+0.3**
JFT	**Otama**	**1.48**	**266**	P	**Pg**	**09 28 28.7**	**+1.1**
JFT				S	**Sb**	**09 28 46.8**	**+0.2**
JMK	**Ichinoseki**	**1.52**	**330**	P	**Pg**	**09 28 28.6**	**+0.1**
JMK				S	**Sn**	**09 28 46.7**	**-1.1**
JYS	**Shirataka**	**1.78**	**290**	P	**Pg**	**09 28 33.7**	**+0.3**
JYS				S	**Sg**	**09 28 56.2**	**-0.4**
MJAR	**Matsushiro Arr**	**3.37**	**252**	Pn	**Pb**	**09 28 56.8**	**-2.8**
	3.0nm,0.3s,baz=78,slow=15,SNR=11						
MAT	**Matsushiro**	**3.37**	**252**	P	**Pb**	**09 28 57.8**	**-1.8**
MAT				S	**Sb**	**09 29 39.2**	**-1.8**
H11N2	**WAKE ISLAND Hy**	**27.93**	**123**	T	T	10 03 06.4	
	baz=316,slow=75,SNR=93						
H11N1	**WAKE ISLAND Hy**	**27.94**	**123**	T	T	10 03 08.6	
	baz=316,slow=75,SNR=64						
H11N3	**WAKE ISLAND Hy**	**27.95**	**123**	T	T	10 02 57.9	
	baz=316,slow=75,SNR=71						
SONM	**Songino Array**	**27.98**	**303**	P	**P**	**09 33 52.9**	**+1.6**
	0.5nm,0.6s,baz=104,slow=9.0,SNR=2.4						
H11S1	**WAKE ISLAND Hy**	**28.68**	**125**	T	T	10 03 49.8	
	baz=318,slow=76,SNR=26						
H11S3	**WAKE ISLAND Hy**	**28.68**	**125**	T	T	10 03 49.8	
	baz=318,slow=76,SNR=47						
H11S2	**WAKE ISLAND Hy**	**28.69**	**125**	T	T	10 03 50.9	
	baz=318,slow=76,SNR=41						
MKAR	**Makanchi Array**	**44.33**	**302**	P	**P**	**09 36 11.9**	**+1.4**
	0.2nm,0.3s,baz=79,slow=7.5,SNR=2.5						
WRA	**Warramunga Arr**	**57.74**	**189**	P	**P**	**09 37 51.7**	**+0.2**
	1.1nm,0.8s,baz=5.8,slow=6.9,SNR=5.0						
ASAR	**Alice Springs**	**61.47**	**189**	P	**P**	**09 38 17.9**	**+0.7**
	0.6nm,0.8s,baz=0.7,slow=5.8,SNR=5.1						
YKA	**Yellowknife Ar**	**62.98**	**30**	P	**P**	**09 38 25.5**	**-1.5**
	0.1nm,0.7s,baz=301,slow=6.5,SNR=3.1						

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*ISCJB **07** 09:33:16.0±0.5, 38°.25N±0°.05×143°.99E±0°.06, h33km, mb4.1/28, MS3.4/7, Error ellipse: s-maj=9.3km s-min=5.3km az=139.6*

*NEIC **07** 09:33:16.7±2.2, 38°.22N×144°.01E, h24km±16km, mb4.6/3, Error ellipse: s-maj=8.9km s-min=6.6km az=123.0*

*MOS **07** 09:33:16.8±1.3, 38°.35N×143°.94E, h36km, mb4.3/19, Error ellipse: s-maj=10.1km s-min=7.6km az=94.3*

*IDC **07** 09:33:17.2±7.5, 38°.19N×144°.04E, h27km±52km, mb3.8/16, mb1 4.0/20, mb1mx3.8/61, mbtmp4.0/20, ML3.4/4, MS3.3/13, Ms1 3.3/13, ms1mx3.0/49, Error ellipse: s-maj=19.8km s-min=14.0km az=115.0*

ISC 07 09:33:17.8±0.6**, 38°.20N**±0°.07×**144°.02E**±0°.07**, h35**km**, n66, σ1^{s}21**/62**, mb4.1**/28**, MS3.3**/7**, 5C-2D, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
ERM	**Erimo**	**3.86**	**350***d*	*i*P	**Pn**	**09 34 13.0**	**-1.7**
ERM	**Erimo**	**3.86**	**350**	*e*Pn	**Pn**	**09 34 13.8**	**-0.9**
MJAR	**Matsushiro Arr**	**4.91**	**252**	Pn	**Pn**	**09 34 29.9**	**+0.8**
	5.3nm,0.3s,baz=66,slow=11,SNR=32						
MJAR				LR	LR	09 36 43.0	
	comp=Z,208nm,21.0s,baz=85,slow=42						
MAJO	**Matsushiro**	**4.91**	**252***d*	*i*P	**Pn**	**09 34 30.1**	**+0.9**
MAJO	**Matsushiro**	**4.91**	**252**	*e*Pn	**Pn**	**09 34 30.0**	**+0.9**
MAT	**Matsushiro**	**4.91**	**252**	P	**Pn**	**09 34 30.1**	**+0.9**
MAT				S	**Sn**	**09 35 25.4**	**+0.6**
YUK	**Yuzh-Kuril'sk**	**5.99**	**13**	*e*P	Pn	09 34 40.1	-3.8
YUK				*e*S	Sn	09 35 41.9	-9.3
YUK				pmax	pmax		
	comp=Z,69nm,0.3s						
YUK				pmax	pmax		
	comp=E,68nm,0.6s						
YUK				pmax	pmax		
	comp=N,41nm,0.3s						
SHO	**Shikotan**	**6.05**	**20**	*e*P	**Pn**	**09 34 41.9**	**-2.8**
SHO				*e*S	Sn	09 35 44.1	-8.5
SHO				pmax	pmax		
	comp=Z,48nm,0.7s						
SHO				pmax	pmax		
	comp=N,18nm,0.5s						
SHO				pmax	pmax		
	comp=E,25nm,0.5s						
JHJ2	**Mitsune**	**6.12**	**215**	*e*Pn	**Pn**	**09 34 44.8**	**-0.9**
JHJ	**Hachijo jima 2**	**6.13**	**215**	Pn	**Pn**	**09 34 44.6**	**-1.3**
	comp=E,16nm,0.3s,baz=309,slow=17,SNR=19						
JHJ				Sn	**Sn**	**09 35 51.5**	**-3.3**
	comp=E,26nm,0.3s,baz=63,slow=21,SNR=5.7						
JHJ				LR	LR	09 37 55.7	
	comp=E,53nm,18.3s,baz=38,slow=46						
KUR	**Kuril'sk**	**7.59**	**21**	P	**Pn**	**09 35 04.0**	**-1.8**
KUR				*e*S	Sn	09 36 21.2	-9.4
KUR				smax	smax		
	comp=N,11nm,0.4s						
KUR				smax	smax		
	comp=E,20nm,0.4s						
YSS	**Yuzh-Sakhalins**	**8.79**	**354**⇑	*i*P	Pn	09 35 35.4	+13
YSS				pmax	pmax		
	comp=Z,20nm,1.0s						
USRK	**Ussuriysk Ar.**	**10.86**	**307**	Pn	**Pn**	**09 35 51.4**	**+0.8**
	comp=Z,0.4nm,0.3s,baz=115,slow=15,SNR=6.2						
USRK				LR	LR	09 39 37.0	
	comp=Z,172nm,20.6s,baz=158,slow=35						
JNU	**Nakatsue**	**11.82**	**249**	LR	LR	09 40 55.6	
	comp=Z,127nm,20.4s,baz=39,slow=39						
KSRS	**Korea Array**	**12.75**	**272**	Pn	**Pn**	**09 36 16.2**	**-0.3**
	comp=Z,0.1nm,0.3s,baz=83,slow=13,SNR=4.9						
KSRS				LR	LR	09 40 45.6	
	comp=Z,80nm,20.7s,baz=66,slow=35						
KSAR	**Wonju Array Be**	**12.78**	**272**	P	**Pn**	**09 36 16.2**	**-0.7**
KSAR	**Wonju Array Be**	**12.78**	**272**	Pn	**Pn**	**09 36 16.2**	**-0.7**
KLR	**Kul'dur**	**14.13**	**325**	LR	LR	09 42 43.3	
	comp=Z,106nm,18.1s,baz=110,slow=40						
MA2	**Magadan**	**21.82**	**9**	P	**P**	**09 38 06.2**	**-0.6**
	comp=Z,2.3nm,0.6s,baz=201,slow=7.5,SNR=4.1						
SEY	**Seymchan**	**25.28**	**9**	P	**P**	**09 38 41.6**	**+1.1**
	comp=Z,3.7nm,0.7s,baz=194,slow=7.0,SNR=24						
SEY	**Seymchan**	**25.28**	**9**	*e*P	**P**	**09 38 40.7**	**+0.2**
BOD	**Bodaibo**	**27.70**	**325**	*e*P	**P**	**09 39 01.3**	**-1.1**
BOD				pmax	pmax		
	comp=Z,6.0nm,1.2s						
ULN	**Ulaanbaatar**	**28.45**	**302**	*e*P	**P**	**09 39 09.4**	**0.0**
ULN				pmax	pmax		
	comp=Z,5.0nm,1.2s						
SONM	**Songino Array**	**28.89**	**302**	P	**P**	**09 39 13.6**	**+0.3**
	comp=Z,0.8nm,0.7s,baz=94,slow=8.7,SNR=4.4						
BILL	**Bilibino**	**32.34**	**15**	*e*P	**P**	**09 39 43.5**	**+0.2**
BILL				*e*		09 39 52.6	
BILL				*e*		09 40 49.6	
BILL				pmax	pmax		
	comp=Z,5.0nm,1.2s						
MIDW	**Midway**	**33.60**	**96**	*e*P	**P**	**09 39 56.0**	**+1.3**
TIXI	**Tiksi**	**34.41**	**352**	*e*P	**P**	**09 39 59.9**	**-1.4**
TIXI				pmax	pmax		
	comp=Z,16nm,4.6s						
ZALV	**Zalesovo Beam**	**42.67**	**311**	P	**P**	**09 41 10.9**	**+0.1**
	comp=Z,0.5nm,0.4s,baz=64,slow=6.7,SNR=3.4						
ZALV				LR	LR	09 59 26.7	
	comp=Z,42nm,20.3s,baz=74,slow=37						
NRIK	**Noril'sk**	**43.09**	**334**	LR	LR	09 59 21.6	
	comp=Z,36nm,18.9s,baz=117,slow=36						
CMAR	**Chiang Mai Arr**	**43.79**	**256**	P	**P**	**09 41 21.1**	**+0.8**
	comp=Z,0.7nm,0.3s,baz=45,slow=7.0,SNR=5.3						
CMAR				LR	LR	10 03 01.0	
	comp=Z,25nm,19.6s,baz=35,slow=41						
CMAR	**Chiang Mai Arr**	**43.79**	**256**	*i*P	**P**	**09 41 21.7**	**+1.4**
CMAR				pmax	pmax		
	comp=Z,1.0nm,0.4s						
MKAR	**Makanchi Array**	**45.26**	**302**	P	**P**	**09 41 32.0**	**+0.3**
	comp=Z,1.7nm,0.7s,baz=84,slow=9.5,SNR=16						
MKAR				LR	LR	10 00 20.2	
	comp=Z,45nm,18.3s,baz=41,slow=36						
MKAR	**Makanchi Array**	**45.26**	**302**	*i*P	**P**	**09 41 32.2**	**+0.5**
MKAR				pmax	pmax		
	comp=Z,2.0nm,0.7s						
KURK	**Kurchatov**	**46.85**	**308**	*e*P	**P**	**09 41 44.2**	**+0.1**
KURK				pmax	pmax		
	comp=Z,7.0nm,0.7s						
KURK	**Kurchatov**	**46.85**	**308**	*e*P	**P**	**09 41 44.2**	**+0.1**
	comp=Z,7.2nm,0.7s						
ILAR	**Eielson Array**	**47.40**	**33**	P	**P**	**09 41 49.1**	**+0.9**
	comp=Z,0.8nm,0.9s,baz=251,slow=6.0,SNR=6.7						
TKM2	**Tokmak 2**	**50.89**	**298**	*e*P	**P**	**09 42 15.8**	**+0.2**
TKM2				pmax	pmax		
	comp=Z,8.0nm,1.0s						
TKM2	**Tokmak 2**	**50.89**	**298**	*e*P	**P**	**09 42 15.8**	**+0.2**
	comp=Z,8.3nm,1.0s						
BRVK	**Borovoye**	**51.37**	**312**	*e*P	**P**	**09 42 18.9**	**+0.2**
BRVK				pmax	pmax		
	comp=Z,1.0nm,1.0s						
AAK	**Ala-Archa**	**51.76**	**298**	*e*P	**P**	**09 42 23.2**	**+1.2**
AAK				pmax	pmax		
	comp=Z,3.0nm,1.0s						
INK	**Inuvik**	**52.40**	**28**	P	**P**	**09 42 27.4**	**+1.3**
	comp=Z,0.8nm,0.6s,baz=293,slow=6.4,SNR=4.6						
DLBC	**Dease Lake**	**56.43**	**39**	LR	LR	10 07 05.1	
	comp=Z,28nm,20.4s,baz=332,slow=36						
ARU	**Arti**	**56.85**	**319***c*	*i*P	**P**	**09 42 59.3**	**+0.7**
ARU						09 45 02.5	
ARU				S	**S**	**09 50 51.1**	**+1.7**
ARU				SS	**SS**	**09 54 36.0**	**-1.3**
ARU				pmax	pmax		
	comp=Z,6.0nm,0.7s						
WRA	**Warramunga Arr**	**58.55**	**191**	P	**P**	**09 43 10.9**	**0.0**
	comp=Z,6.0nm,0.8s,baz=9.3,slow=7.2,SNR=36						
ABKAR	**Akbulak array**	**58.76**	**310**	*e*P	**P**	**09 43 12.6**	**+0.5**
	comp=Z,0.5nm,0.3s						
YKA	**Yellowknife Ar**	**61.75**	**31**	P	**P**	**09 43 32.9**	**+0.6**
	comp=Z,0.3nm,0.7s,baz=305,slow=6.8,SNR=7.2						
ASAR	**Alice Springs**	**62.27**	**190**	P	**P**	**09 43 37.2**	**+1.0**
	comp=Z,0.9nm,0.7s,baz=16,slow=7.3,SNR=12						
ASAR				LR	LR	10 13 56.9	
	comp=Z,17nm,18.9s,baz=116,slow=39						
OBN	**Obninsk**	**68.39**	**324**	*e*P	**P**	**09 44 12.5**	**-3.0**
OBN				pmax	pmax		
	comp=Z,5.0nm,0.9s						
FINES	**FINESS Array B**	**68.73**	**333**	P	**P**	**09 44 17.6**	**0.0**
	comp=Z,1.8nm,0.6s,baz=52,slow=9.9,SNR=5.7						
FINES	**FINESS Array B**	**68.73**	**333***c*	*e*P	**P**	**09 44 18.2**	**+0.7**
FINES				pmax	pmax		
	comp=Z,2.0nm,0.6s						
KIV	**Kislovodsk**	**71.69**	**312**	*e*P	**P**	**09 44 37.9**	**+1.8**
KIV				pmax	pmax		
	comp=Z,10.0nm,1.0s						
KBZ	**Khabaz**	**71.69**	**311**	P	**P**	**09 44 37.4**	**+1.4**
	comp=Z,3.1nm,1.0s,baz=35,slow=4.3,SNR=4.7						
NVAR	**Mina Array Bea**	**72.63**	**55**	P	**P**	**09 44 41.6**	**-0.5**
	comp=Z,1.2nm,0.8s,baz=303,slow=5.3,SNR=3.0						
GNI	**Garni**	**72.65**	**308**	*e*P	**P**	**09 44 43.4**	**+1.4**
GNI				pmax	pmax		
	comp=Z,23nm,1.1s						
AKASG	**Malin Array Be**	**74.62**	**323**	P	**P**	**09 44 53.4**	**+0.3**
	comp=Z,1.0nm,0.5s,baz=43,slow=5.9,SNR=8.6						
AKASG	**Malin Array Be**	**74.62**	**323***c*	*e*P	**P**	**09 44 54.0**	**+0.8**
AKASG				pmax	pmax		
	comp=Z,2.0nm,0.7s						
KIEV	**Kiev**	**74.63**	**323**	*e*P	**P**	**09 44 53.2**	**0.0**
KIEV				pmax	pmax		
	comp=Z,3.0nm,0.9s						
PDAR	**Pinedale Array**	**75.37**	**47**	P	**P**	**09 44 58.1**	**+0.2**
	comp=Z,0.6nm,0.6s,baz=268,slow=2.8,SNR=7.3						
STHS	**Stebnicka Huta**	**79.17**	**326**	*e*P	**P**	**09 45 16.8**	**-2.1**
STHS	**Stebnicka Huta**	**79.17**	**326**	*e*P	**P**	**09 45 16.8**	**-2.1**
CLL	**Collm**	**81.09**	**331**	*e*P	**P**	**09 45 28.0**	**-1.1**
CLL	**Collm**	**81.09**	**331**	*e*P	**P**	**09 45 28.0**	**-1.1**
ANMO	**Albuquerque**	**82.25**	**51**	*e*P	**P**	**09 45 37.9**	**+2.1**
ANMO				pmax	pmax		
	comp=Z,1.0nm,1.0s						
ASF	**Jabal al Asfar**	**82.55**	**305**	LR	LR	10 25 16.1	
	comp=Z,131nm,21.7s,slow=38						
BFO	**Black Forest**	**85.27**	**332***c*	*e*P	P	09 45 54.1	+3.3
LPAZ	**La Paz**	**144.32**	**61**	PKP	**PKPdf**	**09 52 50.6**	**-0.7**
	comp=Z,1.0nm,0.9s,baz=0.0,slow=3.0,SNR=3.1						

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*CSEM **07** 09:33:40.8±0.8, 36°.37N×28°.73E, h2km, MD2.5, Error ellipse: s-maj=16.1km s-min=6.5km az=36.0*

*DDA **07** 09:33:40.9, 36°.48N×28°.81E, h7km, Md2.6*

*ISCJB **07** 09:33:41.2±1.4, 36°.42N±0°.07×28°.73E±0°.06, h10km±7km, Error ellipse: s-maj=13.3km s-min=5.6km az=32.0*

*ISK **07** 09:33:46.0, 36°.79N×28°.85E, h3km, MD2.5*

ISC 07 09:33:40.4±1.7**, 36°.43N**±0°.08×**28°.75E**±0°.07**, h6**km±11km**, n13, σ0^{s}98**/24**, Dodecanese Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
DALY	**Dalyan (Mu˜la**	**0.40**	**349**	*e*PG	**Pb**	**09 33 49.3**	**-0.6**
DALY				*e*SG	**Sg**	**09 33 53.5**	**+0.1**
DALY	**Dalyan (Mu˜la**	**0.40**	**349**	*e*Pg	**Pb**	**09 33 49.3**	**-0.6**
DALY				*e*Sg	**Sg**	**09 33 53.5**	**+0.1**
TURN	**Turunc**	**0.46**	**345**	*i* P	**Pb**	**09 33 50.2**	**-0.8**
TURN				*i* S	**Sb**	**09 33 59.6**	**+1.6**
TURN	**Turunc**	**0.46**	**345**	P	**Pb**	**09 33 50.2**	**-0.8**
TURN				S	**Sb**	**09 33 59.7**	**+1.6**
AKAS	**Kas**	**0.72**	**105**	*i* P	**Pg**	**09 33 54.1**	**-0.1**
AKAS				*i* S	**Sb**	**09 34 05.4**	**-0.2**
AKAS	**Kas**	**0.72**	**105**	P	**Pg**	**09 33 54.1**	**-0.1**
AKAS				S	**Sb**	**09 34 05.4**	**-0.2**
YER	**Yerkesik**	**0.80**	**332**	*e*PG	**Pn**	**09 33 57.8**	**-0.6**
YER				*e*SG	**Sg**	**09 34 06.1**	**-0.1**
YER	**Yerkesik**	**0.80**	**332**	*e*Pg	**Pn**	**09 33 57.8**	**-0.6**
YER				*e*Sg	**Sg**	**09 34 06.1**	**-0.1**
ELL	**Elmali**	**0.98**	**71**	*e*PG	**Pn**	**09 34 03.2**	**+2.3**
ELL				*e*SG	**Sn**	**09 34 15.8**	**+0.5**
GOLH	**Golhisar**	**1.04**	**39**	*i* P	**Pg**	**09 33 59.5**	**-0.9**
GOLH				*i* S	**Sn**	**09 34 14.5**	**-2.1**
NIS1	**Nisyros Isl.**	**1.28**	**278**	*e*PN	Pg	09 34 12.5	+7.5
AYDN	**Tasoluk**	**1.42**	**331**	*i* P	**Pg**	**09 34 08.0**	**+0.4**
AYDN				*i* S	**Sg**	**09 34 26.5**	**+0.5**
AYDN	**Tasoluk**	**1.42**	**331**	P	**Pg**	**09 34 08.0**	**+0.4**
AYDN				S	**Sg**	**09 34 26.5**	**+0.5**

MEX 07 09:49:41.8±0.6**, 15°.74N**×**96°.53W, h8**km±19km**, MD3.9, Near coast of Oaxaca**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
HUIG	**Huatulco**	**0.41**	**86**	*e*P	Pg	09 49 49.3	-0.4
HUIG				*e*S	Sg	09 49 55.1	0.0
VHO	**Vista Hermosa**	**1.34**	**352**	*e*P	Pn	09 50 03.5	-3.6
VHO				*e*S	Sb	09 50 19.7	-5.1
PNIG	**Pinotepa**	**1.67**	**293**	*e*P	Pn	09 50 07.8	-3.6
PNIG				*e*S	Sn	09 50 28.4	-4.7
PCIG		**3.19**	**90**	*i* P	Pn	09 50 28.6	-3.7
TGIG		**3.43**	**72**	*e*P	Pn	09 50 35.1	-0.6
TGIG				*i* S	Sn	09 51 19.7	+3.1

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*NEIC **07** 10:03:34.6, 35°.24N×92°.36W, h3km, MD2.5(CERI), After CERI.*

NEIC Felt at Conway and Greenbrier.

ISC 07 10:03:34.0±1.4**, 35°.25N**±0°.03×**92°.36W**±0°.04**, h4**km±12km**, n21, σ0^{s}84**/38**, Arkansas**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
W40A	**Ferguson Farm,**	**0.59**	**265**	P	**Pg**	**10 03 45.5**	**+0.3**
	baz=85,SNR=13						
W40A				S	**Sg**	**10 03 54.0**	**+1.2**
	baz=85						
V40A	**Witts Springs**	**0.67**	**326**	P	**Pg**	**10 03 46.8**	**-0.1**
	baz=146,SNR=49						
V40A				S	**Sg**	**10 03 55.7**	**+0.1**
	baz=146						
X40A	**Basin Creek Fa**	**0.85**	**207**	P	**Pg**	**10 03 50.4**	**+0.1**
	baz=27,SNR=9.7						
X40A				S	**Sb**	**10 04 02.6**	**-0.6**
	baz=27						
W39A	**Magazine**	**1.17**	**268**	P	**Pb**	**10 03 56.2**	**-0.6**
	baz=87,SNR=17						
W39A				S	**Sb**	**10 04 12.2**	**-0.1**
	baz=87						
U40A	**Yellville**	**1.18**	**340**	P	**Pb**	**10 03 56.0**	**-0.9**
	baz=160,SNR=43						
U40A				S	**Sb**	**10 04 11.1**	**-1.4**
	baz=160						
V39A	**Pettigrew**	**1.20**	**300**	P	**Pb**	**10 03 56.4**	**-1.0**
	baz=119,SNR=45						
V39A				S	**Sb**	**10 04 12.2**	**-1.2**
	baz=119						
MIAR	**Mount Ida**	**1.22**	**235**	P	**Pn**	**10 03 57.0**	**-0.8**
	baz=55,SNR=32						
MIAR				S	**Sg**	**10 04 13.9**	**+0.6**
	baz=55						
MIAR	**Mount Ida**	**1.22**	**235**	*e*Pg	**Pn**	**10 03 56.9**	**-0.9**
MIAR				*e*Sg	**Sb**	**10 04 13.7**	**-0.1**
Y40A	**Okolona**	**1.45**	**212**	P	**Pb**	**10 04 01.3**	**-0.2**
	baz=31,SNR=9.4						
Y40A				S	**Sg**	**10 04 20.9**	**+0.3**
	baz=31						
U39A	**Green Forest**	**1.45**	**321**	P	**Pn**	**10 04 00.5**	**-0.6**
	baz=141,SNR=28						
U39A				S	**Sn**	**10 04 19.9**	**-0.7**
	baz=141						
X39A	**Fountain Ranch**	**1.62**	**244**	Pb	**Pb**	**10 04 04.0**	**-0.4**
	baz=62,SNR=38						
X39A				S	**Sb**	**10 04 25.7**	**+0.4**
	baz=62						
W38A	**Poteau**	**1.78**	**265**	Pb	**Pb**	**10 04 06.5**	**-0.6**
	baz=84,SNR=21						
W38A				Sb	**Sb**	**10 04 30.7**	**+0.9**
	baz=84						
V38A	**Canehill**	**1.78**	**291**	Pb	**Pn**	**10 04 06.3**	**+0.7**
	baz=110,SNR=19						
V38A				S	**Sb**	**10 04 29.7**	**-0.3**
	baz=110						
T40A	**Mansfield**	**1.90**	**356**	Pb	**Pn**	**10 04 08.4**	**+1.1**
	baz=176,SNR=13						
T40A				Sb	**Sb**	**10 04 33.7**	**+0.2**
	baz=176						
T39A	**Clever**	**1.96**	**335**	Pb	**Pn**	**10 04 09.2**	**+1.2**
	baz=155,SNR=17						
T39A				Sb	**Sb**	**10 04 35.6**	**+0.7**
	baz=155						
U38A	**Gravette**	**2.03**	**306**	Pb	**Pn**	**10 04 10.3**	**+1.2**
	baz=126,SNR=10						
U38A				Sb	**Sb**	**10 04 37.7**	**+0.6**
	baz=126						
X38A	**Whitesboro**	**2.11**	**255**	Sb	**Sg**	**10 04 41.1**	**-0.7**
	baz=74						
S40A	**Lebanon**	**2.35**	**357**	Pb	**Pb**	**10 04 15.5**	**-1.4**
	baz=177,SNR=9.8						
OXF	**Oxford**	**2.53**	**106**	*e*Pn	**Pn**	**10 04 15.6**	**-0.3**
OXF				*e*Sn	**Sn**	**10 04 48.5**	**+1.4**
TUL1	**Leonard**	**2.88**	**284**	*e*Pn	**Pn**	**10 04 21.0**	**+0.4**
KSU1	**Kansas State U**	**5.13**	**320**	Pn	**Pn**	**10 04 52.9**	**+1.3**

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*ISCJB **07** 10:07:16.6±0.9, 39°.6N±0°.1×143°.5E±0°.1, h11km, mb3.7/9, MS3.2/1, Error ellipse: s-maj=19.6km s-min=11.0km az=40.5*

*IDC **07** 10:07:22.5±3.5, 39°.56N×143°.43E, h42km±33km, mb3.6/10, mb1 3.7/12, mb1mx3.5/65, mbtmp3.8/12, ML2.6/2, MS3.0/4, Ms1 3.0/4, ms1mx2.7/54, Error ellipse: s-maj=26.7km s-min=19.6km az=130.0*

ISC 07 10:07:18.2±1.1**, 39°.6N**±0°.1×**143°.6E**±0°.1**, h11**km**, n17, σ1^{s}08**/13**, mb3.9**/9**, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
MAT	**Matsushiro**	**5.21**	**236**	P	**Pn**	**10 08 37.2**	**+1.1**
MJAR	**Matsushiro Arr**	**5.21**	**236**	P	**Pn**	**10 08 36.7**	**+0.6**
	1.0nm,0.3s,baz=37,slow=12,SNR=22						
USRK	**Ussuriysk Ar.**	**9.81**	**302**	P	**Pn**	**10 09 40.1**	**+0.9**
	0.2nm,0.3s,baz=93,slow=13,SNR=6.2						
JNU	**Nakatsue**	**12.10**	**242**	LR	LR	10 14 47.0	
	comp=Z,46nm,20.8s,baz=106,slow=37						
KSRS	**Korea Array**	**12.46**	**265**	LR	LR	10 13 58.1	
	comp=Z,50nm,19.9s,baz=78,slow=32						
KLR	**Kul'dur**	**12.83**	**323**	LR	LR	10 15 24.5	
	comp=Z,70nm,20.6s,baz=94,slow=38						
MA2	**Magadan**	**20.54**	**10**	P	**P**	**10 11 56.0**	**-0.4**
	5.8nm,0.7s,baz=220,slow=8.5,SNR=14						
SEY	**Seymchan**	**23.99**	**10**	P	**P**	**10 12 32.2**	**-0.2**
	3.8nm,0.8s,baz=191,slow=6.4,SNR=17						
YAK	**Yakutsk**	**24.05**	**344**	LR	LR	10 23 02.2	
	comp=Z,68nm,18.6s,baz=140,slow=39						
SONM	**Songino Array**	**27.92**	**300**	P	**P**	**10 13 07.5**	**-0.9**
	1.6nm,0.9s,baz=120,slow=10.0,SNR=4.2						
ZALV	**Zalesovo Beam**	**41.53**	**310**	P	**P**	**10 15 03.9**	**-1.5**
	0.5nm,0.3s,baz=78,slow=9.0,SNR=3.9						
MKAR	**Makanchi Array**	**44.28**	**300**	P	**P**	**10 15 26.9**	**-0.8**
	1.3nm,0.8s,baz=82,slow=8.7,SNR=8.8						
ILAR	**Eielson Array**	**46.44**	**34**	P	**P**	**10 15 45.1**	**+0.5**
	0.5nm,0.8s,baz=260,slow=5.4,SNR=3.9						
BVAR	**Borovoye Array**	**50.17**	**311**	P	**P**	**10 16 13.2**	**-0.4**
	1.2nm,0.8s,baz=79,slow=7.5,SNR=3.7						
INK	**Inuvik**	**51.35**	**28**	P	**P**	**10 16 24.2**	**+2.1**
	0.5nm,0.9s,baz=291,slow=5.9,SNR=2.5						
AKTO	**Aktyubinsk**	**58.28**	**311**	P	**P**	**10 17 12.3**	**-0.3**
	0.7nm,0.6s,baz=76,slow=13,SNR=3.6						
WRA	**Warramunga Arr**	**59.83**	**190**	P	**P**	**10 17 22.8**	**-0.8**
	0.9nm,0.9s,baz=8.8,slow=6.8,SNR=4.5						

IDC 07 10:09:23.9±40.0**, 7°.27S**×**106°.01E, h0**km**, mb3.7**/3**, mb1 3.9**/3**, mb1mx3.4**/64**, mbtmp3.7**/3**, MS2.3**/1**, Ms1 2.3**/1**, ms1mx2.1**/54**, Error ellipse: s-maj=684.9km s-min=158.3km az=126.0, Jawa**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
KAPI	**Kappang**	**13.84**	**81**	LR	LR	10 19 28.4	
	comp=Z,12nm,20.5s,baz=281,slow=44						
WRA	**Warramunga Arr**	**30.21**	**117**	P	P	10 15 36.5	0.0
	1.1nm,0.9s,baz=287,slow=11,SNR=4.1						
ASAR	**Alice Springs**	**31.33**	**124**	P	P	10 15 46.6	+0.3
	0.5nm,0.7s,baz=304,slow=9.3,SNR=5.9						
STKA	**Stephens Creek**	**41.19**	**131**	P	P	10 17 10.1	-0.4
	0.7nm,0.4s,baz=313,slow=7.1,SNR=3.0						

IDC 07 10:09:24.3±12.0**, 27°.89N**×**85°.54E, h0**km**, mb3.9**/2**, mb1 3.9**/3**, mb1mx3.3**/68**, mbtmp3.8**/3**, ML3.7**/1**, Error ellipse: s-maj=293.1km s-min=116.7km az=121.0, Nepal**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
MKAR	**Makanchi Array**	**19.04**	**353**	P	P	10 13 48.0	+0.1
	0.2nm,0.3s,baz=171,slow=11,SNR=12						
ZALV	**Zalesovo Beam**	**26.04**	**359**	P	P	10 14 58.8	-0.2
	0.8nm,0.4s,baz=198,slow=8.9,SNR=3.9						
ARCES	**ARCESS Array B**	**53.76**	**338**	P	P	10 18 48.0	0.0
	1.1nm,0.6s,baz=103,slow=8.0,SNR=8.4						

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*IDC **07** 10:17:05.3±0.6, 36°.96N×143°.55E, h0km, mb4.0/19, mb1 4.2/25, mb1mx4.0/63, mbtmp4.1/25, ML3.5/6, MS3.2/12, Ms1 3.2/12, ms1mx2.9/60, Error ellipse: s-maj=15.4km s-min=13.9km az=124.0*

*ISCJB **07** 10:17:08.3±0.4, 36°.94N±0°.05×143°.48E±0°.05, h33km, mb4.1/30, MS3.5/8, Error ellipse: s-maj=8.3km s-min=5.3km az=152.3*

*MOS **07** 10:17:08.7±1.1, 36°.96N×143°.49E, h36km, mb4.4/21, Error ellipse: s-maj=11.7km s-min=9.1km az=133.3*

*NEIC **07** 10:17:10.7±0.4, 37°.06N×143°.51E, h35km, mb4.4/2, Error ellipse: s-maj=9.8km s-min=7.8km az=148.0*

ISC 07 10:17:10.5±0.6**, 36°.96N**±0°.07×**143°.51E**±0°.07**, h35**km**, n73, σ0^{s}93**/62**, mb4.2**/30**, MS3.4**/8**, 2C-2D, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
MJAR	**Matsushiro Arr**	**4.28**	**266**	Pn	**Pn**	**10 18 13.1**	**0.0**
	4.4nm,0.3s,baz=78,slow=10,SNR=59						
MJAR				Sn	**Sn**	**10 19 01.4**	**-0.4**
	2.5nm,0.3s,baz=88,slow=27,SNR=4.3						
MJAR				LR	LR	10 20 04.4	
	comp=Z,262nm,21.4s,baz=75,slow=42						
MAJO	**Matsushiro**	**4.28**	**266***d*	*i*P	**Pn**	**10 18 13.1**	**0.0**
MAJO	**Matsushiro**	**4.28**	**266**	*e*Pn	**Pn**	**10 18 13.3**	**+0.2**
MAT	**Matsushiro**	**4.28**	**266**	P	**Pn**	**10 18 13.2**	**+0.1**
MAT				S	**Sn**	**10 19 01.7**	**-0.1**
JHJ	**Hachijo jima 2**	**4.90**	**220**	Pn	**Pn**	**10 18 20.1**	**-1.6**
	15nm,0.3s,baz=72,slow=22,SNR=12						
JHJ				Sn	**Sn**	**10 19 15.7**	**-1.5**
	24nm,0.3s,baz=350,slow=24,SNR=6.7						
JHJ				LR	LR	10 20 59.7	
	comp=Z,62nm,18.5s,baz=35,slow=48						

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
ERM	**Erimo**	**5.06**	**357**	*e*P	Pn	10 18 19.9	-3.9
ERM	**Erimo**	**5.06**	**357**	*e*Pn	Pn	10 18 19.9	-3.9
YUK	**Yuzh-Kuril'sk**	**7.29**	**13**	*e*P	Pn	10 18 49.4	-5.1
YUK				pmax	pmax		
	comp=N,43nm,0.5s						
YUK				pmax	pmax		
	comp=E,48nm,0.5s						
YUK				pmax	pmax		
	comp=Z,73nm,0.5s						
SHO	**Shikotan**	**7.35**	**19**	*e*P	Pn	10 18 49.4	-5.9
KUR	**Kuril'sk**	**8.90**	**20**	*e*P	Pn	10 19 11.1	-5.3
YSS	**Yuzh-Sakhalins**	**10.01**	**357**	*e*P	Pn	10 19 19.0	-13
YSS				pmax	pmax		
	comp=Z,30nm,1.0s						
JNU	**Nakatsue**	**11.04**	**253**	Pn	**Pn**	**10 19 46.4**	**+0.5**
	comp=Z,0.2nm,0.3s,baz=40,slow=6.3,SNR=5.5						
USRK	**Ussuriysk Ar.**	**11.35**	**313**	Pn	**Pn**	**10 19 49.0**	**-1.1**
	comp=Z,0.6nm,0.3s,baz=121,slow=14,SNR=9.4						
USRK				LR	LR	10 23 52.5	
	comp=Z,156nm,18.4s,baz=135,slow=36						
KSRS	**Korea Array**	**12.44**	**277**	Pn	**Pn**	**10 20 05.9**	**+1.0**
	comp=Z,0.2nm,0.3s,baz=92,slow=14,SNR=12						
KSRS				LR	LR	10 24 38.4	
	comp=Z,69nm,18.4s,baz=70,slow=36						
KSAR	**Wonju Array Be**	**12.47**	**277**	P	**Pn**	**10 20 05.9**	**+0.5**
KSAR	**Wonju Array Be**	**12.47**	**277**	Pn	**Pn**	**10 20 05.9**	**+0.5**
KLR	**Kul'dur**	**14.95**	**329**	Pn	**Pn**	**10 20 36.1**	**-3.0**
	comp=Z,0.3nm,0.3s,baz=127,slow=12,SNR=11						
KLR				LR	LR	10 27 18.7	
	comp=Z,111nm,18.4s,baz=100,slow=41						
GUMO	**Guam**	**23.30**	**177**	LR	LR	10 30 27.8	
	comp=Z,20nm,20.5s,baz=142,slow=34						
SEY	**Seymchan**	**26.57**	**9**	P	**P**	**10 22 45.1**	**+0.2**
	comp=Z,3.1nm,0.8s,baz=184,slow=6.4,SNR=11						
SEY	**Seymchan**	**26.57**	**9**	*e*P	**P**	**10 22 43.4**	**-1.5**
H11N2	**WAKE ISLAND Hy**	**26.69**	**124**	T	T	10 51 16.2	
	baz=316,slow=76,SNR=2.9						
H11N1	**WAKE ISLAND Hy**	**26.70**	**124**	T	T	10 51 23.1	
	baz=316,slow=76,SNR=7.4						
H11N3	**WAKE ISLAND Hy**	**26.70**	**124**	T	T	10 51 13.3	
	baz=316,slow=76,SNR=6.0						
H11S1	**WAKE ISLAND Hy**	**27.43**	**126**	T	T	10 52 14.6	
	baz=323						
H11S3	**WAKE ISLAND Hy**	**27.43**	**126**	T	T	10 52 13.5	
	baz=323,slow=74,SNR=5.9						
H11S2	**WAKE ISLAND Hy**	**27.45**	**126**	T	T	10 52 10.3	
	baz=323,slow=74						
BOD	**Bodaibo**	**28.50**	**326**	*e*P	P	10 22 56.1	-6.2
BOD				pmax	pmax		
	comp=Z,5.0nm,1.5s						
ULN	**Ulaanbaatar**	**28.79**	**304**	*e*P	**P**	**10 23 05.3**	**+0.2**
ULN				pmax	pmax		
	comp=Z,7.0nm,1.2s						
ENH	**Enshi**	**29.00**	**267**	*e*P	**P**	**10 23 08.7**	**+1.7**
	comp=Z,5.0nm,0.6s						
SONM	**Songino Array**	**29.22**	**304**	P	**P**	**10 23 10.5**	**+1.6**
	comp=Z,4.0nm,0.9s,baz=100,slow=9.2,SNR=14						
SONM				LR	LR	10 34 47.2	
	comp=Z,44nm,18.7s,baz=34,slow=36						
ZAK	**Zakamensk**	**31.64**	**308**	*e*P	**P**	**10 23 27.9**	**-2.3**
ZAK				pmax	pmax		
	comp=Z,2.0nm,1.4s						
TLY	**Talaya**	**31.65**	**310**	LR	LR	10 36 48.5	
	comp=Z,67nm,19.2s,baz=89,slow=37						
BILL	**Bilibino**	**33.64**	**15**	*e*P	**P**	**10 23 47.3**	**-0.1**
BILL				pmax	pmax		
	comp=Z,2.0nm,1.2s						
TIXI	**Tiksi**	**35.58**	**352**	*i* P	**P**	**10 24 06.1**	**+2.0**
TIXI				pmax	pmax		
	comp=Z,7.0nm,2.4s						
CMAR	**Chiang Mai Arr**	**43.11**	**257**	P	**P**	**10 25 08.1**	**+0.6**
	comp=Z,0.7nm,0.3s,baz=37,slow=7.9,SNR=3.0						
CMAR				LR	LR	10 46 28.7	
	comp=Z,44nm,18.6s,baz=255,slow=41						
ZALV	**Zalesovo Beam**	**43.20**	**312**	P	**P**	**10 25 07.3**	**-0.6**
	comp=Z,1.4nm,0.3s,baz=90,slow=5.8,SNR=10						
ZALV				LR	LR	10 43 52.8	
	comp=Z,61nm,18.2s,baz=68,slow=37						
MKAR	**Makanchi Array**	**45.58**	**303**	P	**P**	**10 25 27.4**	**+0.4**
	comp=Z,0.4nm,0.5s,baz=99,slow=7.5,SNR=5.5						
MKAR	**Makanchi Array**	**45.58**	**303**	*ce*P	**P**	**10 25 27.3**	**+0.3**
KURK	**Kurchatov**	**47.30**	**308**	*e*P	**P**	**10 25 40.0**	**-0.3**
KURK				pmax	pmax		
	comp=Z,16nm,0.6s						
KURK	**Kurchatov**	**47.30**	**308**	*e*P	**P**	**10 25 40.0**	**-0.3**
	comp=Z,16nm,0.6s						
KURK				P	**P**	**10 25 40.4**	**+0.1**
KURBB	**Kurchatov Arra**	**47.37**	**308**	P	**P**	**10 25 40.4**	**-0.5**
	comp=Z,3.5nm,0.8s,baz=82,slow=7.8,SNR=31						
ILAR	**Eielson Array**	**48.66**	**32**	P	**P**	**10 25 50.7**	**0.0**
	comp=Z,0.8nm,1.0s,baz=266,slow=6.0,SNR=4.1						
TKM2	**Tokmak 2**	**51.14**	**299**	P	**P**	**10 26 11.8**	**+1.7**
TKM2				pmax	pmax		
	comp=Z,3.0nm,0.6s						
TKM2	**Tokmak 2**	**51.14**	**299**	P	**P**	**10 26 11.8**	**+1.7**
	comp=Z,2.9nm,0.6s						
BVAR	**Borovoye Array**	**51.86**	**313**	P	**P**	**10 26 13.9**	**-1.2**
	comp=Z,1.6nm,0.8s,baz=64,slow=6.9,SNR=5.8						
BRVK	**Borovoye**	**51.92**	**313**	*e*P	**P**	**10 26 15.6**	**+0.1**
BRVK				pmax	pmax		
	comp=Z,15nm,3.7s						
INK	**Inuvik**	**53.69**	**27**	P	**P**	**10 26 28.0**	**-0.3**
	comp=Z,1.1nm,0.9s,baz=259,slow=8.8,SNR=4.5						
KKAR	**Karatay Array**	**54.61**	**301**	*e*P	**P**	**10 26 35.5**	**0.0**
KKAR	**Karatay Array**	**54.61**	**301**	*e*P	**P**	**10 26 35.5**	**0.0**
WRAB	**Tennant Creek**	**57.24**	**190**	*e*P	**P**	**10 26 54.6**	**+0.2**
WRAB	**Tennant Creek**	**57.24**	**190**	*e*P	**P**	**10 26 54.5**	**+0.2**
WRA	**Warramunga Arr**	**57.25**	**190**	P	**P**	**10 26 53.9**	**-0.6**
	comp=Z,3.2nm,0.7s,baz=7.8,slow=7.0,SNR=39						
WRA	**Warramunga Arr**	**57.25**	**190**	P	**P**	**10 26 53.9**	**-0.6**
WRA				pmax	pmax		
	comp=Z,4.0nm,0.7s						
ARU	**Arti**	**57.52**	**319**	P	**P**	**10 26 56.2**	**+0.1**
	comp=Z,4.6nm,0.2s,baz=66,slow=5.6,SNR=3.8						
ARU	**Arti**	**57.52**	**319**	*d i*P	**P**	**10 26 54.9**	**-1.1**
ARU						10 28 59.5	
ARU				S	**S**	**10 34 51.8**	**+0.8**
ARU				SS	**SS**	**10 38 40.9**	**+0.3**
ARU				pmax	pmax		
	comp=Z,7.0nm,1.2s						
SPITS	**Spitsbergen Ar**	**60.92**	**349**	LR	LR	10 56 47.4	
	comp=Z,811nm,18.2s,baz=130,slow=39						
ASAR	**Alice Springs**	**60.98**	**190**	P	**P**	**10 27 20.4**	**+0.1**
	comp=Z,1.6nm,0.6s,baz=3.9,slow=7.0,SNR=30						
YKA	**Yellowknife Ar**	**63.02**	**31**	P	**P**	**10 27 33.1**	**-0.4**
	comp=Z,0.3nm,0.8s,baz=302,slow=6.7,SNR=4.9						
STKA	**Stephens Creek**	**68.50**	**182**	P	**P**	**10 28 09.2**	**+0.2**
	comp=Z,2.0nm,0.8s,baz=325,slow=9.8,SNR=3.9						
OBN	**Obninsk**	**69.15**	**324**	*e*P	**P**	**10 28 13.4**	**+0.4**
OBN				pmax	pmax		
	comp=Z,6.0nm,0.9s						
FINES	**FINESS Array B**	**69.65**	**333**	P	**P**	**10 28 15.4**	**-0.6**
	comp=Z,1.6nm,0.6s,baz=68,slow=10,SNR=3.9						
FINES				LR	LR	10 59 41.0	
	comp=Z,30nm,21.2s,baz=14,slow=37						
FINES	**FINESS Array B**	**69.65**	**333**	*ce*P	**P**	**10 28 15.3**	**-0.7**
FINES				pmax	pmax		
	comp=Z,2.0nm,0.6s						
KIV	**Kislovodsk**	**72.22**	**312**	*e*P	**P**	**10 28 33.2**	**+1.2**
KIV				pmax	pmax		
	comp=Z,8.0nm,1.1s						
KBZ	**Khabaz**	**72.22**	**312**	P	**P**	**10 28 31.9**	**0.0**
	comp=Z,2.9nm,1.0s,baz=251,slow=4.4,SNR=3.9						
NVAR	**Mina Array Bea**	**73.68**	**54**	P	**P**	**10 28 41.3**	**+0.3**
	comp=Z,0.6nm,0.6s,baz=309,slow=10,SNR=2.3						
NOA	**NORSAR Array B**	**74.89**	**338**	LR	LR	11 05 42.8	
	comp=Z,20nm,19.0s,baz=20,slow=39						
KIEV	**Kiev**	**75.39**	**323**	*e*P	**P**	**10 28 50.7**	**+0.4**
PDAR	**Pinedale Array**	**76.51**	**46**	P	**P**	**10 28 58.0**	**+0.8**
	comp=Z,0.5nm,0.8s,baz=64,slow=3.4,SNR=3.8						
CLL	**Collm**	**81.98**	**331**	*e*P	**P**	**10 29 26.0**	**-0.6**
	comp=Z,9.0nm,1.3s						
CLL	**Collm**	**81.98**	**331**	*e*P	**P**	**10 29 26.0**	**-0.6**
CLL				pmax	pmax		
	comp=Z,9.0nm,1.3s						
ANMO	**Albuquerque**	**83.34**	**51**	*e*P	**P**	**10 29 33.4**	**-0.8**
ANMO				pmax	pmax		
	comp=Z,16nm,5.2s						
TXAR	**Lajitas Array**	**88.83**	**54**	P	**P**	**10 30 01.9**	**+0.6**
	comp=Z,0.5nm,0.7s,baz=316,slow=3.5,SNR=3.6						
LPAZ	**La Paz**	**145.26**	**62**	PKPbc	**PKPdf**	**10 36 45.8**	**+0.1**
	comp=Z,0.5nm,0.6s,baz=53,slow=4.8,SNR=4.3						

IDC 07 10:19:20.1±2.0**,54°.60N**×**83°.51E,h0**km**,mb1 2.6**/2**,**
mb1mx2.6/57**,mbtmp2.6**/2**,ML1.9**/2**,Error ellipse:**
s-maj=17.2km s-min=10.5km az=162.0,Southwestern Siberia

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
I46RU	**ZALESOVO INFRA**	**1.01**	**130**	*i*		10 25 10.0	
	baz=308,slow=326,SNR=20						
ZALV	**Zalesovo Beam**	**1.01**	**130**	Pg	Pg	10 19 39.0	-0.4
	1.8nm,0.3s,baz=310,slow=16,SNR=21						
ZALV				Lg	Lg	10 19 53.5	
	2.5nm,0.3s,baz=310,slow=29,SNR=20						
ZALV				Rg	Rg	10 20 01.6	
	29nm,1.1s,baz=307,slow=28,SNR=14						
KURBB	**Kurchatov Arra**	**5.00**	**219**	Pn	Pn	10 20 36.2	-0.1
	0.0nm,0.3s,baz=42,slow=14,SNR=3.9						
KURBB				Lg	Lg	10 21 59.6	
	0.0nm,0.3s,baz=29,slow=29,SNR=5.9						
MKAR	**Makanchi Array**	**7.85**	**186**	Pn	Pn	10 21 15.3	-0.1
	0.0nm,0.3s,baz=11,slow=12,SNR=2.8						
MKAR				Sn	Sn	10 22 45.3	+0.4
	0.1nm,0.3s,baz=12,slow=22,SNR=3.5						
MKAR				Lg	Lg	10 23 27.6	
	0.0nm,0.3s,baz=10,slow=27,SNR=4.5						

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*ISCJB **07** 10:20:02.0±0.5, 49°.84N±0°.04×18°.47E±0°.03, h0km, Error ellipse: s-maj=5.3km s-min=2.6km az=10.6*
*CSEM **07** 10:20:02.9±0.4, 49°.86N×18°.52E, h1km, ML2.8/5, Error ellipse: s-maj=12.4km s-min=5.5km az=169.0*
*IPEC **07** 10:20:03.0±0.2, 49°.81N×18°.58E, h0km±3km, ML2.1/4, Error ellipse: s-maj=2.1km s-min=1.1km az=161.0*
ISC 07 10:20:02.8±0.8**,49°.79N**±0°.04×**18°.52E**±0°.02**,h0**km**,n18,**
σ**0s.93**/32**,Czech and Slovak Republics**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
OKC	**Ostrava-Krasne**	**0.25**	**281**	*e*PG	**Pb**	**10 20 09.0**	**+1.5**
OKC				*e*SG	**Sb**	**10 20 12.7**	**+1.9**
	comp=Z,46nm,0.4s						
OKC	**Ostrava-Krasne**	**0.25**	**281**	Pg	**Pb**	**10 20 09.0**	**+1.5**
MORC	**Moravsky Berou**	**0.64**	**269**	*e*Pg	**Pb**	**10 20 16.1**	**-0.7**
MORC				*e*Sg	**Sg**	**10 20 24.1**	**+0.9**
	38nm,0.4s						
LANS	**Liptovska Anna**	**0.89**	**136**	*e*PG	**Pb**	**10 20 20.6**	**-0.5**
LANS				*e*SG	**Sb**	**10 20 33.2**	**-0.3**
OJC	**Ojcow**	**0.93**	**62**	*e*Pg	**Pg**	**10 20 20.2**	**-0.4**
OJC				*e*Sg	**Sg**	**10 20 32.4**	**-0.2**
OJC	**Ojcow**	**0.93**	**62**	*e*Pg	**Pg**	**10 20 20.2**	**-0.4**
OJC				*e*Sg	**Sg**	**10 20 32.4**	**-0.2**
JAVC	**Velka Javorina**	**1.09**	**211**	*e*Sg	**Sn**	**10 20 42.6**	**+1.5**
	27nm,0.6s						
NIE	**Niedzica**	**1.21**	**107**	*e*Pg	**Pn**	**10 20 26.7**	**-0.3**
NIE				*e*Sg	**Sn**	**10 20 45.1**	**+0.9**
VYHS	**Vyhne**	**1.31**	**171**	*e*PN	**Pn**	**10 20 28.4**	**0.0**
VYHS				*e*SN	**Sn**	**10 20 46.6**	**0.0**
VYHS				*e*LG	Lg	10 20 48.0	
VRAC	**Vranov**	**1.35**	**250**	*e*Pg	**Pn**	**10 20 28.5**	**-0.3**
VRAC				*e*Sg	**Sb**	**10 20 46.7**	**0.0**
	20nm,0.3s						
DPC	**Dobruska-Polom**	**1.53**	**292**	*e*PG	**Pn**	**10 20 31.0**	**-0.3**
DPC				*e*SG	**Sn**	**10 20 51.6**	**-0.3**
	comp=Z,9.0nm,0.4s						
DPC	**Dobruska-Polom**	**1.53**	**292**	Pg	**Pn**	**10 20 31.0**	**-0.3**
DPC				Sg	**Sn**	**10 20 51.6**	**-0.3**
	9.0nm,0.4s						
KRUC	**Moravsky**	**1.57**	**243**	*e*Pg	**Pb**	**10 20 32.1**	**-0.6**
KRUC				*e*Sg	**Sg**	**10 20 53.1**	**-0.1**
	16nm,0.3s						
UPC	**Upice**	**1.77**	**295**	*e*PG	**Pb**	**10 20 35.6**	**-0.5**
UPC				*e*SG	**Sg**	**10 20 59.2**	**-0.4**
	comp=Z,7.1nm,0.4s						
STHS	**Stebnicka Huta**	**1.81**	**101**	*e*PN	**Pg**	**10 20 37.8**	**+0.4**
STHS				*e*SN	**Sg**	**10 21 02.9**	**+2.1**
STHS				*e*LG	Lg	10 21 07.4	
KECS	**Kecovo**	**1.84**	**135**	*e*PN	**Pn**	**10 20 35.3**	**-0.3**
KECS				*e*SN	**Sb**	**10 20 59.9**	**-0.8**
KECS				*e*LG	Lg	10 21 04.1	
GOPC	**GO Pecny, Ondr**	**2.42**	**274**	*e*SG	**Sg**	**10 21 18.8**	**-1.7**
PRU	**Pruhonice**	**2.58**	**276**	*e*SG	**Sg**	**10 21 24.2**	**-1.5**
	comp=Z,4.7nm,0.5s						

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*IDC **07** 10:22:35.8±2.2, 36°.39N×141°.68E, h0km, mb3.6/5, mb1 3.6/7, mb1mx3.4/57, mbtmp3.6/7, ML3.2/2, Error ellipse: s-maj=51.7km s-min=22.0km az=77.0*
ISC 07 10:22:40.2±1.5**,36°.42N**±0°.10×**141°.5E**±0°.1**,h26**km**,n8,**
σ**0s.80**/10**,mb3.5**/5**,Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
MJAR	**Matsushiro Arr**	**2.69**	**274**	Pn	**Pn**	**10 23 20.9**	**-0.9**
	2.8nm,0.3s,baz=89,slow=9.5,SNR=26						
MAT	**Matsushiro**	**2.69**	**274**	P	**Pn**	**10 23 23.0**	**+1.2**
MAT				S	**Sb**	**10 23 59.7**	**-0.5**
JHJ	**Hachijo jima 2**	**3.59**	**204**	Pn	**Pn**	**10 23 34.5**	**+0.2**
	6.5nm,0.3s,baz=229,slow=19,SNR=6.2						
JHJ				Sn	**Sn**	**10 24 16.4**	**+0.5**
	12nm,0.3s,baz=274,slow=19,SNR=3.3						
SONM	**Songino Array**	**28.22**	**305**	P	**P**	**10 28 30.9**	**0.0**
	0.8nm,0.7s,baz=106,slow=9.4,SNR=3.8						
ZALV	**Zalesovo Beam**	**42.41**	**313**	P	**P**	**10 30 32.6**	**+0.3**
	0.5nm,0.4s,baz=81,slow=9.1,SNR=3.6						
MKAR	**Makanchi Array**	**44.53**	**303**	P	**P**	**10 30 50.6**	**+1.0**
	0.2nm,0.2s,baz=82,slow=10,SNR=3.1						
KURBB	**Kurchatov Arra**	**46.46**	**308**	P	**P**	**10 31 04.7**	**-0.1**
	0.5nm,0.6s,baz=83,slow=7.7,SNR=7.3						
WRA	**Warramunga Arr**	**56.47**	**188**	P	**P**	**10 32 19.1**	**-0.9**
	0.3nm,0.8s,baz=5.6,slow=7.4,SNR=3.3						

KRSC 07 10:27:21.0±1.4**,50°.72N**×**158°.64E,h51**km±22km**,ML3.7,**
East of Kuril Islands

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
SKR	**Severo-Kuril's**	**1.60**	**270**	*e*P	Pn	10 27 48.4	+1.5
SKR				*e*S	Sn	10 28 06.9	+0.5
RUS	**Russkaya**	**1.72**	**357**	*e*P	Pn	10 27 50.5	+2.0
RUS				*e*S	Sn	10 28 11.2	+1.9
ASAK	**Asacha**	**1.73**	**345**	*e*P	Pn	10 27 51.2	+2.5
ASAK				*e*S	Sn	10 28 12.2	+2.5
MTVR	**Mutnovka**	**1.79**	**351**	*e*P	Pn	10 27 52.0	+2.4
MTVR				*e*S	Sn	10 28 12.9	+1.6
KRMR	**Karymshinskiy**	**2.14**	**352**	*e*P	Pn	10 27 57.5	+3.3
KRMR				*e*S	Sn	10 28 23.7	+4.1
DALK	**Dalny**	**2.32**	**2**	*e*P	Pn	10 27 59.4	+2.7
DALK				*e*S	Sn	10 28 26.4	+2.4
APC	**Apacha**	**2.40**	**338**	*e*P	Pn	10 28 00.6	+2.9
UGLR	**Uglovaya**	**2.50**	**3**	*e*P	Pn	10 28 02.5	+3.2
SPN	**Mys Shipunski**	**2.54**	**19**	*e*P	Pn	10 28 02.6	+3.0
SPN				*e*S	Sn	10 28 31.9	+2.6
SMAR	**Somma**	**2.55**	**2**	*e*P	Pn	10 28 03.4	+3.3
AVH	**Avacha**	**2.55**	**1**	*e*P	Pn	10 28 03.7	+3.7
SDLR	**Sedlovina**	**2.57**	**3**	*e*P	Pn	10 28 02.7	+2.5
GNL	**Ganaly**	**3.02**	**352**	*e*P	Pn	10 28 09.8	+3.5
MKZ	**Mys Kozlova**	**4.28**	**25**	*e*P	Pn	10 28 26.2	+2.7
KMNR	**Kamenistaya**	**5.14**	**10**	*e*P	Pn	10 28 40.6	+5.2
KBTR	**Krutoberegovo**	**6.04**	**23**	*e*P	Pn	10 28 51.3	+3.7

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*ISCJB **07** 10:31:20.7±0.3, 25°.31N±0°.06×124°.69E±0°.04, h107km±4km, mb4.0/12, Error ellipse: s-maj=11.6km s-min=3.5km az=149.7*
*IDC **07** 10:31:20.5±3.4, 25°.34N×124°.64E, h86km±33km, mb3.7/12, mb1 3.8/13, mb1mx3.5/53, mbtmp4.1/13, Error ellipse: s-maj=25.8km s-min=14.7km az=65.0*
*JMA **07** 10:31:22.8±0.1, 25°.25N×124°.63E, h97km±3km, M3.7*
ISC 07 10:31:21.8±0.8**,25°.33N**±0°.08×**124°.67E**±0°.05**,h102**km±8km**,**
n36,σ**1s.09**/58**,mb4.0**/12**,Northeast of Taiwan**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
JIKM	**Ikemajima**	**0.66**	**128**	P	**Pn**	**10 31 39.6**	**+0.5**
JIKM				S	**Sn**	**10 31 52.1**	**+0.1**
JIRB	**Irabujima**	**0.68**	**138**	P	**Pn**	**10 31 39.3**	**+0.1**
JIRB				S	**Sn**	**10 31 51.5**	**-0.7**
JTJ	**Tarama**	**0.69**	**178**	P	**Pn**	**10 31 39.3**	**0.0**
JTJ				S	**Sn**	**10 31 51.8**	**-0.6**
JMJ	**Miyako jima 2**	**0.77**	**132**	P	**Pn**	**10 31 40.4**	**+0.4**
JMJ				S	**Sn**	**10 31 53.3**	**-0.3**
JISG	**Ishigakijimahi**	**0.81**	**204**	P	**Pn**	**10 31 40.3**	**-0.1**
JISG				S	**Sn**	**10 31 53.2**	**-1.2**
JOGS	**Gusukube**	**0.88**	**130**	P	**Pn**	**10 31 41.7**	**+0.6**
JOGS				S	**Sn**	**10 31 55.8**	**+0.2**
JIJ	**Ishigaki jima**	**1.08**	**207**	P	**Pn**	**10 31 42.7**	**-0.5**
JIJ				S	**Sn**	**10 31 57.2**	**-2.1**
JKRS	**Kuro-shima**	**1.24**	**209**	P	**Pn**	**10 31 44.8**	**-0.3**
JKRS				S	**Sn**	**10 32 00.8**	**-1.9**
IRIF	**Iriomote-Funau**	**1.31**	**221**	P	**Pn**	**10 31 45.6**	**-0.3**
IRIF				S	**Sn**	**10 32 02.7**	**-1.3**
HATJ	**Hateruma jima**	**1.49**	**212**	P	**Pn**	**10 31 47.9**	**-0.2**
HATJ				S	**Sn**	**10 32 06.7**	**-1.3**
YOJ	**Yonaguni jima**	**1.74**	**240**	P	**Pn**	**10 31 51.5**	**+0.4**
YOJ				S	**Sn**	**10 32 14.2**	**+0.8**
JYNG	**Yonagunijimaku**	**1.79**	**241**	P	**Pn**	**10 31 52.2**	**+0.4**
JYNG				S	**Sn**	**10 32 15.0**	**+0.3**
JKE	**Kume jima 2**	**2.15**	**62**	P	**Pn**	**10 31 57.4**	**+1.0**
JKE				S	**Sn**	**10 32 23.9**	**+1.1**
JAGN	**Aguni-jima**	**2.63**	**61**	P	**Pn**	**10 32 03.7**	**+1.0**
JAGN				S	**Sn**	**10 32 34.8**	**+0.6**
JJT2	**Tamagusuku 2**	**2.89**	**73**	P	**Pn**	**10 32 07.7**	**+1.5**
JJT2				S	**Sn**	**10 32 40.9**	**+0.6**
JNTH	**Nagotoyohara**	**3.24**	**68**	P	**Pn**	**10 32 11.6**	**+0.8**
JNTH				S	**Sn**	**10 32 47.4**	**-1.3**
JIH	**Iheya**	**3.41**	**59**	P	**Pn**	**10 32 13.9**	**+0.8**
JIH				S	**Sn**	**10 32 51.8**	**-1.0**
JOW	**Kunigami**	**3.57**	**64**	P	**Pn**	**10 32 15.6**	**+0.3**
	16nm,0.3s,baz=143,slow=27,SNR=45						
JOW				S	**Sn**	**10 32 55.1**	**-1.4**
	10.0nm,0.3s,baz=126,slow=27,SNR=7.2						
JOW	**Kunigami**	**3.57**	**64**	P	**Pn**	**10 32 15.5**	**+0.3**
JOKE	**Okinoerabujima**	**4.04**	**59**	P	**Pn**	**10 32 21.3**	**-0.3**
JTK	**Tokunoshima**	**4.55**	**57**	P	**Pn**	**10 32 28.0**	**-0.4**
JTK				S	**Sn**	**10 33 17.4**	**-2.8**
JAMN	**Amaminishikomi**	**4.96**	**53**	P	**Pn**	**10 32 33.2**	**-0.8**
JAMN				S	**Sn**	**10 33 26.9**	**-3.3**
JAM	**Amami Oshima**	**5.37**	**54**	P	**Pn**	**10 32 38.7**	**-0.8**
JAM				S	**Sn**	**10 33 37.2**	**-2.9**
JMZ	**Minamidaito 2**	**5.94**	**84**	P	**Pn**	**10 32 45.9**	**-1.3**
JMZ				S	Sn	10 33 44.6	-9.3
MKAR	**Makanchi Array**	**39.78**	**314**	P	**P**	**10 38 45.3**	**+0.5**
	1.3nm,0.4s,baz=99,slow=10,SNR=17						
ZALV	**Zalesovo Beam**	**41.07**	**325**	P	**P**	**10 38 53.6**	**-1.7**
	2.5nm,0.4s,baz=119,slow=8.6,SNR=11						
KURBB	**Kurchatov Arra**	**43.33**	**318**	P	**P**	**10 39 14.0**	**+0.4**
	1.3nm,0.6s,baz=109,slow=9.2,SNR=14						
WRA	**Warramunga Arr**	**45.97**	**167**	P	**P**	**10 39 35.0**	**+0.1**
	1.7nm,0.8s,baz=349,slow=9.1,SNR=14						
BVAR	**Borovoye Array**	**48.83**	**319**	P	**P**	**10 39 57.3**	**+0.6**
	0.8nm,0.3s,baz=108,slow=8.6,SNR=7.2						
BVAR				PcP	**PcP**	**10 41 20.1**	**+0.2**
	0.7nm,0.7s,baz=180,slow=3.0,SNR=4.1						
ASAR	**Alice Springs**	**49.52**	**169**	P	**P**	**10 40 02.5**	**+0.2**
	0.9nm,0.6s,baz=355,slow=13,SNR=38						
AKTO	**Aktyubinsk**	**56.19**	**315**	P	**P**	**10 40 51.0**	**-0.1**
	0.7nm,0.4s,baz=108,slow=13,SNR=5.2						
SPITS	**Spitsbergen Ar**	**69.04**	**348**	P	**P**	**10 42 16.0**	**0.0**
	12nm,1.1s,baz=71,slow=3.6,SNR=4.4						
FINES	**FINESS Array B**	**72.05**	**330**	P	**P**	**10 42 34.7**	**+0.1**
	2.1nm,0.8s,baz=64,slow=4.4,SNR=4.8						
BRTR	**Keskin Array B**	**75.03**	**307**	P	**P**	**10 42 52.4**	**-0.2**
	0.3nm,0.4s,baz=80,slow=6.8,SNR=3.9						
NOA	**NORSAR Array B**	**78.67**	**333**	P	**P**	**10 43 12.8**	**+0.2**
	0.5nm,0.5s,baz=308,slow=6.5,SNR=2.3						
YKA	**Yellowknife Ar**	**80.67**	**24**	P	**P**	**10 43 24.5**	**+1.3**
	0.6nm,0.6s,baz=302,slow=5.3,SNR=14						

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*BKK **07** 10:34:30.6±1.5, 23°N±23°×9°4E±1°9, h216km±38km, M4.4/4, mB4.7/4, mb4.5/4, MLv4.5/3, Mw(mB)3.9/4*
*ISCJB **07** 10:34:38.5±0.5, 22°.08N±0°.05×94°.61E±0°.05, h113km±6km, mb4.0/23, Error ellipse: s-maj=10.5km s-min=4.4km az=135.2*
*IDC **07** 10:34:40.6±0.7, 22°.14N×94°.85E, h118km±5km, mb3.7/18, mb1 3.8/20, mb1mx3.6/51, mbtmp4.0/20, MS4.3/2, Ms1 4.4/2, ms1mx2.9/61, Error ellipse: s-maj=25.2km s-min=9.6km az=60.0*
*NEIC **07** 10:34:40.6±0.4, 22°.09N×94°.81E, h119km±4km, mb4.2/4, Error ellipse: s-maj=11.2km s-min=5.5km az=52.0*
ISC 07 10:34:40.7±0.6**,22°.06N**±0°.07×**94°.50E**±0°.06**,h120**km±5km**,**
h120km**:pP-P,n61,**σ**2s.12**/83**,mb3.9**/23**,3C-1D,Myanmar**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
SHL	**Shillong**	**4.23**	**326**	*i* P	**Pn**	**10 35 46.0**	**+2.5**
SHL				*i* S	**Sn**	**10 36 31.0**	**-1.2**
CMAI	**Chiengmai2**	**4.75**	**116**	P	**Pn**	**10 35 47.8**	**-2.6**
	66nm,0.8s,1µm0.4nm						
CMAI				S	**Sn**	**10 36 48.6**	**+4.0**
	66nm,0.8s,1µm0.4nm						
MHMT	**Maesarieng**	**5.04**	**140**	P	**Pn**	**10 35 52.1**	**-2.1**
	78nm,0.8s,1µm0.4nm						
CHTO	**Chiang Mai**	**5.28**	**127**	P	**Pn**	**10 35 56.0**	**-1.4**
CHTO	**Chiang Mai**	**5.28**	**127**	*e*Pn	**Pn**	**10 35 54.5**	**-3.0**
	30nm,0.7s						
CMMT	**Chiang Mai**	**5.28**	**127**	P	**Pn**	**10 35 55.7**	**-1.8**
	45nm,0.7s,759nm0.3nm						
CMMT				S	Sn	10 37 04.3	+7.1
	45nm,0.7s,759nm0.3nm						
CMAR	**Chiang Mai Arr**	**5.50**	**130**	P	**Pn**	**10 35 57.7**	**-2.8**
	1.9nm,0.3s,baz=306,slow=15,SNR=37						
UMPA	**Umpang Tak**	**7.14**	**144**	P	**Pn**	**10 36 22.9**	**+0.3**
ODAN	**Odare**	**8.04**	**308**	*e*Pn	**Pn**	**10 36 35.7**	**+0.7**
ODAN				*e*Sn	**Sn**	**10 38 02.1**	**-2.4**
	722nm,0.6s						
TAPN	**Taplejung**	**8.11**	**312**	*e*Pn	**Pn**	**10 36 36.1**	**+0.2**
TAPN				*e*Sn	**Sn**	**10 38 03.6**	**-2.5**
	707nm,0.6s						
BOK	**Bokaro**	**8.12**	**284**	*e*P	**Pn**	**10 36 37.4**	**+1.5**
BOK				*e*S	**Sn**	**10 38 01.2**	**-4.8**
BOK				IAML		10 38 06.3	
	comp=N,250nm,0.4s						
BOK				IAML		10 38 07.3	
	comp=E,260nm,0.3s						
LSA	**Lhasa**	**8.18**	**339**	*e*Pn	**Pn**	**10 36 37.8**	**+0.8**
	comp=E,61nm,0.6s						
PBKT	**Sadao Pong**	**8.20**	**131**	P	Pn	10 36 32.3	-4.5
RAMN	**Ramite**	**8.68**	**306**	*e*Pn	**Pn**	**10 36 43.9**	**+0.3**
RAMN				*e*Sn	**Sn**	**10 38 15.5**	**-4.4**
	comp=E,420nm,0.5s						
DGPR	**DIGLIPUR**	**8.96**	**190**	*e*P	**Pn**	**10 36 45.6**	**-1.6**
GUN	**Gumba**	**9.74**	**308**	*e*Pn	**Pn**	**10 36 57.9**	**-0.1**
GUN				*e*Sn	**Sn**	**10 38 41.7**	**-4.1**
	comp=E,361nm,0.4s						
PKIN	**Phulchoki**	**9.92**	**305**	*e*Pn	**Pn**	**10 37 00.6**	**+0.2**
PKIN				*e*Sn	**Sn**	**10 38 45.9**	**-4.1**
	comp=E,153nm,0.5s						
KKN	**Kakani**	**10.12**	**306**	*e*Pn	**Pn**	**10 37 03.0**	**0.0**
KKN				*e*Sn	**Sn**	**10 38 51.7**	**-3.1**
	comp=E,293nm,0.6s						
DMN	**Daman**	**10.16**	**305**	*e*Pn	**Pn**	**10 37 04.1**	**+0.6**
DMN				*e*Sn	**Sn**	**10 38 50.9**	**-4.8**
	comp=E,199nm,0.5s						
PBA	**Port Blair**	**10.48**	**189**	*e*P	Pn	10 37 07.1	-0.7
PBA				IAmb	IAmb	10 37 08.3	
	comp=Z,101nm,0.4s						
GKN	**Gorkha**	**10.72**	**305**	*e*Pn	**Pn**	**10 37 10.9**	**-0.1**
GKN				*e*Sn	**Sn**	**10 39 05.1**	**-4.0**
	comp=Z,252nm,0.5s						
VIS	**Vishakhapatnam**	**11.36**	**250**	*e*P	**Pn**	**10 37 19.9**	**+0.4**
VIS				*e*S	Sn	10 39 14.2	-10
VIS				IAML		10 39 17.7	
	comp=N,39nm,0.1s						
VIS				IAML		10 39 18.8	
	comp=E,29nm,0.3s						
KOLN	**Koldanda**	**11.40**	**302**	*e*Pn	**Pn**	**10 37 19.5**	**-0.7**
KOLN				*e*Sn	**Sn**	**10 39 20.4**	**-5.4**
	comp=E,242nm,0.5s						
PYUN	**Piuthan**	**12.03**	**302**	*e*Pn	**Pn**	**10 37 27.6**	**-0.9**
PYUN				*e*Sn	**Sn**	**10 39 36.2**	**-4.9**
	comp=E,160nm,0.5s						
ENH	**Enshi**	**15.73**	**56**	*e*Pn	**Pn**	**10 38 13.1**	**-2.6**
	comp=E,6.7nm,0.6s						
BHPL	**Bhopal**	**15.81**	**278**	*e*P	**P**	**10 38 20.7**	**+2.7**
NDI	**New Delhi**	**16.94**	**296**	*e*P	**P**	**10 38 34.3**	**+3.8**
NDI				*e*x	x	10 41 24.7	
SMLA	**Simla**	**17.92**	**304**	*e*P	**Pn**	**10 38 42.9**	**+0.7**
SMLA				IAmb	IAmb	10 38 46.4	
	comp=Z,18nm,1.1s						
SMLA				*e*x	x	10 41 51.2	
DHRM	**DHARAMSHALA**	**19.08**	**306**	*e*P	**Pn**	**10 38 56.6**	**+0.4**
DHRM				*e*x	x	10 42 20.0	
PSI	**Prapat**	**19.62**	**167**	P	**Pn**	**10 39 01.9**	**-0.7**
	comp=Z,0.7nm,0.3s,baz=340,slow=11,SNR=5.1						
TKM2	**Tokmak 2**	**26.09**	**327**	*e*P	**P**	**10 40 05.4**	**+2.0**
	comp=Z,5.9nm,1.1s						

Code	Station Name	Δ°	AZ°	Op	ISC	Time	Res
AAK	Ala-Archa	26.45	325	P	P	10 40 09.7	+3.2
	comp=Z,1.0nm,0.6s,baz=150,slow=2.7,SNR=5.2						
MK31	Makanchi Array	26.58	341	⇑P	P	10 40 08.4	+0.8
	comp=Z,0.5nm,0.3s,baz=144,slow=11,SNR=19						
MK31				S	pP	10 40 32.5	-0.9
	comp=Z,2.5nm,0.7s,baz=137,slow=12,SNR=4.1						
MKAR	Makanchi Array	26.58	341	P	P	10 40 09.3	+1.8
	comp=Z,2.6nm,0.8s,baz=148,slow=10,SNR=11						
MKAR				pP	pP	10 40 32.4	-1.0
	comp=Z,2.1nm,0.7s,baz=131,slow=13,SNR=4.4						
KURBB	Kurchatov Arra	31.13	340	P	P	10 40 49.2	+1.5
	comp=Z,0.8nm,0.5s,baz=149,slow=8.6,SNR=9.6						
KURBB				pP	pP	10 41 15.3	+1.3
	comp=Z,2.6nm,0.8s,baz=152,slow=8.3,SNR=6.8						
KURBB				PcP	PcP	10 43 40.3	+0.2
	comp=Z,1.3nm,0.7s,baz=163,slow=2.0,SNR=11						
KURK	Kurchatov	31.18	340	P	P	10 40 49.2	+1.0
KURK				pP	pP	10 41 15.3	+0.8
KURK				PcP	PcP	10 43 40.3	+0.1
ZALV	Zalesovo Beam	32.67	349	P	P	10 41 01.6	+0.4
	comp=Z,1.7nm,0.5s,baz=165,slow=7.7,SNR=9.1						
ZALV				S	S	10 46 08.5	+0.1
	comp=Z,0.5nm,0.4s,baz=156,slow=15,SNR=4.1						
BVAR	Borovoye Array	35.99	335	P	P	10 41 30.9	+1.0
	comp=Z,0.7nm,0.4s,baz=138,slow=7.9,SNR=5.2						
BVAR				PcP	PcP	10 43 54.2	+0.4
	comp=Z,1.5nm,0.7s,baz=148,slow=3.3,SNR=5.3						
AB31	Akbulak array	38.49	323	Pn	P	10 41 52.6	+1.6
	comp=Z,0.2nm,0.3s,baz=115,slow=8.4,SNR=9.6						
AB31				⇑Sn	pP	10 42 21.1	+3.2
	comp=Z,2.5nm,0.7s,baz=111,slow=11,SNR=5.3						
ABKAR	Akbulak array	38.49	323	eP	P	10 41 52.9	+1.9
	comp=Z,2.8nm,0.6s						
AKTO	Aktyubinsk	40.17	324	P	P	10 42 07.0	+2.0
	comp=Z,1.1nm,0.5s,baz=118,slow=9.4,SNR=5.4						
AKTO				pP	pP	10 42 32.7	+0.6
	comp=Z,1.8nm,0.6s,baz=113,slow=8.1,SNR=3.9						
AKTO	Aktyubinsk	40.17	324	⇑Pn	P	10 42 05.3	+0.3
	comp=Z,1.2nm,0.8s						
AKTO				⇓Sn	pP	10 42 31.0	-1.1
	comp=Z,1.1nm,0.6s						
YAK	Yakutsk	46.62	22	LR	LR	11 03 13.6	
	comp=Z,700nm,21.6s,baz=90,slow=37						
BRTR	Keskin Array B	54.12	304	pP	pP	10 44 23.3	+1.3
	comp=Z,0.7nm,0.7s,baz=70,slow=11,SNR=3.3						
WRA	Warramunga Arr	57.08	134	P	P	10 44 13.6	-1.1
	comp=Z,4.9nm,0.7s,baz=322,slow=7.5,SNR=38						
AKASG	Malin Array Be	57.66	317	P	P	10 44 18.3	0.0
	comp=Z,0.4nm,0.4s,baz=83,slow=6.3,SNR=4.4						
AKASG				pP	pP	10 44 47.4	+0.2
	comp=Z,2.6nm,0.6s,baz=82,slow=6.4,SNR=5.6						
ASAR	Alice Springs	59.46	137	P	P	10 44 30.5	-0.7
	comp=Z,2.3nm,0.6s,baz=322,slow=7.0,SNR=41						
KMBO	Kilima Mbogo	60.36	255	P	P	10 44 39.7	+1.8
	comp=Z,1.2nm,0.7s,baz=42,slow=8.1,SNR=3.7						
FINES	FINESS Array B	60.56	329	P	P	10 44 38.3	+0.2
	comp=Z,2.8nm,1.0s,baz=139,slow=6.8,SNR=3.0						
FINES				pP	pP	10 45 07.7	+0.4
	comp=Z,3.3nm,0.9s,baz=113,slow=5.0,SNR=2.7						
ARCES	ARCESS Array B	62.19	338	P	P	10 44 49.0	-0.1
	comp=Z,1.9nm,0.8s,baz=28,slow=5.5,SNR=4.7						
NOA	NORSAR Array B	67.72	329	P	P	10 45 24.8	-0.2
	comp=Z,1.2nm,0.7s,baz=56,slow=7.5,SNR=3.6						
GERES	GERESS Array B	67.77	315	P	P	10 45 26.3	+0.8
	comp=Z,0.9nm,0.6s,baz=103,slow=4.2,SNR=4.6						
GERES				pP	pP	10 45 56.0	+0.8
	comp=Z,1.5nm,0.7s,baz=80,slow=9.6,SNR=4.2						
STKA	Stephens Creek	70.06	138	P	P	10 45 38.6	-1.2
	comp=Z,1.2nm,0.7s,baz=336,slow=10.0,SNR=3.3						
HNR	Honiara	71.37	109	eP	P	10 45 46.4	-1.7
	comp=Z,322nm,0.6s						
ILAR	Eielson Array	81.55	22	P	P	10 46 42.6	-2.0
	comp=Z,0.7nm,0.7s,baz=302,slow=4.8,SNR=7.7						
ILAR				LR	LR	11 28 28.6	
	comp=Z,92nm,18.4s,baz=276,slow=40						
BOSA	Boshof	83.62	236	pP	pP	10 47 27.4	+0.5
	comp=Z,3.1nm,0.7s,baz=100,slow=7.0,SNR=2.3						
TORD	Torodi Ar. Bea	87.69	283	P	P	10 47 17.9	+1.4
	comp=Z,1.5nm,0.9s,baz=72,slow=4.3,SNR=5.5						
YKA	Yellowknife Ar	92.61	13	P	P	10 47 37.1	-1.3
	comp=Z,0.1nm,0.7s,baz=323,slow=4.0,SNR=3.5						
BDFB	Brasilia	144.02	274	PKP	PKPdf	10 54 03.4	+0.3
	comp=Z,1.8nm,0.5s,baz=116,slow=5.1,SNR=4.3						
SDV	Santo Domingo	145.96	333	ePKPdf	PKPdf	10 54 06.8	+0.3
ROSC	El Rosal	151.11	336	PKPbc	PKPbc	10 54 22.5	+1.4
	comp=Z,12nm,0.8s,baz=173,slow=4.8,SNR=6.4						

*ISCJB **07** 10:40:28.0±1.2, 24°.2S±0°.2×179°.5W±0°.2, h512km, mb4.0/4, Error ellipse: s-maj=33.4km s-min=17.2km az=136.7*
*IDC **07** 10:40:27.5±2.5, 24°.21S×179°.62W, h476km±29km, mb3.5/5, mb1 3.6/6, mb1mx3.2/30, mbtmp4.4/6, Error ellipse: s-maj=34.2km s-min=29.1km az=81.0*
ISC 07 10:40:29.3±1.4**, 24°.2S**±0°.2×**179°.5W**±0°.2**, h512**km**, n6, σ2^{s}19**/7**, mb3.9**/4**, South of Fiji Islands**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
AFI	Afiamalu	12.54	37	P	P	10 43 13.4	-0.3
	3.2nm,0.3s,baz=20,slow=14,SNR=6.6						
AFI				S	S	10 45 20.2	-9.0
	1.1nm,0.3s,baz=354,slow=19,SNR=2.7						
RPZ	Rata Peaks	20.99	199	P	P	10 44 35.5	-0.6
	23nm,1.1s,baz=0.0,slow=16,SNR=3.7						
CTA	Charters Tower	31.93	270	P	P	10 46 12.6	-0.1
	3.8nm,0.3s,baz=93,slow=10,SNR=12						
STKA	Stephens Creek	35.04	248	P	P	10 46 38.6	-0.2
	0.7nm,0.4s,baz=79,slow=10,SNR=4.1						
ASAR	Alice Springs	42.44	261	P	P	10 47 38.9	-0.1
	2.0nm,0.7s,baz=100,slow=7.0,SNR=33						
ASAR				ScP	ScP	10 52 26.5	+4.2
	0.9nm,0.9s,baz=111,slow=4.5,SNR=6.1						
WRA	Warramunga Arr	42.84	266	P	P	10 47 41.2	-0.9
	2.4nm,0.3s,baz=103,slow=8.2,SNR=5.3						

*KRSC **07** 10:43:14.5±0.6, 55°.06N×161°.82E, h70km±12km, ML4.1*
*MOS **07** 10:43:16.2±0.5, 55°.06N×161°.83E, h44km, mb4.3/1, Error ellipse: s-maj=11.7km s-min=5.8km az=82.9*
ISC 07 10:43:17.0±1.6**, 55°.09N**±0°.02×**161°.82E**±0°.03**, h35**km±7km**, n64, σ0^{s}82**/121**, Near east coast of Kamchatka Peninsula**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
MKZ	Mys Kozlova	0.54	185	eP	Pn	10 43 28.8	+0.6
MKZ				eS	Sn	10 43 38.6	+2.5
MKZ	Mys Kozlova	0.54	185	PN	Pn	10 43 28.8	+0.6
MKZ				S	Sn	10 43 38.6	+2.5
TUMD	Tumrok D	0.82	278	eP	Pn	10 43 31.6	-0.5
TUMD				eS	Sb	10 43 44.4	+0.6
KZV	Kizimen	0.88	272	eP	Pn	10 43 32.5	-0.5
KZV				eS	Sn	10 43 44.7	+0.1
TUMR	Tumrok	0.98	282	eP	Pn	10 43 34.2	-0.2
TUMR				eS	Sb	10 43 48.3	0.0
TUMR	Tumrok	0.98	282	PN	Pn	10 43 34.2	-0.2
TUMR				S	Sb	10 43 48.3	0.0
ZLN	Zelenaya	1.09	328	eP	Pn	10 43 36.3	+0.4
ZLN				eS	Sb	10 43 51.8	+0.3
ZLN	Zelenaya	1.09	328	PN	Pn	10 43 36.3	+0.4
ZLN				S	Sb	10 43 51.8	+0.3
KMNR	Kamenistaya	1.12	307	eP	Pn	10 43 36.3	0.0
KMNR				eS	Sb	10 43 51.8	-0.5
KMNR	Kamenistaya	1.12	307	PN	Pn	10 43 36.3	0.0
KMNR				S	Sb	10 43 51.8	-0.5
BZMR	Bezymyannaya	1.13	319	eP	Pn	10 43 36.1	-0.4
BZMR				eS	Sb	10 43 52.7	0.0
LGNR	Loginova	1.18	328	eP	Pn	10 43 37.8	+0.5
LGNR				eS	Sb	10 43 54.0	-0.2
LGNR	Loginova	1.18	328	PN	Pn	10 43 37.8	+0.5
LGNR				S	Sb	10 43 54.0	-0.2
CIRR	Tsirk	1.19	330	eP	Pn	10 43 37.6	+0.3
CIRR				eS	Sb	10 43 53.7	-0.7
CIRR	Tsirk	1.19	330	PN	Pn	10 43 37.6	+0.3
CIRR				S	Sb	10 43 53.7	-0.7
KBTR	Krutoberegovo	1.25	27	eP	Pn	10 43 38.7	+0.7
KBTR				eS	Sb	10 43 56.5	+0.5
KBTR	Krutoberegovo	1.25	27	PN	Pn	10 43 38.7	+0.7
KBTR				S	Sb	10 43 56.5	+0.5
KPT	Kopyto	1.26	315	eP	Pn	10 43 38.2	0.0
KPT				eS	Sn	10 43 55.2	+1.2
KPT	Kopyto	1.26	315	PN	Pn	10 43 38.2	0.0
KPT				S	Sn	10 43 55.2	+1.2
KRSR	Krestovskiy	1.33	328	eP	Pn	10 43 38.9	-0.3
KRSR				eS	Sn	10 43 55.9	+0.1
KRSR	Krestovskiy	1.33	328	PN	Pn	10 43 38.9	-0.3
KRSR				S	Sn	10 43 55.9	+0.1
KLY	Klyuchi	1.39	332	eP	Pn	10 43 39.3	-0.6
KLY				eS	Sn	10 43 56.6	-0.4
KOZ	Kozyrevsk	1.47	312	eP	Pn	10 43 41.1	+0.1
KOZ				eS	Sn	10 44 00.2	+1.2
KOZ	Kozyrevsk	1.47	312	PN	Pn	10 43 41.1	+0.1
KOZ				S	Sn	10 44 00.2	+1.2
SMKR	Semkarok	1.50	353	eP	Pn	10 43 42.0	+0.4
SMKR				eS	Sb	10 44 02.2	-1.0
SMKR	Semkarok	1.50	353	PN	Pn	10 43 42.0	+0.4
SMKR				S	Sb	10 44 02.2	-1.0
BDR	Baidarnaya	1.52	347	eP	Pn	10 43 42.5	+0.7
BDR				eS	Sb	10 44 02.6	-1.0
SRKR	Sorokina	1.61	347	eP	Pn	10 43 43.4	+0.4
SRKR				eS	Sn	10 44 03.9	+1.4
SRKR	Sorokina	1.61	347	PN	Pn	10 43 43.4	+0.4
SRKR				S	Sn	10 44 03.9	+1.4
KII	Karymskiy	1.74	233	eP	Pn	10 43 44.5	-0.3
KII				eS	Sn	10 44 05.7	-0.1
KII	Karymskiy	1.74	233	PN	Pn	10 43 44.5	-0.3
KII				S	Sn	10 44 05.7	-0.1
ESO	Esso	1.96	296	eP	Pn	10 43 46.8	-1.0
ESO				eS	Sn	10 44 09.6	-1.5
ESO	Esso	1.96	296	PN	Pn	10 43 46.8	-1.0
ESO				S	Sn	10 44 09.6	-1.5
SPN	Mys Shipunski	2.26	209	eP	Pn	10 43 50.8	-1.1
SPN				eS	Sn	10 44 16.7	-1.9
SPN	Mys Shipunski	2.26	209	PN	Pn	10 43 50.8	-1.1
SPN				S	Sn	10 44 16.7	-1.9
BKI	Bering	2.39	86	eP	Pn	10 43 53.4	-0.2
BKI				eS	Sn	10 44 19.6	-2.0
BKI	Bering	2.39	86	PN	Pn	10 43 53.4	-0.2
BKI				S	Sn	10 44 19.6	-2.0
NLC	Nalytchevo	2.42	218	eP	Pn	10 43 53.6	-0.4
NLC				eS	Sn	10 44 21.4	-0.9
NLC	Nalytchevo	2.42	218	PN	Pn	10 43 53.6	-0.4
NLC				S	Sn	10 44 21.4	-0.9
SDLR	Sedlovina	2.51	225	eP	Pn	10 43 55.2	-0.2
SDLR				eS	Sn	10 44 24.7	-0.1
SDLR	Sedlovina	2.51	225	PN	Pn	10 43 55.2	-0.2
SDLR				S	Sn	10 44 24.7	-0.1
KRX	Arik	2.55	228	eP	Pn	10 43 56.0	0.0
KRX				eS	Sn	10 44 25.9	+0.1
SMAR	Somma	2.55	225	eP	Pn	10 43 56.0	-0.1
SMAR				eS	Sn	10 44 25.3	-0.7
SMAR	Somma	2.55	225	PN	Pn	10 43 56.0	-0.1
SMAR				S	Sn	10 44 25.3	-0.7
AVH	Avacha	2.58	226	eP	Pn	10 43 56.5	+0.2
AVH				eS	Sn	10 44 25.8	-0.6
AVH	Avacha	2.58	226	PN	Pn	10 43 56.5	+0.2
AVH				S	Sn	10 44 25.8	-0.6
UGLR	Uglovaya	2.58	224	eP	Pn	10 43 56.4	0.0
UGLR				eS	Sn	10 44 26.8	+0.2
KOK	Koryaka	2.60	227	eP	Pn	10 43 57.3	+0.7
KOK				eS	Sn	10 44 28.4	+1.4
KOK	Koryaka	2.60	227	PN	Pn	10 43 57.3	+0.7
KOK				S	Sn	10 44 28.4	+1.4
GNL	Ganaly	2.67	240	eP	Pn	10 43 57.7	+0.1
GNL	Ganaly	2.67	240	PN	Pn	10 43 57.7	+0.1
DALK	Dalny	2.75	222	eP	Pn	10 43 58.4	-0.1
DALK				eS	Sn	10 44 29.3	-1.1
PET	Petropavlovsk	2.79	223	eP	Pn	10 43 59.1	0.0
PET				eS	Sn	10 44 31.6	+0.1
PET	Petropavlovsk	2.79	223	ePN	Pn	10 43 59.3	+0.2
PET				eS	Sn	10 44 31.3	-0.2
PET				pmax	pmax		
	comp=Z,197nm,0.4s						
PET				smax	smax		
	comp=N,414nm,0.5s						
PET				smax	smax		
	comp=E,301nm,0.6s						
KRMR	Karymshinskiy	3.15	225	eP	Pn	10 44 04.4	+0.4
KRMR				eS	Sn	10 44 40.9	+0.6
RUS	Russkaya	3.31	218	eP	Pn	10 44 05.8	-0.5
RUS				eS	Sn	10 44 44.1	-0.3
RUS	Russkaya	3.31	218	PN	Pn	10 44 05.8	-0.5
RUS				S	Sn	10 44 44.1	-0.3
MTVR	Mutnovka	3.39	221	eP	Pn	10 44 08.3	+0.8
MTVR				eS	Sn	10 44 46.7	+0.1
ASAK	Asacha	3.58	222	eP	Pn	10 44 11.0	+0.9
ASAK				eS	Sn	10 44 51.3	+0.2
OSSR	Ossora	4.22	9	eP	Pn	10 44 18.8	0.0
PAU	Pauzhetka	4.71	222	eP	Pn	10 44 26.9	+1.3
PAU	Pauzhetka	4.71	222	PN	Pn	10 44 26.9	+1.3
SKR	Severo-Kuril's	5.61	220	eP	Pn	10 44 38.2	+0.4
SKR	Severo-Kuril's	5.61	220	ePN	Pn	10 44 40.0	+2.2

*NIED **07** 10:52:00, 35°.70N×140°.70E, h47km, Mw4.8 Best double couple: $M_0$1.60000×10[16] NP1:ϕ_s196.00000°, δ21.00000°, λ94.00000°. NP2:ϕ_s11.00000°, δ69.00000°, λ88.00000°.*
*BJI **07** 10:52:08.1, 35°.45N×140°.84E, h36km, mb4.6/44, mB4.9/25, Ms4.4/26, Ms7 4.2/25*
*MOS **07** 10:52:10.1±1.1, 35°.58N×140°.73E, h33km, mb4.5/32, Error ellipse: s-maj=9.5km s-min=6.1km az=110.5*
*NEIC **07** 10:52:12.5±0.3, 35°.61N×140°.61E, h35km, mb4.8/19, Error ellipse: s-maj=7.3km s-min=6.1km az=89.0*
NEIC Recorded [3 JMA] in Chiba.
*ISCJB **07** 10:52:12.9±0.4, 35°.64N±0°.03×140°.69E±0°.04, h59km±3km, mb4.4/63, MS3.9/48, Error ellipse: s-maj=5.6km s-min=4.9km az=6.7*
*JMA **07** 10:52:13.7±0.1, 35°.74N×140°.61E, h48km±1km, M3.9 Broadband fault plane solution: P waves. NP1: ϕ_s10.00000°, δ75.00000°, λ90.00000°. NP2:ϕ_s190.00000°, δ15.00000°, λ90.00000°. Principal axes: T Plg60.0000°, Azm280.0000°; N Plg0.0000°, Azm10.0000°; P Plg30.0000°, Azm100.0000°;*
JMA Felt III J1.
*IDC **07** 10:52:15.0±1.5, 35°.59N×140°.51E, h60km±15km, mb3.9/32, mb1 4.0/35, mb1mx3.9/60, mbtmp4.2/35, MS3.8/47, Ms1 3.8/47, ms1mx3.7/67 Error ellipse: s-maj=14.1km s-min=9.1km az=83.0*
ISC 07 10:52:13.3±0.7**, 35°.59N**±0°.04×**140°.73E**±0°.05**, h45**km±6km**, n170, σ1^{s}34**/153**, mb4.4**/63**, MS3.9**/48**, 5C-6D, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
CHOJ	Chosi	0.16	42	P	Pn	10 52 21.8	+1.1
JCN	Nagara	0.46	249	⇓P	Pn	10 52 25.0	+1.3
JCN				S	Sn	10 52 33.9	+2.8
BSO4	Boso 4	0.68	208	⇓P	Pn	10 52 28.3	+1.9
JYT	Yasato	0.77	326	⇓P	Pn	10 52 26.0	-1.8
BSO3	Boso 3	0.80	193	P	Pn	10 52 30.1	+2.1
JHO	Hitachi	1.03	353	⇓P	Pn	10 52 29.9	-1.4
MJAR	Matsushiro Arr	2.25	296	P	Pn	10 52 47.8	-0.3
	36nm,0.3s,baz=97,slow=12,SNR=237						
MJAR				LR	LR	10 53 47.6	
	comp=Z,3μm,19.3s,baz=120,slow=45						
MAJO	Matsushiro	2.26	296	d iP	Pn	10 52 47.6	-0.5
MAJO	Matsushiro	2.26	296	ePn	Pn	10 52 48.4	+0.3
MAT	Matsushiro	2.26	296	P	Pn	10 52 47.9	-0.2
MAT				S	Sn	10 53 16.0	+1.3
JHJ2	Mitsune	2.58	197	ePn	Pn	10 52 53.4	+0.8
JHJ	Hachijo jima 2	2.58	198	P	Pn	10 52 54.4	+1.8
	110nm,0.3s,baz=272,slow=0.5,SNR=38						
JHJ				S	Sn	10 53 23.9	+1.2
	360nm,0.3s,baz=68,slow=22,SNR=12						
JHJ				LR	LR	10 54 10.5	
	comp=Z,875nm,19.2s,baz=314,slow=46						
INU	Inuyama	3.04	267	ePn	Pn	10 52 59.5	+0.7
ERM	Erimo	6.69	16	eP	Pn	10 53 50.9	+1.9
ERM	Erimo	6.69	16	ePn	Pn	10 53 50.9	+1.9
JNU	Nakatsue	8.51	256	P	Pn	10 54 17.9	+4.0
	0.7nm,0.3s,baz=56,slow=9.7,SNR=7.5						
JNU				LR	LR	10 57 52.6	
	comp=Z,2μm,18.5s,baz=123,slow=40						
CBIJ	Chichi jima	8.55	171	P	Pn	10 54 13.9	-0.6
CBIJ				ePn	Pn	10 54 14.0	-0.5
CBIJ				S	Sn	10 55 46.4	-3.3
JCJ	Chichijima	8.56	171	P	Pn	10 54 13.9	-0.6
	32nm,0.3s,baz=316,slow=10,SNR=10						
JCJ				S	Sn	10 55 46.4	-3.3
YUK	Yuzh-Kuril'sk	9.31	23	eP	Pn	10 54 25.3	+0.5
YUK				pmax	pmax		
	comp=Z,67nm,0.4s						
YUK				pmax	pmax		
	comp=E,62nm,0.7s						
YUK				pmax	pmax		
	comp=N,38nm,0.5s						
YUK				MLR	MLR		
	comp=Z,517nm,11.0s						
SHO	Shikotan	9.51	28	eP	Pn	10 54 27.4	-0.1
SHO				pmax	pmax		
	comp=Z,19nm,0.9s						
SHO				pmax	pmax		
	comp=N,21nm,0.8s						
SHO				pmax	pmax		
	comp=E,25nm,0.9s						
KSRS	Korea Array	10.47	284	P	Pn	10 54 43.5	+2.7
	comp=E,0.3nm,0.3s,baz=100,slow=13,SNR=27						
KSRS				LR	LR	10 58 45.0	
	comp=E,844nm,19.2s,baz=110,slow=38						
KS01	Wonju Array Si	10.50	284	ePn	Pn	10 54 46.3	+5.2
KS15	Wonju Array Si	10.50	284	ePn	Pn	10 54 44.9	+3.7
KSAR	Wonju Array Be	10.50	284	P	Pn	10 54 43.5	+2.3
KSAR	Wonju Array Be	10.50	284	P	Pn	10 54 43.5	+2.3
USRK	Ussuriysk Ar.	10.91	325	P	Pn	10 54 47.8	+1.2
	comp=E,0.2nm,0.3s,baz=140,slow=14,SNR=6.4						
USRK				LR	LR	10 58 38.7	
	comp=E,494nm,19.6s,baz=134,slow=36						
KUR	Kuril'sk	11.06	27	eP	Pn	10 54 48.4	-0.3
KUR				pmax	pmax		
	comp=Z,10.0nm,0.8s						
YSS	Yuzh-Sakhalins	11.46	7	eP	Pn	10 54 46.6	-7.6
YSS				pmax	pmax		
	comp=Z,20nm,1.0s						
CN2	Changchun	14.33	310	eP	Pn	10 55 33.4	+0.1
CN2				epP	P	10 55 41.1	+1.7
CN2				eS	Sn	10 58 10.8	+0.1
CN2				pmax	pmax		
	comp=Z,10.0nm,0.4s						
CN2				pmax	pmax		
	comp=Z,200nm,4.0s						
CN2				LR	LR		
	comp=Z,200nm,12.0s						
CN2				LR	LR		
	comp=Z,400nm,12.0s						
CN2				LR	LR		
	comp=Z,300nm,13.0s						
SNY	Shenyang	14.76	300	⇑P	Pn	10 55 35.6	-3.4
SNY				pmax	pmax		
	comp=Z,150nm,9.2s						
KLR	Kul'dur	15.14	337	P	Pn	10 55 41.4	-2.7
	comp=Z,0.3nm,0.3s,baz=189,slow=4.3,SNR=4.7						
KLR				LR	LR	11 01 13.7	
	comp=Z,304nm,21.6s,baz=155,slow=36						
TYV	Tymovskoe	15.33	5	eP	P	10 55 50.5	0.0
NJ2	Nanjing	18.51	265	eP	P	10 56 24.4	-1.4
NJ2				pmax	pmax		
	comp=Z,11nm,0.5s						
BJI	Beijing	19.88	290	P	P	10 56 38.8	-1.9
BJI				S	S	11 00 14.8	-7.2
BJI				pmax	pmax		
	comp=Z,15nm,1.0s						
PETK	Petropavlovsk-	21.22	29	LR	LR	11 05 23.4	
	comp=Z,60nm,20.0s,baz=216,slow=37						
WHN	Wuhan	22.64	265	P	P	10 57 08.4	-2.1
HHC	Hu-ho-hao-te	23.45	292	eP	P	10 57 15.6	-3.1
HHC				S	S	11 01 19.0	-10
HHC				pmax	pmax		
	comp=Z,18nm,0.9s						
HHC				pmax	pmax		
	comp=Z,110nm,4.7s						
HHC				LR	LR		
	comp=Z,1μm,12.0s						
HHC				LR	LR		
	comp=Z,1μm,12.4s						
HHC				LR	LR		
	comp=Z,1μm,12.7s						
MA2	Magadan	24.88	12	P	P	10 57 31.3	-0.2
	comp=Z,5.5nm,0.6s,baz=219,slow=10,SNR=7.4						
MA2				LR	LR	11 08 01.2	
	comp=Z,176nm,18.2s,baz=214,slow=38						
XAN	Xi'an	26.11	276	P	P	10 57 40.5	-2.5
XAN				pP	pP	10 57 50.0	-4.7
XAN				sP	sP	10 57 56.5	-3.6
XAN				PP	PnPn	10 58 21.5	-1.2
XAN				S	S	11 02 04.2	-7.2
XAN				pmax	pmax		
	comp=Z,11nm,1.1s						
XAN				LR	LR		
	comp=Z,260nm,18.4s						
XAN				LR	LR		
	comp=Z,280nm,21.5s						
XAN				LR	LR		
	comp=Z,310nm,21.5s						
ENH	Enshi	26.69	267	eP	P	10 57 46.1	-2.1
	comp=Z,58nm,1.1s						
YAK	Yakutsk	27.37	349	eP	P	10 57 50.9	-3.0
YAK				pmax	pmax		
	comp=Z,12nm,1.6s						
YAK				pmax	pmax		
	comp=N,16nm,1.6s						
YAK				pmax	pmax		
	comp=E,5.0nm,1.7s						
ULN	Ulaanbaatar	27.74	307	eP	P	10 57 58.5	+0.8
ULN				pmax	pmax		
	comp=Z,15nm,1.6s						
ULN	Ulaanbaatar	27.74	307	eP	P	10 57 58.5	+0.8
	comp=Z,15nm,1.6s						
H11N2	WAKE ISLAND Hy	27.93	118	T	T	11 27 17.1	
	baz=310,slow=75,SNR=42						
H11N1	WAKE ISLAND Hy	27.93	118	T	T	11 27 31.3	
	baz=310,slow=75,SNR=58						
H11N3	WAKE ISLAND Hy	27.94	118	T	T	11 27 13.2	
	baz=310,slow=75,SNR=44						
SONA1	Songino Array	28.16	306	eP	P	10 57 59.5	-2.0
SONM	Songino Array	28.17	306	P	P	10 57 59.5	-1.9
	comp=Z,1.5nm,0.6s,baz=102,slow=8.8,SNR=7.1						
SONM				LR	LR	11 09 29.1	
	comp=Z,254nm,18.6s,baz=88,slow=37						
SEY	Seymchan	28.32	11	P	P	10 58 02.5	+0.2
	comp=Z,0.9nm,0.7s,baz=236,slow=8.8,SNR=4.3						
SEY	Seymchan	28.32	11	eP	P	10 58 03.0	+0.6
BOD	Bodaibo	28.48	330	eP	P	10 58 01.3	-2.6
BOD				pmax	pmax		
	comp=Z,6.0nm,1.4s						
H11S1	WAKE ISLAND Hy	28.58	120	T	T	11 28 04.2	
	baz=312,slow=75,SNR=143						
H11S3	WAKE ISLAND Hy	28.58	120	T	T	11 28 00.0	
	baz=312,slow=75,SNR=105						
H11S2	WAKE ISLAND Hy	28.60	120	T	T	11 28 03.2	
	baz=312,slow=75,SNR=122						
LZH	Lanzhou	29.80	282	eP	P	10 58 15.6	-0.4
LZH				pP	pP	10 58 24.9	-3.0
LZH				sP	sP	10 58 29.1	-4.2
LZH				pmax	pmax		
	comp=Z,34nm,1.2s						
LZH				pmax	pmax		
	comp=Z,110nm,4.0s						
LZH				LR	LR		
	comp=Z,990nm,16.9s						
LZH				LR	LR		
	comp=Z,470nm,17.2s						
LZH				LR	LR		
	comp=Z,520nm,17.6s						
GYA	Guiyang	30.45	262	⇑iP	P	10 58 18.2	-3.7
GYA				pP	pP	10 58 31.8	-2.0
GYA				PP	PnPn	10 59 22.0	+0.2
GYA				PcP	PcP	11 01 21.2	+0.7
GYA				S	S	11 03 18.4	-1.7
GYA				ScP	ScP	11 05 01.0	+1.7
GYA				ScS	ScS	11 08 54.3	-1.4
GYA				pmax	pmax		
	comp=Z,20nm,0.8s						
GYA				pmax	pmax		
	comp=Z,120nm,5.3s						
GYA				LR	LR		
	comp=Z,510nm,16.5s						
GYA				LR	LR		
	comp=Z,490nm,16.8s						
GYA				LR	LR		
	comp=Z,520nm,16.4s						
TLY	Talaya	30.89	313	LR	LR	11 11 22.9	
	comp=Z,136nm,18.5s,baz=108,slow=37						
TLY	Talaya	30.89	313	eP	P	10 58 25.6	+0.3
TLY				pmax	pmax		
	comp=Z,5.0nm,0.7s						
CD2	Chengdu	31.15	272	P	P	10 58 26.1	-1.8
CD2				pmax	pmax		
	comp=Z,1.0nm,0.5s						
DAV	Davao City (W)	31.61	210	LR	LR	11 11 06.5	

comp=Z,95nm,20.4s,baz=360,slow=36
GTA Gaotai 32.49 289 *e*P P **10 58 39.6 -0.1**
GTA pP pP 10 58 49.6 -2.0
GTA sP sP 10 58 54.1 -2.8
GTA S S **11 03 51.3 -0.4**
GTA sS sS 11 04 05.3 -6.3
GTA SS **SnSn** **11 05 46.5 -1.3**
GTA pmax pmax
comp=Z,4.0nm,0.8s
GTA pmax pmax
comp=Z,120nm,5.7s
GTA LR LR
comp=Z,170nm,20.4s
GTA LR LR
comp=Z,300nm,19.0s
GTA LR LR
comp=Z,240nm,20.4s
KMI Kunming 34.22 263 P P **10 58 56.0 +1.0**
KMI sP pP 10 59 08.1 +1.1
KMI S S **11 04 18.1 -0.7**
KMI pmax pmax
comp=Z,7.0nm,1.1s
KMI pmax pmax
comp=Z,36nm,4.0s
KMI LR LR
comp=Z,190nm,21.8s
KMI LR LR
comp=Z,160nm,27.5s
KMI LR LR
comp=Z,250nm,25.8s
BILL Bilibino 35.57 16 *e*P P **10 59 06.9 +1.0**
BILL *e* 10 59 16.8
BILL *e* 11 00 26.9
BILL pmax pmax
comp=Z,33nm,4.3s
TIXI Tiksi 36.66 354 P P **10 59 14.2 -1.0**
comp=Z,0.6nm,0.3s,baz=257,slow=9.2,SNR=2.7
TIXI LR LR 11 16 00.2
comp=Z,104nm,18.9s,baz=157,slow=39
TIXI Tiksi 36.66 354 *e*P P **10 59 16.5 +1.4**
TIXI pmax pmax
comp=Z,4.0nm,1.4s
CMAR Chiang Mai Arr 40.61 256 P P **10 59 47.5 -1.3**
comp=Z,0.7nm,0.4s,baz=46,slow=6.4,SNR=3.5
CMAR LR LR 11 18 16.0
comp=Z,172nm,18.6s,baz=90,slow=39
CMAR Chiang Mai Arr 40.61 256 *i*P P 10 59 53.7 +4.8
CMAR pmax pmax
comp=Z,1.0nm,0.4s
WMQ Urumqi 41.02 298 *e*P P **10 59 53.2 +1.1**
WMQ pP pP 11 00 02.4 -1.9
WMQ ScS ScS 11 09 50.7 -2.1
WMQ pmax pmax
comp=Z,8.0nm,1.2s
WMQ pmax pmax
comp=Z,82nm,4.8s
LSA Lhasa 41.81 276 *e*P P **10 59 59.6 +0.4**
LSA pmax pmax
comp=Z,20nm,1.0s
LSA Lhasa 41.81 276 *e*P P **10 59 59.6 +0.4**
comp=Z,20nm,1.0s
ZAA0 Zalesovo Array 42.49 314 *e*P P **11 00 02.6 -1.3**
ZAA0 *e*P P **11 00 03.1 -0.8**
ZALV Zalesovo Beam 42.49 314 P P **11 00 03.1 -0.8**
comp=Z,1.7nm,0.4s,baz=87,slow=6.4,SNR=14
ZALV LR LR 11 17 30.6
comp=Z,59nm,21.1s,baz=82,slow=36
NVS Novosibirsk 43.45 315 *i*P P **11 00 10.4 -1.2**
NRIK Noril'sk 44.35 336 P P **11 00 18.3 -0.4**
comp=Z,4.4nm,0.8s,baz=133,slow=6.2,SNR=6.4
NRIK LR LR 11 19 40.3
comp=Z,128nm,18.9s,baz=106,slow=37
MK01 Makanchi Array 44.43 303 *e*P P **11 00 18.7 -1.0**
MK31 Makanchi Array 44.43 303 *e*P P **11 00 19.0 -0.7**
MK31 Makanchi Array 44.43 303 *e*P P **11 00 19.0 -0.7**
MKAR Makanchi Array 44.43 303 P P **11 00 18.9 -0.8**
comp=Z,3.6nm,0.6s,baz=88,slow=9.6,SNR=28
MKAR LR LR 11 19 23.9
comp=Z,164nm,18.7s,baz=84,slow=37
MKAR Makanchi Array 44.43 303 *e*P P **11 00 19.0 -0.7**
MAKZ Makanchi 44.65 303 *e*P P **11 00 21.0 -0.4**
MAKZ pmax pmax
comp=Z,12nm,1.3s
MAKZ Makanchi 44.65 303 *e*P P **11 00 21.0 -0.4**
comp=Z,12nm,1.3s
PMG Port Moresby 45.16 171 LR LR 11 19 43.9
comp=Z,49nm,18.7s,baz=349,slow=36
KURK Kurchatov 46.40 309 *e*P P **11 00 33.8 -1.3**
KURK pmax pmax
comp=Z,26nm,1.2s
KURK Kurchatov 46.40 309 *e*P P **11 00 33.8 -1.3**
comp=Z,26nm,1.2s
KURBB Kurchatov Arra 46.47 309 P P **11 00 34.4 -1.3**
comp=Z,16nm,1.0s,baz=83,slow=8.2,SNR=43
SOEI Soe 47.70 202 *e*P P **11 00 45.4 -0.3**
comp=Z,18nm,0.9s
KDAK Kodiak Island 48.55 41 LR LR 11 21 35.2
comp=Z,83nm,20.1s,baz=287,slow=36
MTN Manton Dam 49.02 192 *e*P P **11 00 56.3 +0.6**
comp=Z,34nm,1.4s
TKM2 Tokmak 2 49.84 299 *e*P P **11 01 02.4 +0.3**
TKM2 pmax pmax
comp=Z,10.0nm,0.6s
TKM2 Tokmak 2 49.84 299 *e*P P **11 01 02.4 +0.3**
comp=Z,9.7nm,0.6s
MDM Murphy Dome 50.43 31 *e*P P **11 01 08.3 +2.3**
comp=Z,11nm,1.2s
KSH Kashi 50.50 295 *e*P P **11 01 10.0 +2.9**
KSH *ep*P pP 11 01 19.4 -0.1
KSH PcS **PcS** **11 06 23.1 +1.1**
KSH S S **11 08 20.7 +2.7**
KSH ScS **ScS** **11 10 53.0 -1.4**
KSH SS **SS** **11 11 52.0 0.0**
KSH LR LR
comp=Z,220nm,6.5s
KSH LR LR
comp=Z,170nm,5.7s
KSH LR LR
comp=Z,240nm,7.0s
AAK Ala-Archa 50.70 299 ||*i*P P **11 01 08.0 -0.6**
AAK pmax pmax
comp=Z,6.0nm,1.0s
AAK Ala-Archa 50.70 299 *e*P P **11 01 08.2 -0.4**
comp=Z,2.4nm,0.8s
IL1 Eielson Array 51.01 32 *e*P P **11 01 10.5 +0.1**
ILAR Eielson Array 51.01 32 P P **11 01 11.1 +0.7**
comp=Z,1.8nm,0.8s,baz=273,slow=6.2,SNR=11
ILAR Eielson Array 51.01 32 P P **11 01 11.1 +0.7**
ILAR pmax pmax
comp=Z,1.0nm,0.6s
ILB Eielson Array 51.01 32 *e*P P 11 01 14.0 +3.7
BVAR Borovoye Array 51.15 313 P P **11 01 10.7 -0.9**
comp=Z,2.2nm,0.6s,baz=69,slow=8.1,SNR=14
BRVK Borovoye 51.20 313 *ce*P P **11 01 12.0 +0.1**
BRVK pmax pmax
comp=Z,5.0nm,1.0s
BRVK Borovoye 51.20 313 *e*P P **11 01 11.4 -0.5**
comp=Z,6.3nm,1.0s
WB2 Warramunga Arr 55.55 187 *e*P P **11 01 44.9 +0.7**
comp=Z,16nm,1.0s
WRA Warramunga Arr 55.56 187 P P **11 01 44.1 -0.1**
comp=Z,2.1nm,0.4s,baz=4.1,slow=7.4,SNR=38
INK Inuvik 55.92 27 P P **11 01 46.9 +0.7**
comp=Z,0.6nm,0.5s,baz=313,slow=6.7,SNR=6.1
ARU Arti 57.08 319 P P **11 01 53.1 -1.6**
comp=Z,4.9nm,0.3s,baz=71,slow=5.8,SNR=8.8
ARU LR LR 11 28 30.7
comp=Z,62nm,18.7s,baz=91,slow=38
ARU Arti 57.08 319 *c*P P **11 01 53.8 -0.9**
ARU 11 03 59.0
ARU S S **11 09 48.1 +1.9**
ARU SS SS **11 13 36.2 +1.4**
ARU pmax pmax
comp=Z,22nm,1.7s
ARU Arti 57.08 319 *e*P P **11 01 54.0 -0.7**
comp=Z,7.8nm,0.7s
ABKAR Akbulak array 58.45 311 *e*P P **11 02 03.5 -0.9**
AKTO Aktyubinsk 59.24 312 P P **11 02 08.4 -1.4**
comp=Z,2.8nm,0.7s,baz=78,slow=9.3,SNR=9.1
AKTO LR LR 11 28 40.4
comp=Z,83nm,20.1s,baz=81,slow=37
AS01 Alice Springs 59.28 187 *e*P P **11 02 10.3 0.0**
AS31 Alice Springs 59.28 187 *e*P P 11 02 14.3 +3.9
comp=Z,1.0nm,0.6s
ASAR Alice Springs 59.28 187 P P **11 02 10.2 -0.3**
comp=Z,1.6nm,0.9s,baz=19,slow=11,SNR=17
ASAR LR LR 11 27 09.8
comp=Z,46nm,21.3s,baz=28,slow=35
SPITS Spitsbergen Ar 61.83 349 P P **11 02 28.6 +1.4**
comp=Z,2.0nm,0.8s,baz=140,slow=5.3,SNR=2.4
SPITS Spitsbergen Ar 61.83 349 P P **11 02 28.6 +1.4**
SPITS pmax pmax
comp=Z,3.0nm,0.8s
DZM Mont Dzumac 62.31 153 LR LR 11 24 20.0
comp=Z,72nm,22.0s,baz=60,slow=31
GEYT Alibeck 64.06 299 P P **11 02 42.1 -0.5**
comp=Z,1.5nm,0.4s,baz=268,slow=15,SNR=3.2
GEYT LR LR 11 32 23.3
comp=Z,92nm,18.1s,baz=35,slow=38
RES Resolute Bay 64.14 14 P P **11 02 42.6 +0.1**
comp=Z,1.4nm,0.6s,baz=314,slow=7.3,SNR=16
RES Resolute Bay 64.14 14 *e*P P **11 02 42.8 +0.4**
RES pmax pmax
comp=Z,5.0nm,1.2s
RES Resolute Bay 64.14 14 *e*P P **11 02 42.8 +0.4**
comp=Z,5.2nm,1.2s
ARCES ARCESS Array B 65.16 339 P P **11 02 48.7 -0.5**
comp=Z,1.7nm,0.7s,baz=42,slow=9.8,SNR=3.4
ARCES LR LR 11 34 24.5
comp=Z,107nm,19.8s,baz=38,slow=39
YKA Yellowknife Ar 65.33 30 P P **11 02 50.6 +0.2**
comp=Z,0.2nm,0.4s,baz=298,slow=6.2,SNR=6.7
STKA Stephens Creek 67.11 179 P P **11 03 02.6 +0.5**
comp=Z,2.7nm,1.0s,baz=296,slow=6.4,SNR=3.8
STKA LR LR 11 32 52.5
comp=Z,46nm,18.6s,baz=24,slow=36
OBN Obninsk 68.92 323 *e*P P **11 03 13.8 +0.5**
OBN *e* 11 03 25.1
OBN *e* 11 05 47.7
OBN pmax pmax
comp=Z,5.0nm,0.8s
VSR Storozhevoye 69.66 319 *e*P P **11 03 16.6 -1.3**
FINES FINESS Array B 69.83 332 P P **11 03 17.4 -1.4**
comp=Z,1.3nm,0.7s,baz=292,slow=31,SNR=4.8
FINES LR LR 11 35 06.7
comp=Z,76nm,18.6s,baz=20,slow=37
FINES FINESS Array B 69.83 332 *i*P P 11 03 24.3 +5.5
FINES pmax pmax
comp=Z,4.0nm,1.0s
WSAR Wadi Sarin 70.71 285 LR LR 11 38 34.8
comp=Z,51nm,18.0s,baz=78,slow=39
KBZ Khabaz 71.42 311 P P **11 03 28.3 -0.5**
comp=Z,4.7nm,1.0s,baz=106,slow=2.3,SNR=6.0
KBZ LR LR 11 37 31.1
comp=Z,71nm,18.4s,baz=54,slow=38
KVAR Kislovodsk Arr 71.43 311 LR LR 11 36 44.9
comp=Z,78nm,19.8s,baz=76,slow=37
KIV Kislovodsk 71.44 311 *e*P P **11 03 29.7 +0.7**
KIV pmax pmax
comp=Z,17nm,1.0s
KIV MLR MLR
comp=Z,63nm,17.0s
GNI Garni 72.13 307 LR LR 11 37 04.9
comp=Z,101nm,20.1s,baz=54,slow=37
GNI Garni 72.13 307 *e*P P **11 03 34.0 +0.7**
GNI pmax pmax
comp=Z,19nm,1.2s
AKASG Malin Array Be 75.10 322 P P **11 03 49.4 -1.0**
comp=Z,1.8nm,0.6s,baz=46,slow=6.0,SNR=9.1
AKASG LR LR 11 39 46.3
comp=Z,201nm,18.1s,baz=70,slow=38
KIEV Kiev 75.11 322 *i*P P **11 03 50.1 -0.3**
KIEV pmax pmax
comp=Z,5.0nm,1.5s
HFS Hagfors 75.18 336 P P **11 03 50.2 -0.4**
comp=Z,4.4nm,0.9s,baz=126,slow=9.3,SNR=4.6
HFS LR LR 11 38 46.0
comp=Z,128nm,19.8s,baz=18,slow=37
HFS Hagfors 75.18 336 P P **11 03 50.2 -0.4**
HFS pmax pmax
comp=Z,3.0nm,0.7s
HFS MLR MLR
comp=Z,128nm,19.8s
NB2 NORSAR Subarra 75.30 337 P P **11 03 50.7 -0.7**
comp=Z,1.1nm,0.6s,baz=41,slow=5.9
NOA NORSAR Array B 75.30 337 P P **11 03 51.0 -0.4**
comp=Z,2.5nm,0.8s,baz=39,slow=5.8,SNR=5.1
NOA LR LR 11 39 36.1
comp=Z,67nm,20.0s,baz=60,slow=38
NOA NORSAR Array B 75.30 337 P P **11 03 51.0 -0.4**
NOA pmax pmax
comp=Z,3.0nm,0.8s
NOA MLR MLR
comp=Z,67nm,20.0s
BOZ Bozeman (W) 76.14 44 *e*P P **11 03 59.7 +3.1**
BOZ pmax pmax
comp=Z,11nm,1.5s
BOZ Bozeman (W) 76.14 44 *e*P P **11 03 59.6 +3.1**
comp=Z,11nm,1.5s
NVAR Mina Array Bea 76.30 53 P P **11 03 59.5 +1.7**
comp=Z,1.1nm,0.8s,baz=158,slow=32,SNR=3.3
NVAR LR LR 11 29 57.8
comp=Z,81nm,20.1s,baz=268,slow=39
SFJD Kangerlussuaq 77.37 5 LR LR 11 40 02.4
comp=Z,40nm,20.6s,baz=338,slow=37
PDAR Pinedale Array 79.08 45 P P **11 04 14.3 +1.1**
comp=Z,0.5nm,0.7s,baz=122,slow=0.3,SNR=5.5
PDAR LR LR 11 34 41.0
comp=Z,28nm,21.8s,baz=294,slow=32
BRTR Keskin Array B 79.39 311 P P **11 04 14.9 +0.1**
comp=Z,2.2nm,1.0s,baz=106,slow=4.0,SNR=6.4
BRTR LR LR 11 43 24.9
comp=Z,23nm,18.3s,baz=52,slow=39
BRTR Keskin Array B 79.39 311 P P **11 04 15.0 +0.1**
BRTR pmax pmax
comp=Z,2.0nm,1.0s
BRTR MLR MLR
comp=Z,23nm,18.3s
BR231 Keskin MP Arra 79.85 312 *e*P P **11 04 15.8 -1.4**
MLR Muntele Rosu 80.13 320 LR LR 11 42 19.4
comp=Z,38nm,19.1s,baz=38,slow=38
RAYN Ar Rayn 80.69 292 *e*P P **11 04 21.9 -0.1**
comp=Z,16nm,1.4s
VYHS Vyhne 81.60 325 *e*P P **11 04 25.2 -1.1**
VYHS Vyhne 81.60 325 *e*P P **11 04 25.2 -1.1**
VRAC Vranov 82.03 327 LR LR 11 42 13.9
comp=Z,32nm,20.6s,baz=29,slow=37
MMAI Mount Meron Ar 82.35 305 LR LR 11 43 45.7
comp=Z,50nm,22.0s,baz=5.0,slow=38
GERES GERESS Array B 83.64 328 P P **11 04 37.0 -0.1**
comp=Z,0.3nm,0.3s,baz=52,slow=6.8,SNR=3.3
GERES LR LR 11 43 27.4
comp=Z,64nm,19.9s,baz=326,slow=37
S22A 4UR Ranch, Cre 83.89 47 *e*P P 11 04 42.5 +3.8
comp=Z,13nm,1.8s
PMOR Pomariorio Ree 84.12 113 *e*T T 12 36 56.8
comp=Z,3.6nm,0.2s
PPT Papeete 84.49 116 LR LR 11 34 23.5
comp=Z,76nm,22.0s,baz=354,slow=30
PPT2 Papeete2 84.50 116 *e*LR LR 11 31 07.2
comp=Z,305nm,32.0s
PPT2 Papeete2 84.50 116 *e*T T 12 37 26.0
comp=Z,2.4nm,0.4s
T25A Trinidad 85.73 47 *e*P P **11 04 49.9 +1.9**
comp=Z,13nm,1.5s
ANMO Albuquerque 85.94 49 *ce*P P **11 04 50.1 +1.1**
ANMO pmax pmax
comp=Z,1.0nm,1.1s
BFO Black Forest 86.29 330 *i*P P **11 04 50.3 0.0**
TAOE Nuku Hiva Isla 86.36 103 *e*LR LR 11 32 07.4
comp=Z,205nm,24.3s
DAVOX Davos/Dischmat 86.88 329 LR LR 11 45 18.0
comp=Z,29nm,19.5s,baz=126,slow=37
SCHQ Schefferville 86.88 16 LR LR 11 47 38.5
comp=Z,35nm,18.4s,baz=20,slow=38
TXAR Lajitas Array 91.44 52 P P **11 05 14.4 -0.7**
comp=Z,0.3nm,0.6s,baz=321,slow=4.6,SNR=3.0
TXAR LR LR 11 46 19.0
comp=Z,34nm,18.1s,baz=0.0,slow=35
KEST Kesra 95.83 322 LR LR 11 53 35.3
comp=Z,47nm,19.2s,baz=310,slow=38
ESDC Sonseca Array 98.33 333 LR LR 11 55 41.0
comp=Z,37nm,20.5s,baz=170,slow=39
SAML Samuel 145.66 45 *e*PKPdf **PKPbc** **11 11 47.4 -0.2**
LPAZ La Paz 147.89 61 PKPbc **PKPbc** **11 11 54.3 -0.4**
comp=Z,1.6nm,0.8s,baz=340,slow=4.3,SNR=5.3

*IDC **07** 10:59:07.3±2.4, 35°.13N×141°.23E, h0km, mb3.6/4, mb1 3.7/5, mb1mx3.3/73, mbtmp3.6/5, ML3.0/2, Error ellipse: s-maj=65.0km s-min=21.5km az=67.0*
*JMA **07** 10:59:10.9±0.1, 35°.24N×141°.20E, h26km±3km, M2.9*

*ISCJB **07** 10:59:11.2±1.1, 35°.10N±0°.06×141°.2E±0°.1, h48km, mb3.6/4, Error ellipse: s-maj=12.7km s-min=8.6km az=168.2*
ISC 07 10:59:14.1±1.5, 35°.03N±0°.07×141°.1E±0°.1, h48km, n20, σ1s70/16, mb3.6/4, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
BSO1	**Boso 1**	**0.39**	**195**	P	**Pn**	**10 59 22.8**	**-0.5**
BSO1				*e*X		10 59 31.8	
BSO3	**Boso 3**	**0.54**	**245**	P	**Pn**	**10 59 24.4**	**-1.0**
BSO4	**Boso 4**	**0.63**	**267**	P	**Pn**	**10 59 25.2**	**-1.5**
KTR	**Katsuura**	**0.66**	**281**	P	**Pn**	**10 59 24.8**	**-2.3**
CHOJ	**Chosi**	**0.70**	**344**	P	Pn	10 59 21.5	-6.3
JCN	**Nagara**	**0.83**	**298**	P	**Pn**	**10 59 27.0**	**-2.5**
TATJ	**Tateyama 2**	**0.99**	**271**	P	**Pn**	**10 59 30.5**	**-1.1**
TATJ				S	**Sn**	**10 59 45.8**	**+1.2**
JHJ	**Hachijo jima 2**	**2.19**	**210**	Pn	**Pn**	**10 59 46.9**	**-1.2**
	11nm,0.3s,baz=319,slow=19,SNR=12						
JHJ				Sn	**Sn**	**11 00 14.3**	**+0.4**
	14nm,0.3s,baz=128,slow=19,SNR=3.9						
MJAR	**Matsushiro Arr**	**2.80**	**304**	Pn	**Pn**	**10 59 55.3**	**-1.0**
	1.6nm,0.3s,baz=116,slow=8.2,SNR=9.1						
MAT	**Matsushiro**	**2.80**	**304**	P	**Pn**	**10 59 56.2**	**-0.2**
MAT				*e*S	**Sn**	**11 00 32.8**	**+3.9**
H11N2	**WAKE ISLAND Hy**	**27.40**	**117**	T	T	11 33 48.8	
	baz=318						
H11N1	**WAKE ISLAND Hy**	**27.41**	**117**	T	T	11 33 57.3	
	baz=318						
H11N3	**WAKE ISLAND Hy**	**27.42**	**117**	T	T	11 33 51.1	
	baz=319						
H11S1	**WAKE ISLAND Hy**	**28.04**	**119**	T	T	11 34 40.5	
	baz=312,slow=75,SNR=37						
H11S3	**WAKE ISLAND Hy**	**28.04**	**119**	T	T	11 34 37.4	
	baz=312,slow=75,SNR=17						
H11S2	**WAKE ISLAND Hy**	**28.06**	**119**	T	T	11 34 41.6	
	baz=312,slow=75,SNR=19						
MKAR	**Makanchi Array**	**45.00**	**304**	P	**P**	**11 07 24.2**	**-0.5**
	0.2nm,0.2s,baz=91,slow=9.4,SNR=2.0						
KURBB	**Kurchatov Arra**	**47.06**	**309**	P	**P**	**11 07 40.0**	**-0.7**
	0.3nm,0.5s,baz=81,slow=7.8,SNR=4.3						
WRA	**Warramunga Arr**	**55.04**	**188**	P	**P**	**11 08 41.5**	**+0.6**
	0.5nm,0.5s,baz=0.9,slow=7.4,SNR=15						
ASAR	**Alice Springs**	**58.77**	**188**	P	**P**	**11 09 08.0**	**+0.7**
	0.5nm,0.8s,baz=8.4,slow=7.9,SNR=2.9						

*ISCJB **07** 11:02:48.9±0.8, 6°.8N±0°.1×94°.3E±0°.2, h26km, mb4.1/15, Error ellipse: s-maj=23.5km s-min=18.3km az=156.6*
*IDC **07** 11:02:57.8±3.9, 6°.77N×94°.53E, h90km±36km, mb3.8/13, mb1 3.9/14, mb1mx3.5/72, mbtmp4.1/14, Error ellipse: s-maj=30.3km s-min=15.8km az=60.0*
*NEIC **07** 11:02:59.3±1.9, 6°.59N×94°.40E, h111km±19km, mb4.2/1, Error ellipse: s-maj=25.3km s-min=14.2km az=72.0*
ISC 07 11:02:50.4±0.7, 6°.8N±0°.1×94°.4E±0°.1, h26km, n23, σ0s97/21, mb4.2/15, Nicobar Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
LHMI	**Lhok Sumawe**	**2.98**	**121**	*e*Pn	**Pb**	**11 03 43.4**	**+0.6**
PSI	**Prapat**	**6.00**	**131**	P	Pn	11 04 24.4	+6.8
	5.2nm,0.3s,baz=310,slow=11,SNR=17						
CMAR	**Chiang Mai Arr**	**12.45**	**21**	P	**P**	**11 05 57.0**	**-0.6**
	0.2nm,0.3s,baz=215,slow=15,SNR=7.0						
H08S3	**Diego Garcia H**	**26.10**	**237**	T	T	11 35 31.7	
	baz=56,slow=76,SNR=49						
H08S2	**Diego Garcia H**	**26.10**	**237**	T	T	11 35 07.4	
	baz=56,slow=76,SNR=57						
H08S1	**Diego Garcia H**	**26.11**	**237**	T	T	11 35 15.1	
	baz=56,slow=76,SNR=55						
MKAR	**Makanchi Array**	**41.22**	**347**	P	**P**	**11 10 32.6**	**-0.5**
	0.5nm,0.5s,baz=149,slow=8.2,SNR=7.0						
SONM	**Songino Array**	**42.20**	**12**	P	**P**	**11 10 42.3**	**+1.1**
	0.3nm,0.4s,baz=207,slow=9.3,SNR=3.1						
SONM				PcP	**PcP**	**11 12 34.8**	**-0.3**
	0.6nm,0.5s,baz=221,slow=5.0,SNR=3.5						
KURBB	**Kurchatov Arra**	**45.68**	**346**	P	**P**	**11 11 09.8**	**+0.9**
	0.9nm,0.5s,baz=176,slow=6.9,SNR=13						
KURK	**Kurchatov**	**45.74**	**346**	P	**P**	**11 11 09.8**	**+0.4**
WRA	**Warramunga Arr**	**47.43**	**125**	P	**P**	**11 11 22.2**	**-1.0**
	2.3nm,0.5s,baz=306,slow=8.5,SNR=22						
ASAR	**Alice Springs**	**49.03**	**129**	P	**P**	**11 11 34.7**	**-0.8**
	1.2nm,0.4s,baz=302,slow=7.7,SNR=20						
ATD	**Arta Tunnel**	**51.04**	**279**	P	**P**	**11 11 49.6**	**-1.4**
	7.0nm,0.4s,baz=268,slow=21,SNR=4.6						
ABKAR	**Akbulak array**	**51.32**	**332**	*e*P	**P**	**11 11 53.7**	**+1.3**
	1.1nm,0.4s						
BRTR	**Keskin Array B**	**63.33**	**311**	P	**P**	**11 13 16.4**	**-1.3**
	0.8nm,0.7s,baz=127,slow=7.9,SNR=4.3						
TIXI	**Tiksi**	**68.27**	**11**	P	**P**	**11 13 47.3**	**-1.4**
	2.8nm,0.3s,baz=221,slow=3.9,SNR=9.9						
TIXI	**Tiksi**	**68.27**	**11**	P	**P**	**11 13 47.3**	**-1.4**
TIXI				*e*P	**P**	**11 13 48.3**	**-0.4**
FINES	**FINESS Array B**	**73.80**	**332**	P	**P**	**11 14 22.5**	**+0.1**
	1.8nm,0.4s,baz=99,slow=6.0,SNR=22						
BOSA	**Boshof**	**75.20**	**238**	P	**P**	**11 14 32.6**	**+1.3**
	2.4nm,0.8s,baz=17,slow=1.6,SNR=3.6						
ARCES	**ARCESS Array B**	**76.39**	**340**	P	**P**	**11 14 37.8**	**+0.6**
	1.1nm,0.6s,baz=94,slow=6.3,SNR=12						
GERES	**GERESS Array B**	**78.81**	**318**	P	**P**	**11 14 51.5**	**+0.3**
	0.6nm,0.4s,baz=108,slow=3.0,SNR=4.1						
SPITS	**Spitsbergen Ar**	**80.97**	**348**	P	**P**	**11 15 02.7**	**+0.4**
	1.3nm,0.5s,baz=94,slow=9.3,SNR=13						
DAVOX	**Davos/Dischmat**	**81.35**	**316**	P	**P**	**11 15 05.8**	**+0.7**
	1.8nm,0.4s,baz=117,slow=3.0,SNR=3.7						

*DDA **07** 11:15:27.1, 38°.43N×34°.03E, h7km, Md2.7*
*CSEM **07** 11:15:27.4±0.1, 38°.44N×34°.05E, h8km, MD2.6, Error ellipse: s-maj=3.7km s-min=2.8km az=37.0*
*ISK **07** 11:15:27.1, 38°.45N×34°.05E, h5km, MD2.6*
ISC 07 11:15:27.4±0.9, 38°.42N±0°.03×34°.04E±0°.03, h13km±6km, n24, σ0s59/40, Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
GULA	**Gulagac**	**0.17**	**117**	*e*PG	**Pg**	**11 15 31.7**	**+0.3**
GULA				*e*SG	**Sg**	**11 15 34.3**	**+0.1**
GULA	**Gulagac**	**0.17**	**117**	*e*Pg	**Pg**	**11 15 31.7**	**+0.3**
GULA				*e*Sg	**Sg**	**11 15 34.3**	**+0.1**
AKSY	**AKSARAY - Alti**	**0.32**	**316**	*i*P	**Pg**	**11 15 33.5**	**-0.5**
AKSY				*i*S	**Sg**	**11 15 38.2**	**-0.2**
AKSY	**AKSARAY - Alti**	**0.32**	**316**	P	**Pg**	**11 15 33.5**	**-0.5**
AKSY				S	**Sg**	**11 15 38.2**	**-0.2**
SULT	**Sultanhani-AKS**	**0.47**	**242**	*e*PG	**Pb**	**11 15 37.1**	**-0.4**
SULT	**Sultanhani-AKS**	**0.47**	**242**	*e*Pg	**Pb**	**11 15 37.1**	**-0.4**
NIG	**Nigde**	**0.54**	**125**	*e*PG	**Pg**	**11 15 38.2**	**+0.1**
NIG				*e*SG	**Sb**	**11 15 46.7**	**0.0**
NIG	**Nigde**	**0.54**	**125**	*e*Pg	**Pg**	**11 15 38.2**	**+0.1**
NIG				*e*Sg	**Sb**	**11 15 46.7**	**0.0**
SERE	**Sereflikochisa**	**0.65**	**325**	*e*PG	**Pg**	**11 15 39.6**	**-0.4**
SERE				*e*SG	**Sg**	**11 15 48.7**	**+0.2**
SERE	**Sereflikochisa**	**0.65**	**325**	*e*Pg	**Pg**	**11 15 39.6**	**-0.4**
SERE				*e*Sg	**Sg**	**11 15 48.7**	**+0.2**
AVNS	**Nevsehir-Avano**	**0.74**	**58**	*i*P	**Pg**	**11 15 40.5**	**-1.2**
AVNS				*i*S	**Sb**	**11 15 52.5**	**+0.3**
AVNS	**Nevsehir-Avano**	**0.74**	**58**	P	**Pg**	**11 15 40.5**	**-1.2**
AVNS				S	**Sb**	**11 15 52.5**	**+0.3**
CHBY	**Cihanbeyli**	**0.92**	**280**	*e*PG	**Pb**	**11 15 45.2**	**0.0**
CHBY	**Cihanbeyli**	**0.92**	**280**	*e*Pg	**Pb**	**11 15 45.2**	**0.0**
KERG	**Konya-Eregli**	**1.01**	**176**	*i*P	**Pg**	**11 15 46.7**	**-0.1**
KERG				*i*S	**Sn**	**11 16 01.1**	**-0.3**
KERG	**Konya-Eregli**	**1.01**	**176**	P	**Pg**	**11 15 46.7**	**-0.1**
KERG				S	**Sn**	**11 16 01.1**	**-0.3**
KKUL	**Konya-Kulu**	**1.16**	**311**	*i*P	**Pn**	**11 15 49.2**	**-0.2**
KKUL				*i*S	**Sn**	**11 16 06.5**	**+1.4**
KKUL	**Konya-Kulu**	**1.16**	**311**	P	**Pn**	**11 15 49.2**	**-0.2**
KKUL				S	**Sn**	**11 16 06.5**	**+1.4**
CDAG	**Cicekdag**	**1.23**	**12**	*i*P	**Pb**	**11 15 50.3**	**-0.2**
CDAG				*i*S	**Sg**	**11 16 08.3**	**+1.3**
CDAG	**Cicekdag**	**1.23**	**12**	P	**Pb**	**11 15 50.3**	**-0.2**
CDAG				S	**Sg**	**11 16 08.3**	**+1.3**
KDHN	**Kadinhani**	**1.52**	**274**	*i*P	**Pb**	**11 15 55.0**	**-0.4**
KDHN	**Kadinhani**	**1.52**	**274**	P	**Pb**	**11 15 55.0**	**-0.4**
YOZ	**Yozgat**	**1.57**	**39**	*e*PN	**Pb**	**11 15 56.0**	**-0.4**
YOZ	**Yozgat**	**1.57**	**39**	*e*Pn	**Pb**	**11 15 56.0**	**-0.4**

*GUC **07** 11:19:08.2±0.5, 33°.66S×70°.01W, h9km±1km, ML2.8*
*SJA **07** 11:19:08.1±0.9, 33°.57S×70°.04W, h5km±16km, ML3.3, MW3.3*
ISC 07 11:19:08.4±1.3, 33°.62S±0°.09×70°.02W±0°.04, h11km±10km,

n14, σ0^{s}52/17, 2C-3D, Chile-Argentina border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
YECH	**El Yeso**	**0.07**	**229**	⇑iP	**Pg**	**11 19 11.3**	**+0.1**
YECH				iS	**Sg**	**11 19 13.2**	**-0.2**
CLCH	**Cerro Calan**	**0.49**	**297**	⇓iP	**Pb**	**11 19 19.0**	**-0.1**
CLCH				iS	**Sb**	**11 19 27.2**	**+1.0**
CLCH				IAML		11 19 29.6	
	comp=E,2μm,0.6s						
ANTU	**Antumapu**	**0.52**	**275**	⇑iP	**Pb**	**11 19 19.2**	**-0.3**
ANTU				iS	**Sb**	**11 19 27.7**	**+0.6**
ANTU				IAML		11 19 29.3	
	comp=N,1μm,0.4s						
PEL	**Peldehue**	**0.73**	**310**	⇓iP	**Pb**	**11 19 22.9**	**-0.3**
PEL				iS	**Sb**	**11 19 34.3**	**+1.1**
PEL				IAML		11 19 35.4	
	comp=N,466nm,0.2s						
ROCH	**El Roble**	**1.05**	**307**	⇓iP	**Pg**	**11 19 28.5**	**-0.2**
ROCH				iS	**Sn**	**11 19 43.4**	**-0.6**
ROCH				IAML		11 19 48.6	
	comp=E,478nm,0.6s						
ROC1	**El Roble**	**1.05**	**307**	eP	**Pg**	**11 19 28.5**	**-0.3**
ROC1				eS	**Sb**	**11 19 43.1**	**+0.4**
AAGR	**Agrelo**	**1.13**	**62**	eP	**Pb**	**11 19 29.8**	**-0.1**
ASAL	**Salagasta**	**1.42**	**44**	eP	**Pb**	**11 19 35.0**	**0.0**
AUSP	**Uspallata**	**1.48**	**21**	eP	**Pg**	**11 19 36.7**	**-0.3**
RTLS	**Leoncito**	**1.91**	**19**	eP	**Pb**	**11 19 43.6**	**+0.1**
RTCV	**Cerro Valdivia**	**2.15**	**36**	eP	**Pb**	**11 19 47.3**	**0.0**
AVFE	**Valle Fertil**	**3.66**	**37**	IAML		11 21 19.5	
	comp=Z,29nm,0.6s						
ACLC	**CERRO LA CRUZ**	**4.93**	**33**	IAML		11 21 53.7	
	comp=Z,33nm,0.9s						
VCA	**Vinchina**	**5.11**	**18**	IAML		11 21 52.2	
	comp=Z,28nm,2.9s						

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*ISCJB **07** 11:30:23.9±0.6, 6°.86N±0°.04×73°.11W±0°.04, h160km±5km, mb3.3/1, Error ellipse: s-maj=8.4km s-min=4.4km az=41.9*
*IDC **07** 11:30:24.3±0.8, 6°.81N×73°.08W, h157km±13km, mb3.1/1, mb1 3.2/3, mb1mx2.9/37, mbtmp3.4/3, MS3.4/1, Ms1 3.4/1, ms1mx2.6/9, Error ellipse: s-maj=49.1km s-min=7.9km az=131.0*
*RSNC **07** 11:30:26.4±1.0, 6°.82N×73°.13W, h147km±7km, ML3.3*
*FUNV **07** 11:30:26.9, 7°.06N×73°.17W, h164km, MW2.9*
ISC 07 11:30:24.0±0.9, **6°.89N**±0°.04×**73°.11W**±0°.04, **h163**km±7km, **n26**, σ**1^{s}70**/40, **3D, Northern Colombia**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BARC	**Barichara**	**0.31**	**194**	iP	**Pn**	**11 30 46.0**	**-0.4**
BARC				i		11 30 46.1	
	comp=Z,264nm,0.1s						
PAMC	**Pamplona, Colo**	**0.60**	**42**	⇓iP	**Pn**	**11 30 48.9**	**+1.0**
PAMC				eS	**Sn**	**11 31 05.8**	**-0.4**
BRRC	**Barranca, Sant**	**0.64**	**289**	iP	**Pn**	**11 30 47.9**	**+0.4**
BRRC				eS	**Sn**	**11 31 04.5**	**-1.0**
BRRC				i		11 31 09.0	
	comp=Z,284nm,0.1s						
CAPV	**Capacho**	**1.25**	**39**	eP	**Pn**	**11 30 53.9**	**+1.5**
CAPV				eS	**Sn**	**11 31 14.2**	**0.0**
OCAC	**Ocana**	**1.35**	**351**	eP	**Pn**	**11 30 54.7**	**+1.4**
OCAC				eS	**Sn**	**11 31 16.2**	**+0.3**
OCAC				i		11 31 23.4	
	comp=Z,128nm,0.2s						
YOPC	**Yopal, Colombi**	**1.68**	**156**	iP	**Pn**	**11 30 56.6**	**0.0**
YOPC				eS	**Sn**	**11 31 20.5**	**-1.1**
NORC	**Norcasia**	**2.19**	**233**	eP	**Pn**	**11 31 01.9**	**-0.4**
NORC				eS	**Sn**	**11 31 29.8**	**-1.9**
CHIC	**Chingaza**	**2.33**	**195**	eP	**Pn**	**11 31 04.3**	**0.0**
CHIC				eS	**Sn**	**11 31 33.1**	**-2.2**
ROSC	**El Rosal**	**2.37**	**211**	P	**Pn**	**11 31 05.8**	**+1.2**
	comp=Z,7.1nm,0.3s,baz=123,slow=23,SNR=25						
ROSC				S	**Sn**	**11 31 34.4**	**-1.7**
	comp=Z,12nm,0.3s,baz=100,slow=17,SNR=9.3						
HELC	**Santa Helena**	**2.50**	**254**	eP	**Pn**	**11 31 06.8**	**+0.6**
HELC				eS	**Sn**	**11 31 38.2**	**-0.6**
HELC				i		11 31 44.9	
	comp=Z,70nm,0.4s						
SOCV	**Socops**	**2.62**	**58**	eP	**Pn**	**11 31 08.3**	**+1.0**
SOCV				eS	**Sn**	**11 31 39.6**	**-1.3**
GUYC	**Guyana, Colomb**	**2.81**	**234**	eP	**Pn**	**11 31 10.0**	**0.0**
GUYC				i		11 31 54.0	
	comp=Z,155nm,0.4s						
DBBC	**Dabeiba**	**3.08**	**272**	eP	**Pn**	**11 31 13.9**	**+0.9**
MOTC	**Monteria, Cord**	**3.15**	**307**	⇓iP	**Pn**	**11 31 13.3**	**-0.5**
MOTC				i		11 32 07.2	
	comp=Z,45nm,0.6s						
SDV	**Santo Domingo**	**3.15**	**51**	P	**Pn**	**11 31 15.4**	**+1.4**
	comp=Z,2.4nm,0.3s,baz=220,slow=2.0,SNR=12						
SDV				S	**Sn**	**11 31 53.2**	**+0.5**
	comp=Z,4.3nm,0.3s,baz=235,slow=22,SNR=15						
SDV	**Santo Domingo**	**3.15**	**51**	⇓iP	**Pn**	**11 31 15.4**	**+1.4**
TOLC	**Tolima**	**3.18**	**224**	eP	**Pn**	**11 31 15.9**	**+1.4**
PRAC	**Prado**	**3.62**	**209**	eP	**Pn**	**11 31 19.9**	**0.0**
PRAC				i		11 32 05.2	
	comp=Z,110nm,0.4s						
VIRV	**Villa del Rosa**	**3.65**	**11**	eP	**Pn**	**11 31 20.6**	**+0.5**
VIRV				eS	**Sn**	**11 31 58.5**	**-5.5**
QARV	**Quebrada Arrib**	**4.17**	**38**	eP	**Pn**	**11 31 27.7**	**+0.8**
QARV				eS	**Sn**	**11 32 11.7**	**-4.2**
SANV	**Sanarito**	**4.38**	**54**	eP	**Pn**	**11 31 30.1**	**+0.4**
SANV				eS	**Sn**	**11 32 18.3**	**-2.7**
CURV	**Curarigua**	**4.39**	**45**	eP	**Pn**	**11 31 30.4**	**+0.6**
CURV				eS	**Sn**	**11 32 17.5**	**-3.6**
CMIG	**Matias Romero**	**23.56**	**297**	LR	LR	11 44 46.8	
	comp=Z,93nm,21.9s,baz=296,slow=36						
YKA	**Yellowknife Ar**	**63.20**	**340**	P	**P**	**11 40 36.3**	**+1.8**
	comp=Z,0.3nm,0.6s,baz=134,slow=6.9,SNR=10						
ASAR	**Alice Springs**	**149.16**	**234**	PKPbc	**PKPbc**	**11 49 54.0**	**-0.1**
	comp=Z,0.2nm,0.5s,baz=112,slow=3.9,SNR=4.4						
WRA	**Warramunga Arr**	**150.38**	**241**	PKPbc	**PKPbc**	**11 49 57.5**	**+0.4**
	comp=Z,0.3nm,0.7s,baz=103,slow=3.0,SNR=4.5						

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*NIED **07** 11:36:00, 35°.90N×140°.90E, h44km, Mw4.2 Best double couple: M0 2.05000×10^{15} NP1: φs 143.00000°, δ2.00000°, λ60.00000°. NP2: φs 352.00000°, δ88.00000°, λ91.00000°.*
*ISCJB **07** 11:36:01.7±0.6, 35°.84N±0°.05×140°.90E±0°.08, h46km±5km, mb3.9/17, MS3.1/3, Error ellipse: s-maj=11.5km s-min=7.6km az=166.8*
*JMA **07** 11:36:02.5±0.1, 35°.87N×140°.85E, h38km±1km, M4.1*
JMA Felt I J1.
*IDC **07** 11:36:04.2±2.0, 35°.79N×140°.82E, h55km±19km, mb3.6/17, mb1 3.8/20, mb1mx3.7/41, mbtmp3.9/20, ML3.1/3, MS3.1/7, Ms1 3.1/7, ms1mx2.8/51, Error ellipse: s-maj=17.7km s-min=11.2km az=84.0*
ISC 07 11:36:01.8±1.8, **35°.87N**±0°.04×**140°.91E**±0°.10, **h30**km±13km, **n36**, σ**0^{s}99**/30, **mb3.9**/17, **MS2.9**/3, **2C, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.18**	**193**	⇑P	**Pn**	**11 36 09.1**	**+0.7**
CHOJ				S	**Sn**	**11 36 14.3**	**+2.5**
JYT	**Yasato**	**0.68**	**302**	⇑P	**Pb**	**11 36 14.9**	**-0.2**
JYT				S	**Sb**	**11 36 23.3**	**-0.9**
JHO	**Hitachi**	**0.79**	**340**	P	**Pn**	**11 36 16.9**	**+0.1**
BSO4	**Boso 4**	**1.00**	**208**	P	**Pb**	**11 36 20.8**	**+0.4**
MJAR	**Matsushiro Arr**	**2.28**	**288**	P	**Pn**	**11 36 38.7**	**+1.3**
	22nm,0.3s,baz=91,slow=8.7,SNR=150						
MJAR				LR	LR	11 37 40.9	
	comp=Z,396nm,19.5s,baz=95,slow=44						
MAT	**Matsushiro**	**2.28**	**288**	P	**Pn**	**11 36 38.8**	**+1.3**
MAT				S	**Sb**	**11 37 08.9**	**-1.3**
JHJ	**Hachijo jima 2**	**2.90**	**199**	P	**Pn**	**11 36 45.7**	**-0.3**
	16nm,0.3s,baz=329,slow=15,SNR=19						
JHJ				S	**Sn**	**11 37 19.8**	**0.0**
	47nm,0.3s,baz=75,slow=23,SNR=4.0						
KSRS	**Korea Array**	**10.55**	**282**	P	Pn	11 38 35.8	+4.9
	0.3nm,0.3s,baz=94,slow=14,SNR=5.5						
KSRS				LR	LR	11 42 29.9	
	comp=Z,146nm,21.1s,baz=88,slow=37						
USRK	**Ussuriysk Ar.**	**10.76**	**323**	P	**Pn**	**11 38 35.7**	**+2.0**
	0.2nm,0.3s,baz=119,slow=16,SNR=5.2						
USRK				LR	LR	11 42 29.8	
	comp=Z,85nm,21.6s,baz=67,slow=36						
KLR	**Kul'dur**	**14.94**	**336**	LR	LR	11 44 57.6	
	comp=Z,64nm,21.2s,baz=120,slow=36						
PETK	**Petropavlovsk-**	**20.89**	**29**	LR	LR	11 48 59.6	
	comp=Z,34nm,19.7s,baz=204,slow=37						
MA2	**Magadan**	**24.57**	**12**	P	**P**	**11 41 19.9**	**+1.1**
	2.2nm,0.6s,baz=224,slow=10,SNR=7.2						
H11N2	**WAKE ISLAND Hy**	**27.93**	**118**	T	T	12 11 02.8	
	baz=311,slow=75,SNR=49						
H11N1	**WAKE ISLAND Hy**	**27.94**	**118**	T	T	12 11 04.0	
	baz=311,slow=75,SNR=35						
H11N3	**WAKE ISLAND Hy**	**27.95**	**118**	T	T	12 10 59.2	
	baz=311,slow=75,SNR=40						
SONM	**Songino Array**	**28.11**	**306**	P	**P**	**11 41 50.2**	**-0.8**
	1.3nm,0.7s,baz=106,slow=9.4,SNR=7.2						
H11S1	**WAKE ISLAND Hy**	**28.60**	**120**	T	T	12 11 44.4	
	baz=312,slow=76,SNR=39						
H11S3	**WAKE ISLAND Hy**	**28.60**	**120**	T	T	12 11 44.4	
	baz=312,slow=76,SNR=40						
H11S2	**WAKE ISLAND Hy**	**28.61**	**120**	T	T	12 11 42.3	
	baz=312,slow=76,SNR=39						
DAV	**Davao City (W)**	**31.93**	**210**	LR	LR	11 54 40.4	
	comp=Z,24nm,21.2s,baz=309,slow=35						
ZALV	**Zalesovo Beam**	**42.40**	**313**	P	**P**	**11 43 52.9**	**-0.4**
	1.0nm,0.5s,baz=90,slow=5.9,SNR=6.8						
MKAR	**Makanchi Array**	**44.40**	**303**	P	**P**	**11 44 09.3**	**-0.3**
	4.1nm,0.7s,baz=91,slow=10,SNR=37						
KURBB	**Kurchatov Arra**	**46.40**	**309**	P	**P**	**11 44 24.7**	**-0.6**
	2.6nm,0.4s,baz=84,slow=7.8,SNR=4.4						
AAK	**Ala-Archa**	**50.69**	**299**	P	**P**	**11 44 58.3**	**-0.4**
	0.6nm,0.4s,baz=144,slow=9.5,SNR=4.8						
ILAR	**Eielson Array**	**50.69**	**32**	P	**P**	**11 44 58.7**	**+0.5**
	1.0nm,0.6s,baz=268,slow=5.7,SNR=17						
INK	**Inuvik**	**55.60**	**27**	P	**P**	**11 45 34.4**	**+0.1**
	1.2nm,0.6s,baz=308,slow=6.7,SNR=19						
WRA	**Warramunga Arr**	**55.86**	**187**	P	**P**	**11 45 35.2**	**-1.4**
	1.2nm,0.4s,baz=2.2,slow=7.7,SNR=16						
ASAR	**Alice Springs**	**59.59**	**187**	P	**P**	**11 46 01.6**	**-1.1**
	0.6nm,0.5s,baz=15,slow=9.9,SNR=16						
RES	**Resolute Bay**	**63.82**	**14**	P	**P**	**11 46 30.9**	**+0.2**
	0.8nm,0.7s,baz=300,slow=6.1,SNR=6.9						
YKA	**Yellowknife Ar**	**65.01**	**30**	P	**P**	**11 46 38.9**	**+0.2**
	0.3nm,0.7s,baz=301,slow=6.5,SNR=7.5						
AKASG	**Malin Array Be**	**74.96**	**322**	P	**P**	**11 47 38.6**	**-1.3**
	0.3nm,0.4s,baz=47,slow=6.6,SNR=3.8						
AKASG				LR	LR	12 22 56.0	
	comp=Z,40nm,18.2s,baz=0.0,slow=38						
NOA	**NORSAR Array B**	**75.10**	**337**	P	**P**	**11 47 41.2**	**+0.6**
	1.1nm,0.8s,baz=27,slow=8.2,SNR=3.1						
NVAR	**Mina Array Bea**	**76.01**	**53**	P	**P**	**11 47 46.2**	**-0.3**
	0.6nm,0.4s,baz=282,slow=6.3,SNR=3.4						
PDAR	**Pinedale Array**	**78.77**	**45**	P	**P**	**11 48 01.5**	**-0.4**
	0.3nm,0.5s,baz=277,slow=0.8,SNR=4.7						
TXAR	**Lajitas Array**	**91.15**	**52**	P	**P**	**11 49 04.4**	**+0.2**
	0.2nm,0.6s,baz=271,slow=3.1,SNR=3.5						
LPAZ	**La Paz**	**147.62**	**61**	PKPbc	**PKPbc**	**11 55 44.1**	**-0.3**
	0.7nm,0.7s,baz=265,slow=2.2,SNR=4.0						

IDC 07 11:47:19.1±600.0, **47°.34N**×**48°.72E, h0**km, **Error ellipse: s-maj=223.8km s-min=133.0km az=49.0, Western Kazakhstan**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
I31KZ	**AKTYUBINSK INF**	**6.87**	**60**	i		12 30 35.0	
	baz=248,slow=325,SNR=2.2						
I43RU	**DUBNA INFRASON**	**11.74**	**327**	i		12 59 20.0	
	baz=137,slow=317,SNR=0.7						
I46RU	**ZALESOVO INFRA**	**23.63**	**60**	i		14 12 20.0	
	baz=265,slow=327,SNR=1.3						

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*ISCJB **07** 11:47:24.5±1.2, 38°.29N±0°.04×142°.1E±0°.1, h41km±11km, mb3.6/9, Error ellipse: s-maj=14.2km s-min=6.5km az=11.1*
*JMA **07** 11:47:24.8±0.2, 38°.34N×142°.08E, h32km±2km, M4.0*
JMA Felt I J1.
*IDC **07** 11:47:28.5±2.8, 38°.31N×142°.05E, h60km±28km, mb3.4/9, mb1 3.5/12, mb1mx3.3/52, mbtmp3.6/12, ML2.9/3, Error ellipse: s-maj=28.0km s-min=15.0km az=100.0*
ISC 07 11:47:24.7±2.0, **38°.32N**±0°.05×**142°.09E**±0°.08, **h26**km±14km, **n21**, σ**1^{s}37**/26, **mb3.7**/9, **Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**0.59**	**283**	P	**Pb**	**11 47 36.4**	**-0.1**
JIO				S	**Sb**	**11 47 44.2**	**-0.4**
OFUJ	**Ofunato**	**0.82**	**337**	P	**Pn**	**11 47 39.6**	**-1.0**
JMK	**Ichinoseki**	**0.93**	**313**	P	**Pn**	**11 47 41.5**	**-0.5**
JMK				S	**Sn**	**11 47 53.1**	**-1.4**
JMM	**Marumori**	**1.12**	**246**	P	**Pn**	**11 47 44.2**	**-0.4**
JMM				S	**Sn**	**11 47 57.7**	**-1.5**
JOU	**Okura**	**1.12**	**273**	P	**Pn**	**11 47 45.0**	**+0.3**
JOU				S	**Sn**	**11 47 58.9**	**-0.4**
JOM	**Ohasama**	**1.31**	**332**	P	**Pn**	**11 47 47.3**	**0.0**
JOM				S	**Sn**	**11 48 03.5**	**-0.4**
JFK	**Kawauchi**	**1.35**	**226**	S	**Sn**	**11 48 02.5**	**-2.6**
JYK	**Kaneyama**	**1.48**	**294**	P	**Pn**	**11 47 50.1**	**+0.5**
MJAR	**Matsushiro Arr**	**3.56**	**241**	P	Pn	11 48 21.6	+3.3
	1.1nm,0.3s,baz=64,slow=11,SNR=8.7						
MAT	**Matsushiro**	**3.56**	**241**	P	Pn	11 48 23.5	+5.2
MAT				eS	**Sn**	**11 49 03.2**	**+3.6**
JHJ	**Hachijo jima 2**	**5.52**	**201**	P	**Pn**	**11 48 46.6**	**+1.4**
	5.0nm,0.3s,baz=336,slow=23,SNR=6.9						
JHJ				S	**Sn**	**11 49 46.0**	**-1.8**
	10nm,0.3s,baz=53,slow=20,SNR=4.3						
USRK	**Ussuriysk Ar.**	**9.60**	**311**	P	**Pn**	**11 49 43.8**	**+2.6**
	0.3nm,0.3s,baz=105,slow=17,SNR=2.7						
MA2	**Magadan**	**21.98**	**12**	P	**P**	**11 52 17.2**	**+0.8**
	2.6nm,0.7s,baz=211,slow=10,SNR=6.8						
SEY	**Seymchan**	**25.43**	**11**	P	**P**	**11 52 50.7**	**+0.8**
	0.4nm,0.3s,baz=205,slow=6.6,SNR=8.9						
TIXI	**Tiksi**	**34.08**	**353**	P	**P**	**11 54 06.1**	**-0.5**
	0.9nm,0.7s,baz=119,slow=5.6,SNR=3.5						
ZALV	**Zalesovo Beam**	**41.45**	**311**	P	**P**	**11 55 09.2**	**+0.2**
	1.7nm,0.4s,baz=86,slow=7.5,SNR=7.5						
MKAR	**Makanchi Array**	**43.90**	**301**	P	**P**	**11 55 28.3**	**-0.7**
	1.0nm,0.7s,baz=79,slow=11,SNR=5.6						
ILAR	**Eielson Array**	**48.12**	**33**	P	**P**	**11 56 02.6**	**+0.6**
	0.5nm,1.1s,baz=283,slow=8.2,SNR=3.1						
WRA	**Warramunga Arr**	**58.41**	**189**	P	**P**	**11 57 17.8**	**-0.3**
	0.3nm,0.4s,baz=6.6,slow=6.9,SNR=6.7						
ASAR	**Alice Springs**	**62.14**	**188**	P	**P**	**11 57 43.5**	**0.0**
	0.1nm,0.4s,baz=358,slow=5.5,SNR=5.3						
YKA	**Yellowknife Ar**	**62.43**	**31**	P	**P**	**11 57 44.7**	**-0.3**
	0.1nm,0.5s,baz=301,slow=6.2,SNR=3.0						

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*NIED **07** 11:48:00, 39°.10N×142°.40E, h35km, Mw4.3 Best double couple: M0 3.10000×10^{15} NP1: φs 328.00000°, δ22.00000°, λ-131.00000°. NP2: φs 191.00000°, δ73.00000°, λ-75.00000°.*
*BJI **07** 11:48:16.0, 38°.98N×143°.04E, h47km, mb4.7/17, mB4.7/10, Ms4.6/3, Ms7 4.5/3*
*MOS **07** 11:48:20.8±1.1, 39°.19N×142°.38E, h39km, mb4.5/26, Error ellipse: s-maj=8.8km s-min=6.6km az=90.4*
*ISCJB **07** 11:48:21.0±0.7, 39°.11N±0°.03×142°.40E±0°.05, h42km±5km, mb4.2/42, MS3.8/3, Error ellipse: s-maj=7.4km s-min=4.8km az=22.7*
*JMA **07** 11:48:21.1±0.1, 39°.11N×142°.37E, h31km±1km, M4.4*
JMA Felt II J1.
*NEIC **07** 11:48:22.4±0.5, 39°.08N×142°.38E, h35km, mb4.6/7, Error ellipse: s-maj=11.3km s-min=7.4km az=129.0*
*IDC **07** 11:48:25.1±2.5, 39°.09N×142°.27E, h61km±22km, mb3.8/22, mb1 4.0/26, mb1mx3.8/52, mbtmp4.1/26, ML3.6/4, MS3.7/2, Ms1 3.7/2, ms1mx2.9/41, Error ellipse: s-maj=16.6km s-min=12.4km az=119.0*
ISC 07 11:48:22.3±0.5, **39°.10N**±0°.05×**142°.46E**±0°.06, **h39**km±2km, **n96**, σ**1^{s}93**/111, **mb4.2**/42, **MS3.8**/3, **4C-2D, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**0.62**	**269**	P	**Pn**	**11 48 32.1**	**-2.6**
MIYJ	**Miyakonagasawa**	**0.69**	**314**	P	**Pn**	**11 48 33.1**	**-2.5**
MIYJ				S	**Sn**	**11 48 41.6**	**-3.5**
JTH	**Tanohata**	**0.96**	**331**	S	**Sn**	**11 48 50.3**	**-1.4**
JMK	**Ichinoseki**	**0.98**	**262**	P	**Pn**	**11 48 37.5**	**-2.0**
JMK				S	**Sn**	**11 48 49.3**	**-2.8**
JOM	**Ohasama**	**0.98**	**293**	P	**Pn**	**11 48 37.8**	**-1.8**
JOM				S	**Sn**	**11 48 50.1**	**-2.2**
JIO	**Ouri**	**1.08**	**234**	P	**Pn**	**11 48 38.8**	**-2.1**
JIO				S	**Sn**	**11 48 51.3**	**-3.4**
JKZ	**Kuzumaki**	**1.25**	**316**	P	**Pn**	**11 48 42.3**	**-0.9**
JKZ				S	**Sn**	**11 48 57.3**	**-1.5**
JRG	**Rokugo**	**1.45**	**282**	P	**Pn**	**11 48 45.6**	**-0.4**
JRG				S	**Sn**	**11 49 03.9**	**+0.1**
JANG	**Nango**	**1.47**	**330**	P	**Pn**	**11 48 46.2**	**0.0**
JANG				S	**Sn**	**11 49 03.1**	**-1.1**
JOU	**Okura**	**1.59**	**243**	P	**Pn**	**11 48 47.0**	**-0.9**
ERM	**Erimo**	**2.96**	**10**	ceP	**Pn**	**11 49 08.2**	**+1.5**
ERM				pmax	pmax		
	comp=Z,62nm,0.8s						
ERM	**Erimo**	**2.96**	**10**	ePn	**Pn**	**11 49 09.4**	**+2.6**
MJAR	**Matsushiro Arr**	**4.23**	**234**	P	**Pn**	**11 49 25.4**	**+1.3**
	comp=Z,13nm,0.3s,baz=40,slow=11,SNR=57						
MJAR				LR	LR	11 51 13.8	
	comp=Z,590nm,18.1s,baz=55,slow=41						
MAJO	**Matsushiro**	**4.23**	**234**	d iP	**Pn**	**11 49 25.1**	**+0.9**
MAT	**Matsushiro**	**4.23**	**234**	P	**Pn**	**11 49 26.0**	**+1.8**
MAT				eS	**Sn**	**11 50 15.5**	**+3.2**
YUK	**Yuzh-Kuril'sk**	**5.55**	**26**	eP	**Pn**	**11 49 41.2**	**-1.1**
YUK				eS	**Sn**	**11 50 40.6**	**-4.2**
YUK				pmax	pmax		
	comp=E,76nm,0.5s						
YUK				pmax	pmax		
	comp=Z,174nm,0.5s						
YUK				pmax	pmax		
	comp=N,83nm,0.4s						
SHO	**Shikotan**	**5.79**	**33**	eP	**Pn**	**11 49 42.8**	**-2.7**
SHO				eS	**Sn**	**11 50 44.3**	**-6.2**
SHO				pmax	pmax		
	comp=Z,38nm,0.8s						
SHO				pmax	pmax		
	comp=E,17nm,0.4s						
SHO				pmax	pmax		
	comp=N,8.0nm,0.3s						
JHJ2	**Mitsune**	**6.35**	**201**	ePn	**Pn**	**11 49 54.6**	**+1.4**
KUR	**Kuril'sk**	**7.33**	**31**	eP	**Pn**	**11 50 06.4**	**-0.2**
KUR				iS	**Sn**	**11 51 24.5**	**-3.9**
KUR				pmax	pmax		
	comp=Z,15nm,0.7s						
KUR				smax	smax		
	comp=N,37nm,0.6s						
KUR				smax	smax		
	comp=E,35nm,0.4s						
YSS	**Yuzh-Sakhalins**	**7.85**	**1**	eP	Pn	11 50 21.1	+7.2
YSS				pmax	pmax		
	comp=Z,30nm,1.0s						
VLA	**Vladivostok**	**8.94**	**300**	eP	**Pn**	**11 50 28.3**	**-0.4**
USRK	**Ussuriysk Ar.**	**9.35**	**306**	P	**Pn**	**11 50 36.0**	**+1.7**
	comp=Z,0.6nm,0.3s,baz=123,slow=14,SNR=8.5						
MDJ	**Mudanjiang**	**11.06**	**304**	ePn	**Pn**	**11 50 59.8**	**+1.9**
	comp=Z,9.5nm,0.8s						
JNU	**Nakatsue**	**11.10**	**241**	P	**Pn**	**11 50 59.4**	**+0.9**
	comp=Z,0.6nm,0.3s,baz=51,slow=4.5,SNR=5.8						
KSRS	**Korea Array**	**11.55**	**266**	P	**Pn**	**11 51 06.0**	**+1.5**
	comp=Z,0.3nm,0.3s,baz=77,slow=14,SNR=6.0						
KSAR	**Wonju Array Be**	**11.58**	**266**	P	**Pn**	**11 51 06.0**	**+1.0**
KSAR	**Wonju Array Be**	**11.58**	**266**	P	**Pn**	**11 51 06.0**	**+1.0**
KLR	**Kul'dur**	**12.70**	**326**	P	**Pn**	**11 51 19.4**	**-0.8**
	comp=Z,0.1nm,0.3s,baz=129,slow=10,SNR=4.3						
MA2	**Magadan**	**21.16**	**12**	P	**P**	**11 53 04.1**	**+0.2**
	comp=Z,7.4nm,0.6s,baz=219,slow=9.8,SNR=15						
MA2	**Magadan**	**21.16**	**12**	P	**P**	**11 53 04.1**	**+0.2**
MA2				eP	**P**	**11 53 04.2**	**+0.3**
YAK	**Yakutsk**	**24.26**	**345**	P	**P**	**11 53 34.2**	**-1.2**
	comp=Z,2.5nm,0.5s,baz=336,slow=15,SNR=7.7						
YAK	**Yakutsk**	**24.26**	**345**	eP	**P**	**11 53 34.3**	**-1.1**
YAK				e*PP	**pP**	**11 53 41.7**	**-4.4**
YAK				e		11 57 12.8	
YAK				eS	**S**	**11 57 52.5**	**+1.2**
YAK				e*SS	**sS**	**11 58 07.0**	**-2.0**
YAK				eSS	**SnSn**	**11 58 39.4**	**+3.6**
YAK				pmax	pmax		
	comp=Z,24nm,1.1s						
YAK				pmax	pmax		
	comp=N,11nm,1.0s						
YAK				pmax	pmax		
	comp=E,5.0nm,1.4s						
YAK				pmax	pmax		
	comp=Z,282nm,5.7s						
YAK				pmax	pmax		
	comp=N,253nm,6.9s						
YAK				pmax	pmax		
	comp=E,170nm,4.6s						
YAK				smax	smax		
	comp=N,42nm,2.0s						
YAK				smax	smax		
	comp=E,300nm,4.4s						
YAK	**Yakutsk**	**24.26**	**345**	P	**P**	**11 53 34.2**	**-1.2**
YAK				eP	**P**	**11 53 34.5**	**-0.9**
TPUB	**Ta-pu**	**24.34**	**236**	eP	**P**	**11 53 33.5**	**-3.0**
WHN	**Wuhan**	**24.53**	**258**	P	**P**	**11 53 36.4**	**-1.8**
SEY	**Seymchan**	**24.61**	**11**	P	**P**	**11 53 39.7**	**+1.1**
	comp=E,2.9nm,0.5s,baz=198,slow=6.7,SNR=12						
SEY	**Seymchan**	**24.61**	**11**	⇑iP	**P**	**11 53 38.9**	**+0.3**
BOD	**Bodaibo**	**26.27**	**325**	eP	**P**	**11 53 52.1**	**-1.6**
BOD				pmax	pmax		
	comp=Z,5.0nm,1.2s						
ULN	**Ulaanbaatar**	**26.95**	**301**	eP	**P**	**11 53 59.2**	**-0.9**
ULN				pmax	pmax		
	comp=Z,1.0nm,0.6s						
XAN	**Xi'an**	**27.31**	**270**	P	**P**	**11 54 03.4**	**0.0**
XAN				pmax	pmax		
	comp=Z,7.0nm,0.6s						
XAN				pmax	pmax		
	comp=Z,88nm,4.4s						
SONM	**Songino Array**	**27.39**	**300**	P	**P**	**11 54 03.6**	**-0.4**
	comp=Z,1.5nm,0.6s,baz=101,slow=9.1,SNR=7.8						
ENH	**Enshi**	**28.39**	**262**	eP	**P**	**11 54 11.5**	**-1.4**
	comp=Z,7.9nm,0.6s						
H11N2	**WAKE ISLAND Hy**	**28.58**	**125**	T	T	12 24 40.4	
	baz=318,slow=75,SNR=368						
H11N1	**WAKE ISLAND Hy**	**28.59**	**125**	T	T	12 24 41.1	
	baz=318,slow=75,SNR=418						
H11N3	**WAKE ISLAND Hy**	**28.60**	**125**	T	T	12 24 38.9	
	baz=318,slow=75,SNR=498						
H11S1	**WAKE ISLAND Hy**	**29.37**	**127**	T	T	12 25 38.8	
	baz=319,slow=76,SNR=11						
H11S3	**WAKE ISLAND Hy**	**29.37**	**127**	T	T	12 25 38.5	
	baz=319,slow=76,SNR=12						
H11S2	**WAKE ISLAND Hy**	**29.39**	**127**	T	T	12 25 39.7	
	baz=319,slow=76,SNR=130						
TLY	**Talaya**	**29.66**	**308**	P	**P**	**11 54 24.0**	**0.0**
	comp=Z,1.4nm,0.4s,baz=354,slow=2.4,SNR=4.9						
TLY	**Talaya**	**29.66**	**308**	eP	**P**	**11 54 22.1**	**-2.0**
TLY				pmax	pmax		
	comp=Z,6.0nm,1.0s						
TLY				MLR	MLR		
	comp=Z,109nm,17.0s						
ZAK	**Zakamensk**	**29.70**	**305**	eP	**P**	**11 54 23.3**	**-1.2**
ZAK				pmax	pmax		
	comp=Z,5.0nm,1.1s						
BILL	**Bilibino**	**31.81**	**17**	iP	**P**	**11 54 43.9**	**+1.1**
BILL				pmax	pmax		
	comp=Z,1.0nm,1.0s						
GTA	**Gaotai**	**32.80**	**284**	eP	**P**	**11 54 52.2**	**+0.2**
GTA				PcP	**PcP**	**11 57 31.7**	**-4.7**
GTA				S	**S**	**12 00 10.6**	**+4.1**
GTA				SS	**SnSn**	**12 02 12.5**	**+7.9**
GTA				pmax	pmax		
	comp=Z,5.0nm,0.8s						
GTA				pmax	pmax		
	comp=Z,45nm,6.4s						
GTA				LR	LR		
	comp=Z,71nm,17.1s						
GTA				LR	LR		
	comp=Z,150nm,15.2s						
GTA				LR	LR		
	comp=Z,170nm,19.0s						
TIXI	**Tiksi**	**33.35**	**352**	P	**P**	**11 54 59.5**	**+3.3**
	comp=Z,0.5nm,0.2s,baz=306,slow=3.4,SNR=3.2						
KMI	**Kunming**	**36.13**	**259**	P	**P**	**11 55 20.9**	**-0.1**
KMI				pmax	pmax		
	comp=Z,17nm,0.9s						
ZALV	**Zalesovo Beam**	**41.17**	**311**	P	**P**	**11 56 02.3**	**-0.3**
	comp=Z,5.9nm,0.7s,baz=91,slow=8.1,SNR=19						
ZALV				PcP	**PcP**	**11 58 00.9**	**-0.3**
	comp=Z,0.6nm,0.3s,baz=72,slow=4.7,SNR=3.1						
CHTO	**Chiang Mai**	**42.62**	**254**	eP	**P**	**11 56 14.4**	**-0.6**
CHTO				pmax	pmax		
	comp=Z,2.0nm,0.6s						
CHTO	**Chiang Mai**	**42.62**	**254**	eP	**P**	**11 56 14.4**	**-0.6**
	comp=Z,2.3nm,0.6s						
CMAR	**Chiang Mai Arr**	**42.84**	**254**	P	**P**	**11 56 16.6**	**-0.1**
	comp=Z,1.4nm,0.7s,baz=46,slow=6.7,SNR=12						
CMAR	**Chiang Mai Arr**	**42.84**	**254**	P	**P**	**11 56 16.7**	**-0.1**
CMAR				pmax	pmax		
	comp=Z,2.0nm,0.7s						
MKAR	**Makanchi Array**	**43.76**	**300**	P	**P**	**11 56 23.2**	**-0.6**
	comp=Z,7.1nm,0.8s,baz=84,slow=9.2,SNR=4.7						

Code	Station Name	Δ°	AZ°	Op	ISC	Time	Res
KURK	Kurchatov	45.34	307	eP	P	11 56 35.6	-0.7
KURK				pmax	pmax		
	comp=Z,34nm,0.8s						
KURK	Kurchatov	45.34	307	eP	P	11 56 35.6	-0.7
	comp=Z,34nm,0.8s						
ILAR	Eielson Array	47.31	33	P	P	11 56 53.0	+1.3
	comp=Z,2.0nm,0.7s,baz=264,slow=5.9,SNR=19						
TKM2	Tokmak 2	49.40	297	eP	P	11 57 08.3	-0.1
TKM2				pmax	pmax		
	comp=Z,16nm,1.1s						
TKM2	Tokmak 2	49.40	297	eP	P	11 57 08.2	-0.1
	comp=Z,16nm,1.1s						
BRVK	Borovoye	49.87	311	ceP	P	11 57 11.4	-0.1
BRVK				pmax	pmax		
	comp=Z,4.0nm,0.6s						
AAK	Ala-Archa	50.26	297	eP	P	11 57 14.5	-0.3
AAK				pmax	pmax		
	comp=Z,6.0nm,0.9s						
AAK	Ala-Archa	50.26	297	eP	P	11 57 14.2	-0.6
	comp=Z,4.5nm,1.1s						
INK	Inuvik	52.18	28	P	P	11 57 30.1	+1.6
	comp=Z,1.3nm,0.6s,baz=296,slow=6.2,SNR=7.2						
KKAR	Karatay Array	52.83	299	eP	P	11 57 33.3	-0.5
KKAR				pmax	pmax		
	comp=Z,5.0nm,0.8s						
KKAR	Karatay Array	52.83	299	eP	P	11 57 33.3	-0.5
	comp=Z,4.9nm,0.8s						
ARU	Arti	55.38	318	d iP	P	11 57 52.0	-0.1
ARU						11 59 55.4	
ARU				S	S	12 05 34.9	+1.3
ARU				SS	SS	12 09 17.2	-0.7
ARU				pmax	pmax		
	comp=Z,32nm,1.7s						
DLBC	Dease Lake	56.50	39	P	P	11 58 03.2	+3.0
	comp=Z,0.8nm,0.5s,baz=259,slow=10,SNR=4.1						
ABKAR	Akbulak array	57.26	309	eP	P	11 58 05.1	-0.6
	comp=Z,6.1nm,0.7s						
WRA	Warramunga Arr	59.22	189	P	P	11 58 18.8	-0.8
	comp=Z,1.4nm,0.4s,baz=6.5,slow=7.0,SNR=17						
RES	Resolute Bay	60.40	15	P	P	11 58 27.1	+0.1
	comp=Z,0.8nm,0.8s,baz=280,slow=6.1,SNR=3.2						
YKA	Yellowknife Ar	61.61	31	P	P	11 58 35.5	+0.1
	comp=Z,0.3nm,0.7s,baz=298,slow=6.6,SNR=7.2						
ASAR	Alice Springs	62.95	189	P	P	11 58 44.8	-0.1
	comp=Z,0.9nm,0.7s,baz=7.5,slow=5.6,SNR=10						
OBN	Obninsk	66.94	323	eP	P	11 59 09.5	-0.9
OBN				pmax	pmax		
	comp=Z,5.0nm,0.9s						
FINES	FINESS Array B	67.38	332	P	P	11 59 12.7	-0.4
	comp=Z,2.8nm,0.7s,baz=70,slow=2.2,SNR=5.5						
FINES	FINESS Array B	67.38	332	ceP	P	11 59 12.6	-0.5
FINES				pmax	pmax		
	comp=Z,3.0nm,0.7s						
KIV	Kislovodsk	70.18	311	eP	P	11 59 31.3	+0.3
KIV				pmax	pmax		
	comp=Z,9.0nm,1.0s						
KBZ	Khabaz	70.19	311	P	P	11 59 31.4	+0.5
	comp=Z,2.0nm,0.7s,baz=16,slow=5.9,SNR=4.0						
GNI	Garni	71.14	307	eP	P	11 59 38.9	+1.9
GNI				pmax	pmax		
	comp=Z,14nm,1.0s						
HFS	Hagfors	72.55	336	LR	LR	12 33 39.2	
	comp=Z,65nm,18.6s,baz=335,slow=37						
NOA	NORSAR Array B	72.60	337	P	P	11 59 44.5	-0.7
	comp=Z,1.0nm,0.6s,baz=38,slow=5.8,SNR=3.4						
NVAR	Mina Array Bea	73.10	54	P	P	11 59 50.2	+1.4
	comp=Z,0.7nm,0.6s,baz=282,slow=6.3,SNR=2.9						
AKASG	Malin Array Be	73.17	322	P	P	11 59 48.5	-0.3
	comp=Z,3.3nm,0.5s,baz=44,slow=6.1,SNR=16						
KIEV	Kiev	73.18	322	eP	P	11 59 48.8	0.0
KIEV				pmax	pmax		
	comp=Z,3.0nm,0.9s						
PDAR	Pinedale Array	75.64	46	P	P	12 00 04.6	+1.1
	comp=Z,0.6nm,0.7s,baz=247,slow=1.9,SNR=6.5						
CLL	Collm	79.72	330	eP	P	12 00 26.0	+0.2
CLL	Collm	79.72	330	eP	P	12 00 26.0	+0.2
ANMO	Albuquerque	82.63	51	eP	P	12 00 43.6	+1.7
ANMO				pmax	pmax		
	comp=Z,10.0nm,3.2s						
TXAR	Lajitas Array	88.21	53	P	P	12 01 10.3	+0.7
	comp=Z,0.2nm,0.5s,baz=295,slow=2.4,SNR=4.0						
SIV	San Ignacio	149.10	48	PKPbc	PKPbc	12 08 07.3	+0.5
	comp=Z,1.9nm,0.6s,baz=239,slow=5.0,SNR=2.0						

*NIED **07** 11:52:00, 38°.70N×144°.20E, h5km, Mw4.2 Best double couple: M₀2.30000×10¹⁵ NP1:ϕs11.00000°, δ28.00000°, λ-91.00000°. NP2:ϕs192.00000°, δ62.00000°, λ-89.00000°.*

*IDC **07** 11:52:29.2±0.6, 38°.57N×144°.30E, h0km, mb4.0/24, mb1 4.2/30, mb1mx4.1/57, mbtmp4.0/30, ML3.3/6, MS3.2/3, Ms1 3.2/3, ms1mx2.7/48, Error ellipse: s-maj=16.2km s-min=12.4km az=127.0*

*ISCJB **07** 11:52:31.9±1.3, 38°.69N±0°.04×144°.18E±0°.04, h25km±10km, mb4.2/37, MS3.5/2, Error ellipse: s-maj=6.7km s-min=4.4km az=151.9*

*MOS **07** 11:52:31.8±1.4, 38°.72N×144°.29E, h29km, mb4.3/23, Error ellipse: s-maj=9.9km s-min=6.3km az=91.6*

*JMA **07** 11:52:32.5±0.2, 38°.71N×144°.21E, h46km, M4.6*

*NEIC **07** 11:52:33.1±2.1, 38°.61N×144°.28E, h24km±14km, mb4.8/5, Error ellipse: s-maj=9.8km s-min=5.7km az=133.0*

ISC 07 11:52:33.7±3.9, 38°.69N±0°.06×144°.21E±0°.07, h25km±27km, n80, σ0s.95/89, mb4.1/37, 3C-1D, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
OFUJ	Ofunato	2.02	282	P	Pn	11 53 05.2	-0.9
JTH	Tanohata	2.21	305	P	Pn	11 53 07.5	-1.2
JTH				S	Sn	11 53 33.2	-1.9
JIO	Ouri	2.25	265	P	Pn	11 53 08.3	-1.0
JIO				S	Sn	11 53 34.9	-1.4
JMK	Ichinoseki	2.35	277	P	Pn	11 53 10.1	-0.5
JMK				eS	Sn	11 53 38.0	-0.6
JOM	Ohasama	2.40	290	P	Pn	11 53 10.8	-0.5
JOM				S	Sn	11 53 39.1	-0.8
JANG	Nango	2.68	310	P	Pn	11 53 13.9	-1.3
JOU	Okura	2.80	264	P	Pn	11 53 16.5	-0.3
JOU				S	Sn	11 53 48.8	-1.0
JMM	Marumori	2.81	254	P	Pn	11 53 16.0	-1.0
JMM				S	Sn	11 53 48.2	-1.8
JRG	Rokugo	2.87	285	P	Pn	11 53 17.7	-0.1
JRG				eS	Sn	11 53 51.0	-0.5
JFK	Kawauchi	2.94	244	P	Pn	11 53 17.3	-1.6
JYK	Kaneyama	3.02	276	P	Pn	11 53 19.9	+0.1
JYK				eS	Sn	11 53 53.9	-1.2
JTM	Tenmabayashi	3.20	312	P	Pn	11 53 21.5	-0.8
JTM				S	Sn	11 53 57.7	-2.0
JFT	Otama	3.27	250	P	Pn	11 53 23.1	-0.2
JFT				S	Sn	11 53 59.8	-1.6
ERM	Erimo	3.42	347	ceP	Pn	11 53 24.9	-0.4
ERM				pmax	pmax		
	comp=Z,82nm,1.7s						
ERM	Erimo	3.42	347	ePn	Pn	11 53 25.2	-0.1
JNBK	Urakawa-nobuka	3.75	343	P	Pn	11 53 28.8	-1.1
JNBK				eS	Sn	11 54 12.1	-1.2
JCH	Churui	3.97	351	P	Pn	11 53 31.4	-1.6
JRY	Ryogami san	5.00	239	P	Pn	11 53 46.0	-1.1
MJAR	Matsushiro Arr	5.22	248	Pn	Pn	11 53 50.0	-0.2
	comp=Z,3.3nm,0.3s,baz=67,slow=12,SNR=21						
MAJO	Matsushiro	5.22	248	d iP	Pn	11 53 50.8	+0.6
MAJO	Matsushiro	5.22	248	ePn	Pn	11 53 50.4	+0.2
MAT	Matsushiro	5.22	248	P	Pn	11 53 50.7	+0.5
MAT				S	Sn	11 54 50.3	+0.7
YUK	Yuzh-Kuril'sk	5.48	13	eP	Pn	11 53 50.2	-3.5
YUK				eS	Sn	11 54 48.7	-7.2
YUK				pmax	pmax		
	comp=Z,86nm,0.3s						
YUK				pmax	pmax		
	comp=N,49nm,0.5s						
YUK				pmax	pmax		
	comp=E,49nm,0.5s						
SHO	Shikotan	5.54	20	eP	Pn	11 53 50.5	-4.0
SHO				eS	Sn	11 54 48.6	-8.7
SHO				pmax	pmax		
	comp=Z,97nm,0.8s						
SHO				pmax	pmax		
	comp=N,70nm,0.6s						
SHO				pmax	pmax		
	comp=E,59nm,0.5s						
JHJ	Hachijo jima 2	6.62	214	Pn	Pn	11 54 06.9	-2.4
	comp=E,17nm,0.3s,baz=159,slow=22,SNR=10						
JHJ				LR	LR	11 57 06.6	
	comp=E,52nm,18.1s,baz=306,slow=42						
KUR	Kuril'sk	7.08	21	eP	Pn	11 54 12.0	-3.6
KUR				i S	Sn	11 55 26.5	-8.8
KUR				pmax	pmax		
	comp=N,12nm,0.6s						
KUR				pmax	pmax		
	comp=E,20nm,0.6s						
KUR				pmax	pmax		
	comp=Z,25nm,0.6s						
KUR				smax	smax		
	comp=N,41nm,0.6s						
KUR				smax	smax		
	comp=E,21nm,0.5s						
YSS	Yuzh-Sakhalins	8.33	353	eP	Pn	11 54 29.6	-3.1
YSS				pmax	pmax		
	comp=Z,20nm,1.0s						
USRK	Ussuriysk Ar.	10.69	305	Pn	Pn	11 55 05.5	+0.4
	comp=Z,0.3nm,0.3s,baz=92,slow=11,SNR=7.5						
JNU	Nakatsue	12.15	247	LR	LR	12 00 31.7	
	comp=Z,223nm,18.1s,baz=114,slow=40						
MDJ	Mudanjiang	12.43	303	ePn	Pn	11 55 29.7	+0.8
	comp=Z,27nm,1.1s						
KSRS	Korea Array	12.89	270	Pn	Pn	11 55 35.2	0.0
	comp=Z,0.1nm,0.3s,baz=98,slow=14,SNR=6.1						
KSAR	Wonju Array Be	12.93	270	P	Pn	11 55 35.3	-0.4
KSAR	Wonju Array Be	12.93	270	Pn	Pn	11 55 35.2	-0.4
KLR	Kul'dur	13.82	324	Pn	Pn	11 55 49.4	+1.6
	comp=Z,0.1nm,0.3s,baz=111,slow=16,SNR=3.9						
PETK	Petropavlovsk-	17.16	28	P	P	11 56 32.3	-0.7
	comp=Z,0.1nm,0.3s,baz=238,slow=8.5,SNR=4.4						
MA2	Magadan	21.32	9	P	P	11 57 18.5	+0.2
	comp=Z,4.9nm,0.7s,baz=219,slow=8.3,SNR=14						
MA2	Magadan	21.32	9	P	P	11 57 18.5	+0.2
MA2				eP	P	11 57 18.6	+0.2
SEY	Seymchan	24.78	9	P	P	11 57 54.4	+1.3
	comp=Z,8.7nm,0.7s,baz=187,slow=6.5,SNR=33						
SEY	Seymchan	24.78	9	ceP	P	11 57 53.5	+0.4
YAK	Yakutsk	25.02	344	P	P	11 57 55.3	0.0
	comp=Z,1.1nm,0.4s,baz=225,slow=19,SNR=4.5						
BOD	Bodaibo	27.40	324	eP	P	11 58 15.5	-1.3
BOD				pmax	pmax		
	comp=Z,4.0nm,0.9s						
ULN	Ulaanbaatar	28.33	301	ceP	P	11 58 27.1	+1.6
ULN				pmax	pmax		
	comp=Z,8.0nm,2.5s						
SONM	Songino Array	28.77	301	P	P	11 58 30.3	+1.0
	comp=Z,1.7nm,0.6s,baz=93,slow=9.0,SNR=10.0						
SONM				LR	LR	12 10 24.4	
	comp=Z,94nm,19.3s,baz=70,slow=37						
ENH	Enshi	29.69	264	eP	P	11 58 39.2	+1.6
	comp=Z,9.6nm,0.8s						
TLY	Talaya	30.98	308	eP	P	11 58 53.7	+4.9
TLY				pmax	pmax		
	comp=Z,2.0nm,0.7s						
TLY				MLR	MLR		
	comp=Z,134nm,18.0s						
BILL	Bilibino	31.83	16	eP	P	11 58 55.9	-0.1
BILL				e		11 59 05.5	
BILL				e		11 59 59.1	
BILL				ePPP	PPP	12 00 12.2	
BILL				pmax	pmax		
	comp=Z,6.0nm,0.8s						
TIXI	Tiksi	33.95	351	P	P	11 59 13.6	-0.8
	comp=Z,1.7nm,0.3s,baz=341,slow=1.7,SNR=9.1						
TIXI	Tiksi	33.95	351	eP	P	11 59 14.4	0.0
TIXI				pmax	pmax		
	comp=Z,4.0nm,1.0s						
ZALV	Zalesovo Beam	42.47	311	P	P	12 00 26.8	+0.5
	comp=Z,0.9nm,0.6s,baz=85,slow=6.7,SNR=5.2						
ZALV				PcP	PcP	12 02 19.2	+0.4
	comp=Z,1.5nm,0.7s,baz=74,slow=3.3,SNR=4.6						
CMAR	Chiang Mai Arr	44.05	256	P	P	12 00 39.9	+0.4
	comp=Z,0.5nm,0.4s,baz=39,slow=7.2,SNR=4.6						
MKAR	Makanchi Array	45.13	301	P	P	12 00 48.4	+0.5
	comp=Z,1.6nm,0.7s,baz=82,slow=10.0,SNR=10						
KURK	Kurchatov	46.67	307	eP	P	12 00 59.7	-0.2
KURK				pmax	pmax		
	comp=Z,6.0nm,0.6s						
KURK	Kurchatov	46.67	307	eP	P	12 00 59.7	-0.2
	comp=Z,5.7nm,0.6s						
KURK				P	P	12 01 00.6	+0.7
KURBB	Kurchatov Arra	46.75	307	P	P	12 01 00.6	+0.1
	comp=Z,2.8nm,0.8s,baz=81,slow=8.3,SNR=7.9						
ILAR	Eielson Array	46.91	33	P	P	12 01 01.6	-0.1
	comp=Z,1.0nm,0.8s,baz=262,slow=6.8,SNR=9.5						
TKM2	Tokmak 2	50.80	298	eP	P	12 01 33.0	+1.0
TKM2				pmax	pmax		
	comp=Z,5.0nm,0.9s						
TKM2	Tokmak 2	50.80	298	eP	P	12 01 33.0	+1.0
	comp=Z,4.6nm,0.9s						
BRVK	Borovoye	51.16	312	eP	P	12 01 35.8	+1.5
BRVK				pmax	pmax		
	comp=Z,5.0nm,1.7s						
AAK	Ala-Archa	51.66	298	eP	P	12 01 38.0	-0.5
AAK				pmax	pmax		
	comp=Z,10.0nm,1.8s						
INK	Inuvik	51.90	28	P	P	12 01 39.7	+0.1
	comp=Z,2.0nm,0.6s,baz=298,slow=7.8,SNR=14						
DLBC	Dease Lake	55.95	39	P	P	12 02 10.0	+0.5
	comp=Z,1.5nm,0.8s,baz=270,slow=2.0,SNR=3.5						
ARU	Arti	56.59	318	eP	P	12 02 14.5	+0.5
ARU				pmax	pmax		
	comp=Z,15nm,1.1s						
ARU	Arti	56.59	318	eP	P	12 02 14.5	+0.5
	comp=Z,14nm,1.1s						
ABKAR	Akbulak array	58.56	310	eP	P	12 02 28.0	0.0
	comp=Z,10nm,0.7s						
WRA	Warramunga Arr	59.05	191	P	P	12 02 30.2	-1.4
	comp=Z,2.9nm,0.7s,baz=13,slow=7.5,SNR=23						
RES	Resolute Bay	60.44	15	P	P	12 02 39.6	-0.8
	comp=Z,1.1nm,0.7s,baz=263,slow=3.6,SNR=5.9						
YKA	Yellowknife Ar	61.26	31	P	P	12 02 46.1	-0.1
	comp=Z,0.3nm,0.8s,baz=297,slow=6.5,SNR=4.5						
ASAR	Alice Springs	62.77	191	P	P	12 02 55.3	-1.6
	comp=Z,0.9nm,0.7s,baz=16,slow=7.6,SNR=14						
ARCES	ARCESS Array B	63.22	340	P	P	12 03 00.9	+1.6
	comp=Z,1.7nm,0.8s,baz=41,slow=5.9,SNR=2.6						
OBN	Obninsk	68.08	324	eP	P	12 03 30.8	0.0
OBN				e		12 06 04.4	
OBN				pmax	pmax		
	comp=Z,26nm,1.5s						
FINES	FINESS Array B	68.37	333	P	P	12 03 32.9	+0.3
	comp=Z,3.0nm,0.7s,baz=29,slow=8.7,SNR=8.0						
KIV	Kislovodsk	71.48	312	eP	P	12 03 52.9	+0.8
KIV				pmax	pmax		
	comp=Z,10.0nm,0.9s						
KBZ	Khabaz	71.49	311	P	P	12 03 52.9	+0.9
	comp=Z,4.5nm,0.9s,baz=65,slow=1.9,SNR=8.6						
NVAR	Mina Array Bea	72.23	55	P	P	12 03 57.2	+0.3
	comp=Z,0.8nm,0.7s,baz=300,slow=6.7,SNR=4.1						
NOA	NORSAR Array B	73.50	338	P	P	12 04 03.0	-0.8
	comp=Z,0.7nm,0.6s,baz=31,slow=6.2,SNR=5.2						
NOA	NORSAR Array B	73.50	338	P	P	12 04 03.0	-0.8
NOA				pmax	pmax		
	comp=Z,1.0nm,0.6s						
AKASG	Malin Array Be	74.32	323	P	P	12 04 07.9	-0.8
	comp=Z,0.4nm,0.4s,baz=43,slow=5.4,SNR=6.0						
PDAR	Pinedale Array	74.93	47	P	P	12 04 12.2	-0.5
	comp=Z,0.4nm,0.6s,baz=285,slow=3.9,SNR=4.2						
TXAR	Lajitas Array	87.36	54	P	P	12 05 19.2	+0.4
	comp=Z,0.3nm,0.6s,baz=304,slow=3.5,SNR=3.6						
TORD	Torodi Ar. Bea	117.66	318	PKP	PKPdf	12 11 17.0	-1.0
	comp=Z,0.2nm,0.5s,baz=0.0,slow=1.8,SNR=3.1						

*NIED **07** 11:59:00, 38°.40N×142°.20E, h8km, Mw3.7 Best double couple: M₀4.69000×10¹⁴ NP1:ϕs133.00000°, δ41.00000°, λ-137.00000°. NP2:ϕs9.00000°, δ63.00000°, λ-57.00000°.*

*IDC **07** 11:59:13.4±1.4, 38°.35N×142°.54E, h0km, mb3.4/5, mb1 3.5/7, mb1mx3.4/43, mbtmp3.5/7, ML3.1/2, Error ellipse: s-maj=39.1km s-min=21.3km az=88.0*

*ISCJB **07** 11:59:15.4±1.2, 38°.40N±0°.03×142°.29E±0°.07, h22km±7km, mb3.4/5, Error ellipse: s-maj=8.8km s-min=5.3km az=13.0*

*JMA **07** 11:59:16.9±0.1, 38°.44N×142°.24E, h30km±2km, M3.6*

ISC 07 11:59:16.0±1.9, 38°.44N±0°.04×142°.24E±0°.07, h15km±11km, n20, σ0s.90/31, mb3.4/5, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
JIO	Ouri	0.70	271	P	Pb	11 59 30.0	+0.1
JIO				S	Sg	11 59 38.9	-0.1
OFUJ	Ofunato	0.78	325	P	Pg	11 59 31.4	+0.2
JMK	Ichinoseki	0.95	303	P	Pb	11 59 34.0	-0.1
JMK				eS	Sb	11 59 46.3	-0.2
MIYJ	Miyakonagasawa	1.18	344	P	Pn	11 59 37.0	-1.0
MIYJ				S	Sb	11 59 51.6	-1.6
JOU	Okura	1.24	267	P	Pn	11 59 38.8	0.0
JOU				S	Sb	11 59 54.5	-0.5
JOM	Ohasama	1.27	325	P	Pn	11 59 39.0	-0.2
JOM				S	Sb	11 59 55.1	-0.6
JMM	Marumori	1.28	244	P	Pn	11 59 38.3	-1.0
JYK	Kaneyama	1.55	288	P	Pb	11 59 43.8	-0.6
JYK				eS	Sn	12 00 02.5	-0.3
JRG	Rokugo	1.58	308	P	Pb	11 59 44.2	-0.6
JKZ	Kuzumaki	1.70	336	P	Pn	11 59 45.6	+0.5
JKZ				S	Sn	12 00 06.4	-0.1
JYS	Shirataka	1.73	263	P	Pn	11 59 45.5	0.0
JYS				eS	Sn	12 00 06.6	-0.6
JFT	Otama	1.77	239	P	Pn	11 59 46.2	+0.2
JFT				S	Sn	12 00 07.6	-0.6
JANG	Nango	2.01	344	P	Pn	11 59 50.1	+0.7
JANG				eS	Sn	12 00 14.1	-0.1
MJAR	Matsushiro Arr	3.73	241	Pn	Pn	12 00 15.1	+2.1
	0.5nm,0.3s,baz=62,slow=11,SNR=5.0						
JHJ	Hachijo jima 2	5.67	201	Pn	Pn	12 00 39.9	+0.1
	3.6nm,0.3s,baz=66,slow=20,SNR=5.6						
JHJ				Sn	Sn	12 01 43.2	-1.4
	3.0nm,0.3s,baz=72,slow=19,SNR=2.8						
SEY	Seymchan	25.29	11	P	P	12 04 42.2	+0.8
	0.5nm,0.3s,baz=184,slow=3.7,SNR=4.5						
MKAR	Makanchi Array	43.94	301	P	P	12 07 24.7	+2.5
	0.1nm,0.2s,baz=96,slow=8.8,SNR=2.4						
KURBB	Kurchatov Arra	45.67	307	P	P	12 07 36.2	+0.4
	0.2nm,0.6s,baz=83,slow=7.8,SNR=3.7						
WRA	Warramunga Arr	58.55	189	P	P	12 09 11.2	-0.7
	0.5nm,0.7s,baz=5.6,slow=7.1,SNR=4.3						
ASAR	Alice Springs	62.27	189	P	P	12 09 36.6	-0.7
	0.1nm,0.4s,baz=0.0,slow=7.6,SNR=4.5						

MAN 07 12:03:05, 13°.57N×122°.91E, h11km, mb3.9, ML2.7, MS2.3, 2C, Luzon

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
AUQP	San Andres	0.33	223	eP	Pb	12 03 12.9	0.0
GQP	Guinayangan	0.56	307	⇑eP	Pg	12 03 15.8	-0.1
GQP				eS	Sg	12 03 23.8	+0.4
BOAC	Boac	1.04	264	eP	Pb	12 03 24.4	-0.6
BOAC				eS	Sn	12 03 40.1	+0.1
LQP	Lukban	1.43	292	⇑eP	Pn	12 03 30.9	-0.3
OTRP	Odiongan	1.48	216	eP	Pn	12 03 30.9	-0.7
SJMP	San Jose	2.06	238	eP	Pn	12 03 38.9	-0.6

JMA 07 12:03:45.8, 39°.20N×141°.87E, h57km±1km, M3.6, 4C-5D, Eastern Honshu

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
OFUJ	Ofunato	0.20	233	⇓P	Pn	12 03 54.9	0.0
MIYJ	Miyakonagasawa	0.38	354	⇑P	Pn	12 03 56.3	0.0
MIYJ				S	Sn	12 04 03.7	-0.2
JOM	Ohasama	0.52	302	⇑P	Pn	12 03 57.9	+0.1
JOM				S	Sn	12 04 06.7	+0.2
JMK	Ichinoseki	0.56	244	⇓P	Pn	12 03 58.1	-0.1
JMK				S	Sn	12 04 06.9	-0.3
JIO	Ouri	0.85	209	⇓P	Pn	12 04 01.3	-0.4
JRG	Rokugo	0.98	282	P	Pn	12 04 03.5	+0.1
JRG				S	Sn	12 04 16.7	+0.2
JANG	Nango	1.20	347	⇑P	Pn	12 04 06.2	-0.2
JANG				eS	Sn	12 04 22.7	+0.9
JYK	Kaneyama	1.21	257	⇓P	Pn	12 04 06.6	+0.1
JYK				S	Sn	12 04 22.5	+0.6
JOU	Okura	1.26	229	⇓P	Pn	12 04 06.9	-0.3
JOU				S	Sn	12 04 23.2	+0.1
JAH	Hinai	1.37	316	⇑P	Pn	12 04 09.1	+0.4
JAH				eS	Sn	12 04 27.4	+1.6
JMM	Marumori	1.58	213	P	Pn	12 04 10.8	-0.7

*ISCJB **07** 12:05:26.7±1.3, 3°.0N±0°.3×48°.5W±0°.1, h10km, mb3.9/7, Error ellipse: s-maj=41.5km s-min=13.8km az=157.2*

*IDC **07** 12:05:28.1±2.0, 3°.47N×48°.41W, h0km, mb3.9/7, mb1 4.3/8, mb1mx3.9/37, mbtmp4.0/8, ML4.6/1, MS2.9/1, Ms1 2.9/1, ms1mx2.4/39, Error ellipse: s-maj=68.7km s-min=27.4km az=0.0*

ISC 07 12:05:28.9±1.5, 3°.2N±0°.3×48°.5W±0°.2, h10km, n15, σ1s.56/9, mb4.1/7, North Atlantic Ocean

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
PTGA	Pitinga	12.09	251	Pn	Pn	12 08 22.9	+1.5
	3.2nm,0.3s,baz=241,slow=23,SNR=20						
PTGA				Sn	Sn	12 10 34.0	-2.4
	2.5nm,0.3s,baz=322,slow=23,SNR=5.0						
RCBR	Riachuelo	15.45	125	LR	LR	12 15 39.2	
	comp=Z,44nm,18.1s,baz=294,slow=39						
H10N3	ASCENSION HYDR	35.65	108	T	T	12 50 14.2	
	baz=287,slow=75,SNR=30						
H10N2	ASCENSION HYDR	35.66	108	T	T	12 50 14.9	
	baz=287,slow=75,SNR=38						
H10N1	ASCENSION HYDR	35.67	108	T	T	12 50 15.8	
	baz=287,slow=75,SNR=31						
H10S3	ASCENSION HYDR	35.83	110	T	T	12 50 29.1	
	baz=289,slow=75,SNR=35						
H10S1	ASCENSION HYDR	35.84	110	T	T	12 50 29.8	
	baz=289,slow=75,SNR=33						
H10S2	ASCENSION HYDR	35.85	110	T	T	12 50 30.4	
	baz=289,slow=75,SNR=31						
TORD	Torodi Ar. Bea	50.58	76	P	P	12 14 27.9	-0.5
	0.3nm,0.5s,baz=256,slow=5.8,SNR=3.1						
TXAR	Lajitas Array	58.33	303	P	P	12 15 26.1	+1.4
	1.2nm,0.5s,baz=134,slow=6.7,SNR=26						
PDAR	Pinedale Array	66.85	316	P	P	12 16 21.1	-0.4
	0.9nm,0.6s,baz=108,slow=9.5,SNR=11						
NVAR	Mina Array Bea	72.24	309	P	P	12 16 55.9	+1.0
	1.5nm,0.7s,baz=102,slow=6.9,SNR=5.3						
YKA	Yellowknife Ar	76.31	334	P	P	12 17 16.0	-1.8
	0.3nm,0.6s,baz=98,slow=5.8,SNR=8.2						
INK	Inuvik	85.22	338	P	P	12 18 05.3	0.0
	1.5nm,0.7s,baz=82,slow=4.4,SNR=10						
ILAR	Eielson Array	90.72	335	P	P	12 18 32.0	+0.2
	0.4nm,0.5s,baz=64,slow=3.8,SNR=8.6						

*NIED **07** 12:10:00, 38°.50N×142°.20E, h35km, Mw3.5 Best double couple: M₀2.32000×10¹⁴ NP1:ϕs159.00000°, δ16.00000°, λ-32.00000°. NP2:ϕs280.00000°, δ82.00000°, λ-104.00000°.*

*IDC **07** 12:10:29.4±1.7, 38°.18N×142°.80E, h0km, mb3.6/3, mb1 3.7/5, mb1mx3.4/43, mbtmp3.6/5, ML3.3/2, MS2.4/1, Ms1 2.4/1, ms1mx2.0/54, Error ellipse: s-maj=44.5km s-min=24.8km az=102.0*

*ISCJB **07** 12:10:30.0±1.7, 38°.31N±0°.05×142°.32E±0°.09, h18km±11km, mb3.5/3, Error ellipse: s-maj=12.5km s-min=8.4km az=14.8*

*JMA **07** 12:10:32.6±0.1, 38°.45N×142°.23E, h28km±2km, M4.0*

JMA Felt I J1.

ISC 07 12:10:31.9±1.8, 38°.37N±0°.05×142°.16E±0°.07, h19km±5km, n12, σ0s.69/16, mb3.5/3, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
JIO	Ouri	0.64	278	P	Pn	12 10 45.8	-0.1
JIO				S	Sn	12 10 54.6	-0.9
OFUJ	Ofunato	0.81	332	P	Pb	12 10 47.0	-0.3
JMK	Ichinoseki	0.94	309	P	Pn	12 10 49.7	-0.3
JOU	Okura	1.18	270	P	Pg	12 10 54.6	-0.1
JOU				S	Sg	12 11 10.2	+0.1
JMM	Marumori	1.19	245	P	Pb	12 10 53.9	+0.1
JMM				eS	Sn	12 11 09.6	+0.6
JOM	Ohasama	1.29	329	P	Pn	12 10 54.7	-0.2
JOM				S	Sn	12 11 10.9	-0.7
JYK	Kaneyama	1.51	292	P	Pb	12 10 59.0	-0.3
JYK				eS	Sb	12 11 18.7	+0.6
MJAR	Matsushiro Arr	3.63	241	Pn	Pb	12 11 32.2	-3.3
	1.0nm,0.3s,baz=61,slow=11,SNR=8.0						
JHJ	Hachijo jima 2	5.58	201	Pn	Pn	12 11 53.6	-0.2
	4.7nm,0.3s,baz=311,slow=22,SNR=8.3						
JHJ				Sn	Sn	12 12 56.3	-1.1
	3.6nm,0.3s,baz=90,slow=20,SNR=3.3						
JHJ				LR	LR	12 13 23.4	
	comp=Z,36nm,19.9s,baz=25,slow=31						

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
SEY	**Seymchan**	**25.37**	**11**	P	**P**	**12 15 58.8**	**+1.4**
	0.7nm,0.5s,baz=209,slow=19,SNR=4.8						
MKAR	**Makanchi Array**	**43.92**	**301**	P	P	12 18 41.9	+4.6
	0.2nm,0.3s,baz=88,slow=9.0,SNR=3.6						
WRA	**Warramunga Arr**	**58.47**	**189**	P	**P**	**12 20 26.5**	**-0.1**
	1.0nm,0.9s,baz=7.8,slow=7.7,SNR=5.5						

IDC 07 12:18:18.6±3.0**,37°.39N**×**145°.13E,h0km,mb3.6**/3**, mb1 3.8**/4**,mb1mx3.4**/54**,mbtmp3.5**/4**,ML3.2**/1**,MS3.3**/2**, Ms1 3.3**/2**,ms1mx2.5**/53**,Error ellipse: s-maj=78.4km s-min=30.8km az=56.0,Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MJAR	**Matsushiro Arr**	**5.61**	**263**	Pn	Pn	12 19 43.8	+0.6
	0.7nm,0.3s,baz=78,slow=11,SNR=6.2						
JCJ	**Chichijima**	**10.56**	**194**	LR	LR	12 25 11.2	
	comp=Z,124nm,18.5s,baz=54,slow=39						
MKAR	**Makanchi Array**	**46.44**	**302**	P	P	12 26 46.6	-0.3
	0.2nm,0.2s,baz=88,slow=8.8,SNR=3.2						
PMG	**Port Moresby**	**46.59**	**177**	LR	LR	12 45 39.0	
	comp=Z,45nm,19.8s,baz=76,slow=35						
WRA	**Warramunga Arr**	**57.93**	**192**	P	P	12 28 11.6	-1.0
	1.4nm,0.6s,baz=8.2,slow=8.3,SNR=17						
ASAR	**Alice Springs**	**61.65**	**192**	P	P	12 28 39.2	+1.1
	0.3nm,0.6s,baz=5.4,slow=6.4,SNR=6.4						

JMA 07 12:18:35.8±0.2**,38°.80N**×**142°.91E,h9km**±2km**,M3.5,Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**1.01**	**287**	P	Pg	12 18 55.2	0.0
MIYJ	**Miyakonagasawa**	**1.15**	**313**	P	Pb	12 18 56.8	-1.0
MIYJ				S	Sg	12 19 12.1	-0.7
JIO	**Ouri**	**1.27**	**255**	P	Pn	12 18 58.9	-0.8
JIO				S	Sb	12 19 15.9	-0.4
JMK	**Ichinoseki**	**1.33**	**277**	P	Pn	12 19 00.1	-0.4
JMK				S	Sb	12 19 17.5	-0.5
JOM	**Ohasama**	**1.43**	**299**	P	Pn	12 19 01.8	-0.1
JOM				S	Sn	12 19 20.5	-0.3
JKZ	**Kuzumaki**	**1.70**	**315**	P	Pn	12 19 06.3	+0.6
JKZ				S	Sn	12 19 27.8	+0.1
JRG	**Rokugo**	**1.87**	**289**	P	Pb	12 19 09.7	-0.4
JRG				*e*S	Sn	12 19 32.4	+0.7
JANG	**Nango**	**1.91**	**326**	P	Pn	12 19 08.9	+0.4
JMM	**Marumori**	**1.91**	**241**	*e*S	Sb	12 19 33.8	-0.9
JYK	**Kaneyama**	**2.00**	**274**	P	Pb	12 19 11.0	-1.3
JYK				*e*S	Sn	12 19 35.6	+0.8
JFT	**Otama**	**2.40**	**239**	*e*S	Sn	12 19 44.9	+0.1

*IDC **07** 12:22:20.1±2.1, 36°.37N×142°.20E, h0km, mb3.5/5, mb1 3.6/7, mb1mx3.4/65, mbtmp3.6/7, ML3.6/2, MS2.7/1, Ms1 2.7/1, ms1mx2.2/46, Error ellipse: s-maj=56.4km s-min=21.7km az=65.0*

*JMA **07** 12:22:25.0±0.2, 36°.37N×141°.80E, h71km±4km, M3.2*

ISC 07 12:22:24.3±1.3**,36°.33N**±0°.07×**141°.83E**±0°.09**,h19km,n15, σ1s15**/18**,mb3.5**/5**,Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**1.00**	**232**	P	**Pg**	**12 22 43.8**	**-0.1**
CHOJ				S	**Sn**	**12 22 58.6**	**+1.6**
JHO	**Hitachi**	**1.06**	**286**	P	**Pb**	**12 22 43.6**	**-0.4**
ONAJ	**Iwakimizuishiy**	**1.13**	**313**	P	**Pn**	**12 22 44.9**	**-0.3**
BSO3	**Boso 3**	**1.86**	**216**	P	**Pn**	**12 22 55.5**	**+0.5**
JRY	**Ryogami san**	**2.39**	**263**	P	**Pn**	**12 23 03.1**	**+0.6**
JRY				S	**Sn**	**12 23 30.6**	**-0.7**
JOD2	**Odawara 2**	**2.47**	**245**	P	**Pn**	**12 23 04.7**	**+1.1**
MJAR	**Matsushiro Arr**	**2.93**	**275**	Pn	**Pn**	**12 23 10.8**	**+0.9**
	5.3nm,0.3s,baz=115,slow=8.9,SNR=32						
MAT	**Matsushiro**	**2.93**	**275**	P	**Pn**	**12 23 11.4**	**+1.5**
MAT				S	**Sb**	**12 23 49.9**	**-1.5**
JHJ	**Hachijo jima 2**	**3.62**	**208**	Pn	**Pn**	**12 23 19.9**	**+0.5**
	16nm,0.3s,baz=348,slow=23,SNR=18						
JHJ				Sn	**Sn**	**12 23 59.6**	**-1.9**
	22nm,0.3s,baz=259,slow=23,SNR=8.6						
KSRS	**Korea Array**	**11.20**	**280**	LR	LR	12 28 57.3	
	comp=Z,35nm,18.9s,baz=30,slow=34						
SONM	**Songino Array**	**28.46**	**305**	P	**P**	**12 28 18.9**	**+0.7**
	0.6nm,0.5s,baz=105,slow=7.4,SNR=5.0						
MKAR	**Makanchi Array**	**44.78**	**303**	P	**P**	**12 30 37.3**	**+0.7**
	0.2nm,0.4s,baz=88,slow=7.4,SNR=3.8						
KURBB	**Kurchatov Arra**	**46.70**	**309**	P	**P**	**12 30 52.1**	**+0.3**
	0.6nm,0.7s,baz=83,slow=7.8,SNR=5.9						
WRA	**Warramunga Arr**	**56.41**	**188**	P	**P**	**12 32 02.7**	**-1.9**
	0.6nm,1.1s,baz=11,slow=6.8,SNR=3.2						
ASAR	**Alice Springs**	**60.14**	**188**	P	**P**	**12 32 31.3**	**+0.7**
	0.3nm,1.0s,baz=18,slow=6.5,SNR=2.8						

JMA 07 12:27:13.4±0.4**,38°.04N**×**144°.56E,h42km,M4.1,Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**2.49**	**296**	P	Pn	12 27 52.9	+1.4
JIO	**Ouri**	**2.56**	**280**	S	Sn	12 28 23.9	+1.6
JMM	**Marumori**	**2.98**	**268**	P	Pn	12 27 58.6	+0.4
JMM				S	Sn	12 28 33.1	+0.4
JOU	**Okura**	**3.09**	**277**	S	Sn	12 28 37.7	+2.4
JFT	**Otama**	**3.39**	**262**	P	Pn	12 28 04.7	+1.0
JFT				S	Sn	12 28 44.1	+1.4
JYK	**Kaneyama**	**3.41**	**286**	P	Pn	12 28 06.9	+2.8
JYK				S	Sn	12 28 45.9	+2.6
JTM	**Tenmabayashi**	**3.85**	**316**	*e*S	Sn	12 28 56.6	+2.5
JNBK	**Urakawa-nobuka**	**4.46**	**342**	P	Pn	12 28 20.1	+1.7
JNBK				S	Sn	12 29 11.1	+2.2

IDC 07 12:32:07.7±2.3**,54°.26N**×**86°.20E,h0km,mb1 3.6**/2**, mb1mx3.2**/65**,mbtmp3.6**/2**,ML3.4**/2**,Error ellipse: s-maj=17.6km s-min=11.1km az=54.0,Southwestern Siberia**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
I46RU	**ZALESOVO INFRA**	**0.87**	**249**	*i*		12 38 45.0	
	baz=71,slow=331,SNR=5.5						
ZALV	**Zalesovo Beam**	**0.87**	**249**	Pg	Pg	12 32 22.4	-1.9
	3.5nm,0.3s,baz=64,slow=16,SNR=29						
ZALV				Lg	Lg	12 32 37.3	
	9.6nm,0.3s,baz=69,slow=28,SNR=44						
KURBB	**Kurchatov Arra**	**5.94**	**235**	Pn	Pn	12 33 37.3	+0.6
	0.4nm,0.3s,baz=52,slow=14,SNR=31						
KURBB				Sn	Sn	12 34 44.3	-1.1
	baz=54,slow=24,SNR=2.4						
KURBB				Lg	Lg	12 35 16.4	
	0.1nm,0.3s,baz=49,slow=32,SNR=7.1						
MKAR	**Makanchi Array**	**7.88**	**200**	Pn	Pn	12 34 04.9	+1.4
	1.1nm,0.3s,baz=24,slow=14,SNR=33						
MKAR				Sn	Sn	12 35 33.2	-0.1
	0.2nm,0.3s,baz=22,slow=27,SNR=4.4						
MKAR				Lg	Lg	12 36 19.4	
	0.1nm,0.3s,baz=19,slow=32,SNR=7.8						

*IDC **07** 12:34:22.3±0.7, 1°.44N×118°.23E, h0km, mb4.1/9, mb1 4.3/10, mb1mx3.9/58, mbtmp4.1/10, ML4.5/1, MS2.9/2, Ms1 2.9/2, ms1mx2.5/55, Error ellipse: s-maj=57.1km s-min=13.8km az=65.0*

*ISCJB **07** 12:34:25.2±0.5, 1°.32N±0°.05×118°.05E±0°.07, h32km, mb4.0/11, MS3.0/1, Error ellipse: s-maj=10.1km s-min=6.2km az=156.1*

*NEIC **07** 12:34:27.4±0.5, 1°.34N×118°.13E, h35km, mb4.1/2, Error ellipse: s-maj=24.9km s-min=7.4km az=60.0*

NEIC Felt [II] at Tanjungredep.

*DJA **07** 12:34:28.8±0.4, 1°N±3°×11°8E±°, h52km±77km, M4.5/14, mb4.7/6, mB5.0/3, MLv4.5/14, Mw(mB)4.4/3*

ISC 07 12:34:27.3±0.6**,1°.35N**±0°.06×**118°.08E**±0°.06**,h32km,n26, σ1s17**/27**,mb3.9**/11**,Borneo**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BKB	**Balikpapan**	**2.84**	**204**	P	Pb	12 35 21.0	+3.5
MTKI	**Muara Teweh, K**	**3.91**	**234**	P	**Pn**	**12 35 25.9**	**+0.7**
MRSI	**Marisa**	**3.96**	**103**	P	**Pn**	**12 35 26.1**	**+0.2**
APSI	**Ampana**	**4.22**	**122**	P	**Pn**	**12 35 31.3**	**+1.8**
TTSI	**Tana Toraja**	**4.70**	**158**	P	**Pn**	**12 35 36.5**	**+0.5**
KBKI	**Kotabaru**	**4.99**	**202**	P	**Pn**	**12 35 38.3**	**-1.8**
KKM	**Kota Kinabalu**	**5.02**	**338**	*e*Pn	**Pn**	**12 35 42.0**	**+1.4**
LUWI	**Luwuk**	**5.26**	**117**	P	**Pn**	**12 35 44.1**	**+0.3**
	77nm,0.7s,1μm0.4nm						
LUWI	**Luwuk**	**5.26**	**117**	*e*Pn	**Pn**	**12 35 43.6**	**-0.2**
SPSI	**Sidrap Palu**	**5.54**	**162**	P	**Pn**	**12 35 47.6**	**0.0**
	109nm,0.8s,1μm0.4nm						
BBKI	**Banjar Baru**	**5.77**	**214**	P	**Pn**	**12 35 50.3**	**-0.5**
	47nm,0.7s,2μm0.3nm						
KAPI	**Kappang**	**6.54**	**165**	Pn	**Pn**	**12 36 01.7**	**+0.4**
	9.6nm,0.3s,baz=1.2,slow=11,SNR=18						
KAPI				Sn	**Sn**	**12 37 14.8**	**0.0**
	1.6nm,0.3s,baz=200,slow=19,SNR=2.1						
KAPI				LR	LR	12 39 07.3	
	comp=Z,83nm,18.4s,baz=316,slow=43						
KAPI	**Kappang**	**6.54**	**165**	*e*Pn	**Pn**	**12 36 01.3**	**0.0**
KAPI				Sn	**Sn**	**12 37 14.8**	**0.0**
MDSI	**Maura Dua**	**15.04**	**247**	P	**P**	**12 38 06.2**	**+3.4**
CMAR	**Chiang Mai Arr**	**25.33**	**313**	P	**P**	**12 39 51.0**	**-0.5**
	0.9nm,0.4s,baz=135,slow=7.4,SNR=11						
WRA	**Warramunga Arr**	**26.50**	**144**	P	**P**	**12 40 00.9**	**-1.1**
	4.2nm,0.7s,baz=324,slow=10,SNR=33						
WRAB	**Tennant Creek**	**26.50**	**144**	*e*P	**P**	**12 39 59.5**	**-2.6**
	8.3nm,0.8s						
ASAR	**Alice Springs**	**29.24**	**149**	P	**P**	**12 40 27.1**	**+0.5**
	0.9nm,0.5s,baz=344,slow=14,SNR=21						
ASAR				PcP	**PcP**	**12 43 33.3**	**-0.1**
	0.9nm,0.7s,baz=337,slow=2.3,SNR=14						
MJAR	**Matsushiro Arr**	**39.67**	**26**	LR	LR	12 57 00.9	
	comp=Z,23nm,21.7s,baz=40,slow=34						
STKA	**Stephens Creek**	**39.86**	**148**	P	**P**	**12 41 58.0**	**-0.1**
	1.6nm,0.3s,baz=323,slow=9.6,SNR=3.5						
SONM	**Songino Array**	**47.40**	**349**	P	**P**	**12 42 58.1**	**-0.7**
	0.8nm,0.6s,baz=167,slow=9.0,SNR=8.5						
MKAR	**Makanchi Array**	**54.96**	**331**	P	**P**	**12 43 56.1**	**+0.6**
	0.6nm,0.5s,baz=121,slow=9.3,SNR=3.3						
ZALV	**Zalesovo Beam**	**59.14**	**338**	P	**P**	**12 44 24.4**	**-0.4**
	0.6nm,0.4s,baz=128,slow=6.8,SNR=5.6						
ABKAR	**Akbulak array**	**68.69**	**323**	*e*P	**P**	**12 45 27.5**	**-0.3**
	0.6nm,0.6s						
TIXI	**Tiksi**	**70.54**	**4**	P	**P**	**12 45 37.4**	**-1.3**
	1.1nm,0.3s,baz=182,slow=2.5,SNR=5.6						
VNDA	**Vanda**	**82.28**	**171**	P	**P**	**12 46 45.2**	**0.0**
	0.6nm,0.5s,baz=350,slow=5.9,SNR=6.0						

*IDC **07** 12:52:43.8±7.7, 36°.55N×141°.69E, h0km, mb3.4/2, mb1 3.5/3, mb1mx3.2/34, mbtmp3.2/3, ML3.1/1, Error ellipse: s-maj=163.9km s-min=32.4km az=24.0*

*ISCJB **07** 12:52:47.6±1.5, 36°.07N±0°.05×141°.45E±0°.10, h19km±9km, mb3.3/2, Error ellipse: s-maj=13.2km s-min=8.6km az=176.2*

*JMA **07** 12:52:50.2±0.1, 36°.07N×141°.23E, h36km±2km, M3.2*

ISC 07 12:52:47.6±3.8**,36°.09N**±0°.05×**141°.3E**±0°.1**,h3km**±27km**,n8, σ0s61**/13**,Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.54**	**224**	P	**Pb**	**12 53 00.2**	**+0.5**
CHOJ				S	**Sb**	**12 53 07.2**	**-0.6**
JHO	**Hitachi**	**0.79**	**311**	P	**Pb**	**12 53 04.4**	**+0.4**
JHO				S	**Sb**	**12 53 15.4**	**+0.3**
ONAJ	**Iwakimizuishiy**	**1.09**	**338**	P	**Pb**	**12 53 09.0**	**-0.1**
ONAJ				*e*S	**Sb**	**12 53 23.5**	**-0.2**
JRY	**Ryogami san**	**1.96**	**268**	P	**Pn**	**12 53 20.7**	**-1.0**
MJAR	**Matsushiro Arr**	**2.55**	**281**	Pn	**Pn**	**12 53 29.8**	**0.0**
	3.0nm,0.3s,baz=84,slow=9.1,SNR=11						
MJAR				Sn	**Sb**	**12 54 04.8**	**-0.9**
	3.7nm,0.3s,baz=19,slow=18,SNR=5.5						
MAT	**Matsushiro**	**2.55**	**281**	P	**Pn**	**12 53 30.4**	**+0.6**
MAT				S	**Sn**	**12 54 01.9**	**+0.5**
WRA	**Warramunga Arr**	**56.12**	**188**	P	**P**	**13 02 28.1**	**-0.2**
	0.2nm,0.5s,baz=4.2,slow=7.2,SNR=5.2						
ASAR	**Alice Springs**	**59.85**	**188**	P	**P**	**13 02 54.7**	**+0.2**
	0.2nm,0.8s,baz=12,slow=13,SNR=4.8						

IDC 07 12:56:14.6±2.1**,22°.64S**×**179°.76W,h0km,mb3.8**/4**, mb1 4.0**/4**,mb1mx3.6**/38**,mbtmp3.8**/4**,Error ellipse: s-maj=165.6km s-min=32.7km az=160.0,South of Fiji Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
STKA	**Stephens Creek**	**35.41**	**246**	P	P	13 03 11.5	-0.8
	0.8nm,0.5s,baz=102,slow=11,SNR=3.9						
ASAR	**Alice Springs**	**42.47**	**259**	P	P	13 04 11.4	-0.3
	0.4nm,0.5s,baz=98,slow=7.4,SNR=20						
WRA	**Warramunga Arr**	**42.72**	**265**	P	P	13 04 14.3	+0.5
	0.9nm,0.3s,baz=97,slow=8.4,SNR=35						
TXAR	**Lajitas Array**	**89.58**	**58**	P	P	13 09 14.5	0.0
	0.3nm,0.6s,baz=208,slow=5.1,SNR=4.4						

*ISCJB **07** 13:03:38.6±0.3, 24°.28N±0°.01×121°.84E±0°.02, h6km±2km, Error ellipse: s-maj=2.8km s-min=2.0km az=37.7*

*JMA **07** 13:03:38.8±0.1, 24°.28N×121°.77E, h11km±4km, M3.3*

*TAP **07** 13:03:39.0, 24°.30N×121°.76E, h19km, ML3.9, B*

ISC 07 13:03:39.2±0.8**,24°.28N**±0°.02×**121°.80E**±0°.02**,h17km**±5km**, n69,σ0s73**/118**,13C-5D,Taiwan**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
EHP	**Heping Village**	**0.06**	**298**	*i* P	**Pg**	**13 03 42.8**	**+0.4**
	baz=311						
EHP				*i* S	**Sg**	**13 03 45.0**	**+0.6**
	baz=311						
ENA	**Nanau**	**0.15**	**340**	⇑*i*P	**Pg**	**13 03 43.0**	**-0.3**
	baz=354						
TWD	**Chiawan**	**0.27**	**222**	⇓*i*P	**Pg**	**13 03 44.9**	**-0.2**
	baz=220						
TWD				*i* S	**Sg**	**13 03 49.2**	**0.0**
	baz=220						
TWC	**Suao**	**0.33**	**8**	⇑*i*P	**Pg**	**13 03 46.1**	**0.0**
	baz=10.0						
TWC				*i* S	**Sg**	**13 03 50.7**	**-0.2**
	baz=10.0						
HWA	**Hwalien**	**0.35**	**210**	*e*P	**Pb**	**13 03 47.0**	**0.0**
	baz=209						
ENTT	**Nioudou**	**0.41**	**329**	⇑*i*P	**Pg**	**13 03 47.5**	**-0.2**
	baz=332						
ENTT				S	**Sg**	**13 03 52.8**	**-0.6**
	baz=332						
NNS	**Nan Shan**	**0.42**	**292**	⇑*i*P	**Pg**	**13 03 47.4**	**-0.3**
	baz=292						
NNS				*i* S	**Sg**	**13 03 52.6**	**-0.9**
	baz=292						
TWE	**Neicheng**	**0.45**	**345**	⇑*i*P	**Pg**	**13 03 48.1**	**-0.2**
	baz=348						
TWE				*i* S	**Sg**	**13 03 54.2**	**-0.3**
	baz=348						
ILA	**Ilan**	**0.48**	**355**	*e*P	**Pg**	**13 03 48.8**	**-0.1**
	baz=354						
ILA				S	**Sg**	**13 03 55.9**	**+0.4**
	baz=354						
ESF	**Shoufeng Towns**	**0.49**	**213**	*e*P	**Pb**	**13 03 49.1**	**-0.2**
	baz=219						
WHF	**Hehuan Shan**	**0.51**	**254**	⇑*i*P	**Pg**	**13 03 48.9**	**-0.5**
	baz=260						
WHF				*i* S	**Sg**	**13 03 55.7**	**-0.7**
	baz=260						
NSK	**Sanguang**	**0.56**	**314**	⇑*i*P	**Pg**	**13 03 49.8**	**-0.5**
	baz=315						
NSK				S	**Sg**	**13 03 56.9**	**-1.0**
	baz=315						
TWT	**Tachien**	**0.57**	**267**	⇑*i*P	**Pg**	**13 03 50.6**	**0.0**
	baz=265						
TWT				*i* S	**Sg**	**13 03 57.6**	**-0.5**
	baz=265						
ESL	**Shilin**	**0.57**	**216**	P	**Pg**	**13 03 50.1**	**-0.4**
	baz=218						
ESL				*e*S	**Sg**	**13 03 58.0**	**-0.2**
	baz=218						
TWA	**Mucha**	**0.72**	**344**	P	**Pg**	**13 03 53.6**	**+0.3**
	baz=346						
TWA				S	**Sb**	**13 04 03.0**	**0.0**
	baz=346						
TWB1	**Santiao Chiao**	**0.74**	**13**	⇑P	**Pb**	**13 03 53.4**	**-0.3**
	baz=15						
TWB1				S	**Sb**	**13 04 03.1**	**-0.4**
	baz=15						
NWF	**Wu-fen Shan**	**0.79**	**359**	⇑P	**Pb**	**13 03 54.5**	**+0.1**
	baz=352						
NWF				S	**Sb**	**13 04 04.1**	**-0.7**
	baz=352						
TAP1	**Taipei**	**0.79**	**342**	*e*P	**Pb**	**13 03 54.6**	**+0.1**
	baz=341						
TAP1				*e*S	**Sb**	**13 04 04.5**	**-0.5**
	baz=341						
TAP	**Taipei**	**0.80**	**341**	*e*P	**Pb**	**13 03 52.8**	**-1.8**
	baz=341						
TAP				*e*S	**Sg**	**13 04 05.6**	**+0.2**
	baz=341						
WDT	**Danda**	**0.80**	**229**	⇓*i*P	**Pb**	**13 03 54.4**	**-0.4**
	baz=228						
WDT				S	**Sg**	**13 04 06.1**	**+0.5**
	baz=228						
NSTT	**Nanjuang**	**0.81**	**296**	⇓*i*P	**Pb**	**13 03 54.7**	**-0.1**
	baz=295						
NSTT				*e*S	**Sg**	**13 04 05.7**	**+0.1**
	baz=295						
NCU	**National Centr**	**0.88**	**321**	P	**Pn**	**13 03 57.2**	**+0.4**
	baz=317						
NCU				S	**Sn**	**13 04 09.2**	**-0.1**
	baz=317						
TWS1	**Kuangyinshan**	**0.89**	**337**	P	**Pn**	**13 03 56.9**	**0.0**
	baz=337						
TWS1				*e*S	**Sn**	**13 04 09.5**	**+0.1**
	baz=337						
EHY	**Hungye**	**0.89**	**209**	*e*P	**Pb**	**13 03 54.6**	**-1.5**
	baz=218						
SMLT	**Sun Moon Lake**	**0.91**	**244**	P	**Pb**	**13 03 56.3**	**-0.3**
	baz=236						
SMLT				*e*S	**Sn**	**13 04 09.8**	**-0.4**
	baz=236						
HSN	**Hsinchu**	**0.92**	**305**	*e*P	**Pg**	**13 03 56.9**	**0.0**
	baz=300						
HSN				*e*S	**Sg**	**13 04 09.4**	**+0.4**
	baz=300						
TWQ1	**Liyutan**	**0.94**	**274**	⇑P	**Pn**	**13 03 57.8**	**+0.2**
	baz=273						
TWQ1				S	**Sg**	**13 04 09.7**	**0.0**
	baz=273						
TYC	**Yuchr**	**0.94**	**247**	*i* P	**Pb**	**13 03 56.8**	**-0.2**
	baz=245						
NSY	**Sanyi**	**0.95**	**278**	P	**Pn**	**13 03 58.2**	**+0.4**
	baz=277						
NSY				*e*S	**Sg**	**13 04 10.4**	**+0.1**
	baz=277						
TWY	**Chenhua**	**1.00**	**350**	*e*P	**Pb**	**13 03 57.5**	**-0.6**
	baz=350						
TCU	**Taichung**	**1.03**	**263**	*i* P	**Pg**	**13 03 59.8**	**+0.6**
	baz=261						
TCU				S	**Sn**	**13 04 13.8**	**+0.8**
	baz=261						
TWF1	**Yuli**	**1.03**	**206**	*e*P	**Pb**	**13 03 56.9**	**-1.7**
	baz=215						
JYNG	**Yonagunijimaku**	**1.06**	**81**	P	**Pg**	**13 03 59.9**	**+0.2**
WNT	**Mingjian**	**1.09**	**249**	*e*P	**Pg**	**13 04 00.4**	**+0.1**
	baz=245						
WNT				*e*S	**Sg**	**13 04 16.8**	**+2.1**
	baz=245						
YUS	**Yu-Shan**	**1.11**	**225**	⇓*i*P	**Pb**	**13 03 59.7**	**-0.5**
	baz=212						
YUS				*e*S	**Sb**	**13 04 14.7**	**+0.3**
	baz=212						
YOJ	**Yonaguni jima**	**1.12**	**81**	P	**Pg**	**13 04 00.8**	**0.0**
YOJ				S	**Sg**	**13 04 16.1**	**+0.6**
YOJ	**Yonaguni jima**	**1.12**	**81**	*i* P	**Pg**	**13 04 00.5**	**-0.3**
	baz=71						
YOJ				*e*S	**Sg**	**13 04 16.5**	**+1.0**
	baz=71						
ALS	**Alishan**	**1.19**	**230**	⇓*i*P	**Pb**	**13 04 01.4**	**0.0**
	baz=216						
ALS				*e*S	**Sg**	**13 04 18.3**	**+0.5**
	baz=216						
CHN5	**Tsauling**	**1.23**	**237**	*i* P	**Pb**	**13 04 02.4**	**+0.3**
	baz=220						
CHN5				*i* S	**Sg**	**13 04 20.1**	**+1.0**
	baz=220						
CHKT	**Chengkung**	**1.24**	**199**	*e*P	**Pn**	**13 04 00.8**	**-0.9**
	baz=183						
WGK	**Gukeng**	**1.28**	**243**	*e*P	**Pb**	**13 04 03.1**	**+0.4**
	baz=241						
WGK				*e*S	**Sg**	**13 04 21.2**	**+0.7**
	baz=241						
ELDTW	**Lidau**	**1.30**	**213**	*e*P	**Pn**	**13 04 01.4**	**-1.3**
	baz=199						
PCYT	**Pengchaiyu**	**1.36**	**10**	*e*P	**Pn**	**13 04 03.8**	**+0.3**
	baz=9.0						
CHN2	**Minshiung**	**1.42**	**239**	*e*P	**Pb**	**13 04 05.7**	**+0.4**
	baz=238						
CHN2				*e*S	**Sg**	**13 04 27.2**	**+2.1**
	baz=238						
CHN4	**Tsaushan**	**1.44**	**230**	⇑*i*P	**Pb**	**13 04 06.2**	**+0.6**
	baz=218						
CHN4				*e*S	**Sg**	**13 04 26.8**	**+1.1**
	baz=218						
WTCT	**Ta-ch'eng**	**1.45**	**254**	*e*P	**Pg**	**13 04 06.4**	**-0.6**
	baz=251						
STYT	**Tauyuan**	**1.47**	**221**	*e*P	**Pn**	**13 04 05.0**	**+0.1**
	baz=221						
STYT				*e*S	**Sg**	**13 04 26.2**	**-0.3**
	baz=221						
CHY	**Chiayi**	**1.48**	**238**	*e*P	**Pb**	**13 04 06.5**	**+0.3**
	baz=238						
CHY				*e*S	**Sg**	**13 04 27.3**	**+0.3**
	baz=238						
WTP	**Ta-pu**	**1.50**	**227**	⇑P	**Pb**	**13 04 06.5**	**-0.1**
	baz=226						
WTP				*e*S	**Sg**	**13 04 27.7**	**+0.2**
	baz=226						
TWK	**Hsinying**	**1.57**	**230**	*e*P	**Pb**	**13 04 07.6**	**-0.2**
	baz=229						
CHN1	**Nanshi**	**1.60**	**227**	P	**Pb**	**13 04 08.5**	**+0.2**
	baz=227						
CHN1				*e*S	**Sg**	**13 04 30.2**	**-0.4**
	baz=227						
TWG	**Pinlang**	**1.60**	**205**	*e*P	**Pn**	**13 04 06.6**	**-0.1**
	baz=190						
SGST	**Jiashian**	**1.63**	**223**	*e*P	**Pb**	**13 04 08.4**	**-0.4**
	baz=216						
SGST				S	**Sg**	**13 04 31.6**	**-0.3**
	baz=216						
CHN8	**Yiju**	**1.73**	**238**	*e*P	**Pn**	**13 04 09.0**	**+0.6**
	baz=223						
CHN8				*e*S	**Sg**	**13 04 33.7**	**-1.1**
	baz=223						
IRIF	**Iriomote-Funau**	**1.76**	**88**	P	**Pn**	**13 04 09.4**	**+0.5**
IRIF				S	**Sn**	**13 04 31.8**	**+0.8**
SCLT	**Jiali**	**1.84**	**233**	*e*P	**Pn**	**13 04 09.8**	**-0.2**
	baz=218						
SCLT				*e*S	**Sg**	**13 04 36.7**	**-1.7**
	baz=218						
ECL	**Taimali**	**1.85**	**205**	*e*P	**Pn**	**13 04 10.7**	**+0.6**
	baz=193						
SSD	**Sandimen**	**1.87**	**215**	*e*P	**Pb**	**13 04 11.9**	**-0.9**
	baz=226						
SSD				*e*S	**Sg**	**13 04 38.0**	**-1.3**
	baz=226						
TWM1	**Shoushan**	**1.92**	**221**	*e*P	**Pn**	**13 04 11.8**	**+0.7**
	baz=221						
JKRS	**Kuro-shima**	**2.02**	**91**	P	**Pn**	**13 04 13.1**	**+0.6**
JKRS				S	**Sb**	**13 04 39.8**	**-0.5**
EAST	**Anshuo**	**2.08**	**205**	*e*P	**Pn**	**13 04 13.9**	**+0.5**
	baz=195						
JIJ	**Ishigaki jima**	**2.14**	**87**	P	**Pn**	**13 04 14.4**	**+0.3**
JIJ				S	**Sn**	**13 04 38.8**	**-1.5**
PNG	**Penghu**	**2.17**	**251**	*e*P	**Pn**	**13 04 14.2**	**-0.4**
	baz=249						
PNG				*e*S	**Sn**	**13 04 42.5**	**+1.4**
	baz=249						
SCZT	**Fangliau**	**2.19**	**210**	*e*P	**Pn**	**13 04 16.2**	**+1.5**
	baz=209						
SCZT				*e*S	**Sb**	**13 04 45.3**	**+0.1**
	baz=209						
WDGT	**Dungji**	**2.21**	**243**	*e*P	**Pn**	**13 04 14.2**	**-0.8**
	baz=242						
WDGT				*e*S	**Sn**	**13 04 43.7**	**+1.8**
	baz=242						
LAY	**Lan-yu**	**2.25**	**186**	*e*P	**Pn**	**13 04 14.4**	**-1.2**
	baz=186						
JISG	**Ishigakijimahi**	**2.31**	**82**	P	**Pn**	**13 04 16.0**	**-0.5**
JISG				S	**Sn**	**13 04 45.7**	**+1.2**
TWK1	**Hengchun**	**2.50**	**202**	*e*P	**Pn**	**13 04 20.3**	**+1.2**
	baz=193						
JTJ	**Tarama**	**2.67**	**82**	P	**Pn**	**13 04 22.5**	**+1.1**

IDC 07 13:04:16.8±2.9**,36°.41N**×**143°.30E,h0km,mb3.5**/3**, mb1 3.6**/4**,mb1mx3.2**/66**,mbtmp3.4**/4**,ML3.0**/1**,Error ellipse: s-maj=81.5km s-min=29.6km az=58.0,Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MJAR	Matsushiro Arr	4.11	273	Pn	Pn	13 05 20.5	-0.3
	0.9nm,0.3s,baz=81,slow=17,SNR=7.6						
MAT	Matsushiro	4.11	273	P	Pn	13 05 21.0	+0.1
KURBB	Kurchatov Arra	47.58	309	P	P	13 12 53.9	-0.2
	0.4nm,0.4s,baz=82,slow=7.9,SNR=3.2						
WRA	Warramunga Arr	56.68	190	P	P	13 14 02.1	+0.1
	0.3nm,0.4s,baz=7.6,slow=7.3,SNR=6.1						
ASAR	Alice Springs	60.41	190	P	P	13 14 27.8	-0.2
	0.2nm,0.6s,baz=5.5,slow=7.1,SNR=6.7						

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*NIED **07** 13:08:00, 38.°70N×142.°10E, h38km, Mw4.0 Best double couple: $M_0$1.09000×10^{15} NP1:ϕ_s53.00000°, δ32.00000°, λ-72.00000°. NP2:ϕ_s213.00000°, δ60.00000°, λ-101.00000°.*

*ISCJB **07** 13:08:41.7±0.6, 38.°68N±0.°06×142.°24E±0.°07, h41km, mb3.8/13, Error ellipse: s-maj=9.0km s-min=6.5km az=143.9*

*JMA **07** 13:08:43.8±0.1, 38.°67N×142.°11E, h42km±2km, M3.8*

JMA Felt I J1.

*IDC **07** 13:08:45.4±2.5, 38.°68N×142.°11E, h57km±23km, mb3.5/13, mb1 3.6/17, mb1mx3.5/73, mbtmp3.8/17, ML3.1/4, MS2.7/4, Ms1 2.7/4, ms1mx2.5/54, Error ellipse: s-maj=22.4km s-min=14.4km az=91.0*

ISC 07 13:08:43.5±0.8, 38.°64N±0.°06×142.°17E±0.°08, h41km, n31, σ1.s14/26, mb3.8/13, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	Ofunato	0.58	319	P	Pn	13 08 55.2	-0.1
JIO	Ouri	0.67	254	P	Pn	13 08 56.3	-0.1
JIO				S	Sn	13 09 04.7	-1.1
JMK	Ichinoseki	0.80	293	P	Pn	13 08 58.2	-0.1
JMK				S	Sn	13 09 08.5	-0.5
JOM	Ohasama	1.07	321	P	Pn	13 09 02.1	+0.1
JOU	Okura	1.21	257	P	Pn	13 09 04.2	+0.3
JOU				S	Sn	13 09 19.0	-0.1
MJAR	Matsushiro Arr	3.78	237	P	Pn	13 09 40.7	+1.5
	4.2nm,0.3s,baz=40,slow=12,SNR=18						
MJAR				LR	LR	13 11 20.8	
	comp=Z,56nm,20.6s,baz=80,slow=42						
MAT	Matsushiro	3.78	238	P	Pn	13 09 41.7	+2.5
MAT				S	Sn	13 10 30.1	+7.7
JHJ	Hachijo jima 2	5.84	200	P	Pn	13 10 09.3	+1.8
	4.4nm,0.3s,baz=68,slow=19,SNR=4.7						
JHJ				S	Sn	13 11 09.6	-3.7
	11nm,0.3s,baz=90,slow=20,SNR=4.7						
USRK	Ussuriysk Ar.	9.44	309	P	Pn	13 10 58.1	+1.2
	0.3nm,0.3s,baz=115,slow=13,SNR=3.3						
JNU	Nakatsue	10.68	242	LR	LR	13 15 28.6	
	comp=Z,59nm,20.6s,baz=134,slow=38						
KSRS	Korea Array	11.29	268	P	Pn	13 11 24.3	+2.1
	0.2nm,0.3s,baz=78,slow=13,SNR=4.2						
KSRS				LR	LR	13 15 22.6	
	comp=Z,30nm,20.1s,baz=305,slow=35						
KLR	Kul'dur	12.96	328	LR	LR	13 16 40.8	
	comp=Z,53nm,18.4s,baz=92,slow=37						
MA2	Magadan	21.66	12	P	P	13 13 30.3	+0.2
	1.2nm,0.2s,baz=213,slow=8.0,SNR=4.9						
SEY	Seymchan	25.10	11	P	P	13 14 03.5	-0.5
	1.7nm,0.7s,baz=205,slow=6.1,SNR=13						
SONM	Songino Array	27.42	301	P	P	13 14 25.2	0.0
	0.3nm,0.5s,baz=101,slow=9.6,SNR=2.8						
H11N2	WAKE ISLAND Hy	28.51	124	T	T	13 45 03.4	
	baz=317,slow=75,SNR=508						
H11N1	WAKE ISLAND Hy	28.52	124	T	T	13 45 03.8	
	baz=317,slow=75,SNR=462						
H11N3	WAKE ISLAND Hy	28.53	124	T	T	13 45 04.8	
	baz=317,slow=75,SNR=417						
H11S1	WAKE ISLAND Hy	29.28	126	T	T	13 45 55.7	
	baz=318,slow=76,SNR=84						
H11S3	WAKE ISLAND Hy	29.29	126	T	T	13 45 54.6	
	baz=318,slow=76,SNR=173						
H11S2	WAKE ISLAND Hy	29.30	126	T	T	13 45 56.7	
	baz=318,slow=76,SNR=80						
TIXI	Tiksi	33.77	352	P	P	13 15 19.9	-0.9
	0.4nm,0.4s,baz=231,slow=1.0,SNR=3.9						
ZALV	Zalesovo Beam	41.29	311	P	P	13 16 24.6	0.0
	0.8nm,0.4s,baz=88,slow=7.3,SNR=5.1						
MKAR	Makanchi Array	43.79	301	P	P	13 16 44.4	-0.7
	0.7nm,0.5s,baz=86,slow=8.9,SNR=7.4						
KURBB	Kurchatov Arra	45.50	307	P	P	13 16 58.3	-0.3
	3.7nm,0.6s,baz=82,slow=8.0,SNR=27						
ILAR	Eielson Array	47.82	33	P	P	13 17 17.6	+1.0
	0.2nm,0.4s,baz=261,slow=6.2,SNR=3.0						
BVAR	Borovoye Array	49.94	311	P	P	13 17 32.6	-0.4
	0.5nm,0.4s,baz=70,slow=9.8,SNR=4.4						
AKTO	Aktyubinsk	58.05	311	P	P	13 18 32.1	0.0
	0.4nm,0.3s,baz=37,slow=10,SNR=3.0						
WRA	Warramunga Arr	58.74	189	P	P	13 18 37.1	0.0
	0.6nm,0.7s,baz=6.8,slow=6.9,SNR=9.8						
ASAR	Alice Springs	62.46	189	P	P	13 19 03.1	+0.6
	0.3nm,0.7s,baz=9.2,slow=6.9,SNR=2.6						
FINES	FINESS Array B	67.67	332	P	P	13 19 35.2	-0.7
	1.9nm,0.8s,baz=30,slow=12,SNR=3.8						

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*IDC **07** 13:11:18.9±2.2, 17.°41N×93.°95W, h121km±19km, mb5.6/46, mb1 5.7/46, mb1mx5.7/49, mbtmp5.9/46, MS5.8/27, Ms1 5.8/27, ms1mx5.7/38, Error ellipse: s-maj=10.8km s-min=7.0km az=56.0*

*MOS **07** 13:11:19.5±1.1, 17.°38N×93.°93W, h131km, mb6.1/92, MS6.0/40, Error ellipse: s-maj=5.9km s-min=3.6km az=91.6*

*GCMT **07** 13:11:22.4±0.1, 17.°28N×94.°12W, h154km, MW6.7/142, Moment Tensor Solution. s142,c376; s139,c647; Duration: 5.s5 Moment tensor: Scale 10^{19}Nm; M_{rr}-0.56±.01; $M_{\theta\theta}$-0.29±.01; $M_{\phi\phi}$0.85±.01; $M_{r\theta}$0.91±.01; $M_{\theta\phi}$-0.57±.01; $M_{\phi r}$-0.62±.01; Best double couple: $M_0$1.44400×10^{19} NP1:ϕ_s307.00000°, δ76.00000°, λ-119.00000°. NP2:ϕ_s194.00000°, δ32.00000°, λ-27.00000°. Principal axes: T 1.5350, Plg26.0000°, Azm60.0000°; N -0.1810, Plg28.0000°, Azm315.0000°; P -1.3540, Plg50.0000°, Azm185.0000°; nsta1 refers to body waves, cutoff=50s. nsta2 refers to surface/mantle waves, cutoff=50s.*

*MEX **07** 13:11:22.0±2.3, 17.°22N×94.°32W, h171km±24km, MD6.7*

*NEIC **07** 13:11:22.4, 17.°21N×94.°34W, h166km, mb6.1/246, ME6.1, MW6.6, MW6.6, MD6.7(MEX) Best double couple: NP1: ϕ_s312.00000°, δ77.00000°, λ-110.00000°. NP2: ϕ_s189.00000°, δ24.00000°, λ-35.00000°. Principal axes: T 1.1400, Plg29.0000°, Azm58.0000°; N -0.0400, Plg19.0000°, Azm317.0000°; P -1.1000, Plg54.0000°, Azm197.0000°; Broadband fault plane solution: P waves. NP1:ϕ_s130.00000°, δ10.00000°, λ-90.00000°. NP2: ϕ_s310.00000°, δ80.00000°, λ-90.00000°. Principal axes: T Plg35.0000°, Azm40.0000°; N Plg0.0000°, Azm0.0000°; P Plg55.0000°, Azm220.0000°; Depth from broadband displacement seismograms. Energy computed from BB mechanism. After MEX.*

NEIC Felt [V] at Cordoba and Tuxtla Gutierrez; [IV] at Coatzacoalcos, Huatulco, Jalapa, Minatitlan and Tehuacan; [III] at Coatepec, Oaxaca, Puebla, Puerto Escondido, San Cristobal de Las Casas and Villahermosa; [II] at Boca del Rio, Cuernavaca and Mexico. Felt [II] at Antigua Guatemala, Guatemala and Quetzaltenango, Guatemala. Felt widely in southern Mexico and in western Guatemala.

*ISCJB **07** 13:11:22.7±0.2, 17.°43N±0.°01×94.°06W±0.°01, h163km±1km, mb6.0/335 Error ellipse: s-maj=2.8km s-min=1.5km az=139.0*

*BJI **07** 13:11:23.0, 17.°45N×93.°90W, h160km, mB6.0/32*

*NEIC **07** 13:11:24.0±0.0, 17.°43N×93.°78W, h167km Best double couple: NP1:ϕ_s301.00000°, δ76.00000°, λ-113.00000°. NP2:ϕ_s183.00000°, δ27.00000°, λ-31.00000°. Principal axes: T 1.1700, Plg27.0000°, Azm50.0000°; N -0.0700, Plg23.0000°, Azm307.0000°; P -1.1000, Plg52.0000°, Azm182.0000°;*

*CASC **07** 13:11:25.5±3.3, 17.°05N×93.°89W, h20km±277km, MD5.6, ML5.2, mb6.5(NEIC)*

ISC 07 13:11:23.4±0.3, 17.°27N±0.°03×94.°14W±0.°03, h165km±2km, h165km:pP-P, n1844, σ1.s87/2141, mb6.0/377, 102C-51D, Chiapas

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TUIG	Tuzandepetl	0.81	341	eP	Pn	13 11 45.5	-2.7
TUIG				eS	Sn	13 12 05.4	-2.1
TUIG	Tuzandepetl	0.81	341	eP	Pn	13 11 45.5	-2.7
TUIG				eS	Sn	13 12 05.4	-2.1
TGIG		1.09	116	eP	Pn	13 11 49.2	-1.3
TGIG				i S	Sn	13 12 09.5	-1.7
TGIG		1.09	116	eP	Pn	13 11 49.2	-1.3
TGIG				i S	Sn	13 12 10.5	-0.7
PCIG		1.79	150	eP	Pn	13 11 55.9	-1.2
PCIG				i S	Sn	13 12 21.9	-1.3
PCIG		1.79	150	eP	Pn	13 11 55.9	-1.2
PCIG				i S	Sn	13 12 21.9	-1.3
CCIG	Comitan	2.16	117	ePn	Pn	13 12 01.6	+0.1
CCIG				eS	Sn	13 12 29.8	-1.0
CCIG	Comitan	2.16	117	eP	Pn	13 12 01.1	-0.4
CCIG				eS	Sn	13 12 30.8	0.0
HUIG	Huatulco	2.40	232	eP	Pn	13 11 57.8	-6.4
HUIG				i S	Sn	13 12 29.3	-6.3
HUIG	Huatulco	2.40	232	eP	Pn	13 11 57.8	-6.4
HUIG				i S	Sn	13 12 29.3	-6.3
VHO	Vista Hermosa	2.48	266	i P	Pn	13 12 01.9	-3.4
VHO				eS	Sn	13 12 32.5	-5.1
VHO	Vista Hermosa	2.48	266	i P	Pn	13 12 01.9	-3.4
VHO				eS	Sn	13 12 32.5	-5.1
PANG	Puerto Angel	2.74	235	eP	Pn	13 12 01.9	-6.3
THIG		2.96	142	eP	Pn	13 12 10.8	-0.1
THIG				eS	Sn	13 12 38.2	-10
THIG		2.96	142	eP	Pn	13 12 10.8	-0.1
THIG				eS	Sn	13 12 38.2	-10
TPIG	Tehuac#an	3.27	291	eP	Pn	13 12 11.9	-3.1
TPIG				i S	Sn	13 12 48.8	-6.3
TPIG	Tehuac#an	3.27	291	eP	Pn	13 12 11.9	-3.1
TPIG				i S	Sn	13 12 48.8	-6.3
SCIG	Sabancuy	3.28	59	eP	Pn	13 12 13.6	-1.3
SCIG				eS	Sn	13 12 38.3	-17
SCIG	Sabancuy	3.28	59	eP	Pn	13 12 13.6	-1.3
SCIG				eP	Pn	13 12 13.7	-1.3
PNIG	Pinotepa	3.91	258	eP	Pn	13 12 16.9	-6.1
PNIG				i S	Sn	13 13 00.5	-9.0
PNIG	Pinotepa	3.91	258	eP	Pn	13 12 16.9	-6.1
PNIG				i S	Sn	13 13 00.5	-9.0
TLIG	Tlapa	4.23	275	ePn	Pn	13 12 23.5	-3.7
TLIG	Tlapa	4.23	275	eP	Pn	13 12 23.4	-3.9
TLIG				eS	Sn	13 13 09.9	-7.1
PPM	Popocatepetl	4.62	293	eP	Pn	13 12 35.3	+2.6
PPM	Popocatepetl	4.62	293	eP	Pn	13 12 35.3	+2.6
PPM	Popocatepetl	4.62	293	eP	Pn	13 12 31.0	-1.6
PPM				eP	Pn	13 12 35.3	+2.6
YAIG	Yautepec	4.95	289	eP	Pn	13 12 34.0	-2.6
YAIG	Yautepec	4.95	289	eP	Pn	13 12 34.0	-2.6
UNM	Universidad Na	5.20	294	eP	Pn	13 12 39.8	-0.3
UNM	Universidad Na	5.20	294	ePn	Pn	13 12 39.8	-0.3
UNM				eS	Sn	13 13 31.6	-8.4
UNM	Universidad Na	5.20	294	eP	Pn	13 12 38.0	-2.1
UNM				eS	Sn	13 13 31.6	-8.4
PLIG	Platanillo	5.23	283	eP	Pn	13 12 37.3	-2.8
PLIG				i S	Sn	13 13 23.7	-17
PLIG	Platanillo	5.23	283	eP	Pn	13 12 37.3	-2.8
PLIG				i S	Sn	13 13 33.7	-6.5
CUS1	Cusmapa	5.24	129	eP	Pn	13 12 40.6	+0.2
MEIG	Mezcala	5.26	278	eP	Pn	13 12 37.4	-3.3
MEIG				eS	Sn	13 13 16.0	-25
MEIG	Mezcala	5.26	278	eP	Pn	13 12 37.4	-3.3
MEIG				eS	Sn	13 13 34.0	-7.1
RBDL	Robledal	5.32	126	eP	Pn	13 12 40.3	-1.2
MAVM	Malinalco, Edo	5.36	289	eP	Pn	13 12 39.8	-2.3
RTR	El Retiro	5.48	127	eP	Pn	13 12 42.7	-0.9
ACX	Acapulco	5.48	267	eP	Pn	13 12 42.3	-1.1
ACX	Acapulco	5.48	267	eP	Pn	13 12 42.3	-1.1
MONT	Ecomontaæa	5.50	127	eP	Pn	13 12 43.1	-0.8
SBLS	San Blas	5.53	127	eP	Pn	13 12 43.8	-0.5
DEIG	Demacu	5.53	304	eP	Pn	13 12 43.0	-1.4
DEIG	Demacu	5.53	304	eP	Pn	13 12 43.0	-1.4
BOQS	Boqueron	5.86	126	eP	Pn	13 12 49.2	+0.5
BOQS				eS	Sn	13 13 30.8	-25
CAIG	El Cayaco	5.86	269	eP	Pn	13 12 43.4	-5.0
CAIG	El Cayaco	5.86	269	eP	Pn	13 12 43.4	-5.0
COLS	Colinas	5.88	127	eP	Pn	13 12 49.7	+0.8
SNET	Serv Nac Est T	5.92	126	AML	AML	13 15 04.6	
	comp=Z,3μm,0.5s						
LFU	La Fuente	5.98	125	eP	Pn	13 12 50.3	+0.2
LFRS	El Faro	6.09	126	eP	Pn	13 12 52.1	+0.4
TEIG	Tepich	6.29	61	P	Pn	13 12 52.5	-1.7
	comp=Z,27nm,0.3s,baz=90,slow=24,SNR=681						
TEIG				S	Sn	13 14 04.2	-1.1
	comp=Z,256nm,0.3s,baz=179,slow=24,SNR=65						
TEIG	Tepich	6.29	61	eS	Sn	13 14 06.9	+1.6
TEIG	Tepich	6.29	61	ePn	Pn	13 12 52.3	-1.9
TEIG				S	Sn	13 14 04.2	-1.1
TEIG				eSn	Sn	13 14 06.8	+1.4
CAHU	Cacacuatique	6.69	120	eP	Pn	13 13 01.1	+1.4
LCY	Lacayo	6.81	123	eP	Pn	13 13 02.8	+1.6
VSM	San Miguel	6.83	123	eP	Pn	13 13 03.1	+1.6
ZIIG	Zihuatanejo	7.00	274	eP	Pn	13 12 60.0	-3.5
ZIIG				i S	Sn	13 14 18.9	-3.4
ZIIG	Zihuatanejo	7.00	274	eP	Pn	13 12 60.0	-3.5
ZIIG				i S	Sn	13 14 18.9	-3.4
MOIG	Morelia	7.10	291	ePn	Pn	13 13 03.9	-1.2
MOIG	Morelia	7.10	291	eP	Pn	13 13 03.6	-1.5
CNCH	Conchagua	7.27	122	eP	Pn	13 13 08.4	+1.1
CNCH				eP	Pn	13 13 08.7	+1.4
TGUH	Tegucigalpa,Un	7.35	115	eP	Pn	13 13 08.9	+0.7
TGUH	Tegucigalpa,Un	7.35	115	ePn	Pn	13 13 10.0	+1.8
IGIG	Irapuato, Guan	7.63	298	eP	Pn	13 13 11.3	-0.8
IGIG				eS	Sn	13 14 30.4	-7.3
CSGN	Cosiguina Volc	7.66	123	eP	Pn	13 13 12.9	+0.5
CRIN	San Cristobal	8.22	123	eP	Pn	13 13 21.6	+1.8
CRIN				AML	AML	13 15 00.7	
	comp=E,11μm,0.8s						
TEL3	Telica 3	8.46	122	eP	Pn	13 13 23.5	+0.5
ESTN	Estel	8.57	118	eP	Pn	13 13 26.6	+2.1
ESTN				eS	Sn	13 15 03.7	+3.5
ESTN				AML	AML	13 15 13.2	
	comp=E,675nm,0.6s						
CNGN	Cerro Negro	8.62	122	eP	Pn	13 13 25.3	+0.3
MOMN	Momotombo	8.79	122	eP	Pn	13 13 27.4	0.0
MMIG	Aquila	8.83	278	eP	Pn	13 13 25.1	-2.7
MMIG				i S	Sn	13 14 53.4	-13
MMIG	Aquila	8.83	278	eP	Pn	13 13 25.1	-2.7
MMIG				i S	Sn	13 14 53.4	-13
COPN	Copaltepe	8.88	124	eP	Pn	13 13 30.0	+1.5
APYN	Apoyeque	9.05	123	eP	Pn	13 13 31.2	+0.5
LNIG	Linares	9.07	328	eP	Pn	13 13 29.0	-2.0
LNIG				eS	Sn	13 15 15.8	+3.8
LNIG	Linares	9.07	328	eP	Pn	13 13 29.0	-2.0
LNIG				eS	Sn	13 15 15.8	+3.8
TISN	Laguna Tiscapa	9.16	123	eP	Pn	13 13 31.9	-0.3
MGAN	Managua	9.18	123	eP	Pn	13 13 32.2	-0.3
MGAN				AML	AML	13 15 14.7	
	comp=E,1μm,0.7s						
MASN	Masaya	9.35	123	eP	Pn	13 13 35.0	+0.2
BOAB	BOACO BROADBAN	9.49	119	eP	Pn	13 13 36.6	0.0
R15V		9.54	283	eP	Pn	13 13 36.5	-0.7
ZAIG	Zacatecas	9.62	306	ePn	Pn	13 13 39.1	+0.6
ZAIG				eS	Sn	13 14 50.6	-35
ZAIG	Zacatecas	9.62	306	eP	Pn	13 13 38.7	+0.1
ZAIG				eS	Sn	13 15 18.6	-7.1
035Z	Hargill	9.85	339	P	Pn	13 13 41.8	+0.6
	baz=159,SNR=19						
035Z				S	Sn	13 15 30.0	-0.6
	baz=159						
035A	Encino	10.30	340	P	Pn	13 13 48.3	+1.2
	baz=160,SNR=34						
ANIG	Ahuacatlan	10.51	293	eP	Pn	13 13 49.6	-0.4
ANIG				eS	Sn	13 15 10.2	-36
ANIG	Ahuacatlan	10.51	293	eP	Pn	13 13 49.6	-0.4
ANIG				eS	Sn	13 15 40.2	-6.4
936A	North Padre Is	10.52	344	P	Pn	13 13 50.2	+0.2
	baz=164						
CJM	Chamela	10.58	284	eP	Pn	13 13 47.5	-3.4
CJM	Chamela	10.58	284	eP	Pn	13 13 47.5	-3.4
CJM				i S	Sn	13 15 40.9	-7.5
034A	Hebbronville	10.62	337	P	Pn	13 13 52.3	+1.0
	baz=157,SNR=111						
ESPN	Las Esperanzas	10.77	117	eP	Pn	13 13 53.1	-0.3
KVTX	Kingsville	10.80	342	ePn	Pn	13 13 50.2	-3.5
934A	Benavides	11.05	339	P	Pn	13 13 57.7	+0.7
	baz=159,SNR=78						
JTS	JuntasAbangare	11.30	127	P	Pn	13 14 00.5	+0.2
	comp=E,176nm,0.3s,baz=336,slow=7.4,SNR=148						
JTS				S	Sn	13 16 03.0	-2.7
	comp=E,147nm,0.3s,baz=148,slow=23,SNR=5.9						
JTS				LR	LR	13 18 54.0	
	comp=E,42μm,19.1s,baz=304,slow=40						
JTS	JuntasAbangare	11.30	127	d iP	Pn	13 14 00.2	-0.1
JTS	JuntasAbangare	11.30	127	eP	Pn	13 14 00.6	+0.2
JTS				eS	Sn	13 15 58.7	-7.0
933A	Laredo	11.34	336	P	Pn	13 14 00.9	+0.2
	baz=155,SNR=136						
JCR	Jicaral	11.46	129	eP	Pn	13 14 02.7	+0.2
JCR				eS	Sn	13 16 06.0	-3.6
835A	Beeville	11.48	343	P	Pn	13 14 02.3	-0.3
	baz=163,SNR=32						
834A	Tilden	11.55	340	P	Pn	13 14 03.5	+0.1
	baz=160,SNR=98						
738A	Farr-Stevens R	11.60	353	P	Pn	13 14 04.4	+0.3
	baz=174						
737A	Port Lavaca	11.64	350	P	Pn	13 14 04.8	+0.3
	baz=170,SNR=19						
CGA2	Cerro Gallo 2	11.85	126	eP	Pn	13 14 08.2	+0.7
CGA2				eS	Sn	13 16 18.7	-0.2
736A	Circle Diamond	11.94	348	P	Pn	13 14 09.0	+0.5
	baz=167,SNR=49						
735A	Kenedy	12.02	344	P	Pn	13 14 09.6	+0.1
	baz=164,SNR=38						
833A	Chaparral WMA,	12.02	337	P	Pn	13 14 09.3	-0.3
	baz=156,SNR=109						
638A	Rosharon	12.16	355	P	Pn	13 14 11.9	+0.6
	baz=175,SNR=12						
832A	Faith Ranch, C	12.21	335	P	Pn	13 14 11.2	-0.8
	baz=154,SNR=124						
734A	La Parita Cree	12.22	341	P	Pn	13 14 11.9	-0.2
	baz=161,SNR=26						
637A	Eagle Lake	12.28	351	P	Pn	13 14 12.0	-0.9
	baz=171,SNR=23						
733A	Divot King Ran	12.35	338	P	Pn	13 14 13.4	-0.3
	baz=157,SNR=47						
QCR	Quepos	12.45	128	eP	Pn	13 14 15.3	+0.2
QCR				eS	Sn	13 16 27.7	-5.4
636A	Smothers Creek	12.45	348	P	Pn	13 14 14.5	-0.5
	baz=168,SNR=49						
URSC	Urasca	12.49	125⇑	eP	Pn	13 14 17.2	+1.3
635A	Leesville	12.52	345	P	Pn	13 14 14.9	-1.0
	baz=165,SNR=14						
645A	Chauvin	12.56	14	P	Pn	13 14 15.8	-0.7
	baz=196						
634A	China Grove, S	12.66	343	P	Pn	13 14 17.0	-0.8
	baz=162,SNR=30						
BUS	Buena Vista	12.68	126	eP	Pn	13 14 18.8	+0.3
HKT	Hockley	12.72	353	eP	Pn	13 14 18.0	-0.4
HKT				pmax	pmax		
	comp=Z,7μm,2.2s						
HKT	Hockley	12.72	353	ePn	Pn	13 14 18.0	-0.4
	comp=Z,7μm,2.2s						
541A	Lake Charles	12.77	4	P	Pn	13 14 18.5	-0.5
	baz=185						
539A	Cross D Ranch,	12.80	358	P	Pn	13 14 19.0	-0.5
	baz=178,SNR=15						
542A	Morse	12.88	6	P	Pn	13 14 20.7	+0.1
	baz=188,SNR=14						
540A	Vidor	12.89	1	P	Pn	13 14 20.1	-0.6
	baz=182						
537A	Green Hill Far	12.91	352	P	Pn	13 14 20.9	0.0
	baz=172,SNR=89						
543A	St. Martinvill	12.93	9	P	Pn	13 14 21.7	+0.5
	baz=190,SNR=18						
MAIG	Mazatlaan	12.94	299	eP	Pn	13 14 19.8	-1.6
MAIG	Mazatlaan	12.94	299	eP	Pn	13 14 19.8	-1.6
MAIG				eS	Sn	13 16 35.6	-9.3
538A	Harpers Horsep	12.96	355	P	Pn	13 14 21.9	+0.4
	baz=175,SNR=13						
633A	Saathoff Ranch	12.98	340	P	Pn	13 14 21.2	-0.7
	baz=159,SNR=110						
536A	Bastrop	13.03	349	P	Pn	13 14 21.2	-1.3
	baz=168,SNR=29						
544A	White Castle	13.07	11	P	Pn	13 14 22.7	-0.3
	baz=193,SNR=19						
535A	Dale	13.09	347	P	Pn	13 14 22.2	-0.9
	baz=166,SNR=33						
545A	Edgard	13.15	14	P	Pn	13 14 24.2	+0.2
	baz=196						
534A	Blanco	13.31	343	P	Pn	13 14 24.9	-1.1
	baz=163,SNR=111						
440A	Kirbyville	13.42	1	P	Pn	13 14 26.5	-0.9
	baz=182,SNR=19						
441A	DeRidder	13.45	4	P	Pn	13 14 26.8	-1.0
	baz=185,SNR=87						
442A	Mamou	13.48	6	P	Pn	13 14 27.8	-0.3
	baz=188						
438A	Sam Houston St	13.48	355	P	Pn	13 14 27.8	-0.3
	baz=175,SNR=46						
439A	Center Grove,	13.48	358	P	Pn	13 14 27.6	-0.6
	baz=178,SNR=52						
533A	Kerrville	13.51	342	P	Pn	13 14 27.5	-1.0
	baz=160,SNR=104						
546A	Slidell	13.53	17	P	Pn	13 14 27.9	-0.8
	baz=199,SNR=12						
443A	Delano Plantat	13.61	9	P	Pn	13 14 28.9	-0.9
	baz=190						
437A	Phantom Ranch,	13.62	353	P	Pn	13 14 29.0	-1.0
	baz=173,SNR=12						
436A	Wall Ranch, Ga	13.66	350	P	Pn	13 14 29.3	-1.2
	baz=170,SNR=38						
444A	Pine Grove	13.74	12	P	Pn	13 14 30.5	-0.9
	baz=194,SNR=19						
435B	Jarrell	13.82	348	P	Pn	13 14 31.0	-1.4
	baz=167,SNR=57						
445A	Amite	13.85	14	P	Pn	13 14 31.8	-1.0
	baz=196,SNR=55						
BRU2	Volcan	13.97	126	eP	P	13 14 36.6	-0.9
TBS2		14.00	126	eP	Pn	13 14 35.6	+0.6
434A	Burnet	14.00	345	P	Pn	13 14 34.1	-0.6
	baz=164,SNR=129						
339A	Huntington	14.01	359	P	Pn	13 14 33.0	-1.8
	baz=179,SNR=51						
341A	Kurthwood	14.03	3	P	Pn	13 14 33.9	-1.2
	baz=185,SNR=36						
338A	Crockett	14.07	356	P	Pn	13 14 34.7	-0.8
	baz=176,SNR=74						
337A	Centerville	14.08	354	P	Pn	13 14 34.8	-0.9
	baz=174,SNR=12						
340A	Bronson	14.09	1	P	Pn	13 14 34.3	-1.5
	baz=182,SNR=36						
JCT	Junction City	14.13	340	P	Pn	13 14 35.7	-0.7
	baz=158,SNR=250						
JCT	Junction City	14.13	340	eP	Pn	13 14 35.3	-1.1
342A	Flagon Creek P	14.14	6	P	Pn	13 14 35.3	-1.2
	baz=188,SNR=64						
343A	Vidalia	14.14	9	P	Pn	13 14 35.3	-1.2
	baz=191,SNR=15						
446A	Poplarville	14.15	17	P	Pn	13 14 35.2	-1.4
	baz=200,SNR=318						
433A	Art	14.16	342	P	Pn	13 14 35.7	-1.2
	baz=161,SNR=261						
335A	Moody	14.27	349	P	Pn	13 14 36.8	-1.3
	baz=168,SNR=92						
336A	Riesel	14.27	351	P	Pn	13 14 37.7	-0.4
	baz=170,SNR=56						
HPIG		14.36	314	ePn	Pn	13 14 39.7	+0.1
HPIG				eS	Sn	13 17 06.0	-13
HPIG		14.36	314	eP	Pn	13 14 38.1	-1.4
HPIG				eS	Sn	13 17 06.0	-13
NATX	Nacogdoches	14.44	358	P	Pn	13 14 39.0	-1.2
	baz=179,SNR=54						
NATX	Nacogdoches	14.44	358	ePn	Pn	13 14 39.6	-0.5
344A	Westbrook Farm	14.46	12	P	Pn	13 14 39.0	-1.5
	baz=194,SNR=79						
345A	Thompson Farm,	14.47	14	P	Pn	13 14 39.5	-1.1
	baz=196,SNR=78						
334A	Lometa	14.49	346	P	Pn	13 14 39.1	-1.8
	baz=165,SNR=167						
333A	Richland Sprin	14.67	343	P	Pn	13 14 42.2	-0.9
	baz=162,SNR=91						
346A	Big Creek Wild	14.69	16	P	Pn	13 14 42.4	-0.9
	baz=198,SNR=12						
239A	Gary	14.69	359	P	Pn	13 14 41.4	-1.9
	baz=180,SNR=36						
238A	Jacksonville	14.70	357	P	Pn	13 14 43.2	-0.2
	baz=177,SNR=34						
237A	Washetta, Mont	14.75	354	P	Pn	13 14 42.9	-1.1
	baz=174,SNR=17						
236A	Katherine and	14.83	352	P	Pn	13 14 44.6	-0.4
	baz=172,SNR=48						
TXAR	Lajitas Array	14.85	326	P	Pn	13 14 45.5	+0.1
	comp=Z,14nm,0.3s,baz=148,slow=13,SNR=401						

TXAR S S 13 17 37.2 +2.0
comp=Z,1.2nm,0.3s,baz=352,slow=33,SNR=2.2
TX31 Lajitas Ar. Si 14.85 326 *e*Pn Pn 13 14 45.9 +0.5
WHTX Lake Whitney, 14.97 349 P Pn 13 14 45.9 -0.8
baz=168,SNR=176
WHTX Lake Whitney, 14.97 349 *e*Pn Pn 13 14 45.6 -1.1
244A Avery, Jackson 15.04 11 P Pn 13 14 46.2 -1.4
baz=193,SNR=80
234A Clairette 15.11 347 P Pn 13 14 48.7 +0.1
baz=166,SNR=76
245A Little AP, Sta 15.20 14 P Pn 13 14 48.3 -1.3
baz=196,SNR=102
VBMS Vicksburg 15.25 12 P Pn 13 14 48.8 -1.3
baz=194,SNR=29
VBMS Vicksburg 15.25 12 *e*Pn Pn 13 14 49.0 -1.1
comp=Z,2µm,1.1s
BRAL Brewton 15.27 24 Pn Pn 13 14 46.9 -3.6
comp=Z,14µm,1.6s
136A Ennis 15.30 352 P Pn 13 14 50.7 0.0
baz=172,SNR=76
233A Rising Star 15.31 345 P Pn 13 14 51.0 0.0
baz=163,SNR=169
141A Papa Simpson, 15.31 4 P Pn 13 14 50.7 -0.3
baz=185,SNR=65
140A Cam and Jess, 15.32 2 P Pn 13 14 50.6 -0.5
baz=183,SNR=110
137A Heron Place, G 15.34 355 P Pn 13 14 50.5 -0.8
baz=175,SNR=46
142A Monroe 15.35 7 P Pn 13 14 50.9 -0.5
baz=189,SNR=33
139A Bunkhouse Ranc 15.35 359 P Pn 13 14 51.2 -0.3
baz=180,SNR=65
138A Matatall Enter 15.35 357 P Pn 13 14 51.2 -0.3
baz=177,SNR=53
246A Jackson Lee, B 15.37 16 P Pn 13 14 50.7 -1.0
baz=199,SNR=20
135A Vickery Place, 15.51 350 P Pn 13 14 52.8 -0.6
baz=169,SNR=60
143A Socs Landing, 15.57 9 P Pn 13 14 53.1 -1.1
baz=190,SNR=30
134A White-Moore Ra 15.65 348 P Pn 13 14 55.3 +0.1
baz=167,SNR=77
144A Alexander Plac 15.66 12 P Pn 13 14 54.5 -0.8
baz=194,SNR=19
MCJ Malvern 15.71 85 *e*P P 13 14 56.3 -0.3
145A Houston Renfro 15.74 13 P Pn 13 14 55.4 -0.9
baz=196,SNR=31
CVJ Coleyville 15.85 84 *e*P P 13 14 58.5 +0.3
MTDJ Mount Denham 15.85 84 *e*Pn P 13 14 58.6 +0.4
comp=Z,19µm,1.8s
133A Hamilton Ranch 15.87 345 P Pn 13 14 58.1 +0.2
baz=164,SNR=229
Z39A Irene McRaven, 15.91 360 P P 13 14 58.5 -0.1
baz=180,SNR=17
Z37A Pogue Cattle C 15.92 355 P Pn 13 14 57.7 -0.8
baz=176,SNR=78
DWPF Disney Wildern 15.93 45 *e*Pn Pn 13 14 57.4 -1.1
comp=Z,5µm,0.9s
Z38A Mt. Pleasant 15.94 357 P Pn 13 14 58.5 -0.1
baz=178,SNR=22
Z40A Long Farm, Mag 15.94 2 P Pn 13 14 58.5 -0.1
baz=183,SNR=187
Z36A Blue Ridge 16.07 353 P Pn 13 14 59.7 -0.5
baz=173,SNR=83
BCIP Isla Barro Col 16.08 118 *e*Pn Pn 13 15 00.4 -0.1
BCIP Isla Barro Col 16.08 118 *i* P Pn 13 14 59.5 -1.0
ABTX Abilene, Hawle 16.08 343 P Pn 13 15 00.1 -0.3
baz=162,SNR=162
ABTX Abilene, Hawle 16.08 343 *e*Pn Pn 13 14 59.6 -0.8
comp=Z,2µm,0.9s
BBJ Bamboo Saint A 16.11 83 *i* P P 13 15 01.9 +0.8
Z35A Perchaven, San 16.24 351 P P 13 15 01.6 -0.7
baz=170,SNR=31
WLAR White Oak Lake 16.38 3 *e*P Pn 13 15 04.0 0.0
comp=Z,2µm,0.9s
Z34A Collier Ranch, 16.39 349 P P 13 15 03.1 -0.9
baz=168,SNR=101
BNJ Bonny Gate 16.41 84 *i* P P 13 15 04.4 +0.1
Z33A Whitaker Ranch 16.49 346 P P 13 15 04.3 -0.7
baz=165,SNR=198
STH Stony Hill 16.54 85 *e*P P 13 15 05.4 -0.4
LPIG La Paz 16.58 297 P Pn 13 15 07.7 +1.3
comp=Z,7.1nm,0.3s,baz=58,slow=0.6,SNR=47
LPIG S Sn 13 18 15.9 +3.8
comp=Z,3.5nm,0.3s,baz=344,slow=20,SNR=1.6
LPIG LR LR 13 22 19.9
comp=Z,29µm,18.0s,baz=110,slow=40
Y38A Idabel 16.60 358 P P 13 15 05.6 -0.6
baz=179,SNR=47
Y39A Lockesburg 16.60 0 P P 13 15 05.6 -0.7
baz=181,SNR=61
GWJ Greenwich 16.62 85 *i* PA 13 14 19.0
GWJ *e*P P 13 15 06.8 +0.1
Y40A Okolona 16.70 2 P P 13 15 06.9 -0.4
baz=184,SNR=102
Y37A Hugo 16.70 356 P P 13 15 07.1 -0.2
baz=176,SNR=91
CCAR Cane Creek 16.72 7 *e*P P 13 15 07.6 +0.1
comp=Z,2µm,1.2s
Y35A Marietta 16.77 352 P Pn 13 15 08.6 -0.2
baz=171,SNR=72
Y34A Reagan Ranch, 16.94 350 P P 13 15 09.7 -0.3
baz=169,SNR=174
CMJ Castle Mountai 16.96 84 *e*P Pn 13 15 12.0 +0.9
LRAL Lakeview Retre 16.97 21 *e*P P 13 15 10.0 -0.3
comp=Z,953nm,1.1s
TIGA Tifton 17.06 32 P P 13 15 11.3 0.0
baz=217,SNR=210
TIGA Tifton 17.06 32 *e*P P 13 15 11.1 -0.2
comp=Z,3µm,0.9s
Y33A Hilltop Ranch, 17.15 347 P P 13 15 12.6 +0.3
baz=166,SNR=112
X39A Fountain Ranch 17.18 0 P P 13 15 12.4 -0.2
baz=181,SNR=324
X40A Basin Creek Fa 17.19 4 P P 13 15 12.1 -0.7
baz=185,SNR=161
MIAR Mount Ida 17.22 2 P P 13 15 12.5 -0.5
baz=182,SNR=1000
MIAR Mount Ida 17.22 2 *e*P P 13 15 12.4 -0.6
MIAR pmax pmax
comp=Z,5µm,1.5s
MIAR Mount Ida 17.22 2 *e*P P 13 15 12.4 -0.6
comp=Z,5µm,1.5s
X35A Drake 17.25 352 P P 13 15 13.1 -0.3
baz=172,SNR=126
X37A Clayton 17.29 357 P P 13 15 13.7 -0.1
baz=177,SNR=187
CLNB Carlsbad 17.34 331 *e*P Pn 13 15 15.5 -0.1
X38A Whitesboro 17.34 358 P P 13 15 14.8 +0.4
baz=178,SNR=702
X36A Centrahoma 17.35 354 P P 13 15 14.3 -0.1
baz=174,SNR=220
UALR University of 17.51 5 *e*P P 13 15 15.8 -0.4
comp=Z,6µm,1.6s
X34A Smith Ranch, M 17.58 350 P P 13 15 16.7 -0.3
baz=169,SNR=222
MNTX Cornudas Mount 17.62 327 P Pn 13 15 18.6 -0.3
baz=143,SNR=306
MNTX Cornudas Mount 17.62 327 *e*P P 13 15 17.5 +0.1
comp=Z,505nm,1.3s
X33A Lawton 17.64 348 P P 13 15 18.1 +0.4
baz=167,SNR=72
OXF Oxford 17.69 13 *e*P P 13 15 16.9 -1.3
OXF pmax pmax
comp=Z,2µm,0.8s
OXF Oxford 17.69 13 *e*P P 13 15 16.9 -1.3
comp=Z,2µm,0.8s
X32A Elmer 17.70 346 P P 13 15 18.3 0.0
baz=164,SNR=271
W38A Poteau 17.74 359 P P 13 15 18.8 +0.1
baz=179,SNR=267
W37B Quinton 17.84 357 P P 13 15 19.3 -0.6
baz=177,SNR=210
W39A Magazine 17.86 1 P P 13 15 20.1 +0.1
baz=182,SNR=417
W40A Ferguson Farm, 17.88 3 P P 13 15 20.3 0.0
baz=184,SNR=262
WMOK Wichita Mounta 17.89 347 *e*P P 13 15 19.1 -1.3
WMOK pmax pmax
comp=Z,2µm,1.4s
WMOK Wichita Mounta 17.89 347 *e*P P 13 15 19.1 -1.3
comp=Z,2µm,1.4s
W36A Wetumka 17.90 354 P P 13 15 19.7 -0.7
baz=174,SNR=195
UPD2 Meteti 17.94 117 *i* P P 13 15 20.2 -0.9
baz=310,slow=4.8
W35A Tecumseh 17.98 353 P P 13 15 21.1 -0.3
baz=172,SNR=312
WHAR Wooly Hollow 18.03 5 *e*P P 13 15 21.6 -0.3
comp=Z,1µm,1.0s
CGIG 18.15 318 *e*P Pn 13 15 25.1 -0.2
CGIG 18.15 318 *e*P Pn 13 15 25.1 -0.2
CGIG *e*S S 13 18 36.8 -6.0
MET Memphis--Engin 18.18 11 *e*P P 13 15 23.0 -0.5
comp=Z,2µm,1.0s
W34A Bridge Creek, 18.19 350 P P 13 15 22.9 -0.7
baz=170,SNR=145
W34A Bridge Creek, 18.19 350 *e*P P 13 15 22.9 -0.7
comp=Z,4µm,1.3s
PAYG Puerto Ayora 18.23 168 *e*P Pn 13 15 27.3 +1.1
comp=Z,3µm,1.6s
W33A Caddo, Fort Co 18.23 349 P P 13 15 23.9 -0.2
baz=167,SNR=265
EBZ Ebenezer Churc 18.31 13 *e*P P 13 15 24.1 -0.8
MSTX Muleshoe 18.35 337 P P 13 15 25.0 -0.5
baz=154,SNR=420
MSTX Muleshoe 18.35 337 *e*P P 13 15 24.3 -1.2
comp=Z,1µm,0.9s
W32A Sentinel 18.36 347 P P 13 15 25.0 -0.5
baz=165,SNR=171
SFTN Shelby Forest 18.39 11 *e*P P 13 15 25.4 -0.4
SFTN Shelby Forest 18.39 11 *e*P P 13 15 25.4 -0.4
V40A Witts Springs 18.50 3 P P 13 15 26.8 -0.3
baz=184,SNR=951
V39A Pettigrew 18.50 1 P P 13 15 26.8 -0.4
baz=182,SNR=1000
V36A Jenks 18.52 355 P P 13 15 25.7 -1.5
baz=175,SNR=191
V38A Canehill 18.52 359 P P 13 15 26.4 -0.9
baz=180,SNR=486
V37A Hulbert 18.57 357 P P 13 15 26.3 -1.4
baz=178,SNR=396
QUAR Qualls 18.57 9 *e*P P 13 15 28.1 +0.4
V35A Meyer Ranch, C 18.58 353 P P 13 15 26.8 -1.1
baz=172,SNR=254
TUL1 Leonard 18.63 356 P P 13 15 27.2 -1.3
baz=176,SNR=106
TUL1 Leonard 18.63 356 *e*P P 13 15 26.9 -1.5
comp=Z,2µm,0.8s
GUYB Guaymas 18.70 307 *i* P Pn 13 15 30.6 -1.0
GOGA Godfrey 18.73 29 *e*P P 13 15 29.6 +0.1
GOGA pmax pmax
comp=Z,4µm,1.1s
GOGA Godfrey 18.73 29 *e*P P 13 15 29.6 +0.1
comp=Z,4µm,1.1s
V34A Guthrie 18.74 351 P P 13 15 28.9 -0.8
baz=171,SNR=304
V34A Guthrie 18.74 351 *e*P P 13 15 28.0 -1.6
comp=Z,2µm,0.8s
AMTX Amarillo 18.79 340 P P 13 15 29.7 -0.7
baz=158
AMTX Amarillo 18.79 340 *e*P P 13 15 29.6 -0.7
comp=Z,2µm,0.6s
DLAR Dell 18.83 10 *e*P P 13 15 30.4 -0.2
V33A Lossen Ranch, 18.84 350 P P 13 15 29.8 -1.0
baz=168,SNR=290
V32A Arapaho 18.89 348 P P 13 15 30.5 -0.8
baz=166,SNR=117
HHAR Hobbs 18.94 1 *e*P P 13 15 30.7 -1.1
comp=Z,972nm,1.0s
GNAR Gosnell 18.98 10 *e*P P 13 15 32.1 -0.1
U39A Green Forest 19.05 2 P P 13 15 32.1 -0.9
baz=182,SNR=661
U40A Yellville 19.05 3 P P 13 15 32.5 -0.5
baz=184,SNR=1000
HALT Halls 19.06 12 *e*P P 13 15 32.6 -0.4
U37A Salina 19.09 358 P P 13 15 32.3 -1.1
baz=178,SNR=144
U38A Gravette 19.10 359 P P 13 15 32.7 -0.9
baz=180,SNR=155
U36A Oologah 19.11 356 P P 13 15 32.3 -1.2
baz=176,SNR=32
U35A Pawnee 19.17 354 P P 13 15 33.0 -1.3
baz=173,SNR=40
RELT Roellen 19.18 12 *e*P P 13 15 35.7 +1.3
SWET Sewanee 19.32 21 *e*P P 13 15 34.5 -1.5
comp=Z,520nm,1.2s
U34A Anderson Ranch 19.33 352 P P 13 15 35.0 -1.0
baz=171,SNR=198
U34A Anderson Ranch 19.33 352 *e*P P 13 15 34.7 -1.3
comp=Z,9µm,1.9s
HSIG 19.36 310 *e*P P 13 15 37.5 +1.1
comp=Z,2µm,1.8s
HSIG 19.36 310 *e*P Pn 13 15 38.4 -0.9
U33A Lingo Farm, Me 19.41 350 P P 13 15 36.1 -0.9
baz=169,SNR=175
PVMO Portageville 19.48 11 *e*P Pn 13 15 41.5 +0.9
comp=Z,4µm,1.4s
SRIG Santa Rosalia 19.48 304 *e*P P 13 15 38.9 +1.2
comp=Z,856nm,1.0s
SRIG Santa Rosalia 19.48 304 *e*P P 13 15 36.6 -1.2
U32A Winter Ranch, 19.52 348 P P 13 15 38.3 +0.2
baz=167,SNR=99
121A Cookes Peak, D 19.57 324 P P 13 15 39.7 +0.9
baz=138,SNR=415
121A Cookes Peak, D 19.57 324 *e*P P 13 15 39.9 +1.0
comp=Z,81nm,0.5s
UTMT University of 19.57 13 *e*P P 13 15 37.5 -1.1
comp=Z,4µm,1.2s
WVT Waverly 19.61 15 *e*P P 13 15 36.8 -2.2
WVT pmax pmax
comp=Z,1µm,1.2s
WVT Waverly 19.61 15 *e*P P 13 15 36.8 -2.2
comp=Z,1µm,1.2s
T35A Sooner Cattle 19.69 354 P P 13 15 37.8 -2.1
baz=174,SNR=279
T38A Diamond 19.70 360 P P 13 15 38.7 -1.2
baz=180,SNR=252
T39A Clever 19.70 2 P P 13 15 38.7 -1.3
baz=183,SNR=238
SOLC Bahia Solano 19.70 122 *e*P P 13 15 34.0 -6.2
PBMO Poplar Bluff 19.71 9 *e*P P 13 15 38.8 -1.3
comp=Z,3µm,1.4s
T36A Boggs Farm, Ca 19.78 356 P P 13 15 38.9 -2.0
baz=176,SNR=114
T37A Cheneyville 18 19.79 358 P P 13 15 39.2 -1.8
baz=176,SNR=120
T40A Mansfield 19.86 4 P P 13 15 40.8 -1.0
baz=185,SNR=181
T34A McClaskey Farm 19.86 353 P P 13 15 40.6 -1.2
baz=172,SNR=187
MOTC Monteria, Cord 19.87 113 *i* P P 13 15 40.7 -1.3
RGRS Roger Stewart 20.02 36 *e*P P 13 15 44.5 +1.1
CPCT Cooper Cave 20.04 23 *e*P P 13 15 41.9 -1.7
comp=Z,809nm,1.4s
T33A Patteson Ranc 20.07 350 P P 13 15 43.5 -0.5
baz=169,SNR=203
CSU Charleston Sou 20.15 36 *e*P P 13 15 45.2 +0.3
NHSC New Hope 20.18 36 *e*P P 13 15 46.2 +1.1
comp=Z,3µm,1.1s
NHSC LR LR
comp=Z,35µm,21.0s
BNM Barren Site 20.20 329 *e*P P 13 15 46.4 +0.7
DBBC Dabeiba 20.26 118 *e*P P 13 15 47.6 +1.3
T32A Huddler Ranch, 20.28 349 P P 13 15 45.7 -0.6
baz=169,SNR=198
Y22D IRIS PASSCAL I 20.28 328 P P 13 15 47.4 +0.9
baz=143,SNR=29
Y22D IRIS PASSCAL I 20.28 328 *e*P P 13 15 48.0 +1.5
comp=Z,1µm,0.9s
S38A Stockton 20.29 1 P P 13 15 45.0 -1.3
baz=181,SNR=488
S40A Lebanon 20.31 4 P P 13 15 46.0 -0.6
baz=185,SNR=539
LPM Los Pinos Moun 20.33 329 *e*P P 13 15 47.3 +0.3
S39A Bolivar 20.36 2 P P 13 15 46.5 -0.6
baz=183,SNR=596
S36A Lake Cedric, C 20.42 357 P P 13 15 46.1 -1.6
baz=177,SNR=200
S37A Fort Scott 20.43 358 P P 13 15 46.1 -1.6
baz=179,SNR=126
S35A Otter Creek Ra 20.43 355 P P 13 15 46.9 -0.9
baz=175,SNR=84
JSC Jenkinsville 20.50 32 *e*P P 13 15 47.0 -1.6
JSC pmax pmax
comp=Z,2µm,1.2s
JSC Jenkinsville 20.50 32 *e*P P 13 15 47.0 -1.6
comp=Z,2µm,1.3s
TKL Tuckaleechee C 20.51 25 P P 13 15 46.9 -1.8
comp=Z,193nm,0.7s,baz=223,slow=5.6,SNR=116
TKL S S 13 19 28.1 -1.1
comp=Z,61nm,0.8s,baz=26,slow=23,SNR=3.9
TKL Tuckaleechee C 20.51 25 *e*P P 13 15 47.1 -1.6
comp=Z,1µm,1.3s
TKL S S 13 19 28.1 -1.1
S34A Willow Spring 20.52 353 P P 13 15 46.7 -2.1
baz=172,SNR=44
S33A Kaszmaul Farm, 20.53 351 P P 13 15 47.7 -1.2
baz=170,SNR=30
LAZ Ladron 20.65 328 *e*P P 13 15 51.1 +0.6
ANMO Albuquerque 20.76 330 P P 13 15 51.6 +0.1
comp=Z,146nm,0.9s,baz=146,slow=12,SNR=125
ANMO Albuquerque 20.76 330 P P 13 15 51.9 +0.3
baz=146
ANMO Albuquerque 20.76 330 *e*P P 13 15 51.8 +0.2
ANMO pmax pmax
comp=Z,277nm,0.9s
ANMO Albuquerque 20.76 330 *e*P P 13 15 50.8 -0.8
comp=Z,403nm,1.0s
ANMO LR LR
comp=Z,20µm,19.0s
S32A Newby Ranch, P 20.79 349 P P 13 15 50.8 -0.9
baz=168,SNR=202
SIUC Southern Illin 20.83 11 *e*P P 13 15 50.4 -1.6
comp=Z,2µm,1.3s
R38A Fenwick Farm, 20.84 1 P P 13 15 50.7 -1.6
baz=181,SNR=283
R37A Teagarden Farm 20.98 358 P P 13 15 51.8 -1.9
baz=179,SNR=68
R39A Chumby, Stover 20.99 2 P P 13 15 53.0 -0.8
baz=183,SNR=433
R40A Maddies Statio 21.01 4 P P 13 15 53.2 -0.8
baz=186,SNR=420
R36A Gordon, Harris 21.01 357 P P 13 15 51.8 -2.2
baz=177,SNR=101
R35A Emporia Munici 21.06 355 P P 13 15 52.3 -2.2
baz=175,SNR=44
MALC Bahia Malaga 21.10 127 *e*P P 13 15 54.0 -1.1
R34A Isabella, Hill 21.13 353 P P 13 15 53.3 -2.0
baz=172,SNR=159
GRGC Isla de Gorgon 21.14 130 *e*P P 13 15 55.8 +0.2
KMSC Kings Mountain 21.15 30 P P 13 15 54.2 -1.4
baz=216,SNR=78
KMSC Kings Mountain 21.15 30 *e*P P 13 15 54.5 -1.1
comp=Z,3µm,1.1s
TUC Tucson 21.23 318 P P 13 15 55.9 -0.7
baz=132
TUC Tucson 21.23 318 *e*P P 13 15 57.3 +0.8
TUC pmax pmax
comp=Z,4µm,2.0s
TUC Tucson 21.23 318 *e*P P 13 15 57.3 +0.8
comp=Z,4µm,2.0s
TUC LR LR
comp=Z,25µm,21.0s
R33A Olander Ranch, 21.23 352 P P 13 15 54.7 -1.8
baz=170,SNR=143
HELC Santa Helena 21.27 119 *i* P P 13 15 55.8 -1.6
TZTN Tazewell 21.37 24 *e*P P 13 15 55.4 -2.5
comp=Z,2µm,1.4s
USIN University of 21.39 14 *e*P P 13 15 56.2 -1.9
comp=Z,2µm,1.1s
R32A Long Quarter, 21.45 350 P P 13 15 57.3 -1.5
baz=169,SNR=83
Q37A Longview Farm, 21.53 359 P P 13 15 56.6 -3.0
baz=180,SNR=41
SLM Saint Louis 21.57 8 *e*P P 13 15 57.9 -2.0
SLM pmax pmax
comp=Z,1µm,1.1s
SLM Saint Louis 21.57 8 *e*P P 13 15 57.9 -2.0
comp=Z,1µm,1.1s
TUMC Tumaco 21.57 134 *e*P P 13 16 02.0 +1.8
Q38A Cooks Store, C 21.62 1 P P 13 15 58.5 -2.0
baz=182,SNR=260
Q36A Arnold C. Orve 21.65 357 P P 13 15 58.4 -2.4
baz=177,SNR=16
Q34A Chapman 21.71 354 P P 13 15 58.8 -2.7
baz=173,SNR=46
Q39A Willow Grove F 21.73 2 P P 13 15 59.4 -2.1
baz=184,SNR=202
Q40A Laux Farm, Aux 21.73 4 P P 13 15 58.9 -2.7
baz=186,SNR=241
T25A Trinidad 21.77 337 P P 13 16 02.7 +0.4
baz=153,SNR=352
T25A Trinidad 21.77 337 *e*P P 13 16 02.5 +0.1
comp=Z,3µm,1.5s
SDDR Presa de Saban 21.79 82 *e*P P 13 16 01.3 -1.2
comp=Z,843nm,1.1s
SDDR LR LR
comp=Z,162µm,21.0s
KSU1 Kansas State U 21.86 355 P P 13 16 00.5 -2.5
baz=174,SNR=49
KSU1 Kansas State U 21.86 355 *e*P P 13 16 00.6 -2.5
KSU1 LR LR
comp=Z,14µm,19.0s
Q33A Connelly Farm, 21.89 352 P P 13 16 01.1 -2.2
baz=171,SNR=91
GUYC Guyana, Colomb 21.91 121 *e*P P 13 16 03.6 -0.7
Q32A Meitler Ranch, 21.99 351 P P 13 16 02.3 -2.0
baz=169,SNR=307
WCI Wyandotte Cave 21.99 17 *e*P P 13 16 01.9 -2.4
WCI pmax pmax
comp=Z,960nm,0.7s
WCI Wyandotte Cave 21.99 17 *e*P P 13 16 01.9 -2.4
comp=Z,958nm,0.6s
CBKS Cedar Bluff 22.02 348 P P 13 16 03.7 -1.0
baz=166,SNR=331
CBKS Cedar Bluff 22.02 348 *e*P P 13 16 03.1 -1.6
CBKS pmax pmax
comp=Z,3µm,1.0s
CBKS MLR MLR
comp=Z,52µm,22.0s
CBKS Cedar Bluff 22.02 348 *e*P P 13 16 03.0 -1.6
comp=Z,3µm,1.0s
CBKS LR LR
comp=Z,52µm,22.0s
OLIL Olney 22.03 13 *e*P P 13 16 02.6 -2.1
comp=Z,2µm,1.1s
GRTK Grand Turk 22.11 75 *e*P P 13 16 06.0 +0.4
comp=Z,3µm,1.3s
GRTK LR LR
comp=Z,88µm,19.0s
NORC Norcasia 22.16 119 *e*P P 13 16 05.7 -0.6
P39A Salisbury 22.18 3 P P 13 16 03.8 -2.3
baz=184,SNR=300
OCAC Ocana 22.18 111 *e*P P 13 16 04.2 -2.4
P35A Duane Minner, 22.24 356 P P 13 16 04.5 -2.3
baz=176,SNR=100
P37A Lathrop 22.24 360 P P 13 16 04.2 -2.6
baz=180,SNR=46
X18A Snowflake 22.26 324 *e*P P 13 16 08.0 +0.8
P40A Paris 22.26 4 P P 13 16 04.6 -2.3
baz=186,SNR=557
P38A Dawn 22.29 1 P P 13 16 04.9 -2.3
baz=182,SNR=127
P36A Good Intent, A 22.29 358 P P 13 16 05.2 -2.1
baz=178,SNR=130
P33A Williams Farm, 22.31 353 P P 13 16 05.3 -2.1
baz=172,SNR=26
P34A Walnut Farm, R 22.32 355 P P 13 16 05.4 -2.2
baz=174,SNR=170
TOLC Tolima 22.34 122 *e*P P 13 16 09.8 +1.5
214A Organ Pipe Nat 22.35 314 P P 13 16 08.0 +0.1
baz=127,SNR=84
214A Organ Pipe Nat 22.35 314 *e*P P 13 16 08.2 +0.3
comp=Z,300nm,0.4s
BRRC Barranca, Sant 22.35 114 *i* P P 13 16 05.3 -2.8
POPC Popayan, Colom 22.55 129 *e*P P 13 16 11.0 +0.9
W18A Petrified Fore 22.57 325 P P 13 16 10.9 +0.8
baz=139,SNR=53
W18A Petrified Fore 22.57 325 *e*P P 13 16 11.4 +1.2
comp=Z,1µm,1.4s
P32A Huiting Farm, 22.61 351 P P 13 16 09.0 -1.3
baz=169,SNR=80
BANI BANI 22.67 84 *e*P P 13 16 08.0 -3.1
SDCO Great Sand Dun 22.72 336 P P 13 16 11.8 +0.2
baz=151,SNR=552
SDCO Great Sand Dun 22.72 336 *e*P P 13 16 11.7 +0.1
comp=Z,2µm,1.8s
SDCO LR LR
comp=Z,17µm,20.0s
O38A Galt 22.78 1 P P 13 16 09.7 -2.1
baz=182,SNR=52
O36A Bolckow 22.80 358 P P 13 16 09.6 -2.3
baz=178,SNR=58
BLO Bloomington 22.82 15 *e*P P 13 16 10.3 -1.8
BLO pmax pmax
comp=Z,5µm,1.4s
BLO Bloomington 22.82 15 *e*P P 13 16 10.3 -1.8
comp=Z,5µm,1.4s
GIRC Giron, Santand 22.82 114 *e*P P 13 16 11.2 -1.4
O37A Wolven Farm, M 22.82 360 P P 13 16 10.9 -1.2
baz=180,SNR=95

CMBC **Cumbal** 22.82 134 *e*P P 13 16 14.3 +1.4
O40A **La Belle** 22.86 4 P P 13 16 10.4 -2.0
baz=186,SNR=155
GRMC **Gramalote, San** 22.87 112 *e*P P 13 16 11.4 -1.6
KSCO **Kaye Shedlock'** 22.90 343 P P 13 16 12.4 -0.6
baz=159,SNR=82
KSCO **Kaye Shedlock'** 22.90 343 *e*P P 13 16 12.8 -0.2
comp=Z,5µm,1.8s
OTAV **Otavalo** 22.91 136 *e*P P 13 16 15.3 +1.6
OTAV comp=Z,896nm,1.3s LR LR
comp=Z,37µm,21.0s
OTAV **Otavalo** 22.91 136 *i* P P 13 16 16.4 +2.6
O33A **Hebron** 22.93 353 P P 13 16 11.8 -1.3
baz=172,SNR=138
O34A **Beatrice** 22.94 355 P P 13 16 11.4 -1.8
baz=174,SNR=141
O39A **Kirksville** 22.95 3 P P 13 16 11.5 -1.8
baz=184,SNR=162
O35A **Humboldt** 22.97 357 P P 13 16 11.4 -2.1
baz=176,SNR=56
CRUC **La Cruz** 23.00 131 *e*P P 13 16 16.3 +1.8
ROSC **El Rosal** 23.01 120 P P 13 16 14.8 +0.3
comp=Z,66nm,0.6s,baz=325,slow=12,SNR=16
ROSC S S 13 20 15.3 +2.3
comp=Z,68nm,1.1s,baz=292,slow=21,SNR=3.7
ROSC **El Rosal** 23.01 120 *e*P P 13 16 16.4 +1.9
comp=Z,277nm,1.1s
ROSC S S 13 20 15.3 +2.3
ROSC **El Rosal** 23.01 120 *i* P P 13 16 14.7 +0.2
CNNC **Cliffs of the** 23.03 36 *e*P P 13 16 13.3 -0.8
comp=Z,784nm,1.0s
CNNC LR LR
comp=Z,100µm,22.0s
X16A **Lo Mia Camp, P** 23.05 321 *e*P P 13 16 15.6 +1.1
comp=Z,712nm,0.9s
BARC **Barichara** 23.06 115 *e*P P 13 16 13.7 -1.1
SDD **Santo Domingo** 23.09 83 *e*P P 13 16 15.7 +0.9
comp=Z,4µm,1.7s
PAMC **Pamplona, Colo** 23.13 113 *e*P P 13 16 13.9 -1.9
O32A **Brockman Farm,** 23.19 352 P P 13 16 14.4 -1.2
baz=170,SNR=114
PRAC **Prado** 23.20 123 *e*P P 13 16 15.8 -0.1
O31A **Woolen Ranch,** 23.25 350 P P 13 16 15.4 -0.6
baz=168,SNR=270
S22A **4UR Ranch, Cre** 23.25 334 P P 13 16 17.0 +0.5
baz=148,SNR=120
S22A **4UR Ranch, Cre** 23.25 334 *e*P P 13 16 16.6 +0.2
comp=Z,2µm,2.0s
BLA **Blacksburg** 23.27 29 *e*P P 13 16 14.2 -2.1
BLA pmax pmax
comp=Z,2µm,0.5s
BLA MLR MLR
comp=Z,34µm,19.0s
BLA **Blacksburg** 23.27 29 *e*P P 13 16 14.2 -2.1
comp=Z,2µm,0.5s
BLA LR LR
comp=Z,34µm,19.0s
N37A **Lee Faris, Mou** 23.41 360 P P 13 16 16.7 -0.8
baz=180
N38A **Joes South For** 23.46 2 P P 13 16 16.5 -1.5
baz=183,SNR=328
N36A **Muff Farm, Cla** 23.48 358 P P 13 16 16.5 -1.6
baz=178,SNR=24
113A **Mohawk Valley,** 23.48 315 *e*P P 13 16 19.4 +1.1
VWCC **Virginia Weste** 23.50 29 *e*P P 13 16 16.3 -2.1
N35A **Tabor** 23.55 357 P P 13 16 17.4 -1.4
baz=177,SNR=86
MVCO **Mesa Verde** 23.56 330 P P 13 16 19.4 +0.3
baz=144,SNR=235
MVCO **Mesa Verde** 23.56 330 *e*P P 13 16 19.4 +0.3
comp=Z,3µm,1.8s
MVCO LR LR
comp=Z,13µm,20.0s
N33A **J Bar K, Exete** 23.57 354 P P 13 16 18.1 -0.8
baz=173,SNR=42
N34A **Lincoln** 23.58 356 P P 13 16 18.0 -1.1
baz=175,SNR=21
HDIL **Hopedale** 23.59 9 P P 13 16 17.4 -1.7
baz=192,SNR=93
HDIL **Hopedale** 23.59 9 *e*P P 13 16 17.6 -1.4
comp=Z,4µm,1.6s
HDIL LR LR
comp=Z,11µm,22.0s
CHIC **Chingaza** 23.61 120 *i* P P 13 16 19.7 -0.4
Q24A **Divide** 23.66 338 P P 13 16 20.8 +0.7
baz=154,SNR=161
Q24A **Divide** 23.66 338 *e*P P 13 16 20.1 -0.1
comp=Z,1µm,1.4s
N32A **Stulken Farm,** 23.69 352 P P 13 16 19.4 -0.7
baz=171,SNR=37
Y14A **Wickenburg** 23.70 318 *e*P P 13 16 21.6 +1.3
comp=Z,4µm,1.4s
SPX **San Pedro Mart** 23.75 309 *e*P P 13 16 22.3 +1.3
SPIG **San Pedro Mart** 23.75 309 *e*P P 13 16 23.6 +2.5
SPIG **San Pedro Mart** 23.75 309 *e*P P 13 16 23.6 +2.5
WUAZ **Wupatki** 23.78 323 P P 13 16 21.6 +0.5
baz=136,SNR=207
WUAZ **Wupatki** 23.78 323 *e*P P 13 16 21.7 +0.6
comp=Z,973nm,1.3s
WUAZ LR LR
comp=Z,25µm,19.0s
SFIN **Lafayette** 23.83 13 P P 13 16 19.9 -1.4
baz=197,SNR=137
SFIN **Lafayette** 23.83 13 *e*P P 13 16 18.9 -2.4
comp=Z,2µm,1.3s
N31A **Bailey Ranch,** 23.84 351 P P 13 16 20.8 -0.6
baz=169,SNR=49
VILC **Villavicencio,** 23.93 121 *e*P P 13 16 22.9 +0.3
FLOC **Florencia** 23.95 129 *e*P P 13 16 23.9 +1.3
N30A **Hueftle Ranch,** 24.01 349 P P 13 16 22.5 -0.5
baz=166,SNR=41
M37A **Trindle Farm,** 24.06 0 P P 13 16 22.2 -1.2
baz=181,SNR=75
M38A **Pleasantville** 24.08 2 P P 13 16 21.9 -1.7
baz=183,SNR=338
M36A **Felix, Anita** 24.11 359 P P 13 16 22.1 -1.8
baz=179,SNR=43
N29A **Votaw Ranch, W** 24.13 348 P P 13 16 23.9 -0.2
baz=165,SNR=179
M35A **Neola** 24.16 357 P P 13 16 22.8 -1.5
baz=177,SNR=141
M34A **Aspy Farms, Fr** 24.25 356 P P 13 16 24.0 -1.1
baz=175,SNR=125
BGNE **Belgrade** 24.31 353 P P 13 16 24.5 -1.1
baz=171,SNR=46
BGNE **Belgrade** 24.31 353 *e*P P 13 16 24.6 -1.1
comp=Z,5µm,1.6s
YOPC **Yopal, Colombi** 24.33 117 *e*P P 13 16 25.0 -1.3
PV01 **Paradox Valley** 24.34 332 *e*P P 13 16 27.3 +1.0
SDV **Santo Domingo** 24.35 107 P P 13 16 25.2 -1.3
comp=Z,153nm,0.4s,baz=265,slow=5.9,SNR=63
SDV S S 13 20 31.5 -2.6
comp=Z,67nm,0.9s,baz=170,slow=22,SNR=5.1
SDV **Santo Domingo** 24.35 107 *e*P P 13 16 25.4 -1.1
comp=Z,2µm,1.4s
SDV S S 13 20 31.5 -2.6
SDV LR LR
comp=Z,44µm,22.0s
SDV **Santo Domingo** 24.35 107 *i* P P 13 16 25.0 -1.5
CPBX **Cerro Prieto** 24.35 312 *e*P P 13 16 20.0 -6.2
M31A **Lambtecht Ranc** 24.36 351 P P 13 16 25.5 -0.6
baz=169,SNR=308
M33A **Taylor Creek F** 24.37 354 P P 13 16 25.0 -1.2
baz=173,SNR=53
GLA **Glamis** 24.37 314 P P 13 16 27.8 +1.4
baz=126,SNR=101
GLA **Glamis** 24.37 314 *e*P P 13 16 27.1 +0.7
GLA pmax pmax
comp=Z,800nm,1.4s
GLA **Glamis** 24.37 314 *e*P P 13 16 27.1 +0.7
comp=Z,802nm,1.4s
SMCO **Snowmass** 24.53 335 *e*P P 13 16 28.2 +0.1
comp=Z,918nm,1.1s
PV05 **Paradox Valley** 24.54 331 *e*P P 13 16 28.2 +0.2
OGNE **Ogallala** 24.56 346 P P 13 16 28.0 -0.1
baz=162,SNR=309
OGNE **Ogallala** 24.56 346 *e*P P 13 16 27.9 -0.2
comp=Z,2µm,1.3s
OGNE LR LR
comp=Z,14µm,20.0s
ISCO **Idaho Springs** 24.57 338 P P 13 16 28.3 0.0
baz=153,SNR=176
ISCO **Idaho Springs** 24.57 338 *e*P P 13 16 28.4 0.0
ISCO pmax pmax
comp=Z,880nm,1.6s
ISCO **Idaho Springs** 24.57 338 *e*P P 13 16 28.4 0.0
comp=Z,878nm,1.6s
SCIA **State Center** 24.57 2 *e*P P 13 16 26.3 -1.7
comp=Z,7µm,1.4s
SCIA LR LR
comp=Z,19µm,22.0s
Y12C **Blythe** 24.58 316 P P 13 16 28.5 +0.3
baz=127,SNR=26
Y12C **Blythe** 24.58 316 *e*P P 13 16 31.2 +3.0
comp=Z,336nm,1.1s
PDMCI **Parker Dam,Lak** 24.66 317 P P 13 16 28.4 -0.6
baz=129,SNR=75
M30A **Dale-Ortello V** 24.69 350 P P 13 16 28.3 -0.9
baz=167,SNR=5.5
L34A **Svendsen Farm,** 24.69 356 P P 13 16 27.5 -1.7
baz=175,SNR=19
PV04 **Paradox Valley** 24.70 331 *e*P P 13 16 30.1 +0.7
M29A **Burnside Ranch** 24.75 348 P P 13 16 29.7 0.0
baz=165,SNR=66
PV10 **Paradox Valley** 24.75 331 *e*P P 13 16 29.8 -0.2
L36A **Harm Buss Farm** 24.76 359 P P 13 16 28.1 -1.6
baz=179,SNR=128
L37A **Phoenix Point,** 24.78 1 P P 13 16 28.1 -1.8
baz=181,SNR=141
L35A **Bielow Farm, R** 24.79 358 P P 13 16 28.8 -1.2
baz=177,SNR=27
L38A **Oak Wood Farm,** 24.81 2 P P 13 16 28.4 -1.8
baz=183,SNR=140
M28A **Bar X Bar Ranc** 24.84 347 P P 13 16 31.4 +0.8
baz=164,SNR=78
ACSO **Alum Creek Sta** 24.84 21 *e*P P 13 16 28.1 -2.4
comp=Z,2µm,1.5s
ACSO LR LR
comp=Z,52µm,19.0s
L32A **Elgin** 24.88 353 P P 13 16 30.6 -0.3
baz=172,SNR=14
PV09 **Paradox Valley** 24.89 331 *e*P P 13 16 31.9 +0.6
URVA **University of** 24.95 33 *e*P P 13 16 31.6 +0.1
L33A **Hoskins** 24.96 354 P P 13 16 30.3 -1.3
baz=173,SNR=29
SWSC **Sam W. Stewart** 24.99 313 P P 13 16 33.1 +1.2
baz=124,SNR=16
W13A **Hualapai Mount** 25.00 319 *e*P P 13 16 33.8 +1.4
comp=Z,226nm,1.0s
IBP **Imperial Bould** 25.04 312 P P 13 16 33.6 +1.1
baz=123
L30A **Spencer Herefo** 25.06 350 P P 13 16 32.3 -0.2
baz=168,SNR=38
BC3 **Big Chuckawall** 25.15 314 P P 13 16 33.8 +0.3
baz=126,SNR=118
L31A **Butterfield Fa** 25.15 352 P P 13 16 32.6 -0.8
baz=170,SNR=119
IRM **Iron Mountain** 25.23 316 P P 13 16 35.2 +1.0
baz=127,SNR=48
NEE2 **Needles Airpor** 25.26 318 P P 13 16 35.4 +1.0
baz=129,SNR=8.1
CBX **Cerro Bola** 25.27 311 *e*P P 13 16 25.5 -9.1
K36A **Gilmore City** 25.29 359 P P 13 16 32.9 -1.6
baz=180,SNR=36
L29A **Maesberg Ranch** 25.30 349 P P 13 16 34.5 -0.2
baz=166,SNR=114
K38A **Parkersburg** 25.33 2 P P 13 16 33.2 -1.7
baz=184,SNR=51
TJIG **Tijuana** 25.34 311⇓ *e*P P 13 16 40.4 +5.3
K33A **Hardington** 25.38 355 P P 13 16 35.0 -0.3
baz=174,SNR=10
K35A **Storm Lake** 25.39 358 P P 13 16 34.0 -1.5
baz=178,SNR=35
K34A **Le Mars** 25.39 357 P P 13 16 33.8 -1.7
baz=176,SNR=94
MONP2 **Monument Peak** 25.40 312 P P 13 16 37.2 +1.3
baz=123,SNR=30
K37A **Belmond** 25.42 1 P P 13 16 34.3 -1.4
baz=182,SNR=90
L28A **Connealy Angus** 25.46 347 P P 13 16 36.2 0.0
baz=164,SNR=8.0
BAR **Barrett** 25.47 311 *e*P P 13 16 39.5 +3.2
comp=Z,117nm,0.9s
CBN **Corbin Frederi** 25.52 32 PFAKE 13 16 50.0 +13
CBN LR LR
comp=Z,28µm,19.0s
K32A **Verdigre** 25.52 353 P P 13 16 36.0 -0.6
baz=172,SNR=41
EKU **East Kanab** 25.52 324 *e*P P 13 16 39.0 +2.0
K31A **O'Neill** 25.58 352 P P 13 16 36.8 -0.4
baz=170,SNR=29
N23A **Red Feather La** 25.66 339 P P 13 16 38.8 +0.6
baz=154,SNR=28
N23A **Red Feather La** 25.66 339 *e*P P 13 16 38.3 +0.1
comp=Z,717nm,1.4s
KNB **Kanab** 25.67 324 *e*P P 13 16 39.2 +1.0
KNB pmax pmax
comp=Z,710nm,1.1s
KNB **Kanab** 25.67 324 *e*P P 13 16 39.2 +1.0
comp=Z,712nm,1.1s
PKCU **Pinkcliffs** 25.69 325 *e*P P 13 16 41.9 +3.3
comp=Z,246nm,1.1s
MMU **Miners Mountai** 25.71 328 *e*P P 13 16 38.9 +0.2
BELC **Belle Mtn. Jos** 25.72 315 P P 13 16 39.8 +1.1
baz=126,SNR=38
AGP **Aguadilla** 25.72 83 *e*P P 13 16 42.9 +4.2
comp=Z,6µm,1.9s
K30A **Basset** 25.75 351 P P 13 16 38.4 -0.4
baz=168,SNR=126
JFWS **Jewell Farm** 25.78 7 *e*P P 13 16 36.6 -2.4
JFWS pmax pmax
comp=Z,1µm,1.0s
JFWS **Jewell Farm** 25.78 7 *e*P P 13 16 36.6 -2.4
comp=Z,1µm,0.9s
JFWS LR LR
comp=Z,17µm,20.0s
PFO **Pinyon Flats O** 25.82 313 P P 13 16 38.9 -0.7
comp=Z,37nm,0.7s,baz=119,slow=7.5,SNR=36
PFO LR LR 13 27 57.1
comp=Z,9µm,18.4s,baz=136,slow=39
PFO **Pinyon Flats O** 25.82 313 P P 13 16 40.1 +0.5
baz=124,SNR=40
PFO **Pinyon Flats O** 25.82 313 *e*P P 13 16 42.3 +2.7
PFO pmax pmax
comp=Z,280nm,1.2s
PFO **Pinyon Flats O** 25.82 313 *e*P P 13 16 42.3 +2.7
comp=Z,277nm,1.3s
O20A **White River Ci** 25.86 335 P P 13 16 39.7 -0.2
baz=148,SNR=66
O20A **White River Ci** 25.86 335 *e*P P 13 16 40.2 +0.3
comp=Z,1µm,1.5s
PHWY **Pilot Hill** 25.86 340 *e*P P 13 16 40.1 +0.1
comp=Z,879nm,1.6s
109C **Camp Elliot, M** 25.89 311 P P 13 16 40.1 +0.1
baz=122
LCMT **Little Creek M** 25.90 323 *e*P P 13 16 41.9 +1.6
comp=Z,196nm,1.1s
GMRC **Granite Mounta** 25.95 316 P P 13 16 41.8 +1.1
baz=127,SNR=18
K29A **Lazy Trails An** 25.95 350 P P 13 16 39.4 -1.2
baz=167,SNR=80
J37A **Redenius Farm,** 25.97 1 P P 13 16 38.8 -1.8
baz=182,SNR=60
J36A **Seneca 1, Swea** 25.98 360 P P 13 16 38.3 -2.5
baz=180,SNR=111
J34A **George** 25.98 357 P P 13 16 39.2 -1.6
baz=176,SNR=27
J38A **Wedel Dairy, R** 26.01 3 P P 13 16 38.8 -2.2
baz=184,SNR=76
J35A **Milford** 26.03 358 P P 13 16 39.0 -2.2
baz=178,SNR=36
SRU **San Rafael Swe** 26.03 330 *e*P P 13 16 42.2 +0.7
SRU pmax pmax
comp=Z,260nm,1.0s
SRU **San Rafael Swe** 26.03 330 *e*P P 13 16 42.2 +0.7
comp=Z,257nm,1.1s
MTPU **Mount Pierson** 26.06 326 *e*P P 13 16 44.1 +2.2
comp=Z,498nm,1.0s
J33A **Davis** 26.08 355 P P 13 16 40.9 -0.8
baz=174,SNR=35
K28A **Ten Mile Ranch** 26.10 348 P P 13 16 41.9 -0.1
baz=165,SNR=54
J32A **Parkston** 26.21 354 P P 13 16 41.7 -1.1
baz=172,SNR=51
J31A **Geddes** 26.23 352 P P 13 16 42.2 -0.9
baz=170,SNR=67
CELP **Cerrillos** 26.27 84 *e*P P 13 16 41.5 -2.1
P18A **Preston Nutter** 26.31 331 *e*P P 13 16 45.5 +1.3
comp=Z,608nm,1.3s
MURC **Murrieta** 26.32 313 P P 13 16 44.9 +0.9
baz=123,SNR=29
J30A **Dallas** 26.37 351 P P 13 16 43.7 -0.6
baz=169,SNR=83
MSU **Marysvale** 26.40 327 *e*P P 13 16 46.7 +1.8
MSU **Marysvale** 26.40 327 *e*P P 13 16 46.7 +1.8
HEC **Hector,Ludlow** 26.42 316 P P 13 16 45.4 +0.4
baz=126,SNR=8.1
P17A **Butcher Ranch,** 26.42 330 *e*P P 13 16 45.5 +0.6
comp=Z,658nm,1.3s
ECSD **EROS Data Cent** 26.47 356 P P 13 16 43.2 -1.9
baz=175,SNR=432
ECSD **EROS Data Cent** 26.47 356 *e*P P 13 16 43.0 -2.2
comp=Z,2µm,1.3s
ECSD LR LR
comp=Z,17µm,19.0s
BBRC **Big Bear Solar** 26.50 314 P P 13 16 46.9 +1.1
baz=124
TMUT **Trail Mountain** 26.51 329 *e*P P 13 16 46.8 +0.9
comp=Z,242nm,1.0s
TUQ **Turquoise Moun** 26.51 317 P P 13 16 46.4 +0.6
baz=128
AAM **Ann Arbor** 26.52 18 *e*P P 13 16 43.1 -2.5
AAM pmax pmax
comp=Z,2µm,1.4s
AAM **Ann Arbor** 26.52 18 *e*P P 13 16 43.1 -2.5
comp=Z,2µm,1.4s
AAM LR LR
comp=Z,23µm,20.0s
I35A **Creekview Farm** 26.52 359 P P 13 16 43.5 -2.1
baz=179,SNR=65
J29A **Okreek** 26.58 350 P P 13 16 45.0 -1.2
baz=167,SNR=111
N54A **Moraine State** 26.58 24 P P 13 16 44.1 -2.1
baz=212,SNR=76
O56A **Blue Knob Stat** 26.60 27 P P 13 16 44.7 -1.7
baz=215,SNR=32
SGU **Sterling** 26.64 329 *e*P P 13 16 47.9 +0.8
I36A **Fitzsimmons Fa** 26.67 0 P P 13 16 44.9 -2.0
baz=181,SNR=16
I37A **Lemond, Waseca** 26.67 1 P P 13 16 44.8 -2.2
baz=182,SNR=64
SJG **San Juan** 26.68 84 P P 13 16 44.1 -3.2
comp=Z,134nm,0.8s,baz=266,slow=6.2,SNR=13
SJG **San Juan** 26.68 84 *e*P P 13 16 45.8 -1.5
SJG pmax pmax
comp=Z,560nm,1.2s
SJG **San Juan** 26.68 84 *e*P P 13 16 45.8 -1.5
comp=Z,558nm,1.2s
SJG LR LR
comp=Z,51µm,21.0s
SJG **San Juan** 26.68 84 *i* P P 13 16 44.3 -2.9
SDMD **Soldier's Deli** 26.71 31 *e*P P 13 16 45.5 -1.9
comp=Z,354nm,1.2s
I34A **Hadley** 26.73 357 P P 13 16 45.7 -1.8
baz=177,SNR=41
I38A **Scanlan Farm,** 26.74 3 P P 13 16 45.8 -1.7
baz=184,SNR=75
J27A **Elkhorn Farm,** 26.75 347 P P 13 16 47.4 -0.3
baz=164,SNR=44
J28A **Allard Ranch,** 26.76 348 P P 13 16 47.7 -0.1
baz=165,SNR=153
I33A **Coleman** 26.79 356 P P 13 16 46.0 -2.0
baz=175,SNR=43
I32A **Karley and Nic** 26.83 355 P P 13 16 47.3 -1.0
baz=173,SNR=13
RRX **Edison Barstow** 26.89 315 P P 13 16 49.8 +0.7
baz=125
I31A **Royce, Wessing** 26.94 353 P P 13 16 48.4 -1.0
baz=171
I30A **Oaccoma** 26.94 352 P P 13 16 48.3 -1.1
baz=169,SNR=14
HUMP **Col San Antoni** 26.96 84 *e*P P 13 16 47.9 -1.9
comp=Z,3µm,2.0s
SCI2 **San Clemente I** 26.98 310 P P 13 16 49.0 -0.8
baz=120
BFSC **Mount Baldy Ra** 26.99 313 P P 13 16 50.5 +0.4
baz=123
GSC **Goldstone, Bar** 27.01 316 P P 13 16 51.4 +1.1
baz=126,SNR=16
GSC **Goldstone, Bar** 27.01 316 *e*P P 13 16 53.1 +2.9
GSC pmax pmax
comp=Z,310nm,1.6s
GSC **Goldstone, Bar** 27.01 316 *e*P P 13 16 53.1 +2.9
comp=Z,314nm,1.6s
SHOC **Shoshone, Teco** 27.02 318 P P 13 16 51.5 +1.3
baz=128
J26A **Sides Ranch, S** 27.05 346 P P 13 16 50.5 +0.1
baz=161,SNR=105
CIS **Catalina Islan** 27.09 311 P P 13 16 51.2 +0.3
baz=121
ALLY **Alegheny Colle** 27.11 23 *e*P P 13 16 49.2 -1.7
comp=Z,1µm,1.3s
FMP **Fort Macarthur** 27.16 312 P P 13 16 51.8 +0.3
baz=122
I29A **Vivian Onida** 27.18 350 P P 13 16 50.3 -1.2
baz=168,SNR=63
M54A **Oil Creek Stat** 27.18 24 P P 13 16 49.2 -2.3
baz=212,SNR=32
SSPA **Standing Stone** 27.20 28 *e*P P 13 16 49.4 -2.3
comp=Z,766nm,1.4s
H36A **Jessenland, He** 27.23 0 P P 13 16 50.7 -1.2
baz=181,SNR=96
H37A **Dierke Farm, C** 27.25 2 P P 13 16 50.6 -1.5
baz=183,SNR=55
MWC **Mount Wilson** 27.26 313 *e*P P 13 16 55.6 +3.0
MWC pmax pmax
comp=Z,230nm,1.1s
MWC **Mount Wilson** 27.26 313 *e*P P 13 16 55.6 +3.0
comp=Z,232nm,1.1s
MPU **Maple Canyon** 27.27 330 *e*P P 13 16 53.6 +1.0
comp=Z,657nm,1.5s
H32A **Carlson Farm,** 27.30 355 P P 13 16 50.5 -2.0
baz=174,SNR=375
I28A **Midland** 27.30 349 P P 13 16 51.2 -1.4
baz=166,SNR=160
PASC **Pasadena Art C** 27.33 313 *e*P P 13 16 56.4 +3.4
comp=Z,302nm,1.2s
H34A **Spellman Lake,** 27.35 357 P P 13 16 51.6 -1.4
baz=177,SNR=46
H35A **Sunnyside Ranc** 27.36 359 P P 13 16 50.8 -2.2
baz=179,SNR=114
H31A **Wolsey** 27.38 353 P P 13 16 51.9 -1.3
baz=171,SNR=8.3
SUSD **Miller** 27.40 352 P P 13 16 52.1 -1.3
baz=170,SNR=17
K22A **Casper** 27.42 340 P P 13 16 53.4 -0.4
baz=154,SNR=46
K22A **Casper** 27.42 340 *e*P P 13 16 53.8 -0.1
comp=Z,486nm,1.2s
H33A **Prehn Over Nor** 27.42 356 P P 13 16 51.3 -2.3
baz=175,SNR=130
NLU **North Lily Min** 27.44 329 *e*P P 13 16 55.4 +1.2
comp=Z,822nm,1.9s
DECC **Green Verdugo** 27.47 313 P P 13 16 55.2 +0.9
baz=122
I27A **Quinn** 27.54 348 P P 13 16 54.0 -0.8
baz=164,SNR=114
ERPA **Erie** 27.57 23 *e*P P 13 16 52.9 -2.1
comp=Z,1µm,1.5s
EDW2 **Edwards Air Fo** 27.57 314 P P 13 16 55.4 +0.2
baz=124,SNR=29
JLU **Jordanelle** 27.65 331 *e*P P 13 16 57.6 +1.6
comp=Z,883nm,1.9s
TPNV **Topopah Spring** 27.66 319 P P 13 16 57.2 +1.1
baz=130,SNR=59
TPNV **Topopah Spring** 27.66 319 *e*P P 13 16 58.3 +2.3
TPNV pmax pmax
comp=Z,370nm,1.0s
TPNV **Topopah Spring** 27.66 319 *e*P P 13 16 58.3 +2.3
comp=Z,371nm,1.0s
I26A **New Underwood** 27.68 346 P P 13 16 56.5 +0.5
baz=162,SNR=56
LRMC **Laurel Mtn Rad** 27.70 315 P P 13 16 56.2 -0.1
baz=125
FURC **Furnace Creek,** 27.75 318 P P 13 16 57.5 +0.9
baz=128,SNR=29
H29A **Onida** 27.75 351 P P 13 16 55.3 -1.3
baz=168,SNR=51
STVI **Saint Thomas** 27.80 83 *e*P P 13 16 55.7 -1.6
comp=Z,568nm,1.3s
SNCC **San Nicolas Is** 27.82 310 P P 13 16 56.7 -0.7
baz=119
CTU **Camp Tracy** 27.86 331 *e*P P 13 17 00.3 +2.5
comp=Z,290nm,1.2s
G35A **Watkins** 27.87 359 P P 13 16 55.4 -2.2
baz=180,SNR=11
I25A **Rochford** 27.88 345 P P 13 16 57.9 0.0
baz=161
G36A **St. Michael** 27.89 1 P P 13 16 55.6 -2.1
baz=181,SNR=51
SPMN **Marine on St.** 27.90 2 P P 13 16 55.9 -1.9
baz=183,SNR=162

SPMN Marine on St. 27.90 2 *e*P P 13 16 55.8 -2.0
comp=Z,2µm,1.1s
G33A Ortonville 27.91 357 P P 13 16 55.6 -2.4
baz=176,SNR=57
BLG Laguna Peak, P 27.92 312 P P 13 16 59.1 +0.9
baz=121
G34A Benson 27.92 358 P P 13 16 55.9 -2.2
baz=177,SNR=121
H28A Mission Ridge 27.93 349 P P 13 16 57.0 -1.2
baz=166,SNR=34
OSI Osito Audit: C 27.94 313 P P 13 16 58.6 +0.2
baz=122
OSI Osito Audit: C 27.94 313 *e*P P 13 17 01.7 +3.3
comp=Z,304nm,1.1s
DUG Dugway, Tooele 27.99 329 P P 13 16 59.2 +0.3
baz=140,SNR=29
DUG Dugway, Tooele 27.99 329 *e*P P 13 17 01.2 +2.3
DUG pmax pmax
comp=Z,460nm,1.4s
DUG Dugway, Tooele 27.99 329 *e*P P 13 17 01.2 +2.3
comp=Z,461nm,1.4s
DUG LR LR
comp=Z,15µm,20.0s
CDVI St. Croix 28.01 85 *e*P P 13 16 58.4 -0.8
comp=Z,364nm,1.0s
TCUT Toone Canyon 28.04 332 *e*P P 13 17 00.8 +1.4
comp=Z,334nm,1.0s
RSSD Black Hills 28.05 345 P P 13 16 58.9 -0.6
baz=160
RSSD Black Hills 28.05 345 *e*P P 13 16 59.4 -0.1
RSSD pmax pmax
comp=Z,160nm,0.6s
RSSD Black Hills 28.05 345 *e*P P 13 16 59.4 -0.1
comp=Z,159nm,0.6s
G32A Webster 28.05 355 P P 13 16 57.2 -2.0
baz=174,SNR=103
G31A Conde 28.08 354 P P 13 16 57.8 -1.7
baz=172,SNR=24
H27A Howes 28.09 348 P P 13 16 59.1 -0.5
baz=164,SNR=129
G30A Faulkton 28.09 352 P P 13 16 58.0 -1.6
baz=170,SNR=160
DAC Darwin (Calif) 28.10 317 *e*P P 13 17 00.1 0.0
DAC pmax pmax
comp=Z,240nm,1.4s
DAC Darwin (Calif) 28.10 317 *e*P P 13 17 00.1 0.0
comp=Z,240nm,1.4s
R11A Troy Canyon, C 28.17 322 P P 13 17 01.8 +1.2
baz=133,SNR=77
R11A Troy Canyon, C 28.17 322 *e*P P 13 17 01.3 +0.8
comp=Z,468nm,1.8s
SAIU Southern Antel 28.19 330 *e*P P 13 17 02.5 +1.8
H26A Fairpoint 28.22 347 P P 13 17 00.1 -0.7
baz=163,SNR=38
G29A Hoven 28.26 351 P P 13 17 00.9 -0.2
baz=169,SNR=6.4
SCZ2 Santa Cruz Isl 28.27 311 P P 13 17 03.0 +1.7
baz=120
ARVC Arvin 28.29 314 P P 13 17 03.0 +1.5
baz=123,SNR=22
G28A Parade 28.30 350 P P 13 17 01.8 +0.3
baz=167,SNR=30
ISA Isabella, Lake 28.34 315 P P 13 17 03.4 +1.4
baz=124
ISA Isabella, Lake 28.34 315 *e*P P 13 17 05.5 +3.6
ISA pmax pmax
comp=Z,250nm,1.5s
ISA Isabella, Lake 28.34 315 *e*P P 13 17 05.5 +3.6
comp=Z,245nm,1.5s
GRAC Grapevine Rang 28.39 318 P P 13 17 02.3 -0.1
baz=128,SNR=65
N59A State Game Lan 28.40 30 P P 13 17 01.3 -1.1
baz=220,SNR=22
H25A Fruitdale 28.41 346 P P 13 17 02.1 -0.4
baz=161,SNR=111
F34A Alexandria 28.46 358 P P 13 17 00.9 -1.9
baz=178,SNR=68
HWUT Hardware Ranch 28.50 332 *e*P P 13 17 04.2 +0.7
comp=Z,215nm,1.2s
HWUT LR LR
comp=Z,16µm,19.0s
F35A Swanville 28.51 359 P P 13 17 01.6 -1.7
baz=180,SNR=99
F36A Milaca 28.52 1 P P 13 17 01.5 -1.9
baz=182,SNR=219
F33A 5 Mile Ranch, 28.55 357 P P 13 17 01.0 -2.6
baz=176,SNR=79
SBC Santa Barbara 28.55 312 P P 13 17 01.6 -2.1
baz=121
PD31 Pinedale Array 28.61 336 *e*P P 13 17 04.0 -0.6
PDAR Pinedale Array 28.61 336 P P 13 17 03.6 -0.9
comp=Z,16nm,0.6s,baz=135,slow=8.3,SNR=52
PDAR LR LR 13 31 56.3
comp=Z,20µm,20.8s,baz=144,slow=43
PDAR P3KPbc 13 49 17.6
comp=Z,2.0nm,0.7s,baz=293,slow=1.3,SNR=8.7
BW06 Boulder Array 28.61 336 P P 13 17 03.7 -0.8
baz=148,SNR=67
BW06 Boulder Array 28.61 336 *e*P P 13 17 03.9 -0.6
BW06 LR LR
comp=Z,23µm,21.0s
GLMI Grayling 28.62 14 *e*P P 13 17 02.3 -2.0
comp=Z,1µm,1.0s
GLMI LR LR
comp=Z,17µm,21.0s
F32A Veblen 28.63 356 P P 13 17 01.7 -2.6
baz=174,SNR=10
BGU Big Grassy Mou 28.65 329 *e*P P 13 17 05.8 +1.0
comp=Z,129nm,1.0s
SPUT South Promonto 28.67 330 *e*P P 13 17 06.0 +1.1
comp=Z,468nm,1.5s
EPU East Promontor 28.72 331 *e*P P 13 17 07.4 +2.0
F31A Hecla 28.72 354 P P 13 17 02.8 -2.3
baz=172,SNR=13
HDU Hyde Park 28.75 332 *e*P P 13 17 06.2 +0.6
F30A Leola 28.78 353 P P 13 17 04.4 -1.2
baz=171,SNR=14
G27A Dupree 28.78 349 P P 13 17 04.8 -0.9
baz=165,SNR=117
ATAH Atahualpa 28.81 146 P P 13 17 08.9 +2.2
comp=Z,375nm,0.7s,baz=340,slow=5.8,SNR=118
ATAH S S 13 21 51.1 +6.3
comp=Z,6.2nm,0.6s,baz=83,slow=20,SNR=6.8
G26A Maurine 28.83 348 P P 13 17 05.4 -0.8
baz=164,SNR=125
PKM Mcpherson Peak 28.85 312 P P 13 17 06.2 -0.4
baz=121,SNR=11
F29A Eureka 28.88 352 P P 13 17 05.0 -1.6
baz=169,SNR=78
G25A Newell 28.91 346 P P 13 17 06.4 -0.5
baz=162,SNR=126
MMNY Mt. Morris Dam 28.91 25 *e*P P 13 17 06.5 -0.4
comp=Z,911nm,1.1s
TIN Tinemaha, Big 28.97 318 P P 13 17 07.6 0.0
baz=127
COWI Conover 29.05 7 *e*P P 13 17 05.7 -2.4
comp=Z,420nm,1.0s
COWI LR LR
comp=Z,10µm,20.0s
ODNJ Ogdensburg 29.09 31 *e*P P 13 17 06.7 -1.8
comp=Z,510nm,1.6s
E34A Wadena 29.18 359 P P 13 17 07.2 -1.9
baz=178,SNR=316
E36A McGregor 29.18 1 P P 13 17 07.1 -2.1
baz=182,SNR=269
HVU Hansel Valley 29.19 331 *e*P P 13 17 10.3 +0.7
HVU pmax pmax
comp=Z,220nm,0.9s
HVU Hansel Valley 29.19 331 *e*P P 13 17 10.2 +0.7
comp=Z,220nm,0.9s
SMMC Simmler 29.19 313 P P 13 17 08.6 -0.9
baz=122
E33A Westby DABS, E 29.20 357 P P 13 17 06.7 -2.7
baz=177,SNR=45
E35A Pequot Lakes 29.21 360 P P 13 17 07.9 -1.6
baz=180,SNR=175
RCTC Rector, Farmer 29.21 315 P P 13 17 09.1 -0.5
baz=124,SNR=39
AHID Auburn Hatcher 29.24 334 *e*P P 13 17 10.0 0.0
comp=Z,849nm,1.8s
AHID LR LR
comp=Z,15µm,20.0s
E37A Wrenshall 29.25 2 P P 13 17 08.1 -1.8
baz=184,SNR=83
F27A Lemmon 29.27 349 P P 13 17 09.0 -1.0
baz=165,SNR=161
BINY Binghamton 29.30 28 *e*P P 13 17 08.0 -2.4
comp=Z,735nm,1.3s
BINY LR LR
comp=Z,27µm,21.0s
E32A Braaten, Kindr 29.34 356 P P 13 17 08.6 -2.0
baz=175,SNR=8.0
E31A Nome 29.38 355 P P 13 17 09.3 -1.6
baz=173,SNR=53
F26A Lodgepole 29.38 348 P P 13 17 10.4 -0.7
baz=164,SNR=162
PAL Palisades 29.39 32 *e*P P 13 17 10.4 -0.7
PAL pmax pmax
comp=Z,210nm,1.0s
PAL Palisades 29.39 32 *e*P P 13 17 10.4 -0.7
comp=Z,206nm,0.9s
E30A Jud 29.42 353 P P 13 17 09.8 -1.6
baz=171,SNR=14
SABA Saba 29.47 85 *e*P P 13 17 11.9 -0.2
comp=Z,934nm,1.6s
E29A Napoleon 29.57 352 P P 13 17 11.2 -1.5
baz=170,SNR=72
F25A Bowman 29.61 347 P P 13 17 12.7 -0.4
baz=162,SNR=98
REDW Red Top Meadow 29.63 335 *e*P P 13 17 13.7 +0.2
comp=Z,2µm,1.8s
ELK Elko 29.64 326 P P 13 17 16.1 +2.4
comp=Z,68nm,0.6s,baz=219,slow=0.0,SNR=3.7
ELK Elko 29.64 326 *e*P P 13 17 14.7 +1.0
comp=Z,114nm,1.0s
SNOW Snow King Moun 29.67 335 *e*P P 13 17 14.2 +0.3
comp=Z,390nm,0.7s
MLAC Mammoth, Mammo 29.70 318 P P 13 17 14.3 +0.1
baz=127
E27A Carson 29.73 350 P P 13 17 13.4 -0.7
baz=166,SNR=15
E28A Huff 29.73 351 P P 13 17 13.0 -1.1
baz=168,SNR=194
D35A Remer 29.73 0 P P 13 17 11.8 -2.2
baz=181,SNR=282
LOHW Long Hollow 29.74 335 *e*P P 13 17 14.5 +0.1
comp=Z,386nm,1.3s
D34A Park Rapids 29.75 359 P P 13 17 12.2 -2.1
baz=178,SNR=47
NV11 Mina Array Sit 29.76 320 *e*P P 13 17 16.7 +2.1
comp=Z,230nm,1.0s
D33A AnnSam, Waubun 29.82 358 P P 13 17 12.7 -2.2
baz=177,SNR=198
D36A Goodland 29.84 1 P P 13 17 12.6 -2.4
baz=182,SNR=185
D37A Cotton 29.84 2 P P 13 17 12.6 -2.4
baz=184,SNR=702
D31A Mcclaflin, Tow 29.85 355 P P 13 17 12.7 -2.4
baz=174,SNR=52
NV01 Mina Array Sit 29.85 320 *e*P P 13 17 16.5 +1.0
NVAR Mina Array Bea 29.85 320 P P 13 17 17.2 +1.7
comp=Z,84nm,0.7s,baz=133,slow=8.6,SNR=83
NVAR ScP **ScP** 13 23 44.9 +3.5
comp=Z,11nm,1.0s,baz=143,slow=3.0,SNR=5.2
NVAR LR LR 13 30 14.3
comp=Z,26µm,19.2s,baz=134,slow=38
NVAR P3KPbc 13 49 14.3
comp=Z,1.8nm,0.7s,baz=296,slow=4.5,SNR=5.3
D32A Dogwood Acres, 29.88 356 P P 13 17 13.0 -2.4
baz=175,SNR=25
MOOW Moose Ponds 29.91 335 *e*P P 13 17 15.7 -0.2
comp=Z,779nm,1.9s
E26A Carlson Angus 29.93 348 P P 13 17 15.1 -0.8
baz=164,SNR=425
D30A Buchanan 30.00 354 P P 13 17 14.5 -2.0
baz=172,SNR=101
D29A Pettibone, Tap 30.05 353 P P 13 17 15.1 -1.8
baz=170,SNR=16
E25A Miller Ranch, 30.15 347 P P 13 17 17.2 -0.7
baz=163,SNR=53
SADO Sadowa 30.18 22 P P 13 17 14.9 -3.1
comp=Z,301nm,0.8s,baz=236,slow=8.7,SNR=113
SADO Sadowa 30.18 22 *e*P P 13 17 15.1 -3.0
comp=Z,462nm,1.0s
YTP The Promontory 30.27 337 *e*P P 13 17 19.5 +0.3
C34A RKJ Ranch, Bem 30.31 359 P P 13 17 16.8 -2.3
baz=179,SNR=98
D28A Regan 30.31 351 P P 13 17 18.1 -1.1
baz=168,SNR=37
C35A Jirik Farms, M 30.35 0 P P 13 17 17.3 -2.2
baz=181,SNR=666
D27A Center 30.38 350 P P 13 17 18.4 -1.4
baz=166,SNR=66
H17A Grant Village 30.38 336 *e*P P 13 17 20.8 +0.6
baz=148,SNR=71
H17A Grant Village 30.38 336 *e*P P 13 17 20.8 +0.6
comp=Z,613nm,1.9s
C37A Embarrass 30.42 3 P P 13 17 18.0 -2.2
baz=184,SNR=101
YLT Little Thumb C 30.42 336 *e*P P 13 17 22.3 +1.8
C36A Pine Crest Far 30.43 2 P P 13 17 18.2 -2.0
baz=183,SNR=346
C33A Trail 30.44 358 P P 13 17 17.9 -2.4
baz=177,SNR=118
MCID Moose Creek 30.45 335 *e*P P 13 17 22.3 +1.6
C38A Sawbill Land. 30.46 4 P P 13 17 17.8 -2.7
baz=186,SNR=316
LKWY Lake 30.46 337 *e*P P 13 17 21.9 +1.1
LKWY pmax pmax
comp=Z,610nm,1.8s
LKWY Lake 30.46 337 *e*P P 13 17 21.9 +1.1
comp=Z,607nm,1.8s
LKWY LR LR
comp=Z,16µm,21.0s
D26A Manning 30.46 349 P P 13 17 19.9 -0.7
baz=165,SNR=299
YMP Mirror Lake PI 30.52 337 *e*P P 13 17 23.3 +1.9
RLMT Red Lodge 30.53 339 P P 13 17 21.9 +0.5
baz=151,SNR=167
RLMT Red Lodge 30.53 339 *e*P P 13 17 20.9 -0.5
comp=Z,772nm,1.8s
RLMT LR LR
comp=Z,8µm,20.0s
YFT Old Faithful 30.53 336 *e*P P 13 17 23.1 +1.6
comp=Z,254nm,1.3s
BBSR BB Station 30.54 55 *e*P P 13 17 21.2 -0.1
comp=Z,521nm,1.3s
BBSR LR LR
comp=Z,23µm,20.0s
C32A Crookston 30.54 357 P P 13 17 19.4 -1.8
baz=176,SNR=13
C30A Mose, Pekin 30.56 354 P P 13 17 20.0 -1.4
baz=172,SNR=238
C31A Landman Farms, 30.59 355 P P 13 17 19.7 -1.9
baz=174,SNR=296
WAKR Walker 30.61 319 *e*P P 13 17 25.0 +2.9
C39A Grand Marais 30.65 5 P P 13 17 20.0 -2.1
baz=188,SNR=112
EYMN Ely 30.68 3 P P 13 17 20.1 -2.3
baz=185,SNR=237
EYMN Ely 30.68 3 *e*P P 13 17 19.7 -2.7
comp=Z,2µm,2.0s
EYMN LR LR
comp=Z,11µm,22.0s
YNR Norris Junctio 30.69 337 *e*P P 13 17 23.8 +0.9
comp=Z,195nm,1.3s
D25A Fairfield 30.75 348 P P 13 17 23.1 0.0
baz=163,SNR=353
YMR Madison River 30.76 336 *e*P P 13 17 22.8 -0.7
comp=Z,356nm,1.2s
C28A Hausauer Farms 30.80 352 P P 13 17 22.0 -1.4
baz=169,SNR=28
YHH Holmes Hill 30.82 336 *e*P P 13 17 24.9 +0.9
MDND Maddock 30.83 353 P P 13 17 22.4 -1.3
baz=170,SNR=74
MDND Maddock 30.83 353 *e*P P 13 17 22.4 -1.3
comp=Z,3µm,1.4s
ANWB Willy Bob 30.85 84 *e*P P 13 17 22.8 -1.4
ANWB LR LR
comp=Z,14µm,19.0s
YMC Maple Creek 30.86 336 *e*P P 13 17 24.7 +0.5
CMB Columbia Colle 30.94 317 *e*P P 13 17 26.6 +1.7
CMB pmax pmax
comp=Z,72nm,1.0s
CMB Columbia Colle 30.94 317 *e*P P 13 17 26.6 +1.7
comp=Z,72nm,0.9s
B33A Robert and Kas 30.95 358 P P 13 17 22.2 -2.6
baz=178,SNR=67
SAO San Andreas Ge 30.95 314 *e*P P 13 17 27.7 +2.8
SAO pmax pmax
comp=Z,97nm,0.9s
SAO San Andreas Ge 30.95 314 *e*P P 13 17 27.7 +2.8
comp=Z,97nm,0.8s
C27A Sayler Ranch, 30.96 350 P P 13 17 23.9 -1.1
baz=167,SNR=93
AGMN Agassiz Nation 30.98 358 P P 13 17 23.0 -2.1
baz=177,SNR=780
AGMN Agassiz Nation 30.98 358 *e*P P 13 17 23.0 -2.1
comp=Z,883nm,0.8s
AGMN LR LR
comp=Z,12µm,21.0s
GDHS Morne Mazeau, 31.00 87 *e*P P 13 17 24.9 -0.8
comp=Z,497nm,1.2s
LAO LASA Array 31.00 344 P P 13 17 24.5 -0.8
baz=158,SNR=91
LAO LASA Array 31.00 344 *e*P P 13 17 24.5 -0.8
comp=Z,1µm,1.6s
LAO LR LR
comp=Z,14µm,22.0s
B35A Bob, Littlefor 31.02 1 P P 13 17 23.1 -2.2
baz=181,SNR=314
QLMT Earthquake Lak 31.08 336 *e*P P 13 17 27.4 +1.2
B32A Ashes, Strandq 31.11 357 P P 13 17 24.3 -1.9
baz=176,SNR=194
CRMT Chrome Mountai 31.13 338 *e*P P 13 17 26.4 -0.4
B34A Aery, Baudette 31.14 359 P P 13 17 24.4 -2.1
baz=179,SNR=198
C26A Wahner Farm, P 31.17 350 P P 13 17 25.8 -0.9
baz=166,SNR=206
B31A Greenbush Farm 31.21 355 P P 13 17 25.4 -1.6
baz=174,SNR=160
GCMT Greycliff 31.25 339 *e*P P 13 17 27.2 -0.4
C25A Freed Ranch, W 31.27 348 P P 13 17 27.0 -0.7
baz=164
B30A Myrvik Farm, E 31.29 355 P P 13 17 26.4 -1.4
baz=173,SNR=498
ACCN Adirondack Com 31.30 29 *e*P P 13 17 26.4 -1.5
comp=Z,624nm,1.5s
HLID Hailey 31.34 331 P P 13 17 28.4 -0.1
baz=141,SNR=232
HLID Hailey 31.34 331 *e*P P 13 17 28.8 +0.4
comp=Z,119nm,0.8s
HLID LR LR
comp=Z,11µm,19.0s
B29A Wagenman Farm, 31.41 353 P P 13 17 27.7 -1.1
baz=171,SNR=289
NCB Newcomb 31.49 28 PFAKE 13 17 40.0 +10
NCB LR LR
comp=Z,25µm,19.0s
B28A Dugan Ranch, T 31.51 352 P P 13 17 29.0 -0.7
baz=169,SNR=180
BZMT Bozeman Pass 31.53 337 *e*P P 13 17 30.9 +0.8
B27A Peters Farms, 31.60 351 P P 13 17 29.4 -1.1
baz=167,SNR=16
A33A Warroad 31.61 358 P P 13 17 28.4 -2.1
baz=178,SNR=293
A32A Rocking H Ranc 31.63 357 P P 13 17 28.3 -2.4
baz=176,SNR=103
MCMT McKenzie Canyo 31.65 334 *e*P P 13 17 32.2 +0.9
BGMT Barton Gulch 31.66 336 *e*P P 13 17 32.7 +1.4
A31A Linda, St. Vin 31.68 356 P P 13 17 29.3 -1.9
baz=175,SNR=22
B26A Jensen Ranch, 31.73 350 P P 13 17 30.6 -1.1
baz=166,SNR=12
A30A Hoffart Farm, 31.77 355 P P 13 17 30.6 -1.4
baz=173,SNR=1000
BAMF Morne Balai 31.78 90 *e*P P 13 17 36.3 +3.7
B25A Knox Farm, Ray 31.79 349 P P 13 17 31.8 -0.4
baz=164,SNR=39
FDF Fort de France 31.79 90 *e*P P 13 17 28.5 -4.1
FDF Fort de France 31.79 90 *e*P P 13 17 28.5 -4.1
FDF *e**PP **pP** 13 18 13.6 +6.3
FDF pmax pmax
comp=Z,154nm,0.8s
FDF MLR MLR
comp=Z,55µm,20.0s
FDF Fort de France 31.79 90 *e*P P 13 17 28.5 -4.1
comp=Z,154nm,0.8s
FDF *e*pP **pP** 13 18 13.6 +6.3
FDF LR LR
comp=Z,55µm,20.0s
AFDM Forest Hills D 31.84 318 *e*P P 13 17 34.3 +1.6
comp=Z,64nm,1.1s
BOZ Bozeman (W) 31.84 336 P P 13 17 33.3 +0.5
baz=148,SNR=128
BOZ Bozeman (W) 31.84 336 *e*P P 13 17 34.2 +1.4
BOZ pmax pmax
comp=Z,730nm,1.9s
BOZ Bozeman (W) 31.84 336 *e*P P 13 17 34.2 +1.4
comp=Z,731nm,1.9s
BOZ LR LR
comp=Z,14µm,21.0s
A29A Manning Farm, 31.85 354 P P 13 17 31.4 -1.2
baz=171,SNR=582
LONY Lake Ozonia 31.85 27 *e*P P 13 17 30.3 -2.4
comp=Z,337nm,1.1s
LONY LR LR
comp=Z,20µm,19.0s
MFID Camas Ranch 31.90 329 *e*P P 13 17 34.0 +0.8
comp=Z,123nm,0.9s
TRMF Trois Ilets 31.92 90 *e*P P 13 17 33.8 +0.1
ZAM Aeronautique 31.94 90 *e*P P 13 17 35.1 +1.3
A28A Rude Farm, Bot 31.95 352 P P 13 17 32.2 -1.4
baz=169,SNR=203
SVB Belmont 31.95 93 *e*P P 13 17 35.2 +1.2
comp=Z,662nm,1.1s
DLMT Dillon 31.98 335 *e*P P 13 17 35.0 +0.9
comp=Z,261nm,1.0s
MDV Middlebury 31.99 29 *e*P P 13 17 31.3 -2.6
MVM Montagne Vaucl 32.07 90 *e*P P 13 17 32.9 -2.1
LCCM Lewis and Clar 32.09 336 *e*P P 13 17 35.3 +0.3
DGMT Dagmar 32.19 347 P P 13 17 34.8 -0.9
baz=162,SNR=42
DGMT Dagmar 32.19 347 *e*P P 13 17 35.1 -0.6
comp=Z,471nm,0.9s
DGMT LR LR
comp=Z,12µm,21.0s
A26A Wade Farm, Ken 32.20 350 P P 13 17 34.9 -0.8
baz=166,SNR=523
LRM Limekiln Ridge 32.30 336 *e*P P 13 17 37.0 0.0
A25A Svangstu Ranch 32.42 349 P P 13 17 37.0 -0.7
baz=184,SNR=193
FRNY Flat Rock 32.45 28 *e*P P 13 17 35.5 -2.5
comp=Z,223nm,1.1s
ORV Oroville 32.52 319 *e*P P 13 17 41.9 +3.3
ORV pmax pmax
comp=Z,120nm,1.1s
ORV Oroville 32.52 319 *e*P P 13 17 41.9 +3.3
comp=Z,121nm,1.1s
MCCM Marconi Confer 32.65 315 *e*P P 13 17 40.2 +0.5
comp=Z,711nm,1.0s
WVOR Wild Horse Val 32.65 325 *e*P P 13 17 40.8 +0.9
WVOR pmax pmax
comp=Z,300nm,1.0s
WVOR Wild Horse Val 32.65 325 *e*P P 13 17 40.8 +0.9
comp=Z,297nm,1.0s
WVOR LR LR
comp=Z,15µm,19.0s
LBNH Lisbon 32.77 30 *e*P P 13 17 38.9 -1.8
LBNH pmax pmax
comp=Z,580nm,1.4s
LBNH Lisbon 32.77 30 *e*P P 13 17 38.9 -1.8
comp=Z,580nm,1.4s
ULM Lac du Bonnet 32.93 358 P P 13 17 39.5 -2.6
comp=Z,299nm,0.9s,baz=177,slow=9.8,SNR=86
ULM LR LR 13 33 38.6
comp=Z,11µm,20.9s,baz=178,slow=41
ULM Lac du Bonnet 32.93 358 *e*P P 13 17 39.5 -2.6
ULM pmax pmax
comp=Z,480nm,1.0s
ULM Lac du Bonnet 32.93 358 *e*P P 13 17 39.5 -2.6
comp=Z,478nm,1.0s
TOSP Speyside 33.07 96 *e*P P 13 17 42.4 -1.3
O03D Paynes Creek 33.14 319 P P 13 17 45.6 +1.5
baz=126,SNR=39
MOD Modoc Plateau 33.23 323 *e*P P 13 17 45.4 +0.5
comp=Z,120nm,0.8s
EGMT Eagleton 33.24 341 P P 13 17 45.2 +0.4
baz=152,SNR=212
EGMT Eagleton 33.24 341 *e*P P 13 17 44.6 -0.3
comp=Z,1µm,1.6s
EGMT LR LR
comp=Z,11µm,21.0s
CHMT Chamberlain Mo 33.52 336 *e*P P 13 17 47.0 -0.5
BBGH Gun Hill 33.60 92 PFAKE 13 18 00.0 +12
BBGH LR LR
comp=Z,65µm,21.0s
BMO Blue Mountains 33.67 330 *e*P P 13 17 48.9 +0.2
comp=Z,178nm,1.3s
BMO LR LR
comp=Z,12µm,19.0s
NNA Nana 33.72 148 *e*P P 13 17 50.5 +1.2
NNA pmax pmax

NNA MLR MLR
comp=Z,5µm,1.9s
comp=Z,7µm,22.0s
NNA Nana 33.72 148 *e*P **P 13 17 50.5 +1.2**
NNA LR LR
comp=Z,5µm,1.9s
comp=Z,7µm,22.0s
MSO Missoula 33.72 335 P **P 13 17 49.5 +0.4**
baz=145,SNR=184
MSO Missoula 33.72 335 *e*P **P 13 17 48.3 -0.8**
comp=Z,123nm,0.7s
WDC Whiskeytown Da 33.76 319 *e*P **P 13 17 49.5 +0.1**
WDC pmax pmax
comp=Z,39nm,1.0s
WDC Whiskeytown Da 33.76 319 *e*P **P 13 17 49.5 +0.1**
comp=Z,39nm,0.9s
M04C Macdoel 34.05 322 P **P 13 17 53.0 +1.0**
baz=128,SNR=33
K05A Summer Lake 34.09 324 *e*P **P 13 17 53.7 +1.3**
comp=Z,280nm,1.3s
N02D Trinity Center 34.09 320 P **P 13 17 53.7 +1.3**
baz=126
SWMT Swartz Lake 34.30 336 *e*P **P 13 17 53.4 -0.7**
KMRM Mail Ridge 34.30 318 *e*P **P 13 17 57.0 +2.8**
comp=Z,215nm,1.0s
M02C Callahan 34.43 320 P **P 13 17 55.8 +0.6**
baz=126,SNR=11
F10A Beach Ranch, E 34.47 331 *e*P **P 13 17 55.1 -0.5**
comp=Z,423nm,0.7s
K04D Chiloquin, OR 34.52 323 P **P 13 17 56.2 +0.1**
baz=129,SNR=7.2
YBH Yreka Blue Hor 34.54 321 P **P 13 17 54.8 -1.4**
comp=Z,46nm,0.6s,baz=138,slow=3.8,SNR=32
YBH Yreka Blue Hor 34.54 321 *e*P **P 13 17 56.0 -0.2**
YBH pmax pmax
comp=Z,58nm,0.9s
YBH Yreka Blue Hor 34.54 321 *e*P **P 13 17 56.0 -0.2**
comp=Z,58nm,0.8s
YBMT Yellow Bay 34.59 336 *e*P **P 13 17 56.5 -0.1**
JTMT Jette 34.60 336 *e*P **P 13 17 56.6 -0.1**
J05D Fort Rock, OR 34.64 324 P **P 13 17 58.4 +1.3**
baz=130
KHMM Horse Mountain 34.68 319 *e*P **P 13 18 00.6 +3.1**
comp=Z,165nm,0.8s
PKME Peaks-Kenny Pk 34.80 31 *e*P **P 13 17 57.6 -0.6**
comp=Z,439nm,1.4s
PKME LR LR
comp=Z,29µm,19.0s
JCC Jacoby Creek, 34.83 319 *e*P **P 13 18 02.5 +4.0**
comp=Z,232nm,0.8s
BLMT Blacktail Moun 34.85 336 *e*P **P 13 17 58.9 -0.1**
BSMT Bassoo Peak 34.89 335 *e*P **P 13 17 58.9 -0.3**
HUMO Hull Mountain 35.21 322 *e*P **P 13 18 04.1 +2.2**
comp=Z,61nm,1.1s
L02D Cave Junction, 35.33 321 P **P 13 18 04.1 +1.3**
baz=126
I05D Terrebonne, OR 35.38 326 P **P 13 18 03.8 +0.4**
baz=132,SNR=24
WALA Waterton Lakes 35.54 337 *e*P **P 13 18 03.0 -1.8**
comp=Z,1µm,1.7s
G06A Carlson Farm, 35.61 327 *e*P **P 13 18 07.9 +2.6**
comp=Z,523nm,1.9s
I04A Tendick Farm, 35.62 324 P **P 13 18 06.5 +1.1**
baz=129,SNR=14
HAWA Hanford 35.87 330 *e*P **P 13 18 07.2 -0.2**
comp=Z,80nm,0.8s
HAWA LR LR
comp=Z,13µm,19.0s
G05D Wamic, OR 35.97 327 P **P 13 18 09.0 +0.7**
baz=132,SNR=39
D08A Wollman Farm, 36.06 331 *e*P **P 13 18 08.9 -0.1**
comp=Z,145nm,0.9s
H04A Detroit Lake 36.07 325 *e*P **P 13 18 09.4 +0.3**
comp=Z,302nm,0.8s
I03D Drain, OR 36.10 323 P **P 13 18 09.9 +0.5**
baz=128,SNR=17
NEW Newport 36.17 334 P **P 13 18 09.9 0.0**
baz=141,SNR=104
NEW Newport 36.17 334 *e*P **P 13 18 09.0 -1.0**
NEW pmax pmax
comp=Z,100nm,0.7s
NEW Newport 36.17 334 *e*P **P 13 18 09.0 -1.0**
comp=Z,103nm,0.6s
NEW LR LR
comp=Z,16µm,20.0s
GL2 New Goldendale 36.20 328 P **P 13 18 13.4 +3.0**
TDH Tom, Dick, Har 36.25 326 P **P 13 18 12.5 +1.6**
C09A Chrisman Ranch 36.32 332 *e*P **P 13 18 11.0 -0.2**
comp=Z,259nm,0.6s
DPW Davenport 36.34 332 P **P 13 18 11.3 -0.1**
DPW Davenport 36.34 332 P **P 13 18 11.3 -0.1**
COR Corvallis 36.62 324 *e*P **P 13 18 15.8 +2.0**
COR pmax pmax
comp=Z,790nm,1.3s
COR Corvallis 36.62 324 *e*P **P 13 18 15.8 +2.0**
comp=Z,788nm,1.4s
EBG Ellensburg 36.74 329 P **P 13 18 15.5 +0.7**
SAW Saint Andrews 36.75 331 P **P 13 18 15.0 +0.1**
TBM Table Mountain 36.94 330 P **P 13 18 16.8 +0.2**
G03D McMinnville, O 36.99 325 P **P 13 18 17.4 +0.5**
baz=130,SNR=28
WTV Waterville 37.01 331 P **P 13 18 17.5 +0.4**
F04A Amboy 37.01 327 *e*P **P 13 18 19.4 +2.3**
comp=Z,389nm,1.4s
LTY Liberty 37.03 330 *e*P **P 13 18 17.4 +0.1**
comp=Z,223nm,0.8s
ETW Entiat 37.12 330 *e*P **P 13 18 18.5 +0.4**
B08A Colville Reser 37.21 332 *e*P **P 13 18 18.3 -0.5**
comp=Z,314nm,1.7s
LON Longmire 37.24 328 *e*P **P 13 18 19.4 +0.3**
LON pmax pmax
comp=Z,130nm,0.8s
LON Longmire 37.24 328 *e*P **P 13 18 19.4 +0.3**
comp=Z,132nm,0.8s
OBSR Observation Ro 37.35 328 *e*P **P 13 18 22.5 +2.3**
F04D Rainier, OR 37.42 326 P **P 13 18 21.2 +0.7**
baz=131,SNR=6.9
C06D Leavenworth 37.61 330 P **P 13 18 22.1 0.0**
baz=136,SNR=18
F03A Seaside 37.61 326 *e*P **P 13 18 25.3 +3.1**
comp=Z,718nm,1.3s
D05A Enumclaw 37.63 329 *e*P **P 13 18 23.0 +0.8**
comp=Z,461nm,1.3s
C05A Tolt Reservoir 37.83 329 *e*P **P 13 18 26.8 +2.8**
FFC Flin Flon 37.87 353 *e*P **P 13 18 22.9 -1.2**
FFC pmax pmax
comp=Z,270nm,0.7s
FFC Flin Flon 37.87 353 *e*P **P 13 18 22.9 -1.2**
comp=Z,269nm,0.6s
FFC LR LR
comp=Z,11µm,20.0s
E03A Lebam 38.01 327 *e*P **P 13 18 26.3 +0.9**
comp=Z,338nm,0.9s
PNT Penticton 38.04 333 *e*P **P 13 18 26.7 +1.0**
PNT Penticton 38.04 333 *e*P **P 13 18 26.7 +1.0**
PTGA Pitinga 38.12 115 P **P 13 18 24.6 -2.2**
comp=Z,64nm,0.8s,baz=305,slow=10.0,SNR=34
PTGA Pitinga 38.12 115 *e*P **P 13 18 24.9 -1.9**
comp=Z,224nm,1.4s
PTGA LR LR
comp=Z,39µm,19.0s
B06A Marblemount 38.31 330 *e*P **P 13 18 27.6 -0.3**
comp=Z,198nm,0.8s
B05A Bryant 38.42 330 P **P 13 18 28.3 -0.6**
baz=134,SNR=34
NLWA Neilton Lookou 38.72 327 *e*P **P 13 18 31.7 +0.3**
comp=Z,148nm,0.8s
NLWA LR LR
comp=Z,13µm,21.0s
A04D Lummi Island 39.03 330 P **P 13 18 33.6 -0.3**
baz=134,SNR=52
SAML Samuel 40.19 128 *e*P **P 13 18 41.5 -2.4**
comp=Z,104nm,0.8s
SAML LR LR
comp=Z,15µm,21.0s
LPAZ La Paz 42.06 141 P **P 13 19 00.1 +0.2**
comp=Z,313nm,0.7s,baz=328,slow=6.0,SNR=201
LPAZ S **S 13 25 08.5 +1.2**
comp=Z,40nm,1.0s,baz=177,slow=19,SNR=10
LPAZ La Paz 42.06 141 ǁ *i*P **P 13 18 60.0 +0.2**
LPAZ *i* S **S 13 25 02.5 -4.7**
LPAZ La Paz 42.06 141 *e*P **P 13 19 00.0 +0.2**
comp=Z,280nm,0.7s
LPAZ S **S 13 25 08.5 +1.2**
PB12 IPOC Station P 42.66 146 ⇑ *i*P **P 13 19 03.9 -0.2**
SCHQ Schefferville 42.96 23 P **P 13 19 03.1 -2.8**
comp=Z,159nm,0.9s,baz=222,slow=7.0,SNR=58
SCHQ LR LR 13 39 50.2
comp=Z,37µm,18.2s,baz=230,slow=40
SCHQ Schefferville 42.96 23 *e*P **P 13 19 03.2 -2.8**
comp=Z,300nm,1.1s
HMBC Humberstone 44.26 146 ⇑ *i*P **P 13 19 16.7 -0.2**
PB08 IPOC Station P 44.54 146 ǁ *i*P **P 13 19 18.6 -0.8**
PB08 *i* S **S 13 25 38.1 -4.8**
PB01 IPOC Station P 45.10 147 ǁ *i*P **P 13 19 24.0 +0.5**
PB01 IAmb IAmb 13 19 28.0
comp=Z,410nm,1.1s
PB01 IPOC Station P 45.10 147 *e*P **P 13 19 24.3 +0.8**
comp=Z,269nm,0.9s
PB07 IPOC Station P 45.46 148 ǁ *i*P **P 13 19 27.4 +1.0**
PB07 *i* S **S 13 25 52.9 -2.8**
PB04 IPOC Station P 45.83 148 ǁ *i*P **P 13 19 30.1 +0.8**
PB04 IAmb IAmb 13 19 33.1
comp=Z,2µm,1.8s
PB04 IPOC Station P 45.83 148 *e*P **P 13 19 29.7 +0.4**
comp=Z,2µm,1.8s
PB09 IPOC Station P 45.85 147 ǁ *i*P **P 13 19 30.8 +1.3**
SIV San Ignacio 46.42 134 P **P 13 19 33.3 -0.5**
comp=Z,550nm,0.8s,baz=308,slow=8.6,SNR=298
PB06 IPOC Station P 46.43 148 ǁ *i*P **P 13 19 34.8 +0.9**
PB10 IPOC Station P 46.62 150 ǁ *i*P **P 13 19 36.1 +0.9**
PB10 IPOC Station P 46.62 150 *e*P **P 13 19 36.2 +0.9**
comp=Z,726nm,1.6s
YKA Yellowknife Ar 47.40 347 P **P 13 19 39.8 -1.0**
comp=Z,339nm,0.6s,baz=150,slow=7.2,SNR=691
YKB5 Yellowknife Ar 47.40 347 *e*P **P 13 19 38.2 -2.6**
YKW3 Yellowknife Ar 47.46 347 *e*P **P 13 19 38.7 -2.5**
CRAG Craig 48.28 331 *e*P P 13 19 52.9 +5.2
WRAK Wrangell Islan 48.51 333 *e*P **P 13 19 54.0 +4.6**
WRAK LR LR
comp=Z,6µm,20.0s
DLBC Dease Lake 48.85 336 LR LR 13 43 14.0
comp=Z,6µm,18.2s,baz=135,slow=39
DLBC Dease Lake 48.85 336 *e*P **P 13 19 53.2 +1.2**
comp=Z,1µm,1.7s
LCO Las Campanas 51.28 153 *e*P **P 13 20 11.8 +0.8**
LCO LR LR
comp=Z,15µm,20.0s
SKAG Skagway 51.62 335 *e*P **P 13 20 15.2 +2.5**
TLL Tololo Astrono 52.24 154 ǁ *i*P **P 13 20 18.9 +0.8**
TAOE Nuku Hiva Isla 52.35 244 *e*P **P 13 20 20.9 +1.9**
comp=Z,870nm,1.2s
TAOE *e*S **S 13 27 34.6 +2.4**
comp=Z,23µm,25.1s
TAOE *e*LQ LQ 13 33 25.0
comp=Z,30µm,31.0s
TAOE *e*LR LR 13 35 41.8
comp=Z,33µm,31.2s
TAOE Nuku Hiva Isla 52.35 244 *e*P **P 13 20 19.0 0.0**
comp=Z,317nm,0.9s
ROCH El Roble 54.63 156 ǁ *i*P **P 13 20 36.0 +0.6**
PEL Peldehue 54.91 156 ⇑ *i*P **P 13 20 37.7 +0.5**
PEL IAmb IAmb 13 20 40.5
comp=Z,666nm,0.8s
NRS Narsarsuaq 55.70 26 *i*P **P 13 20 40.4 -1.9**
comp=Z,402nm,0.6s
NRS Narsarsuaq 55.70 26 *i*P **P 13 20 40.4 -1.9**
NRS pmax pmax
comp=Z,400nm,0.6s
NRS MLR MLR
comp=Z,22µm,19.0s
BDFB Brasilia 56.02 123 P **P 13 20 45.5 0.0**
comp=Z,116nm,0.7s,baz=322,slow=3.1,SNR=37
BDFB LR LR 13 48 23.6
comp=Z,7µm,18.9s,baz=299,slow=40
BDFB Brasilia 56.02 123 *e*P **P 13 20 45.9 +0.5**
BDFB Brasilia 56.02 123 *e*P **P 13 20 45.9 +0.5**
CPUP Villa Florida 56.20 140 P **P 13 20 45.1 -1.3**
comp=Z,110nm,1.1s,baz=332,slow=7.6,SNR=74
CPUP S **S 13 28 22.1 -1.0**
comp=Z,2.6nm,0.7s,baz=220,slow=19,SNR=9.6
BMRM Bremner River 56.34 333 *e*P **P 13 20 48.2 +1.2**
RKT Rikitea 56.60 226 *e*P **P 13 20 51.5 +2.2**
comp=Z,494nm,1.5s
RKT *e*S **S 13 28 29.8 +1.3**
comp=Z,28µm,25.8s
RKT *e*LQ LQ 13 35 11.9
comp=Z,47µm,29.2s
RKT *e*LR LR 13 37 30.0
comp=Z,26µm,37.8s
RKT Rikitea 56.60 226 *e*T T 14 19 08.3
comp=Z,13nm,0.2s
EYAK Cordova Ski Ar 56.65 332 *e*P **P 13 20 49.6 +0.4**
INK Inuvik 56.74 344 P **P 13 20 48.8 -0.8**
comp=Z,248nm,0.6s,baz=126,slow=7.5,SNR=178
INK LR LR 13 50 43.3
comp=Z,7µm,18.6s,baz=134,slow=42
MENT Mentasta 56.93 335 *e*P **P 13 20 53.5 +2.4**
EGAK Eagle 56.93 338 *e*P **P 13 20 50.4 -0.6**
EGAK LR LR
comp=Z,7µm,19.0s
SFJD Kangerlussuaq 57.08 19 *i*P **P 13 20 50.2 -1.8**
comp=Z,329nm,1.0s
SFJD *i* pP **pP 13 21 29.2 -0.9**
SFJD Kangerlussuaq 57.08 19 *i*P **P 13 20 50.2 -1.8**
SFJD pmax pmax
comp=Z,330nm,1.0s
SFJD MLR MLR
comp=Z,16µm,18.0s
KLU Klutina 57.15 333 *e*P **P 13 20 53.8 +1.0**
DOT Dot Lake 57.42 336 *e*P **P 13 20 52.3 -2.2**
RES Resolute Bay 57.43 360 *e*P **P 13 20 52.5 -1.9**
RES pmax pmax
comp=Z,134nm,0.6s
RES Resolute Bay 57.43 360 *e*P **P 13 20 52.5 -1.9**
comp=Z,134nm,0.6s
PAX Paxson 57.64 335 *e*P **P 13 20 56.5 +0.3**
PAX Paxson 57.64 335 *e*P **P 13 20 56.5 +0.3**
UWE Uwekahuna 57.82 282 *e*P **P 13 21 00.3 +2.1**
SCM Sheep Creek Mo 57.90 333 *e*P **P 13 20 58.9 +0.9**
SCM Sheep Creek Mo 57.90 333 *e*P **P 13 20 58.9 +0.9**
MLOA Mauna Loa Obse 58.06 283 *e*P **P 13 21 03.2 +2.9**
SEW Seward 58.15 331 *e*P **P 13 21 01.2 +1.7**
SML Sawmill 58.33 333 *e*P **P 13 21 01.1 +0.2**
SML Sawmill 58.33 333 *e*P **P 13 21 01.1 +0.2**
ILULI Ilulissat 58.34 17 *i*P **P 13 20 58.8 -2.0**
comp=Z,322nm,1.0s
ILULI Ilulissat 58.34 17 *i*P **P 13 20 58.8 -2.0**
ILULI pmax pmax
comp=Z,320nm,1.0s
ILULI MLR MLR
comp=Z,20µm,17.0s
H07S1 FLORES T-PHASE 58.45 54 *e*P **P 13 21 04.8 +2.7**
DHY Denali Highway 58.47 335 *e*P **P 13 21 02.9 +1.0**
HLK Haleakala 58.51 284 *e*P **P 13 21 07.8 +4.7**
PMR Palmer 58.59 333 *e*P **P 13 21 03.2 +0.6**
PMR Palmer 58.59 333 *e*P **P 13 21 03.2 +0.6**
RC01 Rabbit Creek A 58.66 332 *e*P **P 13 21 04.7 +1.5**
BRLK Bradley Lake 58.69 330 *e*P **P 13 21 05.8 +2.4**
KDAK Kodiak Island 58.87 328 LR LR 13 45 43.6
comp=Z,8µm,19.9s,baz=114,slow=35
KDAK Kodiak Island 58.87 328 *c e*P **P 13 21 06.3 +1.7**
KDAK Kodiak Island 58.87 328 *e*P **P 13 21 08.0 +3.4**
HDA Harding Lake 58.90 336 *e*P **P 13 21 04.5 -0.2**
IL1 Eielson Array 59.04 337 *e*P **P 13 21 04.9 -0.8**
ILAR Eielson Array 59.04 337 P **P 13 21 05.1 -0.6**
comp=Z,47nm,0.6s,baz=134,slow=5.2,SNR=137
ILAR S **S 13 29 02.1 +2.9**
comp=Z,0.6nm,0.9s,baz=214,slow=0.8,SNR=3.3
ILAR PKPPKP **P'P'df 13 50 38.6 +0.3**
comp=Z,2.5nm,0.9s,baz=308,slow=3.7,SNR=9.7
ILAR LR LR 13 51 15.2
comp=Z,7µm,18.1s,baz=129,slow=41
ILAR P4KPbc 13 58 12.2
comp=Z,0.8nm,0.9s,baz=150,slow=3.0,SNR=6.3
ILB Eielson Array 59.04 337 *e*P **P 13 21 05.4 -0.3**
OHAK Old Harbor 59.06 327 *e*P **P 13 21 08.1 +2.1**
RND Reindeer 59.21 335 *e*P **P 13 21 07.6 +0.6**
RND Reindeer 59.21 335 *e*P **P 13 21 07.6 +0.6**
CCB Clear Creek Bu 59.34 336 *e*P **P 13 21 07.0 -0.7**
WRH Wood River Hil 59.37 336 *e*P **P 13 21 07.7 -0.3**
MCK McKinley 59.38 335 *e*P **P 13 21 07.8 -0.3**
MCK McKinley 59.38 335 *e*P **P 13 21 07.8 -0.3**
COLA College 59.45 336 *c i*P **P 13 21 08.9 +0.4**
COLA pmax pmax
comp=Z,206nm,0.9s
COLA College 59.45 336 *e*P **P 13 21 08.3 -0.2**
COLA LR LR
comp=Z,6µm,20.0s
MDM Murphy Dome 59.64 336 *e*P **P 13 21 09.3 -0.5**
SPU Mount Spurr 59.74 332 *e*P **P 13 21 11.3 +0.7**
RSO Redoubt South 59.81 331 *e*P **P 13 21 12.3 +1.0**
TRF Thorofare Moun 59.82 334 *e*P **P 13 21 11.5 +0.2**
KIP Kipapa 60.05 285 *c e*P **P 13 21 16.5 +3.1**
KIP pmax pmax
comp=Z,2µm,1.6s
KIP Kipapa 60.05 285 *e*P **P 13 21 16.1 +2.7**
KIP LR LR
comp=Z,9µm,20.0s
HON Honolulu 60.05 285 *e*P **P 13 21 17.2 +3.8**
HON Honolulu 60.05 285 *e*P **P 13 21 17.2 +3.8**
KTH Kantishna Hill 60.12 334 *e*P **P 13 21 13.0 -0.2**
BPAW Bear Paw Mtn. 60.36 335 *e*P **P 13 21 14.6 -0.2**
PPLA Purkeypile 60.41 333 *e*P **P 13 21 15.4 +0.2**
comp=Z,390nm,1.2s
CAST Castle Rocks 60.55 334 *e*P **P 13 21 15.6 -0.5**
MLY Manley 60.63 336 *e*P **P 13 21 16.4 -0.2**
ROSA Rosais 60.73 55 *e*P **P 13 21 21.8 +4.1**
comp=Z,197nm,2.3s
KULLO Kullorsuaq 60.75 11 *i*P **P 13 21 15.7 -1.5**
comp=Z,502nm,1.0s
KULLO Kullorsuaq 60.75 11 *e*P **P 13 21 15.7 -1.5**
KULLO pmax pmax
comp=Z,500nm,1.0s
KULLO MLR MLR
comp=Z,12µm,19.0s
PGRA Graciosa 60.94 55 *e*P **P 13 21 20.4 +1.3**
comp=Z,288nm,1.7s
SPB Sao Paulo 61.08 130 *e*P **P 13 21 19.7 -0.5**
SPB LR LR
comp=Z,19µm,20.0s
SVW2 Sparrevohn 61.33 331 *e*P **P 13 21 21.8 +0.4**
COLD Coldfoot 61.35 338 *e*P **P 13 21 21.9 +0.4**
ADH Angra Heroismo 61.52 55 *e*P **P 13 21 21.4 -1.6**
comp=Z,196nm,1.6s
KEKH Kekaha 61.54 286 *e*P **P 13 21 24.5 +1.1**
CHGN Chignik 61.57 325 *e*P **P 13 21 24.7 +1.7**
PLCA Paso Flores 61.73 160 P **P 13 21 24.8 +0.5**
comp=Z,243nm,0.7s,baz=352,slow=7.7,SNR=289
PLCA LR LR 13 43 18.3
comp=Z,5µm,19.6s,baz=348,slow=31
PLCA Paso Flores 61.73 160 *e*P **P 13 21 24.6 +0.3**
VAH Vaihoa 61.85 242 *e*P **P 13 21 27.9 +2.4**
comp=Z,585nm,1.2s
VAH *e*pP **pP 13 22 02.9 -1.3**
comp=Z,592nm,1.5s
RCBR Riachuelo 61.93 107 P **P 13 21 25.1 -1.1**
comp=Z,137nm,0.8s,baz=280,slow=6.1,SNR=25
RCBR Riachuelo 61.93 107 *e*P **P 13 21 25.9 -0.2**
RCBR LR LR
comp=Z,12µm,21.0s
PMOR Pomariorio Ree 61.96 242 *e*P **P 13 21 28.7 +2.5**
comp=Z,694nm,1.1s
TT01 Tatalina 62.06 333 *e*P **P 13 21 25.7 -0.5**
TTA Tatalina 62.07 333 *e*P **P 13 21 25.8 -0.6**
TTA Tatalina 62.07 333 *e*P **P 13 21 25.8 -0.6**
LPA La Plata 62.25 147 *c e*P **P 13 21 28.0 +0.2**
LPA PP **PP 13 23 48.0 +0.9**
LPA PPP PPP 13 25 17.0
LPA S **S 13 29 41.0 +0.3**
LPA sS **sS 13 30 48.0 +0.1**
LPA SCS **ScS 13 31 05.0 +1.1**
LPA SS **SS 13 33 50.0 +2.6**
LPA SKIKS 13 35 11.0
LPA SSS SSS 13 37 08.0
SDPT Sand Point 62.53 324 *e*P **P 13 21 33.7 +4.3**
PSET Sete Cidades 62.72 56 *e*P **P 13 21 31.5 +0.4**
comp=Z,698nm,1.9s
TRQA Tornquist 62.78 152 *e*P **P 13 21 31.2 -0.1**
comp=Z,743nm,1.6s
TRQA LR LR
comp=Z,8µm,20.0s
CMLA Cha da Macela 62.87 56 *e*P **P 13 21 31.4 -0.7**
PSMN Pico do Norte, 63.26 57 *e*P **P 13 21 31.1 -3.5**
comp=Z,154nm,2.0s
MEH Mehetia 63.52 239 *e*P **P 13 21 39.3 +2.7**
comp=Z,142nm,1.2s
MEH *e*pP **pP 13 22 15.2 -0.3**
comp=Z,142nm,1.4s
SUMG Summit 63.67 16 *i*P **P 13 21 36.1 -1.1**
SUMG *i* pP **pP 13 22 16.6 +0.5**
SUMG Summit 63.67 16 *i*P **P 13 21 36.1 -1.1**
SUMG *i* *PP **pP 13 22 16.6 +0.5**
SUMG MLR MLR
comp=Z,9µm,18.0s
SUMG Summit 63.67 16 *e*P **P 13 21 35.6 -1.5**
XMAS Kiritimati 63.93 264 *e*P **P 13 21 42.3 +3.0**
TIAR Tiarei 64.42 240 *e*P **P 13 21 45.1 +2.7**
comp=Z,126nm,1.1s
TIAR *e*pP **pP 13 22 21.0 -0.5**
comp=Z,43nm,1.0s
TVO Taravao 64.45 240 *e*P **P 13 21 45.5 +2.8**
comp=Z,133nm,1.1s
TVO *e*pP **pP 13 22 21.3 -0.4**
comp=Z,129nm,1.6s
PPT Papeete 64.62 240 P **P 13 21 45.5 +1.8**
comp=Z,49nm,1.0s,baz=255,slow=5.5,SNR=6.3
PPT Papeete 64.62 240 P **P 13 21 45.5 +1.8**
PPT pmax pmax
comp=Z,96nm,1.0s
PPT2 Papeete2 64.63 240 *e*P **P 13 21 46.6 +2.7**
comp=Z,140nm,1.5s
PPT2 *e*S **S 13 30 12.4 +1.5**
comp=Z,26µm,27.2s
PPT2 Papeete2 64.63 240 *e*LR LR 13 41 20.2
comp=Z,26µm,30.8s
PAE Paea 64.67 240 *e*P **P 13 21 46.7 +2.7**
comp=Z,58nm,1.2s
BORG Borgarnes 67.20 26 P **P 13 21 56.0 -3.4**
comp=Z,82nm,0.8s,baz=258,slow=2.9,SNR=21
BORG Borgarnes 67.20 26 *c e*P **P 13 22 01.6 +2.2**
BORG Borgarnes 67.20 26 *e*P **P 13 22 01.2 +1.8**
BORG LR LR
comp=Z,10µm,19.0s
TBI Tubuai 67.45 235 *e*P **P 13 22 04.0 +2.3**
comp=Z,366nm,1.4s
TBI *e*S **S 13 30 46.2 +1.5**
comp=Z,27µm,28.8s
TBI *e*LQ LQ 13 39 44.3
comp=Z,15µm,37.8s
TBI *e*LR LR 13 42 33.6
comp=Z,22µm,35.8s
SCO Scoresbysund 67.91 20 *i*P **P 13 22 02.6 -1.2**
comp=Z,268nm,0.8s
SCO *i* S **S 13 30 50.3 +1.5**
SCO Scoresbysund 67.91 20 *i*P **P 13 22 02.6 -1.2**
SCO *i* S **S 13 30 50.3 +1.5**
SCO pmax pmax
comp=Z,270nm,0.8s
SCO MLR MLR
comp=Z,20µm,17.0s
GO08 Villa O'Higgin 68.21 165 *i*P **P 13 22 07.2 +1.3**
GAMB Gambell 69.16 332 *e*P **P 13 22 10.9 -0.7**
comp=Z,60nm,0.8s
DAG Danmarks Havn 69.99 14 *i*P **P 13 22 14.8 -1.7**
DAG *i* S **S 13 31 11.1 -2.0**
DAG Danmarks Havn 69.99 14 *i*P **P 13 22 14.8 -1.7**
DAG *i* S **S 13 31 11.1 -2.0**
PMOZ Porto Moniz, M 70.07 61 *e*P **P 13 22 17.4 -0.6**
PMOZ *e*S **S 13 31 19.7 +4.0**
PMAR Madeira 70.32 61 *e*P **P 13 22 21.3 +1.7**
PMPS Porto Santo 70.76 60 *e*P **P 13 22 23.4 +1.4**
JOHN Johnston Islan 71.61 282 *e*P **P 13 22 28.0 +0.6**
comp=Z,54nm,0.8s
JOHN LR LR
comp=Z,552nm,19.0s
JMIC Jan Mayen 72.39 20 P **P 13 22 30.9 -0.2**
comp=Z,270nm,0.8s,baz=207,slow=1.7,SNR=7.1
VAL Valentia 72.87 40 ⇑ *i*P **P 13 22 34.7 +0.5**
VAL Valentia 72.87 40 ǁ *i*S **S 13 31 43.2 -3.7**
BBTS Babate 74.18 79 P **P 13 22 41.6 -0.9**
comp=Z,47nm,0.9s,baz=266,slow=1.3,SNR=7.2
RRH Rhenigidale 74.21 34 *e*P **P 13 22 42.3 +0.4**
RRR Rubha Reidh 74.69 34 *e*P **P 13 22 44.5 -0.2**
RAR Rarotonga 74.82 242 P **P 13 22 47.9 +1.8**
comp=Z,114nm,1.1s,baz=355,slow=4.4,SNR=12
RAR Rarotonga 74.82 242 *e*P **P 13 22 46.5 +0.4**
comp=Z,620nm,1.8s
RAR LR LR
comp=Z,7µm,22.0s
KPL Plockton 74.84 34 *e*P **P 13 22 44.5 -1.0**
KPL AMB AMB 13 22 46.8
comp=Z,546nm,1.3s
KSB Sheil Bridge 74.98 34 *e*P **P 13 22 45.3 -1.0**
KAC Achnashellach 75.01 34 *e*P **P 13 22 47.0 +0.4**
DSB Dublin 75.04 38 *e*P **P 13 22 45.3 -1.5**
comp=Z,128nm,1.0s

USHA Ushuaia 75.08 165 P **P** 13 22 47.6 +0.9
comp=Z,302nm,0.8s,baz=343,slow=5.5,SNR=18
USHA LR LR 13 49 08.8
comp=Z,24µm,20.7s,baz=323,slow=30
GMM Mts of Mourne 75.14 37 *e*P **P** 13 22 47.4 +0.1
PMAFR Mafra 75.44 53 *e*P **P** 13 22 48.6 -0.8
comp=Z,261nm,1.1s
PMAFR *ep*P **pP** 13 23 31.1 +1.5
PMAFR *e*S **S** 13 32 16.0 -0.1
PMAFR *i* P **PKKPbc** 13 42 05.0 -3.7
MDO Dochfour 75.52 34⇑ *e*P **P** 13 22 47.9 -1.6
EFI East Falkland 75.52 158 *e*P **P** 13 22 51.7 +2.3
EFI pmax pmax
comp=Z,616nm,2.8s
EFI East Falkland 75.52 158 *e*P **P** 13 22 49.8 +0.4
comp=Z,105nm,0.8s
EFI LR LR
comp=Z,8µm,20.0s
PMST Lisbon--Monsan 75.55 54 *e*P **P** 13 22 49.4 -0.6
PMST *ep*P **pP** 13 23 32.1 +1.9
LIS Lisbon 75.58 54 *e*P **P** 13 22 49.9 -0.3
LIS *e*S **S** 13 32 16.6 -1.0
LIS AMS AMS 13 51 10.9
comp=Z,14µm,16.1s
LIS Lisbon 75.58 54 *e*P **P** 13 22 49.9 -0.3
LIS *e*S **S** 13 32 16.6 -1.0
PGAV Gavieira, Arco 75.65 50 *e*P **P** 13 22 50.2 -0.5
comp=Z,264nm,2.0s
PGAV *ep*P **pP** 13 23 32.2 +1.3
PGAV *e*S **S** 13 32 14.6 -4.0
PGAV *i* P **PKKPbc** 13 42 03.7 -4.8
PGBU Glenifferbraes 75.72 36 *e*P **P** 13 22 50.2 -0.4
PGBU AMB AMB 13 22 51.9
comp=Z,524nm,1.3s
GAL1 Galloway 75.75 37 *e*P **P** 13 22 50.9 +0.1
GAL1 AMB AMB 13 22 52.2
comp=Z,176nm,1.1s
PACT Alcochete 75.82 53 *e*P **P** 13 22 51.0 -0.5
comp=Z,814nm,1.2s
PACT *ep*P **pP** 13 23 32.5 +0.8
PCAS Casmilo, Conde 75.83 52 *e*P **P** 13 22 51.4 -0.2
comp=Z,614nm,1.1s
PCAS *ep*P **pP** 13 23 33.2 +1.4
PCAS *e*S **S** 13 32 15.5 -4.9
PCAB Cabril 75.88 50 *e*P **P** 13 22 51.3 -0.6
comp=Z,261nm,2.0s
PCAB *ep*P **pP** 13 23 32.6 +0.5
WIM Isle of Man 75.89 37 *e*P **P** 13 22 52.0 +0.3
ALMR Almeirim 75.94 53 *e*P **P** 13 22 52.1 -0.1
ALMR AMb AMB 13 22 55.7
comp=Z,2µm,1.2s
ALMR Almeirim 75.94 53 *e*P **P** 13 22 52.1 -0.1
comp=Z,2µm,1.2s
ALMR Almeirim 75.94 53 *e*P **P** 13 22 52.1 -0.1
PTOM Tomar 75.98 53 *e*P **P** 13 22 52.1 -0.4
comp=Z,363nm,1.1s
PTOM *ep*P **pP** 13 23 33.4 +0.7
MCD Coleburn Disti 76.08 34⇑ *e*P **P** 13 22 51.5 -1.1
YRC Rhoscolyn 76.11 38 *e*P **P** 13 22 51.6 -1.2
POLO Lamas de Olo 76.11 51 *e*P **P** 13 22 52.5 -0.8
comp=Z,131nm,1.2s
POLO *ep*P **pP** 13 23 31.8 -1.8
POLO *e*S **S** 13 32 20.3 -3.3
POLO *i* P **PKKPbc** 13 42 14.6 +7.1
PFVI Vila Bisbo 76.13 55 *e*P **P** 13 22 53.0 -0.4
comp=Z,372nm,1.7s
PFVI *ep*P **pP** 13 23 34.2 +0.6
PFVI *e*S **S** 13 32 22.3 -1.5
PTEO Sao Teotonio 76.13 55 *e*P **P** 13 22 54.6 +1.2
comp=Z,418nm,1.6s
PTEO *ep*P **pP** 13 23 34.7 +1.1
PVIS Viseu 76.16 51 *e*P **P** 13 22 53.4 -0.1
comp=Z,315nm,1.1s
PVIS *ep*P **pP** 13 23 34.6 +0.8
PNCL Nicolau / Gran 76.18 54 *e*P **P** 13 22 52.9 -0.7
comp=Z,182nm,1.0s
PNCL *ep*P **pP** 13 23 31.4 -2.4
PNCL *e*S **S** 13 32 23.7 -0.5
PVRL Vila Real 76.19 51 *e*P **P** 13 22 53.3 -0.4
comp=Z,232nm,1.4s
WLF1 Llynfaes 76.21 38 *e*P **P** 13 22 53.0 -0.5
WLF1 AMB AMB 13 22 54.5
comp=Z,202nm,1.8s
KBS Kingsbay 76.22 11 *e*P **P** 13 22 53.3 +0.2
KBS IAmb IAmb 13 22 56.9
comp=Z,762nm,1.2s
KBS *e*S **S** 13 32 21.7 -1.6
KBS Kingsbay 76.22 11 *e*P **P** 13 22 53.1 0.0
KBS pmax pmax
comp=Z,591nm,1.0s
KBS MLR MLR
comp=Z,8µm,19.0s
KBS Kingsbay 76.22 11 *e*P **P** 13 22 53.1 0.0
comp=Z,591nm,1.0s
KBS LR LR
comp=Z,8µm,19.0s
PMTG Montargil 76.23 53 *e*P **P** 13 22 53.3 -0.5
comp=Z,269nm,1.1s
PMTG *ep*P **pP** 13 23 30.1 -4.0
PMTG *e*S **S** 13 32 22.7 -2.0
MORF Marmelete 76.24 55 *e*P **P** 13 22 53.3 -0.7
MORF *e*S **S** 13 32 23.8 -1.3
MORF AMS AMS 13 52 41.5
comp=Z,13µm,18.6s
MORF Marmelete 76.24 55 *e*P **P** 13 22 53.4 -0.7
comp=Z,196nm,1.2s
MORF *ep*P **pP** 13 23 35.3 +1.0
MORF *e*S **S** 13 32 24.1 -0.9
MORF Marmelete 76.24 55 *e*P **P** 13 22 53.3 -0.7
MORF *e*S **S** 13 32 23.7 -1.3
WME Myndd Eilian 76.24 38 *e*P **P** 13 22 52.5 -1.1
YRE Yr Eifl 76.24 38 *e*P **P** 13 22 53.1 -0.5
BWH Wardlaw 76.29 36 *e*P **P** 13 22 53.8 -0.1
YLL Llanberis 76.37 38 *e*P **P** 13 22 53.9 -0.5
MESJ Messejana 76.47 54 *e*P **P** 13 22 54.8 -0.4
MESJ *e*S **S** 13 32 26.5 -0.9
MESJ AMS AMS 13 54 11.4
comp=Z,7µm,20.0s
MESJ Messejana 76.47 54 *e*P **P** 13 22 54.4 -0.8
comp=Z,154nm,1.4s
MESJ *ep*P **pP** 13 23 35.8 +0.3
MESJ Messejana 76.47 54 *e*P **P** 13 22 54.8 -0.4
MESJ *e*S **S** 13 32 26.5 -0.9
MTE Manteigas 76.48 52 *e*P **P** 13 22 54.7 -0.7
comp=Z,426nm,1.2s
MTE *ep*P **pP** 13 23 37.4 +1.7
MTE *e*S **S** 13 32 24.5 -3.1
MTE Manteigas 76.48 52 *e*P **P** 13 22 53.8 -1.6
comp=Z,299nm,1.0s
MTE LR LR
comp=Z,16µm,19.0s
EVO Evora 76.49 54 *e*P **P** 13 22 54.6 -0.8
comp=Z,251nm,1.5s
EVO *ep*P **pP** 13 23 32.8 -2.9
WPM1 Penmaenmawr 76.50 38 *e*P **P** 13 22 54.2 -1.0
ESK Eskdalemuir 76.52 36 *e*P **P** 13 22 53.8 -1.3
ESK AMB AMB 13 22 56.5
comp=Z,477nm,1.1s
ESK Eskdalemuir 76.52 36 *ce*P **P** 13 22 56.1 +0.9
ESK Eskdalemuir 76.52 36 *e*P **P** 13 22 53.7 -1.5
comp=Z,444nm,1.0s
ESK LR LR
comp=Z,8µm,21.0s
EKA Eskdalemuir Ar 76.54 36 P **P** 13 22 53.9 -1.4
comp=Z,284nm,0.9s,baz=285,slow=4.9,SNR=181
EKA Eskdalemuir Ar 76.54 36 P **P** 13 22 53.9 -1.4
EKA pmax pmax
comp=Z,284nm,0.9s
BHH Howats Hill 76.56 36 *e*P **P** 13 22 54.0 -1.4
ECK Cauldkaine Hil 76.59 36 *e*P **P** 13 22 54.3 -1.3
DRUM Mains of Drumt 76.61 34 *e*P **P** 13 22 54.2 -1.4
DRUM AMB AMB 13 22 57.0
comp=Z,459nm,1.4s
LPW Lampeter 76.62 39 *e*P **P** 13 22 54.6 -1.2
LPW AMB AMB 13 22 57.4
comp=Z,529nm,1.1s
PCBR Castelo Branco 76.64 52 *e*P **P** 13 22 56.0 -0.2
comp=Z,392nm,1.2s
PCBR *ep*P **pP** 13 23 36.8 +0.3
PCVE Castro Verde 76.65 54 *e*P **P** 13 22 55.5 -0.8
comp=Z,222nm,1.3s
PCVE *ep*P **pP** 13 23 34.2 -2.4
PCVE *e*S **S** 13 32 26.8 -2.6
PBEJ Beja 76.71 54 *e*P **P** 13 22 57.0 +0.4
comp=Z,226nm,1.2s
PBEJ *ep*P **pP** 13 23 37.9 +1.0
KESW Keswick, Cumbr 76.72 37 *e*P **P** 13 22 56.2 -0.1
MVO Moncorvo 76.72 51 *e*P **P** 13 22 56.2 -0.5
comp=Z,345nm,1.2s
MVO *ep*P **pP** 13 23 34.5 -2.5
MVO *e*S **S** 13 32 28.4 -1.8
ESY Stoneypath 76.74 35 *e*P **P** 13 22 55.2 -1.1
PESTR Estremoz 76.75 53 *e*P **P** 13 22 55.4 -1.4
comp=Z,207nm,1.2s
PESTR *ep*P **pP** 13 23 34.8 -2.4
PESTR *e*S **S** 13 32 27.8 -2.7
PMRV Marv??o 76.79 53 *e*P **P** 13 22 56.4 -0.7
comp=Z,319nm,1.2s
PMRV *ep*P **pP** 13 23 36.8 -0.6
PMRV *e*S **S** 13 32 28.9 -2.0
PBRG Braganca 76.81 50 *e*P **P** 13 22 56.7 -0.4
comp=Z,358nm,1.4s
PBRG *ep*P **pP** 13 23 38.9 +1.5
PBRG *e*S **S** 13 32 31.6 +0.6
PBDV Barranco-do-Ve 76.81 55 *e*P **P** 13 22 57.3 +0.1
comp=Z,243nm,1.7s
PBDV *ep*P **pP** 13 23 34.8 -2.8
PBDV *e*S **S** 13 32 30.8 -0.4
PVAQ Vaqueiros 76.95 55 *e*P **P** 13 22 56.7 -1.2
comp=Z,251nm,1.3s
PVAQ *ep*P **pP** 13 23 35.8 -2.5
PVAQ *e*S **S** 13 32 32.4 -0.2
FOEL Foel Wylfa 76.99 38 *e*P **P** 13 22 56.7 -1.1
FOEL AMB AMB 13 22 59.0
comp=Z,268nm,1.0s
DYA Yadsworthy 77.03 41 *e*P **P** 13 22 56.7 -1.4
HLM1 Long Mynd 77.25 39 *e*P **P** 13 22 57.9 -1.5
HLM1 AMB AMB 13 23 00.8
comp=Z,468nm,1.0s
MCH1 Michaelchurch 77.29 39 *e*P **P** 13 22 58.6 -0.9
PBAR Barrancos 77.31 54 *e*P **P** 13 22 59.3 -0.7
comp=Z,478nm,1.3s
PBAR *ep*P **pP** 13 23 37.3 -3.0
PBAR *e*S **S** 13 32 37.1 +0.5
SPA0 Spitsbergen Ar 77.31 11 *e*P **P** 13 22 58.9 -0.3
SPA0 IAmb IAmb 13 23 02.2
comp=Z,582nm,1.2s
SPA0 *e*S **S** 13 32 35.2 -0.1
SPA0 *e*SS **SS** 13 37 34.2 -2.2
SPA0 IAMs_20 IAMs_20 13 58 28.8
comp=Z,11µm,21.3s
SPITS Spitsbergen Ar 77.31 11 P **P** 13 22 58.4 -0.9
comp=Z,166nm,0.9s,baz=214,slow=0.3,SNR=106
SPITS Spitsbergen Ar 77.31 11 P **P** 13 22 58.4 -0.9
SPITS pmax pmax
comp=Z,165nm,0.9s
MONM Monmouth 77.44 39 *e*P **P** 13 22 59.8 -0.5
MONM AMB AMB 13 23 01.9
comp=Z,555nm,1.1s
STNC Stoke 77.54 38 *e*P **P** 13 23 00.8 -0.1
STNC AMB AMB 13 23 02.8
comp=Z,583nm,1.1s
HSPB Hornsund (broa 77.61 13 *e*P **P** 13 23 00.9 +0.1
HSPB IAmb IAmb 13 23 04.5
comp=Z,724nm,1.3s
HSPB *ePP* **PP** 13 25 56.7 -1.1
HSPB *e*S **S** 13 32 38.5 0.0
HSPB Hornsund (broa 77.61 13 *e*P **P** 13 23 02.1 +1.2
HSPB *e*S **S** 13 32 44.0 +5.6
BILL Bilibino 77.67 338 *ce*P **P** 13 23 02.0 +0.6
BILL *e* 13 23 14.0
BILL *e* 13 25 56.1
BILL pmax pmax
comp=Z,622nm,1.8s
BILL MLR MLR
comp=Z,5µm,16.0s
BILL Bilibino 77.67 338 *e*P **P** 13 23 01.7 +0.3
comp=Z,507nm,1.3s
BILL LR LR
comp=Z,5µm,21.0s
STRD Stroud 77.84 39 *e*P **P** 13 23 01.6 -1.0
STRD AMB AMB 13 23 04.2
comp=Z,828nm,1.0s
SSW Stow on the Wo 77.99 39 *e*P **P** 13 23 03.2 -0.2
SWN1 Swindon 78.12 40 *e*P **P** 13 23 03.3 -0.8
SWN1 AMB AMB 13 23 06.5
comp=Z,927nm,1.3s
CWF Charnwood Fore 78.14 38 *e*P **P** 13 23 03.3 -1.0
JSA Saint Aubin 78.40 42 *e*P **P** 13 23 04.7 -1.1
JSA AMB AMB 13 23 07.5
comp=Z,444nm,1.1s
WOL Wolverton 78.52 40 *e*P **P** 13 23 05.3 -1.0
WOL AMB AMB 13 23 08.5
comp=Z,1µm,1.1s
PAB San Pablo 79.06 52 *e*P **P** 13 23 08.7 -1.0
PAB pmax pmax
comp=Z,367nm,1.0s
PAB MLR MLR
comp=Z,13µm,19.0s
PAB San Pablo 79.06 52 *e*P **P** 13 23 08.7 -1.0
comp=Z,367nm,1.0s
PAB LR LR
comp=Z,13µm,19.0s
FOO Floro 79.27 29 *e*P **P** 13 23 09.8 -0.4
FOO IAmb IAmb 13 23 13.0
comp=Z,171nm,0.8s
SUE Sulen 79.29 29 *e*P **P** 13 23 10.3 0.0
SUE IAmb IAmb 13 23 13.3
comp=Z,411nm,1.2s
SUE *e*S **S** 13 32 53.7 -3.0
ESDC Sonseca Array 79.33 52 P **P** 13 23 10.9 -0.2
comp=Z,122nm,0.9s,baz=298,slow=5.5,SNR=104
ESDC S **S** 13 33 00.6 +2.5
comp=Z,0.3nm,0.4s,baz=291,slow=11,SNR=10
ESDC LR LR 13 54 51.2
comp=Z,8µm,19.8s,baz=265,slow=33
BJO Bjornoya 79.49 15 *e*P **P** 13 23 10.5 -0.7
BJO IAmb IAmb 13 23 14.3
comp=Z,480nm,1.0s
BJO *e*S **S** 13 33 02.3 +3.9
BER Bergen 79.75 30 *e*P **P** 13 23 12.3 -0.5
BER *e*S **S** 13 33 00.5 -1.1
HOPEN Hopen 79.78 12 *e*P **P** 13 23 12.6 -0.1
HOPEN IAmb IAmb 13 23 15.6
comp=Z,928nm,1.4s
AKN Aaknes 79.99 28 *e*P **P** 13 23 13.3 -0.8
AKN IAmb IAmb 13 23 17.2
comp=Z,472nm,1.3s
AKN IAMs_20 IAMs_20 13 49 53.5
comp=Z,12µm,21.0s
KMY Karmoy 80.05 31 *e*P **P** 13 23 14.0 -0.5
KMY IAmb IAmb 13 23 17.4
comp=Z,2µm,2.5s
MOL Molde 80.11 27 *e*P **P** 13 23 14.2 -0.5
MOL IAmb IAmb 13 23 23.3
comp=Z,103nm,0.8s
STAV Stavanger 80.36 31 *e*P **P** 13 23 16.7 +0.6
STAV IAmb IAmb 13 23 19.1
comp=Z,421nm,1.4s
ODD1 Odda 80.51 30 *e*P **P** 13 23 16.5 -0.5
ODD1 IAmb IAmb 13 23 19.2
comp=Z,132nm,1.0s
LOF Lofoten 80.52 21 *e*P **P** 13 23 16.8 0.0
LOF IAmb IAmb 13 23 19.9
comp=Z,930nm,1.3s
BLS5 Blasjo 80.58 31 *e*P **P** 13 23 16.5 -0.9
BLS5 IAmb IAmb 13 23 24.5
comp=Z,126nm,0.8s
LARF Larrau 80.68 48 *e*P **P** 13 23 20.2 +2.0
ATE Arette 80.87 48 *e*P **P** 13 23 19.8 +0.6
KONS Konsvik 81.00 23 *e*P **P** 13 23 19.8 +0.4
KONS IAmb IAmb 13 23 22.8
comp=Z,313nm,1.0s
STOK Stokkvaagen 81.02 23 *e*P **P** 13 23 20.0 +0.5
STOK IAmb IAmb 13 23 28.7
comp=N,123nm,1.1s
TBLU Trondheim 81.05 26 *e*P **P** 13 23 20.2 +0.5
TBLU IAmb IAmb 13 23 22.9
comp=Z,624nm,1.2s
REYF Montagne du Re 81.09 48⇑ *e*P **P** 13 23 22.4 +1.9
STEI Steigen 81.19 21 *e*P **P** 13 23 20.8 +0.5
STEI IAmb IAmb 13 23 23.6
comp=Z,516nm,0.9s
SNART Snartemo 81.29 32 *e*P **P** 13 23 20.6 -0.5
SNART IAmb IAmb 13 23 24.6
comp=Z,243nm,1.4s
NSS Namsos 81.30 25 *e*P **P** 13 23 20.4 -0.5
NSS IAmb IAmb 13 23 23.8
comp=Z,221nm,0.7s
NSS *e*S **S** 13 33 15.5 -2.0
LABF Labassere 81.42 48 *e*P **P** 13 23 22.9 +0.7
VIEF Viey 81.43 48 *e*P **P** 13 23 24.2 +1.9
MOR8 Moi Rana 81.62 23 *e*P **P** 13 23 22.1 -0.6
MOR8 IAmb IAmb 13 23 26.2
comp=Z,297nm,0.9s
MOR8 *ep*P **pP** 13 24 04.5 +1.0
TRO Tromso 81.65 19 *e*P **P** 13 23 22.7 0.0
TRO IAmb IAmb 13 23 26.2
comp=Z,400nm,1.1s
TRO *e*S **S** 13 33 18.0 -3.0
MELF Melles 81.96 48 *e*P **P** 13 23 27.1 +2.1
HOMB Homborsund 81.96 31 *e*P **P** 13 23 23.5 -1.0
HOMB IAmb IAmb 13 23 32.8
comp=Z,245nm,1.2s
KONO Kongsberg 82.02 30 *e*P **P** 13 23 24.1 -0.8
KONO IAmb IAmb 13 23 35.0
comp=E,45nm,1.0s
KONO *e*S **S** 13 33 22.8 -2.3
KONO Kongsberg 82.02 30 *e*P **P** 13 23 24.3 -0.6
KONO pmax pmax
comp=Z,201nm,1.1s
KONO MLR MLR
comp=Z,8µm,22.0s
KONO Kongsberg 82.02 30 *e*P **P** 13 23 24.3 -0.6
comp=Z,201nm,1.1s
KONO LR LR
comp=Z,8µm,22.0s
SNF Seneffe 82.09 40 P **P** 13 23 26.6 +1.2
NB2 NORSAR Subarra 82.27 28 P **P** 13 23 26.2 0.0
comp=Z,296nm,0.9s,baz=292,slow=5.1
NB2 NORSAR Subarra 82.27 28 P **P** 13 23 26.2 0.0
baz=292,slow=5.1
NOA NORSAR Array B 82.27 28 P **P** 13 23 26.2 0.0
comp=Z,211nm,0.8s,baz=291,slow=5.2,SNR=157
NOA PKKPbc **PKKPbc** 13 41 52.8 -1.9
comp=Z,1.7nm,0.8s,baz=98,slow=3.7,SNR=4.7
NOA LR LR 13 58 30.6
comp=Z,6µm,21.9s,baz=295,slow=34
NOA NORSAR Array B 82.27 28 P **P** 13 23 26.2 0.0
NOA pmax pmax
comp=Z,213nm,0.9s
NOA pmax pmax
comp=Z,2.0nm,0.8s
SALF Salau 82.29 48⇑ *e*P **P** 13 23 29.0 +2.2
DOU Dourbes 82.41 40 P **P** 13 23 26.6 -0.5
comp=Z,308nm,1.2s
FRNF Fournols 82.49 45⇑ *e*P **P** 13 23 29.2 +1.5
H10N3 ASCENSION HYDR 82.52 101 P **P** 13 23 30.7 +2.7
baz=277,slow=6.0,SNR=8.7
H10N2 ASCENSION HYDR 82.53 101 P **P** 13 23 30.1 +2.1
baz=277,slow=6.0,SNR=12
NC602 NORSAR Array S 82.53 28 *e*P **P** 13 23 28.0 +0.5
NC602 IAmb IAmb 13 23 32.0
comp=Z,317nm,1.0s
H10N1 ASCENSION HYDR 82.54 101 P **P** 13 23 30.3 +2.2
baz=277,slow=6.0,SNR=13
HAMF Hammerfest 82.57 17 *e*P **P** 13 23 27.6 +0.1
HAMF IAmb IAmb 13 23 30.6
comp=Z,1µm,1.5s
HAMF IAMs_20 IAMs_20 14 01 23.9
comp=Z,10µm,20.4s
AFI Afiamalu 82.63 253 P **P** 13 23 30.4 +1.5
comp=Z,29nm,0.7s,baz=294,slow=10,SNR=7.0
AFI Afiamalu 82.63 253 P **P** 13 23 30.4 +1.5
AFI pmax pmax
comp=Z,36nm,0.9s
AGO Saint Agoulin 82.68 44 *e*P **P** 13 23 29.7 +1.1
PYM Petit Puy Mans 82.69 44 *e*P **P** 13 23 30.5 +1.7
BCLA Clavier 82.74 40 P **P** 13 23 28.4 -0.4
comp=Z,510nm,1.2s
BEBN Eben Emael 82.85 39 P **P** 13 23 28.6 -0.7
comp=Z,154nm,1.0s
OTSS Djebel Tessala 82.88 55 P **P** 13 23 31.5 +1.5
MUD Monsted U'grnd 82.93 33⇑ *i*P **P** 13 23 31.1 +1.5
comp=Z,203nm,1.0s
MUD *i* pP **pP** 13 24 12.3 +1.8
MUD Monsted U'grnd 82.93 33⇑ *i*P **P** 13 23 31.1 +1.5
MUD pmax pmax
comp=Z,200nm,1.0s
CARF Carcanieres 82.95 48 *e*P **P** 13 23 31.3 +1.1
VALF Valcebollere 82.98 48 *e*P **P** 13 23 32.1 +1.7
LBL Lubilhac 83.00 45⇑ *e*P **P** 13 23 32.0 +1.6
HGN Heimansgroeve 83.01 39 *e*P **P** 13 23 29.7 -0.5
comp=Z,778nm,0.8s
HGN Heimansgroeve 83.01 39 *e*S **S** 13 33 36.1 +0.6
PLDF La Plantade 83.03 44⇑ *e*P **P** 13 23 31.5 +1.0
MEM Membach 83.10 39 P **P** 13 23 30.6 -0.1
comp=Z,348nm,1.1s
WTSB Winterswijk 83.14 38 *e*P **P** 13 23 31.5 +0.7
comp=Z,811nm,1.1s
LRDF Laroque-de-Fa 83.19 47 *e*P **P** 13 23 32.9 +1.6
KTK1 Kautokeino 83.29 19 *e*P **P** 13 23 31.1 -0.1
KTK1 IAmb IAmb 13 23 34.5
comp=Z,1µm,1.3s
KTK1 *e*SKSac **SKSac** 13 33 35.3 -2.3
FILF Fillols 83.32 48 *e*P **P** 13 23 33.2 +1.1
WLF Walferdange 83.50 40 P **P** 13 23 33.1 +0.4
WLF Walferdange 83.50 40 *e*P **P** 13 23 32.7 0.0
WLF pmax pmax
comp=Z,572nm,0.8s
WLF MLR MLR
comp=Z,12µm,20.0s
WLF Walferdange 83.50 40 *e*P **P** 13 23 32.7 0.0
comp=Z,572nm,0.8s
WLF LR LR
comp=Z,12µm,20.0s
SJAF Saint Jean de 83.57 48 *e*P **P** 13 23 35.9 +2.6
ARCES ARCESS Array B 83.69 18 P **P** 13 23 32.9 -0.5
comp=Z,792nm,1.0s,baz=291,slow=4.1,SNR=196
ARCES PKKPbc **PKKPbc** 13 41 50.2 -1.4
comp=Z,2.4nm,0.8s,baz=126,slow=2.1,SNR=7.7
ARCES LR LR 14 02 28.6
comp=Z,6µm,19.3s,baz=306,slow=37
ARE0 ARCESS Array S 83.69 18 *e*P **P** 13 23 33.3 -0.1
ARE0 IAmb IAmb 13 23 36.4
comp=Z,632nm,0.8s
HFS Hagfors 83.75 29 P **P** 13 23 33.4 -0.3
comp=Z,104nm,0.9s,baz=254,slow=2.6,SNR=49
OKGL Djebel Kef Gue 83.79 54 P **P** 13 23 36.9 +2.3
SSB Saint Sauveur 83.86 45⇑ *e*P **P** 13 23 36.2 +1.5
SSB Saint Sauveur 83.86 45 *e*P **P** 13 23 33.8 -0.9
SSB pmax pmax
comp=Z,235nm,0.8s
SSB MLR MLR
comp=Z,7µm,19.0s
SSB Saint Sauveur 83.86 45 *e*P **P** 13 23 33.8 -0.9
comp=Z,235nm,0.8s
SSB LR LR
comp=Z,7µm,19.0s
THEF They Montfort 83.86 41⇑ *e*P **P** 13 23 36.4 +1.8
KEV Kevo 84.00 17 *e*P **P** 13 23 33.9 -1.0
KEV pmax pmax
comp=Z,676nm,1.0s
KEV MLR MLR
comp=Z,8µm,21.0s
KEV Kevo 84.00 17 *e*P **P** 13 23 33.9 -1.0
comp=Z,676nm,1.0s
KEV LR LR
comp=Z,8µm,21.0s
OJGS Djebel Guires 84.03 55 P **P** 13 23 38.7 +2.9
EANR 'Ain N'Sour 84.17 54 P **P** 13 23 37.2 +0.7
EBNR Beni Rached 84.40 54 P **P** 13 23 39.5 +1.8
ETRT Tiaret 84.49 55 P **P** 13 23 40.0 +1.8
ECH Echery 84.60 41 *e*P **P** 13 23 40.0 +1.6
GRN Grenoble 84.67 44 *e*P **P** 13 23 40.9 +2.0
LOMF Lomont 84.68 42⇑ *e*P **P** 13 23 40.7 +1.8
MOF Molkenrain 84.71 42⇑ *e*P **P** 13 23 40.6 +1.6
LANF Langenberg 84.75 40⇑ *e*P **P** 13 23 41.1 +2.0
COP Copenhagen 84.91 33⇑ *i*P **P** 13 23 41.4 +1.7
comp=Z,176nm,1.0s
COP *i* pP **pP** 13 24 23.8 +3.1
COP *i* S **S** 13 33 47.4 -6.8
COP Copenhagen 84.91 33⇑ *i*P **P** 13 23 41.4 +1.7
COP *i* S **S** 13 33 47.4 -6.8
COP pmax pmax
comp=Z,180nm,1.0s
GDM Grand'Maison 84.93 44 *e*P **P** 13 23 42.0 +1.7
SEY Seymchan 84.94 335 P **P** 13 23 40.6 +0.9
comp=Z,29nm,0.6s,baz=77,slow=4.5,SNR=59
SEY S **S** 13 33 50.4 -3.9
comp=Z,1.2nm,0.8s,baz=8.6,slow=22,SNR=5.6
SEY PKKPbc **PKKPbc** 13 41 47.4 -1.1
comp=Z,2.1nm,0.5s,baz=175,slow=0.7,SNR=9.7
SEY Seymchan 84.94 335 *ce*P **P** 13 23 41.4 +1.7

PMSA **Palmer Station** 84.97 168 P P 13 23 41.9 +2.4
comp=Z,41nm,0.9s,baz=0.2,slow=3.7,SNR=5.2
PMSA LR LR 13 53 51.1
comp=Z,2µm,18.2s,baz=333,slow=30
PMSA Palmer Station 84.97 168 *e*P **P 13 23 39.2 -0.3**
comp=Z,389nm,1.8s
BFO Black Forest 85.30 41 *ce*P **P 13 23 41.3 -0.6**
BFO Black Forest 85.30 41 *e*P **P 13 23 41.2 -0.7**
comp=Z,551nm,1.0s
BFO LR LR
comp=Z,12µm,19.0s
ABA Alger-Bouzarea 85.41 53 P **P 13 23 44.1 +1.5**
EMHD Djebel Mahouad 85.53 54 P **P 13 23 44.3 +0.9**
STU Stuttgart 85.68 40 *e*P **P 13 23 43.1 -0.6**
STU pmax pmax
comp=Z,957nm,0.8s
STU Stuttgart 85.68 40 *e*P **P 13 23 43.1 -0.6**
comp=Z,957nm,0.8s
ADJB Djebel Djouab 85.91 54 P **P 13 23 45.7 +0.4**
CALN Calern 85.94 45 *e*P **P 13 23 47.4 +2.1**
MVIF Mont Vial 86.07 45 *e*P **P 13 23 47.6 +1.7**
LUCF Luceram 86.20 45 *e*P **P 13 23 48.3 +1.8**
AUTN L'Aution 86.22 45⇑ *e*P **P 13 23 48.3 +1.5**
REVF Revere 86.27 45 *e*P **P 13 23 48.5 +1.7**
PET Petropavlovsk 86.31 325 *d*iP **P 13 23 49.1 +2.5**
PET *i* 13 33 59.9
PET *i*S **S 13 34 11.1 +3.1**
PET *e*SP **SP 13 35 12.0 +3.9**
PET *e**SS **sS 13 35 23.3 +3.8**
PET *e*SS **SS 13 40 01.2 +11**
PET pmax pmax
comp=Z,900nm,11.1s
PET pmax pmax
comp=Z,104nm,0.8s
PET MLR MLR
comp=Z,2µm,22.0s
BSD Bornholm Skovb 86.44 33 *i*P **P 13 23 48.0 +0.8**
comp=Z,248nm,1.1s
BSD *i*pP **pP 13 24 26.9 -1.5**
BSD Bornholm Skovb 86.44 33 *i*P **P 13 23 48.0 +0.8**
BSD pmax pmax
comp=Z,250nm,1.1s
GRFO Grafenberg 86.57 39 *e*P **P 13 23 47.6 -0.4**
GRFO pmax pmax
comp=Z,618nm,1.1s
GRFO Grafenberg 86.57 39 *e*P **P 13 23 47.6 -0.4**
comp=Z,618nm,1.1s
TUE Stuetta 86.61 42 *e*P **P 13 23 48.5 -0.1**
comp=Z,681nm,1.1s
TUE LR LR
comp=Z,9µm,20.0s
AKF Akfadou 86.63 53 P **P 13 23 50.5 +1.7**
TIXI Tiksi 86.65 348 P **P 13 23 47.4 -0.6**
TIXI Tiksi 86.65 348 *c*iP **P 13 23 47.9 0.0**
TIXI pmax pmax
comp=Z,191nm,1.0s
TIXI Tiksi 86.65 348 *e*P **P 13 23 46.9 -1.0**
comp=Z,191nm,1.1s
TIXI LR LR
comp=Z,5µm,19.0s
ATAF Djebel Tarf 86.65 54 P **P 13 23 50.5 +1.7**
DAVA Damuels 86.65 41 *i*PcP **P 13 23 48.7 0.0**
comp=Z,931nm,1.0s,SNR=288
DAVA *i*PcP **PcP 13 23 51.0 +0.2**
comp=Z,931nm,1.0s
PETK Petropavlovsk- 86.80 325 P **P 13 23 50.3 +1.2**
comp=Z,23nm,0.8s,baz=93,slow=9.1,SNR=16
DAVOX Davos/Dischmat 86.84 42 P **P 13 23 49.4 -0.2**
comp=Z,284nm,0.8s,baz=297,slow=5.5,SNR=182
CLL Collm 86.97 37⇑ *i*P **P 13 23 50.7 +0.8**
comp=Z,220nm,1.0s
CLL *i* 13 23 56.5
CLL *ep*P **pP 13 24 27.0 -4.2**
CLL *e* 13 24 33.0
CLL *e*PP **PP 13 27 15.0 +0.1**
CLL *ep*PP 13 27 49.0
CLL *e*SKSac **SKSac 13 33 59.0 -2.5**
CLL *e*S **S 13 34 13.0 -1.5**
comp=N,8µm,24.2s
CLL *e*S **S 13 34 13.0 -1.5**
comp=E,24µm,24.2s
CLL *e*ScS **ScS 13 34 18.0 -3.5**
CLL *e*SP **SPn 13 35 11.0 -2.6**
CLL *e*SS **SS 13 39 58.0 -2.3**
CLL *e*SSS SSS 13 43 30.0
CLL Collm 86.97 37⇑ *i*P **P 13 23 50.7 +0.8**
CLL *e**PP **pP 13 24 27.0 -4.2**
CLL *e* 13 33 59.0
CLL *e*S **S 13 34 13.0 -1.5**
CLL pmax pmax
comp=Z,220nm,1.0s
NKC Novy Kostel 87.08 38 *e*P **P 13 23 50.0 -0.5**
NKC *e*PCP **PcP 13 23 51.8 -0.7**
NKC *ep*P **pP 13 24 31.3 -0.5**
NKC *ex* x 13 26 42.5
NKC *e*SKS S 13 34 06.1 -10
NKC *e*XSKS 13 35 15.7
NKC AMS AMS 14 06 00.0
comp=Z,8µm,18.5s
NKC Novy Kostel 87.08 38 *e*P **P 13 23 50.0 -0.5**
NKC *e* 13 34 06.1
NKC *e* 13 35 15.7
NKC MLR MLR
comp=Z,8µm,18.5s
RETA Reutte 87.13 41 *i*PcP **P 13 23 50.9 0.0**
comp=Z,27nm,0.7s,SNR=246
RETA *i*PcP **PcP 13 23 53.7 +0.9**
comp=Z,661nm,1.1s
APA Apatity 87.20 18⇑ *i*P **P 13 23 51.0 +0.3**
APA *i* 13 27 22.0
APA *i*S **S 13 34 17.0 +0.9**
APA *i*PS **PnS 13 35 34.0 -3.9**
APA pmax pmax
comp=Z,162nm,1.2s
TIC Toumodi 87.22 84 *e*P **P 13 23 50.9 -1.0**
MA2 Magadan 87.26 333 P **P 13 23 51.9 +0.7**
comp=Z,85nm,0.9s,baz=98,slow=4.6,SNR=80
MA2 PKKPbc **PKKPbc 13 41 40.9 -2.0**
comp=Z,1.3nm,0.5s,baz=182,slow=4.1,SNR=3.9
MA2 Magadan 87.26 333 *e*P **P 13 23 51.0 -0.1**
comp=Z,804nm,1.3s
MA2 PKKPbc **PKKPbc 13 41 40.9 -2.0**
MA2 LR LR
comp=Z,4µm,22.0s
FETA Feichten 87.29 41 *i*PcP **P 13 23 51.7 0.0**
comp=Z,238nm,0.8s,SNR=156
FETA *i*PcP **PcP 13 23 54.1 +0.4**
comp=Z,238nm,0.8s
LVZ Lovozero 87.33 17 *ce*P **P 13 23 51.6 +0.2**
LVZ pmax pmax
comp=Z,291nm,1.0s
LVZ Lovozero 87.33 17 *e*P **P 13 23 50.5 -0.9**
comp=Z,255nm,0.9s
LVZ LR LR
comp=Z,6µm,21.0s
LIC Lamto 87.34 84 *e*P **P 13 23 51.6 -0.8**
comp=Z,692nm,1.8s
DBIC Dimbokro 87.37 84 P **P 13 23 51.9 -0.6**
comp=Z,150nm,0.7s,baz=270,slow=5.0,SNR=174
DBIC PKKPbc **PKKPbc 13 41 43.7 +2.6**
comp=Z,5.5nm,0.6s,baz=92,slow=2.6,SNR=17
DBIC LR LR 14 00 56.1
comp=Z,4µm,19.5s,baz=271,slow=34
MOTA Mooaalm 87.40 41 *i*PcP **PcP 13 23 53.3 -0.8**
SNR=97
SQTA Sankt Quirin 87.51 41 *i*PcP **P 13 23 53.4 +0.7**
CKHR Kef el Ahmar 87.55 53 P **P 13 23 55.0 +1.8**
KIC Kosan Boka 87.57 84 *e*P **P 13 23 52.8 -0.7**
comp=Z,492nm,0.7s
DFRA Djebel Bou Aff 87.65 53 P **P 13 23 55.5 +1.8**
BRG Berggiesshubel 87.69 37 *i*P **P 13 23 55.0 +1.6**
comp=Z,174nm,1.1s
BRG pP **pP 13 24 34.0 -0.7**
BRG PP **PP 13 27 26.0 +5.3**
BRG SKS **SKSac 13 34 11.0 +5.1**
BRG S **ScS 13 34 30.0 +2.5**
BRG *i* 13 35 14.0
BRG Berggiesshubel 87.69 37 *i*P **P 13 23 55.0 +1.6**
BRG 13 27 26.0
BRG 13 34 11.0
BRG S **ScS 13 34 30.0 +2.5**
BRG pmax pmax
comp=Z,174nm,1.1s
BRG MLR MLR
comp=N,6µm,21.0s
BRG MLR MLR
comp=E,6µm,18.6s
BRG MLR MLR
comp=Z,9µm,20.7s
WATA Walderalm 87.70 41 *i*PcP **PcP 13 23 55.0 -0.4**
SNR=37
WATA *i*PcP **P 13 23 56.3 +2.6**
WTTA Wattenberg 87.76 41 *i*PcP **P 13 23 54.7 +0.6**
comp=Z,7.3nm,0.9s
WTTA *i*PcP **PcP 13 23 56.1 +0.3**
comp=Z,234nm,1.5s,SNR=43
PVCC Panska Ves 88.20 37 *ex* **P 13 23 57.6 +1.8**
PVCC *ep*P **pP 13 24 36.4 -0.8**
PVCC *ex* x 13 26 52.9
PVCC *ex* x 13 27 09.6
PVCC *e*SKS **SKSac 13 34 11.7 +2.7**
PVCC *e*XSKS 13 35 24.1
PVCC AMS AMS 14 05 40.0
comp=Z,9µm,18.6s
PVCC Panska Ves 88.20 37 *e*P **P 13 23 57.6 +1.8**
PVCC *e**PP **pP 13 24 36.4 -0.8**
PVCC *e* 13 34 11.7
PVCC *e* 13 35 24.1
PVCC MLR MLR
comp=Z,9µm,18.6s
KHC Kasperske Hory 88.20 39 *e*P **P 13 23 55.6 -0.3**
KHC *i*PCP **PcP 13 23 58.2 +0.7**
KHC *ep*P **pP 13 24 36.8 -0.5**
KHC *ex* x 13 26 50.3
KHC *ex* x 13 27 10.7
KHC *e*SKS **SKSac 13 34 07.5 -1.6**
KHC *e*XSKS 13 35 24.8
KHC AMS AMS 14 05 00.0
comp=Z,11µm,18.4s
KHC Kasperske Hory 88.20 39 *e*P **P 13 23 55.6 -0.3**
KHC *e* 13 34 07.5
KHC *e* 13 35 24.8
KHC MLR MLR
comp=Z,11µm,18.4s
KHC Kasperske Hory 88.20 39 *e*P **P 13 23 55.8 -0.1**
comp=Z,71nm,0.9s
CASM Ain Smara 88.21 53 P **P 13 23 58.0 +1.8**
CTEI Djebel Teioual 88.22 53 P **P 13 23 58.2 +1.8**
CAEH 'Ain El Ouahch 88.31 52 P **P 13 23 57.5 +0.9**
PRA Prague 88.31 38 *ep*P **pP 13 24 37.0 -0.7**
PRA *ex* x 13 26 50.5
PRA *e*SKS **SKSac 13 34 12.3 +2.7**
PRA *e*XSKS 13 35 25.2
PRA AMS AMS 14 06 50.0
comp=Z,9µm,17.7s
CKFL Kef-Lekhel 88.34 52 P **P 13 23 58.6 +1.7**
GERES GERESS Array B 88.39 39 P **P 13 23 56.8 -0.1**
comp=Z,166nm,0.8s,baz=323,slow=4.2,SNR=212
GERES PKKPbc **PKKPbc 13 41 38.8 -1.1**
comp=Z,3.5nm,0.8s,baz=132,slow=2.0,SNR=6.6
GERES LR LR 14 03 44.8
comp=Z,10µm,19.4s,baz=284,slow=36
GERES GERESS Array B 88.39 39 P **P 13 23 56.8 -0.1**
GERES pmax pmax
comp=Z,167nm,0.9s
GERES pmax pmax
comp=Z,4.0nm,0.8s
GERES MLR MLR
comp=Z,10µm,19.4s
PRU Pruhonice 88.41 38 *e*P **P 13 23 56.3 -0.5**
PRU *e*PCP **PcP 13 23 58.3 0.0**
PRU *ex* x 13 24 03.0
PRU *ep*P **pP 13 24 37.4 -0.8**
PRU *ex* x 13 26 49.9
PRU *ex* x 13 27 13.0
PRU *e*SKS **SKSac 13 34 10.7 +0.4**
PRU *e*XSKS 13 35 26.1
PRU AMS AMS 14 07 00.0
comp=Z,8µm,17.8s
PRU Pruhonice 88.41 38 *e*P **P 13 23 56.3 -0.5**
PRU *e* 13 34 10.7
PRU MLR MLR
comp=Z,8µm,17.8s
FINES FINESS Array B 88.42 25 P **P 13 23 55.7 -0.8**
comp=Z,87nm,1.0s,baz=325,slow=3.0,SNR=62
FINES PKKPbc **PKKPbc 13 41 39.2 -0.9**
comp=Z,4.3nm,0.6s,baz=87,slow=2.9,SNR=15
FINES LR LR 14 05 37.8
comp=Z,6µm,18.7s,baz=310,slow=37
FINES FINESS Array B 88.42 25 P **P 13 23 55.7 -0.8**
FINES pmax pmax
comp=Z,88nm,1.0s
FINES pmax pmax
comp=Z,4.0nm,0.6s
FINES MLR MLR
comp=Z,6µm,18.7s
ABTA Abfaltersbach 88.52 41 *i*PcP **P 13 23 57.6 +0.1**
comp=Z,2.6nm,0.6s,SNR=95
ABTA *i*PcP **PcP 13 23 59.7 +0.7**
comp=Z,220nm,0.9s
GOPC GO Pecny, Ondr 88.59 38 *ex* x 13 23 59.4
GOPC *ep*P pP 13 24 38.5 -0.6
GOPC *e*SKS **SKSac 13 34 08.8 -2.6**
GOPC *e*XSKS 13 35 26.7
GOPC AMS AMS 14 07 10.0
comp=Z,6µm,17.9s
GOPC GO Pecny, Ondr 88.59 38 *e*P **P 13 23 59.4 +1.7**
GOPC *e* 13 34 08.8
GOPC MLR MLR
comp=Z,6µm,17.9s
CMAH Djebel Manchou 88.79 52 P **P 13 23 58.2 -0.8**
KBA Koelnbreinsper 88.91 41 *i*PcP **P 13 23 59.1 -0.3**
comp=Z,10nm,0.7s,SNR=169
KBA *i*PcP **PcP 13 24 01.3 +0.5**
comp=Z,232nm,0.9s
ABSA Djebel Ababsia 88.96 52 P **P 13 24 01.2 +1.4**
UPC Upice 89.04 37 *e*P **P 13 23 59.3 -0.4**
UPC *ep*P **pP 13 24 40.5 -0.7**
UPC *e*SKS **SKSac 13 34 15.0 +1.0**
UPC *e*XSKS 13 35 30.6
UPC AMS AMS 14 06 20.0
comp=Z,10µm,18.6s
UPC Upice 89.04 37 *e*P **P 13 23 59.3 -0.4**
UPC *e* 13 34 15.0
UPC MLR MLR
comp=Z,10µm,18.6s
KSP Ksiaz 89.05 36 *e*P **P 13 24 00.9 +1.2**
KSP *e*S **SKSac 13 34 16.4 +2.5**
KSP *e*ScS **ScS 13 34 37.7 -1.1**
KSP LMZ LR 13 58 57.9
KSP Ksiaz 89.05 36 *e*P **P 13 24 01.0 +1.2**
KSP *e*S **SKSac 13 34 16.5 +2.5**
KSP *e* 13 34 37.8
MOA Molln 89.15 40 *i*PcP **P 13 24 00.2 -0.2**
comp=Z,11nm,0.8s
MOA *i*PcP **PcP 13 24 01.7 0.0**
comp=Z,295nm,1.0s,SNR=91
VSL Villasalto 89.20 49 *e*P **P 13 24 00.3 -0.4**
comp=Z,254nm,0.8s
VSL LR LR
comp=Z,7µm,19.0s
TREC Trest 89.27 38 *ep*P **pP 13 24 42.4 +0.1**
TREC *ex* x 13 27 02.7
TREC *e*SKS **SKSac 13 34 16.6 +1.2**
TREC AMS AMS 14 06 10.0
comp=Z,10µm,18.9s
MYKA Terra Mystica 89.28 41 *i*PcP **P 13 24 01.4 +0.4**
comp=Z,155nm,1.2s,SNR=38
DPC Dobruska-Polom 89.29 37 *e*P **P 13 24 00.8 -0.2**
DPC *e*PCP **PcP 13 24 02.8 +0.5**
DPC *ex* x 13 24 06.5
DPC *ep*P **pP 13 24 41.8 -0.6**
DPC *ex* x 13 26 53.6
DPC *e*SKS **SKSac 13 34 16.6 +1.1**
DPC AMS AMS 14 06 20.0
comp=Z,10µm,18.4s
DPC Dobruska-Polom 89.29 37 *e*P **P 13 24 00.8 -0.2**
DPC *e* 13 34 16.6
DPC MLR MLR
comp=Z,10µm,18.4s
KLNR Kaliningrad 89.39 32 *i*P **P 13 24 01.6 +0.4**
KLNR pmax pmax
comp=Z,443nm,1.5s
TRI Trieste 89.74 42 *e*P **P 13 24 02.7 -0.4**
TRI pmax pmax
comp=Z,316nm,1.0s
TRI Trieste 89.74 42 *e*P **P 13 24 02.6 -0.4**
comp=Z,316nm,1.0s
OBKA Obir 89.90 41 *i*PcP **P 13 24 04.1 +0.1**
comp=Z,10nm,0.7s
OBKA *i*PcP **PcP 13 24 06.1 +1.0**
comp=Z,304nm,0.8s
VRAC Vranov 89.91 38 P **P 13 24 03.5 -0.4**
comp=Z,157nm,0.9s,baz=290,slow=5.7,SNR=102
VRAC Vranov 89.91 38⇑ *i*P **P 13 24 04.6 +0.7**
VRAC Vranov 89.91 38⇑ P **P 13 24 04.6 +0.7**
LJU Ljubljana 90.08 41 *e*P **P 13 24 05.1 +0.4**
comp=Z,401nm,1.1s
LJU *ep*P **pP 13 24 44.5 -1.7**
LJU *e*PP **PP 13 27 38.4 -1.5**
LJU *e*SKSac **SKSac 13 34 22.7 +2.5**
LJU *e*S **ScS 13 34 48.5 +0.9**
LJU *e* 13 35 48.1
LJU *e* 13 48 49.3
CONA Conrad Observa 90.09 39 *i*PcP **P 13 24 04.8 -0.1**
comp=Z,9.2nm,1.0s,SNR=90
CONA *i*PcP **PcP 13 24 06.6 +0.6**
comp=Z,220nm,1.0s
SOKA Soboth 90.12 41 *i*PcP **P 13 24 04.2 -0.9**
comp=Z,8.6nm,0.8s,SNR=150
SOKA *i*PcP **PcP 13 24 06.0 -0.1**
comp=Z,257nm,1.0s
ARSA Arzberg 90.18 40 *i*PcP **P 13 24 04.8 -0.4**
comp=Z,6.8nm,0.8s
VSU Vasula 90.39 27 *ce*P **P 13 24 05.4 -0.4**
VSU pmax pmax
comp=Z,372nm,1.3s
RAC Raciborz 90.48 37 *e*P **P 13 24 06.9 +0.5**
RAC *e* 13 34 25.4
RAC *e*S **S 13 34 46.1 -1.3**
RAC MLR MLR
comp=Z,10µm,19.0s
GROS Grobnik 90.51 41 *e*P **P 13 24 06.2 -0.6**
GROS *ep*P **pP 13 24 45.5 -2.8**
KEST Kesra 90.56 52 P **P 13 24 07.0 -0.3**
comp=Z,115nm,0.9s,baz=193,slow=0.8,SNR=90
KEST LR LR 14 03 52.2
comp=Z,6µm,18.2s,baz=240,slow=35
OKC Ostrava-Krasne 90.57 37 *ex* x 13 24 08.3
OKC *ep*P pP 13 24 47.4 -0.9
OKC *e*SKS **SKSac 13 34 24.0 +1.2**
OKC *e*XSKS 13 35 41.9
OKC AMS AMS 14 07 10.0
comp=Z,6µm,18.9s
OKC Ostrava-Krasne 90.57 37 *e*P **P 13 24 08.3 +1.4**
OKC *e**PP **pP 13 24 47.4 -0.9**
OKC *e* 13 34 24.0
OKC MLR MLR
comp=Z,6µm,18.9s
SOP Sopron 90.62 39⇑ *e*P **P 13 24 08.3 +1.1**
SMOL Smolenice 90.76 38 *e*P **P 13 24 10.3 +2.5**
SMOL Smolenice 90.76 38 *e* **P 13 24 10.3 +2.5**
TMCR Tamitsa 90.91 19 *e*P **P 13 24 09.0 +0.9**
TMCR pmax pmax
comp=Z,88nm,1.0s
NVLJ Novalja 90.93 43 P **P 13 24 09.3 +0.7**
KOGS Kog 90.98 40 *e*P **P 13 24 08.8 -0.1**
KOGS *ep*P **pP 13 24 48.3 -2.0**
KOGS *e*SKSac **SKSac 13 34 27.1 +1.7**
KOGS *e*S **ScS 13 34 56.8 +1.8**
BEL Belsk 91.07 34 *e*P **P 13 24 10.3 +1.2**
BEL *e*S **SKSac 13 34 27.0 +1.5**
BEL *e*ScS **ScS 13 34 55.4 0.0**
BEL LMZ LR 13 56 39.4
BEL Belsk 91.07 34 *e*P **P 13 24 10.4 +1.3**
BEL *e*S **SKSac 13 34 27.1 +1.5**
BEL *e* 13 34 55.4
PUL Pulkovo 91.10 25 *e*P **P 13 24 10.7 +1.6**
PUL pmax pmax
comp=Z,158nm,1.2s
SUW Suwalki 91.19 32 *e*P **P 13 24 10.3 +0.7**
SUW *e*S **SKSac 13 34 26.2 +0.1**
SUW LMZ LR 13 54 56.5
SUW Suwalki 91.19 32 *e*P **P 13 24 10.3 +0.7**
SUW *e*S **SKSac 13 34 26.3 +0.1**
BEHE Becsehely 91.30 40⇑ *e*P **P 13 24 11.6 +1.3**
OJC Ojcow 91.32 36 *e*P **P 13 24 11.4 +1.1**
OJC *e*S **SKSac 13 34 28.9 +1.8**
OJC LMZ LR 14 00 17.9
OJC Ojcow 91.32 36 *e*P **P 13 24 11.5 +1.1**
OJC *e*S **SKSac 13 34 28.9 +1.8**
SISC Sisak 91.49 41 P **P 13 24 11.8 +0.6**
UDBI Udbina 91.52 42 P **P 13 24 12.4 +0.9**
VYHS Vyhne 91.60 38 *e*P **P 13 24 11.4 -0.3**
VYHS *e*S **SKSac 13 34 30.4 +1.6**
VYHS pmax pmax
comp=Z,120nm,1.1s
VYHS Vyhne 91.60 38 *e*P **P 13 24 11.4 -0.3**
VYHS *e*PCP **PcP 13 24 13.9 +1.4**
VYHS Vyhne 91.60 38 *e*S **SKSac 13 34 30.4 +1.6**
VYHS *e*L L 13 55 33.5
TORD Torodi Ar. Bea 91.61 76 LR LR 14 02 03.0
comp=Z,8µm,19.4s,baz=275,slow=33
LANS Liptovska Anna 91.65 37 *e*P **P 13 24 11.4 -0.6**
LANS Liptovska Anna 91.65 37 *e*P **P 13 24 11.4 -0.6**
LANS *e*PCP **PcP 13 24 14.7 +1.9**
PKST T"s 91.70 39⇓ *e*P **P 13 24 13.4 +1.2**
IZAR Zarasai 91.72 29 *e*P **P 13 24 12.9 +0.9**
IZAR IAmb IAmb 13 24 19.3
comp=Z,48nm,1.0s
ISAL Salakas 91.76 29 *e*P **P 13 24 13.2 +0.9**
ISAL IAmb IAmb 13 24 19.4
comp=Z,55nm,0.9s
CSKK Cs˘‡kako 91.79 39⇑ *e*P **P 13 24 14.2 +1.6**
PKSG 91.86 39⇓ *e*P **P 13 24 14.8 +1.9**
IIGN Ignalina 91.93 30 *e*P **P 13 24 13.9 +0.9**
IIGN IAmb IAmb 13 24 20.1
comp=Z,98nm,1.1s
TAM Tamanrasset 91.97 66 *e*P **P 13 24 13.9 -0.3**
TAM pmax pmax
comp=Z,86nm,1.0s
TAM MLR MLR
comp=Z,5µm,20.0s
TAM Tamanrasset 91.97 66 *e*P **P 13 24 13.8 -0.3**
comp=Z,86nm,1.0s
TAM LR LR
comp=Z,5µm,20.0s
NIE Niedzica 92.00 37 *e*P **P 13 24 15.1 +1.5**
NIE *e*S **SKSac 13 34 34.4 +3.3**
NIE LMZ LR 14 00 11.5
NIE Niedzica 92.00 37 *e*P **P 13 24 15.1 +1.5**
NIE *e*S **SKSac 13 34 34.4 +3.3**
PKS9 Tamasi 92.16 40⇓ *e*P **P 13 24 16.1 +1.8**
BUD Budapest 92.19 39⇑ *e*P **P 13 24 15.9 +1.5**
IDID Didziasalis 92.20 29 *e*P **P 13 24 14.8 +0.6**
IDID IAmb IAmb 13 24 17.4
comp=Z,53nm,1.0s
NACGM Naroch 92.45 30 *e*P **P 13 24 16.0 +0.5**
NACGM PM 13 24 17.0
comp=Z,0.7nm,1.0s
NACGM *e*PP **PP 13 27 56.0 -2.2**
NACGM *e*SKS **SKSac 13 34 27.0 -6.2**
NACGM *e*PS **SP 13 36 16.0 -0.1**
NACGM *e*SS SS 13 41 05.0 -14
NACGM *e*SSS SSS 13 44 54.0
NACGM *e*LQ LQ 13 51 53.0
NACGM *e*LR LR 13 57 42.0
NACGM LRM MLR 14 01 36.0
comp=Z,13nm,24.0s
PKS7 Kunszentmiklos 92.48 39⇓ *e*P **P 13 24 17.7 +1.9**
PSZ Piszkesteto 92.50 38⇑ *e*P **P 13 24 17.9 +2.0**
PSZ Piszkesteto 92.50 38 *e*P **P 13 24 15.8 -0.1**
PSZ pmax pmax
comp=Z,812nm,1.8s
PSZ MLR MLR
comp=Z,10µm,20.0s
PSZ Piszkesteto 92.50 38 *e*P **P 13 24 15.8 -0.1**
comp=Z,812nm,1.8s
PSZ LR LR
comp=Z,10µm,20.0s
STHS Stebnicka Huta 92.53 36 *e*P **P 13 24 14.9 -1.1**
STHS pmax pmax
comp=Z,93nm,0.9s
STHS Stebnicka Huta 92.53 36 *e*P **P 13 24 14.9 -1.1**
STHS *e*PCP **PcP 13 24 18.5 +1.9**
KECS Kecovo 92.56 37 *e*P **P 13 24 16.2 +0.1**
KECS pmax pmax
comp=Z,118nm,0.9s
KECS Kecovo 92.56 37 *e*P **P 13 24 16.2 +0.1**
KECS *e*PCP **PcP 13 24 18.8 +2.0**
PKS2 Kecel 92.78 39⇑ *e*P **P 13 24 18.6 +1.5**
CRVS Cervenica-Dubn 92.91 37 *e*P **P 13 24 18.0 +0.2**

CRVS eS **SKSac 13 34 36.7 +0.6**
CRVS Cervenica-Dubn 92.91 37 eP **P 13 24 18.0 +0.2**
CRVS ePCP **PcP 13 24 20.0 +1.7**
CRVS Cervenica-Dubn 92.91 37 eS **SKSac 13 34 36.7 +0.6**
PKS6 Bocsa 92.94 39⇓ eP **P 13 24 19.9 +2.0**
MSVF Nonsavu 93.12 253 eP **P 13 24 20.9 +1.5**
MSVF pmax pmax
comp=Z,164nm,1.3s
MSVF MLR MLR
comp=Z,4μm,22.0s
MSVF Nonsavu 93.12 253 eP **P 13 24 20.9 +1.5**
comp=Z,164nm,1.3s
MSVF LR LR
comp=Z,4μm,22.0s
MICGM Minsk 93.21 30⇓ eP **P 13 24 18.0 -0.9**
MICGM PM 13 24 20.0
comp=Z,0.4nm,1.0s
MICGM epP **pP 13 25 00.0 -0.5**
MICGM esP sP 13 25 31.0 +13
MICGM eP PP 13 27 56.0 -8.1
MICGM eP PP PPP 13 30 17.0
MICGM eSKS **SKSac 13 34 34.0 -3.4**
MICGM eS **S 13 35 06.0 -5.6**
MICGM esS ScS 13 35 42.0 +29
MICGM eP S **SP 13 36 20.0 -4.5**
MICGM eP PPS PPS 13 37 24.0
MICGM eSS **SS 13 41 40.0 +10**
MICGM eSSS SSS 13 45 18.0
MICGM eLQ LQ 13 48 50.0
MICGM eLR LR 13 53 40.0
MICGM LRM MLR 14 01 56.0
comp=Z,15nm,23.0s
MICGM LRM MLR 14 02 00.0
comp=E,9.9nm,20.0s
MNK Minsk 93.21 30⇓ eP **P 13 24 18.0 -0.9**
MNK e 13 34 34.0
MNK eS **S 13 35 06.0 -5.6**
MNK ePPS PPS 13 37 24.0
MNK eSS **SS 13 41 40.0 +10**
MNK eSSS SSS 13 45 18.0
MNK pmax pmax
comp=Z,400nm,1.0s
KWP Kalwaria Pacla 93.24 36 eP **P 13 24 20.9 +1.6**
KWP eS **SKSac 13 34 39.3 +1.4**
KWP LMZ LR 14 00 11.1
KWP Kalwaria Pacla 93.24 36 eP **P 13 24 20.9 +1.6**
KWP eS **SKSac 13 34 39.3 +1.4**
KOLS Kolonicke sedl 93.36 36 eP **P 13 24 20.0 +0.2**
KOLS eS **SKSac 13 34 37.4 -1.2**
KOLS e 13 36 26.0
KOLS pmax pmax
comp=Z,158nm,1.2s
KOLS Kolonicke sedl 93.36 36 eP **P 13 24 20.0 +0.2**
KOLS ePCP **PcP 13 24 22.4 +2.1**
KOLS Kolonicke sedl 93.36 36 eS **SKSac 13 34 37.4 -1.2**
KOLS e 13 36 26.0
KOLS eL L 13 56 08.3
UZH Uzhgorod 93.53 37⇑ iP **P 13 24 22.0 +1.5**
UZH e*PP **pP 13 25 00.4 -1.7**
UZH e 13 28 08.8
UZH e 13 34 42.4
UZH eS **S 13 35 12.4 -2.2**
UZH ePS **SP 13 36 27.4 -0.9**
UZH eSS **SS 13 41 33.4 -1.4**
UZH MLR MLR
comp=N,5μm,17.0s
UZH MLR MLR
comp=E,4μm,17.0s
UZH MLR MLR
comp=Z,5μm,17.0s
CUC Castrocucco 93.54 46 eP **P 13 24 19.7 -1.2**
comp=Z,257nm,1.0s
CUC LR LR
comp=Z,5μm,21.0s
NRIK Noril'sk 93.62 359 P **P 13 24 21.4 +0.8**
comp=Z,50nm,0.9s,baz=33,slow=2.7,SNR=69
NRIK PP **PP 13 28 07.0 +0.1**
comp=Z,39nm,1.0s,baz=11,slow=7.5,SNR=7.5
NRIK S **SKSac 13 34 40.1 +1.0**
comp=Z,1.4nm,0.3s,baz=149,slow=22,SNR=9.0
NRIK LR LR 14 11 07.6
comp=Z,5μm,19.0s,baz=16,slow=38
YAK Yakutsk 93.72 341 P **P 13 24 22.3 +1.2**
comp=Z,2.9nm,0.6s,baz=229,slow=22,SNR=12
YAK PP **PP 13 28 09.1 +1.3**
comp=Z,2.5nm,0.7s,baz=246,slow=23,SNR=4.3
YAK S **SKSac 13 34 41.2 +1.3**
comp=Z,1.0nm,0.3s,baz=194,slow=24,SNR=5.8
YAK Yakutsk 93.72 341 eP **P 13 24 22.3 +1.2**
YAK e 13 28 08.8
YAK eS **SKSac 13 34 36.2 -3.7**
YAK e 13 35 12.1
YAK ePS **PS 13 36 47.4 -3.6**
YAK eSS **SS 13 41 47.2 +11**
YAK pmax pmax
comp=Z,156nm,1.1s
YAK pmax pmax
comp=N,18nm,1.3s
YAK pmax pmax
comp=E,20nm,1.4s
YAK pmax pmax
comp=Z,86nm,1.3s
YAK pmax pmax
comp=N,91nm,1.5s
YAK pmax pmax
comp=E,83nm,1.9s
YAK smax smax
comp=N,1μm,5.4s
YAK smax smax
comp=E,929nm,6.7s
YAK Yakutsk 93.72 341 eP **P 13 24 21.0 -0.1**
comp=E,125nm,0.9s
YAK PP **PP 13 28 09.1 +1.3**
YAK S **SKSac 13 34 41.2 +1.3**
YAK LR LR
comp=Z,4μm,19.0s
KLMR Klimovskoe 93.77 21 eP **P 13 24 17.9 -3.5**
KLMR eS **SKSac 13 34 36.0 -4.2**
KLMR pmax pmax
comp=Z,280nm,1.2s
LVV L'vov 93.87 35*d* iP **P 13 24 22.8 +0.7**
LVV *i* 13 34 38.9
LVV eS **S 13 35 14.1 -3.5**
LVV MLR MLR
comp=Z,4μm,19.0s
TRPA Tarpa 93.92 37⇑ eP **P 13 24 23.7 +1.3**
BRY Bratogost 94.05 43⇑ iP **P 13 24 24.1 +0.8**
UPM Unac-Piva 94.15 42⇑ iP **P 13 24 24.3 +0.5**
HCY Herceg Novi 94.23 42⇑ iP **P 13 24 25.3 +1.3**
SIRR Siria 94.36 39⇓ iP **P 13 24 26.2 +1.7**
NKME Niksic 94.39 43 eP **P 13 24 25.6 +0.9**
NKY Niksic 94.39 43⇑ iP **P 13 24 25.9 +1.1**
PLE Pljevlja 94.40 42⇑ iP **P 13 24 26.3 +1.4**
CEME Cevo 94.47 43⇑ iP **P 13 24 25.6 +0.5**
BANR Banloc 94.49 40⇓ iP **P 13 24 26.8 +1.8**
TIP Timpagrande 94.55 47 P **P 13 24 23.6 -2.0**
TIP Timpagrande 94.55 47 P **P 13 24 23.6 -2.0**
TIP LR LR
comp=Z,8μm,21.0s
BUM Brajici-Budva 94.57 43⇑ iP **P 13 24 27.3 +1.7**
BZS Buzias 94.67 39⇑ iP **P 13 24 27.0 +1.1**
BZS Buzias 94.67 39 ⇑P **P 13 24 27.0 +1.1**
BMR Baia Mare 94.71 37⇑ iP **P 13 24 26.9 +0.9**
BMR Baia Mare 94.71 37 ⇑P **P 13 24 26.9 +0.9**
DRGR 94.72 38⇑ iP **P 13 24 26.3 +0.1**
DRGR 94.72 38 ⇑P **P 13 24 26.3 +0.9**
TTG Podgorica 94.74 43⇑ iP **P 13 24 27.4 +1.2**
DRME Dracevica, Mon 94.81 43⇑ iP **P 13 24 27.9 +1.3**
IVA Berane 94.94 42⇑ iP **P 13 24 28.3 +1.0**
ULC Ulcinj 94.95 43⇑ iP **P 13 24 28.0 +0.7**
PVY Plav 95.12 43⇑ iP **P 13 24 29.4 +1.2**
MDVR Moldovita 95.15 40⇑ iP **P 13 24 29.0 +0.9**
CJR Cluj-Napoca 95.28 38⇓ iP **P 13 24 29.7 +1.0**
CJR Cluj-Napoca 95.28 38 ⇓P **P 13 24 29.7 +1.0**
DEV Deva 95.30 39⇓ iP **P 13 24 31.0 +2.2**
DEV Deva 95.30 39 ⇓P **P 13 24 31.0 +2.2**
GZR Gura Zlata 95.48 39⇑ iP **P 13 24 30.4 +0.7**
GZR Gura Zlata 95.48 39 ⇑P **P 13 24 30.4 +0.7**
NKL Nikolayevsk 95.51 330 eP **P 13 24 29.0 -0.5**
NKL e 13 25 08.0
NKL e 13 28 24.0
NKL eS **SKSac 13 34 51.0 +1.2**
NKL e 13 35 34.0
NKL pmax pmax
comp=N,100nm,1.1s
NKL pmax pmax
comp=Z,55nm,1.1s
NKL pmax pmax
comp=Z,800nm,7.0s
NKL smax smax
comp=N,2μm,14.0s
NKL smax smax
comp=E,3μm,14.0s
NKL MLR MLR
comp=N,1μm,19.0s
NKL MLR MLR
comp=E,2μm,19.0s
NKL MLR MLR
comp=Z,2μm,19.0s
ARCR ARCALIA 95.52 37⇑ iP **P 13 24 30.3 +0.6**
TIR Tirane 95.66 44 P **P 13 24 30.9 +0.4**
TIR pmax pmax
comp=Z,221nm,0.9s
TIR MLR MLR
comp=Z,5μm,20.0s
TIR Tirane 95.66 44 P **P 13 24 30.9 +0.4**
comp=Z,221nm,0.9s
TIR LR LR
comp=Z,5μm,20.0s
BURAR Bucovina Array 95.72 36⇓ iP **P 13 24 33.7 +2.9**
BURAR Bucovina Array 95.72 36 ⇓P **P 13 24 33.7 +2.9**
TYV Tymovskoe 95.93 328 eP **P 13 24 34.2 +2.7**
TYV pmax pmax
comp=Z,13nm,0.8s
MDB Medias 96.04 38⇓ iP **P 13 24 33.8 +1.7**
MDB Medias 96.04 38 ⇓P **P 13 24 33.8 +1.7**
LOT Lotru 96.05 39⇑ iP **P 13 24 33.7 +1.4**
KIEV Kiev 96.11 32*c* iP **P 13 24 31.8 -0.5**
KIEV pmax pmax
comp=Z,144nm,2.1s
AKASG Malin Array Be 96.12 32 P **P 13 24 31.9 -0.4**
comp=Z,11nm,0.6s,baz=295,slow=3.9,SNR=16
AKASG PKKPbc **PKKPdf 13 41 18.5 -1.3**
comp=Z,6.2nm,0.8s,baz=100,slow=2.0,SNR=13
AKASG LR LR 14 07 48.3
comp=Z,5μm,19.6s,baz=305,slow=35
AKASG Malin Array Be 96.12 32 P **P 13 24 31.9 -0.4**
AKASG pmax pmax
comp=Z,18nm,0.8s
AKASG pmax pmax
comp=Z,6.0nm,0.8s
AKASG MLR MLR
comp=Z,5μm,19.6s
SRE Strehaia 96.12 40⇓ iP **P 13 24 34.4 +1.9**
SRE Strehaia 96.12 40 ⇓P **P 13 24 34.4 +1.9**
KUR Kuril'sk 96.21 321 eP **P** 13 24 26.8 -6.0
KUR *i* S **SKSac 13 34 56.8 +3.0**
SKO Skopje 96.38 43 eP **P 13 24 34.1 +0.4**
OHR Ohrid 96.39 44 eP **P 13 24 34.4 +0.5**
KEK Kerkira 96.39 45 P **P 13 24 33.6 -0.3**
KEK Kerkira 96.39 45 P **P 13 24 33.6 -0.3**
ARR Arges 96.61 38⇓ iP **P 13 24 35.6 +0.8**
CRAR CRAIOVA 96.66 40⇑ iP **P 13 24 36.8 +1.9**
CRAR CRAIOVA 96.66 40 ⇑P **P 13 24 36.8 +1.9**
OBN Obninsk 96.70 26 LR LR 14 10 47.0
comp=Z,6μm,19.0s,baz=310,slow=37
OBN Obninsk 96.70 26*de*P **P 13 24 35.8 +1.0**
OBN e*PP **pP 13 25 13.9 -2.5**
OBN pmax pmax
comp=Z,298nm,1.1s
MOS Moscow 96.70 25 eP **P 13 24 34.7 -0.1**
MOS e*PP **pP 13 25 13.3 -3.1**
MOS *e* 13 28 25.8
MOS *i* S **SKSac 13 34 57.4 +1.4**
MOS *e* 13 37 00.6
MOS pmax pmax
comp=Z,292nm,1.4s
MOS pmax pmax
comp=Z,400nm,1.5s
MOS smax smax
comp=N,4μm,5.3s
MOS smax smax
comp=E,4μm,5.1s
SGD Sagiada 96.74 45 P **P 13 24 37.3 +1.9**
BIA Bitola 96.78 43 eP **P 13 24 35.5 -0.2**
VOIR 96.81 38⇓ iP **P 13 24 34.9 -0.8**
VOIR 96.81 38 ⇓P **P 13 24 34.9 -0.8**
IGT Igoumenitsa 96.84 45 P **P 13 24 36.0 +0.1**
IGT Igoumenitsa 96.84 45 P **P 13 24 36.0 +0.1**
IGT Igoumenitsa 96.84 45 P **P 13 24 36.0 +0.1**
NEST Nestorio 96.89 44 P **P 13 24 37.6 +1.4**
FNA Florina 96.93 44 P **P 13 24 36.1 -0.2**
FNA Florina 96.93 44 P **P 13 24 36.1 -0.2**
FNA Florina 96.93 44 P **P 13 24 36.1 -0.2**
MTUR Matau 96.94 38⇓ iP **P 13 24 38.0 +1.7**
MTUR Matau 96.94 38 ⇓P **P 13 24 38.1 +1.7**
MPEP Malo Peshtene 97.13 41 P Pdif 13 24 37.3 +0.1
TESR Tescani 97.15 37⇑ iP Pdif 13 24 37.7 +0.5
SORM Soroca 97.17 35⇓ iP Pdif 13 24 37.4 +0.2
SORM Soroca 97.17 35 ⇓P Pdif 13 24 37.4 +0.2
VTS Vitosha 97.20 41⇑ iP Pdif 13 24 38.1 +0.4
VTS Vitosha 97.20 41 P **P 13 24 37.6 0.0**
VTS Vitosha 97.20 41 ⇑P Pdif 13 24 38.1 +0.4
VTS Vitosha 97.20 41 P Pdif 13 24 38.1 +0.4
VTS Vitosha 97.20 41 P **P 13 24 37.6 0.0**
HUMR Humele 97.27 39⇑ iP Pdif 13 24 39.0 +1.3
MLR Muntele Rosu 97.31 38 P **P 13 24 37.3 -0.7**
comp=E,33nm,1.0s,baz=338,slow=1.9,SNR=94
MLR Muntele Rosu 97.31 38⇑ iP Pdif 13 24 38.8 +0.7
MLR Muntele Rosu 97.31 38 ⇑P Pdif 13 24 38.8 +0.7
KPRO Kipourio 97.33 44 P Pdif 13 24 38.5 +0.3
KZN Kozani 97.43 44 P Pdif 13 24 39.3 +0.6
KZN Kozani 97.43 44 P Pdif 13 24 39.3 +0.6
KZN Kozani 97.43 44 P Pdif 13 24 39.3 +0.6
VAY Valandovo 97.44 43 P Pdif 13 24 39.8 +1.2
VAY Valandovo 97.44 43 eP Pdif 13 24 38.9 +0.3
VAY Valandovo 97.44 43 P Pdif 13 24 39.8 +1.2
VAY Valandovo 97.44 43 P Pdif 13 24 39.8 +1.2
GRG Griva 97.52 43 P **P 13 24 38.8 -0.1**
GRG Griva 97.52 43 P **P 13 24 38.8 -0.1**
GRG Griva 97.52 43 P **P 13 24 38.8 -0.1**
PLOR Plostina 97.52 37⇑ iP Pdif 13 24 40.5 +1.6
PLOR Plostina 97.52 37 ⇑P Pdif 13 24 40.6 +1.7
VRI Vrincioaia 97.56 37⇓ iP Pdif 13 24 39.7 +0.7
VRI Vrincioaia 97.56 37 ⇓P Pdif 13 24 39.7 +0.7
SECR 97.64 38⇓ iP Pdif 13 24 39.6 +0.2
PGB Panagyurishte 97.82 41 P Pdif 13 24 40.6 +0.3
PDO Prodromos 97.88 46 P **P 13 24 38.8 -1.8**
SULR 97.95 38⇓ iP Pdif 13 24 42.2 +1.5
THL Klokotos Trika 97.96 44 P **P 13 24 39.4 -1.5**
LIT Litokhoron 98.01 44 P **P 13 24 40.8 -0.4**
LIT Litokhoron 98.01 44 P **P 13 24 40.8 -0.4**
LIT Litokhoron 98.01 44 P **P 13 24 40.8 -0.4**
MMB Musomiste 98.05 42 P Pdif 13 24 42.2 +0.9
YUK Yuzh-Kuril'sk 98.06 321*d* iP Pdif 13 24 43.9 +2.7
YUK *i* S **SKSac 13 35 05.8 +2.4**
YUK *i* *SS **S 13 35 53.2 -0.7**
YUK pmax pmax
comp=Z,565nm,5.3s
LEOM Leova 98.08 36⇑ iP Pdif 13 24 41.5 +0.2
LEOM Leova 98.08 36 ⇑P Pdif 13 24 41.5 +0.2
KIS Kishinev 98.09 35 eP **P 13 24 40.5 -0.8**
comp=Z,200nm,1.8s
KIS epP **pP 13 25 21.5 -1.5**
KIS Kishinev 98.09 35 ePP PP 13 28 40.0 -2.0
comp=Z,2μm,16.0s
KIS Kishinev 98.09 35 ePS **SP 13 37 24.0 +5.8**
KIS Kishinev 98.09 35 eP **P 13 24 40.5 -0.8**
KIS *e* 13 28 40.0
KIS *i* 13 35 00.0
KIS eS **S 13 35 49.0 -5.1**
KIS ePS **SP 13 37 24.0 +5.8**
KIS ePPS PPS 13 38 10.0
KIS eSS **SS 13 42 42.0 +2.8**
KIS pmax pmax
comp=Z,230nm,1.8s
KIS pmax pmax
comp=Z,900nm,8.0s
KIS pmax pmax
comp=Z,1μm,12.0s
KIS MLR MLR
comp=Z,6μm,20.0s
KIS MLR MLR
comp=N,3μm,21.0s
KIS MLR MLR
comp=E,4μm,20.0s
KIS MLR MLR
comp=Z,6μm,21.0s
EVR Evrytania 98.14 45 P Pdif 13 24 43.6 +1.7
EVR Evrytania 98.14 45 P Pdif 13 24 43.6 +1.7
HORT Hortiatis 98.16 43 P **P 13 24 41.4 -0.5**
HORT Hortiatis 98.16 43 P **P 13 24 41.4 -0.5**
PVL Pavlikeni 98.19 40 P Pdif 13 24 42.2 +0.3
YSS Yuzh-Sakhalins 98.20 325⇑ eP Pdif 13 24 42.5 +0.7
YSS *e* 13 35 05.2
YSS eS **S 13 35 52.9 -2.0**
YSS pmax pmax
comp=Z,20nm,1.1s
YSS pmax pmax
comp=Z,300nm,4.5s
YSS Yuzh-Sakhalins 98.20 325 eP Pdif 13 24 42.4 +0.6
comp=Z,28nm,0.8s
YSS LR LR
comp=Z,1μm,19.0s
SOH Sokhos 98.20 43 P **P 13 24 41.8 -0.3**
SOH Sokhos 98.20 43 P **P 13 24 41.8 -0.3**
SOH Sokhos 98.20 43 P **P 13 24 41.8 -0.3**
SRS Serrai 98.21 43 P **P 13 24 41.2 -0.8**
SRS Serrai 98.21 43 P **P 13 24 41.2 -0.8**
SRS Serrai 98.21 43 P **P 13 24 41.2 -0.8**
NVR Nevrokopi 98.26 42 P **P 13 24 42.0 -0.3**
NVR Nevrokopi 98.26 42 P **P 13 24 42.0 -0.3**
ANX Ano Chora 98.38 45 P Pdif 13 24 43.2 +0.2
PLG Polygyros 98.50 43 P Pdif 13 24 43.4 0.0
PLG Polygyros 98.50 43 P Pdif 13 24 43.4 0.0
PLG Polygyros 98.50 43 P Pdif 13 24 43.4 0.0
SZH Strazhica 98.53 40 P Pdif 13 24 43.5 +0.1
CFR Carcaliu 98.77 37⇓ iP **P 13 24 44.1 -0.2**
CFR Carcaliu 98.77 37 ⇓P **P 13 24 44.1 -0.2**
XOR Xorichti 98.85 44 P **P 13 24 43.6 -1.3**
XOR Xorichti 98.85 44 P **P 13 24 43.6 -1.3**
OUR Ouranopolis 98.87 43 P **P 13 24 44.5 -0.4**
OUR Ouranopolis 98.87 43 P **P 13 24 44.5 -0.4**
OUR Ouranopolis 98.87 43 P **P 13 24 44.5 -0.4**
PAIG Paliouri 98.88 43 P **P 13 24 43.9 -1.1**
PAIG Paliouri 98.88 43 P **P 13 24 43.9 -1.1**
PAIG Paliouri 98.88 43 P **P 13 24 43.9 -1.1**
SKIA Skiathos 99.13 44 P **Pdif 13 24 44.4 -1.8**
TLCR 99.15 37⇑ iP **Pdif 13 24 47.3 +1.2**
TLCR 99.15 37 ⇑P **Pdif 13 24 47.3 +1.2**
MSAB Monastry St. A 99.21 38⇑ iP **Pdif 13 24 46.3 -0.1**
TIRR Tirgusor 99.34 38⇑ iP **Pdif 13 24 47.5 +0.6**
TIRR Tirgusor 99.34 38 ⇑P **Pdif 13 24 47.5 +0.6**
LPSR Galich'ya Gora 99.45 27 eP **Pdif 13 24 48.5 +1.2**
LPSR eS **SKSac 13 35 08.3 -1.7**
LPSR pmax pmax
comp=Z,210nm,0.9s
LPSR smax smax
comp=N,3μm,10.5s
PRD Provadia 99.46 39 P **Pdif 13 24 48.2 +0.7**
URZ Urewera 99.52 233 LR LR 14 00 42.1
comp=N,3μm,21.8s,baz=68,slow=30
PSN Preselentsi 99.65 38 P **Pdif 13 24 48.8 +0.4**
SOKR Solikamsk 99.84 15*c* iP **Pdif 13 24 47.0 -1.8**
SOKR S **SKSac 13 35 09.4 -2.1**
SOKR PS **PS 13 37 44.2 -13**
SOKR SS **SS 13 43 06.2 +3.7**
SOKR pmax pmax
comp=Z,71nm,1.1s
SOKR MLR MLR
comp=Z,4μm,18.0s
ALN Alexandroupoli 99.90 42 P **Pdif 13 24 48.8 -0.7**
ALN Alexandroupoli 99.90 42 P **Pdif 13 24 48.8 -0.7**
ALN Alexandroupoli 99.90 42 P **Pdif 13 24 48.8 -0.7**
VSR Storozhevoye 100.54 28 eP **Pdif 13 24 52.7 +0.6**
VSR eS **SKSac 13 35 10.2 -5.2**
VSR pmax pmax
comp=Z,80nm,0.9s
VSR smax smax
comp=N,4μm,12.6s
HABR Khabarovsk 101.27 329 eP **Pdif 13 24 55.2 -0.2**
HABR ePPP PPP 13 31 15.6
HABR eS **SKSac 13 35 18.9 -0.1**
HABR eS SKKSac 13 36 15.8 +20
HABR eS **Sdif 13 36 20.0 -0.6**
HABR eSP **SP 13 37 53.2 +1.3**
HABR ePS **PS 13 38 13.3 +0.6**
HABR eSS **SS 13 43 25.3 +2.2**
HABR eSSS SSS 13 47 18.3
HABR pmax pmax
comp=N,56nm,2.2s
HABR pmax pmax
comp=E,97nm,2.2s
HABR pmax pmax
comp=Z,53nm,2.2s
HABR MLR MLR
comp=Z,1μm,21.0s
BOD Bodaibo 101.64 345 eP **Pdif 13 24 55.4 -1.5**
BOD pmax pmax
comp=Z,18nm,1.5s
VRH Novokhopyorsk 101.66 27 eP **Pdif 13 24 58.6 +1.5**
VRH *e* 13 29 05.2
VRH eS **SKSac 13 35 18.7 -2.1**
VRH pmax pmax
comp=Z,160nm,1.1s
VRH smax smax
comp=E,4μm,11.0s
IDI Anoyia 102.11 47 P **Pdif 13 25 00.1 +0.5**
comp=E,13nm,0.8s,baz=333,slow=4.4,SNR=5.5
SIM Simferopol' 102.27 35 P **Pdif 13 25 00.4 +0.4**
SIM 13 29 09.4
SIM PPP PPP 13 31 29.6
SIM *e* 13 35 25.5
SIM SP SP 13 38 01.7 -1.1
SIM SPP SPP 13 38 50.5
SIM pmax pmax
comp=Z,180nm,9.8s
SIM pmax pmax
comp=Z,930nm,11.0s
KLR Kul'dur 102.31 331 PKKPbc PKKPbc 13 41 01.9 -0.9
comp=Z,2.1nm,0.7s,baz=272,slow=4.1,SNR=7.7
KLR Kul'dur 102.31 331 eP **Pdif 13 25 02.5 +2.4**
ARU Arti 103.09 15 P **Pdif 13 25 03.7 +0.4**
comp=Z,13nm,0.9s,baz=321,slow=2.9,SNR=24
ARU PKKPbc **PKKPbc 13 40 59.6 -1.3**
comp=Z,7.0nm,0.5s,baz=100,slow=2.1,SNR=9.2
ARU Arti 103.09 15*d* iP **Pdif 13 25 02.1 -1.3**
ARU S **SKSac 13 35 23.1 -4.2**
ARU *SS **Sdif 13 36 33.6 -1.9**
ARU SP **SP 13 38 12.7 +2.1**
ARU pmax pmax
comp=Z,61nm,1.7s
ANN Anapa 104.14 33 eP **Pdif 13 25 07.2 -1.1**
ANN *i* 13 29 23.0
ANN *i* 13 35 33.4
ANN eS **Sdif 13 36 38.8 -5.9**
ANN ePS PS 13 38 25.0 -18
ANN pmax pmax
comp=Z,1μm,8.5s
ANN MLR MLR
comp=Z,7μm,19.0s
BRTR Keskin Array B 105.29 39 Pdiff **Pdif 13 25 14.1 +0.4**
comp=Z,6.8nm,0.9s,baz=298,slow=3.6,SNR=21
BRTR PKiKP **PKiKP 13 29 26.8 -0.2**
comp=Z,1.3nm,0.7s,baz=298,slow=3.1,SNR=3.2
BRTR PKKPbc **PKKPbc 13 40 53.1 -0.8**
comp=Z,3.3nm,0.7s,baz=119,slow=4.4,SNR=4.6
SOC Sochi 106.17 33 eP **Pdif 13 25 16.5 -0.9**
SOC *i* 13 29 38.8
SOC ePPP PPP 13 31 57.2
SOC *i* 13 35 44.5
SOC ePS **PS 13 38 56.4 -7.6**
SOC eSSS SSS 13 48 34.0
SOC pmax pmax
comp=Z,13nm,0.4s
MJAR Matsushiro Arr 107.17 318 Pdiff **Pdif 13 25 23.8 +1.9**
comp=Z,0.4nm,0.4s,baz=60,slow=5.8,SNR=3.7
MJAR PKKPbc **PKKPbc 13 40 48.4 +0.5**
comp=Z,3.4nm,0.7s,baz=94,slow=9.2,SNR=11
QSPA South Pole Qui 107.19 180 ePdif **Pdif 13 25 24.9 +3.5**
comp=Z,43nm,1.1s
QSPA LR LR
comp=Z,5μm,21.0s
KIV Kislovodsk 107.41 31 eP **Pdif 13 25 22.0 -1.0**
KIV *e* 13 29 48.9
KIV ePPP PPP 13 32 07.5
KIV *e* 13 35 46.3
KIV ePS **PS 13 39 10.2 -6.7**
KIV eSS SS 13 44 47.1 -0.3

KIV *e*SSS SSS 13 48 54.1
KIV pmax pmax
comp=Z,10.0nm,1.0s
KIV MLR MLR
comp=Z,5µm,20.0s
KVAR Kislovodsk Arr 107.42 31 Pdiff **Pdif 13 25 24.8 +1.7**
comp=Z,12nm,0.9s,baz=148,slow=19,SNR=4.5
KBZ Khabaz 107.68 31 Pdiff **Pdif 13 25 25.5 +1.4**
comp=Z,7.9nm,1.0s,baz=321,slow=1.6,SNR=10
KBZ PKKPbc **PKKPbc 13 40 47.2 +0.7**
comp=Z,12nm,0.9s,baz=160,slow=2.2,SNR=17
KBZ PKKP **PKKPab 13 41 00.8 -1.6**
comp=Z,10nm,0.5s,baz=159,slow=6.5,SNR=18
NVS Novosibirsk 108.15 2 *i* P **Pdif 13 25 27.1 +1.2**
AKTO Aktyubinsk 108.27 18 Pdiff **Pdif 13 25 27.0 +0.4**
comp=Z,6.4nm,0.9s,baz=323,slow=4.9,SNR=20
AKTO PKKPbc **PKKPbc 13 40 43.9 -1.1**
comp=Z,4.6nm,0.8s,baz=197,slow=2.5,SNR=9.8
AKTO PKKP **PKKPdf 13 40 58.0 +0.3**
comp=Z,24nm,0.9s,baz=143,slow=3.0,SNR=26
BVAR Borovoye Array 108.73 10 Pdiff **Pdif 13 25 29.9 +1.4**
comp=Z,4.6nm,0.8s,baz=352,slow=3.1,SNR=9.0
BVAR PKiKP **PKiKP 13 29 34.3 +1.5**
comp=Z,6.7nm,1.0s,baz=302,slow=2.8,SNR=3.6
BVAR PKKPbc **PKKPbc 13 40 41.6 -2.0**
comp=Z,2.4nm,0.8s,baz=208,slow=2.9,SNR=6.5
ZALV Zalesovo Beam 109.07 1 Pdiff **Pdif 13 25 32.5 +2.5**
comp=Z,1.6nm,0.6s,baz=347,slow=4.6,SNR=6.5
ZALV PP **PP 13 30 00.8 -2.1**
comp=Z,15nm,0.7s,baz=350,slow=5.2,SNR=11
ZALV PKKPbc **PKKPbc 13 40 40.1 -2.4**
comp=Z,2.6nm,0.8s,baz=203,slow=3.7,SNR=5.4
CN2 Changchun 109.25 331 *e*Pdif **Pdif 13 25 31.9 +0.8**
CN2 *e*PP **PP 13 30 05.4 +0.7**
CN2 *e*S **Sdif 13 37 23.2 -4.2**
CN2 AMB AMB
comp=Z,200nm,5.0s
CN2 LR LR
comp=Z,3µm,23.0s
CN2 LR LR
comp=Z,3µm,23.0s
CN2 LR LR
comp=Z,1µm,19.0s
TLY Talaya 109.61 348 PP PP 13 30 07.8 +0.9
comp=Z,6.5nm,0.7s,baz=340,slow=3.9,SNR=6.5
TLY Talaya 109.61 348 PP PP
TLY LR LR
comp=Z,3µm,20.0s
VNDA Vanda 109.77 193 PKKPbc PKKPbc 13 40 40.5 -0.3
comp=Z,1.3nm,0.9s,baz=297,slow=4.0,SNR=4.7
ABKAR Akbulak array 109.89 18 *e*Pdif **Pdif 13 25 34.3 +0.5**
ZAK Zakamensk 110.92 348 *e*P **Pdif 13 25 39.9 +1.4**
ZAK pmax pmax
comp=Z,3.0nm,1.6s
GNI Garni 111.24 33 *i* PKIKP **PKiKP 13 29 36.9 -1.2**
SNY Shenyang 111.65 331 SS SS 13 45 52.7 +8.9
KURK Kurchatov 112.02 5 *i* PKIKP **PKiKP 13 29 39.7 +0.7**
KURK 13 30 24.7
KURK pmax pmax
comp=Z,5.0nm,0.8s
KURK pmax pmax
comp=Z,22nm,0.9s
KURK pmax pmax
comp=Z,6.0nm,0.9s
KURK Kurchatov 112.02 5 *e*Pdif **Pdif 13 25 44.4 +1.2**
KURK PKiKP **PKiKP 13 29 39.7 +0.7**
KURK PP **PP 13 30 24.7 +0.7**
KURK PKKPbc **PKKPbc 13 40 30.8 -2.2**
KURK LR LR
comp=Z,16µm,19.0s
ASF Jabal al Asfar 112.07 44 Pdiff **Pdif 13 25 44.7 +0.7**
comp=Z,1.2nm,0.4s,baz=221,slow=2.7,SNR=9.0
KURBB Kurchatov Arra 112.10 5 Pdiff **Pdif 13 25 44.6 +1.0**
comp=Z,1.3nm,1.0s,baz=346,slow=4.8,SNR=6.9
KURBB PKiKP **PKiKP 13 29 39.7 +0.5**
comp=Z,4.8nm,0.8s,baz=349,slow=1.7,SNR=21
KURBB PP **PP 13 30 24.7 +0.1**
comp=Z,22nm,0.9s,baz=352,slow=6.7,SNR=12
KURBB PKKPbc **PKKPbc 13 40 30.8 -1.9**
comp=Z,5.8nm,0.9s,baz=192,slow=3.1,SNR=23
ULN Ulaanbaatar 112.44 345 *i* PKIKP **PKiKP 13 29 39.6 -0.6**
SONM Songino Array 112.64 345 Pdiff **Pdif 13 25 47.9 +1.7**
comp=Z,1.1nm,1.0s,baz=13,slow=2.5,SNR=7.2
SONM PKiKP **PKiKP 13 29 40.5 0.0**
comp=Z,2.9nm,0.7s,baz=16,slow=2.0,SNR=7.3
SONM PP **PP 13 30 29.8 +1.0**
comp=Z,17nm,0.9s,baz=16,slow=4.6,SNR=17
SONM PKKPbc **PKKPbc 13 40 27.6 -3.5**
comp=Z,1.9nm,0.8s,baz=188,slow=3.1,SNR=3.9
KSRS Korea Array 112.70 325 PKiKP **PKiKP 13 29 41.0 +0.3**
comp=Z,2.3nm,0.7s,baz=4.8,slow=1.5,SNR=10.0
KSRS PKKPab **PKKPab 13 40 38.6 -1.4**
comp=Z,1.8nm,0.7s,baz=246,slow=5.6,SNR=6.8
KSAR Wonju Array Be 112.73 325 PKIKP **PKiKP 13 29 41.0 +0.2**
KSAR Wonju Array Be 112.73 325 PKiKP **PKiKP 13 29 41.0 +0.2**
KSAR PKKPab **PKKPab 13 40 38.6 -1.2**
OTUK Ortayu 113.68 10 PKIKP PKiKP 13 29 52.3 +10
OTUK pmax pmax
comp=Z,10.0nm,1.1s
TSUM Tsumeb 115.51 103 PKKPbc PKKPbc 13 40 22.4 +2.3
comp=Z,4.1nm,1.0s,baz=242,slow=4.5,SNR=4.5
ZSN Zaisan 115.57 1 *e*PKP **PKPdf 13 29 49.4 +3.4**
comp=Z,32nm,1.3s
ZSN *i* PP **PP 13 30 51.0 +1.8**
MK31 Makanchi Array 116.16 3 *i* PKIKP **PKPdf 13 29 49.2 +2.0**
MK31 pmax pmax
comp=Z,37nm,1.0s
MKAR Makanchi Array 116.16 3 PKP **PKPdf 13 29 47.5 +0.3**
comp=Z,2.0nm,0.8s,baz=20,slow=3.6,SNR=4.9
MKAR PP **PP 13 30 51.5 -1.9**
comp=Z,35nm,0.9s,baz=5.6,slow=5.9,SNR=15
MKAR PKKPbc **PKKPbc 13 40 17.2 -1.7**
comp=Z,2.5nm,0.8s,baz=174,slow=3.1,SNR=7.8
MKAR Makanchi Array 116.16 3 PKIKP **PKPdf 13 29 47.5 +0.3**
MKAR 13 30 51.5
MKAR 13 40 17.2
MKAR pmax pmax
comp=Z,4.0nm,0.7s
MKAR pmax pmax
comp=Z,35nm,0.9s
MKAR pmax pmax
comp=Z,3.0nm,0.9s
BJI Beijing 116.37 334 PKP **PKPdf 13 29 48.8 +1.1**
BJI PP **PP 13 30 57.4 +2.3**
BJI SS SS 13 46 45.5 -0.2
BJI AMB AMB
comp=Z,860nm,6.9s
BJI LR LR
comp=Z,2µm,39.1s
BJI LR LR
comp=Z,4µm,26.9s
HHC Hu-ho-hao-te 117.44 338 *e*PKP **PKPdf 13 29 49.8 -0.1**
HHC SKKS 13 37 41.6
KK31 Karatay Array 118.30 13 *i* PKIKP PKPdf 13 30 00.3 +8.9
KK31 pmax pmax
comp=Z,19nm,1.3s
KUU Kurty 118.52 8 *e*PKP **PKPdf 13 29 51.5 -0.3**
comp=Z,82nm,0.8s
KUU *i* sPKP 13 30 50.4
KUU *i* PP **PP 13 31 06.6 -3.1**
KUU *i* SS SS 13 47 13.0 -0.1
IUG Iuzhnay 119.11 13 *i* PP PP 13 31 15.6 +1.6
comp=Z,384nm,1.9s
IUG *e*SS SS 13 47 24.6 +3.7
TIA Tai'an 119.14 331 SS SS 13 47 30.7 +8.8
WMQ Urumqi 119.19 358 *e*PKP **PKPdf 13 29 52.3 -0.9**
WMQ sPKP 13 30 52.3
WMQ PP PP 13 31 22.3 +7.9
WMQ SKS **SKSdf 13 36 42.4 -7.5**
WMQ SKKS **SKKSac 13 37 53.8 -5.6**
WMQ SS **SS 13 47 20.4 -1.3**
WMQ AMB AMB
comp=Z,450nm,10.5s
WMQ LR LR
comp=Z,2µm,19.2s
WMQ LR LR
comp=Z,1µm,15.6s
WMQ LR LR
comp=Z,1µm,22.6s
GEYT Alibeck 119.22 25 PKP **PKPdf 13 29 54.1 +0.8**
comp=Z,7.8nm,0.6s,baz=285,slow=2.9,SNR=7.1
GEYT PP **PP 13 31 16.6 +1.6**
comp=Z,2.7nm,0.3s,baz=335,slow=6.6,SNR=6.6
GEYT PKKPbc **PKKPbc 13 40 07.9 +0.1**
comp=Z,12nm,0.9s,baz=227,slow=3.7,SNR=12
MNAS Manas 119.28 11 PKIKP **PKPdf 13 29 53.0 -0.5**
MNAS pmax pmax
comp=Z,27nm,1.8s
FRU Bishkek 119.31 9 *e*PKIKP **PKPdf 13 29 57.0 +3.6**
FRU pmax pmax
comp=Z,180nm,2.0s
MDOK Medeo 119.33 7 *e*PKP **PKPdf 13 29 53.1 -0.5**
comp=Z,27nm,1.2s
MDOK *i* PP **PP 13 31 16.3 +0.9**
MDOK *i* SKS SKSdf 13 36 37.0 -13
MDOK *i* pSKS 13 37 47.7
MDOK *i* SS **SS 13 47 26.5 +2.8**
AAK Ala-Archa 119.49 10 PKP **PKPdf 13 29 54.3 +0.4**
comp=Z,3.4nm,0.7s,baz=108,slow=0.8,SNR=8.4
AAK PKKPbc **PKKPbc 13 40 07.6 +0.4**
comp=Z,10nm,1.0s,baz=245,slow=4.3,SNR=11
AAK Ala-Archa 119.49 10 *i* PKIKP **PKPdf 13 29 54.4 +0.5**
UZB Uzynbulak 119.56 6 *e*PKP **PKPdf 13 29 54.1 +0.1**
comp=Z,43nm,0.9s
UZB *i* PP **PP 13 31 18.7 +1.7**
SATY Saty 119.59 6 *e*PKP **PKPdf 13 29 58.6 +4.6**
comp=Z,128nm,0.9s
SATY *e*PP **PP 13 31 21.1 +3.9**
SHLS Shalkode 119.63 5 *e*PKP **PKPdf 13 30 00.2 +5.9**
comp=Z,134nm,0.5s
SHLS *e*SS SS 13 47 37.3 +10
SUR Sutherland 119.89 118 PKP **PKPdf 13 29 55.8 +0.9**
comp=Z,1.2nm,0.8s,baz=325,slow=2.1,SNR=3.7
SUR Sutherland 119.89 118 PKP **PKPdf 13 29 55.8 +0.9**
SUR LR LR
comp=Z,6µm,21.0s
PMG Port Moresby 120.04 269 *i* PKIKP **PKPdf 13 29 57.4 +2.0**
PMG pmax pmax
comp=Z,66nm,1.0s
SYO Syowa Base 120.88 162 ‖ *e*PKPdf **PKPdf 13 29 54.4 -1.0**
SSE Sheshan 121.14 325 PKP **PKPdf 13 29 56.5 -0.6**
SSE LR LR
comp=Z,4µm,27.8s
SSE LR LR
comp=Z,2µm,27.8s
SSE LR LR
comp=Z,3µm,44.8s
NJ2 Nanjing 121.65 327 *e*Pdif **Pdif 13 26 27.0 +0.6**
NJ2 PP PP 13 31 39.6 +7.9
NJ2 SS SS 13 47 58.7 +4.6
NJ2 AMB AMB
comp=Z,1µm,10.2s
NJ2 LR LR
comp=Z,2µm,23.8s
NJ2 LR LR
comp=Z,3µm,21.1s
NJ2 LR LR
comp=Z,1µm,18.4s
GTA Gaotai 122.13 347 ⇑PKP **PKPdf 13 29 59.0 0.0**
GTA sPKP 13 30 59.3
GTA PP **PP 13 31 38.7 +4.1**
GTA SKS **SKSdf 13 36 54.8 -1.0**
GTA SKKS **SKKSac 13 38 13.4 -5.4**
GTA SS **SS 13 48 00.8 +1.2**
GTA AMB AMB
comp=Z,860nm,8.3s
GTA LR LR
comp=Z,2µm,20.9s
GTA LR LR
comp=Z,3µm,20.9s
GTA LR LR
comp=Z,3µm,21.4s
KSH Kashi 122.77 9 PKP **PKPdf 13 30 02.3 +2.1**
KSH *es*PKP 13 31 02.2
KSH *e*PP **PP 13 31 45.2 +6.4**
KSH PKS **PKSdf 13 33 34.4 -2.6**
KSH SKS **SKSdf 13 36 52.8 -4.2**
KSH AMB AMB
comp=Z,1µm,6.3s
KSH LR LR
comp=Z,3µm,17.9s
KSH LR LR
comp=Z,5µm,24.0s
KSH LR LR
comp=Z,8µm,24.6s
CTA Charters Tower 122.98 257 PKKPbc PKKPbc 13 39 54.6 +1.7
comp=Z,22nm,0.9s,baz=248,slow=5.3,SNR=20
BOSA Boshof 123.57 113 PKP **PKPdf 13 30 02.3 +0.4**
comp=Z,33nm,0.7s,baz=282,slow=2.1,SNR=33
LBTB Lobatse 123.65 109 PKKPbc PKKPbc 13 39 53.5 +3.0
comp=Z,9.9nm,0.7s,baz=143,slow=4.0,SNR=6.5
JAY Jayapura 124.23 279 PKKPbc PKKPbc 13 39 50.9 +3.0
comp=Z,3.8nm,0.9s,baz=230,slow=22,SNR=6.2
XAN Xi'an 124.45 337 PKP **PKPdf 13 30 01.6 -1.9**
XAN sPKP 13 31 01.1
XAN PP **PP 13 31 51.4 +1.1**
XAN PKS **PKSdf 13 33 37.0 -3.3**
XAN SKS **SKSdf 13 36 55.9 -4.3**
XAN SKKS **SKKSac 13 38 25.8 -8.0**
XAN LR LR
comp=Z,2µm,25.0s
XAN LR LR
comp=Z,4µm,22.3s
XAN LR LR
comp=Z,3µm,20.9s
LSZ Lusaka 124.78 97 PKP **PKPdf 13 30 05.7 +1.1**
WHN Wuhan 125.12 330 SS SS 13 48 47.2 +9.3
MATP Matopo 125.86 103 PKP **PKPdf 13 30 07.2 +0.6**
comp=Z,22nm,0.6s,baz=272,slow=1.7,SNR=3.9
QZH Quanzhou 127.30 322 PKP **PKPdf 13 30 11.5 +2.4**
QZH SKKS 13 38 53.2
QZH SS **SS 13 49 03.4 -2.1**
QZH LR LR
comp=Z,5µm,19.1s
QZH LR LR
comp=Z,3µm,16.0s
QZH LR LR
comp=Z,5µm,17.9s
MAW Mawson 127.56 169 PKP **PKPdf 13 30 09.7 +1.5**
comp=Z,25nm,0.6s,baz=302,slow=5.2,SNR=16
STKA Stephens Creek 127.78 243 PKP **PKPdf 13 30 11.1 +1.3**
comp=Z,85nm,1.0s,baz=72,slow=2.1,SNR=40
ASHO Ashiyiah 129.18 36 P **PKPdf 13 30 12.7 -0.1**
SNR=8.2
ASHO Ashiyiah 129.18 36 PKPdf **PKPdf 13 30 12.7 -0.1**
SNR=8.2
KMBO Kilima Mbogo 129.60 77 PKP **PKPdf 13 30 15.4 +1.3**
comp=Z,6.7nm,0.9s,baz=26,slow=4.0,SNR=9.6
KMBO Kilima Mbogo 129.60 77 P **PKPdf 13 30 13.1 -1.0**
SNR=8.9
KMBO Kilima Mbogo 129.60 77 PKPdf **PKPdf 13 30 13.1 -1.0**
SNR=8.9
DHRM DHARAMSHALA 129.92 11 *e*P **PKPdf 13 30 12.8 -1.4**
DHRM IAMs_20 IAMs_20 14 15 58.2
comp=Z,13µm,41.1s
SMLA Simla 131.17 10 *e*P **PKPdf 13 30 14.7 -1.6**
BIDO Bidbid 131.24 35 P **PKPdf 13 30 16.1 -0.6**
SNR=6.5
BIDO Bidbid 131.24 35 PKPdf **PKPdf 13 30 16.1 -0.6**
SNR=6.5
BSY Bisya 131.35 36 P **PKPdf 13 30 17.0 +0.1**
SNR=8.8
BSY Bisya 131.35 36 PKPdf **PKPdf 13 30 17.0 +0.1**
SNR=8.8
SMDO Samad 131.57 35 P **PKPdf 13 30 17.0 -0.4**
SNR=16
SMDO Samad 131.57 35 PKPdf **PKPdf 13 30 17.0 -0.4**
SNR=16
GZH Guangzhou 131.72 325 PKP **PKPdf 13 30 17.3 -0.2**
GZH PP **PP 13 32 39.2 +0.9**
GZH SKS **SKSdf 13 37 11.6 -2.2**
GZH SKKS **SKKSac 13 39 16.8 -2.7**
GZH SS **SS 13 50 01.8 +2.1**
WSAR Wadi Sarin 131.74 34 PKP **PKPdf 13 30 18.7 +1.1**
comp=Z,9.1nm,0.5s,baz=262,slow=3.7,SNR=9.2
HKC Hong Kong Obse 131.89 324 P PKPdf 13 30 27.0 +9.1
GYA Guiyang 132.06 335 Pdif **Pdif 13 27 11.8 -1.3**
GYA PKP **PKiKP 13 30 19.4 0.0**
GYA sPKP 13 31 19.0
GYA PP **PP 13 32 44.0 +3.7**
GYA PKS **PKSdf 13 33 52.4 -2.6**
GYA SS SS 13 50 02.0 -1.6
GYA LR LR
comp=Z,620nm,23.5s
GYA LR LR
comp=Z,500nm,22.8s
GYA LR LR
comp=Z,580nm,24.4s
DDI Dehra Dun 132.09 9 *e*P **PKPdf 13 30 16.8 -1.4**
DDI IAMs_20 IAMs_20 14 17 39.1
comp=Z,12µm,35.6s
FAKI Fak Fak 132.31 282 *e*PKPdf **PKPdf 13 30 20.9 +2.0**
MCO Taipa Grande 132.38 324 P PKPdf 13 30 27.0 +8.2
LSA Lhasa 133.03 354 *e*PKIKP **PKPdf 13 30 20.9 +0.4**
LSA Lhasa 133.03 354 *e*PKPdf **PKPdf 13 30 20.9 +0.4**
NDI New Delhi 133.56 10 *e*P **PKPdf 13 30 19.0 -1.9**
NDI *e*P **PKSbc 13 33 48.0 -3.2**
WRA Warramunga Arr 134.09 259 PKhKP PKPpre 13 30 08.2
comp=Z,3.8nm,0.7s,baz=74,slow=3.3,SNR=15
WRA PKP **PKiKP 13 30 23.7 +0.3**
comp=Z,54nm,0.7s,baz=80,slow=2.2,SNR=42
WRA PP **PP 13 32 56.9 +1.9**
comp=Z,7.6nm,1.0s,baz=83,slow=6.2,SNR=6.5
WRA PKKP **PKKPdf 13 40 10.5 +1.4**
comp=Z,0.9nm,0.6s,baz=268,slow=1.7,SNR=6.2
ASAR Alice Springs 134.70 254 PKhKP PKPpre 13 30 08.1
comp=Z,5.9nm,0.8s,baz=98,slow=3.2,SNR=25
ASAR PKP **PKiKP 13 30 23.9 -0.7**
comp=Z,37nm,0.7s,baz=97,slow=1.9,SNR=31
ASAR PP **PP 13 33 00.3 +1.5**
comp=Z,6.5nm,0.9s,baz=91,slow=4.7,SNR=4.5
ASAR PKKP **PKKPdf 13 40 09.9 +1.8**
comp=Z,0.8nm,0.6s,baz=290,slow=1.3,SNR=4.6
KMI Kunming 134.77 338 Pdif Pdif 13 28 05.7 +40
KMI PKP **PKiKP 13 30 24.5 -0.5**
KMI pPKP pPKPdf 13 31 07.7 +0.7
KMI sPKP 13 31 28.9
KMI PP **PP 13 32 59.5 +1.9**
KMI PKS **PKSdf 13 33 59.5 -0.8**
KMI Kunming 134.77 338 SS SS 13 50 38.8 +2.6
PYUN Piuthan 134.82 4 *e*P PKPpre 13 30 11.5
comp=Z,72nm,0.8s
GKN Gorkha 134.98 2 *e*P PKPpre 13 30 11.6
comp=Z,33nm,1.0s
GUN Gumba 135.09 360 *e*P PKPpre 13 30 11.2
comp=Z,59nm,0.8s
KOLN Koldanda 135.18 3 *e*P PKPpre 13 30 11.3
comp=Z,18nm,0.7s
KKN Kakani 135.21 1 *e*P PKPpre 13 30 11.3
comp=Z,14nm,0.7s
DMN Daman 135.39 1 *e*P PKPpre 13 30 11.9
comp=Z,22nm,0.8s
PKIN Phulchoki 135.42 1 *e*P PKPpre 13 30 11.9
comp=Z,6.6nm,0.4s
TAPN Taplejung 135.61 358 *e*P PKPpre 13 30 11.7
comp=Z,7.8nm,0.3s
LBMI Labuha 135.83 288 PKP **PKPdf 13 30 27.3 +1.8**
LBMI PKP **PKiKP 13 30 28.7 +1.6**
RAMN Ramite 136.04 359 *e*P PKPpre 13 30 12.0
comp=Z,54nm,0.9s
ODAN Odare 136.11 358 *e*P PKPpre 13 30 12.0
comp=Z,20nm,0.9s
BHJ Bhuj 136.73 22 *e*P **PKPdf 13 30 25.3 -1.6**
BHJ IAMs_20 IAMs_20 14 16 20.3
comp=Z,11µm,54.6s
BHPL Bhopal 138.91 12 *e*P PKPpre 13 30 26.2
BHPL IAMs_20 IAMs_20 14 19 00.5
comp=Z,7µm,38.8s
BOK Bokaro 139.19 360 *e*P **PKPdf 13 30 28.8 -2.7**
BOK IAMs_20 IAMs_20 14 18 34.7
comp=Z,10µm,49.3s
LUWI Luwuk 140.28 290 PKP **PKPdf 13 30 32.2 -1.5**
LUWI PKP **PKiKP 13 30 34.0 -2.2**
LUWI Luwuk 140.28 290 *e*PKPdf **PKPdf 13 30 33.3 -0.4**
MYLDM Lahad Datu 140.79 302 ⇑P **PKPdf 13 30 31.1 -3.5**
KDM Kudat 141.08 306 ⇑P **PKPdf 13 30 32.5 -2.6**
APSI Ampana 141.22 291 PKP PKPpre 13 30 30.8
APSI PKP **PKiKP 13 30 40.9 +2.7**
SDKM Sandakan 141.57 304 ⇑P PKPpre 13 30 31.8
TSM Tawau 141.81 301 ⇑P PKPpre 13 30 32.6
CHTO Chiang Mai 141.91 340 *e*PKIKP **PKPdf 13 30 35.5 -1.0**
CHTO MLR MLR
comp=Z,2µm,37.1s
CHTO Chiang Mai 141.91 340 *e*PKPdf **PKPdf 13 30 35.5 -1.0**
CHTO LR LR
comp=Z,2µm,37.1s
SOEI Soe 141.97 276 PKP PKPpre 13 30 33.2
SOEI PKP **PKPdf 13 30 36.7 -0.1**
SOEI Soe 141.97 276 *e*PKPdf **PKPdf 13 30 38.1 +1.3**
KKM Kota Kinabalu 142.10 305 ⇑P **PKPdf 13 30 33.5 -3.5**
KKM Kota Kinabalu 142.10 305 *e*PKPdf **PKPdf 13 30 35.9 -1.2**
FITZ Fitzroy Crossi 142.14 263 PKhKP PKPpre 13 30 32.6
comp=Z,34nm,0.6s,baz=142,slow=3.3,SNR=30
FITZ Fitzroy Crossi 142.14 263 *e*PKPdf **PKPdf 13 30 36.9 +0.1**
CMAR Chiang Mai Arr 142.24 339 PKhKP PKPpre 13 30 33.9
comp=Z,14nm,0.7s,baz=332,slow=3.3,SNR=34
CMAR PKP **PKPdf 13 30 38.4 +1.3**
comp=Z,22nm,0.8s,baz=330,slow=2.7,SNR=39
POO Poona 142.52 19 *e*P **PKPdf 13 30 34.9 -2.7**
BATI Baumata 142.66 276 PKhKP PKPpre 13 30 36.3
comp=Z,15nm,0.4s,baz=107,slow=24,SNR=4.0
BATI Baumata 142.66 276 PKP **PKPdf 13 30 41.5 +3.6**
OPO Ambohidratompo 143.23 98 PKP **PKPdf 13 30 38.4 -0.6**
comp=Z,31nm,0.7s,baz=261,slow=2.1,SNR=27
SRSP Sriramsagar 143.28 12 *e*PKPdf PKPbc 13 30 35.8 -0.6
SRSP *e*PKiKP **PKPdf 13 30 39.9 +0.9**
ABPO Ambohimpanom 143.30 99 *e*PKIKP **PKPdf 13 30 38.8 -0.3**
ABPO Ambohimpanom 143.30 99 *e*PKPdf **PKPdf 13 30 38.8 -0.3**
RPR Rampur 143.53 10 *e*PKPdf PKPbc 13 30 37.4 +0.4
MMRI Maumere 143.58 279 PKP PKPbc 13 30 37.9 +0.5
MMRI PKP **PKiKP 13 30 50.7 +7.7**
MMRI Maumere 143.58 279 *e*PKPdf **PKPdf 13 30 40.9 +1.4**
KLRI Killari 143.72 15 *e*PKPdf PKPab 13 30 36.8 -0.1
KAPI Kappang 144.66 286 PKP PKPbc 13 30 40.9 +0.2
comp=Z,326nm,1.0s,baz=95,slow=3.1,SNR=56
KAPI Kappang 144.66 286 *e*PKPdf **PKPab 13 30 40.5 -0.1**
KAPI Kappang 144.66 286 P **PKPab 13 30 40.4 -0.1**
SNR=36
KAPI Kappang 144.66 286 PKPbc **PKPab 13 30 40.4 -0.1**
SNR=36
HYBB Hyderabad (bro 144.79 12 *e*PKPdf **PKPab 13 30 39.2 -1.7**
HYBB *e* 13 30 41.1
HYBB *e*PKiKP **PKPdf 13 30 42.7 +1.1**
HYB Hyderabad 144.79 12 *i* PKP **PKPab 13 30 40.0 -0.9**
comp=Z,370nm,1.0s
HYB *e*pP PKiKP 13 31 20.0 +35
HYB *e*PP **PP 13 33 59.0 +0.4**
HYB *e*SKKS 13 40 34.0
HYB *e*SS **SS 13 52 40.0 +7.2**
HYB Hyderabad 144.79 12 *e*P **PKPab 13 30 40.6 -0.2**
VIS Vishakhapatnam 145.15 4 *e*P **PKPbc 13 30 38.5 -3.5**
GOA Goa 145.35 21 *e*P **PKPdf 13 30 38.5 -4.0**
PVM Polavaram 145.45 7 *e*PKPab **PKPdf 13 30 42.3 -0.4**
BASI Baing, Sumba 145.59 277 PKP **PKPbc 13 30 43.6 +0.1**
BASI PKP **PKPab 13 30 45.5 +1.5**
NJS Nagarjunasagar 145.78 11 *e*PKPab **PKPdf 13 30 42.8 -0.5**
SRLM Srisailam 146.14 12 *e*PKPab **PKPbc 13 30 44.7 -0.4**
SRLM *e*PKiKP **PKPab 13 30 46.0 0.0**
BTM Bintulu 146.30 305 ⇑P **PKPdf 13 30 43.5 -0.8**
PATY Pattaya 146.54 333 PKP **PKPab 13 30 47.7 +0.2**
ADKI Addanki 146.59 10 *e*PKiKP **PKPab 13 30 47.3 -0.4**
RCLA Racherla 146.78 12 *e*PKPab **PKPbc 13 30 46.2 -0.7**
RCLA *e*PKiKP **PKPab 13 30 47.3 -1.1**
URV Uravakonda 146.89 15 *e*PKPbc **PKPdf 13 30 44.7 -0.5**
URV *e*PKiKP **PKPbc 13 30 47.4 +0.1**
NWAO Narrogin (SRO) 147.74 235 PKPbc **PKPbc 13 30 47.7 -1.4**
comp=Z,192nm,0.9s,baz=1.8,slow=0.0,SNR=16
NWAO Narrogin (SRO) 147.74 235 *e*PKPdf **PKPdf 13 30 47.5 +1.3**
MBWA Marble Bar 147.81 258 *e*PKPdf **PKPbc 13 30 49.0 -0.7**
MBWA *e*PKPab **PKPab 13 30 54.6 +2.0**
MBWA Marble Bar 147.81 258 P **PKPbc 13 30 48.9 -0.7**
SNR=21
MBWA Marble Bar 147.81 258 PKPdf **PKPbc 13 30 48.9 -0.7**
SNR=21
SKHT Srikalahasti 148.60 12 *e*PKPbc **PKPdf 13 30 49.7 +1.7**
SKHT *e*PKPab **PKiKP 13 30 52.8 -0.5**
DGPR DIGLIPUR 148.96 347 *e*P **PKPdf 13 30 45.6 -2.9**
DGPR IAMs_20 IAMs_20 14 27 00.2
comp=Z,3µm,19.7s
MDRS Chennai 149.35 11 *e*P **PKPdf 13 30 46.2 -3.0**
STKI Sintang 149.45 302 PKP **PKPbc 13 30 53.2 -0.9**
STKI PKP **PKiKP 13 30 54.6 -0.5**
KSM Kuching 149.54 305 *e*PKPbc **PKPbc 13 30 55.4 +1.1**
PBA Port Blair 150.47 346 *e*P PKPdf 13 30 48.1 -2.8
JAGI Jajag, Banyuwa 151.10 284 *e*PKPdf **PKPdf 13 30 52.6 +0.6**
RER Riviere de l'E 151.33 103 *e*PKPbc **PKPbc 13 31 00.4 +2.0**
RER *e*PKPab **PKPab 13 31 06.9 -0.2**
KTGM Kuala Trenggan 151.80 321 ⇑P **PKPdf 13 30 53.5 +0.4**
PKDT Phuket 152.13 333 PKP **PKPbc 13 30 58.6 -1.7**
TRD Trivandrum 152.92 20 *e*P **PKPdf 13 30 53.0 -1.7**
PWJI Pagerwojo 153.10 287 PKP **PKPdf 13 30 56.8 +1.9**
PWJI PKP **PKPbc 13 30 59.4 -3.0**
KULM Kulim 153.24 326 ⇑P **PKPdf 13 30 55.5 +0.3**
KULM Kulim 153.24 326 *e*PKPdf **PKPdf 13 30 55.8 +0.6**

Code	Station Name	Δ°	AZ°	Op	ISC	Time	Res
KULM				ePKPbc	PKiKP	13 31 04.4	+1.5
IPM	Ipoh	153.71	324	⇑P	PKPdf	13 30 56.2	+0.4
IPM	Ipoh	153.71	324	ePKPdf	PKPdf	13 30 55.0	-0.9
MYKOM	Kota Tinggi	154.05	315	⇑P	PKPdf	13 30 56.3	0.0
CMBY	CAMPBELL BAY	154.59	341	eP	PKPdf	13 30 55.9	-1.2
CMBY				IAMs_20	IAMs_20	14 25 26.1	
	comp=Z,2µm,21.6s						
KCSI	Kotacane, Aceh	156.23	329	PKP	PKPdf	13 31 02.2	+2.9
KCSI				PKP	PKPdf	13 31 03.7	+4.4
PSI	Prapat	156.25	326	PKP	PKPdf	13 30 59.8	+0.3
	comp=Z,15nm,0.9s,baz=216,slow=3.1,SNR=13						
PSI				PKPab	PKPab	13 31 28.5	+0.4
	comp=Z,69nm,0.9s,baz=330,slow=3.7,SNR=12						
CISI	Cisompet, Garu	156.51	292	PKP	PKPdf	13 30 59.6	-0.1
CISI				PKP	PKPdf	13 31 01.2	+1.5
CISI	Cisompet, Garu	156.51	292	ePKPdf	PKPdf	13 30 59.3	-0.4
DBJI	Dramaga	156.98	295	PKP	PKPdf	13 31 01.3	+1.0
DBJI				PKP	PKPdf	13 31 01.7	+1.4
CGJI	Cibinong	157.92	296	PKP	PKPdf	13 31 02.2	+0.8
CGJI				PKP	PKPdf	13 31 02.5	+1.1
CGJI				PKP	PKPdf	13 31 05.0	+3.6
MDSI	Maura Dua	158.01	303	PKP	PKPdf	13 31 01.5	0.0
MDSI				PKP	PKPdf	13 31 01.5	0.0
MDSI				PKP	PKPdf	13 31 01.7	+0.2
GSI	Gunungsitoli	158.23	327	ePKPdf	PKPdf	13 31 02.9	+1.1
PDSI	Padang	158.31	317	PKP	PKPdf	13 31 00.8	-1.1
PDSI				PKP	PKPdf	13 31 01.3	-0.6
PDSI				PKP	PKPdf	13 31 03.4	+1.5
MASI	Maura Aman, Be	158.66	309	PKP	PKPdf	13 31 00.1	-2.3
MASI				PKP	PKPdf	13 31 01.0	-1.4
MASI				PKP	PKPdf	13 31 04.2	+1.8

JMA 07 13:29:13.2±0.4**, 37.°52N×143.°74E, h43km, M3.5, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	Ouri	2.11	297	P	Pn	13 29 47.3	+1.4
JIO				S	Sn	13 30 12.7	+1.8
OFUJ	Ofunato	2.25	314	P	Pn	13 29 48.8	+0.8
JFK	Kawauchi	2.29	267	P	Pn	13 29 49.1	+0.7
JFK				S	Sn	13 30 15.7	+0.3
JMM	Marumori	2.36	279	P	Pn	13 29 50.4	+0.9
JMM				S	Sn	13 30 17.9	+0.7
JMK	Ichinoseki	2.45	307	eS	Sn	13 30 20.9	+1.7
JOU	Okura	2.57	290	P	Pn	13 29 54.7	+2.3
JFT	Otama	2.71	271	eS	Sn	13 30 26.4	+0.7
JOM	Ohasama	2.74	316	P	Pn	13 29 56.1	+1.5
JOM				S	Sn	13 30 28.4	+2.0
JYK	Kaneyama	3.01	299	P	Pn	13 30 00.4	+2.1
JYK				eS	Sn	13 30 34.0	+0.9
JRG	Rokugo	3.08	308	eS	Sn	13 30 36.1	+1.3
MAT	Matsushiro	4.53	259	P	Pn	13 30 22.7	+3.4

JMA 07 13:38:01.7±0.2**, 38.°07N×144.°23E, h30km, M3.5, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	Ofunato	2.25	297	P	Pn	13 38 38.0	+1.2
JIO	Ouri	2.30	280	P	Pn	13 38 39.0	+1.5
JIO				S	Sn	13 39 05.8	+1.0
JMK	Ichinoseki	2.52	291	P	Pn	13 38 41.9	+1.3
JTH	Tanohata	2.62	316	P	Pn	13 38 43.6	+1.6
JTH				S	Sn	13 39 14.3	+1.5
JOM	Ohasama	2.69	302	P	Pn	13 38 44.5	+1.6
JOM				S	Sn	13 39 17.1	+2.6
JMM	Marumori	2.72	267	P	Pn	13 38 44.8	+1.4
JMM				S	Sn	13 39 15.8	+0.5
JOU	Okura	2.82	277	S	Sn	13 39 20.0	+2.2
JRG	Rokugo	3.11	296	S	Sn	13 39 27.6	+2.8
JANG	Nango	3.12	318	P	Pn	13 38 50.3	+1.5
JFT	Otama	3.13	261	S	Sn	13 39 27.1	+1.7
JYK	Kaneyama	3.15	287	S	Sn	13 39 29.4	+3.5

*TIF **07** 13:40:15.5, 41.°54N×44.°21E, h10km*
*CSEM **07** 13:40:16.8±0.1, 41.°51N×44.°21E, h2km, ML3.2, Error ellipse: s-maj=3.0km s-min=2.4km az=92.0*
*MOS **07** 13:40:16.2±0.6, 41.°45N×44.°20E, h11km, mb4.1/1, Error ellipse: s-maj=11.2km s-min=5.0km az=90.6*
*DDA **07** 13:40:52.4, 41.°43N×44.°22E, h9km, Md3.2*
ISC 07 13:40:16.6±1.0**, 41.°52N**±0.°02×**44.°19E**±0.°02**, h4**km±9km**, n74, σ0.s70**/126**, 1C-11D, Western Caucasus**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KZR	Kazreti	0.22	129	P	Pg	13 40 20.8	0.0
KZR				S	Sg	13 40 23.8	+0.1
KZR	Kazreti	0.22	129	P	Pg	13 40 20.8	0.0
KZR				S	Sg	13 40 23.8	+0.1
TBLG	Delisi	0.46	62	P	Pg	13 40 26.1	+0.6
TBLG				S	Sg	13 40 32.7	+1.1
TBLG	Delisi	0.46	62	PG	Pg	13 40 26.1	+0.6
TBLG				S	Sg	13 40 32.7	+1.1
TBLG	Delisi	0.46	62	P	Pg	13 40 26.1	+0.6
TBLG				S	Sg	13 40 32.7	+1.1
SEAG	Tbilisi Sea	0.52	62	P	Pg	13 40 26.2	-0.5
SEAG				S	Sg	13 40 33.0	-0.5
SEAG	Tbilisi Sea	0.52	62	P	Pg	13 40 26.2	-0.5
SEAG				S	Sg	13 40 33.0	-0.5
STE	Stepanavan	0.53	165	⇓P	Pg	13 40 25.6	-1.3
STE				S	Sg	13 40 33.4	-0.4
AKH	Akhalkalaki	0.54	259	P	Pg	13 40 27.2	+0.3
AKH				S	Sg	13 40 35.0	+1.1
AKH	Akhalkalaki	0.54	259	PG	Pg	13 40 27.2	+0.3
AKH				S	Sg	13 40 34.9	+1.1
AKH	Akhalkalaki	0.54	259	P	Pg	13 40 27.2	+0.3
AKH				Sg	Sg	13 40 34.9	+1.1
CKLZ	Chkalov	0.68	149	⇓P	Pg	13 40 30.0	+0.4
CKLZ				S	Sg	13 40 39.0	+0.6
DUS	Dusheti	0.69	34	P	Pg	13 40 30.0	+0.1
DUS				S	Sb	13 40 40.6	-0.6
DUS	Dusheti	0.69	34	PG	Pg	13 40 30.0	+0.1
DUS				S	Sb	13 40 40.6	-0.6
DUS	Dusheti	0.69	34	P	Pg	13 40 30.0	+0.1
DUS				S	Sb	13 40 40.6	-0.6
SPIZ	Spitak	0.69	175	⇓P	Pg	13 40 30.0	+0.1
SPIZ				S	Sg	13 40 39.7	+0.8
DGRG	David-gareji	0.89	94	P	Pg	13 40 33.4	-0.3
DGRG				S	Sb	13 40 47.2	+0.2
DGRG	David-gareji	0.89	94	PG	Pg	13 40 33.4	-0.3
DGRG				S	Sb	13 40 47.2	+0.2
DGRG	David-gareji	0.89	94	P	Pg	13 40 33.4	-0.3
DGRG				S	Sb	13 40 47.2	+0.2
EAK	Akyaka	0.94	208	iP	Pg	13 40 34.0	-0.6
EAK				iS	Sb	13 40 48.2	-0.2
EAK	Akyaka	0.94	208	P	Pg	13 40 34.0	-0.6
EAK				S	Sb	13 40 48.2	-0.2
GUDG	Gudauri	0.97	13	P	Pg	13 40 35.0	-0.3
GUDG				S	Sg	13 40 48.0	+0.1
GUDG	Gudauri	0.97	13	P	Pg	13 40 35.0	-0.3
GUDG				S	Sg	13 40 48.0	+0.1
EPOS	Posof	1.10	270	iP	Pg	13 40 37.2	-0.5
EPOS				iS	Sn	13 40 55.1	+0.4
EPOS	Posof	1.10	270	P	Pg	13 40 37.2	-0.5
EPOS				S	Sn	13 40 55.1	+0.4
ONI	Oni	1.21	333	P	Pg	13 40 38.6	-1.1
ONI				S	Sg	13 40 55.1	-0.2
ONI	Oni	1.21	333	PG	Pg	13 40 38.6	-1.1
ONI				S	Sg	13 40 55.1	-0.2
ONI	Oni	1.21	333	P	Pg	13 40 38.6	-1.1
ONI				S	Sg	13 40 55.1	-0.2
ZEI	Tsey	1.29	351	⇓iPG	Pg	13 40 40.2	-1.1
ZEI				eS	Sb	13 40 58.5	-0.1
LACR	Lac	1.31	3	c iPG	Pg	13 40 40.8	-1.0
LACR				eS	Sg	13 40 58.9	+0.1
LACR				pmax	pmax		
	comp=Z,42nm,0.2s						
LACR				smax	smax		
	comp=N,174nm,0.5s						
LACR	Lac	1.31	3	iPg	Pg	13 40 40.8	-1.0
	comp=N,42nm,0.2s						
LACR				eSg	Sg	13 40 58.9	+0.1
	comp=N,174nm,0.5s						
GNI	Garni	1.43	163	d iPG	Pn	13 40 43.5	+0.1
GNI	Garni	1.43	163	⇓P	Pn	13 40 43.6	+0.1
GNI				S	Sn	13 41 03.1	+0.3
DIGR	Digorskoe uzhe	1.45	342	⇓iPG	Pn	13 40 43.5	-0.4
DIGR				eS	Sg	13 41 03.2	-0.2
DIGR	Digorskoe uzhe	1.45	342	iPg	Pn	13 40 43.5	-0.4
DIGR				eSg	Sg	13 41 03.2	-0.2
KORR	Kora	1.57	357	⇓iPN	Pg	13 40 46.7	0.0
KORR				iS	Sg	13 41 08.7	+1.6
KORR	Kora	1.57	357	iPn	Pg	13 40 46.7	0.0
KORR				iSg	Sg	13 41 08.7	+1.6
VLKR	Vladikavkaz	1.57	13	ePN	Pb	13 40 46.4	+0.1
VLKR				eS	Sg	13 41 07.8	+0.7
VLKR	Vladikavkaz	1.57	13	ePn	Pb	13 40 46.4	+0.1
VLKR				eSg	Sg	13 41 07.8	+0.7
KMGR	Komgaron	1.62	18	⇓iPN	Pn	13 40 46.2	+0.2
KMGR				eS	Sg	13 41 08.3	-0.3
KMGR	Komgaron	1.62	18	iPn	Pn	13 40 46.2	+0.2
KMGR				eSg	Sg	13 41 08.3	-0.3
ARNR	Ardon	1.66	2	ePN	Pg	13 40 48.5	0.0
ARNR				eS	Sg	13 41 11.1	+1.0
ARTV	Artvin	1.73	260	iS	Sb	13 41 11.3	-0.1
ARTV	Artvin	1.73	260	S	Sb	13 41 11.3	-0.1
DAGI	Agillar	1.77	256	iP	Pb	13 40 49.7	0.0
DAGI				iS	Sb	13 41 12.4	+0.1
LSNR	Lesken	1.78	351	⇓iPN	Pb	13 40 49.5	-0.4
LSNR				eS	Sg	13 41 13.3	-0.5
LSNR	Lesken	1.78	351	iPn	Pb	13 40 49.5	-0.4
LSNR				eSg	Sg	13 41 13.3	-0.5
STDR	Stavd-Durt	1.85	357	ePN	Pb	13 40 50.4	-0.7
STDR	Stavd-Durt	1.85	357	ePn	Pb	13 40 50.4	-0.7
BTKR	Batakoyurt	1.87	8	ePN	Pb	13 40 50.6	-0.8
BTKR	Batakoyurt	1.87	8	ePn	Pb	13 40 50.6	-0.8
BTLR	Botlikh	1.90	52	ePN	Pn	13 40 49.8	-0.1
BTLR	Botlikh	1.90	52	ePn	Pn	13 40 49.8	-0.1
DBOC	Borcka	1.91	266	iP	Pb	13 40 51.9	-0.1
DBOC				iS	Sb	13 41 16.2	+0.1
DBOC	Borcka	1.91	266	P	Pb	13 40 51.9	-0.1
DBOC				S	Sb	13 41 16.2	+0.1
DBAD	Bademkaya	1.95	256	iP	Pb	13 40 52.3	-0.4
DBAD				iS	Sb	13 41 17.8	+0.4
DBAD	Bademkaya	1.95	256	P	Pb	13 40 52.3	-0.4
DBAD				S	Sb	13 41 17.8	+0.4
CHVG	Ch'k'valeri	1.97	308	P	Pb	13 40 52.4	-0.7
CHVG				S	Sg	13 41 19.7	-0.3
CHVG	Ch'k'valeri	1.97	308	P	Pb	13 40 52.4	-0.7
CHVG				S	Sg	13 41 19.7	-0.3
NCK	Nalchik	2.02	348	ePN	Pb	13 40 52.9	-1.1
NCK	Nalchik	2.02	348	ePn	Pb	13 40 52.9	-1.1
NEY	Neytrino	2.04	328	ePN	Pb	13 40 53.6	-0.8
NEY				eS	Sb	13 41 20.5	+0.2
NEY	Neytrino	2.04	328	ePn	Pb	13 40 53.6	-0.8
NEY				eSb	Sb	13 41 20.5	+0.2
TRKR	Terskaya	2.24	10	⇓ePN	Pn	13 40 54.8	+0.3
TRKR	Terskaya	2.24	10	ePn	Pn	13 40 54.8	+0.3
GRS	Goris	2.59	140	eP	Pn	13 40 56.0	-3.5
SOC	Sochi	3.90	303	ePN	Pn	13 41 17.7	+0.4
SOC	Sochi	3.90	303	ePn	Pn	13 41 17.7	+0.4
TIRR	Tirgusor	11.92	290	eP	Pn	13 43 05.6	-1.7
KIEV	Kiev	13.84	317	eP	Pn	13 43 33.8	+0.3
KIEV				pmax	pmax		
	comp=Z,2.0nm,1.0s						
KIEV	Kiev	13.84	317	eP	Pn	13 43 33.8	+0.3
	comp=Z,2.0nm,1.0s						
OBN	Obninsk	14.51	342	eP	Pn	13 43 44.6	+2.1
OBN				pmax	pmax		
	comp=Z,4.0nm,0.8s						
KURK	Kurchatov	25.38	57	iP	P	13 45 44.9	+0.2
KURK	Kurchatov	25.38	57	iP	P	13 45 44.9	+0.2

*ISCJB **07** 13:40:57.3±0.3, 31.°20N±0.°02×115.°65W±0.°02, h10km, mb4.2/5, Error ellipse: s-maj=3.4km s-min=1.9km az=28.6*
*NEIC **07** 13:40:57.8, 31.°24N×115.°62W, h5km, mb4.1/7, MD4.5(ECX), After ECX.*
*ECX **07** 13:40:57.9±0.7, 31.°23N×115.°62W, h5km, MD4.3, ML4.5, MW5.0, Fault plane solution: NP1:φs82.02000°, δ64.34000°, λ16.10000°.*
*MEX **07** 13:40:59.4±0.5, 31.°16N×115.°63W, h7km±18km, MD4.1*
*IDC **07** 13:40:60.0±1.8, 31.°41N×115.°43W, h0km, mb3.9/4, mb1 4.2/11, mb1mx3.9/54, mbtmp3.9/11, ML3.9/7, Error ellipse: s-maj=28.9km s-min=10.0km az=40.0*
ISC 07 13:40:58.8±0.6**, 31.°25N**±0.°03×**115.°67W**±0.°02**, h10**km**, n197, σ1.s57**/203**, mb4.1**/5**, 5C-13D, Baja California**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SPIG	San Pedro Mart	0.27	139	iP	Pg	13 41 02.9	-1.5
SPIG				iS	Sg	13 41 05.1	-3.1
SPIG	San Pedro Mart	0.27	139	iP	Pg	13 41 02.9	-1.5
SPIG				iS	Sg	13 41 05.1	-3.1
SPX	San Pedro Mart	0.27	139	⇓eP	Pg	13 41 02.8	-1.7
SPX				eS	Sg	13 41 05.7	-2.5
SPX				⇓e		13 41 07.6	
SPX				AML	AML	13 41 07.6	
	comp=N,41µm,0.5s						
SPX	San Pedro Mart	0.27	139	iP	Pg	13 41 02.8	-1.7
SPX				iS	Sg	13 41 06.0	-2.2
ZAX	El Zacaton	0.57	297	⇓eP	Pg	13 41 08.7	-1.2
ZAX				eS	Sb	13 41 17.5	-1.7
ZAX				AML	AML	13 41 22.5	
	comp=N,44µm,0.6s						
ZAX				⇑e		13 41 22.5	
ECBX	El Chinero	0.58	67	⇑eP	Pg	13 41 07.3	-2.7
ECBX				eS	Sg	13 41 14.8	-2.7
ECNX	Esteban Cantu	0.89	297	⇓eP	Pg	13 41 14.4	-1.5
ECNX				eS	Sg	13 41 26.6	-0.9
PBX	Punta Banda	1.02	299	⇓eP	Pg	13 41 16.5	-1.9
PBX				eS	Sg	13 41 30.5	-1.2
CPBX	Cerro Prieto	1.20	15	⇓eP	Pb	13 41 19.8	-1.9
CPBX				eS	Sb	13 41 34.7	-2.6
CPBX	Cerro Prieto	1.20	15	eP	Pb	13 41 20.1	-1.6
CPBX				iS	Sb	13 41 36.1	-1.1
MBIG	Mexicali	1.22	19	⇑eP	Sn	13 41 43.4	+4.9
MBIG	Mexicali	1.22	19	eP	Pn	13 41 20.6	-1.3
MBIG				iS	Sb	13 41 35.8	-2.0
CBX	Cerro Bola	1.35	322	⇓eP	Pn	13 41 22.2	-1.6
CBX				eS	Sb	13 41 40.6	-1.1
CBX				⇑e		13 41 46.5	
CBX				AML	AML	13 41 46.5	
	comp=E,12µm,0.5s						
CBX	Cerro Bola	1.35	322	iP	Pn	13 41 22.3	-1.6
CBX				iS	Sb	13 41 39.9	-1.8
CBX	Cerro Bola	1.35	322	iP	Pn	13 41 22.3	-1.6
CBX				iS	Sb	13 41 39.9	-1.8
RMX	La Rumorosa	1.39	346	⇓eP	Pn	13 41 22.8	-1.6
RMX				eS	Sb	13 41 41.4	-1.4
RMX				AML	AML	13 41 45.8	
	comp=N,6µm,0.4s						
RMX				⇑e		13 41 45.8	
YUH	Yuha Desert	1.41	351	ePn	Pb	13 41 24.0	-1.1
IBP	Imperial Bould	1.45	346	⇓eP	Pn	13 41 24.4	-0.7
IBP	Imperial Bould	1.45	346	P	Pn	13 41 24.4	-0.7
	baz=164,SNR=316						
IBP				S	Sn	13 41 43.4	-0.9
	baz=164						
IBP	Imperial Bould	1.45	346	ePn	Pn	13 41 24.5	-0.7
TJIG	Tijuana	1.45	324	⇓eP	Pn	13 41 23.8	-1.3
ERPC	Ernies Place	1.49	0	ePn	Pb	13 41 25.3	-1.2
WESC	Westside Schoo	1.50	358	⇓eP	Pn	13 41 24.3	-1.5
WESC	Westside Schoo	1.50	358	ePn	Pb	13 41 25.3	-1.4
EMSC	East Mesa	1.59	21	ePn	Pn	13 41 25.7	-1.3
BAR	Barrett	1.66	329	⇓eP	Pn	13 41 27.2	-0.7
BAR	Barrett	1.66	329	ePn	Pn	13 41 27.3	-0.7
COA	Coachella	1.67	16	ePn	Pn	13 41 27.0	-1.1
SWSC	Sam W. Stewart	1.69	356	P	Pn	13 41 26.8	-1.6
	baz=175,SNR=518						
SWSC				S	Sn	13 41 48.1	-2.0
	baz=175						
SWSC	Sam W. Stewart	1.69	356	ePn	Pn	13 41 28.0	-0.4
CBKC	Canebrake	1.71	344	ePn	Pb	13 41 29.1	-1.3
MONP2	Monument Peak	1.75	339	P	Pn	13 41 29.3	-0.1
	baz=157,SNR=1000						
MONP2				S	Sb	13 41 52.0	-1.4
	baz=157						
SDRC	San Diego Road	1.83	324	⇓eP	Pn	13 41 29.9	-0.4
CLIC	Calipatria	1.89	4	ePn	Pn	13 41 31.1	+0.1
EML	El Monte Cty P	1.91	329	ePn	Pn	13 41 27.0	-4.4
EML				ePg	Pb	13 41 32.2	-1.6
GLA	Glamis	1.93	22	P	Pn	13 41 29.9	-1.8
	baz=200,SNR=99						
GLA				Sb	Sb	13 41 58.5	+0.2
	baz=200						
GLA	Glamis	1.93	22	ePn	Pn	13 41 30.1	-1.7
GLA				ePg	Pb	13 41 30.5	-3.6
109C	Camp Elliot, M	2.04	324	P	Pn	13 41 32.4	-0.7
	baz=142,SNR=169						
109C				S	Sb	13 41 59.4	-1.8
	baz=142						
CPE	Camp Elliot	2.04	324	ePn	Pn	13 41 32.6	-0.5
DPP	Dos Picos Cty	2.05	329	ePn	Pb	13 41 34.1	-2.0
HWB	Hans Werner Br	2.08	329	ePn	Pb	13 41 34.5	-2.1
BORC	Borrego Spring	2.11	343	ePn	Pn	13 41 34.5	+0.4
FRK	Frink	2.14	1	ePn	Pn	13 41 33.9	-0.7
113A	Mohawk Valley,	2.22	46	ePn	Pn	13 41 33.8	-1.8
LTC	Little Chuckwa	2.29	13	ePn	Pn	13 41 36.0	-0.6
PLM	Palomar	2.33	335	ePn	Pn	13 41 38.1	+0.8
FRD	Ford Ranch, An	2.37	341	ePn	Pn	13 41 38.3	+0.5
BC3	Big Chuckawall	2.40	4	P	Pn	13 41 37.1	-1.2
	baz=183,SNR=49						
CTW	Cottonwood Mou	2.42	356	ePn	Pn	13 41 38.7	+0.2
SNDA	J Saunders Pla	2.43	341	ePn	Pn	13 41 39.1	+0.4
PFO	Pinyon Flats O	2.44	344	Pn	Pn	13 41 37.9	-0.9
	comp=N,14nm,0.3s,baz=160,slow=12,SNR=126						
PFO				Pg	Pb	13 41 42.5	-0.4
	comp=N,116nm,0.3s,baz=165,slow=16,SNR=119						
PFO				Lg	Lg	13 42 14.6	
	comp=N,404nm,0.3s,baz=214,slow=4.9,SNR=18						
PFO	Pinyon Flats O	2.44	344	P	Pn	13 41 38.0	-0.9
	baz=163,SNR=199						
PFO				Sb	Sg	13 42 14.7	-2.7
	baz=163						
PFO	Pinyon Flats O	2.44	344	ePn	Pn	13 41 39.2	+0.3
PFO				ePg	Pb	13 41 42.0	-0.9
PFO				eSn	Sb	13 42 11.0	-2.1
PFO				Lg	Lg	13 42 14.6	
DNR	Dunn Ranch,Anz	2.45	341	ePn	Pn	13 41 39.3	+0.5
DNR				eScS	ScS	13 56 34.9	+2.2
CRY	Cary Ranch	2.48	339	ePn	Pn	13 41 39.8	+0.6
214A	Organ Pipe Nat	2.54	73	P	Pn	13 41 37.9	-2.2
	baz=254,SNR=66						
214A				S	Sn	13 42 07.9	-3.2
	baz=254						
214A	Organ Pipe Nat	2.54	73	ePn	Pn	13 41 37.5	-2.6
214A				eSn	Sn	13 42 11.8	+0.7
BACC	Bachelor Mtn.	2.62	334	ePn	Pn	13 41 42.1	+0.9
DGR	Domenigoni Val	2.65	335	ePn	Pn	13 41 42.4	+0.8
MURC	Murrieta	2.67	332	P	Pn	13 41 41.5	-0.4
	baz=150,SNR=318						
MURC				Sb	Sb	13 42 19.5	0.0
	baz=150						
Y12C	Blythe	2.67	21	P	Pn	13 41 40.7	-1.2
	baz=200,SNR=27						
Y12C	Blythe	2.67	21	ePn	Pn	13 41 40.9	-1.0
HMTC	Hemet	2.70	336	ePn	Pn	13 41 43.1	+0.8
BELC	Belle Mtn. Jos	2.75	354	P	Pn	13 41 42.4	-0.7
	baz=173,SNR=54						
TPC	Twentynine Pal	2.86	354	ePn	Pn	13 41 44.8	+0.3
IRM	Iron Mountain	2.93	9	P	Pn	13 41 44.6	-0.8
	baz=188,SNR=32						
SCI2	San Clemente I	2.99	306	P	Pn	13 41 44.8	-1.3
	baz=124,SNR=7.8						
SCI2				S	Sn	13 42 22.2	+0.2
	baz=124						
RVR	Riverside	3.09	333	ePn	Pn	13 41 48.7	+1.2
CIS	Catalina Islan	3.16	313	P	Pn	13 41 47.4	-1.2
	baz=132						
BBRC	Big Bear Solar	3.18	341	P	Pn	13 41 47.4	-1.6
	baz=160,SNR=12						
BBRC				Sb	Sb	13 42 36.6	+2.2
	baz=160						
HDB	Hidalgo Marine	3.18	351	ePn	Pn	13 41 49.5	+0.5
FMP	Fort Macarthur	3.31	319	Sb	Sg	13 42 40.6	-4.4
	baz=137						
PDMCI	Parker Dam,Lak	3.31	23	Sb	Sb	13 42 38.9	+1.1
	baz=202						
RPV	Rancho Palos V	3.39	318	ePn	Pn	13 41 53.5	+1.8
RPV				ePg	Pg	13 42 00.9	-2.8
SSK	Sunset Peak	3.41	331	ePn	Pn	13 41 53.4	+1.2
BFSC	Mount Baldy Ra	3.42	331	P	Pn	13 41 52.1	-0.2
	baz=150,SNR=97						
BFSC				Sb	Sb	13 42 41.7	+0.6
	baz=150						
Y14A	Wickenburg	3.50	39	ePn	Pn	13 41 52.4	-0.9
GMRC	Granite Mounta	3.52	0	P	Pn	13 41 52.8	-0.9
	baz=179,SNR=9.1						
MWC	Mount Wilson	3.58	326	ePn	Pn	13 41 54.5	0.0
PASC	Pasadena Art C	3.60	325	ePn	Pn	13 41 53.8	-0.8
PASC				eSn	Sn	13 42 38.2	+1.0
SBI	Santa Barbara	3.61	309	ePn	Pn	13 41 56.8	+2.2
HEC	Hector,Ludlow	3.61	351	P	Pn	13 41 54.4	-0.5
	baz=170,SNR=6.4						
DECC	Green Verdugo	3.74	324	P	Pn	13 41 56.4	-0.2
	baz=142						
DECC				Sb	Sb	13 42 53.5	+3.2
	baz=142						
RRX	Edison Barstow	3.78	343	Pb	Pb	13 42 06.6	+1.0
	baz=162,SNR=36						
RRX				Sb	Sg	13 42 55.4	-4.8
	baz=162						
SNCC	San Nicolas Is	3.82	302	S	Sn	13 42 41.7	-0.9
	baz=120						
LDFC	Landfair	3.84	7	ePn	Pn	13 41 59.2	+1.1
IR2C	Iron Canyon	3.88	324	ePn	Pn	13 42 00.3	+1.8
EDW2	Edwards Air Fo	4.11	332	P	Pn	13 42 01.8	+0.1
	baz=151,SNR=35						
EDW2				Sb	Sb	13 43 03.8	+2.8
	baz=151						
W13A	Hualapai Mount	4.12	21	ePn	Pn	13 42 02.6	+0.6
GSC	Goldstone, Bar	4.15	347	P	Pn	13 42 02.1	-0.1
	baz=166,SNR=9.7						
GSC	Goldstone, Bar	4.15	347	ePn	Pn	13 42 02.8	+0.5
OSI	Osito Audit: C	4.22	323	P	Pn	13 42 03.5	+0.3
	baz=142,SNR=6.8						
OSI				S	Sn	13 42 53.3	+0.7
	baz=142						
OSI	Osito Audit: C	4.22	323	ePn	Pn	13 42 03.9	+0.7
STTC	Scott Ranch	4.23	327	ePg	Pg	13 42 17.2	-2.7
TUC	Tucson	4.29	75	P	Pn	13 42 02.1	-2.1
	baz=257						
TUC	Tucson	4.29	75	ePn	Pn	13 42 01.5	-2.8
TUC				eSn	Sn	13 42 55.8	+1.4
HSIG		4.66	117	ePn	Pn	13 42 09.0	-0.2
HSIG				ePg	Pg	13 42 23.6	-4.4
ARVC	Arvin	4.68	326	P	Pn	13 42 10.2	+0.6
	baz=144,SNR=14						
X16A	Lo Mia Camp, P	4.76	47	ePn	Pn	13 42 09.9	-0.8
SRIG	Santa Rosalia	4.93	142	ePn	Pn	13 42 14.6	+1.7
ISA	Isabella, Lake	4.98	333	P	Pn	13 42 14.9	+1.2
	baz=151,SNR=5.5						
ISA	Isabella, Lake	4.98	333	ePn	Pn	13 42 16.1	+2.4
PKM	Mcpherson Peak	5.02	317	P	Pn	13 42 14.8	+0.4
	baz=135						
DAC	Darwin (Calif)	5.26	343	ePn	Pn	13 42 18.4	+0.7
DAC				eSn	Sn	13 43 20.6	+2.2
WUAZ	Wupatki	5.57	39	P	Pn	13 42 22.0	+0.1
	baz=221,SNR=59						
WUAZ	Wupatki	5.57	39	ePn	Pn	13 42 22.6	+0.7
WUAZ				eSn	Sn	13 43 27.1	+1.1
GCAZ	Grand Canyon	5.62	31	ePn	Pb	13 42 29.4	-7.7
TPNV	Topopah Spring	5.70	355	P	Pn	13 42 23.7	0.0
	baz=175,SNR=38						
TPNV	Topopah Spring	5.70	355	ePn	Pn	13 42 25.4	+1.7
X18A	Snowflake	5.82	54	ePn	Pn	13 42 24.9	-0.4
GRAC	Grapevine Rang	5.90	347	P	Pn	13 42 27.2	+0.9
	baz=165,SNR=33						
LCMT	Little Creek M	6.09	19	ePn	Pn	13 42 30.1	+1.2
KNB	Kanab	6.22	22	ePn	Pn	13 42 32.1	+1.3
W18A	Petrified Fore	6.29	51	P	Pn	13 42 31.9	0.0
	baz=233,SNR=31						
W18A	Petrified Fore	6.29	51	ePn	Pn	13 42 32.2	+0.3
W18A				eSn	Sn	13 43 46.2	+2.3
EKU	East Kanab	6.38	24	ePn	Pn	13 42 34.5	+1.5
PKCU	Pink Cliffs	6.77	23	ePn	Pn	13 42 41.9	+3.4
121A	Cookes Peak, D	6.83	77	P	Pn	13 42 38.6	-0.5
	baz=261,SNR=16						
121A	Cookes Peak, D	6.83	77	ePn	Pn	13 42 38.3	-0.9
	comp=N,42nm,0.9s						
R11A	Troy Canyon, C	7.08	1	P	Pn	13 42 43.6	+1.0
	baz=180,SNR=12						
R11A	Troy Canyon, C	7.08	1	ePn	Pn	13 42 44.4	+1.8
BTU	Barney Top	7.21	25	ePn	Pn	13 42 47.2	+2.7
MTPU	Mount Pierson	7.36	22	ePn	Pn	13 42 52.2	+5.6
NV01	Mina Array Sit	7.48	344	ePn	Pn	13 42 54.0	+5.8
NVAR	Mina Array Bea	7.48	344	Pn	Pn	13 42 49.1	+1.0
	comp=N,0.4nm,0.3s,baz=166,slow=14,SNR=6.6						
NVAR				Lg	Lg	13 44 54.0	
	comp=N,0.3nm,0.3s,baz=146,slow=31,SNR=2.1						
MSU	Marysvale	7.79	21	ePn	Pn	13 42 57.6	+5.2

Code	Station Name	Δ°	AZ°	Op	ISC	Time	Res
CMB	Columbia Colle	7.80	331	ePn	Pn	13 42 56.2	+3.9
MMU	Miners Mountai	7.81	26	ePn	Pn	13 42 54.9	+2.2
WAKR	Walker	7.87	338	ePn	Pn	13 43 00.6	+7.1
BNM	Barren Site	8.15	67	ePn	Pn	13 42 57.1	-0.3
MVCO	Mesa Verde	8.40	43	P	Pn	13 43 01.6	+0.8
	baz=227,SNR=28						
MVCO	Mesa Verde	8.40	43	ePn	Pn	13 43 01.6	+0.8
ANMO	Albuquerque	8.56	62	Pn	Pn	13 43 00.9	-2.0
	comp=N,0.2nm,0.3s,baz=250,slow=12,SNR=3.1						
ANMO				Lg	Lg	13 45 27.1	
	comp=N,0.3nm,0.3s,baz=16,slow=20,SNR=2.6						
ANMO	Albuquerque	8.56	62	ePn	Pn	13 43 02.5	-0.5
ANMO				Lg	Lg	13 45 27.1	
PV05	Paradox Valley	8.70	37	ePn	Pn	13 43 04.2	-0.6
MNTX	Cornudas Mount	8.80	84	P	Pn	13 43 06.1	0.0
	baz=270,SNR=9.1						
MNTX	Cornudas Mount	8.80	84	ePn	Pn	13 43 06.5	+0.4
TMUT	Trail Mountain	8.82	23	ePn	Pn	13 43 09.2	+2.7
SRU	San Rafael Swe	8.90	27	ePn	Pn	13 43 09.5	+2.0
PV10	Paradox Valley	8.96	36	ePn	Pn	13 43 10.0	+1.6
PV09	Paradox Valley	9.01	35	ePn	Pn	13 43 11.5	+2.4
PV01	Paradox Valley	9.02	38	ePn	Pn	13 43 11.9	+2.7
PV04	Paradox Valley	9.04	36	ePn	Pn	13 43 12.7	+3.3
P17A	Butcher Ranch,	9.14	25	ePn	Pn	13 43 14.1	+3.3
NLU	North Lily Min	9.16	18	ePn	Pn	13 43 16.4	+5.2
DUG	Dugway, Tooele	9.22	14	ePn	Pn	13 43 18.4	+6.5
P18A	Preston Nutter	9.46	26	ePn	Pn	13 43 16.9	+1.6
ELK	Elko	9.48	2	ePn	Pn	13 43 19.5	+4.0
S22A	4UR Ranch, Cre	9.76	46	ePn	Pn	13 43 21.1	+1.7
HOPS	Hopland Field	9.81	324	ePn	Pn	13 43 26.2	+6.3
BGU	Big Grassy Mou	9.89	12	ePn	Pn	13 43 23.1	+2.0
JLU	Jordanelle	9.94	19	ePn	Pn	13 43 27.5	+5.6
TX31	Lajitas Ar. Si	10.55	97	ePn	Pn	13 43 28.6	-1.5
TXAR	Lajitas Array	10.55	97	Pn	Pn	13 43 31.2	+1.0
	comp=N,0.3nm,0.3s,baz=274,slow=12,SNR=17						
SDCO	Great Sand Dun	10.60	50	ePn	Pn	13 43 30.4	-0.5
	comp=N,4.1nm,0.8s						
SMCO	Snowmass	10.63	40	ePn	Pn	13 43 33.4	+1.9
O20A	White River Ci	10.72	32	ePn	Pn	13 43 34.5	+2.0
HVU	Hansel Valley	10.76	12	ePn	Pn	13 43 35.5	+2.4
HWUT	Hardware Ranch	10.85	17	ePn	Pn	13 43 39.6	+5.4
MSTX	Muleshoe	11.21	73	ePn	Pn	13 43 44.9	+5.7
MOD	Modoc Plateau	11.26	342	ePn	Pn	13 43 45.9	+6.0
WVOR	Wild Horse Val	11.41	349	ePn	Pn	13 43 41.3	-0.5
YBH	Yreka Blue Hor	11.89	334	Pn	Pn	13 43 53.9	+5.5
	comp=N,0.1nm,0.3s,baz=194,slow=7.0,SNR=6.4						
YBH	Yreka Blue Hor	11.89	334	ePn	Pn	13 43 54.8	+6.4
MFID	Camas Ranch	12.14	359	ePn	Pn	13 43 57.3	+5.4
K05A	Summer Lake	12.19	341	ePn	Pn	13 43 59.8	+7.3
HLID	Hailey	12.33	4	ePn	Pn	13 43 59.6	+5.1
BW06	Boulder Array	12.48	21	ePn	Pn	13 43 59.2	+2.5
PD31	Pinedale Array	12.48	21	ePn	Pn	13 43 59.7	+3.1
PDAR	Pinedale Array	12.48	21	Pn	Pn	13 44 00.0	+3.3
	comp=N,0.2nm,0.3s,baz=192,slow=13,SNR=10.0						
REDW	Red Top Meadow	12.68	16	ePn	Pn	13 43 59.8	+0.4
	comp=N,4.5nm,0.9s						
ABTX	Abilene, Hawle	13.69	80	ePn	Pn	13 44 14.2	+1.3
H04A	Detroit Lake	14.35	341	eP	P	13 44 27.1	-2.0
WMOK	Wichita Mounta	14.60	72	ePn	P	13 44 28.2	-3.6
BOZ	Bozeman (W)	14.71	11	eP	P	13 44 34.6	+1.4
	comp=N,4.7nm,1.0s						
RLMT	Red Lodge	14.73	18	eP	P	13 44 36.7	+3.2
WHTX	Lake Whitney,	15.54	83	ePn	P	13 44 45.2	+2.9
	comp=N,15nm,1.0s						
MSO	Missoula	15.61	4	ePn	Pn	13 44 40.1	+1.1
CHMT	Chamberlain Mo	15.75	6	ePn	P	13 44 43.6	-1.2
JTMT	Jette	16.51	3	ePn	P	13 44 52.3	-0.8
BSMT	Bassoo Peak	16.59	2	ePn	P	13 44 52.8	-1.3
YBMT	Yellow Bay	16.64	4	ePn	P	13 44 52.6	-2.0
NEW	Newport	17.03	357	Pn	P	13 45 00.3	+1.5
	comp=N,0.3nm,0.3s,baz=178,slow=12,SNR=12						
NEW	Newport	17.03	357	ePn	P	13 44 59.9	+1.1
	comp=N,9.3nm,0.8s						
LAO	LASA Array	17.05	23	ePn	P	13 44 57.3	-1.8
	comp=N,21nm,1.2s						
B08A	Colville Reser	17.31	352	ePn	P	13 45 04.2	+2.3
	comp=N,12nm,1.0s						
WALA	Waterton Lakes	17.84	4	ePn	P	13 45 11.2	+3.4
	comp=N,8.0nm,0.9s						
MIAR	Mount Ida	18.84	74	eP	Pn	13 45 21.9	+2.6
	comp=N,23nm,1.3s						
ULM	Lac du Bonnet	24.06	32	P	P	13 46 15.1	+1.1
	comp=N,2.9nm,0.7s,baz=241,slow=12,SNR=5.7						
ULM	Lac du Bonnet	24.06	32	eP	P	13 46 15.4	+1.4
	comp=N,23nm,1.5s						
YKA	Yellowknife Ar	31.26	1	P	P	13 47 19.7	+1.3
	comp=N,0.4nm,0.6s,baz=182,slow=8.1,SNR=11						
INK	Inuvik	38.52	349	P	P	13 48 22.9	+1.9
	comp=N,3.8nm,1.0s,baz=144,slow=6.6,SNR=11						
IL1	Eielson Array	38.71	339	eP	P	13 48 21.6	-1.0
ILAR	Eielson Array	38.71	339	P	P	13 48 25.2	+2.7
	comp=N,1.9nm,0.8s,baz=150,slow=7.3,SNR=23						
HHC	Hu-ho-hao-te	96.01	326	eP	P	13 54 25.4	-1.1
HHC				pmax	pmax		
	comp=Z,24nm,1.3s						
HHC				pmax	pmax		
	comp=Z,400nm,7.2s						
WMQ	Urumqi	102.29	343	eP	Pdif	13 54 54.2	-0.3
WMQ				pmax	pmax		
	comp=Z,4.0nm,0.6s						
CD2	Chengdu	107.74	325	Pdif	Pdif	13 55 17.2	-1.8

*IDC **07** 13:46:22.9±0.6, 36.°59N×141.°16E, h0km, mb3.8/16, mb1 3.9/19, mb1mx3.9/45, mbtmp3.8/19, ML3.2/3, Error ellipse: s-maj=18.2km s-min=14.1km az=98.0*

*ISCJB **07** 13:46:24.3±1.0, 36.°58N±0.°03×141.°23E±0.°06, h22km±6km, mb3.8/18, Error ellipse: s-maj=8.0km s-min=4.8km az=19.5*

*JMA **07** 13:46:25.4±0.1, 36.°63N×141.°16E, h34km±1km, M3.9*

JMA Felt II J1.

*NEIC **07** 13:46:28.1±0.3, 36.°56N×141.°08E, h35km, mb4.5/2, Error ellipse: s-maj=7.3km s-min=6.0km az=129.0*

ISC 07 13:46:24.8±1.5**, 36.°62N**±0.°04×**141.°12E**±0.°05**, h12**km±9km**, n42,** σ1.°01/47**, mb3.9**/18**, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
JHO	Hitachi	0.45	269	P	Pb	13 46 35.2	+0.6
JHO				S	Sb	13 46 42.2	+0.9
ONAJ	Iwakimizuishiy	0.55	332	P	Pb	13 46 36.4	0.0
ONAJ				S	Sb	13 46 44.6	+0.3
JFK	Kawauchi	0.77	345	P	Pg	13 46 39.5	-0.3
JFK				S	Sg	13 46 50.4	+0.5
JYT	Yasato	0.84	243	P	Pb	13 46 41.5	+0.1
JYT				S	Sb	13 46 53.2	+0.5
JSB	Shiboa	1.03	290	P	Pn	13 46 45.1	0.0
JSB				S	Sn	13 46 59.5	+0.1
JFT	Otama	1.10	325	P	Pg	13 46 45.6	-0.3
JFT				S	Sg	13 47 00.1	-0.1
JMM	Marumori	1.27	348	P	Pn	13 46 47.3	-1.1
JAG	Ashikaga	1.36	262	P	Pn	13 46 49.1	-0.5
JAG				S	Sg	13 47 07.9	-0.6
JFY	Yanaizu	1.38	305	P	Pb	13 46 50.5	-0.1
MJAR	Matsushiro Arr	2.35	269	Pn	Pn	13 47 04.6	+1.4
	8.1nm,0.3s,baz=95,slow=9.2,SNR=50						
MAJO	Matsushiro	2.35	269	ePn	Pn	13 47 04.5	+1.3
MAJO				eSn	Sn	13 47 27.5	-4.5
MAT	Matsushiro	2.35	269	P	Pn	13 47 04.5	+1.2
MAT				S	Sn	13 47 33.7	+1.7
JHJ2	Mitsune	3.66	197	ePn	Pn	13 47 20.8	-0.5
JHJ2				eSn	Sn	13 48 02.2	-2.2
JHJ	Hachijo jima 2	3.66	198	Pn	Pn	13 47 22.1	+0.8
	14nm,0.3s,baz=138,slow=22,SNR=9.1						
JHJ				Sn	Sn	13 48 04.9	+0.5
	28nm,0.3s,baz=244,slow=23,SNR=4.4						
KSRS	Korea Array	10.59	278	Pn	Pn	13 48 56.2	-0.1
	0.1nm,0.3s,baz=92,slow=14,SNR=2.9						
KSAR	Wonju Array Be	10.62	278	Pn	Pn	13 48 56.2	-0.5
JOW	Kunigami	14.64	232	ePn	Pn	13 49 51.2	-0.6
MA2	Magadan	23.81	12	P	P	13 51 37.2	-0.1
	1.1nm,0.4s,baz=212,slow=9.2,SNR=4.0						
SONM	Songino Array	27.83	305	P	P	13 52 15.0	+0.9
	0.4nm,0.7s,baz=100,slow=10,SNR=3.2						
H11N2	WAKE ISLAND Hy	28.14	120	T	T	14 21 41.1	
	baz=313,slow=75,SNR=137						
H11N1	WAKE ISLAND Hy	28.15	120	T	T	14 21 41.7	
	baz=313,slow=75,SNR=148						
H11N3	WAKE ISLAND Hy	28.16	120	T	T	14 21 42.5	
	baz=313,slow=75,SNR=177						
H11S1	WAKE ISLAND Hy	28.84	122	T	T	14 22 34.6	
	baz=314,slow=76,SNR=279						
H11S3	WAKE ISLAND Hy	28.84	122	T	T	14 22 34.3	
	baz=314,slow=76,SNR=231						
H11S2	WAKE ISLAND Hy	28.85	122	T	T	14 22 35.8	
	baz=314,slow=76,SNR=221						
ZALV	Zalesovo Beam	42.02	313	P	P	13 54 15.5	-0.4
	0.6nm,0.5s,baz=100,slow=7.5,SNR=3.4						
MKAR	Makanchi Array	44.14	302	P	P	13 54 33.5	+0.3
	0.3nm,0.4s,baz=83,slow=12,SNR=6.3						
KURK	Kurchatov	46.01	308	eP	P	13 54 47.5	-0.4
	9.4nm,0.8s						
ILAR	Eielson Array	49.97	32	P	P	13 55 18.8	+0.4
	0.5nm,0.8s,baz=275,slow=6.7,SNR=4.9						
INK	Inuvik	54.86	27	P	P	13 55 55.2	+0.6
	1.6nm,1.1s,baz=298,slow=1.8,SNR=3.1						
WRAB	Tennant Creek	56.61	188	eP	P	13 56 07.2	-0.5
	1.6nm,0.6s						
WRA	Warramunga Arr	56.62	188	P	P	13 56 07.1	-0.6
	2.3nm,0.6s,baz=4.6,slow=7.3,SNR=30						
ASAR	Alice Springs	60.35	188	P	P	13 56 32.9	-0.8
	1.5nm,0.8s,baz=12,slow=7.7,SNR=15						
YKA	Yellowknife Ar	64.28	30	P	P	13 57 00.1	+0.5
	0.2nm,0.6s,baz=304,slow=6.7,SNR=4.0						
STKA	Stephens Creek	68.14	180	P	P	13 57 24.6	0.0
	1.6nm,0.7s,baz=15,slow=8.0,SNR=4.8						
FINES	FINESS Array B	69.07	332	P	P	13 57 30.1	-0.1
	0.9nm,0.7s,baz=41,slow=11,SNR=3.2						
NOA	NORSAR Array B	74.48	337	P	P	13 58 02.2	-0.6
	1.2nm,0.8s,baz=43,slow=5.4,SNR=3.6						
AKASG	Malin Array Be	74.48	322	P	P	13 58 02.3	-0.6
	1.5nm,0.5s,baz=47,slow=5.6,SNR=5.7						
PDAR	Pinedale Array	78.12	45	P	P	13 58 24.4	+0.3
	0.4nm,0.6s,baz=292,slow=5.7,SNR=3.5						
BRTR	Keskin Array B	78.95	311	P	P	13 58 29.4	+0.9
	0.4nm,0.4s,baz=75,slow=6.7,SNR=3.1						
TXAR	Lajitas Array	90.56	52	P	P	13 59 27.2	-0.1
	0.2nm,0.8s,baz=262,slow=4.7,SNR=4.2						
LPAZ	La Paz	147.10	60	PKPbc	PKPbc	14 06 09.1	+0.2
	1.3nm,0.7s,baz=169,slow=2.5,SNR=6.1						

*IDC **07** 13:47:38.9±0.9, 36.°62N×143.°83E, h0km, mb3.8/7, mb1 4.0/9, mb1mx3.7/45, mbtmp3.8/9, Error ellipse: s-maj=26.9km s-min=20.0km az=122.0*

*ISCJB **07** 13:47:41.7±0.7, 36.°91N±0.°06×143.°43E±0.°06, h33km, mb3.8/7, Error ellipse: s-maj=8.5km s-min=6.3km az=29.9*

*JMA **07** 13:47:42.1±0.4, 36.°97N×143.°43E, h43km, M4.1*

ISC 07 13:47:43.6±0.9**, 36.°85N**±0.°06×**143.°41E**±0.°08**, h35**km**, n19,** σ1.°54/24**, mb3.9**/7**, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
JFK	Kawauchi	2.09	285	P	Pn	13 48 15.5	-0.8
JFK				eS	Sn	13 48 40.3	-0.8
ONAJ	Iwakimizuishiy	2.11	278	P	Pn	13 48 16.6	+0.1
ONAJ				eS	Sn	13 48 40.6	-0.9
JIO	Ouri	2.29	315	S	Sn	13 48 43.3	-2.6
JHO	Hitachi	2.30	265	P	Pn	13 48 18.7	-0.3
JMM	Marumori	2.32	297	P	Pn	13 48 18.9	-0.4
JMM				eS	Sn	13 48 45.7	-0.9
JFT	Otama	2.55	286	P	Pn	13 48 22.7	+0.2
JFT				S	Sn	13 48 52.5	+0.3
JMK	Ichinoseki	2.72	321	S	Sn	13 48 53.8	-2.8
JOM	Ohasama	3.11	328	S	Sn	13 49 03.0	-3.1
JAG	Ashikaga	3.21	264	P	Pn	13 48 31.9	+0.3
MJAR	Matsushiro Arr	4.19	267	Pn	Pn	13 48 46.2	+1.1
	baz=88,slow=15,SNR=1.8						
MAT	Matsushiro	4.19	267	P	Pn	13 48 46.3	+1.2
MAT				eS	Sn	13 49 30.9	-2.0
JHJ	Hachijo jima 2	4.77	220	Pn	Pn	13 48 52.1	-0.9
	baz=90,slow=20,SNR=2.6						
JHJ				Sn	Sn	13 49 44.5	-2.5
	23nm,0.3s,baz=75,slow=20,SNR=4.9						
SONM	Songino Array	29.22	304	P	P	13 53 44.9	+2.9
	1.0nm,0.9s,baz=108,slow=9.4,SNR=3.6						
MKAR	Makanchi Array	45.57	303	P	P	13 56 05.4	+5.3
	0.3nm,0.7s,baz=91,slow=7.2,SNR=2.6						
ILAR	Eielson Array	48.79	32	P	P	13 56 24.8	-0.1
	0.9nm,0.8s,baz=257,slow=6.1,SNR=7.3						
INK	Inuvik	53.82	27	P	P	13 57 02.5	+0.1
	1.0nm,0.7s,baz=304,slow=7.7,SNR=5.8						
WRA	Warramunga Arr	57.13	190	P	P	13 57 26.2	-0.6
	1.3nm,0.8s,baz=8.0,slow=7.6,SNR=4.8						
ASAR	Alice Springs	60.85	190	P	P	13 57 51.9	-0.7
	0.7nm,0.9s,baz=3.4,slow=7.1,SNR=3.7						
TXAR	Lajitas Array	88.95	54	P	P	14 00 35.6	+0.6
	0.6nm,0.7s,baz=288,slow=2.7,SNR=8.2						

*ISCJB **07** 13:58:47.9±0.6, 13.°2N±0.°1×87.°6W±0.°1, h202km±5km, mb2.9/2, Error ellipse: s-maj=27.1km s-min=4.9km az=37.3*

*IDC **07** 13:58:47.1±3.7, 13.°25N×87.°74W, h179km±36km, mb2.9/2, mb1 3.4/4, mb1mx3.0/41, mbtmp3.8/4, Error ellipse: s-maj=66.4km s-min=26.1km az=70.0*

*CASC **07** 13:58:48.7±1.9, 12.°79N×87.°85W, h192km±11km, MD4.1, ML3.3*

ISC 07 13:58:48.8±0.9**, 13.°2N**±0.°2×**87.°6W**±0.°1**, h195**km±6km**, n28,** σ1.°07/38**, Honduras**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
CSGN	Cosiguina Volc	0.18	167	eP	Pn	13 59 14.5	-0.2
CRIN	San Cristobal	0.70	130	eP	Pn	13 59 16.8	+0.4
CRIN				eS	Sn	13 59 39.1	+1.5
VSM	San Miguel	0.71	293	eP	Pn	13 59 16.6	-0.1
LCY	Lacayo	0.73	292	eP	Pn	13 59 16.3	-0.2
PACA	Pacayal	0.77	294	eP	Pn	13 59 16.4	-0.4
PACA				eS	Sn	13 59 40.1	+1.6
TEL3	Telica 3	0.94	128	eP	Pn	13 59 17.8	+0.1
TECA	Tecapa	0.94	291	eP	Pn	13 59 17.6	-0.3
TECA				eS	Sn	13 59 41.7	+1.3
MOMN	Momotombo	1.27	125	eP	Pn	13 59 20.2	0.0
SNVI	San Vicente	1.29	291	eP	Pn	13 59 19.5	-0.9
SNVI				eS	Sn	13 59 44.4	-0.5
COPN	Copaltepe	1.38	134	eP	Pn	13 59 19.8	-1.3
COPN				eS	Sn	13 59 45.7	-0.4
COPN				AML	AML	13 59 47.8	
	comp=Z,251nm,0.3s						
LFRS	El Faro	1.50	288	eP	Pn	13 59 21.8	-0.4
LFRS				eS	Sn	13 59 48.4	+0.4
LBRS	Las Brisas	1.52	293	eP	Pn	13 59 22.5	+0.2
LFU	La Fuente	1.59	292	eP	Pn	13 59 22.7	-0.3
SNJE	San Jose	2.08	290	eP	Pn	13 59 27.4	-0.6
SBLS	San Blas	2.08	289	eP	Pn	13 59 27.9	-0.2
MONT	Ecomontaæa	2.11	290	eP	Pn	13 59 28.6	+0.2
RTR	El Retiro	2.12	291	eP	Pn	13 59 28.3	-0.2
RBDL	Robledal	2.24	295	eP	Pn	13 59 30.1	+0.3
JTS	JuntasAbangare	3.85	137	P	Pn	13 59 48.5	-0.1
	comp=Z,6.1nm,0.3s,baz=291,slow=17,SNR=15						
JTS				S	Sn	14 00 32.1	-3.5
	comp=Z,11nm,0.3s,baz=320,slow=21,SNR=13						
JCR	Jicaral	4.09	143	eP	Pn	13 59 53.3	+1.6
JCR				eS	Sn	14 00 39.5	-1.5
URSC	Urasca	4.99	131	eP	Pn	14 00 06.6	+3.4
URSC				eS	Sn	14 01 03.2	+1.5
QCR	Quepos	5.01	137	eP	Pn	14 00 04.3	+1.0
QCR				eS	Sn	14 01 00.7	-1.2
BUS	Buena Vista	5.19	133	eP	Pn	14 00 08.2	+2.1
BUS				eS	Sn	14 01 06.5	-0.4
SDV	Santo Domingo	17.18	103	P	Pn	14 02 37.5	-0.4
	comp=Z,0.8nm,0.3s,baz=315,slow=9.6,SNR=4.7						
YKA	Yellowknife Ar	52.90	345	P	P	14 07 43.4	-1.1
	comp=Z,0.1nm,0.6s,baz=140,slow=7.8,SNR=4.6						
PLCA	Paso Flores	55.89	164	P	P	14 08 07.1	+0.7
	comp=Z,1.3nm,0.9s,baz=1.7,slow=7.1,SNR=3.3						
WRA	Warramunga Arr	139.32	255	PKP	PKPdf	14 17 54.1	+0.5
	comp=Z,0.5nm,0.5s,baz=86,slow=2.3,SNR=8.5						
ASAR	Alice Springs	139.39	249	PKP	PKPdf	14 17 54.0	+0.4
	comp=Z,0.4nm,0.6s,baz=100,slow=1.7,SNR=9.9						

*IDC **07** 14:01:49.9±2.5, 36.°38N×142.°08E, h0km, mb3.4/3, mb1 3.6/4, mb1mx3.3/56, mbtmp3.4/4, ML3.3/1, Error ellipse: s-maj=60.1km s-min=25.9km az=47.0*

*JMA **07** 14:01:50.6±0.3, 37.°02N×141.°95E, h29km±3km, M3.3*

ISC 07 14:01:48.7±1.6**, 36.°90N**±0.°07×**141.°92E**±0.°09**, h19**km**, n12,** σ1.°28/14**, mb3.5**/3**, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
ONAJ	Iwakimizuishiy	0.92	283	P	Pg	14 02 07.3	+0.7
JFK	Kawauchi	0.95	299	P	Pg	14 02 07.3	0.0
JFK				eS	Sb	14 02 19.7	+0.8
JHO	Hitachi	1.12	255	P	Pg	14 02 10.7	+0.3
JMM	Marumori	1.31	317	P	Pb	14 02 12.4	-0.3
JFT	Otama	1.40	296	P	Pg	14 02 15.0	-0.8
JIO	Ouri	1.61	344	P	Pb	14 02 16.4	-1.4
JOU	Okura	1.77	326	P	Pb	14 02 19.8	-0.7
MJAR	Matsushiro Arr	3.00	264	Pn	Pb	14 02 39.6	-1.9
	3.4nm,0.3s,baz=90,slow=15,SNR=16						
MJAR				Sn	Sb	14 03 19.4	+1.6
	2.4nm,0.3s,baz=78,slow=17,SNR=5.1						
MAT	Matsushiro	3.00	264	P	Pb	14 02 39.2	-2.3
MAT				S	Sb	14 03 18.8	+1.0
SONM	Songino Array	28.19	304	P	P	14 07 48.0	+7.9
	0.2nm,0.4s,baz=97,slow=10,SNR=2.2						
WRA	Warramunga Arr	56.99	189	P	P	14 11 33.6	+0.5
	0.5nm,0.9s,baz=6.5,slow=7.1,SNR=4.7						
ASAR	Alice Springs	60.72	188	P	P	14 11 59.8	+0.8
	0.5nm,1.1s,baz=7.8,slow=7.5,SNR=2.8						

IDC 07 14:03:54.6±590.0**, 47.°34N**×**48.°78E, h0**km**, Error ellipse: s-maj=218.6km s-min=133.9km az=48.0, Western Kazakhstan**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
I31KZ	AKTYUBINSK INF	6.83	60	i		14 46 40.0	
	baz=248,slow=323,SNR=5.5						
I43RU	DUBNA INFRASON	11.77	327	i		15 16 10.0	
	baz=137,slow=320,SNR=1.3						
I46RU	ZALESOVO INFRA	23.59	60	i		16 28 50.0	
	baz=264,slow=328,SNR=1.6						

IDC 07 14:07:16.2±1.8**, 2.°26N**×**125.°54E, h0**km**, mb3.5**/4**, mb1 3.7**/4**, mb1mx3.3**/55**, mbtmp3.5**/4**, Error ellipse: s-maj=170.8km s-min=25.2km az=64.0, Talaud Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
WRA	Warramunga Arr	23.69	159	P	P	14 12 29.5	-0.4
	0.8nm,0.4s,baz=337,slow=11,SNR=14						
ASAR	Alice Springs	27.02	163	P	P	14 13 01.1	+0.8
	0.1nm,0.3s,baz=343,slow=7.7,SNR=9.6						
STKA	Stephens Creek	37.21	157	P	P	14 14 29.1	-0.4
	0.9nm,0.6s,baz=333,slow=9.0,SNR=2.9						
MKAR	Makanchi Array	58.10	326	P	P	14 17 11.2	-0.3
	0.2nm,0.4s,baz=126,slow=8.8,SNR=4.1						

*ISCJB **07** 14:14:51.2±1.4, 38.°32N±0.°05×142.°3E±0.°1, h40km±18km, mb3.6/5, Error ellipse: s-maj=16.6km s-min=8.5km az=10.2*

*IDC **07** 14:14:51.1±1.6, 37.°79N×142.°91E, h0km, mb3.6/5, mb1 3.6/7, mb1mx3.4/59, mbtmp3.6/7, ML3.2/2, Error ellipse: s-maj=37.7km s-min=21.3km az=75.0*

*JMA **07** 14:14:51.8±0.2, 38.°38N×142.°28E, h38km±3km, M3.7*

ISC 07 14:14:51.1±2.1**, 38.°34N**±0.°05×**142.°26E**±0.°09**, h25**km±15km**, n14,** σ0.°86/18**, mb3.7**/5**, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
JIO	Ouri	0.73	280	P	Pn	14 15 05.8	+0.1
JIO				S	Sn	14 15 15.3	-0.7
OFUJ	Ofunato	0.87	328	P	Pb	14 15 07.2	-0.4
JMK	Ichinoseki	1.02	307	P	Pb	14 15 09.9	-0.2
JMK				eS	Sb	14 15 22.7	-0.4
JMM	Marumori	1.25	248	P	Pn	14 15 13.3	+0.4
JMM				eS	Sn	14 15 28.7	-0.2
JOU	Okura	1.25	272	P	Pb	14 15 14.0	-0.1
JOU				S	Sb	14 15 30.0	+0.1
JOM	Ohasama	1.36	327	P	Pn	14 15 14.8	+0.3
JOM				S	Sn	14 15 31.4	-0.4
JFK	Kawauchi	1.46	229	P	Pn	14 15 15.9	0.0
JFK				S	Sn	14 15 33.2	-1.1
MJAR	Matsushiro Arr	3.69	242	Pn	Pb	14 15 51.8	-3.8
	0.8nm,0.3s,baz=69,slow=13,SNR=6.1						
MJAR				Sn	Sb	14 16 41.3	+1.4
	1.2nm,0.3s,baz=94,slow=18,SNR=4.6						
JHJ	Hachijo jima 2	5.58	202	Pn	Pn	14 16 13.0	+0.4
	4.2nm,0.3s,baz=121,slow=22,SNR=6.0						
JHJ				Sn	Sn	14 17 13.6	-2.3
	5.1nm,0.3s,baz=233,slow=20,SNR=3.7						
MKAR	Makanchi Array	44.01	301	P	P	14 23 05.5	+9.1
	0.1nm,0.4s,baz=81,slow=8.9,SNR=3.6						
KURBB	Kurchatov Arra	45.74	307	P	P	14 23 19.9	+10
	0.8nm,0.6s,baz=80,slow=8.3,SNR=4.5						
BVAR	Borovoye Array	50.20	312	P	P	14 23 54.1	+10
	0.4nm,0.7s,baz=45,slow=4.9,SNR=2.6						
WRA	Warramunga Arr	58.45	189	P	P	14 24 45.2	+0.5
	0.9nm,0.7s,baz=6.3,slow=7.2,SNR=9.9						
ASAR	Alice Springs	62.17	189	P	P	14 25 10.9	+0.7
	0.4nm,0.7s,baz=5.9,slow=5.0,SNR=9.6						

*CSEM **07** 14:17:25.8, 39.°68N×29.°46E, h8km, MD2.7, Suspected Mining explosion.*

DDA 07 14:17:25.8, 39.°68N×29.°46E, h8km**, Md2.7, Suspected Mining explosion., Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
ULDT	Uludag	0.52	332	i P	Pg	14 17 36.3	+0.4
ULDT				i S	Sb	14 17 45.3	+0.3
ULDT	Uludag	0.52	332	P	Pg	14 17 36.3	+0.4
ULDT				S	Sb	14 17 45.3	+0.3
GDZ	Gediz	0.59	178	i P	Pg	14 17 36.9	-0.4
GDZ				i S	Sb	14 17 46.1	-0.9
GDZ	Gediz	0.59	178	P	Pg	14 17 36.9	-0.4
GDZ				S	Sb	14 17 46.2	-0.9
IGD	Bursa	0.61	341	i P	Pg	14 17 37.1	-0.5
IGD				i S	Sg	14 17 46.4	+0.8
DURS	Dursunbey	0.76	264	i P	Pg	14 17 40.3	-0.2
DURS				i S	Sb	14 17 52.1	+0.2
DURS	Dursunbey	0.76	264	P	Pg	14 17 40.3	-0.1
DURS				S	Sb	14 17 52.1	+0.2
BORA	Eskisehir	0.79	75	i P	Pg	14 17 40.9	-0.1
BORA				i S	Sb	14 17 53.2	+0.5
BORA	Eskisehir	0.79	75	P	Pg	14 17 40.9	-0.1
BORA				S	Sb	14 17 53.2	+0.4
DEMI	Demirci	0.86	222	i P	Pg	14 17 42.3	+0.1
DEMI				i S	Sn	14 17 58.3	+1.3
DEMI	Demirci	0.86	222	P	Pg	14 17 42.3	0.0
DEMI				S	Sn	14 17 58.3	+1.3
ESKT	Eskisehir	1.09	98	i P	Pg	14 17 46.5	-0.2
SEYT	Eskypehyr	1.09	98	P	Pg	14 17 46.5	-0.2
KHAL	Karahalli	1.31	179	i P	Pg	14 17 51.3	+0.4
KHAL				i S	Sn	14 18 11.6	+3.4
KHAL	Karahalli	1.31	179	P	Pg	14 17 51.3	+0.4
KHAL				S	Sn	14 18 11.6	+3.4
BOLV	Bolvadin	1.51	129	i P	Pn	14 17 53.6	+0.4
BOLV				i S	Sg	14 18 16.0	+1.7
BOLV	Bolvadin	1.51	129	P	Pn	14 17 53.6	+0.4
BOLV				S	Sg	14 18 16.0	+1.7
KAND	Kocaeli-Kandir	1.52	21	i P	Pg	14 17 54.5	-0.3
KAND				i S	Sg	14 18 16.7	+2.2
KAND	Kocaeli-Kandir	1.52	21	P	Pg	14 17 54.5	-0.3
KAND				S	Sg	14 18 16.7	+2.2
AUMIH	MIHALICIK	1.57	83	i P	Pb	14 17 55.3	+0.1
AUMIH				i S	Sg	14 18 18.2	+1.9
AUMIH	MIHALICIK	1.57	83	P	Pb	14 17 55.3	+0.1
AUMIH				S	Sg	14 18 18.2	+1.9
SAHE	Sakarya_HENDEK	1.58	42	i P	Pg	14 17 56.1	0.0
SAHE				i S	Sg	14 18 19.7	+3.0
SAHE	Sakarya_HENDEK	1.58	42	P	Pg	14 17 56.1	0.0
SAHE				S	Sg	14 18 19.7	+3.1
BCAM	Yenicaga	2.29	60	i P	Pg	14 18 09.2	-0.5
BCAM				i S	Sn	14 18 25.5	-7.0
BCAM	Yenicaga	2.29	60	P	Pg	14 18 09.2	-0.5
BCAM				S	Sn	14 18 25.5	-7.0

HEL 07 14:17:31.7±0.5**, 67.°78N**×**19.°97E, h0**km**, ML1.6, Explosion, Sweden**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
KIF	Kilpisjarvi	1.27	14	PG	Pg	14 17 55.3	-0.7
	baz=208						
KIF				SB	Sg	14 18 12.4	0.0
HEF	Hetta	1.52	64	PG	Pn	14 17 59.6	-0.6
	baz=245						

HEF				MSG		14 18 17.3	
	comp=Z,4.6nm,0.2s						
HEF				SG	Sg	14 18 18.1	-2.5
TOF	**Tornio**	**2.42**	**133**	PG	Pb	14 18 14.8	-1.2
TOF				SG	Sb	14 18 47.0	+0.6
SGF	**Sodankyl**	**2.54**	**95**	PG	Pg	14 18 19.3	-0.9
SGF				SG	Sb	14 18 49.5	-0.2
RNF	**Rovaniemi**	**2.63**	**114**	PG	Pb	14 18 18.4	-1.3
RNF				SG	Sb	14 18 51.7	-0.8

NIED ***07*** *14:32:00, 38.2′20N×142.0′00E, h68km, Mw7.1 Best double couple: M0 4.74000×10^19 NP1:φs=20.00000°, δ40.00000°, λ81.00000°. NP2:φs=211.00000°, δ50.00000°, λ97.00000°.*

BJI ***07*** *14:32:38.6, 38.2′20N×141.9′0E, h40km, mb6.6/75, mB6.8/61, Ms7.1/98, Ms7 7.2/70*

NEIC ***07*** *14:32:41.0±0.0, 38.2′5N×142.2′04E, h49km, Moment Tensor Solution. s35 Moment tensor: Scale 10^19Nm; Mrr 5.92; Mθθ -1.85; Mφφ -4.06; Mrθ -1.43; Mθφ -1.22; Mφr -0.44; Best double couple: M0 5.60000×10^19 NP1: φs=213.00000°, δ51.00000°, λ101.00000°. NP2: φs=17.00000°, δ40.00000°, λ77.00000°. Principal axes: T 6.1700, Plg80.0000°, Azm172.0000°; N -1.4800, Plg8.0000°, Azm26.0000°; P -4.7000, Plg5.0000°, Azm295.0000°;*

MOS ***07*** *14:32:42.5±1.0, 38.2′29N×141.7′1E, h49km, mb7.0/102, MS7.3/58 Error ellipse: s-maj=5.8km s-min=3.4km az=105.3 Broadband fault plane solution: P waves. M0 5.40000×10^19 NP1:φs=216.00000°, δ61.00000°, λ118.00000°. NP2:φs=349.00000°, δ39.00000°, λ50.00000°. Principal axes: T Plg63.0000°, Azm173.0000°; N Plg24.0000°, Azm22.0000°; P Plg12.0000°, Azm286.0000°;*

MOS Fault plane solution: P-wave C186, D37 . Felt (II) at Yuzhno-Kuril'sk.

NEIC ***07*** *14:32:43.3±0.1, 38.2′28N×141.5′9E, h42km, mb6.9/109, ME7.1, MS7.0/152, MW7.1, MW7.1, MW7.1 Error ellipse: s-maj=3.0km s-min=2.2km az=140.0, Moment Tensor Solution. s11 Moment tensor: Scale 10^19Nm; Mrr 5.97; Mθθ -2.39; Mφφ -3.58; Mrθ -0.32; Mθφ -0.96; Mφr -1.43; Best double couple: M0 5.50000×10^19 NP1:φs=205.00000°, δ53.00000°, λ87.00000°. NP2:φs=31.00000°, δ37.00000°, λ94.00000°. Principal axes: T 6.1800, Plg82.0000°, Azm99.0000°; N -1.8800, Plg3.0000°, Azm207.0000°; P -4.3100, Plg8.0000°, Azm298.0000°; Broadband fault plane solution: P waves. NP1:φs=25.00000°, δ25.00000°, λ90.00000°. NP2:φs=205.00000°, δ65.00000°, λ90.00000°. Principal axes: T Plg70.0000°, Azm115.0000°; N Plg0.0000°, Azm0.0000°; P Plg20.0000°, Azm295.0000°; Complex earthquake, with at least one event occurring about 2 seconds after the onset observed on broadband displacement seismograms. Depth from synthetics of broadband displacement seismograms. Energy computed from BB mechanism.*

NEIC Two people killed, 132 injured and several roads damaged in the Ishinomaki-Onagawa area. One person died in Yamagata when a power outage interrupted oxygen supply. Felt [VII] at Sendai, [V] at Misawa and [IV] in the Tokyo-Yokohama area. Felt [V] at Sapporo, Hokkaido. Felt widely in central and northern Honshu and in southern Hokkaido. Felt [II] at Yuzhno-Kuril'sk, Kuril Islands. Recorded [6U JMA] in Miyagi, Honshu.

JMA ***07*** *14:32:43.4±0.1, 38.2′20N×141.2′92E, h66km±1km, M7.2*

GCMT ***07*** *14:32:43.3±0.1, 38.2′32N×141.2′85E, h53km, MW7.1/143, Moment Tensor Solution. s140,c387; s143,c682; Duration: 8?8 Moment tensor: Scale 10^19Nm; Mrr 5.99±.02; Mθθ -1.43±.01; Mφφ -4.55±.02; Mrθ -1.11±.03; Mθφ -1.65±.01; Mφr -1.25±.03; Best double couple: M0 5.86500×10^19 NP1:φs=208.00000°, δ53.00000°, λ95.00000°. NP2:φs=19.00000°, δ37.00000°, λ83.00000°. Principal axes: T 6.2480, Plg81.0000°, Azm142.0000°; N -0.7570, Plg4.0000°, Azm25.0000°; P -5.4810, Plg8.0000°, Azm294.0000°; nsta1 refers to body waves, cutoff=50s. nsta2 refers to surface/mantle waves, cutoff=50s.*

ISCJB ***07*** *14:32:44.3±0.2, 38.2′1N±0.0′1×141.6′9E±0.0′1, h63km±2km, mb6.8/381 Error ellipse: s-maj=2.1km s-min=1.6km az=154.4*

IDC ***07*** *14:32:48.1±1.6, 38.2′5N×141.7′1E, h88km±13km, mb6.1/50, mb1 6.2/54, mb1mx6.1/55, mbtmp6.4/54, MS6.9/59, Ms1 6.9/59, ms1mx6.9/63, Error ellipse: s-maj=9.5km s-min=6.3km az=88.0*

NEIC ***07*** *14:33:01.5±0.0, 38.2′46N×141.6′6E, h51km, Moment Tensor Solution. s151 Moment tensor: Scale 10^19Nm; Mrr 6.49; Mθθ -1.64; Mφφ -4.85; Mrθ -1.02; Mθφ -1.76; Mφr -0.36; Best double couple: M0 6.10000×10^19 NP1: φs=210.00000°, δ49.00000°, λ98.00000°. NP2:φs=18.00000°, δ42.00000°, λ81.00000°. Principal axes: T 6.6100, Plg83.0000°, Azm174.0000°; N -0.9400, Plg6.0000°, Azm25.0000°; P -5.6700, Plg4.0000°, Azm294.0000°;*

ISC 07 14:32:44.1±0.3, 38.2′5N±0.0′2×141.7′3E±0.0′2, h53km±2km, h53km; pP-P, n2509, σ1.9 79/2736, mb6.8/439, MS7.0/297, 194C-76D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**0.36**	**304**	⇓P	**Pn**	**14 32 56.0**	**+1.9**
JMK	**Ichinoseki**	**0.81**	**330**	⇓P	**Pn**	**14 33 01.1**	**+1.8**
OFUJ	**Ofunato**	**0.83**	**357**	⇓P	**Pn**	**14 33 00.6**	**+0.9**
JMM	**Marumori**	**0.83**	**243**	⇓P	**Pn**	**14 33 01.0**	**+1.3**
JOU	**Okura**	**0.85**	**278**	⇓P	**Pn**	**14 33 01.9**	**+2.0**
JFK	**Kawauchi**	**1.11**	**218**	⇓P	**Pn**	**14 33 04.4**	**+0.9**
JYK	**Kaneyama**	**1.26**	**302**	⇓P	**Pn**	**14 33 07.4**	**+2.0**
JOM	**Ohasama**	**1.27**	**345**	⇓P	**Pn**	**14 33 06.7**	**+1.2**
JYS	**Shirataka**	**1.31**	**269**	⇓P	**Pn**	**14 33 08.3**	**+2.2**
JFT	**Otama**	**1.32**	**237**	⇓P	**Pn**	**14 33 08.0**	**+1.7**
MIYJ	**Miyakonagasawa**	**1.32**	**3**	⇓P	**Pn**	**14 33 06.7**	**+0.4**
ONAJ	**Iwakimizuishiy**	**1.36**	**213**	⇓P	**Pn**	**14 33 07.6**	**+0.7**
JRG	**Rokugo**	**1.43**	**324**	⇓P	**Pn**	**14 33 09.5**	**+1.8**
JRG				*e*S	**Sn**	**14 33 27.4**	**+2.0**
JYA	**Atsumi**	**1.62**	**283**	⇓P	**Pn**	**14 33 12.4**	**+2.1**
JTH	**Tanohata**	**1.69**	**4**	⇑P	**Pn**	**14 33 11.7**	**+0.5**
JYW	**Yuwa**	**1.75**	**318**	⇓P	**Pn**	**14 33 14.3**	**+2.3**
JFY	**Yanaizu**	**1.81**	**243**	⇓P	**Pn**	**14 33 15.1**	**+2.2**
JTB	**Tobi-shima**	**1.94**	**300**	⇓P	**Pn**	**14 33 16.4**	**+1.7**
JAW	**Awa shima**	**1.96**	**277**	⇓P	**Pn**	**14 33 17.2**	**+2.3**
JAH	**Hinai**	**2.11**	**337**	P	**Pn**	**14 33 18.9**	**+1.9**
JOG2	**Oga 2**	**2.25**	**318**	P	**Pn**	**14 33 20.4**	**+1.6**
JIW	**Iwasaki**	**2.69**	**331**	P	**Pn**	**14 33 26.8**	**+1.9**
JSD	**Sado**	**2.74**	**267**	P	**Pn**	**14 33 27.2**	**+1.6**
I30JP	**ISUMI INFRASON**	**3.15**	**202**	P	**Pn**	**14 33 32.7**	**+1.5**
	baz=27,slow=8.0,SNR=2.8						
I30JP				S	**Sn**	**14 34 15.6**	**+8.0**
	baz=19,slow=206						
I30JP				*i*		14 46 30.0	
	baz=355,slow=339,SNR=0.6						
MJAR	**Matsushiro Arr**	**3.28**	**240**	P	**Pn**	**14 33 37.4**	**+4.4**
	652nm,0.3s,baz=59,slow=11,SNR=1065						
MJAR				S	Sn	14 34 27.4	+17
	2μm,0.3s,baz=57,slow=13,SNR=4.2						
MJAR				P3KPbc		15 11 59.1	
	1.0nm,0.3s,baz=305,slow=2.0,SNR=4.0						
MJAR				P3KP		15 12 32.2	
	0.5nm,0.3s,baz=303,slow=1.7,SNR=4.2						
MAJO	**Matsushiro**	**3.28**	**240**	*d*iP	**Pn**	**14 33 36.2**	**+3.1**
MAJO	**Matsushiro**	**3.28**	**240**	*e*Pn	**Pn**	**14 33 36.9**	**+3.8**
MAJO				*e*Sn	**Sn**	**14 34 07.0**	**-3.9**
MAT	**Matsushiro**	**3.28**	**240**	P	**Pn**	**14 33 35.8**	**+2.7**
MAT				*e*S	Sn	14 34 21.6	+11
JNG	**Nsakai**	**3.43**	**239**	P	**Pn**	**14 33 38.1**	**+3.0**
ERM	**Erimo**	**3.92**	**16**	*de*P	**Pn**	**14 33 40.9**	**-0.8**
ERM	**Erimo**	**3.92**	**16**	*e*Pn	**Pn**	**14 33 41.6**	**-0.1**
ERM				*e*Sn	**Sn**	**14 34 25.9**	**-0.4**
INU	**Inuyama**	**4.76**	**234**	*e*Pg	**Pn**	**14 33 57.7**	**+4.4**
JHJ2	**Mitsune**	**5.36**	**197**	*e*Pn	**Pn**	**14 34 00.8**	**-0.7**
JHJ2				*e*Sn	**Sn**	**14 35 00.2**	**-1.7**
JHJ	**Hachijo jima 2**	**5.36**	**198**	P	**Pn**	**14 34 01.5**	**0.0**
	1μm,0.3s,baz=315,slow=20,SNR=359						
JHJ				S	**Sn**	**14 34 59.8**	**-2.2**
	13μm,0.3s,baz=60,slow=20,SNR=6.0						
JKSM	**Kasumi**	**6.25**	**247**	P	**Pn**	**14 34 18.1**	**+4.4**
YUK	**Yuzh-Kuril'sk**	**6.56**	**27**	*d*iP	**Pn**	**14 34 15.1**	**-2.9**
YUK				*i* S	**Sn**	**14 35 25.6**	**-5.8**
YUK				pmax	pmax		
	comp=Z,29μm,0.5s						
YUK				pmax	pmax		
	comp=N,19μm,0.6s						
YUK				pmax	pmax		
	comp=E,9μm,0.3s						
YUK				pmax	pmax		
	comp=Z,85μm,13.9s						
YUK				MLR	MLR		
	comp=Z,1047μm,17.0s						
YUK				MLR	MLR		
	comp=N,981μm,16.0s						
YUK				MLR	MLR		
	comp=E,597μm,15.0s						
JAJ2	**Tsuna**	**6.72**	**237**	P	**Pn**	**14 34 22.7**	**+2.6**
SHO	**Shikotan**	**6.81**	**33**	*d*iP	**Pn**	**14 34 18.0**	**-3.3**
SHO				*i* S	**Sn**	**14 35 28.8**	**-8.6**
SHO				pmax	pmax		
	comp=Z,14μm,0.8s						
SHO				pmax	pmax		
	comp=N,7μm,0.5s						
SHO				pmax	pmax		
	comp=E,8μm,0.4s						
JNM	**Ikuma**	**7.50**	**251**	P	Pn	14 34 35.8	+5.0
JHS	**Saijyo**	**7.65**	**248**	P	**Pn**	**14 34 37.1**	**+4.2**
KUR	**Kuril'sk**	**8.35**	**31**	*d*iP	**Pn**	**14 34 40.9**	**-1.5**
KUR				*i* S	**Sn**	**14 36 08.8**	**-6.3**
KUR				pmax	pmax		
	comp=N,2μm,0.6s						
KUR				pmax	pmax		
	comp=E,1μm,0.6s						
KUR				pmax	pmax		
	comp=Z,6μm,0.6s						
KUR				smax	smax		
	comp=N,20μm,0.6s						
KUR				smax	smax		
	comp=E,11μm,0.6s						
KUR				smax	smax		
	comp=N,93μm,7.1s						
KUR				smax	smax		
	comp=E,134μm,7.1s						
YSS	**Yuzh-Sakhalins**	**8.73**	**5**	⇓*i*P	**Pn**	**14 34 47.7**	**+0.1**
YSS				*e*S	**Sn**	**14 36 21.1**	**-3.4**
YSS				pmax	pmax		
	comp=N,49μm,8.0s						
YSS				pmax	pmax		
	comp=Z,62μm,8.0s						
YSS				pmax	pmax		
	comp=E,15μm,4.0s						
YSS				pmax	pmax		
	comp=E,5μm,0.9s						
YSS				pmax	pmax		
	comp=Z,10μm,0.9s						
YSS				pmax	pmax		
	comp=N,11μm,0.7s						
YSS				smax	smax		
	comp=N,14μm,1.2s						
YSS				smax	smax		
	comp=E,8μm,1.6s						
YSS				MLR	MLR		
	comp=Z,571μm,20.0s						
YSS				MLR	MLR		
	comp=N,303μm,17.0s						
YSS				MLR	MLR		
	comp=E,384μm,12.0s						
YSS	**Yuzh-Sakhalins**	**8.73**	**5**	*e*Pn	**Pn**	**14 34 47.5**	**-0.1**
YSS				*e*Sn	**Sn**	**14 36 23.9**	**-0.6**
VLA	**Vladivostok**	**8.92**	**306**	*d*iP	**Pn**	**14 34 52.2**	**+2.0**
USRK	**Ussuriysk Ar.**	**9.44**	**312**	P	**Pn**	**14 35 00.0**	**+2.7**
	comp=E,386nm,0.3s,baz=121,slow=14,SNR=1269						
USRK				LR	LR	14 38 27.6	
	comp=E,635μm,21.4s,baz=95,slow=36						
USRK				P3KPbc		15 11 53.5	
	comp=E,0.1nm,0.3s,baz=100,slow=1.6,SNR=2.9						
I45RU	**USSURIYSK INFR**	**9.45**	**312**	P	**Pn**	**14 35 00.0**	**+2.6**
	baz=114,slow=11,SNR=6.1						
I45RU				*i*		15 20 00.0	
	baz=109,slow=332,SNR=1.3						
JNU	**Nakatsue**	**10.20**	**243**	P	**Pn**	**14 35 11.4**	**+3.6**
	comp=E,42nm,0.3s,baz=56,slow=8.1,SNR=132						
JNU				LR	LR	14 39 43.6	
	comp=E,1091μm,21.3s,baz=54,slow=41						
JNU				P3KP		15 12 17.5	
	comp=E,0.2nm,0.3s,baz=49,slow=2.2,SNR=7.0						
JNU	**Nakatsue**	**10.20**	**243**	P	**Pn**	**14 35 11.1**	**+3.3**
JIU2	**Izumi 2**	**10.57**	**241**	P	**Pn**	**14 35 16.8**	**+4.0**
JTU	**Tsushima**	**10.61**	**253**	P	**Pn**	**14 35 17.7**	**+4.3**
UGL	**Uglegorsk**	**10.83**	**1**	*e*P	**Pn**	**14 35 15.0**	**-1.2**
UGL				*e*		14 37 19.0	
UGL				pmax	pmax		
	comp=N,682nm,1.1s						
UGL				pmax	pmax		
	comp=E,2μm,1.1s						
UGL				pmax	pmax		
	comp=Z,4μm,1.1s						
UGL				pmax	pmax		
	comp=N,39μm,10.0s						
UGL				pmax	pmax		
	comp=Z,48μm,10.0s						
UGL				pmax	pmax		
	comp=E,12μm,8.0s						
UGL				MLR	MLR		
	comp=N,442μm,15.0s						
UGL				MLR	MLR		
	comp=E,745μm,15.0s						
UGL				MLR	MLR		
	comp=Z,331μm,15.0s						
KSRS	**Korea Array**	**10.95**	**270**	P	Pn	14 35 22.9	+5.0
	comp=Z,55nm,0.3s,baz=81,slow=14,SNR=324						
KSRS				LR	LR	14 39 39.0	
	comp=Z,405μm,18.3s,baz=71,slow=38						
KSRS				PcP	**PcP**	**14 41 14.7**	**+1.3**
	comp=Z,2.3nm,0.3s,baz=90,slow=0.3,SNR=4.6						
KSRS				P3KPbc		15 11 50.4	
	baz=39,slow=2.3,SNR=4.2						
KSRS	**Korea Array**	**10.95**	**270**	P	Pn	14 35 23.0	+5.0
KSRS				pmax	pmax		
	comp=Z,55nm,0.3s						
KSRS				MLR	MLR		
	comp=Z,405μm,18.3s						
KS01	**Wonju Array Si**	**10.97**	**270**	*e*Pn	**Pn**	**14 35 22.1**	**+3.9**
KS15	**Wonju Array Si**	**10.98**	**270**	*e*Pn	**Pn**	**14 35 22.6**	**+4.2**
KSAR	**Wonju Array Be**	**10.98**	**270**	P	**Pn**	**14 35 23.0**	**+4.6**
KSAR	**Wonju Array Be**	**10.98**	**270**	P	**Pn**	**14 35 22.9**	**+4.6**
KSAR				PcP	**PcP**	**14 41 14.7**	**+1.2**
KSAR				*e*		15 11 50.4	
MDJ	**Mudanjiang**	**11.11**	**309**	P	**Pn**	**14 35 22.5**	**+2.4**
MDJ				S	**Sn**	**14 37 24.0**	**+1.3**
MDJ				PcP	**PcP**	**14 41 15.1**	**+1.6**
MDJ				ScP	**ScP**	**14 44 42.5**	**+1.0**
MDJ				PcS	**PcS**	**14 44 46.1**	**-1.1**
MDJ				ScS	**ScS**	**14 48 16.3**	**-0.4**
MDJ				pmax	pmax		
	comp=Z,610nm,1.8s						
MDJ				pmax	pmax		
	comp=Z,126μm,6.0s						
MDJ				LR	LR		
	comp=Z,755μm,22.5s						
MDJ				LR	LR		
	comp=Z,999μm,25.7s						
MDJ				LR	LR		
	comp=Z,1786μm,24.1s						
MDJ	**Mudanjiang**	**11.11**	**309**	*e*Pn	**Pn**	**14 35 23.0**	**+2.9**
	comp=Z,13μm,1.3s						
CBIJ	**Chichi jima**	**11.13**	**178**	*e*Pn	**Pn**	**14 35 16.1**	**-4.5**
CBIJ				*e*Sn	**Sn**	**14 37 17.3**	**-6.2**
JCJ	**Chichijima**	**11.13**	**178**	P	**Pn**	**14 35 16.9**	**-3.6**
	comp=Z,506nm,0.3s,baz=22,slow=8.3,SNR=74						
JCJ				S	Sn	14 37 14.6	-8.9
	comp=Z,3μm,0.3s,baz=252,slow=20,SNR=5.9						
HABR	**Khabarovsk**	**11.31**	**337**	*ce*P	**Pn**	**14 35 18.9**	**-3.9**
HABR				*e*S	**Sn**	**14 37 24.1**	**-3.5**
HABR				pmax	pmax		
	comp=Z,1μm,1.9s						
HABR				pmax	pmax		
	comp=N,594nm,1.9s						
HABR				pmax	pmax		
	comp=E,431nm,1.9s						
JTN	**Tanegashima 3**	**11.66**	**233**	P	**Pn**	**14 35 31.1**	**+3.3**
INCN	**Inchon**	**11.96**	**271**	*e*Pn	**Pn**	**14 35 35.6**	**+3.8**
INCN	**Inchon** SNR=259	**11.96**	**271**	P	**Pn**	**14 35 35.7**	**+3.8**
JFU	**Fukue jima 2**	**11.96**	**246**	P	Pn	14 35 37.1	+5.2
JKC	**Kuchinoerabu**	**12.29**	**234**	P	**Pn**	**14 35 38.5**	**+2.2**
TYV	**Tymovskoe**	**12.63**	**3**	*e*P	**Pn**	**14 35 40.2**	**-0.6**
TYV				pmax	pmax		
	comp=Z,2μm,1.0s						
KLR	**Kul'dur**	**13.12**	**330**	P	**Pn**	**14 35 45.9**	**-1.6**
	comp=Z,5.9nm,0.3s,baz=137,slow=13,SNR=207						
KLR				S	**Sn**	**14 38 12.4**	**+0.6**
	baz=218,slow=18,SNR=1.4						
KLR				LR	LR	14 40 46.9	
	comp=Z,1224μm,20.9s,baz=139,slow=36						
KLR				P3KPbc		15 11 58.1	
	comp=Z,0.1nm,0.3s,baz=317,slow=6.3,SNR=4.3						
CN2	**Changchun**	**13.48**	**299**	*e*P	**Pn**	**14 35 53.4**	**+0.9**
CN2				*ep*P	P	14 36 00.8	+0.6
CN2				*e*S	**Sn**	**14 38 26.1**	**+5.5**
SNY	**Shenyang**	**14.36**	**290**	⇓P	**Pn**	**14 36 04.8**	**+0.5**
SNY				PP	**PnPn**	**14 36 17.6**	**+5.1**
SNY				pmax	pmax		
	comp=Z,2μm,2.3s						
SNY				LR	LR		
	comp=Z,680μm,15.5s						
SNY				LR	LR		
	comp=Z,1414μm,22.6s						
SNY				LR	LR		
	comp=Z,2338μm,22.6s						
JAMN	**Amaminishikomi**	**14.47**	**230**	P	**Pn**	**14 36 05.9**	**0.0**
NKL	**Nikolayevsk**	**14.92**	**358**	*i* P	**Pn**	**14 36 09.0**	**-2.5**
NKL				pmax	pmax		
	comp=N,10μm,2.0s						
NKL				pmax	pmax		
	comp=E,3μm,2.0s						
NKL				pmax	pmax		
	comp=Z,17μm,1.9s						
OKH	**Okha**	**15.32**	**3**	⇑*i*P	**Pn**	**14 36 14.4**	**-2.4**
OKH				*e*S	**Sn**	**14 39 01.8**	**-3.5**
OKH				pmax	pmax		
	comp=Z,53μm,12.0s						
OKH				smax	smax		
	comp=E,91μm,10.0s						
DL2	**Dalian**	**15.74**	**279**	P	**Pn**	**14 36 23.4**	**+1.2**
DL2				S	**Sn**	**14 39 16.0**	**+0.5**
DL2				pmax	pmax		
	comp=E,10μm,1.5s						
DL2				pmax	pmax		
	comp=E,108μm,11.0s						
DL2				LR	LR		
	comp=E,180μm,15.4s						
DL2				LR	LR		
	comp=E,667μm,24.5s						
DL2				LR	LR		
	comp=E,1230μm,29.5s						
JOW	**Kunigami**	**16.05**	**229**	*e*Pn	**Pn**	**14 36 24.4**	**-1.9**
	comp=E,3μm,1.1s						
SKR	**Severo-Kuril's**	**16.09**	**35**	⇓*i*P	**Pn**	**14 36 22.0**	**-4.5**
SKR				*i* S	**Sn**	**14 39 23.0**	**-0.8**
SKR				pmax	pmax		
	comp=N,3μm,0.9s						
SKR				pmax	pmax		
	comp=Z,6μm,0.9s						
SKR				pmax	pmax		
	comp=E,9μm,1.2s						
SKR				pmax	pmax		
	comp=N,65μm,16.0s						
SKR				pmax	pmax		
	comp=E,51μm,16.0s						
SKR				pmax	pmax		
	comp=Z,69μm,16.0s						
SKR				MLR	MLR		
	comp=E,311μm,14.0s						
SKR				MLR	MLR		
	comp=Z,321μm,14.0s						
SKR				MLR	MLR		
	comp=N,152μm,16.0s						
SSE	**Sheshan**	**18.32**	**253**	P	**P**	**14 36 54.1**	**+0.2**
SSE				S	**Sn**	**14 40 15.8**	**-2.4**
SSE				pmax	pmax		
	comp=N,4μm,1.2s						
SSE				pmax	pmax		
	comp=N,112μm,12.0s						
SSE				LR	LR		
	comp=N,165μm,17.1s						
SSE				LR	LR		
	comp=N,292μm,16.8s						
SSE				LR	LR		
	comp=N,499μm,17.0s						
PEA0	**Petropavlovsk-**	**18.52**	**31**	*e*P	**P**	**14 36 53.8**	**-2.1**
PEA0B	**Petropavlovsk-** comp=N,6μm,1.1s	**18.52**	**31**	*e*P	**P**	**14 36 54.2**	**-1.6**
PETK	**Petropavlovsk-**	**18.52**	**31**	P	**P**	**14 36 54.1**	**-1.8**
	comp=N,5.7nm,0.3s,baz=206,slow=11,SNR=91						
PETK				S	**S**	**14 40 23.8**	**-0.3**
	comp=N,4.3nm,0.3s,baz=230,slow=18,SNR=2.7						
PETK				LR	LR	14 45 03.0	
	comp=N,411μm,18.2s,baz=212,slow=40						
PETK				P3KPbc		15 11 35.0	
	comp=N,0.3nm,0.3s,baz=98,slow=7.7,SNR=4.9						
PET	**Petropavlovsk**	**18.86**	**33**	*d*iP	**P**	**14 36 58.6**	**-1.0**
PET				*e*S	**Sn**	**14 40 23.9**	**-6.8**
PET				pmax	pmax		
	comp=Z,5μm,1.1s						
PET				pmax	pmax		
	comp=Z,174μm,12.6s						
PET				pmax	pmax		
	comp=Z,175μm,10.1s						
PET				MLR	MLR		
	comp=Z,365μm,20.0s						
PET				MLR	MLR		
	comp=Z,283μm,16.0s						
PET	**Petropavlovsk**	**18.86**	**33**	*e*P	**Pn**	**14 37 00.2**	**-0.4**
	comp=Z,7μm,1.2s						
NJ2	**Nanjing**	**19.68**	**259**	*e*P	**P**	**14 37 09.0**	**+0.3**
NJ2				S	**Sn**	**14 40 52.2**	**+1.4**
NJ2				sS	**sS**	**14 41 00.3**	**-6.8**
NJ2				pmax	pmax		
	comp=Z,3μm,1.0s						
NJ2				pmax	pmax		
	comp=Z,12μm,3.6s						
NJ2				LR	LR		
	comp=E,286μm,14.6s						
NJ2				LR	LR		
	comp=Z,466μm,12.5s						
NJ2				LR	LR		
	comp=Z,558μm,13.0s						
TIA	**Tai'an**	**19.69**	**272**	⇓P	**P**	**14 37 08.6**	**-0.2**
TIA				PP	**sP**	**14 37 31.4**	**+3.9**
TIA				S	**S**	**14 40 43.0**	**-5.0**
TIA				pmax	pmax		
	comp=Z,1μm,1.4s						
TIA				pmax	pmax		
	comp=E,35μm,6.0s						
TIA				LR	LR		
	comp=Z,369μm,17.3s						
TIA				LR	LR		
	comp=Z,512μm,24.4s						
TIA				LR	LR		
	comp=Z,963μm,26.0s						
BJI	**Beijing**	**19.88**	**283**	P	**P**	**14 37 10.0**	**-0.9**
BJI				S	**S**	**14 40 43.3**	**-8.5**
BJI				pmax	pmax		
	comp=Z,910nm,1.7s						
BJI				pmax	pmax		
	comp=Z,43μm,9.8s						
BJI				LR	LR		
	comp=Z,376μm,16.9s						
YOJ	**Yonaguni jima**	**21.03**	**235**	*e*P	**P**	**14 37 22.6**	**-0.8**
YOJ				pmax	pmax		
	comp=Z,800nm,0.7s						
YOJ	**Yonaguni jima** comp=Z,801nm,0.7s	**21.03**	**235**	*e*P	**P**	**14 37 22.6**	**-0.8**
TATO	**Taipei**	**21.67**	**238**	*e*P	**P**	**14 37 30.9**	**+0.6**
	comp=Z,4μm,1.4s						
TATO				LR	LR		
	comp=Z,568μm,20.0s						
TATO	**Taipei** SNR=49	**21.67**	**238**	P	**P**	**14 37 31.3**	**+1.0**
CLNS	**Chul'man**	**21.68**	**334**	*e*P	**P**	**14 37 29.7**	**-0.5**
CLNS				*e*		14 37 52.2	
CLNS				*e*S	**S**	**14 41 25.7**	**-1.5**
CLNS				*e*		14 41 32.3	
CLNS				*e*SS	**SnSn**	**14 41 55.1**	**+0.6**
CLNS				pmax	pmax		
	comp=N,7μm,0.9s						
CLNS				pmax	pmax		
	comp=Z,6μm,1.0s						
CLNS				pmax	pmax		
	comp=E,1μm,1.4s						
CLNS				pmax	pmax		
	comp=Z,4μm,0.9s						
CLNS				pmax	pmax		
	comp=N,5μm,0.9s						

CLNS pmax pmax
comp=E,1μm,1.1s
CLNS smax smax
comp=N,95μm,10.4s
CLNS smax smax
comp=E,73μm,11.4s
CLNS MLR MLR
comp=E,179μm,15.0s
CLNS MLR MLR
comp=N,253μm,15.0s
CLNS MLR MLR
comp=Z,283μm,16.0s
YHNB Yeheng 21.95 238 *e*P **P 14 37 31.5 -1.9**
comp=Z,1μm,0.8s
YHNB LR LR
comp=Z,576μm,21.0s
MA2 Magadan 22.11 12 P **P 14 37 34.9 +0.2**
comp=Z,2μm,0.7s,baz=225,slow=8.9,SNR=283
MA2 S **S 14 41 29.5 -5.6**
comp=Z,90nm,0.9s,baz=166,slow=18,SNR=1.7
MA2 LR LR 14 46 10.7
comp=Z,294μm,20.4s,baz=233,slow=36
MA2 P3KPbc 15 11 19.9
comp=Z,12nm,1.0s,baz=48,slow=5.0,SNR=9.8
NACB Ninganchiao 22.15 237 *e*P **P 14 37 32.4 -3.0**
SSLB Suanglung 22.84 237 *e*P **P 14 37 39.5 -3.3**
comp=Z,1μm,0.7s
YULB Yu-li 22.89 236 *e*P **P 14 37 39.8 -3.6**
comp=Z,1μm,0.9s
TIY Taiyuan 23.06 278 *e*P **P 14 37 42.9 -2.1**
TIY PP **PnPn 14 38 14.8 +3.0**
TIY S **S 14 41 50.9 -1.0**
TIY pmax pmax
comp=Z,860nm,0.8s
TIY pmax pmax
comp=Z,9μm,4.9s
TIY LR LR
comp=Z,143μm,15.3s
TIY LR LR
comp=Z,343μm,17.6s
TIY LR LR
comp=Z,874μm,29.1s
HHC Hu-ho-hao-te 23.35 286 *e*P **P 14 37 45.7 -2.2**
HHC pP pP 14 37 56.3 -4.2
HHC sP sP 14 38 02.3 -4.7
HHC S **S 14 41 49.1 -7.6**
HHC pmax pmax
comp=Z,20μm,4.4s
HHC LR LR
comp=Z,133μm,13.7s
HHC LR LR
comp=Z,613μm,13.8s
TPUB Ta-pu 23.39 236 *e*P **P 14 37 45.8 -2.5**
comp=Z,5μm,1.4s
TWG Pinlang 23.44 235 *e*P **P 14 37 48.0 -0.7**
comp=Z,14μm,1.0s
QZH Quanzhou 23.68 243⇑*i*P **P 14 37 46.7 -4.2**
QZH S **S 14 41 54.1 -7.8**
QZH pmax pmax
comp=Z,3μm,0.9s
QZH LR LR
comp=Z,669μm,19.8s
QZH LR LR
comp=Z,313μm,16.9s
QZH LR LR
comp=Z,1026μm,25.9s
WHN Wuhan 23.81 259 ⇓P **P 14 37 50.7 -1.3**
WHN S **S 14 41 57.4 -6.5**
WHN pmax pmax
comp=Z,26μm,11.2s
WHN LR LR
comp=Z,598μm,18.0s
WHN LR LR
comp=Z,887μm,17.2s
CIT Chita 23.99 314 *e*P **P 14 37 51.7 -1.9**
CIT *e* 14 38 07.2
CIT *e*S **S 14 42 05.8 -0.9**
CIT pmax pmax
comp=Z,39μm,1.8s
BTO Baotou 24.54 286 *e*P **P 14 37 57.7 -1.1**
GUMO Guam 24.72 173 P **P 14 38 02.0 +1.5**
comp=Z,2μm,1.2s,baz=216,slow=1.9,SNR=18
GUMO S **S 14 42 15.3 -3.5**
comp=Z,96nm,0.7s,baz=30,slow=20,SNR=1.7
GUMO LR LR 14 48 40.7
comp=Z,66μm,21.3s,baz=17,slow=38
GUMO Guam 24.72 173 *e*P **P 14 38 01.4 +1.0**
comp=Z,12μm,1.2s
GUMO S **S 14 42 15.3 -3.5**
YAK Yakutsk 24.94 347 P **P 14 38 01.6 -0.5**
comp=Z,156nm,0.4s,baz=334,slow=23,SNR=162
YAK S **S 14 42 22.0 +0.4**
comp=Z,41nm,0.8s,baz=52,slow=20,SNR=11
YAK LR LR 14 48 17.6
comp=Z,382μm,19.2s,baz=108,slow=37
YAK Yakutsk 24.94 347*d i*P **P 14 38 02.2 +0.1**
YAK *e**PP **pP 14 38 10.8 -4.6**
YAK *e* 14 38 34.3
YAK *e*S **S 14 42 23.5 +1.9**
YAK *e*SS **sS 14 42 45.3 +1.1**
YAK pmax pmax
comp=Z,3μm,1.1s
YAK pmax pmax
comp=N,3μm,1.5s
YAK pmax pmax
comp=E,1μm,1.5s
YAK pmax pmax
comp=Z,8μm,1.4s
YAK pmax pmax
comp=N,4μm,1.3s
YAK pmax pmax
comp=E,4μm,1.3s
YAK smax smax
comp=E,35μm,1.9s
YAK smax smax
comp=N,170μm,4.0s
YAK MLR MLR
comp=Z,534μm,17.0s
YAK MLR MLR
comp=N,364μm,17.0s
YAK MLR MLR
comp=E,128μm,15.0s
YAK Yakutsk 24.94 347 *e*P **P 14 38 00.4 -1.6**
comp=E,4μm,0.9s
YAK S **S 14 42 22.0 +0.4**
SEY Seymchan 25.55 11 P **P 14 38 08.9 +1.3**
comp=E,2μm,0.8s,baz=203,slow=8.4,SNR=486
SEY S **S 14 42 32.0 +0.7**
comp=E,92nm,1.1s,baz=205,slow=14,SNR=1.9
SEY LR LR 14 48 21.4
comp=E,301μm,20.6s,baz=148,slow=36
SEY P3KPbc 15 11 04.1
comp=E,2.9nm,0.9s,baz=132,slow=5.7,SNR=6.8
SEY Seymchan 25.55 11*ce*P **P 14 38 08.6 +1.0**
SGCP Mt. Cagua 26.32 226 *e*P **P 14 38 15.9 +1.0**
SMY Shemya 26.64 47 *e*P **P 14 38 17.1 -0.4**
SMY pmax pmax
comp=Z,8μm,1.3s
SMY Shemya 26.64 47 *e*P **P 14 38 17.1 -0.4**
comp=Z,8μm,1.3s
BOD Bodaibo 26.65 326⇑*i*P **P 14 38 18.0 +0.5**
BOD *e* 14 42 52.4
BOD pmax pmax
comp=Z,3μm,1.5s
XAN Xi'an 26.74 271 P **P 14 38 18.2 -0.5**
XAN pP pP 14 38 30.2 -1.9
XAN sP sP 14 38 35.7 -2.8
XAN PP **PnPn 14 39 04.7 +2.6**
XAN S **S 14 42 51.0 +0.2**
XAN SS **SnSn 14 44 05.2 +6.7**
XAN pmax pmax
comp=Z,910nm,1.2s
XAN pmax pmax
comp=Z,15μm,9.0s
XAN LR LR
comp=Z,249μm,18.5s
XAN LR LR
comp=Z,291μm,19.7s
XAN LR LR
comp=Z,283μm,20.8s
CVP Callao Caves 26.88 226⇑*e*P **P 14 38 20.2 +0.3**
ULN Ulaanbaatar 26.90 302*de*P **P 14 38 19.7 -0.4**
ULN pmax pmax
comp=Z,4μm,2.5s
ULN MLR MLR
comp=Z,468μm,17.0s

ULN Ulaanbaatar 26.90 302 *e*P **P 14 38 20.4 +0.3**
comp=Z,2μm,1.1s
ULN LR LR
comp=Z,496μm,19.0s
ULN Ulaanbaatar 26.90 302 P **P 14 38 20.1 0.0**
SNR=1208
APYP Conner 27.08 227 *e*P **P 14 38 20.4 -1.4**
PIP Pasuquin 27.08 229⇑*e*P **P 14 38 22.1 +0.3**
SONA1 Songino Array 27.33 302 *e*P **P 14 38 23.8 -0.2**
SONM Songino Array 27.33 302 P **P 14 38 24.7 +0.7**
comp=Z,283nm,0.8s,baz=96,slow=8.6,SNR=417
SONM ScP **ScP 14 45 19.1 +1.1**
comp=Z,139nm,1.2s,baz=106,slow=3.6,SNR=4.7
SONM PKiKP **PKiKP 14 49 19.5 +0.5**
comp=Z,9.0nm,0.9s,baz=53,slow=1.4,SNR=5.7
SONM LR LR 14 49 42.9
comp=Z,549μm,18.5s,baz=118,slow=37
SONM P3KPbc 15 10 59.0
comp=Z,7.6nm,1.0s,baz=260,slow=4.3,SNR=17
SONM Songino Array 27.33 302 P **P 14 38 24.7 +0.7**
SONM pmax pmax
comp=Z,481nm,0.9s
CAUP Cauayan 27.49 225 *e*P **P 14 38 26.5 +1.1**
SIPP Brgy, Tapao 27.49 228⇑*e*P **P 14 38 27.7 +2.3**
ABRA Dolores 27.55 228 *e*P **P 14 38 26.8 +0.8**
ENH Enshi 27.71 263 PFAKE 14 38 40.0 +13
ENH LR LR
comp=Z,358μm,21.0s
HKC Hong Kong Obse 28.47 244⇑*i*P **P 14 38 36.0 +1.8**
GZH Guangzhou 28.57 246⇑*i*P **P 14 38 30.7 -4.4**
GZH sP **pP 14 38 51.7 +3.2**
GZH S S 14 43 08.6 -11
GZH LR LR
comp=Z,864μm,28.0s
H11N2 WAKE ISLAND Hy 28.58 123 P **P 14 38 38.7 +3.8**
baz=284,slow=9.4,SNR=121
H11N2 T T 15 08 54.9
baz=316,slow=75,SNR=350
H11N1 WAKE ISLAND Hy 28.59 123 P **P 14 38 36.5 +1.5**
baz=284,slow=9.4,SNR=156
H11N1 T T 15 09 19.4
baz=316,slow=75,SNR=472
H11N3 WAKE ISLAND Hy 28.60 123 P P 14 38 40.0 +5.0
baz=284,slow=9.4,SNR=108
H11N3 T T 15 08 55.3
baz=316,slow=75,SNR=302
BALP Baler 28.60 224 *e*P **P 14 38 35.8 +0.4**
BCPH Baguio City Da 28.64 226⇑*i*P **P 14 38 36.1 +0.2**
BCPH *i* S **S 14 43 17.6 -3.4**
WAKE Wake Island 28.74 124 *e*P **P 14 38 37.8 +1.3**
comp=Z,15μm,1.9s
WAKE LR LR
comp=Z,326μm,22.0s
PCPH Palayan 29.01 224‖*e*P **P 14 38 38.9 -0.1**
BOLP Bolinao 29.02 227 *e*P **P 14 38 39.3 +0.2**
MCO Taipa Grande 29.02 244 P **P 14 38 40.0 +0.9**
PVCP Virac 29.09 217 *e*P **P 14 38 40.6 +0.8**
H11S1 WAKE ISLAND Hy 29.33 125 P **P 14 38 43.7 +2.1**
baz=305
H11S1 T T 15 10 00.8
baz=318,slow=76,SNR=442
H11S3 WAKE ISLAND Hy 29.33 125 P **P 14 38 43.7 +2.1**
baz=305
H11S3 T T 15 09 54.4
baz=318,slow=76,SNR=1064
H11S2 WAKE ISLAND Hy 29.35 125 P **P 14 38 43.9 +2.1**
baz=305
H11S2 T T 15 09 54.7
baz=318,slow=76,SNR=858
IRK Irkutsk 29.48 311 *e*P **P 14 38 43.0 +0.1**
IRK *e* 14 39 02.0
IRK *e*S **S 14 43 37.3 +3.8**
IRK pmax pmax
comp=Z,6μm,2.4s
GQP Guinayangan 29.67 220⇑*e*P **P 14 38 43.2 -1.7**
ZAK Zakamensk 29.73 307 *e*P **P 14 38 45.6 +0.4**
ZAK pmax pmax
comp=Z,2μm,1.1s
ZAK pmax pmax
comp=Z,282nm,1.2s
TLY Talaya 29.74 309 P **P 14 38 46.1 +0.9**
comp=Z,1μm,1.0s,baz=114,slow=9.2,SNR=384
TLY LR LR 14 51 22.5
comp=Z,663μm,18.5s,baz=112,slow=38
TLY P3KPbc 15 10 48.3
comp=Z,4.1nm,0.9s,baz=274,slow=5.0,SNR=4.0
TLY Talaya 29.74 309*d i*P **P 14 38 45.3 +0.1**
TLY *e* 14 39 47.9
TLY *e* 14 41 53.5
TLY *e*S **S 14 43 38.3 +0.8**
TLY pmax pmax
comp=Z,2μm,1.4s
TLY MLR MLR
comp=Z,548μm,18.0s
TLY Talaya 29.74 309 *e*P **P 14 38 44.2 -1.0**
comp=Z,3μm,1.2s
TLY *e* 15 10 48.3
TLY Talaya 29.74 309 P **P 14 38 45.8 +0.6**
SNR=1290
TLY P **P 14 38 45.8 +0.6**
SNR=1290
TLY P **P 14 38 45.8 +0.6**
SNR=1290
TLY Talaya 29.74 309 P **P 14 38 45.8 +0.6**
SNR=1290
LQP Lukban 29.97 222‖*e*P **P 14 38 47.5 -0.2**
AUQP San Andres 30.05 219 *e*P **P 14 38 49.5 +1.2**
LZH Lanzhou 30.13 278 ⇓P **P 14 38 49.3 +0.3**
LZH pP pP 14 39 01.4 -1.1
LZH sP sP 14 39 05.7 -3.1
LZH PP **PnPn 14 39 49.2 +1.3**
LZH S **S 14 43 40.1 -4.2**
LZH sS sS 14 44 04.0 -3.1
LZH SS **SnSn 14 45 23.5 +2.4**
LZH pmax pmax
comp=Z,2μm,1.0s
LZH pmax pmax
comp=Z,15μm,8.9s
LZH LR LR
comp=Z,168μm,13.5s
LZH LR LR
comp=Z,413μm,15.5s
TGY Tagaytay City 30.30 223‖*e*P **P 14 38 53.7 +3.3**
BOAC Boac 30.36 221 *e*P **P 14 38 51.0 0.0**
PGP Puerto Galera 30.79 222‖*e*P **P 14 38 55.3 +0.6**
PLP Palo 30.86 213‖*e*P **P 14 38 55.1 -0.2**
OCLP Ormoc 31.12 214 *e*P **P 14 38 59.2 +1.5**
OTRP Odiongan 31.20 220 *e*P **P 14 38 59.1 +0.8**
MOY Mondy 31.36 309 *e*P **P 14 38 59.6 0.0**
MOY pmax pmax
comp=Z,4μm,2.6s
RCP Roxas 31.53 218⇑*e*P **P 14 39 02.0 +0.7**
SJMP San Jose 31.57 221 *e*P **P 14 39 01.7 0.0**
GYA Guiyang 31.69 259⇑*i*P **P 14 39 02.5 -0.3**
GYA pP pP 14 39 15.2 -1.1
GYA PP **PnPn 14 40 07.9 -0.3**
GYA PcP **PcP 14 41 52.8 -0.8**
GYA S **S 14 44 01.9 -6.8**
GYA sS sS 14 44 28.2 -3.4
GYA ScP **ScP 14 45 31.0 -1.3**
GYA SS **SnSn 14 45 57.8 -1.4**
GYA ScS **ScS 14 49 27.4 -3.3**
GYA pmax pmax
comp=Z,3μm,0.9s
GYA LR LR
comp=Z,152μm,22.7s
GYA LR LR
comp=Z,229μm,18.8s
GYA LR LR
comp=Z,358μm,19.4s
SCPH Surigao 31.88 211⇑*e*P **P 14 39 04.8 +0.4**
CD2 Chengdu 31.94 268 P **P 14 39 04.9 0.0**
CD2 sP pP 14 39 15.9 -2.5
CD2 PcP **PcP 14 41 55.3 +1.2**
CD2 S **S 14 44 10.4 -2.0**
CD2 sS sS 14 44 27.0 -8.3
CD2 pmax pmax
comp=Z,2μm,0.8s
CD2 pmax pmax
comp=Z,10μm,6.3s
CD2 LR LR
comp=Z,310μm,19.1s
CD2 LR LR
comp=Z,347μm,23.9s
LLP Lapu-Lapu 32.06 214 *e*P **P 14 39 06.2 +0.3**

LLP *e*S **S 14 44 18.2 +4.0**
GUIM Jordan 32.42 217 *e*P **P 14 39 08.4 -0.6**
BUSP Coron 32.44 222 *e*P **P 14 39 09.3 0.0**
GTA Gaotai 32.46 285 ⇓P **P 14 39 09.2 -0.3**
GTA pP pP 14 39 21.8 -1.2
GTA sP sP 14 39 27.1 -2.2
GTA S **S 14 44 22.3 +1.7**
GTA sS sS 14 44 42.4 -1.1
GTA ScP **ScP 14 45 36.2 +1.5**
GTA PcS **PcS 14 45 41.8 +1.1**
GTA SS **SnSn 14 46 22.6 +4.9**
GTA ScS **ScS 14 49 33.7 -0.6**
GTA pmax pmax
comp=Z,16μm,7.4s
GTA LR LR
comp=Z,275μm,22.3s
GTA LR LR
comp=Z,761μm,18.5s
BILL Bilibino 32.79 17*ce*P **P 14 39 11.5 -0.3**
BILL *e* 14 40 20.5
BILL *i* S **S 14 44 25.6 +0.8**
BILL pmax pmax
comp=Z,835nm,1.2s
BILL pmax pmax
comp=Z,3μm,1.3s
BILL MLR MLR
comp=Z,311μm,22.0s
BILL Bilibino 32.79 17 *e*P **P 14 39 11.5 -0.3**
comp=Z,2μm,1.1s
BILL LR LR
comp=Z,282μm,22.0s
CUYO Cuyo Island 32.99 220 *e*P **P 14 39 14.6 +0.5**
BIPH Bislig 32.99 209⇑*i*P **P 14 39 15.3 +1.2**
ATKA Atka Island 33.48 51 *e*P **P 14 39 17.4 -0.6**
comp=Z,5μm,1.4s
ENPP El Nido 33.51 222 *e*P **P 14 39 18.9 +0.2**
BUKP Musuan 33.78 211 *e*P **P 14 39 21.0 0.0**
TIXI Tiksi 34.11 353 P **P 14 39 22.9 -0.4**
comp=Z,200nm,0.7s,baz=160,slow=9.6,SNR=216
TIXI LR LR 14 54 23.3
comp=Z,238μm,18.9s,baz=164,slow=38
TIXI P3KPbc 15 10 26.1
comp=Z,3.4nm,0.5s,baz=1.7,slow=2.6,SNR=15
TIXI Tiksi 34.11 353*ce*P **P 14 39 22.7 -0.6**
TIXI pmax pmax
comp=Z,601nm,1.7s
TIXI MLR MLR
comp=Z,200μm,16.0s
TIXI Tiksi 34.11 353 *e*P **P 14 39 22.1 -1.2**
comp=Z,449nm,0.9s
TIXI *e* 15 10 26.1
DAV Davao City (W) 34.31 209 P **P 14 39 25.6 +0.1**
comp=Z,494nm,0.7s,baz=68,slow=1.8,SNR=14
DAV Davao City (W) 34.31 209 *eX* **P 14 39 25.7 +0.1**
DAV Davao City (W) 34.31 209 *e*P **P 14 39 28.2 +2.7**
comp=Z,1μm,1.0s
DAV LR LR
comp=Z,93μm,21.0s
DAV Davao City (W) 34.31 209 P **P 14 39 26.3 +0.7**
SNR=25
DAV P **P 14 39 26.3 +0.7**
SNR=25
DAV Davao City (W) 34.31 209 P **P 14 39 26.3 +0.7**
SNR=25
DMPH Davao City--Mi 34.33 209 *e*P P 14 39 32.2 +6.4
KCP Kidapawan 34.56 210‖*e*P **P 14 39 27.3 -0.5**
PATS Pohnpei 34.70 150 *e*P **P 14 39 29.7 +0.8**
comp=Z,3μm,1.4s
PPR Puerto Princes 35.08 222‖*e*P **P 14 39 36.1 +3.9**
MIDW Midway 35.40 94 *e*P **P 14 39 35.9 +1.0**
comp=Z,3μm,1.3s
MIDW LR LR
comp=Z,393μm,22.0s
KMI Kunming 35.41 260 ⇑P **P 14 39 35.4 +0.1**
KMI PP **PP 14 40 59.0 +2.7**
KMI S **S 14 45 05.1 -1.4**
KMI sS sS 14 45 29.6 0.0
KMI SS **SnSn 14 47 28.0 -1.5**
KMI pmax pmax
comp=Z,2μm,1.5s
KMI LR LR
comp=Z,217μm,17.1s
KMI LR LR
comp=Z,261μm,20.3s
KMI LR LR
comp=Z,353μm,24.7s
KRAR Krasnoyarsk 36.77 315*d i*P **P 14 39 45.1 -1.1**
KRAR MLR MLR
comp=Z,270μm,18.0s
NIKH Nikolski High 36.80 50 *e*P **P 14 39 45.0 -1.6**
comp=Z,785nm,1.0s
KWAJ Kwajalein Atol 37.45 135 *e*P **P 14 39 54.1 +1.7**
KWAJ pmax pmax
comp=Z,2μm,1.7s
KWAJ Kwajalein Atol 37.45 135 *e*P **P 14 39 54.1 +1.7**
comp=Z,2μm,1.7s
GAMB Gambell 37.55 32 *e*P **P 14 39 53.9 +1.1**
comp=Z,968nm,1.2s
UNV Unalaska Valle 38.25 49 *e*P **P 14 39 59.2 +0.5**
comp=Z,1μm,1.9s
MYLDM Lahad Datu 39.12 219 *e*P **P 14 40 08.6 +2.2**
comp=Z,4μm,1.2s
SKNT Sakolnakorn 39.23 248 P **P 14 40 07.8 +0.4**
comp=Z,875nm,1.1s,comp=Z,19μm
SDKM Sandakan 39.38 221 ⇑P **P 14 40 10.2 +1.5**
KKM Kota Kinabalu 39.55 222 ⇑P **P 14 40 11.8 +1.7**
KKM Kota Kinabalu 39.55 222 *e*P **P 14 40 11.5 +1.4**
comp=Z,1μm,1.1s
KKM LR LR
comp=Z,98μm,20.0s
TNTI Ternate 39.57 203 P **P 14 40 10.4 +0.2**
comp=Z,4μm,1.7s,comp=Z,69μmcomp=Z,412μm
TNTI Ternate 39.57 203 *e*P **P 14 40 10.4 +0.2**
comp=Z,7μm,1.4s
CRAI Chiangrai 39.92 255 P **P 14 40 12.5 -0.7**
comp=Z,1μm,0.8s,comp=Z,15μm
SWI Sorong 40.10 196 P **P 14 40 15.1 +0.5**
comp=Z,2μm,1.2s,comp=Z,30μmcomp=Z,433μm
RKPI Ransiki, Papua 40.17 192 P **P 14 40 16.2 +1.0**
comp=Z,2μm,1.5s,comp=Z,26μm
TSM Tawau 40.19 219 ⇑P **P 14 40 16.6 +1.3**
MANU Manus Island 40.43 171 *e*P **P 14 40 16.9 -0.4**
comp=Z,578nm,0.9s
KHON Khomkaen 40.48 248 P **P 14 40 18.3 +0.5**
comp=Z,443nm,0.8s,comp=Z,3μm
WMQ Urumqi 40.53 296 P **P 14 40 19.6 +1.6**
WMQ pP pP 14 40 27.3 -4.6
WMQ PP **PnPn 14 41 56.3 +0.1**
WMQ S **S 14 46 25.9 +2.6**
WMQ sS sS 14 46 44.0 -2.6
WMQ SS **SS 14 49 24.3 0.0**
WMQ pmax pmax
comp=Z,2μm,1.2s
WMQ pmax pmax
comp=Z,12μm,5.0s
JAY Jayapura 40.57 182 P **P 14 40 18.9 +0.4**
comp=Z,34nm,0.9s,baz=291,slow=20,SNR=36
JAY Jayapura 40.57 182 P **P 14 40 19.5 +1.0**
comp=Z,883nm,1.3s,comp=Z,15μm
GENI Genyem 40.66 182 P **P 14 40 20.3 +1.1**
comp=Z,3μm,1.6s,comp=Z,44μm
LBMI Labuha 40.86 202 P **P 14 40 21.5 +0.6**
comp=Z,3μm,0.8s,comp=Z,39μmcomp=Z,229μm
UTTA Uttaradit 41.28 252 P **P 14 40 24.9 +0.6**
comp=Z,166nm,0.9s,comp=Z,2μm
I46RU ZALESOVO INFRA 41.29 311 P **P 14 40 27.4 +3.3**
baz=102,slow=8.8
ZAA0 Zalesovo Array 41.29 311 *e*P **P 14 40 23.9 -0.1**
ZALV Zalesovo Beam 41.29 311 P **P 14 40 24.1 +0.1**
comp=Z,860nm,0.6s,baz=89,slow=6.4,SNR=678
ZALV PcP **PcP 14 42 22.5 +0.8**
comp=Z,241nm,0.5s,baz=83,slow=3.3,SNR=4.1
ZALV S **S 14 46 27.8 -6.4**
comp=Z,14nm,0.8s,baz=77,slow=25,SNR=3.5
ZALV LR LR 14 58 26.8
comp=Z,407μm,18.3s,baz=82,slow=37
ZALV P3KPbc 15 10 00.2
comp=Z,4.3nm,1.0s,baz=272,slow=4.0,SNR=4.5
ZALV P3KP 15 11 34.0
comp=Z,3.8nm,0.9s,baz=284,slow=5.8,SNR=4.2
ZALV PKPPKP **P'P'df 15 12 37.1 -3.4**
comp=Z,12nm,1.0s,baz=247,slow=3.0,SNR=4.9
ZALV P4KPbc 15 18 30.8
comp=Z,3.1nm,0.7s,baz=106,slow=2.8,SNR=6.1
LAMP Lampang 41.50 254 P **P 14 40 26.8 +0.6**
comp=Z,218nm,0.8s,comp=Z,2μm

PBKT Sadao Pong 41.70 250 P **P** **14 40 28.1 +0.3**
comp=Z,458nm,1.0s,comp=Z,12µm
PHIT Phitsanulok 41.72 251 P **P** **14 40 29.3 +1.3**
comp=Z,290nm,1.0s,comp=Z,5µm
MRSI Marisa 41.76 211 P **P** **14 40 29.0 +0.7**
comp=Z,3µm,1.3s,comp=Z,42µm
SDPT Sand Point 41.78 47 *eP* **P** **14 40 26.8 -1.2**
comp=Z,473nm,0.8s
CMMT Chiang Mai 41.84 255 P **P** **14 40 28.9 -0.1**
comp=Z,821nm,1.0s,comp=Z,14µm
CHTO Chiang Mai 41.84 255 P **P** **14 40 29.0 +0.1**
comp=Z,2µm,0.9s,comp=Z,60µm
CHTO Chiang Mai 41.84 255 *eP* **P** **14 40 29.1 +0.1**
CHTO pmax pmax
comp=Z,540nm,0.7s
CHTO Chiang Mai 41.84 255 *eP* **P** **14 40 29.1 +0.1**
comp=Z,540nm,0.7s
CHTO LR LR
comp=Z,112µm,20.0s
CHTO Chiang Mai 41.84 255 P **P** **14 40 29.6 +0.5**
SNR=314
CHTO P **P** **14 40 29.6 +0.5**
SNR=314
CHTO Chiang Mai 41.84 255 P **P** **14 40 29.6 +0.5**
SNR=314
FAKI Fak Fak 41.89 194 P **P** **14 40 29.5 +0.2**
comp=Z,3µm,1.6s,comp=Z,48µm
FAKI Fak Fak 41.89 194 *eP* **P** **14 40 29.1 -0.2**
comp=Z,2µm,1.0s
CMAR Chiang Mai Arr 42.06 254 P **P** **14 40 31.2 +0.5**
comp=Z,126nm,0.9s,baz=45,slow=5.8,SNR=267
CMAR PcP **PcP** **14 42 26.0 +1.2**
comp=Z,125nm,0.9s,baz=34,slow=1.8,SNR=4.8
CMAR LR LR 14 59 04.9
comp=Z,98µm,20.8s,baz=60,slow=38
CMAR P3KPbc 15 09 57.9
comp=Z,1.2nm,0.9s,baz=260,slow=4.4,SNR=4.8
CMAR P3KP 15 11 29.4
comp=Z,1.0nm,0.8s,baz=297,slow=2.8,SNR=2.6
CMAR PKPPKP **P'P'df** **15 12 33.8 -1.8**
comp=Z,9.7nm,1.1s,baz=249,slow=2.8,SNR=4.2
CM01 Chiang Mai Arr 42.07 254 *eP* **P** **14 40 30.7 -0.1**
ZSN Zaisan 42.16 302 *iP* **P** **14 40 30.6 -0.7**
comp=Z,42µm,1.5s
ZSN *i* PP **PP** **14 42 11.0 +1.4**
ZSN *i* S **S** **14 46 44.3 -3.0**
ZSN *i* SS **SnSn** **14 50 14.8 +3.4**
ZSN LR LR 14 58 25.6
comp=Z,57µm,12.5s
NVS Novosibirsk 42.19 313 ⇓*iP* **P** **14 40 32.8 +1.4**
NVS *i* 14 40 48.3
NVS *i* 14 42 14.8
NVS *i* PPP PPP 14 42 40.1
NVS *i* S **S** **14 46 47.3 -0.2**
NVS *i* 14 47 11.4
NVS *i* SS **ScS** **14 50 25.7 -2.6**
NVS pmax pmax
comp=Z,4µm,1.3s
NVS pmax pmax
comp=N,57nm,0.3s
NVS pmax pmax
comp=E,2µm,1.0s
NVS pmax pmax
comp=Z,961nm,1.1s
NVS pmax pmax
comp=N,154nm,0.5s
NVS pmax pmax
comp=E,79nm,0.5s
NVS smax smax
comp=N,390nm,1.4s
NRIK Noril'sk 42.27 335 P **P** **14 40 32.1 +0.3**
comp=N,110nm,0.3s,baz=108,slow=8.9,SNR=335
NRIK S S 14 46 37.3 -11
comp=N,46nm,0.8s,baz=301,slow=18,SNR=1.6
NRIK LR LR 14 59 12.1
comp=N,568µm,18.9s,baz=105,slow=38
NRIK P3KP 15 11 37.1
comp=N,1.3nm,0.5s,baz=285,slow=1.9,SNR=3.6
NRIK P4KPbc 15 18 37.9
comp=N,3.3nm,0.6s,baz=95,slow=4.6,SNR=5.6
KMPI Kaimana, Papua 42.36 192 P **P** **14 40 33.0 -0.1**
comp=N,2µm,1.4s,comp=N,23µmcomp=N,231µm
LSA Lhasa 42.36 274 P **P** **14 40 36.4 +2.7**
LSA pP **pP** **14 40 46.7 -0.9**
LSA S **S** **14 46 47.4 -4.1**
LSA pmax pmax
comp=N,1µm,1.9s
LSA LR LR
comp=N,98µm,28.4s
LSA LR LR
comp=N,262µm,28.4s
LSA LR LR
comp=N,542µm,30.4s
LSA Lhasa 42.36 274 PFAKE 14 40 40.0 +6.3
LSA LR LR
comp=Z,276µm,22.0s
SANI Sanana 42.66 204 P **P** **14 40 36.7 +1.1**
comp=Z,43µm,1.2s,comp=Z,43µmcomp=Z,385µm
LUWI Luwuk 42.83 209 P **P** **14 40 35.6 -1.4**
comp=Z,3µm,1.5s,comp=Z,42µm
LUWI Luwuk 42.83 209 *eP* **P** **14 40 34.8 -2.2**
comp=Z,8µm,1.5s
MHMT Maesarieng 42.99 255 P **P** **14 40 38.9 +0.6**
comp=Z,628nm,0.8s,comp=Z,8µm
MSAI Masohi 43.05 199 P **P** **14 40 40.9 +2.1**
comp=Z,1µm,1.0s,comp=Z,16µmcomp=Z,74µm
APSI Ampana 43.15 210 P **P** **14 40 40.1 +0.6**
comp=Z,5µm,1.3s,comp=Z,53µm
CHBT CHBT 43.21 245 P **P** **14 40 40.7 +0.6**
comp=Z,915nm,0.8s,comp=Z,19µm
RABL Rabaul 43.32 165 *eP* **P** **14 40 41.1 +0.1**
comp=Z,2µm,0.7s
NLAI Namlea 43.45 202 P **P** **14 40 43.6 +1.7**
comp=Z,2µm,1.8s,comp=Z,42µmcomp=Z,274µm
BTM Bintulu 43.61 224 ⇑P **P** **14 40 43.8 +0.5**
SHL Shillong 43.68 268 *eP* **P** **14 40 43.9 -0.2**
MK01 Makanchi Array 43.69 301 *eP* **P** **14 40 44.3 +0.6**
MK31 Makanchi Array 43.70 301 *eP* **P** **14 40 45.3 +1.6**
MK31 Makanchi Array 43.70 301 *eP* **P** **14 40 45.3 +1.6**
MKAR Makanchi Array 43.70 301 P **P** **14 40 44.5 +0.8**
comp=Z,971nm,0.8s,baz=86,slow=8.3,SNR=1524
MKAR S **S** **14 47 08.8 -1.0**
comp=Z,88nm,1.2s,baz=88,slow=14,SNR=3.1
MKAR LR LR 14 59 32.1
comp=Z,222µm,20.0s,baz=84,slow=37
MKAR P3KPbc 15 09 50.9
comp=Z,0.9nm,0.7s,baz=251,slow=4.7,SNR=5.5
MKAR PKPPKP P'P'df 15 12 24.7 -13
comp=Z,6.7nm,1.0s,baz=263,slow=1.2,SNR=6.2
MKAR P4KPbc 15 18 40.0
comp=Z,4.5nm,0.8s,baz=70,slow=4.0,SNR=10
MKAR Makanchi Array 43.70 301 P **P** **14 40 44.5 +0.8**
MKAR S **S** **14 47 08.8 -1.0**
MKAR pmax pmax
comp=Z,958nm,0.8s
MKAR smax smax
comp=N,88nm,1.2s
MKAR MLR MLR
comp=Z,222µm,20.0s
MKAR Makanchi Array 43.70 301 *eP* **P** **14 40 45.3 +1.5**
MKAR S **S** **14 47 08.8 -1.0**
MKAR P'P' 15 12 24.7
MKAR *e* 15 18 40.0
MAKZ Makanchi 43.90 301 *eP* **P** **14 40 45.6 +0.2**
MAKZ Makanchi 43.90 301 *eP* **P** **14 40 45.6 +0.2**
BNDI Bandanaira 43.95 197 P **P** **14 40 46.4 +0.5**
comp=Z,11µm,1.2s,comp=Z,120µmcomp=Z,377µm
PATY Pattaya 44.15 246 P **P** **14 40 49.3 +1.7**
comp=Z,174nm,1.0s,comp=Z,3µm
TT01 Tatalina 44.28 35 *eP* **P** **14 40 49.2 +1.1**
TTA Tatalina 44.28 35 *eP* **P** **14 40 49.3 +1.1**
TTA pmax pmax
comp=Z,840nm,1.1s
TTA Tatalina 44.28 35 *eP* **P** **14 40 49.3 +1.1**
comp=Z,844nm,1.1s
SVW2 Sparrevohn 44.41 38 *eP* **P** **14 40 50.4 +1.2**
comp=Z,2µm,1.1s
SEM Semipalatinsk 44.41 307 ⇓*iP* **P** **14 40 49.2 -0.1**
comp=Z,12µm,1.6s
SEM *i* S **S** **14 47 19.8 -0.3**
SEM *i* SS **SS** **14 50 37.9 -2.4**
SEM LR LR 14 58 42.3
comp=Z,236µm,19.1s
SRDT SRDT 44.48 249 P **P** **14 40 51.1 +0.8**
comp=Z,2µm,1.1s,comp=Z,47µm
SBUM Sibu 44.70 224 ⇓P **P** **14 40 53.3 +1.3**
SBUM Sibu 44.70 224 *eP* **P** **14 40 51.8 -0.3**
comp=Z,952nm,1.3s
KURK Kurchatov 45.39 307 P **P** **14 40 58.5 +1.4**
KURK Kurchatov 45.39 307 *eP* **P** **14 40 57.8 +0.7**
comp=Z,18µm,1.6s
KURK LR LR
comp=Z,849µm,20.0s
KURK Kurchatov 45.39 307 P **P** **14 40 57.5 +0.4**
SNR=1510
KURK P **P** **14 40 57.5 +0.4**
SNR=1510
KURK P **P** **14 40 57.5 +0.4**
SNR=1510
KURK Kurchatov 45.39 307 P **P** **14 40 57.5 +0.4**
SNR=1510
KURBB Kurchatov Arra 45.46 307 P **P** **14 40 58.5 +0.8**
comp=Z,1µm,0.6s,baz=82,slow=8.3,SNR=1260
BKB Balikpapan 45.50 216 P **P** **14 40 59.3 +1.0**
comp=Z,3µm,1.0s,comp=Z,44µmcomp=Z,447µm
OHAK Old Harbor 45.70 44 *eP* **P** **14 40 59.6 +0.1**
comp=Z,3µm,1.5s
RSO Redoubt South 45.80 39 *eP* **P** **14 41 01.5 +1.0**
TTSI Tana Toraja 45.82 211 P **P** **14 41 00.7 -0.2**
comp=Z,534nm,1.1s,comp=Z,15µm
KDAK Kodiak Island 46.03 43 P P 14 41 16.8 +15
comp=Z,491nm,0.6s,baz=327,slow=2.2,SNR=134
KDAK LR LR 15 00 20.8
comp=Z,247µm,22.0s,baz=251,slow=36
KDAK Kodiak Island 46.03 43 *eP* **P** **14 41 02.0 -0.1**
comp=Z,4µm,1.5s
CAST Castle Rocks 46.08 35 *eP* **P** **14 41 03.3 +0.8**
comp=Z,2µm,1.0s
SPU Mount Spurr 46.12 38 *eP* **P** **14 41 03.9 +1.1**
TAPN Taplejung 46.12 273 *eP* **P** **14 41 03.9 +0.4**
TAPN Taplejung 46.12 273 *eP* **S** **14 47 47.7 +1.8**
comp=Z,3µm,1.5s
MTKI Muara Teweh, K 46.18 219 P **P** **14 41 04.8 +1.1**
comp=Z,3µm,1.0s,comp=Z,44µmcomp=Z,296µm
SHLS Shalkode 46.21 297 ⇑*iP* **P** **14 41 04.5 +0.5**
comp=Z,7µm,1.4s
SHLS *i* S **S** **14 47 48.6 +2.0**
SHLS LR LR 15 00 41.6
comp=Z,82µm,17.9s
HOM Homer 46.39 40 *eP* **P** **14 41 04.6 -0.2**
comp=Z,2µm,1.0s
PDGK Podgornoye 46.44 297 P **P** **14 41 06.1 +0.6**
PDGK pmax pmax
comp=Z,3µm,1.2s
MMPI Merauke 46.49 182 P **P** **14 41 07.6 +1.5**
comp=Z,2µm,1.0s,comp=Z,27µm
TARA Tarawa 46.55 134 *eP* **P** **14 41 07.8 +1.2**
comp=Z,2µm,1.3s
TARA LR LR
comp=Z,26µm,21.0s
BPAW Bear Paw Mtn. 46.57 34 *eP* **P** **14 41 07.5 +1.2**
comp=Z,3µm,1.9s
KSM Kuching 46.58 226 ⇑P **P** **14 41 08.3 +1.5**
KSM Kuching 46.58 226 *eP* **P** **14 41 07.7 +0.8**
comp=Z,790nm,1.0s
KSM LR LR
comp=Z,49µm,20.0s
ODAN Odare 46.60 273 *eP* **P** **14 41 07.7 +0.5**
KTH Kantishna Hill 46.60 35 *eP* **P** **14 41 07.6 +1.0**
comp=Z,3µm,1.2s
SPSI Sidrap Palu 46.68 211 P **P** **14 41 06.7 -0.9**
comp=Z,1µm,1.1s,comp=Z,25µm
MLY Manley 46.69 33 *eP* **P** **14 41 08.0 +0.8**
comp=Z,902nm,1.1s
BRLK Bradley Lake 46.77 40 *eP* **P** **14 41 08.8 +0.9**
comp=Z,3µm,1.7s
UZB Uzynbulak 46.82 297 ⇑*iP* **P** **14 41 09.3 +0.7**
comp=Z,8µm,1.8s
UZB *i* S **S** **14 47 54.3 -1.0**
UZB LR LR 15 00 29.0
comp=Z,139µm,18.2s
TRF Thorofare Moun 46.89 35 *eP* **P** **14 41 09.9 +1.0**
comp=Z,768nm,0.9s
COLD Coldfoot 46.97 30 *eP* **P** **14 41 10.4 +1.1**
comp=Z,953nm,1.1s
SAUI Saumlaki 47.01 194 P **P** **14 41 11.2 +1.0**
comp=Z,5µm,1.4s,comp=Z,78µmcomp=Z,411µm
SAUI Saumlaki 47.01 194 *eP* **P** **14 41 11.1 +1.0**
comp=Z,9µm,1.4s
STKI Sintang 47.09 223 P **P** **14 41 11.8 +0.9**
comp=Z,1µm,1.1s,comp=Z,18µm
JIRN Jiri 47.17 274 *eP* **P** **14 41 11.8 0.0**
RAMN Ramite 47.18 273 *eP* **P** **14 41 11.8 0.0**
RAMN Ramite 47.18 273 *eP* **S** **14 48 01.8 +0.9**
comp=Z,4µm,1.9s
RC01 Rabbit Creek A 47.24 38 *eP* **P** **14 41 12.4 +0.9**
comp=Z,2µm,1.0s
SATY Saty 47.27 297 ⇑*iP* **P** **14 41 13.1 +0.9**
comp=Z,12µm,1.9s
SATY *i* S **S** **14 48 05.1 +3.4**
SATY LR LR 15 00 58.9
comp=Z,180µm,16.7s
GUN Gumba 47.30 275 *eP* **P** **14 41 13.3 +0.5**
GUN Gumba 47.30 275 *eP* **S** **14 48 03.4 +0.6**
comp=Z,5µm,1.5s
SEW Seward 47.46 39 *eP* **P** **14 41 13.6 +0.4**
comp=Z,3µm,1.4s
MCK McKinley 47.49 34 *eP* **P** **14 41 13.6 +0.2**
MCK pmax pmax
comp=Z,2µm,1.4s
MCK McKinley 47.49 34 *eP* **P** **14 41 13.6 +0.2**
comp=Z,2µm,1.4s
PMR Palmer 47.50 37 *eP* **P** **14 41 13.2 -0.3**
PMR pmax pmax
comp=Z,2µm,1.1s
PMR Palmer 47.50 37 *eP* **P** **14 41 13.2 -0.3**
comp=Z,2µm,1.1s
RND Reindeer 47.53 35 *eP* **P** **14 41 13.7 -0.1**
RND pmax pmax
comp=Z,5µm,1.7s
RND Reindeer 47.53 35 *eP* **P** **14 41 13.7 -0.1**
comp=Z,5µm,1.7s
JOHN Johnston Islan 47.63 103 *eP* **P** **14 41 16.7 +1.7**
comp=Z,2µm,1.1s
JOHN LR LR
comp=Z,21µm,22.0s
KBKI Kotabaru 47.64 216 P **P** **14 41 14.9 -0.1**
comp=Z,913nm,1.7s,comp=Z,22µm
KAPI Kappang 47.64 210 PKPPKP 15 12 14.0
comp=Z,11nm,1.0s,baz=144,slow=4.2,SNR=3.7
KAPI Kappang 47.64 210 *eP* **P** **14 41 15.9 +0.9**
comp=Z,9µm,1.5s
KAPI P'P' 15 12 14.0
KAPI LR LR
comp=Z,33µm,22.0s
KAPI Kappang 47.64 210 P **P** **14 41 15.9 +0.9**
SNR=444
KAPI P **P** **14 41 15.9 +0.9**
SNR=444
KAPI Kappang 47.64 210 P **P** **14 41 15.9 +0.9**
SNR=444
PMG Port Moresby 47.68 173 P **P** **14 41 15.3 +0.1**
comp=Z,153nm,0.8s,baz=353,slow=8.9,SNR=27
PMG PKPPKP **P'P'df** **15 12 22.4 -0.2**
comp=Z,13nm,0.9s,baz=22,slow=13,SNR=3.1
PMG Port Moresby 47.68 173 *eP* **P** **14 41 15.4 +0.1**
PMG pmax pmax
comp=Z,790nm,1.1s
PMG Port Moresby 47.68 173 *eP* **P** **14 41 15.4 +0.1**
comp=Z,793nm,1.1s
PMG P'P' 15 12 22.4
PMG LR LR
comp=Z,71µm,22.0s
MDM Murphy Dome 47.76 33 *eP* **P** **14 41 16.0 +0.5**
comp=Z,3µm,1.3s
KKN Kakani 47.82 275 *eP* **P** **14 41 17.4 +0.7**
KKN Kakani 47.82 275 *eP* **S** **14 48 10.2 +0.2**
comp=Z,5µm,1.7s
PKIN Phulchoki 47.83 275 *eP* **P** **14 41 16.9 0.0**
PKIN Phulchoki 47.83 275 *eP* **S** **14 48 10.7 +0.5**
comp=Z,3µm,1.4s
WRH Wood River Hil 47.83 33 *eP* **P** **14 41 16.8 +0.8**
comp=Z,847nm,0.9s
SML Sawmill 47.87 37 *eP* **P** **14 41 16.7 +0.3**
SML pmax pmax
comp=Z,7µm,1.8s
SML Sawmill 47.87 37 *eP* **P** **14 41 16.6 +0.3**
comp=Z,7µm,1.9s
COLA College 47.92 33 *eP* **P** **14 41 17.9 +1.2**
COLA pmax pmax
comp=Z,1µm,1.0s
COLA College 47.92 33 *eP* **P** **14 41 17.9 +1.2**
comp=Z,1µm,1.0s
COLA LR LR
comp=Z,65µm,20.0s
CCB Clear Creek Bu 47.95 33 *eP* **P** **14 41 17.4 +0.5**
comp=Z,2µm,1.8s
KTGM Kuala Trenggan 47.97 237 ⇓P **P** **14 41 19.2 +1.5**
DMN Daman 48.04 275 *eP* **P** **14 41 18.5 0.0**
DMN Daman 48.04 275 *eP* **S** **14 48 13.5 +0.3**
comp=Z,9µm,2.1s
MDOK Medeo 48.19 297 ⇑*iP* **P** **14 41 20.1 +0.8**
comp=Z,5µm,1.8s
MDOK *i* PP **PP** **14 43 12.3 +0.5**
MDOK *i* S **S** **14 48 16.2 +1.4**
MDOK *i* SS **SS** **14 51 47.2 +3.0**
MDOK LRM MLR 15 01 59.1
comp=Z,158µm,23.1s
DHY Denali Highway 48.22 35 *eP* **P** **14 41 19.2 -0.1**
comp=Z,1µm,1.0s
GKN Gorkha 48.23 276 *eP* **P** **14 41 20.2 +0.4**
GKN Gorkha 48.23 276 *eP* **S** **14 48 16.2 +0.6**
comp=Z,1µm,1.4s
AAA Alma-Ata 48.23 298 *eP* **P** **14 41 22.3 +2.8**
AAA *eS* **S** **14 48 17.1 +2.0**
AAA pmax pmax
comp=Z,27µm,5.8s
AAA smax smax
comp=E,147µm,15.4s
AAA MLR MLR
comp=Z,348µm,22.0s
AAA Alma-Ata 48.23 298 ⇓*iP* **P** **14 41 22.2 +2.8**
comp=Z,7µm,1.6s
AAA *i* PP **PP** **14 43 14.0 +2.0**
AAA *i* S **S** **14 48 17.5 +2.4**
AAA *i* SS **SS** **14 51 49.2 +4.6**
AAA LR LR 15 00 55.5
comp=Z,97µm,20.5s
SKLT Songkhla 48.31 241 P **P** **14 41 21.8 +1.5**
comp=Z,681nm,1.4s,comp=Z,16µm
HDA Harding Lake 48.33 33 *eP* **P** **14 41 19.9 0.0**
comp=Z,3µm,1.6s
SURT Suratani 48.33 244 P **P** **14 41 21.4 +0.9**
comp=Z,336nm,1.1s,comp=Z,7µm
ILAR Eielson Array 48.34 33 P **P** **14 41 20.0 +0.1**
comp=Z,238nm,0.7s,baz=266,slow=4.7,SNR=465
ILAR P3KPbc 15 09 28.9
comp=Z,1.1nm,0.8s,baz=97,slow=3.2,SNR=6.4
ILAR P3KP 15 11 17.4
comp=Z,1.6nm,1.0s,baz=233,slow=2.8,SNR=3.2
ILAR PKPPKP P'P'df 15 12 11.6 -20
comp=Z,12nm,1.1s,baz=50,slow=1.4,SNR=5.6
ILAR P4KPbc 15 18 57.4
comp=Z,1.5nm,0.6s,baz=261,slow=4.0,SNR=16
ILB Eielson Array 48.34 33 *eP* **P** **14 41 19.8 -0.1**
IL1 Eielson Array 48.34 33 *eP* **P** **14 41 19.4 -0.5**
SCM Sheep Creek Mo 48.34 37 *eP* **P** **14 41 20.4 +0.3**
SCM pmax pmax
comp=Z,1µm,0.9s
SCM Sheep Creek Mo 48.34 37 *eP* **P** **14 41 20.4 +0.3**
comp=Z,1µm,0.9s
BSSI Bau Bau, Buton 48.38 209 P **P** **14 41 21.5 +0.7**
comp=Z,2µm,1.6s,comp=Z,35µm
BBKI Banjar Baru 48.40 217 P **P** **14 41 21.2 +0.2**
comp=Z,3µm,1.1s,comp=Z,43µm
KUU Kurty 48.47 299 ⇓*iP* **P** **14 41 21.2 -0.1**
comp=Z,8µm,1.6s
KUU *i* PP **PP** **14 43 15.0 +0.9**
KUU *i* S **S** **14 48 19.1 +0.6**
KUU LR LR 15 02 03.4
comp=Z,133µm,17.8s
TRTT Trang 48.48 242 P **P** **14 41 22.6 +1.0**
comp=Z,665nm,1.2s,comp=Z,16µm
FYU Fort Yukon 48.93 30 *eP* **P** **14 41 26.2 +1.7**
comp=Z,6µm,1.5s
KLU Klutina 49.04 37 *eP* **P** **14 41 25.8 +0.3**
comp=Z,2µm,1.2s
PAX Paxson 49.10 35 *eP* **P** **14 41 26.2 +0.3**
PAX pmax pmax
comp=Z,740nm,1.0s
PAX Paxson 49.10 35 *eP* **P** **14 41 26.2 +0.3**
comp=Z,738nm,1.1s
KOLN Koldanda 49.15 276 *eP* **S** **14 48 28.2 -0.5**
comp=Z,590nm,1.1s
DIV Divide 49.16 38 *eP* **P** **14 41 27.0 +0.6**
comp=Z,4µm,1.3s
EYAK Cordova Ski Ar 49.24 38 *eP* **P** **14 41 27.4 +0.6**
comp=Z,2µm,1.2s
BRZS Berezniki 49.26 307 *iP* **P** **14 41 27.8 +0.5**
comp=Z,3µm,0.8s
BRZS *i* S **S** **14 48 33.0 +3.6**
TKM2 Tokmak 2 49.28 298 *eP* **P** **14 41 29.4 +1.6**
TKM2 pmax pmax
comp=Z,3µm,1.0s
TKM2 Tokmak 2 49.28 298 *eP* **P** **14 41 29.4 +1.6**
comp=Z,3µm,0.9s
TKM2 LR LR
comp=Z,302µm,21.0s
BOK Bokaro 49.29 270 *eP* **P** **14 41 28.4 +0.6**
BOK IAmb IAmb 14 41 36.0
comp=Z,5µm,2.3s
BOK IAMs_20 IAMs_20 15 04 41.7
comp=Z,87µm,18.9s
PBKI Pangkalan Bun 49.32 221 P **P** **14 41 28.7 +0.6**
comp=Z,1µm,1.1s,comp=Z,19µm
PKDT Phuket 49.39 244 P **P** **14 41 29.5 +0.9**
comp=Z,2µm,0.9s,comp=Z,21µm
PYUN Piuthan 49.47 277 *eP* **P** **14 41 29.6 +0.2**
PYUN Piuthan 49.47 277 *eP* **S** **14 48 33.4 +0.2**
comp=Z,4µm,1.7s
KULM Kulim 49.65 239 ⇓*iP* **P** **14 41 31.7 +1.1**
KULM Kulim 49.65 239 *eP* **P** **14 41 31.4 +0.9**
comp=Z,862nm,1.1s
KULM LR LR
comp=Z,185µm,22.0s
DOT Dot Lake 49.66 34 *eP* **P** **14 41 30.4 +0.4**
comp=Z,7µm,1.8s
CHKZ Chkalovo 49.67 312 P **P** **14 41 30.3 0.0**
CHKZ pmax pmax
comp=Z,3µm,1.4s
BMRM Bremner River 49.74 38 *eP* **P** **14 41 31.2 +0.4**
comp=Z,1µm,1.0s
RAGM Ragged Mountai 49.79 39 *eP* **P** **14 41 33.2 +2.0**
comp=Z,2µm,1.1s
DGPR DIGLIPUR 49.85 253 *eP* **P** **14 41 33.0 +0.9**
DGPR IAmb IAmb 14 41 36.1
comp=Z,3µm,1.2s
DGPR IAMs_20 IAMs_20 14 58 30.9
comp=Z,250µm,33.5s
MENT Mentasta 49.89 35 *eP* **P** **14 41 32.3 +0.4**
comp=Z,2µm,1.4s
OTUK Ortayu 49.92 305 P **P** **14 41 32.9 +0.6**
OTUK pmax pmax
comp=Z,4µm,1.4s
BVA0 Borovoye Array 49.95 312 P **P** **14 41 32.9 +0.5**
BVA0 pmax pmax
comp=Z,1µm,1.0s
BVAR Borovoye Array 49.95 312 P **P** **14 41 33.2 +0.8**
comp=Z,176nm,0.7s,baz=75,slow=7.0,SNR=372
BVAR PcP **PcP** **14 42 54.6 +2.7**
comp=Z,569nm,0.7s,baz=75,slow=1.6,SNR=6.1
BVAR P3KP 15 11 17.4
comp=Z,1.7nm,0.9s,baz=0.0,slow=1.3,SNR=4.1
BVAR P4KPbc 15 19 05.8
comp=Z,10nm,0.8s,baz=99,slow=4.7,SNR=12
BVAR Borovoye Array 49.95 312 P **P** **14 41 33.2 +0.8**
BVAR 14 42 54.6
BVAR pmax pmax
comp=Z,231nm,0.6s
FRU Bishkek 49.99 298 *iP* **P** **14 41 32.5 -0.5**
FRU *i* 14 42 56.0
FRU *i* S **S** **14 48 40.0 +0.2**
FRU pmax pmax
comp=Z,3µm,2.0s
FRU smax smax
comp=N,3µm,2.0s
IPM Ipoh 49.99 238 ⇓P **P** **14 41 33.9 +0.7**
IPM Ipoh 49.99 238 *eP* **P** **14 41 33.0 -0.2**
comp=N,961nm,0.8s
BRVK Borovoye 50.00 312 *de* **P** **14 41 32.9 +0.1**
BRVK pmax pmax
comp=Z,2µm,2.5s
BRVK MLR MLR
comp=Z,311µm,19.0s
BRVK Borovoye 50.00 312 *eP* **P** **14 41 32.6 -0.2**
comp=Z,2µm,1.0s
BRVK LR LR
comp=Z,326µm,19.0s
BRVK Borovoye 50.00 312 P **P** **14 41 33.5 +0.7**
SNR=626

BRVK P **P** **14 41 33.5 +0.7**
SNR=626
BRVK P **P** **14 41 33.5 +0.7**
SNR=626
BRVK **Borovoye** **50.00 312** P **P** **14 41 33.5 +0.7**
SNR=626
MMRI **Maumere** **50.06 205** P **P** **14 41 34.2 +0.6**
comp=Z,3μm,1.3s,comp=Z,48μmcomp=Z,366μm
MMRI **Maumere** **50.06 205** *eP* **P** **14 41 33.8 +0.1**
comp=Z,3μm,1.0s
AAK **Ala-Archa** **50.14 298** PKPPKP 15 12 14.9
comp=Z,10nm,1.0s,baz=209,slow=4.9,SNR=6.7
AAK P4KPbc 15 19 07.9
comp=Z,8.4nm,0.9s,baz=266,slow=0.5,SNR=7.1
AAK **Ala-Archa** **50.14 298** P **P** **14 41 35.4 +1.1**
AAK pmax pmax
comp=Z,2μm,1.5s
AAK **Ala-Archa** **50.14 298** *eP* **P** **14 41 35.0 +0.8**
comp=Z,3μm,1.7s
AAK P'P' 15 12 14.9
AAK *e* 15 19 07.9
AAK LR LR
comp=Z,364μm,22.0s
AAK **Ala-Archa** **50.14 298** P **P** **14 41 35.0 +0.8**
SNR=332
AAK P **P** **14 41 35.0 +0.8**
SNR=332
AAK **Ala-Archa** **50.14 298** P **P** **14 41 35.0 +0.8**
SNR=332
KSH **Kashi** **50.15 293** P P 14 41 39.4 +5.1
KSH *ep*P pP 14 41 51.6 +3.1
KSH *es*P sP 14 41 57.4 +2.8
KSH *e*PP **PP** **14 43 36.5 +6.8**
KSH S **S** **14 48 50.1 +7.9**
KSH ScS **ScS** **14 51 24.7 +3.8**
KSH pmax pmax
comp=Z,1μm,1.3s
KSH pmax pmax
comp=Z,17μm,6.4s
KSH LR LR
comp=Z,250μm,23.6s
KSH LR LR
comp=Z,284μm,17.4s
KSH LR LR
comp=Z,203μm,17.6s
MYKOM **Kota Tinggi** **50.19 233** ⇓P **P** **14 41 35.7 +1.1**
MYKOM **Kota Tinggi** **50.19 233** *eP* **P** **14 41 34.6 -0.1**
comp=Z,3μm,1.8s
KGM **Kluang** **50.35 234** ⇑P **P** **14 41 37.0 +1.1**
EDFI **Ende, Flores** **50.36 206** P **P** **14 41 35.0 -1.0**
comp=Z,1μm,1.8s,comp=Z,31μmcomp=Z,245μm
HNR **Honiara** **50.39 156** P **P** **14 41 36.5 +0.4**
comp=Z,236nm,0.7s,baz=270,slow=3.0,SNR=25
HNR LR LR 15 01 51.9
comp=Z,192μm,20.6s,baz=316,slow=35
HNR **Honiara** **50.39 156** *eP* **P** **14 41 36.0 -0.1**
HNR **Honiara** **50.39 156** *eP* **P** **14 41 36.6 +0.5**
HNR pmax pmax
comp=Z,1μm,1.0s
HNR **Honiara** **50.39 156** *eP* **P** **14 41 36.6 +0.5**
comp=Z,1μm,0.9s
TPRI **Tanjung Pinang** **50.44 232** P **P** **14 41 37.8 +1.2**
comp=Z,2μm,1.0s,comp=Z,20μm
SOEI **Soe** **50.47 203** P **P** **14 41 36.4 -0.4**
comp=Z,2μm,1.1s,comp=Z,52μmcomp=Z,413μm
SOEI **Soe** **50.47 203** *eP* **P** **14 41 34.9 -2.0**
comp=Z,4μm,1.2s
FRIM **Kepong** **50.52 236** ⇑P **P** **14 41 38.1 +0.9**
EKS2 **Erkin-Say** **50.63 298** *eP* **P** **14 41 38.0 +0.1**
EKS2 pmax pmax
comp=Z,530nm,0.7s
EKS2 **Erkin-Say** **50.63 298** *eP* **P** **14 41 38.0 +0.1**
comp=Z,534nm,0.7s
EKS2 LR LR
comp=Z,162μm,21.0s
ZRNK **Zerenda** **50.78 312** *eP* **P** **14 41 38.5 -0.2**
ZRNK pmax pmax
comp=Z,2μm,0.9s
ZRNK **Zerenda** **50.78 312** *eP* **P** **14 41 38.5 -0.2**
comp=Z,2μm,0.9s
EGAK **Eagle** **50.78 33** PFAKE 14 41 50.0 +12
EGAK LR LR
comp=Z,98μm,21.0s
PBA **Port Blair** **50.96 252** *eP* P 14 41 41.5 +1.0
PBA IAmb IAmb 14 41 46.3
comp=Z,637nm,0.5s
PBA IAMs_20 IAMs_20 15 03 26.5
comp=Z,121μm,19.0s
LGTI **Lohaghat** **50.99 280** *eP* **P** **14 41 43.2 +2.6**
BATI **Baumata** **51.08 203** P **P** **14 41 41.5 +0.2**
comp=Z,257nm,0.5s,baz=287,slow=24,SNR=31
BATI **Baumata** **51.08 203** P **P** **14 41 41.5 +0.2**
comp=Z,686nm,0.9s,comp=Z,12μm
DSRI **Dabo** **51.51 230** P P 14 41 50.7 +6.1
BWJI **Bawean** **51.53 218** P **P** **14 41 43.8 -0.9**
comp=Z,483nm,1.5s,comp=Z,8μm
MNAS **Manas** **51.58 298** P **P** **14 41 46.5 +1.5**
MNAS pmax pmax
comp=Z,2μm,0.9s
WSI **Waingapu** **51.70 207** P **P** **14 41 43.8 -2.1**
comp=Z,2μm,0.8s
MTN **Manton Dam** **51.79 193** *eP* **P** **14 41 43.5 -3.0**
comp=Z,3μm,1.2s
PLAI **Plampang** **51.90 211** P **P** **14 41 46.2 -1.2**
comp=Z,2μm,1.7s,comp=Z,24μmcomp=Z,335μm
PPBI **Pangkal Pinang** **51.93 228** P **P** **14 41 48.6 +0.9**
comp=Z,693nm,1.4s,comp=Z,15μm
COEN **Coen** **51.95 178** *eP* **P** **14 41 47.6 -0.1**
comp=Z,2μm,0.9s
BASI **Baing, Sumba** **52.11 207** P **P** **14 41 47.9 -1.1**
comp=Z,2μm,1.4s,comp=Z,29μmcomp=Z,274μm
TWSI **Taliwang, Sumb** **52.18 212** P **P** **14 41 48.6 -0.9**
comp=Z,1μm,1.1s,comp=Z,19μmcomp=Z,212μm
LHMI **Lhok Sumawe** **52.24 243** P **P** **14 41 52.0 +2.0**
comp=Z,2μm,0.8s,comp=Z,41μm
LHMI **Lhok Sumawe** **52.24 243** *eP* **P** **14 41 51.2 +1.2**
comp=Z,1μm,0.7s
DDI **Dehra Dun** **52.29 282** *eP* **P** **14 41 52.6 +2.2**
DDI *ex* x 14 45 40.5
KEKH **Kekaha** **52.36 90** *eP* **P** **14 41 54.4 +3.5**
comp=Z,500nm,1.2s
TSI **Tuntungan** **52.37 240** P **P** **14 41 51.7 +0.7**
comp=Z,1μm,0.8s,comp=Z,25μm
ABJI **Asem Bagus** **52.49 215** P **P** **14 41 52.3 +0.5**
comp=Z,2μm,2.4s,comp=Z,37μm
SDNR **Sundarnagar** **52.60 283** *eP* **P** **14 41 55.0 +2.4**
SDNR *ex* x 14 49 12.0
SMLA **Simla** **52.62 283** *i* P **P** **14 41 53.2 +0.6**
SMLA IAmb IAmb 14 41 58.4
comp=Z,1μm,0.7s
SMLA *i* x x 14 49 11.3
PSI **Prapat** **52.64 239** P **P** **14 41 53.4 +0.2**
comp=Z,327nm,0.8s,baz=14,slow=4.6,SNR=151
PSI PKPPKP **P'P'df** **15 12 12.5 -7.6**
comp=Z,3.7nm,0.4s,baz=170,slow=20,SNR=5.8
PSI P4KPbc 15 19 19.1
comp=Z,4.0nm,0.4s,baz=350,slow=4.0,SNR=7.4
PSI **Prapat** **52.64 239** *eP* **P** **14 41 52.8 -0.3**
PSI pmax pmax
comp=Z,810nm,0.7s
PSI **Prapat** **52.64 239** *eP* **P** **14 41 52.8 -0.3**
comp=Z,806nm,0.7s
PSI P'P' 15 12 12.5
PSI *e* 15 19 19.1
KK31 **Karatay Array** **52.74 299** P **P** **14 41 54.2 +0.7**
KK31 pmax pmax
comp=Z,2μm,1.2s
KKAR **Karatay Array** **52.74 299** *eP* **P** **14 41 53.5 0.0**
KKAR **Karatay Array** **52.74 299** *eP* **P** **14 41 53.5 0.0**
DHRM **DHARAMSHALA** **52.78 285** *eP* **P** **14 41 54.1 -0.1**
RGRI **Rengat** **52.79 233** P **P** **14 41 56.0 +1.9**
comp=Z,3μm,1.1s,comp=Z,38μm
DNP **Denpasar** **52.84 214** P **P** **14 41 54.3 0.0**
comp=Z,3μm,1.3s,comp=Z,64μm
UWJI **Ujung Watu** **52.86 220** P **P** **14 41 55.9 +1.3**
comp=Z,2μm,2.2s,comp=Z,38μm
KCSI **Kotacane, Aceh** **52.89 240** P **P** **14 41 53.8 -1.1**
comp=Z,496nm,1.2s,comp=Z,13μm
JWA **Jwalamukhi** **52.93 284** *eP* **P** **14 41 55.0 +0.1**
JWA *ex* x 14 42 11.0
JMBI **JAMBI** **52.99 231** P **P** **14 41 58.3 +2.8**
comp=Z,4μm,1.1s,comp=Z,43μm
BKNI **Bangkinang** **53.10 235** P **P** **14 41 57.6 +1.2**
comp=Z,4μm,1.0s,comp=Z,45μm
BKNI **Bangkinang** **53.10 235** *eP* **P** **14 41 57.1 +0.8**
comp=Z,4μm,1.0s

JAGI **Jajag, Banyuwa** **53.12 215** P **P** **14 41 55.1 -1.4**
comp=Z,603nm,1.0s,comp=Z,18μmcomp=Z,321μm
JAGI **Jajag, Banyuwa** **53.12 215** *eP* **P** **14 41 54.5 -2.0**
comp=Z,1μm,1.1s
CMBY **CAMPBELL BAY** **53.15 247** *eP* **P** **14 41 57.0 +0.2**
CMBY IAmb IAmb 14 42 12.6
comp=Z,4μm,1.3s
INK **Inuvik** **53.19 28** P **P** **14 41 56.5 +0.2**
comp=Z,642nm,1.0s,baz=297,slow=6.5,SNR=345
INK LR LR 15 07 00.7
INK comp=Z,149μm,19.9s,baz=282,slow=39 PKPPKP P'P'df 15 12 06.0 -19
comp=Z,14nm,1.0s,baz=112,slow=1.6,SNR=8.2
GMJI **Gumukmas** **53.27 216** P **P** **14 41 57.0 -0.5**
comp=Z,655nm,1.1s,comp=Z,20μmcomp=Z,214μm
PMBI **Palembang** **53.34 228** P **P** **14 42 00.4 +2.3**
comp=Z,3μm,1.1s,comp=Z,41μm
KKR **Kurukshetra** **53.41 282** *eP* **P** **14 41 59.3 +0.7**
KKR *eP* **P** **14 41 59.3 +0.7**
KKR IAmb IAmb 14 42 08.1
comp=Z,1μm,0.7s
IUG **Iuzhnay** **53.41 298**⇑ *iP* **P** **14 41 59.8 +1.2**
comp=Z,10μm,1.6s
IUG *i* S **S** **14 49 27.5 +0.5**
IUG LR LR 15 05 08.0
comp=Z,45μm,17.4s
NGJI **Ngawi** **53.42 219** P **P** **14 42 00.1 +1.4**
comp=Z,1μm,1.3s,comp=Z,37μm
TPTI **Tanjung Pati** **53.49 241** P **P** **14 41 58.1 -1.1**
comp=Z,462nm,1.1s,comp=Z,14μm
BISR **Bishrakh** **53.58 280** *eP* **P** **14 41 58.5 -1.3**
BISR IAmb IAmb 14 42 00.2
comp=Z,700nm,0.5s
CHM **Chimkent** **53.65 299** *i* P **P** **14 42 00.7 +0.6**
comp=Z,1μm,0.8s
CHM *i* S **S** **14 49 31.8 +1.9**
CHM LRM MLR 15 08 08.9
comp=Z,46μm,17.0s
MNSI **Mandailing Nat** **53.69 236** P **P** **14 42 00.4 -0.3**
comp=Z,754nm,0.7s,comp=Z,14μm
NDI **New Delhi** **53.70 280** *eP* **P** **14 41 59.5 -1.2**
SDSI **Sungai Dareh** **53.81 233** P **P** **14 42 02.3 +0.7**
comp=Z,2μm,1.0s,comp=Z,37μm
OPA **Opana** **53.86 90** *eP* **P** **14 42 05.2 +3.3**
OPA pmax pmax
comp=Z,2μm,1.3s
OPA **Opana** **53.86 90** *eP* **P** **14 42 05.2 +3.3**
comp=Z,2μm,1.3s
AYAN **Aya Nagar** **53.86 280** *eP* **P** **14 42 01.9 +0.1**
AYAN *eP* **P** **14 42 01.9 +0.1**
AYAN IAmb IAmb 14 42 03.7
comp=Z,177nm,0.8s
BHGR **Bahadurgarh** **53.91 280** *eP* **P** **14 42 03.2 +1.0**
BHGR IAmb IAmb 14 42 08.4
comp=Z,3μm,0.1s
KIP **Kipapa** **54.00 90** *ceP* **P** **14 42 05.4 +2.5**
KIP pmax pmax
comp=Z,8μm,1.7s
KIP MLR MLR
comp=Z,140μm,20.0s
KIP **Kipapa** **54.00 90** *eP* **P** **14 42 05.1 +2.2**
comp=Z,835nm,1.1s
KIP LR LR
comp=Z,91μm,20.0s
SONA **Sohna** **54.00 280** *eP* **P** **14 42 03.2 +0.4**
SONA *eP* **P** **14 42 03.2 +0.4**
SONA IAmb IAmb 14 42 16.2
comp=Z,560nm,0.5s
HON **Honolulu** **54.06 90** *eP* **P** **14 42 07.0 +3.6**
HON **Honolulu** **54.06 90** *eP* **P** **14 42 07.0 +3.6**
WOJI **Wonogiri, Jawa** **54.09 219** P **P** **14 42 03.4 -0.2**
comp=Z,1μm,1.1s,comp=Z,27μmcomp=Z,254μm
RTK **Rohtak** **54.15 281** *eP* **P** **14 42 03.9 0.0**
RTK *eP* **P** **14 42 04.9 +1.0**
RTK IAmb IAmb 14 42 11.3
comp=Z,524nm,0.7s
PCJI **Pacitan** **54.28 218** P **P** **14 42 04.2 -0.7**
comp=Z,1μm,1.4s,comp=Z,24μm
UGM **Wanagama** **54.35 219** P **P** **14 42 05.1 -0.4**
comp=Z,5μm,1.4s,comp=Z,74μmcomp=Z,323μm
UGM **Wanagama** **54.35 219** *eP* **P** **14 42 05.0 -0.6**
comp=Z,11μm,1.4s
SVE **Sverdlovsk** **54.41 318** *deP* **P** **14 42 06.6 +1.2**
SVE *e* 14 44 10.3
SVE *eS* **S** **14 49 36.7 -3.0**
SVE *eSS* **SKiKP** **14 53 15.6 +5.3**
SVE *eSSS* SSS 14 55 18.4
SVE pmax pmax
comp=Z,4μm,1.2s
SVE pmax pmax
comp=Z,19μm,12.5s
SVE smax smax
comp=E,89μm,17.8s
SVE MLR MLR
comp=E,313μm,18.0s
SVE MLR MLR
comp=Z,414μm,18.0s
PDSI **Padang** **54.41 234** P **P** **14 42 05.1 -0.9**
comp=Z,228nm,0.9s,comp=Z,12μm
KUDL **Kundal** **54.52 280** *eP* **P** **14 42 06.8 +0.2**
KUDL IAmb IAmb 14 42 17.0
comp=Z,390nm,0.5s
VIS **Vishakhapatnam** **54.57 265** *eP* **P** **14 42 07.9 +0.8**
SKAG **Skagway** **54.59 38** *eP* **P** **14 42 08.4 +1.7**
GSI **Gunungsitoli** **54.64 239** P **P** **14 42 08.4 +0.7**
comp=Z,3μm,1.6s,comp=Z,61μm
GSI **Gunungsitoli** **54.64 239** *eP* **P** **14 42 07.3 -0.4**
comp=Z,6μm,1.1s
KPJI **Karang Pucung** **54.67 221** P **P** **14 42 07.2 -0.6**
comp=Z,2μm,0.9s,comp=Z,28μm
LHSI **Lahat** **54.80 229** P **P** **14 42 09.2 +0.4**
comp=Z,4μm,1.2s,comp=Z,58μm
KLI **Kotabumi** **54.85 227** P **P** **14 42 08.8 -0.3**
comp=Z,4μm,1.1s,comp=Z,59μm
TNG **Tangerang** **54.92 224** P P 14 42 16.6 +7.0
TNG P P 14 42 16.6 +7.0
LEM **Lembang** **54.94 223** PKPPKP 15 12 11.1
comp=Z,14nm,0.6s,baz=186,slow=22,SNR=3.9
LEM **Lembang** **54.94 223** P P 14 42 15.2 +5.3
MDSI **Maura Dua** **54.94 228** P **P** **14 42 09.3 -0.5**
comp=Z,2μm,1.1s,comp=Z,33μm
MASI **Maura Aman, Be** **55.03 231** P **P** **14 42 11.2 +0.7**
comp=Z,4μm,1.0s,comp=Z,62μm
BLSI **Bandar Lampung** **55.04 226** P **P** **14 42 10.1 -0.4**
comp=Z,3μm,0.9s,comp=Z,29μmcomp=Z,202μm
KHET **Khetri** **55.08 280** *eP* **P** **14 42 10.4 -0.3**
KHET *eP* **P** **14 42 11.4 +0.7**
KHET IAmb IAmb 14 42 18.0
comp=Z,586nm,0.9s
SBJI **Serang** **55.16 225** P **P** **14 42 12.4 +1.1**
comp=Z,1μm,1.1s,comp=Z,18μm
DBJI **Dramaga** **55.18 224** P **P** **14 42 11.0 -0.5**
comp=Z,2μm,2.3s,comp=Z,28μm
PBSI **Pulau Batu** **55.18 237** P **P** **14 42 11.8 +0.3**
comp=Z,2μm,2.2s,comp=Z,38μm
CMJI **Cimerak** **55.30 221** P **P** **14 42 10.5 -1.8**
comp=Z,559nm,1.4s,comp=Z,13μm
LWLI **Liwa** **55.44 228** P **P** **14 42 12.5 -1.0**
comp=Z,2μm,0.8s,comp=Z,24μm
CISI **Cisompet, Garu** **55.44 222** P **P** **14 42 12.2 -1.2**
comp=Z,926nm,0.6s,comp=Z,17μm
CISI **Cisompet, Garu** **55.44 222** *eP* **P** **14 42 11.2 -2.2**
comp=Z,674nm,0.6s
SOKR **Solikamsk** **55.52 322** *c iP* **P** **14 42 12.0 -1.3**
SOKR S **S** **14 49 52.6 -1.8**
SOKR SS **SS** **14 53 41.9 +2.7**
SOKR pmax pmax
comp=Z,2μm,1.5s
SOKR MLR MLR
comp=Z,96μm,18.0s
MNAI **Manna** **55.56 229** P **P** **14 42 14.7 +0.4**
comp=Z,2μm,0.8s,comp=Z,36μm
KASI **Kota Agung** **55.60 227** P **P** **14 42 12.6 -1.9**
comp=Z,1μm,0.9s,comp=Z,14μm
CNJI **Cibinong** **55.60 223** P **P** **14 42 12.0 -2.5**
comp=Z,814nm,1.2s,comp=Z,13μmcomp=Z,208μm
ARU **Arti** **55.62 318** PKPPKP 15 12 13.2
comp=Z,9.3nm,0.8s,baz=229,slow=3.7,SNR=9.6
ARU P4KPbc 15 19 30.6
comp=Z,9.8nm,0.6s,baz=73,slow=3.2,SNR=7.0
ARU **Arti** **55.62 318** *c iP* **P** **14 42 13.9 -0.3**
ARU 14 44 18.7
ARU *eS* **S** **14 49 56.7 +0.7**
ARU SS **SS** **14 53 39.6 -1.5**
ARU SSS SSS 14 55 45.9
ARU pmax pmax
comp=Z,4μm,1.7s
ARU pmax pmax
comp=Z,26μm,17.6s
ARU MLR MLR
comp=Z,371μm,18.0s
ARU **Arti** **55.62 318** *eP* **P** **14 42 13.9 -0.3**
comp=Z,3μm,1.0s
ARU P'P' 15 12 13.2
ARU *e* 15 19 30.6
ARU LR LR
comp=Z,394μm,19.0s
SKJI **Sukabumi** **55.66 224** P **P** **14 42 13.6 -1.3**
comp=Z,2μm,1.3s,comp=Z,18μm
HLK **Haleakala** **55.74 90** *eP* **P** **14 42 19.2 +3.3**
comp=Z,1μm,1.3s
CGJI **Cibinong** **55.81 225** P **P** **14 42 13.2 -2.8**
comp=Z,567nm,1.3s,comp=Z,11μm
PPSI **Pulau Pagai** **56.12 233** P **P** **14 42 18.6 +0.4**
comp=Z,3μm,0.8s,comp=Z,38μmcomp=Z,153μm
PVM **Polavaram** **56.17 266** *eP* **P** **14 42 18.6 0.0**
PVM IAmb IAmb 14 42 26.4
comp=Z,2μm,1.6s
PVM *eS* **S** **14 49 57.9 -6.4**
PVM IVMs_BB IVMs_BB 15 06 01.8
comp=Z,34μm,24.0s
BHPL **Bhopal** **56.23 274** *eP* **P** **14 42 18.8 -0.3**
BHPL IAmb IAmb 14 42 26.1
comp=Z,533nm,1.0s
BHPL IAMs_20 IAMs_20 15 07 07.7
comp=Z,158μm,24.9s
POHA **Pohakuloa** **56.85 90** *eP* **P** **14 42 25.5 +1.8**
comp=Z,1μm,1.1s
POHA LR LR
comp=Z,71μm,22.0s
MLOA **Mauna Loa Obse** **56.94 90** *eP* **P** **14 42 26.9 +2.3**
CRAG **Craig** **56.99 43** *eP* **P** **14 42 25.9 +2.0**
comp=Z,753nm,1.1s
WRAK **Wrangell Islan** **57.06 41** *eP* **P** **14 42 26.3 +1.9**
comp=Z,2μm,1.5s
WRAK LR LR
comp=Z,64μm,19.0s
RPR **Rampur** **57.10 269** *eP* **P** **14 42 25.1 -0.1**
RPR IAmb IAmb 14 42 33.5
comp=Z,1μm,1.1s
RPR *eS* **S** **14 50 16.1 -0.5**
RPR *eSS* **SS** **14 54 03.5 -2.4**
RPR IVMs_BB IVMs_BB 15 09 29.0
comp=Z,41μm,18.1s
HPO **Honuapo** **57.20 91** *eP* **P** **14 42 29.6 +3.6**
KBL **Kabul** **57.22 290** *eP* **P** **14 42 25.9 -0.3**
KBL pmax pmax
comp=Z,2μm,1.1s
KBL **Kabul** **57.22 290** *eP* **P** **14 42 25.9 -0.3**
comp=Z,2μm,1.1s
AB31 **Akbulak array** **57.35 310** P **P** **14 42 26.8 +0.2**
AB31 pmax pmax
comp=Z,491nm,0.6s
ABKAR **Akbulak array** **57.35 310** *eP* **P** **14 42 26.2 -0.4**
DLBC **Dease Lake** **57.52 39** PKPPKP 15 12 12.7
comp=Z,8.8nm,1.1s,baz=71,slow=2.4,SNR=4.4
DLBC **Dease Lake** **57.52 39** *eP* **P** **14 42 28.3 +0.6**
DLBC P'P' 15 12 12.7
SRSP **Sriramsagar** **57.81 269** *eP* **P** **14 42 29.7 -0.6**
SRSP IAmb IAmb 14 42 37.2
comp=Z,8μm,2.0s
SRSP *eS* **S** **14 50 24.5 -1.4**
SRSP *eSS* **SS** **14 54 15.2 -2.0**
SRSP IVMs_BB IVMs_BB 15 11 08.4
comp=Z,42μm,18.5s
AKTO **Aktyubinsk** **58.05 311** P4KPbc 15 19 41.8
comp=Z,11nm,0.7s,baz=69,slow=5.3,SNR=13
FITZ **Fitzroy Crossi** **58.06 198** P **P** **14 42 31.8 +0.1**
comp=Z,373nm,0.8s,baz=20,slow=8.7,SNR=135
FITZ LR LR 15 07 10.4
FITZ comp=Z,14μm,21.8s,baz=18,slow=36 PKP2bc 15 12 19.1
comp=Z,26nm,1.0s,baz=197,slow=4.2,SNR=3.0
FITZ **Fitzroy Crossi** **58.06 198** *eP* **P** **14 42 32.2 +0.5**
FITZ ⇑*e* 15 12 19.1
H02N1 **VAN INLET T-PH** **58.12 45** P **P** **14 42 34.3 +2.2**
SNR=41
FUNA **Funafuti** **58.18 135** *eP* **P** **14 42 33.9 +1.1**
comp=Z,1μm,1.4s
FUNA LR LR
comp=Z,195μm,22.0s
H02S1 **DAWSON INLET T** **58.18 45** P **P** **14 42 32.7 +0.4**
SNR=96
CTA **Charters Tower** **58.18 175** P **P** **14 42 32.3 -0.4**
comp=Z,164nm,0.5s,baz=355,slow=8.9,SNR=83
CTA LR LR 15 05 14.8
comp=Z,22μm,21.8s,baz=359,slow=34
CTAO **Charters Tower** **58.18 175** *eP* **P** **14 42 32.1 -0.5**
CTAO **Charters Tower** **58.18 175** *eP* **P** **14 42 32.1 -0.5**
CTAO LR LR
comp=Z,49μm,22.0s
ADKI **Addanki** **58.27 265** *eP* **P** **14 42 34.2 +0.7**
ADKI IAmb IAmb 14 42 41.6
comp=Z,2μm,1.6s
ADKI *eS* **S** **14 50 33.0 +1.0**
ADKI *eSS* **SS** **14 54 15.0 -9.4**
ADKI IVMs_BB IVMs_BB 15 07 00.7
comp=Z,44μm,26.7s
WRAB **Tennant Creek** **58.29 188** *ceP* **P** **14 42 33.5 +0.1**
WRAB pmax pmax
comp=Z,4μm,1.0s
WRAB **Tennant Creek** **58.29 188** PFAKE 14 42 50.0 +17
WRAB LR LR
comp=Z,119μm,22.0s
WB2 **Warramunga Arr** **58.30 188** *eP* **P** **14 42 32.3 -1.2**
WRA **Warramunga Arr** **58.30 188** P **P** **14 42 32.5 -0.9**
comp=Z,1μm,0.8s,baz=6.4,slow=7.0,SNR=882
WRA S **S** **14 50 30.4 -1.6**
comp=Z,30nm,1.2s,baz=5.1,slow=11,SNR=5.5
WRA LR LR 15 05 14.8
comp=Z,106μm,21.8s,baz=0.0,slow=33
WRA PKPPKP **P'P'df** **15 12 05.5 -2.1**
comp=Z,16nm,1.0s,baz=153,slow=2.4,SNR=8.1
WRA PKP2bc 15 12 20.7
comp=Z,54nm,1.1s,baz=183,slow=2.2,SNR=9.1
WRA P4KPbc 15 19 42.8
comp=Z,8.3nm,1.0s,baz=2.3,slow=4.5,SNR=14
NJS **Nagarjunasagar** **58.39 267** *eP* **P** **14 42 34.4 +0.1**
NJS IAmb IAmb 14 42 41.6
comp=Z,2μm,1.8s
NJS *eS* **S** **14 50 33.1 -0.4**
NJS *eSS* **SS** **14 54 22.5 -3.7**
NJS IVMs_BB IVMs_BB 15 09 01.2
comp=Z,40μm,22.3s
HYB **Hyderabad** **58.49 268** *i* P **P** **14 42 34.0 -1.1**
comp=Z,500nm,1.0s
HYB *eS* **S** **14 50 30.0 -4.9**
HYB LR LR 15 10 00.0
comp=Z,142nm,22.0s
HYB *ep*PKPPKP P'P'df 15 12 25.0 +11
HYB **Hyderabad** **58.49 268** *eP* **P** **14 42 35.0 0.0**
HYBB **Hyderabad (bro** **58.49 268** *eP* **P** **14 42 34.7 -0.4**
HYBB IAmb IAmb 14 42 42.3
comp=Z,2μm,1.5s
HYBB *eS* **S** **14 50 33.6 -1.3**
HYBB *eSS* **SS** **14 54 25.8 -2.1**
HYBB IVMs_BB IVMs_BB 15 09 57.0
comp=Z,34μm,20.4s
HOPEN **Hopen** **58.92 346** *eP* **P** **14 42 37.7 +0.6**
HOPEN IAmb IAmb 14 42 44.8
comp=Z,7μm,1.9s
SRLM **Srisailam** **58.98 266** *eP* **P** **14 42 38.5 +0.1**
SRLM IAmb IAmb 14 42 44.4
comp=Z,4μm,2.1s
SRLM *eS* **S** **14 50 37.5 -3.6**
SRLM *eSS* **SS** **14 54 32.1 -3.4**
SRLM IVMs_BB IVMs_BB 15 09 18.9
comp=Z,38μm,21.6s
RCLA **Racherla** **59.30 266** *eP* **P** **14 42 40.8 +0.2**
RCLA IAmb IAmb 14 42 48.0
comp=Z,1μm,1.2s
RCLA *eS* **S** **14 50 39.6 -5.6**
RCLA IVMs_BB IVMs_BB 15 06 31.5
comp=Z,39μm,27.2s
SPA0 **Spitsbergen Ar** **59.38 349** *eP* **P** **14 42 40.7 +0.4**
SPA0 IAmb IAmb 14 42 47.9
comp=Z,1μm,1.4s
SPA0 *eS* **S** **14 50 48.3 +3.6**
SPA0 IVMs_BB IVMs_BB 15 08 51.0
comp=Z,52μm,24.5s
SPITS **Spitsbergen Ar** **59.38 349** PKP2bc **P'P'bc** **15 12 22.4 -3.9**
comp=Z,58nm,1.1s,baz=210,slow=5.0,SNR=7.3

SPITS LR LR 15 12 48.1
comp=Z,71µm,18.4s,baz=40,slow=40
JASL Jaisalmer 59.43 282 *eP* **P 14 42 41.1 -0.3**
JASL *eP* **P 14 42 42.1 +0.7**
JASL IAmb IAmb 14 42 49.0
comp=Z,3µm,1.2s
KBS Kingsbay 59.50 350 *eP* **P 14 42 42.9 +1.8**
KBS IAmb IAmb 14 42 48.3
comp=Z,1µm,1.2s
KBS *eS* **S 14 50 49.5 +3.3**
KBS Kingsbay 59.50 350 *eP* **P 14 42 41.6 +0.5**
KBS pmax pmax
comp=Z,1µm,1.0s
KBS Kingsbay 59.50 350 *eP* **P 14 42 41.6 +0.5**
comp=Z,1µm,0.9s
KBS LR LR
comp=Z,65µm,20.0s
KLRI Killari 59.67 270 *eP* **P 14 42 42.4 -0.8**
KLRI IAmb IAmb 14 42 50.7
comp=Z,2µm,1.1s
KLRI *eS* **S 14 50 47.9 -2.1**
KLRI IVMs_BB IVMs_BB 15 10 57.2
comp=Z,56µm,19.0s
MDRS Chennai 59.68 263 *eP* **P 14 42 44.6 +1.4**
MDRS IAmb IAmb 14 42 51.5
comp=Z,3µm,1.6s
SKHT Srikalahasti 59.70 264 *eP* **P 14 42 43.6 +0.2**
SKHT IAmb IAmb 14 42 51.6
comp=Z,1µm,1.0s
SKHT *eS* **S 14 50 51.3 +0.8**
SKHT *eSS* **SS 14 54 45.4 -1.5**
SKHT IVMs_BB IVMs_BB 15 09 41.0
comp=Z,32µm,22.9s
HSPB Hornsund (broa 60.31 348 *eP* **P 14 42 47.5 +0.8**
HSPB IAmb IAmb 14 42 53.9
comp=Z,3µm,1.3s
HSPB *eS* **S 14 50 58.4 +1.8**
HSPB IVMs_BB IVMs_BB 15 10 48.8
comp=Z,44µm,19.9s
HSPB Hornsund (broa 60.31 348 *eP* **P 14 42 47.8 +1.1**
HSPB *eS* **S 14 50 56.4 -0.3**
URV Uravakonda 60.92 266 *eP* **P 14 42 51.3 -0.5**
URV IAmb IAmb 14 42 58.9
comp=Z,5µm,2.0s
URV *eS* **S 14 51 03.7 -2.5**
URV *eSS* **SS 14 55 02.9 -3.2**
URV IVMs_BB IVMs_BB 15 09 38.5
comp=Z,33µm,23.7s
LVZ Lovozero 61.11 336 *ceP* **P 14 42 52.1 -0.2**
LVZ pmax pmax
comp=Z,953nm,1.0s
LVZ MLR MLR
comp=Z,228µm,22.0s
LVZ Lovozero 61.11 336 *eP* **P 14 42 51.8 -0.5**
LVZ LR LR
comp=Z,216µm,20.0s
BJO Bjornoya 61.31 345 *eP* **P 14 42 54.4 +0.9**
BJO IAmb IAmb 14 42 59.1
comp=Z,1µm,1.1s
BJO *eS* **S 14 51 10.6 +1.1**
BJO IVMs_BB IVMs_BB 15 13 05.9
comp=Z,75µm,17.9s
RES Resolute Bay 61.36 15 P **P 14 42 53.2 -0.6**
comp=Z,517nm,0.8s,baz=303,slow=7.9,SNR=521
RES PKPPKP P'P'df 15 12 03.0 -10
comp=Z,13nm,1.0s,baz=118,slow=1.6,SNR=11
RES LR LR 15 12 24.8
comp=Z,37µm,20.5s,baz=314,slow=39
RES P4KPbc 15 19 58.1
comp=Z,1.6nm,0.7s,baz=294,slow=4.7,SNR=7.1
POO Poona 61.57 272 *eP* **P 14 42 56.2 +0.1**
POO IAmb IAmb 14 43 03.6
comp=Z,2µm,1.4s
POO IAMs_20 IAMs_20 15 12 48.6
comp=Z,96µm,16.2s
APA Apatity 61.68 336⇓ *iP* **P 14 42 56.6 +0.5**
APA *i* 14 45 20.0
APA *iS* **S 14 51 14.0 -0.3**
APA pmax pmax
comp=Z,624nm,1.0s
APA MLR MLR
comp=Z,322µm,22.0s
TMCR Tamitsa 61.80 331 *eP* **P 14 42 58.4 +1.5**
TMCR *eS* **S 14 51 21.9 +6.0**
TMCR pmax pmax
comp=Z,3µm,1.4s
AS01 Alice Springs 62.02 188 *eP* **P 14 42 56.8 -2.1**
AS31 Alice Springs 62.02 188 *eP* **P 14 42 58.0 -0.9**
ASAR Alice Springs 62.03 188 P **P 14 42 58.5 -0.5**
comp=Z,789nm,0.8s,baz=8.3,slow=8.5,SNR=1100
ASAR S **S 14 51 20.5 +0.9**
comp=Z,7.7nm,0.9s,baz=8.3,slow=7.7,SNR=2.9
ASAR LR LR 15 10 01.9
comp=Z,41µm,21.8s,baz=360,slow=36
ASAR PKPPKP **P'P'df 15 12 02.0 +0.2**
comp=Z,15nm,1.1s,baz=157,slow=9.5,SNR=6.7
ASAR PKP2bc 15 12 16.9
comp=Z,30nm,0.8s,baz=176,slow=1.6,SNR=19
ASAR P4KPbc 15 20 00.0
comp=Z,6.2nm,0.8s,baz=6.2,slow=4.3,SNR=17
BHJ Bhuj 62.30 279 *eP* **P 14 43 01.5 +0.5**
BHJ IAmb IAmb 14 43 04.2
comp=Z,3µm,1.8s
BHJ IAMs_20 IAMs_20 15 11 07.8
comp=Z,263µm,19.8s
KEV Kevo 62.40 339 PFAKE 14 43 10.0 +9.2
KEV LR LR
comp=Z,110µm,22.0s
YKW3 Yellowknife Ar 62.59 30 *eP* **P 14 43 01.6 -0.7**
MBWA Marble Bar 62.60 203 *eP* **P 14 43 02.4 -0.4**
MBWA LR LR
comp=Z,29µm,21.0s
MBWA Marble Bar 62.60 203 P **P 14 43 02.9 +0.1**
SNR=66
MBWA P **P 14 43 02.9 +0.1**
SNR=66
MBWA Marble Bar 62.60 203 P **P 14 43 02.9 +0.1**
SNR=66
YKA Yellowknife Ar 62.63 31 P **P 14 43 02.0 -0.6**
comp=Z,358nm,1.0s,baz=300,slow=6.0,SNR=430
YKA PKPPKP P'P'df 15 11 52.7 -18
comp=Z,5.1nm,1.0s,baz=132,slow=2.5,SNR=7.2
YKA P4KPbc 15 20 01.7
comp=Z,2.0nm,0.8s,baz=300,slow=4.3,SNR=16
YKA Yellowknife Ar 62.63 31 P **P 14 43 02.0 -0.6**
YKA pmax pmax
comp=Z,359nm,1.0s
YKB5 Yellowknife Ar 62.63 31 *eP* **P 14 43 01.2 -1.4**
HAMF Hammerfest 62.75 341 *eP* **P 14 43 03.0 -0.2**
HAMF IAmb IAmb 14 43 09.5
comp=Z,1µm,1.1s
HAMF *eS* **S 14 51 27.9 +0.2**
HAMF *eSS* **SS 14 55 34.1 +1.9**
HAMF IVMs_BB IVMs_BB 15 10 57.2
comp=Z,56µm,23.3s
KLMR Klimovskoe 62.87 327 *eP* **P 14 43 00.4 -3.7**
KLMR *e*SP **pP 14 43 18.4 -0.4**
KLMR *e* 14 45 19.3
KLMR *eS* **S 14 51 26.8 -2.6**
KLMR *e* 14 52 48.2
KLMR *eSS* **SS 14 55 34.5 +0.1**
KLMR pmax pmax
comp=Z,2µm,1.5s
KLMR MLR MLR
comp=Z,204µm,16.0s
PALK Pallekele 62.88 257 *i* P **P 14 43 05.3 +0.4**
SNR=81
PALK Pallekele 62.88 257 *ceP* **P 14 43 05.9 +0.9**
PALK Pallekele 62.88 257 *eP* **P 14 43 05.4 +0.5**
PALK Pallekele 62.88 257 P **P 14 43 05.5 +0.5**
SNR=145
PALK Pallekele 62.88 257 P **P 14 43 05.5 +0.5**
SNR=145
ARA0 ARCESS Array S 62.95 339 *eP* **P 14 43 04.3 -0.3**
ARCES ARCESS Array B 62.95 339 P **P 14 43 04.5 -0.1**
comp=Z,307nm,0.9s,baz=54,slow=8.2,SNR=180
ARCES PKPPKP **P'P'df 15 12 07.0 -3.1**
comp=Z,8.5nm,0.8s,baz=194,slow=1.9,SNR=7.4
ARCES LR LR 15 15 34.0
comp=Z,148µm,18.1s,baz=42,slow=41
ARE0 ARCESS Array S 62.95 339 *eP* **P 14 43 04.7 +0.1**
ARE0 IAmb IAmb 14 43 11.7
comp=Z,3µm,1.6s
ARE0 IVMs_BB IVMs_BB 15 10 41.8
comp=Z,78µm,24.1s
ARE0 ARCESS Array S 62.95 339 *eP* **P 14 43 04.7 +0.1**

ASHT Ashkhabad 63.28 298 P **P 14 43 08.4 +1.1**
ASHT pmax pmax
comp=Z,3µm,1.4s
GOA Goa 63.31 269 *eP* **P 14 43 07.8 0.0**
GOA IAMs_20 IAMs_20 15 12 07.1
comp=Z,136µm,24.5s
GEYT Alibeck 63.47 299 P **P 14 43 08.7 +0.1**
comp=Z,176nm,0.7s,baz=33,slow=3.4,SNR=219
GEYT S **S 14 51 29.9 -7.9**
comp=Z,9.7nm,1.0s,baz=78,slow=7.9,SNR=2.1
GEYT PKP2bc 15 12 11.0
comp=Z,44nm,1.3s,baz=273,slow=5.6,SNR=13
GEYT LR LR 15 12 41.1
comp=Z,240µm,19.5s,baz=55,slow=38
EIDS Eidsvold 63.89 171 *eP* **P 14 43 11.2 0.0**
KTK1 Kautokeino 63.91 339 *eP* **P 14 43 11.5 +0.6**
KTK1 IAmb IAmb 14 43 17.7
comp=Z,2µm,1.1s
KTK1 *eS* **S 14 51 40.8 -1.4**
KTK1 *eSS* **SS 14 55 51.7 +1.3**
HEF Hetta 64.17 339 *eP* **P 14 43 12.9 +0.3**
DZM Mont Dzumac 64.34 155 P **P 14 43 15.7 +1.4**
comp=Z,426nm,0.6s,baz=26,slow=7.2,SNR=91
DAG Danmarks Havn 64.58 355⇑ *iP* **P 14 43 15.7 +0.5**
comp=Z,1µm,1.0s
DAG *e* 15 12 00.9
DAG Danmarks Havn 64.58 355⇑ *iP* **P 14 43 15.7 +0.5**
DAG pmax pmax
comp=Z,1µm,1.0s
DAG MLR MLR
comp=Z,40µm,18.0s
TRO Tromso 64.65 341 *eP* **P 14 43 15.6 -0.1**
TRO IAmb IAmb 14 43 21.2
comp=Z,1µm,0.8s
TRO *eS* **S 14 51 50.9 -0.3**
TRD Trivandrum 65.00 261 *eP* **P 14 43 18.6 -0.3**
MSVF Nonsavu 65.30 142 *eP* **P 14 43 22.5 +1.8**
MSVF Nonsavu 65.30 142 *eP* **P 14 43 22.5 +1.8**
MSVF LR LR
comp=Z,188µm,22.0s
COCO West Island 65.42 229 *ceP* **P 14 43 23.6 +2.2**
COCO West Island 65.42 229 *eP* **P 14 43 23.1 +1.7**
COCO LR LR
comp=Z,46µm,21.0s
COCO West Island 65.42 229 P **P 14 43 23.6 +2.2**
SNR=22
COCO P **P 14 43 23.6 +2.2**
SNR=22
COCO P **P 14 43 23.6 +2.2**
SNR=22
COCO West Island 65.42 229 P **P 14 43 23.6 +2.2**
SNR=22
B04A Port Angeles 65.59 47 *eP* **P 14 43 23.9 +1.8**
A04D Lummi Island 65.71 46 P **P 14 43 24.2 +1.3**
baz=301,SNR=43
A04D S **S 14 52 04.2 -0.6**
baz=301
NLWA Neilton Lookou 65.71 48 *eP* **P 14 43 24.5 +1.4**
NLWA LR LR
comp=Z,77µm,22.0s
I43RU DUBNA INFRASON 66.07 324 P **P 14 43 25.1 0.0**
baz=63,slow=11
XMAS Kiritimati 66.08 107 *eP* **P 14 43 27.7 +1.9**
XMAS LR LR
comp=Z,3.0nm,20.0s
GNW Green Mountain 66.23 47 P **P 14 43 27.8 +1.5**
B05A Bryant 66.29 47 P **P 14 43 28.4 +1.7**
baz=301,SNR=180
E03A Lebam 66.33 49 *eP* **P 14 43 28.9 +2.0**
JCW Jim Creek 66.42 47 *eP* **P 14 43 28.5 +0.9**
MOS Moscow 66.42 323⇑ *iP* **P 14 43 27.8 +0.4**
MOS *e* 14 43 57.4
MOS *e* 14 45 53.3
MOS *iS* **S 14 52 12.7 -0.6**
MOS *eSS* **SS 14 56 27.8 -2.1**
MOS pmax pmax
comp=Z,6µm,1.8s
MOS pmax pmax
comp=N,2µm,1.5s
MOS pmax pmax
comp=E,1µm,1.3s
MOS pmax pmax
comp=Z,3µm,1.7s
MOS pmax pmax
comp=N,1µm,1.5s
MOS pmax pmax
comp=E,788nm,1.3s
MOS smax smax
comp=N,7µm,2.5s
MOS smax smax
comp=E,12µm,2.5s
MOS MLR MLR
comp=E,110µm,16.0s
MOS MLR MLR
comp=Z,158µm,16.0s
B06A Marblemount 66.50 46 *eP* **P 14 43 29.2 +1.2**
RPW Rockport 66.52 46 P **P 14 43 29.0 +0.7**
F03A Seaside 66.65 49 *eP* **P 14 43 31.4 +2.3**
KULLO Kullorsuaq 66.74 5 *i* P **P 14 43 28.8 -0.3**
KULLO Kullorsuaq 66.74 5 *i* **P'P'df 15 11 56.7 -7.0**
KULLO Kullorsuaq 66.74 5 *i* P **P 14 43 28.8 -0.3**
KULLO MLR MLR
comp=Z,150µm,24.0s
STEI Steigen 66.80 341 *eP* **P 14 43 29.7 +0.1**
STEI IAmb IAmb 14 43 35.0
comp=Z,639nm,0.5s
C05A Tolt Reservoir 66.82 47 *eP* **P 14 43 32.5 +2.4**
VRH Novokhopyorsk 66.85 318 *eP* **P 14 43 30.2 0.0**
VRH *eS* **S 14 52 14.9 -3.7**
VRH *eSS* **SS 14 56 32.4 -4.3**
VRH pmax pmax
comp=Z,1µm,1.6s
VRH pmax pmax
comp=Z,990nm,0.7s
VRH smax smax
comp=E,13µm,3.5s
VRH MLR MLR
comp=Z,147µm,21.0s
F04D Rainier, OR 66.89 49 P **P 14 43 32.3 +1.7**
baz=302,SNR=15
D05A Enumclaw 66.91 47 *eP* **P 14 43 32.4 +1.7**
LOF Lofoten 67.09 341 *eP* **P 14 43 32.2 +0.8**
LOF IAmb IAmb 14 43 38.0
comp=Z,876nm,1.1s
PNT Penticton 67.13 45 *eP* **P 14 43 32.9 +0.8**
PNT Penticton 67.13 45 *eP* **P 14 43 32.9 +0.8**
C06D Leavenworth 67.15 46 P **P 14 43 33.5 +1.3**
baz=302,SNR=74
OBSR Observation Ro 67.17 48 *eP* **P 14 43 34.3 +1.7**
G03D McMinnville, O 67.20 50 P **P 14 43 34.2 +1.6**
baz=302,SNR=28
LON Longmire 67.25 48 *eP* **P 14 43 33.9 +1.0**
LON Longmire 67.25 48 P **P 14 43 33.7 +0.8**
OBN Obninsk 67.27 323 *ceP* **P 14 43 32.9 +0.1**
OBN *i* 14 43 48.6
OBN *i* 14 44 04.6
OBN *e* 14 46 02.1
OBN *iS* **S 14 52 22.4 -1.2**
OBN *eSS* **SS 14 56 47.0 +3.9**
OBN pmax pmax
comp=Z,3µm,1.7s
OBN MLR MLR
comp=Z,171µm,17.0s
OBN Obninsk 67.27 323 *eP* **P 14 43 33.2 +0.4**
OBN LR LR
comp=Z,134µm,20.0s
PUL Pulkovo 67.28 329 *ceP* **P 14 43 33.6 +0.9**
PUL pmax pmax
comp=Z,3µm,1.0s
PUL MLR MLR
comp=Z,223µm,21.0s
F04A Amboy 67.32 49 *eP* **P 14 43 34.8 +1.5**
COR Corvallis 67.50 50 *eP* **P 14 43 36.6 +2.2**
COR Corvallis 67.50 50 *eP* **P 14 43 36.6 +2.2**
LPSR Galich'ya Gora 67.53 320 *eP* **P 14 43 35.0 +0.5**
LPSR *e* 14 46 01.4
LPSR *eS* **S 14 52 23.1 -3.7**
LPSR *eSS* **SS 14 56 45.0 -2.2**
LPSR pmax pmax
comp=Z,1µm,1.1s
LPSR pmax pmax
comp=Z,5µm,2.1s
LPSR smax smax
comp=N,23µm,9.5s
LPSR MLR MLR

comp=Z,172µm,25.0s
LTY Liberty 67.64 47 *eP* **P 14 43 36.4 +1.0**
AFI Afiamalu 67.72 130 LR LR 15 06 57.7
comp=Z,115µm,21.9s,baz=309,slow=30
B08A Colville Reser 67.80 45 *eP* **P 14 43 36.5 +0.1**
FIA1 FINESS Array S 67.86 332 *eP* **P 14 43 35.9 -0.5**
FINES FINESS Array B 67.86 332 P **P 14 43 35.8 -0.6**
comp=Z,1µm,1.0s,baz=60,slow=4.6,SNR=535
FINES PKPPKP **P'P'df 15 11 54.5 -7.2**
comp=Z,3.9nm,0.8s,baz=191,slow=2.1,SNR=5.4
FINES LR LR 15 15 06.1
comp=Z,194µm,21.1s,baz=46,slow=37
VORR Voronezh 67.91 319 *eP* **P 14 43 35.0 -1.9**
VORR *eS* **S 14 52 29.0 -2.3**
VORR pmax pmax
comp=Z,2µm,1.8s
I03D Drain, OR 67.95 51 P **P 14 43 39.0 +1.8**
baz=302,SNR=52
H04A Detroit Lake 68.13 50 *eP* **P 14 43 39.1 +0.6**
VSR Storozhevoye 68.18 319 *eP* **P 14 43 39.2 +0.6**
VSR *eS* **S 14 52 30.3 -4.3**
VSR pmax pmax
comp=Z,2µm,1.2s
VSR pmax pmax
comp=Z,520nm,0.6s
VSR smax smax
comp=E,35µm,8.0s
VSR MLR MLR
comp=Z,213µm,25.0s
MOR8 Moi Rana 68.31 340 *eP* **P 14 43 37.3 -1.8**
MOR8 IAmb IAmb 14 43 43.4
comp=Z,1µm,0.9s
G05D Wamic, OR 68.35 49 P **P 14 43 41.2 +1.4**
baz=303,SNR=69
KONS Konsvik 68.42 340 *eP* **P 14 43 41.1 +1.3**
KONS IAmb IAmb 14 43 46.1
comp=Z,588nm,0.9s
KONS *eS* **S 14 52 37.5 +0.6**
I04A Tendick Farm, 68.47 51 P **P 14 43 41.7 +1.1**
baz=303,SNR=142
STOK Stokkvaagen 68.57 340 *eP* **P 14 43 41.5 +0.7**
STOK IAmb IAmb 14 43 53.6
comp=N,454nm,1.5s
L02D Cave Junction, 68.61 53 P **P 14 43 42.8 +1.2**
baz=303,SNR=46
WIFE Three Sisters- 68.69 50 *eP* **P 14 43 43.5 +1.4**
C09A Chrisman Ranch 68.70 45 *eP* **P 14 43 42.9 +0.9**
DPW Davenport 68.70 45 *eP* **P 14 43 43.2 +1.2**
DPW Davenport 68.70 45 *eP* **P 14 43 43.2 +1.2**
D08A Wollman Farm, 68.75 46 P **P 14 43 43.0 +0.8**
G06A Carlson Farm, 68.75 49 *eP* **P 14 43 43.6 +1.2**
HAWA Hanford 68.76 47 *eP* **P 14 43 43.5 +1.1**
HAWA LR LR
comp=Z,44µm,20.0s
HUMO Hull Mountain 68.78 52 *eP* **P 14 43 44.0 +1.5**
I05D Terrebonne, OR 68.82 50 P **P 14 43 43.8 +0.9**
baz=303,SNR=77
ARMA Armidale 68.94 171 *eP* **P 14 43 44.2 +0.6**
JMIC Jan Mayen 68.99 350 LR LR 15 16 33.9
comp=Z,43µm,19.0s,baz=34,slow=38
JCC Jacoby Creek, 69.07 54 *eP* **P 14 43 46.3 +2.0**
NEW Newport 69.08 45 PKPPKP **P'P'df 15 11 52.5 -7.0**
comp=Z,16nm,1.1s,baz=126,slow=4.7,SNR=4.3
NEW LR LR 15 14 14.4
comp=Z,21µm,19.9s,baz=302,slow=36
NEW Newport 69.08 45 P **P 14 43 45.1 +0.8**
baz=304,SNR=333
NEW Newport 69.08 45 *eP* **P 14 43 44.5 +0.1**
NEW Newport 69.08 45 *eP* **P 14 43 44.5 +0.1**
NEW P'P' 15 11 52.5
KHMM Horse Mountain 69.23 54 *eP* **P 14 43 47.7 +2.2**
YBH Yreka Blue Hor 69.40 53 LR LR 15 09 39.0
comp=Z,41µm,21.0s,baz=294,slow=32
YBH PKPPKP 15 11 51.8
comp=Z,7.5nm,1.0s,baz=108,slow=3.2,SNR=4.8
YBH Yreka Blue Hor 69.40 53 *eP* **P 14 43 47.7 +1.2**
YBH Yreka Blue Hor 69.40 53 *eP* **P 14 43 47.7 +1.2**
YBH P'P' 15 11 51.8
J05D Fort Rock, OR 69.46 51 P **P 14 43 48.4 +1.4**
baz=304,SNR=275
SUMG Summit 69.47 0⇑ *iP* **P 14 43 48.1 +1.3**
comp=Z,2µm,0.8s
SUMG *i* 15 11 47.4
SUMG Summit 69.47 0⇑ *iP* **P 14 43 48.1 +1.3**
SUMG pmax pmax
comp=Z,2µm,0.8s
SUMG Summit 69.47 0 *eP* **P 14 43 46.6 -0.1**
GOF Gofitskoye 69.47 312⇑ *iP* **P 14 43 48.2 +1.4**
GOF *eS* **S 14 52 51.6 +1.5**
GOF pmax pmax
comp=Z,2µm,1.0s
M02C Callahan 69.50 53 P **P 14 43 48.8 +1.7**
baz=303,SNR=92
K04D Chiloquin, OR 69.51 52 P **P 14 43 48.7 +1.5**
baz=304,SNR=28
VSU Vasula 69.53 329 *ceP* **P 14 43 46.9 +0.1**
VSU pmax pmax
comp=Z,5µm,1.7s
VSU MLR MLR
comp=Z,560µm,20.0s
KMRM Mail Ridge 69.60 55 *eP* **P 14 43 49.8 +2.0**
G08A Pilot Rock 69.71 48 *eP* **P 14 43 52.8 +4.4**
STKA Stephens Creek 69.77 180 P **P 14 43 48.1 -0.4**
comp=Z,329nm,0.8s,baz=350,slow=7.3,SNR=161
STKA S **S 14 52 46.7 -6.8**
comp=Z,14nm,1.1s,baz=112,slow=19,SNR=2.1
STKA PKPPKP **P'P'df 15 11 43.5 -5.4**
comp=Z,12nm,1.1s,baz=195,slow=4.6,SNR=6.0
STKA PKP2bc 15 11 54.6
comp=Z,12nm,1.0s,baz=123,slow=1.9,SNR=7.6
STKA LR LR 15 16 03.8
comp=Z,43µm,20.5s,baz=1.7,slow=37
N02D Trinity Center 69.82 53 P **P 14 43 50.7 +1.6**
baz=304,SNR=76
M04C Macdoel 69.92 52 P **P 14 43 51.2 +1.5**
baz=304,SNR=201
KIPM Iron Peak 69.97 55 *eP* **P 14 43 51.7 +1.6**
K05A Summer Lake 69.98 51 *eP* **P 14 43 51.1 +0.9**
NCK Nalchik 70.01 310 *c iP* **P 14 43 50.5 +0.4**
NCK pmax pmax
comp=Z,625nm,1.3s
NCK MLR MLR
comp=Z,136µm,17.0s
GUDG Gudauri 70.05 309 P **P 14 43 51.7 +1.0**
DGRG David-gareji 70.06 307 P **P 14 43 51.1 +0.6**
DGRG David-gareji 70.06 307 P **P 14 43 51.1 +0.6**
DUS Dusheti 70.12 308 P **P 14 43 52.6 +1.7**
DUS Dusheti 70.12 308 P **P 14 43 52.6 +1.7**
WDC Whiskeytown Da 70.14 54 *eP* **P 14 43 52.2 +1.2**
WDC Whiskeytown Da 70.14 54 *eP* **P 14 43 52.2 +1.2**
ZEI Tsey 70.22 309 *eP* **P 14 43 50.9 -0.8**
ZEI *eS* **S 14 52 55.4 -4.1**
ZEI pmax pmax
comp=Z,2µm,0.9s
NSS Namsos 70.23 339 *eP* **P 14 43 51.6 +0.6**
NSS IAmb IAmb 14 43 56.4
comp=Z,806nm,1.0s
NSS *eS* **S 14 52 58.8 +0.4**
NSS *eSS* **SS 14 57 30.1 +1.9**
NSS IVMs_BB IVMs_BB 15 16 01.0
comp=Z,62µm,21.0s
TBLG Delisi 70.30 308 P **P 14 43 54.0 +2.1**
TBLG Delisi 70.30 308 P **P 14 43 54.0 +2.1**
KIV Kislovodsk 70.30 311 *i* P **P 14 43 53.1 +1.1**
SNR=271
KIV Kislovodsk 70.30 311 *eP* **P 14 43 52.8 +0.8**
KIV *e* 14 44 12.5
KIV *e* 14 46 29.4
KIV *eS* **S 14 53 01.5 +1.4**
KIV *eSS* **SS 14 57 33.0 +2.5**
KIV pmax pmax
comp=Z,4µm,5.2s
KIV pmax pmax
comp=Z,4µm,1.1s
KIV MLR MLR
comp=Z,134µm,17.0s
KIV Kislovodsk 70.30 311 *eP* **P 14 43 53.0 +1.0**
KIV LR LR
comp=Z,153µm,20.0s
KIV Kislovodsk 70.30 311 P **P 14 43 53.3 +1.3**
SNR=816
KBZ Khabaz 70.30 310 P **P 14 43 52.4 +0.5**
comp=Z,480nm,0.9s,baz=59,slow=5.1,SNR=402
KBZ S **S 14 52 58.3 -1.6**
comp=Z,5.0nm,0.9s,baz=235,slow=19,SNR=5.1

KBZ PKP2bc 15 11 47.7
comp=Z,5.5nm,1.0s,baz=286,slow=4.3,SNR=6.5
KBZ LR LR 15 17 48.2
comp=Z,124µm,19.4s,baz=47,slow=38
F10A Beach Ranch, E 70.32 47 *e*P **P 14 43 52.8 +0.7**
WALA Waterton Lakes 70.37 43 *e*P **P 14 43 52.2 -0.2**
BSMT Bassoo Peak 70.61 44 *e*P **P 14 43 54.6 +0.7**
ONI Oni 70.61 309 P **P 14 43 55.0 +1.1**
ONI Oni 70.61 309 P **P 14 43 54.9 +1.1**
NEY Neytrino 70.68 310*c* *i*P **P 14 43 55.4 +1.0**
NEY pmax pmax
comp=Z,1µm,2.4s
NEY MLR MLR
comp=Z,74µm,17.0s
HOPS Hopland Field 70.68 55 *e*P **P 14 43 55.4 +1.1**
BLMT Blacktail Moun 70.74 44 *e*P **P 14 43 55.6 +0.8**
O03D Paynes Creek 70.77 54 P **P 14 43 55.6 +0.7**
baz=304,SNR=226
WSAR Wadi Sarin 70.80 285 P **P 14 43 55.8 +0.6**
comp=Z,257nm,0.9s,baz=99,slow=4.1,SNR=88
WSAR S **S 14 53 07.3 +1.0**
comp=Z,33nm,1.3s,baz=235,slow=16,SNR=4.9
MOD Modoc Plateau 70.81 52 *e*P **P 14 43 55.7 +0.5**
WBK Wadi Bani Khal 70.89 284 P **P 14 43 57.2 +1.4**
SNR=218
WBK Wadi Bani Khal 70.89 284 P **P 14 43 57.2 +1.4**
SNR=218
BBOO Buckleboo 70.90 185 *e*P **P 14 43 54.4 -0.9**
BMO Blue Mountains 70.92 48 *e*P **P 14 43 56.3 +0.5**
BMO Blue Mountains 70.92 48 *e*P **P 14 43 56.3 +0.5**
BMO LR LR
comp=Z,69µm,22.0s
SCO Scoresbysund 70.93 354⇑ *i*P **P 14 43 56.5 +1.3**
comp=Z,829nm,1.0s
SCO *e* 15 11 46.0
SCO Scoresbysund 70.93 354⇑ *i*P **P 14 43 56.5 +1.3**
SCO pmax pmax
comp=Z,830nm,1.0s
JTMT Jette 70.94 44 *e*P **P 14 43 56.5 +0.6**
YBMT Yellow Bay 71.02 44 *e*P **P 14 43 56.9 +0.6**
BIDO Bidbid 71.02 285 P **P 14 43 58.0 +1.4**
SNR=204
BIDO Bidbid 71.02 285 P **P 14 43 58.0 +1.4**
SNR=204
BANOM Banah 71.06 288 *i*P **P 14 43 57.7 +0.9**
SNR=229
BANOM Banah 71.06 288 P **P 14 43 58.2 +1.4**
SNR=348
BANOM P **P 14 43 58.2 +1.4**
SNR=348
BANOM Banah 71.06 288 P **P 14 43 58.2 +1.4**
SNR=348
GNI Garni 71.18 307 *i*P **P 14 43 59.3 +1.8**
SNR=204
GNI Garni 71.18 307*c* *i*P **P 14 43 58.6 +1.1**
GNI pmax pmax
comp=Z,4µm,1.4s
GNI MLR MLR
comp=Z,368µm,19.0s
GNI Garni 71.18 307 *e*P **P 14 43 58.7 +1.2**
GNI LR LR
comp=Z,199µm,20.0s
GNI Garni 71.18 307 P **P 14 43 58.7 +1.2**
SNR=341
SWMT Swartz Lake 71.24 44 *e*P **P 14 43 58.1 +0.4**
AKH Akhalkalaki 71.25 308 P **P 14 43 59.2 +1.3**
AKH Akhalkalaki 71.25 308⇑ *i*P **P'P'ab 15 11 50.0 -2.1**
AKH Akhalkalaki 71.25 308 P **P 14 43 59.2 +1.3**
LHI Lord Howe Isla 71.27 164 *e*P **P 14 43 59.0 +1.3**
MCCM Marconi Confer 71.28 56 *e*P **P 14 43 59.2 +1.3**
SMDO Samad 71.34 285 P **P 14 44 00.4 +1.7**
SNR=256
SMDO Samad 71.34 285 P **P 14 44 00.4 +1.7**
SNR=256
CHVG Ch'k'valeri 71.37 310 P **P 14 43 59.6 +1.2**
CHVG Ch'k'valeri 71.37 310⇑ *i*P **P'P'ab 15 11 52.4 +0.9**
ORV Oroville 71.38 54 *e*P **P 14 43 58.4 -0.1**
ORV Oroville 71.38 54 *e*P **P 14 43 58.4 -0.1**
IZAR Zarasai 71.52 327 *e*P **P 14 43 59.2 +0.2**
IZAR IAmb IAmb 14 44 24.2
comp=Z,348nm,0.9s
IZAR Zarasai 71.52 327 *e*P P'P'ab 15 11 40.2 -11
IZAR IAmb IAmb 15 11 45.8
comp=Z,15nm,0.9s
WVOR Wild Horse Val 71.52 50 *e*P **P 14 44 00.2 +0.7**
WVOR Wild Horse Val 71.52 50 *e*P **P 14 44 00.2 +0.7**
WVOR LR LR
comp=Z,62µm,22.0s
EAK Akyaka 71.59 307 *i*P **P 14 44 00.5 +0.5**
IDID Didziasalis 71.59 327 *e*P **P 14 43 59.7 +0.3**
IDID IAmb IAmb 14 44 25.6
comp=Z,397nm,0.7s
IDID Didziasalis 71.59 327 *e*P **P'P'ab 15 11 44.7 -6.1**
IDID IAmb IAmb 15 11 51.1
comp=Z,12nm,1.1s
MICGM Minsk 71.63 326⇑ *i*P **P 14 44 01.0 +1.3**
MICGM PM 14 44 02.0
comp=N,3.1nm,1.2s
MICGM PM 14 44 02.0
comp=Z,3.0nm,1.0s
MICGM PM 14 44 02.0
comp=E,2.6nm,1.5s
MICGM PM 14 44 04.0
comp=Z,37nm,7.0s
MICGM PM 14 44 08.0
comp=Z,75nm,22.0s
MICGM *e*PcP **PcP 14 44 18.0 -0.7**
MICGM *e*PP **PP 14 46 32.0 -6.6**
MICGM PPM 14 46 46.0
comp=Z,24nm,20.0s
MICGM *e*PPP PPP 14 48 20.0
MICGM *e*S **S 14 53 16.0 +1.1**
MICGM SM 14 53 17.0
comp=N,54nm,12.0s
MICGM SM 14 53 17.0
comp=E,176nm,12.0s
MICGM SM 14 53 17.0
comp=N,47nm,8.0s
MICGM SM 14 53 20.0
comp=E,110nm,6.0s
MICGM *e*PS **PnS 14 53 44.0 -5.8**
MICGM *e*SS **SS 14 57 48.0 -2.1**
MICGM *e*SSS SSS 15 01 14.0
MICGM *e*LQ LQ 15 03 04.0
MICGM *e*LR LR 15 10 40.0
MICGM LRM MLR 15 17 30.0
comp=E,100nm,14.0s
MICGM LRM MLR 15 17 56.0
comp=Z,137nm,20.0s
MNK Minsk 71.63 326*c* *i*P **P 14 44 01.0 +1.3**
EPOS Posof 71.67 309 *i*P **P 14 44 01.6 +1.2**
MSO Missoula 71.67 44 P **P 14 44 00.8 +0.6**
baz=307,SNR=291
MSO Missoula 71.67 44 *e*P **P 14 44 00.7 +0.4**
UOSS Minazif 71.68 288 *e*P **P 14 44 00.6 +0.1**
ISAL Salakas 71.69 327 *e*P **P 14 44 00.3 +0.3**
ISAL IAmb IAmb 14 44 25.5
comp=Z,781nm,0.9s
ISAL Salakas 71.69 327 *e*P P'P'ab 15 11 41.9 -8.6
ISAL IAmb IAmb 15 11 50.8
comp=Z,28nm,1.4s
TBLU Trondheim 71.70 339 *e*P **P 14 44 00.0 0.0**
TBLU IAmb IAmb 14 44 05.9
comp=Z,3µm,1.5s
TBLU *e*S **S 14 53 14.5 -1.0**
TBLU *e*SS **SS 14 57 48.3 -2.5**
TBLU IVMs_BB IVMs_BB 15 16 39.4
comp=Z,63µm,26.7s
IIGN Ignalina 71.79 327 *e*P **P 14 44 00.9 +0.2**
IIGN IAmb IAmb 14 44 26.0
comp=Z,553nm,1.1s
IIGN Ignalina 71.79 327 *e*P P'P'ab 15 11 41.7 -8.4
IIGN IAmb IAmb 15 11 50.5
comp=Z,34nm,1.5s
HATD Hatta, Dubai 71.80 288 *i*P **P 14 44 02.0 +0.7**
SNR=232
NACGM Naroch 71.85 327 *e*P **P 14 44 01.0 0.0**
NACGM PM 14 44 05.0
comp=Z,4.7nm,1.0s
NACGM *e*PcP **PcP 14 44 20.0 +0.4**
NACGM *e*PP **PP 14 46 46.0 +5.5**
NACGM *e*PPP PPP 14 48 25.0
NACGM *e*S **S 14 53 17.0 -0.4**
NACGM *e*PS **PnS 14 54 00.0 +7.4**
NACGM *e*SS SS 14 57 41.0 -12

NACGM *e*SSS SSS 15 01 17.0
NACGM *e*LQ LQ 15 08 44.0
NACGM LRM MLR 15 19 18.0
comp=Z,162nm,16.0s
ASHO Ashiyiah 71.93 287 *i*P **P 14 44 02.7 +0.7**
SNR=215
ASHO Ashiyiah 71.93 287 P **P 14 44 02.8 +0.7**
SNR=347
ASHO P **P 14 44 02.8 +0.7**
SNR=347
ASHO Ashiyiah 71.93 287 P **P 14 44 02.8 +0.7**
SNR=347
KARS Kars 71.95 308 *e*P **P 14 44 00.1 -2.0**
CHMT Chamberlain Mo 72.00 44 *e*P **P 14 44 02.4 0.0**
AFDM Forest Hills D 72.06 54 *e*P **P 14 44 03.3 +0.6**
NAZ Nazwa, Dubai 72.06 288 *i*P **P 14 44 03.3 +0.5**
SNR=112
DYDN Diyadin 72.19 306 *i*P **P 14 44 05.7 +2.0**
FAQ Al Faqa, Dubai 72.25 288 *i*P **P 14 44 04.7 +0.7**
SNR=171
FAQ *i*P **P 14 44 05.0 +1.0**
SNR=37
SOC Sochi 72.27 312*c* *i*P **P 14 44 03.9 +0.1**
SOC *e**PP **pP 14 44 16.3 -2.4**
SOC *e* 14 44 20.5
SOC *e* 14 46 43.3
SOC *e*PPP PPP 14 48 26.2
SOC *i*S **S 14 53 22.8 +0.1**
SOC *e* 14 54 04.0
SOC *e*SS **SS 14 57 55.0 -5.5**
SOC *e*SSS SSS 15 01 17.6
SOC pmax pmax
comp=Z,1µm,1.0s
SOC pmax pmax
comp=Z,9µm,2.5s
SOC MLR MLR
comp=N,127µm,19.0s
SOC MLR MLR
comp=Z,169µm,19.0s
SOC MLR MLR
comp=E,61µm,19.0s
CLDR Caldiran 72.28 306 *e*P **P 14 44 05.4 +1.2**
ARQ Araqi 72.34 286 P **P 14 44 05.8 +1.2**
SNR=281
ARQ Araqi 72.34 286 P **P 14 44 05.8 +1.2**
SNR=281
ARTV Artvin 72.34 309 *i*P **P 14 44 04.1 -0.4**
DBOC Borcka 72.41 309 *i*P **P 14 44 04.3 -0.4**
DAGI Agillar 72.42 309 *i*P **P 14 44 05.5 +0.7**
ILULI Ilulissat 72.43 5⇑ *i*P **P 14 44 04.8 +0.6**
comp=E,2µm,1.2s
ILULI Ilulissat 72.43 5⇑ *i*P **P 14 44 04.8 +0.6**
ILULI pmax pmax
comp=Z,2µm,1.2s
ILULI MLR MLR
comp=Z,64µm,24.0s
ASUD Al Ashush, Dub 72.51 288 *i*P **P 14 44 06.0 +0.5**
SNR=40
FFC Flin Flon 72.55 33 *e*P **P 14 44 04.8 -0.4**
FFC Flin Flon 72.55 33 *e*P **P 14 44 04.8 -0.4**
FFC LR LR
comp=Z,63µm,22.0s
DBAD Bademkaya 72.59 309 *i*P **P 14 44 06.8 +1.0**
VMUR Van-Muradiye 72.59 306 *i*P **P 14 44 08.2 +2.2**
AGRB Hanur-Agry 72.61 307 *e*P **P 14 44 07.8 +1.6**
DDEM Demirkent 72.62 309 *i*P **P 14 44 08.0 +1.9**
EATA Elesk irt 72.76 307 *i*P **P 14 44 07.6 +0.4**
ANN Anapa 72.87 314*c* *i*P **P 14 44 07.0 -0.3**
ANN *i* 14 44 24.3
ANN *i*PPP PPP 14 48 36.5
ANN *e*S **S 14 53 27.5 -1.9**
ANN *i* 14 54 07.5
ANN *e*SS **SS 14 58 13.5 +4.0**
ANN pmax pmax
comp=Z,2µm,1.3s
ANN pmax pmax
comp=N,276nm,1.4s
ANN pmax pmax
comp=E,363nm,1.4s
ANN smax smax
comp=N,11µm,9.9s
ANN smax smax
comp=Z,14µm,9.9s
ANN smax smax
comp=E,41µm,9.9s
ANN MLR MLR
comp=E,116µm,20.0s
ANN MLR MLR
comp=N,167µm,20.0s
ANN MLR MLR
comp=Z,138µm,20.0s
VANB Van 72.93 306 *e*P **P 14 44 09.7 +1.8**
TVAN Van 72.96 306 *i*P **P 14 44 09.7 +1.5**
CMB Columbia Colle 72.96 55 *e*P **P 14 44 09.1 +1.1**
CMB Columbia Colle 72.96 55 *e*P **P 14 44 09.1 +1.1**
MOL Molde 73.00 340 *e*P **P 14 44 07.6 -0.2**
MOL IAmb IAmb 14 44 15.8
comp=Z,2µm,1.2s
MOL *e*S **S 14 53 31.6 +1.3**
MOL *e*SS **SS 14 58 11.4 +0.8**
MOL IVMs_BB IVMs_BB 15 19 47.5
comp=Z,59µm,19.5s
SAO San Andreas Ge 73.00 56 *e*P **P 14 44 09.3 +1.0**
SAO San Andreas Ge 73.00 56 *e*P **P 14 44 09.3 +1.0**
HOMI Horasan 73.02 308 *i*P **P 14 44 09.1 +0.5**
HFS Hagfors 73.08 336 LR LR 15 19 11.6
comp=Z,400µm,19.7s,baz=39,slow=38
LRM Limekiln Ridge 73.10 45 *e*P **P 14 44 09.2 +0.2**
NB2 NORSAR Subarra 73.16 337 P **P 14 44 09.2 +0.4**
comp=Z,2µm,1.0s,baz=38,slow=6.2
NB2 NORSAR Subarra 73.16 337 P **P 14 44 09.2 +0.4**
baz=38,slow=6.2
NOA NORSAR Array B 73.16 337 P **P 14 44 08.3 -0.4**
comp=Z,1µm,1.0s,baz=38,slow=5.9,SNR=348
NOA LR LR 15 19 04.3
comp=Z,301µm,21.8s,baz=30,slow=38
EGMT Eagleton 73.19 42 P **P 14 44 10.0 +0.7**
baz=309,SNR=897
EGMT Eagleton 73.19 42 PFAKE 14 44 20.0 +11
EGMT LR LR
comp=Z,56µm,22.0s
WAKR Walker 73.30 54 *e*P **P 14 44 11.2 +1.0**
NC602 NORSAR Array S 73.30 337 *e*P **P 14 44 10.2 +0.7**
NC602 IAmb IAmb 14 44 16.2
comp=Z,2µm,1.5s
NC602 IVMs_BB IVMs_BB 15 18 20.9
comp=Z,134µm,22.6s
DLMT Dillon 73.30 45 *e*P **P 14 44 10.7 +0.6**
GEVA Gevas 73.31 306 *i*P **P 14 44 11.5 +1.2**
HAKT HAKKARI 73.33 305 *i*P **P 14 44 11.3 +0.8**
HLID Hailey 73.36 47 P **P 14 44 11.7 +1.2**
baz=307,SNR=430
HLID Hailey 73.36 47 *e*P **P 14 44 10.5 0.0**
HLID LR LR
comp=Z,67µm,22.0s
EKAR Karacoban 73.39 307 *i*P **P 14 44 12.6 +1.9**
LCCM Lewis and Clar 73.41 44 *e*P **P 14 44 11.6 +0.9**
ERZM Erzurum 73.44 308 *i*P **P 14 44 12.2 +1.1**
AKN Aaknes 73.47 340 *e*P **P 14 44 11.2 +0.7**
AKN IAmb IAmb 14 44 16.6
comp=Z,1µm,0.9s
AKN *e*S **SKiKP 14 53 38.3 +2.2**
AKN IVMs_BB IVMs_BB 15 20 02.0
comp=Z,58µm,20.1s
MCMT McKenzie Canyo 73.49 46 *e*P **P 14 44 11.2 -0.1**
AKASG Malin Array Be 73.49 322 P **P 14 44 10.1 -0.8**
comp=Z,491nm,0.7s,baz=43,slow=6.0,SNR=639
AKASG PP **PP 14 46 55.1 +0.6**
comp=Z,104nm,0.8s,baz=42,slow=9.2,SNR=4.3
AKASG S **S 14 53 35.7 -0.5**
comp=Z,3.6nm,0.8s,baz=37,slow=9.5,SNR=4.2
AKASG PKKPbc **PKKPbc 15 03 49.3 +4.2**
comp=Z,1.4nm,0.5s,baz=248,slow=2.6,SNR=5.4
AKASG PKPPKP **P'P'df 15 11 48.6 -3.2**
comp=Z,3.5nm,0.9s,baz=251,slow=2.3,SNR=4.7
AKASG LR LR 15 19 24.1
comp=Z,215µm,18.5s,baz=50,slow=38
KIEV Kiev 73.50 322*c* *i*P **P 14 44 10.5 -0.4**
KIEV pmax pmax
comp=Z,1µm,1.2s
KIEV MLR MLR
comp=Z,169µm,17.0s
KIEV Kiev 73.50 322 *e*P **P 14 44 09.8 -1.1**
KIEV LR LR
comp=Z,184µm,19.0s

CAN Canberra 73.51 174 *e*P **P 14 44 10.8 -0.2**
CAN Canberra 73.51 174 PFAKE 14 44 20.0 +9.0
CAN LR LR
comp=Z,64µm,22.0s
CUKT Cukurca 73.57 305 *e*P **P 14 44 12.2 +0.5**
BOZ Bozeman (W) 73.67 44 P **P 14 44 13.4 +1.2**
baz=308,SNR=813
BOZ Bozeman (W) 73.67 44 *e*P **P 14 44 13.3 +1.1**
BOZ Bozeman (W) 73.67 44 *e*P **P 14 44 13.3 +1.1**
BOZ LR LR
comp=Z,29µm,19.0s
BGMT Barton Gulch 73.69 45 *e*P **P 14 44 13.7 +1.2**
TATV Tatvan 73.69 306 *i*P **P 14 44 14.5 +2.0**
KTUT Trabzon 73.78 310 *e*P **P 14 44 13.3 +0.6**
MACK Trabzon 73.81 309 *i*P **P 14 44 12.8 -0.1**
VRTB Varto-Mus 73.82 307 *e*P **P 14 44 15.0 +1.8**
BAYT Ayd¯–ntepe-Bay 73.91 309 *e*P **P 14 44 15.2 +1.5**
KOPT Kop Dagi 73.91 308 *i*P **P 14 44 14.7 +0.8**
SUW Suwalki 74.00 327 *e*P **P 14 44 14.3 +0.6**
SUW *e*PcP pP 14 44 18.7 -10
SUW *e*S **S 14 53 41.9 +0.1**
SUW *e*SS **SS 14 58 32.0 +5.8**
SUW LMZ LR 15 14 25.3
SUW Suwalki 74.00 327 *e*P **P 14 44 14.4 +0.7**
SUW *e*S **S 14 53 42.0 +0.1**
SUW *e*SS **SS 14 58 32.0 +5.8**
NVAR Mina Array Bea 74.06 54 P **P 14 44 15.8 +1.1**
comp=Z,244nm,0.9s,baz=286,slow=6.0,SNR=244
NVAR PKPPKP **P'P'df 15 11 38.6 -12**
comp=Z,3.3nm,0.9s,baz=88,slow=3.1,SNR=4.8
NVAR LR LR 15 15 15.1
comp=Z,53µm,18.7s,baz=309,slow=34
NVAR P4KPbc 15 20 49.0
comp=Z,0.3nm,0.3s,baz=293,slow=4.8,SNR=2.3
BZMT Bozeman Pass 74.12 44 *e*P **P 14 44 16.4 +1.5**
BNGL BINGOL 74.14 307 *i*P **P 14 44 16.1 +0.9**
OSL Oslo 74.18 337 *e*P **P 14 44 15.4 +0.7**
OSL IAmb IAmb 14 44 21.7
comp=Z,2µm,0.9s
OSL *e*S **S 14 53 44.6 +1.0**
MLAC Mammoth, Mammo 74.19 54 P **P 14 44 17.0 +1.5**
baz=306,SNR=83
SIRN S¨–rnak 74.20 305 *i*P **P 14 44 16.3 +0.9**
QLMT Earthquake Lak 74.28 45 *e*P **P 14 44 17.2 +1.3**
NWAO Narrogin (SRO) 74.39 201 *e*P **P 14 44 15.8 -0.4**
NWAO Narrogin (SRO) 74.39 201 *e*P **P 14 44 15.8 -0.4**
NWAO LR LR
comp=Z,37µm,22.0s
NWAO Narrogin (SRO) 74.39 201 P **P 14 44 16.8 +0.7**
SNR=34
NWAO Narrogin (SRO) 74.39 201 P **P 14 44 16.8 +0.7**
SNR=34
BNGB Bing¨ll 74.41 307 *e*P **P 14 44 18.0 +1.4**
BGOL Bingol 74.42 307 *i*P **P 14 44 18.8 +2.2**
ESPY Espiye-Giresun 74.45 310 *e*P **P 14 44 17.5 +0.8**
YHB Horse Butte 74.46 45 *e*P **P 14 44 18.5 +1.6**
FOO Floro 74.48 340 *e*P **P 14 44 17.0 +0.6**
FOO IAmb IAmb 14 44 23.3
comp=Z,894nm,1.1s
FOO *e*S **S 14 53 49.2 +2.3**
FOO IVMs_BB IVMs_BB 15 20 33.5
comp=Z,70µm,20.9s
HYA Hoyanger 74.52 339 *e*P **P 14 44 16.9 +0.2**
HYA IAmb IAmb 14 44 23.6
comp=Z,2µm,1.1s
HYA *e*S **S 14 53 49.2 +1.7**
YMC Maple Creek 74.56 45 *e*P **P 14 44 18.6 +1.1**
ELK Elko 74.58 50 LR LR 15 11 15.7
comp=Z,47µm,21.1s,baz=316,slow=31
ELK Elko 74.58 50 *e*P **P 14 44 18.5 +0.8**
ELK Elko 74.58 50 *e*P **P 14 44 18.5 +0.8**
SVAN Silvan-Diyarba 74.58 306 *e*P **P 14 44 18.8 +1.3**
EUZM Uzumlu 74.59 308 *i*P **P 14 44 17.0 +1.3**
KELT Kelkit 74.60 309 *i*P **P 14 44 18.3 +0.5**
CRMT Chrome Mountai 74.60 44 *e*P **P 14 44 18.4 +0.5**
YMV Mammoth Vault 74.60 45 *e*P **P 14 44 19.3 +1.6**
YHH Holmes Hill 74.63 45 *e*P **P 14 44 19.0 +1.0**
SIM Simferopol' 74.64 315*ce*P **P 14 44 17.9 +0.3**
SIM PPP PPP 14 48 58.2
SIM *e*S **S 14 53 48.2 -1.1**
SIM SS **SS 14 58 37.1 +0.7**
SIM pmax pmax
comp=Z,1µm,0.7s
GCMT Greycliff 74.65 43 *e*P **P 14 44 18.6 +0.7**
ERZN Erzincan 74.65 308 *e*P **P 14 44 20.7 +2.7**
SFJD Kangerlussuaq 74.65 5⇑ *i*P **P 14 44 17.9 +0.6**
comp=Z,694nm,0.9s
SFJD Kangerlussuaq 74.65 5⇑ *i*P **P 14 44 17.9 +0.6**
SFJD pmax pmax
comp=Z,690nm,0.9s
SFJD MLR MLR
comp=Z,90µm,21.0s
SFJD Kangerlussuaq 74.65 5 *e*P **P 14 44 17.2 -0.1**
SFJD LR LR
comp=Z,96µm,22.0s
BTMN Batman 74.69 306 *i*P **P 14 44 19.9 +1.7**
YPM Purple Mountai 74.70 45 *e*P **P 14 44 20.0 +1.6**
RCTC Rector, Farmer 74.71 56 P **P 14 44 18.8 +0.6**
baz=306,SNR=20
GRSN GIRESUNGRSN 74.72 310 *i*P **P 14 44 18.7 +0.4**
KONO Kongsberg 74.76 337 *e*P **P 14 44 18.6 +0.6**
KONO IAmb IAmb 14 44 23.9
comp=Z,754nm,0.9s
KONO IVMs_BB IVMs_BB 15 19 03.5
comp=Z,86µm,22.0s
KONO Kongsberg 74.76 337 *e*P **P 14 44 19.1 +1.1**
KONO Kongsberg 74.76 337 PFAKE 14 44 30.0 +12
KONO LR LR
comp=Z,286µm,22.0s
YNR Norris Junctio 74.77 45 *e*P **P 14 44 20.6 +1.9**
SMMC Simmler 74.80 57 P **P 14 44 20.1 +1.3**
baz=306,SNR=9.7
KLNR Kaliningrad 74.81 329 *i*P **P 14 44 18.5 +0.1**
KLNR pmax pmax
comp=Z,4µm,1.3s
MCID Moose Creek 74.82 45 *e*P **P 14 44 20.1 +1.0**
YFT Old Faithful 74.85 45 *e*P **P 14 44 22.0 +2.8**
TIN Tinemaha, Big 74.92 55 P **P 14 44 20.9 +1.3**
baz=307,SNR=40
ORDU Ordu-Boztepe 74.93 310 *i*P **P 14 44 20.8 +1.3**
YLT Little Thumb C 75.00 45 *e*P **P 14 44 23.3 +3.2**
SUE Sulen 75.00 340 *e*P **P 14 44 20.0 +0.6**
SUE IAmb IAmb 14 44 26.6
comp=Z,2µm,1.3s
SUE *e*S **S 14 53 53.6 +0.8**
SUE IVMs_BB IVMs_BB 15 21 33.1
comp=Z,68µm,15.6s
LKWY Lake 75.02 45 PFAKE 14 44 30.0 +10
LKWY LR LR
comp=Z,68µm,20.0s
H17A Grant Village 75.03 45 P **P 14 44 23.3 +3.0**
baz=309,SNR=778
H17A Grant Village 75.03 45 *e*P **P 14 44 22.4 +2.1**
TNCL Tunceli-Merkez 75.04 308 *i*P **P 14 44 21.9 +1.6**
PKM Mcpherson Peak 75.17 57 P **P 14 44 22.4 +1.2**
baz=306,SNR=81
YTP The Promontory 75.19 45 *e*P **P 14 44 23.0 +1.8**
SUSE Susehri 75.20 310 *i*P **P 14 44 21.9 +0.7**
PTK Pertek 75.27 308 *e*P **P 14 44 23.1 +1.4**
RLMT Red Lodge 75.29 44 P **P 14 44 22.7 +1.0**
baz=310,SNR=494
RLMT Red Lodge 75.29 44 *e*P **P 14 44 22.2 +0.5**
RLMT LR LR
comp=Z,34µm,21.0s
MOOW Moose Ponds 75.34 46 *e*P **P 14 44 22.6 +0.6**
MARD Mardin 75.35 306 *i*P **P 14 44 23.5 +1.4**
REFA Refahiye_ERZ¯ 75.35 309 *i*P **P 14 44 22.2 +0.1**
ASK Askoy 75.36 339 *e*P **P 14 44 22.4 +0.9**
ASK IAmb IAmb 14 44 28.5
comp=Z,1µm,0.6s
ASK *e*S **S 14 53 58.4 +1.5**
DYBB Diyarbakir 75.37 307 *e*P **P 14 44 23.4 +1.3**
DIYA Diyarbakir 75.40 307 *i*P **P 14 44 24.1 +1.8**
BER Bergen 75.41 339 *e*P **P 14 44 22.6 +0.8**
BER IAmb IAmb 14 44 28.7
comp=Z,1µm,0.7s
BER *e*S **S 14 53 57.8 +0.5**
BER IVMs_BB IVMs_BB 15 20 55.6
comp=Z,80µm,16.9s
HVU Hansel Valley 75.41 48 *e*P **P 14 44 24.0 +1.6**
HVU Hansel Valley 75.41 48 *e*P **P 14 44 24.0 +1.6**
ODD1 Odda 75.43 338 *e*P **P 14 44 22.2 +0.2**
ODD1 IAmb IAmb 14 44 28.2

	comp=Z,899nm,0.6s						
ODD1				*e*S	**S**	**14 53 58.7**	**+0.9**
MAZI	**Mazidag**	**75.47**	**306**	*e*P	**P**	**14 44 23.8**	**+1.0**
SBC	**Santa Barbara**	**75.51**	**58**	P	**P**	**14 44 24.0**	**+1.1**
	baz=307,SNR=23						
LOHW	**Long Hollow**	**75.51**	**46**	*e*P	**P**	**14 44 23.7**	**+0.7**
GRAC	**Grapevine Rang**	**75.51**	**54**	P	**P**	**14 44 24.0**	**+1.1**
	baz=307,SNR=397						
SNOW	**Snow King Moun**	**75.52**	**46**	*e*P	**P**	**14 44 24.3**	**+1.2**
REDW	**Red Top Meadow**	**75.53**	**46**	*e*P	**P**	**14 44 24.1**	**+0.9**
FRB	**Frobisher Bay**	**75.53**	**13**	PKPPKP		15 11 41.2	
	comp=Z,8.9nm,0.9s,baz=137,slow=3.6,SNR=4.8						
FRB				LR	LR	15 20 43.4	
	comp=Z,91µm,20.1s,baz=338,slow=38						
ISA	**Isabella, Lake**	**75.59**	**56**	P	**P**	**14 44 23.7**	**+0.2**
	baz=307,SNR=32						
ISA	**Isabella, Lake**	**75.59**	**56**	*e*P	**P**	**14 44 23.6**	**+0.2**
ISA	**Isabella, Lake**	**75.59**	**56**	*e*P	**P**	**14 44 23.6**	**+0.2**
KEMA	**Kemaliye**	**75.60**	**309**	*i* P	**P**	**14 44 25.1**	**+1.7**
SORM	**Soroca**	**75.61**	**321⇑**	*i*P	**P**	**14 44 23.0**	**-0.2**
RSDY	**Resadiye-TOKAT**	**75.61**	**310**	*e*P	**P**	**14 44 24.7**	**+1.3**
MLI	**Malad Range**	**75.63**	**48**	*e*P	**P**	**14 44 24.9**	**+1.2**
SVRC	**Sivrice-ELAZID**	**75.64**	**308**	*e*P	**P**	**14 44 25.4**	**+1.6**
MTUT	**Morton Thiokol**	**75.64**	**48**	*e*P	**P**	**14 44 25.4**	**+1.8**
CUZAR	**Zara_SIVAS**	**75.66**	**310**	*i* P	**P**	**14 44 25.3**	**+1.5**
ARVC	**Arvin**	**75.68**	**57**	P	**P**	**14 44 24.6**	**+0.7**
	baz=307,SNR=58						
SAMS	**Samsun-Alacam**	**75.70**	**312**	*i* P	**P**	**14 44 24.2**	**+0.4**
DGMT	**Dagmar**	**75.73**	**39**	P	**P**	**14 44 24.5**	**+0.6**
	baz=312,SNR=279						
DGMT	**Dagmar**	**75.73**	**39**	*e*P	**P**	**14 44 24.0**	**+0.1**
DGMT				LR	LR		
	comp=Z,79µm,22.0s						
AHID	**Auburn Hatcher**	**75.76**	**47**	*e*P	**P**	**14 44 24.6**	**+0.2**
AHID				LR	LR		
	comp=Z,56µm,22.0s						
ELZG	**Elazig**	**75.76**	**308**	*i* P	**P**	**14 44 26.3**	**+1.8**
BEI	**Bear River Ran**	**75.78**	**47**	*e*P	**P**	**14 44 25.6**	**+1.1**
ERBA	**Erbaa**	**75.78**	**311**	*i* P	**P**	**14 44 25.1**	**+0.7**
BGU	**Big Grassy Mou**	**75.79**	**49**	*e*P	**P**	**14 44 25.6**	**+1.0**
DAC	**Darwin (Calif)**	**75.80**	**55**	*e*P	**P**	**14 44 25.2**	**+0.5**
DAC	**Darwin (Calif)**	**75.80**	**55**	*e*P	**P**	**14 44 25.2**	**+0.5**
R11A	**Troy Canyon, C**	**75.82**	**52**	P	**P**	**14 44 25.9**	**+1.1**
	baz=308,SNR=733						
SCZ2	**Santa Cruz Isl**	**75.82**	**58**	P	**P**	**14 44 25.3**	**+0.6**
	baz=307,SNR=7.0						
LTU	**Little Mountai**	**75.83**	**48**	*e*P	**P**	**14 44 25.9**	**+1.1**
EPU	**East Promontor**	**75.86**	**48**	*e*P	**P**	**14 44 25.4**	**+0.5**
BLS5	**Blasjo**	**75.88**	**338**	*e*P	**P**	**14 44 25.6**	**+1.1**
BLS5				IAmb	IAmb	14 44 31.7	
	comp=Z,1µm,1.1s						
BLS5				IVMs_BB	IVMs_BB	15 20 27.2	
	comp=Z,148µm,20.5s						
LAO	**LASA Array**	**75.89**	**41**	P	**P**	**14 44 25.9**	**+1.0**
	baz=311,SNR=252						
LAO	**LASA Array**	**75.89**	**41**	*e*P	**P**	**14 44 25.5**	**+0.6**
LAO				LR	LR		
	comp=Z,49µm,21.0s						
SPUT	**South Promonto**	**75.89**	**48**	*e*P	**P**	**14 44 26.2**	**+1.1**
A25A	**Svangstu Ranch**	**75.95**	**38**	P	**P**	**14 44 26.1**	**+1.0**
	baz=313,SNR=166						
KVT	**Kavak**	**75.95**	**311**	*e*P	**P**	**14 44 26.8**	**+1.5**
RCWM	**Renegade Canyo**	**75.96**	**55**	*e*P	**P**	**14 44 26.7**	**+1.2**
HDU	**Hyde Park**	**75.98**	**48**	*e*P	**P**	**14 44 26.6**	**+0.9**
WVUT	**Wellsville**	**75.99**	**48**	*e*P	**P**	**14 44 27.0**	**+1.2**
OSI	**Osito Audit: C**	**76.06**	**57**	P	**P**	**14 44 27.0**	**+0.9**
	baz=307,SNR=40						
OSI	**Osito Audit: C**	**76.06**	**57**	*e*P	**P**	**14 44 27.4**	**+1.3**
DIKM	**Dikmen**	**76.06**	**312**	*e*P	**P**	**14 44 27.6**	**+1.8**
SCER	**sogukcermik**	**76.06**	**310**	*i* P	**P**	**14 44 27.6**	**+1.5**
CLC	**China Lake**	**76.07**	**55**	*e*P	**P**	**14 44 27.3**	**+1.1**
CLC	**China Lake**	**76.07**	**55**	*e*P	**P**	**14 44 27.2**	**+1.1**
SHAO	**Shalim**	**76.08**	**282**	P	**P**	**14 44 26.2**	**-0.2**
	SNR=14						
SHAO	**Shalim**	**76.08**	**282**	P	**P**	**14 44 26.2**	**-0.2**
	SNR=14						
GZU	**Grizzly Peak**	**76.10**	**48**	*e*P	**P**	**14 44 27.9**	**+1.4**
SVSK	**Karacayir**	**76.11**	**310**	*e*P	**P**	**14 44 28.5**	**+2.4**
SNUT	**Stansbury Nort**	**76.12**	**49**	*e*P	**P**	**14 44 28.1**	**+1.6**
KIS	**Kishinev**	**76.13**	**320**	*i* P	**P**	**14 44 26.0**	**-0.2**
	comp=Z,6µm,2.0s						
KIS	**Kishinev**	**76.13**	**320**	*i* PcP	**PcP**	**14 44 38.0**	**-0.1**
KIS	**Kishinev**	**76.13**	**320**	*i* PP	PP	14 47 44.0	+27
KIS	**Kishinev**	**76.13**	**320**	*i* PPP	PPP	14 49 06.0	
KIS				*i* S	**S**	**14 54 04.0**	**-1.8**
	comp=Z,57µm,16.0s						
KIS	**Kishinev**	**76.13**	**320**	*i* PS		14 54 38.0	
KIS				*e*SS	SS	14 58 48.0	-11
KIS				*e*SSS	SSS	15 02 04.0	
KIS				*e*L	L	15 09 16.0	
KIS				LRM	MLR	15 21 00.0	
	comp=Z,101µm,18.0s						
KIS	**Kishinev**	**76.13**	**320⇑**	*i*P	**P**	**14 44 26.5**	**+0.3**
KIS	**Kishinev**	**76.13**	**320α**	*i*P	**P**	**14 44 26.0**	**-0.2**
KIS				*i*		14 44 38.0	
KIS				*i* PPP	PPP	14 49 06.0	
KIS				*i* S	**S**	**14 54 04.0**	**-1.8**
KIS				*i* PS	**PnS**	**14 54 38.0**	**-11**
KIS				pmax	pmax		
	comp=Z,5µm,2.0s						
KIS				pmax	pmax		
	comp=Z,14µm,8.0s						
KIS				pmax	pmax		
	comp=Z,28µm,20.0s						
KIS				MLR	MLR		
	comp=E,101µm,18.0s						
KIS				MLR	MLR		
	comp=Z,282µm,18.0s						
KIS				MLR	MLR		
	comp=N,150µm,17.0s						
BLG	**Laguna Peak, P**	**76.13**	**58**	P	**P**	**14 44 27.3**	**+0.9**
	baz=307,SNR=27						
HAVZ	**Havza**	**76.15**	**312**	*i* P	**P**	**14 44 28.2**	**+1.8**
FURC	**Furnace Creek,**	**76.15**	**54**	P	**P**	**14 44 27.8**	**+1.4**
	baz=308,SNR=47						
TOKA	**Tokat**	**76.17**	**311**	*i* P	**P**	**14 44 28.3**	**+1.7**
BMUT	**Black Mountain**	**76.19**	**47**	*e*P	**P**	**14 44 27.5**	**+0.5**
CUKAN	**kangal_SIVAS**	**76.20**	**309**	*i* P	**P**	**14 44 27.9**	**+1.0**
HOMB	**Homborsund**	**76.20**	**337**	*e*P	**P**	**14 44 27.2**	**+0.8**
HOMB				IAmb	IAmb	14 44 32.1	
	comp=Z,680nm,0.9s						
HOMB				*e*S	**S**	**14 54 07.8**	**+1.7**
HOMB				IVMs_BB	IVMs_BB	15 20 07.2	
	comp=Z,77µm,23.4s						
LRMC	**Laurel Mtn Rad**	**76.22**	**56**	P	**P**	**14 44 27.8**	**+0.7**
	baz=307,SNR=28						
HWUT	**Hardware Ranch**	**76.22**	**48**	*e*P	**P**	**14 44 27.5**	**+0.5**
HWUT				LR	LR		
	comp=Z,38µm,20.0s						
TPNV	**Topopah Spring**	**76.25**	**54**	P	**P**	**14 44 28.4**	**+1.1**
	baz=308,SNR=256						
TPNV	**Topopah Spring**	**76.25**	**54**	*e*P	**P**	**14 44 27.2**	**-0.1**
TPNV	**Topopah Spring**	**76.25**	**54**	*e*P	**P**	**14 44 27.2**	**-0.1**
RSUT	**Red Spur Mount**	**76.29**	**48**	*e*P	**P**	**14 44 28.0**	**+0.4**
SAIU	**Southern Antel**	**76.33**	**49**	*e*P	**P**	**14 44 29.0**	**+1.4**
SNCC	**San Nicolas Is**	**76.34**	**58**	P	**P**	**14 44 29.1**	**+1.5**
	baz=307,SNR=8.3						
SNCC	**San Nicolas Is**	**76.34**	**58**	*e*P	**P**	**14 44 29.3**	**+1.7**
DUG	**Dugway, Tooele**	**76.37**	**49**	P	**P**	**14 44 29.2**	**+1.3**
	baz=309,SNR=406						
DUG	**Dugway, Tooele**	**76.37**	**49**	*e*P	**P**	**14 44 28.1**	**+0.2**
DUG	**Dugway, Tooele**	**76.37**	**49**	*e*P	**P**	**14 44 28.1**	**+0.2**
DUG				LR	LR		
	comp=Z,52µm,22.0s						
B25A	**Knox Farm, Ray**	**76.38**	**38**	P	**P**	**14 44 28.8**	**+1.2**
	baz=313,SNR=69						
EDW2	**Edwards Air Fo**	**76.38**	**56**	P	**P**	**14 44 29.2**	**+1.3**
	baz=307,SNR=302						
KMY	**Karmoy**	**76.41**	**339**	*e*P	**P**	**14 44 28.2**	**+0.7**
KMY				IAmb	IAmb	14 44 34.6	
	comp=Z,708nm,0.7s						
KMY				*e*S	**S**	**14 54 09.8**	**+1.4**
IR2C	**Iron Canyon**	**76.41**	**57**	*e*P	**P**	**14 44 29.1**	**+1.1**
BOYT	**Boyabat**	**76.41**	**312**	*i* P	**P**	**14 44 28.7**	**+0.7**
BORG	**Borgarnes**	**76.47**	**353**	*e*P	**P**	**14 44 30.6**	**+2.8**
BORG	**Borgarnes**	**76.47**	**353**	*e*P	**P**	**14 44 30.6**	**+2.8**
BORG				LR	LR		
	comp=Z,38µm,20.0s						
A26A	**Wade Farm, Ken**	**76.49**	**38**	P	**P**	**14 44 29.3**	**+1.1**
	baz=314,SNR=292						
BSD	**Bornholm Skovb**	**76.49**	**332⇑**	*i*P	**P**	**14 44 28.6**	**+0.6**
	comp=Z,4µm,1.3s						
BSD	**Bornholm Skovb**	**76.49**	**332⇑**	*i*P	**P**	**14 44 28.6**	**+0.6**
BSD				pmax	pmax		

	comp=Z,4µm,1.3s						
BSD				MLR	MLR		
	comp=Z,140µm,21.0s						
STAV	**Stavanger**	**76.51**	**338**	IVMs_BB	IVMs_BB	15 21 06.0	
	comp=Z,126µm,22.0s						
DECC	**Green Verdugo**	**76.53**	**57**	P	**P**	**14 44 29.4**	**+0.7**
	baz=307,SNR=24						
LVV	**L'vov**	**76.55**	**324**	*e*P	**P**	**14 44 28.8**	**+0.3**
LVV				*e*S	**S**	**14 54 09.2**	**-1.1**
LVV				MLR	MLR		
	comp=Z,33µm,16.0s						
SNART	**Snartemo**	**76.55**	**337**	*e*P	**P**	**14 44 29.0**	**+0.7**
SNART				IAmb	IAmb	14 44 35.3	
	comp=Z,674nm,0.8s						
BEL	**Belsk**	**76.57**	**327**	*e*P	**P**	**14 44 30.1**	**+1.6**
BEL				*e*PcP	**PcP**	**14 44 34.3**	**-5.6**
BEL				*e*S	**S**	**14 54 10.2**	**-0.2**
BEL				*e*SS	**SS**	**14 59 01.0**	**-4.2**
BEL				LMZ	LR	15 17 50.1	
BEL	**Belsk**	**76.57**	**327**	*e*P	**P**	**14 44 30.2**	**+1.7**
BEL				*e*		14 44 34.4	
BEL				*e*S	**S**	**14 54 10.2**	**-0.2**
BEL				*e*SS	**SS**	**14 59 01.0**	**-4.2**
BZK	**Bozkurt**	**76.59**	**313**	*e*P	**P**	**14 44 30.4**	**+1.6**
TCUT	**Toone Canyon**	**76.62**	**48**	*e*P	**P**	**14 44 31.1**	**+1.6**
BW06	**Boulder Array**	**76.64**	**46**	P	**P**	**14 44 30.4**	**+0.9**
	baz=310,SNR=537						
BW06	**Boulder Array**	**76.64**	**46**	*e*P	**P**	**14 44 29.2**	**-0.2**
BW06				LR	LR		
	comp=Z,63µm,22.0s						
PD31	**Pinedale Array**	**76.64**	**46**	*e*P	**P**	**14 44 28.9**	**-0.5**
PDAR	**Pinedale Array**	**76.64**	**46**	P	**P**	**14 44 28.9**	**-0.6**
	comp=Z,248nm,0.6s,baz=276,slow=1.1,SNR=565						
PDAR				PKPPKP	P'P'df	15 11 34.1	-12
	comp=Z,2.4nm,1.0s,baz=197,slow=3.1,SNR=6.6						
PDAR				LR	LR	15 16 20.4	
	comp=Z,31µm,21.4s,baz=320,slow=34						
PDAR				P4KPbc		15 20 56.9	
	comp=Z,0.1nm,0.4s,baz=60,slow=2.2,SNR=2.2						
IAS	**Iasi**	**76.64**	**320⇑**	*i*P	**P**	**14 44 29.5**	**+0.5**
DARE	**Darende-Malaty**	**76.65**	**309**	*e*P	**P**	**14 44 31.3**	**+1.9**
CUALT	**Altinyayla-SIV**	**76.65**	**310**	*i* P	**P**	**14 44 32.0**	**+2.5**
CUGUR	**Gurin_S˜VAS**	**76.68**	**309**	*i* P	**P**	**14 44 32.0**	**+2.4**
CTU	**Camp Tracy**	**76.69**	**49**	*e*P	**P**	**14 44 30.9**	**+1.2**
C25A	**Freed Ranch, W**	**76.71**	**39**	P	**P**	**14 44 30.9**	**+1.3**
	baz=313,SNR=39						
MWC	**Mount Wilson**	**76.73**	**57**	*e*P	**P**	**14 44 30.7**	**+0.7**
MWC	**Mount Wilson**	**76.73**	**57**	*e*P	**P**	**14 44 30.7**	**+0.7**
B26A	**Jensen Ranch,**	**76.76**	**38**	P	**P**	**14 44 30.7**	**+1.0**
	baz=314,SNR=112						
PSUT	**Pine Spring**	**76.77**	**51**	*e*P	**P**	**14 44 31.6**	**+1.4**
LEOM	**Leova**	**76.78**	**319⇓**	*i*P	**P**	**14 44 30.1**	**+0.3**
ATAB	**Bozova**	**76.82**	**307**	*i* P	**P**	**14 44 32.3**	**+2.0**
CUSAR	**Sarkisla-SIVAS**	**76.87**	**310**	*i* P	**P**	**14 44 31.4**	**+0.7**
SHOC	**Shoshone, Teco**	**76.88**	**55**	P	**P**	**14 44 31.4**	**+0.8**
	baz=308,SNR=19						
FMP	**Fort Macarthur**	**76.88**	**57**	P	**P**	**14 44 31.6**	**+0.9**
	baz=307,SNR=5.3						
EL2	**El Mirage 2**	**76.89**	**56**	*e*P	**P**	**14 44 31.9**	**+1.1**
GSC	**Goldstone, Bar**	**76.90**	**55**	P	**P**	**14 44 31.8**	**+0.9**
	baz=308,SNR=123						
GSC	**Goldstone, Bar**	**76.90**	**55**	*e*P	**P**	**14 44 31.8**	**+0.9**
GSC	**Goldstone, Bar**	**76.90**	**55**	*e*P	**P**	**14 44 31.8**	**+0.9**
JLU	**Jordanelle**	**76.92**	**48**	*e*P	**P**	**14 44 32.2**	**+1.1**
YEL1	**Yell**	**76.94**	**342⇑**	*e*P	**P**	**14 44 31.7**	**+1.2**
COP	**Copenhagen**	**76.95**	**333⇑**	*i*P	**P**	**14 44 31.8**	**+1.2**
	comp=Z,1µm,0.9s						
COP	**Copenhagen**	**76.95**	**333⇑**	*i*P	**P**	**14 44 31.8**	**+1.2**
COP				pmax	pmax		
	comp=Z,1µm,0.9s						
COP				MLR	MLR		
	comp=Z,120µm,26.0s						
NLU	**North Lily Min**	**76.96**	**49**	*e*P	**P**	**14 44 32.0**	**+0.7**
BFSC	**Mount Baldy Ra**	**76.99**	**57**	P	**P**	**14 44 31.7**	**+0.3**
	baz=308,SNR=116						
SURC	**SANLIURFA_SURC**	**76.99**	**307**	*i* P	**P**	**14 44 32.7**	**+1.4**
CIS	**Catalina Islan**	**76.99**	**58**	P	**P**	**14 44 32.1**	**+0.7**
	baz=307,SNR=33						
RRX	**Edison Barstow**	**77.03**	**56**	P	**P**	**14 44 32.6**	**+1.1**
	baz=308,SNR=8.6						
D25A	**Fairfield**	**77.06**	**39**	P	**P**	**14 44 32.3**	**+0.8**
	baz=313,SNR=107						
COAL	**Corum-Alaca**	**77.10**	**311**	*i* P	**P**	**14 44 32.8**	**+0.9**
H01W3	**Cape Leeuwin H**	**77.14**	**203**	P	**P**	**14 44 35.0**	**+3.5**
	SNR=7.3						
H01W1	**Cape Leeuwin H**	**77.14**	**203**	P	**P**	**14 44 35.6**	**+4.1**
	SNR=7.1						
H01W2	**Cape Leeuwin H**	**77.15**	**203**	P	**P**	**14 44 35.6**	**+4.1**
	SNR=7.6						
SCI2	**San Clemente I**	**77.16**	**58**	P	**P**	**14 44 33.0**	**+0.8**
	baz=308,SNR=8.8						
PRAR	**RASCA**	**77.19**	**321⇓**	*i*P	**P**	**14 44 33.0**	**+0.8**
C26A	**Wahner Farm, P**	**77.20**	**38**	P	**P**	**14 44 33.2**	**+1.0**
	baz=314,SNR=253						
B27A	**Peters Farms,**	**77.21**	**38**	P	**P**	**14 44 33.1**	**+0.9**
	baz=314,SNR=41						
KWP	**Kalwaria Pacla**	**77.29**	**324**	*e*P	**P**	**14 44 34.4**	**+1.7**
KWP				*e*PcP	**PcP**	**14 44 38.7**	**-4.4**
KWP				*e*S	**S**	**14 54 19.1**	**+0.7**
KWP				*e*SS	**SS**	**14 59 26.2**	**+10**
KWP				LMZ	LR	15 15 03.2	
KWP	**Kalwaria Pacla**	**77.29**	**324**	*e*P	**P**	**14 44 34.4**	**+1.7**
KWP				*e*		14 44 38.8	
KWP				*e*S	**S**	**14 54 19.1**	**+0.7**
KWP				*e*SS	**SS**	**14 59 26.2**	**+10**
KWP	**Kalwaria Pacla**	**77.29**	**324**	*e*S	**S**	**14 54 19.1**	**+0.7**
LRW	**Lerwick**	**77.32**	**342**	*e*P	**P**	**14 44 33.8**	**+1.2**
LRW				AMB	AMB	14 44 39.7	
	comp=Z,1µm,2.6s						
LRW				AMS	AMS	15 16 14.1	
	comp=Z,95µm,25.4s						
WAL1	**Walls**	**77.32**	**342⇑**	*e*P	**P**	**14 44 33.7**	**+1.1**
A28A	**Rude Farm, Bot**	**77.32**	**37**	P	**P**	**14 44 33.5**	**+0.6**
	baz=315,SNR=444						
ILGA	**Ilgaz**	**77.34**	**313**	*i* P	**P**	**14 44 34.3**	**+0.9**
TLCR		**77.34**	**318⇓**	*i*P	**P**	**14 44 33.9**	**+0.9**
GZT	**Gaziantep**	**77.35**	**308**	*i* P	**P**	**14 44 34.4**	**+1.0**
CORM	**Corum**	**77.36**	**311**	*e*P	**P**	**14 44 34.9**	**+1.5**
TUQ	**Turquoise Moun**	**77.39**	**55**	P	**P**	**14 44 34.7**	**+1.0**
	baz=308,SNR=36						
SAN1	**Sandwick**	**77.44**	**342⇑**	*e*P	**P**	**14 44 34.1**	**+0.8**
BBRC	**Big Bear Solar**	**77.46**	**56**	P	**P**	**14 44 34.9**	**+0.7**
	baz=308,SNR=6.0						
MUD	**Monsted U'grnd**	**77.46**	**335⇑**	*i*P	**P**	**14 44 34.4**	**+1.0**
	comp=Z,2µm,1.2s						
MUD	**Monsted U'grnd**	**77.46**	**335⇑**	*i*P	**P**	**14 44 34.4**	**+1.0**
MUD				pmax	pmax		
	comp=Z,2µm,1.2s						
MUD				MLR	MLR		
	comp=Z,310µm,19.0s						
E25A	**Miller Ranch,**	**77.46**	**40**	P	**P**	**14 44 34.9**	**+1.1**
	baz=313,SNR=155						
BNN	**Bunyan**	**77.47**	**310**	*e*P	**P**	**14 44 33.6**	**-0.4**
RBK	**Rabkut**	**77.48**	**282**	P	**P**	**14 44 34.6**	**+0.3**
	SNR=70						
RBK	**Rabkut**	**77.48**	**282**	P	**P**	**14 44 34.6**	**+0.3**
	SNR=70						
HEC	**Hector,Ludlow**	**77.49**	**56**	P	**P**	**14 44 35.2**	**+1.0**
	baz=308,SNR=180						
BUR08	**Bucovina Ar. S**	**77.50**	**322**	*e*P	**P**	**14 44 34.2**	**+0.2**
BURAR	**Bucovina Array**	**77.51**	**322⇓**	*i*P	**P**	**14 44 34.3**	**+0.2**
RGN	**Rugen**	**77.52**	**332**	*e*P	**P**	**14 44 35.4**	**+1.6**
TESR	**Tescani**	**77.56**	**320⇑**	*i*P	**P**	**14 44 34.7**	**+0.4**
C27A	**Sayler Ranch,**	**77.57**	**38**	P	**P**	**14 44 35.4**	**+1.1**
	baz=314,SNR=220						
D26A	**Manning**	**77.58**	**39**	P	**P**	**14 44 35.4**	**+1.0**
	baz=314,SNR=239						
B28A	**Dugan Ranch, T**	**77.60**	**37**	P	**P**	**14 44 35.5**	**+1.0**
	baz=315,SNR=30						
KMRS	**Kahramanmaras**	**77.67**	**308**	*e*P	**P**	**14 44 36.4**	**+1.4**
CANT	**Cankiri**	**77.68**	**312**	*e*P	**P**	**14 44 36.6**	**+1.5**
MURC	**Murrieta**	**77.68**	**57**	P	**P**	**14 44 35.9**	**+0.7**
	baz=308,SNR=54						
GAZ	**Gaziantep**	**77.69**	**308**	*e*P	**P**	**14 44 36.8**	**+1.6**
CFR	**Carcaliu**	**77.70**	**318⇑**	*i*P	**P**	**14 44 35.2**	**+0.2**
AYKD	**Aykdinkavak**	**77.78**	**308**	*i* P	**P**	**14 44 34.8**	**-0.9**
A29A	**Manning Farm,**	**77.80**	**36**	P	**P**	**14 44 36.2**	**+0.6**
	baz=315,SNR=702						
BTIN	**Bart˜–n**	**77.80**	**314**	*i* P	**P**	**14 44 36.2**	**+0.6**
PETR	**Petresti**	**77.80**	**319⇓**	*i*P	**P**	**14 44 37.5**	**+1.9**
MSU	**Marysvale**	**77.81**	**50**	*e*P	**P**	**14 44 37.5**	**+1.4**
MSU	**Marysvale**	**77.81**	**50**	*e*P	**P**	**14 44 37.5**	**+1.4**
F25A	**Bowman**	**77.83**	**40**	P	**P**	**14 44 36.9**	**+1.1**
	baz=313,SNR=157						

CDAG	**Cicekdag**	**77.86**	**311**	*i* P	**P**	**14 44 36.5**	**+0.3**
ELDT	**Eldivan**	**77.86**	**312**	*i* P	**P**	**14 44 36.6**	**+0.4**
ODBI	**Odobesti**	**77.86**	**319⇑**	*i*P	**P**	**14 44 37.6**	**+1.7**
TMUT	**Trail Mountain**	**77.90**	**49**	*e*P	**P**	**14 44 37.8**	**+1.1**
E26A	**Carlson Angus**	**77.95**	**40**	P	**P**	**14 44 37.4**	**+0.8**
	baz=314,SNR=132						
GMRC	**Granite Mounta**	**77.96**	**55**	P	**P**	**14 44 38.1**	**+1.3**
	baz=308,SNR=236						
VRI	**Vrincioaia**	**77.96**	**320⇑**	*i*P	**P**	**14 44 37.1**	**+0.6**
ANDN	**Andirin**	**77.97**	**308**	*i* P	**P**	**14 44 37.9**	**+1.1**
D27A	**Center**	**77.98**	**39**	P	**P**	**14 44 37.7**	**+1.1**
	baz=314,SNR=132						
KOLS	**Kolonicke sedl**	**77.98**	**324**	*e*P	**P**	**14 44 37.0**	**+0.4**
KOLS				pmax	pmax		
	comp=Z,1µm,1.8s						
KOLS	**Kolonicke sedl**	**77.98**	**324**	*e*P	**P**	**14 44 37.0**	**+0.4**
KOLS				*e*PP	**PP**	**14 47 29.6**	**-2.9**
KOLS				*e*S	**S**	**14 54 23.6**	**-2.3**
KOLS				*e*SS	**SS**	**14 59 26.9**	**+0.2**
KOLS				*e*		15 11 39.5	
PLOR	**Plostina**	**78.01**	**320⇑**	*i*P	**P**	**14 44 37.5**	**+0.7**
KAMA	**Osmaniye**	**78.02**	**308**	*i* P	**P**	**14 44 38.0**	**+1.0**
KUZU	**Kuzuini**	**78.02**	**307**	*i* P	**P**	**14 44 38.6**	**+1.6**
TIRR	**Tirgusor**	**78.04**	**318⇑**	*i*P	**P**	**14 44 37.1**	**+0.2**
TIRR	**Tirgusor**	**78.04**	**318**	*e*P	**P**	**14 44 37.2**	**+0.2**
TIRR	**Tirgusor**	**78.04**	**318**	*e*P	**P**	**14 44 37.2**	**+0.2**
P17A	**Butcher Ranch,**	**78.06**	**49**	*e*P	**P**	**14 44 38.3**	**+0.9**
B29A	**Wagenman Farm,**	**78.07**	**37**	P	**P**	**14 44 38.0**	**+1.0**
	baz=315,SNR=155						
AVNS	**Nevsehir-Avano**	**78.10**	**310**	*i* P	**P**	**14 44 39.0**	**+1.5**
LCMT	**Little Creek M**	**78.10**	**52**	*e*P	**P**	**14 44 38.5**	**+0.9**
C28A	**Hausauer Farms**	**78.11**	**38**	P	**P**	**14 44 38.5**	**+1.2**
	baz=315,SNR=67						
MTPU	**Mount Pierson**	**78.11**	**51**	*e*P	**P**	**14 44 40.0**	**+2.1**
STHS	**Stebnicka Huta**	**78.11**	**325**	*e*P	**P**	**14 44 36.7**	**-0.6**
STHS				pmax	pmax		
	comp=Z,819nm,1.3s						
STHS	**Stebnicka Huta**	**78.11**	**325**	*e*	**P**	**14 44 36.7**	**-0.6**
STHS	**Stebnicka Huta**	**78.11**	**325**	*e*P	**P**	**14 44 38.9**	**+1.6**
HARR	**Harsova**	**78.14**	**318⇑**	*i*P	**P**	**14 44 38.5**	**+1.0**
PFO	**Pinyon Flats O**	**78.16**	**57**	LR	LR	15 15 55.8	
	comp=Z,52µm,19.2s,baz=288,slow=33						
PFO	**Pinyon Flats O**	**78.16**	**57**	P	**P**	**14 44 38.4**	**+0.5**
	baz=308,SNR=164						
PFO	**Pinyon Flats O**	**78.16**	**57**	*e*P	**P**	**14 44 37.9**	**-0.1**
GRER		**78.17**	**319⇓**	*i*P	**P**	**14 44 39.4**	**+1.8**
OJC	**Ojcow**	**78.17**	**326**	*e*P	**P**	**14 44 39.0**	**+1.4**
OJC				*e*PcP	**PcP**	**14 44 43.4**	**-3.5**
OJC				*e*S	**S**	**14 54 27.2**	**-0.7**
OJC				*e*SS	SS	14 59 10.9	-19
OJC				LMZ	LR	15 21 46.1	
OJC	**Ojcow**	**78.17**	**326**	*e*P	**P**	**14 44 39.0**	**+1.4**
OJC				*e*		14 44 43.4	
OJC				*e*S	**S**	**14 54 27.2**	**-0.7**
OJC				MLR	MLR		
	comp=Z,213µm,19.3s						
109C	**Camp Elliot, M**	**78.17**	**57**	P	**P**	**14 44 38.7**	**+0.8**
	baz=308,SNR=26						
EFOR	**EFORIE**	**78.18**	**317⇓**	*i*P	**P**	**14 44 38.9**	**+1.2**
UZH	**Uzhgorod**	**78.19**	**324⇓**	*i*P	**P**	**14 44 38.0**	**+0.3**
UZH				*e**PP	**pP**	**14 44 51.2**	**-1.6**
UZH				*e**SP	**sP**	**14 44 56.6**	**-2.1**
UZH				*e*		14 47 38.8	
UZH				*e*PPP	PPP	14 49 30.0	
UZH				*e*S	**S**	**14 54 27.4**	**-0.7**
UZH				*e*		14 54 50.6	
UZH				*e*SSS	SSS	15 02 58.6	
UZH				MLR	MLR		
	comp=N,110µm,16.0s						
UZH				MLR	MLR		
	comp=E,210µm,16.0s						
UZH				MLR	MLR		
	comp=Z,202µm,16.0s						
A30A	**Hoffart Farm,**	**78.22**	**36**	P	**P**	**14 44 38.7**	**+0.9**
	baz=316,SNR=360						
BELC	**Belle Mtn. Jos**	**78.22**	**56**	P	**P**	**14 44 38.9**	**+0.6**
	baz=308,SNR=59						
BRTR	**Keskin Array B**	**78.23**	**312**	P	**P**	**14 44 38.0**	**-0.3**
	comp=Z,177nm,1.0s,baz=50,slow=3.2,SNR=276						
BRTR				PP	**PP**	**14 47 34.8**	**-0.3**
	comp=Z,50nm,0.8s,baz=63,slow=5.6,SNR=3.5						
BRTR				S	**S**	**14 54 27.2**	**-2.0**
	comp=Z,2.8nm,0.9s,baz=104,slow=9.1,SNR=2.7						
BRTR				PKKPbc	**PKKPbc**	**15 03 33.5**	**-1.5**
	comp=Z,3.9nm,0.8s,baz=195,slow=2.5,SNR=3.5						
BRTR				PKPPKP	P'P'df	15 11 32.9	-10
	comp=Z,2.2nm,0.9s,baz=185,slow=2.2,SNR=4.2						
BRTR				LR	LR	15 22 51.0	
	comp=Z,60µm,21.4s,baz=42,slow=38						
P18A	**Preston Nutter**	**78.26**	**49**	*e*P	**P**	**14 44 39.4**	**+0.8**
ABTO	**Aybut**	**78.27**	**283**	P	**P**	**14 44 38.8**	**+0.1**
	SNR=124						
ABTO	**Aybut**	**78.27**	**283**	P	**P**	**14 44 38.8**	**+0.1**
	SNR=124						
F26A	**Lodgepole**	**78.28**	**40**	P	**P**	**14 44 38.9**	**+0.6**
	baz=314,SNR=22						
ARCR	**ARCALIA**	**78.30**	**322⇓**	*i*P	**P**	**14 44 40.0**	**+1.6**
BMR	**Baia Mare**	**78.30**	**323⇓**	*i*P	**P**	**14 44 39.5**	**+1.2**
CVDA	**Cernavoda**	**78.33**	**318⇑**	*i*P	**P**	**14 44 39.8**	**+1.3**
G25A	**Newell**	**78.35**	**41**	P	**P**	**14 44 39.2**	**+0.5**
	baz=313,SNR=144						
KOZT	**Kozan**	**78.35**	**309**	*e*P	**P**	**14 44 39.9**	**+1.1**
ULM	**Lac du Bonnet**	**78.35**	**34**	P	**P**	**14 44 38.0**	**-0.5**
	comp=Z,351nm,0.9s,baz=319,slow=6.4,SNR=150						
ULM				PKPPKP	P'P'df	15 11 23.7	-20
	comp=Z,4.8nm,0.9s,baz=257,slow=0.7,SNR=4.5						
ULM				LR	LR	15 23 21.7	
	comp=Z,37µm,18.9s,baz=324,slow=39						
KNB	**Kanab**	**78.36**	**52**	*e*P	**P**	**14 44 40.2**	**+1.1**
KNB	**Kanab**	**78.36**	**52**	*e*P	**P**	**14 44 40.2**	**+1.1**
CRVS	**Cervenica-Dubn**	**78.38**	**324**	*e*P	**P**	**14 44 38.9**	**+0.1**
CRVS				*e*S	**S**	**14 54 28.7**	**-1.5**
CRVS				*e*SS	**SS**	**14 59 40.9**	**+8.2**
CRVS	**Cervenica-Dubn**	**78.38**	**324**	*e*P	**P**	**14 44 38.8**	**0.0**
CRVS				*e*PP	PP	14 47 27.6	-8.2
CRVS				*e*S	**S**	**14 54 28.7**	**-1.5**
CRVS				*e*SS	**SS**	**14 59 40.9**	**+8.2**
MANR	**Mangalia**	**78.38**	**317⇑**	*i*P	**P**	**14 44 39.4**	**+0.6**
D28A	**Regan**	**78.39**	**38**	P	**P**	**14 44 39.5**	**+0.6**
	baz=315,SNR=36						
MDND	**Maddock**	**78.39**	**37**	P	**P**	**14 44 39.6**	**+0.7**
	baz=315,SNR=101						
K22A	**Casper**	**78.40**	**44**	P	**P**	**14 44 40.1**	**+0.9**
	baz=312,SNR=212						
PKCU	**Pink Cliffs**	**78.41**	**51**	*e*P	**P**	**14 44 41.7**	**+2.2**
SRU	**San Rafael Swe**	**78.42**	**49**	*e*P	**P**	**14 44 39.7**	**+0.3**
SRU	**San Rafael Swe**	**78.42**	**49**	*e*P	**P**	**14 44 39.7**	**+0.3**
E27A	**Carson**	**78.43**	**39**	P	**P**	**14 44 40.1**	**+1.0**
	baz=314,SNR=92						
TRPA	**Tarpa**	**78.43**	**323⇑**	*e*P	**P**	**14 44 40.3**	**+1.3**
BCAM	**Yenicaga**	**78.44**	**313**	*i* P	**P**	**14 44 41.2**	**+1.8**
PGOR	**Pogoanele**	**78.49**	**319⇓**	*i*P	**P**	**14 44 40.2**	**+0.8**
AMRR	**Amara**	**78.51**	**318⇑**	*i*P	**P**	**14 44 40.9**	**+1.4**
NIE	**Niedzica**	**78.53**	**325**	*e*P	**P**	**14 44 41.4**	**+1.8**
NIE				*e*PcP	**PcP**	**14 44 45.6**	**-3.0**
NIE				*e*S	**S**	**14 54 31.7**	**-0.2**
NIE				LMZ	LR	15 22 12.7	
NIE	**Niedzica**	**78.53**	**325**	*e*P	**P**	**14 44 41.5**	**+1.8**
NIE				*e*		14 44 45.7	
NIE				*e*S	**S**	**14 54 31.7**	**-0.2**
NIE				MLR	MLR		
	comp=Z,148µm,19.1s						
B30A	**Myrvik Farm, E**	**78.56**	**36**	P	**P**	**14 44 40.3**	**+0.6**
	baz=316,SNR=291						
ISR	**Istrita**	**78.57**	**319⇑**	*i*P	**P**	**14 44 41.4**	**+1.5**
BAR	**Barrett**	**78.59**	**57**	*e*P	**P**	**14 44 40.9**	**+0.7**
F27A	**Lemmon**	**78.59**	**40**	P	**P**	**14 44 40.8**	**+0.7**
	baz=314,SNR=171						
MSAB	**Monastry St. A**	**78.60**	**318⇑**	*i*P	**P**	**14 44 41.0**	**+1.0**
MLR	**Muntele Rosu**	**78.62**	**320⇑**	*i*P	**P**	**14 44 40.6**	**+0.3**
MLR	**Muntele Rosu**	**78.62**	**320**	*e*P	**P**	**14 44 40.9**	**+0.6**
MLR	**Muntele Rosu**	**78.62**	**320**	*e*P	**P**	**14 44 40.9**	**+0.6**
DGAR	**Diego Garcia**	**78.62**	**251**	*e*P	**P**	**14 44 40.3**	**-0.2**
DGAR	**Diego Garcia**	**78.62**	**251**	*e*P	**P**	**14 44 40.3**	**-0.2**
DGAR				LR	LR		
	comp=Z,53µm,22.0s						
DGAR	**Diego Garcia**	**78.62**	**251**	P	**P**	**14 44 40.8**	**+0.3**
	SNR=35						
DGAR	**Diego Garcia**	**78.62**	**251**	P	**P**	**14 44 40.8**	**+0.3**
	SNR=35						
MONP2	**Monument Peak**	**78.62**	**57**	P	**P**	**14 44 41.4**	**+0.7**
	baz=308,SNR=53						
ANTO	**Ankara**	**78.64**	**312**	*e*P	**P**	**14 44 41.1**	**+0.7**
ANTO	**Ankara**	**78.64**	**312**	*e*P	**P**	**14 44 41.1**	**+0.7**

ANTO LR LR
comp=Z,67nm,20.0s
NEE2 Needles Airpor 78.64 55 P **P 14 44 41.1 +0.7**
baz=309,SNR=8.0
LOD Lodumlu 78.64 312 *e*P pP 14 44 57.0 +1.5
H25A Fruitdale 78.64 41 P **P 14 44 40.7 +0.3**
baz=313,SNR=115
BBAL Bala 78.66 312 *i* P **P 14 44 41.9 +1.3**
IRM Iron Mountain 78.68 55 P **P 14 44 41.9 +1.2**
baz=309,SNR=316
PSN Preselentsi 78.69 317 P **P 14 44 41.7 +1.2**
CEYT Ceyhan 78.70 308 *e*P **P 14 44 42.4 +1.7**
G26A Maurine 78.70 40 P **P 14 44 41.4 +0.7**
baz=314,SNR=393
A31A Linda, St. Vin 78.73 35 P **P 14 44 40.7 0.0**
baz=317,SNR=43
H08S3 Diego Garcia H 78.74 251 P P 14 44 51.2 +10
baz=3.7,slow=11,SNR=64
H08S2 Diego Garcia H 78.75 251 P P 14 44 49.5 +8.7
baz=3.7,slow=11,SNR=64
AFSR Af˙ar-Bala (A 78.75 312 *e*P **P 14 44 42.1 +1.0**
RSSD Black Hills 78.76 42 P **P 14 44 41.5 +0.3**
baz=313
RSSD Black Hills 78.76 42 *e*P **P 14 44 41.1 -0.1**
RSSD Black Hills 78.76 42 *e*P **P 14 44 41.1 -0.1**
H08S1 Diego Carcia H 78.76 251 P P 14 44 51.9 +11
baz=3.7,slow=11,SNR=68
E28A Huff 78.76 39 P **P 14 44 41.4 +0.5**
baz=315,SNR=102
BC3 Big Chuckawall 78.79 56 P **P 14 44 42.1 +0.7**
baz=309,SNR=256
TAHT Tahtakopru-Hat 78.83 308 *e*P **P 14 44 42.8 +1.4**
OUZ Omahuta 78.84 154 PN **P 14 44 43.4 +2.2**
OUZ Omahuta 78.84 154 *e*P **P 14 44 43.7 +2.5**
AKSY AKSARAY - Alti 78.85 311 *i* P **P 14 44 42.8 +1.2**
SECR 78.87 319⇑ *i*P **P 14 44 43.3 +1.8**
B31A Greenbush Farm 78.89 36 P **P 14 44 41.9 +0.4**
baz=316,SNR=75
CJR Cluj-Napoca 78.93 322 *i*P **P 14 44 43.1 +1.2**
D29A Pettibone, Tap 78.95 38 P **P 14 44 42.3 +0.4**
baz=316,SNR=34
MDB Medias 78.95 321⇓ *i*P **P 14 44 43.9 +2.0**
KARA Karaisali 78.96 309 *e*P **P 14 44 43.4 +1.2**
RAC Raciborz 78.97 327 *e*P **P 14 44 42.0 +0.1**
RAC *e*S **S 14 54 36.0 -0.3**
RAC MLR MLR
comp=Z,161μm,17.9s
G27A Dupree 78.98 40 P **P 14 44 42.9 +0.7**
baz=314,SNR=113
I25A Rochford 78.98 42 P **P 14 44 43.0 +0.6**
baz=313,SNR=262
IBP Imperial Bould 78.98 57 P **P 14 44 43.0 +0.5**
baz=309
H08N2 Diego Garcia H 79.00 253 P P 14 44 58.7 +16
baz=339,slow=1.5,SNR=119
H08N1 Diego Carcia H 79.00 253 P P 14 44 59.4 +17
baz=339,slow=1.5,SNR=97
SWSC Sam W. Stewart 79.00 57 P **P 14 44 43.2 +0.8**
baz=309,SNR=48
KKUL Konya-Kulu 79.02 311 *i* P **P 14 44 44.0 +1.4**
H08N3 Diego Garcia H 79.02 253 P P 14 44 59.0 +17
baz=339,slow=1.5,SNR=82
SULR 79.02 319⇓ *i*P **P 14 44 42.8 +0.5**
C30A Mose, Pekin 79.02 37 P **P 14 44 42.7 +0.4**
baz=316,SNR=171
A32A Rocking H Ranc 79.05 35 P **P 14 44 42.4 0.0**
baz=317,SNR=167
H26A Fairpoint 79.08 41 P **P 14 44 43.4 +0.7**
baz=314,SNR=44
YAYL Yayladag 79.09 307 *i* P **P 14 44 43.5 +0.5**
BSTP Nigde 79.09 310 *i* P **P 14 44 45.7 +2.7**
O20A White River Ci 79.10 47 P **P 14 44 44.0 +0.8**
baz=311,SNR=229
LANS Liptovska Anna 79.10 326 *e*P **P 14 44 43.4 +0.6**
LANS Liptovska Anna 79.10 326 *e*P **P 14 44 43.4 +0.6**
LANS *e*PP **PP 14 47 35.7 -6.1**
SAHE Sakarya_HENDEK 79.11 314 *i* P **P 14 44 43.5 +0.6**
VOIR 79.11 320⇑ *i*P **P 14 44 43.1 +0.2**
GULE Gulek 79.12 309 *i* P **P 14 44 47.5 +4.3**
KECS Kecovo 79.13 325 *e*P **P 14 44 43.9 +1.0**
KECS *e* 14 45 00.3
KECS *e* 14 47 39.9
KECS pmax pmax
comp=Z,320nm,1.4s
KECS Kecovo 79.13 325 *e*P **P 14 44 43.9 +1.0**
KECS *es*P **pP 14 45 00.3 +2.3**
KECS *e*PP **PP 14 47 39.9 -2.1**
MDUB Mudurnu 79.17 313 *e*P **P 14 44 44.1 +0.8**
OKC Ostrava-Krasne 79.17 327 *e*P **P 14 44 43.0 -0.1**
OKC *e*PCP **PcP 14 44 49.5 -1.8**
OKC *e*PP PP 14 47 34.0 -8.3
OKC *ex* x 14 49 37.2
OKC *e*S **S 14 54 37.2 -1.3**
OKC *ex* x 14 59 30.0
OKC *e*PKPPKP P'P'df 15 11 31.8 -10
OKC AMS AMS 15 23 10.0
comp=Z,135μm,16.4s
OKC Ostrava-Krasne 79.17 327 *e*P **P 14 44 43.0 -0.1**
OKC *e* 14 44 49.5
OKC *e* 14 49 37.2
OKC *e*S **S 14 54 37.2 -1.3**
KSP Ksiaz 79.20 328 *e*P **P 14 44 44.6 +1.4**
KSP *e*PcP **PcP 14 44 49.0 -2.4**
KSP *e*S **S 14 54 39.3 +0.5**
KSP *e*SS **SS 14 59 36.4 -8.4**
KSP LMZ LR 15 21 16.4
KSP Ksiaz 79.20 328 *e*P **P 14 44 44.6 +1.4**
KSP *e* 14 44 49.0
KSP *e*S **S 14 54 39.4 +0.6**
KSP MLR MLR
comp=Z,189μm,23.0s
KRTS Karatas 79.20 308 *e*P **P 14 44 45.9 +2.4**
BTAS Taskesti 79.21 314 *i* P **P 14 44 44.7 +1.1**
PDMCI Parker Dam,Lak 79.23 55 P **P 14 44 44.9 +1.2**
baz=309,SNR=202
MTUR Matau 79.25 320⇓ *i*P **P 14 44 44.8 +1.1**
E29A Napoleon 79.28 38 P **P 14 44 44.0 +0.2**
baz=316,SNR=56
BAPR Bucharest-Chil 79.28 319⇓ *i*P P 14 44 49.8 +6.1
SULT Sultanhani-AKS 79.29 310 *e*P **P 14 44 45.0 +0.9**
C31A Landman Farms, 79.31 36 P **P 14 44 44.3 +0.5**
baz=317,SNR=163
DRGR 79.31 322⇑ *i*P **P 14 44 45.2 +1.2**
DED Mersin 79.31 309 *i* P **P 14 44 44.9 +0.8**
D30A Buchanan 79.32 37 P **P 14 44 44.2 +0.2**
baz=316,SNR=327
KAND Kocaeli-Kandir 79.32 314 *i* P **P 14 44 44.1 +0.1**
Y12C Blythe 79.33 55 P **P 14 44 45.4 +1.1**
baz=309,SNR=172
BUC1 Bucharest 79.37 319⇓ *i*P P 14 44 50.6 +6.4
ARR Arges 79.37 320⇑ *i*P **P 14 44 45.7 +1.4**
AUMIH MIHALICIK 79.40 313 *i* P **P 14 44 44.9 +0.3**
B32A Ashes, Strandq 79.42 35 P **P 14 44 44.4 0.0**
baz=317,SNR=461
H27A Howes 79.42 41 P **P 14 44 45.5 +0.9**
baz=314,SNR=380
KERG Konya-Eregli 79.43 309 *i* P **P 14 44 45.0 +0.1**
BIGH Upper Bighouse 79.43 342⇑ *e*P **P 14 44 45.0 +0.8**
BIGH AMB AMB 14 44 51.4
comp=Z,4μm,3.0s
BIGH AMS AMS 15 23 28.1
comp=Z,150μm,20.3s
I26A New Underwood 79.44 42 P **P 14 44 45.5 +0.8**
baz=314,SNR=164
PRD Provadia 79.44 317 P **P 14 44 45.7 +1.1**
MLA1 Latheron 79.47 342⇑ *e*P **P 14 44 45.8 +1.3**
MORC Moravsky Berou 79.48 327 *e*P **P 14 44 45.2 +0.4**
MORC Moravsky Berou 79.48 327 *e*P **P 14 44 45.2 +0.4**
SPNC Sapanca-Adapaz 79.53 314 *e*P **P 14 44 46.5 +1.3**
A33A Warroad 79.53 34 P **P 14 44 45.0 0.0**
baz=318,SNR=368
MERS Mersin 79.54 309 *e*P **P 14 44 46.1 +0.6**
DPC Dobruska-Polom 79.56 328 *e*P **P 14 44 45.5 +0.3**
DPC *e*PCP **PcP 14 44 51.7 -1.3**
DPC *e*PP PP 14 47 37.1 -8.5
DPC *ex* x 14 49 40.8
DPC *e*S **S 14 54 40.7 -2.1**
DPC *ex* x 14 59 36.7
DPC *e*PKKP **PKKPbc 15 03 34.7 +2.4**
DPC *ex* x 15 03 55.0
DPC *ex* x 15 11 26.8
DPC AMS AMS 15 21 30.0
comp=Z,142μm,22.7s
DPC Dobruska-Polom 79.56 328 *e*P **P 14 44 45.5 +0.3**
DPC *e* 14 44 51.7
DPC *e* 14 49 40.8
DPC *e*S **S 14 54 40.7 -2.1**
DPC MLR MLR
comp=Z,142μm,22.7s
GOLR 79.57 320⇓ *i*P **P 14 44 46.6 +1.3**
UPC Upice 79.57 328 *e*P **P 14 44 45.2 0.0**
UPC *e*PCP **PcP 14 44 51.7 -1.3**
UPC *e*PP **PP 14 47 47.9 +2.3**
UPC *ex* x 14 49 40.8
UPC *e*S **S 14 54 40.7 -2.1**
UPC *ex* x 14 59 36.9
UPC AMS AMS 15 21 30.0
comp=Z,190μm,22.0s
UPC Upice 79.57 328 *e*P **P 14 44 45.2 0.0**
UPC *e* 14 44 51.7
UPC *e* 14 47 47.9
UPC *e* 14 49 40.8
UPC *e*S **S 14 54 40.7 -2.1**
UPC MLR MLR
comp=Z,190μm,22.0s
GLA Glamis 79.58 56 P **P 14 44 46.6 +0.9**
baz=309,SNR=137
GLA Glamis 79.58 56 *e*P **P 14 44 46.9 +1.3**
GLA Glamis 79.58 56 *e*P **P 14 44 46.9 +1.3**
GULT Gulveren 79.58 314 *e*P **P 14 44 46.2 +0.7**
SILT Sile 79.59 315 *e*P **P 14 44 46.6 +1.1**
PV09 Paradox Valley 79.65 49 *e*P **P 14 44 47.0 +0.8**
SVRH Sivrihisar-ESK 79.65 312 *e*P **P 14 44 46.5 +0.5**
E30A Jud 79.68 38 P **P 14 44 46.2 +0.2**
baz=316,SNR=81
G28A Parade 79.70 40 P **P 14 44 46.7 +0.6**
baz=315,SNR=152
F29A Eureka 79.71 39 P **P 14 44 46.4 +0.2**
baz=316,SNR=147
LOT Lotru 79.74 321⇑ *i*P **P 14 44 46.9 +0.5**
HUMR Humele 79.78 320⇓ *i*P **P 14 44 46.9 +0.4**
PV10 Paradox Valley 79.78 49 *e*P **P 14 44 47.9 +0.9**
AGMN Agassiz Nation 79.79 35 P **P 14 44 46.2 -0.2**
baz=318,SNR=338
AGMN Agassiz Nation 79.79 35 PFAKE 14 45 00.0 +14
AGMN LR LR
comp=Z,49μm,20.0s
PSZ Piszkesteto 79.81 325⇑ *e*P **P 14 44 48.1 +1.4**
PSZ Piszkesteto 79.81 325 *e*P **P 14 44 47.3 +0.6**
PSZ Piszkesteto 79.81 325 PFAKE 14 45 00.0 +13
PSZ LR LR
comp=Z,238μm,19.0s
J26A Sides Ranch, S 79.82 42 P **P 14 44 47.5 +0.7**
baz=314,SNR=147
I27A Quinn 79.83 41 P **P 14 44 47.8 +1.0**
baz=314,SNR=167
C32A Crookston 79.84 36 P **P 14 44 46.5 -0.2**
baz=317,SNR=62
D31A Mcclaflin, Tow 79.85 37 P **P 14 44 46.8 0.0**
baz=317,SNR=58
DEV Deva 79.86 322⇑ *i*P **P 14 44 48.7 +1.8**
KLYT Kilyos 79.86 315 *e*P **P 14 44 47.8 +0.9**
VYHS Vyhne 79.87 325 *e*P **P 14 44 47.8 +0.9**
VYHS *e* 14 45 04.6
VYHS *e*S **S 14 54 45.5 -0.5**
VYHS *es*SS **SS 14 59 56.1 +1.2**
VYHS pmax pmax
comp=Z,1μm,1.6s
VYHS MLR MLR
comp=Z,141μm,17.4s
VYHS Vyhne 79.87 325 *e*P **P 14 44 47.8 +0.9**
VYHS *es*P **pP 14 45 04.6 +2.6**
VYHS *e*PP PP 14 47 38.9 -9.3
VYHS *e*S **S 14 54 45.5 -0.5**
VYHS *e*SS **SS 14 59 56.1 +1.2**
VYHS *e* 15 11 33.3
VYHS *e* 15 15 06.5
N23A Red Feather La 79.90 45 P **P 14 44 48.4 +0.9**
baz=312,SNR=584
KDHN Kadinhani 79.92 311 *i* P **P 14 44 47.6 +0.2**
H28A Mission Ridge 79.93 40 P **P 14 44 48.2 +0.9**
baz=315,SNR=444
B33A Robert and Kas 79.94 35 P **P 14 44 46.9 -0.4**
baz=318,SNR=38
PV05 Paradox Valley 79.94 49 *e*P **P 14 44 48.6 +0.8**
ISK Istanbul-Kandi 79.98 315 *e*P **P 14 44 48.3 +0.7**
ISK Istanbul-Kandi 79.98 315 P P **P 14 44 48.5 +0.9**
ISK Istanbul-Kandi 79.98 315 P P **P 14 44 48.5 +0.9**
ISK Istanbul-Kandi 79.98 315 P P **P 14 44 48.5 +0.9**
BORA Eskisehir 79.98 313 *i* P **P 14 44 48.1 +0.4**
ESKT Eskisehir 80.00 313 *i* P **P 14 44 48.6 +0.7**
MVH1 Achvaich 80.01 342⇑ *e*P **P 14 44 48.5 +1.1**
ADVT Abdulvahap 80.02 314 *e*P **P 14 44 48.6 +0.8**
KIZK Mersin 80.02 309 *i* P **P 14 44 48.6 +0.7**
FKH Fakeheh 80.03 306 *e*P **P 14 44 49.1 +0.9**
BGKT Bogazkoy 80.06 315 *e*P **P 14 44 48.8 +0.8**
MCD Coleburn Disti 80.09 342⇑ *e*P **P 14 44 48.9 +1.0**
BUY Buyukada 80.09 315 *i* P **P 14 44 48.5 +0.3**
BUY Buyukada 80.09 315 *i* P sP 14 45 06.8 -2.5
F30A Leola 80.10 38 P **P 14 44 48.2 0.0**
baz=316,SNR=37
G29A Hoven 80.12 39 P **P 14 44 48.4 +0.1**
baz=316,SNR=12
CAVI Cavuskoy 80.12 314 *e*P **P 14 44 49.2 +0.8**
D32A Dogwood Acres, 80.12 36 P **P 14 44 47.9 -0.4**
baz=317,SNR=56
CTYL Yalikoy Yolu 80.13 316 *e*P **P 14 44 49.4 +1.0**
E31A Nome 80.13 37 P **P 14 44 48.2 -0.1**
baz=317,SNR=179
BRG Berggiesshubel 80.13 329 *i* P **P 14 44 49.4 +1.1**
comp=Z,467nm,1.2s
BRG *i* 14 44 53.7
comp=Z,1μm,1.3s
BRG *i* 14 44 55.7
comp=Z,3μm,1.6s
BRG *i* PP **PP 14 47 43.2 -7.1**
comp=Z,1μm,1.8s
BRG S **S 14 54 44.0 -4.7**
BRG SS SS 14 59 44.0 -15
BRG *e*PKKP **PKKPbc 15 03 27.4 -3.6**
comp=Z,16nm,1.2s
BRG *e*PKPPKP P'P'df 15 11 24.6 -15
comp=Z,132nm,2.2s
BRG Berggiesshubel 80.13 329 *i* P **P 14 44 49.4 +1.1**
BRG S **S 14 54 44.0 -4.7**
BRG *e* 15 03 27.4
BRG pmax pmax
comp=Z,467nm,1.2s
BRG MLR MLR
comp=N,192μm,20.2s
BRG MLR MLR
comp=E,171μm,18.0s
BRG MLR MLR
comp=Z,296μm,19.0s
KONT Konya--Tatoy 80.15 311 *e*P **P 14 44 49.4 +0.7**
PVCC Panska Ves 80.15 329 *e*P **P 14 44 48.4 +0.1**
PVCC *e*PCP **PcP 14 44 55.0 -0.5**
PVCC *e*PP **PP 14 47 54.5 +4.1**
PVCC *e*PKKP **PKKPbc 15 03 35.5 +4.6**
PVCC *ex* x 15 11 27.4
PVCC AMS AMS 15 22 50.0
comp=Z,284μm,20.7s
PVCC Panska Ves 80.15 329 *e*P **P 14 44 48.4 +0.1**
PVCC *e* 14 47 54.5
PVCC MLR MLR
comp=Z,284μm,20.7s
SZH Strazhica 80.17 318 P **P 14 44 49.1 +0.5**
CLL Collm 80.17 330 *i* P **P 14 44 49.0 +0.6**
comp=Z,1μm,1.2s
CLL *e*Plp 14 44 52.0
comp=Z,26μm,21.4s
CLL *i* 14 44 54.2
comp=Z,2μm,1.0s
CLL *e*Pmax 14 44 58.0
CLL *i* 14 45 06.7
CLL *e* 14 47 36.0
CLL *e*PP **PP 14 47 50.0 -0.5**
CLL *e*PPP PPP 14 49 36.0
CLL *e*S **S 14 54 47.0 -2.0**
comp=N,68μm,26.3s
CLL *e*S **S 14 54 47.0 -2.0**
comp=E,67μm,29.6s
CLL *i* 14 55 23.0
CLL *i* SP **SPn 14 55 30.1 -1.8**
comp=Z,652nm,2.4s
CLL *e* 14 56 05.0
CLL *e*SS **SS 14 59 54.0 -5.2**
CLL *e*SSS SSS 15 03 30.0
CLL LmH 15 20 00.0
comp=N,62μm,19.8s
CLL LmH 15 20 00.0
comp=E,180μm,20.2s
CLL Lmax 15 22 00.0
CLL LmV 15 23 00.0
comp=Z,163μm,19.1s
CLL Collm 80.17 330 *i* P SSS 15 03 29.7
CLL *i* 15 03 35.7
comp=Z,32nm,1.2s
CLL *e* 15 03 55.0
CLL Collm 80.17 330 *i* P **P 14 44 49.0 +0.6**
CLL *e*S **S 14 54 47.0 -2.0**
CLL pmax pmax
comp=Z,1μm,1.2s
CLL MLR MLR
comp=Z,163μm,19.1s
CTKS Kestanelik-??a 80.17 315 *e*P **P 14 44 49.5 +0.9**
AUKUT KUTAHYA 80.18 314 *i* P **P 14 44 52.5 +3.6**
SIRR Siria 80.19 322⇑ *i*P **P 14 44 49.5 +0.8**
B34A Aery, Baudette 80.20 34 P **P 14 44 47.9 -0.8**
baz=318,SNR=254
WUAZ Wupatki 80.22 52 P **P 14 44 50.4 +1.2**
baz=310,SNR=219
WUAZ Wupatki 80.22 52 *e*P **P 14 44 50.1 +0.9**
WUAZ LR LR
comp=Z,67μm,22.0s
PV01 Paradox Valley 80.22 49 *e*P **P 14 44 49.8 +0.5**
C33A Trail 80.23 35 P **P 14 44 48.7 -0.1**
baz=318,SNR=177
IZI Iznik 80.24 314 *e*P **P 14 44 50.4 +1.3**
VRAC Vranov 80.24 327 LR LR 15 23 22.6
comp=Z,136μm,20.6s,baz=43,slow=38
VRAC Vranov 80.24 327⇑ *i*P **P 14 44 49.3 +0.4**
KMER Konya-Meram 80.26 311 *i* P **P 14 44 50.0 +0.7**
GZR Gura Zlata 80.27 321⇑ *i*P **P 14 44 49.4 +0.2**
HWQ Hawqa 80.31 306 *e*P **P 14 44 50.1 +0.4**
GEMT Gemlik 80.33 314 *e*P **P 14 44 50.4 +0.9**
I28A Midland 80.33 41 P **P 14 44 50.1 +0.6**
baz=315,SNR=427
SLVT Silivri 80.34 315 *e*P **P 14 44 51.1 +1.6**
AUKIR K˙¬rka- Seyitg 80.34 313 *i* P **P 14 44 50.6 +0.8**
H29A Onida 80.38 40 P **P 14 44 50.3 +0.6**
baz=315,SNR=170
JMB Yambol 80.38 317 P **P 14 44 50.9 +1.2**
J27A Elkhorn Farm, 80.42 42 P **P 14 44 51.3 +1.2**
baz=314,SNR=180
ARMT Armutlu 80.43 315 *e*P **P 14 44 50.5 +0.4**
RAYN Ar Rayn 80.43 292 PFAKE 14 45 00.0 +10
RAYN LR LR
comp=Z,173μm,19.0s
IGD Bursa 80.44 314 *i* P **P 14 44 50.0 -0.1**
PHSR Pinarhisar 80.44 316 *e*P **P 14 44 51.6 +1.5**
RRR Rubha Reidh 80.45 343⇑ *e*P **P 14 44 50.9 +1.1**
F31A Hecla 80.46 38 P **P 14 44 50.5 +0.4**
baz=316,SNR=88
BOLV Bolvadin 80.47 312 *i* P **P 14 44 51.4 +0.9**
SMOL Smolenice 80.47 326 *e*P **P 14 44 52.1 +1.9**
SMOL Smolenice 80.47 326 *e*P **P 14 44 52.1 +1.9**
SMOL *e*PP **PP 14 47 47.4 -5.8**
MDO Dochfour 80.48 342⇑ *e*P **P 14 44 50.6 +0.6**
E32A Braaten, Kindr 80.49 37 P **P 14 44 50.4 +0.1**
baz=317,SNR=64
DRUM Mains of Drumt 80.49 341⇑ *e*P **P 14 44 50.5 +0.4**
DRUM AMB AMB 14 44 56.1
comp=Z,1μm,1.4s
DRUM AMS AMS 15 17 32.1
comp=Z,100μm,28.9s
PVL Pavlikeni 80.52 318 P **P 14 44 51.7 +1.3**
CRAR CRAIOVA 80.52 320⇑ *i*P **P 14 44 51.7 +1.2**
BUD Budapest 80.53 325⇑ *e*P **P 14 44 51.7 +1.3**
GOPC GO Pecny, Ondr 80.53 328 *e*P **P 14 44 50.6 +0.1**
GOPC *e*PCP **PcP 14 44 56.9 -0.3**
GOPC *es*P **sP 14 45 09.5 -2.0**
GOPC *ex* x 14 49 49.8
GOPC *e*S **S 14 54 50.7 -2.3**
GOPC *ex* x 14 59 49.5
GOPC *e*PKKP **PKKPbc 15 03 34.2 +4.1**
GOPC *ex* x 15 03 55.8
GOPC *e*PKPPKP P'P'df 15 11 27.2 -12
GOPC AMS AMS 15 22 10.0
comp=Z,200μm,21.5s
GOPC GO Pecny, Ondr 80.53 328 *e*P **P 14 44 50.6 +0.1**
GOPC *e* 14 45 09.5
GOPC *e* 14 49 49.8
GOPC *e*S **S 14 54 50.7 -2.3**
GOPC *e* 15 03 34.2
GOPC MLR MLR
comp=Z,200μm,21.5s
MDNY Mudanya-Bursa 80.55 314 *e*P **P 14 44 51.9 +1.3**
G30A Faulkton 80.55 39 P **P 14 44 50.9 +0.3**
baz=316,SNR=320
PRA Prague 80.56 329 *e*PCP **PcP 14 44 56.8 -0.5**
PRA *e*PP **PP 14 47 50.1 -3.7**
PRA *e*S **S 14 54 51.1 -2.0**
PRA *ex* x 14 59 52.5
PRA AMS AMS 15 22 40.0
comp=Z,238μm,21.4s
PRA Prague 80.56 329 *e*P P 14 44 56.8 +6.3
PRA *e* 14 47 50.1
PRA *e*S **S 14 54 51.1 -2.0**
PRA MLR MLR
comp=Z,238μm,21.4s
ULDT Uludag 80.56 314 *i* P **P 14 44 51.2 +0.2**
PRU Pruhonice 80.58 329 *e*P **P 14 44 50.5 -0.1**
PRU *e*PCP **PcP 14 44 57.0 -0.4**
PRU *es*P **sP 14 45 09.7 -2.0**
PRU *e*PP **PP 14 47 46.4 -7.6**
PRU *ex* x 14 49 49.8
PRU *e*S **S 14 54 51.1 -2.2**
PRU *ex* x 14 59 51.2
PRU *e*PKPPKP P'P'df 15 11 27.4 -12
PRU AMS AMS 15 22 40.0
comp=Z,207μm,21.2s
PRU Pruhonice 80.58 329 *e*P **P 14 44 50.5 -0.1**
PRU *e* 14 45 09.7
PRU *e* 14 49 49.8
PRU *e*S **S 14 54 51.1 -2.2**
PRU MLR MLR
comp=Z,207μm,21.2s
SRE Strehaia 80.58 321⇓ *i*P **P 14 44 51.8 +1.0**
RRH Rhenigidale 80.59 344⇑ *e*P **P 14 44 51.8 +1.2**
EREN Erenkoy 80.62 308 *e*P **P 14 44 51.8 +0.6**
KAC Achnashellach 80.65 343⇑ *e*P **P 14 44 52.2 +1.3**
D33A AnnSam, Waubun 80.66 36 P **P 14 44 50.8 -0.4**
baz=318,SNR=79
CRLT Corlu 80.67 316 *e*P **P 14 44 53.7 +2.4**
RAR Rarotonga 80.67 126 *e*P **P 14 44 52.9 +1.5**
RAR Rarotonga 80.67 126 *e*P **P 14 44 52.9 +1.5**
RAR LR LR
comp=Z,107μm,22.0s
BZS Buzias 80.68 322⇑ *i*P **P 14 44 51.6 +0.3**
B35A Bob, Littlefor 80.70 34 P **P 14 44 51.2 -0.1**
baz=319,SNR=445
J28A Allard Ranch, 80.70 41 P **P 14 44 52.4 +0.8**
baz=315,SNR=134
C34A RKJ Ranch, Bem 80.70 35 P **P 14 44 51.0 -0.4**
baz=318,SNR=102
EDRB Edirne 80.72 317 *e*P **P 14 44 52.7 +1.1**
EDRB Edirne 80.72 317 P P **P 14 44 52.5 +0.9**
EDRB Edirne 80.72 317 P P **P 14 44 52.5 +0.9**
TREC Trest 80.72 328 *ex* **PcP 14 44 57.9 -0.2**
TREC *e*PP **PP 14 47 55.6 +0.4**
TREC *e*S **S 14 54 52.0 -2.9**
TREC AMS AMS 15 26 10.0
comp=Z,121μm,16.9s
TREC Trest 80.72 328 *e*P P 14 44 57.9 +6.4
TREC *e* 14 47 55.6
TREC *e*S **S 14 54 52.0 -2.9**
TREC MLR MLR
comp=Z,121μm,16.9s
BHL Bhannes 80.73 306 *e*P **P 14 44 52.5 +0.6**
I29A Vivian Onida 80.76 40 P **P 14 44 52.0 +0.2**
baz=315,SNR=168
NRS Narsarsuaq 80.77 4 *i* P **P 14 44 51.9 +0.5**
comp=Z,1μm,1.5s
NRS Narsarsuaq 80.77 4 *e*P **P 14 44 51.9 +0.5**
NRS pmax pmax
comp=Z,1μm,1.5s
NRS MLR MLR
comp=Z,140μm,26.0s
PKS7 Kunszentmiklos 80.79 324 *e*P **P 14 44 53.4 +1.6**
SHUT Suhut-Afyon 80.81 312 *e*P **P 14 44 53.4 +1.1**

ISCO	Idaho Springs	80.83	46	P	P	14 44 53.8	+1.2
	baz=313,SNR=150						
ISCO	Idaho Springs	80.83	46	eP	P	14 44 43.5	-9.1
TVSB	Tavsanli	80.84	313	eP	P	14 44 53.8	+1.4
BEYL	Beirut	80.86	306	eP	P	14 44 53.3	+0.8
MVCO	Mesa Verde	80.87	50	P	P	14 44 53.9	+1.1
	baz=312,SNR=445						
MVCO	Mesa Verde	80.87	50	eP	P	14 44 53.0	+0.2
MVCO				LR	LR		
	comp=Z,52µm,22.0s						
TKR	Tekirdag	80.87	316	eP	P	14 44 54.2	+1.8
RCY	Rachaya	80.88	306	eP	P	14 44 53.5	+0.8
KPL	Plockton	80.88	343	eP	P	14 44 53.4	+1.3
KPL				AMB	AMB	14 44 58.8	
	comp=Z,3µm,1.0s						
KPL				AMS	AMS	15 22 06.5	
	comp=Z,63µm,22.3s						
PKSG		80.89	325	eP	P	14 44 53.7	+1.4
KCTX	Karacabey (Bur	80.91	315	eP	P	14 44 53.4	+0.8
DQRL	Deir Qamar	80.92	306	eP	P	14 44 53.6	+0.8
PKS6	Bocsa	80.94	324	⇑eP	P	14 44 51.2	-1.4
G31A	Conde	80.94	38	P	P	14 44 53.2	+0.5
	baz=317,SNR=107						
TAU	Tasmania Unive	80.94	176	eP	P	14 44 53.2	+0.8
TAU	Tasmania Unive	80.94	176	eP	P	14 44 53.2	+0.8
TAU				LR	LR		
	comp=Z,73µm,21.0s						
KSB	Sheil Bridge	80.95	343	eP	P	14 44 53.5	+1.0
EDU	Dundee	80.95	341	⇑eP	P	14 44 53.3	+0.8
KUZ	Kuaotunu	80.96	153	PN	P	14 44 53.2	+0.6
CSKK	Csˆ‡kako	80.97	325	⇑eP	P	14 44 54.1	+1.3
F32A	Veblen	80.99	37	P	P	14 44 52.6	-0.4
	baz=317,SNR=20						
D34A	Park Rapids	81.00	35	P	P	14 44 52.7	-0.3
	baz=318,SNR=192						
ASF	Jabal al Asfar	81.04	304	P	P	14 44 54.5	+0.9
	comp=Z,129nm,0.9s,baz=302,slow=1.0,SNR=190						
ASF				PP	PP	14 47 56.0	-2.5
	comp=Z,95nm,1.2s,baz=324,slow=19,SNR=2.7						
ASF				S	S	14 54 54.4	-4.6
	comp=Z,1.5nm,0.4s,baz=70,slow=12,SNR=1.8						
ASF				LR	LR	15 24 26.5	
	comp=Z,111µm,21.1s,baz=10.0,slow=38						
PHNC	Paralimni	81.05	308	P	P	14 44 54.0	+0.6
BAGO	Egridir - ISPA	81.05	312	iP	P	14 44 54.8	+1.2
E33A	Westby DABS, E	81.05	36	P	P	14 44 53.5	+0.2
	baz=318,SNR=199						
GDZ	Gediz	81.07	313	iP	P	14 44 54.5	+0.8
BANR	Banloc	81.08	322	⇑iP	P	14 44 54.3	+0.9
C35A	Jirik Farms, M	81.08	34	P	P	14 44 53.2	-0.3
	baz=319,SNR=454						
MKAZ	Moumakai	81.09	154	PN	P	14 44 54.8	+1.6
MRMT	Marmara Adasi	81.11	315	eP	P	14 44 54.3	+0.5
EDC	Edincik	81.13	315	eP	P	14 44 55.2	+1.4
K28A	Ten Mile Ranch	81.13	42	P	P	14 44 54.6	+0.7
	baz=315,SNR=117						
SUSD	Miller	81.14	39	P	P	14 44 53.9	+0.1
	baz=316,SNR=66						
PKST	T˜'s	81.15	325	eP	P	14 44 54.7	+0.9
PKS2	Kecel	81.18	324	⇑eP	P	14 44 54.8	+0.9
LFK	Lefkose	81.18	308	eP	P	14 44 54.8	+0.6
J29A	Okreek	81.18	41	P	P	14 44 54.6	+0.5
	baz=316,SNR=70						
NKC	Novy Kostel	81.23	330	eP	P	14 44 54.1	-0.1
NKC				ePCP	PcP	14 45 00.4	+0.1
NKC				eS	S	14 54 57.5	-2.7
NKC				ePKKP	PKKPbc	15 03 32.9	+4.3
NKC				ePKPPKP	P'P'df	15 11 25.9	-12
NKC				AMS	AMS	15 25 20.0	
	comp=Z,149µm,17.5s						
NKC	Novy Kostel	81.23	330	eP	P	14 44 54.1	-0.1
NKC				eS	S	14 54 57.5	-2.7
NKC				MLR	MLR		
	comp=Z,149µm,17.5s						
MDVR	Moldovita	81.24	321	⇑iP	P	14 44 53.8	-0.6
MPEP	Malo Peshtene	81.24	319	P	P	14 44 55.6	+1.3
MPEP	Malo Peshtene	81.24	319	eP	PKKPbc	15 03 33.0	+4.7
G32A	Webster	81.26	38	P	P	14 44 55.0	+0.6
	baz=317,SNR=186						
SART	Tekirdag	81.28	316	iP	P	14 44 56.1	+1.5
I30A	Oacoma	81.28	40	P	P	14 44 54.9	+0.4
	baz=316,SNR=214						
RKY	Sarkoy-Tekirda	81.28	316	eP	P	14 44 55.4	+0.8
DURS	Dursunbey	81.30	314	iP	P	14 44 55.4	+0.6
ISP	Isparta	81.32	312	eP	P	14 44 55.5	+0.6
ISP	Isparta	81.32	312	P	P	14 44 55.2	+0.2
ISP	Isparta	81.32	312	eP	P	14 44 55.7	+0.7
ISP	Isparta	81.32	312	PFAKE		14 45 10.0	+15
ISP				LR	LR		
	comp=Z,72µm,21.0s						
H31A	Wolsey	81.35	39	P	P	14 44 55.0	+0.1
	baz=316,SNR=36						
KNL	Bal˜–kesir	81.37	315	iP	P	14 44 55.6	+0.5
ESY	Stoneypath	81.41	341	⇑eP	P	14 44 55.7	+0.8
F33A	5 Mile Ranch,	81.41	37	P	P	14 44 55.2	0.0
	baz=318,SNR=332						
KRBG	Karabiga-Canak	81.42	315	eP	P	14 44 56.4	+1.1
E34A	Wadena	81.43	36	P	P	14 44 55.4	+0.1
	baz=318,SNR=26						
MAMC	Mammari	81.44	308	P	P	14 44 56.4	+0.8
KESN	Edirne-Kesan	81.46	316	iP	P	14 44 56.9	+0.9
MMAI	Mount Meron Ar	81.47	305	LR	LR	15 24 19.7	
	comp=Z,132µm,21.6s,baz=40,slow=38						
SOP	Sopron	81.48	326	⇑eP	P	14 44 57.1	+1.6
W18A	Petrified Fore	81.49	52	P	P	14 44 57.5	+1.4
	baz=311,SNR=70						
S22A	4UR Ranch, Cre	81.51	48	P	P	14 44 58.0	+1.7
	baz=312,SNR=620						
CSS	Mathiatis	81.51	308	eP	P	14 44 56.2	+0.3
CSS	Mathiatis	81.51	308	P	P	14 44 56.9	+1.0
CSS	Mathiatis	81.51	308	P	P	14 44 55.8	-0.1
CSS	Mathiatis	81.51	308	PFAKE		14 45 10.0	+14
CSS				LR	LR		
	comp=Z,21µm,21.0s						
D35A	Remer	81.52	35	P	P	14 44 55.6	-0.1
	baz=319,SNR=151						
BCK	Bucak	81.52	311	eP	P	14 44 56.3	+0.3
PKS9	Tamasi	81.54	324	eP	P	14 44 56.5	+0.7
DEMI	Demirci	81.54	314	iP	P	14 44 56.5	+0.4
C36A	Pine Crest Far	81.54	34	P	P	14 44 55.9	+0.1
	baz=320,SNR=276						
L28A	Connealy Angus	81.55	42	P	P	14 44 56.8	+0.7
	baz=315,SNR=73						
EDI	Edinburgh	81.55	341	eP	P	14 44 56.2	+0.5
EDI				AMB	AMB	14 45 01.7	
	comp=Z,810nm,2.3s						
EDI				AMS	AMS	15 18 02.2	
	comp=Z,90µm,29.4s						
KHAL	Karahalli	81.55	313	iP	P	14 44 56.7	+0.5
NAQL	Naqoura	81.57	306	eP	P	14 44 56.8	+0.6
214A	Organ Pipe Nat	81.58	56	P	P	14 44 57.5	+1.1
	baz=310,SNR=94						
PGB	Panagyurishte	81.59	319	P	P	14 44 57.5	+1.2
CONA	Conrad Observa	81.60	327	iP	P	14 44 57.0	+0.7
	comp=Z,1µm,1.3s,SNR=468						
EAB	Aberfoyle	81.61	342	⇑eP	P	14 44 57.1	+1.1
BALB	Balikesir	81.61	314	eP	P	14 44 57.1	+0.8
KHC	Kasperske Hory	81.64	329	eP	P	14 44 56.1	-0.3
KHC				ePCP	PcP	14 45 02.4	+0.3
KHC				esP	sP	14 45 15.8	-1.7
KHC				ePP	PP	14 48 02.4	-0.4
KHC				ex	x	14 49 58.3	
KHC				eS	S	14 55 01.8	-2.7
KHC				ex	x	15 00 05.0	
KHC				ePKKP	PKKPbc	15 03 31.2	+3.6
KHC				ex	x	15 11 23.6	
KHC				AMS	AMS	15 23 30.0	
	comp=Z,261µm,22.0s						
KHC	Kasperske Hory	81.64	329	eP	P	14 44 56.1	-0.3
KHC				e		14 45 15.8	
KHC				e		14 48 02.4	
KHC				e		14 49 58.3	
KHC				eS	S	14 55 01.8	-2.7
KHC				MLR	MLR		
	comp=Z,261µm,22.0s						
KHC	Kasperske Hory	81.64	329	eP	P	14 44 56.2	-0.2
I31A	Royce, Wessing	81.64	39	P	P	14 44 56.3	-0.1
	baz=316						
K29A	Lazy Trails An	81.64	41	P	P	14 44 57.2	+0.6
	baz=316,SNR=70						
ERIK	Erikli-Kesan	81.66	316	eP	P	14 44 57.4	+0.9
Q24A	Divide	81.66	46	P	P	14 44 58.1	+1.1
	baz=313,SNR=156						
J30A	Dallas	81.67	40	P	P	14 44 57.1	+0.5

	baz=316,SNR=88						
LEF	Lefka	81.68	308	eP	P	14 44 56.9	+0.1
BALY	Balya	81.69	315	iP	P	14 44 57.1	+0.3
E35A	Pequot Lakes	81.75	35	P	P	14 44 57.1	+0.1
	baz=319,SNR=82						
ALN	Alexandroupoli	81.75	316	P	P	14 44 56.3	-0.8
ALN	Alexandroupoli	81.75	316	P	P	14 44 56.3	-0.8
ALN	Alexandroupoli	81.75	316	P	P	14 44 56.3	-0.8
TOZ	Tahuroa Road	81.77	154	PN	P	14 44 57.8	+0.9
ENEZ	Enez	81.81	316	eP	P	14 44 58.6	+1.2
ENEZ	Enez	81.81	316	P	P	14 44 58.2	+0.9
GERES	GERESS Array B	81.81	328	P	P	14 44 57.0	-0.4
	comp=Z,218nm,0.9s,baz=39,slow=6.3,SNR=180						
GERES				PKKPbc	PKKPbc	15 03 27.0	-0.3
	comp=Z,12nm,0.8s,baz=198,slow=1.9,SNR=15						
GERES				PKPPKP	P'P'df	15 11 32.1	-4.9
	comp=Z,5.8nm,1.0s,baz=180,slow=1.0,SNR=5.9						
GERES				LR	LR	15 24 11.1	
	comp=Z,214µm,21.7s,baz=26,slow=38						
GERES	GERESS Array B	81.81	328	P	P	14 44 57.0	-0.4
GERES				pmax	pmax		
	comp=Z,219nm,0.9s						
G33A	Ortonville	81.82	37	P	P	14 44 57.3	0.0
	baz=318,SNR=247						
ALFC	Alefka	81.84	309	P	P	14 44 57.9	+0.2
H32A	Carlson Farm,	81.84	38	P	P	14 44 57.6	+0.1
	baz=317,SNR=92						
D36A	Goodland	81.84	34	P	P	14 44 57.0	-0.4
	baz=320,SNR=158						
C37A	Embarrass	81.85	33	P	P	14 44 57.6	+0.1
	baz=320,SNR=339						
RZN	Rozhen	81.91	318	P	P	14 44 59.1	+1.0
RZN	Rozhen	81.91	318	eP	PKKPbc	15 03 31.2	+4.2
SZAC	Souni	81.93	308	P	P	14 44 58.9	+0.8
F34A	Alexandria	81.93	36	P	P	14 44 57.9	0.0
	baz=318,SNR=88						
WTSB	Winterswijk	81.93	334	eP	P	14 44 57.9	+0.1
	comp=Z,1µm,1.5s						
KULA	Kula-Manisa	81.93	313	eP	P	14 44 58.9	+0.8
KULA	Kula-Manisa	81.93	313	P	P	14 44 58.7	+0.5
KULA	Kula-Manisa	81.93	313	P	P	14 44 58.7	+0.5
KORT	Korkueli	81.97	311	iP	P	14 44 58.7	+0.2
PGBU	Glenifferbraes	81.98	342	eP	P	14 44 59.1	+1.2
PGBU				AMB	AMB	14 45 04.5	
	comp=Z,2µm,1.3s						
PGBU				AMS	AMS	15 18 13.5	
	comp=Z,81µm,28.1s						
EYMN	Ely	81.98	33	P	P	14 44 58.2	+0.1
	baz=321,SNR=379						
EYMN	Ely	81.98	33	PFAKE		14 45 10.0	+12
EYMN				LR	LR		
	comp=Z,41µm,21.0s						
OGNE	Ogallala	82.02	43	P	P	14 44 58.9	+0.3
	baz=315,SNR=151						
OGNE	Ogallala	82.02	43	PFAKE		14 45 10.0	+11
OGNE				LR	LR		
	comp=Z,43µm,22.0s						
H33A	Prehn Over Nor	82.05	38	P	P	14 44 59.1	+0.5
	baz=318,SNR=299						
L29A	Maesberg Ranch	82.06	42	P	P	14 44 58.8	+0.1
	baz=316,SNR=114						
M28A	Bar X Bar Ranc	82.06	43	P	P	14 44 59.1	+0.3
	baz=315,SNR=84						
VTS	Vitosha	82.06	319	⇑iP	P	14 44 59.6	+0.7
VTS	Vitosha	82.06	319	P	P	14 44 59.2	+0.3
VTS	Vitosha	82.06	319	P	P	14 44 59.2	+0.3
VTS	Vitosha	82.06	319	P	P	14 44 59.9	+1.0
VTS	Vitosha	82.06	319	eP	PKKPbc	15 03 31.7	+5.0
VTS	Vitosha	82.06	319	P	P	14 44 59.2	+0.3
K30A	Basset	82.07	41	P	P	14 44 59.5	+0.7
	baz=316,SNR=155						
J31A	Geddes	82.07	40	P	P	14 44 58.9	+0.1
	baz=316,SNR=52						
AKMC	Akamas	82.09	309	P	P	14 44 58.6	-0.4
ESK	Eskdalemuir	82.10	341	⇑eP	P	14 44 59.3	+0.7
ESK				AMB	AMB	14 45 04.9	
	comp=Z,853nm,1.7s						
ESK				AMS	AMS	15 18 19.1	
	comp=Z,102µm,30.8s						
ESK	Eskdalemuir	82.10	341	ceP	P	14 44 59.9	+1.3
ESK	Eskdalemuir	82.10	341	PFAKE		14 45 10.0	+11
ESK				LR	LR		
	comp=Z,117µm,20.0s						
G34A	Benson	82.16	37	P	P	14 44 59.8	+0.6
	baz=318,SNR=86						
PPCY	Paphos	82.17	308	P	P	14 44 59.1	-0.3
I32A	Karley and Nic	82.17	39	P	P	14 44 59.5	+0.2
	baz=317,SNR=38						
D37A	Cotton	82.18	34	P	P	14 44 58.9	-0.3
	baz=320,SNR=100						
ECK	Cauldkaine Hil	82.20	341	⇑eP	P	14 45 00.0	+0.9
F35A	Swanville	82.20	36	P	P	14 44 59.4	+0.1
	baz=319,SNR=139						
HIZ	Hauiti	82.25	154	PN	P	14 45 00.3	+1.0
C38A	Sawbill Land.	82.25	33	P	P	14 44 59.5	-0.1
	baz=321,SNR=467						
ARSA	Arzberg	82.27	326	iP	P	14 45 00.4	+0.7
	comp=Z,619nm,1.4s,SNR=230						
SDCO	Great Sand Dun	82.28	48	P	P	14 45 01.5	+1.2
	baz=313,SNR=435						
SDCO	Great Sand Dun	82.28	48	PFAKE		14 45 10.0	+10
SDCO				LR	LR		
	comp=Z,38µm,20.0s						
BHH	Howats Hill	82.30	341	⇑eP	P	14 45 00.8	+1.1
E36A	McGregor	82.30	35	P	P	14 44 59.7	-0.1
	baz=320,SNR=320						
BEHE	Becsehely	82.31	325	⇑eP	P	14 45 00.6	+0.7
GADA	Gvkgeada	82.33	316	eP	P	14 45 00.8	+0.7
GADA	Gvkgeada	82.33	316	P	P	14 44 59.8	-0.3
GADA	Gvkgeada	82.33	316	P	P	14 44 59.8	-0.3
SMTH	Samothraki Isl	82.33	316	P	P	14 44 59.5	-0.6
SMTH	Samothraki Isl	82.33	316	P	P	14 44 59.5	-0.6
BWH	Wardlaw	82.34	341	⇑eP	P	14 45 00.4	+0.5
EZN	Ezine	82.35	315	eP	P	14 45 01.1	+0.9
EZN	Ezine	82.35	315	P	P	14 45 01.1	+0.9
EZN	Ezine	82.35	315	P	P	14 45 01.1	+0.9
EZN	Ezine	82.35	315	P	P	14 45 01.1	+0.9
MOA	Molln	82.35	327	iPcP	P	14 45 01.3	+1.2
	comp=Z,697nm,1.2s,SNR=196						
M29A	Burnside Ranch	82.39	42	P	P	14 45 00.3	-0.2
	baz=316,SNR=18						
ELL	Elmali	82.40	311	eP	P	14 45 01.6	+0.9
J32A	Parkston	82.46	39	P	P	14 45 00.8	0.0
	baz=317,SNR=74						
I33A	Coleman	82.49	38	P	P	14 45 00.8	-0.1
	baz=318,SNR=76						
AYVA	Ayvalik	82.50	315	iP	P	14 45 03.7	+2.7
MMB	Musomiste	82.51	318	eP	PKKPbc	15 03 30.5	+5.0
KAVA	Kavala	82.51	317	P	P	14 45 01.2	+0.2
KAVA	Kavala	82.51	317	P	P	14 45 01.2	+0.2
H34A	Spellman Lake,	82.52	37	P	P	14 45 01.2	+0.1
	baz=318,SNR=67						
L30A	Spencer Herefo	82.54	41	P	P	14 45 01.0	-0.3
	baz=316,SNR=57						
DKL	Dikili	82.55	315	eP	P	14 45 02.0	+0.7
K31A	O'Neill	82.55	40	P	P	14 45 01.4	+0.1
	baz=316,SNR=83						
KOGS	Kog	82.56	325	iP	P	14 45 01.0	-0.2
	comp=Z,7µm,2.2s						
KOGS				eS	S	14 55 10.8	-3.1
KOGS				eSS	SS	15 00 34.8	-0.3
NVR	Nevrokopi	82.61	318	P	P	14 45 01.5	-0.1
NVR	Nevrokopi	82.61	318	P	P	14 45 01.5	-0.1
HAZ	Te Kaha	82.61	152	PN	P	14 45 02.0	+0.8
BBO1	Bothel	82.62	340	⇑eP	P	14 45 02.3	+0.9
KKB	Krupnik	82.64	319	P	P	14 45 02.2	+0.5
E37A	Wrenshall	82.65	34	P	P	14 45 01.1	-0.5
	baz=320,SNR=31						
C39A	Grand Marais	82.66	32	P	P	14 45 01.4	-0.3
	baz=322,SNR=154						
TUC	Tucson	82.67	55	P	P	14 45 02.9	+0.7
	baz=311						
TUC	Tucson	82.67	55	PFAKE		14 45 10.0	+7.9
TUC				LR	LR		
	comp=Z,49µm,20.0s						
GMK	Mull of Kintyr	82.67	342	⇑eP	P	14 45 01.8	+0.2
F36A	Milaca	82.68	35	P	P	14 45 01.2	-0.6
	baz=320,SNR=130						
KESW	Keswick, Cumbr	82.72	340	⇑eP	P	14 45 03.0	+1.2
KESW				AMB	AMB	14 45 09.1	
	comp=Z,2µm,1.4s						
G35A	Watkins	82.72	36	P	P	14 45 02.3	+0.2
	baz=319,SNR=89						
M30A	Dale-Ortello V	82.75	42	P	P	14 45 02.1	-0.3
	baz=316						

AYDB	Zeytinkoy-Aydi	82.76	313	eP	P	14 45 03.6	+1.0
VRZ	Vera Road	82.76	155	PN	P	14 45 03.5	+1.5
PRK	Paraskevi	82.78	315	P	P	14 45 03.5	+1.1
PRK	Paraskevi	82.78	315	P	P	14 45 03.5	+1.1
PRK	Paraskevi	82.78	315	P	P	14 45 03.5	+1.1
ECSD	EROS Data Cent	82.81	38	P	P	14 45 02.4	-0.1
	baz=318,SNR=552						
ECSD	EROS Data Cent	82.81	38	PFAKE		14 45 10.0	+7.4
ECSD				LR	LR		
	comp=Z,44µm,21.0s						
URZ	Urewera	82.81	153	S	S	14 55 24.8	+8.5
	comp=Z,8.8nm,1.0s,baz=200,slow=16,SNR=1.7						
URZ				LR	LR	15 17 17.5	
	comp=Z,105µm,21.9s,baz=340,slow=32						
URZ	Urewera	82.81	153	ePN	P	14 45 00.9	-1.4
L31A	Butterfield Fa	82.83	41	P	P	14 45 03.1	+0.4
	baz=316,SNR=213						
N29A	Votaw Ranch, W	82.86	43	P	P	14 45 03.1	+0.1
	baz=316,SNR=100						
GROS	Grobnik	82.89	326	⇑iP	P	14 45 02.8	-0.2
	comp=Z,6µm,1.7s						
GROS				ePP	PP	14 48 20.3	+7.2
GROS				eS	S	14 55 15.0	-2.4
GAL1	Galloway	82.89	341	⇑eP	P	14 45 03.5	+0.8
GAL1				AMB	AMB	14 45 08.9	
	comp=Z,638nm,1.2s						
SRS	Serrai	82.91	318	P	P	14 45 02.4	-0.8
SRS	Serrai	82.91	318	P	P	14 45 02.4	-0.8
SRS	Serrai	82.91	318	P	P	14 45 02.4	-0.8
K32A	Verdigre	82.92	40	P	P	14 45 02.8	-0.4
	baz=317,SNR=25						
LIA	Limnos Island	82.92	316	P	P	14 45 03.8	+0.6
LIA	Limnos Island	82.92	316	P	P	14 45 03.8	+0.6
SOKA	Soboth	82.92	326	iP	P	14 45 02.9	-0.3
	comp=Z,2µm,1.2s,SNR=992						
AKAS	Kas	82.93	311	iP	P	14 45 03.3	-0.2
J33A	Davis	82.94	39	P	P	14 45 03.4	+0.1
	baz=318,SNR=82						
LMK	Market Rasen	82.94	338	eP	P	14 45 03.2	+0.2
LMK				AMB	AMB	14 45 09.9	
	comp=Z,2µm,2.6s						
LMK				AMS	AMS	15 24 47.5	
	comp=Z,211µm,22.6s						
BLCB	Balcova	82.94	314	eP	P	14 45 03.8	+0.5
H35A	Sunnyside Ranc	82.95	37	P	P	14 45 03.6	+0.4
	baz=319,SNR=453						
I34A	Hadley	82.95	38	P	P	14 45 03.6	+0.4
	baz=318,SNR=16						
FETY	Fethiye	82.97	312	eP	P	14 45 03.9	+0.4
FETY	Fethiye	82.97	312	P	P	14 45 04.5	+1.0
FETY	Fethiye	82.97	312	P	P	14 45 04.5	+1.0
AYDN	Tasoluk	82.97	313	iP	P	14 45 05.3	+1.8
MWZ	Matawai	83.03	152	ePN	P	14 45 02.3	-1.2
SIGR	SIGRI	83.03	315	P	P	14 45 03.9	+0.1
SIGR	SIGRI	83.03	315	P	P	14 45 03.9	+0.1
KSCO	Kaye Shedlock'	83.05	45	P	P	14 45 04.5	+0.4
	baz=315,SNR=53						
G36A	St. Michael	83.05	36	P	P	14 45 04.0	+0.2
	baz=319,SNR=58						
TURN	Turunc	83.08	312	iP	P	14 45 06.9	+2.9
YER	Yerkesik	83.09	312	eP	P	14 45 05.7	+1.4
YER	Yerkesik	83.09	312	P	P	14 45 05.2	+1.0
YER	Yerkesik	83.09	312	P	P	14 45 05.2	+1.0
YER	Yerkesik	83.09	312	P	P	14 45 05.2	+1.0
N30A	Hueftle Ranch,	83.16	42	P	P	14 45 04.5	0.0
	baz=316						
URLA	Izmir	83.21	314	iP	P	14 45 05.8	+1.0
HGN	Heimansgroeve	83.23	334	iP	P	14 45 04.2	-0.4
	comp=Z,1µm,1.5s						
KNT	Kendrikon	83.25	318	P	P	14 45 05.1	+0.2
KNT	Kendrikon	83.25	318	P	P	14 45 05.1	+0.2
KNT	Kendrikon	83.25	318	P	P	14 45 05.1	+0.2
SOH	Sokhos	83.25	318	P	P	14 45 04.4	-0.5
SOH	Sokhos	83.25	318	P	P	14 45 04.4	-0.5
SOH	Sokhos	83.25	318	P	P	14 45 04.4	-0.5
MUKL	Al Mukalla	83.26	283	eP	P	14 45 05.4	+0.1
MUKL				AMb	AMB	14 45 05.8	
	comp=Z,6µm,2.1s						
OUR	Ouranopolis	83.26	317	P	P	14 45 05.1	+0.2
OUR	Ouranopolis	83.26	317	P	P	14 45 05.1	+0.2
OUR	Ouranopolis	83.26	317	P	P	14 45 05.1	+0.2
OBKA	Obir	83.27	326	iP	P	14 45 04.6	-0.4
	comp=Z,270nm,0.9s,SNR=146						
BEBN	Eben Emael	83.30	334	P	P	14 45 05.1	+0.2
VAY	Valandovo	83.30	319	P	P	14 45 06.1	+1.0
VAY	Valandovo	83.30	319	iP	P	14 45 05.5	+0.3
VAY	Valandovo	83.30	319	P	P	14 45 06.1	+1.0
VAY	Valandovo	83.30	319	P	P	14 45 06.1	+1.0
GCAM	G?zelcaml?	83.31	313	iP	P	14 45 06.5	+1.3
T25A	Trinidad	83.33	47	P	P	14 45 06.6	+0.9
	baz=314,SNR=418						
MEM	Membach	83.34	333	P	P	14 45 05.7	+0.5
KBA	Koelnbreinsper	83.34	327	iP	P	14 45 05.5	0.0
	comp=Z,1µm,0.8s,SNR=294						
ZEY	˜zmir	83.35	314	iP	P	14 45 06.1	+0.7
M31A	Lambtecht Ranc	83.36	41	P	P	14 45 05.5	0.0
	baz=316,SNR=59						
L32A	Elgin	83.38	40	P	P	14 45 05.7	+0.1
	baz=317,SNR=28						
WAZ	Wanganui	83.41	155	PN	P	14 45 05.9	+0.6
SKO	Skopje	83.42	320	P	P	14 45 07.6	+1.9
SKO	Skopje	83.42	320	iP	P	14 45 07.0	+1.3
SKO	Skopje	83.42	320	P	P	14 45 07.6	+1.9
SKO	Skopje	83.42	320	P	P	14 45 07.6	+1.9
PLE	Pljevlja	83.44	322	⇑iP	P	14 45 05.5	-0.5
K33A	Hardington	83.45	39	P	P	14 45 06.1	+0.2
	baz=318,SNR=37						
J34A	George	83.46	38	P	P	14 45 05.9	0.0
	baz=318,SNR=38						
H36A	Jessenland, He	83.46	36	P	P	14 45 06.6	+0.7
	baz=319,SNR=162						
SPMN	Marine on St.	83.49	35	P	P	14 45 05.9	-0.1
	baz=320,SNR=70						
CHOS	Chios island	83.50	315	P	P	14 45 06.8	+0.5
CHOS	Chios island	83.50	315	P	P	14 45 06.8	+0.5
I35A	Creekview Farm	83.51	37	P	P	14 45 06.1	0.0
	baz=319,SNR=38						
PLG	Polygyros	83.52	317	P	P	14 45 06.2	-0.1
PLG	Polygyros	83.52	317	P	P	14 45 06.2	-0.1
PLG	Polygyros	83.52	317	P	P	14 45 06.2	-0.1
WIM	Isle of Man	83.53	341	⇑eP	P	14 45 06.9	+0.9
SMG	Samos	83.53	314	P	P	14 45 06.0	-0.4
SMG	Samos	83.53	314	P	P	14 45 06.0	-0.4
IVA	Berane	83.53	321	⇑iP	P	14 45 06.3	-0.1
HORT	Hortiatis	83.55	318	P	P	14 45 05.8	-0.7
HORT	Hortiatis	83.55	318	P	P	14 45 05.8	-0.7
MYKA	Terra Mystica	83.57	327	iP	P	14 45 05.7	-0.7
	comp=Z,704nm,1.5s,SNR=298						
WHHZ	Waihua	83.58	153	ePN	P	14 45 06.2	0.0
QRZ	Quartz Range	83.59	157	PN	P	14 45 06.5	+0.3
THE	Thessaloniki	83.59	318	P	P	14 45 06.4	-0.2
THE	Thessaloniki	83.59	318	P	P	14 45 06.4	-0.2
THE	Thessaloniki	83.59	318	P	P	14 45 06.4	-0.2
ANMO	Albuquerque	83.61	50	S	S	14 55 27.6	+2.1
	comp=Z,3.4nm,1.0s,baz=338,slow=16,SNR=6.5						
ANMO				PKKPbc	PKKPbc	15 03 23.4	+0.4
	comp=Z,2.5nm,0.8s,baz=137,slow=7.0,SNR=3.9						
ANMO				LR	LR	15 16 47.7	
	comp=Z,51µm,21.9s,baz=319,slow=32						
ANMO	Albuquerque	83.61	50	P	P	14 45 07.9	+0.8
	baz=313						
ANMO	Albuquerque	83.61	50	ceP	P	14 45 08.0	+0.9
ANMO				pmax	pmax		
	comp=Z,835nm,1.2s						
BDRM	Kayabasi	83.63	313	iP	P	14 45 08.8	+1.9
L33A	Hoskins	83.63	40	P	P	14 45 06.9	0.0
	baz=317,SNR=55						
LJU	Ljubljana	83.64	326	⇑iP	P	14 45 06.6	-0.2
	comp=Z,6µm,2.3s						
LJU				ePP	PP	14 48 27.0	+7.8
LJU				ePPP	PPP	14 50 20.1	
LJU				e		14 52 08.0	
LJU				eS	S	14 55 21.1	-3.8
LJU				e		14 56 14.7	
GRG	Griva	83.66	318	P	P	14 45 07.3	+0.3
GRG	Griva	83.66	318	P	P	14 45 07.3	+0.3
GRG	Griva	83.66	318	P	P	14 45 07.3	+0.3
PVY	Plav	83.70	321	⇑iP	P	14 45 07.2	-0.1
BODT	Bodrum	83.71	313	eP	P	14 45 08.1	+0.8
BODT	Bodrum	83.71	313	P	P	14 45 08.1	+0.8
BODT	Bodrum	83.71	313	P	P	14 45 08.1	+0.8
PAIG	Paliouri	83.72	317	P	P	14 45 07.2	-0.1
PAIG	Paliouri	83.72	317	P	P	14 45 07.2	-0.1

PAIG Paliouri 83.72 317 P P 14 45 07.2 -0.2 -0.1
BOJS Bojanci 83.73 325⇑eP P 14 45 07.2 -0.1
comp=Z,6μm,2.9s
BOJS ePP PP 14 48 27.7 +7.7
BGNE Belgrade 83.74 41 P P 14 45 07.4 0.0
baz=317,SNR=67
BCLA Clavier 83.74 334 P P 14 45 07.8 +0.6
N31A Bailey Ranch, 83.75 42 P P 14 45 07.5 0.0
baz=316,SNR=25
GMM Mts of Mourne 83.77 342⇑eP P 14 45 08.2 +0.9
J35A Milford 83.77 38 P P 14 45 07.5 0.0
baz=319,SNR=23
UPM Unac-Piva 83.77 322⇑iP P 14 45 07.4 -0.4
STNC Stoke 83.80 339 eP P 14 45 08.8 +1.3
STNC AMB AMB 14 45 15.1
comp=Z,2μm,1.9s
STNC AMS AMS 15 25 15.5
comp=Z,164μm,22.9s
ARG Arkhangelos 83.81 312 P P 14 45 08.4 +0.6
ARG Arkhangelos 83.81 312 P P 14 45 08.4 +0.6
ARG Arkhangelos 83.81 312 P P 14 45 08.4 +0.6
K34A Le Mars 83.84 39 P P 14 45 08.0 +0.1
baz=318,SNR=105
CADS Cadrg 83.84 327⇑iP P 14 45 06.6 -1.2
comp=Z,2μm,1.7s
I36A Fitzsimmons Fa 83.84 37 P P 14 45 08.2 +0.4
baz=319,SNR=73
CWF Charnwood Fore 83.86 338⇑eP P 14 45 08.3 +0.6
CWF AMB AMB 14 45 13.8
comp=Z,1μm,1.2s
CWF AMS AMS 15 25 26.8
comp=Z,172μm,22.2s
WATA Walderalm 83.88 328 iPcP P 14 45 08.8 +0.6
SNR=118
WTTA Wattenberg 83.91 328 iP P 14 45 08.6 +0.2
comp=Z,613nm,0.9s,SNR=197
Y22D IRIS PASSCAL I 83.92 51 P P 14 45 10.5 +1.8
baz=313,SNR=11
EIL Elat 83.92 303 P P 14 45 08.9 +0.4
comp=Z,398nm,1.0s,baz=3.3,slow=4.4,SNR=229
EIL PP PP 14 48 26.2 +4.1
comp=Z,534nm,1.3s,baz=338,slow=3.1,SNR=7.1
EIL S S 14 55 22.6 -5.7
comp=Z,7.5nm,0.9s,baz=54,slow=17,SNR=1.7
H37A Dierke Farm, C 83.93 36 P P 14 45 09.0 +0.7
baz=320,SNR=178
ABTA Abfaltersbach 83.95 328 iP P 14 45 07.9 -0.6
comp=Z,411nm,1.3s,SNR=162
JAVS Javornik 83.96 326⇑iP P 14 45 07.6 -1.0
comp=Z,3μm,1.2s
DUWZ D'Urville Isla 84.00 156 PN P 14 45 08.6 +0.1
TSZ Takapari Road 84.01 154 PN P 14 45 08.1 -0.4
NKY Niksic 84.02 322⇑iP P 14 45 08.5 -0.4
SNF Seneffe 84.02 334 P P 14 45 08.6 0.0
LANF Langenberg 84.03 332⇑eP P 14 45 09.6 +0.9
O31A Woolen Ranch, 84.03 42 P P 14 45 08.8 -0.1
baz=316,SNR=51
MOTA Moosalm 84.06 329 iPcP P 14 45 10.1 +1.0
SNR=272
WLF Walferdange 84.07 333 P P 14 45 09.8 +0.9
comp=Z,2μm,2.1s
WLF Walferdange 84.07 333 PFAKE 14 45 20.0 +11
WLF LR LR
comp=Z,170μm,19.0s
NKME Niksic 84.07 322 eP P 14 45 08.6 -0.5
RETA Reutte 84.09 329 iP P 14 45 09.2 0.0
comp=Z,1μm,1.2s,SNR=438
SCHQ Schefferville 84.10 16 P P 14 45 09.4 +0.5
comp=Z,305nm,0.8s,baz=352,slow=5.1,SNR=44
SCHQ PKKPbc PKKPbc 15 03 22.0 -0.2
comp=Z,9.3nm,0.5s,baz=234,slow=1.3,SNR=5.1
SCHQ PKPPKP P'P'df 15 11 26.1 -6.6
comp=Z,13nm,0.8s,baz=223,slow=1.6,SNR=6.6
NIS1 Nisyros Isl. 84.10 313 P P 14 45 09.8 +0.5
NIS1 Nisyros Isl. 84.10 313 P P 14 45 09.8 +0.5
WME Myndd Eilian 84.10 340⇑eP P 14 45 09.8 +0.8
M33A Taylor Creek F 84.11 40 P P 14 45 09.4 +0.1
baz=318,SNR=50
WPM1 Penmaenmawr 84.12 340⇑eP P 14 45 10.0 +0.9
NISR Nisiros 84.12 313 P P 14 45 09.1 -0.3
NISR Nisiros 84.12 313 P P 14 45 09.1 -0.3
N32A Stulken Farm, 84.13 41 P P 14 45 09.2 -0.3
baz=317,SNR=12
I37A Lemond, Waseca 84.14 37 P P 14 45 09.8 +0.5
baz=320,SNR=499
AOS Alonnisos 84.15 316 P P 14 45 09.6 +0.1
AOS Alonnisos 84.15 316 P P 14 45 09.6 +0.1
BIA Bitola 84.17 319 P P 14 45 13.1 +3.4
BIA Bitola 84.17 319 iP P 14 45 10.0 +0.4
BIA Bitola 84.17 319 P P 14 45 13.1 +3.4
BRY Bratogost 84.17 322⇑iP P 14 45 09.6 -0.2
PDG Podgorica 84.17 321 P P 14 45 10.1 +0.6
TTG Podgorica 84.17 321⇑iP P 14 45 09.8 +0.2
TTG Podgorica 84.17 321 P P 14 45 10.1 +0.6
TTG Podgorica 84.17 321 P P 14 45 10.1 +0.6
NNZ Nelson 84.21 157 PN P 14 45 09.1 -0.2
DSZ Denniston Nort 84.21 158 PN P 14 45 08.9 -0.6
J36A Seneca 1, Swea 84.21 37 P P 14 45 10.0 +0.2
baz=319,SNR=128
WLF1 Llynfaes 84.22 340⇑eP P 14 45 10.4 +0.9
WLF1 AMB AMB 14 45 16.7
comp=Z,2μm,2.3s
WLF1 AMS AMS 15 26 04.8
comp=Z,147μm,20.1s
LIT Litokhoron 84.23 318 P P 14 45 09.7 -0.2
LIT Litokhoron 84.23 318 P P 14 45 09.7 -0.2
LIT Litokhoron 84.23 318 P P 14 45 09.7 -0.2
L34A Svendsen Farm, 84.23 40 P P 14 45 09.9 0.0
baz=318,SNR=68
K35A Storm Lake 84.23 38 P P 14 45 09.8 -0.1
baz=319,SNR=33
UDBI Udbina 84.25 324 P P 14 45 09.4 -0.6
CEME Cevo 84.25 321⇑iP P 14 45 10.0 -0.1
FOEL Foel Wylfa 84.26 340⇑eP P 14 45 10.2 +0.4
FOEL AMB AMB 14 45 16.9
comp=Z,2μm,1.0s
FOEL AMS AMS 15 26 14.6
comp=Z,157μm,21.0s
DOU Dourbes 84.26 334 P P 14 45 10.4 +0.5
comp=Z,480nm,1.8s
YLL Llanberis 84.30 340⇑eP P 14 45 11.0 +1.1
YRC Rhoscolyn 84.31 340⇑eP P 14 45 10.8 +0.8
FNA Florina 84.31 319 P P 14 45 10.2 -0.2
FNA Florina 84.31 319 P P 14 45 10.2 -0.2
FNA Florina 84.31 319 P P 14 45 10.2 -0.2
BFO Black Forest 84.36 331ceP P 14 45 10.5 0.0
BFO Black Forest 84.36 331 PFAKE 14 45 20.0 +10
BFO LR LR
comp=Z,92μm,20.0s
OHR Ohrid 84.37 319 iP P 14 45 10.8 +0.1
SKIA Skiathos 84.38 317 P P 14 45 09.7 -1.0
XOR Xorichti 84.38 317 P P 14 45 09.7 -1.0
XOR Xorichti 84.38 317 P P 14 45 09.7 -1.0
DRME Dracevica, Mon 84.39 321⇑iP P 14 45 10.9 +0.2
NEO Neokhori 84.41 317 P P 14 45 10.9 0.0
NEO Neokhori 84.41 317 P P 14 45 10.9 0.0
MRZ Mangatainoka R 84.42 155 PN P 14 45 09.9 -0.6
121A Cookes Peak, D 84.42 53 P P 14 45 12.6 +1.3
baz=312,SNR=440
COWI Conover 84.43 33 PFAKE 14 45 20.0 +9.2
COWI LR LR
comp=Z,55μm,20.0s
PMOR Pomariorio Ree 84.44 114 eP P 14 45 13.5 +2.4
comp=Z,2μm,1.3s
PMOR Pomariorio Ree 84.44 114 eT T 16 17 52.3
comp=Z,566nm,0.2s
BUM Brajici-Budva 84.45 321⇑iP P 14 45 10.9 -0.2
KZN Kozani 84.46 318 P P 14 45 10.4 -0.8
KZN Kozani 84.46 318 P P 14 45 10.4 -0.8
KZN Kozani 84.46 318 P P 14 45 10.4 -0.8
M34A Aspy Farms, Fr 84.47 40 P P 14 45 11.2 +0.1
baz=318,SNR=44
FETA Feichten 84.48 329 iP P 14 45 10.7 -0.6
comp=Z,570nm,1.3s,SNR=340
FYTO Fytoko, Volos 84.49 317 P P 14 45 10.4 -0.8
FYTO Fytoko, Volos 84.49 317 P P 14 45 10.4 -0.8
HLM1 Long Mynd 84.50 339⇑eP P 14 45 11.7 +0.7
HLM1 AMB AMB 14 45 17.2
comp=Z,1μm,2.1s
HLM1 AMS AMS 15 25 57.8
comp=Z,155μm,22.2s
ELSH Elham, Standar 84.51 336⇑eP P 14 45 11.1 0.0
ELSH AMB AMB 14 45 17.1
comp=Z,2μm,1.0s
O32A Brockman Farm, 84.51 42 P P 14 45 10.6 -0.7
baz=317,SNR=27
YRE Yr Eifl 84.51 340⇑eP P 14 45 11.4 +0.4
ULC Ulcinj 84.53 321⇑iP P 14 45 11.2 -0.2
L35A Bielow Farm, R 84.54 39 P P 14 45 11.3 -0.1
baz=318,SNR=28
HCY Herceg Novi 84.54 322⇑iP P 14 45 11.7 +0.3
THZ Tophouse 84.56 157 PN P 14 45 11.0 -0.3
N33A J Bar K, Exete 84.59 41 P P 14 45 11.5 -0.2
baz=317
J37A Reinius Farm, 84.60 37 P P 14 45 11.8 +0.1
baz=320,SNR=242
STON Ston 84.60 322 P P 14 45 10.6 -1.1
DAVA Damuels 84.61 329 iP P 14 45 11.7 -0.2
comp=Z,1μm,1.6s,SNR=376
SKP1 Kophill 84.61 338⇑eP P 14 45 11.7 +0.1
I38A Scanlan Farm, 84.61 36 P P 14 45 12.1 +0.3
baz=320,SNR=209
NVLJ Novalja 84.63 325 P P 14 45 11.0 -0.8
EREA Eretria 84.66 316 P P 14 45 12.3 +0.2
TIR Tirane 84.67 320 PFAKE 14 45 20.0 +7.9
TIR LR LR
comp=Z,390μm,20.0s
K36A Gilmore City 84.68 38 P P 14 45 12.3 +0.1
baz=319,SNR=109
SSW Stow on the Wo 84.70 338⇑eP P 14 45 12.9 +0.9
SNZO South Karori 84.72 156 PFAKE 14 45 20.0 +8.1
SNZO LR LR
comp=Z,168μm,22.0s
APE Apeiranthos 84.72 314 eP P 14 45 11.7 -0.8
APE Apeiranthos 84.72 314 P P 14 45 11.3 -1.2
APE Apeiranthos 84.72 314 P P 14 45 11.3 -1.2
APE Apeiranthos 84.72 314 P P 14 45 11.3 -1.2
SMIA Simia 84.72 316 P P 14 45 11.4 -1.0
NEST Nestorio 84.75 319 P P 14 45 12.2 -0.5
CBKS Cedar Bluff 84.78 44 P P 14 45 12.4 -0.4
baz=316,SNR=104
CBKS Cedar Bluff 84.78 44 PFAKE 14 45 20.0 +7.3
CBKS LR LR
comp=Z,33μm,22.0s
VAH Vaihoa 84.79 114 eP P 14 45 15.0 +2.1
comp=Z,1μm,1.4s
P32A Huiting Farm, 84.80 42 P P 14 45 12.5 -0.4
baz=317,SNR=100
KARP Karpathos 84.84 312 P P 14 45 13.0 -0.1
KARP Karpathos 84.84 312 P P 14 45 13.0 -0.1
THL Klokotos Trika 84.87 318 P P 14 45 11.9 -1.2
ECH Echery 84.91 331⇑eP P 14 45 13.9 +0.7
KPRO Kipourio 84.93 318 P P 14 45 14.3 +0.8
M35A Neola 84.94 39 P P 14 45 13.6 +0.1
baz=318,SNR=22
PPT Papeete 84.96 117 P P 14 45 15.6 +1.8
comp=Z,400nm,1.1s,baz=324,slow=6.0,SNR=14
PPT LR LR 15 17 15.0
comp=Z,41μm,20.7s,baz=296,slow=31
PTL Penteli 84.96 316 P P 14 45 13.3 -0.4
PTL Penteli 84.96 316 P P 14 45 13.3 -0.4
STRD Stroud 84.96 338⇑eP P 14 45 14.2 +0.9
STRD AMB AMB 14 45 20.2
comp=Z,5μm,2.1s
STRD AMS AMS 15 26 12.6
comp=Z,168μm,22.0s
PPT2 Papeete2 84.97 117 eP P 14 45 16.3 +2.4
comp=Z,610nm,1.3s
PPT2 Papeete2 84.97 117 ePP PP 14 48 29.8 -1.7
comp=Z,19μm,29.5s
PPT2 eS S 14 55 35.7 -3.2
comp=Z,227μm,33.8s
PPT2 Papeete2 84.97 117 eLR LR 15 11 58.5
comp=Z,478μm,25.2s,baz=316
PPT2 Papeete2 84.97 117 eT T 16 18 27.5
comp=Z,129nm,0.3s
K37A Belmond 84.97 37 P P 14 45 13.7 +0.1
baz=320,SNR=316
L36A Harm Buss Farm 84.98 38 P P 14 45 13.8 +0.1
baz=319,SNR=28
MCH1 Michaelchurch 85.00 339⇑eP P 14 45 14.4 +0.9
LKR Lokris 85.00 316 P P 14 45 12.5 -1.3
LKR Lokris 85.00 316 P P 14 45 12.5 -1.3
HMNX Herstmonceux 85.00 337⇑eP P 14 45 14.4 +0.8
HMNX AMB AMB 14 45 20.7
comp=Z,3μm,0.9s
HMNX AMS AMS 15 24 03.4
comp=Z,229μm,24.6s
N34A Lincoln 85.00 40 P P 14 45 13.6 -0.2
baz=318,SNR=65
INZ Inchbonnie 85.00 158 PN P 14 45 13.1 -0.3
O33A Hebron 85.00 41 P P 14 45 13.4 -0.5
baz=317,SNR=16
DAVOX Davos/Dischmat 85.02 329 PKKPbc PKKPbc 15 03 23.2 +3.2
comp=Z,17nm,0.9s,baz=44,slow=9.5,SNR=7.8
DAVOX LR LR 15 26 46.0
comp=Z,218μm,18.8s,baz=19,slow=38
PAE Paea 85.02 117 eP P 14 45 16.3 +2.3
comp=Z,88nm,1.0s
PAE Paea 85.02 117 eT T 16 18 29.9
comp=Z,27nm,0.3s
ATHU Athens Univers 85.06 316 P P 14 45 13.2 -0.9
ATHU Athens Univers 85.06 316 P P 14 45 13.2 -0.9
SWN1 Swindon 85.08 338 eP P 14 45 14.9 +0.9
SWN1 AMB AMB 14 45 21.1
comp=Z,4μm,2.2s
SWN1 AMS AMS 15 25 29.6
comp=Z,192μm,22.4s
MONM Monmouth 85.08 339⇑eP P 14 45 14.8 +0.8
MONM AMB AMB 14 45 20.9
comp=Z,3μm,2.2s
MONM AMS AMS 15 26 04.6
comp=Z,155μm,22.1s
WOL Wolverton 85.09 338⇑eP P 14 45 14.6 +0.6
WOL AMB AMB 14 45 20.6
comp=Z,2μm,2.2s
WOL AMS AMS 15 25 53.1
comp=Z,194μm,21.6s
ATH Athens Observa 85.09 316 P P 14 45 12.7 -1.6
ATH Athens Observa 85.09 316 P P 14 45 12.7 -1.6
ATH Athens Observa 85.09 316 P P 14 45 12.7 -1.6
J38A Wedel Dairy, R 85.10 36 P P 14 45 13.8 -0.4
baz=320,SNR=182
TIAR Tiarei 85.11 117 eP P 14 45 16.8 +2.3
comp=Z,128nm,0.8s
TIAR Tiarei 85.11 117 eT T 16 18 37.7
comp=Z,53nm,0.2s
WVZ Waitaha Valley 85.12 159 PN P 14 45 14.2 +0.2
OLDB Oldbury-Upon-S 85.17 339 eP P 14 45 15.0 +0.7
OLDB AMB AMB 14 45 21.5
comp=Z,1μm,2.4s
OLDB AMS AMS 15 26 18.7
comp=Z,188μm,22.0s
VILL Villia 85.18 316 P P 14 45 14.1 -0.7
THR2 Thira island, 85.21 313 P P 14 45 14.0 -0.9
THR2 Thira island, 85.21 313 P P 14 45 14.0 -0.9
MOF Molkenrain 85.22 331⇑eP P 14 45 15.5 +0.7
SANT Santorini 85.25 313 PFAKE 14 45 30.0 +15
SANT LR LR
comp=Z,53μm,20.0s
THT1 Athinios (Pele 85.26 313 P P 14 45 13.4 -1.7
Q32A Meitler Ranch, 85.28 43 P P 14 45 14.9 -0.4
baz=317,SNR=138
THR5 Thira Island, 85.28 314 P P 14 45 14.4 -0.9
FOZ Fox Glacier 85.30 160 PN P 14 45 15.1 +0.3
LTZ Lake Taylor 85.30 158 PN P 14 45 15.0 +0.1
THR6 Thira Island, 85.30 313 P P 14 45 14.0 -1.3
THR6 Thira Island, 85.30 313 P P 14 45 14.0 -1.3
BATH Bath 85.30 338⇑eP P 14 45 15.1 +0.1
BATH AMB AMB 14 45 21.0
comp=Z,2μm,1.7s
BATH AMS AMS 15 26 21.8
comp=Z,186μm,21.4s
TVO Taravao 85.33 117 eP P 14 45 18.2 +2.5
comp=Z,268nm,1.1s
TVO Taravao 85.33 117 eT T 16 18 53.7
comp=Z,10nm,0.3s
THEF They Montfort 85.33 332⇑eP P 14 45 16.1 +0.8
O34A Beatrice 85.39 41 P P 14 45 15.4 -0.4
baz=318,SNR=80
M36A Felix, Anita 85.40 39 P P 14 45 16.3 +0.5
baz=319,SNR=51
L37A Phoenix Point, 85.40 38 P P 14 45 15.8 0.0
baz=320,SNR=87
JAN Janina 85.41 318 P P 14 45 16.2 +0.3
JAN Janina 85.41 318 P P 14 45 16.2 +0.3
JAN Janina 85.41 318 P P 14 45 16.2 +0.3
P33A Williams Farm, 85.42 42 P P 14 45 15.7 -0.2
baz=317,SNR=27
N35A Tabor 85.42 40 P P 14 45 16.4 +0.5
baz=318,SNR=59
DSF Desfina 85.43 317 P P 14 45 14.4 -1.6
DSF Desfina 85.43 317 P P 14 45 14.4 -1.6
EVR Evrytania 85.45 317 P P 14 45 14.6 -1.6
EVR Evrytania 85.45 317 P P 14 45 14.6 -1.6
LTK Loutraki 85.47 316 P P 14 45 13.6 -2.6
LTK Loutraki 85.47 316 P P 14 45 13.6 -2.6
K38A Parkersburg 85.48 37 P P 14 45 16.2 +0.1
baz=320,SNR=28
TUE Stuetta 85.48 329 PFAKE 14 45 30.0 +14
TUE LR LR
comp=Z,186μm,19.0s
JCZ Jackson Bay 85.53 161 PN P 14 45 16.9 +0.8
R32A Long Quarter, 85.61 43 P P 14 45 16.6 -0.4
baz=317,SNR=20
ANX Ano Chora 85.62 317 P P 14 45 16.4 -0.6
THAL Thalero 85.62 316 P P 14 45 15.0 -1.9
KALE Kalithea 85.65 317 P P 14 45 15.8 -1.4
KALE Kalithea 85.65 317 P P 14 45 15.8 -1.4
Q33A Connelly Farm, 85.66 42 P P 14 45 16.8 -0.3
baz=317,SNR=207
DSL Palaion Diasel 85.67 318 P P 14 45 16.9 -0.3
DSL Palaion Diasel 85.67 318 P P 14 45 16.9 -0.3
DID Didima 85.69 316 P P 14 45 15.5 -1.8
DID Didima 85.69 316 P P 14 45 15.5 -1.8
ZKR Zakros 85.70 312 P P 14 45 17.1 -0.3
ZKR Zakros 85.70 312 P P 14 45 17.1 -0.3
O35A Humboldt 85.73 40 P P 14 45 17.1 -0.4
baz=318,SNR=70
OXZ Oxford 85.73 158 PN P 14 45 17.0 +0.1
LOMF Lomont 85.75 331⇑eP P 14 45 18.3 +0.8
SGD Sagiada 85.77 319 P P 14 45 16.1 -1.5
L38A Oak Wood Farm, 85.77 37 P P 14 45 17.9 +0.2
baz=320,SNR=144
IGT Igoumenitsa 85.78 319 P P 14 45 16.9 -0.8
IGT Igoumenitsa 85.78 319 P P 14 45 16.9 -0.8
IGT Igoumenitsa 85.78 319 P P 14 45 16.9 -0.8
P34A Walnut Farm, R 85.79 41 P P 14 45 17.5 -0.2
baz=318,SNR=199
N36A Muff Farm, Cla 85.80 39 P P 14 45 18.4 +0.6
baz=319,SNR=32
M37A Trindle Farm, 85.80 39 P P 14 45 18.4 +0.6
baz=320,SNR=43
RPZ Rata Peaks 85.80 159 LR LR 15 17 54.3
comp=Z,58μm,21.6s,baz=336,slow=32
RPZ Rata Peaks 85.80 159 ePN P 14 45 17.2 -0.2
KRND KRANIDI 85.83 315 P P 14 45 16.6 -1.3
SCIA State Center 85.83 38 PFAKE 14 45 30.0 +12
SCIA LR LR
comp=Z,34μm,20.0s
LAKA Lakka 85.85 317 P P 14 45 17.2 -0.9
LAKA Lakka 85.85 317 P P 14 45 17.2 -0.9
MSZ Milford Sound 85.87 162 PN P 14 45 18.5 +0.9
GUR Goura 85.87 316 P P 14 45 17.4 -0.9
GUR Goura 85.87 316 P P 14 45 17.4 -0.9
KLV Kalavryta, Ach 85.90 316 P P 14 45 16.9 -1.5
KLV Kalavryta, Ach 85.90 316 P P 14 45 16.9 -1.5
KEK Kerkira 85.92 319 P P 14 45 17.7 -0.7
KEK Kerkira 85.92 319 P P 14 45 17.7 -0.7
NPS Neapolis 85.94 313 P P 14 45 18.1 -0.5
NPS Neapolis 85.94 313 P P 14 45 18.1 -0.5
NPS Neapolis 85.94 313 P P 14 45 18.1 -0.5
PDO Prodromos 86.01 317 P P 14 45 18.1 -0.8
S32A Newby Ranch, P 86.02 44 P P 14 45 19.3 +0.4
baz=317,SNR=133
R33A Olander Ranch, 86.09 43 P P 14 45 19.3 0.0
baz=317,SNR=104
LAST Lasithi 86.09 313 P P 14 45 19.1 -0.3
LAST Lasithi 86.09 313 P P 14 45 19.1 -0.3
CRLZ Canterbury Las 86.13 158 PN P 14 45 19.5 +0.6
LKD2 Lefkada island 86.15 318 P P 14 45 18.9 -0.7
LKD2 Lefkada island 86.15 318 P P 14 45 18.9 -0.7
LBZ Lake Benmore 86.19 160 PN P 14 45 19.6 +0.4
Q34A Chapman 86.19 42 P P 14 45 19.9 +0.2
baz=318,SNR=102
DRO Drossia 86.20 317 P P 14 45 19.1 -0.7
M38A Pleasantville 86.21 38 P P 14 45 20.4 +0.6
baz=320,SNR=234
N37A Lee Faris, Mou 86.22 39 P P 14 45 20.7 +0.9
baz=319,SNR=13
BDHA Al Bayda' 86.22 285 eP P 14 45 21.5 +1.0
P35A Duane Minner, 86.22 41 P P 14 45 19.9 0.0
baz=318,SNR=112
TAOE Nuku Hiva Isla 86.22 104 eP P 14 45 20.8 +0.5
comp=Z,807nm,1.2s
TAOE Nuku Hiva Isla 86.22 104 eS S 14 55 48.4 -3.1
comp=Z,136μm,32.9s
TAOE Nuku Hiva Isla 86.22 104 eLR LR 15 12 28.7
comp=Z,424μm,30.9s,baz=316
TAOE Nuku Hiva Isla 86.22 104 eT T 16 20 24.2
comp=Z,267nm,0.2s
MEH Mehetia 86.22 116 eP P 14 45 22.5 +2.4
comp=Z,292nm,1.3s
MEH Mehetia 86.22 116 eT T 16 20 02.3
comp=Z,629nm,0.3s
KSU1 Kansas State U 86.23 42 P P 14 45 20.1 +0.2
baz=318,SNR=73
KSU1 Kansas State U 86.23 42 PFAKE 14 45 30.0 +10
KSU1 LR LR
comp=Z,55μm,20.0s
RLS Riolos of Patr 86.26 317 P P 14 45 20.1 +0.1
RLS Riolos of Patr 86.26 317 P P 14 45 20.1 +0.1
VLX Vlachokerasia 86.26 316 P P 14 45 19.3 -0.9
VLX Vlachokerasia 86.26 316 P P 14 45 19.3 -0.9
O36A Bolckow 86.31 40 P P 14 45 20.9 +0.6
baz=319,SNR=91
IDI Anoyia 86.34 313 P P 14 45 19.6 -1.0
comp=Z,228nm,0.5s,baz=24,slow=7.0,SNR=74
IDI S SKSac 14 55 39.4 -3.3
comp=Z,26nm,1.1s,baz=221,slow=19,SNR=5.7
IDI Anoyia 86.34 313 P P 14 45 19.2 -1.4
IDI Anoyia 86.34 313 P P 14 45 19.2 -1.4
IDI S SKSac 14 55 39.4 -3.3
T32A Huddler Ranch, 86.40 44 P P 14 45 21.3 +0.5
baz=317,SNR=188
VLI Veliai 86.43 315 P P 14 45 17.7 -3.2
VLI Veliai 86.43 315 P P 14 45 17.7 -3.2
JFWS Jewell Farm 86.44 35 PFAKE 14 45 30.0 +9.1
JFWS LR LR
comp=Z,95μm,22.0s
MNTX Cornudas Mount 86.48 52 P P 14 45 22.0 +0.6
baz=314,SNR=398
MNTX Cornudas Mount 86.48 52 PFAKE 14 45 30.0 +8.7
MNTX LR LR
comp=Z,33μm,22.0s
AMTX Amarillo 86.48 47 P P 14 45 22.2 +0.9
baz=315
R34A Isabella, Hill 86.49 42 P P 14 45 21.7 +0.5
baz=318,SNR=60
MSTX Muleshoe 86.49 49 P P 14 45 21.8 +0.4
baz=315,SNR=125
AMT Artemida-Makis 86.51 316 P P 14 45 20.7 -0.7
MLZ Mavora Lakes 86.57 162 ePN P 14 45 21.0 -0.1
P36A Good Intent, A 86.57 40 P P 14 45 21.9 +0.3
baz=319,SNR=256
SIVA Sivas 86.58 313 P P 14 45 21.8 +0.1
SIVA Sivas 86.58 313 P P 14 45 21.8 +0.1
KFL Anninata 86.58 317 P P 14 45 21.4 -0.3
S33A Kaszmaul Farm, 86.60 43 P P 14 45 22.4 +0.6
baz=317,SNR=50
VLS Valsamata 86.64 317 P P 14 45 20.5 -1.5
VLS Valsamata 86.64 317 P P 14 45 20.5 -1.5
VLS Valsamata 86.64 317 P P 14 45 20.5 -1.5
HAJJ Hajjah 86.64 287 eP P 14 45 23.3 +0.8
ITM Ithomi 86.65 316 P P 14 45 21.4 -0.6
ITM Ithomi 86.65 316 P P 14 45 21.4 -0.6
VAM Vamos 86.66 313 P P 14 45 22.8 +0.7
VAM Vamos 86.66 313 P P 14 45 22.8 +0.7
VAM Vamos 86.66 313 P P 14 45 22.8 +0.7
DYA Yadsworthy 86.66 339⇑eP P 14 45 22.1 +0.3
DYA AMB AMB 14 45 28.5
comp=Z,2μm,2.3s
DYA AMS AMS 15 27 14.6
comp=Z,163μm,22.4s
N38A Joes South For 86.67 39 P P 14 45 22.5 +0.5
baz=320,SNR=44
KYTH Kithira 86.69 315 P P 14 45 26.0 +3.7
KYTH Kithira 86.69 315 P P 14 45 26.0 +3.7
O37A Wolven Farm, M 86.69 39 P P 14 45 22.9 +0.8
baz=320,SNR=105
EAZ Earnscleugh 86.74 161 PN P 14 45 22.6 +0.7
IMMV Iera Moni Meta 86.74 314 P P 14 45 21.6 -0.9
DHBB Dhamar BB 86.75 286 eP P 14 45 24.2 +1.0
DHBB AMb AMB 14 45 25.0

ANKY **Antikythira Is** 86.83 314 P P 14 45 24.5 +1.6
ANKY **Antikythira Is** 86.83 314 P P 14 45 24.5 +1.6
T33A **Patterson Ranc** 86.84 44 P P 14 45 23.5 +0.5
baz=317,SNR=85
VAL **Valentia** 86.91 343 *eP* P 14 45 24.4 +1.5
VAL **Valentia** 86.91 343 *iS* S 14 55 48.8 -8.0
ODZ **Otahua Downs** 86.92 160 PN P 14 45 24.2 +1.4
VLC **Villacollemand** 86.92 327 PFAKE 14 45 30.0 +6.8
VLC LR LR
comp=Z,86µm,21.0s
Q36A **Arnold C. Orve** 86.93 41 P P 14 45 23.4 0.0
baz=319,SNR=67
U32A **Winter Ranch,** 86.94 45 P P 14 45 24.2 +0.8
baz=317,SNR=22
PYL **PYLOS** 86.96 316 P P 14 45 22.0 -1.5
PYL **PYLOS** 86.96 316 P P 14 45 22.0 -1.5
S34A **Willow Spring** 87.00 43 P P 14 45 24.0 +0.3
baz=318,SNR=74
R35A **Emporia Munici** 87.02 42 P P 14 45 24.6 +0.8
baz=318,SNR=273
P37A **Lathrop** 87.03 40 P P 14 45 24.1 +0.3
baz=319,SNR=92
O38A **Galt** 87.06 39 P P 14 45 24.4 +0.4
baz=320,SNR=106
GVD **Gavdhos** 87.12 313 P P 14 45 24.9 +0.5
GVD **Gavdhos** 87.12 313 P P 14 45 24.9 +0.5
CCA1 **Carnmenellis** 87.25 339⇑ *eP* P 14 45 25.1 +0.5
CCA1 AMB AMB 14 45 31.5
comp=Z,2µm,2.4s
CCA1 AMS AMS 15 27 55.0
comp=Z,135µm,20.6s
JSA **Saint Aubin** 87.25 337⇑ *eP* P 14 45 25.2 +0.5
JSA AMB AMB 14 45 31.3
comp=Z,2µm,1.1s
GLMI **Grayling** 87.34 31 PFAKE 14 45 40.0 +15
GLMI LR LR
comp=Z,62µm,21.0s
R36A **Gordon, Harris** 87.39 41 P P 14 45 25.9 +0.3
baz=319,SNR=431
U33A **Lingo Farm, Me** 87.39 44 P P 14 45 26.2 +0.6
baz=317,SNR=82
V32A **Arapaho** 87.39 45 P P 14 45 26.5 +0.8
baz=317,SNR=171
P38A **Dawn** 87.41 39 P P 14 45 26.3 +0.6
baz=320,SNR=372
O39A **Kirksville** 87.42 38 P P 14 45 26.3 +0.6
baz=320,SNR=43
S35A **Otter Creek Ra** 87.44 42 P P 14 45 26.2 +0.4
baz=316,SNR=422
T34A **McClaskey Farm** 87.46 43 P P 14 45 26.4 +0.4
baz=318,SNR=70
Q37A **Longview Farm,** 87.52 40 P P 14 45 25.8 -0.3
baz=319,SNR=36
U34A **Anderson Ranch** 87.70 44 P P 14 45 27.7 +0.6
baz=318,SNR=114
W32A **Sentinel** 87.71 46 P P 14 45 28.0 +0.8
baz=317,SNR=202
BNI **Bardonecchia** 87.71 330 PFAKE 14 45 40.0 +13
BNI LR LR
comp=Z,138µm,22.0s
CUC **Castrocucco** 87.71 321 PFAKE 14 45 40.0 +13
CUC LR LR
comp=Z,125µm,19.0s
V33A **Lossen Ranch,** 87.74 45 P P 14 45 27.5 +0.2
baz=317,SNR=48
R37A **Teagarden Farm** 87.75 41 P P 14 45 27.2 -0.1
baz=319,SNR=158
S36A **Lake Cedric, C** 87.79 42 P P 14 45 27.7 +0.2
baz=319,SNR=109
GDM **Grand'Maison** 87.81 330 *eP* P 14 45 28.3 +0.6
O40A **La Belle** 87.85 38 P P 14 45 28.0 +0.3
baz=321,SNR=199
TIP **Timpagrande** 87.87 320 P P 14 45 28.1 +0.1
TIP **Timpagrande** 87.87 320 P P 14 45 28.1 +0.1
TIP LR LR
comp=Z,169µm,21.0s
Q38A **Cooks Store, C** 87.88 40 P P 14 45 28.0 +0.2
baz=320,SNR=219
T35A **Sooner Cattle** 87.90 43 P P 14 45 28.7 +0.7
baz=318,SNR=131
P39A **Salisbury** 87.91 39 P P 14 45 28.2 +0.1
baz=320,SNR=169
GRN **Grenoble** 87.92 331 *eP* P 14 45 28.9 +0.8
PLDF **La Plantade** 88.11 332⇑ *eP* P 14 45 30.0 +1.1
W33A **Caddo, Fort Co** 88.12 45 P P 14 45 30.5 +1.3
baz=317,SNR=80
Q39A **Willow Grove F** 88.13 39 P P 14 45 29.7 +0.6
baz=320,SNR=579
T36A **Boggs Farm, Ca** 88.13 43 P P 14 45 30.1 +0.9
baz=318,SNR=113
V34A **Guthrie** 88.15 44 P P 14 45 29.7 +0.4
baz=318,SNR=92
S37A **Fort Scott** 88.16 41 P P 14 45 29.4 +0.2
baz=319,SNR=254
U35A **Pawnee** 88.19 43 P P 14 45 30.0 +0.6
baz=318,SNR=70
X32A **Elmer** 88.19 46 P P 14 45 29.7 +0.2
baz=317,SNR=146
AGO **Saint Agoulin** 88.21 333⇑ *eP* P 14 45 30.3 +0.9
P40A **Paris** 88.22 39 P P 14 45 29.9 +0.4
baz=321,SNR=412
WMOK **Wichita Mounta** 88.25 46 PFAKE 14 45 40.0 +10
WMOK LR LR
comp=Z,62µm,22.0s
AUTN **L'Aution** 88.29 329 *eP* P 14 45 30.2 +0.2
R38A **Fenwick Farm,** 88.32 41 P P 14 45 29.8 -0.2
baz=320,SNR=173
SSB **Saint Sauveur** 88.35 331 *eP* P 14 45 31.0 +0.9
SSB **Saint Sauveur** 88.35 331 PFAKE 14 45 40.0 +10
SSB LR LR
comp=Z,114µm,22.0s
LPIG **La Paz** 88.37 60 LR LR 15 19 30.2
comp=Z,41µm,19.9s,baz=313,slow=32
LUCF **Luceram** 88.41 329 *eP* P 14 45 30.4 0.0
W34A **Bridge Creek,** 88.45 45 P P 14 45 31.4 +0.7
baz=318,SNR=53
MVIF **Mont Vial** 88.48 329 *eP* P 14 45 30.4 -0.5
REVF **Revere** 88.52 329 *eP* P 14 45 30.4 -0.5
X33A **Lawton** 88.55 46 P P 14 45 31.1 -0.1
baz=317,SNR=36
V35A **Meyer Ranch, C** 88.58 44 P P 14 45 31.6 +0.3
baz=318,SNR=38
T37A **Cheneyville 18** 88.59 42 P P 14 45 31.4 0.0
baz=319,SNR=226
Q40A **Laux Farm, Aux** 88.62 39 P P 14 45 31.4 0.0
baz=321,SNR=274
R39A **Chumby, Stover** 88.66 40 P P 14 45 31.5 -0.1
baz=320,SNR=340
CALN **Calern** 88.71 329 *eP* P 14 45 31.7 -0.2
U36A **Oologah** 88.71 43 P P 14 45 32.1 +0.2
baz=319,SNR=57
S38A **Stockton** 88.74 41 P P 14 45 31.8 -0.2
baz=320,SNR=178
HDIL **Hopedale** 88.74 36 P P 14 45 32.3 +0.4
baz=322,SNR=89
HDIL **Hopedale** 88.74 36 PFAKE 14 45 40.0 +8.1
HDIL LR LR
comp=Z,59µm,20.0s
Y33A **Hilltop Ranch,** 88.87 46 P P 14 45 32.9 +0.2
baz=317,SNR=128
LBL **Lubilhac** 88.87 332⇑ *eP* P 14 45 33.6 +1.0
X34A **Smith Ranch, M** 88.88 45 P P 14 45 33.6 +0.8
baz=318,SNR=134
TBI **Tubuai** 88.94 121 *eP* P 14 45 35.6 +2.7
comp=Z,2µm,1.5s
TBI **Tubuai** 88.94 121 *ePP* PP 14 49 03.8 +0.4
comp=Z,15µm,33.0s
TBI *eS* S 14 56 14.1 -2.7
comp=Z,96µm,32.5s
TBI **Tubuai** 88.94 121 *eLR* LR 15 13 38.6
comp=Z,253µm,33.2s,baz=313
TBI **Tubuai** 88.94 121 *eT* T 16 23 16.3
comp=Z,1µm,0.3s
FRNF **Fournols** 88.99 333 *eP* P 14 45 34.3 +1.2
S39A **Bolivar** 88.99 41 P P 14 45 32.8 -0.4
baz=320,SNR=362
W35A **Tecumseh** 89.01 44 P P 14 45 33.6 +0.3
baz=318,SNR=112
U37A **Salina** 89.03 42 P P 14 45 33.7 +0.3
baz=319,SNR=172
TUL1 **Leonard** 89.04 43 P P 14 45 33.7 +0.3
baz=319,SNR=63
V36A **Jenks** 89.05 43 P P 14 45 33.8 +0.3
baz=318,SNR=82
R40A **Maddies Statio** 89.07 40 P P 14 45 33.3 -0.2
baz=321,SNR=387

TXAR **Lajitas Array** 89.18 53 P P 14 45 33.8 -0.6
comp=Z,117nm,0.6s,baz=295,slow=2.9,SNR=602
TXAR PKKPbc PKKPbc 15 03 11.2 +1.6
comp=Z,7.7nm,0.7s,baz=133,slow=3.8,SNR=9.5
TXAR PKPPKP P'P'df 15 11 15.1 -7.9
comp=Z,2.8nm,1.0s,baz=119,slow=1.1,SNR=6.4
TXAR LR LR 15 23 52.1
comp=Z,46µm,19.4s,baz=0.0,slow=34
ABTX **Abilene, Hawle** 89.28 48 P P 14 45 35.3 +0.6
baz=316,SNR=116
Z33A **Whitaker Ranch** 89.31 47 P P 14 45 35.0 +0.2
baz=317,SNR=100
W36A **Wetumka** 89.38 44 P P 14 45 35.3 +0.3
baz=318,SNR=50
U38A **Gravette** 89.39 42 P P 14 45 35.1 0.0
baz=319,SNR=177
Y34A **Reagan Ranch,** 89.40 46 P P 14 45 35.4 +0.2
baz=318,SNR=88
V37A **Hulbert** 89.41 43 P P 14 45 35.3 +0.2
baz=319,SNR=258
T39A **Clever** 89.47 41 P P 14 45 35.1 -0.4
baz=320,SNR=152
S40A **Lebanon** 89.48 40 P P 14 45 35.1 -0.4
baz=320,SNR=324
SADO **Sadowa** 89.50 28 P P 14 45 34.9 -0.5
comp=Z,112nm,0.7s,baz=320,slow=5.8,SNR=42
SADO PP PP 14 49 09.9 +3.5
comp=Z,47nm,1.1s,baz=29,slow=19,SNR=5.0
SADO LR LR 15 28 07.0
comp=Z,47µm,21.7s,baz=346,slow=37
X35A **Drake** 89.51 45 P P 14 45 35.9 +0.2
baz=318,SNR=199
133A **Hamilton Ranch** 89.72 47 P P 14 45 37.0 +0.3
baz=317,SNR=91
X36A **Centrahoma** 89.73 44 P P 14 45 36.9 +0.2
baz=318,SNR=180
Z34A **Collier Ranch,** 89.74 46 P P 14 45 36.8 +0.1
baz=317,SNR=62
W37B **Quinton** 89.81 44 P P 14 45 37.7 +0.7
baz=319,SNR=163
V38A **Canehill** 89.81 42 P P 14 45 37.2 +0.1
baz=319,SNR=359
AAM **Ann Arbor** 89.82 32 PFAKE 14 45 50.0 +13
AAM LR LR
comp=Z,55µm,20.0s
T40A **Mansfield** 89.82 40 P P 14 45 36.9 -0.1
baz=320,SNR=241
Y35A **Marietta** 89.84 45 P P 14 45 37.3 +0.1
baz=318,SNR=66
SFIN **Lafayette** 89.89 35 P P 14 45 37.7 +0.3
baz=324,SNR=127
U39A **Green Forest** 89.91 42 P P 14 45 37.4 -0.1
baz=320,SNR=362
Z35A **Perchaven, San** 90.14 46 P P 14 45 38.8 +0.2
baz=318,SNR=71
233A **Rising Star** 90.16 48 P P 14 45 39.3 +0.6
baz=317,SNR=185
134A **White-Moore Ra** 90.23 47 P P 14 45 39.6 +0.6
baz=317,SNR=94
V39A **Pettigrew** 90.23 42 P P 14 45 39.1 -0.1
baz=320,SNR=249
X37A **Clayton** 90.25 44 P P 14 45 39.4 +0.3
baz=319,SNR=94
U40A **Yellville** 90.25 41 P P 14 45 39.1 0.0
baz=320,SNR=604
W38A **Poteau** 90.35 43 P P 14 45 40.1 +0.5
baz=319,SNR=118
X38A **Whitesboro** 90.49 43 P P 14 45 40.9 +0.7
baz=319,SNR=237
Y37A **Hugo** 90.57 44 P P 14 45 40.8 +0.2
baz=319,SNR=43
234A **Clairette** 90.61 47 P P 14 45 41.3 +0.4
baz=317,SNR=238
333A **Richland Sprin** 90.61 48 P P 14 45 41.3 +0.4
baz=317,SNR=419
135A **Vickery Place,** 90.62 46 P P 14 45 41.6 +0.7
baz=318,SNR=35
Z36A **Blue Ridge** 90.65 45 P P 14 45 41.3 +0.3
baz=318,SNR=77
W39A **Magazine** 90.65 42 P P 14 45 41.1 +0.2
baz=320,SNR=126
V40A **Witts Springs** 90.69 41 P P 14 45 40.9 -0.3
baz=320,SNR=115
JCT **Junction City** 90.73 49 P P 14 45 42.0 +0.4
baz=316,SNR=159
JCT **Junction City** 90.73 49 PFAKE 14 45 50.0 +8.5
JCT LR LR
comp=Z,71µm,21.0s
433A **Art** 90.96 49 P P 14 45 42.5 0.0
baz=317,SNR=188
X39A **Fountain Ranch** 90.99 43 P P 14 45 43.1 +0.5
baz=320,SNR=301
WHTX **Lake Whitney,** 91.01 47 P P 14 45 43.0 +0.3
baz=318,SNR=185
W40A **Ferguson Farm,** 91.03 42 P P 14 45 43.0 +0.3
baz=320,SNR=136
334A **Lometa** 91.04 48 P P 14 45 43.1 +0.2
baz=317,SNR=359
LRDF **Laroque-de-Fa** 91.10 331⇑ *eP* P 14 45 43.7 +0.8
Y38A **Idabel** 91.10 44 P P 14 45 43.1 +0.1
baz=319,SNR=14
VSL **Villasalto** 91.14 325 PFAKE 14 45 50.0 +6.8
VSL LR LR
comp=Z,108µm,20.0s
Z37A **Pogue Cattle C** 91.15 45 P P 14 45 43.8 +0.4
baz=319,SNR=62
136A **Ennis** 91.18 46 P P 14 45 43.7 +0.2
baz=318,SNR=28
LONY **Lake Ozonia** 91.23 25 PFAKE 14 46 00.0 +16
LONY LR LR
comp=Z,33µm,20.0s
MIAR **Mount Ida** 91.25 43 P P 14 45 43.9 +0.2
baz=320,SNR=434
MIAR **Mount Ida** 91.25 43 PFAKE 14 46 00.0 +16
MIAR LR LR
comp=Z,46µm,22.0s
H06N1 **SOCORRO T-PHAS** 91.34 65 T T 16 27 46.4
SNR=70
SJAF **Saint Jean de** 91.35 331 *eP* P 14 45 44.5 +0.4
434A **Burnet** 91.40 48 P P 14 45 44.4 -0.2
baz=317,SNR=188
FILF **Fillols** 91.41 331⇑ *eP* P 14 45 45.3 +0.8
H06E1 **SOCORRO T-PHAS** 91.44 65 T T 16 27 47.5
SNR=61
Y39A **Lockesburg** 91.44 43 P P 14 45 44.9 +0.3
baz=320,SNR=118
CARF **Carcanieres** 91.45 331 *eP* P 14 45 45.3 +0.6
Z38A **Mt. Pleasant** 91.47 44 P P 14 45 45.2 +0.4
baz=319,SNR=16
533A **Kerrville** 91.49 49 P P 14 45 45.3 +0.3
baz=317,SNR=84
137A **Harold Place, G** 91.53 45 P P 14 45 45.4 +0.3
baz=319,SNR=23
236A **Katherine and** 91.53 46 P P 14 45 45.3 +0.2
baz=318,SNR=31
335A **Moody** 91.55 47 P P 14 45 45.7 +0.5
baz=318,SNR=34
WDD **Wied Dalam** 91.55 320 PFAKE 14 46 00.0 +15
WDD LR LR
comp=Z,107µm,19.0s
X40A **Basin Creek Fa** 91.69 42 P P 14 45 45.8 0.0
baz=320,SNR=154
SALF **Salau** 91.75 332 *eP* P 14 45 46.0 -0.1
VALF **Valcebollere** 91.75 331 *eP* P 14 45 47.0 +0.8
336A **Riesel** 91.81 47 P P 14 45 46.6 +0.2
baz=318,SNR=62
ACSO **Alum Creek Sta** 91.82 33 PFAKE 14 46 00.0 +14
ACSO LR LR
comp=Z,49µm,21.0s
Y40A **Okolona** 91.82 43 P P 14 45 46.7 +0.3
baz=320,SNR=18
435B **Jarrell** 91.82 48 P P 14 45 46.8 +0.3
baz=318,SNR=38
633A **Saathoff Ranch** 91.84 50 P P 14 45 47.4 +0.7
baz=317,SNR=96
534A **Blanco** 91.85 49 P P 14 45 46.6 -0.1
baz=317,SNR=246
138A **Matatall Enter** 91.85 45 P P 14 45 47.4 +0.8
baz=319,SNR=39
Z39A **Irene McRaven,** 91.92 44 P P 14 45 47.3 +0.4
baz=320,SNR=52
NCB **Newcomb** 91.92 25 PFAKE 14 46 00.0 +13
NCB LR LR
comp=Z,38µm,21.0s
237A **Washetta, Mont** 91.94 46 P P 14 45 47.3 +0.3
baz=319,SNR=11
REYF **Montagne du Re** 92.06 333 *eP* P 14 45 47.7 +0.2
VIEF **Viey** 92.07 333⇑ *eP* P 14 45 49.0 +1.5

M54A **Oil Creek Stat** 92.09 30 P P 14 45 47.7 +0.1
baz=329,SNR=87
ORDF **Ordiarp** 92.12 334 *eP* P 14 45 47.7 +0.1
ATE **Arette** 92.15 333⇑ *eP* P 14 45 50.5 +2.7
832A **Faith Ranch, C** 92.21 51 P P 14 45 48.6 +0.3
baz=316,SNR=50
139A **Bunkhouse Ranc** 92.22 44 P P 14 45 48.8 +0.6
baz=319,SNR=16
436A **Wall Ranch, Ga** 92.29 47 P P 14 45 49.2 +0.6
baz=318,SNR=55
PKME **Peaks-Kenny Pk** 92.29 21 PFAKE 14 46 00.0 +12
PKME LR LR
comp=Z,75µm,22.0s
LARF **Larrau** 92.29 334 *eP* P 14 45 49.9 +1.4
733A **Divot King Ran** 92.31 50 P P 14 45 49.4 +0.6
baz=317,SNR=33
238A **Jacksonville** 92.33 45 P P 14 45 49.8 +1.1
baz=319,SNR=15
Z40A **Long Farm, Mag** 92.33 43 P P 14 45 49.4 +0.7
baz=320,SNR=28
535A **Dale** 92.38 48 P P 14 45 49.6 +0.5
baz=318,SNR=24
634A **China Grove, S** 92.39 49 P P 14 45 50.0 +0.9
baz=317,SNR=9.3
337A **Centerville** 92.41 46 P P 14 45 50.6 +1.4
baz=318,SNR=6.0
N54A **Moraine State** 92.43 30 P P 14 45 49.6 +0.5
baz=329,SNR=72
833A **Chaparral WMA,** 92.53 51 P P 14 45 50.8 +1.0
baz=317,SNR=55
437A **Phantom Ranch,** 92.63 47 P P 14 45 51.1 +1.0
baz=318,SNR=17
536A **Bastrop** 92.65 48 P P 14 45 51.4 +1.1
baz=318,SNR=40
734A **La Parita Cree** 92.66 50 P P 14 45 51.4 +1.0
baz=317,SNR=23
239A **Gary** 92.68 45 P P 14 45 50.8 +0.4
baz=319,SNR=16
140A **Cam and Jess,** 92.70 44 P P 14 45 51.2 +0.7
baz=320,SNR=15
338A **Crockett** 92.70 46 P P 14 45 51.2 +0.7
baz=319
635A **Leesville** 92.73 49 P P 14 45 51.8 +1.1
baz=318,SNR=21
NATX **Nacogdoches** 92.77 45 P P 14 45 51.2 +0.4
baz=319,SNR=16
NATX **Nacogdoches** 92.77 45 PFAKE 14 46 00.0 +9.2
NATX LR LR
comp=Z,93µm,22.0s
BINY **Binghamton** 92.88 27 PFAKE 14 46 00.0 +8.8
BINY LR LR
comp=Z,41µm,22.0s
438A **Sam Houston St** 93.06 46 P P 14 45 53.1 +0.9
baz=319,SNR=17
537A **Green Hill Far** 93.08 47 P P 14 45 53.6 +1.3
baz=318,SNR=29
636A **Smothers Creek** 93.09 48 P P 14 45 54.1 +1.7
baz=318,SNR=97
141A **Papa Simpson,** 93.09 44 P P 14 45 53.1 +0.8
baz=320
735A **Kenedy** 93.10 49 P P 14 45 54.1 +1.7
baz=317,SNR=27
933A **Laredo** 93.12 51 P P 14 45 54.1 +1.6
baz=317,SNR=130
339A **Huntington** 93.15 45 P P 14 45 52.9 +0.3
baz=319
834A **Tilden** 93.19 50 P P 14 45 54.1 +1.2
baz=317,SNR=35
439A **Center Grove,** 93.43 46 P P 14 45 54.7 +0.8
baz=319,SNR=10.0
538A **Harpers Horsep** 93.45 47 P P 14 45 55.1 +1.1
baz=319
340A **Bronson** 93.46 45 P P 14 45 54.2 +0.2
baz=320
736A **Circle Diamond** 93.47 49 P P 14 45 56.2 +2.1
baz=318,SNR=47
835A **Beeville** 93.50 50 P P 14 45 55.5 +1.2
baz=317,SNR=23
637A **Eagle Lake** 93.54 48 P P 14 45 56.1 +1.7
baz=318,SNR=19
O56A **Blue Knob Stat** 93.58 30 P P 14 45 54.5 0.0
baz=330,SNR=64
934A **Benavides** 93.59 51 P P 14 45 56.4 +1.7
baz=317,SNR=31
142A **Monroe** 93.66 43 P P 14 45 55.5 +0.6
baz=321
143A **Socs Landing,** 93.83 43 P P 14 45 56.3 +0.6
baz=321
034A **Hebbronville** 93.88 51 P P 14 45 57.9 +1.9
baz=317,SNR=138
341A **Kurthwood** 93.92 45 P P 14 45 56.7 +0.5
baz=320,SNR=18
440A **Kirbyville** 93.93 45 P P 14 45 56.6 +0.4
baz=320
539A **Cross D Ranch,** 93.97 46 P P 14 45 57.7 +1.3
baz=319
737A **Port Lavaca** 93.98 48 P P 14 45 59.0 +2.6
baz=318,SNR=6.8
KVTX **Kingsville** 94.01 50 PFAKE 14 46 10.0 +13
KVTX LR LR
comp=Z,29µm,19.0s
638A **Rosharon** 94.07 47 P P 14 45 58.7 +1.8
baz=319,SNR=13
N59A **State Game Lan** 94.08 28 P P 14 45 57.0 +0.2
baz=332,SNR=74
KEST **Kesra** 94.21 323 P P 14 45 57.4 -0.1
comp=Z,85nm,1.1s,baz=325,slow=1.3,SNR=41
KEST PP PP 14 49 45.0 +1.1
comp=Z,104nm,1.1s,baz=28,slow=9.2,SNR=5.1
KEST LR LR 15 33 23.8
comp=Z,188µm,19.8s,baz=328,slow=39
540A **Vidor** 94.32 46 P P 14 45 59.6 +1.7
baz=320
035A **Encino** 94.32 51 P P 14 45 59.7 +1.6
baz=317,SNR=28
342A **Flagon Creek P** 94.35 44 P P 14 45 59.2 +1.1
baz=320,SNR=5.5
441A **DeRidder** 94.35 45 P P 14 45 59.3 +1.1
baz=320
CMAH **Djebel Manchou** 94.37 325 P P 14 45 57.8 -0.4
738A **Farr-Stevens R** 94.39 48 P P 14 45 59.8 +1.4
baz=319
144A **Alexander Plac** 94.40 42 P P 14 45 58.9 +0.6
baz=322,SNR=8.1
936A **North Padre Is** 94.45 50 P P 14 45 59.5 +0.9
baz=318
AAE **Adis Abeba** 94.49 285 *i* P P 14 46 00.8 +1.3
AAE 14 49 51.9
AAE 14 58 14.0
CAEH **'Ain El Ouahch** 94.50 325 P P 14 45 58.3 -0.4
ABSA **Djebel Ababsia** 94.63 324 P P 14 45 59.3 -0.2
FURI **Furi** 94.64 285 *eP* P 14 45 58.0 -2.1
FURI *iS* SKSac 14 56 37.4 +5.7
VBMS **Vicksburg** 94.67 42 P P 14 46 00.4 +0.9
baz=322
145A **Houston Renfro** 94.68 42 P P 14 46 00.3 +0.7
baz=322
035Z **Hargill** 94.69 51 P P 14 46 01.3 +1.6
baz=317,SNR=18
244A **Avery, Jackson** 94.72 42 P P 14 46 00.8 +1.0
baz=322,SNR=34
442A **Mamou** 94.80 44 P P 14 46 01.6 +1.4
baz=320
343A **Vidalia** 94.81 44 P P 14 46 00.9 +0.7
baz=321
541A **Lake Charles** 94.88 45 P P 14 46 02.3 +1.8
baz=320
CASM **Ain Smara** 95.09 325 P P 14 46 01.4 -0.1
146A **Union** 95.11 41 P P 14 46 02.5 +0.9
baz=322
443A **Delano Plantat** 95.12 44 P P 14 46 03.1 +1.5
baz=321
DFRA **Djebel Bou Aff** 95.13 326 P P 14 46 02.0 +0.2
245A **Little AP, Sta** 95.15 42 P P 14 46 02.4 +0.7
baz=322,SNR=29
344A **Westbrook Farm** 95.15 43 P P 14 46 02.6 +0.8
baz=321,SNR=23
542A **Morse** 95.18 45 P P 14 46 03.6 +1.6
baz=320
TKL **Tuckaleechee C** 95.25 36 P P 14 46 01.9 -0.2
comp=Z,261nm,0.6s,baz=192,slow=0.6,SNR=78
TKL LR LR 15 30 23.7
comp=Z,53µm,21.8s,slow=36
TKL **Tuckaleechee C** 95.25 36 P P 14 46 02.0 -0.2
TKL pmax pmax
comp=Z,244nm,0.7s
TKL MLR MLR

comp=Z,53µm,21.8s
CTEI Djebel Teioual 95.29 325 P **P** **14 46 02.8 +0.3**
PBRG Braganca 95.30 337 *e*P **P** **14 46 02.5 +0.2**
comp=Z,558nm,1.8s
PBRG Braganca 95.30 337 *e*PP PP 14 49 51.2 -0.8
PBRG *e*SKS **SKSac** **14 56 36.8 +3.0**
PBRG *e*SS **SS** **15 03 47.1 +7.4**
BLA Blacksburg 95.44 33 PFAKE 14 46 20.0 +17
BLA LR LR
comp=Z,44µm,20.0s
246A Jackson Lee, B 95.56 41 P **P** **14 46 04.7 +1.1**
baz=322
543A St. Martinvill 95.60 44 P **P** **14 46 05.6 +1.7**
baz=321
PGAV Gavieira, Arco 95.61 338 *e*P **P** **14 46 04.0 +0.2**
comp=Z,463nm,2.0s
PGAV Gavieira, Arco 95.61 338 *e*PP PP 14 50 00.7 +6.2
PGAV *e*SKS **SKSac** **14 56 35.8 +0.2**
PGAV *e*SS **SS** **15 03 49.5 +5.2**
PGAV Gavieira, Arco 95.61 338 *e*LQ LQ 15 14 45.5
PGAV *e*LR LR 15 18 20.4
comp=Z,85µm,20.0s
SET Setif 95.63 326 P **P** **14 46 06.0 +2.0**
345A Thompson Farm, 95.64 42 P **P** **14 46 05.1 +1.1**
baz=322
444A Pine Grove 95.72 43 P **P** **14 46 05.6 +1.2**
baz=321
CKHR Kef el Ahmar 95.73 326 P **P** **14 46 04.9 +0.4**
PCAB Cabril 95.77 338 *e*P **P** **14 46 04.7 +0.2**
comp=Z,508nm,1.8s
PCAB Cabril 95.77 338 *e*PP PP 14 49 58.1 +2.5
CBN Corbin Frederi 95.83 30 PFAKE 14 46 20.0 +15
CBN LR LR
comp=Z,83µm,22.0s
346A Big Creek Wild 95.88 42 P **P** **14 46 05.6 +0.6**
baz=322
445A Amite 95.93 43 P **P** **14 46 06.6 +1.3**
baz=322
544A White Castle 95.96 44 P **P** **14 46 06.8 +1.3**
baz=321
MVO Moncorvo 95.97 337 *e*P **P** **14 46 05.2 -0.2**
comp=Z,466nm,2.4s
MVO Moncorvo 95.97 337 *e*PP PP 14 50 03.6 +6.4
MVO *e*SKS **SKSac** **14 56 38.5 +1.1**
MVO *e*SS **SS** **15 03 55.1 +5.8**
MVO Moncorvo 95.97 337 *e*LQ LQ 15 14 08.9
MVO *e*LR LR 15 19 14.6
comp=Z,200µm,22.0s
POLO Lamas de Olo 96.01 337 *e*P **P** **14 46 05.9 +0.3**
comp=Z,256nm,1.8s
POLO Lamas de Olo 96.01 337 *e*PP PP 14 50 03.2 +5.6
POLO *e*SKS **SKSac** **14 56 37.9 +0.2**
POLO *e*SS **SS** **15 03 55.6 +5.6**
PVRL Vila Real 96.08 337 *e*P **P** **14 46 06.7 +0.8**
comp=Z,480nm,1.9s
PVRL Vila Real 96.08 337 *e*PP PP 14 49 53.0 -5.0
ESDC Sonseca Array 96.31 334 P **P** **14 46 07.0 0.0**
comp=Z,34nm,0.6s,baz=24,slow=3.6,SNR=53
ESDC PP **PP** **14 49 55.6 -4.3**
comp=Z,28nm,0.9s,baz=5.6,slow=7.1,SNR=5.0
ESDC PKKPbc **PKKPdf** **15 02 51.5 +0.3**
comp=Z,4.1nm,0.9s,baz=204,slow=3.2,SNR=3.6
ESDC PKPPKP **P'P'df** **15 11 07.5 -2.2**
comp=Z,2.8nm,0.9s,baz=239,slow=0.7,SNR=5.3
ESDC LR LR 15 34 41.1
comp=Z,161µm,20.2s,baz=30,slow=39
545A Edgard 96.38 44 P **P** **14 46 09.3 +1.9**
baz=322
446A Poplarville 96.40 42 P **P** **14 46 08.3 +0.8**
baz=322
PAB San Pablo 96.56 334 PFAKE 14 46 20.0 +12
PAB LR LR
comp=Z,213µm,20.0s
PVIS Viseu 96.64 337 *e*P **P** **14 46 08.5 0.0**
comp=Z,383nm,1.8s
PVIS Viseu 96.64 337 *e*PP PP 14 50 05.1 +2.7
546A Slidell 96.65 43 P **P** **14 46 09.5 +0.9**
baz=322
EMHD Djebel Mahouad 96.69 328 P **P** **14 46 13.1 +4.2**
645A Chauvin 96.78 44 P **P** **14 46 10.6 +1.4**
baz=321
KMSC Kings Mountain 96.78 34 P **P** **14 46 08.9 -0.2**
baz=327,SNR=57
MTE Manteigas 96.82 337 *e*P **P** **14 46 09.4 +0.1**
comp=Z,420nm,1.6s
MTE Manteigas 96.82 337 *e*PP PP 14 50 11.0 +7.2
MTE *e*SKS **SKSac** **14 56 43.0 +1.1**
MTE Manteigas 96.82 337 *e*LQ LQ 15 14 30.0
MTE *e*LR LR 15 19 25.4
comp=Z,187µm,22.0s
MTE Manteigas 96.82 337 PFAKE 14 46 20.0 +11
MTE LR LR
comp=Z,193µm,22.0s
EBNR Beni Rached 97.20 329 P Pdif 14 46 15.5 +4.3
GOGA Godfrey 97.25 37 PFAKE 14 46 20.0 +8.7
GOGA LR LR
comp=Z,69µm,22.0s
BRAL Brewton 97.31 41 PFAKE 14 46 20.0 +8.4
BRAL LR LR
comp=Z,46µm,20.0s
PCBR Castelo Branco 97.31 337 *e*P Pdif 14 46 12.2 +0.7
comp=Z,312nm,1.6s
PCBR Castelo Branco 97.31 337 *e*PP PP 14 50 13.9 +6.4
PCAS Casmilo, Conde 97.43 337 *e*P Pdif 14 46 12.2 +0.1
comp=Z,280nm,1.6s
PCAS Casmilo, Conde 97.43 337 *e*PP PP 14 50 10.5 +2.1
PCAS *e*SKS **SKSac** **14 56 44.9 0.0**
PCAS *e*SS **SS** **15 04 13.8 +3.9**
PMRV Marv??o 97.66 336 *e*P **P** **14 46 13.1 0.0**
PMRV Marv??o 97.66 336 *e*PP PP 14 50 16.9 +6.7
PMRV *e*SKS **SKSac** **14 56 46.4 +0.3**
PMRV *e*SS **SS** **15 04 19.3 +6.1**
PMRV Marv??o 97.66 336 *e*LQ LQ 15 14 44.4
PMRV *e*LR LR 15 19 56.9
comp=Z,154µm,22.0s
EANR 'Ain N'Sour 97.67 329 P **P** **14 46 13.0 -0.2**
PTOM Tomar 97.81 337 *e*P Pdif 14 46 14.1 +0.4
comp=Z,201nm,1.5s
PTOM Tomar 97.81 337 *e*PP PP 14 50 16.9 +5.6
ETRT Tiaret 98.07 328 P **P** **14 46 15.0 -0.1**
CNNC Cliffs of the 98.18 32 PFAKE 14 46 30.0 +15
CNNC LR LR
comp=Z,67µm,21.0s
PESTR Estremoz 98.24 336 *e*P **P** **14 46 15.6 0.0**
comp=Z,192nm,1.9s
PESTR Estremoz 98.24 336 *e*PP PP 14 50 20.9 +6.3
PESTR *e*SKS **SKSac** **14 56 50.0 +0.9**
PESTR *e*SS **SS** **15 04 26.4 +5.1**
PMTG Montargil 98.25 337 *e*P **P** **14 46 15.2 -0.5**
comp=Z,207nm,1.8s
PMTG Montargil 98.25 337 *e*PP PP 14 50 14.6 -0.1
PMTG *e*SKS **SKSac** **14 56 49.6 +0.5**
EVO Evora 98.68 336 *e*P **P** **14 46 17.6 0.0**
comp=Z,167nm,2.3s
EVO Evora 98.68 336 *e*PP PP 14 50 20.4 +2.4
PMAFR Mafra 98.68 338 *e*P **P** **14 46 17.4 -0.2**
comp=Z,357nm,1.8s
PMAFR Mafra 98.68 338 *e*PP PP 14 50 20.5 +2.5
PMAFR *e*SKS **SKSac** **14 56 51.5 +0.2**
PMAFR *e*SS **SS** **15 04 30.5 +3.1**
PBAR Barrancos 98.69 336 *e*P Pdif 14 46 18.1 +0.4
comp=Z,480nm,1.8s
PBAR Barrancos 98.69 336 *e*PP PP 14 50 24.4 +6.3
PBAR *e*SKS **SKSac** **14 56 51.6 +0.3**
PBAR *e*SS **SS** **15 04 33.7 +6.1**
ODJA Bouhanifia 98.72 329 P Pdif 14 46 19.0 +1.1
PACT Alcochete 98.72 337 *e*P Pdif 14 46 18.8 +1.1
comp=Z,683nm,1.8s
PACT Alcochete 98.72 337 *e*PP PP 14 50 17.6 -0.6
TIGA Tifton 98.81 38 P Pdif 14 46 18.8 +0.5
baz=326
PMST Lisbon--Monsan 98.85 337 *e*P Pdif 14 46 18.4 0.0
comp=Z,256nm,1.9s
PMST Lisbon--Monsan 98.85 337 *e*PP PP 14 50 16.4 -2.9
LIS Lisbon 98.86 337 *e*P **P** **14 46 16.4 -2.0**
LIS *e*S **SKSac** **14 56 50.3 -1.8**
LIS AMS AMS 15 35 25.5
comp=Z,166µm,21.4s
LIS Lisbon 98.86 337 *e*P **P** **14 46 18.4 0.0**
comp=Z,384nm,2.1s
LIS Lisbon 98.86 337 *e*PP PP 14 50 24.8 +5.5
LIS Lisbon 98.86 337 *e*P **P** **14 46 16.3 -2.0**
LIS *e*S **SKSac** **14 56 50.3 -1.8**
RKT Rikitea 98.98 112 *e*PP PP 14 50 25.0 +3.1
comp=Z,14µm,32.8s
RKT *e*SKSac **SKSac** **14 56 55.2 +2.4**
comp=Z,38µm,27.8s
RKT Rikitea 98.98 112 *e*PS PS 14 59 17.1 -1.3
comp=Z,38µm,35.2s
RKT *e*SS SS 15 04 32.1 -2.4
comp=Z,44µm,30.8s
RKT Rikitea 98.98 112 *e*LR LR 15 18 20.7
comp=Z,304µm,27.5s,baz=308
RKT Rikitea 98.98 112 *e*T T 16 36 05.4
comp=Z,8.7nm,0.3s
NHSC New Hope 99.01 35 PFAKE 14 46 30.0 +11
NHSC LR LR
comp=Z,73µm,21.0s
PBEJ Beja 99.09 336 *e*P **Pdif** **14 46 20.2 +0.7**
PBEJ Beja 99.09 336 *e*PP PP 14 50 21.9 +0.7
PNCL Nicolau / Gran 99.22 337 *e*P **Pdif** **14 46 21.3 +1.3**
PNCL Nicolau / Gran 99.22 337 *e*PP PP 14 50 28.9 +6.8
PNCL *e*SKS **SKSac** **14 56 53.7 -0.3**
OLHC Oulhaca 99.29 330 P **Pdif** **14 46 21.0 +0.5**
MESJ Messejana 99.38 336 *e*P **Pdif** **14 46 18.9 -1.9**
MESJ *e*S **SKSac** **14 56 53.0 -1.7**
MESJ AMS AMS 15 33 49.6
comp=Z,161µm,21.4s
MESJ Messejana 99.38 336 *e*P **Pdif** **14 46 20.9 +0.2**
MESJ Messejana 99.38 336 *e*PP PP 14 50 26.6 +3.3
MESJ Messejana 99.38 336 *e*P **Pdif** **14 46 18.8 -1.9**
MESJ *e*S **SKSac** **14 56 53.0 -1.7**
PCVE Castro Verde 99.51 336 *e*P **Pdif** **14 46 21.8 +0.5**
PCVE Castro Verde 99.51 336 *e*PP PP 14 50 28.0 +3.7
PCVE *e*SKS **SKSac** **14 56 56.2 +0.8**
PCVE *e*SS **SS** **15 04 44.0 +5.0**
PVAQ Vaqueiros 99.61 336 *e*P **Pdif** **14 46 21.9 +0.1**
PVAQ Vaqueiros 99.61 336 *e*PP PP 14 50 28.3 +3.2
PVAQ *e*SKS **SKSac** **14 56 55.6 -0.4**
PVAQ Vaqueiros 99.61 336 *e*LQ LQ 15 16 24.8
PVAQ *e*LR LR 15 21 45.7
comp=Z,207µm,22.0s
RER Riviere de l'E 99.78 251 PFAKE 14 46 30.0 +7.3
RER LR LR
comp=Z,38µm,21.0s
PTEO Sao Teotonio 99.80 337 *e*P **Pdif** **14 46 23.7 +1.1**
PTEO Sao Teotonio 99.80 337 *e*PP PP 14 50 29.3 +2.8
PBDV Barranco-do-Ve 99.83 336 *e*P **Pdif** **14 46 23.1 +0.3**
PBDV Barranco-do-Ve 99.83 336 *e*PP PP 14 50 29.1 +2.3
PBDV *e*SKS **SKSac** **14 56 57.3 +0.2**
PBDV *e*SS **SS** **15 04 48.8 +5.2**
MORF Marmelete 100.00 336 *e*P **Pdif** **14 46 21.7 -1.9**
MORF *e*S **SKSac** **14 56 56.0 -2.0**
MORF AMS AMS 15 35 07.0
comp=Z,139µm,22.4s
MORF Marmelete 100.00 336 *e*P **Pdif** **14 46 25.7 +2.1**
MORF Marmelete 100.00 336 *e*PP PP 14 50 29.5 +1.4
MORF *e*SKS **SKSac** **14 56 58.9 +0.9**
MORF *e*SS **SS** **15 04 48.7 +2.7**
MORF Marmelete 100.00 336 *e*P **Pdif** **14 46 21.7 -1.9**
MORF *e*S **SKSac** **14 56 56.0 -2.0**
PFVI Vila Bisbo 100.22 336 *e*P **Pdif** **14 46 21.1 -3.4**
PFVI Vila Bisbo 100.22 336 *e*PP PP 14 50 33.3 +3.6
PFVI *e*SKS **SKSac** **14 56 58.9 0.0**
PFVI *e*SS **SS** **15 04 54.7 +5.8**
KMBO Kilima Mbogo 102.05 278 P **Pdif** **14 46 33.2 -0.1**
comp=Z,12nm,0.7s,baz=46,slow=7.0,SNR=37
KMBO PP **PP** **14 50 43.5 -1.8**
comp=Z,23nm,1.1s,baz=41,slow=14,SNR=5.5
KMBO PKKPbc **PKKPdf** **15 02 38.9 -3.2**
comp=Z,8.9nm,0.9s,baz=191,slow=2.2,SNR=6.7
KMBO Kilima Mbogo 102.05 278 PP PP 14 50 43.5 -1.8
KMBO PKKPbc **PKKPdf** **15 02 38.9 -3.2**
KMBO LR LR
comp=Z,54µm,22.0s
KMBO Kilima Mbogo 102.05 278 Pdiff **Pdif** **14 46 33.6 +0.3**
SNR=64
PGRA Graciosa 102.52 352 *e*P **Pdif** **14 46 40.9 +6.2**
comp=Z,325nm,1.8s
PGRA Graciosa 102.52 352 *e*PP PP 14 50 48.1 +1.3
PGRA *i*SKS **SKSac** **14 57 14.0 +4.1**
PGRA *i*SP **SP** **14 59 54.9 +7.1**
PGRA Graciosa 102.52 352 *i*LR LR 15 22 33.6
comp=Z,5µm,17.1s
MDT Midelt 102.67 331 PKKP **PKKPdf** **15 02 38.2 -1.8**
comp=Z,8.1nm,1.0s,baz=198,slow=4.5,SNR=5.2
ROSA Rosais 102.85 352 *e*P **Pdif** **14 46 39.7 +3.5**
comp=Z,416nm,1.7s
ROSA Rosais 102.85 352 *e*PP PP 14 50 57.7 +8.4
ROSA *i*SKS **SKSac** **14 57 14.0 +2.5**
ROSA *i*SP **SP** **14 59 59.0 +7.6**
ROSA Rosais 102.85 352 *i*LR LR 15 23 29.9
comp=Z,5µm,17.3s
PSET Sete Cidades 103.42 350 *e*P **Pdif** **14 46 41.5 +2.7**
comp=Z,303nm,1.5s
PSET Sete Cidades 103.42 350 *e*PP PP 14 50 56.3 +2.7
PSET *i*SKS **SKSac** **14 57 22.2 +8.0**
PSET *i*SP **SP** **15 00 01.7 +4.3**
PSET Sete Cidades 103.42 350 *i*LR LR 15 23 10.8
comp=Z,4µm,20.9s
CMLA Cha da Macela 103.45 350 *e*P **Pdif** **14 46 43.3 +4.4**
comp=Z,777nm,1.9s
CMLA Cha da Macela 103.45 350 *e*PP PP 14 50 56.3 +2.5
CMLA *i*SKS **SKSac** **14 57 12.6 -1.8**
CMLA *i*SP **SP** **15 00 00.3 +2.6**
CMLA Cha da Macela 103.45 350 *i*LR LR 15 23 09.7
comp=Z,2µm,19.3s
CMLA Cha da Macela 103.45 350 PFAKE 14 46 50.0 +11
CMLA LR LR
comp=Z,36µm,21.0s
PSMN Pico do Norte, 104.13 349 *e*P **Pdif** **14 46 43.6 +1.7**
comp=Z,576nm,1.7s
PSMN Pico do Norte, 104.13 349 *e*PP PP 14 51 07.2 +8.3
PSMN *i*SKS SKSac 14 58 22.2 +65
PSMN *i*SP **SP** **15 00 08.5 +3.6**
PSMN Pico do Norte, 104.13 349 *i*LR LR 15 23 30.9
comp=Z,7µm,21.3s
ABPO Ambohimpanom 104.96 257 PFAKE 14 47 00.0 +14
ABPO LR LR
comp=Z,14µm,19.0s
TEIG Tepich 105.27 48 PFAKE 14 51 10.0
TEIG LR LR
comp=Z,13µm,22.0s
BBSR BB Station 105.55 23 PFAKE 14 51 10.0
BBSR LR LR
comp=Z,38µm,22.0s
PMPS Porto Santo 106.18 341 *e*PP PP 14 51 20.5 +6.4
DODT Dodoma, Tanzan 106.35 275 **Pdif** **14 46 53.4 +1.2**
DODT 14 51 16.4
DODT 15 00 09.3
PMOZ Porto Moniz, M 106.62 342 *e*P **Pdif** **14 46 54.7 +1.5**
PMOZ Porto Moniz, M 106.62 342 *e*PP PP 14 51 22.1 +4.6
PMOZ Porto Moniz, M 106.62 342 *e*LR LR 15 24 06.4
comp=Z,75µm,22.0s
TAM Tamanrasset 106.68 318 PFAKE 14 51 20.0
TAM LR LR
comp=Z,62µm,19.0s
CASY Casey 106.94 193 PFAKE 14 51 10.0
CASY LR LR
comp=Z,3µm,20.0s
PAF Port-aux-Franc 107.65 221 PFAKE 14 51 20.0
PAF LR LR
comp=Z,19µm,22.0s
MIR Mirnyy 110.92 199 *i*PKIKP **PKiKP** **14 51 16.0 +5.9**
MIR *i*PPP PPP 14 57 46.0
MIR *i*SS SS 15 07 12.0 -4.4
MIR pmax pmax
comp=Z,8.0nm,1.8s
MIR pmax pmax
comp=Z,12µm,12.0s
GTBY Guantanamo Bay 112.58 38 PFAKE 14 51 30.0
GTBY LR LR
comp=Z,33µm,20.0s
MTDJ Mount Denham 112.81 41 PFAKE 14 51 30.0
MTDJ LR LR
comp=Z,38µm,22.0s
GRTK Grand Turk 113.02 33 PFAKE 14 51 30.0
GRTK LR LR
comp=Z,71µm,22.0s
JTS JuntasAbangare 114.97 52 PKP PKPdf 14 51 19.1 -0.5
comp=Z,9.5nm,0.7s,baz=34,slow=3.6,SNR=3.2
JTS PKKPbc **PKKPab** **15 02 03.3 -0.1**
comp=Z,21nm,0.9s,baz=293,slow=18,SNR=8.9
JTS JuntasAbangare 114.97 52 PKKPbc PKKPbc 15 02 03.3 +8.8
JTS LR LR
comp=Z,23µm,22.0s
SDDR Presa de Saban 115.17 35 PFAKE 14 51 30.0 +10
SDDR LR LR
comp=Z,36µm,21.0s
VNDA Vanda 116.17 175 PKP **PKPdf** **14 51 19.7 -0.3**
comp=Z,22nm,0.9s,baz=272,slow=3.1,SNR=18
VNDA PP **PP** **14 52 25.6 -0.9**
comp=Z,11nm,0.8s,baz=321,slow=5.6,SNR=3.1
VNDA PKKPbc **PKKPab** **15 01 51.8 0.0**
comp=Z,14nm,1.1s,baz=191,slow=5.2,SNR=5.5
TORD Torodi Ar. Bea 116.64 316 PKP **PKPdf** **14 51 24.0 +1.2**
comp=Z,87nm,0.6s,baz=12,slow=2.1,SNR=2.0
TORD PP **PP** **14 52 28.2 -1.8**
comp=Z,175nm,1.1s,baz=19,slow=6.1,SNR=1.7
SBA Scott Base 116.84 174 PFAKE 14 51 30.0 +8.8
SBA LR LR
comp=Z,19µm,22.0s
LSZ Lusaka 117.71 272 PFAKE 14 51 40.0 +15
LSZ LR LR
comp=Z,41µm,22.0s
SJG San Juan 118.12 30 PKP **PKPdf** **14 51 25.8 +0.3**
comp=Z,24nm,0.6s,baz=6.3,slow=7.3,SNR=8.9
SJG PP **PP** **14 52 40.2 +0.3**
comp=Z,65nm,0.9s,baz=325,slow=18,SNR=7.4
SJG PKKPbc **PKKPbc** **15 01 46.5 +3.0**
comp=Z,17nm,0.7s,baz=270,slow=1.0,SNR=4.3
SJG San Juan 118.12 30 PKKPbc PKKPbc 15 01 46.5 +3.0
SJG LR LR
comp=Z,60µm,22.0s
BCIP Isla Barro Col 118.95 48 PFAKE 14 51 40.0 +13
BCIP LR LR
comp=Z,24µm,22.0s
SMRT St. Maarten 119.34 27 *e* 14 52 49.1
PAYG Puerto Ayora 119.45 65 PFAKE 14 51 40.0 +12
PAYG LR LR
comp=Z,53µm,21.0s
SABA Saba 119.68 28 *e* **PP** **14 52 51.8 +1.2**
SEUS St. Eustatius 119.89 27 *e* **PP** **14 52 54.0 +1.9**
ANWB Willy Bob 120.15 26 *e*P **PP** **14 52 55.9 +2.1**
ANWB Willy Bob 120.15 26 *e* **PP** **14 52 56.5 +2.7**
ANWB Willy Bob 120.15 26 PFAKE 14 51 40.0 +11
ANWB LR LR
comp=Z,20µm,22.0s
MATP Matopo 120.34 267 PP PP 14 52 59.7 +3.0
comp=Z,32nm,0.8s,baz=54,slow=10,SNR=5.1
MATP PKKPbc **PKKPbc** **15 01 35.5 +0.1**
comp=Z,20nm,0.9s,baz=231,slow=3.3,SNR=15
MATP SKKP **SKKPdf** **15 05 32.0 -7.1**
comp=Z,22nm,1.1s,baz=260,slow=7.3,SNR=4.5
MAW Mawson 120.74 206 PKP **PKPdf** **14 51 28.8 -0.1**
comp=Z,44nm,0.6s,baz=1.9,slow=1.3,SNR=26
MAW PP **PP** **14 52 55.9 -2.5**
comp=Z,25nm,1.0s,baz=86,slow=9.2,SNR=1.1
MAW PKKPbc **PKKPbc** **15 01 34.7 -0.1**
comp=Z,41nm,0.9s,baz=266,slow=5.6,SNR=9.8
MAW SKKPbc SKKPbc 15 05 17.5 -3.5
comp=Z,30nm,1.1s,baz=274,slow=7.5,SNR=4.5
MLYT Lee's Yard 120.89 27 *e* **PKPdf** **14 51 36.9 +5.9**
MLYT Lee's Yard 120.89 27 *e* **PP** **14 52 60.0 +1.1**
MOTC Monteria, Cord 121.65 45 *e*P **PKPdf** **14 51 31.0 -1.5**
DEG La Desirade 121.66 26 *e* **PKPdf** **14 51 35.4 +2.9**
TBG Guadaloupe-3 121.88 27 *e* **PKPdf** **14 51 35.5 +2.7**
MGG Marie-Galante 121.94 26 *e* **PKPdf** **14 51 35.2 +2.3**
BBL Barber's Block 122.25 27 *e* **PKPdf** **14 51 33.9 +0.3**
DWS Wesley 122.26 26 *e* **PKPdf** **14 51 33.0 -0.5**
MDN Morne-Daniel 122.47 27 *e* **PP** **14 53 08.4 -1.2**
DLPL La Plaine 122.50 27 *e* **PP** **14 53 11.0 +1.1**
DBCT Belle View Cho 122.53 27 *e* **PKPdf** **14 51 39.0 +4.8**
SOLC Bahia Solano 122.73 48 *e*P **PKPdf** **14 51 35.2 +0.7**
DBBC Dabeiba 122.79 47 *e*P **PKPdf** **14 51 36.3 +1.6**
PCM Pelee Case Pet 123.00 27 *e*P **PKPdf** **14 51 39.2 +4.2**
GBMF Grand Be 123.03 27 *e*P **PKPdf** **14 51 35.2 0.0**
FDF Fort de France 123.09 27 *e*P **PP** **14 53 10.4 -3.5**
FDF Fort de France 123.09 27 PFAKE 14 51 50.0 +15
FDF LR LR
comp=Z,28µm,21.0s
ZAM Aeronautique 123.28 27 *e*P **PKPdf** **14 51 35.1 -0.4**
TRMF Trois Ilets 123.31 27 *e*P **PKPdf** **14 51 35.7 +0.1**
OCAC Ocana 123.38 43 *e*P **PKPdf** **14 51 36.7 +0.8**
BBTS Babate 123.56 335 PP PP 14 53 15.4 -1.5
baz=26,slow=1.2
BBTS PKKPbc **PKKPab** **15 01 27.1 +0.4**
comp=Z,29nm,0.8s,baz=252,slow=3.2,SNR=3.4
HELC Santa Helena 123.85 46 *e*P **PKPdf** **14 51 36.3 -0.8**
GRMC Gramalote, San 124.09 43 *e*P **PKPdf** **14 51 35.4 -1.9**
BRRC Barranca, Sant 124.11 44 *e*P **PKPdf** **14 51 37.5 +0.4**
MCLT Moule a Chique 124.11 27 *e*P **PP** **14 53 23.1 +2.3**
SDV Santo Domingo 124.23 40 PKP **PKPdf** **14 51 37.4 -0.3**
comp=Z,326nm,0.7s,baz=306,slow=3.6,SNR=51
SDV PP **PP** **14 53 22.9 +0.8**
comp=Z,46nm,0.9s,baz=26,slow=5.7,SNR=1.6
SDV Santo Domingo 124.23 40 PFAKE 14 51 50.0 +12
SDV LR LR
comp=Z,30µm,22.0s
SDV Santo Domingo 124.23 40 *e*P **PKPdf** **14 51 36.7 -0.9**
SVB Belmont 124.41 27 *e* **PP** **14 53 20.1 -2.7**
SVB Belmont 124.41 27 *e*P **PP** **14 53 25.4 +2.6**
GIRC Giron, Santand 124.42 44 *e*P **PKPdf** **14 51 38.3 +0.3**
PAMC Pamplona, Colo 124.47 43 *e*P **PKPdf** **14 51 37.5 -0.9**
BTLC Betulia, Santa 124.51 44 *e*P **PKPdf** **14 51 37.9 -0.3**
MALC Bahia Malaga 124.54 50 *e*P **PKPdf** **14 51 40.0 +2.0**
GUYC Guyana, Colomb 124.71 47 *e*P **PKPdf** **14 51 38.8 -0.2**
NORC Norcasia 124.73 46 *e*P **PKPdf** **14 51 35.5 -3.0**
BARC Barichara 124.83 44 *e*P **PKPdf** **14 51 38.0 -0.9**
GRGC Isla de Gorgon 124.83 51 *e*P **PKPdf** **14 51 38.1 -0.5**
LBTB Lobatse 125.02 264 PKP **PKPdf** **14 51 39.0 +0.4**
comp=Z,165nm,0.9s,baz=116,slow=1.8,SNR=16
LBTB PP **PP** **14 53 30.8 +2.4**
comp=Z,19nm,0.7s,baz=67,slow=5.9,SNR=4.3
LBTB PKKPbc **PKKPab** **15 01 18.6 +1.2**
comp=Z,9.6nm,0.8s,baz=252,slow=5.9,SNR=3.9
BBGH Gun Hill 125.12 26 *e* **PP** **14 53 31.7 +4.3**
BBGH Gun Hill 125.12 26 PFAKE 14 51 50.0 +11
BBGH LR LR
comp=Z,49µm,22.0s
TOLC Tolima 125.27 47 *e*P **PKPdf** **14 51 38.8 -1.1**
GRW Mount Saint Ca 125.28 28 *e* **PP** **14 53 22.8 -5.9**
GRGR Grenville 125.31 28 *e* **PP** **14 53 27.3 -1.5**
GRGR Grenville 125.31 28 PFAKE 14 51 50.0 +11
GRGR LR LR
comp=Z,38µm,21.0s
TUMC Tumaco 125.40 53 *e*P **PKPdf** **14 51 38.8 -0.9**
DBIC Dimbokro 125.57 318 PKP **PKPdf** **14 51 39.5 -0.5**
comp=Z,85nm,0.7s,baz=8.8,slow=2.9,SNR=31
DBIC PP PP 14 53 22.2 -8.6
comp=Z,76nm,1.0s,baz=45,slow=7.8,SNR=2.6
DBIC PKKPbc **PKKPab** **15 01 19.7 +2.0**
comp=Z,11nm,0.7s,baz=214,slow=3.6,SNR=6.4
ROSC El Rosal 125.64 46 PKP **PKPdf** **14 51 40.8 +0.2**
comp=Z,71nm,0.7s,baz=77,slow=0.8,SNR=28
ROSC PP **PP** **14 53 32.2 +0.4**
comp=Z,20nm,0.9s,baz=127,slow=20,SNR=1.6
ROSC El Rosal 125.64 46 *e*P **PKPdf** **14 51 40.4 -0.2**
TIC Toumodi 125.67 318 *e*PKP1 **PKPdf** **14 51 39.8 -0.4**
KIC Kosan Boka 125.77 317 *e*PKP1 **PKPdf** **14 51 39.4 -1.0**
comp=Z,953nm,1.1s
LIC Lamto 126.03 318 *e*PKP1 **PKPdf** **14 51 40.5 -0.4**
comp=Z,570nm,1.5s
POPC Popayan, Colom 126.10 50 *e*P **PKPdf** **14 51 41.2 -0.1**
CHIC Chingaza 126.14 46 *e*P **PKPdf** **14 51 40.4 -1.2**
PRAC Prado 126.23 48 *e*P **PKPdf** **14 51 40.4 -0.9**
YOPC Yopal, Colombi 126.27 44 *e*P **PKPdf** **14 51 41.6 +0.2**
TOSP Speyside 126.49 28 *e* **PKPdf** **14 51 42.9 +1.2**
TOSP Speyside 126.49 28 *e*P **PP** **14 53 35.5 -1.1**
TOSP Speyside 126.49 28 *e* **PP** **14 53 42.8 +6.2**
VILC Villavicencio, 126.59 46 *e*P **PKPdf** **14 51 41.2 -0.9**
CMBC Cumbal 126.65 53 *e*P **PKPdf** **14 51 41.2 -1.4**
CRUC La Cruz 126.70 51 *e*P **PKPdf** **14 51 42.9 +0.3**
TRN Trinidad (W) 126.76 29 *e* **PKPdf** **14 51 46.0 +3.8**
OTAV Otavalo 126.80 54 PFAKE 14 52 00.0 +17
OTAV LR LR
comp=Z,26µm,21.0s
OTAV Otavalo 126.80 54 *e*P **PKPdf** **14 51 42.5 -0.4**
BOSA Boshof 127.04 260 PKP **PKPdf** **14 51 42.1 -0.3**
comp=Z,93nm,0.8s,baz=83,slow=2.2,SNR=24
BOSA SKKPbc SKKPbc 15 04 54.6 -2.2
comp=Z,11nm,1.0s,baz=235,slow=4.9,SNR=3.0
TBH Brigand Hill 127.04 29 *e* **PKPdf** **14 51 45.3 +2.5**
TPP Pointe-a-Pierr 127.05 29 *e* **PKPdf** **14 51 41.5 -1.2**
FLOC Florencia 127.48 50 *e*P **PKPdf** **14 51 43.3 -0.4**
QSPA South Pole Qui 127.99 180 PFAKE 14 52 00.0 +17
QSPA LR LR
comp=Z,45µm,22.0s
TSUM Tsumeb 128.26 275 PKP **PKPdf** **14 51 45.8 +0.7**
comp=Z,36nm,0.8s,baz=76,slow=3.3
TSUM PP **PP** **14 53 53.4 +3.6**
comp=Z,22nm,1.0s,baz=17,slow=4.6,SNR=2.8
TSUM SKKPbc SKKPbc 15 04 46.3 -5.4

	comp=Z,30nm,1.2s,baz=258,slow=5.7,SNR=7.4						
TSUM	Tsumeb	128.26	275	PKP	PKPdf	14 51 45.8	+0.7
TSUM				PP	PP	14 53 53.4	+3.6
TSUM				SKKPbc	SKKPbc	15 04 46.3	-5.4
TSUM				LR	LR		
	comp=Z,37µm,21.0s						
SYO	Syowa Base	129.40	207⇑	eX	Pdif	14 48 30.7	-2.5
SYO	Syowa Base	129.40	207⇓	iX	PKPdf	14 51 43.0	-2.5
SUR	Sutherland	132.14	258	PKP	PKPdf	14 51 52.2	+0.1
	comp=Z,1.7nm,0.8s,baz=118,slow=2.5,SNR=8.3						
SUR	Sutherland	132.14	258	ePKPdf	PKPdf	14 51 52.7	+0.6
SUR				eSKPbc	SKPbc	14 55 12.6	-1.3
SUR				LR	LR		
	comp=Z,53µm,21.0s						
ATAH	Atahualpa	132.34	60	PKP	PKPdf	14 51 53.6	+0.3
	comp=Z,100nm,1.1s,baz=332,slow=3.7,SNR=26						
NNA	Nana	136.85	63	ePKIKP	PKPdf	14 52 01.4	+0.2
NNA				MLR	MLR		
	comp=Z,34µm,22.0s						
NNA	Nana	136.85	63	ePKPdf	PKPdf	14 52 01.4	+0.2
NNA				LR	LR		
	comp=Z,34µm,22.0s						
PTGA	Pitinga	137.67	33	PKhKP	PKPpre	14 51 54.6	
	comp=Z,15nm,0.6s,baz=320,slow=3.3,SNR=15						
PTGA				PKP	PKPdf	14 52 03.3	+0.5
	comp=Z,82nm,0.8s,baz=352,slow=2.5,SNR=14						
PTGA				PP	PP	14 54 50.0	+1.4
	comp=Z,136nm,1.1s,baz=340,slow=8.6,SNR=8.7						
NVL	N'lazarevskaya	138.51	203	ePKHKP	PKPpre	14 51 53.0	
NVL				e		14 59 08.0	
NVL				e		15 07 09.3	
NVL				e		15 07 10.7	
NVL				eSS	SS	15 12 58.9	-4.1
NVL				eSSS	SSS	15 18 21.4	
SNAA	Sanae	141.98	197	PKP	PKPdf	14 52 05.8	-3.2
SNAA	Sanae	141.98	197	ePKIKP	PKPdf	14 52 08.0	-1.0
SNAA	Sanae	141.98	197	ePKPdf	PKPdf	14 52 08.0	-1.0
H10N2	ASCENSION HYDR	142.87	319	PKP	PKPdf	14 52 11.3	-0.5
	baz=26,slow=2.9,SNR=11						
H10N1	ASCENSION HYDR	142.88	319	PKP	PKPdf	14 52 11.0	-0.9
	baz=26,slow=2.9,SNR=19						
H10N3	ASCENSION HYDR	142.89	319	PKP	PKPdf	14 52 11.5	-0.3
	baz=26,slow=2.9,SNR=17						
ASCN	Ascension	142.89	318	ePKPdf	PKPdf	14 52 13.4	+1.2
ASCN				LR	LR		
	comp=Z,26µm,22.0s						
SAML	Samuel	143.20	44	ePKPdf	PKPdf	14 52 11.7	-1.0
SAML				LR	LR		
	comp=Z,24µm,20.0s						
VNA2	Neumayer--Watz	143.56	197	PKP	PKPbc	14 52 09.2	0.0
	baz=93,slow=2.2						
VNA3	Neumayer Olymp	143.81	195	PKP	PKPbc	14 52 09.7	-0.2
H10S1	ASCENSION HYDR	143.89	318	PKP	PKPdf	14 52 13.7	+0.1
	baz=339,slow=4.2,SNR=20						
H10S2	ASCENSION HYDR	143.90	318	PKP	PKPdf	14 52 13.7	0.0
	baz=339,slow=4.2,SNR=16						
H10S3	ASCENSION HYDR	143.91	318	PKP	PKPdf	14 52 13.5	-0.2
	baz=339,slow=4.2,SNR=14						
VNA1	Neumayer--Stat	143.95	196	PKP	PKPbc	14 52 10.5	+0.2
LPAZ	La Paz	145.85	58	PKPbc	PKPdf	14 52 18.1	+0.1
	comp=Z,834nm,1.0s,baz=339,slow=3.6,SNR=431						
RCBR	Riachuelo	147.65	356	PKPbc	PKPdf	14 52 21.2	+0.7
	comp=Z,488nm,1.2s,baz=357,slow=3.4,SNR=26						
RCBR	Riachuelo	147.65	356	ePKPdf	PKPdf	14 52 21.2	+0.7
RCBR				LR	LR		
	comp=Z,38µm,22.0s						
PMSA	Palmer Station	149.42	159	PKPbc	PKPbc	14 52 26.3	+0.2
	comp=Z,170nm,0.8s,baz=232,slow=2.8,SNR=21						
PMSA	Palmer Station	149.42	159	ePKPbc	PKPbc	14 52 26.8	+0.7
PMSA				LR	LR		
	comp=Z,30µm,22.0s						
SIV	San Ignacio	150.10	48	PKP	PKPdf	14 52 24.8	+0.5
	comp=Z,201nm,0.9s,baz=321,slow=1.3,SNR=44						
SIV				PKPbc	PKiKP	14 52 29.9	-0.3
	comp=Z,422nm,0.8s,baz=330,slow=2.5,SNR=100						
LCO	Las Campanas	151.59	81	ePKPbc	PKPbc	14 52 33.7	+0.8
LCO				LR	LR		
	comp=Z,62µm,22.0s						
USHA	Ushuaia	153.73	139	PKPbc	PKPbc	14 52 34.1	-2.2
	comp=Z,367nm,0.8s,baz=256,slow=2.4,SNR=9.5						
PLCA	Paso Flores	155.04	106	PKP	PKPdf	14 52 30.4	-0.5
	comp=Z,6.8nm,0.7s,baz=273,slow=2.3,SNR=14						
BDFB	Brasilia	155.89	24	PKP	PKPdf	14 52 33.4	+0.6
	comp=Z,28nm,1.0s,baz=357,slow=3.2,SNR=22						
BDFB				PP	PP	14 56 34.7	-1.2
	comp=Z,73nm,1.0s,baz=11,slow=2.1,SNR=3.1						
TRIS	Tristan da Cun	159.43	265	PFAKE		14 52 50.0	+14
TRIS				LR	LR		
	comp=Z,25µm,21.0s						
CPUP	Villa Florida	160.02	59	PKP	PKPdf	14 52 37.3	-0.1
	comp=Z,42nm,1.2s,baz=356,slow=1.3,SNR=29						
CPUP				PKPab	PKPab	14 53 18.1	+0.8
	comp=Z,106nm,0.8s,baz=313,slow=4.0,SNR=12						
CPUP				PP	PP	14 56 59.3	-0.1
	comp=Z,47nm,1.2s,baz=320,slow=7.0,SNR=3.5						
EFI	East Falkland	160.69	140	PFAKE		14 52 50.0	+13
EFI				LR	LR		
	comp=Z,118µm,22.0s						
TRQA	Tornquist	161.36	97	ePKPdf	PKPdf	14 52 36.0	-2.6
TRQA				LR	LR		
	comp=Z,53µm,21.0s						
SPB	Sao Paulo	163.42	31	PFAKE		14 52 50.0	+9.0
SPB				LR	LR		
	comp=Z,8µm,22.0s						
LPA	La Plata	163.86	84	cePKIKP	PKPdf	14 52 43.0	+1.9
LPA	La Plata	163.86	84	PKP	PKPab	14 53 38.0	+4.0
LPA				PKIKS		14 56 15.0	
LPA				PP	PP	14 57 21.0	+0.8
HOPE	Hope Point	163.92	184	PFAKE		14 52 50.0	+10
HOPE				LR	LR		
	comp=Z,27µm,20.0s						

JMA 07 14:36:40.4±0.1,38°.38N×141°.92E,h58^{km}±3^{km},M4.5, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
OFUJ	Ofunato	0.73	344	P	Pn	14 36 54.9	0.0
JMK	Ichinoseki	0.79	316	P	Pn	14 36 56.0	+0.3
JMK				eS	Sn	14 37 06.9	+0.1
JOU	Okura	0.99	270	eS	Sn	14 37 11.5	+0.1
JMM	Marumori	1.03	240	P	Pn	14 36 58.8	+0.1
JMM				eS	Sn	14 37 11.8	-0.4
JOM	Ohasama	1.20	336	P	Pn	14 37 01.5	+0.5
JOM				eS	Sn	14 37 16.5	+0.2
MIYJ	Miyakonagasawa	1.20	356	P	Pn	14 37 01.0	0.0
MIYJ				eS	Sn	14 37 15.7	-0.6
JFK	Kawauchi	1.31	220	P	Pn	14 37 03.0	+0.5
JFK				eS	Sn	14 37 19.0	0.0

JMA 07 14:37:38.9±0.1,38°.21N×141°.84E,h65^{km}±3^{km},M4.3, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
JMK	Ichinoseki	0.89	327	P	Pn	14 37 55.8	+0.1
JMM	Marumori	0.90	248	P	Pn	14 37 56.0	+0.2
JMM				eS	Sn	14 38 08.1	-0.2
JOU	Okura	0.94	280	P	Pn	14 37 56.8	+0.4
JOU				eS	Sn	14 38 10.0	+0.7
JOM	Ohasama	1.33	341	eS	Sn	14 38 18.5	+0.1
MIYJ	Miyakonagasawa	1.36	359	eS	Sn	14 38 18.7	-0.5

JMA 07 14:37:52.9±0.1,38°.45N×141°.95E,h57^{km}±2^{km},M4.5, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
OFUJ	Ofunato	0.67	341	P	Pn	14 38 06.8	+0.2
JMK	Ichinoseki	0.76	311	P	Pn	14 38 07.9	+0.2
JMK				eS	Sn	14 38 18.8	+0.3
JOU	Okura	1.01	266	eS	Sn	14 38 24.7	+0.3
JMM	Marumori	1.08	238	eS	Sn	14 38 26.0	0.0
MIYJ	Miyakonagasawa	1.13	355	eS	Sn	14 38 26.3	-0.8
JOM	Ohasama	1.14	334	P	Pn	14 38 13.0	+0.3
JFK	Kawauchi	1.38	219	eS	Sn	14 38 33.5	+0.4

JMA 07 14:40:24.0±0.1,38°.24N×141°.90E,h65^{km}±3^{km},M4.7, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
OFUJ	Ofunato	0.86	348	P	Pn	14 40 40.5	0.0
JMK	Ichinoseki	0.89	323	P	Pn	14 40 41.1	+0.3
JMK				S	Sn	14 40 53.3	0.0
JMM	Marumori	0.95	247	P	Pn	14 40 41.5	-0.1
JMM				S	Sn	14 40 54.3	-0.3
JOU	Okura	0.98	278	P	Pn	14 40 42.3	+0.3
JOU				S	Sn	14 40 55.4	0.0
JFK	Kawauchi	1.19	223	P	Pn	14 40 44.8	0.0
JFK				S	Sn	14 40 59.9	-0.4
JOM	Ohasama	1.32	339	P	Pn	14 40 46.6	+0.2
JOM				eS	Sn	14 41 03.8	+0.6
JYK	Kaneyama	1.38	300	P	Pn	14 40 47.7	+0.4
JYK				eS	Sn	14 41 04.8	+0.1
JFT	Otama	1.43	240	S	Sn	14 41 06.1	+0.2
JYS	Shirataka	1.45	270	P	Pn	14 40 48.6	+0.5
JYS				S	Sn	14 41 07.1	+0.9
JRG	Rokugo	1.52	320	P	Pn	14 40 49.6	+0.5
JRG				eS	Sn	14 41 09.1	+1.1

JMA 07 14:43:04.7±0.1,38°.40N×141°.82E,h61^{km}±2^{km},M3.5, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
OFUJ	Ofunato	0.69	350	P	Pn	14 43 18.9	0.0
JMK	Ichinoseki	0.72	320	P	Pn	14 43 19.4	+0.1
JMK				eS	Sn	14 43 29.7	-0.3
JOU	Okura	0.91	268	P	Pn	14 43 21.8	+0.2
JMM	Marumori	0.97	237	P	Pn	14 43 22.3	-0.1
JMM				eS	Sn	14 43 35.0	-0.4
JYK	Kaneyama	1.25	295	P	Pn	14 43 26.5	+0.4
JFK	Kawauchi	1.27	216	eS	Sn	14 43 42.5	-0.2

JMA 07 14:45:05.6±0.1,38°.34N×141°.87E,h64^{km}±3^{km},M3.5, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
OFUJ	Ofunato	0.76	348	P	Pn	14 45 20.8	0.0
JMK	Ichinoseki	0.80	320	P	Pn	14 45 21.6	+0.4
JMK				eS	Sn	14 45 32.5	-0.2
JOU	Okura	0.95	272	P	Pn	14 45 23.4	+0.2
JOU				S	Sn	14 45 36.7	+0.5
JMM	Marumori	0.97	241	P	Pn	14 45 23.4	0.0
JMM				S	Sn	14 45 36.2	-0.4
JOM	Ohasama	1.22	338	P	Pn	14 45 27.2	+0.6
JOM				eS	Sn	14 45 43.0	+0.6
MIYJ	Miyakonagasawa	1.24	358	P	Pn	14 45 26.9	0.0
MIYJ				eS	Sn	14 45 42.2	-0.6
JYK	Kaneyama	1.32	296	P	Pn	14 45 28.4	+0.5

IDC 07 14:46:16.7±4.0,38°.31N×142°.62E,h0^{km},mb3.9/1, mb1 4.0/4,mb1mx3.7/56,mbtmp3.9/4,ML3.2/3,Error ellipse: s-maj=68.7km s-min=39.7km az=61.0
JMA 07 14:46:25.3±0.1,38°.25N×141°.84E,h57^{km}±3^{km},M4.2
JMA Felt II J1.
ISC 07 14:46:23.5±2.0,38°.21N±0°.05×141°.96E±0°.10,h28^{km}±14^{km}, n14,σ1^{s}10/20,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
OFUJ	Ofunato	0.90	345	P	Pn	14 46 41.3	+0.9
JMK	Ichinoseki	0.95	322	P	Pb	14 46 41.1	-0.2
JMK				eS	Sb	14 46 53.0	-0.4
JMM	Marumori	0.98	250	P	Pb	14 46 42.0	+0.1
JMM				S	Sb	14 46 53.9	-0.6
JOU	Okura	1.03	279	P	Pb	14 46 42.6	-0.2
JOU				eS	Sb	14 46 55.2	-0.8
JFK	Kawauchi	1.20	226	P	Pb	14 46 45.8	+0.2
JFK				S	Sn	14 47 00.2	+0.3
JOM	Ohasama	1.37	338	P	Pn	14 46 47.8	+1.0
JYK	Kaneyama	1.45	300	P	Pn	14 46 48.2	+0.4
JFT	Otama	1.46	242	P	Pn	14 46 49.2	+1.2
JFT				S	Sn	14 47 06.3	+0.1
JYS	Shirataka	1.50	271	P	Pn	14 46 49.1	+0.6
JRG	Rokugo	1.58	319	P	Pn	14 46 50.7	+1.0
JRG				eS	Sn	14 47 09.2	0.0
MJAR	Matsushiro Arr	3.42	242	Pn	Pn	14 47 17.6	+2.6
	3.8nm,0.3s,baz=66,slow=10,SNR=7.8						
JHJ	Hachijo jima 2	5.38	200	Pn	Pn	14 47 43.4	+1.5
	6.4nm,0.3s,baz=40,slow=21,SNR=1.5						
USRK	Ussuriysk Ar.	9.61	312	Pn	Pn	14 48 41.0	+1.2
	0.4nm,0.3s,baz=123,slow=14,SNR=1.3						
WRA	Warramunga Arr	58.28	188	P	P	14 56 14.1	-1.6
	1.1nm,0.7s,baz=2.9,slow=7.0,SNR=1.7						

ISCJB 07 14:47:21.9±0.8,38°.29N±0°.04×141°.97E±0°.08,h70^{km}±5^{km}, mb4.2/14,Error ellipse: s-maj=10.7km s-min=5.5km az=14.8
JMA 07 14:47:23.3±0.1,38°.30N×141°.92E,h58^{km}±4^{km},M4.8
JMA Felt II J1.
IDC 07 14:47:25.1±2.5,38°.26N×141°.86E,h80^{km}±22^{km},mb3.9/12, mb1 4.1/17,mb1mx3.9/58,mbtmp4.3/17,Error ellipse: s-maj=23.0km s-min=15.3km az=80.0
NEIC 07 14:47:25.0±1.9,38°.18N×141°.83E,h83^{km}±16^{km},mb4.7/2, Error ellipse: s-maj=19.1km s-min=12.6km az=66.0
ISC 07 14:47:22.2±1.4,38°.26N±0°.04×142°.03E±0°.08,h59^{km}±11^{km}, n44,σ1^{s}33/52,mb4.3/14,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
OFUJ	Ofunato	0.86	341	P	Pn	14 47 38.7	+0.3
JMK	Ichinoseki	0.93	318	P	Pn	14 47 39.5	+0.2
JMK				eS	Sn	14 47 51.1	-0.8
JMM	Marumori	1.05	248	P	Pn	14 47 41.1	+0.3
JMM				S	Sn	14 47 53.9	-0.7
JOU	Okura	1.08	276	P	Pn	14 47 42.0	+0.8
JOU				eS	Sn	14 47 54.3	-1.0
JFK	Kawauchi	1.28	226	P	Pn	14 47 44.7	+0.8
JFK				eS	Sn	14 48 00.7	+0.6
JOM	Ohasama	1.34	335	P	Pn	14 47 45.1	+0.5
JOM				eS	Sn	14 48 01.0	-0.4
JYK	Kaneyama	1.46	297	P	Pn	14 47 46.3	0.0
JYK				eS	Sn	14 48 03.2	-1.2
JFT	Otama	1.53	241	P	Pn	14 47 48.2	+1.0
JFT				S	Sn	14 48 05.9	-0.2
JYS	Shirataka	1.54	269	S	Sn	14 48 05.9	-0.6
JRG	Rokugo	1.57	317	P	Pn	14 47 48.4	+0.7
MJAR	Matsushiro Arr	3.49	242	P	Pn	14 48 16.1	+2.1
	26nm,0.3s,baz=57,slow=10,SNR=28						
MAJO	Matsushiro	3.49	242	ePn	Pn	14 48 14.1	+0.1
MAJO				eSn	Sn	14 48 55.9	+1.8
MAT	Matsushiro	3.49	242	P	Pn	14 48 15.7	+1.7
MAT				eS	Sn	14 48 56.6	+2.5
JHJ2	Mitsune	5.45	200	ePn	Pn	14 48 39.5	-1.2
JHJ2				eSn	Sn	14 49 40.7	-1.4
JHJ	Hachijo jima 2	5.45	200	P	Pn	14 48 41.2	+0.4
	61nm,0.3s,baz=141,slow=22,SNR=14						
JHJ				S	Sn	14 49 39.5	-2.6
	99nm,0.3s,baz=53,slow=20,SNR=9.1						
USRK	Ussuriysk Ar.	9.61	311	P	Pn	14 49 37.9	+0.3
	2.5nm,0.3s,baz=124,slow=14,SNR=24						
JNU	Nakatsue	10.41	244	P	Pn	14 49 50.6	+1.9
	0.4nm,0.3s,baz=232,slow=13,SNR=4.3						
KSRS	Korea Array	11.18	270	P	Pn	14 50 01.8	+2.6
	0.4nm,0.3s,baz=76,slow=13,SNR=4.2						
KSAR	Wonju Array Be	11.21	270	P	Pn	14 50 01.8	+2.2
JOW	Kunigami	16.24	229	ePn	Pn	14 51 03.6	-2.8
BJT	Baijiatuau	20.11	283	eP	P	14 51 49.2	-1.9
ULN	Ulaanbaatar	27.09	302	eP	P	14 52 59.6	+0.2
SONM	Songino Array	27.53	302	P	P	14 53 02.9	-0.4
	4.6nm,0.5s,baz=112,slow=7.7,SNR=13						
ZALV	Zalesovo Beam	41.46	311	P	P	14 55 02.8	-0.2
	12nm,0.5s,baz=87,slow=7.8,SNR=28						
CMAR	Chiang Mai Arr	42.29	254	P	P	14 55 09.5	-0.7
	1.0nm,0.8s,baz=33,slow=6.9,SNR=3.5						
MKAR	Makanchi Array	43.89	301	P	P	14 55 23.3	+0.5
	8.9nm,0.7s,baz=86,slow=9.2,SNR=18						
TAPN	Taplejung	46.35	273	eP	P	14 55 39.9	-3.0
	21nm,0.4s						
RAMN	Ramite	47.41	273	eP	P	14 55 47.4	-3.7
	39nm,0.8s						
GUN	Gumba	47.53	275	eP	P	14 55 51.9	-0.2
	31nm,0.4s						
KKN	Kakani	48.05	275	eP	P	14 55 56.3	+0.3
	35nm,0.7s						
ILAR	Eielson Array	48.20	33	P	P	14 55 57.8	+1.5
	1.1nm,0.8s,baz=270,slow=6.8,SNR=3.5						
KOLN	Koldanda	49.38	276	eP	P	14 56 07.6	+1.4
	9.3nm,0.3s						
TKM2	Tokmak 2	49.48	298	eP	P	14 56 05.0	-1.8
	5.2nm,0.4s						
PYUN	Piuthan	49.70	277	eP	P	14 56 11.9	+3.3
	92nm,1.1s						
EKS2	Erkin-Say	50.83	298	P	P	14 56 11.8	-5.1
	3.4nm,0.5s						
ABKAR	Akbulak array	57.52	310	eP	P	14 57 04.3	-1.0
WRAB	Tennant Creek	58.34	188	P	P	14 57 12.3	+1.1
WRA	Warramunga Arr	58.34	189	P	P	14 57 11.3	0.0
	12nm,1.0s,baz=5.4,slow=6.9,SNR=7.4						
ASAR	Alice Springs	62.07	188	P	P	14 57 37.4	+0.7
	0.7nm,0.7s,baz=11,slow=4.0,SNR=2.6						
ARCES	ARCESS Array B	63.02	339	P	P	14 57 42.4	-0.1
	1.1nm,0.5s,baz=61,slow=8.5,SNR=6.9						
FINES	FINESS Array B	67.95	332	P	P	14 58 14.2	-0.2
	3.9nm,0.7s,baz=46,slow=8.0,SNR=5.9						
NOA	NORSAR Array B	73.24	337	P	P	14 58 47.4	+0.7
	3.1nm,0.8s,baz=37,slow=6.0,SNR=3.5						
AKASG	Malin Array Be	73.62	322	P	P	14 58 48.5	-0.5
	1.8nm,0.5s,baz=44,slow=6.1,SNR=9.8						
PDAR	Pinedale Array	76.46	46	P	P	14 59 07.5	+1.6
	0.6nm,0.6s,baz=248,slow=4.5,SNR=3.7						

ISK 07 14:49:04.4,40°.75N×34°.91E,h5^{km},MD2.7
DDA 07 14:49:05.9,40°.73N×34°.91E,h7^{km},Md2.6
CSEM 07 14:49:05.7±0.1,40°.74N×34°.91E,h8^{km},MD2.6,Error ellipse: s-maj=3.5km s-min=3.0km az=103.0
ISC 07 14:49:06.2±1.1,40°.74N±0°.02×34°.91E±0°.03,h10^{km}±10^{km}, n27,σ0^{s}70/38,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
COAL	Corum-Alaca	0.48	173	i P	Pg	14 49 14.9	-0.7
COAL				i S	Sg	14 49 22.9	+0.8
COAL	Corum-Alaca	0.48	173	P	Pg	14 49 14.9	-0.7
COAL				S	Sg	14 49 22.9	+0.8
CORM	Corum	0.60	201	ePG	Pg	14 49 17.4	-0.4
CORM				eSG	Sb	14 49 26.9	-0.4
CORM	Corum	0.60	201	ePg	Pg	14 49 17.4	-0.4
CORM				eSg	Sb	14 49 26.9	-0.4
HAVZ	Havza	0.70	61	i P	Pg	14 49 19.2	-0.5
HAVZ				i S	Sb	14 49 29.5	-0.7
HAVZ				i S	Sg	14 49 30.4	+1.6
HAVZ	Havza	0.70	61	P	Pg	14 49 19.2	-0.5
HAVZ				S	Sb	14 49 29.5	-0.7
TOS	Tosya	0.74	294	ePG	Pg	14 49 19.5	-0.9
TOS	Tosya	0.74	294	ePg	Pg	14 49 19.5	-0.9
BYBT	Boyabat	0.74	352	ePG	Pg	14 49 19.3	-1.1
BYBT	Boyabat	0.74	352	ePg	Pg	14 49 19.3	-1.1
KVT	Kavak	0.93	68	ePG	Pg	14 49 23.3	-0.7
KVT	Kavak	0.93	68	ePg	Pg	14 49 23.3	-0.7
DIKM	Dikmen	0.95	16	ePG	Pg	14 49 23.9	-0.5
DIKM	Dikmen	0.95	16	ePg	Pg	14 49 23.9	-0.5
ILGA	Ilgaz	0.96	290	i P	Pg	14 49 24.2	-0.4
ILGA				i S	Sb	14 49 38.6	+0.7
ILGA	Ilgaz	0.96	290	P	Pg	14 49 24.2	-0.4
ILGA				S	Sb	14 49 38.6	+0.7
CANT	Cankiri	0.99	263	ePG	Pg	14 49 24.5	-0.7
YOZ	Yozgat	1.14	164	ePN	Pg	14 49 27.4	-0.6
YOZ	Yozgat	1.14	164	ePn	Pg	14 49 27.4	-0.6
CDAG	Cicekdag	1.19	201	i P	Pb	14 49 28.3	-0.5
CDAG				i S	Sn	14 49 45.2	+0.1
CDAG	Cicekdag	1.19	201	P	Pb	14 49 28.3	-0.5
CDAG				S	Sn	14 49 45.2	+0.1
SNOP	Sinop	1.30	10	ePN	Pn	14 49 30.5	+0.1
SNOP	Sinop	1.30	10	ePn	Pn	14 49 30.5	+0.1
BZK	Bozkurt	1.40	331	ePN	Pb	14 49 32.4	0.0
BZK	Bozkurt	1.40	331	ePn	Pb	14 49 32.4	0.0
SVSK	Karacayir	1.79	117	ePN	Pn	14 49 37.7	+0.6
SVSK	Karacayir	1.79	117	ePn	Pn	14 49 37.7	+0.6

ISCJB 07 14:49:34.6±0.6,38°.13N±0°.03×141°.80E±0°.07,h69^{km}±4^{km}, mb4.5/36,Error ellipse: s-maj=8.9km s-min=4.5km az=11.7
JMA 07 14:49:35.1±0.1,38°.14N×141°.82E,h59^{km}±3^{km},M4.6
JMA Felt III J1.
NEIC 07 14:49:36.8±0.7,38°.12N×141°.74E,h74^{km}±7^{km},mb4.6/5, Error ellipse: s-maj=7.1km s-min=5.5km az=112.0
NEIC Recorded [3 JMA] in Fukushima and Miyagi.
IDC 07 14:49:37.1±1.9,38°.16N×141°.74E,h74^{km}±17^{km},mb4.3/28, mb1 4.4/34,mb1mx4.3/57,mbtmp4.6/34,Error ellipse: s-maj=13.6km s-min=9.9km az=106.0
ISC 07 14:49:35.3±1.1,38°.14N±0°.04×141°.83E±0°.07,h61^{km}±10^{km}, n70,σ0^{s}90/79,mb4.6/36,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
JMM	Marumori	0.86	252	P	Pn	14 49 51.1	-0.5
JMM				S	Sn	14 50 02.8	-0.8
JMK	Ichinoseki	0.94	330	P	Pn	14 49 52.4	-0.2
JMK				S	Sn	14 50 04.5	-0.8
JOU	Okura	0.94	284	P	Pn	14 49 52.5	-0.1
JOU				S	Sn	14 50 04.9	-0.6
JFK	Kawauchi	1.08	225	P	Pn	14 49 54.3	-0.2
JFK				eS	Sn	14 50 08.2	-0.5
JFT	Otama	1.33	243	P	Pn	14 49 58.2	+0.4
JFT				S	Sn	14 50 14.8	+0.2
JYK	Kaneyama	1.39	304	P	Pn	14 49 58.3	-0.2
JYK				eS	Sn	14 50 15.8	-0.1
JYS	Shirataka	1.39	274	P	Pn	14 49 58.7	+0.2
JYS				S	Sn	14 50 16.2	+0.2
JOM	Ohasama	1.39	343	P	Pn	14 49 58.5	-0.1
JOM				S	Sn	14 50 15.9	-0.2
JRG	Rokugo	1.56	324	P	Pn	14 50 01.1	+0.3
JRG				eS	Sn	14 50 21.1	+1.0
JYA	Atsumi	1.72	286	P	Pn	14 50 03.0	0.0
MJAR	Matsushiro Arr	3.29	242	P	Pn	14 50 25.4	+1.0
	27nm,0.3s,baz=63,slow=12,SNR=12						
MAJO	Matsushiro	3.29	242	ePn	Pn	14 50 24.4	-0.1
MAJO				eSn	Sn	14 51 01.5	-1.0
MAT	Matsushiro	3.29	242	P	Pn	14 50 26.1	+1.6
MAT				eS	Sn	14 51 05.8	+3.4
JHJ2	Mitsune	5.28	199	ePn	Pn	14 50 51.5	-0.1
JHJ2				eSn	Sn	14 51 52.2	+1.1
JHJ	Hachijo jima 2	5.28	199	P	Pn	14 50 52.7	+1.1
	38nm,0.3s,baz=90,slow=20,SNR=3.4						
JHJ				S	Sn	14 51 48.7	-2.4
	110nm,0.3s,baz=73,slow=19,SNR=10						
USRK	Ussuriysk Ar.	9.57	312	P	Pn	14 51 51.1	+0.8
	2.3nm,0.3s,baz=116,slow=14,SNR=41						
JNU	Nakatsue	10.22	244	P	Pn	14 51 59.9	+0.7
	0.5nm,0.3s,baz=346,slow=4.2,SNR=4.0						
KSRS	Korea Array	11.02	271	P	Pn	14 52 13.2	+3.0
	2.1nm,0.3s,baz=80,slow=14,SNR=18						
KSAR	Wonju Array Be	11.06	271	P	Pn	14 52 13.2	+2.6
KLR	Kul'dur	13.25	330	P	P	14 52 47.9	-0.4
	0.6nm,0.3s,baz=168,slow=6.0,SNR=4.3						
JOW	Kunigami	16.04	229	Pn	Pn	14 53 16.1	-0.9
PETK	Petropavlovsk-	18.57	31	P	Pn	14 53 48.1	+0.2
	0.1nm,0.3s,baz=206,slow=6.3,SNR=3.2						
MA2	Magadan	22.20	12	P	P	14 54 25.8	-0.6
	25nm,0.9s,baz=225,slow=9.6,SNR=8.7						
YAK	Yakutsk	25.07	346	P	P	14 54 53.4	-0.3
	1.0nm,0.3s,baz=329,slow=19,SNR=4.5						
SEY	Seymchan	25.64	11	P	P	14 55 00.0	+1.1
	28nm,0.9s,baz=191,slow=9.5,SNR=10.0						
SONM	Songino Array	27.46	302	P	P	14 55 15.5	-0.1
	4.3nm,0.9s,baz=103,slow=8.2,SNR=5.8						
ENH	Enshi	27.77	263	eP	P	14 55 16.8	-1.6
	29nm,0.6s						
H11N2	WAKE ISLAND Hy	28.45	123	T	T	15 25 45.8	
	baz=316,slow=75,SNR=8.5						
H11N1	WAKE ISLAND Hy	28.46	123	T	T	15 25 48.5	
	baz=316,slow=75,SNR=10						
H11N3	WAKE ISLAND Hy	28.47	123	T	T	15 25 51.3	
	baz=316,slow=75,SNR=7.8						
H11S1	WAKE ISLAND Hy	29.21	125	T	T	15 26 40.6	
	baz=318,slow=76,SNR=4.7						
H11S3	WAKE ISLAND Hy	29.21	125	T	T	15 26 50.7	
	baz=318,slow=76,SNR=4.7						
H11S2	WAKE ISLAND Hy	29.22	125	T	T	15 26 58.4	
	baz=318,slow=76,SNR=5.7						
ZALV	Zalesovo Beam	41.42	311	P	P	14 57 15.4	-0.1
	4.4nm,0.4s,baz=83,slow=7.0,SNR=9.9						
ZALV				PcP	PcP	14 59 12.1	-0.3
	2.0nm,0.3s,baz=109,slow=3.1,SNR=5.4						

Code	Station Name	Δ°	AZ°	Op	ISC	Time	Res
CMAR	**Chiang Mai Arr**	**42.10**	**254**	P	**P**	**14 57 21.8**	**+0.3**
	1.0nm,0.6s,baz=46,slow=7.7,SNR=6.5						
CMAR				PcP	**PcP**	**14 59 15.7**	**+0.4**
	0.9nm,0.5s,baz=32,slow=1.7,SNR=4.8						
MKAR	**Makanchi Array**	**43.82**	**301**	P	**P**	**14 57 35.3**	**+0.2**
	4.6nm,0.7s,baz=81,slow=10,SNR=7.3						
ILAR	**Eielson Array**	**48.39**	**33**	P	**P**	**14 58 11.2**	**+0.4**
	5.3nm,0.7s,baz=268,slow=6.5,SNR=27						
TKM2	**Tokmak 2**	**49.40**	**298**	*e*P	**P**	**14 58 17.9**	**-1.1**
	2.8nm,0.5s						
EKS2	**Erkin-Say**	**50.75**	**298**	P	**P**	**14 58 29.0**	**-0.2**
	2.5nm,0.5s						
INK	**Inuvik**	**53.26**	**28**	P	**P**	**14 58 47.9**	**+0.7**
	6.6nm,0.8s,baz=294,slow=5.5,SNR=7.8						
ABKAR	**Akbulak array**	**57.48**	**310**	*e*P	**P**	**14 59 16.2**	**-1.7**
	4.3nm,0.6s						
FITZ	**Fitzroy Crossi**	**57.97**	**198**	P	**P**	**14 59 22.0**	**+0.4**
	2.2nm,0.5s,baz=35,slow=8.5,SNR=4.4						
WRAB	**Tennant Creek**	**58.19**	**188**	*e*P	**P**	**14 59 22.6**	**-0.5**
	2.8nm,0.7s						
WRA	**Warramunga Arr**	**58.20**	**188**	P	**P**	**14 59 22.8**	**-0.4**
	6.1nm,0.5s,baz=5.9,slow=7.2,SNR=26						
SPITS	**Spitsbergen Ar**	**59.50**	**349**	P	**P**	**14 59 31.6**	**0.0**
	1.3nm,0.4s,baz=67,slow=6.4,SNR=12						
RES	**Resolute Bay**	**61.45**	**15**	P	**P**	**14 59 44.5**	**-0.3**
	17nm,1.0s,baz=310,slow=6.0,SNR=18						
ASAR	**Alice Springs**	**61.93**	**188**	P	**P**	**14 59 48.8**	**+0.1**
	4.9nm,0.7s,baz=9.1,slow=6.3,SNR=19						
YKA	**Yellowknife Ar**	**62.69**	**31**	P	**P**	**14 59 53.5**	**+0.2**
	3.5nm,0.8s,baz=302,slow=6.6,SNR=7.6						
ARCES	**ARCESS Array B**	**63.08**	**339**	P	**P**	**14 59 55.6**	**-0.2**
	5.2nm,0.6s,baz=51,slow=8.0,SNR=27						
FINES	**FINESS Array B**	**67.99**	**332**	P	**P**	**15 00 27.2**	**-0.4**
	14nm,0.7s,baz=41,slow=8.7,SNR=22						
YBH	**Yreka Blue Hor**	**69.41**	**53**	P	**P**	**15 00 37.9**	**+1.0**
	3.4nm,0.8s,baz=342,slow=3.2,SNR=4.3						
STKA	**Stephens Creek**	**69.66**	**180**	P	**P**	**15 00 38.2**	**0.0**
	2.3nm,0.6s,baz=330,slow=11,SNR=6.1						
KBZ	**Khabaz**	**70.43**	**311**	P	**P**	**15 00 43.0**	**0.0**
	4.4nm,0.8s,baz=78,slow=4.0,SNR=6.0						
NB2	**NORSAR Subarra**	**73.29**	**337**	P	**P**	**15 00 59.4**	**-0.5**
	comp=Z,4.1nm,0.8s,baz=37,slow=5.9						
NOA	**NORSAR Array B**	**73.29**	**337**	P	**P**	**15 00 59.8**	**-0.1**
	comp=Z,6.6nm,0.8s,baz=38,slow=5.9,SNR=11						
AKASG	**Malin Array Be**	**73.62**	**322**	P	**P**	**15 01 01.4**	**-0.5**
	comp=Z,7.8nm,0.6s,baz=45,slow=5.9,SNR=21						
NVAR	**Mina Array Bea**	**74.07**	**54**	P	**P**	**15 01 06.3**	**+1.2**
	comp=Z,4.8nm,0.8s,baz=286,slow=5.4,SNR=9.9						
PDAR	**Pinedale Array**	**76.66**	**46**	P	**P**	**15 01 20.4**	**+0.5**
	comp=Z,5.4nm,0.7s,baz=280,slow=1.7,SNR=19						
BRTR	**Keskin Array B**	**78.36**	**312**	P	**P**	**15 01 29.2**	**-0.2**
	comp=Z,1.4nm,0.4s,baz=116,slow=3.4,SNR=5.4						
DPC	**Dobruska-Polom**	**79.69**	**328**	*e*P	**P**	**15 01 36.8**	**+0.5**
BRG	**Berggiesshubel**	**80.27**	**330**	*e*P	**P**	**15 01 39.1**	**-0.2**
	comp=Z,13nm,1.3s						
CLL	**Collm**	**80.30**	**330**	*i* P	**P**	**15 01 39.6**	**+0.1**
	comp=Z,13nm,1.0s						
GOPC	**GO Pecny, Ondr**	**80.67**	**328**	*e*P	**P**	**15 01 41.6**	**+0.1**
KHC	**Kasperske Hory**	**81.77**	**329**	*e*P	**P**	**15 01 47.8**	**+0.4**
GERES	**GERESS Array B**	**81.94**	**328**	P	**P**	**15 01 48.4**	**0.0**
	comp=Z,1.9nm,0.6s,baz=33,slow=5.4,SNR=5.1						
ANMO	**Albuquerque**	**83.63**	**50**	P	**P**	**15 01 58.5**	**+1.0**
	comp=Z,4.5nm,0.9s,baz=308,slow=6.7,SNR=4.5						
DAVOX	**Davos/Dischmat**	**85.15**	**329**	P	**P**	**15 02 05.0**	**0.0**
	comp=Z,6.2nm,0.8s,baz=61,slow=6.2,SNR=4.7						
TXAR	**Lajitas Array**	**89.19**	**53**	P	**P**	**15 02 25.0**	**+0.3**
	comp=Z,4.4nm,0.7s,baz=296,slow=2.9,SNR=12						
LPAZ	**La Paz**	**145.84**	**59**	PKPbc	**PKPbc**	**15 09 09.0**	**+0.1**
	comp=Z,9.9nm,0.5s,baz=3.9,slow=2.2,SNR=27						
SIV	**San Ignacio**	**150.11**	**49**	PKPbc	**PKPbc**	**15 09 19.2**	**-0.4**
	comp=Z,2.7nm,0.5s,baz=312,slow=3.9,SNR=5.5						

JMA 07 14:51:38.8±0.1**,38°.38N**×**141°.86E,h60**km±3km**,M4.2, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**0.71**	**348**	P	Pn	14 51 53.2	0.0
JMK	**Ichinoseki**	**0.76**	**319**	P	Pn	14 51 54.0	+0.2
JMK				S	Sn	14 52 04.6	-0.1
JOU	**Okura**	**0.94**	**269**	P	Pn	14 51 56.2	+0.1
JOU				*e*S	Sn	14 52 08.9	+0.1
JMM	**Marumori**	**0.99**	**239**	P	Pn	14 51 56.6	0.0
JMM				S	Sn	14 52 09.4	-0.4
JOM	**Ohasama**	**1.18**	**338**	P	Pn	14 51 59.5	+0.3
JOM				*e*S	Sn	14 52 14.5	+0.1
JFK	**Kawauchi**	**1.28**	**218**	P	Pn	14 52 00.8	+0.3
JFK				*e*S	Sn	14 52 16.6	-0.2
JYK	**Kaneyama**	**1.29**	**295**	P	Pn	14 52 01.0	+0.3
JRG	**Rokugo**	**1.40**	**317**	P	Pn	14 52 02.7	+0.6
JYS	**Shirataka**	**1.42**	**264**	P	Pn	14 52 02.9	+0.5
JYS				*e*S	Sn	14 52 20.7	+0.5
JFT	**Otama**	**1.48**	**235**	P	Pn	14 52 04.0	+0.8
JFT				S	Sn	14 52 22.0	+0.4
MAT	**Matsushiro**	**3.44**	**239**	P	Pn	14 52 32.0	+2.1
MAT				S	Sn	14 53 13.6	+4.2

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*ISCJB **07** 14:53:13.3±0.8, 38°.38N±0°.04×141°.92E±0°.09, h65km±5km, mb4.1/17, Error ellipse: s-maj=11.5km s-min=5.7km az=16.1*
*JMA **07** 14:53:13.8±0.2, 38°.36N×141°.90E, h59km±4km, M4.6*
JMA Felt II J1.
*NEIC **07** 14:53:16.5±1.1, 38°.33N×141°.85E, h80km±10km, mb4.2/1, Error ellipse: s-maj=11.2km s-min=8.2km az=64.0*
*IDC **07** 14:53:17.0±2.6, 38°.39N×141°.79E, h81km±23km, mb3.9/16, mb1 4.1/20, mb1mx3.8/57, mbtmp4.2/20, Error ellipse: s-maj=19.6km s-min=15.0km az=82.0*
ISC 07 14:53:14.3±1.3**,38°.39N**±0°.05×**141°.92E**±0°.09**,h58**km±11km**, n47,**σ**0**^{s}**83**/49**,mb4.2**/17**,Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**0.72**	**344**	P	**Pn**	**14 53 28.7**	**0.0**
JMK	**Ichinoseki**	**0.79**	**316**	P	**Pn**	**14 53 29.5**	**0.0**
JMK				S	**Sn**	**14 53 40.0**	**-0.7**
JOU	**Okura**	**0.98**	**269**	P	**Pn**	**14 53 31.8**	**-0.3**
JOU				S	**Sn**	**14 53 44.5**	**-0.8**
JMM	**Marumori**	**1.03**	**240**	P	**Pn**	**14 53 31.7**	**-0.9**
JMM				*e*S	**Sn**	**14 53 45.1**	**-1.1**
JOM	**Ohasama**	**1.19**	**336**	P	**Pn**	**14 53 34.9**	**+0.1**
JOM				*e*S	**Sn**	**14 53 49.9**	**-0.2**
JFK	**Kawauchi**	**1.31**	**219**	P	**Pn**	**14 53 35.4**	**-1.1**
JFK				S	**Sn**	**14 53 52.5**	**-0.5**
JYK	**Kaneyama**	**1.33**	**294**	P	**Pn**	**14 53 36.6**	**-0.1**
JRG	**Rokugo**	**1.42**	**316**	P	**Pn**	**14 53 37.8**	**-0.1**
JYS	**Shirataka**	**1.47**	**264**	P	**Pn**	**14 53 38.5**	**0.0**
JYS				*e*S	**Sn**	**14 53 56.7**	**0.0**
JFT	**Otama**	**1.52**	**236**	P	**Pn**	**14 53 38.9**	**-0.4**
MAJO	**Matsushiro**	**3.48**	**239**	*e*Pn	**Pn**	**14 54 07.5**	**+1.5**
MAT	**Matsushiro**	**3.48**	**239**	P	**Pn**	**14 54 07.9**	**+1.9**
MAT				S	**Sn**	**14 54 47.1**	**+1.2**
MJAR	**Matsushiro Arr**	**3.48**	**239**	P	**Pn**	**14 54 07.5**	**+1.5**
	16nm,0.3s,baz=35,slow=13,SNR=8.6						
JHJ2	**Mitsune**	**5.53**	**199**	*e*Pn	**Pn**	**14 54 33.7**	**-0.4**
USRK	**Ussuriysk Ar.**	**9.46**	**311**	P	**Pn**	**14 55 28.4**	**+0.6**
	2.6nm,0.3s,baz=121,slow=14,SNR=25						
JNU	**Nakatsue**	**10.39**	**243**	P	**Pn**	**14 55 41.9**	**+1.3**
	0.5nm,0.3s,baz=101,slow=4.7,SNR=3.5						
KSRS	**Korea Array**	**11.10**	**270**	P	Pn	14 55 53.5	+3.3
	1.4nm,0.3s,baz=78,slow=14,SNR=13						
KSAR	**Wonju Array Be**	**11.13**	**269**	P	**Pn**	**14 55 53.5**	**+2.9**
JOW	**Kunigami**	**16.25**	**229**	*e*Pn	**Pn**	**14 56 58.6**	**-0.3**
SONM	**Songino Array**	**27.39**	**302**	P	**P**	**14 58 54.2**	**-0.1**
	0.7nm,0.5s,baz=86,slow=7.4,SNR=3.8						
H11N2	**WAKE ISLAND Hy**	**28.53**	**124**	T	T	15 29 25.0	
	baz=316						
H11N1	**WAKE ISLAND Hy**	**28.54**	**124**	T	T	15 29 25.4	
	baz=316						
H11N3	**WAKE ISLAND Hy**	**28.55**	**124**	T	T	15 29 26.1	
	baz=316						
H11S1	**WAKE ISLAND Hy**	**29.29**	**126**	T	T	15 30 22.1	
	baz=318						
H11S3	**WAKE ISLAND Hy**	**29.29**	**126**	T	T	15 30 22.2	
	baz=318,slow=74						
H11S2	**WAKE ISLAND Hy**	**29.30**	**126**	T	T	15 30 24.1	
	baz=318,slow=74						
ZALV	**Zalesovo Beam**	**41.31**	**311**	P	**P**	**15 00 53.1**	**-0.8**
	2.5nm,0.4s,baz=85,slow=7.1,SNR=9.0						
ZALV				PcP	**PcP**	**15 02 50.8**	**-0.7**
	3.2nm,0.8s,baz=70,slow=2.8,SNR=3.8						
MKAR	**Makanchi Array**	**43.75**	**301**	P	**P**	**15 01 13.4**	**-0.5**
	0.9nm,0.5s,baz=84,slow=10,SNR=8.8						
KURK	**Kurchatov**	**45.42**	**307**	P	**P**	**15 01 27.1**	**-0.1**
KURBB	**Kurchatov Arra**	**45.50**	**307**	P	**P**	**15 01 27.1**	**-0.6**
	9.7nm,0.7s,baz=81,slow=7.9,SNR=5.6						
ILAR	**Eielson Array**	**48.14**	**33**	P	**P**	**15 01 48.7**	**+0.5**
	0.9nm,0.7s,baz=270,slow=7.0,SNR=7.4						
TKM2	**Tokmak 2**	**49.35**	**298**	*e*P	**P**	**15 01 57.6**	**-0.4**
	1.2nm,0.4s						
BVAR	**Borovoye Array**	**49.97**	**312**	P	**P**	**15 02 01.8**	**-0.5**
	0.9nm,0.5s,baz=65,slow=7.2,SNR=2.7						
BVAR				PcP	**PcP**	**15 03 21.5**	**-0.1**
	3.2nm,0.7s,baz=92,slow=3.4,SNR=5.9						
ABKAR	**Akbulak array**	**57.38**	**310**	*e*P	**P**	**15 02 55.6**	**-0.9**
WRAB	**Tennant Creek**	**58.44**	**188**	P	**P**	**15 03 03.9**	**-0.3**
WRA	**Warramunga Arr**	**58.45**	**188**	P	**P**	**15 03 03.8**	**-0.5**
	5.3nm,0.5s,baz=6.0,slow=7.2,SNR=22						
RES	**Resolute Bay**	**61.19**	**15**	P	**P**	**15 03 22.0**	**-0.5**
	2.3nm,0.5s,baz=292,slow=6.4,SNR=7.1						
ASAR	**Alice Springs**	**62.18**	**188**	P	**P**	**15 03 29.8**	**+0.1**
	2.0nm,0.8s,baz=15,slow=12,SNR=8.5						
YKA	**Yellowknife Ar**	**62.44**	**31**	P	**P**	**15 03 31.3**	**+0.4**
	0.6nm,0.5s,baz=298,slow=5.6,SNR=4.4						
ARCES	**ARCESS Array B**	**62.87**	**339**	P	**P**	**15 03 33.6**	**-0.2**
	0.7nm,0.4s,baz=45,slow=5.8,SNR=6.7						
NB2	**NORSAR Subarra**	**73.09**	**337**	P	**P**	**15 04 37.6**	**-0.5**
	comp=Z,2.1nm,0.6s,baz=38,slow=6.2						
NOA	**NORSAR Array B**	**73.09**	**337**	P	**P**	**15 04 37.9**	**-0.2**
	comp=Z,4.1nm,0.8s,baz=38,slow=6.0,SNR=7.3						
AKASG	**Malin Array Be**	**73.47**	**322**	P	**P**	**15 04 40.5**	**0.0**
	comp=Z,1.3nm,0.4s,baz=45,slow=6.1,SNR=4.6						
PDAR	**Pinedale Array**	**76.44**	**46**	P	**P**	**15 04 58.9**	**+0.8**
	comp=Z,1.7nm,0.6s,baz=318,slow=1.2,SNR=5.2						
GERES	**GERESS Array B**	**81.77**	**328**	P	**P**	**15 05 26.5**	**-0.3**
	comp=Z,0.7nm,0.4s,baz=44,slow=7.2,SNR=2.8						
TXAR	**Lajitas Array**	**88.98**	**53**	P	**P**	**15 06 03.9**	**+0.8**
	comp=Z,1.3nm,0.7s,baz=299,slow=3.7,SNR=4.2						
LPAZ	**La Paz**	**145.66**	**58**	PKPbc	**PKPbc**	**15 12 47.6**	**-0.1**
	comp=Z,2.6nm,0.6s,baz=11,slow=4.8,SNR=6.4						

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*JMA **07** 14:57:51.3±0.1, 38°.47N×141°.94E, h58km±2km, M3.6*
*IDC **07** 14:57:59.8±2.1, 37°.16N×142°.89E, h0km, mb4.0/4, mb1 3.9/8, mb1mx3.6/61, mbtmp3.9/8, ML3.3/4, Error ellipse: s-maj=48.4km s-min=24.2km az=70.0*
ISC 07 14:57:39.9±1.8**,38°.16N**±0°.05×**142°.46E**±0°.09**,h14**km**,n12, σ1**^{s}**71**/15**,Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**1.11**	**326**	P	Pg	14 58 04.9	+3.6
JMK	**Ichinoseki**	**1.25**	**310**	P	**Pg**	**14 58 06.2**	**+2.1**
JMK				*e*S	**Sb**	**14 58 16.7**	**-2.7**
JMM	**Marumori**	**1.35**	**258**	P	Pg	14 58 10.3	+4.5
JMM				*e*S	**Sg**	**14 58 24.0**	**+0.7**
JOU	**Okura**	**1.43**	**279**	P	**Pg**	**14 58 09.6**	**+2.2**
JOU				*e*S	**Sn**	**14 58 23.1**	**-0.9**
JFK	**Kawauchi**	**1.48**	**238**	P	Pg	14 58 14.8	+6.4
MIYJ	**Miyakonagasawa**	**1.50**	**341**	P	**Pg**	**14 58 10.9**	**+2.1**
MIYJ				*e*S	**Sn**	**14 58 24.7**	**-1.2**
JOM	**Ohasama**	**1.60**	**326**	P	**Pg**	**14 58 11.3**	**+0.7**
JOM				*e*S	**Sn**	**14 58 26.1**	**-2.1**
JYK	**Kaneyama**	**1.81**	**295**	P	**Pb**	**14 58 13.9**	**+1.0**
JYS	**Shirataka**	**1.89**	**273**	P	**Pg**	**14 58 16.5**	**+0.4**
MJAR	**Matsushiro Arr**	**3.75**	**246**	Pn	Pg	14 58 58.8	+7.0
	3.6nm,0.3s,baz=86,slow=15,SNR=12						
MAT	**Matsushiro**	**3.75**	**246**	P	**Pb**	**14 58 45.6**	**-0.3**
MAT				*e*S	**Sb**	**14 59 30.2**	**-1.0**
JHJ	**Hachijo jima 2**	**5.48**	**204**	Pn	**Pb**	**14 59 13.9**	**-1.5**
	14nm,0.3s,baz=105,slow=19,SNR=5.4						
JHJ				Sn	**Sn**	**15 00 05.3**	**+1.4**
	15nm,0.3s,baz=287,slow=19,SNR=3.2						

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*ISCJB **07** 14:58:18.5±1.4, 38°.32N±0°.06×141°.9E±0°.1, h74km±7km, mb4.0/3, Error ellipse: s-maj=19.7km s-min=7.1km az=25.7*
*JMA **07** 14:58:19.5±0.1, 38°.32N×141°.89E, h64km±2km, M4.0*
JMA Felt I J1.
ISC 07 14:58:18.9±2.0**,38°.30N**±0°.08×**142°.0E**±0°.1**,h62**km±14km**, n14,σ0**^{s}**66**/17**,mb4.0**/3**,Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**0.81**	**344**	P	**Pn**	**14 58 34.9**	**+0.2**
JMK	**Ichinoseki**	**0.87**	**319**	P	**Pn**	**14 58 35.7**	**+0.3**
JMK				S	**Sn**	**14 58 47.1**	**-0.5**
JMM	**Marumori**	**1.02**	**245**	P	**Pn**	**14 58 37.5**	**+0.3**
JMM				S	**Sn**	**14 58 50.3**	**-0.5**
JOU	**Okura**	**1.02**	**274**	S	**Sn**	**14 58 50.5**	**-0.5**
JFK	**Kawauchi**	**1.27**	**223**	*e*S	**Sn**	**14 58 56.8**	**+0.1**
MIYJ	**Miyakonagasawa**	**1.28**	**355**	P	**Pn**	**14 58 41.1**	**+0.4**
MIYJ				*e*S	**Sn**	**14 58 56.4**	**-0.6**
JOM	**Ohasama**	**1.28**	**336**	P	**Pn**	**14 58 41.2**	**+0.5**
JOM				S	**Sn**	**14 58 57.1**	**0.0**
JYK	**Kaneyama**	**1.40**	**297**	P	**Pn**	**14 58 42.4**	**+0.1**
JYS	**Shirataka**	**1.50**	**268**	P	**Pn**	**14 58 44.0**	**+0.5**
JYS				S	**Sn**	**14 59 02.2**	**+0.1**
USRK	**Ussuriysk Ar.**	**9.54**	**311**	Pn	**Pn**	**15 00 34.6**	**+1.1**
	0.6nm,0.3s,baz=119,slow=14,SNR=9.9						
KSRS	**Korea Array**	**11.13**	**270**	Pn	Pn	15 00 51.7	-3.5
	0.2nm,0.3s,baz=81,slow=14,SNR=3.0						
ZALV	**Zalesovo Beam**	**41.40**	**311**	P	**P**	**15 05 59.6**	**+0.8**
	1.3nm,0.5s,baz=93,slow=9.4,SNR=4.9						
MKAR	**Makanchi Array**	**43.83**	**301**	P	P	15 06 16.7	-2.0
	1.1nm,0.7s,baz=91,slow=7.6,SNR=5.3						
KURBB	**Kurchatov Arra**	**45.58**	**307**	P	**P**	**15 06 31.1**	**-1.4**
	1.9nm,0.3s,baz=81,slow=8.1,SNR=2.5						

JMA 07 14:58:54.6±0.1**,30°.54N**×**131°.24E,h29**km±1km**,M3.2, Kyushu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
JTN	**Tanegashima 3**	**0.25**	**297**	P	Pb	14 59 01.1	-0.2
JTN				S	Sb	14 59 06.2	+0.3
JTSR	**Tashiro 2**	**0.68**	**336**	P	Pb	14 59 07.4	-0.6
JTSR				S	Sb	14 59 16.7	-0.5
JYAK	**Yakushimahirau**	**0.70**	**245**	P	Pb	14 59 07.9	-0.4
JYAK				S	Sb	14 59 17.9	+0.3
JKC	**Kuchinoerabu**	**0.91**	**265**	P	Pn	14 59 11.2	-0.1
JKC				S	Sn	14 59 23.5	+0.1
JNAR	**Kushima--Naru**	**0.98**	**2**	P	Pb	14 59 12.9	-0.2
JNAR				S	Sb	14 59 26.9	+1.2
JSU	**Suzuyama**	**1.18**	**325**	P	Pn	14 59 14.7	-0.4
JSU				S	Sb	14 59 31.0	-0.2
JTZ	**Takazaki**	**1.36**	**355**	P	Pn	14 59 18.2	+0.5
JTZ				S	Sb	14 59 36.5	0.0
JNN	**Nakanoshima**	**1.37**	**240**	P	Pn	14 59 18.4	+0.6
JNN				S	Sb	14 59 36.4	-0.4
JSJ	**Shimokoshiki**	**1.73**	**311**	P	Pn	14 59 21.7	-1.0
ASAR	**Alice Springs**	**53.96**	**177**	P	P	15 08 15.2	-0.6
	0.9nm,1.0s,baz=4.5,slow=6.8,SNR=4.6						

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*IDC **07** 14:59:07.5±2.6, 38°.60N×142°.74E, h0km, mb4.0/4, mb1 4.0/7, mb1mx3.6/61, mbtmp4.0/7, ML3.3/3, Error ellipse: s-maj=65.4km s-min=24.5km az=70.0*
*JMA **07** 14:59:18.1±0.1, 38°.40N×141°.85E, h51km±3km, M3.9*
JMA Felt I J1.
ISC 07 14:59:15.5±1.5**,38°.30N**±0°.04×**141°.99E**±0°.08**,h34**km±3km**, n18,σ1**^{s}**02**/27**,mb3.9**/4**,Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**0.82**	**342**	P	**Pb**	**14 59 31.8**	**+0.4**
JMK	**Ichinoseki**	**0.89**	**318**	P	**Pn**	**14 59 32.4**	**+0.8**
JMK				*e*S	**Sn**	**14 59 42.6**	**-0.7**
JMM	**Marumori**	**1.04**	**246**	P	**Pb**	**14 59 35.4**	**+0.4**
JMM				*e*S	**Sb**	**14 59 47.9**	**-0.4**
JOU	**Okura**	**1.05**	**274**	P	**Pb**	**14 59 35.2**	**+0.1**
JOU				*e*S	**Sn**	**14 59 47.1**	**-0.1**
JFK	**Kawauchi**	**1.28**	**224**	P	**Pb**	**14 59 39.9**	**+0.8**
JFK				*e*S	**Sb**	**14 59 55.8**	**+0.5**
JOM	**Ohasama**	**1.29**	**335**	P	**Pn**	**14 59 38.3**	**+1.1**
JOM				*e*S	**Sn**	**14 59 53.4**	**0.0**
JYK	**Kaneyama**	**1.42**	**296**	P	**Pn**	**14 59 39.6**	**+0.7**
JYK				*e*S	**Sn**	**14 59 55.5**	**-1.0**
JYS	**Shirataka**	**1.52**	**268**	P	**Pn**	**14 59 41.9**	**+1.6**
JYS				*e*S	**Sn**	**14 59 59.1**	**+0.2**
JFT	**Otama**	**1.52**	**240**	P	**Pb**	**14 59 42.9**	**-0.2**
JFT				*e*S	**Sb**	**15 00 01.2**	**-0.9**
JRG	**Rokugo**	**1.53**	**316**	P	**Pn**	**14 59 41.4**	**+1.0**
JRG				*e*S	**Sn**	**14 59 59.2**	**+0.1**
JYA	**Atsumi**	**1.81**	**280**	P	**Pn**	**14 59 45.9**	**+1.6**
JHJ	**Hachijo jima 2**	**5.47**	**200**	Pn	**Pn**	**15 00 35.9**	**+1.3**
	12nm,0.3s,baz=53,slow=20,SNR=3.1						
JHJ				Sn	**Sn**	**15 01 34.5**	**-1.8**
	5.7nm,0.3s,baz=72,slow=20,SNR=2.7						
USRK	**Ussuriysk Ar.**	**9.56**	**311**	Pn	**Pn**	**15 01 31.6**	**+0.9**
	0.6nm,0.3s,baz=125,slow=14,SNR=7.5						
KSRS	**Korea Array**	**11.15**	**270**	Pn	Pn	15 01 57.3	+4.8
	0.2nm,0.3s,baz=74,slow=13,SNR=3.4						
ZALV	**Zalesovo Beam**	**41.41**	**311**	P	**P**	**15 06 57.4**	**-1.1**
	1.1nm,0.5s,baz=82,slow=7.0,SNR=3.7						
MKAR	**Makanchi Array**	**43.85**	**301**	P	**P**	**15 07 18.5**	**+0.1**
	0.5nm,0.6s,baz=89,slow=8.6,SNR=3.5						
KURBB	**Kurchatov Arra**	**45.60**	**307**	P	**P**	**15 07 30.0**	**-2.2**
	2.0nm,0.2s,baz=82,slow=8.2,SNR=2.3						
WRA	**Warramunga Arr**	**58.37**	**188**	P	**P**	**15 09 07.7**	**+0.2**
	0.8nm,0.5s,baz=5.9,slow=7.1,SNR=6.1						

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*ISCJB **07** 15:01:03.5±0.8, 38°.28N±0°.04×141°.89E±0°.09, h70km±6km, mb3.9/9, Error ellipse: s-maj=11.8km s-min=5.7km az=13.2*
*JMA **07** 15:01:04.4±0.1, 38°.30N×141°.87E, h63km±3km, M4.4*
JMA Felt II J1.
*IDC **07** 15:01:05.8±2.9, 38°.27N×141°.86E, h75km±25km, mb3.6/9, mb1 3.8/13, mb1mx3.5/65, mbtmp3.9/13, Error ellipse: s-maj=28.4km s-min=15.3km az=71.0*
ISC 07 15:01:04.2±1.0**,38°.25N**±0°.05×**141°.96E**±0°.08**,h61**km±9km**, n31,σ1**^{s}**16**/37**,mb3.9**/9**,Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**0.86**	**345**	P	**Pn**	**15 01 20.0**	**-0.5**
JMK	**Ichinoseki**	**0.91**	**321**	P	**Pn**	**15 01 20.6**	**-0.5**
JMK				S	**Sn**	**15 01 31.8**	**-1.8**
JMM	**Marumori**	**1.00**	**248**	P	**Pn**	**15 01 21.9**	**-0.3**
JMM				S	**Sn**	**15 01 34.2**	**-1.4**
JOU	**Okura**	**1.02**	**277**	P	**Pn**	**15 01 22.0**	**-0.6**
JOU				S	**Sn**	**15 01 35.0**	**-1.3**
JFK	**Kawauchi**	**1.23**	**225**	P	**Pn**	**15 01 25.6**	**+0.2**
JFK				S	**Sn**	**15 01 40.9**	**-0.3**
JOM	**Ohasama**	**1.33**	**337**	P	**Pn**	**15 01 26.2**	**-0.4**
JOM				S	**Sn**	**15 01 42.1**	**-1.3**
JYK	**Kaneyama**	**1.42**	**298**	P	**Pn**	**15 01 27.2**	**-0.6**
JYK				*e*S	**Sn**	**15 01 44.4**	**-1.2**
JFT	**Otama**	**1.48**	**241**	P	**Pn**	**15 01 29.0**	**+0.4**
JFT				S	**Sn**	**15 01 46.6**	**-0.4**
JYS	**Shirataka**	**1.49**	**269**	P	**Pn**	**15 01 28.6**	**-0.2**
JYS				S	**Sn**	**15 01 46.8**	**-0.5**
JRG	**Rokugo**	**1.54**	**318**	P	**Pn**	**15 01 29.1**	**-0.4**
JRG				*e*S	**Sn**	**15 01 48.3**	**-0.2**
JYA	**Atsumi**	**1.80**	**282**	P	**Pn**	**15 01 32.4**	**-0.5**
MJAR	**Matsushiro Arr**	**3.44**	**241**	P	**Pn**	**15 01 56.9**	**+1.5**
	3.2nm,0.3s,baz=44,slow=11,SNR=5.0						
MAT	**Matsushiro**	**3.44**	**241**	P	**Pn**	**15 01 57.1**	**+1.7**
MAT				S	**Sn**	**15 02 34.3**	**-0.6**
JHJ	**Hachijo jima 2**	**5.42**	**200**	P	**Pn**	**15 02 22.1**	**-0.3**
	8.2nm,0.3s,baz=75,slow=20,SNR=2.7						
JHJ				S	**Sn**	**15 03 19.6**	**-3.8**
	28nm,0.3s,baz=218,slow=22,SNR=7.7						
USRK	**Ussuriysk Ar.**	**9.57**	**312**	P	**Pn**	**15 03 19.4**	**+0.3**
	1.9nm,0.3s,baz=125,slow=14,SNR=24						
KSRS	**Korea Array**	**11.13**	**270**	P	**Pn**	**15 03 42.9**	**+2.5**
	0.3nm,0.3s,baz=76,slow=14,SNR=4.6						
SONM	**Songino Array**	**27.49**	**302**	P	**P**	**15 06 44.1**	**-0.6**
	0.7nm,0.5s,baz=108,slow=8.6,SNR=6.3						
H11N2	**WAKE ISLAND Hy**	**28.43**	**123**	T	T	15 37 20.2	
	baz=316,slow=76,SNR=6.8						
H11N1	**WAKE ISLAND Hy**	**28.44**	**123**	T	T	15 37 22.0	
	baz=316,slow=76,SNR=6.2						
H11N3	**WAKE ISLAND Hy**	**28.45**	**123**	T	T	15 37 25.0	
	baz=316,slow=76,SNR=6.4						
H11S1	**WAKE ISLAND Hy**	**29.18**	**125**	T	T	15 38 18.9	
	baz=318,slow=76,SNR=7.8						
H11S3	**WAKE ISLAND Hy**	**29.18**	**126**	T	T	15 38 11.0	
	baz=318,slow=76,SNR=7.4						
H11S2	**WAKE ISLAND Hy**	**29.20**	**125**	T	T	15 38 21.2	
	baz=318,slow=76,SNR=7.6						
ZALV	**Zalesovo Beam**	**41.43**	**311**	P	**P**	**15 08 43.8**	**-0.6**
	1.9nm,0.5s,baz=85,slow=7.9,SNR=8.4						
MKAR	**Makanchi Array**	**43.85**	**301**	P	**P**	**15 09 03.5**	**-0.7**
	1.2nm,0.5s,baz=85,slow=11,SNR=16						
KURBB	**Kurchatov Arra**	**45.60**	**307**	P	**P**	**15 09 17.4**	**-0.7**
	2.1nm,0.5s,baz=80,slow=8.1,SNR=5.0						
ILAR	**Eielson Array**	**48.24**	**33**	P	**P**	**15 09 38.5**	**0.0**
	0.6nm,0.9s,baz=262,slow=6.2,SNR=4.3						
ILAR				pP	**pP**	**15 09 55.6**	**+1.3**
	0.6nm,0.6s,baz=270,slow=5.8,SNR=2.6						
BVAR	**Borovoye Array**	**50.08**	**312**	P	**P**	**15 09 52.0**	**-0.7**
	0.4nm,0.5s,baz=66,slow=4.9,SNR=3.6						
WRA	**Warramunga Arr**	**58.33**	**188**	P	**P**	**15 10 52.6**	**-0.2**
	1.8nm,0.4s,baz=7.8,slow=7.9,SNR=23						
ASAR	**Alice Springs**	**62.05**	**188**	P	**P**	**15 11 18.8**	**+0.5**
	1.8nm,0.7s,baz=2.1,slow=6.2,SNR=11						
TXAR	**Lajitas Array**	**89.04**	**53**	P	**P**	**15 13 53.8**	**+1.0**
	0.4nm,0.6s,baz=297,slow=4.6,SNR=4.4						

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*IDC **07** 15:02:20.2±0.6, 27°.15N×143°.42E, h0km, mb4.2/19, mb1 4.4/22, mb1mx4.2/67, mbtmp4.2/22, ML3.6/3, Error ellipse: s-maj=17.0km s-min=15.4km az=38.0*
*ISCJB **07** 15:02:23.6±0.5, 27°.17N±0°.07×143°.44E±0°.06, h33km, mb4.4/23, Error ellipse: s-maj=10.8km s-min=7.0km az=168.3*
*NEIC **07** 15:02:25.6±0.4, 27°.14N×143°.30E, h35km, mb4.8/4, Error ellipse: s-maj=9.3km s-min=7.9km az=55.0*
ISC 07 15:02:25.5±0.7**,27°.2N**±0°.1×**143°.39E**±0°.08**,h35**km**,n34, σ0**^{s}**78**/33**,mb4.3**/23**,Bonin Islands region**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
CBIJ	**Chichi jima**	**1.07**	**265**	*e*Pn	**Pn**	**15 02 43.3**	**-0.8**
CBIJ				Sn	**Sn**	**15 02 58.5**	**+0.7**
JCJ	**Chichijima**	**1.07**	**265**	Pn	**Pn**	**15 02 43.4**	**-0.7**
	200nm,0.3s,baz=264,slow=23,SNR=47						
JCJ				Sn	**Sn**	**15 02 58.5**	**+0.7**
	124nm,0.3s,baz=88,slow=23,SNR=13						
MJAR	**Matsushiro Arr**	**10.30**	**336**	Pn	**Pn**	**15 04 49.3**	**-1.5**
	2.5nm,0.3s,baz=140,slow=13,SNR=8.9						
MAT	**Matsushiro**	**10.30**	**336**	P	**Pn**	**15 04 49.4**	**-1.4**
KSRS	**Korea Array**	**16.57**	**312**	Pn	**Pn**	**15 06 15.4**	**+0.3**
	0.3nm,0.3s,baz=120,slow=12,SNR=13						
KSAR	**Wonju Array Be**	**16.59**	**312**	Pn	**Pn**	**15 06 15.4**	**+0.1**
USRK	**Ussuriysk Ar.**	**19.29**	**335**	P	**P**	**15 06 46.1**	**-1.2**
	0.3nm,0.3s,baz=142,slow=11,SNR=6.6						
MDJ	**Mudanjiang**	**20.61**	**331**	P	**P**	**15 07 01.7**	**0.0**
	7.0nm,0.8s						
KLR	**Kul'dur**	**23.76**	**341**	P	**P**	**15 07 34.7**	**+0.1**
	2.0nm,0.6s,baz=147,slow=11,SNR=5.1						
HIA	**Hailar**	**28.60**	**327**	*e*P	P	15 08 22.2	+3.9
	9.3nm,0.9s						
SONM	**Songino Array**	**35.38**	**316**	P	**P**	**15 09 17.7**	**-0.2**
	1.4nm,0.8s,baz=120,slow=7.9,SNR=7.1						
TLY	**Talaya**	**38.54**	**320**	P	**P**	**15 09 45.9**	**+1.3**
	2.0nm,0.6s,baz=199,slow=2.9,SNR=4.1						
CMAR	**Chiang Mai Arr**	**41.70**	**268**	P	**P**	**15 10 11.3**	**+0.1**
	1.3nm,0.8s,baz=53,slow=9.5,SNR=7.1						
FALS	**False Pass**	**47.20**	**39**	P	P	15 10 57.3	+2.7
	160nm,0.6s						
WRAB	**Tennant Creek**	**47.67**	**192**	*e*P	**P**	**15 10 57.7**	**-1.0**
	21nm,0.9s						
WRA	**Warramunga Arr**	**47.68**	**192**	P	**P**	**15 10 57.7**	**-1.0**
	11nm,0.8s,baz=12,slow=8.6,SNR=23						
ZALV	**Zalesovo Beam**	**50.11**	**319**	P	**P**	**15 11 17.8**	**+0.7**
	1.4nm,0.6s,baz=96,slow=5.8,SNR=3.5						
MKAR	**Makanchi Array**	**51.23**	**310**	P	**P**	**15 11 26.2**	**+0.5**
	1.7nm,0.8s,baz=90,slow=7.3,SNR=7.1						
ASAR	**Alice Springs**	**51.39**	**191**	P	**P**	**15 11 26.1**	**-1.0**
	1.0nm,0.6s,baz=9.1,slow=6.3,SNR=12						
KURK	**Kurchatov**	**53.67**	**314**	*e*P	**P**	**15 11 43.5**	**-0.2**
	24nm,1.0s						
KURBB	**Kurchatov Arra**	**53.73**	**314**	P	**P**	**15 11 44.4**	**+0.4**
	6.8nm,0.5s,baz=90,slow=8.0,SNR=36						
THN	**Thein Dam**	**58.07**	**293**	*e*P	P	15 12 12.0	-3.4
BVAR	**Borovoye Array**	**58.69**	**317**	P	**P**	**15 12 19.5**	**0.0**
	5.7nm,0.6s,baz=94,slow=5.3,SNR=6.2						
YKA	**Yellowknife Ar**	**71.54**	**29**	P	**P**	**15 13 42.1**	**-0.5**
	1.6nm,0.8s,baz=294,slow=5.8,SNR=5.2						
NEW	**Newport**	**76.10**	**43**	P	**P**	**15 14 10.3**	**+0.6**
	2.9nm,0.7s,baz=225,slow=1.4,SNR=3.1						

Code	Station Name	Δ°	AZ°	Op	ISC	Time	Res
FINES	FINESS Array B	78.32	334	P	P	15 14 21.9	+0.1
	3.1nm,0.9s,baz=86,slow=3.6,SNR=4.6						
KBZ	Khabaz	78.72	313	P	P	15 14 25.7	+1.4
	4.3nm,0.8s,baz=71,slow=8.9,SNR=4.3						
NVAR	Mina Array Bea	79.61	52	P	P	15 14 30.4	+0.7
	2.0nm,0.9s,baz=281,slow=4.8,SNR=4.0						
AKASG	Malin Array Be	83.16	324	P	P	15 14 47.4	-0.5
	1.8nm,0.5s,baz=48,slow=5.1,SNR=11						
PDAR	Pinedale Array	83.38	45	P	P	15 14 50.6	+1.1
	1.4nm,1.0s,baz=297,slow=2.8,SNR=3.9						
BRTR	Keskin Array B	86.71	313	P	P	15 15 06.4	+0.3
	0.5nm,0.5s,baz=45,slow=4.3,SNR=3.2						
TXAR	Lajitas Array	94.68	54	P	P	15 15 43.5	0.0
	1.2nm,0.9s,baz=222,slow=0.5,SNR=3.8						
LPAZ	La Paz	148.86	76	PKPbc	PKPbc	15 22 11.2	+0.2
	2.8nm,0.7s,baz=309,slow=1.3,SNR=9.0						
PLCA	Paso Flores	148.99	125	PKPbc	PKPbc	15 22 10.4	+0.4
	1.0nm,0.8s,baz=268,slow=4.7,SNR=3.9						

NEIC ***07*** *15:06:45.6±1.1, 38.07°N×142.37°E, h72km±10km, mb4.7/6, Error ellipse: s-maj=14.8km s-min=10.3km az=114.0*
ISCJB ***07*** *15:06:46.6±0.6, 38.38°N±0.03×141.96°E±0.06, h62km±4km, mb4.3/27, Error ellipse: s-maj=8.7km s-min=4.8km az=19.8*
JMA ***07*** *15:06:47.9±0.1, 38.38°N×141.85°E, h64km±2km, M4.3*
JMA Felt II J1.
IDC ***07*** *15:06:48.6±0.7, 38.39°N×141.79°E, h66km±6km, mb3.9/22, mb1 4.1/26, mb1mx3.8/83, mbtmp4.2/26, Error ellipse: s-maj=14.5km s-min=12.0km az=116.0*
ISC 07 15:06:48.3±0.7**, 38.38°N**±0.04×**141.88°E**±0.07**, h62**km±6km**, n78, σ1s.36**/87**, mb4.3**/27**, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
OFUJ	Ofunato	0.72	347	P	Pn	15 07 02.5	-0.4
JMK	Ichinoseki	0.77	318	P	Pn	15 07 03.4	-0.1
JMK				S	Sn	15 07 13.9	-0.8
JOU	Okura	0.95	270	P	Pn	15 07 05.4	-0.4
JOU				S	Sn	15 07 18.2	-0.6
JMM	Marumori	0.99	240	P	Pn	15 07 05.8	-0.5
JMM				S	Sn	15 07 18.5	-1.2
JOM	Ohasama	1.19	338	P	Pn	15 07 08.6	-0.2
JOM				S	Sn	15 07 23.9	-0.3
JFK	Kawauchi	1.28	218	P	Pn	15 07 10.0	-0.2
JFK				S	Sn	15 07 25.9	-0.6
JYK	Kaneyama	1.30	295	P	Pn	15 07 10.2	-0.2
JYK				eS	Sn	15 07 26.4	-0.6
JRG	Rokugo	1.41	317	P	Pn	15 07 11.5	-0.3
JRG				eS	Sn	15 07 29.4	0.0
JYS	Shirataka	1.43	264	P	Pn	15 07 12.1	0.0
JYS				S	Sn	15 07 30.0	0.0
JFT	Otama	1.49	235	P	Pn	15 07 13.0	+0.1
JFT				S	Sn	15 07 31.2	-0.2
JYA	Atsumi	1.71	278	P	Pn	15 07 15.7	-0.1
MJAR	Matsushiro Arr	3.44	239	P	Pn	15 07 40.8	+1.3
	25nm,0.3s,baz=40,slow=13,SNR=88						
MAJO	Matsushiro	3.45	239	ePn	Pn	15 07 41.1	+1.5
MAJO				eSn	Sn	15 08 05.1	-14
MAT	Matsushiro	3.45	239	P	Pn	15 07 41.3	+1.8
MAT				eS	Sn	15 08 22.6	+3.5
ERM	Erimo	3.76	15	ePn	Pn	15 07 42.8	-1.0
ERM				eSn	Sn	15 08 22.2	-4.6
INU	Inuyama	4.93	234	ePn	Pn	15 08 00.3	+0.5
JHJ2	Mitsune	5.51	198	ePn	Pn	15 08 05.7	-2.1
JHJ2				eSn	Sn	15 09 06.0	-3.8
JHJ	Hachijo jima 2	5.51	199	P	Pn	15 08 07.2	-0.6
	19nm,0.3s,baz=326,slow=23,SNR=14						
JHJ				S	Sn	15 09 04.7	-5.2
	20nm,0.3s,baz=105,slow=20,SNR=4.3						
YSS	Yuzh-Sakhalins	8.60	4	ePn	Pn	15 08 50.4	+0.5
USRK	Ussuriysk Ar.	9.44	311	P	Pn	15 09 02.1	+0.7
	1.3nm,0.3s,baz=123,slow=14,SNR=20						
JNU	Nakatsue	10.36	243	P	Pn	15 09 14.4	+0.3
	0.3nm,0.3s,baz=78,slow=4.2,SNR=5.4						
JNU	Nakatsue	10.36	243	ePn	Pn	15 09 14.2	+0.1
KSRS	Korea Array	11.06	270	P	Pn	15 09 26.9	+3.3
	1.6nm,0.3s,baz=79,slow=14,SNR=22						
KS01	Wonju Array Si	11.08	270	ePn	Pn	15 09 26.8	+2.9
KS15	Wonju Array Si	11.10	270	ePn	Pn	15 09 27.8	+3.7
KSAR	Wonju Array Be	11.10	270	P	Pn	15 09 26.9	+2.9
CBIJ	Chichi jima	11.25	179	ePn	Pn	15 09 14.6	-12
BJT	Baijiatuau	19.97	283	eP	P	15 11 15.2	-0.2
	42nm,1.3s						
MA2	Magadan	21.97	12	P	P	15 11 36.6	0.0
	16nm,0.8s,baz=213,slow=9.5,SNR=14						
SONA0	Songino Array	27.37	302	eP	P	15 12 26.1	-1.5
	40nm,1.6s						
SONM	Songino Array	27.37	302	P	P	15 12 26.1	-1.5
	6.7nm,1.2s,baz=107,slow=9.8,SNR=3.6						
H11N2	WAKE ISLAND Hy	28.55	124	T	T	15 43 06.4	
	baz=316,slow=76,SNR=22						
H11N1	WAKE ISLAND Hy	28.56	124	T	T	15 43 05.9	
	baz=316,slow=76,SNR=18						
H11N3	WAKE ISLAND Hy	28.57	124	T	T	15 43 09.6	
	baz=316,slow=76,SNR=17						
H11S1	WAKE ISLAND Hy	29.31	126	T	T	15 44 02.0	
	baz=318,slow=76,SNR=24						
H11S3	WAKE ISLAND Hy	29.31	126	T	T	15 44 01.9	
	baz=318,slow=76,SNR=29						
H11S2	WAKE ISLAND Hy	29.33	126	T	T	15 44 03.4	
	baz=318,slow=76,SNR=26						
ZAA1	Zalesovo Array	41.29	311	eP	P	15 14 27.1	-0.3
ZAA1				ePcP	PcP	15 16 24.2	-0.6
ZALV	Zalesovo Beam	41.29	311	P	P	15 14 27.1	-0.3
	2.2nm,0.5s,baz=86,slow=7.2,SNR=8.7						
ZALV				PcP	PcP	15 16 24.2	-0.6
	0.7nm,0.4s,baz=115,slow=2.7,SNR=3.7						
MK32	Makanchi Array	43.73	301	eP	P	15 14 46.9	-0.4
MKAR	Makanchi Array	43.73	301	P	P	15 14 46.9	-0.4
	2.0nm,0.8s,baz=83,slow=11,SNR=9.8						
MKAR	Makanchi Array	43.73	301	eP	P	15 14 47.1	-0.2
MAKZ	Makanchi	43.94	301	eP	P	15 14 48.8	-0.1
	10.0nm,1.4s						
KURK	Kurchatov	45.40	307	eP	P	15 14 59.6	-0.8
	20nm,1.5s						
KURBB	Kurchatov Arra	45.48	307	P	P	15 15 00.4	-0.6
	3.4nm,0.6s,baz=82,slow=8.7,SNR=9.1						
TAPN	Taplejung	46.23	273	eP	P	15 15 08.9	+1.3
ODAN	Odare	46.71	273	eP	P	15 15 12.5	+1.2
RAMN	Ramite	47.28	273	eP	P	15 15 17.2	+1.3
GUN	Gumba	47.40	275	eP	P	15 15 18.4	+1.5
KKN	Kakani	47.92	275	eP	P	15 15 22.7	+1.9
PKIN	Phulchoki	47.93	275	eP	P	15 15 22.7	+1.8
ILAR	Eielson Array	48.17	33	P	P	15 15 22.3	+0.4
	1.4nm,0.7s,baz=267,slow=7.0,SNR=9.8						
ILAR				pP	pP	15 15 38.8	+0.9
	0.7nm,0.6s,baz=270,slow=6.6,SNR=2.9						
GKN	Gorkha	48.33	275	eP	P	15 15 25.9	+2.1
KOLN	Koldanda	49.25	276	eP	P	15 15 32.9	+2.0
TKM2	Tokmak 2	49.33	298	eP	P	15 15 31.7	+0.3
	5.8nm,1.1s						
PYUN	Piuthan	49.57	276	eP	P	15 15 35.5	+2.1
BVAR	Borovoye Array	49.95	312	P	P	15 15 34.9	-0.7
	0.8nm,0.6s,baz=79,slow=11,SNR=3.4						
BVAR				PcP	PcP	15 16 55.0	0.0
	1.3nm,0.5s,baz=108,slow=2.3,SNR=6.6						
AAK	Ala-Archa	50.19	298	P	P	15 15 36.6	-1.2
	0.6nm,0.3s,baz=111,slow=5.3,SNR=4.1						
COEN	Coen	52.07	178	eP	P	15 15 45.9	-6.0
	92nm,1.7s						
WRA	Warramunga Arr	58.44	188	P	P	15 16 37.1	-0.5
	2.7nm,0.5s,baz=5.8,slow=7.0,SNR=32						
RES	Resolute Bay	61.21	15	P	P	15 16 55.5	-0.5
	2.1nm,0.5s,baz=314,slow=5.2,SNR=15						
ASAR	Alice Springs	62.17	188	P	P	15 17 02.8	-0.3
	1.4nm,0.7s,baz=14,slow=10,SNR=11						
ASAR				pP	pP	15 17 20.3	+0.6
	0.6nm,0.6s,baz=18,slow=12,SNR=2.2						
YKA	Yellowknife Ar	62.47	31	P	P	15 17 04.5	-0.1
	1.1nm,0.7s,baz=300,slow=5.9,SNR=8.8						
ARCES	ARCESS Array B	62.87	339	P	P	15 17 06.7	-0.6
	2.4nm,0.8s,baz=64,slow=8.2,SNR=9.2						
FIA0	FINESS Array S	67.80	332	eP	P	15 17 38.3	-0.8
FINES	FINESS Array B	67.80	332	P	P	15 17 38.3	-0.8
	3.9nm,0.9s,baz=52,slow=9.0,SNR=5.0						
HFS	Hagfors	73.02	336	P	P	15 18 10.7	-0.3
	2.5nm,0.5s,baz=48,slow=4.4,SNR=16						
NB2	NORSAR Subarra	73.09	337	P	P	15 18 11.2	-0.3
	comp=Z,2.7nm,0.7s,baz=39,slow=6.2						
NB200	NORSAR Array S	73.09	337	eP	P	15 18 11.3	-0.2
NOA	NORSAR Array B	73.09	337	P	P	15 18 11.3	-0.2
	comp=Z,3.6nm,0.9s,baz=38,slow=6.0,SNR=6.1						
AKASG	Malin Array Be	73.46	322	P	P	15 18 12.9	-0.9
	comp=Z,1.6nm,0.5s,baz=45,slow=6.4,SNR=9.5						
FRB	Frobisher Bay	75.38	13	P	P	15 18 24.3	-0.4
	comp=Z,2.9nm,0.6s,baz=338,slow=5.2,SNR=3.7						
PDAR	Pinedale Array	76.47	46	P	P	15 18 32.3	+0.7
	comp=Z,1.3nm,0.6s,baz=248,slow=0.4,SNR=14						
PDAR				pP	pP	15 18 49.5	+0.8
	comp=Z,1.0nm,0.6s,baz=282,slow=1.8,SNR=4.6						
GERES	GERESS Array B	81.76	328	P	P	15 18 59.7	-0.6
	comp=Z,0.4nm,0.3s,baz=32,slow=5.8,SNR=3.0						
EKA	Eskdalemuir Ar	81.99	341	P	P	15 19 02.5	+1.3
	comp=Z,0.6nm,0.6s,baz=12,slow=5.2,SNR=3.5						
LTX	Lajitas	89.01	53	eP	P	15 19 37.3	+0.6
TXAR	Lajitas Array	89.01	53	P	P	15 19 37.3	+0.6
	comp=Z,0.9nm,0.6s,baz=289,slow=3.5,SNR=8.6						
LPAZ	La Paz	145.69	58	PKPbc	PKPbc	15 26 21.1	-0.1
	comp=Z,2.6nm,0.6s,baz=356,slow=3.1,SNR=11						

ISK ***07*** *15:08:30.8, 39.47°N×33.21°E, h8km, MD2.6*
DDA ***07*** *15:08:31.8, 39.38°N×33.16°E, h7km, Md2.5*
CSEM ***07*** *15:08:31.3±0.2, 39.43°N×33.14°E, h12km, MD2.6, Error ellipse: s-maj=6.4km s-min=4.2km az=152.0*
ISCJB ***07*** *15:08:32.2±0.5, 39.37°N±0.03×33.16°E±0.05, h7km±5km, Error ellipse: s-maj=6.2km s-min=4.6km az=18.9*
ISC 07 15:08:31.6±0.8**, 39.36°N**±0.03×**33.18°E**±0.04**, h9**km±7km**, n20, σ0s.82**/34**, Turkey**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
AFSR	Af¯ar-Bala (A	0.12	315	ePG	Pg	15 08 34.2	-0.2
AFSR				eSG	Sg	15 08 36.1	-0.3
AFSR	Af¯ar-Bala (A	0.12	315	ePg	Pg	15 08 34.2	-0.2
AFSR				eSg	Sg	15 08 36.1	-0.3
BBAL	Bala	0.18	347	i P	Pb	15 08 35.7	+0.2
BBAL				i S	Sb	15 08 38.5	+0.3
BBAL	Bala	0.18	347	P	Pb	15 08 35.7	+0.2
BBAL				S	Sb	15 08 38.5	+0.3
KKUL	Konya-Kulu	0.28	226	i P	Pg	15 08 37.3	+0.1
KKUL				i S	Sg	15 08 41.8	+0.8
KKUL	Konya-Kulu	0.28	226	P	Pg	15 08 37.3	+0.1
KKUL				S	Sg	15 08 41.8	+0.8
SERE	Sereflikochisa	0.51	144	ePG	Pb	15 08 43.0	+0.1
SERE				eSG	Sb	15 08 51.2	+0.7
SERE	Sereflikochisa	0.51	144	ePg	Pb	15 08 43.0	+0.1
SERE				eSg	Sb	15 08 51.2	+0.7
CDAG	Cicekdag	0.96	74	i P	Pg	15 08 50.3	+0.3
CDAG				i S	Sn	15 09 04.2	-1.0
CDAG	Cicekdag	0.96	74	P	Pg	15 08 50.3	+0.3
CDAG				S	Sn	15 09 04.2	-1.0
KIZT	Kizilcal	1.12	245	ePN	Pb	15 08 52.5	-0.7
KIZT	Kizilcal	1.12	245	ePn	Pb	15 08 52.5	-0.7
ELDT	Eldivan	1.14	10	i P	Pg	15 08 55.1	+1.6
ELDT				i S	Sn	15 09 10.4	+0.6
ELDT	Eldivan	1.14	10	P	Pg	15 08 55.1	+1.6
ELDT				S	Sn	15 09 10.4	+0.6
KDHN	Kadinhani	1.18	225	i P	Pg	15 08 55.2	+1.0
KDHN				i S	Sg	15 09 10.3	+0.7
KDHN	Kadinhani	1.18	225	P	Pg	15 08 55.2	+1.0
KDHN				S	Sg	15 09 10.3	+0.7
CORM	Corum	1.38	54	ePN	Pn	15 08 56.0	-1.2
CORM	Corum	1.38	54	ePn	Pn	15 08 56.0	-1.2
YOZ	Yozgat	1.68	80	ePN	Pn	15 09 00.3	-1.0
YOZ	Yozgat	1.68	80	ePn	Pn	15 09 00.3	-1.0

WEL 07 15:12:04.6±0.1**, 43.60°S**×**172.64°E, h8**km**, ML3.6**/15**, 4C-1D, Error ellipse: s-maj=1.0km s-min=0.6km az=90.0, South Island**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
CRLZ	Canterbury Las	0.02	337	⇑PG	Pg	15 12 05.8	-0.1
CRLZ				SG	Sg	15 12 06.7	-0.2
CRLZ				AML	AML	15 12 06.8	
CRLZ				AML	AML	15 12 06.8	
CRLZ				AML	AML	15 12 07.2	
MQZ	McQueen's Vall	0.11	173	⇑PG	Pg	15 12 07.2	+0.1
MQZ				SG	Sg	15 12 09.1	+0.3
MQZ				AML	AML	15 12 09.1	
OXZ	Oxford	0.51	302	⇑P*	Pg	15 12 14.4	0.0
LTZ	Lake Taylor	0.86	342	P*	Pg	15 12 21.1	+0.1
LTZ				S*	Sb	15 12 32.8	-0.6
LTZ				AML	AML	15 12 33.7	
RPZ	Rata Peaks	1.15	264	⇓P*	Pg	15 12 25.6	-1.1
RPZ				AML	AML	15 12 47.8	
RPZ				AML	AML	15 12 53.1	
INZ	Inchbonnie	1.23	315	P*	Pb	15 12 27.5	-0.6
KHZ	Kahutara	1.35	30	PN	Pn	15 12 27.9	-1.9
WVZ	Waitaha Valley	1.48	290	⇑PN	Pn	15 12 30.6	-0.9
WVZ				AML	AML	15 12 34.1	
THZ	Tophouse	1.84	6	PN	Pn	15 12 34.7	-1.9
THZ				AML	AML	15 13 09.2	
THZ				AML	AML	15 13 16.3	
LBZ	Lake Benmore	1.94	245	PN	Pn	15 12 36.6	-1.3
LBZ				AML	AML	15 15 07.5	
LBZ				AML	AML	15 15 07.5	
DSZ	Denniston Nort	1.95	341	PN	Pn	15 12 36.9	-1.1
DSZ				AML	AML	15 13 05.5	
DSZ				AML	AML	15 13 06.1	
ODZ	Otahua Downs	2.03	224	PN	Pn	15 12 37.7	-1.5
ODZ				AML	AML	15 13 14.9	
ODZ				AML	AML	15 13 17.1	
FOZ	Fox Glacier	2.05	271	ePN	Pn	15 12 39.4	+0.1
BSWZ	Blackbirch Sta	2.09	26	ePN	Pn	15 12 38.4	-1.5
BSWZ				AML	AML	15 13 06.1	
TUWZ	Tuamarina	2.37	25	ePN	Pn	15 12 42.0	-1.8
JCZ	Jackson Bay	2.83	259	PN	Pn	15 12 49.6	-0.5
JCZ				AML	AML	15 15 18.1	
JCZ				AML	AML	15 15 18.1	
WKZ	Wanaka	2.88	243	AML	AML	15 13 41.2	
EAZ	Earnscleugh	2.89	234	PN	Pn	15 12 49.6	-1.3
EAZ				AML	AML	15 13 37.2	
EAZ				AML	AML	15 13 39.0	
CAW	Cannon Point	3.07	37	ePN	Pn	15 12 50.7	-2.8
TUZ	Tuapeka	3.18	221	ePN	Pn	15 12 53.4	-1.5
TUZ				AML	AML	15 13 52.6	
TUZ				AML	AML	15 13 54.1	
MRZ	Mangatainoka R	3.66	38	ePN	Pn	15 12 58.1	-3.4
WHZ	Wether Hill Ro	4.05	234	AML	AML	15 14 18.1	

IDC ***07*** *15:13:31.5±54.0, 23.14°S×175.90°W, h0km, mb4.0/3, mb1 4.2/3, mb1mx3.7/46, mbtmp4.0/3, Error ellipse: s-maj=996.8km s-min=162.1km az=87.0*
ISCJB ***07*** *15:13:35.4±1.3, 23.5°S±0.2×175.9°W±0.2, h33km, mb4.6/9, Error ellipse: s-maj=28.1km s-min=23.7km az=39.6*
NEIC ***07*** *15:13:37.1±0.8, 23.53°S×175.90°W, h35km, mb4.9/7, Error ellipse: s-maj=18.0km s-min=15.2km az=129.0*
ISC 07 15:13:36.8±1.5**, 23.5°S**±0.2×**175.9°W**±0.2**, h33**km**, n12, σ0s.24**/12**, mb4.7**/9**, Tonga Islands region**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
URZ	Urewera	15.86	201	ePn	Pn	15 17 17.5	0.0
STKA	Stephens Creek	38.35	248	P	P	15 20 55.3	+0.4
	3.8nm,1.1s,baz=93,slow=8.6,SNR=8.7						
STKA	Stephens Creek	38.35	248	eP	P	15 20 55.0	+0.2
	4.4nm,1.6s						
BBOO	Buckleboo	43.05	247	eP	P	15 21 33.2	-0.4
	23nm,1.4s						
AS01	Alice Springs	45.77	259	eP	P	15 21 55.8	+0.3
AS31	Alice Springs	45.81	259	eP	P	15 21 55.8	0.0
	2.9nm,1.4s						
ASAR	Alice Springs	45.81	259	P	P	15 21 55.8	-0.1
	0.3nm,0.3s,baz=91,slow=7.8,SNR=20						
WB2	Warramunga Arr	46.18	264	eP	P	15 21 58.5	-0.3
	52nm,1.9s						
WRAB	Tennant Creek	46.18	264	eP	P	15 21 58.8	0.0
	41nm,1.8s						
WR1	Warramunga Arr	46.19	264	eP	P	15 21 58.8	0.0
	36nm,1.8s						
WRA	Warramunga Arr	46.19	264	P	P	15 21 58.8	0.0
	0.9nm,0.3s,baz=103,slow=8.1,SNR=59						
MIAR	Mount Ida	97.05	56	eP	P	15 27 05.6	0.0
	26nm,1.0s						

ISCJB ***07*** *15:14:53.4±1.6, 36.54°N±0.06×141.35°E±0.09, h15km±12km, mb4.2/4, Error ellipse: s-maj=13.1km s-min=8.7km az=24.9*
JMA ***07*** *15:14:56.0±0.1, 36.58°N×141.16°E, h32km±2km, M3.8*
JMA Felt II J1.
ISC 07 15:14:55.7±1.7**, 36.60°N**±0.05×**141.14°E**±0.07**, h15**km±11km**, n14, σ1s.23**/21**, mb4.2**/4**, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
JHO	Hitachi	0.46	272	P	Pb	15 15 05.6	0.0
JHO				S	Sb	15 15 12.6	+0.3
ONAJ	Iwakimizuishiy	0.57	331	P	Pb	15 15 07.6	+0.1
ONAJ				S	Sb	15 15 16.3	+0.7
JFK	Kawauchi	0.80	344	P	Pg	15 15 10.7	-0.5
JFK				eS	Sg	15 15 21.5	-0.2
JYT	Yasato	0.85	245	P	Pb	15 15 11.6	-0.6
JYT				S	Sb	15 15 23.4	0.0
JSB	Shiboa	1.05	291	P	Pg	15 15 15.7	-0.3
JSB				S	Sn	15 15 30.8	+0.4
MJAR	Matsushiro Arr	2.36	270	Pn	Pn	15 15 34.9	+0.9
	8.2nm,0.3s,baz=83,slow=9.7,SNR=66						
MJAR				Sn	Sb	15 16 08.0	+1.0
	17nm,0.3s,baz=90,slow=23,SNR=8.0						
MAJO	Matsushiro	2.36	270	ePn	Pn	15 15 35.4	+1.4
MAT	Matsushiro	2.36	270	P	Pn	15 15 35.1	+1.1
MAT				S	Sn	15 16 00.1	-2.7
INU	Inuyama	3.57	251	ePn	Pn	15 15 52.9	+2.3
JHJ2	Mitsune	3.64	198	ePn	Pn	15 15 53.5	+1.9
ENH	Enshi	27.08	266	eP	P	15 20 37.9	0.0
	8.6nm,0.8s						
WR1	Warramunga Arr	56.60	188	eP	P	15 24 36.8	-1.2
	30nm,1.9s						
WRA	Warramunga Arr	56.60	188	P	P	15 24 36.8	-1.2
	0.7nm,0.6s,baz=6.4,slow=7.5,SNR=7.3						
ASAR	Alice Springs	60.33	188	P	P	15 25 03.6	-0.4
	0.5nm,1.0s,baz=10,slow=5.1,SNR=4.6						

IDC ***07*** *15:14:46.8±0.7, 37.49°N×141.79°E, h0km, mb3.9/17, mb1 4.1/19, mb1mx3.8/79, mbtmp3.9/19, ML3.4/2, Error ellipse: s-maj=18.2km s-min=16.4km az=151.0*
NEIC ***07*** *15:14:51.5±0.5, 37.30°N×141.75°E, h35km, mb4.5/5, Error ellipse: s-maj=12.4km s-min=9.4km az=145.0*
ISCJB ***07*** *15:14:57.8±0.7, 38.25°N±0.05×141.79°E±0.07, h67km±5km, mb3.9/18, Error ellipse: s-maj=10.1km s-min=6.6km az=34.2*
JMA ***07*** *15:14:58.3±0.1, 38.25°N×141.81°E, h58km±3km, M4.2*
JMA Felt I J1.
ISC 07 15:14:57.5±1.4**, 38.21°N**±0.06×**141.87°E**±0.08**, h52**km±12km**, n51, σ0s.72**/53**, mb3.9**/18**, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
OFUJ	Ofunato	0.88	350	P	Pn	15 15 14.2	+0.4
JMK	Ichinoseki	0.90	326	P	Pn	15 15 14.5	+0.6
JMK				S	Sn	15 15 25.7	-0.3
JMM	Marumori	0.92	248	P	Pn	15 15 14.6	+0.4
JMM				S	Sn	15 15 26.4	0.0
JOU	Okura	0.96	280	P	Pn	15 15 15.3	+0.5
JOU				S	Sn	15 15 27.7	+0.2
JFK	Kawauchi	1.15	223	P	Pn	15 15 18.6	+1.2
JOM	Ohasama	1.34	341	P	Pn	15 15 20.5	+0.6
JOM				S	Sn	15 15 36.5	-0.1
JYK	Kaneyama	1.38	301	P	Pn	15 15 20.9	+0.5
JYK				eS	Sn	15 15 37.5	0.0
JFT	Otama	1.39	241	eS	Sn	15 15 39.0	+1.1
JYS	Shirataka	1.42	271	P	Pn	15 15 21.8	+0.8
JYS				S	Sn	15 15 39.4	+0.8
JRG	Rokugo	1.53	321	P	Pn	15 15 23.0	+0.6
JRG				S	Sn	15 15 42.4	+1.2
JYA	Atsumi	1.73	283	P	Pn	15 15 25.9	+0.6
JYA				eS	Sn	15 15 46.6	+0.4
ERM	Erimo	3.93	14	ePn	Pn	15 15 54.7	-0.6
USRK	Ussuriysk Ar.	9.55	312	Pn	Pn	15 17 13.6	+1.3
	1.7nm,0.3s,baz=125,slow=14,SNR=29						
KSRS	Korea Array	11.06	270	Pn	Pn	15 17 31.4	-1.6
	0.1nm,0.3s,baz=77,slow=14,SNR=3.9						
KSAR	Wonju Array Be	11.09	270	Pn	Pn	15 17 31.4	-2.0
MA2	Magadan	22.13	12	P	P	15 19 49.8	+1.4
	2.5nm,0.8s,baz=227,slow=6.9,SNR=9.7						
SEY	Seymchan	25.57	11	P	P	15 20 22.4	+1.1
	3.1nm,0.9s,baz=213,slow=9.2,SNR=9.1						
SONA1	Songino Array	27.45	302	eP	P	15 20 37.8	-0.8
SONA0	Songino Array	27.45	302	eP	P	15 20 38.4	-0.2
	13nm,1.7s						
SONM	Songino Array	27.45	302	P	P	15 20 38.4	-0.2
	0.4nm,0.5s,baz=98,slow=8.6,SNR=3.5						
H11N2	WAKE ISLAND Hy	28.46	123	T	T	15 50 42.8	
	baz=315,slow=75,SNR=3.4						
H11N1	WAKE ISLAND Hy	28.47	123	T	T	15 50 42.8	
	baz=315,slow=75,SNR=3.0						
H11N3	WAKE ISLAND Hy	28.48	123	T	T	15 50 42.8	
	baz=315,slow=75,SNR=3.1						
H11S1	WAKE ISLAND Hy	29.22	125	T	T	15 52 03.0	
	baz=321,slow=74						
H11S3	WAKE ISLAND Hy	29.22	125	T	T	15 52 04.4	
	baz=321,slow=74						
H11S2	WAKE ISLAND Hy	29.23	125	T	T	15 52 05.3	
	baz=321						
ZAA0	Zalesovo Array	41.40	311	eP	P	15 22 38.1	-0.4
ZAA1	Zalesovo Array	41.40	311	eP	P	15 22 38.2	-0.2
ZALV	Zalesovo Beam	41.40	311	P	P	15 22 38.2	-0.2
	1.0nm,0.5s,baz=103,slow=3.2,SNR=3.7						
MK01	Makanchi Array	43.81	301	eP	P	15 22 58.6	+0.5
MK31	Makanchi Array	43.81	301	eP	P	15 22 57.9	-0.4
MK32	Makanchi Array	43.81	301	eP	P	15 22 57.8	-0.5
MKAR	Makanchi Array	43.81	301	P	P	15 22 57.8	-0.5
	1.9nm,0.8s,baz=79,slow=12,SNR=10						
MKAR	Makanchi Array	43.81	301	eP	P	15 22 57.9	-0.4
KURK	Kurchatov	45.50	307	eP	P	15 23 11.0	-0.6
	6.2nm,1.0s						
KURBB	Kurchatov Arra	45.57	307	P	P	15 23 11.7	-0.4
	4.6nm,0.8s,baz=82,slow=8.4,SNR=8.7						
BRLK	Bradley Lake	46.73	40	eP	P	15 23 20.9	-0.2
	79nm,0.8s						
ILAR	Eielson Array	48.31	33	P	P	15 23 33.9	+0.6
	0.9nm,0.7s,baz=270,slow=5.8,SNR=7.3						
ILB	Eielson Array	48.31	33	eP	P	15 23 33.3	0.0
BVAR	Borovoye Array	50.05	312	P	P	15 23 46.0	-0.8
	0.5nm,0.5s,baz=61,slow=8.9,SNR=2.3						
RES	Resolute Bay	61.37	15	P	P	15 25 07.4	-0.1
	1.6nm,0.5s,baz=316,slow=5.9,SNR=10						
RES	Resolute Bay	61.37	15	eP	P	15 25 07.2	-0.3
	4.3nm,1.4s						
YKA	Yellowknife Ar	62.61	31	P	P	15 25 15.9	-0.1
	0.4nm,0.6s,baz=299,slow=6.8,SNR=5.6						
FIA0	FINESS Array S	67.94	332	eP	P	15 25 50.5	0.0
FINES	FINESS Array B	67.94	332	P	P	15 25 50.5	0.0
	2.0nm,0.8s,baz=46,slow=4.0,SNR=2.4						
AKASG	Malin Array Be	73.59	322	P	P	15 26 24.4	-0.6
	0.2nm,0.3s,baz=42,slow=5.7,SNR=5.6						
NVAR	Mina Array Bea	74.00	54	P	P	15 26 28.9	+0.9
	1.1nm,0.8s,baz=330,slow=4.7,SNR=3.3						
PDAR	Pinedale Array	76.59	46	P	P	15 26 43.5	+0.7
	0.9nm,0.6s,baz=251,slow=2.8,SNR=8.2						
LTX	Lajitas	89.12	53	eP	P	15 27 47.9	+0.2
TXAR	Lajitas Array	89.12	53	P	P	15 27 47.9	+0.2
	0.8nm,0.6s,baz=300,slow=4.5,SNR=5.6						
LPAZ	La Paz	145.78	59	PKPbc	PKPbc	15 34 31.9	-0.1
	1.2nm,0.5s,baz=291,slow=2.9,SNR=4.9						

DJA 07 15:21:09.0±0.5**, 1°S**±5°×**13°3E**±°**, h10**km**, M3.5**/3**, MLv3.5**/3**, Irian Jaya region**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
RKPI	Ransiki, Papua	1.21	125	S	Sb	15 21 47.0	-0.7
SWI	Sorong	1.93	268	P	Pn	15 21 41.3	-0.6
SWI				S	Sb	15 22 07.5	-1.0
FAKI	Fak Fak	2.30	204	P	Pn	15 21 46.3	-0.7
FAKI				S	Sn	15 22 16.1	+0.8

IDC ***07*** *15:23:30.7±2.5, 37.46°N×142.33°E, h0km, mb3.6/3, mb1 3.7/4, mb1mx3.2/75, mbtmp3.7/4, ML2.8/2, Error ellipse: s-maj=58.5km s-min=27.4km az=72.0*
JMA ***07*** *15:23:33.4±0.1, 37.52°N×141.93°E, h15km±2km, M3.5*
ISC 07 15:23:31.7±2.4**, 37.51°N**±0.06×**142.00E**±0.08**, h1**km±13km**, n11, σ1s.25**/18**, mb3.5**/3**, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	Kawauchi	0.90	261	P	Pb	15 23 49.7	-0.4
JFK				eS	Sb	15 24 01.3	-1.4
JMM	Marumori	1.02	291	P	Pg	15 23 51.3	+0.1
JMM				S	Sg	15 24 04.2	-0.2
ONAJ	Iwakimizuishiy	1.04	247	P	Pb	15 23 51.9	-0.5
ONAJ				eS	Sb	15 24 05.5	-1.0
JFT	Otama	1.32	271	P	Pb	15 23 56.8	-0.4
JFT				eS	Sb	15 24 13.6	-1.0
JMK	Ichinoseki	1.56	337	eS	Sn	15 24 20.1	-1.4
JFY	Yanaizu	1.82	268	P	Pn	15 24 04.7	+0.5
JFY				eS	Sn	15 24 27.6	-0.3
MJAR	Matsushiro Arr	3.18	253	Pn	Pn	15 24 24.8	+2.0
	0.4nm,0.3s,baz=78,slow=17,SNR=2.8						
MJAR				Sn	Sn	15 25 03.3	+1.9
	1.0nm,0.3s,baz=83,slow=20,SNR=4.2						
JHJ	Hachijo jima 2	4.74	203	Pn	Pn	15 24 45.3	+1.1
	2.7nm,0.3s,baz=53,slow=20,SNR=3.2						
JHJ				Sn	Sn	15 25 38.2	-1.5
	7.7nm,0.3s,baz=73,slow=19,SNR=3.5						
MKAR	Makanchi Array	44.26	302	P	P	15 31 43.3	+0.6
	0.5nm,0.8s,baz=88,slow=7.5,SNR=2.5						
KURBB	Kurchatov Arra	46.08	308	P	P	15 31 58.4	+1.5
	0.7nm,0.3s,baz=81,slow=7.4,SNR=4.2						
WRA	Warramunga Arr	57.60	189	P	P	15 33 22.2	-1.0
	0.2nm,0.5s,baz=5.5,slow=7.3,SNR=4.1						

MOS ***07*** *15:25:11.5±1.1, 38°.28N×141°.90E, h61km, mb4.6/28, Error ellipse: s-maj=8.7km s-min=5.9km az=87.9*

ISCJB ***07*** *15:25:12.2±0.5, 38°.20N±0°.03×141°.88E±0°.04, h72km±3km, mb4.3/52, Error ellipse: s-maj=6.2km s-min=4.1km az=31.2*

IDC ***07*** *15:25:13.8±0.7, 38°.22N×141°.79E, h67km±6km, mb4.1/29, mb1 4.2/35, mb1mx4.0/74, mbtmp4.3/35, Error ellipse: s-maj=11.9km s-min=9.9km az=117.0*

JMA ***07*** *15:25:13.2±0.1, 38°.20N×141°.85E, h63km±3km, M4.5 JMA Felt II J1.*

NEIC ***07*** *15:25:14.3±0.5, 38°.21N×141°.84E, h74km±4km, mb4.5/20, Error ellipse: s-maj=5.4km s-min=4.0km az=134.0*

ISC 07 15:25:13.1±0.6**, 38°.17N**±0°.04×**141°.87E**±0°.05**, h64**km±5km**, n169,** σ1s.**08**/180**, mb4.4**/52**, 2D, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JMM	Marumori	0.91	251	P	Pn	15 25 30.1	0.0
JMM				S	Sn	15 25 42.2	-0.5
OFUJ	Ofunato	0.92	350	P	Pn	15 25 30.1	-0.2
JMK	Ichinoseki	0.93	327	P	Pn	15 25 30.5	+0.1
JMK				S	Sn	15 25 42.5	-0.8
JOU	Okura	0.97	282	P	Pn	15 25 31.0	0.0
JOU				S	Sn	15 25 43.7	-0.5
JFK	Kawauchi	1.13	225	P	Pn	15 25 33.4	+0.3
JFK				S	Sn	15 25 48.5	+0.6
JOM	Ohasama	1.38	341	P	Pn	15 25 36.1	-0.1
JOM				S	Sn	15 25 53.1	-0.5
JFT	Otama	1.38	242	P	Pn	15 25 37.1	+0.8
JFT				eS	Sn	15 25 54.5	+0.7
JYK	Kaneyama	1.40	302	P	Pn	15 25 36.4	-0.2
JYK				S	Sn	15 25 53.3	-0.9
JYS	Shirataka	1.43	272	P	Pn	15 25 37.2	+0.3
JYS				S	Sn	15 25 55.2	+0.4
JRG	Rokugo	1.56	322	P	Pn	15 25 38.7	0.0
JRG				S	Sn	15 25 58.6	+0.6
JYA	Atsumi	1.75	285	P	Pn	15 25 41.3	+0.1
JYA				S	Sn	15 26 03.0	+0.5
MJAR	Matsushiro Arr	3.34	242	P	Pn	15 26 04.7	+1.8
	33nm,0.3s,baz=58,slow=9.5,SNR=109						
MAJO	Matsushiro	3.34	242 d	iP	Pn	15 26 03.5	+0.5
MAJO	Matsushiro	3.34	242	ePn	Pn	15 26 04.8	+1.8
ERM	Erimo	3.96	14	eP	Pn	15 26 11.4	+0.1
ERM				e		15 26 52.4	
ERM	Erimo	3.96	14	ePn	Pn	15 26 11.4	+0.1
ERM				eSn	Sn	15 26 52.4	-4.1
INU	Inuyama	4.81	236	ePn	Pn	15 26 24.5	+1.5
JHJ2	Mitsune	5.32	199	ePn	Pn	15 26 29.7	-0.3
JHJ2				eSn	Sn	15 27 25.2	-4.7
JHJ	Hachijo jima 2	5.32	199	P	Pn	15 26 29.9	-0.1
	29nm,0.3s,baz=337,slow=22,SNR=18						
JHJ				S	Sn	15 27 26.3	-3.7
	101nm,0.3s,baz=47,slow=23,SNR=20						
YUK	Yuzh-Kuril'sk	6.58	26	eP	Pn	15 26 45.0	-2.2
YUK				eS	Sn	15 27 53.6	-7.2
YUK				pmax	pmax		
	comp=N,48nm,0.7s						
YUK				pmax	pmax		
	comp=E,90nm,0.7s						
YUK				pmax	pmax		
	comp=Z,108nm,0.7s						
SHO	Shikotan	6.81	32	eP	Pn	15 26 47.0	-3.3
SHO				eS	Sn	15 27 57.2	-9.2
SHO				pmax	pmax		
	comp=E,38nm,0.6s						
SHO				pmax	pmax		
	comp=Z,51nm,0.6s						
SHO				pmax	pmax		
	comp=N,53nm,0.5s						
KUR	Kuril'sk	8.36	31	eP	Pn	15 27 10.1	-1.3
KUR				eS	Sn	15 28 37.1	-7.1
KUR				pmax	pmax		
	comp=N,11nm,0.9s						
KUR				pmax	pmax		
	comp=Z,17nm,0.9s						
KUR				smax	smax		
	comp=E,84nm,0.7s						
KUR				smax	smax		
	comp=N,47nm,0.3s						
YSS	Yuzh-Sakhalins	8.80	4	eP	Pn	15 27 17.6	+0.1
YSS	Yuzh-Sakhalins	8.80	4	ePn	Pn	15 27 17.4	-0.1
USRK	Ussuriysk Ar.	9.57	312	P	Pn	15 27 29.0	+0.9
	comp=N,2.4nm,0.3s,baz=121,slow=14,SNR=39						
JNU	Nakatsue	10.27	244	P	Pn	15 27 38.5	+0.9
	comp=N,0.8nm,0.3s,baz=45,slow=0.3,SNR=9.5						
KSRS	Korea Array	11.06	271	P	Pn	15 27 50.8	+2.4
	comp=N,1.0nm,0.3s,baz=82,slow=14,SNR=18						
KSRS	Korea Array	11.06	271	eP	Pn	15 27 51.7	+3.3
KSRS				pmax	pmax		
	comp=Z,1.0nm,0.3s						
KS01	Wonju Array Si	11.08	271	ePn	Pn	15 27 50.2	+1.5
KS15	Wonju Array Si	11.09	271	ePn	Pn	15 27 51.7	+2.8
KSAR	Wonju Array Be	11.09	271	P	Pn	15 27 50.8	+1.9
KSAR	Wonju Array Be	11.09	271	P	Pn	15 27 50.8	+1.9
KLR	Kul'dur	13.24	330	P	Pn	15 28 16.8	-1.3
	comp=Z,0.2nm,0.3s,baz=139,slow=12,SNR=5.4						
CN2	Changchun	13.62	300	eP	Pn	15 28 25.5	+2.4
PETK	Petropavlovsk-	18.52	31	P	P	15 29 23.4	-0.7
	comp=Z,0.2nm,0.3s,baz=254,slow=10,SNR=2.8						
PEA1	Petropavlovsk-	18.52	31	eP	P	15 29 23.4	-0.8
NJ2	Nanjing	19.77	259	eP	P	15 29 38.7	+0.7
MA2	Magadan	22.16	12	P	P	15 30 02.9	-0.5
	comp=Z,4.6nm,0.6s,baz=211,slow=9.2,SNR=14						
YULB	Yu-li	22.94	236	eP	P	15 30 08.2	-3.7
	comp=Z,24nm,1.6s						
TPUB	Ta-pu	23.44	237	eP	P	15 30 14.5	-2.3
	comp=Z,20nm,1.3s						
HHC	Hu-ho-hao-te	23.48	286	eP	P	15 30 16.9	-0.3
YAK	Yakutsk	25.04	346	P	P	15 30 29.8	-1.1
	comp=Z,0.7nm,0.3s,baz=125,slow=19,SNR=3.4						
YAK	Yakutsk	25.04	346	eP	P	15 30 31.5	+0.6
YAK				pmax	pmax		
	comp=Z,7.0nm,0.7s						
YAK	Yakutsk	25.04	346	eP	P	15 30 29.8	-1.1
	comp=Z,13nm,1.0s						
SEY	Seymchan	25.60	11	P	P	15 30 36.6	+0.6
	comp=Z,7.6nm,1.0s,baz=200,slow=6.9,SNR=24						
SEY	Seymchan	25.60	11	eP	P	15 30 37.7	+1.7
BOD	Bodaibo	26.77	326	eP	P	15 30 44.8	-1.8
BOD				pmax	pmax		
	comp=Z,5.0nm,1.0s						
ULN	Ulaanbaatar	27.04	302	eP	P	15 30 50.0	+0.7
ULN				pmax	pmax		
	comp=Z,18nm,2.5s						
ULN	Ulaanbaatar	27.04	302	eP	P	15 30 49.2	-0.1
	comp=Z,5.6nm,0.8s						
SONA1	Songino Array	27.47	302	eP	P	15 30 52.3	-0.9
SONA0	Songino Array	27.47	302	eP	P	15 30 52.6	-0.6
	comp=Z,20nm,1.7s						
SONM	Songino Array	27.47	302	P	P	15 30 52.6	-0.6
	comp=Z,1.3nm,0.4s,baz=102,slow=7.9,SNR=14						
SONM	Songino Array	27.47	302	eP	P	15 30 53.4	+0.2
SONM				pmax	pmax		
	comp=Z,1.0nm,0.4s						
ENH	Enshi	27.81	263	eP	P	15 30 55.5	-0.8
	comp=Z,38nm,0.8s						
H11N2	WAKE ISLAND Hy	28.44	123	T	T	16 01 21.2	
	baz=316,slow=76,SNR=37						
H11N1	WAKE ISLAND Hy	28.45	123	T	T	16 01 27.8	
	baz=316,slow=76,SNR=57						
H11N3	WAKE ISLAND Hy	28.46	123	T	T	16 01 26.0	
	baz=316,slow=76,SNR=44						
H11S1	WAKE ISLAND Hy	29.19	125	T	T	16 02 21.4	
	baz=317,slow=76,SNR=32						
H11S3	WAKE ISLAND Hy	29.20	125	T	T	16 02 21.5	
	baz=317,slow=76,SNR=37						
H11S2	WAKE ISLAND Hy	29.21	125	T	T	16 02 28.1	
	baz=317,slow=76,SNR=35						
ZAK	Zakamensk	29.87	307	eP	P	15 31 12.8	-1.6
ZAK				pmax	pmax		
	comp=Z,4.0nm,0.9s						
LZH	Lanzhou	30.25	278	eP	P	15 31 18.8	+0.7
LZH				pP	pP	15 31 34.3	+0.6
LZH				sP	sP	15 31 41.6	+0.3
GYA	Guiyang	31.79	259	eP	P	15 31 32.0	+0.4
CD2	Chengdu	32.05	269	P	P	15 31 32.7	-1.1
GTA	Gaotai	32.59	286	eP	P	15 31 37.7	-0.9
GTA				pP	pP	15 31 45.9	-8.4
GTA				sP	sP	15 31 49.6	-12
BILL	Bilibino	32.83	17	eP	P	15 31 39.4	-0.7
BILL				pmax	pmax		
	comp=Z,2.0nm,1.1s						
KMI	Kunming	35.51	260	P	P	15 32 04.5	+0.5
WMQ	Urumqi	40.66	296	P	P	15 32 48.2	+1.2
WMQ				pP	pP	15 33 06.4	+3.3
WMQ				sP	sP	15 33 13.1	+2.5
ZAA0	Zalesovo Array	41.43	311	eP	P	15 32 52.2	-0.9
ZAA1	Zalesovo Array	41.43	311	eP	P	15 32 52.5	-0.6
ZALV	Zalesovo Beam	41.43	311	P	P	15 32 52.5	-0.6
	comp=Z,4.4nm,0.5s,baz=83,slow=7.4,SNR=23						
ZALV	Zalesovo Beam	41.43	311	eP	P	15 32 52.9	-0.1
ZALV				pmax	pmax		
	comp=Z,4.0nm,0.5s						
CHTO	Chiang Mai	41.93	255	eP	P	15 32 57.7	+0.1
CHTO				pmax	pmax		
	comp=Z,6.0nm,1.4s						
CHTO	Chiang Mai	41.93	255	eP	P	15 32 57.7	+0.1
	comp=Z,6.5nm,1.4s						
CM31	Chiang Mai Arr	42.15	254	eP	P	15 32 58.4	-1.0
CMAR	Chiang Mai Arr	42.15	254	P	P	15 32 59.5	+0.1
	comp=Z,0.6nm,0.5s,baz=42,slow=7.7,SNR=6.0						
CMAR	Chiang Mai Arr	42.15	254	eP	P	15 32 59.6	+0.2
CMAR				pmax	pmax		
	comp=Z,1.0nm,0.5s						
NRIK	Noril'sk	42.39	335	P	P	15 33 00.7	0.0
	comp=Z,0.6nm,0.3s,baz=130,slow=7.9,SNR=3.4						
MK01	Makanchi Array	43.83	301	eP	P	15 33 12.6	-0.1
MK31	Makanchi Array	43.83	301	eP	P	15 33 13.1	+0.4
MK31	Makanchi Array	43.83	301	eP	P	15 33 13.1	+0.4
MK32	Makanchi Array	43.83	301	eP	P	15 33 12.5	-0.2
MKAR	Makanchi Array	43.83	301	P	P	15 33 12.5	-0.2
	comp=Z,10nm,0.6s,baz=86,slow=9.9,SNR=112						
MKAR	Makanchi Array	43.83	301	eP	P	15 33 13.2	+0.5
MKAR				pmax	pmax		
	comp=Z,10.0nm,0.6s						
MKAR	Makanchi Array	43.83	301	eP	P	15 33 12.9	+0.2
MAKZ	Makanchi	44.04	301	eP	P	15 33 14.3	-0.1
MAKZ				pmax	pmax		
	comp=Z,11nm,0.6s						
MAKZ	Makanchi	44.04	301	eP	P	15 33 14.3	-0.1
	comp=Z,10nm,0.6s						
KURK	Kurchatov	45.52	307	eP	P	15 33 25.6	-0.4
KURK				pmax	pmax		
	comp=Z,15nm,0.5s						
KURK	Kurchatov	45.52	307	eP	P	15 33 25.6	-0.4
	comp=Z,15nm,0.5s						
KURBB	Kurchatov Arra	45.60	307	P	P	15 33 26.2	-0.4
	comp=Z,13nm,0.4s,baz=82,slow=8.3,SNR=31						
KDAK	Kodiak Island	46.01	43	iP	P	15 33 30.3	+0.5
TAPN	Taplejung	46.23	273	eP	P	15 33 32.3	0.0
	comp=Z,7.5nm,0.4s						
ODAN	Odare	46.72	273	eP	P	15 33 35.2	-0.8
	comp=Z,18nm,0.8s						
RAMN	Ramite	47.30	273	eP	P	15 33 40.0	-0.6
	comp=Z,43nm,0.9s						
GUN	Gumba	47.41	275	eP	P	15 33 41.7	+0.1
	comp=Z,20nm,0.3s						
KKN	Kakani	47.94	275	eP	P	15 33 45.2	-0.3
	comp=Z,19nm,0.5s						
PKIN	Phulchoki	47.95	275	eP	P	15 33 45.2	-0.4
	comp=Z,8.7nm,0.7s						
DMN	Daman	48.16	275	eP	P	15 33 46.3	-1.0
	comp=Z,7.1nm,0.3s						
ILAR	Eielson Array	48.34	33	P	P	15 33 48.4	+0.5
	comp=Z,2.2nm,0.7s,baz=270,slow=6.7,SNR=23						
ILAR				pP	pP	15 34 05.0	+0.7
	comp=Z,0.8nm,0.7s,baz=266,slow=6.3,SNR=3.5						
ILB	Eielson Array	48.34	33	eP	P	15 33 47.9	+0.1
GKN	Gorkha	48.35	276	eP	P	15 33 48.2	-0.4
	comp=Z,31nm,0.8s						
KOLN	Koldanda	49.27	276	eP	P	15 33 54.2	-1.5
	comp=Z,5.4nm,0.3s						
TKM2	Tokmak 2	49.42	298	eP	P	15 33 57.3	+0.7
TKM2				pmax	pmax		
	comp=Z,10.0nm,0.8s						
TKM2	Tokmak 2	49.42	298	eP	P	15 33 57.3	+0.7
	comp=Z,10.0nm,0.8s						
PYUN	Piuthan	49.59	277	eP	P	15 33 57.4	-0.8
	comp=Z,78nm,0.9s						
VOSK	Vostochnaya	49.80	311	eP	P	15 33 58.8	-0.4
VOSK				pmax	pmax		
	comp=Z,7.0nm,1.0s						
VOSK	Vostochnaya	49.80	311	eP	P	15 33 58.8	-0.4
	comp=Z,6.9nm,1.0s						
BVAR	Borovoye Array	50.08	312	P	P	15 34 00.9	-0.3
	comp=Z,1.2nm,0.5s,baz=72,slow=9.1,SNR=7.2						
BVAR	Borovoye Array	50.08	312	P	P	15 34 01.0	-0.3
AAK	Ala-Archa	50.28	298	P	P	15 34 03.3	+0.2
	comp=Z,3.2nm,0.5s,baz=137,slow=6.0,SNR=20						
KSH	Kashi	50.28	293	P	P	15 34 08.7	+5.5
ZRNK	Zerenda	50.91	312	eP	P	15 34 07.8	+0.2
ZRNK				pmax	pmax		
	comp=Z,4.0nm,0.8s						
ZRNK	Zerenda	50.91	312	eP	P	15 34 07.8	+0.2
	comp=Z,4.4nm,0.8s						
INK	Inuvik	53.21	28	P	P	15 34 25.2	+0.9
	comp=Z,2.5nm,0.6s,baz=287,slow=6.8,SNR=11						
INK	Inuvik	53.21	28	eP	P	15 34 24.8	+0.5
	comp=Z,5.7nm,1.0s						
ARU	Arti	55.75	318	P	P	15 34 42.7	-0.2
	comp=Z,2.5nm,0.4s,baz=112,slow=2.0,SNR=7.3						
ARU	Arti	55.75	318 d	iP	P	15 34 43.0	0.0
ARU						15 36 46.0	
ARU				S	S	15 42 28.9	+4.3
ARU				SS	SS	15 46 08.3	-2.0
ARU				pmax	pmax		
	comp=Z,1.0nm,0.3s						
ARU	Arti	55.75	318	eP	P	15 34 42.4	-0.5
	comp=Z,7.0nm,1.0s						
ABKAR	Akbulak array	57.49	310	eP	P	15 34 54.5	-0.9
AKTO	Aktyubinsk	58.19	312	P	P	15 35 00.3	0.0
	comp=Z,1.1nm,0.5s,baz=64,slow=10,SNR=4.2						
WR1	Warramunga Arr	58.24	188	eP	P	15 35 00.8	-0.1
	comp=Z,8.6nm,0.8s						
WRA	Warramunga Arr	58.24	188	P	P	15 35 00.8	-0.1
	comp=Z,5.0nm,0.5s,baz=6.1,slow=7.1,SNR=76						
SPITS	Spitsbergen Ar	59.48	349	P	P	15 35 08.7	-0.1
	comp=Z,0.9nm,0.4s,baz=68,slow=6.7,SNR=6.8						
SPITS	Spitsbergen Ar	59.48	349	P	P	15 35 08.7	-0.1
SPITS				pmax	pmax		
	comp=Z,11nm,1.1s						
RES	Resolute Bay	61.41	15	P	P	15 35 21.7	-0.2
	comp=Z,3.6nm,0.6s,baz=306,slow=7.0,SNR=19						
RES	Resolute Bay	61.41	15	eP	P	15 35 21.3	-0.7
AS01	Alice Springs	61.96	188	eP	P	15 35 26.5	+0.2
AS31	Alice Springs	61.97	188	eP	P	15 35 26.0	-0.3
	comp=Z,1.2nm,0.8s						
ASAR	Alice Springs	61.97	188	P	P	15 35 26.6	+0.3
	comp=Z,3.4nm,0.7s,baz=10,slow=5.0,SNR=54						
ASAR				pP	pP	15 35 44.3	+0.9
	comp=Z,0.7nm,0.6s,baz=19,slow=12,SNR=3.4						
YKA	Yellowknife Ar	62.64	31	P	P	15 35 30.5	+0.1
	comp=Z,1.0nm,0.6s,baz=303,slow=6.6,SNR=21						
YKA				PcP	PcP	15 36 09.4	+0.7
	comp=Z,0.5nm,0.5s,baz=298,slow=4.2,SNR=9.4						
YKB5	Yellowknife Ar	62.64	31	eP	P	15 35 30.3	-0.1
YKB5				ePcP	PcP	15 36 09.4	+0.7
ARCES	ARCESS Array B	63.06	339	P	P	15 35 33.0	-0.1
	comp=Z,1.7nm,0.6s,baz=55,slow=7.7,SNR=10						
ARCES	ARCESS Array B	63.06	339	eP	P	15 35 33.2	+0.1
ARCES				pmax	pmax		
	comp=Z,2.0nm,0.6s						
FIA0	FINESS Array S	67.98	332	eP	P	15 36 04.6	-0.3
FIA0	FINESS Array S	67.98	332	eP	P	15 36 04.6	-0.3
FINES	FINESS Array B	67.98	332	P	P	15 36 04.6	-0.3
	comp=Z,2.3nm,0.6s,baz=38,slow=9.6,SNR=9.7						
FINES	FINESS Array B	67.98	332	eP	P	15 36 05.1	+0.2
FINES				pmax	pmax		
	comp=Z,3.0nm,0.6s						
STKA	Stephens Creek	69.69	180	P	P	15 36 16.6	+0.8
	comp=Z,0.8nm,0.4s,baz=334,slow=8.9,SNR=5.9						
STKA	Stephens Creek	69.69	180	eP	P	15 36 16.1	+0.3
	comp=Z,5.0nm,1.8s						
KIV	Kislovodsk	70.44	311	eP	P	15 36 22.3	+1.7
KIV				pmax	pmax		
	comp=Z,6.0nm,1.0s						
LRM	Limekiln Ridge	73.08	45	eP	P	15 36 35.8	-0.8
EGMT	Eagleton	73.18	42	eP	P	15 36 37.7	+0.7
	comp=Z,7.3nm,0.9s						
HFS	Hagfors	73.20	336	P	P	15 36 36.7	0.0
	comp=Z,1.6nm,0.6s,baz=72,slow=4.8,SNR=6.7						
HFS	Hagfors	73.20	336	P	P	15 36 36.7	0.0
HFS				pmax	pmax		
	comp=Z,1.0nm,0.5s						
NB2	NORSAR Subarra	73.28	337	P	P	15 36 37.0	-0.2
	comp=Z,1.3nm,0.7s,baz=38,slow=6.2						
NB200	NORSAR Array S	73.28	337	eP	P	15 36 37.0	-0.2
NOA	NORSAR Array B	73.28	337	P	P	15 36 37.0	-0.2
	comp=Z,3.5nm,0.9s,baz=38,slow=5.9,SNR=4.9						
NOA	NORSAR Array B	73.28	337	eP	P	15 36 37.2	0.0
NOA				pmax	pmax		
	comp=Z,2.0nm,0.7s						
AKASG	Malin Array Be	73.62	322	P	P	15 36 38.8	-0.5
	comp=Z,0.8nm,0.5s,baz=44,slow=6.0,SNR=7.5						
KIEV	Kiev	73.63	322	eP	P	15 36 39.1	-0.3
KIEV				pmax	pmax		
	comp=Z,3.0nm,0.8s						
NV01	Mina Array Sit	74.02	54	eP	P	15 36 43.4	+1.2
NVAR	Mina Array Bea	74.02	54	P	P	15 36 43.6	+1.4
	comp=Z,3.1nm,0.8s,baz=280,slow=6.3,SNR=1.5						
GATR	Gnd/Air Tx Cnt	74.86	58	eP	P	15 36 46.1	-0.9
H17A	Grant Village	75.00	45	eP	P	15 36 50.2	+2.3
	comp=Z,6.0nm,0.8s						
FRB	Frobisher Bay	75.58	13	P	P	15 36 50.2	-0.3
	comp=Z,4.1nm,0.4s,baz=357,slow=3.9,SNR=6.8						
BW06	Boulder Array	76.61	46	eP	P	15 36 57.3	+0.3
PD31	Pinedale Array	76.61	46	eP	P	15 36 57.5	+0.5
PDAR	Pinedale Array	76.61	46	P	P	15 36 57.8	+0.7
	comp=Z,2.8nm,0.7s,baz=260,slow=1.7,SNR=20						
PDAR				pP	pP	15 37 15.8	+1.2
	comp=Z,0.9nm,0.5s,baz=297,slow=2.8,SNR=4.5						
DNR	Dunn Ranch,Anz	78.02	57	eP	P	15 37 05.9	+0.9
ECSD	EROS Data Cent	82.80	39	eP	P	15 37 30.3	+0.1
	comp=Z,30nm,2.0s						
ANMO	Albuquerque	83.58	50	eP	P	15 37 35.4	+0.8
ANMO				pmax	pmax		
	comp=Z,2.0nm,1.0s						
TX31	Lajitas Ar. Si	89.14	53	eP	P	15 38 01.8	-0.1
LTX	Lajitas	89.14	53	eP	P	15 38 02.6	+0.7
LTX	Lajitas	89.14	53	eP	P	15 38 02.6	+0.7
TXAR	Lajitas Array	89.14	53	P	P	15 38 02.6	+0.7
	comp=Z,2.1nm,0.6s,baz=299,slow=3.1,SNR=27						
MCWV	Mont Chateau	93.61	31	eP	P	15 38 21.3	-1.0
	comp=Z,273nm,0.9s						
LPAZ	La Paz	145.79	59	PKPbc	PKPab	15 44 46.4	-0.2
	comp=Z,4.8nm,0.5s,baz=337,slow=3.1,SNR=12						
LPAZ	La Paz	145.79	59	ePKP2	PKPbc	15 44 46.1	0.0
LPAZ	La Paz	145.79	59	ePKPdf	PKPbc	15 44 46.1	0.0

IDC ***07*** *15:28:09.8±1.0, 35°.73N×22°.03E, h0km, mb3.7/8, mb1 3.7/13, mb1mx3.5/70, mbtmp3.6/13, ML3.4/5, Error ellipse: s-maj=22.2km s-min=16.4km az=174.0*

ATH ***07*** *15:28:10.6, 35°.60N×21°.91E, h6km±1km, ML3.4/6, Error ellipse: s-maj=2.2km s-min=0.9km az=48.0*

ISCJB ***07*** *15:28:11.4±1.2, 35°.55N±0°.03×21°.86E±0°.04, h10km±9km, mb3.7/7, Error ellipse: s-maj=6.5km s-min=4.2km az=38.3*

THE ***07*** *15:28:11.6, 35°.66N×21°.99E, h0km±3km, ML3.5/3, Error ellipse: s-maj=4.0km s-min=1.1km az=205.0*

CSEM ***07*** *15:28:13.4±0.4, 35°.68N×21°.99E, h2km, ML3.5, Error ellipse: s-maj=9.8km s-min=4.3km az=40.0*

ISC 07 15:28:10.1±1.4**, 35°.58N**±0°.04×**21°.93E**±0°.04**, h1**km±9km**, n110,** σ1s.**51**/133**, mb3.9**/7**, Central Mediterranean Sea**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KYTH	Kithira	1.14	52	P	Pg	15 28 31.4	-0.4
KYTH				S	Sg	15 28 46.5	-0.2
KYTH	Kithira	1.14	52	P	Pg	15 28 31.5	-0.4
KYTH				S	Sg	15 28 46.5	-0.2
KYTH	Kithira	1.14	52	P	Pg	15 28 31.5	-0.4
ANKY	Antikythira Is	1.15	75	P	Pg	15 28 32.4	+0.2
ANKY				S	Sb	15 28 48.2	+0.1
ANKY	Antikythira Is	1.15	75	P	Pg	15 28 32.6	+0.4
ANKY				S	Sb	15 28 48.3	+0.1
ANKY	Antikythira Is	1.15	75	P	Pg	15 28 32.6	+0.4
ANKY				S	Sb	15 28 48.3	+0.1
ANKY				AML	AML	15 28 50.7	
	comp=N,5057µm,0.8s						
ANKY				AML	AML	15 28 50.8	
	comp=E,4905µm,0.5s						
PYL	PYLOS	1.32	353	P	Pg	15 28 33.8	-1.6
PYL				S	Sg	15 28 53.5	+1.0
PYL	PYLOS	1.32	353	P	Pg	15 28 35.2	-0.2
PYL				S	Sg	15 28 53.5	+1.0
PYL	PYLOS	1.32	353	P	Pg	15 28 35.2	-0.2
PYL				S	Sg	15 28 53.6	+1.0
PYL				AML	AML	15 29 00.0	
	comp=E,2393µm,0.6s						
PYL				AML	AML	15 29 01.3	
	comp=N,2015µm,0.7s						
VLI	Veliai	1.40	35	P	Pg	15 28 35.8	-1.1
VLI	Veliai	1.40	35	P	Pg	15 28 36.2	-0.7
VLI				S	Sn	15 28 57.0	+1.2
VLI	Veliai	1.40	35	P	Pg	15 28 36.2	-0.7
VLI				S	Sn	15 28 57.0	+1.2
ITM	Ithomi	1.59	360	P	Pn	15 28 38.8	-0.6
ITM				S	Sn	15 29 01.0	+0.4
ITM	Ithomi	1.59	360	P	Pn	15 28 40.4	+1.0
ITM				S	Sn	15 29 01.0	+0.4
ITM	Ithomi	1.59	360	P	Pn	15 28 40.4	+1.0
ITM				S	Sg	15 29 02.5	+1.2
IMMV	Iera Moni Meta	1.68	94	P	Pn	15 28 41.1	+0.5
IMMV	Iera Moni Meta	1.68	94	P	Pb	15 28 42.2	+0.5
IMMV				S	Sg	15 29 04.7	+0.6
IMMV	Iera Moni Meta	1.68	94	P	Pb	15 28 42.2	+0.5
IMMV				S	Sg	15 29 04.7	+0.6
IMMV				AML	AML	15 29 12.2	
	comp=E,1321µm,0.4s						
IMMV				AML	AML	15 29 13.7	
	comp=N,1885µm,0.7s						
VLX	Vlachokerasia	1.82	11	P	Pn	15 28 42.7	+0.1
VLX	Vlachokerasia	1.82	11	P	Pn	15 28 43.1	+0.5
VLX				S	Sg	15 29 10.4	+1.8
VLX	Vlachokerasia	1.82	11	P	Pn	15 28 43.1	+0.5
VLX				S	Sg	15 29 10.4	+1.8
VLX				AML	AML	15 29 18.9	
	comp=N,1838µm,0.6s						
VLX				AML	AML	15 29 18.9	
	comp=E,1752µm,0.5s						
VAM	Vamos	1.86	95	P	Pb	15 28 45.5	+0.6
VAM				S	Sn	15 29 07.8	+0.6
GVD	Gavdhos	1.92	112	P	Pg	15 28 47.2	+0.3
GVD	Gavdhos	1.92	112	P	Pg	15 28 47.2	+0.3
AMT	Artemida-Makis	1.95	355	P	Pn	15 28 44.6	+0.2
AMT	Artemida-Makis	1.95	355	P	Pn	15 28 45.5	+1.1
AMT				S	Sn	15 29 11.4	+1.9
AMT	Artemida-Makis	1.95	355	P	Pn	15 28 45.5	+1.1
AMT				S	Sn	15 29 11.4	+1.9
AMT				AML	AML	15 29 31.7	
	comp=N,1684µm,0.6s						
AMT				AML	AML	15 29 32.4	
	comp=E,2044µm,0.7s						
TRIP	Tripoli	1.96	8	P	Pn	15 28 45.9	+1.4
TRIP	Tripoli	1.96	8	P	Pn	15 28 45.9	+1.4
KRND	KRANIDI	2.05	28	P	Pn	15 28 45.3	-0.3
KRND	KRANIDI	2.05	28	P	Pb	15 28 48.2	+0.2
KRND				S	Sn	15 29 12.7	+0.9
KRND	KRANIDI	2.05	28	P	Pb	15 28 48.2	+0.2
KRND				S	Sn	15 29 12.7	+0.9

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
DID	Didima	2.19	28	P	Pn	15 28 48.8	+1.2
DID	Didima	2.19	28	P	Pn	15 28 48.8	+1.2
MHLO	Agia Marina, M	2.29	60	P	Pb	15 28 52.7	+0.6
MHLO	Agia Marina, M	2.29	60	P	Pb	15 28 52.7	+0.6
DRO	Drossia	2.37	356	P	Pn	15 28 50.3	+0.2
DRO	Drossia	2.37	356	P	Pn	15 28 51.5	+1.4
DRO	Drossia	2.37	356	P	Pn	15 28 51.5	+1.4
GUR	Goura	2.37	8	P	Pb	15 28 53.3	-0.4
GUR	Goura	2.37	8	P	Pb	15 28 53.3	-0.4
SIVA	Sivas	2.42	103	P	Pb	15 28 53.3	-1.2
SIVA				S	Sb	15 29 25.6	+0.8
SIVA	Sivas	2.42	103	P	Pb	15 28 53.3	-1.2
SIVA				S	Sb	15 29 25.6	+0.8
IDI	Anoyia	2.44	96	Pn	Pn	15 28 52.1	+1.1
	comp=E,2.0nm,0.3s,baz=282,slow=17,SNR=9.7						
IDI	Anoyia	2.44	96	P	Pb	15 28 54.8	+0.1
IDI	Anoyia	2.44	96	P	Pb	15 28 54.8	+0.1
KLV	Kalavryta, Ach	2.46	4	P	Pn	15 28 52.7	+1.3
KLV				S	Sn	15 29 24.3	+2.2
KLV	Kalavryta, Ach	2.46	4	P	Pn	15 28 52.7	+1.3
KLV				S	Sn	15 29 24.3	+2.2
KLV				AML	AML	15 29 41.1	
	comp=N,451μm,1.2s						
KLV				AML	AML	15 29 42.9	
	comp=E,392μm,0.7s						
RLS	Riolos of Patr	2.50	352	P	Pn	15 28 54.4	+2.6
LTK	Loutraki	2.57	19	P	Pn	15 28 55.7	+2.8
LTK	Loutraki	2.57	19	P	Pn	15 28 55.7	+2.8
AXS	Araxos	2.65	351	P	Pn	15 28 54.3	+0.4
AXS	Araxos	2.65	351	P	Pn	15 28 54.3	+0.4
LAKA	Lakka	2.65	1	P	Pn	15 28 57.1	+3.1
LAKA	Lakka	2.65	1	P	Pn	15 28 57.1	+3.1
KFL	Anninata	2.68	340	P	Pn	15 28 56.4	+2.0
KFL	Anninata	2.68	340	P	Pn	15 28 56.4	+2.0
VLS	Valsamata	2.80	338	P	Pn	15 28 57.4	+1.4
VILL	Villia	2.81	23	P	Pn	15 28 58.4	+2.3
KALE	Kalithea	2.81	3	P	Pn	15 28 59.1	+2.9
KALE	Kalithea	2.81	3	P	Pn	15 28 59.1	+2.9
VIL2	Platees	2.83	22	P	Pn	15 28 58.4	+1.9
DSF	Desfina	2.86	9	P	Pn	15 28 59.1	+2.2
DSF	Desfina	2.86	9	P	Pn	15 28 59.1	+2.2
PTL	Penteli	2.91	32	P	Pn	15 29 00.0	+2.5
PTL	Penteli	2.91	32	P	Pn	15 29 00.0	+2.5
LAST	Lasithi	2.93	97	P	Pn	15 29 01.0	+3.1
LAST	Lasithi	2.93	97	P	Pn	15 29 01.0	+3.1
ANX	Ano Chora	3.00	360	P	Pn	15 29 02.7	+3.8
PVO	Paravola	3.04	354	P	Pn	15 29 02.5	+3.1
PVO	Paravola	3.04	354	P	Pn	15 29 02.5	+3.1
PDO	Prodromos	3.07	349	P	Pn	15 29 01.1	+1.5
PDO	Prodromos	3.07	349	P	Pn	15 29 01.1	+1.5
LKR	Lokris	3.18	15	P	Pn	15 29 02.3	+1.1
LKR	Lokris	3.18	15	P	Pn	15 29 02.3	+1.1
APE	Apeiranthos	3.27	62	P	Pn	15 29 04.6	+2.2
APE	Apeiranthos	3.27	62	P	Pn	15 29 04.6	+2.2
EVR	Evrytania	3.33	358	P	Pn	15 29 04.2	+0.9
EVR	Evrytania	3.33	358	P	Pn	15 29 04.2	+0.9
LKD2	Lefkada island	3.36	343	P	Pn	15 29 04.3	+0.6
LKD2	Lefkada island	3.36	343	P	Pn	15 29 04.3	+0.6
DSL	Palaion Diasel	3.61	350	P	Pn	15 29 08.9	+1.8
DSL	Palaion Diasel	3.61	350	P	Pn	15 29 08.9	+1.8
SKIA	Skiathos	3.78	18	P	Pn	15 29 10.3	+0.8
SKIA	Skiathos	3.78	18	P	Pn	15 29 10.3	+0.8
AOS	Alonnisos	3.90	23	P	Pn	15 29 12.9	+1.8
AOS	Alonnisos	3.90	23	P	Pn	15 29 12.9	+1.8
XOR	Xorichti	3.91	15	P	Pn	15 29 12.6	+1.4
XOR	Xorichti	3.91	15	P	Pn	15 29 12.6	+1.4
THL	Klokotos Trika	3.98	1	P	Pn	15 29 14.9	+2.8
KARP	Karpathos	4.27	89	P	Pn	15 29 18.6	+2.4
KARP	Karpathos	4.27	89	P	Pn	15 29 18.6	+2.4
KPRO	Kipourio	4.39	354	P	Pn	15 29 19.5	+1.6
KPRO	Kipourio	4.39	354	P	Pn	15 29 19.5	+1.6
KEK	Kerkira	4.46	338	P	Pn	15 29 22.6	+3.9
NEST	Nestorio	4.87	352	P	Pn	15 29 26.6	+2.0
NEST	Nestorio	4.87	352	P	Pn	15 29 26.6	+2.0
BRTR	Keskin Array B	10.16	63	Pn	Pn	15 30 37.8	+0.6
	comp=E,0.1nm,0.3s,baz=229,slow=13,SNR=2.8						
EIL	Elat	12.46	115	Pn	Pn	15 31 06.8	-1.6
	comp=E,0.3nm,0.3s,baz=351,slow=13,SNR=2.9						
GERES	GERESS Array B	14.57	338	Pn	Pn	15 31 36.7	-0.7
	comp=E,0.2nm,0.3s,baz=157,slow=11,SNR=2.7						
KHC	Kasperske Hory	14.87	338	eP	P	15 31 48.1	+0.8
AKASG	Malin Array Be	16.01	17	Pn	Pn	15 31 51.9	-4.4
	comp=E,0.2nm,0.3s,baz=214,slow=11,SNR=3.0						
ESDC	Sonseca Array	20.88	289	P	P	15 32 54.6	+0.9
	comp=E,0.7nm,0.6s,baz=88,slow=13,SNR=2.8						
MDT	Midelt	22.11	270	P	P	15 33 07.7	+0.8
	comp=E,1.3nm,0.6s,baz=90,slow=11,SNR=4.0						
EKA	Eskdalemuir Ar	26.20	327	P	P	15 33 46.0	0.0
	comp=E,1.4nm,0.6s,baz=130,slow=9.4,SNR=4.9						
TORD	Torodi Ar. Bea	28.84	224	P	P	15 34 11.1	+1.0
	comp=E,0.6nm,0.7s,baz=34,slow=9.7,SNR=5.0						
ARCES	ARCESS Array B	34.06	2	P	P	15 34 53.5	-2.0
	comp=E,1.5nm,0.7s,baz=191,slow=11,SNR=14						
MKAR	Makanchi Array	45.74	56	P	P	15 36 31.2	-1.7
	comp=E,1.4nm,0.3s,baz=270,slow=7.7,SNR=22						
ZALV	Zalesovo Beam	46.62	46	P	P	15 36 37.5	-2.1
	comp=E,0.4nm,0.4s,baz=282,slow=6.8,SNR=3.4						
YKA	Yellowknife Ar	76.21	341	P	P	15 39 59.0	-0.7
	comp=E,0.2nm,0.7s,baz=33,slow=5.3,SNR=2.6						

*ISCJB **07** 15:31:27.9±0.6, 38°.31N±0°.03×141°.96E±0°.06, h66^{km}±4^{km}, mb4.2/26, Error ellipse: s-maj=8.8km s-min=4.7km az=18.4*

*NEIC **07** 15:31:27.4±0.9, 38°.22N×142°.25E, h70^{km}±9^{km}, mb4.6/6, Error ellipse: s-maj=15.8km s-min=8.0km az=111.0*

*JMA **07** 15:31:29.3±0.1, 38°.31N×141°.90E, h58^{km}±3^{km}, M4.2*

JMA Felt II J1.

*IDC **07** 15:31:29.6±0.8, 38°.27N×141°.90E, h65^{km}±7^{km}, mb3.6/12, mb1 3.9/16, mb1mx3.6/58, mbtmp4.0/16, Error ellipse: s-maj=17.2km s-min=12.6km az=122.0*

ISC 07 15:31:29.3±0.7, **38°.33N**±0°.04×**141°.91E**±0°.06, **h62**^{km}±6^{km}, **n72**, σ1^{s}36/79, **mb4.4**/26, **Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
OFUJ	Ofunato	0.77	346	P	Pn	15 31 44.6	0.0
OFUJ				S	Sn	15 31 55.4	-0.3
JMK	Ichinoseki	0.82	319	P	Pn	15 31 45.4	+0.2
JMK				S	Sn	15 31 56.7	-0.1
JOU	Okura	0.98	272	P	Pn	15 31 47.2	0.0
JOU				S	Sn	15 32 00.1	-0.3
JMM	Marumori	0.99	242	P	Pn	15 31 46.9	-0.4
JMM				S	Sn	15 31 59.7	-1.0
JOM	Ohasama	1.24	337	P	Pn	15 31 50.8	+0.2
JOM				S	Sn	15 32 06.8	+0.4
JFK	Kawauchi	1.26	221	P	Pn	15 31 50.8	-0.1
JFK				S	Sn	15 32 06.5	-0.6
JYK	Kaneyama	1.35	296	P	Pn	15 31 52.2	+0.2
JYK				S	Sn	15 32 09.2	+0.2
JYS	Shirataka	1.45	266	P	Pn	15 31 53.7	+0.3
JYS				S	Sn	15 32 11.8	+0.2
JRG	Rokugo	1.46	317	P	Pn	15 31 53.7	+0.2
JRG				S	Sn	15 32 12.6	+1.0
JFT	Otama	1.48	237	P	Pn	15 31 54.3	+0.4
JFT				S	Sn	15 32 11.9	-0.4
JYA	Atsumi	1.74	279	P	Pn	15 31 57.5	+0.2
MJAR	Matsushiro Arr	3.44	240	P	Pn	15 32 21.7	+1.2
	0.5nm,0.3s,baz=262,slow=9.5,SNR=4.1						
MAJO	Matsushiro	3.44	240	ePn	Pn	15 32 22.0	+1.4
MAT	Matsushiro	3.44	240	P	Pn	15 32 22.4	+1.9
MAT				S	Sn	15 33 05.4	+5.3
ERM	Erimo	3.80	14	ePn	Pn	15 32 24.2	-1.2
ERM				eSn	Sn	15 33 04.6	-4.2
INU	Inuyama	4.92	234	ePn	Pn	15 32 41.5	+0.7
JHJ2	Mitsune	5.48	199	ePn	Pn	15 32 47.9	-0.4
JHJ2				eSn	Sn	15 33 42.9	-7.2
JHJ	Hachijo jima 2	5.48	199	P	Pn	15 32 47.0	-1.4
	21nm,0.3s,baz=122,slow=21,SNR=16						
JHJ				S	Sn	15 33 45.2	-4.9
	50nm,0.3s,baz=51,slow=20,SNR=10						
YSS	Yuzh-Sakhalins	8.64	4	ePn	Pn	15 33 31.1	-0.5
USRK	Ussuriysk Ar.	9.49	311	P	Pn	15 33 44.0	+0.8
	2.3nm,0.3s,baz=125,slow=14,SNR=29						
JNU	Nakatsue	10.36	243	P	Pn	15 33 55.6	+0.5
	0.3nm,0.3s,baz=110,slow=3.3,SNR=3.9						
JNU	Nakatsue	10.36	243	ePn	Pn	15 33 55.8	+0.6
KSRS	Korea Array	11.09	270	P	Pn	15 34 08.0	+2.9
	0.8nm,0.3s,baz=78,slow=14,SNR=9.4						
KS15	Wonju Array Si	11.12	270	ePn	Pn	15 34 05.6	+0.1
CBIJ	Chichi jima	11.21	179	ePn	Pn	15 34 01.6	-5.2
KLR	Kul'dur	13.12	329	P	Pn	15 34 29.8	-2.9
	0.1nm,0.3s,baz=184,slow=14,SNR=4.0						
CN2	Changchun	13.56	299	eP	Pn	15 34 39.4	+0.7
NJ2	Nanjing	19.83	259	eP	Pn	15 35 56.5	-0.5
NJ2				pmax	pmax		
	comp=Z,20nm,0.5s						
MA2	Magadan	22.01	12	P	P	15 36 19.1	+0.9
	comp=Z,0.6nm,0.3s,baz=238,slow=7.1,SNR=3.5						
HHC	Hu-ho-hao-te	23.46	286	eP	P	15 36 33.9	+0.5
HHC				pmax	pmax		
	comp=Z,28nm,0.9s						
HHC				pmax	pmax		
	comp=Z,2μm,4.9s						
SEY	Seymchan	25.45	11	P	P	15 36 52.5	+1.4
	comp=Z,0.5nm,0.4s,baz=175,slow=5.4,SNR=4.3						
ULN	Ulaanbaatar	26.98	302	eP	P	15 37 04.8	-0.5
	comp=Z,5.7nm,1.2s						
SONA1	Songino Array	27.41	302	eP	P	15 37 09.5	+0.4
SONM	Songino Array	27.41	302	P	P	15 37 09.0	-0.1
	comp=Z,2.1nm,0.5s,baz=114,slow=9.2,SNR=18						
ENH	Enshi	27.86	263	eP	P	15 37 11.6	-1.6
	comp=Z,14nm,1.0s						
H11N2	WAKE ISLAND Hy	28.50	124	T	T	16 07 47.7	
	baz=316,slow=75,SNR=15						
H11N1	WAKE ISLAND Hy	28.51	124	T	T	16 07 49.6	
	baz=316,slow=75,SNR=18						
H11N3	WAKE ISLAND Hy	28.52	124	T	T	16 07 47.1	
	baz=316,slow=75,SNR=16						
H11S1	WAKE ISLAND Hy	29.26	126	T	T	16 08 42.5	
	baz=318,slow=76,SNR=23						
H11S3	WAKE ISLAND Hy	29.27	126	T	T	16 08 45.7	
	baz=318,slow=76,SNR=25						
H11S2	WAKE ISLAND Hy	29.28	126	T	T	16 08 46.5	
	baz=318,slow=76,SNR=24						
LZH	Lanzhou	30.26	278	eP	P	15 37 38.8	+4.2
LZH				pP	sP	15 37 56.1	-0.9
LZH				sP	pP	15 38 01.8	+12
LZH				pmax	pmax		
	comp=Z,13nm,1.0s						
GYA	Guiyang	31.84	259	eP	P	15 37 48.6	+0.1
GYA				pmax	pmax		
	comp=Z,10.0nm,0.8s						
CD2	Chengdu	32.08	268	P	P	15 37 49.4	-1.1
CD2				pmax	pmax		
	comp=Z,1.0nm,0.5s						
GTA	Gaotai	32.58	285	eP	P	15 37 53.8	-1.1
GTA				pP	pP	15 38 02.1	-8.0
GTA				sP	sP	15 38 06.5	-11
GTA				pmax	pmax		
	comp=Z,5.0nm,1.1s						
KMI	Kunming	35.56	260	P	P	15 38 19.5	-1.4
KMI				pmax	pmax		
	comp=Z,10.0nm,0.9s						
WMQ	Urumqi	40.62	296	eP	P	15 39 04.1	+1.0
WMQ				pP	pP	15 39 21.6	+2.9
WMQ				sP	sP	15 39 28.6	+2.7
WMQ				pmax	pmax		
	comp=Z,13nm,0.6s						
ZAA0	Zalesovo Array	41.34	311	eP	P	15 39 08.3	-0.5
ZALV	Zalesovo Beam	41.34	311	P	P	15 39 08.7	-0.1
	comp=Z,6.4nm,0.5s,baz=85,slow=7.8,SNR=36						
CMAR	Chiang Mai Arr	42.21	254	P	P	15 39 16.4	0.0
	comp=Z,0.2nm,0.5s,baz=54,slow=8.5,SNR=3.2						
MKAR	Makanchi Array	43.77	301	P	P	15 39 28.1	-0.6
	comp=Z,3.0nm,0.6s,baz=85,slow=9.8,SNR=32						
MKAR	Makanchi Array	43.77	301	eP	P	15 39 28.5	-0.2
MAKZ	Makanchi	43.98	301	eP	P	15 39 30.2	-0.2
	comp=Z,3.4nm,0.6s						
KURK	Kurchatov	45.45	307	eP	P	15 39 40.8	-1.1
	comp=Z,9.5nm,0.4s						
TAPN	Taplejung	46.25	273	eP	P	15 39 50.1	+1.2
	comp=Z,4.3nm,0.5s						
ODAN	Odare	46.73	273	eP	P	15 39 52.7	+0.1
	comp=Z,6.0nm,0.6s						
RAMN	Ramite	47.31	273	eP	P	15 39 57.1	-0.1
	comp=Z,11nm,0.7s						
GUN	Gumba	47.43	275	eP	P	15 39 59.8	+1.6
	comp=Z,12nm,0.3s						
KKN	Kakani	47.95	275	eP	P	15 40 03.8	+1.7
	comp=Z,12nm,0.5s						
ILAR	Eielson Array	48.19	33	P	P	15 40 03.4	+0.3
	comp=Z,0.4nm,0.6s,baz=269,slow=5.8,SNR=4.9						
ILAR				pP	pP	15 40 20.1	+1.0
	comp=Z,0.8nm,0.5s,baz=265,slow=5.8,SNR=4.8						
GKN	Gorkha	48.36	276	eP	P	15 40 07.0	+1.9
	comp=Z,4.5nm,0.3s						
KOLN	Koldanda	49.28	276	eP	P	15 40 14.1	+1.9
	comp=Z,4.1nm,0.3s						
TKM2	Tokmak 2	49.37	298	eP	P	15 40 13.6	+0.8
	comp=Z,5.4nm,0.4s						
PYUN	Piuthan	49.60	277	eP	P	15 40 16.7	+2.0
	comp=Z,13nm,0.4s						
KSH	Kashi	50.24	293	eP	P	15 40 24.4	+5.1
KSH				epP	sP	15 40 40.2	-2.3
KSH				esP	pP	15 40 47.7	+12
KSH				pmax	pmax		
	comp=Z,9.0nm,0.9s						
KSH				pmax	pmax		
	comp=Z,2μm,10.3s						
ZRNK	Zerenda	50.83	312	eP	P	15 40 23.1	-0.2
	comp=Z,13nm,2.0s						
ABKAR	Akbulak array	57.41	310	eP	P	15 41 10.5	-0.8
WRA	Warramunga Arr	58.40	188	P	P	15 41 17.7	-0.8
	comp=Z,3.4nm,0.4s,baz=6.0,slow=6.9,SNR=73						
ASAR	Alice Springs	62.12	188	P	P	15 41 43.5	-0.4
	comp=Z,2.2nm,0.7s,baz=7.5,slow=4.8,SNR=38						
YKA	Yellowknife Ar	62.49	31	P	P	15 41 46.2	+0.3
	comp=Z,0.3nm,0.7s,baz=303,slow=7.1,SNR=5.1						
YKA				pP	pP	15 42 03.4	+0.9
	comp=Z,0.2nm,0.6s,baz=304,slow=6.7,SNR=3.4						
PDAR	Pinedale Array	76.48	46	P	P	15 43 12.9	+0.1
	comp=Z,0.6nm,0.6s,baz=298,slow=3.8,SNR=6.9						
PDAR				pP	pP	15 43 30.4	+0.5
	comp=Z,0.7nm,0.6s,baz=284,slow=3.6,SNR=6.3						
TXAR	Lajitas Array	89.02	53	P	P	15 44 18.0	+0.2
	comp=Z,0.4nm,0.6s,baz=296,slow=2.2,SNR=6.1						

JMA 07 15:33:49.3±0.1, **38°.41N**×**141°.86E**, **h55**^{km}±2^{km}, **M3.5**, **Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
OFUJ	Ofunato	0.69	347	P	Pn	15 34 03.2	+0.1
JMK	Ichinoseki	0.74	317	P	Pn	15 34 04.0	+0.3
JMK				S	Sn	15 34 14.2	-0.1
JOU	Okura	0.94	268	P	Pn	15 34 06.6	+0.2
JOU				eS	Sn	15 34 18.9	-0.1
JMM	Marumori	1.00	237	P	Pn	15 34 07.1	-0.1
JMM				eS	Sn	15 34 19.8	-0.5
MIYJ	Miyakonagasawa	1.17	358	P	Pn	15 34 09.3	-0.1
MIYJ				eS	Sn	15 34 23.9	-0.4
JYK	Kaneyama	1.28	294	P	Pn	15 34 11.2	+0.3
JYK				eS	Sn	15 34 27.3	+0.3
JFK	Kawauchi	1.30	217	P	Pn	15 34 11.6	+0.4
JFK				S	Sn	15 34 27.5	-0.1
JRG	Rokugo	1.37	316	P	Pn	15 34 12.7	+0.5
JRG				eS	Sn	15 34 30.4	+1.1
JYS	Shirataka	1.42	263	P	Pn	15 34 13.3	+0.4
JYS				S	Sn	15 34 31.0	+0.5
JFT	Otama	1.50	234	P	Pn	15 34 14.5	+0.6
JFT				S	Sn	15 34 32.6	+0.3
JKZ	Kuzumaki	1.62	345	P	Pn	15 34 16.6	+1.0

NNC 07 15:35:57.0±3.3, **37°.55N**×**71°.53E**, **h148**^{km}±48^{km}, **mb2.7, mpv3.6, 5C-4D, Error ellipse: s-maj=31.3km s-min=27.0km az=74.0, Afghanistan-Tajikistan border region**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
SFK	Sufi-Kurgan	2.90	32	⇑P	Pn	15 36 43.3	+0.1
	13nm,0.3s						
SFK				⇓S	Sn	15 37 19.5	+0.5
	16nm,0.2s						
MNAS	Manas	4.99	8	⇓P	Pn	15 37 11.0	+0.7
	6.8nm,0.4s						
MNAS				⇑S	Sn	15 38 09.0	+1.5
	5.5nm,0.6s						
AAK	Ala-Archa	5.56	23	⇓P	Pn	15 37 18.2	+0.2
	1.7nm,0.3s						
AAK				⇑S	Sn	15 38 21.1	0.0
	3.4nm,0.4s						
KK31	Karatay Array	5.60	352	P	Pn	15 37 19.9	+1.5
	2.5nm,0.5s,baz=177,slow=14,SNR=19						
KK31				⇑S	Sn	15 38 21.8	0.0
	12nm,0.8s,baz=176,slow=25,SNR=19						
TKM2	Tokmak 2	6.20	29	⇑P	Pn	15 37 24.5	-2.0
	2.2nm,0.8s						
TKM2				⇓S	Sn	15 38 36.5	0.0
	0.3nm,0.3s						

*ISCJB **07** 15:38:21.7±0.6, 23°.23S±0°.05×66°.8W±0°.1, h200^{km}, mb4.4/3, Error ellipse: s-maj=17.3km s-min=6.8km az=174.7*

*SJA **07** 15:38:21.7±0.7, 23°.32S×66°.58W, h232^{km}±20^{km}, ML2.9, MW3.1*

*IDC **07** 15:38:22.0±2.8, 23°.30S×66°.47W, h200^{km}±24^{km}, mb3.5/2, mb1 3.7/5, mb1mx3.5/23, mbtmp4.1/5, Error ellipse: s-maj=35.8km s-min=24.5km az=109.0*

ISC 07 15:38:22.1±0.8, **23°.19S**±0°.07×**66°.5W**±0°.1, **h200**^{km}, **n18**, σ2^{s}89/21, **mb4.2**/3, **Jujuy Province**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
YJA	Yavi	1.38	43	eP	Pn	15 38 59.5	+4.1
YJA				eS	Sn	15 39 28.2	+7.2
YJA				IAML		15 39 29.8	
	comp=Z,56nm,0.9s						
AZAP	Zapla	1.70	128	eP	Pn	15 39 00.1	+2.2
ASTB	Santa Barbara	2.06	112	eP	Pn	15 39 04.0	+2.7
FSA	Cafayete	2.95	170	eP	Pn	15 39 12.0	+0.6
AHML	Horco Molle	3.74	163	eP	Pn	15 39 21.2	+0.5
CYA	Choya	5.27	173	eP	Pn	15 39 39.9	-0.1
VCA	Vinchina	5.72	195	eP	Pn	15 39 45.4	-0.5
LPAZ	La Paz	7.03	347	P	Pn	15 40 05.4	+2.0
	comp=Z,8.9nm,0.3s,baz=157,slow=6.2,SNR=159						
LPAZ				S	Sn	15 41 22.8	-0.8
	baz=37,slow=20,SNR=1.5						
SIV	San Ignacio	8.82	37	P	Pn	15 40 27.1	+1.0
	comp=Z,5.1nm,0.3s,baz=228,slow=14,SNR=61						
SIV				S	Sn	15 41 57.9	-7.3
	baz=246,slow=20,SNR=2.4						
PLCA	Paso Flores	17.82	190	P	P	15 42 15.3	-0.6
	comp=Z,0.1nm,0.3s,baz=47,slow=9.8,SNR=3.1						
PTGA	Pitinga	23.22	17	P	P	15 43 11.5	-0.1
	comp=Z,2.5nm,0.4s,baz=193,slow=13,SNR=5.9						
TORD	Torodi Ar. Bea	75.88	69	P	P	15 49 46.6	-0.4
	comp=Z,107nm,0.7s,baz=258,slow=5.9,SNR=13						
YKA	Yellowknife Ar	93.51	340	P	P	15 51 14.7	+0.2
	comp=Z,0.2nm,0.4s,baz=130,slow=4.6,SNR=5.9						
ASAR	Alice Springs	129.37	204	PKP	PKPdf	15 57 06.5	-1.0
	comp=Z,0.4nm,0.9s,baz=160,slow=3.0,SNR=4.3						
WRA	Warramunga Arr	132.54	207	PKP	PKPdf	15 57 12.9	-0.7
	comp=Z,0.3nm,0.5s,baz=155,slow=1.6,SNR=7.1						
ZALV	Zalesovo Beam	142.48	28	PKP	PKPdf	15 57 28.2	-2.5
	comp=Z,0.7nm,0.6s,baz=289,slow=4.4,SNR=3.6						
MKAR	Makanchi Array	145.63	39	PKPbc	PKPbc	15 57 37.3	+0.1
	comp=Z,1.7nm,0.7s,baz=308,slow=3.2,SNR=19						
KLR	Kul'dur	150.27	335	PKPbc	PKPbc	15 57 49.0	-0.4
	comp=Z,0.6nm,0.4s,baz=18,slow=3.2,SNR=3.6						

JMA 07 15:39:42.4±0.1, **38°.42N**×**141°.95E**, **h56**^{km}±2^{km}, **M3.5**, **Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
OFUJ	Ofunato	0.69	342	P	Pn	15 39 56.5	+0.1
JMK	Ichinoseki	0.78	313	P	Pn	15 39 57.6	+0.2
JMK				S	Sn	15 40 08.2	-0.2
JOU	Okura	1.01	267	P	Pn	15 40 00.7	+0.2
JOU				S	Sn	15 40 13.9	+0.1
JMM	Marumori	1.07	239	P	Pn	15 40 01.2	0.0
JMM				S	Sn	15 40 14.7	-0.4
MIYJ	Miyakonagasawa	1.16	355	P	Pn	15 40 02.4	0.0
MIYJ				eS	Sn	15 40 17.0	-0.3
JOM	Ohasama	1.17	334	P	Pn	15 40 02.9	+0.3
JOM				S	Sn	15 40 18.1	+0.5
JYK	Kaneyama	1.34	292	P	Pn	15 40 05.2	+0.4
JFK	Kawauchi	1.35	219	P	Pn	15 40 05.3	+0.3
JRG	Rokugo	1.42	314	P	Pn	15 40 06.3	+0.4
JYS	Shirataka	1.50	263	P	Pn	15 40 07.5	+0.6
JFT	Otama	1.56	235	P	Pn	15 40 08.6	+0.8
MAT	Matsushiro	3.52	239	P	Pn	15 40 36.8	+2.2
MAT				eS	Sn	15 41 13.3	-1.7

*IDC **07** 15:45:49.9±1.6, 1°.93N×96°.94E, h0^{km}, mb3.5/7, mb1 3.6/9, mb1mx3.4/65, mbtmp3.5/9, ML3.1/2, Error ellipse: s-maj=48.5km s-min=19.2km az=53.0*

*DJA **07** 15:45:54.7±2.3, 1°N±15°×9°7E±1°6, h10^{km}, M3.3/6, MLv3.3/6*

ISC 07 15:45:47.6±1.9, **1°.1N**±0°.1×**96°.9E**±0°.2, **h25**^{km}, **n16**, σ1^{s}69/11, **mb3.6**/7, **Off west coast of northern Sumatera**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
GSI	Gunungsitoli	0.67	75	P	Pn	15 46 02.3	+0.7
TPTI		2.13	7	P	Pb	15 46 27.6	+2.1
KCSI	Kotacane, Aceh	2.52	20	P	Pb	15 46 34.0	+1.8
PSI	Prapat	2.60	50	Pn	Pn	15 46 26.1	-2.1
	1.5nm,0.3s,baz=338,slow=24,SNR=4.5						
MNSI	Mandailing Nat	2.68	97	P	Pb	15 46 36.0	+1.1
CMAR	Chiang Mai Arr	17.33	6	Pn	Pn	15 49 45.0	-3.0
	0.1nm,0.3s,baz=197,slow=11,SNR=3.0						
H08S2	Diego Garcia H	25.88	250	T	T	16 18 29.4	
	baz=70,slow=76,SNR=58						
H08S3	Diego Garcia H	25.88	250	T	T	16 18 35.2	
	baz=70,slow=76,SNR=37						
H08S1	Diego Carcia H	25.90	250	T	T	16 18 28.2	
	baz=70,slow=76,SNR=79						
WRA	Warramunga Arr	42.23	122	P	P	15 53 48.7	+10
	0.7nm,0.9s,baz=304,slow=8.9,SNR=3.9						
ASAR	Alice Springs	43.58	127	P	P	15 53 59.7	+10
	0.2nm,0.7s,baz=300,slow=8.1,SNR=3.2						
SONM	Songino Array	47.24	9	P	P	15 54 18.8	+0.1
	0.8nm,0.9s,baz=185,slow=7.8,SNR=4.3						
MKAR	Makanchi Array	47.24	346	P	P	15 54 19.4	+0.7
	0.8nm,0.5s,baz=161,slow=9.6,SNR=9.7						
KURBB	Kurchatov Arra	51.73	345	P	P	15 54 53.0	+0.3
	0.2nm,0.3s,baz=160,slow=6.6,SNR=4.4						
ZALV	Zalesovo Beam	53.58	351	P	P	15 55 06.4	0.0
	0.7nm,0.4s,baz=177,slow=6.3,SNR=4.5						
BVAR	Borovoye Array	56.22	341	P	P	15 55 25.4	-0.2
	0.4nm,0.7s,baz=131,slow=8.2,SNR=3.5						

*IDC **07** 15:45:55.4±2.1, 38°.34N×142°.74E, h0^{km}, mb3.5/5, mb1 3.6/8, mb1mx3.4/65, mbtmp3.6/8, ML2.8/3, Error ellipse: s-maj=56.3km s-min=20.9km az=70.0*

*ISCJB **07** 15:46:03.8±1.1, 38°.17N±0°.05×142°.0E±0°.1, h62^{km}±9^{km}, mb3.5/5, Error ellipse: s-maj=16.2km s-min=6.4km az=18.3*

*JMA **07** 15:46:05.7±0.1, 38°.21N×141°.90E, h56^{km}±4^{km}, M3.4*

JMA Felt I J1.

ISC 07 15:46:04.1±1.6, **38°.14N**±0°.05×**142°.1E**±0°.1, **h48**^{km}±17^{km}, **n17**, σ0^{s}89/23, **mb3.4**/5, **Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
OFUJ	Ofunato	0.99	342	P	Pn	15 46 22.2	+0.6
JMM	Marumori	1.04	255	P	Pn	15 46 22.7	+0.4
JMM				eS	Sn	15 46 35.0	-0.7
JMK	Ichinoseki	1.05	321	P	Pn	15 46 22.7	+0.3
JMK				S	Sn	15 46 34.8	-1.1
JOU	Okura	1.12	282	P	Pn	15 46 23.7	+0.2
JOU				eS	Sn	15 46 37.1	-0.7
JFK	Kawauchi	1.22	231	eS	Sn	15 46 40.6	+0.4
MIYJ	Miyakonagasawa	1.45	352	P	Pn	15 46 28.6	+0.8
MIYJ				eS	Sn	15 46 44.9	-0.7
JOM	Ohasama	1.46	336	P	Pn	15 46 28.6	+0.6
JOM				eS	Sn	15 46 45.3	-0.7
JFT	Otama	1.50	246	eS	Sn	15 46 47.1	0.0
JYK	Kaneyama	1.55	301	P	Pn	15 46 29.2	0.0
MJAR	Matsushiro Arr	3.46	244	Pn	Pn	15 46 57.8	+2.3
	0.4nm,0.3s,baz=65,slow=10,SNR=4.1						
JHJ	Hachijo jima 2	5.34	201	Pn	Pn	15 47 21.9	+0.7
	2.6nm,0.3s,baz=55,slow=16,SNR=4.4						
JHJ				Sn	Sn	15 48 19.6	-1.9
	6.7nm,0.3s,baz=4.4,slow=22,SNR=6.2						
USRK	Ussuriysk Ar.	9.71	312	Pn	Pn	15 48 21.6	+0.6
	0.3nm,0.3s,baz=123,slow=15,SNR=6.8						
ZALV	Zalesovo Beam	41.56	311	P	P	15 53 46.8	0.0
	0.3nm,0.4s,baz=77,slow=6.2,SNR=2.9						

MKAR	Makanchi Array	43.98	301	P	P	15 54 06.5	0.0
	0.3nm,0.7s,baz=90,slow=8.5,SNR=3.2						
KURBB	Kurchatov Arra	45.74	307	P	P	15 54 20.3	-0.1
	0.5nm,0.4s,baz=75,slow=8.7,SNR=5.1						
WRA	Warramunga Arr	58.23	189	P	P	15 55 53.3	-0.2
	1.0nm,1.0s,baz=5.8,slow=7.1,SNR=5.8						
ASAR	Alice Springs	61.96	188	P	P	15 56 19.1	+0.1
	0.2nm,0.7s,baz=10,slow=9.8,SNR=5.1						

*IDC **07** 15:53:17.6±1.3, 23.°74N×94.°83E, h120km±8km, mb3.5/9, mb1 3.5/10, mb1mx3.2/63, mbtmp3.8/10, Error ellipse: s-maj=48.9km s-min=15.9km az=59.0*

ISC 07 15:53:14.4±1.1**, 23.°1N**±0.°2×**93.°9E**±0.°1**, h100km, n21, σ1.s74/35, mb3.6/9, Myanmar-India border region**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
SHL	Shillong	3.05	324	ePN	Pn	15 54 03.0	+1.9
SHL				i SN	Sn	15 54 35.0	-2.0
CMAR	Chiang Mai Arr	6.62	133	P	Pn	15 54 49.4	+0.1
	0.1nm,0.3s,baz=325,slow=14,SNR=5.9						
CMAR				S	Sn	15 56 12.1	+8.8
	baz=307,slow=30,SNR=2.3						
ODAN	Odare	6.97	304	ePn	Pn	15 54 55.3	+1.1
ODAN				eSn	Sn	15 56 11.5	-0.6
	113nm,0.5s						
TAPN	Taplejung	7.00	308	ePn	Pn	15 54 56.2	+1.6
TAPN				eSn	Sn	15 56 13.3	+0.4
	139nm,0.7s						
RAMN	Ramite	7.63	302	ePn	Pn	15 55 05.2	+2.1
RAMN				eSn	Sn	15 56 26.2	-1.9
	90nm,0.6s						
GUN	Gumba	8.66	305	ePn	Pn	15 55 18.4	+1.1
GUN				eSn	Sn	15 56 51.8	-1.6
	93nm,0.6s						
PKIN	Phulchoki	8.87	302	ePn	Pn	15 55 21.9	+1.9
PKIN				eSn	Sn	15 56 56.7	-1.6
	11nm,0.2s						
KKN	Kakani	9.06	303	ePn	Pn	15 55 25.0	+2.4
KKN				eSn	Sn	15 57 03.0	+0.1
	18nm,0.2s						
DMN	Daman	9.11	301	ePn	Pn	15 55 24.7	+1.4
DMN				eSn	Sn	15 57 04.2	0.0
	33nm,0.8s						
GKN	Gorkha	9.66	302	ePn	Pn	15 55 31.8	+1.1
GKN				eSn	Sn	15 57 17.4	-0.1
	50nm,0.4s						
KOLN	Koldanda	10.38	299	ePn	Pn	15 55 41.8	+1.3
KOLN				eSn	Sn	15 57 33.5	-1.6
	29nm,0.4s						
PYUN	Piuthan	11.01	299	ePn	Pn	15 55 49.3	+0.2
PYUN				eSn	Sn	15 57 47.6	-2.7
	34nm,0.6s						
AAK	Ala-Archa	25.27	325	P	P	15 58 33.4	+1.8
	0.6nm,0.5s,baz=163,slow=11,SNR=3.5						
MKAR	Makanchi Array	25.42	341	P	P	15 58 31.6	-1.0
	5.0nm,0.7s,baz=145,slow=9.8,SNR=45						
MKAR				pP	pP	15 58 57.9	+3.1
	4.0nm,0.6s,baz=146,slow=9.9,SNR=11						
MKAR				PcP	PcP	16 02 02.3	0.0
	0.2nm,0.7s,baz=158,slow=1.6,SNR=2.5						
SONM	Songino Array	26.63	19	P	P	15 58 37.4	-6.3
	0.3nm,0.4s,baz=189,slow=8.6,SNR=2.9						
KURBB	Kurchatov Arra	29.96	340	P	P	15 59 11.2	-1.9
	0.8nm,0.6s,baz=154,slow=8.0,SNR=9.6						
KURBB				pP	pP	15 59 38.0	+2.5
	0.8nm,0.5s,baz=148,slow=8.8,SNR=4.3						
KURBB				PcP	PcP	16 02 12.2	-1.0
	0.3nm,0.5s,baz=166,slow=4.2,SNR=4.8						
KURBB				ScP	ScP	16 05 45.2	-1.2
	0.5nm,0.6s,baz=147,slow=3.3,SNR=5.3						
ZALV	Zalesovo Beam	31.55	350	P	P	15 59 23.5	-3.6
	0.4nm,0.4s,baz=170,slow=8.8,SNR=3.2						
BVAR	Borovoye Array	34.81	335	P	P	15 59 54.5	-1.0
	0.5nm,0.6s,baz=137,slow=11,SNR=5.9						
BVAR				pP	pP	16 00 21.8	+3.6
	0.4nm,0.5s,baz=121,slow=10,SNR=2.2						
WRA	Warramunga Arr	58.22	134	P	P	16 02 58.7	+0.2
	1.2nm,0.7s,baz=324,slow=7.5,SNR=5.5						
ARCES	ARCESS Array B	61.01	338	P	P	16 03 16.1	-1.0
	5.0nm,1.1s,baz=99,slow=7.5,SNR=5.0						
SPITS	Spitsbergen Ar	64.99	347	P	P	16 03 41.0	-2.2
	3.1nm,1.0s,baz=84,slow=4.5,SNR=4.1						

*IDC **07** 15:53:43.8±1.8, 37.°65N×2.°30W, h0km, mb3.5/3, mb1 3.6/5, mb1mx3.3/56, mbtmp3.5/5, ML3.4/2, Error ellipse: s-maj=34.1km s-min=17.9km az=33.0*
*ISCJB **07** 15:53:43.1±0.3, 37.°76N±0.°02×2.°56W±0.°01, h0km±1km, mb3.7/3, Error ellipse: s-maj=2.8km s-min=1.7km az=160.2*
*CSEM **07** 15:53:45.4±0.1, 37.°60N×2.°54W, h10km, ML4.0/51, Error ellipse: s-maj=3.0km s-min=1.7km az=154.0*
*INMG **07** 15:53:45.0±1.5, 37.°51N×2.°45W, h4km±2km, MD3.7, ML3.6, Error ellipse: s-maj=2.0km s-min=1.3km az=140.0*
*LDG **07** 15:53:45.5±0.1, 37.°48N×2.°45W, h2km, Ml3.6/11, Error ellipse: s-maj=2.5km s-min=1.4km az=141.0*
*SFS **07** 15:53:45.0, 37.°52N×2.°45W, h1km, ML3.4*
*MDD **07** 15:53:45.2±0.2, 37.°50N×2.°44W, h10km, mbLg3.6/45, Error ellipse: s-maj=2.6km s-min=2.0km az=153.0, PRXIMO*
MDD EMS : IV INTENSIDAD MAXIMA.
*IGIL **07** 15:53:46.0, 37.°51N×2.°45W, h12km, ML3.3*
*STR **07** 15:53:55.6±0.3, 38.°22N×2.°12W, h2km, Ml3.5, Error ellipse: s-maj=0.0km s-min=0.0km az=0.0*
*CRAAG **07** 15:54:25.6, 36.°18N×0.°82E, Ml2.5*

ISC 07 15:53:44.0±0.5**, 37.°60N**±0.°02×**2.°46W**±0.°01**, h9km**±2km**, n252, σ1.s42/440, mb3.7/3, 12C-6D, Spain**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
EHUE	Huescar	0.23	334	⇑Pg	Pg	15 53 50.7	+1.9
	124nm,0.1s,SNR=18						
EHUE	Huescar	0.23	334	Pg	Pg	15 53 50.7	+1.9
	124nm,0.1s,SNR=18						
GORA	Gorafe	0.48	255	⇑Pg	Pg	15 53 53.8	+0.5
	620nm,0.2s,SNR=18						
GORA				Lg	Lg	15 54 01.2	
	6µm,0.3s,SNR=7.9						
GORA	Gorafe	0.48	255	Pg	Pg	15 53 53.8	+0.5
	620nm,0.2s,SNR=18						
GORA				Lg	Lg	15 54 01.2	
	6µm,0.3s,SNR=7.9						
SESP	Santiago Espad	0.52	353	⇑Pg	Pb	15 53 56.1	+0.7
	310nm,0.2s,SNR=18						
SESP				Lg	Lg	15 54 05.5	
	3µm,0.5s,SNR=7.9						
SESP	Santiago Espad	0.52	353	Pg	Pb	15 53 56.1	+0.7
	310nm,0.2s,SNR=18						
SESP				Lg	Lg	15 54 05.5	
	3µm,0.5s,SNR=7.9						
EQES	Quesada	0.52	293	⇑Pg	Pb	15 53 55.8	+0.4
	149nm,0.2s,SNR=18						
EQES				Lg	Lg	15 54 03.3	
	1µm,0.4s,SNR=5.0						
EQES	Quesada	0.52	293	Pg	Pb	15 53 55.8	+0.4
	149nm,0.2s,SNR=18						
EQES				Lg	Lg	15 54 03.3	
	1µm,0.4s,SNR=5.0						
ENIJ	Nijar	0.66	162	⇑Pg	Pg	15 53 55.5	-1.2
	166nm,0.1s,SNR=18						
ENIJ				Lg	Lg	15 54 02.3	
	4µm,0.3s,SNR=7.9						
EQUE	Quentar	0.88	243	Pg	Pg	15 54 00.4	-0.4
	319nm,0.2s,SNR=363						
EQUE				Lg	Lg	15 54 11.7	
	2µm,0.5s,SNR=22						
EQUE	Quentar	0.88	243	Pg	Pg	15 54 00.4	-0.4
	319nm,0.2s,SNR=363						
EQUE				Lg	Lg	15 54 11.7	
	2µm,0.5s,SNR=22						
ECOG	Cogollos-Vega	0.94	250	Pg	Pg	15 54 01.9	-0.1
	1µm,0.5s,SNR=98						
ECOG				Lg	Lg	15 54 14.7	
	906nm,0.5s,SNR=5.0						
ECOG	Cogollos-Vega	0.94	250	Pg	Pg	15 54 01.9	-0.1
	1µm,0.5s,SNR=98						
ECOG				Lg	Lg	15 54 14.7	
	906nm,0.5s,SNR=5.0						
EMUR	La Murta	1.00	76	Pg	Pg	15 54 02.6	-0.5
	304nm,0.4s,SNR=130						
EMUR				Lg	Lg	15 54 17.2	
	3µm,0.8s,SNR=5.0						
SELV	Sierra Elvira	1.07	251	Pg	Pg	15 54 04.8	+0.2
	103nm,0.2s,SNR=7.9						
SELV				Lg	Lg	15 54 18.5	
	778nm,0.6s,SNR=7.9						
SELV	Sierra Elvira	1.07	251	Pg	Pg	15 54 04.8	+0.2
	103nm,0.2s,SNR=7.9						
SELV				Lg	Lg	15 54 18.5	
	778nm,0.6s,SNR=7.9						
CART	Cartagena	1.16	90	⇑Pg	Pb	15 54 05.0	-1.2
CART				Lg	Lg	15 54 19.5	
CART	Cartagena	1.16	90	iP	Pb	15 54 05.0	-1.2
CART				iS	Sb	15 54 19.5	-1.8
ETOB	Tobarra	1.27	34	Pg	Pg	15 54 09.7	+1.4
	214nm,0.2s,SNR=366						
ETOB				Lg	Lg	15 54 27.6	
	2µm,0.4s,SNR=16						
ETOB	Tobarra	1.27	34	Pg	Pg	15 54 09.7	+1.4
	214nm,0.2s,SNR=366						
ETOB				Lg	Lg	15 54 27.6	
	2µm,0.4s,SNR=16						
EGOR	Sierra Gorda,	1.40	250	Pg	Pb	15 54 10.8	+0.4
	147nm,0.2s,SNR=7.9						
EGOR				Lg	Lg	15 54 29.3	
	1µm,0.4s,SNR=7.9						
EGOR	Sierra Gorda,	1.40	250	Pg	Pb	15 54 10.8	+0.4
	147nm,0.2s,SNR=7.9						
EGOR				Lg	Lg	15 54 29.3	
	1µm,0.4s,SNR=7.9						
EADA	Adamuz	1.77	289	⇑Pn	Pn	15 54 15.5	+0.8
	58nm,0.3s,SNR=18						
EADA				Pg	Pg	15 54 18.3	+0.5
	77nm,0.4s,SNR=11						
EADA				Sn	Sn	15 54 37.5	+0.1
	111nm,0.4s,SNR=6.8						
EADA				Lg	Lg	15 54 42.5	
	692nm,0.3s,SNR=16						
EADA	Adamuz	1.77	289	Pn	Pn	15 54 15.5	+0.8
	58nm,0.3s,SNR=18						
EMAL	Malaga-Limoner	1.78	242	Pg	Pb	15 54 16.7	-0.1
EMAL				Lg	Lg	15 54 40.9	
EMAL	Malaga-Limoner	1.78	242	eP	Pb	15 54 16.7	-0.1
EMAL				eS	Sg	15 54 40.9	-0.3
AFON	Font Roja	1.85	54	Pn	Pn	15 54 17.1	+1.2
	31nm,0.4s,SNR=25						
AFON				Lg	Lg	15 54 45.5	
	202nm,0.6s,SNR=6.3						
AFON	Font Roja	1.85	54	Pn	Pn	15 54 17.1	+1.2
	31nm,0.4s,SNR=25						
AFON				Lg	Lg	15 54 45.5	
	202nm,0.6s,SNR=6.3						
EMIJ	Mijas	2.12	241	Pn	Pn	15 54 19.5	-0.1
	1.9nm,0.3s,SNR=7.9						
EMIJ				Lg	Lg	15 54 51.3	
	412nm,0.5s,SNR=7.4						
EMIJ	Mijas	2.12	241	Pn	Pn	15 54 19.5	-0.1
	1.9nm,0.3s,SNR=7.9						
EMIJ				Lg	Lg	15 54 51.3	
	412nm,0.5s,SNR=7.4						
ESDC	Sonseca Array	2.38	331	Pn	Pn	15 54 24.0	+0.8
	9.9nm,0.3s,baz=146,slow=13,SNR=60						
ESDC				Pg	Pg	15 54 30.5	+0.9
	45nm,0.3s,baz=153,slow=15,SNR=69						
ESDC				Sn	Sn	15 54 52.8	+0.3
	75nm,0.3s,baz=149,slow=23,SNR=14						
ESDC				Lg	Lg	15 55 00.8	
	147nm,0.3s,baz=147,slow=30,SNR=16						
ESDC	Sonseca Array	2.38	331	Pn	Pn	15 54 24.8	+1.6
	6.7nm,0.3s,baz=150,slow=12,SNR=36						
ESDC				Pg	Pg	15 54 30.2	+0.6
	14nm,0.3s,baz=152,slow=16,SNR=8.2						
ESDC				Sn	Sn	15 54 54.2	+1.7
	25nm,0.4s,baz=150,slow=17,SNR=11						
ESDC				Lg	Lg	15 55 03.9	
	78nm,0.4s,baz=148,slow=29,SNR=21						
ESDC	Sonseca Array	2.38	331	Pn	Pn	15 54 24.8	+1.6
	6.7nm,0.3s,SNR=36						
ESDC	Sonseca Array	2.38	331	Pg	Pg	15 54 30.2	+0.6
	14nm,0.3s,SNR=8.2						
ESDC				Sn	Sn	15 54 54.2	+1.7
	25nm,0.4s,SNR=11						
ESDC				Lg	Lg	15 55 03.9	
	78nm,0.4s,SNR=21						
ECAB	El Cabril	2.39	282	⇑Pn	Pn	15 54 23.9	+0.7
	98nm,0.3s,SNR=18						
ECAB				Pg	Pg	15 54 29.5	-0.2
	101nm,0.3s,SNR=17						
ECAB				Sn	Sn	15 54 53.3	+0.7
	56nm,0.4s,SNR=5.8						
ECAB				Lg	Lg	15 55 01.4	
	172nm,0.3s,SNR=5.0						
ECAB	El Cabril	2.39	282	Pn	Pn	15 54 23.9	+0.7
	98nm,0.3s,SNR=18						
EJIF	Jimena Fronter	2.67	245	Pn	Pn	15 54 27.6	+0.5
	1.5nm,0.2s,SNR=7.9						
EJIF				Pg	Pg	15 54 35.4	+0.3
	22nm,0.3s,SNR=7.9						
EJIF	Jimena Fronter	2.67	245	Pn	Pn	15 54 27.6	+0.5
	1.5nm,0.2s,SNR=7.9						
ESPR	Espera	2.81	256	Pn	Pn	15 54 31.2	+2.2
	45nm,0.4s,SNR=9.0						
ESPR				Pg	Pg	15 54 36.8	-0.9
	65nm,0.4s,SNR=7.1						
ESPR				Lg	Lg	15 55 13.6	
	150nm,0.4s,SNR=4.0						
ESPR	Espera	2.81	256	Pn	Pn	15 54 31.2	+2.2
	45nm,0.4s,SNR=9.0						
OKGL	Djebel Kef Gue	2.94	121	P	Pn	15 54 30.7	-0.2
OKGL	Djebel Kef Gue	2.94	121	Pn	Pn	15 54 30.7	-0.2
OKGL				Sn	Sn	15 55 04.4	-1.9
	104nm,0.4s,SNR=7.9						
OKGL	Djebel Kef Gue	2.94	121	P	Pn	15 54 30.7	-0.2
EMOS	Mosqueruela	3.16	29	Pn	Pn	15 54 36.4	+2.3
	7.3nm,0.4s,SNR=12						
EMOS				Pg	Pg	15 54 44.7	+0.2
	14nm,0.4s,SNR=14						
EMOS				Sn	Sn	15 55 12.8	+0.8
	1.4nm,1.0s,SNR=6.0						
EMOS				Lg	Lg	15 55 28.0	
	162nm,0.9s,SNR=5.0						
EMOS	Mosqueruela	3.16	29	Pn	Pn	15 54 36.4	+2.3
	7.3nm,0.4s,SNR=12						
EMOS	Mosqueruela	3.16	29	Pg	Pg	15 54 44.7	+0.2
	14nm,0.4s,SNR=14						
EMOS				Sn	Sn	15 55 12.8	+0.8
	1.4nm,1.0s,SNR=6.0						
EMOS				Lg	Lg	15 55 28.0	
	162nm,0.9s,SNR=5.0						
ETOR	Torete	3.23	5	Pn	Pn	15 54 37.4	+2.5
	36nm,0.3s,SNR=59						
ETOR				Pg	Pg	15 54 46.1	+0.3
	118nm,0.3s,SNR=206						
ETOR				Sn	Sn	15 55 14.6	+1.2
	258nm,0.4s,SNR=8.5						
ETOR				Lg	Lg	15 55 30.5	
	404nm,0.3s,SNR=5.0						
ETOR	Torete	3.23	5	Pn	Pn	15 54 37.4	+2.5
	36nm,0.3s,SNR=59						
EANR	'Ain N'Sour	3.30	119	P	Pn	15 54 34.0	-1.8
EANR	'Ain N'Sour	3.30	119	Pn	Pn	15 54 34.0	-1.8
EANR	'Ain N'Sour	3.30	119	P	Pn	15 54 34.0	-1.8
GUD	Guadarrama	3.31	337	Pn	Pn	15 54 37.6	+1.6
	4.7nm,0.3s,SNR=18						
GUD				Pg	Pg	15 54 47.3	-0.1
	35nm,0.4s,SNR=209						
GUD				Sn	Sn	15 55 16.3	+0.8
	174nm,0.4s,SNR=5.0						
GUD				Lg	Lg	15 55 30.7	
	205nm,0.6s,SNR=7.9						
GUD	Guadarrama	3.31	337	Pn	Pn	15 54 37.6	+1.6
	4.7nm,0.3s,SNR=18						
OJGS	Djebel Guires	3.33	128	P	Pn	15 54 37.7	+1.5
OJGS	Djebel Guires	3.33	128	Pn	Pn	15 54 37.7	+1.5
OJGS	Djebel Guires	3.33	128	P	Pn	15 54 37.7	+1.5
EMIN	Mina Concepcio	3.34	274	⇑Pn	Pn	15 54 36.5	+0.1
	11nm,0.3s,SNR=18						
EMIN				Sn	Sn	15 55 15.7	-0.5
	64nm,0.4s,SNR=5.0						
EMIN				Lg	Lg	15 55 32.1	
	94nm,0.3s,SNR=5.6						
EMIN	Mina Concepcio	3.34	274	Pn	Pn	15 54 36.5	+0.1
	11nm,0.3s,SNR=18						
EMIN				Sn	Sn	15 55 15.7	-0.5
	64nm,0.4s,SNR=5.0						
EMIN				Lg	Lg	15 55 32.1	
	94nm,0.3s,SNR=5.6						
PBAR	Barrancos	3.67	280	ePn	Pn	15 54 41.1	+0.3
PBAR				eSn	Sn	15 55 24.8	+0.7
PBAR				eSg	Sg	15 55 42.9	+1.2
PBAR				A	A	15 55 48.0	
	166nm,0.4s						
PBAR	Barrancos	3.67	280	Pn	Pn	15 54 41.1	+0.3
PBAR				Sn	Sn	15 55 24.8	+0.7
PBAR				Lg	Lg	15 55 42.9	
	166nm,0.4s						
PBAR	Barrancos	3.67	280	Pn	Pn	15 54 41.1	+0.3
PBAR				Sn	Sn	15 55 24.8	+0.7
PBAR				eSg	Sg	15 55 42.9	+1.2
	166nm,0.4s						
EPLA	Plasencia	3.75	312	⇑Pn	Pn	15 54 43.0	+1.1
	10nm,0.3s,SNR=18						
EPLA				Pg	Pg	15 54 55.2	-0.5
	16nm,0.3s,SNR=14						
EPLA				Sn	Sn	15 55 23.3	-2.8
	20nm,0.3s,SNR=7.6						
EPLA				Lg	Lg	15 55 43.9	
	152nm,0.4s,SNR=5.0						
EPLA	Plasencia	3.75	312	Pn	Pn	15 54 43.0	+1.1
	10nm,0.3s,SNR=18						
ETRT	Tiaret	3.75	125	P	Pn	15 54 40.0	-2.1
ETRT	Tiaret	3.75	125	Pn	Pn	15 54 40.0	-2.1
ETRT	Tiaret	3.75	125	P	Pn	15 54 40.0	-2.1
EBAD	Badajoz	3.77	289	⇓Pn	Pn	15 54 42.7	+0.5
	8.1nm,0.3s,SNR=18						
EBAD				Pg	Pg	15 54 54.3	-1.8
	18nm,0.3s,SNR=9.6						
EBAD				Sn	Sn	15 55 26.7	+0.1
	36nm,0.4s,SNR=4.8						
EBAD				Lg	Lg	15 55 46.0	
	115nm,0.2s,SNR=5.7						
EBAD	Badajoz	3.77	289	Pn	Pn	15 54 42.7	+0.5
	8.1nm,0.3s,SNR=18						
EBAD	Badajoz	3.77	289	Pg	Pg	15 54 54.3	-1.8
	18nm,0.3s,SNR=9.6						
EBAD				Sn	Sn	15 55 26.7	+0.1
	36nm,0.4s,SNR=4.8						
EBAD				Lg	Lg	15 55 46.0	
	115nm,0.2s,SNR=5.7						
ERTA	Horta de San J	3.99	32	Pn	Pn	15 54 47.4	+2.1
	32nm,0.7s,SNR=20						
ERTA				Sn	Sn	15 55 30.5	-1.6
	32nm,0.5s,SNR=4.6						
ERTA				Lg	Lg	15 55 50.2	
	44nm,0.5s,SNR=5.0						
ERTA	Horta de San J	3.99	32	Pn	Pn	15 54 47.4	+2.1
	32nm,0.7s,SNR=20						
ERTA				Lg	Lg	15 55 50.2	
	44nm,0.5s,SNR=5.0						
EGRO	El Granado	3.99	271	⇑Pn	Pn	15 54 45.2	0.0
	11nm,0.3s,SNR=18						
EGRO				Pg	Pg	15 54 58.0	-2.4
	17nm,0.4s,SNR=5.3						
EGRO				Sn	Sn	15 55 29.6	-2.5
	23nm,0.3s,SNR=7.7						
EGRO				Lg	Lg	15 55 49.5	
	54nm,0.3s,SNR=5.0						
EGRO	El Granado	3.99	271	Pn	Pn	15 54 45.2	0.0
	11nm,0.3s,SNR=18						
PVAQ	Vaqueiros	4.18	269	ePn	Pn	15 54 47.8	-0.1
PVAQ	Vaqueiros	4.18	269	ePg	Pn	15 54 53.1	+5.2
PVAQ				eSn	Sn	15 55 37.0	+0.1
PVAQ				A	A	15 56 10.6	
	55nm,0.5s						
PVAQ	Vaqueiros	4.18	269	Pn	Pn	15 54 47.8	-0.1
PVAQ				Pg	Pb	15 54 53.1	-4.6
PVAQ				Sn	Sn	15 55 37.0	+0.1
	55nm,0.5s						
PVAQ	Vaqueiros	4.18	269	Pn	Pn	15 54 47.8	-0.1
PVAQ				eSn	Sn	15 55 37.0	+0.1
	55nm,0.5s						
PESTR	Estremoz	4.23	289	ePn	Pn	15 54 50.1	+1.5
PESTR	Estremoz	4.23	289	ePg	Pg	15 55 03.3	-1.7
PESTR				eSn	Sn	15 55 38.8	+0.7
PESTR				eSg	Sg	15 55 59.5	-0.3
PESTR				A	A	15 56 09.6	
	95nm,0.4s						
PESTR	Estremoz	4.23	289	Pn	Pn	15 54 50.1	+1.5
PESTR				Pg	Pg	15 55 03.3	-1.7
PESTR				Sn	Sn	15 55 38.8	+0.7
PESTR				Lg	Lg	15 55 59.5	
	95nm,0.4s						
PESTR	Estremoz	4.23	289	Pn	Pn	15 54 50.1	+1.5
PESTR	Estremoz	4.23	289	Pg	Pg	15 55 03.3	-1.7
PESTR				Sn	Sn	15 55 38.8	+0.7
PESTR				eSg	Sg	15 55 59.5	-0.3
	95nm,0.4s						
PMRV	Marv??o	4.27	297	ePn	Pn	15 54 49.8	+0.6
PMRV	Marv??o	4.27	297	ePg	Pg	15 55 05.0	-0.8
PMRV				eSn	Sn	15 55 40.5	+1.3
PMRV				eSg	Sg	15 56 00.7	-0.5
PMRV				A	A	15 56 07.1	
	185nm,0.4s						
PMRV	Marv??o	4.27	297	Pn	Pn	15 54 49.8	+0.6
PMRV				Pg	Pg	15 55 05.0	-0.8
PMRV				Sn	Sn	15 55 40.5	+1.3
PMRV				Lg	Lg	15 56 00.7	
	185nm,0.4s						
PMRV	Marv??o	4.27	297	Pn	Pn	15 54 49.8	+0.6
PMRV	Marv??o	4.27	297	Pg	Pg	15 55 05.0	-0.8
PMRV				Sn	Sn	15 55 40.5	+1.3
PMRV				eSg	Sg	15 56 00.7	-0.5
	185nm,0.4s						
PBEJ	Beja	4.30	277	ePn	Pn	15 54 49.7	+0.2
PBEJ				eSn	Sn	15 55 39.9	+0.1
PBEJ				eSg	Sg	15 56 02.7	+0.6
PBEJ				A	A	15 56 08.1	
	42nm,0.5s						
PBEJ	Beja	4.30	277	Pn	Pn	15 54 49.7	+0.2
PBEJ				Sn	Sn	15 55 39.9	+0.1
PBEJ				Lg	Lg	15 56 02.7	
	21nm,0.5s						
PBEJ	Beja	4.30	277	Pn	Pn	15 54 49.7	+0.2
PBEJ				Sn	Sn	15 55 39.9	+0.1
PBEJ				eSg	Sg	15 56 02.7	+0.6
	42nm,0.5s						
PBDV	Barranco-do-Ve	4.37	267	ePn	Pn	15 54 50.9	+0.4
PBDV				eSn	Sn	15 55 41.3	-0.2
PBDV				A	A	15 56 12.4	
	56nm,0.6s						
PBDV	Barranco-do-Ve	4.37	267	Pn	Pn	15 54 50.9	+0.4
PBDV				Sn	Sn	15 55 41.3	-0.2
	56nm,0.6s						
PBDV	Barranco-do-Ve	4.37	267	Pn	Pn	15 54 50.9	+0.4
PBDV				eSn	Sn	15 55 41.3	-0.2
	56nm,0.6s						
ESAC	San Caprasio	4.39	20	Pn	Pn	15 54 53.8	+3.0
	35nm,1.1s,SNR=5.5						
ESAC				Pg	Pg	15 55 08.4	+0.4
	1.7nm,0.3s,SNR=7.9						
ESAC				Sn	Sn	15 55 42.5	+0.4
	48nm,0.4s,SNR=6.7						
ESAC				Lg	Lg	15 56 07.5	
	299nm,0.4s,SNR=7.9						
ESAC	San Caprasio	4.39	20	Pn	Pn	15 54 53.8	+3.0
	35nm,1.1s,SNR=5.5						
PCVE	Castro Verde	4.43	272	⇑ePn	Pn	15 54 51.8	+0.5
PCVE				eSn	Sn	15 55 42.6	-0.3
PCVE				eSg	Sg	15 56 06.9	+0.8
PCVE				A	A	15 56 11.9	
	48nm,0.4s						
PCVE	Castro Verde	4.43	272	Pn	Pn	15 54 51.8	+0.5
PCVE				Sn	Sn	15 55 42.6	-0.3
PCVE				Lg	Lg	15 56 06.9	
	48nm,0.4s						
PCVE	Castro Verde	4.43	272	Pn	Pn	15 54 51.8	+0.5
PCVE				Sn	Sn	15 55 42.6	-0.3
PCVE				eSg	Sg	15 56 06.9	+0.8
	48nm,0.4s						
EVO	Evora	4.48	284	ePn	Pn	15 54 53.1	+1.1
EVO				eSn	Sn	15 55 44.2	+0.1
EVO				A	A	15 56 19.0	
	56nm,0.7s						
EVO	Evora	4.48	284	Pn	Pn	15 54 53.1	+1.1
EVO				Sn	Sn	15 55 44.2	+0.1
	56nm,0.7s						
EVO	Evora	4.48	284	Pn	Pn	15 54 53.1	+1.1
EVO				eSn	Sn	15 55 44.2	+0.1
	56nm,0.7s						
PCBR	Castelo Branco	4.51	301	ePn	Pn	15 54 53.4	+1.0
PCBR				eSn	Sn	15 55 44.7	-0.3
PCBR				eSg	Sg	15 56 09.8	+0.9
PCBR				A	A	15 56 21.4	
	109nm,0.5s						

PCBR Castelo Branco 4.51 301 Pn **Pn** **15 54 53.4 +1.0**
PCBR Sn **Sn** **15 55 44.7 -0.3**
PCBR Lg Lg 15 56 09.8
54nm,0.5s
PCBR Castelo Branco 4.51 301 Pn **Pn** **15 54 53.4 +1.0**
PCBR Sn **Sn** **15 55 44.7 -0.3**
PCBR *e*Sg **Sg** **15 56 09.8 +0.9**
109nm,0.5s
MESJ Messejana 4.57 275 *e*P **Pn** **15 54 53.2 0.0**
MESJ *e*S **Sn** **15 55 42.2 -4.2**
MESJ AML AML 15 56 09.4
comp=E,28nm,0.4s
MESJ Messejana 4.57 275 *e*Pn **Pn** **15 54 53.4 +0.2**
MESJ *e*Sn **Sn** **15 55 46.6 +0.2**
MESJ *e*Sg **Sg** **15 56 09.3 -1.4**
MESJ A A 15 56 24.7
comp=E,65nm,0.6s
MESJ Messejana 4.57 275 Pn **Pn** **15 54 53.2 0.0**
MESJ Sn **Sn** **15 55 42.2 -4.2**
comp=E,28nm,0.4s
MESJ Lg Lg 15 56 09.3
comp=E,65nm,0.6s
MESJ Messejana 4.57 275 *e*Pn **Pn** **15 54 53.4 +0.2**
MESJ *e*Sn **Sn** **15 55 46.6 +0.2**
MESJ *e*Sg **Sg** **15 56 09.3 -1.4**
comp=E,65nm,0.6s
EPOB Poblet 4.64 35 Pn **Pn** **15 54 56.3 +2.0**
comp=E,11nm,0.7s,SNR=17
EPOB Pg Pb 15 55 10.3 +4.8
comp=E,1.6nm,0.9s,SNR=7.9
EPOB Sn **Sn** **15 55 48.3 +0.1**
comp=E,16nm,1.6s,SNR=7.9
EPOB Lg Lg 15 56 14.7
comp=E,24nm,0.7s,SNR=7.9
EPOB Poblet 4.64 35 Pn **Pn** **15 54 56.3 +2.0**
comp=E,11nm,0.7s,SNR=17
EPOB Sn **Sn** **15 55 48.3 +0.1**
comp=E,16nm,1.6s,SNR=7.9
EPOB Lg Lg 15 56 14.7
comp=E,24nm,0.7s,SNR=7.9
ETOS Mallorca 4.66 61 Pn **Pn** **15 54 55.3 +0.8**
comp=E,11nm,0.7s,SNR=12
ETOS Sn **Sn** **15 55 46.9 -1.7**
comp=E,20nm,0.9s,SNR=7.6
ETOS Mallorca 4.66 61 Pn **Pn** **15 54 55.3 +0.8**
comp=E,11nm,0.7s,SNR=12
PMTG Montargil 4.76 290 *e*Pn **Pn** **15 54 56.8 +1.0**
PMTG *e*Sn **Sn** **15 55 50.5 -0.6**
PMTG *e*Sg **Sg** **15 56 16.7 -0.1**
PMTG A A 15 56 29.4
comp=E,95nm,0.4s
PMTG Montargil 4.76 290 *e*Pn **Pn** **15 54 56.8 +1.0**
PMTG *e*Sn **Sn** **15 55 50.5 -0.6**
PMTG *e*Sg **Sg** **15 56 16.7 -0.1**
comp=E,95nm,0.4s
PNCL Nicolau / Gran 4.83 278 *e*Pn **Pn** **15 54 57.6 +0.8**
PNCL *e*Sn **Sn** **15 55 53.5 +0.7**
PNCL A A 15 56 34.1
comp=E,32nm,0.5s
PNCL Nicolau / Gran 4.83 278 *e*Pn **Pn** **15 54 57.6 +0.8**
PNCL *e*Sn **Sn** **15 55 53.5 +0.7**
comp=E,32nm,0.5s
MTE Manteigas 4.84 307 *e*Pn **Pn** **15 54 58.3 +1.2**
MTE *e*Sn **Sn** **15 55 53.8 +0.5**
MTE *e*Sg **Sg** **15 56 19.1 -0.4**
MTE A A 15 56 34.0
comp=E,120nm,0.6s
MTE Manteigas 4.84 307 *e*Pn **Pn** **15 54 58.3 +1.2**
MTE *e*Sn **Sn** **15 55 53.8 +0.5**
MTE *e*Sg **Sg** **15 56 19.1 -0.4**
comp=E,120nm,0.6s
MORF Marmelete 4.93 268 *e*P **Pn** **15 54 58.1 -0.2**
MORF *e*S **Sn** **15 55 50.6 -4.9**
MORF AML AML 15 55 57.3
comp=N,88nm,0.3s
MORF Marmelete 4.93 268 *e*Pn **Pn** **15 54 58.6 +0.3**
MORF *e*Sn **Sn** **15 55 55.5 0.0**
MORF A A 15 56 00.3
comp=N,44nm,0.2s
MORF Marmelete 4.93 268 Pn **Pn** **15 54 58.1 -0.2**
MORF Sn **Sn** **15 55 50.6 -4.9**
comp=N,88nm,0.3s
MORF Marmelete 4.93 268 *e*Pn **Pn** **15 54 58.6 +0.3**
MORF *e*Sn **Sn** **15 55 55.5 0.0**
comp=N,44nm,0.2s
PTEO Sao Teotonio 4.97 271 *e*Pn **Pn** **15 54 59.1 +0.3**
PTEO *e*Sn **Sn** **15 55 57.0 +0.6**
PTEO A A 15 56 25.9
comp=N,57nm,0.6s
PTEO *e*Sg **Sg** **15 56 26.0 +2.3**
PTEO Sao Teotonio 4.97 271 Pn **Pn** **15 54 59.1 +0.3**
PTEO Sn **Sn** **15 55 57.0 +0.6**
comp=N,29nm,0.6s
PTEO Lg Lg 15 56 26.0
PTEO Sao Teotonio 4.97 271 Pn **Pn** **15 54 59.1 +0.3**
PTEO *e*Sn **Sn** **15 55 57.0 +0.6**
comp=N,57nm,0.6s
PTEO *e*Sg **Sg** **15 56 26.0 +2.3**
MVO Moncorvo 5.02 317 *e*Pn **Pn** **15 55 01.3 +1.9**
MVO *e*Sn **Sn** **15 55 58.0 +0.5**
MVO *e*Sg **Sg** **15 56 23.1 -1.9**
MVO A A 15 56 31.3
comp=N,56nm,0.7s
MVO Moncorvo 5.02 317 Pn **Pn** **15 55 01.3 +1.9**
comp=N,24nm,0.3s,SNR=7.9
MVO Pg **Pg** **15 55 20.5 +0.5**
comp=N,4.7nm,0.4s,SNR=7.9
MVO Sn **Sn** **15 55 56.0 -1.5**
comp=N,56nm,0.7s,SNR=7.9
MVO Lg Lg 15 56 28.5
comp=N,234nm,0.9s,SNR=7.9
MVO Moncorvo 5.02 317 Pn **Pn** **15 55 01.3 +1.9**
comp=N,24nm,0.3s,SNR=7.9
MVO Moncorvo 5.02 317 Pg **Pg** **15 55 20.5 +0.5**
comp=N,4.7nm,0.4s,SNR=7.9
MVO *e*Sn **Sn** **15 55 58.0 +0.5**
MVO *e*Sg **Sg** **15 56 23.1 -1.9**
comp=N,56nm,0.7s
MVO Lg Lg 15 56 28.5
comp=N,234nm,0.9s,SNR=7.9
ALMR Almeirim 5.05 290 *e*P **Pn** **15 55 00.3 +0.5**
ALMR Almeirim 5.05 290 *e*P **Pn** **15 55 00.3 +0.5**
ALMR Almeirim 5.05 290 Pn **Pn** **15 55 00.3 +0.5**
ALMR Almeirim 5.05 290 *e*P **Pn** **15 55 00.3 +0.5**
PTOM Tomar 5.08 295 *e*Pn **Pn** **15 55 01.5 +1.3**
PTOM *e*Sg **Sg** **15 56 26.4 -0.5**
PTOM A A 15 56 33.0
comp=N,150nm,0.5s
PTOM Tomar 5.08 295 Pn **Pn** **15 55 01.5 +1.3**
PTOM Lg Lg 15 56 26.4
comp=N,75nm,0.5s
PTOM Tomar 5.08 295 Pn **Pn** **15 55 01.5 +1.3**
PTOM *e*Sg **Sg** **15 56 26.4 -0.5**
comp=N,150nm,0.5s
PFVI Vila Bisbo 5.09 267 *e*Pn **Pn** **15 55 01.0 +0.6**
PFVI *e*Sn **Sn** **15 55 58.1 -1.2**
PFVI A A 15 56 05.7
comp=N,51nm,0.5s
PFVI Vila Bisbo 5.09 267 Pn **Pn** **15 55 01.2 +0.8**
comp=N,1.7nm,0.2s,SNR=7.9
PFVI Pg Pg 15 55 17.8 -3.6
comp=N,24nm,0.4s,SNR=6.6
PFVI Sn **Sn** **15 55 57.4 -1.8**
comp=N,6.2nm,0.8s,SNR=7.9
PFVI Lg Lg 15 56 27.8
comp=N,53nm,0.6s,SNR=7.9
PFVI Vila Bisbo 5.09 267 *e*Pn **Pn** **15 55 01.0 +0.6**
PFVI *e*Sn **Sn** **15 55 58.1 -1.2**
comp=N,51nm,0.5s
PFVI Lg Lg 15 56 27.8
comp=N,53nm,0.6s,SNR=7.9
PACT Alcochete 5.15 285‖ *e*Pn **Pn** **15 55 03.0 +1.8**
PACT *e*Sn **Sn** **15 56 01.4 +0.7**
PACT *e*Sg **Sg** **15 56 29.6 +0.2**
PACT A A 15 56 48.2
comp=N,87nm,0.6s
PACT Alcochete 5.15 285‖ *e*Pn **Pn** **15 55 03.0 +1.8**
PACT *e*Sn **Sn** **15 56 01.4 +0.7**
PACT *e*Sg **Sg** **15 56 29.6 +0.2**
comp=N,87nm,0.6s
EARA Aranguren 5.21 7 Sn **Sn** **15 56 02.6 +0.4**
comp=N,12nm,0.3s,SNR=4.0
EARA Lg Lg 15 56 34.0
comp=N,52nm,0.6s,SNR=7.9
EARA Aranguren 5.21 7 Sn **Sn** **15 56 02.6 +0.4**
comp=N,12nm,0.3s,SNR=4.0
EARA Lg Lg 15 56 34.0
comp=N,52nm,0.6s,SNR=7.9
PVIS Viseu 5.24 308‖ *e*Pn **Pn** **15 55 04.0 +1.5**
PVIS *e*Sn **Sn** **15 56 02.9 -0.2**
PVIS *e*Sg **Sg** **15 56 32.0 -0.3**
PVIS A A 15 56 44.7
comp=N,62nm,0.7s
PVIS Viseu 5.24 308 Pn **Pn** **15 55 04.0 +1.5**
PVIS Sn **Sn** **15 56 02.9 -0.2**
PVIS Lg Lg 15 56 32.0
comp=N,31nm,0.7s
PVIS Viseu 5.24 308 Pn **Pn** **15 55 04.0 +1.5**
PVIS Sn **Sn** **15 56 02.9 -0.2**
PVIS *e*Sg **Sg** **15 56 32.0 -0.3**
comp=N,62nm,0.7s
EMIR Miracle 5.29 34 Pn **Pn** **15 55 05.5 +2.4**
comp=N,6.9nm,0.3s,SNR=7.9
EMIR Pg Pg 15 55 22.6 -2.7
comp=N,7.9nm,0.5s,SNR=6.3
EMIR Sn **Sn** **15 56 03.7 -0.5**
comp=N,12nm,0.6s,SNR=7.9
EMIR Lg Lg 15 56 35.6
comp=N,41nm,1.6s,SNR=7.9
EMIR Miracle 5.29 34 Pn **Pn** **15 55 05.5 +2.4**
comp=N,6.9nm,0.3s,SNR=7.9
EMIR Sn **Sn** **15 56 03.7 -0.5**
comp=N,12nm,0.6s,SNR=7.9
EMIR Lg Lg 15 56 35.6
comp=N,41nm,1.6s,SNR=7.9
PCAS Casmilo, Conde 5.31 299‖ *e*Pn **Pn** **15 55 05.0 +1.6**
PCAS *e*Sn **Sn** **15 56 04.9 +0.2**
PCAS *e*Sg **Sg** **15 56 33.7 -0.7**
PCAS A A 15 56 33.8
comp=N,32nm,0.5s
PCAS Casmilo, Conde 5.31 299‖ *e*Pn **Pn** **15 55 05.0 +1.6**
PCAS *e*Sn **Sn** **15 56 04.9 +0.2**
PCAS *e*Sg **Sg** **15 56 33.7 -0.7**
comp=N,32nm,0.5s
IELO Elcoad 5.32 10 Pn Pn 15 55 07.0 +3.5
comp=N,1.1nm,0.2s,SNR=7.9
IELO Pg **Pg** **15 55 23.8 -1.9**
comp=N,3.1nm,0.3s,SNR=7.9
IELO Sn **Sn** **15 56 05.2 +0.3**
comp=N,8.6nm,1.3s,SNR=7.9
IELO Lg Lg 15 56 37.8
comp=N,49nm,0.9s,SNR=7.9
IELO Elcoad 5.32 10 Pn Pn 15 55 07.0 +3.5
comp=N,1.1nm,0.2s,SNR=7.9
IELO Sn **Sn** **15 56 05.2 +0.3**
comp=N,8.6nm,1.3s,SNR=7.9
IELO Lg Lg 15 56 37.8
comp=N,49nm,0.9s,SNR=7.9
PBRG Braganca 5.34 323 *e*Pn **Pn** **15 55 05.6 +1.8**
PBRG *e*Sn **Sn** **15 56 05.7 +0.3**
PBRG *e*Sg **Sg** **15 56 34.3 -1.0**
PBRG A A 15 56 37.8
comp=N,66nm,0.6s
PBRG Braganca 5.34 323 Pn **Pn** **15 55 05.6 +1.8**
PBRG Sn **Sn** **15 56 05.7 +0.3**
PBRG Lg Lg 15 56 34.3
comp=N,33nm,0.6s
PBRG Braganca 5.34 323 Pn **Pn** **15 55 05.6 +1.8**
PBRG Sn **Sn** **15 56 05.7 +0.3**
PBRG *e*Sg **Sg** **15 56 34.3 -1.0**
comp=N,66nm,0.6s
PMST Lisbon--Monsan 5.42 284 *e*Sg **Sg** **15 56 38.0 +0.2**
PMST A A 15 56 53.4
comp=N,80nm,0.7s
PMST Lisbon--Monsan 5.42 284 *e*Sg **Sg** **15 56 38.0 +0.2**
comp=N,80nm,0.7s
ECAL Calabor 5.44 324 Pn **Pn** **15 55 06.8 +1.5**
comp=N,9.8nm,0.3s,SNR=16
ECAL Sn **Sn** **15 56 06.7 -1.3**
comp=N,9.5nm,0.3s,SNR=5.6
ECAL Lg Lg 15 56 37.9
comp=N,60nm,0.3s
ECAL Calabor 5.44 324 Pn **Pn** **15 55 06.8 +1.5**
comp=N,9.8nm,0.3s,SNR=16
ECAL Sn **Sn** **15 56 06.7 -1.3**
comp=N,9.5nm,0.3s,SNR=5.6
ECAL Lg Lg 15 56 37.9
comp=N,60nm,0.3s
PVRL Vila Real 5.48 314 *e*Pn **Pn** **15 55 07.7 +2.0**
PVRL *e*Sn **Sn** **15 56 08.2 -0.6**
PVRL *e*Sg **Sg** **15 56 40.8 +1.1**
PVRL A A 15 56 46.9
comp=N,62nm,0.5s
PVRL Vila Real 5.48 314 Pn **Pn** **15 55 07.7 +2.0**
PVRL Sn **Sn** **15 56 08.2 -0.6**
PVRL Lg Lg 15 56 40.8
comp=N,31nm,0.5s
PVRL Vila Real 5.48 314 Pn **Pn** **15 55 07.7 +2.0**
PVRL Sn **Sn** **15 56 08.2 -0.6**
PVRL *e*Sg **Sg** **15 56 40.8 +1.1**
comp=N,62nm,0.5s
ETSF Etsaut 5.49 15 *e*Pn Pn 15 55 09.0 +3.1
ETSF *e*Sn **Sn** **15 56 08.1 -1.0**
ETSF *e*Sg **Sg** **15 56 40.6 +0.6**
comp=N,6.6nm,0.3s
ETSF Etsaut 5.49 15 Pn Pn 15 55 09.0 +3.1
ETSF Sn **Sn** **15 56 08.1 -1.0**
ETSF Lg Lg 15 56 40.6
comp=N,3.3nm,0.3s
ETSF Etsaut 5.49 15 Pn Pn 15 55 09.0 +3.1
ETSF *e*Sg **Sg** **15 56 40.6 +0.6**
comp=N,3.3nm,0.3s
CSOR Sort 5.51 29 Pn **Pn** **15 55 08.7 +2.5**
comp=N,16nm,0.3s,SNR=19
CSOR Sn **Sn** **15 56 09.5 -0.2**
comp=N,36nm,0.9s,SNR=6.3
CSOR Lg Lg 15 56 43.0
comp=N,100nm,1.3s,SNR=7.9
CSOR Sort 5.51 29 Pn **Pn** **15 55 08.7 +2.5**
comp=N,16nm,0.3s,SNR=19
CSOR Sn **Sn** **15 56 09.5 -0.2**
comp=N,36nm,0.9s,SNR=6.3
CSOR Lg Lg 15 56 43.0
comp=N,100nm,1.3s,SNR=7.9
PMAFR Mafra 5.53 286 *e*Pn **Pn** **15 55 07.6 +1.1**
PMAFR *e*Sn **Sn** **15 56 09.7 -0.5**
PMAFR *e*Sg **Sg** **15 56 42.8 +1.2**
PMAFR A A 15 56 55.3
comp=N,82nm,0.7s
PMAFR Mafra 5.53 286 Pn **Pn** **15 55 07.3 +0.8**
comp=N,30nm,0.3s,SNR=17
PMAFR Sn **Sn** **15 56 08.4 -1.8**
comp=N,9.8nm,0.6s,SNR=7.9
PMAFR Lg Lg 15 56 42.4
comp=N,233nm,0.6s,SNR=7.9
PMAFR Mafra 5.53 286 Pn **Pn** **15 55 07.3 +0.8**
comp=N,30nm,0.3s,SNR=17
PMAFR *e*Sn **Sn** **15 56 09.7 -0.5**
PMAFR Lg Lg 15 56 42.4
comp=N,233nm,0.6s,SNR=7.9
PMAFR *e*Sg **Sg** **15 56 42.8 +1.2**
comp=N,82nm,0.7s
POLO Lamas de Olo 5.58 314 *e*Pn **Pn** **15 55 08.6 +1.4**
POLO *e*Sn **Sn** **15 56 10.4 -1.2**
POLO *e*Sg **Sg** **15 56 43.4 +0.2**
POLO A A 15 56 51.6
comp=N,27nm,0.6s
POLO Lamas de Olo 5.58 314 *e*Pn **Pn** **15 55 08.6 +1.4**
POLO *e*Sn **Sn** **15 56 10.4 -1.2**
POLO *e*Sg **Sg** **15 56 43.4 +0.2**
comp=N,27nm,0.6s
SJPF Ste Jean 5.58 9 *e*Pn Pn 15 55 10.5 +3.3
SJPF *e*Sn **Sn** **15 56 10.9 -0.5**
SJPF *e*Sg **Sg** **15 56 43.9 +0.7**
comp=N,19nm,0.4s
SJPF Ste Jean 5.58 9 Pn Pn 15 55 10.5 +3.3
SJPF Sn **Sn** **15 56 10.9 -0.5**
SJPF Lg Lg 15 56 43.9
comp=N,9.5nm,0.4s
SJPF Ste Jean 5.58 9 Pn Pn 15 55 10.5 +3.3
SJPF Sn **Sn** **15 56 10.9 -0.5**
SJPF *e*Sg **Sg** **15 56 43.9 +0.7**
comp=N,9.5nm,0.4s
VIEF Viey 5.61 19 P Pn 15 55 10.6 +3.1
VIEF S **Sn** **15 56 12.9 +0.8**
VIEF Viey 5.61 19 P Pn 15 55 10.6 +3.1
VIEF S **Sn** **15 56 12.9 +0.8**
CFON Fontmartina 5.61 41 Pn **Pn** **15 55 09.5 +1.8**
comp=N,5.9nm,0.6s,SNR=7.4
CFON Sn **Sn** **15 56 11.7 -0.6**
comp=N,11nm,0.7s,SNR=7.9
CFON Fontmartina 5.61 41 Pn **Pn** **15 55 09.5 +1.8**
comp=N,5.9nm,0.6s,SNR=7.4
ATE Arette 5.64 13 Pn Pn 15 55 11.0 +3.1
comp=N,2.5nm,0.7s,SNR=7.9
ATE Sn **Sn** **15 56 12.0 -0.8**
comp=N,20nm,0.8s,SNR=7.9
ATE Lg Lg 15 56 47.8
comp=N,15nm,0.5s,SNR=7.9
ATE Arette 5.64 13 Pn Pn 15 55 11.0 +3.1
comp=N,2.5nm,0.7s,SNR=7.9
ATE Sn **Sn** **15 56 12.0 -0.8**
comp=N,20nm,0.8s,SNR=7.9
ATE Lg Lg 15 56 47.8
comp=N,15nm,0.5s,SNR=7.9
EALK Alkurruntz 5.66 7 Pn Pn 15 55 11.7 +3.5
comp=N,18nm,0.4s,SNR=18
EALK Sn **Sn** **15 56 13.3 0.0**
comp=N,11nm,0.4s,SNR=5.5
EALK Lg Lg 15 56 48.6
comp=N,65nm,0.7s,SNR=4.0
EALK Alkurruntz 5.66 7 Pn Pn 15 55 11.7 +3.5
comp=N,18nm,0.4s,SNR=18
EALK Sn **Sn** **15 56 13.3 0.0**
comp=N,11nm,0.4s,SNR=5.5
EALK Lg Lg 15 56 48.6
comp=N,65nm,0.7s,SNR=4.0
ELAN Lanestosa 5.67 353 Pn **Pn** **15 55 10.6 +2.2**
comp=N,3.0nm,0.3s,SNR=6.6
ELAN Pg **Pg** **15 55 30.3 -2.3**
comp=N,11nm,0.6s,SNR=5.7
ELAN Sn **Sn** **15 56 12.2 -1.4**
comp=N,30nm,1.4s,SNR=5.0
ELAN Lg Lg 15 56 47.4
comp=N,28nm,0.4s
ELAN Lanestosa 5.67 353 Pn **Pn** **15 55 10.6 +2.2**
comp=N,3.0nm,0.3s,SNR=6.6
ELAN Sn **Sn** **15 56 12.2 -1.4**
comp=N,30nm,1.4s,SNR=5.0
ELAN Lg Lg 15 56 47.4
comp=N,28nm,0.4s
REYF Montagne du Re 5.68 15 P **Pn** **15 55 11.4 +2.8**
REYF S **Sn** **15 56 14.4 +0.4**
REYF Montagne du Re 5.68 15 P **Pn** **15 55 11.4 +2.8**
REYF S **Sn** **15 56 14.4 +0.4**
ORDF Ordiarp 5.72 11 P Pn 15 55 12.4 +3.3
ORDF S **Sn** **15 56 15.7 +0.9**
ORDF Ordiarp 5.72 11 P Pn 15 55 12.4 +3.3
ORDF S **Sn** **15 56 15.7 +0.9**
LABF Labassere 5.77 19 P **Pn** **15 55 12.4 +2.6**
LABF S **Sn** **15 56 16.9 +0.8**
LABF Labassere 5.77 19 P **Pn** **15 55 12.4 +2.6**
LABF S **Sn** **15 56 16.9 +0.8**
MELF Melles 5.81 24 P Pn 15 55 13.4 +3.1
MELF Melles 5.81 24 P Pn 15 55 13.4 +3.1
EPF Esparros 5.83 21 *e*Pn Pn 15 55 13.6 +3.0
EPF *e*Sn **Sn** **15 56 16.1 -1.4**
EPF *e*Sg **Sg** **15 56 50.5 -0.5**
comp=N,39nm,0.7s
EPF Esparros 5.83 21 Pn Pn 15 55 13.6 +3.0
EPF Sn **Sn** **15 56 16.1 -1.4**
EPF Lg Lg 15 56 50.5
comp=N,20nm,0.7s
EPF Esparros 5.83 21 Pn Pn 15 55 13.6 +3.0
EPF *e*Sg **Sg** **15 56 50.5 -0.5**
comp=N,20nm,0.7s
SALF Salau 5.86 27 P Pn 15 55 14.1 +3.1
SALF S **Sn** **15 56 18.6 +0.3**
SALF Salau 5.86 27 P Pn 15 55 14.1 +3.1
SALF S **Sn** **15 56 18.6 +0.3**
PTO Porto 5.92 308 *e*Pn **Pn** **15 55 13.5 +1.7**
PTO Porto 5.92 308 Pn **Pn** **15 55 13.5 +1.7**
PTO Porto 5.92 308 Pn **Pn** **15 55 13.5 +1.7**
PCAB Cabril 5.94 315 *e*Pn **Pn** **15 55 13.2 +1.2**
PCAB *e*Sn **Sn** **15 56 17.9 -2.3**
PCAB *e*Sg **Sg** **15 56 54.8 +0.3**
PCAB A A 15 57 01.1
comp=N,54nm,0.5s
PCAB Cabril 5.94 315 Pn **Pn** **15 55 13.2 +1.2**
PCAB Sn **Sn** **15 56 17.9 -2.3**
PCAB Lg Lg 15 56 54.8
comp=N,27nm,0.5s
PCAB Cabril 5.94 315 Pn **Pn** **15 55 13.2 +1.2**
PCAB *e*Sg **Sg** **15 56 54.8 +0.3**
comp=N,54nm,0.5s
CLLI Llivia 5.94 34 Pn **Pn** **15 55 14.2 +2.0**
comp=N,3.3nm,0.4s,SNR=6.3
CLLI Lg Lg 15 56 54.3
comp=N,13nm,0.7s
CLLI Llivia 5.94 34 Pn **Pn** **15 55 14.2 +2.0**
comp=N,3.3nm,0.4s,SNR=6.3
CLLI Lg Lg 15 56 54.3
comp=N,13nm,0.7s
ELOB Lobios 6.06 316 Pn **Pn** **15 55 15.3 +1.5**
comp=N,4.1nm,0.3s,SNR=18
ELOB Sn **Sn** **15 56 21.2 -2.1**
comp=N,5.6nm,0.4s,SNR=6.0
ELOB Lg Lg 15 57 00.4
comp=N,96nm,0.8s
ELOB Lobios 6.06 316 Pn **Pn** **15 55 15.3 +1.5**
comp=N,4.1nm,0.3s,SNR=18
ELOB Sn **Sn** **15 56 21.2 -2.1**
comp=N,5.6nm,0.4s,SNR=6.0
ELOB Lg Lg 15 57 00.4
comp=N,96nm,0.8s
EARI Arriondas 6.07 341 Pn **Pn** **15 55 16.2 +2.4**
comp=N,3.3nm,0.3s,SNR=21
EARI Sn **Sn** **15 56 20.2 -3.1**
comp=N,6.3nm,0.8s,SNR=4.6
EARI Lg Lg 15 56 58.1
comp=N,64nm,0.7s
EARI Arriondas 6.07 341 Pn **Pn** **15 55 16.2 +2.4**
comp=N,3.3nm,0.3s,SNR=21
EARI Lg Lg 15 56 58.1
comp=N,64nm,0.7s
PGAV Gavieira, Arco 6.24 316 *e*Pn **Pn** **15 55 17.7 +1.4**
PGAV *e*Sn **Sn** **15 56 25.8 -2.0**
PGAV *e*Sg **Sg** **15 57 03.1 -1.2**
PGAV A A 15 57 17.1
comp=N,44nm,0.7s
PGAV Gavieira, Arco 6.24 316 *e*Pn **Pn** **15 55 17.7 +1.4**
PGAV *e*Sn **Sn** **15 56 25.8 -2.0**
PGAV *e*Sg **Sg** **15 57 03.1 -1.2**
comp=N,44nm,0.7s
EPON Pontenova 6.74 329 Pn **Pn** **15 55 25.3 +2.3**
comp=N,5.2nm,0.4s,SNR=5.2
EPON Sn **Sn** **15 56 37.2 -2.7**
comp=N,22nm,0.5s,SNR=5.1
EPON Lg Lg 15 57 21.3
comp=N,15nm,0.3s,SNR=4.0
EPON Pontenova 6.74 329 Pn **Pn** **15 55 25.3 +2.3**
comp=N,5.2nm,0.4s,SNR=5.2
EPON Lg Lg 15 57 21.3
comp=N,15nm,0.3s,SNR=4.0
EAGO Agolada(Pontev 6.75 322 Pn **Pn** **15 55 25.0 +1.9**
comp=N,1.5nm,0.3s,SNR=7.9
EAGO Sn **Sn** **15 56 38.2 -1.9**
comp=N,22nm,1.2s,SNR=7.9
EAGO Lg Lg 15 57 20.7
comp=N,31nm,0.5s,SNR=7.9
EAGO Agolada(Pontev 6.75 322 Pn **Pn** **15 55 25.0 +1.9**
comp=N,1.5nm,0.3s,SNR=7.9
EAGO Sn **Sn** **15 56 38.2 -1.9**
comp=N,22nm,1.2s,SNR=7.9
EAGO Lg Lg 15 57 20.7
comp=N,31nm,0.5s,SNR=7.9
MTLF Montolieu 6.75 30 *e*Pn **Pn** **15 55 24.9 +1.7**
MTLF *e*Sn **Sn** **15 56 37.3 -2.8**
MTLF *e*Sg **Sg** **15 57 19.6 -0.9**
comp=N,8.2nm,0.6s
MTLF Montolieu 6.75 30 Pn **Pn** **15 55 24.9 +1.7**
MTLF Sn **Sn** **15 56 37.3 -2.8**
MTLF Lg Lg 15 57 19.6
comp=N,4.1nm,0.6s
MTLF Montolieu 6.75 30 Pn **Pn** **15 55 24.9 +1.7**
MTLF Lg Lg 15 57 19.6
comp=N,4.1nm,0.6s
EMAZ Mazaricos 7.30 319 Sn **Sn** **15 56 51.6 -2.0**
comp=N,11nm,1.3s,SNR=7.9
EMAZ Lg Lg 15 57 40.7
comp=N,68nm,1.1s,SNR=7.9
EMAZ Mazaricos 7.30 319 Sn **Sn** **15 56 51.6 -2.0**
comp=N,11nm,1.3s,SNR=7.9
EMAZ Lg Lg 15 57 40.7
comp=N,68nm,1.1s,SNR=7.9
LFF La Frestale 7.71 17 *e*Sn **Sn** **15 57 01.3 -2.5**
comp=N,11nm,0.5s

LFF	La Frestale	7.71	17	Sn	Sn	15 57 01.3	-2.5
	comp=N,5.3nm,0.5s						
LASF	Ste Croix	8.04	35	ePn	Pn	15 55 42.9	+2.0
LASF				eSg	Sg	15 58 00.2	-1.8
	comp=N,5.1nm,0.6s						
LASF	Ste Croix	8.04	35	Pn	Pn	15 55 42.9	+2.0
LASF				Lg	Lg	15 58 00.2	
	comp=N,2.6nm,0.6s						
LASF	Ste Croix	8.04	35	Pn	Pn	15 55 42.9	+2.0
LASF				Lg	Lg	15 58 00.2	
	comp=N,2.6nm,0.6s						
CAF	Calviac	8.07	24	ePn	Pn	15 55 42.8	+1.5
CAF				eSn	Sn	15 57 09.7	-2.9
CAF				eSg	Sg	15 58 01.2	-1.6
	comp=N,10nm,0.7s						
CAF	Calviac	8.07	24	Pn	Pn	15 55 42.8	+1.5
CAF				Sn	Sn	15 57 09.7	-2.9
CAF				Lg	Lg	15 58 01.2	
	comp=N,5.1nm,0.7s						
CAF	Calviac	8.07	24	Pn	Pn	15 55 42.8	+1.5
CAF				Lg	Lg	15 58 01.2	
	comp=N,5.1nm,0.7s						
RJF	Les Rejaudoux	8.25	20	ePn	Pn	15 55 44.5	+0.7
RJF				eSn	Sn	15 57 14.4	-2.7
	comp=N,4.3nm,0.5s						
RJF	Les Rejaudoux	8.25	20	Pn	Pn	15 55 44.5	+0.7
RJF				Sn	Sn	15 57 14.4	-2.7
	comp=N,2.2nm,0.5s						
RJF	Les Rejaudoux	8.25	20	Pn	Pn	15 55 44.5	+0.7
MFF	Saint Martin d	9.15	10	ePn	Pn	15 55 57.1	+1.0
MFF	Saint Martin d	9.15	10	Pn	Pn	15 55 57.1	+1.0
MFF	Saint Martin d	9.15	10	Pn	Pn	15 55 57.1	+1.0
KEST	Kesra	9.67	98	Pn	Pn	15 56 02.9	-0.4
	comp=N,0.1nm,0.3s,baz=289,slow=18,SNR=1.9						
PGF	Pioggiola	10.07	57	ePn	Pn	15 56 09.6	+0.8
PGF	Pioggiola	10.07	57	Pn	Pn	15 56 09.6	+0.8
PGF	Pioggiola	10.07	57	Pn	Pn	15 56 09.6	+0.8
QUIF	Quistinic	10.32	357	ePn	Pn	15 56 13.3	+1.2
QUIF				eSn	Sn	15 58 03.7	-4.1
	comp=N,3.8nm,0.4s						
QUIF	Quistinic	10.32	357	Pn	Pn	15 56 13.3	+1.2
QUIF				Sn	Sn	15 58 03.7	-4.1
	comp=N,1.9nm,0.4s						
QUIF	Quistinic	10.32	357	Pn	Pn	15 56 13.3	+1.2
SGMF	Saint Gilles	10.65	360	ePn	Pn	15 56 17.6	+1.1
SGMF				eSn	Sn	15 58 11.4	-4.4
	comp=N,3.7nm,0.4s						
SGMF	Saint Gilles	10.65	360	Pn	Pn	15 56 17.6	+1.1
SGMF				Sn	Sn	15 58 11.4	-4.4
	comp=N,1.9nm,0.4s						
SGMF	Saint Gilles	10.65	360	Pn	Pn	15 56 17.6	+1.1
ROSF	Rostrenen	10.74	357	ePn	Pn	15 56 19.1	+1.2
ROSF				eSn	Sn	15 58 13.9	-4.3
	comp=N,2.2nm,0.2s						
ROSF	Rostrenen	10.74	357	Pn	Pn	15 56 19.1	+1.2
ROSF				Sn	Sn	15 58 13.9	-4.3
	comp=N,1.1nm,0.2s						
ROSF	Rostrenen	10.74	357	Pn	Pn	15 56 19.1	+1.2
KECS	Kecovo	19.91	50	ePN	P	15 58 15.4	-0.3
KURBB	Kurchatov Arra	56.80	49	P	P	16 03 28.7	+0.4
	comp=N,0.9nm,0.6s,baz=295,slow=7.9,SNR=5.8						
MKAR	Makanchi Array	60.57	52	P	P	16 03 55.0	+0.4
	comp=N,0.5nm,0.7s,baz=286,slow=5.6,SNR=6.2						
YKA	Yellowknife Ar	66.47	332	P	P	16 04 34.8	+1.5
	comp=N,0.1nm,0.6s,baz=52,slow=6.4,SNR=3.0						

*IDC **07** 15:54:21.5±1.7, 21°.11S×178°.45W, h534km±17km, mb3.7/14, mb1 3.9/17, mb1mx3.8/26, mbtmp4.6/17, Error ellipse: s-maj=21.6km s-min=12.1km az=146.0*
*ISCJB **07** 15:54:24.7±0.6, 21°.09S±0°.09×178°.7W±0°.1, h579km, mb4.1/14, Error ellipse: s-maj=14.8km s-min=10.2km az=31.8*
ISC 07 15:54:25.6±0.6**, 21°.2S**±0°.1×**178°.7W**±0°.1**, h579**km**, n45,** σ**10000s00**/46**, mb4.0**/13**, 6C-4D, Fiji Islands region**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
AFI	Afiamalu	9.78	43	P	P	15 56 34.2	-7.8
	9.4nm,0.3s,baz=148,slow=1.6,SNR=17						
AFI				S	S	15 58 19.9	-14
	4.0nm,0.3s,baz=150,slow=20,SNR=2.7						
DZM	Mont Dzumac	13.87	264	P	P	15 57 22.6	-1.0
	2.2nm,0.3s,baz=81,slow=19,SNR=20						
URZ	Urewera	17.40	191	P	P	15 57 54.2	-2.4
	1.0nm,0.3s,baz=338,slow=5.4,SNR=7.4						
URZ				S	S	16 00 48.5	+0.4
	0.3nm,0.3s,baz=86,slow=16,SNR=3.0						
HNR	Honiara	23.66	296	P	P	15 58 53.1	-0.1
	26nm,0.5s,baz=93,slow=6.5,SNR=4.1						
STKA	Stephens Creek	36.92	245	P	P	16 00 47.8	+1.2
	8.9nm,0.6s,baz=93,slow=10,SNR=42						
ASAR	Alice Springs	43.75	258	P	P	16 01 41.8	+0.7
	13nm,0.5s,baz=91,slow=8.2,SNR=365						
ASAR				PcP	PcP	16 03 15.8	+1.0
	1.6nm,0.6s,baz=100,slow=4.0,SNR=8.1						
ASAR				ScP	ScP	16 06 16.9	+5.0
	0.6nm,0.9s,baz=105,slow=3.5,SNR=3.4						
ASAR				S	S	16 07 30.3	-0.1
	1.3nm,0.9s,baz=91,slow=14,SNR=9.0						
WRA	Warramunga Arr	43.88	263	P	P	16 01 42.0	-0.1
	2.5nm,0.3s,baz=96,slow=7.5,SNR=187						
WRA				S	S	16 07 29.1	-3.2
	1.2nm,1.0s,baz=101,slow=12,SNR=4.5						
MJAR	Matsushiro Arr	70.39	324	P	P	16 04 41.8	-0.5
	1.8nm,0.5s,baz=155,slow=6.0,SNR=6.7						
PETK	Petropavlovsk-	76.77	346	P	P	16 05 17.2	-0.8
	2.3nm,0.7s,baz=238,slow=8.5,SNR=16						
KSRS	Korea Array	76.98	319	P	P	16 05 20.2	+0.7
	1.0nm,0.7s,baz=119,slow=6.0,SNR=3.8						
USRK	Ussuriysk Ar.	79.17	326	P	P	16 05 31.1	0.0
	2.8nm,0.6s,baz=112,slow=4.5,SNR=7.5						
NVAR	Mina Array Bea	81.95	44	P	P	16 05 45.7	-0.2
	2.5nm,0.6s,baz=224,slow=7.8,SNR=14						
TXAR	Lajitas Array	87.95	58	P	P	16 06 15.2	+0.1
	2.1nm,0.9s,baz=208,slow=6.8,SNR=12						
ILAR	Eielson Array	89.12	13	P	P	16 06 18.2	-1.3
	1.4nm,0.4s,baz=218,slow=5.2,SNR=29						
CMAR	Chiang Mai Arr	89.75	290	P	P	16 06 25.6	+2.2
	1.3nm,0.6s,baz=124,slow=3.1,SNR=11						
PDAR	Pinedale Array	89.89	43	P	P	16 06 23.8	-0.2
	2.5nm,0.6s,baz=213,slow=3.9,SNR=24						
YKA	Yellowknife Ar	97.39	25	P	Pdif	16 06 56.1	-1.2
	0.3nm,0.7s,baz=242,slow=4.4,SNR=6.5						
ZALV	Zalesovo Beam	110.62	321	PKiKP	PKiKP	16 11 50.9	-1.9
	0.8nm,0.6s,baz=102,slow=1.0,SNR=5.9						
MKAR	Makanchi Array	111.20	313	PKiKP	PKiKP	16 11 53.3	-0.9
	0.4nm,0.4s,baz=92,slow=1.0,SNR=15						
KURBB	Kurchatov Arra	114.11	317	PKiKP	PKiKP	16 11 58.5	-1.0
	0.8nm,0.7s,baz=96,slow=1.7,SNR=8.4						
BVAR	Borovoye Array	119.19	320	PKP	PKPdf	16 12 08.8	-0.5
	2.4nm,0.4s,baz=115,slow=2.2,SNR=15						
ARU	Arti	125.40	325	PKP	PKPdf	16 12 21.3	+0.3
	4.1nm,0.4s,baz=97,slow=5.1,SNR=8.8						
AKTO	Aktyubinsk	127.15	318	PKP	PKPdf	16 12 24.9	+0.2
	0.8nm,0.6s,baz=32,slow=6.5,SNR=4.3						
ARCES	ARCESS Array B	129.47	349	PKP	PKPdf	16 12 27.9	-0.6
	2.2nm,0.5s,baz=26,slow=0.9,SNR=20						
FINES	FINESS Array B	136.24	343	PKhKP	PKPpre	16 12 27.8	
	5.3nm,1.1s,baz=28,slow=3.3,SNR=2.9						
FINES				SKPbc	SKiKP	16 15 22.6	-2.2
	2.6nm,0.9s,baz=349,slow=1.9,SNR=5.8						
HFS	Hagfors	140.11	350	PKhKP	PKPpre	16 12 41.0	
	2.2nm,0.4s,baz=70,slow=1.7,SNR=17						
AKASG	Malin Array Be	143.29	330	PKP	PKPab	16 12 52.0	-0.7
	4.9nm,0.6s,baz=43,slow=4.3,SNR=67						
EKA	Eskdalemuir Ar	145.73	5	PKPbc	PKPdf	16 12 59.5	+0.9
	1.3nm,0.5s,baz=333,slow=3.2,SNR=6.7						
BRTR	Keskin Array B	146.82	311	PKPbc	PKPbc	16 13 03.9	0.0
	3.4nm,0.6s,baz=136,slow=4.9,SNR=21						
BURAR	Bucovina Array	147.33	329⇑	iP	PKPbc	16 13 05.8	+0.8
TESR	Tescani	147.39	327⇑	iP	PKPbc	16 13 05.4	+0.4
CFR	Carcaliu	147.46	324⇓	iP	PKPbc	16 13 05.7	+0.5
VRI	Vrincioaia	147.78	326⇑	iP	PKPbc	16 13 06.4	+0.4
MLR	Muntele Rosu	148.44	326⇓	iP	PKPbc	16 13 09.0	+1.1
EIL	Elat	148.56	292	PKPbc	PKPbc	16 13 09.3	+0.9
	baz=353,slow=8.1						
CLL	Collm	148.57	346⇓	iP	PKPbc	16 13 08.0	+0.2
	comp=Z,10.0nm,0.7s						
CLL				i		16 13 13.3	
CLL				e		16 13 20.0	
DPC	Dobruska-Polom	148.58	341	ePKP	PKPbc	16 13 08.7	+0.8
DPC				ex	x	16 13 14.3	
BRG	Berggiesshubel	148.75	345	i PKP	PKPbc	16 13 08.7	+0.4
	comp=Z,9.7nm,1.4s						
VOIR		148.94	327⇑	iP	PKPbc	16 13 09.5	+0.5
ARR	Arges	149.20	327⇑	iP	PKPbc	16 13 11.1	+1.5
PRU	Pruhonice	149.41	343	ePKP	PKPbc	16 13 10.2	+0.3
PRU				ex	x	16 13 17.3	
GZR	Gura Zlata	150.10	329⇑	iP	PKPbc	16 13 11.9	+0.1
KHC	Kasperske Hory	150.45	344	ePKP	PKPbc	16 13 12.9	+0.5
KHC				ex	x	16 13 21.8	
GERES	GERESS Array B	150.68	343	PKPbc	PKPbc	16 13 13.1	+0.1
	comp=Z,2.1nm,0.6s,baz=45,slow=0.2,SNR=5.4						
MDVR	Moldovita	151.06	329⇓	iP	PKPbc	16 13 14.2	+0.2

JMA 07 16:06:49.2±0.1**, 38°.31N**×**141°.80E, h53**km±2km**, M3.5, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
OFUJ	Ofunato	0.78	352	P	Pn	16 07 04.2	+0.1
JMK	Ichinoseki	0.79	325	P	Pn	16 07 04.5	+0.3
JMK				eS	Sn	16 07 15.4	+0.3
JOU	Okura	0.90	274	eS	Sn	16 07 17.9	+0.2
JMM	Marumori	0.91	241	eS	Sn	16 07 17.6	-0.4
JFK	Kawauchi	1.19	218	P	Pn	16 07 09.7	+0.1
JFK				eS	Sn	16 07 24.8	0.0
JOM	Ohasama	1.23	341	P	Pn	16 07 10.4	+0.3
JOM				eS	Sn	16 07 26.1	+0.5
MIYJ	Miyakonagasawa	1.27	1	eS	Sn	16 07 27.0	+0.5
JYK	Kaneyama	1.28	299	P	Pn	16 07 11.0	+0.2
JYK				eS	Sn	16 07 27.2	+0.3
JYS	Shirataka	1.37	267	P	Pn	16 07 12.3	+0.3
JYS				S	Sn	16 07 29.4	+0.4
JFT	Otama	1.40	236	P	Pn	16 07 13.3	+0.9
JRG	Rokugo	1.42	320	P	Pn	16 07 13.2	+0.6
JRG				S	Sn	16 07 31.8	+1.6

*JMA **07** 16:18:24.0±0.4, 36°.33N×142°.37E, h26km, M3.0*
*ISCJB **07** 16:18:28.6±1.6, 36°.14N±0°.06×142°.0E±0°.2, h26km, mb3.4/3, Error ellipse: s-maj=19.5km s-min=7.7km az=171.0*
*IDC **07** 16:18:28.5±2.7, 36°.22N×141°.67E, h0km, mb3.3/3, mb1 3.5/5, mb1mx3.3/59, mbtmp3.4/5, ML3.4/2, Error ellipse: s-maj=63.1km s-min=25.8km az=67.0*
ISC 07 16:18:31.4±1.5**, 36°.15N**±0°.06×**141°.8E**±0°.1**, h26**km**, n10,** σ**1s10**/13**, mb3.1**/3**, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
CHOJ	Chosi	0.86	239	P	Pn	16 18 48.4	+0.5
BSO1	Boso 1	1.63	204	P	Pn	16 18 57.2	-0.7
BSO3	Boso 3	1.69	218	P	Pn	16 18 58.9	-0.1
JFT	Otama	1.79	320	P	Pn	16 18 59.6	-1.0
JFT				S	Sn	16 19 22.8	+0.3
MJAR	Matsushiro Arr	2.91	279	Pn	Pn	16 19 16.3	+0.3
	1.6nm,0.3s,baz=95,slow=8.6,SNR=9.0						
MAT	Matsushiro	2.91	279	P	Pn	16 19 16.8	+0.8
MAT				eS	Sb	16 19 56.5	-1.2
JHJ	Hachijo jima 2	3.44	209	Pn	Pn	16 19 21.6	-1.6
	36nm,0.3s,baz=60,slow=2.6,SNR=15						
JHJ				Sn	Sn	16 20 02.9	-0.3
	5.0nm,0.3s,baz=73,slow=19,SNR=3.3						
SONM	Songino Array	28.53	305	P	P	16 24 23.8	-1.1
	0.3nm,0.8s,baz=95,slow=9.0,SNR=2.2						
MKAR	Makanchi Array	44.84	303	P	P	16 26 43.5	+0.2
	0.2nm,0.7s,baz=82,slow=8.8,SNR=2.9						
WRA	Warramunga Arr	56.23	188	P	P	16 28 11.4	+2.0
	1.2nm,1.0s,baz=4.3,slow=7.4,SNR=4.2						

*ISCJB **07** 16:21:39.1±0.9, 5°.2N±0°.1×94°.1E±0°.1, h46km, mb3.7/8, Error ellipse: s-maj=22.7km s-min=9.2km az=140.8*
*NEIC **07** 16:21:42.2±2.1, 5°.22N×94°.19E, h58km±17km, mb4.5/2, Error ellipse: s-maj=28.6km s-min=9.2km az=67.0*
*IDC **07** 16:21:50.3±13.0, 5°.44N×94°.43E, h124km±114km, mb3.1/6, mb1 3.2/7, mb1mx3.0/62, mbtmp3.5/7, ML3.9/1, Error ellipse: s-maj=116.3km s-min=19.2km az=59.0*
ISC 07 16:21:41.0±1.3**, 5°.4N**±0°.1×**94°.2E**±0°.2**, h46**km**, n19,** σ**1s04**/16**, mb3.7**/8**, Northern Sumatera**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
LHMI	Lhok Sumawe	2.74	93	ePn	Pn	16 22 23.5	+1.0
GSI	Gunungsitoli	5.25	140	ePn	Pn	16 22 56.8	-0.3
KULM	Kulim	6.43	90	ePn	Pn	16 23 13.4	+0.2
CMAR	Chiang Mai Arr	13.82	19	P	P	16 24 59.2	-2.4
	0.2nm,0.3s,baz=214,slow=12,SNR=6.4						
H08S2	Diego Garcia H	25.21	239	T	T	16 52 57.0	
	baz=60,slow=75,SNR=6.8						
H08S3	Diego Garcia H	25.21	239	T	T	16 53 03.1	
	baz=60,slow=75,SNR=5.0						
H08S1	Diego Carcia H	25.23	239	T	T	16 52 59.4	
	baz=60,slow=75,SNR=2.9						
MK01	Makanchi Array	42.52	348	eP	P	16 29 33.1	+1.1
MK32	Makanchi Array	42.54	348	eP	P	16 29 33.1	+0.9
MKAR	Makanchi Array	42.54	348	P	P	16 29 33.1	+0.9
	0.9nm,0.6s,baz=169,slow=9.7,SNR=3.1						
SONA0	Songino Array	43.59	12	eP	P	16 29 41.1	+0.3
	5.8nm,1.9s						
SONM	Songino Array	43.59	12	P	P	16 29 41.1	+0.3
	0.2nm,0.8s,baz=176,slow=8.5,SNR=2.4						
WR1	Warramunga Arr	46.80	124	eP	P	16 30 06.4	-0.1
	41nm,1.8s						
WRA	Warramunga Arr	46.80	124	P	P	16 30 06.4	-0.1
	0.2nm,0.5s,baz=303,slow=9.6,SNR=4.9						
KURBB	Kurchatov Arra	46.98	346	P	P	16 30 08.6	+1.1
	0.6nm,0.6s,baz=169,slow=7.1,SNR=4.2						
KURK	Kurchatov	47.05	347	eP	P	16 30 08.6	+0.6
ASAR	Alice Springs	48.30	128	P	P	16 30 18.3	+0.2
	0.3nm,1.0s,baz=301,slow=7.2,SNR=4.1						
ZALV	Zalesovo Beam	49.04	353	P	P	16 30 24.4	+1.1
	0.4nm,0.3s,baz=175,slow=7.1,SNR=3.8						
ZAA1	Zalesovo Array	49.04	353	eP	P	16 30 24.4	+1.0

JMA 07 16:25:01.8, 38°.24N×**141°.82E, h54**km±2km**, M3.5, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
OFUJ	Ofunato	0.85	352	P	Pn	16 25 17.8	+0.2
JMK	Ichinoseki	0.85	327	P	Pn	16 25 18.1	+0.4
JMK				S	Sn	16 25 29.5	+0.2
JMM	Marumori	0.89	246	P	Pn	16 25 18.1	-0.1
JMM				S	Sn	16 25 30.0	-0.2
JOU	Okura	0.92	278	P	Pn	16 25 18.8	+0.2
JOU				eS	Sn	16 25 31.2	+0.3
JFK	Kawauchi	1.15	221	P	Pn	16 25 21.7	0.0
JFK				eS	Sn	16 25 36.5	+0.1
JOM	Ohasama	1.30	342	P	Pn	16 25 24.1	+0.5
JOM				eS	Sn	16 25 40.0	+0.1
JYK	Kaneyama	1.33	301	P	Pn	16 25 24.3	+0.2
JYK				eS	Sn	16 25 41.6	+0.9
MIYJ	Miyakonagasawa	1.33	360	P	Pn	16 25 24.4	+0.3
JFT	Otama	1.38	239	P	Pn	16 25 25.5	+0.8
JFT				eS	Sn	16 25 42.2	+0.3
JYS	Shirataka	1.38	270	P	Pn	16 25 25.2	+0.4
JYS				eS	Sn	16 25 42.7	+0.7
JRG	Rokugo	1.48	322	P	Pn	16 25 26.9	+0.8

*ISCJB **07** 16:31:34.6±0.7, 38°.40N±0°.04×141°.87E±0°.08, h64km±6km, mb3.6/12, Error ellipse: s-maj=11.0km s-min=5.3km az=17.9*
*JMA **07** 16:31:35.4±0.1, 38°.41N×141°.87E, h52km±3km, M3.9*
*IDC **07** 16:31:36.9±2.5, 38°.40N×141°.89E, h71km±23km, mb3.4/12, mb1 3.6/16, mb1mx3.3/67, mbtmp3.7/16, Error ellipse: s-maj=21.9km s-min=15.2km az=87.0*
ISC 07 16:31:35.3±1.2**, 38°.39N**±0°.04×**141°.92E**±0°.08**, h55**km±11km**, n34,** σ**1s12**/38**, mb3.5**/12**, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
OFUJ	Ofunato	0.72	344	P	Pn	16 31 49.1	-0.5
OFUJ				S	Sn	16 31 59.1	-0.9
JMK	Ichinoseki	0.79	316	P	Pn	16 31 50.2	-0.2
JMK				S	Sn	16 32 00.3	-1.2
JOU	Okura	0.99	269	P	Pn	16 31 52.7	-0.4
JOU				S	Sn	16 32 05.5	-0.7
JMM	Marumori	1.03	240	S	Sn	16 32 05.9	-1.3
JOM	Ohasama	1.19	336	P	Pn	16 31 55.6	-0.1
JOM				S	Sn	16 32 10.5	-0.4
JFK	Kawauchi	1.31	219	P	Pn	16 31 57.6	+0.1
JFK				S	Sn	16 32 13.4	-0.6
JYK	Kaneyama	1.33	294	P	Pn	16 31 57.3	-0.4
JYK				S	Sn	16 32 13.3	-1.1
JRG	Rokugo	1.42	315	P	Pn	16 31 58.8	-0.1
JRG				S	Sn	16 32 16.7	+0.1
JYS	Shirataka	1.47	264	P	Pn	16 31 59.5	0.0
JYS				S	Sn	16 32 17.1	-0.6
JFT	Otama	1.53	236	S	Sn	16 32 18.6	-0.5
MJAR	Matsushiro Arr	3.48	239	P	Pn	16 32 28.6	+1.6
	3.9nm,0.3s,baz=38,slow=12,SNR=29						
MAT	Matsushiro	3.48	239	P	Pn	16 32 29.1	+2.1
MAT				eS	Sn	16 33 04.4	-2.6
JHJ	Hachijo jima 2	5.54	199	P	Pn	16 32 56.9	+1.7
	6.1nm,0.3s,baz=74,slow=18,SNR=3.0						
JHJ				S	Sn	16 33 54.5	-3.1
	6.0nm,0.3s,baz=43,slow=19,SNR=2.5						
USRK	Ussuriysk Ar.	9.46	311	P	Pn	16 33 49.3	+0.5
	0.6nm,0.3s,baz=124,slow=14,SNR=7.9						
KSRS	Korea Array	11.10	270	P	Pn	16 34 13.6	+2.3
	0.3nm,0.3s,baz=78,slow=14,SNR=4.9						
MA2	Magadan	21.95	12	P	P	16 36 24.2	+0.2
	1.9nm,0.6s,baz=191,slow=11,SNR=5.4						
SEY	Seymchan	25.39	11	P	P	16 36 56.0	-1.1
	0.6nm,0.6s,baz=173,slow=5.6,SNR=3.6						
SONM	Songino Array	27.39	302	P	P	16 37 16.2	+0.6
	0.5nm,1.0s,baz=95,slow=9.6,SNR=3.1						
H11N2	WAKE ISLAND Hy	28.52	124	T	T	17 07 47.1	
	baz=316,slow=75,SNR=10						
H11N1	WAKE ISLAND Hy	28.53	124	T	T	17 07 47.4	
	baz=316,slow=75,SNR=16						
H11N3	WAKE ISLAND Hy	28.54	124	T	T	17 07 48.1	
	baz=316,slow=75,SNR=16						
H11S1	WAKE ISLAND Hy	29.29	126	T	T	17 08 41.9	
	baz=318,slow=76,SNR=12						
H11S3	WAKE ISLAND Hy	29.29	126	T	T	17 08 48.3	
	baz=318,slow=76,SNR=12						
H11S2	WAKE ISLAND Hy	29.30	126	T	T	17 08 46.8	
	baz=318,slow=76,SNR=5.0						
ZALV	Zalesovo Beam	41.31	311	P	P	16 39 14.5	-0.7
	0.3nm,0.3s,baz=90,slow=7.8,SNR=2.6						
MKAR	Makanchi Array	43.76	301	P	P	16 39 35.1	-0.1
	0.7nm,0.8s,baz=88,slow=10,SNR=7.4						
KURBB	Kurchatov Arra	45.50	307	P	P	16 39 48.3	-0.7
	0.7nm,0.4s,baz=80,slow=8.1,SNR=6.2						
WRA	Warramunga Arr	58.46	188	P	P	16 41 24.9	-0.7
	0.8nm,0.6s,baz=5.3,slow=7.1,SNR=8.2						
ASAR	Alice Springs	62.18	188	P	P	16 41 50.8	-0.2
	0.3nm,0.7s,baz=8.0,slow=6.5,SNR=6.4						
YKA	Yellowknife Ar	62.44	31	P	P	16 41 52.4	+0.2
	0.2nm,0.6s,baz=302,slow=6.1,SNR=4.7						
HFS	Hagfors	73.02	336	P	P	16 42 58.5	-0.4
	3.9nm,1.0s,baz=64,slow=3.4,SNR=3.4						
PDAR	Pinedale Array	76.43	46	P	P	16 43 19.4	+0.2
	0.3nm,0.5s,baz=345,slow=2.1,SNR=3.7						
TXAR	Lajitas Array	88.98	53	P	P	16 44 24.4	+0.1
	0.4nm,0.8s,baz=316,slow=3.5,SNR=3.5						
LPAZ	La Paz	145.65	58	PKPbc	PKPdf	16 51 08.8	+0.2
	0.9nm,0.6s,baz=302,slow=3.8,SNR=4.5						

*ISCJB **07** 16:40:06.4±0.8, 38°.38N±0°.04×142°.03E±0°.09, h62km±7km, mb3.6/12, Error ellipse: s-maj=11.5km s-min=5.8km az=14.7*
*JMA **07** 16:40:07.1±0.1, 38°.41N×142°.00E, h57km±3km, M4.0*
JMA Felt II J1.
*IDC **07** 16:40:09.0±2.6, 38°.30N×142°.01E, h75km±25km, mb3.3/12, mb1 3.5/15, mb1mx3.3/60, mbtmp3.7/15, Error ellipse: s-maj=20.1km s-min=15.6km az=92.0*
ISC 07 16:40:06.4±1.6**, 38°.36N**±0°.04×**142°.14E**±0°.10**, h49**km±15km**, n32,** σ**1s18**/37**, mb3.7**/12**, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
OFUJ	Ofunato	0.81	333	P	Pn	16 40 21.6	0.0
JMK	Ichinoseki	0.93	310	P	Pn	16 40 22.9	-0.3
JMK				S	Sn	16 40 34.2	-1.3
JOU	Okura	1.16	271	P	Pn	16 40 26.0	-0.3
JOU				S	Sn	16 40 39.7	-1.4
JMM	Marumori	1.17	246	P	Pn	16 40 26.2	-0.2
JMM				S	Sn	16 40 40.0	-1.3
JOM	Ohasama	1.29	329	P	Pn	16 40 28.0	-0.1
JOM				S	Sn	16 40 43.5	-0.8
JFK	Kawauchi	1.41	226	P	Pn	16 40 30.3	+0.6
JFK				S	Sn	16 40 46.8	-0.4
JYK	Kaneyama	1.50	292	P	Pn	16 40 30.6	-0.4
JYK				eS	Sn	16 40 48.1	-1.3
JRG	Rokugo	1.57	312	P	Pn	16 40 31.4	-0.4
JRG				eS	Sn	16 40 50.0	-1.0
JYS	Shirataka	1.64	266	P	Pn	16 40 32.7	-0.1
JYS				S	Sn	16 40 51.7	-1.1
JFT	Otama	1.66	240	P	Pn	16 40 33.7	+0.6
JFT				S	Sn	16 40 53.4	+0.2
MJAR	Matsushiro Arr	3.62	241	P	Pn	16 41 01.7	+1.8
	2.6nm,0.3s,baz=34,slow=14,SNR=17						
MAT	Matsushiro	3.62	241	P	Pn	16 41 02.0	+2.0
MAT				eS	Sn	16 41 41.8	+0.4
JHJ	Hachijo jima 2	5.57	201	P	Pn	16 41 26.3	-0.5
	3.1nm,0.3s,baz=72,slow=20,SNR=6.0						
JHJ				S	Sn	16 42 25.8	-3.6
	7.1nm,0.3s,baz=90,slow=20,SNR=6.2						
KSRS	Korea Array	11.27	270	P	Pn	16 42 47.2	+2.5
	0.2nm,0.3s,baz=82,slow=14,SNR=4.1						
MA2	Magadan	21.94	12	P	P	16 44 57.2	+1.6
	2.0nm,0.5s,baz=215,slow=10,SNR=6.6						
SEY	Seymchan	25.38	11	P	P	16 45 30.0	+1.2
	0.6nm,0.7s,baz=204,slow=5.3,SNR=5.5						
SONM	Songino Array	27.55	302	P	P	16 45 48.2	-0.5
	0.4nm,0.6s,baz=103,slow=8.8,SNR=3.4						
H11N2	WAKE ISLAND Hy	28.37	124	T	T	17 16 19.6	
	baz=316,slow=76,SNR=11						
H11N1	WAKE ISLAND Hy	28.38	124	T	T	17 16 18.5	
	baz=316,slow=76,SNR=23						
H11N3	WAKE ISLAND Hy	28.39	124	T	T	17 16 20.2	
	baz=316,slow=76,SNR=14						
H11S1	WAKE ISLAND Hy	29.13	126	T	T	17 17 16.2	
	baz=318,slow=76,SNR=8.0						
H11S3	WAKE ISLAND Hy	29.13	126	T	T	17 17 16.2	
	baz=318,slow=76,SNR=5.3						
H11S2	WAKE ISLAND Hy	29.15	126	T	T	17 17 16.2	
	baz=318,slow=76,SNR=7.7						
ZALV	Zalesovo Beam	41.46	311	P	P	16 47 48.1	-0.1
	0.8nm,0.5s,baz=75,slow=8.1,SNR=4.8						
MKAR	Makanchi Array	43.92	301	P	P	16 48 07.8	-0.4
	0.3nm,0.5s,baz=82,slow=13,SNR=5.8						
KURBB	Kurchatov Arra	45.65	307	P	P	16 48 20.6	-1.4
	2.7nm,0.5s,baz=81,slow=8.1,SNR=28						
ILAR	Eielson Array	48.07	33	P	P	16 48 40.9	+0.2
	0.5nm,0.8s,baz=265,slow=6.2,SNR=2.8						
BVAR	Borovoye Array	50.12	312	P	P	16 48 55.8	-0.7
	0.3nm,0.4s,baz=60,slow=7.3,SNR=3.1						
WRA	Warramunga Arr	58.45	189	P	P	16 49 56.6	-0.7
	0.4nm,0.5s,baz=6.3,slow=7.2,SNR=9.2						
ASAR	Alice Springs	62.18	189	P	P	16 50 22.3	-0.5
	0.2nm,0.7s,baz=22,slow=4.8,SNR=5.6						
PDAR	Pinedale Array	76.33	46	P	P	16 51 50.6	+0.1
	0.5nm,0.5s,baz=334,slow=1.2,SNR=5.0						
TXAR	Lajitas Array	88.86	53	P	P	16 52 56.0	+0.3
	0.3nm,0.6s,baz=302,slow=4.1,SNR=2.5						

*BJI **07** 16:40:47.0, 64°.32N×148°.66W, h104km, mb4.5/21, mB5.3/3*
*ISCJB **07** 16:40:49.5±0.1, 63°.98N±0°.02×148°.78W±0°.04, h123km±1km, mb4.4/105, Error ellipse: s-maj=2.9km s-min=2.5km az=32.8*
*MOS **07** 16:40:49.0±0.9, 64°.01N×148°.86W, h119km, mb4.5/33, Error ellipse: s-maj=13.0km s-min=5.2km az=96.3*
*NEIC **07** 16:40:51.2, 63°.90N×148°.63W, h115km, mb4.4/64, After AEIC.*
*IDC **07** 16:40:51.5±0.7, 64°.08N×148°.87W, h123km±6km, mb4.1/41, mb1 4.1/43, mb1mx4.1/60, mbtmp4.5/43, Error ellipse: s-maj=11.4km s-min=7.7km az=23.0*
ISC 07 16:40:50.8±0.4**, 63°.94N**±0°.03×**148°.77W**±0°.03**, h124**km±3km**, h123**km**:pP-P, n395,** σ**1s61**/460**, mb4.4**/105**, 2C-2D, Central Alaska**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
MCK	McKinley	0.22	200	eP	Pn	16 41 07.4	-0.6
MCK				e		16 41 19.8	
MCK	McKinley	0.22	200	ePn	Pn	16 41 07.3	-0.6

MCK eSn **Sn** 16 41 19.8 -1.1
RND Reindeer 0.53 184 eP **Pn** 16 41 08.6 -0.9
RND e 16 41 22.0
RND Reindeer 0.53 184 ePn **Pn** 16 41 08.6 -0.9
RND eSn **Sn** 16 41 21.9 -1.5
WRH Wood River Hil 0.61 29 ePn **Pn** 16 41 09.4 -0.5
WRH eSn **Sn** 16 41 21.0 -3.3
CCB Clear Creek Bu 0.83 30 ePn **Pn** 16 41 11.1 -0.4
CCB eSn **Sn** 16 41 25.9 -1.3
TRF Thorofare Moun 0.83 235 ePn **Pn** 16 41 11.7 -0.1
TRF eSn **Sn** 16 41 26.1 -1.6
HDA Harding Lake 0.93 58 ePn **Pn** 16 41 11.7 -0.7
HDA eSn **Sn** 16 41 23.5 -5.3
BPAW Bear Paw Mtn. 0.99 281 eSn **Sn** 16 41 29.5 -0.4
COLA College 1.02 22*d* iP **Pn** 16 41 12.9 -0.4
COLA College 1.02 22 ePn **Pn** 16 41 12.9 -0.4
COLA eSn **Sn** 16 41 29.0 -1.3
COLA eSn Sn 16 41 29.3 -1.0
KTH Kantishna Hill 1.03 249 ePn **Pn** 16 41 13.7 +0.2
HUR Hurricane 1.04 202 ePn **Pn** 16 41 13.1 -0.4
PS08 TAPS Pump Stn8 1.05 54 ePn **Pn** 16 41 12.9 -0.6
MDM Murphy Dome 1.05 13 ePn **Pn** 16 41 13.3 -0.4
MDM eSn **Sn** 16 41 30.0 -1.0
IL1 Eielson Array 1.17 43 ePn **Pn** 16 41 13.6 -1.3
IL1 eSn **Sn** 16 41 31.3 -1.7
ILAR Eielson Array 1.17 43 P **Pn** 16 41 14.1 -0.7
274nm,0.3s,baz=226,slow=11
ILAR S **Sn** 16 41 32.1 -0.9
743nm,0.3s,baz=227,slow=18,SNR=50
MLY Manley 1.39 323 ePn **Pn** 16 41 17.6 +0.3
MLY eSn **Sn** 16 41 37.1 -0.2
PS10 TAPS Pump St10 1.43 110 ePn **Pn** 16 41 17.6 -0.1
CAST Castle Rocks 1.57 252 ePn **Pn** 16 41 19.2 0.0
CHUM Lake Minchumin 1.57 270 ePn **Pn** 16 41 19.8 +0.6
CUT Chulitna 1.68 205 ePn **Pn** 16 41 20.3 -0.2
PAX Paxson 1.77 122 eP **Pn** 16 41 20.9 -0.8
PAX e 16 41 44.5
PAX Paxson 1.77 122 ePn **Pn** 16 41 20.9 -0.8
PAX eSn **Sn** 16 41 44.5 -0.7
PPLA Purkeypile 1.86 237 ePn **Pn** 16 41 23.1 +0.3
PPLA eSn **Sn** 16 41 48.1 +0.9
PS06 TAPS Pump Stn6 1.97 348 ePn **Pn** 16 41 24.6 +0.6
DOT Dot Lake 2.11 96 ePn **Pn** 16 41 24.5 -1.2
DOT eSn **Sn** 16 41 50.1 -2.5
SML Sawmill 2.15 175 eP **Pn** 16 41 25.6 -0.7
SML e 16 41 48.6
SML Sawmill 2.15 175 ePn **Pn** 16 41 53.6 -0.7
SML eSn **Sn** 16 41 48.6 -4.8
SCM Sheep Creek Mo 2.21 162 eP **Pn** 16 41 26.4 -0.7
SCM Sheep Creek Mo 2.21 162 ePn **Pn** 16 41 26.4 -0.7
PMR Palmer 2.36 184 eP **Pn** 16 41 28.5 -0.3
PMR e 16 41 53.4
PMR Palmer 2.36 184 ePn **Pn** 16 41 28.5 -0.3
PMR eSn **Sn** 16 41 53.4 -4.7
PS11 TAPS Pump St11 2.39 140 ePn **Pn** 16 41 28.7 -0.6
MENT Mentasta 2.48 112 ePn **Pn** 16 41 28.9 -1.5
MENT eSn **Sn** 16 42 01.3 +0.4
KLU Klutina 2.78 151 ePn **Pn** 16 41 32.9 -1.5
STLK Strandline Lak 2.83 211 P **Pn** 16 41 34.8 -0.2
RC01 Rabbit Creek A 2.89 189 ePn **Pn** 16 41 36.0 +0.2
RC01 eSn **Sn** 16 42 13.0 +2.7
IM3 Indian Mountai 2.95 316 P **Pn** 16 41 36.7 +0.2
PS05 TAPS Pump Stn5 3.00 345 ePn **Pn** 16 41 37.6 +0.6
FYU Fort Yukon 3.03 28 ePn **Pn** 16 41 37.2 -0.3
VLZ Valdez 3.03 157 ePn **Pn** 16 41 35.8 -1.7
VMT TAPS Tl Valdez 3.07 158 ePn **Pn** 16 41 36.5 -1.6
CRP Crater Peak 3.10 212 P **Pn** 16 41 38.8 +0.1
DIV Divide 3.14 152 ePn **Pn** 16 41 37.2 -1.9
DIV eSn **Sn** 16 42 13.0 -3.2
CKN Chakachatna No 3.15 212 P **Pn** 16 41 39.5 +0.4
SPU Mount Spurr 3.16 210 ePn **Pn** 16 41 39.0 -0.2
SPU eSn **Sn** 16 42 08.3 -8.3
SPCR Spurr Chakacha 3.17 212 P **Pn** 16 41 39.4 -0.1
CKL Chakachamna La 3.21 213 P **Pn** 16 41 39.7 -0.3
BCA3 Beaver Creek A 3.25 102 ePn **Pn** 16 41 38.8 -1.7
COLD Coldfoot 3.36 350 ePn **Pn** 16 41 42.4 +0.6
TTA Tatalina 3.41 256 eP **Pn** 16 41 42.6 +0.1
TTA e 16 42 19.0
TTA Tatalina 3.41 256 ePn **Pn** 16 41 42.6 +0.1
TTA eSn **Sn** 16 42 18.9 -3.6
EGAK Eagle 3.41 72 ePn **Pn** 16 41 41.2 -1.3
EGAK eSn Sn 16 42 11.1 -1.1
TT01 Tatalina 3.42 256 ePn **Pn** 16 41 42.7 0.0
TT01 eSn **Sn** 16 42 19.0 -3.8
SLKM Skilak Lake 3.51 192 eP **Pn** 16 41 43.8 -0.1
SLKM Skilak Lake 3.51 192 ePn **Pn** 16 41 43.8 -0.1
BMRM Bremner River 3.55 145 ePn **Pn** 16 41 42.9 -1.6
VRDI Verde Repeater 3.66 135 P **Pn** 16 41 44.8 -1.3
EYAK Cordova Ski Ar 3.68 156 P **Pn** 16 41 45.0 -1.1
MCARA McCarthy VSAT 3.69 131 P **Pn** 16 41 45.5 -0.6
DFR Drift River 3.82 210 P **Pn** 16 41 48.5 +0.4
RDJH Redoubt Jeurge 3.85 211 P **Pn** 16 41 49.2 +0.7
SEW Seward 3.86 185 ePn **Pn** 16 41 47.5 -1.0
BM3 Burnt Mountain 3.90 24 ePn **Pn** 16 41 48.8 -0.2
NCT North Crescent 3.91 212 ePn **Pn** 16 41 49.8 +0.6
RSO Redoubt South 3.96 210 ePn **Pn** 16 41 50.5 +0.6
PTPK Patty Peak 4.01 131 P **Pn** 16 41 50.0 -0.7
BALM Baldy 4.16 131 eP **Pn** 16 41 51.5 -1.1
BALM Baldy 4.16 131 ePn **Pn** 16 41 51.5 -1.1
SVW2 Sparrevohn 4.25 231 ePn **Pn** 16 41 53.3 -0.4
BRLK Bradley Lake 4.31 194 ePn **Pn** 16 41 52.7 -1.7
BRLK eScP **ScP** 16 52 20.3 -4.8
HOM Homer 4.50 199 ePn **Pn** 16 41 56.1 -1.0
KDAK Kodiak Island 6.45 199 P Pn 16 42 36.1 +13
8.0nm,0.3s,baz=52,slow=9.4,SNR=71
KDAK S Sn 16 43 43.5 +8.2
24nm,0.3s,baz=60,slow=20,SNR=8.8
KDAK Kodiak Island 6.45 199 eP **Pn** 16 42 21.3 -1.9
KDAK e 16 43 43.5
KDAK Kodiak Island 6.45 199 ePn **Pn** 16 42 21.3 -1.9
KDAK eSn **Sn** 16 43 43.5 +8.2
OHAK Old Harbor 7.09 200 ePn **Pn** 16 42 29.4 -2.5
INK Inuvik 7.57 48 P **Pn** 16 42 37.1 -1.1
21nm,0.3s,baz=235,slow=16,SNR=392
INK S **Sn** 16 43 59.4 -2.8
baz=330,slow=20,SNR=2.1
INK Inuvik 7.57 48 eP **Pn** 16 42 36.5 -1.7
INK S **Sn** 16 43 59.4 -2.8
INK Inuvik 7.57 48 ePn **Pn** 16 42 36.5 -1.7
INK S **Sn** 16 43 59.4 -2.8
SKAG Skagway 7.80 119 ePn **Pn** 16 42 41.0 -0.3
CHGN Chignik 9.04 217 ePn **Pn** 16 42 56.9 -1.1
CHGN eSn **Sn** 16 44 32.2 -5.6
GAMB Gambell 10.11 279 ePn **Pn** 16 43 14.6 +2.2
SDPT Sand Point 10.43 220 ePn **Pn** 16 43 19.2 +2.4
SDPT eSn **Sn** 16 45 05.5 -6.3
DLBC Dease Lake 10.56 113 P **Pn** 16 43 18.1 -0.5
1.0nm,0.3s,baz=310,slow=16,SNR=31
DLBC S **Sn** 16 45 20.3 +5.3
0.4nm,0.3s,baz=216,slow=19,SNR=2.2
DLBC Dease Lake 10.56 113 ePn **Pn** 16 43 19.4 +0.7
DLBC S **Sn** 16 45 20.3 +5.3
WRAK Wrangell Islan 11.09 125 ePn **Pn** 16 43 24.6 -1.0
CRAG Craig 11.56 130 ePn **Pn** 16 43 30.5 -1.3
YKW3 Yellowknife Ar 15.33 80 ePn **Pn** 16 44 17.8 -2.4
23nm,0.9s
YKA Yellowknife Ar 15.36 80 P **Pn** 16 44 18.2 -2.3
1.0nm,0.3s,baz=289,slow=13,SNR=83
YKA ScP **ScP** 16 52 38.6 +0.3
0.1nm,0.3s,baz=288,slow=2.0,SNR=4.7
YKB5 Yellowknife Ar 15.36 80 ePn **Pn** 16 44 17.6 -2.9
YKB5 eScP **ScP** 16 52 38.9 +0.7
BBB Bella Bella 15.96 128 P **P** 16 44 31.0 +1.8
0.3nm,0.3s,baz=343,slow=13,SNR=3.5
BILL Bilibino 18.41 303*c iP* **Pn** 16 44 57.0 -0.5
BILL pmax pmax
comp=Z,53nm,1.5s
BILL Bilibino 18.41 303 eP **P** 16 44 56.8 +0.8
comp=Z,85nm,1.6s
PGC Sidney 20.56 126 eP **P** 16 45 17.3 -2.0
comp=Z,19nm,0.8s
RES Resolute Bay 20.92 37 P **P** 16 45 21.8 -1.1
comp=Z,7.3nm,0.5s,baz=239,slow=13,SNR=37
RES Resolute Bay 20.92 37 eP **P** 16 45 21.7 -1.2
RES pmax pmax
comp=Z,15nm,0.8s
RES Resolute Bay 20.92 37 eP **P** 16 45 21.7 -1.2
comp=Z,15nm,0.8s
B05A Bryant 21.37 125 P **P** 16 45 29.0 +0.9
baz=327,SNR=5.4
B06A Marblemount 21.38 123 eP **P** 16 45 29.0 +0.8
comp=Z,39nm,1.3s
D05A Enumclaw 22.32 126 eP **P** 16 45 39.6 +1.6
comp=Z,80nm,1.6s
B08A Colville Reser 22.32 120 eP **P** 16 45 39.4 +1.3
comp=Z,9.3nm,0.9s
LTY Liberty 22.74 124 eP **P** 16 45 43.5 +1.3
comp=Z,13nm,0.9s
LTY epP **pP** 16 46 08.4 +2.7
LON Longmire 22.76 126 eP **P** 16 45 44.3 +1.9
LON pmax pmax
comp=Z,15nm,1.5s
LON Longmire 22.76 126 eP **P** 16 45 44.3 +1.9
comp=Z,15nm,1.5s
C09A Chrisman Ranch 23.19 120 eP **P** 16 45 45.4 -1.0
C09A epP **pP** 16 46 12.7 +2.2
F04A Amboy 23.25 128 eP **P** 16 45 46.4 -0.5
comp=Z,24nm,1.1s
F04A epP **pP** 16 46 12.9 +1.8
NEW Newport 23.25 117 P **P** 16 45 48.3 +1.3
comp=Z,7.9nm,0.8s,baz=300,slow=7.1,SNR=10.0
NEW Newport 23.25 117 P **P** 16 45 47.0 -0.1
baz=324,SNR=5.8
NEW Newport 23.25 117 eP **P** 16 45 48.1 +1.1
NEW pmax pmax
comp=Z,11nm,0.9s
NEW Newport 23.25 117 eP **P** 16 45 48.1 +1.1
comp=Z,11nm,0.9s
D08A Wollman Farm, 23.56 122 eP **P** 16 45 49.8 +0.1
comp=Z,13nm,0.8s
D08A epP **pP** 16 46 14.6 +0.2
WALA Waterton Lakes 23.91 112 eP **P** 16 45 53.9 +0.9
comp=Z,19nm,0.8s
WALA epP **pP** 16 46 20.0 +1.8
G05D Wamic, OR 24.23 127 P **P** 16 45 56.1 +0.3
baz=330
BSMT Bassoo Peak 24.52 115 eP **P** 16 45 59.5 +1.0
BLMT Blacktail Moun 24.56 114 eP **P** 16 46 00.6 +1.6
LNOR Lincton Mounta 24.79 122 epP pP 16 46 27.9 +0.7
JTMT Jette 24.80 114 eP **P** 16 46 02.5 +1.4
YBMT Yellow Bay 24.82 114 eP **P** 16 46 02.7 +1.5
FFC Flin Flon 25.01 90 eP **P** 16 46 02.9 +0.1
FFC pmax pmax
comp=Z,11nm,1.3s
FFC Flin Flon 25.01 90 eP **P** 16 46 02.9 +0.1
comp=Z,11nm,1.3s
I05D Terrebonne, OR 25.01 129 P **P** 16 46 04.3 +1.3
baz=331
F10A Beach Ranch, E 25.11 121 eP **P** 16 46 05.4 +1.6
comp=Z,11nm,0.8s
SWMT Swartz Lake 25.11 114 eP **P** 16 46 04.8 +0.9
SWMT epP **pP** 16 46 33.1 +2.9
I04A Tendick Farm, 25.13 131 P **P** 16 46 05.3 +1.2
baz=333
SEY Seymchan 25.54 295 P **P** 16 46 07.1 -0.4
comp=Z,11nm,0.4s,baz=79,slow=7.2,SNR=120
SEY Seymchan 25.54 295 eP **P** 16 46 07.6 +0.1
CHMT Chamberlain Mo 25.89 114 eP **P** 16 46 12.0 +1.0
CHMT epP **pP** 16 46 39.8 +2.3
FCC Fort Churchill 26.00 76 eP **P** 16 46 11.7 +0.1
FCC pmax pmax
comp=Z,9.0nm,1.2s
FCC Fort Churchill 26.00 76 eP **P** 16 46 11.7 +0.1
comp=Z,8.8nm,1.2s
BMO Blue Mountains 26.02 122 eP **P** 16 46 14.0 +1.8
BMO epP **pP** 16 46 41.9 +3.4
EGMT Eagleton 26.44 108 P **P** 16 46 17.3 +1.4
baz=321
EGMT Eagleton 26.44 108 eP **P** 16 46 16.8 +0.9
EGMT epP **pP** 16 46 44.6 +2.3
K05A Summer Lake 26.59 130 eP **P** 16 46 19.6 +2.2
comp=Z,30nm,1.5s
HRY Holter Researc 26.63 113 eP **P** 16 46 18.2 +0.7
HRY epP **pP** 16 46 42.6 -1.5
YBH Yreka Blue Hor 26.88 133 P **P** 16 46 22.1 +2.2
comp=Z,2.0nm,0.6s,baz=348,slow=3.6,SNR=4.1
YBH Yreka Blue Hor 26.88 133 eP **P** 16 46 21.9 +2.1
YBH e*PP **pP** 16 46 47.2 +0.9
YBH Yreka Blue Hor 26.88 133 eP **P** 16 46 21.9 +2.1
YBH epP **pP** 16 46 47.2 +0.9
LRM Limekiln Ridge 27.10 115 eP **P** 16 46 22.8 +0.8
M04C Macdoel 27.11 132 P **P** 16 46 23.9 +1.9
baz=334
DLMT Dillon 27.42 115 eP **P** 16 46 23.5 -1.2
DLMT epP **pP** 16 46 53.5 +2.3
N02D Trinity Center 27.56 134 P **P** 16 46 27.7 +1.8
baz=335
BOZ Bozeman (W) 27.57 114 P **P** 16 46 27.9 +1.8
baz=325
BOZ Bozeman (W) 27.57 114 eP **P** 16 46 28.7 +2.6
BOZ e*PP **pP** 16 46 55.1 +2.4
BOZ Bozeman (W) 27.57 114 eP **P** 16 46 28.7 +2.6
BOZ epP **pP** 16 46 55.0 +2.4
WVOR Wild Horse Val 27.63 127 eP **P** 16 46 27.6 +1.0
WVOR pmax pmax
comp=Z,11nm,1.6s
WVOR Wild Horse Val 27.63 127 eP **P** 16 46 27.6 +1.0
comp=Z,11nm,1.6s
MCMT McKenzie Canyo 27.76 116 eP **P** 16 46 29.6 +1.7
MCMT epP **pP** 16 46 57.3 +2.8
MFID Camas Ranch 27.80 122 eP **P** 16 46 29.5 +1.4
MA2 Magadan 27.98 289 P **P** 16 46 29.6 +0.3
comp=Z,4.9nm,0.6s,baz=76,slow=10,SNR=13
HLID Hailey 28.21 120 P **P** 16 46 32.0 +0.2
baz=328,SNR=6.8
HLID Hailey 28.21 120 eP **P** 16 46 33.4 +1.6
comp=Z,3.3nm,0.8s
GCMT Greycliff 28.26 111 eP **P** 16 46 33.6 +1.4
QLMT Earthquake Lak 28.32 115 eP **P** 16 46 35.0 +2.2
O03D Paynes Creek 28.47 133 P **P** 16 46 35.4 +1.4
baz=335
YMR Madison River 28.64 114 eP **P** 16 46 37.7 +2.0
comp=Z,9.4nm,0.9s
YNR Norris Junctio 28.72 114 eP **P** 16 46 37.5 +1.1
comp=Z,17nm,1.6s
RLMT Red Lodge 28.96 112 eP **P** 16 46 39.2 +0.7
comp=Z,20nm,1.8s
LAO LASA Array 28.98 106 eP **P** 16 46 39.9 +1.5
comp=Z,9.7nm,1.0s
H17A Grant Village 29.03 114 eP **P** 16 46 42.7 +3.6
comp=Z,5.2nm,1.1s
PEA1 Petropavlovsk- 29.07 274 eP **P** 16 46 38.5 -0.5
PETK Petropavlovsk- 29.07 274 P **P** 16 46 38.5 -0.6
comp=Z,2.1nm,0.7s,baz=70,slow=12,SNR=8.3
FXWY Fox Creek 29.48 115 eP **P** 16 46 45.0 +1.9
FXWY epP **pP** 16 47 12.3 +2.6
MOOW Moose Ponds 29.50 115 eP **P** 16 46 45.0 +1.8
MOOW epP **pP** 16 47 12.7 +2.7
TIXI Tiksi 29.60 321 P **P** 16 46 43.6 -0.2
comp=Z,3.0nm,0.5s,baz=76,slow=10,SNR=31
TIXI Tiksi 29.60 321 eP **P** 16 46 43.6 +0.1
TIXI pmax pmax
comp=Z,10.0nm,2.5s
TIXI Tiksi 29.60 321 eP **P** 16 46 43.1 -0.4
comp=Z,3.9nm,0.5s
TIXI eP **P** 16 46 43.4 -0.2
LOHW Long Hollow 29.67 115 eP **P** 16 46 46.9 +2.2
comp=Z,5.1nm,0.6s
SNOW Snow King Moun 29.73 115 eP **P** 16 46 47.3 +2.0
comp=Z,5.7nm,0.9s
REDW Red Top Meadow 29.78 116 eP **P** 16 46 48.4 +2.7
comp=Z,14nm,1.7s
AFDM Forest Hills D 29.96 133 eP **P** 16 46 47.5 +0.4
comp=Z,17nm,1.8s
ELK Elko 30.34 124 eP **P** 16 46 51.8 +1.2
ELK pmax pmax
comp=Z,4.0nm,1.3s
ELK Elko 30.34 124 eP **P** 16 46 51.8 +1.2
comp=Z,3.7nm,1.3s
KULLO Kullorsuaq 30.54 32 *i* P **P** 16 46 52.5 +0.7
comp=Z,15nm,0.8s
KULLO Kullorsuaq 30.54 32 *i* P **P** 16 46 52.5 +0.7
KULLO pmax pmax
comp=Z,15nm,0.8s
BW06 Boulder Array 30.79 115 P **P** 16 46 55.8 +1.1
baz=327,SNR=7.5
BW06 Boulder Array 30.79 115 eP **P** 16 46 56.2 +1.5
comp=Z,5.0nm,0.8s
BW06 epP **pP** 16 47 24.2 +2.7
BW06 epP **pP** 16 47 24.8 +3.3
PD31 Pinedale Array 30.79 115 eP **P** 16 46 56.6 +1.9
PD31 epP **pP** 16 47 24.9 +3.4
PDAR Pinedale Array 30.79 115 P **P** 16 46 56.5 +1.9
comp=Z,9.9nm,0.7s,baz=313,slow=6.3,SNR=34
ULM Lac du Bonnet 30.80 91 P **P** 16 46 55.1 +0.7
comp=Z,6.1nm,0.7s,baz=313,slow=9.0,SNR=14
ULM Lac du Bonnet 30.80 91 eP **P** 16 46 55.2 +0.8
ULM pmax pmax
comp=Z,6.0nm,0.8s
ULM Lac du Bonnet 30.80 91 eP **P** 16 46 55.2 +0.8
comp=Z,6.1nm,0.8s
WAKR Walker 30.86 131 eP **P** 16 46 57.2 +1.9
WAKR epP **pP** 16 47 26.1 +4.0
CMB Columbia Colle 30.98 133 eP **P** 16 46 56.0 -0.1
CMB pmax pmax
comp=Z,19nm,1.9s
CMB Columbia Colle 30.98 133 eP **P** 16 46 56.0 -0.1
comp=Z,19nm,1.9s
HWUT Hardware Ranch 30.98 118 eP **P** 16 46 57.3 +1.0
comp=Z,15nm,1.9s
HWUT epP **pP** 16 47 24.8 +1.8
BGU Big Grassy Mou 31.00 121 eP **P** 16 46 58.6 +2.2
comp=Z,3.2nm,0.8s
NV01 Mina Array Sit 31.31 130 eP **P** 16 47 00.9 +1.6
NV01 ePcP **PcP** 16 49 51.8 +1.7
NVAR Mina Array Bea 31.31 130 P **P** 16 47 01.3 +2.1
comp=Z,5.2nm,0.7s,baz=323,slow=8.0,SNR=33
NVAR PcP **PcP** 16 49 51.8 +1.7
comp=Z,0.5nm,0.7s,baz=310,slow=4.2,SNR=2.9
DUG Dugway, Tooele 31.72 121 ePP PP 16 48 11.5 -5.0
C31A Landman Farms, 31.81 96 P **P** 16 47 03.5 +0.2
baz=319
G27A Dupree 31.85 103 P **P** 16 47 04.6 +0.9
baz=322
B32A Ashes, Strandq 31.88 94 P **P** 16 47 04.2 +0.3
baz=319
A33A Warroad 31.98 92 P **P** 16 47 04.7 0.0
baz=318
AGMN Agassiz Nation 32.25 93 P **P** 16 47 07.2 +0.1
baz=319
AGMN Agassiz Nation 32.25 93 eP **P** 16 47 06.5 -0.6
comp=Z,4.7nm,0.8s
R11A Troy Canyon, C 32.33 126 P **P** 16 47 09.0 +1.0
baz=333,SNR=5.8
R11A Troy Canyon, C 32.33 126 eP **P** 16 47 08.7 +0.6
comp=Z,16nm,1.9s
B34A Aery, Baudette 32.64 92 P **P** 16 47 10.7 +0.2
baz=318
H28A Mission Ridge 32.80 103 P **P** 16 47 12.3 +0.3
baz=323
B35A Bob, Littlefor 33.15 91 P **P** 16 47 15.2 +0.3
baz=319
P18A Preston Nutter 33.19 119 eP **P** 16 47 17.8 +2.0
comp=Z,8.1nm,0.9s
DAC Darwin (Calif) 33.49 131 eP **P** 16 47 19.9 +1.6
DAC pmax pmax
comp=Z,4.0nm,0.7s
DAC Darwin (Calif) 33.49 131 eP **P** 16 47 19.9 +1.6
comp=Z,4.1nm,0.7s
C35A Jirik Farms, M 33.53 92 P **P** 16 47 18.4 +0.1
baz=319,SNR=5.4
SRU San Rafael Swe 33.53 119 eP **P** 16 47 20.1 +1.5
SRU e*PP **pP** 16 47 48.7 +3.1
SRU San Rafael Swe 33.53 119 eP **P** 16 47 20.1 +1.5
SRU epP **pP** 16 47 48.7 +3.1
O20A White River Ci 33.55 116 P **P** 16 47 18.3 -0.4
baz=329
WCHM Chimney Peak 33.69 132 eP P 16 47 26.5 +6.4
D35A Remer 33.97 93 P **P** 16 47 22.1 0.0
baz=320
C36A Pine Crest Far 33.99 91 P **P** 16 47 22.1 -0.1
baz=319
D36A Goodland 34.29 92 P **P** 16 47 24.6 -0.2
baz=320
C37A Embarrass 34.30 91 P **P** 16 47 24.8 -0.1
baz=319
EYMN Ely 34.44 90 P **P** 16 47 26.6 +0.4
baz=319,SNR=20
EYMN Ely 34.44 90 eP **P** 16 47 26.4 +0.3
comp=Z,24nm,0.6s
PV09 Paradox Valley 34.60 118 eP **P** 16 47 29.2 +1.2
GSC Goldstone, Bar 34.65 130 P **P** 16 47 29.2 +1.1
baz=336
GSC Goldstone, Bar 34.65 130 eP **P** 16 47 28.6 +0.5
GSC pmax pmax
comp=Z,6.0nm,0.8s
GSC Goldstone, Bar 34.65 130 eP **P** 16 47 28.6 +0.5
comp=Z,5.8nm,0.8s
C38A Sawbill Land. 34.71 90 P **P** 16 47 28.5 +0.1
baz=319,SNR=11
YAK Yakutsk 34.74 305 P **P** 16 47 28.2 -0.2
comp=Z,1.0nm,0.3s,baz=45,slow=20,SNR=6.0
YAK Yakutsk 34.74 305 eP **P** 16 47 27.9 -0.5
YAK pmax pmax
comp=Z,10.0nm,0.8s
YAK Yakutsk 34.74 305 eP **P** 16 47 27.9 -0.5
comp=Z,9.9nm,0.8s
PV10 Paradox Valley 34.74 118 eP **P** 16 47 30.4 +1.3
E36A McGregor 34.75 93 P **P** 16 47 29.6 +0.8
baz=320,SNR=5.5
ISCO Idaho Springs 34.89 113 P **P** 16 47 30.5 +0.1
baz=328
ISCO Idaho Springs 34.89 113 eP **P** 16 47 31.7 +1.3
ISCO Idaho Springs 34.89 113 eP **P** 16 47 31.7 +1.3
PV05 Paradox Valley 34.98 119 eP **P** 16 47 32.1 +1.0
DSCC Desert Studies 35.03 130 ePP PP 16 49 08.6 +16
PV01 Paradox Valley 35.14 118 eP **P** 16 47 33.7 +1.2
F36A Milaca 35.14 94 P **P** 16 47 32.8 +0.6
baz=321
C39A Grand Marais 35.14 89 P **P** 16 47 31.5 -0.6
baz=319,SNR=5.3
GMRC Granite Mounta 35.51 129 P **P** 16 47 35.5 0.0
baz=336
GMRC Granite Mounta 35.51 129 eScP **ScP** 16 53 31.4 -4.5
Q24A Divide 35.79 113 P **P** 16 47 38.2 +0.1
baz=329
SPMN Marine on St. 35.95 94 P **P** 16 47 39.9 +0.8
baz=322
SPMN Marine on St. 35.95 94 eP **P** 16 47 40.5 +1.4
comp=Z,9.2nm,0.6s
MVCO Mesa Verde 35.97 119 P **P** 16 47 40.2 +0.6
baz=331
SUMG Summit 35.98 29 *i* P **P** 16 47 40.1 +0.6
comp=Z,16nm,0.8s
SUMG Summit 35.98 29 *i* P **P** 16 47 40.1 +0.6
SUMG pmax pmax
comp=Z,16nm,0.8s
SUMG Summit 35.98 29 eP **P** 16 47 40.0 +0.6
comp=Z,82nm,1.7s
DAG Danmarks Havn 36.15 17 *i* P **P** 16 47 40.8 +0.4
comp=Z,14nm,0.7s
DAG Danmarks Havn 36.15 17 *i* P **P** 16 47 40.8 +0.4
DAG pmax pmax
comp=Z,10.0nm,0.7s
S22A 4UR Ranch, Cre 36.16 116 P **P** 16 47 41.9 +0.6
baz=330
S22A 4UR Ranch, Cre 36.16 116 eP **P** 16 47 43.4 +2.1
comp=Z,10.0nm,1.8s
IRM Iron Mountain 36.25 129 P **P** 16 47 42.9 +1.1
baz=336
PFO Pinyon Flats O 36.30 131 eP **P** 16 47 41.9 -0.4
PFO pmax pmax
comp=Z,28nm,1.5s
PFO Pinyon Flats O 36.30 131 eP **P** 16 47 41.9 -0.4
comp=Z,28nm,1.5s
WUAZ Wupatki 36.37 123 P **P** 16 47 44.2 +1.3
baz=333
WUAZ Wupatki 36.37 123 eP **P** 16 47 44.6 +1.6
comp=Z,8.9nm,0.8s
NKL Nikolayevsk 36.41 287 eP **P** 16 47 43.0 +0.1
NKL pmax pmax
comp=Z,11nm,0.8s
BORC Borrego Spring 36.63 131 eP **P** 16 47 44.7 -0.2
I37A Lemond, Waseca 36.65 96 P **P** 16 47 46.0 +1.0
baz=322
SDCO Great Sand Dun 36.69 115 eP **P** 16 47 47.2 +1.4
comp=Z,3.3nm,1.0s
SFJD Kangerlussuaq 36.84 40 P **P** 16 47 46.8 +0.5
comp=Z,15nm,0.6s,baz=312,slow=7.2,SNR=12
SFJD Kangerlussuaq 36.84 40 *i* P **P** 16 47 47.0 +0.7
comp=Z,21nm,0.7s
SFJD Kangerlussuaq 36.84 40 eP **P** 16 47 46.7 +0.5
SFJD pmax pmax
comp=Z,191nm,2.0s
SFJD Kangerlussuaq 36.84 40 eP **P** 16 47 46.6 +0.4
comp=Z,191nm,2.0s
SFJD eP **P** 16 47 46.8 +0.4
COWI Conover 36.89 90 eP **P** 16 47 46.9 -0.2
comp=Z,9.9nm,1.3s
MONP2 Monument Peak 36.97 132 P **P** 16 47 49.5 +1.4
baz=337
L34A Svendsen Farm, 36.99 101 P **P** 16 47 49.0 +1.0
baz=324

TYV	Tymovskoe	37.23	283	eP	P	16 47 49.2	-0.6
WESC	Westside Schoo	37.33	131	eP	P	16 47 47.8	-3.0
X16A	Lo Mia Camp, P	37.33	124	eP	P	16 47 49.8	-1.3
	comp=Z,4.5nm,0.8s						
J38A	Wedel Dairy, R	37.60	96	P	P	16 47 54.0	+0.9
	baz=323						
SPITS	Spitsbergen Ar	37.83	5	P	P	16 47 54.5	-0.1
	comp=Z,5.9nm,0.8s,baz=14,slow=5.2,SNR=14						
ANMO	Albuquerque	38.74	118	ceP	P	16 48 04.2	+1.3
ANMO				pmax	pmax		
	comp=Z,3.0nm,1.1s						
ANMO	Albuquerque	38.74	118	eP	P	16 48 03.0	0.0
	comp=Z,3.9nm,1.0s						
LAZ	Ladron	38.96	119	eP	P	16 48 07.1	+2.3
214A	Organ Pipe Nat	39.06	128	P	P	16 48 06.8	+1.4
	baz=336						
KSU1	Kansas State U	39.25	104	P	P	16 48 08.4	+1.6
	baz=327						
KSU1	Kansas State U	39.25	104	eP	P	16 48 08.4	+1.6
	comp=Z,21nm,0.4s						
Q34A	Chapman	39.26	104	P	P	16 48 08.3	+1.3
	baz=327						
BNM	Barren Site	39.38	119	eP	P	16 48 09.7	+1.4
P36A	Good Intent, A	39.42	102	P	P	16 48 09.4	+1.1
	baz=326						
TUC	Tucson	39.46	125	eP	P	16 48 10.6	+1.8
TUC				pmax	pmax		
	comp=Z,7.0nm,1.3s						
TUC	Tucson	39.46	125	eP	P	16 48 10.6	+1.8
	comp=Z,7.1nm,1.3s						
SCHQ	Schefferville	39.86	63	P	P	16 48 11.6	-0.2
	comp=Z,6.6nm,0.6s,baz=318,slow=8.3,SNR=6.6						
SCHQ	Schefferville	39.86	63	eP	P	16 48 11.0	-0.7
	comp=Z,29nm,1.3s						
121A	Cookes Peak, D	40.37	121	P	P	16 48 17.6	+1.2
	baz=334						
R36A	Gordon, Harris	40.37	103	P	P	16 48 17.1	+1.0
	baz=327						
S35A	Otter Creek Ra	40.56	105	P	P	16 48 18.8	+1.1
	baz=328						
P39A	Salisbury	40.59	100	P	P	16 48 18.0	+0.1
	baz=326						
Q38A	Cooks Store, C	40.66	101	P	P	16 48 16.8	-1.7
	baz=326						
P40A	Paris	40.87	99	P	P	16 48 18.3	-1.9
	baz=326						
S37A	Fort Scott	41.13	103	P	P	16 48 22.8	+0.4
	baz=327						
NRIK	Noril'sk	41.25	333	P	P	16 48 23.4	+0.4
	comp=Z,6.0nm,0.8s,baz=37,slow=8.5,SNR=4.8						
Q40A	Laux Farm, Aux	41.30	99	P	P	16 48 24.0	+0.3
	baz=326						
R39A	Chumby, Stover	41.45	101	P	P	16 48 24.6	-0.3
	baz=327						
S38A	Stockton	41.64	102	P	P	16 48 26.9	+0.4
	baz=327						
S40A	Lebanon	42.27	101	P	P	16 48 32.1	+0.5
	baz=327						
U38A	Gravette	42.44	104	P	P	16 48 32.8	-0.3
	baz=328						
V37A	Hulbert	42.59	105	P	P	16 48 34.9	+0.7
	baz=328						
V38A	Canehill	42.91	104	P	P	16 48 35.4	-1.5
	baz=328						
KLR	Kul'dur	43.09	289	P	P	16 48 37.5	-0.5
	comp=Z,3.6nm,0.5s,baz=39,slow=8.6,SNR=16						
W37B	Quinton	43.09	106	P	P	16 48 37.2	-1.1
	baz=329						
BOD	Bodaibo	43.27	309	eP	P	16 48 38.6	-0.9
BOD				pmax	pmax		
	comp=Z,11nm,1.2s						
V40A	Witts Springs	43.65	103	P	P	16 48 40.9	-1.9
	baz=328						
133A	Hamilton Ranch	43.82	111	P	P	16 48 42.7	-1.5
	baz=331						
233A	Rising Star	44.34	112	P	P	16 48 46.8	-1.5
	baz=331						
Z37A	Pogue Cattle C	44.68	107	P	P	16 48 50.7	-0.2
	baz=330						
TX31	Lajitas Ar. Si	44.80	119	eP	P	16 48 53.6	+1.4
TX31				eP	P	16 48 53.9	+1.8
LTX	Lajitas	44.80	119	eP	P	16 48 53.9	+1.8
LTX				e*PP	pP	16 49 21.2	+0.9
LTX	Lajitas	44.80	119	eP	P	16 48 53.9	+1.8
LTX				epP	pP	16 49 21.2	+0.9
TXAR	Lajitas Array	44.80	119	P	P	16 48 53.9	+1.7
	comp=Z,2.5nm,0.7s,baz=329,slow=6.7,SNR=28						
TXAR				pP	pP	16 49 21.2	+1.0
	comp=Z,1.8nm,0.9s,baz=324,slow=6.2,SNR=3.4						
N54A	Moraine State	45.01	87	P	P	16 48 50.4	-3.2
	baz=324						
HPIG		46.20	122	epP	pP	16 49 25.9	-5.6
ARCES	ARCESS Array B	46.75	3	P	P	16 49 06.5	-0.3
	comp=Z,2.8nm,0.6s,baz=0.1,slow=8.2,SNR=18						
ARCES				PcP	PcP	16 50 37.4	-0.5
	comp=Z,1.3nm,0.5s,baz=340,slow=3.1,SNR=7.2						
USRK	Ussuriysk Ar.	46.95	285	P	P	16 49 07.8	-0.9
	comp=Z,1.2nm,0.6s,baz=28,slow=9.2,SNR=4.9						
JSRW	J. Sargeant Re	48.62	87	eP	P	16 49 21.0	-0.7
CN2	Changchun	50.04	290	eP	P	16 49 32.7	+0.4
CN2				pmax	pmax		
	comp=Z,10.0nm,0.4s						
MJAR	Matsushiro Arr	50.53	274	P	P	16 49 36.5	+0.4
	comp=Z,1.6nm,0.6s,baz=11,slow=8.2,SNR=7.6						
ULN	Ulaanbaatar	53.81	306	eP	P	16 50 00.4	0.0
ULN				pmax	pmax		
	comp=Z,3.0nm,0.7s						
ULN	Ulaanbaatar	53.81	306	eP	P	16 49 59.8	-0.7
	comp=Z,3.6nm,0.5s						
SONA1	Songino Array	54.06	306	eP	P	16 50 02.8	+0.5
SONA0	Songino Array	54.08	306	eP	P	16 50 03.3	+1.0
	comp=Z,4.4nm,0.9s						
SONM	Songino Array	54.08	306	P	P	16 50 03.3	+1.0
	comp=Z,3.3nm,0.7s,baz=18,slow=5.8,SNR=25						
KS01	Wonju Array Si	54.25	283	eP	P	16 50 03.9	+0.4
KSRS	Korea Array	54.25	283	P	P	16 50 04.2	+0.6
	comp=Z,2.9nm,0.6s,baz=25,slow=6.7,SNR=12						
KS15	Wonju Array Si	54.28	283	eP	P	16 50 03.9	+0.2
KSAR	Wonju Array Be	54.28	283	P	P	16 50 04.2	+0.5
KSAR	Wonju Array Be	54.28	283	P	P	16 50 04.2	+0.5
NB2	NORSAR Subarra	54.43	12	P	P	16 50 04.5	0.0
	comp=Z,2.2nm,0.7s,baz=350,slow=7.4						
NB200	NORSAR Array S	54.43	12	eP	P	16 50 04.1	-0.4
NOA	NORSAR Array B	54.43	12	P	P	16 50 04.1	-0.4
	comp=Z,2.2nm,0.7s,baz=350,slow=7.2,SNR=6.0						
FIA0	FINESS Array S	54.87	3	eP	P	16 50 07.1	-0.5
FIA0	FINESS Array S	54.87	3	eP	P	16 50 07.1	-0.5
FINES	FINESS Array B	54.87	3	P	P	16 50 07.1	-0.5
	comp=Z,3.7nm,0.6s,baz=360,slow=8.0,SNR=21						
NVS	Novosibirsk	54.94	326	eP	P	16 50 07.0	-1.2
ZAA1	Zalesovo Array	55.34	325	eP	P	16 50 10.6	-0.5
ZAA0	Zalesovo Array	55.35	325	eP	P	16 50 10.3	-0.9
ZALV	Zalesovo Beam	55.35	325	P	P	16 50 10.6	-0.6
	comp=Z,3.3nm,0.3s,baz=14,slow=7.5,SNR=17						
KLMR	Klimovskoe	55.37	355	eP	P	16 50 10.1	-1.1
KLMR				pmax	pmax		
	comp=Z,14nm,0.9s						
HHC	Hu-ho-hao-te	58.11	298	eP	P	16 50 32.2	+1.2
HHC				pmax	pmax		
	comp=Z,14nm,1.1s						
EKA	Eskdalemuir Ar	58.13	22	P	P	16 50 31.1	+0.3
	comp=Z,9.8nm,0.5s,baz=336,slow=5.4,SNR=40						
EKA				pP	pP	16 51 00.6	+0.4
	comp=Z,2.9nm,0.7s,baz=333,slow=4.8,SNR=2.1						
ARU	Arti	58.13	343	P	P	16 50 31.1	+0.3
	comp=Z,3.6nm,0.4s,baz=52,slow=3.3,SNR=9.0						
ARU	Arti	58.13	343	d iP	P	16 50 31.6	+0.8
ARU						16 52 40.2	
ARU				S	S	16 58 26.3	+4.4
ARU				SS	SS	17 02 16.5	+2.3
ARU				pmax	pmax		
	comp=Z,4.0nm,0.6s						
ARU	Arti	58.13	343	eP	P	16 50 30.9	+0.1
	comp=Z,8.7nm,1.2s						
BRVK	Borovoye	59.45	334	eP	P	16 50 40.4	+0.4
BRVK				pmax	pmax		
	comp=Z,6.0nm,1.7s						
BRVK	Borovoye	59.45	334	eP	P	16 50 39.4	-0.6
	comp=Z,5.8nm,1.2s						
BVAR	Borovoye Array	59.47	334	P	P	16 50 39.5	-0.6
	comp=Z,2.4nm,0.4s,baz=48,slow=7.9,SNR=29						
ZRNK	Zerenda	59.80	335	eP	P	16 50 42.1	-0.3
ZRNK				pmax	pmax		
	comp=Z,5.0nm,0.4s						
ZRNK	Zerenda	59.80	335	eP	P	16 50 42.0	-0.3
	comp=Z,4.9nm,0.4s						
KURK	Kurchatov	59.84	327	eP	P	16 50 42.6	-0.1
KURK	Kurchatov	59.84	327	eP	P	16 50 42.6	-0.1
KURBB	Kurchatov Arra	59.95	327	P	P	16 50 42.6	-0.8
	comp=Z,1.7nm,0.4s,baz=32,slow=7.2,SNR=30						
OBN	Obninsk	61.21	357	P	P	16 50 51.7	-0.2
	comp=Z,13nm,0.4s,baz=270,slow=7.1,SNR=3.5						
OBN	Obninsk	61.21	357	eP	P	16 50 52.7	+0.9
OBN				e*PP	pP	16 51 19.1	-2.4
OBN				e		16 53 08.1	
OBN				pmax	pmax		
	comp=Z,5.0nm,1.0s						
MK32	Makanchi Array	62.54	323	eP	P	16 50 59.7	-1.3
MKAR	Makanchi Array	62.54	323	P	P	16 50 59.7	-1.2
	comp=Z,2.0nm,0.4s,baz=45,slow=7.4,SNR=51						
MKAR	Makanchi Array	62.54	323	i P	P	16 51 00.0	-1.0
MKAR				pmax	pmax		
	comp=Z,2.0nm,0.4s						
MKAR	Makanchi Array	62.54	323	eP	P	16 50 59.9	-1.0
WMQ	Urumqi	63.75	318	eP	P	16 51 11.0	+2.0
WMQ				pmax	pmax		
	comp=Z,3.0nm,0.6s						
WMQ				LR	LR		
	comp=Z,970nm,19.0s						
WMQ				LR	LR		
	comp=Z,2μm,21.4s						
WMQ				LR	LR		
	comp=Z,3μm,21.4s						
GTA	Gaotai	63.75	306	eP	P	16 51 09.8	+0.6
GTA				pmax	pmax		
	comp=Z,6.0nm,1.0s						
AKTO	Aktyubinsk	64.05	341	P	P	16 51 10.5	-0.3
	comp=Z,2.8nm,0.4s,baz=49,slow=8.7,SNR=13						
CLL	Collm	64.21	13	eP	P	16 51 11.0	-0.8
CLL	Collm	64.21	13	eP	P	16 51 11.0	-0.8
ABKAR	Akbulak array	64.92	340	eP	P	16 51 16.2	-0.2
DPC	Dobruska-Polom	65.46	10	eP	P	16 51 21.0	+1.0
DPC	Dobruska-Polom	65.46	10	eP	P	16 51 21.0	+1.0
AKASG	Malin Array Be	65.69	1	P	P	16 51 20.2	-1.2
	comp=Z,2.3nm,0.4s,baz=360,slow=6.3,SNR=19						
AKASG	Malin Array Be	65.69	1	i P	P	16 51 21.1	-0.3
AKASG				pmax	pmax		
	comp=Z,2.0nm,0.4s						
AKBB	Malin Array Si	65.69	1	eP	P	16 51 21.1	-0.3
AKBB				pmax	pmax		
	comp=Z,6.0nm,0.6s						
AKBB	Malin Array Si	65.69	1	eP	P	16 51 21.1	-0.3
	comp=Z,5.7nm,0.6s						
KIEV	Kiev	65.70	1	eP	P	16 51 21.4	0.0
KIEV				pmax	pmax		
	comp=Z,6.0nm,1.4s						
KHC	Kasperske Hory	66.42	13	eP	P	16 51 27.2	+1.0
KHC				ex	x	16 51 33.1	
KHC	Kasperske Hory	66.42	13	eP	P	16 51 27.2	+1.0
STHS	Stebnicka Huta	66.72	7	eP	P	16 51 29.0	+1.0
STHS	Stebnicka Huta	66.72	7	eP	P	16 51 29.0	+1.0
GERES	GERESS Array B	66.72	13	P	P	16 51 28.4	+0.3
	comp=Z,0.4nm,0.4s,baz=322,slow=4.1,SNR=3.9						
TKM2	Tokmak 2	67.87	326	eP	P	16 51 35.6	0.0
TKM2				pmax	pmax		
	comp=Z,5.0nm,1.3s						
TKM2	Tokmak 2	67.87	326	eP	P	16 51 35.6	0.0
	comp=Z,5.3nm,1.3s						
AAK	Ala-Archa	68.41	327	eP	P	16 51 39.0	+0.1
AAK				pmax	pmax		
	comp=Z,3.0nm,1.1s						
AAK	Ala-Archa	68.41	327	eP	P	16 51 39.0	+0.1
	comp=Z,3.2nm,1.1s						
EKS2	Erkin-Say	68.55	328	eP	P	16 51 39.8	+0.1
EKS2				pmax	pmax		
	comp=Z,6.0nm,0.7s						
EKS2	Erkin-Say	68.55	328	eP	P	16 51 39.8	+0.1
	comp=Z,6.1nm,0.7s						
BUR08	Bucovina Ar. S	68.66	4	eP	P	16 51 40.3	-0.1
CD2	Chengdu	69.85	299	P	P	16 51 46.8	-1.0
CD2				pmax	pmax		
	comp=Z,1.0nm,0.6s						
KVAR	Kislovodsk Arr	72.07	351	P	P	16 52 01.8	+0.7
	comp=Z,4.7nm,0.7s,baz=0.0,slow=11,SNR=3.6						
KBZ	Khabaz	72.28	351	P	P	16 52 01.9	-0.3
	comp=Z,1.4nm,0.8s,baz=20,slow=4.9,SNR=3.4						
ES19	SONSECA Array	73.02	28	eP	P	16 52 07.1	+0.3
ESDC	Sonseca Array	73.03	28	P	P	16 52 06.9	+0.1
	comp=Z,2.9nm,0.6s,baz=346,slow=5.5,SNR=19						
ESDC				pP	pP	16 52 37.9	+0.5
	comp=Z,2.0nm,0.8s,baz=345,slow=5.7,SNR=2.7						
ZEI	Tsey	73.15	350	eP	P	16 52 12.1	+4.5
ZEI				pmax	pmax		
	comp=Z,9.0nm,1.0s						
GEYT	Alibeck	76.26	338	P	P	16 52 25.5	+0.1
	comp=Z,1.1nm,0.4s,baz=316,slow=4.0,SNR=3.4						
BR231	Keskin MP Arra	76.56	359	eP	P	16 52 28.3	+1.1
BR101	Keskin Array S	76.66	358	eP	P	16 52 27.9	+0.1
BRTR	Keskin Array B	76.66	358	P	P	16 52 27.9	+0.1
	comp=Z,0.9nm,0.7s,baz=29,slow=2.8,SNR=4.8						
BRTR	Keskin Array B	76.66	358	i P	P	16 52 30.7	+2.9
KEST	Kesra	79.16	18	P	P	16 52 41.5	-0.1
	comp=Z,5.3nm,0.9s,baz=68,slow=3.4,SNR=4.3						
KEST	Kesra	79.16	18	eP	P	16 52 41.8	+0.2
	comp=Z,12nm,1.2s						
CM31	Chiang Mai Arr	82.92	298	eP	P	16 53 01.7	+0.1
CMAR	Chiang Mai Arr	82.92	298	P	P	16 53 01.5	-0.1
	comp=Z,1.3nm,0.8s,baz=8.5,slow=5.6,SNR=14						
VNDA	Vanda	144.40	196	PKP	PKPbc	17 00 09.1	0.0
	comp=Z,1.7nm,0.8s,baz=356,slow=2.0,SNR=6.0						
BOSA	Boshof	144.46	9	PKP	PKPab	17 00 09.7	-0.9
	comp=Z,4.4nm,0.5s,baz=1.6,slow=3.8,SNR=15						

*IDC **07** 16:44:11.8±2.6, 38°.62N×142°.72E, h0km, mb3.4/3, mb1 3.6/5, mb1mx3.3/50, mbtmp3.6/5, ML3.2/2, Error ellipse: s-maj=62.1km s-min=27.2km az=75.0*
*ISCJB **07** 16:44:20.9±1.0, 38°.43N±0°.04×141°.9E±0°.1, h60km±9km, mb3.4/3, Error ellipse: s-maj=13.7km s-min=6.4km az=15.1*
*JMA **07** 16:44:21.8±0.1, 38°.44N×141°.87E, h56km±3km, M3.7*
JMA Felt I J1.
ISC 07 16:44:20.7±1.7**, 38°.43N**±0°.04×**142°.0E**±0°.1**, h47**km±16km**, n19, σ1.16**/26**, mb3.6**/3**, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	Ofunato	0.71	337	P	Pn	16 44 35.3	+0.8
JMK	Ichinoseki	0.82	310	P	Pn	16 44 36.4	+0.5
JMK				S	Sn	16 44 46.6	-0.5
JOU	Okura	1.07	267	P	Pn	16 44 39.3	-0.1
JOU				S	Sn	16 44 51.9	-1.3
JMM	Marumori	1.12	241	P	Pn	16 44 40.1	+0.1
JMM				S	Sn	16 44 53.1	-1.2
JOM	Ohasama	1.19	331	P	Pn	16 44 41.7	+0.7
JOM				S	Sn	16 44 56.3	+0.2
JYK	Kaneyama	1.40	291	P	Pn	16 44 43.7	0.0
JYK				S	Sn	16 44 59.9	-1.1
JFK	Kawauchi	1.40	221	P	Pn	16 44 44.5	+0.7
JFK				S	Sn	16 45 01.0	-0.1
JRG	Rokugo	1.46	312	P	Pn	16 44 44.9	+0.3
JYS	Shirataka	1.56	263	P	Pn	16 44 46.1	+0.1
JYS				S	Sn	16 45 04.1	-0.9
JFT	Otama	1.61	236	P	Pn	16 44 47.6	+0.8
JFT				S	Sn	16 45 06.0	-0.4
MJAR	Matsushiro Arr	3.57	239	Pn	Pn	16 45 15.9	+2.3
	1.7nm,0.3s,baz=41,slow=12,SNR=13						
MJAR				Sn	Sn	16 46 02.8	+8.2
	0.7nm,0.3s,baz=89,slow=24,SNR=3.4						
MAT	Matsushiro	3.57	239	P	Pn	16 45 16.3	+2.7
MAT				eS	Sn	16 45 56.2	+1.6
JHJ	Hachijo jima 2	5.60	200	Pn	Pn	16 45 41.6	+0.2
	1.8nm,0.3s,baz=116,slow=24,SNR=6.3						
JHJ				Sn	Sn	16 46 42.4	-2.0
	4.5nm,0.3s,baz=107,slow=19,SNR=4.3						
H11S1	WAKE ISLAND Hy	29.24	126	T	T	17 21 30.7	
	baz=320						
H11S3	WAKE ISLAND Hy	29.24	126	T	T	17 21 30.9	
	baz=320						
H11S2	WAKE ISLAND Hy	29.26	126	T	T	17 21 31.9	
	baz=320						
MKAR	Makanchi Array	43.81	301	P	P	16 52 22.9	+1.1
	0.3nm,0.6s,baz=66,slow=7.0,SNR=1.8						
KURBB	Kurchatov Arra	45.54	307	P	P	16 52 34.6	-1.0
	0.5nm,0.6s,baz=80,slow=8.0,SNR=3.6						
WRA	Warramunga Arr	58.51	188	P	P	16 54 11.6	-0.6
	0.4nm,0.8s,baz=5.2,slow=7.5,SNR=3.2						

IDC 07 16:58:12.6±2.5**, 36°.59N**×**143°.55E, h0**km**, mb3.3**/3**, mb1 3.5**/5**, mb1mx3.2**/40**, mbtmp3.4**/5**, ML2.6**/2**, Error ellipse: s-maj=57.7km s-min=29.4km az=60.0, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MJAR	Matsushiro Arr	4.30	271	Pn	Pn	16 59 19.6	+0.3
	0.5nm,0.3s,baz=90,slow=15,SNR=5.3						
MJAR				Sn	Sn	17 00 05.2	-5.0
	0.4nm,0.3s,baz=69,slow=24,SNR=3.7						
JHJ	Hachijo jima 2	4.64	223	Pn	Pn	16 59 23.4	-0.6
	0.6nm,0.3s,baz=0.0,slow=20,SNR=3.6						
JHJ				Sn	Sn	17 00 13.2	-5.3
	3.7nm,0.3s,baz=73,slow=19,SNR=2.7						
MKAR	Makanchi Array	45.80	303	P	P	17 06 35.8	-0.3
	0.2nm,0.7s,baz=71,slow=8.8,SNR=3.1						
WRA	Warramunga Arr	56.89	190	P	P	17 07 59.2	-0.1
	0.5nm,1.0s,baz=6.1,slow=6.8,SNR=3.1						
ASAR	Alice Springs	60.62	190	P	P	17 08 25.4	+0.1
	0.3nm,0.9s,baz=2.3,slow=6.7,SNR=3.2						

JMA 07 16:58:45.5±0.3**, 36°.63N**×**141°.85E, h47**km**, M2.5, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHO	Hitachi	1.03	269	P	Pn	16 59 04.0	+0.4
JHO				S	Sn	16 59 16.6	-0.3
JFK	Kawauchi	1.07	314	P	Pn	16 59 04.1	-0.1
JFK				S	Sn	16 59 18.6	+0.6
JFT	Otama	1.50	307	P	Pn	16 59 11.5	+1.5
JFT				S	Sn	16 59 29.9	+1.5

*ISCJB **07** 17:11:45.4±0.7, 38°.39N±0°.04×141°.89E±0°.08, h61km±5km, mb3.9/24, Error ellipse: s-maj=10.5km s-min=4.9km az=20.5*
*JMA **07** 17:11:46.0±0.1, 38°.39N×141°.88E, h53km±2km, M4.2*
JMA Felt II J1.
*IDC **07** 17:11:46.3±0.6, 38°.34N×141°.77E, h55km±4km, mb3.7/24, mb1 3.9/27, mb1mx3.8/60, mbtmp4.0/27, Error ellipse: s-maj=13.5km s-min=11.4km az=117.0*
ISC 07 17:11:46.3±0.6**, 38°.36N**±0°.04×**141°.91E**±0°.06**, h55**km±5km**, n65, σ1.01**/62**, mb3.9**/24**, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	Ofunato	0.74	345	P	Pn	17 12 00.2	-0.6
OFUJ				S	Sn	17 12 10.1	-1.3
JMK	Ichinoseki	0.80	318	P	Pn	17 12 00.9	-0.6
JMK				S	Sn	17 12 11.4	-1.2
JOU	Okura	0.98	271	P	Pn	17 12 03.5	-0.4
JOU				eS	Sn	17 12 15.9	-1.0
JMM	Marumori	1.01	241	P	Pn	17 12 03.9	-0.4
JMM				eS	Sn	17 12 16.8	-0.7
JOM	Ohasama	1.21	337	P	Pn	17 12 06.5	-0.4
JOM				eS	Sn	17 12 21.3	-1.0
JFK	Kawauchi	1.29	220	P	Pn	17 12 08.0	0.0
JFK				S	Sn	17 12 23.8	-0.5
JYK	Kaneyama	1.34	295	P	Pn	17 12 08.2	-0.4
JYK				S	Sn	17 12 24.3	-1.1
JRG	Rokugo	1.44	316	P	Pn	17 12 09.7	-0.3
JYS	Shirataka	1.46	265	P	Pn	17 12 10.3	0.0
JYS				eS	Sn	17 12 28.3	0.0
JFT	Otama	1.50	236	P	Pn	17 12 11.2	+0.3
JFT				eS	Sn	17 12 29.6	+0.2
MAT	Matsushiro	3.46	239	P	Pn	17 12 39.6	+1.9
MAT				eS	Sn	17 13 19.3	+1.9
MJAR	Matsushiro Arr	3.46	239	P	Pn	17 12 39.5	+1.8
	4.7nm,0.3s,baz=39,slow=12,SNR=56						
JHJ	Hachijo jima 2	5.51	199	P	Pn	17 13 05.2	-0.5
	13nm,0.3s,baz=326,slow=21,SNR=18						
JHJ				S	Sn	17 14 04.3	-3.5
	28nm,0.3s,baz=133,slow=22,SNR=8.6						
USRK	Ussuriysk Ar.	9.47	311	P	Pn	17 14 00.3	+0.3
	1.2nm,0.3s,baz=122,slow=14,SNR=27						
KSRS	Korea Array	11.09	270	P	Pn	17 14 26.1	+4.0
	0.3nm,0.3s,baz=79,slow=13,SNR=3.9						
KLR	Kul'dur	13.10	329	P	Pn	17 14 50.6	+1.2
	0.1nm,0.3s,baz=129,slow=14,SNR=4.3						
MA2	Magadan	21.98	12	P	P	17 16 34.9	-0.4
	3.6nm,0.5s,baz=218,slow=9.1,SNR=14						
YAK	Yakutsk	24.87	346	P	P	17 17 01.5	-1.9
	0.7nm,0.3s,baz=307,slow=20,SNR=4.7						
SEY	Seymchan	25.41	11	P	P	17 17 09.4	+1.1
	2.2nm,0.6s,baz=196,slow=6.4,SNR=12						
SONM	Songino Array	27.40	302	P	P	17 17 26.2	-0.4
	0.5nm,0.6s,baz=112,slow=9.1,SNR=5.3						
SONM				PcP	PcP	17 20 44.1	-0.1
	0.2nm,0.3s,baz=116,slow=3.4,SNR=2.6						
H11N2	WAKE ISLAND Hy	28.52	124	T	T	17 48 14.6	
	baz=317,slow=75,SNR=441						
H11N1	WAKE ISLAND Hy	28.53	124	T	T	17 48 14.1	
	baz=317,slow=75,SNR=374						
H11N3	WAKE ISLAND Hy	28.54	124	T	T	17 48 16.3	
	baz=317,slow=75,SNR=434						
H11S1	WAKE ISLAND Hy	29.28	126	T	T	17 48 43.3	
	baz=318,slow=76,SNR=10						
H11S3	WAKE ISLAND Hy	29.28	126	T	T	17 48 53.3	
	baz=318,slow=76,SNR=122						
H11S2	WAKE ISLAND Hy	29.30	126	T	T	17 48 54.4	
	baz=318,slow=76,SNR=108						
ZALV	Zalesovo Beam	41.32	311	P	P	17 19 25.6	-0.7
	2.3nm,0.5s,baz=88,slow=7.5,SNR=17						
ZALV				PcP	PcP	17 21 23.5	-0.3
	1.1nm,0.7s,baz=68,slow=1.4,SNR=4.1						
CMAR	Chiang Mai Arr	42.23	254	P	P	17 19 33.2	-0.9
	0.2nm,0.7s,baz=52,slow=9.4,SNR=3.3						
MKAR	Makanchi Array	43.76	301	P	P	17 19 45.6	-0.6
	1.5nm,0.6s,baz=84,slow=9.5,SNR=20						
MKAR				pP	pP	17 19 59.0	-1.5
	3.5nm,0.7s,baz=88,slow=9.0,SNR=16						
TAPN	Taplejung	46.25	273	eP	pP	17 20 19.3	-1.7
TAPN	Taplejung	46.25	273	eP	pP	17 20 19.3	-1.7
	6.7nm,0.6s						
ODAN	Odare	46.74	273	eP	pP	17 20 22.8	-2.0
RAMN	Ramite	47.31	273	eP	pP	17 20 27.3	-2.0
RAMN	Ramite	47.31	273	eP	pP	17 20 28.1	-1.2
	54nm,1.1s						
GUN	Gumba	47.43	275	eP	pP	17 20 28.3	-2.0
GUN	Gumba	47.43	275	eP	pP	17 20 29.1	-1.2
	35nm,0.9s						
KKN	Kakani	47.95	275	eP	pP	17 20 32.8	-1.4
	26nm,0.9s						
PKIN	Phulchoki	47.96	275	eP	pP	17 20 32.5	-1.9
	7.0nm,0.6s						
ILAR	Eielson Array	48.16	33	P	P	17 20 20.9	+0.3
	0.9nm,0.7s,baz=262,slow=6.2,SNR=10.0						
ILAR				pP	pP	17 20 36.3	+1.2
	1.8nm,0.6s,baz=262,slow=6.0,SNR=11						
GKN	Gorkha	48.36	276	eP	pP	17 20 35.8	-1.5
GKN	Gorkha	48.36	276	eP	pP	17 20 35.9	-1.4
	54nm,1.0s						
KOLN	Koldanda	49.28	276	eP	pP	17 20 43.1	-1.4
KOLN	Koldanda	49.28	276	eP	pP	17 20 43.1	-1.4
	22nm,0.8s						
PYUN	Piuthan	49.60	277	eP	pP	17 20 45.8	-1.1
PYUN	Piuthan	49.60	277	eP	pP	17 20 45.8	-1.1
	72nm,1.0s						
INK	Inuvik	53.03	28	P	P	17 20 58.3	+1.2
	0.5nm,0.4s,baz=273,slow=3.7,SNR=2.6						
INK				pP	pP	17 21 13.1	+1.2
	1.9nm,0.6s,baz=320,slow=4.9,SNR=3.8						
DLBC	Dease Lake	57.34	39	P	P	17 21 30.1	+1.6
	1.8nm,0.8s,baz=174,slow=6.3,SNR=3.5						
WRA	Warramunga Arr	58.43	188	P	P	17 21 36.0	-0.4
	5.3nm,0.6s,baz=6.0,slow=7.0,SNR=37						
RES	Resolute Bay	61.22	15	P	P	17 21 54.6	-0.3
	0.8nm,0.5s,baz=314,slow=5.0,SNR=8.8						
RES				pP	pP	17 22 09.7	-0.2
	1.1nm,0.4s,baz=310,slow=4.5,SNR=6.1						
ASAR	Alice Springs	62.16	188	P	P	17 22 01.6	-0.2
	2.7nm,0.7s,baz=10,slow=5.2,SNR=49						
YKA	Yellowknife Ar	62.47	31	P	P	17 22 03.3	-0.1
	0.5nm,0.6s,baz=302,slow=6.5,SNR=13						
YKA				pP	pP	17 22 18.8	+0.4
	0.5nm,0.8s,baz=302,slow=6.6,SNR=4.5						
GEYT	Alibeck	63.54	299	pP	pP	17 22 24.7	-1.4
	1.7nm,0.7s,baz=66,slow=3.7,SNR=4.2						
FINES	FINESS Array B	67.83	332	P	P	17 22 37.4	-0.7
	0.8nm,0.8s,baz=33,slow=11,SNR=5.1						
STKA	Stephens Creek	69.88	180	P	P	17 22 49.9	-1.3

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
	1.0nm,0.7s,baz=108,slow=2.0,SNR=3.0						
KBZ	Khabaz	70.34	311	P	P	17 22 55.5	+1.5
	1.5nm,0.9s,baz=294,slow=9.6,SNR=3.8						
HFS	Hagfors	73.04	336	P	P	17 23 10.0	0.0
	1.7nm,0.6s,baz=36,slow=2.8,SNR=6.6						
NB2	NORSAR Subarra	73.11	337	P	P	17 23 09.7	-0.8
	comp=Z,2.8nm,0.8s,baz=39,slow=6.2						
NOA	NORSAR Array B	73.11	337	P	P	17 23 09.9	-0.6
	comp=Z,1.0nm,0.6s,baz=39,slow=6.0,SNR=3.8						
AKASG	Malin Array Be	73.49	322	P	P	17 23 11.9	-0.9
	comp=Z,1.3nm,0.6s,baz=44,slow=6.1,SNR=9.6						
NVAR	Mina Array Bea	73.88	54	P	P	17 23 16.7	+1.1
	comp=Z,1.3nm,0.8s,baz=286,slow=8.0,SNR=5.1						
PDAR	Pinedale Array	76.46	46	P	P	17 23 30.9	+0.6
	comp=Z,1.2nm,0.6s,baz=277,slow=3.2,SNR=13						
PDAR				pP	pP	17 23 46.6	+0.8
	comp=Z,1.6nm,0.6s,baz=261,slow=2.5,SNR=9.5						
BRTR	Keskin Array B	78.27	312	P	P	17 23 41.2	+0.8
	comp=Z,0.3nm,0.5s,baz=104,slow=4.6,SNR=3.8						
TXAR	Lajitas Array	89.00	53	P	P	17 24 36.1	+0.7
	comp=Z,0.9nm,0.7s,baz=301,slow=3.3,SNR=12						
TXAR				pP	pP	17 24 51.4	+0.2
	comp=Z,0.6nm,0.7s,baz=286,slow=3.3,SNR=4.0						
DBIC	Dimbokro	125.58	318	PKP	PKPdf	17 30 42.4	+0.5
	comp=Z,1.5nm,0.5s,baz=181,slow=12,SNR=5.9						
LPAZ	La Paz	145.67	58	PKPbc	PKPbc	17 31 20.0	0.0
	comp=Z,3.5nm,0.6s,baz=351,slow=3.4,SNR=13						

IDC 07 17:14:41.5±6.7, 3°.50S×151°.29E, h0km, mb3.3/3, mb1 3.5/3, mb1mx3.2/48, mbtmp3.4/3, Error ellipse: s-maj=209.9km s-min=36.5km az=104.0, New Ireland region

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
WRA	Warramunga Arr	23.25	224	P	P	17 19 51.5	+0.7
	0.3nm,0.3s,baz=48,slow=9.8,SNR=7.8						
ASAR	Alice Springs	26.16	218	P	P	17 20 17.2	-0.6
	0.5nm,1.1s,baz=51,slow=8.5,SNR=4.0						
MKAR	Makanchi Array	78.37	319	P	P	17 26 44.0	0.0
	0.2nm,0.5s,baz=93,slow=6.9,SNR=4.7						

IDC 07 17:16:16.7±8.6, 13°.90N×120°.93E, h127km±83km, mb3.3/13, mb1 3.5/13, mb1mx3.2/61, mbtmp3.7/13, Error ellipse: s-maj=38.8km s-min=14.2km az=61.0
ISCJB 07 17:16:18.9±0.4, 13°.86N±0°.04×120°.61E±0°.07, h152km, mb3.5/13, Error ellipse: s-maj=9.4km s-min=5.7km az=162.7
ISC 07 17:16:19.6±0.7, 13°.85N±0°.05×120°.65E±0°.07, h152km, n27, σ1s.12/30, mb3.6/13, 3C-3D, Mindoro

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
TGY	Tagaytay City	0.38	48⇑	iP	Pn	17 16 40.8	+0.1
PGP	Puerto Galera	0.46	139⇑	eP	Pn	17 16 40.5	-0.6
LQP	Lukban	0.90	73⇓	eP	Pn	17 16 44.2	+0.2
BOAC	Boac	1.23	108	eP	Pn	17 16 47.1	+0.6
BOAC				eS	Sn	17 17 06.4	-0.7
SJMP	San Jose	1.46	162	eP	Pn	17 16 49.0	+0.1
SJMP				eS	Sn	17 17 11.1	-0.3
GQP	Guinayangan	1.75	88⇓	eP	Pn	17 16 52.9	+0.9
PCPH	Palayan	1.76	14⇓	eP	Pn	17 16 51.0	-1.1
BUSP	Coron	1.89	193	eP	Pn	17 16 53.7	+0.1
AUQP	San Andres	2.04	105	eP	Pn	17 16 57.8	+2.5
BALP	Baler	2.08	25	eP	Pn	17 16 56.1	+0.2
BCPH	Baguio City Da	2.52	359⇑	iP	Pn	17 17 03.6	+2.4
BCPH				iS	Sn	17 17 34.2	+0.9
BOLP	Bolinao	2.61	344	eP	Pn	17 17 01.4	-0.9
ENPP	El Nido	2.89	205	eP	Pn	17 17 06.8	+1.1
CUYO	Cuyo Island	3.00	173	eP	Pn	17 17 08.1	+0.9
CMAR	Chiang Mai Arr	21.34	285	P	P	17 20 55.5	+0.6
	0.9nm,0.7s,baz=97,slow=6.5,SNR=8.6						
SONM	Songino Array	35.90	344	P	P	17 23 05.4	+0.2
	0.3nm,0.5s,baz=158,slow=9.7,SNR=3.1						
WRA	Warramunga Arr	36.18	158	P	P	17 23 05.3	-2.4
	0.7nm,0.5s,baz=328,slow=10,SNR=4.5						
ASAR	Alice Springs	39.48	161	P	P	17 23 35.5	+0.1
	0.8nm,0.4s,baz=335,slow=7.2,SNR=34						
MKAR	Makanchi Array	45.88	324	P	P	17 24 27.9	+1.1
	0.3nm,0.5s,baz=113,slow=8.4,SNR=5.6						
ZALV	Zalesovo Beam	48.90	333	P	P	17 24 49.7	-0.2
	0.4nm,0.4s,baz=122,slow=6.0,SNR=3.0						
KURBB	Kurchatov Arra	50.04	326	P	P	17 24 59.5	+0.9
	1.6nm,0.7s,baz=130,slow=8.1,SNR=15						
BVAR	Borovoye Array	55.62	326	P	P	17 25 40.1	+0.6
	0.5nm,0.6s,baz=97,slow=8.0,SNR=4.5						
TIXI	Tiksi	57.99	3	P	P	17 25 55.0	-0.9
	0.2nm,0.3s,baz=34,slow=1.7,SNR=5.1						
GEYT	Alibeck	60.01	306	P	P	17 26 12.2	+1.8
	0.6nm,0.4s,baz=46,slow=4.2,SNR=2.7						
ILAR	Eielson Array	78.64	26	P	P	17 28 03.1	-1.2
	0.5nm,1.0s,baz=225,slow=10.0,SNR=4.5						
ARCES	ARCESS Array B	78.93	339	P	P	17 28 05.6	-0.3
	2.1nm,0.9s,baz=69,slow=6.6,SNR=3.7						
FINES	FINESS Array B	80.13	331	P	P	17 28 11.8	-0.7
	2.0nm,0.9s,baz=90,slow=8.3,SNR=2.8						

IDC 07 17:18:52.4±13.0, 37°.26N×142°.43E, h0km, mb3.4/3, mb1 3.3/4, mb1mx3.1/67, mbtmp3.3/4, ML2.7/1, Error ellipse: s-maj=245.3km s-min=64.1km az=131.0
JMA 07 17:18:54.4±0.4, 37°.31N×142°.23E, h16km±4km, M3.2
ISC 07 17:19:00.3±4.0, 37°.5N±0°.2×141°.8E±0°.3, h21km, n7, σ0s.60/7, mb3.2/3, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
JFK	Kawauchi	0.75	258	P	Pb	17 19 14.4	-0.3
JMM	Marumori	0.86	293	P	Pn	17 19 17.3	+0.1
JFT	Otama	1.16	270	P	Pn	17 19 21.6	+0.3
MJAR	Matsushiro Arr	3.04	252	Pn	Pn	17 19 47.2	+0.1
	0.7nm,0.3s,baz=79,slow=9.7,SNR=5.4						
SONM	Songino Array	27.77	303	P	P	17 24 47.7	+0.1
	0.3nm,0.7s,baz=99,slow=7.6,SNR=2.2						
MKAR	Makanchi Array	44.12	302	P	P	17 27 07.8	+0.8
	0.2nm,0.6s,baz=87,slow=8.4,SNR=2.3						
KURBB	Kurchatov Arra	45.94	308	P	P	17 27 20.6	-0.8
	0.7nm,0.6s,baz=82,slow=7.8,SNR=8.7						

CSEM 07 17:20:49.2±0.6, 78°.46N×6°.92E, h10km, ML3.1, Error ellipse: s-maj=21.3km s-min=11.9km az=178.0
IDC 07 17:20:51.4±1.1, 78°.46N×7°.17E, h0km, mb3.4/5, mb1 3.7/8, mb1mx3.3/61, mbtmp3.6/8, ML3.2/3, Error ellipse: s-maj=19.0km s-min=13.0km az=19.0
NAO 07 17:20:53.6±1.8, 78°.39N×8°.30E, ML3.6
BER 07 17:20:56.4±2.7, 78°.45N×8°.54E, h10km, MD2.3, ML3.1, ML3.6(NAO)
ISC 07 17:20:53.8±1.1, 78°.34N±0°.06×8°.47E±0°.07, h10km, n37, σ1s.77/43, mb3.3/5, Svalbard region

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
KBS	Kingsbay	0.91	48	Pg	Pg	17 21 10.5	-0.7
KBS				Lg	Lg	17 21 22.6	
KBS	Kingsbay	0.91	48	eP	Pg	17 21 10.5	-0.7
KBS				Lg	Lg	17 21 22.6	
KBS				IAML		17 21 24.8	
	comp=Z,2μm,0.2s						
KBS	Kingsbay	0.91	48	eP	Pg	17 21 10.5	-0.7
	SNR=70						
KBS				Lg	Lg	17 21 22.6	
BRBA	Barentsburg A	1.21	100	Pg	Pg	17 21 17.0	-0.1
	SNR=94						
BRBA				Lg	Lg	17 21 34.0	
SPA0	Spitsbergen Ar	1.62	92	Pn	Pg	17 21 23.7	-1.2
	baz=281,slow=14						
SPA0				Lg	Lg	17 21 46.3	
	baz=297,slow=37						
SPA0	Spitsbergen Ar	1.62	92	Pn	Pg	17 21 23.7	-1.2
	baz=281,slow=14						
SPA0				Lg	Lg	17 21 46.3	
	baz=297,slow=37						
SPA0	Spitsbergen Ar	1.62	92	Pn	Pg	17 21 23.7	-1.2
	SNR=50						
SPA0				Lg	Lg	17 21 46.3	
	SNR=50						
SPITS	Spitsbergen Ar	1.62	92	Pn	Pg	17 21 23.6	-1.3
	baz=272,slow=12,SNR=1338						
SPITS				Sn	Sg	17 21 46.1	+0.2
	baz=303,slow=29,SNR=7.9						
HSP	Hornsund	2.02	128	Pn	Pn	17 21 28.0	+0.1
HSP				Sn	Sb	17 21 53.9	-1.7
HSPB	Hornsund (broa	2.02	128	Pn	Pn	17 21 28.0	+0.1
HSPB				Sn	Sb	17 21 53.9	-1.8
HSPB				IAML		17 21 57.4	
	comp=Z,126nm,0.6s						
HSPB	Hornsund (broa	2.02	128	Pn	Pn	17 21 28.0	+0.1
	SNR=50						
HSPB				Sn	Sb	17 21 53.9	-1.8
	SNR=50						
HOPEN	Hopen	4.04	109	Pn	Pn	17 21 55.9	+0.3
HOPEN				Sn	Sn	17 22 43.4	+0.5
HOPEN	Hopen	4.04	109	ePn	Pn	17 21 56.0	+0.4
HOPEN				Sn	Sn	17 22 43.2	+0.3
HOPEN				IAML		17 22 45.2	
	comp=Z,79nm,0.3s						
HOPEN	Hopen	4.04	109	ePn	Pn	17 21 56.0	+0.4
	SNR=50						
BJO1	Bjornoya	4.57	142	Pn	Pn	17 22 05.2	+2.3
BJO1				Sn	Sn	17 22 58.6	+2.6
BJO	Bjornoya	4.59	141	Pn	Pn	17 22 05.2	+2.0
BJO	Bjornoya	4.59	141	Pn	Pn	17 22 05.2	+2.0
	SNR=50						
BJO				Sn	Sn	17 22 58.6	+2.1
DAG	Danmarks Havn	6.03	269	iP	Pn	17 22 13.2	-10
DAG				iS	Sn	17 23 14.3	-17
JMIC	Jan Mayen	8.59	220	Pn	Pn	17 22 53.7	-4.2
	comp=Z,36nm,0.3s,baz=157,slow=9.7,SNR=7.9						
ARA0	ARCESS Array S	9.95	143	Pn	Pn	17 23 16.9	+0.4
	baz=349,slow=11						
ARA0				Sn	Sn	17 25 04.2	-3.9
	baz=336,slow=28						
ARA0	ARCESS Array S	9.95	143	P	Pn	17 23 16.9	+0.4
	baz=349,slow=11						
ARA0				Sn	Sn	17 25 04.2	-3.9
	baz=336,slow=28						
ARA0	ARCESS Array S	9.95	143	P	Pn	17 23 17.0	+0.4
	SNR=47						
ARCES	ARCESS Array B	9.95	143	Pn	Pn	17 23 17.8	+1.2
	comp=Z,0.6nm,0.3s,baz=343,slow=12,SNR=20						
ARCES				Sn	Sn	17 25 04.6	-3.5
	comp=Z,0.3nm,0.3s,baz=335,slow=30,SNR=3.0						
SCO	Scoresbysund	11.16	242	iP	Pn	17 23 26.4	-6.6
SCO				eS	Sn	17 25 21.2	-16
SCO	Scoresbysund	11.16	242	eP	Pn	17 23 26.4	-6.6
APA0	Apatity Array	12.76	134	Pn	Pn	17 23 53.9	-1.1
	baz=346,slow=9.3						
APA0	Apatity Array	12.76	134	P	Pn	17 23 53.9	-1.1
	baz=346,slow=9.3						
APA0	Apatity Array	12.76	134	P	Pn	17 23 53.9	-1.1
	SNR=47						
FINES	FINESS Array B	17.85	152	P	P	17 25 03.9	+1.4
	comp=Z,0.1nm,0.3s,baz=325,slow=9.7,SNR=4.7						
HFS	Hagfors	18.37	172	P	P	17 25 10.0	+1.8
	slow=10						
HFS	Hagfors	18.37	172	P	P	17 25 10.0	+1.8
	slow=10						
HFS	Hagfors	18.37	172	P	P	17 25 09.9	+1.8
	comp=Z,0.2nm,0.3s,baz=10,slow=9.1,SNR=5.3						
RES	Resolute Bay	21.35	315	P	P	17 25 36.7	-3.9
	comp=Z,0.4nm,0.7s,baz=28,slow=12,SNR=4.1						
AKASG	Malin Array Be	28.76	152	P	P	17 26 51.8	+0.7
	comp=Z,0.6nm,0.6s,baz=350,slow=9.7,SNR=3.5						
KURBB	Kurchatov Arra	36.97	95	P	P	17 28 04.7	+2.0
	comp=Z,0.4nm,0.7s,baz=341,slow=7.5,SNR=5.8						
MKAR	Makanchi Array	41.38	93	P	P	17 28 41.5	+1.9
	comp=Z,0.4nm,0.7s,baz=339,slow=6.0,SNR=5.8						
TXAR	Lajitas Array	65.78	298	P	P	17 31 35.2	-3.4
	comp=Z,0.4nm,0.8s,baz=92,slow=3.0,SNR=3.8						

ISCJB 07 17:24:50.6±0.7, 38°.41N±0°.04×141°.90E±0°.08, h67km±5km, mb3.8/20, Error ellipse: s-maj=10.9km s-min=5.1km az=17.9
JMA 07 17:24:51.7±0.1, 38°.42N×141°.87E, h57km±3km, M4.2
JMA Felt I J1.
IDC 07 17:24:52.7±2.4, 38°.42N×141°.81E, h68km±22km, mb3.6/20, mb1 3.7/23, mb1mx3.6/62, mbtmp3.9/23, Error ellipse: s-maj=17.9km s-min=13.4km az=102.0
ISC 07 17:24:50.7±1.3, 38°.37N±0°.04×141°.98E±0°.08, h53km±11km, n41, σ1s.04/47, mb4.0/20, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
OFUJ	Ofunato	0.75	341	P	Pn	17 25 05.7	+0.4
OFUJ				S	Sn	17 25 15.5	-0.4
JMK	Ichinoseki	0.83	315	P	Pn	17 25 06.6	+0.3
JMK				S	Sn	17 25 17.0	-0.8
JOU	Okura	1.03	270	P	Pn	17 25 09.1	+0.1
JOU				S	Sn	17 25 21.9	-0.6
JMM	Marumori	1.06	242	P	Pn	17 25 09.6	+0.2
JMM				S	Sn	17 25 22.5	-0.6
JOM	Ohasama	1.23	334	P	Pn	17 25 11.9	+0.3
JOM				S	Sn	17 25 27.0	-0.1
JFK	Kawauchi	1.33	222	P	Pn	17 25 14.0	+1.0
JFK				S	Sn	17 25 29.9	+0.2
JYK	Kaneyama	1.38	294	P	Pn	17 25 13.7	0.0
JYK				S	Sn	17 25 30.0	-0.9
JRG	Rokugo	1.47	315	P	Pn	17 25 14.8	-0.1
JRG				S	Sn	17 25 33.1	+0.1
JYS	Shirataka	1.51	265	P	Pn	17 25 15.8	+0.3
JYS				eS	Sn	17 25 34.2	+0.1
JFT	Otama	1.55	237	P	Pn	17 25 17.2	+1.2
JFT				S	Sn	17 25 35.2	+0.2
MJAR	Matsushiro Arr	3.51	240	P	Pn	17 25 44.4	+1.6
	2.3nm,0.3s,baz=45,slow=12,SNR=13						
MAT	Matsushiro	3.51	240	P	Pn	17 25 45.0	+2.2
MAT				eS	Sn	17 26 25.6	+2.5
JHJ	Hachijo jima 2	5.53	199	P	Pn	17 26 10.8	+0.3
	16nm,0.3s,baz=328,slow=21,SNR=31						
JHJ				S	Sn	17 27 09.1	-3.8
	35nm,0.3s,baz=113,slow=23,SNR=9.7						
USRK	Ussuriysk Ar.	9.51	311	P	Pn	17 27 05.6	+0.7
	0.8nm,0.3s,baz=118,slow=14,SNR=11						
MA2	Magadan	21.96	12	P	P	17 29 40.3	+0.6
	2.9nm,0.5s,baz=218,slow=9.0,SNR=11						
SEY	Seymchan	25.40	11	P	P	17 30 13.9	+1.2
	0.6nm,0.3s,baz=217,slow=4.5,SNR=6.6						
SONM	Songino Array	27.44	302	P	P	17 30 30.9	-0.6
	0.3nm,0.5s,baz=111,slow=8.4,SNR=3.1						
H11N2	WAKE ISLAND Hy	28.48	124	T	T	18 01 05.2	
	baz=317,slow=75,SNR=71						
H11N1	WAKE ISLAND Hy	28.49	124	T	T	18 01 18.7	
	baz=317,slow=75,SNR=80						
H11N3	WAKE ISLAND Hy	28.50	124	T	T	18 01 21.4	
	baz=317,slow=75,SNR=89						
H11S1	WAKE ISLAND Hy	29.24	126	T	T	18 01 59.6	
	baz=318,slow=76,SNR=41						
H11S3	WAKE ISLAND Hy	29.24	126	T	T	18 01 58.5	
	baz=318,slow=76,SNR=47						
H11S2	WAKE ISLAND Hy	29.25	126	T	T	18 02 05.1	
	baz=318,slow=76,SNR=34						
TIXI	Tiksi	34.02	353	P	P	17 31 28.0	-1.1
	1.3nm,0.3s,baz=103,slow=4.2,SNR=13						
ZALV	Zalesovo Beam	41.36	311	P	P	17 32 30.7	-0.5
	1.4nm,0.4s,baz=84,slow=7.3,SNR=8.5						
CMAR	Chiang Mai Arr	42.28	254	P	P	17 32 39.7	+0.5
	0.7nm,0.9s,baz=50,slow=8.4,SNR=6.1						
MKAR	Makanchi Array	43.80	301	P	P	17 32 50.6	-0.6
	0.3nm,0.5s,baz=88,slow=10,SNR=8.7						
ILAR	Eielson Array	48.13	33	P	P	17 33 25.8	+0.9
	0.6nm,0.7s,baz=270,slow=6.0,SNR=7.7						
ARU	Arti	55.66	318	P	P	17 34 19.2	-1.8
	1.4nm,0.5s,baz=76,slow=12,SNR=3.1						
WRA	Warramunga Arr	58.44	188	P	P	17 34 41.2	+0.1
	1.2nm,0.8s,baz=5.8,slow=7.3,SNR=7.3						
RES	Resolute Bay	61.20	15	P	P	17 34 59.3	-0.1
	0.8nm,0.5s,baz=311,slow=6.1,SNR=8.9						
ASAR	Alice Springs	62.17	188	P	P	17 35 07.0	+0.5
	0.3nm,0.8s,baz=11,slow=10,SNR=5.8						
YKA	Yellowknife Ar	62.43	31	P	P	17 35 08.1	+0.3
	0.4nm,0.7s,baz=300,slow=6.6,SNR=6.8						
ARCES	ARCESS Array B	62.91	339	P	P	17 35 10.8	-0.1
	1.3nm,0.9s,baz=64,slow=11,SNR=5.3						
FINES	FINESS Array B	67.84	332	P	P	17 35 42.5	-0.4
	3.8nm,0.9s,baz=33,slow=13,SNR=2.9						
HFS	Hagfors	73.06	336	P	P	17 36 14.6	-0.1
	1.5nm,0.4s,baz=142,slow=7.5,SNR=7.9						
NOA	NORSAR Array B	73.13	337	P	P	17 36 14.7	-0.6
	2.2nm,1.0s,baz=39,slow=6.2,SNR=3.3						
AKASG	Malin Array Be	73.52	322	P	P	17 36 16.6	-1.0
	1.4nm,0.5s,baz=52,slow=6.4,SNR=4.1						
PDAR	Pinedale Array	76.41	46	P	P	17 36 35.4	+0.6
	0.4nm,0.5s,baz=234,slow=1.0,SNR=5.1						
TXAR	Lajitas Array	88.95	53	P	P	17 37 41.3	+1.4
	0.3nm,0.6s,baz=270,slow=0.9,SNR=2.1						
LPAZ	La Paz	145.62	59	PKPbc	PKPdf	17 44 24.6	+0.4
	1.0nm,0.6s,baz=343,slow=5.5,SNR=3.4						

ISCJB 07 17:24:49.4±0.9, 27°.1N±0°.1×143°.61E±0°.10, h10km, mb3.6/6, Error ellipse: s-maj=18.7km s-min=12.4km az=179.3
IDC 07 17:24:49.8±1.1, 27°.06N×143°.61E, h0km, mb3.6/6, mb1 3.7/6, mb1mx3.4/56, mbtmp3.6/6, Error ellipse: s-maj=30.3km s-min=21.4km az=87.0
ISC 07 17:24:51.4±1.1, 27°.1N±0°.2×143°.6E±0°.1, h10km, n7, σ1s.23/8, mb3.7/6, Bonin Islands region

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
JCJ	Chichijima	1.22	272	Pn	Pn	17 25 13.3	-1.1
	29nm,0.3s,baz=285,slow=22,SNR=6.0						
JCJ				Sn	Sb	17 25 30.1	-0.1
	44nm,0.3s,baz=100,slow=22,SNR=8.0						
SONM	Songino Array	35.59	316	P	P	17 31 50.8	+1.7
	0.7nm,0.9s,baz=112,slow=6.4,SNR=3.7						
TIXI	Tiksi	45.38	354	P	P	17 33 08.2	-1.4
	0.7nm,0.6s,baz=140,slow=5.6,SNR=5.5						
WRA	Warramunga Arr	47.56	192	P	P	17 33 27.5	+0.3
	0.9nm,0.5s,baz=13,slow=8.7,SNR=8.9						
ZALV	Zalesovo Beam	50.32	319	P	P	17 33 49.2	+1.1
	0.5nm,0.4s,baz=104,slow=6.1,SNR=3.0						
ASAR	Alice Springs	51.28	191	P	P	17 33 55.8	+0.2
	0.2nm,0.6s,baz=360,slow=5.8,SNR=6.5						
YKA	Yellowknife Ar	71.60	29	P	P	17 36 12.1	-0.5
	0.1nm,0.4s,baz=295,slow=5.7,SNR=3.8						

BNS 07 17:31:53.0±0.5, 51°.26N×17°.35E, h10km, ML3.7
ISCJB 07 17:31:59.6±0.2, 51°.52N±0°.01×16°.08E±0°.02, h0km, mb3.8/12, Error ellipse: s-maj=2.1km s-min=1.5km az=8.7
MOS 07 17:32:00.0±1.1, 51°.63N×16°.14E, h10km, mb4.0/8, Error ellipse: s-maj=8.1km s-min=4.7km az=87.5
CSEM 07 17:32:00.8±0.1, 51°.56N×16°.10E, h0km, mb4.0/6, ML4.3/16, Ms4.3, Error ellipse: s-maj=2.5km s-min=2.1km az=5.0
LDG 07 17:32:00.6±0.2, 51°.52N×16°.11E, h1km, Ml4.3/15, Error ellipse: s-maj=4.5km s-min=2.2km az=10.0, Suspected Mining induced.
IDC 07 17:32:01.6±0.5, 51°.52N×16°.03E, h0km, mb3.7/9, mb1 3.9/16, mb1mx3.7/54, mbtmp3.7/16, ML3.4/6, MS3.6/1, Ms1 3.6/1, ms1mx3.3/64, Error ellipse: s-maj=10.5km s-min=6.5km az=115.0
BGR 07 17:32:02.1±0.2, 51°.53N×16°.12E, h1km, ML3.9/34, Error ellipse: s-maj=2.2km s-min=1.1km az=27.0
PRU 07 17:32:02.0, 51°.53N×16°.10E, h0km
VIE 07 17:32:05.4±1.1, 51°.25N×16°.03E, h0km, mb3.4/14, ml3.4/13, ms4.3/1, Error ellipse: s-maj=6.9km s-min=6.8km az=12.0, Suspected Mining induced.
ISC 07 17:32:01.0±0.4, 51°.56N±0°.02×16°.11E±0°.02, h0km, n277, σ1s.27/396, mb3.9/12, 8C-21D, Poland

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
KSP	Ksiaz	0.72	171	iPg	Pg	17 32 15.4	+0.6
KSP				eSg	Sg	17 32 25.3	+1.1
KSP				e		17 32 28.6	
KSP	Ksiaz	0.72	171⇓	iP	Pg	17 32 15.4	+0.6
KSP				e		17 32 28.6	
KSP	Ksiaz	0.72	171	iP	Pg	17 32 15.4	+0.6
KSP				Sg	Sg	17 32 24.3	+0.1
KSP				eS	Sn	17 32 28.6	-1.7
KSP	Ksiaz	0.72	171	ePg	Pg	17 32 15.4	+0.6
KSP				eSg	Sg	17 32 24.3	+0.1
UPC	Upice	1.05	183⇓	iPG	Pg	17 32 21.4	+0.2
UPC				eSG	Sg	17 32 35.3	+0.5
	comp=Z,751nm,0.6s						
UPC				AMS	AMS	17 33 00.0	
	comp=Z,2μm,2.8s						
UPC	Upice	1.05	183⇓	iP	Pg	17 32 21.4	+0.2
UPC				e		17 32 35.3	
UPC				smax	smax		
	comp=N,751nm,0.6s						
UPC				MLR	MLR		
	comp=Z,2μm,2.8s						
UPC	Upice	1.05	183	Pg	Pg	17 32 21.4	+0.2
UPC				Sg	Sg	17 32 35.3	+0.5
	comp=Z,751nm,0.6s						
DPC	Dobruska-Polom	1.22	174⇓	iPG	Pg	17 32 24.2	-0.1
DPC				eSG	Sg	17 32 39.5	-0.5
	comp=Z,597nm,0.7s						
DPC				AMS	AMS	17 33 00.0	
	comp=Z,2μm,2.4s						
DPC	Dobruska-Polom	1.22	174⇓	iP	Pg	17 32 24.2	-0.1
DPC				e		17 32 39.5	
DPC				smax	smax		
	comp=N,597nm,0.7s						
DPC				MLR	MLR		
	comp=Z,2μm,2.4s						
DPC	Dobruska-Polom	1.22	174	Pg	Pg	17 32 24.2	-0.1
DPC				Sg	Sg	17 32 39.5	-0.5
	comp=Z,597nm,0.7s						
DPC	Dobruska-Polom	1.22	174	ePg	Pg	17 32 24.3	-0.1
DPC				eSg	Sg	17 32 40.1	+0.1
PVCC	Panska Ves	1.42	224⇓	ePG	Pn	17 32 27.7	-0.3
PVCC				eSG	Sn	17 32 47.4	0.0
	comp=Z,1μm,0.3s						
PVCC	Panska Ves	1.42	224	eP	Pn	17 32 27.7	-0.3
PVCC				e		17 32 47.4	
PVCC				smax	smax		
	comp=N,1μm,0.3s						
PVCC	Panska Ves	1.42	224	Pn	Pn	17 32 27.9	-0.1
PVCC				Sg	Sn	17 32 47.4	0.0
	comp=N,1μm,0.3s						
PVCC	Panska Ves	1.42	224	ePn	Pn	17 32 27.9	-0.1
PVCC				ePg	Pb	17 32 28.7	+0.4
PVCC				eSg	Sn	17 32 47.7	+0.4
BRG	Berggiesshubel	1.53	244	PN	Pn	17 32 28.8	-0.7
BRG				PG	Pg	17 32 30.7	+0.5
BRG				SG	Sb	17 32 50.8	+0.8
	comp=N,534nm,0.7s						
BRG	Berggiesshubel	1.53	244	P	Pn	17 32 28.8	-0.7
BRG						17 32 50.8	
BRG				smax	smax		
	comp=N,534nm,0.7s						
BRG	Berggiesshubel	1.53	244	P	Pn	17 32 28.8	-0.7
BRG	Berggiesshubel	1.53	244	Pg	Pg	17 32 30.2	-0.1
BRG				Sg	Sb	17 32 51.0	+0.9
BRG	Berggiesshubel	1.53	244	ePn	Pn	17 32 28.6	-0.9
BRG				ePg	Pg	17 32 30.2	-0.1
BRG				eSg	Sb	17 32 51.0	+0.9
RUE	Ruedersdorf	1.71	304	Pn	Pn	17 32 31.4	-0.7
RUE				Sn	Sn	17 32 52.9	-1.7
RUE				Sg	Sg	17 32 57.2	+1.2
RUE	Ruedersdorf	1.71	304	ePn	Pn	17 32 31.4	-0.7
RUE				eSn	Sn	17 32 52.9	-1.7
RUE				eSg	Sg	17 32 57.2	+1.2
PRA	Prague	1.83	216⇓	ePN	Pn	17 32 33.5	-0.2
PRA				eSG	Sg	17 32 59.5	-0.3
	comp=N,556nm,0.7s						
PRA				AMS	AMS	17 33 30.0	
	comp=N,2μm,3.0s						
PRA	Prague	1.83	216	eP	Pn	17 32 33.5	-0.2
PRA				e		17 32 59.5	
PRA				smax	smax		
	comp=N,556nm,0.7s						
PRA				MLR	MLR		
	comp=Z,2μm,3.0s						
PRA	Prague	1.83	216	Pn	Pn	17 32 33.5	-0.2
PRA				Sg	Sg	17 32 59.5	-0.3
	comp=Z,556nm,0.7s						
FBE	Freiberg	1.85	251	Pn	Pn	17 32 33.5	-0.4
FBE	Freiberg	1.85	251	Pg	Pg	17 32 36.2	-0.2
FBE				Sg	Sg	17 33 00.7	+0.4
FBE	Freiberg	1.85	251	ePn	Pn	17 32 33.5	-0.4
FBE				ePg	Pg	17 32 36.2	-0.2
FBE				eSg	Sg	17 33 00.7	+0.4
GOPC	GO Pecny, Ondr	1.85	208⇓	ePN	Pn	17 32 33.5	-0.5
GOPC				ePG	Pg	17 32 36.1	-0.3
GOPC				eSG	Sb	17 32 59.8	+0.5
	comp=Z,471nm,0.8s						
GOPC	GO Pecny, Ondr	1.85	208	eP	Pn	17 32 33.5	-0.5
GOPC				e		17 32 59.8	
GOPC				smax	smax		
	comp=N,471nm,0.8s						
GOPC	GO Pecny, Ondr	1.85	208	Pn	Pn	17 32 33.5	-0.5

PRU	Pruhonice	1.86 213⇓	ePN	Pn	17 32 33.6	-0.5
PRU			ePG	Pg	17 32 37.0	+0.4
PRU			eSG	Sb	17 32 59.7	+0.1
	comp=N,189nm,0.4s					
PRU	Pruhonice	1.86 213	eP	Pn	17 32 33.6	-0.5
PRU			e		17 32 59.7	
PRU			smax	smax		
	comp=N,189nm,0.4s					
PRU	Pruhonice	1.86 213	eP	Pn	17 32 33.6	-0.5
PRU	Pruhonice	1.86 213	Pg	Pg	17 32 37.0	+0.4
PRU			Sg	Sg	17 33 00.3	-0.4
PRU	Pruhonice	1.86 213	ePn	Pn	17 32 33.6	-0.5
PRU			eSg	Sg	17 33 00.3	-0.4
CLL	Collm	1.96 264	ePn	Pn	17 32 35.0	-0.5
CLL			ePg	Pb	17 32 38.0	+0.4
CLL			i		17 32 41.8	
CLL			eSg	Sb	17 33 03.0	+0.4
	comp=Z,306nm,0.8s					
CLL	Collm	1.96 264	eP	Pn	17 32 35.0	-0.5
CLL			e		17 33 03.0	
CLL	Collm	1.96 264	Pn	Pn	17 32 34.6	-0.9
CLL	Collm	1.96 264	eP	Pn	17 32 35.0	-0.5
CLL	Collm	1.96 264	Pg	Pb	17 32 37.8	+0.2
CLL			eS	Sb	17 33 03.0	+0.4
CLL	Collm	1.96 264	ePn	Pn	17 32 34.6	-0.9
CLL			ePg	Pb	17 32 37.8	+0.2
CLL			eSg	Sg	17 33 03.9	-0.1
RAC	Raciborz	1.98 137	eP	Pg	17 32 39.2	+0.3
RAC			e		17 33 04.2	
RAC	Raciborz	1.98 137	eP	Pg	17 32 39.2	+0.3
RAC			eS	Sg	17 33 04.2	-0.4
MORC	Moravsky Berou	2.00 152	Pn	Pn	17 32 35.6	-0.5
MORC			Sg	Sb	17 33 04.0	+0.3
MORC	Moravsky Berou	2.00 152	ePn	Pn	17 32 35.6	-0.5
MORC			eSg	Sb	17 33 04.0	+0.3
OKC	Ostrava-Krasne	2.15 142⇓	ePN	Pn	17 32 36.9	-1.2
OKC			ePG	Pb	17 32 41.3	+0.5
OKC			eSG	Sg	17 33 09.1	-1.0
	comp=Z,431nm,0.7s					
OKC	Ostrava-Krasne	2.15 142	eP	Pn	17 32 36.9	-1.2
OKC			e		17 33 09.1	
OKC			smax	smax		
	comp=N,431nm,0.7s					
OKC	Ostrava-Krasne	2.15 142	Pn	Pn	17 32 37.1	-1.0
OKC	Ostrava-Krasne	2.15 142	Pg	Pg	17 32 42.0	-0.2
OKC			Sg	Sg	17 33 09.1	-1.0
	comp=N,431nm,0.7s					
OKC	Ostrava-Krasne	2.15 142	ePn	Pn	17 32 37.1	-1.0
OKC			ePg	Pg	17 32 42.0	-0.2
OKC			eSg	Sb	17 33 08.4	+0.3
CHZP	Chorzow	2.22 124	Pn	Pn	17 32 38.0	-1.0
CHZP			ePg	Pg	17 32 44.9	+1.4
CHZP			Sn	Sn	17 33 08.2	+1.0
CHZP			eSg	Sg	17 33 17.3	+5.0
VRAC	Vranov	2.27 172	Pn	Pn	17 32 39.5	-0.3
	comp=N,5.8nm,0.3s,baz=351,slow=13,SNR=27					
VRAC			Lg	Lg	17 33 12.9	
	comp=N,31nm,0.3s,baz=252,slow=18,SNR=14					
VRAC	Vranov	2.27 172⇓	iP	Pn	17 32 39.9	+0.1
VRAC			S	Sg	17 33 14.2	+0.3
VRAC	Vranov	2.27 172	⇓P	Pn	17 32 39.9	+0.1
VRAC			S	Sg	17 33 14.2	+0.3
VRAC	Vranov	2.27 172	P	Pn	17 32 39.9	+0.1
VRAC	Vranov	2.27 172	Pn	Pn	17 32 40.2	+0.4
VRAC	Vranov	2.27 172	Pg	Pg	17 32 44.0	-0.5
VRAC			Sg	Sb	17 33 12.2	+0.7
VRAC	Vranov	2.27 172	ePn	Pn	17 32 40.2	+0.4
VRAC			ePg	Pg	17 32 44.0	-0.5
VRAC			eSg	Sb	17 33 12.2	+0.7
TREC	Trest	2.30 190⇓	ePN	Pn	17 32 40.2	0.0
TREC			ePG	Pg	17 32 44.2	-0.8
TREC			eSG	Sg	17 33 14.0	-0.8
	comp=N,307nm,0.7s					
TREC	Trest	2.30 190	eP	Pn	17 32 40.2	0.0
TREC			e		17 33 14.0	
TREC			smax	smax		
	comp=N,307nm,0.7s					
TREC	Trest	2.30 190	Pn	Pn	17 32 40.2	0.0
KRUC	Moravsky	2.50 176	Pn	Pn	17 32 43.2	+0.2
KRUC	Moravsky	2.50 176	Pg	Pg	17 32 47.9	-1.1
KRUC			Sg	Sg	17 33 20.2	-1.2
KRUC	Moravsky	2.50 176	ePn	Pn	17 32 43.2	+0.2
KRUC			ePg	Pg	17 32 47.9	-1.1
KRUC			eSg	Sg	17 33 20.2	-1.2
TANN	Tannenbergstha	2.58 245	Pn	Pn	17 32 43.8	-0.2
TANN			Sg	Sg	17 33 23.2	-0.5
TANN	Tannenbergstha	2.58 245	ePn	Pn	17 32 43.8	-0.2
TANN			eSg	Sg	17 33 23.2	-0.5
WERD	Werda	2.65 247	Pn	Pn	17 32 45.0	0.0
WERD	Werda	2.65 247	Pg	Pg	17 32 51.2	-0.5
WERD			Sg	Sg	17 33 25.4	-0.6
WERD	Werda	2.65 247	ePn	Pn	17 32 45.0	0.0
WERD			ePg	Pg	17 32 51.2	-0.5
WERD			eSg	Sg	17 33 25.4	-0.6
NKC	Novy Kostel	2.67 242⇓	ePN	Pn	17 32 45.2	-0.1
NKC			ePG	Pg	17 32 52.0	-0.2
NKC			eSG	Sg	17 33 27.3	+0.5
	comp=N,590nm,0.6s					
NKC	Novy Kostel	2.67 242	eP	Pn	17 32 45.2	-0.1
NKC			e		17 33 27.3	
NKC			smax	smax		
	comp=N,590nm,0.6s					
NKC	Novy Kostel	2.67 242	Pn	Pn	17 32 45.2	-0.1
NKC	Novy Kostel	2.67 242	ePn	Pn	17 32 45.4	+0.1
NKC			eSg	Sg	17 33 27.7	+0.9
GUNZ	Gunzen	2.67 245	Pn	Pn	17 32 45.3	0.0
GUNZ	Gunzen	2.67 245	Pg	Pg	17 32 52.6	+0.4
GUNZ			Sg	Sg	17 33 26.6	-0.2
GUNZ	Gunzen	2.67 245	ePn	Pn	17 32 45.3	0.0
GUNZ			ePg	Pg	17 32 52.6	+0.4
GUNZ			eSg	Sg	17 33 26.6	-0.2
WERN	Wernitzgruen	2.68 243	Pn	Pn	17 32 45.7	+0.2
WERN	Wernitzgruen	2.68 243	Pg	Pg	17 32 54.0	+1.6
WERN			Sg	Sg	17 33 26.2	-1.0
WERN	Wernitzgruen	2.68 243	ePn	Pn	17 32 45.7	+0.2
WERN			ePg	Pg	17 32 54.0	+1.6
WERN			eSg	Sg	17 33 26.2	-1.0
OJC	Ojcow	2.69 118	ePn	Pn	17 32 43.7	-1.8
OJC			ePg	Pg	17 32 52.5	0.0
OJC			eSg	Sg	17 33 27.8	+0.4
OJC	Ojcow	2.69 118	eP	Pn	17 32 43.7	-1.8
OJC			e		17 33 27.8	
OJC	Ojcow	2.69 118	Pn	Pn	17 32 44.0	-1.6
OJC	Ojcow	2.69 118	ePn	Pn	17 32 44.0	-1.6
OJC			ePg	Pg	17 32 52.0	-0.6
OJC			eSg	Sg	17 33 27.3	-0.1
PLN	Plauen	2.72 248	Pn	Pn	17 32 46.0	+0.1
PLN	Plauen	2.72 248	Pg	Pg	17 32 53.8	+0.7
PLN			Sg	Sg	17 33 28.6	+0.3
PLN	Plauen	2.72 248	ePn	Pn	17 32 46.0	+0.1
PLN			ePg	Pg	17 32 53.8	+0.7
PLN			eSg	Sg	17 33 28.6	+0.3
NEUB	Neuenburg	2.74 264	Pn	Pn	17 32 46.5	+0.3
NEUB	Neuenburg	2.74 264	Pg	Pg	17 32 53.4	-0.1
NEUB			Sg	Sg	17 33 29.6	+0.6
NEUB	Neuenburg	2.74 264	ePn	Pn	17 32 46.5	+0.3
NEUB			ePg	Pg	17 32 53.4	-0.1
NEUB			eSg	Sg	17 33 29.6	+0.6
JAVC	Velka Javorina	2.88 159	Pn	Pn	17 32 49.4	+1.2
JAVC	Velka Javorina	2.88 159	Pg	Pg	17 32 55.5	-0.7
JAVC			Sg	Sg	17 33 35.3	+1.8
JAVC	Velka Javorina	2.88 159	ePn	Pn	17 32 49.4	+1.2
JAVC			ePg	Pg	17 32 55.5	-0.7
JAVC			eSg	Sg	17 33 35.3	+1.8
KHC	Kasperske Hory	2.92 215⇓	ePN	Pn	17 32 48.3	-0.4
KHC			ePG	Pb	17 32 54.8	+0.8
KHC			eSN	Sn	17 33 23.9	-0.6
KHC			eSG	Sg	17 33 33.4	-1.4
	comp=N,124nm,0.6s					
KHC	Kasperske Hory	2.92 215	eP	Pn	17 32 48.3	-0.4
KHC			e		17 33 23.9	
KHC			smax	smax		
	comp=N,124nm,0.6s					
KHC	Kasperske Hory	2.92 215	Pn	Pn	17 32 48.5	-0.2
KHC	Kasperske Hory	2.92 215	ePn	Pn	17 32 48.5	-0.2
KHC			eSg	Sg	17 33 33.9	-0.9
BEL	Belsk	2.92 83	ePn	Pg	17 33 01.5	+4.5
BEL			ePg	Sn	17 33 21.5	-3.0
BEL	Belsk	2.92 83	eP	Pg	17 33 01.6	+4.6
BEL			e		17 33 21.5	
BEL	Belsk	2.92 83	eS	Sn	17 33 21.5	-3.0
MOX	Moxa	2.98 254	Pn	Pn	17 32 49.0	-0.5
MOX	Moxa	2.98 254	Pg	Pg	17 32 57.7	-0.4
MOX			Sg	Sg	17 33 37.8	+1.2
MOX	Moxa	2.98 254	ePn	Pn	17 32 49.0	-0.5
MOX			ePg	Pg	17 32 57.7	-0.4
MOX			eSg	Sg	17 33 37.8	+1.2
MANZ	Manzenberg	2.99 240	Sg	Sg	17 33 36.6	-0.4
MANZ	Manzenberg	2.99 240	eSg	Sg	17 33 36.6	-0.4
ROTZ	Rotzenmuhle	3.06 236	Pn	Pn	17 32 50.7	0.0
ROTZ			Sg	Sg	17 33 37.9	-1.5
ROTZ	Rotzenmuhle	3.06 236	ePn	Pn	17 32 50.7	0.0
ROTZ			eSg	Sg	17 33 37.9	-1.5
GEC2	GERESS Array S	3.12 211	Pn	Pn	17 32 51.4	-0.2
GEC2	GERESS Array S	3.12 211	Pg	Pg	17 32 59.7	-1.2
GEC2			Sg	Sg	17 33 39.1	-2.3
GEC2	GERESS Array S	3.12 211	ePn	Pn	17 32 51.4	-0.2
GEC2			ePg	Pg	17 32 59.7	-1.2
GEC2			eSg	Sg	17 33 39.1	-2.3
GERES	GERESS Array B	3.12 211	Pn	Pn	17 32 51.5	-0.2
	comp=N,6.9nm,0.3s,baz=30,slow=12,SNR=112					
GERES			Pg	Pb	17 32 58.0	+0.6
	comp=N,8.8nm,0.3s,baz=30,slow=14,SNR=44					
GERES			Lg	Lg	17 33 39.2	
	comp=N,19nm,0.3s,baz=32,slow=28,SNR=11					
GERES			LR	LR	17 34 03.7	
	comp=N,912nm,20.5s,baz=158,slow=40					
SMOL	Smolenice	3.16 164	eP	Pg	17 33 01.3	-0.3
SMOL	Smolenice	3.16 164	ePG	Pg	17 33 01.3	-0.3
SMOL			eSG	Sg	17 33 43.3	+0.8
WET	Wettzell	3.18 222	Pn	Pn	17 32 52.4	+0.1
WET			Sg	Sg	17 33 42.3	-0.9
WET	Wettzell	3.18 222	ePn	Pn	17 32 52.4	+0.1
WET			eSg	Sg	17 33 42.3	-0.9
LANS	Liptovska Anna	3.23 137	eP	Pn	17 32 54.7	+1.7
LANS	Liptovska Anna	3.23 137	eP	Pn	17 32 54.7	+1.7
LANS	Liptovska Anna	3.23 137	e	Pn	17 32 54.7	+1.7
LANS	Liptovska Anna	3.23 137	ePG	Pg	17 33 02.8	0.0
LANS			eSG	Sg	17 33 43.9	-0.7
ASSE	Asse, Remlinge	3.42 282	Pg	Pg	17 33 06.9	+0.3
ASSE			Sg	Sg	17 33 50.3	-0.6
ASSE	Asse, Remlinge	3.42 282	ePg	Pg	17 33 06.9	+0.3
ASSE			eSg	Sg	17 33 50.3	-0.6
NIE	Niedzica	3.42 127	eP	Pg	17 33 06.2	-0.4
NIE			eS	Sg	17 33 51.3	+0.3
NIE	Niedzica	3.42 127	eP	Pg	17 33 06.2	-0.4
VYHS	Vyhne	3.53 149	eP	Pn	17 32 56.6	-0.5
VYHS			pmax	pmax		
	comp=N,43nm,0.9s					
VYHS	Vyhne	3.53 149	eP	Pn	17 32 56.6	-0.5
	comp=N,43nm,0.9s					
VYHS	Vyhne	3.53 149	e	Pn	17 32 56.6	-0.5
VYHS	Vyhne	3.53 149	ePG	Pg	17 33 08.9	+0.2
VYHS			eSG	Sg	17 33 51.4	-3.0
VYHS			eLG	Lg	17 34 06.6	
CLZ	Clausthal	3.58 277	Pn	Pn	17 32 58.4	+0.6
CLZ	Clausthal	3.58 277	ePn	Pn	17 32 58.4	+0.6
GRA1	Grafenberg Arr	3.63 241	Pn	Pn	17 32 59.1	+0.6
GRA1			Sg	Sg	17 33 57.2	-0.4
GRF	Grafenberg Arr	3.63 241	ePn	Pn	17 32 59.1	+0.6
GRF			eSg	Sg	17 33 57.2	-0.4
BSD	Bornholm Skovb	3.64 349	i P	Pn	17 32 57.0	-1.5
BSD			eS	Sn	17 33 35.8	-6.2
BSD	Bornholm Skovb	3.64 349	i P	Pn	17 32 57.0	-1.5
BSD			eS	Sn	17 33 35.8	-6.2
BSD	Bornholm Skovb	3.64 349	i P	Pn	17 32 57.0	-1.5
CONA	Conrad Observa	3.64 183	i Pn	Pn	17 32 57.0	-1.6
	SNR=19					
CONA			i Sg	Sb	17 33 54.2	+3.4
	comp=N,203nm,0.6s					
CONA	Conrad Observa	3.64 183	Pn	Pn	17 32 57.0	-1.6
	SNR=19					
CONA			Sg	Sb	17 33 54.2	+3.4
	comp=N,203nm,0.6s					
NRDL	Niedersach Rie	3.83 287	Pn	Pn	17 33 02.0	+1.0
NRDL	Niedersach Rie	3.83 287	ePn	Pn	17 33 02.0	+1.0
MOA	Molln	3.90 199	i Pn	Pn	17 33 02.4	+0.2
	comp=N,26nm,0.3s,SNR=42					
MOA			i Sg	Sg	17 34 06.4	+0.2
	comp=N,166nm,0.6s					
MOA	Molln	3.90 199	Pn	Pn	17 33 02.4	+0.2
	comp=N,26nm,0.3s,SNR=42					
MOA			Sg	Sg	17 34 06.4	+0.2
	comp=N,166nm,0.6s					
STHS	Stebnicka Huta	3.92 121	eP	Pn	17 33 03.6	+1.2
STHS			pmax	pmax		
	comp=N,88nm,0.7s					
STHS	Stebnicka Huta	3.92 121	eP	Pn	17 33 03.6	+1.2
	comp=N,88nm,0.7s					
STHS	Stebnicka Huta	3.92 121	e	Pn	17 33 03.6	+1.2
STHS	Stebnicka Huta	3.92 121	ePG	Pg	17 33 17.5	+1.5
STHS			eLG	Lg	17 34 17.8	
KECS	Kecovo	4.17 136	eP	Pn	17 33 06.1	+0.2
KECS			pmax	pmax		
	comp=N,44nm,1.0s					
KECS	Kecovo	4.17 136	eP	Pn	17 33 06.1	+0.2
	comp=N,44nm,1.0s					
KECS	Kecovo	4.17 136	e	Pn	17 33 06.1	+0.2
KECS	Kecovo	4.17 136	ePG	Pg	17 33 21.1	+0.2
KECS			eLG	Lg	17 34 25.5	
BSEG	Bad Segeberg	4.25 306	Pn	Pn	17 33 06.4	-0.5
BSEG	Bad Segeberg	4.25 306	ePn	Pn	17 33 06.4	-0.5
ARSA	Arzberg	4.33 185	i Pn	Pn	17 33 09.1	+1.0
	comp=N,4.5nm,0.3s,SNR=9.2					
ARSA			i Sg	Sg	17 34 17.2	-2.8
	comp=N,136nm,0.7s					
ARSA	Arzberg	4.33 185	Pn	Pn	17 33 09.1	+1.0
	comp=N,4.5nm,0.3s,SNR=9.2					
ARSA			Sg	Sg	17 34 17.2	-2.8
	comp=N,136nm,0.7s					
CRVS	Cervenica-Dubn	4.34 126	eP	Pn	17 33 08.4	+0.2
CRVS	Cervenica-Dubn	4.34 126	eP	Pn	17 33 08.4	+0.2
CRVS	Cervenica-Dubn	4.34 126	e	Pn	17 33 08.3	+0.1
CRVS	Cervenica-Dubn	4.34 126	ePG	Pg	17 33 25.4	+1.2
PSZ	Piszkesteto	4.39 145⇑	eP	Pn	17 33 09.2	+0.2
CSKK	Csˆ‡kako	4.42 161⇑	eP	Pn	17 33 08.8	-0.6
PKSG		4.42 160⇑	eP	Pn	17 33 09.5	+0.2
PKST	Tˆ's	4.48 163⇑	eP	Pn	17 33 10.4	+0.3
KWP	Kalwaria Pacla	4.62 112	ePn	Pg	17 33 26.5	-3.0
KWP	Kalwaria Pacla	4.62 112	eP	Pg	17 33 26.6	-3.0
KOLS	Kolonicke sedl	4.75 121	eP	Pn	17 33 13.7	-0.1
KOLS			pmax	pmax		
	comp=N,111nm,1.0s					
KOLS	Kolonicke sedl	4.75 121	eP	Pn	17 33 13.7	-0.1
	comp=N,111nm,1.0s					
KOLS	Kolonicke sedl	4.75 121	e	Pn	17 33 13.7	-0.1
KOLS	Kolonicke sedl	4.75 121	ePG	Pg	17 33 34.7	+2.8
KOLS			eLG	Lg	17 34 59.2	
KBA	Koelnbreinsper	4.83 203	i Pn	Pn	17 33 15.5	+0.4
	SNR=20					
KBA			i Sg	Sg	17 34 36.2	0.0
	comp=N,99nm,0.6s					
KBA	Koelnbreinsper	4.83 203	Pn	Pn	17 33 15.5	+0.4
	SNR=20					
KBA			Sg	Sg	17 34 36.2	0.0
	comp=N,99nm,0.6s					
SOKA	Soboth	4.93 189	i Pn	Pn	17 33 17.9	+1.5
	comp=N,4.0nm,0.4s,SNR=6.7					
SOKA			i Sg	Sg	17 34 35.1	-4.4
	comp=N,2µm,0.0s					
SOKA	Soboth	4.93 189	Pn	Pn	17 33 17.9	+1.5
	comp=N,4.0nm,0.4s,SNR=6.7					
SOKA			Sg	Sg	17 34 35.1	-4.4
	comp=N,2µm,0.0s					
UZH	Uzhgorod	4.94 124	eP	Pn	17 33 15.8	-0.6
UZH			eS	Sn	17 34 13.2	-1.0
UZH	Uzhgorod	4.94 124	eP	Pn	17 33 15.8	-0.6
UZH			eS	Sn	17 34 13.2	-1.0
TNS	Taunus Mts	5.03 258	Pn	Pn	17 33 17.5	-0.2
TNS	Taunus Mts	5.03 258	ePn	Pn	17 33 17.5	-0.2
BEHE	Becsehely	5.11 175⇓	eP	Pn	17 33 20.6	+1.8
GROS	Grobnik	5.12 185	i Pn	Pn	17 33 19.7	+0.8
GROS	Grobnik	5.12 185	i Pn	Pn	17 33 19.7	+0.8
OBKA	Obir	5.16 192	i Pn	Pn	17 33 19.7	+0.2
	comp=N,4.3nm,0.5s					
OBKA			i Sg	Sg	17 34 49.4	+2.9
	comp=N,124nm,1.1s					
OBKA	Obir	5.16 192	Pn	Pn	17 33 19.7	+0.2
	comp=N,4.3nm,0.5s					
OBKA			Sg	Sg	17 34 49.4	+2.9
	comp=N,124nm,1.1s					
WATA	Walderalm	5.16 217	i Pn	Pn	17 33 20.8	+1.2
	SNR=11					
WATA	Walderalm	5.16 217	Pn	Pn	17 33 20.8	+1.2
	SNR=11					
PKS9	Tamasi	5.17 163⇑	eP	Pn	17 33 21.4	+1.8
MYKA	Terra Mystica	5.19 199	i Sg	Sg	17 34 44.9	-2.8
	comp=N,132nm,0.9s					
MYKA	Terra Mystica	5.19 199	Sg	Sg	17 34 44.9	-2.8
	comp=N,132nm,0.9s					
WTTA	Wattenberg	5.20 216	i Pn	Pn	17 33 21.2	+1.1
	comp=N,15nm,0.8s,SNR=9.3					
WTTA			i Sg	Sg	17 34 45.8	-2.0
	comp=N,48nm,0.6s					
WTTA	Wattenberg	5.20 216	Pn	Pn	17 33 21.2	+1.1
	comp=N,15nm,0.8s,SNR=9.3					
WTTA			Sg	Sg	17 34 45.8	-2.0
	comp=N,48nm,0.6s					
LVV	L'vov	5.33 106	eP	Pn	17 33 22.6	+0.9
LVV			eS	Sn	17 34 22.8	-0.9
LVV			MLR	MLR		
	comp=Z,400nm,4.8s					
LVV	L'vov	5.33 106	eP	Pn	17 33 22.6	+0.9
	comp=Z,400nm,4.8s					
LVV			eS	Sn	17 34 22.8	-0.9
MOTA	Moosalm	5.33 220	i Pn	Pn	17 33 23.1	+1.1
	SNR=11					
MOTA	Moosalm	5.33 220	Pn	Pn	17 33 23.1	+1.1
	SNR=11					
ABTA	Abfaltersbach	5.36 208	i Pn	Pn	17 33 23.6	+1.3
	comp=Z,14nm,0.8s,SNR=15					
ABTA			i Sg	Sg	17 34 53.0	-0.2
	comp=Z,95nm,0.7s					
ABTA	Abfaltersbach	5.36 208	Pn	Pn	17 33 23.6	+1.3
	comp=Z,14nm,0.8s,SNR=15					
ABTA			Sg	Sg	17 34 53.0	-0.2
	comp=Z,95nm,0.7s					
KOE	Koeppel	5.41 261	Pn	Pn	17 33 22.5	-0.4
KOE	Koeppel	5.41 261	ePn	Pn	17 33 22.5	-0.4
HOBG	Hohbusch	5.54 267	Pn	Pn	17 33 25.3	+0.6
HOBG	Hohbusch	5.54 267	ePn	Pn	17 33 25.3	+0.6
BGG	Burgeitz	5.72 260	Pn	Pn	17 33 26.9	-0.2
BGG	Burgeitz	5.72 260	ePn	Pn	17 33 26.9	-0.2
BGG			eSn	Sn	17 34 37.9	+4.6
	comp=Z,18nm,0.8s					
AHRW	Bad Neuenahr-A	5.79 263	ePn	Pn	17 33 29.1	+1.0
STB	Steinbach	5.92 264	Pn	Pn	17 33 30.1	+0.2
STB	Steinbach	5.92 264	ePn	Pn	17 33 30.1	+0.2
BFO	Black Forest	5.97 240	i P	Pn	17 33 30.8	+0.2
BFO	Black Forest	5.97 240	i P	Pn	17 33 30.8	+0.2
KLL	Kalltalsperre	6.24 265	Pn	Pn	17 33 33.7	-0.6
KLL	Kalltalsperre	6.24 265	ePn	Pn	17 33 33.7	-0.6
DREG	Dreilaegerbach	6.29 266	Pn	Pn	17 33 34.9	0.0
DREG	Dreilaegerbach	6.29 266	ePn	Pn	17 33 34.9	0.0
DAVOX	Davos/Dischmat	6.29 223	Pn	Pn	17 33 35.4	+0.3
	comp=Z,0.8nm,0.3s,baz=27,slow=16,SNR=8.8					
DAVOX			Lg	Lg	17 35 10.4	
	comp=Z,0.8nm,0.3s,baz=65,slow=11,SNR=4.5					
DRGR		6.44 135⇓	iP	Pn	17 33 44.7	+7.6
DRGR		6.44 135	⇓P	Pn	17 33 44.7	+7.6
MEM	Membach	6.44 265	PN	Pn	17 33 37.2	+0.2
CDF	Champ du Feu	6.51 245	ePn	Pn	17 33 36.3	-1.8
CDF			eSg	Sg	17 35 23.5	-6.5
	comp=Z,136nm,0.9s					
CDF	Champ du Feu	6.51 245	ePn	Pn	17 33 36.3	-1.8
HINF	Hinteralfeld	7.08 242	ePn	Pn	17 33 42.9	-2.9
HINF			eSg	Sg	17 35 40.4	-7.7
	comp=Z,216nm,1.4s					
BURAR	Bucovina Array	7.11 120⇑	iP	Pn	17 33 47.0	+0.7
BURAR	Bucovina Array	7.11 120	⇑P	Pn	17 33 47.0	+0.7
NACGM	Naroch	7.23 58	e	Pg	17 34 20.0	+0.6
HAU	Haudompre	7.25 244	ePn	Pn	17 33 45.5	-2.7
HAU			eSg	Sg	17 35 46.7	-7.0
	comp=Z,133nm,1.0s					
GIVF	Givet	7.30 263	eSg	Sg	17 35 48.8	-6.4
	comp=Z,78nm,1.0s					
PAGF	Fort de Pagny	7.33 250	ePn	Pn	17 33 46.9	-2.3
	baz=84					
PAGF	Fort de Pagny	7.33 250	ePg	Pb	17 34 15.1	+6.1
	baz=80					
PAGF			eSg	Sg	17 35 48.8	-7.5
	comp=Z,37nm,1.2s					
PAGF	Fort de Pagny	7.33 250	ePn	Pn	17 33 46.9	-2.3
GZR	Gura Zlata	7.59 142⇓	iP	Pn	17 33 54.5	+1.6
GZR	Gura Zlata	7.59 142	⇓P	Pn	17 33 54.5	+1.6
GZR	Gura Zlata	7.59 142	P	Pn	17 33 54.5	+1.6
MICGM	Minsk	7.69 63	eP	Pb	17 34 06.0	-9.0
MICGM			e		17 34 25.0	
MICGM			eS	Sb	17 35 50.0	+2.9
MNK	Minsk	7.69 63	eP	Pb	17 34 06.0	-9.0
BAIF	Baives	7.69 263	ePn	Pn	17 33 51.5	-2.7
BAIF			eSg	Sg	17 36 00.2	-7.6
	comp=Z,89nm,1.2s					
SFTF	Sexfontaines	7.90 249	eSg	Sg	17 36 06.8	-7.7
	comp=Z,194nm,1.4s					
CABF	La Chapelle	8.23 237	eSg	Sg	17 36 16.3	-8.9
	comp=Z,298nm,1.5s					
KIEV	Kiev	8.29 91⇓	iP	Pn	17 34 00.5	-1.8
KIEV	Kiev	8.29 91	i P	Pn	17 34 00.5	-1.8
AKASG	Malin Array Be	8.29 91	Pn	Pn	17 34 00.5	-2.0
	comp=Z,2.0nm,0.3s,baz=279,slow=12,SNR=24					
AKASG			Sn	Sn	17 35 31.8	-5.0
	comp=Z,1.0nm,0.3s,baz=267,slow=24,SNR=7.2					
MTSE	Matsula	8.42 29	eP	Pn	17 34 04.4	+0.4
	SNR=46					
LPG	La Plagne	8.68 229	ePn	Pn	17 34 03.8	-4.2
LPG			eSg	Sg	17 36 32.6	-6.8
	comp=Z,121nm,1.2s					
HFS	Hagfors	8.70 352	Pn	Pn	17 34 06.5	-1.5
	comp=Z,0.1nm,0.3s,baz=182,slow=14,SNR=4.3					
LOR	Lormes	9.07 247	ePn	Pn	17 34 11.1	-2.0
	baz=80					
LOR			eSg	Sn	17 36 42.4	+47
	comp=Z,60nm,1.2s					
LOR	Lormes	9.07 247	ePn	Pn	17 34 11.1	-2.0
LOR			eSg	Sn	17 36 42.4	+47
	comp=Z,30nm,1.2s					
MBDF	Montbardon	9.25 226	eP	Pn	17 34 17.8	+2.1
MBDF			eSg	Sn	17 36 48.5	+48
	comp=Z,26nm,1.0s					
MBDF	Montbardon	9.25 226	eP	Pn	17 34 17.8	+2.1
SSF	Saint Saulge	9.38 246	ePn	Pn	17 34 15.2	-2.1
SSF	Saint Saulge	9.38 246	ePn	Pn	17 34 15.2	-2.1
SMF	Signal de Mont	9.43 243	ePn	Pn	17 34 15.5	-2.5
SMF			eSg	Sn	17 36 54.2	+50
	comp=Z,41nm,0.9s					
SMF	Signal de Mont	9.43 243	ePn	Pn	17 34 15.5	-2.5
ORIF	Oris-en-Rattie	9.52 230	ePn	Pn	17 34 15.3	-4.0
SBF	Sospel	9.66 221	ePn	Pn	17 34 18.7	-2.6
SBF	Sospel	9.66 221	ePn	Pn	17 34 18.7	-2.6
MEF	Metsahovi	9.84 25	eP	Pn	17 34 24.9	+1.4
	SNR=46					
RAF	Rauma	9.99 16	eP	Pn	17 34 24.2	-1.4
	SNR=134					
BGF	Bois d'Agland	10.04 245	eSg	Sn	17 37 14.0	+54
	comp=Z,24nm,0.7s					
VIVF	Saint-Julien-l	10.15 233	eSg	Sn	17 37 16.9	+54
	comp=Z,26nm,1.0s					
FINES	FINESS Array B	11.32 25	Pn	Pn	17 34 41.9	-1.9
	comp=Z,0.3nm,0.3s,baz=221,slow=11,SNR=6.9					
FINES			Sn	Sn	17 36 44.5	-6.4
	comp=Z,0.4nm,0.3s,baz=220,slow=21,SNR=5.2					
EKA	Eskdalemuir Ar	12.09 296	Pn	Pn	17 34 49.5	-4.8
	baz=97,slow=14,SNR=4.3					
OBN	Obninsk	12.72 66	eP	Pn	17 35 00.1	-2.9
OBN			pmax	pmax		
	comp=Z,6.0nm,1.0s					
VSR	Storozhevoye	14.39 82	eP	Pn	17 35 26.5	+0.7
VSR			pmax	pmax		
	comp=Z,5.0nm,1.0s					
VRH	Novokhopyorsk	15.97 81	eP	Pn	17 35 39.7	-7.1
VRH			pmax	pmax		
	comp=Z,8.0nm,0.7s					
ARCES	ARCESS Array B	18.58 10	Pn	P	17 36 15.8	-3.5
	comp=Z,0.3nm,0.3s,baz=198,slow=9.7,SNR=11					
ARU	Arti	25.11 62	P	P	17 37 27.3	+0.1
	comp=Z,2.3nm,0.7s,baz=275,slow=12,SNR=4.0					
ARU	Arti	25.11 62c	iP	P	17 37 27.7	+0.5
ARU					17 37 59.8	
ARU			S	S	17 41 56.8	+4.2
ARU			SS	SnSn	17 42 46.5	+5.4
ARU			pmax	pmax		
	comp=Z,5.0nm,1.0s					
ARU	Arti	25.11 62	i P	P	17 37 27.7	+0.5
	comp=Z,5.0nm,1.0s					
AKTK	Aktyubinsk	26.14 76	P	P	17 37 37.0	+0.4
	comp=Z,2.0nm,0.8s					
AKTO	Aktyubinsk	26.14 76	P	P	17 37 37.0	+0.4
	comp=Z,1.5nm,0.8s,baz=287,slow=12,SNR=5.0					

Code	Station Name	Δ°	AZ°	Op	ISC	Time	Res
AKTO	**Aktyubinsk**	**26.14**	**76**	P	**P**	**17 37 37.0**	**+0.4**
AKTO				pmax	pmax		
	comp=Z,2.0nm,0.8s						
BRVK	**Borovoye**	**32.50**	**66**	*e*P	**P**	**17 38 32.4**	**-0.6**
BRVK				pmax	pmax		
	comp=Z,2.0nm,1.0s						
BRVK	**Borovoye**	**32.50**	**66**	*e*P	**P**	**17 38 32.4**	**-0.6**
	comp=Z,2.0nm,1.0s						
AAK	**Ala-Archa**	**39.76**	**79**	*e*P	**P**	**17 39 35.0**	**-0.5**
AAK				pmax	pmax		
	comp=Z,6.0nm,1.0s						
AAK	**Ala-Archa**	**39.76**	**79**	*e*P	**P**	**17 39 35.0**	**-0.5**
	comp=Z,6.0nm,1.0s						
ZALV	**Zalesovo Beam**	**40.17**	**59**	P	**P**	**17 39 39.1**	**+0.6**
	comp=Z,0.3nm,0.3s,baz=302,slow=8.5,SNR=4.3						
ZALV	**Zalesovo Beam**	**40.17**	**59**	*i* P	**P**	**17 39 40.4**	**+1.9**
ZALV	**Zalesovo Beam**	**40.17**	**59**	*i* P	**P**	**17 39 40.4**	**+1.9**
MKAR	**Makanchi Array**	**42.20**	**69**	P	**P**	**17 39 55.9**	**+0.6**
	comp=Z,0.5nm,0.8s,baz=310,slow=7.5,SNR=5.3						
SONM	**Songino Array**	**54.89**	**55**	P	**P**	**17 41 34.5**	**+1.4**
	comp=Z,1.0nm,0.9s,baz=287,slow=9.7,SNR=7.3						
YKA	**Yellowknife Ar**	**59.81**	**336**	P	**P**	**17 42 07.8**	**+0.3**
	comp=Z,1.0nm,0.8s,baz=30,slow=6.5,SNR=18						
CMAR	**Chiang Mai Arr**	**71.35**	**84**	P	**P**	**17 43 22.7**	**0.0**
	comp=Z,1.3nm,1.1s,baz=307,slow=7.8,SNR=8.5						
CMAR	**Chiang Mai Arr**	**71.35**	**84**	*i* P	**P**	**17 43 22.3**	**-0.4**
CMAR				pmax	pmax		
	comp=Z,1.0nm,1.1s						
PDAR	**Pinedale Array**	**74.90**	**322**	P	**P**	**17 43 43.9**	**+0.1**
	comp=Z,1.0nm,1.0s,baz=54,slow=3.8,SNR=3.9						
TXAR	**Lajitas Array**	**83.69**	**310**	P	**P**	**17 44 32.0**	**+0.3**
	comp=Z,0.3nm,0.8s,baz=62,slow=3.0,SNR=4.5						

*IDC **07** 17:39:08.3±0.6, 27°.08N×143°.35E, h0km, mb4.1/24, mb1 4.2/26, mb1mx4.0/47, mbtmp4.0/26, ML3.4/2, Error ellipse: s-maj=15.5km s-min=14.2km az=90.0*
*ISCJB **07** 17:39:11.0±0.5, 27°.03N±0°.07×143°.43E±0°.06, h33km, mb4.2/30, Error ellipse: s-maj=9.8km s-min=7.1km az=173.7*
*NEIC **07** 17:39:12.4±3.6, 27°.07N×143°.36E, h28km±24km, mb4.7/6, Error ellipse: s-maj=12.6km s-min=8.3km az=97.0*
ISC 07 17:39:13.6±0.7**, 27°.12N**±0°.09×**143°.32E**±0°.08**, h35**km**, n41, σ0s.86**/45**, mb4.2**/30**, Bonin Islands region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CBIJ	**Chichi jima**	**1.01**	**269**	*e*Pn	**Pn**	**17 39 30.8**	**-0.5**
CBIJ				Sn	**Sn**	**17 39 45.0**	**+0.7**
JCJ	**Chichijima**	**1.01**	**269**	Pn	**Pn**	**17 39 31.1**	**-0.2**
	baz=288,slow=20						
JCJ				Sn	**Sn**	**17 39 45.0**	**+0.7**
	baz=287,slow=20						
MJAR	**Matsushiro Arr**	**10.35**	**336**	Pn	**Pn**	**17 41 38.1**	**-1.4**
	1.2nm,0.3s,baz=160,slow=11,SNR=7.6						
KSRS	**Korea Array**	**16.58**	**312**	Pn	**P**	**17 43 06.0**	**+0.5**
	0.4nm,0.3s,baz=123,slow=10,SNR=12						
KSAR	**Wonju Array Be**	**16.60**	**312**	Pn	**P**	**17 43 06.0**	**+0.3**
USRK	**Ussuriysk Ar.**	**19.34**	**335**	P	**Pn**	**17 43 36.6**	**-0.4**
	0.3nm,0.3s,baz=145,slow=14,SNR=7.2						
YULB	**Yu-li**	**20.26**	**264**	*e*P	**P**	**17 43 46.9**	**+0.8**
SSLB	**Suanglung**	**20.46**	**266**	*e*P	**P**	**17 43 49.0**	**+0.6**
	13nm,0.7s						
KLR	**Kul'dur**	**23.82**	**341**	P	**P**	**17 44 24.2**	**+1.0**
	1.9nm,0.7s,baz=162,slow=10.0,SNR=4.8						
HIA	**Hailar**	**28.64**	**327**	*e*P	**P**	**17 45 07.3**	**+0.6**
ENH	**Enshi**	**29.78**	**284**	*e*P	**P**	**17 45 15.0**	**-2.1**
SONM	**Songino Array**	**35.40**	**316**	P	**P**	**17 46 06.4**	**+0.2**
	0.7nm,0.4s,baz=125,slow=7.7,SNR=7.0						
TLY	**Talaya**	**38.56**	**320**	P	**P**	**17 46 33.5**	**+0.7**
	2.3nm,0.6s,baz=102,slow=5.5,SNR=3.5						
CMAR	**Chiang Mai Arr**	**41.64**	**268**	P	**P**	**17 46 58.8**	**+0.1**
	1.4nm,0.6s,baz=74,slow=5.3,SNR=23						
CMAR				PcP	**PcP**	**17 48 57.2**	**+1.9**
	0.2nm,0.7s,baz=41,slow=1.2,SNR=4.5						
TIXI	**Tiksi**	**45.30**	**354**	P	**P**	**17 47 27.8**	**+0.3**
	0.5nm,0.3s,baz=145,slow=7.1,SNR=7.2						
WRAB	**Tennant Creek**	**47.58**	**191**	*e*P	**P**	**17 47 45.4**	**-0.5**
WRA	**Warramunga Arr**	**47.59**	**191**	P	**P**	**17 47 45.8**	**-0.2**
	6.5nm,0.6s,baz=12,slow=8.6,SNR=57						
ZALV	**Zalesovo Beam**	**50.13**	**319**	P	**P**	**17 48 05.8**	**+0.5**
	0.8nm,0.4s,baz=95,slow=7.6,SNR=7.2						
ZALV				PcP	**PcP**	**17 49 24.4**	**+0.1**
	0.9nm,0.5s,baz=123,slow=4.4,SNR=5.4						
MKAR	**Makanchi Array**	**51.24**	**310**	P	**P**	**17 48 14.3**	**+0.6**
	0.5nm,0.5s,baz=88,slow=9.8,SNR=14						
ASAR	**Alice Springs**	**51.30**	**191**	P	**P**	**17 48 13.8**	**-0.5**
	0.7nm,0.6s,baz=356,slow=4.6,SNR=30						
KURK	**Kurchatov**	**53.69**	**315**	*e*P	**P**	**17 48 32.1**	**+0.3**
	5.9nm,0.4s						
KURBB	**Kurchatov Arra**	**53.75**	**314**	P	**P**	**17 48 32.7**	**+0.5**
	7.6nm,0.5s,baz=90,slow=7.9,SNR=171						
AAK	**Ala-Archa**	**57.08**	**305**	P	**P**	**17 48 57.2**	**+0.6**
	0.8nm,0.4s,baz=90,slow=2.8,SNR=5.1						
ILAR	**Eielson Array**	**57.21**	**29**	P	**P**	**17 48 56.5**	**-0.4**
	0.8nm,0.8s,baz=250,slow=5.8,SNR=6.5						
STKA	**Stephens Creek**	**58.69**	**182**	P	**P**	**17 49 07.2**	**-0.3**
	2.3nm,0.8s,baz=3.4,slow=7.7,SNR=4.8						
BVAR	**Borovoye Array**	**58.71**	**317**	P	**P**	**17 49 08.6**	**+1.0**
	3.2nm,0.7s,baz=90,slow=7.5,SNR=23						
BRVK	**Borovoye**	**58.77**	**318**	*e*P	**P**	**17 49 08.9**	**+0.9**
	3.4nm,0.8s						
KKAR	**Karatay Array**	**59.89**	**306**	*e*P	**P**	**17 49 16.6**	**+0.7**
	4.0nm,0.6s						
INK	**Inuvik**	**62.59**	**25**	P	**P**	**17 49 34.2**	**+0.5**
	0.7nm,0.6s,baz=268,slow=4.8,SNR=3.4						
ARU	**Arti**	**65.03**	**322**	P	**P**	**17 49 50.6**	**+0.6**
	2.9nm,0.5s,baz=50,slow=1.4,SNR=6.5						
ABKAR	**Akbulak array**	**65.80**	**314**	*e*P	**P**	**17 49 55.5**	**+0.4**
	2.9nm,0.6s						
AKTO	**Aktyubinsk**	**66.72**	**316**	P	**P**	**17 50 01.6**	**+0.5**
	1.4nm,0.8s,baz=70,slow=17,SNR=6.0						
GEYT	**Alibeck**	**70.34**	**303**	P	**P**	**17 50 22.5**	**-1.4**
	0.9nm,0.5s,baz=38,slow=10,SNR=2.5						
YKA	**Yellowknife Ar**	**71.64**	**29**	P	**P**	**17 50 31.3**	**+0.1**
	0.4nm,0.7s,baz=292,slow=5.7,SNR=6.0						
FINES	**FINESS Array B**	**78.37**	**334**	P	**P**	**17 51 10.7**	**+0.6**
	1.5nm,0.6s,baz=238,slow=3.6,SNR=8.6						
KBZ	**Khabaz**	**78.73**	**313**	P	**P**	**17 51 12.9**	**+0.5**
	3.8nm,0.9s,baz=110,slow=1.7,SNR=7.0						
NVAR	**Mina Array Bea**	**79.71**	**52**	P	**P**	**17 51 19.3**	**+1.1**
	0.7nm,0.7s,baz=294,slow=6.7,SNR=3.0						
AKASG	**Malin Array Be**	**83.19**	**324**	P	**P**	**17 51 35.7**	**-0.4**
	1.2nm,0.5s,baz=51,slow=5.4,SNR=9.4						
NOA	**NORSAR Array B**	**83.96**	**339**	P	**P**	**17 51 37.5**	**-2.4**
	2.7nm,1.0s,baz=45,slow=7.8,SNR=3.4						
RAYN	**Ar Rayn**	**86.06**	**294**	*e*P	**P**	**17 51 51.5**	**+0.3**
	5.4nm,0.6s						
BRTR	**Keskin Array B**	**86.73**	**313**	P	**P**	**17 51 53.2**	**-1.1**
	0.4nm,0.7s,baz=93,slow=2.9,SNR=2.7						

*IDC **07** 17:39:57.7±0.9, 27°.07N×143°.44E, h0km, mb3.9/13, mb1 4.1/15, mb1mx3.8/45, mbtmp3.9/15, ML3.1/2, Error ellipse: s-maj=22.4km s-min=20.0km az=88.0*
*ISCJB **07** 17:40:00.7±0.6, 27°.06N±0°.08×143°.47E±0°.06, h33km, mb4.0/17, Error ellipse: s-maj=11.7km s-min=8.1km az=177.2*
*NEIC **07** 17:40:03.1±0.4, 27°.06N×143°.37E, h35km, mb4.5/5, Error ellipse: s-maj=11.1km s-min=8.2km az=73.0*
ISC 07 17:40:03.1±0.9**, 27°.1N**±0°.1×**143°.37E**±0°.09**, h35**km**, n23, σ0s.46**/25**, mb4.0**/17**, Bonin Islands region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CBIJ	**Chichi jima**	**1.05**	**271**	Pn	**Pn**	**17 40 20.6**	**-0.7**
CBIJ				Sn	**Sn**	**17 40 35.3**	**+0.5**
JCJ	**Chichijima**	**1.05**	**271**	Pn	**Pn**	**17 40 20.6**	**-0.7**
	baz=0.0,slow=15						
JCJ				Sn	**Sn**	**17 40 35.3**	**+0.5**
	baz=0.0,slow=20						
KSRS	**Korea Array**	**16.64**	**312**	Pn	**P**	**17 43 55.2**	**-0.4**
	0.2nm,0.3s,baz=124,slow=10,SNR=4.9						
KSAR	**Wonju Array Be**	**16.66**	**312**	Pn	**P**	**17 43 55.2**	**-0.7**
USRK	**Ussuriysk Ar.**	**19.39**	**335**	Pn	**Pn**	**17 44 27.3**	**+0.1**
	0.2nm,0.3s,baz=128,slow=12,SNR=4.0						
MDJ	**Mudanjiang**	**20.71**	**331**	P	**P**	**17 44 39.6**	**-0.7**
	3.3nm,0.6s						
SONM	**Songino Array**	**35.46**	**316**	P	**P**	**17 46 56.0**	**-0.2**
	0.5nm,0.5s,baz=116,slow=7.2,SNR=4.5						
CMAR	**Chiang Mai Arr**	**41.68**	**268**	P	**P**	**17 47 48.5**	**0.0**
	0.8nm,0.6s,baz=76,slow=5.1,SNR=7.9						
WRAB	**Tennant Creek**	**47.54**	**192**	*e*P	**P**	**17 48 35.2**	**+0.1**
	4.2nm,0.6s						
WRA	**Warramunga Arr**	**47.55**	**192**	P	**P**	**17 48 35.3**	**+0.1**
	3.5nm,0.6s,baz=13,slow=8.7,SNR=6.5						
ZALV	**Zalesovo Beam**	**50.19**	**319**	P	**P**	**17 48 55.5**	**+0.3**
	0.4nm,0.3s,baz=79,slow=7.7,SNR=3.6						
ASAR	**Alice Springs**	**51.27**	**191**	P	**P**	**17 49 03.4**	**-0.3**
	0.5nm,0.6s,baz=12,slow=8.1,SNR=5.5						
MKAR	**Makanchi Array**	**51.30**	**310**	P	**P**	**17 49 03.5**	**-0.2**
	0.2nm,0.4s,baz=87,slow=10,SNR=4.8						
KURK	**Kurchatov**	**53.75**	**315**	*e*P	**P**	**17 49 21.8**	**+0.1**
	4.5nm,0.5s						
KURBB	**Kurchatov Arra**	**53.81**	**314**	P	**P**	**17 49 22.4**	**+0.2**
	5.0nm,0.5s,baz=91,slow=7.4,SNR=19						
ILAR	**Eielson Array**	**57.22**	**29**	P	**P**	**17 49 46.3**	**-0.2**
	0.6nm,0.7s,baz=227,slow=6.1,SNR=3.5						
BVAR	**Borovoye Array**	**58.77**	**318**	P	**P**	**17 49 57.7**	**+0.2**
	1.9nm,0.7s,baz=87,slow=8.5,SNR=5.3						
BRVK	**Borovoye**	**58.83**	**318**	*e*P	**P**	**17 49 58.0**	**+0.1**
	1.9nm,0.7s						
KKAR	**Karatay Array**	**59.95**	**306**	*e*P	**P**	**17 50 06.2**	**+0.4**
	2.6nm,0.6s						
FINES	**FINESS Array B**	**78.43**	**334**	P	**P**	**17 52 00.2**	**+0.3**
	0.8nm,0.5s,baz=50,slow=2.2,SNR=2.2						
KBZ	**Khabaz**	**78.79**	**313**	P	**P**	**17 52 03.4**	**+1.1**
	2.4nm,0.8s,baz=124,slow=7.5,SNR=3.9						
AKASG	**Malin Array Be**	**83.25**	**324**	P	**P**	**17 52 25.6**	**-0.3**
	0.7nm,0.6s,baz=52,slow=4.7,SNR=4.7						
PDAR	**Pinedale Array**	**83.48**	**45**	P	**P**	**17 52 27.4**	**-0.1**
	0.1nm,0.4s,baz=326,slow=2.7,SNR=3.7						

*ISCJB **07** 17:42:17.6±0.6, 38°.23N±0°.03×141°.94E±0°.07, h69km±4km, mb3.9/18, Error ellipse: s-maj=9.6km s-min=4.8km az=21.6*
*JMA **07** 17:42:18.7±0.1, 38°.23N×141°.91E, h59km±3km, M4.1*
JMA Felt I J1.
*IDC **07** 17:42:19.9±0.7, 38°.18N×141°.84E, h74km±7km, mb3.7/18, mb1 3.9/23, mb1mx3.7/47, mbtmp4.1/23, Error ellipse: s-maj=14.8km s-min=11.5km az=127.0*
ISC 07 17:42:19.2±0.7**, 38°.20N**±0°.04×**141°.93E**±0°.06**, h68**km±6km**, n49, σ1s.16**/56**, mb4.0**/18**, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**0.90**	**347**	P	**Pn**	**17 42 35.2**	**-1.1**
OFUJ				S	**Sn**	**17 42 46.9**	**-2.1**
JMK	**Ichinoseki**	**0.93**	**324**	P	**Pn**	**17 42 35.8**	**-0.9**
JMK				S	**Sn**	**17 42 47.8**	**-1.9**
JMM	**Marumori**	**0.96**	**250**	P	**Pn**	**17 42 36.1**	**-0.9**
JMM				S	**Sn**	**17 42 48.7**	**-1.6**
JOU	**Okura**	**1.01**	**280**	P	**Pn**	**17 42 36.9**	**-0.8**
JOU				S	**Sn**	**17 42 49.8**	**-1.7**
JFK	**Kawauchi**	**1.18**	**225**	P	**Pn**	**17 42 39.4**	**-0.5**
JFK				S	**Sn**	**17 42 54.6**	**-0.8**
JOM	**Ohasama**	**1.36**	**339**	P	**Pn**	**17 42 41.4**	**-0.9**
JOM				S	**Sn**	**17 42 58.0**	**-1.6**
MIYJ	**Miyakonagasawa**	**1.37**	**356**	S	**Sn**	**17 42 57.2**	**-2.7**
ONAJ	**Iwakimizuishiy**	**1.42**	**220**	P	**Pn**	**17 42 42.6**	**-0.5**
ONAJ				S	**Sn**	**17 43 00.3**	**-0.7**
JYK	**Kaneyama**	**1.42**	**301**	P	**Pn**	**17 42 42.2**	**-0.8**
JFT	**Otama**	**1.43**	**242**	P	**Pn**	**17 42 43.2**	**0.0**
JFT				S	**Sn**	**17 43 00.9**	**-0.4**
JYS	**Shirataka**	**1.47**	**271**	P	**Pn**	**17 42 43.2**	**-0.5**
JYS				S	**Sn**	**17 43 01.5**	**-0.6**
JYA	**Atsumi**	**1.78**	**283**	P	**Pn**	**17 42 47.2**	**-0.7**
JYA				S	**Sn**	**17 43 08.9**	**-0.7**
MJAR	**Matsushiro Arr**	**3.40**	**242**	P	**Pn**	**17 43 10.9**	**+1.1**
	4.8nm,0.3s,baz=58,slow=11,SNR=40						
JHJ	**Hachijo jima 2**	**5.37**	**200**	P	**Pn**	**17 43 35.5**	**-1.2**
	31nm,0.3s,baz=140,slow=23,SNR=9.3						
JHJ				S	**Sn**	**17 44 32.8**	**-4.3**
	46nm,0.3s,baz=264,slow=22,SNR=9.3						
USRK	**Ussuriysk Ar.**	**9.59**	**312**	P	**Pn**	**17 44 34.6**	**+0.3**
	2.1nm,0.3s,baz=126,slow=14,SNR=36						
JNU	**Nakatsue**	**10.32**	**244**	P	**Pn**	**17 44 46.0**	**+1.6**
	0.2nm,0.3s,baz=130,slow=3.6,SNR=4.6						
KSRS	**Korea Array**	**11.11**	**270**	P	Pn	17 44 57.8	+2.8
	0.3nm,0.3s,baz=81,slow=14,SNR=6.4						
PETK	**Petropavlovsk-**	**18.47**	**31**	P	**P**	**17 46 29.3**	**-0.1**
	0.1nm,0.3s,baz=243,slow=9.5,SNR=3.8						
MA2	**Magadan**	**22.13**	**12**	P	**P**	**17 47 08.3**	**-0.5**
	2.7nm,0.6s,baz=203,slow=7.0,SNR=8.0						
SEY	**Seymchan**	**25.57**	**11**	P	**P**	**17 47 42.2**	**+0.8**
	3.9nm,0.8s,baz=201,slow=5.6,SNR=13						
SONM	**Songino Array**	**27.49**	**302**	P	**P**	**17 47 58.5**	**-0.6**
	2.0nm,0.5s,baz=110,slow=9.1,SNR=12						
H11N2	**WAKE ISLAND Hy**	**28.42**	**123**	T	T	18 18 28.0	
	baz=316,slow=76,SNR=50						
H11N1	**WAKE ISLAND Hy**	**28.43**	**123**	T	T	18 18 28.7	
	baz=316,slow=76,SNR=53						
H11N3	**WAKE ISLAND Hy**	**28.44**	**123**	T	T	18 18 28.7	
	baz=316,slow=76,SNR=35						
H11S1	**WAKE ISLAND Hy**	**29.18**	**125**	T	T	18 19 26.7	
	baz=317,slow=76,SNR=46						
H11S3	**WAKE ISLAND Hy**	**29.18**	**125**	T	T	18 19 26.9	
	baz=317,slow=76,SNR=49						
H11S2	**WAKE ISLAND Hy**	**29.19**	**125**	T	T	18 19 28.1	
	baz=317,slow=76,SNR=59						
ZALV	**Zalesovo Beam**	**41.44**	**311**	P	**P**	**17 49 58.5**	**-0.4**
	3.6nm,0.5s,baz=89,slow=7.6,SNR=12						
CMAR	**Chiang Mai Arr**	**42.20**	**254**	P	**P**	**17 50 05.2**	**-0.3**
	0.6nm,0.7s,baz=45,slow=5.8,SNR=5.9						
MKAR	**Makanchi Array**	**43.85**	**301**	P	**P**	**17 50 18.2**	**-0.4**
	6.4nm,0.7s,baz=85,slow=9.8,SNR=44						
KURBB	**Kurchatov Arra**	**45.61**	**307**	P	**P**	**17 50 31.8**	**-0.7**
	6.1nm,0.4s,baz=80,slow=7.9,SNR=38						
ODAN	**Odare**	**46.76**	**273**	*e*P	**P**	**17 50 42.0**	**0.0**
RAMN	**Ramite**	**47.34**	**273**	*e*P	**P**	**17 50 46.3**	**-0.3**
	17nm,0.8s						
GUN	**Gumba**	**47.46**	**275**	*e*P	**P**	**17 50 47.5**	**-0.1**
	29nm,0.8s						
KKN	**Kakani**	**47.98**	**275**	*e*P	**P**	**17 50 51.4**	**-0.1**
	18nm,0.7s						
ILAR	**Eielson Array**	**48.29**	**33**	P	**P**	**17 50 53.6**	**+0.5**
	1.3nm,0.7s,baz=268,slow=6.2,SNR=12						
ILAR				pP	**pP**	**17 51 13.4**	**+3.1**
	1.0nm,0.9s,baz=271,slow=7.7,SNR=4.7						
GKN	**Gorkha**	**48.39**	**276**	*e*P	**P**	**17 50 54.4**	**-0.2**
	33nm,0.9s						
KOLN	**Koldanda**	**49.31**	**276**	*e*P	**P**	**17 51 01.6**	**-0.1**
PYUN	**Piuthan**	**49.63**	**277**	*e*P	**P**	**17 51 04.3**	**+0.1**
	19nm,0.5s						
BVAR	**Borovoye Array**	**50.09**	**312**	P	**P**	**17 51 06.7**	**-0.4**
	0.7nm,0.4s,baz=69,slow=8.2,SNR=4.3						
AAK	**Ala-Archa**	**50.30**	**298**	P	**P**	**17 51 08.9**	**-0.1**
	1.7nm,0.5s,baz=116,slow=3.5,SNR=9.3						
INK	**Inuvik**	**53.16**	**28**	P	**P**	**17 51 30.3**	**+0.7**
	2.4nm,1.0s,baz=269,slow=7.1,SNR=5.4						
WRA	**Warramunga Arr**	**58.27**	**188**	P	**P**	**17 52 06.7**	**-0.1**
	0.4nm,0.6s,baz=5.0,slow=7.0,SNR=4.7						
WRA				pP	**pP**	**17 52 24.6**	**+0.1**
	1.2nm,0.7s,baz=5.0,slow=7.1,SNR=5.1						
ASAR	**Alice Springs**	**62.00**	**188**	P	**P**	**17 52 31.9**	**-0.3**
	0.2nm,0.6s,baz=11,slow=10,SNR=3.7						
ASAR				pP	**pP**	**17 52 50.8**	**+0.7**
	0.8nm,0.7s,baz=12,slow=5.1,SNR=5.4						
YKA	**Yellowknife Ar**	**62.59**	**31**	P	**P**	**17 52 35.9**	**+0.1**
	0.5nm,0.7s,baz=301,slow=6.4,SNR=8.3						
FINES	**FINESS Array B**	**67.97**	**332**	P	**P**	**17 53 10.0**	**-0.5**
	1.2nm,0.7s,baz=44,slow=10,SNR=2.8						
AKASG	**Malin Array Be**	**73.62**	**322**	P	**P**	**17 53 44.8**	**-0.2**
	0.5nm,0.4s,baz=43,slow=6.4,SNR=7.1						
PDAR	**Pinedale Array**	**76.56**	**46**	P	**P**	**17 54 03.3**	**+0.9**
	0.9nm,0.6s,baz=277,slow=2.2,SNR=10.0						
TXAR	**Lajitas Array**	**89.09**	**53**	P	**P**	**17 55 08.0**	**+0.8**
	0.6nm,0.6s,baz=294,slow=2.9,SNR=7.9						

*ISK **07** 17:44:48.5, 36°.44N×28°.78E, h6km, MD2.7*
*DDA **07** 17:44:49.6, 36°.40N×28°.74E, h7km, Md2.8*
*CSEM **07** 17:44:49.5±0.5, 36°.44N×28°.81E, h8km, MD2.7, Error ellipse: s-maj=11.7km s-min=5.5km az=19.0*
*ISCJB **07** 17:44:50.9±0.9, 36°.50N±0°.08×28°.85E±0°.06, h16km±14km, Error ellipse: s-maj=14.4km s-min=5.4km az=29.4*
ISC 07 17:44:49.7±1.1**, 36°.50N**±0°.05×**28°.83E**±0°.03**, h20**km±3km**, n20, σ0s.46**/32**, Dodecanese Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FETY	**Fethiye**	**0.25**	**56**	*e*PG	**Pb**	**17 44 55.0**	**-0.4**
FETY				*e*SG	**Sg**	**17 44 59.8**	**+0.3**
FETY	**Fethiye**	**0.25**	**56**	*e*Pg	**Pb**	**17 44 55.0**	**-0.4**
FETY				*e*Sg	**Sg**	**17 44 59.8**	**+0.3**
DALY	**Dalyan (Mu˜la**	**0.35**	**336**	*e*PG	**Pg**	**17 44 56.3**	**-0.9**
DALY				*e*SG	**Sb**	**17 45 02.5**	**+0.1**
DALY	**Dalyan (Mu˜la**	**0.35**	**336**	*e*Pg	**Pg**	**17 44 56.3**	**-0.9**
DALY				*e*Sg	**Sb**	**17 45 02.5**	**+0.1**
TURN	**Turunc**	**0.42**	**334**	*i* P	**Pn**	**17 45 00.1**	**-0.5**
TURN				*i* S	**Sn**	**17 45 08.3**	**+0.5**
TURN	**Turunc**	**0.42**	**334**	P	**Pn**	**17 45 00.1**	**-0.5**
TURN				S	**Sn**	**17 45 08.3**	**+0.5**
AKAS	**Kas**	**0.68**	**113**	*i* P	**Pg**	**17 45 03.2**	**0.0**
AKAS				*i* S	**Sn**	**17 45 14.5**	**0.0**
AKAS	**Kas**	**0.68**	**113**	P	**Pg**	**17 45 03.2**	**0.0**
AKAS				S	**Sn**	**17 45 14.5**	**0.0**
YER	**Yerkesik**	**0.77**	**326**	*e*PG	**Pb**	**17 45 04.3**	**-0.2**
YER	**Yerkesik**	**0.77**	**326**	*e*Pg	**Pb**	**17 45 04.3**	**-0.2**
ELL	**Elmali**	**0.90**	**74**	*e*PG	**Pn**	**17 45 07.5**	**+0.1**
ELL	**Elmali**	**0.90**	**74**	*e*Pg	**Pn**	**17 45 07.5**	**+0.1**
BDRM	**Kayabasi**	**1.25**	**297**	*i* P	**Pg**	**17 45 13.6**	**-0.3**
BDRM				*i* S	**Sg**	**17 45 30.6**	**+0.4**
BDRM	**Kayabasi**	**1.25**	**297**	P	**Pg**	**17 45 13.6**	**-0.3**
BDRM				S	**Sg**	**17 45 30.6**	**+0.4**
BODT	**Bodrum**	**1.34**	**295**	*e*PN	**Pb**	**17 45 14.0**	**-0.2**
BODT	**Bodrum**	**1.34**	**295**	*e*Pn	**Pb**	**17 45 14.0**	**-0.2**
AYDN	**Tasoluk**	**1.39**	**327**	*i* P	**Pg**	**17 45 16.9**	**+0.4**
AYDN				*i* S	**Sg**	**17 45 35.6**	**+0.9**
AYDN	**Tasoluk**	**1.39**	**327**	P	**Pg**	**17 45 16.9**	**+0.4**
AYDN				S	**Sg**	**17 45 35.6**	**+0.9**
AYDB	**Zeytinkoy-Aydi**	**1.63**	**333**	*e*PN	**Pb**	**17 45 19.0**	**-0.2**
AYDB	**Zeytinkoy-Aydi**	**1.63**	**333**	*e*Pn	**Pb**	**17 45 19.0**	**-0.2**

MEX 07 17:45:41.9±0.4**, 17°.48N**×**94°.06W, h128**km±15km**, MD3.7, Chiapas**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TUIG	**Tuzandepetl**	**0.65**	**328**	*e*P	Pn	17 46 00.5	-1.3
TGIG		**1.14**	**128**	*e*P	Pn	17 46 04.9	-1.1
TGIG				*e*S	Sn	17 46 22.5	-1.9
VHO	**Vista Hermosa**	**2.59**	**261**	*e*P	Pn	17 46 21.7	-1.6
VHO				*e*S	Sn	17 46 53.7	-1.5

*ISCJB **07** 17:51:20.2±0.5, 19°.03N±0°.05×145°.5E±0°.1, h214km, mb3.9/22, Error ellipse: s-maj=17.0km s-min=6.2km az=174.4*
*IDC **07** 17:51:22.0±1.5, 19°.01N×145°.52E, h217km±14km, mb3.7/22, mb1 3.8/28, mb1mx3.7/49, mbtmp4.4/28, Error ellipse: s-maj=15.1km s-min=7.5km az=78.0*
ISC 07 17:51:21.7±0.6**, 19°.00N**±0°.06×**145°.5E**±0°.1**, h214**km**, n30, σ0s.94**/33**, mb3.9**/22**, Mariana Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GUMO	**Guam**	**5.41**	**187**	P	**Pn**	**17 52 43.2**	**+1.4**
	24nm,0.3s,baz=58,slow=9.5,SNR=12						
GUMO				S	**S**	**17 53 44.7**	**-0.3**
	18nm,0.3s,baz=15,slow=20,SNR=2.5						
JCJ	**Chichijima**	**8.63**	**340**	P	**Pn**	**17 53 21.3**	**-1.8**
	33nm,0.3s,baz=89,slow=23,SNR=11						
JCJ				S	S	17 54 53.3	-7.1
	baz=90,slow=20						
JHJ	**Hachijo jima 2**	**14.98**	**341**	P	**Pn**	**17 54 42.8**	**-0.2**
	5.9nm,0.3s,baz=66,slow=19,SNR=2.0						
JHJ				S	**S**	**17 57 31.4**	**+2.6**
	9.2nm,0.3s,baz=198,slow=20,SNR=4.0						
JOW	**Kunigami**	**17.70**	**299**	P	**P**	**17 55 13.1**	**-0.3**
	5.1nm,0.3s,baz=126,slow=10,SNR=7.5						
MJAR	**Matsushiro Arr**	**18.63**	**341**	P	**P**	**17 55 23.3**	**-0.1**
	2.1nm,0.3s,baz=172,slow=11,SNR=36						
MJAR				S	**S**	**17 58 43.0**	**-1.3**
	0.3nm,0.3s,baz=175,slow=16,SNR=6.2						
MAT	**Matsushiro**	**18.63**	**341**	P	**P**	**17 55 23.6**	**+0.2**
JNU	**Nakatsue**	**19.23**	**320**	P	**P**	**17 55 30.4**	**+0.5**
	0.3nm,0.3s,baz=284,slow=17,SNR=4.5						
KSRS	**Korea Array**	**23.99**	**324**	P	**P**	**17 56 16.9**	**+0.1**
	6.4nm,0.8s,baz=151,slow=8.4,SNR=21						
USRK	**Ussuriysk Ar.**	**27.57**	**339**	P	**P**	**17 56 49.6**	**+0.7**
	5.8nm,0.7s,baz=154,slow=9.1,SNR=14						
PMG	**Port Moresby**	**28.27**	**177**	P	**P**	**17 56 54.8**	**-0.5**
	6.7nm,0.7s,baz=20,slow=9.6,SNR=3.6						
PETK	**Petropavlovsk-**	**35.34**	**13**	P	**P**	**17 57 57.8**	**+1.2**
	2.2nm,0.7s,baz=192,slow=10.0,SNR=6.0						
WRA	**Warramunga Arr**	**40.22**	**196**	P	**P**	**17 58 38.0**	**+0.2**
	13nm,1.0s,baz=10,slow=8.9,SNR=60						
SONM	**Songino Array**	**42.81**	**321**	P	**P**	**17 58 58.3**	**-0.3**
	1.4nm,0.6s,baz=132,slow=10,SNR=15						
ASAR	**Alice Springs**	**43.89**	**195**	P	**P**	**17 59 07.4**	**0.0**
	3.3nm,0.8s,baz=14,slow=8.0,SNR=58						
CMAR	**Chiang Mai Arr**	**44.02**	**277**	P	**P**	**17 59 09.9**	**+1.4**
	0.8nm,0.6s,baz=65,slow=7.0,SNR=12						
STKA	**Stephens Creek**	**50.72**	**184**	P	**P**	**17 59 58.9**	**-0.9**
	1.5nm,0.7s,baz=342,slow=9.8,SNR=4.7						
ZALV	**Zalesovo Beam**	**57.69**	**322**	P	**P**	**18 00 49.5**	**-0.2**
	1.1nm,0.5s,baz=113,slow=7.9,SNR=6.3						
MKAR	**Makanchi Array**	**58.14**	**314**	P	**P**	**18 00 53.2**	**+0.1**
	1.2nm,0.7s,baz=92,slow=8.6,SNR=17						
KURBB	**Kurchatov Arra**	**60.99**	**318**	P	**P**	**18 01 11.8**	**-0.7**
	1.6nm,0.6s,baz=96,slow=7.5,SNR=25						
NRIK	**Noril'sk**	**61.28**	**340**	P	**P**	**18 01 13.9**	**-0.2**
	6.5nm,0.5s,baz=107,slow=10.0,SNR=3.9						
ILAR	**Eielson Array**	**63.45**	**26**	P	**P**	**18 01 27.6**	**-1.0**
	1.0nm,0.7s,baz=256,slow=5.3,SNR=11						
AAK	**Ala-Archa**	**63.56**	**309**	P	**P**	**18 01 29.5**	**-0.4**
	0.5nm,0.5s,baz=157,slow=7.7,SNR=3.3						
BVAR	**Borovoye Array**	**66.15**	**320**	P	**P**	**18 01 45.6**	**-0.5**
	1.9nm,0.4s,baz=99,slow=7.6,SNR=12						
ARU	**Arti**	**72.73**	**324**	P	**P**	**18 02 26.0**	**-0.3**
	0.8nm,0.3s,baz=72,slow=3.2,SNR=3.4						
AKTO	**Aktyubinsk**	**74.04**	**318**	P	**P**	**18 02 33.8**	**-0.3**
	0.5nm,0.4s,baz=116,slow=11,SNR=5.5						
YKA	**Yellowknife Ar**	**77.80**	**28**	P	**P**	**18 02 55.3**	**+0.2**
	0.5nm,0.6s,baz=290,slow=5.5,SNR=10						
ARCES	**ARCESS Array B**	**82.16**	**342**	P	**P**	**18 03 17.7**	**-0.6**
	1.1nm,0.6s,baz=76,slow=8.4,SNR=11						
NVAR	**Mina Array Bea**	**83.08**	**52**	P	**P**	**18 03 25.2**	**+1.2**
	3.1nm,0.6s,baz=268,slow=6.0,SNR=19						
FINES	**FINESS Array B**	**86.55**	**335**	P	**P**	**18 03 38.8**	**-1.6**
	1.5nm,0.3s,baz=69,slow=5.0,SNR=29						
LPAZ	**La Paz**	**147.84**	**91**	PKPbc	**PKPbc**	**18 10 42.8**	**-0.3**
	0.7nm,0.5s,baz=333,slow=4.5,SNR=3.2						

*IDC **07** 17:54:58.5±1.9, 35°.35N×73°.17E, h0km, mb3.5/4, mb1 3.6/6, mb1mx3.3/53, mbtmp3.4/6, ML3.2/2, Error ellipse: s-maj=69.8km s-min=28.8km az=74.0*
*ISCJB **07** 17:54:59.5±1.7, 35°.5N±0°.2×73°.5E±0°.5, h10km, mb3.4/3, Error ellipse: s-maj=56.8km s-min=23.3km az=161.2*
*NNC **07** 17:55:09.7±17.0, 37°.03N×71°.01E, h0km, mb3.2, mpv2.9, Error ellipse: s-maj=126.7km s-min=89.0km az=174.0*
ISC 07 17:55:01.7±1.7**, 35°.7N**±0°.2×**73°.7E**±0°.4**, h10**km**, n9, σ1s.74**/7**, mb3.6**/3**, 5C-1D, Northwestern Kashmir**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SFK	**Sufi-Kurgan**	**4.36**	**358**	⇑Pg	**Pb**	**17 56 16.7**	**-1.8**
	1.4nm,0.4s						
SFK				⇓Lg	Lg	17 57 05.9	
	3.4nm,0.6s						
MNAS	**Manas**	**6.89**	**353**	⇑Pg	Pn	17 56 48.2	+5.2
	0.5nm,0.5s						
MNAS				⇑Lg	Lg	17 58 05.3	
	1.7nm,0.5s						
AAK	**Ala-Archa**	**7.00**	**5**	Pn	Pn	17 56 52.5	+8.1
	0.2nm,0.3s,baz=149,slow=5.9,SNR=4.0						
KK31	**Karatay Array**	**7.84**	**343**	⇑Pg	**Pn**	**17 56 57.7**	**+1.9**
	0.4nm,0.3s,baz=179,slow=14,SNR=8.6						
KK31				⇑Lg	Lg	17 58 25.0	
	0.4nm,0.3s,baz=170,slow=25,SNR=3.8						
BVAR	**Borovoye Array**	**17.53**	**353**	P	**P**	**17 59 07.9**	**+0.7**
	0.1nm,0.3s,baz=164,slow=12,SNR=4.4						
ZALV	**Zalesovo Beam**	**19.88**	**20**	P	**P**	**17 59 34.9**	**+2.0**
	0.6nm,0.4s,baz=209,slow=7.3,SNR=4.5						
ARCES	**ARCESS Array B**	**42.77**	**337**	P	**P**	**18 02 58.1**	**-0.9**
	1.4nm,0.9s,baz=110,slow=8.0,SNR=6.4						
YKA	**Yellowknife Ar**	**81.97**	**4**	P	**P**	**18 07 21.1**	**-0.3**
	0.3nm,0.5s,baz=350,slow=5.2,SNR=7.8						
ASAR	**Alice Springs**	**81.97**	**127**	P	**P**	**18 07 21.8**	**-0.2**
	0.1nm,0.5s,baz=308,slow=4.7,SNR=5.3						

*ISCJB **07** 18:09:58.1±0.8, 38°.42N±0°.04×141°.94E±0°.10, h62km±7km, mb3.5/6, Error ellipse: s-maj=13.2km s-min=5.9km az=16.3*
*JMA **07** 18:09:59.5±0.1, 38°.43N×141°.87E, h52km±3km, M4.0*
JMA Felt I J1.

IDC ***07*** *18:09:59.2±3.0, 38°.42N×142°.12E, h57km±28km, mb3.2/6, mb1 3.5/9, mb1mx3.2/44, mbtmp3.6/9, ML3.0/3, Error ellipse: s-maj=31.4km s-min=17.2km az=92.0*

ISC 07 18:09:58.6±1.5**, 38°.39N**±0°.05×**141°.99E**±0°.10**, h49**km±14km**, n25,** σ**1s.15**/27**, mb3.5**/6**, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
OFUJ	Ofunato	0.73	340	P	Pn	18 10 13.1	+0.4
OFUJ				S	Sn	18 10 22.4	-0.5
JMK	Ichinoseki	0.82	313	P	Pn	18 10 14.0	+0.1
JMK				S	Sn	18 10 24.1	-0.9
JOU	Okura	1.04	269	P	Pn	18 10 16.8	-0.1
JOU				S	Sn	18 10 29.5	-0.9
JMM	Marumori	1.08	241	P	Pn	18 10 17.5	+0.1
JMM				S	Sn	18 10 30.2	-1.1
JOM	Ohasama	1.21	333	P	Pn	18 10 19.4	+0.3
JOM				S	Sn	18 10 34.5	+0.2
JFK	Kawauchi	1.35	221	P	Pn	18 10 21.8	+0.7
JFK				S	Sn	18 10 38.2	+0.2
JYK	Kaneyama	1.38	293	P	Pn	18 10 21.3	-0.1
JYK				S	Sn	18 10 37.2	-1.4
JYS	Shirataka	1.52	264	S	Sn	18 10 41.2	-0.9
JFT	Otama	1.57	237	P	Pn	18 10 25.0	+0.9
JFT				S	Sn	18 10 43.1	-0.2
MAT	Matsushiro	3.53	240	P	Pn	18 10 53.1	+2.2
MJAR	Matsushiro Arr	3.53	240	P	Pn	18 10 53.3	+2.3
	2.2nm,0.3s,baz=35,slow=14,SNR=17						
JHJ	Hachijo jima 2	5.56	199	P	Pn	18 11 19.2	+0.5
	4.2nm,0.3s,baz=236,slow=18,SNR=6.0						
USRK	Ussuriysk Ar.	9.50	311	P	Pn	18 12 15.5	+2.9
	0.3nm,0.3s,baz=127,slow=16,SNR=5.2						
MA2	Magadan	21.93	12	P	P	18 14 45.9	-1.7
	0.8nm,0.3s,baz=219,slow=13,SNR=2.8						
H11N2	WAKE ISLAND Hy	28.48	124	T	T	18 46 27.0	
	baz=317,slow=76,SNR=60						
H11N1	WAKE ISLAND Hy	28.49	124	T	T	18 46 22.0	
	baz=317,slow=76,SNR=55						
H11N3	WAKE ISLAND Hy	28.50	124	T	T	18 46 28.5	
	baz=317,slow=76,SNR=53						
H11S1	WAKE ISLAND Hy	29.25	126	T	T	18 47 12.9	
	baz=318,slow=76,SNR=24						
H11S3	WAKE ISLAND Hy	29.25	126	T	T	18 47 08.4	
	baz=318,slow=76,SNR=34						
H11S2	WAKE ISLAND Hy	29.26	126	T	T	18 47 12.4	
	baz=318,slow=76,SNR=25						
MKAR	Makanchi Array	43.80	301	P	P	18 18 00.2	+0.8
	0.2nm,0.5s,baz=83,slow=11,SNR=4.4						
KURBB	Kurchatov Arra	45.54	307	P	P	18 18 12.5	-0.7
	0.8nm,0.5s,baz=80,slow=8.2,SNR=11						
WRA	Warramunga Arr	58.47	188	P	P	18 19 49.4	-0.2
	0.5nm,0.5s,baz=5.0,slow=6.9,SNR=12						
ASAR	Alice Springs	62.20	188	P	P	18 20 15.3	+0.4
	0.2nm,0.7s,baz=16,slow=11,SNR=4.0						
YKA	Yellowknife Ar	62.41	31	P	P	18 20 15.8	-0.1
	0.1nm,0.6s,baz=301,slow=6.6,SNR=3.7						

IDC ***07*** *18:10:43.2±2.9, 36°.15N×140°.95E, h0km, mb3.4/4, mb1 3.5/5, mb1mx3.3/41, mbtmp3.4/5, ML3.7/1, Error ellipse: s-maj=85.5km s-min=24.0km az=56.0*
ISCJB ***07*** *18:10:50.3±1.0, 35°.85N±0°.09×140°.53E±0°.09, h50km, mb3.3/4, Error ellipse: s-maj=13.0km s-min=10.0km az=29.8*
JMA ***07*** *18:10:52.4±0.1, 36°.00N×140°.39E, h55km±1km, M2.8*

ISC 07 18:10:52.1±1.1**, 36°.01N**±0°.07×**140°.46E**±0°.08**, h50**km**, n12,** σ**0s.98**/15**, mb3.3**/4**, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
JYT	Yasato	0.30	316	P	Pn	18 11 01.9	+0.6
JYT				S	Sn	18 11 09.0	+1.2
JHO	Hitachi	0.61	9	P	Pn	18 11 05.5	+0.8
JAG	Ashikaga	0.91	298	P	Pn	18 11 08.8	+0.2
BSO3	Boso 3	1.20	178	P	Pn	18 11 13.5	+1.2
JKT	Katashina	1.23	308	P	Pn	18 11 13.5	+0.4
JRY	Ryogami san	1.26	271	P	Pn	18 11 13.4	0.0
JRY				eS	Sn	18 11 29.7	+0.5
MJAR	Matsushiro Arr	1.89	287	Pn	Pn	18 11 22.9	+0.9
	19nm,0.3s,baz=91,slow=8.9,SNR=7.5						
MAT	Matsushiro	1.89	287	P	Pn	18 11 23.1	+1.1
MAT				eS	Sn	18 11 46.0	+1.3
SONM	Songino Array	27.74	306	P	P	18 16 35.8	-0.2
	0.4nm,0.6s,baz=98,slow=7.7,SNR=3.3						
MKAR	Makanchi Array	44.02	303	P	P	18 18 53.6	-1.0
	0.2nm,0.4s,baz=91,slow=8.6,SNR=7.4						
WRA	Warramunga Arr	55.94	187	P	P	18 20 23.7	-1.6
	0.2nm,0.4s,baz=4.8,slow=7.6,SNR=7.1						
ASAR	Alice Springs	59.67	187	P	P	18 20 51.4	+0.1
	0.2nm,0.6s,baz=7.5,slow=15,SNR=4.7						

CASC 07 18:29:21.9±2.0**, 9°.34N**×**83°.25W, h13**km±8km**, MD3.9, 5C-1D, Costa Rica**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
BUS	Buena Vista	0.55	293⇑	iP	Pg	18 29 32.2	-0.6
BUS				eS	Sg	18 29 40.2	0.0
ACR	Cerro Adams	0.69	174	eP	Pg	18 29 35.2	-0.1
URSC	Urasca	0.72	313⇑	iP	Pg	18 29 35.5	-0.4
BRU2	Volcan	0.77	135	eP	Pg	18 29 36.6	-0.4
BRU2				eS	Sg	18 29 47.4	+0.3
TBS2		0.80	133⇓	iP	Pg	18 29 36.7	-0.7
TBS2				eS	Sg	18 29 47.9	0.0
LCR2	La Lucha 2	0.85	298⇑	iP	Pg	18 29 37.2	-1.2
LCR2				eS	Sg	18 29 48.4	-1.1
QCR	Quepos	0.91	275⇑	iP	Pg	18 29 38.6	-1.0
QCR				eS	Sg	18 29 50.8	-0.7
HDC	Heredia	1.08	307	eP	Pb	18 29 41.9	-0.7
HDC				eS	Sb	18 29 56.2	-0.4
CGA2	Cerro Gallo 2	1.38	299	eP	Pn	18 29 46.8	-0.1
CGA2				eS	Sn	18 30 04.9	-0.3
ARE1	Arenal 1	1.83	308⇑	eP	Pb	18 29 55.2	-0.1
JCR	Jicaral	1.91	285	eP	Pn	18 29 55.3	+1.1
JCR				eS	Sb	18 30 19.4	-1.0
A494	Palo Verde	2.30	296	eP	Pb	18 30 01.5	-1.8
A494				eS	Sn	18 30 29.3	+1.5
VCR	Vista de Mar	2.48	289	eP	Pn	18 30 02.2	+0.1
PNME	Penonome	3.01	106	eP	Pn	18 30 09.6	+0.3
AZU	Azuero	3.32	117	eP	Pn	18 30 11.6	-1.9
ZANG	Zanguenga, Cho	3.36	96	eP	Pn	18 30 14.9	+0.8
ZANG				eS	Sn	18 30 53.9	0.0
UPD2	Meteti	5.23	98	eP	Pn	18 30 39.6	-0.3

MEX 07 18:33:54.7±0.8**, 16°.77N**×**95°.35W, h141**km±17km**, MD3.8, Oaxaca**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
HUIG	Huatulco	1.23	216	eP	Pn	18 34 19.0	-1.8
HUIG				eS	Sn	18 34 39.0	-1.7
VHO	Vista Hermosa	1.36	283	eP	Pn	18 34 21.7	-0.6
VHO				iS	Sn	18 34 41.2	-2.2
TGIG		2.13	89	eP	Pn	18 34 28.9	-2.0
TGIG				eS	Sn	18 34 57.0	-1.8
PCIG		2.30	117	eP	Pn	18 34 31.2	-1.8
PCIG				eS	Sn	18 35 00.9	-1.4
PNIG	Pinotepa	2.69	262	eP	Pn	18 34 37.1	-0.7
PNIG				eS	Sn	18 35 09.3	-1.7
TLIG	Tlapa	3.18	285	eP	Pn	18 34 44.7	+0.5
TLIG				iS	Sn	18 35 20.1	-2.2
MEIG	Mezcala	4.24	286	eP	Pn	18 34 59.2	+1.2
MEIG				eS	Sn	18 35 41.1	-6.0
ARIG	Puente Sto Nin	5.00	288	eP	Pn	18 35 10.1	+2.1

IDC ***07*** *18:34:02.4±11.0, 36°.67N×143°.32E, h0km, mb3.4/2, mb1 3.3/3, mb1mx3.1/38, mbtmp3.3/3, ML2.8/1, Error ellipse: s-maj=204.0km s-min=79.7km az=139.0*
JMA ***07*** *18:34:09.5±0.4, 37°.34N×142°.46E, h1km±4km, M3.6*

ISC 07 18:34:14.5±2.2**, 37°.3N**±0°.1×**142°.3E**±0°.1**, h25**km**, n9,** σ**0s.90**/11**, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
JFK	Kawauchi	1.16	272	P	Pn	18 34 33.7	-1.4
JFK				eS	Sn	18 34 50.9	+0.7
ONAJ	Iwakimizuishiy	1.25	259	P	Pn	18 34 36.0	-0.3
JMM	Marumori	1.33	294	P	Pn	18 34 36.0	-1.4
JHO	Hitachi	1.59	243	P	Pn	18 34 39.9	-1.1
JFT	Otama	1.59	277	P	Pn	18 34 41.0	-0.1
JFT				S	Sb	18 35 02.8	-0.2
JOU	Okura	1.67	308	P	Pn	18 34 41.8	-0.3
MJAR	Matsushiro Arr	3.40	258	Pn	Pn	18 35 06.3	+0.4
	0.6nm,0.3s,baz=87,slow=16,SNR=4.9						
SONM	Songino Array	28.22	303	P	P	18 40 05.9	+0.6
	0.5nm,0.7s,baz=99,slow=8.9,SNR=3.7						
MKAR	Makanchi Array	44.57	302	P	P	18 42 24.4	0.0
	0.3nm,0.8s,baz=77,slow=6.4,SNR=2.9						

ISCJB ***07*** *18:35:22.7±0.7, 38°.30N±0°.04×141°.68E±0°.09, h67km±6km, mb3.6/9, Error ellipse: s-maj=11.4km s-min=5.6km az=8.8*
IDC ***07*** *18:35:23.5±0.9, 38°.29N×141°.66E, h59km±8km, mb3.5/9, mb1 3.8/12, mb1mx3.5/39, mbtmp3.8/12, Error ellipse: s-maj=20.3km s-min=15.0km az=87.0*
JMA ***07*** *18:35:23.5±0.1, 38°.30N×141°.66E, h59km±2km, M3.9*
JMA Felt II J1.

ISC 07 18:35:23.2±0.9**, 38°.29N**±0°.04×**141°.77E**±0°.07**, h54**km±8km**, n32,** σ**1s.36**/37**, mb3.7**/9**, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
JMK	Ichinoseki	0.79	327	P	Pn	18 35 38.4	+0.2
JMK				S	Sn	18 35 48.8	-0.4
JOU	Okura	0.87	275	P	Pn	18 35 38.9	-0.4
JOU				S	Sn	18 35 50.1	-1.1
JMM	Marumori	0.88	241	P	Pn	18 35 39.1	-0.3
JMM				S	Sn	18 35 50.3	-1.1
JFK	Kawauchi	1.17	218	P	Pn	18 35 43.5	+0.2
JFK				S	Sn	18 35 58.1	-0.1
JOM	Ohasama	1.23	343	P	Pn	18 35 44.6	+0.4
JOM				S	Sn	18 35 59.8	0.0
JYK	Kaneyama	1.27	300	P	Pn	18 35 44.3	-0.3
JYK				S	Sn	18 35 59.4	-1.2
JYS	Shirataka	1.34	267	P	Pn	18 35 45.3	-0.3
JYS				S	Sn	18 36 01.8	-0.6
JFT	Otama	1.37	236	P	Pn	18 35 46.2	+0.2
JFT				S	Sn	18 36 02.5	-0.6
ONAJ	Iwakimizuishiy	1.42	213	S	Sn	18 36 03.5	-0.8
JYA	Atsumi	1.64	281	S	Sn	18 36 08.1	-1.5
MJAR	Matsushiro Arr	3.33	239	P	Pn	18 36 13.7	+0.9
	6.9nm,0.3s,baz=36,slow=13,SNR=32						
MAT	Matsushiro	3.33	239	P	Pn	18 36 14.8	+2.0
MAT				eS	Sn	18 36 55.8	+4.7
JHJ	Hachijo jima 2	5.41	198	P	Pn	18 36 41.8	+0.5
	7.2nm,0.3s,baz=142,slow=23,SNR=6.5						
JHJ				S	Sn	18 37 39.0	-3.2
	15nm,0.3s,baz=126,slow=23,SNR=6.3						
USRK	Ussuriysk Ar.	9.43	312	P	Pn	18 37 36.8	+0.5
	0.8nm,0.3s,baz=125,slow=14,SNR=9.0						
KSRS	Korea Array	10.98	270	P	Pn	18 38 00.3	+2.8
	0.1nm,0.3s,baz=82,slow=14,SNR=3.0						
SONM	Songino Array	27.34	302	P	P	18 41 03.0	0.0
	0.3nm,0.5s,baz=95,slow=12,SNR=3.8						
H11N2	WAKE ISLAND Hy	28.58	123	T	T	19 11 30.1	
	baz=316,slow=75,SNR=153						
H11N1	WAKE ISLAND Hy	28.58	123	T	T	19 11 32.4	
	baz=316,slow=75,SNR=199						
H11N3	WAKE ISLAND Hy	28.59	123	T	T	19 11 37.0	
	baz=316,slow=75,SNR=152						
H11S1	WAKE ISLAND Hy	29.33	125	T	T	19 12 29.8	
	baz=318,slow=76,SNR=54						
H11S3	WAKE ISLAND Hy	29.33	125	T	T	19 12 29.9	
	baz=318,slow=76,SNR=56						
H11S2	WAKE ISLAND Hy	29.35	125	T	T	19 12 31.2	
	baz=318,slow=76,SNR=48						
ZALV	Zalesovo Beam	41.28	311	P	P	18 43 01.6	-1.3
	1.1nm,0.4s,baz=87,slow=7.4,SNR=8.0						
ZALV				pP	pP	18 43 16.1	-1.0
	0.6nm,0.5s,baz=76,slow=6.3,SNR=2.9						
MKAR	Makanchi Array	43.70	301	P	P	18 43 21.3	-1.4
	0.9nm,0.6s,baz=83,slow=9.6,SNR=10						
MKAR				pP	pP	18 43 37.2	+0.3
	0.5nm,0.7s,baz=84,slow=11,SNR=3.8						
ILAR	Eielson Array	48.28	33	P	P	18 43 58.8	+0.3
	0.3nm,0.7s,baz=251,slow=5.6,SNR=3.4						
WRA	Warramunga Arr	58.35	188	P	P	18 45 11.7	-1.1
	1.9nm,0.7s,baz=6.0,slow=7.3,SNR=13						
WRA				pP	pP	18 45 28.2	+0.7
	1.2nm,0.7s,baz=4.4,slow=7.3,SNR=5.1						
ASAR	Alice Springs	62.07	188	P	P	18 45 38.0	-0.2
	0.9nm,0.8s,baz=11,slow=8.0,SNR=8.4						
YKA	Yellowknife Ar	62.58	31	P	P	18 45 41.3	+0.2
	0.1nm,0.5s,baz=304,slow=7.0,SNR=6.0						
FINES	FINESS Array B	67.83	332	pP	pP	18 46 29.4	-0.8
	3.4nm,0.9s,baz=20,slow=6.1,SNR=2.7						
AKASG	Malin Array Be	73.47	322	pP	pP	18 47 04.0	-1.0
	0.8nm,0.5s,baz=44,slow=5.8,SNR=3.9						
PDAR	Pinedale Array	76.58	46	P	P	18 47 08.6	+0.5
	0.5nm,0.5s,baz=284,slow=0.6,SNR=5.0						
TXAR	Lajitas Array	89.13	53	P	P	18 48 13.2	+0.2
	0.4nm,0.6s,baz=307,slow=3.5,SNR=5.6						

BKK 07 18:35:40.2±1.0**, 21°N**±5°×**10°1E**±°**, h17**km±7km**, M3.8**/7**, MLv3.8**/7**, Laos**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
CRAI	Chiangrai	0.87	217	P	Pb	18 35 55.6	-1.3
CRAI				S	Sg	18 36 08.6	-0.1
CMAI	Chiengmai2	2.03	241	P	Pn	18 36 13.0	-0.8
CMAI				S	Sn	18 36 39.4	+0.6
LAMP	Lampang	2.69	207	P	Pn	18 36 23.7	+1.0
LAMP				S	Sn	18 36 56.4	+1.5
CMMT	Chiang Mai	2.81	222	P	Pn	18 36 24.7	+0.2
CMMT				S	Sn	18 36 59.2	+1.2
CHTO	Chiang Mai	2.81	222	S	Sn	18 36 59.3	+1.2
UTTA	Uttaradit	3.19	186	P	Pn	18 36 30.2	+0.6
UTTA				S	Sn	18 37 08.9	+1.7
PHIT	Phitsanulok	3.75	188	P	Pn	18 36 36.0	-1.4
PHIT				S	Sn	18 37 19.6	-1.6
PBKT	Sadao Pong	4.34	179	P	Pn	18 36 45.6	+0.2
PBKT				S	Sn	18 37 37.4	+1.8

IDC ***07*** *18:45:55.4±2.0, 30°.66S×177°.00W, h0km, mb4.0/3, mb1 4.3/4, mb1mx3.9/34, mbtmp4.1/4, ML4.4/1, Error ellipse: s-maj=63.8km s-min=36.3km az=141.0*
NEIC ***07*** *18:46:00.4±1.4, 30°.81S×177°.01W, h35km, mb4.2/1, Error ellipse: s-maj=36.1km s-min=20.7km az=116.0*

ISC 07 18:45:57.2±2.5**, 30°.4S**±0°.2×**177°.1W**±0°.4**, h10**km**, n8,** σ**0s.71**/8**, mb4.1**/4**, Kermadec Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
URZ	Urewera	9.21	210	Sn	Sn	18 49 53.7	-0.2
	0.9nm,0.3s,baz=249,slow=3.3,SNR=4.2						
STKA	Stephens Creek	35.25	257	P	P	18 52 52.0	0.0
	2.3nm,0.8s,baz=80,slow=11,SNR=5.0						
ASAR	Alice Springs	43.90	266	P	P	18 54 04.5	+0.3
	0.5nm,0.5s,baz=104,slow=7.5,SNR=21						
WRAB	Tennant Creek	44.88	272	eP	P	18 54 11.7	-0.4
	2.3nm,0.7s						
WRA	Warramunga Arr	44.89	272	P	P	18 54 12.3	+0.1
	1.7nm,0.4s,baz=110,slow=8.0,SNR=33						
FINES	FINESS Array B	145.38	341	PKPbc	PKPab	19 05 34.1	-0.6
	2.0nm,0.5s,baz=46,slow=4.4,SNR=15						
MMAI	Mount Meron Ar	152.29	284	PKPbc	PKPbc	19 05 54.9	+1.3
	2.9nm,0.7s,baz=91,slow=5.8,SNR=8.6						
BRTR	Keskin Array B	153.28	299	PKPbc	PKPbc	19 05 55.2	-0.4
	0.6nm,0.8s,baz=347,slow=3.3,SNR=3.7						

WEL 07 18:47:54.2±0.9**, 37°.80S**×**177°.23E, h61**km±6km**, ML2.5**/3**, 1D, Error ellipse: s-maj=6.7km s-min=5.4km az=90.0, Off east coast of North Island**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
HAZ	Te Kaha	0.44	85	P*	Pn	18 48 05.6	0.0
HAZ				S*	Sn	18 48 14.2	+0.2
URZ	Urewera	0.47	192	⇓P*	Pn	18 48 05.9	-0.2
URZ				S*	Sn	18 48 14.7	+0.1
URZ	Urewera	0.47	192	Pn	Pn	18 48 05.8	-0.3
	3.8nm,0.3s,baz=276,slow=4.6,SNR=46						
MWZ	Matawai	0.59	157	P*	Pn	18 48 07.0	-0.3
RAGZ	Rawiri	0.71	168	P*	Pn	18 48 09.6	+0.8
PUZ	Puketiti	0.85	109	PN	Pn	18 48 10.2	-0.3

ISCJB ***07*** *18:52:03.5±1.4, 36°.09N±0°.05×141°.2E±0°.1, h34km±12km, mb3.7/5, Error ellipse: s-maj=16.5km s-min=7.5km az=169.6*
JMA ***07*** *18:52:03.5±0.1, 36°.07N×141°.13E, h40km±1km, M3.6*
JMA Felt I J1.
IDC ***07*** *18:52:09.1±3.6, 35°.68N×140°.46E, h40km±31km, mb3.2/4, mb1 3.5/5, mb1mx3.1/59, mbtmp3.5/5, ML2.9/1, Error ellipse: s-maj=37.8km s-min=18.8km az=72.0*

ISC 07 18:52:03.8±1.6**, 36°.14N**±0°.05×**141°.10E**±0°.09**, h20**km±11km**, n13,** σ**0s.57**/17**, mb3.5**/5**, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
CHOJ	Chosi	0.48	204	P	Pb	18 52 13.3	-0.2
CHOJ				S	Sb	18 52 20.4	+0.4
JHO	Hitachi	0.64	318	P	Pn	18 52 17.2	-0.5
JHO				S	Sn	18 52 27.1	-0.2
JYT	Yasato	0.74	277	P	Pb	18 52 17.8	-0.1
JYT				S	Sn	18 52 29.3	-0.4
ONAJ	Iwakimizuishiy	0.99	346	P	Pb	18 52 22.3	0.0
JAG	Ashikaga	1.36	283	P	Pn	18 52 27.2	-0.4
JAG				eS	Sn	18 52 44.5	-0.6
MJAR	Matsushiro Arr	2.37	281	Pn	Pn	18 52 41.9	+0.4
	5.5nm,0.3s,baz=107,slow=7.6,SNR=25						
MAT	Matsushiro	2.37	281	P	Pn	18 52 42.5	+1.0
MAT				eS	Sb	18 53 14.5	-0.1
JHJ	Hachijo jima 2	3.20	200	Pn	Pn	18 52 46.5	-6.4
	5.9nm,0.3s,baz=48,slow=16,SNR=3.3						
JHJ				Sn	Sn	18 53 30.3	-0.2
	8.2nm,0.3s,baz=221,slow=20,SNR=4.5						
SONM	Songino Array	28.09	305	P	P	18 57 54.4	+0.3
	0.2nm,0.5s,baz=101,slow=7.5,SNR=2.6						
MKAR	Makanchi Array	44.39	303	P	P	19 00 13.7	+0.9
	7.5nm,0.3s,baz=81,slow=9.5,SNR=74						
ILAR	Eielson Array	50.38	32	P	P	19 01 06.8	+7.7
	0.5nm,0.7s,baz=271,slow=6.7,SNR=4.8						
WRA	Warramunga Arr	56.14	188	P	P	19 01 41.0	-0.9
	0.2nm,0.4s,baz=23,slow=7.3,SNR=7.2						
ASAR	Alice Springs	59.87	188	P	P	19 02 07.7	-0.3
	0.2nm,0.6s,baz=7.8,slow=7.5,SNR=2.9						

DDA ***07*** *18:58:12.7, 38°.12N×30°.74E, h5km, Md2.6*
ISK ***07*** *18:58:12.6, 38°.12N×30°.75E, h8km, MD2.8*
CSEM ***07*** *18:58:13.2±0.2, 38°.12N×30°.74E, h8km, MD2.8, Error ellipse: s-maj=3.8km s-min=3.5km az=111.0*

ISC 07 18:58:13.2±1.1**, 38°.13N**±0°.02×**30°.72E**±0°.02**, h8**km±9km**, n41,** σ**1s.11**/60**, Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
BAGO	Egridir - ISPA	0.15	158	i P	Pg	18 58 15.5	-0.9
ISP	Isparta	0.34	207	ePG	Pg	18 58 19.8	-0.2
ISP				eSG	Sb	18 58 25.6	-1.6
ISP	Isparta	0.34	207	ePg	Pg	18 58 19.8	-0.2
ISP				eSg	Sb	18 58 25.6	-1.6
SHUT	Suhut-Afyon	0.44	343	ePG	Pg	18 58 21.2	-0.6
SHUT				eSG	Sb	18 58 29.3	-0.8
SHUT	Suhut-Afyon	0.44	343	ePg	Pg	18 58 21.2	-0.6
SHUT				eSg	Sb	18 58 29.3	-0.8
BOLV	Bolvadin	0.61	17	i P	Pg	18 58 24.4	-0.7
BOLV				i S	Sb	18 58 33.8	-1.3
BOLV	Bolvadin	0.61	17	P	Pg	18 58 24.4	-0.7
BOLV				S	Sb	18 58 33.8	-1.3
BCK	Bucak	0.68	189	ePG	Pb	18 58 26.5	-0.8
BCK	Bucak	0.68	189	ePg	Pb	18 58 26.5	-0.8
KHL	Karahalli	0.96	282	ePG	Pg	18 58 31.7	+0.1
KHL	Karahalli	0.96	282	ePg	Pg	18 58 31.7	+0.1
KHAL	Karahalli	0.99	284	i P	Pg	18 58 32.2	-0.1
KHAL				i S	Sn	18 58 47.8	0.0
KHAL	Karahalli	0.99	284	P	Pg	18 58 32.2	-0.1
KHAL				S	Sn	18 58 47.8	0.0
AUKIR	K˜–rka- Seyitg	1.15	353	i P	Pn	18 58 35.9	+0.2
AUKIR				i S	Sn	18 58 51.7	-0.1
AUKIR	K˜–rka- Seyitg	1.15	353	P	Pn	18 58 35.9	+0.2
AUKIR				S	Sn	18 58 51.7	-0.1
KDHN	Kadinhani	1.17	70	i P	Pg	18 58 34.6	-1.0
KDHN				i S	Sn	18 58 52.1	0.0
KDHN	Kadinhani	1.17	70	P	Pg	18 58 34.6	-1.0
KDHN				S	Sn	18 58 52.1	0.0
KIZT	Kizilcal	1.18	50	ePN	Pn	18 58 35.3	-0.8
KIZT	Kizilcal	1.18	50	ePn	Pn	18 58 35.3	-0.8
LADK	Ladik-KONYA	1.30	86	ePN	Pg	18 58 37.3	-0.8
LADK	Ladik-KONYA	1.30	86	ePn	Pg	18 58 37.3	-0.8
KONT	Konya--Tatoy	1.31	98	ePN	Pg	18 58 37.3	-1.0
KONT	Konya--Tatoy	1.31	98	ePn	Pg	18 58 37.3	-1.0
KMER	Konya-Meram	1.35	105	i P	Pg	18 58 39.9	+0.8
KMER				i S	Sn	18 59 00.2	+3.5
KMER	Konya-Meram	1.35	105	P	Pg	18 58 39.9	+0.8
KMER				S	Sn	18 59 00.2	+3.5
GDZ	Gediz	1.36	315	i P	Pn	18 58 38.4	-0.2
GDZ				i S	Sg	18 58 59.1	+2.1
GDZ	Gediz	1.36	315	P	Pn	18 58 38.4	-0.2
GDZ				S	Sg	18 58 59.1	+2.1
ESKT	Eskisehir	1.39	4	i P	Pb	18 58 39.2	-0.3
ESKT				i S	Sg	18 58 58.9	+1.0
SEYT	Eskypehyr	1.39	4	P	Pb	18 58 39.2	-0.3
SEYT				S	Sg	18 58 58.9	+1.0
SVRH	Sivrihisar-ESK	1.46	25	ePN	Pg	18 58 40.3	-0.8
SVRH	Sivrihisar-ESK	1.46	25	ePn	Pg	18 58 40.3	-0.8
ELL	Elmali	1.52	205	ePN	Pb	18 58 40.9	-0.8
ELL	Elmali	1.52	205	ePn	Pb	18 58 40.9	-0.8
TVSB	Tavsanli	1.64	324	ePN	Pb	18 58 42.9	-0.9
TVSB	Tavsanli	1.64	324	ePn	Pb	18 58 42.9	-0.9
KULA	Kula-Manisa	1.66	284	ePN	Pn	18 58 42.9	+0.2
KULA	Kula-Manisa	1.66	284	ePn	Pn	18 58 42.9	+0.2
AUMIH	MIHALICIK	1.83	19	i P	Pg	18 58 48.4	+0.1
AUMIH				i S	Sg	18 59 14.8	+2.7
AUMIH	MIHALICIK	1.83	19	P	Pg	18 58 48.4	+0.1
GULT	Gulveren	2.30	356	ePN	Pn	18 58 52.2	+0.7
GULT	Gulveren	2.30	356	ePn	Pn	18 58 52.2	+0.7

JMA ***07*** *19:01:01.7±0.3, 38°.50N×142°.09E, h36km, M4.0*
JMA Felt I J1.
ISCJB ***07*** *19:01:02.2±1.2, 38°.50N±0°.06×142°.1E±0°.1, h41km, mb3.9/3, Error ellipse: s-maj=12.2km s-min=8.2km az=2.0*
IDC ***07*** *19:01:09.1±2.4, 37°.11N×140°.42E, h0km, mb3.8/3, mb1 4.1/3, mb1mx3.4/54, mbtmp3.8/3, Error ellipse: s-maj=57.5km s-min=30.0km az=50.0*

ISC 07 19:01:03.6±1.6**, 38°.52N**±0°.06×**142°.0E**±0°.1**, h41**km**, n11,** σ**0s.83**/10**, mb4.0**/3**, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
JMK	Ichinoseki	0.74	306	P	Pn	19 01 16.8	-0.8
JOU	Okura	1.05	262	P	Pn	19 01 22.2	+0.4
JOU				S	Sn	19 01 35.8	+0.5
JOM	Ohasama	1.10	331	P	Pn	19 01 21.9	-0.6
JOM				S	Sn	19 01 36.2	-0.2
JMM	Marumori	1.14	236	P	Pn	19 01 22.6	-0.5
JMM				S	Sn	19 01 36.6	-0.9
JYK	Kaneyama	1.33	288	P	Pn	19 01 26.5	+0.8
JFK	Kawauchi	1.45	218	P	Pn	19 01 26.3	-1.0
MAT	Matsushiro	3.59	238	P	Pn	19 01 58.4	+1.6
MAT				eS	Sn	19 02 43.7	+5.7
MJAR	Matsushiro Arr	3.59	238	Pn	Pn	19 01 41.7	-15
	1.1nm,0.3s,baz=90,slow=16,SNR=8.7						
MKAR	Makanchi Array	43.73	301	P	P	19 09 13.3	+8.6
	0.4nm,0.4s,baz=86,slow=11,SNR=1.2						
WRA	Warramunga Arr	58.59	188	P	P	19 10 56.7	+0.4
	1.7nm,0.5s,baz=6.7,slow=7.3,SNR=8.7						
ASAR	Alice Springs	62.32	188	P	P	19 11 22.8	+1.1
	0.9nm,0.8s,baz=10,slow=5.7,SNR=5.5						

IDC 07 19:01:08.3±1.3**, 26°.56N**×**141°.70E, h0**km**, mb3.9**/5**, mb1 4.0**/5**, mb1mx3.5**/53**, mbtmp3.9**/5**, MS3.9**/1**, Ms1 3.9**/1**, ms1mx3.1**/45**, Error ellipse: s-maj=31.8km s-min=16.1km az=138.0, Bonin Islands region**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
JCJ	Chichijima	0.68	39	Pn	Pn	19 01 25.3	0.0
	132nm,0.3s,baz=286,slow=23,SNR=59						
JCJ				Sn	Sn	19 01 38.0	+1.3
	104nm,0.3s,baz=97,slow=24,SNR=16						
JHJ	Hachijo jima 2	6.74	346	LR	LR	19 05 24.9	
	comp=Z,1μm,21.4s,baz=144,slow=38						
WRA	Warramunga Arr	46.78	190	P	P	19 09 39.9	+0.1
	1.3nm,0.5s,baz=16,slow=8.7,SNR=5.5						

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
MKAR	Makanchi Array	50.48	310	P	P	19 10 08.3	+0.2
	0.1nm,0.4s,baz=86,slow=9.0,SNR=2.7						
KURBB	Kurchatov Arra	53.10	315	P	P	19 10 26.7	-0.9
	2.4nm,0.4s,baz=90,slow=7.9,SNR=15						
BVAR	Borovoye Array	58.14	318	P	P	19 11 03.2	-0.5
	0.9nm,0.5s,baz=96,slow=7.4,SNR=6.5						
FINES	FINESS Array B	78.23	334	P	P	19 13 10.2	+0.6
	2.2nm,1.0s,baz=69,slow=4.1,SNR=5.6						

IDC 07 19:01:14.8±49.0**, 16°.32S×175°.87W, h0km, mb4.0**/3**, mb1 4.2**/3**, mb1mx3.6**/46**, mbtmp4.0**/3**, MS4.1**/1**, Ms1 4.1**/1**, ms1mx3.3**/39**, Error ellipse: s-maj=914.9km s-min=165.1km az=78.0, Tonga Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
STKA	Stephens Creek	41.52	240	P	P	19 09 04.9	+0.9
	0.9nm,0.3s,baz=83,slow=9.5,SNR=7.1						
WRA	Warramunga Arr	47.32	258	P	P	19 09 49.8	-0.9
	0.5nm,0.7s,baz=96,slow=8.2,SNR=3.8						
ASAR	Alice Springs	47.56	253	P	P	19 09 52.3	-0.3
	3.8nm,0.6s,baz=88,slow=8.2,SNR=40						
JCJ	Chichijima	59.33	316	LR	LR	19 32 08.7	
	comp=Z,160nm,19.5s,baz=265,slow=31						

IDC 07 19:03:57.8±1.1**, 2°.33S×139°.93E, h0km, mb3.6**/3**, mb1 4.0**/4**, mb1mx3.4**/52**, mbtmp3.8**/4**, ML4.0**/1**, Error ellipse: s-maj=26.5km s-min=10.2km az=15.0, Near north coast of Irian Jaya**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
JAY	Jayapura	0.79	104	Pg	Pg	19 04 13.3	+0.3
	16nm,0.3s,baz=226,slow=22,SNR=376						
JAY				Lg	Lg	19 04 23.9	
	24nm,0.3s,baz=107,slow=19,SNR=21						
WRA	Warramunga Arr	18.34	197	P	Pn	19 08 12.5	-1.4
	0.5nm,0.3s,baz=18,slow=12,SNR=22						
ASAR	Alice Springs	22.00	195	P	P	19 08 53.9	0.0
	2.0nm,0.7s,baz=28,slow=11,SNR=30						
MKAR	Makanchi Array	70.24	322	P	P	19 15 13.1	+0.1
	0.6nm,0.8s,baz=106,slow=9.0,SNR=6.5						
KURBB	Kurchatov Arra	74.13	324	P	P	19 15 36.1	0.0
	0.4nm,0.8s,baz=108,slow=5.1,SNR=3.6						

*NIED **07** 19:11:00, 36°.70N×142°.20E, h14km, Mw4.8 Best double couple: M₀1.65000×10^16 NP1:φs227.00000°, δ17.00000°, λ115.00000°. NP2:φs21.00000°, δ75.00000°, λ83.00000°.*
*ISCJB **07** 19:11:08.9±0.9, 36°.70N±0°.03×142°.21E±0°.04, h15km±6km, mb4.6/107, MS4.4/19, Error ellipse: s-maj=6.1km s-min=4.5km az=33.1*
*JMA **07** 19:11:10.3±0.3, 36°.72N×142°.18E, h29km, M4.5*
*BJI **07** 19:11:12.8, 36°.85N×141°.68E, h25km, mb4.9/48, mB5.1/31, Ms4.6/35, Ms7 4.5/33*
*NEIC **07** 19:11:14.6±0.9, 36°.70N×142°.04E, h42km±8km, mb4.7/31, Error ellipse: s-maj=8.1km s-min=6.1km az=117.0*
*MOS **07** 19:11:14.2±1.0, 37°.07N×141°.96E, h36km, mb4.9/57, MS4.2/12, Error ellipse: s-maj=7.9km s-min=4.8km az=111.6*
*IDC **07** 19:11:14.6±2.0, 36°.67N×142°.06E, h42km±17km, mb4.3/43, mb1 4.3/49, mb1mx4.2/81, mbtmp4.5/49, ML3.7/5, MS4.2/13, Ms1 4.2/13, ms1mx3.8/55, Error ellipse: s-maj=12.9km s-min=10.2km az=119.0*
ISC 07 19:11:12.3±0.7**, 36°.77N**±0°.05×**141°.99E**±0°.05**, h23**km±3km**, h22km:pP-P, n271, σ1.46**/269**, mb4.7**/107**, MS4.3**/18**, 16C-16D, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
ONAJ	Iwakimizuishiy	1.01	290	P	Pb	19 11 30.9	-0.3
JFK	Kawauchi	1.07	304	P	Pn	19 11 31.5	-0.5
JHO	Hitachi	1.15	263	P	Pn	19 11 33.0	0.0
JHO				eS	Sn	19 11 49.5	+1.4
JMM	Marumori	1.46	319	P	Pn	19 11 37.2	0.0
JMM				S	Sb	19 11 57.6	+0.8
JFT	Otama	1.52	300	P	Pb	19 11 39.2	-0.6
JFT				eS	Sb	19 12 00.3	+1.6
JOU	Okura	1.91	327	P	Pn	19 11 44.9	+1.4
JOU				eS	Sb	19 12 10.5	+0.5
JFY	Yanaizu	1.94	290	P	Pb	19 11 45.4	-1.5
JAG	Ashikaga	2.07	261	P	Pn	19 11 46.4	+0.8
JYS	Shirataka	2.11	314	P	Pn	19 11 47.8	+1.6
JKT	Katashina	2.20	271	P	Pn	19 11 49.3	+1.8
MJAR	Matsushiro Arr	3.05	267	P	Pn	19 12 01.0	+1.9
	36nm,0.3s,baz=90,slow=9.6,SNR=358						
MJAR				LR	LR	19 13 29.8	
	comp=Z,4μm,18.5s,baz=120,slow=44						
MJAR	Matsushiro Arr	3.05	267	P	Pn	19 12 01.0	+1.9
MJAR				pmax	pmax		
	comp=Z,36nm,0.3s						
MJAR				MLR	MLR		
	comp=Z,4μm,18.5s						
MAJO	Matsushiro	3.05	267c	iP	Pn	19 12 01.4	+2.2
MAJO	Matsushiro	3.05	267	ePn	Pn	19 12 01.3	+2.2
MAT	Matsushiro	3.05	267	P	Pn	19 12 01.5	+2.4
MAT				eS	Sb	19 12 41.4	-1.3
JHJ2	Mitsune	4.06	207	ePn	Pn	19 12 11.2	-1.7
JHJ	Hachijo jima 2	4.06	207	P	Pn	19 12 11.5	-1.5
	comp=Z,41nm,0.3s,baz=324,slow=22,SNR=17						
JHJ				S	Sn	19 12 55.9	-4.0
	comp=Z,190nm,0.3s,baz=251,slow=20,SNR=8.9						
ERM	Erimo	5.32	9	eP	Pn	19 12 29.1	-1.2
ERM	Erimo	5.32	9	eP	Pn	19 12 28.5	-1.8
	comp=Z,75nm,0.6s						
YUK	Yuzh-Kuril'sk	7.84	21	eP	Pn	19 13 03.8	-1.0
YUK				eS	Sn	19 14 23.7	-9.1
YUK				pmax	pmax		
	comp=Z,111nm,0.5s						
YUK				pmax	pmax		
	comp=E,38nm,0.6s						
YUK				pmax	pmax		
	comp=N,28nm,0.3s						
YUK				MLR	MLR		
	comp=N,1μm,16.0s						
YUK				MLR	MLR		
	comp=Z,1μm,16.0s						
SHO	Shikotan	8.00	26	eP	Pn	19 13 04.9	-2.2
SHO				eS	Sn	19 14 25.9	-11
SHO				pmax	pmax		
	comp=Z,58nm,0.5s						
KUR	Kuril'sk	9.55	26	P	Pn	19 13 27.5	-0.8
KUR				eS	Sn	19 15 05.8	-9.1
KUR				smax	smax		
	comp=E,49nm,0.8s						
KUR				smax	smax		
	comp=N,43nm,0.7s						
JCJ	Chichijima	9.64	179	S	Sn	19 15 06.0	-11
	comp=N,15nm,0.3s,baz=287,slow=19,SNR=4.0						
JNU	Nakatsue	9.82	252	P	Pn	19 13 35.2	+3.1
	comp=N,0.5nm,0.3s,baz=247,slow=4.2,SNR=7.2						
JNU	Nakatsue	9.82	252	eP	Pn	19 13 34.6	+2.5
	comp=N,44nm,1.1s						
YSS	Yuzh-Sakhalins	10.20	3	eP	Pn	19 13 37.6	+0.4
YSS				pmax	pmax		
	comp=Z,14nm,0.9s						
USRK	Ussuriysk Ar.	10.63	317	P	Pn	19 13 47.1	+3.9
	comp=Z,0.9nm,0.3s,baz=124,slow=12,SNR=28						
USRK				LR	LR	19 17 46.2	
	comp=Z,2μm,18.8s,baz=135,slow=36						
KSRS	Korea Array	11.26	278	P	Pn	19 13 56.0	+4.3
	comp=Z,0.4nm,0.3s,baz=90,slow=14,SNR=24						
KSRS				LR	LR	19 18 09.8	
	comp=Z,2μm,18.4s,baz=114,slow=37						
KSAR	Wonju Array Be	11.29	278	P	Pn	19 13 56.0	+3.9
KSAR	Wonju Array Be	11.29	278	P	Pn	19 13 56.0	+3.9
MDJ	Mudanjiang	12.24	314	eP	Pn	19 14 09.7	+4.6
	comp=Z,35nm,1.0s						
HABR	Khabarovsk	12.76	339	eP	Pn	19 14 07.1	-5.1
HABR				eS	Sn	19 16 22.6	-11
HABR				pmax	pmax		
	comp=Z,40nm,2.2s						
HABR				MLR	MLR		
	comp=Z,980nm,13.0s						
TYV	Tymovskoe	14.10	2	eP	Pn	19 14 33.2	+2.7
TYV				pmax	pmax		
	comp=Z,11nm,0.8s						
KLR	Kul'dur	14.52	332	P	Pn	19 14 35.7	-0.6
	comp=Z,0.2nm,0.3s,baz=130,slow=9.9,SNR=4.5						
JOW	Kunigami	15.28	233	LR	LR	19 20 40.6	
	comp=Z,687nm,21.7s,slow=37						
NKL	Nikolayevsk	16.41	357	eP	Pn	19 14 53.3	-7.6
NKL				pmax	pmax		
	comp=N,10.0nm,1.0s						
NKL				pmax	pmax		
	comp=Z,10.0nm,1.0s						
NKL				MLR	MLR		
	comp=E,1μm,22.0s						
NKL				MLR	MLR		
	comp=Z,900nm,14.0s						
NJ2	Nanjing	19.64	263	eP	P	19 15 39.6	+0.2
NJ2				S	S	19 19 05.0	-15
NJ2				pmax	pmax		
	comp=Z,20nm,0.7s						
NJ2				LR	LR		
	comp=Z,500nm,11.9s						
NJ2				LR	LR		
	comp=Z,1μm,13.6s						
NJ2				LR	LR		
	comp=Z,1μm,7.6s						
PETK	Petropavlovsk-	19.69	29	P	P	19 15 40.0	+0.3
	comp=Z,0.1nm,0.3s,baz=165,slow=6.0,SNR=4.7						
PETK				LR	LR	19 23 53.1	
	comp=Z,197nm,20.1s,baz=204,slow=38						
TIA	Tai'an	19.99	276	eP	P	19 15 42.2	-0.9
TIA				pmax	pmax		
	comp=Z,20nm,1.0s						
TIA				LR	LR		
	comp=Z,600nm,16.0s						
TIA				LR	LR		
	comp=Z,830nm,16.1s						
TIA				LR	LR		
	comp=Z,1μm,18.0s						
HIA	Hailar	20.42	315	eP	P	19 15 46.6	-1.1
HIA				pmax	pmax		
	comp=Z,32nm,1.2s						
HIA	Hailar	20.42	315	eP	P	19 15 46.6	-1.1
	comp=Z,32nm,1.2s						
BJT	Baijiatuau	20.48	287	eP	Pn	19 15 53.2	+2.6
BJT				pmax	pmax		
	comp=Z,16nm,0.6s						
BJT	Baijiatuau	20.48	287	eP	Pn	19 15 53.2	+2.6
	comp=Z,16nm,0.6s						
SSLB	Suanglung	22.24	240	eP	P	19 16 04.7	-2.8
	comp=Z,27nm,1.3s						
TPUB	Ta-pu	22.78	240	eP	P	19 16 10.1	-3.2
	comp=Z,24nm,0.9s						
MA2	Magadan	23.52	11	P	P	19 16 19.6	-0.8
	comp=Z,13nm,0.8s,baz=215,slow=8.3,SNR=25						
CIT	Chita	25.19	316	eP	P	19 16 37.1	+1.1
CIT				e		19 16 53.7	
CIT				e		19 17 08.8	
CIT				pmax	pmax		
	comp=Z,187nm,1.3s						
YAK	Yakutsk	26.43	347	P	P	19 16 47.1	0.0
	comp=Z,5.6nm,0.8s,baz=335,slow=21,SNR=24						
YAK	Yakutsk	26.43	347	eP	P	19 16 46.4	-0.6
YAK				e*PP	sP	19 16 56.6	-0.2
YAK				eS	S	19 21 18.3	-0.8
YAK				e*SS	sS	19 21 31.3	+0.8
YAK				eSS	SnSn	19 22 16.4	-4.3
YAK				e		19 27 31.3	
YAK				pmax	pmax		
	comp=E,14nm,1.4s						
YAK				pmax	pmax		
	comp=Z,102nm,1.0s						
YAK				pmax	pmax		
	comp=N,45nm,1.4s						
YAK				pmax	pmax		
	comp=Z,15nm,1.4s						
YAK				pmax	pmax		
	comp=N,38nm,1.4s						
YAK				pmax	pmax		
	comp=E,56nm,1.8s						
YAK				smax	smax		
	comp=N,22nm,1.6s						
YAK				smax	smax		
	comp=E,88nm,3.0s						
YAK				MLR	MLR		
	comp=Z,960nm,16.0s						
YAK				MLR	MLR		
	comp=N,701nm,15.0s						
YAK				MLR	MLR		
	comp=E,290nm,10.0s						
SEY	Seymchan	26.97	10	P	P	19 16 53.5	+1.7
	comp=E,9.1nm,0.8s,baz=197,slow=6.5,SNR=22						
XAN	Xi'an	27.02	274	P	P	19 16 52.8	+0.1
XAN				pmax	pmax		
	comp=E,28nm,1.1s						
XAN				pmax	pmax		
	comp=E,89nm,4.8s						
H11N2	WAKE ISLAND Hy	27.61	121	T	T	19 46 29.7	
	baz=313,slow=75,SNR=30						
H11N1	WAKE ISLAND Hy	27.62	121	T	T	19 46 33.4	
	baz=313,slow=75,SNR=31						
H11N3	WAKE ISLAND Hy	27.63	121	T	T	19 46 32.4	
	baz=313,slow=75,SNR=35						
ENH	Enshi	27.77	266	eP	P	19 16 58.9	-0.6
	comp=E,58nm,0.7s						
ULN	Ulaanbaatar	27.89	304c	eP	P	19 17 01.0	+0.5
ULN				pmax	pmax		
	comp=Z,36nm,1.2s						
ULN	Ulaanbaatar	27.89	304	eP	P	19 17 00.4	-0.1
	comp=Z,22nm,0.9s						
BOD	Bodaibo	28.00	328	⇓iP	P	19 17 01.1	-0.1
BOD				pmax	pmax		
	comp=Z,23nm,1.1s						
SONM	Songino Array	28.32	304	P	P	19 17 05.2	+0.9
	comp=Z,34nm,0.9s,baz=103,slow=8.9,SNR=130						
SONM				LR	LR	19 28 55.9	
	comp=Z,743nm,19.4s,baz=160,slow=37						
H11S1	WAKE ISLAND Hy	28.33	123	T	T	19 47 29.1	
	baz=316,slow=75,SNR=25						
H11S3	WAKE ISLAND Hy	28.33	123	T	T	19 47 24.7	
	baz=316,slow=75,SNR=14						
H11S2	WAKE ISLAND Hy	28.34	123	T	T	19 47 30.6	
	baz=316,slow=75,SNR=14						
LZH	Lanzhou	30.57	280	eP	P	19 17 25.1	+0.7
LZH				pP	sP	19 17 37.9	+3.7
LZH				pmax	pmax		
	comp=Z,37nm,1.0s						
LZH				pmax	pmax		
	comp=Z,260nm,5.2s						
LZH				LR	LR		
	comp=Z,760nm,16.0s						
LZH				LR	LR		
	comp=Z,1μm,15.1s						
LZH				LR	LR		
	comp=Z,2μm,16.7s						
ZAK	Zakamensk	30.80	309	eP	P	19 17 26.6	+0.4
ZAK				pmax	pmax		
	comp=Z,17nm,1.2s						
TLY	Talaya	30.86	311	P	P	19 17 27.7	+1.1
	comp=Z,4.4nm,0.6s,baz=121,slow=11,SNR=10						
TLY				LR	LR	19 30 29.4	
	comp=Z,614nm,18.9s,baz=93,slow=37						
TLY	Talaya	30.86	311	eP	P	19 17 27.1	+0.5
TLY				pmax	pmax		
	comp=Z,17nm,1.0s						
TLY				MLR	MLR		
	comp=Z,304nm,11.0s						
MOY	Mondy	32.46	310	eP	P	19 17 41.5	+0.6
MOY				pmax	pmax		
	comp=Z,25nm,2.3s						
GTA	Gaotai	33.08	288	⇓P	P	19 17 46.8	+0.4
GTA				pP	sP	19 17 56.1	-0.1
GTA				sP	pP	19 18 00.0	+6.6
GTA				S	S	19 22 55.4	-8.8
GTA				pmax	pmax		
	comp=Z,11nm,1.1s						
GTA				pmax	pmax		
	comp=Z,310nm,6.2s						
GTA				LR	LR		
	comp=Z,490nm,15.7s						
GTA				LR	LR		
	comp=Z,340nm,16.2s						
GTA				LR	LR		
	comp=Z,420nm,16.6s						
BILL	Bilibino	34.16	16	eP	P	19 17 55.4	+0.2
BILL				e		19 18 11.2	
BILL				e		19 19 05.2	
BILL				ePPP	PPP	19 19 23.9	
BILL				pmax	pmax		
	comp=Z,8.0nm,1.0s						
BILL				MLR	MLR		
	comp=Z,301nm,21.0s						
KMI	Kunming	35.38	262	P	P	19 18 06.5	-0.1
KMI				pP	sP	19 18 15.6	-0.8
KMI				sP	pP	19 18 22.0	+8.4
KMI				pmax	pmax		
	comp=Z,22nm,1.1s						
KMI				pmax	pmax		
	comp=Z,98nm,4.5s						
KMI				LR	LR		
	comp=Z,390nm,18.2s						
KMI				LR	LR		
	comp=Z,280nm,16.8s						
KMI				LR	LR		
	comp=Z,560nm,18.5s						
TIXI	Tiksi	35.61	353	P	P	19 18 07.4	-0.4
	comp=Z,2.7nm,0.7s,baz=140,slow=6.8,SNR=15						
TIXI	Tiksi	35.61	353	eP	P	19 18 07.6	-0.1
TIXI				pmax	pmax		
	comp=Z,7.0nm,1.2s						
KRAR	Krasnoyarsk	37.98	316	eP	P	19 18 25.8	-2.2
KRAR				pmax	pmax		
	comp=Z,10.0nm,0.9s						
SKNT	Sakolnakorn	38.88	250	P	P	19 18 37.2	+1.1
	comp=Z,35nm,1.4s						
CRAI	Chiangrai	39.77	257	P	P	19 18 43.3	-0.2
	comp=Z,50nm,0.7s,comp=Z,9μm						
KHON	Khomkaen	40.15	250	P	P	19 18 48.6	+1.9
	comp=Z,12nm,0.4s,comp=Z,823nm						
MRSI	Marisa	40.60	212	P	P	19 18 50.9	+0.5
	comp=Z,28nm,1.4s						
CMAI	Chiengmai2	40.97	258	P	P	19 18 54.9	+1.2
	comp=Z,29nm,1.1s						
UTTA	Uttaradit	41.04	254	P	P	19 18 56.0	+2.0
	comp=Z,3.4nm,0.9s,comp=Z,41nm						
LAMP	Lampang	41.30	256	P	P	19 18 58.3	+2.1
	comp=Z,6.1nm,0.9s						
SANI	Sanana	41.39	205	P	P	19 18 57.4	+0.6
	comp=Z,29nm,0.9s,comp=Z,620nm						
PBKT	Sadao Pong	41.41	252	P	P	19 18 58.4	+1.3
	comp=Z,24nm,1.6s						
CMMT	Chiang Mai	41.67	257	P	P	19 18 59.7	+0.4
	comp=Z,10.0nm,1.4s						
CHTO	Chiang Mai	41.67	257	P	P	19 18 59.6	+0.3
	comp=Z,36nm,1.1s						
CHTO	Chiang Mai	41.67	257	eP	P	19 18 59.2	-0.1
CHTO				pmax	pmax		
	comp=Z,23nm,1.5s						
CHTO	Chiang Mai	41.67	257	eP	P	19 18 59.2	-0.1
	comp=Z,22nm,1.5s						
CMAR	Chiang Mai Arr	41.88	256	P	P	19 19 01.3	+0.4
	comp=Z,3.0nm,0.8s,baz=46,slow=7.2,SNR=30						
CMAR				LR	LR	19 38 25.4	
	comp=Z,199nm,20.6s,baz=35,slow=39						
ZALV	Zalesovo Beam	42.44	313	P	P	19 19 05.7	+0.6
	comp=Z,19nm,1.0s,baz=90,slow=6.2,SNR=64						
ZALV				PcP	PcP	19 20 56.7	-1.0
	comp=Z,4.2nm,0.8s,baz=87,slow=3.1,SNR=3.5						
LSA	Lhasa	42.69	276	eP	P	19 19 09.0	+1.0
LSA				pmax	pmax		
	comp=Z,11nm,0.8s						
LSA	Lhasa	42.69	276	eP	P	19 19 09.0	+1.0
	comp=Z,11nm,0.8s						
MHMT	Maesarieng	42.83	257	P	P	19 19 09.9	+1.3
	comp=Z,9.6nm,1.6s,comp=Z,242nm						
NVS	Novosibirsk	43.36	314	⇑iP	P	19 19 12.8	+0.3
NVS				i		19 19 25.4	
NVS				pmax	pmax		
	comp=Z,16nm,0.9s						
NVS				pmax	pmax		
	comp=N,1.0nm,0.2s						
NVS				pmax	pmax		
	comp=E,1.0nm,0.2s						
NRIK	Noril'sk	43.70	335	P	P	19 19 15.0	-0.1
	comp=E,3.6nm,0.6s,baz=120,slow=6.6,SNR=9.1						
SRDT	SRDT	44.18	251	P	P	19 19 21.6	+2.1
	comp=E,43nm,0.9s						
MKAR	Makanchi Array	44.65	302	P	P	19 19 23.5	+0.5
	comp=E,9.2nm,0.8s,baz=89,slow=9.8,SNR=82						
SPSI	Sidrap Palu	45.52	212	P	P	19 19 37.3	+7.2
KSM	Kuching	45.70	227	eP	P	19 19 32.6	+0.9
	comp=E,11nm,0.9s						
TAPN	Taplejung	46.42	275	eP	P	19 19 38.0	+0.4
	comp=E,81nm,1.2s						
KURK	Kurchatov	46.46	308	P	P	19 19 38.0	+0.7
KURK				pmax	pmax		
	comp=Z,10.0nm,0.6s						
KURK	Kurchatov	46.46	308	P	P	19 19 38.0	+0.7
KAPI	Kappang	46.47	211	P	P	19 19 37.0	-0.6
	comp=Z,4.1nm,0.2s,baz=35,slow=8.1,SNR=4.3						
KAPI	Kappang	46.47	211	eP	P	19 19 38.0	+0.3
	comp=Z,23nm,1.0s						
KURBB	Kurchatov Arra	46.53	308	P	P	19 19 38.0	+0.2
	comp=Z,10nm,0.6s,baz=82,slow=8.1,SNR=110						
ODAN	Odare	46.89	274	eP	P	19 19 41.7	+0.5
	comp=Z,67nm,0.9s						
RAMN	Ramite	47.48	275	eP	P	19 19 46.4	+0.5
	comp=Z,52nm,0.7s						
GUN	Gumba	47.64	276	eP	P	19 19 47.8	+0.6
	comp=Z,82nm,0.9s						
SURT	Suratani	47.89	246	P	P	19 19 50.0	+1.2
	comp=Z,4.7nm,1.4s						
PKIN	Phulchoki	48.17	276	eP	P	19 19 51.4	+0.2
	comp=Z,28nm,0.8s						
KKN	Kakani	48.17	276	eP	P	19 19 51.7	+0.5
	comp=Z,50nm,0.7s						
DMN	Daman	48.39	276	eP	P	19 19 53.4	+0.5
	comp=Z,31nm,0.9s						
GKN	Gorkha	48.59	277	eP	P	19 19 54.8	+0.5
	comp=Z,98nm,0.8s						
COLA	College	49.06	32	eP	P	19 19 58.6	+1.4
COLA				pmax	pmax		
	comp=Z,3.0nm,0.6s						
COLA	College	49.06	32	eP	P	19 19 58.6	+1.4
	comp=Z,3.4nm,0.6s						
AAA	Alma-Ata	49.12	299	eP	P	19 20 09.0	+11
AAA				pmax	pmax		
	comp=Z,400nm,6.4s						
AAA				MLR	MLR		
	comp=Z,1μm,18.0s						
SOEI	Soe	49.18	203	eP	P	19 20 03.0	+4.2
	comp=Z,47nm,1.0s						
IPM	Ipoh	49.40	239	eP	P	19 19 59.5	-0.9
	comp=Z,8.3nm,0.8s						
ILAR	Eielson Array	49.47	32	P	P	19 19 59.7	-0.7
	comp=Z,3.7nm,0.8s,baz=269,slow=6.9,SNR=24						
KOLN	Koldanda	49.52	277	eP	P	19 20 01.7	+0.2
	comp=Z,34nm,0.9s						
PYUN	Piuthan	49.86	278	eP	P	19 20 04.7	+0.6
	comp=Z,110nm,1.0s						
TKM2	Tokmak 2	50.16	299	eP	P	19 20 07.1	+0.9
TKM2				pmax	pmax		
	comp=Z,21nm,0.6s						
TKM2	Tokmak 2	50.16	299	eP	P	19 20 07.1	+0.9
	comp=Z,21nm,0.6s						
FRU	Bishkek	50.88	299	eP	P	19 20 12.0	+0.6
KSH	Kashi	50.94	294	eP	P	19 20 16.6	+4.6
KSH				pmax	pmax		
	comp=Z,160nm,4.3s						
KSH				LR	LR		
	comp=Z,570nm,15.4s						
KSH				LR	LR		
	comp=Z,160nm,6.4s						
KSH				LR	LR		
	comp=Z,870nm,18.1s						
AAK	Ala-Archa	51.02	299	P	P	19 20 12.9	+0.2
	comp=Z,4.0nm,0.8s,baz=110,slow=6.4,SNR=13						
AAK	Ala-Archa	51.02	299	i P	P	19 20 11.1	-1.6
AAK				pmax	pmax		
	comp=Z,10.0nm,1.0s						
BVAR	Borovoye Array	51.09	313	P	P	19 20 12.8	-0.1
	comp=Z,3.7nm,0.8s,baz=69,slow=8.1,SNR=15						
BVAR				PcP	PcP	19 21 28.1	-0.2
	comp=Z,2.4nm,0.6s,baz=99,slow=4.8,SNR=3.8						
BRVK	Borovoye	51.15	313	eP	P	19 20 13.9	+0.7
BRVK				pmax	pmax		
	comp=Z,24nm,2.5s						
BRVK	Borovoye	51.15	313	eP	P	19 20 12.0	-1.2
	comp=Z,5.1nm,0.7s						
EKS2	Erkin-Say	51.52	299	eP	P	19 20 16.7	+0.3
EKS2				pmax	pmax		
	comp=Z,5.0nm,0.8s						
EKS2	Erkin-Say	51.52	299	eP	P	19 20 16.6	+0.3
	comp=Z,5.3nm,0.8s						
PSI	Prapat	52.05	240	P	P	19 20 20.9	+0.3
	comp=Z,3.2nm,0.4s,baz=195,slow=12,SNR=3.7						
KKAR	Karatay Array	53.66	300	eP	P	19 20 32.2	+0.2
KKAR				pmax	pmax		
	comp=Z,20nm,1.1s						
KKAR	Karatay Array	53.66	300	eP	P	19 20 32.2	+0.2
	comp=Z,20nm,1.1s						

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
GSI	Gunungsitoli	54.06	240	P	P	19 20 34.7	-0.6
	comp=Z,57nm,1.3s						
GSI	Gunungsitoli	54.06	240	eP	P	19 20 34.6	-0.6
	comp=Z,74nm,1.1s						
MDSI	Maura Dua	54.11	229	P	P	19 20 35.7	+0.1
INK	Inuvik	54.42	27	P	P	19 20 37.6	+0.5
	comp=Z,1.8nm,0.6s,baz=309,slow=5.7,SNR=8.1						
SVE	Sverdlovsk	55.65	319	⇓eP	P	19 20 46.6	+0.4
SVE				pmax	pmax		
	comp=Z,29nm,1.2s						
FITZ	Fitzroy Crossi	56.71	199	P	P	19 20 53.3	-0.8
	comp=Z,2.6nm,0.9s,baz=349,slow=5.2,SNR=2.6						
SOKR	Solikamsk	56.82	323	d iP	P	19 20 53.8	-0.6
SOKR				pmax	pmax		
	comp=Z,19nm,1.1s						
WRAB	Tennant Creek	56.85	189	P	P	19 20 55.8	+0.7
WRAB				pmax	pmax		
	comp=Z,15nm,1.1s						
WRAB	Tennant Creek	56.85	189	P	P	19 20 55.8	+0.7
	comp=Z,15nm,1.1s						
WRA	Warramunga Arr	56.86	189	P	P	19 20 53.7	-1.5
	comp=Z,2.6nm,1.0s,baz=6.6,slow=7.4,SNR=7.8						
WRA	Warramunga Arr	56.86	189	i P	P	19 21 00.4	+5.2
WRA				pmax	pmax		
	comp=Z,1.0nm,0.6s						
ARU	Arti	56.87	319	P	P	19 20 55.2	+0.3
	comp=Z,9.2nm,0.9s,baz=83,slow=4.1,SNR=19						
ARU	Arti	56.87	319	c iP	P	19 20 55.0	+0.1
ARU						19 21 47.1	
ARU				S	S	19 28 43.4	-3.5
ARU				SS	SS	19 32 26.6	-8.0
ARU				pmax	pmax		
	comp=Z,29nm,1.2s						
ARU				MLR	MLR		
	comp=Z,503nm,18.0s						
ABKAR	Akbulak array	58.47	310	eP	P	19 21 06.0	-0.3
	comp=Z,4.9nm,0.5s						
DLBC	Dease Lake	58.55	38	P	P	19 21 07.4	+0.6
	comp=Z,3.7nm,1.0s,baz=312,slow=12,SNR=2.5						
HYB	Hyderabad	58.66	269	i P	P	19 21 08.0	-0.1
AKTO	Aktyubinsk	59.20	312	P	P	19 21 11.0	-0.3
	comp=Z,8.5nm,0.9s,baz=74,slow=11,SNR=21						
ASAR	Alice Springs	60.59	189	P	P	19 21 19.8	-1.3
	comp=Z,1.3nm,0.8s,baz=12,slow=6.9,SNR=8.3						
BBB	Bella Bella	61.93	44	LR	LR	19 44 47.4	
	comp=Z,111nm,21.4s,baz=168,slow=32						
RES	Resolute Bay	62.74	15	eP	P	19 21 34.2	-0.8
RES				pmax	pmax		
	comp=Z,4.0nm,0.8s						
RES	Resolute Bay	62.74	15	eP	P	19 21 34.2	-0.8
	comp=Z,4.4nm,0.8s						
DZM	Mont Dzumac	62.91	154	LR	LR	19 46 01.5	
	comp=Z,195nm,20.5s,baz=42,slow=33						
YKA	Yellowknife Ar	63.81	30	P	P	19 21 41.7	-0.5
	comp=Z,0.9nm,0.7s,baz=302,slow=6.8,SNR=14						
KLMR	Klimovskoe	64.23	328	eP	P	19 21 43.3	-1.7
KLMR				e*PP	sP	19 21 54.1	-1.0
KLMR				pmax	pmax		
	comp=Z,13nm,1.5s						
GEYT	Alibeck	64.37	299	P	P	19 21 46.7	+0.3
	comp=Z,7.1nm,0.9s,baz=9.5,slow=3.6,SNR=17						
VRH	Novokhopyorsk	68.09	318	eP	P	19 22 08.9	-1.0
VRH				pmax	pmax		
	comp=Z,10.0nm,0.7s						
OBN	Obninsk	68.59	323	eP	P	19 22 12.0	-1.0
OBN				e		19 22 20.8	
OBN				e		19 22 35.8	
OBN				pmax	pmax		
	comp=Z,12nm,1.0s						
OBN				MLR	MLR		
	comp=Z,213nm,16.0s						
LPSR	Galich'ya Gora	68.80	320	eP	P	19 22 13.5	-0.9
LPSR				pmax	pmax		
	comp=Z,10.0nm,0.8s						
FINES	FINESS Array B	69.27	332	P	P	19 22 17.8	+0.7
	comp=Z,7.4nm,0.8s,baz=54,slow=7.8,SNR=16						
VSR	Storozhevoye	69.44	319	eP	P	19 22 18.0	-0.4
VSR				pmax	pmax		
	comp=Z,10.0nm,0.7s						
GOF	Gofitskoye	70.62	312	⇑eP	P	19 22 26.5	+0.8
ZEI	Tsey	71.33	310	eP	P	19 22 27.8	-2.6
ZEI				pmax	pmax		
	comp=Z,10.0nm,0.8s						
KVAR	Kislovodsk Arr	71.42	311	P	P	19 22 32.7	+1.9
	comp=Z,16nm,0.9s,baz=185,slow=7.9,SNR=7.5						
KBZ	Khabaz	71.43	311	P	P	19 22 31.5	+0.8
	comp=Z,11nm,0.9s,baz=46,slow=3.4,SNR=19						
KIV	Kislovodsk	71.43	311	i P	P	19 22 32.7	+1.9
	SNR=6.6						
KIV	Kislovodsk	71.43	311	eP	P	19 22 31.5	+0.7
KIV				pmax	pmax		
	comp=Z,33nm,1.1s						
KIV				MLR	MLR		
	comp=Z,273nm,17.0s						
KIV	Kislovodsk	71.43	311	eP	P	19 22 31.5	+0.7
	comp=Z,28nm,0.9s						
GNI	Garni	72.24	307	P	P	19 22 36.7	+0.9
	comp=Z,4.3nm,0.7s,baz=139,slow=8.4,SNR=3.3						
GNI	Garni	72.24	307	eP	P	19 22 37.8	+2.0
GNI				pmax	pmax		
	comp=Z,58nm,1.2s						
AKH	Akhalkalaki	72.33	309	⇓iP	P	19 22 37.8	+1.4
HATD	Hatta, Dubai	72.45	288	i P	P	19 22 37.5	+0.4
	SNR=7.8						
CHVG	Ch'k'valeri	72.48	310	⇑iP	P	19 22 38.3	+1.3
ASHO	Ashiyiah	72.58	288	i P	P	19 22 38.7	+0.7
	SNR=6.4						
FAQ	Al Faqa, Dubai	72.91	288	P	P	19 22 39.7	-0.1
ASUD	Al Ashush, Dub	73.17	288	P	P	19 22 41.3	-0.1
FFC	Flin Flon	73.68	33	eP	P	19 22 43.3	-0.6
FFC				pmax	pmax		
	comp=Z,1.0nm,0.6s						
FFC	Flin Flon	73.68	33	eP	P	19 22 43.3	-0.6
	comp=Z,1.2nm,0.6s						
HFS	Hagfors	74.52	336	P	P	19 22 48.9	+0.2
	comp=Z,6.5nm,0.8s,baz=70,slow=1.7,SNR=5.5						
NB2	NORSAR Subarra	74.61	338	P	P	19 22 49.5	+0.2
	comp=Z,6.2nm,0.7s,baz=39,slow=6.2						
NOA	NORSAR Array B	74.61	338	P	P	19 22 49.2	0.0
	comp=Z,5.7nm,0.9s,baz=39,slow=5.7,SNR=8.5						
NOA				LR	LR	19 59 19.0	
	comp=Z,230nm,19.1s,baz=200,slow=39						
NVAR	Mina Array Bea	74.78	53	P	P	19 22 51.9	+1.0
	comp=Z,0.8nm,0.7s,baz=271,slow=7.3,SNR=4.6						
AKASG	Malin Array Be	74.79	323	P	P	19 22 50.3	-0.1
	comp=Z,8.9nm,0.8s,baz=46,slow=5.9,SNR=41						
AKASG	Malin Array Be	74.79	323	i P	P	19 22 50.2	-0.2
AKASG				pmax	pmax		
	comp=Z,9.0nm,0.8s						
KIEV	Kiev	74.80	323	eP	P	19 22 50.2	-0.3
KIEV				pmax	pmax		
	comp=Z,15nm,0.9s						
KIEV	Kiev	74.80	323	eP	P	19 22 49.7	-0.7
	comp=Z,9.1nm,0.8s						
SIM	Simferopol'	75.84	316	P	P	19 22 55.8	-0.8
SIM				pmax	pmax		
	comp=Z,15nm,0.7s						
H17A	Grant Village	75.94	45	eP	P	19 22 58.4	+0.9
	comp=Z,8.9nm,1.1s						
PDAR	Pinedale Array	77.53	46	P	P	19 23 07.7	+1.2
	comp=Z,0.7nm,0.8s,baz=270,slow=5.4,SNR=4.0						
LVV	L'vov	77.87	324	eP	P	19 23 07.8	-0.1
LVV				e		19 26 03.6	
KWP	Kalwaria Pacla	78.62	325	eP	P	19 23 13.3	+1.2
KWP	Kalwaria Pacla	78.62	325	eP	P	19 23 13.4	+1.3
BURAR	Bucovina Array	78.81	322	⇑iP	P	19 23 14.1	+0.8
BURAR	Bucovina Array	78.81	322	⇑P	P	19 23 14.1	+0.8
TESR	Tescani	78.83	320	⇓iP	P	19 23 14.0	+0.7
CFR	Carcaliu	78.95	319	⇓iP	P	19 23 14.4	+0.4
CFR	Carcaliu	78.95	319	⇓P	P	19 23 14.4	+0.4
VRI	Vrincioaia	79.23	320	⇓iP	P	19 23 12.8	-2.7
VRI	Vrincioaia	79.23	320	⇓P	P	19 23 12.8	-2.7
TIRR	Tirgusor	79.28	318	⇑iP	P	19 23 14.3	-1.5
TIRR	Tirgusor	79.28	318	⇑P	P	19 23 14.3	-1.5
BRTR	Keskin Array B	79.38	312	P	P	19 23 17.2	+0.6
	comp=Z,4.4nm,1.0s,baz=106,slow=4.0,SNR=22						
BRTR	Keskin Array B	79.38	312	i P	P	19 23 17.2	+0.6
BRTR				pmax	pmax		
	comp=Z,5.0nm,1.0s						
STHS	Stebnicka Huta	79.44	325	eP	P	19 23 18.1	+1.5
STHS	Stebnicka Huta	79.44	325	eP	P	19 23 18.1	+1.5
UZH	Uzhgorod	79.51	324	eP	P	19 23 17.8	+0.8
UZH				e		19 23 24.2	
OJC	Ojcow	79.52	326	eP	P	19 23 17.5	+0.5
OJC	Ojcow	79.52	326	eP	P	19 23 17.6	+0.5
CRVS	Cervenica-Dubn	79.71	325	eP	P	19 23 18.7	+0.6
CRVS	Cervenica-Dubn	79.71	325	eP	P	19 23 18.7	+0.6
MLR	Muntele Rosu	79.89	320	⇑iP	P	19 23 19.6	+0.3
MLR	Muntele Rosu	79.89	320	⇑P	P	19 23 19.6	+0.3
VOIR		80.38	320	⇓iP	P	19 23 22.7	+0.8
VOIR		80.38	320	⇓P	P	19 23 22.7	+0.8
LANS	Liptovska Anna	80.44	326	eP	P	19 23 23.1	+1.0
LANS	Liptovska Anna	80.44	326	eP	P	19 23 23.1	+1.0
KECS	Kecovo	80.46	325	eP	P	19 23 23.2	+1.1
KECS				pmax	pmax		
	comp=Z,3.0nm,1.1s						
KECS	Kecovo	80.46	325	eP	P	19 23 23.2	+1.1
OKC	Ostrava-Krasne	80.53	327	eP	P	19 23 23.6	+1.2
OKC				ePCP	pP	19 23 27.8	-2.1
OKC	Ostrava-Krasne	80.53	327	eP	P	19 23 23.6	+1.2
KSP	Ksiaz	80.57	329	eP	P	19 23 23.5	+0.9
KSP	Ksiaz	80.57	329	eP	P	19 23 23.6	+0.9
ARR	Arges	80.64	321	⇓iP	P	19 23 25.0	+1.7
DPC	Dobruska-Polom	80.93	328	eP	P	19 23 25.3	+0.6
DPC	Dobruska-Polom	80.93	328	eP	P	19 23 25.3	+0.6
UPC	Upice	80.94	328	eP	P	19 23 25.1	+0.4
UPC	Upice	80.94	328	eP	P	19 23 25.1	+0.4
PSZ	Piszkesteto	81.14	325	eP	P	19 23 25.7	-0.2
PSZ				pmax	pmax		
	comp=Z,15nm,1.0s						
PSZ	Piszkesteto	81.14	325	eP	P	19 23 25.7	-0.2
	comp=Z,15nm,1.0s						
RAYN	Ar Rayn	81.19	293	eP	P	19 23 26.5	0.0
	comp=Z,9.8nm,0.9s						
VYHS	Vyhne	81.21	326	eP	P	19 23 26.8	+0.7
VYHS				pmax	pmax		
	comp=Z,4.0nm,1.0s						
VYHS	Vyhne	81.21	326	eP	P	19 23 26.8	+0.7
PVCC	Panska Ves	81.53	329	eP	P	19 23 28.9	+1.1
PVCC	Panska Ves	81.53	329	eP	P	19 23 28.9	+1.1
CLL	Collm	81.56	330	eP	P	19 23 24.0	-3.9
CLL				i		19 23 27.8	
	comp=Z,11nm,0.9s						
CLL	Collm	81.56	330	eP	P	19 23 24.0	-3.9
GZR	Gura Zlata	81.56	322	⇑iP	P	19 23 28.7	+0.6
GZR	Gura Zlata	81.56	322	⇑P	P	19 23 28.7	+0.6
VRAC	Vranov	81.60	327	P	P	19 23 28.5	+0.3
	comp=Z,7.7nm,1.0s,baz=58,slow=6.7,SNR=7.5						
GOPC	GO Pecny, Ondr	81.91	329	eP	P	19 23 30.8	+1.0
GOPC	GO Pecny, Ondr	81.91	329	eP	P	19 23 30.8	+1.0
PRU	Pruhonice	81.95	329	eP	P	19 23 31.0	+1.0
PRU				ePCP	pP	19 23 36.3	-1.2
PRU	Pruhonice	81.95	329	eP	P	19 23 31.0	+1.0
BZS	Buzias	81.98	322	⇑iP	P	19 23 30.5	+0.3
BZS	Buzias	81.98	322	⇑P	P	19 23 30.5	+0.3
ASF	Jabal al Asfar	82.04	304	P	P	19 23 30.8	-0.2
	comp=Z,0.9nm,0.6s,baz=41,slow=8.9,SNR=3.6						
MMAI	Mount Meron Ar	82.50	306	P	P	19 23 34.1	+0.8
	comp=Z,3.1nm,0.7s,baz=51,slow=7.0,SNR=9.9						
MDVR	Moldovita	82.53	322	⇓iP	P	19 23 33.0	-0.2
CSS	Mathiatis	82.59	308	eP	P	19 23 33.5	-0.2
	comp=Z,1.4nm,0.8s						
KHC	Kasperske Hory	83.01	329	eP	P	19 23 36.0	+0.3
KHC				ex	x	19 23 43.2	
KHC	Kasperske Hory	83.01	329	eP	P	19 23 36.0	+0.3
KHC				e		19 23 43.2	
KHC	Kasperske Hory	83.01	329	eP	P	19 23 35.9	+0.3
	comp=Z,4.5nm,1.1s						
GERES	GERESS Array B	83.18	329	P	P	19 23 36.8	+0.2
	comp=Z,3.0nm,0.8s,baz=39,slow=5.1,SNR=13						
VTS	Vitosha	83.32	319	⇓iP	P	19 23 38.2	+0.7
VTS	Vitosha	83.32	319	⇓P	P	19 23 38.2	+0.7
EKA	Eskdalemuir Ar	83.54	341	P	P	19 23 39.0	+0.9
	comp=Z,1.8nm,0.8s,baz=46,slow=3.6,SNR=3.5						
PPT	Papeete	84.10	117	LR	LR	19 53 49.0	
	comp=Z,112nm,21.6s,baz=250,slow=30						
ANMO	Albuquerque	84.41	50	eP	P	19 23 46.7	+3.5
ANMO				pmax	pmax		
	comp=Z,2.0nm,0.8s						
ANMO	Albuquerque	84.41	50	P	P	19 23 44.1	+0.9
	comp=Z,1.9nm,0.9s						
VAY	Valandovo	84.55	319	i P	P	19 23 44.0	+0.4
SKO	Skopje	84.68	320	i P	P	19 23 44.9	+0.7
EIL	Elat	84.91	303	P	P	19 23 45.3	-0.3
	comp=Z,8.1nm,1.1s,baz=122,slow=4.7,SNR=4.8						
BFO	Black Forest	85.76	331	i P	P	19 23 49.7	+0.1
BFO	Black Forest	85.76	331	eP	P	19 23 49.1	-0.5
	comp=Z,10nm,0.9s						
DAVOX	Davos/Dischmat	86.40	329	P	P	19 23 54.7	+1.8
	comp=Z,2.6nm,0.9s,baz=302,slow=13,SNR=3.6						
DAVOX	Davos/Dischmat	86.40	329	P	P	19 23 54.7	+1.8
DAVOX				pmax	pmax		
	comp=Z,2.0nm,0.6s						
TXAR	Lajitas Array	89.92	53	P	P	19 24 11.2	+1.2
	comp=Z,1.4nm,1.0s,baz=298,slow=4.0,SNR=4.1						
TXAR				LR	LR	19 59 48.3	
	comp=Z,97nm,20.9s,baz=0.0,slow=32						
TORD	Torodi Ar. Bea	117.85	315	PP	PP	19 31 03.9	-6.4
	comp=Z,0.8nm,1.0s,baz=48,slow=7.0,SNR=3.1						
LPAZ	La Paz	146.43	61	PKPbc	PKPdf	19 30 49.8	-1.5
	comp=Z,1.0nm,0.7s,baz=153,slow=2.3,SNR=3.7						

*ISCJB **07** 19:11:11.8±1.0, 20°.60N±0°.06×145°.3E±0°.3, h129km, mb3.7/8, Error ellipse: s-maj=36.3km s-min=6.7km az=171.2*

*IDC **07** 19:11:12.4±2.6, 20°.51N×145°.22E, h121km±23km, mb3.6/8, mb1 3.7/10, mb1mx3.4/75, mbtmp4.1/10, Error ellipse: s-maj=44.5km s-min=12.3km az=82.0*

ISC 07 19:11:13.5±1.1**, 20°.58N**±0°.08×**145°.2E**±0°.3**, h129**km**, n10, σ1s.06**/12**, mb3.8**/8**, Mariana Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GUMO	Guam	6.96	183	P	Pn	19 12 52.5	-0.4
	7.4nm,0.3s,baz=158,slow=18,SNR=5.4						
GUMO				S	Sn	19 14 12.4	+1.6
	2.6nm,0.3s,baz=37,slow=20,SNR=2.6						
JCJ	Chichijima	7.06	337	P	Pn	19 12 53.7	-0.6
	baz=266,slow=19						
JCJ				S	Sn	19 14 12.4	-0.6
	baz=287,slow=19						
KSRS	Korea Array	22.55	322	P	P	19 16 03.6	+0.8
	4.0nm,0.8s,baz=146,slow=8.9,SNR=6.3						
USRK	Ussuriysk Ar.	26.00	338	P	P	19 16 33.5	-0.8
	1.0nm,0.3s,baz=128,slow=14,SNR=8.9						
KLR	Kul'dur	30.55	343	P	P	19 17 15.5	+0.8
	2.5nm,0.4s,baz=157,slow=10,SNR=10						
SONM	Songino Array	41.41	320	P	P	19 18 47.6	+0.3
	1.4nm,0.8s,baz=138,slow=9.0,SNR=4.6						
WRA	Warramunga Arr	41.65	195	P	P	19 18 48.0	-1.4
	1.0nm,0.9s,baz=13,slow=8.7,SNR=7.3						
ASAR	Alice Springs	45.34	195	P	P	19 19 17.4	-1.4
	0.3nm,0.3s,baz=16,slow=6.8,SNR=14						
KURBB	Kurchatov Arra	59.63	317	P	P	19 21 04.5	+0.7
	1.8nm,0.8s,baz=83,slow=7.9,SNR=1.7						
YKA	Yellowknife Ar	76.55	28	P	P	19 22 49.5	+0.3
	0.5nm,0.5s,baz=291,slow=5.6,SNR=4.0						

*ISCJB **07** 19:14:17.6±1.1, 38°.28N±0°.05×141°.8E±0°.1, h71km±11km, mb3.8/3, Error ellipse: s-maj=18.6km s-min=7.4km az=13.8*

*IDC **07** 19:14:17.3±2.5, 37°.16N×142°.30E, h0km, mb3.9/3, mb1 4.0/5, mb1mx3.4/72, mbtmp3.8/5, ML3.0/2, Error ellipse: s-maj=66.7km s-min=26.3km az=60.0*

*JMA **07** 19:14:18.4±0.1, 38°.27N×141°.84E, h59km±3km, M4.1*

JMA Felt I J1.

ISC 07 19:14:18.2±1.7**, 38°.28N**±0°.06×**141°.9E**±0°.1**, h57**km±18km**, n14, σ0s.61**/20**, mb3.9**/3**, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JMK	Ichinoseki	0.84	323	P	Pn	19 14 34.5	+0.4
JMK				S	Sn	19 14 45.7	-0.1
JMM	Marumori	0.94	245	P	Pn	19 14 35.2	-0.2
JMM				S	Sn	19 14 47.4	-0.6
JOU	Okura	0.95	276	P	Pn	19 14 35.6	+0.1
JOU				S	Sn	19 14 48.4	+0.1
JFK	Kawauchi	1.20	221	P	Pn	19 14 39.1	+0.2
JFK				S	Sn	19 14 54.1	-0.1
JOM	Ohasama	1.28	340	P	Pn	19 14 40.5	+0.6
JOM				eS	Sn	19 14 55.9	-0.1
JYK	Kaneyama	1.34	299	P	Pn	19 14 40.9	+0.2
JYK				eS	Sn	19 14 57.6	0.0
JYS	Shirataka	1.42	268	P	Pn	19 14 42.1	+0.3
JYS				eS	Sn	19 14 58.7	-0.7
JFT	Otama	1.43	238	P	Pn	19 14 42.4	+0.5
JFT				S	Sn	19 14 59.8	+0.2
JYA	Atsumi	1.72	281	P	Pn	19 14 46.2	+0.4
MJAR	Matsushiro Arr	3.39	240	Pn	Pn	19 15 10.4	+1.8
	4.3nm,0.3s,baz=49,slow=11,SNR=13						
USRK	Ussuriysk Ar.	9.50	312	Pn	Pn	19 16 50.0	+18
	0.5nm,0.3s,baz=119,slow=15,SNR=4.1						
KURBB	Kurchatov Arra	45.53	307	P	P	19 22 45.6	+14
	0.8nm,0.5s,baz=80,slow=8.2,SNR=4.8						
WRA	Warramunga Arr	58.34	188	P	P	19 24 06.8	-0.6
	0.3nm,0.3s,baz=5.6,slow=7.2,SNR=9.2						
ASAR	Alice Springs	62.07	188	P	P	19 24 32.5	-0.4
	0.4nm,0.4s,baz=16,slow=7.1,SNR=4.5						

*IDC **07** 19:15:37.1±0.9, 37°.49N×144°.38E, h0km, mb3.8/9, mb1 4.0/12, mb1mx3.7/71, mbtmp3.8/12, ML3.0/3, Error ellipse: s-maj=22.2km s-min=18.6km az=100.0*

*ISCJB **07** 19:15:40.1±0.6, 37°.48N±0°.08×144°.25E±0°.08, h33km, mb4.0/11, Error ellipse: s-maj=11.7km s-min=9.0km az=154.8*

*NEIC **07** 19:15:42.3±0.6, 37°.53N×144°.32E, h35km, mb4.6/2, Error ellipse: s-maj=13.0km s-min=11.2km az=116.0*

ISC 07 19:15:42.3±0.8**, 37°.47N**±0°.10×**144°.26E**±0°.10**, h35**km**, n18, σ1s.27**/19**, mb3.8**/11**, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MJAR	Matsushiro Arr	4.93	261	Pn	Pn	19 16 54.5	+0.5
	1.2nm,0.3s,baz=90,slow=15,SNR=2.6						
MAJO	Matsushiro	4.93	261	eP	Pn	19 16 55.1	+1.1
MAT	Matsushiro	4.93	261	P	Pn	19 16 55.7	+1.7
MAT				S	Sn	19 17 49.1	-0.7
JHJ	Hachijo jima 2	5.68	221	Sn	Sn	19 18 05.4	-2.8
	13nm,0.3s,baz=229,slow=20,SNR=3.0						
USRK	Ussuriysk Ar.	11.47	310	Pn	Pn	19 18 23.2	-0.3
	0.2nm,0.3s,baz=126,slow=13,SNR=5.1						
KLR	Kul'dur	14.84	326	Pn	Pn	19 19 07.7	-1.8
	0.1nm,0.3s,baz=129,slow=13,SNR=2.5						
SEY	Seymchan	25.97	8	P	P	19 21 09.3	-2.1
	1.5nm,0.6s,baz=180,slow=20,SNR=4.2						
ZALV	Zalesovo Beam	43.31	312	P	P	19 23 41.6	+1.1
	0.5nm,0.6s,baz=99,slow=9.1,SNR=2.8						
CMAR	Chiang Mai Arr	43.81	257	P	P	19 23 46.9	+1.9
	0.5nm,0.7s,baz=47,slow=7.3,SNR=4.8						
MKAR	Makanchi Array	45.81	302	P	P	19 24 00.3	-0.3
	0.9nm,0.8s,baz=79,slow=7.5,SNR=4.4						
KURK	Kurchatov	47.45	308	P	P	19 24 13.6	+0.3
KURBB	Kurchatov Arra	47.52	308	P	P	19 24 13.6	-0.3
	0.8nm,0.6s,baz=82,slow=8.1,SNR=4.9						
ILAR	Eielson Array	47.91	33	P	P	19 24 16.9	+0.2
	0.9nm,0.9s,baz=271,slow=7.0,SNR=5.3						
WRAB	Tennant Creek	57.85	191	eP	P	19 25 30.4	-0.1
	4.9nm,0.9s						
WRA	Warramunga Arr	57.87	191	P	P	19 25 30.3	-0.3
	4.0nm,0.8s,baz=11,slow=7.3,SNR=11						
ASAR	Alice Springs	61.59	191	P	P	19 25 56.1	-0.1
	1.3nm,0.7s,baz=16,slow=7.0,SNR=8.2						
MBWA	Marble Bar	62.73	206	P	P	19 26 03.8	0.0
	8.6nm,1.3s						
NVAR	Mina Array Bea	72.90	55	P	P	19 27 08.9	+0.8
	0.8nm,0.7s,baz=276,slow=8.1,SNR=3.9						

*IDC **07** 19:20:59.6±2.7, 37°.76N×144°.07E, h0km, mb3.6/4, mb1 3.8/5, mb1mx3.4/52, mbtmp3.8/5, ML3.6/1, Error ellipse: s-maj=81.4km s-min=26.1km az=70.0*

*ISCJB **07** 19:21:00.2±0.9, 38°.16N±0°.05×143°.77E±0°.07, h33km, mb3.7/4, Error ellipse: s-maj=8.1km s-min=6.7km az=20.4*

*JMA **07** 19:21:01.7±0.5, 38°.15N×143°.65E, h40km, M3.5*

ISC 07 19:21:01.2±1.3**, 38°.13N**±0°.05×**143°.80E**±0°.09**, h35**km**, n16, σ1s.66**/22**, mb3.7**/4**, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JMK	Ichinoseki	2.19	293	S	Sn	19 22 00.5	-0.3
JOM	Ohasama	2.38	305	P	Pn	19 21 37.7	+0.1
JOM				S	Sn	19 22 05.8	+0.3
JMM	Marumori	2.39	265	P	Pn	19 21 37.8	-0.1
JMM				eS	Sn	19 22 04.0	-1.9
JFK	Kawauchi	2.44	253	P	Pn	19 21 38.6	0.0
JOU	Okura	2.48	276	P	Pn	19 21 39.6	+0.5
JOU				S	Sn	19 22 06.5	-1.7
JFT	Otama	2.81	258	P	Pn	19 21 44.7	+1.0
JFT				eS	Sn	19 22 15.3	-1.1
JYK	Kaneyama	2.81	287	P	Pn	19 21 44.7	+1.1
JNBK	Urakawa-nobuka	4.22	349	P	Pn	19 22 04.1	+1.2
JNBK				eS	Sn	19 22 49.5	-1.5
JKB	Kayabe	4.31	331	P	Pn	19 22 05.8	+1.6
JKB				eS	Sn	19 22 51.0	-2.2
JRY	Ryogami san	4.45	243	P	Pn	19 22 08.1	+1.9
JCH	Churui	4.49	356	P	Pn	19 22 06.4	-0.2
JCH				eS	Sn	19 22 54.4	-3.2
JHJ	Hachijo jima 2	5.98	214	Pn	Pn	19 22 26.4	-0.7
	5.5nm,0.3s,baz=106,slow=23,SNR=6.2						
JHJ				Sn	Sn	19 23 30.9	-3.5
	5.6nm,0.3s,baz=86,slow=15,SNR=4.1						
MKAR	Makanchi Array	45.15	302	P	P	19 29 21.3	+7.1
	0.2nm,0.3s,baz=78,slow=8.8,SNR=4.3						
KURBB	Kurchatov Arra	46.83	308	P	P	19 29 33.4	+6.0
	0.5nm,0.6s,baz=80,slow=8.2,SNR=5.6						
WRA	Warramunga Arr	58.45	190	P	P	19 30 54.8	+1.2
	1.2nm,0.6s,baz=8.7,slow=7.0,SNR=12						
ASAR	Alice Springs	62.17	190	P	P	19 31 20.7	+1.7
	0.4nm,0.6s,baz=5.3,slow=7.0,SNR=8.7						

*JMA **07** 19:34:00.9±0.4, 38°.41N×142°.32E, h32km, M4.0*

JMA Felt I J1.

*IDC **07** 19:34:04.9±2.8, 38°.35N×142°.18E, h46km±28km, mb3.5/8, mb1 3.7/10, mb1mx3.4/59, mbtmp3.8/10, ML3.6/2, Error ellipse: s-maj=27.6km s-min=15.5km az=97.0*

ISC 07 19:34:00.0±2.0**, 38°.36N**±0°.04×**142°.25E**±0°.07**, h13**km±11km**, n21, σ1s.33**/30**, mb3.9**/9**, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JMK	Ichinoseki	1.00	307	P	Pb	19 34 19.2	0.0
JMK				S	Sg	19 34 31.3	-1.0
JOU	Okura	1.25	271	P	Pg	19 34 24.3	+0.3
JOU				S	Sn	19 34 40.0	+0.1
JMM	Marumori	1.25	247	P	Pb	19 34 23.5	0.0
JMM				eS	Sg	19 34 40.1	-0.2
JOM	Ohasama	1.34	326	P	Pn	19 34 24.0	-0.4
JOM				S	Sb	19 34 40.5	-1.5
JFK	Kawauchi	1.47	228	P	Pn	19 34 26.4	+0.1
JFK				S	Sn	19 34 44.2	-1.3
JYK	Kaneyama	1.58	291	P	Pb	19 34 28.6	-0.5
JYK				eS	Sn	19 34 48.2	+0.1
JYS	Shirataka	1.72	266	P	Pb	19 34 30.9	-0.7
JYS				eS	Sb	19 34 52.6	-0.5
JFT	Otama	1.73	241	P	Pb	19 34 31.5	-0.2
JFT				S	Sb	19 34 53.0	-0.3
MJAR	Matsushiro Arr	3.69	242	P	Pn	19 34 59.6	+2.8
	2.1nm,0.3s,baz=65,slow=10,SNR=19						
MAT	Matsushiro	3.69	242	P	Pn	19 34 59.9	+3.1
MAT				eS	Sb	19 35 49.2	-0.7
JHJ	Hachijo jima 2	5.60	202	P	Pn	19 35 23.2	+0.1
	13nm,0.3s,baz=250,slow=23,SNR=6.4						
JHJ				S	Sn	19 36 23.6	-3.7
	7.3nm,0.3s,baz=204,slow=20,SNR=2.9						
KLR	Kul'dur	13.23	329	P	Pn	19 37 07.0	-0.6
	0.1nm,0.3s,baz=156,slow=16,SNR=3.7						
MA2	Magadan	21.92	12	P	P	19 38 54.9	+2.0
	2.1nm,0.4s,baz=211,slow=13,SNR=3.9						
SEY	Seymchan	25.36	11	P	P	19 39 28.1	+1.5
	2.2nm,0.7s,baz=194,slow=6.9,SNR=12						
ZALV	Zalesovo Beam	41.52	311	P	P	19 41 45.9	-1.0
	0.6nm,0.5s,baz=88,slow=7.6,SNR=3.9						
MKAR	Makanchi Array	43.99	301	P	P	19 42 06.9	-0.1
	0.1nm,0.4s,baz=87,slow=12,SNR=3.0						
KURBB	Kurchatov Arra	45.72	307	P	P	19 42 21.1	+0.4
	0.8nm,0.5s,baz=81,slow=8.1,SNR=8.8						
ILAR	Eielson Array	48.02	33	P	P	19 42 38.5	0.0
	0.3nm,0.7s,baz=248,slow=6.5,SNR=3.6						
BVAR	Borovoye Array	50.18	312	P	P	19 42 59.5	+4.3
	0.4nm,0.5s,baz=74,slow=5.1,SNR=3.0						
WRA	Warramunga Arr	58.47	189	P	P	19 43 56.2	+0.4
	2.0nm,0.7s,baz=6.5,slow=7.2,SNR=16						
ASAR	Alice Springs	62.20	189	P	P	19 44 21.6	+0.3
	0.9nm,0.6s,baz=3.8,slow=4.6,SNR=16						

*NEIC **07** 19:40:58.4±1.5, 45°.38N×106°.66W, h0km, ML2.7, Error ellipse: s-maj=24.9km s-min=18.9km az=143.0, Suspected Mining explosion.*
NEIC 56 km [35 miles] S of Colstrip.
*IDC **07** 19:40:59.5±1.1, 44°.81N×106°.59W, h0km, mb1 3.6/2, mb1mx3.1/48, mbtmp3.4/2, ML2.9/2, Error ellipse: s-maj=67.7km s-min=8.5km az=138.0*
ISC 07 19:40:58.4±1.0**, 45°.09N**±0°.06×**106°.89W**±0°.05**, h0**km**, n17, σ1s.48**/15**, Montana**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
LAO	LASA Array	1.67	16	ePn	Pn	19 41 16.6	-12
RLMT	Red Lodge	1.68	272	ePn	Pb	19 41 29.8	-0.5
RSSD	Black Hills	2.26	114	ePn	Pb	19 41 39.9	-0.3
K22A	Casper	2.45	174	ePn	Pn	19 41 41.4	+1.6
LKWY	Lake	2.55	259	ePn	Pb	19 41 45.4	+0.2
H17A	Grant Village	2.71	257	ePn	Pb	19 41 46.6	-1.4
BW06	Boulder Array	3.01	221	ePn	Pb	19 41 51.6	-1.5
PDAR	Pinedale Array	3.01	221	Pn	Pb	19 41 51.9	-1.2
	1.3nm,0.3s,baz=51,slow=17,SNR=24						
PDAR				Pg	Pg	19 41 56.4	+0.2
	1.9nm,0.3s,baz=47,slow=17,SNR=30						
PDAR				Lg	Lg	19 42 30.6	
	2.2nm,0.3s,baz=51,slow=29,SNR=14						
LOHW	Long Hollow	3.04	242	ePn	Pb	19 41 52.1	-1.5
MOOW	Moose Ponds	3.07	245	ePn	Pb	19 41 51.6	-2.4
SNOW	Snow King Moun	3.21	241	Pn	Pn	19 41 52.8	+2.4
REDW	Red Top Meadow	3.33	240	ePn	Pn	19 41 53.2	+1.3
BOZ	Bozeman (W)	3.38	281	ePn	Pb	19 41 59.6	+0.2
EGMT	Eagleton	3.54	327	ePn	Pn	19 41 55.4	+0.7
NEW	Newport	7.72	298	Lg	Lg	19 45 02.1	
	0.2nm,0.3s,baz=80,slow=18,SNR=3.9						
I10CA	LAC DU BONNET	8.94	51	i		20 31 20.0	
	baz=234,slow=280,SNR=1.4						
ULM	Lac du Bonnet	9.05	51	Pn	Pn	19 43 09.1	-1.2
	0.3nm,0.3s,baz=239,slow=12,SNR=6.0						
ULM				Lg	Lg	19 45 38.4	
	0.2nm,0.3s,baz=165,slow=20,SNR=4.8						

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*IDC **07** 19:42:51.4±2.2, 38°.42N×142°.70E, h0km, mb3.6/4, mb1 3.7/7, mb1mx3.4/50, mbtmp3.6/7, ML3.1/3, Error ellipse: s-maj=55.9km s-min=22.4km az=69.0*
*ISCJB **07** 19:43:00.2±1.0, 38°.24N±0°.04×141°.9E±0°.1, h63km±9km, mb3.5/4, Error ellipse: s-maj=13.8km s-min=6.6km az=6.7*
*JMA **07** 19:43:01.5±0.1, 38°.25N×141°.85E, h55km±3km, M4.0*
JMA Felt I J1.
ISC 07 19:43:00.1±1.8**, 38°.22N**±0°.05×**142°.0E**±0°.1**, h46**km±18km**, n17, σ1s.27**/28**, mb3.5**/4**, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
JMK	Ichinoseki	0.97	320	P	Pn	19 43 17.7	+0.5
JMK				S	Sn	19 43 29.2	-0.7
JMM	Marumori	1.03	251	P	Pn	19 43 18.2	+0.1
JMM				S	Sn	19 43 30.1	-1.3
JOU	Okura	1.08	278	P	Pn	19 43 18.8	0.0
JOU				S	Sn	19 43 31.4	-1.2
JFK	Kawauchi	1.24	227	P	Pn	19 43 21.8	+0.8
JFK				S	Sn	19 43 36.7	+0.1
JOM	Ohasama	1.38	336	P	Pn	19 43 23.9	+1.0
JOM				S	Sn	19 43 40.0	+0.1
JYK	Kaneyama	1.48	299	P	Pn	19 43 24.2	0.0
JYK				eS	Sn	19 43 41.1	-1.3
JFT	Otama	1.50	243	P	Pn	19 43 25.5	+0.9
JFT				S	Sn	19 43 42.6	-0.4
JYS	Shirataka	1.54	271	P	Pn	19 43 25.2	+0.1
JYS				S	Sn	19 43 43.2	-0.7
JYA	Atsumi	1.85	282	P	Pn	19 43 29.3	0.0
JYA				eS	Sn	19 43 50.7	-0.8
MJAR	Matsushiro Arr	3.46	242	Pn	Pn	19 43 53.6	+2.1
	2.0nm,0.3s,baz=46,slow=11,SNR=20						
MAT	Matsushiro	3.46	242	P	Pn	19 43 53.9	+2.4
MAT				eS	Sn	19 44 34.8	+3.5
JHJ	Hachijo jima 2	5.40	200	Pn	Pn	19 44 18.9	+0.8
	4.4nm,0.3s,baz=326,slow=23,SNR=8.1						
JHJ				Sn	Sn	19 45 16.6	-2.3
	1.4nm,0.3s,baz=52,slow=19,SNR=2.5						
USRK	Ussuriysk Ar.	9.63	312	Pn	Pn	19 45 17.0	+1.0
	0.4nm,0.3s,baz=119,slow=14,SNR=5.3						
ZALV	Zalesovo Beam	41.48	311	P	P	19 50 41.7	-0.6
	0.5nm,0.4s,baz=91,slow=5.8,SNR=3.4						
MKAR	Makanchi Array	43.91	301	P	P	19 51 02.0	-0.1
	0.3nm,0.6s,baz=84,slow=10,SNR=4.8						
WRA	Warramunga Arr	58.30	188	P	P	19 52 50.1	0.0
	0.5nm,0.5s,baz=5.9,slow=7.4,SNR=8.3						
ASAR	Alice Springs	62.02	188	P	P	19 53 15.3	-0.3
	0.2nm,0.6s,baz=98,slow=7.8,SNR=5.6						

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*IDC **07** 19:46:01.2±2.4, 36°.25N×140°.56E, h0km, mb3.6/3, mb1 3.7/4, mb1mx3.3/41, mbtmp3.7/4, ML4.0/1, Error ellipse: s-maj=60.1km s-min=23.5km az=65.0*
*ISCJB **07** 19:46:09.0±0.7, 36°.03N±0°.05×139°.99E±0°.07, h56km±6km, mb3.5/3, Error ellipse: s-maj=9.4km s-min=8.2km az=153.9*
*JMA **07** 19:46:10.5±0.1, 36°.05N×139°.93E, h44km±1km, M3.8 Broadband fault plane solution: P waves. NP1: φs64.00000°, δ74.00000°, λ92.00000°. NP2:φs236.00000°, δ16.00000°, λ82.00000°. Principal axes: T Plg61.0000°, Azm337.0000°; N Plg2.0000°, Azm243.0000°; P Plg29.0000°, Azm152.0000°;*
JMA Felt II J1.
ISC 07 19:46:09.7±1.0**, 36°.05N**±0°.05×**139°.98E**±0°.06**, h49**km±9km**, n13, σ0s.82**/19**, mb3.6**/3**, 2C-3D, Eastern Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
JYT	Yasato	0.25	44	⇑P	Pn	19 46 18.9	+0.6
JYT				S	Sn	19 46 24.7	+0.2
JAG	Ashikaga	0.57	312	⇓P	Pn	19 46 22.0	+0.3
JAG				S	Sn	19 46 30.0	-0.4
JHU	Hanno	0.60	251	⇑P	Pn	19 46 21.9	-0.2
JHU				S	Sn	19 46 30.1	-0.9
JRY	Ryogami san	0.87	268	⇓P	Pn	19 46 25.8	+0.1
JRY				S	Sn	19 46 36.8	-0.6
JKT	Katashina	0.93	321	⇓P	Pn	19 46 26.8	+0.3
JOD2	Odawara 2	1.07	223	P	Pn	19 46 29.9	+1.6
JYN	Shimob	1.29	245	P	Pn	19 46 33.0	+1.6
MJAR	Matsushiro Arr	1.51	290	Pn	Pn	19 46 35.0	+0.6
	34nm,0.3s,baz=93,slow=8.8,SNR=176						
MAT	Matsushiro	1.51	290	P	Pn	19 46 35.4	+1.0
MAT				S	Sn	19 46 53.2	+0.3
JHJ	Hachijo jima 2	2.93	183	Pn	Pn	19 46 53.9	+0.1
	46nm,0.3s,baz=77,slow=21,SNR=23						
JHJ				Sn	Sn	19 47 27.0	-0.6
	49nm,0.3s,baz=248,slow=23,SNR=8.5						
ZALV	Zalesovo Beam	41.73	313	P	P	19 53 54.2	+0.5
	0.9nm,0.5s,baz=102,slow=6.7,SNR=6.0						
MKAR	Makanchi Array	43.67	303	P	P	19 54 08.9	-0.6
	0.3nm,0.5s,baz=93,slow=9.2,SNR=5.2						
WRA	Warramunga Arr	55.94	186	P	P	19 55 42.3	-0.5
	0.2nm,0.3s,baz=1.0,slow=7.5,SNR=11						

MEX 07 19:48:34.0±0.7**, 17°.10N**×**99°.15W, h10**km**, MD3.6, Guerrero**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
ACX	Acapulco	0.72	252	eP	Pn	19 48 49.8	-0.4
ACX				eS	Sb	19 48 59.2	+0.7
ACP2	Acapulco	0.74	253	i P	Pg	19 48 45.7	-2.6
ACP2				eS	Sg	19 48 55.9	-2.1
CAIG	El Cayaco	1.07	268	eP	Pg	19 48 50.9	-3.7
CAIG				eS	Sg	19 49 04.4	-4.1
PNIG	Pinotepa	1.20	125	eP	Pb	19 48 52.7	-4.2
PNIG				i S	Sb	19 49 08.2	-4.3
PLIG	Platanillo	1.33	345	i P	Pn	19 48 55.3	-3.5
PLIG				eS	Sb	19 49 11.6	-4.8

GUC 07 19:50:22.2±0.4**, 22°.99S**×**69°.03W, h90**km±3km**, ML3.5, Northern Chile**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
PB06	IPOC Station P	0.58	299	eP	Pn	19 50 38.2	+0.4
PB06				eS	Sn	19 50 50.1	+0.7
PB06				IAML		19 50 50.8	
	comp=E,3μm,0.1s						
PB09	IPOC Station P	1.20	350	eP	Pn	19 50 45.8	+1.2
PB09				eS	Sn	19 51 03.0	+1.7
PB04	IPOC Station P	1.23	302	eP	Pn	19 50 45.1	+0.4
PB04				eS	Sn	19 51 03.0	+1.2
PB04				IAML		19 51 05.9	
	comp=N,1μm,0.2s						
PB07	IPOC Station P	1.49	328	eP	Pn	19 50 48.8	+0.8
PB07				eS	Sn	19 51 08.7	+1.2
PB10	IPOC Station P	1.50	249	eP	Pn	19 50 48.4	+0.4
PB10				eS	Sn	19 51 09.2	+1.8
PB01	IPOC Station P	1.98	347	eP	Pn	19 50 55.1	+0.7
PB01				eS	Sn	19 51 20.1	+1.4
PB01				IAML		19 51 23.0	
	comp=E,545nm,0.3s						

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*IDC **07** 19:53:06.3±7.6, 38°.29N×142°.39E, h49km±51km, mb3.5/5, mb1 3.7/9, mb1mx3.4/37, mbtmp3.8/9, ML3.2/4, Error ellipse: s-maj=103.3km s-min=18.5km az=68.0*
*ISCJB **07** 19:53:07.5±1.1, 38°.21N±0°.04×142°.0E±0°.1, h64km±8km, mb3.7/5, Error ellipse: s-maj=14.3km s-min=6.7km az=9.2*
*JMA **07** 19:53:09.3±0.1, 38°.23N×141°.88E, h63km±3km, M4.0*
JMA Felt I J1.
ISC 07 19:53:07.7±1.8**, 38°.18N**±0°.05×**142°.1E**±0°.1**, h51**km±17km**, n25, σ1s.36**/29**, mb3.8**/5**, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
JMK	Ichinoseki	1.04	318	P	Pn	19 53 26.4	+0.4
JMK				S	Sn	19 53 38.4	-1.1
JMM	Marumori	1.09	254	P	Pn	19 53 26.5	-0.1
JMM				S	Sn	19 53 39.1	-1.5
JOU	Okura	1.16	280	P	Pn	19 53 27.3	-0.2
JOU				S	Sn	19 53 40.4	-1.9
JFK	Kawauchi	1.27	231	P	Pn	19 53 29.9	+0.8
JFK				S	Sn	19 53 44.8	-0.3
JOM	Ohasama	1.44	334	P	Pn	19 53 31.9	+0.5
JOM				eS	Sn	19 53 48.7	-0.5
JFT	Otama	1.55	245	P	Pn	19 53 33.6	+0.7
JFT				S	Sn	19 53 50.8	-1.1
JYK	Kaneyama	1.56	299	P	Pn	19 53 32.7	-0.3
JYK				S	Sn	19 53 50.5	-1.6
JYS	Shirataka	1.61	272	P	Pn	19 53 33.6	-0.1
JYS				eS	Sn	19 53 51.8	-1.6
JYA	Atsumi	1.93	283	P	Pn	19 53 37.6	-0.4
MJAR	Matsushiro Arr	3.51	243	P	Pn	19 54 01.4	+1.6
	4.1nm,0.3s,baz=53,slow=11,SNR=25						
MAT	Matsushiro	3.51	243	P	Pn	19 54 01.6	+1.8
MAT				eS	Sn	19 54 42.3	+2.2
JHJ	Hachijo jima 2	5.39	201	P	Pn	19 54 25.9	+0.3
	3.1nm,0.3s,baz=86,slow=19,SNR=4.6						
JHJ				S	Sn	19 55 23.0	-3.3
	20nm,0.3s,baz=38,slow=22,SNR=17						
USRK	Ussuriysk Ar.	9.71	311	P	Pn	19 55 25.2	+0.6
	0.5nm,0.3s,baz=122,slow=14,SNR=9.1						
KSRS	Korea Array	11.25	271	P	Pn	19 55 48.5	+2.8
	0.2nm,0.3s,baz=78,slow=14,SNR=4.1						
SONM	Songino Array	27.63	302	P	P	19 58 50.3	-0.1
	0.3nm,0.4s,baz=108,slow=9.5,SNR=3.5						
H11N2	WAKE ISLAND Hy	28.29	124	T	T	20 29 18.6	
	baz=316,slow=75,SNR=26						
H11N1	WAKE ISLAND Hy	28.30	124	T	T	20 29 25.3	
	baz=316,slow=75,SNR=34						
H11N3	WAKE ISLAND Hy	28.30	124	T	T	20 29 18.5	
	baz=316,slow=75,SNR=29						
H11S1	WAKE ISLAND Hy	29.04	126	T	T	20 30 17.4	
	baz=317,slow=76,SNR=21						
H11S3	WAKE ISLAND Hy	29.05	126	T	T	20 30 17.5	
	baz=317,slow=76,SNR=26						
H11S2	WAKE ISLAND Hy	29.06	126	T	T	20 30 18.7	
	baz=317,slow=76,SNR=13						
ZALV	Zalesovo Beam	41.56	311	P	P	20 00 49.1	-0.9
	0.7nm,0.6s,baz=89,slow=7.3,SNR=4.3						
MKAR	Makanchi Array	43.99	301	P	P	20 01 09.7	-0.2
	1.3nm,0.7s,baz=86,slow=9.5,SNR=16						
WRA	Warramunga Arr	58.27	189	P	P	20 02 57.0	0.0
	1.3nm,0.6s,baz=6.2,slow=6.9,SNR=15						
ASAR	Alice Springs	62.00	189	P	P	20 03 22.5	0.0
	0.6nm,0.8s,baz=5.1,slow=4.4,SNR=9.7						

DHMR 07 20:00:02.4±1.8**, 12°.18N**×**43°.73E, h2**km±156km**, ML3.6, Western Arabian Peninsula**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
ADEN	Aden	1.36	64	i P	Pg	20 00 28.6	0.0
ADEN				i S	Sn	20 00 46.9	-0.3
ADEN				AML	AML	20 00 56.4	
	comp=N,1μm,0.5s						
BDHA	Al Bayda'	2.53	45	i P	Pn	20 00 46.1	+1.3
BDHA				i S	Sg	20 01 22.3	-1.6
HAJJ	Hajjah	3.50	358	i S	Sb	20 01 46.1	-2.4

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*CSEM **07** 20:13:26.8±0.3, 36°.47N×28°.79E, h5km, MD2.7, Error ellipse: s-maj=6.1km s-min=3.8km az=12.0*
*ISK **07** 20:13:26.6, 36°.53N×28°.81E, h8km, MD2.7*
*DDA **07** 20:13:27.5, 36°.53N×28°.75E, h6km, Md2.7*
ISC 07 20:13:26.6±1.2**, 36°.50N**±0°.03×**28°.79E**±0°.02**, h7**km±9km**, n30, σ1s.13**/49**, Dodecanese Islands**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
FETY	Fethiye	0.27	60	ePG	Pg	20 13 32.0	0.0
FETY				eSG	Sg	20 13 36.0	+0.4
FETY	Fethiye	0.27	60	ePg	Pg	20 13 32.0	0.0
FETY				eSg	Sg	20 13 36.0	+0.4
DALY	Dalyan (Mu˜la	0.34	341	ePG	Pg	20 13 32.8	-0.4
DALY				eSG	Sg	20 13 38.4	+0.7
DALY	Dalyan (Mu˜la	0.34	341	ePg	Pg	20 13 32.8	-0.4
DALY				eSg	Sg	20 13 38.4	+0.7
TURN	Turunc	0.40	338	i P	Pb	20 13 36.2	+0.1
TURN				i S	Sb	20 13 44.5	+2.1
TURN	Turunc	0.40	338	P	Pb	20 13 36.2	+0.1
TURN				S	Sb	20 13 44.5	+2.1
AKAS	Kas	0.71	112	i P	Pg	20 13 40.1	-0.1
AKAS				i S	Sn	20 13 53.1	-1.2
AKAS	Kas	0.71	112	P	Pg	20 13 40.1	-0.1
AKAS				S	Sn	20 13 53.1	-1.2
YER	Yerkesik	0.76	327	ePG	Pg	20 13 41.1	-0.1
YER				eSG	Sb	20 13 52.1	-0.6
YER	Yerkesik	0.76	327	ePg	Pg	20 13 41.1	-0.1
YER				eSg	Sb	20 13 52.1	-0.6
ELL	Elmali	0.93	74	ePG	Pb	20 13 44.8	-0.4
ELL	Elmali	0.93	74	ePg	Pb	20 13 44.8	-0.4
GOLH	Golhisar	0.96	40	i P	Pn	20 13 45.7	-0.9
GOLH				i S	Sn	20 13 59.6	-1.0
GOLH	Golhisar	0.96	40	P	Pn	20 13 45.7	-0.9
GOLH				S	Sn	20 13 59.6	-1.0
BDRM	Kayabasi	1.22	298	i P	Pg	20 13 50.2	+0.2
BDRM				i S	Sn	20 14 07.3	+0.4
BDRM	Kayabasi	1.22	298	P	Pg	20 13 50.2	+0.2
BDRM				S	Sn	20 14 07.3	+0.4
DENT	Denizli	1.27	9	ePN	Pg	20 13 50.6	-0.3
DENT	Denizli	1.27	9	ePn	Pg	20 13 50.6	-0.3
BODT	Bodrum	1.32	296	ePN	Pb	20 13 51.6	0.0
BODT	Bodrum	1.32	296	ePn	Pb	20 13 51.6	0.0
KORT	Korkueli	1.35	68	i P	Pg	20 13 53.7	+1.3
KORT				i S	Sn	20 14 15.5	+5.3
KORT	Korkueli	1.35	68	P	Pg	20 13 53.7	+1.3
AYDN	Tasoluk	1.37	328	i P	Pg	20 13 52.7	-0.2
AYDN				i S	Sg	20 14 11.8	+1.2
AYDN	Tasoluk	1.37	328	P	Pg	20 13 52.7	-0.2
AYDN				S	Sg	20 14 11.9	+1.2
AYDB	Zeytinkoy-Aydi	1.61	334	ePN	Pb	20 13 55.9	-0.9
AYDB	Zeytinkoy-Aydi	1.61	334	ePn	Pb	20 13 55.9	-0.9
KARP	Karpathos	1.63	235	ePN	Pb	20 13 56.7	-0.3
KARP	Karpathos	1.63	235	ePn	Pb	20 13 56.7	-0.3
KHAL	Karahalli	1.95	16	i P	Pb	20 14 01.8	-0.7
KHAL				i S	Sg	20 14 28.2	-1.1
KHAL	Karahalli	1.95	16	P	Pb	20 14 01.8	-0.7
KHAL				S	Sg	20 14 28.2	-1.1

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*ISCJB **07** 20:15:04.0±1.1, 16°.23N±0°.06×99°.31W±0°.04, h27km±8km, mb3.5/4, Error ellipse: s-maj=10.7km s-min=5.5km az=25.0*
*MEX **07** 20:15:07.0±0.5, 16°.21N×99°.31W, h18km±30km, MD4.0*
*NEIC **07** 20:15:07.0, 16°.21N×99°.31W, h18km, MD4.0(MEX), After MEX.*
*IDC **07** 20:15:18.2±25.0, 18°.75N×97°.22W, h0km, mb3.6/4, mb1 3.9/4, mb1mx3.6/36, mbtmp3.6/4, Error ellipse: s-maj=438.3km s-min=84.0km az=166.0*
ISC 07 20:15:03.7±2.0**, 16°.25N**±0°.07×**99°.31W**±0°.04**, h17**km±12km**, n23, σ1s.07**/40**, mb3.5**/4**, Near coast of Guerrero**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
ACX	Acapulco	0.81	320	eP	Pn	20 15 20.8	+0.6
ACX				eS	Sg	20 15 31.2	+1.1
ACX	Acapulco	0.81	320	eP	Pn	20 15 20.8	+0.6
ACX				eS	Sg	20 15 31.2	+1.1
ACP2	Acapulco	0.83	318	eP	Pb	20 15 17.1	-2.5
ACP2				i S	Sb	20 15 27.6	-2.8
CAIG	El Cayaco	1.21	311	eP	Pn	20 15 25.6	-0.1
CAIG				eS	Sb	20 15 40.8	-0.6
CAIG	El Cayaco	1.21	311	eP	Pn	20 15 25.6	-0.1
CAIG				eS	Sb	20 15 40.8	-0.6
TLIG	Tlapa	1.48	29	eP	Pn	20 15 28.3	-1.4
TLIG				eS	Sn	20 15 48.2	-0.5
MEIG	Mezcala	1.69	350	eP	Pn	20 15 32.8	+0.3
MEIG				eS	Sn	20 15 53.2	-0.6
MEIG	Mezcala	1.69	350	eP	Pn	20 15 32.8	+0.3
MEIG				eS	Sn	20 15 53.2	-0.6
PLIG	Platanillo	2.13	355	eP	Pn	20 15 39.8	+1.2
PLIG				eS	Sn	20 16 05.1	+0.3
PLIG	Platanillo	2.13	355	eP	Pn	20 15 39.8	+1.2
PLIG				eS	Sn	20 16 05.1	+0.3
ARIG	Puente Sto Nin	2.25	334	eP	Pn	20 15 41.2	+1.1
ARIG				eS	Sn	20 16 07.8	+0.4
ZIIG	Zihuatanejo	2.46	303	eP	Pn	20 15 44.2	+1.2
ZIIG				eS	Sn	20 16 12.8	+0.1
ZIIG	Zihuatanejo	2.46	303	eP	Pn	20 15 44.2	+1.2
ZIIG				eS	Sn	20 16 12.8	+0.1
VHO	Vista Hermosa	2.60	71	eP	Pn	20 15 46.0	+0.9
VHO				eS	Sn	20 16 16.7	+0.2
VHO	Vista Hermosa	2.60	71	eP	Pn	20 15 46.0	+0.9
VHO				eS	Sn	20 16 16.7	+0.2
YAIG	Yautepec	2.60	5	eP	Pn	20 15 46.5	+1.4
YAIG				eS	Sn	20 16 17.2	+0.7
YAIG	Yautepec	2.60	5	eP	Pn	20 15 46.5	+1.4
YAIG				eS	Sn	20 16 17.2	+0.7
HUIG	Huatulco	3.12	98	eP	Pn	20 15 53.0	+0.9
HUIG				eS	Sn	20 16 27.8	-1.2
HUIG	Huatulco	3.12	98	eP	Pn	20 15 53.0	+0.9
HUIG				eS	Sn	20 16 27.8	-1.2
NVAR	Mina Array Bea	27.68	327	P	P	20 21 01.1	+10
	0.9nm,0.9s,baz=134,slow=13,SNR=4.1						
PDAR	Pinedale Array	27.84	344	P	P	20 20 53.8	+1.3
	0.8nm,1.0s,baz=178,slow=9.5,SNR=2.9						
ULM	Lac du Bonnet	34.02	4	P	P	20 21 41.4	-5.2
	1.3nm,0.8s,baz=198,slow=3.2,SNR=2.4						
YKA	Yellowknife Ar	47.43	350	P	P	20 23 37.8	+0.9
	0.4nm,0.8s,baz=157,slow=7.2,SNR=4.3						

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*IDC **07** 20:15:32.5±2.5, 36°.42N×142°.16E, h0km, mb3.7/4, mb1 3.8/6, mb1mx3.5/56, mbtmp3.8/6, ML3.7/2, Error ellipse: s-maj=58.3km s-min=25.6km az=71.0*
*ISCJB **07** 20:15:34.9±1.1, 36°.35N±0°.06×141°.94E±0°.10, h19km, mb3.6/4, Error ellipse: s-maj=11.4km s-min=8.4km az=157.8*
*JMA **07** 20:15:38.1±0.2, 36°.45N×141°.79E, h61km±5km, M3.1*
ISC 07 20:15:36.6±1.3**, 36°.43N**±0°.06×**141°.75E**±0°.09**, h19**km**, n12, σ1s.73**/16**, mb3.6**/4**, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
JHO	Hitachi	0.96	281	P	Pg	20 15 56.0	+0.6
JHO				eS	Sg	20 16 09.9	+1.8
ONAJ	Iwakimizuishiy	1.01	312	P	Pg	20 15 56.5	+0.2
CHOJ	Chosi	1.02	225	P	Pg	20 15 57.4	+1.0
BSO3	Boso 3	1.91	212	P	Pb	20 16 09.1	-1.5
JRY	Ryogami san	2.34	261	P	Pb	20 16 15.6	-2.5
JRY				eS	Sn	20 16 43.6	+1.4
MJAR	Matsushiro Arr	2.85	273	Pn	Pb	20 16 23.7	-3.2
	5.0nm,0.3s,baz=103,slow=9.4,SNR=45						
MAT	Matsushiro	2.85	273	P	Pb	20 16 24.1	-2.8
MAT				eS	Sn	20 16 54.3	-0.6
JHJ	Hachijo jima 2	3.67	207	Pn	Pn	20 16 32.5	+0.2
	29nm,0.3s,baz=85,slow=24,SNR=13						
JHJ				Sn	Sn	20 17 14.1	-1.1
	37nm,0.3s,baz=301,slow=19,SNR=9.0						
SONM	Songino Array	28.35	305	P	P	20 21 30.5	+1.2
	0.8nm,0.5s,baz=112,slow=10,SNR=6.0						
ZALV	Zalesovo Beam	42.52	313	P	P	20 23 31.5	+1.0
	0.6nm,0.4s,baz=91,slow=7.9,SNR=4.2						
MKAR	Makanchi Array	44.67	303	P	P	20 23 49.0	+1.0
	0.6nm,0.7s,baz=87,slow=10.0,SNR=7.6						
WRA	Warramunga Arr	56.50	188	P	P	20 25 16.6	-0.8
	0.5nm,0.7s,baz=6.4,slow=7.4,SNR=6.6						

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*IDC **07** 20:17:26.4±0.8, 36°.48N×141°.68E, h0km, mb4.0/15, mb1 4.1/17, mb1mx3.9/55, mbtmp4.0/17, ML2.9/2, Error ellipse: s-maj=21.1km s-min=16.9km az=103.0*
*ISCJB **07** 20:17:29.5±0.6, 36°.48N±0°.07×141°.73E±0°.09, h35km, mb4.2/26, Error ellipse: s-maj=11.3km s-min=9.5km az=142.4*
*NEIC **07** 20:17:31.9±0.5, 36°.57N×141°.54E, h35km, mb4.6/11, Error ellipse: s-maj=10.7km s-min=9.1km az=167.0*
ISC 07 20:17:31.3±0.6**, 36°.44N**±0°.07×**141°.6E**±0°.1**, h35**km**, n44, σ1s.30**/33**, mb4.3**/26**, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
MJAR	Matsushiro Arr	2.76	273	Pn	Pn	20 18 13.2	+0.2
	2.2nm,0.3s,baz=79,slow=17,SNR=4.0						
MAJO	Matsushiro	2.77	273	Pn	Pn	20 18 11.9	-1.2
JHJ	Hachijo jima 2	3.65	205	Pn	Pn	20 18 24.8	-0.4
	baz=234,slow=19,SNR=2.4						
CBIJ	Chichi jima	9.33	177	Sn	Sn	20 21 25.2	-1.8
JCJ	Chichijima	9.33	177	Sn	Sn	20 21 25.2	-1.8
	18nm,0.3s,baz=280,slow=22,SNR=7.4						
USRK	Ussuriysk Ar.	10.69	319	Pn	Pn	20 20 01.1	-0.6
	0.7nm,0.3s,baz=132,slow=13,SNR=18						
KSRS	Korea Array	11.02	279	Pn	Pn	20 20 10.8	+4.4
	0.2nm,0.3s,baz=86,slow=14,SNR=2.7						
KSAR	Wonju Array Be	11.05	279	Pn	Pn	20 20 10.8	+4.0
MDJ	Mudanjiang	12.26	315	eP	Pn	20 20 21.4	-1.9
KLR	Kul'dur	14.68	334	Pn	Pn	20 20 52.7	-3.5
	0.1nm,0.3s,baz=129,slow=12,SNR=14						
YAK	Yakutsk	26.69	347	eP	P	20 23 03.1	-3.6
	26nm,0.6s						
SEY	Seymchan	27.34	11	P	P	20 23 12.2	-0.4
	0.8nm,0.5s,baz=204,slow=7.2,SNR=4.4						
ENH	Enshi	27.47	266	eP	P	20 23 17.4	+3.3
	11nm,0.8s						
SONM	Songino Array	28.27	305	P	P	20 23 21.1	-0.1
	2.0nm,0.6s,baz=101,slow=8.5,SNR=11						
ZALV	Zalesovo Beam	42.45	313	P	P	20 25 21.8	-0.6
	3.3nm,0.8s,baz=86,slow=6.9,SNR=17						
MKAR	Makanchi Array	44.59	303	P	P	20 25 40.7	+0.8
	2.1nm,0.6s,baz=88,slow=9.4,SNR=26						
TAPN	Taplejung	46.16	275	eP	P	20 25 57.3	+4.4
	3.8nm,0.4s						
KURK	Kurchatov	46.44	309	eP	P	20 25 54.1	-0.3
	14nm,0.7s						
ODAN	Odare	46.63	274	eP	P	20 26 00.5	+4.0
	8.6nm,0.8s						
RAMN	Ramite	47.23	275	eP	P	20 26 04.8	+3.6
	10.0nm,0.7s						
GUN	Gumba	47.40	276	eP	P	20 26 07.4	+4.8
	11nm,0.4s						
KKN	Kakani	47.93	276	eP	P	20 26 10.6	+4.0
	11nm,0.6s						
GKN	Gorkha	48.35	277	eP	P	20 26 14.0	+4.2
	18nm,0.8s						
PYUN	Piuthan	49.63	278	eP	P	20 26 24.2	+4.6
ILAR	Eielson Array	49.90	32	P	P	20 26 21.4	+0.4
	0.7nm,0.7s,baz=275,slow=6.7,SNR=6.1						
TKM2	Tokmak 2	50.07	299	eP	P	20 26 23.1	+0.2
	6.1nm,0.6s						
AAK	Ala-Archa	50.93	299	eP	P	20 26 30.4	+1.2
	2.1nm,0.6s						
BRVK	Borovoye	51.16	313	eP	P	20 26 30.5	-0.1
	1.8nm,0.8s						
KKAR	Karatay Array	53.58	301	eP	P	20 26 48.6	-0.2

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
	1.2nm,0.6s						
INK	Inuvik	54.83	27	P	P	20 26 58.0	+0.6
	1.6nm,0.8s,baz=309,slow=4.3,SNR=6.0						
WRA	Warramunga Arr	56.50	188	P	P	20 27 11.2	+1.3
	0.3nm,0.7s,baz=5.1,slow=7.1,SNR=4.6						
ARU	Arti	56.92	319	eP	P	20 27 11.2	-1.4
	3.5nm,0.8s						
ABKAR	Akbulak array	58.46	310	eP	P	20 27 23.3	-0.2
	1.8nm,0.5s						
ASAR	Alice Springs	60.23	188	P	P	20 27 35.6	-0.3
	0.3nm,0.7s,baz=17,slow=6.8,SNR=3.2						
YKA	Yellowknife Ar	64.23	30	P	P	20 28 02.7	+0.5
	0.5nm,0.7s,baz=301,slow=6.3,SNR=8.6						
GEYT	Alibeck	64.28	299	P	P	20 28 04.7	+1.6
	1.6nm,0.6s,baz=72,slow=4.8,SNR=4.7						
ARCES	ARCESS Array B	64.61	340	P	P	20 28 03.9	-0.8
	3.6nm,1.0s,baz=51,slow=7.4,SNR=4.2						
FINES	FINESS Array B	69.42	332	P	P	20 28 34.6	-0.7
	4.7nm,0.8s,baz=58,slow=7.2,SNR=9.9						
KIV	Kislovodsk	71.43	311	eP	P	20 28 48.4	+0.3
NOA	NORSAR Array B	74.80	337	P	P	20 29 07.4	-0.2
	2.5nm,0.8s,baz=39,slow=5.8,SNR=6.9						
AKASG	Malin Array Be	74.88	322	P	P	20 29 08.4	+0.3
	1.3nm,0.4s,baz=45,slow=6.0,SNR=8.5						
BW06	Boulder Array	77.95	45	eP	P	20 29 26.6	+0.6
	6.2nm,0.6s						
BRTR	Keskin Array B	79.38	312	P	P	20 29 35.8	+2.0
	0.6nm,0.8s,baz=49,slow=6.5,SNR=3.6						
MSTX	Muleshoe	87.74	49	eP	P	20 30 20.7	+3.9
	4.3nm,0.4s						

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*IDC **07** 20:17:28.8±5.6, 37°.91N×142°.07E, h0km, mb3.7/2, mb1 3.9/4, mb1mx3.5/54, mbtmp3.8/4, ML3.7/2, Error ellipse: s-maj=106.0km s-min=53.2km az=1.0*
*JMA **07** 20:17:39.0±0.1, 37°.51N×141°.47E, h42km±1km, M4.1*
JMA Felt II J1.
ISC 07 20:17:36.8±1.8**, 37°.57N**±0°.05×**141°.60E**±0°.09**, h31**km±12km**, n13,** σ**0.86**/19**, mb4.0**/3**, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
JFK	Kawauchi	0.61	251	P	Pn	20 17 49.8	+0.4
JFK				S	Sb	20 17 57.3	-0.2
JMM	Marumori	0.71	295	P	Pn	20 17 51.7	+1.1
JMM				S	Sn	20 18 00.6	+0.1
ONAJ	Iwakimizuishiy	0.79	234	P	Pb	20 17 52.0	-0.1
ONAJ				S	Sb	20 18 01.2	-1.3
JFT	Otama	1.01	268	P	Pb	20 17 56.1	+0.5
JFT				S	Sb	20 18 08.2	-0.3
JOU	Okura	1.09	317	P	Pb	20 17 57.6	+0.6
JYS	Shirataka	1.38	299	P	Pb	20 18 01.4	-0.5
JYS				S	Sb	20 18 19.3	+0.1
JMK	Ichinoseki	1.41	348	eS	Sb	20 18 19.9	-0.3
JFY	Yanaizu	1.52	264	P	Pn	20 18 02.6	+0.8
JFY				eS	Sn	20 18 20.2	-0.3
MJAR	Matsushiro Arr	2.90	250	Pn	Pn	20 18 22.5	+1.6
	6.1nm,0.3s,baz=81,slow=17,SNR=10						
JHJ	Hachijo jima 2	4.68	199	Pn	Pn	20 18 46.9	+1.6
	11nm,0.3s,baz=82,slow=17,SNR=4.8						
JHJ				Sn	Sn	20 19 38.3	-0.2
	10.0nm,0.3s,baz=270,slow=20,SNR=4.9						
WRA	Warramunga Arr	57.61	188	P	P	20 27 22.8	-1.1
	0.7nm,0.5s,baz=5.2,slow=7.2,SNR=8.1						
ASAR	Alice Springs	61.34	188	P	P	20 27 49.3	-0.2
	0.5nm,0.7s,baz=13,slow=7.7,SNR=5.0						
NB2	NORSAR Subarra	73.75	337	P	P	20 29 07.3	-0.3
	comp=Z,1.4nm,0.7s,baz=39,slow=6.2						

MEX 07 20:18:43.7±0.5**, 16°.35N**×**99°.66W, h10**km**, MD3.9, Near coast of Guerrero**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
ACX	Acapulco	0.55	340	eP	Pg	20 18 54.9	+0.4
ACX				eS	Sb	20 19 02.7	-0.8
ACP2	Acapulco	0.57	337	eP	Pg	20 18 51.2	-3.5
ACP2				eS	Sg	20 18 59.3	-2.9
CAIG	El Cayaco	0.91	320	eP	Pg	20 18 58.3	-2.9
CAIG				eS	Sg	20 19 10.4	-2.7
MEIG	Mezcala	1.57	1	eP	Pn	20 19 07.3	-4.5
MEIG				eS	Sn	20 19 27.4	-4.7
TLIG	Tlapa	1.60	41	i P	Pn	20 19 04.6	-7.5
TLIG				eS	Sn	20 19 19.1	-14
ARIG	Puente Sto Nin	2.03	341	eP	Pn	20 19 15.0	-3.0
ARIG				eS	Sn	20 19 39.1	-4.4
PLIG	Platanillo	2.04	4	eP	Pn	20 19 14.4	-3.8
PLIG				eS	Sn	20 19 39.9	-3.9
ZIIG	Zihuatanejo	2.13	306	eP	Pn	20 19 16.4	-3.0
ZIIG				eS	Sn	20 19 42.0	-4.0
YAIG	Yautepec	2.56	13	eP	Pn	20 19 22.3	-3.1
YAIG				eS	Sn	20 19 52.8	-4.0
VHO	Vista Hermosa	2.89	75	eP	Pn	20 19 27.3	-2.8
VHO				eS	Sn	20 20 02.0	-3.0
HUIG	Huatulco	3.46	99	eP	Pn	20 19 37.3	-0.4
HUIG				eS	Sn	20 20 18.8	0.0

JMA 07 20:33:21.7±0.3**, 38°.10N**×**142°.25E, h12**km**, M3.5, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
JMK	Ichinoseki	1.17	317	P	Pb	20 33 43.5	-0.4
JMK				S	Sb	20 33 58.4	-0.7
JMM	Marumori	1.18	259	P	Pb	20 33 43.6	-0.3
JMM				S	Sb	20 33 58.4	-0.7
JOU	Okura	1.28	282	P	Pb	20 33 45.6	-0.1
JOU				S	Sb	20 34 02.1	0.0
JFK	Kawauchi	1.31	237	P	Pn	20 33 45.2	-0.7
JFK				S	Sb	20 34 01.7	-1.4
JOM	Ohasama	1.56	332	P	Pn	20 33 49.5	+0.2
JOM				S	Sn	20 34 09.2	-0.3
JFT	Otama	1.62	250	P	Pb	20 33 51.1	-0.5
JFT				S	Sb	20 34 12.4	+0.4
JYK	Kaneyama	1.69	299	P	Pn	20 33 51.9	+0.8
JYS	Shirataka	1.73	275	P	Pb	20 33 53.1	-0.2
JYS				S	Sb	20 34 14.9	-0.1

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*IDC **07** 20:40:51.6±2.7, 38°.43N×142°.74E, h0km, mb3.8/4, mb1 3.8/6, mb1mx3.5/39, mbtmp3.7/6, ML2.8/2, Error ellipse: s-maj=66.5km s-min=27.9km az=68.0*
*NEIC **07** 20:40:57.2±1.6, 38°.43N×142°.52E, h35km, mb4.1/1, Error ellipse: s-maj=32.0km s-min=19.3km az=88.0*
*ISCJB **07** 20:41:01.3±1.3, 38°.29N±0°.05×141°.9E±0°.1, h68km±8km, mb3.7/5, Error ellipse: s-maj=17.5km s-min=7.1km az=9.7*
*JMA **07** 20:41:01.8±0.1, 38°.28N×141°.91E, h61km±4km, M3.9*
JMA Felt I J1.
ISC 07 20:41:00.3±2.0**, 38°.23N**±0°.05×**142°.1E**±0°.1**, h51**km±17km**, n16,** σ**1.19**/24**, mb3.8**/5**, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
JMK	Ichinoseki	0.99	317	P	Pn	20 41 18.4	+0.5
JMK				S	Sn	20 41 29.9	-0.9
JMM	Marumori	1.08	251	P	Pn	20 41 19.5	+0.4
JMM				S	Sn	20 41 32.3	-0.7
JOU	Okura	1.12	277	P	Pn	20 41 20.1	+0.4
JOU				S	Sn	20 41 32.9	-1.2
JFK	Kawauchi	1.29	228	P	Pn	20 41 23.1	+1.1
JFK				S	Sn	20 41 39.0	+0.9
JOM	Ohasama	1.39	334	P	Pn	20 41 23.8	+0.5
JOM				S	Sn	20 41 40.1	-0.4
JYK	Kaneyama	1.51	298	P	Pn	20 41 25.1	+0.1
JYK				S	Sn	20 41 42.3	-1.3
JFT	Otama	1.55	243	P	Pn	20 41 26.6	+1.0
JFT				S	Sn	20 41 44.7	+0.1
JYS	Shirataka	1.59	270	P	Pn	20 41 26.4	+0.4
JYS				S	Sn	20 41 44.7	-0.7
MJAR	Matsushiro Arr	3.51	243	Pn	Pn	20 41 54.8	+2.3
	0.8nm,0.3s,baz=56,slow=10.0,SNR=7.1						
JHJ	Hachijo jima 2	5.43	201	Sn	Sn	20 43 16.6	-3.3
	3.9nm,0.3s,baz=73,slow=19,SNR=3.7						
USRK	Ussuriysk Ar.	9.66	311	Pn	Pn	20 43 17.1	+0.5
	0.6nm,0.3s,baz=124,slow=14,SNR=9.0						
SONM	Songino Array	27.58	302	P	P	20 46 43.1	+0.5
	0.6nm,0.5s,baz=97,slow=7.0,SNR=4.2						
ZALV	Zalesovo Beam	41.51	311	P	P	20 48 42.5	+0.2
	1.1nm,0.5s,baz=86,slow=8.0,SNR=9.0						
MKAR	Makanchi Array	43.94	301	P	P	20 49 02.1	-0.1
	1.0nm,0.7s,baz=86,slow=9.3,SNR=13						
KURK	Kurchatov	45.62	307	eP	P	20 49 14.0	-1.4
	1.7nm,0.6s						
WRA	Warramunga Arr	58.32	189	P	P	20 50 50.4	+0.4
	0.4nm,0.5s,baz=6.1,slow=7.2,SNR=4.9						

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*IDC **07** 20:41:50.2±0.5, 17°.19N×85°.06W, h0km, mb4.8/26, mb1 4.9/31, mb1mx4.8/38, mbtmp4.8/31, ML3.9/5, MS5.2/35, Ms1 5.2/35, ms1mx5.1/44, Error ellipse: s-maj=17.3km s-min=10.3km az=55.0*
*MOS **07** 20:41:50.4±1.0, 17°.17N×85°.06W, h11km, mb5.4/47, MS5.4/14, Error ellipse: s-maj=8.3km s-min=4.6km az=103.5*
*NEIC **07** 20:41:51.5±0.6, 17°.11N×85°.08W, h7km±3km, mb5.3/176, MS5.3/138, MW5.9, MW5.8, Error ellipse: s-maj=4.0km s-min=2.7km az=207.0, Moment Tensor Solution. s24 Moment tensor: Scale 10^{17}Nm; M_{rr}-0.03; $M_{\theta\theta}$-1.81; $M_{\phi\phi}$1.84; $M_{r\theta}$0.18; $M_{\theta\phi}$8.22; $M_{\phi r}$1.65; Best double couple: $M_0$8.60000×10^{17} NP1:ϕ_s84.00000°, δ79.00000°, λ2.00000°. NP2:ϕ_s354.00000°, δ88.00000°, λ169.00000°. Principal axes: T 8.6600, Plg9.0000°, Azm308.0000°; N -0.1600, Plg79.0000°, Azm162.0000°; P -8.5000, Plg6.0000°, Azm39.0000°;*
NEIC Felt [II] at French Harbor and Roatan. Also felt at Arizona, Guanaja, Jose Santos Guardiola, La Ceiba and Sandy Bay. Felt at Dangriga, Belize and at Chetumal, Mexico. Also felt at Santa Ana, El Salvador.
*GCMT **07** 20:41:51.5±0.1, 17°.22N×85°.17W, h15km, MW5.9/127, Moment Tensor Solution. s94,c156; s127,c280; Duration: 2s1 Moment tensor: Scale 10^{17}Nm; M_{rr}0.35±.10; $M_{\theta\theta}$-4.19±.10; $M_{\phi\phi}$3.83±.11; $M_{r\theta}$-0.61±.32; $M_{\theta\phi}$5.93±.08; $M_{\phi r}$3.39±.32; Best double couple: $M_0$7.95000×10^{17} NP1:ϕ_s342.00000°, δ87.00000°, λ154.00000°. NP2:ϕ_s74.00000°, δ64.00000°, λ4.00000°. Principal axes: T 7.9780, Plg20.0000°, Azm295.0000°; N -0.0630, Plg64.0000°, Azm155.0000°; P -7.9220, Plg15.0000°, Azm31.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface/mantle waves, cutoff=50s.*
*ISCJB **07** 20:41:53.5±0.1, 17°.17N±0°.02×85°.17W±0°.02, h33km, mb5.2/186, MS5.3/191 Error ellipse: s-maj=2.7km s-min=2.2km az=142.7*
*BJI **07** 20:41:54.5, 17°.20N×85°.10W, h20km, mB5.6/20, Ms5.9/27, Ms7 5.6/27*
*NEIC **07** 20:41:54.0±0.0, 17°.22N×85°.09W, h19km, Moment Tensor Solution. s9 Moment tensor: Scale 10^{17}Nm; M_{rr}-0.50; $M_{\theta\theta}$-5.70; $M_{\phi\phi}$6.20; $M_{r\theta}$0.20; $M_{\theta\phi}$2.60; $M_{\phi r}$1.80; Best double couple: $M_0$7.00000×10^{17} NP1:ϕ_s326.00000°, δ82.00000°, λ169.00000°. NP2:ϕ_s58.00000°, δ79.00000°, λ8.00000°. Principal axes: T 7.1000, Plg13.0000°, Azm281.0000°; N -0.9000, Plg76.0000°, Azm110.0000°; P -6.2000, Plg1.0000°, Azm12.0000°;*
ISC 07 20:41:55.3±0.3**, 17°.15N**±0°.04×**85°.19W**±0°.04**, h35**km**, n1005,** σ**1.71**/916**, mb5.2**/186**, MS5.3**/196**, 16C-5D, North of Honduras**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
TGUH	Tegucigalpa,Un	3.67	214	ePn	Pn	20 42 48.6	-1.0
ESTN	Estel	4.18	196	eP	Pn	20 42 55.3	-1.4
TEIG	Tepich	4.24	317	Pn	Pn	20 42 55.9	-1.4
	635nm,0.3s,baz=89,slow=24,SNR=1113						
TEIG				Sn	Sn	20 43 42.6	-3.1
	448nm,0.3s,baz=179,slow=23,SNR=15						
TEIG				LR	LR	20 44 46.8	
	comp=Z,30μm,19.5s,baz=170,slow=41						
TEIG	Tepich	4.24	317	eP	Pn	20 42 56.0	-1.4
CNCH	Conchagua	4.62	214	eS	Sn	20 44 22.5	+27
CSGN	Cosiguina Volc	4.74	209	eP	Pn	20 43 02.6	-1.8
PACA	Pacayal	4.75	220	eP	Pn	20 43 02.7	-1.8
VSM	San Miguel	4.75	219	eP	Pn	20 43 03.7	-0.9
LCY	Lacayo	4.76	219	eP	Pn	20 43 02.5	-2.3
CRIN	San Cristobal	4.77	202	eP	Pn	20 43 03.9	-1.0
CRIN				AML	AML	20 45 21.8	
	comp=N,4μm,0.8s						
TECA	Tecapa	4.84	222	eP	Pn	20 43 05.2	-0.6
CNGN	Cerro Negro	4.84	198	eP	Pn	20 43 06.0	+0.2
MOMN	Momotombo	4.89	196	eP	Pn	20 43 04.0	-2.4
MOMN				AML	AML	20 44 39.7	
	comp=Z,795nm,0.8s						
SNVI	San Vicente	4.97	226	eS	Sn	20 44 32.9	+29
LBRS	Las Brisas	5.03	228	eP	Pn	20 43 08.3	0.0
COPN	Copaltepe	5.12	196	eP	Pn	20 43 03.0	-6.6
LFRS	El Faro	5.12	227	eP	Pn	20 43 09.3	-0.3
SNET	Serv Nac Est T	5.20	229	eS	Sn	20 44 39.4	+30
BOQS	Boqueron	5.20	230	eP	Pn	20 43 10.9	0.0
BOQS				eS	Sn	20 44 39.9	+30
COLS	Colinas	5.26	229	eP	Pn	20 43 12.0	+0.4
SNJE	San Jose	5.36	233	eP	Pn	20 43 13.6	+0.5
RTR	El Retiro	5.38	234	eP	Pn	20 43 13.9	+0.7
SBLS	San Blas	5.39	233	eP	Pn	20 43 13.7	+0.2
IXG	Ixpaco	5.87	241	eP	Pn	20 43 20.8	+0.7
CCIG	Comitan	6.72	264	ePn	Pn	20 43 30.1	-1.5
JTS	JuntasAbangare	6.82	178	Pn	Pn	20 43 32.2	-0.7
	comp=Z,8.5nm,0.3s,baz=352,slow=10,SNR=21						
JTS				Lg	Lg	20 45 17.2	
	comp=Z,9.0nm,0.3s,baz=257,slow=8.7,SNR=4.3						
JTS				LR	LR	20 46 08.8	
	comp=Z,40μm,21.1s,baz=3.0,slow=38						
JTS	JuntasAbangare	6.82	178	eP	Pn	20 43 32.3	-0.6
VCR	Vista de Mar	6.99	184	eP	Pn	20 43 35.5	+0.1
MCJ	Malvern	7.20	83	eP	Pn	20 43 34.3	-3.8
CVJ	Coleyville	7.37	80	i P	Pn	20 43 38.2	-2.4
MTDJ	Mount Denham	7.37	80	ePn	Pn	20 43 36.6	-4.0
BBJ	Bamboo Saint A	7.64	80	eP	Pn	20 43 40.7	-3.6
BNJ	Bonny Gate	7.93	80	i P	Pn	20 43 45.2	-3.0
STH	Stony Hill	8.04	82	i P	Pn	20 43 45.8	-3.9
GTBY	Guantanamo Bay	9.95	72	ePn	Pn	20 44 13.1	-2.7
DWPF	Disney Wildern	11.45	17	ePn	Pn	20 44 32.5	-3.8
MOTC	Monteria, Cord	12.45	131	eP	Pn	20 44 42.0	-8.1
TLIG	Tlapa	12.78	274	ePn	Pn	20 44 52.9	-1.8
SDDR	Presa de Saban	13.34	80	ePn	Pn	20 45 00.5	-1.8
546A	Slidell	13.67	343	P	Pn	20 45 03.4	-3.2
	baz=161						
GRTK	Grand Turk	13.96	70	ePn	Pn	20 45 07.9	-2.7
BRAL	Brewton	14.06	353	ePn	Pn	20 45 14.0	+2.0
446A	Poplarville	14.11	345	P	Pn	20 45 10.0	-2.6
	baz=163,SNR=9.0						
BANI	BANI	14.18	83	ePn	Pn	20 45 09.1	-4.7
TIGA	Tifton	14.30	6	P	Pn	20 45 11.9	-3.4
	baz=186						
TIGA	Tifton	14.30	6	ePn	Pn	20 45 13.5	-1.8
TIGA				eSn	Sn	20 47 43.0	-10
542A	Morse	14.57	334	P	Pn	20 45 16.5	-2.5
	baz=151						
346A	Big Creek Wild	14.70	345	P	Pn	20 45 17.9	-2.9
	baz=163						
738A	Farr-Stevens R	15.10	322	P	Pn	20 45 22.6	-3.4
	baz=138						
035Z	Hargill	15.12	310	P	Pn	20 45 22.8	-3.6
	baz=125,SNR=53						
246A	Jackson Lee, B	15.23	347	P	Pn	20 45 24.4	-3.3
	baz=165						
GUYC	Guyana, Colomb	15.24	140	eP	P	20 45 32.4	-0.7
GRMC	Gramalote, San	15.29	126	eP	Pn	20 45 24.4	-4.3
540A	Vidor	15.29	330	P	Pn	20 45 25.3	-3.2
	baz=146						
NORC	Norcasia	15.31	138	eP	P	20 45 34.6	+1.2
441A	DeRidder	15.38	333	P	Pn	20 45 26.6	-3.1
	baz=150,SNR=6.5						
MOIG	Morelia	15.40	282	ePn	P	20 45 35.8	+1.3
	comp=Z,353nm,1.0s						
638A	Rosharon	15.42	324	P	Pn	20 45 26.4	-3.8
	baz=140,SNR=7.1						
245A	Little AP, Sta	15.43	345	P	Pn	20 45 28.3	-2.0
	baz=163						
035A	Encino	15.43	311	P	Pn	20 45 26.3	-4.1
	baz=126,SNR=25						
737A	Port Lavaca	15.52	320	P	Pn	20 45 28.0	-3.5
	baz=136						
539A	Cross D Ranch,	15.57	328	P	Pn	20 45 29.3	-2.9
	baz=144						
342A	Flagon Creek P	15.58	337	P	Pn	20 45 29.1	-3.3
	baz=154						
PAMC	Pamplona, Colo	15.61	127	eP	Pn	20 45 29.5	-3.7
244A	Avery, Jackson	15.65	342	P	Pn	20 45 29.5	-3.7
	baz=160						
KVTX	Kingsville	15.65	314	ePn	Pn	20 45 32.4	-0.8
	comp=Z,248nm,0.8s						
KVTX				eSn	Sn	20 48 25.6	+0.1
440A	Kirbyville	15.72	331	P	Pn	20 45 30.8	-3.3
	baz=147						
BARC	Barichara	15.73	130	eP	P	20 45 38.0	-0.3
VBMS	Vicksburg	15.77	343	P	Pn	20 45 30.6	-4.1
	baz=161						
VBMS	Vicksburg	15.77	343	ePn	Pn	20 45 35.2	+0.5
	comp=Z,140nm,0.8s						
146A	Union	15.82	348	P	Pn	20 45 31.7	-3.6
	baz=166						
146A				S	Sn	20 48 14.2	-15
	baz=166						
341A	Kurthwood	15.88	334	P	Pn	20 45 32.6	-3.6
	baz=151						
LRAL	Lakeview Retre	15.91	354	ePn	Pn	20 45 33.3	-3.1
	comp=Z,100nm,1.1s						
034A	Hebbronville	15.92	311	P	Pn	20 45 33.6	-3.2
	baz=126,SNR=45						
637A	Eagle Lake	15.94	322	P	Pn	20 45 33.9	-3.1
	baz=138,SNR=29						
145A	Houston Renfro	15.98	345	P	Pn	20 45 34.3	-3.1
	baz=163						
736A	Circle Diamond	16.04	319	P	Pn	20 45 35.6	-2.6
	baz=134,SNR=14						
HKT	Hockley	16.04	325	eP	Pn	20 45 35.1	-3.1
HKT				pmax	pmax		
	comp=Z,600nm,1.0s						
HKT	Hockley	16.04	325	ePn	Pn	20 45 35.1	-3.1
	comp=Z,600nm,1.0s						
538A	Harpers Horsep	16.06	326	P	Pn	20 45 35.8	-2.8
	baz=142,SNR=13						
835A	Beeville	16.08	316	P	Pn	20 45 36.4	-2.3
	baz=131,SNR=16						
934A	Benavides	16.12	313	P	Pn	20 45 36.6	-2.7
	baz=127,SNR=51						
144A	Alexander Plac	16.13	344	P	Pn	20 45 37.0	-2.3
	baz=162						
242A	Grayson	16.14	338	P	Pn	20 45 37.0	-2.5
	baz=155						
439A	Center Grove,	16.15	329	P	Pn	20 45 36.5	-3.1
	baz=145,SNR=14						
ROSC	El Rosal	16.21	138	Pn	Pn	20 45 40.6	-0.3
	comp=Z,1.0nm,0.3s,baz=1.6,slow=11,SNR=14						
ROSC				LR	LR	20 52 38.2	
	comp=Z,9μm,19.8s,baz=338,slow=40						
ROSC	El Rosal	16.21	138	eP	Pn	20 45 41.4	+0.5
	comp=Z,218nm,1.2s						
340A	Bronson	16.26	332	P	Pn	20 45 37.6	-3.4
	baz=149						
GOGA	Godfrey	16.27	5	eP	Pn	20 45 38.1	-3.1
GOGA				pmax	pmax		
	comp=Z,110nm,1.1s						
GOGA	Godfrey	16.27	5	ePn	Pn	20 45 38.1	-3.1
	comp=Z,109nm,1.1s						
RGRS	Roger Stewart	16.33	15	ePn	Pn	20 45 40.1	-1.8
SDV	Santo Domingo	16.37	118	Pn	Pn	20 45 39.3	-3.5
	comp=Z,5.0nm,0.3s,baz=320,slow=6.6,SNR=22						
SDV				Sn	Sn	20 48 30.7	-13
	comp=Z,1.4nm,0.3s,baz=339,slow=14,SNR=3.8						
SDV				LR	LR	20 53 32.5	
	comp=Z,10μm,19.0s,baz=275,slow=43						
SDV	Santo Domingo	16.37	118	ePn	Pn	20 45 39.2	-3.5
	comp=Z,200nm,0.8s						
SDV				Sn	Sn	20 48 30.7	-13
241A	Mo Tay, Goldon	16.39	336	P	Pn	20 45 39.7	-2.9
	baz=153						
636A	Smothers Creek	16.41	321	P	Pn	20 45 39.7	-3.2
	baz=136,SNR=53						
537A	Green Hill Far	16.41	324	P	Pn	20 45 39.3	-3.6
	baz=139,SNR=10						
CSU	Charleston Sou	16.43	15	ePn	Pn	20 45 42.0	-1.2
735A	Kenedy	16.44	317	P	Pn	20 45 40.2	-3.2
	baz=132,SNR=21						
834A	Tilden	16.47	314	P	Pn	20 45 40.5	-3.2
	baz=129,SNR=60						
438A	Sam Houston St	16.47	327	P	Pn	20 45 40.1	-3.6
	baz=143,SNR=15						
143A	Socs Landing,	16.48	341	P	Pn	20 45 40.8	-3.0
	baz=158						
339A	Huntington	16.50	331	P	Pn	20 45 40.9	-3.1
	baz=147,SNR=19						
142A	Monroe	16.51	340	P	Pn	20 45 41.5	-2.7
	baz=156						
NHSC	New Hope	16.52	15	ePn	Pn	20 45 43.0	-1.3
	comp=Z,876nm,1.1s						
933A	Laredo	16.67	311	P	Pn	20 45 43.1	-3.2
	baz=126,SNR=110						
240A	Hunter Patters	16.74	334	P	Pn	20 45 43.8	-3.3
	baz=150						
POPC	Popayan, Colom	16.75	149	eP	P	20 45 50.4	+0.9
CHIC	Chingaza	16.75	137	eP	Pn	20 45 48.2	+0.4
635A	Leesville	16.78	319	P	Pn	20 45 44.1	-3.5
	baz=134,SNR=17						
536A	Bastrop	16.84	322	P	Pn	20 45 44.8	-3.6
	baz=137,SNR=17						
338A	Crockett	16.88	329	P	Pn	20 45 46.2	-2.6
	baz=144,SNR=7.3						
437A	Phantom Ranch,	16.89	326	P	Pn	20 45 45.7	-3.2
	baz=141,SNR=10						
141A	Papa Simpson,	16.90	337	P	Pn	20 45 46.3	-2.8
	baz=154						
NATX	Nacogdoches	16.90	331	P	Pn	20 45 45.7	-3.4
	baz=147,SNR=8.7						
NATX	Nacogdoches	16.90	331	ePn	Pn	20 45 46.5	-2.6
NATX				eSn	Sn	20 48 43.5	-12
734A	La Parita Cree	16.93	316	P	Pn	20 45 46.8	-2.7
	baz=131,SNR=64						
239A	Gary	17.03	332	P	Pn	20 45 47.4	-3.4
	baz=148,SNR=16						
337A	Centerville	17.14	327	P	Pn	20 45 49.1	-3.0
	baz=143,SNR=24						
634A	China Grove, S	17.15	318	P	Pn	20 45 48.6	-3.7
	baz=132,SNR=7.2						
833A	Chaparral WMA,	17.17	313	P	Pn	20 45 48.8	-3.8
	baz=127,SNR=99						
140A	Cam and Jess,	17.19	335	P	Pn	20 45 49.8	-2.9
	baz=152						
436A	Wall Ranch, Ga	17.20	324	P	Pn	20 45 49.7	-3.2
	baz=139,SNR=12						
ZAIG	Zacatecas	17.27	292	eP	Pn	20 45 54.2	+0.2
	comp=Z,142nm,1.1s						
238A	Jacksonville	17.32	330	P	Pn	20 45 51.2	-3.1
	baz=146						
733A	Divot King Ran	17.35	314	P	Pn	20 45 51.7	-3.0
	baz=129,SNR=24						
JSC	Jenkinsville	17.42	11	eP	Pn	20 45 52.9	-2.7
JSC				pmax	pmax		
	comp=Z,130nm,1.2s						
JSC	Jenkinsville	17.42	11	ePn	Pn	20 45 52.9	-2.7
	comp=Z,131nm,1.2s						
JSC				eSn	Sn	20 48 55.5	-13
CRUC	La Cruz	17.47	152	eP	P	20 45 57.8	+0.2
832A	Faith Ranch, C	17.56	312	P	Pn	20 45 53.6	-3.8
	baz=126,SNR=184						
139A	Bunkhouse Ranc	17.56	333	P	Pn	20 45 54.1	-3.2
	baz=149,SNR=6.7						
237A	Washetta, Mont	17.65	329	P	Pn	20 45 55.6	-2.8
	baz=144						
CMBC	Cumbal	17.66	155	eP	P	20 46 02.3	+2.5
435B	Jarrell	17.66	322	P	Pn	20 45 56.2	-2.4
	baz=137,SNR=114						
534A	Blanco	17.66	319	P	Pn	20 45 55.5	-3.2
	baz=134,SNR=157						
Z40A	Long Farm, Mag	17.67	337	P	Pn	20 45 56.1	-2.5
	baz=153						
336A	Riesel	17.70	325	P	Pn	20 45 55.7	-3.3
	baz=140,SNR=37						
OXF	Oxford	17.70	348	eP	Pn	20 45 59.0	-0.1
OXF				e		20 49 10.8	
OXF				pmax	pmax		
	comp=Z,440nm,1.0s						
OXF	Oxford	17.70	348	ePn	Pn	20 45 59.0	-0.1
	comp=Z,440nm,0.9s						
OXF				eSn	Sn	20 49 10.8	-4.5
633A	Saathoff Ranch	17.74	316	P	Pn	20 45 56.0	-3.5
	baz=131,SNR=147						
CELP	Cerrillos	17.76	84	eP	Pn	20 45 59.0	-0.9
138A	Matatall Enter	17.85	332	P	Pn	20 45 58.0	-3.0
	baz=147						
335A	Moody	17.94	324	P	Pn	20 45 59.6	-2.4
	baz=139,SNR=21						
WLAR	White Oak Lake	17.95	338	ePn	P	20 46 04.7	+2.3
	comp=Z,101nm,0.8s						

Z39A Irene McRaven, 17.96 335 P Pn 20 45 59.6 -2.6
baz=151
236A Katherine and 18.01 327 P Pn 20 46 01.0 -1.9
baz=142,SNR=7.2
533A Kerrville 18.05 318 P Pn 20 46 00.1 -3.3
baz=132,SNR=103
OTAV Otavalo 18.06 158 ePn P 20 46 05.2 +1.0
comp=Z,115nm,1.3s
OTAV Otavalo 18.06 158 eP P 20 46 06.3 +2.0
434A Burnet 18.09 321 P Pn 20 46 01.3 -2.6
baz=136,SNR=170
137A Heron Place, G 18.11 330 P Pn 20 46 02.1 -1.9
baz=146,SNR=12
SJG San Juan 18.17 84 P Pn 20 46 03.4 -1.5
comp=Z,0.7nm,0.3s,baz=298,slow=5.1,SNR=8.1
SJG LR LR 20 53 38.8
comp=Z,6µm,18.7s,baz=279,slow=39
SJG San Juan 18.17 84 eP Pn 20 46 03.6 -1.3
SJG pmax pmax
comp=Z,240nm,1.8s
SJG San Juan 18.17 84 ePn Pn 20 46 03.6 -1.3
comp=Z,239nm,1.8s
CPCT Cooper Cave 18.24 2 eP P 20 46 05.1 -0.5
comp=Z,44nm,0.8s
KMSC Kings Mountain 18.25 10 P P 20 46 02.6 -3.1
baz=191,SNR=14
KMSC Kings Mountain 18.25 10 ePn P 20 46 04.5 -1.3
comp=Z,331nm,1.5s
Y40A Okolona 18.30 338 P P 20 46 04.2 -2.1
baz=154
Z38A Mt. Pleasant 18.31 333 P P 20 46 04.5 -1.8
baz=149
136A Ennis 18.39 328 P P 20 46 04.6 -2.7
baz=143,SNR=9.5
PAYG Puerto Ayora 18.41 196 eP Pn 20 46 12.2 +4.4
comp=Z,270nm,1.4s
334A Lometa 18.45 322 P P 20 46 05.9 -2.1
baz=137,SNR=280
CBYP Canovanas 18.45 84 eP P 20 46 06.0 -2.1
comp=Z,67nm,1.0s
HUMP Col San Antoni 18.45 84 eP P 20 46 05.6 -2.5
comp=Z,337nm,2.0s
TKL Tuckaleechee C 18.48 4 P P 20 46 08.2 -0.1
comp=Z,1.3nm,0.3s,baz=176,slow=11,SNR=18
TKL S Sn 20 49 21.2 -13
comp=Z,2.9nm,0.3s,baz=89,slow=4.7,SNR=8.5
TKL LR LR 20 53 08.7
comp=Z,10µm,18.5s,baz=186,slow=37
TKL Tuckaleechee C 18.48 4 eP P 20 46 08.1 -0.1
TKL pmax pmax
comp=Z,110nm,1.0s
TKL Tuckaleechee C 18.48 4 eP P 20 46 08.1 -0.1
comp=Z,113nm,1.0s
TKL S Sn 20 49 21.2 -13
WHTX Lake Whitney, 18.50 325 eP P 20 46 07.7 -0.8
comp=Z,813nm,0.7s
Y39A Lockesburg 18.54 336 P P 20 46 06.4 -2.5
baz=152,SNR=6.2
Z37A Pogue Cattle C 18.55 331 P P 20 46 07.4 -1.6
baz=147,SNR=9.3
433A Art 18.55 319 P P 20 46 06.9 -2.2
baz=134,SNR=100
X40A Basin Creek Fa 18.58 340 P P 20 46 07.8 -1.5
baz=156
UALR University of 18.69 341 eP Pn 20 46 12.1 +1.0
comp=Z,120nm,1.1s
Y38A Idabel 18.78 335 P P 20 46 10.1 -1.5
baz=150
JCT Junction City 18.82 318 P P 20 46 11.1 -1.0
baz=132,SNR=48
JCT Junction City 18.82 318 eP P 20 46 10.7 -1.3
JCT pmax pmax
comp=Z,200nm,0.7s
JCT Junction City 18.82 318 eP P 20 46 10.7 -1.3
comp=Z,202nm,0.6s
234A Clairette 18.88 324 P P 20 46 11.9 -0.8
baz=138,SNR=131
333A Richland Sprin 18.88 321 P P 20 46 11.7 -1.1
baz=135,SNR=161
MIAR Mount Ida 18.89 338 P P 20 46 11.1 -1.6
baz=154,SNR=22
MIAR Mount Ida 18.89 338 eP P 20 46 12.4 -0.3
MIAR pmax pmax
comp=Z,260nm,1.5s
MIAR Mount Ida 18.89 338 eP P 20 46 12.4 -0.3
comp=Z,262nm,1.5s
135A Vickery Place, 18.91 327 P P 20 46 12.4 -0.6
baz=141,SNR=18
Z36A Blue Ridge 18.99 330 P P 20 46 12.9 -0.9
baz=145
X39A Fountain Ranch 19.05 337 P P 20 46 14.4 -0.1
baz=153,SNR=10
WVT Waverly 19.05 353 eP Pn 20 46 15.4 -0.1
WVT pmax pmax
comp=Z,160nm,1.2s
WVT Waverly 19.05 353 eP Pn 20 46 15.4 -0.1
comp=Z,164nm,1.3s
WHAR Wooly Hollow 19.15 342 eP Pn 20 46 17.1 +0.4
comp=Z,309nm,1.5s
CNNC Cliffs of the 19.16 18 eP P 20 46 15.3 -0.4
comp=Z,202nm,0.3s
Y37A Hugo 19.20 333 P P 20 46 16.2 0.0
baz=148,SNR=13
GNAR Gosnell 19.23 348 esP Pn 20 46 19.8 +2.2
134A White-Moore Ra 19.28 325 P P 20 46 17.5 +0.4
baz=140,SNR=28
W40A Ferguson Farm, 19.30 340 P P 20 46 17.4 +0.1
baz=156
STVI Saint Thomas 19.31 83 eP P 20 46 15.8 -1.7
comp=Z,85nm,0.9s
233A Rising Star 19.33 323 P P 20 46 17.8 +0.2
baz=137,SNR=117
TZTN Tazewell 19.38 4 eP Pn 20 46 19.2 -0.2
comp=Z,214nm,1.4s
Y36A Durant 19.43 331 P P 20 46 19.1 +0.4
baz=146,SNR=27
Z35A Perchaven, San 19.44 328 P Pn 20 46 19.4 -0.7
baz=143,SNR=5.5
X38A Whitesboro 19.47 336 P Pn 20 46 20.5 0.0
baz=151,SNR=30
CDVI St. Croix 19.49 85 eP Pn 20 46 20.2 -0.7
comp=Z,103nm,0.8s
X37A Clayton 19.62 334 P Pn 20 46 21.9 -0.4
baz=150,SNR=14
W38A Poteau 19.70 337 P Pn 20 46 22.9 -0.3
baz=152,SNR=17
133A Hamilton Ranch 19.77 324 P Pn 20 46 23.9 -0.3
baz=138,SNR=43
Y35A Marietta 19.79 330 P P 20 46 23.2 +0.6
baz=144,SNR=11
Z34A Collier Ranch, 19.81 327 P Pn 20 46 24.1 -0.4
baz=142,SNR=20
X36A Centrahoma 20.02 332 P Pn 20 46 26.1 -1.0
baz=147,SNR=11
PBMO Poplar Bluff 20.10 348 eP Pn 20 46 27.5 -0.4
comp=Z,215nm,1.4s
X35A Drake 20.17 331 P Pn 20 46 27.8 -1.0
baz=145,SNR=21
Y34A Reagan Ranch, 20.19 328 P P 20 46 27.5 +0.6
baz=143,SNR=20
Z33A Whitaker Ranch 20.20 325 P P 20 46 27.7 +0.7
baz=139,SNR=18
ABTX Abilene, Hawle 20.20 322 P P 20 46 27.8 +0.7
baz=136,SNR=38
ABTX Abilene, Hawle 20.20 322 eP Pn 20 46 28.2 -1.0
comp=Z,556nm,0.8s
U40A Yellville 20.31 342 P P 20 46 28.5 +0.2
baz=158,SNR=16
V38A Canehill 20.37 338 P P 20 46 29.4 +0.5
baz=154,SNR=18
BLA Blacksburg 20.43 11 eP Pn 20 46 30.6 -1.2
BLA pmax pmax
comp=Z,580nm,1.3s
BLA Blacksburg 20.43 11 eP Pn 20 46 30.6 -1.2
comp=Z,575nm,1.3s
BLA LR LR
comp=Z,13µm,21.0s
W36A Wetumka 20.45 333 P P 20 46 30.1 +0.3
baz=148
U39A Green Forest 20.52 341 P P 20 46 31.2 +0.6
baz=157,SNR=18
VWCC Virginia Weste 20.54 12 eP P 20 46 31.4 +0.6
HHAR Hobbs 20.58 340 eP P 20 46 32.2 +1.0
comp=Z,49nm,0.9s
V37A Hulbert 20.66 337 P P 20 46 31.7 -0.3
baz=152,SNR=22
Y33A Hilltop Ranch, 20.67 327 P P 20 46 32.3 +0.1
baz=141,SNR=13
X34A Smith Ranch, M 20.74 329 P P 20 46 33.1 +0.2
baz=144,SNR=16
W35A Tecumseh 20.75 332 P P 20 46 33.2 +0.2
baz=147,SNR=14
SIUC Southern Illin 20.80 351 eP Pn 20 46 34.8 -1.3
comp=Z,229nm,1.0s
TX31 Lajitas Ar. Si 20.84 309 eP P 20 46 34.9 +0.8
TXAR Lajitas Array 20.84 309 P P 20 46 35.0 +0.8
comp=Z,91nm,1.1s,baz=126,slow=10,SNR=212
TXAR S S 20 50 21.2 -3.6
comp=Z,8.6nm,0.6s,baz=138,slow=12,SNR=6.8
TXAR LR LR 20 57 24.4
comp=Z,5µm,18.3s,baz=0.0,slow=45
USIN University of 20.86 354 eP P 20 46 35.1 +1.0
comp=Z,288nm,1.2s
U38A Gravette 20.88 339 P P 20 46 34.9 +0.5
baz=154,SNR=11
V36A Jenks 20.89 335 P P 20 46 35.2 +0.7
baz=150,SNR=18
TUL1 Leonard 20.93 335 P P 20 46 35.4 +0.4
baz=150
TUL1 Leonard 20.93 335 eP P 20 46 35.3 +0.3
comp=Z,165nm,1.2s
T40A Mansfield 20.95 343 P P 20 46 35.5 +0.2
baz=160,SNR=22
X33A Lawton 21.03 328 P P 20 46 36.5 +0.4
baz=142,SNR=5.7
WCI Wyandotte Cave 21.03 358 eP P 20 46 36.8 +0.8
WCI pmax pmax
comp=Z,240nm,1.0s
WCI Wyandotte Cave 21.03 358 eP P 20 46 36.8 +0.8
comp=Z,240nm,0.9s
T39A Clever 21.08 342 P P 20 46 36.8 +0.1
baz=158,SNR=28
U37A Salina 21.11 337 P P 20 46 36.9 +0.1
baz=153,SNR=15
W34A Bridge Creek, 21.23 330 P P 20 46 38.8 +0.6
baz=145,SNR=13
W34A Bridge Creek, 21.23 330 eP P 20 46 39.0 +0.8
comp=Z,268nm,1.1s
V35A Meyer Ranch, C 21.24 333 P P 20 46 37.5 -0.8
baz=148,SNR=9.9
HPIG 21.31 301 eP P 20 46 40.8 +1.4
comp=Z,303nm,1.2s
WMOK Wichita Mounta 21.32 328 eP P 20 46 39.6 +0.4
WMOK pmax pmax
comp=Z,120nm,1.0s
WMOK Wichita Mounta 21.32 328 eP P 20 46 39.6 +0.4
comp=Z,124nm,0.9s
WMOK LR LR
comp=Z,6µm,21.0s
U36A Oologah 21.33 336 P P 20 46 39.3 +0.1
baz=151,SNR=5.8
X32A Elmer 21.34 326 P P 20 46 40.0 +0.6
baz=140,SNR=19
S40A Lebanon 21.37 344 P P 20 46 40.3 +0.6
baz=160,SNR=30
T38A Diamond 21.38 340 P P 20 46 40.3 +0.4
baz=155,SNR=12
URVA University of 21.43 17 eP P 20 46 40.5 +0.2
W33A Caddo, Fort Co 21.50 329 P P 20 46 41.9 +0.8
baz=143
V34A Guthrie 21.60 332 P P 20 46 42.5 +0.4
baz=146
V34A Guthrie 21.60 332 eP P 20 46 42.6 +0.4
comp=Z,496nm,1.8s
OLIL Olney 21.66 354 eP P 20 46 43.9 +1.2
comp=Z,322nm,1.0s
T37A Cheneyville 18 21.68 339 P P 20 46 43.2 +0.2
baz=154,SNR=30
S39A Bolivar 21.68 342 P P 20 46 43.3 +0.3
baz=158,SNR=28
U35A Pawnee 21.71 334 P P 20 46 43.3 0.0
baz=149
S38A Stockton 21.80 341 P P 20 46 44.5 +0.2
baz=157,SNR=22
W32A Sentinel 21.86 328 P P 20 46 45.1 +0.1
baz=141,SNR=25
SLM Saint Louis 21.86 349 eP P 20 46 46.3 +1.4
SLM pmax pmax
comp=Z,180nm,1.1s
SLM Saint Louis 21.86 349 eP P 20 46 46.3 +1.4
comp=Z,183nm,1.1s
V33A Lossen Ranch, 21.95 330 P P 20 46 46.5 +0.6
baz=144
R40A Maddies Statio 21.96 345 P P 20 46 45.9 -0.1
baz=162,SNR=12
T36A Boggs Farm, Ca 21.97 337 P P 20 46 46.1 0.0
baz=152,SNR=13
BLO Bloomington 21.98 357 eP P 20 46 46.8 +0.6
BLO pmax pmax
comp=Z,190nm,0.9s
BLO Bloomington 21.98 357 eP P 20 46 46.8 +0.6
comp=Z,190nm,0.8s
CBN Corbin Frederi 22.07 17 eP P 20 46 47.9 +0.7
comp=Z,412nm,1.2s
CBN LR LR
comp=Z,12µm,21.0s
T35A Sooner Cattle 22.09 335 P P 20 46 47.3 -0.2
baz=150,SNR=13
U34A Anderson Ranch 22.11 333 P P 20 46 47.1 -0.5
baz=147,SNR=11
U34A Anderson Ranch 22.11 333 eP P 20 46 47.0 -0.7
comp=Z,353nm,1.4s
R39A Chumby, Stover 22.19 343 P P 20 46 48.6 +0.1
baz=160,SNR=53
S37A Fort Scott 22.22 339 P P 20 46 48.8 +0.1
baz=155,SNR=33
V32A Arapaho 22.23 329 P P 20 46 49.5 +0.5
baz=143
R38A Fenwick Farm, 22.32 342 P P 20 46 50.2 +0.4
baz=157,SNR=11
ANWB Willy Bob 22.33 85 PFAKE 20 47 00.0 +10
ANWB LR LR
comp=Z,3µm,19.0s
U33A Lingo Farm, Me 22.37 332 P P 20 46 50.3 -0.1
baz=146
GDHS Morne Mazeau, 22.45 89 eP P 20 46 50.2 -1.3
comp=Z,246nm,0.9s
S36A Lake Cedric, C 22.45 338 P P 20 46 50.6 -0.7
baz=153,SNR=18
T34A McClaskey Farm 22.46 334 P P 20 46 51.2 -0.2
baz=149,SNR=13
Q40A Laux Farm, Aux 22.59 346 P P 20 46 52.6 -0.1
baz=162
S35A Otter Creek Ra 22.68 337 P P 20 46 53.8 0.0
baz=151,SNR=11
R37A Teagarden Farm 22.72 340 P P 20 46 54.2 0.0
baz=155
U32A Winter Ranch, 22.74 330 P P 20 46 54.3 -0.1
baz=144
Q39A Willow Grove F 22.86 344 P P 20 46 56.2 +0.7
baz=160
MCWV Mont Chateau 22.91 11 eP P 20 46 57.1 +1.0
comp=Z,50nm,0.9s
Q38A Cooks Store, C 22.95 343 P P 20 46 56.1 -0.4
baz=159,SNR=17
R36A Gordon, Harris 22.96 339 P P 20 46 56.2 -0.4
baz=154,SNR=6.0
T33A Patterson Ranc 22.96 332 P P 20 46 56.5 -0.2
baz=146
AMTX Amarillo 23.00 323 P P 20 46 57.2 0.0
baz=136
AMTX Amarillo 23.00 323 eP P 20 46 57.5 +0.2
comp=Z,437nm,1.2s
S34A Willow Spring 23.01 335 P P 20 46 57.3 +0.1
baz=150
MSTX Muleshoe 23.01 320 P P 20 46 56.5 -0.9
baz=132,SNR=17
MSTX Muleshoe 23.01 320 eP P 20 46 56.5 -0.9
comp=Z,279nm,1.1s
ACSO Alum Creek Sta 23.08 4 eP P 20 46 58.5 +0.7
comp=Z,128nm,1.3s
ACSO LR LR
comp=Z,8µm,21.0s
P40A Paris 23.09 346 P P 20 46 58.1 +0.2
baz=163
Q37A Longview Farm, 23.12 341 P P 20 46 58.1 -0.1
baz=157
R35A Emporia Munici 23.20 338 P P 20 46 59.2 +0.1
baz=152
SFIN Lafayette 23.21 356 P P 20 46 58.8 -0.3
baz=175,SNR=6.4
SFIN Lafayette 23.21 356 eP P 20 47 00.1 +0.9
comp=Z,169nm,1.4s
P39A Salisbury 23.22 345 P P 20 46 59.3 0.0
baz=161
FDF Fort de France 23.23 93 eP P 20 46 57.1 -2.5
FDF pmax pmax
comp=Z,155nm,1.0s
FDF Fort de France 23.23 93 eP P 20 46 57.1 -2.5
comp=Z,155nm,1.0s
S33A Kaszmaul Farm, 23.29 334 P P 20 47 00.1 +0.1
baz=148
GRGR Grenville 23.30 99 PFAKE 20 47 10.0 +10
GRGR LR LR
comp=Z,9µm,20.0s
SDMD Soldier's Deli 23.35 16 eP P 20 47 00.9 +0.4
comp=Z,132nm,1.3s
MNTX Cornudas Mount 23.35 312 P P 20 47 00.1 -0.6
baz=124,SNR=84
MNTX Cornudas Mount 23.35 312 eP P 20 47 00.1 -0.6
comp=Z,104nm,1.0s
MNTX LR LR
comp=Z,5µm,22.0s
SVB Belmont 23.41 96 eP P 20 47 00.6 -0.8
comp=Z,186nm,1.0s
Q36A Arnold C. Orve 23.52 340 P P 20 47 02.5 +0.3
baz=155
P38A Dawn 23.55 344 P P 20 47 02.4 -0.1
baz=160,SNR=16
R34A Isabella, Hill 23.58 336 P P 20 47 03.0 +0.2
baz=150,SNR=7.8
HDIL Hopedale 23.60 352 P P 20 47 03.1 +0.2
baz=170
HDIL Hopedale 23.60 352 PFAKE 20 47 10.0 +7.1
HDIL LR LR
comp=Z,3µm,19.0s
O40A La Belle 23.62 347 P P 20 47 03.7 +0.6
baz=164
Q35A Mercer Eighty, 23.62 338 P P 20 47 03.2 0.0
baz=153
P37A Lathrop 23.74 342 P P 20 47 04.4 +0.1
baz=158
O56A Blue Knob Stat 23.75 13 P P 20 47 04.8 +0.4
baz=196,SNR=10
S32A Newby Ranch, P 23.78 332 P P 20 47 04.7 0.0
baz=146
R33A Olander Ranch, 23.88 335 P P 20 47 05.7 +0.1
baz=148,SNR=12
O39A Kirksville 23.89 346 P P 20 47 05.6 -0.1
baz=162
BBSR BB Station 23.93 47 eP P 20 47 06.0 -0.1
comp=Z,107nm,1.0s
BBSR LR LR
comp=Z,3µm,20.0s
O38A Galt 24.00 344 P P 20 47 06.6 -0.1
baz=160
Q34A Chapman 24.00 337 P P 20 47 06.8 +0.1
baz=151
P36A Good Intent, A 24.03 341 P P 20 47 07.1 +0.1
baz=156
KSU1 Kansas State U 24.04 338 P P 20 47 07.2 +0.1
baz=152,SNR=5.2
KSU1 Kansas State U 24.04 338 eP P 20 47 08.1 +1.0
comp=Z,104nm,0.9s
KSU1 LR LR
comp=Z,3µm,20.0s
N54A Moraine State 24.15 10 P P 20 47 08.1 -0.1
baz=192,SNR=5.3
P35A Duane Minner, 24.21 339 P P 20 47 09.0 +0.3
baz=154
O37A Wolven Farm, M 24.22 343 P P 20 47 08.9 +0.2
baz=159,SNR=13
SSPA Standing Stone 24.24 14 eP P 20 47 10.0 +1.1
comp=Z,65nm,1.0s
R32A Long Quarter, 24.29 333 P P 20 47 09.3 -0.1
baz=147,SNR=7.1
Q33A Connelly Farm, 24.41 336 P P 20 47 11.0 +0.4
baz=150,SNR=6.5
O36A Bolckow 24.43 342 P P 20 47 10.4 -0.2
baz=157
LPIG La Paz 24.49 291 P P 20 47 12.1 +0.7
comp=Z,26nm,0.3s,baz=240,slow=1.6,SNR=3.5
LPIG LR LR 20 57 41.1
comp=Z,9µm,18.1s,baz=114,slow=39
P34A Walnut Farm, R 24.51 338 P P 20 47 11.6 +0.2
baz=152,SNR=40
N38A Joes South For 24.57 345 P P 20 47 12.9 +1.0
baz=161,SNR=9.6
Q32A Meitler Ranch, 24.70 334 P P 20 47 13.3 +0.2
baz=148,SNR=13
P33A Williams Farm, 24.74 336 P P 20 47 13.9 +0.4
baz=150
M54A Oil Creek Stat 24.74 10 P P 20 47 13.9 +0.4
baz=192,SNR=7.2
N37A Lee Faris, Mou 24.79 343 P P 20 47 14.1 +0.2
baz=159,SNR=9.1
ALLY Alegheny Colle 24.80 9 eP P 20 47 16.4 +2.4
comp=Z,154nm,1.4s
O35A Humboldt 24.84 340 P P 20 47 14.6 +0.2
baz=155
LUPA Lehigh Univers 24.86 18 eP P 20 47 16.1 +1.5
comp=Z,102nm,1.0s
O34A Beatrice 25.03 339 P P 20 47 16.2 +0.1
baz=153,SNR=9.1
ATAH Atahualpa 25.04 164 P P 20 47 19.6 +2.7
comp=Z,19nm,1.0s,baz=324,slow=3.5,SNR=4.8
ATAH LR LR 20 56 55.0
comp=Z,5µm,21.9s,baz=326,slow=36
BBGH Gun Hill 25.05 96 PFAKE 20 47 30.0 +14
BBGH LR LR
comp=Z,10µm,19.0s
N59A State Game Lan 25.05 17 P P 20 47 16.7 +0.4
baz=201,SNR=18
N36A Muff Farm, Cla 25.05 342 P P 20 47 16.9 +0.6
baz=157
CBKS Cedar Bluff 25.06 332 P P 20 47 17.1 +0.7
baz=145
CBKS Cedar Bluff 25.06 332 eP P 20 47 17.1 +0.7
CBKS pmax pmax
comp=Z,98nm,0.9s
CBKS Cedar Bluff 25.06 332 eP P 20 47 17.1 +0.7
comp=Z,98nm,0.8s
CBKS LR LR
comp=Z,2µm,22.0s
AAM Ann Arbor 25.11 3 eP P 20 47 18.1 +1.4
AAM pmax pmax
comp=Z,83nm,1.0s
AAM Ann Arbor 25.11 3 eP P 20 47 18.1 +1.4
comp=Z,83nm,0.9s
AAM LR LR
comp=Z,10µm,19.0s
M38A Pleasantville 25.15 346 P P 20 47 17.1 -0.1
baz=162,SNR=13
BRNJ Basking Ridge 25.19 19 eP P 20 47 19.1 +1.6
comp=Z,153nm,1.1s
O33A Hebron 25.25 337 P P 20 47 19.8 +1.7
baz=151,SNR=8.4
P32A Huiting Farm, 25.25 335 P P 20 47 18.5 +0.3
baz=149
ERPA Erie 25.28 9 eP P 20 47 19.0 +0.7
comp=Z,114nm,1.0s
N35A Tabor 25.30 341 P P 20 47 19.4 +0.8
baz=156,SNR=6.0
M37A Trindle Farm, 25.35 344 P P 20 47 19.8 +0.8
baz=160
CPNY Central Park 25.48 20 eP P 20 47 21.8 +1.7
comp=Z,154nm,1.3s
121A Cookes Peak, D 25.52 311 P P 20 47 22.4 +1.6
baz=122,SNR=59
121A Cookes Peak, D 25.52 311 eP P 20 47 22.0 +1.2
comp=Z,115nm,1.0s
ODNJ Ogdensburg 25.54 19 eP P 20 47 21.8 +1.1
comp=Z,107nm,1.1s
N34A Lincoln 25.55 340 P P 20 47 22.3 +1.4
baz=154
M36A Felix, Anita 25.60 343 P P 20 47 21.8 +0.6
baz=158,SNR=7.3
BNM Barren Site 25.61 315 eP P 20 47 22.3 +0.6
SCIA State Center 25.62 346 eP P 20 47 24.6 +3.2
comp=Z,102nm,0.8s
SCIA LR LR
comp=Z,4µm,19.0s
KSPA Keystone Colle 25.64 16 eP P 20 47 23.2 +1.6
comp=Z,568nm,1.9s
O32A Brockman Farm, 25.68 336 P P 20 47 23.3 +1.3
baz=150
PAL Palisades 25.69 20 eP P 20 47 23.2 +1.1
PAL pmax pmax
comp=Z,170nm,1.0s
PAL Palisades 25.69 20 eP P 20 47 23.2 +1.1
comp=Z,174nm,1.0s
LPM Los Pinos Moun 25.71 316 eP P 20 47 23.0 +0.4
L38A Oak Wood Farm, 25.79 347 P P 20 47 23.5 +0.6
baz=163

N33A **J Bar K, Exete** 25.79 338 P P 20 47 23.3 +0.3
baz=152
M35A **Neola** 25.87 342 P P 20 47 24.4 +0.7
baz=156
L37A **Phoenix Point,** 25.96 345 P P 20 47 25.7 +1.2
baz=161
ANMO **Albuquerque** 25.97 317 P P 20 47 25.9 +0.9
comp=Z,36nm,1.0s,baz=138,slow=11,SNR=34
ANMO LR LR 21 00 26.7
comp=Z,2µm,21.0s,baz=134,slow=43
ANMO **Albuquerque** 25.97 317 P P 20 47 25.9 +0.9
baz=128
ANMO **Albuquerque** 25.97 317 *c i* P P 20 47 25.2 +0.2
ANMO pmax pmax
comp=Z,38nm,1.1s
ANMO **Albuquerque** 25.97 317 *eP* P 20 47 25.9 +0.9
comp=Z,44nm,1.0s
O31A **Woolen Ranch,** 26.00 335 P P 20 47 26.0 +1.0
baz=148
JFWS **Jewell Farm** 26.05 352 *eP* P 20 47 25.9 +0.6
JFWS pmax pmax
comp=Z,130nm,1.1s
JFWS **Jewell Farm** 26.05 352 *eP* P 20 47 25.9 +0.6
comp=Z,129nm,1.1s
JFWS LR LR
comp=Z,4µm,19.0s
LAZ **Ladron** 26.10 315 *eP* P 20 47 27.5 +1.4
N32A **Stulken Farm,** 26.12 337 P P 20 47 27.6 +1.5
baz=150
T25A **Trinidad** 26.16 323 P P 20 47 27.3 +0.7
baz=134,SNR=17
T25A **Trinidad** 26.16 323 *eP* P 20 47 26.7 +0.1
comp=Z,96nm,0.9s
L36A **Harm Buss Farm** 26.17 344 P P 20 47 27.2 +0.8
baz=159
M34A **Aspy Farms, Fr** 26.18 340 P P 20 47 27.7 +1.2
baz=154
BINY **Binghamton** 26.18 16 *eP* P 20 47 27.1 +0.5
comp=Z,145nm,1.1s
BINY LR LR
comp=Z,14µm,20.0s
L35A **Bielow Farm, R** 26.42 342 P P 20 47 29.5 +0.8
baz=157,SNR=7.2
HSIG 26.42 301 *eP* P 20 47 29.2 +0.4
comp=Z,36nm,1.0s
N31A **Bailey Ranch,** 26.42 336 P P 20 47 30.4 +1.7
baz=149
M33A **Taylor Creek F** 26.44 339 P P 20 47 30.0 +1.1
baz=153
L34A **Svendsen Farm,** 26.53 341 P P 20 47 31.0 +1.3
baz=155
K37A **Belmond** 26.54 346 P P 20 47 30.2 +0.4
baz=162
KSCO **Kaye Shedlock'** 26.58 329 P P 20 47 31.1 +0.8
baz=140,SNR=6.0
KSCO **Kaye Shedlock'** 26.58 329 *eP* P 20 47 31.8 +1.5
comp=Z,84nm,0.9s
K36A **Gilmore City** 26.61 345 P P 20 47 31.2 +0.8
baz=160
BGNE **Belgrade** 26.63 338 P P 20 47 31.8 +1.2
baz=151
BGNE **Belgrade** 26.63 338 *eP* P 20 47 32.0 +1.4
comp=Z,144nm,0.9s
J38A **Wedel Dairy, R** 26.82 348 P P 20 47 32.4 +0.2
baz=164
M31A **Lambtecht Ranc** 26.88 337 P P 20 47 33.2 +0.3
baz=150
K35A **Storm Lake** 26.90 343 P P 20 47 33.7 +0.7
baz=158
L33A **Hoskins** 27.00 340 P P 20 47 35.1 +1.2
baz=154
J37A **Redenius Farm,** 27.03 346 P P 20 47 35.0 +0.8
baz=162
N29A **Votaw Ranch, W** 27.10 334 P P 20 47 36.0 +1.1
baz=146
L32A **Elgin** 27.10 339 P P 20 47 35.4 +0.6
baz=152
SDCO **Great Sand Dun** 27.20 323 P P 20 47 37.4 +1.2
baz=133,SNR=31
SDCO **Great Sand Dun** 27.20 323 *eP* P 20 47 37.3 +1.2
comp=Z,31nm,1.0s
SDCO LR LR
comp=Z,5µm,22.0s
J36A **Seneca 1, Swea** 27.23 345 P P 20 47 36.7 +0.7
baz=160
L31A **Butterfield Fa** 27.55 338 P P 20 47 40.2 +1.3
baz=151
GLMI **Grayling** 27.60 1 PFAKE 20 47 50.0 +11
GLMI LR LR
comp=Z,2µm,20.0s
J34A **George** 27.62 343 P P 20 47 42.9 +3.4
baz=157
TUC **Tucson** 27.62 308 P P 20 47 41.5 +1.8
baz=117
TUC **Tucson** 27.62 308 *eP* P 20 47 41.3 +1.6
TUC pmax pmax
comp=Z,85nm,1.3s
TUC **Tucson** 27.62 308 *eP* P 20 47 41.3 +1.6
comp=Z,85nm,1.4s
TUC LR LR
comp=Z,6µm,20.0s
I37A **Lemond, Waseca** 27.67 347 P P 20 47 40.0 +0.1
baz=163
L30A **Spencer Herefo** 27.68 336 P P 20 47 42.2 +2.2
baz=149
OGNE **Ogallala** 27.82 332 P P 20 47 42.2 +0.9
baz=144
OGNE **Ogallala** 27.82 332 *eP* P 20 47 45.0 +3.6
comp=Z,88nm,0.7s
OGNE LR LR
comp=Z,3µm,19.0s
Q24A **Divide** 27.86 325 P P 20 47 42.2 +0.2
baz=136,SNR=10
Q24A **Divide** 27.86 325 *eP* P 20 47 42.9 +0.8
comp=Z,39nm,1.1s
I35A **Creekview Farm** 27.89 345 P P 20 47 42.1 +0.2
baz=160
ACCN **Adirondack Com** 27.92 18 *eP* P 20 47 43.0 +0.9
comp=Z,40nm,1.0s
S22A **4UR Ranch, Cre** 27.98 321 P P 20 47 43.7 +0.6
baz=131,SNR=10
S22A **4UR Ranch, Cre** 27.98 321 *eP* P 20 47 44.2 +1.1
comp=Z,159nm,1.6s
SADO **Sadowa** 28.00 9 P P 20 47 43.0 +0.2
comp=Z,24nm,0.6s,baz=208,slow=8.1,SNR=25
SADO LR LR 20 58 45.6
comp=Z,10µm,19.7s,baz=202,slow=36
SADO **Sadowa** 28.00 9 *eP* P 20 47 43.1 +0.2
comp=Z,32nm,0.7s
ECSD **EROS Data Cent** 28.22 342 P P 20 47 44.9 +0.1
baz=156
ECSD **EROS Data Cent** 28.22 342 *eP* P 20 47 46.1 +1.3
comp=Z,30nm,0.9s
ECSD LR LR
comp=Z,4µm,19.0s
J32A **Parkston** 28.27 340 P P 20 47 46.3 +1.1
baz=154
W18A **Petrified Fore** 28.27 314 P P 20 47 45.9 +0.3
baz=123,SNR=6.8
W18A **Petrified Fore** 28.27 314 *eP* P 20 47 47.6 +2.0
comp=Z,73nm,1.2s
NCB **Newcomb** 28.30 17 PFAKE 20 48 00.0 +14
NCB LR LR
comp=Z,12µm,19.0s
H36A **Jessenland, He** 28.32 347 P P 20 47 46.3 +0.6
baz=162
K29A **Lazy Trails An** 28.61 336 P P 20 47 48.6 +0.3
baz=148
MDV **Middlebury** 28.63 18 *eP* P 20 47 49.8 +1.4
H35A **Sunnyside Ranc** 28.64 346 P P 20 47 48.4 -0.2
baz=160
MVCO **Mesa Verde** 28.66 319 P P 20 47 49.3 +0.1
baz=128,SNR=6.0
MVCO **Mesa Verde** 28.66 319 *eP* P 20 47 50.2 +1.1
comp=Z,83nm,1.4s
MVCO LR LR
comp=Z,4µm,21.0s
ISCO **Idaho Springs** 28.71 326 P P 20 47 50.1 +0.5
baz=136,SNR=20
ISCO **Idaho Springs** 28.71 326 *eP* P 20 47 50.7 +1.1
ISCO pmax pmax
comp=Z,68nm,1.5s
ISCO **Idaho Springs** 28.71 326 *eP* P 20 47 50.7 +1.1
comp=Z,68nm,1.5s
ISCO LR LR
comp=Z,4µm,22.0s
SPMN **Marine on St.** 28.71 349 P P 20 47 49.3 +0.1
baz=165
SPMN **Marine on St.** 28.71 349 *eP* P 20 47 49.6 +0.5
comp=Z,36nm,1.0s
LONY **Lake Ozonia** 28.81 16 *eP* P 20 47 50.6 +0.6
comp=Z,74nm,1.1s
LONY LR LR
comp=Z,14µm,19.0s
H34A **Spellman Lake,** 28.85 344 P P 20 47 51.4 +1.0
baz=158
SMCO **Snowmass** 29.02 324 *eP* P 20 47 53.8 +1.2
comp=Z,57nm,1.4s
214A **Organ Pipe Nat** 29.03 306 P P 20 47 53.1 +1.0
baz=114,SNR=25
214A **Organ Pipe Nat** 29.03 306 *eP* P 20 47 53.8 +1.7
comp=Z,399nm,1.2s
COWI **Conover** 29.06 354 *eP* P 20 47 52.6 +0.4
comp=Z,26nm,0.9s
COWI LR LR
comp=Z,3µm,22.0s
H33A **Prehn Over Nor** 29.12 343 P P 20 47 52.9 +0.1
baz=157
J29A **Okreek** 29.16 337 P P 20 47 53.5 +0.3
baz=149
H32A **Carlson Farm,** 29.16 342 P P 20 47 53.5 +0.3
baz=155
LBNH **Lisbon** 29.24 20 *eP* P 20 47 54.9 +1.1
LBNH pmax pmax
comp=Z,120nm,1.6s
LBNH **Lisbon** 29.24 20 *eP* P 20 47 54.9 +1.1
comp=Z,120nm,1.6s
FRNY **Flat Rock** 29.28 17 *eP* P 20 47 54.6 +0.4
comp=Z,54nm,1.4s
PV01 **Paradox Valley** 29.28 320 *eP* P 20 47 57.6 +3.0
G34A **Benson** 29.35 345 P P 20 47 54.6 -0.3
baz=159
F36A **Milaca** 29.47 348 P P 20 47 55.8 0.0
baz=164,SNR=6.1
J28A **Allard Ranch,** 29.52 336 P P 20 47 56.8 +0.3
baz=148
WUAZ **Wupatki** 29.61 313 PFAKE 20 48 10.0 +12
WUAZ LR LR
comp=Z,5µm,20.0s
N23A **Red Feather La** 29.68 327 P P 20 47 58.2 +0.1
baz=137,SNR=14
N23A **Red Feather La** 29.68 327 *eP* P 20 47 59.3 +1.2
comp=Z,26nm,0.8s
F35A **Swanville** 29.68 347 P P 20 47 57.7 0.0
baz=162
I29A **Vivian Onida** 29.68 338 P P 20 47 57.4 -0.4
baz=150
J27A **Elkhorn Farm,** 29.69 335 P P 20 47 57.6 -0.4
baz=146
PHWY **Pilot Hill** 29.73 328 *eP* P 20 47 60.0 +1.4
comp=Z,34nm,1.3s
I28A **Midland** 29.99 337 P P 20 48 00.1 -0.4
baz=148
E36A **McGregor** 30.05 349 P P 20 48 00.6 -0.4
baz=164
F33A **5 Mile Ranch,** 30.07 344 P P 20 48 00.2 -1.0
baz=158
NNA **Nana** 30.10 164 PFAKE 20 48 10.0 +8.3
NNA LR LR
comp=Z,3µm,22.0s
J26A **Sides Ranch, S** 30.18 334 P P 20 48 01.6 -0.7
baz=144
G30A **Faulkton** 30.26 340 P P 20 48 01.6 -1.3
baz=153
I27A **Quinn** 30.39 336 P P 20 48 04.1 0.0
baz=147
O20A **White River Ci** 30.39 324 P P 20 48 04.8 +0.5
baz=132,SNR=6.4
O20A **White River Ci** 30.39 324 *eP* P 20 48 06.4 +2.0
comp=Z,77nm,1.4s
E34A **Wadena** 30.43 346 P P 20 48 05.3 +0.8
baz=161
H28A **Mission Ridge** 30.51 337 P P 20 48 04.8 -0.3
baz=149
D37A **Cotton** 30.52 350 P P 20 48 04.7 -0.4
baz=166,SNR=10
PTGA **Pitinga** 30.55 123 *eP* P 20 48 06.3 +0.6
comp=Z,19nm,0.7s
PTGA LR LR
comp=Z,32µm,21.0s
D36A **Goodland** 30.66 349 P P 20 48 06.4 -0.1
baz=165
D35A **Remer** 30.74 348 P P 20 48 06.9 -0.2
baz=163
G28A **Parade** 30.81 338 P P 20 48 07.5 -0.3
baz=150
C39A **Grand Marais** 30.86 353 P P 20 48 07.8 -0.3
baz=171
H27A **Howes** 30.87 336 P P 20 48 08.1 -0.2
baz=147
C38A **Sawill Land.** 30.90 352 P P 20 48 08.2 -0.3
baz=168
D34A **Park Rapids** 30.98 347 P P 20 48 09.2 0.0
baz=161
GLA **Glamis** 31.02 306 P P 20 48 10.9 +1.0
baz=114,SNR=9.4
GLA **Glamis** 31.02 306 *eP* P 20 48 12.2 +2.4
GLA pmax pmax
comp=Z,87nm,0.9s
GLA **Glamis** 31.02 306 *eP* P 20 48 12.2 +2.4
comp=Z,87nm,0.9s
PDMCI **Parker Dam,Lak** 31.03 309 P P 20 48 09.3 -0.5
baz=116
PKME **Peaks-Kenny Pk** 31.04 22 *eP* P 20 48 11.0 +1.3
comp=Z,52nm,0.9s
PKME LR LR
comp=Z,8µm,21.0s
I25A **Rochford** 31.04 334 P P 20 48 09.4 -0.6
baz=144
C37A **Embarrass** 31.04 351 P P 20 48 10.0 +0.3
baz=167
Y12C **Blythe** 31.08 308 P P 20 48 10.4 +0.1
baz=115
F29A **Eureka** 31.10 340 P P 20 48 10.3 0.0
baz=152
H26A **Fairpoint** 31.13 335 P P 20 48 10.3 -0.3
baz=146
EYMN **Ely** 31.15 352 P P 20 48 10.4 -0.3
baz=168
EYMN **Ely** 31.15 352 *eP* P 20 48 10.7 0.0
comp=Z,74nm,1.5s
EYMN LR LR
comp=Z,3µm,20.0s
E31A **Nome** 31.17 343 P P 20 48 10.5 -0.4
baz=156
C36A **Pine Crest Far** 31.17 350 P P 20 48 10.7 -0.2
baz=166
D33A **AnnSam, Waubun** 31.18 346 P P 20 48 10.8 -0.2
baz=160
P18A **Preston Nutter** 31.24 321 *eP* P 20 48 13.3 +1.4
comp=Z,35nm,1.1s
RSSD **Black Hills** 31.25 333 P P 20 48 11.7 -0.2
baz=143
RSSD **Black Hills** 31.25 333 *eP* P 20 48 12.7 +0.8
RSSD pmax pmax
comp=Z,27nm,1.2s
RSSD **Black Hills** 31.25 333 *eP* P 20 48 12.7 +0.8
comp=Z,27nm,1.3s
K22A **Casper** 31.26 329 P P 20 48 12.7 +0.8
baz=138,SNR=13
K22A **Casper** 31.26 329 *eP* P 20 48 13.5 +1.6
comp=Z,72nm,1.3s
C35A **Jirik Farms, M** 31.32 349 P P 20 48 12.3 +0.1
baz=164
E30A **Jud** 31.41 342 P P 20 48 12.6 -0.4
baz=154
F28A **McLaughlin** 31.44 339 P P 20 48 13.7 +0.3
baz=150
P17A **Butcher Ranch,** 31.44 320 *eP* P 20 48 15.1 +1.5
comp=Z,28nm,1.1s
G27A **Dupree** 31.45 337 P P 20 48 13.7 +0.3
baz=148
VLDQ **Val d'Or** 31.53 10 *eP* P 20 48 14.6 +0.6
comp=Z,27nm,0.8s
NEE2 **Needles Airpor** 31.59 309 P P 20 48 15.8 +1.1
baz=116
TMUT **Trail Mountain** 31.62 320 *eP* P 20 48 16.9 +1.5
comp=Z,21nm,1.0s
IRM **Iron Mountain** 31.72 308 P P 20 48 16.6 +0.7
baz=115
SWSC **Sam W. Stewart** 31.74 306 P P 20 48 16.6 +0.6
baz=112
BC3 **Big Chuckawall** 31.75 307 P P 20 48 17.3 +1.1
baz=114
IBP **Imperial Bould** 31.86 305 P P 20 48 17.6 +0.4
baz=112
G25A **Newell** 31.86 335 P P 20 48 17.0 -0.1
baz=145
B35A **Bob, Littlefor** 31.91 349 P P 20 48 17.3 -0.1
baz=164
D30A **Buchanan** 31.91 342 P P 20 48 17.3 -0.2
baz=155
E28A **Huff** 32.04 340 P P 20 48 18.4 -0.2
baz=151
D29A **Pettibone, Tap** 32.12 341 P P 20 48 19.0 -0.3
baz=153
B33A **Robert and Kas** 32.19 347 P P 20 48 19.8 0.0
baz=161
B34A **Aery, Baudette** 32.20 348 P P 20 48 19.6 -0.3
baz=163,SNR=9.0
C31A **Landman Farms,** 32.26 344 P P 20 48 20.2 -0.3
baz=157,SNR=5.5
AGMN **Agassiz Nation** 32.28 347 P P 20 48 20.3 -0.3
baz=160,SNR=7.7
AGMN **Agassiz Nation** 32.28 347 *eP* P 20 48 20.1 -0.5
comp=Z,49nm,0.8s
AGMN LR LR
comp=Z,4µm,19.0s
BELC **Belle Mtn. Jos** 32.30 307 P P 20 48 22.3 +1.1
baz=114
BAR **Barrett** 32.32 305 *eP* P 20 48 24.2 +3.0
BAR *e* 20 48 36.0
GMRC **Granite Mounta** 32.37 309 P P 20 48 22.4 +0.7
baz=115,SNR=7.2
C30A **Mose, Pekin** 32.38 343 P P 20 48 21.9 +0.4
baz=156
PFO **Pinyon Flats O** 32.50 306 P P 20 48 22.7 -0.2
baz=112
PFO **Pinyon Flats O** 32.50 306 *eP* P 20 48 22.0 -0.9
PFO pmax pmax
comp=Z,57nm,1.0s
PFO **Pinyon Flats O** 32.50 306 *eP* P 20 48 22.0 -0.9
comp=Z,57nm,1.0s
PFO LR LR
comp=Z,6µm,20.0s
B32A **Ashes, Strandq** 32.52 346 P P 20 48 22.4 -0.3
baz=159,SNR=18
D28A **Regan** 32.54 340 P P 20 48 23.2 +0.2
baz=152
NLU **North Lily Min** 32.55 320 *eP* P 20 48 24.9 +1.5
comp=Z,14nm,1.1s
E26A **Carlson Angus** 32.57 338 P P 20 48 23.5 +0.3
baz=148
LMQ **La Malbaie** 32.69 19 *eP* P 20 48 25.2 +0.9
comp=Z,38nm,1.0s
109C **Camp Elliot, M** 32.74 305 P P 20 48 25.9 +1.1
baz=111,SNR=5.4
A33A **Warroad** 32.78 348 P P 20 48 25.1 +0.1
baz=162,SNR=7.4
B31A **Greenbush Farm** 32.82 345 P P 20 48 25.7 +0.3
baz=158
MDND **Maddock** 32.83 342 P P 20 48 25.9 +0.4
baz=154
MDND **Maddock** 32.83 342 *eP* P 20 48 25.9 +0.4
comp=Z,160nm,1.2s
HEC **Hector,Ludlow** 32.89 308 P P 20 48 27.3 +1.1
baz=114,SNR=5.5
PSUT **Pine Spring** 32.89 316 *eP* P 20 48 28.2 +1.9
comp=Z,37nm,1.2s
BW06 **Boulder Array** 32.91 326 P P 20 48 26.5 0.0
baz=133,SNR=15
BW06 **Boulder Array** 32.91 326 *eP* P 20 48 26.9 +0.4
comp=Z,45nm,1.3s
BW06 LR LR
comp=Z,3µm,21.0s
PD31 **Pinedale Array** 32.91 326 *eP* P 20 48 27.3 +0.8
PDAR **Pinedale Array** 32.91 326 P P 20 48 26.8 +0.3
comp=Z,25nm,1.0s,baz=126,slow=9.3,SNR=56
PDAR LR LR 21 04 39.9
comp=Z,2µm,21.6s,baz=136,slow=42
E25A **Miller Ranch,** 32.94 337 P P 20 48 27.3 +0.7
baz=147
C28A **Hausauer Farms** 32.95 341 P P 20 48 27.3 +0.8
baz=152
A32A **Rocking H Ranc** 33.00 346 P P 20 48 27.2 +0.3
baz=160
B30A **Myrvik Farm, E** 33.02 344 P P 20 48 27.5 +0.4
baz=156
D26A **Manning** 33.03 338 P P 20 48 27.6 +0.3
baz=149
MURC **Murrieta** 33.06 306 P P 20 48 28.9 +1.1
baz=112,SNR=11
BBRC **Big Bear Solar** 33.10 307 P P 20 48 28.2 -0.1
baz=113
DUG **Dugway, Tooele** 33.15 319 P P 20 48 29.4 +0.8
baz=126,SNR=5.8
DUG **Dugway, Tooele** 33.15 319 *eP* P 20 48 29.8 +1.2
DUG pmax pmax
comp=Z,25nm,1.2s
DUG **Dugway, Tooele** 33.15 319 *eP* P 20 48 29.8 +1.2
comp=Z,25nm,1.3s
DUG LR LR
comp=Z,3µm,20.0s
A31A **Linda, St. Vin** 33.18 345 P P 20 48 28.5 +0.1
baz=159
C27A **Sayler Ranch,** 33.31 340 P P 20 48 29.7 0.0
baz=151
B29A **Wagenman Farm,** 33.31 343 P P 20 48 30.1 +0.4
baz=155
GSC **Goldstone, Bar** 33.44 309 P P 20 48 32.0 +0.9
baz=115
GSC **Goldstone, Bar** 33.44 309 *eP* P 20 48 33.3 +2.3
GSC pmax pmax
comp=Z,34nm,1.1s
GSC **Goldstone, Bar** 33.44 309 *eP* P 20 48 33.3 +2.3
comp=Z,34nm,1.1s
A30A **Hoffart Farm,** 33.46 344 P P 20 48 31.3 +0.3
baz=157
B28A **Dugan Ranch, T** 33.59 342 P P 20 48 32.6 +0.4
baz=153
C26A **Wahner Farm, P** 33.60 339 P P 20 48 32.6 +0.4
baz=150
BFSC **Mount Baldy Ra** 33.66 307 P P 20 48 33.3 +0.2
baz=112
A29A **Manning Farm,** 33.70 343 P P 20 48 32.6 -0.4
baz=155,SNR=5.1
BGU **Big Grassy Mou** 33.72 320 *eP* P 20 48 34.4 +0.9
comp=Z,35nm,1.4s
AHID **Auburn Hatcher** 33.75 325 *eP* P 20 48 35.0 +1.2
comp=Z,54nm,1.0s
AHID LR LR
comp=Z,5µm,20.0s
B27A **Peters Farms,** 33.83 341 P P 20 48 35.0 +0.8
baz=152
SAML **Samuel** 33.84 138 *eP* P 20 48 33.5 -1.1
comp=Z,28nm,1.2s
SAML LR LR
comp=Z,5µm,22.0s
SCI2 **San Clemente I** 33.91 304 P P 20 48 35.3 +0.3
baz=110
CIS **Catalina Islan** 33.95 305 P P 20 48 36.1 +0.7
baz=110
R11A **Troy Canyon, C** 33.96 315 P P 20 48 36.7 +1.1
baz=120,SNR=13
R11A **Troy Canyon, C** 33.96 315 *eP* P 20 48 37.0 +1.3
comp=Z,20nm,1.3s
A28A **Rude Farm, Bot** 33.98 342 P P 20 48 36.5 +1.0
baz=154
REDW **Red Top Meadow** 34.01 326 *eP* P 20 48 37.1 +1.1
comp=Z,291nm,1.4s
SNOW **Snow King Moun** 34.02 326 *eP* P 20 48 37.5 +1.3
comp=Z,240nm,1.5s
LOHW **Long Hollow** 34.04 326 *eP* P 20 48 37.4 +1.1
comp=Z,156nm,1.8s
ULM **Lac du Bonnet** 34.13 348 P P 20 48 36.1 -0.6
comp=Z,8.7nm,0.8s,baz=159,slow=9.2,SNR=16
ULM **Lac du Bonnet** 34.13 348 *eP* P 20 48 36.1 -0.6
ULM pmax pmax
comp=Z,63nm,1.0s
ULM **Lac du Bonnet** 34.13 348 *eP* P 20 48 36.1 -0.6
comp=Z,63nm,1.0s
EDW2 **Edwards Air Fo** 34.16 308 P P 20 48 38.6 +1.3
baz=113,SNR=7.8
LRMC **Laurel Mtn Rad** 34.16 309 P P 20 48 38.7 +1.3
baz=114
DECC **Green Verdugo** 34.19 306 P P 20 48 38.8 +1.3
baz=112
MOOW **Moose Ponds** 34.21 326 *eP* P 20 48 38.8 +0.9
comp=Z,103nm,1.4s
LAO **LASA Array** 34.23 334 P P 20 48 38.9 +1.2
baz=142
LAO **LASA Array** 34.23 334 *eP* P 20 48 37.6 -0.1
comp=Z,52nm,1.1s
LAO LR LR

comp=Z,2µm,22.0s
MPMC Manual Prospec 34.26 310 P P 20 48 39.4 +1.2
baz=115,SNR=11
FXWY Fox Creek 34.29 326 eP P 20 48 39.5 +1.0
comp=Z,25nm,0.8s
RLMT Red Lodge 34.42 329 P P 20 48 40.2 +0.7
baz=136,SNR=46
RLMT Red Lodge 34.42 329 eP P 20 48 40.3 +0.7
comp=Z,79nm,1.1s
RLMT LR LR
comp=Z,3µm,21.0s
DAC Darwin (Calif) 34.42 310 eP P 20 48 41.2 +1.5
DAC pmax pmax
comp=Z,21nm,1.2s
DAC Darwin (Calif) 34.42 310 eP P 20 48 41.2 +1.5
comp=Z,21nm,1.3s
A26A Wade Farm, Ken 34.51 340 P P 20 48 40.5 +0.4
baz=151
H17A Grant Village 34.56 327 eP P 20 48 42.3 +1.3
comp=Z,16nm,0.8s
GRAC Grapevine Rang 34.57 311 P P 20 48 41.8 +1.0
baz=116
LKWY Lake 34.59 328 eP P 20 48 43.5 +2.4
LKWY pmax pmax
comp=Z,44nm,1.1s
LKWY Lake 34.59 328 eP P 20 48 43.5 +2.4
comp=Z,44nm,1.1s
LKWY LR LR
comp=Z,5µm,21.0s
OSI Osito Audit: C 34.62 307 P P 20 48 42.2 +0.9
baz=112
BLG Laguna Peak, P 34.70 306 P P 20 48 42.6 +0.7
baz=111
YFT Old Faithful 34.74 327 eP P 20 48 44.9 +2.5
comp=Z,87nm,1.4s
SNCC San Nicolas Is 34.77 304 P P 20 48 43.7 +1.2
baz=109
ISA Isabella, Lake 34.83 308 P P 20 48 44.6 +1.5
baz=113,SNR=5.6
ISA Isabella, Lake 34.83 308 eP P 20 48 45.5 +2.4
ISA pmax pmax
comp=Z,64nm,1.3s
ISA Isabella, Lake 34.83 308 eP P 20 48 45.5 +2.4
comp=Z,64nm,1.4s
YNR Norris Junctio 34.84 328 eP P 20 48 45.1 +1.9
comp=Z,29nm,1.2s
DGMT Dagmar 34.89 338 P P 20 48 44.5 +1.1
baz=147
DGMT Dagmar 34.89 338 eP P 20 48 43.8 +0.4
comp=Z,42nm,1.0s
DGMT LR LR
comp=Z,3µm,21.0s
ARVC Arvin 34.89 307 P P 20 48 45.0 +1.5
baz=112,SNR=11
ELK Elko 34.99 318 eP P 20 48 45.9 +1.3
ELK pmax pmax
comp=Z,30nm,1.3s
ELK Elko 34.99 318 eP P 20 48 45.9 +1.3
comp=Z,30nm,1.3s
GCMT Greycliff 35.10 330 eP P 20 48 46.1 +0.8
SCZ2 Santa Cruz Isl 35.10 305 P P 20 48 47.5 +2.1
baz=110
TIN Tinemaha, Big 35.22 311 P P 20 48 47.3 +0.9
baz=115
QLMT Earthquake Lak 35.31 327 eP P 20 48 49.6 +2.3
SBC Santa Barbara 35.32 306 P P 20 48 49.3 +2.1
baz=110
PKM Mcpherson Peak 35.55 307 P P 20 48 50.6 +1.1
baz=111,SNR=7.7
RCTC Rector, Farmer 35.65 309 P P 20 48 51.5 +1.4
baz=113
SMMC Simmler 35.84 307 P P 20 48 53.1 +1.3
baz=111
NV01 Mina Array Sit 35.88 313 eP P 20 48 53.3 +1.1
NVAR Mina Array Bea 35.88 313 P P 20 48 53.6 +1.4
comp=Z,14nm,1.0s,baz=124,slow=7.7,SNR=36
NVAR LR LR 21 07 46.3
comp=Z,10µm,18.2s,baz=135,slow=43
BOZ Bozeman (W) 35.97 328 P P 20 48 53.8 +0.9
baz=134,SNR=54
BOZ Bozeman (W) 35.97 328 eP P 20 48 53.9 +1.0
BOZ pmax pmax
comp=Z,32nm,0.9s
BOZ Bozeman (W) 35.97 328 eP P 20 48 53.9 +1.0
comp=Z,32nm,0.8s
BOZ LR LR
comp=Z,2µm,21.0s
MCMT McKenzie Canyo 36.06 326 eP P 20 48 55.8 +2.1
HLID Hailey 36.12 323 P P 20 48 55.1 +0.9
baz=128,SNR=11
HLID Hailey 36.12 323 eP P 20 48 55.2 +0.9
comp=Z,18nm,1.0s
HLID LR LR
comp=Z,3µm,19.0s
DLMT Dillon 36.28 327 eP P 20 48 57.2 +1.7
comp=Z,162nm,1.7s
LRM Limekiln Ridge 36.51 327 eP P 20 48 59.0 +1.4
WAKR Walker 36.71 312 eP P 20 49 01.9 +2.6
EGMT Eagleton 36.78 332 P P 20 49 00.2 +0.5
baz=138,SNR=12
EGMT Eagleton 36.78 332 eP P 20 48 59.9 +0.2
comp=Z,90nm,1.0s
EGMT LR LR
comp=Z,4µm,21.0s
MFID Camas Ranch 36.86 322 eP P 20 49 01.3 +0.9
CMB Columbia Colle 37.18 311 eP P 20 49 04.4 +1.2
CMB pmax pmax
comp=Z,35nm,1.4s
CMB Columbia Colle 37.18 311 eP P 20 49 04.4 +1.2
comp=Z,35nm,1.4s
LPAZ La Paz 37.23 152 P P 20 49 03.7 -0.7
comp=Z,1.2nm,0.6s,baz=0.8,slow=5.6,SNR=2.3
LPAZ La Paz 37.23 152 P P 20 49 03.7 -0.7
LPAZ e 20 49 11.6
LPAZ La Paz 37.23 152 P P 20 49 03.7 -0.7
LPAZ e 20 49 11.6
CHMT Chamberlain Mo 37.66 328 eP P 20 49 08.0 +0.7
MSO Missoula 37.95 328 P P 20 49 10.4 +0.8
baz=132,SNR=30
MSO Missoula 37.95 328 eP P 20 49 10.4 +0.8
comp=Z,30nm,0.8s
AFDM Forest Hills D 37.98 312 eP P 20 49 12.1 +2.2
AFDM e 20 49 23.2
WVOR Wild Horse Val 38.04 319 eP P 20 49 11.4 +0.9
WVOR pmax pmax
comp=Z,75nm,1.3s
WVOR Wild Horse Val 38.04 319 eP P 20 49 11.4 +0.9
comp=Z,75nm,1.4s
WVOR LR LR
comp=Z,5µm,20.0s
SWMT Swartz Lake 38.44 328 eP P 20 49 14.6 +0.9
BMO Blue Mountains 38.56 323 eP P 20 49 14.6 -0.2
BMO pmax pmax
comp=Z,50nm,1.7s
BMO Blue Mountains 38.56 323 eP P 20 49 14.6 -0.2
comp=Z,50nm,1.7s
BMO LR LR
comp=Z,4µm,19.0s
ORV Oroville 38.61 313 eP P 20 49 17.2 +2.1
ORV Oroville 38.61 313 eP P 20 49 17.2 +2.1
ORV e 20 49 29.1
YBMT Yellow Bay 38.68 329 eP P 20 49 16.9 +1.1
JTMT Jette 38.74 328 eP P 20 49 17.1 +0.8
MOD Modoc Plateau 38.85 317 eP P 20 49 17.3 0.0
comp=Z,50nm,1.3s
BLMT Blacktail Moun 38.95 329 eP P 20 49 19.0 +0.8
O03D Paynes Creek 39.13 314 P P 20 49 19.8 +0.2
baz=115
F10A Beach Ranch, E 39.18 324 eP P 20 49 20.2 +0.2
comp=Z,36nm,0.8s
WALA Waterton Lakes 39.45 330 eP P 20 49 22.8 +0.6
comp=Z,46nm,1.2s
K05A Summer Lake 39.63 318 eP P 20 49 24.4 +0.5
comp=Z,31nm,1.1s
FFC Flin Flon 39.68 345 eP P 20 49 23.8 0.0
FFC pmax pmax
comp=Z,69nm,1.9s
FFC Flin Flon 39.68 345 eP P 20 49 23.2 -0.7
comp=Z,69nm,1.9s
FFC LR LR
comp=Z,3µm,19.0s
M04C Macdoel 39.81 316 P P 20 49 25.6 +0.3
baz=117
J05D Fort Rock, OR 40.12 318 P P 20 49 28.3 +0.4
baz=119
SCHQ Schefferville 40.18 16 P P 20 49 27.8 -0.3
comp=Z,17nm,0.7s,baz=220,slow=7.8,SNR=11
SCHQ LR LR 21 06 09.2
comp=Z,11µm,20.2s,baz=213,slow=36
SCHQ Schefferville 40.18 16 eP P 20 49 28.2 +0.2
comp=Z,92nm,1.5s
KMRM Mail Ridge 40.43 313 eP P 20 49 32.8 +2.4
comp=Z,90nm,1.2s
NEW Newport 40.52 327 P P 20 49 30.9 -0.1
baz=129,SNR=12
NEW Newport 40.52 327 eP P 20 49 31.4 +0.3
NEW pmax pmax
comp=Z,14nm,0.8s
NEW Newport 40.52 327 eP P 20 49 31.3 +0.3
comp=Z,14nm,0.8s
NEW LR LR
comp=Z,3µm,19.0s
HAWA Hanford 40.73 323 PFAKE 20 49 50.0 +17
HAWA LR LR
comp=Z,2µm,20.0s
D08A Wollman Farm, 40.76 324 eP P 20 49 34.0 +1.0
comp=Z,85nm,1.4s
C09A Chrisman Ranch 40.85 326 eP P 20 49 34.8 +1.1
comp=Z,33nm,0.7s
I04A Tendick Farm, 41.12 318 P P 20 49 35.9 -0.1
baz=118
G05D Wamic, OR 41.16 321 P P 20 49 36.6 +0.3
baz=121
VBEM Beaver Butte 41.23 320 P P 20 49 38.5 +1.5
H04A Detroit Lake 41.41 320 eP P 20 49 39.2 +0.8
comp=Z,42nm,1.0s
TDH Tom, Dick, Har 41.47 321 P P 20 49 40.7 +1.8
I03D Drain, OR 41.67 318 P P 20 49 41.3 +0.8
baz=117
B08A Colville Reser 41.75 326 eP P 20 49 41.4 +0.3
comp=Z,13nm,0.9s
ETW Entiat 41.86 324 P P 20 49 43.3 +1.2
FCC Fort Churchill 42.07 353 eP P 20 49 43.4 0.0
FCC pmax pmax
comp=Z,53nm,0.8s
FCC Fort Churchill 42.07 353 eP P 20 49 43.4 0.0
comp=Z,53nm,0.8s
G03D McMinnville, O 42.33 320 P P 20 49 46.4 +0.6
baz=119
C06D Leavenworth 42.35 324 P P 20 49 46.6 +0.6
baz=124
D05A Enumclaw 42.57 323 eP P 20 49 48.8 +1.0
D05A e 20 50 01.1
F04D Rainier, OR 42.61 321 P P 20 49 48.6 +0.6
baz=120
RPW Rockport 42.99 325 P P 20 49 51.1 -0.1
B05A Bryant 43.21 324 P P 20 49 52.9 0.0
baz=123,SNR=6.2
NLWA Neilton Lookou 43.77 322 eP P 20 49 58.0 +0.5
comp=Z,144nm,1.8s
NLWA LR LR
comp=Z,4µm,19.0s
A04D Lummi Island 43.80 324 P P 20 49 57.7 0.0
baz=123
OSD Olympics--Snow 43.90 323 P P 20 49 59.7 +1.0
LCO Las Campanas 47.97 163 PFAKE 20 50 40.0 +8.9
LCO LR LR
comp=Z,2µm,21.0s
BDFB Brasilia 49.04 130 P P 20 50 38.8 -0.5
comp=Z,3.3nm,0.7s,baz=304,slow=9.4,SNR=5.0
BDFB LR LR 21 14 02.9
comp=Z,5µm,18.0s,baz=298,slow=40
BDFB Brasilia 49.04 130 eP P 20 50 39.6 +0.3
BDFB pmax pmax
comp=Z,25nm,0.9s
BDFB Brasilia 49.04 130 eP P 20 50 39.5 +0.3
comp=Z,25nm,0.9s
YKA Yellowknife Ar 49.75 343 P P 20 50 43.6 -0.3
comp=Z,2.3nm,0.6s,baz=136,slow=8.0,SNR=81
YKB5 Yellowknife Ar 49.75 343 eP P 20 50 43.0 -0.9
YKW3 Yellowknife Ar 49.80 343 eP P 20 50 44.1 -0.2
comp=Z,23nm,1.2s
CPUP Villa Florida 51.00 147 P P 20 50 55.4 +1.5
comp=Z,6.0nm,0.8s,baz=354,slow=10,SNR=2.0
CPUP LR LR 21 14 32.2
comp=Z,3µm,18.3s,baz=324,slow=38
CPUP Villa Florida 51.00 147 eP P 20 50 59.9 +6.1
DLBC Dease Lake 52.72 332 eP P 20 51 07.7 +1.3
comp=Z,46nm,0.8s
WRAK Wrangell Islan 52.78 329 PFAKE 20 51 20.0 +13
WRAK LR LR
comp=Z,4µm,20.0s
RCBR Riachuelo 53.77 111 eP P 20 51 13.2 -1.6
comp=Z,44nm,1.0s
RCBR LR LR
comp=Z,3µm,19.0s
SFJD Kangerlussuaq 54.63 16 P P 20 51 18.6 -1.6
comp=Z,8.4nm,0.8s,baz=222,slow=12,SNR=3.6
SFJD LR LR 21 14 20.0
comp=Z,8µm,20.7s,baz=220,slow=36
RES Resolute Bay 57.80 357 LR LR 21 17 30.8
comp=Z,3µm,18.9s,baz=171,slow=37
RES Resolute Bay 57.80 357 eP P 20 51 42.3 -0.3
RES pmax pmax
comp=Z,14nm,0.8s
RES Resolute Bay 57.80 357 eP P 20 51 42.3 -0.3
comp=Z,14nm,0.8s
TRQA Tornquist 59.08 159 PFAKE 20 52 00.0 +7.9
TRQA LR LR
comp=Z,2µm,19.0s
PLCA Paso Flores 59.17 167 P P 20 51 52.2 -0.5
comp=Z,6.8nm,0.8s,baz=7.3,slow=7.5,SNR=16
PLCA Paso Flores 59.17 167 eP P 20 51 52.4 -0.3
PLCA pmax pmax
comp=Z,52nm,1.1s
PLCA Paso Flores 59.17 167 eP P 20 51 52.4 -0.3
comp=Z,52nm,1.1s
INK Inuvik 59.45 341 P P 20 51 54.9 +0.7
comp=Z,11nm,0.7s,baz=112,slow=7.0,SNR=65
INK Inuvik 59.45 341 eP P 20 51 55.2 +1.0
INK pmax pmax
comp=Z,48nm,1.1s
INK Inuvik 59.45 341 eP P 20 51 54.8 +0.7
comp=Z,48nm,1.1s
TAOE Nuku Hiva Isla 60.16 249 eLQ LQ 21 07 13.9
comp=Z,9µm,27.6s
TAOE eLR LR 21 09 46.1
comp=Z,1µm,23.9s
EGAK Eagle 60.40 336 PFAKE 20 52 10.0 +9.2
EGAK LR LR
comp=Z,4µm,22.0s
BMRM Bremner River 60.46 331 eP P 20 52 02.5 +1.1
MENT Mentasta 60.74 333 eP P 20 52 06.1 +2.9
comp=Z,30nm,1.1s
DOT Dot Lake 61.13 334 eP P 20 52 06.4 +0.5
comp=Z,134nm,1.2s
PAX Paxson 61.50 333 eP P 20 52 09.1 +0.6
PAX pmax pmax
comp=Z,37nm,0.9s
PAX Paxson 61.50 333 eP P 20 52 09.1 +0.6
comp=Z,38nm,0.9s
SUMG Summit 61.52 14 i P P 20 52 08.3 -0.5
comp=Z,52nm,1.1s
SUMG Summit 61.52 14 i P P 20 52 08.3 -0.5
SUMG pmax pmax
comp=Z,52nm,1.1s
SUMG Summit 61.52 14 eP P 20 52 07.7 -1.1
comp=Z,36nm,0.9s
FYU Fort Yukon 62.65 337 eP P 20 52 17.1 +1.2
ILAR Eielson Array 62.68 335 P P 20 52 16.9 +0.6
comp=Z,17nm,0.7s,baz=116,slow=5.1,SNR=164
RKT Rikitea 63.01 232 eS S 21 00 46.0 -1.2
comp=Z,2µm,35.8s
RKT eLQ LQ 21 08 28.5
comp=Z,3µm,31.0s
RKT eLR LR 21 11 08.7
comp=Z,4µm,27.0s,baz=45
COLA College 63.10 335 e i P P 20 52 18.1 -0.9
COLA pmax pmax
comp=Z,15nm,0.9s
COLA College 63.10 335 eP P 20 52 19.1 +0.1
comp=Z,28nm,0.8s
COLA LR LR
comp=Z,2µm,21.0s
BORG Borgarnes 63.55 25 LR LR 21 18 14.4
comp=Z,1µm,21.5s,baz=235,slow=34
KDAK Kodiak Island 63.62 326 PFAKE 20 52 40.0 +17
KDAK LR LR
comp=Z,3µm,21.0s
BPAW Bear Paw Mtn. 64.19 334 eP P 20 52 26.7 +0.4
CAST Castle Rocks 64.50 333 eP P 20 52 28.7 +0.4
COLD Coldfoot 64.72 337 eP P 20 52 31.1 +1.5
SCO Scoresbysund 65.12 19 i P P 20 52 31.6 -0.6
SCO Scoresbysund 65.12 19 i P P 20 52 31.6 -0.6
BBTS Babate 65.76 81 LR LR 21 15 31.7
comp=Z,1µm,21.7s,slow=31
TT01 Tatalina 66.16 332 eP P 20 52 39.0 0.0
TTA Tatalina 66.16 332 eP P 20 52 39.0 -0.1
TTA pmax pmax
comp=Z,120nm,1.7s
TTA Tatalina 66.16 332 eP P 20 52 39.0 -0.1
comp=Z,121nm,1.8s
POHA Pohakuloa 66.34 284 PFAKE 20 52 50.0 +8.8
POHA LR LR
comp=Z,2µm,19.0s
DAG Danmarks Havn 68.11 13 i P P 20 52 49.5 -1.6
comp=Z,8.8nm,0.8s
DAG Danmarks Havn 68.11 13 i P P 20 52 49.5 -1.6
DAG pmax pmax
comp=Z,7.0nm,0.8s
KIP Kipapa 68.32 287 PFAKE 20 53 10.0 +17
KIP LR LR
comp=Z,7µm,19.0s
PMAFR Mafra 68.59 54 eS S 21 02 05.9 +11
LIS Lisbon 68.72 55 eP P 20 52 55.8 +0.2
LIS AMb AMB 20 53 09.6
comp=Z,90nm,1.3s
LIS Lisbon 68.72 55 eP P 20 52 55.8 +0.2
PCAS Casmilo, Conde 69.10 53 eP P 20 52 58.5 +0.5
comp=Z,77nm,1.6s
PCAS eS S 21 02 10.2 +9.1
PGAV Gavieira, Arco 69.11 51 eS S 21 02 11.3 +10
PGAV Gavieira, Arco 69.11 51 eLR LR 21 13 53.7
comp=Z,2µm,18.0s
PFVI Vila Bisbo 69.12 56 eS S 21 02 12.9 +11
PTOM Tomar 69.20 54 eP P 20 52 59.2 +0.6
comp=Z,46nm,1.8s
MORF Marmelete 69.25 56 eP P 20 52 58.9 -0.1
MORF AMb AMB 20 53 01.1
comp=Z,61nm,1.9s
MORF Marmelete 69.25 56 eP P 20 52 59.9 +0.9
MORF eS S 21 02 16.1 +13
MORF Marmelete 69.25 56 eP P 20 52 58.9 -0.1
PNCL Nicolau / Gran 69.26 55 eS S 21 02 11.5 +8.5
PMTG Montargil 69.40 54 eP P 20 53 00.2 +0.3
comp=Z,52nm,1.3s
PMTG eS S 21 02 15.2 +11
PVIS Viseu 69.50 52 eP P 20 53 01.0 +0.5
comp=Z,52nm,1.7s
POLO Lamas de Olo 69.51 52 eP P 20 53 00.8 +0.1
comp=Z,25nm,1.7s
POLO eS S 21 02 14.9 +8.7
MESJ Messejana 69.53 55 eP P 20 53 01.1 +0.4
MESJ AMb AMB 20 53 02.0
comp=Z,16nm,1.2s
MESJ Messejana 69.53 55 eP P 20 53 01.0 +0.4
JMIC Jan Mayen 69.57 20 LR LR 21 23 32.5
comp=Z,1µm,19.6s,baz=262,slow=36
PVRL Vila Real 69.58 52 eP P 20 53 01.2 +0.2
comp=Z,32nm,1.3s
EVO Evora 69.62 55 eP P 20 53 01.8 +0.6
comp=Z,25nm,1.4s
PCVE Castro Verde 69.69 56 eS S 21 02 16.3 +8.1
PBEJ Beja 69.79 55 eP P 20 53 02.9 +0.6
MTE Manteigas 69.79 53 eP P 20 53 02.7 +0.3
comp=Z,57nm,1.3s
MTE eS S 21 02 18.0 +8.6
MTE Manteigas 69.79 53 eLR LR 21 14 18.9
comp=Z,1µm,20.0s
MTE Manteigas 69.79 53 eP P 20 53 02.1 -0.3
MTE LR LR
comp=Z,2µm,20.0s
PBDV Barranco-do-Ve 69.82 56 eP P 20 53 02.9 +0.3
PBDV eS S 21 02 21.9 +12
PCBR Castelo Branco 69.90 53 eP P 20 53 03.4 +0.5
comp=Z,56nm,1.4s
PESTR Estremoz 69.91 54 eP P 20 53 03.5 +0.4
comp=Z,53nm,1.5s
PESTR eS S 21 02 21.4 +11
PVAQ Vaqueiros 69.97 56 eS S 21 02 21.7 +10
PVAQ Vaqueiros 69.97 56 eLR LR 21 13 37.4
comp=Z,2µm,20.0s
PMRV Marv??o 70.01 54 eP P 20 53 03.9 +0.3
comp=Z,45nm,2.0s
PMRV eS S 21 02 21.3 +9.4
PMRV Marv??o 70.01 54 eLR LR 21 13 53.7
comp=Z,1µm,22.0s
MVO Moncorvo 70.11 52 eP P 20 53 04.5 +0.2
comp=Z,29nm,1.4s
MVO eS S 21 02 21.9 +8.8
MVO Moncorvo 70.11 52 eLR LR 21 14 25.1
comp=Z,1µm,18.0s
PBRG Braganca 70.26 51 eP P 20 53 05.8 +0.6
comp=Z,56nm,1.6s
PBRG eS S 21 02 26.0 +11
PBAR Barrancos 70.42 55 eP P 20 53 06.8 +0.6
comp=Z,85nm,1.8s
PBAR eS S 21 02 25.7 +9.0
ESK Eskdalemuir 71.54 37 PFAKE 20 53 20.0 +7.4
ESK LR LR
comp=Z,2µm,19.0s
PPT Papeete 72.16 245 LR LR 21 19 13.9
comp=Z,2µm,18.0s,baz=50,slow=31
PPT2 Papeete2 72.17 245 eS S 21 02 38.7 +1.1
comp=Z,3µm,30.8s
PPT2 eLQ LQ 21 12 22.7
comp=Z,4µm,27.5s
PPT2 eLR LR 21 15 19.6
comp=Z,2µm,21.8s,baz=58
PAB San Pablo 72.33 53 eP P 20 53 17.9 +0.1
PAB pmax pmax
comp=Z,34nm,1.4s
PAB MLR MLR
comp=Z,1µm,21.0s
PAB San Pablo 72.33 53 eP P 20 53 17.9 +0.1
comp=Z,34nm,1.4s
PAB LR LR
comp=Z,1µm,21.0s
EFI East Falkland 72.50 163 PFAKE 20 53 30.0 +12
EFI LR LR
comp=Z,4µm,21.0s
ESDC Sonseca Array 72.61 53 P P 20 53 19.8 +0.4
comp=Z,7.4nm,0.7s,baz=284,slow=5.8,SNR=52
ESDC LR LR 21 21 24.9
comp=Z,761nm,18.9s,baz=275,slow=33
ES19 SONSECA Array 72.65 53 eP P 20 53 19.8 +0.1
MDT Midelt 73.15 60 LR LR 21 21 24.9
comp=Z,1µm,18.9s,slow=32
TBI Tubuai 74.58 239 eS S 21 03 05.4 +0.9
comp=Z,2µm,32.5s
TBI Tubuai 74.58 239 eLQ LQ 21 13 21.7
comp=Z,2µm,31.8s
TBI eLR LR 21 16 27.0
comp=Z,3µm,26.5s,baz=66
KBS Kingsbay 74.66 11 eS S 21 03 07.9 +4.1
KBS Kingsbay 74.66 11 PFAKE 20 53 40.0 +9.3
KBS LR LR
comp=Z,5µm,20.0s
SPA0 Spitsbergen Ar 75.69 12 eS S 21 03 16.6 +1.4
SPA0 IAMs_20 IAMs_20 21 26 40.6
comp=Z,4µm,20.2s
HSPB Hornsund (broa 75.81 13 eS S 21 03 24.0 +7.4
HSPB IAMs_20 IAMs_20 21 24 29.9
comp=E,4µm,21.0s
PYM Petit Puy Mans 76.69 46⇑ eP P 20 53 42.9 -0.1
AGO Saint Agoulin 76.71 46 eP P 20 53 42.5 -0.5
DOU Dourbes 76.91 41 P P 20 53 42.9 -1.1
LBL Lubilhac 76.95 46⇑ eP P 20 53 44.4 -0.1
PLDF La Plantade 77.06 46 eP P 20 53 44.8 -0.3
BCLA Clavier 77.29 41 P P 20 53 48.5 +2.4
BJO Bjornoya 77.39 15 eS S 21 03 38.4 +4.5
MEM Membach 77.69 41 P P 20 53 47.8 -0.6
KONO Kongsberg 77.77 31 eS S 21 03 37.6 -0.8
KONO eSS SS 21 08 41.5 +3.1
KONO Kongsberg 77.77 31 PFAKE 20 54 00.0 +11
KONO LR LR
comp=Z,2µm,21.0s
SSB Saint Sauveur 77.84 46 eP P 20 53 46.0 -3.4
SSB Saint Sauveur 77.84 46 eP P 20 53 46.0 -3.4
WLF Walferdange 77.98 42 PFAKE 20 54 00.0 +10
WLF LR LR
comp=Z,2µm,19.0s
HOPEN Hopen 78.03 13 eS S 21 03 42.9 +2.1
HOPEN IAMs_20 IAMs_20 21 25 22.9
comp=E,3µm,21.4s
THEF They Montfort 78.18 43 eP P 20 53 50.6 -0.6
NB2 NORSAR Subarra 78.22 30 P P 20 53 50.7 -0.5
comp=Z,1.4nm,0.7s,baz=286,slow=5.9
NB2 NORSAR Subarra 78.22 30 P P 20 53 50.7 -0.5

baz=286,slow=5.9
NOA NORSAR Array B 78.22 30 P **P** **20 53 50.7 -0.5**
comp=Z,5.4nm,0.9s,baz=284,slow=5.5,SNR=6.5
NOA LR LR 21 26 23.1
comp=Z,935nm,20.6s,baz=275,slow=34
NC602 NORSAR Array S 78.45 30 *e*S **S** **21 03 50.8 +4.9**
NC602 *e*SS **SS** **21 08 51.0 +2.3**
TIC Toumodi 78.70 86 *e*P **P** **20 53 54.0 -0.7**
LIC Lamto 78.81 87 *e*P **P** **20 53 55.0 -0.3**
comp=Z,137nm,1.9s
DBIC Dimbokro 78.85 86 P **P** **20 53 55.2 -0.2**
comp=Z,8.7nm,0.8s,baz=270,slow=4.8,SNR=18
DBIC LR LR 21 23 06.6
comp=Z,491nm,21.0s,baz=263,slow=32
DBIC Dimbokro 78.85 86 *e*P **P** **20 53 55.7 +0.2**
DBIC Dimbokro 78.85 86 *e*P **P** **20 53 55.7 +0.2**
TRO Tromso 78.88 20 *e*S **S** **21 03 51.5 +1.4**
TRO *e*SS **SS** **21 08 57.5 +2.8**
LOMF Lomont 78.93 44⇑ *e*P **P** **20 53 54.0 -1.4**
ECH Echery 78.95 43⇑ *e*P **P** **20 53 54.9 -0.5**
MOF Molkenrain 79.02 43⇑ *e*P **P** **20 53 55.3 -0.6**
KIC Kosan Boka 79.05 87 *e*P **P** **20 53 56.4 -0.2**
comp=Z,113nm,1.3s
LANF Langenberg 79.19 42 *e*P **P** **20 53 56.6 -0.1**
BNI Bardonecchia 79.36 46 PFAKE 20 54 10.0 +12
BNI LR LR
comp=Z,2μm,20.0s
BFO Black Forest 79.68 43 PFAKE 20 54 10.0 +11
BFO LR LR
comp=Z,1μm,19.0s
TUE Stuetta 80.82 44 *e*P **P** **20 54 04.1 -1.8**
TUE LR LR
comp=Z,1μm,21.0s
BILL Bilibino 80.96 339 *e*P **P** **20 54 05.9 0.0**
BILL *e* 20 54 12.5
BILL pmax pmax
comp=Z,4.0nm,0.9s
BILL MLR MLR
comp=Z,2μm,19.0s
BILL Bilibino 80.96 339 *e*P **P** **20 54 06.3 +0.4**
BILL LR LR
comp=Z,2μm,21.0s
ARCES ARCESS Array B 81.06 19 P **P** **20 54 06.0 -0.4**
comp=Z,2.4nm,0.6s,baz=282,slow=5.4,SNR=18
ARCES LR LR 21 25 43.1
comp=Z,686nm,21.1s,baz=302,slow=32
ARE0 ARCESS Array S 81.06 19 *e*S **S** **21 04 15.3 +2.3**
DAVOX Davos/Dischmat 81.09 44 LR LR 21 25 33.1
comp=Z,602nm,21.3s,baz=268,slow=32
CASM Ain Smara 81.38 55 P **P** **20 54 09.2 +0.4**
KEV Kevo 81.43 19 PFAKE 20 54 20.0 +12
KEV LR LR
comp=Z,2μm,22.0s
NKC Novy Kostel 81.78 40 *e*P **P** **20 54 10.3 -0.3**
NKC *ex* x 20 54 20.5
NKC AMS AMS 21 33 20.0
comp=Z,1μm,20.7s
NKC Novy Kostel 81.78 40 *e*P **P** **20 54 10.3 -0.3**
NKC MLR MLR
comp=Z,1μm,20.7s
CLL Collm 81.80 39 *e*P **P** **20 54 09.0 -1.7**
comp=Z,23nm,1.6s
CLL *i* 20 54 20.6
CLL *e* 20 54 30.0
CLL *e*PP **PP** **20 57 19.0 +1.3**
CLL *e*S **S** **21 04 16.0 -5.4**
CLL *e*PS **PnS** **21 05 12.0 -0.6**
CLL *e*SS **SS** **21 09 38.0 -1.2**
CLL *e*SSS SSS 21 12 54.0
CLL *e* 21 14 48.0
CLL *e*SSSS 21 15 48.0
CLL Lm MLR 21 34 00.0
comp=N,700nm,19.2s
CLL Lm MLR 21 34 00.0
comp=E,1μm,20.8s
CLL Lm MLR 21 34 00.0
comp=Z,2μm,19.0s
CLL Collm 81.80 39 *e*P **P** **20 54 09.0 -1.7**
CLL *e*S **S** **21 04 16.0 -5.4**
CLL pmax pmax
comp=Z,23nm,1.6s
CLL MLR MLR
comp=Z,2μm,19.0s
CMAH Djebel Manchou 82.00 54 P **P** **20 54 11.5 -0.6**
ABSA Djebel Ababsia 82.14 55 P **P** **20 54 12.9 0.0**
VLC Villacollemand 82.15 46 PFAKE 20 54 20.0 +7.3
VLC LR LR
comp=Z,779nm,22.0s
HOPE Hope Point 82.38 154 PFAKE 20 54 20.0 +6.7
HOPE LR LR
comp=Z,1μm,20.0s
BRG Berggiesshubel 82.50 39 *e*P **P** **20 54 13.5 -0.8**
comp=Z,31nm,1.9s
BRG *e*PP **PP** **20 57 23.2 -0.2**
comp=Z,30nm,1.8s
BRG SKS S 21 04 42.0 +13
BRG S ScS 21 05 03.0 +19
BRG SS **SS** **21 09 50.0 +0.4**
comp=N,710nm,15.6s
comp=E,819nm,17.9s
comp=Z,1μm,18.8s
BRG Berggiesshubel 82.50 39 *e*P **P** **20 54 13.5 -0.8**
BRG *e* 20 57 23.2
BRG SS SS 21 09 50.0 +0.4
BRG pmax pmax
comp=Z,31nm,1.9s
BRG pmax pmax
comp=Z,30nm,1.8s
BRG MLR MLR
comp=N,710nm,15.6s
BRG MLR MLR
comp=E,819nm,17.9s
BRG MLR MLR
comp=Z,1μm,18.8s
VSL Villasalto 82.72 51 PFAKE 20 54 30.0 +14
VSL LR LR
comp=Z,870nm,20.0s
KHC Kasperske Hory 82.81 41 *e*P **P** **20 54 15.5 -0.5**
KHC *ex* x 20 54 26.8
KHC *e*S **S** **21 04 36.9 +5.0**
KHC AMS AMS 21 32 10.0
comp=Z,2μm,19.9s
KHC Kasperske Hory 82.81 41 *e*P **P** **20 54 15.5 -0.5**
KHC *e*S **S** **21 04 36.9 +5.0**
KHC MLR MLR
comp=Z,2μm,19.9s
KHC Kasperske Hory 82.81 41 *e*P **P** **20 54 14.6 -1.5**
GERES GERESS Array B 82.97 41 P **P** **20 54 16.4 -0.5**
comp=Z,2.5nm,0.9s,baz=270,slow=2.1,SNR=6.9
PVCC Panska Ves 82.98 39 AMS AMS 21 34 00.0
comp=Z,1μm,18.9s
PRA Prague 83.04 40 AMS AMS 21 35 10.0
comp=Z,2μm,18.6s
PRU Pruhonice 83.14 40 *e*P **P** **20 54 17.2 -0.5**
PRU *e*pP **PcP** **20 54 20.1 -2.1**
PRU *ex* x 20 54 27.7
PRU *e*S **S** **21 04 35.9 +0.8**
PRU *e*PS **PnS** **21 05 27.0 -2.1**
PRU AMS AMS 21 35 20.0
comp=Z,2μm,16.1s
PRU Pruhonice 83.14 40 *e*P **P** **20 54 17.2 -0.5**
PRU *e* 20 54 20.1
PRU *e*S **S** **21 04 35.9 +0.8**
PRU *e*PS **PnS** **21 05 27.0 -2.1**
PRU MLR MLR
comp=Z,2μm,16.1s
TORD Torodi Ar. Bea 83.29 78 P **P** **20 54 18.1 -1.0**
comp=Z,1.3nm,0.5s,baz=284,slow=3.5,SNR=17
TORD LR LR 21 27 08.5
comp=Z,844nm,22.0s,baz=270,slow=33
GOPC GO Pecny, Ondr 83.31 40 *e*PS 21 05 29.6
GOPC AMS AMS 21 35 20.0
comp=Z,2μm,16.9s
KEST Kesra 83.75 55 P **P** **20 54 21.6 +0.4**
comp=Z,8.9nm,0.8s,baz=317,slow=2.4,SNR=12
KEST LR LR 21 25 43.8
comp=Z,336nm,21.9s,baz=236,slow=32
KEST Kesra 83.75 55 *e*P **P** **20 54 21.7 +0.5**
CADS Cadrg 83.80 44 *i* P **P** **20 54 20.3 -0.9**
UPC Upice 83.86 39 *e*P **P** **20 54 21.2 -0.2**
UPC *e*S **S** **21 04 45.1 +2.7**
UPC *e*PS **PnS** **21 05 37.5 -0.5**
UPC AMS AMS 21 35 30.0
comp=Z,1μm,19.1s
UPC Upice 83.86 39 *e*P **P** **20 54 21.2 -0.2**
UPC *e*S **S** **21 04 45.1 +2.7**
UPC *e*PS **PnS** **21 05 37.5 -0.5**
UPC MLR MLR
comp=Z,1μm,19.1s
TREC Trest 83.94 40 AMS AMS 21 34 20.0
comp=Z,2μm,18.1s
DPC Dobruska-Polom 84.10 39 *e*P **P** **20 54 22.3 -0.4**
DPC *ex* x 20 54 32.9
DPC *ex* x 20 54 41.7
DPC AMS AMS 21 35 40.0
comp=Z,1μm,20.6s
DPC Dobruska-Polom 84.10 39 *e*P **P** **20 54 22.3 -0.4**
DPC MLR MLR
comp=Z,1μm,20.6s
TAM Tamanrasset 84.15 68 *e*P **P** **20 54 24.5 +0.9**
TAM MLR MLR
comp=Z,168nm,19.0s
TAM Tamanrasset 84.15 68 *e*P **P** **20 54 24.5 +0.9**
TAM LR LR
comp=Z,168nm,19.0s
LJU Ljubljana 84.38 44 *i* P **P** **20 54 23.5 -0.6**
CEY Cerknica 84.41 44 *i* P **P** **20 54 24.0 -0.3**
APA Apatity 84.55 20 *i* P P 20 54 33.0 +8.5
APA *i* 20 57 41.0
APA *i* PS **PnS** **21 05 46.0 +0.3**
APA *i* SS SS 21 10 22.0 +3.0
VRAC Vranov 84.62 40 LR LR 21 28 22.2
comp=Z,799nm,21.5s,baz=282,slow=33
LVZ Lovozero 84.77 19 *e*P **P** **20 54 24.8 -0.9**
LVZ pmax pmax
comp=Z,14nm,1.1s
LVZ Lovozero 84.77 19 *e*P **P** **20 54 25.4 -0.3**
LVZ LR LR
comp=Z,2μm,20.0s
FINES FINESS Array B 84.82 27 P **P** **20 54 25.9 -0.1**
comp=Z,19nm,1.1s,baz=222,slow=2.6,SNR=10
FINES LR LR 21 29 53.3
comp=Z,1μm,20.2s,baz=316,slow=34
OKC Ostrava-Krasne 85.38 39 AMS AMS 21 36 30.0
comp=Z,2μm,18.1s
VYHS Vyhne 86.29 40 *e*P **P** **20 54 33.1 -0.5**
VYHS pmax pmax
comp=Z,7.0nm,1.5s
VYHS Vyhne 86.29 40 *e*P **P** **20 54 33.1 -0.5**
LANS Liptovska Anna 86.44 40 *e*P **P** **20 54 35.2 +0.8**
LANS Liptovska Anna 86.44 40 *e*P **P** **20 54 35.2 +0.8**
LANS *e* 20 54 56.5
PSZ Piszkesteto 87.16 41 PFAKE 20 54 50.0 +12
PSZ LR LR
comp=Z,966nm,20.0s
CUC Castrococco 87.28 49 PFAKE 20 54 50.0 +11
CUC LR LR
comp=Z,798nm,21.0s
WDD Wied Dalam 87.71 53 PFAKE 20 54 50.0 +9.3
WDD LR LR
comp=Z,870nm,21.0s
KOLS Kolonicke sedl 88.22 39 *e* P 20 55 28.5 +46
TIP Timpagrande 88.25 50 PFAKE 20 54 50.0 +6.6
TIP LR LR
comp=Z,1μm,21.0s
UZH Uzhgorod 88.35 39 *e*P **P** **20 54 39.0 -4.5**
UZH *e* 20 58 10.8
UZH *e* 21 05 05.8
UZH *e*SSS SSS 21 14 56.0
UZH MLR MLR
comp=N,2μm,17.0s
UZH MLR MLR
comp=E,1μm,17.0s
UZH MLR MLR
comp=Z,2μm,17.0s
TIXI Tiksi 88.45 350 P **P** **20 54 43.5 -0.1**
comp=Z,3.3nm,0.4s,baz=53,slow=3.9,SNR=8.2
TIXI Tiksi 88.45 350 *e*P **P** **20 54 43.5 -0.1**
TIXI pmax pmax
comp=Z,12nm,1.2s
TIXI Tiksi 88.45 350 *e*P **P** **20 54 43.4 -0.1**
TIXI LR LR
comp=Z,2μm,21.0s
SEY Seymchan 88.51 337 P **P** **20 54 44.5 +0.5**
comp=Z,1.8nm,0.5s,baz=74,slow=4.8,SNR=5.0
SEY Seymchan 88.51 337 *e*P **P** **20 54 43.6 -0.4**
BZS Buzias 89.16 42⇑ *i*P **P** **20 54 47.5 +0.1**
BZS Buzias 89.16 42⇑ P **P** **20 54 47.5 +0.1**
MDVR Moldovita 89.56 43⇓ *i*P P 20 54 42.6 -6.8
TIR Tirane 89.66 47 PFAKE 20 55 00.0 +10
TIR LR LR
comp=Z,1μm,22.0s
GZR Gura Zlata 89.99 42⇓ *i*P **P** **20 54 51.1 -0.3**
GZR Gura Zlata 89.99 42⇓ P **P** **20 54 51.1 -0.3**
KLMR Klimovskoe 90.63 24 *e*P **P** **20 54 51.7 -2.2**
KLMR *e* 20 58 24.0
KLMR *e*S **SKSac** **21 05 19.8 -2.9**
KLMR pmax pmax
comp=Z,15nm,1.6s
AFI Afiamalu 90.85 256 LR LR 21 27 47.8
comp=Z,468nm,19.9s,baz=60,slow=30
MA2 Magadan 91.16 335 P **P** **20 54 56.7 +0.3**
comp=Z,5.7nm,0.6s,baz=80,slow=8.8,SNR=3.8
MA2 Magadan 91.16 335 P **P** **20 54 56.7 +0.3**
MA2 MLR MLR
comp=Z,2μm,22.0s
MA2 Magadan 91.16 335 P **P** **20 54 56.7 +0.3**
MA2 LR LR
comp=Z,2μm,22.0s
PET Petropavlovsk 91.21 327 PFAKE 20 55 10.0 +13
PET LR LR
comp=Z,1μm,21.0s
VOIR 91.42 41⇑ *i*P P 20 55 04.1 +6.0
VOIR 91.42 41⇑ P P 20 55 04.1 +6.0
KIEV Kiev 91.44 35 *e*P **P** **20 54 58.7 +0.8**
KIEV pmax pmax
comp=Z,2.0nm,1.0s
KIEV Kiev 91.44 35 PFAKE 20 55 10.0 +12
KIEV LR LR
comp=Z,1μm,19.0s
VTS Vitosha 91.44 45⇑ *i*P **P** **20 54 58.6 +0.3**
VTS Vitosha 91.44 45⇑ P **P** **20 54 58.6 +0.3**
VTS Vitosha 91.44 45 *e*P **P** **20 54 58.4 +0.1**
MLR Muntele Rosu 91.96 41⇓ *i*P **P** **20 55 01.1 +0.5**
MLR Muntele Rosu 91.96 41⇓ P **P** **20 55 01.1 +0.5**
MLR Muntele Rosu 91.96 41 *e*P **P** **20 55 00.1 -0.5**
OBN Obninsk 92.83 29 *e*P **P** **20 55 02.3 -1.9**
OBN *e* 20 58 42.2
OBN pmax pmax
comp=Z,5.0nm,1.0s
OBN MLR MLR
comp=Z,1μm,17.0s
OBN Obninsk 92.83 29 PFAKE 20 55 20.0 +16
OBN LR LR
comp=Z,1μm,22.0s
CFR Carcaliu 93.47 41⇑ *i*P **P** **20 55 06.0 -1.4**
CFR Carcaliu 93.47 41⇑ P **P** **20 55 06.0 -1.4**
NRIK Noril'sk 93.59 3 LR LR 21 39 35.2
comp=Z,1μm,18.5s,baz=1.5,slow=37
SANT Santorini 95.69 49 PFAKE 20 55 30.0 +12
SANT LR LR
comp=Z,563nm,21.0s
YAK Yakutsk 96.40 344 LR LR 21 46 23.7
comp=Z,504nm,18.1s,baz=64,slow=40
FUNA Funafuti 97.80 263 PFAKE 20 55 40.0 +12
FUNA LR LR
comp=Z,6μm,19.0s
ISP Isparta 98.60 46 PFAKE 20 55 40.0 +8.9
ISP LR LR
comp=Z,782nm,20.0s
ANTO Ankara 99.10 43 PFAKE 20 55 40.0 +6.8
ANTO LR LR
comp=Z,101nm,22.0s
ARU Arti 100.64 20*c* *i*P **Pdif** **20 55 38.1 -1.5**
ARU 20 59 45.1
ARU S **SKSac** **21 06 14.3 -1.7**
ARU SP **SP** **21 08 39.9 -2.9**
ARU pmax pmax
comp=Z,8.0nm,1.7s
ARU MLR MLR
comp=Z,2μm,22.0s
ARU Arti 100.64 20 PFAKE 20 55 50.0 +10
ARU LR LR
comp=Z,2μm,22.0s
TARA Tarawa 100.96 275 PFAKE 20 55 50.0 +8.1
TARA LR LR
comp=Z,119nm,19.0s
MSVF Nonsavu 101.31 255 PFAKE 20 56 00.0 +17
MSVF LR LR
comp=Z,2μm,19.0s
CSS Mathiatis 101.99 48 PFAKE 20 56 00.0 +14
CSS LR LR
comp=Z,125nm,21.0s
KIV Kislovodsk 102.78 36 PFAKE 20 56 00.0 +10
KIV LR LR
comp=Z,622nm,19.0s
YSS Yuzh-Sakhalins 103.02 329 PFAKE 20 56 00.0 +10
YSS LR LR
comp=Z,473nm,22.0s
ERM Erimo 106.15 325 PFAKE 21 00 30.0
ERM LR LR
comp=Z,3μm,21.0s
GNI Garni 106.39 38 PFAKE 21 00 30.0
GNI LR LR
comp=Z,770nm,20.0s
BRVK Borovoye 106.94 15 PFAKE 21 00 30.0
BRVK LR LR
comp=Z,1μm,21.0s
QSPA South Pole Qui 107.08 180 PFAKE 21 00 30.0
QSPA LR LR
comp=Z,2μm,21.0s
TSUM Tsumeb 107.19 105 PFAKE 21 00 30.0
TSUM LR LR
comp=Z,967nm,21.0s
SNZO South Karori 108.61 231 PFAKE 21 00 30.0
SNZO LR LR
comp=Z,3μm,20.0s
HIA Hailar 110.28 343 PFAKE 21 00 40.0
HIA LR LR
comp=Z,1μm,20.0s
SBA Scott Base 110.43 192 PFAKE 21 00 40.0
SBA LR LR
comp=Z,1μm,21.0s
MDJ Mudanjiang 110.84 334 Pdif **Pdif** **20 56 26.2 +1.0**
MDJ PKS **PKSdf** **21 04 03.9 +2.5**
MDJ AMB AMB
comp=Z,170nm,6.8s
MDJ LR LR
comp=Z,760nm,23.8s
MDJ LR LR
comp=Z,620nm,20.1s
MDJ LR LR
comp=Z,950nm,23.8s
MDJ Mudanjiang 110.84 334 PFAKE 21 00 40.0
MDJ LR LR
comp=Z,914nm,22.0s
KURK Kurchatov 110.95 11 PFAKE 21 00 40.0
KURK LR LR
comp=Z,5μm,19.0s
TLY Talaya 111.04 354 PFAKE 21 00 40.0
TLY LR LR
comp=Z,1μm,22.0s
SUR Sutherland 112.28 118 PFAKE 21 00 40.0
SUR LR LR
comp=Z,2μm,21.0s
MAJO Matsushiro 112.69 323 PFAKE 21 00 40.0
MAJO LR LR
comp=Z,7μm,22.0s
CN2 Changchun 113.18 336 *e*Pdif **Pdif** **20 56 33.4 -2.2**
CN2 *e*PP **PP** **21 01 21.1 +2.8**
CN2 *e*S **Sdif** **21 08 52.2 -7.1**
CN2 AMB AMB
comp=Z,200nm,4.0s
CN2 LR LR
comp=Z,500nm,23.0s
CN2 LR LR
comp=Z,900nm,23.0s
CN2 LR LR
comp=Z,500nm,20.0s
ULN Ulaanbaatar 114.37 351 PFAKE 21 00 40.0 +8.3
ULN LR LR
comp=Z,911nm,19.0s
SONM Songino Array 114.49 351 PP **PP** **21 01 27.9 +0.5**
comp=Z,1.0nm,0.9s,baz=17,slow=6.0,SNR=3.3
SONM PKKP **PKKPdf** **21 11 29.9 -4.2**
comp=Z,0.5nm,0.4s,baz=166,slow=1.2,SNR=5.1
BOSA Boshof 115.67 114 PKP **PKPdf** **21 00 37.3 +2.7**
comp=Z,4.4nm,0.9s,baz=164,slow=5.5,SNR=3.3
LSZ Lusaka 116.28 99 PFAKE 21 00 50.0 +14
LSZ LR LR
comp=Z,891nm,20.0s
HNR Honiara 116.39 268 PFAKE 21 00 50.0 +14
HNR LR LR
comp=Z,1μm,20.0s
RAYN Ar Rayn 117.12 51 PFAKE 21 00 50.0 +12
RAYN LR LR
comp=Z,602nm,19.0s
EKS2 Erkin-Say 117.41 17 PFAKE 21 00 50.0 +12
EKS2 LR LR
comp=Z,1μm,22.0s
AAK Ala-Archa 117.64 17 PFAKE 21 00 50.0 +12
AAK LR LR
comp=Z,1μm,20.0s
TKM2 Tokmak 2 117.67 16 PFAKE 21 00 50.0 +12
TKM2 LR LR
comp=Z,1μm,20.0s
INCN Inchon 117.95 332 PFAKE 21 00 50.0 +11
INCN LR LR
comp=Z,2μm,21.0s
WMQ Urumqi 118.98 6 *e*PKP **PKPdf** **21 00 40.2 -0.4**
WMQ sPKP 21 00 51.0
WMQ PP **PP** **21 02 01.0 +2.3**
WMQ SKKS 21 08 54.5
WMQ SS **SS** **21 18 22.9 +7.4**
WMQ AMB AMB
comp=Z,39nm,10.8s
WMQ LR LR
comp=Z,1μm,24.6s
WMQ LR LR
comp=Z,430nm,22.0s
WMQ LR LR
comp=Z,2μm,24.6s
BJI Beijing 119.73 341 PKP **PKPdf** **21 00 42.7 +0.7**
BJI LR LR
comp=Z,1μm,18.7s
BJI LR LR
comp=Z,690nm,22.2s
BJI LR LR
comp=Z,2μm,23.3s
BJT Baijiatuau 119.75 341 PFAKE 21 00 50.0 +7.9
BJT LR LR
comp=Z,2μm,22.0s
HHC Hu-ho-hao-te 120.24 345 *e*PKP **PKPdf** **21 00 43.2 +0.1**
HHC PP PP 21 02 16.5 +8.9
HHC LR LR
comp=Z,1μm,20.6s
HHC LR LR
comp=Z,730nm,19.8s
HHC LR LR
comp=Z,2μm,20.5s
KSH Kashi 120.95 17 *e*PKP **PKPdf** **21 00 40.3 -4.3**
KSH *es*PKP 21 00 54.6
KSH AMB AMB
comp=Z,150nm,6.1s
KSH LR LR
comp=Z,190nm,6.1s
KSH LR LR
comp=Z,1μm,15.9s
KSH LR LR
comp=Z,1μm,23.7s
KMBO Kilima Mbogo 121.23 81 PFAKE 21 01 00.0 +14
KMBO LR LR
comp=Z,833nm,19.0s
GUMO Guam 121.91 299 PFAKE 21 01 00.0 +13
GUMO LR LR
comp=Z,2μm,22.0s
GTA Gaotai 123.55 355 *e*PKP **PKPdf** **21 00 52.2 +2.6**
GTA sPKP 21 00 59.7
GTA SKS **SKSdf** **21 08 02.4 +3.2**
GTA SKKS **SKKSac** **21 09 22.2 -5.6**
GTA AMB AMB
comp=Z,190nm,7.1s
GTA LR LR
comp=Z,850nm,20.9s
GTA LR LR
comp=Z,1μm,20.4s
GTA LR LR
comp=Z,1μm,22.8s
SSE Sheshan 125.75 332 PKP **PKPdf** **21 00 52.7 -1.1**
SSE SS SS 21 19 45.8 +3.5
SSE LR LR
comp=Z,1μm,14.5s
SSE LR LR
comp=Z,810nm,14.9s
SSE LR LR

Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.35**	**275**	P	**Pn**	**20 47 21.8**	**-0.5**
ONAJ				S	**Sn**	**20 47 28.0**	**-1.3**
JFK	**Kawauchi**	**0.41**	**315**	P	**Pn**	**20 47 22.3**	**-0.6**
JFK				S	**Sn**	**20 47 28.8**	**-1.5**
JHO	**Hitachi**	**0.71**	**230**	P	**Pn**	**20 47 25.9**	**-0.5**
JHO				S	**Sn**	**20 47 34.9**	**-1.6**
JFT	**Otama**	**0.84**	**302**	P	**Pn**	**20 47 28.0**	**-0.2**
JFT				S	**Sn**	**20 47 38.7**	**-1.0**
JMM	**Marumori**	**0.87**	**336**	P	**Pn**	**20 47 27.9**	**-0.6**
JMM				S	**Sn**	**20 47 38.8**	**-1.4**
JSB	**Shiboa**	**1.06**	**265**	S	**Sn**	**20 47 43.5**	**-1.3**
JFY	**Yanaizu**	**1.27**	**286**	P	**Pn**	**20 47 33.0**	**-0.9**
JOU	**Okura**	**1.37**	**341**	P	**Pn**	**20 47 35.2**	**0.0**
JOU				S	**Sn**	**20 47 51.4**	**-0.9**
JYS	**Shirataka**	**1.48**	**321**	P	**Pn**	**20 47 36.4**	**-0.3**
JAG	**Ashikaga**	**1.57**	**246**	P	**Pn**	**20 47 37.4**	**-0.6**
JAG				S	**Sn**	**20 47 55.6**	**-1.6**
JKT	**Katashina**	**1.62**	**260**	P	**Pn**	**20 47 38.7**	**-0.1**
MJAR	**Matsushiro Arr**	**2.49**	**259**	P	**Pn**	**20 47 50.5**	**0.0**
	27nm,0.3s,baz=81,slow=16,SNR=127						
MAJO	**Matsushiro**	**2.49**	**259**	*d* iP	**Pn**	**20 47 50.9**	**+0.3**
MAJO	**Matsushiro**	**2.49**	**259**	*e*P	**Pn**	**20 47 50.6**	**+0.1**
MAT	**Matsushiro**	**2.49**	**259**	P	**Pn**	**20 47 51.0**	**+0.4**
MAT				*e*S	**Sn**	**20 48 21.5**	**+1.8**
JHJ2	**Mitsune**	**4.12**	**197**	*e*P	**Pn**	**20 48 13.7**	**+0.8**
JHJ	**Hachijo jima 2**	**4.12**	**197**	P	**Pn**	**20 48 13.8**	**+0.8**
	129nm,0.3s,baz=329,slow=17,SNR=73						
JHJ				S	**Sn**	**20 48 59.9**	**0.0**
	238nm,0.3s,baz=221,slow=23,SNR=13						
ERM	**Erimo**	**5.15**	**16**	*e*P	**Pn**	**20 48 27.3**	**+0.3**
YUK	**Yuzh-Kuril'sk**	**7.79**	**25**	*e*P	Pn	20 49 06.4	+3.2
YUK				*i* S	**Sn**	**20 50 26.7**	**-3.2**
YUK				pmax	pmax		
	comp=Z,106nm,0.4s						
YUK				pmax	pmax		
	comp=E,28nm,0.1s						
YUK				pmax	pmax		
	comp=N,52nm,0.2s						
SHO	**Shikotan**	**8.01**	**30**	*e*P	**Pn**	**20 49 06.1**	**-0.1**
SHO				pmax	pmax		
	comp=Z,44nm,0.7s						
SHO				pmax	pmax		
	comp=N,37nm,0.8s						
SHO				pmax	pmax		
	comp=E,29nm,0.8s						
JNU	**Nakatsue**	**9.36**	**248**	P	**Pn**	**20 49 26.4**	**+1.7**
	comp=E,0.5nm,0.3s,baz=335,slow=2.3,SNR=6.0						
KUR	**Kuril'sk**	**9.56**	**29**	*e*P	**Pn**	**20 49 30.1**	**+2.8**
KUR				*i* S	**Sn**	**20 51 09.6**	**-3.6**
KUR				pmax	pmax		
	comp=Z,53nm,0.6s						
KUR				pmax	pmax		
	comp=N,36nm,0.1s						
KUR				pmax	pmax		
	comp=E,36nm,0.1s						
YSS	**Yuzh-Sakhalins**	**9.94**	**6**	*i* P	**Pn**	**20 49 34.0**	**+1.5**
CBIJ	**Chichi jima**	**9.98**	**175**	P	**Pn**	**20 49 31.2**	**-2.1**
JCJ	**Chichijima**	**9.98**	**175**	P	**Pn**	**20 49 31.2**	**-2.1**
	comp=E,21nm,0.3s,baz=1,3,slow=20,SNR=9.6						
USRK	**Ussuriysk Ar.**	**10.00**	**318**	P	**Pn**	**20 49 36.1**	**+2.7**
	comp=E,0.7nm,0.3s,baz=129,slow=14,SNR=25						
USRK				LR	LR	20 53 08.3	
	comp=E,286nm,20.5s,baz=160,slow=36						
KSRS	**Korea Array**	**10.62**	**276**	P	**Pn**	**20 49 44.6**	**+2.7**
	comp=E,0.3nm,0.3s,baz=89,slow=13,SNR=12						
KSAR	**Wonju Array Be**	**10.65**	**276**	P	**Pn**	**20 49 44.7**	**+2.3**
KSAR	**Wonju Array Be**	**10.65**	**276**	P	**Pn**	**20 49 44.6**	**+2.3**
MDJ	**Mudanjiang**	**11.59**	**314**	*e*P	**Pn**	**20 49 57.9**	**+2.7**
	comp=E,18nm,1.0s						
TYV	**Tymovskoe**	**13.82**	**4**	*e*P	**Pn**	**20 50 25.2**	**-0.3**
KLR	**Kul'dur**	**13.97**	**333**	P	**Pn**	**20 50 27.1**	**-0.5**
	comp=E,0.3nm,0.3s,baz=157,slow=14,SNR=5.6						
KLR				LR	LR	20 56 03.2	
	comp=E,189nm,18.0s,baz=240,slow=38						
TIA	**Tai'an**	**19.36**	**275**	*e*P	**Pn**	**20 51 34.5**	**-0.8**
TIA				pmax	pmax		
	comp=E,20nm,1.3s						
PETK	**Petropavlovsk-**	**19.72**	**30**	P	**Pn**	**20 51 39.9**	**+0.4**
	comp=E,21nm,0.3s,baz=220,slow=13,SNR=2.8						
MA2	**Magadan**	**23.34**	**12**	P	**P**	**20 52 16.5**	**+0.5**
	comp=E,14nm,0.9s,baz=215,slow=8.5,SNR=11						
MA2				pP	**pP**	**20 52 29.4**	**+1.1**
	comp=E,7.0nm,0.6s,baz=242,slow=7.5,SNR=2.8						
YAK	**Yakutsk**	**26.00**	**348**	P	**P**	**20 52 39.9**	**-0.3**
	comp=E,1.8nm,0.4s,baz=155,slow=19,SNR=5.1						
YAK	**Yakutsk**	**26.00**	**348**	*e*P	**P**	**20 52 40.1**	**-0.1**
YAK				*e**PP	**pP**	**20 52 51.2**	**-2.0**
YAK				*e**SS		21 03 33.6	
YAK				pmax	pmax		
	comp=Z,15nm,1.0s						
YAK				pmax	pmax		
	comp=N,3.0nm,0.9s						
YAK				pmax	pmax		
	comp=Z,244nm,6.3s						
YAK				pmax	pmax		
	comp=N,315nm,6.9s						
YAK				pmax	pmax		
	comp=E,377nm,5.9s						
SEY	**Seymchan**	**26.78**	**11**	P	**P**	**20 52 47.6**	**+0.4**
	comp=E,1.8nm,0.2s,baz=186,slow=6.2,SNR=7.4						
SEY	**Seymchan**	**26.78**	**11**	*ce*P	**P**	**20 52 49.0**	**+1.8**
ENH	**Enshi**	**27.20**	**265**	*e*P	**P**	**20 52 49.9**	**-1.5**
	comp=E,4.9nm,0.5s						
ULN	**Ulaanbaatar**	**27.22**	**304**	*ce*P	**P**	**20 52 51.6**	**0.0**
ULN				pmax	pmax		
	comp=Z,10.0nm,1.2s						
ULN	**Ulaanbaatar**	**27.22**	**304**	*e*P	**P**	**20 52 51.1**	**-0.5**
	comp=Z,7.0nm,0.8s						
BOD	**Bodaibo**	**27.42**	**328**	*e*P	**P**	**20 52 51.3**	**-1.8**
BOD				pmax	pmax		
	comp=Z,6.0nm,0.8s						
SONM	**Songino Array**	**27.65**	**304**	P	**P**	**20 52 54.1**	**-1.3**
	comp=Z,3.0nm,0.6s,baz=101,slow=8.8,SNR=16						
SONM				PcP	**PcP**	**20 56 11.3**	**-0.2**
	comp=Z,0.5nm,0.6s,baz=50,slow=2.3,SNR=3.1						
H11N2	**WAKE ISLAND Hy**	**28.29**	**121**	T	T	21 23 07.8	
	baz=314,slow=75,SNR=379						
H11N1	**WAKE ISLAND Hy**	**28.30**	**121**	T	T	21 22 59.7	
	baz=314,slow=75,SNR=276						
H11N3	**WAKE ISLAND Hy**	**28.31**	**121**	T	T	21 23 08.0	
	baz=314,slow=75,SNR=484						
H11S1	**WAKE ISLAND Hy**	**29.00**	**123**	T	T	21 24 01.7	
	baz=315,slow=76,SNR=510						
H11S3	**WAKE ISLAND Hy**	**29.00**	**123**	T	T	21 24 00.6	
	baz=315,slow=76,SNR=344						
H11S2	**WAKE ISLAND Hy**	**29.01**	**123**	T	T	21 24 00.6	
	baz=315,slow=76,SNR=356						
ZAK	**Zakamensk**	**30.14**	**308**	*e*P	**P**	**20 53 14.8**	**-2.6**
ZAK				pmax	pmax		
	comp=Z,2.0nm,1.6s						
GTA	**Gaotai**	**32.42**	**287**	*e*P	**P**	**20 53 36.1**	**-1.6**
GTA				pP	pP	20 53 41.5	-9.3
GTA				sP	sP	20 53 44.5	-12
GTA				S	**S**	**20 58 52.4**	**+3.8**
GTA				pmax	pmax		
	comp=Z,2.0nm,0.7s						
GTA				pmax	pmax		
	comp=Z,94nm,5.2s						
GTA				LR	LR		
	comp=Z,230nm,16.6s						
GTA				LR	LR		
	comp=Z,230nm,15.2s						
GTA				LR	LR		
	comp=Z,230nm,16.2s						
BILL	**Bilibino**	**34.03**	**17**	*i* P	**P**	**20 53 51.0**	**-0.2**
BILL				*e*PPP	PPP	20 55 22.6	
BILL				pmax	pmax		
	comp=Z,2.0nm,1.0s						
TIXI	**Tiksi**	**35.23**	**353**	P	**P**	**20 54 00.8**	**-0.7**
	comp=Z,1.1nm,0.5s,baz=150,slow=7.2,SNR=11						
TIXI	**Tiksi**	**35.23**	**353**	*ce*P	**P**	**20 54 01.0**	**-0.5**
TIXI				pmax	pmax		
	comp=Z,2.0nm,0.9s						
CMAR	**Chiang Mai Arr**	**41.37**	**255**	P	**P**	**20 54 53.4**	**-0.4**
	comp=Z,0.6nm,0.6s,baz=43,slow=8.6,SNR=7.1						
ZALV	**Zalesovo Beam**	**41.78**	**312**	P	**P**	**20 54 56.0**	**-0.7**
	comp=Z,8.8nm,0.5s,baz=95,slow=7.0,SNR=54						
ZALV				PcP	**PcP**	**20 56 51.7**	**-0.3**
	comp=Z,1.1nm,0.4s,baz=106,slow=3.0,SNR=4.2						
LSA	**Lhasa**	**42.07**	**275**	*e*P	**P**	**20 54 59.9**	**+0.1**
LSA				pmax	pmax		
	comp=Z,6.0nm,0.9s						
LSA	**Lhasa**	**42.07**	**275**	*e*P	**P**	**20 54 59.9**	**+0.1**
	comp=Z,5.8nm,0.9s						
NVS	**Novosibirsk**	**42.71**	**314**	*i* P	**P**	**20 55 03.7**	**-0.5**
NRIK	**Noril'sk**	**43.17**	**335**	P	**P**	**20 55 06.5**	**-1.2**
	comp=Z,1.7nm,0.3s,baz=100,slow=5.2,SNR=3.6						
MKAR	**Makanchi Array**	**43.98**	**302**	P	**P**	**20 55 14.1**	**-0.5**
	comp=Z,4.7nm,0.7s,baz=88,slow=9.6,SNR=61						
MKAR				PcP	**PcP**	**20 56 59.1**	**-0.5**
	comp=Z,0.7nm,0.7s,baz=80,slow=5.7,SNR=2.8						
KURK	**Kurchatov**	**45.80**	**308**	*e*P	**P**	**20 55 27.7**	**-1.2**
KURK				pmax	pmax		
	comp=Z,32nm,1.0s						
KURK	**Kurchatov**	**45.80**	**308**	*e*P	**P**	**20 55 27.7**	**-1.2**
	comp=Z,32nm,1.0s						
TAPN	**Taplejung**	**45.80**	**274**	*e*P	**P**	**20 55 29.2**	**-0.4**
ODAN	**Odare**	**46.27**	**273**	*e*P	**P**	**20 55 32.8**	**-0.5**
	comp=Z,9.6nm,0.5s						
RAMN	**Ramite**	**46.86**	**274**	*e*P	**P**	**20 55 37.2**	**-0.7**
	comp=Z,40nm,1.0s						
GUN	**Gumba**	**47.01**	**276**	*e*P	**P**	**20 55 38.7**	**-0.5**
	comp=Z,9.4nm,0.4s						
GKN	**Gorkha**	**47.96**	**276**	*e*P	**P**	**20 55 45.7**	**-0.6**
	comp=Z,44nm,1.1s						
PYUN	**Piuthan**	**49.23**	**277**	*e*P	**P**	**20 55 55.7**	**-0.4**
TKM2	**Tokmak 2**	**49.49**	**298**	*e*P	**P**	**20 55 57.8**	**-0.2**
TKM2	**Tokmak 2**	**49.49**	**298**	*e*P	**P**	**20 55 57.8**	**-0.2**
ILAR	**Eielson Array**	**49.54**	**32**	P	**P**	**20 55 58.9**	**+1.1**
	comp=Z,1.5nm,0.8s,baz=263,slow=5.8,SNR=6.2						
BATI	**Baumata**	**49.84**	**203**	LR	LR	21 14 01.7	
	comp=Z,103nm,21.2s,baz=194,slow=32						
AAK	**Ala-Archa**	**50.35**	**298**	*e*P	**P**	**20 56 05.1**	**+0.7**
AAK				pmax	pmax		
	comp=Z,4.0nm,0.6s						
AAK	**Ala-Archa**	**50.35**	**298**	*e*P	**P**	**20 56 03.5**	**-0.9**
	comp=Z,3.1nm,0.9s						
BRVK	**Borovoye**	**50.50**	**312**	*ce*P	**P**	**20 56 04.8**	**-0.4**
BRVK				pmax	pmax		
	comp=Z,11nm,2.5s						
BRVK	**Borovoye**	**50.50**	**312**	*e*P	**P**	**20 56 04.3**	**-0.9**
KKAR	**Karatay Array**	**52.98**	**300**	*e*P	**P**	**20 56 22.7**	**-1.2**
KKAR				pmax	pmax		
	comp=Z,1.0nm,0.6s						
KKAR	**Karatay Array**	**52.98**	**300**	*e*P	**P**	**20 56 22.7**	**-1.2**
	comp=Z,1.4nm,0.6s						
INK	**Inuvik**	**54.42**	**27**	P	**P**	**20 56 35.5**	**+1.6**
	comp=Z,1.0nm,0.5s,baz=207,slow=4.5,SNR=7.6						
SVE	**Sverdlovsk**	**55.02**	**319**	*e*P	**P**	**20 56 38.3**	**-0.2**
SVE				pmax	pmax		
	comp=Z,23nm,1.0s						
ARU	**Arti**	**56.24**	**318**	LR	LR	21 22 53.4	
	comp=Z,224nm,20.7s,baz=71,slow=38						
ARU	**Arti**	**56.24**	**318**	*c* iP	**P**	**20 56 46.4**	**-0.8**
ARU				S	**S**	**21 04 36.3**	**+3.3**
ARU				SS	**SS**	**21 08 22.4**	**+2.8**
ARU				pmax	pmax		
	comp=Z,25nm,1.2s						
ARU	**Arti**	**56.24**	**318**	*e*P	**P**	**20 56 46.3**	**-0.9**
	comp=Z,14nm,0.8s						
CTAO	**Charters Tower**	**57.05**	**174**	*e*P	**P**	**20 56 53.4**	**+0.1**
CTAO	**Charters Tower**	**57.05**	**174**	*e*P	**P**	**20 56 53.4**	**+0.1**
WRAB	**Tennant Creek**	**57.07**	**188**	*e*P	**P**	**20 56 53.0**	**-0.4**
WRAB	**Tennant Creek**	**57.07**	**188**	*e*P	**P**	**20 56 53.0**	**-0.4**
WRA	**Warrannunga Arr**	**57.08**	**188**	P	**P**	**20 56 53.8**	**+0.3**
	comp=Z,1.4nm,0.6s,baz=5.3,slow=7.4,SNR=18						
ABKAR	**Akbulak array**	**57.81**	**310**	*e*P	**P**	**20 56 57.2**	**-1.2**
	comp=Z,2.9nm,0.5s						
ASAR	**Alice Springs**	**60.81**	**188**	P	**P**	**20 57 20.3**	**+1.0**
	comp=Z,0.5nm,0.6s,baz=12,slow=5.9,SNR=7.7						
ASAR				pP	**pP**	**20 57 35.1**	**+1.6**
	comp=Z,2.7nm,0.8s,baz=13,slow=5.7,SNR=13						
MBWA	**Marble Bar**	**61.37**	**203**	*e*P	**P**	**20 57 22.7**	**-0.4**
KLMR	**Klimovskoe**	**63.65**	**328**	*e*P	**P**	**20 57 36.6**	**-1.3**
KLMR				*e**SP	**pP**	**20 57 52.2**	**0.0**
KLMR				pmax	pmax		
	comp=Z,17nm,1.5s						
GEYT	**Alibeck**	**63.69**	**299**	P	**P**	**20 57 38.2**	**-0.4**
	comp=Z,4.0nm,0.8s,baz=22,slow=1.6,SNR=12						
YKA	**Yellowknife Ar**	**63.84**	**30**	P	**P**	**20 57 39.8**	**+0.7**
	comp=Z,0.7nm,0.7s,baz=303,slow=6.6,SNR=6.4						
ARCES	**ARCESS Array B**	**63.91**	**339**	P	**P**	**20 57 39.4**	**-0.1**
	comp=Z,3.1nm,0.9s,baz=58,slow=7.9,SNR=12						
OBN	**Obninsk**	**67.98**	**323**	*e*P	**P**	**20 58 04.7**	**-1.2**
OBN				*e*		20 58 23.5	
OBN				pmax	pmax		
	comp=Z,4.0nm,0.8s						
STKA	**Stephens Creek**	**68.59**	**180**	P	**P**	**20 58 11.2**	**+1.4**
	comp=Z,1.0nm,0.6s,baz=339,slow=8.8,SNR=4.0						
FINES	**FINESS Array B**	**68.71**	**332**	P	**P**	**20 58 09.7**	**-0.7**
	comp=Z,2.4nm,0.6s,baz=37,slow=9.4,SNR=12						
KBZ	**Khabaz**	**70.77**	**311**	P	**P**	**20 58 23.2**	**0.0**
	comp=Z,3.8nm,0.9s,baz=51,slow=4.2,SNR=7.3						
KIV	**Kislovodsk**	**70.78**	**311**	*e*P	**P**	**20 58 24.0**	**+0.5**
KIV				pmax	pmax		
	comp=Z,15nm,1.1s						
GNI	**Garni**	**71.57**	**307**	*ce*P	**P**	**20 58 30.1**	**+1.6**
GNI				pmax	pmax		
	comp=Z,42nm,1.2s						
NB2	**NORSAR Subarra**	**74.10**	**337**	P	**P**	**20 58 42.4**	**-0.5**
	comp=Z,1.5nm,0.6s,baz=38,slow=6.2						
NOA	**NORSAR Array B**	**74.10**	**337**	P	**P**	**20 58 42.5**	**-0.5**
	comp=Z,3.1nm,0.8s,baz=38,slow=5.9,SNR=7.0						
AKASG	**Malin Array Be**	**74.18**	**322**	P	**P**	**20 58 42.6**	**-0.8**
	comp=Z,2.6nm,0.4s,baz=48,slow=5.8,SNR=15						
NVAR	**Mina Array Bea**	**75.08**	**53**	P	**P**	**20 58 50.8**	**+1.6**
	comp=Z,1.9nm,0.9s,baz=283,slow=5.8,SNR=5.3						
DUG	**Dugway, Tooele**	**77.44**	**49**	*e*P	**P**	**20 59 04.2**	**+1.7**
DUG	**Dugway, Tooele**	**77.44**	**49**	*e*P	**P**	**20 59 04.2**	**+1.7**
PDAR	**Pinedale Array**	**77.74**	**45**	P	**P**	**20 59 06.1**	**+1.9**
	comp=Z,0.8nm,0.8s,baz=316,slow=5.0,SNR=3.9						
PDAR				pP	**pP**	**20 59 20.8**	**+1.9**
	comp=Z,0.5nm,0.5s,baz=322,slow=0.8,SNR=2.8						
BURAR	**Bucovina Array**	**78.19**	**322**	*j* iP	**P**	**20 59 06.6**	**+0.1**
BURAR	**Bucovina Array**	**78.19**	**322**	*j* P	**P**	**20 59 06.6**	**+0.1**
TESR	**Tescani**	**78.21**	**320**	*j* iP	**P**	**20 59 06.4**	**-0.1**
BRTR	**Keskin Array B**	**78.72**	**311**	P	**P**	**20 59 09.1**	**-0.5**
	comp=Z,0.8nm,0.5s,baz=86,slow=4.1,SNR=6.6						
BRTR	**Keskin Array B**	**78.72**	**311**	*i* P	**P**	**20 59 09.6**	**0.0**
BRTR				pmax	pmax		
	comp=Z,1.0nm,0.5s						
DPC	**Dobruska-Polom**	**80.35**	**328**	*e*P	**P**	**20 59 18.5**	**+0.4**
DPC				*e*pP	**sP**	**20 59 39.7**	**+1.2**
DPC	**Dobruska-Polom**	**80.35**	**328**	*e*P	**P**	**20 59 18.5**	**+0.4**
DPC				*e*		20 59 39.7	
VYHS	**Vyhne**	**80.61**	**325**	*e*P	**P**	**20 59 19.6**	**+0.1**
VYHS	**Vyhne**	**80.61**	**325**	*e*P	**P**	**20 59 19.6**	**+0.1**
CLL	**Collm**	**80.99**	**330**	*e*P	**P**	**20 59 21.0**	**-0.5**
CLL	**Collm**	**80.99**	**330**	*e*P	**P**	**20 59 21.0**	**-0.5**
KHC	**Kasperske Hory**	**82.44**	**328**	*e*P	**P**	**20 59 29.2**	**0.0**
KHC	**Kasperske Hory**	**82.44**	**328**	*e*P	**P**	**20 59 29.2**	**0.0**
GERES	**GERESS Array B**	**82.60**	**328**	P	**P**	**20 59 29.6**	**-0.6**
	comp=Z,1.8nm,0.8s,baz=40,slow=7.7,SNR=5.9						
GERES	**GERESS Array B**	**82.60**	**328**	P	**P**	**20 59 29.6**	**-0.6**
GERES				pmax	pmax		
	comp=Z,1.0nm,0.5s						
BFO	**Black Forest**	**85.20**	**331**	*i* P	**P**	**20 59 43.5**	**+0.2**
TXAR	**Lajitas Array**	**90.21**	**52**	P	**P**	**21 00 08.1**	**+0.3**
	comp=Z,0.6nm,0.6s,baz=226,slow=3.3,SNR=3.8						
TXAR				pP	**pP**	**21 00 23.2**	**+0.5**
	comp=Z,0.9nm,0.7s,baz=309,slow=4.4,SNR=4.4						
TORD	**Torodi Ar. Bea**	**117.20**	**315**	PKP	**PKPdf**	**21 05 51.6**	**-0.9**
	comp=Z,71nm,0.4s,baz=52,slow=2.6,SNR=4.6						
LPAZ	**La Paz**	**146.79**	**59**	PKPbc	**PKPab**	**21 06 50.9**	**-0.5**
	comp=Z,4.1nm,0.7s,baz=20,slow=7.4,SNR=14						

IDC 07 20:58:27.2±1.8, 1°.31S×124°.03E, h0km, mb3.4/3, mb1 3.7/3, mb1mx3.4/40, mbtmp3.5/3, Error ellipse: s-maj=170.7km s-min=27.6km az=62.0, Southern Molucca Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**21.09**	**152**	P	P	21 03 12.0	-1.4
	0.8nm,0.5s,baz=328,slow=12,SNR=9.6						
ASAR	**Alice Springs**	**24.20**	**157**	P	P	21 03 47.0	+1.3
	0.6nm,0.4s,baz=335,slow=11,SNR=7.6						
MKAR	**Makanchi Array**	**60.26**	**328**	P	P	21 08 37.1	-0.3
	0.5nm,1.0s,baz=145,slow=5.3,SNR=3.6						

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*NIED **07** 20:47:00, 37°.10N×141°.10E, h56km, Mw4.5 Best double couple: M0=5.56000×10^15 NP1:φ=199.00000°, δ=19.00000°, λ=79.00000°. NP2:φ=31.00000°, δ=71.00000°, λ=94.00000°.*

*BJI **07** 20:47:05.9, 36°.91N×141°.28E, h28km, mb4.6/25, mB4.9/12, Ms4.8/5, Ms7 4.4/5*

*MOS **07** 20:47:10.1±1.0, 37°.07N×141°.08E, h42km, mb4.5/25, Error ellipse: s-maj=9.4km s-min=5.6km az=94.1*

*ISCJB **07** 20:47:11.6±0.4, 37°.08N±0°.03×141°.18E±0°.05, h58km±3km, mb4.3/43, MS4.0/3, Error ellipse: s-maj=6.8km s-min=4.1km az=23.4*

*JMA **07** 20:47:12.9±0.1, 37°.11N×141°.10E, h53km±1km, M4.3*

JMA Felt III J1.

*IDC **07** 20:47:13.3±0.6, 37°.12N×141°.00E, h54km±6km, mb3.9/26, mb1 4.0/30, mb1mx4.0/47, mbtmp4.2/30, MS3.8/4, Ms1 3.8/4, ms1mx3.2/49, Error ellipse: s-maj=13.9km s-min=8.5km az=105.0*

*NEIC **07** 20:47:15.2±0.7, 37°.08N×141°.04E, h74km±6km, mb4.4/8, Error ellipse: s-maj=7.2km s-min=5.5km az=95.0*

NEIC Recorded [3 JMA] in Fukushima and Ibaraki.

ISC 07 20:47:12.5±0.5, 37°.07N±0°.04×141°.24E±0°.05, h51km±4km, h51km: pP-P, n129, σ1=24/144, mb4.2/43, MS4.0/3, 6C-4D,

*IDC **07** 21:04:33.8±1.5, 5°.67N×124°.52E, h0km, mb3.4/3, mb1 3.6/3, mb1mx3.3/57, mbtmp3.4/3, Error ellipse: s-maj=49.6km s-min=24.6km az=85.0*

ISC 07 21:04:35.2±1.4, 5°.6N±0°.1×124°.6E±0°.2, h10km, n6, σ1=88/7, mb3.3/3, 1C-1D, Mindanao

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
KCP	**Kidapawan**	**1.46**	**20** ⇓	*i*P	Pg	21 05 07.2	+4.0
KCP				*i* S	**Sg**	**21 05 24.7**	**+2.6**
DMPH	**Davao City--Mi**	**1.71**	**33** ⇑	*e*P	**Pg**	**21 05 08.6**	**+0.5**
DMPH				*e*S	**Sn**	**21 05 25.0**	**-2.0**
DAV	**Davao City (W)**	**1.74**	**35**	Pn	**Pb**	**21 05 06.0**	**-1.2**
	64nm,0.3s,baz=103,slow=2.5,SNR=1.8						
DAV				Sn	Sn	21 05 20.3	-7.3
	78nm,0.3s,baz=272,slow=22,SNR=2.1						
WRA	**Warramunga Arr**	**27.17**	**160**	P	**P**	**21 10 19.1**	**0.0**
	0.3nm,0.8s,baz=343,slow=9.1,SNR=5.4						
ASAR	**Alice Springs**	**30.51**	**163**	P	**P**	**21 10 50.0**	**+1.2**
	0.4nm,0.5s,baz=343,slow=6.9,SNR=8.5						
MKAR	**Makanchi Array**	**54.78**	**326**	P	**P**	**21 14 04.7**	**-0.6**
	0.1nm,0.3s,baz=110,slow=8.4,SNR=2.1						

*CASC **07** 21:05:51.2±3.5, 17.°81N×83.°72W, h8km, ML4.5, mb5.0(NEIC)*

*IDC **07** 21:06:02.7±0.6, 17.°32N×84.°93W, h0km, mb4.6/32, mb1 4.8/38, mb1mx4.7/56, mbtmp4.7/38, ML3.3/3, MS4.4/7, Ms1 4.4/7, ms1mx4.0/44, Error ellipse: s-maj=19.3km s-min=11.1km az=48.0*

*MOS **07** 21:06:02.3±0.9, 17.°23N×85.°01W, h9km, mb5.2/35, Error ellipse: s-maj=9.4km s-min=4.7km az=99.0*

*ISCJB **07** 21:06:02.5±0.1, 17.°22N±0.°02×85.°11W±0.°02, h10km, mb4.9/157, MS4.8/5, Error ellipse: s-maj=3.3km s-min=2.2km az=41.1*

*NEIC **07** 21:06:03.9±1.4, 17.°15N×85.°08W, h8km±9km, mb5.0/150, Error ellipse: s-maj=4.1km s-min=2.8km az=209.0*

NEIC Felt at Guanaja.

*BJI **07** 21:06:04.7, 17.°20N×85.°10W, h16km, mB5.5/7, Ms5.6/8, Ms7 5.3/8*

ISC 07 21:06:04.0±0.3, **17.°34N**±0.°04×**84.°99W**±0.°04, **h10**km, **n620**, σ**1.78**/607, **mb5.0**/157, **MS4.8**/5, **7C-3D, North of Honduras**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
TGUH	**Tegucigalpa,Un**	**3.94**	**214**	*e*P	Pn	21 06 57.2	-7.3
TGUH	**Tegucigalpa,Un**	**3.94**	**214**	*e*Pn	**Pn**	**21 07 01.1**	**-3.4**
TEIG	**Tepich**	**4.24**	**313**	Pn	**Pn**	**21 07 07.9**	**-0.7**
	220nm,0.3s,baz=270,slow=23,SNR=432						
TEIG				Sn	**Sn**	**21 07 53.9**	**-4.2**
	34nm,0.3s,baz=1.8,slow=15,SNR=3.8						
TEIG				LR	LR	21 08 57.7	
	comp=Z,1µm,20.2s,baz=180,slow=41						
TEIG	**Tepich**	**4.24**	**313**	*e*P	**Pn**	**21 07 06.6**	**-2.0**
TEIG				*e*S	**Sn**	**21 07 57.3**	**-0.8**
ESTN	**Estel**	**4.42**	**198**	*e*P	**Pn**	**21 07 09.2**	**-2.1**
BOAB	**BOACO BROADBAN**	**4.91**	**188**	*e*P	**Pn**	**21 07 15.0**	**-2.9**
CSGN	**Cosiguina Volc**	**5.00**	**210**	*e*P	**Pn**	**21 07 19.4**	**+0.2**
VSM	**San Miguel**	**5.02**	**220**	*e*S	**Sb**	**21 08 37.6**	**+4.9**
CRIN	**San Cristobal**	**5.03**	**204**	*e*P	**Pn**	**21 07 17.9**	**-1.7**
CRIN				AML	AML	21 09 31.2	
	comp=N,778nm,0.7s						
CNGN	**Cerro Negro**	**5.09**	**199**	*e*S	**Sb**	**21 08 33.7**	**-0.9**
MOMN	**Momotombo**	**5.13**	**197**	*e*P	**Pn**	**21 07 19.1**	**-1.8**
ESPN	**Las Esperanzas**	**5.16**	**173**	*e*P	**Pn**	**21 07 18.1**	**-3.3**
COPN	**Copaltepe**	**5.36**	**197**	*e*P	**Pn**	**21 07 21.5**	**-2.6**
CCIG	**Comitan**	**6.93**	**262**	*e*Pn	**Pn**	**21 07 42.6**	**-3.2**
MCJ	**Malvern**	**6.99**	**84**	*e*P	**Pn**	**21 07 45.4**	**-1.1**
JTS	**JuntasAbangare**	**7.01**	**180**	Pn	**Pn**	**21 07 45.5**	**-1.3**
	comp=N,1.1nm,0.3s,baz=30,slow=5.2,SNR=6.9						
JTS				Sn	**Sb**	**21 09 29.4**	**-0.4**
	comp=N,3.6nm,0.3s,baz=308,slow=23,SNR=4.4						
CVJ	**Coleyville**	**7.15**	**82**	*e*P	**Pn**	**21 07 49.1**	**+0.2**
MTDJ	**Mount Denham**	**7.15**	**82**	*e*Pn	**Pn**	**21 07 50.1**	**+1.3**
VCR	**Vista de Mar**	**7.20**	**185**	*e*P	**Pn**	**21 07 49.0**	**-0.5**
BBJ	**Bamboo Saint A**	**7.42**	**81**	*e*P	**Pn**	**21 07 52.5**	**0.0**
BNJ	**Bonny Gate**	**7.71**	**82**	*e*P	**Pn**	**21 07 53.6**	**-2.9**
STH	**Stony Hill**	**7.83**	**83**	*e*P	**Pn**	**21 07 57.4**	**-0.7**
GTBY	**Guantanamo Bay**	**9.71**	**73**	*e*Pn	**Pn**	**21 08 25.9**	**+2.1**
DWPF	**Disney Wildern**	**11.21**	**16**	*e*Pn	**Pn**	**21 08 44.8**	**+0.5**
MOTC	**Monteria, Cord**	**12.44**	**132**	*e*P	**Pn**	**21 08 56.9**	**-4.4**
TLIG	**Tlapa**	**12.96**	**273**	*e*Pn	**Pn**	**21 09 05.3**	**-3.2**
SDDR	**Presa de Saban**	**13.12**	**81**	*e*Pn	**Pn**	**21 09 13.1**	**+2.5**
GRTK	**Grand Turk**	**13.71**	**70**	*e*Pn	**Pn**	**21 09 20.7**	**+2.2**
BRAL	**Brewton**	**13.89**	**353**	*e*Pn	**Pn**	**21 09 21.1**	**+0.1**
BANI	**BANI**	**13.97**	**83**	*e*Pn	**Pn**	**21 09 23.4**	**+1.2**
446A	**Poplarville**	**13.97**	**344**	P	**Pn**	**21 09 22.3**	**+0.2**
	baz=163,SNR=6.2						
TIGA	**Tifton**	**14.09**	**5**	P	**Pn**	**21 09 25.2**	**+1.5**
	baz=186,SNR=6.5						
TIGA	**Tifton**	**14.09**	**5**	*e*Pn	**Pn**	**21 09 26.1**	**+2.4**
SDD	**Santo Domingo**	**14.39**	**83**	*e*Pn	**P**	**21 09 30.3**	**-4.6**
345A	**Thompson Farm,**	**14.64**	**343**	P	**Pn**	**21 09 31.4**	**+0.1**
	baz=161						
035Z	**Hargill**	**15.15**	**309**	P	**Pn**	**21 09 36.6**	**-1.5**
	baz=125,SNR=12						
GUYC	**Guyana, Colomb**	**15.28**	**141**	*e*P	**P**	**21 09 43.8**	**-1.5**
245A	**Little AP, Sta**	**15.29**	**344**	P	**Pn**	**21 09 39.3**	**-0.6**
	baz=162						
NORC	**Norcasia**	**15.33**	**139**	*e*P	**P**	**21 09 44.8**	**-0.6**
638A	**Rosharon**	**15.37**	**323**	P	**Pn**	**21 09 39.1**	**-1.9**
	baz=140						
035A	**Encino**	**15.44**	**310**	P	**Pn**	**21 09 39.5**	**-2.4**
	baz=126,SNR=8.0						
MOIG	**Morelia**	**15.54**	**281**	*e*Pn	**Pn**	**21 09 43.7**	**+0.1**
	comp=N,173nm,1.1s						
VBMS	**Vicksburg**	**15.63**	**342**	*e*Pn	**P**	**21 09 46.6**	**-2.0**
	comp=N,87nm,0.8s						
146A	**Union**	**15.67**	**347**	P	**Pn**	**21 09 44.4**	**-0.5**
	baz=166						
BARC	**Barichara**	**15.72**	**131**	*e*P	**P**	**21 09 47.5**	**-2.5**
LRAL	**Lakeview Retre**	**15.73**	**354**	*e*Pn	**P**	**21 09 47.8**	**-1.9**
	comp=N,65nm,1.0s						
637A	**Eagle Lake**	**15.90**	**321**	P	**Pn**	**21 09 46.7**	**-1.3**
	baz=138,SNR=14						
034A	**Hebbronville**	**15.94**	**310**	P	**Pn**	**21 09 45.3**	**-3.1**
	baz=126,SNR=11						
HKT	**Hockley**	**15.99**	**324**	*e*P	**P**	**21 09 51.0**	**-1.6**
HKT				pmax	pmax		
	comp=Z,166nm,1.0s						
HKT	**Hockley**	**15.99**	**324**	*e*Pn	**P**	**21 09 51.0**	**-1.6**
	comp=Z,166nm,1.0s						
736A	**Circle Diamond**	**16.02**	**318**	P	**Pn**	**21 09 47.9**	**-1.5**
	baz=134,SNR=5.5						
GOGA	**Godfrey**	**16.06**	**5**	*e*P	**Pn**	**21 09 50.3**	**+0.3**
GOGA				pmax	pmax		
	comp=Z,73nm,1.0s						
GOGA	**Godfrey**	**16.06**	**5**	*e*Pn	**Pn**	**21 09 50.3**	**+0.3**
	comp=Z,73nm,1.0s						
GOGA				*e*Sn	**Sn**	**21 12 37.5**	**-11**
835A	**Beeville**	**16.07**	**315**	P	**Pn**	**21 09 47.8**	**-2.3**
	baz=131,SNR=11						
439A	**Center Grove,**	**16.08**	**328**	P	**Pn**	**21 09 48.7**	**-1.5**
	baz=145,SNR=6.5						
RGRS	**Roger Stewart**	**16.09**	**15**	*e*Pn	**P**	**21 09 53.7**	**0.0**
934A	**Benavides**	**16.13**	**312**	P	**Pn**	**21 09 48.4**	**-2.5**
	baz=127,SNR=17						
340A	**Bronson**	**16.18**	**332**	P	**Pn**	**21 09 49.6**	**-1.8**
	baz=149						
CSU	**Charleston Sou**	**16.20**	**15**	*e*Pn	**P**	**21 09 54.2**	**-0.6**
ROSC	**El Rosal**	**16.23**	**139**	Pn	**P**	**21 09 52.7**	**-3.1**
	comp=Z,0.8nm,0.3s,baz=342,slow=13,SNR=6.2						
ROSC				LR	LR	21 18 00.2	
	comp=Z,1µm,19.2s,baz=26,slow=44						
NHSC	**New Hope**	**16.28**	**15**	*e*Pn	**P**	**21 09 54.6**	**-1.3**
	comp=Z,554nm,1.2s						
SDV	**Santo Domingo**	**16.30**	**119**	Pn	**Pn**	**21 09 51.1**	**-2.2**
	comp=Z,3.5nm,0.3s,baz=322,slow=8.1,SNR=18						
SDV				LR	LR	21 17 31.3	
	comp=Z,996nm,19.0s,baz=3.0,slow=42						
SDV	**Santo Domingo**	**16.30**	**119**	*e*Pn	**Pn**	**21 09 50.9**	**-2.4**
	comp=Z,147nm,0.8s						
SDV	**Santo Domingo**	**16.30**	**119**	*e*P	**Pn**	**21 09 49.6**	**-3.8**
537A	**Green Hill Far**	**16.36**	**323**	P	**Pn**	**21 09 51.8**	**-2.1**
	baz=139,SNR=13						
636A	**Smothers Creek**	**16.38**	**320**	P	**Pn**	**21 09 51.6**	**-2.4**
	baz=136,SNR=12						
142A	**Monroe**	**16.39**	**339**	P	**Pn**	**21 09 52.9**	**-1.4**
	baz=156						
438A	**Sam Houston St**	**16.41**	**326**	P	**Pn**	**21 09 52.3**	**-2.2**
	baz=143						
339A	**Huntington**	**16.42**	**330**	P	**Pn**	**21 09 52.8**	**-1.7**
	baz=147,SNR=5.6						
735A	**Kenedy**	**16.43**	**317**	P	**Pn**	**21 09 51.8**	**-2.9**
	baz=132,SNR=7.8						
834A	**Tilden**	**16.47**	**313**	P	**Pn**	**21 09 52.5**	**-2.7**
	baz=129,SNR=15						
240A	**Hunter Patters**	**16.65**	**333**	P	**Pn**	**21 09 55.7**	**-1.8**
	baz=150						
933A	**Laredo**	**16.68**	**310**	P	**Pn**	**21 09 55.1**	**-2.9**
	baz=126,SNR=38						
635A	**Leesville**	**16.76**	**318**	P	**Pn**	**21 09 56.5**	**-2.4**
	baz=134,SNR=9.3						
CHIC	**Chingaza**	**16.77**	**138**	*e*P	**P**	**21 10 01.2**	**-0.6**
536A	**Bastrop**	**16.80**	**321**	P	**Pn**	**21 09 57.4**	**-2.1**
	baz=137						
NATX	**Nacogdoches**	**16.82**	**330**	P	**Pn**	**21 09 58.2**	**-1.5**
	baz=147						
NATX	**Nacogdoches**	**16.82**	**330**	*e*Pn	**Pn**	**21 09 59.2**	**-0.5**
	comp=Z,68nm,0.6s						
NATX				*e*Sn	Sn	21 12 54.2	-12
437A	**Phantom Ranch,**	**16.83**	**325**	P	**Pn**	**21 09 57.9**	**-1.9**
	baz=141						
734A	**La Parita Cree**	**16.92**	**315**	P	**Pn**	**21 09 58.4**	**-2.6**
	baz=130,SNR=13						
239A	**Gary**	**16.95**	**331**	P	**Pn**	**21 09 59.1**	**-2.2**
	baz=148						
AGP	**Aguadilla**	**17.02**	**84**	*e*Pn	**P**	**21 10 07.3**	**+3.1**
	comp=Z,230nm,1.0s						
MPR	**Mayaguez**	**17.02**	**84**	*e*Pn	**P**	**21 10 03.6**	**-0.5**
	comp=Z,41nm,1.1s						
337A	**Centerville**	**17.07**	**327**	P	**Pn**	**21 10 00.9**	**-1.9**
	baz=143						
535A	**Dale**	**17.08**	**320**	P	**Pn**	**21 10 00.2**	**-2.7**
	baz=136						
140A	**Cam and Jess,**	**17.09**	**335**	P	**Pn**	**21 10 02.1**	**-1.0**
	baz=152						
436A	**Wall Ranch, Ga**	**17.16**	**323**	P	**Pn**	**21 10 01.9**	**-2.0**
	baz=139						
833A	**Chaparral WMA,**	**17.18**	**312**	P	**Pn**	**21 10 01.8**	**-2.4**
	baz=127,SNR=31						
JSC	**Jenkinsville**	**17.20**	**10**	*e*P	**P**	**21 10 04.8**	**-1.1**
JSC				pmax	pmax		
	comp=Z,58nm,0.8s						
JSC	**Jenkinsville**	**17.20**	**10**	*e*Pn	**P**	**21 10 04.8**	**-1.1**
	comp=Z,58nm,0.8s						
JSC				*e*Sn	**Sn**	**21 13 07.0**	**-8.7**
238A	**Jacksonville**	**17.24**	**330**	P	**Pn**	**21 10 03.3**	**-1.6**
	baz=146						
733A	**Divot King Ran**	**17.35**	**313**	P	**Pn**	**21 10 04.1**	**-2.2**
	baz=128,SNR=6.8						
ZAIG	**Zacatecas**	**17.37**	**291**	*e*Pn	**Pn**	**21 10 06.0**	**-0.9**
	comp=Z,35nm,1.1s						
OXF	**Oxford**	**17.55**	**348**	*e*P	**P**	**21 10 10.9**	**+1.0**
OXF				*e*		21 13 18.2	
OXF				pmax	pmax		
	comp=Z,223nm,1.2s						
OXF	**Oxford**	**17.55**	**348**	*e*Pn	**P**	**21 10 10.8**	**+1.0**
	comp=Z,223nm,1.2s						
OXF				*e*Sn	**Sn**	**21 13 18.2**	**-6.1**
CELP	**Cerrillos**	**17.55**	**85**	*e*Pn	**P**	**21 10 11.2**	**+1.1**
Z40A	**Long Farm, Mag**	**17.57**	**336**	P	**P**	**21 10 09.4**	**-0.6**
	baz=153						
832A	**Faith Ranch, C**	**17.57**	**311**	P	**Pn**	**21 10 07.2**	**-1.9**
	baz=126,SNR=33						
237A	**Washetta, Mont**	**17.58**	**328**	P	**Pn**	**21 10 08.9**	**-0.2**
	baz=144						
435B	**Jarrell**	**17.62**	**322**	P	**Pn**	**21 10 09.0**	**-0.8**
	baz=137,SNR=23						
534A	**Blanco**	**17.64**	**318**	P	**P**	**21 10 10.3**	**-0.7**
	baz=134,SNR=86						
336A	**Riesel**	**17.65**	**325**	P	**Pn**	**21 10 08.4**	**-1.6**
	baz=140,SNR=6.9						
633A	**Saathoff Ranch**	**17.73**	**315**	P	**Pn**	**21 10 09.4**	**-1.6**
	baz=130,SNR=23						
CMBC	**Cumbal**	**17.76**	**156**	*e*P	**P**	**21 10 13.3**	**+0.5**
138A	**Matatall Enter**	**17.77**	**331**	P	**P**	**21 10 11.3**	**-1.0**
	baz=147						
SWET	**Sewanee**	**17.82**	**357**	*e*Pn	**P**	**21 10 14.4**	**+1.5**
	comp=Z,21nm,1.1s						
SWET				*e*Sn	Sn	21 13 18.5	-12
WLAR	**White Oak Lake**	**17.84**	**337**	*e*Pn	**P**	**21 10 13.6**	**+0.6**
	comp=Z,68nm,0.9s						
335A	**Moody**	**17.90**	**323**	P	**Pn**	**21 10 12.2**	**-0.9**
	baz=139,SNR=9.6						
SJG	**San Juan**	**17.96**	**85**	P	**P**	**21 10 13.6**	**-0.9**
	baz=296,slow=7.0,SNR=6.5						
SJG	**San Juan**	**17.96**	**85**	*e*P	**P**	**21 10 15.5**	**+1.0**
SJG				pmax	pmax		
	comp=Z,49nm,1.0s						
SJG	**San Juan**	**17.96**	**85**	*e*Pn	**P**	**21 10 15.5**	**+1.0**
	comp=Z,50nm,1.0s						
KMSC	**Kings Mountain**	**18.02**	**10**	P	**P**	**21 10 15.9**	**+0.8**
	baz=192,SNR=10						
KMSC	**Kings Mountain**	**18.02**	**10**	*e*Pn	**P**	**21 10 16.4**	**+1.3**
	comp=Z,126nm,1.2s						
KMSC				*e*Sn	**Sn**	**21 13 27.8**	**-8.0**
533A	**Kerrville**	**18.03**	**317**	P	**Pn**	**21 10 14.1**	**-0.7**
	baz=132,SNR=28						
137A	**Heron Place, G**	**18.04**	**329**	P	**P**	**21 10 15.0**	**-0.3**
	baz=146						
CPCT	**Cooper Cave**	**18.04**	**1**	*e*Pn	**P**	**21 10 16.5**	**+1.2**
	comp=Z,33nm,0.7s						
CPCT				*e*Sn	Sn	21 13 23.2	-13
434A	**Burnet**	**18.06**	**320**	P	**P**	**21 10 15.0**	**-0.5**
	baz=136,SNR=72						
OTAV	**Otavalo**	**18.18**	**159**	*e*Pn	**P**	**21 10 17.1**	**-0.3**
	comp=Z,52nm,1.4s						
CBYP	**Canovanas**	**18.24**	**84**	*e*P	**P**	**21 10 18.2**	**+0.5**
	comp=Z,182nm,1.7s						
HUMP	**Col San Antoni**	**18.25**	**85**	*e*P	**P**	**21 10 19.2**	**+1.5**
	comp=Z,70nm,1.2s						
TKL	**Tuckaleechee C**	**18.27**	**3**	P	**P**	**21 10 19.6**	**+1.7**
	comp=Z,2.9nm,0.3s,baz=178,slow=10,SNR=20						
TKL				LR	LR	21 16 57.8	
	comp=Z,1µm,18.2s,baz=196,slow=36						
TKL	**Tuckaleechee C**	**18.27**	**3**	*e*P	**P**	**21 10 19.4**	**+1.5**
TKL				pmax	pmax		
	comp=Z,108nm,1.3s						
TKL	**Tuckaleechee C**	**18.27**	**3**	*e*P	**P**	**21 10 19.4**	**+1.5**
	comp=Z,108nm,1.3s						
136A	**Ennis**	**18.32**	**327**	P	**P**	**21 10 18.2**	**-0.3**
	baz=143						
334A	**Lometa**	**18.41**	**322**	P	**Pn**	**21 10 20.0**	**+0.6**
	baz=137,SNR=100						
WHTX	**Lake Whitney,**	**18.44**	**325**	P	**Pn**	**21 10 20.5**	**+0.7**
	baz=140,SNR=30						
WHTX	**Lake Whitney,**	**18.44**	**325**	*e*P	**Pn**	**21 10 20.5**	**+0.7**
	comp=Z,268nm,0.8s						
WHTX				*e*Sn	Sn	21 13 31.0	-15
X40A	**Basin Creek Fa**	**18.46**	**339**	P	**Pn**	**21 10 20.4**	**+0.5**
	baz=156						
Z37A	**Pogue Cattle C**	**18.46**	**331**	P	**Pn**	**21 10 20.2**	**+0.2**
	baz=147						
433A	**Art**	**18.52**	**319**	P	**Pn**	**21 10 20.8**	**0.0**
	baz=134,SNR=68						
MTP	**Monte Pirata**	**18.53**	**85**	*e*P	**Pn**	**21 10 22.0**	**+1.0**
UALR	**University of**	**18.56**	**341**	*e*P	**Pn**	**21 10 22.1**	**+0.9**
	comp=Z,57nm,1.4s						
PAYG	**Puerto Ayora**	**18.65**	**197**	*e*P	**P**	**21 10 20.5**	**-1.6**
	comp=Z,108nm,1.4s						
MIAR	**Mount Ida**	**18.78**	**337**	P	**Pn**	**21 10 25.6**	**+1.7**
	baz=154,SNR=9.1						
MIAR	**Mount Ida**	**18.78**	**337**	*e*P	**Pn**	**21 10 25.8**	**+1.9**
MIAR				pmax	pmax		
	comp=Z,106nm,1.4s						
MIAR	**Mount Ida**	**18.78**	**337**	*e*P	**Pn**	**21 10 25.8**	**+1.9**
	comp=Z,106nm,1.4s						
JCT	**Junction City**	**18.80**	**317**	P	**Pn**	**21 10 24.3**	**+0.1**
	baz=132						
JCT	**Junction City**	**18.80**	**317**	*e*P	**Pn**	**21 10 24.0**	**-0.2**
JCT				pmax	pmax		
	comp=Z,69nm,0.8s						
JCT	**Junction City**	**18.80**	**317**	*e*P	**Pn**	**21 10 24.0**	**-0.2**
	comp=Z,69nm,0.8s						
HBAR	**Harrisburg**	**18.83**	**346**	*e*P	**Pn**	**21 10 26.0**	**+1.5**
234A	**Clairette**	**18.84**	**323**	P	**Pn**	**21 10 25.7**	**+1.1**
	baz=138,SNR=20						
135A	**Vickery Place,**	**18.85**	**326**	P	**Pn**	**21 10 25.1**	**+0.3**
	baz=141						
333A	**Richland Sprin**	**18.85**	**320**	P	**Pn**	**21 10 25.7**	**+0.9**
	baz=135,SNR=91						
WVT	**Waverly**	**18.88**	**353**	*e*P	**Pn**	**21 10 26.9**	**+1.8**
WVT				pmax	pmax		
	comp=Z,55nm,1.1s						
WVT	**Waverly**	**18.88**	**353**	*e*P	**Pn**	**21 10 26.9**	**+1.8**
	comp=Z,55nm,1.1s						
WVT				*e*Sn	Sn	21 13 42.7	-14
HALT	**Halls**	**18.89**	**349**	*e*P	**Pn**	**21 10 27.1**	**+1.9**
CNNC	**Cliffs of the**	**18.91**	**18**	*e*P	**Pn**	**21 10 26.8**	**+1.4**
	comp=Z,77nm,0.8s						
X39A	**Fountain Ranch**	**18.95**	**336**	P	**Pn**	**21 10 27.4**	**+1.5**
	baz=153						
WHAR	**Wooly Hollow**	**19.02**	**341**	*e*P	**Pn**	**21 10 29.1**	**+2.2**
	comp=Z,61nm,1.1s						
Y37A	**Hugo**	**19.12**	**332**	P	**Pn**	**21 10 29.1**	**+1.1**
	baz=148						
TZTN	**Tazewell**	**19.17**	**4**	*e*P	**Pn**	**21 10 30.9**	**+2.3**
	comp=Z,82nm,1.1s						
W40A	**Ferguson Farm,**	**19.18**	**339**	P	**Pn**	**21 10 30.2**	**+1.5**
	baz=156						
134A	**White-Moore Ra**	**19.23**	**324**	P	**Pn**	**21 10 29.2**	**-0.1**
	baz=140,SNR=13						
233A	**Rising Star**	**19.29**	**322**	P	**Pn**	**21 10 30.8**	**+0.7**
	baz=137,SNR=20						
X38A	**Whitesboro**	**19.37**	**335**	P	**Pn**	**21 10 32.3**	**+1.3**
	baz=151,SNR=10						
X37A	**Clayton**	**19.52**	**334**	P	**Pn**	**21 10 34.1**	**+1.3**
	baz=150						
W38A	**Poteau**	**19.60**	**336**	P	**Pn**	**21 10 34.8**	**+1.1**
	baz=152						
Y35A	**Marietta**	**19.72**	**329**	P	**Pn**	**21 10 35.2**	**0.0**
	baz=144						
133A	**Hamilton Ranch**	**19.73**	**323**	P	**Pn**	**21 10 35.4**	**+0.1**
	baz=138,SNR=9.2						
Z34A	**Collier Ranch,**	**19.75**	**326**	P	**Pn**	**21 10 36.0**	**+0.4**
	baz=141						
X36A	**Centrahoma**	**19.94**	**332**	P	**Pn**	**21 10 37.8**	**0.0**
	baz=147,SNR=6.1						
PBMO	**Poplar Bluff**	**19.95**	**347**	*e*P	**Pn**	**21 10 39.0**	**+1.1**
	comp=Z,35nm,0.8s						
X35A	**Drake**	**20.09**	**330**	P	Pn	21 10 39.5	-0.1
	baz=145						
Y34A	**Reagan Ranch,**	**20.12**	**328**	P	Pn	21 10 39.1	-0.9
	baz=143						
Z33A	**Whitaker Ranch**	**20.14**	**325**	P	Pn	21 10 39.8	-0.4
	baz=139						
ABTX	**Abilene, Hawle**	**20.16**	**322**	P	Pn	21 10 39.4	-1.1
	baz=136,SNR=16						
ABTX	**Abilene, Hawle**	**20.16**	**322**	*e*P	Pn	21 10 40.2	-0.3
	comp=Z,144nm,0.8s						
U40A	**Yellville**	**20.18**	**341**	P	Pn	21 10 40.2	-0.4
	baz=158,SNR=13						
BLA	**Blacksburg**	**20.20**	**11**	*e*P	Pn	21 10 41.6	+0.7
BLA				pmax	pmax		
	comp=Z,240nm,1.0s						
BLA	**Blacksburg**	**20.20**	**11**	*e*P	Pn	21 10 41.6	+0.7
	comp=Z,240nm,1.0s						
V38A	**Canehill**	**20.26**	**337**	P	Pn	21 10 41.4	-0.2
	baz=154						
VWCC	**Virginia Weste**	**20.31**	**12**	*e*P	Pn	21 10 43.4	+1.2
W36A	**Wetumka**	**20.36**	**333**	P	Pn	21 10 42.1	-0.7
	baz=148						
U39A	**Green Forest**	**20.40**	**340**	P	Pn	21 10 43.0	-0.3
	baz=157,SNR=11						
HHAR	**Hobbs**	**20.46**	**339**	*e*P	Pn	21 10 45.4	+1.4
	comp=Z,23nm,1.0s						
V37A	**Hulbert**	**20.55**	**336**	P	Pn	21 10 44.6	-0.3
	baz=152,SNR=9.3						
Y33A	**Hilltop Ranch,**	**20.61**	**326**	P	Pn	21 10 44.7	-1.0
	baz=141						
SIUC	**Southern Illin**	**20.63**	**350**	*e*P	Pn	21 10 46.3	+0.4
	comp=Z,82nm,1.0s						
W35A	**Tecumseh**	**20.66**	**331**	P	Pn	21 10 45.4	-0.9
	baz=147						
X34A	**Smith Ranch, M**	**20.67**	**329**	P	Pn	21 10 45.9	-0.6
	baz=144						
USIN	**University of**	**20.68**	**354**	*e*P	Pn	21 10 46.6	+0.2
	comp=Z,142nm,1.1s						
U38A	**Gravette**	**20.76**	**338**	P	Pn	21 10 46.5	-0.9
	baz=154						
V36A	**Jenks**	**20.79**	**334**	P	Pn	21 10 46.9	-0.9
	baz=150						
T40A	**Mansfield**	**20.82**	**343**	P	Pn	21 10 47.6	-0.5
	baz=160,SNR=13						
TUL1	**Leonard**	**20.84**	**335**	P	Pn	21 10 47.4	-0.9
	baz=150						
TUL1	**Leonard**	**20.84**	**335**	*e*P	Pn	21 10 47.8	-0.5
	comp=Z,53nm,1.0s						
TUL1				*e*PcP	**PcP**	**21 14 54.1**	**-0.4**
WCI	**Wyandotte Cave**	**20.84**	**357**	*e*P	Pn	21 10 48.2	-0.2
WCI				pmax	pmax		
	comp=Z,167nm,0.9s						
WCI	**Wyandotte Cave**	**20.84**	**357**	*e*P	Pn	21 10 48.2	-0.1
	comp=Z,167nm,0.9s						
TXAR	**Lajitas Array**	**20.86**	**308**	P	Pn	21 10 47.0	-1.8
	comp=Z,15nm,0.8s,baz=125,slow=11,SNR=74						
TXAR				S	**S**	**21 14 35.0**	**-4.1**
	comp=Z,1.2nm,0.4s,baz=119,slow=20,SNR=5.3						
TX31	**Lajitas Ar. Si**	**20.86**	**308**	*e*P	Pn	21 10 47.1	-1.7
T39A	**Clever**	**20.96**	**341**	P	Pn	21 10 49.5	-0.2
	baz=158,SNR=13						
X33A	**Lawton**	**20.96**	**327**	P	**P**	**21 10 48.2**	**+0.9**
	baz=142						
U37A	**Salina**	**21.00**	**337**	P	**P**	**21 10 49.3**	**+1.7**
	baz=153						
W34A	**Bridge Creek,**	**21.15**	**330**	P	**P**	**21 10 50.8**	**+1.6**
	baz=145						
W34A	**Bridge Creek,**	**21.15**	**330**	*e*P	**P**	**21 10 51.3**	**+2.0**
	comp=Z,175nm,1.2s						
V35A	**Meyer Ranch, C**	**21.15**	**332**	P	**P**	**21 10 50.5**	**+1.2**
	baz=148						
URVA	**University of**	**21.19**	**17**	*e*P	**P**	**21 10 52.4**	**+2.8**
U36A	**Oologah**	**21.23**	**335**	P	**P**	**21 10 51.7**	**+1.6**
	baz=151						
S40A	**Lebanon**	**21.23**	**343**	P	**P**	**21 10 52.3**	**+2.2**
	baz=160,SNR=17						
WMOK	**Wichita Mounta**	**21.26**	**327**	P	**P**	**21 10 51.6**	**+1.1**
WMOK	**Wichita Mounta**	**21.26**	**327**	P	**P**	**21 10 51.5**	**+1.1**
T38A	**Diamond**	**21.27**	**339**	P	**P**	**21 10 52.0**	**+1.5**
	baz=155						
HPIG		**21.37**	**300**	*e*P	**P**	**21 10 53.1**	**+1.1**
	comp=Z,97nm,1.1s						
W33A	**Caddo, Fort Co**	**21.43**	**328**	P	**P**	**21 10 53.1**	**+0.9**
	baz=143						
OLIL	**Olney**	**21.48**	**353**	*e*P	**P**	**21 10 55.3**	**+2.5**
	comp=Z,184nm,1.1s						
V34A	**Guthrie**	**21.52**	**331**	*e*P	**P**	**21 10 54.7**	**+1.5**
	comp=Z,51nm,0.9s						
S39A	**Bolivar**	**21.56**	**342**	P	**P**	**21 10 55.2**	**+1.6**
	baz=158,SNR=10						
T37A	**Cheneyville 18**	**21.56**	**338**	P	**P**	**21 10 55.2**	**+1.5**
	baz=154,SNR=9.7						
U35A	**Pawnee**	**21.62**	**334**	P	**P**	**21 10 55.3**	**+1.0**
	baz=149						
S38A	**Stockton**	**21.68**	**341**	P	**P**	**21 10 56.4**	**+1.4**
	baz=157,SNR=7.2						
SLM	**Saint Louis**	**21.71**	**349**	*e*P	**P**	**21 10 58.1**	**+2.9**
SLM				pmax	pmax		
	comp=Z,79nm,0.7s						
SLM	**Saint Louis**	**21.71**	**349**	*e*P	**P**	**21 10 58.1**	**+2.9**
	comp=Z,78nm,0.7s						
BLO	**Bloomington**	**21.79**	**357**	*e*P	**P**	**21 10 58.8**	**+2.7**
BLO				pmax	pmax		
	comp=Z,142nm,1.0s						
BLO	**Bloomington**	**21.79**	**357**	*e*P	**P**	**21 10 58.8**	**+2.7**
	comp=Z,142nm,1.0s						
W32A	**Sentinel**	**21.80**	**327**	P	**P**	**21 10 57.0**	**+0.8**
	baz=141						
R40A	**Maddies Statio**	**21.82**	**344**	P	**P**	**21 10 58.2**	**+1.7**
	baz=161,SNR=7.0						
CBN	**Corbin Frederi**	**21.83**	**16**	*e*P	**P**	**21 10 59.5**	**+3.0**
	comp=Z,351nm,1.4s						
T36A	**Boggs Farm, Ca**	**21.87**	**336**	P	**P**	**21 10 58.8**	**+1.9**
	baz=152						
T35A	**Sooner Cattle**	**21.99**	**335**	P	**P**	**21 10 59.7**	**+1.4**
	baz=150						
U34A	**Anderson Ranch**	**22.03**	**332**	P	**P**	**21 10 59.8**	**+1.2**
	baz=147						
U34A	**Anderson Ranch**	**22.03**	**332**	*e*P	**P**	**21 11 00.3**	**+1.7**
	comp=Z,92nm,1.3s						
R39A	**Chumby, Stover**	**22.05**	**343**	P	**P**	**21 11 00.7**	**+1.8**
	baz=160,SNR=19						
S37A	**Fort Scott**	**22.10**	**339**	P	**P**	**21 11 01.3**	**+1.9**
	baz=155,SNR=14						
R38A	**Fenwick Farm,**	**22.19**	**341**	P	**P**	**21 11 02.3**	**+1.9**
	baz=157						
GDHS	**Morne Mazeau,**	**22.25**	**89**	*e*P	**P**	**21 11 02.4**	**+1.0**
	comp=Z,210nm,0.9s						
S36A	**Lake Cedric, C**	**22.34**	**337**	P	**P**	**21 11 04.1**	**+2.0**
	baz=153						
T34A	**McClaskey Farm**	**22.37**	**334**	P	**P**	**21 11 03.3**	**+1.0**
	baz=148						
Q40A	**Laux Farm, Aux**	**22.44**	**345**	P	**P**	**21 11 04.3**	**+1.2**
	baz=162,SNR=5.1						
S35A	**Otter Creek Ra**	**22.58**	**336**	P	**P**	**21 11 06.3**	**+1.7**
	baz=151						
R37A	**Teagarden Farm**	**22.60**	**340**	P	**P**	**21 11 06.5**	**+1.7**
	baz=155						
MCWV	**Mont Chateau**	**22.68**	**10**	*e*P	**P**	**21 11 08.3**	**+2.7**
	comp=Z,49nm,1.0s						
Q39A	**Willow Grove F**	**22.72**	**344**	P	**P**	**21 11 07.7**	**+1.7**
	baz=160						

Q38A	Cooks Store, C	22.82	342	P	P	21 11 08.3	+1.2
	baz=159,SNR=8.2						
R36A	Gordon, Harris	22.84	338	P	P	21 11 08.0	+0.7
	baz=154						
ACSO	Alum Creek Sta	22.87	4	eP	P	21 11 10.7	+3.0
	comp=Z,61nm,1.0s						
P40A	Paris	22.95	346	P	P	21 11 09.5	+1.1
	baz=163,SNR=9.2						
AMTX	Amarillo	22.96	323	P	P	21 11 09.0	+0.3
	baz=136						
AMTX	Amarillo	22.96	323	eP	P	21 11 09.7	+1.0
	comp=Z,67nm,0.8s						
MSTX	Muleshoe	22.99	319	P	P	21 11 08.8	-0.3
	baz=132,SNR=6.9						
MSTX	Muleshoe	22.99	319	eP	P	21 11 09.0	0.0
	comp=Z,82nm,1.1s						
Q37A	Longview Farm,	22.99	341	P	P	21 11 10.5	+1.6
	baz=157						
SFIN	Lafayette	23.03	356	P	P	21 11 10.2	+1.0
	baz=175,SNR=11						
SFIN	Lafayette	23.03	356	eP	P	21 11 11.0	+1.7
	comp=Z,60nm,0.9s						
P39A	Salisbury	23.08	345	P	P	21 11 11.2	+1.5
	baz=161						
R35A	Emporia Munici	23.09	337	P	P	21 11 10.6	+0.7
	baz=152						
SDMD	Soldier's Deli	23.10	16	eP	P	21 11 12.5	+2.5
	comp=Z,53nm,0.9s						
SVB	Belmont	23.24	97	eP	P	21 11 12.2	+0.5
	comp=Z,198nm,1.2s						
T32A	Huddler Ranch,	23.27	331	P	P	21 11 12.3	+0.5
	baz=145						
MNTX	Cornudas Mount	23.36	311	P	P	21 11 11.9	-0.8
	baz=124,SNR=12						
MNTX	Cornudas Mount	23.36	311	eP	P	21 11 12.2	-0.6
	comp=Z,29nm,0.9s						
P38A	Dawn	23.41	343	P	P	21 11 14.0	+0.8
	baz=160,SNR=7.5						
HDIL	Hopedale	23.43	352	P	P	21 11 14.9	+1.5
	baz=170						
HDIL	Hopedale	23.43	352	eP	P	21 11 15.9	+2.6
	comp=Z,42nm,0.8s						
O40A	La Belle	23.47	347	P	P	21 11 16.3	+2.6
	baz=164,SNR=6.2						
O56A	Blue Knob Stat	23.51	12	P	P	21 11 17.2	+3.0
	baz=196,SNR=9.9						
P37A	Lathrop	23.61	342	P	P	21 11 17.4	+2.2
	baz=158,SNR=5.4						
BBSR	BB Station	23.66	47	eP	P	21 11 17.7	+2.0
	comp=Z,58nm,1.0s						
O39A	Kirksville	23.75	346	P	P	21 11 18.2	+1.8
	baz=162,SNR=5.4						
R33A	Olander Ranch,	23.79	334	P	P	21 11 17.8	+0.9
	baz=148						
O38A	Galt	23.86	344	P	P	21 11 19.4	+1.9
	baz=160						
Q34A	Chapman	23.90	336	P	P	21 11 19.5	+1.6
	baz=151						
P36A	Good Intent, A	23.91	340	P	P	21 11 19.6	+1.6
	baz=156						
N54A	Moraine State	23.93	9	P	P	21 11 20.4	+2.2
	baz=192						
KSU1	Kansas State U	23.93	337	P	P	21 11 20.0	+1.8
	baz=152						
KSU1	Kansas State U	23.93	337	eP	P	21 11 21.0	+2.8
	comp=Z,68nm,0.8s						
SSPA	Standing Stone	24.01	13	eP	P	21 11 21.7	+2.7
	comp=Z,46nm,0.9s						
O37A	Wolven Farm, M	24.09	343	P	P	21 11 21.2	+1.5
	baz=159,SNR=5.7						
P35A	Duane Minner,	24.10	339	P	P	21 11 21.7	+1.9
	baz=154						
R32A	Long Quarter,	24.20	333	P	P	21 11 22.5	+1.7
	baz=147						
O36A	Bolckow	24.30	341	P	P	21 11 24.1	+2.5
	baz=157						
P34A	Walnut Farm, R	24.40	337	P	P	21 11 24.4	+1.8
	baz=152,SNR=13						
N38A	Joes South For	24.43	345	P	P	21 11 25.5	+2.7
	baz=161						
M54A	Oil Creek Stat	24.51	10	P	P	21 11 25.9	+2.3
	baz=192,SNR=6.2						
ALLY	Alegheny Colle	24.58	9	eP	P	21 11 28.0	+3.8
	comp=Z,82nm,1.3s						
Q32A	Meitler Ranch,	24.61	334	P	P	21 11 26.3	+1.8
	baz=148						
LUPA	Lehigh Univers	24.62	18	eP	P	21 11 28.0	+3.4
	comp=Z,43nm,0.9s						
P33A	Williams Farm,	24.64	336	P	P	21 11 26.1	+1.4
	baz=150						
N37A	Lee Faris, Mou	24.66	343	P	P	21 11 27.0	+2.2
	baz=159,SNR=5.7						
N59A	State Game Lan	24.80	17	P	P	21 11 28.6	+2.4
	baz=201,SNR=18						
AAM	Ann Arbor	24.90	2	eP	P	21 11 29.7	+2.6
AAM				pmax	pmax		
	comp=Z,114nm,1.3s						
AAM	Ann Arbor	24.90	2	eP	P	21 11 29.7	+2.6
	comp=Z,114nm,1.3s						
O34A	Beatrice	24.92	338	P	P	21 11 29.8	+2.5
	baz=153						
N36A	Muff Farm, Cla	24.93	342	P	P	21 11 29.7	+2.4
	baz=157						
BRNJ	Basking Ridge	24.94	19	eP	P	21 11 30.6	+3.2
	comp=Z,60nm,0.9s						
CBKS	Cedar Bluff	24.97	332	P	P	21 11 29.5	+1.7
	baz=145						
CBKS	Cedar Bluff	24.97	332	eP	P	21 11 29.0	+1.2
CBKS				pmax	pmax		
	comp=Z,49nm,0.9s						
CBKS	Cedar Bluff	24.97	332	eP	P	21 11 29.0	+1.2
	comp=Z,49nm,0.9s						
M38A	Pleasantville	25.01	345	P	P	21 11 29.5	+1.4
	baz=162,SNR=18						
ERPA	Erie	25.06	9	eP	P	21 11 31.0	+2.5
	comp=Z,105nm,1.1s						
O33A	Hebron	25.15	337	P	P	21 11 31.5	+2.2
	baz=151						
N35A	Tabor	25.18	341	P	P	21 11 31.7	+2.1
	baz=156,SNR=5.4						
CPNY	Central Park	25.23	20	eP	P	21 11 32.5	+2.4
	comp=Z,113nm,1.4s						
ODNJ	Ogdensburg	25.29	19	eP	P	21 11 33.4	+2.7
	comp=Z,56nm,0.9s						
PAL	Palisades	25.44	20	eP	P	21 11 35.3	+3.3
PAL				pmax	pmax		
	comp=Z,112nm,1.0s						
PAL	Palisades	25.44	20	eP	P	21 11 35.3	+3.3
	comp=Z,112nm,1.0s						
M36A	Felix, Anita	25.47	343	P	P	21 11 34.9	+2.7
	baz=158						
SCIA	State Center	25.48	346	eP	P	21 11 36.5	+4.2
	comp=Z,66nm,0.9s						
121A	Cookes Peak, D	25.53	311	P	P	21 11 34.7	+1.6
	baz=121,SNR=15						
121A	Cookes Peak, D	25.53	311	eP	P	21 11 34.7	+1.6
	comp=Z,48nm,1.1s						
L38A	Oak Wood Farm,	25.64	346	P	P	21 11 35.5	+1.7
	baz=162,SNR=6.6						
L37A	Phoenix Point,	25.81	345	P	P	21 11 36.8	+1.4
	baz=161						
JFWS	Jewell Farm	25.88	351	eP	P	21 11 37.9	+2.0
JFWS				pmax	pmax		
	comp=Z,109nm,1.5s						
JFWS	Jewell Farm	25.88	351	eP	P	21 11 37.9	+2.0
	comp=Z,109nm,1.5s						
O31A	Woolen Ranch,	25.90	334	P	P	21 11 37.7	+1.4
	baz=148						
BINY	Binghamton	25.94	15	eP	P	21 11 39.3	+2.8
	comp=Z,80nm,1.1s						
ANMO	Albuquerque	25.96	317	P	P	21 11 38.2	+1.2
	comp=Z,10nm,1.1s,baz=153,slow=9.7,SNR=10.0						
ANMO	Albuquerque	25.96	317	P	P	21 11 37.4	+0.4
	baz=128						
ANMO	Albuquerque	25.96	317	eP	P	21 11 38.2	+1.2
ANMO				pmax	pmax		
	comp=Z,18nm,1.1s						
ANMO	Albuquerque	25.96	317	eP	P	21 11 38.2	+1.2
	comp=Z,18nm,1.1s						
MMNY	Mt. Morris Dam	26.02	12	eP	P	21 11 39.3	+2.2
K38A	Parkersburg	26.08	347	P	P	21 11 39.6	+1.8
	baz=163						
T25A	Trinidad	26.11	323	P	P	21 11 39.6	+1.2
	baz=134						
T25A	Trinidad	26.11	323	eP	P	21 11 40.5	+2.0
	comp=Z,50nm,1.2s						
L35A	Bielow Farm, R	26.29	342	P	P	21 11 41.2	+1.5
	baz=157						
K37A	Belmond	26.39	346	P	P	21 11 42.4	+1.8
	baz=162						
HSIG		26.48	301	eP	P	21 11 43.7	+2.1
	comp=Z,23nm,1.3s						
KSCO	Kaye Shedlock'	26.51	328	P	P	21 11 43.3	+1.4
	baz=140						
KSCO	Kaye Shedlock'	26.51	328	eP	P	21 11 42.8	+1.0
	comp=Z,41nm,1.1s						
J38A	Wedel Dairy, R	26.66	348	P	P	21 11 44.6	+1.6
	baz=164						
M31A	Lambtecht Ranc	26.77	336	P	P	21 11 45.1	+1.0
	baz=150						
J37A	Redenius Farm,	26.89	346	P	P	21 11 47.5	+2.4
	baz=162,SNR=8.9						
J36A	Seneca 1, Swea	27.09	345	P	P	21 11 48.3	+1.4
	baz=160						
SDCO	Great Sand Dun	27.16	323	P	P	21 11 48.7	+0.7
	baz=133,SNR=7.7						
SDCO	Great Sand Dun	27.16	323	eP	P	21 11 49.4	+1.4
	comp=Z,47nm,1.8s						
SDCO				eS	S	21 16 22.5	-4.3
GLMI	Grayling	27.40	1	eP	P	21 11 51.5	+1.9
	comp=Z,58nm,0.9s						
TUC	Tucson	27.66	307	P	P	21 11 52.5	+0.3
	baz=117						
TUC	Tucson	27.66	307	eP	P	21 11 53.8	+1.6
TUC				pmax	pmax		
	comp=Z,15nm,1.0s						
TUC	Tucson	27.66	307	eP	P	21 11 53.8	+1.6
	comp=Z,15nm,1.0s						
ACCN	Adirondack Com	27.68	18	eP	P	21 11 54.1	+2.0
	comp=Z,24nm,0.9s						
OGNE	Ogallala	27.73	331	eP	P	21 11 53.7	+0.9
	comp=Z,117nm,1.5s						
SADO	Sadowa	27.78	9	P	P	21 11 54.2	+1.2
	comp=Z,31nm,0.8s,baz=214,slow=8.0,SNR=33						
SADO				LR	LR	21 21 38.0	
	comp=Z,1µm,19.9s,baz=202,slow=34						
SADO	Sadowa	27.78	9	eP	P	21 11 54.2	+1.2
	comp=Z,37nm,0.9s						
Q24A	Divide	27.81	325	P	P	21 11 54.7	+0.9
	baz=136						
W18A	Petrified Fore	28.27	314	P	P	21 11 58.4	+0.6
	baz=123						
SPMN	Marine on St.	28.56	348	P	P	21 12 01.0	+1.0
	baz=164						
LONY	Lake Ozonia	28.57	16	eP	P	21 12 02.3	+2.2
	comp=Z,45nm,0.9s						
ISCO	Idaho Springs	28.65	326	P	P	21 12 02.1	+0.8
	baz=136,SNR=5.8						
ISCO	Idaho Springs	28.65	326	eP	P	21 12 02.7	+1.4
ISCO				pmax	pmax		
	comp=Z,13nm,1.0s						
ISCO	Idaho Springs	28.65	326	eP	P	21 12 02.6	+1.4
	comp=Z,13nm,1.0s						
SMCO	Snowmass	28.98	323	eP	P	21 12 06.2	+1.9
	comp=Z,25nm,1.3s						
LBNH	Lisbon	28.99	20	eP	P	21 12 07.1	+3.2
LBNH				pmax	pmax		
	comp=Z,26nm,1.0s						
LBNH	Lisbon	28.99	20	eP	P	21 12 07.0	+3.2
	comp=Z,26nm,1.0s						
FRNY	Flat Rock	29.03	17	eP	P	21 12 06.6	+2.4
	comp=Z,53nm,1.8s						
214A	Organ Pipe Nat	29.07	305	P	P	21 12 04.6	-0.1
	baz=114,SNR=5.8						
F36A	Milaca	29.31	348	P	P	21 12 07.6	+1.0
	baz=164,SNR=7.6						
PV10	Paradox Valley	29.69	320	eP	P	21 12 15.1	+4.7
G32A	Webster	29.74	342	P	P	21 12 12.1	+1.6
	baz=156						
PV09	Paradox Valley	29.83	320	eP	P	21 12 14.1	+2.4
F33A	5 Mile Ranch,	29.94	344	P	P	21 12 13.4	+1.2
	baz=158						
O20A	White River Ci	30.35	323	P	P	21 12 15.9	-0.3
	baz=132						
D37A	Cotton	30.36	350	P	P	21 12 16.8	+0.9
	baz=166,SNR=12						
H28A	Mission Ridge	30.40	337	P	P	21 12 17.0	+0.6
	baz=149						
PTGA	Pitinga	30.50	124	LR	LR	21 25 11.0	
	comp=Z,794nm,19.8s,baz=316,slow=38						
PTGA	Pitinga	30.50	124	eP	P	21 12 17.8	+0.3
	comp=Z,16nm,0.8s						
D35A	Remer	30.59	348	P	P	21 12 17.8	-0.2
	baz=163						
C39A	Grand Marais	30.68	353	P	P	21 12 18.5	-0.3
	baz=171						
C38A	Sawbill Land.	30.73	352	P	P	21 12 19.4	+0.2
	baz=168						
PKME	Peaks-Kenny Pk	30.78	22	eP	P	21 12 23.1	+3.4
	comp=Z,49nm,0.9s						
C37A	Embarrass	30.88	351	P	P	21 12 21.1	+0.6
	baz=167						
EYMN	Ely	30.98	351	P	P	21 12 21.9	+0.4
	baz=168						
C36A	Pine Crest Far	31.01	350	P	P	21 12 22.7	+1.0
	baz=166,SNR=6.0						
C35A	Jirik Farms, M	31.16	348	P	P	21 12 24.1	+1.1
	baz=164						
K22A	Casper	31.19	328	P	P	21 12 23.8	+0.2
	baz=138						
K22A	Casper	31.19	328	eP	P	21 12 26.4	+2.9
	comp=Z,27nm,1.3s						
P18A	Preston Nutter	31.21	321	eP	P	21 12 25.3	+1.4
	comp=Z,25nm,1.4s						
E30A	Jud	31.29	341	P	P	21 12 24.8	+0.7
	baz=154						
VLDQ	Val d'Or	31.30	10	eP	P	21 12 26.1	+2.0
	comp=Z,31nm,0.9s						
B35A	Bob, Littlefor	31.75	349	P	P	21 12 28.6	+0.5
	baz=164						
B34A	Aery, Baudette	32.05	348	P	P	21 12 31.5	+0.7
	baz=163,SNR=8.3						
C31A	Landman Farms,	32.12	344	P	P	21 12 31.9	+0.4
	baz=157						
AGMN	Agassiz Nation	32.13	346	P	P	21 12 32.0	+0.5
	baz=160						
AGMN	Agassiz Nation	32.13	346	eP	P	21 12 32.1	+0.6
	comp=Z,15nm,0.8s						
C30A	Mose, Pekin	32.24	343	P	P	21 12 33.5	+1.0
	baz=156						
BELC	Belle Mtn. Jos	32.33	307	P	P	21 12 32.4	-1.3
	baz=114						
B32A	Ashes, Strandq	32.38	346	P	P	21 12 34.7	+1.0
	baz=159,SNR=11						
PFO	Pinyon Flats O	32.54	306	P	P	21 12 32.6	-2.8
	comp=Z,8.6nm,0.6s,baz=76,slow=1.5,SNR=4.8						
A33A	Warroad	32.63	347	P	P	21 12 37.2	+1.3
	baz=162,SNR=11						
BW06	Boulder Array	32.85	326	P	P	21 12 38.2	-0.1
	baz=133,SNR=6.5						
BW06	Boulder Array	32.85	326	eP	P	21 12 38.9	+0.7
PD31	Pinedale Array	32.85	326	eP	P	21 12 39.2	+1.0
PDAR	Pinedale Array	32.85	326	P	P	21 12 38.7	+0.5
	comp=Z,2.8nm,0.7s,baz=125,slow=10,SNR=24						
A32A	Rocking H Ranc	32.85	346	P	P	21 12 38.5	+0.6
	baz=160						
PSUT	Pine Spring	32.88	316	eP	P	21 12 40.3	+1.8
	comp=Z,7.6nm,0.9s						
B30A	Myrvik Farm, E	32.88	344	P	P	21 12 38.9	+0.7
	baz=156						
C26A	Wahner Farm, P	33.48	339	P	P	21 12 44.0	+0.5
	baz=150						
BGU	Big Grassy Mou	33.69	320	eP	P	21 12 46.8	+1.3
	comp=Z,8.2nm,1.1s						
AHID	Auburn Hatcher	33.70	324	eP	P	21 12 47.0	+1.5
	comp=Z,42nm,1.2s						
SAML	Samuel	33.87	139	eP	P	21 12 44.8	-2.2
	comp=Z,14nm,1.2s						
REDW	Red Top Meadow	33.95	325	eP	P	21 12 49.2	+1.4
	comp=Z,84nm,1.2s						
SNOW	Snow King Moun	33.97	325	eP	P	21 12 50.0	+2.0
	comp=Z,47nm,1.1s						
ULM	Lac du Bonnet	33.98	347	P	P	21 12 47.2	-0.4
	comp=Z,16nm,1.1s,baz=162,slow=7.7,SNR=12						
ULM	Lac du Bonnet	33.98	347	eP	P	21 12 48.0	+0.4
ULM				pmax	pmax		
	comp=Z,20nm,0.9s						
ULM	Lac du Bonnet	33.98	347	eP	P	21 12 48.0	+0.4
	comp=Z,20nm,0.9s						
LOHW	Long Hollow	33.99	326	eP	P	21 12 49.4	+1.3
	comp=Z,26nm,1.2s						
MOOW	Moose Ponds	34.15	326	eP	P	21 12 50.7	+1.2
	comp=Z,32nm,1.3s						
FXWY	Fox Creek	34.23	325	eP	P	21 12 51.4	+1.1
	comp=Z,14nm,1.0s						
MPMC	Manual Prospec	34.28	309	P	P	21 12 50.8	+0.1
	baz=115						
RLMT	Red Lodge	34.35	329	P	P	21 12 52.4	+1.2
	baz=136,SNR=12						
RLMT	Red Lodge	34.35	329	eP	P	21 12 52.4	+1.2
	comp=Z,44nm,1.2s						
A26A	Wade Farm, Ken	34.39	340	P	P	21 12 52.7	+1.4
	baz=151						
H17A	Grant Village	34.50	327	eP	P	21 12 53.8	+1.2
	comp=Z,7.9nm,0.9s						
LKWY	Lake	34.53	327	eP	P	21 12 57.6	+4.8
LKWY				pmax	pmax		
	comp=Z,27nm,1.3s						
LKWY	Lake	34.53	327	eP	P	21 12 57.6	+4.8
	comp=Z,27nm,1.3s						
YFT	Old Faithful	34.68	327	eP	P	21 12 57.2	+3.1
	comp=Z,18nm,1.1s						
DGMT	Dagmar	34.78	337	P	P	21 12 55.9	+1.3
	baz=147						
DGMT	Dagmar	34.78	337	eP	P	21 12 57.2	+2.5
	comp=Z,18nm,0.9s						
A25A	Svangstu Ranch	34.79	339	P	P	21 12 56.1	+1.4
	baz=149						
YMR	Madison River	34.89	327	eP	P	21 12 58.2	+2.2
	comp=Z,30nm,1.1s						
ARVC	Arvin	34.92	307	P	P	21 12 55.9	-0.2
	baz=112						
ELK	Elko	34.97	318	eP	P	21 12 58.2	+1.5
ELK				pmax	pmax		
	comp=Z,8.0nm,1.1s						
ELK	Elko	34.97	318	eP	P	21 12 58.2	+1.5
	comp=Z,8.1nm,1.1s						
GCMT	Greycliff	35.03	329	eP	P	21 12 58.6	+1.7
QLMT	Earthquake Lak	35.25	327	eP	P	21 13 02.4	+3.4
NV01	Mina Array Sit	35.88	313	eP	P	21 13 05.8	+1.3
NVAR	Mina Array Bea	35.88	313	P	P	21 13 04.9	+0.4
	comp=Z,1.5nm,0.7s,baz=160,slow=4.7,SNR=7.4						
BOZ	Bozeman (W)	35.91	328	P	P	21 13 05.3	+0.8
	baz=134,SNR=17						
BOZ	Bozeman (W)	35.91	328	eP	P	21 13 05.8	+1.2
BOZ				pmax	pmax		
	comp=Z,35nm,1.3s						
BOZ	Bozeman (W)	35.91	328	eP	P	21 13 05.8	+1.2
	comp=Z,35nm,1.3s						
MCMT	McKenzie Canyo	36.00	326	eP	P	21 13 07.8	+2.3
HLID	Hailey	36.08	323	P	P	21 13 06.9	+0.8
	baz=128						
HLID	Hailey	36.08	323	eP	P	21 13 07.5	+1.4
	comp=Z,7.2nm,1.0s						
BMN	Battle Mountai	36.09	316	eP	P	21 13 07.8	+1.6
BMN				e*PP	sP	21 13 13.6	+3.1
BMN	Battle Mountai	36.09	316	eP	P	21 13 07.8	+1.6
BMN				epP	sP	21 13 13.6	+3.1
DLMT	Dillon	36.22	326	eP	P	21 13 09.5	+2.3
	comp=Z,22nm,1.1s						
LRM	Limekiln Ridge	36.45	327	eP	P	21 13 10.9	+1.6
EGMT	Eagleton	36.70	332	P	P	21 13 11.7	+0.4
	baz=138,SNR=7.6						
EGMT	Eagleton	36.70	332	eP	P	21 13 12.9	+1.6
	comp=Z,35nm,1.3s						
MFID	Camas Ranch	36.83	321	eP	P	21 13 13.5	+1.1
	comp=Z,9.3nm,1.0s						
LPAZ	La Paz	37.32	153	P	P	21 13 17.5	+0.2
	comp=Z,3.0nm,1.0s,baz=327,slow=16,SNR=3.7						
CHMT	Chamberlain Mo	37.59	328	eP	P	21 13 20.3	+1.3
MSO	Missoula	37.89	327	P	P	21 13 21.9	+0.5
	baz=132,SNR=7.0						
MSO	Missoula	37.89	327	eP	P	21 13 22.8	+1.4
	comp=Z,21nm,1.1s						
WVOR	Wild Horse Val	38.02	318	eP	P	21 13 23.7	+1.1
WVOR				pmax	pmax		
	comp=Z,43nm,1.5s						
WVOR	Wild Horse Val	38.02	318	eP	P	21 13 23.7	+1.1
	comp=Z,43nm,1.5s						
YBMT	Yellow Bay	38.61	328	eP	P	21 13 31.1	+3.7
JTMT	Jette	38.67	328	eP	P	21 13 30.2	+2.3
DRLN	Deer Lake	38.83	29	eP	P	21 13 31.2	+2.1
	comp=Z,56nm,1.1s						
BLMT	Blacktail Moun	38.88	328	eP	P	21 13 34.4	+4.5
BSMT	Bassoo Peak	38.99	328	eP	P	21 13 32.1	+1.3
F10A	Beach Ranch, E	39.13	324	eP	P	21 13 32.1	+0.3
	comp=Z,23nm,0.9s						
WALA	Waterton Lakes	39.37	330	eP	P	21 13 36.1	+2.3
	comp=Z,19nm,1.4s						
FFC	Flin Flon	39.54	345	eP	P	21 13 35.6	+0.6
FFC				pmax	pmax		
	comp=Z,6.0nm,0.9s						
FFC	Flin Flon	39.54	345	eP	P	21 13 35.6	+0.6
	comp=Z,6.3nm,0.9s						
SCHQ	Schefferville	39.94	16	P	P	21 13 39.5	+1.2
	comp=Z,13nm,0.6s,baz=208,slow=6.6,SNR=8.0						
SCHQ	Schefferville	39.94	16	eP	P	21 13 39.8	+1.5
	comp=Z,18nm,0.8s						
NEW	Newport	40.46	327	P	P	21 13 43.3	+0.5
	comp=Z,2.3nm,0.6s,baz=110,slow=10.0,SNR=4.1						
NEW	Newport	40.46	327	eP	P	21 13 43.8	+1.0
NEW				pmax	pmax		
	comp=Z,12nm,1.1s						
NEW	Newport	40.46	327	eP	P	21 13 43.8	+1.0
	comp=Z,12nm,1.1s						
H04A	Detroit Lake	41.38	319	eP	P	21 13 50.2	-0.2
	comp=Z,49nm,1.5s						
I03D	Drain, OR	41.66	317	P	P	21 13 52.2	-0.4
	baz=117						
B08A	Colville Reser	41.70	326	eP	P	21 13 53.7	+0.8
	comp=Z,20nm,1.5s						
ASR	Mount Adams--S	41.76	322	eP	P	21 13 54.4	+0.8
FCC	Fort Churchill	41.90	353	eP	P	21 13 54.9	+0.6
FCC				pmax	pmax		
	comp=Z,60nm,1.0s						
FCC	Fort Churchill	41.90	353	eP	P	21 13 54.9	+0.6
	comp=Z,60nm,1.0s						
LON	Longmire	42.20	322	eP	P	21 13 58.2	+1.1
LON				pmax	pmax		
	comp=Z,10.0nm,0.9s						
LON	Longmire	42.20	322	eP	P	21 13 58.2	+1.1
	comp=Z,10nm,0.9s						
B06A	Marblemount	42.96	325	eP	P	21 14 03.9	+0.7
	comp=Z,11nm,0.6s						
BDFB	Brasilia	49.02	130	P	P	21 14 50.2	-1.3
	comp=Z,6.6nm,1.0s,baz=307,slow=7.1,SNR=7.1						
BDFB	Brasilia	49.02	130	eP	P	21 14 51.3	-0.2
BDFB				pmax	pmax		
	comp=Z,23nm,1.2s						
BDFB	Brasilia	49.02	130	eP	P	21 14 51.3	-0.2
	comp=Z,23nm,1.2s						
YKA	Yellowknife Ar	49.62	342	P	P	21 14 55.8	+0.5
	comp=Z,2.3nm,0.7s,baz=136,slow=7.9,SNR=54						
YKA				PcP	PcP	21 16 16.7	+0.1
	comp=Z,0.1nm,0.6s,baz=144,slow=3.7,SNR=4.2						
YKB5	Yellowknife Ar	49.62	342	eP	P	21 14 55.0	-0.3
YKW3	Yellowknife Ar	49.67	343	eP	P	21 14 56.3	+0.6
	comp=Z,16nm,1.4s						
DLBC	Dease Lake	52.63	332	eP	P	21 15 20.5	+2.4
	comp=Z,98nm,1.6s						
SFJD	Kangerlussuaq	54.39	16	P	P	21 15 30.3	-0.4
	comp=Z,9.8nm,1.0s,baz=324,slow=1.6,SNR=3.9						
SFJD				LR	LR	21 38 16.9	
	comp=Z,829nm,19.2s,baz=226,slow=36						
RES	Resolute Bay	57.61	357	P	P	21 15 54.1	+0.4
	comp=Z,11nm,0.8s,baz=176,slow=11,SNR=45						
RES	Resolute Bay	57.61	357	eP	P	21 15 54.2	+0.4
RES				pmax	pmax		
	comp=Z,13nm,0.8s						
RES	Resolute Bay	57.61	357	eP	P	21 15 54.2	+0.4
	comp=Z,13nm,0.8s						
PLCA	Paso Flores	59.32	167	P	P	21 16 08.1	+1.9
	comp=Z,30nm,1.0s,baz=9.8,slow=8.1,SNR=4.3						
INK	Inuvik	59.33	341	P	P	21 16 07.1	+1.3
	comp=Z,14nm,1.0s,baz=112,slow=7.5,SNR=33						
INK	Inuvik	59.33	341	eP	P	21 16 07.1	+1.3
INK				pmax	pmax		
	comp=Z,19nm,0.9s						
INK	Inuvik	59.33	341	eP	P	21 16 07.1	+1.3
	comp=Z,19nm,0.9s						
DOT	Dot Lake	61.04	334	eP	P	21 16 19.9	+2.3
	comp=Z,56nm,1.0s						
SUMG	Summit	61.28	14	iP	P	21 16 20.1	+0.5
	comp=Z,28nm,0.9s						
SUMG	Summit	61.28	14	iP	P	21 16 20.1	+0.5
SUMG				pmax	pmax		
	comp=Z,28nm,0.9s						
SUMG	Summit	61.28	14	eP	P	21 16 19.8	+0.2
	comp=Z,27nm,0.8s						
FYU	Fort Yukon	62.54	337	eP	P	21 16 29.5	+1.9
	comp=Z,72nm,1.4s						
IL1	Eielson Array	62.58	335	eP	P	21 16 28.3	+0.3
ILAR	Eielson Array	62.58	335	P	P	21 16 29.1	+1.0

Code	Station Name	Δ°	AZ°	Op	ISC	Time	Res
	comp=Z,11nm,0.8s,baz=116,slow=4.9,SNR=93						
ILB	Eielson Array	62.58	335	eP	P	21 16 29.0	+1.0
CCB	Clear Creek Bu	62.92	335	eP	P	21 16 31.7	+1.5
	comp=Z,17nm,1.0s						
COLA	College	63.01	335⇓	iP	P	21 16 31.3	+0.5
COLA				pmax	pmax		
	comp=Z,10.0nm,0.9s						
COLA	College	63.01	335	eP	P	21 16 32.5	+1.7
	comp=Z,27nm,1.0s						
MDM	Murphy Dome	63.19	335	eP	P	21 16 33.2	+1.1
	comp=Z,14nm,0.9s						
BPAW	Bear Paw Mtn.	64.10	334	eP	P	21 16 39.1	+1.0
	comp=Z,27nm,0.8s						
CAST	Castle Rocks	64.42	333	eP	P	21 16 40.5	+0.3
	comp=Z,14nm,1.1s						
COLD	Coldfoot	64.61	337	eP	P	21 16 43.9	+2.5
	comp=Z,29nm,1.4s						
SCO	Scoresbysund	64.88	19	i P	P	21 16 42.8	-0.2
SCO	Scoresbysund	64.88	19	i P	P	21 16 42.8	-0.2
TTA	Tatalina	66.08	332	eP	P	21 16 51.2	+0.2
TTA				e*SP	sP	21 16 59.5	+4.0
TTA	Tatalina	66.08	332	eP	P	21 16 51.2	+0.2
TTA				esP	sP	21 16 59.5	+4.0
CHGN	Chignik	66.56	324	eP	P	21 16 51.7	-2.4
DAG	Danmarks Havn	67.88	13	i P	P	21 17 01.5	-0.6
	comp=Z,12nm,1.0s						
DAG	Danmarks Havn	67.88	13	i P	P	21 17 01.5	-0.6
DAG				pmax	pmax		
	comp=Z,12nm,1.0s						
PACT	Alcochete	68.69	55	eP	P	21 17 09.7	+1.8
PCAS	Casmilo, Conde	68.83	53	eP	P	21 17 10.2	+1.4
PTEO	Sao Teotonio	68.90	56	eP	P	21 17 10.7	+1.5
PTOM	Tomar	68.93	54	eP	P	21 17 11.0	+1.5
PMTG	Montargil	69.13	54	eP	P	21 17 11.9	+1.2
PVIS	Viseu	69.23	52	eP	P	21 17 12.6	+1.3
	comp=Z,26nm,1.4s						
POLO	Lamas de Olo	69.24	52	eP	P	21 17 12.6	+1.1
MESJ	Messejana	69.26	55	eP	P	21 17 13.1	+1.6
PVRL	Vila Real	69.31	52	eP	P	21 17 13.3	+1.5
EVO	Evora	69.35	55	eP	P	21 17 13.4	+1.3
PBEJ	Beja	69.52	55	eP	P	21 17 14.4	+1.3
MTE	Manteigas	69.52	53	eP	P	21 17 14.3	+1.1
	comp=Z,30nm,1.1s						
MTE	Manteigas	69.52	53	eP	P	21 17 14.3	+1.1
	comp=Z,36nm,1.3s						
PCBR	Castelo Branco	69.63	53	eP	P	21 17 15.0	+1.3
	comp=Z,25nm,1.9s						
PESTR	Estremoz	69.64	54	eP	P	21 17 15.2	+1.3
PVAQ	Vaqueiros	69.71	56	eP	P	21 17 16.1	+1.8
PMRV	Marv??o	69.74	54	eP	P	21 17 15.6	+1.1
MVO	Moncorvo	69.84	52	eP	P	21 17 16.4	+1.3
PBRG	Braganca	69.99	51	eP	P	21 17 17.3	+1.3
	comp=Z,26nm,1.9s						
PBAR	Barrancos	70.15	55	eP	P	21 17 18.4	+1.4
EKA	Eskdalemuir Ar	71.29	37	P	P	21 17 22.6	-1.0
	comp=Z,9.5nm,0.9s,baz=286,slow=5.9,SNR=13						
PAB	San Pablo	72.06	53	eP	P	21 17 29.8	+1.1
PAB				pmax	pmax		
	comp=Z,29nm,1.5s						
PAB	San Pablo	72.06	53	eP	P	21 17 29.8	+1.1
	comp=Z,29nm,1.5s						
ESDC	Sonseca Array	72.34	53	P	P	21 17 31.5	+1.2
	comp=Z,8.3nm,0.7s,baz=286,slow=5.8,SNR=58						
ESLA	Sonseca Array	72.34	53	eP	P	21 17 31.9	+1.6
	comp=Z,11nm,0.8s						
ES19	SONSECA Array	72.38	53	eP	P	21 17 31.4	+0.9
MDT	Midelt	72.88	60	P	P	21 17 34.3	+0.5
	comp=Z,5.6nm,0.9s,baz=309,slow=6.7,SNR=12						
REYF	Montagne du Re	74.48	49	eP	P	21 17 44.4	+1.5
VIEF	Viey	74.81	49	eP	P	21 17 46.2	+1.4
PYM	Petit Puy Mans	76.41	46⇑	eP	P	21 17 55.2	+1.3
AGO	Saint Agoulin	76.44	46	eP	P	21 17 53.6	-0.4
DOU	Dourbes	76.64	41	P	P	21 17 54.9	-0.1
LBL	Lubilhac	76.68	47⇑	eP	P	21 17 57.1	+1.7
PLDF	La Plantade	76.79	46	eP	P	21 17 56.8	+0.7
BCLA	Clavier	77.02	41	P	P	21 17 57.1	0.0
	comp=Z,10.0nm,1.7s						
BCLA				XP	PcP	21 18 06.2	-1.9
MEM	Membach	77.42	41	P	P	21 17 59.3	-0.1
THEF	They Montfort	77.91	43	eP	P	21 18 02.2	0.0
NB2	NORSAR Subarra	77.96	30	P	P	21 18 02.3	0.0
	comp=Z,18nm,1.1s,baz=286,slow=5.9						
NB2	NORSAR Subarra	77.96	30	P	P	21 18 02.3	0.0
	baz=286,slow=5.9						
NOA	NORSAR Array B	77.96	30	P	P	21 18 02.7	+0.4
	comp=Z,7.8nm,0.9s,baz=284,slow=5.5,SNR=12						
TIC	Toumodi	78.50	87	eP	P	21 18 05.9	-0.2
LIC	Lamto	78.61	87	eP	P	21 18 06.8	+0.1
	comp=Z,110nm,1.8s						
DBIC	Dimbokro	78.65	87	P	P	21 18 06.9	0.0
	comp=Z,13nm,0.9s,baz=271,slow=6.1,SNR=15						
DBIC	Dimbokro	78.65	87	eP	P	21 18 07.4	+0.5
DBIC				pmax	pmax		
	comp=Z,41nm,1.4s						
DBIC	Dimbokro	78.65	87	eP	P	21 18 07.4	+0.5
	comp=Z,41nm,1.4s						
LOMF	Lomont	78.66	44	eP	P	21 18 06.6	+0.1
ECH	Echery	78.68	43	eP	P	21 18 06.3	-0.2
KIC	Kosan Boka	78.85	87	eP	P	21 18 08.0	0.0
	comp=Z,63nm,1.1s						
BFO	Black Forest	79.41	43	i P	P	21 18 11.3	+0.8
TUE	Stuetta	80.55	44	eP	P	21 18 19.4	+2.4
	comp=Z,6.6nm,0.9s						
DAVA	Damuels	80.69	43	i P	P	21 18 17.8	+0.2
	comp=Z,4.5nm,0.7s						
ARCES	ARCESS Array B	80.81	19	P	P	21 18 17.8	+0.2
	comp=Z,4.8nm,0.9s,baz=280,slow=5.5,SNR=19						
DAVOX	Davos/Dischmat	80.82	44	P	P	21 18 18.9	+0.6
	comp=Z,4.5nm,0.8s,baz=230,slow=4.5,SNR=7.7						
BILL	Bilibino	80.85	339	eP	P	21 18 17.8	0.0
BILL				pmax	pmax		
	comp=Z,5µm,1.0s						
BILL	Bilibino	80.85	339	eP	P	21 18 19.0	+1.2
	comp=Z,12nm,1.2s						
RETA	Reutte	81.21	43	i P	P	21 18 20.4	+0.1
	comp=Z,6.7nm,0.9s						
FETA	Feichten	81.31	44	i P	P	21 18 20.9	-0.1
	comp=Z,3.1nm,1.0s						
MOTA	Moosalm	81.47	43	i P	P	21 18 22.4	+0.6
NKC	Novy Kostel	81.50	40	eP	P	21 18 21.8	+0.1
NKC	Novy Kostel	81.50	40	eP	P	21 18 21.8	+0.1
CLL	Collm	81.53	39⇓	iP	P	21 18 21.5	-0.3
	comp=Z,15nm,1.4s						
CLL				i		21 18 30.8	
CLL				ePP	PP	21 21 38.0	+10
CLL	Collm	81.53	39⇓	iP	P	21 18 21.5	-0.3
CLL				pmax	pmax		
	comp=Z,15nm,1.4s						
BRG	Berggiesshubel	82.22	39	eP	P	21 18 25.7	+0.2
	comp=Z,12nm,1.5s						
BRG	Berggiesshubel	82.22	39	eP	P	21 18 25.7	+0.2
BRG				pmax	pmax		
	comp=Z,12nm,1.5s						
KHC	Kasperske Hory	82.53	41	eP	P	21 18 27.4	+0.3
KHC				ex	x	21 18 36.2	
KHC	Kasperske Hory	82.53	41	eP	P	21 18 27.4	+0.3
KHC				e		21 18 36.2	
KHC	Kasperske Hory	82.53	41	eP	P	21 18 27.5	+0.3
ABTA	Abfaltersbach	82.57	43	i P	P	21 18 27.5	0.0
	comp=Z,4.1nm,1.4s						
GEC2	GERESS Array S	82.70	41	eP	P	21 18 28.5	+0.4
GEC2	GERESS Array S	82.70	41	eP	P	21 18 28.5	+0.4
GERES	GERESS Array B	82.70	41	P	P	21 18 28.1	0.0
	comp=Z,2.4nm,0.9s,baz=311,slow=2.6,SNR=11						
PRU	Pruhonice	82.86	40	eP	P	21 18 26.8	-2.0
PRU				epP	PcP	21 18 35.5	+1.9
PRU	Pruhonice	82.86	40	eP	P	21 18 26.8	-2.0
PRU				e		21 18 35.5	
KBA	Koelnbreinsper	83.01	43	i P	P	21 18 29.9	0.0
	comp=Z,2.4nm,0.8s						
TORD	Torodi Ar. Bea	83.06	78	P	P	21 18 29.9	-0.6
	comp=Z,1.7nm,0.8s,baz=285,slow=4.2,SNR=11						
MYKA	Terra Mystica	83.34	43	P	P	21 18 31.5	0.0
	comp=Z,4.8nm,1.0s						
MOA	Molln	83.36	42	i P	P	21 18 31.3	-0.2
	comp=Z,4.0nm,1.1s						
KEST	Kesra	83.48	55	P	P	21 18 33.4	+0.9
	comp=Z,13nm,0.9s,baz=251,slow=5.1,SNR=14						
KEST	Kesra	83.48	55	eP	P	21 18 33.7	+1.3
CADS	Cadrg	83.53	44	eP	P	21 18 32.0	-0.3
UPC	Upice	83.59	39	eP	P	21 18 32.9	+0.3
UPC				ex	x	21 18 41.7	
UPC	Upice	83.59	39	eP	P	21 18 32.9	+0.3
UPC				e		21 18 41.7	
DPC	Dobruska-Polom	83.83	39	eP	P	21 18 33.8	0.0
DPC				ex	x	21 18 43.1	
DPC	Dobruska-Polom	83.83	39	eP	P	21 18 33.8	0.0
TAM	Tamanrasset	83.90	68	eP	P	21 18 35.9	+1.0
TAM				pmax	pmax		
	comp=Z,14nm,1.1s						
TAM	Tamanrasset	83.90	68	eP	P	21 18 35.9	+1.0
	comp=Z,14nm,1.1s						
OBKA	Obir	83.97	43	i P	P	21 18 35.5	+0.8
	comp=Z,4.6nm,0.8s						
CEY	Cerknica	84.14	44	i P	P	21 18 35.7	+0.2
SOKA	Soboth	84.23	43	i P	P	21 18 35.6	-0.5
	comp=Z,5.5nm,1.0s						
VRAC	Vranov	84.35	40	P	P	21 18 36.4	-0.1
	comp=Z,4.7nm,0.8s,baz=306,slow=5.4,SNR=4.9						
CONA	Conrad Observa	84.36	42	i P	P	21 18 36.6	0.0
	comp=Z,3.6nm,0.8s						
LVZ	Lovozero	84.52	19	eP	P	21 18 36.6	-0.4
LVZ				pmax	pmax		
	comp=Z,13nm,1.0s						
FINES	FINESS Array B	84.56	27	P	P	21 18 37.5	+0.3
	comp=Z,13nm,0.9s,baz=264,slow=3.8,SNR=17						
LEGS	Legarje	84.66	44	eP	P	21 18 38.0	-0.1
VYHS	Vyhne	86.02	40	eP	P	21 18 45.3	+0.4
VYHS				pmax	pmax		
	comp=Z,6.0nm,1.4s						
VYHS	Vyhne	86.02	40	eP	P	21 18 45.3	+0.4
LANS	Liptovska Anna	86.16	40	eP	P	21 18 46.5	+0.9
LANS	Liptovska Anna	86.16	40	eP	P	21 18 46.5	+0.9
PSZ	Piszkesteto	86.89	41	eP	P	21 18 50.5	+1.3
PSZ	Piszkesteto	86.89	41	eP	P	21 18 50.5	+1.3
KOLS	Kolonicke sedl	87.95	39	eP	P	21 18 54.9	+0.7
KOLS	Kolonicke sedl	87.95	39	eP	P	21 18 54.9	+0.7
UZH	Uzhgorod	88.08	39⇑	iP	P	21 18 55.0	+0.2
UZH				e		21 19 01.2	
TIXI	Tiksi	88.29	350	P	P	21 18 55.7	+0.4
	comp=Z,4.1nm,0.8s,baz=25,slow=5.0,SNR=17						
TIXI	Tiksi	88.29	350⇑	iP	P	21 18 55.8	+0.4
TIXI				pmax	pmax		
	comp=Z,6.0nm,1.0s						
TIXI	Tiksi	88.29	350	eP	P	21 18 55.4	0.0
SEY	Seymchan	88.40	337	P	P	21 18 56.5	+0.4
	comp=Z,2.4nm,0.7s,baz=93,slow=4.6,SNR=12						
SEY	Seymchan	88.40	337⇑	iP	P	21 18 56.1	0.0
MA2	Magadan	91.06	335	eP	P	21 19 07.5	-1.1
PET	Petropavlovsk	91.15	327	eP	P	21 19 09.1	0.0
PET				pmax	pmax		
	comp=Z,17nm,1.1s						
MLR	Muntele Rosu	91.69	41	P	P	21 19 11.8	-0.1
	comp=Z,1.0nm,0.8s,baz=321,slow=3.5,SNR=3.8						
OBN	Obninsk	92.56	29	eP	P	21 19 15.4	-0.2
OBN				pmax	pmax		
	comp=Z,6.0nm,1.0s						
NRIK	Noril'sk	93.39	3	P	P	21 19 19.4	+0.3
	comp=Z,2.8nm,0.6s,baz=29,slow=2.3,SNR=3.7						
ARU	Arti	100.40	20c	iP	Pdif	21 19 50.4	-0.7
ARU						21 23 56.4	
ARU				S	SKSac	21 30 28.1	-2.1
ARU				pmax	pmax		
	comp=Z,7.0nm,2.5s						
WMQ	Urumqi	118.77	6	ePKP	PKPdf	21 24 53.2	+0.3
WMQ				PP	PP	21 26 11.6	+1.9
WMQ				SKKS		21 33 06.5	
WMQ				AMB	AMB		
	comp=Z,18nm,8.9s						
WMQ				LR	LR		
	comp=Z,200nm,18.6s						
WMQ				LR	LR		
	comp=Z,110nm,18.6s						
WMQ				LR	LR		
	comp=Z,250nm,20.4s						
HHC	Hu-ho-hao-te	120.10	346	ePKP	PKPdf	21 24 55.8	+0.2
HHC				PP	PP	21 26 23.9	+4.9
HHC				SS	SS	21 42 46.3	+1.3
HHC				LR	LR		
	comp=Z,770nm,19.8s						
HHC				LR	LR		
	comp=Z,810nm,19.7s						
HHC				LR	LR		
	comp=Z,760nm,18.0s						
KSH	Kashi	120.70	17	ePKP	PKPdf	21 24 55.6	-1.2
KSH				PKS	PKSdf	21 28 30.6	-3.0
KSH				AMB	AMB		
	comp=Z,85nm,5.2s						
KSH				LR	LR		
	comp=Z,130nm,7.1s						
KSH				LR	LR		
	comp=Z,230nm,8.1s						
KSH				LR	LR		
	comp=Z,300nm,9.1s						
GTA	Gaotai	123.37	356	ePKP	PKPdf	21 25 01.5	-0.4
NJ2	Nanjing	125.83	335	ePKP	PKPdf	21 25 00.6	-6.0
CD2	Chengdu	131.29	350	PKP	PKPdf	21 25 15.7	-1.5
GYA	Guiyang	135.01	345	ePdif	Pdif	21 22 23.6	-2.3
GYA				PKP	PKPdf	21 25 22.8	-1.6
GYA				PP	PP	21 28 01.4	+4.0
GYA				AMB	AMB		
	comp=Z,120nm,7.8s						
KMI	Kunming	137.12	350	PKP	PKPdf	21 25 27.3	-1.2
WRA	Warramunga Arr	142.70	260	PKP	PKPdf	21 25 37.9	-0.5
	comp=Z,2.4nm,1.1s,baz=86,slow=2.1,SNR=6.0						
WRA	Warramunga Arr	142.70	260c	iPKIKP	PKPdf	21 25 41.5	+3.1
WRA				pmax	pmax		
	comp=Z,2.0nm,0.9s						
ASAR	Alice Springs	143.12	254	PKhKP	PKPpre	21 25 34.0	
	comp=Z,1.4nm,0.6s,baz=103,slow=3.4,SNR=11						
CMAR	Chiang Mai Arr	144.21	354	PKP	PKPdf	21 25 39.0	-2.1
	comp=Z,2.6nm,0.9s,baz=332,slow=3.9,SNR=13						

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*ISCJB **07** 21:10:58.5±0.5, 38°.85N±0°.04×27°.95E±0°.04, h6km±6km, Error ellipse: s-maj=6.5km s-min=4.9km az=37.7*
*CSEM **07** 21:10:58.6±0.1, 38°.85N×27°.94E, h5km, MD2.7, Error ellipse: s-maj=3.1km s-min=3.0km az=41.0*
*ISK **07** 21:10:58.0, 38°.85N×27°.95E, h8km, MD2.7*
*DDA **07** 21:10:58.0, 38°.89N×27°.95E, h5km, Md2.7*
ISC 07 21:10:58.6±0.9**, 38°.84N**±0°.03×**27°.93E**±0°.03**, h8**km±8km**, n24,** σ**0s.40**/36**, Turkey**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
AKHS	Akhisar	0.10	291	i P	Pg	21 11 00.7	-0.3
AKHS				i S	Sg	21 11 02.9	+0.3
AKHS	Akhisar	0.10	291	P	Pg	21 11 00.7	-0.3
AKHS				S	Sg	21 11 02.9	+0.3
AKS	Akhisar	0.10	291	ePG	Pg	21 11 00.8	-0.2
AKS				eSG	Sg	21 11 03.1	+0.5
AKS	Akhisar	0.10	291	ePg	Pg	21 11 00.8	-0.2
AKS				eSg	Sg	21 11 03.1	+0.5
DEMI	Demirci	0.64	72	i P	Pg	21 11 10.8	-0.2
DEMI				i S	Sg	21 11 19.9	+0.5
DEMI	Demirci	0.64	72	P	Pg	21 11 10.8	-0.2
DEMI				S	Sg	21 11 19.9	+0.5
KULA	Kula-Manisa	0.66	120	ePG	Pg	21 11 11.0	-0.3
KULA				eSG	Sg	21 11 20.5	+0.6
KULA	Kula-Manisa	0.66	120	ePg	Pg	21 11 11.0	-0.3
KULA				eSg	Sg	21 11 20.5	+0.6
DURS	Dursunbey	0.86	29	i P	Pg	21 11 15.1	-0.2
DURS				i S	Sb	21 11 27.6	-0.2
DURS	Dursunbey	0.86	29	P	Pg	21 11 15.1	-0.2
DURS				S	Sb	21 11 27.6	-0.2
AYDB	Zeytinkoy-Aydi	0.90	182	ePG	Pb	21 11 16.2	-0.3
AYDB				eSG	Sb	21 11 28.6	-0.1
AYDB	Zeytinkoy-Aydi	0.90	182	ePg	Pb	21 11 16.2	-0.3
AYDB				eSg	Sb	21 11 28.6	-0.1
DST	Dursunbey	0.93	35	ePG	Pg	21 11 16.5	+0.1
DST	Dursunbey	0.93	35	ePg	Pg	21 11 16.5	+0.1
KHAL	Karahalli	1.31	111	i P	Pg	21 11 24.1	+0.4
KHAL	Karahalli	1.31	111	P	Pg	21 11 24.1	+0.4
TVSB	Tavsanli	1.33	63	ePN	Pn	21 11 23.1	-0.6
TVSB	Tavsanli	1.33	63	ePn	Pn	21 11 23.1	-0.6
KCTX	Karacabey (Bur	1.46	13	ePN	Pn	21 11 24.9	-0.4
KCTX	Karacabey (Bur	1.46	13	ePn	Pn	21 11 24.9	-0.4
ARMT	Armutlu	1.86	22	ePN	Pn	21 11 31.3	+0.4
ARMT	Armutlu	1.86	22	ePn	Pn	21 11 31.3	+0.4
ALN	Alexandroupoli	2.51	325	ePN	Pn	21 11 40.4	+0.6
ALN	Alexandroupoli	2.51	325	ePn	Pn	21 11 40.4	+0.6

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*IDC **07** 21:11:29.1±2.5, 17°.53N×85°.04W, h0km, mb3.8/5, mb1 4.2/7, mb1mx3.8/54, mbtmp4.0/7, ML3.9/2, Error ellipse: s-maj=61.4km s-min=32.6km az=29.0*
*NEIC **07** 21:11:30.5±0.3, 17°.53N×85°.03W, h10km, mb4.3/6, Error ellipse: s-maj=11.5km s-min=5.6km az=65.0*
*ISCJB **07** 21:11:31.3±0.6, 17°.52N±0°.07×85°.1W±0°.1, h33km, mb4.1/8, Error ellipse: s-maj=15.9km s-min=7.1km az=146.3*
ISC 07 21:11:33.6±0.7**, 17°.52N**±0°.09×**85°.0W**±0°.1**, h35**km**, n17,** σ**1s.00**/18**, mb4.2**/8**, North of Honduras**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
TEIG	Tepich	4.08	312	Pn	Pn	21 12 31.9	-1.5
	47nm,0.3s,baz=89,slow=23,SNR=19						
TEIG	Tepich	4.08	312	ePn	Pn	21 12 32.1	-1.3
TEIG				eSn	Sn	21 13 19.0	-1.0
JTS	JuntasAbangare	7.19	179	ePn	Pn	21 13 15.9	-0.5
DWPF	Disney Wildern	11.05	17	ePn	Pn	21 14 08.5	-0.7
SDV	Santo Domingo	16.44	120	Pn	Pn	21 15 20.7	-1.2
	0.6nm,0.3s,baz=28,slow=3.0,SNR=3.6						
SDV	Santo Domingo	16.44	120	ePn	Pn	21 15 20.9	-1.0
	6.3nm,0.8s						
OTAV	Otavalo	18.36	159	ePn	P	21 15 46.0	0.0
	1.7nm,0.6s						
TXAR	Lajitas Array	20.71	308	P	P	21 16 11.5	+0.4
	1.7nm,0.6s,baz=128,slow=12,SNR=2.5						
KSU1	Kansas State U	23.75	337	eP	P	21 16 43.2	+0.5
	5.5nm,0.4s						
SADO	Sadowa	27.61	9	P	P	21 17 18.4	+0.7
	3.2nm,0.7s,baz=255,slow=16,SNR=2.5						
NNA	Nana	30.42	164	eP	P	21 17 43.1	+0.1
	9.3nm,0.6s						
PDAR	Pinedale Array	32.67	326	P	P	21 18 02.9	+0.1
	1.2nm,0.9s,baz=108,slow=12,SNR=4.4						
CMB	Columbia Colle	37.04	311	eP	P	21 18 41.0	+0.6
	3.7nm,0.4s						
YKA	Yellowknife Ar	49.43	342	P	P	21 20 20.5	+0.7
	0.3nm,0.7s,baz=138,slow=7.9,SNR=3.8						
ILAR	Eielson Array	62.40	335	P	P	21 21 53.1	+0.5
	0.7nm,0.8s,baz=108,slow=4.8,SNR=6.0						
COLA	College	62.82	335	eP	P	21 21 55.7	+0.3
	1.4nm,0.5s						
ASAR	Alice Springs	143.12	254	PKP	PKPdf	21 31 06.8	+2.1
	0.6nm,0.8s,baz=101,slow=3.7,SNR=4.2						

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*NIED **07** 21:13:00, 36°.70N×142°.70E, h17km, Mw4.3 Best double couple: $M_0$2.92000×10^15 NP1:ϕ_s177.00000°, δ26.00000°, λ28.00000°. NP2:ϕ_s61.00000°, δ78.00000°, λ113.00000°.*
*NEIC **07** 21:13:37.8±3.0, 36°.60N×142°.90E, h6km±19km, mb4.6/9, Error ellipse: s-maj=8.2km s-min=7.0km az=113.0*
*IDC **07** 21:13:37.1±0.6, 36°.60N×142°.85E, h0km, mb4.1/25, mb1 4.3/31, mb1mx4.2/66, mbtmp4.2/31, ML3.6/5, MS3.9/2, Ms1 3.9/2, ms1mx3.2/42, Error ellipse: s-maj=14.5km s-min=12.5km az=109.0*
*ISCJB **07** 21:13:40.2±0.4, 36°.69N±0°.04×142°.70E±0°.04, h29km, mb4.3/35, MS4.5/1, Error ellipse: s-maj=5.9km s-min=4.4km az=151.9*
*JMA **07** 21:13:40.7±0.2, 36°.73N×142°.67E, h63km, M4.3*
ISC 07 21:13:41.7±0.5**, 36°.66N**±0°.05×**142°.77E**±0°.06**, h29**km**, n81,** σ**1s.49**/79**, mb4.3**/35**, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
ONAJ	Iwakimizuishiy	1.64	286	P	Pn	21 14 06.8	-1.9
ONAJ				S	Sn	21 14 26.0	-2.9
JFK	Kawauchi	1.67	295	P	Pn	21 14 06.7	-2.4
JFK				S	Sn	21 14 26.1	-3.5
JHO	Hitachi	1.77	269	P	Pn	21 14 08.4	-2.0
JHO				S	Sn	21 14 28.9	-3.1
CHOJ	Chosi	1.82	239	P	Pn	21 14 10.4	-0.7
JMM	Marumori	1.98	308	P	Pn	21 14 11.0	-2.3
JFT	Otama	2.13	294	P	Pn	21 14 13.9	-1.4
JOU	Okura	2.39	316	P	Pn	21 14 16.9	-2.0
BSO1	Boso 1	2.48	217	P	Pn	21 14 19.1	-0.6
BSO1				eS	Sn	21 14 48.6	-0.1
JMK	Ichinoseki	2.59	332	P	Pn	21 14 19.6	-2.1
JAG	Ashikaga	2.68	266	P	Pn	21 14 21.6	-1.4
JYK	Kaneyama	2.95	320	P	Pn	21 14 24.3	-2.4
JOM	Ohasama	3.04	338	P	Pn	21 14 25.7	-2.1
JRY	Ryogami san	3.19	259	P	Pn	21 14 28.5	-1.5
JRY				eS	Sn	21 15 03.7	-3.4
JOD2	Odawara 2	3.30	246	P	Pn	21 14 31.0	-0.4
MJAR	Matsushiro Arr	3.67	269	Pn	Pn	21 14 36.4	-0.2
	30nm,0.3s,baz=91,slow=13,SNR=213						
MAJO	Matsushiro	3.68	269	ePn	Pn	21 14 36.5	-0.2
MAJO				ePg	Pb	21 14 47.8	+1.8
MAJO				eSn	Sn	21 15 21.0	+2.0
MAT	Matsushiro	3.68	269	P	Pn	21 14 36.8	+0.2
MAT				eS	Sn	21 15 16.5	-2.5
JHJ	Hachijo jima 2	4.30	216	Pn	Pn	21 14 43.0	-2.2
	45nm,0.3s,baz=340,slow=22,SNR=23						
JHJ				Sn	Sn	21 15 29.0	-5.5
	108nm,0.3s,baz=283,slow=23,SNR=9.4						
CBIJ	Chichi jima	9.55	183	Pn	Pn	21 15 53.5	-3.8
JCJ	Chichijima	9.55	183	Pn	Pn	21 15 53.5	-3.8
	16nm,0.3s,baz=2.8,slow=18,SNR=11						
YSS	Yuzh-Sakhalins	10.28	360	ePn	Pn	21 16 06.0	-1.2
	27nm,0.8s						
JNU	Nakatsue	10.39	254	Pn	Pn	21 16 10.1	+1.4
	0.2nm,0.3s,baz=113,slow=7.7,SNR=3.7						
JNU				LR	LR	21 20 42.6	
	comp=Z,196nm,20.5s,baz=147,slow=41						
USRK	Ussuriysk Ar.	11.14	316	Pn	Pn	21 16 20.5	+1.6
	0.4nm,0.3s,baz=123,slow=12,SNR=12						
KSRS	Korea Array	11.89	278	Pn	Pn	21 16 31.2	+2.0
	0.3nm,0.3s,baz=89,slow=13,SNR=19						
KSAR	Wonju Array Be	11.93	278	Pn	Pn	21 16 31.2	+1.5
KLR	Kul'dur	14.91	331	Pn	Pn	21 17 06.6	-3.7
	0.2nm,0.3s,baz=128,slow=12,SNR=6.2						
MA2	Magadan	23.51	10	P	P	21 18 48.1	-0.8
	2.6nm,0.3s,baz=217,slow=6.1,SNR=4.5						
MA2	Magadan	23.51	10	eP	P	21 18 48.5	-0.5
SEY	Seymchan	26.96	10	P	P	21 19 21.5	+1.1
	1.2nm,0.4s,baz=171,slow=24,SNR=5.1						
H11N2	WAKE ISLAND Hy	27.02	122	T	T	21 47 48.4	
	baz=314,slow=75,SNR=9.3						
H11N1	WAKE ISLAND Hy	27.03	122	T	T	21 47 49.1	
	baz=314,slow=75,SNR=7.2						
H11N3	WAKE ISLAND Hy	27.04	122	T	T	21 47 42.0	
	baz=314,slow=75,SNR=6.3						
H11S1	WAKE ISLAND Hy	27.75	124	T	T	21 48 40.7	
H11S3	WAKE ISLAND Hy	27.75	124	T	T	21 48 45.4	
	baz=255,slow=74,SNR=3.7						
H11S2	WAKE ISLAND Hy	27.76	124	T	T	21 48 43.9	
	baz=314,slow=74,SNR=6.8						
ENH	Enshi	28.39	267	eP	P	21 19 33.5	-0.1
	46nm,0.8s						
ULN	Ulaanbaatar	28.46	304	eP	P	21 19 34.2	-0.1
	13nm,1.0s						
SONM	Songino Array	28.90	304	P	P	21 19 38.6	+0.6
	7.5nm,0.8s,baz=103,slow=8.7,SNR=28						
TLY	Talaya	31.40	311	P	P	21 20 00.1	+0.1
	3.1nm,0.5s,baz=59,slow=2.5,SNR=6.9						
TLY	Talaya	31.40	311	eP	P	21 20 00.3	+0.3
TIXI	Tiksi	35.79	353	P	P	21 20 37.4	-0.5
	0.9nm,0.7s,baz=128,slow=5.7,SNR=2.5						
CMAR	Chiang Mai Arr	42.47	257	P	P	21 21 33.9	-0.5
	0.3nm,0.4s,baz=37,slow=6.8,SNR=2.6						
ZALV	Zalesovo Beam	42.97	313	P	P	21 21 38.0	0.0
	4.4nm,0.8s,baz=98,slow=5.6,SNR=17						
LSA	Lhasa	43.33	276	eP	P	21 21 42.4	+0.6
	6.3nm,1.1s						
NRIK	Noril'sk	44.06	335	P	P	21 21 47.4	+0.8
	1.2nm,0.3s,baz=143,slow=2.8,SNR=3.6						
MKAR	Makanchi Array	45.24	303	P	P	21 21 56.4	+0.1
	2.3nm,0.7s,baz=88,slow=10.0,SNR=37						
KURK	Kurchatov	47.02	309	eP	P	21 22 09.8	-0.3
	22nm,0.8s						
TAPN	Taplejung	47.06	275	eP	P	21 22 11.3	+0.1
	12nm,0.8s						
ODAN	Odare	47.53	275	eP	P	21 22 15.4	+0.6
	25nm,1.1s						
RAMN	Ramite	48.12	275	eP	P	21 22 19.4	0.0
	37nm,1.0s						
GUN	Gumba	48.28	277	eP	P	21 22 21.3	+0.6
	13nm,0.4s						
HNR	Honiara	48.61	157	LR	LR	21 41 20.1	
	comp=Z,493nm,20.7s,baz=73,slow=34						
KKN	Kakani	48.81	277	eP	P	21 22 25.1	+0.4
	24nm,0.9s						
ILAR	Eielson Array	49.22	32	P	P	21 22 26.6	-0.5
	1.8nm,0.8s,baz=264,slow=6.7,SNR=13						
GKN	Gorkha	49.23	277	eP	P	21 22 27.9	+0.1
	33nm,0.9s						
PYUN	Piuthan	50.50	278	eP	P	21 22 38.2	+0.7
TKM2	Tokmak 2	50.76	299	eP	P	21 22 39.9	+0.6
	6.4nm,0.8s						

AAK	Ala-Archa	51.62	299	eP	P	21 22 45.1	-0.6
	3.7nm,1.0s						
BVAR	Borovoye Array	51.63	313	P	P	21 22 44.9	-0.5
	0.6nm,0.4s,baz=65,slow=8.4,SNR=5.9						
EKS2	Erkin-Say	52.12	299	eP	P	21 22 49.7	+0.3
	1.1nm,0.6s						
WRA	Warramunga Arr	56.86	189	P	P	21 23 22.8	-1.0
	6.8nm,0.9s,baz=9.8,slow=7.4,SNR=26						
ARU	Arti	57.36	319	P	P	21 23 26.6	-0.3
	2.0nm,0.5s,baz=59,slow=3.0,SNR=5.7						
ARU	Arti	57.36	319	eP	P	21 23 27.2	+0.3
ABKAR	Akbulak array	59.01	311	eP	P	21 23 38.4	-0.2
	3.8nm,0.8s						
ASAR	Alice Springs	60.59	189	P	P	21 23 49.4	-0.3
	4.1nm,0.8s,baz=11,slow=6.6,SNR=37						
RES	Resolute Bay	62.69	15	P	P	21 24 03.6	+0.4
	1.4nm,0.5s,baz=305,slow=4.8,SNR=4.9						
YKA	Yellowknife Ar	63.58	30	P	P	21 24 09.5	+0.3
	0.6nm,0.7s,baz=299,slow=6.5,SNR=9.8						
GEYT	Alibeck	64.97	300	P	P	21 24 19.2	+0.3
	1.7nm,0.8s,baz=72,slow=4.8,SNR=5.2						
STKA	Stephens Creek	68.19	181	P	P	21 24 39.4	+0.2
	2.5nm,0.9s,baz=8.4,slow=7.8,SNR=3.1						
FINES	FINESS Array B	69.65	333	P	P	21 24 50.1	+2.1
	2.9nm,0.8s,baz=72,slow=6.2,SNR=4.5						
KBZ	Khabaz	71.97	311	P	P	21 25 02.5	0.0
	4.2nm,0.9s,baz=266,slow=0.9,SNR=6.7						
KIV	Kislovodsk	71.97	312	eP	P	21 25 03.1	+0.5
	9.1nm,0.9s						
NVAR	Mina Array Bea	74.33	54	P	P	21 25 17.4	+0.6
	1.5nm,0.8s,baz=280,slow=6.0,SNR=7.5						
AKASG	Malin Array Be	75.25	323	P	P	21 25 21.6	0.0
	1.7nm,0.7s,baz=41,slow=6.4,SNR=7.4						
PDAR	Pinedale Array	77.14	46	P	P	21 25 33.3	+0.4
	0.5nm,0.7s,baz=262,slow=3.0,SNR=4.1						
BRTR	Keskin Array B	79.91	312	P	P	21 25 49.5	+1.5
	1.6nm,1.0s,baz=139,slow=4.6,SNR=4.9						
KHC	Kasperske Hory	83.42	329	eP	P	21 26 07.2	+0.9
TXAR	Lajitas Array	89.48	53	P	P	21 26 36.1	-0.3
	0.5nm,0.7s,baz=343,slow=2.6,SNR=4.1						
H06S1	SOCORRO T	91.36	66	T	T	23 06 34.5	
	SNR=17						
BLA	Blacksburg	96.31	33	eP	P	21 27 05.5	-2.2
	16nm,0.6s						
LPAZ	La Paz	145.92	62	PKPbc	PKPdf	21 33 18.8	-0.2
	1.0nm,0.5s,baz=270,slow=3.7,SNR=3.8						

IDC 07 21:21:07.8±2.2, 6.26S×129.67E, h0km, mb3.1/1, mb1 3.7/3, mb1mx3.4/26, mbtmp3.4/3, ML4.0/1, Error ellipse: s-maj=147.5km s-min=30.8km az=69.0, Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
WRA	Warramunga Arr	14.34	162	Pn	Pn	21 24 34.2	+2.0
	baz=346,slow=13,SNR=3.5						
WRA				Sn	Sn	21 26 58.1	-14
	0.2nm,0.3s,baz=336,slow=22,SNR=4.2						
ASAR	Alice Springs	17.78	167	P	Pn	21 25 15.8	-1.2
	0.5nm,0.3s,baz=339,slow=9.5,SNR=23						
MKAR	Makanchi Array	67.43	327	P	P	21 32 05.4	0.0
	0.1nm,0.5s,baz=116,slow=8.2,SNR=3.2						

IDC 07 21:25:46.8±2.2, 6.37S×128.21E, h0km, mb3.2/1, mb1 3.9/3, mb1mx3.4/24, mbtmp3.6/3, ML3.7/2, Error ellipse: s-maj=125.0km s-min=32.6km az=66.0, Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
WRA	Warramunga Arr	14.74	157	Pn	Pn	21 29 19.0	+2.1
	0.2nm,0.3s,baz=335,slow=13,SNR=5.2						
WRA				Sn	Sn	21 31 59.4	-1.8
	0.1nm,0.3s,baz=337,slow=20,SNR=1.8						
ASAR	Alice Springs	18.05	163	P	Pn	21 29 58.0	-1.3
	0.5nm,0.3s,baz=344,slow=11,SNR=14						
MKAR	Makanchi Array	66.74	328	P	P	21 36 40.0	+0.1
	0.1nm,0.4s,baz=128,slow=9.3,SNR=2.2						

ISCJB 07 21:33:31.4±0.6, 6.76N±0.04×73.06W±0.05, h156km±5km, Error ellipse: s-maj=10.0km s-min=4.4km az=38.9
FUNV 07 21:33:32.0, 6.77N×73.11W, h175km, MW2.4
RSNC 07 21:33:33.9±0.7, 6.73N×73.08W, h143km±4km, ML2.6
ISC 07 21:33:30.4±1.4, 6.79N±0.05×73.06W±0.05, h166km±8km, n21, σ1.68/38, Northern Colombia

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
BARC	Barichara	0.23	213	eP	Pn	21 33 53.2	+0.1
BARC				eS	Sn	21 34 08.1	-2.3
BARC				i		21 34 10.3	
	comp=Z,79nm,0.2s						
BTLC	Betulia, Santa	0.25	301	eP	Pn	21 33 53.6	+0.6
BTLC				eS	Sn	21 34 08.2	-2.1
GIRC	Giron, Santand	0.32	335	eP	Pn	21 33 53.5	+0.4
GIRC				eS	Sn	21 34 08.6	-1.9
PAMC	Pamplona, Colo	0.65	33	eP	Pn	21 33 56.1	+1.1
PAMC				eS	Sn	21 34 13.0	-0.8
BRRC	Barranca, Sant	0.72	296	eP	Pn	21 33 55.2	+0.4
BRRC				eS	Sn	21 34 12.4	-1.1
BRRC				i		21 34 13.6	
	comp=Z,100nm,0.1s						
GRMC	Gramalote, San	0.96	15	i P	Pn	21 33 59.3	+2.7
GRMC				eS	Sn	21 34 18.9	+2.1
GRMC				i		21 34 20.2	
	comp=Z,47nm,0.4s						
CAPV	Capacho	1.30	35	eP	Pn	21 34 01.3	+1.7
CAPV				eS	Sn	21 34 23.4	+1.4
OCAC	Ocana	1.46	350	eP	Pn	21 34 02.3	+1.2
OCAC				i		21 34 29.7	
	comp=Z,114nm,0.1s						
YOPC	Yopal, Colombi	1.56	156	eP	Pn	21 34 03.5	+1.4
YOPC				i		21 34 04.2	
	comp=Z,21nm,0.4s						
YOPC				eS	Sn	21 34 25.0	-1.4
NORC	Norcasia	2.17	236	eP	Pn	21 34 09.1	+0.5
NORC				eS	Sn	21 34 37.5	-0.6
CHIC	Chingaza	2.25	197	eP	Pn	21 34 11.1	+1.2
CHIC				eS	Sn	21 34 39.8	-0.5
CHIC				i		21 34 44.4	
	comp=Z,17nm,0.5s						
HELC	Santa Helena	2.53	257	eP	Pn	21 34 13.9	+0.8
HELC				i		21 34 52.0	
	comp=Z,20nm,0.3s						
VIGV	El Vigia	2.64	39	eP	Pn	21 34 15.4	+1.3
VIGV				eS	Sn	21 34 48.5	+0.5
SOCV	Socops	2.64	56	eP	Pn	21 34 16.0	+1.9
SOCV				eS	Sn	21 34 48.2	+0.3
GUYC	Guyana, Colomb	2.79	236	eP	Pn	21 34 18.2	+1.8
GUYC				eS	Sn	21 34 51.4	-0.6
GUYC				i		21 34 58.0	
	comp=Z,38nm,0.5s						
PRAC	Prado	3.56	211	eP	Pn	21 34 26.4	+0.8
PRAC				eS	Sn	21 35 08.0	-0.4
VIRV	Villa del Rosa	3.75	10	eP	Pn	21 34 28.6	+0.7
VIRV				eS	Sn	21 35 10.5	-2.3
CURV	Curarigua	4.43	44	eP	Pn	21 34 38.1	+1.3
BAUV	El Baul	5.41	66	eP	Pn	21 34 50.1	+0.5
BAUV				eS	Sn	21 35 47.4	-4.1
MAPV	Macapo	5.46	56	eP	Pn	21 34 51.1	+0.9
MONV	Montecano	5.97	30	eP	Pn	21 34 57.5	+0.6
MONV				eS	Sn	21 36 00.5	-4.3

IDC 07 21:34:30.9±9.6, 36.63N×143.99E, h0km, mb3.6/2, mb1 3.9/3, mb1mx3.3/36, mbtmp3.6/3, ML3.7/1, Error ellipse: s-maj=209.1km s-min=47.0km az=30.0, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
MJAR	Matsushiro Arr	4.66	271	Pn	Pn	21 35 42.1	-0.5
	3.4nm,0.3s,baz=89,slow=15,SNR=6.6						
MAT	Matsushiro	4.66	271	P	Pn	21 35 42.9	+0.4
MAT				eS	Sn	21 36 33.8	-3.5
WRA	Warramunga Arr	57.00	191	P	P	21 44 18.6	+0.1
	0.7nm,0.5s,baz=9.0,slow=7.1,SNR=8.4						
ASAR	Alice Springs	60.72	191	P	P	21 44 44.1	-0.2
	0.1nm,0.5s,baz=7.0,slow=8.4,SNR=2.5						

JMA 07 21:34:49.3, 35.85N×140.92E, h14km±1km, M2.6, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
CHOJ	Chosi	0.15	199	P	Pg	21 34 53.2	+0.1
CHOJ				S	Sg	21 34 56.2	+0.5
JYT	Yasato	0.70	303	P	Pg	21 35 02.5	-0.4
JYT				S	Sg	21 35 12.3	+0.2
JHO	Hitachi	0.81	340	P	Pg	21 35 04.5	-0.5
JHO				S	Sg	21 35 15.2	-0.5
BSO4	Boso 4	0.98	209	P	Pb	21 35 07.6	-0.4

IDC 07 21:42:44.5±0.7, 38.35N×141.97E, h0km, mb3.8/12, mb1 4.1/12, mb1mx3.8/36, mbtmp3.8/12, MS4.5/1, Ms1 4.5/1, ms1mx3.2/42, Error ellipse: s-maj=22.6km s-min=18.7km az=89.0
NEIC 07 21:42:50.0±0.7, 38.44N×142.23E, h35km, mb4.2/4, Error ellipse: s-maj=17.0km s-min=12.1km az=147.0
ISCJB 07 21:42:51.7±0.9, 38.40N±0.04×141.97E±0.09, h67km±6km, mb3.8/16, Error ellipse: s-maj=12.3km s-min=6.3km az=9.1
JMA 07 21:42:52.8±0.1, 38.41N×141.91E, h61km±3km, M3.9
JMA Felt II J1.
ISC 07 21:42:52.0±1.5, 38.39N±0.05×142.07E±0.10, h56km±12km, n40, σ1.38/44, mb3.8/16, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
JMK	Ichinoseki	0.87	311	P	Pn	21 43 08.2	0.0
JMK				S	Sn	21 43 19.1	-1.0
JOU	Okura	1.10	269	P	Pn	21 43 10.9	-0.4
JOU				S	Sn	21 43 24.1	-1.5
JMM	Marumori	1.13	243	P	Pn	21 43 11.3	-0.3
JMM				S	Sn	21 43 24.8	-1.4
JOM	Ohasama	1.24	331	P	Pn	21 43 13.4	+0.3
JOM				S	Sn	21 43 28.4	-0.5
JFK	Kawauchi	1.39	223	P	Pn	21 43 15.5	+0.4
JFK				S	Sn	21 43 31.9	-0.6
JYK	Kaneyama	1.44	292	P	Pn	21 43 15.4	-0.4
JYK				eS	Sn	21 43 32.1	-1.6
JYS	Shirataka	1.59	265	P	Pn	21 43 17.5	-0.3
JYS				S	Sn	21 43 36.0	-1.2
JFT	Otama	1.62	238	P	Pn	21 43 18.7	+0.4
JFT				S	Sn	21 43 37.1	-1.0
MJAR	Matsushiro Arr	3.58	240	Pn	Pn	21 43 46.2	+1.1
	6.8nm,0.3s,baz=34,slow=12,SNR=52						
MAJO	Matsushiro	3.58	240	ePn	Pn	21 43 46.7	+1.6
MAT	Matsushiro	3.58	240	P	Pn	21 43 46.7	+1.6
MAT				eS	Sn	21 44 31.1	+5.0
JHJ	Hachijo jima 2	5.57	200	Pn	Pn	21 44 12.4	0.0
	7.6nm,0.3s,baz=99,slow=22,SNR=3.8						
JHJ				Sn	Sn	21 45 11.4	-3.6
	21nm,0.3s,baz=117,slow=22,SNR=6.8						
USRK	Ussuriysk Ar.	9.55	311	Pn	Pn	21 45 07.1	+0.3
	0.9nm,0.3s,baz=115,slow=14,SNR=11						
KSRS	Korea Array	11.22	270	Pn	Pn	21 45 32.0	+2.5
	0.7nm,0.3s,baz=79,slow=14,SNR=6.5						
MDJ	Mudanjiang	11.23	308	ePn	Pn	21 45 31.2	+1.5
KSAR	Wonju Array Be	11.25	270	Pn	Pn	21 45 32.0	+2.0
SONM	Songino Array	27.49	302	P	P	21 48 32.6	-0.5
	0.6nm,0.7s,baz=107,slow=9.0,SNR=3.2						
ENH	Enshi	27.99	263	eP	P	21 48 37.1	-0.5
	5.2nm,0.6s						
H11N2	WAKE ISLAND Hy	28.43	124	T	T	22 19 20.6	
	baz=316,slow=76,SNR=364						
H11N1	WAKE ISLAND Hy	28.44	124	T	T	22 19 04.4	
	baz=316,slow=76,SNR=329						
H11N3	WAKE ISLAND Hy	28.45	124	T	T	22 19 22.0	
	baz=316,slow=76,SNR=283						
H11S1	WAKE ISLAND Hy	29.19	126	T	T	22 20 03.1	
	baz=318,slow=76,SNR=23						
H11S3	WAKE ISLAND Hy	29.19	126	T	T	22 20 00.8	
	baz=318,slow=76,SNR=28						
H11S2	WAKE ISLAND Hy	29.21	126	T	T	22 20 09.4	
	baz=318,slow=76,SNR=26						
ZALV	Zalesovo Beam	41.40	311	P	P	21 50 32.5	-0.1
	2.1nm,0.5s,baz=87,slow=8.5,SNR=15						
ZALV				PcP	PcP	21 52 29.0	-0.7
	0.5nm,0.3s,baz=94,slow=4.5,SNR=4.3						
MKAR	Makanchi Array	43.86	301	P	P	21 50 52.7	0.0
	0.8nm,0.5s,baz=86,slow=10.0,SNR=14						
KURK	Kurchatov	45.52	307	eP	P	21 51 04.6	-1.2
	7.6nm,0.6s						
ILAR	Eielson Array	48.08	33	P	P	21 51 26.6	+1.0
	0.4nm,0.7s,baz=272,slow=5.5,SNR=5.6						
EKS2	Erkin-Say	50.81	298	eP	P	21 51 46.9	+0.1
	0.4nm,0.4s						
INK	Inuvik	52.95	28	P	P	21 52 03.2	+1.0
	0.6nm,0.7s,baz=174,slow=2.6,SNR=3.1						
LEM	Lembang	55.22	223	LR	LR	22 14 47.7	
	comp=Z,434nm,20.6s,slow=35						
ABKAR	Akbulak array	57.47	310	eP	P	21 52 34.2	-0.8
	0.6nm,0.3s						
WRA	Warramunga Arr	58.47	189	P	P	21 52 41.9	-0.5
	2.3nm,0.5s,baz=5.7,slow=7.0,SNR=41						
ASAR	Alice Springs	62.20	188	P	P	21 53 07.6	-0.1
	1.0nm,0.7s,baz=7.2,slow=5.5,SNR=10						
YKA	Yellowknife Ar	62.38	31	P	P	21 53 09.0	+0.5
	0.4nm,1.1s,baz=300,slow=6.4,SNR=6.4						
FINES	FINESS Array B	67.86	332	P	P	21 53 43.2	-0.8
	2.2nm,0.8s,baz=36,slow=10,SNR=4.4						
NOA	NORSAR Array B	73.14	337	P	P	21 54 15.9	-0.4
	0.8nm,0.6s,baz=37,slow=6.1,SNR=3.3						
PDAR	Pinedale Array	76.35	46	P	P	21 54 36.0	+0.6
	0.5nm,0.5s,baz=262,slow=1.4,SNR=6.1						
GERES	GERESS Array B	81.84	328	P	P	21 55 04.6	-0.5
	0.3nm,0.4s,baz=28,slow=4.4,SNR=2.5						
LPAZ	La Paz	145.55	59	PKPbc	PKPbc	22 02 25.8	+0.5
	1.1nm,0.5s,baz=357,slow=2.1,SNR=5.9						

IDC 07 21:46:16.9±53.0, 48.90S×124.57E, h0km, mb3.6/3, mb1 3.8/3, mb1mx3.6/18, mbtmp3.7/3, Error ellipse: s-maj=883.4km s-min=116.0km az=9.0, Western Indian-Antarctic Ridge

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
STKA	Stephens Creek	21.30	43	P	P	21 51 04.8	-0.2
	1.5nm,0.6s,baz=194,slow=13,SNR=5.4						
ASAR	Alice Springs	26.24	20	P	P	21 51 53.7	+0.1
	1.4nm,1.1s,baz=192,slow=9.2,SNR=5.0						
WRA	Warramunga Arr	29.94	19	P	P	21 52 26.7	+0.1
	1.2nm,1.1s,baz=196,slow=8.6,SNR=3.3						

IDC 07 21:55:16.8±2.6, 38.64N×142.65E, h0km, mb3.4/3, mb1 3.5/4, mb1mx3.3/29, mbtmp3.3/4, ML3.2/1, MS4.1/1, Ms1 4.1/1, ms1mx3.1/35, Error ellipse: s-maj=66.3km s-min=30.4km az=70.0
ISCJB 07 21:55:26.5±1.2, 38.40N±0.05×141.9E±0.1, h68km±9km, mb3.4/3, Error ellipse: s-maj=17.1km s-min=7.1km az=11.3
JMA 07 21:55:26.8±0.1, 38.40N×141.91E, h58km±3km, M4.1
JMA Felt I J1.
ISC 07 21:55:26.8±1.8, 38.40N±0.05×141.9E±0.1, h57km±14km, n15, σ1.03/23, mb3.5/3, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
JMK	Ichinoseki	0.79	315	P	Pn	21 55 42.1	+0.2
JMK				S	Sn	21 55 52.9	-0.1
JOU	Okura	1.00	268	P	Pn	21 55 44.7	0.0
JOU				S	Sn	21 55 57.9	-0.1
JMM	Marumori	1.05	240	P	Pn	21 55 45.1	-0.2
JMM				S	Sn	21 55 58.4	-0.6
JOM	Ohasama	1.18	335	P	Pn	21 55 47.4	+0.3
JOM				S	Sn	21 56 02.7	+0.4
JFK	Kawauchi	1.33	219	P	Pn	21 55 49.2	0.0
JFK				S	Sn	21 56 05.9	0.0
JYK	Kaneyama	1.34	293	P	Pn	21 55 49.4	+0.2
JYK				eS	Sn	21 56 06.1	+0.1
JYS	Shirataka	1.48	264	P	Pn	21 55 51.5	+0.3
JYS				S	Sn	21 56 10.0	+0.5
JFT	Otama	1.54	236	P	Pn	21 55 52.6	+0.6
JFT				S	Sn	21 56 10.9	0.0
JYA	Atsumi	1.75	277	P	Pn	21 55 55.1	+0.3
MJAR	Matsushiro Arr	3.50	239	Pn	Pn	21 56 20.9	+2.2
	1.6nm,0.3s,baz=34,slow=13,SNR=12						
MAT	Matsushiro	3.50	239	P	Pn	21 56 21.2	+2.5
MAT				eS	Sn	21 56 56.2	-2.7
JOW	Kunigami	16.27	229	LR	LR	22 05 20.0	
	comp=Z,643nm,20.9s,baz=272,slow=36						
ZALV	Zalesovo Beam	41.31	311	P	P	22 03 06.0	-0.5
	0.5nm,0.4s,baz=73,slow=8.9,SNR=3.0						
MKAR	Makanchi Array	43.76	301	P	P	22 03 26.5	0.0
	0.2nm,0.5s,baz=82,slow=9.8,SNR=4.6						
WRA	Warramunga Arr	58.47	188	P	P	22 05 16.6	-0.3
	0.2nm,0.5s,baz=4.9,slow=7.3,SNR=4.1						

IDC 07 21:57:38.0±3.1, 38.29N×142.65E, h0km, mb3.6/2, mb1 3.6/4, mb1mx3.3/40, mbtmp3.4/4, ML2.7/2, Error ellipse: s-maj=71.1km s-min=33.8km az=64.0
ISCJB 07 21:57:47.0±1.3, 38.18N±0.05×142.0E±0.1, h63km±11km, mb3.5/2, Error ellipse: s-maj=17.9km s-min=7.0km az=16.3
JMA 07 21:57:48.0±0.1, 38.18N×141.88E, h56km±3km, M3.9
JMA Felt II J1.
ISC 07 21:57:47.3±2.1, 38.17N±0.07×142.0E±0.1, h50km±19km, n15, σ0.98/23, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
JMK	Ichinoseki	0.99	323	P	Pn	21 58 05.4	+0.5
JMK				S	Sn	21 58 17.6	-0.2
JMM	Marumori	0.99	253	P	Pn	21 58 04.7	-0.2
JMM				S	Sn	21 58 17.0	-0.9
JOU	Okura	1.06	281	P	Pn	21 58 05.9	0.0
JOU				S	Sn	21 58 18.7	-0.9
JFK	Kawauchi	1.19	228	P	Pn	21 58 07.9	+0.2
JFK				S	Sn	21 58 22.5	-0.3
JOM	Ohasama	1.41	338	P	Pn	21 58 11.2	+0.6
JOM				S	Sn	21 58 28.5	+0.4
JFT	Otama	1.46	244	P	Pn	21 58 11.8	+0.5
JFT				S	Sn	21 58 28.9	-0.4
JYK	Kaneyama	1.48	301	P	Pn	21 58 11.6	0.0
JYS	Shirataka	1.52	273	P	Pn	21 58 12.2	+0.2
JYS				S	Sn	21 58 30.5	-0.2
JYA	Atsumi	1.84	284	P	Pn	21 58 16.3	-0.1
JNS	Sasagawa	2.14	261	P	Pn	21 58 20.7	+0.2
MJAR	Matsushiro Arr	3.42	243	Pn	Pn	21 58 39.4	+1.3
	1.4nm,0.3s,baz=62,slow=10,SNR=5.2						
MAT	Matsushiro	3.42	243	P	Pn	21 58 40.3	+2.1
MAT				eS	Sn	21 59 20.2	+2.7
USRK	Ussuriysk Ar.	9.65	312	Pn	Pn	22 00 04.3	+0.9
	0.2nm,0.3s,baz=125,slow=13,SNR=4.7						
MKAR	Makanchi Array	43.91	301	P	P	22 05 48.6	-0.3
	0.4nm,0.6s,baz=84,slow=9.7,SNR=6.5						
WRA	Warramunga Arr	58.25	188	P	P	22 07 35.7	-0.9
	0.7nm,0.9s,baz=5.9,slow=7.0,SNR=3.4						

NIED 07 22:02:00, 39.10N×143.00E, h20km, Mw5.0 Best double couple: $M_0$3.55000×10[16] NP1:ϕ_s172.00000°, δ20.00000°, λ53.00000°. NP2:ϕ_s30.00000°, δ74.00000°, λ102.00000°.
IDC 07 22:02:13.7±0.5, 39.15N×142.98E, h0km, mb4.7/33, mb1 4.8/36, mb1mx4.7/48, mbtmp4.7/36, ML4.2/3, MS4.7/29, Ms1 4.7/29, ms1mx4.4/47, Error ellipse: s-maj=14.4km s-min=10.5km az=109.0
JMA 07 22:02:15.4±0.2, 39.10N×143.02E, h8km, M5.0
JMA Felt II J1.
ISCJB 07 22:02:16.0±0.8, 39.19N±0.02×142.91E±0.03, h21km±5km, mb5.0/170, MS4.8/57, Error ellipse: s-maj=4.8km s-min=3.3km az=43.0
BJI 07 22:02:16.3, 39.10N×142.90E, h34km, mb5.1/80, mB5.3/52, Ms4.9/73, Ms7 4.8/70
MOS 07 22:02:17.2±0.9, 39.31N×142.86E, h27km, mb5.4/64, MS4.9/31, Error ellipse: s-maj=6.9km s-min=4.1km az=107.2
NEIC 07 22:02:19.9±0.6, 39.14N×142.89E, h41km±5km, mb5.1/82, Error ellipse: s-maj=5.6km s-min=3.7km az=124.0
ISC 07 22:02:18.2±0.4, 39.20N±0.04×142.94E±0.04, h27km±2km, h27km:pP-P, n468, σ1.29/501, mb5.1/174, MS4.9/57, 43C-21D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
JOM	Ohasama	1.30	283	⇓P	Pn	22 02 40.9	+0.3
JOM				S	Sb	22 02 59.0	+0.6
JMK	Ichinoseki	1.36	260	⇓P	Pn	22 02 41.3	0.0
JMK				S	Sb	22 03 00.3	+0.4
JOU	Okura	1.96	246	P	Pn	22 02 49.9	+0.2
JOU				eS	Sb	22 03 15.9	-1.4
JYK	Kaneyama	2.03	263	P	Pn	22 02 51.8	+1.3
JMM	Marumori	2.15	232	P	Pn	22 02 51.6	-0.6
ERM	Erimo	2.82	3	ceP	Pn	22 03 00.5	-0.9
ERM				pmax	pmax		
	comp=Z,269nm,1.2s						
ERM	Erimo	2.82	3	ePn	Pn	22 03 01.1	-0.3
MJAR	Matsushiro Arr	4.59	236	Pn	Pn	22 03 27.5	+1.7
	comp=Z,44nm,0.3s,baz=45,slow=12,SNR=362						
MJAR				LR	LR	22 05 20.9	
	comp=Z,5µm,21.7s,baz=50,slow=41						
MAJO	Matsushiro	4.59	236	eP	Pn	22 03 27.4	+1.6
MAJO	Matsushiro	4.59	236	ePn	Pn	22 03 27.4	+1.6
MAT	Matsushiro	4.59	236	P	Pn	22 03 28.0	+2.2
MAT				eS	Sn	22 04 20.8	+2.6
YUK	Yuzh-Kuril'sk	5.30	23	eP	Pn	22 03 34.5	-1.0
YUK				i S	Sn	22 04 30.1	-5.6
YUK				pmax	pmax		
	comp=Z,365nm,0.3s						
YUK				pmax	pmax		
	comp=E,74nm,0.2s						
YUK				pmax	pmax		
	comp=N,75nm,0.1s						
INU	Inuyama	6.09	233	ePn	Pn	22 03 47.2	+0.9
JHJ2	Mitsune	6.58	204	ePn	Pn	22 03 50.9	-2.2
JHJ	Hachijo jima 2	6.58	204	Pn	Pn	22 03 51.0	-2.2
	comp=N,59nm,0.3s,baz=296,slow=23,SNR=16						
JHJ				Sn	Sn	22 04 59.8	-7.5
	comp=N,141nm,0.3s,baz=240,slow=22,SNR=7.8						
KUR	Kuril'sk	7.05	30	eP	Pn	22 03 58.2	-1.3
KUR				eS	Sn	22 05 11.4	-7.3
KUR				pmax	pmax		
	comp=Z,38nm,0.5s						
KUR				smax	smax		
	comp=E,107nm,0.6s						
YSS	Yuzh-Sakhalins	7.75	359	⇑eP	Pn	22 04 10.2	+1.1
YSS				eS	Sn	22 05 36.7	+0.8
YSS				pmax	pmax		
	comp=Z,60nm,0.8s						
YSS				MLR	MLR		
	comp=Z,2µm,13.0s						
YSS				MLR	MLR		
	comp=N,1µm,12.0s						
YSS				MLR	MLR		
	comp=E,2µm,15.0s						
YSS	Yuzh-Sakhalins	7.75	359	ePn	Pn	22 04 10.9	+1.8
VLA	Vladivostok	9.21	299	c iP	Pn	22 04 29.5	+0.4
USRK	Ussuriysk Ar.	9.59	305	Pn	Pn	22 04 36.1	+1.8
	comp=E,1.8nm,0.3s,baz=108,slow=12,SNR=56						
USRK				LR	LR	22 08 10.0	
	comp=E,6µm,19.2s,baz=108,slow=37						
UGL	Uglegorsk	9.89	357	P	Pn	22 04 37.0	-1.5
UGL				pmax	pmax		
	comp=Z,72nm,0.8s						
UGL				MLR	MLR		
	comp=Z,2µm,16.0s						
UGL				MLR	MLR		
	comp=N,3µm,18.0s						
UGL				MLR	MLR		
	comp=E,3µm,10.0s						
HABR	Khabarovsk	10.87	331	eP	Pn	22 04 49.1	-2.8
HABR				eS	Sn	22 06 48.4	-4.1
HABR				pmax	pmax		
	comp=E,22nm,1.5s						
HABR				pmax	pmax		
	comp=N,21nm,1.5s						
HABR				pmax	pmax		
	comp=Z,16nm,1.5s						
HABR				MLR	MLR		
	comp=Z,2µm,13.0s						
MDJ	Mudanjiang	11.32	303	P	Pn	22 05 00.5	+2.5
MDJ				S	Sn	22 07 04.5	+1.0
MDJ				PcP	PcP	22 10 55.8	+4.6
MDJ				ScP	ScP	22 14 21.4	-0.5
MDJ				PcS	PcS	22 14 25.6	+0.7
MDJ				ScS	ScS	22 17 56.6	-0.6
MDJ				pmax	pmax		

comp=Z,42nm,1.0s
MDJ pmax pmax
comp=Z,530nm,6.2s
MDJ LR LR
comp=Z,2µm,16.4s
MDJ LR LR
comp=Z,4µm,15.5s
MDJ LR LR
comp=Z,6µm,15.5s
MDJ Mudanjiang 11.32 303 *e*Pn **Pn 22 04 59.2 +1.2**
comp=Z,148nm,1.1s
JNU Nakatsue 11.47 242 Pn **Pn 22 05 00.4 +0.1**
comp=Z,1.1nm,0.3s,baz=51,slow=4.4,SNR=16
JNU LR LR 22 09 49.5
comp=Z,5µm,19.1s,baz=52,slow=40
TYV Tymovskoe 11.66 359 *e*P **Pn 22 05 03.2 +0.5**
TYV pmax pmax
comp=Z,44nm,1.0s
KSRS Korea Array 11.92 266 Pn **Pn 22 05 08.4 +2.1**
comp=Z,0.7nm,0.3s,baz=84,slow=13,SNR=30
KSRS LR LR 22 09 27.7
comp=Z,3µm,18.6s,baz=74,slow=36
KS01 Wonju Array Si 11.94 266 *e*Pn **Pn 22 05 09.5 +3.0**
KS15 Wonju Array Si 11.96 266 *e*Pn **Pn 22 05 08.7 +2.0**
KSAR Wonju Array Be 11.96 266 P **Pn 22 05 08.4 +1.6**
KSAR Wonju Array Be 11.96 266 Pn **Pn 22 05 08.4 +1.6**
KLR Kul'dur 12.83 325 Pn **Pn 22 05 18.6 0.0**
comp=Z,0.6nm,0.3s,baz=136,slow=12,SNR=20
KLR LR LR 22 10 25.6
comp=Z,3µm,18.7s,baz=132,slow=38
CN2 Changchun 13.89 295 *e*P **P 22 05 38.2 -2.8**
CN2 *e*pP pP 22 05 45.7
CN2 *e*S **Sn 22 08 11.3 +5.0**
CN2 pmax pmax
comp=Z,10.0nm,0.6s
CN2 LR LR
comp=Z,3µm,16.0s
CN2 LR LR
comp=Z,2µm,16.0s
CN2 LR LR
comp=Z,3µm,19.0s
SNY Shenyang 14.96 286 ⇓P **Pn 22 05 47.8 +0.2**
SNY pmax pmax
comp=Z,15nm,0.6s
SNY pmax pmax
comp=Z,410nm,3.9s
SNY LR LR
comp=Z,500nm,12.9s
SNY LR LR
comp=Z,3µm,18.6s
SNY LR LR
comp=Z,5µm,16.7s
DL2 Dalian 16.56 276 P **Pn 22 06 08.2 -0.1**
DL2 S **Sn 22 09 08.2 -3.0**
DL2 pmax pmax
comp=Z,51nm,0.9s
DL2 pmax pmax
comp=Z,430nm,4.3s
DL2 LR LR
comp=Z,1µm,14.3s
DL2 LR LR
comp=Z,2µm,17.9s
DL2 LR LR
comp=Z,3µm,19.7s
PEA0 Petropavlovsk- 17.21 31 *e*Pn **P 22 06 17.9 0.0**
PETK Petropavlovsk- 17.21 31 P **P 22 06 18.1 +0.2**
comp=Z,0.2nm,0.3s,baz=223,slow=3.5,SNR=5.7
PET Petropavlovsk 17.55 33 *e*P P 22 06 29.7 +8.2
PET MLR MLR
comp=Z,600nm,19.0s
PET MLR MLR
comp=Z,800nm,20.0s
HIA Hailar 19.36 309 *e*P **P 22 06 39.6 -1.9**
HIA pmax pmax
comp=Z,87nm,0.9s
HIA Hailar 19.36 309 *e*P **P 22 06 39.6 -1.9**
comp=Z,87nm,0.9s
BJI Beijing 20.61 281 P **P 22 06 53.6 -1.6**
BJI S **S 22 10 40.6 -3.5**
BJI pmax pmax
comp=Z,54nm,1.1s
BJI LR LR
comp=Z,840nm,12.8s
BJI LR LR
comp=Z,2µm,15.6s
BJI LR LR
comp=Z,2µm,22.4s
BJT Baijiatuau 20.62 281 *e*P **P 22 06 53.6 -1.7**
BJT pmax pmax
comp=Z,77nm,0.9s
BJT Baijiatuau 20.62 281 *e*P **P 22 06 53.6 -1.7**
comp=Z,77nm,0.9s
TIA Tai'an 20.62 270 ⇓P **P 22 06 53.7 -1.6**
TIA S **S 22 10 44.4 0.0**
TIA pmax pmax
comp=Z,60nm,1.2s
TIA LR LR
comp=Z,680nm,16.0s
TIA LR LR
comp=Z,2µm,15.0s
TIA LR LR
comp=Z,3µm,18.0s
NJ2 Nanjing 20.80 257 *e*P **P 22 06 55.0 -2.3**
NJ2 pP **pP 22 07 03.7 -1.0**
NJ2 S **S 22 10 49.1 +1.1**
NJ2 pmax pmax
comp=Z,29nm,0.9s
NJ2 LR LR
comp=Z,1µm,12.5s
NJ2 LR LR
comp=Z,2µm,13.0s
NJ2 LR LR
comp=Z,3µm,11.9s
MA2 Magadan 20.99 11 P **P 22 06 59.5 +0.3**
comp=Z,65nm,0.8s,baz=213,slow=8.9,SNR=71
MA2 LR LR 22 14 42.4
comp=Z,642nm,21.0s,baz=207,slow=36
MA2 Magadan 20.99 11 *e*P **P 22 06 59.5 +0.3**
comp=Z,286nm,0.8s
CLNS Chul'man 21.26 332 *e*P **P 22 07 01.9 -0.2**
CLNS *e**PP **sP 22 07 12.2 -0.9**
CLNS *e* 22 07 22.7
CLNS *e*S **S 22 10 56.6 -0.3**
CLNS *e* 22 11 02.3
CLNS *e*SS **SnSn 22 11 27.3 +7.6**
CLNS pmax pmax
comp=Z,55nm,1.0s
CLNS pmax pmax
comp=E,30nm,1.4s
CLNS pmax pmax
comp=N,61nm,1.3s
CLNS pmax pmax
comp=N,73nm,1.1s
CLNS pmax pmax
comp=Z,59nm,1.2s
CLNS pmax pmax
comp=E,56nm,1.2s
CLNS smax smax
comp=E,110nm,11.0s
CLNS smax smax
comp=N,156nm,11.4s
CLNS MLR MLR
comp=N,1µm,15.0s
CLNS MLR MLR
comp=Z,2µm,17.0s
CLNS MLR MLR
comp=E,1µm,16.0s
TATO Taipei 22.98 238 *e*P **P 22 07 19.1 -1.5**
comp=E,83nm,0.9s
YHNB Yeheng 23.26 238 *e*P **P 22 07 19.9 -3.6**
comp=E,40nm,0.7s
NACB Ninganchiao 23.46 237 *e*P **P 22 07 24.7 -0.8**
comp=E,27nm,0.8s
HHC Hu-ho-hao-te 24.02 284 *e*P **P 22 07 28.9 -1.9**
HHC pP pP 22 07 39.0 +0.2
HHC sP sP 22 07 41.4 -0.8
HHC S **S 22 11 39.6 -6.7**
HHC pmax pmax
comp=E,32nm,0.9s
HHC LR LR
comp=E,2µm,14.1s
HHC LR LR
comp=E,2µm,13.9s
HHC LR LR
comp=E,2µm,12.8s
CIT Chita 24.04 312 *e*P **P 22 07 28.3 -2.5**
CIT *e* 22 07 41.6
CIT *e* 22 08 06.1
CIT pmax pmax
comp=Z,269nm,1.6s
SSLB Suanglung 24.15 237 *e*P **P 22 07 28.5 -3.5**
comp=Z,31nm,0.7s
YULB Yu-li 24.20 236 *e*P **P 22 07 31.5 -1.1**
comp=Z,26nm,0.8s
YAK Yakutsk 24.26 345 P **P 22 07 32.1 -0.5**
comp=Z,6.0nm,0.6s,baz=335,slow=21,SNR=16
YAK LR LR 22 18 19.5
comp=Z,1µm,18.7s,baz=198,slow=40
YAK Yakutsk 24.26 345 *e*P **P 22 07 31.6 -1.0**
YAK *e* 22 11 15.4
YAK *e*S **S 22 11 45.8 -3.6**
YAK *e* 22 18 29.3
YAK pmax pmax
comp=Z,121nm,0.9s
YAK pmax pmax
comp=E,13nm,0.9s
YAK pmax pmax
comp=N,34nm,1.0s
YAK pmax pmax
comp=Z,66nm,1.0s
YAK pmax pmax
comp=N,70nm,1.1s
YAK pmax pmax
comp=E,55nm,0.9s
YAK smax smax
comp=E,365nm,3.7s
YAK smax smax
comp=N,134nm,2.5s
YAK MLR MLR
comp=Z,2µm,16.0s
YAK MLR MLR
comp=N,1µm,15.0s
YAK MLR MLR
comp=E,499nm,17.0s
YAK Yakutsk 24.26 345 *e*P **P 22 07 31.6 -1.0**
comp=E,150nm,0.9s
SEY Seymchan 24.44 10 P **P 22 07 35.0 +0.7**
comp=E,36nm,0.8s,baz=195,slow=7.8,SNR=125
SEY Seymchan 24.44 10*ce*P **P 22 07 35.5 +1.2**
TPUB Ta-pu 24.70 237 *e*P **P 22 07 34.4 -2.6**
comp=E,52nm,0.9s
TWG Pinlang 24.76 235 *e*P **P 22 07 35.3 -2.3**
comp=E,382nm,0.9s
SMY Shemya 25.30 47 *e*P **P 22 07 42.7 +0.5**
SMY pmax pmax
comp=Z,290nm,1.1s
SMY Shemya 25.30 47 *e*P **P 22 07 42.7 +0.5**
comp=Z,290nm,1.1s
GUMO Guam 25.57 176 LR LR 22 16 41.0
comp=Z,586nm,21.3s,baz=346,slow=34
GUMO Guam 25.57 176 *e*P **P 22 07 45.3 +0.4**
GUMO pmax pmax
comp=Z,397nm,1.4s
GUMO Guam 25.57 176 *e*P **P 22 07 45.3 +0.4**
comp=Z,397nm,1.4s
BOD Bodaibo 26.40 324⇓*i*P **P 22 07 51.7 -0.4**
BOD *e* 22 08 00.2
BOD pmax pmax
comp=Z,44nm,1.0s
ULN Ulaanbaatar 27.22 300 *e*P **P 22 08 00.0 +0.2**
ULN pmax pmax
comp=Z,25nm,1.0s
ULN Ulaanbaatar 27.22 300 *e*P **P 22 08 00.0 +0.2**
comp=Z,25nm,1.0s
ULN Ulaanbaatar 27.22 300 P **P 22 08 00.4 +0.7**
SNR=17
ULN Ulaanbaatar 27.22 300 P **P 22 08 00.4 +0.7**
SNR=17
SONA1 Songino Array 27.65 300 *e*P **P 22 08 03.4 -0.3**
SONM Songino Array 27.65 300 P **P 22 08 04.3 +0.6**
comp=Z,15nm,0.7s,baz=95,slow=9.7,SNR=69
SONM LR LR 22 19 41.8
comp=Z,3µm,18.1s,baz=94,slow=38
XAN Xi'an 27.68 270 P **P 22 08 02.8 -1.1**
XAN pP pP 22 08 12.5 +0.6
XAN S **S 22 12 38.3 -6.1**
XAN sS sS 22 12 55.5 -2.2
XAN pmax pmax
comp=Z,25nm,1.0s
XAN LR LR
comp=Z,600nm,16.1s
XAN LR LR
comp=Z,1µm,12.9s
XAN LR LR
comp=Z,1µm,12.3s
H11N2 WAKE ISLAND Hy 28.34 126 T T 22 38 59.8
baz=317,slow=75,SNR=1512
H11N1 WAKE ISLAND Hy 28.35 126 T T 22 38 48.2
baz=317,slow=75,SNR=1112
H11N3 WAKE ISLAND Hy 28.36 126 T T 22 38 52.2
baz=317,slow=75,SNR=1440
ENH Enshi 28.77 262 *e*P **P 22 08 13.1 -0.5**
comp=Z,60nm,0.8s
H11S1 WAKE ISLAND Hy 29.14 128 T T 22 39 47.9
baz=318,slow=76,SNR=127
H11S3 WAKE ISLAND Hy 29.14 128 T T 22 39 47.9
baz=318,slow=76,SNR=159
H11S2 WAKE ISLAND Hy 29.16 128 T T 22 39 48.3
baz=318,slow=76,SNR=109
IRK Irkutsk 29.60 309 *e*P **P 22 08 20.6 -0.2**
IRK pmax pmax
comp=Z,92nm,1.9s
TLY Talaya 29.89 308 P **P 22 08 24.4 +1.0**
comp=Z,19nm,0.8s,baz=177,slow=2.7,SNR=9.6
TLY LR LR 22 21 06.1
comp=Z,2µm,18.4s,baz=104,slow=38
TLY Talaya 29.89 308*c i*P **P 22 08 23.9 +0.5**
TLY pmax pmax
comp=Z,42nm,1.4s
TLY MLR MLR
comp=Z,2µm,15.0s
TLY Talaya 29.89 308 *e*P **P 22 08 24.1 +0.7**
comp=Z,27nm,0.9s
TLY Talaya 29.89 308 P **P 22 08 24.0 +0.7**
SNR=14
TLY Talaya 29.89 308 P **P 22 08 24.0 +0.7**
SNR=14
ZAK Zakamensk 29.94 305 *e*P **P 22 08 23.5 -0.4**
ZAK pmax pmax
comp=Z,43nm,1.2s
LZH Lanzhou 30.95 277 *e*P **P 22 08 33.2 +0.1**
LZH pP sP 22 08 43.2 -1.3
LZH sP pP 22 08 48.2 +7.1
LZH pmax pmax
comp=Z,55nm,1.0s
LZH pmax pmax
comp=Z,340nm,6.4s
LZH LR LR
comp=Z,2µm,15.0s
LZH LR LR
comp=Z,2µm,13.2s
LZH LR LR
comp=Z,2µm,14.0s
MOY Mondy 31.52 307 *e*P **P 22 08 38.4 +0.5**
MOY pmax pmax
comp=Z,48nm,2.0s
BILL Bilibino 31.61 17 *e*P **P 22 08 38.5 +0.2**
BILL *e* 22 09 41.0
BILL *e*PPP PPP 22 09 52.3
BILL pmax pmax
comp=Z,9.0nm,1.0s
BILL MLR MLR
comp=Z,537nm,17.0s
BILL Bilibino 31.61 17 *e*P **P 22 08 38.3 0.0**
comp=Z,22nm,1.2s
GYA Guiyang 32.80 258⇑*i*P **P 22 08 48.7 -0.7**
GYA PP **PnPn 22 10 00.8 +2.6**
GYA PcP **PcP 22 11 35.0 +0.9**
GYA S **S 22 14 02.9 -2.1**
GYA sS sS 22 14 20.2 +1.9
GYA ScP **ScP 22 15 14.5 -1.6**
GYA SS **SnSn 22 16 01.8 -0.3**
GYA ScS **ScS 22 19 13.4 -2.9**
GYA pmax pmax
comp=Z,170nm,0.8s
GYA pmax pmax
comp=Z,200nm,5.5s
GYA LR LR
comp=Z,840nm,16.5s
GYA LR LR
comp=Z,790nm,16.8s
GYA LR LR
comp=Z,820nm,16.4s
CD2 Chengdu 32.92 268 P **P 22 08 49.2 -1.1**
CD2 sP sP 22 09 03.3 +1.6
CD2 PP **PP 22 10 03.8 -1.0**
CD2 S **S 22 14 04.9 -1.6**
CD2 sS sS 22 14 21.6 +1.8
CD2 pmax pmax
comp=Z,70nm,0.9s
CD2 LR LR
comp=Z,2µm,15.5s
CD2 LR LR
comp=Z,2µm,15.5s
GTA Gaotai 33.13 284 *e*P **P 22 08 52.4 +0.2**
GTA pP pP 22 09 01.5 +1.3
GTA sP sP 22 09 05.7 +2.1
GTA PcP **PcP 22 11 35.0 +0.2**
GTA S **S 22 14 09.2 -0.7**
GTA pmax pmax
comp=Z,19nm,1.1s
GTA pmax pmax
comp=Z,520nm,7.1s
GTA LR LR
comp=Z,1µm,16.2s
GTA LR LR
comp=Z,3µm,18.1s
GTA LR LR
comp=Z,4µm,17.6s
TIXI Tiksi 33.30 352 P **P 22 08 52.5 -0.5**
comp=Z,4.2nm,0.8s,baz=143,slow=9.0,SNR=10
TIXI Tiksi 33.30 352*ce*P **P 22 08 52.8 -0.2**
TIXI pmax pmax
comp=Z,7.0nm,1.0s
TIXI Tiksi 33.30 352 *e*P **P 22 08 52.0 -1.0**
comp=Z,11nm,1.1s
MIDW Midway 34.54 96 *e*P **P 22 09 04.8 +0.5**
comp=Z,295nm,1.3s
KMI Kunming 36.51 260 P **P 22 09 21.6 +0.1**
KMI pP sP 22 09 31.8 -1.2
KMI sP pP 22 09 35.3 +5.7
KMI S **S 22 15 04.8 +2.6**
KMI sS sS 22 15 19.1 +3.5
KMI pmax pmax
comp=Z,160nm,0.9s
KMI LR LR
comp=Z,1µm,16.8s
KMI LR LR
comp=Z,1µm,16.5s
KMI LR LR
comp=Z,2µm,16.7s
KRAR Krasnoyarsk 36.78 314*d i*P **P 22 09 22.1 -1.1**
KRAR pmax pmax
comp=Z,56nm,0.9s
MYLDM Lahad Datu 40.45 219 *e*P **P 22 09 54.6 +0.3**
comp=Z,35nm,1.0s
SKNT Sakolnakorn 40.46 248 P **P 22 09 54.6 +0.1**
comp=Z,43nm,1.1s
TNTI Ternate 40.81 204 *e*P **P 22 09 56.7 -0.7**
comp=Z,73nm,1.1s
WMQ Urumqi 40.98 295 P **P 22 09 59.8 +1.2**
WMQ pP sP 22 10 09.4 -0.7
WMQ PcP **PcP 22 12 02.5 +4.1**
WMQ S **S 22 16 09.0 0.0**
WMQ sS sS 22 16 26.2 +3.7
WMQ SS **SS 22 19 05.2 -5.9**
WMQ ScS **ScS 22 20 02.0 +0.6**
WMQ pmax pmax
comp=Z,64nm,0.8s
WMQ pmax pmax
comp=Z,180nm,4.0s
CRAI Chiangrai 41.08 255 P **P 22 09 59.4 -0.2**
comp=Z,48nm,0.8s
MANU Manus Island 41.24 173 *e*P **P 22 10 00.7 -0.2**
comp=Z,21nm,1.0s
ZAA0 Zalesovo Array 41.38 311 *e*P **P 22 10 01.7 0.0**
ZALV Zalesovo Beam 41.38 311 P **P 22 10 01.8 0.0**
comp=Z,14nm,0.5s,baz=90,slow=7.5,SNR=76
ZALV PcP **PcP 22 11 59.5 +0.1**
comp=Z,8.2nm,0.8s,baz=78,slow=4.7,SNR=3.9
ZALV LR LR 22 27 59.6
comp=Z,2µm,19.1s,baz=70,slow=37
KHON Khomkaen 41.71 248 P **P 22 10 05.1 +0.3**
comp=Z,28nm,0.8s
NRIK Noril'sk 41.83 334 P **P 22 10 05.1 -0.1**
comp=Z,3.4nm,0.6s,baz=111,slow=11,SNR=9.7
NRIK LR LR 22 28 37.0
comp=Z,2µm,18.9s,baz=106,slow=38
NRIK Noril'sk 41.83 334 P **P 22 10 05.1 -0.1**
NRIK pmax pmax
comp=Z,4.0nm,0.7s
NRIK MLR MLR
comp=Z,2µm,18.9s
NVS Novosibirsk 42.25 312⇑*i*P **P 22 10 09.1 +0.3**
NVS *i* 22 10 19.0
NVS pmax pmax
comp=Z,18nm,0.6s
NVS pmax pmax
comp=N,2.0nm,0.4s
NVS pmax pmax
comp=E,11nm,0.6s
UTTA Uttaradit 42.47 252 P **P 22 10 11.2 +0.2**
comp=E,12nm,1.1s,comp=E,102nm
LAMP Lampang 42.67 254 P **P 22 10 13.3 +0.7**
comp=E,16nm,0.9s
PBKT Sadao Pong 42.91 250 P **P 22 10 14.6 +0.1**
comp=E,62nm,1.0s
PHIT Phitsanulok 42.92 252 P **P 22 10 16.4 +1.8**
comp=E,21nm,1.0s
CMMT Chiang Mai 43.00 255 P **P 22 10 15.2 -0.2**
comp=E,40nm,1.0s
CHTO Chiang Mai 43.01 255 P **P 22 10 15.3 -0.1**
comp=E,168nm,1.1s
CHTO Chiang Mai 43.01 255 *e*P **P 22 10 15.6 +0.2**
CHTO pmax pmax
comp=Z,31nm,1.0s
CHTO Chiang Mai 43.01 255 *e*P **P 22 10 15.6 +0.2**
comp=Z,31nm,1.0s
CHTO Chiang Mai 43.01 255 P **P 22 10 15.6 +0.2**
SNR=12
CHTO Chiang Mai 43.01 255 P **P 22 10 15.6 +0.2**
SNR=12
MRSI Marisa 43.06 212 P **P 22 10 16.4 +0.6**
comp=Z,48nm,1.3s
CM31 Chiang Mai Arr 43.22 254 *e*P **P 22 10 17.4 +0.3**
CMAR Chiang Mai Arr 43.22 254 P **P 22 10 17.5 +0.4**
comp=Z,8.4nm,0.8s,baz=44,slow=6.7,SNR=61
CMAR LR LR 22 28 03.2
comp=Z,601nm,18.4s,baz=124,slow=36
CMAR Chiang Mai Arr 43.22 254 P **P 22 10 17.5 +0.4**
CMAR pmax pmax
comp=Z,9.0nm,0.8s
CMAR MLR MLR
comp=Z,601nm,18.5s
CM01 Chiang Mai Arr 43.23 254 *e*P **P 22 10 17.0 -0.2**
LSA Lhasa 43.24 274 P **P 22 10 18.5 +0.8**
LSA pmax pmax
comp=Z,15nm,2.3s
LSA Lhasa 43.24 274 *e*P **P 22 10 18.2 +0.5**
LSA pmax pmax
comp=Z,66nm,1.3s
LSA Lhasa 43.24 274 *e*P **P 22 10 18.2 +0.5**
comp=Z,66nm,1.3s
SANI Sanana 43.91 205 P **P 22 10 23.2 +0.6**
comp=Z,50nm,0.8s
MK01 Makanchi Array 44.02 300 *e*P **P 22 10 23.4 +0.2**
MK31 Makanchi Array 44.02 300 *e*P **P 22 10 23.7 +0.4**
MK31 Makanchi Array 44.02 300 *e*P **P 22 10 23.6 +0.4**
MKAR Makanchi Array 44.02 300 P **P 22 10 23.6 +0.4**
comp=Z,45nm,0.8s,baz=83,slow=9.0,SNR=374
MKAR LR LR 22 29 30.9
comp=Z,1µm,19.8s,baz=71,slow=37
MKAR Makanchi Array 44.02 300 P **P 22 10 23.7 +0.4**
MKAR pmax pmax
comp=Z,46nm,0.9s
MKAR MLR MLR
comp=Z,1µm,19.8s
LUWI Luwuk 44.12 210 *e*P **P 22 10 23.6 -0.7**
comp=Z,35nm,0.8s
MHMT Maesarieng 44.15 255 P **P 22 10 25.2 +0.6**
comp=Z,31nm,0.8s,comp=Z,361nm
MAKZ Makanchi 44.23 301 *e*P **P 22 10 24.8 -0.1**
MAKZ pmax pmax
comp=Z,60nm,1.0s
MAKZ Makanchi 44.23 301 *e*P **P 22 10 24.8 -0.1**
comp=Z,60nm,1.0s
APSI Ampana 44.44 211 P P 22 10 35.6 +8.7
CHBT CHBT 44.47 245 P **P 22 10 27.5 +0.4**
comp=Z,73nm,1.0s

KDAK **Kodiak Island** 44.69 43 P P 22 10 28.3 -0.1
comp=Z,7.9nm,0.3s,baz=305,slow=3.3,SNR=5.1
CAST **Castle Rocks** 44.76 35 eP **P** **22 10 30.8 +1.8**
comp=Z,8.8nm,0.9s
MLY **Manley** 45.38 33 eP **P** **22 10 35.6 +1.7**
comp=Z,13nm,1.1s
PATY **Pattaya** 45.39 247 P **P** **22 10 35.3 +0.8**
comp=Z,12nm,0.9s,comp=Z,772nm
KURK **Kurchatov** 45.57 307 eP **P** **22 10 35.6 +0.1**
KURK pmax pmax
comp=Z,107nm,0.9s
KURK **Kurchatov** 45.57 307 eP **P** **22 10 35.6 +0.1**
comp=Z,107nm,0.9s
KURK **Kurchatov** 45.57 307 P **P** **22 10 36.0 +0.5**
SNR=30
KURK **Kurchatov** 45.57 307 P **P** **22 10 36.0 +0.5**
SNR=30
COLD **Coldfoot** 45.68 30 eP **P** **22 10 36.7 +0.6**
COLD epP **sP** **22 10 48.5 +0.8**
SRDT **SRDT** 45.70 250 P **P** **22 10 37.3 +0.4**
comp=Z,73nm,1.0s
SBUM **Sibu** 46.04 225 eP **P** **22 10 39.5 -0.1**
comp=Z,29nm,1.5s
MDM **Murphy Dome** 46.45 33 eP **P** **22 10 43.7 +1.4**
comp=Z,21nm,1.2s
TAPN **Taplejung** 47.01 273 eP **P** **22 10 47.8 +0.3**
comp=Z,60nm,0.8s
IL1 **Eielson Array** 47.03 33 eP **P** **22 10 45.3 -1.5**
ILAR **Eielson Array** 47.03 33 P **P** **22 10 47.1 +0.4**
comp=Z,5.0nm,0.8s,baz=267,slow=6.3,SNR=45
ILB **Eielson Array** 47.03 33 eP **P** **22 10 47.6 +0.9**
ODAN **Odare** 47.50 272 eP **P** **22 10 51.4 +0.1**
comp=Z,56nm,0.9s
KSM **Kuching** 47.91 227 eP **P** **22 10 53.9 -0.3**
comp=Z,29nm,1.0s
RAMN **Ramite** 48.07 273 eP **P** **22 10 55.8 +0.1**
comp=Z,114nm,0.8s
GUN **Gumba** 48.16 275 eP **P** **22 10 56.7 +0.2**
comp=Z,175nm,0.8s
STKI **Sintang** 48.43 224 P **P** **22 10 59.2 +1.0**
comp=Z,34nm,1.0s,comp=Z,17µm
MENT **Mentasta** 48.58 36 eP **P** **22 10 57.5 -1.3**
comp=Z,20nm,1.0s
AAA **Alma-Ata** 48.63 297 eP P 22 11 10.8 +11
AAA pmax pmax
comp=Z,200nm,1.7s
AAA MLR MLR
comp=Z,2µm,16.0s
KKN **Kakani** 48.68 275 eP **P** **22 11 00.7 +0.3**
comp=Z,109nm,0.8s
PKIN **Phulchoki** 48.70 274 eP **P** **22 11 00.3 -0.2**
comp=Z,56nm,0.8s
DMN **Daman** 48.91 275 eP **P** **22 11 02.2 +0.1**
comp=Z,98nm,1.0s
KAPI **Kappang** 48.94 211 P **P** **22 11 02.6 +0.6**
comp=Z,6.2nm,0.4s,baz=209,slow=16,SNR=3.7
KAPI **Kappang** 48.94 211 eP **P** **22 11 04.3 +2.2**
comp=Z,110nm,1.6s
GKN **Gorkha** 49.08 275 eP **P** **22 11 03.3 0.0**
comp=Z,138nm,0.9s
SURT **Suratani** 49.59 245 P **P** **22 11 07.8 +0.7**
comp=Z,8.8nm,1.4s
TKM2 **Tokmak 2** 49.68 297 eP **P** **22 11 08.9 +1.1**
TKM2 pmax pmax
comp=Z,85nm,0.8s
TKM2 **Tokmak 2** 49.68 297 eP **P** **22 11 08.9 +1.1**
comp=Z,85nm,0.8s
BBKI **Banjar Baru** 49.73 218 P **P** **22 11 07.7 -0.4**
comp=Z,48nm,1.0s,comp=Z,6µm
TRTT **Trang** 49.76 243 P **P** **22 11 09.6 +1.2**
comp=Z,22nm,1.2s
KOLN **Koldanda** 49.99 276 eP **P** **22 11 10.7 +0.3**
comp=Z,103nm,0.9s
BVAR **Borovoye Array** 50.03 311 LR LR 22 33 17.4
comp=Z,758nm,19.4s,baz=73,slow=37
BRVK **Borovoye** 50.08 311 *ce*P **P** **22 11 11.1 +0.7**
BRVK pmax pmax
comp=Z,34nm,0.8s
BRVK **Borovoye** 50.08 311 eP **P** **22 11 10.8 +0.4**
comp=Z,34nm,0.9s
BRVK **Borovoye** 50.08 311 P **P** **22 11 11.1 +0.7**
SNR=11
BRVK **Borovoye** 50.08 311 P **P** **22 11 11.1 +0.7**
SNR=11
PYUN **Piuthan** 50.30 276 eP **P** **22 11 13.1 +0.4**
comp=Z,339nm,1.0s
FRU **Bishkek** 50.39 297 eP **P** **22 11 12.5 -0.5**
FRU *e* 22 13 09.5
FRU pmax pmax
comp=Z,100nm,2.0s
AAK **Ala-Archa** 50.54 297 *c* iP **P** **22 11 14.4 +0.1**
AAK pmax pmax
comp=Z,57nm,1.0s
AAK **Ala-Archa** 50.54 297 eP **P** **22 11 14.8 +0.5**
comp=Z,18nm,0.9s
AAK **Ala-Archa** 50.54 297 P **P** **22 11 14.8 +0.5**
SNR=12
AAK **Ala-Archa** 50.54 297 P **P** **22 11 14.8 +0.5**
SNR=12
KSH **Kashi** 50.64 293 P P 22 11 19.6 +4.5
KSH epP sP 22 11 29.8 +3.1
KSH *e*ScP **ScP** **22 16 28.1 +1.7**
KSH S **S** **22 18 31.9 +3.6**
KSH sS sS 22 18 49.5 +7.5
KSH SS **SS** **22 22 03.5 +1.1**
KSH pmax pmax
comp=Z,24nm,1.1s
KSH pmax pmax
comp=Z,360nm,5.4s
KSH LR LR
comp=Z,650nm,15.2s
KSH LR LR
comp=Z,980nm,15.2s
KSH LR LR
comp=Z,1µm,18.8s
PKDT **Phuket** 50.66 244 P **P** **22 11 16.0 +0.8**
comp=Z,62nm,1.2s
ZRNK **Zerenda** 50.85 311 eP **P** **22 11 16.7 +0.4**
ZRNK pmax pmax
comp=Z,49nm,0.9s
ZRNK **Zerenda** 50.85 311 eP **P** **22 11 16.7 +0.4**
comp=Z,49nm,0.9s
KULM **Kulim** 50.95 240 eP **P** **22 11 16.8 -0.6**
KULM epP **sP** **22 11 28.0 -1.0**
EKS2 **Erkin-Say** 51.03 298 eP **P** **22 11 18.2 +0.3**
EKS2 pmax pmax
comp=Z,33nm,0.8s
EKS2 **Erkin-Say** 51.03 298 eP **P** **22 11 18.2 +0.3**
comp=Z,33nm,0.8s
IPM **Ipoh** 51.29 239 eP **P** **22 11 19.9 -0.2**
comp=Z,21nm,0.9s
LGTI **Lohaghat** 51.77 279 eP **P** **22 11 23.6 +0.2**
INK **Inuvik** 51.91 28 eP **P** **22 11 25.1 +1.2**
INK pmax pmax
comp=Z,16nm,1.3s
INK **Inuvik** 51.91 28 eP **P** **22 11 25.1 +1.2**
comp=Z,16nm,1.3s
MTN **Manton Dam** 52.93 194 eP **P** **22 11 33.0 +0.9**
comp=Z,45nm,1.4s
KKAR **Karatay Array** 53.10 299 eP **P** **22 11 32.9 -0.3**
KKAR *e* 22 11 44.2
KKAR pmax pmax
comp=Z,32nm,0.8s
KKAR **Karatay Array** 53.10 299 eP **P** **22 11 32.9 -0.3**
comp=Z,32nm,0.8s
KKAR *e* 22 11 44.2
SMLA **Simla** 53.33 283 *i* P **P** **22 11 34.9 -0.1**
PSI **Prapat** 53.93 239 P **P** **22 11 39.5 -0.3**
comp=Z,13nm,0.7s,baz=3.5,slow=5.8,SNR=15
PSI **Prapat** 53.93 239 eP **P** **22 11 39.2 -0.5**
PSI pmax pmax
comp=Z,15nm,0.8s
PSI **Prapat** 53.93 239 eP **P** **22 11 39.2 -0.5**
comp=Z,15nm,0.8s
SVE **Sverdlovsk** 54.33 318⇓ eP **P** **22 11 42.7 +0.8**
SVE pmax pmax
comp=Z,66nm,1.0s
SVE MLR MLR
comp=Z,2µm,16.0s
BKNI **Bangkinang** 54.41 235 P **P** **22 11 44.2 +1.2**
NDI **New Delhi** 54.46 280 eP P 22 11 40.0 -3.3
SDSI **Sungai Dareh** 55.14 234 P **P** **22 11 49.0 +0.7**
SOKR **Solikamsk** 55.35 322 *d* iP **P** **22 11 47.7 -1.5**
SOKR pmax pmax
comp=Z,40nm,1.3s
SOKR MLR MLR
comp=Z,687nm,17.0s

ARU **Arti** 55.55 318 LR LR 22 38 13.2
comp=Z,1µm,18.2s,baz=68,slow=39
ARU **Arti** 55.55 318 *c* iP **P** **22 11 50.9 +0.1**
ARU 22 12 50.0
ARU 22 13 54.4
ARU S **S** **22 19 35.5 +1.3**
ARU SS **SS** **22 23 17.7 -1.1**
ARU pmax pmax
comp=Z,91nm,1.7s
ARU MLR MLR
comp=Z,2µm,19.0s
ARU **Arti** 55.55 318 eP **P** **22 11 50.8 +0.1**
comp=Z,51nm,1.0s
GSI **Gunungsitoli** 55.94 239 eP **P** **22 11 53.8 -0.3**
comp=Z,59nm,0.9s
ABKAR **Akbulak array** 57.48 310 eP **P** **22 12 04.6 0.0**
comp=Z,26nm,0.8s
ABKAR *e* 22 12 15.9
KBL **Kabul** 57.78 290 eP **P** **22 12 07.0 -0.2**
KBL pmax pmax
comp=Z,66nm,0.9s
KBL **Kabul** 57.78 290 eP **P** **22 12 07.0 -0.2**
comp=Z,66nm,0.9s
AKTO **Aktyubinsk** 58.13 311 LR LR 22 38 24.6
comp=Z,771nm,18.0s,slow=37
SPITS **Spitsbergen Ar** 58.63 349 LR LR 22 40 57.0
comp=Z,366nm,18.9s,baz=10.0,slow=40
KBS **Kingsbay** 58.73 350 eP **P** **22 12 14.1 +1.2**
KBS pmax pmax
comp=Z,20nm,0.9s
KBS **Kingsbay** 58.73 350 eP **P** **22 12 14.1 +1.2**
comp=Z,20nm,0.9s
FITZ **Fitzroy Crossi** 59.26 199 P **P** **22 12 16.8 -0.4**
comp=Z,3.3nm,0.6s,baz=11,slow=5.2,SNR=3.5
WRAB **Tennant Creek** 59.37 189 eP **P** **22 12 18.5 +0.5**
WRAB pmax pmax
comp=Z,42nm,0.8s
WRAB **Tennant Creek** 59.37 189 eP **P** **22 12 18.5 +0.5**
comp=Z,42nm,0.8s
WB2 **Warramunga Arr** 59.38 189 eP **P** **22 12 16.4 -1.6**
comp=Z,48nm,0.8s
WRA **Warramunga Arr** 59.38 189 P **P** **22 12 16.4 -1.7**
comp=Z,6.0nm,0.7s,baz=7.7,slow=6.8,SNR=43
HYB **Hyderabad** 59.47 268⇑ iP **P** **22 12 18.0 -0.9**
HYB *e* 22 12 29.5
RES **Resolute Bay** 60.20 15 eP **P** **22 12 23.2 +0.1**
RES **Resolute Bay** 60.20 15 eP **P** **22 12 23.2 +0.1**
APA **Apatity** 61.21 336 *i* P **P** **22 12 29.6 -0.5**
APA MLR MLR
comp=Z,900nm,20.0s
YKA **Yellowknife Ar** 61.34 31 P **P** **22 12 31.1 +0.1**
comp=Z,0.9nm,0.7s,baz=304,slow=6.7,SNR=17
TMCR **Tamitsa** 61.43 331 eP **P** **22 12 31.6 +0.1**
TMCR pmax pmax
comp=Z,50nm,1.1s
ARCES **ARCESS Array B** 62.40 339 P **P** **22 12 37.8 -0.2**
comp=Z,5.0nm,0.8s,baz=48,slow=8.4,SNR=13
ARCES LR LR 22 44 02.8
comp=Z,339nm,18.0s,baz=34,slow=40
KLMR **Klimovskoe** 62.57 328 eP P 22 12 35.7 -3.6
KLMR *e**PP pP 22 12 46.6 -1.2
KLMR *e* 22 14 52.4
KLMR pmax pmax
comp=Z,36nm,1.6s
AS01 **Alice Springs** 63.10 189 eP **P** **22 12 40.9 -2.3**
AS31 **Alice Springs** 63.10 189 eP **P** **22 12 46.4 +3.1**
comp=Z,5.5nm,0.8s
ASAR **Alice Springs** 63.11 189 P **P** **22 12 42.1 -1.2**
comp=Z,2.9nm,0.8s,baz=12,slow=5.9,SNR=18
GEYT **Alibeck** 63.84 299 P **P** **22 12 48.3 +0.1**
comp=Z,16nm,0.8s,baz=28,slow=3.5,SNR=42
GEYT LR LR 22 43 03.0
comp=Z,323nm,19.1s,baz=110,slow=38
MOS **Moscow** 66.23 323 eP **P** **22 13 02.4 -0.9**
MOS *e* 22 13 15.1
MOS pmax pmax
comp=Z,53nm,1.3s
VRH **Novokhopyorsk** 66.78 318 eP **P** **22 13 06.5 -0.4**
VRH *e**SP **sP** **22 13 18.2 -0.6**
VRH pmax pmax
comp=Z,20nm,0.8s
VRH MLR MLR
comp=Z,1µm,17.0s
OBN **Obninsk** 67.08 323 *ce*P **P** **22 13 08.8 +0.1**
OBN *e* 22 13 15.4
OBN *e* 22 13 34.5
OBN *e* 22 15 33.9
OBN pmax pmax
comp=Z,75nm,2.5s
OBN MLR MLR
comp=Z,1µm,16.0s
OBN **Obninsk** 67.08 323 eP **P** **22 13 08.9 +0.1**
comp=Z,104nm,1.6s
LPSR **Galich'ya Gora** 67.41 320 eP **P** **22 13 10.6 -0.3**
LPSR *e**SP **sP** **22 13 22.0 -0.7**
LPSR pmax pmax
comp=Z,20nm,0.8s
LPSR MLR MLR
comp=Z,410nm,14.0s
FIA1 **FINESS Array S** 67.46 332 eP **P** **22 13 11.3 +0.3**
FINES **FINESS Array B** 67.46 332 P **P** **22 13 10.7 -0.3**
comp=Z,16nm,0.8s,baz=54,slow=9.7,SNR=40
FINES LR LR 22 45 14.4
comp=Z,1µm,18.9s,baz=42,slow=38
VSR **Storozhevoye** 68.09 319 eP **P** **22 13 14.9 -0.3**
VSR *e**SP **sP** **22 13 26.7 -0.4**
VSR pmax pmax
comp=Z,20nm,0.8s
VSR MLR MLR
comp=Z,2µm,20.0s
SUMG **Summit** 68.52 0 eP **P** **22 13 18.9 +0.9**
SUMG pmax pmax
comp=Z,27nm,1.0s
SUMG **Summit** 68.52 0 eP **P** **22 13 18.9 +0.9**
comp=Z,27nm,1.0s
VSU **Vasula** 69.20 330 *ce*P **P** **22 13 23.8 +1.9**
VSU pmax pmax
comp=Z,180nm,2.5s
GOF **Gofitskoye** 69.55 312⇑ eP **P** **22 13 25.4 +1.0**
GOF pmax pmax
comp=Z,48nm,0.8s
SWMT **Swartz Lake** 69.90 45 eP **P** **22 13 28.6 +1.9**
GUDG **Gudauri** 70.19 309 P **P** **22 13 29.9 +1.2**
ZEI **Tsey** 70.35 309 eP **P** **22 13 28.2 -1.5**
ZEI pmax pmax
comp=Z,63nm,1.1s
KIV **Kislovodsk** 70.39 311 *i* P **P** **22 13 31.2 +1.4**
SNR=10
KIV **Kislovodsk** 70.39 311 eP **P** **22 13 30.5 +0.7**
KIV pmax pmax
comp=Z,71nm,1.1s
KIV **Kislovodsk** 70.39 311 eP **P** **22 13 29.4 -0.4**
comp=Z,117nm,1.1s
KIV **Kislovodsk** 70.39 311 P **P** **22 13 30.6 +0.9**
SNR=16
KIV **Kislovodsk** 70.39 311 P **P** **22 13 30.6 +0.9**
SNR=16
KBZ **Khabaz** 70.40 311 P **P** **22 13 30.4 +0.7**
comp=Z,18nm,0.9s,baz=35,slow=3.0,SNR=30
KBZ LR LR 22 49 34.9
comp=Z,560nm,18.2s,baz=52,slow=40
STKA **Stephens Creek** 70.73 181 P **P** **22 13 32.6 +1.1**
comp=Z,2.0nm,0.9s,baz=352,slow=10,SNR=3.1
ONI **Oni** 70.74 310 P **P** **22 13 31.8 -0.1**
ONI **Oni** 70.74 310 P **P** **22 13 31.7 -0.1**
NEY **Neytrino** 70.79 310 *c* iP **P** **22 13 33.4 +1.1**
NEY pmax pmax
comp=Z,2.0nm,0.9s
FFC **Flin Flon** 71.24 34 eP **P** **22 13 34.5 0.0**
FFC pmax pmax
comp=Z,17nm,1.4s
FFC **Flin Flon** 71.24 34 eP **P** **22 13 34.5 0.0**
comp=Z,17nm,1.4s
GNI **Garni** 71.37 307 *i* P **P** **22 13 37.5 +1.6**
SNR=5.4
GNI **Garni** 71.37 307 *ce*P **P** **22 13 36.9 +1.0**
GNI pmax pmax
comp=Z,87nm,1.7s
GNI **Garni** 71.37 307 eP **P** **22 13 37.3 +1.5**
comp=Z,53nm,1.3s
AKH **Akhalkalaki** 71.40 308⇑ iP **P** **22 13 37.4 +1.4**
CHVG **Ch'k'valeri** 71.48 310⇓ iP **P** **22 13 37.3 +1.1**
FCC **Fort Churchill** 71.53 27 eP **P** **22 13 36.5 +0.3**
FCC pmax pmax
comp=Z,13nm,1.3s
FCC **Fort Churchill** 71.53 27 eP **P** **22 13 36.5 +0.3**
comp=Z,13nm,1.3s
NACGM **Naroch** 71.57 327 *e* **P** **22 13 37.0 +0.4**
BANOM **Banah** 71.66 289 *i* P **P** **22 13 37.9 +0.3**
SNR=31
BANOM **Banah** 71.66 289 P **P** **22 13 37.9 +0.3**
SNR=7.8
BANOM **Banah** 71.66 289 P **P** **22 13 37.9 +0.3**
SNR=7.8
LRM **Limekiln Ridge** 71.77 45 eP **P** **22 13 40.3 +2.0**
UOSS **Minazif** 72.29 288 eP **P** **22 13 41.4 0.0**
comp=Z,3.2nm,0.9s
BOZ **Bozeman (W)** 72.33 45 eP **P** **22 13 43.1 +1.6**
BOZ pmax pmax
comp=Z,6.0nm,1.0s
BOZ **Bozeman (W)** 72.33 45 eP **P** **22 13 43.1 +1.6**
comp=Z,5.6nm,1.0s
HATD **Hatta, Dubai** 72.41 288 *i* P **P** **22 13 43.0 +0.8**
SNR=34
ASHO **Ashiyiah** 72.55 288 *i* P **P** **22 13 43.7 +0.7**
SNR=22
ASHO **Ashiyiah** 72.55 288 P **P** **22 13 43.1 +0.1**
SNR=12
ASHO **Ashiyiah** 72.55 288 P **P** **22 13 43.1 +0.1**
SNR=12
NB2 **NORSAR Subarra** 72.65 338 P **P** **22 13 42.7 -0.3**
comp=Z,20nm,0.8s,baz=38,slow=6.2
NB2 **NORSAR Subarra** 72.65 338 P **P** **22 13 42.7 -0.3**
baz=38,slow=6.2
NOA **NORSAR Array B** 72.65 338 P **P** **22 13 42.9 0.0**
comp=Z,14nm,0.8s,baz=38,slow=6.0,SNR=36
NOA LR LR 22 50 53.4
comp=Z,432nm,18.7s,baz=45,slow=40
NAZ **Nazwa, Dubai** 72.66 288 *i* P **P** **22 13 44.0 +0.4**
SNR=6.8
NV01 **Mina Array Sit** 72.74 54 eP **P** **22 13 45.6 +1.5**
NVAR **Mina Array Bea** 72.74 54 P **P** **22 13 45.5 +1.3**
comp=Z,1.2nm,0.8s,baz=282,slow=7.3,SNR=6.6
FAQ **Al Faqa, Dubai** 72.86 288 *i* P **P** **22 13 45.0 +0.2**
SNR=18
ARQ **Araqi** 72.99 286 P **P** **22 13 45.5 0.0**
SNR=10
ARQ **Araqi** 72.99 286 P **P** **22 13 45.5 0.0**
SNR=10
ASUD **Al Ashush, Dub** 73.12 288 *i* P **P** **22 13 47.0 +0.7**
SNR=12
AKASG **Malin Array Be** 73.32 323 P **P** **22 13 46.9 -0.1**
comp=Z,14nm,0.8s,baz=44,slow=5.8,SNR=48
AKASG **Malin Array Be** 73.32 323 P **P** **22 13 46.9 -0.1**
AKASG pmax pmax
comp=Z,15nm,0.7s
AKBB **Malin Array Si** 73.32 323 eP **P** **22 13 47.0 0.0**
AKBB **Malin Array Si** 73.32 323 eP **P** **22 13 47.0 0.0**
KIEV **Kiev** 73.33 323 *c* iP **P** **22 13 46.9 -0.2**
KIEV pmax pmax
comp=Z,22nm,0.9s
KIEV **Kiev** 73.33 323 eP **P** **22 13 47.0 -0.2**
comp=Z,18nm,0.8s
SFJD **Kangerlussuaq** 73.62 6 eP **P** **22 13 49.1 +0.6**
SFJD pmax pmax
comp=Z,12nm,0.9s
SFJD **Kangerlussuaq** 73.62 6 eP **P** **22 13 49.1 +0.6**
comp=Z,12nm,0.9s
H17A **Grant Village** 73.69 46 eP **P** **22 13 51.3 +1.6**
comp=Z,7.7nm,1.1s
FXWY **Fox Creek** 73.92 47 eP **P** **22 13 53.5 +2.5**
comp=Z,22nm,1.9s
SIM **Simferopol'** 74.62 316 P **P** **22 13 54.9 +0.1**
SIM pmax pmax
comp=Z,24nm,0.9s
SIM MLR MLR
comp=Z,220nm,14.0s
BW06 **Boulder Array** 75.30 47 eP **P** **22 13 58.8 -0.3**
BW06 epP **pP** **22 14 05.4 -2.3**
PDAR **Pinedale Array** 75.30 47 P **P** **22 13 59.5 +0.5**
comp=Z,0.6nm,0.5s,baz=61,slow=0.9,SNR=7.9
KIS **Kishinev** 76.02 320 eP **P** **22 14 03.0 +0.2**
KIS LRM MLR 22 50 10.0
comp=Z,1µm,18.0s
BEL **Belsk** 76.28 327 eP **P** **22 14 05.6 +1.4**
BEL **Belsk** 76.28 327 eP **P** **22 14 05.6 +1.4**
LVV **L'vov** 76.33 324 eP **P** **22 14 05.0 +0.5**
LVV MLR MLR
comp=N,500nm,15.0s
LVV MLR MLR
comp=E,900nm,15.0s
LVV MLR MLR
comp=Z,800nm,15.0s
ULM **Lac du Bonnet** 77.04 34 P **P** **22 14 07.7 -0.7**
comp=Z,1.8nm,0.7s,baz=301,slow=5.5,SNR=3.8
KWP **Kalwaria Pacla** 77.06 325 eP **P** **22 14 09.9 +1.3**
KWP **Kalwaria Pacla** 77.06 325 eP **P** **22 14 10.0 +1.3**
TLCR 77.26 319⇑ iP **P** **22 14 10.1 +0.3**
BUR08 **Bucovina Ar. S** 77.34 322 eP **P** **22 14 11.0 +0.6**
BURAR **Bucovina Array** 77.35 322 ⇓ iP **P** **22 14 11.3 +0.9**
TESR **Tescani** 77.43 321⇑ iP **P** **22 14 11.1 +0.3**
CFR **Carcaliu** 77.62 319⇓ iP **P** **22 14 12.3 +0.5**
KOLS **Kolonicke sedl** 77.77 325 eP **P** **22 14 13.0 +0.4**
KOLS pmax pmax
comp=Z,8.0nm,1.1s
KOLS **Kolonicke sedl** 77.77 325 eP **P** **22 14 13.0 +0.4**
VRI **Vrincioaia** 77.85 320⇑ iP **P** **22 14 14.5 +1.4**
STHS **Stebnicka Huta** 77.87 325 eP **P** **22 14 13.9 +0.7**
STHS pmax pmax
comp=Z,6.0nm,0.9s
STHS **Stebnicka Huta** 77.87 325 eP **P** **22 14 13.8 +0.6**
PLOR **Plostina** 77.90 320⇓ iP **P** **22 14 14.6 +1.2**
OJC **Ojcow** 77.90 327 eP **P** **22 14 14.1 +0.8**
OJC **Ojcow** 77.90 327 eP **P** **22 14 14.1 +0.8**
OJC **Ojcow** 77.90 327 eP **P** **22 14 14.1 +0.8**
comp=Z,24nm,0.9s
TIRR **Tirgusor** 77.97 318⇓ iP **P** **22 14 14.6 +0.8**
BMR **Baia Mare** 78.12 323⇑ iP **P** **22 14 15.9 +1.3**
ARCR **ARCALIA** 78.14 322⇓ iP **P** **22 14 15.5 +0.8**
CRVS **Cervenica-Dubn** 78.15 325 eP **P** **22 14 15.3 +0.5**
CRVS **Cervenica-Dubn** 78.15 325 eP **P** **22 14 15.3 +0.5**
BR131 **Keskin Array S** 78.31 312 eP **P** **22 14 16.3 +0.3**
BRTR **Keskin Array B** 78.31 312 P **P** **22 14 16.2 +0.3**
comp=Z,7.6nm,1.1s,baz=95,slow=4.2,SNR=25
BRTR LR LR 22 54 09.1
comp=Z,342nm,18.2s,baz=66,slow=40
BRTR **Keskin Array B** 78.31 312 *i* P **P** **22 14 16.2 +0.3**
BRTR pmax pmax
comp=Z,7.0nm,1.1s
PGOR **Pogoanele** 78.39 319⇑ iP **P** **22 14 17.6 +1.5**
MLR **Muntele Rosu** 78.50 320⇓ iP **P** **22 14 17.0 +0.1**
MLR **Muntele Rosu** 78.50 320 eP **P** **22 14 18.5 +1.6**
MLR pmax pmax
comp=Z,28nm,1.5s
MLR **Muntele Rosu** 78.50 320 eP **P** **22 14 18.5 +1.6**
comp=Z,28nm,1.5s
MSAB **Monastry St. A** 78.53 318⇑ iP **P** **22 14 17.8 +0.9**
ANTO **Ankara** 78.70 313 eP **P** **22 14 18.8 +0.8**
ANTO pmax pmax
comp=Z,26nm,0.8s
ANTO **Ankara** 78.70 313 eP **P** **22 14 18.8 +0.8**
comp=Z,26nm,0.8s
BR231 **Keskin MP Arra** 78.73 313 eP **P** **22 14 19.4 +1.2**
CJR **Cluj-Napoca** 78.77 322⇑ iP **P** **22 14 19.6 +1.4**
LANS **Liptovska Anna** 78.85 326 eP **P** **22 14 19.9 +1.3**
LANS **Liptovska Anna** 78.85 326 eP **P** **22 14 19.8 +1.2**
KSP **Ksiaz** 78.89 329 eP **P** **22 14 19.5 +0.8**
KSP **Ksiaz** 78.89 329 eP **P** **22 14 19.5 +0.8**
OKC **Ostrava-Krasne** 78.89 327 eP **P** **22 14 19.3 +0.5**
OKC AMS AMS 22 53 20.0
comp=Z,700nm,16.9s
OKC **Ostrava-Krasne** 78.89 327 eP **P** **22 14 19.3 +0.5**
OKC MLR MLR
comp=Z,700nm,16.9s
SULR 78.92 319⇓ iP **P** **22 14 20.0 +1.0**
VOIR 78.98 321⇓ iP **P** **22 14 20.5 +1.0**
DRGR 79.13 323⇓ iP **P** **22 14 21.1 +0.9**
MORC **Moravsky Berou** 79.19 327 eP **P** **22 14 21.3 +0.8**
MORC pmax pmax
comp=Z,67nm,1.0s
MORC **Moravsky Berou** 79.19 327 eP **P** **22 14 21.2 +0.8**
comp=Z,67nm,1.0s
ARR **Arges** 79.24 321⇓ iP **P** **22 14 22.5 +1.6**
DPC **Dobruska-Polom** 79.25 328 *i* P **P** **22 14 21.7 +0.9**
DPC *e*PCP **PcP** **22 14 29.2 +0.1**
DPC *e*pP **sP** **22 14 36.0 +3.2**
DPC *e*PP **PP** **22 17 19.8 -0.1**
DPC AMS AMS 22 52 20.0
comp=Z,600nm,20.1s
DPC **Dobruska-Polom** 79.25 328 *i* P **P** **22 14 21.7 +0.9**
DPC *e* 22 14 29.2

DPC				e		22 17 19.8	
DPC				MLR	MLR		
	comp=Z,600nm,20.1s						
UPC	Upice	79.26	329	eP	P	22 14 21.6	+0.8
UPC				AMS	AMS	22 55 40.0	
	comp=Z,600nm,12.6s						
UPC	Upice	79.26	329	eP	P	22 14 21.6	+0.8
UPC				MLR	MLR		
	comp=Z,600nm,12.6s						
ISCO	Idaho Springs	79.49	47	eP	P	22 14 24.2	+1.6
ISCO				pmax	pmax		
	comp=Z,13nm,1.5s						
ISCO	Idaho Springs	79.49	47	eP	P	22 14 24.2	+1.6
	comp=Z,12nm,1.5s						
VYHS	Vyhne	79.62	326	eP	P	22 14 23.6	+0.8
VYHS				pmax	pmax		
	comp=Z,7.0nm,1.1s						
VYHS	Vyhne	79.62	326	eP	P	22 14 23.6	+0.8
BRG	Berggiesshubel	79.79	330	eP	P	22 14 24.1	+0.4
	comp=Z,16nm,1.0s						
	comp=N,376nm,16.8s						
	comp=E,301nm,16.4s						
	comp=Z,676nm,19.9s						
BRG	Berggiesshubel	79.79	330	eP	P	22 14 24.0	+0.4
BRG				pmax	pmax		
	comp=Z,16nm,1.0s						
BRG				MLR	MLR		
	comp=N,376nm,16.8s						
BRG				MLR	MLR		
	comp=E,301nm,16.4s						
BRG				MLR	MLR		
	comp=Z,676nm,19.9s						
CLL	Collm	79.81	331⇑	iP	P	22 14 23.7	0.0
	comp=Z,27nm,0.8s						
CLL				i		22 14 30.7	
CLL				e		22 14 37.0	
CLL				i PP	PP	22 17 24.8	+0.4
	comp=Z,13nm,1.5s						
CLL	Collm	79.81	331⇑	iP	P	22 14 23.7	0.0
CLL				i		22 14 30.7	
CLL				pmax	pmax		
	comp=Z,27nm,0.8s						
CLL	Collm	79.81	331	eP	P	22 14 23.8	0.0
	comp=Z,29nm,0.8s						
PVCC	Panska Ves	79.82	329	eP	P	22 14 24.7	+0.9
PVCC				ePCP	PcP	22 14 31.4	0.0
PVCC				AMS	AMS	22 53 00.0	
	comp=Z,600nm,19.0s						
PVCC	Panska Ves	79.82	329	eP	P	22 14 24.7	+0.9
PVCC				e		22 14 31.4	
PVCC				MLR	MLR		
	comp=Z,600nm,19.0s						
VRAC	Vranov	79.95	328⇑	iP	P	22 14 25.7	+1.1
GZR	Gura Zlata	80.12	322⇑	iP	P	22 14 26.3	+0.7
GOPC	GO Pecny, Ondr	80.21	329	eP	P	22 14 26.7	+0.7
GOPC				AMS	AMS	22 54 30.0	
	comp=Z,600nm,17.1s						
GOPC	GO Pecny, Ondr	80.21	329	eP	P	22 14 26.7	+0.7
GOPC				MLR	MLR		
	comp=Z,600nm,17.1s						
PRA	Prague	80.23	329	AMS	AMS	22 53 10.0	
	comp=Z,800nm,16.8s						
PRU	Pruhonice	80.25	329	eP	P	22 14 26.7	+0.5
PRU				ePCP	PcP	22 14 34.1	+0.8
PRU				AMS	AMS	22 53 00.0	
	comp=Z,700nm,20.1s						
PRU	Pruhonice	80.25	329	eP	P	22 14 26.7	+0.5
PRU				e		22 14 34.1	
PRU				MLR	MLR		
	comp=Z,700nm,20.1s						
BZS	Buzias	80.51	323⇓	iP	P	22 14 28.0	+0.4
NKC	Novy Kostel	80.88	330	eP	P	22 14 29.9	+0.3
NKC				ePCP	PcP	22 14 36.8	+0.7
NKC				AMS	AMS	22 56 20.0	
	comp=Z,700nm,15.9s						
NKC	Novy Kostel	80.88	330	eP	P	22 14 29.9	+0.3
NKC				e		22 14 36.8	
NKC				MLR	MLR		
	comp=Z,700nm,15.9s						
RAYN	Ar Rayn	80.94	293	eP	P	22 14 29.8	-0.6
	comp=Z,16nm,0.9s						
MDVR	Moldovita	81.08	322⇑	iP	P	22 14 30.6	-0.2
MPEP	Malo Peshtene	81.13	320	eP	P	22 14 31.0	0.0
KHC	Kasperske Hory	81.32	329	eP	P	22 14 32.5	+0.6
KHC				ePCP	pP	22 14 39.7	-1.0
KHC				epP	sP	22 14 45.8	+1.9
KHC				ePP	PP	22 17 38.2	+1.2
KHC				AMS	AMS	22 55 20.0	
	comp=Z,800nm,17.4s						
KHC	Kasperske Hory	81.32	329	eP	P	22 14 32.5	+0.6
KHC				e		22 14 39.7	
KHC				e		22 14 45.8	
KHC				e		22 17 38.2	
KHC				MLR	MLR		
	comp=Z,800nm,17.4s						
KHC	Kasperske Hory	81.32	329	eP	P	22 14 32.5	+0.6
	comp=Z,5.8nm,0.9s						
CONA	Conrad Observa	81.33	327	i P	P	22 14 33.2	+1.1
	comp=Z,14nm,1.0s,SNR=6.5						
ECSD	EROS Data Cent	81.48	39	eP	P	22 14 32.6	-0.3
	comp=Z,29nm,1.8s						
GEC2	GERESS Array S	81.49	329	eP	P	22 14 33.1	+0.1
GEC2				pmax	pmax		
	comp=Z,7.0nm,0.9s						
GEC2	GERESS Array S	81.49	329	eP	P	22 14 33.1	+0.1
	comp=Z,7.1nm,0.9s						
GERES	GERESS Array B	81.49	329	P	P	22 14 33.0	+0.1
	comp=Z,3.8nm,0.7s,baz=34,slow=5.5,SNR=24						
GERES				PP	PP	22 17 40.8	+2.2
	comp=Z,0.4nm,0.6s,baz=116,slow=4.6,SNR=3.4						
GERES				LR	LR	22 54 06.6	
	comp=Z,468nm,18.3s,baz=48,slow=38						
CSS	Mathiatis	81.67	309	eP	P	22 14 34.3	+0.3
	comp=Z,4.9nm,0.8s						
GRFO	Grafenberg	81.79	331	eP	P	22 14 35.1	+0.7
GRFO				pmax	pmax		
	comp=Z,13nm,0.8s						
GRFO	Grafenberg	81.79	331	eP	P	22 14 35.1	+0.7
	comp=Z,14nm,0.8s						
RZN	Rozhen	81.84	318	eP	P	22 14 35.7	+0.6
VTS	Vitosha	81.96	320⇑	iP	P	22 14 35.6	0.0
VTS	Vitosha	81.96	320	eP	P	22 14 36.1	+0.5
ARSA	Arzberg	82.00	327	i P	P	22 14 36.0	+0.5
	comp=Z,8.2nm,1.1s						
MOA	Molln	82.05	328	i P	P	22 14 36.4	+0.5
	comp=Z,8.2nm,0.9s,SNR=6.5						
ANMO	Albuquerque	82.28	51⇓	eP	P	22 14 37.9	+0.4
ANMO				pmax	pmax		
	comp=Z,7.0nm,1.7s						
MMB	Musomiste	82.42	319	eP	P	22 14 38.4	+0.5
KKB	Krupnik	82.55	319	eP	P	22 14 39.2	+0.7
GROS	Grobnik	82.63	326⇑	iP	P	22 14 39.0	0.0
GROS	Grobnik	82.63	326⇑	iP	P	22 14 39.0	+0.1
SOKA	Soboth	82.66	327	i P	P	22 14 39.6	+0.5
	comp=Z,27nm,1.0s,SNR=22						
BEBN	Eben Emael	82.86	334	P	P	22 14 40.1	+0.2
MEM	Membach	82.91	334	P	P	22 14 40.5	+0.3
	comp=Z,8.1nm,0.9s						
SCHQ	Schefferville	82.92	17	P	P	22 14 39.2	-1.0
	comp=Z,6.2nm,0.8s,baz=18,slow=5.7,SNR=5.5						
OBKA	Obir	83.00	327	i P	P	22 14 40.8	0.0
	comp=Z,7.1nm,0.8s,SNR=5.7						
KBA	Koelnbreinsper	83.05	328	i PcP	P	22 14 42.5	+1.3
	comp=Z,16nm,0.9s,SNR=9.2						
CRES	Cresnjev	83.14	326⇑	iP	P	22 14 41.4	-0.1
CRES	Cresnjev	83.14	326⇑	iP	P	22 14 41.4	-0.1
MYKA	Terra Mystica	83.28	328	i P	P	22 14 42.2	-0.2
	comp=Z,10nm,0.9s,SNR=6.6						
STU	Stuttgart	83.30	331	eP	P	22 14 42.5	+0.2
STU				pmax	pmax		
	comp=Z,26nm,0.7s						
STU	Stuttgart	83.30	331	eP	P	22 14 42.5	+0.2
	comp=Z,26nm,0.7s						
BCLA	Clavier	83.31	334	P	P	22 14 42.2	0.0
LJU	Ljubljana	83.37	327⇑	iP	P	22 14 42.4	-0.3
LJU	Ljubljana	83.37	327⇑	iP	P	22 14 42.4	-0.3
SNF	Seneffe	83.57	335	P	P	22 14 43.9	+0.3
WTTA	Wattenberg	83.59	329	i PcP	P	22 14 44.6	+0.6
	comp=Z,7.5nm,1.0s						
ABTA	Abfaltersbach	83.65	328	i P	P	22 14 43.5	-0.8
	comp=Z,11nm,1.1s,SNR=5.8						
WLF	Walferdange	83.66	333	P	P	22 14 44.9	+0.8
WLF	Walferdange	83.66	333	eP	P	22 14 44.4	+0.4
WLF				pmax	pmax		
	comp=Z,7.0nm,0.9s						
WLF	Walferdange	83.66	333	eP	P	22 14 44.4	+0.4
	comp=Z,7.4nm,0.9s						
JAVS	Javornik	83.69	327⇑	iP	P	22 14 43.6	-0.8
JAVS	Javornik	83.69	327⇑	iP	P	22 14 43.6	-0.8
MOTA	Moosalm	83.74	329	i PcP	P	22 14 46.1	+1.3
	SNR=13						
RETA	Reutte	83.76	330	i PcP	P	22 14 45.2	+0.5
	comp=Z,24nm,1.0s,SNR=19						
DOU	Dourbes	83.82	334	P	P	22 14 44.8	-0.1
TRI	Trieste	83.96	327	eP	P	22 14 44.7	-1.0
TRI				pmax	pmax		
	comp=Z,12nm,0.9s						
TRI	Trieste	83.96	327	eP	P	22 14 44.7	-1.0
	comp=Z,12nm,0.9s						
BFO	Black Forest	83.99	331	eP	P	22 14 45.5	-0.4
BFO				pmax	pmax		
	comp=Z,58nm,1.7s						
BFO	Black Forest	83.99	331	eP	P	22 14 45.5	-0.4
	comp=Z,58nm,1.7s						
FETA	Feichten	84.15	329	i PcP	P	22 14 47.2	+0.4
	comp=Z,16nm,1.0s,SNR=8.9						
DSB	Dublin	84.17	342	eP	P	22 14 47.4	+0.8
	comp=Z,25nm,1.0s						
DAVA	Damuels	84.27	330	i PcP	P	22 14 47.8	+0.4
	comp=Z,24nm,0.9s,SNR=13						
ECH	Echery	84.52	332⇑	eP	P	22 14 48.4	-0.1
PPT	Papeete	84.55	118	LR	LR	22 53 08.4	
	comp=Z,223nm,18.2s,baz=352,slow=36						
PPT2	Papeete2	84.56	118	eLR	LR	22 41 40.4	
	comp=Z,668nm,22.5s,baz=310						
MOF	Molkenrain	84.83	332⇑	eP	P	22 14 50.1	-0.1
THEF	They Montfort	84.93	333	eP	P	22 14 50.6	0.0
TUE	Stuetta	85.14	330	eP	P	22 14 52.2	+0.2
	comp=Z,15nm,0.9s						
LOMF	Lomont	85.36	332⇑	eP	P	22 14 52.9	0.0
TAOE	Nuku Hiva Isla	85.55	105	eLR	LR	22 42 07.9	
	comp=Z,472nm,22.1s						
PLDF	La Plantade	87.70	333	eP	P	22 15 05.6	+1.3
AGO	Saint Agoulin	87.80	333	eP	P	22 15 06.3	+1.6
TXAR	Lajitas Array	87.86	53	P	P	22 15 05.2	-0.2
	comp=Z,0.4nm,0.5s,baz=305,slow=4.4,SNR=3.5						
TXAR	Lajitas Array	87.86	53	P	P	22 15 05.2	-0.2
TXAR				pmax	pmax		
	comp=Z,1.0nm,0.6s						
PYM	Petit Puy Mans	88.10	333	eP	P	22 15 07.5	+1.2
TBI	Tubuai	88.62	122	eLR	LR	22 43 33.1	
	comp=Z,370nm,28.5s,baz=315						
NCB	Newcomb	90.66	26	eP	P	22 15 17.6	-0.7
	comp=Z,115nm,0.6s						
TKL	Tuckaleechee C	93.93	36	LR	LR	22 58 48.6	
	comp=Z,90nm,21.8s,slow=36						
KEST	Kesra	94.01	324	LR	LR	23 00 59.3	
	comp=Z,233nm,19.9s,baz=12,slow=38						
ES19	SONSECA Array	95.81	335	eP	P	22 15 42.1	+0.1
ESDC	Sonseca Array	95.86	335	P	P	22 15 41.6	-0.6
	comp=Z,0.9nm,0.6s,baz=15,slow=4.1,SNR=9.6						
ESDC				LR	LR	23 04 17.0	
	comp=Z,257nm,18.1s,baz=40,slow=39						
RKT	Rikitea	98.47	113	eLR	LR	22 48 06.6	
	comp=Z,422nm,23.0s						
TORD	Torodi Ar. Bea	116.61	317	PKP	PKPdf	22 20 58.7	-1.5
	comp=Z,142nm,0.8s,baz=40,slow=0.6,SNR=4.6						
TORD				PP	PP	22 21 56.8	-10
	comp=Z,0.7nm,0.8s,baz=27,slow=8.2,SNR=4.5						
SNAA	Sanae	143.17	197	PKP	PKPab	22 21 44.5	+0.4
SNAA	Sanae	143.17	197	ePKIKP	PKPbc	22 21 45.0	-0.5
SNAA	Sanae	143.17	197	ePKPdf	PKPbc	22 21 45.0	-0.6
VNA2	Neumayer--Watz	144.73	196	PKP	PKPab	22 21 49.2	-0.9
	baz=98,slow=2.2						
VNA3	Neumayer Olymp	144.97	195	PKP	PKPab	22 21 49.8	-1.2
VNA1	Neumayer--Stat	145.13	196	PKP	PKPbc	22 21 48.1	-3.3

JMA 07 22:02:28.4, 37°.79N×139°.99E, h9km±1km, M1.8, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFY	Yanaizu	0.45	211	S	Sg	22 02 43.0	+0.1
JNS	Sasagawa	0.53	273	S	Sg	22 02 45.8	0.0

IDC 07 22:07:05.5±1.6, 7°.24S×105°.85E, h0km, mb4.1/5, mb1 4.1/5, mb1mx3.7/43, mbtmp4.1/5, Error ellipse: s-maj=89.4km s-min=27.9km az=56.0
ISCJB 07 22:07:07.4±0.7, 7°.75S±0°.07×105°.76E±0°.05, h31km, mb4.2/10, Error ellipse: s-maj=9.5km s-min=6.4km az=11.7
DJA 07 22:07:08.6±0.6, 8°S±3°×10°6E±°, h18km±8km, M4.5/18, mb5.0/1, MLv4.2/18
NEIC 07 22:07:10.9±0.6, 7°.23S×105°.93E, h35km, mb4.2/6, Error ellipse: s-maj=14.8km s-min=8.1km az=217.0
ISC 07 22:07:06.8±0.9, 7°.82S±0°.07×105°.96E±0°.06, h31km, n33, σ1s.20/31, mb4.2/10, Jawa

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SKJI	Sukabumi	1.00	36	P	Pb	22 07 25.9	+0.3
CGJI	Cibinong	1.23	347	P	Pn	22 07 28.1	+0.3
CNJI	Cibinong	1.26	67	P	Pb	22 07 31.1	+1.1
DBJI	Dramaga	1.48	32	P	Pb	22 07 33.5	-0.2
DBJI				S	Sn	22 07 51.7	+2.1
CBJI	Citeko	1.64	32	P	Pn	22 07 33.5	-0.1
SBJI	Serang	1.69	6	P	Pn	22 07 35.8	+1.5
TNG	Tangerang	1.77	23	P	Pb	22 07 37.8	-0.9
TNG				P	Pb	22 07 37.7	-0.9
TNG				S	Sn	22 07 58.9	+2.1
TNG				S	Sb	22 07 59.4	-1.0
CISI	Cisompet, Garu	1.85	82	P	Pb	22 07 40.9	+0.8
CISI	Cisompet, Garu	1.85	82	ePn	Pb	22 07 40.8	+0.7
CISI				eSn	Sb	22 08 01.5	-1.4
LEM	Lembang	1.91	59	P	Pb	22 07 48.5	+7.3
CMJI	Cimerak	2.46	89	P	Pb	22 07 49.4	-1.0
KASI	Kota Agung	2.70	327	P	Pn	22 07 48.8	+0.6
KPJI	Karang Pucung	2.98	81	P	Pb	22 07 58.5	-0.7
LWLI	Liwa	3.36	326	P	Pn	22 07 58.4	+1.0
MDSI	Maura Dua	3.75	332	P	Pn	22 08 03.9	+1.3
MNAI	Manna	4.55	319	P	Pn	22 08 14.6	+0.9
PPSI	Pulau Pagai	7.77	310	P	Pn	22 08 56.9	-0.9
JAGI	Jajag, Banyuwa	8.13	95	P	Pn	22 09 11.8	+9.0
KKM	Kota Kinabalu	17.15	37	ePn	Pn	22 11 02.5	-2.0
	6.8nm,0.8s						
H08S2	Diego Garcia H	33.16	268	T	T	22 49 02.4	
	baz=91,slow=75,SNR=54						
H08S3	Diego Garcia H	33.17	268	T	T	22 49 10.1	
	baz=91,slow=75,SNR=51						
H08S1	Diego Carcia H	33.18	268	T	T	22 49 12.9	
	baz=91,slow=75,SNR=36						
LSA	Lhasa	39.93	340	eP	P	22 14 37.9	-1.0
	1.0nm,0.3s						
PMG	Port Moresby	40.74	95	eP	P	22 14 50.0	+4.6
	5.4nm,0.8s						
STKA	Stephens Creek	40.87	131	P	P	22 14 53.2	+7.0
	1.6nm,0.6s,baz=328,slow=9.5,SNR=4.4						
BJT	Baijiatuau	48.52	10	eP	P	22 15 46.1	-0.8
	3.7nm,0.5s						
SONM	Songino Array	55.41	0	P	P	22 16 37.8	-0.5
	0.5nm,0.4s,baz=180,slow=6.5,SNR=4.0						
MDJ	Mudanjiang	56.38	20	eP	P	22 16 44.9	-0.3
	1.6nm,0.4s						
MKAR	Makanchi Array	58.31	341	P	P	22 16 58.1	-0.7
	1.0nm,0.5s,baz=152,slow=8.9,SNR=16						
ZALV	Zalesovo Beam	64.07	346	P	P	22 17 37.2	-0.4
	1.6nm,0.3s,baz=156,slow=6.0,SNR=12						
ABKAR	Akbulak array	69.59	330	eP	P	22 18 13.2	+0.3
	1.0nm,0.5s						
BRTR	Keskin Array B	81.61	312	P	P	22 19 23.6	+1.4
	1.3nm,0.8s,baz=126,slow=5.5,SNR=4.5						
TXAR	Lajitas Array	144.87	49	PKP	PKPdf	22 26 44.3	+2.6
	0.4nm,0.4s,baz=318,slow=1.2,SNR=3.0						

ATH 07 22:10:31.4, 38°.17N×26°.70E, h31km±1km, ML2.5/4, Error ellipse: s-maj=2.2km s-min=0.9km az=254.0
CSEM 07 22:10:31.9±0.1, 38°.17N×26°.71E, h5km, ML3.2, Error ellipse: s-maj=3.6km s-min=2.6km az=60.0
ISCJB 07 22:10:31.9±0.4, 38°.18N±0°.02×26°.72E±0°.03, h8km±3km, Error ellipse: s-maj=4.0km s-min=2.8km az=153.1
DDA 07 22:10:31.9, 38°.19N×26°.72E, h7km, Ml3.2
ISK 07 22:10:32.0, 38°.21N×26°.76E, h6km, MD3.0
THE 07 22:10:32.3, 38°.18N×26°.71E, h14km±2km, ML2.6/3, Error ellipse: s-maj=3.6km s-min=0.6km az=237.0

ISC 07 22:10:31.6±0.9, 38°.17N±0°.02×26°.72E±0°.02, h11km±7km, n71, σ0s.58/105, Aegean Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ZEY	˜zmir	0.18	293	i P	Pg	22 10 35.9	+0.3
URLA	Izmir	0.21	334	i P	Pg	22 10 36.0	-0.1
URLA				i S	Sg	22 10 39.4	+0.2
URLA	Izmir	0.21	334	P	Pg	22 10 36.0	-0.1
URLA				S	Sg	22 10 39.4	+0.2
BLCB	Balcova	0.34	50	ePG	Pg	22 10 38.4	0.0
BLCB				eSG	Sg	22 10 42.4	-0.4
BLCB	Balcova	0.34	50	ePg	Pg	22 10 38.4	0.0
BLCB				eSg	Sg	22 10 42.4	-0.4
SMG	Samos	0.47	168	P	Pb	22 10 41.6	-0.3
SMG				S	Sb	22 10 49.2	+0.4
SMG	Samos	0.47	168	P	Pb	22 10 41.6	-0.3
SMG				S	Sb	22 10 49.0	+0.2
SMG	Samos	0.47	168	P	Pb	22 10 41.8	0.0
SMG				S	Sb	22 10 49.0	+0.2
SMG				AML	AML	22 10 49.6	
	comp=N,1495μm,0.2s						
SMG				AML	AML	22 10 49.8	
	comp=E,1121μm,0.3s						
IZM	Izmir	0.49	62	ePG	Pg	22 10 41.4	+0.3
IZM				eSG	Sg	22 10 48.1	+0.5
IZM	Izmir	0.49	62	ePg	Pg	22 10 41.4	+0.3
IZM				eSg	Sg	22 10 48.1	+0.5
CHOS	Chios island	0.56	293	ePG	Pb	22 10 43.9	+0.3
CHOS				eSG	Sb	22 10 52.2	+0.6
CHOS	Chios island	0.56	293	P	Pg	22 10 42.6	0.0
CHOS				S	Sb	22 10 51.7	+0.1
CHOS	Chios island	0.56	293	P	Pg	22 10 42.7	+0.1
CHOS	Chios island	0.56	293	ePg	Pb	22 10 43.9	+0.3
CHOS				S	Sb	22 10 51.7	+0.1
CHOS				eSg	Sb	22 10 52.2	+0.6
CHOS	Chios island	0.56	293	P	Pg	22 10 42.7	+0.1
CHOS				S	Sb	22 10 52.1	+0.5
CHOS				AML	AML	22 10 56.9	
	comp=N,923μm,0.2s						
CHOS				AML	AML	22 10 57.0	
	comp=E,1448μm,0.2s						
GCAM	G?zelcaml?	0.62	139	i P	Pb	22 10 44.8	+0.3
GCAM				i S	Sb	22 10 53.3	+0.2
GCAM	G?zelcaml?	0.62	139	P	Pb	22 10 44.8	+0.3
GCAM				S	Sb	22 10 53.3	+0.2
DKL	Dikili	0.91	9	ePG	Pg	22 10 48.9	-0.3
DKL				eSG	Sb	22 11 01.6	0.0
DKL	Dikili	0.91	9	ePg	Pg	22 10 48.9	-0.3
DKL				eSg	Sb	22 11 01.6	0.0
AYDB	Zeytinkoy-Aydi	0.95	103	ePG	Pb	22 10 50.3	+0.1
AYDB	Zeytinkoy-Aydi	0.95	103	ePg	Pb	22 10 50.3	+0.1
AYDN	Tasoluk	1.05	119	i P	Pn	22 10 52.3	0.0
AYDN				i S	Sn	22 11 06.5	-0.5
AYDN	Tasoluk	1.05	119	P	Pn	22 10 52.3	0.0
AYDN				S	Sn	22 11 06.5	-0.5
AKS	Akhisar	1.11	50	ePG	Pb	22 10 52.8	-0.1
AKS	Akhisar	1.11	50	ePg	Pb	22 10 52.8	-0.1
PRK	Paraskevi	1.13	342	P	Pb	22 10 52.4	-0.7
PRK				S	Sb	22 11 07.6	-0.3
PRK	Paraskevi	1.13	342	P	Pb	22 10 52.5	-0.7
PRK				S	Sb	22 11 07.6	-0.3
PRK	Paraskevi	1.13	342	P	Pb	22 10 52.5	-0.7
PRK				S	Sb	22 11 07.6	-0.3
PRK				AML	AML	22 11 10.8	
	comp=N,354μm,0.5s						
PRK				AML	AML	22 11 13.6	
	comp=E,404μm,0.3s						
AYVA	Ayvalik	1.14	359	i P	Pb	22 10 53.1	-0.2
AYVA				i S	Sn	22 11 09.4	+0.4
AYVA	Ayvalik	1.14	359	P	Pb	22 10 53.1	-0.2
AYVA				S	Sn	22 11 09.4	+0.4
BODT	Bodrum	1.20	157	ePN	Pg	22 10 55.2	+0.5
BODT	Bodrum	1.20	157	P	Pn	22 10 54.2	-0.1
BODT				S	Sb	22 11 09.9	0.0
BODT	Bodrum	1.20	157	P	Pn	22 10 54.2	-0.1
BODT	Bodrum	1.20	157	ePn	Pg	22 10 55.2	+0.5
BODT				S	Sb	22 11 09.9	0.0
SIGR	SIGRI	1.24	327	ePN	Pg	22 10 55.7	+0.3
SIGR	SIGRI	1.24	327	P	Pn	22 10 54.3	-0.6
SIGR				S	Sb	22 11 10.8	-0.2
SIGR	SIGRI	1.24	327	P	Pn	22 10 54.3	-0.6
SIGR	SIGRI	1.24	327	ePn	Pg	22 10 55.7	+0.3
SIGR				S	Sb	22 11 10.8	-0.2
SIGR	SIGRI	1.24	327	P	Pn	22 10 54.1	-0.7
SIGR				S	Sb	22 11 10.5	-0.5
SIGR				AML	AML	22 11 12.9	
	comp=E,363μm,0.5s						
SIGR				AML	AML	22 11 15.3	
	comp=N,507μm,0.5s						
BDRM	Kayabasi	1.24	152	i P	Pg	22 10 55.7	+0.2
BDRM	Kayabasi	1.24	152	P	Pg	22 10 55.7	+0.2
APE	Apeiranthos	1.45	221	ePN	Pg	22 11 00.1	+0.7
APE	Apeiranthos	1.45	221	P	Pn	22 10 57.1	-0.6
APE	Apeiranthos	1.45	221	ePn	Pg	22 11 00.0	+0.7
APE				S	Sn	22 11 16.1	-0.6
APE	Apeiranthos	1.45	221	P	Pn	22 10 57.1	-0.6
APE				S	Sn	22 11 16.1	-0.6
KULA	Kula-Manisa	1.57	77	ePN	Pb	22 11 00.3	-0.3
KULA	Kula-Manisa	1.57	77	ePn	Pb	22 11 00.4	-0.3
BALY	Balya	1.72	24	i P	Pb	22 11 03.3	+0.1
BALY	Balya	1.72	24	P	Pb	22 11 03.3	+0.1
BALB	Balikesir	1.73	31	ePN	Pb	22 11 02.6	-0.7
BALB	Balikesir	1.73	31	ePn	Pb	22 11 02.6	-0.7
DEMI	Demirci	1.79	60	i P	Pg	22 11 05.7	-0.3
DEMI				i S	Sn	22 11 25.7	+0.3
DEMI	Demirci	1.79	60	P	Pg	22 11 05.7	-0.3
DEMI				S	Sn	22 11 25.7	+0.3
TURN	Turunc	1.98	130	i P	Pn	22 11 04.0	-1.0
TURN	Turunc	1.98	130	P	Pn	22 11 04.0	-1.0
DALY	Dalyan (Mu˜la	2.05	131	ePN	Pb	22 11 08.0	-0.8
DALY	Dalyan (Mu˜la	2.05	131	ePn	Pb	22 11 08.0	-0.8
LIA	Limnos Island	2.10	326	P	Pn	22 11 07.4	+0.7
GADA	Gvkgeada	2.12	343	ePN	Pb	22 11 08.7	-1.3
GADA	Gvkgeada	2.12	343	ePn	Pb	22 11 08.7	-1.3
KHAL	Karahalli	2.19	84	i P	Pg	22 11 13.2	-0.4
SMTH	Samothraki Isl	2.48	339	P	Pn	22 11 12.3	+0.4
SMTH	Samothraki Isl	2.48	339	P	Pn	22 11 12.3	+0.4
TVSB	Tavsanli	2.50	58	ePN	Pn	22 11 13.7	+1.4
TVSB	Tavsanli	2.50	58	ePn	Pn	22 11 13.7	+1.4
ERIK	Erikli-Kesan	2.50	356	ePN	Pn	22 11 12.8	+0.7
ERIK	Erikli-Kesan	2.50	356	ePn	Pn	22 11 12.9	+0.7
ALN	Alexandroupoli	2.77	349	ePN	Pn	22 11 17.9	+1.9
ALN	Alexandroupoli	2.77	349	P	Pn	22 11 17.1	+1.1
ALN	Alexandroupoli	2.77	349	ePn	Pn	22 11 17.9	+1.9
ALN	Alexandroupoli	2.77	349	P	Pn	22 11 17.1	+1.1

ISCJB 07 22:12:42.5±0.3, 39°.64S±0°.02×174°.39E±0°.03, h139km±3km, mb3.4/3, Error ellipse: s-maj=4.9km s-min=3.1km az=34.3
IDC 07 22:12:42.7±1.6, 39°.60S×174°.46E, h112km±20km, mb3.2/3, mb1 3.6/5, mb1mx3.4/26, mbtmp3.8/5, Error ellipse: s-maj=28.1km s-min=17.1km az=136.0
NEIC 07 22:12:44.0, 39°.62S×174°.44E, h136km, MG4.6(WEL), After WEL.
WEL 07 22:12:44.1±0.2, 39°.62S×174°.44E, h135km±1km, ML4.6/22, Error ellipse: s-maj=1.0km s-min=0.7km az=90.0
WEL Felt between Waikato, Manawatu and Taranaki, maximum reported intensity MM 4.
ISC 07 22:12:43.3±0.9, 39°.66S±0°.03×174°.42E±0°.03, h143km±5km, n232, σ1s.13/259, mb3.5/3, 26C-44D, North Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LREZ	Lake Rotokare	0.20	355	⇑PN	Pn	22 13 02.4	-0.3
LREZ				SN	Sn	22 13 16.2	-1.3
PREZ	Palmer Road	0.38	327	PN	Pn	22 13 02.9	-0.5
PREZ	Palmer Road	0.38	327	Pn	Pn	22 13 02.9	-0.5
WAZ	Wanganui	0.44	103	⇓PN	Pn	22 13 03.8	+0.2
WAZ				SN	Sn	22 13 18.6	-0.4
WAZ	Wanganui	0.44	103	Pn	Pn	22 13 03.8	+0.2
WAZ				Sn	Sn	22 13 18.6	-0.4
NEZ	North Egmont	0.46	327	⇑PN	Pn	22 13 03.1	-0.7
NEZ				SN	Sn	22 13 18.0	-1.3
NEZ	North Egmont	0.46	327	Pn	Pn	22 13 03.1	-0.7
NEZ				Sn	Sn	22 13 18.0	-1.3
KHEZ	Kahui Hut	0.48	319	⇑PN	Pn	22 13 03.3	-0.6
KHEZ				SN	Sn	22 13 18.2	-1.2
KHEZ	Kahui Hut	0.48	319	Pn	Pn	22 13 03.3	-0.6
KHEZ				Sn	Sn	22 13 18.2	-1.2

NMEZ	**Namu Road**	**0.49**	**300**	⇑PN	**Pn**	**22 13 03.3**	**-0.4**
NMEZ				SN	**Sn**	**22 13 18.3**	**-1.0**
NMEZ	**Namu Road**	**0.49**	**300**	Pn	**Pn**	**22 13 03.4**	**-0.4**
NMEZ				Sn	**Sn**	**22 13 18.3**	**-1.0**
DREZ	**Durham Road**	**0.50**	**340**	⇑PN	**Pn**	**22 13 03.4**	**-0.4**
DREZ				SN	**Sn**	**22 13 17.9**	**-1.5**
DREZ	**Durham Road**	**0.50**	**340**	Pn	**Pn**	**22 13 03.4**	**-0.4**
DREZ				Sn	**Sn**	**22 13 17.9**	**-1.5**
PKE	**Pukeiti**	**0.57**	**324**	⇑PN	**Pn**	**22 13 03.6**	**-0.7**
PKE	**Pukeiti**	**0.57**	**324**	Pn	**Pn**	**22 13 03.6**	**-0.7**
NWEZ	**Newall Road**	**0.57**	**311**	⇑PN	**Pn**	**22 13 03.9**	**-0.3**
NWEZ	**Newall Road**	**0.57**	**311**	Pn	**Pn**	**22 13 03.9**	**-0.3**
MHEZ	**Mangahewa**	**0.58**	**352**	⇑PN	**Pn**	**22 13 04.0**	**-0.4**
MHEZ	**Mangahewa**	**0.58**	**352**	Pn	**Pn**	**22 13 04.0**	**-0.4**
VRZ	**Vera Road**	**0.59**	**26**	⇓PN	**Pn**	**22 13 03.7**	**-0.7**
VRZ				SN	**Sn**	**22 13 18.5**	**-1.9**
VRZ	**Vera Road**	**0.59**	**26**	Pn	**Pn**	**22 13 03.7**	**-0.7**
VRZ				Sn	**Sn**	**22 13 18.5**	**-1.9**
PKVZ	**Pokaka**	**0.80**	**63**	⇓PN	**Pn**	**22 13 05.4**	**-0.5**
PKVZ				SN	**Sn**	**22 13 21.1**	**-1.9**
PKVZ	**Pokaka**	**0.80**	**63**	Pn	**Pn**	**22 13 05.4**	**-0.5**
PKVZ				Sn	**Sn**	**22 13 21.1**	**-1.9**
MTVZ	**Mangateitei**	**0.85**	**72**	⇓PN	**Pn**	**22 13 05.8**	**-0.5**
MTVZ				SN	**Sn**	**22 13 21.9**	**-1.8**
MTVZ	**Mangateitei**	**0.85**	**72**	Pn	**Pn**	**22 13 05.8**	**-0.5**
MTVZ				Sn	**Sn**	**22 13 21.9**	**-1.8**
TRVZ	**Turoa**	**0.94**	**68**	⇓PN	**Pn**	**22 13 06.6**	**-0.5**
TRVZ	**Turoa**	**0.94**	**68**	Pn	**Pn**	**22 13 06.3**	**-0.8**
DRZ	**Dome Shelter**	**0.96**	**67**	⇑PN	**Pn**	**22 13 06.9**	**-0.5**
DRZ	**Dome Shelter**	**0.96**	**67**	Pn	**Pn**	**22 13 06.9**	**-0.5**
FWVZ	**Far West T-bar**	**0.96**	**66**	⇓PN	**Pn**	**22 13 06.8**	**-0.5**
FWVZ				SN	**Sn**	**22 13 23.2**	**-2.4**
FWVZ	**Far West T-bar**	**0.96**	**66**	⇓Pn	**Pn**	**22 13 06.8**	**-0.5**
FWVZ				Sn	**Sn**	**22 13 23.2**	**-2.4**
WNVZ	**Wahianoa**	**0.97**	**70**	⇓PN	**Pn**	**22 13 06.9**	**-0.4**
WNVZ	**Wahianoa**	**0.97**	**70**	Pn	**Pn**	**22 13 06.9**	**-0.4**
WHVZ	**Whangaehu Hut**	**0.98**	**68**	PN	**Pn**	**22 13 06.7**	**-0.8**
WHVZ	**Whangaehu Hut**	**0.98**	**68**	Pn	**Pn**	**22 13 06.7**	**-0.8**
TWVZ	**Taurewa**	**0.98**	**54**	⇓PN	**Pn**	**22 13 06.6**	**-0.7**
TWVZ	**Taurewa**	**0.98**	**54**	Pn	**Pn**	**22 13 06.7**	**-0.7**
TUVZ	**Tukino**	**1.03**	**68**	⇓PN	**Pn**	**22 13 07.7**	**-0.1**
TUVZ	**Tukino**	**1.03**	**68**	Pn	**Pn**	**22 13 07.7**	**-0.1**
NGZ	**Ngauruhoe**	**1.03**	**63**	⇓PN	**Pn**	**22 13 07.4**	**-0.4**
NGZ	**Ngauruhoe**	**1.03**	**63**	Pn	**Pn**	**22 13 07.4**	**-0.4**
WTVZ	**West Tongariro**	**1.05**	**59**	⇓PN	**Pn**	**22 13 07.6**	**-0.4**
WTVZ	**West Tongariro**	**1.05**	**59**	Pn	**Pn**	**22 13 07.6**	**-0.4**
MOVZ	**Moawhango**	**1.06**	**77**	⇓PN	**Pn**	**22 13 07.4**	**-0.5**
MOVZ				SN	**Sn**	**22 13 24.1**	**-2.7**
MOVZ	**Moawhango**	**1.06**	**77**	Pn	**Pn**	**22 13 07.5**	**-0.5**
MOVZ				Sn	**Sn**	**22 13 24.1**	**-2.7**
OTVZ	**Oturere**	**1.08**	**63**	PN	**Pn**	**22 13 08.1**	**-0.2**
OTVZ	**Oturere**	**1.08**	**63**	Pn	**Pn**	**22 13 08.1**	**-0.2**
KRVZ	**Karewarewa**	**1.10**	**60**	⇓PN	**Pn**	**22 13 08.0**	**-0.4**
KRVZ	**Karewarewa**	**1.10**	**60**	Pn	**Pn**	**22 13 08.0**	**-0.4**
HIZ	**Hauiti**	**1.19**	**17**	⇓PN	**Pn**	**22 13 08.4**	**-0.8**
HIZ	**Hauiti**	**1.19**	**17**	Pn	**Pn**	**22 13 08.4**	**-0.8**
KATZ	**Kakaramea**	**1.20**	**56**	⇓PN	**Pn**	**22 13 09.2**	**-0.2**
KATZ	**Kakaramea**	**1.20**	**56**	Pn	**Pn**	**22 13 09.2**	**-0.2**
DUWZ	**D'Urville Isla**	**1.21**	**198**	PN	**Pn**	**22 13 09.6**	**+0.3**
DUWZ	**D'Urville Isla**	**1.21**	**198**	Pn	**Pn**	**22 13 09.7**	**+0.3**
TSZ	**Takapari Road**	**1.25**	**109**	PN	**Pn**	**22 13 09.7**	**0.0**
TSZ				AML	AML	22 13 28.4	
TSZ				AML	AML	22 13 30.9	
TSZ	**Takapari Road**	**1.25**	**109**	Pn	**Pn**	**22 13 09.7**	**0.0**
KIW	**Kapiti Island**	**1.26**	**163**	PN	**Pn**	**22 13 10.2**	**+0.4**
KIW				AML	AML	22 13 28.5	
KIW				AML	AML	22 13 29.7	
KIW	**Kapiti Island**	**1.26**	**163**	Pn	**Pn**	**22 13 10.2**	**+0.4**
POWZ	**Post Office Ro**	**1.27**	**126**	PN	**Pn**	**22 13 10.3**	**+0.5**
POWZ	**Post Office Ro**	**1.27**	**126**	Pn	**Pn**	**22 13 10.3**	**+0.5**
BHHZ	**Black Hill Sta**	**1.28**	**83**	⇓PN	**Pn**	**22 13 09.3**	**-0.8**
BHHZ				SN	**Sn**	**22 13 27.5**	**-3.0**
BHHZ	**Black Hill Sta**	**1.28**	**83**	Pn	**Pn**	**22 13 09.3**	**-0.8**
BHHZ				Sn	**Sn**	**22 13 27.5**	**-3.0**
OGWZ	**Otaki Gorge**	**1.29**	**154**	⇑PN	**Pn**	**22 13 10.6**	**+0.5**
OGWZ	**Otaki Gorge**	**1.29**	**154**	Pn	**Pn**	**22 13 10.7**	**+0.5**
RATZ	**Rangitukua**	**1.31**	**53**	PN	**Pn**	**22 13 10.6**	**+0.2**
RATZ	**Rangitukua**	**1.31**	**53**	Pn	**Pn**	**22 13 10.6**	**+0.2**
MRZ	**Mangatainoka R**	**1.34**	**139**	PN	**Pn**	**22 13 10.9**	**+0.3**
MRZ				AML	AML	22 13 31.2	
MRZ				AML	AML	22 13 32.2	
MRZ	**Mangatainoka R**	**1.34**	**139**	Pn	**Pn**	**22 13 10.9**	**+0.3**
WATZ	**Wairara**	**1.39**	**47**	⇓PN	**Pn**	**22 13 11.1**	**-0.1**
WATZ	**Wairara**	**1.39**	**47**	Pn	**Pn**	**22 13 11.1**	**-0.1**
PNHZ	**Pukenui**	**1.39**	**101**	PN	**Pn**	**22 13 11.3**	**+0.1**
PNHZ	**Pukenui**	**1.39**	**101**	Pn	**Pn**	**22 13 11.3**	**+0.1**
DVHZ	**Dannevirke**	**1.48**	**116**	PN	**Pn**	**22 13 12.2**	**0.0**
DVHZ	**Dannevirke**	**1.48**	**116**	Pn	**Pn**	**22 13 12.2**	**0.0**
PRWZ	**Pori Road**	**1.49**	**128**	⇑PN	**Pn**	**22 13 12.8**	**+0.6**
PRWZ	**Pori Road**	**1.49**	**128**	Pn	**Pn**	**22 13 12.8**	**+0.6**
HOWZ	**Holdsworth Sta**	**1.50**	**146**	⇑PN	**Pn**	**22 13 12.6**	**+0.3**
HOWZ	**Holdsworth Sta**	**1.50**	**146**	Pn	**Pn**	**22 13 12.6**	**+0.3**
KRHZ	**Kereru**	**1.50**	**90**	⇓PN	**Pn**	**22 13 12.1**	**-0.2**
HATZ	**Hinemaiaia**	**1.50**	**60**	PN	**Pn**	**22 13 11.7**	**-0.7**
HATZ	**Hinemaiaia**	**1.50**	**60**	Pn	**Pn**	**22 13 11.7**	**-0.7**
CAW	**Cannon Point**	**1.53**	**161**	⇑PN	**Pn**	**22 13 14.1**	**+1.5**
CAW				AML	AML	22 13 35.1	
CAW				AML	AML	22 13 36.9	
CAW	**Cannon Point**	**1.53**	**161**	⇑Pn	**Pn**	**22 13 14.1**	**+1.5**
TCW	**Tory Channel**	**1.56**	**184**	PN	**Pn**	**22 13 13.3**	**+0.4**
TCW				AML	AML	22 13 33.7	
TCW				AML	AML	22 13 34.6	
TCW	**Tory Channel**	**1.56**	**184**	Pn	**Pn**	**22 13 13.3**	**+0.4**
KWHZ	**Kaweka Forest**	**1.56**	**82**	PN	**Pn**	**22 13 13.1**	**+0.1**
TIWZ	**Tintock**	**1.58**	**135**	⇑PN	**Pn**	**22 13 13.6**	**+0.4**
TIWZ				AML	AML	22 13 36.4	
TIWZ				AML	AML	22 13 37.0	
TIWZ	**Tintock**	**1.58**	**135**	Pn	**Pn**	**22 13 13.6**	**+0.4**
TLZ	**Tolley Road**	**1.58**	**34**	⇓PN	**Pn**	**22 13 12.7**	**-0.6**
TLZ	**Tolley Road**	**1.58**	**34**	⇓Pn	**Pn**	**22 13 12.7**	**-0.6**
KUTZ	**Kaahu Road**	**1.59**	**44**	⇓PN	**Pn**	**22 13 13.5**	**+0.1**
KUTZ	**Kaahu Road**	**1.59**	**44**	Pn	**Pn**	**22 13 13.5**	**+0.1**
WPHZ	**Waipukurau**	**1.60**	**105**	⇑PN	**Pn**	**22 13 13.8**	**+0.4**
WPHZ	**Waipukurau**	**1.60**	**105**	Pn	**Pn**	**22 13 13.8**	**+0.4**
WEL	**Wellington**	**1.65**	**171**	PN	**Pn**	**22 13 14.3**	**+0.4**
WEL				AML	AML	22 13 38.3	
WEL				AML	AML	22 13 38.9	
WEL	**Wellington**	**1.65**	**171**	Pn	**Pn**	**22 13 14.3**	**+0.4**
BKZ	**Black Stump Fm**	**1.68**	**74**	⇓PN	**Pn**	**22 13 13.6**	**-0.7**
BKZ				AML	AML	22 13 45.4	
BKZ				AML	AML	22 13 45.5	
BKZ	**Black Stump Fm**	**1.68**	**74**	Pn	**Pn**	**22 13 13.6**	**-0.7**
MTW	**Mount Morrison**	**1.71**	**152**	⇑PN	**Pn**	**22 13 15.4**	**+0.8**
MTW				AML	AML	22 13 38.6	
MTW				AML	AML	22 13 38.6	
MTW	**Mount Morrison**	**1.71**	**152**	⇑Pn	**Pn**	**22 13 15.4**	**+0.8**
BFZ	**Birch Farm**	**1.73**	**127**	⇑PN	**Pn**	**22 13 15.0**	**+0.1**
BFZ				AML	AML	22 13 39.7	
BFZ				AML	AML	22 13 39.7	
BFZ				AML	AML	22 13 39.9	
BFZ				AML	AML	22 13 42.7	
BFZ	**Birch Farm**	**1.73**	**127**	Pn	**Pn**	**22 13 15.0**	**+0.1**
NNZ	**Nelson**	**1.75**	**207**	⇓PN	**Pn**	**22 13 15.2**	**+0.2**
NNZ	**Nelson**	**1.75**	**207**	Pn	**Pn**	**22 13 15.2**	**+0.2**
MRHZ	**Matea Rd**	**1.75**	**63**	⇓PN	**Pn**	**22 13 14.2**	**-1.0**
WPRZ	**Whakapapatarin**	**1.77**	**51**	PN	**Pn**	**22 13 14.9**	**-0.4**
WPRZ	**Whakapapatarin**	**1.77**	**51**	Pn	**Pn**	**22 13 14.9**	**-0.4**
ANWZ	**Angora Road**	**1.77**	**118**	⇓PN	**Pn**	**22 13 15.8**	**+0.6**
MCHZ	**McNeill Hill**	**1.77**	**84**	PN	**Pn**	**22 13 15.7**	**+0.4**
MCHZ	**McNeill Hill**	**1.77**	**84**	Pn	**Pn**	**22 13 15.7**	**+0.4**
BHW	**Baring Head**	**1.78**	**169**	⇑PN	**Pn**	**22 13 15.7**	**+0.3**
BHW				AML	AML	22 13 40.1	
BHW				AML	AML	22 13 40.5	
BHW	**Baring Head**	**1.78**	**169**	Pn	**Pn**	**22 13 15.7**	**+0.3**
PRHZ	**Porangahau**	**1.81**	**110**	PN	**Pn**	**22 13 16.0**	**+0.3**
PRHZ	**Porangahau**	**1.81**	**110**	Pn	**Pn**	**22 13 16.0**	**+0.3**
TUWZ	**Tuamarina**	**1.81**	**192**	PN	**Pn**	**22 13 15.7**	**0.0**
TUWZ				AML	AML	22 13 38.8	
TUWZ				AML	AML	22 13 39.6	
TUWZ	**Tuamarina**	**1.81**	**192**	Pn	**Pn**	**22 13 15.7**	**0.0**
CPWZ	**Castlepoint**	**1.85**	**133**	⇓PN	**Pn**	**22 13 17.1**	**+0.9**
CPWZ	**Castlepoint**	**1.85**	**133**	Pn	**Pn**	**22 13 17.1**	**+0.9**
ALRZ	**Allen Road**	**1.85**	**54**	⇓PN	**Pn**	**22 13 15.5**	**-0.7**
ALRZ	**Allen Road**	**1.85**	**54**	Pn	**Pn**	**22 13 15.5**	**-0.7**
GRRZ	**Galatos Road**	**1.85**	**46**	⇓PN	**Pn**	**22 13 16.4**	**+0.1**
QRZ	**Quartz Range**	**1.86**	**231**	PN	**Pn**	**22 13 15.8**	**-0.5**
QRZ	**Quartz Range**	**1.86**	**231**	Pn	**Pn**	**22 13 15.8**	**-0.5**
MSWZ	**Moikau Station**	**1.87**	**161**	Pn	**Pn**	**22 13 17.8**	**+1.4**
MSWZ				Sn	**Sn**	**22 13 39.9**	**-2.0**
PAWZ	**Paruwai Farm**	**1.89**	**156**	⇑PN	**Pn**	**22 13 16.9**	**+0.3**
PAWZ				SN	**Sn**	**22 13 39.4**	**-2.9**
PAWZ				AML	AML	22 13 42.0	
PAWZ	**Paruwai Farm**	**1.89**	**156**	Pn	**Pn**	**22 13 16.9**	**+0.3**
PAWZ				Sn	**Sn**	**22 13 39.4**	**-2.9**
KAHZ	**Kahuranaki**	**1.90**	**95**	PN	**Pn**	**22 13 17.1**	**+0.3**
KAHZ	**Kahuranaki**	**1.90**	**95**	Pn	**Pn**	**22 13 17.1**	**+0.3**
PXZ	**Pawanui**	**1.91**	**102**	PN	**Pn**	**22 13 16.9**	**0.0**
PXZ				AML	AML	22 13 42.9	
PXZ				AML	AML	22 13 43.0	
PXZ				AML	AML	22 13 43.5	
PXZ				AML	AML	22 13 43.5	
PXZ	**Pawanui**	**1.91**	**102**	Pn	**Pn**	**22 13 16.9**	**0.0**
PRRZ	**Plateau Road**	**1.92**	**54**	PN	**Pn**	**22 13 16.3**	**-0.8**
PRRZ	**Plateau Road**	**1.92**	**54**	Pn	**Pn**	**22 13 16.3**	**-0.8**
HRRZ	**Handcock Road**	**1.92**	**49**	⇓PN	**Pn**	**22 13 16.9**	**-0.2**
HRRZ	**Handcock Road**	**1.92**	**49**	Pn	**Pn**	**22 13 16.9**	**-0.2**
NMHZ	**Naumai**	**1.93**	**74**	PN	**Pn**	**22 13 17.6**	**+0.4**
NMHZ	**Naumai**	**1.93**	**74**	Pn	**Pn**	**22 13 17.6**	**+0.4**
HSRZ	**Hossack Road**	**1.95**	**47**	⇓PN	**Pn**	**22 13 17.4**	**-0.1**
TRWZ	**Traveller**	**1.99**	**151**	⇑PN	**Pn**	**22 13 17.9**	**+0.1**
TRWZ				AML	AML	22 13 45.8	
TRWZ				AML	AML	22 13 45.9	
TRWZ	**Traveller**	**1.99**	**151**	Pn	**Pn**	**22 13 17.9**	**+0.1**
PLWZ	**Palliser**	**2.01**	**162**	⇑PN	**Pn**	**22 13 18.2**	**0.0**
PLWZ	**Palliser**	**2.01**	**162**	Pn	**Pn**	**22 13 18.2**	**0.0**
UTU	**Utuhina**	**2.02**	**44**	PN	**Pn**	**22 13 18.5**	**+0.2**
UTU	**Utuhina**	**2.02**	**44**	Pn	**Pn**	**22 13 18.5**	**+0.2**
ARHZ	**Aropaoanui**	**2.03**	**80**	⇓PN	**Pn**	**22 13 18.4**	**+0.1**
ARHZ	**Aropaoanui**	**2.03**	**80**	Pn	**Pn**	**22 13 18.4**	**+0.1**
CKHZ	**Cape Kidnapper**	**2.05**	**91**	⇑PN	**Pn**	**22 13 18.9**	**+0.3**
CKHZ	**Cape Kidnapper**	**2.05**	**91**	Pn	**Pn**	**22 13 18.9**	**+0.3**
CMWZ	**Cape Campbell**	**2.10**	**184**	PN	**Pn**	**22 13 20.1**	**+1.0**
CMWZ				SN	**Sn**	**22 13 45.6**	**-1.1**
CMWZ				AML	AML	22 13 47.1	
CMWZ	**Cape Campbell**	**2.10**	**184**	Pn	**Pn**	**22 13 20.1**	**+1.0**
CMWZ				Sn	**Sn**	**22 13 45.6**	**-1.1**
BSWZ	**Blackbirch Sta**	**2.10**	**191**	PN	**Pn**	**22 13 19.5**	**+0.4**
BSWZ				AML	AML	22 13 46.2	
BSWZ				AML	AML	22 13 48.4	
BSWZ	**Blackbirch Sta**	**2.10**	**191**	Pn	**Pn**	**22 13 19.5**	**+0.4**
TOZ	**Tahuroa Road**	**2.10**	**24**	PN	**Pn**	**22 13 18.2**	**-1.0**
TOZ	**Tahuroa Road**	**2.10**	**24**	Pn	**Pn**	**22 13 18.2**	**-1.0**
TARZ	**Mount Tarawera**	**2.16**	**50**	PN	**Pn**	**22 13 19.7**	**-0.2**
TARZ	**Mount Tarawera**	**2.16**	**50**	Pn	**Pn**	**22 13 19.7**	**-0.2**
OMRZ	**Omania**	**2.17**	**45**	Pn	**Pn**	**22 13 19.9**	**-0.2**
RAHZ	**Arahi**	**2.19**	**71**	⇑PN	**Pn**	**22 13 19.9**	**-0.4**
RAHZ	**Arahi**	**2.19**	**71**	Pn	**Pn**	**22 13 19.9**	**-0.4**
WHHZ	**Waihua**	**2.25**	**76**	PN	**Pn**	**22 13 20.9**	**-0.2**
THZ	**Tophouse**	**2.40**	**208**	⇓PN	**Pn**	**22 13 22.7**	**-0.2**
THZ	**Tophouse**	**2.40**	**208**	Pn	**Pn**	**22 13 22.7**	**-0.2**
TGRZ	**Tauranga**	**2.40**	**37**	PN	**Pn**	**22 13 22.8**	**0.0**
TGRZ	**Tauranga**	**2.40**	**37**	Pn	**Pn**	**22 13 22.8**	**0.0**
SNGZ	**Shannon Statio**	**2.43**	**70**	PN	**Pn**	**22 13 22.6**	**-0.6**
SNGZ	**Shannon Statio**	**2.43**	**70**	Pn	**Pn**	**22 13 22.6**	**-0.6**
OPRZ	**Ohinepanea**	**2.46**	**43**	PN	**Pn**	**22 13 23.2**	**-0.4**
OPRZ	**Ohinepanea**	**2.46**	**43**	Pn	**Pn**	**22 13 23.2**	**-0.4**
URZ	**Urewera**	**2.52**	**57**	P	**Pn**	**22 13 22.7**	**-1.5**
	72nm,0.3s,baz=252,slow=3.2,SNR=588						
URZ				S	**Sn**	**22 13 52.0**	**-3.7**
	52nm,0.3s,baz=104,slow=19,SNR=9.6						
URZ	**Urewera**	**2.52**	**57**	PN	**Pn**	**22 13 22.7**	**-1.5**
URZ				AML	AML	22 13 52.9	
URZ				AML	AML	22 13 54.1	
AWAZ	**Awhitu Peninsu**	**2.59**	**4**	PN	**Pn**	**22 13 25.2**	**0.0**
KNZ	**Kokohu**	**2.60**	**77**	⇓PN	**Pn**	**22 13 24.3**	**-1.0**
KNZ				AML	AML	22 13 25.5	
KNZ				AML	AML	22 13 59.6	
KNZ	**Kokohu**	**2.60**	**77**	Pn	**Pn**	**22 13 24.3**	**-1.0**
RAGZ	**Rawiri**	**2.60**	**64**	PN	**Pn**	**22 13 24.3**	**-1.1**
RAGZ	**Rawiri**	**2.60**	**64**	Pn	**Pn**	**22 13 24.3**	**-1.1**
MKAZ	**Moumakai**	**2.61**	**13**	⇓PN	**Pn**	**22 13 25.0**	**-0.4**
MKAZ	**Moumakai**	**2.61**	**13**	Pn	**Pn**	**22 13 25.0**	**-0.4**
ETAZ	**East Tamaki Re**	**2.73**	**9**	Pn	**Pn**	**22 13 26.9**	**0.0**
MHGZ	**Mahia Peninsul**	**2.75**	**81**	PN	**Pn**	**22 13 26.5**	**-0.6**
MHGZ	**Mahia Peninsul**	**2.75**	**81**	Pn	**Pn**	**22 13 26.5**	**-0.6**
MWZ	**Matawai**	**2.76**	**62**	⇓PN	**Pn**	**22 13 25.9**	**-1.4**
MWZ				AML	AML	22 14 02.5	
MWZ				AML	AML	22 14 03.9	
MWZ	**Matawai**	**2.76**	**62**	Pn	**Pn**	**22 13 25.9**	**-1.4**
RIGZ	**Rimuhau**	**2.76**	**71**	⇓PN	**Pn**	**22 13 26.5**	**-0.9**
PRGZ	**Paritu Road**	**2.78**	**76**	⇓PN	**Pn**	**22 13 26.7**	**-0.9**
PRGZ	**Paritu Road**	**2.78**	**76**	Pn	**Pn**	**22 13 26.7**	**-0.9**
KHZ	**Kahutara**	**2.84**	**193**	⇓PN	**Pn**	**22 13 28.3**	**+0.1**
KHZ	**Kahutara**	**2.84**	**193**	Pn	**Pn**	**22 13 28.3**	**+0.1**
DSZ	**Denniston Nort**	**2.88**	**223**	PN	**Pn**	**22 13 28.4**	**-0.5**
DSZ	**Denniston Nort**	**2.88**	**223**	Pn	**Pn**	**22 13 28.4**	**-0.5**
WIAZ	**Waiheke Island**	**2.91**	**11**	PN	**Pn**	**22 13 29.5**	**+0.2**
TKGZ	**Te Karaka**	**2.93**	**67**	PN	**Pn**	**22 13 28.4**	**-1.0**
TKGZ	**Te Karaka**	**2.93**	**67**	Pn	**Pn**	**22 13 28.4**	**-1.0**
TWGZ	**Tauwhareparae**	**3.14**	**63**	⇓PN	**Pn**	**22 13 31.1**	**-1.1**
TWGZ	**Tauwhareparae**	**3.14**	**63**	Pn	**Pn**	**22 13 31.1**	**-1.1**
CNGZ	**Carnagh Statio**	**3.17**	**70**	PN	**Pn**	**22 13 31.5**	**-1.0**
CNGZ	**Carnagh Statio**	**3.17**	**70**	Pn	**Pn**	**22 13 31.5**	**-1.0**
HAZ	**Te Kaha**	**3.24**	**55**	PN	**Pn**	**22 13 31.5**	**-2.0**
PKGZ	**Pakihiroa**	**3.36**	**59**	PN	**Pn**	**22 13 33.5**	**-1.5**
PUZ	**Puketiti**	**3.38**	**63**	⇓PN	**Pn**	**22 13 33.4**	**-1.9**
PUZ				AML	AML	22 14 14.2	
PUZ				AML	AML	22 14 15.8	
PUZ	**Puketiti**	**3.38**	**63**	Pn	**Pn**	**22 13 33.4**	**-1.9**
LTZ	**Lake Taylor**	**3.52**	**207**	PN	**Pn**	**22 13 36.1**	**-0.9**
LTZ	**Lake Taylor**	**3.52**	**207**	Pn	**Pn**	**22 13 36.1**	**-0.9**
WMGZ	**Waiomatatini S**	**3.62**	**61**	⇓PN	**Pn**	**22 13 36.5**	**-1.9**
WMGZ	**Waiomatatini S**	**3.62**	**61**	Pn	**Pn**	**22 13 36.5**	**-1.9**
MXZ	**Matakaoa Point**	**3.69**	**57**	⇓PN	**Pn**	**22 13 37.8**	**-1.5**
MXZ				AML	AML	22 13 38.8	
MXZ				AML	AML	22 13 39.8	
MXZ	**Matakaoa Point**	**3.69**	**57**	Pn	**Pn**	**22 13 37.8**	**-1.5**
INZ	**Inchbonnie**	**3.80**	**215**	PN	**Pn**	**22 13 39.6**	**-1.0**
OXZ	**Oxford**	**4.08**	**205**	PN	**Pn**	**22 13 42.0**	**-2.4**
CRLZ	**Canterbury Las**	**4.14**	**198**	⇓PN	**Pn**	**22 13 43.0**	**-2.1**
CRLZ	**Canterbury Las**	**4.14**	**198**	Pn	**Pn**	**22 13 43.0**	**-2.1**
MQZ	**McQueen's Vall**	**4.26**	**198**	PN	**Pn**	**22 13 44.2**	**-2.4**
WVZ	**Waitaha Valley**	**4.40**	**218**	⇑PN	**Pn**	**22 13 47.0**	**-1.5**
WVZ	**Waitaha Valley**	**4.40**	**218**	Pn	**Pn**	**22 13 47.0**	**-1.5**
RPZ	**Rata Peaks**	**4.78**	**211**	P	**Pn**	**22 13 51.8**	**-1.7**
	5.8nm,0.3s,baz=9.5,slow=12,SNR=45						
RPZ				S	**Sn**	**22 14 43.2**	**-5.1**
	32nm,0.3s,baz=25,slow=19,SNR=19						
RPZ	**Rata Peaks**	**4.78**	**211**	PN	**Pn**	**22 13 52.2**	**-1.4**
RPZ	**Rata Peaks**	**4.78**	**211**	Pn	**Pn**	**22 13 52.2**	**-1.4**
FOZ	**Fox Glacier**	**5.19**	**220**	PN	**Pn**	**22 13 56.6**	**-2.3**
FOZ	**Fox Glacier**	**5.19**	**220**	Pn	**Pn**	**22 13 56.6**	**-2.3**
LBZ	**Lake Benmore**	**5.68**	**212**	PN	**Pn**	**22 14 03.9**	**-1.7**
LBZ	**Lake Benmore**	**5.68**	**212**	Pn	**Pn**	**22 14 03.9**	**-1.7**
ODZ	**Otahua Downs**	**6.07**	**206**	PN	**Pn**	**22 14 08.8**	**-1.9**
ODZ	**Otahua Downs**	**6.07**	**206**	Pn	**Pn**	**22 14 08.8**	**-1.9**
JCZ	**Jackson Bay**	**6.10**	**222**	PN	**Pn**	**22 14 08.6**	**-2.6**
JCZ	**Jackson Bay**	**6.10**	**222**	Pn	**Pn**	**22 14 08.6**	**-2.6**
WKZ	**Wanaka**	**6.54**	**216**	PN	Pn	22 14 13.8	-3.2
WKZ	**Wanaka**	**6.54**	**216**	Pn	Pn	22 14 13.8	-3.2
TUZ	**Tuapeka**	**7.21**	**208**	Pn	**Pn**	**22 14 25.0**	**-1.0**
ASAR	**Alice Springs**	**37.65**	**283**	P	**P**	**22 19 47.0**	**+2.5**
	0.3nm,0.4s,baz=120,slow=7.0,SNR=6.7						
VNDA	**Vanda**	**38.34**	**184**	P	P	22 19 53.8	+4.2
	1.0nm,0.8s,baz=349,slow=6.7,SNR=4.0						
WRA	**Warramunga Arr**	**39.54**	**288**	P	**P**	**22 20 03.2**	**+2.9**
	0.3nm,0.3s,baz=125,slow=8.2,SNR=6.1						
ARCES	**ARCESS Array B**	**145.85**	**341**	PKPbc	**PKPab**	**22 32 06.3**	**+1.0**
	1.6nm,0.9s,baz=56,slow=3.7,SNR=5.0						
TORD	**Torodi Ar. Bea**	**152.83**	**196**	PKPbc	**PKPbc**	**22 32 25.6**	**+1.9**
	0.1nm,0.4s,baz=152,slow=3.5,SNR=0.9						

*IDC **07** 22:15:00.1±3.7, 36°.51N×142°.72E, h0km, mb3.5/2, mb1 3.6/3, mb1mx3.3/36, mbtmp3.4/3, ML3.4/1, MS4.1/1, Ms1 4.1/1, ms1mx3.1/38, Error ellipse: s-maj=88.2km s-min=38.1km az=53.0*

*ISCJB **07** 22:15:03.4±1.0, 36°.55N±0°.04×142°.40E±0°.08, h15km, mb3.5/2, MS4.2/1, Error ellipse: s-maj=9.4km s-min=6.1km az=11.3*

*JMA **07** 22:15:05.3±0.2, 36°.56N×142°.40E, h65km, M3.1*

ISC 07 22:15:02.4±1.4**, 36°.50N**±0°.05×**142°.49E**±0°.09**, h15km, n17, σ1.s38**/22**, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**1.48**	**294**	P	**Pb**	**22 15 29.1**	**-0.6**
JHO	**Hitachi**	**1.55**	**275**	P	**Pb**	**22 15 30.0**	**-0.8**
JHO				*e*S	**Sn**	**22 15 48.7**	**-0.6**
JFK	**Kawauchi**	**1.56**	**304**	P	**Pb**	**22 15 29.6**	**-1.3**
JMM	**Marumori**	**1.92**	**316**	P	**Pn**	**22 15 34.6**	**0.0**
JFT	**Otama**	**2.00**	**301**	P	**Pb**	**22 15 36.9**	**-1.6**
JFT				*e*S	**Sn**	**22 15 59.5**	**-1.0**
BSO1	**Boso 1**	**2.22**	**214**	P	**Pb**	**22 15 39.9**	**-2.0**
BSO1				*e*S	**Sb**	**22 16 07.8**	**-1.2**
BSO3	**Boso 3**	**2.34**	**224**	P	**Pb**	**22 15 42.0**	**-2.2**
BSO3				S	**Sn**	**22 16 10.4**	**+1.9**
JAG	**Ashikaga**	**2.45**	**269**	P	**Pn**	**22 15 43.1**	**+1.2**
JMK	**Ichinoseki**	**2.64**	**338**	P	**Pn**	**22 15 45.2**	**+0.7**
JRY	**Ryogami san**	**2.94**	**262**	P	**Pn**	**22 15 49.8**	**+1.2**
JRY				S	**Sn**	**22 16 22.7**	**-1.0**
JYK	**Kaneyama**	**2.94**	**326**	P	**Pn**	**22 15 49.5**	**+0.8**
JOM	**Ohasama**	**3.11**	**343**	P	**Pn**	**22 15 51.4**	**+0.4**
MJAR	**Matsushiro Arr**	**3.45**	**272**	Pn	**Pn**	**22 15 57.3**	**+1.6**
	2.9nm,0.3s,baz=92,slow=12,SNR=9.0						
MAT	**Matsushiro**	**3.45**	**272**	P	**Pn**	**22 15 58.0**	**+2.4**
MAT				*e*S	**Sn**	**22 16 35.6**	**-0.7**
SONM	**Songino Array**	**28.80**	**305**	P	**P**	**22 21 01.1**	**+1.3**
	0.6nm,0.6s,baz=98,slow=10,SNR=2.1						
LEM	**Lembang**	**54.09**	**225**	LR	LR	22 46 58.7	
	comp=Z,186nm,19.6s,slow=35						
WRA	**Warramunga Arr**	**56.66**	**189**	P	**P**	**22 24 45.5**	**+0.4**
	0.4nm,0.9s,baz=8.5,slow=7.3,SNR=1.6						

*LJU **07** 22:20:27.3, 46°.39N×15°.07E, h0km, ML0.9 Rockburst*

CSEM 07 22:20:27.3, 46°.39N×15°.07E, h0km, Mining explosion., Northwestern Balkan Peninsula

*IDC **07** 22:32:58.5±2.5, 38°.79N×142°.58E, h0km, mb3.8/5, mb1 3.8/6, mb1mx3.5/56, mbtmp3.7/6, ML3.2/1, MS3.3/3, Ms1 3.4/3, ms1mx2.9/52, Error ellipse: s-maj=66.4km s-min=26.8km az=73.0*

*NEIC **07** 22:33:03.4±0.8, 38°.75N×142°.59E, h35km, mb4.1/3, Error ellipse: s-maj=14.6km s-min=10.2km az=118.0*

*ISCJB **07** 22:33:04.9±0.9, 38°.64N±0°.05×142°.11E±0°.10, h41km, mb3.8/8, MS3.8/2, Error ellipse: s-maj=11.2km s-min=7.1km az=14.9*

*JMA **07** 22:33:07.2±0.1, 38°.62N×141°.92E, h50km±4km, M3.7*
JMA Felt I J1.

ISC 07 22:33:06.8±1.4**, 38°.63N**±0°.06×**142°.0E**±0°.1**, h41km, n24, σ1.s06**/23**, mb3.8**/8**, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JMK	**Ichinoseki**	**0.70**	**297**	P	**Pn**	**22 33 20.4**	**+0.1**
JMK				S	**Sn**	**22 33 29.4**	**-0.6**
JOM	**Ohasama**	**1.02**	**326**	P	**Pn**	**22 33 24.9**	**+0.3**
JOU	**Okura**	**1.10**	**257**	P	**Pn**	**22 33 25.5**	**-0.2**
JOU				S	**Sn**	**22 33 38.6**	**-1.1**
JMM	**Marumori**	**1.23**	**232**	P	**Pn**	**22 33 27.2**	**-0.3**
JMM				S	**Sn**	**22 33 41.5**	**-1.4**
JYK	**Kaneyama**	**1.33**	**283**	P	**Pn**	**22 33 28.8**	**-0.1**
JFK	**Kawauchi**	**1.55**	**216**	P	**Pn**	**22 33 32.1**	**+0.1**
JFK				S	**Sn**	**22 33 49.6**	**-1.3**
JYS	**Shirataka**	**1.59**	**256**	P	**Pn**	**22 33 32.5**	**+0.1**
JFT	**Otama**	**1.73**	**231**	P	**Pn**	**22 33 34.8**	**+0.4**
MAJO	**Matsushiro**	**3.68**	**237**	*e*Pn	**Pn**	**22 34 04.0**	**+2.9**
MAT	**Matsushiro**	**3.68**	**237**	P	Pn	22 34 04.5	+3.4
MAT				*e*S	Sn	22 34 56.7	+13
MJAR	**Matsushiro Arr**	**3.68**	**237**	Pn	**Pn**	**22 34 03.1**	**+2.0**
	1.5nm,0.3s,baz=43,slow=11,SNR=11						
MDJ	**Mudanjiang**	**11.05**	**307**	*e*Pn	**Pn**	**22 35 43.1**	**+0.8**
JCJ	**Chichijima**	**11.50**	**179**	LR	LR	22 43 18.1	
	comp=Z,25nm,18.6s,baz=164,slow=53						
ENH	**Enshi**	**27.98**	**263**	*e*P	**P**	**22 38 54.9**	**+1.2**
	2.4nm,0.5s						
ZALV	**Zalesovo Beam**	**41.21**	**311**	P	**P**	**22 40 46.8**	**-0.5**
	0.5nm,0.3s,baz=84,slow=9.1,SNR=3.8						
NRIK	**Noril'sk**	**42.03**	**334**	LR	LR	23 01 28.2	
	comp=Z,151nm,18.8s,baz=178,slow=41						
MKAR	**Makanchi Array**	**43.70**	**301**	P	**P**	**22 41 06.9**	**-0.7**
	0.3nm,0.5s,baz=88,slow=10.0,SNR=6.6						
KURK	**Kurchatov**	**45.34**	**307**	P	**P**	**22 41 20.6**	**-0.1**
KURBB	**Kurchatov Arra**	**45.42**	**307**	P	**P**	**22 41 20.6**	**-0.7**
	2.8nm,0.5s,baz=82,slow=8.1,SNR=21						
COLA	**College**	**47.48**	**33**	*e*P	P	22 41 31.2	-5.9
	2.2nm,0.6s						
BVAR	**Borovoye Array**	**49.87**	**311**	P	**P**	**22 41 55.1**	**-0.6**
	0.4nm,0.5s,baz=78,slow=6.9,SNR=4.8						
EKS2	**Erkin-Say**	**50.66**	**298**	*e*P	**P**	**22 42 02.0**	**-0.1**
	0.5nm,0.7s						
WRA	**Warramunga Arr**	**58.70**	**188**	P	**P**	**22 42 59.3**	**-0.9**
	0.8nm,0.9s,baz=3.8,slow=7.5,SNR=3.5						
NOA	**NORSAR Array B**	**72.90**	**337**	LR	LR	23 18 56.8	
	comp=Z,36nm,20.4s,baz=75,slow=38						

JMA 07 22:34:36.4±0.4**, 37°.81N×144°.14E, h50km, M3.9, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JMK	**Ichinoseki**	**2.56**	**297**	P	Pn	22 35 16.5	+1.1
JFK	**Kawauchi**	**2.63**	**261**	P	Pn	22 35 17.4	+1.0
JFK				*e*S	Sn	22 35 47.8	+0.7
JMM	**Marumori**	**2.65**	**272**	P	Pn	22 35 17.8	+1.2
JMM				*e*S	Sn	22 35 48.2	+0.7
JOM	**Ohasama**	**2.78**	**308**	P	Pn	22 35 19.7	+1.3
JOM				*e*S	Sn	22 35 51.7	+1.0
JOU	**Okura**	**2.80**	**282**	P	Pn	22 35 20.5	+1.8
JOU				*e*S	Sn	22 35 53.3	+2.1
JFT	**Otama**	**3.03**	**266**	P	Pn	22 35 22.6	+0.7
JFT				*e*S	Sn	22 35 58.7	+1.7
JYK	**Kaneyama**	**3.17**	**292**	P	Pn	22 35 25.7	+1.9
JYK				*e*S	Sn	22 36 01.9	+1.5
JRY	**Ryogami san**	**4.56**	**248**	P	Pn	22 35 43.7	+0.8
JRY				*e*S	Sn	22 36 33.8	-0.9
JNBK	**Urakawa-nobuka**	**4.59**	**347**	P	Pn	22 35 43.0	-0.2
JNBK				*e*S	Sn	22 36 33.5	-1.7
JKB	**Kayabe**	**4.72**	**331**	P	Pn	22 35 46.5	+1.5
JCH	**Churui**	**4.84**	**353**	P	Pn	22 35 45.4	-1.2
JCH				*e*S	Sn	22 36 36.8	-4.5

WEL 07 22:43:39.4±0.3**, 40°.18S×173°.66E, h145km**±2km**, ML3.5**/10**, 5C-3D, Error ellipse: s-maj=1.7km s-min=1.0km az=90.0, Cook Strait**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DUWZ	**D'Urville Isla**	**0.66**	**162**	PN	Pn	22 44 01.3	+0.1
DUWZ				SN	Sn	22 44 17.4	-0.4
NWEZ	**Newall Road**	**0.92**	**10**	PN	Pn	22 44 02.7	-0.3
NWEZ				SN	Sn	22 44 21.7	+0.7
LREZ	**Lake Rotokare**	**0.92**	**39**	PN	Pn	22 44 02.8	-0.3
KHEZ	**Kahui Hut**	**0.92**	**17**	PN	Pn	22 44 03.0	-0.2
KHEZ				SN	Sn	22 44 21.4	+0.1
NEZ	**North Egmont**	**0.97**	**21**	PN	Pn	22 44 03.1	-0.5
PKE	**Pukeiti**	**1.01**	**15**	PN	Pn	22 44 03.5	-0.4
NNZ	**Nelson**	**1.06**	**191**	PN	Pn	22 44 04.0	-0.2
NNZ				SN	Sn	22 44 22.4	-0.8
QRZ	**Quartz Range**	**1.08**	**233**	⇑PN	Pn	22 44 03.6	-0.8
WAZ	**Wanganui**	**1.10**	**68**	PN	Pn	22 44 05.1	+0.4
TCW	**Tory Channel**	**1.14**	**156**	PN	Pn	22 44 05.5	+0.6
TCW				SN	Sn	22 44 23.7	-0.8
TCW				AML	AML	22 44 24.9	
KIW	**Kapiti Island**	**1.17**	**126**	PN	Pn	22 44 05.4	+0.1
KIW				SN	Sn	22 44 23.6	-1.5
KIW				AML	AML	22 44 24.4	
TUWZ	**Tuamarina**	**1.27**	**170**	PN	Pn	22 44 06.7	+0.4
TUWZ				SN	Sn	22 44 25.8	-0.9
TUWZ				AML	AML	22 44 27.9	
OGWZ	**Otaki Gorge**	**1.32**	**120**	PN	Pn	22 44 06.9	+0.2
OGWZ				SN	Sn	22 44 26.2	-1.4
CAW	**Cannon Point**	**1.42**	**131**	PN	Pn	22 44 08.0	+0.2
CAW				AML	AML	22 44 29.7	
CAW				AML	AML	22 44 30.0	
MRZ	**Mangatainoka R**	**1.54**	**109**	⇑PN	Pn	22 44 09.0	-0.1
MRZ				SN	Sn	22 44 29.8	-2.0
MRZ				AML	AML	22 44 30.9	
BSWZ	**Blackbirch Sta**	**1.55**	**174**	PN	Pn	22 44 09.3	+0.2
PKVZ	**Pokaka**	**1.57**	**56**	PN	Pn	22 44 08.9	-0.6
HOWZ	**Holdsworth Sta**	**1.59**	**118**	⇑PN	Pn	22 44 09.5	-0.1
HOWZ				SN	Sn	22 44 30.8	-1.9
MTVZ	**Mangateitei**	**1.60**	**61**	PN	Pn	22 44 09.3	-0.5
THZ	**Tophouse**	**1.68**	**200**	⇓PN	Pn	22 44 10.1	-0.6
THZ				SN	Sn	22 44 34.4	-0.3
TRVZ	**Turoa**	**1.70**	**60**	PN	Pn	22 44 10.6	-0.5

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
MTW	Mount Morrison	1.71	126	PN	Pn	22 44 10.8	-0.1
MTW				SN	Sn	22 44 33.3	-1.8
MTW				AML	AML	22 44 34.9	
TSZ	Takapari Road	1.77	87	PN	Pn	22 44 11.1	-0.5
TSZ				AML	AML	22 44 37.3	
TSZ				AML	AML	22 44 37.4	
TIWZ	Tintock	1.80	110	⇑PN	Pn	22 44 11.8	-0.2
TIWZ				AML	AML	22 44 35.2	
TIWZ				AML	AML	22 44 36.2	
PRWZ	Pori Road	1.81	103	PN	Pn	22 44 12.1	+0.1
PRWZ				SN	Sn	22 44 35.3	-1.6
HIZ	Hauiti	1.90	30	⇓PN	Pn	22 44 12.1	-1.0
HIZ				SN	Sn	22 44 38.0	-0.9
DVHZ	Dannevirke	1.92	94	⇑PN	Pn	22 44 12.8	-0.6
TMWZ	Te Maipa	1.94	119	PN	Pn	22 44 13.2	-0.3
TRWZ	Traveller	1.96	129	PN	Pn	22 44 13.8	-0.1
TRWZ				AML	AML	22 44 39.7	
TRWZ				AML	AML	22 44 39.8	
PNHZ	Pukenui	1.97	83	PN	Pn	22 44 13.5	-0.4
BHHZ	Black Hill Sta	1.97	70	PN	Pn	22 44 13.3	-0.8
BFZ	Birch Farm	2.04	105	PN	Pn	22 44 14.2	-0.5
BFZ				SN	Sn	22 44 39.2	-2.6
DSZ	Denniston Nort	2.10	221	PN	Pn	22 44 14.7	-0.8
ANWZ	Angora Road	2.17	98	PN	Pn	22 44 15.9	-0.3
KHZ	Kahutara	2.24	182	⇓PN	Pn	22 44 16.6	-0.5
LTZ	Lake Taylor	2.80	201	PN	Pn	22 44 22.8	-1.3
INZ	Inchbonnie	3.04	212	PN	Pn	22 44 25.5	-1.6
OXZ	Oxford	3.37	201	PN	Pn	22 44 28.8	-2.6
MQZ	McQueen's Vall	3.61	192	PN	Pn	22 44 31.5	-2.8

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*IDC **07** 22:45:48.0±8.9, 15°.69N×97°.32W, h0^{km}, mb3.5/3, mb1 3.9/4, mb1mx3.5/33, mbtmp3.4/4, ML3.5/1, Error ellipse: s-maj=166.5km s-min=125.3km az=24.0*
*ISCJB **07** 22:45:56.4±1.2, 16°.29N±0°.08×99°.34W±0°.05, h18^{km}±9^{km}, mb3.3/3, Error ellipse: s-maj=15.0km s-min=6.0km az=22.4*
*MEX **07** 22:45:58.5±0.9, 16°.25N×99°.41W, h12^{km}±20^{km}, MD4.0*
*NEIC **07** 22:45:58.5, 16°.25N×99°.41W, h12^{km}, MD4.0(MEX), After MEX.*
ISC 07 22:45:58.7±1.5**, 16°.43N**±0°.10×**99°.29W**±0°.06**, h9**^{km}±11^{km}**, n24,** σ**1^{s}54**/26**, mb3.5**/3**, Near coast of Guerrero**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
ACX	Acapulco	0.70	309	eP	Pn	22 46 14.5	-0.3
ACX				i S	Sg	22 46 23.4	+2.1
ACX	Acapulco	0.70	309	eP	Pn	22 46 14.5	-0.3
ACX				i S	Sg	22 46 23.4	+2.1
ACP2	Acapulco	0.72	308	i P	Pg	22 46 11.1	-1.6
ACP2				i S	Sg	22 46 20.7	-1.4
CAIG	El Cayaco	1.12	304	i P	Pb	22 46 16.6	-3.6
CAIG				i S	Sb	22 46 29.0	-5.9
CAIG	El Cayaco	1.12	304	i P	Pb	22 46 16.6	-3.6
CAIG				i S	Sb	22 46 29.0	-5.9
PNIG	Pinotepa	1.12	92	eP	Pn	22 46 17.8	-2.7
PNIG				i S	Sb	22 46 32.1	-2.8
PNIG	Pinotepa	1.12	92	eP	Pn	22 46 17.8	-2.7
PNIG				i S	Sb	22 46 32.1	-2.8
TLIG	Tlapa	1.33	31	eP	Pn	22 46 22.3	-1.2
TLIG				eS	Sn	22 46 41.1	-0.3
PLIG	Platanillo	1.97	354	eP	Pn	22 46 31.6	-0.7
PLIG				eS	Sn	22 46 56.7	-0.4
PLIG	Platanillo	1.97	354	eP	Pn	22 46 31.6	-0.7
PLIG				eS	Sn	22 46 56.7	-0.4
ARIG	Puente Sto Nin	2.10	332	i P	Pn	22 46 32.4	-1.7
ARIG				i S	Sn	22 46 58.2	-2.2
YAIG	Yautepec	2.43	5	eP	Pn	22 46 38.0	-0.8
YAIG				eS	Sn	22 47 09.6	+0.9
YAIG	Yautepec	2.43	5	eP	Pn	22 46 38.0	-0.8
YAIG				eS	Sn	22 47 09.6	+0.9
VHO	Vista Hermosa	2.54	75	eP	Pn	22 46 37.5	-2.7
VHO	Vista Hermosa	2.54	75	eP	Pn	22 46 37.5	-2.7
PPM	Popocatepetl	2.70	13	eP	Pn	22 46 43.0	+0.2
PPM	Popocatepetl	2.70	13	eP	Pn	22 46 43.0	+0.2
HUIG	Huatulco	3.13	102	eP	Pb	22 46 56.2	+1.7
HUIG	Huatulco	3.13	102	eP	Pb	22 46 56.2	+1.7
SFJM	Santa Fe	5.38	319	eP	Pb	22 47 30.1	-2.9
TXAR	Lajitas Array	13.46	343	Pn	P	22 49 21.7	+2.2
	0.0nm,0.3s,baz=151,slow=15,SNR=3.1						
NVAR	Mina Array Bea	27.55	326	P	P	22 51 52.0	+5.8
	0.7nm,0.8s,baz=130,slow=11,SNR=3.5						
PDAR	Pinedale Array	27.68	344	P	P	22 51 47.9	+0.6
	0.7nm,1.0s,baz=150,slow=9.3,SNR=2.9						
YKA	Yellowknife Ar	47.26	350	P	P	22 54 31.5	-0.4
	0.3nm,0.7s,baz=158,slow=7.4,SNR=6.8						

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*MEX **07** 22:50:26.8±0.3, 16°.31N×99°.38W, h10^{km}, MD3.6*
*IDC **07** 22:50:36.9±8.5, 18°.01N×98°.68W, h0^{km}, mb3.3/3, mb1 3.8/4, mb1mx3.5/39, mbtmp3.3/4, ML2.9/1, MS3.4/1, Ms1 3.4/1, ms1mx2.9/20, Error ellipse: s-maj=149.2km s-min=124.1km az=30.0*
ISC 07 22:50:28.4±1.7**, 16°.2N**±0°.1×**99°.74W**±0°.09**, h23**^{km}**, n10,** σ**2^{s}04**/13**, mb3.2**/3**, Near coast of Guerrero**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
ACX	Acapulco	0.68	351	eP	Pn	22 50 42.9	+0.3
ACX				eS	Sn	22 50 52.9	+0.4
ACP2	Acapulco	0.68	348	eP	Pb	22 50 39.8	-1.9
ACP2				eS	Sb	22 50 49.4	-1.3
CAIG	El Cayaco	0.98	329	eP	Pb	22 50 44.9	-1.9
CAIG				eS	Sn	22 51 02.4	+2.4
PLIG	Platanillo	2.19	6	eP	Pn	22 50 59.6	-3.9
VHO	Vista Hermosa	3.01	73	eP	Pn	22 51 16.8	+1.8
VHO				eS	Sb	22 51 59.5	+1.5
HUIG	Huatulco	3.52	96	eP	Pb	22 51 28.2	-1.8
HUIG				eS	Sb	22 52 10.1	-2.4
TXAR	Lajitas Array	13.56	345	Pn	Pn	22 53 32.6	-6.9
	0.0nm,0.3s,baz=154,slow=15,SNR=3.7						
NVAR	Mina Array Bea	27.50	327	P	P	22 56 16.7	+3.3
	0.3nm,0.6s,baz=146,slow=7.2,SNR=2.7						
PDAR	Pinedale Array	27.78	344	P	P	22 56 16.3	+0.5
	0.2nm,0.5s,baz=143,slow=9.7,SNR=2.8						
PDAR				LR	LR	23 07 30.7	
	comp=Z,74nm,18.8s,baz=16,slow=38						
YKA	Yellowknife Ar	47.41	351	P	P	22 58 59.7	-1.0
	0.3nm,0.7s,baz=157,slow=7.3,SNR=4.4						

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*ISCJB **07** 22:55:36.9±1.0, 16°.45N±0°.06×99°.31W±0°.04, h17^{km}±7^{km}, mb3.6/6, MS3.3/1, Error ellipse: s-maj=10.5km s-min=5.8km az=11.7*
*MEX **07** 22:55:39.4±0.6, 16°.37N×99°.37W, h17^{km}±999^{km}, MD3.8*
*IDC **07** 22:55:50.3±12.0, 18°.37N×99°.21W, h0^{km}, mb3.6/6, mb1 3.9/6, mb1mx3.7/38, mbtmp3.6/6, MS3.4/1, Ms1 3.4/1, ms1mx2.8/43, Error ellipse: s-maj=226.8km s-min=89.2km az=165.0*
ISC 07 22:55:36.3±2.3**, 16°.40N**±0°.10×**99°.32W**±0°.05**, h16**^{km}±14^{km}**, n14,** σ**1^{s}41**/18**, mb3.8**/6**, Near coast of Guerrero**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
ACP2	Acapulco	0.72	311	eP	Pb	22 55 51.3	+0.8
ACP2				eS	Sg	22 55 59.9	0.0
CAIG	El Cayaco	1.11	305	eP	Pb	22 55 56.3	-0.9
CAIG				i S	Sb	22 56 09.9	-1.5
PNIG	Pinotepa	1.15	90	eP	Pn	22 55 57.3	-0.4
PNIG				eS	Sb	22 56 11.1	-1.4
TLIG	Tlapa	1.36	32	eP	Pb	22 56 01.9	+0.3
TLIG				eS	Sn	22 56 17.5	-1.2
HMTT	Tlapaneco	1.57	28	eP	Pn	22 56 04.2	+0.5
HMTT				i S	Sn	22 56 23.4	-0.3
PLIG	Platanillo	1.99	355	eP	Pn	22 56 09.8	+0.4
PLIG				eS	Sn	22 56 33.2	-0.9
ARIG	Puente Sto Nin	2.11	332	eP	Pn	22 56 10.5	-0.6
ARIG				i S	Sn	22 56 36.3	-0.7
NVAR	Mina Array Bea	27.56	326	P	P	23 01 26.2	+3.3
	0.4nm,0.7s,baz=142,slow=9.1,SNR=2.9						
PDAR	Pinedale Array	27.70	344	P	P	23 01 22.0	-2.1
	0.2nm,0.3s,baz=149,slow=9.5,SNR=2.8						
YBH	Yreka Blue Hor	32.28	326	LR	LR	23 14 02.8	
	comp=Z,65nm,18.7s,baz=268,slow=36						
ULM	Lac du Bonnet	33.88	4	P	P	23 02 18.1	-0.2
	1.5nm,0.6s,baz=215,slow=6.9,SNR=3.4						
YKA	Yellowknife Ar	47.28	350	P	P	23 04 10.3	+1.6
	0.6nm,0.7s,baz=157,slow=7.0,SNR=12						
INK	Inuvik	56.24	345	P	P	23 05 18.8	+3.2
	1.2nm,0.8s,baz=159,slow=12,SNR=2.8						
ILAR	Eielson Array	57.92	338	P	P	23 05 31.1	+3.6
	1.1nm,1.1s,baz=148,slow=5.2,SNR=4.8						

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*IDC **07** 23:07:03.8±2.2, 38°.81N×141°.82E, h0^{km}, mb3.8/8, mb1 3.9/9, mb1mx3.6/62, mbtmp3.7/9, ML3.3/1, MS3.4/5, Ms1 3.4/5, ms1mx3.0/42, Error ellipse: s-maj=53.6km s-min=21.6km az=155.0*
*ISCJB **07** 23:07:08.1±0.7, 38°.44N±0°.04×141°.86E±0°.08, h65^{km}±6^{km}, mb3.8/12, Error ellipse: s-maj=11.6km s-min=5.7km az=20.4*
*JMA **07** 23:07:08.3±0.1, 38°.45N×141°.88E, h57^{km}±4^{km}, M3.8*
JMA Felt I J1.
*NEIC **07** 23:07:09.7±0.8, 38°.46N×141°.91E, h62^{km}±8^{km}, mb4.3/3, Error ellipse: s-maj=13.7km s-min=7.0km az=132.0*
ISC 07 23:07:09.2±1.4**, 38°.43N**±0°.06×**141°.8E**±0°.1**, h57**^{km}±12^{km}**, n33,** σ**0^{s}96**/33**, mb3.8**/12**, MS3.5**/5**, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
JMK	Ichinoseki	0.71	317	P	Pn	23 07 22.9	-0.4
JMK				S	Sn	23 07 33.2	-0.4
JOU	Okura	0.92	266	P	Pn	23 07 26.0	-0.1
JOU				S	Sn	23 07 38.5	0.0
JMM	Marumori	1.00	236	P	Pn	23 07 26.7	-0.3
JMM				S	Sn	23 07 39.8	-0.4
JOM	Ohasama	1.12	338	P	Pn	23 07 28.1	-0.6
JOM				S	Sn	23 07 43.2	0.0
JYK	Kaneyama	1.25	293	P	Pn	23 07 30.4	0.0
JYK				S	Sn	23 07 46.8	+0.5
JFK	Kawauchi	1.31	216	P	Pn	23 07 31.1	-0.1
JFK				S	Sn	23 07 47.8	+0.1
MAJO	Matsushiro	3.45	238	ePn	Pn	23 08 02.5	+2.1
MAT	Matsushiro	3.45	238	P	Pn	23 08 02.2	+1.8
MJAR	Matsushiro Arr	3.45	238	Pn	Pn	23 08 02.3	+1.9
	2.4nm,0.3s,baz=37,slow=12,SNR=19						
ERM	Erimo	3.72	15	ePn	Pn	23 08 03.4	-0.6
ERM				eSn	Sn	23 08 49.0	+2.5
JHJ2	Mitsune	5.56	198	ePn	Pn	23 08 29.8	+0.5
	232nm,0.4s						
USRK	Ussuriysk Ar.	9.38	311	Pn	Pn	23 09 21.8	+0.3
	0.5nm,0.3s,baz=124,slow=15,SNR=9.5						
KSRS	Korea Array	11.03	269	Pn	Pn	23 09 45.7	+1.6
	0.1nm,0.3s,baz=82,slow=13,SNR=2.5						
KSAR	Wonju Array Be	11.06	269	Pn	Pn	23 09 45.7	+1.1
MA2	Magadan	21.92	12	P	P	23 11 57.9	+0.5
	3.3nm,0.3s,baz=195,slow=19						
GUMO	Guam	24.89	173	LR	LR	23 21 03.6	
	comp=Z,25nm,21.7s,baz=58,slow=33						
SEY	Seymchan	25.36	11	P	P	23 12 30.8	+0.2
	1.9nm,0.7s,baz=192,slow=6.2,SNR=6.3						
H11S1	WAKE ISLAND Hy	29.37	126	T	T	23 44 22.5	
	baz=318,slow=76,SNR=9.5						
H11S3	WAKE ISLAND Hy	29.37	126	T	T	23 44 22.1	
	baz=318,slow=76,SNR=12						
H11S2	WAKE ISLAND Hy	29.39	126	T	T	23 44 23.3	
	baz=318,slow=76,SNR=12						
ZALV	Zalesovo Beam	41.23	311	P	P	23 14 47.7	-0.6
	1.3nm,0.4s,baz=77,slow=7.4,SNR=7.0						
ZALV				LR	LR	23 32 37.7	
	comp=Z,45nm,18.5s,baz=70,slow=37						
CHTO	Chiang Mai	41.97	255	eP	P	23 14 55.0	+0.2
	0.5nm,0.6s						
NRIK	Noril'sk	42.14	335	LR	LR	23 34 23.4	
	comp=Z,60nm,19.1s,baz=157,slow=39						
MKAR	Makanchi Array	43.67	301	P	P	23 15 09.1	+0.9
	0.5nm,0.7s,baz=83,slow=9.8,SNR=7.9						
KURK	Kurchatov	45.34	307	P	P	23 15 21.2	-0.3
	0.4nm,0.6s						
KURBB	Kurchatov Arra	45.42	307	P	P	23 15 21.2	-0.9
	3.1nm,0.6s,baz=82,slow=8.1,SNR=35						
COLA	College	47.72	33	eP	P	23 15 39.5	-0.3
	2.0nm,0.4s						
ILAR	Eielson Array	48.14	33	P	P	23 15 42.9	-0.2
	0.4nm,0.6s,baz=265,slow=4.5,SNR=4.7						
INK	Inuvik	52.99	28	P	P	23 16 19.3	-0.3
	0.8nm,0.7s,baz=280,slow=5.7,SNR=4.1						
RES	Resolute Bay	61.17	15	P	P	23 17 16.3	-0.9
	0.4nm,0.5s,baz=315,slow=7.3,SNR=8.5						
YKA	Yellowknife Ar	62.44	31	P	P	23 17 25.5	-0.4
	0.4nm,0.6s,baz=304,slow=6.7,SNR=8.0						
GERES	GERESS Array B	81.70	328	LR	LR	23 59 06.4	
	comp=Z,47nm,19.9s,baz=45,slow=38						
PPT	Papeete	84.96	117	LR	LR	23 53 10.1	
	comp=Z,30nm,19.7s,baz=162,slow=32						

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*IDC **07** 23:07:44.4±0.6, 35°.49N×140°.84E, h0^{km}, mb4.2/24, mb1 4.3/26, mb1mx4.2/64, mbtmp4.2/26, ML4.3/2, MS3.6/5, Ms1 3.6/5, ms1mx3.1/44, Error ellipse: s-maj=17.5km s-min=15.0km az=88.0*
*MOS **07** 23:07:45.9±1.0, 35°.48N×141°.12E, h26^{km}, mb4.5/25, Error ellipse: s-maj=10.4km s-min=6.2km az=109.2*
*ISCJB **07** 23:07:47.3±0.3, 35°.55N±0°.03×141°.13E±0°.05, h33^{km}, mb4.3/41, MS3.6/2, Error ellipse: s-maj=6.2km s-min=4.1km az=24.1*
*NEIC **07** 23:07:48.3±1.6, 35°.49N×140°.97E, h28^{km}±11^{km}, mb4.6/9, Error ellipse: s-maj=6.7km s-min=5.8km az=70.0*
*JMA **07** 23:07:48.6±0.1, 35°.56N×141°.04E, h36^{km}±1^{km}, M3.9*
JMA Felt I J1.
ISC 07 23:07:49.2±0.5**, 35°.51N**±0°.04×**141°.01E**±0°.06**, h33**^{km}**, n88,** σ**0^{s}87**/87**, mb4.3**/41**, 5C-4D, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
CHOJ	Chosi	0.23	328	⇓P	Pn	23 07 55.5	-0.5
CHOJ				eS	Sn	23 08 00.2	+0.7
KTR	Katsuura	0.67	238	P	Pb	23 08 02.4	-0.2
BSO4	Boso 4	0.76	227	⇓P	Pb	23 08 03.6	-0.3
BSO3	Boso 3	0.81	210	⇓P	Pn	23 08 04.1	0.0
BSO1	Boso 1	0.85	182	P	Pn	23 08 04.1	-0.3
JIM2	Oshima 3	1.52	239	eS	Sb	23 08 34.7	-0.9
JAG	Ashikaga	1.56	306	P	Pn	23 08 15.5	+0.9
JOD2	Odawara 2	1.59	262	P	Pn	23 08 15.6	+0.6
MJAR	Matsushiro Arr	2.49	295	Pn	Pn	23 08 28.2	+0.7
	18nm,0.3s,baz=100,slow=8.6,SNR=35						
MAJO	Matsushiro	2.50	295	eP	Pn	23 08 26.6	-0.9
MAJO	Matsushiro	2.50	295	ePn	Pn	23 08 26.6	-0.9
JHJ	Hachijo jima 2	2.59	203	Pn	Pn	23 08 29.8	+1.0
	60nm,0.3s,baz=330,slow=23,SNR=13						
JHJ				Sn	Sn	23 09 00.7	+1.6
	220nm,0.3s,baz=74,slow=23,SNR=14						
ERM	Erimo	6.71	14	eP	Pn	23 09 25.1	-0.3
ERM	Erimo	6.71	14	ePn	Pn	23 09 25.1	-0.3
CBIJ	Chichi jima	8.45	173	Pn	Pn	23 09 48.2	-1.1
JCJ	Chichijima	8.45	173	Pn	Pn	23 09 48.2	-1.1
	16nm,0.3s,baz=358,slow=21,SNR=7.4						
YUK	Yuzh-Kuril'sk	9.30	22	P	Pn	23 10 01.2	+0.4
YUK				pmax	pmax		
	comp=Z,122nm,0.5s						
YUK				pmax	pmax		
	comp=N,46nm,0.3s						
YUK				pmax	pmax		
	comp=E,63nm,0.3s						
SHO	Shikotan	9.48	26	P	Pn	23 10 03.3	0.0
KSRS	Korea Array	10.72	284	Pn	Pn	23 10 24.1	+3.9
	comp=E,1.0nm,0.3s,baz=106,slow=13,SNR=5.3						
KSRS				LR	LR	23 14 31.6	
	comp=E,422nm,20.3s,baz=91,slow=38						
KSAR	Wonju Array Be	10.74	284	P	Pn	23 10 24.2	+3.5
KSAR	Wonju Array Be	10.74	284	Pn	Pn	23 10 24.1	+3.4
USRK	Ussuriysk Ar.	11.10	324	Pn	Pn	23 10 25.9	+0.4
	comp=E,0.3nm,0.3s,baz=129,slow=12,SNR=6.4						
USRK				LR	LR	23 14 23.0	
	comp=E,285nm,21.7s,baz=138,slow=36						
YSS	Yuzh-Sakhalins	11.51	6	eP	Pn	23 10 31.8	+0.7
MDJ	Mudanjiang	12.61	320	ePn	Pn	23 10 45.4	-0.8
KLR	Kul'dur	15.31	336	Pn	Pn	23 11 21.1	-1.6
	comp=E,0.3nm,0.3s,baz=164,slow=8.7,SNR=5.4						
KLR				LR	LR	23 17 24.7	
	comp=E,135nm,18.0s,baz=148,slow=38						
MA2	Magadan	24.91	12	P	P	23 13 09.1	+0.2
	comp=E,11nm,0.6s,baz=213,slow=8.9,SNR=10						
MA2	Magadan	24.91	12	eP	P	23 13 09.5	+0.6
MA2	Magadan	24.91	12	eP	P	23 13 09.5	+0.6
YAK	Yakutsk	27.49	348	eP	P	23 13 33.1	+1.0
YAK				pmax	pmax		
	comp=Z,17nm,0.6s						
ULN	Ulaanbaatar	27.97	307	ceP	P	23 13 38.9	+2.1
ULN				pmax	pmax		
	comp=Z,2.0nm,0.7s						
ULN	Ulaanbaatar	27.97	307	eP	P	23 13 37.1	+0.2
	comp=Z,1.4nm,0.6s						
H11S3	WAKE ISLAND Hy	28.34	120	T	T	23 43 21.5	
	baz=312,slow=75,SNR=207						
H11S1	WAKE ISLAND Hy	28.34	120	T	T	23 43 24.1	
	baz=312,slow=75,SNR=284						
SEY	Seymchan	28.35	11	P	P	23 13 40.9	+1.1
	comp=Z,2.2nm,0.7s,baz=183,slow=19,SNR=2.0						
SEY	Seymchan	28.35	11	eP	P	23 13 40.4	+0.6
H11S2	WAKE ISLAND Hy	28.36	120	T	T	23 43 23.3	
	baz=312,slow=75,SNR=170						
SONM	Songino Array	28.40	306	P	P	23 13 39.7	-0.9
	comp=Z,1.7nm,0.6s,baz=102,slow=9.1,SNR=12						
TLY	Talaya	31.11	313	P	P	23 14 04.2	-0.2
	comp=Z,1.9nm,0.6s,baz=265,slow=5.4,SNR=3.4						
BILL	Bilibino	35.58	16	eP	P	23 14 42.6	-0.5
BILL				pmax	pmax		
	comp=Z,3.0nm,1.0s						
TIXI	Tiksi	36.77	354	P	P	23 14 53.0	-0.2
	comp=Z,2.1nm,0.6s,baz=139,slow=5.0,SNR=8.2						
TIXI	Tiksi	36.77	354	eP	P	23 14 53.1	-0.1
TIXI				pmax	pmax		
	comp=Z,4.0nm,1.0s						
ZALV	Zalesovo Beam	42.72	314	P	P	23 15 42.5	-0.4
	comp=Z,4.3nm,0.5s,baz=95,slow=7.4,SNR=20						
ZALV				PcP	PcP	23 17 33.5	-0.5
	comp=Z,0.3nm,0.3s,baz=115,slow=5.2,SNR=2.8						
NVS	Novosibirsk	43.67	315	i P	P	23 15 50.0	-0.6
NRIK	Noril'sk	44.52	336	P	P	23 15 57.0	-0.2
	comp=Z,2.2nm,0.6s,baz=96,slow=7.5,SNR=5.8						
NRIK	Noril'sk	44.52	336	P	P	23 15 57.0	-0.2
NRIK				pmax	pmax		
	comp=Z,2.0nm,0.6s						
MKAR	Makanchi Array	44.67	303	P	P	23 15 58.3	-0.4
	comp=Z,2.9nm,0.8s,baz=88,slow=9.9,SNR=20						
MKAR				PcP	PcP	23 17 40.7	-0.2
	comp=Z,0.9nm,0.9s,baz=98,slow=6.0,SNR=2.2						
KURK	Kurchatov	46.63	309	eP	P	23 16 13.5	-0.6
KURK				pmax	pmax		
	comp=Z,23nm,0.9s						
KURK	Kurchatov	46.63	309	eP	P	23 16 13.4	-0.6
	comp=Z,23nm,0.9s						
KURBB	Kurchatov Arra	46.70	309	P	P	23 16 13.9	-0.7
	comp=Z,5.7nm,0.7s,baz=82,slow=7.7,SNR=17						
AAK	Ala-Archa	50.94	299	P	P	23 16 47.1	-0.5
	comp=Z,1.0nm,0.5s,baz=123,slow=4.0,SNR=7.4						
ILAR	Eielson Array	50.96	32	P	P	23 16 47.9	+0.7
	comp=Z,1.1nm,0.8s,baz=275,slow=7.8,SNR=7.8						
BRVK	Borovoye	51.42	313	ceP	P	23 16 51.7	+0.9
BRVK				pmax	pmax		
	comp=Z,3.0nm,1.2s						
EKS2	Erkin-Say	51.44	300	eP	P	23 16 50.8	-0.5
EKS2				pmax	pmax		
	comp=Z,1.0nm,0.5s						
EKS2	Erkin-Say	51.44	300	eP	P	23 16 50.8	-0.5
	comp=Z,1.1nm,0.5s						
KKAR	Karatay Array	53.62	301	eP	P	23 17 07.1	-0.2
KKAR				pmax	pmax		
	comp=Z,1.0nm,0.6s						
KKAR	Karatay Array	53.62	301	eP	P	23 17 07.1	-0.2
	comp=Z,1.4nm,0.6s						
KIP	Kipapa	54.63	88	ceP	P	23 17 11.0	-3.9
KIP				pmax	pmax		
	comp=Z,524nm,1.7s						
WRA	Warramunga Arr	55.51	188	P	P	23 17 20.4	-0.6
	comp=Z,2.8nm,0.7s,baz=5.3,slow=7.5,SNR=13						
WRA	Warramunga Arr	55.51	188	ceP	P	23 17 20.3	-0.8
WRA				pmax	pmax		
	comp=Z,3.0nm,0.7s						
INK	Inuvik	55.89	27	P	P	23 17 24.1	+0.8
	comp=Z,0.6nm,0.5s,baz=318,slow=7.5,SNR=6.2						
SVE	Sverdlovsk	56.08	319	eP	P	23 17 25.0	+0.2
ARU	Arti	57.29	319	d i P	P	23 17 33.1	-0.3
ARU						23 18 23.0	
ARU						23 19 39.8	
ARU				S	S	23 25 30.7	+3.6
ARU				SS	SS	23 29 17.4	+1.3
ARU				pmax	pmax		
	comp=Z,8.0nm,0.8s						
ARU	Arti	57.29	319	eP	P	23 17 32.8	-0.6
	comp=Z,5.4nm,0.8s						
ABKAR	Akbulak array	58.68	311	eP	P	23 17 42.6	-0.6
	comp=Z,2.4nm,0.6s						
ASAR	Alice Springs	59.23	188	P	P	23 17 47.8	+0.5
	comp=Z,0.4nm,0.5s,baz=11,slow=8.7,SNR=6.5						
ASAR				LR	LR	23 40 36.3	
	comp=Z,37nm,20.7s,baz=104,slow=33						
RES	Resolute Bay	64.16	14	P	P	23 18 20.1	+0.3
	comp=Z,2.5nm,0.8s,baz=312,slow=7.2,SNR=8.5						
GEYT	Alibeck	64.29	299	P	P	23 18 21.1	-0.3
	comp=Z,1.7nm,0.8s,baz=29,slow=6.8,SNR=4.9						
YKA	Yellowknife Ar	65.29	30	P	P	23 18 27.1	-0.3
	comp=Z,0.3nm,0.7s,baz=138,slow=13,SNR=3.8						
ARCES	ARCESS Array B	65.31	340	P	P	23 18 27.2	-0.2
	comp=Z,2.1nm,0.8s,baz=38,slow=6.5,SNR=4.7						
ARCES				LR	LR	23 50 06.4	
	comp=Z,62nm,19.8s,baz=29,slow=39						
OBN	Obninsk	69.12	323	eP	P	23 18 52.2	+0.4
OBN				e		23 19 14.9	
OBN				e		23 21 26.0	
OBN				pmax	pmax		
	comp=Z,6.0nm,1.1s						
VSR	Storozhevoye	69.86	319	eP	P	23 18 54.6	-1.9
VSR				pmax	pmax		
	comp=Z,4.0nm,0.6s						
FINES	FINESS Array B	70.01	332	P	P	23 18 56.2	-1.0
	comp=Z,2.8nm,0.7s,baz=82,slow=5.2,SNR=8.4						
KBZ	Khabaz	71.65	311	P	P	23 19 07.5	0.0
	comp=Z,4.8nm,0.9s,baz=1.8,slow=2.7,SNR=9.3						
KIV	Kislovodsk	71.66	311	eP	P	23 19 08.8	+1.1
KIV				pmax	pmax		
	comp=Z,9.0nm,1.1s						
GNI	Garni	72.36	307	eP	P	23 19 11.0	-1.0
GNI				pmax	pmax		
	comp=Z,8.0nm,1.1s						
NB2	NORSAR Subarra	75.47	337	P	P	23 19 29.1	-0.6
	comp=Z,2.5nm,0.7s,baz=40,slow=6.2						
NOA	NORSAR Array B	75.47	337	P	P	23 19 29.5	-0.2
	comp=Z,3.2nm,0.8s,baz=39,slow=5.8,SNR=5.8						
NVAR	Mina Array Bea	76.17	53	P	P	23 19 37.1	+2.8
	comp=Z,0.6nm,0.7s,baz=302,slow=5.1,SNR=3.5						
LOHW	Long Hollow	77.85	45	eP	P	23 19 44.0	+0.3
	comp=Z,12nm,0.8s						
AHID	Auburn Hatcher	78.08	46	eP	P	23 19 45.6	+0.6
	comp=Z,8.5nm,1.0s						
HWUT	Hardware Ranch	78.50	47	eP	P	23 19 46.3	-1.0
	comp=Z,12nm,0.9s						
BRTR	Keskin Array B	79.62	312	P	P	23 19 53.7	+0.3
	comp=Z,1.3nm,0.9s,baz=101,slow=3.1,SNR=6.7						
CLL	Collm	82.25	330	eP	P	23 20 07.0	0.0
	comp=Z,5.0nm,0.9s						
CLL	Collm	82.25	330	eP	P	23 20 07.0	0.0
CLL				pmax	pmax		
	comp=Z,5.0nm,0.9s						
GERES	GERESS Array B	83.83	328	P	P	23 20 14.7	-0.7
	comp=Z,0.2nm,0.3s,baz=81,slow=8.2,SNR=4.3						
BFO	Black Forest	86.47	331	ceP	P	23 20 28.6	+0.1
SAML	Samuel	145.55	46	ePKPdf	PKPdf	23 27 24.1	-0.5
LPAZ	La Paz	147.73	61	PKPbc	PKPbc	23 27 31.4	-0.3
	comp=Z,0.5nm,0.4s,baz=0.6,slow=5.9,SNR=5.0						

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*ISCJB **07** 23:11:08.3±0.5, 35°.27N±0°.01×92°.37W±0°.01, h8^{km}±3^{km}, mb3.5/3, Error ellipse: s-maj=2.0km s-min=1.8km az=21.5*
*NEIC **07** 23:11:09.0, 35°.25N×92°.37W, h6^{km}, mb4.0/3, MW3.9, Moment Tensor Solution. s25 Moment tensor: Scale 10^{14}Nm; M_{rr}0.42; $M_{\theta\theta}$5.03; $M_{\phi\phi}$-5.45; $M_{r\theta}$-1.53; $M_{\theta\phi}$4.67; $M_{\phi r}$-2.10; Best double couple: $M_0$7.50000×10^{14} NP1: ϕ_s295.00000°, δ70.00000°, λ5.00000°. NP2: ϕ_s203.00000°, δ85.00000°, λ160.00000°. Principal axes: T 7.4900, Plg17.0000°, Azm157.0000°; N 0.0000, Plg69.0000°, Azm11.0000°; P -7.4900, Plg11.0000°, Azm251.0000°; After CERI.*
NEIC Felt [IV] at Greenbrier, [III] at Quitman and Vilonia and [II] at Conway. Felt widely in central and northwestern Arkansas. Also felt in parts of southern Missouri and at Collierville, Tennessee.
*IDC **07** 23:11:09.4±0.9, 35°.20N×92°.30W, h0^{km}, mb3.5/2, mb1 3.9/7, mb1mx3.6/56, mbtmp3.7/7, ML3.1/4, MS3.1/1, Ms1 3.1/1, ms1mx2.6/41 Error ellipse: s-maj=19.5km s-min=9.5km az=170.0*
ISC 07 23:11:09.3±0.9**, 35°.25N**±0°.02×**92°.38W**±0°.02**, h8**^{km}±7^{km}**,**

n298,σ1$02/328,mb3.6/3,Arkansas

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WHAR	Wooly Hollow	0.09	62	ePg	Pg	23 11 11.6	+0.1
UALR	University of	0.47	176	ePg	Pg	23 11 18.8	+0.4
W40A	Ferguson Farm, baz=84,SNR=242	0.56	264	P	Pg	23 11 20.1	-0.1
W40A	baz=84			S	Sg	23 11 28.2	+0.6
V40A	Witts Springs baz=146,SNR=1000	0.66	327	P	Pg	23 11 22.0	0.0
V40A	baz=146			S	Sg	23 11 31.3	+0.6
X40A	Basin Creek Fa baz=26,SNR=510	0.85	206	P	Pg	23 11 25.4	-0.1
X40A	baz=26			S	Sg	23 11 37.0	+0.4
W39A	Magazine baz=87	1.15	268	S	Sb	23 11 47.3	+0.9
U40A	Yellville baz=160,SNR=1000	1.17	341	P	Pg	23 11 31.4	-0.4
U40A	baz=160			S	Sg	23 11 47.1	+0.2
V39A	Pettigrew baz=119,SNR=1000	1.19	300	P	Pg	23 11 31.6	-0.4
V39A	baz=119			S	Sg	23 11 47.5	0.0
MIAR	Mount Ida baz=54,SNR=1000	1.20	235	P	Pg	23 11 31.5	-0.9
MIAR	baz=54			S	Sb	23 11 48.5	+0.4
MIAR	Mount Ida	1.20	235	ePg	Pg	23 11 31.9	-0.5
CCAR	Cane Creek	1.42	159	ePn	Pn	23 11 35.7	+0.4
Y40A	Okolona baz=31,SNR=479	1.44	211	P	Pn	23 11 36.1	+0.5
Y40A	baz=31			S	Sg	23 11 55.2	-0.4
U39A	Green Forest baz=141,SNR=1000	1.44	322	P	Pn	23 11 35.8	+0.1
U39A	baz=141			S	Sg	23 11 55.1	-0.5
HBAR	Harrisburg	1.44	77	ePn	Pn	23 11 36.0	+0.3
QUAR	Qualls	1.47	74	ePn	Pn	23 11 36.4	+0.4
X39A	Fountain Ranch baz=62,SNR=1000	1.60	243	P	Pn	23 11 38.4	+0.5
X39A	baz=62			Sb	Sg	23 12 01.5	+0.7
HHAR	Hobbs	1.63	310	ePn	Pn	23 11 39.1	+0.8
WLAR	White Oak Lake	1.67	201	ePn	Pn	23 11 39.6	+0.9
W38A	Poteau baz=84,SNR=586	1.76	265	P	Pb	23 11 41.5	-0.3
W38A	baz=84			Sb	Sg	23 12 05.8	0.0
V38A	Canehill baz=110,SNR=441	1.76	291	P	Pn	23 11 41.3	+1.2
V38A	baz=110			S	Sb	23 12 04.9	+0.9
T40A	Mansfield baz=176,SNR=634	1.90	357	P	Pn	23 11 43.4	+1.4
T40A	baz=176			S	Sb	23 12 08.5	+0.4
Y39A	Lockesburg baz=47,SNR=60	1.92	228	P	Pn	23 11 43.0	+0.7
Y39A	baz=47			S	Sn	23 12 08.2	+1.6
SFTN	Shelby Forest	1.94	86	ePn	Pn	23 11 42.9	+0.4
SFTN				eSn	Sb	23 12 09.9	+0.8
T39A	Clever baz=155,SNR=281	1.94	336	P	Pn	23 11 44.1	+1.5
T39A	baz=155			S	Sb	23 12 09.8	+0.4
MET	Memphis--Engin	2.01	93	ePn	Pn	23 11 44.1	+0.6
MET				eSn	Sn	23 12 10.2	+1.4
U38A	Gravette baz=126,SNR=232	2.01	307	P	Pn	23 11 44.9	+1.3
DLAR	Dell	2.02	73	ePn	Pn	23 11 44.6	+1.1
DLAR				eSn	Sb	23 12 12.8	+1.5
GNAR	Gosnell	2.06	69	ePn	Pb	23 11 46.4	-0.4
X38A	Whitesboro baz=73,SNR=677	2.09	255	P	Pn	23 11 46.4	+1.8
X38A	baz=73			Sb	Sg	23 12 16.1	-0.3
PBMO	Poplar Bluff	2.20	45	ePn	Pn	23 11 47.5	+1.4
PBMO				eSn	Sb	23 12 16.4	-0.2
V37A	Hulbert baz=105,SNR=219	2.34	286	P	Pn	23 11 49.0	+1.1
V37A	baz=105			S	Sn	23 12 18.5	+1.7
Y38A	Idabel baz=55,SNR=22	2.34	236	P	Pn	23 11 48.9	+0.9
Y38A	baz=55			S	Sn	23 12 19.2	+2.2
S40A	Lebanon baz=177,SNR=194	2.35	358	P	Pn	23 11 49.4	+1.3
S40A	baz=177			S	Sn	23 12 20.0	+2.9
T38A	Diamond baz=138,SNR=85	2.36	320	P	Pn	23 11 49.4	+1.1
CWPT	Cottonwood Poi	2.37	71	ePn	Pn	23 11 50.4	+2.0
WADM	Wardell	2.38	61	ePn	Pb	23 11 51.3	-1.1
PVMO	Portageville	2.47	61	ePn	Pn	23 11 51.1	+1.3
EBZ	Ebenezer Churc	2.48	92	ePn	Pn	23 11 50.7	+0.7
Z39A	Irene McRaven, baz=36	2.50	217	P	Pn	23 11 50.9	+0.7
Z39A	baz=36			S	Sn	23 12 22.2	+1.4
U37A	Salina baz=117,SNR=65	2.50	298	P	Pn	23 11 51.5	+1.3
X37A	Clayton baz=74,SNR=98	2.54	256	P	Pn	23 11 52.2	+1.4
X37A	baz=74			Sb	Sg	23 12 29.2	-1.7
S39A	Bolivar baz=162,SNR=138	2.55	343	P	Pn	23 11 52.4	+1.4
OXF	Oxford	2.55	106	ePn	Pn	23 11 51.7	+0.7
PARMO	Parma	2.56	56	ePn	Pn	23 11 52.7	+1.7
HALT	Halls	2.57	74	ePn	Pn	23 11 52.1	+1.0
RELT	Roellen	2.63	72	ePn	Pn	23 11 53.5	+1.5
143A	Socs Landing, baz=343,SNR=10	2.67	162	P	Pn	23 11 52.9	+0.4
141A	Papa Simpson, baz=9.3	2.67	189	P	Pn	23 11 52.8	+0.2
141A	baz=9.3			S	Sn	23 12 25.8	+0.6
S38A	Stockton baz=152,SNR=52	2.67	333	P	Pn	23 11 54.2	+1.6
GLAT	Glass	2.71	67	ePn	Pn	23 11 54.3	+1.2
142A	Monroe baz=353	2.72	172	P	Pn	23 11 54.0	+0.8
T37A	Cheneyville 18 baz=132,SNR=24	2.77	313	P	Pn	23 11 55.5	+1.5
140A	Cam and Jess, baz=21,SNR=7.4	2.78	201	P	Pn	23 11 55.1	+1.0
TUL1	Leonard baz=102,SNR=28	2.86	284	P	Pn	23 11 56.3	+1.2
TUL1	Leonard	2.86	284	ePn	Pn	23 11 56.7	+1.5
Z38A	Mt. Pleasant baz=47,SNR=7.6	2.94	228	P	Pn	23 11 57.1	+0.9
U36A	Oologah baz=112,SNR=11	2.95	294	P	Pn	23 11 57.6	+1.1
V36A	Jenks baz=99,SNR=69	2.95	281	P	Pn	23 11 57.9	+1.5
Y37A	Hugo baz=64,SNR=15	2.96	246	P	Pn	23 11 58.6	+2.1
139A	Bunkhouse Ranc baz=32	3.06	214	P	Pn	23 11 58.3	+0.4
UTMT	University of	3.06	68	ePn	Pn	23 11 59.1	+1.2
144A	Alexander Plac baz=329	3.08	147	P	Pn	23 11 58.9	+0.7
R39A	Chumby, Stover baz=170,SNR=79	3.10	350	P	Pn	23 11 59.7	+1.2
W36A	Wetumka baz=87,SNR=26	3.15	269	P	Pn	23 11 60.0	+0.8
R38A	Fenwick Farm, baz=157,SNR=31	3.18	338	P	Pn	23 12 00.6	+1.1
S37A	Fort Scott baz=141,SNR=24	3.19	323	P	Pn	23 12 00.9	+1.2
X36A	Centrahoma baz=77,SNR=15	3.33	259	P	Pn	23 12 03.3	+1.7
145A	Houston Renfro baz=323,SNR=9.6	3.34	142	P	Pn	23 12 02.4	+0.7
T36A	Boggs Farm, Ca baz=122,SNR=45	3.36	304	P	Pn	23 12 03.3	+1.3
Z37A	Pogue Cattle C baz=52,SNR=9.8	3.38	234	P	Pn	23 12 03.4	+1.1
VBMS	Vicksburg baz=334	3.40	152	P	Pn	23 12 03.4	+0.9
VBMS	Vicksburg	3.40	152	ePn	Pn	23 12 03.1	+0.5
VBMS				ePb	Pb	23 12 10.1	+0.4
138A	Matatall Enter baz=40,SNR=5.4	3.42	222	P	Pn	23 12 03.9	+1.0
Y36A	Durant baz=66	3.49	248	P	Pn	23 12 05.8	+1.9
244A	Avery, Jackson baz=337	3.50	156	P	Pn	23 12 04.6	+0.7
PLAL	Pickwick Lake	3.54	93	ePn	Pn	23 12 05.1	+0.6
SIUC	Southern Illin	3.54	45	ePn	Pn	23 12 06.5	+1.9
S36A	Lake Cedric, C baz=133,SNR=27	3.58	315	P	Pn	23 12 06.2	+1.2
R37A	Teagarden Farm baz=147,SNR=23	3.63	328	P	Pn	23 12 07.1	+1.3
239A	Gary baz=28,SNR=17	3.66	209	P	Pn	23 12 07.1	+0.9
V35A	Meyer Ranch, C baz=97,SNR=19	3.67	279	P	Pn	23 12 07.5	+1.2
W35A	Tecumseh baz=87,SNR=40	3.68	270	P	Pn	23 12 07.3	+0.9
U35A	Pawnee baz=106,SNR=16	3.71	289	P	Pn	23 12 07.9	+1.1
T35A	Sooner Cattle baz=115,SNR=27	3.73	298	P	Pn	23 12 08.2	+0.9
Q40A	Laux Farm, Aux baz=184,SNR=17	3.75	4	P	Pn	23 12 08.7	+1.4
SLM	Saint Louis	3.79	26	ePn	Pn	23 12 09.6	+1.6
146A	Union baz=314,SNR=8.3	3.80	132	P	Pn	23 12 08.9	+0.8
WVT	Waverly	3.81	75	ePn	Pn	23 12 08.3	+0.1
Q39A	Willow Grove F baz=173	3.82	353	P	Pn	23 12 09.5	+1.2
245A	Little AP, Sta baz=328	3.82	146	P	Pn	23 12 08.3	-0.1
Q38A	Cooks Store, C baz=165,SNR=8.4	3.83	345	P	Pn	23 12 10.2	+1.6
137A	Heron Place, G baz=46	3.85	228	P	Pn	23 12 09.7	+0.9
342A	Flagon Creek P baz=359	3.87	179	P	Pn	23 12 10.7	+1.7
X35A	Drake baz=76,SNR=19	3.87	259	P	Pn	23 12 09.9	+0.8
Z36A	Blue Ridge baz=58	3.89	241	P	Pn	23 12 10.0	+0.6
341A	Kurthwood baz=9.4	3.96	190	P	Pn	23 12 11.4	+1.1
R36A	Gordon, Harris baz=140,SNR=16	3.96	322	P	Pn	23 12 11.3	+1.0
238A	Jacksonville baz=34	3.96	216	P	Pn	23 12 10.8	+0.5
NATX	Nacogdoches baz=28	3.97	209	P	Pn	23 12 11.1	+0.7
NATX	Nacogdoches	3.97	209	ePn	Pn	23 12 11.5	+1.1
Q37A	Longview Farm, baz=155,SNR=13	3.98	336	P	Pn	23 12 11.3	+0.8
S35A	Otter Creek Ra baz=126,SNR=6.9	4.00	309	P	Pn	23 12 11.9	+1.1
340A	Bronson baz=18	4.03	199	P	Pn	23 12 12.0	+0.8
344A	Westbrook Farm baz=341	4.03	159	P	Pn	23 12 12.2	+1.0
Y35A	Marietta baz=69,SNR=9.1	4.07	252	P	Pn	23 12 13.0	+1.2
V34A	Guthrie baz=96,SNR=11	4.23	279	P	Pn	23 12 14.9	+1.0
V34A	Guthrie	4.23	279	ePn	Pn	23 12 15.2	+1.2
P39A	Salisbury baz=176,SNR=7.7	4.24	356	P	Pn	23 12 15.5	+1.4
T34A	McClaskey Farm baz=113,SNR=10	4.27	296	P	Pn	23 12 15.4	+0.8
P40A	Paris baz=184,SNR=8.2	4.28	3	P	Pn	23 12 15.7	+1.0
237A	Washetta, Mont baz=40,SNR=11	4.32	222	P	Pn	23 12 16.0	+0.8
R35A	Emporia Munici baz=134	4.33	316	P	Pn	23 12 16.3	+0.8
U34A	Anderson Ranch baz=104	4.35	287	P	Pn	23 12 16.3	+0.7
U34A	Anderson Ranch	4.35	287	ePn	Pn	23 12 16.9	+1.2
345A	Thompson Farm, baz=334	4.40	153	P	Pn	23 12 16.6	+0.3
W34A	Bridge Creek, baz=88	4.41	271	P	Pn	23 12 17.9	+1.4
W34A	Bridge Creek,	4.41	271	ePn	Pn	23 12 18.3	+1.8
136A	Ennis baz=50	4.42	232	P	Pn	23 12 17.4	+0.8
Q36A	Arnold C. Orve baz=146	4.45	327	P	Pn	23 12 18.3	+1.3
P38A	Dawn baz=168,SNR=15	4.46	349	P	Pn	23 12 18.6	+1.4
Z35A	Perchaven, San baz=63	4.46	246	P	Pn	23 12 18.0	+0.8
X34A	Smith Ranch, M baz=80	4.52	263	P	Pn	23 12 18.9	+0.8
S34A	Willow Spring baz=121	4.53	304	P	Pn	23 12 19.0	+0.9
441A	DeRidder baz=8.4	4.54	189	P	Pn	23 12 19.0	+0.7
346A	Big Creek Wild baz=329	4.56	147	P	Pn	23 12 19.1	+0.5
338A	Crockett baz=31	4.59	213	P	Pn	23 12 20.1	+1.1
P37A	Lathrop baz=160	4.61	341	P	Pn	23 12 20.6	+1.5
Y34A	Reagan Ranch, baz=72	4.62	255	P	Pn	23 12 20.0	+0.7
USIN	University of	4.66	53	ePn	Pn	23 12 21.1	+1.2
440A	Kirbyville baz=16	4.68	197	P	Pn	23 12 21.0	+0.8
236A	Katherine and baz=46	4.74	228	P	Pn	23 12 21.7	+0.7
U33A	Lingo Farm, Me baz=103	4.80	286	P	Pn	23 12 23.1	+1.2
445A	Amite baz=340	4.82	159	P	Pn	23 12 22.4	+0.2
V33A	Lossen Ranch, baz=95	4.85	278	P	Pn	23 12 23.9	+1.4
439A	Center Grove, baz=24	4.87	205	P	Pn	23 12 24.7	+1.8
O40A	La Belle baz=185,SNR=9.0	4.88	5	P	Pn	23 12 23.9	+1.0
OLIL	Olney	4.88	43	ePn	Pn	23 12 24.4	+1.4
337A	Centerville baz=36,SNR=5.7	4.90	218	P	Pn	23 12 24.5	+1.3
P36A	Good Intent, A baz=152,SNR=49	4.91	334	P	Pn	23 12 24.6	+1.3
O38A	Galt baz=170	4.94	350	P	Pn	23 12 24.6	+0.8
Z34A	Collier Ranch, baz=66	4.95	249	P	Pn	23 12 25.3	+1.4
R34A	Isabella, Hill baz=126,SNR=11	4.95	309	P	Pn	23 12 24.7	+0.8
135A	Vickery Place, baz=66	4.97	239	P	Pn	23 12 24.6	+0.5
LRAL	Lakeview Retre	4.98	115	ePn	Pn	23 12 25.0	+0.6
W33A	Caddo, Fort Co baz=87,SNR=8.7	4.98	271	P	Pn	23 12 26.0	+1.6
O39A	Kirksville baz=178,SNR=12	5.00	359	P	Pn	23 12 25.2	+0.7
S33A	Kaszmaul Farm, baz=116	5.10	299	P	Pn	23 12 26.9	+0.9
O37A	Wolven Farm, M baz=164	5.10	345	P	Pn	23 12 27.3	+1.3
KSU1	Kansas State U baz=138	5.12	320	P	Pn	23 12 26.2	+0.1
KSU1	Kansas State U	5.12	320	ePn	Pn	23 12 26.6	+0.4
446A	Poplarville baz=331	5.12	149	P	Pn	23 12 26.6	+0.4
P35A	Duane Minner, baz=145	5.16	327	P	Pn	23 12 27.6	+0.8
Q34A	Chapman baz=134,SNR=7.7	5.17	317	P	Pn	23 12 27.3	+0.4
438A	San Houston St baz=29	5.18	211	P	Pn	23 12 28.2	+1.0
WMOK	Wichita Mounta	5.28	266	ePn	Pn	23 12 29.5	+1.1
WMOK				eSn	Sn	23 13 30.0	+0.6
WMOK				eSg	Sg	23 13 56.6	-2.1
SWET	Sewanee	5.28	89	ePn	Pn	23 12 29.3	+0.8
O36A	Bolckow baz=156	5.29	338	P	Pn	23 12 29.8	+1.3
Y33A	Hilltop Ranch, baz=75	5.29	258	P	Pn	23 12 30.1	+1.4
WHTX	Lake Whitney, baz=51,SNR=9.9	5.33	234	P	Pn	23 12 29.9	+0.8
WHTX	Lake Whitney,	5.33	234	ePn	Pn	23 12 30.0	+0.8
336A	Riesel baz=43	5.37	225	P	Pn	23 12 30.1	+0.5
437A	Phantom Ranch, baz=34	5.42	217	P	Pn	23 12 31.0	+0.7
134A	White-Moore Ra baz=59	5.44	242	P	Pn	23 12 31.5	+0.9
V32A	Arapaho baz=93	5.46	277	P	Pn	23 12 32.3	+1.4
U32A	Winter Ranch, baz=100,SNR=7.8	5.50	284	P	Pn	23 12 32.1	+0.6
P34A	Walnut Farm, R baz=139,SNR=14	5.56	322	P	Pn	23 12 32.6	+0.4
N38A	Joes South For baz=173,SNR=5.5	5.58	353	P	Pn	23 12 32.9	+0.4
W32A	Sentinel baz=87,SNR=6.7	5.62	271	P	Pn	23 12 33.7	+0.5
Z33A	Whitaker Ranch baz=68,SNR=12	5.63	251	P	Pn	23 12 34.7	+1.3
WCI	Wyandotte Cave	5.72	57	ePn	Pn	23 12 35.2	+0.7
O35A	Humboldt baz=150,SNR=15	5.73	332	P	Pn	23 12 35.3	+0.6
X32A	Elmer baz=80	5.74	264	P	Pn	23 12 36.1	+1.3
Q33A	Connelly Farm, baz=129	5.74	312	P	Pn	23 12 35.6	+0.9
234A	Clairette baz=54,SNR=11	5.79	238	P	Pn	23 12 35.8	+0.3
335A	Moody baz=45,SNR=9.4	5.79	228	P	Pn	23 12 36.1	+0.6
436A	Wall Ranch, Ga baz=38	5.80	221	P	Pn	23 12 35.9	+0.3
S32A	Newby Ranch, P baz=113,SNR=10.0	5.82	297	P	Pn	23 12 36.5	+0.7
HDIL	Hopedale baz=206	5.83	24	P	Pn	23 12 36.9	+0.9
HDIL	Hopedale	5.83	24	ePn	Pn	23 12 36.0	0.0
HDIL				eSn	Sn	23 13 43.1	0.0
N36A	Muff Farm, Cla baz=159	5.92	341	P	Pn	23 12 38.4	+1.2
P33A	Williams Farm, baz=133	5.95	316	P	Pn	23 12 38.7	+1.1
R32A	Long Quarter, baz=120	5.98	304	P	Pn	23 12 38.5	+0.4
O34A	Beatrice baz=144	5.99	327	P	Pn	23 12 38.8	+0.5
133A	Hamilton Ranch baz=62	6.04	246	P	Pn	23 12 39.6	+0.7
BLO	Bloomington	6.10	48	ePn	Pn	23 12 39.8	+0.1
537A	Green Hill Far baz=32	6.13	214	P	Pn	23 12 40.8	+0.7
N35A	Tabor baz=154,SNR=16	6.16	336	P	Pn	23 12 41.3	+0.8
Q32A	Meitler Ranch, baz=125,SNR=11	6.19	309	P	Pn	23 12 41.2	+0.2
435B	Jarrell baz=43	6.24	226	P	Pn	23 12 42.3	+0.7
334A	Lometa baz=50,SNR=25	6.27	233	P	Pn	23 12 42.1	+0.1
M37A	Trindle Farm, baz=167	6.28	348	P	Pn	23 12 43.3	+1.1
233A	Rising Star baz=58	6.32	241	P	Pn	23 12 43.2	+0.4
O33A	Hebron baz=138,SNR=18	6.34	321	P	Pn	23 12 43.6	+0.6
CPCT	Cooper Cave	6.43	86	ePn	Pn	23 12 44.8	+0.6
N34A	Lincoln baz=148	6.46	331	P	Pn	23 12 45.2	+0.7
ABTX	Abilene, Hawle baz=64,SNR=12	6.58	249	P	Pn	23 12 46.3	0.0
ABTX	Abilene, Hawle	6.58	249	ePn	Pn	23 12 45.1	-1.2
P32A	Huiting Farm, baz=130	6.60	313	P	Pn	23 12 46.8	+0.2
SFIN	Lafayette baz=221	6.61	38	P	Pn	23 12 48.2	+1.5
SFIN	Lafayette	6.61	38	ePn	Pn	23 12 47.5	+0.8
434A	Burnet baz=46	6.63	230	P	Pn	23 12 46.8	-0.2
SCIA	State Center	6.68	355	ePn	Pn	23 12 48.2	+0.5
SCIA				Sg	Sg	23 14 37.8	-5.8
M35A	Neola baz=156	6.73	338	P	Pn	23 12 48.4	+0.1
333A	Richland Sprin baz=53	6.77	237	P	Pn	23 12 49.0	0.0
CBKS	Cedar Bluff baz=119,SNR=16	6.87	303	P	Pn	23 12 50.8	+0.4
CBKS	Cedar Bluff	6.87	303	ePn	Pn	23 12 50.8	+0.4
L37A	Phoenix Point, baz=171	6.95	352	P	Pn	23 12 52.2	+0.9
636A	Smothers Creek baz=33	6.98	216	P	Pn	23 12 53.1	+1.3
TKL	Tuckaleechee C 1.1nm,0.3s,baz=222,slow=9.9,SNR=10	7.04	84	Pn	Pn	23 12 52.7	+0.1
TKL	2.1nm,0.3s,baz=299,slow=19,SNR=2.3			Sn	Sn	23 14 09.8	-3.1
TKL	10nm,0.3s,baz=167,slow=21,SNR=14			Lg	Lg	23 14 46.7	
M34A	Aspy Farms, Fr baz=151,SNR=9.5	7.06	333	P	Pn	23 12 54.1	+1.2
433A	Art baz=50,SNR=16	7.20	233	P	Pn	23 12 54.8	-0.1
N32A	Stulken Farm, baz=138	7.22	321	P	Pn	23 12 55.8	+0.7
TZTN	Tazewell	7.29	77	ePn	Pn	23 12 56.5	+0.5
TZTN				eSn	Sn	23 14 16.7	-2.2
534A	Blanco baz=43	7.31	226	P	Pn	23 12 56.0	-0.5
O31A	Woolen Ranch, baz=130	7.36	314	P	Pn	23 12 57.5	+0.4
L34A	Svendsen Farm, baz=154,SNR=9.2	7.40	336	P	Pn	23 12 58.1	+0.5
635A	Leesville baz=36	7.41	219	P	Pn	23 12 57.8	+0.1
736A	Circle Diamond baz=31,SNR=7.9	7.43	214	P	Pn	23 12 58.9	+0.9
GOGA	Godfrey	7.60	101	ePn	Pn	23 12 60.0	-0.4
GOGA				eSn	Sn	23 14 25.5	-1.2
N31A	Bailey Ranch, baz=135	7.60	319	P	Pn	23 13 01.2	+0.8
533A	Kerrville baz=46	7.62	229	P	Pn	23 13 00.4	-0.2
AMTX	Amarillo	7.63	270	ePn	Pn	23 13 00.8	0.0
BGNE	Belgrade baz=142	7.64	325	P	Pn	23 13 01.1	+0.2
634A	China Grove, S baz=39	7.73	222	P	Pn	23 13 03.6	+1.5
JFWS	Jewell Farm	7.83	12	ePn	Pn	23 13 03.5	0.0
JCT	Junction City baz=51	7.84	235	P	Pn	23 13 03.4	-0.3
JCT	Junction City	7.84	235	ePn	Pn	23 13 03.5	-0.3
K34A	Le Mars baz=158	7.97	340	P	Pn	23 13 06.6	+1.2
M31A	Lambtecht Ranc baz=138,SNR=7.8	7.99	322	P	Pn	23 13 05.9	+0.2
J37A	Redenius Farm, baz=173	8.10	354	P	Pn	23 13 07.7	+0.5
633A	Saathoff Ranch baz=43	8.14	227	P	Pn	23 13 07.1	-0.7
J35A	Milford baz=164	8.39	346	P	Pn	23 13 12.2	+1.0
J34A	George baz=160	8.49	342	P	Pn	23 13 13.2	+0.7
N29A	Votaw Ranch, W baz=128	8.55	313	P	Pn	23 13 14.0	+0.5
L31A	Butterfield Fa baz=142	8.56	326	P	Pn	23 13 14.5	+1.0
M30A	Dale-Ortello V baz=134	8.60	319	P	Pn	23 13 14.4	+0.3
733A	Divot King Ran baz=40	8.76	224	P	Pn	23 13 15.8	-0.5
I38A	Scanlan Farm, baz=180	8.78	0	P	Pn	23 13 16.2	-0.2
L30A	Spencer Herefo baz=137	8.81	322	P	Pn	23 13 17.9	+0.9
KSCO	Kaye Shedlock' baz=112	9.00	298	P	Pn	23 13 19.8	+0.2
KMSC	Kings Mountain	9.05	88	ePn	Pn	23 13 20.0	-0.1
ECSD	EROS Data Cent baz=158,SNR=25	9.08	340	P	Pn	23 13 20.5	-0.2
ECSD	EROS Data Cent	9.08	340	ePn	Pn	23 13 20.4	-0.2
833A	Chaparral WMA, baz=39	9.12	223	P	Pn	23 13 21.2	0.0
J32A	Parkston baz=151	9.15	334	P	Pn	23 13 22.3	+0.8
I34A	Hadley baz=162	9.18	344	P	Pn	23 13 22.5	+0.6
JSC	Jenkinsville	9.20	93	ePn	Pn	23 13 22.5	+0.2
934A	Benavides baz=33,SNR=6.2	9.25	216	P	Pn	23 13 23.2	+0.2
L29A	Maesberg Ranch	9.29	319	P	Pn	23 13 24.8	+1.3

Code	Station Name	Δ°	AZ°	Op	ISC	Time	Res
	baz=134						
K30A	Basset	9.31	325	P	Pn	23 13 25.1	+1.3
	baz=140						
M28A	Bar X Bar Ranc	9.35	314	P	Pn	23 13 24.6	+0.2
	baz=128						
H36A	Jessenland, He	9.39	353	P	Pn	23 13 25.9	+1.1
	baz=172						
I33A	Coleman	9.42	340	P	Pn	23 13 25.6	+0.3
	baz=157						
OGNE	Ogallala	9.49	310	P	Pn	23 13 26.7	+0.4
	baz=124						
I32A	Karley and Nic	9.60	337	P	Pn	23 13 28.3	+0.6
	baz=154						
H35A	Sunnyside Ranc	9.62	349	P	Pn	23 13 29.0	+1.0
	baz=168						
K29A	Lazy Trails An	9.71	323	P	Pn	23 13 29.5	+0.2
	baz=138						
J30A	Dallas	9.76	328	P	Pn	23 13 30.4	+0.4
	baz=143						
034A	Hebbronville	9.78	215	P	Pn	23 13 29.9	-0.3
	baz=32,SNR=5.6						
BLA	Blacksburg	9.86	75	ePn	Pn	23 13 31.2	-0.1
BLA				eSn	Sn	23 15 21.8	-0.4
SPMN	Marine on St.	9.97	358	ePn	Pn	23 13 31.3	-1.5
H32A	Carlson Farm,	10.02	339	P	Pn	23 13 33.1	-0.4
	baz=156						
G35A	Watkins	10.09	351	P	Pn	23 13 34.9	+0.5
	baz=170						
I30A	Oacoma	10.21	330	P	Pn	23 13 36.2	0.0
	baz=146						
K28A	Ten Mile Ranch	10.21	320	P	Pn	23 13 36.6	+0.4
	baz=134						
VWCC	Virginia Weste	10.22	75	ePn	Pn	23 13 36.5	+0.3
F36A	Milaca	10.64	356	P	Pn	23 13 41.8	-0.1
	baz=175						
SDCO	Great Sand Dun	10.85	287	ePn	Pn	23 13 44.8	-0.3
COWI	Conover	11.12	12	ePn	Pn	23 13 47.5	-1.0
TXAR	Lajitas Array	11.22	241	Pn	Pn	23 13 48.9	-1.1
	0.7nm,0.3s,baz=65,slow=10,SNR=21						
TXAR				Lg	Lg	23 17 10.9	
	0.8nm,0.3s,baz=32,slow=12,SNR=4.0						
TXAR				LR	LR	23 18 30.7	
	comp=Z,116nm,21.9s,baz=0.0,slow=39						
TX31	Lajitas Ar. Si	11.22	241	ePn	Pn	23 13 48.9	-1.1
MNTX	Cornudas Mount	11.42	256	P	Pn	23 13 52.3	-0.3
	baz=68						
MNTX	Cornudas Mount	11.42	256	ePn	Pn	23 13 51.9	-0.8
ISCO	Idaho Springs	11.44	297	P	Pn	23 13 53.2	0.0
	baz=109						
ISCO	Idaho Springs	11.44	297	ePn	Pn	23 13 53.6	+0.3
ANMO	Albuquerque	11.54	273	Pn	Pn	23 13 54.3	-0.1
	0.1nm,0.3s,baz=76,slow=16,SNR=3.4						
ANMO				Lg	Lg	23 17 14.1	
	1.5nm,0.3s,baz=346,slow=18,SNR=4.7						
E33A	Westby DABS, E	11.57	347	P	Pn	23 13 53.7	-1.0
	baz=165						
M54A	Oil Creek Stat	11.77	54	P	Pn	23 13 56.2	-1.2
	baz=242						
PHWY	Pilot Hill	11.91	304	ePn	Pn	23 14 01.0	+1.4
O56A	Blue Knob Stat	12.03	61	P	Pn	23 14 00.0	-0.9
	baz=250						
N23A	Red Feather La	12.08	302	P	Pn	23 14 02.0	+0.1
	baz=114						
N23A	Red Feather La	12.08	302	ePn	Pn	23 14 02.5	+0.6
I25A	Rochford	12.37	318	P	Pn	23 14 05.7	0.0
	baz=131						
C34A	RKJ Ranch, Bem	12.53	352	P	Pn	23 14 06.7	-1.1
	baz=170						
EYMN	Ely	12.70	3	P	Pn	23 14 08.1	-2.1
	baz=183						
EYMN	Ely	12.70	3	ePn	Pn	23 14 06.3	-3.9
EYMN				eSn	Sn	23 16 21.1	-11
AGMN	Agassiz Nation	13.29	350	ePn	Pn	23 14 15.4	-2.8
PV01	Paradox Valley	13.31	287	eSn	Sn	23 16 44.2	-2.8
SADO	Sadowa	13.89	43	Pn	Pn	23 14 23.4	-3.0
	0.4nm,0.3s,baz=240,slow=10.0,SNR=5.7						
SADO				Sn	Sn	23 16 49.8	-11
	0.4nm,0.3s,baz=16,slow=2.2,SNR=5.2						
SADO				Lg	Lg	23 18 18.2	
	1.0nm,0.3s,baz=132,slow=22,SNR=9.6						
HPIG		14.07	238	ePn	Pn	23 14 31.9	+2.8
ULM	Lac du Bonnet	15.21	351	Pn	Pn	23 14 41.9	-2.3
	0.4nm,0.3s,baz=170,slow=14,SNR=3.7						
ULM				Sn	Sn	23 17 19.9	-13
	0.2nm,0.3s,baz=272,slow=19,SNR=3.4						
ULM				Lg	Lg	23 18 57.8	
	0.5nm,0.3s,baz=62,slow=14,SNR=4.0						
PDAR	Pinedale Array	15.30	305	Pn	Pn	23 14 45.2	-0.5
	0.2nm,0.3s,baz=121,slow=14,SNR=4.5						
PDAR				Lg	Lg	23 19 14.1	
	0.6nm,0.3s,baz=98,slow=34,SNR=8.5						
DGMT	Dagmar	15.85	330	ePn	Pn	23 14 49.9	-2.7
	25nm,1.2s						
RLMT	Red Lodge	16.21	313	ePn	P	23 15 00.3	-0.4
	12nm,1.5s						
MDV	Middlebury	17.15	54	ePn	Pn	23 15 08.5	-0.7
FCC	Fort Churchill	23.55	358	eP	P	23 16 19.9	+0.1
	4.5nm,0.9s						
INK	Inuvik	40.31	338	P	P	23 18 49.2	+2.6
	1.2nm,0.9s,baz=146,slow=3.6,SNR=3.2						
ILAR	Eielson Array	43.72	330	P	P	23 19 16.7	+2.2
	0.4nm,0.9s,baz=110,slow=7.8,SNR=3.8						

*IDC **07** 23:20:44.0±2.7, 13°.77S×166°.61E, h0km, mb4.0/3, mb1 4.1/3, mb1mx3.7/32, mbtmp4.0/3, Error ellipse: s-maj=111.3km s-min=43.9km az=139.0*
*ISCJB **07** 23:20:48.0±0.5, 13°.8S±0°.1×166°.60E±0°.10, h43km, mb4.6/16, Error ellipse: s-maj=19.9km s-min=12.6km az=158.1*
*NEIC **07** 23:20:48.9±0.3, 13°.80S×166°.66E, h35km, mb4.6/10, Error ellipse: s-maj=13.6km s-min=8.6km az=158.0*
ISC 07 23:20:49.7±0.7**, 13°.8S**±0°.2×**166°.7E**±0°.1**, h43km, n17, σ0s63**/17**, mb4.5**/16**, Vanuatu Islands**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
STKA	Stephens Creek	29.16	228	P	P	23 26 47.1	+0.2
	2.4nm,0.6s,baz=48,slow=10,SNR=7.2						
WRAB	Tennant Creek	31.48	254	eP	P	23 27 07.7	0.0
	0.2nm,0.5s						
WRA	Warramunga Arr	31.49	254	P	P	23 27 08.1	+0.3
	0.9nm,0.8s,baz=86,slow=9.6,SNR=3.9						
ASAR	Alice Springs	32.46	248	P	P	23 27 15.4	-0.8
	0.8nm,0.6s,baz=74,slow=9.3,SNR=9.8						
RAR	Rarotonga	32.80	108	eP	P	23 27 19.1	0.0
	14nm,0.8s						
POHA	Pohakuloa	49.97	49	eP	P	23 29 39.5	-0.6
	75nm,0.4s						
KKM	Kota Kinabalu	53.81	288	eP	P	23 30 09.0	+0.3
	3.3nm,0.3s						
MAJO	Matsushiro	56.83	333	eP	P	23 30 29.7	-0.2
	2.0nm,0.3s						
BJT	Baijiatuau	71.17	321	eP	P	23 32 03.2	-0.9
	1.7nm,0.4s						
CHTO	Chiang Mai	74.17	294	eP	P	23 32 23.2	+0.9
	0.5nm,0.6s						
QSPA	South Pole Qui	76.21	180	eP	P	23 32 32.9	-0.5
	4.9nm,0.6s						
YAK	Yakutsk	80.99	343	eP	P	23 32 58.8	-0.6
	30nm,0.4s						
WVOR	Wild Horse Val	88.26	46	eP	P	23 33 37.2	+0.4
	0.4nm,0.5s						
NEW	Newport	91.25	40	eP	P	23 33 50.9	+0.4
	0.8nm,0.3s						
PV01	Paradox Valley	94.36	52	eP	P	23 34 05.8	+0.5
	863nm,1.2s						
ANMO	Albuquerque	95.27	55	eP	P	23 34 10.5	+1.0
	0.3nm,0.3s						
ARCES	ARCESS Array B	119.22	345	PKP	PKPdf	23 39 34.3	+0.7
	1.8nm,0.8s,baz=29,slow=2.1,SNR=9.1						

*IDC **07** 23:22:07.2±2.6, 37°.05N×142°.03E, h0km, mb3.5/3, mb1 3.6/5, mb1mx3.4/37, mbtmp3.6/5, ML3.4/2, Error ellipse: s-maj=59.5km s-min=27.4km az=67.0*
*JMA **07** 23:22:13.2±0.2, 37°.00N×141°.58E, h44km±2km, M3.5*
ISC 07 23:22:09.2±2.2**, 36°.99N**±0°.05×**141°.77E**±0°.09**, h8km**±12km**, n14, σ1s49**/21**, mb3.4**/3**, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
ONAJ	Iwakimizuishiy	0.79	279	P	Pg	23 22 25.7	+1.3
ONAJ				S	Sg	23 22 34.5	-0.2
JFK	Kawauchi	0.81	298	P	Pg	23 22 26.1	+1.2
JFK				eS	Sg	23 22 35.3	-0.1
JHO	Hitachi	1.03	249	P	Pg	23 22 29.2	+0.1
JHO				S	Sg	23 22 40.9	-1.6
JMM	Marumori	1.18	319	P	Pb	23 22 31.6	-0.2
JMM				S	Sg	23 22 43.9	-3.2
JFT	Otama	1.26	295	P	Pn	23 22 33.4	+0.2
JFT				S	Sb	23 22 47.9	-1.9
JSB	Shiboa	1.48	270	P	Pn	23 22 37.2	+0.9
JOU	Okura	1.64	328	P	Pn	23 22 39.4	+1.0
JFY	Yanaizu	1.70	285	P	Pn	23 22 40.0	+0.7
MJAR	Matsushiro Arr	2.90	262	Pn	Pn	23 22 56.8	+1.1
	2.5nm,0.3s,baz=85,slow=15,SNR=12						
MAT	Matsushiro	2.90	262	P	Pn	23 22 57.2	+1.5
MAT				S	Sn	23 23 32.7	+2.0
JHJ	Hachijo jima 2	4.19	204	Pn	Pn	23 23 14.8	+1.4
	9.4nm,0.3s,baz=94,slow=23,SNR=5.6						
JHJ				Sn	Sn	23 24 00.2	-2.3
	36nm,0.3s,baz=65,slow=24,SNR=9.8						
SONM	Songino Array	28.05	304	P	P	23 28 02.1	+1.0
	0.3nm,0.4s,baz=96,slow=7.7,SNR=3.0						
MKAR	Makanchi Array	44.39	302	P	P	23 30 19.8	-0.4
	0.4nm,0.7s,baz=83,slow=9.3,SNR=5.2						
WRA	Warramunga Arr	57.05	188	P	P	23 31 55.5	-0.4
	0.3nm,0.4s,baz=6.3,slow=7.4,SNR=3.6						

*GUC **07** 23:22:16.9±0.4, 34°.75S×71°.76W, h47km±2km, ML3.1*
*SJA **07** 23:22:44.0±1.1, 33°.29S×70°.02W, h96km±30km, ML2.0, MW2.8*
ISC 07 23:22:17.8±1.3**, 34°.77S**±0°.06×**71°.80W**±0°.09**, h29km**±12km**, n13, σ0s93**/18**, 1D, Near coast of central Chile**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
CHPI	Pichilemu	0.41	336	eP	Pb	23 22 26.4	-0.4
CHPI				eS	Sb	23 22 33.7	+0.8
NICH	Los Niches	0.53	116⇓	eP	Pb	23 22 27.9	-0.7
NICH				eS	Sb	23 22 36.1	0.0
TALC	Talca	0.64	168	eP	Pb	23 22 30.1	-0.4
TALC				eS	Sb	23 22 39.7	+0.4
ANTU	Antumapu	1.54	39	eP	Pn	23 22 42.8	-0.6
ANTU				eS	Sn	23 23 02.2	-0.2
ANTU				IAML		23 23 03.4	
	comp=E,614nm,0.2s						
CLCH	Cerro Calan	1.73	38	eP	Pn	23 22 45.2	-0.7
CLCH				eS	Sn	23 23 06.9	-0.1
CLCH				IAML		23 23 11.4	
	comp=E,333nm,0.1s						
PEL	Peldehue	1.87	30	eP	Pn	23 22 47.0	-0.8
PEL				eS	Sn	23 23 10.3	-0.2
PEL				IAML		23 23 16.5	
	comp=N,267nm,0.2s						
AAGR	Agrelo	2.99	57	eP	Pn	23 23 05.2	+1.9
AAGR				eS	Sn	23 23 21.4	-17
ARCO	CERRO ARCO	3.07	52	eP	Pn	23 23 05.5	+1.1
ARCO				IAML		23 23 11.4	
	comp=Z,16nm,0.6s						
AUSP	Uspallata	3.24	39	eP	Pn	23 23 07.9	+1.0
ASAL	Salagasta	3.29	50	eP	Pn	23 23 08.8	+1.3
RTLS	Leoncito	3.63	36	eP	Pn	23 23 13.2	+0.9
RTLL	Cerro Villicun	4.42	40	eP	Pn	23 23 22.2	-0.8
AVFE	Valle Fertil	5.50	43	IAML		23 24 49.5	
	comp=Z,5.2nm,0.4s						

*NIED **07** 23:33:00, 38°.80N×142°.80E, h5km, Mw3.8 Best double couple: M0 6.24000×10^14 NP1:φs300.00000°, δ32.00000°, λ-93.00000°. NP2:φs124.00000°, δ58.00000°, λ-88.00000°.*
*IDC **07** 23:33:40.4±0.9, 38°.70N×142°.90E, h0km, mb3.8/14, mb1 3.9/14, mb1mx3.8/50, mbtmp3.8/14, Error ellipse: s-maj=22.1km s-min=18.3km az=107.0*
*ISCJB **07** 23:33:42.2±0.6, 38°.74N±0°.05×143°.00E±0°.07, h23km, mb4.0/18, Error ellipse: s-maj=9.0km s-min=6.4km az=41.5*
*JMA **07** 23:33:42.0±0.3, 38°.78N×142°.81E, h4km, M3.9*
*NEIC **07** 23:33:46.4±1.2, 38°.79N×142°.94E, h40km±10km, mb4.0/3, Error ellipse: s-maj=14.4km s-min=8.3km az=122.0*
ISC 07 23:33:43.9±0.8**, 38°.69N**±0°.07×**142°.75E**±0°.07**, h23km, n37, σ0s84**/28**, mb3.9**/18**, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
JMK	Ichinoseki	1.22	283	P	Pb	23 34 05.7	-0.7
JOM	Ohasama	1.38	305	P	Pn	23 34 07.6	-0.2
JOM				S	Sb	23 34 26.3	+0.1
JOU	Okura	1.67	260	P	Pb	23 34 13.3	-0.6
JMM	Marumori	1.74	243	P	Pb	23 34 14.5	-0.7
JYK	Kaneyama	1.88	278	P	Pb	23 34 16.0	-1.6
ERM	Erimo	3.34	5	ePn	Pn	23 34 33.6	-1.2
ERM				eSn	Sn	23 35 13.8	+0.1
MJAR	Matsushiro Arr	4.19	241	Pn	Pn	23 34 51.2	+4.7
	3.1nm,0.3s,baz=55,slow=11,SNR=25						
MAJO	Matsushiro	4.19	241	ePn	Pn	23 34 49.6	+3.1
MAT	Matsushiro	4.19	241	P	Pb	23 34 52.1	-4.9
MAT				eS	Sb	23 35 45.3	-1.9
USRK	Ussuriysk Ar.	9.78	308	Pn	Pn	23 36 07.3	+4.3
	0.1nm,0.3s,baz=106,slow=16,SNR=3.0						
MDJ	Mudanjiang	11.48	305	ePn	Pn	23 36 26.9	+0.5
KSRS	Korea Array	11.75	269	Pn	Pn	23 36 36.4	+6.3
	0.1nm,0.3s,baz=75,slow=16,SNR=4.1						
KSAR	Wonju Array Be	11.79	269	Pn	Pn	23 36 36.4	+5.9
MA2	Magadan	21.53	11	P	P	23 38 30.7	-0.5
	2.8nm,0.3s,baz=210,slow=19,SNR=5.1						
SEY	Seymchan	24.97	10	P	P	23 39 05.8	+0.3
	1.1nm,0.6s,baz=230,slow=14,SNR=5.8						
SONM	Songino Array	27.79	301	P	P	23 39 32.0	+0.8
	0.6nm,0.4s,baz=90,slow=7.6,SNR=5.6						
H11N2	WAKE ISLAND Hy	28.16	125	T	T	00 08 58.2	
	baz=318,slow=76,SNR=75						
H11N1	WAKE ISLAND Hy	28.17	125	T	T	00 08 59.6	
	baz=318,slow=76,SNR=50						
H11N3	WAKE ISLAND Hy	28.18	125	T	T	00 09 01.4	
	baz=318,slow=76,SNR=54						
H11S1	WAKE ISLAND Hy	28.94	127	T	T	00 09 53.2	
	baz=320,slow=76,SNR=12						
H11S3	WAKE ISLAND Hy	28.94	127	T	T	00 09 53.9	
	baz=320,slow=76,SNR=13						
H11S2	WAKE ISLAND Hy	28.96	127	T	T	00 09 57.3	
	baz=320,slow=76,SNR=16						
ZALV	Zalesovo Beam	41.61	311	P	P	23 41 30.6	+0.7
	0.6nm,0.4s,baz=99,slow=9.9,SNR=4.6						
MKAR	Makanchi Array	44.16	301	P	P	23 41 51.9	+1.2
	1.0nm,0.8s,baz=85,slow=10.0,SNR=13						
KURK	Kurchatov	45.76	307	eP	P	23 42 03.4	0.0
	13nm,0.9s						
KURBB	Kurchatov Arra	45.84	307	P	P	23 42 04.4	+0.4
	2.2nm,0.7s,baz=82,slow=8.1,SNR=24						
ILAR	Eielson Array	47.54	33	P	P	23 42 16.4	-0.6
	0.9nm,0.9s,baz=264,slow=6.6,SNR=7.1						
BVAR	Borovoye Array	50.26	312	P	P	23 42 38.4	+0.2
	0.7nm,0.5s,baz=76,slow=12,SNR=3.5						
AAK	Ala-Archa	50.65	298	eP	P	23 42 42.6	+1.1
	0.4nm,0.5s						
EKS2	Erkin-Say	51.14	298	eP	P	23 42 45.9	+0.8
	0.8nm,0.6s						
INK	Inuvik	52.44	28	P	P	23 42 54.0	-0.2
	0.4nm,0.4s,baz=309,slow=8.6,SNR=4.0						
WRA	Warramunga Arr	58.85	189	P	P	23 43 40.7	-0.1
	2.6nm,0.9s,baz=7.5,slow=7.3,SNR=7.6						
YKA	Yellowknife Ar	61.85	31	P	P	23 43 59.8	-1.0
	0.1nm,0.5s,baz=301,slow=6.0,SNR=2.8						
ASAR	Alice Springs	62.57	189	P	P	23 44 07.0	+0.9
	0.7nm,0.7s,baz=15,slow=7.7,SNR=6.3						
GEYT	Alibeck	63.96	299	P	P	23 44 16.1	+0.7
	0.9nm,0.6s,baz=68,slow=5.0,SNR=2.9						
FINES	FINESS Array B	67.84	332	P	P	23 44 40.0	+0.1
	1.7nm,0.9s,baz=38,slow=7.0,SNR=2.6						
DGAR	Diego Garcia	79.52	252	eP	P	23 45 50.0	+0.9
	24nm,0.5s						

*ISCJB **07** 23:39:25.8±0.4, 38°.91N±0°.04×142°.03E±0°.05, h51km, mb4.2/32, Error ellipse: s-maj=7.2km s-min=4.1km az=41.8*
*MOS **07** 23:39:27.4±0.9, 38°.92N×141°.96E, h69km, mb4.4/19, Error ellipse: s-maj=9.8km s-min=6.9km az=89.3*
*JMA **07** 23:39:27.3±0.2, 38°.91N×141°.91E, h55km±3km, M4.1*
JMA Felt III J1.
*IDC **07** 23:39:29.6±0.9, 38°.86N×141°.90E, h74km±5km, mb3.9/22, mb1 3.9/26, mb1mx3.8/53, mbtmp4.2/26, MS2.8/2, Ms1 2.8/2, ms1mx2.5/39, Error ellipse: s-maj=16.9km s-min=13.8km az=102.0*
*NEIC **07** 23:39:31.1±0.8, 38°.82N×141°.87E, h89km±7km, mb4.4/4, Error ellipse: s-maj=8.2km s-min=6.8km az=109.0*
NEIC Recorded [3 JMA] in Iwate.
ISC 07 23:39:26.7±0.6**, 38°.88N**±0°.06×**142°.09E**±0°.07**, h51km, n72, σ1s35**/72**, mb4.3**/32**, 1C-1D, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
JMK	Ichinoseki	0.68	276	P	Pn	23 39 39.6	-0.6
JMK				S	Sn	23 39 48.0	-2.1
JOM	Ohasama	0.86	314	P	Pn	23 39 41.9	-0.6
JOM				eS	Sn	23 39 52.3	-1.8
JOU	Okura	1.23	246	P	Pn	23 39 46.9	-0.6
JOU				S	Sn	23 40 01.5	-1.6
JYK	Kaneyama	1.35	272	P	Pn	23 39 48.4	-0.8
JMM	Marumori	1.44	226	P	Pn	23 39 49.7	-0.6
JMM				S	Sn	23 40 06.5	-1.6
ERM	Erimo	3.23	14	eP	Pn	23 40 15.9	+1.0
MJAR	Matsushiro Arr	3.86	234	P	Pn	23 40 25.4	+1.9
	7.1nm,0.3s,baz=35,slow=12,SNR=29						
MAJO	Matsushiro	3.87	234d	iP	Pn	23 40 25.1	+1.5
MAJO	Matsushiro	3.87	234	ePn	Pn	23 40 25.7	+2.1
MAT	Matsushiro	3.87	234	P	Pn	23 40 25.5	+1.9
MAT				eS	Sn	23 41 10.5	+2.8
YUK	Yuzh-Kuril'sk	5.88	28	P	Pn	23 40 54.7	+3.6
YUK				eS	Sn	23 41 55.1	-2.0
YUK				pmax	pmax		
	comp=Z,103nm,0.6s						
YUK				pmax	pmax		
	comp=E,47nm,0.3s						
YUK				pmax	pmax		
	comp=N,75nm,0.5s						
JHJ	Hachijo jima 2	6.05	199	P	Pn	23 40 55.8	+2.3
	comp=N,7.6nm,0.3s,baz=330,slow=23,SNR=3.1						
JHJ				S	Sn	23 41 59.6	-1.8
	comp=N,8.6nm,0.3s,baz=57,slow=21,SNR=2.3						
SHO	Shikotan	6.13	34	eP	Pn	23 40 57.0	+2.5
SHO				iS	Sn	23 41 58.1	-5.1
SHO				pmax	pmax		
	comp=E,33nm,0.8s						
SHO				pmax	pmax		
	comp=Z,47nm,0.8s						
SHO				pmax	pmax		
	comp=N,11nm,0.4s						
KUR	Kuril'sk	7.66	32	P	Pn	23 41 19.7	+4.1
KUR				eS	Sn	23 42 37.7	-3.2
USRK	Ussuriysk Ar.	9.25	308	P	Pn	23 41 40.2	+2.9
	comp=N,1.4nm,0.3s,baz=117,slow=14,SNR=30						
MDJ	Mudanjiang	10.95	306	ePn	Pn	23 42 03.4	+2.8
	comp=N,3.3nm,0.5s						
KSRS	Korea Array	11.25	267	P	Pn	23 42 07.6	+3.0
	comp=N,0.6nm,0.3s,baz=82,slow=14,SNR=6.6						
KSRS				LR	LR	23 45 21.5	
	comp=N,54nm,19.6s,baz=76,slow=32						
KSAR	Wonju Array Be	11.28	267	P	Pn	23 42 07.6	+2.5
KSAR	Wonju Array Be	11.28	267	P	Pn	23 42 07.6	+2.5
KLR	Kul'dur	12.73	328	LR	LR	23 47 42.8	
	comp=N,46nm,21.5s,baz=98,slow=39						
KLR	Kul'dur	12.73	328	eP	Pn	23 42 23.9	-0.9
MA2	Magadan	21.44	12	eP	P	23 44 11.2	+1.0
SEY	Seymchan	24.88	11	P	P	23 44 46.3	+2.0
	comp=N,1.2nm,0.2s,baz=198,slow=7.2,SNR=8.7						
SEY	Seymchan	24.88	11	eP	P	23 44 47.4	+3.2
BOD	Bodaibo	26.29	325	eP	P	23 44 55.9	-1.1
BOD				pmax	pmax		
	comp=Z,4.0nm,2.0s						
SONM	Songino Array	27.25	301	P	P	23 45 05.9	-0.1
	comp=Z,0.7nm,0.5s,baz=100,slow=8.4,SNR=6.5						
ENH	Enshi	28.07	262	eP	P	23 45 12.7	-0.7
	comp=Z,9.7nm,0.6s						
H11N2	WAKE ISLAND Hy	28.69	125	T	T	00 15 45.4	
	baz=317,slow=75,SNR=220						
H11N1	WAKE ISLAND Hy	28.70	125	T	T	00 15 48.6	
	baz=317,slow=75,SNR=524						
H11N3	WAKE ISLAND Hy	28.71	125	T	T	00 15 48.9	
	baz=317,slow=75,SNR=355						
H11S1	WAKE ISLAND Hy	29.47	127	T	T	00 16 54.3	
	baz=319,slow=76,SNR=153						
H11S3	WAKE ISLAND Hy	29.47	127	T	T	00 16 54.4	
	baz=319,slow=76,SNR=182						
H11S2	WAKE ISLAND Hy	29.49	127	T	T	00 16 55.5	
	baz=319,slow=76,SNR=173						
TLY	Talaya	29.57	308	eP	P	23 45 27.6	+1.1
TLY				pmax	pmax		
	comp=Z,6.0nm,2.5s						
BILL	Bilibino	32.11	17	eP	P	23 45 51.1	+2.5
BILL				pmax	pmax		
	comp=Z,1.0nm,1.0s						
ZALV	Zalesovo Beam	41.09	311	P	P	23 47 04.9	-0.3
	comp=Z,4.8nm,0.5s,baz=88,slow=7.9,SNR=25						
ZALV				pP	sP	23 47 22.8	-1.8
	comp=Z,3.2nm,0.6s,baz=78,slow=8.1,SNR=5.8						
ZALV				PcP	PcP	23 49 03.9	0.0
	comp=Z,0.7nm,0.3s,baz=98,slow=2.5,SNR=5.0						
NRIK	Noril'sk	41.83	334	P	P	23 47 10.8	-0.2
	comp=Z,1.1nm,0.3s,baz=99,slow=6.8,SNR=5.2						
NVS	Novosibirsk	41.98	312	eP	P	23 47 12.6	+0.2
MKAR	Makanchi Array	43.62	301	P	P	23 47 25.6	-0.2
	comp=Z,6.7nm,0.7s,baz=86,slow=9.9,SNR=90						
MKAR				pP	sP	23 47 44.1	-1.2
	comp=Z,2.4nm,0.7s,baz=100,slow=6.6,SNR=5.9						
KURK	Kurchatov	45.24	307	eP	P	23 47 38.2	-0.5
KURK				pmax	pmax		
	comp=Z,27nm,0.9s						
KURK	Kurchatov	45.24	307	eP	P	23 47 38.1	-0.5
	comp=Z,27nm,0.9s						
KURBB	Kurchatov Arra	45.31	307	P	P	23 47 38.7	-0.5
	comp=Z,8.2nm,0.6s,baz=81,slow=8.3,SNR=89						
COLA	College	47.24	33	eP	P	23 47 56.0	+1.9
COLA				pmax	pmax		
	comp=Z,2.0nm,0.5s						
COLA	College	47.24	33	eP	P	23 47 56.0	+1.9
	comp=Z,1.6nm,0.5s						
ILAR	Eielson Array	47.65	33	P	P	23 47 59.6	+2.2
	comp=Z,0.7nm,0.7s,baz=264,slow=6.1,SNR=6.4						
BVAR	Borovoye Array	49.74	311	P	P	23 48 13.4	-0.3
	comp=Z,3.6nm,0.4s,baz=72,slow=7.9,SNR=37						
BVAR				pP	sP	23 48 31.9	-1.4
	comp=Z,1.5nm,0.5s,baz=79,slow=8.0,SNR=3.9						
BVAR				PcP	PcP	23 49 34.0	+0.1
	comp=Z,0.9nm,0.4s,baz=91,slow=3.6,SNR=5.0						
BRVK	Borovoye	49.80	311c	eP	P	23 48 14.4	+0.4
BRVK				pmax	pmax		
	comp=Z,2.0nm,0.6s						
AAK	Ala-Archa	50.10	297	P	P	23 48 16.5	-0.3
	comp=Z,1.5nm,0.4s,baz=107,slow=4.0,SNR=10						
AAK	Ala-Archa	50.10	297	eP	P	23 48 16.6	-0.1
EKS2	Erkin-Say	50.59	297	eP	P	23 48 20.0	-0.4
EKS2				pmax	pmax		
	comp=Z,2.0nm,0.8s						
EKS2	Erkin-Say	50.59	297	eP	P	23 48 20.0	-0.4
	comp=Z,2.0nm,0.8s						
INK	Inuvik	52.50	28	P	P	23 48 34.8	+0.8
	comp=Z,1.6nm,0.9s,baz=315,slow=8.8,SNR=5.8						
SVE	Sverdlovsk	54.13	318	eP	P	23 48 46.7	+0.5
SVE				pmax	pmax		
	comp=Z,9.0nm,0.7s						
ARU	Arti	55.34	318	P	P	23 48 54.7	-0.3
	comp=Z,4.4nm,0.4s,baz=78,slow=1.9,SNR=15						
ARU				pP	sP	23 49 13.9	-0.9
	comp=Z,2.1nm,0.5s,baz=28,slow=13,SNR=2.6						
AKTO	Aktyubinsk	57.85	311	P	P	23 49 12.2	-0.7
	comp=Z,1.4nm,0.4s,baz=72,slow=13,SNR=9.9						
WRA	Warramunga Arr	58.96	189	P	P	23 49 20.6	-0.2
	comp=Z,1.4nm,0.5s,baz=5.2,slow=7.0,SNR=6.5						
YKA	Yellowknife Ar	61.95	31	P	P	23 49 42.3	+1.5
	comp=Z,0.2nm,0.7s,baz=304,slow=6.7,SNR=5.7						
ARCES	ARCESS Array B	62.46	339	P	P	23 49 43.7	-0.4
	comp=Z,1.2nm,0.7s,baz=60,slow=7.7,SNR=5.5						
ASAR	Alice Springs	62.69	188	P	P	23 49 46.2	+0.1
	comp=Z,0.3nm,0.5s,baz=1.2,slow=5.2,SNR=6.4						
ASAR	Alice Springs	62.69	188	P	P	23 49 46.3	+0.1
ASAR				pmax	pmax		
	comp=Z,1.0nm,0.6s						
GEYT	Alibeck	63.42	298	P	P	23 49 50.3	-0.7
	comp=Z,1.8nm,0.7s,baz=55,slow=5.6,SNR=6.4						
FINES	FINESS Array B	67.43	332	P	P	23 50 16.3	-0.2
	comp=Z,3.2nm,0.7s,baz=28,slow=10,SNR=20						
FINES				pP	sP	23 50 35.5	-1.1
	comp=Z,3.3nm,0.8s,baz=90,slow=3.8,SNR=2.8						
KIV	Kislovodsk	70.11	311	eP	P	23 50 35.2	+1.6
KIV				pmax	pmax		

Code	Station Name	Δ°	AZ°	Op	ISC	h m s	Res ISC
	comp=Z,9.0nm,1.0s						
KBZ	**Khabaz**	**70.11**	**310**	P	**P**	**23 50 33.8**	**+0.3**
	comp=Z,3.8nm,0.9s,baz=55,slow=2.8,SNR=7.2						
AKASG	**Malin Array Be**	**73.17**	**322**	P	**P**	**23 50 51.4**	**-0.3**
	comp=Z,1.3nm,0.4s,baz=38,slow=4.8,SNR=7.9						
AKASG				pP	**PcP**	**23 51 10.0**	**+1.9**
	comp=Z,1.4nm,0.5s,baz=46,slow=6.9,SNR=2.4						
STHS	**Stebnicka Huta**	**77.76**	**325**	*e*P	**P**	**23 51 18.6**	**+0.5**
STHS	**Stebnicka Huta**	**77.76**	**325**	*e*P	**P**	**23 51 18.6**	**+0.5**
BRTR	**Keskin Array B**	**78.03**	**312**	P	**P**	**23 51 19.9**	**0.0**
	comp=Z,0.7nm,0.4s,baz=120,slow=3.0,SNR=10						
BRTR	**Keskin Array B**	**78.03**	**312**	P	**P**	**23 51 20.0**	**0.0**
BRTR				pmax	pmax		
	comp=Z,1.0nm,0.4s						
CLL	**Collm**	**79.76**	**330**	*e*P	P	23 51 25.0	-4.0
CLL				*i*		23 51 29.1	
CLL	**Collm**	**79.76**	**330**	*e*P	P	23 51 25.0	-4.0
GERES	**GERESS Array B**	**81.42**	**328**	P	**P**	**23 51 38.0**	**-0.1**
	comp=Z,0.7nm,0.6s,baz=46,slow=5.8,SNR=4.5						

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*IDC **08** 00:04:50.5±8.0, 24°.38N×123°.38E, h136km±48km, mb2.9/3, mb1 3.1/5, mb1mx2.8/46, mbtmp3.5/5, Error ellipse: s-maj=105.5km s-min=38.1km az=12.0*
*ISCJB **08** 00:04:56.0±0.6, 25°.2N±0°.1×123°.48E±0°.09, h157km±13km, mb3.0/3, Error ellipse: s-maj=26.6km s-min=8.4km az=155.0*
*JMA **08** 00:04:58.2±0.3, 25°.06N×123°.45E, h147km±4km, M3.5*
ISC 08 00:04:56.6±0.9**, 25°.3N**±0°.2×**123°.45E**±0°.09**, h150**km±16km**, n19,** σ1s.**23**/30**, mb3.2**/3**, Northeast of Taiwan**

Code	Station Name	Δ°	AZ°	Op	ISC	h m s	Res ISC
YOJ	**Yonaguni jima**	**0.88**	**207**	P	**Pn**	**00 05 20.8**	**+0.4**
JYNG	**Yonagunijimaku**	**0.92**	**210**	P	**Pn**	**00 05 21.0**	**+0.3**
IRIF	**Iriomote-Funau**	**0.95**	**164**	P	**Pn**	**00 05 20.7**	**-0.2**
IRIF				S	**Sn**	**00 05 37.7**	**-1.7**
JISG	**Ishigakijimahi**	**1.02**	**130**	P	**Pn**	**00 05 22.0**	**+0.4**
JISG				S	**Sn**	**00 05 40.1**	**-0.4**
JIJ	**Ishigaki jima**	**1.08**	**144**	P	**Pn**	**00 05 22.2**	**+0.1**
JIJ				S	**Sn**	**00 05 39.8**	**-1.7**
JKRS	**Kuro-shima**	**1.13**	**153**	P	**Pn**	**00 05 22.8**	**+0.3**
JKRS				S	**Sn**	**00 05 41.1**	**-1.2**
HATJ	**Hateruma jima**	**1.23**	**165**	P	**Pn**	**00 05 23.5**	**0.0**
HATJ				S	**Sn**	**00 05 42.4**	**-1.6**
JTJ	**Tarama**	**1.29**	**118**	P	**Pn**	**00 05 24.9**	**+0.9**
JTJ				S	**Sn**	**00 05 44.8**	**-0.1**
JIRB	**Irabujima**	**1.62**	**105**	P	**Pn**	**00 05 28.4**	**+1.0**
JIRB				S	**Sn**	**00 05 50.5**	**-0.5**
JIKM	**Ikemajima**	**1.66**	**101**	P	**Pn**	**00 05 29.3**	**+1.4**
JIKM				S	**Sn**	**00 05 52.3**	**+0.5**
JMJ	**Miyako jima 2**	**1.73**	**104**	*e*S	**Sn**	**00 05 53.8**	**+0.7**
JOGS	**Gusukube**	**1.84**	**105**	S	**Sn**	**00 05 55.9**	**+0.5**
JKE	**Kume jima 2**	**3.19**	**70**	P	**Pn**	**00 05 47.1**	**+0.7**
JKE				*e*S	**Sn**	**00 06 25.5**	**+0.5**
JOW	**Kunigami**	**4.62**	**69**	P	**Pn**	**00 06 04.1**	**-0.9**
	0.6nm,0.3s,baz=122,slow=17,SNR=5.1						
JOW				S	**Sn**	**00 06 55.0**	**-3.3**
	2.4nm,0.3s,baz=110,slow=24,SNR=8.1						
JOW	**Kunigami**	**4.62**	**69**	P	**Pn**	**00 06 04.1**	**-0.9**
JOW				*e*S	**Sn**	**00 06 55.1**	**-3.1**
KSRS	**Korea Array**	**12.75**	**16**	P	**P**	**00 07 58.5**	**+0.7**
	0.5nm,0.3s,baz=202,slow=12,SNR=5.8						
SONM	**Songino Array**	**26.26**	**333**	P	**P**	**00 10 18.7**	**+0.8**
	0.2nm,0.3s,baz=150,slow=9.9,SNR=2.3						
MKAR	**Makanchi Array**	**39.04**	**314**	P	**P**	**00 12 08.8**	**+0.1**
	0.1nm,0.4s,baz=94,slow=7.9,SNR=5.4						
YKA	**Yellowknife Ar**	**81.18**	**23**	P	**P**	**00 16 55.0**	**-0.2**
	0.2nm,0.4s,baz=308,slow=4.9,SNR=7.2						

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*BEO **08** 00:06:55.1±1.2, 42°.98N×15°.56E, h0km, M2.5/5*
*CSEM **08** 00:06:57.2±0.9, 43°.04N×15°.80E, h5km, ML2.5, Error ellipse: s-maj=21.8km s-min=8.7km az=31.0*
ISC 08 00:06:55.1±2.9**, 42°.9N**±0°.1×**15°.59E**±0°.08**, h5**km±19km**, n24,** σ0s.**84**/33**, Adriatic Sea**

Code	Station Name	Δ°	AZ°	Op	ISC	h m s	Res ISC
STON	**Ston**	**1.55**	**89**	*e*Pn	**Pn**	**00 07 23.5**	**+0.2**
STON				Sn	**Sg**	**00 07 44.8**	**0.0**
STON	**Ston**	**1.55**	**89**	*e*Pg	**Pn**	**00 07 23.1**	**-0.2**
STON				*e*Sg	**Sg**	**00 07 45.2**	**+0.4**
STON	**Ston**	**1.55**	**89**	*e*Pg	**Pn**	**00 07 23.1**	**-0.2**
STON	**Ston**	**1.55**	**89**	*e*Pn	**Pn**	**00 07 23.4**	**+0.2**
STON				Sn	**Sg**	**00 07 44.8**	**0.0**
STON				*e*Sg	**Sg**	**00 07 45.2**	**+0.4**
UDBI	**Udbina**	**1.67**	**4**	*e*Pn	**Pn**	**00 07 23.1**	**-2.0**
UDBI				Sn	**Sn**	**00 07 45.6**	**-1.2**
NVLJ	**Novalja**	**1.78**	**343**	*e*Pn	**Pn**	**00 07 26.1**	**-0.3**
NVLJ				Sn	**Sn**	**00 07 49.8**	**+0.3**
NVLJ	**Novalja**	**1.78**	**343**	*e*Pn	**Pn**	**00 07 26.1**	**-0.3**
NVLJ				Sn	**Sn**	**00 07 49.7**	**+0.3**
BLY	**Banja Luka**	**2.21**	**31**	*e*Pg	**Pn**	**00 07 33.5**	**+1.1**
BLY				*e*Sg	**Sb**	**00 08 03.4**	**+0.3**
BLY	**Banja Luka**	**2.21**	**31**	*e*Pg	**Pn**	**00 07 33.5**	**+1.1**
BLY				*e*Sg	**Sb**	**00 08 03.4**	**+0.3**
SKDS	**Skadanscina**	**2.91**	**338**	*i* Pn	**Pn**	**00 07 42.5**	**+0.4**
SKDS	**Skadanscina**	**2.91**	**338**	*i* Pn	**Pn**	**00 07 42.5**	**+0.4**
BBLS	**Lazići**	**2.96**	**69**	*e*Pg	**Pb**	**00 07 47.5**	**-0.7**
BBLS	**Lazići**	**2.96**	**69**	*e*Pg	**Pb**	**00 07 47.5**	**-0.7**
VISS	**Visnje**	**2.99**	**350**	*i* Pn	**Pn**	**00 07 43.5**	**+0.4**
VISS	**Visnje**	**2.99**	**350**	*i* Pn	**Pn**	**00 07 43.5**	**+0.4**
CEY	**Cerknica**	**3.00**	**344**	*i* Pn	**Pn**	**00 07 44.0**	**+0.8**
CEY	**Cerknica**	**3.00**	**344**	*i* Pn	**Pn**	**00 07 44.0**	**+0.8**
JAVS	**Javornik**	**3.22**	**341**	*i* Pn	**Pn**	**00 07 47.7**	**+1.3**
JAVS	**Javornik**	**3.22**	**341**	*i* Pn	**Pn**	**00 07 47.7**	**+1.3**
SJES	**Sjenica**	**3.23**	**81**	*e*Pn	**Pn**	**00 07 45.8**	**-0.8**
TEKS	**Tekeris**	**3.31**	**58**	*e*Pn	**Pn**	**00 07 48.1**	**+0.5**
TEKS	**Tekeris**	**3.31**	**58**	*e*Pn	**Pn**	**00 07 48.1**	**+0.5**
IVAS	**Ivanjica**	**3.41**	**76**	*e*Pn	**Pn**	**00 07 50.4**	**+1.5**
IVAS	**Ivanjica**	**3.41**	**76**	*e*Pn	**Pn**	**00 07 50.4**	**+1.5**

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*ISK **08** 00:08:19.7, 40°.24N×27°.15E, h7km, MD2.7*
*DDA **08** 00:08:20.1, 40°.26N×27°.20E, h7km, Md2.9*
*CSEM **08** 00:08:20.0±0.1, 40°.24N×27°.15E, h8km, MD2.7, Error ellipse: s-maj=3.6km s-min=2.1km az=29.0*
ISC 08 00:08:19.9±1.0**, 40°.25N**±0°.04×**27°.17E**±0°.03**, h17**km±9km**, n30,** σ0s.**23**/36**, Turkey**

Code	Station Name	Δ°	AZ°	Op	ISC	h m s	Res ISC
KRBG	**Karabiga-Canak**	**0.17**	**35**	*e*PG	**Pg**	**00 08 24.2**	**-0.1**
KRBG	**Karabiga-Canak**	**0.17**	**35**	*e*Pg	**Pg**	**00 08 24.2**	**-0.1**
KNL	**Bal˜–kesir**	**0.27**	**86**	*i* P	**Pg**	**00 08 25.4**	**-0.4**
KNL				*i* S	**Sg**	**00 08 30.1**	**+0.1**
RKY	**Sarkoy-Tekirda**	**0.43**	**1**	*e*PG	**Pb**	**00 08 29.2**	**0.0**
RKY	**Sarkoy-Tekirda**	**0.43**	**1**	*e*Pg	**Pb**	**00 08 29.2**	**0.0**
GONE	**Gonen-Balikesi**	**0.45**	**118**	*e*PG	**Pb**	**00 08 29.1**	**-0.2**
GONE				*e*SG	**Sb**	**00 08 35.9**	**+0.2**
GONE	**Gonen-Balikesi**	**0.45**	**118**	*e*Pg	**Pb**	**00 08 29.1**	**-0.2**
GONE				*e*Sg	**Sb**	**00 08 35.9**	**+0.2**
MRMT	**Marmara Adasi**	**0.48**	**43**	*e*PG	**Pg**	**00 08 29.3**	**-0.2**
MRMT	**Marmara Adasi**	**0.48**	**43**	*e*Pg	**Pg**	**00 08 29.3**	**-0.2**
EDC	**Edincik**	**0.54**	**80**	*e*PG	**Pb**	**00 08 30.8**	**-0.1**
EDC	**Edincik**	**0.54**	**80**	*e*Pg	**Pb**	**00 08 30.8**	**-0.1**
ERIK	**Erikli-Kesan**	**0.65**	**310**	*e*PG	**Pg**	**00 08 32.6**	**-0.2**
ERIK	**Erikli-Kesan**	**0.65**	**310**	*e*Pg	**Pg**	**00 08 32.6**	**-0.2**
BALB	**Balikesir**	**0.82**	**138**	*e*PG	**Pg**	**00 08 35.9**	**0.0**
BALB	**Balikesir**	**0.82**	**138**	*e*Pg	**Pg**	**00 08 35.9**	**0.0**
KCTX	**Karacabey (Bur**	**0.91**	**89**	*e*PG	**Pb**	**00 08 37.0**	**-0.2**
KCTX	**Karacabey (Bur**	**0.91**	**89**	*e*Pg	**Pb**	**00 08 37.1**	**-0.2**
BOZC	**Bozcaada**	**0.95**	**245**	*i* P	**Pb**	**00 08 37.7**	**-0.2**
BOZC				*i* S	**Sb**	**00 08 50.3**	**0.0**
GADA	**Gvkgeada**	**0.98**	**267**	*e*PG	**Pb**	**00 08 38.4**	**0.0**
GADA	**Gvkgeada**	**0.98**	**267**	*e*Pg	**Pb**	**00 08 38.4**	**0.0**
ALN	**Alexandroupoli**	**1.07**	**307**	*e*PG	**Pg**	**00 08 40.4**	**-0.2**
ALN	**Alexandroupoli**	**1.07**	**307**	*e*Pg	**Pg**	**00 08 40.4**	**-0.2**
DURS	**Dursunbey**	**1.20**	**123**	*i* P	**Pg**	**00 08 42.6**	**-0.4**
DURS				*i* S	**Sg**	**00 08 59.1**	**+0.5**
DURS	**Dursunbey**	**1.20**	**123**	P	**Pg**	**00 08 42.6**	**-0.4**
DURS				S	**Sg**	**00 08 59.1**	**+0.5**
DST	**Dursunbey**	**1.29**	**120**	*e*PN	**Pg**	**00 08 44.8**	**0.0**
DST	**Dursunbey**	**1.29**	**120**	*e*Pn	**Pg**	**00 08 44.8**	**0.0**
MDNY	**Mudanya-Bursa**	**1.31**	**84**	*e*PN	**Pg**	**00 08 45.0**	**-0.2**
MDNY	**Mudanya-Bursa**	**1.31**	**84**	*e*Pn	**Pg**	**00 08 45.0**	**-0.2**
ARMT	**Armutlu**	**1.33**	**76**	*e*PN	**Pg**	**00 08 45.4**	**-0.1**
ARMT	**Armutlu**	**1.33**	**76**	*e*Pn	**Pg**	**00 08 45.4**	**-0.1**

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*IDC **08** 00:11:09.8±3.1, 39°.31N×143°.12E, h0km, mb3.5/2, mb1 3.7/4, mb1mx3.3/46, mbtmp3.5/4, ML2.5/2, Error ellipse: s-maj=70.1km s-min=32.5km az=63.0*
*ISCJB **08** 00:11:16.6±1.9, 39°.19N±0°.04×142°.4E±0°.1, h24km±9km, mb3.5/2, Error ellipse: s-maj=15.6km s-min=5.9km az=12.3*
*JMA **08** 00:11:16.5±0.2, 39°.18N×142°.37E, h27km±3km, M4.0*
JMA Felt I J1.
ISC 08 00:11:16.6±3.7**, 39°.17N**±0°.05×**142°.4E**±0°.1**, h25**km±23km**, n22,** σ1s.**13**/20**, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	h m s	Res ISC
JOM	**Ohasama**	**0.90**	**290**	P	**Pn**	**00 11 32.7**	**-1.0**
JOM				S	**Sb**	**00 11 44.5**	**-0.7**
JMK	**Ichinoseki**	**0.93**	**257**	P	**Pn**	**00 11 33.1**	**-1.0**
JMK				*e*S	**Sb**	**00 11 45.9**	**-0.1**
JOU	**Okura**	**1.56**	**240**	P	**Pn**	**00 11 43.5**	**+0.6**
JOU				*e*S	**Sb**	**00 12 03.9**	**-0.3**
JYK	**Kaneyama**	**1.60**	**262**	P	**Pn**	**00 11 43.7**	**+0.4**
JMM	**Marumori**	**1.80**	**224**	P	**Pn**	**00 11 46.9**	**+0.8**
JMM				*e*S	**Sn**	**00 12 08.7**	**+0.6**
JYS	**Shirataka**	**2.04**	**243**	P	**Pn**	**00 11 50.5**	**+1.0**
JYS				*e*S	**Sn**	**00 12 14.4**	**+0.2**
JFK	**Kawauchi**	**2.15**	**214**	S	**Sn**	**00 12 17.7**	**+0.8**
JYA	**Atsumi**	**2.16**	**256**	P	**Pn**	**00 11 52.6**	**+1.6**
JAW	**Awa shima**	**2.55**	**255**	P	**Pn**	**00 11 58.4**	**+2.0**
JSR	**Shiriuchi**	**2.80**	**328**	P	**Pn**	**00 12 01.0**	**+1.2**
JSR				S	**Sn**	**00 12 34.8**	**+2.0**
JKB	**Kayabe**	**2.91**	**340**	P	**Pn**	**00 12 02.0**	**+0.7**
JKB				S	**Sn**	**00 12 35.4**	**0.0**
MJAR	**Matsushiro Arr**	**4.22**	**233**	Pn	Pn	00 12 22.4	+3.1
	1.7nm,0.3s,baz=39,slow=11,SNR=13						
MAT	**Matsushiro**	**4.22**	**233**	P	Pn	00 12 22.8	+3.5
USRK	**Ussuriysk Ar.**	**9.26**	**306**	Pn	Pn	00 13 31.8	+3.3
	0.0nm,0.3s,baz=119,slow=15,SNR=4.7						
H11N2	**WAKE ISLAND Hy**	**28.67**	**125**	T	T	00 47 40.9	
	baz=318,slow=76,SNR=115						
H11N1	**WAKE ISLAND Hy**	**28.68**	**125**	T	T	00 47 41.6	
	baz=318,slow=76,SNR=122						
H11N3	**WAKE ISLAND Hy**	**28.69**	**125**	T	T	00 47 43.7	
	baz=318,slow=76,SNR=133						
H11S1	**WAKE ISLAND Hy**	**29.46**	**127**	T	T	00 48 37.8	
	baz=319,slow=76,SNR=45						
H11S3	**WAKE ISLAND Hy**	**29.46**	**127**	T	T	00 48 41.9	
	baz=319,slow=76,SNR=55						
H11S2	**WAKE ISLAND Hy**	**29.47**	**127**	T	T	00 48 42.4	
	baz=319,slow=76,SNR=57						
MKAR	**Makanchi Array**	**43.67**	**300**	P	**P**	**00 19 18.7**	**-0.6**
	0.2nm,0.4s,baz=94,slow=8.7,SNR=5.6						
WRA	**Warramunga Arr**	**59.28**	**189**	P	**P**	**00 21 15.0**	**-1.1**
	0.4nm,0.4s,baz=6.6,slow=7.2,SNR=6.1						

JMA 08 00:11:23.8±0.2**, 37°.34N**×**141°.86E, h32**km±4km**, M2.9, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	h m s	Res ISC
JFK	**Kawauchi**	**0.79**	**272**	P	Pn	00 11 38.5	-0.2
JFK				S	Sn	00 11 49.1	-0.3
JFK	**Kawauchi**	**0.79**	**272**	P	Sn	00 11 49.0	-0.4
ONAJ	**Iwakimizuishiy**	**0.88**	**255**	P	Pn	00 11 39.7	-0.3
ONAJ				S	Sn	00 11 50.9	-0.8
JMM	**Marumori**	**1.00**	**302**	P	Pn	00 11 41.5	-0.1
JMM				*e*S	Sn	00 11 54.7	+0.2
JFT	**Otama**	**1.23**	**279**	P	Pb	00 11 45.8	-0.6
JFT				S	Sb	00 12 01.6	-0.3

JMA 08 00:23:48.8, 36°.83N×**140°.56E, h7**km±1km**, M2.9, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	h m s	Res ISC
JHO	**Hitachi**	**0.22**	**178**	P	Pg	00 23 53.3	+0.1
ONAJ	**Iwakimizuishiy**	**0.33**	**35**	P	Pg	00 23 55.3	0.0
ONAJ				*e*S	Sg	00 23 59.7	0.0
MAT	**Matsushiro**	**1.91**	**262**	P	Pn	00 24 22.8	+1.0
MAT				S	Sb	00 24 47.9	-0.2

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*NIED **08** 00:28:00, 38°.40N×142°.00E, h77km, Mw4.2 Best double couple: M0 2.08000×10^15 NP1:φs203.00000°, δ52.00000°, λ33.00000°. NP2:φs91.00000°, δ65.00000°, λ137.00000°.*
*IDC **08** 00:28:46.0±0.8, 38°.72N×142°.01E, h0km, mb4.2/17, mb1 4.3/19, mb1mx4.1/47, mbtmp4.2/19, ML4.0/2, MS3.0/4, Ms1 3.0/4, ms1mx2.7/58, Error ellipse: s-maj=21.3km s-min=15.7km az=165.0*
*ISCJB **08** 00:28:52.0±0.7, 38°.44N±0°.04×141°.95E±0°.07, h67km±5km, mb4.1/28, Error ellipse: s-maj=10.0km s-min=5.6km az=21.2*
*JMA **08** 00:28:52.2±0.1, 38°.42N×141°.98E, h60km±2km, M4.2*
JMA Felt II J1.
*NEIC **08** 00:28:54.2±1.0, 38°.62N×141°.90E, h63km±8km, mb4.4/8, Error ellipse: s-maj=12.0km s-min=7.4km az=138.0*
ISC 08 00:28:51.6±1.5**, 38°.38N**±0°.05×**142°.08E**±0°.09**, h51**km±13km**, n55,** σ1s.**28**/55**, mb4.2**/28**, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	h m s	Res ISC
JMK	**Ichinoseki**	**0.89**	**310**	P	**Pn**	**00 29 08.0**	**+0.2**
JMK				S	**Sn**	**00 29 19.2**	**-0.5**
JOU	**Okura**	**1.12**	**270**	P	**Pn**	**00 29 11.1**	**+0.1**
JOU				S	**Sn**	**00 29 24.7**	**-0.6**
JMM	**Marumori**	**1.14**	**244**	P	**Pn**	**00 29 11.4**	**+0.1**
JMM				S	**Sn**	**00 29 25.3**	**-0.5**
JOM	**Ohasama**	**1.25**	**331**	P	**Pn**	**00 29 12.9**	**+0.1**
JOM				S	**Sn**	**00 29 28.4**	**-0.2**
JFK	**Kawauchi**	**1.39**	**224**	P	**Pn**	**00 29 15.3**	**+0.6**
JFK				*e*S	**Sn**	**00 29 31.9**	**-0.1**
JYK	**Kaneyama**	**1.45**	**292**	P	**Pn**	**00 29 15.5**	**0.0**
JYK				S	**Sn**	**00 29 32.8**	**-0.7**
JYS	**Shirataka**	**1.60**	**265**	P	**Pn**	**00 29 17.8**	**+0.3**
JYS				S	**Sn**	**00 29 36.8**	**-0.2**
JFT	**Otama**	**1.63**	**239**	P	**Pn**	**00 29 18.7**	**+0.8**
JFT				*e*S	**Sn**	**00 29 37.8**	**+0.1**
MJAR	**Matsushiro Arr**	**3.59**	**240**	Pn	**Pn**	**00 29 46.5**	**+1.8**
	8.2nm,0.3s,baz=32,slow=13,SNR=60						
MJAR				LR	LR	00 31 23.1	
	comp=Z,138nm,20.7s,baz=55,slow=42						
MAJO	**Matsushiro**	**3.59**	**240**	*e*Pn	**Pn**	**00 29 47.0**	**+2.2**
MAT	**Matsushiro**	**3.59**	**240**	P	**Pn**	**00 29 46.9**	**+2.1**
MAT				*e*S	**Sn**	**00 30 25.6**	**-0.3**
ERM	**Erimo**	**3.72**	**12**	*e*Pn	**Pn**	**00 29 46.3**	**-0.2**
JHJ	**Hachijo jima 2**	**5.57**	**200**	Pn	**Pn**	**00 30 12.3**	**+0.3**
	20nm,0.3s,baz=331,slow=23,SNR=8.2						
JHJ				Sn	**Sn**	**00 31 10.6**	**-4.1**
	92nm,0.3s,baz=49,slow=22,SNR=14						
USRK	**Ussuriysk Ar.**	**9.56**	**311**	Pn	**Pn**	**00 31 07.0**	**+0.4**
	1.1nm,0.3s,baz=117,slow=14,SNR=27						
KSRS	**Korea Array**	**11.23**	**270**	Pn	**Pn**	**00 31 31.8**	**+2.4**
	0.5nm,0.3s,baz=81,slow=14,SNR=4.4						
KSRS				LR	LR	00 35 44.4	
	comp=Z,18nm,18.9s,baz=80,slow=37						
KSAR	**Wonju Array Be**	**11.26**	**270**	Pn	**Pn**	**00 31 31.8**	**+2.0**
KLR	**Kul'dur**	**13.15**	**329**	Pn	**Pn**	**00 31 54.0**	**-1.6**
	0.2nm,0.3s,baz=121,slow=12,SNR=4.3						
JOW	**Kunigami**	**16.35**	**229**	LR	LR	00 39 11.3	
	comp=Z,48nm,20.3s,baz=120,slow=38						
MA2	**Magadan**	**21.93**	**12**	P	**P**	**00 33 41.7**	**+1.2**
	2.6nm,0.3s,baz=209,slow=8.1,SNR=6.3						
SEY	**Seymchan**	**25.37**	**11**	P	**P**	**00 34 14.5**	**+0.8**
	1.2nm,0.4s,baz=190,slow=8.1,SNR=7.0						
SONM	**Songino Array**	**27.50**	**302**	P	**P**	**00 34 31.7**	**-1.6**
	1.6nm,0.5s,baz=105,slow=9.1,SNR=12						
ENH	**Enshi**	**28.00**	**263**	*e*P	**P**	**00 34 38.3**	**+0.6**
	5.6nm,0.4s						
H11N2	**WAKE ISLAND Hy**	**28.42**	**124**	T	T	01 05 07.4	
	baz=316,slow=76,SNR=25						
H11N1	**WAKE ISLAND Hy**	**28.43**	**124**	T	T	01 05 04.8	
	baz=316,slow=76,SNR=549						
H11N3	**WAKE ISLAND Hy**	**28.43**	**124**	T	T	01 05 03.2	
	baz=316,slow=76,SNR=395						
H11S1	**WAKE ISLAND Hy**	**29.18**	**126**	T	T	01 05 56.5	
	baz=318,slow=76,SNR=150						
H11S3	**WAKE ISLAND Hy**	**29.18**	**126**	T	T	01 05 56.7	
	baz=318,slow=76,SNR=379						
H11S2	**WAKE ISLAND Hy**	**29.20**	**126**	T	T	01 05 57.8	
	baz=318,slow=76,SNR=96						
TLY	**Talaya**	**29.88**	**309**	P	**P**	**00 34 53.3**	**-0.9**
	3.6nm,0.4s,baz=262,slow=7.2,SNR=3.5						
ZALV	**Zalesovo Beam**	**41.41**	**311**	P	**P**	**00 36 31.5**	**-1.4**
	2.9nm,0.3s,baz=80,slow=7.8,SNR=21						
MKAR	**Makanchi Array**	**43.87**	**301**	P	**P**	**00 36 51.4**	**-1.5**
	2.4nm,0.6s,baz=87,slow=9.8,SNR=31						
KURK	**Kurchatov**	**45.53**	**307**	*e*P	**P**	**00 37 04.7**	**-1.3**
	26nm,0.5s						
KURBB	**Kurchatov Arra**	**45.60**	**307**	P	**P**	**00 37 05.0**	**-1.6**
	11nm,0.5s,baz=81,slow=7.9,SNR=89						
KDAK	**Kodiak Island**	**45.75**	**43**	P	P	00 37 23.1	+15
	15nm,0.9s,baz=297,slow=11,SNR=3.8						
COLA	**College**	**47.66**	**33**	*e*P	**P**	**00 37 23.1**	**+0.7**
	1.6nm,0.5s						
ILAR	**Eielson Array**	**48.08**	**33**	P	**P**	**00 37 25.7**	**0.0**
	1.1nm,0.7s,baz=266,slow=6.1,SNR=21						
TKM2	**Tokmak 2**	**49.47**	**298**	*e*P	**P**	**00 37 37.2**	**+0.2**
	3.3nm,0.4s						
BVAR	**Borovoye Array**	**50.07**	**312**	P	**P**	**00 37 40.0**	**-1.2**
	0.8nm,0.4s,baz=82,slow=9.6,SNR=11						
AAK	**Ala-Archa**	**50.33**	**298**	*e*P	**P**	**00 37 42.5**	**-1.0**
	1.3nm,0.5s						
EKS2	**Erkin-Say**	**50.82**	**298**	*e*P	**P**	**00 37 46.7**	**-0.4**
	0.9nm,0.4s						
BATI	**Baumata**	**51.30**	**203**	P	P	00 37 54.4	+3.6
	7.4nm,0.6s,baz=271,slow=24,SNR=3.4						
INK	**Inuvik**	**52.95**	**28**	P	**P**	**00 38 02.5**	**+0.2**
	0.6nm,0.4s,baz=267,slow=5.0,SNR=5.5						
ABKAR	**Akbulak array**	**57.49**	**310**	*e*P	**P**	**00 38 33.8**	**-1.5**
	1.7nm,0.5s						
ASAR	**Alice Springs**	**62.19**	**188**	LR	LR	01 04 56.0	
	comp=Z,132nm,21.3s,baz=300,slow=35						
YKA	**Yellowknife Ar**	**62.38**	**31**	P	**P**	**00 39 08.1**	**-0.6**
	0.8nm,0.7s,baz=301,slow=6.5,SNR=14						
ARCES	**ARCESS Array B**	**62.93**	**339**	P	**P**	**00 39 12.6**	**+0.4**
	1.7nm,0.9s,baz=54,slow=7.9,SNR=3.2						
FINES	**FINESS Array B**	**67.87**	**332**	P	**P**	**00 39 43.2**	**-1.1**
	3.2nm,1.1s,baz=37,slow=9.4,SNR=3.8						
NOA	**NORSAR Array B**	**73.15**	**337**	P	**P**	**00 40 15.6**	**-1.0**
	0.8nm,0.8s,baz=36,slow=4.5,SNR=2.7						
NVAR	**Mina Array Bea**	**73.76**	**54**	P	**P**	**00 40 21.8**	**+1.0**
	0.7nm,0.7s,baz=261,slow=8.3,SNR=5.4						
PDAR	**Pinedale Array**	**76.35**	**46**	P	**P**	**00 40 35.9**	**+0.2**
	1.6nm,0.5s,baz=281,slow=0.9,SNR=26						
BRTR	**Keskin Array B**	**78.36**	**312**	P	**P**	**00 40 47.8**	**+1.0**
	0.5nm,0.8s,baz=62,slow=3.1,SNR=2.8						
MVCO	**Mesa Verde**	**80.58**	**50**	*e*P	**P**	**00 41 00.9**	**+1.8**
	2.3nm,0.8s						
TXAR	**Lajitas Array**	**88.88**	**53**	P	**P**	**00 41 41.0**	**+0.2**
	0.7nm,0.6s,baz=304,slow=4.3,SNR=9.1						
BOSA	**Boshof**	**127.33**	**261**	PKP	**PKPdf**	**00 47 54.1**	**+3.3**
	6.7nm,1.1s,baz=48,slow=6.5,SNR=3.3						
LPAZ	**La Paz**	**145.55**	**59**	PKPbc	**PKPdf**	**00 48 25.0**	**-0.3**
	1.6nm,0.7s,baz=327,slow=3.7,SNR=6.4						

IDC 08 00:31:32.8±1.2**, 9°.62S**×**123°.55E, h106**km±16km**, mb3.3**/2**, mb1 3.5**/5**, mb1mx3.3**/36**, mbtmp3.8**/5**, Error ellipse: s-maj=111.0km s-min=25.3km az=59.0, Timor region**

Code	Station Name	Δ°	AZ°	Op	ISC	h m s	Res ISC
BATI	**Baumata**	**0.60**	**169**	P	Pn	00 31 50.7	+0.7
	130nm,0.3s,baz=294,slow=23,SNR=164						
BATI				S	Sn	00 32 04.5	+1.5
	130nm,0.3s,baz=94,slow=22,SNR=38						
FITZ	**Fitzroy Crossi**	**8.68**	**167**	P	Pn	00 33 35.9	+0.4
	1.2nm,0.3s,baz=347,slow=9.8,SNR=13						
FITZ				S	Sn	00 35 08.8	-2.9
	3.6nm,0.3s,baz=182,slow=7.2,SNR=21						
WRA	**Warramunga Arr**	**14.63**	**136**	P	Pn	00 34 53.0	-1.6
	0.7nm,0.3s,baz=311,slow=14,SNR=9.7						
WRA				S	Sn	00 37 25.4	-11
	1.3nm,0.3s,baz=303,slow=24,SNR=6.4						
ASAR	**Alice Springs**	**17.12**	**146**	P	P	00 35 27.4	+1.7
	0.5nm,0.3s,baz=317,slow=11,SNR=26						
ASAR				S	Sn	00 38 28.4	-7.9
	0.4nm,0.3s,baz=318,slow=24,SNR=12						
MKAR	**Makanchi Array**	**67.12**	**331**	P	P	00 42 15.7	+0.6
	0.3nm,0.5s,baz=119,slow=6.3,SNR=3.7						
ZALV	**Zalesovo Beam**	**71.28**	**337**	P	P	00 42 40.0	-0.5
	0.4nm,0.4s,baz=136,slow=3.3,SNR=3.0						

CASC 08 00:32:23.9±2.6**, 9°.36N**×**84°.46W, h2**km±10km**, MD3.7, 1C-4D, Costa Rica**

Code	Station Name	Δ°	AZ°	Op	ISC	h m s	Res ISC
QCR	**Quepos**	**0.29**	**78**	⇓*i*P	Pb	00 32 31.4	-0.5
QCR				*e*S	Sb	00 32 36.3	-1.0
BUS	**Buena Vista**	**0.72**	**75**	⇓*e*P	Pg	00 32 38.5	+0.8
BUS				*e*S	Sb	00 32 51.3	+1.5
HDC	**Heredia**	**0.72**	**28**	⇓*i*P	Pb	00 32 38.9	-0.3
HDC				*e*S	Sb	00 32 48.6	-1.1
JCR	**Jicaral**	**0.81**	**307**	⇑*e*P	Pg	00 32 39.6	+0.2
JCR				*e*S	Sb	00 32 52.0	-0.1
URSC	**Urasca**	**0.82**	**55**	⇓*e*P	Pb	00 32 40.4	-0.5
URSC				*e*S	Sn	00 32 54.5	-1.0
JTS	**JuntasAbangare**	**1.04**	**332**	*e*P	Pg	00 32 43.5	-0.4
JTS				*e*S	Sg	00 32 57.0	-0.4
VCR	**Vista de Mar**	**1.38**	**303**	*e*P	Pn	00 32 50.3	-0.1
VCR				*e*S	Sn	00 33 11.2	+1.9
TBS2		**1.87**	**108**	*e*S	Sb	00 33 23.3	+0.5

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*JMA **08** 00:32:53.8±0.2, 38°.78N×142°.43E, h31km±5km, M3.6*
JMA Felt I J1.
*ISCJB **08** 00:32:54.9±1.4, 38°.81N±0°.05×142°.4E±0°.1, h45km±13km, mb3.6/7, MS4.0/1, Error ellipse: s-maj=16.3km s-min=8.3km az=4.2*
*IDC **08** 00:32:59.9±3.5, 38°.67N×142°.29E, h80km±32km, mb3.4/7, mb1 3.5/9, mb1mx3.2/49, mbtmp3.7/9, MS4.0/1, Ms1 4.0/1, ms1mx2.7/35, Error ellipse: s-maj=27.1km s-min=22.1km az=88.0*
ISC 08 00:32:55.5±1.1**, 38°.84N**±0°.06×**142°.4E**±0°.2**, h35**km±10km**, n19,** σ1s.**12**/23**, mb3.6**/7**, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	h m s	Res ISC
JMK	**Ichinoseki**	**0.94**	**278**	P	**Pn**	**00 33 11.3**	**-0.8**
JMK				S	**Sn**	**00 33 23.4**	**-0.9**
JOM	**Ohasama**	**1.08**	**307**	P	**Pn**	**00 33 13.8**	**-0.3**
JOM				S	**Sn**	**00 33 27.7**	**-0.1**
JOU	**Okura**	**1.45**	**252**	P	**Pn**	**00 33 18.6**	**-0.6**
JOU				S	**Sn**	**00 33 37.1**	**+0.2**
JMM	**Marumori**	**1.60**	**233**	P	**Pn**	**00 33 20.3**	**-0.9**
JMM				*e*S	**Sn**	**00 33 39.7**	**-0.9**
JYK	**Kaneyama**	**1.60**	**274**	P	**Pn**	**00 33 21.7**	**+0.4**
JFK	**Kawauchi**	**1.90**	**220**	P	**Pn**	**00 33 24.2**	**-1.3**
JFK				*e*S	**Sn**	**00 33 48.2**	**0.0**
JFT	**Otama**	**2.10**	**232**	P	**Pn**	**00 33 27.9**	**-0.2**
JFT				*e*S	**Sn**	**00 33 54.4**	**+1.4**
JFY	**Yanaizu**	**2.56**	**237**	P	**Pn**	**00 33 35.0**	**+0.4**
MJAR	**Matsushiro Arr**	**4.04**	**237**	P	**Pn**	**00 33 56.5**	**+1.6**
	2.6nm,0.3s,baz=34,slow=13,SNR=7.1						
MAT	**Matsushiro**	**4.04**	**237**	P	**Pn**	**00 33 57.8**	**+2.9**
USRK	**Ussuriysk Ar.**	**9.47**	**308**	P	Pn	00 35 14.2	+4.9
	0.2nm,0.3s,baz=110,slow=14,SNR=7.8						
SONM	**Songino Array**	**27.48**	**301**	P	**P**	**00 38 38.8**	**+0.3**
	0.5nm,0.6s,baz=98,slow=10,SNR=3.6						
ZALV	**Zalesovo Beam**	**41.31**	**311**	P	**P**	**00 40 37.4**	**0.0**
	1.4nm,0.8s,baz=81,slow=8.2,SNR=6.3						
MKAR	**Makanchi Array**	**43.85**	**301**	P	**P**	**00 40 58.0**	**-0.2**
	0.7nm,0.7s,baz=85,slow=11,SNR=6.2						
KURBB	**Kurchatov Arra**	**45.53**	**307**	P	**P**	**00 41 11.0**	**-0.5**
	1.9nm,0.4s,baz=80,slow=8.0,SNR=12						
ILAR	**Eielson Array**	**47.56**	**33**	P	**P**	**00 41 27.9**	**+0.8**
	0.4nm,0.8s,baz=259,slow=5.6,SNR=5.1						
KAPI	**Kappang**	**48.41**	**211**	LR	LR	01 00 57.2	
	comp=Z,178nm,21.2s,baz=128,slow=35						
INK	**Inuvik**	**52.43**	**28**	P	**P**	**00 42 05.2**	**+1.2**
	0.3nm,0.4s,baz=234,slow=6.2,SNR=4.2						
WRA	**Warramunga Arr**	**58.95**	**189**	P	**P**	**00 42 49.7**	**-1.6**
	0.4nm,0.7s,baz=6.5,slow=6.6,SNR=2.8						

DJA 08 00:36:49.4±1.1**, 8°S**±6°×**10°6E**±°**, h15**km±11km**, M3.7**/10**, MLv3.7**/10**, Jawa**

Code	Station Name	Δ°	AZ°	Op	ISC	h m s	Res ISC
SKJI	**Sukabumi**	**0.74**	**45**	P	Pg	00 37 03.2	-0.6
CGJI	**Cibinong**	**0.97**	**340**	P	Pb	00 37 06.6	-1.3

Code	Station Name	Δ°	AZ°	Op	ISC	Time	Res
CNJI	**Cibinong**	**1.11**	**79**	P	Pb	00 37 08.7	-1.7
DBJI	**Dramaga**	**1.21**	**36**	P	Pn	00 37 10.0	-1.7
DBJI				S	Sb	00 37 26.1	-1.2
CBJI	**Citeko**	**1.37**	**36**	P	Pn	00 37 11.1	-2.9
SBJI	**Serang**	**1.40**	**4**	P	Pn	00 37 12.5	-2.0
LEM	**Lembang**	**1.72**	**66**	P	Pg	00 37 25.5	+2.9
CISI	**Cisompet, Garu**	**1.77**	**91**	P	Pn	00 37 18.8	-0.8
CMJI	**Cimerak**	**2.41**	**96**	P	Pn	00 37 27.9	-0.4
KASI	**Kota Agung**	**2.51**	**323**	P	Pn	00 37 30.1	+0.4

DHMR 08 00:39:55.0±1.1**, 12°.12N×44°.00E, h4**km±11km**, ML4.0, Western Arabian Peninsula**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ADEN	**Aden**	**1.17**	**56**	*i* P	Pg	00 40 17.1	-0.3
ADEN				*i* S	Sb	00 40 33.2	0.0
ADEN				AML	AML	00 40 36.2	
	comp=N,3μm,0.4s						
UDYN	**Al 'Udayn**	**1.84**	**359**	*i* P	Pn	00 40 27.6	+0.1
UDYN				*i* S	Sg	00 40 53.9	-0.3
BDHA	**Al Bayda'**	**2.40**	**39**	*i* P	Pb	00 40 37.4	-1.6
BDHA				*i* S	Sb	00 41 09.9	+1.0
DHBB	**Dhamar BB**	**2.47**	**9**	*i* S	Sg	00 41 12.9	-1.6

JMA 08 00:41:04.2±0.2**, 36°.64N×141°.37E, h47**km±2km**, M2.7, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHO	**Hitachi**	**0.65**	**268**	P	Pn	00 41 16.9	-0.2
JHO				*e*S	Sn	00 41 26.9	+0.5
JFK	**Kawauchi**	**0.83**	**331**	P	Pn	00 41 19.2	-0.4
JFK				*e*S	Sn	00 41 30.4	-0.4
JFT	**Otama**	**1.21**	**317**	P	Pn	00 41 25.6	+0.9
JMM	**Marumori**	**1.31**	**340**	P	Pn	00 41 25.1	-0.9
MAT	**Matsushiro**	**2.55**	**269**	P	Pn	00 41 47.0	+4.0
MAT				S	Sn	00 42 15.1	+2.3

*ISK **08** 00:41:25.7, 39°.49N×25°.93E, h8km, MD2.7*
*ISCJB **08** 00:41:26.1±0.7, 39°.47N±0°.03×25°.93E±0°.08, h12km, Error ellipse: s-maj=8.5km s-min=4.7km az=11.3*
*CSEM **08** 00:41:26.2±0.1, 39°.48N×25°.93E, h10km, MD2.7, Error ellipse: s-maj=4.2km s-min=2.7km az=97.0*
*DDA **08** 00:41:28.2, 39°.53N×26°.05E, h7km, Md2.7*
ISC 08 00:41:26.3±1.0**, 39°.47N**±0°.03×**25°.94E**±0°.05**, h12**km**, n15, σ0s.44**/22**, Aegean Sea**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SIGR	**SIGRI**	**0.27**	**195**	*e*PG	**Pg**	**00 41 31.7**	**-0.2**
SIGR				*e*SG	**Sg**	**00 41 36.1**	**+0.5**
SIGR	**SIGRI**	**0.27**	**195**	*e*Pg	**Pg**	**00 41 31.7**	**-0.2**
SIGR				*e*Sg	**Sg**	**00 41 36.1**	**+0.5**
BOZC	**Bozcaada**	**0.38**	**13**	*i* P	**Pg**	**00 41 34.2**	**+0.3**
BOZC				*i* S	**Sb**	**00 41 39.8**	**-1.0**
EZN	**Ezine**	**0.46**	**40**	*e*PG	**Pg**	**00 41 35.4**	**0.0**
EZN				*e*SG	**Sg**	**00 41 41.9**	**+0.4**
EZN	**Ezine**	**0.46**	**40**	*e*Pg	**Pg**	**00 41 35.4**	**0.0**
EZN				*e*Sg	**Sg**	**00 41 41.9**	**+0.4**
AYVA	**Ayvalik**	**0.60**	**106**	*i* P	**Pg**	**00 41 37.6**	**-0.4**
AYVA				*i* S	**Sb**	**00 41 46.8**	**-0.4**
AYVA	**Ayvalik**	**0.60**	**106**	P	**Pg**	**00 41 37.6**	**-0.4**
AYVA				S	**Sb**	**00 41 46.8**	**-0.4**
GADA	**Gvkgeada**	**0.72**	**357**	*e*PG	**Pg**	**00 41 39.7**	**-0.5**
GADA	**Gvkgeada**	**0.72**	**357**	*e*Pg	**Pg**	**00 41 39.7**	**-0.5**
ERIK	**Erikli-Kesan**	**1.27**	**20**	*e*PN	**Pb**	**00 41 50.2**	**0.0**
ERIK	**Erikli-Kesan**	**1.27**	**20**	*e*Pn	**Pb**	**00 41 50.2**	**0.0**
ALN	**Alexandroupoli**	**1.42**	**3**	*e*PN	**Pn**	**00 41 52.1**	**+0.2**
ALN	**Alexandroupoli**	**1.42**	**3**	*e*Pn	**Pn**	**00 41 52.2**	**+0.2**
MRMT	**Marmara Adasi**	**1.70**	**48**	*e*PN	**Pn**	**00 41 56.3**	**+0.5**
MRMT	**Marmara Adasi**	**1.70**	**48**	*e*Pn	**Pn**	**00 41 56.3**	**+0.5**

MEX 08 00:51:58.6±0.7**, 16°.26N×99°.41W, h10**km**, MD3.5, Near coast of Guerrero**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ACX	**Acapulco**	**0.74**	**325**	*e*P	Pb	00 52 14.4	+0.7
ACX				*i* S	Sb	00 52 24.0	+0.2
ACP2	**Acapulco**	**0.76**	**323**	*e*P	Pg	00 52 11.9	-1.4
ACP2				*e*S	Sg	00 52 20.6	-2.7
CAIG	**El Cayaco**	**1.13**	**314**	*e*P	Pb	00 52 16.8	-3.5
CAIG				*e*S	Sb	00 52 30.1	-5.0
PNIG	**Pinotepa**	**1.24**	**84**	*e*P	Pn	00 52 18.1	-4.0
PNIG				*e*S	Sb	00 52 33.7	-4.6
TLIG	**Tlapa**	**1.53**	**32**	*e*P	Pn	00 52 22.5	-3.6
TLIG				*e*S	Sn	00 52 40.6	-5.5
MEIG	**Mezcala**	**1.67**	**353**	*e*P	Pn	00 52 25.2	-2.8
MEIG				*e*S	Sn	00 52 44.4	-5.1
VHO	**Vista Hermosa**	**2.69**	**72**	*e*P	Pn	00 52 38.9	-3.3
VHO				*e*S	Sn	00 53 11.1	-3.9

*NIED **08** 00:56:00, 36°.70N×142°.30E, h14km, Mw4.7 Best double couple: M0 1.38000×10^16 NP1:φs 218.00000°, δ20.00000°, λ107.00000°. NP2:φs 20.00000°, δ71.00000°, λ84.00000°.*
*IDC **08** 00:56:18.6±0.7, 36°.74N×142°.12E, h0km, mb4.4/32, mb1 4.5/36, mb1mx4.4/60, mbtmp4.4/36, ML4.0/4, MS4.2/33, Ms1 4.2/33, ms1mx4.0/51, Error ellipse: s-maj=16.7km s-min=12.0km az=145.0*
*JMA **08** 00:56:18.7±0.3, 36°.71N×142°.28E, h17km, M4.7*
JMA Felt I J1.
*ISCJB **08** 00:56:19.7±0.2, 36°.72N±0°.03×142°.23E±0°.03, h19km, mb4.7/92, MS4.3/37, Error ellipse: s-maj=4.8km s-min=3.6km az=158.4*
*MOS **08** 00:56:22.9±1.0, 37°.01N×142°.07E, h29km, mb4.9/52, MS4.2/20, Error ellipse: s-maj=7.8km s-min=5.1km az=111.0*
*BJI **08** 00:56:22.1, 36°.72N×141°.85E, h29km, mb5.0/52, mB5.0/40, Ms4.6/38, Ms7 4.5/34*
*NEIC **08** 00:56:24.5±0.7, 36°.68N×142°.14E, h43km±5km, mb4.7/22, Error ellipse: s-maj=6.8km s-min=5.1km az=142.0*
ISC 08 00:56:21.5±0.4**, 36°.84N**±0°.05×**142°.18E**±0°.04**, h19**km**, n243, σ1s.32**/230**, mb4.8**/92**, MS4.3**/37**, 22C-10D, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**1.14**	**284**	P	**Pn**	**00 56 41.0**	**-1.5**
JFK	**Kawauchi**	**1.17**	**297**	P	**Pn**	**00 56 41.8**	**-1.1**
JFK				*e*S	**Sn**	**00 56 58.7**	**+0.4**
JHO	**Hitachi**	**1.31**	**261**	P	**Pn**	**00 56 43.4**	**-1.4**
JHO				*e*S	**Sn**	**00 57 01.2**	**-0.6**
JMM	**Marumori**	**1.51**	**313**	P	**Pn**	**00 56 47.4**	**-0.1**
JMM				S	**Sb**	**00 57 08.2**	**+0.6**
JFT	**Otama**	**1.62**	**295**	P	**Pn**	**00 56 49.2**	**+0.1**
JFT				*e*S	**Sb**	**00 57 11.3**	**+0.4**
JOU	**Okura**	**1.94**	**322**	P	**Pb**	**00 56 55.2**	**-1.1**
JAG	**Ashikaga**	**2.23**	**260**	P	**Pn**	**00 56 56.7**	**-0.7**
MJAR	**Matsushiro Arr**	**3.20**	**266**	Pn	**Pn**	**00 57 11.0**	**+0.2**
	45nm,0.3s,baz=95,slow=9.5,SNR=423						
MJAR				LR	LR	00 58 40.0	
	comp=Z,4μm,18.4s,baz=120,slow=45						
MAJO	**Matsushiro**	**3.20**	**266**	*c i*P	**Pn**	**00 57 11.8**	**+0.9**
MAJO	**Matsushiro**	**3.20**	**266**	⇑*e*Pn	**Pn**	**00 57 11.9**	**+1.1**
MAT	**Matsushiro**	**3.20**	**266**	P	**Pn**	**00 57 11.8**	**+0.9**
MAT				S	**Sb**	**00 57 54.2**	**-2.3**
JHJ	**Hachijo jima 2**	**4.20**	**209**	Pn	**Pn**	**00 57 22.7**	**-1.8**
	42nm,0.3s,baz=246,slow=19,SNR=3.3						
JHJ				Sn	Sn	00 58 05.8	-7.2
	226nm,0.3s,baz=227,slow=24,SNR=11						
ERM	**Erimo**	**5.23**	**8**	*ce*P	**Pn**	**00 57 38.5**	**-0.1**
ERM				pmax	pmax		
	comp=Z,144nm,1.2s						
ERM	**Erimo**	**5.23**	**8**	*e*Pn	Pn	00 57 43.8	+5.2
	comp=Z,112nm,0.9s						
YUK	**Yuzh-Kuril'sk**	**7.72**	**20**	P	**Pn**	**00 58 13.2**	**+0.4**
YUK				*i* S	**Sn**	**00 59 35.0**	**-4.7**
YUK				pmax	pmax		
	comp=Z,127nm,0.4s						
YUK				pmax	pmax		
	comp=E,43nm,0.3s						
YUK				pmax	pmax		
	comp=N,40nm,0.2s						
SHO	**Shikotan**	**7.87**	**25**	*e*P	**Pn**	**00 58 14.1**	**-0.8**
SHO				*i* S	Sn	00 59 36.9	-6.6
SHO				pmax	pmax		
	comp=Z,82nm,1.0s						
SHO				pmax	pmax		
	comp=N,42nm,1.1s						
SHO				pmax	pmax		
	comp=E,33nm,0.7s						
KUR	**Kuril'sk**	**9.42**	**25**	P	**Pn**	**00 58 36.7**	**+0.5**
KUR				*e*S	**Sn**	**01 00 17.1**	**-4.5**
KUR				pmax	pmax		
	comp=Z,75nm,0.6s						
KUR				pmax	pmax		
	comp=N,32nm,0.2s						
KUR				pmax	pmax		
	comp=E,43nm,0.2s						
CBIJ	**Chichi jima**	**9.71**	**180**	Pn	**Pn**	**00 58 38.0**	**-2.2**
CBIJ				Sn	Sn	01 00 17.9	-11
JCJ	**Chichijima**	**9.71**	**180**	Pn	**Pn**	**00 58 38.0**	**-2.2**
JCJ				Sn	Sn	01 00 17.9	-11
JNU	**Nakatsue**	**9.98**	**252**	Pn	**Pn**	**00 58 44.9**	**+1.0**
	comp=E,0.7nm,0.3s,baz=43,slow=5.1,SNR=5.2						
JNU				LR	LR	01 02 44.7	
	comp=E,723nm,19.2s,baz=92,slow=39						
YSS	**Yuzh-Sakhalins**	**10.12**	**2**	*e*P	Pn	00 58 42.4	-3.3
USRK	**Ussuriysk Ar.**	**10.68**	**317**	Pn	Pn	00 58 57.6	+4.2
	comp=E,0.8nm,0.3s,baz=134,slow=13,SNR=34						
USRK				LR	LR	01 02 55.3	
	comp=E,2μm,18.1s,baz=123,slow=37						
KSRS	**Korea Array**	**11.39**	**277**	Pn	**Pn**	**00 59 06.1**	**+2.9**
	comp=E,0.3nm,0.3s,baz=90,slow=13,SNR=25						
KSRS				LR	LR	01 03 19.8	
	comp=E,2μm,18.8s,baz=92,slow=37						
KSAR	**Wonju Array Be**	**11.43**	**277**	P	**Pn**	**00 59 06.1**	**+2.4**
KSAR	**Wonju Array Be**	**11.43**	**277**	Pn	**Pn**	**00 59 06.1**	**+2.4**
MDJ	**Mudanjiang**	**12.30**	**313**	P	P	00 59 23.4	-4.3
MDJ				S	Sn	01 01 49.3	+17
MDJ				pmax	pmax		
	comp=Z,27nm,1.2s						
MDJ				pmax	pmax		
	comp=Z,28nm,2.8s						
MDJ				LR	LR		
	comp=N,730nm,19.7s						
MDJ				LR	LR		
	comp=E,630nm,18.2s						
MDJ				LR	LR		
	comp=Z,1μm,19.2s						
MDJ	**Mudanjiang**	**12.30**	**313**	*e*Pn	Pn	00 59 19.5	+3.9
	comp=Z,29nm,1.0s						
TYV	**Tymovskoe**	**14.03**	**1**	*e*P	**P**	**00 59 44.5**	**-2.4**
TYV				pmax	pmax		
	comp=Z,5.0nm,0.6s						
TYV				MLR	MLR		
	comp=N,2μm,15.0s						
TYV				MLR	MLR		
	comp=Z,2μm,18.0s						
CN2	**Changchun**	**14.52**	**304**	*e*P	**Pn**	**00 59 46.7**	**+0.8**
CN2				*e*sP	P	00 59 58.9	+6.5
CN2				*e*S	**Sn**	**01 02 24.0**	**-2.3**
CN2				pmax	pmax		
	comp=Z,10.0nm,0.7s						
CN2				pmax	pmax		
	comp=Z,200nm,4.0s						
KLR	**Kul'dur**	**14.53**	**332**	Pn	**Pn**	**00 59 46.8**	**+0.8**
	comp=Z,0.4nm,0.3s,baz=130,slow=12,SNR=6.1						
KLR				LR	LR	01 05 20.1	
	comp=Z,1μm,18.9s,baz=143,slow=37						
SNY	**Shenyang**	**15.22**	**295**	⇓P	**Pn**	**00 59 55.2**	**-0.2**
SNY				pmax	pmax		
	comp=Z,9.0nm,0.3s						
SNY				pmax	pmax		
	comp=Z,240nm,10.8s						
SNY				LR	LR		
	comp=Z,750nm,13.9s						
SNY				LR	LR		
	comp=Z,2μm,17.8s						
SNY				LR	LR		
	comp=Z,3μm,16.5s						
JOW	**Kunigami**	**15.44**	**234**	LR	LR	01 06 01.2	
	comp=Z,372nm,19.7s,baz=142,slow=38						
NKL	**Nikolayevsk**	**16.35**	**357**	*e*P	**P**	**01 00 12.0**	**-0.6**
NKL				pmax	pmax		
	comp=Z,22nm,1.0s						
NKL				MLR	MLR		
	comp=E,500nm,15.0s						
NKL				MLR	MLR		
	comp=Z,1μm,15.0s						
DL2	**Dalian**	**16.36**	**283**	P	**P**	**01 00 12.8**	**0.0**
DL2				*e*S	**Sn**	**01 03 11.3**	**+0.3**
DL2				pmax	pmax		
	comp=Z,45nm,0.9s						
DL2				pmax	pmax		
	comp=Z,370nm,7.2s						
DL2				LR	LR		
	comp=Z,480nm,15.3s						
DL2				LR	LR		
	comp=Z,1μm,18.1s						
DL2				LR	LR		
	comp=Z,2μm,17.7s						
PETK	**Petropavlovsk-**	**19.56**	**29**	P	**Pn**	**01 00 49.1**	**-0.3**
	comp=Z,0.7nm,0.3s,baz=214,slow=13,SNR=5.1						
PETK				LR	LR	01 08 51.9	
	comp=Z,217nm,19.1s,baz=204,slow=38						
PET	**Petropavlovsk**	**19.87**	**30**	*e*P	**Pn**	**01 00 54.0**	**+0.9**
PET				*e*S	**S**	**01 04 29.2**	**-5.0**
PET				MLR	MLR		
	comp=Z,500nm,16.0s						
PET				MLR	MLR		
	comp=Z,400nm,15.0s						
TIA	**Tai'an**	**20.13**	**276**	⇓P	**P**	**01 00 52.5**	**-1.9**
TIA				pmax	pmax		
	comp=Z,30nm,1.1s						
TIA				pmax	pmax		
	comp=Z,220nm,6.0s						
TIA				LR	LR		
	comp=Z,720nm,16.0s						
TIA				LR	LR		
	comp=Z,1μm,16.0s						
TIA				LR	LR		
	comp=Z,1μm,17.0s						
HIA	**Hailar**	**20.48**	**314**	*e*P	Pn	01 00 59.5	-0.8
HIA				pmax	pmax		
	comp=Z,5.0nm,0.6s						
HIA	**Hailar**	**20.48**	**314**	*e*P	Pn	01 00 59.5	-0.9
	comp=Z,5.4nm,0.6s						
BJT	**Baijiatuau**	**20.60**	**287**	*e*P	**P**	**01 00 59.7**	**+0.2**
BJT				pmax	pmax		
	comp=Z,14nm,0.6s						
BJT	**Baijiatuau**	**20.60**	**287**	*e*P	**P**	**01 00 59.7**	**+0.2**
	comp=Z,14nm,0.6s						
CLNS	**Chul'man**	**23.11**	**335**	*e*P	**P**	**01 01 28.4**	**+2.2**
CLNS				pmax	pmax		
	comp=Z,22nm,0.9s						
CLNS				pmax	pmax		
	comp=E,11nm,0.9s						
CLNS				pmax	pmax		
	comp=N,7.0nm,0.9s						
CLNS				MLR	MLR		
	comp=Z,983nm,15.0s						
CLNS				MLR	MLR		
	comp=N,702nm,14.0s						
CLNS				MLR	MLR		
	comp=E,383nm,16.0s						
MA2	**Magadan**	**23.43**	**11**	P	**P**	**01 01 30.1**	**+0.9**
	comp=E,10nm,0.8s,baz=214,slow=8.3,SNR=13						
MA2				LR	LR	01 10 08.2	
	comp=E,156nm,19.9s,baz=204,slow=35						
WHN	**Wuhan**	**23.94**	**263**	P	**P**	**01 01 32.3**	**-2.2**
WHN				S	**S**	**01 05 45.8**	**-4.3**
WHN				pmax	pmax		
	comp=E,48nm,0.8s						
WHN				LR	LR		
	comp=E,1μm,15.2s						
WHN				LR	LR		
	comp=E,2μm,12.2s						
WHN				LR	LR		
	comp=E,2μm,15.2s						
CIT	**Chita**	**25.24**	**316**	*e*P	**P**	**01 01 47.0**	**+0.8**
CIT				*e*		01 01 58.0	
CIT				*e*		01 02 19.5	
CIT				pmax	pmax		
	comp=Z,185nm,1.5s						
YAK	**Yakutsk**	**26.40**	**347**	P	**P**	**01 01 56.7**	**+0.3**
	comp=Z,4.0nm,0.5s,baz=324,slow=22,SNR=7.1						
YAK				LR	LR	01 12 46.3	
	comp=Z,446nm,18.3s,baz=158,slow=37						
YAK	**Yakutsk**	**26.40**	**347**	*e*P	**P**	**01 01 56.8**	**+0.3**
YAK				*e*		01 05 28.0	
YAK				*e*S	S	01 06 19.9	-8.8
YAK				pmax	pmax		
	comp=Z,85nm,0.9s						
YAK				pmax	pmax		
	comp=N,29nm,1.0s						
YAK				pmax	pmax		
	comp=E,14nm,1.1s						
YAK				pmax	pmax		
	comp=Z,65nm,1.0s						
YAK				pmax	pmax		
	comp=N,17nm,0.9s						
YAK				pmax	pmax		
	comp=E,5.0nm,1.0s						
YAK				smax	smax		
	comp=E,248nm,6.0s						
YAK				smax	smax		
	comp=N,179nm,4.8s						
YAK				MLR	MLR		
	comp=Z,931nm,14.0s						
YAK				MLR	MLR		
	comp=N,734nm,14.0s						
SEY	**Seymchan**	**26.87**	**10**	P	**P**	**01 02 02.5**	**+1.7**
	comp=N,8.4nm,0.9s,baz=202,slow=8.2,SNR=20						
SEY	**Seymchan**	**26.87**	**10**	*ce*P	**P**	**01 02 03.5**	**+2.7**
XAN	**Xi'an**	**27.16**	**274**	P	**P**	**01 02 02.9**	**-0.9**
XAN				pmax	pmax		
	comp=N,26nm,1.2s						
XAN				pmax	pmax		
	comp=N,55nm,4.3s						
H11N2	**WAKE ISLAND Hy**	**27.52**	**122**	T	T	01 31 52.4	
	baz=313,slow=75,SNR=27						
H11N1	**WAKE ISLAND Hy**	**27.53**	**122**	T	T	01 31 52.1	
	baz=313,slow=75,SNR=26						
H11N3	**WAKE ISLAND Hy**	**27.54**	**122**	T	T	01 31 40.9	
	baz=313,slow=75,SNR=27						
ENH	**Enshi**	**27.93**	**266**	*e*P	**P**	**01 02 09.6**	**-1.0**
	comp=N,177nm,1.2s						
ULN	**Ulaanbaatar**	**27.97**	**304**	*ce*P	**P**	**01 02 11.5**	**+0.5**
ULN				pmax	pmax		
	comp=Z,36nm,1.2s						
ULN	**Ulaanbaatar**	**27.97**	**304**	*e*P	**P**	**01 02 11.6**	**+0.5**
	comp=Z,22nm,0.9s						
BOD	**Bodaibo**	**28.02**	**327**	*e*P	**P**	**01 02 10.9**	**-0.2**
BOD				pmax	pmax		
	comp=Z,24nm,1.0s						
H11S1	**WAKE ISLAND Hy**	**28.24**	**124**	T	T	01 32 41.4	
	baz=315,slow=76,SNR=23						
H11S3	**WAKE ISLAND Hy**	**28.24**	**124**	T	T	01 32 35.4	
	baz=315,slow=76,SNR=36						
H11S2	**WAKE ISLAND Hy**	**28.26**	**124**	T	T	01 32 40.0	
	baz=315,slow=76,SNR=32						
SONM	**Songino Array**	**28.40**	**304**	P	**P**	**01 02 15.0**	**+0.2**
	comp=Z,28nm,0.8s,baz=102,slow=9.0,SNR=106						
SONM				LR	LR	01 13 47.4	
	comp=Z,385nm,19.2s,baz=72,slow=37						
SONM	**Songino Array**	**28.40**	**304**	P	**P**	**01 02 15.0**	**+0.2**
SONM				pmax	pmax		
	comp=Z,29nm,0.8s						
SONM				MLR	MLR		
	comp=Z,385nm,19.2s						
LZH	**Lanzhou**	**30.70**	**280**	*e*P	**P**	**01 02 35.6**	**+0.2**
LZH				pmax	pmax		
	comp=Z,47nm,1.0s						
LZH				pmax	pmax		
	comp=Z,180nm,4.0s						
LZH				LR	LR		
	comp=Z,600nm,13.1s						
LZH				LR	LR		
	comp=Z,2μm,15.6s						
LZH				LR	LR		
	comp=Z,2μm,16.3s						
ZAK	**Zakamensk**	**30.87**	**308**	*e*P	**P**	**01 02 36.7**	**+0.1**
ZAK				pmax	pmax		
	comp=Z,17nm,1.3s						
ZAK				pmax	pmax		
	comp=Z,2.0nm,1.1s						
TLY	**Talaya**	**30.92**	**311**	LR	LR	01 15 38.9	
	comp=Z,607nm,19.2s,baz=96,slow=38						
TLY	**Talaya**	**30.92**	**311**	*e*P	**P**	**01 02 38.0**	**+1.0**
TLY				pmax	pmax		
	comp=Z,27nm,1.4s						
TLY				MLR	MLR		
	comp=Z,567nm,15.0s						
CD2	**Chengdu**	**32.29**	**271**	P	**P**	**01 02 48.2**	**-1.0**
CD2				pmax	pmax		
	comp=Z,30nm,0.8s						
MOY	**Mondy**	**32.53**	**310**	*e*P	**P**	**01 02 51.7**	**+0.5**
MOY				pmax	pmax		
	comp=Z,21nm,1.5s						
GTA	**Gaotai**	**33.20**	**288**	P	**P**	**01 02 57.7**	**+0.4**
GTA				pP	sP	01 03 08.5	+3.0
GTA				sP	pP	01 03 12.6	+9.5
GTA				S	**S**	**01 08 21.7**	**+5.5**
GTA				pmax	pmax		
	comp=Z,21nm,1.1s						
GTA				pmax	pmax		
	comp=Z,130nm,6.7s						
GTA				LR	LR		
	comp=Z,520nm,15.2s						
GTA				LR	LR		
	comp=Z,360nm,15.2s						
GTA				LR	LR		
	comp=Z,400nm,18.1s						
KMI	**Kunming**	**35.54**	**262**	P	**P**	**01 03 18.1**	**+0.4**
KMI				pP	sP	01 03 27.1	+1.2
KMI				pmax	pmax		
	comp=Z,32nm,0.6s						
KMI				pmax	pmax		
	comp=Z,72nm,3.8s						
KMI				LR	LR		
	comp=Z,440nm,15.0s						
KMI				LR	LR		
	comp=Z,310nm,17.4s						
KMI				LR	LR		
	comp=Z,500nm,18.9s						
TIXI	**Tiksi**	**35.56**	**353**	P	**P**	**01 03 17.7**	**+0.6**
	comp=Z,2.6nm,0.3s,baz=141,slow=9.9,SNR=4.3						
TIXI	**Tiksi**	**35.56**	**353**	*e*P	**P**	**01 03 17.6**	**+0.5**
TIXI				pmax	pmax		
	comp=Z,10.0nm,1.7s						
UBPT	**Khong Chiam**	**39.01**	**246**	P	**P**	**01 03 47.3**	**+0.4**
	comp=Z,39nm,1.4s						
SKNT	**Sakolnakorn**	**39.05**	**250**	P	**P**	**01 03 47.7**	**+0.4**
	comp=Z,44nm,1.3s						
CRAI	**Chiangrai**	**39.93**	**257**	P	**P**	**01 03 53.9**	**-0.8**
	comp=Z,19nm,1.3s						
CMAI	**Chiengmai2**	**41.14**	**258**	P	**P**	**01 04 03.2**	**-1.6**
	comp=Z,32nm,0.3s,comp=Z,2μm						
UTTA	**Uttaradit**	**41.20**	**254**	P	**P**	**01 04 06.5**	**+1.4**
	comp=Z,3.4nm,1.1s						
LAMP	**Lampang**	**41.47**	**256**	P	P	01 04 11.9	+4.6
WMQ	**Urumqi**	**41.47**	**297**	P	**P**	**01 04 08.6**	**+1.4**
WMQ				pP	sP	01 04 20.8	+5.3
WMQ				pmax	pmax		
	comp=Z,19nm,0.5s						
WMQ				pmax	pmax		
	comp=Z,300nm,5.6s						
WMQ				LR	LR		
	comp=Z,220nm,19.6s						
WMQ				LR	LR		
	comp=Z,190nm,22.6s						
WMQ				LR	LR		
	comp=Z,260nm,23.5s						
PBKT	**Sadao Pong**	**41.58**	**252**	P	**P**	**01 04 08.7**	**+0.5**
	comp=Z,28nm,1.1s,comp=Z,3μm						
CMMT	**Chiang Mai**	**41.84**	**257**	P	**P**	**01 04 11.2**	**+0.8**
	comp=Z,15nm,1.3s						
CHTO	**Chiang Mai**	**41.84**	**257**	P	**P**	**01 04 11.3**	**+0.9**
	comp=Z,68nm,1.3s						
CHTO	**Chiang Mai**	**41.84**	**257**	*e*P	**P**	**01 04 10.2**	**-0.2**
CHTO				*e*		01 04 20.9	
CHTO				pmax	pmax		
	comp=Z,8.0nm,1.0s						
CHTO	**Chiang Mai**	**41.84**	**257**	*e*P	**P**	**01 04 10.2**	**-0.2**
	comp=Z,7.6nm,1.0s						
CHTO				*e*		01 04 20.9	
CMAR	**Chiang Mai Arr**	**42.04**	**256**	P	**P**	**01 04 11.9**	**-0.1**
	comp=Z,3.3nm,0.7s,baz=45,slow=6.7,SNR=14						
CMAR				LR	LR	01 23 16.3	
	comp=Z,159nm,18.1s,baz=57,slow=38						
CMAR	**Chiang Mai Arr**	**42.04**	**256**	P	**P**	**01 04 12.0**	**-0.1**
CMAR				pmax	pmax		
	comp=Z,4.0nm,0.8s						
CMAR				MLR	MLR		
	comp=Z,159nm,18.1s						
ZALV	**Zalesovo Beam**	**42.50**	**313**	P	**P**	**01 04 15.3**	**-0.1**
	comp=Z,14nm,0.9s,baz=90,slow=6.4,SNR=71						

ZALV PcP **PcP** **01 06 07.6 -0.2**
comp=Z,5.2nm,0.8s,baz=83,slow=3.1,SNR=4.3
ZALV LR LR 01 22 36.9
comp=Z,463nm,19.2s,baz=70,slow=37
ZALV Zalesovo Beam 42.50 313 P **P** **01 04 15.3 -0.1**
ZALV 01 06 07.6
ZALV pmax pmax
comp=Z,15nm,0.9s
ZALV pmax pmax
comp=Z,5.0nm,0.9s
ZALV MLR MLR
comp=Z,463nm,19.2s
LSA Lhasa 42.84 276 *e*P **P** **01 04 20.0 +1.0**
LSA pmax pmax
comp=Z,25nm,1.1s
LSA Lhasa 42.84 276 *e*P **P** **01 04 19.9 +1.0**
comp=Z,25nm,1.1s
CHBT CHBT 42.95 247 P **P** **01 04 20.7 +1.2**
comp=Z,28nm,0.8s,comp=Z,4µm
NVS Novosibirsk 43.42 314 *i*P **P** **01 04 23.4 +0.6**
NRIK Noril'sk 43.70 335 P **P** **01 04 24.7 -0.2**
comp=Z,3.5nm,0.8s,baz=116,slow=7.9,SNR=8.9
NRIK LR LR 01 24 03.6
comp=Z,562nm,18.4s,baz=103,slow=38
SRDT SRDT 44.34 251 P **P** **01 04 32.1 +1.5**
comp=Z,60nm,1.0s,comp=Z,5µm
MKAR Makanchi Array 44.74 302 P **P** **01 04 33.6 +0.1**
comp=Z,8.4nm,0.8s,baz=88,slow=9.8,SNR=81
MKAR LR LR 01 23 35.8
comp=Z,194nm,21.2s,baz=80,slow=37
KURK Kurchatov 46.53 308 P **P** **01 04 48.2 +0.6**
KURK pmax pmax
comp=Z,12nm,0.7s
KURK Kurchatov 46.53 308 P **P** **01 04 48.2 +0.6**
KURBB Kurchatov Arra 46.60 308 P **P** **01 04 48.2 0.0**
comp=Z,12nm,0.7s,baz=83,slow=8.0,SNR=110
KAPI Kappang 46.61 212 P **P** **01 04 46.8 -1.7**
comp=Z,9.2nm,0.8s,baz=226,slow=23,SNR=3.4
KAPI Kappang 46.61 212 *e*P **P** **01 04 47.4 -1.1**
ODAN Odare 47.04 274 *e*P **P** **01 04 52.1 -0.1**
comp=Z,81nm,1.0s
RAMN Ramite 47.63 275 *e*P **P** **01 04 56.5 -0.3**
comp=Z,90nm,0.8s
GUN Gumba 47.78 276 *e*P **P** **01 04 58.0 -0.1**
comp=Z,91nm,0.9s
SURT Suratani 48.05 246 P **P** **01 05 01.5 +1.6**
comp=Z,5.3nm,1.2s
KKN Kakani 48.31 276 *e*P **P** **01 05 01.8 -0.3**
comp=Z,34nm,0.7s
PKIN Phulchoki 48.31 276 *e*P **P** **01 05 01.6 -0.5**
comp=Z,23nm,0.7s
GKN Gorkha 48.73 277 *e*P **P** **01 05 04.9 -0.3**
comp=Z,129nm,0.9s
COLA College 48.92 32 *e*P P 01 05 10.6 +4.7
COLA pmax pmax
comp=Z,4.0nm,0.9s
HNR Honiara 48.96 156 LR LR 01 24 08.9
comp=Z,138nm,20.5s,baz=338,slow=34
ILAR Eielson Array 49.34 32 P **P** **01 05 09.8 +0.7**
comp=Z,2.4nm,0.8s,baz=264,slow=6.1,SNR=18
ILAR LR LR 01 27 33.0
comp=Z,34nm,19.4s,baz=270,slow=38
KOLN Koldanda 49.66 277 *e*P **P** **01 05 12.2 -0.2**
comp=Z,33nm,0.8s
PYUN Piuthan 50.00 278 *e*P **P** **01 05 14.9 -0.1**
comp=Z,111nm,0.9s
TKM2 Tokmak 2 50.26 299 *e*P **P** **01 05 17.4 +0.6**
TKM2 pmax pmax
comp=Z,13nm,0.8s
TKM2 Tokmak 2 50.26 299 *e*P **P** **01 05 17.4 +0.6**
comp=Z,13nm,0.8s
FRU Bishkek 50.98 299 *e*P **P** **01 05 20.5 -1.4**
KSH Kashi 51.04 294 P P 01 05 26.7 +4.1
KSH pmax pmax
comp=Z,140nm,3.7s
KSH LR LR
comp=Z,840nm,16.3s
KSH LR LR
comp=Z,280nm,7.2s
KSH LR LR
comp=Z,900nm,15.4s
AAK Ala-Archa 51.12 299 P **P** **01 05 23.2 0.0**
comp=Z,3.4nm,0.8s,baz=106,slow=4.7,SNR=9.9
AAK LR LR 01 28 27.5
comp=Z,838nm,18.9s,baz=55,slow=38
AAK Ala-Archa 51.12 299 *e*P **P** **01 05 23.3 0.0**
AAK pmax pmax
comp=Z,11nm,0.8s
BVAR Borovoye Array 51.16 313 P **P** **01 05 23.2 +0.1**
comp=Z,3.8nm,0.8s,baz=86,slow=9.1,SNR=15
BRVK Borovoye 51.21 313 *e*P **P** **01 05 23.7 +0.2**
BRVK pmax pmax
comp=Z,7.0nm,0.9s
BRVK Borovoye 51.21 313 *e*P **P** **01 05 23.7 +0.2**
comp=Z,7.4nm,0.9s
EKS2 Erkin-Say 51.62 299 *e*P **P** **01 05 26.9 0.0**
EKS2 pmax pmax
comp=Z,5.0nm,0.8s
EKS2 Erkin-Say 51.62 299 *e*P **P** **01 05 26.9 0.0**
comp=Z,5.0nm,0.8s
PSI Prapat 52.22 240 P **P** **01 05 30.5 -1.1**
comp=Z,3.8nm,0.4s,baz=46,slow=5.7,SNR=3.6
KKAR Karatay Array 53.75 300 *e*P **P** **01 05 42.9 +0.4**
KKAR *e* 01 05 54.2
KKAR pmax pmax
comp=Z,10.0nm,0.9s
KKAR Karatay Array 53.75 300 *e*P **P** **01 05 42.9 +0.4**
comp=Z,10.0nm,0.9s
KKAR *e* 01 05 54.1
INK Inuvik 54.28 27 P **P** **01 05 47.2 +1.3**
comp=Z,3.4nm,0.9s,baz=308,slow=7.5,SNR=5.5
SVE Sverdlovsk 55.70 319 *e*P **P** **01 05 57.1 +0.7**
SVE pmax pmax
comp=Z,28nm,1.2s
SOKR Solikamsk 56.85 323⇑ *i*P **P** **01 06 02.5 -2.0**
SOKR pmax pmax
comp=Z,17nm,1.0s
SOKR MLR MLR
comp=Z,243nm,17.0s
ARU Arti 56.91 319*c i*P **P** **01 06 05.1 +0.1**
ARU 01 06 54.8
ARU S **S** **01 13 55.1 -2.6**
ARU SS **SS** **01 17 40.0 -5.5**
ARU pmax pmax
comp=Z,31nm,1.2s
ARU MLR MLR
comp=Z,468nm,17.0s
ARU Arti 56.91 319 *e*P **P** **01 06 05.3 +0.2**
comp=Z,27nm,1.1s
ARU *e* 01 06 15.6
ABKAR Akbulak array 58.53 310 *e*P **P** **01 06 16.4 -0.1**
comp=Z,5.8nm,0.6s
AKTO Aktyubinsk 59.26 312 LR LR 01 33 03.9
comp=Z,152nm,19.9s,baz=66,slow=37
POO Poona 61.99 273⇑ *i*P P 01 06 37.0 -3.7
comp=Z,30nm,1.0s
RES Resolute Bay 62.64 15 P **P** **01 06 44.1 0.0**
comp=Z,1.5nm,0.9s,baz=287,slow=6.8,SNR=6.6
DZM Mont Dzumac 62.91 155 LR LR 01 32 14.3
comp=Z,148nm,20.0s,baz=62,slow=34
YKA Yellowknife Ar 63.67 30 P **P** **01 06 51.3 +0.1**
comp=Z,0.9nm,0.8s,baz=300,slow=6.6,SNR=9.7
KLMR Klimovskoe 64.25 328 *e*P **P** **01 06 53.1 -1.9**
KLMR *e* 01 07 30.9
KLMR pmax pmax
comp=Z,26nm,1.5s
ARCES ARCESS Array B 64.40 340 P **P** **01 06 56.6 +0.8**
comp=Z,2.2nm,0.8s,baz=11,slow=7.4,SNR=4.0
ARCES LR LR 01 40 16.3
comp=Z,225nm,18.3s,baz=12,slow=41
GEYT Alibeck 64.47 299 P **P** **01 06 56.8 -0.1**
comp=Z,6.5nm,0.8s,baz=29,slow=3.4,SNR=18
GEYT LR LR 01 37 58.8
comp=Z,140nm,18.6s,baz=110,slow=39
VRH Novokhopyorsk 68.14 318 *e*P **P** **01 07 19.0 -1.1**
VRH pmax pmax
comp=Z,10.0nm,1.0s
OBN Obninsk 68.62 324*ce*P **P** **01 07 23.4 +0.4**
OBN pmax pmax
comp=Z,16nm,1.2s
LPSR Galich'ya Gora 68.84 320 *e*P **P** **01 07 24.4 -0.1**
LPSR pmax pmax
comp=Z,10.0nm,0.8s
FINES FINESS Array B 69.27 333 P **P** **01 07 27.2 +0.3**
comp=Z,7.6nm,0.8s,baz=46,slow=8.2,SNR=17
FINES LR LR 01 39 56.3
comp=Z,296nm,18.7s,baz=20,slow=38

VSR Storozhevoye 69.48 319 *e*P **P** **01 07 27.9 -0.6**
VSR pmax pmax
comp=Z,10.0nm,0.9s
GOF Gofitskoye 70.68 312⇑ *e*P **P** **01 07 36.3 +0.4**
GOF pmax pmax
comp=Z,35nm,1.0s
ZEI Tsey 71.40 310 *e*P **P** **01 07 39.0 -1.6**
ZEI pmax pmax
comp=Z,29nm,1.2s
KVAR Kislovodsk Arr 71.49 311 P **P** **01 07 42.3 +1.2**
comp=Z,24nm,1.1s,baz=3.2,slow=3.5,SNR=7.5
KVAR LR LR 01 40 22.4
comp=Z,108nm,18.5s,baz=24,slow=37
KBZ Khabaz 71.49 311 P **P** **01 07 41.9 +1.0**
comp=Z,11nm,0.9s,baz=73,slow=3.8,SNR=24
KBZ LR LR 01 43 51.0
comp=Z,237nm,18.2s,baz=40,slow=40
KIV Kislovodsk 71.50 311 *i*P **P** **01 07 40.8 -0.3**
SNR=9.6
KIV Kislovodsk 71.50 311*ce*P **P** **01 07 42.5 +1.5**
KIV pmax pmax
comp=Z,33nm,1.0s
KIV Kislovodsk 71.50 311 *e*P **P** **01 07 42.0 +1.0**
comp=Z,28nm,0.9s
KIV *e* 01 07 53.1
GNI Garni 72.31 307 P **P** **01 07 47.3 +1.2**
comp=Z,4.7nm,0.9s,baz=183,slow=23,SNR=4.3
GNI Garni 72.31 307*ce*P **P** **01 07 46.4 +0.3**
GNI pmax pmax
comp=Z,14nm,1.0s
AKH Akhalkalaki 72.41 309⇑ *i*P **P** **01 07 47.2 +0.5**
HATD Hatta, Dubai 72.57 288 *i*P **P** **01 07 48.0 +0.3**
SNR=13
FAQ Al Faqa, Dubai 73.03 288 *i*P **P** **01 07 50.7 +0.3**
SNR=10
ASUD Al Ashush, Dub 73.29 288 P **P** **01 07 52.3 +0.4**
FFC Flin Flon 73.54 33 *e*P **P** **01 07 53.6 +0.7**
FFC *e* 01 08 05.0
FFC pmax pmax
comp=Z,4.0nm,0.8s
FFC Flin Flon 73.54 33 *e*P **P** **01 07 53.6 +0.7**
comp=Z,4.4nm,0.8s
FFC *e* 01 08 05.0
BOZ Bozeman (W) 74.43 44 *e*P **P** **01 07 59.6 +1.1**
BOZ pmax pmax
comp=Z,6.0nm,0.9s
BOZ Bozeman (W) 74.43 44 *e*P **P** **01 07 59.5 +1.1**
comp=Z,6.2nm,0.9s
NB2 NORSAR Subarra 74.60 338 P **P** **01 07 59.5 +0.4**
comp=Z,6.4nm,0.8s,baz=38,slow=6.2
NOA NORSAR Array B 74.60 338 P **P** **01 07 59.6 +0.6**
comp=Z,5.1nm,0.9s,baz=39,slow=5.8,SNR=8.1
NOA LR LR 01 44 28.5
comp=Z,211nm,18.8s,baz=35,slow=39
NVAR Mina Array Bea 74.62 53 P **P** **01 08 01.4 +1.6**
comp=Z,0.5nm,0.5s,baz=294,slow=6.8,SNR=3.5
NVAR LR LR 01 32 22.5
comp=Z,78nm,20.9s,baz=267,slow=29
AKASG Malin Array Be 74.83 323 P **P** **01 08 00.1 -0.3**
comp=Z,6.6nm,0.7s,baz=44,slow=5.7,SNR=33
AKASG LR LR 01 44 24.7
comp=Z,220nm,18.4s,baz=20,slow=38
KIEV Kiev 74.84 323 *e*P **P** **01 08 00.6 +0.1**
KIEV pmax pmax
comp=Z,10.0nm,0.9s
KIEV Kiev 74.84 323 *e*P **P** **01 08 00.6 +0.1**
comp=Z,10nm,0.9s
H17A Grant Village 75.78 45 *e*P **P** **01 08 08.3 +1.9**
comp=Z,9.4nm,1.0s
PDAR Pinedale Array 77.37 46 P **P** **01 08 16.1 +0.7**
comp=Z,0.8nm,0.7s,baz=271,slow=2.1,SNR=6.5
KWP Kalwaria Pacla 78.64 325 *e*P **P** **01 08 23.2 +1.2**
KWP Kalwaria Pacla 78.64 325 *e*P **P** **01 08 23.3 +1.2**
BURAR Bucovina Array 78.84 322⇑ *i*P **P** **01 08 22.4 -0.9**
TESR Tescani 78.88 321⇑ *i*P **P** **01 08 23.9 +0.5**
CFR Carcaliu 79.00 319⇓ *i*P **P** **01 08 24.5 +0.5**
VRI Vrincioaia 79.27 320⇑ *i*P **P** **01 08 25.7 +0.1**
ULM Lac du Bonnet 79.33 34 P **P** **01 08 27.6 +1.8**
comp=Z,1.4nm,0.6s,baz=227,slow=5.2,SNR=4.0
BRTR Keskin Array B 79.44 312 P **P** **01 08 26.9 +0.1**
comp=Z,4.6nm,0.9s,baz=108,slow=4.0,SNR=20
BRTR LR LR 01 49 53.2
comp=Z,96nm,18.7s,baz=46,slow=40
BRTR Keskin Array B 79.44 312*ce*P **P** **01 08 27.5 +0.7**
BRTR pmax pmax
comp=Z,5.0nm,0.9s
STHS Stebnicka Huta 79.47 325 *e*P **P** **01 08 28.1 +1.5**
STHS pmax pmax
comp=Z,6.0nm,1.0s
STHS Stebnicka Huta 79.47 325 *e*P **P** **01 08 28.1 +1.5**
OJC Ojcow 79.54 327 *e*P **P** **01 08 28.1 +1.1**
OJC Ojcow 79.54 327 *e*P **P** **01 08 28.2 +1.2**
ARCR ARCESS LIA 79.63 322⇓ *i*P **P** **01 08 28.9 +1.4**
CRVS Cervenica-Dubn 79.74 325 *e*P **P** **01 08 29.7 +1.6**
CRVS Cervenica-Dubn 79.74 325 *e*P **P** **01 08 29.7 +1.6**
MSAB Monastry St. A 79.89 318⇓ *i*P **P** **01 08 30.0 +1.1**
NIE Niedzica 79.90 326 *e*P **P** **01 08 30.0 +1.1**
NIE Niedzica 79.90 326 *e*P **P** **01 08 30.1 +1.1**
VOIR 80.42 321⇑ *i*P **P** **01 08 31.1 -0.8**
LANS Liptovska Anna 80.47 326 *e*P **P** **01 08 34.6 +2.6**
LANS Liptovska Anna 80.47 326 *e*P **P** **01 08 34.6 +2.6**
KECS Kecovo 80.49 325 *e*P **P** **01 08 33.2 +1.1**
KECS pmax pmax
comp=Z,3.0nm,1.0s
KECS Kecovo 80.49 325 *e*P **P** **01 08 33.2 +1.1**
OKC Ostrava-Krasne 80.55 327 *e*P **P** **01 08 33.3 +0.9**
OKC Ostrava-Krasne 80.55 327 *e*P **P** **01 08 33.3 +0.9**
KSP Ksiaz 80.59 329 *e*P **P** **01 08 33.8 +1.2**
KSP Ksiaz 80.59 329 *e*P **P** **01 08 33.8 +1.2**
DRGR 80.64 323⇓ *i*P **P** **01 08 33.8 +0.7**
ARR Arges 80.69 321⇓ *i*P **P** **01 08 34.6 +1.3**
DPC Dobruska-Polom 80.95 328 *e*P **P** **01 08 35.6 +1.0**
DPC *ep*P **sP** **01 08 46.1 +2.9**
DPC Dobruska-Polom 80.95 328 *e*P **P** **01 08 35.6 +1.0**
DPC *e* 01 08 46.1
UPC Upice 80.96 329 AMS AMS 01 47 30.0
comp=Z,400nm,15.4s
PSZ Piszkesteto 81.17 325 *e*P **P** **01 08 36.8 +0.9**
PSZ pmax pmax
comp=Z,13nm,1.1s
PSZ Piszkesteto 81.17 325 *e*P **P** **01 08 36.8 +0.9**
comp=Z,13nm,1.1s
VYHS Vyhne 81.23 326 *e*P **P** **01 08 37.0 +0.9**
VYHS pmax pmax
comp=Z,4.0nm,1.1s
VYHS Vyhne 81.23 326 *e*P **P** **01 08 37.0 +0.9**
RAYN Ar Rayn 81.30 293 *e*P **P** **01 08 36.6 -0.3**
comp=Z,17nm,0.8s
RAYN *e* 01 08 47.8
BRG Berggiesshubel 81.53 330 *e*P **P** **01 08 38.0 +0.4**
comp=Z,5.0nm,0.9s
BRG Berggiesshubel 81.53 330 *e*P **P** **01 08 38.0 +0.4**
BRG pmax pmax
comp=Z,5.0nm,0.9s
PVCC Panska Ves 81.54 329 *e*P **P** **01 08 39.0 +1.3**
PVCC Panska Ves 81.54 329 *e*P **P** **01 08 39.0 +1.3**
CLL Collm 81.57 331 *i*P **P** **01 08 38.0 +0.2**
comp=Z,18nm,1.2s
CLL *e* 01 08 56.0
CLL Collm 81.57 331 *i*P **P** **01 08 38.0 +0.2**
CLL pmax pmax
comp=Z,18nm,1.2s
GZR Gura Zlata 81.60 322⇑ *i*P **P** **01 08 38.3 +0.1**
VRAC Vranov 81.62 327⇑ *i*P **P** **01 08 39.0 +0.9**
GOPC GO Pecny, Ondr 81.92 329 *e*P **P** **01 08 40.9 +1.2**
GOPC GO Pecny, Ondr 81.92 329 *e*P **P** **01 08 40.9 +1.2**
PRU Pruhonice 81.97 329 *e*P **P** **01 08 41.0 +1.1**
PRU Pruhonice 81.97 329 *e*P **P** **01 08 41.0 +1.1**
BZS Buzias 82.02 322⇓ *i*P **P** **01 08 40.7 +0.4**
MDVR Moldovita 82.57 322⇓ *i*P **P** **01 08 40.7 -2.5**
NKC Novy Kostel 82.63 330 *e*P **P** **01 08 44.2 +0.8**
NKC Novy Kostel 82.63 330 *e*P **P** **01 08 44.2 +0.8**
CSS Mathiatis 82.67 308 *e*P **P** **01 08 43.9 0.0**
comp=Z,1.6nm,0.8s
KHC Kasperske Hory 83.03 329 *e*P **P** **01 08 45.9 +0.3**
KHC *ep*P **sP** **01 08 56.4 +2.3**
KHC Kasperske Hory 83.03 329 *e*P **P** **01 08 45.9 +0.3**
KHC *e* 01 08 56.4
KHC Kasperske Hory 83.03 329 *e*P **P** **01 08 45.8 +0.3**
comp=Z,4.1nm,1.1s
GERES GERESS Array B 83.20 329 P **P** **01 08 46.4 -0.1**
comp=Z,3.2nm,0.9s,baz=46,slow=5.8,SNR=14
GERES LR LR 01 51 11.6
comp=Z,171nm,18.2s,baz=340,slow=40

VTS Vitosha 83.36 319⇓ *i*P **P** **01 08 48.8 +1.3**
PPT Papeete 84.00 117 LR LR 01 37 55.4
comp=Z,74nm,21.0s,baz=324,slow=30
PPT2 Papeete2 84.01 117 *e*LR LR 01 34 52.0
comp=Z,226nm,29.0s
ANMO Albuquerque 84.25 50*ce*P P 01 08 56.4 +4.1
ANMO pmax pmax
comp=Z,3.0nm,1.2s
VAY Valandovo 84.60 319 *e*P **P** **01 08 54.1 +0.5**
TAOE Nuku Hiva Isla 85.53 104 *e*LR LR 01 35 37.6
comp=Z,349nm,23.6s
BFO Black Forest 85.77 331*ce*P **P** **01 09 00.0 +0.5**
BFO Black Forest 85.77 331 *e*P **P** **01 08 59.7 +0.2**
comp=Z,11nm,1.0s
TBI Tubuai 87.90 121 *e*LR LR 01 36 38.6
comp=Z,234nm,26.2s
TXAR Lajitas Array 89.76 53 P **P** **01 09 19.8 +0.8**
comp=Z,1.5nm,0.8s,baz=296,slow=3.0,SNR=10
KEST Kesra 95.55 323 LR LR 01 58 44.8
comp=Z,152nm,18.5s,baz=288,slow=39
ESDC Sonseca Array 97.73 334 LR LR 01 58 54.9
comp=Z,180nm,19.9s,baz=95,slow=38
LPAZ La Paz 146.26 61 PKPbc **PKPbc** **01 16 02.0 0.0**
comp=Z,1.5nm,0.6s,baz=325,slow=7.3,SNR=5.0
LPAZ La Paz 146.26 61 PKP2 **PKPbc** **01 16 02.0 0.0**
LPAZ pmax pmax
comp=Z,2.0nm,0.6s

BJI ***08*** *00:56:47.3, 8.˚25S×124.˚11E, h249km, mb4.5/26, mB4.8/21*
MOS ***08*** *00:56:51.8±1.0, 7.˚73S×123.˚50E, h248km, mb4.8/17, Error ellipse: s-maj=10.1km s-min=6.8km az=119.8*
ISCJB ***08*** *00:56:52.5±0.3, 7.˚84S±0.˚02×123.˚44E±0.˚02, h254km±3km, mb4.6/78, Error ellipse: s-maj=4.1km s-min=3.2km az=140.2*
KLM ***08*** *00:56:53.9, 7.˚80S×123.˚55E, h240km, mb5.0, ML4.1, MS5.8*
IDC ***08*** *00:56:53.5±1.0, 7.˚81S×123.˚48E, h251km±9km, mb4.2/34, mb1 4.3/40, mb1mx4.2/53, mbtmp4.8/40, Error ellipse: s-maj=8.8km s-min=6.4km az=63.0*
NEIC ***08*** *00:56:53.3±0.3, 7.˚82S×123.˚42E, h250km±3km, mb5.0/42, Error ellipse: s-maj=4.5km s-min=3.2km az=50.0*
DJA ***08*** *00:56:53.8±0.1, 8.˚S±2.˚×12.˚3E±.˚, h237km±3km, M4.7/60, mb5.0/60, mB5.3/36, MLv5.0/21, Mw(mB)4.7/36.*

ISC 08 00:56:53.5±0.5, 7.˚84S±0.˚04×123.˚43E±0.˚04, h252km±4km, n346,σ1°37/383, mb4.7/77, 4C-8D, Banda Sea

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
MMRI	**Maumere**	**1.42**	**236**	P		**Pn**		**00 57 30.8**	**-0.6**
MMRI	**Maumere**	**1.42**	**236**	*e*Pn		**Pn**		**00 57 30.9**	**-0.5**
EDFI	**Ende, Flores**	**1.94**	**242**	P		**Pn**		**00 57 35.6**	**-0.2**
SOEI	**Soe**	**2.08**	**157**	P		**Pn**		**00 57 36.8**	**-0.2**
SOEI	**Soe**	**2.08**	**157**	*e*Pn		**Pn**		**00 57 36.6**	**-0.3**
BSSI	**Bau Bau, Buton**	**3.37**	**300**	P		**Pn**		**00 57 49.9**	**-0.3**
BASI	**Baing, Sumba**	**3.68**	**230**	P		**Pn**		**00 57 53.4**	**-0.2**
KAPI	**Kappang**	**4.61**	**307**	P		**Pn**		**00 58 04.4**	**-0.2**
	12nm,0.3s,baz=146,slow=7.1,SNR=33								
KAPI	**Kappang**	**4.61**	**307**	*e*Pn		**Pn**		**00 58 04.6**	**0.0**
SPSI	**Sidrap Palu**	**5.30**	**316**	P		**Pn**		**00 58 12.5**	**-0.6**
	157nm,1.6s,2µm0.5nm								
PLAI	**Plampang**	**5.68**	**260**	P		**Pn**		**00 58 15.9**	**-1.8**
	300nm,1.6s,7µm1.7nm								
NLAI	**Namlea**	**5.85**	**39**	P		**Pn**		**00 58 21.0**	**+1.1**
	440nm,0.9s,4µm1.3nm								
TTSI	**Tana Toraja**	**5.97**	**323**	P		**Pn**		**00 58 21.9**	**+0.6**
	185nm,1.5s,4µm2.0nm								
SANI	**Sanana**	**6.29**	**24**	P		**Pn**		**00 58 27.2**	**+1.8**
	205nm,1.3s,2µm0.6nm								
TWSI	**Taliwang, Sumb**	**6.54**	**262**	P		**Pn**		**00 58 26.4**	**-2.1**
	90nm,0.7s,3µm1.1nm								
LUWI	**Luwuk**	**6.79**	**354**	*e*Pn		**Pn**		**00 58 30.9**	**-0.7**
MSAI	**Masohi**	**7.06**	**51**	P		**Pn**		**00 58 35.7**	**+0.6**
	134nm,1.1s,1µm0.5nm								
APSI	**Ampana**	**7.11**	**345**	P		**Pn**		**00 58 35.3**	**-0.3**
	190nm,1.8s,2µm0.6nm								
PCI	**Palu**	**7.76**	**332**	P		**Pn**		**00 58 44.9**	**+1.0**
	108nm,1.0s,2µm								
SAUI	**Saumlaki**	**7.80**	**92**	P		**Pn**		**00 58 42.7**	**-1.6**
	1µm,0.8s,16µm7.0nm								
SAUI	**Saumlaki**	**7.80**	**92**	*e*Pn		**Pn**		**00 58 43.4**	**-1.0**
LBMI	**Labuha**	**8.23**	**30**	P		**Pn**		**00 58 50.3**	**+0.5**
	235nm,1.1s,2µm								
MRSI	**Marisa**	**8.39**	**350**	P		**Pn**		**00 58 52.3**	**+0.4**
MTN	**Manton Dam**	**9.06**	**124**	*e*Pn		**Pn**		**00 58 59.4**	**-0.9**
	baz=9.1,SNR=276								
MTN	**Manton Dam**	**9.06**	**124**	*e*Pn		**Pn**		**00 58 59.7**	**-0.6**
ABJI	**Asem Bagus**	**9.11**	**270**	P		**Pn**		**00 59 00.1**	**-0.8**
	98nm,1.6s,2µm								
JAGI	**Jajag, Banyuwa**	**9.21**	**265**	P		**Pn**		**00 58 59.6**	**-2.5**
	87nm,0.6s,3µm								
JAGI	**Jajag, Banyuwa**	**9.21**	**265**	*e*Pn		**Pn**		**00 58 60.0**	**-2.2**
KNRA	**Kununurra**	**9.38**	**147**	P		**Pn**		**00 59 03.4**	**-0.8**
	baz=9.4								
TNTI	**Ternate**	**9.41**	**25**	P		**Pn**		**00 59 04.9**	**+0.1**
	262nm,1.1s								
TNTI	**Ternate**	**9.41**	**25**	*e*Pn		**Pn**		**00 59 05.3**	**+0.5**
BBKI	**Banjar Baru**	**9.59**	**297**	P		**Pn**		**00 59 08.8**	**+1.8**
GMJI	**Gumukmas**	**9.90**	**267**	P		**Pn**		**00 59 08.3**	**-2.5**
	70nm,0.9s,1µm								
FAKI	**Fak Fak**	**10.05**	**61**	P		**Pn**		**00 59 10.6**	**-2.2**
	470nm,0.6s,4µm								
FAKI	**Fak Fak**	**10.05**	**61**	*e*Pn		**Pn**		**00 59 11.2**	**-1.6**
FAKI				*e*S		**S**		**01 01 09.1**	**+3.2**
KDU	**Kakadu**	**10.12**	**119**	P		**Pn**		**00 59 13.0**	**-0.7**
	baz=10,SNR=68								
FITZ	**Fitzroy Crossi**	**10.42**	**168**	P		**Pn**		**00 59 16.6**	**-0.8**
	1.7nm,0.3s,baz=8.7,slow=8.5,SNR=24								
FITZ				S		**S**		**01 01 12.1**	**-2.4**
	13nm,0.3s,baz=126,slow=10,SNR=10								
FITZ	**Fitzroy Crossi**	**10.42**	**168**	P		**Pn**		**00 59 16.3**	**-1.1**
	baz=10,SNR=20								
SWI	**Sorong**	**10.44**	**49**	P		**Pn**		**00 59 15.9**	**-1.8**
	495nm,0.7s,4µm								
KMPI	**Kaimana, Papua**	**11.03**	**68**	P		**Pn**		**00 59 22.8**	**-2.3**
	1µm,1.0s,10µm								
PWJI	**Pagerwojo**	**11.52**	**268**	P		**Pn**		**00 59 30.8**	**-0.3**
	112nm,0.7s,2µm								
NGJI	**Ngawi**	**11.87**	**271**	P		**P**		**00 59 43.4**	**+4.7**
PCJI	**Pacitan**	**12.14**	**267**	P		**Pn**		**00 59 37.1**	**-1.8**
	494nm,1.3s,6µm								
WOJI	**Wonogiri, Jawa**	**12.39**	**269**	P		**Pn**		**00 59 41.1**	**-0.9**
	258nm,1.0s,6µm								
RKPI	**Ransiki, Papua**	**12.42**	**60**	P		**Pn**		**00 59 41.6**	**-0.7**
	379nm,1.1s,5µm								
UGM	**Wanagama**	**12.79**	**269**	P		**Pn**		**00 59 45.8**	**-1.1**
	224nm,1.4s								
UGM	**Wanagama**	**12.79**	**269**	*e*Pn		**Pn**		**00 59 45.5**	**-1.4**
MBWA	**Marble Bar**	**13.71**	**195**	*e*Pn		**Pn**		**00 59 58.3**	**+0.2**
MBWA				*e*S		**S**		**01 02 33.8**	**+3.6**
MYLDM	**Lahad Datu**	**13.84**	**339**	*e*Pn		**P**		**01 00 00.8**	**+0.3**
STKI	**Sintang**	**14.27**	**303**	P		**P**		**01 00 07.8**	**+2.5**
KPJI	**Karang Pucung**	**14.38**	**271**	P		**P**		**01 00 07.0**	**+0.5**
	107nm,1.0s								
SDKM	**Sandakan**	**14.77**	**335**	⇓P		**Pn**		**01 00 13.1**	**+2.1**
CMJI	**Cimerak**	**14.84**	**269**	P		**P**		**01 00 10.0**	**-1.6**
	100nm,0.7s,2µm								
BTM	**Bintulu**	**15.06**	**316**	⇓P		**Pn**		**01 00 16.8**	**+2.3**
SBUM	**Sibu**	**15.15**	**312**	⇓P		**Pn**		**01 00 16.6**	**+1.0**
SBUM	**Sibu**	**15.15**	**312**	*e*P		**P**		**01 00 15.5**	**+0.5**
	18nm,0.7s								
CISI	**Cisompet, Garu**	**15.48**	**270**	P		**Pn**		**01 00 24.1**	**+4.6**
	116nm,1.1s,5µm								
CISI	**Cisompet, Garu**	**15.48**	**270**	*e*P		**P**		**01 00 17.2**	**-1.5**
	73nm,0.8s								
CISI				*e*S		**S**		**01 03 06.6**	**-2.7**
KKM	**Kota Kinabalu**	**15.56**	**332**	⇓P		**P**		**01 00 20.4**	**+0.8**
KKM	**Kota Kinabalu**	**15.56**	**332**	*e*P		**P**		**01 00 19.9**	**+0.3**
KKM				*e*Pn		**Pn**		**01 00 26.9**	**+6.4**
LEM	**Lembang**	**15.71**	**273**	P		**Pn**		**01 00 23.7**	**+1.2**
	9.0nm,0.3s,baz=35,slow=13,SNR=5.9								
LEM	**Lembang**	**15.71**	**273**	P		Pn		01 00 30.0	+7.5
WRA	**Warramunga Arr**	**16.02**	**140**	P		**P**		**01 00 24.7**	**+0.2**
	20nm,0.3s,baz=317,slow=12,SNR=409								
WRA				S		**S**		**01 03 19.7**	**-0.1**
	1.8nm,0.3s,baz=319,slow=21,SNR=20								
WRAB	**Tennant Creek**	**16.02**	**140**	*e*P		**P**		**01 00 24.9**	**+0.4**
WRAB				*e*S		**S**		**01 03 20.1**	**+0.3**
WRAB				pmax	pmax				
	comp=Z,151nm,0.7s								
WRAB	**Tennant Creek**	**16.02**	**140**	*e*P		**P**		**01 00 24.9**	**+0.4**
	comp=Z,151nm,0.7s								
WRAB				*e*S		**S**		**01 03 20.1**	**+0.3**
WB2	**Warramunga Arr**	**16.02**	**140**	*e*P		**P**		**01 00 24.9**	**+0.3**

comp=Z,166nm,0.6s

KSM Kuching 16.03 305 ⇑P **Pn 01 00 26.2 +0.2**
KSM Kuching 16.03 305 *eP* **P 01 00 25.3 +0.7**
comp=Z,24nm,0.8s
WC4 Warramunga Arr 16.03 140 P **P 01 00 25.0 +0.3**
baz=16
CNJI Cibinong 16.17 271 P **P 01 00 24.6 -1.6**
comp=Z,101nm,1.0s,comp=Z,2µm
DBJI Dramaga 16.60 273 P **Pn 01 00 36.2 +3.5**
comp=Z,124nm,0.7s
MMPI Merauke 16.80 93 P **Pn 01 00 37.1 +2.1**
comp=Z,828nm,0.7s
GENI Genyem 17.46 74 P **P 01 00 40.8 +0.5**
comp=Z,621nm,0.7s,comp=Z,4µm
CGJI Cibinong 17.64 273 P **Pn 01 00 44.7 -0.2**
comp=Z,64nm,0.4s,comp=Z,5µm
WRKA Warakurna 17.72 165 P **P 01 00 44.3 +1.2**
baz=18,SNR=197
XMIS Christmas Isla 17.74 260 *eP* **P 01 00 42.7 -0.7**
comp=Z,216nm,1.1s
JAY Jayapura 18.00 74 P **P 01 00 44.7 -1.5**
comp=Z,1.2nm,0.3s,baz=3.9,slow=24,SNR=48
JAY S **S 01 03 59.2 -0.3**
comp=Z,0.1nm,0.3s,baz=306,slow=23,SNR=4.8
JAY Jayapura 18.00 74 P **P 01 00 44.9 -1.3**
comp=Z,226nm,0.9s,comp=Z,2µm
AS31 Alice Springs 18.67 149 *eP* **P 01 00 54.3 +1.0**
comp=Z,204nm,0.6s
ASAR Alice Springs 18.67 149 P **P 01 00 54.5 +1.1**
comp=Z,11nm,0.3s,baz=312,slow=9.0,SNR=755
ASAR S **S 01 04 11.9 -0.6**
baz=329,slow=21,SNR=11
AS01 Alice Springs 18.69 149 *eP* **P 01 00 54.0 +0.5**
QIS Mount Isa 20.12 131 P **P 01 01 09.1 +0.2**
baz=20,SNR=85
LHSI Lahat 20.20 280 P **P 01 01 11.8 +2.1**
COEN Coen 20.31 109 P **P 01 01 10.1 -0.8**
baz=20,SNR=86
COEN Coen 20.31 109 *eP* **P 01 01 10.2 -0.8**
comp=Z,62nm,0.6s
MNAI Manna 20.64 278 *eP* **P 01 01 15.1 +0.6**
comp=Z,106nm,1.0s
MORW Morawa 22.23 197 P **P 01 01 29.9 +0.4**
baz=22,SNR=19
MTSU Mount Surprise 22.75 119 P **P 01 01 35.1 +0.6**
baz=23,SNR=19
KMBL Kambalda 23.45 183 P **P 01 01 40.9 +0.3**
baz=24,SNR=9.2
PMG Port Moresby 23.51 96 P **P 01 01 40.9 -0.5**
comp=Z,47nm,0.6s,baz=306,slow=4.6,SNR=24
PMG Port Moresby 23.51 96*d* *i*P **P 01 01 41.0 -0.3**
PMG pmax pmax
comp=Z,201nm,0.7s
PMG Port Moresby 23.51 96 *eP* **P 01 01 41.3 0.0**
comp=Z,49nm,0.7s
BLDU Ballidu 23.52 195 P **P 01 01 41.1 0.0**
baz=24,SNR=34
KLBR Kellerberrin 24.22 192 P **P 01 01 47.7 +0.2**
baz=24,SNR=8.7
MANU Manus Island 24.52 78 *eP* **P 01 01 51.5 +1.0**
comp=Z,38nm,0.8s
CTA Charters Tower 25.23 121 P **P 01 01 58.0 +1.2**
comp=Z,10nm,0.9s,baz=299,slow=7.9,SNR=3.4
CTAO Charters Tower 25.23 121 *eP* **P 01 01 57.5 +0.6**
CTAO pmax pmax
comp=Z,73nm,1.5s
CTAO Charters Tower 25.23 121 *eP* **P 01 01 57.5 +0.6**
comp=Z,73nm,1.5s
NWAO Narrogin (SRO) 25.61 192 P **P 01 02 00.8 +0.7**
comp=Z,29nm,0.8s,baz=283,slow=0.1,SNR=11
NWAO Narrogin (SRO) 25.61 192 P **P 01 02 00.8 +0.7**
baz=26,SNR=6.0
NWAO Narrogin (SRO) 25.61 192 *eP* **P 01 02 00.5 +0.4**
NWAO pmax pmax
comp=Z,159nm,1.8s
NWAO Narrogin (SRO) 25.61 192 *eP* **P 01 02 00.5 +0.4**
comp=Z,160nm,1.8s
QLP Quilpie 27.17 136 P **P 01 02 15.4 +1.4**
baz=27,SNR=14
RKGY Rocky Gully 27.30 192 P **P 01 02 17.2 +2.2**
baz=27,SNR=12
GSI Gunungsitoli 27.34 288 *eP* **P 01 02 13.3 -2.4**
comp=Z,35nm,1.2s
BBOO Buckleboo 27.47 156 P **P 01 02 17.1 +0.4**
baz=28,SNR=183
BBOO Buckleboo 27.47 156 *eP* **P 01 02 17.1 +0.4**
comp=Z,126nm,0.6s
HTT Hallett 29.22 153 P **P 01 02 33.4 +1.2**
baz=29,SNR=114
STKA Stephens Creek 29.29 147 P **P 01 02 33.7 +0.9**
comp=Z,41nm,0.5s,baz=323,slow=8.7,SNR=100
STKA Stephens Creek 29.29 147 P **P 01 02 33.7 +0.9**
baz=29,SNR=87
STKA Stephens Creek 29.29 147 *eP* **P 01 02 33.4 +0.6**
STKA pmax pmax
comp=Z,17nm,0.9s
STKA Stephens Creek 29.29 147 *eP* **P 01 02 33.4 +0.6**
comp=Z,17nm,0.9s
RMQ Roma 30.38 131 P **P 01 02 43.6 +1.2**
baz=30,SNR=10
TWG Pinlang 30.56 356 *eP* **P 01 02 45.0 +1.1**
comp=Z,144nm,1.3s
TPUB Ta-pu 31.07 355 *eP* **P 01 02 48.8 +0.3**
comp=Z,18nm,0.9s
YULB Yu-li 31.11 356 *eP* **P 01 02 49.3 +0.5**
comp=Z,43nm,1.7s
CMSA Cobar Meteorol 31.41 142 P **P 01 02 52.6 +1.2**
baz=31,SNR=45
SSLB Suanglung 31.53 356 *eP* **P 01 02 52.4 -0.1**
comp=Z,13nm,1.0s
ARPS Mount Arapiles 33.32 153 P **P 01 03 09.6 +1.7**
baz=33,SNR=100
ARMA Armidale 34.66 134 P **P 01 03 21.9 +2.3**
baz=35,SNR=15
ARMA Armidale 34.66 134 *eP* **P 01 03 21.6 +1.9**
comp=Z,23nm,0.8s
YNG Young 34.96 142 P **P 01 03 23.6 +1.6**
baz=35,SNR=44
CM01 Chiang Mai Arr 35.55 317 *eP* **P 01 03 27.8 +0.5**
CM01 *ep*P **pP 01 04 12.2 -5.8**
CMAR Chiang Mai Arr 35.59 317 P **P 01 03 28.1 +0.5**
comp=Z,3.4nm,0.8s,baz=143,slow=6.4,SNR=8.7
CMAR PcP **PcP 01 05 51.5 +1.0**
comp=Z,2.7nm,0.6s,baz=176,slow=3.0,SNR=4.8
CMAR ScP **ScP 01 09 12.4 0.0**
comp=Z,0.9nm,0.5s,baz=156,slow=2.1,SNR=5.5
TOO Toolangi 35.72 149 P **P 01 03 30.7 +2.2**
baz=36,SNR=11
CMMT Chiang Mai 35.84 318 P **P 01 03 33.5 +3.9**
CHTO Chiang Mai 35.84 318 P **P 01 03 33.5 +3.8**
comp=Z,31nm,1.2s
CHTO Chiang Mai 35.84 318 *eP* **P 01 03 29.9 +0.2**
CHTO pmax pmax
comp=Z,12nm,0.8s
CHTO Chiang Mai 35.84 318 *eP* **P 01 03 29.9 +0.2**
comp=Z,12nm,0.8s
MGCD Mangrove Creek 35.96 138 P **P 01 03 33.4 +2.9**
baz=36,SNR=4.9
CAN Canberra 36.02 143 P **P 01 03 32.5 +1.5**
baz=36
CAN Canberra 36.02 143 *eP* **P 01 03 31.6 +0.6**
CAN pmax pmax
comp=Z,54nm,1.1s
CAN Canberra 36.02 143 *eP* **P 01 03 31.6 +0.6**
comp=Z,54nm,1.1s
CAN *e*ScP **ScP 01 09 12.1 -1.7**
HNR Honiara 36.13 95 P **P 01 03 31.9 -0.3**
comp=Z,87nm,0.6s,baz=301,slow=2.5,SNR=6.9
HNR ScP **ScP 01 09 13.8 -0.7**
comp=Z,42nm,0.3s,baz=196,slow=4.9,SNR=4.4
HNR Honiara 36.13 95 *eP* **P 01 03 33.3 +1.1**
HNR pmax pmax
comp=Z,99nm,0.8s
HNR Honiara 36.13 95 *eP* **P 01 03 33.3 +1.1**
comp=Z,99nm,0.8s
HNR ScP **ScP 01 09 13.8 -0.7**
GYA Guiyang 37.78 335 ⇑*i*P **P 01 03 47.3 +1.3**
GYA pP pP 01 04 40.0 +2.7
GYA sP sP 01 05 09.2 +3.1
GYA PP **PnPn 01 05 25.4 +2.7**
GYA S **S 01 09 22.6 +4.8**
GYA sS sS 01 10 52.0 +2.6
GYA ScS **ScS 01 13 30.3 -0.1**
GYA pmax pmax
comp=Z,70nm,0.9s
GYA pmax pmax
comp=Z,150nm,5.4s

KMI Kunming 38.47 329 P **P 01 03 53.1 +1.3**
KMI pP pP 01 04 45.8 +2.5
KMI sP sP 01 05 16.3 +4.2
KMI pmax pmax
comp=Z,17nm,0.5s
KMI pmax pmax
comp=Z,87nm,4.7s
NJ2 Nanjing 39.91 354 *eP* **P 01 04 03.5 +0.2**
NJ2 pmax pmax
comp=Z,27nm,0.5s
TAU Tasmania Unive 40.76 153 *eP* **P 01 04 10.7 +0.5**
TAU pmax pmax
comp=Z,45nm,0.9s
TAU Tasmania Unive 40.76 153 *eP* **P 01 04 10.7 +0.5**
comp=Z,45nm,0.9s
CD2 Chengdu 42.90 335 P **P 01 04 28.4 +0.8**
CD2 pP pP 01 05 20.3 +0.1
CD2 sP sP 01 05 48.7 0.0
CD2 PP **PcP 01 06 14.0 +0.4**
CD2 S **S 01 10 35.6 +2.4**
CD2 sS sS 01 12 08.5 +2.0
CD2 pmax pmax
comp=Z,30nm,0.5s
CD2 pmax pmax
comp=Z,220nm,5.5s
DZM Mont Dzumac 43.73 114 P **P 01 04 34.4 -0.2**
comp=Z,22nm,1.1s,baz=221,slow=9.3,SNR=3.5
INCN Inchon 45.19 4 *eP* **P 01 04 46.4 +0.8**
comp=Z,64nm,1.4s
KSAR Wonju Array Be 45.24 5 P **P 01 04 45.9 -0.1**
KSAR 01 06 21.6
KSAR Wonju Array Be 45.24 5 P **P 01 04 45.9 -0.1**
KSAR PcP **PcP 01 06 21.6 +0.2**
KSRS Korea Array 45.25 5 P **P 01 04 45.8 -0.2**
comp=Z,2.7nm,0.9s,baz=189,slow=10,SNR=4.9
KSRS PcP **PcP 01 06 21.6 +0.2**
comp=Z,3.3nm,0.9s,baz=196,slow=4.0,SNR=6.7
MJAR Matsushiro Arr 46.28 17 P **P 01 04 52.2 -1.9**
comp=Z,7.2nm,0.7s,baz=174,slow=5.5,SNR=4.8
MAJO Matsushiro 46.28 17 *eP* **P 01 04 54.3 +0.1**
MAJO pmax pmax
comp=Z,12nm,0.9s
MAJO Matsushiro 46.28 17 *eP* **P 01 04 54.2 +0.1**
comp=Z,12nm,0.9s
KWAJ Kwajalein Atol 47.03 70 *eP* **P 01 05 01.1 +0.8**
KWAJ pmax pmax
comp=Z,57nm,0.8s
KWAJ Kwajalein Atol 47.03 70 *eP* **P 01 05 01.1 +0.8**
comp=Z,57nm,0.8s
HHC Hu-ho-hao-te 49.67 348 *eP* **P 01 05 23.2 +3.1**
HHC pmax pmax
comp=Z,15nm,1.5s
HHC pmax pmax
comp=Z,160nm,3.6s
TARA Tarawa 50.20 82 *eP* **P 01 05 24.1 -0.3**
comp=Z,44nm,0.9s
HYB Hyderabad 50.95 300 *i* P **P 01 05 30.0 0.0**
HYB *e* 01 06 18.0
GTA Gaotai 51.86 337 *eP* **P 01 05 32.2 -4.3**
GTA pP pP 01 06 24.4 -6.7
GTA PcP PcP 01 06 35.2 -10
GTA sP sP 01 06 53.2 -5.8
GTA S **S 01 12 32.0 -7.3**
GTA pmax pmax
comp=Z,5.0nm,0.8s
GTA pmax pmax
comp=Z,99nm,6.9s
GTA LR LR
comp=N,160nm,14.7s
GTA LR LR
comp=E,130nm,17.1s
GTA LR LR
comp=Z,140nm,19.5s
USRK Ussuriysk Ar. 52.37 8 P **P 01 05 39.1 -0.9**
comp=Z,5.3nm,0.4s,baz=188,slow=5.3,SNR=5.0
PYZ Puysegur Point 53.20 144 *eP* **P 01 05 46.7 +0.6**
comp=Z,238nm,1.3s
WHZ Wether Hill Ro 53.82 143 *eP* **P 01 05 50.7 +0.2**
comp=Z,38nm,0.9s
FOZ Fox Glacier 53.84 139 *eP* **P 01 05 50.7 0.0**
comp=Z,253nm,1.6s
MSVF Nonsavu 54.00 106 *eP* **P 01 05 52.5 +0.1**
MSVF pmax pmax
comp=Z,15nm,0.8s
MSVF Nonsavu 54.00 106 *eP* **P 01 05 52.5 +0.1**
comp=Z,15nm,0.8s
ASAJ Asahikawa 54.55 17 *eP* **P 01 05 56.1 +0.4**
comp=Z,25nm,0.8s
RPZ Rata Peaks 54.72 139 *eP* **P 01 05 57.1 0.0**
comp=Z,144nm,0.7s
ODZ Otahua Downs 55.06 141 *eP* **P 01 05 58.7 -0.7**
THZ Tophouse 55.14 136 *eP* **P 01 06 00.5 +0.3**
comp=Z,56nm,0.8s
FUNA Funafuti 55.16 95 *eP* **P 01 06 00.7 0.0**
comp=Z,64nm,1.2s
KHZ Kahutara 55.83 137 *eP* **P 01 06 05.4 +0.4**
comp=Z,226nm,1.7s
HABR Khabarovsk 57.00 9 *eP* **P 01 06 10.5 -2.5**
HABR *e* 01 07 02.6
HABR *e*S **S 01 13 44.8 -2.3**
HABR *e* 01 15 33.7
HABR *e*SS **SS 01 17 38.3 -1.9**
HABR pmax pmax
comp=Z,18nm,0.9s
HABR MLR MLR
comp=Z,107nm,21.0s
YSS Yuzh-Sakhalins 57.20 16 *eP* **P 01 06 14.7 +0.3**
YSS pmax pmax
comp=Z,51nm,1.2s
YSS Yuzh-Sakhalins 57.20 16 *eP* **P 01 06 14.7 +0.3**
comp=Z,51nm,1.2s
KLR Kul'dur 57.30 6 P **P 01 06 13.9 -1.1**
comp=Z,2.6nm,0.9s,baz=219,slow=3.7,SNR=3.9
KLR Kul'dur 57.30 6 P **P 01 06 14.0 -1.1**
ULN Ulaanbaatar 57.32 347 *eP* **P 01 06 15.3 -0.2**
ULN pmax pmax
comp=Z,20nm,1.8s
ULN Ulaanbaatar 57.32 347 *eP* **P 01 06 15.3 -0.2**
comp=Z,20nm,1.8s
SONM Songino Array 57.45 346 P **P 01 06 15.8 -0.5**
comp=Z,1.3nm,0.5s,baz=156,slow=7.0,SNR=4.7
SONA1 Songino Array 57.45 346 *eP* **P 01 06 15.9 -0.5**
CASY Casey 59.03 186 *eP* **P 01 06 26.2 -0.5**
comp=Z,17nm,0.9s
WMQ Urumqi 60.75 331 P **P 01 06 41.2 +2.3**
WMQ pP pP 01 07 36.5 +1.1
WMQ sP sP 01 08 03.6 +0.8
WMQ S **S 01 14 36.1 +0.5**
WMQ pmax pmax
comp=Z,4.0nm,0.8s
WMQ pmax pmax
comp=Z,49nm,4.0s
WMQ LR LR
comp=Z,32nm,14.4s
WMQ LR LR
comp=Z,16nm,14.4s
WMQ LR LR
comp=Z,4.0nm,17.2s
KSH Kashi 64.39 321 *eP* **P 01 07 05.6 +2.5**
KSH *ep*P pP 01 08 04.6 +4.4
KSH PcS 01 11 38.9
KSH S **S 01 15 23.1 +2.0**
KSH ScS **SKSac 01 16 30.9 -1.5**
KSH sS sS 01 17 04.4 +2.8
KSH SS **SS 01 19 40.4 +3.9**
KSH pmax pmax
comp=Z,190nm,5.8s
KSH LR LR
comp=Z,71nm,6.4s
KSH LR LR
comp=Z,320nm,10.0s
KSH LR LR
comp=Z,350nm,7.0s
MK01 Makanchi Array 65.51 330 *eP* **P 01 07 09.6 -0.4**
MKAR Makanchi Array 65.53 330 P **P 01 07 09.7 -0.5**
comp=Z,6.6nm,0.6s,baz=135,slow=6.2,SNR=25
BOD Bodaibo 65.88 354 *eP* **P 01 07 11.1 -1.0**
BOD pmax pmax
comp=Z,4.0nm,1.6s
AAK Ala-Archa 67.12 323 P **P 01 07 21.0 +0.5**
comp=Z,1.7nm,0.5s,baz=111,slow=6.3,SNR=3.8
AAK Ala-Archa 67.12 323 P **P 01 07 21.0 +0.5**
PEA0 Petropavlovsk- 67.33 22 *eP* **P 01 07 22.1 +0.8**
PETK Petropavlovsk- 67.33 22 P **P 01 07 22.1 +0.7**
comp=Z,15nm,0.7s,baz=198,slow=6.8,SNR=15

ZALV Zalesovo Beam 69.61 337 P **P 01 07 34.0 -1.4**
comp=Z,3.3nm,0.5s,baz=134,slow=5.3,SNR=8.7
ZALV Zalesovo Beam 69.61 337 P **P 01 07 34.0 -1.4**
YAK Yakutsk 69.83 3 P **P 01 07 37.0 +0.5**
comp=Z,3.4nm,0.3s,baz=26,slow=7.5,SNR=2.4
KURBB Kurchatov Arra 69.97 331 P **P 01 07 37.0 -0.6**
comp=Z,2.4nm,0.8s,baz=144,slow=5.5,SNR=6.4
KURK Kurchatov 69.99 332 *eP* **P 01 07 36.6 -1.1**
KURK Kurchatov 69.99 332 *eP* **P 01 07 36.6 -1.1**
WSAR Wadi Sarin 70.43 298 P **P 01 07 42.1 +1.1**
comp=Z,12nm,0.7s,baz=206,slow=5.2,SNR=7.8
MA2 Magadan 70.66 14 P **P 01 07 42.4 +0.8**
comp=Z,14nm,0.7s,baz=203,slow=4.5,SNR=15
MAW Mawson 71.83 201 P **P 01 07 49.8 +1.3**
comp=Z,5.0nm,0.7s,baz=44,slow=8.1,SNR=4.9
MAW Mawson 71.83 201 *eP* **P 01 07 50.0 +1.4**
MAW Mawson 71.83 201 *eP* **P 01 07 50.0 +1.4**
VNDA Vanda 72.47 172 P **P 01 07 52.9 +0.7**
comp=Z,3.3nm,0.7s,baz=315,slow=6.8,SNR=26
VNDA Vanda 72.47 172 *eP* **P 01 07 52.8 +0.6**
VNDA Vanda 72.47 172 *eP* **P 01 07 52.8 +0.6**
SBA Scott Base 73.43 171 *eP* **P 01 07 59.7 +1.9**
SBA Scott Base 73.43 171 *eP* **P 01 07 59.7 +1.9**
SEY Seymchan 73.97 13 P **P 01 08 01.5 +0.4**
comp=Z,19nm,0.6s,baz=212,slow=4.5,SNR=74
OPO Ambohidratompo 74.55 253 P **P 01 08 05.9 +0.3**
comp=Z,8.2nm,0.7s,baz=60,slow=3.1,SNR=13
ABKAR Akbulak array 79.20 323 *eP* **P 01 08 31.9 +1.3**
TIXI Tiksi 79.41 2 P **P 01 08 30.5 -0.7**
comp=Z,6.4nm,0.5s,baz=150,slow=4.8,SNR=12
TIXI Tiksi 79.41 2 *eP* **P 01 08 30.5 -0.7**
TIXI pmax pmax
comp=Z,13nm,1.2s
TIXI Tiksi 79.41 2 *eP* **P 01 08 29.9 -1.3**
SYO Syowa Base 80.52 201⇑*eP* **P 01 08 34.8 -2.5**
SYO Syowa Base 80.52 201‖*e*PcP **PcP 01 08 44.6 +1.2**
NRIK Noril'sk 80.90 348 P **P 01 08 40.7 +1.5**
comp=Z,2.3nm,0.5s,baz=136,slow=6.2,SNR=5.0
QSPA South Pole Qui 82.14 180 *eP* **P 01 08 46.0 -0.1**
comp=Z,104nm,0.8s
SVE Sverdlovsk 82.19 330 *eP* **P 01 08 46.8 +0.6**
SVE pmax pmax
comp=Z,17nm,1.3s
ARU Arti 83.05 330*d* *i*P **P 01 08 50.8 +0.2**
ARU *PP **pP 01 09 49.9 -0.9**
ARU 01 12 02.6
ARU S **S 01 18 47.9 -0.4**
ARU SS **SS 01 24 21.7 +3.2**
ARU pmax pmax
comp=Z,7.0nm,1.0s
KMBO Kilima Mbogo 86.06 269 P **P 01 09 07.0 0.0**
comp=Z,2.6nm,0.8s,baz=92,slow=3.3,SNR=9.0
KMBO Kilima Mbogo 86.06 269 *eP* **P 01 09 07.1 +0.1**
KMBO Kilima Mbogo 86.06 269 *eP* **P 01 09 07.1 +0.1**
GNI Garni 86.45 311 P **P 01 09 10.2 +2.0**
comp=Z,9.9nm,0.8s,baz=135,slow=2.5,SNR=5.7
ZEI Tsey 87.66 314 *eP* **P 01 09 14.6 +0.6**
ZEI pmax pmax
comp=Z,12nm,0.6s
KBZ Khabaz 88.58 314 P **P 01 09 18.6 +0.7**
comp=Z,7.5nm,0.8s,baz=100,slow=4.0,SNR=6.6
KIV Kislovodsk 88.78 315 *eP* **P 01 09 19.9 +0.9**
KIV pmax pmax
comp=Z,6.0nm,1.0s
MATP Matopo 91.88 249 P **P 01 09 33.9 -0.2**
comp=Z,7.3nm,0.8s,baz=117,slow=5.6,SNR=9.3
LSZ Lusaka 92.97 254 *eP* **P 01 09 38.5 -0.7**
LSZ Lusaka 92.97 254 *eP* **P 01 09 38.5 -0.7**
SNAA Sanae 93.26 195 P **P 01 09 40.0 +0.7**
SNAA Sanae 93.26 195⇑*i*P **P 01 09 39.1 -0.2**
SNAA pmax pmax
comp=Z,310nm,0.9s
SNAA Sanae 93.26 195 *eP* **P 01 09 40.2 +0.9**
BOSA Boshof 93.40 241 P **P 01 09 40.7 -0.2**
comp=Z,5.5nm,0.8s,baz=111,slow=3.9,SNR=6.9
LBTB Lobatse 93.75 244 P **P 01 09 42.4 -0.2**
comp=Z,3.2nm,0.8s,baz=164,slow=3.1,SNR=4.5
OBN Obninsk 94.57 325 *eP* **P 01 09 44.9 -0.5**
OBN pmax pmax
comp=Z,20nm,1.8s
BRTR Keskin Array B 94.79 309 P **P 01 09 46.0 -1.0**
comp=Z,2.5nm,0.9s,baz=138,slow=4.6,SNR=4.8
VNA2 Neumayer--Watz 94.87 194 P **P 01 09 46.0 -0.6**
baz=111,slow=3.4
VNA3 Neumayer Olymp 95.21 194 P **P 01 09 48.7 +0.6**
VNA1 Neumayer--Stat 95.27 194 P P 01 09 57.5 +9.1
ILAR Eielson Array 96.90 26 P **P 01 09 53.0 -2.8**
comp=Z,1.0nm,0.9s,baz=293,slow=4.3,SNR=6.3
ILAR PKKPbc **PKKPbc 01 26 36.0 -3.4**
comp=Z,0.7nm,0.8s,baz=59,slow=1.9,SNR=7.8
AKASG Malin Array Be 98.67 320 P Pdif 01 10 03.2 -0.8
comp=Z,1.6nm,0.6s,baz=75,slow=4.5,SNR=6.3
KIEV Kiev 98.68 320 *eP* Pdif 01 10 02.7 -1.4
KIEV pmax pmax
comp=Z,2.0nm,0.8s
ARCES ARCESS Array B 100.07 339 P **Pdif 01 10 08.5 -1.4**
comp=Z,2.9nm,0.9s,baz=76,slow=5.1,SNR=4.3
INK Inuvik 102.06 22 PKiKP **PKiKP 01 14 39.8 +0.1**
comp=Z,0.5nm,0.7s,baz=343,slow=1.7,SNR=2.5
YKA Yellowknife Ar 111.32 25 PKiKP **PKiKP 01 14 55.9 -1.1**
comp=Z,1.2nm,0.7s,baz=308,slow=2.0,SNR=26
YKA SKiKP **SKiKP 01 18 07.3 -1.1**
comp=Z,0.4nm,0.8s,baz=300,slow=1.9,SNR=5.1
YKA PKKPbc **PKKPbc 01 25 51.5 -4.5**
comp=Z,0.6nm,0.9s,baz=106,slow=2.7,SNR=8.4
NVAR Mina Array Bea 116.90 51 PKP **PKPdf 01 15 09.4 +0.5**
comp=Z,0.4nm,0.4s,baz=236,slow=1.6,SNR=3.7
HLID Hailey 118.45 44 P **PKPdf 01 15 12.2 +0.6**
baz=288
BOZ Bozeman (W) 119.65 41 P **PKPdf 01 15 13.6 -0.3**
baz=291
EGMT Eagleton 119.94 38 P **PKPdf 01 15 14.0 -0.2**
baz=294
EGMT Eagleton 119.94 38 *e*PKPdf **PKPdf 01 15 13.5 -0.7**
DUG Dugway, Tooele 120.59 48 P **PKPdf 01 15 15.9 +0.1**
baz=287
REDW Red Top Meadow 120.97 44 *e*PKPdf **PKPdf 01 15 16.6 0.0**
SNOW Snow King Moun 121.00 44‖*e*PKP **PKPdf 01 15 16.8 +0.2**
HWUT Hardware Ranch 121.06 46 *e*PKPdf **PKPdf 01 15 16.4 -0.3**
BW06 Boulder Array 122.07 44 P **PKPdf 01 15 18.3 -0.4**
baz=291
PDAR Pinedale Array 122.07 44 PKP **PKPdf 01 15 18.4 -0.3**
comp=Z,0.8nm,0.7s,baz=268,slow=1.0,SNR=12
PDAR PKKPbc **PKKPab 01 25 16.6 -0.6**
comp=Z,0.7nm,0.7s,baz=119,slow=5.2,SNR=6.8
TORD Torodi Ar. Bea 122.57 281 PKP **PKPdf 01 15 18.7 -1.4**
comp=Z,2.5nm,0.7s,baz=72,slow=2.1,SNR=32
LAO LASA Array 122.68 39 P **PKPdf 01 15 20.0 +0.5**
baz=296
A25A Svangstu Ranch 123.45 35 P **PKPdf 01 15 21.3 +0.4**
baz=301
O20A White River Ci 123.92 46 P **PKPdf 01 15 22.6 +0.3**
baz=291
O20A White River Ci 123.92 46 *e*PKPdf **PKPdf 01 15 22.5 +0.2**
K22A Casper 124.18 43 P **PKPdf 01 15 22.1 -0.5**
baz=294
E26A Carlson Angus 125.07 37 P **PKPdf 01 15 24.1 0.0**
baz=300
RSSD Black Hills 125.20 40 P **PKPdf 01 15 23.9 -0.8**
baz=297
RSSD Black Hills 125.20 40 *e*PKIKP **PKPdf 01 15 23.6 -1.0**
RSSD Black Hills 125.20 40 *e*PKPdf **PKPdf 01 15 23.6 -1.0**
I25A Rochford 125.44 40 P **PKPdf 01 15 24.7 -0.4**
baz=297
A29A Manning Farm, 125.62 33 P **PKPdf 01 15 24.8 -0.2**
baz=304
E27A Carson 125.63 37 P **PKPdf 01 15 25.2 +0.1**
baz=301
S22A 4UR Ranch, Cre 125.78 49 P **PKPdf 01 15 26.9 +0.9**
baz=290
G27A Dupree 125.93 38 P **PKPdf 01 15 25.6 -0.2**
baz=300
I26A New Underwood 125.99 40 P **PKPdf 01 15 25.2 -0.7**
baz=298
A30A Hoffart Farm, 126.12 33 P **PKPdf 01 15 25.2 -0.8**
baz=305
H27A Howes 126.20 39 P **PKPdf 01 15 25.7 -0.6**
baz=299
B30A Myrvik Farm, E 126.38 33 P **PKPdf 01 15 25.8 -0.7**
baz=305
ULM Lac du Bonnet 126.59 30 PKP **PKPdf 01 15 25.4 -1.3**
comp=Z,2.9nm,0.6s,baz=338,slow=3.4,SNR=8.5
ANMO Albuquerque 126.99 52 P **PKPdf 01 15 28.6 +0.3**
baz=289
I28A Midland 127.08 39 P **PKPdf 01 15 27.4 -0.6**
baz=299

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
C31A	Landman Farms,	127.09	34	P	PKPdf	01 15 27.0	-0.9
	baz=305						
E30A	Jud	127.15	36	P	PKPdf	01 15 27.8	-0.2
	baz=303						
B32A	Ashes, Strandq	127.38	33	P	PKPdf	01 15 27.5	-0.9
	baz=307						
D33A	AnnSam, Waubun	128.51	34	P	PKPdf	01 15 30.2	-0.4
	baz=307						
DBIC	Dimbokro	128.71	272	PKP	PKPdf	01 15 30.7	-1.2
	comp=Z,3.2nm,0.8s,baz=130,slow=4.7,SNR=6.2						
DBIC				SKPbc	SKPbc	01 18 26.7	
	comp=Z,2.8nm,0.9s,baz=68,slow=3.7,SNR=2.9						
B35A	Bob, Littlefor	128.88	31	P	PKPdf	01 15 30.7	-0.5
	baz=310						
F33A	5 Mile Ranch,	129.02	35	P	PKPdf	01 15 31.2	-0.4
	baz=306						
D35A	Remer	129.51	33	P	PKPdf	01 15 31.2	-1.3
	baz=309						
PLCA	Paso Flores	129.98	166	PKP	PKPdf	01 15 34.6	+0.9
	comp=Z,2.5nm,0.8s,baz=211,slow=5.6,SNR=7.5						
PLCA				SKPbc	SKPab	01 18 31.5	-0.9
	comp=Z,4.9nm,1.0s,baz=167,slow=2.9,SNR=4.0						
H34A	Spellman Lake,	130.00	36	P	PKPdf	01 15 33.2	-0.3
	baz=305						
ECSD	EROS Data Cent	130.03	38	P	PKPdf	01 15 32.5	-1.1
	baz=304						
ECSD	EROS Data Cent	130.03	38	*e*PKPdf	PKPdf	01 15 32.5	-1.1
E36A	McGregor	130.29	33	P	PKPdf	01 15 33.6	-0.4
	baz=309						
H35A	Sunnyside Ranc	130.53	36	P	PKPdf	01 15 34.2	-0.3
	baz=306						
F36A	Milaca	130.56	34	P	PKPdf	01 15 33.8	-0.7
	baz=308						
TXAR	Lajitas Array	130.92	58	PKP	PKPdf	01 15 36.2	+0.4
	comp=Z,0.6nm,0.9s,baz=331,slow=1.6,SNR=4.9						
TXAR				SKPbc	SKPbc	01 18 35.4	-0.9
	comp=Z,2.2nm,0.9s,baz=262,slow=3.8,SNR=14						
K34A	Le Mars	130.92	38	P	PKPdf	01 15 34.8	-0.5
	baz=304						
O33A	Hebron	131.34	42	P	PKPdf	01 15 36.0	-0.2
	baz=300						
H37A	Dierke Farm, C	131.69	35	P	PKPdf	01 15 36.2	-0.5
	baz=308						
I37A	Lemond, Waseca	131.76	35	P	PKPdf	01 15 36.3	-0.6
	baz=307						
P34A	Walnut Farm, R	132.11	42	P	PKPdf	01 15 37.2	-0.5
	baz=300						
I38A	Scanlan Farm,	132.35	35	P	PKPdf	01 15 37.2	-0.8
	baz=308						
SCHQ	Schefferville	132.42	8	PKP	PKPdf	01 15 38.2	+0.5
	comp=Z,1.9nm,0.3s,baz=28,slow=3.3,SNR=11						
SCHQ				SKPbc	SKPbc	01 18 40.2	-0.6
	comp=Z,5.0nm,0.9s,baz=27,slow=6.7,SNR=4.0						
KSU1	Kansas State U	132.48	43	P	PKPdf	01 15 38.4	+0.1
	baz=300						
M37A	Trindle Farm,	132.90	39	P	PKPdf	01 15 38.9	-0.1
	baz=305						
Q35A	Mercer Eighty,	132.99	43	P	PKPdf	01 15 39.4	0.0
	baz=301						
L38A	Oak Wood Farm,	133.14	37	P	PKPdf	01 15 39.4	-0.1
	baz=306						
R36A	Gordon, Harris	133.62	43	P	PKPdf	01 15 40.7	+0.2
	baz=301						
U35A	Pawnee	133.72	46	P	PKPdf	01 15 40.7	0.0
	baz=298						
JCT	Junction City	133.76	55	P	PKPdf	01 15 41.6	+0.5
	baz=290						
JCT	Junction City	133.76	55	*e*PKIKP	PKPdf	01 15 41.5	+0.5
JCT	Junction City	133.76	55	*e*PKPdf	PKPdf	01 15 41.5	+0.5
Y34A	Reagan Ranch,	134.04	50	P	PKPdf	01 15 42.1	+0.7
	baz=295						
S37A	Fort Scott	134.37	43	P	PKPdf	01 15 41.7	-0.2
	baz=301						
V36A	Jenks	134.56	46	P	PKPdf	01 15 42.9	+0.5
	baz=298						
R38A	Fenwick Farm,	134.77	42	P	PKPdf	01 15 42.5	-0.2
	baz=302						
P39A	Salisbury	134.80	40	P	PKPdf	01 15 42.8	+0.2
	baz=305						
Q39A	Willow Grove F	134.91	41	P	PKPdf	01 15 43.4	+0.5
	baz=304						
534A	Blanco	134.99	55	P	PKPdf	01 15 43.0	-0.4
	baz=291						
O40A	La Belle	134.99	39	P	PKPdf	01 15 43.3	+0.3
	baz=306						
V37A	Hulbert	135.09	46	P	PKPdf	01 15 42.7	-0.6
	baz=299						
R39A	Chumby, Stover	135.27	42	P	PKPdf	01 15 42.9	-0.7
	baz=303						
S39A	Bolivar	135.42	43	P	PKPdf	01 15 43.2	-0.7
	baz=302						
V38A	Canehill	135.61	45	P	PKPdf	01 15 44.3	0.0
	baz=300						
R40A	Maddies Statio	135.79	41	P	PKPdf	01 15 45.0	+0.4
	baz=304						
U39A	Green Forest	136.00	44	P	PKPdf	01 15 45.3	+0.3
	baz=301						
S40A	Lebanon	136.02	42	P	PKPdf	01 15 44.8	-0.2
	baz=303						
V39A	Pettigrew	136.16	45	P	PKPdf	01 15 45.9	+0.5
	baz=301						
T40A	Mansfield	136.25	43	P	PKPdf	01 15 45.1	-0.4
	baz=303						
W39A	Magazine	136.38	46	P	PKPdf	01 15 46.2	+0.4
	baz=300						
U40A	Yellville	136.44	44	P	PKPdf	01 15 45.4	-0.4
	baz=302						
V40A	Witts Springs	136.75	45	P	PKPdf	01 15 47.0	+0.5
	baz=301						
MIAR	Mount Ida	136.85	47	*e*PKIKP	PKPdf	01 15 47.1	+0.5
MIAR	Mount Ida	136.85	47	*e*PKPdf	PKPdf	01 15 47.1	+0.5
GOGA	Godfrey	144.43	41	*e*PKIKP	PKPab	01 15 58.7	-0.5
GOGA	Godfrey	144.43	41	*e*PKPab	PKPab	01 15 58.7	-0.5
AHML	Horco Molle	144.55	166	*e*P	PKPdf	01 16 00.6	-0.3
KMSC	Kings Mountain	144.59	36	*e*PKPbc	PKPab	01 15 59.0	-0.7
FSA	Cafayete	145.03	165	*e*P	PKPab	01 16 02.0	+0.1
TIGA	Tifton	145.57	43	*e*PKPdf	PKPdf	01 16 02.6	+0.3
CPUP	Villa Florida	146.03	179	*e*P	PKPdf	01 16 03.1	-0.1
CPUP	Villa Florida	146.03	179	PKPbc	PKPdf	01 16 03.6	+0.3
	comp=Z,30nm,0.8s,baz=172,slow=2.1,SNR=39						
SLA	San Lorenzo	146.48	165	*e*P	PKPbc	01 16 06.5	+0.4
AZAP	Zapla	147.07	166	*e*P	PKPbc	01 16 07.4	-0.4
ASTB	Santa Barbara	147.48	167	*e*P	PKPbc	01 16 09.1	+0.2
ALOL	LOMAS DE OLMED	147.72	167	*e*P	PKPbc	01 16 09.7	+0.4
HJA	Humahuaca	147.95	165	*e*P	PKPdf	01 16 08.6	+1.6
YJA	Yavi	148.91	164	*e*P	PKPdf	01 16 10.1	+1.4
NNA	Nana	151.82	134	*i* PKIKP	PKPbc	01 16 20.4	+0.9
LPAZ	La Paz	153.44	155	PKPbc	PKPbc	01 16 22.4	-1.4
	comp=Z,4.6nm,0.7s,baz=291,slow=0.7,SNR=5.2						
LPAZ				PKPab	PKPab	01 16 36.9	+0.1
	comp=Z,12nm,0.8s,baz=192,slow=3.8,SNR=12						
BDFB	Brasilia	155.18	200	PKP	PKPdf	01 16 16.5	-1.3
	comp=Z,1.4nm,0.6s,baz=66,slow=7.7,SNR=3.5						
BDFB				PKPbc	PKPbc	01 16 26.9	
	comp=Z,2.7nm,0.7s,baz=157,slow=6.0,SNR=3.5						
BDFB				PKPab	PKPab	01 16 44.1	+0.5
	comp=Z,7.7nm,0.8s,baz=166,slow=4.6,SNR=8.4						
SAML	Samuel	162.07	158	*e*PKPdf	PKPdf	01 16 25.7	-0.1

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*IDC **08** 01:12:04.1±1.2, 36.°63N×140.°56E, h0km, mb3.4/6, mb1 3.6/6, mb1mx3.3/52, mbtmp3.4/6, Error ellipse: s-maj=29.3km s-min=22.6km az=13.0*
*ISCJB **08** 01:12:05.3±0.7, 36.°67N±0.°04×140.°64E±0.°06, h18km±4km, mb3.4/6, Error ellipse: s-maj=9.3km s-min=5.6km az=26.4*
*JMA **08** 01:12:06.2, 36.°71N×140.°55E, h12km±1km, M3.7 Broadband fault plane solution: P waves. NP1: φs329.00000°, δ49.00000°, λ-98.00000°. NP2: φs161.00000°, δ42.00000°, λ-81.00000°. Principal axes: T Plg4.0000°, Azm65.0000°; N Plg6.0000°, Azm335.0000°; P Plg83.0000°, Azm186.0000°;*
JMA Felt II J1.
ISC 08 01:12:05.7±1.0**, 36.°71N**±0.°04×**140.°61E**±0.°06**, h12**km±6km**, n19,** σ**0.s73**/20**, mb3.5**/6**, 3C-1D, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
JHO	Hitachi	0.10	199	⇓P	Pg	01 12 08.9	+0.3
JHO				S	Sg	01 12 10.8	+0.1
ONAJ	Iwakimizuishiy	0.42	21	⇑P	Pb	01 12 14.8	-0.4
ONAJ				S	Sb	01 12 21.0	-0.5
JYT	Yasato	0.59	215	⇑P	Pg	01 12 16.7	-0.5
JYT				S	Sg	01 12 24.3	-0.6
JSB	Shiboa	0.61	295	⇑P	Pg	01 12 17.7	0.0
JSB				S	Sg	01 12 25.5	-0.2
JFT	Otama	0.84	345	P	Pg	01 12 21.8	-0.1
JFT				S	Sg	01 12 32.7	-0.2
MJAR	Matsushiro Arr	1.94	266	Pn	Pn	01 12 38.6	0.0
	17nm,0.3s,baz=81,slow=11,SNR=35						
MJAR				Sn	Sn	01 13 03.4	+0.5
	29nm,0.3s,baz=60,slow=23,SNR=22						
MAT	Matsushiro	1.94	266	P	Pn	01 12 39.1	+0.5
MAT				S	Sn	01 13 03.3	+0.4
SONM	Songino Array	27.44	305	P	P	01 17 51.3	-0.2
	0.2nm,0.6s,baz=98,slow=11,SNR=1.8						
H11N2	WAKE ISLAND Hy	28.54	119	T	T	01 47 51.0	
	baz=312,slow=75,SNR=24						
H11N1	WAKE ISLAND Hy	28.55	119	T	T	01 47 50.2	
	baz=312,slow=75,SNR=24						
H11N3	WAKE ISLAND Hy	28.56	119	T	T	01 47 50.9	
	baz=312,slow=75,SNR=28						
H11S1	WAKE ISLAND Hy	29.23	121	T	T	01 48 39.3	
	baz=314,slow=75,SNR=87						
H11S3	WAKE ISLAND Hy	29.23	121	T	T	01 48 39.3	
	baz=314,slow=75,SNR=67						
H11S2	WAKE ISLAND Hy	29.25	121	T	T	01 48 40.6	
	baz=314,slow=75,SNR=61						
ZALV	Zalesovo Beam	41.66	313	P	P	01 19 53.1	-0.7
	0.3nm,0.2s,baz=91,slow=12,SNR=2.4						
MKAR	Makanchi Array	43.75	302	P	P	01 20 12.2	+1.3
	0.1nm,0.4s,baz=101,slow=7.8,SNR=2.0						
KURBB	Kurchatov Arra	45.69	308	P	P	01 20 25.5	-0.9
	0.6nm,0.6s,baz=83,slow=7.9,SNR=7.1						
WRA	Warramunga Arr	56.66	187	P	P	01 21 47.9	-1.0
	0.4nm,0.3s,baz=3.1,slow=7.1,SNR=3.4						
PDAR	Pinedale Array	78.35	45	P	P	01 24 07.9	+1.6
	0.2nm,0.5s,baz=251,slow=2.8,SNR=3.2						

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*ISCJB **08** 01:18:52.7±1.1, 13.°7N±0.°1×144.°9E±0.°4, h144km, mb3.3/5, Error ellipse: s-maj=52.7km s-min=19.2km az=179.4*
*IDC **08** 01:18:53.8±0.7, 13.°76N×144.°85E, h130km±5km, mb3.0/5, mb1 3.2/5, mb1mx3.0/48, mbtmp3.4/5, Error ellipse: s-maj=45.4km s-min=22.0km az=89.0*
ISC 08 01:18:54.3±1.0**, 13.°7N**±0.°2×**144.°9E**±0.°3**, h144**km**, n7,** σ**1.s53**/8**, mb3.4**/5**, Mariana Islands**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
GUMO	Guam	0.14	206	P	Pn	01 19 12.7	-1.1
	125nm,0.3s,baz=268,slow=3.7,SNR=44						
GUMO				S	Sn	01 19 26.2	-2.3
	375nm,0.3s,baz=137,slow=22,SNR=103						
WRA	Warramunga Arr	35.03	198	P	P	01 25 33.7	+0.3
	0.9nm,0.6s,baz=20,slow=9.2,SNR=3.4						
ASAR	Alice Springs	38.69	196	P	P	01 26 05.2	+1.0
	0.3nm,0.5s,baz=19,slow=13,SNR=5.2						
SONM	Songino Array	46.66	325	P	P	01 27 09.3	+0.8
	0.5nm,0.6s,baz=142,slow=7.3,SNR=3.5						
KURBB	Kurchatov Arra	64.57	320	P	P	01 29 15.8	-0.2
	0.3nm,0.5s,baz=104,slow=7.3,SNR=4.0						
YKA	Yellowknife Ar	82.72	27	P	P	01 31 01.5	-0.3
	0.1nm,0.4s,baz=286,slow=5.2,SNR=3.6						
LPAZ	La Paz	147.98	99	PKPbc	PKPbc	01 38 26.3	+1.8
	0.7nm,0.5s,baz=315,slow=5.7,SNR=3.0						

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*JMA **08** 01:19:27.4±0.3, 34.°88N×141.°22E, h43km±4km, M2.7*
*ISCJB **08** 01:19:28.7±1.3, 34.°77N±0.°07×141.°2E±0.°1, h35km, mb3.2/3, Error ellipse: s-maj=15.1km s-min=9.9km az=166.8*
*IDC **08** 01:19:34.7±1.3, 33.°95N×138.°40E, h0km, mb3.2/3, mb1 3.2/4, mb1mx3.1/49, mbtmp3.1/4, ML2.6/1, Error ellipse: s-maj=43.4km s-min=18.2km az=46.0*
ISC 08 01:19:30.5±1.7**, 34.°81N**±0.°10×**141.°1E**±0.°1**, h35**km**, n9,** σ**0.s84**/10**, mb3.3**/3**, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
BSO1	Boso 1	0.17	206	P	Pn	01 19 35.7	-0.8
BSO1				X		01 19 41.9	
BSO3	Boso 3	0.46	269	P	Pn	01 19 39.6	-0.7
BSO3				*e*X		01 19 48.7	
BSO4	Boso 4	0.63	287	P	Pn	01 19 41.9	-0.9
BSO4				*e*X		01 19 52.3	
TATJ	Tateyama 2	0.99	283	P	Pn	01 19 47.4	-0.5
TATJ				*e*S	Sn	01 20 02.0	+1.3
JHJ	Hachijo jima 2	2.00	213	Pn	Pn	01 20 02.0	+0.3
	5.3nm,0.3s,baz=252,slow=20,SNR=4.2						
JHJ				Sn	Sn	01 20 24.7	-0.8
	20nm,0.3s,baz=116,slow=22,SNR=6.6						
MJAR	Matsushiro Arr	2.90	307	Pn	Pn	01 20 16.6	+2.4
	1.1nm,0.3s,baz=147,slow=14,SNR=4.0						
MKAR	Makanchi Array	45.09	304	P	P	01 27 43.0	-0.1
	0.1nm,0.4s,baz=76,slow=6.1,SNR=2.6						
KURBB	Kurchatov Arra	47.17	310	P	P	01 27 59.6	+0.2
	0.2nm,0.5s,baz=84,slow=7.7,SNR=4.3						
WRA	Warramunga Arr	54.83	188	P	P	01 28 57.7	+0.5
	0.1nm,0.3s,baz=3.9,slow=7.4,SNR=2.9						

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*NEIC **08** 01:23:54.0, 36.°16S×73.°58W, h14km, mb3.9/1, ML4.2(GUC), After GUC.*
NEIC Felt [III] at Concepcion, Coronel, Hualpen, Penco, San Pedro de la Paz, Talcahuano and Tome; [II] at Chiguayante and Curanilahue.
*GUC **08** 01:23:54.1±0.6, 36.°16S×73.°58W, h14km±4km, ML4.2*
*IDC **08** 01:23:55.9±1.3, 36.°18S×73.°47W, h0km, mb3.7/5, mb1 4.0/7, mb1mx3.9/22, mbtmp3.8/7, ML4.2/2, MS2.6/1, Ms1 2.6/1, ms1mx2.5/16, Error ellipse: s-maj=32.2km s-min=20.1km az=68.0*
ISC 08 01:23:52.5±3.6**, 36.°12S**±0.°05×**73.°7W**±0.°1**, h1**km±21km**, n28,** σ**1.s43**/28**, mb3.8**/6**, Near coast of central Chile**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
COCH	Cobquecura	0.70	91	*i* P	Pb	01 24 07.0	-0.5
COCH				*i* S	Sb	01 24 16.7	-1.0
COCH				IAML		01 24 17.6	
	comp=N,24μm,0.9s						
CCSP	San Pedro de C	0.84	149	*i* P	Pb	01 24 09.3	-0.6
CCSP				*i* S	Sb	01 24 20.7	-1.2
CCSP				IAML		01 24 25.2	
	comp=N,15μm,0.4s						
CCHI	Chillan	1.36	111	*i* P	Pb	01 24 18.3	-0.5
CCHI				*i* S	Sg	01 24 36.5	+0.3
CCHI				IAML		01 24 41.8	
	comp=E,9μm,0.6s						
TALC	Talca	1.79	67	*i* P	Pb	01 24 25.3	-0.9
TALC				*i* S	Sg	01 24 49.4	-0.8
NICH	Los Niches	2.27	61	*i* P	Pb	01 24 33.5	-0.8
NICH				*e*S	Sb	01 25 01.2	-1.7
ROC1	El Roble	3.82	36	*e*P	Pn	01 24 53.1	+0.4
AAGR	Agrelo	5.00	54	*e*P	Pn	01 25 10.4	+1.5
AAGR				*e*S	Sg	01 26 34.0	+0.8
ARCO	CERRO ARCO	5.09	51	*e*P	Pn	01 25 11.9	+1.8
PLCA	Paso Flores	5.21	153	Pn	Pn	01 25 13.5	+1.8
	comp=E,2.2nm,0.3s,baz=354,slow=12,SNR=103						
PLCA				Lg	Lg	01 26 39.3	
	comp=E,3.4nm,0.3s,baz=96,slow=24,SNR=5.4						
PLCA				LR	LR	01 27 01.7	
	comp=E,63nm,18.6s,baz=151,slow=36						
AUSP	Uspallata	5.26	44	*e*P	Pn	01 25 13.7	+1.2
ASAL	Salagasta	5.32	50	*e*P	Pn	01 25 14.6	+1.4
RTLS	Leoncito	5.63	41	*e*P	Pn	01 25 18.8	+1.1
ACAN	Cantantal	6.59	56	*e*P	Pn	01 25 31.4	+0.8
AMOG	MOGNA	6.73	41	*e*P	Pn	01 25 32.2	-0.4
LCO	Las Campanas	7.52	20	*e*Pn	Pn	01 25 43.3	-0.2
AVFE	Valle Fertil	7.52	45	IAML		01 25 45.2	
	comp=Z,8.7nm,0.4s						
VCA	Vinchina	8.68	34	IAML		01 26 01.2	
	comp=Z,15nm,0.3s						
ACLC	CERRO LA CRUZ	8.74	42	*e*P	Pn	01 25 58.6	-1.6
ACLC				IAML		01 26 19.2	
	comp=Z,16nm,2.0s						
CPUP	Villa Florida	17.02	60	Pn	P	01 27 55.1	+1.4
	comp=Z,0.2nm,0.3s,baz=260,slow=12,SNR=2.5						
LPAZ	La Paz	20.36	15	P	Pn	01 28 35.5	+2.4
	comp=Z,1.9nm,0.8s,baz=185,slow=10.0,SNR=6.7						
SIV	San Ignacio	22.97	32	P	P	01 29 01.9	+3.3
	comp=Z,1.7nm,0.5s,baz=227,slow=8.5,SNR=4.4						
BDFB	Brasilia	30.63	55	P	P	01 30 11.6	+3.1
	comp=Z,1.4nm,0.6s,baz=235,slow=12,SNR=2.5						
SNAA	Sanae	50.14	157	*e*P	P	01 32 47.1	-2.0
TXAR	Lajitas Array	70.97	332	P	P	01 35 14.8	+3.0
	comp=Z,0.2nm,0.6s,baz=146,slow=8.8,SNR=2.8						
MNTX	Cornudas Mount	73.73	332	*e*P	P	01 35 26.4	-1.8
	comp=Z,1.0nm,0.8s						
AMTX	Amarillo	75.32	336	*e*P	P	01 35 36.2	-1.2
NVAR	Mina Array Bea	84.89	326	P	P	01 36 35.3	+6.1
	comp=Z,0.2nm,0.3s,baz=165,slow=3.7,SNR=2.8						
TORD	Torodi Ar. Bea	86.17	71	P	P	01 36 37.3	+1.5
	comp=Z,0.4nm,0.8s,baz=260,slow=2.6,SNR=2.3						

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*ISCJB **08** 01:23:59.9±1.1, 36.°65N±0.°05×140.°77E±0.°07, h12km±4km, mb3.5/5, Error ellipse: s-maj=11.2km s-min=5.7km az=37.4*
*IDC **08** 01:23:59.6±1.8, 36.°86N×140.°66E, h0km, mb3.5/5, mb1 3.6/5, mb1mx3.3/50, mbtmp3.5/5, Error ellipse: s-maj=37.2km s-min=23.8km az=69.0*
*JMA **08** 01:24:01.6, 36.°70N×140.°64E, h6km±1km, M3.1*
JMA Felt II J1.
ISC 08 01:24:00.6±1.3**, 36.°77N**±0.°07×**140.°56E**±0.°05**, h5**km±12km**, n20,** σ**0.s66**/20**, mb3.5**/5**, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
JHO	Hitachi	0.16	178	P	Pg	01 24 03.8	+0.1
JHO				S	Sg	01 24 05.5	-0.4
ONAJ	Iwakimizuishiy	0.38	30	P	Pb	01 24 09.8	0.0
ONAJ				S	Sb	01 24 15.5	-0.6
JSB	Shiboa	0.55	291	P	Pn	01 24 14.8	-0.3
JSB				*e*S	Sn	01 24 24.4	-0.3
JYT	Yasato	0.62	209	P	Pg	01 24 12.8	+0.4
JFK	Kawauchi	0.65	23	P	Pb	01 24 14.6	+0.3
JFK				*e*S	Sb	01 24 23.6	-0.1
JFT	Otama	0.77	346	P	Pn	01 24 17.8	-0.3
JFY	Yanaizu	0.94	313	P	Pn	01 24 21.1	+0.7
MJAR	Matsushiro Arr	1.91	264	Pn	Pb	01 24 35.2	-0.6
	7.1nm,0.3s,baz=84,slow=9.8,SNR=40						
MJAR				Sn	Sb	01 25 00.3	+0.4
	14nm,0.3s,baz=81,slow=28,SNR=14						
MAT	Matsushiro	1.91	264	P	Pb	01 24 35.7	-0.2
MAT				S	Sg	01 25 02.2	+0.3
SONM	Songino Array	27.37	305	P	P	01 29 46.7	-0.1
	0.5nm,0.6s,baz=104,slow=12,SNR=3.1						
H11N2	WAKE ISLAND Hy	28.61	119	T	T	01 59 40.8	
	baz=312,slow=75,SNR=103						
H11N1	WAKE ISLAND Hy	28.61	119	T	T	01 59 41.4	
	baz=312,slow=75,SNR=102						
H11N3	WAKE ISLAND Hy	28.62	119	T	T	01 59 42.2	
	baz=312,slow=75,SNR=91						
H11S1	WAKE ISLAND Hy	29.30	121	T	T	02 00 31.4	
	baz=314,slow=76,SNR=347						
H11S3	WAKE ISLAND Hy	29.30	121	T	T	02 00 30.0	
	baz=314,slow=76,SNR=142						
H11S2	WAKE ISLAND Hy	29.31	121	T	T	02 00 33.5	
	baz=314,slow=76,SNR=162						
ZALV	Zalesovo Beam	41.59	313	P	P	01 31 49.6	+0.5
	0.5nm,0.5s,baz=94,slow=4.0,SNR=3.0						
MKAR	Makanchi Array	43.68	302	P	P	01 32 04.3	-1.9
	0.2nm,0.6s,baz=91,slow=6.2,SNR=2.3						
KURBB	Kurchatov Arra	45.63	308	P	P	01 32 22.1	+0.4
	0.4nm,0.4s,baz=83,slow=7.8,SNR=7.5						
WRA	Warramunga Arr	56.71	187	P	P	01 33 45.9	+0.8
	0.5nm,0.4s,baz=4.7,slow=7.5,SNR=3.2						

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*NIED **08** 01:36:00, 36.°20N×142.°30E, h14km, Mw4.0 Best double couple: M0 1.22000×10^15 NP1: φs184.00000°, δ38.00000°, λ75.00000°. NP2: φs23.00000°, δ54.00000°, λ101.00000°.*
*IDC **08** 01:36:23.2±0.6, 36.°10N×142.°23E, h0km, mb3.9/17, mb1 4.0/20, mb1mx3.9/52, mbtmp3.9/20, ML3.5/2, MS3.6/2, Ms1 3.6/2, ms1mx2.7/53, Error ellipse: s-maj=17.1km s-min=17.0km az=81.0*
*ISCJB **08** 01:36:24.8±0.4, 36.°15N±0.°04×142.°23E±0.°05, h23km, mb4.0/27, MS3.7/2, Error ellipse: s-maj=6.6km s-min=5.0km az=140.5*
*JMA **08** 01:36:24.8±0.2, 36.°16N×142.°29E, h56km, M3.6*
*NEIC **08** 01:36:28.1±3.2, 36.°11N×142.°15E, h33km±22km, mb4.3/8, Error ellipse: s-maj=10.2km s-min=9.3km az=91.0*
ISC 08 01:36:26.8±0.6**, 36.°16N**±0.°05×**142.°19E**±0.°07**, h23**km**, n57,** σ**0.s90**/53**, mb4.1**/27**, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
CHOJ	Chosi	1.17	248	P	Pn	01 36 46.5	-1.3
CHOJ				*e*S	Sn	01 37 02.2	-0.8
JHO	Hitachi	1.38	290	P	Pn	01 36 49.4	-1.3
ONAJ	Iwakimizuishiy	1.46	311	P	Pn	01 36 50.4	-1.5
JFK	Kawauchi	1.60	319	P	Pn	01 36 52.2	-1.6
BSO1	Boso 1	1.79	214	P	Pn	01 36 55.1	-0.8
BSO1				*e*S	Sn	01 37 18.1	+0.4
BSO3	Boso 3	1.92	226	P	Pn	01 36 57.0	-0.9
JFT	Otama	2.01	313	P	Pn	01 36 59.0	-0.4
JMM	Marumori	2.04	327	P	Pn	01 36 58.4	-1.4
JAG	Ashikaga	2.23	278	P	Pn	01 37 01.2	-1.1
JAG				*e*S	Sn	01 37 28.7	-0.4
JRY	Ryogami san	2.67	268	P	Pn	01 37 07.5	-0.9
JOD2	Odawara 2	2.67	251	P	Pn	01 37 07.7	-0.8
JMK	Ichinoseki	2.90	345	P	Pn	01 37 10.3	-1.2
JYN	Shimob	3.03	259	P	Pn	01 37 13.3	-0.2
JYK	Kaneyama	3.12	333	P	Pn	01 37 13.6	-1.0
MJAR	Matsushiro Arr	3.23	278	Pn	Pn	01 37 16.0	-0.2
	6.6nm,0.3s,baz=88,slow=14,SNR=40						
MAJO	Matsushiro	3.24	278	*e*Pn	Pn	01 37 16.3	+0.1
MAT	Matsushiro	3.24	278	P	Pn	01 37 16.5	+0.3
MAT				*e*S	Sn	01 37 56.5	+2.4
USRK	Ussuriysk Ar.	11.19	319	Pn	Pn	01 39 06.0	+0.7
	0.0nm,0.3s,baz=122,slow=14,SNR=3.3						
KSRS	Korea Array	11.51	281	Pn	Pn	01 39 11.1	+1.4
	0.2nm,0.3s,baz=93,slow=13,SNR=6.8						
KSAR	Wonju Array Be	11.54	281	Pn	Pn	01 39 11.2	+1.0
H11N2	WAKE ISLAND Hy	27.17	120	T	T	02 10 31.3	
	baz=312,slow=75,SNR=10						
H11N1	WAKE ISLAND Hy	27.17	120	T	T	02 10 25.5	
	baz=312,slow=75,SNR=11						
H11N3	WAKE ISLAND Hy	27.18	120	T	T	02 10 29.3	
	baz=312,slow=75,SNR=7.3						
H11S1	WAKE ISLAND Hy	27.86	123	T	T	02 11 25.1	
	baz=314,slow=76,SNR=9.9						
H11S3	WAKE ISLAND Hy	27.86	123	T	T	02 11 26.1	
	baz=314,slow=76,SNR=10						
H11S2	WAKE ISLAND Hy	27.88	123	T	T	02 11 29.0	
	baz=314,slow=76,SNR=8.4						
ENH	Enshi	27.90	267	*e*P	P	01 42 14.0	-1.1
	10nm,0.6s						
ULN	Ulaanbaatar	28.37	305	*e*P	P	01 42 19.9	+0.6
	3.7nm,0.6s						
SONM	Songino Array	28.80	305	P	P	01 42 24.0	+0.9
	3.4nm,0.8s,baz=107,slow=8.7,SNR=20						
CMAR	Chiang Mai Arr	41.89	257	P	P	01 44 15.9	+0.3
	0.9nm,0.3s,baz=48,slow=7.5,SNR=4.1						
ZALV	Zalesovo Beam	42.97	313	P	P	01 44 22.8	-1.1
	1.8nm,0.5s,baz=101,slow=7.7,SNR=6.4						
MKAR	Makanchi Array	45.12	303	P	P	01 44 41.4	+0.1
	3.7nm,0.7s,baz=89,slow=9.0,SNR=28						
KURK	Kurchatov	46.97	309	*e*P	P	01 44 55.0	-0.7
	9.7nm,0.9s						
ILAR	Eielson Array	49.91	32	P	P	01 45 17.6	-0.6
	0.4nm,0.7s,baz=254,slow=5.2,SNR=4.7						
TKM2	Tokmak 2	50.60	299	*e*P	P	01 45 23.9	-0.1
	3.1nm,0.6s						
EKS2	Erkin-Say	51.96	299	*e*P	P	01 45 34.1	0.0
	1.2nm,0.6s						
KKAR	Karatay Array	54.11	301	*e*P	P	01 45 49.1	-0.7
	2.5nm,0.9s						
INK	Inuvik	54.89	27	P	P	01 45 55.7	+0.7
	0.9nm,0.7s,baz=321,slow=4.9,SNR=5.2						
WRA	Warramunga Arr	56.28	189	P	P	01 46 04.1	-1.5
	1.0nm,0.8s,baz=7.8,slow=7.4,SNR=4.1						
ARU	Arti	57.43	319	LR	LR	02 15 21.5	
	comp=Z,46nm,18.1s,baz=98,slow=41						
ARU	Arti	57.43	319	*e*P	P	01 46 13.0	-0.4
	4.6nm,0.8s						
ABKAR	Akbulak array	58.98	311	*e*P	P	01 46 23.7	-0.7
	2.3nm,0.7s						
ASAR	Alice Springs	60.01	189	P	P	01 46 31.5	-0.2
	0.1nm,0.3s,baz=278,slow=35,SNR=3.4						
SPITS	Spitsbergen Ar	61.50	349	LR	LR	02 16 45.0	
	comp=Z,54nm,18.4s,baz=315,slow=39						
YKA	Yellowknife Ar	64.25	30	P	P	01 47 00.1	+0.4
	0.3nm,0.7s,baz=298,slow=6.6,SNR=7.1						
STKA	Stephens Creek	67.68	181	P	P	01 47 22.2	+0.2
	0.7nm,0.4s,baz=231,slow=3.9,SNR=2.9						
SUMG	Summit	71.56	0	*e*P	P	01 47 46.4	+0.4
	7.9nm,1.2s						
KBZ	Khabaz	71.95	311	P	P	01 47 49.4	+1.0

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
	2.6nm,0.9s,baz=65,slow=3.2,SNR=4.6						
NOA	**NORSAR Array B**	**75.23**	**338**	P	**P**	**01 48 07.4**	**0.0**
	1.1nm,0.8s,baz=63,slow=12,SNR=2.6						
AKASG	**Malin Array Be**	**75.37**	**323**	P	**P**	**01 48 07.9**	**-0.4**
	1.4nm,0.7s,baz=45,slow=6.2,SNR=4.3						
PDAR	**Pinedale Array**	**77.84**	**46**	P	**P**	**01 48 23.1**	**+0.4**
	0.3nm,0.6s,baz=228,slow=1.8,SNR=4.1						
BRTR	**Keskin Array B**	**79.90**	**312**	P	**P**	**01 48 34.9**	**+0.8**
	1.1nm,1.0s,baz=111,slow=6.8,SNR=5.1						
RAYN	**Ar Rayn**	**81.57**	**293**	*e*P	**P**	**01 48 42.8**	**-0.3**
	1.4nm,0.8s						
GERES	**GERESS Array B**	**83.78**	**329**	P	**P**	**01 48 54.1**	**-0.2**
	0.2nm,0.3s,baz=11,slow=14,SNR=2.4						
TXAR	**Lajitas Array**	**90.16**	**53**	P	**P**	**01 49 26.4**	**+0.8**
	0.2nm,0.5s,baz=151,slow=36,SNR=2.8						
TORD	**Torodi Ar. Bea**	**118.39**	**315**	PKP	**PKPdf**	**01 55 13.9**	**+0.9**
	43nm,0.5s,baz=189,slow=8.7,SNR=2.8						
LPAZ	**La Paz**	**146.58**	**62**	PKPbc	**PKPbc**	**01 56 07.3**	**-0.3**
	0.5nm,0.6s,baz=299,slow=6.4,SNR=2.7						

SJA 08 01:41:33.4±0.9**, 26°.97S**×**66°.96W, h18**km±11km**, ML3.1, MW3.5, Catamarca Province**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
FSA	**Cafayete**	**1.22**	**46**	*e*P	Pg	01 41 56.8	-0.3
FSA				*e*S	Sg	01 42 14.2	+1.0
FSA				IAML		01 42 14.8	
	comp=Z,162nm,0.2s						
AHML	**Horco Molle**	**1.46**	**83**	*e*P	Pg	01 42 01.5	-0.1
AHML				IAML		01 42 28.6	
	comp=Z,124nm,0.3s						
CYA	**Choya**	**1.79**	**145**	*e*P	Pb	01 42 05.5	-0.1
CYA				IAML		01 42 28.9	
	comp=Z,346nm,0.6s						
VCA	**Vinchina**	**2.08**	**212**	*e*P	Pb	01 42 10.1	-0.6
VCA				IAML		01 42 43.1	
	comp=Z,366nm,0.6s						
ACLC	**CERRO LA CRUZ**	**2.45**	**180**	IAML		01 42 50.3	
	comp=Z,99nm,0.7s						
SLA	**San Lorenzo**	**2.59**	**31**	*e*P	Pb	01 42 17.6	-1.8
SLA				IAML		01 43 02.2	
	comp=Z,93nm,0.8s						

*ISCJB **08** 01:43:14.8±0.3, 45°.82N±0°.02×10°.04E±0°.03, h26km±5km, Error ellipse: s-maj=4.6km s-min=3.2km az=139.8*
*GEN **08** 01:43:14.6, 45°.80N×9°.99E, h0km, ML2.0*
*CSEM **08** 01:43:14.5±0.1, 45°.82N×10°.05E, h15km, ML2.4/12, Error ellipse: s-maj=2.0km s-min=1.7km az=174.0*
*LDG **08** 01:43:15.3±0.1, 45°.83N×10°.10E, h10km, Ml2.1/7, Error ellipse: s-maj=1.7km s-min=1.5km az=164.0*
*ROM **08** 01:43:15.0±0.1, 45°.82N×10°.08E, h14km±4km, Md2.4/14, Ml2.1/6, Error ellipse: s-maj=1.9km s-min=1.3km az=42.0*
*VIE **08** 01:43:15.2±1.1, 45°.83N×10°.18E, h8km, mb1.8/2, ml2.6/3, Error ellipse: s-maj=7.1km s-min=6.1km az=82.0*
ISC 08 01:43:14.5±1.0**, 45°.81N**±0°.02×**10°.05E**±0°.02**, h18**km±3km**, n84, σ0s.82**/133**, 1C-1D, Northern Italy**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
SALO	**Salr**	**0.38**	**120**	Pg	**Pb**	**01 43 22.7**	**-0.1**
SALO				Sg	**Sb**	**01 43 29.1**	**+0.7**
	138nm,0.3s						
SALO	**Salr**	**0.38**	**120**	Pg	**Pb**	**01 43 22.7**	**-0.1**
SALO				Sg	**Sb**	**01 43 29.1**	**+0.7**
	138nm,0.3s						
MAGA	**Magasa**	**0.41**	**94**	Pg	**Pg**	**01 43 22.5**	**-0.4**
MAGA				Sg	**Sb**	**01 43 28.8**	**-0.4**
	255nm,0.2s						
MAGA	**Magasa**	**0.41**	**94**	Pg	**Pg**	**01 43 22.5**	**-0.4**
MAGA				Sg	**Sb**	**01 43 28.8**	**-0.4**
	255nm,0.2s						
MABI	**Malga Bissina**	**0.41**	**52**	Pg	**Pg**	**01 43 22.8**	**-0.2**
MABI				Sg	**Sg**	**01 43 28.4**	**-0.4**
	322nm,0.1s						
MABI	**Malga Bissina**	**0.41**	**52**	Pg	**Pg**	**01 43 22.8**	**-0.2**
MABI				Sg	**Sg**	**01 43 28.4**	**-0.4**
	322nm,0.1s						
RNI	**Roncone**	**0.43**	**66**	*e*Pg	**Pg**	**01 43 23.4**	**-0.1**
RNI				*e*Sg	**Sg**	**01 43 29.2**	**-0.4**
RNI	**Roncone**	**0.43**	**66**⇑	*e*Pg	**Pg**	**01 43 23.4**	**-0.1**
RNI				*e*Sg	**Sg**	**01 43 29.2**	**-0.4**
BALD	**Monte Baldo**	**0.55**	**103**	*e*Pg	**Pg**	**01 43 25.5**	**-0.1**
BALD				*e*Sg	**Sb**	**01 43 34.3**	**+1.0**
BALD	**Monte Baldo**	**0.55**	**103**	*e*Pg	**Pg**	**01 43 25.5**	**-0.1**
BALD				*e*Sg	**Sb**	**01 43 34.3**	**+1.0**
BERNI	**Berninapass**	**0.61**	**358**	Pg	**Pb**	**01 43 26.8**	**+0.2**
BERNI				Sg	**Sg**	**01 43 35.0**	**+0.2**
BERNI	**Berninapass**	**0.61**	**358**	Pg	**Pb**	**01 43 26.8**	**+0.2**
BERNI				Sg	**Sg**	**01 43 35.0**	**+0.2**
BRMO	**Bormio**	**0.70**	**18**	Pg	**Pb**	**01 43 28.5**	**+0.2**
BRMO				Sg	**Sg**	**01 43 37.5**	**-0.3**
	23nm,0.2s						
BRMO	**Bormio**	**0.70**	**18**	Pg	**Pb**	**01 43 28.5**	**+0.2**
BRMO				Sg	**Sg**	**01 43 37.5**	**-0.3**
	23nm,0.2s						
MUGIO	**Muggio**	**0.71**	**280**	Pg	**Pb**	**01 43 28.7**	**+0.3**
MUGIO				Sg	**Sb**	**01 43 38.8**	**+0.9**
MUGIO	**Muggio**	**0.71**	**280**	Pg	**Pb**	**01 43 28.7**	**+0.3**
MUGIO				Sg	**Sb**	**01 43 38.8**	**+0.9**
ROVR	**Rover˜¤ Verone**	**0.73**	**102**	Pg	**Pg**	**01 43 28.8**	**-0.1**
ROVR	**Rover˜¤ Verone**	**0.73**	**102**	Pg	**Pg**	**01 43 28.8**	**-0.1**
CARE	**Lago del Cares**	**0.76**	**36**	*e*Pg	**Pg**	**01 43 29.3**	**-0.2**
CARE				*e*Sg	**Sg**	**01 43 39.1**	**-0.6**
CARE	**Lago del Cares**	**0.76**	**36**⇓	*e*Pg	**Pg**	**01 43 29.3**	**-0.2**
CARE				*e*Sg	**Sg**	**01 43 39.1**	**-0.6**
DDS	**Dosso del Somm**	**0.80**	**84**	*e*Pg	**Pb**	**01 43 29.8**	**-0.1**
DDS	**Dosso del Somm**	**0.80**	**84**	*e*Pg	**Pb**	**01 43 29.8**	**-0.1**
TUE	**Stuetta**	**0.82**	**324**	Pg	**Pg**	**01 43 30.8**	**+0.1**
TUE				Sg	**Sb**	**01 43 41.3**	**+0.1**
	37nm,0.4s						
TUE	**Stuetta**	**0.82**	**324**	Pg	**Pg**	**01 43 30.8**	**+0.1**
TUE				Sg	**Sb**	**01 43 41.3**	**+0.1**
	37nm,0.4s						
FUORN	**Ofenpass-Fuorn**	**0.83**	**10**	Pg	**Pg**	**01 43 30.8**	**+0.1**
FUORN				Sg	**Sb**	**01 43 41.6**	**+0.3**
FUORN	**Ofenpass-Fuorn**	**0.83**	**10**	Pg	**Pg**	**01 43 30.8**	**+0.1**
FUORN				Sg	**Sb**	**01 43 41.6**	**+0.3**
MARN	**Marana (Italy)**	**0.83**	**101**	*e*Pg	**Pb**	**01 43 30.5**	**+0.1**
MARN	**Marana (Italy)**	**0.83**	**101**	*e*Pg	**Pb**	**01 43 30.5**	**+0.1**
OZOL	**Ozolo**	**0.92**	**49**	*e*Pg	**Pb**	**01 43 31.8**	**-0.1**
OZOL	**Ozolo**	**0.92**	**49**	*e*Pg	**Pb**	**01 43 31.8**	**-0.1**
PANI	**Panarotta**	**0.93**	**74**	*e*Pg	**Pn**	**01 43 33.0**	**+0.2**
PANI	**Panarotta**	**0.93**	**74**	*e*Pg	**Pn**	**01 43 33.0**	**+0.2**
DAVOX	**Davos/Dischmat**	**0.98**	**353**	Pg	**Pg**	**01 43 33.6**	**0.0**
DAVOX				Sg	**Sg**	**01 43 46.9**	**+0.4**
DAVOX	**Davos/Dischmat**	**0.98**	**353**	Pg	**Pg**	**01 43 33.6**	**0.0**
DAVOX				Sg	**Sg**	**01 43 46.9**	**+0.4**
APPI	**Appiano**	**1.06**	**50**	Pg	**Pb**	**01 43 34.4**	**+0.1**
	54nm,0.3s						
APPI	**Appiano**	**1.06**	**50**	Pg	**Pb**	**01 43 34.4**	**+0.1**
	54nm,0.3s						
FUSIO	**Fusio**	**1.16**	**304**	Pg	**Pb**	**01 43 36.6**	**+0.5**
FUSIO	**Fusio**	**1.16**	**304**	Pg	**Pb**	**01 43 36.6**	**+0.5**
CGRP	**Cima Grappa**	**1.23**	**86**	Pg	**Pb**	**01 43 37.5**	**+0.3**
CGRP	**Cima Grappa**	**1.23**	**86**	Pg	**Pb**	**01 43 37.5**	**+0.3**
CGRP	**Cima Grappa**	**1.23**	**86**	*e*Pg	**Pb**	**01 43 37.6**	**+0.3**
GRAM	**Graiana**	**1.32**	**180**	P	**Pb**	**01 43 38.9**	**+0.2**
GRAM				S	**Sb**	**01 43 55.5**	**+0.3**
CODM	**Codolo**	**1.42**	**186**	P	**Pb**	**01 43 40.3**	**-0.2**
CODM				S	**Sn**	**01 43 58.0**	**+0.3**
SC2M	**Scurtabo**	**1.45**	**195**	P	**Pn**	**01 43 40.6**	**+0.8**
SC2M				S	**Sn**	**01 43 58.4**	**0.0**
DAVA	**Damuels**	**1.48**	**356**	*e*Pg	**Pg**	**01 43 44.1**	**+1.0**
	2.1nm,0.2s						
DAVA				*i* Sg	**Sg**	**01 44 06.1**	**+3.6**
	19nm,0.3s						
DAVA	**Damuels**	**1.48**	**356**	Pg	**Pg**	**01 43 44.1**	**+1.0**
	2.1nm,0.2s						
DAVA				Sg	**Sg**	**01 44 06.1**	**+3.6**
	19nm,0.3s						
SATI	**Passo dei Sala**	**1.53**	**273**	P	**Pn**	**01 43 41.8**	**+0.6**
MOTA	**Moosalm**	**1.70**	**25**	*i* Pg	**Pg**	**01 43 47.2**	**0.0**
MOTA	**Moosalm**	**1.70**	**25**	Pg	**Pg**	**01 43 47.2**	**0.0**
RETA	**Reutte**	**1.75**	**16**	*e*Pg	**Pg**	**01 43 47.6**	**-0.6**
	0.3nm,0.1s						
RETA				*i* Sg	**Sg**	**01 44 11.7**	**+0.8**
	1.8nm,0.2s						
RETA	**Reutte**	**1.75**	**16**	Pg	**Pg**	**01 43 47.6**	**-0.6**
	0.3nm,0.1s						
RETA				Sg	**Sg**	**01 44 11.7**	**+0.8**
	1.8nm,0.2s						
STAL	**STALIGIAL**	**1.91**	**75**	Pg	**Pn**	**01 43 47.1**	**+1.0**
LPG	**La Plagne**	**2.33**	**264**	*e*Pn	**Pb**	**01 43 54.7**	**-1.5**
LPG				*e*Sn	**Sn**	**01 44 20.2**	**-0.4**
	2.2nm,0.3s						
LPG	**La Plagne**	**2.33**	**264**	*e*Pn	**Pb**	**01 43 54.7**	**-1.5**
LPG				*e*Sn	**Sn**	**01 44 20.2**	**-0.4**
	1.1nm,0.3s						
LPL	**La Plagne**	**2.34**	**264**	*e*Pn	**Pn**	**01 43 54.3**	**+2.0**
LPL				*e*Sn	**Sn**	**01 44 20.7**	**0.0**
	1.7nm,0.3s						
LPL	**La Plagne**	**2.34**	**264**	*e*Pn	**Pn**	**01 43 54.3**	**+2.0**
LPL				*e*Sn	**Sn**	**01 44 20.7**	**0.0**
	0.9nm,0.3s						
MBDF	**Montbardon**	**2.56**	**246**	*e*Pn	**Pn**	**01 43 56.0**	**+0.9**
MBDF				*e*Sn	**Sn**	**01 44 25.1**	**-0.7**
	1.8nm,0.4s						
MBDF	**Montbardon**	**2.56**	**246**	*e*Pn	**Pn**	**01 43 56.0**	**+0.9**
MBDF				*e*Sn	**Sn**	**01 44 25.1**	**-0.7**
	0.9nm,0.4s						
SBF	**Sospel**	**2.69**	**225**	*e*Pn	**Pn**	**01 43 57.6**	**+0.7**
SBF	**Sospel**	**2.69**	**225**	*e*Pn	**Pn**	**01 43 57.6**	**+0.7**
CABF	**La Chapelle**	**2.87**	**288**	*e*Pn	**Pn**	**01 43 58.3**	**-1.0**
CABF				*e*Sg	**Sg**	**01 44 46.4**	**-0.2**
	0.5nm,0.2s						
CABF	**La Chapelle**	**2.87**	**288**	*e*Pn	**Pn**	**01 43 58.3**	**-1.0**
CABF				*e*Sg	**Sg**	**01 44 46.4**	**-0.2**
	0.2nm,0.2s						
HINF	**Hinteralfeld**	**2.98**	**314**	*e*Pn	**Pn**	**01 44 01.4**	**+0.6**
HINF				*e*Sn	**Sn**	**01 44 34.5**	**-1.5**
HINF				*e*Sg	**Sg**	**01 44 49.5**	**-0.6**
	1.5nm,0.3s						
HINF	**Hinteralfeld**	**2.98**	**314**	*e*Pn	**Pn**	**01 44 01.4**	**+0.6**
HINF				*e*Sn	**Sn**	**01 44 34.5**	**-1.5**
HINF				*e*Sg	**Sg**	**01 44 49.5**	**-0.6**
	0.8nm,0.3s						
ORIF	**Oris-en-Rattie**	**3.07**	**255**	*e*Pn	**Pn**	**01 44 03.2**	**+1.0**
ORIF	**Oris-en-Rattie**	**3.07**	**255**	*e*Pn	**Pn**	**01 44 03.2**	**+1.0**
CDF	**Champ du Feu**	**3.22**	**325**	*e*Pn	**Pn**	**01 44 04.7**	**+0.5**
CDF				*e*Sn	**Sn**	**01 44 40.1**	**-2.0**
CDF				*e*Sg	**Sg**	**01 44 56.6**	**-1.4**
	1.8nm,0.4s						
CDF	**Champ du Feu**	**3.22**	**325**	*e*Pn	**Pn**	**01 44 04.7**	**+0.5**
CDF				*e*Sn	**Sn**	**01 44 40.1**	**-2.0**
CDF				*e*Sg	**Sg**	**01 44 56.6**	**-1.4**
	0.9nm,0.4s						
FRF	**La Foret Royal**	**3.31**	**228**	*e*Pn	**Pn**	**01 44 05.2**	**-0.1**
FRF	**La Foret Royal**	**3.31**	**228**	*e*Pn	**Pn**	**01 44 05.2**	**-0.1**
HAU	**Haudompre**	**3.36**	**312**	*e*Pn	**Pn**	**01 44 06.4**	**+0.4**
HAU				*e*Sn	**Sn**	**01 44 43.9**	**-1.5**
	1.1nm,0.2s						
HAU	**Haudompre**	**3.36**	**312**	*e*Pn	**Pn**	**01 44 06.4**	**+0.4**
HAU				*e*Sn	**Sn**	**01 44 43.9**	**-1.5**
	0.6nm,0.2s						
LMR	**La Mourre**	**3.54**	**227**	*e*Pn	**Pn**	**01 44 08.2**	**-0.3**
LMR	**La Mourre**	**3.54**	**227**	*e*Pn	**Pn**	**01 44 08.2**	**-0.3**
SMF	**Signal de Mont**	**4.39**	**283**	*e*Pn	**Pn**	**01 44 20.6**	**+0.4**
SMF	**Signal de Mont**	**4.39**	**283**	*e*Pn	**Pn**	**01 44 20.6**	**+0.4**
LOR	**Lormes**	**4.52**	**291**	*e*Pn	**Pn**	**01 44 22.4**	**+0.5**
	baz=122						
LOR	**Lormes**	**4.52**	**291**	*e*Pn	**Pn**	**01 44 22.4**	**+0.5**
AVF	**Avril sur Loir**	**4.75**	**284**	*e*Pn	**Pn**	**01 44 25.4**	**+0.4**
AVF	**Avril sur Loir**	**4.75**	**284**	*e*Pn	**Pn**	**01 44 25.4**	**+0.4**
BGF	**Bois d'Agland**	**5.06**	**281**	*e*Pn	**Pn**	**01 44 30.1**	**+0.7**
BGF	**Bois d'Agland**	**5.06**	**281**	*e*Pn	**Pn**	**01 44 30.1**	**+0.7**
TCF	**Toulx Ste Croi**	**5.48**	**278**	*e*Pn	**Pn**	**01 44 35.4**	**+0.2**
TCF	**Toulx Ste Croi**	**5.48**	**278**	*e*Pn	**Pn**	**01 44 35.4**	**+0.2**

*GUC **08** 01:48:18.8±0.5, 33°.64S×72°.48W, h25km±486km, ML2.9*
*SJA **08** 01:48:34.7±0.5, 32°.74S×71°.39W, h15km±7km, ML2.8, MW3.1*
ISC 08 01:48:18.4±4.2**, 33°.7S**±0°.1×**72°.4W**±0°.2**, h5**km±17km**, n12, σ1s.22**/16**, Off coast of central Chile**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
RCDM	**Rinconada Maip**	**1.31**	**83**	*i* P	**Pg**	**01 48 43.2**	**-0.4**
RCDM				*i* S	**Sg**	**01 49 01.0**	**+0.5**
RCDM				IAML		01 49 03.2	
	comp=N,285nm,0.4s						
ROC1	**El Roble**	**1.32**	**59**	*e*P	**Pb**	**01 48 43.3**	**-0.6**
ROC1				*e*S	Sb	01 48 49.5	-12
ROCH	**El Roble**	**1.33**	**59**	*i* P	**Pb**	**01 48 43.2**	**-0.8**
ROCH				*i* S	**Sg**	**01 49 02.4**	**+1.2**
ANTU	**Antumapu**	**1.45**	**86**	*e*P	**Pb**	**01 48 44.8**	**-1.1**
ANTU				*e*S	**Sn**	**01 49 03.9**	**-0.8**
ANTU				IAML		01 49 08.2	
	comp=N,285nm,0.6s						
PEL	**Peldehue**	**1.50**	**70**	*i* P	**Pb**	**01 48 46.1**	**-0.6**
PEL				*i* S	**Sg**	**01 49 06.8**	**+0.2**
PEL				IAML		01 49 11.0	
	comp=E,295nm,0.4s						
CLCH	**Cerro Calan**	**1.55**	**80**	*i* P	**Pb**	**01 48 46.9**	**-0.7**
CLCH				*i* S	**Sg**	**01 49 08.6**	**+0.4**
CLCH				IAML		01 49 13.3	
	comp=E,238nm,0.6s						
AUSP	**Uspallata**	**2.89**	**61**	*e*P	**Pb**	**01 49 07.9**	**-2.7**
ARCO	**CERRO ARCO**	**2.99**	**75**	*e*P	**Pb**	**01 49 11.1**	**-1.1**
ARCO				IAML		01 49 17.1	
	comp=Z,44nm,0.5s						
AAGR	**Agrelo**	**3.02**	**80**	*e*P	**Pb**	**01 49 13.2**	**+0.5**
RTLS	**Leoncito**	**3.19**	**55**	*e*P	**Pn**	**01 49 11.0**	**+1.5**
AMOG	**MOGNA**	**4.26**	**51**	*e*P	**Pn**	**01 49 25.1**	**+1.0**
VCA	**Vinchina**	**6.07**	**37**	IAML		01 49 50.7	
	comp=Z,13nm,3.2s						

*ISK **08** 01:51:45.2, 38°.98N×30°.98E, h11km, MD2.6*
*ISCJB **08** 01:51:46.5±0.5, 39°.05N±0°.03×31°.06E±0°.04, h11km±5km, Error ellipse: s-maj=5.7km s-min=4.5km az=135.8*
*DDA **08** 01:51:46.5, 39°.04N×30°.98E, h7km, Md2.6*
*CSEM **08** 01:51:46.3±0.1, 39°.03N×31°.03E, h15km, MD2.6, Error ellipse: s-maj=3.6km s-min=2.4km az=40.0*
ISC 08 01:51:46.0±1.0**, 39°.04N**±0°.03×**31°.07E**±0°.03**, h17**km±7km**, n25, σ0s.34**/39**, Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
BOLV	**Bolvadin**	**0.33**	**196**	*i* P	**Pg**	**01 51 53.4**	**+0.2**
BOLV				*i* S	**Sg**	**01 51 57.7**	**-0.3**
BOLV	**Bolvadin**	**0.33**	**196**	P	**Pg**	**01 51 53.3**	**+0.2**
BOLV				S	**Sg**	**01 51 57.7**	**-0.3**
AUKIR	**K˜–rka- Seyitg**	**0.48**	**300**	*i* P	**Pg**	**01 51 55.8**	**+0.1**
AUKIR				*i* S	**Sb**	**01 52 03.2**	**+0.4**
AUKIR	**K˜–rka- Seyitg**	**0.48**	**300**	P	**Pg**	**01 51 55.8**	**+0.1**
AUKIR				S	**Sb**	**01 52 03.2**	**+0.4**
ESKT	**Eskisehir**	**0.51**	**341**	*i* P	**Pg**	**01 51 56.1**	**-0.2**
ESKT				*i* S	**Sg**	**01 52 03.1**	**-0.2**
SEYT	**Eskypehyr**	**0.51**	**341**	P	**Pg**	**01 51 56.1**	**-0.2**
SEYT				S	**Sg**	**01 52 03.1**	**-0.1**
SVRH	**Sivrihisar-ESK**	**0.54**	**41**	*e*PG	**Pb**	**01 51 58.0**	**+0.9**
SVRH	**Sivrihisar-ESK**	**0.54**	**41**	*e*Pg	**Pb**	**01 51 58.0**	**+0.9**
KIZT	**Kizilcal**	**0.66**	**104**	*e*PG	**Pb**	**01 51 59.3**	**+0.2**
KIZT				*e*SG	**Sn**	**01 52 09.8**	**-0.8**
KIZT	**Kizilcal**	**0.66**	**104**	*e*Pg	**Pb**	**01 51 59.3**	**+0.2**
KIZT				*e*Sg	**Sn**	**01 52 09.8**	**-0.8**
BORA	**Eskisehir**	**0.96**	**331**	*i* P	**Pb**	**01 52 04.4**	**+0.1**
BORA				*i* S	**Sg**	**01 52 17.4**	**-0.2**
BORA	**Eskisehir**	**0.96**	**331**	P	**Pb**	**01 52 04.4**	**+0.1**
BORA				S	**Sg**	**01 52 17.4**	**-0.2**
GDZ	**Gediz**	**1.23**	**273**	*i* P	**Pb**	**01 52 09.0**	**+0.1**
GDZ				*i* S	**Sb**	**01 52 24.6**	**0.0**
GDZ	**Gediz**	**1.23**	**273**	P	**Pb**	**01 52 09.0**	**+0.1**
GDZ				S	**Sb**	**01 52 24.6**	**0.0**
TVSB	**Tavsanli**	**1.31**	**289**	*e*PN	**Pn**	**01 52 09.6**	**0.0**
TVSB				*e*SN	**Sn**	**01 52 27.1**	**+0.3**
TVSB	**Tavsanli**	**1.31**	**289**	*e*Pn	**Pn**	**01 52 09.6**	**0.0**
LADK	**Ladik-KONYA**	**1.32**	**129**	*e*PN	**Pb**	**01 52 10.4**	**+0.1**
LADK	**Ladik-KONYA**	**1.32**	**129**	*e*Pn	**Pb**	**01 52 10.5**	**+0.1**
KHAL	**Karahalli**	**1.40**	**242**	*i* P	Pg	01 52 17.3	+4.2
KHAL				*i* S	**Sg**	**01 52 31.7**	**+0.4**
GULT	**Gulveren**	**1.46**	**343**	*e*PN	**Pb**	**01 52 12.7**	**0.0**
GULT	**Gulveren**	**1.46**	**343**	*e*Pn	**Pb**	**01 52 12.7**	**0.0**
KONT	**Konya--Tatoy**	**1.49**	**137**	*e*PN	**Pb**	**01 52 13.5**	**+0.3**
KONT	**Konya--Tatoy**	**1.49**	**137**	*e*Pn	**Pb**	**01 52 13.5**	**+0.3**
ULDT	**Uludag**	**1.85**	**307**	*i* P	**Pg**	**01 52 21.6**	**-0.1**
ULDT				*i* S	**Sg**	**01 52 45.7**	**-0.1**
DURS	**Dursunbey**	**2.09**	**286**	*i* P	**Pg**	**01 52 26.1**	**0.0**

*ISK **08** 01:53:21.8, 36°.47N×28°.75E, h5km, MD2.6*
*ISCJB **08** 01:53:22.5±0.9, 36°.46N±0°.05×28°.78E±0°.04, h0km±8km, Error ellipse: s-maj=8.5km s-min=5.5km az=21.4*
*CSEM **08** 01:53:22.5±0.4, 36°.44N×28°.78E, h5km, MD2.6, Error ellipse: s-maj=8.0km s-min=4.0km az=17.0*
*DDA **08** 01:53:22.7, 36°.46N×28°.79E, h4km, Md2.8*
ISC 08 01:53:21.9±1.5**, 36°.42N**±0°.05×**28°.75E**±0°.03**, h0**km±11km**, n23, σ0s.50**/38**, Dodecanese Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
FETY	**Fethiye**	**0.35**	**51**	*e*PG	**Pg**	**01 53 28.3**	**-0.3**
FETY				*e*SG	**Sg**	**01 53 33.3**	**+0.2**
FETY	**Fethiye**	**0.35**	**51**	*e*Pg	**Pg**	**01 53 28.3**	**-0.3**
FETY				*e*Sg	**Sg**	**01 53 33.3**	**+0.2**
DALY	**Dalyan (Mu˜la**	**0.41**	**350**	*e*PG	**Pg**	**01 53 29.2**	**-0.4**
DALY				*e*SG	**Sg**	**01 53 34.9**	**0.0**
DALY	**Dalyan (Mu˜la**	**0.41**	**350**	*e*Pg	**Pg**	**01 53 29.2**	**-0.4**
DALY				*e*Sg	**Sg**	**01 53 34.9**	**0.0**
TURN	**Turunc**	**0.47**	**346**	*i* P	**Pb**	**01 53 32.3**	**-0.7**
TURN				*i* S	**Sb**	**01 53 41.6**	**+1.1**
TURN	**Turunc**	**0.47**	**346**	P	**Pb**	**01 53 32.3**	**-0.7**
TURN				S	**Sb**	**01 53 41.6**	**+1.1**
AKAS	**Kas**	**0.72**	**105**	*i* P	**Pg**	**01 53 35.8**	**+0.1**
AKAS				*i* S	**Sb**	**01 53 47.4**	**-0.4**
AKAS	**Kas**	**0.72**	**105**	P	**Pg**	**01 53 35.8**	**+0.1**
AKAS				S	**Sb**	**01 53 47.4**	**-0.4**
YER	**Yerkesik**	**0.81**	**333**	*e*PG	**Pg**	**01 53 36.9**	**-0.5**
YER	**Yerkesik**	**0.81**	**333**	*e*Pg	**Pg**	**01 53 36.9**	**-0.5**
ELL	**Elmali**	**0.99**	**70**	*e*PG	**Pg**	**01 53 41.2**	**+0.3**
ELL	**Elmali**	**0.99**	**70**	*e*Pg	**Pg**	**01 53 41.2**	**+0.3**
GOLH	**Golhisar**	**1.05**	**38**	*i* P	**Pg**	**01 53 41.9**	**-0.1**
GOLH				*i* S	**Sg**	**01 53 56.0**	**+0.4**
GOLH	**Golhisar**	**1.05**	**38**	P	**Pg**	**01 53 41.9**	**-0.1**
GOLH				S	**Sg**	**01 53 56.0**	**+0.4**
BDRM	**Kayabasi**	**1.23**	**302**	*i* P	**Pn**	**01 53 47.1**	**+0.8**
BDRM				*i* S	**Sn**	**01 54 03.6**	**-0.1**
BDRM	**Kayabasi**	**1.23**	**302**	P	**Pn**	**01 53 47.1**	**+0.8**
BDRM				S	**Sn**	**01 54 03.6**	**-0.1**
BODT	**Bodrum**	**1.32**	**300**	*e*PN	**Pg**	**01 53 47.1**	**-0.1**
BODT	**Bodrum**	**1.32**	**300**	*e*Pn	**Pg**	**01 53 47.1**	**-0.1**
AYDN	**Tasoluk**	**1.42**	**331**	*i* P	**Pg**	**01 53 49.1**	**0.0**
AYDN				*i* S	**Sn**	**01 54 08.7**	**+0.2**
AYDN	**Tasoluk**	**1.42**	**331**	P	**Pg**	**01 53 49.2**	**0.0**
AYDN				S	**Sn**	**01 54 08.7**	**+0.2**
AYDB	**Zeytinkoy-Aydi**	**1.67**	**336**	*e*PN	**Pn**	**01 53 52.1**	**-0.3**
AYDB	**Zeytinkoy-Aydi**	**1.67**	**336**	*e*Pn	**Pn**	**01 53 52.2**	**-0.3**
KHAL	**Karahalli**	**2.04**	**17**	*i* P	**Pg**	**01 54 01.8**	**+0.9**
KHAL				*i* S	**Sn**	**01 54 22.9**	**-0.9**

*NIED **08** 01:58:00, 36°.30N×141°.80E, h32km, Mw4.0 Best double couple: M0 1.20000×10^15 NP1:φs271.00000°, δ47.00000°, λ-154.00000°. NP2:φs163.00000°, δ72.00000°, λ-46.00000°.*
*JMA **08** 01:58:40.7±0.2, 36°.32N×141°.78E, h73km±4km, M3.8*
*ISCJB **08** 01:58:41.0±1.0, 36°.28N±0°.03×141°.89E±0°.08, h36km±8km, mb3.9/20, MS3.3/1, Error ellipse: s-maj=10.3km s-min=5.7km az=179.4*
*NEIC **08** 01:58:41.8±4.2, 36°.22N×141°.87E, h28km±29km, mb4.3/5, Error ellipse: s-maj=12.4km s-min=9.9km az=91.0*
*IDC **08** 01:58:42.4±0.7, 36°.20N×141°.91E, h30km±4km, mb3.5/12, mb1 3.6/15, mb1mx3.5/55, mbtmp3.7/15, ML3.9/3, MS3.1/4, Ms1 3.1/4, ms1mx2.7/48, Error ellipse: s-maj=16.9km s-min=13.3km az=101.0*
ISC 08 01:58:42.8±0.7**, 36°.30N**±0°.04×**141°.83E**±0°.07**, h32**km±4km**, h31**km**:pP-P, n42, σ1s.16**/51**, mb3.8**/19**, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.99**	**233**	P	**Pn**	**01 58 59.3**	**-1.2**
CHOJ				*e*S	**Sn**	**01 59 13.3**	**0.0**
JHO	**Hitachi**	**1.06**	**287**	P	**Pn**	**01 58 59.1**	**-2.4**
JHO				*e*S	**Sn**	**01 59 14.2**	**-1.0**
ONAJ	**Iwakimizuishiy**	**1.15**	**314**	P	**Pn**	**01 59 01.4**	**-1.4**
ONAJ				*e*S	**Sn**	**01 59 16.4**	**-1.1**
JFK	**Kawauchi**	**1.31**	**325**	P	**Pn**	**01 59 03.8**	**-1.2**
JFK				*e*S	**Sn**	**01 59 20.6**	**-0.8**
JYT	**Yasato**	**1.32**	**267**	P	**Pn**	**01 59 03.4**	**-1.7**
JFT	**Otama**	**1.70**	**316**	P	**Pn**	**01 59 09.4**	**-1.0**
JFT				S	**Sn**	**01 59 32.1**	**+1.0**
JMM	**Marumori**	**1.77**	**332**	P	**Pn**	**01 59 10.4**	**-0.8**
JMM				S	**Sn**	**01 59 31.8**	**-0.8**
BSO3	**Boso 3**	**1.84**	**216**	P	**Pn**	**01 59 11.2**	**-0.8**
MJAR	**Matsushiro Arr**	**2.93**	**276**	Pn	**Pn**	**01 59 27.2**	**0.0**
	14nm,0.3s,baz=107,slow=8.9,SNR=54						
MJAR				Sn	**Sn**	**01 59 59.2**	**-2.1**
	8.3nm,0.3s,baz=102,slow=12,SNR=7.1						
MJAR				LR	LR	02 00 42.5	
	comp=Z,206nm,19.3s,baz=115,slow=40						
MAJO	**Matsushiro**	**2.93**	**276**	*e*Pn	**Pn**	**01 59 27.2**	**0.0**
MAT	**Matsushiro**	**2.93**	**276**	P	**Pn**	**01 59 27.1**	**-0.1**
MAT				S	**Sn**	**02 00 03.5**	**+2.2**
JHJ	**Hachijo jima 2**	**3.59**	**208**	Pn	**Pn**	**01 59 36.6**	**+0.3**
	102nm,0.3s,baz=72,slow=0.9,SNR=16						
JHJ				Sn	**Sn**	**02 00 17.1**	**-0.6**
	136nm,0.3s,baz=225,slow=22,SNR=12						
USRK	**Ussuriysk Ar.**	**10.89**	**319**	Pn	Pn	02 01 24.1	+7.7
	0.2nm,0.3s,baz=134,slow=12,SNR=15						
KSRS	**Korea Array**	**11.20**	**280**	Pn	**Pn**	**02 01 23.5**	**+2.9**
	0.2nm,0.3s,baz=141,slow=28,SNR=3.3						
KSRS				LR	LR	02 05 14.0	
	comp=Z,110nm,19.6s,baz=78,slow=35						
KSAR	**Wonju Array Be**	**11.23**	**280**	Pn	**Pn**	**02 01 23.5**	**+2.4**
KLR	**Kul'dur**	**14.87**	**333**	Pn	P	02 02 20.0	+3.9
	0.1nm,0.3s,baz=133,slow=14,SNR=5.2						
KLR				LR	LR	02 07 29.8	
	comp=Z,82nm,18.2s,baz=136,slow=35						
SEY	**Seymchan**	**27.45**	**10**	P	**P**	**02 04 27.5**	**+2.0**
	0.5nm,0.4s,baz=153,slow=8.3,SNR=3.1						
SEY				sP	**sP**	**02 04 38.7**	**+0.2**
	1.2nm,0.5s,baz=224,slow=4.8,SNR=8.5						
H11N2	**WAKE ISLAND Hy**	**27.49**	**120**	T	T	02 33 52.4	
	baz=312,slow=75,SNR=21						
H11N1	**WAKE ISLAND Hy**	**27.50**	**120**	T	T	02 33 53.6	
	baz=312,slow=75,SNR=11						
H11N3	**WAKE ISLAND Hy**	**27.51**	**120**	T	T	02 33 51.2	
	baz=312,slow=75,SNR=12						
ULN	**Ulaanbaatar**	**28.04**	**305**	*e*P	**P**	**02 04 30.8**	**-0.5**
	1.8nm,0.6s						
SONM	**Songino Array**	**28.47**	**305**	P	**P**	**02 04 36.9**	**+1.8**
	0.6nm,0.6s,baz=121,slow=9.6,SNR=3.5						
SONM				pP	**pP**	**02 04 44.5**	**+0.2**
	5.4nm,0.9s,baz=103,slow=8.7,SNR=15						
ZALV	**Zalesovo Beam**	**42.65**	**313**	P	**P**	**02 06 36.9**	**+0.7**
	0.3nm,0.3s,baz=141,slow=9.6,SNR=1.9						
ZALV				pP	**pP**	**02 06 46.0**	**+0.4**
	3.2nm,0.6s,baz=89,slow=6.3,SNR=7.9						
MKAR	**Makanchi Array**	**44.79**	**303**	P	**P**	**02 06 53.4**	**-0.1**
	0.7nm,0.7s,baz=89,slow=9.2,SNR=7.6						
MKAR				pP	**pP**	**02 07 03.8**	**+0.9**
	2.0nm,0.8s,baz=91,slow=8.9,SNR=10.0						
KURK	**Kurchatov**	**46.65**	**309**	*e*P	**P**	**02 07 07.7**	**-0.3**
	13nm,0.7s						
KURK				pP	**pP**	**02 07 18.6**	**+1.1**
KURBB	**Kurchatov Arra**	**46.71**	**309**	P	**P**	**02 07 08.5**	**-0.1**
	0.4nm,0.3s,baz=85,slow=8.0,SNR=3.5						
KURBB				pP	**pP**	**02 07 18.6**	**+0.6**
	3.9nm,0.7s,baz=84,slow=8.3,SNR=10						
ILAR	**Eielson Array**	**49.94**	**32**	P	**P**	**02 07 32.6**	**-0.6**
	0.5nm,0.7s,baz=269,slow=8.1,SNR=5.2						
AAK	**Ala-Archa**	**51.13**	**299**	*e*P	**P**	**02 07 42.3**	**-0.6**
	1.2nm,0.6s						
DOT	**Dot Lake**	**51.23**	**33**	*e*P	**P**	**02 07 43.0**	**-0.1**
	15nm,1.1s						
BVAR	**Borovoye Array**	**51.31**	**313**	P	**P**	**02 07 43.3**	**-0.5**
	0.3nm,0.5s,baz=173,slow=27,SNR=6.5						
BVAR				pP	**pP**	**02 07 53.1**	**-0.3**
	0.7nm,0.6s,baz=74,slow=8.4,SNR=4.3						
INK	**Inuvik**	**54.89**	**27**	P	**P**	**02 08 10.5**	**+0.6**
	0.5nm,0.5s,baz=288,slow=8.1,SNR=6.8						
WRAB	**Tennant Creek**	**56.38**	**188**	*e*P	**P**	**02 08 20.2**	**-0.9**
	5.0nm,1.0s						
WRA	**Warramunga Arr**	**56.38**	**188**	P	**P**	**02 08 20.2**	**-1.0**
	0.3nm,0.4s,baz=6.1,slow=7.2,SNR=2.8						
ARU	**Arti**	**57.13**	**319**	*e*P	**P**	**02 08 26.6**	**+0.5**
	2.7nm,0.6s						
ABKAR	**Akbulak array**	**58.66**	**311**	*e*P	**P**	**02 08 37.5**	**+0.5**
	1.6nm,0.5s						
ASAR	**Alice Springs**	**60.11**	**188**	P	**P**	**02 08 45.9**	**-1.3**
	0.4nm,0.8s,baz=355,slow=10,SNR=3.1						

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ASAR				pP	pP	02 08 55.1	-1.8
	0.1nm,0.3s,baz=192,slow=22,SNR=3.4						
RES	Resolute Bay	63.23	14	P	P	02 09 06.7	-0.8
	0.5nm,0.5s,baz=323,slow=3.7,SNR=4.7						
YKA	Yellowknife Ar	64.27	30	P	P	02 09 14.6	0.0
	0.4nm,0.7s,baz=301,slow=6.4,SNR=8.5						
WSAR	Wadi Sarin	71.38	285	LR	LR	02 47 16.9	
	comp=Z,16nm,18.1s,baz=208,slow=41						
NB2	NORSAR Subarra	74.99	338	P	pP	02 10 31.4	+0.7
	comp=Z,1.1nm,0.8s,baz=38,slow=5.9						
H06S1	SOCORRO T	92.20	65	T	T	03 55 38.8	
	SNR=27						
LPAZ	La Paz	146.77	61	PKPbc	PKPbc	02 18 23.1	+0.2
	comp=Z,0.7nm,0.5s,baz=150,slow=7.2,SNR=3.0						

JMA 08 02:03:20.2±0.1, 38.°35N×141.°94E, h57km±3km, M3.5, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JMK	Ichinoseki	0.82	317	P	Pn	02 03 36.2	+0.4
JMK				S	Sn	02 03 47.6	+0.3
JOU	Okura	1.00	271	P	Pn	02 03 38.5	+0.3
JOU				S	Sn	02 03 51.9	+0.4
JMM	Marumori	1.03	242	P	Pn	02 03 38.5	+0.1
JMM				S	Sn	02 03 51.7	-0.2
JOM	Ohasama	1.23	336	P	Pn	02 03 41.6	+0.4
JOM				S	Sn	02 03 57.0	+0.2
JFK	Kawauchi	1.29	221	P	Pn	02 03 42.3	+0.2
JFK				S	Sn	02 03 58.6	+0.2
JYK	Kaneyama	1.36	295	P	Pn	02 03 43.3	+0.4
JYK				S	Sn	02 04 00.4	+0.4
JYS	Shirataka	1.48	266	P	Pn	02 03 45.2	+0.6
JYS				S	Sn	02 04 03.8	+0.9
JFT	Otama	1.52	237	P	Pn	02 03 45.9	+0.9
JFT				S	Sn	02 04 03.4	-0.3

IDC 08 02:07:00.6±1.3, 37.°92N×142.°82E, h0km, mb3.5/6, mb1 3.6/7, mb1mx3.4/54, mbtmp3.4/7, ML3.2/1, Error ellipse: s-maj=30.6km s-min=26.5km az=121.0
JMA 08 02:07:06.0±0.3, 37.°70N×142.°24E, h22km±5km, M3.6
ISC 08 02:07:06.7±1.4, 37.°69N±0.°08×142.°18E±0.°10, h24km, n21, σ1.s49/17, mb3.4/6, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	Kawauchi	1.09	253	P	Pb	02 07 26.5	-0.4
JFK				S	Sb	02 07 41.7	+1.0
JMM	Marumori	1.11	280	P	Pb	02 07 26.7	-0.6
JMM				S	Sb	02 07 41.4	0.0
ONAJ	Iwakimizuishiy	1.25	243	P	Pb	02 07 29.0	-0.6
JOU	Okura	1.38	300	P	Pb	02 07 30.7	-1.1
JOU				S	Sb	02 07 48.6	-0.4
JFT	Otama	1.48	264	P	Pb	02 07 33.0	-0.5
JHO	Hitachi	1.68	231	P	Pn	02 07 34.7	+0.1
MJAR	Matsushiro Arr	3.37	251	Pn	Pb	02 08 02.7	-3.1
	1.8nm,0.3s,baz=74,slow=11,SNR=7.6						
MAT	Matsushiro	3.38	251	P	Pb	02 08 02.7	-3.2
MAT				eS	Sn	02 08 39.1	+1.8
SONM	Songino Array	27.94	303	P	P	02 12 56.5	+1.3
	0.5nm,0.7s,baz=103,slow=9.0,SNR=3.6						
H11N2	WAKE ISLAND Hy	27.97	123	T	T	02 42 01.7	
	baz=316,slow=75,SNR=20						
H11N1	WAKE ISLAND Hy	27.98	123	T	T	02 42 02.2	
	baz=316,slow=75,SNR=17						
H11N3	WAKE ISLAND Hy	27.99	123	T	T	02 42 04.1	
	baz=316,slow=75,SNR=16						
H11S1	WAKE ISLAND Hy	28.71	125	T	T	02 42 56.9	
	baz=317,slow=76,SNR=16						
H11S3	WAKE ISLAND Hy	28.71	125	T	T	02 43 14.2	
	baz=317,slow=76,SNR=18						
H11S2	WAKE ISLAND Hy	28.73	125	T	T	02 43 01.7	
	baz=317,slow=76,SNR=11						
CMAR	Chiang Mai Arr	42.25	255	P	P	02 14 58.6	+0.4
	0.5nm,0.3s,baz=26,slow=6.8,SNR=4.1						
MKAR	Makanchi Array	44.30	302	P	P	02 15 13.2	-1.3
	0.1nm,0.4s,baz=114,slow=43,SNR=2.2						
KURBB	Kurchatov Arra	46.09	308	P	P	02 15 29.3	+0.7
	0.5nm,0.5s,baz=83,slow=7.8,SNR=4.1						
ILAR	Eielson Array	48.62	33	P	P	02 15 41.8	-6.4
	0.3nm,0.9s,baz=245,slow=7.9,SNR=2.6						
WRA	Warramunga Arr	57.79	189	P	P	02 16 56.2	+0.2
	0.3nm,0.7s,baz=5.3,slow=7.3,SNR=2.8						
H06E1	SOCORRO T-PHAS	91.35	65	T	T	04 01 10.1	
	SNR=2.4						

DHMR 08 02:11:06.0±1.5, 12.°13N×43.°88E, h2km±5km, ML3.5, Western Arabian Peninsula

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ADEN	Aden	1.25	59	i P	Pg	02 11 28.4	-1.7
ADEN				i S	Sn	02 11 47.7	-0.4
ADEN				AML	AML	02 11 49.1	
	comp=N,1µm,0.3s						
UDYN	Al 'Udayn	1.83	3	i P	Pb	02 11 40.0	-0.3
UDYN				i S	Sg	02 12 05.4	+0.5
BDHA	Al Bayda'	2.46	42	i P	Pb	02 11 49.6	-1.6
BDHA				i S	Sg	02 12 23.8	-1.4
HAJJ	Hajjah	3.56	356	i P	Pn	02 12 05.2	+2.6
HAJJ				i S	Sb	02 12 50.3	-3.4

ISCJB 08 02:18:50.7±0.7, 36.°38N±0.°06×141.°81E±0.°07, h19km, mb3.5/9, MS3.6/1, Error ellipse: s-maj=9.4km s-min=7.0km az=37.7
JMA 08 02:18:51.5±0.2, 36.°35N×141.°76E, h67km±5km, M3.4
IDC 08 02:18:55.7±1.2, 36.°57N×141.°84E, h34km±6km, mb3.3/9, mb1 3.5/10, mb1mx3.3/61, mbtmp3.5/10, ML3.4/1, MS3.0/3, Ms1 3.0/3, ms1mx2.6/29, Error ellipse: s-maj=25.6km s-min=21.3km az=176.0
ISC 08 02:18:52.8±0.8, 36.°33N±0.°06×141.°76E±0.°08, h19km, n26, σ1.s52/23, mb3.5/9, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	Chosi	0.96	229	P	Pb	02 19 09.7	-1.1
CHOJ				S	Sb	02 19 23.3	+0.1
JHO	Hitachi	1.00	286	P	Pb	02 19 09.6	-1.8
ONAJ	Iwakimizuishiy	1.09	315	P	Pb	02 19 10.8	-2.2
BSO4	Boso 4	1.77	221	P	Pn	02 19 21.5	-0.8
BSO1	Boso 1	1.79	201	P	Pn	02 19 20.5	-1.7
BSO3	Boso 3	1.84	214	P	Pn	02 19 21.6	-1.4
MJAR	Matsushiro Arr	2.87	275	Pn	Pn	02 19 37.9	+0.4
	5.1nm,0.3s,baz=110,slow=8.7,SNR=20						
MJAR				LR	LR	02 20 52.7	
	comp=Z,119nm,20.6s,baz=95,slow=40						
MAT	Matsushiro	2.87	275	P	Pn	02 19 37.6	+0.1
MAT				S	Sn	02 20 10.3	-1.3
USRK	Ussuriysk Ar.	10.83	319	Pn	Pn	02 21 34.7	+8.0
	0.2nm,0.3s,baz=132,slow=13,SNR=8.5						
KSRS	Korea Array	11.14	280	LR	LR	02 25 36.8	
	comp=Z,49nm,21.0s,baz=54,slow=36						
H11N2	WAKE ISLAND Hy	27.55	120	T	T	02 53 33.5	
	baz=312,slow=75,SNR=7.8						
H11N1	WAKE ISLAND Hy	27.56	120	T	T	02 53 30.2	
	baz=312,slow=75,SNR=7.4						
H11N3	WAKE ISLAND Hy	27.57	120	T	T	02 53 28.8	
	baz=312,slow=75,SNR=6.9						
H11S1	WAKE ISLAND Hy	28.25	122	T	T	02 54 09.2	
	baz=314,slow=76,SNR=9.8						
H11S3	WAKE ISLAND Hy	28.25	122	T	T	02 54 11.4	
	baz=314,slow=76,SNR=8.8						
H11S2	WAKE ISLAND Hy	28.27	122	T	T	02 54 16.2	
	baz=314,slow=76,SNR=6.6						
SONM	Songino Array	28.41	305	P	P	02 24 46.4	+0.3
	0.5nm,0.5s,baz=98,slow=11,SNR=3.5						
SONM				pP	sP	02 24 56.0	+1.7
	2.2nm,0.8s,baz=108,slow=9.5,SNR=8.7						
ZALV	Zalesovo Beam	42.59	313	P	P	02 26 48.5	+1.2
	0.5nm,0.6s,baz=80,slow=11,SNR=2.4						
ZALV				pP	sP	02 26 56.5	+0.9
	1.0nm,0.5s,baz=90,slow=7.3,SNR=4.4						
MKAR	Makanchi Array	44.73	303	P	P	02 27 03.5	-1.1
	0.2nm,0.3s,baz=72,slow=7.8,SNR=3.4						
MKAR				pP	sP	02 27 15.4	+2.4
	0.3nm,0.4s,baz=87,slow=14,SNR=5.0						
KURBB	Kurchatov Arra	46.65	309	P	P	02 27 18.4	-1.3
	0.4nm,0.6s,baz=84,slow=7.7,SNR=4.4						
BVAR	Borovoye Array	51.25	313	P	P	02 27 56.3	+1.3
	0.4nm,0.5s,baz=233,slow=39,SNR=2.5						
BVAR				pP	sP	02 28 05.2	+1.8
	0.3nm,0.6s,baz=50,slow=9.8,SNR=2.4						
INK	Inuvik	54.88	27	P	P	02 28 20.8	-0.7
	1.2nm,0.9s,baz=295,slow=6.1,SNR=3.8						
WRA	Warramunga Arr	56.41	188	P	P	02 28 35.9	+2.9
	0.4nm,0.3s,baz=2.0,slow=7.6,SNR=5.7						
YKA	Yellowknife Ar	64.27	30	P	P	02 29 25.6	-0.7
	0.2nm,0.7s,baz=298,slow=6.6,SNR=3.8						
NOA	NORSAR Array B	74.94	337	LR	LR	03 07 09.6	
	comp=Z,29nm,19.4s,baz=40,slow=39						
PDAR	Pinedale Array	77.96	46	P	P	02 30 48.8	-1.2
	0.2nm,0.5s,baz=273,slow=5.8,SNR=2.7						

NIED 08 02:21:00, 38.°30N×141.°90E, h68km, Mw4.1 Best double couple: M0 1.47000×10^15 NP1:φs95.00000°, δ21.00000°, λ116.00000°. NP2:φs248.00000°, δ71.00000°, λ80.00000°.
NEIC 08 02:21:06.3±0.8, 38.°29N×141.°91E, h40km±7km, mb4.5/10, Error ellipse: s-maj=8.7km s-min=5.8km az=110.0
ISCJB 08 02:21:07.9±0.8, 38.°30N±0.°04×141.°87E±0.°09, h71km±5km, mb4.0/33, Error ellipse: s-maj=11.7km s-min=5.7km az=16.5
JMA 08 02:21:08.7±0.1, 38.°31N×141.°88E, h60km±2km, M4.2
JMA Felt II J1.
IDC 08 02:21:10.2±2.6, 38.°31N×141.°88E, h75km±23km, mb3.8/24, mb1 3.9/27, mb1mx3.7/58, mbtmp4.0/27, MS3.1/3, Ms1 3.1/3, ms1mx2.5/57, Error ellipse: s-maj=16.9km s-min=13.0km az=103.0
ISC 08 02:21:07.8±1.2, 38.°27N±0.°05×141.°97E±0.°09, h57km±10km, n59, σ0.s86/58, mb4.3/33, MS3.0/3, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JMK	Ichinoseki	0.90	320	P	Pn	02 21 24.9	+0.5
JMK				S	Sn	02 21 36.2	-0.5
JMM	Marumori	1.01	247	P	Pn	02 21 26.2	+0.4
JMM				S	Sn	02 21 38.9	-0.3
JOU	Okura	1.03	276	P	Pn	02 21 26.5	+0.3
JOU				S	Sn	02 21 39.4	-0.3
JFK	Kawauchi	1.25	224	P	Pn	02 21 30.0	+0.9
JFK				eS	Sn	02 21 45.7	+0.8
JOM	Ohasama	1.31	337	P	Pn	02 21 30.3	+0.3
JOM				S	Sn	02 21 46.2	-0.3
JYK	Kaneyama	1.42	298	P	Pn	02 21 31.6	+0.3
JYK				eS	Sn	02 21 48.7	-0.3
JFT	Otama	1.49	240	P	Pn	02 21 33.6	+1.3
JFT				S	Sn	02 21 50.9	+0.2
JYS	Shirataka	1.50	269	P	Pn	02 21 33.0	+0.6
JYS				S	Sn	02 21 51.1	+0.2
MJAR	Matsushiro Arr	3.45	241	P	Pn	02 22 01.4	+2.3
	3.7nm,0.3s,baz=92,slow=16,SNR=6.3						
MAJO	Matsushiro	3.45	241	ePn	Pn	02 21 57.1	-2.0
MAT	Matsushiro	3.45	241	P	Pn	02 22 01.6	+2.5
MAT				eS	Sn	02 22 37.7	-1.1
ERM	Erimo	3.85	13	ePn	Pn	02 22 02.1	-2.4
USRK	Ussuriysk Ar.	9.57	311	P	Pn	02 23 24.4	+1.6
	0.8nm,0.3s,baz=120,slow=15,SNR=9.8						
CBIJ	Chichi jima	11.14	179	ePn	Pn	02 23 42.9	-1.5
KLR	Kul'dur	13.20	329	P	Pn	02 24 11.7	-0.7
	0.3nm,0.3s,baz=127,slow=11,SNR=5.2						
MA2	Magadan	22.06	12	P	P	02 25 58.5	+0.9
	3.2nm,0.3s,baz=202,slow=7.4,SNR=8.4						
MA2				LR	LR	02 34 45.0	
	comp=Z,54nm,19.8s,baz=157,slow=37						
MA2	Magadan	22.06	12	eP	P	02 25 59.0	+1.4
	38nm,0.8s						
YHNB	Yeheng	22.12	238	eP	P	02 25 59.6	+1.0
	12nm,1.0s						
GUMO	Guam	24.71	173	LR	LR	02 43 38.4	
	comp=Z,20nm,18.1s,baz=93,slow=54						
SEY	Seymchan	25.50	11	P	P	02 26 30.9	+0.4
	4.2nm,0.8s,baz=198,slow=6.8,SNR=13						
SONM	Songino Array	27.48	302	P	P	02 26 48.8	0.0
	0.7nm,0.5s,baz=108,slow=8.9,SNR=5.4						
H11N2	WAKE ISLAND Hy	28.43	123	T	T	02 57 17.5	
	baz=316,slow=75,SNR=370						
H11N1	WAKE ISLAND Hy	28.44	124	T	T	02 57 18.2	
	baz=316,slow=75,SNR=519						
H11N3	WAKE ISLAND Hy	28.45	123	T	T	02 57 18.9	
	baz=316,slow=75,SNR=437						
H11S1	WAKE ISLAND Hy	29.19	125	T	T	02 58 14.9	
	baz=317,slow=75,SNR=289						
H11S3	WAKE ISLAND Hy	29.19	126	T	T	02 58 15.0	
	baz=317,slow=75,SNR=357						
H11S2	WAKE ISLAND Hy	29.20	126	T	T	02 58 16.2	
	baz=317,slow=75,SNR=166						
TLY	Talaya	29.87	309	LR	LR	02 38 26.0	
	comp=Z,43nm,18.5s,baz=359,slow=35						
TIXI	Tiksi	34.12	353	P	P	02 27 46.5	-0.3
	1.0nm,0.3s,baz=328,slow=1.4,SNR=1.7						
ZALV	Zalesovo Beam	41.42	311	P	P	02 28 48.2	-0.2
	3.7nm,0.5s,baz=86,slow=8.0,SNR=17						
MKAR	Makanchi Array	43.85	301	P	P	02 29 08.5	+0.2
	0.8nm,0.5s,baz=85,slow=10.0,SNR=8.7						
KURK	Kurchatov	45.53	307	eP	P	02 29 20.7	-0.9
	18nm,0.8s						
KURBB	Kurchatov Arra	45.60	307	P	P	02 29 21.5	-0.6
	4.0nm,0.4s,baz=80,slow=8.2,SNR=35						
ILAR	Eielson Array	48.22	33	P	P	02 29 43.6	+1.2
	0.7nm,1.1s,baz=172,slow=12,SNR=4.0						
TKM2	Tokmak 2	49.44	298	eP	P	02 29 52.6	+0.3
	4.1nm,0.4s						
BVAR	Borovoye Array	50.08	312	P	P	02 29 56.4	-0.3
	0.7nm,0.5s,baz=82,slow=8.3,SNR=6.6						
BRVK	Borovoye	50.13	312	eP	P	02 29 56.5	-0.6
	1.3nm,0.4s						
INK	Inuvik	53.09	28	P	P	02 30 20.3	+1.4
	1.4nm,0.9s,baz=319,slow=4.2,SNR=4.5						
ARU	Arti	55.73	318	P	P	02 30 37.6	-0.7
	1.9nm,0.3s,baz=240,slow=4.7,SNR=4.6						
ARU	Arti	55.73	318	eP	P	02 30 37.8	-0.6
	4.3nm,0.7s						
ABKAR	Akbulak array	57.49	310	eP	P	02 30 50.4	-0.5
	1.5nm,0.6s						
AKTO	Aktyubinsk	58.18	312	P	P	02 30 55.1	-0.7
	0.7nm,0.5s,baz=60,slow=15,SNR=5.2						
WRAB	Tennant Creek	58.33	188	eP	P	02 30 57.1	+0.1
	4.0nm,0.7s						
WRA	Warramunga Arr	58.34	188	P	P	02 30 57.3	+0.2
	3.4nm,0.4s,baz=6.3,slow=7.1,SNR=31						
RES	Resolute Bay	61.30	15	P	P	02 31 16.6	-0.2
	1.1nm,0.4s,baz=318,slow=5.3,SNR=20						
ASAR	Alice Springs	62.07	188	P	P	02 31 23.3	+0.7
	1.8nm,0.7s,baz=8.2,slow=4.3,SNR=17						
YKA	Yellowknife Ar	62.52	31	P	P	02 31 24.7	-0.4
	0.2nm,0.7s,baz=289,slow=6.1,SNR=2.9						
ARCES	ARCESS Array B	63.00	339	P	P	02 31 28.4	+0.1
	1.1nm,0.4s,baz=57,slow=7.8,SNR=25						
FINES	FINESS Array B	67.93	332	P	P	02 32 00.4	+0.2
	2.7nm,0.6s,baz=42,slow=10,SNR=9.8						
SUMG	Summit	69.45	0	eP	P	02 32 09.0	-1.0
	4.5nm,0.8s						
KBZ	Khabaz	70.44	311	P	P	02 32 16.3	+0.4
	1.6nm,0.9s,baz=70,slow=4.9,SNR=3.2						
NB2	NORSAR Subarra	73.22	337	P	P	02 32 32.2	-0.2
	comp=Z,1.5nm,0.6s,baz=37,slow=6.2						
NOA	NORSAR Array B	73.22	337	P	P	02 32 32.3	-0.2
	comp=Z,2.4nm,0.7s,baz=38,slow=6.0,SNR=7.3						
AKASG	Malin Array Be	73.59	322	P	P	02 32 34.1	-0.6
	comp=Z,0.4nm,0.4s,baz=45,slow=5.4,SNR=6.4						
PDAR	Pinedale Array	76.49	46	P	P	02 32 57.2	+5.2
	comp=Z,0.3nm,0.6s,baz=302,slow=1.7,SNR=3.3						
BRTR	Keskin Array B	78.36	312	P	P	02 33 02.6	+0.3
	comp=Z,0.3nm,0.4s,baz=96,slow=2.9,SNR=4.5						
RAYN	Ar Rayn	80.59	292	eP	P	02 33 13.9	-0.6
	comp=Z,0.9nm,0.4s						
GERES	GERESS Array B	81.89	328	P	P	02 33 21.5	+0.3
	comp=Z,0.2nm,0.3s,baz=359,slow=5.6,SNR=3.0						
TXAR	Lajitas Array	89.03	53	P	P	02 33 57.0	0.0
	comp=Z,0.2nm,0.6s,baz=321,slow=50,SNR=3.1						

IDC 08 02:24:34.5±22.0, 38.°27N×142.°60E, h49km±93km, mb3.5/4, mb1 3.6/6, mb1mx3.2/66, mbtmp3.7/6, ML3.1/2, Error ellipse: s-maj=282.1km s-min=57.5km az=96.0
JMA 08 02:24:38.9±0.1, 38.°25N×141.°89E, h62km±3km, M4.0
JMA Felt I J1.
ISC 08 02:24:38.7±2.2, 38.°24N±0.°07×142.°0E±0.°1, h57km±15km, n18, σ0.s75/24, mb3.7/4, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JMK	Ichinoseki	0.92	321	P	Pn	02 24 55.8	+0.3
JMK				S	Sn	02 25 07.6	-0.3
JMM	Marumori	0.99	248	P	Pn	02 24 56.3	-0.1
JMM				S	Sn	02 25 09.0	-0.5
JOU	Okura	1.02	278	P	Pn	02 24 57.0	+0.1
JOU				S	Sn	02 25 10.1	-0.3
JFK	Kawauchi	1.22	225	P	Pn	02 24 59.7	+0.1
JFK				eS	Sn	02 25 14.9	-0.2
JOM	Ohasama	1.34	338	P	Pn	02 25 01.6	+0.5
JOM				eS	Sn	02 25 17.7	-0.2
JYK	Kaneyama	1.42	299	P	Pn	02 25 02.2	-0.1
JYK				eS	Sn	02 25 20.0	0.0
JFT	Otama	1.47	241	P	Pn	02 25 03.4	+0.5
JFT				S	Sn	02 25 21.4	+0.4
JYS	Shirataka	1.49	270	P	Pn	02 25 03.3	+0.2
JYS				S	Sn	02 25 21.7	+0.2
MJAR	Matsushiro Arr	3.43	242	P	Pn	02 25 31.5	+1.8
	3.8nm,0.3s,baz=58,slow=9.4,SNR=7.0						
MAT	Matsushiro	3.43	242	P	Pn	02 25 31.3	+1.6
MAT				eS	Sn	02 26 08.0	-1.1
USRK	Ussuriysk Ar.	9.58	312	P	Pn	02 26 54.5	+0.7
	0.6nm,0.3s,baz=127,slow=13,SNR=7.4						
SONM	Songino Array	27.49	302	P	P	02 30 20.1	+0.4
	0.3nm,0.5s,baz=77,slow=6.2,SNR=3.0						
H11S1	WAKE ISLAND Hy	29.18	125	T	T	03 00 34.7	
H11S3	WAKE ISLAND Hy	29.18	125	T	T	03 00 34.7	
H11S2	WAKE ISLAND Hy	29.19	125	T	T	03 00 34.7	
ZALV	Zalesovo Beam	41.43	311	P	P	02 32 19.1	-0.4
	0.8nm,0.5s,baz=91,slow=8.8,SNR=3.9						
MKAR	Makanchi Array	43.85	301	P	P	02 32 39.1	-0.1
	0.9nm,0.6s,baz=86,slow=10,SNR=7.1						
KURBB	Kurchatov Arra	45.61	307	P	P	02 32 51.7	-1.4
	0.6nm,0.3s,baz=82,slow=8.8,SNR=8.0						

IDC 08 02:25:53.2±10.0, 37.°18N×143.°39E, h0km, mb3.5/4, mb1 3.5/5, mb1mx3.3/64, mbtmp3.5/5, ML3.3/1, Error ellipse: s-maj=187.7km s-min=64.2km az=132.0
JMA 08 02:26:06.1±0.1, 37.°27N×141.°51E, h27km±1km, M3.2
ISC 08 02:26:09.0±2.8, 37.°3N±0.°1×141.°3E±0.°2, h35km, n15, σ1.s41/10, mb3.4/4, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	Kawauchi	0.37	286	P	Pn	02 26 16.3	-1.5
ONAJ	Iwakimizuishiy	0.44	249	P	Pn	02 26 17.3	-1.6
ONAJ				S	Sn	02 26 25.8	+0.1
JMM	Marumori	0.73	325	P	Pn	02 26 21.1	-1.7
JMM				S	Sn	02 26 32.6	-0.1
JFT	Otama	0.82	288	P	Pn	02 26 23.9	-0.1
MJAR	Matsushiro Arr	2.59	255	Pn	Pn	02 26 58.1	+10
	1.7nm,0.3s,baz=78,slow=17,SNR=3.8						
SONM	Songino Array	27.59	304	P	P	02 31 55.3	+2.4
	0.3nm,0.5s,baz=91,slow=8.6,SNR=2.6						
H11N2	WAKE ISLAND Hy	28.33	121	T	T	03 00 45.8	
H11N1	WAKE ISLAND Hy	28.34	121	T	T	03 00 45.8	
H11N3	WAKE ISLAND Hy	28.35	121	T	T	03 00 45.8	
H11S1	WAKE ISLAND Hy	29.05	123	T	T	03 01 41.5	
H11S3	WAKE ISLAND Hy	29.05	123	T	T	03 01 41.5	
H11S2	WAKE ISLAND Hy	29.07	123	T	T	03 01 41.5	
ZALV	Zalesovo Beam	41.70	312	P	P	02 33 53.7	-0.4
	0.5nm,0.3s,baz=55,slow=11,SNR=3.1						
MKAR	Makanchi Array	43.93	302	P	P	02 34 12.9	+0.6
	0.1nm,0.3s,baz=87,slow=7.1,SNR=3.0						
KURBB	Kurchatov Arra	45.80	308	P	P	02 34 27.0	0.0
	0.5nm,0.5s,baz=84,slow=8.6,SNR=4.2						

ISCJB 08 02:26:48.1±0.4, 5.°39S±0.°06×153.°49E±0.°05, h43km, mb4.4/27, MS3.3/3, Error ellipse: s-maj=8.8km s-min=7.2km az=30.2
NEIC 08 02:26:52.4±1.1, 5.°50S×153.°58E, h72km±10km, mb4.7/12, Error ellipse: s-maj=8.2km s-min=7.3km az=179.0
IDC 08 02:26:55.5±2.4, 5.°55S×153.°58E, h99km±23km, mb3.9/17, mb1 4.1/20, mb1mx3.9/46, mbtmp4.3/20, MS3.4/5, Ms1 3.4/5, ms1mx3.0/40, Error ellipse: s-maj=16.0km s-min=13.3km az=3.0
ISC 08 02:26:49.7±0.5, 5.°33S±0.°08×153.°50E±0.°06, h43km, n38, σ1.s32/42, mb4.4/27, MS3.4/3, New Ireland region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	Port Moresby	7.48	237	P	Pn	02 28 40.6	+4.3
	8.7nm,0.3s,baz=58,slow=9.6,SNR=13						
PMG				S	Sn	02 30 06.0	+6.1
	33nm,0.3s,baz=40,slow=23,SNR=15						
PMG				LR	LR	02 31 38.7	
	comp=Z,277nm,21.9s,baz=30,slow=38						
PMG	Port Moresby	7.48	237	ePn	Pn	02 28 38.2	+1.9
	29nm,0.5s						
PMG				eSn	Sn	02 30 01.1	+1.2
HNR	Honiara	7.59	123	P	Pn	02 28 39.9	+2.1
	18nm,0.3s,baz=187,slow=4.9,SNR=5.2						
HNR				S	Sn	02 30 05.4	+2.8
	14nm,0.3s,baz=39,slow=22,SNR=2.2						
HNR				LR	LR	02 31 50.5	
	comp=Z,184nm,20.8s,baz=258,slow=40						
HNR	Honiara	7.59	123	ePn	Pn	02 28 37.8	0.0
	122nm,0.8s						
HNR				S	Sn	02 30 05.4	+2.8
JAY	Jayapura	13.06	282	LR	LR	02 34 47.7	
	comp=Z,7.3nm,21.3s,baz=144,slow=36						
CTA	Charters Tower	16.28	205	P	Pn	02 30 35.7	+0.2
	0.5nm,0.3s,baz=22,slow=14,SNR=8.8						
CTAO	Charters Tower	16.28	205	ePn	Pn	02 30 35.6	+0.2
DZM	Mont Dzumac	20.84	144	P	P	02 31 26.3	-1.7
	20nm,0.5s,baz=230,slow=7.5,SNR=23						
WRAB	Tennant Creek	23.62	230	eP	P	02 31 56.3	-0.8
	10nm,1.0s						
WRA	Warramunga Arr	23.63	230	P	P	02 31 57.3	+0.1
	8.3nm,0.7s,baz=56,slow=10,SNR=7.9						
WRA				ScP	ScP	02 39 16.1	-0.1
	1.3nm,0.9s,baz=55,slow=3.7,SNR=4.5						
WRA				LR	LR	02 40 51.3	
	comp=Z,82nm,20.4s,baz=280,slow=36						
ASAR	Alice Springs	26.24	224	P	P	02 32 20.6	-0.4
	3.0nm,0.5s,baz=55,slow=8.5,SNR=24						
ASAR				PcP	PcP	02 35 46.8	-0.3
	0.9nm,0.6s,baz=64,slow=2.8,SNR=4.0						
ASAR				ScP	ScP	02 39 22.4	-1.1
	0.4nm,0.6s,baz=62,slow=2.7,SNR=5.8						
ASAR				LR	LR	02 42 19.9	
	comp=Z,105nm,20.6s,baz=68,slow=35						
STKA	Stephens Creek	28.67	201	P	P	02 32 41.0	-1.6
	7.4nm,0.8s,baz=9.7,slow=7.3,SNR=7.6						
FITZ	Fitzroy Crossi	30.03	243	P	P	02 32 54.8	0.0
	14nm,0.7s,baz=79,slow=7.3,SNR=20						
FITZ				LR	LR	02 44 54.8	
	comp=Z,91nm,21.9s,baz=78,slow=36						
FITZ	Fitzroy Crossi	30.03	243	eP	P	02 32 54.3	-0.5
	7.7nm,0.6s						
KAPI	Kappang	33.61	269	eP	P	02 33 27.0	+0.6
	14nm,1.0s						
MBWA	Marble Bar	36.32	241	eP	P	02 33 48.7	-1.0
	29nm,1.2s						
KKM	Kota Kinabalu	38.90	286	eP	P	02 34 13.2	+1.6
	8.9nm,0.5s						
URZ	Urewera	39.19	150	P	P	02 34 11.9	-1.7
	10nm,0.8s,baz=341,slow=8.2,SNR=3.8						
KULM	Kulim	53.81	280	eP	P	02 36 08.4	-0.3
	6.3nm,0.7s						
CMAR	Chiang Mai Arr	58.73	295	P	P	02 36 45.8	+2.1
	4.8nm,0.8s,baz=114,slow=5.2,SNR=22						
MA2	Magadan	64.73	358	P	P	02 37 24.3	+1.0
	3.0nm,0.3s,baz=154,slow=12,SNR=3.8						
ULN	Ulaanbaatar	66.81	328	eP	P	02 37 37.1	0.0
	2.1nm,0.6s						
SONM	Songino Array	67.14	328	P	P	02 37 40.3	+1.1
	0.6nm,0.6s,baz=145,slow=5.4,SNR=2.6						
VNDA	Vanda	72.28	178	P	P	02 38 08.4	-1.8
	0.9nm,0.6s,baz=330,slow=6.3,SNR=6.4						
TIXI	Tiksi	78.51	352	P	P	02 38 42.9	-3.0
	1.5nm,0.3s,baz=121,slow=8.1,SNR=3.7						
MKAR	Makanchi Array	81.17	319	P	P	02 39 01.6	+0.6
	0.8nm,0.7s,baz=98,slow=6.2,SNR=10.0						
ZALV	Zalesovo Beam	81.97	326	P	P	02 39 03.8	-1.1
	0.5nm,0.3s,baz=64,slow=3.4,SNR=2.6						
ILAR	Eielson Array	82.39	22	P	P	02 39 07.2	+0.3
	0.4nm,0.5s,baz=235,slow=5.3,SNR=5.7						
KURK	Kurchatov	84.61	322	eP	P	02 39 18.6	-0.1
	10nm,1.1s						
QSPA	South Pole Qui	84.64	180	eP	P	02 39 17.4	-1.3
	15nm,0.7s						
KURBB	Kurchatov Arra	84.64	322	P	P	02 39 18.4	-0.3

Code	Station Name	Δ°	AZ°	Op	ISC	Time	Res
	0.8nm,0.6s,baz=111,slow=3.8,SNR=7.0						
TKM2	**Tokmak 2**	**84.79**	**314**	eP	**P**	**02 39 20.5**	**+0.4**
	4.5nm,0.7s						
AAK	**Ala-Archa**	**85.53**	**313**	P	**P**	**02 39 24.5**	**+0.9**
	0.7nm,0.4s,baz=182,slow=24,SNR=3.6						
AAK	**Ala-Archa**	**85.53**	**313**	eP	**P**	**02 39 24.0**	**+0.3**
	2.0nm,0.8s						
BVAR	**Borovoye Array**	**90.08**	**323**	P	**P**	**02 39 43.9**	**-1.2**
	0.7nm,0.7s,baz=88,slow=5.0,SNR=4.9						
BRVK	**Borovoye**	**90.14**	**323**	eP	**P**	**02 39 44.5**	**-0.8**
	2.2nm,0.8s						
YKA	**Yellowknife Ar**	**95.57**	**28**	P	**P**	**02 40 11.2**	**+1.1**
	0.2nm,0.6s,baz=269,slow=4.7,SNR=7.4						
TORD	**Torodi Ar. Bea**	**151.13**	**288**	PKPbc	**PKPbc**	**02 46 38.3**	**-1.0**
	1.7nm,0.6s,baz=54,slow=2.1,SNR=21						

*ISCJB **08** 02:26:57.4±0.4, 49°.92N±0°.03×18°.41E±0°.03, h0km, Error ellipse: s-maj=4.7km s-min=2.3km az=17.1*
*IPEC **08** 02:26:58.5±0.2, 49°.84N×18°.52E, h1km±3km, ML2.2/3, Error ellipse: s-maj=2.2km s-min=1.1km az=161.0*
*CSEM **08** 02:26:58.4±0.2, 49°.89N×18°.43E, h1km, ML2.8/8*
*PRU **08** 02:26:59.8, 49°.84N×18°.39E, h0km*
ISC 08 02:26:57.9±0.8**, 49°.89N**±0°.04×**18°.49E**±0°.02**, h0km, n30, σ0s.85**/50**, Czech and Slovak Republics**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
OKC	**Ostrava-Krasne**	**0.23**	**256**	ePG	**Pg**	**02 27 03.7**	**+1.4**
OKC				eSG	**Sg**	**02 27 05.5**	**+0.3**
	comp=Z,116nm,0.3s						
OKC	**Ostrava-Krasne**	**0.23**	**256**	Pg	**Pg**	**02 27 03.7**	**+1.4**
OKC				Sg	**Sg**	**02 27 05.5**	**+0.3**
	116nm,0.3s						
MORC	**Moravsky Berou**	**0.62**	**260**	ePg	**Pg**	**02 27 10.5**	**+0.7**
MORC				eSg	**Sg**	**02 27 18.6**	**+0.7**
	34nm,0.3s						
OJC	**Ojcow**	**0.91**	**68**	ePg	**Pb**	**02 27 16.1**	**-0.4**
OJC				eSg	**Sb**	**02 27 29.2**	**+0.1**
OJC	**Ojcow**	**0.91**	**68**	ePg	**Pb**	**02 27 16.1**	**-0.4**
OJC				eSg	**Sb**	**02 27 29.2**	**+0.1**
LANS	**Liptovska Anna**	**0.98**	**139**	ePG	**Pb**	**02 27 17.6**	**-0.2**
LANS				eSG	**Sn**	**02 27 33.2**	**-0.4**
KRLC	**Kraliky**	**1.12**	**280**	ePG	**Pg**	**02 27 19.1**	**-0.2**
KRLC				eSG	**Sg**	**02 27 33.7**	**-0.1**
KRLC	**Kraliky**	**1.12**	**280**	Pg	**Pg**	**02 27 19.1**	**-0.2**
KRLC				Sg	**Sg**	**02 27 33.7**	**-0.1**
NIE	**Niedzica**	**1.27**	**111**	ePg	**Pn**	**02 27 23.5**	**+0.5**
NIE				eSg	**Sn**	**02 27 41.9**	**+1.2**
NIE	**Niedzica**	**1.27**	**111**	ePg	**Pn**	**02 27 23.5**	**+0.5**
NIE				eSg	**Sn**	**02 27 41.9**	**+1.2**
VRAC	**Vranov**	**1.36**	**245**	ePg	**Pg**	**02 27 24.0**	**0.0**
VRAC				eSg	**Sg**	**02 27 41.1**	**-0.6**
	36nm,0.3s						
VYHS	**Vyhne**	**1.42**	**171**	ePG	**Pn**	**02 27 24.6**	**-0.4**
VYHS				eSN	**Sg**	**02 27 43.1**	**-0.3**
VYHS				eLG	Lg	02 27 51.4	
DPC	**Dobruska-Polom**	**1.47**	**289**	ePG	**Pb**	**02 27 26.1**	**0.0**
DPC				eSG	**Sn**	**02 27 45.6**	**0.0**
	comp=Z,18nm,0.3s						
DPC	**Dobruska-Polom**	**1.47**	**289**	Pg	**Pb**	**02 27 26.1**	**0.0**
DPC				Sg	**Sn**	**02 27 45.6**	**0.0**
	18nm,0.3s						
KRUC	**Moravsky**	**1.60**	**239**	ePg	**Pn**	**02 27 27.6**	**+0.2**
KRUC				eSg	**Sn**	**02 27 48.4**	**-0.4**
	19nm,0.4s						
KSP	**Ksiaz**	**1.70**	**305**	ePg	**Pb**	**02 27 30.0**	**0.0**
KSP				eSg	**Sg**	**02 27 52.9**	**+0.5**
KSP	**Ksiaz**	**1.70**	**305**	ePg	**Pb**	**02 27 30.0**	**0.0**
KSP				eSg	**Sg**	**02 27 52.9**	**+0.5**
UPC	**Upice**	**1.71**	**292**	ePG	**Pg**	**02 27 30.4**	**-0.2**
UPC				eSG	**Sg**	**02 27 53.0**	**+0.3**
UPC	**Upice**	**1.71**	**292**	Pg	**Pg**	**02 27 30.4**	**-0.2**
UPC				Sg	**Sg**	**02 27 53.0**	**+0.3**
KECS	**Kecovo**	**1.93**	**136**	e	**Pn**	**02 27 31.8**	**-0.1**
KECS	**Kecovo**	**1.93**	**136**	eSN	**Sg**	**02 27 59.1**	**-0.6**
KECS				eLG	Lg	02 28 05.5	
CRVS	**Cervenica-Dubn**	**2.18**	**116**	ePN	**Pg**	**02 27 39.7**	**0.0**
PRU	**Pruhonice**	**2.55**	**274**	eSG	**Sb**	**02 28 17.3**	**+0.9**
	comp=Z,4.6nm,0.4s						
PRU	**Pruhonice**	**2.55**	**274**	Sg	**Sb**	**02 28 17.3**	**+0.9**
	4.6nm,0.4s						
PVCC	**Panska Ves**	**2.60**	**286**	eSG	**Sg**	**02 28 20.2**	**-1.1**
	comp=Z,14nm,0.4s						
PVCC	**Panska Ves**	**2.60**	**286**	Sg	**Sg**	**02 28 20.2**	**-1.1**
	14nm,0.4s						
BRG	**Berggiesshubel**	**3.07**	**290**	PG	**Pg**	**02 27 55.6**	**-1.1**
BRG				SG	**Sg**	**02 28 35.6**	**-0.9**
	5.2nm,0.4s						
KHC	**Kasperske Hory**	**3.29**	**258**	eSG	**Sg**	**02 28 40.7**	**-2.8**
	comp=Z,6.0nm,0.4s						
KHC	**Kasperske Hory**	**3.29**	**258**	Sg	**Sg**	**02 28 40.7**	**-2.8**
	6.0nm,0.4s						
CLL	**Collm**	**3.77**	**294**	eSg	**Sg**	**02 28 58.0**	**-1.0**
	comp=Z,5.0nm,0.6s						

*IDC **08** 02:30:41.8±2.2, 18°.80S×70°.97W, h0km, mb3.5/1, mb1 3.9/2, mb1mx3.4/23, mbtmp3.5/2, ML3.4/1, Error ellipse: s-maj=72.2km s-min=40.9km az=157.0*
*GUC **08** 02:30:51.8±0.5, 17°.88S×70°.94W, h46km±2km, ML4.0*
ISC 08 02:30:49.1±1.5**, 17°.67S**±0°.07×**70°.9W**±0°.1**, h20km**±7km**, n16, σ0s.95**/17**, 1D, Near coast of Peru**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
PB12	**IPOC Station P**	**1.07**	**152**	i P	**Pb**	**02 31 09.2**	**+0.3**
PB12				i S	**Sb**	**02 31 22.4**	**-0.1**
PB13	**IPOC Station P**	**1.46**	**117**⇓	eP	**Pb**	**02 31 15.8**	**0.0**
PB13				eS	**Sn**	**02 31 33.4**	**-0.2**
PB13				IAML		02 31 36.4	
	comp=E,9µm,0.5s						
MNMC	**Minye Minye**	**1.89**	**141**	i P	**Pn**	**02 31 21.3**	**+0.8**
MNMC				i S	**Sn**	**02 31 43.6**	**-0.2**
MNMC				IAML		02 31 46.3	
	comp=E,2µm,0.3s						
PSGC	**Pisagua**	**2.04**	**160**	i P	**Pn**	**02 31 22.4**	**0.0**
PSGC				i S	**Sn**	**02 31 45.8**	**-1.6**
PB11	**IPOC Station P**	**2.37**	**151**	i P	**Pn**	**02 31 27.9**	**+0.9**
PB11				i S	**Sn**	**02 31 55.4**	**-0.3**
PB11				IAML		02 32 13.3	
	comp=E,1µm,0.2s						
HMBC	**Humberstone**	**2.75**	**161**	i P	**Pn**	**02 31 32.7**	**+0.5**
HMBC				i S	**Sn**	**02 32 03.6**	**-1.4**
HMBC				IAML		02 32 21.1	
	comp=N,312nm,0.2s						
PB08	**IPOC Station P**	**2.94**	**147**	i P	**Pn**	**02 31 36.5**	**+1.4**
PB08				i S	**Sn**	**02 32 10.5**	**+0.5**
LPAZ	**La Paz**	**2.96**	**63**	Pn	**Pb**	**02 31 41.2**	**-0.3**
	comp=N,2.3nm,0.3s,baz=264,slow=8.1,SNR=55						
LPAZ				Sn	Sb	02 32 25.3	+7.9
	comp=N,0.6nm,0.3s,baz=141,slow=6.5,SNR=2.3						
TORD	**Torodi Ar. Bea**	**77.87**	**72**	P	**P**	**02 42 44.4**	**-1.5**
	comp=N,44nm,0.5s,baz=255,slow=5.3,SNR=12						
YKA	**Yellowknife Ar**	**86.98**	**341**	P	**P**	**02 43 33.4**	**+1.0**
	comp=N,0.2nm,0.5s,baz=137,slow=5.2,SNR=7.2						
H11N3	**WAKE ISLAND Hy**	**125.46**	**282**	T	T	05 07 39.7	
	baz=99,slow=74,SNR=12						
H11S2	**WAKE ISLAND Hy**	**125.47**	**280**	T	T	05 07 40.9	
	baz=100,slow=75,SNR=12						
H11N2	**WAKE ISLAND Hy**	**125.47**	**282**	T	T	05 07 41.6	
	baz=99,slow=74,SNR=17						
H11N1	**WAKE ISLAND Hy**	**125.48**	**282**	T	T	05 07 42.8	
	baz=99,slow=74,SNR=14						
H11S1	**WAKE ISLAND Hy**	**125.48**	**280**	T	T	05 07 41.2	
	baz=100,slow=75,SNR=17						
H11S3	**WAKE ISLAND Hy**	**125.49**	**280**	T	T	05 07 41.2	
	baz=100,slow=75,SNR=17						

*IDC **08** 02:36:04.6±2.2, 33°.59S×177°.88W, h44km±9km, mb3.4/2, mb1 3.6/3, mb1mx3.4/36, mbtmp3.6/3, ML3.0/1, Error ellipse: s-maj=56.9km s-min=20.8km az=124.0*
ISC 08 02:36:03.4±2.3**, 33°.5S**±0°.2×**177°.9W**±0°.3**, h34km, n7, σ1s.64**/14**, South of Kermadec Islands**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
WMGZ	**Waiomatatini S**	**5.31**	**214**	PN	**Pn**	**02 37 19.1**	**-1.1**
WMGZ				SN	**Sn**	**02 38 22.9**	**+2.7**
HAZ	**Te Kaha**	**5.57**	**218**	PN	**Pn**	**02 37 23.8**	**0.0**
HAZ				SN	**Sn**	**02 38 28.7**	**+2.1**
MWZ	**Matawai**	**6.14**	**216**	PN	**Pn**	**02 37 30.1**	**-1.7**
MWZ				SN	**Sn**	**02 38 40.4**	**-0.3**
URZ	**Urewera**	**6.30**	**219**	P	**Pn**	**02 37 32.6**	**-1.2**
	0.4nm,0.3s,baz=274,slow=8.2,SNR=6.1						
URZ				S	**Sn**	**02 38 43.1**	**-1.4**
	2.5nm,0.3s,baz=167,slow=19,SNR=9.0						
ASAR	**Alice Springs**	**43.15**	**270**	P	**P**	**02 44 01.1**	**+0.1**
	0.7nm,0.7s,baz=111,slow=7.4,SNR=6.4						
ASAR				pP	**sP**	**02 44 13.3**	**-1.7**
	0.6nm,0.6s,baz=113,slow=7.1,SNR=7.1						
WRA	**Warramunga Arr**	**44.42**	**275**	P	**P**	**02 44 10.8**	**-0.2**
	0.6nm,0.7s,baz=115,slow=7.8,SNR=5.2						
WRA				pP	**pP**	**02 44 23.0**	**+1.8**
	0.8nm,0.9s,baz=115,slow=7.7,SNR=4.8						
FINES	**FINESS Array B**	**148.04**	**338**	PKPbc	**PKPbc**	**02 55 44.2**	**-0.3**
	2.2nm,0.9s,baz=46,slow=5.2,SNR=3.8						
FINES				pPKPbc	**pPKPbc**	**02 55 57.6**	**+2.0**
	3.0nm,1.1s,baz=48,slow=2.8,SNR=4.9						

*DDA **08** 02:36:53.8, 38°.98N×26°.51E, h25km, Md2.9*
*ATH **08** 02:36:53.5, 38°.98N×26°.49E, h22km±1km, ML2.2/6, Error ellipse: s-maj=3.4km s-min=1.2km az=249.0*
*THE **08** 02:36:53.9, 38°.98N×26°.49E, h1km±1km, ML2.4/6, Error ellipse: s-maj=1.7km s-min=0.6km az=91.0*
*ISCJB **08** 02:36:53.8±0.4, 38°.98N±0°.02×26°.49E±0°.03, h2km±4km, Error ellipse: s-maj=3.8km s-min=2.6km az=153.9*
*ISK **08** 02:36:53.6, 38°.99N×26°.48E, h9km, MD3.0*
*CSEM **08** 02:36:54.2±0.1, 38°.98N×26°.48E, h5km, ML2.4, Error ellipse: s-maj=3.3km s-min=2.5km az=61.0*
ISC 08 02:36:53.7±1.0**, 39°.00N**±0°.01×**26°.45E**±0°.02**, h6km**±9km**, n88, σ0s.64**/130**, Turkey**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
PRK	**Paraskevi**	**0.28**	**331**	P	**Pb**	**02 37 00.5**	**-0.7**
PRK				S	**Sb**	**02 37 05.5**	**-0.7**
PRK	**Paraskevi**	**0.28**	**331**	P	**Pb**	**02 37 00.5**	**-0.7**
PRK				S	**Sb**	**02 37 05.5**	**-0.7**
PRK	**Paraskevi**	**0.28**	**331**	P	**Pb**	**02 37 00.9**	**-0.3**
PRK				S	**Sb**	**02 37 05.7**	**-0.6**
PRK				AML	AML	02 37 05.9	
	comp=N,3058µm,0.5s						
PRK				AML	AML	02 37 07.8	
	comp=E,2931µm,0.7s						
AYVA	**Ayvalik**	**0.36**	**31**	i P	**Pg**	**02 37 01.3**	**+0.6**
AYVA	**Ayvalik**	**0.36**	**31**	P	**Pg**	**02 37 01.3**	**+0.6**
DKL	**Dikili**	**0.36**	**79**	ePG	**Pg**	**02 37 00.5**	**-0.3**
DKL				eSG	**Sg**	**02 37 06.1**	**+0.5**
DKL	**Dikili**	**0.36**	**79**	ePg	**Pg**	**02 37 00.5**	**-0.3**
DKL				eSg	**Sg**	**02 37 06.1**	**+0.5**
SIGR	**SIGRI**	**0.51**	**295**	ePG	**Pb**	**02 37 05.0**	**-0.1**
SIGR				eSG	**Sb**	**02 37 11.7**	**-1.0**
SIGR	**SIGRI**	**0.51**	**295**	P	**Pb**	**02 37 04.8**	**-0.3**
SIGR				S	**Sb**	**02 37 12.3**	**-0.4**
SIGR	**SIGRI**	**0.51**	**295**	P	**Pb**	**02 37 04.8**	**-0.3**
SIGR				eSg	**Sb**	**02 37 11.7**	**-1.0**
SIGR				S	**Sb**	**02 37 12.3**	**-0.4**
SIGR	**SIGRI**	**0.51**	**295**	P	**Pb**	**02 37 05.1**	**0.0**
SIGR				S	**Sb**	**02 37 11.6**	**-1.1**
SIGR				AML	AML	02 37 13.1	
	comp=E,321µm,0.4s						
SIGR				AML	AML	02 37 16.6	
	comp=N,218µm,0.2s						
URLA	**Izmir**	**0.65**	**170**	i P	**Pg**	**02 37 05.7**	**-0.5**
URLA				i S	**Sg**	**02 37 14.5**	**-0.2**
URLA	**Izmir**	**0.65**	**170**	P	**Pg**	**02 37 05.7**	**-0.5**
URLA				S	**Sg**	**02 37 14.5**	**-0.2**
CHOS	**Chios island**	**0.69**	**207**	P	**Pg**	**02 37 07.0**	**+0.1**
CHOS				S	**Sb**	**02 37 16.7**	**-1.2**
CHOS	**Chios island**	**0.69**	**207**	P	**Pg**	**02 37 07.0**	**+0.1**
CHOS				S	**Sg**	**02 37 16.4**	**+0.5**
CHOS	**Chios island**	**0.69**	**207**	P	**Pg**	**02 37 06.6**	**-0.3**
CHOS				S	**Sg**	**02 37 16.4**	**+0.5**
CHOS				AML	AML	02 37 19.7	
	comp=E,922µm,0.3s						
CHOS				AML	AML	02 37 20.8	
	comp=N,444µm,0.2s						
ZEY	**˜zmir**	**0.76**	**177**	i P	**Pg**	**02 37 08.0**	**-0.4**
ZEY				i S	**Sb**	**02 37 20.0**	**0.0**
BLCB	**Balcova**	**0.77**	**143**	ePG	**Pg**	**02 37 08.1**	**-0.4**
BLCB	**Balcova**	**0.77**	**143**	ePg	**Pg**	**02 37 08.1**	**-0.4**
EZN	**Ezine**	**0.83**	**353**	ePG	**Pn**	**02 37 11.2**	**-0.8**
EZN	**Ezine**	**0.83**	**353**	P	**Pb**	**02 37 10.2**	**-0.4**
EZN				S	**Sb**	**02 37 22.1**	**+0.1**
EZN	**Ezine**	**0.83**	**353**	P	**Pb**	**02 37 10.2**	**-0.4**
EZN	**Ezine**	**0.83**	**353**	ePg	**Pn**	**02 37 11.2**	**-0.8**
EZN				S	**Sb**	**02 37 22.1**	**+0.1**
IZM	**Izmir**	**0.88**	**133**	ePG	**Pb**	**02 37 11.3**	**-0.1**
IZM	**Izmir**	**0.88**	**133**	ePg	**Pb**	**02 37 11.3**	**-0.1**
BOZC	**Bozcaada**	**0.89**	**340**	i P	**Pn**	**02 37 12.4**	**-0.5**
BOZC				i S	**Sn**	**02 37 26.0**	**-0.2**
AKHS	**Akhisar**	**1.07**	**96**	i P	**Pg**	**02 37 14.5**	**+0.2**
AKHS				i S	**Sg**	**02 37 28.5**	**+0.3**
AKHS	**Akhisar**	**1.07**	**96**	P	**Pg**	**02 37 14.5**	**+0.2**
AKHS				S	**Sg**	**02 37 28.5**	**+0.3**
AKS	**Akhisar**	**1.07**	**96**	ePG	**Pg**	**02 37 14.2**	**-0.1**
AKS	**Akhisar**	**1.07**	**96**	ePg	**Pg**	**02 37 14.2**	**-0.1**
BALY	**Balya**	**1.17**	**50**	i P	**Pg**	**02 37 16.3**	**+0.1**
BALY				i S	**Sn**	**02 37 32.8**	**-0.2**
BALY	**Balya**	**1.17**	**50**	P	**Pg**	**02 37 16.3**	**+0.1**
BALY				S	**Sn**	**02 37 32.8**	**-0.2**
GADA	**Gvkgeada**	**1.26**	**340**	ePN	**Pg**	**02 37 17.8**	**-0.2**
GADA	**Gvkgeada**	**1.26**	**340**	P	**Pg**	**02 37 17.8**	**-0.2**
GADA				S	**Sn**	**02 37 35.9**	**+0.7**
GADA	**Gvkgeada**	**1.26**	**340**	P	**Pg**	**02 37 17.8**	**-0.2**
GADA				S	**Sn**	**02 37 35.9**	**+0.7**
BALB	**Balikesir**	**1.28**	**60**	ePN	**Pg**	**02 37 18.4**	**+0.1**
BALB	**Balikesir**	**1.28**	**60**	ePn	**Pg**	**02 37 18.4**	**+0.1**
SMG	**Samos**	**1.32**	**167**	P	**Pn**	**02 37 17.9**	**-0.9**
SMG				S	**Sn**	**02 37 37.2**	**+0.4**
SMG	**Samos**	**1.32**	**167**	P	**Pn**	**02 37 17.9**	**-0.9**
SMG				S	**Sn**	**02 37 37.2**	**+0.4**
SMG	**Samos**	**1.32**	**167**	P	**Pn**	**02 37 17.8**	**-1.0**
SMG				AML	AML	02 37 38.1	
	comp=E,494µm,0.3s						
SMG				AML	AML	02 37 38.4	
	comp=N,519µm,0.3s						
SMG				S	**Sn**	**02 37 38.8**	**+2.0**
LIA	**Limnos Island**	**1.33**	**313**	P	**Pg**	**02 37 19.4**	**+0.2**
LIA				S	**Sn**	**02 37 38.4**	**+1.6**
LIA	**Limnos Island**	**1.33**	**313**	P	**Pg**	**02 37 19.6**	**+0.4**
LIA				S	**Sn**	**02 37 38.2**	**+1.4**
GONE	**Gonen-Balikesi**	**1.42**	**42**	ePN	**Pb**	**02 37 20.6**	**0.0**
GONE	**Gonen-Balikesi**	**1.42**	**42**	ePn	**Pb**	**02 37 20.6**	**0.0**
AYDB	**Zeytinkoy-Aydi**	**1.54**	**132**	ePN	**Pn**	**02 37 20.9**	**-1.0**
AYDB	**Zeytinkoy-Aydi**	**1.54**	**132**	ePn	**Pn**	**02 37 20.9**	**-1.0**
SMTH	**Samothraki Isl**	**1.63**	**335**	P	**Pn**	**02 37 22.8**	**-0.2**
SMTH				S	**Sg**	**02 37 45.9**	**-0.3**
SMTH	**Samothraki Isl**	**1.63**	**335**	P	**Pn**	**02 37 22.8**	**-0.2**
SMTH				S	**Sg**	**02 37 45.9**	**-0.3**
SMTH	**Samothraki Isl**	**1.63**	**335**	P	**Pn**	**02 37 22.1**	**-0.9**
SMTH				S	**Sg**	**02 37 47.7**	**+1.5**
SMTH				AML	AML	02 37 48.0	
	comp=E,56µm,0.2s						
SMTH				AML	AML	02 37 48.2	
	comp=N,62µm,0.2s						
ERIK	**Erikli-Kesan**	**1.67**	**2**	ePN	**Pn**	**02 37 23.4**	**-0.1**
ERIK	**Erikli-Kesan**	**1.67**	**2**	ePn	**Pn**	**02 37 23.4**	**-0.1**
DURS	**Dursunbey**	**1.68**	**68**	i P	**Pn**	**02 37 23.0**	**-0.8**
DURS				i S	**Sn**	**02 37 45.1**	**-0.6**
DURS	**Dursunbey**	**1.68**	**68**	P	**Pn**	**02 37 23.0**	**-0.8**
DURS				S	**Sn**	**02 37 45.1**	**-0.6**
EDC	**Edincik**	**1.73**	**39**	ePN	**Pn**	**02 37 24.1**	**-0.3**
EDC	**Edincik**	**1.73**	**39**	ePn	**Pn**	**02 37 24.1**	**-0.3**
AYDN	**Tasoluk**	**1.75**	**140**	i P	**Pg**	**02 37 27.4**	**+0.2**
AYDN				i S	**Sb**	**02 37 48.9**	**+0.4**
AYDN	**Tasoluk**	**1.75**	**140**	P	**Pg**	**02 37 27.4**	**+0.2**
AYDN				S	**Sb**	**02 37 48.9**	**+0.4**
DEMI	**Demirci**	**1.77**	**88**	i P	**Pb**	**02 37 26.8**	**+0.2**
DEMI				i S	**Sb**	**02 37 48.6**	**-0.4**
DEMI	**Demirci**	**1.77**	**88**	P	**Pb**	**02 37 26.8**	**+0.2**
DEMI				S	**Sb**	**02 37 48.6**	**-0.4**
DST	**Dursunbey**	**1.79**	**70**	ePN	**Pn**	**02 37 25.4**	**+0.2**
DST	**Dursunbey**	**1.79**	**70**	ePn	**Pn**	**02 37 25.4**	**+0.2**
KULA	**Kula-Manisa**	**1.80**	**105**	ePN	**Pn**	**02 37 25.4**	**0.0**
KULA	**Kula-Manisa**	**1.80**	**105**	P	**Pn**	**02 37 24.0**	**-1.3**
KULA	**Kula-Manisa**	**1.80**	**105**	P	**Pn**	**02 37 24.0**	**-1.3**
KULA	**Kula-Manisa**	**1.80**	**105**	ePn	**Pn**	**02 37 25.4**	**0.0**
MRMT	**Marmara Adasi**	**1.83**	**29**	ePN	**Pn**	**02 37 25.7**	**-0.1**
MRMT	**Marmara Adasi**	**1.83**	**29**	ePn	**Pn**	**02 37 25.7**	**-0.1**
ALN	**Alexandroupoli**	**1.92**	**351**	ePN	**Pb**	**02 37 28.5**	**-0.6**
ALN	**Alexandroupoli**	**1.92**	**351**	P	**Pn**	**02 37 26.9**	**-0.1**
ALN	**Alexandroupoli**	**1.92**	**351**	P	**Pn**	**02 37 26.9**	**-0.1**
ALN	**Alexandroupoli**	**1.92**	**351**	ePn	**Pb**	**02 37 28.5**	**-0.6**
ALN				S	**Sg**	**02 37 55.3**	**-0.1**
ALN	**Alexandroupoli**	**1.92**	**351**	P	**Pn**	**02 37 26.3**	**-0.7**
ALN				S	**Sg**	**02 37 55.3**	**-0.1**
ALN				AML	AML	02 37 56.6	
	comp=N,52µm,0.7s						
ALN				AML	AML	02 37 57.0	
	comp=E,42µm,0.6s						
KCTX	**Karacabey (Bur**	**1.94**	**49**	ePN	**Pn**	**02 37 27.0**	**-0.3**
KCTX	**Karacabey (Bur**	**1.94**	**49**	ePn	**Pn**	**02 37 27.0**	**-0.3**
BODT	**Bodrum**	**2.05**	**160**	ePN	**Pn**	**02 37 29.2**	**+0.4**
BODT	**Bodrum**	**2.05**	**160**	ePn	**Pn**	**02 37 29.2**	**+0.4**
APE	**Apeiranthos**	**2.06**	**201**	ePN	**Pn**	**02 37 29.8**	**+0.9**
APE	**Apeiranthos**	**2.06**	**201**	ePn	**Pn**	**02 37 29.8**	**+0.9**
MDNY	**Mudanya-Bursa**	**2.32**	**53**	ePN	**Pn**	**02 37 33.3**	**+0.8**
MDNY	**Mudanya-Bursa**	**2.32**	**53**	ePn	**Pn**	**02 37 33.3**	**+0.8**
ULDT	**Uludag**	**2.37**	**60**	i P	**Pg**	**02 37 38.4**	**-0.7**
ULDT				i S	**Sg**	**02 38 10.0**	**+0.2**
ULDT	**Uludag**	**2.37**	**60**	P	**Pg**	**02 37 38.4**	**-0.7**
TVSB	**Tavsanli**	**2.38**	**78**	ePN	**Pn**	**02 37 33.6**	**+0.2**
TVSB	**Tavsanli**	**2.38**	**78**	ePn	**Pn**	**02 37 33.6**	**+0.2**
ARMT	**Armutlu**	**2.43**	**49**	ePN	**Pn**	**02 37 34.6**	**+0.6**
ARMT	**Armutlu**	**2.43**	**49**	ePn	**Pn**	**02 37 34.6**	**+0.6**
EDRB	**Edirne**	**2.85**	**4**	ePN	**Pn**	**02 37 41.5**	**+1.8**
EDRB	**Edirne**	**2.85**	**4**	ePn	**Pn**	**02 37 41.6**	**+1.8**

JMA 08 02:39:43.6±0.1**, 38°.42N**×**141°.85E, h56km**±3km**, M3.4, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
JMK	**Ichinoseki**	**0.72**	**317**	P	Pn	02 39 58.3	+0.4
JMK				S	Sn	02 40 08.6	+0.2
JOU	**Okura**	**0.93**	**267**	P	Pn	02 40 00.9	+0.3
JOU				S	Sn	02 40 13.6	+0.4
JMM	**Marumori**	**1.00**	**237**	P	Pn	02 40 01.6	+0.1
JMM				S	Sn	02 40 14.7	0.0
JOM	**Ohasama**	**1.14**	**338**	P	Pn	02 40 03.6	+0.3
JOM				S	Sn	02 40 18.1	+0.1
JYK	**Kaneyama**	**1.27**	**294**	P	Pn	02 40 05.6	+0.5
JYK				S	Sn	02 40 21.8	+0.7
JFK	**Kawauchi**	**1.30**	**217**	P	Pn	02 40 05.9	+0.3
JFK				S	Sn	02 40 22.1	+0.1
JYS	**Shirataka**	**1.42**	**262**	P	Pn	02 40 07.9	+0.8
JYS				S	Sn	02 40 25.7	+1.0
JFT	**Otama**	**1.50**	**233**	P	Pn	02 40 09.1	+0.9
JFT				S	Sn	02 40 27.2	+0.6

IDC 08 02:40:07.6±4.4**, 35°.69N**×**134°.79E, h76km**±44km**, mb3.4**/3**, mb1 3.6**/4**, mb1mx3.1**/48**, mbtmp3.5**/4**, ML2.7**/1**, Error ellipse: s-maj=42.3km s-min=29.4km az=61.0, Western Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
MJAR	**Matsushiro Arr**	**2.89**	**72**	P	Pn	02 40 51.8	+0.4
	1.1nm,0.3s,baz=206,slow=13,SNR=4.8						
KURBB	**Kurchatov Arra**	**42.63**	**309**	P	P	02 47 56.0	-0.2
	0.7nm,0.7s,baz=83,slow=8.0,SNR=9.0						
WRA	**Warramunga Arr**	**55.33**	**181**	P	P	02 49 33.5	-0.1
	1.2nm,1.1s,baz=5.2,slow=7.1,SNR=3.7						
TXAR	**Lajitas Array**	**95.09**	**48**	P	P	02 53 22.5	0.0
	0.3nm,0.6s,baz=263,slow=1.5,SNR=3.3						

*NIED **08** 02:41:00, 37°.30N×141°.40E, h74km, Mw3.9 Best double couple: M0 9.19000×10^14 NP1: φs159.00000°, δ58.00000°, λ17.00000°. NP2: φs60.00000°, δ76.00000°, λ147.00000°.*
*ISCJB **08** 02:41:19.9±1.6, 37°.33N±0°.05×141°.60E±0°.09, h17km±10km, mb3.6/6, Error ellipse: s-maj=12.7km s-min=8.4km az=12.0*
*JMA **08** 02:41:22.5±0.2, 37°.33N×141°.43E, h30km±2km, M3.6*
*IDC **08** 02:41:29.4±4.0, 37°.29N×141°.35E, h82km±36km, mb3.2/5, mb1 3.5/6, mb1mx3.2/46, mbtmp3.5/6, Error ellipse: s-maj=34.9km s-min=20.8km az=86.0*
ISC 08 02:41:21.0±2.1**, 37°.33N**±0°.05×**141°.46E**±0°.08**, h12km**±12km**, n20, σ0s.68**/19**, mb3.6**/6**, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**0.47**	**275**	P	**Pb**	**02 41 32.1**	**+0.9**
JFK				S	**Sb**	**02 41 38.5**	**+0.4**
ONAJ	**Iwakimizuishiy**	**0.58**	**247**	P	**Pb**	**02 41 33.1**	**0.0**
ONAJ				S	**Sb**	**02 41 41.3**	**0.0**
JMM	**Marumori**	**0.75**	**315**	P	**Pb**	**02 41 36.0**	**-0.1**
JMM				S	**Sg**	**02 41 45.6**	**+0.1**
JFT	**Otama**	**0.91**	**282**	P	**Pn**	**02 41 39.4**	**-0.3**
JFT				S	**Sb**	**02 41 51.3**	**+0.3**
JHO	**Hitachi**	**1.01**	**225**	P	**Pg**	**02 41 40.4**	**-0.2**
JOU	**Okura**	**1.21**	**329**	P	**Pn**	**02 41 43.7**	**-0.1**
JOU				S	**Sb**	**02 41 59.0**	**-0.5**
MJAR	**Matsushiro Arr**	**2.72**	**254**	P	**Pb**	**02 42 09.6**	**-0.1**
	4.1nm,0.3s,baz=20,slow=17,SNR=7.3						
MAT	**Matsushiro**	**2.72**	**254**	P	**Pn**	**02 42 05.7**	**+1.1**
MAT				S	**Sb**	**02 42 41.3**	**-1.7**
H11N2	**WAKE ISLAND Hy**	**28.27**	**121**	T	T	03 16 54.4	
	baz=314,slow=75,SNR=38						
H11N1	**WAKE ISLAND Hy**	**28.28**	**121**	T	T	03 16 50.4	
	baz=314,slow=75,SNR=22						
H11N3	**WAKE ISLAND Hy**	**28.29**	**121**	T	T	03 16 56.2	
	baz=314,slow=75,SNR=16						
H11S1	**WAKE ISLAND Hy**	**28.99**	**123**	T	T	03 17 45.0	
	baz=316,slow=75,SNR=24						
H11S3	**WAKE ISLAND Hy**	**28.99**	**123**	T	T	03 17 47.0	
	baz=316,slow=75,SNR=15						
H11S2	**WAKE ISLAND Hy**	**29.01**	**123**	T	T	03 17 43.2	
	baz=316,slow=75,SNR=16						
MKAR	**Makanchi Array**	**43.99**	**302**	P	**P**	**02 49 28.0**	**-0.2**
	0.3nm,0.3s,baz=88,slow=10,SNR=4.8						
KURBB	**Kurchatov Arra**	**45.85**	**308**	P	**P**	**02 49 42.5**	**-0.3**
	0.5nm,0.4s,baz=82,slow=7.6,SNR=8.1						
ILAR	**Eielson Array**	**49.22**	**32**	P	**P**	**02 50 09.7**	**+0.8**
	0.3nm,0.7s,baz=267,slow=4.9,SNR=4.1						
WRA	**Warramunga Arr**	**57.36**	**188**	P	**P**	**02 51 08.3**	**-0.8**
	1.0nm,0.6s,baz=6.9,slow=7.5,SNR=13						
ASAR	**Alice Springs**	**61.09**	**188**	P	**P**	**02 51 34.9**	**0.0**
	0.4nm,0.7s,baz=13,slow=14,SNR=4.1						
YKA	**Yellowknife Ar**	**63.53**	**30**	P	P	02 51 58.9	+8.0
	0.2nm,0.6s,baz=304,slow=6.8,SNR=5.8						

*IDC **08** 02:54:16.4±1.3, 49°.30S×164°.01E, h0km, mb3.9/3, mb1 4.1/4, mb1mx3.8/26, mbtmp3.9/4, ML3.6/1, MS3.6/2, Ms1 3.5/2, ms1mx3.0/19, Error ellipse: s-maj=46.7km s-min=29.5km az=175.0*
*ISCJB **08** 02:54:18.6±1.7, 49°.4S±0°.2×164°.2E±0°.2, h33km, mb3.9/4, MS3.3/1, Error ellipse: s-maj=33.4km s-min=6.9km az=153.7*
*NEIC **08** 02:54:21.3±9.6, 49°.20S×164°.07E, h32km±62km, mb4.2/1, Error ellipse: s-maj=50.6km s-min=12.5km az=190.0*
ISC 08 02:54:21.5±1.0**, 49°.4S**±0°.2×**164°.2E**±0°.1**, h35km, n37, σ1s.09**/32**, mb3.9**/4**, Auckland Islands region**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
APZ	**The Paps**	**3.59**	**47**	PN	**Pn**	**02 55 14.4**	**-0.3**
APZ				SN	**Sn**	**02 55 56.2**	**+0.3**
PYZ	**Puysegur Point**	**3.61**	**29**	PN	**Pn**	**02 55 14.5**	**-0.4**
WHZ	**Wether Hill Ro**	**4.30**	**38**	PN	**Pn**	**02 55 24.1**	**-0.3**
WHZ				SN	**Sn**	**02 56 14.2**	**+0.9**
WHZ	**Wether Hill Ro**	**4.30**	**38**	ePn	**Pn**	**02 55 23.9**	**-0.5**
WHZ				eSn	**Sn**	**02 56 12.2**	**-1.1**
SYZ	**Scrubby Hill**	**4.37**	**52**	PN	**Pn**	**02 55 25.4**	**+0.1**
SYZ				SN	**Sn**	**02 56 14.2**	**-0.7**
DCZ	**Deep Cove**	**4.39**	**29**	PN	**Pn**	**02 55 24.8**	**-0.7**
MLZ	**Mavora Lakes**	**4.81**	**35**	PN	**Pn**	**02 55 32.3**	**+0.9**
EAZ	**Earnscleugh**	**5.41**	**42**	PN	**Pn**	**02 55 40.5**	**+1.0**
WKZ	**Wanaka**	**5.61**	**38**	PN	**Pn**	**02 55 43.7**	**+1.3**
JCZ	**Jackson Bay**	**6.16**	**33**	PN	**Pn**	**02 55 51.3**	**+1.4**
ODZ	**Otahua Downs**	**6.17**	**48**	PN	**Pn**	**02 55 49.1**	**-0.9**
ODZ	**Otahua Downs**	**6.17**	**48**	ePn	**Pn**	**02 55 49.2**	**-0.7**
ODZ				eSn	**Sn**	**02 56 57.0**	**-2.2**
RPZ	**Rata Peaks**	**7.37**	**43**	Pn	**Pn**	**02 56 05.4**	**-1.1**
	0.9nm,0.3s,baz=197,slow=4.3,SNR=4.4						
RPZ				Sn	**Sn**	**02 57 31.5**	**+2.7**
	2.7nm,0.3s,baz=26,slow=15,SNR=3.0						

URZ	Urewera	14.48	45	LR	LR	03 04 06.2	
	comp=Z,294nm,20.0s,baz=230,slow=41						
STKA	Stephens Creek	24.31	308	LR	LR	03 07 58.2	
	comp=Z,107nm,19.7s,baz=189,slow=34						
ASAR	Alice Springs	34.93	306	P	P	03 01 09.3	-0.6
	1.0nm,0.7s,baz=138,slow=7.6,SNR=14						
ASAR				PcP	PcP	03 03 41.6	-0.3
	0.4nm,0.6s,baz=137,slow=4.7,SNR=4.3						
WRA	Warramunga Arr	37.80	310	P	P	03 01 32.9	-1.4
	1.1nm,0.7s,baz=138,slow=8.1,SNR=6.4						
WRA				PcP	PcP	03 03 49.4	-1.1
	0.7nm,0.7s,baz=149,slow=2.9,SNR=5.2						
WRAB	Tennant Creek	37.80	310	*e*P	P	03 01 33.2	-1.1
	3.9nm,0.9s						
H01W1	Cape Leeuwin H	39.08	272	T	T	03 43 10.5	
	baz=128,slow=76,SNR=33						
H01W2	Cape Leeuwin H	39.09	272	T	T	03 43 09.2	
	baz=128,slow=76,SNR=37						
H01W3	Cape Leeuwin H	39.10	272	T	T	03 43 09.9	
	baz=128,slow=76,SNR=36						
FITZ	Fitzroy Crossi	43.93	301	P	P	03 02 24.4	-0.5
	1.5nm,0.6s,baz=188,slow=15,SNR=2.4						
H08S2	Diego Garcia H	85.35	264	T	T	04 40 48.3	
	baz=140,slow=76,SNR=78						
H08S1	Diego Carcia H	85.36	264	T	T	04 40 46.7	
	baz=140,slow=76,SNR=50						
H08S3	Diego Garcia H	85.37	264	T	T	04 40 49.7	
	baz=140,slow=76,SNR=53						
H08N1	Diego Carcia H	87.29	263	T	T	04 43 26.9	
	baz=144,slow=76,SNR=29						
H08N3	Diego Garcia H	87.30	263	T	T	04 43 34.1	
	baz=144,slow=76,SNR=60						
H08N2	Diego Garcia H	87.31	263	T	T	04 43 33.6	
	baz=144,slow=76,SNR=32						
ILAR	Eielson Array	119.97	22	PKP	PKPdf	03 13 07.3	+0.5
	0.4nm,0.9s,baz=235,slow=3.2,SNR=3.4						
KURK	Kurchatov	123.49	311	*e*PKPdf	PKPdf	03 13 13.7	-0.3
YKA	Yellowknife Ar	128.59	36	PKP	PKPdf	03 13 25.2	+1.9
	0.1nm,0.7s,baz=262,slow=1.7,SNR=3.2						
TORD	Torodi Ar. Bea	141.12	208	PKhKP	PKPpre	03 13 41.3	
	0.4nm,0.5s,baz=163,slow=3.6,SNR=6.3						
BRTR	Keskin Array B	144.03	274	PKP	PKPbc	03 13 52.3	+1.4
	0.6nm,0.8s,baz=142,slow=7.3,SNR=3.4						
TAM	Tamanrasset	148.59	220	*e*PKPbc	PKPbc	03 14 05.6	+0.8
AKASG	Malin Array Be	151.36	290	PKPbc	PKPbc	03 14 10.4	0.0
	1.8nm,0.6s,baz=82,slow=2.5,SNR=7.9						
ARCES	ARCESS Array B	151.75	331	PKPbc	PKPbc	03 14 10.6	-0.2
	2.6nm,0.8s,baz=132,slow=1.8,SNR=7.6						
FINES	FINESS Array B	153.81	313	PKPbc	PKPbc	03 14 16.1	+0.6
	1.3nm,0.6s,baz=90,slow=7.6,SNR=3.9						

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*NIED **08** 02:57:00, 36°.80N×141°.20E, h47km, Mw4.8 Best double couple: $M_0$1.52000×10^{16} NP1:ϕ_s137.00000°, δ16.00000°, λ160.00000°. NP2:ϕ_s246.00000°, δ85.00000°, λ75.00000°.*

*MOS **08** 02:57:17.2±1.0, 36°.86N×141°.08E, h26km, mb5.0/70, Error ellipse: s-maj=7.2km s-min=4.4km az=102.2*

*BJI **08** 02:57:17.6, 36°.72N×141°.17E, h37km, mb4.7/57, mB5.0/38, Ms4.5/41, Ms7 4.3/37*

*NEIC **08** 02:57:20.6±0.6, 36°.79N×141°.03E, h40km±5km, mb4.9/71, Error ellipse: s-maj=4.0km s-min=3.0km az=115.0*

NEIC Recorded [3 JMA] in Fukushima and Ibaraki.

*ISCJB **08** 02:57:20.1±0.3, 36°.79N±0°.02×141°.10E±0°.03, h51km±2km, mb4.8/139, MS4.0/28, Error ellipse: s-maj=4.4km s-min=3.5km az=40.3*

*JMA **08** 02:57:20.1±0.1, 36°.77N×141°.17E, h44km±1km, M4.7*

JMA Felt III J1.

*IDC **08** 02:57:24.2±1.6, 36°.79N×141°.08E, h75km±13km, mb4.3/35, mb1 4.4/41, mb1mx4.4/50, mbtmp4.6/41, MS3.9/21, Ms1 3.9/21, ms1mx3.8/33, Error ellipse: s-maj=11.5km s-min=8.6km az=96.0*

ISC 08 02:57:20.5±0.6**, 36°.83N**±0°.03×**141°.19E**±0°.04**, h45**km±4km**, n328,** σ1s**.53**/358**, mb4.8**/139**, MS4.0**/27**, 12C-5D, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	Iwakimizuishiy	0.41	312	P	Pn	02 57 30.1	-0.4
ONAJ				S	Sn	02 57 37.1	-0.5
JHO	Hitachi	0.54	247	P	Pn	02 57 31.0	-1.0
JHO				S	Sn	02 57 38.6	-1.6
JFK	Kawauchi	0.59	335	P	Pn	02 57 32.6	-0.1
JFK				S	Sn	02 57 41.2	-0.3
JFT	Otama	0.97	316	P	Pn	02 57 38.5	+0.8
JFT				*e*S	Sn	02 57 51.3	+1.0
JMM	Marumori	1.08	343	P	Pn	02 57 39.4	+0.1
JFY	Yanaizu	1.32	296	P	Pn	02 57 42.7	+0.2
JAG	Ashikaga	1.45	254	P	Pn	02 57 43.7	-0.6
JAG				*e*S	Sn	02 58 01.2	-0.9
JKT	Katashina	1.56	268	P	Pn	02 57 45.9	+0.1
JKT				*e*S	Sn	02 58 04.8	-0.1
MJAR	Matsushiro Arr	2.41	264	P	Pn	02 57 58.1	+0.6
	70nm,0.3s,baz=90,slow=15,SNR=361						
MJAR				S	Sn	02 58 28.9	+3.2
	146nm,0.3s,baz=101,slow=18,SNR=11						
MAJO	Matsushiro	2.41	264	*e*P	Pn	02 57 58.4	+0.9
MAJO	Matsushiro	2.41	264	*e*Pn	Pn	02 57 58.4	+0.9
MAT	Matsushiro	2.41	264	P	Pn	02 57 58.4	+0.9
MAT				S	Sn	02 58 30.4	+4.6
INU	Inuyama	3.68	248	*e*Pn	Pn	02 58 15.3	+0.4
JHJ	Hachijo jima 2	3.87	198	P	Pn	02 58 18.6	+1.0
	113nm,0.3s,baz=1.8,slow=23,SNR=13						
JHJ				S	Sn	02 59 01.1	-0.8
	234nm,0.3s,baz=218,slow=23,SNR=9.2						
JHJ2	Mitsune	3.87	197	*e*Pn	Pn	02 58 17.2	-0.3
ERM	Erimo	5.40	16	*e*P	Pn	02 58 37.4	-1.1
ERM				*e*		02 59 38.3	
ERM	Erimo	5.40	16	*e*Pn	Pn	02 58 37.4	-1.1
ERM				*e*Sn	Sn	02 59 38.3	-1.0
YUK	Yuzh-Kuril'sk	8.03	25	*e*P	Pn	02 59 14.4	-0.2
YUK				*i* S	Sn	03 00 39.3	-4.7
YUK				pmax	pmax		
	comp=E,96nm,0.2s						
YUK				pmax	pmax		
	comp=Z,178nm,0.2s						
YUK				pmax	pmax		
	comp=N,55nm,0.1s						
SHO	Shikotan	8.25	30	*e*P	Pn	02 59 16.7	-0.8
SHO				*i* S	Sn	03 00 43.7	-5.6
SHO				pmax	pmax		
	comp=Z,91nm,0.9s						
SHO				pmax	pmax		
	comp=E,15nm,0.2s						
SHO				pmax	pmax		
	comp=N,48nm,0.5s						
JNU	Nakatsue	9.23	249	P	Pn	02 59 32.7	+1.6
	comp=N,0.6nm,0.3s,baz=69,slow=11,SNR=5.6						
JNU	Nakatsue	9.23	249	*e*Pn	Pn	02 59 29.1	-2.0
	comp=N,18nm,0.9s						
CBIJ	Chichi jima	9.74	175	*e*Pn	Pn	02 59 34.3	-3.7
CBIJ				*e*Sn	Sn	03 01 15.1	-11
KUR	Kuril'sk	9.79	29	P	Pn	02 59 40.8	+2.1
KUR				*i* S	Sn	03 01 23.1	-4.1
KUR				pmax	pmax		
	comp=Z,49nm,0.5s						
KUR				pmax	pmax		
	comp=N,50nm,0.1s						
KUR				pmax	pmax		
	comp=E,32nm,0.3s						
USRK	Ussuriysk Ar.	10.15	319	P	Pn	02 59 46.9	+3.3
	comp=E,4.9nm,0.3s,baz=133,slow=13,SNR=105						
USRK				LR	LR	03 03 27.6	
	comp=E,1µm,18.7s,baz=119,slow=36						
YSS	Yuzh-Sakhalins	10.19	6	⇑*e*P	Pn	02 59 43.4	-0.6
YSS				pmax	pmax		
	comp=Z,60nm,0.6s						
YSS	Yuzh-Sakhalins	10.19	6	*e*Pn	Pn	02 59 42.2	-1.9
KSRS	Korea Array	10.61	277	P	Pn	02 59 53.6	+3.7
	comp=Z,0.4nm,0.3s,baz=90,slow=14,SNR=28						
KSRS				LR	LR	03 03 43.9	
	comp=Z,669nm,19.0s,baz=96,slow=36						
KS15	Wonju Array Si	10.64	277	*e*Pn	Pn	02 59 49.2	-1.1
KSAR	Wonju Array Be	10.64	277	P	Pn	02 59 53.6	+3.3
KSAR	Wonju Array Be	10.64	277	P	Pn	02 59 53.6	+3.3
MDJ	Mudanjiang	11.73	315	P	Pn	03 00 04.0	-1.2
MDJ				S	Sn	03 02 12.2	-2.5
MDJ				pmax	pmax		
	comp=Z,4.0nm,0.8s						
MDJ				pmax	pmax		
	comp=Z,120nm,5.7s						
MDJ	Mudanjiang	11.73	315	*e*Pn	Pn	03 00 03.5	-1.7
	comp=Z,77nm,1.1s						
HABR	Khabarovsk	12.48	341	*e*P	Pn	03 00 13.2	-2.1
HABR				*e*S	Sn	03 02 32.2	-0.6
HABR				pmax	pmax		
	comp=Z,27nm,1.2s						
HABR				pmax	pmax		
	comp=Z,26nm,1.1s						
HABR				pmax	pmax		
	comp=N,27nm,1.1s						
HABR				pmax	pmax		
	comp=E,46nm,1.1s						
HABR				pmax	pmax		
	comp=N,30nm,1.1s						
HABR				MLR	MLR		
	comp=Z,416nm,13.0s						
CN2	Changchun	13.87	305	*e*P	Pn	03 00 35.9	+1.5
CN2				pmax	pmax		
	comp=Z,10.0nm,0.7s						
TYV	Tymovskoe	14.07	4	*e*P	Pn	03 00 36.5	-0.5
TYV				pmax	pmax		
	comp=Z,44nm,1.0s						
KLR	Kul'dur	14.17	334	P	Pn	03 00 41.5	+3.1
	comp=Z,0.4nm,0.3s,baz=148,slow=12,SNR=6.7						
KLR				LR	LR	03 05 55.6	
	comp=Z,810nm,18.6s,baz=134,slow=36						
SNY	Shenyang	14.51	296	⇓P	P	03 00 50.1	+1.4
SNY				S	S	03 03 34.2	-6.0
SNY				pmax	pmax		
	comp=Z,25nm,0.7s						
SNY				pmax	pmax		
	comp=Z,110nm,4.3s						
SNY				LR	LR		
	comp=N,830nm,21.4s						
SNY				LR	LR		
	comp=E,760nm,19.8s						
SNY				LR	LR		
	comp=Z,1µm,18.8s						
DL2	Dalian	15.59	284	P	Pn	03 00 58.0	+0.9
DL2				*e*S	Sn	03 03 48.6	0.0
DL2				pmax	pmax		
	comp=Z,34nm,0.9s						
DL2				LR	LR		
	comp=Z,830nm,13.7s						
DL2				LR	LR		
	comp=Z,420nm,13.1s						
DL2				LR	LR		
	comp=Z,710nm,11.6s						
NKL	Nikolayevsk	16.33	359	*e*P	Pn	03 01 06.0	-0.4
NKL				MLR	MLR		
	comp=Z,700nm,17.0s						
NJ2	Nanjing	19.01	262	*e*P	Pn	03 01 39.6	0.0
NJ2				pmax	pmax		
	comp=Z,9.0nm,0.9s						
TIA	Tai'an	19.34	275	⇓P	P	03 01 41.0	-1.2
TIA				pmax	pmax		
	comp=Z,20nm,1.0s						
BJI	Beijing	19.84	287	P	P	03 01 46.2	-1.3
BJI				S	S	03 05 22.9	-5.5
BJI				pmax	pmax		
	comp=Z,9.0nm,0.9s						
BJI				LR	LR		
	comp=Z,190nm,12.6s						
BJI				LR	LR		
	comp=Z,370nm,13.0s						
BJT	Baijiatuau	19.84	287	*e*P	P	03 01 46.6	-1.0
BJT				pmax	pmax		
	comp=Z,23nm,0.7s						
BJT	Baijiatuau	19.84	287	*e*Pn	P	03 01 46.6	-1.0
	comp=Z,23nm,0.7s						
PETK	Petropavlovsk-	19.96	30	P	Pn	03 01 51.0	+0.4
	comp=Z,5.4nm,0.8s,baz=171,slow=10,SNR=4.2						
PETK				LR	LR	03 09 31.3	
	comp=Z,392nm,18.6s,baz=220,slow=36						
PET	Petropavlovsk	20.29	32	⇓*e*P	P	03 01 52.8	+0.5
PET				*e*S	S	03 05 31.2	-5.9
PET				MLR	MLR		
	comp=Z,300nm,14.0s						
YULB	Yu-li	21.74	238	*e*P	P	03 02 06.8	-1.4
	comp=Z,15nm,1.0s						
WHN	Wuhan	23.15	262	P	P	03 02 21.3	-1.7
WHN				LR	LR		
	comp=Z,910nm,10.6s						
WHN				LR	LR		
	comp=Z,2µm,14.7s						
WHN				LR	LR		
	comp=Z,1µm,12.9s						
HHC	Hu-ho-hao-te	23.36	289	*e*P	P	03 02 25.4	+0.2
HHC				PP	PnPn	03 02 57.8	+5.3
HHC				S	S	03 06 30.2	-4.6
HHC				SS	SnSn	03 07 17.8	+5.2
HHC				pmax	pmax		
	comp=Z,16nm,2.0s						
HHC				pmax	pmax		
	comp=Z,85nm,3.5s						
HHC				LR	LR		
	comp=Z,950nm,11.2s						
HHC				LR	LR		
	comp=Z,1µm,14.9s						
HHC				LR	LR		
	comp=Z,2µm,13.7s						
GUMO	Guam	23.38	171	LR	LR	03 14 18.6	
	comp=Z,99nm,18.5s,baz=353,slow=43						
GUMO	Guam	23.38	171	*e*P	P	03 02 25.4	+0.2
GUMO				pmax	pmax		
	comp=Z,160nm,0.9s						
GUMO	Guam	23.38	171	*e*P	P	03 02 25.4	+0.2
	comp=Z,160nm,0.9s						
MA2	Magadan	23.59	12	P	P	03 02 27.9	+0.9
	comp=Z,26nm,0.8s,baz=214,slow=8.8,SNR=20						
MA2				LR	LR	03 11 59.8	
	comp=Z,272nm,18.3s,baz=220,slow=37						
MA2	Magadan	23.59	12	*e*P	P	03 02 27.0	0.0
	comp=Z,156nm,1.0s						
YAK	Yakutsk	26.23	348	P	P	03 02 51.3	+0.4
	comp=Z,77nm,0.8s,baz=335,slow=3.3,SNR=9.4						
YAK				LR	LR	03 12 56.8	
	comp=Z,422nm,20.1s,baz=154,slow=36						
YAK	Yakutsk	26.23	348	*e*P	P	03 02 50.9	-0.1
YAK				*e*		03 03 29.9	
YAK				*e*		03 06 17.0	
YAK				*e*S	S	03 07 21.1	+1.2
YAK				*e*S	S	03 07 21.1	+1.2
YAK				*e*SS	SnSn	03 08 20.7	-1.4
YAK				pmax	pmax		
	comp=Z,75nm,0.9s						
YAK				pmax	pmax		
	comp=N,35nm,1.3s						
YAK				pmax	pmax		
	comp=E,14nm,1.3s						
YAK				pmax	pmax		
	comp=Z,28nm,1.1s						
YAK				pmax	pmax		
	comp=N,18nm,1.0s						
YAK				pmax	pmax		
	comp=E,26nm,1.2s						
YAK				smax	smax		
	comp=E,195nm,3.5s						
YAK				smax	smax		
	comp=N,251nm,3.8s						
YAK				MLR	MLR		
	comp=Z,377nm,19.0s						
YAK				MLR	MLR		
	comp=N,275nm,19.0s						
YAK				MLR	MLR		
	comp=E,94nm,17.0s						
YAK	Yakutsk	26.23	348	*e*P	P	03 02 51.4	+0.4
	comp=E,87nm,1.0s						
XAN	Xi'an	26.37	274	P	P	03 02 52.3	-0.3
XAN				pmax	pmax		
	comp=E,5.0nm,0.7s						
XAN				pmax	pmax		
	comp=E,47nm,5.9s						
SEY	Seymchan	27.03	11	P	P	03 02 59.7	+1.5
	comp=E,35nm,0.9s,baz=196,slow=6.0,SNR=68						
SEY	Seymchan	27.03	11	*ce*P	P	03 03 00.0	+1.8
ENH	Enshi	27.13	265	*e*P	P	03 02 58.6	-0.9
	comp=E,34nm,0.6s						
ULN	Ulaanbaatar	27.32	305	*ce*P	P	03 03 00.7	-0.5
ULN				pmax	pmax		
	comp=Z,29nm,1.2s						
ULN	Ulaanbaatar	27.32	305	*e*P	P	03 03 00.2	-0.9
	comp=Z,21nm,1.0s						
BOD	Bodaibo	27.61	328	*e*P	P	03 03 02.5	-0.9
BOD				pmax	pmax		
	comp=Z,14nm,1.0s						
SONA1	Songino Array	27.75	304	*e*P	P	03 03 04.1	-0.8
SONM	Songino Array	27.75	304	P	P	03 03 04.1	-0.8
	comp=Z,7.1nm,0.6s,baz=103,slow=9.5,SNR=21						
SONM				LR	LR	03 13 42.1	
	comp=Z,259nm,19.9s,baz=70,slow=35						
H11N2	WAKE ISLAND Hy	28.20	120	T	T	03 32 44.2	
	SNR=229						
H11N1	WAKE ISLAND Hy	28.21	120	T	T	03 32 44.0	
H11N3	WAKE ISLAND Hy	28.22	120	T	T	03 32 44.0	
H11S1	WAKE ISLAND Hy	28.90	122	T	T	03 34 03.8	
	baz=314,slow=75,SNR=497						
H11S3	WAKE ISLAND Hy	28.90	122	T	T	03 34 03.9	
	baz=314,slow=75,SNR=789						
H11S2	WAKE ISLAND Hy	28.92	122	T	T	03 33 40.5	
	baz=314,slow=75,SNR=371						
LZH	Lanzhou	29.92	280	*e*P	P	03 03 25.3	+0.9
LZH				pP	pP	03 03 35.4	-0.9
LZH				sP	sP	03 03 39.5	-2.2
LZH				PP	PnPn	03 04 22.0	+0.1
LZH				*e*S	S	03 08 17.3	-1.6
LZH				sS	sS	03 08 32.3	-6.6
LZH				SS	SnSn	03 09 54.3	+1.5
LZH				pmax	pmax		
	comp=Z,34nm,1.0s						
LZH				pmax	pmax		
	comp=Z,130nm,5.8s						
LZH				LR	LR		
	comp=Z,610nm,15.0s						
LZH				LR	LR		
	comp=Z,670nm,14.8s						
LZH				LR	LR		
	comp=Z,570nm,16.2s						
ZAK	Zakamensk	30.25	309	*e*P	P	03 03 26.1	-1.0
ZAK				pmax	pmax		
	comp=Z,5.0nm,1.0s						
TLY	Talaya	30.33	311	P	P	03 03 28.0	+0.3
	comp=Z,3.7nm,0.7s,baz=345,slow=2.3,SNR=4.5						
TLY				LR	LR	03 16 35.2	
	comp=Z,296nm,18.4s,baz=103,slow=38						
TLY	Talaya	30.33	311	*e*P	P	03 03 28.1	+0.4
TLY				pmax	pmax		
	comp=Z,5.0nm,0.8s						
TLY				MLR	MLR		
	comp=Z,214nm,14.0s						
TLY	Talaya	30.33	311	*e*P	P	03 03 27.6	-0.1
	comp=Z,5.7nm,0.8s						
GYA	Guiyang	31.01	260	P	P	03 03 34.3	+0.3
GYA				pP	pP	03 03 45.4	-0.5
GYA				PP	PnPn	03 04 37.0	+0.8
GYA				PcP	PcP	03 06 31.2	+2.0
GYA				S	S	03 08 35.6	-0.3
GYA				sS	sS	03 08 53.8	-2.1
GYA				ScP	ScP	03 10 09.2	+0.8
GYA				SS	SnSn	03 10 19.0	-0.3
GYA				ScS	ScS	03 14 04.6	-1.0
GYA				pmax	pmax		
	comp=Z,20nm,0.8s						
GYA				pmax	pmax		
	comp=Z,130nm,5.2s						
GYA				LR	LR		
	comp=Z,560nm,16.2s						
GYA				LR	LR		
	comp=Z,530nm,16.4s						
GYA				LR	LR		
	comp=Z,540nm,16.0s						
CD2	Chengdu	31.49	270	P	P	03 03 36.3	-1.9
CD2				sP	pP	03 03 52.6	+2.5
CD2				PP	PP	03 04 47.4	-2.4
CD2				S	S	03 08 41.1	-2.2
CD2				sS	sS	03 09 00.4	-2.9
CD2				pmax	pmax		
	comp=Z,20nm,0.5s						
CD2				pmax	pmax		
	comp=Z,80nm,4.1s						
CD2				LR	LR		
	comp=Z,690nm,16.7s						
CD2				LR	LR		
	comp=Z,900nm,17.8s						
GTA	Gaotai	32.45	287	*e*P	P	03 03 45.6	-1.0
GTA				pP	pP	03 03 53.1	-5.5
GTA				PcP	PcP	03 06 30.7	-2.3
GTA				S	S	03 08 56.3	-2.0
GTA				SS	SnSn	03 10 49.6	-4.5
GTA				pmax	pmax		
	comp=Z,4.0nm,1.0s						
GTA				pmax	pmax		
	comp=Z,93nm,7.1s						
GTA				LR	LR		
	comp=Z,240nm,14.7s						
GTA				LR	LR		
	comp=Z,270nm,15.7s						
GTA				LR	LR		
	comp=Z,370nm,15.2s						
DAV	Davao City (W)	32.86	209	LR	LR	03 16 04.6	
	comp=Z,97nm,21.3s,baz=72,slow=34						
KMI	Kunming	34.75	261	P	P	03 04 06.8	-0.1
KMI				pP	pP	03 04 18.0	-0.9
KMI				sP	sP	03 04 23.5	-0.7
KMI				PP	PP	03 05 27.7	+1.6
KMI				S	S	03 09 31.7	-2.6
KMI				pmax	pmax		
	comp=Z,19nm,0.5s						
KMI				pmax	pmax		
	comp=Z,120nm,5.5s						
KMI				LR	LR		
	comp=Z,290nm,16.0s						
KMI				LR	LR		
	comp=Z,490nm,15.6s						
KMI				LR	LR		
	comp=Z,580nm,15.1s						
TIXI	Tiksi	35.47	353	P	P	03 04 12.3	+0.1
	comp=Z,7.6nm,0.7s,baz=145,slow=5.6,SNR=26						
TIXI	Tiksi	35.47	353	*ce*P	P	03 04 12.1	-0.1
TIXI				pmax	pmax		
	comp=Z,12nm,1.0s						
TIXI	Tiksi	35.47	353	*e*P	P	03 04 11.8	-0.4
	comp=Z,10nm,0.9s						
UBPT	Khong Chiam	38.28	245	P	P	03 04 38.0	+1.3
	comp=Z,28nm,1.1s						
SKNT	Sakolnakorn	38.30	249	P	P	03 04 37.3	+0.4
	comp=Z,18nm,1.0s,comp=Z,2µm						
JAY	Jayapura	39.14	181	P	P	03 04 44.1	+0.2
	comp=Z,1.4nm,0.7s,baz=315,slow=22,SNR=5.6						
CRAI	Chiangrai	39.16	256	P	P	03 04 44.4	+0.3
	comp=Z,6.4nm,1.0s						
CMAI	Chiengmai2	40.36	257	P	P	03 04 55.5	+1.2
	comp=Z,9.0nm,1.0s						
WMQ	Urumqi	40.77	297	P	P	03 04 58.1	+0.8
WMQ				pP	pP	03 05 08.2	-1.3
WMQ				sP	sP	03 05 10.5	-4.3
WMQ				S	S	03 11 02.2	-2.7
WMQ				sS	sS	03 11 25.0	-0.2
WMQ				ScS	ScS	03 14 57.6	-0.9
WMQ				pmax	pmax		
	comp=Z,24nm,0.8s						
WMQ				pmax	pmax		
	comp=Z,70nm,4.0s						
PBKT	Sadao Pong	40.82	251	P	P	03 05 07.3	+9.4
CHTO	Chiang Mai	41.06	256	*e*P	P	03 04 59.2	-0.7
CHTO				pmax	pmax		
	comp=Z,2.0nm,0.5s						
CHTO	Chiang Mai	41.06	256	*e*P	P	03 04 59.2	-0.7
	comp=Z,2.4nm,0.5s						
CMAR	Chiang Mai Arr	41.27	255	P	P	03 05 01.4	-0.1
	comp=Z,1.4nm,0.3s,baz=46,slow=5.6,SNR=11						
CMAR				LR	LR	03 22 45.2	
	comp=Z,129nm,18.4s,baz=70,slow=37						
LUWI	Luwuk	41.38	209	*e*P	P	03 05 01.9	-0.6
ZAA0	Zalesovo Array	41.92	313	*e*P	P	03 05 06.3	-0.2
ZALV	Zalesovo Beam	41.92	313	P	P	03 05 06.5	0.0
	comp=Z,22nm,0.9s,baz=91,slow=6.5,SNR=69						
ZALV				PcP	PcP	03 07 01.4	+0.1
	comp=Z,3.3nm,0.8s,baz=95,slow=3.5,SNR=3.3						
ZALV				LR	LR	03 23 25.4	
	comp=Z,179nm,18.5s,baz=70,slow=37						
LSA	Lhasa	42.05	275	*e*P	P	03 05 09.6	+1.2
LSA				pmax	pmax		
	comp=Z,6.0nm,0.6s						
LSA	Lhasa	42.05	275	*e*P	P	03 05 09.6	+1.2
	comp=Z,6.1nm,0.6s						
CHBT	CHBT	42.22	246	P	P	03 05 09.9	+0.5
	comp=Z,28nm,1.1s,comp=Z,3µm						
NVS	Novosibirsk	42.85	314	*e*P	P	03 05 13.9	-0.1
NVS				*i*		03 05 26.9	
NVS				pmax	pmax		
	comp=Z,24nm,1.1s						
NVS				pmax	pmax		
	comp=N,1.0nm,0.3s						
NVS				pmax	pmax		
	comp=E,11nm,0.7s						

NRIK Noril'sk 43.38 335 P **P** **03 05 18.1 0.0**
comp=E,3.8nm,0.5s,baz=92,slow=4.0,SNR=4.9
NRIK LR LR 03 24 20.5
comp=E,319nm,18.3s,baz=107,slow=37
SBUM Sibu 43.39 225 *eP* **P** **03 05 19.1 +0.3**
comp=E,13nm,1.1s
MK31 Makanchi Array 44.07 302 *i* P **P** **03 05 24.3 +0.2**
MK31 pmax pmax
comp=Z,15nm,0.8s
MKAR Makanchi Array 44.07 302 P **P** **03 05 24.3 +0.2**
comp=Z,12nm,0.8s,baz=88,slow=10.0,SNR=81
MKAR LR LR 03 24 13.5
comp=Z,200nm,20.3s,baz=86,slow=37
MAKZ Makanchi 44.28 302 *eP* **P** **03 05 26.1 +0.3**
MAKZ pmax pmax
comp=Z,14nm,0.8s
MAKZ Makanchi 44.28 302 *eP* **P** **03 05 26.1 +0.3**
comp=Z,14nm,0.8s
KSM Kuching 45.28 226 *eP* **P** **03 05 34.8 +0.9**
comp=Z,27nm,0.9s
TTA Tatalina 45.70 35 *eP* **P** **03 05 33.4 -3.4**
TTA Tatalina 45.70 35 *eP* **P** **03 05 33.4 -3.4**
KURK Kurchatov 45.91 308 P **P** **03 05 38.7 +0.1**
KURK pmax pmax
comp=Z,19nm,0.9s
KURK Kurchatov 45.91 308 *eP* **P** **03 05 37.8 -0.8**
comp=Z,36nm,0.9s
KURBB Kurchatov Arra 45.98 308 P **P** **03 05 38.6 -0.5**
comp=Z,19nm,0.9s,baz=84,slow=8.2,SNR=141
KAPI Kappang 46.19 210 *eP* **P** **03 05 41.6 +0.5**
comp=Z,55nm,1.3s
ODAN Odare 46.24 274 *eP* **P** **03 05 42.2 +0.4**
comp=Z,33nm,0.7s
PMG Port Moresby 46.33 172 *eP* **P** **03 05 42.5 +0.4**
PMG pmax pmax
comp=Z,8.0nm,0.7s
PMG Port Moresby 46.33 172 *eP* **P** **03 05 42.5 +0.4**
comp=Z,8.5nm,0.7s
PDGK Podgornoye 46.71 298 P **P** **03 05 44.9 0.0**
PDGK pmax pmax
comp=Z,18nm,0.8s
RAMN Ramite 46.84 274 *eP* **P** **03 05 46.9 +0.5**
comp=Z,130nm,1.0s
GUN Gumba 46.99 276 *eP* **P** **03 05 48.3 +0.5**
comp=Z,79nm,0.9s
SURT Suratani 47.33 245 P **P** **03 05 50.8 +0.8**
comp=Z,7.4nm,1.1s
KDAK Kodiak Island 47.37 42 LR LR 03 25 27.0
comp=Z,78nm,21.9s,baz=264,slow=36
KKN Kakani 47.52 276 *eP* **P** **03 05 52.2 +0.4**
comp=Z,26nm,0.6s
GKN Gorkha 47.95 276 *eP* **P** **03 05 55.3 +0.4**
comp=Z,122nm,0.9s
BPAW Bear Paw Mtn. 48.00 33 *eP* **P** **03 05 56.5 +1.8**
comp=Z,0.9nm,0.8s
MLY Manley 48.12 32 *eP* **P** **03 05 58.0 +2.3**
comp=Z,24nm,1.4s
COLD Coldfoot 48.42 29 *eP* **P** **03 05 58.4 +0.5**
comp=Z,4.4nm,0.8s
KULM Kulim 48.55 240 *eP* **P** **03 05 59.2 -0.3**
comp=Z,11nm,1.0s
SOEI Soe 48.99 202 *eP* **P** **03 06 02.2 -0.7**
comp=Z,52nm,0.8s
MDM Murphy Dome 49.19 32 *eP* **P** **03 06 06.3 +2.4**
comp=Z,36nm,1.3s
PYUN Piuthan 49.22 277 *eP* **P** **03 06 05.6 +0.8**
comp=Z,153nm,1.0s
SML Sawmill 49.27 36 *eP* **P** **03 06 05.8 +1.3**
SML pmax pmax
comp=Z,2.0nm,0.7s
SML Sawmill 49.27 36 *eP* **P** **03 06 05.8 +1.3**
comp=Z,2.3nm,0.7s
COLA College 49.35 32 *eP* **P** **03 06 06.1 +1.1**
COLA pmax pmax
comp=Z,5.0nm,1.0s
TKM2 Tokmak 2 49.57 299 *eP* **P** **03 06 08.0 +0.7**
TKM2 pmax pmax
comp=Z,12nm,0.8s
TKM2 Tokmak 2 49.57 299 *eP* **P** **03 06 08.0 +0.7**
comp=Z,12nm,0.8s
BATI Baumata 49.60 203 P **P** **03 06 07.7 +0.2**
comp=Z,17nm,0.6s,baz=278,slow=23,SNR=5.6
IL1 Eielson Array 49.77 32 *eP* **P** **03 06 09.0 +0.8**
ILAR Eielson Array 49.77 32 P **P** **03 06 09.4 +1.3**
comp=Z,3.0nm,0.8s,baz=268,slow=6.3,SNR=27
ILB Eielson Array 49.77 32 *eP* **P** **03 06 09.5 +1.3**
FRU Bishkek 50.28 299 *eP* **P** **03 06 12.0 -0.5**
MTN Manton Dam 50.30 193 *eP* **P** **03 06 12.6 -0.2**
comp=Z,35nm,0.8s
KSH Kashi 50.32 294 P **P** **03 06 16.7 +3.8**
KSH *es*P sP 03 06 34.8 +4.2
KSH *e*PP **PP** **03 08 13.4 +4.9**
KSH S **S** **03 13 26.3 +3.6**
KSH sS sS 03 13 48.0 +4.5
KSH ScS **ScS** **03 16 02.1 +1.8**
KSH pmax pmax
comp=Z,9.0nm,0.6s
KSH pmax pmax
comp=Z,130nm,5.6s
KSH LR LR
comp=Z,170nm,5.6s
KSH LR LR
comp=Z,83nm,6.7s
KSH LR LR
comp=Z,320nm,15.4s
OTUK Ortayu 50.40 306 P **P** **03 06 12.4 -0.9**
OTUK pmax pmax
comp=Z,16nm,0.9s
AAK Ala-Archa 50.43 298 *d* *i*P **P** **03 06 13.4 -0.3**
AAK pmax pmax
comp=Z,11nm,0.7s
AAK Ala-Archa 50.43 298 *eP* **P** **03 06 13.8 0.0**
COEN Coen 50.55 177 *eP* **P** **03 06 14.5 -0.1**
comp=Z,26nm,0.9s
BVA0 Borovoye Array 50.58 312 P **P** **03 06 14.7 +0.2**
BVA0 pmax pmax
comp=Z,12nm,0.9s
BVAR Borovoye Array 50.58 312 P **P** **03 06 14.5 0.0**
comp=Z,21nm,1.0s,baz=79,slow=7.7,SNR=38
BRVK Borovoye 50.63 312 *ceP* **P** **03 06 15.1 +0.2**
BRVK pmax pmax
comp=Z,16nm,1.0s
BRVK Borovoye 50.63 312 *eP* **P** **03 06 14.9 0.0**
comp=Z,15nm,0.9s
EKS2 Erkin-Say 50.92 299 *eP* **P** **03 06 17.2 -0.2**
EKS2 pmax pmax
comp=Z,12nm,1.4s
EKS2 Erkin-Say 50.92 299 *eP* **P** **03 06 17.2 -0.2**
comp=Z,12nm,1.4s
DOT Dot Lake 51.08 34 *eP* **P** **03 06 19.3 +1.1**
comp=Z,13nm,0.8s
ZRNK Zerenda 51.41 313 *eP* **P** **03 06 20.7 -0.1**
ZRNK pmax pmax
comp=Z,19nm,0.9s
ZRNK Zerenda 51.41 313 *eP* **P** **03 06 20.7 -0.1**
comp=Z,19nm,0.9s
JAGI Jajag, Banyuwa 51.71 215 *eP* **P** **03 06 22.0 -1.3**
comp=Z,21nm,0.9s
MNAS Manas 51.87 299 P **P** **03 06 24.1 -0.5**
MNAS pmax pmax
comp=Z,14nm,0.8s
SFK Sufi-Kurgan 51.96 296 P **P** **03 06 24.1 -1.2**
SFK pmax pmax
comp=Z,16nm,0.7s
EGAK Eagle 52.21 32 *eP* **P** **03 06 27.9 +1.4**
comp=Z,3.7nm,0.6s
KK31 Karatay Array 53.07 300 *i* P **P** **03 06 33.2 -0.1**
KK31 pmax pmax
comp=Z,12nm,1.0s
KKAR Karatay Array 53.07 300 *eP* **P** **03 06 33.2 -0.1**
KKAR Karatay Array 53.07 300 *eP* **P** **03 06 33.2 -0.1**
GSI Gunungsitoli 53.54 239 *eP* **P** **03 06 37.2 +0.3**
comp=Z,30nm,0.7s
INK Inuvik 54.65 27 P **P** **03 06 45.2 +0.8**
comp=Z,4.7nm,0.8s,baz=300,slow=6.8,SNR=22
INK Inuvik 54.65 27 *eP* **P** **03 06 45.8 +1.5**
INK pmax pmax
comp=Z,13nm,1.1s
INK Inuvik 54.65 27 *eP* **P** **03 06 45.8 +1.5**
comp=Z,13nm,1.1s
SVE Sverdlovsk 55.18 319 *eP* **P** **03 06 48.9 +0.5**
SVE pmax pmax
comp=Z,30nm,1.0s
ARU Arti 56.39 319 *d* *i*P **P** **03 06 56.9 -0.2**
ARU 03 07 52.8
ARU S **S** **03 14 46.7 +2.4**
ARU pmax pmax
comp=Z,30nm,1.0s
ARU Arti 56.39 319 *eP* **P** **03 06 56.6 -0.4**
comp=Z,25nm,0.9s
FITZ Fitzroy Crossi 56.57 198 P **P** **03 06 59.2 +0.5**
comp=Z,5.8nm,0.7s,baz=13,slow=7.4,SNR=9.7
FITZ Fitzroy Crossi 56.57 198 *eP* **P** **03 06 58.9 +0.3**
comp=Z,19nm,1.4s
WRAB Tennant Creek 56.82 188 *ceP* **P** **03 06 59.9 -0.5**
WRAB pmax pmax
comp=Z,35nm,0.6s
WRAB Tennant Creek 56.82 188 *eP* **P** **03 06 59.3 -1.1**
comp=Z,15nm,0.8s
WB2 Warramunga Arr 56.83 188 *eP* **P** **03 06 59.7 -0.8**
comp=Z,21nm,0.8s
WRA Warramunga Arr 56.83 188 P **P** **03 06 59.7 -0.8**
comp=Z,17nm,0.5s,baz=5.7,slow=7.3,SNR=56
KBL Kabul 57.32 291 *eP* **P** **03 07 04.2 -0.1**
KBL pmax pmax
comp=Z,20nm,1.0s
KBL Kabul 57.32 291 *eP* **P** **03 07 04.2 -0.1**
comp=Z,20nm,1.0s
AB31 Akbulak array 57.93 310 *i* P **P** **03 07 07.5 -0.5**
AB31 pmax pmax
comp=Z,11nm,1.0s
ABKAR Akbulak array 57.93 310 *eP* **P** **03 07 07.7 -0.4**
DLBC Dease Lake 58.90 38 *eP* **P** **03 07 15.5 +0.8**
comp=Z,11nm,1.1s
AS01 Alice Springs 60.55 188 *eP* **P** **03 07 25.6 -0.7**
AS31 Alice Springs 60.56 188 *eP* **P** **03 07 26.2 -0.2**
comp=Z,3.3nm,0.9s
ASAR Alice Springs 60.56 188 P **P** **03 07 25.9 -0.4**
comp=Z,11nm,0.8s,baz=12,slow=6.2,SNR=70
ASAR LR LR 03 32 11.4
comp=Z,56nm,21.9s,baz=12,slow=34
ASAR Alice Springs 60.56 188 P **P** **03 07 26.0 -0.4**
ASAR pmax pmax
comp=Z,11nm,0.8s
TMCR Tamitsa 62.84 331 *eP* P 03 07 52.2 +11
TMCR pmax pmax
comp=Z,14nm,1.3s
RES Resolute Bay 62.85 14 *eP* **P** **03 07 41.5 +0.3**
RES pmax pmax
comp=Z,10.0nm,1.1s
RES Resolute Bay 62.85 14 *eP* **P** **03 07 41.5 +0.3**
comp=Z,10nm,1.1s
GEYT Alibeck 63.77 299 P **P** **03 07 48.3 +0.3**
comp=Z,13nm,0.9s,baz=42,slow=2.4,SNR=18
GEYT LR LR 03 37 04.6
comp=Z,113nm,18.4s,baz=20,slow=37
KLMR Klimovskoe 63.83 328 *eP* **P** **03 07 45.7 -2.2**
KLMR pmax pmax
comp=Z,16nm,1.6s
YKA Yellowknife Ar 64.08 30 P **P** **03 07 50.3 +0.8**
comp=Z,1.0nm,0.6s,baz=304,slow=6.7,SNR=29
YKB5 Yellowknife Ar 64.08 30 *eP* **P** **03 07 51.4 +1.9**
ARCES ARCESS Array B 64.12 339 P **P** **03 07 50.0 +0.3**
comp=Z,2.5nm,0.8s,baz=58,slow=7.5,SNR=9.3
DAG Danmarks Havn 65.96 355 *i* P **P** **03 08 01.6 +0.1**
DAG Danmarks Havn 65.96 355 *i* P **P** **03 08 01.6 +0.1**
ARMA Armidale 67.61 170 *eP* **P** **03 08 13.3 +0.7**
comp=Z,22nm,1.2s
VRH Novokhopyorsk 67.61 318 *eP* **P** **03 08 11.1 -1.3**
VRH pmax pmax
comp=Z,10.0nm,1.1s
OBN Obninsk 68.15 323 *i* *e*P **P** **03 08 15.5 -0.2**
OBN pmax pmax
comp=Z,7.0nm,1.0s
LPSR Galich'ya Gora 68.34 320 *eP* **P** **03 08 16.2 -0.8**
LPSR pmax pmax
comp=Z,10.0nm,1.1s
STKA Stephens Creek 68.35 180 P **P** **03 08 17.1 0.0**
comp=Z,8.6nm,0.6s,baz=357,slow=6.2,SNR=23
STKA LR LR 03 37 12.8
comp=Z,61nm,21.7s,baz=25,slow=35
STKA Stephens Creek 68.35 180 *eP* **P** **03 08 17.4 +0.3**
STKA pmax pmax
comp=Z,2.0nm,0.7s
STKA Stephens Creek 68.35 180 *eP* **P** **03 08 17.4 +0.3**
comp=Z,1.8nm,0.7s
FINES FINESS Array B 68.91 332 *i* P **P** **03 08 20.4 0.0**
comp=Z,7.7nm,0.9s,baz=59,slow=11,SNR=11
FINES PcP **PcP** **03 08 43.2 -1.3**
comp=Z,2.6nm,0.8s,baz=62,slow=7.1,SNR=4.9
FINES LR LR 03 40 40.6
comp=Z,148nm,19.2s,baz=37,slow=38
VSR Storozhevoye 68.97 319 *eP* **P** **03 08 19.8 -1.1**
VSR pmax pmax
comp=Z,2.0nm,0.5s
BBOO Buckleboo 69.44 185 *eP* **P** **03 08 23.3 -0.6**
comp=Z,10nm,0.7s
GOF Gofitskoye 70.09 312 *i* *e*P **P** **03 08 28.1 +0.1**
GOF pmax pmax
comp=Z,40nm,1.5s
ZEI Tsey 70.79 309 *eP* **P** **03 08 31.3 -1.2**
ZEI pmax pmax
comp=Z,13nm,1.0s
SUMG Summit 70.89 360 *i* P **P** **03 08 33.4 +0.5**
comp=Z,11nm,1.1s
SUMG Summit 70.89 360 *i* P **P** **03 08 33.4 +0.5**
SUMG pmax pmax
comp=Z,11nm,1.1s
SUMG Summit 70.89 360 *eP* **P** **03 08 33.1 +0.2**
comp=Z,53nm,1.9s
KBZ Khabaz 70.90 311 P **P** **03 08 33.5 +0.6**
comp=Z,6.4nm,0.9s,baz=199,slow=3.9,SNR=12
KIV Kislovodsk 70.90 311 *i* *e*P **P** **03 08 33.9 +0.8**
KIV *e* 03 11 16.5
KIV *e*PPP PPP 03 12 57.8
KIV *es* S **S** **03 17 41.3 -3.9**
KIV pmax pmax
comp=Z,24nm,1.0s
KIV MLR MLR
comp=Z,130nm,18.0s
KIV Kislovodsk 70.90 311 *eP* **P** **03 08 34.2 +1.2**
comp=Z,18nm,0.9s
GNI Garni 71.68 307 *eP* **P** **03 08 39.5 +1.6**
GNI pmax pmax
comp=Z,23nm,1.3s
GNI Garni 71.68 307 *eP* **P** **03 08 38.4 +0.5**
comp=Z,49nm,1.0s
BMO Blue Mountains 72.20 47 *eP* **P** **03 08 42.1 +1.2**
comp=Z,9.5nm,1.2s
FFC Flin Flon 73.98 33 *eP* **P** **03 08 53.0 +2.0**
FFC Flin Flon 73.98 33 *eP* **P** **03 08 53.0 +2.0**
FCC Fort Churchill 74.27 26 *eP* **P** **03 08 53.6 +1.0**
FCC pmax pmax
comp=Z,23nm,1.1s
FCC Fort Churchill 74.27 26 *eP* **P** **03 08 53.6 +1.0**
comp=Z,23nm,1.1s
NB2 NORSAR Subarra 74.31 337 P **P** **03 08 52.6 -0.3**
comp=Z,6.4nm,0.8s,baz=41,slow=5.9
NOA NORSAR Array B 74.31 337 P **P** **03 08 52.8 -0.1**
comp=Z,4.0nm,0.8s,baz=39,slow=5.8,SNR=7.4
AKASG Malin Array Be 74.35 322 P **P** **03 08 53.1 -0.2**
comp=Z,3.2nm,0.5s,baz=45,slow=5.8,SNR=16
AKASG Malin Array Be 74.35 322 *ceP* **P** **03 08 53.0 -0.2**
AKASG pmax pmax
comp=Z,4.0nm,0.5s
KIEV Kiev 74.36 322 *eP* **P** **03 08 53.2 -0.1**
KIEV pmax pmax
comp=Z,8.0nm,0.9s
KIEV Kiev 74.36 322 *eP* **P** **03 08 53.1 -0.1**
comp=Z,8.0nm,0.9s
LRM Limekiln Ridge 74.42 44 *eP* **P** **03 08 56.0 +1.8**
EGMT Eagleton 74.55 41 *eP* **P** **03 08 55.4 +0.8**
comp=Z,16nm,1.6s
DLMT Dillon 74.62 45 *eP* **P** **03 08 57.2 +2.1**
comp=Z,20nm,1.4s
HLID Hailey 74.65 47 *eP* **P** **03 08 56.4 +1.0**
comp=Z,8.9nm,1.4s
BOZ Bozeman (W) 74.99 44 *eP* **P** **03 08 59.0 +1.7**
BOZ pmax pmax
comp=Z,11nm,1.3s
BOZ Bozeman (W) 74.99 44 *eP* **P** **03 08 59.0 +1.7**
comp=Z,11nm,1.3s
NV01 Mina Array Sit 75.26 53 *eP* **P** **03 09 00.7 +1.6**
NVAR Mina Array Bea 75.26 53 P **P** **03 09 00.6 +1.6**
comp=Z,1.9nm,0.7s,baz=302,slow=4.7,SNR=10.0
YMR Madison River 75.96 44 *eP* **P** **03 09 05.2 +2.2**
comp=Z,27nm,2.0s
RLMT Red Lodge 76.62 43 *eP* **P** **03 09 08.7 +2.0**
comp=Z,13nm,1.6s
MOOW Moose Ponds 76.65 45 *eP* **P** **03 09 09.3 +2.4**
comp=Z,9.8nm,1.4s
DUG Dugway, Tooele 77.63 49 *eP* **P** **03 09 13.5 +1.2**
DUG pmax pmax
comp=Z,4.0nm,0.9s
DUG Dugway, Tooele 77.63 49 *eP* **P** **03 09 13.5 +1.2**
comp=Z,4.4nm,0.9s
BW06 Boulder Array 77.94 45 *eP* **P** **03 09 15.0 +0.9**
PD31 Pinedale Array 77.94 45 *eP* **P** **03 09 15.4 +1.3**
PDAR Pinedale Array 77.94 45 P **P** **03 09 15.2 +1.0**
comp=Z,1.4nm,0.6s,baz=269,slow=2.1,SNR=22
BUR08 Bucovina Ar. S 78.35 322 *eP* **P** **03 09 16.9 +0.7**
BR131 Keskin Array S 78.85 311 *eP* **P** **03 09 20.4 +1.3**
BRTR Keskin Array B 78.85 311 P **P** **03 09 19.1 0.0**
comp=Z,12nm,1.3s,baz=133,slow=5.4,SNR=8.6
BRTR Keskin Array B 78.85 311 *ceP* **P** **03 09 20.1 +1.0**
BRTR pmax pmax
comp=Z,12nm,1.3s
KOLS Kolonicke sedl 78.88 324 *eP* **P** **03 09 19.6 +0.7**
KOLS Kolonicke sedl 78.88 324 *eP* **P** **03 09 19.6 +0.7**
STHS Stebnicka Huta 79.02 325 *eP* **P** **03 09 21.2 +1.5**
STHS pmax pmax
comp=Z,5.0nm,0.8s
STHS Stebnicka Huta 79.02 325 *eP* **P** **03 09 21.2 +1.5**
OJC Ojcow 79.11 326 *eP* **P** **03 09 20.8 +0.7**
OJC Ojcow 79.11 326 *eP* **P** **03 09 20.8 +0.7**
CRVS Cervenica-Dubn 79.28 324 *eP* **P** **03 09 22.1 +1.0**
CRVS Cervenica-Dubn 79.28 324 *eP* **P** **03 09 22.1 +1.0**
BR231 Keskin MP Arra 79.29 312 *eP* **P** **03 09 19.8 -1.7**
P18A Preston Nutter 79.53 48 *eP* **P** **03 09 25.8 +2.8**
comp=Z,38nm,2.0s
SRU San Rafael Swe 79.69 49 *eP* **P** **03 09 25.6 +1.8**
SRU pmax pmax
comp=Z,13nm,1.2s
SRU San Rafael Swe 79.69 49 *eP* **P** **03 09 25.6 +1.8**
comp=Z,13nm,1.2s
K22A Casper 79.73 44 *eP* **P** **03 09 24.0 +0.1**
comp=Z,7.9nm,1.2s
ULM Lac du Bonnet 79.78 33 P **P** **03 09 25.1 +1.4**
comp=Z,1.3nm,0.4s,baz=303,slow=8.8,SNR=4.2
LANS Liptovska Anna 80.03 325 *eP* **P** **03 09 26.6 +1.4**
LANS Liptovska Anna 80.03 325 *eP* **P** **03 09 26.6 +1.4**
MORC Moravsky Berou 80.43 327 *eP* **P** **03 09 28.7 +1.3**
MORC pmax pmax
comp=Z,69nm,1.6s
MORC Moravsky Berou 80.43 327 *eP* **P** **03 09 28.7 +1.3**
comp=Z,69nm,1.6s
DPC Dobruska-Polom 80.53 328 *eP* **P** **03 09 29.0 +1.1**
DPC *ep*P **pP** **03 09 41.2 +0.1**
DPC Dobruska-Polom 80.53 328 *eP* **P** **03 09 29.0 +1.1**
DPC *e* 03 09 41.2
RAYN Ar Rayn 80.56 292 *eP* **P** **03 09 29.4 +0.9**
comp=Z,4.5nm,0.9s
PSZ Piszkesteto 80.72 324 *eP* **P** **03 09 29.4 +0.4**
PSZ pmax pmax
comp=Z,9.0nm,1.0s
PSZ Piszkesteto 80.72 324 *eP* **P** **03 09 29.4 +0.4**
comp=Z,8.5nm,1.0s
VYHS Vyhne 80.79 325 *eP* **P** **03 09 30.2 +0.9**
VYHS pmax pmax
comp=Z,3.0nm,1.0s
VYHS Vyhne 80.79 325 *eP* **P** **03 09 30.2 +0.9**
BRG Berggiesshubel 81.14 329 *eP* **P** **03 09 31.6 +0.5**
comp=Z,5.6nm,1.1s
BRG Berggiesshubel 81.14 329 *eP* **P** **03 09 31.6 +0.5**
BRG pmax pmax
comp=Z,6.0nm,1.1s
PVCC Panska Ves 81.14 329 *eP* **P** **03 09 32.1 +1.0**
PVCC Panska Ves 81.14 329 *eP* **P** **03 09 32.1 +1.0**
CLL Collm 81.18 330 *i* P **P** **03 09 31.2 -0.1**
comp=Z,27nm,1.8s
CLL *i* 03 09 43.8
CLL Collm 81.18 330 *i* P **P** **03 09 31.2 -0.1**
CLL *i* 03 09 43.8
CLL pmax pmax
comp=Z,27nm,1.8s
CLL Collm 81.18 330 *eP* **P** **03 09 31.6 +0.3**
AGMN Agassiz Nation 81.21 35 *eP* **P** **03 09 32.5 +1.0**
GOPC GO Pecny, Ondr 81.52 328 *eP* **P** **03 09 33.9 +0.8**
GOPC GO Pecny, Ondr 81.52 328 *eP* **P** **03 09 33.9 +0.8**
PRU Pruhonice 81.56 328 *eP* **P** **03 09 34.5 +1.2**
PRU Pruhonice 81.56 328 *eP* **P** **03 09 34.5 +1.2**
ISCO Idaho Springs 82.13 46 *eP* **P** **03 09 38.8 +1.9**
ISCO Idaho Springs 82.13 46 *eP* **P** **03 09 38.8 +1.9**
NKC Novy Kostel 82.24 330 *eP* **P** **03 09 37.1 +0.2**
NKC Novy Kostel 82.24 330 *eP* **P** **03 09 37.1 +0.2**
KHC Kasperske Hory 82.62 328 *eP* **P** **03 09 39.3 +0.3**
KHC *ep*P **pP** **03 09 51.8 -0.4**
KHC Kasperske Hory 82.62 328 *eP* **P** **03 09 39.3 +0.3**
KHC *e* 03 09 51.8
KHC Kasperske Hory 82.62 328 *eP* **P** **03 09 39.5 +0.5**
comp=Z,2.1nm,0.9s
GERES GERESS Array B 82.79 328 P **P** **03 09 40.1 +0.2**
comp=Z,1.2nm,0.5s,baz=46,slow=6.5,SNR=13
GRFO Grafenberg 83.16 330 *eP* **P** **03 09 42.7 +1.0**
GRFO pmax pmax
comp=Z,10.0nm,1.0s
GRFO Grafenberg 83.16 330 *eP* **P** **03 09 42.7 +1.0**
comp=Z,10.0nm,1.0s
EYMN Ely 83.41 33 *eP* **P** **03 09 44.4 +1.3**
comp=Z,12nm,1.0s
PMOR Pomariorio Ree 84.27 113 *eT* T 04 42 36.5
comp=Z,10nm,0.2s
T25A Trinidad 84.61 47 *eP* **P** **03 09 51.3 +1.7**
PPT Papeete 84.71 116 LR LR 03 40 41.5
comp=Z,97nm,21.2s,baz=338,slow=31
PPT2 Papeete2 84.72 116 *e*LR LR 03 36 28.0
comp=Z,243nm,26.2s
PPT2 Papeete2 84.72 116 *eT* T 04 43 08.8
comp=Z,2.3nm,0.4s
ANMO Albuquerque 84.86 50 *eP* **P** **03 09 53.4 +2.5**
ANMO Albuquerque 84.86 50 *eP* **P** **03 09 53.4 +2.5**
BFO Black Forest 85.39 331 *ceP* **P** **03 09 54.0 +0.9**
BFO Black Forest 85.39 331 *eP* **P** **03 09 53.4 +0.3**
comp=Z,6.7nm,0.9s
SCHQ Schefferville 85.58 16 LR LR 03 49 12.1
comp=Z,64nm,21.5s,baz=9.0,slow=36
FUORN Ofenpass-Fuorn 85.98 329 *eP* **P** **03 09 56.8 +0.5**
TAOE Nuku Hiva Isla 86.30 104 *e*LR LR 03 37 02.2
comp=Z,187nm,25.8s
TBI Tubuai 88.58 121 *e*LR LR 03 38 08.3
comp=Z,225nm,24.2s
TBI Tubuai 88.58 121 *eT* T 04 47 53.8
comp=Z,15nm,0.3s
TX31 Lajitas Ar. Si 90.39 52 *eP* **P** **03 10 18.9 +1.4**
TXAR Lajitas Array 90.39 52 P **P** **03 10 18.6 +1.2**
comp=Z,1.4nm,0.9s,baz=293,slow=3.5,SNR=12
ABTX Abilene, Hawke 90.56 47 *eP* **P** **03 10 19.2 +1.1**
comp=Z,9.4nm,1.0s
MIAR Mount Ida 92.59 42 *eP* **P** **03 10 27.9 +0.4**
MIAR pmax pmax
comp=Z,7.0nm,0.8s
MIAR Mount Ida 92.59 42 *eP* **P** **03 10 27.9 +0.4**
comp=Z,6.6nm,0.8s
ESDC Sonseca Array 97.39 334 P **P** **03 10 48.9 -0.5**
comp=Z,0.1nm,0.3s,baz=5.7,slow=4.5,SNR=3.4
LSZ Lusaka 117.31 271 *e*PKIKP **PKPdf** **03 16 02.2 +0.6**
LSZ Lusaka 117.31 271 *e*PKPdf **PKPdf** **03 16 02.2 +0.6**
TORD Torodi Ar. Bea 117.35 315 PKP **PKPdf** **03 16 00.4 -1.3**
comp=Z,0.2nm,0.5s,baz=58,slow=3.1,SNR=3.4
TORD PP **PP** **03 17 10.9 -1.4**
comp=Z,1.8nm,1.0s,baz=60,slow=4.4,SNR=6.4
SDV Santo Domingo 125.60 40 PKP **PKPdf** **03 16 17.6 -0.2**
comp=Z,3.5nm,0.9s,baz=61,slow=9.3,SNR=2.3
SDV Santo Domingo 125.60 40 *e*PKPdf **PKPdf** **03 16 17.2 -0.6**
SNAA Sanae 140.50 197 PKP PKPpre 03 16 35.1
VNA2 Neumayer--Watz 142.07 196 PKP PKPpre 03 16 41.4
baz=83,slow=2.0
VNA3 Neumayer Olymp 142.32 195 PKP PKPpre 03 16 41.3
SAML Samuel 144.52 45 *e*PKPdf PKPbc 03 16 52.0 +0.8
LPAZ La Paz 146.96 60 PKPbc **PKPbc** **03 16 59.8 +0.4**
comp=Z,6.2nm,0.6s,baz=341,slow=2.7,SNR=32
SIV San Ignacio 151.36 49 PKPbc **PKPbc** **03 17 10.4 +0.6**
comp=Z,3.4nm,0.5s,baz=280,slow=3.0,SNR=8.0
LCO Las Campanas 152.22 83 *e*PKPbc **PKPbc** **03 17 12.2 +0.4**
PLCA Paso Flores 155.03 109 PKPab **PKPab** **03 17 33.6 +0.5**
comp=Z,4.0nm,1.1s,baz=219,slow=5.8,SNR=4.3

NIED ***08*** *03:00:00, 37.10N×141.10E, h53km, Mw4.3 Best double couple: M0 2.79000×10^15 NP1: φ=262.00000°, δ=14.00000°, λ=152.00000°. NP2: φ=19.00000°, δ=84.00000°, λ=78.00000°.*
ISCJB ***08*** *03:00:05.0±0.8, 37.15N±0.05×141.18E±0.09, h55km±4km, mb3.9/18, Error ellipse: s-maj=12.3km s-min=7.3km az=12*
JMA ***08*** *03:00:05.8±0.1, 37.10N×141.13E, h52km±1km, M4.1*

JMA Felt II J1.
IDC ***08*** *03:00:08.1±0.6, 37.°61N×141.°01E, h46km±3km, mb3.7/18, mb1 3.8/20, mb1mx3.7/47, mbtmp3.9/20, Error ellipse: s-maj=16.4km s-min=8.7km az=148.0*
ISC 08 03:00:05.7±0.6**, 37.°15N**±0.°05×**141.°22E**±0.°07**, h46**km±3km**, n36, σ1.s23**/46**, mb3.9**/18**, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
ONAJ	Iwakimizuishiy	0.34	263	P	Pn	03 00 14.7	-0.2
ONAJ				S	Sn	03 00 21.0	-0.4
JFK	Kawauchi	0.35	309	P	Pn	03 00 15.2	+0.2
JFK				S	Sn	03 00 21.7	+0.1
JHO	Hitachi	0.74	224	P	Pn	03 00 18.8	-1.0
JHO				S	Sn	03 00 27.8	-2.3
JFT	Otama	0.79	298	P	Pn	03 00 21.0	+0.5
JFT				eS	Sn	03 00 31.7	+0.4
JMM	Marumori	0.79	335	P	Pn	03 00 20.7	+0.2
JMM				S	Sn	03 00 31.7	+0.4
JFY	Yanaizu	1.23	283	P	Pn	03 00 26.0	-0.5
MJAR	Matsushiro Arr	2.49	257	P	Pn	03 00 43.8	+0.2
	11nm,0.3s,baz=85,slow=10.0,SNR=7.0						
MJAR				S	Sn	03 01 15.1	+2.3
	16nm,0.3s,baz=341,slow=26,SNR=5.2						
MAT	Matsushiro	2.49	257	P	Pn	03 00 44.0	+0.3
MAT				S	Sn	03 01 17.2	+4.4
JHJ	Hachijo jima 2	4.19	197	S	Sn	03 01 57.6	+3.0
	78nm,0.3s,baz=328,slow=23,SNR=6.1						
USRK	Ussuriysk Ar.	9.93	318	P	Pn	03 02 30.7	+5.0
	0.2nm,0.3s,baz=132,slow=12,SNR=6.0						
KSRS	Korea Array	10.60	276	P	Pn	03 02 35.1	+0.3
	0.2nm,0.3s,baz=184,slow=34,SNR=2.5						
SONM	Songino Array	27.59	304	P	P	03 05 48.4	-0.1
	1.0nm,0.5s,baz=100,slow=8.3,SNR=3.8						
SONM				sP	sP	03 06 06.1	0.0
	1.5nm,0.7s,baz=104,slow=9.3,SNR=3.1						
H11N2	WAKE ISLAND Hy	28.34	121	T	T	03 35 48.2	
H11N1	WAKE ISLAND Hy	28.35	121	T	T	03 35 48.2	
H11N3	WAKE ISLAND Hy	28.36	121	T	T	03 35 48.2	
H11S1	WAKE ISLAND Hy	29.05	123	T	T	03 36 41.4	
H11S3	WAKE ISLAND Hy	29.05	123	T	T	03 36 41.4	
H11S2	WAKE ISLAND Hy	29.07	123	T	T	03 36 41.4	
ZALV	Zalesovo Beam	41.72	312	P	P	03 07 49.2	-0.6
	5.7nm,0.8s,baz=91,slow=6.6,SNR=5.6						
ZALV				PcP	PcP	03 09 44.5	-1.1
	1.5nm,0.6s,baz=329,slow=0.9,SNR=3.9						
MKAR	Makanchi Array	43.92	302	P	P	03 08 07.3	-0.6
	2.2nm,0.8s,baz=84,slow=12,SNR=4.5						
KURBB	Kurchatov Arra	45.81	308	P	P	03 08 22.0	-0.7
	3.8nm,0.8s,baz=82,slow=8.2,SNR=6.4						
KURBB				sP	sP	03 08 39.1	-1.6
	3.0nm,0.8s,baz=84,slow=7.9,SNR=5.1						
ILAR	Eielson Array	49.48	32	P	P	03 08 51.8	+0.8
	0.7nm,0.7s,baz=278,slow=6.5,SNR=3.4						
ILAR				sP	sP	03 09 07.7	-1.5
	1.1nm,0.7s,baz=270,slow=6.0,SNR=4.2						
BVAR	Borovoye Array	50.38	312	P	P	03 08 57.5	-0.5
	1.1nm,0.6s,baz=64,slow=6.8,SNR=3.0						
BVAR				PcP	PcP	03 10 14.5	-1.4
	1.5nm,0.7s,baz=72,slow=4.8,SNR=3.8						
WRA	Warramunga Arr	57.15	188	P	P	03 09 54.1	+6.4
	0.9nm,0.5s,baz=3.4,slow=7.6,SNR=5.5						
ASAR	Alice Springs	60.88	188	P	P	03 10 19.0	+5.5
	0.4nm,0.5s,baz=14,slow=11,SNR=3.3						
GEYT	Alibeck	63.64	299	P	P	03 10 31.4	-0.7
	3.7nm,0.8s,baz=50,slow=4.6,SNR=3.6						
GEYT				pP	pP	03 10 46.2	+1.0
	1.3nm,0.4s,baz=71,slow=14,SNR=2.4						
YKA	Yellowknife Ar	63.79	30	P	P	03 10 33.2	+0.7
	0.3nm,0.7s,baz=305,slow=7.2,SNR=3.5						
YKA				pP	pP	03 10 46.7	+1.0
	0.3nm,0.6s,baz=303,slow=6.7,SNR=3.8						
FINES	FINESS Array B	68.64	332	P	P	03 11 03.0	-0.6
	2.0nm,0.7s,baz=98,slow=5.8,SNR=4.4						
FINES				sP	sP	03 11 22.2	+0.1
	3.3nm,0.7s,baz=69,slow=10,SNR=5.7						
KBZ	Khabaz	70.71	311	P	P	03 11 16.4	-0.2
	2.4nm,0.8s,baz=63,slow=3.5,SNR=3.5						
NOA	NORSAR Array B	74.02	337	P	P	03 11 35.7	-0.5
	2.5nm,0.9s,baz=41,slow=6.0,SNR=3.9						
AKASG	Malin Array Be	74.11	322	P	P	03 11 35.4	-1.4
	1.0nm,0.6s,baz=45,slow=6.9,SNR=4.2						
AKASG				sP	sP	03 11 54.9	-0.5
	1.3nm,0.5s,baz=46,slow=6.5,SNR=5.4						
PDAR	Pinedale Array	77.70	45	P	P	03 11 58.6	+0.8
	0.3nm,0.8s,baz=320,slow=6.4,SNR=2.4						
BRTR	Keskin Array B	78.66	311	P	P	03 12 03.0	0.0
	0.8nm,0.8s,baz=55,slow=6.5,SNR=3.4						
BRTR				sP	sP	03 12 22.3	+0.6
	1.1nm,1.0s,baz=104,slow=5.2,SNR=3.6						
GERES	GERESS Array B	82.53	328	P	P	03 12 23.3	-0.2
	0.2nm,0.3s,baz=86,slow=6.8,SNR=2.8						
GERES				sP	sP	03 12 42.6	+0.4
	0.5nm,0.4s,baz=46,slow=5.8,SNR=4.1						
TXAR	Lajitas Array	90.18	52	P	P	03 13 02.0	+0.6
	0.2nm,0.6s,baz=318,slow=1.7,SNR=2.4						
TXAR				pP	pP	03 13 17.2	+2.1
	0.3nm,0.6s,baz=302,slow=3.5,SNR=4.2						
LPAZ	La Paz	146.77	59	PKPbc	PKPab	03 19 45.0	-0.1
	1.8nm,0.8s,baz=35,slow=9.4,SNR=4.8						

DDA ***08*** *03:03:01.5, 36.°33N×35.°55E, h9km, Ml3.3*
NSSC ***08*** *03:03:01.8±1.4, 36.°31N×35.°59E, h3km±4km, MD1.3, ML2.8*
ISCJB ***08*** *03:03:02.3±0.5, 36.°29N±0.°02×35.°57E±0.°02, h11km±3km, Error ellipse: s-maj=3.5km s-min=2.6km az=144.3*
CSEM ***08*** *03:03:02.5±0.1, 36.°29N×35.°57E, h10km, MD3.2, Error ellipse: s-maj=3.2km s-min=2.7km az=48.0*
ISK ***08*** *03:03:02.1, 36.°23N×35.°62E, h19km, MD3.2*
ISC 08 03:03:01.9±1.1**, 36.°28N**±0.°02×**35.°56E**±0.°02**, h7**km±9km**, n91, σ0.s82**/136**, Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
KRTS	Karatas	0.33	333	PG	Pb	03 03 10.7	+0.6
KRTS				eSG	Sb	03 03 17.3	+1.7
KRTS	Karatas	0.33	333	i Pg	Pb	03 03 10.7	+0.6
YAYL	Yayladag	0.50	119	i P	Pg	03 03 11.7	+0.1
YAYL				i S	Sb	03 03 20.0	-0.7
YAYL	Yayladag	0.50	119	P	Pg	03 03 11.7	+0.1
YAYL				S	Sb	03 03 20.0	-0.7
TAHT	Tahtakopru-Hat	0.51	79	ePG	Pg	03 03 12.3	+0.6
TAHT				eSG	Sg	03 03 19.6	+1.1
TAHT	Tahtakopru-Hat	0.51	79	ePg	Pg	03 03 12.4	+0.6
TAHT				eSg	Sg	03 03 19.6	+1.1
ARNB	Al Arnab	0.53	141	eP	Pg	03 03 11.2	-1.0
ARNB				eS	Sg	03 03 19.4	+0.3
ARNB				AML	AML	03 03 21.0	
	comp=N,379nm,0.2s						
ARNB				AML	AML	03 03 23.9	
	comp=E,267nm,0.7s						
CEYT	Ceyhan	0.75	11	ePG	Pb	03 03 17.6	+0.4
CEYT	Ceyhan	0.75	11	ePg	Pb	03 03 17.6	+0.4
BTCH	Batrach	0.76	108	eP	Pb	03 03 17.5	0.0
BTCH				eS	Sg	03 03 27.2	+0.6
BTCH				AML	AML	03 03 29.7	
	comp=N,1μm,0.3s						
BTCH				AML	AML	03 03 31.5	
	comp=E,1μm,0.8s						
BTCH	Batrach	0.76	108	eP	Pb	03 03 17.5	0.0
BTCH				eS	Sg	03 03 27.1	+0.6
BTCH				AML	AML	03 03 29.7	
	comp=N,1μm,0.3s						
BTCH				AML	AML	03 03 31.5	
	comp=E,1μm,0.8s						
BTCH	Batrach	0.76	108	eP	Pb	03 03 17.5	0.0
BTCH				eS	Sg	03 03 27.1	+0.6
SLNF	Slenfeh	0.86	142	eP	Pb	03 03 19.3	0.0
SLNF				eS	Sb	03 03 31.2	0.0
SLNF				AML	AML	03 03 35.3	
	comp=E,1μm,0.3s						
SLNF				AML	AML	03 03 37.2	
	comp=N,201nm,0.3s						
SLNF	Slenfeh	0.86	142	eP	Pb	03 03 19.3	0.0
SLNF				eS	Sb	03 03 31.2	0.0
SLNF				AML	AML	03 03 35.3	
	comp=E,1μm,0.3s						
SLNF				AML	AML	03 03 37.2	
	comp=N,201nm,0.3s						
SLNF	Slenfeh	0.86	142	eP	Pb	03 03 19.3	0.0
SLNF				eS	Sb	03 03 31.2	0.0
DED	Mersin	0.92	318	i P	Pg	03 03 19.7	+0.1
DED				i S	Sg	03 03 31.5	0.0
DRWC	Darouich	0.95	69	eP	Pg	03 03 18.9	-1.4
DRWC				eS	Sg	03 03 32.0	-0.6
DRWC				AML	AML	03 03 33.8	
	comp=E,628nm,0.5s						
DRWC				AML	AML	03 03 35.2	
	comp=N,337nm,0.5s						
DRWC	Darouich	0.95	69	eP	Pg	03 03 18.8	-1.4
DRWC				eS	Sg	03 03 31.5	-1.1
DRWC				AML	AML	03 03 33.8	
	comp=E,628nm,0.5s						
DRWC				AML	AML	03 03 35.2	
	comp=N,337nm,0.5s						
DRWC	Darouich	0.95	69	eP	Pg	03 03 18.8	-1.4
DRWC				eS	Sg	03 03 31.5	-1.1
WRDH	Warideh	1.03	138	eP	Pg	03 03 21.7	0.0
WRDH				eS	Sg	03 03 35.3	+0.2
WRDH				AML	AML	03 03 38.9	
	comp=N,423nm,0.2s						
WRDH				AML	AML	03 03 42.4	
	comp=E,510nm,0.5s						
WRDH	Warideh	1.03	138	eP	Pg	03 03 21.7	0.0
WRDH				eS	Sg	03 03 35.3	+0.2
WRDH				AML	AML	03 03 38.9	
	comp=N,423nm,0.2s						
WRDH				AML	AML	03 03 42.4	
	comp=E,510nm,0.5s						
WRDH	Warideh	1.03	138	eP	Pg	03 03 21.7	0.0
WRDH				eS	Sg	03 03 35.3	+0.2
KIZK	Mersin	1.16	280	i P	Pg	03 03 23.2	-1.0
KIZK				i S	Sb	03 03 39.6	+0.1
KIZK	Mersin	1.16	280	P	Pg	03 03 23.2	-1.0
KIZK				S	Sb	03 03 39.6	+0.1
KOZT	Kozan	1.22	10	ePN	Pb	03 03 25.1	-0.1
KOZT	Kozan	1.22	10	ePn	Pb	03 03 25.2	-0.1
KAMA	Osmaniye	1.27	44	i P	Pn	03 03 25.3	-0.8
KAMA				i S	Sb	03 03 42.1	-0.6
KUZU	Kuzuini	1.31	67	i P	Pn	03 03 26.7	0.0
KUZU	Kuzuini	1.31	67	P	Pn	03 03 26.7	0.0
EREN	Erenkoy	1.35	237	ePN	Pn	03 03 27.1	-0.1
EREN	Erenkoy	1.35	237	ePn	Pn	03 03 27.1	-0.1
BIDA	Albida	1.40	154	eP	Pn	03 03 28.2	+0.2
BIDA				eS	Sb	03 03 45.9	-0.7
BIDA				AML	AML	03 03 50.9	
	comp=N,702nm,0.6s						
BIDA				AML	AML	03 03 54.7	
	comp=E,188nm,0.3s						
ANDN	Andirin	1.44	25	i P	Pn	03 03 28.7	+0.2
ANDN	Andirin	1.44	25	P	Pn	03 03 28.7	+0.2
KFRA	Kufra	1.46	136	eP	Pb	03 03 29.2	-0.2
KFRA				eS	Sb	03 03 48.2	0.0
KFRA				AML	AML	03 03 50.5	
	comp=N,2μm,0.3s						
KFRA				AML	AML	03 03 53.4	
	comp=E,1μm,0.4s						
KFRA	Kufra	1.46	136	eP	Pb	03 03 29.2	-0.2
KFRA				eS	Sg	03 03 48.6	-0.3
KFRA				AML	AML	03 03 50.5	
	comp=N,2μm,0.3s						
KFRA				AML	AML	03 03 53.4	
	comp=E,1μm,0.4s						
KFRA	Kufra	1.46	136	eP	Pb	03 03 29.2	-0.2
KFRA				eS	Sg	03 03 48.6	-0.3
AYKD	Aykdinkavak	1.51	41	i P	Pn	03 03 29.2	-0.1
AYKD				i S	Sn	03 03 48.8	-0.6
IKL	Isikli	1.52	269	ePN	Pn	03 03 29.6	+0.2
IKL	Isikli	1.52	269	ePn	Pn	03 03 29.6	+0.2
KERG	Konya-Eregli	1.62	315	i P	Pn	03 03 30.3	-0.6
KERG				i S	Sn	03 03 52.0	-0.1
KERG	Konya-Eregli	1.62	315	P	Pn	03 03 30.3	-0.6
KERG				S	Sn	03 03 52.0	-0.1
KMRS	Kahramanmaras	1.63	41	ePN	Pn	03 03 30.9	-0.1
KMRS	Kahramanmaras	1.63	41	ePn	Pn	03 03 30.9	-0.1
HAWK	Haweek	1.88	158	eP	Pn	03 03 35.0	+0.5
HAWK				eS	Sn	03 03 59.0	+0.5
HAWK				AML	AML	03 04 05.9	
	comp=E,92nm,0.5s						
HAWK				AML	AML	03 04 08.8	
	comp=N,120nm,0.4s						
HAWK	Haweek	1.88	158	eP	Pn	03 03 35.0	+0.5
HAWK				eS	Sn	03 03 58.5	-0.1
HAWK				AML	AML	03 04 05.9	
	comp=E,92nm,0.5s						
HAWK				AML	AML	03 04 08.8	
	comp=N,120nm,0.4s						
HAWK	Haweek	1.88	158	eP	Pn	03 03 35.0	+0.5
HAWK				eS	Sn	03 03 58.5	-0.1
LFK	Lefkose	1.93	240	ePN	Pn	03 03 35.0	-0.1
LFK	Lefkose	1.93	240	ePn	Pn	03 03 35.0	-0.1
GZT	Gaziantep	1.93	56	i P	Pg	03 03 39.1	+0.2
NIG	Nigde	1.98	338	ePN	Pn	03 03 36.2	+0.2
NIG	Nigde	1.98	338	ePn	Pn	03 03 36.2	+0.2
HWQ	Hawqa	2.02	171	eP	Pn	03 03 36.7	+0.3
HWQ	Hawqa	2.02	171	eP	Pn	03 03 36.7	+0.3
YESY	Yesilyurt	2.09	316	ePN	Pn	03 03 38.3	+0.8
YESY	Yesilyurt	2.09	316	ePn	Pn	03 03 38.3	+0.8
FKH	Fakeheh	2.14	161	eP	Pn	03 03 38.5	+0.4
CSS	Mathiatis	2.24	235	ePN	Pn	03 03 39.4	0.0
CSS	Mathiatis	2.24	235	ePn	Pn	03 03 39.4	0.0
MARH	Ras Al Marh	2.37	161	eP	Pn	03 03 42.4	+1.0
MARH				eS	Sb	03 04 13.2	-1.4
MARH				AML	AML	03 04 18.8	
	comp=N,93nm,0.5s						
MARH				AML	AML	03 04 19.7	
	comp=E,85nm,0.5s						
MARH	Ras Al Marh	2.37	161	eP	Pn	03 03 42.3	+0.9
MARH				eS	Sn	03 04 11.3	+0.4
MARH				AML	AML	03 04 18.8	
	comp=N,93nm,0.5s						
MARH				AML	AML	03 04 19.7	
	comp=E,85nm,0.5s						
MARH	Ras Al Marh	2.37	161	eP	Pn	03 03 42.3	+0.9
MARH				eS	Sn	03 04 11.3	+0.4
MARH				AML	AML	03 04 18.8	
	comp=N,93nm,0.5s						
MARH				AML	AML	03 04 19.7	
	comp=E,85nm,0.5s						
MARH	Ras Al Marh	2.37	161	eP	Pn	03 03 42.3	+0.9
MARH				eS	Sn	03 04 11.3	+0.4
BHL	Bhannes	2.37	178	eP	Pn	03 03 42.9	+1.7
BHL	Bhannes	2.37	178	eP	Pn	03 03 42.9	+1.7
LEF	Lefka	2.46	243	ePN	Pn	03 03 43.2	+0.8
LEF	Lefka	2.46	243	ePn	Pn	03 03 43.2	+0.8
SULT	Sultanhani-AKS	2.52	320	ePN	Pn	03 03 44.0	+0.7
SULT	Sultanhani-AKS	2.52	320	ePn	Pn	03 03 44.0	+0.7
SURC	SANLIURFA_SURC	2.53	75	i P	Pg	03 03 49.3	-1.0
ROOS	tl_alroos	2.53	146	eP	Pn	03 03 43.7	+0.2
ROOS				eS	Sn	03 04 14.8	+0.3
ROOS				AML	AML	03 04 24.6	
	comp=E,94nm,0.6s						
ROOS				AML	AML	03 04 30.1	
	comp=N,46nm,0.5s						
DQRL	Deir Qamar	2.57	180	eP	Pb	03 03 46.5	-1.7
DQRL	Deir Qamar	2.57	180	eP	Pb	03 03 46.5	-1.7
DARE	Darende-Malaty	2.75	33	ePN	Pn	03 03 47.0	+0.5
DARE	Darende-Malaty	2.75	33	ePn	Pn	03 03 47.0	+0.5
AKCD	Akcadag	2.76	42	i P	Pg	03 03 55.0	+0.3
KSRV	Kasrt alli	2.82	97	eP	Pn	03 03 49.6	+2.3
KSRV				eS	Sb	03 04 25.2	-2.0
KSRV				AML	AML	03 04 35.5	
	comp=N,68nm,0.3s						
KSRV				AML	AML	03 04 42.4	
	comp=E,50nm,0.5s						
BRBR	Barbar	2.88	174	eP	Pn	03 03 49.6	+1.4
BRBR				eS	Sn	03 04 23.8	+0.5
BRBR				AML	AML	03 04 39.8	
	comp=E,26nm,0.8s						
BRBR				AML	AML	03 04 45.5	
	comp=N,28nm,0.4s						
BRBR	Barbar	2.88	174	eP	Pn	03 03 49.5	+1.2
BRBR				eS	Sn	03 04 23.6	+0.4
BRBR				AML	AML	03 04 39.8	
	comp=E,26nm,0.8s						
BRBR				AML	AML	03 04 45.5	
	comp=N,28nm,0.4s						
BRBR	Barbar	2.88	174	eP	Pn	03 03 49.5	+1.2
BRBR				eS	Sn	03 04 23.3	0.0
BRBR				AML	AML	03 04 39.8	
	comp=E,26nm,0.8s						
BRBR				AML	AML	03 04 45.5	
	comp=N,28nm,0.4s						
BRBR	Barbar	2.88	174	eP	Pn	03 03 49.5	+1.2
BRBR				eS	Sn	03 04 23.3	0.0
TOTH	TOTAH	3.00	166	eP	Pn	03 03 51.8	+2.0
SVRC	Sivrice-ELAZID	3.65	54	ePN	Pn	03 03 59.3	+0.5
SVRC	Sivrice-ELAZID	3.65	54	ePn	Pn	03 03 59.3	+0.5
ZALF	Zalf	3.65	156	eP	Pn	03 04 00.8	+2.0
ZALF				eS	Sn	03 04 44.9	+2.8
ZALF				AML	AML	03 04 59.9	
	comp=E,19nm,0.7s						
ZALF				AML	AML	03 05 10.0	
	comp=N,20nm,0.5s						
ZALF	Zalf	3.65	156	eP	Pn	03 04 00.4	+1.6
ZALF				eS	Sn	03 04 42.2	0.0
ZALF				AML	AML	03 04 59.9	
	comp=E,19nm,0.7s						
ZALF				AML	AML	03 05 10.1	
	comp=N,20nm,0.5s						
SVSK	Karacayir	3.81	17	ePN	Pn	03 04 01.9	+1.1
SVSK	Karacayir	3.81	17	ePn	Pn	03 04 01.9	+1.1
KBSD	Kabsdagh	4.07	78	eP	Pn	03 04 04.9	+0.3
KBSD				eS	Sn	03 04 50.8	-1.7
KBSD				AML	AML	03 05 23.8	
	comp=E,26nm,0.8s						
KBSD				AML	AML	03 05 30.4	
	comp=N,39nm,0.4s						
MAZI	Mazidag	4.09	72	ePN	Pn	03 04 05.3	+0.4
MAZI	Mazidag	4.09	72	ePn	Pn	03 04 05.3	+0.4

IDC 08 03:10:44.8±6.9**, 7.°46S**×**128.°15E, h148**km±68km**, mb3.4**/2**, mb1 3.8**/6**, mb1mx3.4**/35**, mbtmp4.1**/6**, Error ellipse: s-maj=64.9km s-min=21.1km az=44.0, Banda Sea**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
BATI	Baumata	5.21	238	P	Pn	03 12 02.6	+1.6
	18nm,0.3s,baz=120,slow=24,SNR=28						
BATI				S	Sn	03 13 00.7	+0.3
	27nm,0.3s,baz=257,slow=24,SNR=8.9						
FITZ	Fitzroy Crossi	10.85	193	P	Pn	03 13 14.4	-1.9
	1.5nm,0.3s,baz=37,slow=10,SNR=13						
FITZ				S	Sn	03 15 07.8	-8.4
	1.9nm,0.3s,baz=107,slow=17,SNR=4.8						
WRA	Warramunga Arr	13.78	155	P	Pn	03 13 52.6	-1.5
	0.5nm,0.3s,baz=324,slow=13,SNR=14						
WRA				S	Sn	03 16 15.5	-11
	1.3nm,0.3s,baz=331,slow=22,SNR=7.8						
ASAR	Alice Springs	17.03	162	P	Pn	03 14 34.9	+0.6
	1.2nm,0.3s,baz=340,slow=11,SNR=112						
ASAR				S	S	03 17 37.7	-6.2
	0.3nm,0.3s,baz=327,slow=22,SNR=5.7						
STKA	Stephens Creek	27.33	154	P	P	03 16 16.6	+0.6
	1.6nm,0.6s,baz=334,slow=9.7,SNR=4.6						
MKAR	Makanchi Array	67.62	328	P	P	03 21 25.5	-0.3
	0.3nm,0.5s,baz=116,slow=8.7,SNR=5.4						

JMA 08 03:16:09.3±0.1**, 38.°28N**×**141.°79E, h55**km±4km**, M3.5, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
JMK	Ichinoseki	0.81	327	P	Pn	03 16 25.0	+0.4
JMK				S	Sn	03 16 35.9	+0.1
JMM	Marumori	0.89	243	P	Pn	03 16 25.6	-0.1
JMM				S	Sn	03 16 37.5	-0.2
JOU	Okura	0.89	276	P	Pn	03 16 26.0	+0.3
JOU				S	Sn	03 16 38.1	+0.3
JFK	Kawauchi	1.17	219	P	Pn	03 16 29.7	+0.3
JOM	Ohasama	1.25	342	P	Pn	03 16 30.8	+0.3
JOM				S	Sn	03 16 46.7	+0.3
JYK	Kaneyama	1.29	300	P	Pn	03 16 31.5	+0.5
JYK				S	Sn	03 16 47.8	+0.5
JYS	Shirataka	1.36	268	P	Pn	03 16 32.5	+0.5
JYS				S	Sn	03 16 49.9	+0.9
JFT	Otama	1.38	237	P	Pn	03 16 33.0	+0.8
JFT				S	Sn	03 16 49.8	+0.4

NEIC ***08*** *03:27:58.0, 35.°26N×92.°39W, h6km, MN3.2, After CERI.*
NEIC Felt [II] at Greenbrier. Also felt at Conway, Mountain View, Quitman and Vilonia.
ISC 08 03:27:57.5±1.1**, 35.°27N**±0.°02×**92.°40W**±0.°02**, h3**km±8km**, n155, σ1.s34**/199**, Arkansas**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
WHAR	Wooly Hollow	0.09	77	ePg	Pg	03 28 00.2	+0.9
W41B	Gary Mavity, V	0.16	128	P	Pg	03 28 01.0	+0.4
	baz=306						
W41B				S	Sg	03 28 02.8	+0.2
	baz=306						
UALR	University of	0.49	175	ePg	Pg	03 28 07.6	+0.6
W40A	Ferguson Farm,	0.56	262	P	Pg	03 28 09.4	+1.2
	baz=83,SNR=155						
V40A	Witts Springs	0.64	327	P	Pg	03 28 10.8	+1.0
	baz=147,SNR=654						
V40A				S	Sg	03 28 19.7	+1.7
	baz=147						
X40A	Basin Creek Fa	0.86	205	P	Pg	03 28 14.4	+0.4
	baz=25						
W39A	Magazine	1.14	267	P	Pg	03 28 20.0	+0.6
	baz=86,SNR=38						
W39A				S	Sb	03 28 36.2	+1.1
	baz=86						
U40A	Yellville	1.15	341	P	Pg	03 28 20.0	+0.5
	baz=161,SNR=776						
V39A	Pettigrew	1.17	300	P	Pg	03 28 20.5	+0.6
	baz=119,SNR=276						
V39A				S	Sb	03 28 36.1	+0.2
	baz=119						
MIAR	Mount Ida	1.21	234	P	Pg	03 28 20.9	+0.2
	baz=54,SNR=631						
MIAR				S	Sb	03 28 37.8	+0.7
	baz=54						
MIAR	Mount Ida	1.21	234	ePg	Pg	03 28 20.5	-0.2
MIAR				eSg	Sg	03 28 35.2	-1.2
U39A	Green Forest	1.42	322	Pb	Pn	03 28 24.6	+0.3
	baz=142,SNR=266						
U39A				Sb	Sg	03 28 43.8	+0.7
	baz=142						
CCAR	Cane Creek	1.45	159	ePn	Pn	03 28 24.4	-0.2
Y40A	Okolona	1.45	210	Pb	Pn	03 28 25.0	+0.3
	baz=30						
Y40A				S	Sb	03 28 44.1	+0.1
	baz=30						
HBAR	Harrisburg	1.45	78	ePn	Pn	03 28 24.6	-0.1
QUAR	Qualls	1.48	75	ePn	Pn	03 28 25.2	+0.1
QUAR				eSn	Sb	03 28 44.8	0.0
X39A	Fountain Ranch	1.60	242	Pb	Pb	03 28 27.6	-0.1
	baz=62,SNR=452						
X39A				Sb	Sg	03 28 49.2	+0.3
	baz=62						
HHAR	Hobbs	1.61	309	ePn	Pn	03 28 27.7	+0.7
WLAR	White Oak Lake	1.69	201	ePn	Pn	03 28 28.5	+0.6
V38A	Canehill	1.74	290	Pb	Pb	03 28 30.0	-0.2
	baz=110,SNR=171						
V38A				Sb	Sg	03 28 53.7	+0.2
	baz=110						
W38A	Poteau	1.75	264	Pb	Pb	03 28 30.3	0.0
	baz=83,SNR=252						
W38A				Sb	Sg	03 28 54.7	+0.9
	baz=83						
T40A	Mansfield	1.88	357	Pb	Pb	03 28 32.2	-0.4
	baz=177,SNR=272						
T40A				Sb	Sb	03 28 57.5	+1.0
	baz=177						
T39A	Clever	1.92	336	Pb	Pb	03 28 32.9	-0.4
	baz=155,SNR=190						
Y39A	Lockesburg	1.93	227	P	Pn	03 28 32.0	+0.8
	baz=46,SNR=48						
SFTN	Shelby Forest	1.95	87	eSn	Sb	03 28 57.9	-0.5
U38A	Gravette	1.99	306	Pb	Pb	03 28 33.9	-0.6
	baz=126,SNR=23						
DLAR	Dell	2.02	74	ePn	Pn	03 28 33.9	+1.3
DLAR				eSn	Sb	03 29 01.2	+0.7
MET	Memphis--Engin	2.02	93	ePn	Pn	03 28 32.5	-0.1
MET				eSn	Sn	03 28 58.5	+0.1
GNAR	Gosnell	2.06	70	ePn	Pn	03 28 33.9	+0.8
X38A	Whitesboro	2.08	254	Pb	Pb	03 28 35.7	-0.3
	baz=73,SNR=199						
Z40A	Long Farm, Mag	2.17	203	P	Pn	03 28 35.6	+1.0
	baz=22						
PBMO	Poplar Bluff	2.19	46	ePn	Pn	03 28 36.7	+1.7
V37A	Hulbert	2.32	286	P	Pn	03 28 38.3	+1.6
	baz=105,SNR=81						
V37A				S	Sb	03 29 08.0	-1.1
	baz=105						
S40A	Lebanon	2.33	358	P	Pn	03 28 38.2	+1.4

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
	baz=178,SNR=146						
S40A				Sb	**Sb**	**03 29 10.3**	**+1.0**
	baz=178						
T38A	**Diamond**	**2.34**	**320**	P	**Pn**	**03 28 38.2**	**+1.3**
	baz=139,SNR=41						
Y38A	**Idabel**	**2.34**	**236**	P	**Pn**	**03 28 38.1**	**+1.1**
	baz=55,SNR=18						
CWPT	**Cottonwood Poi**	**2.38**	**71**	*e*Pn	**Pb**	**03 28 40.3**	**-0.6**
CWPT				*e*Pg	**Pg**	**03 28 42.6**	**-0.5**
WADM	**Wardell**	**2.38**	**62**	*e*Sn	**Sb**	**03 29 11.6**	**+0.7**
U37A	**Salina**	**2.48**	**298**	P	**Pn**	**03 28 40.5**	**+1.6**
	baz=117,SNR=17						
W37B	**Quinton**	**2.49**	**268**	P	**Pn**	**03 28 40.3**	**+1.3**
	baz=86,SNR=34						
EBZ	**Ebenezer Churc**	**2.50**	**92**	*e*Pn	**Pn**	**03 28 39.4**	**+0.3**
EBZ				*e*Sn	**Sn**	**03 29 10.4**	**+0.2**
S39A	**Bolivar**	**2.53**	**343**	P	**Pn**	**03 28 41.3**	**+1.8**
	baz=163,SNR=173						
X37A	**Clayton**	**2.54**	**255**	P	**Pn**	**03 28 41.1**	**+1.5**
	baz=74,SNR=51						
X37A				Sb	**Sg**	**03 29 17.9**	**-1.1**
	baz=74						
PARMO	**Parma**	**2.56**	**56**	*e*Pn	**Pn**	**03 28 40.9**	**+0.9**
OXF	**Oxford**	**2.57**	**106**	*e*Pn	**Pn**	**03 28 40.5**	**+0.4**
OXF				*e*Sn	**Sn**	**03 29 11.2**	**-0.7**
HALT	**Halls**	**2.57**	**75**	*e*Pn	**Pn**	**03 28 40.8**	**+0.6**
RELT	**Roellen**	**2.63**	**72**	*e*Pn	**Pb**	**03 28 44.8**	**-0.6**
S38A	**Stockton**	**2.65**	**333**	P	**Pn**	**03 28 42.7**	**+1.4**
	baz=152,SNR=52						
143A	**Socs Landing,**	**2.69**	**162**	P	**Pn**	**03 28 42.2**	**+0.4**
	baz=342						
141A	**Papa Simpson,**	**2.69**	**189**	S	**Sn**	**03 29 14.8**	**-0.1**
	baz=9.0						
GLAT	**Glass**	**2.72**	**68**	*e*Pn	**Pn**	**03 28 42.2**	**+0.1**
142A	**Monroe**	**2.74**	**172**	P	**Pn**	**03 28 43.0**	**+0.5**
	baz=352						
T37A	**Cheneyville 18**	**2.75**	**313**	P	**Pn**	**03 28 43.8**	**+1.2**
	baz=132,SNR=40						
140A	**Cam and Jess,**	**2.80**	**201**	S	**Sn**	**03 29 17.4**	**-0.1**
	baz=20						
TUL1	**Leonard**	**2.84**	**284**	P	**Pn**	**03 28 45.0**	**+1.2**
	baz=102,SNR=23						
TUL1	**Leonard**	**2.84**	**284**	*e*Pn	**Pn**	**03 28 45.2**	**+1.4**
TUL1				*e*Pg	**Pg**	**03 28 51.0**	**-0.9**
TUL1				*e*Sn	**Sn**	**03 29 19.1**	**+0.6**
TUL1				*e*Sg	**Sg**	**03 29 28.1**	**-0.6**
U36A	**Oologah**	**2.93**	**293**	P	**Pn**	**03 28 46.0**	**+0.9**
	baz=112						
V36A	**Jenks**	**2.94**	**281**	P	**Pn**	**03 28 46.4**	**+1.3**
	baz=99,SNR=27						
R40A	**Maddies Statio**	**3.02**	**2**	P	**Pn**	**03 28 47.7**	**+1.5**
	baz=182						
UTMT	**University of**	**3.07**	**69**	*e*Pn	**Pn**	**03 28 47.4**	**+0.5**
UTMT				*e*Pb	**Pb**	**03 28 53.5**	**+0.8**
139A	**Bunkhouse Ranc**	**3.07**	**213**	P	**Pn**	**03 28 48.0**	**+1.0**
	baz=32						
R39A	**Chumby, Stover**	**3.08**	**351**	P	**Pn**	**03 28 48.6**	**+1.5**
	baz=170,SNR=50						
W36A	**Wetumka**	**3.14**	**269**	Pb	**Pb**	**03 28 55.1**	**+1.1**
	baz=87						
R38A	**Fenwick Farm,**	**3.15**	**338**	P	**Pn**	**03 28 49.6**	**+1.5**
	baz=157,SNR=18						
S37A	**Fort Scott**	**3.16**	**322**	P	**Pn**	**03 28 49.9**	**+1.6**
	baz=141						
X36A	**Centrahoma**	**3.32**	**259**	P	**Pn**	**03 28 52.1**	**+1.6**
	baz=77,SNR=7.4						
T36A	**Boggs Farm, Ca**	**3.33**	**303**	P	**Pn**	**03 28 52.1**	**+1.4**
	baz=122,SNR=13						
145A	**Houston Renfro**	**3.36**	**142**	P	**Pn**	**03 28 52.1**	**+1.1**
	baz=323						
Y36A	**Durant**	**3.48**	**248**	P	**Pn**	**03 28 54.2**	**+1.5**
	baz=66,SNR=6.9						
244A	**Avery, Jackson**	**3.52**	**156**	P	**Pn**	**03 28 54.6**	**+1.4**
	baz=337						
SIUC	**Southern Illin**	**3.54**	**45**	*e*Pn	**Pn**	**03 28 55.4**	**+2.0**
S36A	**Lake Cedric, C**	**3.55**	**315**	P	**Pn**	**03 28 55.1**	**+1.4**
	baz=133,SNR=8.0						
PLAL	**Pickwick Lake**	**3.56**	**93**	*e*Pn	**Pn**	**03 28 53.7**	**0.0**
R37A	**Teagarden Farm**	**3.61**	**328**	P	**Pn**	**03 28 56.2**	**+1.7**
	baz=147,SNR=11						
V35A	**Meyer Ranch, C**	**3.66**	**279**	P	**Pn**	**03 28 56.3**	**+1.2**
	baz=97,SNR=17						
W35A	**Tecumseh**	**3.67**	**269**	P	**Pn**	**03 28 56.4**	**+1.2**
	baz=87,SNR=17						
239A	**Gary**	**3.67**	**209**	P	**Pn**	**03 28 56.0**	**+0.7**
	baz=28,SNR=9.4						
U35A	**Pawnee**	**3.69**	**289**	P	**Pn**	**03 28 56.8**	**+1.3**
	baz=106,SNR=16						
T35A	**Sooner Cattle**	**3.71**	**297**	P	**Pn**	**03 28 57.3**	**+1.4**
	baz=115,SNR=9.4						
Q40A	**Laux Farm, Aux**	**3.73**	**4**	P	**Pn**	**03 28 57.4**	**+1.4**
	baz=184,SNR=6.7						
Q39A	**Willow Grove F**	**3.80**	**353**	Pb	**Pb**	**03 29 06.9**	**+1.7**
	baz=173						
Q38A	**Cooks Store, C**	**3.81**	**346**	P	**Pn**	**03 28 58.8**	**+1.7**
	baz=165						
WVT	**Waverly**	**3.82**	**76**	*e*Pn	**Pn**	**03 28 57.2**	**0.0**
X35A	**Drake**	**3.86**	**258**	P	**Pn**	**03 28 59.1**	**+1.2**
	baz=76						
Z36A	**Blue Ridge**	**3.89**	**240**	Pb	**Pb**	**03 29 07.4**	**+0.6**
	baz=58						
R36A	**Gordon, Harris**	**3.94**	**322**	P	**Pn**	**03 29 00.0**	**+1.1**
	baz=140						
Q37A	**Longview Farm,**	**3.96**	**336**	P	**Pn**	**03 29 00.6**	**+1.4**
	baz=155						
238A	**Jacksonville**	**3.97**	**216**	P	**Pn**	**03 29 00.5**	**+1.2**
	baz=34						
S35A	**Otter Creek Ra**	**3.97**	**308**	P	**Pn**	**03 29 00.9**	**+1.5**
	baz=126						
341A	**Kurthwood**	**3.98**	**190**	P	**Pn**	**03 29 00.3**	**+0.9**
	baz=9.2,SNR=7.2						
Y35A	**Marietta**	**4.06**	**252**	P	**Pn**	**03 29 02.4**	**+1.7**
	baz=69						
V34A	**Guthrie**	**4.21**	**279**	P	**Pn**	**03 29 03.8**	**+1.1**
	baz=96,SNR=15						
V34A	**Guthrie**	**4.21**	**279**	*e*Pn	**Pn**	**03 29 03.9**	**+1.1**
V34A				*e*Sn	**Sn**	**03 29 52.8**	**+0.4**
V34A				*e*Sg	**Sg**	**03 30 09.6**	**-3.2**
P39A	**Salisbury**	**4.22**	**356**	P	**Pn**	**03 29 04.0**	**+1.2**
	baz=176,SNR=5.1						
T34A	**McClaskey Farm**	**4.25**	**296**	P	**Pn**	**03 29 04.4**	**+1.2**
	baz=113						
P40A	**Paris**	**4.26**	**4**	P	**Pn**	**03 29 04.6**	**+1.2**
	baz=184,SNR=11						
237A	**Washetta, Mont**	**4.33**	**222**	P	**Pn**	**03 29 05.3**	**+1.0**
	baz=40,SNR=12						
U34A	**Anderson Ranch**	**4.33**	**287**	*e*Pn	**Pn**	**03 29 04.2**	**-0.2**
U34A				*e*Sg	**Sg**	**03 30 13.4**	**-3.3**
W34A	**Bridge Creek,**	**4.40**	**271**	P	**Pn**	**03 29 06.4**	**+1.1**
	baz=88						
W34A	**Bridge Creek,**	**4.40**	**271**	*e*Pn	**Pn**	**03 29 05.8**	**+0.5**
W34A				*e*Pg	**Pb**	**03 29 18.5**	**+3.0**
W34A				*e*Sg	**Sg**	**03 30 17.6**	**-1.2**
345A	**Thompson Farm,**	**4.42**	**153**	P	**Pn**	**03 29 06.5**	**+0.9**
	baz=334						
Q36A	**Arnold C. Orve**	**4.42**	**327**	P	**Pn**	**03 29 07.5**	**+1.9**
	baz=146						
P38A	**Dawn**	**4.44**	**349**	P	**Pn**	**03 29 07.5**	**+1.6**
	baz=168,SNR=11						
Z35A	**Perchaven, San**	**4.46**	**246**	P	**Pn**	**03 29 07.2**	**+1.1**
	baz=63						
338A	**Crockett**	**4.60**	**213**	P	**Pn**	**03 29 08.9**	**+0.8**
	baz=31						
Q35A	**Mercer Eighty,**	**4.62**	**322**	P	**Pn**	**03 29 09.7**	**+1.4**
	baz=140,SNR=20						
USIN	**University of**	**4.66**	**53**	*e*Pn	**Pn**	**03 29 10.0**	**+1.2**
USIN				*e*Sb	**Sb**	**03 30 22.1**	**+5.7**
O40A	**La Belle**	**4.86**	**5**	P	**Pn**	**03 29 12.8**	**+1.2**
	baz=185						
P36A	**Good Intent, A**	**4.88**	**334**	P	**Pn**	**03 29 13.4**	**+1.4**
	baz=152,SNR=12						
O38A	**Galt**	**4.92**	**350**	P	**Pn**	**03 29 13.7**	**+1.4**
	baz=170						
R34A	**Isabella, Hill**	**4.93**	**309**	P	**Pn**	**03 29 13.9**	**+1.3**
	baz=127						
W33A	**Caddo, Fort Co**	**4.97**	**270**	P	**Pn**	**03 29 14.8**	**+1.6**
	baz=87,SNR=9.3						
O39A	**Kirksville**	**4.98**	**359**	P	**Pn**	**03 29 14.2**	**+1.0**
	baz=179						
LRAL	**Lakeview Retre**	**5.00**	**115**	*e*Pn	**Pn**	**03 29 13.2**	**-0.3**
LRAL				*e*Sn	**Sn**	**03 30 10.2**	**-1.7**
LRAL				*e*Sg	**Sb**	**03 30 28.9**	**+2.6**
KSU1	**Kansas State U**	**5.09**	**320**	*e*Pn	**Pn**	**03 29 15.1**	**+0.3**
	72nm,0.7s						
KSU1				*e*Pg	Pb	03 29 31.2	+3.9
KSU1				*e*Sg	**Sg**	**03 30 36.9**	**-4.1**
WMOK	**Wichita Mounta**	**5.26**	**266**	*e*Pn	**Pn**	**03 29 16.5**	**-0.7**
	10nm,0.7s						
WMOK				*e*Pg	**Pb**	**03 29 33.2**	**+2.9**
WMOK				*e*Sn	**Sn**	**03 30 18.1**	**-0.4**
WMOK				*e*Sg	**Sg**	**03 30 42.1**	**-4.6**
SWET	**Sewanee**	**5.29**	**89**	*e*Pn	**Pn**	**03 29 17.2**	**-0.3**
WHTX	**Lake Whitney,**	**5.34**	**234**	P	**Pn**	**03 29 19.0**	**+0.9**
	baz=51,SNR=13						
WHTX	**Lake Whitney,**	**5.34**	**234**	*e*Pn	**Pn**	**03 29 16.6**	**-1.5**
P34A	**Walnut Farm, R**	**5.54**	**322**	P	**Pn**	**03 29 21.7**	**+0.8**
	baz=139						
N38A	**Joes South For**	**5.55**	**353**	P	**Pn**	**03 29 21.9**	**+0.8**
	baz=173						
N39A	**Derby Farms, D**	**5.60**	**359**	P	**Pn**	**03 29 22.7**	**+0.9**
	baz=179						
W32A	**Sentinel**	**5.61**	**270**	P	**Pn**	**03 29 22.8**	**+0.9**
	baz=87,SNR=13						
Z33A	**Whitaker Ranch**	**5.63**	**251**	P	**Pn**	**03 29 23.4**	**+1.2**
	baz=68						
O35A	**Humboldt**	**5.71**	**332**	P	**Pn**	**03 29 24.5**	**+1.2**
	baz=150						
WCI	**Wyandotte Cave**	**5.72**	**57**	*e*Pn	**Pn**	**03 29 24.3**	**+0.9**
WCI				*e*Pg	Pb	03 29 41.4	+3.4
WCI				*e*Sn	**Sn**	**03 30 30.5**	**+0.8**
WCI				*e*Sg	Sg	03 30 54.9	-6.4
234A	**Clairette**	**5.79**	**237**	P	**Pn**	**03 29 24.9**	**+0.5**
	baz=54						
HDIL	**Hopedale**	**5.82**	**24**	*e*Pn	**Pn**	**03 29 25.6**	**+0.8**
HDIL				*e*Sn	**Sn**	**03 30 31.8**	**-0.3**
HDIL				*e*Sg	**Sg**	**03 31 01.4**	**-3.1**
BLO	**Bloomington**	**6.09**	**49**	*e*Pb	Pb	03 29 40.6	-3.7
334A	**Lometa**	**6.27**	**233**	P	**Pn**	**03 29 31.3**	**+0.3**
	baz=50						
N34A	**Lincoln**	**6.43**	**331**	P	**Pn**	**03 29 34.4**	**+1.2**
	baz=149						
CPCT	**Cooper Cave**	**6.44**	**86**	*e*Pn	**Pn**	**03 29 33.3**	**0.0**
ABTX	**Abilene, Hawle**	**6.57**	**248**	P	**Pn**	**03 29 35.6**	**+0.4**
	baz=64						
434A	**Burnet**	**6.63**	**230**	P	**Pn**	**03 29 35.9**	**-0.1**
	baz=46						
SCIA	**State Center**	**6.66**	**355**	*e*Pn	**Pn**	**03 29 36.9**	**+0.6**
	25nm,0.6s						
SCIA				*e*Pb	**Pb**	**03 29 56.2**	**+2.2**
SCIA				*e*Pg	**Pg**	**03 30 03.5**	**-1.6**
SCIA				*e*Sn	**Sn**	**03 30 55.0**	**+2.3**
SCIA				*e*Sg	**Sg**	**03 31 26.1**	**-5.2**
333A	**Richland Sprin**	**6.77**	**236**	P	**Pn**	**03 29 37.9**	**0.0**
	baz=53						
CBKS	**Cedar Bluff**	**6.85**	**303**	P	**Pn**	**03 29 40.2**	**+1.2**
	baz=119						
534A	**Blanco**	**7.32**	**226**	P	**Pn**	**03 29 45.5**	**+0.1**
	baz=43,SNR=6.7						
635A	**Leesville**	**7.42**	**219**	P	**Pn**	**03 29 47.0**	**+0.2**
	baz=36						
AMTX	**Amarillo**	**7.62**	**270**	P	**Pn**	**03 29 49.7**	**+0.1**
	baz=84						
AMTX	**Amarillo**	**7.62**	**270**	*e*Pn	**Pn**	**03 29 50.0**	**+0.3**
AMTX				*e*Pg	Pb	03 30 15.9	+5.5
AMTX				*e*Sn	**Sn**	**03 31 16.0**	**-0.6**
JFWS	**Jewell Farm**	**7.81**	**12**	*e*Pn	**Pn**	**03 29 51.9**	**-0.2**
JFWS				*e*Pg	Pg	03 30 22.6	-4.6
JFWS				*e*Sn	**Sn**	**03 31 22.1**	**+0.9**
JFWS				*e*Sg	Sg	03 31 59.4	-9.0
JCT	**Junction City**	**7.85**	**235**	*e*Pn	**Pn**	**03 29 51.4**	**-1.3**
M31A	**Lambtecht Ranc**	**7.97**	**322**	P	**Pn**	**03 29 55.5**	**+1.2**
	baz=138						
TIGA	**Tifton**	**8.30**	**115**	*e*Pn	**Pn**	**03 29 57.2**	**-1.6**
TIGA				*e*Sg	Sb	03 32 09.5	+8.4
MSTX	**Muleshoe**	**8.65**	**264**	*e*Pn	**Pn**	**03 30 04.0**	**+0.2**
ECSD	**EROS Data Cent**	**9.06**	**340**	*e*Pn	**Pn**	**03 30 09.2**	**0.0**
ECSD				*e*Lg	Lg	03 32 38.6	
KMSC	**Kings Mountain**	**9.06**	**88**	*e*Pn	**Pn**	**03 30 08.4**	**-0.8**
OGNE	**Ogallala**	**9.47**	**310**	*e*Lg	Lg	03 33 06.0	
TX31	**Lajitas Ar. Si**	**11.22**	**241**	*e*Pn	**Pn**	**03 30 38.0**	**-0.9**
MNTX	**Cornudas Mount**	**11.41**	**255**	*e*Pn	**Pn**	**03 30 40.9**	**-0.6**
MNTX				*e*Sn	**Sn**	**03 32 49.5**	**0.0**
MNTX				*e*Lg	Lg	03 33 56.8	
PHWY	**Pilot Hill**	**11.89**	**304**	*e*Pn	Pn	03 30 51.8	+3.5
BW06	**Boulder Array**	**15.28**	**304**	*e*Sn	**Sn**	**03 34 22.5**	**-1.8**
WMUT	**West Mountain**	**16.11**	**293**	*e*Pn	**Pn**	**03 31 47.1**	**+1.8**
FLU	**Fool Peak**	**16.25**	**290**	*e*Pn	**P**	**03 31 49.4**	**-0.8**

*IDC **08** 03:27:56.0±2.9, 38°.37N×143°.36E, h0km, mb3.5/3, mb1 3.6/4, mb1mx3.3/46, mbtmp3.5/4, ML3.1/1, MS3.0/1, Ms1 3.0/1, ms1mx2.4/41, Error ellipse: s-maj=71.4km s-min=30.6km az=63.0*

*JMA **08** 03:28:10.7±0.1, 38°.30N×141°.91E, h59km±4km, M3.8*

ISC 08 03:28:10.7±2.2**, 38°.31N**±0°.05×**142°.0E**±0°.1**, h51**km±17km**, n14, σ0ˢ.85**/21**, mb3.3**/3**, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
JMK	**Ichinoseki**	**0.87**	**318**	P	**Pn**	**03 28 27.1**	**+0.4**
JMK				S	**Sn**	**03 28 38.7**	**+0.2**
JMM	**Marumori**	**1.03**	**245**	P	**Pn**	**03 28 28.5**	**-0.3**
JMM				S	**Sn**	**03 28 41.3**	**-0.9**
JOU	**Okura**	**1.03**	**274**	P	**Pn**	**03 28 28.8**	**0.0**
JOU				S	**Sn**	**03 28 42.1**	**-0.2**
JOM	**Ohasama**	**1.28**	**336**	P	**Pn**	**03 28 32.7**	**+0.5**
JOM				S	**Sn**	**03 28 48.4**	**+0.2**
JFK	**Kawauchi**	**1.28**	**223**	P	**Pn**	**03 28 32.1**	**-0.1**
JFK				S	**Sn**	**03 28 48.0**	**-0.3**
JYK	**Kaneyama**	**1.40**	**296**	P	**Pn**	**03 28 33.9**	**0.0**
JYK				S	**Sn**	**03 28 51.4**	**+0.1**
JYS	**Shirataka**	**1.50**	**267**	P	**Pn**	**03 28 35.4**	**+0.2**
JYS				S	**Sn**	**03 28 53.8**	**+0.1**
JFT	**Otama**	**1.52**	**239**	P	**Pn**	**03 28 35.8**	**+0.4**
JFT				S	**Sn**	**03 28 53.4**	**-0.6**
MJAR	**Matsushiro Arr**	**3.48**	**241**	Pn	**Pn**	**03 29 03.9**	**+1.6**
	1.0nm,0.3s,baz=58,slow=11,SNR=5.7						
MAT	**Matsushiro**	**3.48**	**241**	P	**Pn**	**03 29 04.7**	**+2.4**
MAT				*e*S	**Sn**	**03 29 42.9**	**+0.7**
KSRS	**Korea Array**	**11.14**	**270**	LR	LR	03 35 41.6	
	comp=Z,62nm,18.4s,baz=140,slow=38						
SONM	**Songino Array**	**27.47**	**302**	P	**P**	**03 33 52.1**	**+0.2**
	0.4nm,0.5s,baz=101,slow=7.5,SNR=2.4						
MKAR	**Makanchi Array**	**43.83**	**301**	P	**P**	**03 36 10.5**	**-1.1**
	0.2nm,0.3s,baz=84,slow=11,SNR=4.2						
WRA	**Warramunga Arr**	**58.38**	**188**	P	P	03 37 54.9	-5.9
	0.6nm,1.0s,baz=23,slow=6.9,SNR=10						

MEX 08 03:31:16.9±0.9**, 16°.19N**×**99°.47W, h6**km±21km**, MD3.5, Near coast of Guerrero**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
CAIG	**El Cayaco**	**1.15**	**318**	*e*P	Pg	03 31 36.5	-2.4
CAIG				*e*S	Sg	03 31 49.9	-3.9
PNIG	**Pinotepa**	**1.30**	**81**	*e*P	Pn	03 31 37.6	-4.1
PNIG				*e*S	Sg	03 31 54.6	-4.2
TLIG	**Tlapa**	**1.61**	**32**	*e*P	Pn	03 31 42.0	-4.0
TLIG				*e*S	Sn	03 32 03.0	-4.3
MEIG	**Mezcala**	**1.73**	**355**	*e*P	Pn	03 31 43.8	-3.8
MEIG				*e*S	Sn	03 32 04.5	-5.6

JMA 08 03:34:10.1±0.1**, 38°.39N**×**141°.92E, h58**km±2km**, M3.7, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
JMK	**Ichinoseki**	**0.78**	**316**	P	Pn	03 34 25.7	+0.4
JMK				S	Sn	03 34 36.5	+0.1
JOU	**Okura**	**0.99**	**269**	P	Pn	03 34 28.1	+0.2
JOU				S	Sn	03 34 41.3	+0.2
JMM	**Marumori**	**1.03**	**240**	P	Pn	03 34 28.4	-0.1
JMM				S	Sn	03 34 41.5	-0.5
JOM	**Ohasama**	**1.19**	**336**	P	Pn	03 34 30.9	+0.4
JOM				S	Sn	03 34 46.5	+0.7
JFK	**Kawauchi**	**1.31**	**219**	P	Pn	03 34 32.5	+0.2
JFK				S	Sn	03 34 48.6	-0.3
JYK	**Kaneyama**	**1.33**	**294**	P	Pn	03 34 32.9	+0.4
JYK				S	Sn	03 34 49.7	+0.5
JYS	**Shirataka**	**1.47**	**264**	P	Pn	03 34 34.9	+0.6
JYS				S	Sn	03 34 53.6	+1.1
JFT	**Otama**	**1.52**	**236**	P	Pn	03 34 36.0	+0.9
JFT				S	Sn	03 34 54.4	+0.5

MEX 08 03:36:23.7±0.9**, 16°.06N**×**99°.41W, h4**km±19km**, MD3.8, Near coast of Guerrero**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
PNIG	**Pinotepa**	**1.28**	**75**	*e*P	Pg	03 36 45.4	-2.8
PNIG				*e*S	Sg	03 36 60.0	-4.8
CAIG	**El Cayaco**	**1.28**	**320**	*e*P	Pg	03 36 44.3	-4.0
CAIG				*e*S	Sg	03 37 00.8	-4.2
TLIG	**Tlapa**	**1.70**	**28**	*e*P	Pn	03 36 50.0	-4.3
TLIG				*i* S	Sn	03 37 11.4	-5.0
MEIG	**Mezcala**	**1.86**	**354**	*e*P	Pn	03 36 52.8	-3.7
MEIG				*i* S	Sn	03 37 16.6	-3.9
PLIG	**Platanillo**	**2.32**	**358**	*e*P	Pn	03 36 60.0	-2.8
PLIG				*e*S	Sn	03 37 27.1	-4.7
YAIG	**Yautepec**	**2.81**	**7**	*e*P	Pn	03 37 07.1	-2.3
YAIG				*e*S	Sn	03 37 40.3	-3.6

*NIED **08** 03:45:00, 37°.20N×143°.40E, h11km, Mw4.2 Best double couple: $M_0$2.42000×10^{15} NP1:ϕ_s51.00000°, δ42.00000°, λ-65.00000°. NP2:ϕ_s199.00000°, δ52.00000°, λ-111.00000°.*

*IDC **08** 03:45:38.1±0.5, 37°.09N×143°.56E, h0km, mb4.1/23, mb1 4.3/28, mb1mx4.2/53, mbtmp4.1/28, ML3.5/4, MS3.4/4, Ms1 3.4/4, ms1mx2.9/47, Error ellipse: s-maj=14.8km s-min=12.7km az=124.0*

*ISCJB **08** 03:45:39.8±1.2, 37°.22N±0°.03×143°.42E±0°.03, h19km±8km, mb4.3/51, MS3.6/2, Error ellipse: s-maj=5.9km s-min=4.4km az=160.9*

*JMA **08** 03:45:41.6±0.2, 37°.20N×143°.38E, h47km, M4.5*

*NEIC **08** 03:45:41.5±2.4, 37°.13N×143°.53E, h22km±16km, mb4.6/18, Error ellipse: s-maj=8.5km s-min=6.2km az=131.0*

*MOS **08** 03:45:42.9±1.1, 37°.41N×143°.43E, h33km, mb4.5/32, Error ellipse: s-maj=9.0km s-min=6.1km az=98.8*

ISC 08 03:45:42.0±2.1**, 37°.19N**±0°.04×**143°.45E**±0°.05**, h25**km±14km**, n123, σ1ˢ.44**/127**, mb4.3**/51**, 7C-1D, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**2.06**	**276**	P	**Pn**	**03 46 13.9**	**-1.2**
JFK				S	**Sn**	**03 46 37.8**	**-2.3**
ONAJ	**Iwakimizuishiy**	**2.12**	**268**	P	**Pn**	**03 46 15.0**	**-1.0**
ONAJ				S	**Sn**	**03 46 39.3**	**-2.3**
JMM	**Marumori**	**2.22**	**288**	P	**Pn**	**03 46 16.0**	**-1.2**
JMM				S	**Sn**	**03 46 41.9**	**-1.9**
JMK	**Ichinoseki**	**2.49**	**316**	P	**Pn**	**03 46 19.9**	**-1.0**
JMK				S	**Sn**	**03 46 48.2**	**-2.3**
JFT	**Otama**	**2.50**	**278**	P	**Pn**	**03 46 21.0**	**-0.2**
JFT				S	**Sn**	**03 46 50.0**	**-0.9**
JOM	**Ohasama**	**2.84**	**324**	P	**Pn**	**03 46 25.5**	**-0.3**
JOM				S	**Sn**	**03 46 57.2**	**-2.0**
JYK	**Kaneyama**	**2.99**	**306**	P	**Pn**	**03 46 27.1**	**-0.7**
JYK				S	**Sn**	**03 47 01.5**	**-1.4**
JAG	**Ashikaga**	**3.30**	**258**	P	**Pn**	**03 46 31.5**	**-0.6**
JAG				S	**Sn**	**03 47 07.5**	**-3.0**
JNS	**Sasagawa**	**3.35**	**282**	P	**Pn**	**03 46 33.1**	**+0.4**
JAW	**Awa shima**	**3.56**	**292**	P	**Pn**	**03 46 36.1**	**+0.4**
JRY	**Ryogami san**	**3.84**	**254**	P	**Pn**	**03 46 38.7**	**-0.9**
JRY				S	**Sn**	**03 47 19.9**	**-4.1**
JOD2	**Odawara 2**	**4.02**	**243**	P	**Pn**	**03 46 41.0**	**-1.0**
JOD2				S	**Sn**	**03 47 24.4**	**-3.9**
JSD	**Sado**	**4.21**	**283**	P	**Pn**	**03 46 44.8**	**+0.2**
MJAR	**Matsushiro Arr**	**4.25**	**263**	Pn	**Pn**	**03 46 45.5**	**+0.3**
	13nm,0.3s,baz=84,slow=16,SNR=78						
MJAR				Sn	**Sn**	**03 47 35.2**	**+1.1**
	8.3nm,0.3s,baz=95,slow=26,SNR=5.8						
MJAR				LR	LR	03 48 57.5	
	comp=Z,203nm,18.6s,baz=70,slow=46						
MAJO	**Matsushiro**	**4.26**	**263***c*	*i*P	**Pn**	**03 46 45.8**	**+0.6**
MAJO	**Matsushiro**	**4.26**	**263**	*e*Pn	**Pn**	**03 46 45.9**	**+0.6**
MAJO				*e*Sn	**Sn**	**03 47 34.0**	**-0.2**
MAT	**Matsushiro**	**4.26**	**263**	P	**Pn**	**03 46 45.9**	**+0.6**
MAT				S	Sn	03 47 29.3	-4.9
JOT	**Ohata**	**4.58**	**337**	P	**Pn**	**03 46 49.4**	**-0.3**
JOT				S	**Sn**	**03 47 39.3**	**-2.8**
ERM	**Erimo**	**4.82**	**357**	*e*P	**Pn**	**03 46 51.3**	**-1.7**
ERM	**Erimo**	**4.82**	**357**	*e*Pn	**Pn**	**03 46 51.2**	**-1.7**
JHJ2	**Mitsune**	**5.04**	**217**	P	**Pn**	**03 46 55.6**	**-0.5**
JHJ2				S	**Sn**	**03 47 49.0**	**-4.5**
JKB	**Kayabe**	**5.05**	**339**	P	**Pn**	**03 46 55.5**	**-0.6**
JKB				S	Sn	03 47 48.8	-4.8
JHJ	**Hachijo jima 2**	**5.05**	**218**	Pn	**Pn**	**03 46 53.6**	**-2.6**
	10nm,0.3s,baz=61,slow=22,SNR=6.2						
JHJ				Sn	**Sn**	**03 47 50.2**	**-3.6**
	47nm,0.3s,baz=73,slow=23,SNR=6.6						
YUK	**Yuzh-Kuril'sk**	**7.08**	**14**	*e*P	**Pn**	**03 47 22.2**	**-1.7**
YUK				*e*S	Sn	03 48 36.0	-7.5
YUK				pmax	pmax		
	comp=Z,140nm,0.2s						
YUK				pmax	pmax		
	comp=E,63nm,0.3s						
YUK				pmax	pmax		
	comp=N,40nm,0.1s						
SHO	**Shikotan**	**7.15**	**20**	*e*P	Pn	03 47 22.4	-2.5
SHO				*i* S	Sn	03 48 36.0	-9.3
SHO				pmax	pmax		
	comp=Z,66nm,0.9s						
SHO				pmax	pmax		
	comp=N,21nm,0.5s						
KUR	**Kuril'sk**	**8.69**	**21**	P	**Pn**	**03 47 45.0**	**-1.1**
KUR				*e*S	Sn	03 49 14.7	-8.6
YSS	**Yuzh-Sakhalins**	**9.77**	**357**	*e*P	**Pn**	**03 48 01.7**	**+0.9**
JNU	**Nakatsue**	**11.06**	**252**	*e*Pn	**Pn**	**03 48 19.2**	**+0.5**
USRK	**Ussuriysk Ar.**	**11.16**	**312**	Pn	**Pn**	**03 48 20.4**	**+0.4**
	comp=N,0.5nm,0.3s,baz=112,slow=13,SNR=7.1						
KSRS	**Korea Array**	**12.37**	**276**	Pn	**Pn**	**03 48 39.2**	**+2.7**
	baz=90,slow=14,SNR=7.4						
KSAR	**Wonju Array Be**	**12.40**	**276**	P	**Pn**	**03 48 39.2**	**+2.3**
KSAR	**Wonju Array Be**	**12.40**	**276**	Pn	**Pn**	**03 48 39.1**	**+2.3**
KLR	**Kul'dur**	**14.73**	**328**	Pn	Pn	03 49 05.9	-2.7
	comp=N,0.3nm,0.3s,baz=130,slow=13,SNR=24						
KLR				LR	LR	03 55 21.0	
	comp=N,101nm,18.3s,baz=100,slow=39						
PETK	**Petropavlovsk-**	**18.76**	**27**	P	**Pn**	**03 50 00.7**	**+1.1**
	comp=N,0.6nm,0.3s,baz=80,slow=21,SNR=5.1						
MA2	**Magadan**	**22.89**	**10**⇑	*e*P	**P**	**03 50 44.4**	**+0.8**
YULB	**Yu-li**	**23.49**	**240**	*e*P	**P**	**03 50 48.2**	**-1.7**
	comp=N,6.2nm,0.6s						
YAK	**Yakutsk**	**26.30**	**345**	LR	LR	04 02 21.4	
	comp=N,60nm,18.4s,baz=124,slow=38						
YAK	**Yakutsk**	**26.30**	**345**	*e*P	**P**	**03 51 11.9**	**-3.4**
YAK				pmax	pmax		
	comp=Z,14nm,0.9s						
YAK				pmax	pmax		
	comp=N,3.0nm,0.9s						
YAK				pmax	pmax		
	comp=E,2.0nm,0.9s						
YAK				pmax	pmax		
	comp=Z,16nm,0.8s						
YAK				pmax	pmax		
	comp=N,5.0nm,0.9s						
SEY	**Seymchan**	**26.35**	**9**	P	**P**	**03 51 16.6**	**+0.9**
	comp=N,6.5nm,0.9s,baz=190,slow=6.6,SNR=20						
SEY	**Seymchan**	**26.35**	**9***c*	*e*P	**P**	**03 51 17.3**	**+1.6**
H11N2	**WAKE ISLAND Hy**	**26.86**	**124**	T	T	04 18 11.7	
	baz=317,slow=74,SNR=18						
H11N1	**WAKE ISLAND Hy**	**26.86**	**124**	T	T	04 18 23.2	
	baz=317,slow=74,SNR=14						
H11N3	**WAKE ISLAND Hy**	**26.87**	**124**	T	T	04 18 20.3	
	baz=317,slow=74,SNR=18						
H11S1	**WAKE ISLAND Hy**	**27.61**	**126**	T	T	04 19 23.2	
	baz=318,slow=76,SNR=12						
H11S3	**WAKE ISLAND Hy**	**27.61**	**126**	T	T	04 19 22.9	
	baz=318,slow=76,SNR=13						
H11S2	**WAKE ISLAND Hy**	**27.62**	**126**	T	T	04 19 26.3	
	baz=318,slow=76,SNR=14						
BOD	**Bodaibo**	**28.28**	**326**	*e*P	**P**	**03 51 36.3**	**+3.1**
BOD				pmax	pmax		
	comp=Z,6.0nm,1.3s						
ULN	**Ulaanbaatar**	**28.62**	**303**	*e*P	**P**	**03 51 35.5**	**-1.0**
ULN				pmax	pmax		
	comp=Z,7.0nm,1.0s						
ULN	**Ulaanbaatar**	**28.62**	**303**	*e*P	**P**	**03 51 35.5**	**-1.0**
	comp=Z,7.4nm,1.0s						
SONM	**Songino Array**	**29.05**	**303**	P	**P**	**03 51 42.7**	**+2.4**
	comp=Z,3.7nm,0.8s,baz=96,slow=8.5,SNR=20						
ZAK	**Zakamensk**	**31.46**	**308**	*e*P	**P**	**03 52 01.5**	**0.0**
ZAK				pmax	pmax		
	comp=Z,3.0nm,1.3s						
TLY	**Talaya**	**31.47**	**310**	*e*P	**P**	**03 52 03.4**	**+1.9**
TLY				pmax	pmax		
	comp=Z,1.0nm,1.0s						

TIXI	Tiksi	35.34	352	P	P	03 52 40.0	+5.1
	comp=Z,1.6nm,0.7s,baz=147,slow=4.1,SNR=5.2						
TIXI	Tiksi	35.34	352	eP	P	03 52 37.2	+2.3
TIXI				pmax	pmax		
	comp=Z,4.0nm,1.5s						
KRAR	Krasnoyarsk	38.48	316	eP	P	03 53 03.2	+1.4
KRAR				pmax	pmax		
	comp=Z,11nm,0.6s						
ZALV	Zalesovo Beam	43.01	312	P	P	03 53 40.0	+0.9
	comp=Z,0.9nm,0.4s,baz=90,slow=6.2,SNR=4.9						
ZALV				PcP	PcP	03 55 28.4	-0.6
	comp=Z,0.7nm,0.3s,baz=129,slow=4.0,SNR=3.5						
MKAR	Makanchi Array	45.41	302	P	P	03 53 59.0	+0.5
	comp=Z,1.0nm,0.6s,baz=87,slow=9.6,SNR=19						
MKAR	Makanchi Array	45.41	302	i P	P	03 54 01.5	+2.9
MKAR				pmax	pmax		
	comp=Z,3.0nm,0.8s						
KURK	Kurchatov	47.12	308	eP	P	03 54 11.7	-0.1
KURK				pmax	pmax		
	comp=Z,14nm,0.6s						
KURK	Kurchatov	47.12	308	eP	P	03 54 11.7	-0.1
	comp=Z,14nm,0.6s						
KURBB	Kurchatov Arra	47.19	308	P	P	03 54 12.7	+0.3
	comp=Z,3.5nm,0.8s,baz=82,slow=7.8,SNR=27						
ILAR	Eielson Array	48.49	32	P	P	03 54 22.2	0.0
	comp=Z,2.3nm,0.8s,baz=267,slow=6.4,SNR=23						
TKM2	Tokmak 2	50.98	299	eP	P	03 54 42.7	+0.8
TKM2				pmax	pmax		
	comp=Z,6.0nm,0.7s						
TKM2	Tokmak 2	50.98	299	eP	P	03 54 42.7	+0.8
	comp=Z,5.6nm,0.7s						
BVAR	Borovoye Array	51.67	313	P	P	03 54 47.0	+0.4
	comp=Z,0.5nm,0.5s,baz=77,slow=9.3,SNR=5.4						
BRVK	Borovoye	51.72	313c	eP	P	03 54 48.5	+1.5
BRVK				pmax	pmax		
	comp=Z,6.0nm,2.5s						
BRVK	Borovoye	51.72	313	eP	P	03 54 47.8	+0.8
	comp=Z,10nm,1.3s						
AAK	Ala-Archa	51.85	299	eP	P	03 54 47.7	-0.6
AAK				pmax	pmax		
	comp=Z,8.0nm,1.2s						
AAK	Ala-Archa	51.85	299	eP	P	03 54 47.7	-0.6
	comp=Z,7.9nm,1.2s						
EKS2	Erkin-Say	52.34	299	eP	P	03 54 52.2	+0.3
EKS2				pmax	pmax		
	comp=Z,9.0nm,1.3s						
EKS2	Erkin-Say	52.34	299	eP	P	03 54 52.2	+0.3
	comp=Z,9.2nm,1.3s						
INK	Inuvik	53.50	27	P	P	03 55 00.3	+0.5
	comp=Z,3.8nm,1.1s,baz=277,slow=5.3,SNR=9.5						
KKAR	Karatay Array	54.45	301	eP	P	03 55 07.6	+0.3
KKAR	Karatay Array	54.45	301	eP	P	03 55 07.6	+0.3
ARU	Arti	57.32	319d	iP	P	03 55 27.1	-0.4
ARU				S	S	04 03 20.9	-1.2
ARU				SS	SS	04 07 08.6	-2.4
ARU				pmax	pmax		
	comp=Z,8.0nm,1.7s						
ARU	Arti	57.32	319	eP	P	03 55 27.6	+0.1
	comp=Z,19nm,1.4s						
WRAB	Tennant Creek	57.46	190c	eP	P	03 55 31.9	+3.0
WRAB				pmax	pmax		
	comp=Z,61nm,2.5s						
WRAB	Tennant Creek	57.46	190	eP	P	03 55 27.5	-1.4
	comp=Z,10.0nm,0.8s						
WRA	Warramunga Arr	57.47	190	P	P	03 55 27.7	-1.3
	comp=Z,6.0nm,0.6s,baz=11,slow=7.4,SNR=23						
FITZ	Fitzroy Crossi	57.51	200	P	P	03 55 30.0	+0.8
	comp=Z,1.2nm,0.4s,baz=4.7,slow=21,SNR=2.8						
ABKAR	Akbulak array	59.08	311	eP	P	03 55 39.6	-0.4
	comp=Z,1.1nm,0.3s						
ASAR	Alice Springs	61.20	190	P	P	03 55 53.9	-0.8
	comp=Z,2.4nm,0.8s,baz=12,slow=7.6,SNR=16						
RES	Resolute Bay	62.04	15	P	P	03 55 59.1	-0.6
	comp=Z,3.7nm,1.2s,baz=316,slow=5.9,SNR=7.8						
RES	Resolute Bay	62.04	15	P	P	03 55 59.1	-0.6
RES				pmax	pmax		
	comp=Z,2.0nm,0.9s						
YKA	Yellowknife Ar	62.85	31	P	P	03 56 05.2	-0.1
	comp=Z,0.7nm,0.7s,baz=303,slow=6.7,SNR=16						
ARMA	Armidale	67.69	172	eP	P	03 56 31.4	-5.7
	comp=Z,38nm,0.8s						
STKA	Stephens Creek	68.73	182	P	P	03 56 43.0	-0.5
	comp=Z,4.0nm,0.9s,baz=324,slow=7.3,SNR=4.0						
FINES	FINESS Array B	69.42	333	P	P	03 56 48.2	+0.7
	comp=Z,2.6nm,0.7s,baz=31,slow=7.8,SNR=7.1						
FINES	FINESS Array B	69.42	333	i P	P	03 56 47.5	0.0
FINES				pmax	pmax		
	comp=Z,3.0nm,0.8s						
SUMG	Summit	70.52	1	eP	P	03 56 54.6	0.0
SUMG				pmax	pmax		
	comp=Z,3.0nm,0.6s						
SUMG	Summit	70.52	1	eP	P	03 56 54.6	0.0
	comp=Z,3.5nm,0.6s						
KIV	Kislovodsk	72.03	312⇑	eP	P	03 57 06.0	+2.2
KIV				e		03 59 41.5	
KIV				ePPP	PPP	04 01 27.7	
KIV				pmax	pmax		
	comp=Z,9.0nm,1.2s						
KBZ	Khabaz	72.03	311	P	P	03 57 04.2	+0.5
	comp=Z,2.1nm,0.8s,baz=334,slow=3.2,SNR=4.2						
FFC	Flin Flon	72.68	34	eP	P	03 57 06.9	-0.5
FFC				pmax	pmax		
	comp=Z,8.0nm,1.4s						
FFC	Flin Flon	72.68	34	eP	P	03 57 06.9	-0.5
	comp=Z,8.0nm,1.4s						
GNI	Garni	72.91	308	eP	P	03 57 10.7	+1.4
BOZ	Bozeman (W)	73.45	45	eP	P	03 57 12.6	+0.2
BOZ				pmax	pmax		
	comp=Z,3.0nm,0.8s						
BOZ	Bozeman (W)	73.45	45	eP	P	03 57 12.6	+0.2
	comp=Z,2.6nm,0.8s						
NVAR	Mina Array Bea	73.58	54	P	P	03 57 14.2	+0.8
	comp=Z,1.0nm,0.7s,baz=287,slow=6.4,SNR=7.5						
NB2	NORSAR Subarra	74.66	338	P	P	03 57 33.5	+15
	comp=Z,3.1nm,0.8s,baz=39,slow=6.2						
NOA	NORSAR Array B	74.66	338	P	P	03 57 20.2	+1.3
	comp=Z,2.2nm,0.9s,baz=37,slow=6.1,SNR=3.9						
AKASG	Malin Array Be	75.16	323	P	P	03 57 22.5	+0.5
	comp=Z,0.2nm,0.3s,baz=46,slow=5.5,SNR=3.3						
KIEV	Kiev	75.17	323	eP	P	03 57 20.6	-1.4
KIEV				pmax	pmax		
	comp=Z,2.0nm,1.0s						
R11A	Troy Canyon, C	75.37	53	eP	P	03 57 23.3	-0.4
	comp=Z,1.5nm,0.9s						
PDAR	Pinedale Array	76.39	46	P	P	03 57 29.2	-0.2
	comp=Z,0.8nm,0.7s,baz=270,slow=2.8,SNR=9.7						
BRTR	Keskin Array B	79.96	313	P	P	03 57 50.9	+1.7
	comp=Z,0.6nm,0.7s,baz=64,slow=2.9,SNR=3.6						
ISCO	Idaho Springs	80.56	47	eP	P	03 57 53.0	+0.3
ISCO				pmax	pmax		
	comp=Z,1.0nm,0.8s						
ISCO	Idaho Springs	80.56	47	eP	P	03 57 53.0	+0.3
	comp=Z,1.2nm,0.8s						
PSZ	Piszkesteto	81.46	325	eP	P	03 57 57.5	+0.5
PSZ				pmax	pmax		
	comp=Z,5.0nm,0.9s						
PSZ	Piszkesteto	81.46	325	eP	P	03 57 57.5	+0.5
	comp=Z,5.1nm,0.9s						
CLL	Collm	81.76	331	i P	P	03 57 59.1	+0.7
CLL	Collm	81.76	331	i P	P	03 57 59.1	+0.7
ECSD	EROS Data Cent	82.77	39	eP	P	03 58 03.0	-0.9
	comp=Z,6.2nm,1.1s						
ANMO	Albuquerque	83.23	51c	eP	P	03 58 08.0	+1.3
ANMO				pmax	pmax		
	comp=Z,8.0nm,2.5s						
GERES	GERESS Array B	83.42	329	P	P	03 58 06.5	-0.8
	comp=Z,0.5nm,0.8s,baz=28,slow=3.2,SNR=3.7						
BFO	Black Forest	85.95	332	i P	P	03 58 20.3	+0.4
AMTX	Amarillo	86.18	48	eP	P	03 58 21.5	+0.1
	comp=Z,6.2nm,0.9s						
TXAR	Lajitas Array	88.72	54	P	P	03 58 33.9	+0.1
	comp=Z,1.6nm,0.8s,baz=286,slow=3.2,SNR=22						
MIAR	Mount Ida	91.09	44	eP	P	03 58 44.4	-0.2
MIAR				pmax	pmax		
	comp=Z,2.0nm,0.9s						
MIAR	Mount Ida	91.09	44	eP	P	03 58 44.4	-0.2
	comp=Z,2.0nm,0.9s						
VAE	Valguarnera	92.03	322	LR	LR	04 42 27.6	
	comp=Z,49nm,18.0s,baz=177,slow=37						
LPAZ	La Paz	145.19	62	PKPbc	PKPbc	04 05 18.2	-0.1
	comp=Z,0.9nm,0.3s,baz=346,slow=5.3,SNR=9.2						
LCO	Las Campanas	150.37	84	ePKPbc	PKPbc	04 05 31.3	-0.4

*ISK **08** 03:45:58.0, 36°.52N×28°.80E, h5km, MD2.6*
*ISCJB **08** 03:45:59.1±1.2, 36°.40N±0°.06×28°.85E±0°.06, h9km±7km,*
Error ellipse: s-maj=10.6km s-min=7.7km az=11.8
*CSEM **08** 03:45:59.1±0.6, 36°.42N×28°.80E, h2km, MD2.7, Error ellipse: s-maj=13.5km s-min=6.9km az=13.0*
*DDA **08** 03:46:00.3, 36°.54N×28°.79E, h6km, Md2.7*
ISC 08 03:45:59.8±1.1**, 36°.51N**±0°.05×**28°.82E**±0°.03**, h13**km±8km**,**
n16, σ0^{s}71/28**, Dodecanese Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
FETY	Fethiye	0.25	58	ePG	Pg	03 46 04.4	-0.7
FETY				eSG	Sg	03 46 09.1	+0.4
FETY	Fethiye	0.25	58	ePg	Pg	03 46 04.4	-0.7
FETY				eSg	Sg	03 46 09.1	+0.4
TURN	Turunc	0.41	335	i P	Pb	03 46 09.8	+1.0
TURN				i S	Sn	03 46 17.8	-0.9
TURN	Turunc	0.41	335	P	Pb	03 46 09.8	+1.0
AKAS	Kas	0.69	113	i P	Pg	03 46 12.6	-0.6
AKAS				i S	Sn	03 46 25.3	-0.6
AKAS	Kas	0.69	113	P	Pg	03 46 12.6	-0.6
YER	Yerkesik	0.76	326	ePG	Pg	03 46 13.4	-1.2
YER	Yerkesik	0.76	326	ePg	Pg	03 46 13.4	-1.2
BDRM	Kayabasi	1.24	297	i P	Pb	03 46 23.4	+0.5
BDRM				i S	Sg	03 46 40.3	+0.6
BDRM	Kayabasi	1.24	297	P	Pb	03 46 23.5	+0.5
BDRM				S	Sg	03 46 40.3	+0.6
BODT	Bodrum	1.33	295	ePN	Pn	03 46 24.2	+0.1
BODT				eSN	Sg	03 46 43.2	+0.5
BODT	Bodrum	1.33	295	ePn	Pn	03 46 24.2	+0.1
BODT				eSn	Sg	03 46 43.3	+0.5
AYDN	Tasoluk	1.38	327	i P	Pb	03 46 26.1	+0.7
AYDN				i S	Sg	03 46 44.7	+0.5
AYDN	Tasoluk	1.38	327	P	Pb	03 46 26.1	+0.7
AYDN				S	Sg	03 46 44.7	+0.5
KHAL	Karahalli	1.94	16	i P	Pb	03 46 35.5	+0.5
KHAL				i S	Sb	03 46 59.2	+0.1
KHAL	Karahalli	1.94	16	P	Pb	03 46 35.5	+0.5
KHAL				S	Sb	03 46 59.2	+0.1

JMA 08 03:48:36.1±0.1**, 38°.38N**×**141°.78E, h57**km±3km**, M3.5,**
Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
JMK	Ichinoseki	0.72	323	P	Pn	03 48 50.7	+0.3
JMK				S	Sn	03 49 00.9	0.0
JOU	Okura	0.88	269	P	Pn	03 48 52.8	+0.4
JOU				S	Sn	03 49 04.9	+0.4
JMM	Marumori	0.93	237	P	Pn	03 48 53.2	+0.1
JMM				S	Sn	03 49 05.5	-0.2
JOM	Ohasama	1.16	341	P	Pn	03 48 56.3	+0.2
JOM				S	Sn	03 49 11.4	+0.4
JYK	Kaneyama	1.23	296	P	Pn	03 48 57.6	+0.4
JYK				S	Sn	03 49 13.4	+0.5
JFK	Kawauchi	1.24	216	P	Pn	03 48 57.5	+0.2
JFK				S	Sn	03 49 13.2	+0.2
JYS	Shirataka	1.36	264	P	Pn	03 48 59.6	+0.8
JYS				S	Sn	03 49 17.0	+1.2
JFT	Otama	1.43	233	P	Pn	03 49 00.5	+0.7
JFT				S	Sn	03 49 18.3	+0.8

*NIED **08** 03:49:00, 36°.80N×142°.20E, h5km, Mw4.0 Best double couple: M₀1.07000×10^{15} NP1:φs237.00000°, δ47.00000°, λ129.00000°. NP2:φs7.00000°, δ55.00000°, λ56.00000°.*
*ISCJB **08** 03:49:11.2±0.5, 36°.66N±0°.05×142°.17E±0°.06, h19km, mb3.7/16, MS3.9/1, Error ellipse: s-maj=7.1km s-min=6.5km az=172.9*
*JMA **08** 03:49:12.1±0.2, 36°.76N×142°.24E, h34km, M3.9*
*IDC **08** 03:49:13.7±0.6, 36°.67N×142°.14E, h22km±3km, mb3.6/16, mb1 3.8/18, mb1mx3.7/49, mbtmp3.8/18, ML3.6/2, MS3.6/2, Ms1 3.6/2, ms1mx2.8/45, Error ellipse: s-maj=15.4km s-min=13.1km az=141.0*
ISC 08 03:49:12.8±0.6**, 36°.70N**±0°.06×**142°.16E**±0°.07**, h19**km**, n29,**
σ1^{s}00/34**, mb3.7**/16**, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
JFK	Kawauchi	1.22	303	P	Pn	03 49 33.9	-1.0
JHO	Hitachi	1.28	267	P	Pn	03 49 35.2	-0.4
JFT	Otama	1.67	300	S	Sn	03 50 00.3	-1.6
JOU	Okura	2.04	325	P	Pn	03 49 46.4	+0.2
JOU				S	Sn	03 50 09.5	-1.7
MJAR	Matsushiro Arr	3.18	268	Pn	Pn	03 50 03.3	+1.5
	6.4nm,0.3s,baz=100,slow=10,SNR=30						
MJAR				Sn	Sn	03 50 40.6	+1.4
	3.0nm,0.3s,baz=80,slow=17,SNR=4.4						
JHJ	Hachijo jima 2	4.07	209	Pn	Pn	03 50 13.2	-0.8
	14nm,0.3s,baz=113,slow=23,SNR=4.2						
JHJ				Sn	Sn	03 50 59.8	-1.3
	18nm,0.3s,baz=297,slow=21,SNR=3.5						
KSRS	Korea Array	11.40	278	LR	LR	03 56 41.3	
	comp=Z,136nm,19.4s,baz=90,slow=39						
SEY	Seymchan	27.01	10	P	P	03 54 55.9	+2.7
	0.4nm,0.4s,baz=209,slow=13,SNR=3.0						
H11N2	WAKE ISLAND Hy	27.47	121	T	T	04 24 37.5	
H11N1	WAKE ISLAND Hy	27.47	121	T	T	04 24 37.5	
H11N3	WAKE ISLAND Hy	27.48	121	T	T	04 24 37.5	
H11S1	WAKE ISLAND Hy	28.18	123	T	T	04 25 32.2	
H11S3	WAKE ISLAND Hy	28.18	123	T	T	04 25 32.2	
H11S2	WAKE ISLAND Hy	28.19	123	T	T	04 25 32.2	
SONM	Songino Array	28.46	304	P	P	03 55 06.9	+0.2
	1.4nm,0.7s,baz=107,slow=8.6,SNR=6.0						
ZALV	Zalesovo Beam	42.58	313	P	P	03 57 07.7	+0.5
	0.6nm,0.5s,baz=83,slow=12,SNR=2.8						
ZALV				pP	sP	03 57 14.2	-1.4
	1.4nm,0.8s,baz=94,slow=5.8,SNR=4.1						
MKAR	Makanchi Array	44.80	303	P	P	03 57 25.5	+0.2
	0.2nm,0.2s,baz=88,slow=11,SNR=2.1						
MKAR				pP	sP	03 57 32.4	-1.2
	1.6nm,0.9s,baz=90,slow=9.7,SNR=6.3						
KURBB	Kurchatov Arra	46.68	308	P	P	03 57 39.5	-0.5
	1.3nm,0.6s,baz=83,slow=7.9,SNR=4.1						
KURBB				pP	sP	03 57 47.3	-1.0
	1.3nm,0.7s,baz=84,slow=8.2,SNR=6.0						
ILAR	Eielson Array	49.46	32	P	P	03 58 01.3	0.0
	0.6nm,0.7s,baz=261,slow=6.2,SNR=5.3						
ILAR				pP	sP	03 58 09.0	-0.7
	1.3nm,0.8s,baz=263,slow=7.1,SNR=8.9						
BVAR	Borovoye Array	51.24	313	P	P	03 58 15.0	+0.1
	0.4nm,0.6s,baz=33,slow=5.7,SNR=2.5						
INK	Inuvik	54.41	27	P	P	03 58 38.8	+0.6
	1.0nm,1.0s,baz=336,slow=3.1,SNR=3.0						
INK				pP	sP	03 58 46.0	-0.5
	1.4nm,1.0s,baz=258,slow=6.0,SNR=3.0						
INK				LR	LR	04 25 05.5	
	comp=Z,98nm,19.0s,baz=318,slow=40						
FITZ	Fitzroy Crossi	56.69	199	P	P	03 58 55.7	+0.7
	1.0nm,0.5s,baz=63,slow=2.3,SNR=2.6						
WRA	Warramunga Arr	56.82	189	P	P	03 58 55.8	-0.2
	1.5nm,0.8s,baz=6.2,slow=7.4,SNR=5.0						
ASAR	Alice Springs	60.54	189	P	P	03 59 22.2	+0.3
	1.0nm,0.8s,baz=12,slow=7.4,SNR=6.6						
YKA	Yellowknife Ar	63.80	30	P	P	03 59 43.5	+0.2
	0.2nm,0.8s,baz=297,slow=6.9,SNR=3.8						
YKA				pP	sP	03 59 51.2	-0.5
	0.3nm,0.7s,baz=302,slow=6.8,SNR=6.7						
FINES	FINESS Array B	69.39	333	P	P	04 00 19.5	+0.6
	4.8nm,1.0s,baz=231,slow=21,SNR=2.7						
FINES				pP	sP	04 00 26.1	-1.4
	2.4nm,0.9s,baz=229,slow=17,SNR=3.7						
PDAR	Pinedale Array	77.48	46	P	P	04 01 07.4	+0.1
	0.3nm,0.7s,baz=67,slow=31,SNR=3.1						
PDAR				pP	sP	04 01 15.1	-0.7
	0.3nm,0.7s,baz=333,slow=0.7,SNR=3.9						
BRTR	Keskin Array B	79.52	312	P	P	04 01 19.3	+0.8
	0.2nm,0.4s,baz=170,slow=14,SNR=2.7						
TXAR	Lajitas Array	89.85	53	P	P	04 02 11.2	+0.4
	0.3nm,0.9s,baz=283,slow=7.6,SNR=3.0						
TXAR				pP	sP	04 02 18.8	-0.5
	0.6nm,0.9s,baz=310,slow=4.7,SNR=3.9						

*NIED **08** 03:50:00, 39°.20N×142°.40E, h32km, Mw4.0 Best double couple: M₀1.29000×10^{15} NP1:φs304.00000°, δ43.00000°, λ-154.00000°. NP2:φs194.00000°, δ73.00000°, λ-50.00000°.*
*ISCJB **08** 03:50:04.1±0.9, 39°.2N±0°.1×142°.43E±0°.07, h27km, mb3.6/11, Error ellipse: s-maj=19.3km s-min=6.8km az=167.8*
*JMA **08** 03:50:04.4±0.3, 39°.19N×142°.38E, h11km, M4.1*
JMA Felt I J1.
*IDC **08** 03:50:05.2±3.2, 38°.99N×142°.38E, h29km±5km, mb3.5/11, mb1 3.6/12, mb1mx3.5/47, mbtmp3.7/12, ML2.2/1, MS3.1/2, Ms1 3.1/2, ms1mx2.7/41, Error ellipse: s-maj=82.2km s-min=19.5km az=177.0*
ISC 08 03:50:05.4±1.0**, 39°.1N**±0°.1×**142°.35E**±0°.07**, h27**km**, n22,**
σ0^{s}80/21**, mb3.8**/11**, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
JMK	Ichinoseki	0.89	261	P	Pn	03 50 21.9	-0.2
JMK				eS	Sb	03 50 34.3	+0.6
JOM	Ohasama	0.90	295	P	Pn	03 50 21.3	-1.0
JOM				S	Sb	03 50 33.3	-0.7
USRK	Ussuriysk Ar.	9.28	307	Pn	Pn	03 52 18.9	+1.6
	0.2nm,0.3s,baz=115,slow=14,SNR=4.2						
USRK				LR	LR	03 55 43.6	
	comp=Z,70nm,18.1s,baz=121,slow=36						
JNU	Nakatsue	11.03	241	LR	LR	03 56 56.5	
	comp=Z,134nm,20.3s,baz=62,slow=37						
KSRS	Korea Array	11.46	266	Pn	Pn	03 52 53.0	+5.8
	0.3nm,0.3s,baz=80,slow=14,SNR=4.6						
SONM	Songino Array	27.31	300	P	P	03 55 48.2	+0.3
	0.2nm,0.4s,baz=0.3,slow=28,SNR=2.1						
H11N2	WAKE ISLAND Hy	28.65	125	T	T	04 26 25.0	
	baz=318,slow=75,SNR=47						
H11N1	WAKE ISLAND Hy	28.66	125	T	T	04 26 26.0	
	baz=318,slow=75,SNR=32						
H11N3	WAKE ISLAND Hy	28.67	125	T	T	04 26 24.9	
	baz=318,slow=75,SNR=72						
H11S1	WAKE ISLAND Hy	29.44	127	T	T	04 27 24.1	
	baz=319,slow=76,SNR=18						
H11S3	WAKE ISLAND Hy	29.44	127	T	T	04 27 23.4	
	baz=319,slow=76,SNR=9.2						
H11S2	WAKE ISLAND Hy	29.46	127	T	T	04 27 23.6	
	baz=319,slow=76,SNR=17						
ZALV	Zalesovo Beam	41.10	311	P	P	03 57 46.9	+0.3
	0.8nm,0.4s,baz=87,slow=6.9,SNR=3.6						
MKAR	Makanchi Array	43.68	300	P	P	03 58 07.5	-0.3
	1.5nm,0.8s,baz=82,slow=8.7,SNR=5.1						
ILAR	Eielson Array	47.36	33	P	P	03 58 36.7	+0.1
	0.7nm,0.7s,baz=266,slow=5.9,SNR=7.0						
ILAR				pP	pP	03 58 45.7	+0.9
	0.8nm,0.8s,baz=265,slow=6.3,SNR=5.8						
BVAR	Borovoye Array	49.75	311	P	P	03 58 55.0	-0.2
	0.5nm,0.6s,baz=97,slow=7.6,SNR=2.6						
INK	Inuvik	52.22	28	P	P	03 59 14.1	+0.6
	1.1nm,0.9s,baz=282,slow=6.3,SNR=2.5						
INK				pP	sP	03 59 23.2	-1.8
	1.0nm,0.6s,baz=296,slow=9.2,SNR=3.9						
RES	Resolute Bay	60.42	15	P	P	04 00 11.1	-0.7
	0.6nm,0.8s,baz=310,slow=5.4,SNR=2.5						
RES				pP	pP	04 00 19.6	-0.6
	1.5nm,0.8s,baz=295,slow=8.8,SNR=6.1						
YKA	Yellowknife Ar	61.66	31	P	P	04 00 20.4	0.0
	0.1nm,0.4s,baz=129,slow=25,SNR=3.3						
YKA				pP	pP	04 00 29.6	+0.8
	0.3nm,0.6s,baz=300,slow=6.3,SNR=5.4						
FINES	FINESS Array B	67.33	332	P	P	04 00 57.7	+0.2
	1.1nm,0.8s,baz=166,slow=11,SNR=3.6						
AKASG	Malin Array Be	73.12	322	P	P	04 01 33.1	0.0
	0.5nm,0.4s,baz=47,slow=5.8,SNR=3.0						
PDAR	Pinedale Array	75.70	46	P	P	04 01 48.2	-0.4
	0.3nm,0.8s,baz=267,slow=3.0,SNR=3.1						
PDAR				pP	pP	04 01 58.0	+0.8
	0.3nm,0.5s,baz=278,slow=1.1,SNR=3.9						

*TAP **08** 03:51:40.2, 24°.05N×122°.44E, h17km, ML3.0, D*
*JMA **08** 03:51:40.9±0.2, 24°.01N×122°.43E, h11km, M2.0*
*ISCJB **08** 03:51:41.5±0.5, 24°.04N±0°.04×122°.42E±0°.02, h21km±9km, Error ellipse: s-maj=6.9km s-min=3.1km az=168.6*
ISC 08 03:51:40.9±1.2**, 24°.04N**±0°.05×**122°.41E**±0°.02**, h19**km±3km**,**
n23, σ0^{s}42/37**, Taiwan region**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
JYNG	Yonagunijimaku	0.64	50	P	Pb	03 51 53.2	-0.2
JYNG				S	Sb	03 52 01.3	-0.6
YOJ	Yonaguni jima	0.69	52	P	Pb	03 51 54.2	-0.1
YOJ				S	Sb	03 52 02.9	-0.6
ENA	Nanau	0.72	303	eP	Pb	03 51 54.9	0.0
	baz=300						
ENA				eS	Sb	03 52 04.5	+0.1
	baz=300						
HWA	Hwalien	0.74	266	eP	Pg	03 51 55.4	+0.1
	baz=264						
HWA				eS	Sn	03 52 06.5	-0.4
	baz=264						
TWD	Chiawan	0.74	274	eP	Pb	03 51 55.5	+0.2
	baz=272						
TWD				eS	Sn	03 52 06.6	-0.6
	baz=272						
TWC	Suao	0.77	318	P	Pb	03 51 55.4	-0.2
	baz=316						
TWC				eS	Sb	03 52 05.5	-0.2
	baz=316						
ESL	Shilin	0.92	256	eP	Pb	03 51 58.6	+0.4
	baz=255						
TWE	Neicheng	0.96	315	eP	Pb	03 51 59.3	+0.4
	baz=314						
TWE				eS	Sg	03 52 12.5	+0.2
	baz=314						
NNS	Nan Shan	1.03	293	eP	Pn	03 52 00.7	+0.3
	baz=291						
NNS				eS	Sg	03 52 15.2	+0.8
	baz=291						
WHF	Hehuan Shan	1.05	276	eP	Pn	03 52 01.0	0.0
	baz=275						
WHF				S	Sg	03 52 15.3	0.0
	baz=275						
EHY	Hungye	1.13	242	eP	Pb	03 52 01.9	+0.1
	baz=241						
TWT	Tachien	1.15	281	eP	Pn	03 52 02.1	+0.1
	baz=279						
NSK	Sanguang	1.15	304	eP	Pg	03 52 03.2	0.0
	baz=302						
NSK				S	Sn	03 52 17.6	+0.3
	baz=302						
NWF	Wu-fen Shan	1.18	331	eP	Pg	03 52 03.4	-0.3
	baz=329						
WDT	Danda	1.20	257	eP	Pn	03 52 02.7	-0.2
	baz=256						
TWF1	Yuli	1.23	237	P	Pn	03 52 02.7	-0.3
	baz=236						
TWF1				eS	Sn	03 52 19.6	+0.5
	baz=236						
IRIF	Iriomote-Funau	1.24	76	P	Pb	03 52 04.3	+0.6
IRIF				eS	Sg	03 52 20.6	-0.6
SMLT	Sun Moon Lake	1.39	264	eP	Pn	03 52 05.4	+0.1
	baz=263						
TYC	Yuchr	1.43	265	eP	Pb	03 52 06.5	-0.3
	baz=264						
YUS	Yu-Shan	1.44	248	eP	Pb	03 52 07.1	-0.3
	baz=247						
JKRS	Kuro-shima	1.48	82	P	Pb	03 52 08.3	+0.6
JKRS				S	Sg	03 52 27.9	-0.7
ALS	Alishan	1.56	251	eP	Pn	03 52 07.9	0.0
	baz=250						
JIJ	Ishigaki jima	1.62	78	P	Pn	03 52 09.2	+0.8
JIJ				S	Sn	03 52 29.2	+0.5

*NIED **08** 04:01:00, 38°.60N×142°.80E, h26km, Mw3.8 Best double couple: M₀4.88000×10^{14} NP1:φs252.00000°, δ47.00000°, λ12.00000°. NP2:φs154.00000°, δ81.00000°, λ137.00000°.*
*ISCJB **08** 04:01:16.3±0.6, 38°.58N±0°.06×142°.91E±0°.06, h23km, mb3.5/9, Error ellipse: s-maj=9.0km s-min=5.9km az=157.3*
*JMA **08** 04:01:16.2±0.4, 38°.59N×142°.83E, h14km±5km, M3.8*
*IDC **08** 04:01:18.7±0.7, 38°.47N×143°.05E, h30km±4km, mb3.4/10, mb1 3.6/11, mb1mx3.4/37, mbtmp3.5/11, ML3.6/1, MS2.9/3, Ms1 2.9/3, ms1mx2.5/34, Error ellipse: s-maj=23.9km s-min=15.6km az=124.0*
ISC 08 04:01:17.9±0.7**, 38°.61N**±0°.07×**142°.86E**±0°.07**, h23**km**, n26,**
σ1^{s}03/30**, mb3.6**/9**, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
JIO	Ouri	1.20	263	P	Pn	04 01 37.8	-1.4
JIO				S	Sn	04 01 52.3	-2.4
JMK	Ichinoseki	1.33	286	P	Pn	04 01 39.9	-1.1
JMK				S	Sn	04 01 57.5	-0.5
JOM	Ohasama	1.50	306	P	Pn	04 01 42.6	-0.7
JOM				S	Sn	04 02 02.5	+0.3
JOU	Okura	1.74	263	P	Pn	04 01 46.9	+0.2

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
JMM	**Marumori**	**1.79**	**246**	P	**Pn**	**04 01 46.5**	**-0.8**
JYK	**Kaneyama**	**1.98**	**280**	P	**Pn**	**04 01 50.2**	**+0.2**
JFK	**Kawauchi**	**2.00**	**232**	P	**Pn**	**04 01 49.5**	**-0.8**
JFK				S	**Sn**	**04 02 14.0**	**-0.6**
JYS	**Shirataka**	**2.23**	**261**	P	**Pn**	**04 01 53.6**	**+0.2**
JFT	**Otama**	**2.27**	**242**	P	**Pn**	**04 01 54.4**	**+0.4**
MJAR	**Matsushiro Arr**	**4.23**	**242**	Pn	**Pn**	**04 02 23.3**	**+2.3**
	3.4nm,0.3s,baz=74,slow=13,SNR=24						
MJAR				LR	LR	04 04 20.9	
	comp=Z,162nm,18.6s,baz=70,slow=42						
JNU	**Nakatsue**	**11.15**	**244**	LR	LR	04 08 41.7	
	comp=Z,71nm,19.1s,baz=294,slow=40						
KSRS	**Korea Array**	**11.84**	**269**	LR	LR	04 08 06.1	
	comp=Z,30nm,19.1s,baz=55,slow=34						
SEY	**Seymchan**	**25.03**	**10**	P	**P**	**04 06 41.4**	**+1.4**
	1.2nm,0.6s,baz=172,slow=7.7,SNR=6.0						
SONM	**Songino Array**	**27.91**	**301**	P	**P**	**04 07 06.9**	**+0.7**
	0.7nm,0.7s,baz=97,slow=8.1,SNR=4.7						
H11N2	**WAKE ISLAND Hy**	**28.04**	**125**	T	T	04 36 41.4	
	baz=317,slow=75,SNR=9.4						
H11N1	**WAKE ISLAND Hy**	**28.05**	**125**	T	T	04 36 30.5	
	baz=317,slow=75,SNR=7.9						
H11N3	**WAKE ISLAND Hy**	**28.06**	**125**	T	T	04 36 27.0	
	baz=317,slow=75,SNR=9.7						
H11S1	**WAKE ISLAND Hy**	**28.82**	**127**	T	T	04 37 21.8	
	SNR=4.2						
ZALV	**Zalesovo Beam**	**41.73**	**311**	P	**P**	**04 09 06.3**	**+1.5**
	0.7nm,0.6s,baz=149,slow=25,SNR=3.6						
MKAR	**Makanchi Array**	**44.27**	**301**	P	**P**	**04 09 27.4**	**+1.8**
	0.2nm,0.3s,baz=94,slow=10,SNR=2.6						
ILAR	**Eielson Array**	**47.55**	**33**	P	**P**	**04 09 51.1**	**0.0**
	0.4nm,0.8s,baz=252,slow=7.4,SNR=3.8						
ILAR				pP	**sP**	**04 10 00.8**	**-0.3**
	0.5nm,0.8s,baz=277,slow=8.1,SNR=5.4						
INK	**Inuvik**	**52.47**	**28**	P	**P**	**04 10 28.8**	**+0.5**
	0.9nm,1.1s,baz=317,slow=6.2,SNR=3.2						
INK				pP	**sP**	**04 10 38.0**	**-0.2**
	0.8nm,0.8s,baz=287,slow=7.5,SNR=3.2						
WRA	**Warramunga Arr**	**58.79**	**189**	P	**P**	**04 11 13.4**	**-0.8**
	0.2nm,0.6s,baz=7.0,slow=7.0,SNR=6.6						
WRA				pP	**pP**	**04 11 21.9**	**+0.4**
	0.6nm,0.5s,baz=7.2,slow=7.1,SNR=8.5						
RES	**Resolute Bay**	**60.79**	**15**	P	**P**	**04 11 26.9**	**-0.5**
	0.5nm,0.9s,baz=304,slow=6.9,SNR=4.7						
RES				pP	**sP**	**04 11 36.8**	**-0.6**
	0.3nm,0.5s,baz=305,slow=5.5,SNR=2.7						
YKA	**Yellowknife Ar**	**61.87**	**31**	P	**P**	**04 11 34.9**	**0.0**
	0.0nm,0.4s,baz=157,slow=27,SNR=3.5						
YKA				pP	**sP**	**04 11 43.8**	**-1.2**
	0.3nm,1.0s,baz=270,slow=6.9,SNR=4.1						
TXAR	**Lajitas Array**	**88.26**	**53**	P	**P**	**04 14 07.3**	**-0.4**
	0.2nm,0.7s,baz=10,slow=7.6,SNR=2.3						
TXAR				pP	**sP**	**04 14 17.4**	**-0.5**
	0.2nm,0.6s,baz=289,slow=3.8,SNR=3.2						

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*IDC **08** 04:03:17.1±1.1, 37.°04N×143.°89E, h0km, mb3.5/7, mb1 3.7/8, mb1mx3.5/36, mbtmp3.5/8, ML3.6/1, Error ellipse: s-maj=27.5km s-min=22.4km az=87.0*

*ISCJB **08** 04:03:20.3±0.9, 37.°1N±0.°1×143.°8E±0.°1, h33km, mb3.5/7, Error ellipse: s-maj=19.9km s-min=14.0km az=141.6*

ISC 08 04:03:23.6±1.2**, 37.°3N**±0.°1×**143.°7E**±0.°2**, h35**km**, n10, σ1.s50**/9**, mb3.6**/7**, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
MJAR	**Matsushiro Arr**	**4.45**	**262**	Pn	**Pn**	**04 04 26.5**	**-2.1**
	2.7nm,0.3s,baz=89,slow=15,SNR=5.2						
MAT	**Matsushiro**	**4.45**	**262**	P	**Pn**	**04 04 28.1**	**-0.5**
JHJ	**Hachijo jima 2**	**5.24**	**219**	Pn	**Pn**	**04 04 40.1**	**+0.6**
	29nm,0.3s,baz=46,slow=17,SNR=5.1						
SONM	**Songino Array**	**29.15**	**303**	P	**P**	**04 09 23.6**	**+2.1**
	0.1nm,0.3s,baz=16,slow=41,SNR=2.2						
ZALV	**Zalesovo Beam**	**43.08**	**312**	P	**P**	**04 11 19.6**	**-0.4**
	0.4nm,0.4s,baz=248,slow=42,SNR=2.1						
MKAR	**Makanchi Array**	**45.52**	**302**	P	**P**	**04 11 40.9**	**+1.3**
	0.2nm,0.2s,baz=81,slow=9.2,SNR=2.1						
ILAR	**Eielson Array**	**48.31**	**33**	P	**P**	**04 12 00.8**	**-0.3**
	0.3nm,0.5s,baz=255,slow=6.7,SNR=4.3						
INK	**Inuvik**	**53.33**	**27**	P	**P**	**04 12 38.2**	**-0.6**
	0.5nm,0.7s,baz=28,slow=4.9,SNR=3.5						
WRA	**Warramunga Arr**	**57.60**	**190**	P	P	04 13 05.7	-4.4
	0.8nm,0.9s,baz=7.8,slow=7.4,SNR=5.0						
ASAR	**Alice Springs**	**61.33**	**190**	P	**P**	**04 13 34.4**	**-1.3**
	0.4nm,0.8s,baz=18,slow=11,SNR=3.0						

GUC 08 04:03:44.4±0.5**, 36.°09S×73.°12W, h18**km±11km**, ML3.5, 2C, Near coast of central Chile**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
COCH	**Cobquecura**	**0.27**	**98⇑**	*i*P	Pb	04 03 50.7	+0.1
COCH				*i* S	Sb	04 03 54.8	0.0
COCH				IAML		04 03 55.3	
	comp=E,15μm,0.2s						
CCSP	**San Pedro de C**	**0.75**	**180**	*e*P	Pb	04 03 57.7	-1.2
CCSP				*i* S	Sb	04 04 08.4	-0.3
CCHI	**Chillan**	**0.98**	**121**	*e*P	Pb	04 04 01.7	-1.2
CCHI				*e*S	Sb	04 04 15.0	-0.5
TALC	**Talca**	**1.39**	**60⇑**	*i*P	Pn	04 04 08.4	-0.5
TALC				*i* S	Sn	04 04 26.2	-0.6
ROCH	**El Roble**	**3.57**	**30**	IAML		04 05 52.3	
	comp=E,51nm,0.6s						

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*ISK **08** 04:16:43.8, 36.°46N×28.°80E, h5km, MD2.8*

*ISCJB **08** 04:16:45.0±1.0, 36.°44N±0.°06×28.°80E±0.°04, h2km±7km, Error ellipse: s-maj=10.0km s-min=5.5km az=5.3*

*CSEM **08** 04:16:45.3±0.3, 36.°44N×28.°80E, h5km, MD2.8, Error ellipse: s-maj=7.8km s-min=3.7km az=11.0*

*DDA **08** 04:16:46.9, 36.°52N×28.°80E, h34km, Md3.1*

ISC 08 04:16:45.5±1.5**, 36.°48N**±0.°05×**28.°78E**±0.°03**, h1**km±11km**, n23, σ0.s69**/38**, Dodecanese Islands**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
FETY	**Fethiye**	**0.29**	**57**	*e*PG	**Pg**	**04 16 50.7**	**-0.4**
FETY				*e*SG	**Sg**	**04 16 55.6**	**+0.8**
FETY	**Fethiye**	**0.29**	**57**	*e*Pg	**Pg**	**04 16 50.7**	**-0.4**
FETY				*e*Sg	**Sg**	**04 16 55.6**	**+0.8**
AKAS	**Kas**	**0.71**	**110**	*i* P	**Pg**	**04 16 58.6**	**-0.5**
AKAS				*i* S	**Sn**	**04 17 13.1**	**-1.4**
AKAS	**Kas**	**0.71**	**110**	P	**Pg**	**04 16 58.6**	**-0.5**
YER	**Yerkesik**	**0.77**	**329**	*e*PG	**Pg**	**04 16 59.7**	**-0.6**
YER				*e*SG	**Sb**	**04 17 12.4**	**-0.4**
YER	**Yerkesik**	**0.77**	**329**	*e*Pg	**Pg**	**04 16 59.7**	**-0.6**
YER				*e*Sg	**Sb**	**04 17 12.4**	**-0.4**
ELL	**Elmali**	**0.95**	**73**	*e*PG	**Pg**	**04 17 03.0**	**-0.6**
ELL	**Elmali**	**0.95**	**73**	*e*Pg	**Pg**	**04 17 03.1**	**-0.6**
GOLH	**Golhisar**	**0.98**	**39**	*i* P	**Pg**	**04 17 04.0**	**-0.4**
GOLH				*i* S	**Sb**	**04 17 18.7**	**-0.3**
GOLH	**Golhisar**	**0.98**	**39**	P	**Pg**	**04 17 04.0**	**-0.4**
GOLH				S	**Sb**	**04 17 18.7**	**-0.3**
BDRM	**Kayabasi**	**1.22**	**299**	*i* P	**Pn**	**04 17 09.7**	**-0.2**
BDRM				*i* S	**Sb**	**04 17 26.3**	**+0.5**
BDRM	**Kayabasi**	**1.22**	**299**	P	**Pn**	**04 17 09.7**	**-0.2**
BDRM				S	**Sb**	**04 17 26.3**	**+0.5**
BODT	**Bodrum**	**1.32**	**297**	*e*PN	**Pg**	**04 17 10.6**	**-0.2**
BODT	**Bodrum**	**1.32**	**297**	*e*Pn	**Pg**	**04 17 10.6**	**-0.2**
KORT	**Korkueli**	**1.36**	**67**	*i* P	**Pb**	**04 17 12.1**	**+0.1**
KORT				*i* S	**Sn**	**04 17 33.3**	**+2.6**
KORT	**Korkueli**	**1.36**	**67**	P	**Pb**	**04 17 12.1**	**+0.1**
AYDN	**Tasoluk**	**1.39**	**329**	*i* P	**Pn**	**04 17 11.8**	**-0.3**
AYDN				*i* S	**Sn**	**04 17 30.9**	**-0.2**
AYDN	**Tasoluk**	**1.39**	**329**	P	**Pn**	**04 17 11.8**	**-0.3**
AYDN				S	**Sn**	**04 17 30.9**	**-0.2**
AYDB	**Zeytinkoy-Aydi**	**1.63**	**334**	*e*PN	**Pn**	**04 17 15.0**	**-0.5**
AYDB	**Zeytinkoy-Aydi**	**1.63**	**334**	*e*Pn	**Pn**	**04 17 15.0**	**-0.5**
KHAL	**Karahalli**	**1.97**	**16**	*i* P	**Pn**	**04 17 20.5**	**+0.3**
KHAL				*i* S	**Sn**	**04 17 44.9**	**-0.8**
KHAL	**Karahalli**	**1.97**	**16**	P	**Pn**	**04 17 20.5**	**+0.3**
KHAL				S	**Sn**	**04 17 44.9**	**-0.8**
ZEY	**˜zmir**	**2.53**	**315**	*i* P	**Pn**	**04 17 28.7**	**+1.0**
ZEY				*i* S	**Sn**	**04 17 59.6**	**+0.5**

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*ISN **08** 04:27:38.9±0.3, 34.°97N×45.°03E, h0km, ML4.3*

*NEIC **08** 04:27:44.8, 34.°46N×45.°46E, h24km, mb4.1/10, ML4.3(THR), MN4.3(TEH), After TEH.*

*THR **08** 04:27:44.1±0.4, 34.°37N×45.°37E, h18km±7km, ML4.3*

*ISCJB **08** 04:27:44.2±0.2, 34.°14N±0.°03×45.°55E±0.°03, h18km, mb4.1/33, MS3.3/9, Error ellipse: s-maj=4.4km s-min=3.4km az=5.0*

*TEH **08** 04:27:44.8, 34.°46N×45.°46E, h24km, ML4.3*

*CSEM **08** 04:27:46.6±0.2, 34.°32N×45.°56E, h20km, mb4.1/15, Error ellipse: s-maj=7.1km s-min=5.1km az=176.0*

*MOS **08** 04:27:46.2±1.4, 34.°15N×45.°64E, h33km, mb4.2/22, Error ellipse: s-maj=10.2km s-min=6.2km az=86.8*

*OMAN **08** 04:27:48.1±99.0, 33.°76N×45.°60E, h1km±99km, Error ellipse: s-maj=6246.0km s-min=110.6km az=310.0*

*IDC **08** 04:27:48.9±2.3, 34.°38N×45.°51E, h33km±17km, mb3.9/19, mb1 3.9/28, mb1mx3.8/56, mbtmp4.0/28, ML3.6/8, MS3.2/13, Ms1 3.2/13, ms1mx3.0/58, Error ellipse: s-maj=16.5km s-min=10.0km az=142.0*

*DSN **08** 04:27:58.6±0.9, 33.°98N×46.°70E, h30km, Error ellipse: s-maj=44.7km s-min=6.5km az=40.0*

ISC 08 04:27:46.1±0.4**, 34.°18N**±0.°04×**45.°64E**±0.°04**, h18**km**, n156, σ1.s49**/137**, mb4.1**/33**, MS3.2**/9**, 4C-2D, Iran-Iraq border region**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
IGHG	**Ghaleghazi**	**0.78**	**79**	*e*Sg	**Sn**	**04 28 14.8**	**+0.9**
IGHG				*e*Pg	**Pg**	**04 28 02.0**	**+0.5**
IGHG				*e*AMB	AMB	04 28 16.5	
	comp=Z,40μm,0.3s						
IGHG	**Ghaleghazi**	**0.78**	**79**	Pg	**Pg**	**04 28 01.9**	**+0.5**
IGHG				Sg	**Sn**	**04 28 14.7**	**+0.9**
IDHR	**Dehrash**	**0.81**	**50**	*e*Pg	**Pb**	**04 27 59.7**	**-2.0**
IDHR				*e*Sg	**Sb**	**04 28 10.7**	**-1.7**
IDHR				*e*AMB	AMB	04 28 12.1	
	comp=Z,23μm,0.1s						
IDHR	**Dehrash**	**0.81**	**50**	*e*Pg	**Pb**	**04 27 59.7**	**-2.0**
IDHR				*e*Sg	**Sb**	**04 28 10.7**	**-1.7**
IDHR	**Dehrash**	**0.81**	**50**	Pg	**Pb**	**04 27 59.7**	**-2.0**
IDHR				Sg	**Sb**	**04 28 10.7**	**-1.7**
ILIN	**Lien**	**1.32**	**56**	*e*AMB	AMB	04 28 31.2	
	comp=Z,36μm,0.4s						
ILIN				*e*Pg	**Pn**	**04 28 09.4**	**-0.5**
IKOM	**Komasi**	**1.55**	**90**	*e*Pg	**Pg**	**04 28 16.1**	**+0.1**
IKOM				*e*AMB	AMB	04 28 41.9	
	comp=Z,80μm,0.3s						
IKOM	**Komasi**	**1.55**	**90**	*e*Pg	**Pg**	**04 28 16.1**	**+0.1**
IKOM	**Komasi**	**1.55**	**90**	Pg	**Pg**	**04 28 16.1**	**+0.1**
SNGE	**Sanandaj**	**1.68**	**57**	*e*Pg	**Pb**	**04 28 16.8**	**+0.2**
SNGE				*e*Sg	**Sg**	**04 28 40.6**	**+0.3**
SNGE				AML	AML	04 28 44.4	
	comp=N,2μm,0.3s						
SNGE	**Sanandaj**	**1.68**	**57**	Pg	**Pb**	**04 28 16.0**	**-0.6**
SNGE				Sg	**Sg**	**04 28 40.0**	**-0.3**
SNGE	**Sanandaj**	**1.68**	**57**	Pg	**Pb**	**04 28 16.0**	**-0.6**
SNGE				Sg	**Sg**	**04 28 40.0**	**-0.3**
IBZA	**Bozab**	**1.86**	**80**	*e*Pg	**Pb**	**04 28 20.3**	**+0.6**
IBZA				*e*AMB	AMB	04 28 49.6	
	comp=Z,50μm,0.4s						
IBZA	**Bozab**	**1.86**	**80**	*e*Pg	**Pb**	**04 28 20.3**	**+0.6**
IBZA	**Bozab**	**1.86**	**80**	Pg	**Pb**	**04 28 20.3**	**+0.6**
MSL	**Mosul**	**3.03**	**318**	*e*Pg	Pn	04 28 26.0	-7.2
	baz=132						
MSL				*e*Sg	Sn	04 28 59.0	-10
SHGR	**Shooshtar-Gavs**	**3.36**	**127**	*e*Pn	Pn	04 28 42.0	+4.3
SHGR				AML	AML	04 30 01.8	
	comp=E,897nm,0.5s						
SHGR				AML	AML	04 30 02.3	
	comp=N,725nm,0.5s						
SHGR	**Shooshtar-Gavs**	**3.36**	**127**	Pn	Pn	04 28 41.0	+3.3
SHGR	**Shooshtar-Gavs**	**3.36**	**127**	Pn	Pn	04 28 41.0	+3.3
KHMZ	**Khomeyn**	**3.62**	**96**	*e*Pn	Pn	04 28 44.8	+3.4
KHMZ	**Khomeyn**	**3.62**	**96**	Pn	**Pn**	**04 28 44.0**	**+2.6**
KHMZ	**Khomeyn**	**3.62**	**96**	Pn	**Pn**	**04 28 44.0**	**+2.6**
ASAO	**Ashtian**	**3.65**	**83**	*e*Pn	**Pn**	**04 28 45.0**	**+3.1**
ASAO				AML	AML	04 29 58.9	
	comp=N,282nm,0.4s						
ASAO	**Ashtian**	**3.65**	**83**	Pn	**Pn**	**04 28 44.0**	**+2.1**
ASAO	**Ashtian**	**3.65**	**83**	Pn	**Pn**	**04 28 44.0**	**+2.1**
MZRK	**Al-Mazaregh**	**4.41**	**293**	*e*P	**Pn**	**04 28 54.1**	**+1.9**
GHVR	**GHOM**	**4.69**	**85**	*e*Pn	**Pn**	**04 28 58.5**	**+2.5**
GHVR	**GHOM**	**4.69**	**85**	Pn	**Pn**	**04 28 58.0**	**+1.9**
GHVR	**GHOM**	**4.69**	**85**	Pn	**Pn**	**04 28 58.0**	**+1.9**
SFNV	**Sufian**	**5.04**	**298**	*e*P	**Pn**	**04 29 00.6**	**-0.3**
KSRV	**Kasrt alli**	**5.70**	**289**	*e*P	**Pn**	**04 29 10.5**	**+0.6**
GNI	**Garni**	**6.00**	**353**	Pn	**Pn**	**04 29 13.8**	**-0.3**
	comp=N,0.7nm,0.3s,baz=142,slow=17,SNR=1.8						
GNI				Pg	Pb	04 29 33.5	+3.2
	comp=N,1.2nm,0.3s,baz=38,slow=8.7,SNR=3.5						
GNI				Lg	Lg	04 30 56.3	
	comp=N,1.7nm,0.3s,baz=335,slow=22,SNR=3.4						
GNI				LR	LR	04 31 39.7	
	comp=N,178nm,19.3s,baz=164,slow=40						
GNI	**Garni**	**6.00**	**353**	*e*P	Pn	04 29 07.8	-6.4
GNI	**Garni**	**6.00**	**353**	*e*Pn	Pn	04 29 07.8	-6.4
GNI	**Garni**	**6.00**	**353**	*e*Pg	Pg	04 29 35.0	-6.0
GNI	**Garni**	**6.00**	**353**	*e*Pn	Pn	04 29 07.8	-6.4
GNI				*e*Pg	Pg	04 29 35.0	-6.0
GNI				Lg	Lg	04 30 56.3	
ZALF	**Zalf**	**7.05**	**262**	*e*P	**Pn**	**04 29 29.6**	**+1.2**
SALA	**Sala**	**7.59**	**261**	*e*P	**Pn**	**04 29 35.4**	**-0.6**
ASF	**Jabal al Asfar**	**7.60**	**257**	Pn	**Pn**	**04 29 36.0**	**0.0**
	comp=N,1.3nm,0.3s,baz=356,slow=11,SNR=10						
ASF				Lg	Lg	04 31 47.1	
	comp=N,1.7nm,0.3s,baz=203,slow=23,SNR=6.1						
ASF	**Jabal al Asfar**	**7.60**	**257**	P	**Pn**	**04 29 36.0**	**0.0**
ASF				pmax	pmax		
	comp=Z,1.0nm,0.3s						
MARH	**Ras Al Marh**	**7.60**	**271**	*e*P	**Pn**	**04 29 36.3**	**+0.1**
HAWK	**Haweek**	**7.65**	**275**	*e*P	**Pn**	**04 29 35.0**	**-1.7**
WRDH	**Warideh**	**7.70**	**283**	*e*P	**Pn**	**04 29 34.9**	**-2.5**
DRWC	**Darouich**	**7.72**	**291**	*e*P	Pn	04 29 32.9	-4.8
BIDA	**Albida**	**7.73**	**279**	*e*P	**Pn**	**04 29 35.5**	**-2.4**
BTCH	**Batrach**	**7.75**	**286**	*e*P	Pn	04 29 34.0	-4.1
SLNF	**Slenfeh**	**7.87**	**283**	*e*P	Pn	04 29 36.4	-3.4
ARNB	**Al Arnab**	**8.11**	**285**	*e*P	Pn	04 29 37.2	-5.8
MMAI	**Mount Meron Ar**	**8.62**	**265**	Pn	**Pn**	**04 29 49.7**	**-0.3**
	comp=Z,1.5nm,0.3s,baz=65,slow=16,SNR=3.1						
MMAI				Pg		04 30 26.7	
	comp=Z,1.6nm,0.3s,baz=98,slow=17,SNR=4.0						
MMAI				Lg	Lg	04 32 18.9	
	comp=Z,2.2nm,0.3s,baz=88,slow=40,SNR=4.7						
MMAI				LR	LR	04 33 28.6	
	comp=Z,72nm,21.8s,baz=35,slow=40						
ZEI	**Tsey**	**8.70**	**352**	*e*P	Pn	04 29 54.3	+3.0
ZEI				pmax	pmax		
	comp=Z,53nm,1.7s						
NEY	**Neytrino**	**9.34**	**347**	*e*P	Pn	04 30 04.2	+4.2
NCK	**Nalchik**	**9.44**	**351**	*e*P	Pn	04 30 08.1	+6.9
KBZ	**Khabaz**	**9.77**	**348**	Pn	Pn	04 30 08.7	+3.0
	comp=Z,0.1nm,0.3s,baz=5.3,slow=22,SNR=2.1						
KVAR	**Kislovodsk Arr**	**10.03**	**348**	Pn	Pn	04 30 12.4	+3.0
	baz=326,slow=21,SNR=1.8						
KIV	**Kislovodsk**	**10.03**	**348⇑**	*e*P	Pn	04 30 15.3	+6.0
KIV				pmax	pmax		
	comp=Z,21nm,1.7s						
KIV				MLR	MLR		
	comp=Z,68nm,17.0s						
EIL	**Elat**	**10.13**	**247**	Pn	**Pn**	**04 30 11.4**	**+0.7**
	comp=Z,0.8nm,0.3s,baz=88,slow=6.5,SNR=6.9						
EIL				Lg	Lg	04 33 13.4	
	comp=Z,1.1nm,0.3s,baz=311,slow=11,SNR=3.4						
RAYN	**Ar Rayn**	**10.62**	**181**	*e*Pn	**Pn**	**04 30 17.7**	**+0.3**
	comp=Z,34nm,0.5s						
RAYN				*e*Sn	**Sn**	**04 32 11.6**	**-4.3**
RAYN	**Ar Rayn**	**10.62**	**181**	*e*Pn	**Pn**	**04 30 17.7**	**+0.3**
	comp=Z,34nm,0.5s						
RAYN				*e*Sn	**Sn**	**04 32 11.7**	**-4.3**
RAYN				*e*Lg	Lg	04 33 38.5	
GEYT	**Alibeck**	**10.77**	**66**	Pn	Pn	04 30 22.6	+3.2
	comp=Z,0.7nm,0.3s,baz=258,slow=18,SNR=3.1						
GEYT				LR	LR	04 34 29.9	
	comp=Z,108nm,21.4s,baz=235,slow=37						
BRTR	**Keskin Array B**	**11.08**	**303**	Pn	**Pn**	**04 30 26.3**	**+2.5**
	comp=Z,0.1nm,0.3s,baz=278,slow=19,SNR=2.5						
BANOM	**Banah**	**12.36**	**129**	*i* P	**Pn**	**04 30 41.4**	**+0.2**
	SNR=52						
BANOM				S	Sn	04 32 51.1	-7.4
BANOM	**Banah**	**12.36**	**129**	P	**Pn**	**04 30 41.6**	**+0.4**
	SNR=20						
NAZ	**Nazwa, Dubai**	**12.64**	**134**	*i* P	**Pn**	**04 30 46.8**	**+1.8**
	SNR=14						
ASUD	**Al Ashush, Dub**	**12.72**	**136**	P	**Pn**	**04 30 47.8**	**+1.7**
FAQ	**Al Faqa, Dubai**	**12.78**	**135**	*i* P	**Pn**	**04 30 48.2**	**+1.3**
	SNR=7.8						
HATD	**Hatta, Dubai**	**13.04**	**133**	*i* P	**Pn**	**04 30 51.4**	**+0.8**
	SNR=14						
ASHO	**Ashiyiah**	**13.10**	**133**	*i* P	**Pn**	**04 30 51.9**	**+0.5**
	SNR=16						
ASHO				S	Sn	04 33 09.9	-6.8
ASHO	**Ashiyiah**	**13.10**	**133**	Pn	**Pn**	**04 30 52.2**	**+0.8**
	SNR=16						
ASHO	**Ashiyiah**	**13.10**	**133**	P	**Pn**	**04 30 52.2**	**+0.8**
	SNR=16						
ARQ	**Araqi**	**14.40**	**136**	P	**Pn**	**04 31 09.2**	**+0.1**
	SNR=7.6						
BSY	**Bisya**	**15.25**	**135**	Pn	**Pn**	**04 31 19.8**	**-0.8**
	SNR=12						
BSY	**Bisya**	**15.25**	**135**	P	**Pn**	**04 31 19.8**	**-0.8**
	SNR=12						
SMDO	**Samad**	**15.52**	**132**	Pn	**Pn**	**04 31 26.2**	**+2.0**
	SNR=32						
SMDO	**Samad**	**15.52**	**132**	Pn	**Pn**	**04 31 26.2**	**+2.0**
	SNR=32						
WSAR	**Wadi Sarin**	**15.75**	**130**	Pn	**Pn**	**04 31 26.6**	**-0.6**
	comp=Z,1.9nm,0.3s,baz=354,slow=5.8,SNR=20						
WSAR				Sn	**Sn**	**04 34 15.9**	**-5.4**
	comp=Z,1.1nm,0.3s,baz=165,slow=18,SNR=8.5						
WSAR				LR	LR	04 38 55.1	
	comp=Z,89nm,19.5s,baz=324,slow=42						
VRH	**Novokhopyorsk**	**17.25**	**352**	*e*P	**P**	**04 31 47.6**	**+0.2**
VRH				pmax	pmax		
	comp=Z,10.0nm,0.7s						
VRH	**Novokhopyorsk**	**17.25**	**352**	*e*P	**P**	**04 31 47.6**	**+0.2**
	comp=Z,10.0nm,0.7s						
VSR	**Storozhevoye**	**17.67**	**346**	*e*P	**P**	**04 31 53.1**	**+1.1**
VSR				pmax	pmax		
	comp=Z,10.0nm,1.4s						
RBK	**Rabkut**	**18.29**	**153**	P	**P**	**04 31 57.9**	**-1.2**
	SNR=7.9						
ABKAR	**Akbulak array**	**18.41**	**31**	*e*P	**P**	**04 31 59.3**	**-0.9**
	comp=Z,2.9nm,0.6s						
ABKAR	**Akbulak array**	**18.41**	**31**	*e*P	**P**	**04 31 59.3**	**-0.9**
	comp=Z,2.9nm,0.6s						
AKTK	**Aktyubinsk**	**18.60**	**25**	P	**P**	**04 32 01.6**	**-0.7**
	comp=Z,61nm,19.3s						
AKTO	**Aktyubinsk**	**18.60**	**25**	P	**P**	**04 32 01.6**	**-0.7**
	comp=Z,0.3nm,0.3s,baz=212,slow=10,SNR=22						
AKTO				LR	LR	04 39 58.3	
	comp=Z,61nm,19.3s,baz=222,slow=40						
LPSR	**Galich'ya Gora**	**19.04**	**347**	*e*P	**Pn**	**04 32 09.0**	**+1.2**
LPSR				pmax	pmax		
	comp=Z,20nm,0.9s						
AKASG	**Malin Array Be**	**20.40**	**329**	P	**P**	**04 32 20.0**	**-1.9**
	comp=Z,0.6nm,0.3s,baz=139,slow=9.5,SNR=10						
KIEV	**Kiev**	**20.41**	**329**	*e*P	Pn	04 32 23.3	-0.8
KIEV				pmax	pmax		
	comp=Z,4.0nm,0.9s						
KIEV	**Kiev**	**20.41**	**329**	*e*P	P	04 32 17.0	-4.9
	comp=Z,10.0nm,1.0s						
KIEV	**Kiev**	**20.41**	**329**	*e*P	P	04 32 17.1	-4.9
	comp=Z,10.0nm,1.0s						
KKAR	**Karatay Array**	**21.31**	**58**	*e*P	**P**	**04 32 31.9**	**0.0**
KKAR				pmax	pmax		
	comp=Z,4.0nm,0.9s						
KKAR	**Karatay Array**	**21.31**	**58**	*e*P	**P**	**04 32 31.9**	**0.0**
	comp=Z,3.9nm,0.9s						
KKAR	**Karatay Array**	**21.31**	**58**	*e*P	**P**	**04 32 31.9**	**0.0**
	comp=Z,3.9nm,0.9s						
OBN	**Obninsk**	**21.87**	**346⇓**	*e*P	**P**	**04 32 37.7**	**0.0**
OBN				*e*		04 33 03.0	
OBN				*e*PPP	PPP	04 33 13.7	
OBN				pmax	pmax		
	comp=Z,6.0nm,0.8s						
OBN				MLR	MLR		
	comp=Z,72nm,15.0s						
OBN	**Obninsk**	**21.87**	**346**	*e*P	**P**	**04 32 37.7**	**0.0**
	comp=Z,6.0nm,0.8s						
ATD	**Arta Tunnel**	**22.69**	**187**	LR	LR	04 42 21.5	
	comp=Z,45nm,18.7s,baz=88,slow=38						
CRVS	**Cervenica-Dubn**	**23.19**	**317**	*e*P	**P**	**04 32 54.0**	**+2.3**
CRVS	**Cervenica-Dubn**	**23.19**	**317**	*e*P	**P**	**04 32 54.0**	**+2.3**
EKS2	**Erkin-Say**	**23.53**	**61**	*e*P	**P**	**04 32 55.1**	**-0.3**
EKS2				pmax	pmax		
	comp=Z,3.0nm,0.8s						
EKS2	**Erkin-Say**	**23.53**	**61**	*e*P	**P**	**04 32 55.1**	**-0.3**
	comp=Z,3.0nm,0.8s						
EKS2	**Erkin-Say**	**23.53**	**61**	*e*P	**P**	**04 32 55.1**	**-0.3**
	comp=Z,3.0nm,0.8s						
KECS	**Kecovo**	**23.55**	**315**	*e*P	**P**	**04 32 58.2**	**+2.9**
KECS				pmax	pmax		
	comp=Z,3.0nm,0.9s						
KECS	**Kecovo**	**23.55**	**315**	*e*P	**P**	**04 32 58.2**	**+2.9**
PSZ	**Piszkesteto**	**23.64**	**313**	*e*P	P	04 32 50.1	-6.2
PSZ				pmax	pmax		
	comp=Z,2.0nm,0.5s						
PSZ	**Piszkesteto**	**23.64**	**313**	*e*P	P	04 32 50.1	-6.2
	comp=Z,2.5nm,0.5s						
PSZ	**Piszkesteto**	**23.64**	**313**	*e*P	P	04 32 50.1	-6.2
	comp=Z,2.5nm,0.5s						
ARU	**Arti**	**23.95**	**18**	P	P	04 33 03.9	+4.8
	comp=Z,6.0nm,0.2s,baz=225,slow=6.6,SNR=4.6						
ARU	**Arti**	**23.95**	**18d**	*i*P	**P**	**04 33 03.0**	**+3.9**
ARU						04 33 33.9	
ARU				SS	Sn	04 38 08.9	+31
ARU				pmax	pmax		
	comp=Z,16nm,1.7s						
AAK	**Ala-Archa**	**24.05**	**61**	P	P	04 33 05.8	+5.4
	comp=Z,0.7nm,0.3s,baz=20,slow=4.3,SNR=3.3						
AAK				PcP	**PcP**	**04 36 42.0**	**+0.3**
	comp=Z,0.9nm,0.6s,baz=136,slow=6.7,SNR=3.0						
AAK				LR	LR	04 45 15.6	
	comp=Z,84nm,19.9s,baz=254,slow=44						
AAK	**Ala-Archa**	**24.05**	**61**	*e*P	**P**	**04 32 59.6**	**-0.7**
AAK						04 36 42.0	
AAK				pmax	pmax		
	comp=Z,4.0nm,1.0s						
AAK	**Ala-Archa**	**24.05**	**61**	*e*P	**P**	**04 32 59.6**	**-0.7**
	comp=Z,4.2nm,1.0s						
AAK	**Ala-Archa**	**24.05**	**61**	PcP	**PcP**	**04 36 42.0**	**+0.3**
AAK	**Ala-Archa**	**24.05**	**61**	*e*P	**P**	**04 32 59.6**	**-0.7**
	comp=Z,4.2nm,1.0s						
AAK				PcP	**PcP**	**04 36 42.0**	**+0.3**
TKM2	**Tokmak 2**	**24.90**	**61**	*e*P	**P**	**04 33 07.4**	**-0.8**
TKM2				pmax	pmax		
	comp=Z,9.0nm,1.3s						
TKM2	**Tokmak 2**	**24.90**	**61**	*e*P	**P**	**04 33 07.4**	**-0.8**
	comp=Z,8.8nm,1.3s						
TKM2	**Tokmak 2**	**24.90**	**61**	*e*P	**P**	**04 33 07.4**	**-0.8**
	comp=Z,8.8nm,1.3s						
BRVK	**Borovoye**	**25.75**	**35c**	*e*P	**P**	**04 33 15.6**	**+0.1**
BRVK				pmax	pmax		
	comp=Z,3.0nm,0.9s						
BRVK	**Borovoye**	**25.75**	**35**	*e*P	**P**	**04 33 15.6**	**+0.1**
	comp=Z,3.0nm,0.9s						
BRVK	**Borovoye**	**25.75**	**35**	*e*P	**P**	**04 33 13.4**	**-2.1**
	comp=Z,15nm,1.3s						
BVAR	**Borovoye Array**	**25.79**	**36**	P	**P**	**04 33 15.6**	**-0.2**
	comp=Z,3.3nm,0.7s,baz=234,slow=7.1,SNR=19						
BVAR				PcP	**PcP**	**04 36 45.7**	**+0.6**
	comp=Z,0.7nm,0.8s,baz=321,slow=2.1,SNR=3.6						
VSU	**Vasula**	**27.38**	**338c**	*e*P	**P**	**04 33 29.8**	**-0.3**
VSU				pmax	pmax		
	comp=Z,75nm,1.2s						
VSU	**Vasula**	**27.38**	**338**	*e*P	**P**	**04 33 29.8**	**-0.3**
	comp=Z,75nm,1.2s						
KURBB	**Kurchatov Arra**	**29.01**	**45**	P	**P**	**04 33 45.5**	**+0.7**
	comp=Z,3.9nm,0.2s,baz=252,slow=9.0,SNR=10						
KURK	**Kurchatov**	**29.10**	**45**	P	**P**	**04 33 45.5**	**-0.1**
KURK				pmax	pmax		
	comp=Z,4.0nm,0.2s						
KURK	**Kurchatov**	**29.10**	**45**	P	**P**	**04 33 45.5**	**-0.1**
	comp=Z,4.0nm,0.2s						
KURK	**Kurchatov**	**29.10**	**45**	*e*P	**P**	**04 33 42.7**	**-2.9**
	comp=Z,24nm,1.4s						
FINES	**FINESS Array B**	**30.03**	**341**	P	**P**	**04 33 51.8**	**-1.9**
	comp=Z,0.7nm,0.4s,baz=150,slow=10,SNR=3.7						
MKAR	**Makanchi Array**	**30.31**	**54**	P	**P**	**04 33 57.1**	**+0.7**
	comp=Z,0.6nm,0.6s,baz=252,slow=7.3,SNR=7.2						
MKAR				ScP	**ScP**	**04 40 37.5**	**-0.3**
	comp=Z,0.4nm,0.5s,baz=266,slow=7.1,SNR=5.8						
MKAR				LR	LR	04 49 08.6	
	comp=Z,41nm,20.2s,baz=288,slow=42						
ZALV	**Zalesovo Beam**	**33.81**	**42**	P	**P**	**04 34 26.9**	**-0.1**
	comp=Z,0.7nm,0.3s,baz=268,slow=10,SNR=7.2						
ZALV				LR	LR	04 48 18.9	
	comp=Z,28nm,20.7s,baz=261,slow=36						
NOA	**NORSAR Array B**	**34.78**	**331**	P	**P**	**04 34 33.0**	**-2.4**
	comp=Z,1.3nm,0.8s,baz=125,slow=8.3,SNR=2.9						
NOA	**NORSAR Array B**	**34.78**	**331**	P	**P**	**04 34 33.0**	**-2.4**
NOA				pmax	pmax		
	comp=Z,1.0nm,0.8s						
NOA	**NORSAR Array B**	**34.78**	**331**	P	**P**	**04 34 33.0**	**-2.4**
	comp=Z,1.0nm,0.8s						
TAM	**Tamanrasset**	**36.83**	**263**	*e*P	P	04 34 47.2	-6.2
TAM				pmax	pmax		

Code	Station Name	Δ°	AZ°	Op	ISC	Time	Res
	comp=Z,4.0nm,1.1s						
TAM	Tamanrasset	36.83	263	eP	P	04 34 47.2	-6.3
	comp=Z,4.4nm,1.1s						
ARCES	ARCESS Array B	37.13	348	P	P	04 34 53.3	-2.0
	comp=Z,3.5nm,0.9s,baz=170,slow=8.3,SNR=9.9						
ESDC	Sonseca Array	39.62	293	P	P	04 35 15.6	-1.1
	comp=Z,0.2nm,0.4s,baz=60,slow=8.8,SNR=4.4						
NRIK	Noril'sk	42.12	21	P	P	04 35 37.2	+0.4
	comp=Z,4.3nm,0.8s,baz=317,slow=18,SNR=4.4						
GTA	Gaotai	43.15	67	eP	P	04 35 50.9	+5.1
GTA				pP	sP	04 35 54.3	+0.6
GTA				sP	pP	04 35 57.3	+5.9
GTA				pmax	pmax		
	comp=Z,3.0nm,0.9s						
TORD	Torodi Ar. Bea	44.94	253	P	P	04 36 00.7	+0.5
	comp=Z,1.1nm,0.8s,baz=44,slow=6.0,SNR=7.0						
TORD				LR	LR	04 57 55.4	
	comp=Z,54nm,18.6s,baz=265,slow=40						
SPITS	Spitsbergen Ar	45.87	352	LR	LR	04 56 52.4	
	comp=Z,61nm,18.4s,baz=205,slow=38						
SONM	Songino Array	46.68	54	P	P	04 36 14.9	+1.2
	comp=Z,0.3nm,0.4s,baz=330,slow=44,SNR=3.6						
ULN	Ulaanbaatar	47.11	54	eP	P	04 36 16.8	-0.4
ULN				pmax	pmax		
	comp=Z,2.0nm,0.8s						
ULN	Ulaanbaatar	47.11	54	eP	P	04 36 16.8	-0.4
	comp=Z,2.0nm,0.8s						
CMAR	Chiang Mai Arr	49.74	94	P	P	04 36 38.0	+0.4
	comp=Z,1.3nm,0.4s,baz=296,slow=8.0,SNR=10						
DBIC	Dimbokro	53.96	251	P	P	04 37 09.6	+0.5
	comp=Z,2.9nm,1.1s,baz=59,slow=10,SNR=3.0						
DBIC				LR	LR	05 01 31.9	
	comp=Z,44nm,18.7s,baz=110,slow=38						
TIXI	Tiksi	55.85	22	P	P	04 37 21.7	-0.3
	comp=Z,1.4nm,0.3s,baz=101,slow=4.1,SNR=4.0						
TIXI	Tiksi	55.85	22	ceP	P	04 37 22.4	+0.4
TIXI				pmax	pmax		
	comp=Z,10.0nm,1.7s						
PSI	Prapat	58.52	110	LR	LR	05 04 57.6	
	comp=Z,25nm,18.0s,baz=184,slow=38						
KSAR	Wonju Array Be	64.69	61	P	P	04 38 22.1	-0.9
KSAR	Wonju Array Be	64.69	61	P	P	04 38 22.1	-0.9
KSAR	Wonju Array Be	64.69	61	P	P	04 38 22.1	-0.9
KSRS	Korea Array	64.71	61	P	P	04 38 22.1	-1.1
	comp=Z,1.6nm,0.7s,baz=287,slow=8.0,SNR=4.5						
BOSA	Boshof	65.36	200	P	P	04 38 29.9	+2.4
	comp=Z,4.9nm,0.6s,baz=356,slow=7.0,SNR=11						
SEY	Seymchan	67.17	28	P	P	04 38 38.7	+0.1
	comp=Z,3.6nm,0.7s,baz=306,slow=6.3,SNR=14						
SEY	Seymchan	67.17	28	eP	P	04 38 39.4	+0.8
ILAR	Eielson Array	80.89	5	P	P	04 39 57.2	-1.5
	comp=Z,0.8nm,0.8s,baz=316,slow=4.2,SNR=8.1						
YKA	Yellowknife Ar	82.36	351	P	P	04 40 05.9	-0.5
	comp=Z,0.5nm,0.8s,baz=14,slow=5.7,SNR=9.0						
YKA	Yellowknife Ar	82.36	351	P	P	04 40 06.0	-0.5

*DJA **08** 04:33:31.6±2.6, 1°N±36°×12°1E±°, h34km±26km, M4.0/7, mb4.2/1, MLv4.0/7*
*IDC **08** 04:33:32.9±1.4, 0°.05S×122°.63E, h0km, mb3.9/4, mb1 4.2/6, mb1mx3.7/62, mbtmp4.0/6, ML4.0/2, Error ellipse: s-maj=42.9km s-min=21.7km az=69.0*
*ISCJB **08** 04:33:43.8±1.2, 0°.5S±0°.1×121°.8E±0°.1, h100km, mb3.9/5, Error ellipse: s-maj=18.0km s-min=15.4km az=156.7*
*NEIC **08** 04:33:46.8±1.5, 0°.59S×121°.88E, h121km±11km, mb4.1/2, Error ellipse: s-maj=24.8km s-min=20.7km az=71.0*
ISC 08 04:33:45.3±1.3, **0°.6S**±0°.1×**121°.73E**±0°.09, **h100**km, **n14, σ1s.80**/13, **mb4.0**/5, **Minahassa Peninsula, Sulawesi**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
APSI	Ampana	0.36	193	P	Pn	04 34 01.6	+1.3
LUWI	Luwuk	1.15	115	P	Pn	04 34 09.3	+1.9
LUWI	Luwuk	1.15	115	ePn	Pn	04 34 09.1	+1.6
LUWI				eSn	Sn	04 34 39.3	+15
PCI	Palu	1.92	260	P	Pn	04 34 08.7	-8.3
TTSI	Tana Toraja	3.13	218	P	Pn	04 34 33.3	+0.5
SPSI	Sidrap Palu	3.91	210	P	Pn	04 34 45.4	+2.0
KAPI	Kappang	4.85	204	Pn	Pn	04 34 57.6	+1.5
	1.2nm,0.3s,baz=297,slow=8.5,SNR=3.9						
KAPI				Sn	Sn	04 36 06.6	+15
	baz=102,slow=6.4,SNR=2.4						
FITZ	Fitzroy Crossi	17.86	168	P	Pn	04 37 48.7	+1.3
	1.0nm,0.3s,baz=359,slow=7.4,SNR=9.9						
FITZ	Fitzroy Crossi	17.86	168	eP	Pn	04 37 48.1	+0.7
	5.0nm,0.5s						
WRAB	Tennant Creek	22.88	148	eP	P	04 38 38.0	-2.7
	4.3nm,0.5s						
WRA	Warramunga Arr	22.89	148	P	P	04 38 38.2	-2.5
	6.8nm,0.5s,baz=330,slow=11,SNR=78						
ASAR	Alice Springs	25.84	154	P	P	04 39 06.5	-1.1
	2.4nm,0.5s,baz=344,slow=15,SNR=43						
STKA	Stephens Creek	36.38	151	P	P	04 40 38.8	-1.2
	3.3nm,1.0s,baz=332,slow=8.8,SNR=4.1						
MKAR	Makanchi Array	58.42	329	P	P	04 43 30.9	+0.3
	0.1nm,0.4s,baz=115,slow=9.7,SNR=2.1						

*ISCJB **08** 04:40:29.3±0.3, 27°.15N±0°.05×143°.52E±0°.04, h10km, mb4.4/53, MS3.6/2, Error ellipse: s-maj=6.7km s-min=5.5km az=165.7*
*IDC **08** 04:40:29.9±0.5, 27°.16N×143°.47E, h0km, mb4.2/26, mb1 4.3/29, mb1mx4.2/67, mbtmp4.2/29, ML3.9/3, MS3.1/4, Ms1 3.2/4, ms1mx2.7/43, Error ellipse: s-maj=13.5km s-min=12.1km az=75.0*
*NEIC **08** 04:40:31.3±3.6, 27°.12N×143°.48E, h11km±21km, mb4.5/24, Error ellipse: s-maj=6.6km s-min=4.5km az=96.0*
*BJI **08** 04:40:33.7, 27°.10N×143°.24E, h34km, mb4.7/28, mB5.0/22, Ms4.5/6, Ms7 4.2/4*
ISC 08 04:40:31.3±0.5, **27°.17N**±0°.07×**143°.48E**±0°.06, **h10**km, **n85, σ0s.82**/87, **mb4.4**/53, **Bonin Islands region**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
CBIJ	Chichi jima	1.16	267	ePn	Pb	04 40 53.0	-0.3
CBIJ				Sn	Sg	04 41 08.7	+0.2
JCJ	Chichijima	1.16	267	Pn	Pb	04 40 53.2	-0.2
	482nm,0.3s,baz=238,slow=23,SNR=69						
JCJ				Sn	Sg	04 41 08.7	+0.2
MJAR	Matsushiro Arr	10.36	336	Pn	Pn	04 42 59.2	-0.8
	3.5nm,0.3s,baz=162,slow=26,SNR=16						
MJAR				Sn	Sn	04 44 55.0	-1.1
	1.0nm,0.3s,baz=24,slow=24,SNR=4.1						
MAJO	Matsushiro	10.36	336	ePn	Pn	04 42 58.7	-1.3
MAT	Matsushiro	10.36	336	P	Pn	04 42 58.9	-1.1
MAT				eS	Sn	04 44 49.2	-7.0
JNU	Nakatsue	12.41	302	LR	LR	04 48 18.3	
	comp=Z,110nm,18.7s,baz=118,slow=38						
KSRS	Korea Array	16.66	312	Pn	Pn	04 44 26.3	+1.5
	0.7nm,0.3s,baz=120,slow=11,SNR=23						
KSRS				LR	LR	04 51 12.8	
	comp=Z,77nm,19.6s,baz=126,slow=39						
KSAR	Wonju Array Be	16.67	312	Pn	Pn	04 44 26.3	+1.3
USRK	Ussuriysk Ar.	19.36	334	P	P	04 44 56.0	-0.9
	0.5nm,0.3s,baz=155,slow=11,SNR=20						
USRK				LR	LR	04 52 55.9	
	comp=Z,47nm,18.2s,baz=117,slow=38						
YHNB	Yeheng	20.04	268	eP	P	04 45 04.2	-0.4
	12nm,0.7s						
YULB	Yu-li	20.40	264	eP	P	04 45 08.8	+0.3
	8.2nm,0.7s						
SSLB	Suanglung	20.61	266	eP	P	04 45 10.8	0.0
	20nm,0.8s						
MDJ	Mudanjiang	20.68	331	P	P	04 45 11.6	+0.3
MDJ				pmax	pmax		
	comp=Z,15nm,0.9s						
MDJ				pmax	pmax		
	comp=Z,37nm,3.3s						
MDJ	Mudanjiang	20.68	331	eP	P	04 45 12.3	+1.0
	14nm,0.9s						
NJ2	Nanjing	21.94	289	eP	P	04 45 27.3	+2.3
NJ2				pmax	pmax		
	comp=Z,12nm,0.5s						
KLR	Kul'dur	23.82	341	P	P	04 45 44.4	+0.1
	2.0nm,0.4s,baz=180,slow=11,SNR=13						
HHC	Hu-ho-hao-te	29.59	306	eP	P	04 46 37.6	+1.0
HHC				S	S	04 51 30.2	-1.6
HHC				sS	sS	04 51 44.9	+8.1
HHC				pmax	pmax		
	comp=Z,27nm,1.4s						
HHC				pmax	pmax		
	comp=Z,130nm,3.5s						
HHC				LR	LR		
	comp=N,200nm,13.7s						
HHC				LR	LR		
	comp=E,330nm,13.7s						
LZH	Lanzhou	34.70	295	eP	P	04 47 25.3	+3.7
LZH				pP	sP	04 47 34.7	+8.8
LZH				sP	pP	04 47 39.1	+14
LZH				pmax	pmax		
	comp=Z,16nm,1.0s						
LZH				pmax	pmax		
	comp=Z,80nm,4.4s						
CD2	Chengdu	34.80	286	P	P	04 47 20.5	-1.8
ULN	Ulaanbaatar	35.07	316	eP	P	04 47 24.0	-0.6
	4.8nm,1.1s						
SONA1	Songino Array	35.47	316	eP	P	04 47 27.3	-0.7
SONM	Songino Array	35.47	316	P	P	04 47 28.4	+0.5
	1.7nm,0.6s,baz=124,slow=8.6,SNR=9.9						
KMI	Kunming	36.52	276	P	P	04 47 37.2	-0.1
KMI				pmax	pmax		
	comp=Z,7.0nm,0.6s						
KMI				pmax	pmax		
	comp=Z,130nm,4.9s						
KMI				LR	LR		
	comp=N,110nm,5.3s						
KMI				LR	LR		
	comp=E,110nm,5.6s						
KMI				LR	LR		
	comp=Z,100nm,5.9s						
GTA	Gaotai	38.14	300	eP	P	04 47 51.1	+0.2
GTA				pP	sP	04 48 00.7	+5.5
GTA				sP	pP	04 48 04.5	+11
GTA				pmax	pmax		
	comp=Z,6.0nm,1.2s						
TLY	Talaya	38.62	320	P	P	04 47 55.8	+1.3
	2.9nm,0.6s,baz=159,slow=5.2,SNR=8.9						
TLY	Talaya	38.62	320	eP	P	04 47 56.0	+1.4
	6.0nm,0.8s						
CHTO	Chiang Mai	41.66	268	eP	P	04 48 19.3	-0.9
	4.6nm,0.8s						
CMAR	Chiang Mai Arr	41.78	268	P	P	04 48 20.6	-0.5
	1.8nm,0.6s,baz=60,slow=8.5,SNR=13						
CMAR				LR	LR	05 05 03.7	
	comp=Z,18nm,20.2s,baz=0.0,slow=35						
TIXI	Tiksi	45.26	354	P	P	04 48 47.7	-0.8
	0.9nm,0.3s,baz=124,slow=6.4,SNR=4.1						
WMQ	Urumqi	47.47	306	eP	P	04 49 07.4	+1.0
WMQ				pP	sP	04 49 16.6	+5.8
WMQ				sP	pP	04 49 19.6	+10
WMQ				pmax	pmax		
	comp=Z,1.0nm,1.0s						
WMQ				pmax	pmax		
	comp=Z,51nm,5.4s						
WRAB	Tennant Creek	47.65	192	eP	P	04 49 07.2	-0.7
	14nm,0.6s						
WB2	Warramunga Arr	47.66	192	eP	P	04 49 07.8	-0.2
	18nm,0.6s						
WRA	Warramunga Arr	47.66	192	P	P	04 49 07.7	-0.2
	14nm,0.6s,baz=13,slow=8.6,SNR=86						
FITZ	Fitzroy Crossi	48.21	203	P	P	04 49 12.8	+0.6
	3.5nm,0.8s,baz=64,slow=13,SNR=3.7						
FITZ	Fitzroy Crossi	48.21	203	eP	P	04 49 11.7	-0.5
	4.3nm,0.8s						
ZAA0	Zalesovo Array	50.19	319	eP	P	04 49 27.1	+0.1
ZALV	Zalesovo Beam	50.19	319	P	P	04 49 26.9	-0.1
	2.1nm,0.7s,baz=105,slow=7.7,SNR=9.9						
ZALV				PcP	PcP	04 50 44.7	-1.5
	0.6nm,0.4s,baz=74,slow=3.8,SNR=2.5						
GSI	Gunungsitoli	50.95	248	eP	P	04 49 32.1	-1.1
	18nm,0.8s						
MK01	Makanchi Array	51.31	310	eP	P	04 49 34.9	-0.8
MKAR	Makanchi Array	51.32	310	P	P	04 49 36.2	+0.5
	0.8nm,0.4s,baz=91,slow=9.7,SNR=12						
AS01	Alice Springs	51.37	191	eP	P	04 49 35.4	-0.8
AS31	Alice Springs	51.38	191	eP	P	04 49 35.8	-0.5
	1.3nm,0.6s						
ASAR	Alice Springs	51.38	191	P	P	04 49 35.8	-0.5
	1.5nm,0.6s,baz=15,slow=15,SNR=36						
ASAR				PcP	PcP	04 50 51.5	+0.6
	0.3nm,0.6s,baz=14,slow=4.2,SNR=4.5						
MAKZ	Makanchi	51.53	310	eP	P	04 49 37.3	0.0
	6.9nm,1.4s						
KURK	Kurchatov	53.76	314	eP	P	04 49 53.4	-0.2
	6.0nm,0.7s						
KURBB	Kurchatov Arra	53.81	314	P	P	04 49 53.9	-0.2
	6.8nm,0.6s,baz=89,slow=8.0,SNR=60						
BPAW	Bear Paw Mtn.	55.24	29	eP	P	04 50 04.3	0.0
	2.9nm,1.5s						
COLD	Coldfoot	56.11	25	eP	P	04 50 11.0	+0.6
	3.0nm,0.8s						
KSH	Kashi	56.53	301	P	P	04 50 17.7	+3.6
KSH				epP	sP	04 50 28.6	+10
KSH				ePP	PP	04 52 26.0	+6.3
KSH				S	S	04 58 06.6	+0.8
KSH				pmax	pmax		
	comp=Z,65nm,3.5s						
IL1	Eielson Array	57.10	29	eP	P	04 50 16.4	-1.1
ILAR	Eielson Array	57.10	29	P	P	04 50 16.9	-0.6
	1.2nm,0.8s,baz=252,slow=5.7,SNR=10						
EYAK	Cordova Ski Ar	57.33	34	eP	P	04 50 20.1	+1.0
	360nm,1.8s						
STKA	Stephens Creek	58.74	182	P	P	04 50 28.6	-0.7
	2.3nm,0.6s,baz=322,slow=10,SNR=7.5						
BVAR	Borovoye Array	58.77	317	P	P	04 50 29.7	+0.3
	6.5nm,0.7s,baz=87,slow=7.3,SNR=24						
BRVK	Borovoye	58.83	318	eP	P	04 50 30.0	+0.2
	6.3nm,0.8s						
EGAK	Eagle	59.55	29	eP	P	04 50 34.5	-0.1
ZRNK	Zerenda	59.61	317	eP	P	04 50 35.5	+0.2
	4.0nm,0.7s						
KKAR	Karatay Array	59.98	306	eP	P	04 50 38.1	+0.1
	5.8nm,0.7s						
INK	Inuvik	62.48	25	P	P	04 50 54.9	+0.4
	1.0nm,0.6s,baz=291,slow=6.2,SNR=9.8						
ARU	Arti	65.07	322	P	P	04 51 12.4	+0.6
	4.6nm,0.2s,baz=73,slow=4.8,SNR=8.1						
ARU	Arti	65.07	322	eP	P	04 51 12.1	+0.3
	4.5nm,0.7s						
ABKAR	Akbulak array	65.87	314	eP	P	04 51 17.1	0.0
AKTO	Aktyubinsk	66.78	316	P	P	04 51 22.7	-0.2
	1.6nm,0.6s,baz=80,slow=11,SNR=6.6						
GEYT	Alibeck	70.43	303	P	P	04 51 47.9	+1.9
	2.2nm,0.4s,baz=38,slow=7.7,SNR=3.2						
YKA	Yellowknife Ar	71.53	29	P	P	04 51 52.0	-0.1
	0.7nm,0.6s,baz=293,slow=6.2,SNR=14						
YKA	Yellowknife Ar	71.53	29	P	P	04 51 52.0	-0.1
ARCES	ARCESS Array B	73.85	341	P	P	04 52 12.5	+6.7
	1.1nm,0.6s,baz=75,slow=9.3,SNR=9.8						
FINES	FINESS Array B	78.39	334	P	P	04 52 31.9	+0.1
	3.8nm,1.0s,baz=93,slow=4.2,SNR=6.9						
KBZ	Khabaz	78.80	313	P	P	04 52 35.2	+0.8
	2.8nm,0.7s,baz=92,slow=4.7,SNR=7.8						
MFID	Camas Ranch	79.01	47	eP	P	04 52 35.4	-0.3
	5.0nm,1.2s						
NVAR	Mina Array Bea	79.56	52	P	P	04 52 39.6	+0.6
	0.9nm,0.6s,baz=294,slow=3.5,SNR=4.9						
FFC	Flin Flon	81.07	32	eP	P	04 52 46.6	+0.2
	2.2nm,0.8s						
AKASG	Malin Array Be	83.24	324	P	P	04 52 57.4	-0.4
	0.8nm,0.5s,baz=49,slow=4.8,SNR=5.2						
PDAR	Pinedale Array	83.35	45	P	P	04 52 59.2	+0.3
	0.5nm,0.7s,baz=263,slow=2.5,SNR=4.5						
HFS	Hagfors	83.81	337	P	P	04 53 06.8	+6.1
	1.1nm,0.5s,baz=85,slow=9.1,SNR=5.4						
NOA	NORSAR Array B	83.97	339	P	P	04 53 02.4	+0.9
	1.4nm,0.9s,baz=39,slow=16,SNR=2.8						
RAYN	Ar Rayn	86.17	294	eP	P	04 53 12.9	-0.4
	5.4nm,0.8s						
PHWY	Pilot Hill	86.71	45	eP	P	04 53 14.4	-1.6
	6.5nm,0.6s						
BRTR	Keskin Array B	86.80	313	P	P	04 53 17.7	+1.5
	0.8nm,0.7s,baz=98,slow=5.1,SNR=4.6						
TXAR	Lajitas Array	94.63	54	P	P	04 53 53.8	+0.8
	0.7nm,0.7s,baz=293,slow=1.2,SNR=12						
TORD	Torodi Ar. Bea	125.39	312	PKP	PKPdf	04 59 32.8	-0.5
	0.4nm,0.9s,baz=242,slow=2.9,SNR=2.1						
SDV	Santo Domingo	131.24	47	ePKPdf	PKPdf	04 59 45.2	+0.5
LPAZ	La Paz	148.79	76	PKPbc	PKPbc	05 00 21.0	+0.5
	2.5nm,0.9s,baz=275,slow=2.0,SNR=8.2						
PLCA	Paso Flores	148.90	125	PKPbc	PKPbc	05 00 20.0	+0.5
	1.1nm,0.5s,baz=270,slow=4.2,SNR=8.4						
LCO	Las Campanas	149.85	102	ePKPbc	PKPbc	05 00 21.4	-1.0

*ISCJB **08** 04:44:42.7±0.8, 8°.37N±0°.05×73°.57W±0°.05, h105km±12km, Error ellipse: s-maj=10.7km s-min=5.8km az=136.5*
*RSNC **08** 04:44:43.9±0.9, 8°.30N×73°.60W, h105km±12km, ML2.5*
*FUNV **08** 04:44:43.7, 8°.38N×73°.57W, h11km, MW2.6*
ISC 08 04:44:42.9±1.6, **8°.34N**±0°.06×**73°.59W**±0°.05, **h105**km±17km, **n17, σ1s.00**/28, **1D, Northern Colombia**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
GUEC	Guerrero, Nort	0.83	128	eP	Pn	04 45 02.5	+0.2
GRMC	Gramalote, San	0.99	129	i P	Pn	04 45 03.5	-0.3
GRMC				i		04 45 04.1	
	comp=Z,126nm,0.3s						
GRMC				eS	Sn	04 45 18.7	-0.8
BRRC	Barranca, Sant	1.23	186	eP	Pn	04 45 06.3	0.0
BRRC				eS	Sn	04 45 23.6	-0.4
BRRC				i		04 45 26.7	
	comp=Z,98nm,0.3s						
GIRC	Giron, Santand	1.31	163	eP	Pn	04 45 07.6	+0.2
PAMC	Pamplona, Colo	1.33	138	eP	Pn	04 45 08.9	+1.0
PAMC				eS	Sn	04 45 27.3	+0.6
PAMC				i		04 45 29.2	
	comp=Z,19nm,0.2s						
CAPV	Capacho	1.35	110	⇓iP	Pn	04 45 08.8	+0.9
CAPV				eS	Sn	04 45 26.9	+0.2
BTLC	Betulia, Santa	1.45	167	i P	Pn	04 45 09.3	+0.2
BARC	Barichara	1.78	167	eP	Pn	04 45 13.5	+0.3
BARC				eS	Sn	04 45 35.3	-0.9
BARC				i		04 45 37.5	
	comp=Z,103nm,0.1s						
MOTC	Monteria, Cord	2.10	282	eP	Pn	04 45 17.4	+0.4
MOTC				i		04 45 17.6	
	comp=Z,15nm,0.2s						
VIGV	El Vigia	2.25	77	eP	Pn	04 45 20.2	+1.2
VIGV				eS	Sn	04 45 46.7	0.0
VIRV	Villa del Rosa	2.44	28	eP	Pn	04 45 21.8	+0.3
VIRV				eS	Sn	04 45 51.4	+0.3
SOCV	Socops	2.70	91	eP	Pn	04 45 25.9	+1.0
HELC	Santa Helena	2.88	222	eP	Pn	04 45 28.4	+0.9
HELC				i		04 46 12.1	
	comp=Z,16nm,0.4s						
SDV	Santo Domingo	2.97	79	eP	Pn	04 45 29.8	+1.2
SDV				eS	Sn	04 46 03.6	-0.1
SDV				i		04 46 04.4	
	comp=Z,16nm,0.2s						
CURV	Curarigua	3.95	65	eP	Pn	04 45 42.0	+0.5
CURV				eS	Sn	04 46 25.6	-1.4
MONV	Montecano	5.06	44	eP	Pn	04 45 56.9	+0.5
MONV				eS	Sn	04 46 52.4	-1.4
BAUV	El Baul	5.52	83	eP	Pn	04 46 03.6	+0.9
BAUV				eS	Sn	04 47 01.8	-3.1

SKHL 08 04:53:59.9±0.7, **44°.83N**×**150°.21E, h45**km±5km, **mb4.3**/3, **East of Kuril Islands**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
KUR	Kuril'sk	1.71	284	eP	Pn	04 54 26.3	-0.9
KUR				AMB	AMB	04 54 30.4	
	50nm,0.3s						
KUR				eS	Sn	04 54 46.6	-1.2
KUR				A	A	04 54 49.8	
	330nm,0.4s						
KUR				A	A	04 54 49.8	
	150nm,0.4s						
SHO	Shikotan	2.61	250	eP	Pn	04 54 39.6	+0.1
SHO				AMB	AMB	04 54 40.6	
	70nm,0.8s						
SHO				eS	Sn	04 55 09.5	-0.4
SHO				A	A	04 55 14.2	
	160nm,0.3s						
SHO				A	A	04 55 14.2	
	70nm,0.3s						
YUK	Yuzh-Kuril'sk	3.21	257	i P	Pn	04 54 48.8	+1.0
YUK				AMB	AMB	04 54 50.5	
	60nm,0.3s						
YUK				i S	Sn	04 55 24.9	0.0
YUK				A	A	04 55 29.7	
	120nm,0.4s						
YUK				A	A	04 55 29.7	
	100nm,0.4s						
YSS	Yuzh-Sakhalins	5.62	295	eP	Pn	04 55 22.0	+1.2
MYR	Moyori	5.64	246	eP	Pn	04 55 20.4	-0.7
MYR				eS	Sn	04 56 21.5	-3.0
TYV	Tymovskoe	7.89	323	eP	Pn	04 55 53.6	+1.7

*ISCJB **08** 05:02:51.9±0.3, 24°.28N±0°.01×121°.82E±0°.02, h6km±2km, mb3.3/4, Error ellipse: s-maj=2.9km s-min=2.1km az=40.3*
*TAP **08** 05:02:51.8, 24°.29N×121°.77E, h19km, ML3.9, B*
*JMA **08** 05:02:52.0±0.1, 24°.23N×121°.68E, h23km±1km, M3.3*
*IDC **08** 05:03:05.3±6.8, 24°.19N×122°.02E, h140km±66km, mb3.0/4, mb1 3.3/5, mb1mx3.0/41, mbtmp3.5/5, Error ellipse: s-maj=46.2km s-min=21.4km az=71.0*
ISC 08 05:02:52.3±0.8, **24°.27N**±0°.02×**121°.78E**±0°.02, **h16**km±5km, **n71, σ0s.85**/109, **mb3.4**/4, **9C-6D, Taiwan**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
EHP	Heping Village	0.05	318	P	Pg	05 02 55.6	+0.2
	baz=318						
EHP				i S	Sg	05 02 58.0	+0.6
	baz=318						
ENA	Nanau	0.16	347	⇑iP	Pg	05 02 55.9	-0.6
	baz=353						
TWD	Chiawan	0.25	222	⇓iP	Pg	05 02 57.8	-0.1
	baz=221						
TWD				i S	Sb	05 03 01.9	-0.8
	baz=221						
HWA	Hwalien	0.33	209	eP	Pg	05 02 59.2	-0.1
	baz=213						
TWC	Suao	0.34	11	⇑iP	Pg	05 02 59.1	-0.4
	baz=10.0						
TWC				i S	Sg	05 03 03.7	-0.7
	baz=10.0						
NNS	Nan Shan	0.41	295	⇑iP	Pg	05 03 00.3	-0.4
	baz=292						
NNS				i S	Sg	05 03 05.6	-0.8
	baz=292						
ENTT	Nioudou	0.42	332	⇑iP	Pg	05 03 00.5	-0.3
	baz=332						
ENTT				S	Sg	05 03 05.9	-0.7
	baz=332						
TWE	Neicheng	0.46	347	⇑iP	Pg	05 03 01.1	-0.5
	baz=348						
TWE				S	Sg	05 03 07.4	-0.5
	baz=348						
ESF	Shoufeng Towns	0.47	212	eP	Pb	05 03 02.0	-0.3
	baz=219						
WHF	Hehuan Shan	0.49	255	⇑iP	Pg	05 03 01.8	-0.4
	baz=261						
WHF				S	Sg	05 03 08.2	-0.7
	baz=261						
ILA	Ilan	0.49	357	eP	Pg	05 03 01.8	-0.4
	baz=354						
ILA				eS	Sb	05 03 09.2	-0.4
	baz=354						
TWT	Tachien	0.55	268	⇑iP	Pb	05 03 03.5	-0.2
	baz=266						
TWT				S	Sg	05 03 10.4	-0.4
	baz=266						
ESL	Shilin	0.55	215	eP	Pg	05 03 02.9	-0.4
	baz=218						
NSK	Sanguang	0.56	316	⇑iP	Pg	05 03 02.8	-0.6
	baz=315						
NSK				S	Sg	05 03 09.8	-1.1
	baz=315						
TEGC	Jichi Village	0.60	201	eP	Pn	05 03 05.8	-0.4
	baz=191						
TWA	Mucha	0.73	346	eP	Pb	05 03 06.8	+0.1
	baz=346						
TWA				eS	Sg	05 03 15.4	-0.9
	baz=346						
TWB1	Santiao Chiao	0.76	14	P	Pg	05 03 06.5	-0.7
	baz=15						
TWB1				i S	Sg	05 03 16.3	-0.9
	baz=15						
WDT	Danda	0.78	229	⇓iP	Pg	05 03 07.2	-0.5
	baz=228						
WDT				eS	Sb	05 03 19.4	+1.2
	baz=228						
NSTT	Nanjuang	0.80	297	P	Pb	05 03 07.7	-0.1
	baz=296						
NSTT				S	Sb	05 03 18.1	-0.2
	baz=296						
NWF	Wu-fen Shan	0.80	0	P	Pg	05 03 07.5	-0.5
	baz=359						
TAP1	Taipei	0.80	343	eP	Pb	05 03 07.9	0.0
	baz=341						
TAP1				eS	Sg	05 03 17.4	-1.1

	baz=341						
EHY	Hungye	0.87	209	eP	Pg	05 03 08.3	-1.0
	baz=218						
NCU	National Centr	0.88	322	eP	Pb	05 03 09.5	+0.2
	baz=318						
NCU				eS	Sn	05 03 22.6	0.0
	baz=318						
TWS1	Kuangyinshan	0.89	338	eP	Pb	05 03 09.7	+0.3
	baz=337						
TWS1				eS	Sn	05 03 22.5	-0.3
	baz=337						
SMLT	Sun Moon Lake	0.89	245	⇓P	Pg	05 03 09.1	-0.6
	baz=237						
SMLT				eS	Sb	05 03 21.2	0.0
	baz=237						
HSN	Hsinchu	0.91	306	eP	Pn	05 03 10.3	-0.1
	baz=300						
HSN				eS	Sn	05 03 22.9	-0.3
	baz=300						
TYC	Yuchr	0.92	247	⇓P	Pg	05 03 09.5	-0.7
	baz=245						
TWQ1	Liyutan	0.92	275	eP	Pn	05 03 10.6	0.0
	baz=274						
TWQ1				eS	Sb	05 03 22.4	+0.4
	baz=274						
NSY	Sanyi	0.94	279	eP	Pn	05 03 11.3	+0.4
	baz=278						
NSY				eS	Sn	05 03 24.0	-0.1
	baz=278						
TWY	Chenhua	1.01	351	eP	Pn	05 03 12.0	+0.1
	baz=350						
TCU	Taichung	1.01	263	⇓P	Pn	05 03 12.9	+1.0
	baz=261						
TCU				S	Sn	05 03 26.4	+0.6
	baz=261						
TWF1	Yuli	1.01	206	eP	Pb	05 03 09.7	-1.9
	baz=215						
WNT	Mingjian	1.07	249	eP	Pn	05 03 13.3	+0.6
	baz=245						
WNT				eS	Sn	05 03 29.3	+2.0
	baz=245						
JYNG	Yonagunijimaku	1.08	80	P	Pb	05 03 12.9	+0.3
JYNG				S	Sn	05 03 28.8	+1.4
YUS	Yu-Shan	1.09	224	⇓iP	Pb	05 03 12.8	-0.3
	baz=224						
YOJ	Yonaguni jima	1.14	80	P	Pb	05 03 13.8	+0.2
YOJ				S	Sn	05 03 30.3	+1.4
YOJ	Yonaguni jima	1.14	80	P	Pb	05 03 13.8	+0.2
	baz=71						
YOJ				eS	Sn	05 03 30.8	+1.9
	baz=71						
ALS	Alishan	1.17	230	P	Pb	05 03 14.2	-0.2
	baz=217						
CHN5	Tsauling	1.21	237	P	Pg	05 03 15.5	-0.3
	baz=220						
CHN5				eS	Sn	05 03 32.6	+1.9
	baz=220						
CHKT	Chengkung	1.23	198	eP	Pn	05 03 13.4	-1.4
	baz=182						
WGK	Gukeng	1.26	243	eP	Pg	05 03 15.9	-0.7
	baz=241						
ELDTW	Lidau	1.28	213	eP	Pn	05 03 14.7	-1.0
	baz=199						
PCYT	Pengchaiyu	1.38	11	eP	Pn	05 03 17.2	+0.2
	baz=9.0						
CHN2	Minshiung	1.40	239	eP	Pb	05 03 18.4	+0.3
	baz=237						
CHN4	Tsaushan	1.42	230	⇑P	Pg	05 03 18.9	-0.8
	baz=218						
CHN4				eS	Sg	05 03 40.4	+2.2
	baz=218						
STYT	Tauyuan	1.45	221	eP	Pn	05 03 17.5	-0.4
	baz=220						
CHY	Chiayi	1.46	238	eP	Pg	05 03 19.8	-0.6
	baz=238						
CHY				eS	Sg	05 03 39.9	+0.4
	baz=238						
WTP	Ta-pu	1.48	227	eP	Pb	05 03 19.0	-0.5
	baz=226						
WTP				eS	Sg	05 03 40.6	+0.6
	baz=226						
TWK	Hsinying	1.55	230	eP	Pb	05 03 20.4	-0.3
	baz=229						
TWK				eS	Sg	05 03 41.6	-0.7
	baz=229						
WSF	Szhu	1.56	246	eP	Pb	05 03 20.2	-0.6
	baz=254						
WSF				eS	Sg	05 03 42.6	0.0
	baz=254						
CHN1	Nanshi	1.58	227	eP	Pb	05 03 21.1	0.0
	baz=227						
CHN1				eS	Sg	05 03 44.0	+0.8
	baz=227						
TWG	Pinlang	1.58	204	eP	Pn	05 03 19.7	-0.1
	baz=190						
SGST	Jiashian	1.61	223	eP	Pb	05 03 21.3	-0.5
	baz=217						
SGST				eS	Sg	05 03 44.2	-0.2
	baz=217						
IRIF	Iriomote-Funau	1.78	88	P	Pn	05 03 22.6	+0.2
IRIF				S	Sn	05 03 45.3	+0.6
SSD	Sandimen	1.85	215	eP	Pn	05 03 23.9	+0.5
	baz=225						
TWM1	Shoushan	1.90	221	eP	Pn	05 03 24.9	+0.8
	baz=221						
JKRS	Kuro-shima	2.04	90	P	Pn	05 03 26.7	+0.8
JKRS				S	Sb	05 03 53.3	-0.7
EAST	Anshuo	2.06	205	eP	Pb	05 03 28.1	-1.4
	baz=194						
PNG	Penghu	2.15	251	eP	Pn	05 03 27.8	+0.3
	baz=249						
JIJ	Ishigaki jima	2.16	87	P	Pn	05 03 27.9	+0.3
JIJ				eS	Sn	05 03 54.8	+0.7
SCZT	Fangliau	2.17	210	eP	Pn	05 03 28.7	+0.9
	baz=194						
WDGT	Dungji	2.19	243	eP	Pn	05 03 29.1	+1.1
	baz=242						
LAY	Lan-yu	2.23	185	eP	Pn	05 03 26.8	-1.9
	baz=186						
TWP	Hsiaoliuchiu	2.32	214	eP	Pb	05 03 32.9	-0.8
	baz=232						
JISG	Ishigakijimahi	2.33	82	P	Pn	05 03 30.4	+0.4
JISG				S	Sn	05 03 59.2	+0.9
TWK1	Hengchun	2.48	201	eP	Pn	05 03 34.0	+1.8
	baz=193						
KSRS	Korea Array	14.15	20	P	P	05 06 20.0	+0.4
	0.3nm,0.3s,baz=207,slow=11,SNR=5.4						
SONM	Songino Array	26.50	336	P	P	05 08 30.1	+1.0
	0.3nm,0.5s,baz=143,slow=8.4,SNR=3.0						
MKAR	Makanchi Array	38.66	316	P	P	05 10 17.6	+2.5
	0.3nm,0.5s,baz=106,slow=9.9,SNR=3.9						
WRA	Warramunga Arr	45.62	163	P	P	05 11 10.5	-1.6
	0.5nm,0.9s,baz=346,slow=8.9,SNR=3.7						
YKA	Yellowknife Ar	82.68	23	P	P	05 15 13.0	-1.9
	0.2nm,0.5s,baz=310,slow=5.2,SNR=11						

*NIED **08** 05:09:00, 37°.90N×143°.50E, h5km, Mw4.2 Best double couple: $M_0$2.36000×10^15 NP1:φs57.00000°, δ24.00000°, λ-78.00000°. NP2:φs224.00000°, δ67.00000°, λ-95.00000°.*

*IDC **08** 05:09:01.2±0.7, 37°.83N×143°.74E, h0km, mb3.9/14, mb1 4.2/18, mb1mx4.0/42, mbtmp4.0/18, ML3.2/3, MS3.2/7, Ms1 3.2/7, ms1mx2.8/46, Error ellipse: s-maj=18.5km s-min=15.1km az=120.0*

*JMA **08** 05:09:03.8±0.3, 37°.94N×143°.48E, h40km, M4.0*

*NEIC **08** 05:09:06.3±0.4, 37°.82N×143°.63E, h35km, mb4.7/6, Error ellipse: s-maj=9.9km s-min=8.0km az=134.0*

ISC 08 05:09:02.5±4.2, 37°.93N±0°.06×143°.51E±0°.06, h8km±27km, n47, σ1s38/46, mb4.2/20, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	Ouri	1.78	288	P	Pn	05 09 32.8	-0.8
JIO				S	Sn	05 09 53.5	-2.9
JMK	Ichinoseki	2.07	300	P	Pn	05 09 36.8	-0.7
JMK				S	Sn	05 10 01.8	-1.7
JMM	Marumori	2.15	269	P	Pn	05 09 38.1	-0.5
JMM				S	Sn	05 10 03.1	-2.4
JFK	Kawauchi	2.17	256	P	Pn	05 09 38.1	-0.8
JOU	Okura	2.29	282	P	Pn	05 09 40.2	-0.3
JOM	Ohasama	2.33	312	P	Pn	05 09 40.2	-0.8
JOM				S	Sn	05 10 07.7	-2.1
JFT	Otama	2.55	262	P	Pn	05 09 44.6	+0.5
JYK	Kaneyama	2.67	293	P	Pn	05 09 45.8	+0.1
JYK				eS	Sn	05 10 17.3	-0.9
JRG	Rokugo	2.69	304	P	Pn	05 09 46.1	+0.1
JRY	Ryogami san	4.15	244	P	Pn	05 10 06.5	+0.3
JRY				S	Sn	05 10 52.8	-2.2
JNBK	Urakawa-nobuka	4.39	353	P	Pn	05 10 09.1	-0.3
JNBK				S	Sn	05 10 59.6	-1.0
MJAR	Matsushiro Arr	4.45	254	Pn	Pn	05 10 11.6	+1.3
	2.5nm,0.3s,baz=64,slow=9.8,SNR=18						
MAJO	Matsushiro	4.45	254	ePn	Pn	05 10 11.8	+1.5
MAT	Matsushiro	4.45	254	P	Pn	05 10 12.2	+1.9
MAT				eS	Sn	05 11 03.3	+1.0
USRK	Ussuriysk Ar.	10.72	309	Pn	Pn	05 11 38.9	+2.7
	0.5nm,0.3s,baz=78,slow=13,SNR=5.7						
USRK				LR	LR	05 15 45.3	
	comp=Z,111nm,20.5s,baz=155,slow=37						
CBIJ	Chichi jima	10.86	186	Pn	Pn	05 11 36.0	-2.2
JCJ	Chichijima	10.86	186	Pn	Pn	05 11 36.0	-2.2
JCJ				LR	LR	05 14 56.3	
	comp=Z,201nm,21.8s,baz=240,slow=33						
JNU	Nakatsue	11.35	249	LR	LR	05 16 32.4	
	comp=Z,98nm,19.2s,baz=117,slow=39						
KSRS	Korea Array	12.36	273	Pn	Pn	05 12 02.1	+3.4
	0.3nm,0.3s,baz=91,slow=13,SNR=5.4						
KSRS				LR	LR	05 16 26.4	
	comp=Z,81nm,19.2s,baz=60,slow=35						
KSAR	Wonju Array Be	12.39	273	Pn	Pn	05 12 02.1	+3.0
KLR	Kul'dur	14.13	327	Pn	Pn	05 12 20.9	-2.0
	0.1nm,0.3s,baz=129,slow=12,SNR=7.7						
KLR				LR	LR	05 17 35.9	
	comp=Z,52nm,20.4s,baz=302,slow=36						
SEY	Seymchan	25.62	9	P	P	05 14 32.9	+0.8
	1.5nm,0.8s,baz=208,slow=6.2,SNR=6.7						
H11N2	WAKE ISLAND Hy	27.23	125	T	T	05 43 08.6	
	baz=317,slow=75,SNR=18						
H11N1	WAKE ISLAND Hy	27.24	125	T	T	05 43 13.5	
	baz=317,slow=75,SNR=13						
H11N3	WAKE ISLAND Hy	27.25	125	T	T	05 43 09.2	
	baz=317,slow=75,SNR=16						
H11S2	WAKE ISLAND Hy	28.02	127	T	T	05 44 10.6	
	SNR=7.3						
SONM	Songino Array	28.70	302	P	P	05 15 01.6	+1.6
	2.1nm,0.7s,baz=92,slow=8.6,SNR=9.9						
ENH	Enshi	29.07	265	eP	P	05 15 05.1	+1.7
	8.3nm,0.6s						
ZALV	Zalesovo Beam	42.56	312	P	P	05 17 01.6	+3.2
	1.8nm,0.5s,baz=86,slow=8.0,SNR=3.1						
NRIK	Noril'sk	43.17	335	LR	LR	05 35 49.9	
	comp=Z,68nm,18.2s,baz=114,slow=37						
MKAR	Makanchi Array	45.06	302	P	P	05 17 19.7	+1.0
	1.6nm,0.7s,baz=80,slow=10,SNR=13						
MKAR				LR	LR	05 36 20.8	
	comp=Z,23nm,21.1s,baz=38,slow=36						
KURK	Kurchatov	46.70	308	eP	P	05 17 31.2	-0.3
	14nm,0.6s						
ILAR	Eielson Array	47.84	33	P	P	05 17 40.2	-0.1
	1.7nm,0.7s,baz=263,slow=6.7,SNR=19						
TKM2	Tokmak 2	50.68	298	eP	P	05 18 01.7	-0.8
	11nm,1.3s						
COEN	Coen	51.61	180	eP	P	05 18 10.5	+1.0
	14nm,1.1s						
INK	Inuvik	52.83	28	P	P	05 18 17.6	-0.3
	0.9nm,0.9s,baz=303,slow=5.0,SNR=3.7						
WRAB	Tennant Creek	58.19	190	eP	P	05 18 56.3	-0.8
	8.3nm,0.9s						
WRA	Warramunga Arr	58.20	190	P	P	05 18 56.6	-0.5
	4.1nm,0.7s,baz=8.7,slow=7.3,SNR=24						
ABKAR	Akbulak array	58.64	310	eP	P	05 19 00.9	+1.0
	2.0nm,0.7s						
RES	Resolute Bay	61.32	15	P	P	05 19 17.7	-0.2
	0.6nm,0.8s,baz=331,slow=12,SNR=4.1						
ASAR	Alice Springs	61.93	190	P	P	05 19 22.4	-0.3
	1.5nm,0.8s,baz=9.7,slow=6.9,SNR=16						
YKA	Yellowknife Ar	62.19	31	P	P	05 19 23.7	-0.3
	0.3nm,0.7s,baz=303,slow=6.8,SNR=7.4						
FINES	FINESS Array B	68.80	333	P	P	05 20 07.0	+0.2
	3.7nm,0.9s,baz=64,slow=8.7,SNR=4.2						
NVAR	Mina Array Bea	73.11	54	P	P	05 20 34.0	+0.4
	1.0nm,0.8s,baz=274,slow=6.7,SNR=6.4						
PDAR	Pinedale Array	75.85	47	P	P	05 20 49.3	-0.2
	0.4nm,0.6s,baz=254,slow=1.5,SNR=4.9						
TXAR	Lajitas Array	88.25	54	P	P	05 21 54.5	-0.2
	0.3nm,0.6s,baz=308,slow=4.6,SNR=4.5						
H06S1	SOCORRO T	90.30	66	T	T	07 00 49.8	
	SNR=8.9						

JMA 08 05:11:00.0±0.2, 38°.26N×142°.13E, h32km±2km, M3.9, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	Ouri	0.64	288	P	Pb	05 11 12.5	-0.4
JIO				S	Sb	05 11 20.7	-0.9
JMK	Ichinoseki	0.99	314	P	Pn	05 11 17.5	-0.2
JMM	Marumori	1.13	250	P	Pn	05 11 19.6	+0.1
JMM				S	Sn	05 11 33.8	-0.1
JOU	Okura	1.16	276	P	Pb	05 11 20.8	-0.7
JOU				S	Sn	05 11 35.3	+0.6
JFK	Kawauchi	1.34	228	P	Pn	05 11 22.4	-0.1
JFK				S	Sn	05 11 38.5	-0.6
JOM	Ohasama	1.38	332	P	Pn	05 11 23.3	+0.3
JOM				S	Sn	05 11 40.2	+0.1
JFT	Otama	1.60	243	P	Pn	05 11 27.4	+1.3

*IDC **08** 05:26:08.6±0.9, 16°.68S×178°.42W, h0km, mb4.2/9, mb1 4.4/9, mb1mx4.1/35, mbtmp4.2/9, Error ellipse: s-maj=43.8km s-min=17.7km az=140.0*

*ISCJB **08** 05:26:11.9±0.6, 16°.8S±0°.1×178°.4W±0°.1, h33km, mb4.3/14, Error ellipse: s-maj=23.7km s-min=11.8km az=143.8*

*NEIC **08** 05:26:13.8±0.5, 16°.74S×178°.44W, h35km, mb4.6/5, Error ellipse: s-maj=19.3km s-min=9.5km az=143.0*

ISC 08 05:26:13.9±0.8, 16°.7S±0°.2×178°.4W±0°.2, h35km, n17, σ0s81/16, mb4.3/14, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MSVF	Nonsavu	3.50	253	Pn	Pn	05 27 05.5	-0.4
MQZ	McQueen's Vall	27.94	194	eP	P	05 31 59.6	-1.3
RPZ	Rata Peaks	28.35	196	P	P	05 32 04.3	-0.2
	21nm,1.0s,baz=161,slow=5.7,SNR=3.6						
RPZ	Rata Peaks	28.35	196	eP	P	05 32 04.9	+0.3
	32nm,0.9s						
EIDS	Eidsvold	29.66	248	eP	P	05 32 17.2	+0.7
	18nm,1.2s						
COEN	Coen	37.08	269	eP	P	05 33 26.3	+5.1
	7.4nm,0.7s						
STKA	Stephens Creek	39.19	240	P	P	05 33 39.4	+0.7
	4.5nm,0.3s,baz=90,slow=6.2,SNR=17						
WRAB	Tennant Creek	44.82	258	eP	P	05 34 24.7	-0.1
	2.5nm,0.5s						
WRA	Warramunga Arr	44.83	258	P	P	05 34 24.7	-0.2
	2.8nm,0.5s,baz=92,slow=6.8,SNR=41						
ASAR	Alice Springs	45.09	253	P	P	05 34 27.0	0.0
	33nm,0.5s,baz=89,slow=8.2,SNR=492						
FITZ	Fitzroy Crossi	53.20	260	eP	P	05 35 28.2	-0.9
	1.7nm,0.8s						
NVAR	Mina Array Bea	78.59	44	P	P	05 38 13.9	+1.6
	0.9nm,0.7s,baz=230,slow=8.3,SNR=5.9						
SEY	Seymchan	82.62	347	P	P	05 38 33.6	+0.6
	1.7nm,0.6s,baz=146,slow=6.8,SNR=7.9						
ILAR	Eielson Array	84.74	13	P	P	05 38 43.5	-0.5
	0.4nm,0.4s,baz=222,slow=5.3,SNR=12						
TXAR	Lajitas Array	85.39	58	P	P	05 38 48.4	+0.2
	0.6nm,0.6s,baz=218,slow=6.3,SNR=7.6						
PDAR	Pinedale Array	86.51	43	P	P	05 38 53.1	-0.4
	0.4nm,0.5s,baz=222,slow=3.2,SNR=5.8						
YKA	Yellowknife Ar	93.27	25	P	P	05 39 23.2	-1.3
	0.1nm,0.4s,baz=234,slow=4.7,SNR=3.7						

JMA 08 05:29:19.2±0.3, 37°.04N×142°.56E, h21km, M3.5, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	Kawauchi	1.39	284	P	Pn	05 29 43.4	+0.1
JFK				eS	Sn	05 30 01.3	+0.3
ONAJ	Iwakimizuishiy	1.41	273	P	Pb	05 29 44.3	-0.5
ONAJ				S	Sb	05 30 02.1	-0.3
JMM	Marumori	1.63	301	P	Pn	05 29 47.2	+0.6
JMM				eS	Sn	05 30 07.5	+0.5
JIO	Ouri	1.71	326	P	Pn	05 29 48.2	+0.5
JFT	Otama	1.84	286	P	Pb	05 29 51.5	-0.6
JFT				S	Sb	05 30 14.5	-0.1
JAG	Ashikaga	2.57	257	P	Pn	05 30 00.7	+1.1
MAT	Matsushiro	3.53	263	P	Pn	05 30 15.0	+2.2
MAT				eS	Sn	05 30 58.1	+4.2

IDC 08 05:30:30.6±2.2, 3°.33S×128°.99E, h0km, mb3.6/3, mb1 3.8/4, mb1mx3.5/49, mbtmp3.6/4, ML3.7/1, Error ellipse: s-maj=187.6km s-min=25.0km az=69.0, Seram

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	Warramunga Arr	17.31	163	P	Pn	05 34 33.8	-0.2
	0.3nm,0.3s,baz=345,slow=12,SNR=4.6						
ASAR	Alice Springs	20.76	167	P	P	05 35 13.3	+0.1
	4.3nm,0.6s,baz=351,slow=11,SNR=22						
MKAR	Makanchi Array	64.63	326	P	P	05 41 10.8	+0.6
	0.2nm,0.7s,baz=129,slow=5.9,SNR=2.3						
KURBB	Kurchatov Arra	68.88	328	P	P	05 41 36.5	-0.7
	0.5nm,0.7s,baz=131,slow=5.5,SNR=5.4						

JMA 08 05:38:55.6±0.2, 37°.73N×142°.10E, h25km±4km, M3.5, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	Ouri	0.94	321	P	Pn	05 39 12.8	-0.3
JIO				S	Sb	05 39 24.7	-0.4
JFK	Kawauchi	1.04	250	P	Pn	05 39 14.2	-0.4
JMM	Marumori	1.04	278	P	Pn	05 39 14.4	-0.2
JMM				S	Sb	05 39 27.9	-0.4
JOU	Okura	1.30	300	S	Sb	05 39 35.3	-0.3
JMK	Ichinoseki	1.40	331	P	Pn	05 39 19.8	+0.2
JMK				S	Sn	05 39 36.6	-0.7
JYK	Kaneyama	1.81	311	P	Pn	05 39 26.0	+0.8
JOM	Ohasama	1.85	340	P	Pn	05 39 26.7	+0.9

*ISCJB **08** 05:39:36.2±0.3, 21°.64N±0°.04×94°.58E±0°.05, h97km, mb4.2/38, Error ellipse: s-maj=7.8km s-min=3.9km az=43.8*

*NEIC **08** 05:39:38.5±0.8, 21°.65N×94°.68E, h104km±7km, mb4.5/9, Error ellipse: s-maj=9.7km s-min=5.5km az=58.0*

*IDC **08** 05:39:38.0±1.6, 21°.67N×94°.65E, h98km±13km, mb4.0/30, mb1 4.0/32, mb1mx3.9/76, mbtmp4.3/32, MS2.8/2, Ms1 2.8/2, ms1mx2.6/37, Error ellipse: s-maj=15.8km s-min=9.2km az=53.0*

*BJI **08** 05:39:39.4, 21°.74N×94°.64E, h115km, mb4.4/11, mB4.6/7*

*BKK **08** 05:39:47.4±6.3, 21°N±31°×9°6E±4°4, h0km, M4.2/8, mb4.4/4, mB4.3/1, MLv4.1/8, Mw(mB)3.5/1*

ISC 08 05:39:37.8±0.4, 21°.69N±0°.06×94°.55E±0°.06, h97km, n77, σ1s14/91, mb4.2/38, Myanmar

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CMAI	Chiengmai2	4.55	112	P	Pn	05 40 43.6	-1.0
SHL	Shillong	4.57	328	eP	Pn	05 40 45.4	+0.6
SHL				eS	Sn	05 41 33.4	-3.4
SHL				eS	Sn	05 41 33.6	-3.2
SHL				AML	AML	05 41 39.5	
	comp=E,760nm,0.3s						
SHL				AML	AML	05 41 39.9	
	comp=N,700nm,0.1s						
CHTO	Chiang Mai	5.02	124	P	Pn	05 40 50.5	-0.3
CHTO	Chiang Mai	5.02	124	ePn	Pn	05 40 49.1	-1.6
CMMT	Chiang Mai	5.03	124	P	Pn	05 40 50.1	-0.7
CMAR	Chiang Mai Arr	5.23	127	P	Pn	05 40 52.4	-1.2
	comp=N,3.3nm,0.3s,baz=305,slow=14,SNR=96						
CMAR				S	Sn	05 41 51.0	-1.8
	comp=N,1.9nm,0.3s,baz=282,slow=16,SNR=4.5						
CMAR				LR	LR	05 43 06.8	
	comp=N,49nm,22.0s,baz=295,slow=41						
CRAI	Chiangrai	5.63	104	P	Pn	05 40 58.6	-0.5
LAMP	Lampang	5.72	123	P	Pn	05 40 59.6	-0.7
UMPA	Umpang Tak	6.81	142	P	Pn	05 41 16.1	+0.9
	comp=N,9.4nm,0.6s						
UTTA	Uttaradit	6.88	124	P	Pn	05 41 15.5	-0.6
	comp=N,11nm,0.4s,comp=N,264nmcomp=N,0.1nm						
PHIT	Phitsanulok	7.12	128	P	Pn	05 41 19.0	-0.3
	comp=N,36nm,0.8s,comp=N,0.2nm						
PBKT	Sadao Pong	7.92	129	P	Pn	05 41 30.0	-0.2
BOK	Bokaro	8.27	286	eP	Pn	05 41 33.5	-1.4
BOK				eS	Sn	05 42 59.1	-7.5
BOK				AML	AML	05 43 08.1	
	comp=E,191nm,0.1s						
BOK				AML	AML	05 43 08.2	
	comp=N,190nm,0.0s						
LSA	Lhasa	8.54	340	ePn	Pn	05 41 40.3	+1.2
	comp=N,36nm,0.6s						
DGPR	DIGLIPUR	8.61	191	eP	Pn	05 41 37.4	-2.2
DGPR				eS	Sn	05 43 04.7	-10
VIS	Vishakhapatnam	11.28	251	eP	Pn	05 42 14.4	-1.5
VIS				IAmb	IAmb	05 42 15.9	
	comp=Z,5.8nm,0.3s						
VIS				ex	x	05 44 06.2	
ENH	Enshi	15.91	54	eP	Pn	05 43 16.1	0.0
	comp=Z,39nm,0.9s						
BHPL	Bhopal	15.91	279	eP	Pn	05 43 15.7	-0.4
BHPL				ex	x	05 45 57.9	
KCSI	Kotacane, Aceh	18.33	170	P	Pn	05 43 46.9	+1.2
	comp=Z,15nm,1.3s						
PSI	Prapat	19.25	167	P	Pn	05 43 57.2	+0.4
	comp=Z,0.9nm,0.3s,baz=358,slow=10,SNR=5.3						
DHRM	DHARAMSHALA	19.34	307	eP	Pn	05 43 58.2	+0.4
DHRM				IAmb	IAmb	05 44 02.8	
	comp=Z,10nm,0.3s						
DHRM				ex	x	05 47 11.3	
KSH	Kashi	23.82	322	P	P	05 44 44.1	+2.1
KSH				epP	pP	05 45 10.1	+7.4
KSH				ePP	PnPn	05 45 24.1	+8.2
KSH				esP	sP	05 45 25.4	+11
KSH				S	S	05 48 47.2	-3.6
KSH				pmax	pmax		
	comp=Z,210nm,6.7s						
KSH				LR	LR		
	comp=Z,130nm,5.0s						
KSH				LR	LR		
	comp=Z,140nm,6.7s						
KSH				LR	LR		
	comp=Z,220nm,6.0s						
AAK	Ala-Archa	26.79	326	P	P	05 45 11.5	+2.7
	comp=Z,1.6nm,0.5s,baz=146,slow=4.7,SNR=5.8						
AAK	Ala-Archa	26.79	326	eP	P	05 45 11.2	+2.4
	comp=Z,2.5nm,0.7s						
MKAR	Makanchi Array	26.95	341	P	P	05 45 11.4	+1.4
	comp=Z,4.5nm,0.5s,baz=149,slow=9.7,SNR=48						
MKAR				PcP	PcP	05 48 30.1	+0.5
	comp=Z,1.3nm,0.5s,baz=156,slow=3.0,SNR=11						
MKAR				ScP	ScP	05 52 01.1	0.0
	comp=Z,0.8nm,0.6s,baz=151,slow=1.9,SNR=7.3						
MKAR				LR	LR	05 57 26.9	
	comp=Z,36nm,19.9s,baz=35,slow=40						
SONM	Songino Array	27.77	17	P	P	05 45 17.4	-0.1
	comp=Z,0.5nm,0.3s,baz=199,slow=9.5,SNR=6.8						
JOW	Kunigami	31.11	74	P	P	05 45 47.0	-0.2
	comp=Z,15nm,0.8s,baz=153,slow=17,SNR=7.1						
KURBB	Kurchatov Arra	31.50	340	P	P	05 45 51.1	+0.9
	comp=Z,2.6nm,0.5s,baz=149,slow=8.7,SNR=26						
KURBB				PcP	PcP	05 48 41.1	+0.1
	comp=Z,4.7nm,0.6s,baz=159,slow=2.3,SNR=32						
KURBB				ScP	ScP	05 52 15.5	+0.1
	comp=Z,0.9nm,0.6s,baz=150,slow=2.8,SNR=10						
KURK	Kurchatov	31.55	341	eP	P	05 45 52.0	+1.3
	comp=Z,5.5nm,0.6s						
KURK				PcP	PcP	05 48 41.1	0.0
KURK				ScP	ScP	05 52 15.5	-0.1
ZALV	Zalesovo Beam	33.05	349	P	P	05 46 04.9	+1.1
	comp=Z,8.1nm,0.4s,baz=170,slow=8.8,SNR=40						
BVAR	Borovoye Array	36.35	335	P	P	05 46 33.2	+0.9
	comp=Z,1.4nm,0.5s,baz=149,slow=10,SNR=9.0						
BVAR				PcP	PcP	05 48 55.4	+0.6
	comp=Z,2.8nm,0.4s,baz=164,slow=2.6,SNR=14						
BVAR				ScP	ScP	05 52 32.6	0.0
	comp=Z,0.4nm,0.4s,baz=150,slow=9.9,SNR=3.4						
BRVK	Borovoye	36.42	335	eP	P	05 46 34.1	+1.4
	comp=Z,2.9nm,0.8s						
USRK	Ussuriysk Ar.	38.15	45	P	P	05 46 48.9	+1.3
	comp=Z,1.2nm,0.5s,baz=254,slow=8.9,SNR=6.6						
ABKAR	Akbulak array	38.82	324	eP	P	05 46 54.8	+1.7
	comp=Z,7.2nm,0.4s						
AKTO	Aktyubinsk	40.50	324	P	P	05 47 08.2	+1.1
	comp=Z,7.3nm,0.4s,baz=120,slow=10,SNR=39						
AKTO				ScP	ScP	05 52 48.7	+0.2
	comp=Z,0.6nm,0.5s,baz=157,slow=1.5,SNR=4.3						
ARU	Arti	43.65	332	P	P	05 47 33.5	+0.9

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
	comp=Z,3.6nm,0.2s,baz=115,slow=10.0,SNR=4.0						
NRIK	**Noril'sk**	**47.84**	**357**	P	**P**	**05 48 05.9**	**+0.5**
	comp=Z,4.3nm,0.5s,baz=178,slow=7.5,SNR=4.1						
TIXI	**Tiksi**	**53.71**	**13**	P	**P**	**05 48 48.4**	**-0.9**
	comp=Z,10nm,0.3s,baz=194,slow=5.3,SNR=14						
BRTR	**Keskin Array B**	**54.37**	**304**	P	**P**	**05 48 55.7**	**+0.8**
	comp=Z,0.4nm,0.5s,baz=38,slow=5.4,SNR=2.9						
MA2	**Magadan**	**54.59**	**31**	P	**P**	**05 48 55.7**	**-0.1**
	comp=Z,2.8nm,0.4s,baz=283,slow=9.1,SNR=3.8						
SEY	**Seymchan**	**56.41**	**28**	P	**P**	**05 49 09.8**	**+0.9**
	comp=Z,1.1nm,0.4s,baz=260,slow=3.7,SNR=7.7						
WRA	**Warramunga Arr**	**56.79**	**134**	P	**P**	**05 49 11.2**	**-0.9**
	comp=Z,1.6nm,0.5s,baz=320,slow=7.5,SNR=19						
WRAB	**Tennant Creek**	**56.79**	**134**	*e*P	**P**	**05 49 11.0**	**-1.1**
	comp=Z,4.6nm,1.1s						
AKASG	**Malin Array Be**	**57.96**	**317**	P	**P**	**05 49 19.6**	**-0.4**
	comp=Z,1.9nm,0.4s,baz=82,slow=6.4,SNR=10.0						
ASAR	**Alice Springs**	**59.16**	**137**	P	**P**	**05 49 28.1**	**-0.6**
	comp=Z,0.8nm,0.4s,baz=319,slow=6.8,SNR=16						
FINES	**FINESS Array B**	**60.91**	**329**	P	**P**	**05 49 40.0**	**0.0**
	comp=Z,1.3nm,0.5s,baz=82,slow=5.8,SNR=11						
ARCES	**ARCESS Array B**	**62.55**	**338**	P	**P**	**05 49 51.2**	**+0.2**
	comp=Z,1.6nm,0.6s,baz=99,slow=7.7,SNR=17						
SPITS	**Spitsbergen Ar**	**66.49**	**347**	P	**P**	**05 50 16.9**	**+0.4**
	comp=Z,1.1nm,0.4s,baz=105,slow=8.7,SNR=10						
HFS	**Hagfors**	**66.92**	**328**	P	**P**	**05 50 19.4**	**-0.1**
	comp=Z,2.6nm,0.5s,baz=100,slow=5.0,SNR=11						
GERES	**GERESS Array B**	**68.06**	**315**	P	**P**	**05 50 27.2**	**+0.2**
	comp=Z,0.9nm,0.4s,baz=77,slow=5.9,SNR=9.1						
NB2	**NORSAR Subarra**	**68.07**	**329**	P	**P**	**05 50 26.2**	**-0.6**
	comp=Z,1.1nm,0.5s,baz=84,slow=6.5						
NOA	**NORSAR Array B**	**68.07**	**329**	P	**P**	**05 50 26.0**	**-0.8**
	comp=Z,1.5nm,0.8s,baz=85,slow=6.5,SNR=3.7						
DAG	**Danmarks Havn**	**74.15**	**347**	*i* P	**P**	**05 51 02.2**	**-0.9**
	comp=Z,8.4nm,1.4s						
LSZ	**Lusaka**	**74.71**	**246**	*e*P	**P**	**05 51 07.9**	**+0.3**
	comp=Z,2.4nm,0.5s						
EKA	**Eskdalemuir Ar**	**76.69**	**324**	P	**P**	**05 51 18.0**	**0.0**
	comp=Z,1.1nm,0.5s,baz=75,slow=6.0,SNR=6.2						
SUMG	**Summit**	**80.83**	**347**	*i* P	**P**	**05 51 41.1**	**+0.1**
	comp=Z,6.0nm,0.7s						
ILAR	**Eielson Array**	**81.87**	**22**	P	**P**	**05 51 44.4**	**-1.7**
	comp=Z,0.6nm,0.5s,baz=290,slow=5.0,SNR=11						
BOSA	**Boshof**	**83.45**	**236**	P	**P**	**05 51 56.2**	**+1.2**
	comp=Z,4.8nm,0.9s,baz=33,slow=4.2,SNR=3.6						
RES	**Resolute Bay**	**83.66**	**3**	P	**P**	**05 51 55.0**	**-0.1**
	comp=Z,2.0nm,0.5s,baz=344,slow=4.6,SNR=24						
MDT	**Midelt**	**85.79**	**304**	P	**P**	**05 52 07.4**	**+0.5**
	comp=Z,0.6nm,0.6s,baz=90,slow=9.1,SNR=2.8						
TORD	**Torodi Ar. Bea**	**87.83**	**283**	P	**P**	**05 52 17.5**	**+0.6**
	comp=Z,0.9nm,0.6s,baz=69,slow=4.6,SNR=7.8						
SFJD	**Kangerlussuaq**	**87.83**	**347**	*i* P	**P**	**05 52 15.3**	**-0.6**
YKA	**Yellowknife Ar**	**92.96**	**13**	P	**P**	**05 52 38.8**	**-1.0**
	comp=Z,0.4nm,0.8s,baz=330,slow=4.3,SNR=6.8						
TXAR	**Lajitas Array**	**126.32**	**20**	PKP	**PKPdf**	**05 58 29.7**	**-0.2**
	comp=Z,0.3nm,0.8s,baz=222,slow=1.2,SNR=2.9						
BDFB	**Brasilia**	**144.09**	**273**	PKP	PKPbc	05 59 01.6	+0.3
	comp=Z,2.3nm,0.7s,baz=158,slow=7.7,SNR=4.6						
SDV	**Santo Domingo**	**146.31**	**333**	PKPbc	**PKPbc**	**05 59 08.1**	**-0.3**
	comp=Z,15nm,0.6s,baz=79,slow=3.2,SNR=29						
PTGA	**Pitinga**	**147.58**	**307**	PKPbc	**PKPbc**	**05 59 12.7**	**+0.9**
	comp=Z,3.3nm,0.4s,baz=332,slow=4.9,SNR=6.4						
OCAC	**Ocana**	**147.96**	**337**	*e*P	**PKPbc**	**05 59 12.3**	**-0.6**
MOTC	**Monteria, Cord**	**148.23**	**341**	*e*P	**PKPbc**	**05 59 13.9**	**+0.5**
GRMC	**Gramalote, San**	**148.25**	**336**	*e*P	**PKPbc**	**05 59 13.5**	**-0.2**
BRRC	**Barranca, Sant**	**149.15**	**337**	*e*P	**PKPbc**	**05 59 16.1**	**+0.3**
BARC	**Barichara**	**149.43**	**335**	*e*P	**PKPbc**	**05 59 16.0**	**-0.8**
DBBC	**Dabeiba**	**150.06**	**341**	*e*P	**PKPbc**	**05 59 19.5**	**+1.3**
HELC	**Santa Helena**	**150.63**	**340**	*e*P	**PKPbc**	**05 59 19.2**	**-0.7**
CHIC	**Chingaza**	**151.43**	**335**	*e*P	**PKPbc**	**05 59 21.0**	**-0.8**
CHIC				*e*P	**PKiKP**	**05 59 22.0**	**-0.2**
ROSC	**El Rosal**	**151.47**	**336**	PKP	**PKPdf**	**05 59 16.9**	**+1.3**
	comp=Z,5.6nm,0.8s,baz=82,slow=10,SNR=5.0						
ROSC				PKPbc	**PKiKP**	**05 59 23.3**	**+1.0**
	comp=Z,23nm,0.6s,baz=117,slow=7.1,SNR=25						
CPUP	**Villa Florida**	**153.93**	**254**	PKPbc	**PKPbc**	**05 59 25.8**	**-0.6**
	comp=Z,1.9nm,0.5s,baz=88,slow=3.1,SNR=6.7						

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*NIED **08** 05:56:00, 38°20N×144°40E, h5km, Mw3.7 Best double couple: $M_0$4.63000×10^{14} NP1:ϕ_s13.00000°, δ34.00000°, λ-88.00000°. NP2:ϕ_s191.00000°, δ56.00000°, λ-91.00000°.*

*IDC **08** 05:56:51.9±1.1, 38°04N×144°50E, h0km, mb3.5/7, mb1 3.8/9, mb1mx3.6/38, mbtmp3.6/9, ML2.9/2, MS2.6/3, Ms1 2.6/3, ms1mx2.4/35, Error ellipse: s-maj=27.7km s-min=23.3km az=145.0*

*ISCJB **08** 05:56:55.4±0.7, 38°16N±0°06×144°42E±0°05, h33km, mb3.5/7, Error ellipse: s-maj=8.4km s-min=5.2km az=161.7*

*JMA **08** 05:56:56.0±0.4, 38°15N×144°38E, h39km, M3.9*

ISC 08 05:56:57.2±0.9**, 38°19N**±0°07×**144°45E**±0°07**, h35**km**, n24, σ1^{s}08**/32**, mb3.5**/7**, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**2.45**	**277**	P	**Pn**	**05 57 34.1**	**-0.6**
JIO				S	**Sn**	**05 58 02.4**	**-1.0**
JMK	**Ichinoseki**	**2.64**	**288**	P	**Pn**	**05 57 37.0**	**-0.3**
JMK				S	**Sn**	**05 58 07.4**	**-0.7**
JOM	**Ohasama**	**2.78**	**299**	P	**Pn**	**05 57 39.4**	**+0.2**
JOM				S	**Sn**	**05 58 11.4**	**-0.1**
JMM	**Marumori**	**2.91**	**265**	P	**Pn**	**05 57 40.4**	**-0.5**
JMM				S	**Sn**	**05 58 13.5**	**-1.1**
JFK	**Kawauchi**	**2.95**	**255**	S	**Sn**	**05 58 14.0**	**-1.7**
JOU	**Okura**	**2.98**	**275**	P	**Pn**	**05 57 42.2**	**+0.2**
JOU				S	**Sn**	**05 58 16.8**	**+0.2**
JRG	**Rokugo**	**3.22**	**293**	P	**Pn**	**05 57 45.5**	**+0.3**
JRG				S	**Sn**	**05 58 22.5**	**+0.2**
JYK	**Kaneyama**	**3.29**	**284**	P	**Pn**	**05 57 46.8**	**+0.6**
JFT	**Otama**	**3.32**	**260**	P	**Pn**	**05 57 47.0**	**+0.3**
JFT				S	**Sn**	**05 58 24.8**	**-0.1**
JNBK	**Urakawa-nobuka**	**4.29**	**343**	P	**Pn**	**05 57 59.1**	**-0.8**
JNBK				S	**Sn**	**05 58 46.9**	**-1.8**
JCH	**Churui**	**4.50**	**350**	P	**Pn**	**05 58 01.0**	**-1.8**
JRY	**Ryogami san**	**4.93**	**246**	P	**Pn**	**05 58 08.3**	**-0.5**
JRY				S	**Sn**	**05 59 02.0**	**-2.7**
MJAR	**Matsushiro Arr**	**5.23**	**254**	Pn	**Pn**	**05 58 13.2**	**+0.2**
	2.9nm,0.3s,baz=80,slow=15,SNR=18						
MJAR				LR	LR	06 00 20.0	
	comp=Z,51nm,19.6s,baz=85,slow=40						
MAT	**Matsushiro**	**5.24**	**254**	P	**Pn**	**05 58 13.9**	**+0.9**
MAT				S	**Sn**	**05 59 10.2**	**-1.9**
USRK	**Ussuriysk Ar.**	**11.14**	**307**	Pn	**Pn**	**05 59 33.2**	**-0.7**
	0.1nm,0.3s,baz=103,slow=15,SNR=6.2						
JCJ	**Chichijima**	**11.22**	**190**	LR	LR	06 05 26.1	
	comp=Z,35nm,18.1s,baz=96,slow=46						
KSRS	**Korea Array**	**13.09**	**272**	LR	LR	06 05 36.3	
	comp=Z,32nm,18.5s,baz=24,slow=40						
SEY	**Seymchan**	**25.25**	**9**	P	**P**	**06 02 20.7**	**+1.2**
	1.1nm,0.6s,baz=176,slow=5.1,SNR=9.1						
ZALV	**Zalesovo Beam**	**42.94**	**312**	P	**P**	**06 04 53.0**	**+0.7**
	0.4nm,0.4s,baz=67,slow=8.1,SNR=3.1						
MKAR	**Makanchi Array**	**45.56**	**302**	P	**P**	**06 05 13.9**	**+0.4**
	0.5nm,0.6s,baz=81,slow=9.5,SNR=6.9						
WRA	**Warramunga Arr**	**58.59**	**191**	P	**P**	**06 06 49.2**	**-1.3**
	1.0nm,0.8s,baz=11,slow=7.5,SNR=6.1						
YKA	**Yellowknife Ar**	**61.59**	**31**	P	**P**	**06 07 11.5**	**+0.9**
	0.1nm,0.6s,baz=292,slow=6.1,SNR=3.0						
NVAR	**Mina Array Bea**	**72.36**	**55**	P	**P**	**06 08 21.4**	**+1.6**
	0.4nm,0.7s,baz=246,slow=6.7,SNR=2.4						
PDAR	**Pinedale Array**	**75.13**	**47**	P	**P**	**06 08 35.8**	**-0.1**
	0.2nm,0.6s,baz=337,slow=6.3,SNR=2.4						

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*IDC **08** 06:05:22.8±0.6, 42°47S×120°29E, h0km, mb4.7/12, mb1 4.7/14, mb1mx4.6/29, mbtmp4.7/14, ML4.7/1, MS3.9/13, Ms1 3.9/13, ms1mx3.7/29, Error ellipse: s-maj=25.3km s-min=16.2km az=109.0*

*ISCJB **08** 06:05:23.1±0.3, 42°52S±0°05×120°29E±0°08, h10km, mb4.8/33, MS3.9/12, Error ellipse: s-maj=9.1km s-min=6.7km az=13.2*

*BJI **08** 06:05:23.0, 42°50S×120°10E, h6km, mb4.9/12, mB5.2/6, Ms5.3/2, Ms7 4.8/2*

*NEIC **08** 06:05:24.6±0.2, 42°46S×120°16E, h10km, mb4.8/17, Error ellipse: s-maj=9.3km s-min=7.4km az=111.0*

*GCMT **08** 06:05:24.6±0.4, 42°35S×120°18E, h20km±1km, MW5.0/67, Moment Tensor Solution. s21,c24; s67,c87; Duration: 0 Moment tensor: Scale 10^{16}Nm; M_{rr}3.85±.31; $M_{\theta\theta}$-0.73±.18; $M_{\phi\phi}$-3.12±.21; $M_{r\theta}$0.43±.39; $M_{\theta\phi}$-0.33±.11; $M_{\phi r}$-1.53±.39; Best double couple: $M_0$3.84100×10^{16} NP1:ϕ_s179.00000°, δ57.00000°, λ82.00000°. NP2: ϕ_s14.00000°, δ34.00000°, λ102.00000°. Principal axes: T 4.2200, Plg77.0000°, Azm65.0000°; N -0.7640, Plg7.0000°, Azm184.0000°; P -3.4610, Plg11.0000°, Azm275.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

ISC 08 06:05:24.8±0.3**, 42°47S**±0°07×**120°28E**±0°09**, h10**km**, n340, σ1^{s}04**/328**, mb4.9**/33**, MS3.9**/12**, 1C, South of Australia**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
H01W1	**Cape Leeuwin H**	**8.96**	**326**	T	T	06 16 32.4	
	baz=149,slow=76,SNR=30						
H01W2	**Cape Leeuwin H**	**8.96**	**326**	T	T	06 16 32.4	
	baz=149,slow=76,SNR=30						
H01W3	**Cape Leeuwin H**	**8.97**	**326**	T	T	06 16 34.1	
	baz=149,slow=76,SNR=34						
NWAO	**Narrogin (SRO)**	**9.83**	**345**	Pn	**Pn**	**06 07 43.8**	**-2.3**
	2.8nm,0.3s,baz=135,slow=0.0,SNR=14						
NWAO				Sn	Sn	06 09 25.7	-11
	2.0nm,0.3s,baz=92,slow=0.0,SNR=5.0						
NWAO	**Narrogin (SRO)**	**9.83**	**345**	*e*Pn	**Pn**	**06 07 43.9**	**-2.2**
NWAO				*e*Sn	Sn	06 09 26.6	-10
BBOO	**Buckleboo**	**15.77**	**57**	*e*P	**P**	**06 09 08.5**	**-2.3**
	20nm,1.1s						
TAU	**Tasmania Unive**	**19.86**	**100**	*e*P	**P**	**06 09 56.2**	**+0.5**
	130nm,1.4s						
STKA	**Stephens Creek**	**19.96**	**65**	P	**Pn**	**06 09 57.8**	**-0.9**
	1.2nm,0.3s,baz=230,slow=7.8,SNR=20						
STKA				LR	LR	06 16 37.1	
	comp=Z,1μm,21.0s,baz=216,slow=34						
MBWA	**Marble Bar**	**21.26**	**359**	*e*P	**P**	**06 10 11.6**	**+0.5**
	30nm,1.1s						
ASAR	**Alice Springs**	**21.91**	**35**	P	**P**	**06 10 17.5**	**-0.6**
	17nm,0.8s,baz=206,slow=9.8,SNR=50						
ASAR				PcP	**PcP**	**06 14 16.8**	**-0.5**
	2.5nm,0.7s,baz=191,slow=1.7,SNR=10						
ASAR				LR	LR	06 18 06.9	
	comp=Z,373nm,21.1s,baz=216,slow=35						
CAN	**Canberra**	**23.39**	**82**	*e*P	**P**	**06 10 35.4**	**+1.7**
	12nm,0.9s						
CASY	**Casey**	**24.46**	**190**	*e*P	**P**	**06 10 42.2**	**-1.3**
	8.9nm,1.3s						
FITZ	**Fitzroy Crossi**	**24.72**	**12**	P	**P**	**06 10 45.9**	**-0.3**
	9.6nm,0.9s,baz=169,slow=11,SNR=10						
FITZ				LR	LR	06 20 03.4	
	comp=Z,133nm,21.1s,baz=204,slow=36						
FITZ	**Fitzroy Crossi**	**24.72**	**12**	*e*P	**P**	**06 10 46.5**	**+0.3**
	15nm,1.1s						
WRA	**Warramunga Arr**	**25.41**	**32**	P	**P**	**06 10 50.9**	**-1.6**
	8.7nm,0.8s,baz=203,slow=11,SNR=26						
WRA				PcP	**PcP**	**06 14 23.5**	**-1.1**
	2.6nm,0.9s,baz=235,slow=1.6,SNR=5.7						
WRA				LR	LR	06 20 46.0	
	comp=Z,137nm,18.9s,baz=205,slow=36						
WRAB	**Tennant Creek**	**25.42**	**32**	*e*P	**P**	**06 10 51.1**	**-1.5**
	43nm,1.4s						
ARMA	**Armidale**	**27.78**	**75**	*e*P	**P**	**06 11 15.5**	**+1.5**
	16nm,0.7s						
EIDS	**Eidsvold**	**30.51**	**66**	*e*P	**P**	**06 11 38.5**	**+0.5**
	21nm,1.1s						
KPJI	**Karang Pucung**	**36.41**	**341**	P	**P**	**06 12 31.9**	**+2.5**
	54nm,1.1s						
SPSI	**Sidrap Palu**	**38.35**	**359**	P	**P**	**06 12 46.9**	**+1.0**
	31nm,1.2s						
VNDA	**Vanda**	**39.01**	**167**	P	**P**	**06 12 50.2**	**-0.6**
	4.8nm,1.0s,baz=300,slow=9.0,SNR=13						
VNDA				LR	LR	06 27 01.0	
	comp=Z,254nm,20.8s,baz=326,slow=33						
BBKI	**Banjar Baru**	**39.15**	**351**	P	**P**	**06 12 54.9**	**+2.3**
	63nm,1.6s,5μm						
MAW	**Mawson**	**39.27**	**211**	P	**P**	**06 12 52.6**	**-0.5**
	6.9nm,0.9s,baz=76,slow=12,SNR=4.0						
MAW				LR	LR	06 26 02.7	
	comp=Z,183nm,18.7s,baz=62,slow=32						
SBA	**Scott Base**	**40.05**	**166**	*e*P	**P**	**06 13 00.3**	**+0.8**
	9.6nm,1.1s						
MDSI	**Maura Dua**	**40.45**	**335**	P	**P**	**06 13 02.8**	**-0.7**
	14nm,1.9s,2μm						
LHSI	**Lahat**	**41.28**	**334**	P	**P**	**06 13 12.7**	**+2.4**
URZ	**Urewera**	**42.82**	**104**	LR	LR	06 29 29.2	
	comp=Z,328nm,18.4s,baz=236,slow=34						
QSPA	**South Pole Qui**	**47.65**	**180**	*e*P	**P**	**06 14 00.3**	**-0.6**
	63nm,1.0s						
SYO	**Syowa Base**	**47.88**	**209**	⇑*e*P	**P**	**06 14 00.5**	**-1.9**
KCSI	**Kotacane, Aceh**	**50.12**	**330**	P	**P**	**06 14 20.9**	**+0.7**
	29nm,1.2s						
SNAA	**Sanae**	**59.31**	**198**	P	**P**	**06 15 26.2**	**0.0**
SNAA	**Sanae**	**59.31**	**198**	*e*P	**P**	**06 15 25.9**	**-0.4**
	2μm,1.1s						
VNA2	**Neumayer--Watz**	**60.87**	**197**	P	**P**	**06 15 36.4**	**-0.5**
	baz=124,slow=6.5						
VNA3	**Neumayer Olymp**	**61.12**	**196**	P	**P**	**06 15 39.0**	**+0.4**
VNA1	**Neumayer--Stat**	**61.27**	**197**	P	**P**	**06 15 40.4**	**+0.8**
CMAR	**Chiang Mai Arr**	**63.74**	**337**	P	**P**	**06 15 56.3**	**-0.4**
	18nm,0.8s,baz=182,slow=5.8,SNR=75						
CMAR				LR	LR	06 41 17.5	
	comp=Z,80nm,21.8s,baz=164,slow=34						
CHTO	**Chiang Mai**	**64.08**	**337**	*e*P	**P**	**06 15 59.7**	**+0.8**
	20nm,1.3s						
AFI	**Afiamalu**	**64.50**	**86**	LR	LR	06 38 26.6	
	comp=Z,106nm,19.1s,baz=270,slow=31						
RAR	**Rarotonga**	**68.75**	**100**	LR	LR	06 40 30.4	
	comp=Z,76nm,20.8s,baz=264,slow=31						
BOSA	**Boshof**	**74.72**	**245**	LR	LR	06 43 48.2	
	comp=Z,107nm,18.0s,baz=175,slow=31						
TAPN	**Taplejung**	**75.69**	**330**	*e*P	**P**	**06 17 10.5**	**0.0**
	66nm,1.1s						
RAMN	**Ramite**	**75.74**	**329**	*e*P	**P**	**06 17 10.8**	**0.0**
	21nm,0.5s						
LSA	**Lhasa**	**76.67**	**334**	*e*P	**P**	**06 17 16.8**	**+0.5**
	7.5nm,0.6s						
GUN	**Gumba**	**76.88**	**329**	*e*P	**P**	**06 17 17.0**	**-0.4**
	92nm,0.9s						
GKN	**Gorkha**	**77.44**	**328**	*e*P	**P**	**06 17 19.9**	**-0.4**
	65nm,1.0s						
KOLN	**Koldanda**	**77.65**	**327**	*e*P	**P**	**06 17 20.8**	**-0.7**
	36nm,1.0s						
PYUN	**Piuthan**	**78.19**	**327**	*e*P	**P**	**06 17 23.7**	**-0.8**
	70nm,0.9s						
KSAR	**Wonju Array Be**	**79.84**	**6**	P	**P**	**06 17 33.9**	**+0.9**
KSRS	**Korea Array**	**79.86**	**6**	P	**P**	**06 17 33.9**	**+0.8**
	3.6nm,1.0s,baz=192,slow=5.8,SNR=7.0						
MJAR	**Matsushiro Arr**	**80.33**	**15**	P	**P**	**06 17 35.4**	**-0.3**
	5.3nm,0.9s,baz=188,slow=7.4,SNR=3.2						
LSZ	**Lusaka**	**81.37**	**257**	*e*P	**P**	**06 17 43.1**	**+1.0**
	28nm,1.4s						
GTA	**Gaotai**	**83.59**	**344**	*e*P	**P**	**06 17 54.0**	**+1.0**
GTA				pP	sP	06 18 00.0	+2.5
GTA				sP	PcP	06 18 03.4	+6.2
GTA				pmax	pmax		
	comp=Z,14nm,0.9s						
KMBO	**Kilima Mbogo**	**84.09**	**274**	P	**P**	**06 17 56.8**	**+0.4**
	11nm,0.4s,baz=177,slow=3.6,SNR=12						
KMBO				LR	LR	06 47 28.5	
	comp=Z,120nm,20.1s,baz=96,slow=30						
TSUM	**Tsumeb**	**86.20**	**248**	*e*P	**P**	**06 18 07.5**	**+0.7**
	1.5nm,0.8s						
USRK	**Ussuriysk Ar.**	**86.93**	**8**	P	**P**	**06 18 09.4**	**+0.1**
	9.2nm,0.8s,baz=216,slow=4.5,SNR=18						
ULN	**Ulaanbaatar**	**90.71**	**351**	*e*P	**P**	**06 18 27.9**	**+0.5**
	2.7nm,0.6s						
SONM	**Songino Array**	**90.76**	**351**	P	**P**	**06 18 27.4**	**-0.2**
	3.6nm,0.9s,baz=161,slow=4.5,SNR=16						
MKAR	**Makanchi Array**	**95.06**	**335**	P	**P**	**06 18 46.3**	**-1.0**
	1.1nm,0.8s,baz=148,slow=7.1,SNR=12						
MKAR				LR	LR	07 03 55.5	
	comp=Z,19nm,21.2s,baz=142,slow=37						
RAYN	**Ar Rayn**	**95.09**	**297**	*e*P	**P**	**06 18 47.6**	**-0.5**
	7.2nm,1.3s						
KURBB	**Kurchatov Arra**	**99.62**	**335**	PKKPbc	PKKPbc	06 35 28.9	-1.3
	0.5nm,0.8s,baz=319,slow=4.0,SNR=4.6						
KURK	**Kurchatov**	**99.67**	**335**	PKKPbc	PKKPbc	06 35 28.9	-1.1
TORD	**Torodi Ar. Bea**	**119.79**	**260**	PKP	**PKPdf**	**06 24 14.1**	**-1.4**
	217nm,1.0s,baz=108,slow=0.7,SNR=14						
AKASG	**Malin Array Be**	**121.86**	**312**	PKP	**PKPdf**	**06 24 17.5**	**-0.8**
	1.5nm,0.8s,baz=96,slow=2.8,SNR=3.1						
KEST	**Kesra**	**127.32**	**287**	PKP	**PKPdf**	**06 24 28.6**	**-0.8**
	8.2nm,1.0s,baz=315,slow=3.5,SNR=5.6						
FINES	**FINESS Array B**	**128.03**	**323**	PKP	**PKPdf**	**06 24 29.2**	**-0.7**
	2.4nm,0.8s,baz=73,slow=6.6,SNR=4.6						
ILAR	**Eielson Array**	**128.57**	**33**	PKP	**PKPdf**	**06 24 29.8**	**-1.1**
	1.3nm,0.7s,baz=264,slow=3.2,SNR=12						
SAML	**Samuel**	**128.73**	**176**	*e*PKPdf	**PKPdf**	**06 24 32.9**	**+0.2**
GERES	**GERESS Array B**	**130.13**	**304**	PKP	**PKPdf**	**06 24 34.7**	**+0.3**
	1.0nm,0.7s,baz=114,slow=3.3,SNR=9.9						
CLL	**Collm**	**131.43**	**307**	*e*(P)	PKPdf	06 24 53.0	+16
	comp=Z,5.0nm,0.9s						
INK	**Inuvik**	**134.53**	**30**	PKP	**PKPdf**	**06 24 42.2**	**+0.2**
	comp=Z,5.1nm,1.0s,baz=352,slow=0.5,SNR=10.0						
INK	**Inuvik**	**134.53**	**30**	*e*PKPdf	**PKPdf**	**06 24 41.7**	**-0.2**
OTAV	**Otavalo**	**134.70**	**153**	*e*PKPdf	**PKPdf**	**06 24 44.2**	**-0.5**
NOA	**NORSAR Array B**	**134.86**	**320**	PKP	**PKPdf**	**06 24 42.1**	**-0.7**
	comp=Z,1.9nm,0.9s,baz=101,slow=2.2,SNR=2.4						
NVAR	**Mina Array Bea**	**136.00**	**75**	PKP	**PKPdf**	**06 24 47.5**	**+1.5**
	comp=Z,1.5nm,0.8s,baz=221,slow=3.2,SNR=8.7						
ESDC	**Sonseca Array**	**138.51**	**286**	PKP	**PKPdf**	**06 24 49.9**	**-0.5**
	comp=Z,0.2nm,0.3s,baz=66,slow=1.8,SNR=5.2						
DAG	**Danmarks Havn**	**141.55**	**346**	*i* P	**PKPdf**	**06 24 52.4**	**-2.3**
	comp=Z,4.2nm,1.0s						
TXAR	**Lajitas Array**	**142.47**	**96**	PKhKP	PKPpre	06 24 53.5	
	comp=Z,2.0nm,0.7s,baz=214,slow=5.5,SNR=22						
YKA	**Yellowknife Ar**	**142.51**	**39**	PKhKP	PKPpre	06 24 52.1	
	comp=Z,1.6nm,0.7s,baz=266,slow=2.6,SNR=20						
YKA				PKP	**PKPdf**	**06 24 55.9**	**-0.8**
	comp=Z,1.5nm,0.7s,baz=264,slow=2.5,SNR=22						
BOZ	**Bozeman (W)**	**143.10**	**67**	P	**PKPdf**	**06 24 57.6**	**-1.0**
	baz=256						
BOZ	**Bozeman (W)**	**143.10**	**67**	*e*PKPdf	**PKPdf**	**06 24 57.1**	**-1.5**
SNOW	**Snow King Moun**	**143.12**	**71**	*e*PKPdf	**PKPdf**	**06 24 57.4**	**-1.4**
ANMO	**Albuquerque**	**143.15**	**86**	P	**PKPdf**	**06 24 57.5**	**-1.6**
	baz=244						
LOHW	**Long Hollow**	**143.27**	**70**	*e*PKPdf	PKPbc	06 24 56.6	+0.5
H17A	**Grant Village**	**143.50**	**69**	*e*PKPdf	**PKPdf**	**06 24 59.3**	**-0.1**
BW06	**Boulder Array**	**143.76**	**72**	P	**PKPdf**	**06 24 58.8**	**-1.1**
	baz=253,SNR=12						
BW06	**Boulder Array**	**143.76**	**72**	*e*PKPdf	PKPbc	06 24 57.4	-0.1
PDAR	**Pinedale Array**	**143.76**	**72**	PKP	PKPbc	06 24 57.6	0.0
	comp=Z,5.6nm,0.7s,baz=206,slow=1.6,SNR=49						
O20A	**White River Ci**	**143.87**	**77**	P	**PKPdf**	**06 24 59.6**	**-0.6**
	baz=250						
O20A	**White River Ci**	**143.87**	**77**	*e*PKPdf	PKPbc	06 24 58.4	+0.4
S22A	**4UR Ranch, Cre**	**144.03**	**81**	P	**PKPdf**	**06 24 60.0**	**-0.7**
	baz=247,SNR=12						
RES	**Resolute Bay**	**144.03**	**15**	PKP	**PKPab**	**06 24 56.4**	**-0.2**
	comp=Z,17nm,0.9s,baz=318,slow=4.3,SNR=48						
RLMT	**Red Lodge**	**144.59**	**68**	P	**PKPdf**	**06 25 02.1**	**+0.9**
	baz=256						
RLMT	**Red Lodge**	**144.59**	**68**	*e*PKPdf	**PKPdf**	**06 25 01.5**	**+0.3**
EGMT	**Eagleton**	**144.85**	**63**	P	**PKPdf**	**06 25 01.5**	**0.0**
	baz=260						
EGMT	**Eagleton**	**144.85**	**63**	*e*PKPdf	PKPbc	06 25 00.6	0.0
SDCO	**Great Sand Dun**	**145.00**	**82**	P	**PKPdf**	**06 25 03.5**	**+1.2**
	baz=248,SNR=12						
833A	**Chaparral WMA,**	**145.04**	**101**	P	**PKPdf**	**06 25 03.2**	**+0.9**
	baz=235,SNR=7.4						
035A	**Encino**	**145.17**	**104**	P	**PKPdf**	**06 25 04.9**	**+2.4**
	baz=233						
SDV	**Santo Domingo**	**145.19**	**161**	*e*PKPdf	**PKPbc**	**06 25 02.4**	**-0.4**
934A	**Benavides**	**145.26**	**103**	P	**PKPdf**	**06 25 05.4**	**+2.7**
	baz=234						
MSTX	**Muleshoe**	**145.43**	**90**	P	**PKPab**	**06 25 04.1**	**+1.0**
	baz=243						
MSTX	**Muleshoe**	**145.43**	**90**	*e*PKPdf	**PKPab**	**06 25 03.0**	**-0.2**
834A	**Tilden**	**145.54**	**102**	P	**PKPab**	**06 25 05.6**	**+2.0**
	baz=235,SNR=8.6						
T25A	**Trinidad**	**145.56**	**84**	P	**PKPab**	**06 25 04.7**	**+1.0**
	baz=247,SNR=10						
ISCO	**Idaho Springs**	**145.65**	**79**	P	**PKPab**	**06 25 05.7**	**+1.6**
	baz=250,SNR=11						
ISCO	**Idaho Springs**	**145.65**	**79**	*e*PKPbc	**PKPab**	**06 25 05.0**	**+1.0**
Q24A	**Divide**	**145.70**	**80**	P	**PKPab**	**06 25 05.5**	**+1.2**
	baz=249,SNR=16						
N23A	**Red Feather La**	**145.77**	**77**	P	**PKPab**	**06 25 06.2**	**+1.8**
	baz=252,SNR=16						
633A	**Saathoff Ranch**	**145.83**	**99**	P	**PKPab**	**06 25 05.7**	**+1.1**
	baz=237,SNR=23						
K22A	**Casper**	**145.87**	**73**	P	**PKPab**	**06 25 05.4**	**+0.8**
	baz=254,SNR=12						
K22A	**Casper**	**145.87**	**73**	*e*PKPbc	**PKPab**	**06 25 04.6**	**-0.1**
JCT	**Junction City**	**145.92**	**97**	P	**PKPab**	**06 25 04.5**	**-0.5**
	baz=238,SNR=10						
JCT	**Junction City**	**145.92**	**97**	*e*PKPdf	**PKPbc**	**06 25 04.3**	**-0.2**
734A	**La Parita Cree**	**145.94**	**101**	P	**PKPab**	**06 25 06.3**	**+1.2**
	baz=236						
533A	**Kerrville**	**146.26**	**99**	P	**PKPab**	**06 25 06.6**	**+0.3**
	baz=237						
433A	**Art**	**146.58**	**97**	P	**PKPab**	**06 25 07.2**	**-0.2**
	baz=238,SNR=18						
AMTX	**Amarillo**	**146.65**	**89**	P	**PKPab**	**06 25 07.6**	**-0.1**
	baz=244						
AMTX	**Amarillo**	**146.65**	**89**	*e*PKPbc	**PKPab**	**06 25 07.9**	**+0.1**
534A	**Blanco**	**146.65**	**99**	P	**PKPab**	**06 25 07.2**	**-0.6**
	baz=237,SNR=8.8						
333A	**Richland Sprin**	**146.96**	**97**	P	**PKPab**	**06 25 08.0**	**-0.9**
	baz=239,SNR=20						
LAO	**LASA Array**	**146.99**	**66**	P	**PKPab**	**06 25 08.6**	**-0.1**
	baz=260						
LAO	**LASA Array**	**146.99**	**66**	*e*PKPbc	**PKPab**	**06 25 09.0**	**+0.3**
736A	**Circle Diamond**	**147.09**	**102**	P	**PKPab**	**06 25 10.5**	**+1.1**
	baz=236						
ABTX	**Abilene, Hawle**	**147.12**	**94**	P	**PKPab**	**06 25 09.3**	**-0.3**
	baz=241,SNR=9.7						
ABTX	**Abilene, Hawle**	**147.12**	**94**	*e*PKPbc	**PKPbc**	**06 25 07.8**	**-0.2**
434A	**Burnet**	**147.22**	**98**	P	**PKPab**	**06 25 09.2**	**-0.8**
	baz=238,SNR=9.3						
233A	**Rising Star**	**147.37**	**96**	P	**PKPbc**	**06 25 08.6**	**-0.1**
	baz=240,SNR=5.7						
334A	**Lometa**	**147.51**	**97**	P	**PKPbc**	**06 25 09.6**	**+0.6**
	baz=239,SNR=5.8						
KSCO	**Kaye Shedlock'**	**147.56**	**81**	P	**PKPab**	**06 25 10.8**	**-0.4**
	baz=250						
KSCO	**Kaye Shedlock'**	**147.56**	**81**	*e*PKPbc	**PKPab**	**06 25 10.6**	**-0.6**
133A	**Hamilton Ranch**	**147.65**	**95**	P	**PKPbc**	**06 25 10.2**	**+0.8**
	baz=241,SNR=8.0						
KULLO	**Kullorsuaq**	**147.78**	**359**	*i* P	**PKPdf**	**06 25 07.4**	**+1.9**
	comp=Z,45nm,1.4s						
234A	**Clairette**	**147.92**	**96**	P	**PKPbc**	**06 25 10.5**	**+0.4**
	baz=240						
J25A	**Sunshine Ranch**	**147.99**	**73**	P	**PKPbc**	**06 25 10.6**	**+0.6**
	baz=256						
RSSD	**Black Hills**	**147.99**	**72**	P	**PKPbc**	**06 25 10.7**	**+0.6**
	baz=257						
RSSD	**Black Hills**	**147.99**	**72**	*e*PKPbc	**PKPbc**	**06 25 10.8**	**+0.6**
335A	**Moody**	**148.08**	**98**	P	**PKPbc**	**06 25 11.4**	**+0.9**
	baz=239						
Z33A	**Whitaker Ranch**	**148.08**	**94**	P	**PKPbc**	**06 25 11.1**	**+0.7**
	baz=242,SNR=7.7						
SUMG	**Summit**	**148.13**	**348**	*i* P	**PKPdf**	**06 25 07.7**	**+1.0**
	comp=Z,16nm,1.1s						
SUMG	**Summit**	**148.13**	**348**	*e*PKPdf	**PKPdf**	**06 25 07.4**	**+0.7**
I25A	**Rochford**	**148.19**	**72**	P	**PKPbc**	**06 25 11.7**	**+1.0**
	baz=257,SNR=9.5						
X32A	**Elmer**	**148.22**	**91**	P	**PKPab**	**06 25 12.2**	**-1.6**
	baz=243						
134A	**White-Moore Ra**	**148.25**	**95**	P	**PKPab**	**06 25 12.3**	**-1.7**
	baz=241						
537A	**Green Hill Far**	**148.25**	**101**	P	**PKPab**	**06 25 13.0**	**-1.0**
	baz=237						
H25A	**Fruitdale**	**148.41**	**71**	P	**PKPbc**	**06 25 12.3**	**+1.3**
	baz=258,SNR=13						
J26A	**Sides Ranch, S**	**148.49**	**73**	P	**PKPbc**	**06 25 12.4**	**+1.0**
	baz=256,SNR=10						
Y33A	**Hilltop Ranch,**	**148.52**	**93**	P	**PKPbc**	**06 25 12.8**	**+1.2**
	baz=243						
W32A	**Sentinel**	**148.55**	**90**	P	**PKPab**	**06 25 13.2**	**-2.0**
	baz=244,SNR=11						
DGMT	**Dagmar**	**148.59**	**63**	P	**PKPbc**	**06 25 12.8**	**+1.4**
	baz=264,SNR=9.3						
DGMT	**Dagmar**	**148.59**	**63**	*e*PKPbc	**PKPbc**	**06 25 11.7**	**+0.3**
OGNE	**Ogallala**	**148.61**	**78**	P	**PKPbc**	**06 25 12.9**	**+1.2**
	baz=253						
OGNE	**Ogallala**	**148.61**	**78**	*e*PKPbc	**PKPab**	**06 25 13.3**	**-2.0**
G25A	**Newell**	**148.65**	**70**	P	**PKPbc**	**06 25 11.7**	**+0.1**
	baz=259						
WMOK	**Wichita Mounta**	**148.73**	**91**	*e*PKPdf	**PKPdf**	**06 25 08.6**	**+0.2**
WMOK				*e*PKPbc	**PKPbc**	**06 25 12.1**	**0.0**
I26A	**New Underwood**	**148.80**	**72**	P	**PKPbc**	**06 25 13.0**	**+0.9**
	baz=258,SNR=8.8						
X33A	**Lawton**	**148.85**	**92**	P	**PKPbc**	**06 25 12.9**	**+0.4**
	baz=244,SNR=5.6						
E25A	**Miller Ranch,**	**148.88**	**67**	P	**PKPbc**	**06 25 13.8**	**+1.6**
	baz=261						
H26A	**Fairpoint**	**148.98**	**71**	P	**PKPbc**	**06 25 13.1**	**+0.6**
	baz=259,SNR=11						
D25A	**Fairfield**	**149.03**	**66**	P	**PKPbc**	**06 25 14.0**	**+1.5**
	baz=262						
C25A	**Freed Ranch, W**	**149.14**	**65**	P	**PKPbc**	**06 25 13.9**	**+1.2**
	baz=264,SNR=5.8						
Y34A	**Reagan Ranch,**	**149.14**	**93**	P	**PKPbc**	**06 25 13.5**	**+0.3**
	baz=243						
W33A	**Caddo, Fort Co**	**149.14**	**91**	P	**PKPbc**	**06 25 14.6**	**+1.4**
	baz=244						
337A	**Centerville**	**149.22**	**99**	P	**PKPbc**	**06 25 15.0**	**+1.6**

	baz=238							
J27A	Elkhorn Farm, baz=257,SNR=8.9	149.23	74	P	PKPbc	06 25 14.0	+0.8	
U32A	Winter Ranch, baz=246	149.26	88	P	PKPbc	06 25 14.2	+0.8	
F26A	Lodgepole baz=261	149.28	69	P	PKPbc	06 25 14.3	+1.1	
136A	Ennis baz=240	149.34	97	P	PKPbc	06 25 15.8	+2.1	
A25A	Svangstu Ranch baz=266	149.35	63	P	PKPbc	06 25 14.9	+1.7	
X34A	Smith Ranch, M baz=244	149.37	92	P	PKPbc	06 25 15.4	+1.6	
I27A	Quinn baz=258,SNR=9.2	149.38	72	P	PKPbc	06 25 14.1	+0.6	
H27A	Howes baz=259	149.47	71	P	PKPbc	06 25 14.2	+0.5	
V33A	Lossen Ranch, baz=246	149.56	90	P	PKPbc	06 25 15.1	+0.9	
K28A	Ten Mile Ranch baz=256,SNR=7.1	149.56	75	P	PKPbc	06 25 14.0	-0.1	
D26A	Manning baz=263	149.61	67	P	PKPbc	06 25 14.3	+0.3	
CBKS	Cedar Bluff baz=250	149.61	83	P	PKPbc	06 25 15.0	+0.7	
CBKS	Cedar Bluff	149.61	83	*e*PKPbc	PKPbc	06 25 14.7	+0.4	
T32A	Huddler Ranch, baz=248	149.62	87	P	PKPbc	06 25 15.0	+0.7	
237A	Washetta, Mont baz=239	149.63	98	P	PKPbc	06 25 15.7	+1.3	
338A	Crockett baz=238	149.66	100	P	PKPbc	06 25 15.9	+1.3	
G27A	Dupree baz=260	149.71	70	P	PKPbc	06 25 14.8	+0.5	
Z36A	Blue Ridge baz=241,SNR=6.7	149.79	95	P	PKPbc	06 25 15.8	+1.0	
S32A	Newby Ranch, P baz=248	149.81	86	P	PKPbc	06 25 15.0	+0.2	
J28A	Allard Ranch, baz=257	149.82	74	P	PKPbc	06 25 14.6	-0.1	
X35A	Drake baz=243,SNR=8.8	149.92	93	P	PKPbc	06 25 15.7	+0.6	
C26A	Wahner Farm, P baz=264,SNR=5.6	149.93	65	P	PKPbc	06 25 16.2	+1.5	
U33A	Lingo Farm, Me baz=246	149.93	89	P	PKPbc	06 25 15.8	+0.7	
FFC	Flin Flon	149.96	51	*e*PKPbc	PKPbc	06 25 14.6	+0.1	
137A	Heron Place, G baz=240,SNR=5.5	149.97	97	P	PKPbc	06 25 17.0	+1.8	
I28A	Midland baz=258,SNR=8.7	149.99	73	P	PKPbc	06 25 15.4	+0.4	
L29A	Maesberg Ranch baz=255	150.04	77	P	PKPbc	06 25 16.2	+1.0	
A26A	Wade Farm, Ken baz=266,SNR=8.5	150.05	63	P	PKPbc	06 25 16.0	+1.1	
T33A	Patterson Ranc baz=248	150.09	87	P	PKPbc	06 25 16.6	+1.1	
E27A	Carson baz=262	150.12	68	P	PKPbc	06 25 16.4	+1.2	
V34A	Guthrie baz=246	150.13	90	P	PKPbc	06 25 15.9	+0.3	
238A	Jacksonville baz=239	150.13	99	P	PKPbc	06 25 17.8	+2.2	
Y36A	Durant baz=242,SNR=15	150.20	94	P	PKPbc	06 25 17.1	+1.3	
339A	Huntington baz=238	150.20	100	P	PKPbc	06 25 18.0	+2.2	
R32A	Long Quarter, baz=250,SNR=13	150.23	85	P	PKPbc	06 25 16.7	+0.9	
C27A	Sayler Ranch, baz=265	150.31	65	P	PKPbc	06 25 17.4	+1.8	
W35A	Tecumseh baz=244,SNR=17	150.32	92	P	PKPbc	06 25 17.1	+1.1	
440A	Kirbyville baz=237	150.32	102	P	PKPbc	06 25 18.5	+2.3	
M30A	Dale-Ortello V baz=255	150.34	78	P	PKPbc	06 25 15.8	-0.1	
NATX	Nacogdoches baz=239	150.35	100	P	PKPbc	06 25 18.4	+2.2	
Z37A	Pogue Cattle C baz=241	150.36	96	P	PKPbc	06 25 17.7	+1.5	
U34A	Anderson Ranch baz=246	150.36	89	P	PKPbc	06 25 17.4	+1.3	
U34A	Anderson Ranch	150.36	89	*e*PKPbc	PKPbc	06 25 17.9	+1.8	
G28A	Parade baz=260	150.37	71	P	PKPbc	06 25 17.1	+1.2	
X36A	Centrahoma baz=243	150.45	93	P	PKPbc	06 25 17.4	+1.0	
S33A	Kaszmaul Farm, baz=248	150.46	87	P	PKPbc	06 25 18.1	+1.8	
J29A	Okreek baz=258,SNR=14	150.46	74	P	PKPbc	06 25 16.7	+0.6	
Q32A	Meitler Ranch, baz=251	150.54	84	P	PKPbc	06 25 17.8	+1.4	
L30A	Spencer Herefo baz=255	150.56	77	P	PKPbc	06 25 16.1	-0.3	
F28A	McLaughlin baz=262,SNR=7.7	150.57	69	P	PKPbc	06 25 17.1	+0.8	
I29A	Vivian Onida baz=259,SNR=11	150.60	73	P	PKPbc	06 25 16.8	+0.4	
V35A	Meyer Ranch, C baz=245	150.60	91	P	PKPbc	06 25 17.8	+1.1	
P32A	Huiting Farm, baz=252,SNR=6.1	150.71	82	P	PKPbc	06 25 17.8	+1.0	
Y37A	Hugo baz=242,SNR=6.0	150.72	95	P	PKPbc	06 25 17.9	+0.9	
R33A	Olander Ranch, baz=250,SNR=7.2	150.73	85	P	PKPbc	06 25 18.0	+1.1	
E28A	Huff baz=263	150.74	68	P	PKPbc	06 25 17.4	+0.7	
H29A	Onida baz=260	150.78	72	P	PKPbc	06 25 17.6	+0.7	
W36A	Wetumka baz=244,SNR=18	150.79	92	P	PKPbc	06 25 18.2	+1.1	
K30A	Basset baz=257	150.81	76	P	PKPbc	06 25 18.3	+1.3	
N31A	Bailey Ranch, baz=254	150.81	80	P	PKPbc	06 25 17.4	+0.4	
T34A	McClaskey Farm baz=247	150.85	88	P	PKPbc	06 25 17.7	+0.5	
Z38A	Mt. Pleasant baz=241	150.85	97	P	PKPbc	06 25 19.2	+1.9	
U35A	Pawnee baz=246,SNR=10	150.93	90	P	PKPbc	06 25 19.0	+1.6	
M31A	Lambtecht Ranc baz=254,SNR=6.6	150.94	79	P	PKPbc	06 25 18.3	+1.0	
J30A	Dallas baz=258,SNR=7.6	151.04	75	P	PKPbc	06 25 17.9	+0.4	
C28A	Hausauer Farms baz=265	151.06	65	P	PKPbc	06 25 18.2	+0.8	
Q33A	Connelly Farm, baz=251	151.07	84	P	PKPbc	06 25 18.6	+0.9	
B28A	Dugan Ranch, T baz=267	151.13	64	P	PKPbc	06 25 18.6	+1.1	
O32A	Brockman Farm, baz=253	151.14	81	P	PKPbc	06 25 18.5	+0.6	
240A	Hunter Patters baz=239	151.14	100	P	PKPbc	06 25 19.7	+1.6	
S34A	Willow Spring baz=249,SNR=8.5	151.16	87	P	PKPbc	06 25 18.8	+0.9	
X37A	Clayton baz=243,SNR=12	151.18	94	P	PKPbc	06 25 19.0	+0.9	
I30A	Oacoma baz=259,SNR=5.2	151.21	73	P	PKPbc	06 25 18.4	+0.6	
341A	Kurthwood baz=238	151.21	102	P	PKPbc	06 25 19.8	+1.6	
A28A	Rude Farm, Bot baz=268	151.22	63	P	PKPbc	06 25 18.8	+1.0	
F29A	Eureka baz=262	151.24	69	P	PKPbc	06 25 18.6	+0.7	
L31A	Butterfield Fa baz=256	151.25	77	P	PKPbc	06 25 18.4	+0.3	
R34A	Isabella, Hill baz=250	151.27	86	P	PKPbc	06 25 19.7	+1.5	
V36A	Jenks baz=245	151.28	91	P	PKPbc	06 25 19.8	+1.6	
T35A	Sooner Cattle baz=247,SNR=9.3	151.31	89	P	PKPbc	06 25 19.4	+1.1	
W37B	Quinton baz=244,SNR=5.5	151.38	93	P	PKPbc	06 25 19.7	+1.2	
K31A	O'Neill baz=257,SNR=5.6	151.41	76	P	PKPbc	06 25 18.9	+0.5	
TUL1	Leonard baz=246,SNR=12	151.44	91	P	PKPbc	06 25 19.8	+1.2	
TUL1	Leonard	151.44	91	*e*PKPbc	PKPbc	06 25 19.2	+0.6	
E29A	Napoleon baz=264	151.46	68	P	PKPbc	06 25 18.1	-0.3	
D29A	Pettibone, Tap	151.54	67	P	PKPbc	06 25 19.2	+0.7	
	baz=265							
J31A	Geddes baz=258	151.57	75	P	PKPbc	06 25 19.4	+0.7	
140A	Cam and Jess, baz=240	151.59	99	P	PKPbc	06 25 20.5	+1.5	
O33A	Hebron baz=253,SNR=5.6	151.59	82	P	PKPbc	06 25 19.5	+0.7	
MDND	Maddock	151.60	65	*e*PKPbc	PKPbc	06 25 19.5	+0.9	
G30A	Faulkton baz=261	151.61	71	P	PKPbc	06 25 18.7	-0.1	
X38A	Whitesboro baz=243,SNR=13	151.62	94	P	PKPbc	06 25 20.5	+1.4	
SUSD	Miller baz=260	151.63	72	P	PKPbc	06 25 18.8	0.0	
Q34A	Chapman baz=251	151.71	85	P	PKPbc	06 25 19.7	+0.5	
S35A	Otter Creek Ra baz=249,SNR=14	151.74	87	P	PKPbc	06 25 20.7	+1.4	
F30A	Leola baz=263	151.80	70	P	PKPbc	06 25 20.2	+1.1	
B29A	Wagenman Farm, baz=267	151.81	64	P	PKPbc	06 25 19.5	+0.4	
Y39A	Lockesburg baz=242,SNR=5.9	151.83	96	P	PKPbc	06 25 21.1	+1.5	
T36A	Boggs Farm, Ca baz=248,SNR=13	151.83	89	P	PKPbc	06 25 20.5	+1.0	
342A	Flagon Creek P baz=238	151.84	102	P	PKPbc	06 25 21.6	+1.9	
I31A	Royce, Wessing baz=260	151.86	73	P	PKPbc	06 25 20.0	+0.6	
N33A	J Bar K, Exete baz=254	151.88	81	P	PKPbc	06 25 19.9	+0.4	
A29A	Manning Farm, baz=268	151.90	63	P	PKPbc	06 25 20.4	+1.2	
V37A	Hulbert baz=246,SNR=5.8	151.91	92	P	PKPbc	06 25 20.3	+0.6	
H31A	Wolsey baz=260	151.98	73	P	PKPbc	06 25 20.3	+0.7	
P34A	Walnut Farm, R baz=252,SNR=7.5	151.99	83	P	PKPbc	06 25 20.9	+1.1	
KSU1	Kansas State U baz=251,SNR=5.3	152.01	84	P	PKPbc	06 25 20.7	+0.9	
KSU1	Kansas State U	152.01	84	*e*PKPbc	PKPbc	06 25 21.1	+1.3	
Z40A	Long Farm, Mag baz=241	152.02	98	P	PKPbc	06 25 21.9	+1.9	
W38A	Poteau baz=244,SNR=5.5	152.03	94	P	PKPbc	06 25 21.3	+1.3	
141A	Papa Simpson, baz=240	152.06	100	P	PKPbc	06 25 22.2	+2.1	
X39A	Fountain Ranch baz=243,SNR=6.9	152.08	95	P	PKPbc	06 25 21.3	+1.1	
D30A	Buchanan baz=265	152.12	67	P	PKPbc	06 25 20.0	+0.1	
U37A	Salina baz=246,SNR=5.1	152.14	91	P	PKPbc	06 25 20.8	+0.6	
J32A	Parkston baz=259	152.22	75	P	PKPbc	06 25 20.4	+0.3	
O34A	Beatrice baz=253	152.28	82	P	PKPbc	06 25 20.8	+0.4	
S36A	Lake Cedric, C baz=249,SNR=8.6	152.29	88	P	PKPbc	06 25 20.8	+0.2	
F31A	Hecla baz=263	152.34	70	P	PKPbc	06 25 20.9	+0.6	
C30A	Moses, Pekin baz=266	152.35	66	P	PKPbc	06 25 21.0	+0.7	
L33A	Hoskins baz=257	152.38	78	P	PKPbc	06 25 20.8	+0.2	
V38A	Canehill baz=245,SNR=7.5	152.44	92	P	PKPbc	06 25 21.5	+0.6	
Y40A	Okolona baz=242	152.46	97	P	PKPbc	06 25 21.7	+0.7	
B30A	Myrvik Farm, E baz=262	152.49	64	P	PKPbc	06 25 20.8	+0.1	
MIAR	Mount Ida baz=243	152.49	95	P	PKPbc	06 25 21.3	+0.3	
A30A	Hoffart Farm, baz=269	152.52	63	P	PKPbc	06 25 21.5	+0.8	
R36A	Gordon, Harris baz=250	152.56	87	P	PKPbc	06 25 21.8	+0.7	
T37A	Cheneyville 18 baz=248,SNR=6.9	152.56	89	P	PKPbc	06 25 21.7	+0.6	
P35A	Duane Minner, baz=252	152.58	84	P	PKPbc	06 25 21.8	+0.6	
N34A	Lincoln baz=254	152.60	81	P	PKPbc	06 25 21.1	0.0	
I32A	Karley and Nic baz=260	152.62	74	P	PKPbc	06 25 22.2	+1.1	
W39A	Magazine baz=244	152.62	94	P	PKPbc	06 25 21.8	+0.5	
E31A	Nome baz=265	152.66	68	P	PKPbc	06 25 21.7	+0.6	
K33A	Hardington baz=258	152.67	77	P	PKPbc	06 25 21.1	-0.1	
U38A	Gravette baz=246,SNR=5.6	152.69	91	P	PKPbc	06 25 21.6	+0.1	
H32A	Carlson Farm, baz=261	152.72	73	P	PKPbc	06 25 21.7	+0.4	
G32A	Webster baz=262	152.78	71	P	PKPbc	06 25 21.7	+0.3	
Q36A	Arnold C. Orve baz=251	152.81	85	P	PKPbc	06 25 22.5	+0.9	
J33A	Davis baz=259	152.84	75	P	PKPbc	06 25 22.1	+0.5	
C31A	Landman Farms, baz=267	152.86	66	P	PKPbc	06 25 21.2	-0.3	
S37A	Fort Scott baz=249	152.87	88	P	PKPbc	06 25 22.4	+0.6	
B31A	Greenbush Farm baz=268	152.94	64	P	PKPbc	06 25 22.0	+0.5	
L34A	Svendsen Farm, baz=256	152.98	79	P	PKPbc	06 25 21.7	-0.2	
T38A	Diamond baz=248	152.99	90	P	PKPbc	06 25 22.5	+0.4	
344A	Westbrook Farm baz=237	153.03	104	P	PKPbc	06 25 25.1	+2.8	
R37A	Teagarden Farm baz=250	153.06	87	P	PKPbc	06 25 22.1	-0.1	
F32A	Veblen baz=264	153.12	70	P	PKPbc	06 25 23.1	+1.0	
W40A	Ferguson Farm, baz=244	153.15	95	P	PKPbc	06 25 23.3	+0.8	
ECSD	EROS Data Cent baz=260	153.17	75	P	PKPbc	06 25 22.3	0.0	
ECSD	EROS Data Cent	153.17	75	*e*PKPdf	PKPdf	06 25 16.1	+1.3	
ECSD				*e*PKPbc	PKiKP	06 25 22.5	+0.1	
P36A	Good Intent, A baz=252	153.21	84	P	PKPbc	06 25 22.6	+0.1	
H33A	Prehn Over Nor baz=262	153.23	73	P	PKPbc	06 25 22.5	+0.1	
U39A	Green Forest baz=246	153.34	92	P	PKPbc	06 25 23.4	+0.5	
244A	Avery, Jackson baz=238	153.38	103	P	PKPbc	06 25 25.3	+2.2	
S38A	Stockton baz=249	153.50	89	P	PKPbc	06 25 23.4	+0.2	
G33A	Ortonville baz=263	153.52	71	P	PKPbc	06 25 22.6	-0.4	
T39A	Clover baz=248	153.67	91	P	PKPbc	06 25 23.6	0.0	
F33A	5 Mile Ranch, baz=264	153.69	70	P	PKPbc	06 25 23.3	0.0	
R38A	Fenwick Farm, baz=250	153.70	88	P	PKPbc	06 25 23.5	-0.1	
A32A	Rocking H Ranc baz=270	153.71	63	P	PKPbc	06 25 23.4	+0.2	
U40A	Yellville baz=246	153.79	92	P	PKPbc	06 25 24.7	+0.8	
P37A	Lathrop baz=252	153.83	85	P	PKPbc	06 25 23.5	-0.4	
H34A	Spellman Lake, baz=262	153.91	73	P	PKPbc	06 25 23.6	-0.2	
S39A	Bolivar baz=249	153.96	89	P	PKPbc	06 25 23.6	-0.6	
ULM	Lac du Bonnet comp=Z,1.2nm,0.4s,baz=239,slow=5.9,SNR=4.6	154.07	60	PKP PKPbc	PKPdf PKiKP	06 25 14.7 06 25 24.1	-1.2 +0.1	
ULM	comp=Z,9.6nm,1.2s,baz=283,slow=2.2,SNR=5.6			PKPab	PKPab	06 25 36.0	-1.6	
	comp=Z,3.4nm,0.7s,baz=296,slow=6.3,SNR=5.4			P	PKPbc	06 25 24.0	-0.5	
O37A	Wolven Farm, M baz=254	154.14	83	P	PKPbc	06 25 24.4	-0.4	
N37A	Lee Faris, Mou baz=255	154.26	82	P	PKPbc	06 25 25.1	0.0	
T40A	Mansfield baz=248	154.35	91	P	PKPbc	06 25 24.5	-0.6	
R39A	Chumby, Stover baz=250	154.38	88	P	PKPbc	06 25 24.6	-0.3	
A33A	Warroad	154.44	63	P	PKPbc	06 25 24.6	-0.3	
	baz=271							
P38A	Dawn baz=253	154.44	85	P	PKPbc	06 25 24.2	-1.0	
K36A	Gilmore City baz=258	154.52	78	P	PKPbc	06 25 24.4	-0.8	
S40A	Lebanon baz=249	154.53	90	P	PKPbc	06 25 25.1	-0.3	
H35A	Sunnyside Ranc baz=263	154.59	73	P	PKPbc	06 25 24.2	-1.1	
Q39A	Willow Grove F baz=252	154.67	87	P	PKPbc	06 25 25.0	-0.6	
B34A	Aery, Baudette baz=271	154.94	64	P	PKPbc	06 25 25.6	-0.3	
P40A	Paris baz=253	155.50	86	P	PKPdf	06 25 26.3	+8.0	
EYMN	Ely baz=272	157.06	65	P	PKPdf	06 25 29.0	+9.0	

NIED **08** *06:13:00,37˚.50N×142˚.30E,h8km,Mw3.8 Best double couple: M0 6.44000×10^14 NP1:φs 15.00000°,δ45.00000°, λ-128.00000°. NP2:φs 242.00000°,δ56.00000°, λ-59.00000°.*

IDC **08** *06:13:41.3±0.7,37˚.40N×142˚.47E,h0km,mb3.8/11, mb1 4.0/13,mb1mx3.8/41,mbtmp3.8/13,ML3.7/2,Error ellipse: s-maj=22.5km s-min=17.4km az=108.0*

ISCJB **08** *06:13:42.6±0.5,37˚.43N±0˚.05×142˚.50E±0˚.06,h21km, mb4.0/18,Error ellipse: s-maj=8.1km s-min=5.5km az=146.6*

JMA **08** *06:13:42.1±0.3,37˚.49N×142˚.33E,h0km,M4.2*

NEIC **08** *06:13:46.8±1.0,37˚.46N×142˚.48E,h36km±9km,mb4.4/7, Error ellipse: s-maj=11.1km s-min=7.7km az=114.0*

ISC 08 06:13:44.5±0.7,37˚.43N±0˚.06×142˚.42E±0˚.07,h21km,n41, σ1$30/38,**mb4.0**/18,**Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JFK	Kawauchi	1.23	268	P	Pn	06 14 04.4	-2.2
JIO	Ouri	1.33	321	P	Pn	06 14 05.9	-2.0
ONAJ	Iwakimizuishiy	1.33	256	P	Pn	06 14 07.6	-0.4
ONAJ				S	Sb	06 14 25.9	+0.4
JMM	Marumori	1.36	289	P	Pn	06 14 06.4	-1.9
JFT	Otama	1.66	274	P	Pn	06 14 12.0	-0.4
JFT				S	Sn	06 14 32.1	-1.0
JOU	Okura	1.68	305	P	Pn	06 14 11.7	-1.0
JHO	Hitachi	1.69	242	P	Pn	06 14 11.7	-1.1
JHO				S	Sn	06 14 33.8	0.0
MJAR	Matsushiro Arr 4.6nm,0.3s,baz=70,slow=8.4,SNR=15	3.49	257	P	Pn	06 14 38.3	+0.8
MAJO	Matsushiro	3.49	257	*e*Pn	Pn	06 14 40.1	+2.5
MAJO				*e*Sn	Sb	06 15 25.9	-1.6
ERM	Erimo	4.62	7	*e*Pn	Pn	06 14 52.6	-0.4
JHJ2	Mitsune	4.80	207	*e*Pn	Pn	06 14 56.4	+0.8
JHJ	Hachijo jima 2 13nm,0.3s,baz=40,slow=7.9,SNR=4.5	4.81	207	Pn	Pn	06 14 54.9	-0.8
JHJ				Sn	Sn	06 15 47.0	-3.7
USRK	29nm,0.3s,baz=77,slow=23,SNR=5.0 Ussuriysk Ar.	10.40	314	Pn	Pn	06 16 15.8	+3.4
KSRS	0.2nm,0.3s,baz=122,slow=13,SNR=3.6 Korea Array	11.53	275	Pn	Pn	06 16 31.1	+3.3
KSAR	0.2nm,0.3s,baz=87,slow=14,SNR=2.9 Wonju Array Be	11.56	274	Pn	Pn	06 16 31.1	+2.8
JOW	Kunigami 8.0nm,0.4s	15.95	233	*e*P	P	06 17 31.2	0.0
H11N2	WAKE ISLAND Hy baz=316	27.67	123	T	T	06 48 20.7	
H11N1	WAKE ISLAND Hy baz=316	27.68	123	T	T	06 48 20.2	
H11N3	WAKE ISLAND Hy baz=316	27.69	123	T	T	06 48 20.7	
ENH	Enshi 24nm,1.1s	28.17	265	*e*P	P	06 19 35.5	0.0
SONM	Songino Array 0.6nm,0.6s,baz=102,slow=9.9,SNR=4.1	28.24	303	P	P	06 19 36.9	+0.8
H11S1	WAKE ISLAND Hy baz=319,slow=74	28.41	125	T	T	06 49 14.5	
H11S3	WAKE ISLAND Hy baz=319,slow=74	28.41	125	T	T	06 49 15.1	
H11S2	WAKE ISLAND Hy baz=319	28.43	125	T	T	06 49 15.1	
ZALV	Zalesovo Beam 1.0nm,0.5s,baz=101,slow=7.7,SNR=4.7	42.25	312	P	P	06 21 36.5	+0.5
MKAR	Makanchi Array 0.4nm,0.4s,baz=88,slow=9.8,SNR=5.4	44.59	302	P	P	06 21 55.7	+0.6
KURK	Kurchatov 6.8nm,0.8s	46.33	308	*e*P	P	06 22 08.8	+0.1
ILAR	Eielson Array 0.6nm,0.9s,baz=244,slow=7.9,SNR=4.4	48.73	33	P	P	06 22 27.6	+0.5
TKM2	Tokmak 2 1.3nm,0.7s	50.15	298	*e*P	P	06 22 38.8	+0.2
INK	Inuvik 9.5nm,1.8s	53.67	27	*e*P	P	06 23 05.2	+1.1
WRAB	Tennant Creek 4.4nm,0.8s	57.55	189	*e*P	P	06 23 34.0	+1.4
WRA	Warramunga Arr 2.4nm,0.8s,baz=7.3,slow=7.2,SNR=11	57.57	189	P	P	06 23 32.2	-0.5
ABKAR	Akbulak array 0.5nm,0.5s	58.30	310	*e*P	P	06 23 37.7	+0.1
ASAR	Alice Springs 1.3nm,0.8s,baz=15,slow=6.7,SNR=7.5	61.29	189	P	P	06 23 58.6	+0.2
RES	Resolute Bay 0.5nm,0.5s,baz=321,slow=6.6,SNR=6.5	62.02	15	P	P	06 24 03.4	+0.7
YKA	Yellowknife Ar 0.2nm,0.6s,baz=302,slow=7.0,SNR=4.5	63.06	30	P	P	06 24 10.0	+0.2
FINES	FINESS Array B 1.0nm,0.5s,baz=19,slow=6.5,SNR=4.2	68.84	333	P	P	06 24 46.4	-0.6
SCO	Scoresbysund 17nm,1.4s	71.80	355	*i* P	P	06 25 02.8	-2.1
AKASG	Malin Array Be 0.4nm,0.3s,baz=48,slow=6.8,SNR=2.9	74.48	323	P	P	06 25 20.6	-0.4
TXAR	Lajitas Array 0.3nm,0.6s,baz=280,slow=5.4,SNR=2.5	89.24	53	P	P	06 26 39.6	+0.3
LPAZ	La Paz 1.0nm,0.7s,baz=307,slow=5.1,SNR=3.2	145.80	60	PKPbc	PKPdf	06 33 22.7	0.0

IDC **08** *06:14:21.9±2.5,38˚.57N×143˚.07E,h0km,mb3.9/4, mb1 4.1/5,mb1mx3.6/40,mbtmp3.9/5,ML2.9/1,Error ellipse: s-maj=90.7km s-min=24.7km az=63.0*

ISCJB **08** *06:14:32.5±1.1,38˚.21N±0˚.06×141˚.8E±0˚.1,h67km±8km, mb3.9/4,Error ellipse: s-maj=17.7km s-min=9.3km az=8.0*

JMA **08** *06:14:33.9,38˚.23N×141˚.81E,h57km±1km,M3.8*

JMA Felt II J1.

ISC 08 06:14:32.5±1.8,38˚.20N±0˚.07×141˚.9E±0˚.1,h60km±14km, n13,σ1$25/19,**mb3.9**/4,**Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JIO	Ouri	0.52	300	P	Pn	06 14 44.9	+0.3
JIO				S	Sn	06 14 52.7	-0.7
JMK	Ichinoseki	0.93	324	P	Pn	06 14 50.0	+0.4
JMK				S	Sn	06 15 01.7	-0.6
JMM	Marumori	0.95	250	P	Pn	06 14 50.0	+0.1
JMM				S	Sn	06 15 01.9	-0.8
JOU	Okura	1.00	280	P	Pn	06 14 51.2	+0.6
JOU				S	Sn	06 15 03.2	-0.8
JFK	Kawauchi	1.17	225	P	Pn	06 14 53.7	+0.9
JOM	Ohasama	1.37	339	P	Pn	06 14 56.2	+0.8
JOM				S	Sn	06 15 12.6	+0.1
JYK	Kaneyama	1.42	301	P	Pn	06 14 56.3	+0.2
JYK				S	Sn	06 15 13.6	-0.3
USRK	Ussuriysk Ar. 0.9nm,0.3s,baz=126,slow=14,SNR=8.6	9.59	312	Pn	Pn	06 16 48.8	+1.1
ZALV	Zalesovo Beam 0.6nm,0.4s,baz=89,slow=7.3,SNR=2.7	41.44	311	P	P	06 22 13.4	+0.4
MKAR	Makanchi Array 0.8nm,0.6s,baz=87,slow=10,SNR=4.6	43.85	301	P	P	06 22 33.5	+0.8
WRA	Warramunga Arr 1.8nm,0.6s,baz=5.2,slow=7.0,SNR=8.8	58.27	188	P	P	06 24 21.6	+0.6
ASAR	Alice Springs 1.0nm,0.7s,baz=355,slow=4.9,SNR=5.3	61.99	188	P	P	06 24 47.6	+1.2
LPAZ	La Paz 0.4nm,0.5s,baz=315,slow=2.9,SNR=1.8	145.75	59	PKP	PKPdf	06 34 01.5	-3.9

IDC **08** *06:30:54.0±2.6,37˚.70N×143˚.27E,h0km,mb3.5/3, mb1 3.6/4,mb1mx3.3/44,mbtmp3.5/4,ML2.6/1,Error ellipse: s-maj=68.7km s-min=31.1km az=65.0*

ISCJB **08** *06:31:11.2±1.0,38˚.26N±0˚.04×141˚.8E±0˚.1,h66km±7km, mb3.5/3,Error ellipse: s-maj=13.9km s-min=6.1km az=19.6*

*JMA **08** 06:31:12.4±0.1, 38°.27N×141°.77E, h57km±1km, M3.3*
ISC 08 06:31:11.4±1.6**, 38°.24N**±0°.05×**141°.9E**±0°.1**, h60**km±11km**, n18, σ0.74**/24**, mb3.7**/3**, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
JIO	Ouri	0.45	299	P	Pn	06 31 23.0	+0.2
JIO				S	Sn	06 31 30.3	-0.8
JMK	Ichinoseki	0.86	325	P	Pn	06 31 28.0	+0.3
JMM	Marumori	0.91	246	P	Pn	06 31 28.5	+0.2
JMM				S	Sn	06 31 40.1	-0.7
JOU	Okura	0.94	278	P	Pn	06 31 29.0	+0.3
JOU				S	Sn	06 31 41.1	-0.3
JFK	Kawauchi	1.17	222	P	Pn	06 31 32.4	+0.7
JFK				S	Sn	06 31 47.2	+0.5
JOM	Ohasama	1.30	341	P	Pn	06 31 34.1	+0.6
JOM				S	Sn	06 31 49.9	-0.1
MIYJ	Miyakonagasawa	1.33	359	P	Pn	06 31 34.5	+0.6
MIYJ				S	Sn	06 31 49.5	-1.2
JYK	Kaneyama	1.35	301	P	Pn	06 31 34.4	+0.3
JYK				S	Sn	06 31 50.8	-0.2
JFT	Otama	1.40	239	P	Pn	06 31 35.9	+1.2
JFT				S	Sn	06 31 52.8	+0.6
JYS	Shirataka	1.40	270	P	Pn	06 31 35.6	+0.8
JYS				S	Sn	06 31 52.6	+0.2
JRG	Rokugo	1.49	321	P	Pn	06 31 36.6	+0.6
JRG				S	Sn	06 31 55.1	+0.6
MJAR	Matsushiro Arr	3.36	241	Pn	Pn	06 31 59.6	-1.8
	0.4nm,0.3s,baz=78,slow=12,SNR=3.8						
H11S1	WAKE ISLAND Hy	29.25	125	T	T	07 06 39.1	
	baz=312,slow=75,SNR=32						
H11S3	WAKE ISLAND Hy	29.25	125	T	T	07 06 39.7	
	baz=312,slow=75,SNR=25						
H11S2	WAKE ISLAND Hy	29.27	125	T	T	07 06 40.8	
	baz=312,slow=75,SNR=26						
MKAR	Makanchi Array	43.78	301	P	P	06 39 10.8	-0.2
	0.3nm,0.6s,baz=87,slow=11,SNR=3.3						
KURBB	Kurchatov Arra	45.54	307	P	P	06 39 24.8	-0.1
	1.1nm,0.9s,baz=84,slow=8.4,SNR=6.5						
WRA	Warramunga Arr	58.30	188	P	P	06 40 48.1	-12
	0.2nm,0.3s,baz=2.8,slow=7.7,SNR=4.3						

IDC 08 06:34:44.6±2.5**, 53°.95N**×**86°.51E, h0**km**, mb1 2.8**/2**, mb1mx2.7**/44**, mbtmp2.8**/2**, ML2.5**/2**, Error ellipse: s-maj=21.2km s-min=13.3km az=56.0, Southwestern Siberia**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
I46RU	ZALESOVO INFRA	1.00	270	*i*		06 42 30.8	
	baz=91,slow=325,SNR=6.0						
ZALV	Zalesovo Beam	1.00	270	Pg	Pg	06 35 03.1	-0.6
	0.9nm,0.3s,baz=91,slow=18,SNR=5.8						
ZALV				Lg	Lg	06 35 17.2	
	2.4nm,0.3s,baz=88,slow=28,SNR=14						
KURBB	Kurchatov Arra	5.92	239	Pn	Pn	06 36 14.4	+0.9
	0.1nm,0.3s,baz=56,slow=14,SNR=12						
KURBB				Lg	Lg	06 37 53.9	
	0.0nm,0.3s,baz=47,slow=28,SNR=4.2						
MKAR	Makanchi Array	7.66	202	Pn	Pn	06 36 38.2	+0.9
	0.1nm,0.3s,baz=24,slow=13,SNR=4.0						
MKAR				Lg	Lg	06 38 48.8	
	0.1nm,0.3s,baz=29,slow=33,SNR=3.3						

*IDC **08** 06:36:55.9±1.4, 38°.82N×142°.66E, h0km, mb3.7/5, mb1 3.8/7, mb1mx3.5/43, mbtmp3.6/7, ML2.7/2, MS3.2/9, Ms1 3.2/9, ms1mx3.0/38, Error ellipse: s-maj=29.4km s-min=26.4km az=85.0*
*ISCJB **08** 06:36:58.9±0.9, 38°.84N±0°.05×142°.55E±0°.08, h27km, mb3.6/5, MS3.7/4, Error ellipse: s-maj=9.7km s-min=7.0km az=162.3*
*JMA **08** 06:37:00.8±0.3, 38°.82N×142°.39E, h30km±5km, M3.5*
ISC 08 06:37:00.4±1.2**, 38°.83N**±0°.07×**142°.45E**±0°.10**, h27**km**, n29, σ1.06**/20**, mb3.7**/5**, MS3.6**/4**, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
MIYJ	Miyakonagasawa	0.90	327	P	Pn	06 37 16.6	-0.6
MIYJ				S	Sb	06 37 27.6	-1.3
JIO	Ouri	0.94	247	P	Pn	06 37 16.9	-0.9
JMK	Ichinoseki	0.97	278	P	Pn	06 37 17.9	-0.3
JMK				S	Sn	06 37 30.1	-1.0
JOM	Ohasama	1.11	306	P	Pn	06 37 20.3	+0.2
JOM				S	Sn	06 37 34.2	-0.4
JKZ	Kuzumaki	1.45	323	P	Pn	06 37 25.7	+0.9
JKZ				S	Sn	06 37 43.7	+0.7
JOU	Okura	1.47	252	P	Pn	06 37 25.5	+0.3
JRG	Rokugo	1.52	293	P	Pn	06 37 26.4	+0.6
JMM	Marumori	1.62	234	P	Pn	06 37 26.7	-0.4
JYK	Kaneyama	1.64	274	P	Pn	06 37 27.9	+0.5
MAT	Matsushiro	4.07	237	P	Pn	06 38 04.5	+3.7
MAT				S	Sn	06 38 35.8	-12
MJAR	Matsushiro Arr	4.07	237	Pn	Pn	06 38 03.1	+2.3
	1.9nm,0.3s,baz=41,slow=12,SNR=15						
MJAR				LR	LR	06 39 46.5	
	comp=Z,107nm,19.5s,baz=40,slow=41						
USRK	Ussuriysk Ar.	9.51	308	Pn	Pn	06 39 18.0	+2.6
	0.2nm,0.3s,baz=126,slow=13,SNR=6.2						
USRK				LR	LR	06 43 29.7	
	comp=Z,46nm,18.3s,baz=352,slow=41						
JNU	Nakatsue	10.96	242	LR	LR	06 44 25.6	
	comp=Z,71nm,18.8s,baz=300,slow=40						
KSRS	Korea Array	11.53	268	LR	LR	06 43 25.2	
	comp=Z,46nm,21.3s,baz=85,slow=33						
KLR	Kul'dur	12.93	327	LR	LR	06 44 59.9	
	comp=Z,71nm,18.8s,baz=82,slow=37						
SONM	Songino Array	27.52	301	P	P	06 42 44.7	0.0
	0.6nm,0.6s,baz=93,slow=9.2,SNR=3.2						
H11N2	WAKE ISLAND Hy	28.43	125	T	T	07 12 39.7	
	baz=319,slow=75,SNR=5.1						
H11N1	WAKE ISLAND Hy	28.44	125	T	T	07 12 39.7	
	baz=319						
H11N3	WAKE ISLAND Hy	28.45	125	T	T	07 12 41.4	
	baz=319,slow=75,SNR=6.4						
H11S1	WAKE ISLAND Hy	29.21	127	T	T	07 14 15.6	
	baz=318,slow=76,SNR=5.2						
H11S3	WAKE ISLAND Hy	29.21	127	T	T	07 14 16.1	
	baz=318,slow=76,SNR=5.1						
H11S2	WAKE ISLAND Hy	29.23	127	T	T	07 14 14.5	
	baz=318,slow=76,SNR=5.2						
ZALV	Zalesovo Beam	41.34	311	P	P	06 44 44.1	+0.5
	1.5nm,0.6s,baz=83,slow=7.7,SNR=6.2						
ZALV				LR	LR	07 01 41.3	
	comp=Z,42nm,19.0s,baz=70,slow=36						
MKAR	Makanchi Array	43.89	301	P	P	06 45 04.7	+0.2
	1.3nm,0.8s,baz=85,slow=9.5,SNR=9.8						
ILAR	Eielson Array	47.55	33	P	P	06 45 32.5	-0.5
	0.3nm,0.7s,baz=267,slow=5.6,SNR=3.3						
WRA	Warramunga Arr	58.95	189	P	P	06 46 56.8	-0.5
	0.3nm,0.5s,baz=6.7,slow=6.9,SNR=6.5						
ARCES	ARCESS Array B	62.61	339	LR	LR	07 17 49.4	
	comp=Z,40nm,19.0s,baz=158,slow=39						
NVAR	Mina Array Bea	73.27	54	LR	LR	07 16 32.1	
	comp=Z,107nm,21.8s,baz=254,slow=32						
PDAR	Pinedale Array	75.83	46	LR	LR	07 24 03.3	
	comp=Z,32nm,18.8s,baz=278,slow=37						

JMA 08 06:37:43.8±0.4**, 38°.36N**×**142°.11E, h41**km**, M3.6, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
JIO	Ouri	0.60	279	P	Pn	06 37 56.0	0.0
JIO				S	Sn	06 38 04.1	-0.5
JMK	Ichinoseki	0.91	311	P	Pn	06 38 01.3	+1.1
JOU	Okura	1.14	271	S	Sn	06 38 19.1	+1.4
JMM	Marumori	1.15	245	S	Sn	06 38 17.9	0.0
MIYJ	Miyakonagasawa	1.24	350	P	Pn	06 38 04.2	-0.4
MIYJ				S	Sn	06 38 18.6	-1.5
JOM	Ohasama	1.28	330	S	Sn	06 38 21.8	+0.6
JFK	Kawauchi	1.39	225	P	Pn	06 38 06.7	-0.1
JFK				S	Sn	06 38 23.1	-0.9

*ISCJB **08** 06:43:37.7±0.9, 22°.13S±0°.05×68°.9W±0°.2, h127km±10km, mb4.6/2, Error ellipse: s-maj=26.7km s-min=6.7km az=10.4*
*GUC **08** 06:43:38.2±0.4, 22°.11S×68°.66W, h92km±10km, ML3.7*
*IDC **08** 06:43:41.0±3.3, 22°.01S×68°.65W, h141km±30km, mb3.1/1, mb1 3.3/3, mb1mx3.1/17, mbtmp3.5/3, Error ellipse: s-maj=59.4km s-min=28.8km az=97.0*
ISC 08 06:43:37.7±1.2**, 22°.12S**±0°.06×**68°.8W**±0°.2**, h120**km±12km**, n12, σ1.51**/20**, 6C, Northern Chile**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
PB06	IPOC Station P	0.92	231	⇑*i*P	Pn	06 43 59.0	-0.1
PB06				*i* S	Sn	06 44 14.8	-0.6
PB06				IAML		06 44 19.2	
	comp=E,2μm,0.2s						
PB07	IPOC Station P	1.09	291	⇑*i*P	Pn	06 44 01.1	+0.3
PB07				*i* S	Sn	06 44 18.8	+0.6
PB07				IAML		06 44 19.6	
	comp=E,2μm,0.3s						
PB01	IPOC Station P	1.25	329	⇑*i*P	Pn	06 44 02.3	-0.1
PB01				*i* S	Sn	06 44 20.6	-0.6
PB01				IAML		06 44 22.7	
	comp=E,1μm,0.3s						
PB08	IPOC Station P	2.00	350	⇑*i*P	Pn	06 44 12.3	+0.7
PB08				*i* S	Sn	06 44 37.9	+0.5
HMBC	Humberstone	2.10	331	⇑*e*P	Pn	06 44 12.2	-0.4
HMBC				*i* S	Sn	06 44 40.1	+0.9
HMBC				IAML		06 44 47.8	
	comp=N,886nm,0.3s						
PB10	IPOC Station P	2.13	229	*e*P	Pn	06 44 13.1	+0.3
PB10				*e*S	Sn	06 44 37.6	-2.1
PB10				IAML		06 44 51.4	
	comp=N,1μm,0.6s						
PB11	IPOC Station P	2.48	341	⇑*e*P	Pn	06 44 16.9	-0.6
PB11				*e*S	Sn	06 44 47.7	-0.3
LPAZ	La Paz	5.84	6	P	Pn	06 45 04.5	+1.9
	comp=N,0.5nm,0.3s,baz=185,slow=6.7,SNR=15						
LPAZ				S	Sn	06 46 03.9	-4.8
	comp=N,0.1nm,0.3s,baz=194,slow=16,SNR=2.7						
PLCA	Paso Flores	18.61	184	P	Pn	06 47 48.9	+1.3
	comp=N,0.1nm,0.3s,baz=8.4,slow=14,SNR=3.4						
TORD	Torodi Ar. Bea	77.47	70	P	P	06 55 20.4	-0.1
	comp=N,142nm,0.8s,baz=252,slow=5.6,SNR=7.1						
YKA	Yellowknife Ar	91.81	341	P	P	06 56 31.8	+0.2
	comp=N,0.1nm,0.4s,baz=123,slow=4.5,SNR=4.0						
MKAR	Makanchi Array	146.07	37	PKPbc	PKPbc	07 03 03.4	-0.4
	comp=N,0.3nm,0.6s,baz=330,slow=4.2,SNR=4.6						

*ISCJB **08** 06:47:43.3±0.5, 35°.25N±0°.02×92°.38W±0°.02, h2km±3km, Error ellipse: s-maj=3.3km s-min=2.7km az=177.2*
*NEIC **08** 06:47:43.9, 35°.24N×92°.36W, h4km, MD2.5(CERI), After CERI.*
NEIC Felt at Greenbrier.
ISC 08 06:47:43.6±0.9**, 35°.24N**±0°.02×**92°.37W**±0°.02**, h6**km±7km**, n33, σ0.79**/53**, Arkansas**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
WHAR	Wooly Hollow	0.08	55	*e*Pg	Pg	06 47 45.6	+0.2
WHAR				*e*Sg	Sg	06 47 46.8	+0.1
W41B	Gary Mavity, V	0.12	126	P	Pg	06 47 46.1	0.0
	baz=307						
W41B				S	Sg	06 47 48.0	+0.2
	baz=307						
UALR	University of	0.47	177	*e*Pg	Pg	06 47 53.2	+0.6
UALR				*e*Sg	Sb	06 48 01.1	-0.3
W40A	Ferguson Farm,	0.58	265	P	Pg	06 47 55.2	+0.5
	baz=85,SNR=18						
V40A	Witts Springs	0.67	327	P	Pg	06 47 56.1	-0.4
	baz=146,SNR=24						
V40A				S	Sg	06 48 05.0	-0.2
	baz=146						
X40A	Basin Creek Fa	0.85	207	P	Pg	06 47 59.6	-0.2
	baz=27,SNR=11						
W39A	Magazine	1.16	268	S	Sb	06 48 21.4	0.0
	baz=87						
U40A	Yellville	1.18	341	P	Pb	06 48 05.3	-1.0
	baz=160,SNR=20						
V39A	Pettigrew	1.20	300	P	Pb	06 48 05.8	-1.0
	baz=119,SNR=21						
V39A				S	Sb	06 48 21.5	-1.1
	baz=119						
MIAR	Mount Ida	1.21	235	P	Pn	06 48 06.3	-0.8
	baz=55						
MIAR				S	Sb	06 48 22.6	-0.3
	baz=55						
MIAR	Mount Ida	1.21	235	*e*Pg	Pn	06 48 06.4	-0.8
MIAR				*e*Sn	Sn	06 48 24.0	+0.2
CCAR	Cane Creek	1.41	159	*e*Pn	Pn	06 48 09.8	-0.1
HBAR	Harrisburg	1.43	77	*e*Sn	Sg	06 48 31.2	+1.6
Y40A	Okolona	1.44	212	Sb	Sg	06 48 30.1	+0.2
	baz=31						
U39A	Green Forest	1.45	322	Pb	Pn	06 48 10.0	-0.4
	baz=141,SNR=13						
U39A				S	Sn	06 48 29.2	-0.6
	baz=141						
QUAR	Qualls	1.46	74	*e*Pn	Pb	06 48 10.7	-0.5
QUAR				*e*Sn	Sg	06 48 31.7	+1.2
X39A	Fountain Ranch	1.61	243	Pb	Pb	06 48 13.3	-0.5
	baz=62,SNR=23						
X39A				Sg	Sg	06 48 36.4	+1.0
	baz=62						
HHAR	Hobbs	1.65	309	*e*Pn	Pb	06 48 14.0	-0.3
HHAR				*e*Sn	Sb	06 48 35.4	0.0
WLAR	White Oak Lake	1.67	202	*e*Pn	Pn	06 48 13.7	+0.4
WLAR				*e*Sn	Sn	06 48 34.2	-0.9
WLAR				*e*Sg	Sb	06 48 34.9	-1.2
W38A	Poteau	1.77	265	Pb	Pn	06 48 15.6	+0.8
	baz=84,SNR=22						
W38A				Sb	Sb	06 48 39.8	+0.8
	baz=84						
V38A	Canehill	1.77	291	Pb	Pn	06 48 15.4	+0.6
	baz=110,SNR=12						
V38A				Sb	Sb	06 48 39.2	+0.1
	baz=110						
T40A	Mansfield	1.91	356	Pb	Pn	06 48 17.6	+0.9
	baz=176,SNR=11						
T40A				Sb	Sb	06 48 42.9	0.0
	baz=176						
T39A	Clever	1.96	336	Pb	Pn	06 48 18.3	+1.0
	baz=155,SNR=19						
U38A	Gravette	2.03	307	Pb	Pn	06 48 19.4	+1.1
	baz=126,SNR=10						
U38A				Sb	Sb	06 48 46.6	+0.3
	baz=126						
X38A	Whitesboro	2.10	255	Pb	Pb	06 48 21.6	-0.5
	baz=74						
X38A				Sb	Sb	06 48 50.0	+1.5
	baz=74						
PBMO	Poplar Bluff	2.19	45	*e*Pn	Pb	06 48 22.2	-1.5
PBMO				*e*Sn	Sb	06 48 51.0	-0.1
S40A	Lebanon	2.35	357	Pb	Pb	06 48 24.6	-1.8
	baz=177,SNR=10						
EBZ	Ebenezer Churc	2.47	92	*e*Sn	Sn	06 48 55.7	+0.8
OXF	Oxford	2.54	106	*e*Pn	Pn	06 48 25.3	-0.1
OXF				*e*Sn	Sn	06 48 57.2	+0.6
S39A	Bolivar	2.56	343	P	Pn	06 48 26.7	+1.0
	baz=162,SNR=8.7						
TUL1	Leonard	2.87	284	P	Pn	06 48 30.5	+0.6
	baz=102						
V36A	Jenks	2.97	282	P	Pn	06 48 32.1	+0.9
	baz=100						
PLAL	Pickwick Lake	3.53	93	*e*Pn	Pn	06 48 39.1	+0.2

*IDC **08** 06:58:04.3±0.8, 36°.88N×144°.08E, h0km, mb3.8/12, mb1 4.0/13, mb1mx3.8/38, mbtmp3.8/13, ML3.6/1, MS2.9/1, Ms1 2.9/1, ms1mx2.4/50, Error ellipse: s-maj=28.3km s-min=18.0km az=108.0*
*NEIC **08** 06:58:05.9±0.5, 36°.85N×144°.08E, h10km, mb4.2/5, Error ellipse: s-maj=12.8km s-min=9.5km az=140.0*
*ISCJB **08** 06:58:07.2±0.6, 36°.82N±0°.10×144°.0E±0°.1, h33km, mb3.9/16, Error ellipse: s-maj=15.6km s-min=11.5km az=141.2*
ISC 08 06:58:09.1±0.8**, 36°.7N**±0°.1×**144°.0E**±0°.1**, h35**km**, n24, σ1.32**/20**, mb4.0**/16**, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
MJAR	Matsushiro Arr	4.65	270	Pn	Pn	06 59 16.6	-0.3
	2.4nm,0.3s,baz=30,slow=11,SNR=8.7						
MAJO	Matsushiro	4.66	270	*e*Pn	Pn	06 59 17.5	+0.6
JHJ	Hachijo jima 2	4.99	225	Sn	Sn	07 00 14.9	-2.9
	66nm,0.3s,baz=26,slow=22,SNR=5.1						
KSRS	Korea Array	12.86	278	LR	LR	07 06 32.9	
	comp=Z,54nm,19.6s,baz=74,slow=39						
H11N2	WAKE ISLAND Hy	26.23	124	T	T	07 30 41.7	
	baz=312,slow=75,SNR=6.9						
H11N1	WAKE ISLAND Hy	26.24	124	T	T	07 30 41.7	
	baz=312						
H11N3	WAKE ISLAND Hy	26.25	124	T	T	07 30 39.9	
	baz=312,slow=75,SNR=4.8						
SEY	Seymchan	26.75	9	P	P	07 03 44.9	-0.2
	1.1nm,0.5s,baz=192,slow=6.2,SNR=9.2						
KURK	Kurchatov	47.75	309	*e*P	P	07 06 44.8	+2.4
	1.4nm,0.7s						
ILAR	Eielson Array	48.65	32	P	P	07 06 48.5	-0.8
	0.5nm,0.7s,baz=266,slow=6.2,SNR=7.0						
INK	Inuvik	53.72	27	P	P	07 07 26.0	-1.1
	0.3nm,0.4s,baz=293,slow=7.2,SNR=4.6						
INK	Inuvik	53.72	27	*e*P	P	07 07 27.6	+0.5
	8.8nm,1.7s						
WRAB	Tennant Creek	57.08	191	*e*P	P	07 07 53.1	+1.3
	9.7nm,1.4s						
WRA	Warramunga Arr	57.09	191	P	P	07 07 53.5	+1.6
	0.4nm,0.5s,baz=9.8,slow=7.1,SNR=9.7						
ABKAR	Akbulak array	59.71	311	*e*P	P	07 08 09.2	-0.8
	0.6nm,0.5s						
ASAR	Alice Springs	60.81	191	P	P	07 08 19.8	+2.1
	0.4nm,0.8s,baz=9.4,slow=8.5,SNR=3.5						
RES	Resolute Bay	62.38	15	*e*P	P	07 08 26.8	-0.9
	1.0nm,0.9s						
YKA	Yellowknife Ar	63.03	31	P	P	07 08 31.3	-0.9
	0.3nm,0.8s,baz=296,slow=7.3,SNR=3.6						
ARCES	ARCESS Array B	65.00	340	P	P	07 08 44.6	-0.5
	2.6nm,1.0s,baz=58,slow=7.4,SNR=4.6						
FINES	FINESS Array B	70.04	333	P	P	07 09 17.2	+0.3
	2.2nm,0.7s,baz=44,slow=5.8,SNR=4.1						
KBZ	Khabaz	72.66	312	P	P	07 09 34.0	+1.0
	2.7nm,1.0s,baz=73,slow=3.6,SNR=3.9						
NOA	NORSAR Array B	75.26	338	P	P	07 09 48.4	+0.4
	1.9nm,0.8s,baz=40,slow=5.6,SNR=3.7						
AKASG	Malin Array Be	75.79	323	P	P	07 09 50.3	-0.9
	0.1nm,0.2s,baz=50,slow=6.7,SNR=4.1						
TXAR	Lajitas Array	88.65	54	P	P	07 10 58.7	-0.3
	0.4nm,0.7s,baz=316,slow=3.8,SNR=3.5						

*NIED **08** 06:58:00, 36°.30N×142°.60E, h14km, Mw4.0 Best double couple: $M_0$1.29000×10[15] NP1:ϕ_s182.00000°, δ34.00000°, λ-26.00000°. NP2:ϕ_s294.00000°, δ76.00000°, λ-122.00000°.*
*IDC **08** 06:58:44.0±0.7, 36°.11N×142°.65E, h0km, mb3.7/14, mb1 4.0/17, mb1mx3.8/40, mbtmp3.8/17, ML1.3/1, MS3.3/4, Ms1 3.4/4, ms1mx2.8/50, Error ellipse: s-maj=20.2km s-min=16.9km az=145.0*
*ISCJB **08** 06:58:45.4±0.5, 36°.19N±0°.06×142°.56E±0°.05, h18km, mb3.8/15, MS3.6/1, Error ellipse: s-maj=9.1km s-min=5.3km az=166.9*
*JMA **08** 06:58:45.7±0.4, 36°.35N×142°.64E, h38km, M4.2*
ISC 08 06:58:46.9±0.7**, 36°.13N**±0°.06×**142°.51E**±0°.06**, h18**km**, n37, σ1.30**/32**, mb3.7**/15**, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
CHOJ	Chosi	1.41	253	P	Pb	06 59 12.3	-0.3
CHOJ				*e*S	Sb	06 59 30.6	+0.4
JHO	Hitachi	1.64	288	P	Pn	06 59 14.0	-0.9
JHO				S	Sn	06 59 34.1	-1.4
ONAJ	Iwakimizuishiy	1.69	306	P	Pn	06 59 12.4	-3.1
BSO1	Boso 1	1.93	221	P	Pb	06 59 20.2	-1.0
JFT	Otama	2.23	309	P	Pn	06 59 23.8	+0.8
JAG	Ashikaga	2.49	278	P	Pn	06 59 26.8	+0.3
JAG				S	Sn	06 59 56.1	-0.4
JOD2	Odawara 2	2.92	254	P	Pn	06 59 33.9	+1.5
JRY	Ryogami san	2.93	269	S	Sn	07 00 07.7	+0.4
MJAR	Matsushiro Arr	3.50	278	Pn	Pn	06 59 40.5	0.0
	7.4nm,0.3s,baz=111,slow=8.6,SNR=12						
MAT	Matsushiro	3.50	278	P	Pn	06 59 39.5	-0.9
MAT				S	Sn	07 00 17.9	-3.5
JHJ	Hachijo jima 2	3.75	218	Pn	Pn	06 59 44.2	+0.4
	37nm,0.3s,baz=80,slow=21,SNR=4.1						
JHJ				Sn	Sn	07 00 24.9	-2.6
	54nm,0.3s,baz=72,slow=19,SNR=4.5						
JNU	Nakatsue	10.04	256	LR	LR	07 05 27.8	
	comp=Z,78nm,20.3s,baz=320,slow=40						
USRK	Ussuriysk Ar.	11.39	318	Pn	Pn	07 01 31.1	+2.6
	0.0nm,0.3s,baz=126,slow=14,SNR=3.3						
USRK				LR	LR	07 05 45.5	
	comp=Z,186nm,19.5s,baz=137,slow=37						
KLR	Kul'dur	15.28	332	LR	LR	07 08 26.4	
	comp=Z,113nm,18.3s,baz=158,slow=38						
H11N2	WAKE ISLAND Hy	26.92	121	T	T	07 32 37.4	
	baz=313,slow=75,SNR=15						
H11N1	WAKE ISLAND Hy	26.93	121	T	T	07 32 36.9	
	baz=313,slow=75,SNR=18						
H11N3	WAKE ISLAND Hy	26.94	121	T	T	07 32 38.0	
	baz=313,slow=75,SNR=15						
SEY	Seymchan	27.52	10	P	P	07 04 32.2	+0.2
	1.4nm,0.8s,baz=172,slow=19,SNR=4.7						
H11S1	WAKE ISLAND Hy	27.62	123	T	T	07 33 31.0	
	baz=325,slow=76						
H11S3	WAKE ISLAND Hy	27.62	123	T	T	07 33 30.5	
	baz=325,slow=76,SNR=5.6						
H11S2	WAKE ISLAND Hy	27.64	123	T	T	07 33 29.4	
	baz=325,slow=76,SNR=4.9						
SONM	Songino Array	29.03	305	P	P	07 04 46.7	+0.8
	0.8nm,0.5s,baz=105,slow=8.0,SNR=4.1						
ZALV	Zalesovo Beam	43.18	313	P	P	07 06 46.8	+0.4
	0.7nm,0.5s,baz=126,slow=7.3,SNR=2.6						
MKAR	Makanchi Array	45.35	303	P	P	07 07 04.6	+0.6
	0.7nm,0.6s,baz=90,slow=8.6,SNR=7.0						
KDAK	Kodiak Island	47.19	41	P	P	07 07 17.9	-0.2
	18nm,1.0s,baz=282,slow=9.3,SNR=3.3						
ILAR	Eielson Array	49.79	32	P	P	07 07 37.5	-0.6
	0.5nm,0.6s,baz=263,slow=6.4,SNR=7.9						
BVAR	Borovoye Array	51.84	313	P	P	07 07 54.6	+0.9
	0.2nm,0.5s,baz=85,slow=3.2,SNR=2.4						
INK	Inuvik	54.79	27	P	P	07 08 14.2	-1.0
	0.8nm,0.5s,baz=295,slow=6.9,SNR=9.5						
WRA	Warramunga Arr	56.30	189	P	P	07 08 27.0	+0.5
	1.0nm,1.0s,baz=7.0,slow=7.1,SNR=3.3						
ASAR	Alice Springs	60.02	189	P	P	07 08 52.0	-0.6
	0.4nm,0.6s,baz=11,slow=6.2,SNR=4.4						
YKA	Yellowknife Ar	64.15	30	P	P	07 09 19.4	-0.3
	0.3nm,0.7s,baz=302,slow=6.8,SNR=4.2						
NVAR	Mina Array Bea	74.82	53	P	P	07 10 26.8	+0.4
	1.1nm,0.6s,baz=298,slow=6.6,SNR=9.5						
NOA	NORSAR Array B	75.36	338	LR	LR	07 49 46.2	
	comp=Z,31nm,18.0s,baz=35,slow=41						
AKASG	Malin Array Be	75.56	323	P	P	07 10 30.2	0.0
	0.6nm,0.4s,baz=44,slow=5.7,SNR=4.3						
PDAR	Pinedale Array	77.67	46	P	P	07 10 42.2	-0.4
	0.4nm,0.7s,baz=320,slow=3.8,SNR=3.1						
TXAR	Lajitas Array	89.97	53	P	P	07 11 45.1	-0.4
	0.3nm,0.5s,baz=318,slow=3.5,SNR=4.0						
LPAZ	La Paz	146.36	62	PKPbc	PKPdf	07 18 27.0	+0.4
	0.7nm,0.4s,baz=22,slow=4.2,SNR=4.5						

IDC 08 07:03:45.2±3.5**, 23°.26N**×**95°.23E, h0**km**, mb3.7**/4**, mb1 3.9**/4**, mb1mx3.4**/44**, mbtmp3.7**/4**, MS3.7**/1**, Ms1 3.7**/1**, ms1mx2.7**/44**, Error ellipse: s-maj=264.1km s-min=21.2km az=62.0, Myanmar**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
SHL	Shillong	3.82	308	*e*PN	Pn	07 04 48.0	+2.4
SHL				*e*SN	Sn	07 05 25.5	-5.8
MKAR	Makanchi Array	25.69	339	P	P	07 09 16.9	-0.1
	0.7nm,0.5s,baz=143,slow=10,SNR=9.2						
ZALV	Zalesovo Beam	31.64	348	P	P	07 10 09.9	+0.1
	0.5nm,0.4s,baz=168,slow=7.4,SNR=2.8						
AKTO	Aktyubinsk	39.63	323	LR	LR	07 28 49.5	
	comp=Z,93nm,19.0s,baz=329,slow=38						
WRA	Warramunga Arr	57.43	135	P	P	07 13 35.9	-0.2
	0.9nm,0.7s,baz=323,slow=7.4,SNR=16						
ASAR	Alice Springs	59.89	139	P	P	07 13 53.3	+0.2
	0.4nm,0.6s,baz=314,slow=6.9,SNR=7.6						

*IDC **08** 07:04:29.6±1.3, 36°.65N×140°.70E, h0km, mb3.5/5, mb1 3.7/5, mb1mx3.4/38, mbtmp3.5/5, Error ellipse: s-maj=26.2km s-min=22.6km az=136.0*
*ISCJB **08** 07:04:30.2±0.9, 36°.66N±0°.04×140°.77E±0°.06, h12km±4km, mb3.5/5, Error ellipse: s-maj=8.4km s-min=4.8km az=31.6*
*JMA **08** 07:04:31.9, 36°.71N×140°.63E, h5km±1km, M3.3*
JMA Felt II J1.
ISC 08 07:04:31.2±1.0**, 36°.69N**±0°.04×**140°.64E**±0°.06**, h12**km±6km**, n21, σ0.52**/24**, mb3.6**/5**, 4C, Near east coast of eastern**

Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
JHO	Hitachi	0.09	216	⇑P	Pg	07 04 34.2	+0.3
JHO				S	Sg	07 04 35.9	0.0
ONAJ	Iwakimizuishiy	0.43	17	⇑P	Pg	07 04 39.9	0.0
ONAJ				S	Sg	07 04 45.6	-0.1
JYT	Yasato	0.58	218	⇑P	Pb	07 04 43.1	-0.2
JYT				S	Sb	07 04 51.6	+0.1
JSB	Shiboa	0.64	296	P	Pb	07 04 44.6	+0.2
JSB				S	Sb	07 04 53.6	+0.3
JFK	Kawauchi	0.71	16	⇑P	Pg	07 04 44.8	-0.1
JFK				S	Sg	07 04 53.9	-0.3
JFT	Otama	0.86	344	P	Pb	07 04 48.1	-0.1
JFT				S	Sg	07 04 59.0	-0.3
JAG	Ashikaga	0.99	255	P	Pb	07 04 49.9	-0.4
JFY	Yanaizu	1.04	314	P	Pg	07 04 51.5	+0.3
JFY				S	Sb	07 05 04.5	-0.2
MJAR	Matsushiro Arr	1.96	267	Pn	Pb	07 05 05.7	-1.2
	15nm,0.3s,baz=85,slow=9.9,SNR=54						
MJAR				Sn	Sb	07 05 31.4	+0.2
	20nm,0.3s,baz=86,slow=29,SNR=17						
MAT	Matsushiro	1.96	267	P	Pb	07 05 05.9	-1.0
MAT				S	Sb	07 05 32.2	+0.9
SONM	Songino Array	27.47	305	P	P	07 10 17.7	+0.5
	0.5nm,0.6s,baz=100,slow=9.7,SNR=3.1						
H11N2	WAKE ISLAND Hy	28.51	119	T	T	07 40 10.7	
	baz=312,slow=75,SNR=48						
H11N1	WAKE ISLAND Hy	28.52	119	T	T	07 40 11.3	
	baz=312,slow=75,SNR=69						
H11N3	WAKE ISLAND Hy	28.53	119	T	T	07 40 12.0	
	baz=312,slow=75,SNR=55						
H11S1	WAKE ISLAND Hy	29.20	121	T	T	07 41 03.3	
	baz=314,slow=75,SNR=156						
H11S3	WAKE ISLAND Hy	29.20	121	T	T	07 41 03.4	
	baz=314,slow=75,SNR=133						
H11S2	WAKE ISLAND Hy	29.22	121	T	T	07 41 04.1	
	baz=314,slow=75,SNR=130						
ILAR	Eielson Array	50.12	32	P	P	07 13 26.5	+0.6
	0.2nm,0.7s,baz=269,slow=9.0,SNR=3.0						
BVAR	Borovoye Array	50.34	312	P	P	07 13 27.2	-0.6
	0.3nm,0.3s,baz=88,slow=9.3,SNR=2.4						
INK	Inuvik	54.98	27	P	P	07 14 02.6	+0.8
	0.3nm,0.3s,baz=270,slow=3.0,SNR=2.9						
WRA	Warramunga Arr	56.63	187	P	P	07 14 14.0	-0.3
	0.5nm,0.8s,baz=4.0,slow=7.3,SNR=5.3						

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*NIED **08** 07:07:00, 38°.00N×143°.80E, h5^{km}, Mw4.0 Best double couple: M$_0$1.26000×10^{15} NP1:ϕ_s206.00000°, δ41.00000°, λ-79.00000°. NP2:ϕ_s12.00000°, δ49.00000°, λ-99.00000°.*
*IDC **08** 07:07:37.4±0.6, 37°.88N×143°.96E, h0^{km}, mb4.1/23, mb1 4.2/28, mb1mx4.2/45, mbtmp4.1/28, ML3.5/5, MS3.2/7, Ms1 3.2/7, ms1mx2.9/46, Error ellipse: s-maj=16.0km s-min=13.4km az=137.0*
*ISCJB **08** 07:07:38.9±1.3, 37°.95N±0°.04×143°.84E±0°.04, h18^{km}±9^{km}, mb4.2/41, MS3.5/5, Error ellipse: s-maj=6.6km s-min=4.8km az=163.9*
*NEIC **08** 07:07:39.1±0.4, 37°.93N×143°.97E, h10^{km}, mb4.6/11, Error ellipse: s-maj=8.2km s-min=6.0km az=145.0*
*MOS **08** 07:07:40.7±1.0, 37°.90N×143°.92E, h34^{km}, mb4.5/25, Error ellipse: s-maj=9.6km s-min=6.9km az=98.8*
*JMA **08** 07:07:40.6±0.3, 37°.96N×143°.83E, h46^{km}, M4.2*
ISC 08 07:07:41.4±2.4**, 37°.94N**±0°.06×**143°.85E**±0°.06**, h23**^{km}±16^{km}**, n98, σ1^{s}.26**/101**, mb4.3**/41**, MS3.4**/5**, 11C-4D, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
JIO	Ouri	2.04	285	P	Pn	07 08 13.2	-1.0
JIO				S	Sn	07 08 37.4	-1.6
JMK	Ichinoseki	2.30	297	eS	Sn	07 08 43.6	-1.8
JMM	Marumori	2.42	269	P	Pn	07 08 18.6	-0.9
JMM				S	Sn	07 08 47.0	-1.4
JFK	Kawauchi	2.43	257	P	Pn	07 08 18.3	-1.4
JFK				S	Sn	07 08 46.2	-2.5
JOM	Ohasama	2.52	308	P	Pn	07 08 20.4	-0.5
JOM				eS	Sn	07 08 49.4	-1.5
JTH	Tanohata	2.53	323	eS	Sn	07 08 48.7	-2.4
JOU	Okura	2.55	281	P	Pn	07 08 21.0	-0.3
JFT	Otama	2.82	263	P	Pn	07 08 24.9	-0.1
JFT				S	Sn	07 08 57.5	-0.8
JRG	Rokugo	2.91	301	P	Pn	07 08 25.7	-0.5
JRG				eS	Sn	07 08 59.8	-0.7
JYK	Kaneyama	2.91	291	P	Pn	07 08 26.0	-0.3
JYK				eS	Sn	07 08 59.8	-0.7
JANG	Nango	3.04	324	P	Pn	07 08 26.8	-1.2
ERM	Erimo	4.11	353	⇑eP	Pn	07 08 41.6	-1.1
ERM	Erimo	4.11	353	ePn	Pn	07 08 41.0	-1.7
ERM				eSn	Sn	07 09 23.0	-7.0
JRY	Ryogami san	4.40	246	P	Pn	07 08 46.0	-0.8
JRY				S	Sn	07 09 33.6	-3.8
JNBK	Urakawa-nobuka	4.42	349	P	Pn	07 08 45.7	-1.2
JKB	Kayabe	4.50	332	P	Pn	07 08 48.2	+0.1
JCH	Churui	4.69	356	P	Pn	07 08 49.0	-1.6
MJAR	Matsushiro Arr	4.71	255	Pn	Pn	07 08 51.1	+0.1
	8.9nm,0.3s,baz=81,slow=15,SNR=20						
MJAR				LR	LR	07 11 00.7	
	comp=Z,230nm,19.2s,baz=100,slow=43						
MAJO	Matsushiro	4.71	255	d iP	Pn	07 08 52.5	+1.4
MAJO	Matsushiro	4.71	255	ePn	Pn	07 08 52.0	+0.9
JHJ	Hachijo jima 2	5.84	216	Pn	Pn	07 09 05.0	-1.5
	5.8nm,0.3s,baz=44,slow=18,SNR=3.5						
JHJ				Sn	Sn	07 10 04.0	-8.8
	9.7nm,0.3s,baz=66,slow=20,SNR=1.8						
YUK	Yuzh-Kuril'sk	6.28	13	eP	Pn	07 09 08.6	-3.9
YUK				iS	Sn	07 10 15.9	-7.5
YUK				pmax	pmax		
	comp=Z,109nm,0.5s						
YUK				pmax	pmax		
	comp=N,57nm,0.2s						
YUK				pmax	pmax		
	comp=E,43nm,0.2s						
SHO	Shikotan	6.34	20	eP	Pn	07 09 09.1	-4.2
SHO				pmax	pmax		
	comp=Z,50nm,0.7s						
SHO				pmax	pmax		
	comp=N,53nm,0.6s						
SHO				pmax	pmax		
	comp=E,17nm,0.5s						
KUR	Kuril'sk	7.88	21	⇓P	Pn	07 09 35.1	+0.6
YSS	Yuzh-Sakhalins	9.05	355	eP	Pn	07 09 51.6	+1.2
YSS				pmax	pmax		
	comp=Z,30nm,1.0s						
USRK	Ussuriysk Ar.	10.92	309	Pn	Pn	07 10 17.5	+1.4
	comp=Z,0.6nm,0.3s,baz=121,slow=12,SNR=16						
USRK				LR	LR	07 14 24.6	
	comp=Z,168nm,18.2s,baz=144,slow=37						
JNU	Nakatsue	11.61	249	LR	LR	07 15 34.7	
	comp=Z,81nm,19.0s,baz=128,slow=41						
KSRS	Korea Array	12.63	273	Pn	Pn	07 10 42.0	+2.5
	comp=Z,0.3nm,0.3s,baz=89,slow=13,SNR=8.6						
KSRS				LR	LR	07 15 17.6	
	comp=Z,97nm,18.3s,baz=80,slow=36						
KSRS	Korea Array	12.63	273	P	Pn	07 10 42.0	+2.5
KSRS				MLR	MLR		
	comp=Z,97nm,18.3s						
KSAR	Wonju Array Be	12.66	273	P	Pn	07 10 42.0	+2.0
KSAR	Wonju Array Be	12.66	273	Pn	Pn	07 10 42.0	+2.0
KLR	Kul'dur	14.27	326	Pn	Pn	07 10 59.9	-2.0
	comp=Z,0.2nm,0.3s,baz=116,slow=14,SNR=5.7						
SKR	Severo-Kuril's	15.45	30	P	Pn	07 11 18.0	+0.4
MA2	Magadan	22.11	9	P	P	07 12 35.1	+0.3
	comp=Z,1.3nm,0.2s,baz=221,slow=10,SNR=4.2						
SEY	Seymchan	25.56	9	P	P	07 13 08.8	+0.7
	comp=Z,3.5nm,0.7s,baz=195,slow=7.0,SNR=19						
SEY	Seymchan	25.56	9	⇑iP	P	07 13 09.4	+1.2
YAK	Yakutsk	25.66	345	iP	P	07 13 09.8	+0.7
YAK				pmax	pmax		
	comp=Z,17nm,0.5s						
H11N2	WAKE ISLAND Hy	27.02	126	T	T	07 41 36.1	
	baz=318,slow=75,SNR=9.7						
H11N1	WAKE ISLAND Hy	27.03	126	T	T	07 41 35.3	
	baz=318,slow=75,SNR=6.0						
H11N3	WAKE ISLAND Hy	27.04	126	T	T	07 41 36.3	
	baz=318,slow=75,SNR=6.2						
BOD	Bodaibo	27.85	325	eP	P	07 13 28.2	-0.6
BOD				pmax	pmax		
	comp=Z,6.0nm,0.9s						
ULN	Ulaanbaatar	28.48	302	⇑iP	P	07 13 37.4	+2.6
ULN				pmax	pmax		
	comp=Z,7.0nm,1.2s						
ULN	Ulaanbaatar	28.48	302	eP	P	07 13 36.6	+1.7
	comp=Z,13nm,1.3s						
SONM	Songino Array	28.92	302	P	P	07 13 39.4	+0.7
	comp=Z,3.4nm,0.9s,baz=92,slow=8.2,SNR=14						
ENH	Enshi	29.34	265	eP	P	07 13 44.3	+1.8
	comp=Z,12nm,0.9s						
TLY	Talaya	31.23	309	eP	P	07 14 02.5	+3.5
TLY				pmax	pmax		
	comp=Z,4.0nm,0.9s						
TLY				MLR	MLR		
	comp=Z,105nm,14.0s						
ZAK	Zakamensk	31.26	307	eP	P	07 13 59.1	-0.2
ZAK				pmax	pmax		
	comp=Z,4.0nm,1.0s						
ZALV	Zalesovo Beam	42.75	312	P	P	07 15 37.2	+0.6
	comp=Z,1.7nm,0.8s,baz=77,slow=6.4,SNR=5.9						
ZALV				PcP	PcP	07 17 27.8	0.0
	comp=Z,1.6nm,0.6s,baz=107,slow=1.5,SNR=4.4						
ZALV				LR	LR	07 33 11.0	
	comp=Z,27nm,19.4s,baz=70,slow=36						
ZALV	Zalesovo Beam	42.75	312	iP	P	07 15 37.0	+0.4
ZALV				pmax	pmax		
	comp=Z,1.0nm,0.7s						
CMAR	Chiang Mai Arr	43.60	256	P	P	07 15 44.2	+0.3
	comp=Z,1.2nm,0.4s,baz=52,slow=6.4,SNR=4.9						
CMAR	Chiang Mai Arr	43.60	256	ceP	P	07 15 44.5	+0.6
CMAR				pmax	pmax		
	comp=Z,1.0nm,0.3s						
KDAK	Kodiak Island	45.13	43	ceP	P	07 15 55.8	+0.2
MKAR	Makanchi Array	45.29	302	P	P	07 15 57.6	+0.4
	comp=Z,2.7nm,0.7s,baz=85,slow=9.5,SNR=26						
MKAR	Makanchi Array	45.29	302	iP	P	07 15 57.7	+0.6
MKAR				pmax	pmax		
	comp=Z,3.0nm,0.7s						
KURK	Kurchatov	46.91	308	eP	P	07 16 09.9	+0.1
KURK				pmax	pmax		
	comp=Z,17nm,0.8s						
KURK	Kurchatov	46.91	308	eP	P	07 16 09.8	+0.1
	comp=Z,17nm,0.8s						
ILAR	Eielson Array	47.69	33	P	P	07 16 15.5	-0.2
	comp=Z,1.1nm,0.7s,baz=263,slow=5.2,SNR=15						
KAPI	Kappang	48.25	213	LR	LR	07 34 20.4	
	comp=Z,26nm,21.6s,baz=315,slow=33						
TKM2	Tokmak 2	50.91	298	eP	P	07 16 41.8	+0.9
TKM2				pmax	pmax		
	comp=Z,11nm,1.1s						
TKM2	Tokmak 2	50.91	298	eP	P	07 16 41.8	+0.9
	comp=Z,11nm,1.1s						
BVAR	Borovoye Array	51.40	312	P	P	07 16 44.4	+0.2
	comp=Z,1.6nm,0.6s,baz=72,slow=9.7,SNR=9.8						
BRVK	Borovoye	51.45	312	⇑iP	P	07 16 45.5	+1.0
BRVK				pmax	pmax		
	comp=Z,1.0nm,0.6s						
AAK	Ala-Archa	51.77	298	P	P	07 16 47.4	+0.1
	comp=Z,2.1nm,0.7s,baz=170,slow=13,SNR=3.9						
AAK	Ala-Archa	51.77	298	⇑eP	P	07 16 47.3	+0.1
AAK				pmax	pmax		
	comp=Z,4.0nm,0.9s						
AAK	Ala-Archa	51.77	298	eP	P	07 16 47.2	-0.1
	comp=Z,1.8nm,0.7s						
INK	Inuvik	52.69	28	P	P	07 16 53.0	-0.4
	comp=Z,0.6nm,0.5s,baz=307,slow=6.1,SNR=6.5						
LEM	Lembang	55.87	225	LR	LR	07 39 24.7	
	comp=Z,36nm,21.4s,baz=40,slow=34						
ARU	Arti	56.97	319	d iP	P	07 17 24.9	+0.3
ARU				S	S	07 25 18.8	+1.6
ARU				SS	SS	07 29 03.7	-1.5
ARU				pmax	pmax		
	comp=Z,17nm,1.2s						
ARU	Arti	56.97	319	eP	P	07 17 24.5	-0.1
	comp=Z,6.3nm,0.6s						
WRAB	Tennant Creek	58.25	191	⇑iP	P	07 17 33.4	-0.6
WRAB				pmax	pmax		
	comp=Z,24nm,1.2s						
WRAB	Tennant Creek	58.25	191	eP	P	07 17 32.6	-1.4
	comp=Z,15nm,1.2s						
WRA	Warramunga Arr	58.26	191	P	P	07 17 33.2	-0.9
	comp=Z,6.2nm,0.8s,baz=11,slow=7.4,SNR=34						
ABKAR	Akbulak array	58.84	310	eP	P	07 17 37.7	-0.2
	comp=Z,3.1nm,0.7s						
AKTO	Aktyubinsk	59.51	312	P	P	07 17 42.5	0.0
	comp=Z,3.6nm,0.8s,baz=69,slow=8.9,SNR=14						
ASAR	Alice Springs	61.99	190	P	P	07 17 58.9	-0.7
	comp=Z,1.8nm,0.8s,baz=11,slow=6.5,SNR=16						
YKA	Yellowknife Ar	62.05	31	P	P	07 17 58.7	-0.8
	comp=Z,0.4nm,0.7s,baz=302,slow=6.3,SNR=9.4						
KLMR	Klimovskoe	64.02	328	eP	P	07 18 10.7	-2.0
KLMR				pmax	pmax		
	comp=Z,16nm,1.5s						
GEYT	Alibeck	65.09	300	P	P	07 18 20.5	+0.4
	comp=Z,2.6nm,0.3s,baz=52,slow=2.4,SNR=6.1						
OBN	Obninsk	68.52	324	⇓eP	P	07 18 42.1	+0.5
OBN				e		07 21 14.6	
OBN				ePPP	PPP	07 22 54.8	
OBN				eS	PnS	07 28 01.9	-5.3
OBN				pmax	pmax		
	comp=Z,6.0nm,0.9s						
FINES	FINESS Array B	68.91	333	P	P	07 18 44.0	+0.1
	comp=Z,3.3nm,0.6s,baz=54,slow=9.7,SNR=9.0						
FINES	FINESS Array B	68.91	333	P	P	07 18 44.0	+0.1
FINES				pmax	pmax		
	comp=Z,3.0nm,0.6s						
KIV	Kislovodsk	71.77	312	⇑iP	P	07 19 03.4	+1.5
KIV				e		07 21 45.5	
KIV				ePPP	PPP	07 23 26.7	
KIV				pmax	pmax		
	comp=Z,7.0nm,0.7s						
KIV				MLR	MLR		
	comp=Z,41nm,14.0s						
KBZ	Khabaz	71.77	311	P	P	07 19 02.3	+0.5
	comp=Z,1.9nm,0.7s,baz=59,slow=5.8,SNR=4.5						
FFC	Flin Flon	71.89	34	eP	P	07 19 02.5	+0.3
FFC				pmax	pmax		
	comp=Z,2.0nm,1.0s						
FFC	Flin Flon	71.89	34	eP	P	07 19 02.5	+0.3
	comp=Z,2.2nm,1.0s						
FCC	Fort Churchill	72.31	28	eP	P	07 19 04.1	-0.6
FCC				pmax	pmax		
	comp=Z,3.0nm,1.0s						
FCC	Fort Churchill	72.31	28	eP	P	07 19 04.1	-0.6
	comp=Z,2.5nm,1.0s						
NVAR	Mina Array Bea	72.89	54	P	P	07 19 09.2	+0.4
	comp=Z,0.4nm,0.8s,baz=285,slow=4.6,SNR=2.4						
NB2	NORSAR Subarra	74.09	338	P	P	07 19 14.8	-0.4
	comp=Z,4.6nm,1.0s,baz=42,slow=6.2						
NOA	NORSAR Array B	74.09	338	P	P	07 19 15.2	0.0
	comp=Z,2.4nm,0.9s,baz=43,slow=5.5,SNR=4.6						
AKASG	Malin Array Be	74.75	323	P	P	07 19 19.1	-0.1
	comp=Z,2.8nm,0.6s,baz=44,slow=5.8,SNR=14						
AKASG	Malin Array Be	74.75	323	ceP	P	07 19 19.2	0.0
AKASG				pmax	pmax		
	comp=Z,2.0nm,0.6s						
KIEV	Kiev	74.77	323	eP	P	07 19 19.1	-0.2
KIEV				pmax	pmax		
	comp=Z,6.0nm,0.8s						
KIEV	Kiev	74.77	323	eP	P	07 19 19.1	-0.2
	comp=Z,6.0nm,0.8s						
PDAR	Pinedale Array	75.64	47	P	P	07 19 24.5	-0.3
	comp=Z,0.4nm,0.6s,baz=257,slow=2.2,SNR=5.1						
GERES	GERESS Array B	82.94	329	P	P	07 20 03.6	-0.8
	comp=Z,0.7nm,0.7s,baz=66,slow=2.4,SNR=3.3						
BFO	Black Forest	85.44	332	ceP	P	07 20 18.2	+1.2
TXAR	Lajitas Array	88.03	54	P	P	07 20 30.0	-0.1
	comp=Z,0.1nm,0.5s,baz=298,slow=5.8,SNR=3.2						

JMA 08 07:07:56.2, 36°.12N×136°.52E, h9^{km}±1^{km}**, M2.6, Near west coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
JKG	Kaga	0.22	316	P	Pg	07 08 00.9	+0.2
JKG				S	Sg	07 08 04.1	+0.4
JGN	Niukaw	0.65	81	P	Pg	07 08 08.8	0.0
JGN				S	Sg	07 08 17.7	+0.3
JTT	Ttatey	0.82	53	P	Pg	07 08 11.9	0.0
JTT				S	Sg	07 08 23.0	+0.5
MAT	Matsushiro	1.43	72	P	Pg	07 08 23.5	-0.1
MAT				S	Sg	07 08 45.1	+3.0

JMA 08 07:13:36.8±0.2**, 37°.01N×143°.73E, h44**^{km}**, M3.8, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
JFK	Kawauchi	2.31	280	P	Pn	07 14 13.4	+1.0
JFK				eS	Sn	07 14 40.6	+1.1
ONAJ	Iwakimizuishiy	2.35	273	S	Sn	07 14 41.8	+1.3
JIO	Ouri	2.38	308	P	Pn	07 14 14.5	+1.3
JIO				S	Sn	07 14 41.7	+0.6
JMM	Marumori	2.49	291	P	Pn	07 14 16.2	+1.4
JMM				S	Sn	07 14 45.4	+1.5
JMK	Ichinoseki	2.77	315	P	Pn	07 14 19.8	+1.1
JMK				eS	Sn	07 14 51.8	+0.9
JOU	Okura	2.78	300	eS	Sn	07 14 53.2	+2.0
JOM	Ohasama	3.12	323	P	Pn	07 14 24.9	+1.4
JOM				eS	Sn	07 15 00.1	+0.6
BSO1	Boso 1	3.25	224	S	Sn	07 15 04.3	+2.5

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*SOME **08** 07:19:47.3, 48°.12N×85°.78E, h20^{km}*
*NNC **08** 07:20:08.4±8.3, 48°.47N×84°.94E, h20^{km}±82^{km}, mb4.0, mpv3.6, Error ellipse: s-maj=95.8km s-min=30.7km az=80.0*
ISC 08 07:19:46.2±3.3**, 48°.0N**±0°.1×**86°.0E**±0°.2**, h10**^{km}**, n9, σ1^{s}.92**/10**, 4C-4D, Kazakhstan-Xinjiang border region**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
ZSN	Zaisan	1.19	242	⇓iP	Pn	07 20 09.6	+0.8
	6.3nm,0.3s						
ZSN				eS	Sn	07 20 25.8	+0.7
	60nm,0.5s						
MK31	Makanchi Array	2.77	245	Pn	Pg	07 20 48.2	+9.0
	5.1nm,0.2s,baz=49,slow=15,SNR=762						
MK31				⇑Sn	Sg	07 21 16.6	+1.5
	9.8nm,0.3s,baz=57,slow=28,SNR=20						
MAKZ	Makanchi	2.96	247	⇓Pn	Pg	07 20 51.4	+8.6
	21nm,0.3s						
MAKZ				⇑Sn	Sg	07 21 20.5	-0.5
	14nm,0.3s						
SEM	Semipalatinsk	4.43	305	eP	Pn	07 20 56.6	+3.2
	5.6nm,0.1s						
SEM				eS	Sn	07 21 46.0	+0.9
	174nm,0.1s						
KAPS	Kapalarasan	5.30	241	eP	Pg	07 21 24.4	-3.2
	0.9nm,0.1s						
KAPS				eS	Sg	07 22 33.3	-2.9
	4.8nm,0.8s						
KURK	Kurchatov	5.50	302	⇓Pn	Pb	07 21 15.6	-6.5
	2.7nm,0.3s						
KURK				⇑Sn	Sn	07 22 14.9	+3.7
	3.5nm,0.4s						
KURK				⇓Lg	Lg	07 22 35.7	
	16nm,0.5s						
KURBB	Kurchatov Arra	5.51	301	⇑Pn	Pb	07 21 14.4	-7.9
	3.7nm,0.3s						
DJR	Jarkent	5.64	231	eP	Pg	07 21 32.8	-1.4
	1.3nm,0.0s						
DJR				eS	Sg	07 22 49.2	+1.9
	3.2nm,0.4s						
KTMS	Ketmen	6.02	223	eP	Pg	07 21 39.6	-1.7
	0.7nm,0.1s						
KTMS				eS	Sg	07 23 01.4	+2.1
	3.7nm,0.4s						

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*ISCJB **08** 07:20:12.6±0.6, 24°.78N±0°.09×123°.54E±0°.05, h91^{km}±5^{km}, mb3.5/4, Error ellipse: s-maj=14.9km s-min=6.6km az=167.9*
*IDC **08** 07:20:13.9±4.7, 24°.87N×123°.59E, h90^{km}±45^{km}, mb3.3/4, mb1 3.5/5, mb1mx3.1/51, mbtmp3.7/5, Error ellipse: s-maj=45.1km s-min=22.0km az=75.0*
*JMA **08** 07:20:14.2±0.1, 24°.78N×123°.57E, h80^{km}±2^{km}, M3.1*
ISC 08 07:20:13.4±0.9**, 24°.80N**±0°.10×**123°.54E**±0°.05**, h86**^{km}±9^{km}**, n15, σ0^{s}.48**/25**, mb3.6**/4**, Southwestern Ryukyu Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
IRIF	Iriomote-Funau	0.49	160	P	Pn	07 20 27.4	-0.2
IRIF				S	Sn	07 20 37.5	-0.6
YOJ	Yonaguni jima	0.59	235	P	Pn	07 20 29.0	+0.6
YOJ				eS	Sn	07 20 39.5	-0.1
JYNG	Yonagunijimaku	0.64	238	P	Pn	07 20 29.5	+0.6
JYNG				S	Sn	07 20 40.6	+0.1
JIJ	Ishigaki jima	0.70	128	P	Pn	07 20 29.4	-0.1
JIJ				S	Sn	07 20 40.6	-0.9
JKRS	Kuro-shima	0.70	142	P	Pn	07 20 29.8	+0.3
JKRS				S	Sn	07 20 41.7	+0.2
JISG	Ishigakijimahi	0.73	106	P	Pn	07 20 29.9	+0.1
JISG				S	Sn	07 20 41.9	-0.1
HATJ	Hateruma jima	0.78	162	P	Pn	07 20 30.4	+0.1
HATJ				S	Sn	07 20 42.9	0.0
JTJ	Tarama	1.07	98	P	Pn	07 20 34.1	+0.6
JTJ				S	Sn	07 20 48.9	+0.2
JIRB	Irabujima	1.48	88	P	Pn	07 20 39.3	+0.6
JIRB				eS	Sn	07 20 57.9	+0.1
JIKM	Ikemajima	1.56	85	P	Pn	07 20 39.8	+0.2
JIKM				eS	Sn	07 21 00.5	+1.0
JOW	Kunigami	4.72	64	P	Pn	07 21 21.9	-0.3
	baz=187,slow=17						
MKAR	Makanchi Array	39.42	314	P	P	07 27 34.5	-0.4
	0.2nm,0.3s,baz=100,slow=8.5,SNR=5.0						
WRA	Warramunga Arr	45.70	166	P	P	07 28 25.9	-0.1
	0.8nm,0.7s,baz=349,slow=8.3,SNR=5.9						
ASAR	Alice Springs	49.21	167	P	P	07 28 54.0	+0.8
	0.6nm,0.4s,baz=352,slow=7.2,SNR=10						
YKA	Yellowknife Ar	81.56	23	P	P	07 32 21.0	-0.4
	0.2nm,0.6s,baz=303,slow=5.2,SNR=8.0						

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*IDC **08** 07:21:31.4±1.1, 39°.50N×143°.52E, h0^{km}, mb3.3/5, mb1 3.5/6, mb1mx3.3/48, mbtmp3.3/6, ML3.1/1, MS2.8/1, Ms1 2.8/1, ms1mx2.1/24, Error ellipse: s-maj=33.2km s-min=23.7km az=94.0*
*ISCJB **08** 07:21:38.8±1.6, 39°.60N±0°.05×142°.80E±0°.09, h31^{km}±10^{km}, mb3.3/5, Error ellipse: s-maj=11.8km s-min=7.8km az=15.7*
*JMA **08** 07:21:38.6±0.2, 39°.62N×142°.79E, h26^{km}±2^{km}, M3.5*
ISC 08 07:21:38.3±2.4**, 39°.58N**±0°.05×**142°.8E**±0°.1**, h24**^{km}±15^{km}**, n23, σ1^{s}.07**/20**, mb3.4**/5**, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
MIYJ	Miyakonagasawa	0.76	270	P	Pb	07 21 52.8	-0.1
JTH	Tanohata	0.81	297	P	Pb	07 21 53.4	-0.3
JTH				eS	Sb	07 22 04.2	0.0
JOM	Ohasama	1.17	265	P	Pb	07 21 59.5	-0.4
JOM				S	Sb	07 22 14.3	-0.3
JKZ	Kuzumaki	1.20	290	P	Pn	07 21 59.9	+0.2
JKZ				S	Sb	07 22 15.1	-0.5
JANG	Nango	1.27	309	P	Pn	07 21 59.9	-0.6
JMK	Ichinoseki	1.38	243	P	Pn	07 22 02.5	+0.5
JMK				eS	Sn	07 22 19.8	+0.4
JIO	Ouri	1.59	226	P	Pn	07 22 05.6	+0.6
JOT	Ohata	2.24	324	P	Pn	07 22 14.8	+0.9
JOT				eS	Sn	07 22 40.9	+0.1
JKB	Kayabe	2.67	330	P	Pn	07 22 21.2	+1.4
JKB				S	Sn	07 22 52.2	+0.9
JCH	Churui	3.06	8	P	Pn	07 22 26.1	+0.9
MJAR	Matsushiro Arr	4.72	232	Pn	Pn	07 22 50.5	+2.4
	0.6nm,0.3s,baz=46,slow=11,SNR=6.5						
JCJ	Chichijima	12.46	183	LR	LR	07 34 06.2	
	comp=Z,41nm,18.5s,baz=156,slow=61						
H11N2	WAKE ISLAND Hy	28.65	127	T	T	07 57 32.1	
	baz=319,slow=75,SNR=43						
H11N1	WAKE ISLAND Hy	28.66	127	T	T	07 57 30.9	
	baz=319,slow=75,SNR=24						
H11N3	WAKE ISLAND Hy	28.67	127	T	T	07 57 35.4	
	baz=319,slow=75,SNR=20						
H11S1	WAKE ISLAND Hy	29.46	129	T	T	07 58 37.9	
	baz=321,slow=76,SNR=9.8						
H11S3	WAKE ISLAND Hy	29.46	129	T	T	07 58 39.1	
	baz=321,slow=76,SNR=5.6						
H11S2	WAKE ISLAND Hy	29.48	129	T	T	07 58 36.2	
	baz=321,slow=76,SNR=6.2						
MKAR	Makanchi Array	43.74	300	P	P	07 29 42.2	+0.6
	0.2nm,0.6s,baz=82,slow=8.6,SNR=2.8						
KURBB	Kurchatov Arra	45.34	306	P	P	07 29 54.9	+0.7
	0.3nm,0.5s,baz=81,slow=8.6,SNR=4.7						
WRA	Warramunga Arr	59.73	189	P	P	07 31 37.1	-4.0
	0.3nm,0.9s,baz=7.3,slow=6.8,SNR=2.9						
YKA	Yellowknife Ar	61.07	31	P	P	07 31 45.3	-4.4
	0.2nm,0.9s,baz=298,slow=6.2,SNR=3.1						
ASAR	Alice Springs	63.46	189	P	P	07 32 03.9	-2.3
	0.3nm,0.9s,baz=14,slow=9.5,SNR=3.4						

IDC 08 07:30:21.2±3.2**, 54°.05N×87°.57E, h0km, mb1 2.6**/2**, mb1mx2.5**/44**, mbtmp2.6**/2**, ML2.3**/2**, Error ellipse: s-maj=25.7km s-min=16.0km az=59.0, Southwestern Siberia**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
I46RU	ZALESOVO INFRA	1.63	268	i		07 40 40.0	
	baz=86,slow=330,SNR=2.0						
ZALV	Zalesovo Beam	1.63	267	Pg	Pn	07 30 50.4	-0.7
	1.8nm,0.3s,baz=86,slow=16,SNR=17						
ZALV				Lg	Lg	07 31 12.6	
	6.3nm,0.3s,baz=86,slow=26,SNR=20						
KURBB	Kurchatov Arra	6.52	242	Pn	Pn	07 31 59.1	+0.8
	0.0nm,0.3s,baz=57,slow=14,SNR=3.7						
KURBB				Lg	Lg	07 33 48.0	
	0.0nm,0.3s,baz=58,slow=31,SNR=5.5						
MKAR	Makanchi Array	8.01	207	Pn	Pn	07 32 19.5	+0.7
	0.1nm,0.3s,baz=24,slow=11,SNR=3.7						
MKAR				Sn	Sn	07 33 50.9	+0.9
	0.1nm,0.3s,baz=28,slow=26,SNR=5.6						
MKAR				Lg	Lg	07 34 33.9	
	0.0nm,0.3s,baz=23,slow=30,SNR=2.9						

*SOME **08** 07:33:35.3, 40°.47N×71°.98E, h20km*
*NNC **08** 07:33:36.7±1.6, 40°.62N×72°.14E, h0km, mb2.6, mpv2.4, Error ellipse: s-maj=16.7km s-min=4.8km az=56.0*
*KRNET **08** 07:33:36.2±0.1, 40°.59N×72°.07E, h21km, mb2.2*
ISC 08 07:33:37.7±2.1**, 40°.59N**±0°.04×**72°.05E**±0°.03**, h22**km±8km**, n16, σ1°.35**/26**, 10C-11D, Kyrgyzstan**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BTK	Batken	1.08	241	⇑eP	Pb	07 33 57.0	-0.8
	baz=241						
BTK				⇑iS	Sn	07 34 12.9	+0.9
	baz=241						
ARK	Arkit	1.21	357	⇑iP	Pb	07 33 59.0	-0.9
	baz=357						
ARK				⇑iS	Sn	07 34 15.7	+0.5
	baz=357						
SFK	Sufi-Kurgan	1.26	117	⇓iP	Pb	07 34 00.1	-0.8
	baz=117						
SFK				⇓iS	Sn	07 34 16.8	+0.2
	baz=117						
SFK	Sufi-Kurgan	1.26	117	⇓P	Pb	07 34 00.3	-0.6
	0.6nm,0.3s						
SFK				⇓S	Sn	07 34 16.2	-0.5
	10nm,0.3s						
MNAS	Manas	1.92	10	⇓eP	Pb	07 34 11.3	-0.9
	baz=10.0						
MNAS				⇓eS	Sb	07 34 35.9	+0.1
	baz=10.0						
MNAS	Manas	1.92	10	⇓Pg	Pb	07 34 11.8	-0.4
	3.6nm,0.4s						
MNAS				⇑Lg	Lg	07 34 38.6	
	11nm,0.5s						
AML	Almayashu	1.98	38	⇓iP	Pb	07 34 12.9	-0.3
	baz=38						
AML				⇓iS	Sb	07 34 38.5	+1.0
	baz=38						
ARLS	Aral	2.13	53	⇑eP	Pb	07 34 14.6	-1.2
	baz=52						
ARLS				⇑iS	Sb	07 34 42.7	+0.8
	baz=52						
IUG	Iuzhnay	2.17	316	eP	Pb	07 34 13.9	-2.5
	14nm,0.2s						
IUG				eS	Sb	07 34 42.0	-0.9
	22nm,0.2s						
MRKS	Merke	2.32	22	eP	Pb	07 34 16.5	-2.5
	2.6nm,0.3s						
MRKS				eS	Sb	07 34 46.4	-0.9
	10nm,0.5s						
AAK	Ala-Archa	2.74	41	⇑Pg	Pb	07 34 26.1	0.0
	0.9nm,0.5s						
AAK				Lg	Lg	07 35 02.2	
	9.4nm,0.8s						
KK31	Karatay Array	2.76	336	⇓Pg	Pb	07 34 25.9	-0.5
	0.4nm,0.3s,baz=157,slow=16,SNR=7.7						
KK31				⇑Lg	Lg	07 35 02.2	
	0.9nm,0.2s,baz=158,slow=31,SNR=5.8						
BRLS	Borolday	2.82	322	eP	Pb	07 34 27.5	+0.2
	0.8nm,0.3s						
BRLS				eS	Sb	07 35 04.9	+3.6
	5.1nm,0.3s						
TKM2	Tokmak 2	3.53	48	⇓Pg	Pb	07 34 37.7	-1.9
	0.4nm,0.3s						
TKM2				⇑Lg	Lg	07 35 26.0	
	4.1nm,0.6s						
BMNS	Besmoynak	3.69	46	eP	Pb	07 34 43.0	+0.7
	5.3nm,0.2s						
BMNS				eS	Sb	07 35 31.6	+4.9
	15nm,0.7s						
KST	Kastek	3.82	49	eP	Pb	07 34 45.8	+1.3
	1.9nm,0.3s						
KST				eS	Sb	07 35 36.5	+6.3
	8.7nm,0.3s						

IDC 08 07:33:46.8±2.9**, 34°.80N×141°.15E, h0km, mb3.5**/3**, mb1 3.5**/5**, mb1mx3.3**/46**, mbtmp3.4**/5**, ML3.2**/2**, Error ellipse: s-maj=72.4km s-min=24.7km az=72.0, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHJ	Hachijo jima 2	2.03	215	Pn	Pn	07 34 21.9	-0.4
	26nm,0.3s,baz=67,slow=13,SNR=2.2						
JHJ				Sn	Sn	07 34 44.0	-4.2
	44nm,0.3s,baz=53,slow=20,SNR=4.2						
MJAR	Matsushiro Arr	2.96	307	Pn	Pn	07 34 35.2	+0.1
	2.0nm,0.3s,baz=122,slow=9.5,SNR=8.2						
MAT	Matsushiro	2.96	307	P	Pn	07 34 35.2	+0.1
MAT				S	Sn	07 35 08.8	-2.6
H11N2	WAKE ISLAND Hy	27.26	117	T	T	08 08 26.2	
	baz=311						
H11N1	WAKE ISLAND Hy	27.27	117	T	T	08 08 29.1	
	baz=311						
H11N3	WAKE ISLAND Hy	27.28	117	T	T	08 08 25.7	
	baz=311						
H11S1	WAKE ISLAND Hy	27.89	119	T	T	08 09 14.4	
	baz=315						
H11S3	WAKE ISLAND Hy	27.89	119	T	T	08 09 16.1	
	baz=315						
H11S2	WAKE ISLAND Hy	27.91	119	T	T	08 09 16.1	
	baz=315						
SONM	Songino Array	28.91	307	P	P	07 39 49.3	+1.7
	0.3nm,0.6s,baz=98,slow=10,SNR=2.2						
KURBB	Kurchatov Arra	47.23	310	P	P	07 42 20.0	-1.4
	0.7nm,0.7s,baz=84,slow=7.3,SNR=9.7						
WRA	Warramunga Arr	54.83	188	P	P	07 43 18.9	+0.1
	0.4nm,0.6s,baz=4.6,slow=7.6,SNR=7.0						

NNC 08 07:38:52.3±3.5**, 37°.25N×70°.76E, h0km, mb3.7, mpv3.3, 7C-5D, Error ellipse: s-maj=30.4km s-min=21.9km az=151.0, Afghanistan-Tajikistan border region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SFK	Sufi-Kurgan	3.50	37	⇓Pn	Pn	07 39 48.8	+0.6
	4.0nm,0.2s						
SFK				⇑Sn	Sn	07 40 32.5	+2.1
	9.5nm,0.2s						
MNAS	Manas	5.40	14	⇑Pn	Pn	07 40 15.7	+1.4
	2.4nm,0.3s						
MNAS				⇓Sn	Sn	07 41 18.3	+1.1
	6.0nm,0.4s						
KK31	Karatay Array	5.85	358	⇑Pn	Pn	07 40 22.3	+2.0
	0.7nm,0.3s,baz=174,slow=12,SNR=14						
KK31				⇓Sn	Sn	07 41 30.2	+2.1
	3.9nm,0.5s,baz=166,slow=27,SNR=3.6						
AAK	Ala-Archa	6.10	27	⇑Pn	Pn	07 40 22.8	-1.0
	0.4nm,0.5s						
AAK				⇓Sn	Sn	07 41 34.1	-0.3
	5.9nm,0.7s						
TKM2	Tokmak 2	6.77	32	⇑Pn	Pn	07 40 31.6	-1.5
	0.7nm,0.4s						
TKM2				⇓Sn	Sn	07 41 49.9	-1.2
	2.4nm,0.8s						
AB31	Akbulak array	14.34	330	⇑Pn	Pn	07 42 15.5	-1.0
	0.2nm,0.4s,baz=138,slow=12,SNR=9.1						
AKTO	Aktyubinsk	16.04	329	⇑Pn	Pn	07 42 33.8	-5.3
	5.6nm,1.3s						

*NIED **08** 07:42:00, 38°.20N×141°.90E, h59km, Mw3.9 Best double couple: M₀7.51000×10^14 NP1:φs354.00000°, δ44.00000°, λ112.00000°. NP2:φs145.00000°, δ50.00000°, λ70.00000°.*
*ISCJB **08** 07:42:26.4±0.8, 38°.25N±0°.04×141°.91E±0°.10, h72km±5km, mb3.7/16, Error ellipse: s-maj=13.0km s-min=6.3km az=18.9*
*JMA **08** 07:42:27.6±0.1, 38°.25N×141°.86E, h64km±1km, M3.8*
JMA Felt II J1.
*IDC **08** 07:42:29.7±2.8, 38°.25N×141°.83E, h87km±25km, mb3.5/16, mb1 3.6/19, mb1mx3.5/43, mbtmp3.8/19, MS2.7/2, Ms1 2.7/2, ms1mx2.5/30, Error ellipse: s-maj=19.9km s-min=16.3km az=83.0*
ISC 08 07:42:27.1±1.3**, 38°.26N**±0°.06×**141°.97E**±0°.10**, h61**km±11km**, n34, σ1°.26**/37**, mb3.8**/16**, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	Ouri	0.53	292	P	Pn	07 42 39.6	+0.2
JIO				S	Sn	07 42 47.7	-0.7
JMK	Ichinoseki	0.91	320	P	Pn	07 42 44.5	+0.5
JMK				S	Sn	07 42 56.3	-0.1
JMM	Marumori	1.01	247	P	Pn	07 42 44.7	-0.6
JMM				S	Sn	07 42 57.2	-1.6
JOU	Okura	1.04	276	P	Pn	07 42 45.4	-0.2
JOU				S	Sn	07 42 58.5	-0.9
JFK	Kawauchi	1.25	225	P	Pn	07 42 48.2	-0.3
JFK				S	Sn	07 43 03.4	-1.0
MIYJ	Miyakonagasawa	1.32	355	P	Pn	07 42 49.9	+0.5
MIYJ				S	Sn	07 43 06.0	0.0
JOM	Ohasama	1.32	336	P	Pn	07 42 50.1	+0.7
JOM				S	Sn	07 43 06.7	+0.6
JYK	Kaneyama	1.43	298	P	Pn	07 42 50.8	0.0
JYK				S	Sn	07 43 08.3	-0.3
MJAR	Matsushiro Arr	3.46	241	P	Pn	07 43 19.7	+1.3
	8.8nm,0.3s,baz=62,slow=9.9,SNR=39						
MJAR				LR	LR	07 44 58.1	
	comp=Z,93nm,20.0s,baz=35,slow=44						
MAT	Matsushiro	3.46	241	P	Pn	07 43 19.8	+1.4
MAT				S	Sn	07 44 03.1	+5.0
USRK	Ussuriysk Ar.	9.58	311	P	Pn	07 44 43.1	+1.0
	0.2nm,0.3s,baz=104,slow=16,SNR=2.7						
KSRS	Korea Array	11.14	270	P	Pn	07 45 05.6	+2.1
	0.1nm,0.3s,baz=79,slow=14,SNR=3.7						
KSRS				LR	LR	07 48 56.0	
	comp=Z,43nm,18.1s,baz=76,slow=35						
SONM	Songino Array	27.49	302	P	P	07 48 08.4	+0.7
	0.3nm,0.6s,baz=90,slow=8.8,SNR=2.4						
H11N2	WAKE ISLAND Hy	28.42	123	T	T	08 18 35.1	
	baz=316,slow=75,SNR=235						
H11N1	WAKE ISLAND Hy	28.43	124	T	T	08 18 36.2	
	baz=316,slow=75,SNR=563						
H11N3	WAKE ISLAND Hy	28.44	123	T	T	08 18 36.8	
	baz=316,slow=75,SNR=311						
H11S1	WAKE ISLAND Hy	29.18	126	T	T	08 19 32.3	
	baz=317,slow=76,SNR=172						
H11S3	WAKE ISLAND Hy	29.18	126	T	T	08 19 31.2	
	baz=317,slow=76,SNR=158						
H11S2	WAKE ISLAND Hy	29.20	126	T	T	08 19 31.7	
	baz=317,slow=76,SNR=107						
ZALV	Zalesovo Beam	41.43	311	P	P	07 50 07.4	+0.1
	0.6nm,0.3s,baz=99,slow=7.4,SNR=2.4						
MKAR	Makanchi Array	43.85	301	P	P	07 50 25.1	-2.1
	0.7nm,0.7s,baz=93,slow=6.1,SNR=7.0						
KURBB	Kurchatov Arra	45.61	307	P	P	07 50 39.5	-1.5
	1.0nm,0.6s,baz=82,slow=8.3,SNR=6.5						
ILAR	Eielson Array	48.22	33	P	P	07 51 01.4	+0.2
	0.5nm,0.7s,baz=267,slow=6.0,SNR=7.4						
INK	Inuvik	53.09	28	P	P	07 51 38.1	+0.3
	0.7nm,0.7s,baz=306,slow=7.7,SNR=3.9						
AKTO	Aktyubinsk	58.19	312	P	P	07 52 13.8	-0.8
	0.7nm,0.5s,baz=60,slow=11,SNR=5.0						
WRA	Warramunga Arr	58.34	188	P	P	07 52 15.0	-0.9
	0.6nm,0.6s,baz=6.9,slow=7.0,SNR=8.2						
ASAR	Alice Springs	62.06	188	P	P	07 52 41.1	-0.2
	0.5nm,0.8s,baz=358,slow=5.9,SNR=6.4						
YKA	Yellowknife Ar	62.52	31	P	P	07 52 43.6	-0.3
	0.4nm,0.8s,baz=296,slow=6.5,SNR=5.5						
ARCES	ARCESS Array B	63.01	339	P	P	07 52 45.7	-1.4
	1.5nm,0.8s,baz=30,slow=8.4,SNR=7.9						
FINES	FINESS Array B	67.94	332	P	P	07 53 19.1	+0.2
	2.7nm,0.7s,baz=56,slow=4.8,SNR=5.9						
NOA	NORSAR Array B	73.23	337	P	P	07 53 51.2	0.0
	2.0nm,0.8s,baz=39,slow=5.9,SNR=3.8						
AKASG	Malin Array Be	73.60	322	P	P	07 53 53.1	-0.4
	1.1nm,0.5s,baz=45,slow=5.8,SNR=6.4						
PDAR	Pinedale Array	76.49	46	P	P	07 54 11.2	+0.5
	0.4nm,0.6s,baz=145,slow=0.5,SNR=5.3						
TXAR	Lajitas Array	89.02	53	P	P	07 55 16.6	+0.9
	0.3nm,0.6s,baz=293,slow=4.0,SNR=5.7						

IDC 08 07:46:55.1±3.0**, 54°.55N×87°.00E, h0km, mb1 2.6**/2**, mb1mx2.6**/38**, mbtmp2.6**/2**, ML2.2**/2**, Error ellipse: s-maj=24.4km s-min=20.5km az=42.0, Southwestern Siberia**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
I46RU	ZALESOVO INFRA	1.41	246	i		07 56 30.0	
	baz=62,slow=327,SNR=2.7						
ZALV	Zalesovo Beam	1.41	246	Pg	Pn	07 47 19.9	-2.1
	1.4nm,0.3s,baz=68,slow=16,SNR=11						
ZALV				Lg	Lg	07 47 41.0	
	0.7nm,0.3s,baz=65,slow=29,SNR=13						
KURBB	Kurchatov Arra	6.49	236	Pn	Pn	07 48 32.7	+1.0
	0.0nm,0.3s,baz=54,slow=14,SNR=10						
KURBB				Sn	Sn	07 49 43.6	-2.8
	0.0nm,0.3s,baz=48,slow=16,SNR=2.5						
KURBB				Lg	Lg	07 50 22.9	
	0.0nm,0.3s,baz=56,slow=27,SNR=5.7						
MKAR	Makanchi Array	8.32	203	Pn	Pn	07 48 58.3	+1.4
	0.0nm,0.3s,baz=24,slow=14,SNR=3.2						
MKAR				Lg	Lg	07 51 18.3	
	0.1nm,0.3s,baz=24,slow=30,SNR=7.6						

IDC 08 07:51:46.5±2.6**, 53°.67N×86°.90E, h0km, mb1 2.7**/2**, mb1mx2.7**/39**, mbtmp2.7**/2**, ML2.5**/2**, Error ellipse: s-maj=23.7km s-min=15.0km az=73.0, Southwestern Siberia**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
I46RU	ZALESOVO INFRA	1.27	284	i		08 00 40.6	
	baz=103,slow=333,SNR=5.7						
ZALV	Zalesovo Beam	1.27	284	Pg	Pg	07 52 10.1	-0.6
	1.4nm,0.3s,baz=105,slow=14,SNR=9.5						
ZALV				Lg	Lg	07 52 26.7	
	1.6nm,0.3s,baz=102,slow=28,SNR=8.2						
KURBB	Kurchatov Arra	5.99	243	Pn	Pn	07 53 17.5	+1.3
	0.1nm,0.3s,baz=57,slow=14,SNR=4.1						
KURBB				Lg	Lg	07 54 57.9	
	0.0nm,0.3s,baz=61,slow=31,SNR=3.5						
MKAR	Makanchi Array	7.49	205	Pn	Pn	07 53 37.9	+1.0
	0.2nm,0.3s,baz=26,slow=10,SNR=4.7						

*ISCJB **08** 07:58:20.1±2.0, 29°.24S±0°.07×72°.3W±0°.2, h25km, Error ellipse: s-maj=23.6km s-min=5.9km az=19.2*
*GUC **08** 07:58:24.8±0.7, 29°.47S×71°.69W, h65km±28km, ML3.5*
ISC 08 07:58:20.5±1.9**, 29°.37S**±0°.05×**72°.2W**±0°.1**, h25**km**, n20, σ2°.48**/19**, 1C, Off coast of central Chile**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LCO	Las Campanas	1.34	75	eP	Pb	07 58 43.9	-1.1
LCO				eS	Sn	07 58 57.9	-3.1
TLL	Tololo Astrono	1.43	124	eP	Pn	07 58 44.9	-0.3
TLL				eS	Sn	07 58 59.3	-4.0
TLL				IAML		07 59 04.9	
	comp=E,2μm,0.4s						
VACH	Vallenar	1.47	58	⇑eP	Pb	07 58 46.1	-1.1
VACH				i S	Sn	07 59 02.1	-1.8
CPCH	Copiapo	2.57	39	eP	Pn	07 59 01.5	+1.0
CPCH				eS	Sn	07 59 30.8	-0.2
AGUA	GUANDACOL	3.22	93	eP	Pb	07 59 13.0	-4.0
AGUA				eS	Sb	07 59 58.2	+2.4
RTLS	Leoncito	3.47	135	eP	Pn	07 59 16.8	+3.6
VCA	Vinchina	3.53	81	IAML		08 00 10.1	
	comp=Z,63nm,0.3s						
AMOG	MOGNA	3.55	117	eP	Pb	07 59 17.8	-4.9
AUSP	Uspallata	3.72	141	eP	Pn	07 59 20.5	+3.9
AUSP				eS	Sb	08 00 14.7	+4.2
ROCH	El Roble	3.73	165	eP	Pn	07 59 18.3	+1.6
ROCH				eS	Sn	07 59 59.2	-0.7
ROCH				IAML		08 00 19.9	
	comp=N,80nm,0.5s						
ROC1	El Roble	3.73	165	eS	Sb	08 00 07.0	-3.7
RTLL	Cerro Villicun	3.75	122	eP	Pn	07 59 19.4	+2.6
PEL	Peldehue	3.97	162	eP	Pn	07 59 22.2	+2.3
PEL				i S	Sn	08 00 04.6	-1.1
RTCV	Cerro Valdivia	4.00	129	eP	Pn	07 59 23.4	+3.2
CLCH	Cerro Calan	4.25	161	eP	Pn	07 59 25.3	+1.5
AVFE	Valle Fertil	4.29	109	eP	Pn	07 59 26.8	+2.5
ASAL	Salagasta	4.31	139	eP	Pn	07 59 28.2	+3.7
ASAL				eS	Sb	08 00 34.4	+7.3
ARCO	CERRO ARCO	4.44	142	eP	Pn	07 59 30.6	+4.2
ARCO				AMPG		08 00 46.9	
ARCO				IAML		08 00 47.6	
	comp=Z,22nm,0.6s						
AAGR	Agrelo	4.68	143	eP	Pn	07 59 32.2	+2.4
CYA	Choya	5.66	82	eP	Pn	07 59 45.0	+1.9
CYA				IAML		08 00 58.8	
	comp=Z,6.5nm,0.5s						

*NIED **08** 08:02:00, 35°.50N×142°.80E, h5km, Mw4.0 Best double couple: M₀1.02000×10^15 NP1:φs6.00000°, δ34.00000°, λ-95.00000°. NP2:φs192.00000°, δ56.00000°, λ-87.00000°.*
*IDC **08** 08:02:25.2±0.7, 35°.34N×143°.04E, h0km, mb3.9/13, mb1 4.1/17, mb1mx4.0/43, mbtmp3.9/17, ML4.2/3, MS2.8/4, Ms1 2.8/4, ms1mx2.6/39, Error ellipse: s-maj=20.0km s-min=15.7km az=110.0*
*NEIC **08** 08:02:26.8±0.4, 35°.38N×143°.05E, h10km, mb4.3/7, Error ellipse: s-maj=10.0km s-min=8.6km az=96.0*
*JMA **08** 08:02:29.8±0.3, 35°.49N×142°.79E, h85km, M3.9*
*ISCJB **08** 08:02:31.4±0.4, 35°.43N±0°.04×142°.71E±0°.04, h59km, mb4.0/20, MS2.7/1, Error ellipse: s-maj=6.2km s-min=4.6km az=155.1*
ISC 08 08:02:33.3±0.6**, 35°.44N**±0°.05×**142°.73E**±0°.07**, h59**km**, n47, σ1°.27**/43**, mb4.0**/20**, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	Chosi	1.54	280	P	Pn	08 02 57.3	-1.2
BSO1	Boso 1	1.64	242	P	Pn	08 02 57.7	-1.6
BSO1				S	Sn	08 03 19.7	+0.7
BSO3	Boso 3	1.93	251	P	Pn	08 03 02.7	-0.8
JFT	Otama	2.83	318	P	Pn	08 03 13.7	-2.4
JFT				S	Sn	08 03 47.3	-1.7
JAG	Ashikaga	2.83	291	P	Pn	08 03 14.1	-2.0
JAG				S	Sn	08 03 47.4	-1.6
JOD2	Odawara 2	2.98	268	P	Pn	08 03 16.9	-1.2
JOD2				eS	Sn	08 03 52.6	-0.1
JRY	Ryogami san	3.17	282	P	Pn	08 03 20.0	-0.7
JHJ2	Mitsune	3.35	227	P	Pn	08 03 21.4	-1.7
JHJ2				eS	Sn	08 04 01.0	-0.6
JHJ	Hachijo jima 2	3.36	227	Pn	Pn	08 03 21.2	-2.1
	59nm,0.3s,baz=78,slow=20,SNR=2.8						
JHJ				Sn	Sn	08 03 59.0	-3.0
	175nm,0.3s,baz=49,slow=19,SNR=7.5						
JYN	Shimob	3.41	272	P	Pn	08 03 23.4	-0.7
JYN				S	Sn	08 04 03.6	+0.2
MJAR	Matsushiro Arr	3.82	288	Pn	Pn	08 03 30.2	+0.6
	5.5nm,0.3s,baz=91,slow=14,SNR=20						
MJAR				LR	LR	08 04 52.2	
	comp=Z,73nm,21.6s,baz=85,slow=36						
MAJO	Matsushiro	3.83	288	ePn	Pn	08 03 30.4	+0.7
MAT	Matsushiro	3.83	288	P	Pn	08 03 29.3	-0.4
MAT				S	Sn	08 04 10.6	-2.8
ERM	Erimo	6.57	3	ePn	Pn	08 04 01.9	-5.4
CBIJ	Chichi jima	8.33	183	Pn	Pn	08 04 24.6	-6.9
CBIJ				Sn	Sn	08 05 52.0	-12
JCJ	Chichijima	8.33	183	Pn	Pn	08 04 24.6	-6.9
	8.4nm,0.3s,baz=297,slow=20,SNR=9.3						
JCJ				Sn	Sn	08 05 52.0	-12
	baz=356,slow=19						
USRK	Ussuriysk Ar.	12.02	320	Pn	Pn	08 05 20.7	-0.9
	0.1nm,0.3s,baz=144,slow=12,SNR=2.3						
KSRS	Korea Array	12.09	284	LR	LR	08 09 53.5	
	comp=Z,74nm,20.2s,baz=130,slow=36						
KLR	Kul'dur	15.97	333	LR	LR	08 11 59.2	
	comp=Z,29nm,19.4s,baz=340,slow=36						
H11N2	WAKE ISLAND Hy	26.43	120	T	T	08 35 28.5	
	baz=311,slow=75,SNR=5.0						
H11N1	WAKE ISLAND Hy	26.44	120	T	T	08 35 28.0	
	baz=311,slow=75,SNR=4.3						
H11N3	WAKE ISLAND Hy	26.45	120	T	T	08 35 28.0	
	baz=311,slow=75,SNR=3.7						
H11S1	WAKE ISLAND Hy	27.11	122	T	T	08 36 17.4	
	baz=314,slow=75,SNR=5.4						
H11S3	WAKE ISLAND Hy	27.11	122	T	T	08 36 18.5	
	baz=314,slow=75,SNR=6.4						
H11S2	WAKE ISLAND Hy	27.12	122	T	T	08 36 17.9	
	baz=314,slow=75,SNR=6.9						
SEY	Seymchan	28.17	9	P	P	08 08 19.4	-0.3
	0.6nm,0.4s,baz=196,slow=8.0,SNR=4.5						
SONM	Songino Array	29.57	306	P	P	08 08 34.1	+1.6
	0.7nm,0.9s,baz=103,slow=6.5,SNR=2.4						
CMAR	Chiang Mai Arr	42.16	258	LR	LR	08 30 47.4	
	comp=Z,9.8nm,18.5s,baz=60,slow=40						
ZALV	Zalesovo Beam	43.77	314	P	P	08 10 33.5	+0.7
	0.7nm,0.4s,baz=99,slow=7.7,SNR=4.1						
MKAR	Makanchi Array	45.87	304	P	P	08 10 51.3	+1.6
	0.6nm,0.6s,baz=90,slow=10.0,SNR=6.7						
KURK	Kurchatov	47.76	309	eP	P	08 11 04.8	+0.6
	5.4nm,0.9s						
ILAR	Eielson Array	50.28	32	P	P	08 11 22.6	-0.8
	2.1nm,1.0s,baz=275,slow=6.6,SNR=6.8						
INK	Inuvik	55.32	27	P	P	08 12 00.8	+0.4
	1.4nm,0.6s,baz=300,slow=6.5,SNR=16						
WRAB	Tennant Creek	55.64	190	eP	P	08 12 04.8	+1.5
	7.9nm,1.4s						
WRA	Warramunga Arr	55.65	190	P	P	08 12 03.1	-0.2
	2.0nm,0.8s,baz=8.1,slow=7.5,SNR=10.0						
ASAR	Alice Springs	59.38	189	P	P	08 12 28.9	-0.7
	0.9nm,0.8s,baz=12,slow=7.3,SNR=7.9						
ABKAR	Akbulak array	59.78	311	eP	P	08 12 33.1	+1.0
	0.5nm,0.5s						
RES	Resolute Bay	63.87	14	eP	P	08 12 59.2	0.0
	3.2nm,0.9s						
YKA	Yellowknife Ar	64.65	30	P	P	08 13 03.5	-0.9
	0.6nm,0.8s,baz=299,slow=6.4,SNR=10						
FINES	FINESS Array B	70.71	333	P	P	08 13 43.7	+1.1
	1.7nm,0.6s,baz=108,slow=10,SNR=3.7						
FFC	Flin Flon	74.46	33	eP	P	08 14 04.9	-0.1
	1.5nm,0.6s						
FCC	Fort Churchill	74.94	27	eP	P	08 14 07.0	-0.7
	2.2nm,0.9s						
NVAR	Mina Array Bea	75.09	53	P	P	08 14 08.5	-0.7
	0.4nm,0.6s,baz=286,slow=9.8,SNR=4.4						
AKASG	Malin Array Be	76.20	323	P	P	08 14 16.1	+1.0
	0.7nm,0.4s,baz=43,slow=5.7,SNR=4.8						
PDAR	Pinedale Array	78.02	46	P	P	08 14 25.5	-0.2
	0.4nm,0.6s,baz=291,slow=2.0,SNR=6.5						
MIAR	Mount Ida	92.76	43	eP	P	08 15 39.6	+0.3
	34nm,2.0s						
QSPA	South Pole Qui	125.19	180	ePKPdf	PKPdf	08 21 27.1	+0.9

*NIED **08** 08:03:00, 38°.80N×142°.10E, h53km, Mw4.1 Best double couple: M₀1.46000×10^15 NP1:φs229.00000°, δ73.00000°, λ-4.00000°. NP2:φs320.00000°, δ86.00000°, λ-163.00000°.*
JMA 08 08:03:25.7±0.1**, 38°.84N×142°.09E, h40**km±2km**, M3.8, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JMK	Ichinoseki	0.69	280	P	Pn	08 03 39.2	+0.2
JMK				S	Sn	08 03 48.4	-0.1
JIO	Ouri	0.70	237	P	Pn	08 03 38.9	-0.2
JIO				S	Sn	08 03 47.9	-0.8
MIYJ	Miyakonagasawa	0.77	344	P	Pn	08 03 40.2	+0.2
MIYJ				S	Sn	08 03 49.9	-0.5
JOM	Ohasama	0.89	316	P	Pn	08 03 42.0	+0.3
JOM				S	Sn	08 03 53.5	+0.1
JTH	Tanohata	1.11	351	P	Pn	08 03 45.4	+0.6
JOU	Okura	1.21	247	P	Pn	08 03 46.6	+0.4
JOU				S	Sn	08 04 01.6	+0.2
JRG	Rokugo	1.26	297	P	Pn	08 03 47.3	+0.5
JRG				S	Sn	08 04 03.8	+1.2
JKZ	Kuzumaki	1.29	333	P	Pn	08 03 47.9	+0.7
JKZ				S	Sn	08 04 04.2	+0.9

JMA 08 08:10:27.5±0.3,38°.46N×144°.11E,h42km,M3.8,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	Ouri	2.17	271	P	Pn	08 11 02.3	+1.2
JIO				S	Sn	08 11 27.1	+0.4
JTH	Tanohata	2.29	311	P	Pn	08 11 03.9	+1.2
JMK	Ichinoseki	2.31	283	P	Pn	08 11 04.6	+1.5
JOM	Ohasama	2.42	296	P	Pn	08 11 06.1	+1.6
JOM				S	Sn	08 11 35.4	+2.5
JMM	Marumori	2.68	258	eS	Sn	08 11 39.7	+0.4
JOU	Okura	2.71	269	P	Pn	08 11 10.2	+1.7
JOU				S	Sn	08 11 42.1	+2.0
JANG	Nango	2.77	314	P	Pn	08 11 10.5	+1.1
JFK	Kawauchi	2.78	248	P	Pn	08 11 10.2	+0.6
JFK				eS	Sn	08 11 42.1	+0.2
JRG	Rokugo	2.87	290	P	Pn	08 11 12.9	+2.2
JYK	Kaneyama	2.97	280	P	Pn	08 11 14.5	+2.4
JFT	Otama	3.13	254	P	Pn	08 11 16.4	+2.1
JFT				S	Sn	08 11 52.6	+2.2
JNBK	Urakawa-nobuka	3.95	345	P	Pn	08 11 26.7	+1.1
JNBK				S	Sn	08 12 10.8	+0.1
JCH	Churui	4.19	352	P	Pn	08 11 28.8	0.0
JRY	Ryogami san	4.82	241	P	Pn	08 11 39.0	+1.5

MEX 08 08:10:56.8±0.4,21°.28N×106°.15W,h10km±11km,MD3.9,Off coast of central Mexico

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ANIG	Ahuacatlan	1.54	98	eP	Pn	08 11 21.3	-3.1
ANIG				i S	Sn	08 11 40.0	-4.5
MAIG	Mazatlaan	1.91	352	eP	Pn	08 11 26.1	-3.3
MAIG				eS	Sn	08 11 48.6	-5.0
CJM	Chamela	2.06	149	eP	Pn	08 11 27.6	-3.8
CJM				eS	Sn	08 11 53.2	-3.9
R15V		2.92	136	eP	Pn	08 11 42.2	-1.3
R15V				eS	Sn	08 12 15.1	-3.6
EZ5V		2.99	126	eP	Pn	08 11 41.3	-3.2
EZ5V				eS	Sn	08 12 16.7	-3.9
ZAIG	Zacatecas	3.64	65	eP	Pn	08 11 51.5	-2.0

IDC 08 08:40:36.5±1.1,37°.55N×143°.22E,h0km,mb3.5/6, mb1 3.6/8,mb1mx3.5/51,mbtmp3.4/8,ML2.7/2,MS2.6/1, Ms1 2.6/1,ms1mx2.1/48,Error ellipse: s-maj=31.9km s-min=22.0km az=110.0
JMA 08 08:40:36.7±0.2,37°.69N×142°.69E,h0km,M3.6
ISCJB 08 08:40:38.0±0.8,37°.67N±0°.08×142°.83E±0°.07,h24km, mb3.5/6,Error ellipse: s-maj=11.0km s-min=8.3km az=169.8
ISC 08 08:40:40.2±1.0,37°.72N±0°.09×142°.72E±0°.08,h24km,n22, σ1s.11/15,mb3.5/6,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	Ouri	1.31	305	P	Pn	08 41 01.6	-1.4
JIO				eS	Sb	08 41 20.2	-0.2
JFK	Kawauchi	1.51	257	P	Pn	08 41 04.8	-1.0
JFK				eS	Sn	08 41 24.4	-0.2
JMM	Marumori	1.53	276	P	Pn	08 41 04.8	-1.3
ONAJ	Iwakimizuishiy	1.65	249	P	Pn	08 41 06.7	-1.0
JOU	Okura	1.75	292	P	Pn	08 41 08.7	-0.3
JFT	Otama	1.90	265	P	Pn	08 41 10.9	-0.3
JHO	Hitachi	2.04	238	P	Pn	08 41 12.9	-0.2
MJAR	Matsushiro Arr	3.79	253	Pn	Pn	08 41 39.9	+2.8
	1.2nm,0.3s,baz=78,slow=15,SNR=4.5						
USRK	Ussuriysk Ar.	10.38	312	Pn	Pn	08 43 14.1	+6.7
	0.3nm,0.3s,baz=133,slow=14,SNR=3.4						
JNU	Nakatsue	10.69	248	LR	LR	08 47 49.8	
	comp=Z,34nm,20.0s,baz=121,slow=39						
SEY	Seymchan	25.93	10	P	P	08 46 10.7	+0.4
	1.0nm,0.4s,baz=251,slow=13,SNR=5.5						
H11N2	WAKE ISLAND Hy	27.63	124	T	T	09 15 16.8	
	baz=316,slow=75,SNR=36						
H11N1	WAKE ISLAND Hy	27.64	124	T	T	09 15 20.2	
	baz=316,slow=75,SNR=20						
H11N3	WAKE ISLAND Hy	27.65	124	T	T	09 15 16.3	
	baz=316,slow=75,SNR=22						
H11S1	WAKE ISLAND Hy	28.39	126	T	T	09 16 15.3	
	baz=318,slow=76,SNR=7.6						
H11S3	WAKE ISLAND Hy	28.39	126	T	T	09 16 13.6	
	baz=318,slow=76,SNR=8.5						
H11S2	WAKE ISLAND Hy	28.40	126	T	T	09 16 15.9	
	baz=318,slow=76,SNR=7.7						
MKAR	Makanchi Array	44.64	302	P	P	08 48 53.5	+2.8
	0.2nm,0.3s,baz=76,slow=8.4,SNR=3.2						
ILAR	Eielson Array	48.36	33	P	P	08 49 19.1	-0.5
	0.4nm,1.0s,baz=262,slow=6.3,SNR=3.1						
WRA	Warramunga Arr	57.89	189	P	P	08 50 29.9	-0.3
	0.2nm,0.5s,baz=7.5,slow=7.0,SNR=4.3						
ASAR	Alice Springs	61.62	189	P	P	08 50 55.1	-0.7
	0.4nm,0.8s,baz=8.9,slow=6.6,SNR=2.7						
YKA	Yellowknife Ar	62.69	31	P	P	08 51 02.2	-0.4
	0.3nm,1.0s,baz=289,slow=5.8,SNR=2.8						

NEIC 08 08:45:03.7,17°.08N×94°.19W,h143km,MD4.2(MEX),After MEX.
MEX 08 08:45:03.7±0.6,17°.08N×94°.19W,h143km±9km,MD4.2
ISCJB 08 08:45:05.0±0.4,17°.01N±0°.05×94°.25W±0°.04,h104km±6km, mb3.6/7,Error ellipse: s-maj=8.6km s-min=5.4km az=13.9
IDC 08 08:45:05.5±3.6,17°.34N×93°.78W,h184km±31km,mb3.2/7, mb1 3.5/9,mb1mx3.3/35,mbtmp3.7/9,Error ellipse: s-maj=34.6km s-min=13.8km az=47.0
ISC 08 08:45:03.7±0.6,16°.87N±0°.06×94°.24W±0°.03,h133km±7km, n82,σ1s.70/64,mb3.6/7,Oaxaca

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TGIG		1.07	95	eP	Pn	08 45 27.0	-0.6
TGIG				eS	Sn	08 45 45.0	-0.7
TGIG		1.07	95	eP	Pn	08 45 27.0	-0.6
TGIG				eS	Sn	08 45 45.0	-0.7
TUIG	Tuzandepetl	1.17	351	i P	Pn	08 45 26.2	-2.2
TUIG				i S	Sn	08 45 44.4	-3.0
TUIG	Tuzandepetl	1.17	351	i P	Pn	08 45 26.2	-2.2
TUIG				i S	Sn	08 45 44.4	-3.0
PCIG		1.52	140	eP	Pn	08 45 33.4	+1.2
PCIG				eS	Sn	08 45 56.4	+2.4
PCIG		1.52	140	eP	Pn	08 45 33.4	+1.2
PCIG				eS	Sn	08 45 56.4	+2.4
CCIG	Comitan	2.10	106	eP	Pn	08 45 38.5	-0.7
CCIG				eS	Sn	08 46 05.3	-1.1
CCIG	Comitan	2.10	106	eP	Pn	08 45 38.5	-0.7
CCIG				eS	Sn	08 46 05.3	-1.1
HUIG	Huatulco	2.11	239	eP	Pn	08 45 38.1	-1.0
HUIG				eS	Sn	08 46 08.4	+2.2
HUIG	Huatulco	2.11	239	eP	Pn	08 45 38.1	-1.0
HUIG				eS	Sn	08 46 08.4	+2.2
VHO	Vista Hermosa	2.40	275	eP	Pn	08 45 43.1	+0.2
VHO				eS	Sn	08 46 12.8	-0.2
VHO	Vista Hermosa	2.40	275	eP	Pn	08 45 43.1	+0.2
VHO				eS	Sn	08 46 12.8	-0.2
TPIG	Tehuac#an	3.35	298	eP	Pn	08 45 53.7	-1.4
TPIG				eS	Sn	08 46 31.9	-3.0
TPIG	Tehuac#an	3.35	298	eP	Pn	08 45 53.7	-1.4
TPIG				eS	Sn	08 46 31.9	-3.0
TEIG	Tepich	6.56	59	P	Pn	08 46 31.4	-6.4
	4.0nm,0.3s,baz=269,slow=24,SNR=48						
TEIG				S	Sn	08 47 40.8	-11
	0.7nm,0.3s,baz=301,slow=22,SNR=3.1						
934A	Benavides	11.39	340	P	Pn	08 47 43.7	+1.3
	baz=158						
834A	Tilden	11.88	341	P	Pn	08 47 49.8	+0.9
	baz=159						
736A	Circle Diamond	12.30	348	P	Pn	08 47 53.5	-0.8
	baz=167						
833A	Chaparral WMA,	12.35	338	P	Pn	08 47 56.9	+1.9
	baz=156,SNR=9.2						
832A	Faith Ranch, C	12.53	336	P	Pn	08 47 59.8	+2.4
	baz=153,SNR=6.8						
733A	Divot King Ran	12.68	339	P	Pn	08 48 00.8	+1.6
	baz=157						
634A	China Grove, S	13.01	344	P	Pn	08 48 04.2	+0.6
	baz=162						
633A	Saathoff Ranch	13.32	341	P	Pn	08 48 08.0	+0.5
	baz=159,SNR=18						
534A	Blanco	13.66	344	P	Pn	08 48 12.7	+0.8
	baz=162,SNR=28						
441A	DeRidder	13.85	4	P	Pn	08 48 11.2	-3.1
	baz=184						
533A	Kerrville	13.85	342	P	Pn	08 48 15.8	+1.4
	baz=160						
435B	Jarrell	14.18	348	P	Pn	08 48 18.2	-0.4
	baz=166,SNR=6.2						
434A	Burnet	14.36	346	P	Pn	08 48 21.8	+1.0
	baz=164,SNR=6.6						
339A	Huntington	14.40	359	P	Pn	08 48 19.0	-2.2
	baz=179						
433A	Art	14.51	343	P	Pn	08 48 23.2	+0.5
	baz=161,SNR=22						
335A	Moody	14.63	349	P	Pn	08 48 24.6	+0.4
	baz=168,SNR=15						
334A	Lometa	14.85	347	P	P	08 48 28.2	-1.2
	baz=165,SNR=12						
345A	Thompson Farm,	14.87	14	P	Pn	08 48 25.3	-1.9
	baz=196						
333A	Richland Sprin	15.02	344	P	P	08 48 31.7	+0.4
	baz=162,SNR=7.4						
346A	Big Creek Wild	15.09	16	P	Pn	08 48 28.4	-1.5
	baz=198						
TXAR	Lajitas Array	15.12	327	P	Pn	08 48 27.4	-3.1
	0.1nm,0.3s,baz=150,slow=14,SNR=14						
237A	Washetta, Mont	15.13	355	P	Pn	08 48 29.8	-0.6
	baz=174						
242A	Grayson	15.24	7	P	Pn	08 48 29.9	-1.9
	baz=188						
WHTX	Lake Whitney,	15.33	350	P	P	08 48 34.5	-0.2
	baz=168						
234A	Clairette	15.47	347	P	P	08 48 37.5	+1.2
	baz=166,SNR=28						
233A	Rising Star	15.66	345	P	P	08 48 40.4	+2.0
	baz=163,SNR=6.1						
137A	Heron Place, G	15.72	355	P	P	08 48 38.7	-0.2
	baz=174						
138A	Matatall Enter	15.74	357	P	P	08 48 38.8	-0.4
	baz=177						
134A	White-Moore Ra	16.01	348	P	P	08 48 45.6	+3.3
	baz=166,SNR=6.4						
133A	Hamilton Ranch	16.23	346	P	P	08 48 48.2	+3.6
	baz=164						
Z37A	Pogue Cattle C	16.30	356	P	P	08 48 46.5	+1.1
	baz=175						
ABTX	Abilene, Hawle	16.43	344	P	Pn	08 48 50.2	+3.7
	baz=161						
Z36A	Blue Ridge	16.45	353	P	Pn	08 48 48.0	+1.3
	baz=172						
Z35A	Perchaven, San	16.61	351	P	Pn	08 48 50.5	+1.8
	baz=170						
Z34A	Collier Ranch,	16.76	349	P	Pn	08 48 54.3	+3.8
	baz=168,SNR=5.7						
Z33A	Whitaker Ranch	16.84	347	P	Pn	08 48 56.1	+4.5
	baz=165,SNR=14						
Y38A	Idabel	16.99	359	P	Pn	08 48 54.8	+1.6
	baz=178						
Y39A	Lockesburg	16.99	0	P	Pn	08 48 54.9	+1.6
	baz=180						
Y36A	Durant	17.05	354	P	Pn	08 48 57.0	+3.0
	baz=173						
Y40A	Okolona	17.09	3	P	Pn	08 48 55.7	+1.3
	baz=183						
Y34A	Reagan Ranch,	17.30	350	P	Pn	08 49 01.8	+4.7
	baz=168,SNR=9.2						
Y33A	Hilltop Ranch,	17.51	348	P	Pn	08 49 05.2	+5.6
	baz=166,SNR=16						
X39A	Fountain Ranch	17.56	0	P	Pn	08 49 03.1	+2.9
	baz=180,SNR=7.2						
MIAR	Mount Ida	17.61	2	P	Pn	08 49 03.4	+2.7
	baz=182						
X35A	Drake	17.62	353	P	Pn	08 49 04.4	+3.5
	baz=171,SNR=11						
X37A	Clayton	17.67	357	P	Pn	08 49 05.0	+3.5
	baz=176,SNR=6.2						
X38A	Whitesboro	17.73	358	P	Pn	08 49 04.8	+2.6
	baz=178,SNR=10						
X34A	Smith Ranch, M	17.95	350	P	Pn	08 49 10.0	+5.2
	baz=169						
X33A	Lawton	18.00	349	P	Pn	08 49 11.5	+6.1
	baz=166,SNR=20						
W38A	Poteau	18.12	359	P	Pn	08 49 10.1	+3.2
	baz=179,SNR=7.9						
W39A	Magazine	18.25	1	P	Pn	08 49 11.9	+3.5
	baz=181,SNR=8.3						
W40A	Ferguson Farm,	18.27	3	P	Pn	08 49 11.5	+2.9
	baz=183						
W35A	Tecumseh	18.36	353	P	Pn	08 49 14.0	+4.4
	baz=172,SNR=5.1						
W33A	Caddo, Fort Co	18.59	349	P	Pn	08 49 19.9	+7.5
	baz=167,SNR=5.2						
V39A	Pettigrew	18.90	1	P	Pn	08 49 19.5	+3.5
	baz=182						
V40A	Witts Springs	18.90	4	P	Pn	08 49 19.7	+3.6
	baz=184,SNR=7.8						
V37A	Hulbert	18.95	358	P	Pn	08 49 21.9	+5.3
	baz=177						
TUL1	Leonard	19.01	356	P	Pn	08 49 22.5	+5.2
	baz=175						
U35A	Pawnee	19.55	354	P	Pn	08 49 29.8	+6.2
	baz=173						
T35A	Sooner Cattle	20.07	355	P	Pn	08 49 36.4	+6.8
	baz=174						
SDV	Santo Domingo	24.32	106	P	P	08 50 04.1	-5.3
	3.3nm,0.6s,baz=332,slow=7.2,SNR=9.1						
PDAR	Pinedale Array	28.93	336	P	P	08 50 46.0	-4.5
	0.2nm,0.5s,baz=125,slow=7.1,SNR=2.7						
NVAR	Mina Array Bea	30.09	320	P	P	08 50 58.5	-2.3
	0.5nm,0.8s,baz=134,slow=10,SNR=3.5						
NVAR				pP	pP	08 51 32.5	+3.0
	0.5nm,0.6s,baz=124,slow=11,SNR=3.8						
LPAZ	La Paz	41.81	141	P	P	08 52 38.7	-2.5
	0.7nm,0.6s,baz=333,slow=4.5,SNR=3.3						
YKA	Yellowknife Ar	47.76	347	P	P	08 53 20.6	-6.3
	1.5nm,0.7s,baz=152,slow=7.3,SNR=34						
YKA				pP	pP	08 53 57.5	0.0
	0.3nm,0.7s,baz=149,slow=7.4,SNR=3.1						
YKA				PcP	PcP	08 54 47.6	-6.3
	0.1nm,0.5s,baz=148,slow=3.7,SNR=2.9						
ILAR	Eielson Array	59.36	337	P	P	08 54 45.2	-6.3
	0.3nm,0.6s,baz=141,slow=5.2,SNR=10.0						
ARCES	ARCESS Array B	84.09	18	P	P	08 57 13.1	-6.2
	0.7nm,0.4s,baz=298,slow=5.4,SNR=9.9						

WEL 08 08:45:07.1±0.3,36°.30S×177°.16E,h222km±5km,ML3.7/9, 1D,Error ellipse: s-maj=8.0km s-min=7.1km az=90.0, Off east coast of North Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HAZ	Te Kaha	1.54	161	PN	Pn	08 45 43.2	+0.2
HAZ				SN	S	08 46 10.9	-0.2
MXZ	Matakaoa Point	1.56	144	PN	Pn	08 45 43.4	+0.1
MXZ				SN	S	08 46 11.9	+0.4
PKGZ	Pakihiroa	1.75	155	PN	Pn	08 45 45.1	+0.1
WMGZ	Waiomatatini S	1.82	147	PN	Pn	08 45 45.6	0.0
WMGZ				SN	S	08 46 15.2	-0.4
URZ	Urewera	1.96	181	PN	Pn	08 45 47.2	+0.4
PUZ	Puketiti	1.98	154	PN	Pn	08 45 46.8	-0.3
TWGZ	Tauwhareparae	1.99	161	⇓PN	Pn	08 45 47.7	+0.5
MWZ	Matawai	2.06	172	PN	Pn	08 45 48.1	+0.3
MWZ				AML	AML	08 46 21.8	
MWZ				AML	AML	08 46 25.4	
TKGZ	Te Karaka	2.21	166	PN	Pn	08 45 49.1	-0.2
CNGZ	Carnagh Statio	2.34	159	PN	Pn	08 45 50.6	0.0
RIGZ	Rimuhau	2.45	169	PN	Pn	08 45 51.7	-0.2
SNGZ	Shannon Statio	2.48	177	PN	Pn	08 45 52.1	-0.1
MRHZ	Matea Rd	2.60	193	PN	Pn	08 45 53.7	+0.2
RAHZ	Arahi	2.62	181	PN	Pn	08 45 53.7	0.0
KNZ	Kokohu	2.75	172	PN	Pn	08 45 54.3	-0.7
KNZ				AML	AML	08 46 43.1	
NMHZ	Naumai	2.81	186	PN	Pn	08 45 56.1	+0.3
BKZ	Black Stump Fm	2.91	190	PN	Pn	08 45 56.2	-0.7
MCHZ	McNeill Hill	3.16	186	PN	Pn	08 45 59.3	-0.4
BHHZ	Black Hill Sta	3.30	195	PN	Pn	08 46 00.4	-1.1
KRHZ	Kereru	3.40	190	PN	Pn	08 46 01.4	-1.1
PNHZ	Pukenui	3.69	192	PN	Pn	08 46 04.5	-1.5
TSZ	Takapari Road	3.87	194	PN	Pn	08 46 06.5	-1.6
MRZ	Mangatainoka R	4.53	195	PN	Pn	08 46 13.4	-2.7
MRZ				AML	AML	08 47 10.2	
TIWZ	Tintock	4.58	192	AML	AML	08 47 13.8	
OGWZ	Otaki Gorge	4.77	198	PN	Pn	08 46 16.7	-2.4
TUWZ	Tuamarina	5.71	205	PN	Pn	08 46 29.7	-1.2

WEL 08 08:52:56.9±0.8,34°.89S×178°.34E,h33km,ML3.6/3,Error ellipse: s-maj=12.9km s-min=6.1km az=90.0,South of Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MXZ	Matakaoa Point	2.66	181	P*	Pn	08 53 37.5	+0.1
MXZ				eS*	Sn	08 54 07.6	-0.9
HAZ	Te Kaha	2.89	189	P*	Pn	08 53 41.9	+1.3
HAZ				S*	Sn	08 54 14.2	0.0
WMGZ	Waiomatatini S	2.92	179	PN	Pn	08 53 40.6	-0.4
WMGZ				SN	Sn	08 54 12.5	-2.4
PKGZ	Pakihiroa	3.00	184	ePN	Pn	08 53 41.4	-0.7
MWZ	Matawai	3.50	191	P*	Pn	08 53 48.5	-0.5
URZ	Urewera	3.50	196	P*	Pn	08 53 48.9	-0.1
URZ				S*	Sn	08 54 29.8	+0.5

ISCJB 08 08:55:39.1±1.1,27°.0N±0°.1×143°.71E±0°.10,h10km, mb3.5/5,Error ellipse: s-maj=20.2km s-min=12.8km az=175.0
IDC 08 08:55:39.4±1.4,26°.96N×143°.94E,h0km,mb3.5/5, mb1 3.7/6,mb1mx3.5/44,mbtmp3.5/6,ML3.7/1,Error ellipse: s-maj=31.0km s-min=27.9km az=142.0
ISC 08 08:55:41.1±1.2,27°.0N±0°.2×143°.7E±0°.1,h10km,n7, σ1s.71/8,mb3.6/5,Bonin Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JCJ	Chichijima	1.37	275	Pn	Pb	08 56 08.2	+1.4
	baz=90,slow=20						
JCJ				Sn	Sn	08 56 21.8	-2.7
	23nm,0.3s,baz=42,slow=13,SNR=7.0						
MJAR	Matsushiro Arr	10.61	335	Pn	Pn	08 58 13.1	-0.2
	0.6nm,0.3s,baz=162,slow=12,SNR=4.5						
WRA	Warramunga Arr	47.53	192	P	P	09 04 16.6	-0.2
	0.7nm,0.8s,baz=14,slow=8.8,SNR=3.5						
MKAR	Makanchi Array	51.59	310	P	P	09 04 49.5	+1.8
	0.3nm,0.4s,baz=87,slow=8.3,SNR=2.7						
KURBB	Kurchatov Arra	54.09	314	P	P	09 05 06.6	+0.6
	0.3nm,0.5s,baz=93,slow=8.0,SNR=4.3						
INK	Inuvik	62.56	25	P	P	09 06 05.0	+0.1
	0.3nm,0.3s,baz=279,slow=6.4,SNR=3.6						
YKA	Yellowknife Ar	71.59	29	P	P	09 07 01.0	-1.3
	0.2nm,0.7s,baz=293,slow=6.2,SNR=3.2						

IDC 08 08:58:09.8±3.0,53°.57N×87°.79E,h0km,mb1 2.9/2, mb1mx2.8/53,mbtmp2.9/2,ML2.5/2,Error ellipse: s-maj=25.7km s-min=16.8km az=49.0,Southwestern Siberia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
I46RU	ZALESOVO INFRA	1.80	283	i		09 09 55.9	
	baz=101,slow=329,SNR=12						
ZALV	Zalesovo Beam	1.80	283	Pg	Pn	08 58 42.4	+0.2
	1.5nm,0.3s,baz=100,slow=14,SNR=14						
ZALV				Lg	Lg	08 59 06.9	
	1.7nm,0.3s,baz=101,slow=27,SNR=14						
KURBB	Kurchatov Arra	6.42	246	Pn	Pn	08 59 46.2	+0.7
	0.1nm,0.3s,baz=63,slow=14,SNR=3.6						
KURBB				Sn	Sn	09 00 58.7	-0.8
	0.0nm,0.3s,baz=65,slow=17,SNR=2.5						
KURBB				Lg	Lg	09 01 34.4	
	0.1nm,0.3s,baz=59,slow=29,SNR=6.4						
MKAR	Makanchi Array	7.64	210	Pn	Pn	09 00 03.5	+1.1
	0.1nm,0.3s,baz=23,slow=12,SNR=5.6						

ISCJB 08 08:59:12.9±0.5,37°.12N±0°.04×71°.68E±0°.08,h106km, mb3.6/7,Error ellipse: s-maj=9.3km s-min=4.1km az=158.5
IDC 08 08:59:13.8±3.0,37°.04N×71°.81E,h106km±25km,mb3.4/7, mb1 3.6/14,mb1mx3.3/59,mbtmp3.8/14,Error ellipse: s-maj=22.6km s-min=19.2km az=148.0
NNC 08 08:59:20.7±3.7,37°.70N×71°.69E,h204km±39km,mb3.0, mpv4.3,Error ellipse: s-maj=40.9km s-min=30.3km az=67.0
ISC 08 08:59:13.6±0.7,37°.10N±0°.06×71°.66E±0°.08,h106km,n29, σ1s.65/33,mb3.6/7,7C-7D,Afghanistan-Tajikistan border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SFK	Sufi-Kurgan	3.25	26	⇓P	Pn	09 00 06.1	+3.1
	39nm,0.4s						
SFK				⇓S	Sn	09 00 44.5	+3.4
	132nm,0.3s						
MNAS	Manas	5.42	7	⇓P	Pn	09 00 33.5	+1.3
	29nm,0.5s						
MNAS				⇓S	Sn	09 01 31.5	-1.8
	77nm,0.5s						
THN	Thein Dam	5.73	143	eP	Pn	09 00 39.6	+3.4
THN				eS	Sn	09 01 43.6	+2.9
AAK	Ala-Archa	5.94	21	P	Pn	09 00 41.7	+2.5
	23nm,0.3s,baz=172,slow=5.9,SNR=250						
AAK				S	Sn	09 01 46.2	+0.2
	7.9nm,0.3s,baz=122,slow=23,SNR=18						
AAK	Ala-Archa	5.94	21	⇓P	Pn	09 00 41.2	+1.9
	36nm,0.4s						
AAK				⇑S	Sn	09 01 45.9	-0.1
	48nm,0.7s						
KK31	Karatay Array	6.06	352	⇑P	Pn	09 00 41.7	+0.9
	5.6nm,0.3s,baz=182,slow=15,SNR=122						
KK31				⇑S	Sn	09 01 44.2	-4.5
	6.0nm,0.3s,baz=174,slow=25,SNR=4.1						
TKM2	Tokmak 2	6.55	26	⇓P	Pn	09 00 49.0	+1.5
	22nm,0.5s						
TKM2				⇑S	Sn	09 01 53.7	-7.2
	4.8nm,0.7s						
SDNR	Sundarnagar	7.11	140	eP	Pn	09 00 58.0	+3.0
SDNR				eS	Sn	09 02 14.0	-0.2
SMLA	Simla	7.50	141	i P	Pn	09 01 03.4	+3.1
SMLA				i S	Sn	09 02 21.9	-1.9
SMLA				i S	Sn	09 02 22.7	-1.1
SMLA				AML	AML	09 02 27.1	
	comp=E,1µm,0.3s						
SMLA				AML	AML	09 02 28.3	
	comp=N,1µm,0.4s						
GEYT	Alibeck	10.79	278	P	Pn	09 01 46.2	+1.2
	comp=N,0.9nm,0.3s,baz=111,slow=7.9,SNR=3.1						
GEYT				S	Sn	09 03 35.8	-7.9
	comp=N,3.1nm,0.3s,baz=105,slow=21,SNR=8.0						
MKAR	Makanchi Array	12.50	36	P	Pn	09 02 08.4	+0.8
	comp=N,0.2nm,0.3s,baz=227,slow=14,SNR=17						
PYUN	Piuthan	13.10	130	eP	Pn	09 02 14.9	-0.9
	comp=N,27nm,0.4s						
KOLN	Koldanda	13.71	129	eP	Pn	09 02 22.9	-0.8
	comp=N,13nm,0.4s						
GKN	Gorkha	14.20	126	eP	Pn	09 02 29.5	-0.6
	comp=N,19nm,0.4s						
KURBB	Kurchatov Arra	14.39	18	P	Pn	09 02 30.9	-1.2
	comp=N,0.0nm,0.3s,baz=210,slow=13,SNR=3.0						
AB31	Akbulak array	14.83	329	⇓P	Pn	09 02 35.8	-1.9
	comp=N,0.4nm,0.3s,baz=157,slow=9.9,SNR=49						
AB31				⇑S	Sn	09 05 09.3	-12
	comp=N,3.8nm,0.8s,baz=107,slow=29,SNR=8.9						
PKIN	Phulchoki	14.98	125	eP	Pn	09 02 40.0	-0.1
	comp=N,13nm,0.4s						
BVAR	Borovoye Array	15.95	357	P	P	09 02 52.1	-1.2
	comp=N,0.3nm,0.3s,baz=170,slow=18,SNR=4.0						
RAMN	Ramite	16.20	124	eP	Pn	09 02 54.6	-0.7
	comp=N,21nm,0.4s						
AKTO	Aktyubinsk	16.54	328	P	P	09 03 00.5	+0.7
	comp=N,0.4nm,0.3s,baz=118,slow=11,SNR=5.8						
AKTO				S	Sn	09 05 52.3	-10
	comp=N,0.2nm,0.3s,baz=230,slow=17,SNR=4.7						
AKTO	Aktyubinsk	16.54	328	⇑P	Pn	09 02 56.8	-2.3
	comp=N,1.6nm,0.6s						
AKTO				⇑S	Sn	09 05 51.2	-11
	comp=N,3.2nm,0.7s						
ZALV	Zalesovo Beam	19.15	24	P	Pn	09 03 29.7	-0.7
	comp=N,0.7nm,0.3s,baz=220,slow=12,SNR=8.0						
NRIK	Noril'sk	33.44	10	P	P	09 05 41.4	-0.5
	comp=N,2.1nm,0.6s,baz=162,slow=20,SNR=4.5						
ARCES	ARCESS Array B	40.80	337	P	P	09 06 46.0	+2.0
	comp=N,1.5nm,0.9s,baz=111,slow=9.0,SNR=3.4						
TORD	Torodi Ar. Bea	66.26	269	P	P	09 09 51.5	+0.8
	comp=N,0.5nm,0.9s,baz=69,slow=4.3,SNR=2.6						
INK	Inuvik	73.23	10	P	P	09 10 32.3	-0.3
	comp=N,0.6nm,0.4s,baz=333,slow=4.9,SNR=10						
YKA	Yellowknife Ar	80.62	3	P	P	09 11 15.4	+1.3
	comp=N,0.6nm,0.6s,baz=350,slow=5.4,SNR=19						
WRA	Warramunga Arr	81.86	122	P	P	09 11 20.4	-0.9
	comp=N,0.3nm,0.7s,baz=324,slow=4.9,SNR=2.8						

Code	Station Name	Δ°	AZ°	Op	ISC	Time	Res
ASAR	Alice Springs	84.17	125	P	P	09 11 33.0	-0.2
	comp=N,0.3nm,0.8s,baz=310,slow=4.5,SNR=3.0						

ISCJB 08 08:59:36.2±0.8, 6°.84N±0°.04×73°.13W±0°.05, h144km±6km, mb3.3/2, Error ellipse: s-maj=9.1km s-min=5.8km az=30.4
RSNC 08 08:59:36.5±0.9, 6°.85N×73°.11W, h146km±5km, ML2.5
IDC 08 08:59:38.8±1.1, 6°.39N×72°.42W, h76km±15km, mb2.9/2, mb1 3.1/4, mb1mx3.0/29, mbtmp3.1/4, Error ellipse: s-maj=32.1km s-min=7.4km az=131.0
ISC 08 08:59:36.6±1.2, 6°.85N±0°.05×73°.09W±0°.05, h145km±8km, n20, σ1s.29/33, 1D, Northern Colombia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BTLC	Betulia, Santa	0.18	291	*i* P	Pn	08 59 56.2	-0.3
BTLC				*e*S	Sn	09 00 11.5	-0.1
BARC	Barichara	0.27	199	*i* P	Pn	08 59 56.0	-0.8
BARC				*e*S	Sn	09 00 10.8	-1.3
BARC				*i*		09 00 14.4	
	comp=Z,55nm,0.7s						
PAMC	Pamplona, Colo	0.62	39	*e*P	Pn	08 59 58.5	-0.2
PAMC				*i*		08 59 58.9	
	comp=Z,52nm,0.2s						
PAMC				*e*S	Sn	09 00 15.5	+0.1
BRRC	Barranca, Sant	0.67	293⇓	*i*P	Pn	08 59 57.6	-0.7
BRRC				*i*		08 59 57.8	
	comp=Z,62nm,0.1s						
BRRC				*e*S	Sn	09 00 14.7	-0.2
GRMC	Gramalote, San	0.91	18	*i* P	Pn	09 00 01.4	+1.0
GRMC				*e*S	Sn	09 00 20.3	+1.9
GRMC				*i*		09 00 21.7	
	comp=Z,81nm,0.3s						
OCAC	Ocana	1.40	351	*e*P	Pn	09 00 04.2	-0.7
OCAC				*e*S	Sn	09 00 25.2	-1.3
OCAC				*i*		09 00 27.2	
	comp=Z,47nm,0.2s						
YOPC	Yopal, Colombi	1.63	156	*e*P	Pn	09 00 07.0	-0.4
YOPC				*e*S	Sn	09 00 31.2	+0.3
YOPC				*i*		09 00 32.0	
	comp=Z,18nm,0.6s						
NORC	Norcasia	2.18	234	*e*P	Pn	09 00 12.6	-1.1
NORC				*e*S	Sn	09 00 39.9	-2.2
CHIC	Chingaza	2.30	196	*e*P	Pn	09 00 14.5	-1.0
CHIC				*i*		09 00 16.0	
	comp=Z,18nm,0.4s						
CHIC				*e*S	Sn	09 00 44.3	-1.0
ROSC	El Rosal	2.34	211	P	Pn	09 00 16.2	+0.3
	comp=Z,4.3nm,0.3s,baz=90,slow=20,SNR=19						
ROSC				S	Sn	09 00 46.9	+0.7
	comp=Z,4.8nm,0.3s,baz=120,slow=20,SNR=7.7						
ROSC	El Rosal	2.34	211	*i* P	Pn	09 00 16.5	+0.5
HELC	Santa Helena	2.51	255	*e*P	Pn	09 00 17.6	-0.4
HELC				*e*S	Sn	09 00 49.7	0.0
HELC				*i*		09 00 55.1	
	comp=Z,24nm,0.5s						
VILC	Villavicencio,	2.79	192	*e*P	Pn	09 00 20.3	-1.0
GUYC	Guyana, Colomb	2.80	235	*e*P	Pn	09 00 21.6	-0.2
GUYC				*e*S	Sn	09 00 55.4	-1.0
GUYC				*i*		09 01 02.9	
	comp=Z,18nm,0.4s						
TOLC	Tolima	3.16	225	*e*P	Pn	09 00 26.1	-0.1
SDV	Santo Domingo	3.17	50	P	Pn	09 00 25.5	-0.6
	comp=Z,0.6nm,0.3s,baz=214,slow=9.4,SNR=8.7						
SDV				S	Sn	09 01 00.9	-3.5
	comp=Z,3.5nm,0.3s,baz=258,slow=19,SNR=25						
SDV	Santo Domingo	3.17	50	*e*P	Pn	09 00 25.1	-1.0
SDV				*i*		09 01 05.3	
	comp=Z,9.2nm,0.4s						
PRAC	Prado	3.59	210	*e*P	Pn	09 00 29.8	-1.7
PRAC				*e*S	Sn	09 01 12.8	-1.3
LPAZ	La Paz	23.51	168	P	P	09 04 37.4	+3.0
	comp=Z,0.4nm,0.4s,baz=0.0,slow=8.1,SNR=2.8						
YKA	Yellowknife Ar	63.24	340	P	P	09 10 03.5	+14
	comp=Z,0.3nm,0.6s,baz=145,slow=6.8,SNR=7.4						

NIED 08 09:03:00, 37°.90N×143°.80E, h5km, Mw3.8 Best double couple: M0 5.34000×10^14 NP1:φs 2.00000°, δ31.00000°, λ-85.00000°. NP2:φs 176.00000°, δ59.00000°, λ-93.00000°.
IDC 08 09:03:12.8±0.8, 37°.88N×144°.00E, h0km, mb3.8/9, mb1 3.9/12, mb1mx3.7/54, mbtmp3.7/12, ML2.7/3, MS3.1/2, Ms1 3.1/2, ms1mx2.5/57, Error ellipse: s-maj=21.8km s-min=18.1km az=100.0
NEIC 08 09:03:14.5±0.5, 37°.91N×143°.98E, h10km, mb4.0/4, Error ellipse: s-maj=11.2km s-min=8.0km az=130.0
ISCJB 08 09:03:16.1±0.5, 37°.94N±0°.04×143°.86E±0°.04, h33km, mb4.0/14, MS3.6/1, Error ellipse: s-maj=5.2km s-min=4.7km az=146.9
JMA 08 09:03:17.3±0.3, 37°.93N×143°.78E, h44km, M3.8
ISC 08 09:03:18.3±0.7, 37°.93N±0°.06×143°.86E±0°.07, h35km, n39, σ1s.02/46, mb3.9/14, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	Ouri	2.04	286	S	Sn	09 04 13.3	-1.0
JMK	Ichinoseki	2.31	297	P	Pn	09 03 53.1	-0.6
JMK				S	Sn	09 04 20.2	-0.6
JMM	Marumori	2.42	269	P	Pn	09 03 55.0	-0.3
JMM				S	Sn	09 04 22.4	-1.3
JFK	Kawauchi	2.43	257	P	Pn	09 03 54.4	-1.1
JFK				*e*S	Sn	09 04 22.1	-2.0
JOM	Ohasama	2.53	308	P	Pn	09 03 57.1	+0.3
JOM				S	Sn	09 04 26.1	-0.2
JTH	Tanohata	2.53	323	*e*S	Sn	09 04 25.1	-1.4
JOU	Okura	2.55	281	P	Pn	09 03 57.0	-0.1
JFT	Otama	2.82	263	P	Pn	09 04 00.9	+0.1
JFT				S	Sn	09 04 33.5	-0.1
JRG	Rokugo	2.91	301	*e*S	Sn	09 04 36.2	+0.3
JYK	Kaneyama	2.92	291	P	Pn	09 04 02.5	+0.4
JANG	Nango	3.04	324	P	Pn	09 04 04.1	+0.3
JANG				*e*S	Sn	09 04 37.1	-1.9
ERM	Erimo	4.11	353	*e*Pn	Pn	09 04 17.0	-1.5
JRY	Ryogami san	4.40	246	P	Pn	09 04 22.0	-0.6
JNBK	Urakawa-nobuka	4.42	349	P	Pn	09 04 22.1	-0.7
JNBK				*e*S	Sn	09 05 11.8	-1.3
JCH	Churui	4.69	356	P	Pn	09 04 24.9	-1.6
MJAR	Matsushiro Arr	4.71	255	Pn	Pn	09 04 26.9	0.0
	2.2nm,0.3s,baz=90,slow=15,SNR=16						
MJAR				LR	LR	09 06 37.0	
	comp=Z,72nm,18.0s,baz=105,slow=43						
MAJO	Matsushiro	4.71	255	*e*Pn	Pn	09 04 27.5	+0.6
MAJO				*e*Sn	Sn	09 05 19.3	-1.1
MAT	Matsushiro	4.71	255	P	Pn	09 04 27.7	+0.8
MAT				S	Sn	09 05 06.4	-14
JHJ2	Mitsune	5.83	216	*e*Pn	Pn	09 04 41.7	-0.4
USRK	Ussuriysk Ar.	10.92	309	Pn	Pn	09 05 53.7	+1.7
	0.1nm,0.3s,baz=108,slow=14,SNR=3.4						
KSRS	Korea Array	12.63	273	Pn	Pn	09 06 15.4	+0.1
	0.1nm,0.3s,baz=95,slow=13,SNR=1.9						
KSAR	Wonju Array Be	12.66	273	Pn	Pn	09 06 15.4	-0.4
SEY	Seymchan	25.57	9	P	P	09 08 43.8	+0.3
	0.8nm,0.4s,baz=194,slow=3.2,SNR=6.2						
MKAR	Makanchi Array	45.29	302	P	P	09 11 32.1	-0.4
	0.2nm,0.3s,baz=83,slow=9.9,SNR=4.9						
KURK	Kurchatov	46.91	308	P	P	09 11 45.6	+0.5
KURBB	Kurchatov Arra	46.98	308	P	P	09 11 45.6	-0.1
	1.1nm,0.7s,baz=84,slow=8.5,SNR=7.7						
ILAR	Eielson Array	47.69	33	P	P	09 11 50.5	-0.4
	0.6nm,0.7s,baz=280,slow=6.4,SNR=6.0						
TKM2	Tokmak 2	50.91	298	*e*P	P	09 12 18.1	+2.0
	3.2nm,1.0s						
ARU	Arti	56.97	319	P	P	09 12 59.7	-0.2
	4.8nm,0.2s,baz=281,slow=19,SNR=2.7						
WRAB	Tennant Creek	58.25	191	*e*P	P	09 13 09.2	0.0
	2.8nm,0.8s						
WRA	Warramunga Arr	58.26	191	P	P	09 13 08.8	-0.5
	4.2nm,0.8s,baz=11,slow=7.1,SNR=21						
ABKAR	Akbulak array	58.84	310	*e*P	P	09 13 14.1	+0.9
	0.3nm,0.4s						
AKTO	Aktyubinsk	59.51	312	P	P	09 13 19.7	+2.0
	0.7nm,0.3s,baz=56,slow=3.6,SNR=3.6						
ASAR	Alice Springs	61.98	190	P	P	09 13 34.8	0.0
	0.8nm,0.5s,baz=6.2,slow=6.8,SNR=12						
YKA	Yellowknife Ar	62.05	31	P	P	09 13 35.2	+0.5
	0.3nm,0.7s,baz=296,slow=6.4,SNR=4.8						
HLID	Hailey	72.33	48	*e*P	P	09 14 42.2	+1.6
	0.4nm,0.6s						
SCHQ	Schefferville	83.92	17	LR	LR	09 59 47.8	
	comp=Z,25nm,18.0s,baz=24,slow=40						
TXAR	Lajitas Array	88.03	54	P	P	09 16 03.9	-1.3
	0.5nm,0.9s,baz=289,slow=3.8,SNR=3.4						
LCO	Las Campanas	149.97	83	*e*PKPbc	PKPbc	09 23 03.6	-1.7

IDC 08 09:03:49.9±0.9, 36°.94N×144°.40E, h0km, mb4.1/10, mb1 4.1/14, mb1mx3.9/63, mbtmp4.1/14, ML3.5/4, Error ellipse: s-maj=25.7km s-min=17.3km az=108.0
ISCJB 08 09:03:51.6±0.5, 36°.96N±0°.06×144°.36E±0°.07, h26km, mb4.2/16, Error ellipse: s-maj=10.2km s-min=6.3km az=137.6
NEIC 08 09:03:51.2±0.5, 36°.98N×144°.47E, h10km, mb4.2/5, Error ellipse: s-maj=12.0km s-min=9.0km az=127.0
ISC 08 09:03:53.6±0.7, 36°.94N±0°.08×144°.37E±0°.09, h26km, n30, σ1s.53/27, mb4.2/16, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MJAR	Matsushiro Arr	4.96	267	Pn	Pn	09 05 06.0	-0.4
	4.2nm,0.3s,baz=75,slow=9.3,SNR=6.1						
MAJO	Matsushiro	4.96	267	*e*Pn	Pn	09 05 07.0	+0.5
MAJO				*e*Sn	Sn	09 06 02.7	-0.4
ERM	Erimo	5.15	350	*e*Pn	Pn	09 05 05.8	-3.2
JHJ2	Mitsune	5.34	226	*e*Pn	Pn	09 05 11.8	+0.1
JHJ2				*e*Sn	Sn	09 06 14.1	+1.7
JHJ	Hachijo jima 2	5.36	226	Pn	Pn	09 05 11.8	0.0
	15nm,0.3s,baz=135,slow=22,SNR=7.7						
JHJ				Sn	Sn	09 06 08.1	-4.6
	21nm,0.3s,baz=90,slow=20,SNR=3.5						
USRK	Ussuriysk Ar.	11.87	311	Pn	Pn	09 06 40.0	-1.1
	0.3nm,0.3s,baz=114,slow=15,SNR=7.3						
KLR	Kul'dur	15.33	327	Pn	Pn	09 07 29.1	+1.0
	0.2nm,0.3s,baz=134,slow=8.7,SNR=7.2						
H11N2	WAKE ISLAND Hy	26.11	125	T	T	09 36 23.9	
	baz=317,slow=75,SNR=83						
H11N1	WAKE ISLAND Hy	26.12	125	T	T	09 36 22.8	
	baz=317,slow=75,SNR=40						
H11N3	WAKE ISLAND Hy	26.13	125	T	T	09 36 28.4	
	baz=317,slow=75,SNR=47						
SEY	Seymchan	26.48	8	P	P	09 09 28.8	+0.5
	4.4nm,0.8s,baz=182,slow=7.7,SNR=12						
H11S1	WAKE ISLAND Hy	26.87	127	T	T	09 37 15.6	
	baz=318,slow=76,SNR=17						
H11S3	WAKE ISLAND Hy	26.87	127	T	T	09 37 23.2	
	baz=318,slow=76,SNR=18						
H11S2	WAKE ISLAND Hy	26.89	127	T	T	09 37 24.5	
	baz=318,slow=76,SNR=12						
KURK	Kurchatov	47.84	309	*e*P	P	09 12 29.1	+0.2
	66nm,1.0s						
ILAR	Eielson Array	48.30	32	P	P	09 12 31.9	-0.4
	0.9nm,0.8s,baz=259,slow=6.8,SNR=5.4						
TKM2	Tokmak 2	51.74	299	*e*P	P	09 13 01.1	+2.1
	0.9nm,0.3s						
INK	Inuvik	53.38	27	P	P	09 13 11.2	+0.7
	0.6nm,0.4s,baz=301,slow=5.0,SNR=6.4						
WRAB	Tennant Creek	57.36	191	*e*P	P	09 13 40.9	+1.4
	2.6nm,0.6s						
WRA	Warramunga Arr	57.37	191	P	P	09 13 40.3	+0.7
	1.7nm,0.5s,baz=9.7,slow=7.1,SNR=8.5						
ARU	Arti	57.98	319	P	P	09 13 43.5	-0.2
	3.6nm,0.2s,baz=69,slow=5.2,SNR=4.8						
ABKAR	Akbulak array	59.79	311	*e*P	P	09 13 56.6	+0.3
	0.9nm,0.6s						
AKTO	Aktyubinsk	60.48	313	P	P	09 14 01.8	+0.8
	1.1nm,0.4s,baz=70,slow=13,SNR=4.5						
ASAR	Alice Springs	61.09	191	P	P	09 14 05.0	-0.3
	0.8nm,0.8s,baz=6.4,slow=6.9,SNR=4.6						
YKA	Yellowknife Ar	62.68	31	P	P	09 14 15.9	+0.3
	0.3nm,0.8s,baz=303,slow=6.9,SNR=3.7						
FINES	FINESS Array B	69.98	333	P	P	09 15 02.3	0.0
	1.4nm,0.7s,baz=33,slow=11,SNR=2.9						
FFC	Flin Flon	72.48	34	*e*P	P	09 15 18.7	+1.0
	0.6nm,0.2s						
HLID	Hailey	72.68	48	*e*P	P	09 15 16.9	-2.4
	0.2nm,0.2s						
DUG	Dugway, Tooele	75.61	50	*e*P	P	09 15 34.6	-1.8
AKASG	Malin Array Be	75.79	324	P	P	09 15 37.8	+0.7
	2.1nm,0.6s,baz=44,slow=5.7,SNR=7.7						

NIED 08 09:08:00, 37°.10N×144°.10E, h5km, Mw4.2 Best double couple: M0 2.21000×10^15 NP1:φs 49.00000°, δ32.00000°, λ-91.00000°. NP2:φs 231.00000°, δ58.00000°, λ-89.00000°.
IDC 08 09:08:34.9±0.6, 37°.00N×144°.40E, h0km, mb4.3/27, mb1 4.4/33, mb1mx4.3/70, mbtmp4.3/33, ML4.0/5, MS3.3/11, Ms1 3.4/11, ms1mx3.0/62, Error ellipse: s-maj=14.9km s-min=12.5km az=111.0
NEIC 08 09:08:36.9±0.3, 36°.98N×144°.35E, h10km, mb4.6/14, Error ellipse: s-maj=6.7km s-min=5.2km az=133.0
MOS 08 09:08:38.3±0.9, 36°.96N×144°.34E, h33km, mb4.6/33, Error ellipse: s-maj=10.4km s-min=7.2km az=121.4
ISCJB 08 09:08:39.3±0.3, 37°.11N±0°.03×144°.11E±0°.03, h33km, mb4.4/58, MS3.6/11, Error ellipse: s-maj=4.4km s-min=3.3km az=157.4
JMA 08 09:08:39.8±0.2, 37°.15N×144°.07E, h64km, M4.5
ISC 08 09:08:41.1±0.5, 37°.10N±0°.04×144°.19E±0°.05, h35km, n146, σ1s.49/148, mb4.5/58, MS3.6/12, 6C-6D, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	Ouri	2.62	302	P	Pn	09 09 19.1	-1.8
JIO				*e*S	Sn	09 09 48.4	-3.1
JFK	Kawauchi	2.66	277	P	Pn	09 09 19.8	-1.7
JFK				S	Sn	09 09 49.9	-2.6
ONAJ	Iwakimizuishiy	2.71	271	P	Pn	09 09 20.8	-1.4
ONAJ				*e*S	Sn	09 09 51.1	-2.7
JMK	Ichinoseki	2.98	309	P	Pn	09 09 24.3	-1.6
JMK				*e*S	Sn	09 09 57.2	-3.2
JFT	Otama	3.10	279	P	Pn	09 09 25.9	-1.6
JFT				*e*S	Sn	09 10 00.5	-2.8
JOM	Ohasama	3.29	317	P	Pn	09 09 28.9	-1.1
JOM				S	Sn	09 10 05.0	-2.9
JYK	Kaneyama	3.53	302	P	Pn	09 09 32.8	-0.5
JYK				S	Sn	09 10 11.6	-2.2
BSO1	Boso 1	3.57	228	P	Pn	09 09 33.3	-0.2
BSO1				*e*S	Sn	09 10 14.5	+0.3
JAG	Ashikaga	3.86	261	P	Pn	09 09 37.0	-1.0
JANG	Nango	3.88	328	P	Pn	09 09 36.9	-1.3
JRY	Ryogami san	4.39	257	P	Pn	09 09 44.0	-1.3
JRY				*e*S	Sn	09 10 33.0	-2.2
JOD2	Odawara 2	4.52	248	P	Pn	09 09 45.5	-1.5
JOD2				S	Sn	09 10 37.8	-0.5
MJAR	Matsushiro Arr	4.83	265	Pn	Pn	09 09 51.4	+0.1
	9.8nm,0.3s,baz=89,slow=15,SNR=38						
MJAR				Sn	Sn	09 10 45.5	-0.6
	6.0nm,0.3s,baz=299,slow=21,SNR=10						
MAJO	Matsushiro	4.83	265⇑	*i*P	Pn	09 09 52.1	+0.8
MAJO	Matsushiro	4.83	265	*e*Pn	Pn	09 09 51.9	+0.5
MAT	Matsushiro	4.83	265	P	Pn	09 09 51.2	-0.1
MAT				S	Sn	09 10 45.8	-0.3
JOT	Ohata	4.92	331	P	Pn	09 09 52.3	-0.2
JOT				*e*S	Sn	09 10 46.0	-2.1
ERM	Erimo	4.97	351	*e*P	Pn	09 09 51.0	-2.1
ERM	Erimo	4.97	351	*e*Pn	Pn	09 09 51.0	-2.1
ERM				*e*Sn	Sn	09 10 43.1	-6.3
JHJ2	Mitsune	5.36	223	P	Pn	09 09 55.7	-2.8
JHJ2	Mitsune	5.36	223	*e*Pn	Pn	09 09 56.3	-2.2
JHJ2				*e*Sn	Sn	09 10 54.4	-4.5
JKB	Kayabe	5.37	334	P	Pn	09 09 57.1	-1.5
JHJ	Hachijo jima 2	5.37	224	Pn	Pn	09 09 56.0	-2.7
	26nm,0.3s,baz=335,slow=17,SNR=15						
JHJ				Sn	Sn	09 10 54.7	-4.6
	84nm,0.3s,baz=210,slow=23,SNR=6.3						
JCH	Churui	5.54	354	P	Pn	09 09 57.8	-3.2
JCH				S	Sn	09 10 56.5	-7.0
INU	Inuyama	6.06	255	*e*Pn	Pn	09 10 08.7	+0.6
JOSM	Okushiri--Mats	6.16	325	P	Pn	09 10 08.6	-0.9
NEM2	Nemuro 2	6.37	10	P	Pn	09 10 07.3	-5.0
JTKR	Abashiri--Toko	6.87	358	P	Pn	09 10 16.0	-3.2
JHR	Hokuryu	6.89	345	P	Pn	09 10 18.4	-1.2
YUK	Yuzh-Kuril'sk	7.04	10	*e*P	Pn	09 10 17.3	-4.3
YUK				pmax	pmax		
	comp=Z,262nm,0.2s						
YUK				pmax	pmax		
	comp=N,31nm,0.1s						
YUK				pmax	pmax		
	comp=E,57nm,0.2s						
SHO	Shikotan	7.05	16	*e*P	Pn	09 10 16.1	-5.6
SHO				pmax	pmax		
	comp=E,93nm,0.5s						
SHO				pmax	pmax		
	comp=Z,115nm,0.5s						
KUR	Kuril'sk	8.58	18	*e*P	Pn	09 10 38.9	-3.8
KUR				pmax	pmax		
	comp=Z,68nm,0.7s						
KUR				pmax	pmax		
	comp=N,35nm,0.1s						
KUR				pmax	pmax		
	comp=E,45nm,0.5s						
CBIJ	Chichi jima	10.12	190	*e*Pn	Pn	09 10 59.0	-4.9
JCJ	Chichijima	10.12	190	Pn	Pn	09 10 58.7	-5.2
	comp=E,4.9nm,0.3s,baz=287,slow=19,SNR=6.3						
JNU	Nakatsue	11.60	254	LR	LR	09 15 55.1	
	comp=E,71nm,18.8s,baz=129,slow=38						
USRK	Ussuriysk Ar.	11.66	311	Pn	Pn	09 11 25.3	+0.4
	comp=E,0.6nm,0.3s,baz=117,slow=14,SNR=23						
USRK				LR	LR	09 15 34.7	
	comp=E,109nm,20.3s,baz=131,slow=35						
KSRS	Korea Array	12.96	276	Pn	Pn	09 11 44.8	+2.1
	comp=E,0.3nm,0.3s,baz=93,slow=13,SNR=8.5						
KSAR	Wonju Array Be	12.99	276	P	Pn	09 11 44.8	+1.6
KSAR	Wonju Array Be	12.99	276	Pn	Pn	09 11 44.8	+1.6
MDJ	Mudanjiang	13.35	309	P	Pn	09 11 50.1	+2.2
MDJ				pmax	pmax		
	comp=Z,6.0nm,0.9s						
MDJ				pmax	pmax		
	comp=Z,38nm,3.2s						
KLR	Kul'dur	15.12	327	Pn	Pn	09 12 13.2	+1.3
	comp=Z,0.2nm,0.3s,baz=138,slow=18,SNR=4.4						
KLR				LR	LR	09 17 57.2	
	comp=Z,94nm,18.9s,baz=132,slow=37						
NJ2	Nanjing	21.43	264	*e*P	P	09 13 26.5	+0.4
NJ2				pmax	pmax		
	comp=Z,9.0nm,0.5s						
MA2	Magadan	22.89	9	P	P	09 13 39.9	-1.5
	comp=Z,1.8nm,0.3s,baz=229,slow=9.4,SNR=5.9						
MA2	Magadan	22.89	9	*e*P	P	09 13 41.7	+0.3
MA2	Magadan	22.89	9	*e*P	P	09 13 41.7	+0.3
HHC	Hu-ho-hao-te	25.55	289	*e*P	P	09 14 07.6	+0.9
HHC				pP	pP	09 14 17.8	+1.2
HHC				S	S	09 18 30.8	-1.3
HHC				sS	sS	09 18 46.6	-2.1
HHC				pmax	pmax		
	comp=Z,22nm,0.8s						
HHC				pmax	pmax		
	comp=Z,100nm,7.1s						
HHC				LR	LR		
	comp=N,1μm,13.7s						
HHC				LR	LR		
	comp=E,1μm,14.9s						
HHC				LR	LR		
	comp=Z,1μm,13.7s						
H11N2	WAKE ISLAND Hy	26.32	125	T	T	09 41 24.1	
	baz=316,slow=75,SNR=82						
H11N1	WAKE ISLAND Hy	26.33	125	T	T	09 41 06.4	
	baz=316,slow=75,SNR=33						
H11N3	WAKE ISLAND Hy	26.34	125	T	T	09 41 05.5	
	baz=316,slow=75,SNR=51						
SEY	Seymchan	26.35	8	P	P	09 14 14.2	+0.7
	comp=Z,14nm,0.8s,baz=186,slow=6.8,SNR=49						
SEY	Seymchan	26.35	8⇑	*i*P	P	09 14 14.4	+1.0
H11S1	WAKE ISLAND Hy	27.08	127	T	T	09 42 06.4	
	baz=318,slow=76,SNR=11						
H11S3	WAKE ISLAND Hy	27.08	127	T	T	09 42 11.0	
	baz=318,slow=76,SNR=16						
H11S2	WAKE ISLAND Hy	27.09	127	T	T	09 42 03.7	
	baz=318,slow=76,SNR=15						
BOD	Bodaibo	28.69	326	*e*P	P	09 14 33.7	-0.8
BOD				pmax	pmax		
	comp=Z,1μm,1.4s						
ULN	Ulaanbaatar	29.16	303⇓	*i*P	P	09 14 41.2	+2.2
ULN				pmax	pmax		
	comp=Z,5.0nm,1.2s						
SONA1	Songino Array	29.59	303	*e*P	P	09 14 44.3	+1.4
SONM	Songino Array	29.60	303	P	P	09 14 44.7	+1.9
	comp=Z,1.5nm,0.7s,baz=90,slow=9.3,SNR=7.2						
ZAK	Zakamensk	31.98	308	*e*P	P	09 15 01.3	-2.5
ZAK				pmax	pmax		
	comp=Z,2.0nm,1.3s						
GYA	Guiyang	33.43	262	*e*P	P	09 15 16.8	+0.1
GYA				pmax	pmax		
	comp=Z,10.0nm,0.8s						
CD2	Chengdu	33.89	272	P	P	09 15 19.3	-1.3
CD2				pmax	pmax		
	comp=Z,1.0nm,0.6s						
GTA	Gaotai	34.66	288	*e*P	P	09 15 30.3	+3.0
GTA				pP	pP	09 15 34.5	-2.9
GTA				sP	sP	09 15 37.9	-3.8
GTA				pmax	pmax		
	comp=Z,5.0nm,0.8s						
TIXI	Tiksi	35.51	352	P	P	09 15 32.0	-2.1
	comp=Z,0.7nm,0.3s,baz=100,slow=7.1,SNR=4.1						
TIXI	Tiksi	35.51	352⇓	*i*P	P	09 15 34.1	0.0
TIXI				pmax	pmax		
	comp=Z,10.0nm,2.5s						
KMI	Kunming	37.17	263	P	P	09 15 50.9	+1.8
KMI				pmax	pmax		
	comp=Z,12nm,0.7s						
KMI				pmax	pmax		
	comp=Z,63nm,3.4s						
WMQ	Urumqi	42.79	297	*e*P	P	09 16 37.3	+2.0
WMQ				pP	pP	09 16 45.9	+0.3
WMQ				sP	sP	09 16 50.6	+0.8
WMQ				pmax	pmax		
	comp=Z,4.0nm,0.6s						
WMQ				pmax	pmax		
	comp=Z,72nm,4.8s						
ZAA0	Zalesovo Array	43.51	312	*e*P	P	09 16 41.3	+0.4
ZALV	Zalesovo Beam	43.51	312	P	P	09 16 40.1	-0.7
	comp=Z,0.8nm,0.3s,baz=90,slow=7.7,SNR=5.5						
ZALV				PcP	PcP	09 18 27.5	-0.8
	comp=Z,2.1nm,0.5s,baz=94,slow=3.6,SNR=5.6						
ZALV				LR	LR	09 35 25.5	
	comp=Z,30nm,19.2s,baz=70,slow=37						
CMAR	Chiang Mai Arr	43.67	257	P	P	09 16 42.1	-0.5
	comp=Z,2.0nm,0.4s,baz=43,slow=6.9,SNR=12						
CMAR				LR	LR	09 37 22.7	
	comp=Z,22nm,18.8s,baz=330,slow=39						
NRIK	Noril'sk	44.14	335	LR	LR	09 35 49.8	
	comp=Z,65nm,20.1s,baz=95,slow=37						
KDAK	Kodiak Island	45.56	42	*ce*P	P	09 16 56.8	-0.4
MK01	Makanchi Array	45.96	302	*e*P	P	09 17 01.1	+0.5
MK31	Makanchi Array	45.96	303	*e*P	P	09 17 01.6	+1.0
MK31	Makanchi Array	45.96	303	*e*P	P	09 17 01.6	+1.0
MKAR	Makanchi Array	45.96	303	P	P	09 17 01.2	+0.6
	comp=Z,1.4nm,0.7s,baz=87,slow=9.6,SNR=10						
MKAR				LR	LR	09 36 17.2	
	comp=Z,25nm,19.7s,baz=5.5,slow=36						
MKAR	Makanchi Array	45.96	303	*e*P	P	09 17 01.6	+1.0
MKAR	Makanchi Array	45.96	303	*e*P	P	09 17 01.6	+1.0
MLY	Manley	46.62	32	*e*P	P	09 17 06.6	+1.2
	comp=Z,7.1nm,1.0s						
KURK	Kurchatov	47.63	308	*e*P	P	09 17 13.8	+0.3
KURK				pmax	pmax		
	comp=Z,6.0nm,0.7s						
KURK	Kurchatov	47.63	308	*e*P	P	09 17 13.8	+0.3
	comp=Z,6.2nm,0.7s						
MDM	Murphy Dome	47.68	32	*e*P	P	09 17 14.3	+0.6
	comp=Z,14nm,1.1s						
KURBB	Kurchatov Arra	47.70	308	P	P	09 17 14.2	+0.1
	comp=Z,2.9nm,0.6s,baz=83,slow=8.4,SNR=5.0						
ILAR	Eielson Array	48.25	32	P	P	09 17 17.0	-1.1
	comp=Z,2.8nm,0.8s,baz=264,slow=6.5,SNR=25						
ILB	Eielson Array	48.25	32	*e*P	P	09 17 18.0	-0.1
IL1	Eielson Array	48.25	32	*e*P	P	09 17 17.8	-0.3
MTN	Manton Dam	51.18	196	*e*P	P	09 17 39.9	-0.9
TKM2	Tokmak 2	51.54	299	*e*P	P	09 17 45.3	+1.6
TKM2				pmax	pmax		
	comp=Z,4.0nm,0.8s						
TKM2	Tokmak 2	51.54	299	*e*P	P	09 17 45.2	+1.6
	comp=Z,3.7nm,0.8s						
BVAR	Borovoye Array	52.16	313	P	P	09 17 48.7	+0.8
	comp=Z,1.4nm,0.6s,baz=75,slow=6.8,SNR=9.4						
BVAR				PcP	PcP	09 18 57.8	-1.5
	comp=Z,1.5nm,0.7s,baz=83,slow=3.7,SNR=4.7						
BRVK	Borovoye	52.22	313⇑	*i*P	P	09 17 49.6	+1.3
BRVK				pmax	pmax		
	comp=Z,10.0nm,2.5s						
BRVK	Borovoye	52.22	313	*e*P	P	09 17 49.1	+0.8
	comp=Z,4.4nm,1.0s						
KSH	Kashi	52.40	295	P	P	09 17 55.1	+5.1
KSH				*e*sP	sP	09 18 08.9	+4.2
KSH				*e*PP	PP	09 19 56.4	+7.7
KSH				PcS	PcS	09 23 01.2	+2.1
KSH				S	S	09 25 19.7	+6.1
KSH				ScS	ScS	09 27 38.5	+1.2

Code	Station Name	Δ°	AZ°	Op	ISC	Time	Res
KSH				pmax	pmax		
	comp=Z,220nm,5.2s						
KSH				LR	LR		
	comp=N,190nm,9.2s						
KSH				LR	LR		
	comp=E,200nm,11.5s						
KSH				LR	LR		
	comp=Z,180nm,5.6s						
AAK	Ala-Archa	52.40	299	LR	LR	09 40 54.3	
	comp=Z,45nm,18.6s,baz=44,slow=37						
AAK	Ala-Archa	52.40	299	eP	P	09 17 51.4	+1.3
AAK				pmax	pmax		
	comp=Z,3.0nm,0.9s						
ZRNK	Zerenda	52.99	313	eP	P	09 17 54.8	+0.7
ZRNK				pmax	pmax		
	comp=Z,4.0nm,0.9s						
ZRNK	Zerenda	52.99	313	eP	P	09 17 54.8	+0.7
	comp=Z,4.3nm,0.9s						
INK	Inuvik	53.31	27	P	P	09 17 54.6	-1.5
	comp=Z,3.1nm,0.7s,baz=288,slow=6.7,SNR=22						
INK	Inuvik	53.31	27	eP	P	09 17 56.7	+0.6
INK				pmax	pmax		
	comp=Z,3.0nm,0.6s						
INK	Inuvik	53.31	27	eP	P	09 17 56.7	+0.6
	comp=Z,2.9nm,0.6s						
WRAB	Tennant Creek	57.48	191⇓	eP	P	09 18 25.0	-1.7
WRAB				pmax	pmax		
	comp=Z,12nm,0.8s						
WRA	Warramunga Arr	57.49	191	P	P	09 18 25.1	-1.7
	comp=Z,4.6nm,0.7s,baz=9.6,slow=7.1,SNR=29						
ARU	Arti	57.77	319	P	P	09 18 28.3	-0.1
	comp=Z,4.7nm,0.2s,baz=118,slow=4.7,SNR=10						
ARU	Arti	57.77	319d	iP	P	09 18 28.8	+0.4
ARU						09 20 34.1	
ARU				S	S	09 26 28.3	+3.5
ARU				SS	SS	09 30 13.0	-2.0
ARU				pmax	pmax		
	comp=Z,20nm,1.7s						
ARU	Arti	57.77	319	eP	P	09 18 29.1	+0.7
	comp=Z,8.7nm,0.7s						
ABKAR	Akbulak array	59.58	311	eP	P	09 18 41.4	+0.3
	comp=Z,1.7nm,0.5s						
AKTO	Aktyubinsk	60.27	313	P	P	09 18 46.5	+0.7
	comp=Z,5.2nm,0.8s,baz=70,slow=11,SNR=13						
AS01	Alice Springs	61.21	191	eP	P	09 18 51.1	-1.3
ASAR	Alice Springs	61.22	191	P	P	09 18 51.3	-1.1
	comp=Z,1.6nm,0.7s,baz=5.4,slow=7.0,SNR=18						
RES	Resolute Bay	61.97	15	eP	P	09 18 56.8	-0.1
RES				pmax	pmax		
	comp=Z,5.0nm,1.0s						
RES	Resolute Bay	61.97	15	eP	P	09 18 56.8	-0.1
	comp=Z,4.9nm,1.0s						
YKA	Yellowknife Ar	62.62	31	P	P	09 19 00.8	-0.7
	comp=Z,0.7nm,0.7s,baz=301,slow=6.8,SNR=12						
KLMR	Klimovskoe	64.87	328	P	P	09 19 13.3	-3.0
KLMR				pmax	pmax		
	comp=Z,14nm,1.6s						
GEYT	Alibeck	65.73	300	P	P	09 19 22.7	+0.4
	comp=Z,1.8nm,0.4s,baz=48,slow=2.2,SNR=3.5						
STKA	Stephens Creek	68.67	182	P	P	09 19 40.1	-0.5
	comp=Z,1.3nm,0.7s,baz=343,slow=3.6,SNR=3.0						
OBN	Obninsk	69.36	324⇓	eP	P	09 19 45.8	+1.0
OBN				e		09 22 19.7	
OBN				ePPP	PPP	09 24 01.0	
OBN				pmax	pmax		
	comp=Z,5.0nm,0.9s						
OBN				MLR	MLR		
	comp=Z,83nm,13.0s						
LPSR	Galich'ya Gora	69.66	321	eP	P	09 19 47.5	+0.8
LPSR				pmax	pmax		
	comp=Z,10.0nm,0.9s						
FINES	FINESS Array B	69.77	333	P	P	09 19 47.5	+0.2
	comp=Z,3.7nm,0.8s,baz=54,slow=9.8,SNR=8.5						
FINES				LR	LR	09 51 41.3	
	comp=Z,53nm,20.7s,baz=331,slow=37						
VSR	Storozhevoye	70.33	320	eP	P	09 19 51.1	+0.2
VSR				pmax	pmax		
	comp=Z,10.0nm,1.1s						
NCK	Nalchik	72.24	311⇑	eP	P	09 20 03.8	+1.1
NCK				pmax	pmax		
	comp=Z,16nm,1.2s						
FFC	Flin Flon	72.43	34	eP	P	09 20 03.5	0.0
FFC				pmax	pmax		
	comp=Z,4.0nm,0.8s						
FFC	Flin Flon	72.43	34	eP	P	09 20 03.5	0.0
	comp=Z,4.3nm,0.8s						
KIV	Kislovodsk	72.52	312⇓	eP	P	09 20 06.6	+2.2
KIV				e		09 22 47.0	
KIV				eS	S	09 29 26.2	-0.1
KIV				pmax	pmax		
	comp=Z,28nm,2.5s						
KIV				MLR	MLR		
	comp=Z,52nm,15.0s						
KBZ	Khabaz	72.53	312	P	P	09 20 05.5	+1.2
	comp=Z,4.6nm,0.8s,baz=79,slow=4.0,SNR=9.4						
LRM	Limekiln Ridge	72.53	46	eP	P	09 20 05.0	+0.3
NV01	Mina Array Sit	73.16	54	eP	P	09 20 08.7	+0.2
NVAR	Mina Array Bea	73.16	54	P	P	09 20 07.8	-0.6
	comp=Z,1.8nm,0.8s,baz=286,slow=6.0,SNR=12						
HFS	Hagfors	74.92	337	P	P	09 20 18.8	+0.7
	comp=Z,6.5nm,1.0s,baz=57,slow=9.0,SNR=5.1						
NB2	NORSAR Subarra	74.96	338	P	P	09 20 18.5	+0.2
	comp=Z,1.8nm,0.7s,baz=37,slow=5.9						
NOA	NORSAR Array B	74.96	338	P	P	09 20 18.8	+0.5
	comp=Z,2.2nm,0.7s,baz=39,slow=5.8,SNR=5.1						
AKASG	Malin Array Be	75.58	323	P	P	09 20 21.5	-0.5
	comp=Z,7.6nm,0.7s,baz=44,slow=5.7,SNR=22						
KIEV	Kiev	75.59	323	eP	P	09 20 22.5	+0.4
KIEV				pmax	pmax		
	comp=Z,9.0nm,0.8s						
KIEV	Kiev	75.59	323	eP	P	09 20 22.4	+0.4
	comp=Z,9.1nm,0.8s						
BUR08	Bucovina Ar. S	79.60	323	eP	P	09 20 45.8	+1.1
BRTR	Keskin Array B	80.45	313	P	P	09 20 50.5	+1.0
	comp=Z,3.0nm,1.1s,baz=113,slow=2.8,SNR=7.6						
SDCO	Great Sand Dun	81.59	49	eP	P	09 20 58.1	+2.3
	comp=Z,13nm,1.4s						
CLL	Collm	82.12	332	iP	P	09 20 57.9	0.0
	comp=Z,9.0nm,0.8s						
CLL	Collm	82.12	332	iP	P	09 20 57.9	0.0
CLL				pmax	pmax		
	comp=Z,9.0nm,0.8s						
PPT	Papeete	82.69	118	LR	LR	09 49 29.8	
	comp=Z,32nm,20.9s,baz=197,slow=30						
KHC	Kasperske Hory	83.62	330	eP	P	09 21 04.5	-1.3
KHC	Kasperske Hory	83.62	330	eP	P	09 21 04.5	-1.3
KHC	Kasperske Hory	83.62	330	eP	P	09 21 06.3	+0.6
	comp=Z,1.2nm,0.7s						
MMAI	Mount Meron Ar	83.72	307	LR	LR	10 02 47.6	
	comp=Z,20nm,18.6s,baz=245,slow=39						
GERES	GERESS Array B	83.80	330	P	P	09 21 07.2	+0.5
	comp=Z,1.2nm,0.5s,baz=26,slow=6.5,SNR=7.0						
BFO	Black Forest	86.30	332c	eP	P	09 21 21.3	+2.1
TXAR	Lajitas Array	88.30	54	P	P	09 21 28.1	-1.2
	comp=Z,0.6nm,0.6s,baz=308,slow=3.7,SNR=8.9						
LPAZ	La Paz	144.72	63	PKP	PKPbc	09 28 14.2	0.0
	comp=Z,0.9nm,0.7s,baz=313,slow=4.8,SNR=4.6						

*DJA **08** 09:18:32.6±1.2, 10°S±11°×10°8E±°, h10km, M3.9/9, MLv3.9/9*
*IDC **08** 09:18:36.5±2.0, 10°.06S×108°.14E, h0km, mb3.5/5, mb1 3.7/6, mb1mx3.5/44, mbtmp3.6/6, ML4.1/1, MS2.8/1, Ms1 2.8/1, ms1mx2.3/45, Error ellipse: s-maj=83.8km s-min=18.7km az=55.0*
ISC 08 09:18:37.5±1.5**, 9°.9S**±0°.1×**108°.0E**±0°.2**, h22**km**, n12, σ1s97**/10**, mb3.4**/5**, South of Jawa**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
CMJI	Cimerak	2.12	12	P	Pb	09 19 13.1	-2.0
CISI	Cisompet, Garu	2.30	356	P	Pn	09 19 14.5	+0.3
KPJI	Karang Pucung	2.68	20	P	Pb	09 19 22.9	-1.9
CNJI	Cibinong	2.68	341	P	Pn	09 19 17.8	-1.5
LEM	Lembang	3.04	353	Pn	Pb	09 19 30.4	-0.6
	19nm,0.3s,baz=303,slow=18,SNR=8.3						
LEM				Sn	Sb	09 20 11.4	+3.6
	20nm,0.3s,baz=190,slow=22,SNR=14						
SKJI	Sukabumi	3.18	333	P	Pn	09 19 24.9	-1.3
FITZ	Fitzroy Crossi	18.96	118	LR	LR	09 29 40.0	
	comp=Z,32nm,20.9s,baz=238,slow=35						
WRA	Warramunga Arr	27.32	115	P	P	09 24 20.8	-0.1
	0.4nm,0.7s,baz=287,slow=11,SNR=4.5						
ASAR	Alice Springs	28.28	122	P	P	09 24 31.1	+1.6
	0.2nm,0.7s,baz=305,slow=9.8,SNR=4.9						
STKA	Stephens Creek	38.02	130	P	P	09 25 54.5	+0.2
	0.8nm,0.5s,baz=320,slow=7.9,SNR=3.2						
MKAR	Makanchi Array	60.90	340	P	P	09 28 51.2	+2.7
	0.3nm,0.4s,baz=140,slow=7.9,SNR=3.9						
KURBB	Kurchatov Arra	65.46	340	P	P	09 29 23.0	+4.4
	0.1nm,0.3s,baz=164,slow=5.2,SNR=2.8						

*IDC **08** 09:20:04.2±2.5, 37°.79N×142°.22E, h0km, mb3.5/3, mb1 3.6/4, mb1mx3.3/49, mbtmp3.4/4, ML2.6/1, Error ellipse: s-maj=64.5km s-min=32.6km az=58.0*
*JMA **08** 09:20:10.3±0.1, 37°.74N×141°.82E, h36km±3km, M3.6*
ISC 08 09:20:05.3±2.6**, 37°.72N**±0°.05×**141°.92E**±0°.10**, h1**km±15km**, n12, σ1s15**/18**, mb3.5**/3**, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
JIO	Ouri	0.86	329	P	Pn	09 20 25.1	+0.5
JIO				S	Sb	09 20 34.9	-0.2
JFK	Kawauchi	0.90	248	P	Pn	09 20 25.8	+0.7
JFK				S	Sb	09 20 36.7	+0.5
JMM	Marumori	0.90	280	P	Pn	09 20 25.7	+0.6
JMM				S	Sb	09 20 36.2	-0.1
ONAJ	Iwakimizuishiy	1.08	236	P	Pn	09 20 28.6	+1.0
ONAJ				S	Sb	09 20 41.3	-0.2
JOU	Okura	1.18	304	P	Pn	09 20 30.1	+1.1
JOU				S	Sg	09 20 43.9	+0.6
JFT	Otama	1.27	262	P	Pn	09 20 31.9	+1.7
JHO	Hitachi	1.54	225	P	Pg	09 20 35.0	+0.2
MJAR	Matsushiro Arr	3.19	250	Pn	Pn	09 20 58.8	+2.3
	0.5nm,0.3s,baz=67,slow=12,SNR=2.3						
MAT	Matsushiro	3.19	250	P	Pb	09 21 00.9	-1.8
MAT				eS	Sb	09 21 40.3	-1.8
KURBB	Kurchatov Arra	45.90	308	P	P	09 28 29.4	+0.1
	0.2nm,0.4s,baz=84,slow=8.5,SNR=4.1						
WRA	Warramunga Arr	57.79	188	P	P	09 29 58.1	-0.1
	0.6nm,0.5s,baz=5.4,slow=7.0,SNR=12						
ASAR	Alice Springs	61.52	188	P	P	09 30 23.5	-0.3
	0.3nm,0.8s,baz=24,slow=9.2,SNR=3.3						

IDC 08 09:29:23.2±9.0**, 36°.21N**×**143°.29E, h0**km**, mb3.5**/2**, mb1 3.6**/3**, mb1mx3.3**/62**, mbtmp3.4**/3**, ML2.6**/1**, Error ellipse: s-maj=201.2km s-min=45.6km az=35.0, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
MJAR	Matsushiro Arr	4.11	276	Pn	Pn	09 30 26.6	-0.7
	0.4nm,0.3s,baz=94,slow=15,SNR=4.4						
WRA	Warramunga Arr	56.48	190	P	P	09 39 07.0	0.0
	0.8nm,0.7s,baz=9.6,slow=7.4,SNR=10						
ASAR	Alice Springs	60.20	190	P	P	09 39 33.0	0.0
	0.3nm,0.8s,baz=15,slow=8.5,SNR=4.6						

*ISK **08** 09:36:01.0, 36°.97N×37°.54E, h5km, MD2.7*
*DDA **08** 09:36:04.5, 37°.16N×37°.40E, h7km, Md2.8*
*CSEM **08** 09:36:04.6±0.4, 37°.10N×37°.40E, h10km, MD2.8, Error ellipse: s-maj=12.5km s-min=9.4km az=12.0*
*ISCJB **08** 09:36:05.1±0.7, 37°.11N±0°.05×37°.37E±0°.04, h13km±5km, Error ellipse: s-maj=8.8km s-min=5.6km az=3.9*
ISC 08 09:36:04.0±1.1**, 37°.12N**±0°.04×**37°.43E**±0°.03**, h11**km±9km**, n19, σ0s63**/26**, Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
GAZ	Gaziantep	0.18	286	ePG	Pg	09 36 08.4	+0.5
GAZ	Gaziantep	0.18	286	ePg	Pg	09 36 08.4	+0.5
GZT	Gaziantep	0.26	26	iP	Pg	09 36 08.8	-0.6
GZT				iS	Sb	09 36 16.9	+1.6
KUZU	Kuzuini	0.45	219	iP	Pb	09 36 14.4	+0.5
KUZU				iS	Sg	09 36 25.9	+7.1
KUZU	Kuzuini	0.45	219	P	Pb	09 36 14.4	+0.5
KMRS	Kahramanmaras	0.57	312	ePG	Pb	09 36 16.1	+0.1
KMRS				eSG	Sn	09 36 28.0	+0.6
KMRS	Kahramanmaras	0.57	312	ePg	Pb	09 36 16.1	+0.1
KMRS				eSg	Sn	09 36 28.0	+0.6
AYKD	Aykdinkavak	0.57	301	iP	Pg	09 36 15.1	-0.1
AYKD				iS	Sg	09 36 22.6	-0.1
KAMA	Osmaniye	0.61	276	iP	Pb	09 36 16.6	-0.1
KAMA				iS	Sb	09 36 25.1	-0.2
SURC	SANLIURFA_SURC	0.98	104	iP	Pb	09 36 23.1	+0.1
SURC				iS	Sn	09 36 38.3	+0.6
SURC	SANLIURFA_SURC	0.98	104	P	Pb	09 36 23.1	+0.1
SURC				S	Sn	09 36 38.3	+0.6
TAHT	Tahtakopru-Hat	1.24	234	ePN	Pn	09 36 26.1	-1.2
TAHT	Tahtakopru-Hat	1.24	234	ePn	Pn	09 36 26.1	-1.2
KOZT	Kozan	1.32	286	ePN	Pg	09 36 29.7	+0.3
KOZT	Kozan	1.32	286	ePn	Pg	09 36 29.7	+0.3
CEYT	Ceyhan	1.35	266	ePN	Pb	09 36 29.1	-0.1
CEYT	Ceyhan	1.35	266	ePn	Pb	09 36 29.1	-0.1
DARE	Darende-Malaty	1.45	2	ePN	Pg	09 36 31.8	0.0
DARE	Darende-Malaty	1.45	2	ePn	Pg	09 36 31.8	0.0

*NIED **08** 09:36:00, 38°.40N×142°.30E, h17km, Mw3.8 Best double couple: M0 5.04000×10^14 NP1:φs68.00000°, δ12.00000°, λ-135.00000°. NP2:φs293.00000°, δ82.00000°, λ-82.00000°.*
*IDC **08** 09:36:42.9±1.0, 38°.26N×142°.59E, h0km, mb3.7/6, mb1 3.8/9, mb1mx3.6/56, mbtmp3.7/9, ML3.0/3, MS3.2/7, Ms1 3.2/7, ms1mx2.8/58, Error ellipse: s-maj=30.8km s-min=17.1km az=105.0*
*JMA **08** 09:36:45.3±0.3, 38°.42N×142°.27E, h32km±4km, M4.0*
*ISCJB **08** 09:36:46.5±0.7, 38°.41N±0°.04×142°.20E±0°.07, h41km, mb3.7/6, MS3.3/4, Error ellipse: s-maj=8.0km s-min=5.5km az=6.7*
ISC 08 09:36:47.9±0.9**, 38°.40N**±0°.04×**142°.22E**±0°.08**, h41**km**, n32, σ1s73**/27**, mb3.7**/6**, MS3.2**/4**, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
JIO	Ouri	0.69	274	P	Pn	09 36 59.0	-2.1
JIO				S	Sn	09 37 08.1	-2.5
JMK	Ichinoseki	0.95	305	P	Pn	09 37 03.1	-1.7
JMK				eS	Sn	09 37 15.5	-1.7
MIYJ	Miyakonagasawa	1.21	345	P	Pn	09 37 05.8	-2.5
MIYJ				S	Sn	09 37 21.0	-2.5
JOU	Okura	1.22	269	P	Pn	09 37 07.8	-0.7
JMM	Marumori	1.25	245	P	Pn	09 37 07.3	-1.5
JOM	Ohasama	1.29	326	P	Pn	09 37 08.0	-1.4
JOM				S	Sn	09 37 24.1	-1.3
JFK	Kawauchi	1.48	226	P	Pn	09 37 10.2	-1.9
JYK	Kaneyama	1.54	290	P	Pn	09 37 12.5	-0.4
JRG	Rokugo	1.58	309	P	Pn	09 37 13.3	-0.1
JYS	Shirataka	1.70	264	P	Pn	09 37 14.9	-0.2
JKZ	Kuzumaki	1.72	337	P	Pn	09 37 14.3	-1.1
JFT	Otama	1.73	240	P	Pn	09 37 14.9	-0.6
JANG	Nango	2.04	345	P	Pn	09 37 18.8	-0.9
MAT	Matsushiro	3.69	241	P	Pn	09 37 43.0	+0.6
MAT				eS	Sn	09 38 32.9	+8.2
MJAR	Matsushiro Arr	3.69	241	Pn	Pn	09 37 44.1	+1.7
	1.5nm,0.3s,baz=65,slow=11,SNR=15						
MJAR				LR	LR	09 39 13.9	
	comp=Z,138nm,18.7s,baz=65,slow=39						
JHJ	Hachijo jima 2	5.63	201	Pn	Pn	09 38 07.5	-1.5
	9.9nm,0.3s,baz=284,slow=22,SNR=8.9						
JHJ				Sn	Sn	09 39 09.2	-3.3
	2.6nm,0.3s,baz=47,slow=18,SNR=2.9						
JHJ				LR	LR	09 40 38.3	
	comp=Z,77nm,20.6s,baz=116,slow=42						
USRK	Ussuriysk Ar.	9.63	310	Pn	Pn	09 39 09.2	+5.4
	0.1nm,0.3s,baz=99,slow=18,SNR=3.3						
JNU	Nakatsue	10.61	244	LR	LR	09 43 45.0	
	comp=Z,96nm,21.1s,baz=122,slow=39						
MA2	Magadan	21.88	12	P	P	09 41 39.3	+2.3
	1.4nm,0.3s,baz=224,slow=8.2,SNR=4.1						
MA2				LR	LR	09 49 44.0	
	comp=Z,39nm,20.0s,baz=96,slow=36						
YAK	Yakutsk	24.89	346	LR	LR	09 52 11.2	
	comp=Z,44nm,18.1s,baz=92,slow=37						
SEY	Seymchan	25.33	11	P	P	09 42 11.9	+1.5
	1.7nm,0.8s,baz=192,slow=4.7,SNR=11						
H11N2	WAKE ISLAND Hy	28.34	124	T	T	10 12 27.0	
	baz=317,slow=75,SNR=125						
H11N1	WAKE ISLAND Hy	28.35	124	T	T	10 12 21.8	
	baz=317,slow=75,SNR=71						
H11N3	WAKE ISLAND Hy	28.36	124	T	T	10 12 21.7	
	baz=317,slow=75,SNR=116						
H11S1	WAKE ISLAND Hy	29.11	126	T	T	10 13 24.2	
	baz=318,slow=76,SNR=54						
H11S3	WAKE ISLAND Hy	29.11	126	T	T	10 13 28.0	
	baz=318,slow=76,SNR=60						
H11S2	WAKE ISLAND Hy	29.12	126	T	T	10 13 15.4	
	baz=318,slow=76,SNR=39						
MKAR	Makanchi Array	43.95	301	P	P	09 44 52.8	+2.0
	0.2nm,0.2s,baz=79,slow=7.8,SNR=2.7						
ILAR	Eielson Array	48.00	33	P	P	09 45 22.3	-0.1
	0.5nm,0.9s,baz=246,slow=6.8,SNR=3.3						
WRA	Warramunga Arr	58.51	189	P	P	09 46 39.6	-0.3
	0.7nm,0.7s,baz=6.2,slow=7.1,SNR=6.8						
WRA				LR	LR	10 11 34.1	
	comp=Z,33nm,21.2s,baz=210,slow=36						
ASAR	Alice Springs	62.23	189	P	P	09 47 06.6	+1.2
	0.4nm,0.6s,baz=12,slow=5.0,SNR=8.7						
RAR	Rarotonga	80.45	127	LR	LR	10 16 17.5	
	comp=Z,91nm,21.0s,baz=142,slow=30						

*NIED **08** 09:40:00, 35°.90N×138°.00E, h20km, Mw3.4 Best double couple: M0 1.45000×10^14 NP1:φs251.00000°, δ76.00000°, λ-173.00000°. NP2:φs160.00000°, δ84.00000°, λ-14.00000°.*
JMA 08 09:40:03.9, 35°.92N×138°.03E, h9km, M3.6, 2C-2D Broadband fault plane solution: P waves. NP1: φs162.00000°, δ86.00000°, λ-12.00000°. **NP2:** φs253.00000°, δ78.00000°, λ-176.00000°. **Principal axes:** T Plg6.0000°, Azm208.0000°; N Plg77.0000°, Azm326.0000°; P Plg11.0000°, Azm117.0000°; **Eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
JNT	Takato	0.10	117	⇓P	Pg	09 40 06.4	-0.1
JNT				S	Sg	09 40 08.2	-0.1
JNG	Nsakai	0.49	7	⇑P	Pg	09 40 13.2	-0.2
JNG				S	Sg	09 40 19.8	-0.1
JNY	Yasuok	0.58	194	⇑P	Pg	09 40 14.7	-0.4
JNY				S	Sg	09 40 22.4	-0.3
JYN	Shimob	0.59	135	⇓P	Pg	09 40 15.4	0.0
JYN				S	Sg	09 40 23.9	+0.7
MAT	Matsushiro	0.64	13	P	Pg	09 40 15.7	-0.6
MAT				S	Sg	09 40 23.9	-0.7
MAT	Matsushiro	0.64	13	P	Pg	09 40 15.7	-0.6
MAT				S	Sg	09 40 23.7	-0.9

IDC 08 09:51:01.2±2.9**, 53°.58N**×**87°.92E, h0**km**, mb1 2.9**/2**, mb1mx2.8**/52**, mbtmp2.9**/2**, ML2.5**/2 **Error ellipse: s-maj=23.3km s-min=15.7km az=65.0, Southwestern Siberia**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
I46RU	ZALESOVO INFRA	1.88	283	i		10 03 37.9	
	baz=101,slow=332,SNR=12						
ZALV	Zalesovo Beam	1.88	283	Pn	Pn	09 51 35.2	+0.7
	1.5nm,0.3s,baz=97,slow=17,SNR=25						
ZALV				Lg	Lg	09 52 01.2	
	4.2nm,0.3s,baz=102,slow=24,SNR=29						
KURBB	Kurchatov Arra	6.50	247	Pn	Pn	09 52 37.8	-0.2
	0.1nm,0.3s,baz=62,slow=14,SNR=7.1						
KURBB				Sn	Sn	09 53 51.4	-1.4
	0.0nm,0.3s,baz=50,slow=19,SNR=3.1						
KURBB				Lg	Lg	09 54 28.0	
	0.1nm,0.3s,baz=61,slow=32,SNR=5.7						
MKAR	Makanchi Array	7.69	210	Pn	Pn	09 52 55.9	+1.5
	0.1nm,0.3s,baz=30,slow=9.0,SNR=3.7						
MKAR				Sn	Sn	09 54 22.5	+0.4
	0.1nm,0.3s,baz=25,slow=21,SNR=3.1						
MKAR				Lg	Lg	09 55 07.2	
	0.1nm,0.3s,baz=29,slow=30,SNR=5.3						

*ISK **08** 09:56:02.4, 37°.04N×34°.35E, h2km, MD2.8*
*ISCJB **08** 09:56:03.6±0.6, 37°.03N±0°.03×34°.39E±0°.04, h8km±8km, Error ellipse: s-maj=5.8km s-min=5.0km az=21.7*
*CSEM **08** 09:56:03.6±0.2, 37°.03N×34°.37E, h10km, MD2.8, Error ellipse: s-maj=5.9km s-min=4.6km az=106.0*
*DDA **08** 09:56:03.1, 37°.02N×34°.42E, h7km, Md2.6*
ISC 08 09:56:03.5±1.0**, 37°.04N**±0°.03×**34°.38E**±0°.03**, h10**km±10km**, n19, σ0s47**/29**, Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
MERS	Mersin	0.20	146	ePG	Pg	09 56 07.3	-0.5
MERS				eSG	Sg	09 56 11.5	+0.8
MERS	Mersin	0.20	146	ePg	Pg	09 56 07.3	-0.5
MERS				eSg	Sg	09 56 11.5	+0.8
DED	Mersin	0.34	103	iP	Pg	09 56 09.3	-1.0
DED				iS	Sg	09 56 14.6	-0.3
GULE	Gulek	0.40	52	iP	Pg	09 56 11.3	-0.2
GULE				iS	Sg	09 56 17.1	+0.3
GULE	Gulek	0.40	52	P	Pg	09 56 11.3	-0.2
KERG	Konya-Eregli	0.43	332	iP	Pg	09 56 12.0	0.0
KERG				iS	Sb	09 56 19.4	-0.4
KERG	Konya-Eregli	0.43	332	P	Pg	09 56 12.0	0.0
KERG				S	Sb	09 56 19.4	-0.4
KARA	Karaisali	0.58	67	ePG	Pg	09 56 15.0	+0.2
KARA				eSG	Sb	09 56 24.0	-0.1
KARA	Karaisali	0.58	67	ePg	Pg	09 56 15.0	+0.2
KARA				eSg	Sb	09 56 24.0	-0.1
KIZK	Mersin	0.59	199	iP	Pg	09 56 14.7	-0.2
KIZK				iS	Sb	09 56 25.0	+0.8
KIZK	Mersin	0.59	199	P	Pg	09 56 14.7	-0.2
KIZK				S	Sb	09 56 25.0	+0.8
IKL	Isikli	0.97	215	ePG	Pg	09 56 21.6	-0.6
IKL	Isikli	0.97	215	ePg	Pg	09 56 21.6	-0.6
KOZT	Kozan	1.23	69	ePN	Pg	09 56 27.2	0.0
KOZT	Kozan	1.23	69	ePn	Pg	09 56 27.2	0.0
GULA	Gulagac	1.31	355	ePN	Pb	09 56 28.2	-0.1
GULA	Gulagac	1.31	355	ePn	Pb	09 56 28.2	-0.1
TAHT	Tahtakopru-Hat	1.59	114	ePN	Pb	09 56 32.9	-0.1
TAHT	Tahtakopru-Hat	1.59	114	ePn	Pb	09 56 32.9	-0.1

*NIED **08** 10:04:00, 37°.90N×143°.80E, h5km, Mw4.2 Best double couple: M0 2.55000×10^15 NP1:φs25.00000°, δ42.00000°, λ-83.00000°. NP2:φs196.00000°, δ49.00000°, λ-96.00000°.*
*ISCJB **08** 10:04:14.4±1.0, 37°.92N±0°.03×143°.85E±0°.03, h15km±7km, mb4.5/71, MS3.8/18, Error ellipse: s-maj=5.0km s-min=4.1km az=152.6*
*IDC **08** 10:04:14.0±0.6, 37°.89N×143°.90E, h0km, mb4.4/33, mb1 4.5/39, mb1mx4.4/74, mbtmp4.4/39, ML3.5/6, MS3.5/15, Ms1 3.5/15, ms1mx3.2/46, Error ellipse: s-maj=14.7km s-min=12.0km az=135.0*
*NEIC **08** 10:04:15.9±0.2, 37°.94N×143°.92E, h10km, mb4.6/21, Error ellipse: s-maj=4.9km s-min=3.7km az=129.0*
*BJI **08** 10:04:16.7, 38°.19N×144°.13E, h33km, mb4.6/53, mB4.9/35, Ms4.5/22, Ms7 4.3/21*
*MOS **08** 10:04:17.9±0.9, 37°.95N×143°.85E, h36km, mb4.8/43, Error ellipse: s-maj=8.9km s-min=5.6km az=114.0*
*JMA **08** 10:04:17.1±0.3, 37°.90N×143°.81E, h45km, M4.6*
ISC 08 10:04:16.4±1.5**, 37°.94N**±0°.04×**143°.90E**±0°.04**, h13**km±9km**, n181, σ1s28**/203**, mb4.6**/71**, MS3.8**/19**, 11C-2D, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
JIO	Ouri	2.08	285	P	Pn	10 04 49.8	-1.1
JIO				eS	Sn	10 05 13.4	-3.2
JMK	Ichinoseki	2.33	296	P	Pn	10 04 53.6	-0.9
JMK				S	Sn	10 05 20.9	-2.1
JFK	Kawauchi	2.47	258	P	Pn	10 04 54.6	-1.8
JFK				S	Sn	10 05 23.1	-3.3
JOM	Ohasama	2.55	308	P	Pn	10 04 56.6	-0.9
JOM				eS	Sn	10 05 26.4	-1.9
JFT	Otama	2.86	263	P	Pn	10 05 01.4	-0.3
JFT				S	Sn	10 05 33.9	-2.0
JYK	Kaneyama	2.95	290	P	Pn	10 05 02.7	-0.2
JYK				eS	Sn	10 05 36.7	-1.4
JANG	Nango	3.06	323	P	Pn	10 05 03.1	-1.3
JANG				eS	Sn	10 05 38.2	-2.6
JAW	Awa shima	3.70	279	P	Pn	10 05 13.5	+0.3
JAG	Ashikaga	3.86	248	P	Pn	10 05 14.8	-0.6
JOT	Ohata	4.08	328	P	Pn	10 05 19.8	+1.3
ERM	Erimo	4.11	352c	iP	Pn	10 05 18.1	-0.8

ERM Erimo 4.11 352 *e*Pn **Pn** **10 05 17.9 -1.0**
ERM *e*Sn **Sn** **10 06 01.6 -5.2**
JRY Ryogami san 4.44 246 P **Pn** **10 05 22.4 -1.0**
JRY *e*S **Sn** **10 06 11.3 -3.6**
JOD2 Odawara 2 4.70 237 P **Pn** **10 05 26.2 -0.9**
MJAR Matsushiro Arr 4.75 255 Pn **Pn** **10 05 28.2 +0.5**
7.7nm,0.3s,baz=80,slow=15,SNR=100
MJAR LR LR 10 07 37.2
comp=Z,447nm,18.4s,baz=85,slow=43
MAJO Matsushiro 4.75 255 *e*P **Pn** **10 05 28.7 +1.0**
MAJO *e* 10 06 19.7
MAJO Matsushiro 4.75 255 *e*Pn **Pn** **10 05 28.7 +1.0**
MAJO *e*Sn **Sn** **10 06 19.7 -3.0**
MAT Matsushiro 4.75 255 P **Pn** **10 05 28.3 +0.6**
MAT *e*S **Sn** **10 06 22.4 -0.3**
JHJ2 Mitsune 5.86 216 *e*Pn **Pn** **10 05 41.4 -1.5**
JHJ2 *e*Sn **Sn** **10 06 48.5 -1.3**
JHJ Hachijo jima 2 5.86 216 Pn **Pn** **10 05 41.5 -1.5**
16nm,0.3s,baz=346,slow=21,SNR=13
JHJ Sn **Sn** **10 06 44.4 -5.7**
13nm,0.3s,baz=286,slow=15,SNR=2.7
INU Inuyama 6.11 247 *e*Pn **Pn** **10 05 47.1 +0.8**
YUK Yuzh-Kuril'sk 6.27 13 *e*P Pn 10 05 45.0 -3.5
YUK *i* S Sn 10 06 52.4 -7.5
YUK pmax pmax
comp=Z,202nm,0.2s
YUK pmax pmax
comp=N,69nm,0.3s
YUK pmax pmax
comp=E,132nm,0.3s
SHO Shikotan 6.33 20 *e*P Pn 10 05 45.7 -3.6
SHO pmax pmax
comp=Z,100nm,0.4s
SHO pmax pmax
comp=N,52nm,0.5s
SHO pmax pmax
comp=E,73nm,0.4s
KUR Kuril'sk 7.87 21 *e*P Pn 10 06 06.6 -3.9
KUR pmax pmax
comp=Z,48nm,0.5s
KUR pmax pmax
comp=N,29nm,0.1s
YSS Yuzh-Sakhalins 9.05 355 *e*P **Pn** **10 06 27.0 +0.4**
YSS *e*S **Sn** **10 08 02.9 -5.4**
YSS pmax pmax
comp=Z,40nm,0.7s
YSS Yuzh-Sakhalins 9.05 355 *e*Pn **Pn** **10 06 26.0 -0.6**
comp=Z,43nm,0.9s
VLA Vladivostok 10.50 303⇑ *e*P **Pn** **10 06 47.9 +1.3**
CBIJ Chichi jima 10.91 188 *e*Pn **Pn** **10 06 54.1 +1.9**
JCJ Chichijima 10.91 188 Pn Pn 10 06 48.0 -4.2
comp=Z,5.6nm,0.3s,baz=281,slow=23,SNR=5.4
USRK Ussuriysk Ar. 10.95 309 Pn **Pn** **10 06 52.9 +0.2**
comp=Z,0.5nm,0.3s,baz=112,slow=13,SNR=26
USRK LR LR 10 11 01.5
comp=Z,365nm,18.2s,baz=146,slow=37
JNU Nakatsue 11.64 250 Pn **Pn** **10 07 00.9 -1.3**
comp=Z,0.3nm,0.3s,baz=38,slow=15,SNR=6.0
JNU LR LR 10 12 01.4
comp=Z,150nm,18.0s,baz=94,slow=40
MDJ Mudanjiang 12.65 306 P **Pn** **10 07 16.6 +0.6**
MDJ S **Sn** **10 09 36.3 -0.4**
MDJ pmax pmax
comp=Z,21nm,1.1s
MDJ pmax pmax
comp=Z,32nm,2.6s
MDJ Mudanjiang 12.65 306 *e*Pn **Pn** **10 07 16.1 +0.1**
comp=Z,15nm,0.9s
KSRS Korea Array 12.67 273 Pn **Pn** **10 07 17.1 +1.0**
comp=Z,0.2nm,0.3s,baz=89,slow=13,SNR=15
KSRS LR LR 10 11 44.4
comp=Z,188nm,19.6s,baz=67,slow=36
KSAR Wonju Array Be 12.70 273 P **Pn** **10 07 17.2 +0.5**
KSAR Wonju Array Be 12.70 273 Pn **Pn** **10 07 17.1 +0.5**
TYV Tymovskoe 12.95 356 *e*P **Pn** **10 07 20.0 0.0**
TYV pmax pmax
comp=Z,13nm,0.8s
KLR Kul'dur 14.29 326 Pn **Pn** **10 07 37.3 -1.1**
comp=Z,0.2nm,0.3s,baz=127,slow=13,SNR=11
KLR LR LR 10 13 10.9
comp=Z,104nm,19.2s,baz=140,slow=37
CN2 Changchun 15.13 299 *e*P **P** **10 07 53.8 -1.0**
DL2 Dalian 17.48 280 P **Pn** **10 08 20.0 +0.2**
DL2 *e*S **Sn** **10 11 32.4 -1.7**
DL2 pmax pmax
comp=Z,46nm,1.0s
DL2 pmax pmax
comp=Z,140nm,5.2s
HIA Hailar 20.74 311 *e*P **P** **10 08 56.6 -0.1**
HIA Hailar 20.74 311 *e*P **P** **10 08 56.6 -0.1**
NJ2 Nanjing 21.31 262 *e*P P 10 09 10.0 +7.1
NJ2 pmax pmax
comp=Z,19nm,0.5s
TIA Tai'an 21.41 274 *e*P **P** **10 09 03.1 -0.8**
TIA pmax pmax
comp=Z,20nm,1.0s
BJI Beijing 21.62 284 P **P** **10 09 07.6 +1.5**
BJI S **S** **10 13 05.5 +0.2**
BJI pmax pmax
comp=Z,9.0nm,0.8s
BJI LR LR
comp=Z,140nm,8.5s
BJI LR LR
comp=Z,240nm,13.3s
BJT Baijiatuau 21.63 284 *e*P **P** **10 09 08.2 +2.0**
BJT pmax pmax
comp=Z,13nm,0.8s
BJT Baijiatuau 21.63 284 *e*P **P** **10 09 08.2 +2.0**
comp=Z,13nm,0.8s
MA2 Magadan 22.10 9 P **P** **10 09 10.1 -1.0**
comp=Z,4.5nm,0.6s,baz=223,slow=10,SNR=7.3
MA2 Magadan 22.10 9 *e*P **P** **10 09 11.5 +0.4**
MA2 Magadan 22.10 9 *e*P **P** **10 09 11.5 +0.4**
HHC Hu-ho-hao-te 25.08 287 *e*P **P** **10 09 42.8 +2.1**
HHC PP PnPn 10 10 24.4 +10
HHC S **S** **10 14 04.5 -0.4**
HHC sS sS 10 14 19.4 +7.9
HHC SS SnSn 10 15 04.2 +10
HHC pmax pmax
comp=Z,21nm,1.2s
HHC pmax pmax
comp=Z,77nm,4.3s
HHC LR LR
comp=Z,560nm,13.7s
HHC LR LR
comp=Z,690nm,12.4s
HHC LR LR
comp=Z,550nm,12.4s
SEY Seymchan 25.55 9 P **P** **10 09 44.6 0.0**
comp=Z,7.7nm,0.7s,baz=191,slow=6.9,SNR=43
SEY Seymchan 25.55 9⇑ *i*P **P** **10 09 46.1 +1.5**
YAK Yakutsk 25.67 344 P **P** **10 09 45.0 -0.6**
comp=Z,37nm,0.6s,baz=357,slow=1.1,SNR=9.8
YAK Yakutsk 25.67 344 *e*P **P** **10 09 44.8 -0.9**
YAK *e* 10 10 23.6
YAK *e*S **S** **10 14 15.1 +1.5**
YAK *e*SS SnSn 10 15 26.9 +19
YAK *e* 10 20 40.6
YAK pmax pmax
comp=Z,30nm,0.8s
YAK pmax pmax
comp=N,4.0nm,0.8s
YAK pmax pmax
comp=E,2.0nm,0.8s
YAK pmax pmax
comp=Z,21nm,1.1s
YAK pmax pmax
comp=E,16nm,1.2s
YAK pmax pmax
comp=N,17nm,1.0s
YAK smax smax
comp=N,117nm,4.2s
YAK smax smax
comp=E,80nm,4.0s
YAK MLR MLR
comp=Z,116nm,16.0s
YAK MLR MLR
comp=N,84nm,16.0s
YAK Yakutsk 25.67 344 *e*P **P** **10 09 45.0 -0.6**
comp=N,47nm,0.7s
H11N2 WAKE ISLAND Hy 26.99 126 T T 10 38 15.7
baz=318,slow=74,SNR=13
H11N1 WAKE ISLAND Hy 27.00 126 T T 10 38 05.7
baz=318,slow=74,SNR=9.1
H11N3 WAKE ISLAND Hy 27.01 126 T T 10 38 14.3
baz=318,slow=74,SNR=11

BOD Bodaibo 27.87 325 *e*P **P** **10 10 04.7 -0.8**
BOD pmax pmax
comp=Z,10.0nm,1.4s
ULN Ulaanbaatar 28.52 302⇑ *i*P **P** **10 10 12.7 +1.1**
ULN pmax pmax
comp=Z,8.0nm,1.2s
ULN Ulaanbaatar 28.52 302 *e*P **P** **10 10 12.3 +0.7**
comp=Z,13nm,1.0s
SONA Songino Array 28.95 302 *e*P **P** **10 10 16.2 +0.7**
SONM Songino Array 28.95 302 P **P** **10 10 15.6 +0.2**
comp=Z,5.3nm,0.9s,baz=100,slow=9.0,SNR=19
SONM LR LR 10 22 13.7
comp=Z,113nm,18.4s,baz=200,slow=37
ENH Enshi 29.38 265 *e*P **P** **10 10 18.9 -0.4**
comp=Z,15nm,0.7s
TLY Talaya 31.26 309 P **P** **10 10 35.6 -0.1**
comp=Z,6.2nm,0.8s,baz=102,slow=4.9,SNR=8.7
TLY Talaya 31.26 309 *e*P P 10 10 39.3 +3.6
TLY pmax pmax
comp=Z,7.0nm,0.9s
TLY MLR MLR
comp=Z,257nm,20.0s
TLY Talaya 31.26 309 *e*P P 10 10 39.4 +3.6
comp=Z,7.0nm,0.9s
ZAK Zakamensk 31.29 307 *e*P **P** **10 10 36.1 0.0**
ZAK pmax pmax
comp=Z,7.0nm,1.2s
LZH Lanzhou 31.87 279 *e*P **P** **10 10 42.1 +0.7**
LZH pP sP 10 10 49.5 +2.4
LZH sP pP 10 10 52.3 +6.8
LZH pmax pmax
comp=Z,26nm,1.0s
LZH pmax pmax
comp=Z,83nm,4.0s
LZH LR LR
comp=Z,230nm,11.3s
LZH LR LR
comp=Z,190nm,11.9s
GYA Guiyang 33.32 261 P **P** **10 10 54.8 +0.7**
GYA pP sP 10 11 06.2 +6.3
GYA PP **PP** **10 12 08.0 -1.5**
GYA PcP **PcP** **10 13 37.8 +1.8**
GYA S **S** **10 16 14.2 -0.3**
GYA sS sS 10 16 30.0 +8.8
GYA ScP **ScP** **10 17 18.4 -1.6**
GYA SS **SnSn** **10 18 16.8 +1.7**
GYA ScS **ScS** **10 21 18.3 -2.7**
GYA pmax pmax
comp=Z,20nm,0.8s
GYA pmax pmax
comp=Z,120nm,5.4s
GYA LR LR
comp=Z,550nm,16.0s
GYA LR LR
comp=Z,530nm,16.5s
GYA LR LR
comp=Z,500nm,16.6s
CD2 Chengdu 33.65 270 P **P** **10 10 56.3 -0.6**
CD2 sP sP 10 11 10.0 +7.4
CD2 PP **PP** **10 12 12.7 -0.3**
CD2 S **S** **10 16 17.5 -1.9**
CD2 sS sS 10 16 33.8 +7.6
CD2 pmax pmax
comp=Z,10.0nm,0.5s
CD2 pmax pmax
comp=Z,100nm,6.4s
CD2 LR LR
comp=Z,220nm,5.4s
CD2 LR LR
comp=Z,240nm,6.4s
GTA Gaotai 34.20 286 *e*P **P** **10 11 01.8 +0.1**
GTA pP sP 10 11 11.4 +4.0
GTA sP pP 10 11 15.2 +9.5
GTA S **S** **10 16 26.7 -1.2**
GTA sS sS 10 16 42.1 +7.5
GTA SS **SnSn** **10 18 38.5 +2.4**
GTA pmax pmax
comp=Z,4.0nm,1.2s
GTA pmax pmax
comp=Z,130nm,5.9s
GTA LR LR
comp=Z,160nm,16.6s
GTA LR LR
comp=Z,280nm,16.6s
GTA LR LR
comp=Z,250nm,16.2s
TIXI Tiksi 34.65 352⇑ *i*P **P** **10 11 04.4 -0.6**
TIXI pmax pmax
comp=Z,6.0nm,1.7s
WMQ Urumqi 42.20 296 P **P** **10 12 11.1 +2.1**
WMQ pP sP 10 12 20.4 +5.6
WMQ sP pP 10 12 24.5 +11
WMQ PcP **PcP** **10 14 04.4 +1.4**
WMQ S **S** **10 18 28.2 -0.6**
WMQ sS sS 10 18 45.1 +10
WMQ SS **SS** **10 21 34.6 -1.9**
WMQ pmax pmax
comp=Z,4.0nm,0.8s
WMQ pmax pmax
comp=Z,72nm,4.8s
ZAA0 Zalesovo Array 42.78 312 *e*P **P** **10 12 13.2 -0.2**
ZALV Zalesovo Beam 42.78 312 P **P** **10 12 12.4 -1.0**
comp=Z,3.2nm,0.8s,baz=90,slow=8.9,SNR=8.2
ZALV PcP **PcP** **10 14 03.8 -0.7**
comp=Z,1.5nm,0.3s,baz=95,slow=3.2,SNR=7.1
ZALV LR LR 10 30 21.2
comp=Z,63nm,19.5s,baz=68,slow=37
NRIK Noril'sk 43.29 334 LR LR 10 32 12.4
comp=Z,11nm,19.2s,baz=116,slow=39
CMAR Chiang Mai Arr 43.63 256 P **P** **10 12 19.6 -1.2**
comp=Z,1.6nm,0.7s,baz=49,slow=6.1,SNR=10.0
CMAR LR LR 10 33 35.7
comp=Z,47nm,18.0s,baz=80,slow=40
CM01 Chiang Mai Arr 43.65 256 *e*P **P** **10 12 21.8 +1.0**
KDAK Kodiak Island 45.10 43 *i*P **P** **10 12 32.2 +0.2**
MK01 Makanchi Array 45.32 302 *e*P **P** **10 12 34.1 +0.1**
MK31 Makanchi Array 45.32 302 *e*P **P** **10 12 34.5 +0.6**
MK31 Makanchi Array 45.32 302 *e*P **P** **10 12 34.5 +0.6**
MKAR Makanchi Array 45.32 302 P **P** **10 12 33.2 -0.7**
comp=Z,5.6nm,0.8s,baz=83,slow=9.9,SNR=15
MKAR LR LR 10 31 59.3
comp=Z,59nm,19.0s,baz=52,slow=37
MKAR Makanchi Array 45.32 302 *i*P **P** **10 12 34.4 +0.5**
MKAR pmax pmax
comp=Z,6.0nm,0.7s
MAKZ Makanchi 45.53 302 *e*P **P** **10 12 35.9 +0.3**
MAKZ pmax pmax
comp=Z,11nm,1.1s
MAKZ Makanchi 45.53 302 *e*P **P** **10 12 35.9 +0.3**
comp=Z,11nm,1.1s
KURK Kurchatov 46.94 308 *e*P **P** **10 12 46.4 -0.2**
KURK pmax pmax
comp=Z,17nm,1.1s
KURK Kurchatov 46.94 308 *e*P **P** **10 12 46.4 -0.2**
comp=Z,17nm,1.1s
KURBB Kurchatov Arra 47.01 308 P **P** **10 12 47.1 0.0**
comp=Z,6.6nm,0.6s,baz=82,slow=8.5,SNR=18
IL1 Eielson Array 47.67 33 *e*P **P** **10 12 52.3 +0.2**
ILAR Eielson Array 47.67 33 P **P** **10 12 52.3 +0.2**
comp=Z,2.9nm,0.7s,baz=261,slow=6.3,SNR=38
ILB Eielson Array 47.67 33 *e*P **P** **10 12 52.3 +0.2**
ODAN Odare 48.33 274 *e*P **P** **10 12 58.5 +0.5**
comp=Z,32nm,1.1s
RAMN Ramite 48.91 275 *e*P **P** **10 13 03.0 +0.5**
comp=Z,38nm,1.0s
GUN Gumba 49.03 276 *e*P **P** **10 13 04.1 +0.6**
comp=Z,54nm,1.0s
GKN Gorkha 49.96 277 *e*P **P** **10 13 10.9 +0.5**
comp=Z,31nm,0.7s
TKM2 Tokmak 2 50.94 298 *e*P **P** **10 13 18.6 +1.0**
TKM2 pmax pmax
comp=Z,18nm,0.9s
TKM2 Tokmak 2 50.94 298 *e*P **P** **10 13 18.6 +1.0**
comp=Z,18nm,0.9s
PYUN Piuthan 51.21 278 *e*P **P** **10 13 20.4 +0.5**
comp=Z,54nm,0.9s
BVAR Borovoye Array 51.43 312 P **P** **10 13 21.4 +0.4**
comp=Z,3.7nm,0.7s,baz=79,slow=9.4,SNR=12
BRVK Borovoye 51.48 312⇑ P **P** **10 13 21.6 +0.3**
BRVK pmax pmax
comp=Z,14nm,2.5s
BRVK Borovoye 51.48 312 *e*P **P** **10 13 19.9 -1.4**
comp=Z,5.8nm,0.9s
AAK Ala-Archa 51.80 298 P **P** **10 13 24.6 +0.5**
comp=Z,3.6nm,0.8s,baz=6.0,slow=12,SNR=5.4
AAK Ala-Archa 51.80 298⇑ *i*P **P** **10 13 24.5 +0.5**
AAK pmax pmax
comp=Z,9.0nm,0.8s
KSH Kashi 51.84 294 P P 10 13 29.2 +4.8
KSH *e*pP sP 10 13 38.7 +8.5
KSH PcS **PcS** **10 18 37.1 +1.7**
KSH S **S** **10 20 48.7 +2.2**
KSH SS **SS** **10 24 27.3 +4.5**
KSH pmax pmax
comp=Z,150nm,6.8s
KSH LR LR
comp=Z,130nm,8.6s
KSH LR LR
comp=Z,190nm,6.7s
KSH LR LR
comp=Z,170nm,9.9s
ZRNK Zerenda 52.26 312 *e*P **P** **10 13 27.5 +0.4**
ZRNK pmax pmax
comp=Z,8.0nm,1.1s
ZRNK Zerenda 52.26 312 *e*P **P** **10 13 27.5 +0.4**
comp=Z,8.2nm,1.1s
EKS2 Erkin-Say 52.29 299 *e*P **P** **10 13 28.3 +0.7**
EKS2 pmax pmax
comp=Z,7.0nm,0.9s
EKS2 Erkin-Say 52.29 299 *e*P **P** **10 13 28.3 +0.7**
comp=Z,6.8nm,0.9s
INK Inuvik 52.68 28 P **P** **10 13 30.8 +0.8**
comp=Z,1.7nm,0.5s,baz=297,slow=7.0,SNR=25
PSI Prapat 53.96 241 P **P** **10 13 39.8 -0.4**
comp=Z,5.9nm,0.8s,baz=46,slow=8.1,SNR=3.8
SVE Sverdlovsk 55.78 319 *e*P **P** **10 13 53.9 +1.2**
SVE pmax pmax
comp=Z,36nm,0.8s
ARU Arti 56.99 319 P **P** **10 14 01.8 +0.4**
comp=Z,17nm,0.6s,baz=76,slow=5.6,SNR=20
ARU Arti 56.99 319 *d*P **P** **10 14 01.7 +0.4**
ARU 10 16 06.1
ARU S **S** **10 21 56.9 +1.8**
ARU SS **SS** **10 25 46.0 +3.0**
ARU pmax pmax
comp=Z,26nm,1.0s
ARU Arti 56.99 319 *e*P **P** **10 14 01.8 +0.4**
comp=Z,19nm,0.7s
WRAB Tennant Creek 58.26 191 *ce*P **P** **10 14 10.0 -0.6**
WRAB pmax pmax
comp=Z,46nm,2.5s
WRAB Tennant Creek 58.26 191 *e*P **P** **10 14 10.2 -0.4**
comp=Z,12nm,0.8s
WRA Warramunga Arr 58.27 191 P **P** **10 14 09.9 -0.8**
comp=Z,8.5nm,0.7s,baz=11,slow=7.1,SNR=58
WRA Warramunga Arr 58.27 191 *i*P **P** **10 14 09.8 -0.9**
WRA pmax pmax
comp=Z,9.0nm,0.7s
ABKAR Akbulak array 58.86 310 *e*P **P** **10 14 14.4 -0.2**
comp=Z,2.5nm,0.5s
KBL Kabul 58.93 292 *e*P **P** **10 14 15.7 +0.1**
KBL pmax pmax
comp=Z,17nm,1.3s
KBL Kabul 58.93 292 *e*P **P** **10 14 15.7 +0.1**
comp=Z,17nm,1.3s
AKTO Aktyubinsk 59.54 312 P **P** **10 14 19.4 +0.1**
comp=Z,8.0nm,0.8s,baz=74,slow=11,SNR=22
RES Resolute Bay 61.22 15 *e*P **P** **10 14 30.6 +0.2**
RES Resolute Bay 61.22 15 *e*P **P** **10 14 30.6 +0.2**
AS01 Alice Springs 61.99 190 *e*P **P** **10 14 35.8 -0.4**
AS31 Alice Springs 61.99 190 *e*P **P** **10 14 36.4 +0.2**
comp=Z,1.4nm,0.8s
ASAR Alice Springs 61.99 190 P **P** **10 14 35.5 -0.8**
comp=Z,3.0nm,0.8s,baz=12,slow=6.7,SNR=27
ASAR LR LR 10 42 57.2
comp=Z,18nm,19.8s,baz=101,slow=38
YKA Yellowknife Ar 62.02 31 P **P** **10 14 36.0 0.0**
comp=Z,1.1nm,0.7s,baz=302,slow=6.6,SNR=23
YKA Yellowknife Ar 62.02 31 P **P** **10 14 36.0 0.0**
YKA pmax pmax
comp=Z,1.0nm,0.7s
LVZ Lovozero 62.09 336⇓ *i*P **P** **10 14 35.8 -0.6**
LVZ pmax pmax
comp=Z,19nm,1.7s
TMCR Tamitsa 62.89 332 *e*P **P** **10 14 42.1 +0.3**
TMCR pmax pmax
comp=Z,24nm,1.1s
ARCES ARCESS Array B 63.84 340 P **P** **10 14 47.7 -0.3**
comp=Z,2.4nm,0.8s,baz=52,slow=8.0,SNR=9.0
KLMR Klimovskoe 64.04 328 *e*P P 10 14 45.7 -3.7
KLMR pmax pmax
comp=Z,26nm,1.4s
GEYT Alibeck 65.12 300 P **P** **10 14 56.7 -0.2**
comp=Z,5.6nm,0.7s,baz=36,slow=2.8,SNR=7.6
OBN Obninsk 68.54 324⇑ *e*P **P** **10 15 18.7 +0.4**
OBN *e* 10 17 46.5
OBN *e*PPP PPP 10 19 24.7
OBN *e*S S 10 24 06.8 -13
OBN pmax pmax
comp=Z,8.0nm,1.1s
OBN MLR MLR
comp=Z,125nm,16.0s
FINES FINESS Array B 68.92 333 P **P** **10 15 20.7 +0.1**
comp=Z,7.4nm,0.7s,baz=45,slow=8.6,SNR=19
FINES LR LR 10 49 34.3
comp=Z,85nm,18.6s,baz=10,slow=39
SUMG Summit 69.77 1 *e*P **P** **10 15 26.6 +0.4**
SUMG pmax pmax
comp=Z,3.0nm,0.6s
SUMG Summit 69.77 1 *e*P **P** **10 15 26.6 +0.4**
comp=Z,2.8nm,0.6s
KIV Kislovodsk 71.79 312 *ce*P **P** **10 15 39.8 +1.2**
KIV *e* 10 18 21.2
KIV *e*PPP PPP 10 20 02.9
KIV pmax pmax
comp=Z,19nm,1.2s
KIV MLR MLR
comp=Z,69nm,17.0s
KBZ Khabaz 71.80 311 P **P** **10 15 38.3 -0.2**
comp=Z,6.9nm,0.9s,baz=47,slow=3.0,SNR=10
FFC Flin Flon 71.86 34 *e*P **P** **10 15 38.9 +0.2**
FFC pmax pmax
comp=Z,3.0nm,0.8s
FFC Flin Flon 71.86 34 *e*P **P** **10 15 38.9 +0.2**
comp=Z,3.2nm,0.8s
FCC Fort Churchill 72.30 28 *e*P **P** **10 15 40.8 -0.4**
FCC pmax pmax
comp=Z,2.0nm,0.6s
FCC Fort Churchill 72.30 28 *e*P **P** **10 15 40.8 -0.4**
comp=Z,1.6nm,0.6s
GNI Garni 72.74 308 LR LR 10 51 56.3
comp=Z,40nm,18.1s,baz=38,slow=39
NVAR Mina Array Bea 72.86 55 P **P** **10 15 45.8 +0.5**
comp=Z,0.8nm,0.8s,baz=293,slow=5.8,SNR=5.1
HFS Hagfors 74.06 337 P **P** **10 15 52.1 +0.4**
comp=Z,2.0nm,0.5s,baz=48,slow=7.0,SNR=9.2
HFS LR LR 10 51 02.1
comp=Z,48nm,19.2s,baz=29,slow=38
NB2 NORSAR Subarra 74.10 338 P **P** **10 15 51.6 -0.3**
comp=Z,1.1nm,0.6s,baz=37,slow=6.2
NOA NORSAR Array B 74.10 338 P **P** **10 15 52.0 0.0**
comp=Z,1.5nm,0.6s,baz=38,slow=6.0,SNR=5.1
NOA LR LR 10 56 17.7
comp=Z,21nm,18.2s,baz=310,slow=42
NOA NORSAR Array B 74.10 338 P **P** **10 15 52.0 0.0**
NOA pmax pmax
comp=Z,2.0nm,0.6s
AKASG Malin Array Be 74.78 323 P **P** **10 15 55.8 -0.1**
comp=Z,5.1nm,0.6s,baz=44,slow=6.0,SNR=20
AKASG Malin Array Be 74.78 323 *i*P **P** **10 15 55.7 -0.3**
AKASG pmax pmax
comp=Z,5.0nm,0.6s
DUG Dugway, Tooele 75.26 50 *e*P **P** **10 15 58.0 -1.2**
DUG Dugway, Tooele 75.26 50 *e*P **P** **10 15 58.0 -1.2**
comp=Z,0.3nm,0.4s
BW06 Boulder Array 75.61 47 *e*P **P** **10 16 01.0 -0.3**
PD31 Pinedale Array 75.61 47 *e*P **P** **10 16 01.7 +0.4**
PDAR Pinedale Array 75.61 47 P **P** **10 16 01.4 +0.1**
comp=Z,1.2nm,0.6s,baz=256,slow=1.8,SNR=13
BUR08 Bucovina Ar. S 78.80 323 *e*P **P** **10 16 19.7 +0.8**
BRTR Keskin Array B 79.71 313 P **P** **10 16 24.2 +0.2**
comp=Z,1.7nm,0.9s,baz=98,slow=3.7,SNR=6.4
BR231 Keskin MP Arra 80.14 313 *e*P **P** **10 16 27.8 +1.5**
VYHS Vyhne 81.08 327 *e*P **P** **10 16 31.4 +0.3**
VYHS *e* 10 16 43.1
VYHS Vyhne 81.08 327 *e*P **P** **10 16 31.4 +0.3**
VYHS *e* 10 16 43.1
BRG Berggiesshubel 81.26 331 *e*P **P** **10 16 32.0 0.0**
comp=Z,2.2nm,0.8s
BRG Berggiesshubel 81.26 331 *e*P **P** **10 16 32.0 0.0**
BRG pmax pmax
comp=Z,2.0nm,0.8s

Code	Station Name	Δ°	AZ°	Op	ISC	Time	Res
CLL	**Collm**	**81.28**	**331**	*e*P	**P**	**10 16 32.0**	**-0.1**
	comp=Z,6.0nm,1.0s						
CLL	**Collm**	**81.28**	**331**	*e*P	**P**	**10 16 32.0**	**-0.1**
CLL				pmax	pmax		
	comp=Z,6.0nm,1.0s						
VRAC	**Vranov**	**81.42**	**328**	P	**P**	**10 16 33.0**	**+0.1**
	comp=Z,4.8nm,0.7s,baz=158,slow=2.6,SNR=3.9						
VRAC	**Vranov**	**81.42**	**328**	P	**P**	**10 16 33.0**	**+0.1**
VRAC				pmax	pmax		
	comp=Z,5.0nm,0.7s						
RAYN	**Ar Rayn**	**82.12**	**294**	*e*P	**P**	**10 16 37.1**	**0.0**
	comp=Z,2.8nm,0.7s						
KHC	**Kasperske Hory**	**82.78**	**330**	*e*P	**P**	**10 16 40.0**	**-0.1**
KHC	**Kasperske Hory**	**82.78**	**330**	*e*P	**P**	**10 16 40.0**	**-0.1**
GERES	**GERESS Array B**	**82.96**	**329**	P	**P**	**10 16 41.4**	**+0.3**
	comp=Z,1.0nm,0.6s,baz=39,slow=5.4,SNR=6.8						
BFO	**Black Forest**	**85.46**	**332**	*ce*P	**P**	**10 16 54.4**	**+0.7**
DAVOX	**Davos/Dischmat**	**86.15**	**330**	P	**P**	**10 16 57.3**	**-0.1**
	comp=Z,2.5nm,0.5s,baz=159,slow=2.1,SNR=3.6						
TXAR	**Lajitas Array**	**88.00**	**54**	P	**P**	**10 17 06.2**	**-0.4**
	comp=Z,0.3nm,0.6s,baz=294,slow=4.7,SNR=3.0						
VNA2	**Neumayer--Watz**	**143.73**	**195**	PKP	PKPab	10 23 47.1	+0.3
	baz=94,slow=2.7						
VNA3	**Neumayer Olymp**	**143.94**	**194**	PKP	PKPab	10 23 47.3	-0.3
VNA1	**Neumayer--Stat**	**144.12**	**195**	PKP	**PKPab**	**10 23 48.5**	**+0.2**

*SOME **08** 10:05:22.1, 43.63N×69.62E*

NNC 08 10:05:23.2±1.4**, 43.63N×69.73E, h0km, mb3.5, mpv2.9, 6C-2D, Error ellipse: s-maj=7.7km s-min=5.7km az=125.0, Suspected Mining explosion., Central Kazakhstan**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
KK31	**Karatay Array**	**0.77**	**132**	⇑P	Pg	10 05 38.2	+0.2
	1.3nm,0.2s,baz=318,slow=18,SNR=227						
KK31				⇓S	Sg	10 05 49.0	+1.0
	11nm,0.3s,baz=311,slow=28,SNR=149						
MNAS	**Manas**	**2.33**	**118**	⇑Pg	Pb	10 06 05.9	-0.2
	2.5nm,0.3s						
MNAS				⇑Lg	Lg	10 06 37.9	
	11nm,0.4s						
AAK	**Ala-Archa**	**3.62**	**104**	⇑Pg	Pb	10 06 29.1	+0.9
	5.5nm,0.5s						
AAK				⇓Lg	Lg	10 07 19.4	
	9.2nm,0.5s						
TKM2	**Tokmak 2**	**4.34**	**97**	⇑Pg	Pb	10 06 42.1	+1.6
	3.0nm,0.7s						
TKM2				⇑Lg	Lg	10 07 39.8	
	6.0nm,0.4s						

*ISK **08** 10:06:35.9, 37.02N×30.98E, h20km, MD2.8*
*DDA **08** 10:06:38.2, 36.96N×30.70E, h7km, Md2.6*
*CSEM **08** 10:06:41.8±0.3, 37.20N×30.48E, h2km, MD2.6, Error ellipse: s-maj=12.6km s-min=4.5km az=119.0*

ISC 08 10:06:41.2±1.3**, 37.16N**±0.05×**30.53E**±0.08**, h4**km±11km**, n14,** σ0.99/22**, Turkey**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
KORT	**Korkueli**	**0.21**	**222**	*i* P	**Pg**	**10 06 43.8**	**-1.6**
KORT				*i* S	**Sg**	**10 06 48.9**	**+0.7**
BCK	**Bucak**	**0.30**	**9**	*e*PG	**Pg**	**10 06 47.2**	**+0.1**
BCK				*e*SG	**Sb**	**10 06 55.3**	**+0.7**
BCK	**Bucak**	**0.30**	**9**	*e*Pg	**Pg**	**10 06 47.2**	**+0.1**
BCK				*e*Sg	**Sb**	**10 06 55.3**	**+0.7**
ELL	**Elmali**	**0.65**	**231**	*e*PG	**Pg**	**10 06 53.8**	**+0.2**
ELL	**Elmali**	**0.65**	**231**	*e*Pg	**Pg**	**10 06 53.8**	**+0.2**
ISP	**Isparta**	**0.66**	**360**	*e*PG	**Pg**	**10 06 53.4**	**-0.5**
ISP				*e*SG	**Sn**	**10 07 06.3**	**-2.0**
ISP	**Isparta**	**0.66**	**360**	*e*Pg	**Pg**	**10 06 53.4**	**-0.5**
ISP				*e*Sg	**Sn**	**10 07 06.3**	**-2.0**
BAGO	**Egridir - ISPA**	**0.85**	**14**	*i* P	**Pb**	**10 06 58.9**	**+0.3**
BAGO				*i* S	**Sn**	**10 07 14.1**	**+1.1**
AKAS	**Kas**	**1.19**	**219**	*i* P	**Pn**	**10 07 05.3**	**+0.7**
AKAS				*i* S	Sn	10 07 28.9	+7.6
AKAS	**Kas**	**1.19**	**219**	P	**Pn**	**10 07 05.3**	**+0.7**
KHAL	**Karahalli**	**1.46**	**326**	*i* P	**Pg**	**10 07 08.9**	**-0.3**
KHAL				*i* S	Sg	10 07 34.3	+6.1
KHAL	**Karahalli**	**1.46**	**326**	P	**Pg**	**10 07 08.9**	**-0.3**
KDHN	**Kadinhani**	**1.85**	**42**	*i* P	**Pb**	**10 07 14.8**	**-0.8**
KDHN				*i* S	**Sb**	**10 07 39.9**	**+0.7**
KDHN	**Kadinhani**	**1.85**	**42**	P	**Pb**	**10 07 14.8**	**-0.8**
KDHN				S	**Sb**	**10 07 39.9**	**+0.7**

DJA 08 10:06:52.0±2.0**, 0°N**±9°×**12°2E**±1°5**, h167**km±19km**, M3.6**/5**, MLv3.6**/5**, Minahassa Peninsula, Sulawesi**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
MRSI	**Marisa**	**0.30**	**343**	P	Pn	10 07 15.1	+0.5
APSI	**Ampana**	**1.16**	**199**	P	Pn	10 07 21.3	+1.6
LUWI	**Luwuk**	**1.43**	**149**	P	Pn	10 07 23.0	+0.8
LUWI				S	Sn	10 07 46.3	+0.7
TTSI	**Tana Toraja**	**3.90**	**215**	P	Pn	10 07 51.7	+0.2

IDC 08 10:06:58.5±7.3**, 21.77N×143.04E, h291**km±45km**, mb3.2**/8**, mb1 3.3**/9**, mb1mx3.0**/70**, mbtmp3.9**/9**, Error ellipse: s-maj=74.0km s-min=34.5km az=176.0, Mariana Islands region**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
JCJ	**Chichijima**	**5.35**	**352**	P	Pn	10 08 20.1	+0.3
	6.5nm,0.3s,baz=107,slow=19,SNR=4.6						
JCJ				S	S	10 09 25.0	-0.1
	10nm,0.3s,baz=311,slow=20,SNR=3.2						
KSRS	**Korea Array**	**20.37**	**323**	P	P	10 11 14.7	+0.9
	1.2nm,0.7s,baz=143,slow=9.2,SNR=6.1						
KLR	**Kul'dur**	**28.83**	**345**	P	P	10 12 30.3	+0.1
	1.3nm,0.5s,baz=176,slow=6.4,SNR=5.9						
MKAR	**Makanchi Array**	**54.55**	**313**	P	P	10 15 56.3	-0.8
	0.2nm,0.3s,baz=98,slow=9.5,SNR=2.7						
KURBB	**Kurchatov Arra**	**57.38**	**317**	P	P	10 16 16.4	-0.4
	0.7nm,0.5s,baz=95,slow=7.8,SNR=5.4						
BVAR	**Borovoye Array**	**62.52**	**319**	P	P	10 16 52.2	+0.6
	1.2nm,0.4s,baz=107,slow=7.7,SNR=9.2						
YKA	**Yellowknife Ar**	**76.45**	**28**	P	P	10 18 16.3	+0.1
	0.2nm,0.5s,baz=292,slow=5.9,SNR=4.8						
ARCES	**ARCESS Array B**	**78.81**	**341**	P	P	10 18 29.3	+0.2
	2.4nm,0.9s,baz=68,slow=7.3,SNR=10						
FINES	**FINESS Array B**	**83.05**	**334**	P	P	10 18 50.7	-0.7
	1.6nm,0.7s,baz=56,slow=3.4,SNR=5.3						

*ISK **08** 10:07:35.3, 37.97N×35.57E, h5km, MD2.9*
*CSEM **08** 10:07:36.4±0.3, 37.99N×35.59E, h8km, MD2.9, Error ellipse: s-maj=7.2km s-min=5.4km az=34.0*
*DDA **08** 10:07:37.2, 38.05N×35.59E, h7km, Md2.6*

ISC 08 10:07:36.8±1.2**, 37.99N**±0.03×**35.61E**±0.03**, h1**km±12km**, n22,** σ1.08/32**, Turkey**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
KOZT	**Kozan**	**0.54**	**161**	*e*PG	**Pg**	**10 07 46.7**	**-0.4**
KOZT				*e*SG	**Sg**	**10 07 55.3**	**+1.3**
KOZT	**Kozan**	**0.54**	**161**	*e*Pg	**Pg**	**10 07 46.7**	**-0.4**
KOZT				*e*Sg	**Sg**	**10 07 55.3**	**+1.3**
ANDN	**Andirin**	**0.71**	**125**	*e*P	**Pg**	**10 07 50.4**	**-0.1**
ANDN				*i* S	**Sg**	**10 07 59.3**	**-0.3**
ANDN	**Andirin**	**0.71**	**125**	P	**Pg**	**10 07 50.4**	**-0.1**
ANDN				S	**Sg**	**10 07 59.3**	**-0.3**
NIG	**Nigde**	**0.80**	**279**	*e*PG	**Pg**	**10 07 51.3**	**-0.8**
NIG				*e*SG	**Sg**	**10 08 03.0**	**+0.5**
NIG	**Nigde**	**0.80**	**279**	*e*Pg	**Pg**	**10 07 51.3**	**-0.8**
NIG				*e*Sg	**Sg**	**10 08 03.0**	**+0.5**
KARA	**Karaisali**	**0.85**	**211**	*e*PG	**Pg**	**10 07 51.9**	**-1.2**
KARA	**Karaisali**	**0.85**	**211**	*e*Pg	**Pg**	**10 07 51.9**	**-1.2**
BNN	**Bunyan**	**0.88**	**12**	*e*PG	**Pg**	**10 07 53.8**	**+0.1**
BNN	**Bunyan**	**0.88**	**12**	*e*Pg	**Pg**	**10 07 53.8**	**+0.1**
AVNS	**Nevsehir-Avano**	**1.01**	**324**	*e*P	**Pg**	**10 07 55.5**	**-0.7**
AVNS				*i* S	**Sn**	**10 08 14.2**	**+1.0**
AVNS	**Nevsehir-Avano**	**1.01**	**324**	P	**Pg**	**10 07 55.5**	**-0.7**
AYKD	**Aykdinkavak**	**1.11**	**121**	*i* P	**Pn**	**10 08 00.3**	**+0.9**
AYKD				*i* S	**Sn**	**10 08 16.4**	**+1.0**
KMRS	**Kahramanmaras**	**1.13**	**115**	*e*PN	**Pb**	**10 07 58.2**	**-1.0**
KMRS	**Kahramanmaras**	**1.13**	**115**	*e*Pn	**Pb**	**10 07 58.2**	**-1.0**
GULA	**Gulagac**	**1.14**	**289**	*e*PN	**Pb**	**10 07 57.9**	**-1.4**
GULA	**Gulagac**	**1.14**	**289**	*e*Pn	**Pb**	**10 07 57.9**	**-1.4**
KAMA	**Osmaniye**	**1.16**	**133**	*i* P	**Pn**	**10 07 59.9**	**-0.4**
KAMA				*i* S	**Sn**	**10 08 16.1**	**-0.6**
KERG	**Konya-Eregli**	**1.31**	**245**	*i* P	**Pg**	**10 08 02.6**	**+0.7**
KERG				*i* S	**Sg**	**10 08 22.4**	**+3.5**
KERG	**Konya-Eregli**	**1.31**	**245**	P	**Pg**	**10 08 02.6**	**+0.7**
DARE	**Darende-Malaty**	**1.58**	**68**	*e*PN	**Pb**	**10 08 06.5**	**-0.5**
DARE	**Darende-Malaty**	**1.58**	**68**	*e*Pn	**Pb**	**10 08 06.5**	**-0.4**

*ISK **08** 10:20:14.3, 37.05N×29.09E, h5km, MD2.7*
*DDA **08** 10:20:15.3, 37.09N×29.07E, h7km, Md2.8*
*CSEM **08** 10:20:15.2±0.1, 37.07N×29.09E, h5km, ML2.5, Error ellipse: s-maj=2.9km s-min=2.6km az=6.0*
*THE **08** 10:20:16.2, 36.98N×29.00E, h1km±1km, ML2.5/3, Error ellipse: s-maj=2.3km s-min=1.1km az=55.0*

ISC 08 10:20:14.9±1.1**, 37.07N**±0.02×**29.07E**±0.02**, h4**km±9km**, n51,** σ0.67/77**, Turkey**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
DALY	**Dalyan (Mu˜la**	**0.42**	**234**	*e*PG	**Pg**	**10 20 22.9**	**-0.1**
DALY				*e*SG	**Sg**	**10 20 28.9**	**+0.5**
DALY	**Dalyan (Mu˜la**	**0.42**	**234**	*e*Pg	**Pg**	**10 20 22.9**	**-0.1**
DALY				*e*Sg	**Sg**	**10 20 28.9**	**+0.5**
TURN	**Turunc**	**0.42**	**243**	*i* P	**Pn**	**10 20 28.0**	**+0.2**
TURN				*i* S	Sb	10 20 40.4	+8.7
TURN	**Turunc**	**0.42**	**243**	P	**Pn**	**10 20 28.0**	**+0.2**
GOLH	**Golhisar**	**0.42**	**66**	*i* P	**Pg**	**10 20 22.6**	**-0.5**
GOLH				*i* S	**Sb**	**10 20 31.0**	**-0.9**
GOLH	**Golhisar**	**0.42**	**66**	P	**Pg**	**10 20 22.6**	**-0.5**
GOLH				S	**Sb**	**10 20 31.0**	**-0.9**
FETY	**Fethiye**	**0.43**	**179**	*e*PG	**Pg**	**10 20 22.9**	**-0.3**
FETY				*e*SG	**Sg**	**10 20 29.2**	**+0.3**
FETY	**Fethiye**	**0.43**	**179**	P	**Pg**	**10 20 22.8**	**-0.4**
FETY				S	**Sg**	**10 20 29.2**	**+0.3**
FETY	**Fethiye**	**0.43**	**179**	*e*Pg	**Pg**	**10 20 22.9**	**-0.3**
FETY				S	**Sg**	**10 20 29.2**	**+0.3**
YER	**Yerkesik**	**0.64**	**276**	*e*PG	**Pg**	**10 20 27.6**	**+0.4**
YER	**Yerkesik**	**0.64**	**276**	P	**Pg**	**10 20 27.4**	**+0.2**
YER				S	**Sb**	**10 20 37.1**	**-0.8**
YER	**Yerkesik**	**0.64**	**276**	*e*Pg	**Pg**	**10 20 27.6**	**+0.4**
YER				S	**Sb**	**10 20 37.1**	**-0.8**
DENT	**Denizli**	**0.69**	**357**	*e*PG	**Pg**	**10 20 27.4**	**-0.7**
DENT	**Denizli**	**0.69**	**357**	*e*Pg	**Pg**	**10 20 27.4**	**-0.7**
ELL	**Elmali**	**0.74**	**115**	*e*PG	**Pg**	**10 20 28.8**	**-0.4**
ELL	**Elmali**	**0.74**	**115**	*e*Pg	**Pg**	**10 20 28.8**	**-0.4**
AKAS	**Kas**	**0.94**	**153**	*i* P	**Pn**	**10 20 34.9**	**-0.2**
AKAS				*i* S	**Sn**	**10 20 51.4**	**+2.5**
AKAS	**Kas**	**0.94**	**153**	P	**Pn**	**10 20 34.8**	**-0.2**
UZP	**Denizli**	**0.97**	**5**	*i* S	**Sb**	**10 20 47.9**	**+0.4**
KSL	**Kastellorizon**	**1.00**	**156**	P	**Pb**	**10 20 34.9**	**0.0**
KSL				S	**Sn**	**10 20 49.8**	**-0.5**
KORT	**Korkueli**	**1.02**	**93**	*i* P	**Pb**	**10 20 35.1**	**-0.2**
KORT				*i* S	**Sn**	**10 20 53.8**	**+2.7**
KORT	**Korkueli**	**1.02**	**93**	P	**Pb**	**10 20 35.1**	**-0.2**
AYDN	**Tasoluk**	**1.12**	**302**	*i* P	**Pb**	**10 20 36.8**	**-0.2**
AYDN				*i* S	**Sn**	**10 20 53.6**	**+0.2**
AYDN	**Tasoluk**	**1.12**	**302**	P	**Pb**	**10 20 36.8**	**-0.2**
AYDN				S	**Sn**	**10 20 53.6**	**+0.2**
AYDB	**Zeytinkoy-Aydi**	**1.29**	**313**	*e*PN	**Pb**	**10 20 39.7**	**-0.1**
AYDB	**Zeytinkoy-Aydi**	**1.29**	**313**	*e*Pn	**Pb**	**10 20 39.7**	**-0.1**
BDRM	**Kayabasi**	**1.30**	**270**	*i* P	**Pg**	**10 20 39.9**	**-0.1**
BDRM				*i* S	**Sn**	**10 20 58.1**	**+0.3**
BDRM	**Kayabasi**	**1.30**	**270**	P	**Pg**	**10 20 39.9**	**-0.1**
BDRM				S	**Sn**	**10 20 58.1**	**+0.3**
KHL	**Karahalli**	**1.30**	**16**	*e*PN	**Pn**	**10 20 39.9**	**-0.1**
KHL	**Karahalli**	**1.30**	**16**	*e*Pn	**Pn**	**10 20 39.9**	**-0.1**
KHAL	**Karahalli**	**1.34**	**14**	*i* P	**Pg**	**10 20 40.2**	**-0.5**
KHAL				*i* S	**Sn**	**10 20 58.8**	**-0.1**
KHAL	**Karahalli**	**1.34**	**14**	P	**Pg**	**10 20 40.2**	**-0.5**
KHAL				S	**Sn**	**10 20 58.8**	**-0.1**
ISP	**Isparta**	**1.38**	**56**	*e*PN	**Pg**	**10 20 41.0**	**-0.4**
ISP	**Isparta**	**1.38**	**56**	*e*Pn	**Pg**	**10 20 41.0**	**-0.4**
BODT	**Bodrum**	**1.41**	**270**	*e*PN	**Pb**	**10 20 41.7**	**-0.1**
BODT	**Bodrum**	**1.41**	**270**	P	**Pn**	**10 20 41.3**	**-0.1**
BODT				S	**Sg**	**10 20 59.8**	**-0.5**
BODT	**Bodrum**	**1.41**	**270**	P	**Pn**	**10 20 41.3**	**-0.1**
BODT	**Bodrum**	**1.41**	**270**	*e*Pn	**Pb**	**10 20 41.7**	**-0.1**
BODT				S	**Sg**	**10 20 59.8**	**-0.5**
KULA	**Kula-Manisa**	**1.48**	**347**	*e*PN	**Pn**	**10 20 42.6**	**+0.1**
KULA	**Kula-Manisa**	**1.48**	**347**	P	**Pg**	**10 20 43.3**	**-0.1**
KULA				S	**Sg**	**10 21 04.5**	**+1.9**
KULA	**Kula-Manisa**	**1.48**	**347**	*e*Pn	**Pn**	**10 20 42.6**	**+0.1**
KULA	**Kula-Manisa**	**1.48**	**347**	P	**Pg**	**10 20 43.3**	**-0.1**
KULA				S	**Sg**	**10 21 04.5**	**+1.9**
NIS1	**Nisyros Isl.**	**1.59**	**254**	*e*PN	**Pb**	**10 20 44.6**	**-0.2**
NIS1	**Nisyros Isl.**	**1.59**	**254**	P	**Pn**	**10 20 43.9**	**0.0**
NIS1				S	**Sn**	**10 21 04.4**	**-0.5**
NIS1	**Nisyros Isl.**	**1.59**	**254**	P	**Pn**	**10 20 43.9**	**0.0**
NIS1	**Nisyros Isl.**	**1.59**	**254**	*e*Pn	**Pb**	**10 20 44.7**	**-0.2**
NIS1				S	**Sn**	**10 21 04.4**	**-0.5**
BAGO	**Egridir - ISPA**	**1.65**	**55**	*i* P	**Pg**	**10 20 46.0**	**-0.5**
SMG	**Samos**	**1.89**	**290**	P	**Pn**	**10 20 48.6**	**+0.5**
SMG				S	**Sn**	**10 21 11.6**	**-0.8**
SMG	**Samos**	**1.89**	**290**	P	**Pn**	**10 20 48.6**	**+0.5**
SMG				S	**Sn**	**10 21 11.6**	**-0.8**
KARP	**Karpathos**	**2.17**	**226**	*e*PN	**Pn**	**10 20 52.2**	**+0.4**
KARP	**Karpathos**	**2.17**	**226**	*e*Pn	**Pn**	**10 20 52.2**	**+0.4**

*NEIC **08** 10:20:41.0, 17.45N×63.12W, h170km, MD4.2(TRN), After TRN.*
*TRN **08** 10:20:40.3, 17.48N×63.08W, h178km, MD4.2*
*ISCJB **08** 10:20:41.4±0.3, 17.38N±0.06×63.17W±0.06, h169km±3km, mb3.5/7, Error ellipse: s-maj=13.3km s-min=4.6km az=135.5*
*IDC **08** 10:20:44.2±3.2, 17.41N×63.32W, h172km±23km, mb3.2/7, mb1 3.6/9, mb1mx3.3/49, mbtmp3.8/9, Error ellipse: s-maj=43.3km s-min=21.8km az=64.0*

ISC 08 10:20:42.3±0.7**, 17.40N**±0.06×**63.21W**±0.06**, h162**km±6km**, n51,** σ1.29/69**, mb3.5**/7**, 2C-5D, Leeward Islands**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
SABA	**Saba**	**0.22**	**351**	⇓*i*P	**Pn**	**10 21 05.4**	**+1.4**
SABA				*e*S	**Sn**	**10 21 22.2**	**+1.4**
SABA	**Saba**	**0.22**	**351**	⇓*i*Pn	**Pn**	**10 21 05.4**	**+1.4**
SABA				*e*S	**Sn**	**10 21 22.2**	**+1.4**
SEUS	**St. Eustatius**	**0.23**	**66**	⇓*i*P	**Pn**	**10 21 05.2**	**+1.2**
SEUS				*e*S	**Sn**	**10 21 22.2**	**+1.6**
SEUS	**St. Eustatius**	**0.23**	**66**	⇓*i*Pn	**Pn**	**10 21 05.2**	**+1.2**
SEUS				*e*S	**Sn**	**10 21 20.0**	**-0.6**
SMRT	**St. Maarten**	**0.66**	**11**	*e*P	**Pn**	**10 21 07.0**	**+1.1**
SMRT				*e*S	**Sn**	**10 21 24.4**	**+0.3**
SMRT	**St. Maarten**	**0.66**	**11**	*e*P	**Pn**	**10 21 07.0**	**+1.1**
SMRT				*e*S	**Sn**	**10 21 24.4**	**+0.3**
MLYT	**Lee's Yard**	**1.18**	**125**	⇓*i*P	**Pn**	**10 21 09.9**	**+0.2**
MLYT				*e*S	**Sn**	**10 21 31.5**	**+0.7**
ANWB	**Willy Bob**	**1.38**	**79**	*e*P	**Pn**	**10 21 11.6**	**0.0**
ANWB				*e*S	**Sn**	**10 21 33.9**	**-0.2**
ANWB	**Willy Bob**	**1.38**	**79**	*i* Pn	**Pn**	**10 21 11.6**	**0.0**
ANWB				*e*Sn	**Sn**	**10 21 30.1**	**-3.9**
LZG	**Guadaloupe-1**	**1.85**	**132**	*e*P	**Pn**	**10 21 16.2**	**-0.3**
SEG	**Port Louis**	**1.91**	**121**	*e*P	**Pn**	**10 21 16.6**	**-0.5**
SSG	**Sans Toucher**	**1.96**	**131**	⇑*i*P	**Pn**	**10 21 17.6**	**-0.2**
TBG	**Guadaloupe-3**	**2.15**	**136**	*e*P	**Pn**	**10 21 20.1**	**+0.3**
TBG				*e*S	**Sn**	**10 21 49.1**	**+0.3**
SFG	**Saint Francois**	**2.24**	**120**	*e*P	**Pn**	**10 21 19.9**	**-1.0**
DEG	**La Desirade**	**2.32**	**117**	*e*P	**Pn**	**10 21 20.7**	**-1.2**
DEG	**La Desirade**	**2.32**	**117**	*e*P	**Pn**	**10 21 20.7**	**-1.2**
MGG	**Marie-Galante**	**2.33**	**129**	*e*P	**Pn**	**10 21 21.7**	**-0.3**
MGG				*e*S	**Sn**	**10 21 52.0**	**-0.7**
MGG	**Marie-Galante**	**2.33**	**129**	*e*P	**Pn**	**10 21 21.7**	**-0.3**
MGG				*e*S	**Sn**	**10 21 52.0**	**-0.7**
BBL	**Barber's Block**	**2.50**	**138**	*e*P	**Pn**	**10 21 23.3**	**-0.7**
BBL	**Barber's Block**	**2.50**	**138**	*e*P	**Pn**	**10 21 23.3**	**-0.7**
MDN	**Morne-Daniel**	**2.70**	**140**	*e*P	**Pn**	**10 21 26.0**	**-0.5**
MDN				*e*S	**Sn**	**10 22 00.1**	**-0.6**
DPMT	**Pointe Michel**	**2.76**	**140**	*e*P	**Pn**	**10 21 27.1**	**0.0**
DBCT	**Belle View Cho**	**2.77**	**140**	*e*P	**Pn**	**10 21 26.2**	**-1.2**
DLPL	**La Plaine**	**2.79**	**137**	*e*P	**Pn**	**10 21 26.7**	**-0.8**
DLPL				*e*S	**Sn**	**10 22 01.8**	**-0.7**
DSHT	**Scott's Head**	**2.79**	**141**	*e*P	**Pn**	**10 21 26.9**	**-0.7**
SJG	**San Juan**	**2.89**	**285**	P	**Pn**	**10 21 29.8**	**+1.0**
	54nm,0.3s,baz=77,slow=11,SNR=36						
SJG				S	**Sn**	**10 22 05.7**	**+0.9**
	14nm,0.3s,baz=337,slow=17,SNR=9.3						
SJG	**San Juan**	**2.89**	**285**	*e*Pn	**Pn**	**10 21 29.8**	**+1.0**
SJG				*e*Sn	**Sn**	**10 22 06.2**	**+1.4**
PCM	**Pelee Case Pet**	**3.21**	**143**	⇑*i*P	**Pn**	**10 21 31.7**	**-1.0**
BAMF	**Morne Balai**	**3.24**	**142**	*e*P	**Pn**	**10 21 32.4**	**-0.8**
GBMF	**Grand Be**	**3.25**	**143**	*e*P	**Pn**	**10 21 32.1**	**-1.2**
PML	**Morne Lenard**	**3.25**	**143**	*e*P	**Pn**	**10 21 32.9**	**-0.4**
FDF	**Fort de France**	**3.31**	**143**	*e*P	**Pn**	**10 21 33.0**	**-1.1**
FDF	**Fort de France**	**3.31**	**143**	*e*P	**Pn**	**10 21 34.2**	**+0.2**
FDF				*e*S	**Sn**	**10 22 12.4**	**-1.8**
ZAM	**Aeronautique**	**3.50**	**143**	*e*P	**Pn**	**10 21 35.7**	**-0.8**
TRMF	**Trois Ilets**	**3.52**	**144**	*e*P	**Pn**	**10 21 35.9**	**-0.8**
LPMF	**Morne Lapointe**	**3.54**	**142**	*e*P	**Pn**	**10 21 36.0**	**-1.0**
MVM	**Montagne Vaucl**	**3.60**	**142**	*e*P	**Pn**	**10 21 36.9**	**-0.8**
SVB	**Belmont**	**4.51**	**155**	*e*P	**Pn**	**10 21 50.5**	**+0.9**
SDDR	**Presa de Saban**	**7.84**	**283**	*e*P	**Pn**	**10 22 33.5**	**-0.1**
SDDR	**Presa de Saban**	**7.84**	**283**	*e*S	**Sn**	**10 23 56.3**	**-5.0**
SDDR	**Presa de Saban**	**7.84**	**283**	*e*Pn	**Pn**	**10 22 33.0**	**-0.6**
SDDR				*e*Sn	**Sn**	**10 23 57.6**	**-3.7**
GRTK	**Grand Turk**	**8.52**	**300**	*e*Pn	**Pn**	**10 22 40.1**	**-2.4**
GRTK				*e*Sn	Sn	10 24 09.5	-8.1
PTGA	**Pitinga**	**18.29**	**170**	P	**Pn**	**10 24 46.5**	**+0.5**
	0.3nm,0.3s,baz=351,slow=14,SNR=6.2						
TXAR	**Lajitas Array**	**38.81**	**295**	P	**P**	**10 27 51.4**	**-0.3**
	0.2nm,0.5s,baz=126,slow=9.1,SNR=2.9						
ULM	**Lac du Bonnet**	**41.94**	**329**	P	**P**	**10 28 17.1**	**+0.2**
	2.4nm,0.3s,baz=137,slow=7.9,SNR=7.9						
ANMO	**Albuquerque**	**42.20**	**303**	P	**P**	**10 28 20.3**	**+0.8**
	0.6nm,0.5s,baz=90,slow=7.8,SNR=4.3						
PDAR	**Pinedale Array**	**46.66**	**313**	P	**P**	**10 28 55.4**	**+0.6**
	1.1nm,0.4s,baz=120,slow=10,SNR=18						
NVAR	**Mina Array Bea**	**52.19**	**305**	P	**P**	**10 29 37.7**	**+0.9**
	0.4nm,0.7s,baz=84,slow=9.3,SNR=3.2						
YKA	**Yellowknife Ar**	**57.33**	**334**	P	**P**	**10 30 13.2**	**+0.2**
	0.5nm,0.5s,baz=107,slow=7.3,SNR=13						
ILAR	**Eielson Array**	**71.73**	**333**	P	**P**	**10 31 46.5**	**+0.1**
	0.2nm,0.4s,baz=104,slow=4.4,SNR=7.2						
ASAR	**Alice Springs**	**162.81**	**246**	PKPab	**PKPab**	**10 41 14.2**	**-1.5**
	0.5nm,0.9s,baz=104,slow=4.1,SNR=4.3						

KRSC 08 10:25:20.5±1.1**, 53.33N×160.70E, h48**km±18km**, ML3.9, Near east coast of Kamchatka Peninsula**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
SPN	**Mys Shipunski**	**0.47**	**241**	*i* P	Pn	10 25 32.7	+1.5
NLC	**Nalytchevo**	**0.83**	**259**	*i* P	Pn	10 25 37.1	+1.3
NLC				*i* S	Sn	10 25 47.8	+0.8
KII	**Karymskiy**	**1.03**	**314**	*e*P	Pn	10 25 39.3	+0.7
KII				*e*S	Sn	10 25 51.6	-0.3
SDLR	**Sedlovina**	**1.09**	**268**	*i* P	Pn	10 25 40.8	+1.3
UGLR	**Uglovaya**	**1.14**	**265**	*i* P	Pn	10 25 41.7	+1.6
SMAR	**Somma**	**1.14**	**267**	*i* P	Pn	10 25 41.5	+1.2
AVH	**Avacha**	**1.18**	**268**	*i* P	Pn	10 25 42.3	+1.6
KRX	**Arik**	**1.23**	**272**	*i* P	Pn	10 25 42.6	+1.2
KRX				*e*S	Sn	10 25 57.4	+0.4
KOK	**Koryaka**	**1.24**	**269**	*e*P	Pn	10 25 43.0	+1.5
PET	**Petropavlovsk**	**1.27**	**257**	*i* P	Pn	10 25 43.3	+1.5
PET				*e*S	Sn	10 25 58.3	+0.6
MKZ	**Mys Kozlova**	**1.37**	**26**	*e*P	Pn	10 25 44.8	+1.7
MKZ				*e*S	Sn	10 26 00.7	+0.6
RUS	**Russkaya**	**1.60**	**237**	*i* P	Pn	10 25 47.9	+1.6
RUS				*e*S	Sn	10 26 06.5	+0.7
KRMR	**Karymshinskiy**	**1.63**	**253**	*i* P	Pn	10 25 48.7	+2.0
KRMR				*e*S	Sn	10 26 08.2	+1.7
GNL	**Ganaly**	**1.69**	**284**	*i* P	Pn	10 25 49.5	+1.9
MTVR	**Mutnovka**	**1.75**	**242**	*e*P	Pn	10 25 51.1	+2.7
MTVR				*e*S	Sn	10 26 11.7	+2.1
ASAK	**Asacha**	**1.95**	**242**	*i* P	Pn	10 25 53.8	+2.7
ASAK				*e*S	Sn	10 26 17.7	+3.3
TUMR	**Tumrok**	**1.98**	**351**	*e*P	Pn	10 25 54.6	+2.9
TUMR				*e*S	Sn	10 26 18.0	+2.7
KMNR	**Kamenistaya**	**2.45**	**354**	*e*P	Pn	10 26 02.0	+4.0
KIRR	**Kirishev**	**2.64**	**356**	*e*S	Sn	10 26 33.8	+2.4
KPT	**Kopyto**	**2.66**	**354**	*e*P	Pn	10 26 04.8	+4.0
ZLN	**Zelenaya**	**2.69**	**1**	*e*P	Pn	10 26 05.9	+4.5
ZLN				*e*S	Sn	10 26 37.3	+4.6
LGNR	**Loginova**	**2.76**	**360**	*e*P	Pn	10 26 06.5	+4.1
LGNR				*e*S	Sn	10 26 39.5	+4.9
KOZ	**Kozyrevsk**	**2.77**	**350**	*e*P	Pn	10 26 05.6	+3.2
CIRR	**Tsirk**	**2.79**	**1**	*e*P	Pn	10 26 07.6	+4.9
ESO	**Esso**	**2.85**	**337**	*e*P	Pn	10 26 05.6	+2.2
KLY	**Klyuchi**	**2.99**	**359**	*e*P	Pn	10 26 09.3	+4.0
KLY				*e*S	Sn	10 26 43.4	+3.6
PAU	**Pauzhetka**	**3.03**	**233**	*e*P	Pn	10 26 10.1	+4.3
KBTR	**Krutoberegovo**	**3.13**	**22**	*e*P	Pn	10 26 10.6	+3.3
KBTR				*e*S	Sn	10 26 47.2	+3.8
BDR	**Baidarnaya**	**3.26**	**5**	*e*P	Pn	10 26 13.5	+4.4
SMKR	**Semkarok**	**3.29**	**7**	*e*P	Pn	10 26 12.2	+2.7
SRKR	**Sorokina**	**3.34**	**4**	*e*P	Pn	10 26 14.2	+4.0
BKI	**Bering**	**3.62**	**57**	*e*P	Pn	10 26 17.1	+3.2
BKI				*e*S	Sn	10 26 55.3	+0.1

*NIED **08** 10:33:00, 36.90N×141.10E, h50km, Mw3.8 Best double couple: M₀6.63000×10^14 NP1:φs3.00000°, δ32.00000°, λ-99.00000°. NP2:φs193.00000°, δ59.00000°, λ-85.00000°.*
*JMA **08** 10:33:16.9±0.1, 36.88N×141.06E, h50km±1km, M3.8*
JMA Felt II J1.
*IDC **08** 10:33:17.5±2.2, 36.77N×141.12E, h57km±23km, mb3.4/10, mb1 3.7/15, mb1mx3.5/58, mbtmp3.8/15, ML3.4/4, MS2.6/3, Ms1 2.6/3, ms1mx2.5/24, Error ellipse: s-maj=21.2km s-min=13.0km az=80.0*

ISC 08 10:33:14.6±0.6**, 36.71N**±0.05×**141.01E**±0.07**, h32**km**, n28,** σ1.80/22**, mb3.7**/10**, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
JHO	**Hitachi**	**0.37**	**254**	P	Pn	10 33 27.8	+4.1
JHO				S	Sn	10 33 35.3	+5.5
ONAJ	**Iwakimizuishiy**	**0.42**	**336**	P	**Pn**	**10 33 25.9**	**+1.3**
ONAJ				S	**Sn**	**10 33 32.3**	**+1.0**
JFK	**Kawauchi**	**0.66**	**351**	P	**Pn**	**10 33 28.0**	**+0.2**
JFK				S	**Sb**	**10 33 35.6**	**-1.2**
JFT	**Otama**	**0.97**	**326**	P	**Pb**	**10 33 33.5**	**+0.6**
MJAR	**Matsushiro Arr**	**2.26**	**267**	P	**Pb**	**10 33 52.3**	**-2.5**
	26nm,0.3s,baz=86,slow=15,SNR=82						
MJAR				LR	LR	10 35 01.9	
	comp=Z,104nm,19.5s,baz=65,slow=45						
MAT	**Matsushiro**	**2.26**	**267**	P	**Pb**	**10 33 54.0**	**-0.8**
MAT				S	**Sb**	**10 34 20.7**	**-1.7**
JHJ	**Hachijo jima 2**	**3.72**	**196**	P	Pn	10 34 13.8	+3.9
	22nm,0.3s,baz=328,slow=21,SNR=17						
JHJ				S	**Sn**	**10 34 57.9**	**+5.3**
	57nm,0.3s,baz=50,slow=23,SNR=10						
JNU	**Nakatsue**	**9.06**	**250**	LR	LR	10 38 59.9	
	comp=Z,50nm,19.3s,baz=120,slow=37						
JCJ	**Chichijima**	**9.64**	**174**	P	**Pn**	**10 35 32.5**	**+1.4**
	baz=270,slow=20						
JCJ				S	**Sn**	**10 37 15.2**	**-3.1**
	5.4nm,0.3s,baz=164,slow=20,SNR=4.0						
USRK	**Ussuriysk Ar.**	**10.15**	**320**	P	Pn	10 35 41.4	+3.3
	0.5nm,0.3s,baz=137,slow=12,SNR=7.5						
KSRS	**Korea Array**	**10.48**	**278**	P	Pn	10 35 47.6	+5.0
	0.2nm,0.3s,baz=87,slow=14,SNR=11						
KSRS				LR	LR	10 39 01.5	
	comp=Z,33nm,18.5s,baz=67,slow=32						
SEY	**Seymchan**	**27.17**	**11**	P	**P**	**10 38 55.4**	**+0.6**
	0.4nm,0.5s,baz=185,slow=7.9,SNR=5.5						
SONM	**Songino Array**	**27.70**	**305**	P	**P**	**10 39 01.7**	**+1.8**
	1.5nm,0.6s,baz=113,slow=9.0,SNR=6.8						
H11N2	**WAKE ISLAND Hy**	**28.27**	**120**	T	T	11 09 09.1	
	baz=313,slow=75,SNR=12						
H11N1	**WAKE ISLAND Hy**	**28.27**	**120**	T	T	11 09 11.2	
	baz=313,slow=75,SNR=22						
H11N3	**WAKE ISLAND Hy**	**28.28**	**120**	T	T	11 09 12.0	
	baz=313,slow=75,SNR=13						
H11S1	**WAKE ISLAND Hy**	**28.96**	**122**	T	T	11 10 02.1	
	baz=314,slow=75,SNR=49						
H11S3	**WAKE ISLAND Hy**	**28.96**	**122**	T	T	11 10 02.0	
	baz=314,slow=75,SNR=32						
H11S2	**WAKE ISLAND Hy**	**28.98**	**122**	T	T	11 10 03.4	
	baz=314,slow=75,SNR=27						
MKAR	**Makanchi Array**	**44.02**	**302**	P	**P**	**10 41 19.4**	**+0.4**
	0.3nm,0.4s,baz=86,slow=9.7,SNR=4.5						
KURBB	**Kurchatov Arra**	**45.95**	**308**	P	**P**	**10 41 33.6**	**-0.7**
	0.7nm,0.4s,baz=83,slow=8.4,SNR=9.3						
ILAR	**Eielson Array**	**49.94**	**32**	P	**P**	**10 42 04.0**	**-1.0**
	0.7nm,0.8s,baz=265,slow=5.9,SNR=7.1						
INK	**Inuvik**	**54.82**	**27**	P	**P**	**10 42 40.9**	**-0.1**
	0.5nm,0.7s,baz=287,slow=4.7,SNR=5.0						
WRA	**Warramunga Arr**	**56.70**	**188**	P	**P**	**10 42 55.4**	**+0.3**
	1.1nm,0.7s,baz=5.7,slow=7.3,SNR=12						
YKA	**Yellowknife Ar**	**64.25**	**30**	P	**P**	**10 43 44.7**	**-1.4**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
	0.2nm,0.7s,baz=303,slow=7.4,SNR=3.6						
PDAR	**Pinedale Array**	**78.12**	**45**	P	**P**	**10 45 10.3**	**-0.4**
	0.3nm,0.6s,baz=318,slow=2.0,SNR=4.4						
TXAR	**Lajitas Array**	**90.57**	**52**	P	**P**	**10 46 13.8**	**-0.2**
	0.3nm,0.7s,baz=345,slow=3.2,SNR=3.1						
LPAZ	**La Paz**	**147.13**	**60**	PKPbc	**PKPbc**	**10 52 55.0**	**-0.6**
	1.1nm,0.6s,baz=102,slow=2.9,SNR=5.4						

*IASPEI **08** 10:34:30.3±0.9, 32°.69N±0°.03×115°.74W±0°.02, h17km±4km, Error ellipse: s-maj=4.2km s-min=3.0km az=162.7, GT5 selection from ISC bulletin GT5 identified by Bondˆ¡r and McLaughlin (2009) selection criteria Bondˆ¡r and McLaughlin, A new ground truth data set for seismic studies, <i>Seism. Res. Let.</i>, 80, 465-472, 2009*
*ISCJB **08** 10:34:30.3±0.3, 32°.68N±0°.02×115°.70W±0°.02, h13km±2km, Error ellipse: s-maj=2.9km s-min=2.4km az=165.9*
*NEIC **08** 10:34:31.7, 32°.63N×115°.73W, h3km, ML3.3(PAS), ML3.5(ECX), After ECX.*
NEIC Felt at El Centro, California.
*ECX **08** 10:34:31.7±0.5, 32°.63N×115°.73W, h3km, MD3.3, ML3.5*
*MEX **08** 10:34:32.4±0.4, 32°.81N×115°.72W, h20km±76km, MD3.9*
ISC 08 10:34:30.4±0.8**, 32°.67N**±0°.02×**115°.74W**±0°.02**, h15**km±5km**, n57,** σ1s.**02**/87**, 8C-2D, California-Baja California border region**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
SGL	**Mount Signal**	**0.03**	**148**	⇑iP	**Pg**	**10 34 32.8**	**-0.3**
WESC	**Westside Schoo**	**0.09**	**6**	eP	**Pg**	**10 34 34.1**	**+0.5**
ERPC	**Ernies Place**	**0.10**	**44**	⇑iP	**Pg**	**10 34 34.3**	**+0.5**
YUH	**Yuha Desert**	**0.15**	**260**	⇑iP	**Pb**	**10 34 34.9**	**-0.2**
COK	**Cook Ranch**	**0.18**	**4**	⇓iP	**Pb**	**10 34 35.8**	**+0.4**
SWSC	**Sam W. Stewart**	**0.28**	**350**	P	**Pb**	**10 34 37.1**	**0.0**
	baz=170,SNR=79						
SWSC				S	**Sb**	**10 34 41.1**	**-0.5**
	baz=170						
DREC	**Desert Rsrch C**	**0.28**	**62**	⇑iP	**Pb**	**10 34 37.5**	**+0.3**
RMX	**La Rumorosa**	**0.29**	**256**	⇑iP	**Pg**	**10 34 36.8**	**+0.1**
RMX				eS	**Sg**	**10 34 41.4**	**+0.3**
IBP	**Imperial Bould**	**0.29**	**268**	⇑eP	**Pb**	**10 34 37.5**	**0.0**
IBP				⇑iP	**Pb**	**10 34 37.5**	**0.0**
IBP	**Imperial Bould**	**0.29**	**268**	P	**Pb**	**10 34 37.4**	**0.0**
	baz=99,SNR=66						
IBP				S	**Sb**	**10 34 41.9**	**-0.3**
	baz=99						
MBIG	**Mexicali**	**0.53**	**120**	eP	**Pb**	**10 34 41.2**	**-0.2**
MBIG				eS	**Sb**	**10 34 49.9**	**+1.0**
MONP2	**Monument Peak**	**0.61**	**291**	P	**Pb**	**10 34 43.3**	**+0.3**
	baz=116,SNR=24						
MONP2				S	**Sb**	**10 34 51.3**	**-0.1**
	baz=116						
BAR	**Barrett**	**0.78**	**271**	eP	**Pb**	**10 34 46.1**	**+0.3**
BAR	**Barrett**	**0.78**	**271**	ePg	**Pb**	**10 34 46.1**	**+0.3**
BAR				eSg	**Sb**	**10 34 56.4**	**+0.2**
TJIG	**Tijuana**	**0.82**	**253**	eP	**Pg**	**10 34 46.5**	**0.0**
TJIG	**Tijuana**	**0.82**	**253**	eP	**Pg**	**10 34 46.5**	**0.0**
TJIG				eS	**Sb**	**10 34 57.1**	**-0.2**
CBX	**Cerro Bola**	**0.86**	**245**	eP	**Pg**	**10 34 47.3**	**+0.2**
CBX				eS	**Sg**	**10 34 58.8**	**+0.4**
CBX	**Cerro Bola**	**0.86**	**245**	ePg	**Pg**	**10 34 47.1**	**0.0**
CBX				eSg	**Sg**	**10 34 58.8**	**+0.4**
CBX	**Cerro Bola**	**0.86**	**245**	eP	**Pg**	**10 34 47.1**	**0.0**
CBX				eS	**Sg**	**10 34 58.8**	**+0.4**
GLA	**Glamis**	**0.86**	**64**	P	**Pb**	**10 34 46.2**	**-0.8**
	baz=240,SNR=32						
GLA				S	**Sb**	**10 34 57.2**	**-1.2**
	baz=240						
GLA	**Glamis**	**0.86**	**64**	ePg	**Pb**	**10 34 46.2**	**-0.8**
GLA				eSg	**Sb**	**10 34 57.8**	**-0.6**
BC3	**Big Chuckawall**	**1.01**	**14**	P	**Pb**	**10 34 49.0**	**-0.7**
	baz=193,SNR=13						
BC3				S	**Sb**	**10 35 01.8**	**-1.0**
	baz=193						
SDRC	**San Diego Road**	**1.01**	**274**	eP	**Pn**	**10 34 49.9**	**-0.1**
PFO	**Pinyon Flats O**	**1.11**	**327**	P	**Pb**	**10 34 50.7**	**-0.8**
	baz=148						
PFO				S	**Sb**	**10 35 05.2**	**-0.6**
	baz=148						
PFO	**Pinyon Flats O**	**1.11**	**327**	ePg	**Pb**	**10 34 50.6**	**-0.8**
PFO				eSg	**Sb**	**10 35 05.2**	**-0.6**
109C	**Camp Elliot, M**	**1.17**	**281**	P	**Pb**	**10 34 52.5**	**+0.2**
	baz=103						
109C				S	**Sn**	**10 35 07.7**	**-0.1**
	baz=103						
ZAX	**El Zacaton**	**1.24**	**201**	eP	**Pn**	**10 34 53.1**	**-0.2**
ECNX	**Esteban Cantu**	**1.25**	**216**	eP	**Pn**	**10 34 53.1**	**-0.3**
PBX	**Punta Banda**	**1.25**	**222**	eP	**Pn**	**10 34 53.2**	**-0.2**
PBX				eS	**Sb**	**10 35 09.4**	**-0.1**
ECBX	**El Chinero**	**1.33**	**154**	eP	**Pn**	**10 34 54.2**	**-0.3**
ECBX				eS	**Sn**	**10 35 11.6**	**-0.3**
ECBX				⇓e		10 35 13.7	
ECBX				AML	AML	10 35 13.7	
	comp=N,584nm,0.3s						
ECBX				AML	AML	10 35 13.7	
	comp=E,542nm,0.2s						
ECBX				⇑e		10 35 13.7	
BELC	**Belle Mtn. Jos**	**1.34**	**351**	S	**Sn**	**10 35 10.8**	**-1.6**
	baz=171						
Y12C	**Blythe**	**1.48**	**43**	P	**Pn**	**10 34 55.9**	**-0.7**
	baz=222						
Y12C	**Blythe**	**1.48**	**43**	ePn	**Pn**	**10 34 55.9**	**-0.7**
Y12C				eSn	**Sg**	**10 35 18.2**	**-0.1**
MURC	**Murrieta**	**1.53**	**308**	P	**Pn**	**10 34 57.1**	**-0.2**
	baz=128,SNR=16						
MURC				S	**Sn**	**10 35 16.7**	**-0.2**
	baz=128						
IRM	**Iron Mountain**	**1.56**	**19**	P	**Pn**	**10 34 56.9**	**-0.8**
	baz=198,SNR=31						
SPIG	**San Pedro Mart**	**1.64**	**172**	ePn	**Pn**	**10 34 59.2**	**+0.2**
SPIG				eSn	**Sn**	**10 35 20.1**	**+0.1**
SPIG	**San Pedro Mart**	**1.64**	**172**	eP	**Pn**	**10 34 59.2**	**+0.2**
SPIG				eS	**Sn**	**10 35 20.1**	**+0.1**
SPX	**San Pedro Mart**	**1.64**	**172**	eP	**Pn**	**10 34 59.0**	**0.0**
SPX				eS	**Sb**	**10 35 21.2**	**0.0**
SPX	**San Pedro Mart**	**1.64**	**172**	ePn	**Pn**	**10 34 58.4**	**-0.6**
SPX				eSn	**Sn**	**10 35 19.8**	**-0.3**
113A	**Mohawk Valley,**	**1.67**	**86**	ePn	**Pn**	**10 34 57.9**	**-1.2**
113A				eSn	**Sn**	**10 35 18.2**	**-1.9**
BFSC	**Mount Baldy Ra**	**2.24**	**315**	Sb	**Sb**	**10 35 39.9**	**+1.7**
	baz=135						
LDFC	**Landfair**	**2.46**	**12**	ePn	**Pb**	**10 35 13.2**	**-1.1**
MWC	**Mount Wilson**	**2.48**	**309**	ePn	**Pb**	**10 35 13.4**	**-1.3**
MWC				eSn	**Sg**	**10 35 48.1**	**-2.0**
PASC	**Pasadena Art C**	**2.53**	**307**	ePn	**Pn**	**10 35 11.2**	**+0.3**
PASC				eSn	**Sb**	**10 35 44.4**	**-2.1**
214A	**Organ Pipe Nat**	**2.58**	**105**	P	**Pn**	**10 35 10.2**	**-1.5**
	baz=286						
214A	**Organ Pipe Nat**	**2.58**	**105**	ePn	**Pn**	**10 35 10.3**	**-1.5**
214A				eSn	**Sn**	**10 35 45.1**	**+2.2**
Y14A	**Wickenburg**	**2.62**	**60**	ePn	**Pn**	**10 35 11.9**	**-0.3**
DECC	**Green Verdugo**	**2.68**	**307**	Sb	**Sb**	**10 35 53.5**	**+2.7**
	baz=126						
EDW2	**Edwards Air Fo**	**2.89**	**320**	Sb	**Sg**	**10 36 00.4**	**-3.0**
	baz=140						
X16A	**Lo Mia Camp, P**	**3.99**	**63**	ePn	**Pn**	**10 35 31.7**	**+0.5**
X16A				eSn	**Sn**	**10 36 17.5**	**-0.3**
TUC	**Tucson**	**4.21**	**94**	ePn	**Pn**	**10 35 33.9**	**-0.2**
TPNV	**Topopah Spring**	**4.29**	**355**	ePg	**Pg**	**10 35 54.4**	**+1.8**
U15A	**North Rim**	**4.71**	**36**	ePn	**Pn**	**10 35 42.6**	**+1.5**
LCMT	**Little Creek M**	**4.79**	**25**	ePn	**Pn**	**10 35 43.8**	**+1.7**
LCMT				eSg	**Sg**	**10 37 07.6**	**+3.3**
EKU	**East Kanab**	**5.14**	**30**	ePn	**Pn**	**10 35 49.1**	**+2.1**
X18A	**Snowflake**	**5.18**	**67**	ePn	**Pn**	**10 35 48.6**	**+1.1**
R11A	**Troy Canyon, C**	**5.66**	**1**	ePg	Pg	10 36 23.0	+4.1

IDC 08 10:39:49.5±2.7**, 39°.39N**×**144°.29E, h0**km**, mb3.5**/3**, mb1 3.6**/4**, mb1mx3.3**/49**, mbtmp3.4**/4**, ML3.4**/1**, MS3.1**/2**, Ms1 3.1**/2**, ms1mx2.5**/29**, Error ellipse: s-maj=68.8km s-min=31.6km az=69.0, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
MJAR	**Matsushiro Arr**	**5.59**	**241**	Pn	Pn	10 41 13.8	-0.1
	1.2nm,0.3s,baz=41,slow=12,SNR=12						
MAT	**Matsushiro**	**5.59**	**241**	P	Pn	10 41 13.5	-0.4
YAK	**Yakutsk**	**24.36**	**343**	LR	LR	10 54 48.0	
	comp=Z,31nm,20.5s,baz=256,slow=37						
TIXI	**Tiksi**	**33.27**	**351**	LR	LR	11 02 48.6	
	comp=Z,36nm,18.8s,baz=173,slow=42						
MKAR	**Makanchi Array**	**44.83**	**301**	P	P	10 48 04.3	-0.9
	0.1nm,0.3s,baz=69,slow=7.9,SNR=3.6						
KURBB	**Kurchatov Arra**	**46.38**	**307**	P	P	10 48 17.8	+0.4
	1.1nm,0.5s,baz=81,slow=8.5,SNR=10.0						

*ISCJB **08** 10:55:24.0±0.4, 48°.04N±0°.05×153°.50E±0°.07, h117km, mb4.1/20, Error ellipse: s-maj=9.2km s-min=3.3km az=140.6*
*KRSC **08** 10:55:23.0±1.3, 48°.10N×153°.62E, h212km±28km, ML4.6*
*SKHL **08** 10:55:25.8±0.7, 47°.98N×153°.74E, h142km±1km, mb4.9/6, msh5.0/3*
*MOS **08** 10:55:26.8±0.8, 48°.23N×153°.54E, h159km, mb4.1/15, Error ellipse: s-maj=10.4km s-min=7.3km az=71.0*
*IDC **08** 10:55:29.1±2.8, 48°.19N×153°.12E, h151km±25km, mb3.7/15, mb1 3.9/18, mb1mx3.7/37, mbtmp4.1/18, Error ellipse: s-maj=16.5km s-min=10.6km az=145.0*
ISC 08 10:55:25.6±0.6**, 48°.14N**±0°.07×**153°.37E**±0°.06**, h117**km**, n75,** σ1s.**47**/78**, mb4.1**/20**, 3C-5D, Kuril Islands**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
SKR	**Severo-Kuril's**	**3.11**	**34**	eP	**Pn**	**10 56 15.7**	**+2.5**
SKR				eS	**Sn**	**10 56 52.2**	**+2.3**
SKR	**Severo-Kuril's**	**3.11**	**34**	eP	**Pn**	**10 56 13.5**	**+0.3**
SKR				AMB	AMB	10 56 15.0	
	80nm,0.5s						
SKR				eS	**Sn**	**10 56 49.5**	**-0.4**
SKR				A	A	10 56 55.6	
	30nm,0.2s						
SKR	**Severo-Kuril's**	**3.11**	**34**	ePN	**Pn**	**10 56 13.5**	**+0.3**
SKR				eS	**Sn**	**10 56 49.5**	**-0.4**
SKR				pmax	pmax		
	comp=Z,90nm,0.5s						
SKR				smax	smax		
	comp=E,280nm,0.2s						
PAU	**Pauzhetka**	**4.01**	**33**	eP	**Pn**	**10 56 27.7**	**+2.7**
PAU				eS	**Sn**	**10 57 12.8**	**+1.6**
PAU	**Pauzhetka**	**4.01**	**33**	eP	**Pn**	**10 56 27.7**	**+2.7**
PAU	**Pauzhetka**	**4.01**	**33**	PN	**Pn**	**10 56 27.7**	**+2.7**
PAU				S	**Sn**	**10 57 12.8**	**+1.6**
KUR	**Kuril'sk**	**4.77**	**234**	eP	**Pn**	**10 56 37.6**	**+2.3**
KUR				AMB	AMB	10 56 54.9	
	comp=E,60nm,0.8s						
KUR				iS	**Sn**	**10 57 31.2**	**+1.6**
KUR				A	A	10 57 34.5	
	comp=E,80nm,0.8s						
KUR				A	A	10 57 34.5	
	comp=E,40nm,0.8s						
KUR	**Kuril'sk**	**4.77**	**234**	⇓iPN	**Pn**	**10 56 38.5**	**+3.2**
KUR				iS	**Sn**	**10 57 32.5**	**+2.9**
KUR				smax	smax		
	comp=N,84nm,0.8s						
KUR				smax	smax		
	comp=E,39nm,0.3s						
ASAK	**Asacha**	**5.15**	**33**	eP	**Pn**	**10 56 41.9**	**+1.5**
KRMR	**Karymshinskiy**	**5.59**	**31**	eP	**Pn**	**10 56 47.1**	**+0.8**
KRMR				eS	**Sn**	**10 57 48.8**	**-0.5**
PETK	**Petropavlovsk-**	**5.69**	**27**	P	Pn	10 56 50.8	+3.2
	comp=E,1.0nm,0.3s,baz=184,slow=13,SNR=17						
PET	**Petropavlovsk**	**5.94**	**33**	eP	**Pn**	**10 56 52.8**	**+1.9**
PET				eS	**Sn**	**10 57 57.7**	**+0.2**
PET	**Petropavlovsk**	**5.94**	**33**	PN	**Pn**	**10 56 51.1**	**+0.2**
PET				pmax	pmax		
	comp=Z,67nm,1.7s						
UGLR	**Uglovaya**	**6.14**	**32**	eP	**Pn**	**10 56 54.0**	**+0.1**
AVH	**Avacha**	**6.16**	**32**	eP	**Pn**	**10 56 53.5**	**-0.6**
AVH	**Avacha**	**6.16**	**32**	PN	**Pn**	**10 56 53.5**	**-0.6**
SHO	**Shikotan**	**6.24**	**229**	iP	**Pn**	**10 56 55.6**	**+0.4**
SHO				AMB	AMB	10 56 56.3	
	comp=Z,50nm,0.5s						
SHO				iS	**Sn**	**10 58 02.6**	**-2.5**
SHO				A	A	10 58 08.2	
	comp=Z,30nm,0.5s						
SHO	**Shikotan**	**6.24**	**229**	d iPN	**Pn**	**10 56 53.6**	**-1.6**
SHO				pmax	pmax		
	comp=Z,48nm,0.7s						
SHO				pmax	pmax		
	comp=N,35nm,0.9s						
SHO				pmax	pmax		
	comp=E,39nm,0.8s						
GNL	**Ganaly**	**6.27**	**26**	eP	**Pn**	**10 56 57.1**	**+1.5**
GNL	**Ganaly**	**6.27**	**26**	PN	**Pn**	**10 56 57.1**	**+1.5**
SPN	**Mys Shipunski**	**6.52**	**38**	eP	**Pn**	**10 56 59.9**	**+1.0**
SPN	**Mys Shipunski**	**6.52**	**38**	eP	**Pn**	**10 56 59.9**	**+1.0**
SPN	**Mys Shipunski**	**6.52**	**38**	PN	**Pn**	**10 56 59.9**	**+1.0**
YUK	**Yuzh-Kuril'sk**	**6.64**	**235**	iP	**Pn**	**10 57 01.7**	**+1.2**
YUK				AMB	AMB	10 57 02.0	
	comp=E,50nm,0.3s						
YUK				iS	**Sn**	**10 58 14.5**	**-0.2**
YUK	**Yuzh-Kuril'sk**	**6.64**	**235**	c iPN	**Pn**	**10 57 00.3**	**-0.2**
YUK				pmax	pmax		
	comp=Z,53nm,0.2s						
YSS	**Yuzh-Sakhalins**	**7.28**	**265**	eP	Pn	10 57 12.8	+3.6
YSS				AMB	AMB	10 57 14.4	
	comp=Z,70nm,0.8s						
YSS	**Yuzh-Sakhalins**	**7.28**	**265**	ePN	Pn	10 57 15.0	+5.8
YSS				pmax	pmax		
	comp=Z,48nm,2.5s						
TYV	**Tymovskoe**	**7.49**	**295**	eP	Pn	10 57 15.8	+3.9
TYV				AMB	AMB	10 57 16.4	
	comp=Z,80nm,0.9s						
TYV	**Tymovskoe**	**7.49**	**295**	ePN	Pn	10 57 16.0	+4.1
TYV				pmax	pmax		
	comp=Z,6.0nm,0.6s						
MKZ	**Mys Kozlova**	**8.28**	**36**	eP	**Pn**	**10 57 22.2**	**-0.4**
MKZ	**Mys Kozlova**	**8.28**	**36**	eP	**Pn**	**10 57 22.2**	**-0.4**
MKZ	**Mys Kozlova**	**8.28**	**36**	PN	**Pn**	**10 57 22.2**	**-0.4**
NKL	**Nikolayevsk**	**9.49**	**307**	eP	**Pn**	**10 57 40.2**	**+1.3**
NKL	**Nikolayevsk**	**9.49**	**307**	ePN	**Pn**	**10 57 40.2**	**+1.3**
KBTR	**Krutoberegovo**	**9.94**	**32**	eP	**Pn**	**10 57 43.6**	**-1.4**
KBTR				eS	Sn	10 59 26.6	-8.0
KBTR	**Krutoberegovo**	**9.94**	**32**	PN	**Pn**	**10 57 43.6**	**-1.4**
BKI	**Bering**	**10.54**	**43**	eS	Sn	10 59 37.9	-11
HABR	**Khabarovsk**	**12.20**	**278**	eP	**Pn**	**10 58 17.0**	**+1.7**
HABR	**Khabarovsk**	**12.20**	**278**	PN	**Pn**	**10 58 17.0**	**+1.7**
HABR				eS	**Sn**	**11 00 32.0**	**+2.5**
HABR				pmax	pmax		
	comp=N,6.0nm,1.4s						
HABR				MLR	MLR		
	comp=Z,16nm,11.0s						
EKMR	**Ekimchan**	**13.86**	**298**	eP	**P**	**10 58 39.5**	**-1.7**
EKMR				AMB	AMB	10 58 44.3	
	comp=Z,5.0nm,0.7s						
KLR	**Kul'dur**	**14.32**	**282**	P	**Pn**	**10 58 44.6**	**+2.0**
	comp=Z,0.1nm,0.3s,baz=315,slow=20,SNR=2.8						
SEY	**Seymchan**	**14.84**	**358**	P	**P**	**10 58 52.4**	**+0.5**
	comp=Z,0.4nm,0.3s,baz=173,slow=10.0,SNR=11						
VLA	**Vladivostok**	**15.83**	**259**	eP	**P**	**10 59 04.7**	**+1.7**
VLA	**Vladivostok**	**15.83**	**259**	⇓P	**P**	**10 59 04.7**	**+1.7**
VLA				pmax	pmax		
	comp=Z,13nm,1.0s						
KROS	**Kirovskiy**	**17.61**	**301**	eP	**P**	**10 59 22.6**	**0.0**
KROS				AMB	AMB	10 59 28.6	
	comp=Z,3.0nm,0.5s						
KSRS	**Korea Array**	**21.41**	**249**	P	**P**	**11 00 04.5**	**+0.5**
	comp=Z,0.8nm,0.6s,baz=47,slow=10,SNR=4.9						
TIXI	**Tiksi**	**26.18**	**343**	P	**P**	**11 00 46.6**	**-2.1**
	comp=Z,1.3nm,0.3s,baz=124,slow=9.1,SNR=4.5						
H11N2	**WAKE ISLAND Hy**	**30.39**	**154**	T	T	11 33 19.2	
	baz=342,slow=76,SNR=12						
H11N1	**WAKE ISLAND Hy**	**30.40**	**154**	T	T	11 33 43.9	
	baz=342,slow=76,SNR=8.1						
H11N3	**WAKE ISLAND Hy**	**30.40**	**154**	T	T	11 33 40.1	
	baz=342,slow=76,SNR=11						
H11S1	**WAKE ISLAND Hy**	**31.49**	**155**	T	T	11 34 58.8	
	baz=343,slow=76,SNR=667						
H11S3	**WAKE ISLAND Hy**	**31.50**	**155**	T	T	11 35 05.1	
	baz=343,slow=76,SNR=495						
H11S2	**WAKE ISLAND Hy**	**31.51**	**155**	T	T	11 35 05.3	
	baz=343,slow=76,SNR=386						
TLY	**Talaya**	**31.72**	**295**	eP	**P**	**11 01 37.8**	**-0.2**
TLY	**Talaya**	**31.72**	**295**	eP	**P**	**11 01 37.8**	**-0.2**
TLY				pmax	pmax		
	comp=Z,3.0nm,0.8s						
COLA	**College**	**34.95**	**40**	⇑eP	**P**	**11 02 04.6**	**-1.1**
COLA				pmax	pmax		
	comp=Z,3.0nm,0.8s						
ILAR	**Eielson Array**	**35.36**	**40**	P	**P**	**11 02 10.2**	**+0.9**
	comp=Z,0.8nm,0.6s,baz=261,slow=6.7,SNR=11						
INK	**Inuvik**	**40.39**	**33**	P	**P**	**11 02 52.5**	**+1.1**
	comp=Z,1.9nm,0.6s,baz=303,slow=7.5,SNR=21						
ZALV	**Zalesovo Beam**	**41.95**	**305**	P	**P**	**11 03 03.1**	**-1.3**
	comp=Z,1.9nm,0.3s,baz=34,slow=5.6,SNR=4.6						
MKAR	**Makanchi Array**	**46.47**	**296**	P	**P**	**11 03 39.0**	**-1.5**
	comp=Z,2.3nm,0.7s,baz=68,slow=8.4,SNR=12						
MKAR	**Makanchi Array**	**46.47**	**296**	eP	**P**	**11 03 39.9**	**-0.7**
MKAR				pmax	pmax		
	comp=Z,2.0nm,0.6s						
YKA	**Yellowknife Ar**	**49.71**	**37**	P	**P**	**11 04 06.3**	**+1.2**
	comp=Z,1.3nm,0.7s,baz=296,slow=7.1,SNR=14						
YKA				PcP	**PcP**	**11 05 23.7**	**-0.8**
	comp=Z,0.2nm,0.4s,baz=303,slow=3.8,SNR=4.7						
BRVK	**Borovoye**	**50.15**	**309**	⇓iP	**P**	**11 04 08.1**	**-0.6**
BRVK				pmax	pmax		
	comp=Z,1.0nm,0.6s						
CMAR	**Chiang Mai Arr**	**52.88**	**256**	P	**P**	**11 04 30.1**	**+0.7**
	comp=Z,1.2nm,0.5s,baz=33,slow=7.5,SNR=7.4						
AAK	**Ala-Archa**	**53.38**	**296**	⇑iP	**P**	**11 04 32.2**	**-0.8**
AAK				pmax	pmax		
	comp=Z,3.0nm,0.9s						
ARU	**Arti**	**54.11**	**317**	d iP	**P**	**11 04 36.9**	**-1.0**
ARU						11 05 38.1	
ARU						11 06 38.7	
ARU				S	**S**	**11 12 01.7**	**-3.4**
ARU				SS	**SKiKP**	**11 15 38.6**	**+1.8**
ARU				pmax	pmax		
	comp=Z,11nm,2.5s						
ARCES	**ARCESS Array B**	**56.60**	**341**	P	**P**	**11 04 54.0**	**-1.5**
	comp=Z,0.4nm,0.4s,baz=46,slow=8.7,SNR=7.4						
NVAR	**Mina Array Bea**	**61.64**	**63**	P	**P**	**11 05 31.3**	**+0.2**
	comp=Z,4.2nm,0.8s,baz=294,slow=7.8,SNR=22						
FINES	**FINESS Array B**	**62.86**	**335**	P	**P**	**11 05 37.2**	**-1.2**
	comp=Z,1.8nm,0.4s,baz=31,slow=7.9,SNR=28						
PDAR	**Pinedale Array**	**63.79**	**55**	P	**P**	**11 05 46.5**	**+1.2**
	comp=Z,4.2nm,0.8s,baz=285,slow=1.5,SNR=34						
WRA	**Warramunga Arr**	**69.89**	**199**	P	**P**	**11 06 21.9**	**-1.8**
	comp=Z,2.9nm,0.7s,baz=23,slow=6.5,SNR=25						
ASAR	**Alice Springs**	**73.58**	**199**	P	**P**	**11 06 45.7**	**-0.1**
	comp=Z,1.3nm,0.4s,baz=12,slow=5.9,SNR=39						
TXAR	**Lajitas Array**	**76.66**	**61**	P	**P**	**11 07 04.2**	**+0.5**
	comp=Z,5.1nm,0.7s,baz=297,slow=4.4,SNR=68						
PLCA	**Paso Flores**	**148.14**	**93**	PKPbc	**PKPbc**	**11 14 57.0**	**-0.2**
	comp=Z,2.1nm,0.8s,baz=241,slow=3.5,SNR=4.5						
PLCA	**Paso Flores**	**148.14**	**93**	PKP2	**PKPbc**	**11 14 57.0**	**-0.2**
PLCA				pmax	pmax		
	comp=Z,2.0nm,0.8s						

*ISCJB **08** 10:56:58.3±0.6, 36°.05N±0°.05×141°.69E±0°.06, h26km, mb3.8/11, MS3.3/1, Error ellipse: s-maj=7.8km s-min=6.4km az=36.2*
*NIED **08** 10:57:00, 36°.10N×141°.40E, h35km, Mw4.0 Best double couple: $M_0$1.00000×10^{15} NP1:ϕ_s93.00000°, δ33.00000°, λ-122.00000°. NP2:ϕ_s310.00000°, δ62.00000°, λ-71.00000°.*
*JMA **08** 10:57:02.2±0.1, 36°.07N×141°.41E, h53km±2km, M3.9*
*IDC **08** 10:57:03.5±0.7, 36°.04N×141°.51E, h53km±7km, mb3.5/11, mb1 3.7/14, mb1mx3.6/34, mbtmp3.9/14, MS3.0/6, Ms1 3.0/6, ms1mx2.7/49, Error ellipse: s-maj=18.3km s-min=13.6km az=105.0*
ISC 08 10:57:01.0±0.6**, 36°.08N**±0°.06×**141°.48E**±0°.07**, h26**km**, n32,** σ1s.**27**/26**, mb3.8**/11**, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.63**	**233**	P	**Pn**	**10 57 14.6**	**+0.4**
CHOJ				S	**Sn**	**10 57 24.1**	**+0.7**
JHO	**Hitachi**	**0.91**	**306**	P	**Pn**	**10 57 18.2**	**+0.2**
JYT	**Yasato**	**1.05**	**278**	P	**Pn**	**10 57 20.1**	**+0.1**
JYT				S	**Sb**	**10 57 32.9**	**-0.9**
ONAJ	**Iwakimizuishiy**	**1.16**	**332**	P	**Pn**	**10 57 22.0**	**+0.5**
MJAR	**Matsushiro Arr**	**2.68**	**281**	P	**Pn**	**10 57 43.5**	**+1.0**
	11nm,0.3s,baz=100,slow=8.8,SNR=78						
MJAR				LR	LR	10 58 60.0	
	comp=Z,176nm,19.3s,baz=90,slow=44						
MAT	**Matsushiro**	**2.68**	**281**	P	**Pn**	**10 57 44.4**	**+1.9**
MAT				eS	**Sn**	**10 58 13.4**	**-0.7**
JHJ	**Hachijo jima 2**	**3.27**	**206**	P	**Pn**	**10 57 51.1**	**+0.6**
	65nm,0.3s,baz=333,slow=14,SNR=60						
JHJ				S	**Sn**	**10 58 27.5**	**-1.1**
	179nm,0.3s,baz=59,slow=24,SNR=25						
JHJ				LR	LR	10 59 21.9	
	comp=Z,149nm,18.8s,baz=76,slow=43						
JCJ	**Chichijima**	**8.98**	**176**	P	**Pn**	**10 59 08.0**	**-0.9**
	8.6nm,0.3s,baz=291,slow=23,SNR=8.4						
JNU	**Nakatsue**	**9.22**	**254**	LR	LR	11 03 12.8	
	comp=Z,138nm,19.7s,baz=120,slow=40						
KSRS	**Korea Array**	**10.96**	**281**	LR	LR	11 03 21.9	
	comp=Z,32nm,20.3s,baz=20,slow=34						
KLR	**Kul'dur**	**14.94**	**335**	LR	LR	11 05 44.0	
	comp=Z,67nm,18.2s,baz=123,slow=35						
H11N2	**WAKE ISLAND Hy**	**27.63**	**119**	T	T	11 31 54.9	
	baz=320,slow=75,SNR=288						
H11N1	**WAKE ISLAND Hy**	**27.63**	**119**	T	T	11 31 50.9	
H11N3	**WAKE ISLAND Hy**	**27.64**	**119**	T	T	11 31 56.2	
	baz=314,slow=75,SNR=293						
SEY	**Seymchan**	**27.71**	**11**	pP	pP	11 03 01.1	+6.6
	2.0nm,0.7s,baz=170,slow=7.1,SNR=5.2						
H11S1	**WAKE ISLAND Hy**	**28.31**	**121**	T	T	11 32 41.9	
H11S3	**WAKE ISLAND Hy**	**28.31**	**122**	T	T	11 32 41.9	
H11S2	**WAKE ISLAND Hy**	**28.32**	**122**	T	T	11 32 41.9	
SONM	**Songino Array**	**28.37**	**305**	P	**P**	**11 02 53.3**	**+0.2**
	1.2nm,0.7s,baz=103,slow=7.7,SNR=4.6						
ZALV	**Zalesovo Beam**	**42.60**	**313**	P	**P**	**11 04 54.5**	**-0.2**
	2.7nm,0.6s,baz=89,slow=6.4,SNR=9.5						
MKAR	**Makanchi Array**	**44.67**	**303**	P	**P**	**11 05 11.6**	**+0.1**
	1.9nm,0.7s,baz=83,slow=8.3,SNR=7.9						
ILAR	**Eielson Array**	**50.27**	**32**	P	**P**	**11 05 53.1**	**-1.6**
	0.3nm,0.8s,baz=260,slow=5.4,SNR=3.0						
AAK	**Ala-Archa**	**50.99**	**299**	LR	LR	11 26 58.2	
	comp=Z,29nm,18.1s,baz=56,slow=35						
INK	**Inuvik**	**55.21**	**27**	P	**P**	**11 06 31.0**	**-0.1**
	0.8nm,1.1s,baz=356,slow=1.9,SNR=2.5						
WRA	**Warramunga Arr**	**56.13**	**188**	P	**P**	**11 06 37.0**	**-1.2**
	0.7nm,0.4s,baz=6.1,slow=7.6,SNR=12						
WRA				pP	**sP**	**11 06 51.5**	**+2.1**
	2.1nm,0.8s,baz=5.3,slow=7.5,SNR=4.7						
ASAR	**Alice Springs**	**59.85**	**188**	P	**P**	**11 07 04.4**	**0.0**
	0.6nm,0.7s,baz=360,slow=5.4,SNR=4.8						
YKA	**Yellowknife Ar**	**64.60**	**30**	P	**P**	**11 07 33.2**	**-2.5**
	0.1nm,0.4s,baz=303,slow=4.3,SNR=2.2						
YKA				pP	**sP**	**11 07 49.3**	**+2.4**
	0.5nm,0.8s,baz=302,slow=6.6,SNR=5.7						
FINES	**FINESS Array B**	**69.68**	**332**	P	**P**	**11 08 08.0**	**0.0**
	2.1nm,1.0s,baz=90,slow=8.8,SNR=3.4						
AKASG	**Malin Array Be**	**75.08**	**322**	P	**P**	**11 08 39.5**	**-0.8**
	0.5nm,0.4s,baz=48,slow=5.4,SNR=4.2						
NVAR	**Mina Array Bea**	**75.52**	**53**	P	**P**	**11 08 44.1**	**+0.7**
	0.3nm,0.6s,baz=312,slow=6.7,SNR=3.0						
NVAR				pP	**PcP**	**11 08 58.9**	**+2.6**
	0.7nm,0.6s,baz=294,slow=6.7,SNR=3.9						
PDAR	**Pinedale Array**	**78.30**	**45**	pP	pP	11 09 13.5	+6.2
	0.5nm,0.6s,baz=266,slow=2.9,SNR=5.1						
TXAR	**Lajitas Array**	**90.66**	**52**	pP	pP	11 10 15.2	+5.2
	0.2nm,0.7s,baz=218,slow=5.9,SNR=2.8						

MEX 08 10:57:50.3±0.4**, 17°.34N**×**94°.39W, h146**km±7km**, MD3.6, Chiapas**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
TGIG		**1.33**	**115**	eP	Pn	10 58 16.7	-1.2
TGIG				iS	Sn	10 58 37.0	-2.0
PCIG		**1.98**	**145**	eP	Pn	10 58 23.6	-1.3
PCIG				eS	Sn	10 58 49.6	-1.8
VHO	**Vista Hermosa**	**2.26**	**264**	eP	Pn	10 58 27.1	-1.4
VHO				eS	Sn	10 58 56.1	-1.8
HUIG	**Huatulco**	**2.27**	**227**	eP	Pn	10 58 24.4	-4.1
HUIG				eS	Sn	10 58 53.8	-4.1

*ISCJB **08** 11:01:33.1±0.5, 50°.08N±0°.04×18°.33E±0°.04, h0km, Error ellipse: s-maj=5.8km s-min=2.8km az=21.0*
*CSEM **08** 11:01:34.0±0.3, 50°.08N×18°.36E, h1km, ML2.6, Error ellipse: s-maj=7.6km s-min=3.9km az=18.0*
*PRU **08** 11:01:35.8, 50°.05N×18°.34E, h0km*
ISC 08 11:01:34.4±0.8**, 50°.09N**±0°.03×**18°.38E**±0°.02**, h0**km**, n26,** σ0s.**94**/46**, 3D, Poland**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
OKC	**Ostrava-Krasne**	**0.29**	**212**	⇓iPG	**Pg**	**11 01 40.7**	**+0.7**
OKC				eSG	**Sg**	**11 01 45.0**	**+1.2**
	comp=Z,193nm,0.4s						
OKC	**Ostrava-Krasne**	**0.29**	**212**	Pg	**Pg**	**11 01 40.7**	**+0.7**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
OKC				Sg	Sg	11 01 45.0	+1.2
	193nm,0.4s						
OJC	Ojcow	0.92	81	ePg	Pg	11 01 51.3	-0.7
OJC				eSg	Sg	11 02 04.2	+0.3
OJC	Ojcow	0.92	81	ePg	Pg	11 01 51.3	-0.7
OJC				eSg	Sg	11 02 04.2	+0.3
LANS	Liptovska Anna	1.17	143	ePg	Pg	11 01 56.3	-0.6
LANS				eSg	Sg	11 02 12.8	+0.8
LANS	Liptovska Anna	1.17	143	ePG	Pg	11 01 56.2	-0.6
LANS				eSG	Sg	11 02 12.8	+0.8
DPC	Dobruska-Polom	1.35	282	ePG	Pg	11 02 00.5	+0.2
DPC				eSG	Sb	11 02 18.8	+0.4
DPC	Dobruska-Polom	1.35	282	Pg	Pg	11 02 00.5	+0.2
DPC				Sg	Sb	11 02 18.8	+0.4
NIE	Niedzica	1.41	118	ePg	Pn	11 02 01.7	+0.3
NIE				eSg	Sb	11 02 20.9	+0.7
KSP	Ksiaz	1.54	300	ePn	Pn	11 02 02.7	-0.4
KSP				ePg	Pg	11 02 04.4	+0.6
KSP				eSg	Sn	11 02 25.1	+1.4
KSP	Ksiaz	1.54	300	ePn	Pn	11 02 02.7	-0.4
UPC	Upice	1.58	286⇓	ePG	Pb	11 02 04.4	-0.1
UPC	Upice	1.58	286	Pg	Pb	11 02 04.4	-0.1
VYHS	Vyhne	1.62	169	ePn	Pn	11 02 03.5	-0.8
VYHS				eSn	Sn	11 02 24.3	-1.6
VYHS	Vyhne	1.62	169	ePN	Pn	11 02 03.5	-0.8
VYHS				eSN	Sn	11 02 24.3	-1.6
VYHS				eLG	Lg	11 02 28.5	
STHS	Stebnicka Huta	1.97	109	ePn	Pb	11 02 11.8	+0.6
STHS				eSn	Sg	11 02 38.6	+0.9
STHS	Stebnicka Huta	1.97	109	ePN	Pb	11 02 11.8	+0.6
STHS				eSN	Sg	11 02 38.6	+0.9
STHS				eLG	Lg	11 02 40.9	
GOPC	GO Pecny, Ondr	2.33	267	ePG	Pb	11 02 16.5	-0.7
GOPC	GO Pecny, Ondr	2.33	267	Pg	Pb	11 02 16.5	-0.7
CRVS	Cervenica-Dubn	2.33	119	ePn	Pb	11 02 17.2	-0.1
CRVS	Cervenica-Dubn	2.33	119	ePN	Pb	11 02 17.2	-0.1
PRU	Pruhonice	2.48	269⇓	ePG	Pg	11 02 21.0	-0.9
PRU				eSG	Sg	11 02 52.3	-1.7
	comp=Z,5.7nm,0.3s						
PRU	Pruhonice	2.48	269	Pg	Pg	11 02 21.0	-0.9
PRU				Sg	Sg	11 02 52.3	-1.7
	5.7nm,0.3s						
BRG	Berggiesshubel	2.94	287	PG	Pb	11 02 29.3	+1.5
BRG				SG	Sg	11 03 09.9	+0.9
	8.8nm,0.5s						
KHC	Kasperske Hory	3.27	255	ePG	Pb	11 02 34.9	+1.6
KHC				eSG	Sg	11 03 18.3	-1.1
	comp=Z,15nm,0.5s						
KHC	Kasperske Hory	3.27	255	Pg	Pb	11 02 34.9	+1.6
KHC				Sg	Sg	11 03 18.3	-1.1
	15nm,0.5s						

*NIED **08** 11:07:00, 38°.40N×141°.80E, h62km, Mw3.7 Best double couple: $M_0$3.84000×10^{14} NP1:ϕ_s360.00000°, δ32.00000°, λ104.00000°. NP2:ϕ_s163.00000°, δ59.00000°, λ82.00000°.*
*ISCJB **08** 11:07:20.4±0.9, 38°.34N±0°.05×141°.9E±0°.1, h61km±7km, mb3.6/7, Error ellipse: s-maj=14.1km s-min=7.0km az=12.8*
*JMA **08** 11:07:21.9±0.1, 38°.39N×141°.76E, h58km±1km, M3.7*
JMA Felt I J1.
*IDC **08** 11:07:22.6±2.9, 38°.24N×141°.80E, h68km±27km, mb3.3/7, mb1 3.6/10, mb1mx3.4/55, mbtmp3.7/10, MS3.1/1, Ms1 3.1/1, ms1mx2.2/29, Error ellipse: s-maj=30.1km s-min=17.6km az=90.0*
ISC 08 11:07:20.6±1.2, **38°.31N**±0°.05×**141°.9E**±0°.1, **h47**km±11km, **n25**, σ**1s09**/26, **mb3.5**/7, **Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
JIO	Ouri	0.48	288	P	Pn	11 07 32.2	+0.7
JIO				S	Sn	11 07 39.1	-0.1
JMK	Ichinoseki	0.85	319	P	Pn	11 07 36.4	+0.1
JMK				S	Sn	11 07 46.6	-1.1
JOU	Okura	1.00	274	P	Pn	11 07 38.3	0.0
JOU				S	Sn	11 07 50.4	-0.9
JMM	Marumori	1.00	244	P	Pn	11 07 38.8	+0.5
JMM				S	Sn	11 07 51.0	-0.3
JFK	Kawauchi	1.26	222	P	Pn	11 07 43.2	+1.4
JOM	Ohasama	1.27	337	S	Sn	11 07 56.7	-1.1
JYK	Kaneyama	1.38	297	P	Pn	11 07 43.2	-0.2
JYK				S	Sn	11 07 58.8	-1.7
MJAR	Matsushiro Arr	3.45	240	P	Pn	11 08 12.3	+0.5
	2.4nm,0.3s,baz=35,slow=14,SNR=17						
MAT	Matsushiro	3.45	240	P	Pn	11 08 14.1	+2.3
MAT				eS	Sn	11 08 52.3	+0.8
JHJ	Hachijo jima 2	5.47	199	P	Pn	11 08 39.5	0.0
	8.2nm,0.3s,baz=147,slow=23,SNR=5.7						
JHJ				S	Sn	11 09 39.4	-1.6
	7.6nm,0.3s,baz=328,slow=23,SNR=3.0						
USRK	Ussuriysk Ar.	9.52	311	P	Pn	11 09 37.0	+2.0
	0.5nm,0.3s,baz=118,slow=14,SNR=7.3						
MA2	Magadan	22.02	12	P	P	11 12 11.9	+1.2
	0.8nm,0.3s,baz=217,slow=13,SNR=3.6						
H11N2	WAKE ISLAND Hy	28.47	124	T	T	11 43 20.6	
	baz=316,slow=76,SNR=44						
H11N1	WAKE ISLAND Hy	28.48	124	T	T	11 43 21.3	
	baz=316,slow=76,SNR=93						
H11N3	WAKE ISLAND Hy	28.49	124	T	T	11 43 30.0	
	baz=316,slow=76,SNR=52						
H11S1	WAKE ISLAND Hy	29.23	126	T	T	11 44 27.9	
	baz=318,slow=76,SNR=26						
H11S3	WAKE ISLAND Hy	29.23	126	T	T	11 44 29.1	
	baz=318,slow=76,SNR=25						
H11S2	WAKE ISLAND Hy	29.25	126	T	T	11 44 27.1	
	baz=318,slow=76,SNR=34						
DAV	Davao City (W)	34.44	210	LR	LR	11 28 58.0	
	comp=Z,29nm,18.8s,baz=354,slow=38						
MKAR	Makanchi Array	43.81	301	P	P	11 15 21.3	-0.4
	0.6nm,0.6s,baz=90,slow=8.5,SNR=7.1						
KURBB	Kurchatov Arra	45.56	307	P	P	11 15 34.4	-1.1
	1.1nm,0.5s,baz=82,slow=8.1,SNR=6.3						
KURBB				pP	pP	11 15 48.2	-0.1
	1.6nm,0.6s,baz=82,slow=8.2,SNR=6.9						
WRA	Warramunga Arr	58.38	188	P	P	11 17 10.3	-0.8
	0.6nm,0.5s,baz=5.8,slow=7.2,SNR=6.8						
ASAR	Alice Springs	62.11	188	P	P	11 17 35.9	-0.7
	0.3nm,0.7s,baz=6.8,slow=5.3,SNR=4.9						
YKA	Yellowknife Ar	62.50	31	P	P	11 17 38.9	+0.2
	0.2nm,0.6s,baz=302,slow=6.4,SNR=4.3						
TXAR	Lajitas Array	89.02	53	P	P	11 20 11.5	+0.8
	0.1nm,0.6s,baz=312,slow=2.9,SNR=4.2						

*IDC **08** 11:09:06.2±1.9, 38°.51N×142°.79E, h0km, mb4.1/5, mb1 4.1/8, mb1mx3.7/58, mbtmp3.9/8, ML3.1/3, Error ellipse: s-maj=52.6km s-min=20.4km az=63.0*
*NEIC **08** 11:09:11.6±0.6, 38°.53N×142°.65E, h35km, mb4.0/5, Error ellipse: s-maj=11.8km s-min=8.8km az=108.0*
*ISCJB **08** 11:09:16.0±1.0, 38°.30N±0°.04×142°.0E±0°.1, h69km±6km, mb4.0/10, Error ellipse: s-maj=14.6km s-min=6.2km az=10.8*
*JMA **08** 11:09:17.5±0.1, 38°.32N×141°.89E, h63km±1km, M4.0*
JMA Felt I J1.
ISC 08 11:09:16.0±1.8, **38°.27N**±0°.05×**142°.1E**±0°.1, **h56**km±14km, **n29**, σ**1s17**/37, **mb4.1**/10, **Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
JIO	Ouri	0.61	288	P	Pn	11 09 29.4	+0.5
JIO				S	Sn	11 09 37.5	-0.8
JMK	Ichinoseki	0.96	315	P	Pn	11 09 33.8	+0.4
JMK				S	Sn	11 09 45.2	-1.1
JMM	Marumori	1.10	249	P	Pn	11 09 35.3	+0.1
JMM				S	Sn	11 09 48.1	-1.3
JOU	Okura	1.12	275	P	Pn	11 09 35.5	-0.1
JOU				S	Sn	11 09 48.5	-1.6
JFK	Kawauchi	1.32	227	P	Pn	11 09 39.1	+0.9
JFK				S	Sn	11 09 54.8	+0.1
JOM	Ohasama	1.35	333	P	Pn	11 09 39.3	+0.6
JOM				S	Sn	11 09 54.9	-0.7
JYK	Kaneyama	1.50	296	P	Pn	11 09 40.5	-0.2
JFT	Otama	1.57	242	P	Pn	11 09 42.5	+0.9
JFT				S	Sn	11 10 00.8	-0.2
JYS	Shirataka	1.59	269	P	Pn	11 09 42.0	+0.1
JYS				S	Sn	11 10 00.3	-1.1
JRG	Rokugo	1.60	315	P	Pn	11 09 42.4	+0.4
JRG				S	Sn	11 10 01.7	+0.1
MJAR	Matsushiro Arr	3.54	242	Pn	Pn	11 10 09.9	+1.5
	2.2nm,0.3s,baz=33,slow=12,SNR=6.7						
MAJO	Matsushiro	3.54	242	ePn	Pn	11 10 10.5	+2.0
MAT	Matsushiro	3.54	242	P	Pn	11 10 10.0	+1.5
MAT				eS	Sn	11 10 48.6	-0.5
JHJ	Hachijo jima 2	5.47	201	Sn	Sn	11 11 33.2	-3.3
	21nm,0.3s,baz=139,slow=23,SNR=6.1						
YSS	Yuzh-Sakhalins	8.70	3	ePn	Pn	11 11 09.6	-9.5
YSS				eSn	Sn	11 12 44.1	-11
USRK	Ussuriysk Ar.	9.64	311	Pn	Pn	11 11 30.9	-1.1
	0.6nm,0.3s,baz=121,slow=14,SNR=8.7						
KSRS	Korea Array	11.23	270	Pn	Pn	11 11 56.3	+2.5
	0.2nm,0.3s,baz=78,slow=14,SNR=4.3						
KSAR	Wonju Array Be	11.26	270	Pn	Pn	11 11 56.3	+2.1
ZALV	Zalesovo Beam	41.49	311	P	P	11 16 57.0	-0.4
	1.9nm,0.4s,baz=82,slow=7.9,SNR=5.8						
MKAR	Makanchi Array	43.93	301	P	P	11 17 17.6	+0.3
	1.0nm,0.6s,baz=86,slow=9.8,SNR=8.7						
KURK	Kurchatov	45.60	307	P	P	11 17 29.9	-0.5
KURBB	Kurchatov Arra	45.68	307	P	P	11 17 29.9	-1.1
	1.2nm,0.3s,baz=75,slow=7.2,SNR=17						
TKM2	Tokmak 2	49.52	298	eP	P	11 18 01.3	0.0
	0.7nm,0.5s						
ABKAR	Akbulak array	57.56	310	eP	P	11 18 59.2	-0.5
	0.3nm,0.4s						
FITZ	Fitzroy Crossi	58.16	198	eP	P	11 19 05.0	+0.9
	0.9nm,0.4s						
WRAB	Tennant Creek	58.34	189	eP	P	11 19 05.6	+0.1
	2.6nm,0.9s						
WRA	Warramunga Arr	58.36	189	P	P	11 19 05.8	+0.3
	1.2nm,0.5s,baz=7.8,slow=7.7,SNR=17						
ASAR	Alice Springs	62.08	188	P	P	11 19 30.6	-0.4
	0.9nm,0.7s,baz=5.6,slow=4.2,SNR=10						
HLID	Hailey	73.14	48	eP	P	11 20 35.7	-5.1
	0.4nm,0.5s						

*IDC **08** 11:10:29.0±12.0, 8°.82S×112°.06E, h0km, mb3.7/3, mb1 3.9/3, mb1mx3.4/48, mbtmp3.7/3, MS3.4/2, Ms1 3.4/2, ms1mx2.6/39, Error ellipse: s-maj=196.5km s-min=133.3km az=137.0*
*DJA **08** 11:10:39.3±0.5, 10°S±5°×11°3E±°, h10km, M4.1/10, mB4.9/1, mb4.5/2, MLv3.9/10, Mw(mB)4.2/1*
*ISCJB **08** 11:10:40.6±0.7, 9°.69S±0°.08×112°.52E±0°.06, h33km, mb3.5/3, MS4.1/1, Error ellipse: s-maj=12.1km s-min=6.2km az=30.3*
ISC 08 11:10:42.1±1.1, **9°.6S**±0°.1×**112°.54E**±0°.06, **h35**km, **n15**, σ**0s91**/15, **mb3.5**/3, **South of Jawa**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
GMJI	Gumukmas	1.61	34	P	Pn	11 11 07.2	-0.9
PWJI	Pagerwojo	1.75	335	P	Pn	11 11 10.0	0.0
PWJI				S	Sn	11 11 30.2	-0.9
PCJI	Pacitan	1.96	316	P	Pn	11 11 13.0	+0.2
JAGI	Jajag, Banyuwa	1.96	54	P	Pn	11 11 12.5	-0.4
WOJI	Wonogiri, Jawa	2.39	318	P	Pn	11 11 19.4	+0.6
ABJI	Asem Bagus	2.47	43	P	Pn	11 11 22.1	+2.2
UGM	Wanagama	2.62	310	P	Pn	11 11 22.6	+0.6
UGM				S	Sn	11 11 52.7	+0.1
TWSI	Taliwang, Sumb	4.38	79	P	Pn	11 11 46.7	+0.6
CMJI	Cimerak	4.44	294	P	Pn	11 11 46.7	-0.3
CNJI	Cibinong	5.83	293	P	Pn	11 12 07.0	+1.0
	30nm,1.1s,930nm0.2nm						
FITZ	Fitzroy Crossi	15.24	125	LR	LR	11 19 53.7	
	comp=Z,36nm,19.4s,baz=278,slow=35						
WRA	Warramunga Arr	23.41	118	P	P	11 15 47.3	-0.8
	0.5nm,0.5s,baz=294,slow=11,SNR=10						
ASAR	Alice Springs	24.72	127	P	P	11 15 59.9	-0.5
	1.0nm,0.7s,baz=300,slow=9.4,SNR=23						
STKA	Stephens Creek	34.85	134	P	P	11 17 30.4	+0.4
	0.6nm,0.3s,baz=302,slow=9.5,SNR=3.6						
BVAR	Borovoye Array	71.99	335	LR	LR	11 58 11.9	
	comp=Z,100nm,18.4s,baz=73,slow=40						

*IDC **08** 11:17:27.6±2.1, 36°.23N×143°.28E, h0km, mb3.6/4, mb1 3.8/7, mb1mx3.5/66, mbtmp3.8/7, ML3.8/3, MS2.3/1, Ms1 2.3/1, ms1mx2.0/43, Error ellipse: s-maj=53.7km s-min=22.0km az=67.0*
*ISCJB **08** 11:17:31.4±1.2, 36°.05N±0°.08×143°.1E±0°.1, h33km, mb3.7/4, Error ellipse: s-maj=13.7km s-min=10.7km az=140.2*
ISC 08 11:17:33.6±1.6, **36°.1N**±0°.1×**143°.1E**±0°.1, **h35**km, **n8**, σ**1s19**/10, **mb3.7**/4, **Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
MJAR	Matsushiro Arr	3.95	278	Pn	Pn	11 18 31.1	-0.6
	2.1nm,0.3s,baz=90,slow=16,SNR=20						
MJAR				LR	LR	11 20 08.1	
	comp=Z,40nm,20.1s,baz=125,slow=39						
MAT	Matsushiro	3.95	278	P	Pn	11 18 31.9	+0.2
MAT				eS	Sn	11 19 17.8	+1.0
JHJ	Hachijo jima 2	4.02	223	Pn	Pn	11 18 33.0	+0.3
	15nm,0.3s,baz=314,slow=16,SNR=14						
JHJ				Sn	Sn	11 19 17.3	-1.2
	21nm,0.3s,baz=92,slow=23,SNR=6.4						
JCJ	Chichijima	9.00	185	Pn	Pn	11 19 41.4	+0.3
	2.3nm,0.3s,baz=294,slow=19,SNR=3.1						
MKAR	Makanchi Array	45.74	303	P	P	11 25 52.6	+1.2
	0.2nm,0.3s,baz=79,slow=8.6,SNR=2.7						
KURBB	Kurchatov Arra	47.63	309	P	P	11 26 04.1	-1.9
	0.5nm,0.5s,baz=85,slow=7.6,SNR=4.1						
WRA	Warramunga Arr	56.34	190	P	P	11 27 10.5	-0.7
	0.7nm,0.8s,baz=12,slow=7.1,SNR=4.6						
ASAR	Alice Springs	60.07	190	P	P	11 27 38.4	+1.2
	0.4nm,0.5s,baz=3.9,slow=7.1,SNR=11						

*NIED **08** 11:32:00, 36°.70N×143°.60E, h5km, Mw3.7 Best double couple: $M_0$4.61000×10^{14} NP1:ϕ_s55.00000°, δ22.00000°, λ-83.00000°. NP2:ϕ_s228.00000°, δ68.00000°, λ-93.00000°.*
*IDC **08** 11:32:27.6±0.8, 36°.58N×143°.87E, h0km, mb3.7/9, mb1 4.0/13, mb1mx3.7/59, mbtmp3.8/13, ML3.9/3, MS3.0/4, Ms1 3.0/4, ms1mx2.5/46, Error ellipse: s-maj=22.1km s-min=17.8km az=111.0*
*ISCJB **08** 11:32:31.0±0.6, 36°.63N±0°.05×143°.68E±0°.05, h33km, mb3.7/9, MS3.5/1, Error ellipse: s-maj=6.7km s-min=5.3km az=170.4*
*JMA **08** 11:32:32.4±0.4, 36°.74N×143°.62E, h97km, M3.5*
ISC 08 11:32:32.8±0.8, **36°.67N**±0°.06×**143°.72E**±0°.07, **h35**km, **n27**, σ**1s46**/32, **mb3.7**/9, **Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
ONAJ	Iwakimizuishiy	2.38	281	P	Pn	11 33 09.5	+0.1
ONAJ				S	Sn	11 33 37.0	-0.4
JHO	Hitachi	2.53	270	eS	Sn	11 33 39.3	-1.8
JFT	Otama	2.83	288	P	Pn	11 33 16.0	+0.4
JFT				S	Sn	11 33 48.9	+0.4
BSO1	Boso 1	3.00	229	P	Pn	11 33 17.7	+0.3
JMK	Ichinoseki	3.02	320	P	Pn	11 33 16.8	-1.3
JMK				eS	Sn	11 33 51.0	-2.0
JOM	Ohasama	3.39	326	P	Pn	11 33 22.0	-1.2
JOM				eS	Sn	11 33 57.3	-4.9
JAG	Ashikaga	3.44	267	P	Pn	11 33 24.4	+0.5
JAG				S	Sn	11 34 02.7	-0.8
JYK	Kaneyama	3.48	311	P	Pn	11 33 24.2	-0.3
JYK				eS	Sn	11 34 03.7	-0.8
JRY	Ryogami san	3.94	262	P	Pn	11 33 31.0	+0.2
JRY				eS	Sn	11 34 14.0	-1.9
JOD2	Odawara 2	4.01	251	eS	Sn	11 34 16.9	-0.6
MJAR	Matsushiro Arr	4.43	270	Pn	Pn	11 33 39.0	+1.4
	2.5nm,0.3s,baz=90,slow=15,SNR=14						
MAT	Matsushiro	4.43	270	P	Pn	11 33 39.2	+1.6
MAT				eS	Sn	11 34 27.0	-1.0
JHJ	Hachijo jima 2	4.79	224	Pn	Pn	11 33 41.9	-0.7
	20nm,0.3s,baz=67,slow=23,SNR=15						
JHJ				Sn	Sn	11 34 33.9	-3.0
	28nm,0.3s,baz=233,slow=20,SNR=4.3						
JCJ	Chichijima	9.63	188	Pn	Pn	11 34 45.2	-3.7
	2.0nm,0.3s,baz=300,slow=20,SNR=2.9						
JCJ				Sn	Sn	11 36 27.1	-8.9
	3.9nm,0.3s,baz=285,slow=20,SNR=3.3						
JCJ				LR	LR	11 38 56.9	
	comp=Z,67nm,20.6s,baz=8.0,slow=41						
USRK	Ussuriysk Ar.	11.67	314	Pn	Pn	11 35 18.1	+1.3
	0.2nm,0.3s,baz=111,slow=9.9,SNR=2.8						
KSRS	Korea Array	12.64	278	LR	LR	11 40 22.7	
	comp=Z,33nm,19.6s,baz=41,slow=37						
KLR	Kul'dur	15.28	329	LR	LR	11 41 22.0	
	comp=Z,47nm,20.2s,baz=116,slow=35						
MKAR	Makanchi Array	45.87	303	P	P	11 40 51.8	+0.2
	0.1nm,0.2s,baz=95,slow=7.2,SNR=2.3						
KURBB	Kurchatov Arra	47.68	309	P	P	11 41 06.2	+0.5
	0.3nm,0.2s,baz=78,slow=7.7,SNR=2.0						
ILAR	Eielson Array	48.82	32	P	P	11 41 14.0	-0.3
	0.4nm,0.7s,baz=255,slow=6.2,SNR=3.3						
LEM	Lembang	54.91	226	LR	LR	12 08 03.9	
	comp=Z,38nm,18.6s,baz=58,slow=39						
WRA	Warramunga Arr	57.00	191	P	P	11 42 14.3	-0.7
	0.8nm,0.5s,baz=11,slow=7.2,SNR=11						
ASAR	Alice Springs	60.72	190	P	P	11 42 40.6	-0.2
	0.3nm,0.5s,baz=7.3,slow=6.7,SNR=4.6						
RES	Resolute Bay	62.49	15	P	P	11 42 52.5	+0.4
	0.4nm,0.7s,baz=163,slow=18,SNR=3.5						
KBZ	Khabaz	72.53	312	P	P	11 43 57.8	+1.7
	2.7nm,1.0s,baz=68,slow=19,SNR=3.5						
NVAR	Mina Array Bea	73.72	54	P	P	11 44 04.1	+0.7
	0.6nm,0.9s,baz=291,slow=7.6,SNR=3.4						
TXAR	Lajitas Array	88.86	54	P	P	11 45 23.6	-0.1
	0.3nm,0.7s,baz=270,slow=3.4,SNR=3.9						

*ISCJB **08** 11:41:05.6±1.1, 67°.70N±0°.04×34°.1E±0°.2, h0km, Error ellipse: s-maj=8.5km s-min=5.0km az=10.8*
*KOLA **08** 11:41:06.7, 67°.66N×34°.15E, h0km*
*NAO **08** 11:41:07.7±1.5, 67°.50N×33°.88E, ML2.7*
*HEL **08** 11:41:08.4±0.4, 67°.66N×33°.92E, h0km, ML2.3, Explosion*
*CSEM **08** 11:41:10.2±0.6, 67°.64N×33°.44E, h2km, ML2.7, Error ellipse: s-maj=11.9km s-min=6.7km az=82.0, Mining explosion.*
*IDC **08** 11:41:10.5±1.9, 67°.72N×33°.52E, h0km, mb1 3.4/3, mb1mx3.0/62, mbtmp3.4/3, ML2.7/3, Error ellipse: s-maj=21.1km s-min=10.0km az=80.0*
ISC 08 11:41:06.2±1.7, **67°.68N**±0°.04×**34°.11E**±0°.09, **h0**km, **n33**, σ**1s12**/51, **Baltic States-Belarus-Northwestern Russia**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
APA	Apatity	0.29	249	P	Pg	11 41 12.0	+0.2
APA				S	Sg	11 41 15.9	+0.4
APZ9	Apatity	0.29	249	Pg	Pg	11 41 11.9	+0.2
APZ9				Lg	Lg	11 41 14.7	
APZ9	Apatity	0.29	249	Pg	Pg	11 41 11.9	+0.2
APZ9				Lg	Lg	11 41 14.7	
APZ9	Apatity	0.29	249	Pg	Pg	11 41 11.9	+0.2
APZ9				Lg	Lg	11 41 14.6	
	SNR=19						
APA0	Apatity Array	0.43	261	Pg	Pg	11 41 14.6	+0.1
	baz=106,slow=14						
APA0				Lg	Lg	11 41 19.4	
	baz=90,slow=28						
APA0				Rg	Rg	11 41 20.7	
	baz=82,slow=37						
APA0	Apatity Array	0.43	261	Pg	Pg	11 41 14.6	+0.1
	baz=106,slow=14						
APA0				Lg	Lg	11 41 19.4	
	baz=90,slow=28						
APA0				Rg	Rg	11 41 20.7	
	baz=82,slow=37						
APA0	Apatity Array	0.43	261	P	Pg	11 41 14.6	+0.1
APA0				S	Sg	11 41 20.4	+0.3
APA0	Apatity Array	0.43	261	Pg	Pg	11 41 14.6	+0.1
	SNR=577						
APA0				Lg	Lg	11 41 19.4	
VRF	Varrio	1.72	274	eP	Pn	11 41 37.5	+0.1
VRF				eS	Sn	11 41 59.1	-0.8
VRF				MSG		11 42 04.3	
	comp=Z,19nm,0.2s						
VRF	Varrio	1.72	274	P	Pn	11 41 37.5	+0.1
KU6	Riekki	2.35	227	eP	Pn	11 41 47.8	+1.7
KU6				eSB	Sb	11 42 17.4	-1.6
KU6				MSG		11 42 23.4	
	comp=Z,16nm,0.3s						
KU6	Riekki	2.35	227	P	Pn	11 41 47.7	+1.7
KU6				Sb	Sb	11 42 17.3	-1.6
MSF	Maaselka	2.68	231	ePB	Pb	11 41 53.8	-1.2
MSF				eSB	Sb	11 42 27.5	-0.8
MSF	Maaselka	2.68	231	Pb	Pb	11 41 53.7	-1.2
MSF				Sb	Sb	11 42 27.5	-0.8
SGF	Sodankyl	2.92	269	ePB	Pn	11 41 56.7	+2.9
SGF				eSG	Sb	11 42 35.7	+0.4
SGF	Sodankyl	2.92	269	Pb	Pn	11 41 56.7	+2.9
SGF				Sg	Sb	11 42 35.6	+0.4
KEV	Kevo	3.33	312	eP	Pn	11 42 01.4	+2.0
KEV				eS	Sn	11 42 40.3	+0.7
KEV				MSG		11 42 54.6	
	comp=Z,10nm,0.2s						
KEV	Kevo	3.33	312	P	Pn	11 42 01.4	+2.0
KEV				S	Sn	11 42 40.3	+0.7
RNF	Rovaniemi	3.34	255	eP	Pn	11 42 00.1	+0.5
RNF				eS	Sn	11 42 40.9	+1.0
RNF	Rovaniemi	3.34	255	P	Pn	11 42 00.1	+0.5
RNF				S	Sn	11 42 40.8	+1.0
ARA0	ARCESS Array S	3.66	305	Pn	Pn	11 42 05.2	+1.2
	baz=126,slow=18						
ARA0				Sn	Sn	11 42 47.3	-0.6
	baz=122,slow=22						
ARA0				Lg	Lg	11 43 00.8	
	baz=117,slow=37						
ARA0	ARCESS Array S	3.66	305	Pn	Pn	11 42 05.2	+1.2
	baz=126,slow=18						
ARA0				Sn	Sn	11 42 47.3	-0.6
	baz=122,slow=22						
ARA0				Lg	Lg	11 43 00.8	
	baz=117,slow=37						
ARA0	ARCESS Array S	3.66	305	Pn	Pn	11 42 05.2	+1.2
	SNR=244						
ARA0				Sn	Sn	11 42 47.3	-0.6
	SNR=6.9						
ARA0				Lg	Lg	11 43 00.8	
	SNR=19						
ARCES	ARCESS Array B	3.66	305	Pn	Pn	11 42 05.3	+1.2
	comp=Z,2.6nm,0.3s,baz=123,slow=15,SNR=93						
ARCES				Pg	Pb	11 42 09.8	-2.0
	comp=Z,2.8nm,0.3s,baz=122,slow=15,SNR=27						
ARCES				Sn	Sn	11 42 47.8	-0.1
	comp=Z,1.8nm,0.3s,baz=116,slow=24,SNR=8.5						
ARCES				Lg	Lg	11 42 59.3	
	comp=Z,3.9nm,0.3s,baz=119,slow=30,SNR=8.4						
ARE0	ARCESS Array S	3.66	305	eP	Pn	11 42 05.3	+1.2
ARE0				eS	Sn	11 42 47.8	-0.1
ARE0	ARCESS Array S	3.66	305	P	Pn	11 42 05.3	+1.2
ARE0				S	Sn	11 42 47.8	-0.1
FIA0	FINESS Array S	7.14	213	Lg	Lg	11 44 45.2	
	baz=27,slow=22						
FIA0	FINESS Array S	7.14	213	Lg	Lg	11 44 45.2	
	baz=27,slow=22						
FINES	FINESS Array B	7.14	213	Pn	Pn	11 42 52.7	+0.9
	comp=Z,0.1nm,0.3s,baz=34,slow=12,SNR=3.1						
FINES				Sn	Sn	11 44 13.7	+0.1
	comp=Z,0.3nm,0.3s,baz=34,slow=21,SNR=3.3						
FINES				Lg	Lg	11 44 48.7	
	comp=Z,0.7nm,0.3s,baz=21,slow=29,SNR=5.1						
I43RU	DUBNA INFRASON	11.09	171	i		12 47 00.0	
	baz=353,slow=333,SNR=0.4						
SPA0	Spitsbergen Ar	11.67	342	Pn	Pn	11 43 53.7	-0.1
	baz=134,slow=14						
SPA0	Spitsbergen Ar	11.67	342	Pn	Pn	11 43 53.7	-0.1
	baz=134,slow=14						
SPITS	Spitsbergen Ar	11.67	342	Pn	Pn	11 43 53.4	-0.3
	baz=149,slow=13,SNR=6.2						

IDC 08 11:45:08.1±609.0, **47°.04N**×**47°.82E**, **h0**km, **Error ellipse: s-maj=226.4km s-min=146.5km az=43.0, Ukraine-Moldova-Southwestern Russia region**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
I31KZ	AKTYUBINSK INF	7.55	60	i		12 30 20.0	
	baz=248,slow=319,SNR=0.8						
I43RU	DUBNA INFRASON	11.69	330	i		12 55 20.0	
	baz=140,slow=324,SNR=0.8						
I46RU	ZALESOVO INFRA	24.31	60	i		14 16 00.0	
	baz=264,slow=334,SNR=2.1						

*ISCJB **08** 11:52:20.8±0.8, 27°.2N±0°.1×143°.56E±0°.09, h10km, mb3.8/7, Error ellipse: s-maj=17.3km s-min=10.8km az=168.1*
*IDC **08** 11:52:21.2±0.9, 27°.19N×143°.58E, h0km, mb3.7/7,*

mb1 3.9/8, mb1mx3.6/44, mbtmp3.7/8, ML3.6/1, Error ellipse: s-maj=26.3km s-min=20.1km az=122.0

ISC 08 11:52:22.8±1.0**, 27°.2N**±0°.2×**143°.47E**±0°.10**, h10**^{km}**, n9, σ0^{s}99**/10**, mb3.8**/7**, Bonin Islands region**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
JCJ	**Chichijima**	**1.15**	**265**	Pn	**Pn**	**11 52 44.5**	**-0.5**
	77nm,0.3s,baz=91,slow=23,SNR=58						
JCJ				Sn	**Sb**	**11 52 59.5**	**-0.3**
	55nm,0.3s,baz=287,slow=23,SNR=7.8						
KSRS	**Korea Array**	**16.63**	**312**	Pn	**P**	**11 56 17.6**	**-0.8**
	0.2nm,0.3s,baz=127,slow=10.0,SNR=4.8						
WRA	**Warramunga Arr**	**47.70**	**192**	P	**P**	**12 00 59.5**	**-0.2**
	1.2nm,0.5s,baz=11,slow=8.4,SNR=6.6						
ZALV	**Zalesovo Beam**	**50.16**	**319**	P	**P**	**12 01 19.6**	**+1.3**
	0.4nm,0.4s,baz=126,slow=7.3,SNR=3.3						
ASAR	**Alice Springs**	**51.41**	**191**	P	**P**	**12 01 28.6**	**+0.5**
	0.3nm,0.7s,baz=8.5,slow=7.5,SNR=5.1						
ILAR	**Eielson Array**	**57.07**	**29**	P	**P**	**12 02 07.8**	**-1.1**
	0.9nm,1.0s,baz=244,slow=5.1,SNR=4.7						
INK	**Inuvik**	**62.45**	**25**	P	**P**	**12 02 45.5**	**-0.3**
	1.3nm,0.9s,baz=257,slow=10,SNR=3.2						
YKA	**Yellowknife Ar**	**71.50**	**29**	P	**P**	**12 03 42.7**	**-0.7**
	0.3nm,0.7s,baz=296,slow=5.1,SNR=6.8						
FINES	**FINESS Array B**	**78.35**	**334**	P	**P**	**12 04 24.5**	**+1.4**
	0.8nm,0.5s,baz=77,slow=6.3,SNR=7.2						

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*IDC **08** 11:52:59.3±1.1, 38°.32N×142°.86E, h0^{km}, mb3.6/5, mb1 3.7/7, mb1mx3.5/46, mbtmp3.6/7, ML3.4/2, Error ellipse: s-maj=36.1km s-min=19.9km az=110.0*

*NIED **08** 11:53:00, 38°.60N×142°.10E, h56^{km}, Mw3.8 Best double couple: $M_0$5.80000×10^{14} NP1:ϕ_s95.00000°, δ47.00000°, λ131.00000°. NP2:ϕ_s223.00000°, δ57.00000°, λ55.00000°.*

*ISCJB **08** 11:53:01.7±1.5, 38°.50N±0°.05×142°.26E±0°.08, h28^{km}±9^{km}, mb3.5/5, Error ellipse: s-maj=10.6km s-min=7.9km az=17.7*

*JMA **08** 11:53:04.3±0.2, 38°.57N×142°.11E, h34^{km}±2^{km}, M3.8*

JMA Felt I J1.

ISC 08 11:53:02.5±2.2**, 38°.53N**±0°.05×**142°.24E**±0°.09**, h25**^{km}±15^{km}**, n15, σ1^{s}49**/21**, mb3.5**/5**, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
JIO	**Ouri**	**0.70**	**264**	P	**Pb**	**11 53 16.3**	**+0.3**
JIO				S	**Sb**	**11 53 24.3**	**-1.0**
JMK	**Ichinoseki**	**0.90**	**298**	P	**Pn**	**11 53 19.2**	**-0.3**
JMK				S	**Sn**	**11 53 29.7**	**-2.0**
JOM	**Ohasama**	**1.19**	**322**	P	**Pn**	**11 53 24.0**	**+0.5**
JOM				S	**Sn**	**11 53 38.2**	**-0.7**
JOU	**Okura**	**1.25**	**263**	P	**Pn**	**11 53 24.7**	**+0.4**
JOU				S	**Sn**	**11 53 39.1**	**-1.2**
JMM	**Marumori**	**1.32**	**240**	P	**Pn**	**11 53 25.3**	**0.0**
JMM				S	**Sn**	**11 53 40.0**	**-2.0**
JRG	**Rokugo**	**1.52**	**305**	P	**Pn**	**11 53 28.7**	**+0.7**
JYK	**Kaneyama**	**1.52**	**285**	P	**Pn**	**11 53 28.7**	**+0.7**
MJAR	**Matsushiro Arr**	**3.77**	**239**	Pn	**Pn**	**11 54 01.1**	**+2.1**
	1.5nm,0.3s,baz=48,slow=10.0,SNR=15						
MAT	**Matsushiro**	**3.77**	**239**	P	**Pn**	**11 54 01.2**	**+2.2**
MAT				*e*S	**Sn**	**11 54 44.9**	**+2.3**
JHJ	**Hachijo jima 2**	**5.76**	**201**	Pn	**Pn**	**11 54 25.9**	**-0.4**
	6.1nm,0.3s,baz=246,slow=20,SNR=4.6						
JHJ				Sn	**Sn**	**11 55 29.6**	**-2.0**
	7.0nm,0.3s,baz=73,slow=19,SNR=4.7						
SEY	**Seymchan**	**25.20**	**11**	P	**P**	**11 58 27.9**	**+2.2**
	0.7nm,0.3s,baz=151,slow=13,SNR=4.5						
MKAR	**Makanchi Array**	**43.89**	**301**	P	P	12 01 12.2	+5.4
	0.1nm,0.2s,baz=91,slow=7.2,SNR=2.0						
ILAR	**Eielson Array**	**47.88**	**33**	P	**P**	**12 01 37.0**	**-1.0**
	0.2nm,0.4s,baz=272,slow=7.1,SNR=3.9						
WRA	**Warramunga Arr**	**58.64**	**189**	P	**P**	**12 02 57.0**	**-0.5**
	0.9nm,0.7s,baz=6.6,slow=7.2,SNR=5.3						
ASAR	**Alice Springs**	**62.36**	**189**	P	**P**	**12 03 23.4**	**+0.5**
	0.4nm,0.9s,baz=350,slow=10.0,SNR=5.0						

JMA 08 11:55:01.3±0.4**, 21°.14N**×**121°.47E, h0**^{km}**, M4.2, 1C, Taiwan region**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
PIP	**Pasuquin**	**2.91**	**196**⇑	*i*P	Pn	11 55 44.5	-4.4
JYNG	**Yonagunijimaku**	**3.57**	**22**	P	Pn	11 55 58.3	+0.4
JYNG				*e*S	Sn	11 56 41.7	+0.9
YOJ	**Yonaguni jima**	**3.60**	**23**	P	Pn	11 56 01.9	+3.5
YOJ				*e*S	Sn	11 56 44.9	+3.3
HATJ	**Hateruma jima**	**3.62**	**36**	*e*S	Sn	11 56 42.9	+0.9
IRIF	**Iriomote-Funau**	**3.80**	**33**	P	Pn	11 56 03.3	+2.1
IRIF				S	Sn	11 56 48.8	+2.2
JKRS	**Kuro-shima**	**3.87**	**37**	P	Pn	11 56 04.2	+2.1
JKRS				*e*S	Sn	11 56 49.4	+1.1
JIJ	**Ishigaki jima**	**4.05**	**37**	P	Pn	11 56 06.0	+1.5
JIJ				*e*S	Sn	11 56 52.5	-0.2
JISG	**Ishigakijimahi**	**4.32**	**37**	P	Pn	11 56 09.5	+1.3
JISG				*e*S	Sn	11 57 01.3	+2.0
JTJ	**Tarama**	**4.58**	**40**	P	Pn	11 56 13.9	+2.0
JTJ				*e*S	Sn	11 57 06.9	+1.0
JIRB	**Irabujima**	**5.01**	**42**	P	Pn	11 56 19.3	+1.5
JIRB				*e*S	Sn	11 57 16.3	-0.1
JOGS	**Gusukube**	**5.11**	**44**	*e*S	Sn	11 57 19.4	+0.5
JIKM	**Ikemajima**	**5.13**	**42**	P	Pn	11 56 21.0	+1.6
JIKM				*e*S	Sn	11 57 18.0	-1.3

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*ISK **08** 11:59:27.6, 38°.42N×28°.51E, h7^{km}, MD2.1*

*DDA **08** 11:59:28.1, 38°.50N×28°.49E, h10^{km}, Md2.6*

*CSEM **08** 11:59:28.3±0.2, 38°.47N×28°.50E, h8^{km}, MD2.1, Error ellipse: s-maj=6.1km s-min=4.0km az=139.0*

ISC 08 11:59:28.2±0.9**, 38°.45N**±0°.03×**28°.52E**±0°.03**, h11**^{km}±6^{km}**, n20, σ0^{s}56**/34**, Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
KULA	**Kula-Manisa**	**0.13**	**59**	*e*PG	**Pg**	**11 59 31.3**	**-0.2**
KULA				*e*SG	**Sg**	**11 59 33.9**	**+0.1**
KULA	**Kula-Manisa**	**0.13**	**59**	*e*Pg	**Pg**	**11 59 31.3**	**-0.2**
KULA				*e*Sg	**Sg**	**11 59 33.9**	**+0.1**
DEMI	**Demirci**	**0.62**	**15**	*i* P	**Pg**	**11 59 39.6**	**-0.6**
DEMI				*i* S	**Sg**	**11 59 48.1**	**-0.3**
DEMI	**Demirci**	**0.62**	**15**	P	**Pg**	**11 59 39.6**	**-0.6**
DEMI				S	**Sg**	**11 59 48.1**	**-0.3**
AKS	**Akhisar**	**0.70**	**308**	*e*PG	**Pg**	**11 59 41.7**	**-0.1**
AKS	**Akhisar**	**0.70**	**308**	*e*Pg	**Pg**	**11 59 41.7**	**-0.1**
AYDB	**Zeytinkoy-Aydi**	**0.70**	**225**	*e*PG	**Pg**	**11 59 41.0**	**-0.8**
AYDB				*e*SG	**Sg**	**11 59 51.1**	**+0.1**
AYDB	**Zeytinkoy-Aydi**	**0.70**	**225**	*e*Pg	**Pg**	**11 59 41.0**	**-0.8**
AYDB				*e*Sg	**Sg**	**11 59 51.1**	**+0.1**
KHAL	**Karahalli**	**0.77**	**95**	*i* P	**Pb**	**11 59 43.9**	**+0.2**
KHAL				*i* S	**Sb**	**11 59 54.8**	**+0.6**
KHAL	**Karahalli**	**0.77**	**95**	P	**Pb**	**11 59 43.9**	**+0.2**
KHAL				S	**Sb**	**11 59 54.8**	**+0.6**
AYDN	**Tasoluk**	**0.93**	**213**	*i* P	**Pn**	**11 59 47.7**	**+0.5**
AYDN				*i* S	**Sn**	**12 00 00.1**	**-0.5**
AYDN	**Tasoluk**	**0.93**	**213**	P	**Pn**	**11 59 47.7**	**+0.5**
AYDN				S	**Sn**	**12 00 00.1**	**-0.5**
IZM	**Izmir**	**0.98**	**268**	*e*PG	**Pg**	**11 59 46.8**	**-0.4**
IZM	**Izmir**	**0.98**	**268**	*e*Pg	**Pg**	**11 59 46.8**	**-0.4**
GDZ	**Gediz**	**0.99**	**49**	*i* P	**Pg**	**11 59 45.8**	**-1.5**
GDZ				*i* S	**Sn**	**12 00 02.5**	**+0.3**
GDZ	**Gediz**	**0.99**	**49**	P	**Pg**	**11 59 45.8**	**-1.5**
GDZ				S	**Sn**	**12 00 02.5**	**+0.3**
DURS	**Dursunbey**	**1.16**	**358**	*i* P	**Pn**	**11 59 50.5**	**+0.1**
DURS				*i* S	**Sn**	**12 00 05.8**	**-0.4**
DURS	**Dursunbey**	**1.16**	**358**	P	**Pn**	**11 59 50.5**	**+0.1**
DURS				S	**Sn**	**12 00 05.8**	**-0.4**
TVSB	**Tavsanli**	**1.25**	**36**	*e*PN	**Pg**	**11 59 52.3**	**+0.1**
TVSB	**Tavsanli**	**1.25**	**36**	*e*Pn	**Pg**	**11 59 52.3**	**+0.1**

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*IDC **08** 12:09:44.4±1.3, 36°.99N×142°.81E, h0^{km}, mb3.7/5, mb1 3.8/7, mb1mx3.5/36, mbtmp3.7/7, ML3.3/2, MS3.3/3, Ms1 3.3/3, ms1mx2.6/61, Error ellipse: s-maj=28.0km s-min=21.7km az=89.0*

*ISCJB **08** 12:09:46.0±1.3, 37°.21N±0°.05×142°.59E±0°.10, h33^{km}±14^{km}, mb3.6/5, MS3.2/3, Error ellipse: s-maj=12.8km s-min=8.3km az=173.4*

*JMA **08** 12:09:46.5±0.4, 37°.40N×142°.44E, h11^{km}, M3.8*

ISC 08 12:09:46.5±2.2**, 37°.21N**±0°.05×**142°.39E**±0°.08**, h16**^{km}±11^{km}**, n18, σ1^{s}00**/21**, mb3.7**/5**, MS3.1**/3**, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**1.22**	**278**	P	**Pg**	**12 10 09.8**	**-0.3**
JFK				*e*S	**Sg**	**12 10 26.4**	**+0.4**
ONAJ	**Iwakimizuishiy**	**1.28**	**266**	P	**Pg**	**12 10 11.1**	**-0.1**
ONAJ				*e*S	**Sg**	**12 10 29.2**	**+1.3**
JMM	**Marumori**	**1.43**	**298**	P	**Pn**	**12 10 10.7**	**-1.1**
JMM				S	**Sn**	**12 10 29.9**	**-0.4**
JIO	**Ouri**	**1.49**	**327**	P	**Pn**	**12 10 12.2**	**-0.5**
JIO				*e*S	**Sn**	**12 10 30.4**	**-1.4**
JFT	**Otama**	**1.67**	**281**	P	**Pn**	**12 10 15.5**	**+0.4**
JFT				*e*S	**Sg**	**12 10 39.0**	**-1.2**
JOU	**Okura**	**1.79**	**311**	P	**Pn**	**12 10 16.3**	**-0.5**
JOU				*e*S	**Sn**	**12 10 38.3**	**-1.0**
JMK	**Ichinoseki**	**1.97**	**332**	P	**Pn**	**12 10 19.4**	**+0.2**
JYS	**Shirataka**	**2.10**	**299**	S	**Sn**	**12 10 47.3**	**+0.3**
MJAR	**Matsushiro Arr**	**3.42**	**260**	Pn	Pn	12 10 42.8	+3.5
	1.5nm,0.3s,baz=85,slow=15,SNR=4.2						
MJAR				Sn	**Sb**	**12 11 27.8**	**-0.3**
	0.7nm,0.3s,baz=161,slow=23,SNR=3.3						
JHJ	**Hachijo jima 2**	**4.61**	**208**	Pn	**Pn**	**12 10 54.8**	**-0.7**
	6.0nm,0.3s,baz=86,slow=16,SNR=3.9						
JHJ				Sn	**Sn**	**12 11 48.5**	**-0.3**
	12nm,0.3s,baz=53,slow=20,SNR=2.8						
YAK	**Yakutsk**	**26.07**	**346**	LR	LR	12 27 38.3	
	comp=Z,57nm,19.3s,baz=206,slow=41						
SONM	**Songino Array**	**28.34**	**303**	P	**P**	**12 15 42.2**	**+2.4**
	0.5nm,0.7s,baz=113,slow=9.6,SNR=3.0						
MKAR	**Makanchi Array**	**44.69**	**302**	P	P	12 18 03.7	+5.1
	0.2nm,0.2s,baz=79,slow=7.2,SNR=2.9						
AAK	**Ala-Archa**	**51.09**	**299**	LR	LR	12 42 28.5	
	comp=Z,41nm,18.8s,baz=58,slow=38						
INK	**Inuvik**	**53.87**	**27**	P	**P**	**12 19 08.4**	**0.0**
	1.7nm,1.1s,baz=236,slow=6.0,SNR=3.0						
FITZ	**Fitzroy Crossi**	**57.24**	**199**	LR	LR	12 41 13.8	
	comp=Z,17nm,19.7s,baz=80,slow=33						
WRA	**Warramunga Arr**	**57.35**	**189**	P	**P**	**12 19 32.7**	**-1.3**
	0.4nm,0.5s,baz=6.1,slow=7.0,SNR=7.5						
ASAR	**Alice Springs**	**61.08**	**189**	P	**P**	**12 19 59.8**	**0.0**
	0.9nm,1.0s,baz=1.0,slow=5.9,SNR=6.1						

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*NIED **08** 12:10:00, 37°.90N×143°.90E, h5^{km}, Mw4.2 Best double couple: $M_0$1.89000×10^{15} NP1:ϕ_s10.00000°, δ30.00000°, λ-93.00000°. NP2:ϕ_s193.00000°, δ60.00000°, λ-88.00000°.*

*IDC **08** 12:10:52.8±0.6, 37°.84N×143°.95E, h0^{km}, mb4.2/26, mb1 4.3/31, mb1mx4.3/43, mbtmp4.2/31, ML3.6/5, MS3.2/5, Ms1 3.2/5, ms1mx2.8/59, Error ellipse: s-maj=14.7km s-min=12.4km az=123.0*

*ISCJB **08** 12:10:53.9±1.2, 37°.90N±0°.03×143°.85E±0°.04, h16^{km}±9^{km}, mb4.3/43, MS3.7/1, Error ellipse: s-maj=6.1km s-min=4.5km az=142.3*

*NEIC **08** 12:10:54.6±0.3, 37°.88N×143°.96E, h10^{km}, mb4.6/11, Error ellipse: s-maj=6.8km s-min=5.1km az=133.0*

*JMA **08** 12:10:55.3±0.3, 37°.91N×143°.87E, h43^{km}, M4.5*

*MOS **08** 12:10:56.5±1.0, 37°.91N×143°.91E, h36^{km}, mb4.4/26, Error ellipse: s-maj=9.8km s-min=7.0km az=101.9*

ISC 08 12:10:57.0±1.0**, 37°.98N**±0°.05×**143°.87E**±0°.06**, h23**^{km}±6^{km}**, n108, σ1^{s}54**/115**, mb4.3**/43**, 7C-5D, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
JIO	**Ouri**	**2.04**	**284**	P	**Pn**	**12 11 28.7**	**-1.2**
JIO				S	**Sn**	**12 11 53.0**	**-1.6**
JMK	**Ichinoseki**	**2.30**	**296**	P	**Pn**	**12 11 32.3**	**-1.1**
JMK				S	**Sn**	**12 11 59.5**	**-1.4**
JOM	**Ohasama**	**2.51**	**307**	P	**Pn**	**12 11 35.8**	**-0.5**
JOM				*e*S	**Sn**	**12 12 05.2**	**-1.0**
JFT	**Otama**	**2.84**	**262**	P	**Pn**	**12 11 40.2**	**-0.6**
JFT				S	**Sn**	**12 12 12.9**	**-1.4**
JYK	**Kaneyama**	**2.91**	**290**	P	**Pn**	**12 11 41.3**	**-0.5**
JYK				S	**Sn**	**12 12 14.8**	**-1.3**
JANG	**Nango**	**3.01**	**323**	*e*S	**Sn**	**12 12 14.4**	**-4.2**
JAW	**Awa shima**	**3.67**	**279**	P	**Pn**	**12 11 53.0**	**+0.7**
JAG	**Ashikaga**	**3.85**	**248**	P	**Pn**	**12 11 53.4**	**-1.3**
JAG				S	**Sn**	**12 12 36.3**	**-3.0**
JOT	**Ohata**	**4.04**	**328**	P	**Pn**	**12 11 57.7**	**+0.4**
JOT				*e*S	**Sn**	**12 12 41.5**	**-2.4**
BSO1	**Boso 1**	**4.05**	**216**	S	**Sn**	**12 12 40.6**	**-2.9**
ERM	**Erimo**	**4.07**	**353** *d*	*i*P	**Pn**	**12 11 56.8**	**-0.9**
ERM	**Erimo**	**4.07**	**353**	*e*Pn	**Pn**	**12 11 56.9**	**-0.9**
ERM				*e*Sn	**Sn**	**12 12 43.4**	**-1.3**
JRY	**Ryogami san**	**4.43**	**245**	P	**Pn**	**12 12 01.4**	**-1.4**
JRY				*e*S	**Sn**	**12 12 48.8**	**-4.8**
JKB	**Kayabe**	**4.47**	**332**	P	**Pn**	**12 12 03.9**	**+0.6**
JKB				*e*S	**Sn**	**12 12 51.0**	**-3.6**
JCH	**Churui**	**4.65**	**355**	P	**Pn**	**12 12 04.7**	**-1.0**
JCH				*e*S	**Sn**	**12 12 54.7**	**-4.2**
JOD2	**Odawara 2**	**4.70**	**236**	P	**Pn**	**12 12 04.4**	**-2.1**
JOD2				*e*S	**Sn**	**12 12 55.2**	**-5.1**
MJAR	**Matsushiro Arr**	**4.74**	**254**	Pn	**Pn**	**12 12 07.1**	**+0.1**
	9.7nm,0.3s,baz=90,slow=15,SNR=19						
MJAR				Sn	**Sn**	**12 13 00.8**	**-0.4**
	3.5nm,0.3s,baz=95,slow=17,SNR=4.9						
MJAR				LR	LR	12 14 16.9	
	comp=Z,327nm,19.7s,baz=75,slow=43						
MAJO	**Matsushiro**	**4.74**	**254**⇓	*i*P	**Pn**	**12 12 07.9**	**+0.9**
MAJO	**Matsushiro**	**4.74**	**254**	*e*Pn	**Pn**	**12 12 07.4**	**+0.4**
MAT	**Matsushiro**	**4.74**	**254**	P	**Pn**	**12 12 06.6**	**-0.4**
MAT				*e*S	**Sn**	**12 13 01.1**	**-0.1**
JOSM	**Okushiri--Mats**	**5.31**	**322**	P	**Pn**	**12 12 14.6**	**-0.2**
NEM2	**Nemuro 2**	**5.57**	**14**	P	Pn	12 12 14.7	-3.6
NEM2				S	Sn	12 13 15.5	-6.1
JHJ2	**Mitsune**	**5.87**	**215**	*e*Pn	**Pn**	**12 12 20.1**	**-2.4**
JHJ2				*e*Sn	Sn	12 13 22.1	-7.0
JHJ	**Hachijo jima 2**	**5.88**	**216**	Pn	**Pn**	**12 12 20.2**	**-2.4**
	16nm,0.3s,baz=68,slow=18,SNR=3.5						
JHJ				Sn	Sn	12 13 22.1	-7.2
	33nm,0.3s,baz=81,slow=19,SNR=3.9						
YUK	**Yuzh-Kuril'sk**	**6.24**	**13**	*e*P	Pn	12 12 24.0	-3.5
YUK				*e*S	**Sn**	**12 13 32.5**	**-5.5**
YUK				pmax	pmax		
	comp=N,50nm,0.4s						
YUK				pmax	pmax		
	comp=E,48nm,0.4s						
YUK				pmax	pmax		
	comp=Z,157nm,0.4s						
SHO	**Shikotan**	**6.30**	**20**	*e*P	Pn	12 12 24.7	-3.7
SHO				*e*S	Sn	12 13 32.4	-7.2
SHO				pmax	pmax		
	comp=Z,71nm,0.4s						
SHO				pmax	pmax		
	comp=N,11nm,0.2s						
SHO				pmax	pmax		
	comp=E,22nm,0.4s						
KUR	**Kuril'sk**	**7.84**	**21**	*e*P	Pn	12 12 45.1	-4.5
KUR				*e*S	Sn	12 14 10.7	-6.9
KUR				pmax	pmax		
	comp=Z,21nm,0.9s						
KUR				smax	smax		
	comp=N,18nm,0.4s						
KUR				smax	smax		
	comp=E,44nm,0.4s						
YSS	**Yuzh-Sakhalins**	**9.01**	**355**	*e*P	**Pn**	**12 13 06.2**	**+0.6**
YSS	**Yuzh-Sakhalins**	**9.01**	**355**	*e*Pn	**Pn**	**12 13 06.2**	**+0.6**
USRK	**Ussuriysk Ar.**	**10.90**	**308**	Pn	**Pn**	**12 13 33.0**	**+1.5**
	comp=E,0.6nm,0.3s,baz=111,slow=14,SNR=14						
USRK				LR	LR	12 17 21.8	
	comp=E,146nm,21.9s,baz=106,slow=35						
CBIJ	**Chichi jima**	**10.94**	**188**	Pn	Pn	12 13 24.1	-8.0
CBIJ				Sn	Sn	12 15 20.6	-13
JCJ	**Chichijima**	**10.94**	**188**	Pn	Pn	12 13 24.1	-8.0
	comp=E,3.7nm,0.3s,baz=201,slow=14,SNR=3.3						
JCJ				Sn	Sn	12 15 20.6	-13
	comp=E,5.3nm,0.3s,baz=285,slow=20,SNR=3.3						
JCJ				LR	LR	12 21 02.0	
	comp=E,44nm,18.3s,baz=116,slow=56						
JNU	**Nakatsue**	**11.63**	**249**	LR	LR	12 18 39.4	
	comp=E,113nm,18.5s,baz=118,slow=40						
HABR	**Khabarovsk**	**12.30**	**331**	*e*P	Pn	12 13 47.3	-3.2
HABR				*e*S	Sn	12 16 00.5	-6.2
HABR				pmax	pmax		
	comp=Z,40nm,2.2s						
HABR				pmax	pmax		
	comp=N,27nm,2.2s						
HABR				pmax	pmax		
	comp=E,14nm,1.1s						
HABR				MLR	MLR		
	comp=Z,49nm,15.0s						
MDJ	**Mudanjiang**	**12.61**	**306**	*e*Pn	**Pn**	**12 13 55.6**	**+0.8**
	comp=Z,18nm,1.0s						
KSRS	**Korea Array**	**12.64**	**273**	Pn	**Pn**	**12 13 57.3**	**+2.0**
	comp=Z,0.4nm,0.3s,baz=89,slow=12,SNR=13						
KSRS				LR	LR	12 18 23.4	
	comp=Z,137nm,18.8s,baz=64,slow=35						
KSAR	**Wonju Array Be**	**12.67**	**272**	P	**Pn**	**12 13 57.3**	**+1.6**
KSAR	**Wonju Array Be**	**12.67**	**272**	Pn	**Pn**	**12 13 57.3**	**+1.6**
TYV	**Tymovskoe**	**12.91**	**357**	*e*P	Pn	12 13 54.5	-4.4
KLR	**Kul'dur**	**14.25**	**326**	Pn	**Pn**	**12 14 15.9**	**-1.2**
	comp=Z,0.2nm,0.3s,baz=135,slow=13,SNR=7.7						
KLR	**Kul'dur**	**14.25**	**326**	P	**Pn**	**12 14 16.0**	**-1.2**
PET	**Petropavlovsk**	**18.21**	**30**	*e*P	**Pn**	**12 15 07.9**	**-0.1**
PET	**Petropavlovsk**	**18.21**	**30**	*e*Pn	**Pn**	**12 15 07.9**	**-0.1**
MA2	**Magadan**	**22.07**	**9**	P	**P**	**12 15 51.1**	**+1.2**
	comp=Z,4.7nm,0.7s,baz=199,slow=9.2,SNR=6.7						
SEY	**Seymchan**	**25.52**	**9**	P	**P**	**12 16 24.3**	**+0.9**
	comp=Z,6.0nm,0.8s,baz=193,slow=8.0,SNR=19						
SEY	**Seymchan**	**25.52**	**9**⇓	*i*P	**P**	**12 16 24.5**	**+1.1**
YAK	**Yakutsk**	**25.63**	**345**	P	**P**	**12 16 24.8**	**+0.4**
	comp=Z,10nm,0.4s,baz=30,slow=0.9,SNR=6.5						
YAK	**Yakutsk**	**25.63**	**345**	*e*P	**P**	**12 16 23.9**	**-0.5**
YAK				pmax	pmax		
	comp=Z,15nm,0.8s						
YAK				pmax	pmax		
	comp=N,6.0nm,1.1s						
YAK				pmax	pmax		
	comp=E,2.0nm,0.9s						
BOD	**Bodaibo**	**27.82**	**325**	*e*P	**P**	**12 16 43.1**	**-1.1**
BOD				pmax	pmax		
	comp=Z,8.0nm,1.6s						
ULN	**Ulaanbaatar**	**28.47**	**302**⇑	*e*P	**P**	**12 16 50.6**	**+0.3**
ULN				pmax	pmax		
	comp=Z,8.0nm,1.2s						
ULN	**Ulaanbaatar**	**28.47**	**302**	*e*P	**P**	**12 16 51.5**	**+1.2**
	comp=Z,18nm,1.4s						
SONM	**Songino Array**	**28.91**	**302**	P	**P**	**12 16 55.1**	**+0.9**
	comp=Z,1.4nm,0.5s,baz=86,slow=9.0,SNR=9.6						
ENH	**Enshi**	**29.36**	**265**	*e*P	**P**	**12 16 59.5**	**+1.3**
	comp=Z,7.2nm,0.3s						
TLY	**Talaya**	**31.22**	**309**	*e*P	**P**	**12 17 16.7**	**+2.3**
TLY				pmax	pmax		
	comp=Z,3.0nm,0.9s						
TLY				MLR	MLR		
	comp=Z,120nm,16.0s						
ZAK	**Zakamensk**	**31.25**	**307**	*e*P	**P**	**12 17 14.1**	**-0.7**
ZAK				pmax	pmax		
	comp=Z,3.0nm,1.4s						
ZALV	**Zalesovo Beam**	**42.74**	**312**	P	**P**	**12 18 52.2**	**+0.1**
	comp=Z,0.6nm,0.3s,baz=81,slow=9.2,SNR=5.7						
NRIK	**Noril'sk**	**43.24**	**334**	P	**P**	**12 18 55.7**	**-0.3**
	comp=Z,2.0nm,0.4s,baz=136,slow=4.6,SNR=3.6						
CMAR	**Chiang Mai Arr**	**43.62**	**256**	P	**P**	**12 18 59.9**	**+0.2**
	comp=Z,0.5nm,0.4s,baz=49,slow=6.3,SNR=7.0						
CMAR	**Chiang Mai Arr**	**43.62**	**256** *c*	*e*P	**P**	**12 19 00.5**	**+0.8**
CMAR				pmax	pmax		
	comp=Z,1.0nm,0.5s						
MKAR	**Makanchi Array**	**45.28**	**302**	P	**P**	**12 19 12.7**	**0.0**
	comp=Z,2.4nm,0.7s,baz=83,slow=9.9,SNR=15						
MKAR	**Makanchi Array**	**45.28**	**302**	*i* P	**P**	**12 19 13.1**	**+0.4**
MKAR				pmax	pmax		
	comp=Z,2.0nm,0.7s						
KURK	**Kurchatov**	**46.89**	**308**	*e*P	**P**	**12 19 25.2**	**-0.1**
KURK				pmax	pmax		
	comp=Z,16nm,0.8s						
KURK	**Kurchatov**	**46.89**	**308**	*e*P	**P**	**12 19 25.2**	**-0.1**
	comp=Z,16nm,0.8s						
KURBB	**Kurchatov Arra**	**46.97**	**308**	P	**P**	**12 19 25.7**	**-0.1**
	comp=Z,2.7nm,0.5s,baz=81,slow=8.3,SNR=4.1						
COLA	**College**	**47.24**	**33**	*i* P	**P**	**12 19 29.4**	**+1.7**
ILAR	**Eielson Array**	**47.65**	**33**	P	**P**	**12 19 31.0**	**0.0**
	comp=Z,1.9nm,0.7s,baz=262,slow=6.4,SNR=14						
TKM2	**Tokmak 2**	**50.90**	**298**	*e*P	**P**	**12 19 57.4**	**+1.0**
TKM2				pmax	pmax		
	comp=Z,15nm,1.2s						
TKM2	**Tokmak 2**	**50.90**	**298**	*e*P	**P**	**12 19 57.4**	**+1.0**
	comp=Z,14nm,1.2s						
BRVK	**Borovoye**	**51.44**	**312**⇓	*i*P	**P**	**12 20 00.3**	**+0.3**
BRVK				pmax	pmax		
	comp=Z,5.0nm,1.7s						
AAK	**Ala-Archa**	**51.76**	**298**	P	**P**	**12 20 03.5**	**+0.7**
	comp=Z,0.9nm,0.4s,baz=87,slow=5.3,SNR=5.6						
AAK	**Ala-Archa**	**51.76**	**298**⇑	*i*P	**P**	**12 20 03.7**	**+0.9**
AAK				pmax	pmax		
	comp=Z,6.0nm,1.0s						
INK	**Inuvik**	**52.66**	**28**	P	**P**	**12 20 08.7**	**-0.1**
	comp=Z,1.5nm,0.7s,baz=302,slow=7.2,SNR=14						
INK	**Inuvik**	**52.66**	**28**	P	**P**	**12 20 08.7**	**-0.1**
INK				pmax	pmax		
	comp=Z,1.0nm,0.4s						
ARU	**Arti**	**56.95**	**319** *c*	*i*P	**P**	**12 20 40.1**	**0.0**
ARU						12 21 32.7	
ARU						12 22 42.0	
ARU				S	**S**	**12 28 31.9**	**-0.7**
ARU				SS	**SS**	**12 32 18.6**	**-1.9**
ARU				pmax	pmax		
	comp=Z,23nm,1.7s						
ARU	**Arti**	**56.95**	**319**	*e*P	**P**	**12 20 40.4**	**+0.3**
	comp=Z,22nm,1.3s						
WRAB	**Tennant Creek**	**58.29**	**191** *c*	*i*P	**P**	**12 20 49.1**	**-0.8**
WRAB				*i* *PP	**sP**	**12 20 59.7**	**-0.2**
WRAB				pmax	pmax		
	comp=Z,61nm,2.5s						
WRAB	**Tennant Creek**	**58.29**	**191**	*e*P	**P**	**12 20 48.4**	**-1.4**
	comp=Z,9.2nm,0.8s						
WRA	**Warramunga Arr**	**58.30**	**191**	P	**P**	**12 20 47.6**	**-2.4**
	comp=Z,8.9nm,0.7s,baz=10,slow=7.4,SNR=30						
ABKAR	**Akbulak array**	**58.82**	**310**	*e*P	**P**	**12 20 53.4**	**0.0**
	comp=Z,3.0nm,0.8s						
AKTO	**Aktyubinsk**	**59.49**	**312**	P	**P**	**12 20 58.2**	**+0.2**
	comp=Z,4.0nm,0.7s,baz=68,slow=11,SNR=7.0						
YKA	**Yellowknife Ar**	**62.01**	**31**	P	**P**	**12 21 14.9**	**+0.1**
	comp=Z,0.8nm,0.7s,baz=302,slow=6.7,SNR=17						
ASAR	**Alice Springs**	**62.02**	**190**	P	**P**	**12 21 14.2**	**-1.3**
	comp=Z,1.8nm,0.5s,baz=5.3,slow=6.9,SNR=26						
ARCES	**ARCESS Array B**	**63.80**	**340**	P	**P**	**12 21 26.4**	**-0.4**
	comp=Z,1.7nm,0.9s,baz=33,slow=9.2,SNR=5.9						
GEYT	**Alibeck**	**65.08**	**300**	P	**P**	**12 21 35.8**	**+0.2**
	comp=Z,1.7nm,0.4s,baz=79,slow=7.7,SNR=4.6						
OBN	**Obninsk**	**68.50**	**324**	⇓P	**P**	**12 21 57.7**	**+0.7**
OBN				pmax	pmax		
	comp=Z,6.0nm,0.8s						
FINES	**FINESS Array B**	**68.88**	**333**	P	**P**	**12 21 59.6**	**+0.3**
	comp=Z,3.7nm,0.6s,baz=46,slow=9.0,SNR=12						
STKA	**Stephens Creek**	**69.53**	**182**	P	**P**	**12 22 02.8**	**-0.8**
	comp=Z,1.4nm,0.6s,baz=13,slow=9.9,SNR=3.9						
KIV	**Kislovodsk**	**71.75**	**312** *c*	*e*P	**P**	**12 22 19.8**	**+2.4**
KIV				pmax	pmax		
	comp=Z,26nm,2.5s						
KBZ	**Khabaz**	**71.76**	**311**	P	**P**	**12 22 18.6**	**+1.3**
	comp=Z,4.5nm,1.0s,baz=19,slow=4.0,SNR=5.5						
FFC	**Flin Flon**	**71.85**	**34**	*e*P	**P**	**12 22 17.7**	**+0.1**
FFC				pmax	pmax		
	comp=Z,3.0nm,1.0s						
FFC	**Flin Flon**	**71.85**	**34**	*e*P	**P**	**12 22 17.7**	**+0.1**
	comp=Z,2.7nm,1.0s						
FCC	**Fort Churchill**	**72.28**	**28**	*e*P	**P**	**12 22 19.9**	**-0.2**
FCC				pmax	pmax		
	comp=Z,2.0nm,0.7s						
FCC	**Fort Churchill**	**72.28**	**28**	*e*P	**P**	**12 22 19.9**	**-0.2**
	comp=Z,2.0nm,0.7s						
NVAR	**Mina Array Bea**	**72.86**	**55**	P	**P**	**12 22 25.0**	**+0.8**
	comp=Z,0.5nm,0.7s,baz=297,slow=6.5,SNR=4.1						
H17A	**Grant Village**	**74.02**	**46**	*e*P	**P**	**12 22 33.1**	**+2.1**
	comp=Z,4.3nm,1.1s						
NOA	**NORSAR Array B**	**74.06**	**338**	P	**P**	**12 22 30.9**	**+0.2**
	comp=Z,1.5nm,0.8s,baz=36,slow=5.9,SNR=2.7						
DUG	**Dugway, Tooele**	**75.26**	**50**	*e*P	**P**	**12 22 37.2**	**-0.9**
DUG				pmax	pmax		
	comp=Z,1.0nm,0.6s						
DUG	**Dugway, Tooele**	**75.26**	**50**	*e*P	**P**	**12 22 37.2**	**-0.9**
	comp=Z,0.6nm,0.6s						
PDAR	**Pinedale Array**	**75.61**	**47**	P	**P**	**12 22 40.4**	**+0.1**
	comp=Z,0.8nm,0.6s,baz=251,slow=2.0,SNR=11						
VYHS	**Vyhne**	**81.04**	**327**	*e*P	**P**	**12 23 10.8**	**+0.9**
VYHS	**Vyhne**	**81.04**	**327**	*e*P	**P**	**12 23 10.8**	**+0.9**
CLL	**Collm**	**81.23**	**331**	*e*P	**P**	**12 23 11.0**	**+0.2**
CLL	**Collm**	**81.23**	**331**	*e*P	**P**	**12 23 11.0**	**+0.2**
GERES	**GERESS Array B**	**82.92**	**329**	P	**P**	**12 23 20.3**	**+0.5**
	comp=Z,1.0nm,0.7s,baz=22,slow=7.6,SNR=4.2						
BFO	**Black Forest**	**85.41**	**332** *c*	*e*P	**P**	**12 23 34.1**	**+1.7**
TXAR	**Lajitas Array**	**88.00**	**54**	P	**P**	**12 23 44.9**	**-0.6**
	comp=Z,0.3nm,0.6s,baz=278,slow=3.3,SNR=4.1						
VNA2	**Neumayer--Watz**	**143.75**	**196**	PKP	PKPab	12 30 25.8	0.0

Code	Station Name	Δ°	AZ°	Op	ISC	Time	Res
	baz=95,slow=1.6						
VNA3	Neumayer Olymp	143.97	194	PKP	PKPab	12 30 26.1	-0.5

SJA 08 12:19:19.1±1.0, 27°.98S×66°.69W, h178km±6km, ML3.0, MW3.5, Catamarca Province

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
ACLC	CERRO LA CRUZ	1.46	189	eP	Pn	12 19 51.8	+1.2
VCA	Vinchina	1.54	240	eP	Pn	12 19 52.4	+1.0
VCA				IAML		12 20 21.8	
	comp=Z,325nm,0.5s						
AHML	Horco Molle	1.69	46	eP	Pn	12 19 53.1	+0.2
AHML				IAML		12 20 17.7	
	comp=Z,35nm,0.4s						
FSA	Cafayete	1.97	19	eP	Pn	12 19 56.6	+0.7
AGUA	GUANDACOL	2.18	226	eP	Pn	12 19 59.0	+0.9
APLL	PUNTA DE LOS L	2.41	177	eP	Pn	12 20 02.0	+1.4
AVFE	Valle Fertil	2.75	194	eP	Pn	12 20 05.4	+0.7
AVFE				IAML		12 20 07.0	
	comp=Z,48nm,0.4s						
AMOG	MOGNA	3.34	208	eP	Pn	12 20 12.5	+0.6
SLA	San Lorenzo	3.42	18	eP	Pn	12 20 14.2	+1.3
SLA				IAML		12 20 58.0	
	comp=Z,11nm,1.1s						
RTLL	Cerro Villicun	3.68	205	eP	Pn	12 20 16.8	+0.6
AZAP	Zapla	4.01	22	eP	Pn	12 20 21.4	+0.8
AZAP				IAML		12 20 23.1	
	comp=Z,12nm,0.9s						
RTCV	Cerro Valdivia	4.19	202	eP	Pn	12 20 23.5	+0.9
RTLS	Leoncito	4.43	210	eP	Pn	12 20 26.4	+0.5
AUSP	Uspallata	4.83	208	eP	Pn	12 20 32.0	+0.9
ASAL	Salagasta	4.96	201	eP	Pn	12 20 33.1	+0.7
ARCO	CERRO ARCO	5.22	201	eP	Pn	12 20 36.5	+0.6

*IDC **08** 12:20:26.3±9.3, 32°.00N×86°.30E, h63km±83km, mb3.2/6, mb1 3.4/8, mb1mx3.2/51, mbtmp3.5/8, ML3.8/2, MS3.2/2, Ms1 3.2/2, ms1mx2.7/34, Error ellipse: s-maj=102.0km s-min=17.5km az=53.0*

ISC 08 12:20:24.2±1.4, 32°.1N±0°.3×86°.2E±0°.4, h35km, n9, σ1s.06/7, mb3.5/6, Xizang

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
MKAR	Makanchi Array	15.03	350	P	Pn	12 23 54.0	0.0
	0.1nm,0.3s,baz=145,slow=8.5,SNR=2.6						
MKAR				LR	LR	12 30 42.0	
	comp=Z,56nm,19.3s,baz=120,slow=41						
CMAR	Chiang Mai Arr	17.74	137	P	Pn	12 24 28.9	+0.4
	0.4nm,0.3s,baz=324,slow=12,SNR=12						
ZALV	Zalesovo Beam	21.91	358	P	P	12 25 14.2	-0.1
	0.2nm,0.3s,baz=188,slow=8.7,SNR=2.6						
BVAR	Borovoye Array	23.89	336	P	P	12 25 36.2	+1.8
	0.4nm,0.6s,baz=104,slow=6.1,SNR=3.3						
JNU	Nakatsue	37.43	76	LR	LR	12 44 41.4	
	comp=Z,54nm,20.0s,baz=301,slow=39						
FINES	FINESS Array B	48.22	326	P	P	12 29 00.7	-0.4
	1.3nm,0.7s,baz=96,slow=7.7,SNR=8.1						
NOA	NORSAR Array B	55.37	325	P	P	12 29 53.5	-1.0
	1.4nm,0.8s,baz=94,slow=13,SNR=2.3						
WRA	Warramunga Arr	69.25	131	P	P	12 31 27.7	-0.2
	0.4nm,0.7s,baz=325,slow=6.9,SNR=3.4						
ASAR	Alice Springs	71.74	134	P	P	12 31 40.0	-3.1
	0.3nm,0.7s,baz=318,slow=6.2,SNR=7.9						

*IDC **08** 12:29:12.8±1.4, 63°.55N×147°.47W, h0km, mb3.3/3, mb1 3.7/5, mb1mx3.5/52, mbtmp3.5/5, ML3.3/2, Error ellipse: s-maj=16.9km s-min=12.9km az=32.0*

*ISCJB **08** 12:29:13.4±0.7, 63°.56N±0°.02×147°.39W±0°.05, h8km±6km, mb3.6/2, Error ellipse: s-maj=3.8km s-min=3.3km az=177.7*

*NEIC **08** 12:29:14.1, 63°.54N×147°.40W, h8km, MW3.6, ML3.6(AEIC), Moment Tensor Solution. s24 Moment tensor: Scale 10^{14}Nm; M_{rr}1.55; $M_{\theta\theta}$-2.70; $M_{\phi\phi}$1.16; $M_{r\theta}$-0.76; $M_{\theta\phi}$-1.97; $M_{\phi r}$1.15; Best double couple: $M_0$3.40000×10^{14} NP1:ϕ_s284.00000°, δ65.00000°, λ147.00000°. NP2:ϕ_s30.00000°, δ60.00000°, λ29.00000°. Principal axes: T 3.1400, Plg41.0000°, Azm245.0000°; N 0.4100, Plg49.0000°, Azm72.0000°; P -3.5400, Plg3.0000°, Azm338.0000°; After AEIC.*

ISC 08 12:29:13.7±1.1, 63°.58N±0°.02×147°.40W±0°.02, h8km±8km, n56, σ0s.90/66, Central Alaska

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
DHY	Denali Highway	0.50	179	P	Pg	12 29 23.1	-0.3
DHY				S	Sg	12 29 29.5	-0.5
RND	Reindeer	0.67	256	P	Pg	12 29 26.9	+0.2
RND				S	Sg	12 29 35.9	+0.5
PS10	TAPS Pump St10	0.75	101	P	Pg	12 29 27.8	-0.3
PS10				S	Sg	12 29 37.8	-0.1
PS09	TAPS Pump Stn9	0.81	63	P	Pb	12 29 29.8	-0.2
PS09				S	Sg	12 29 40.5	+0.7
HDA	Harding Lake	0.86	13	P	Pb	12 29 31.2	+0.3
HDA				S	Sb	12 29 42.7	+0.2
WRH	Wood River Hil	0.95	342	P	Pb	12 29 32.8	+0.4
WRH				S	Sb	12 29 45.7	+0.6
PS08	TAPS Pump Stn8	1.00	15	P	Pn	12 29 33.8	-0.3
PS08				S	Sb	12 29 47.0	+0.3
PAX	Paxson	1.06	124	P	Pg	12 29 32.6	-1.6
PAX				S	Sg	12 29 46.8	-1.2
CCB	Clear Creek Bu	1.09	351	P	Pn	12 29 35.2	-0.1
HUR	Hurricane	1.18	240	P	Pb	12 29 35.6	-0.6
IL1	Eielson Array	1.22	10	P	Pb	12 29 37.0	-0.1
ILAR	Eielson Array	1.22	10	Pg	Pg	12 29 37.4	+0.2
	139nm,0.3s,baz=189,slow=16,SNR=2125						
ILAR				LR	LR	12 29 38.3	
	comp=Z,137nm,19.2s,baz=64,slow=20						
ILAR				Lg	Lg	12 29 53.4	
	207nm,0.3s,baz=190,slow=29,SNR=31						
ILB	Eielson Array	1.22	10	P	Pb	12 29 37.0	0.0
COLA	College	1.32	352	P	Pb	12 29 38.6	-0.1
MDM	Murphy Dome	1.44	346	P	Pn	12 29 40.2	+0.2
DOT	Dot Lake	1.49	86	P	Pn	12 29 41.0	+0.2
KTH	Kantishna Hill	1.58	271	P	Pn	12 29 42.1	+0.1
BPAW	Bear Paw Mtn.	1.67	290	P	Pn	12 29 43.0	-0.2
SCM	Sheep Creek Mo	1.75	179	P	Pn	12 29 44.4	0.0
CUT	Chulitna	1.76	229	P	Pn	12 29 44.2	-0.2
MENT	Mentasta	1.78	109	P	Pn	12 29 45.4	+0.6
SML	Sawmill	1.83	194	P	Pn	12 29 45.3	-0.1
MLY	Manley	2.06	317	P	Pn	12 29 48.8	+0.2
CAST	Castle Rocks	2.10	268	P	Pn	12 29 48.8	-0.4
PMR	Palmer	2.15	203	P	Pn	12 29 49.9	+0.2
KLU	Klutina	2.20	161	P	Pn	12 29 51.4	+0.8
CHUM	Lake Minchumin	2.21	280	P	Pn	12 29 50.4	-0.1
PPLA	Purkeypile	2.27	255	P	Pn	12 29 52.8	+1.2
PS06	TAPS Pump Stn6	2.50	337	P	Pn	12 29 55.4	+0.9
DIV	Divide	2.57	162	ePn	Pn	12 29 57.1	+1.4
DIV				eSg	Sb	12 30 32.8	+1.0
BCA3	Beaver Creek A	2.59	99	P	Pn	12 29 56.0	+0.2
RC01	Rabbit Creek A	2.72	205	P	Pn	12 29 59.1	+1.4
BMRM	Bremner River	2.93	152	P	Pn	12 30 02.0	+1.5
STLK	Strandline Lak	2.93	227	P	Pn	12 30 00.9	+0.4
EGAK	Eagle	2.99	63	P	Pn	12 30 01.9	+0.6
FYU	Fort Yukon	3.14	16	P	Pn	12 30 04.5	+1.2
SPU	Mount Spurr	3.23	224	P	Pn	12 30 05.8	+1.0
PS05	TAPS Pump Stn5	3.53	339	P	Pn	12 30 10.0	+1.3
DAWY	Dawson	3.58	79	P	Pn	12 30 10.0	+0.5
SEW	Seward	3.62	196	P	Pn	12 30 12.4	+2.5
IM3	Indian Mountai	3.64	314	P	Pn	12 30 10.8	+0.6
KHIT	Khitrov Hills	3.70	146	P	Pn	12 30 13.0	+1.7
COLD	Coldfoot	3.85	344	P	Pn	12 30 14.4	+1.3
TT01	Tatalina	3.96	264	P	Pn	12 30 14.2	-0.4
BM3	Burnt Mountain	4.03	16	P	Pn	12 30 16.7	+1.0
BRLK	Bradley Lake	4.17	205	P	Pn	12 30 20.0	+2.4
SVW2	Sparrevohn	4.55	241	P	Pn	12 30 22.6	-0.2
KDAK	Kodiak Island	6.34	206	Pn	Pb	12 31 02.7	-1.5
	0.6nm,0.3s,baz=57,slow=7.9,SNR=13						
KDAK	Kodiak Island	6.34	206	ePn	Pn	12 30 46.8	-0.5
KDAK				eSn	Sn	12 31 59.0	-0.9
INK	Inuvik	7.39	44	Pn	Pn	12 31 02.4	+0.8
	0.8nm,0.3s,baz=240,slow=12,SNR=52						
INK	Inuvik	7.39	44	ePn	Pn	12 31 02.0	+0.4
	3.8nm,0.4s						
INK				eSn	Sn	12 32 23.6	-1.8
YKA	Yellowknife Ar	14.83	79	Pn	Pn	12 32 43.1	-0.2
	0.1nm,0.3s,baz=284,slow=13,SNR=9.6						
RES	Resolute Bay	20.84	36	P	P	12 33 55.8	+0.4

Code	Station Name	Δ°	AZ°	Op	ISC	Time	Res
	0.4nm,0.6s,baz=259,slow=11,SNR=3.4						
TXAR	Lajitas Array	44.10	120	P	P	12 37 23.8	+1.7
	0.4nm,0.6s,baz=326,slow=7.6,SNR=6.0						
MKAR	Makanchi Array	63.20	324	P	P	12 39 40.6	-1.2
	0.3nm,0.3s,baz=29,slow=4.9,SNR=4.2						
BOSA	Boshof	144.71	11	PKP	PKPab	12 48 48.6	-0.6
	2.1nm,0.8s,baz=355,slow=7.1,SNR=3.5						

*ISCJB **08** 12:37:47.5±0.6, 35°.44N±0°.05×141°.26E±0°.08, h33km, mb3.8/13, MS3.0/1, Error ellipse: s-maj=9.3km s-min=7.0km az=3.1*

*JMA **08** 12:37:48.3±0.1, 35°.41N×141°.19E, h26km±2km, M3.4*

*IDC **08** 12:37:50.5±3.1, 35°.40N×141°.19E, h40km±26km, mb3.6/13, mb1 3.6/16, mb1mx3.5/70, mbtmp3.8/16, ML3.1/3, MS3.0/4, Ms1 3.0/4, ms1mx2.7/42, Error ellipse: s-maj=31.9km s-min=15.2km az=77.0*

ISC 08 12:37:49.3±0.8, 35°.38N±0°.05×141°.14E±0°.08, h33km, n31, σ1s.11/26, mb4.0/13, 1C-2D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
CHOJ	Chosi	0.40	325	⇑P	Pb	12 37 56.8	-1.5
CHOJ				S	Sb	12 38 02.9	-1.6
KTR	Katsuura	0.71	251	P	Pn	12 38 02.7	-0.3
KTR				eS	Sb	12 38 13.1	+0.3
BSO1	Boso 1	0.73	190	P	Pn	12 38 02.6	-0.3
BSO4	Boso 4	0.76	240	⇓P	Pn	12 38 03.6	0.0
BSO4				X		12 38 15.3	
JCN	Nagara	0.77	273	P	Pb	12 38 04.2	0.0
BSO3	Boso 3	0.77	222	⇓P	Pn	12 38 03.5	-0.1
BSO3				X		12 38 14.7	
JYT	Yasato	1.14	318	P	Pn	12 38 08.6	-0.3
JHJ	Hachijo jima 2	2.52	207	P	Pn	12 38 29.4	+1.5
	26nm,0.3s,baz=314,slow=21,SNR=16						
JHJ				S	Sn	12 38 53.7	-3.7
	28nm,0.3s,baz=60,slow=20,SNR=4.8						
MJAR	Matsushiro Arr	2.64	297	P	Pn	12 38 30.9	+1.3
	5.5nm,0.3s,baz=97,slow=14,SNR=23						
MJAR				LR	LR	12 39 43.2	
	comp=Z,206nm,19.7s,baz=110,slow=43						
KSRS	Korea Array	10.85	285	LR	LR	12 44 48.1	
	comp=Z,108nm,18.4s,baz=82,slow=38						
USRK	Ussuriysk Ar.	11.27	324	P	Pn	12 40 28.5	+0.6
	0.3nm,0.3s,baz=152,slow=13,SNR=3.3						
KLR	Kul'dur	15.47	336	LR	LR	12 47 12.7	
	comp=Z,44nm,19.4s,baz=138,slow=36						
H11N2	WAKE ISLAND Hy	27.54	118	T	T	13 12 38.5	
	baz=310,slow=76,SNR=42						
H11N1	WAKE ISLAND Hy	27.54	118	T	T	13 12 33.0	
	baz=310,slow=76,SNR=46						
H11N3	WAKE ISLAND Hy	27.55	118	T	T	13 12 37.8	
	baz=310,slow=76,SNR=47						
H11S1	WAKE ISLAND Hy	28.19	120	T	T	13 13 16.6	
	baz=312,slow=75,SNR=206						
H11S3	WAKE ISLAND Hy	28.19	120	T	T	13 13 16.0	
	baz=312,slow=75,SNR=158						
H11S2	WAKE ISLAND Hy	28.20	120	T	T	13 13 10.7	
	baz=312,slow=75,SNR=122						
SONM	Songino Array	28.56	307	P	P	12 43 42.8	+0.7
	0.7nm,0.6s,baz=100,slow=10.0,SNR=3.7						
TIXI	Tiksi	36.90	354	P	P	12 44 53.4	-1.0
	0.7nm,0.2s,baz=150,slow=6.3,SNR=4.1						
TIXI				LR	LR	13 02 03.0	
	comp=Z,29nm,20.5s,baz=192,slow=39						
ZALV	Zalesovo Beam	42.88	314	P	P	12 45 44.7	+0.4
	1.1nm,0.5s,baz=94,slow=6.6,SNR=7.3						
MKAR	Makanchi Array	44.83	303	P	P	12 46 00.3	+0.3
	0.8nm,0.6s,baz=89,slow=9.8,SNR=9.2						
KURBB	Kurchatov Arra	46.86	309	P	P	12 46 15.8	-0.2
	0.7nm,0.4s,baz=81,slow=7.5,SNR=8.3						
BVAR	Borovoye Array	51.53	313	P	P	12 46 52.5	+0.8
	0.3nm,0.4s,baz=56,slow=11,SNR=4.7						
WRA	Warramunga Arr	55.39	188	P	P	12 47 20.3	0.0
	0.8nm,0.4s,baz=5.6,slow=7.7,SNR=10.0						
ARU	Arti	57.46	319	P	P	12 47 34.8	+0.1
	1.2nm,0.3s,baz=249,slow=6.7,SNR=4.9						
ASAR	Alice Springs	59.12	188	P	P	12 47 47.3	+0.7
	0.4nm,0.8s,baz=15,slow=11,SNR=2.8						
AKTO	Aktyubinsk	59.62	313	P	P	12 47 51.1	+1.3
	0.5nm,0.4s,baz=108,slow=9.6,SNR=3.3						
YKA	Yellowknife Ar	65.35	30	P	P	12 48 28.4	+0.5
	0.1nm,0.7s,baz=302,slow=6.7,SNR=2.9						
ARCES	ARCESS Array B	65.47	340	P	P	12 48 29.0	+0.5
	0.9nm,0.7s,baz=46,slow=9.1,SNR=4.6						
FINES	FINESS Array B	70.17	332	P	P	12 48 58.1	-0.1
	1.2nm,0.7s,baz=74,slow=8.1,SNR=4.8						

*ISCJB **08** 12:37:58.8±0.4, 14°.23S±0°.05×166°.54E±0°.06, h43km, mb4.7/40, MS4.1/15, Error ellipse: s-maj=9.0km s-min=6.1km az=157.0*

*BJI **08** 12:37:59.8, 13°.75S×166°.27E, h11km, mb4.7/28, mB5.2/24, Ms5.0/9, Ms7 4.6/9*

*NEIC **08** 12:38:02.1±1.2, 14°.19S×166°.58E, h63km±11km, mb4.8/13, Error ellipse: s-maj=10.5km s-min=9.6km az=207.0*

*IDC **08** 12:38:03.2±3.7, 14°.32S×166°.61E, h72km±32km, mb4.2/17, mb1 4.3/19, mb1mx4.1/44, mbtmp4.5/19, ML3.2/2, MS4.0/15, Ms1 4.0/15, ms1mx3.8/28, Error ellipse: s-maj=20.0km s-min=17.6km az=80.0*

ISC 08 12:38:00.9±0.4, 14°.23S±0°.07×166°.55E±0°.06, h43km, n81, σ1s.81/82, mb4.6/40, MS4.2/15, 1C, Vanuatu Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
DZM	Mont Dzumac	7.80	181	P	Pn	12 39 51.6	-0.3
	3.4nm,0.3s,baz=141,slow=22,SNR=17						
DZM				S	Sn	12 41 19.9	+0.9
	baz=185,slow=23,SNR=1.4						
HNR	Honiara	8.04	306	P	Pn	12 39 54.5	-0.7
	13nm,0.3s,baz=234,slow=4.4,SNR=13						
HNR				S	Sn	12 41 24.3	-0.5
	3.2nm,0.3s,baz=119,slow=8.0,SNR=2.0						
HNR				LR	LR	12 43 00.5	
	comp=Z,1μm,20.8s,baz=160,slow=37						
HNR	Honiara	8.04	306	eP	Pn	12 39 53.0	-2.1
HNR				eS	Sn	12 41 16.0	-8.8
HNR	Honiara	8.04	306	ePn	Pn	12 39 54.2	-0.9
HNR				S	Sn	12 41 24.3	-0.5
HNR				eSn	Sn	12 41 25.3	+0.5
MSVF	Nonsavu	11.59	109	ePn	Pn	12 40 46.8	+2.9
MSVF				eSn	Sn	12 42 48.5	-3.6
PMG	Port Moresby	19.57	282	P	Pn	12 42 26.4	-0.6
	0.5nm,0.3s,baz=102,slow=7.0,SNR=24						
PMG				LR	LR	12 49 24.9	
	comp=Z,380nm,19.6s,baz=77,slow=35						
PMG	Port Moresby	19.57	282	eP	Pn	12 42 26.7	-0.3
	105nm,1.1s						
CTA	Charters Tower	20.24	250	P	Pn	12 42 34.1	-0.9
	32nm,1.1s,baz=84,slow=12,SNR=5.9						
CTAO	Charters Tower	20.24	250	eP	P	12 42 32.6	-0.1
	77nm,1.7s						
AFI	Afiamalu	21.02	92	P	P	12 42 45.8	+4.6
	29nm,0.8s,baz=158,slow=3.8,SNR=3.8						
AFI				LR	LR	12 48 41.2	
	comp=Z,626nm,20.3s,baz=280,slow=30						
ARMA	Armidale	21.18	218	eP	P	12 42 43.9	+1.1
	36nm,1.2s						
MANU	Manus Island	22.50	301	eP	P	12 42 57.5	+0.6
	45nm,1.1s						
COEN	Coen	22.68	268	eP	P	12 42 59.3	+0.4
	48nm,1.0s						
GENI	Genyem	28.50	292	P	P	12 43 55.4	+2.9
STKA	Stephens Creek	28.80	228	P	P	12 43 55.9	+0.9
	7.1nm,0.4s,baz=52,slow=9.7,SNR=45						
STKA				PcP	PcP	12 47 06.0	+1.9
	1.6nm,0.6s,baz=35,slow=2.9,SNR=3.3						
STKA				LR	LR	12 55 39.3	
	comp=Z,924nm,18.3s,baz=51,slow=37						
WRAB	Tennant Creek	31.27	255	eP	P	12 44 15.4	-1.6
	15nm,1.0s						
WRA	Warramunga Arr	31.28	255	P	P	12 44 15.7	-1.3
	12nm,1.0s,baz=85,slow=8.6,SNR=37						
WRA				PcP	PcP	12 47 12.0	+1.2
	1.0nm,0.8s,baz=89,slow=2.6,SNR=4.7						
WRA				LR	LR	12 56 01.7	
	comp=Z,497nm,21.1s,baz=75,slow=34						
ASAR	Alice Springs	32.21	248	P	P	12 44 23.9	-1.3
	6.6nm,0.8s,baz=74,slow=9.3,SNR=62						
ASAR				PcP	PcP	12 47 15.8	+2.5
	0.7nm,0.8s,baz=65,slow=2.4,SNR=4.2						
ASAR				LR	LR	12 56 55.0	
	comp=Z,383nm,19.5s,baz=73,slow=35						
FITZ	Fitzroy Crossi	39.43	259	P	P	12 45 26.2	-0.9
	11nm,1.1s,baz=106,slow=6.8,SNR=7.6						
FITZ	Fitzroy Crossi	39.43	259	eP	P	12 45 26.2	-0.9
	8.2nm,1.1s						
SANI	Sanana	41.85	283	P	P	12 45 48.4	+1.2
BATI	Baumata	42.07	270	P	P	12 45 49.6	+0.6
PPT2	Papeete2	42.26	101	eS	S	12 52 11.3	+2.9
	83nm,23.2s						
PPT2				eLR	LR	12 57 42.1	
	501nm,25.8s						
PPT	Papeete	42.26	101	LR	LR	13 02 01.8	
	comp=Z,154nm,18.1s,baz=289,slow=34						
TBI	Tubuai	42.48	109	eS	S	12 52 14.5	+3.0
	98nm,25.8s						
TBI				eLR	LR	12 57 44.4	
	523nm,24.8s						
KAPI	Kappang	46.96	276	P	P	12 46 27.7	-0.4
	3.4nm,0.5s,baz=130,slow=12,SNR=3.8						
PLAI	Plampang	48.02	271	P	P	12 46 36.7	+0.4
TWSI	Taliwang, Sumb	48.91	271	P	P	12 46 43.3	+0.2
	49nm,1.0s,532nm						
TAOE	Nuku Hiva Isla	52.41	90	eS	S	12 54 37.3	+4.3
	103nm,24.9s						
TAOE				eLR	LR	13 02 28.7	
	359nm,22.3s,baz=256						
KPJI	Karang Pucung	56.90	270	P	P	12 47 41.6	-0.5
MAJO	Matsushiro	57.15	333	eP	P	12 47 39.1	-4.3
	177nm,1.1s						
ERM	Erimo	59.98	340	eP	P	12 48 01.5	-1.4
	7.5nm,0.6s						
KSRS	Korea Array	62.94	326	P	P	12 48 21.9	-1.1
	1.8nm,0.8s,baz=137,slow=7.1,SNR=7.9						
KSAR	Wonju Array Be	62.95	326	P	P	12 48 21.9	-1.2
VNDA	Vanda	63.34	181	P	P	12 48 24.2	-0.9
	2.8nm,0.8s,baz=357,slow=6.3,SNR=9.9						
VNDA				LR	LR	13 11 57.9	
	comp=Z,29nm,19.9s,baz=322,slow=32						
SBA	Scott Base	63.63	180	eP	P	12 48 27.8	+0.7
	16nm,1.2s						
NJ2	Nanjing	64.84	316	eP	P	12 48 37.1	+1.4
NJ2				pmax	pmax		
	comp=Z,17nm,0.5s						
USRK	Ussuriysk Ar.	66.13	333	P	P	12 48 43.6	-0.2
	1.9nm,0.8s,baz=108,slow=8.7,SNR=4.8						
PETK	Petropavlovsk-	67.50	354	P	P	12 48 52.8	+0.5
	5.7nm,0.8s,baz=181,slow=8.2,SNR=6.3						
PETK				LR	LR	13 12 42.9	
	comp=Z,70nm,21.6s,baz=161,slow=31						
MDJ	Mudanjiang	67.52	332	P	P	12 48 56.4	+3.8
MDJ				pmax	pmax		
	comp=Z,4.0nm,1.3s						
MDJ				pmax	pmax		
	comp=Z,130nm,5.0s						
ENH	Enshi	70.52	310	eP	P	12 49 10.7	-0.9
	5.5nm,0.4s						
GYA	Guiyang	70.86	305	eP	P	12 49 17.0	+3.1
GYA				pmax	pmax		
	comp=Z,10.0nm,1.0s						
CMAR	Chiang Mai Arr	74.11	294	P	P	12 49 33.8	+0.5
	4.6nm,0.9s,baz=120,slow=4.4,SNR=30						
CMAR				LR	LR	13 23 46.7	
	comp=Z,25nm,18.5s,baz=155,slow=37						
CHTO	Chiang Mai	74.24	294	eP	P	12 49 33.8	-0.2
	7.0nm,1.0s						
MA2	Magadan	74.66	352	P	P	12 49 35.6	+0.1
	2.4nm,0.7s,baz=206,slow=5.7,SNR=3.5						
HHC	Hu-ho-hao-te	74.76	320	eP	P	12 49 41.4	+4.7
HHC				PP	PP	12 52 22.5	-2.0
HHC				S	S	12 59 18.7	+8.5
HHC				ScS	ScS	12 59 47.3	+2.1
HHC				pmax	pmax		
	comp=Z,19nm,1.3s						
HHC				pmax	pmax		
	comp=Z,85nm,3.1s						
HHC				LR	LR		
	comp=N,150nm,13.7s						
HHC				LR	LR		
	comp=E,120nm,12.4s						
HHC				LR	LR		
	comp=Z,140nm,12.4s						
CD2	Chengdu	75.16	308	P	P	12 49 41.4	+2.3
CD2				pmax	pmax		
	comp=Z,10.0nm,0.6s						
QSPA	South Pole Qui	75.79	180	eP	P	12 49 41.4	-0.9
	55nm,1.0s						
LZH	Lanzhou	77.47	312	eP	P	12 49 58.0	+5.7
LZH				pP	pP	12 50 04.2	-0.9
LZH				sP	sP	12 50 06.3	-3.7
LZH				pmax	pmax		
	comp=Z,35nm,1.1s						
LZH				pmax	pmax		
	comp=Z,160nm,4.8s						
SEY	Seymchan	77.71	353	P	P	12 49 53.5	+0.7
	4.6nm,0.7s,baz=157,slow=5.9,SNR=25						
ULN	Ulaanbaatar	81.33	324	eP	P	12 50 12.1	-0.9
	4.4nm,0.8s						
SONM	Songino Array	81.69	324	P	P	12 50 14.1	-0.8
	1.1nm,0.8s,baz=126,slow=6.7,SNR=4.5						
GTA	Gaotai	81.82	314	⇑P	P	12 50 15.8	0.0
GTA				pP	PcP	12 50 19.7	-1.7
GTA				sP	pP	12 50 22.5	-6.2
GTA				S	S	13 00 28.4	+2.2
GTA				SKS	SKSac	13 00 32.2	-0.5
GTA				sS	SKKSac	13 00 35.7	-0.1
GTA				pmax	pmax		
	comp=Z,5.0nm,1.1s						
GTA				pmax	pmax		
	comp=Z,220nm,5.2s						
GTA				LR	LR		
	comp=N,75nm,16.2s						
GTA				LR	LR		
	comp=E,150nm,17.1s						
GTA				LR	LR		
	comp=Z,120nm,17.6s						
MAW	Mawson	82.08	202	LR	LR	13 22 24.8	
	comp=Z,95nm,19.6s,baz=62,slow=32						
ILAR	Eielson Array	86.27	18	P	P	12 50 34.2	-3.5
	1.5nm,0.8s,baz=228,slow=5.7,SNR=16						
ILAR				LR	LR	13 24 40.1	
	comp=Z,112nm,18.8s,baz=246,slow=32						
NVAR	Mina Array Bea	87.47	49	P	P	12 50 42.9	-1.5
	0.9nm,0.9s,baz=232,slow=10,SNR=4.5						
NVAR				LR	LR	13 22 18.8	
	comp=Z,309nm,19.9s,baz=256,slow=30						
WMQ	Urumqi	91.89	315	eP	P	12 51 08.2	+3.4
WMQ				pP	pP	12 51 13.3	-4.6
WMQ				sP	sP	12 51 15.5	-7.2
WMQ				pmax	pmax		
	comp=Z,3.0nm,0.6s						
WMQ				pmax	pmax		
	comp=Z,94nm,6.6s						
SNAA	Sanae	94.00	183	P	P	12 51 07.2	-7.0
SNAA	Sanae	94.00	183	eP	P	12 51 13.2	-0.9
	590nm,1.3s						
VNA3	Neumayer Olymp	94.70	181	P	P	12 51 15.1	-2.2
VNA2	Neumayer--Watz	94.95	182	P	P	12 51 16.6	-1.9
	baz=177,slow=4.1						
PDAR	Pinedale Array	95.12	47	LR	LR	13 28 37.0	
	comp=Z,71nm,18.2s,baz=248,slow=32						
MKAR	Makanchi Array	96.37	317	P	P	12 51 24.4	-0.9
	1.9nm,0.8s,baz=97,slow=6.2,SNR=11						
ZALV	Zalesovo Beam	96.58	324	P	P	12 51 24.2	-1.8
	0.4nm,0.3s,baz=120,slow=5.8,SNR=4.6						
ZALV				LR	LR	13 37 35.0	
	comp=Z,27nm,18.1s,baz=70,slow=37						
YKA	Yellowknife Ar	97.42	27	P	P	12 51 25.7	-3.9
	0.3nm,0.9s,baz=258,slow=4.8,SNR=5.2						
KSH	Kashi	99.35	308	eP	Pdif	12 51 42.1	+3.1
KSH				epP	pP	12 51 47.4	-4.7
KSH				ePP	PP	12 55 46.9	+4.2
KSH				SKS	SKSac	13 02 18.9	+4.6
KSH				S	S	13 03 09.5	+1.4
KSH				pmax	pmax		
	comp=Z,110nm,4.5s						
KSH				LR	LR		
	comp=N,95nm,4.6s						
KSH				LR	LR		
	comp=E,130nm,5.6s						
KSH				LR	LR		
	comp=Z,310nm,5.2s						
ARCES	ARCESS Array B	119.60	345	PKP	PKPdf	12 56 42.6	-2.9
	4.7nm,0.7s,baz=40,slow=1.2,SNR=15						
FINES	FINESS Array B	125.00	338	PKP	PKPdf	12 56 54.4	-1.7
	4.3nm,0.9s,baz=72,slow=4.5,SNR=8.5						
NOA	NORSAR Array B	129.96	345	PKP	PKPdf	12 57 03.6	-2.1
	1.3nm,0.7s,baz=336,slow=1.9,SNR=4.1						
DPC	Dobruska-Polom	136.62	332	ePKPdf	PKPdf	12 57 20.8	+2.3

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
PVCC	Panska Ves	137.26	334	ePKPdf	PKPdf	12 57 22.7	+3.1
KHC	Kasperske Hory	138.73	333	ePKPdf	PKPdf	12 57 24.3	+1.9
GERES	GERESS Array B	138.89	333	PKP	PKPdf	12 57 19.3	-3.5
	0.3nm,0.2s,baz=32,slow=1.8,SNR=2.7						
KEST	Kesra	150.39	320	PKPbc	PKPbc	12 57 47.1	-1.1
	10nm,0.8s,baz=330,slow=1.3,SNR=13						
CMAH	Djebel Manchou	150.93	324	P	PKPdf	12 57 46.1	+2.3
ABSA	Djebel Ababsia	151.14	323	P	PKPbc	12 57 48.1	-1.9
CKFL	Kef-Lekhel	151.49	324	P	PKPbc	12 57 50.1	-0.7
DFRA	Djebel Bou Aff	151.85	326	P	PKPbc	12 57 51.3	-0.4
CKHR	Kef el Ahmar	152.44	325	P	PKPbc	12 57 50.0	-3.0
ESDC	Sonseca Array	153.32	344	PKPbc	PKPbc	12 57 53.3	-1.5
	1.2nm,0.6s,baz=16,slow=2.5,SNR=8.6						
ESDC				PKPab	PKPab	12 58 06.1	-0.5
	1.9nm,0.7s,baz=11,slow=3.8,SNR=7.1						
TORD	Torodi Ar. Bea	165.25	268	PKP	PKPdf	12 57 59.7	-1.9
	1.0nm,0.7s,baz=78,slow=0.4,SNR=6.7						
TORD				PKPab	PKPab	12 58 58.5	-0.7
	1.3nm,0.9s,baz=153,slow=2.9,SNR=4.9						

*ATH **08** 12:46:24.2, 35°.62N×21°.87E, h8km±3km, ML3.3/4, Error ellipse: s-maj=4.9km s-min=1.4km az=30.0*
*CSEM **08** 12:46:26.5±0.5, 35°.70N×21°.97E, h2km, ML3.5, Error ellipse: s-maj=10.7km s-min=4.9km az=34.0*
*THE **08** 12:46:27.1, 35°.76N×21°.98E, h0km±2km, ML3.5/2, Error ellipse: s-maj=2.2km s-min=0.6km az=249.0*
*IDC **08** 12:46:29.7±3.3, 35°.73N×21°.99E, h40km±36km, mb3.4/8, mb1 3.5/9, mb1mx3.3/52, mbtmp3.6/9, ML2.9/1, MS2.6/3, Ms1 2.7/3, ms1mx2.4/34, Error ellipse: s-maj=31.8km s-min=17.8km az=169.0*
ISC 08 12:46:25.9±1.5, **35°.71N**±0°.05×**21°.92E**±0°.04, **h11**km±9km, **n44**, σ**0s.96**/50, **mb3.7**/7, **Central Mediterranean Sea**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
KYTH	Kithira	1.07	57	P	Pg	12 46 46.1	-0.3
KYTH				S	Sb	12 47 00.9	+0.5
KYTH	Kithira	1.07	57	P	Pg	12 46 46.2	-0.2
KYTH				S	Sb	12 47 00.9	+0.5
KYTH	Kithira	1.07	57	P	Pg	12 46 46.2	-0.2
ANKY	Antikythira Is	1.13	82	P	Pg	12 46 47.5	-0.2
ANKY				S	Sn	12 47 03.4	+0.2
ANKY	Antikythira Is	1.13	82	P	Pg	12 46 47.5	-0.2
ANKY				S	Sn	12 47 03.2	0.0
ANKY	Antikythira Is	1.13	82	P	Pg	12 46 46.8	-0.8
ANKY				S	Sn	12 47 03.2	0.0
ANKY				AML	AML	12 47 14.0	
	comp=E,4122μm,0.8s						
ANKY				AML	AML	12 47 15.8	
	comp=N,3363μm,0.8s						
PYL	PYLOS	1.19	353	P	Pn	12 46 48.7	+0.2
PYL	PYLOS	1.19	353	P	Pn	12 46 48.7	+0.2
PYL				S	Sn	12 47 05.6	+0.9
PYL	PYLOS	1.19	353	P	Pb	12 46 48.0	-0.4
PYL				S	Sn	12 47 05.6	+0.9
PYL				AML	AML	12 47 14.1	
	comp=E,1846μm,0.8s						
PYL				AML	AML	12 47 15.4	
	comp=N,1756μm,0.6s						
VLI	Veliai	1.30	39	P	Pg	12 46 50.5	-0.3
VLI	Veliai	1.30	39	P	Pg	12 46 50.5	-0.3
VLI	Veliai	1.30	39	P	Pn	12 46 49.9	0.0
ITM	Ithomi	1.47	0	P	Pb	12 46 53.3	+0.1
ITM	Ithomi	1.47	0	P	Pb	12 46 53.3	+0.1
ITM	Ithomi	1.47	0	P	Pg	12 46 53.5	-0.5
ITM				S	Sg	12 47 20.4	+7.3
ITM				AML	AML	12 47 22.2	
	comp=N,1113μm,0.4s						
ITM				AML	AML	12 47 27.9	
	comp=E,1573μm,0.9s						
IMMV	Iera Moni Meta	1.70	98	P	Pb	12 46 56.6	-0.5
IMMV	Iera Moni Meta	1.70	98	P	Pb	12 46 56.6	-0.5
IMMV				S	Sg	12 47 21.6	+1.1
IMMV	Iera Moni Meta	1.70	98	P	Pb	12 46 56.8	-0.3
IMMV				S	Sg	12 47 21.6	+1.1
IMMV				AML	AML	12 47 33.9	
	comp=E,1372μm,0.6s						
IMMV				AML	AML	12 47 37.6	
	comp=N,1364μm,0.9s						
VLX	Vlachokerasia	1.70	12	P	Pg	12 46 57.9	-0.5
VLX	Vlachokerasia	1.70	12	P	Pg	12 46 57.9	-0.5
AMT	Artemida-Makis	1.83	355	P	Pg	12 47 00.1	-0.8
AMT	Artemida-Makis	1.83	355	P	Pg	12 47 00.1	-0.8
VAM	Vamos	1.88	99	P	Pb	12 46 59.5	-0.7
VAM	Vamos	1.88	99	P	Pb	12 46 59.5	-0.7
MHLO	Agia Marina, M	2.23	63	P	Pn	12 47 02.7	-0.1
MHLO	Agia Marina, M	2.23	63	P	Pn	12 47 02.7	-0.1
IDI	Anoyia	2.46	99	P	Pn	12 47 06.9	+0.9
	comp=N,2.7nm,0.3s,baz=176,slow=16,SNR=11						
IDI	Anoyia	2.46	99	P	Pn	12 47 06.8	+0.9
KFL	Anninata	2.56	340	P	Pb	12 47 09.8	-2.0
KFL	Anninata	2.56	340	P	Pb	12 47 09.8	-2.0
VLS	Valsamata	2.68	337	P	Pn	12 47 10.6	+1.6
DSL	Palaion Diasel	3.48	349	P	Pn	12 47 22.8	+2.8
DSL	Palaion Diasel	3.48	349	P	Pn	12 47 22.8	+2.8
MLR	Muntele Rosu	10.24	16	LR	LR	12 53 50.6	
	comp=N,24nm,18.2s,baz=52,slow=43						
MMAI	Mount Meron Ar	11.46	100	LR	LR	12 56 12.9	
	comp=N,16nm,19.2s,baz=290,slow=51						
ESDC	Sonseca Array	20.84	289	P	P	12 51 08.9	+1.3
	comp=N,0.2nm,0.2s,baz=88,slow=12,SNR=3.1						
MDT	Midelt	22.10	270	P	P	12 51 21.8	+0.6
	comp=N,1.3nm,0.7s,baz=87,slow=11,SNR=4.3						
EKA	Eskdalemuir Ar	26.09	327	P	P	12 51 59.0	-0.3
	comp=N,1.8nm,0.8s,baz=125,slow=10,SNR=4.4						
TORD	Torodi Ar. Bea	28.93	224	P	P	12 52 25.2	+0.1
	comp=N,0.5nm,0.7s,baz=35,slow=8.6,SNR=3.7						
ARCES	ARCESS Array B	33.94	2	P	P	12 53 07.9	-0.8
	comp=N,1.1nm,0.5s,baz=186,slow=8.5,SNR=13						
DBIC	Dimbokro	37.93	227	LR	LR	13 10 14.7	
	comp=N,24nm,18.1s,baz=40,slow=38						
MKAR	Makanchi Array	45.68	57	P	P	12 54 45.6	-1.0
	comp=N,1.1nm,0.4s,baz=270,slow=7.8,SNR=20						
SONM	Songino Array	61.17	50	P	P	12 56 39.7	-0.8
	comp=N,0.4nm,0.7s,baz=277,slow=5.7,SNR=2.9						
YKA	Yellowknife Ar	76.09	341	P	P	12 58 13.3	+0.2
	comp=N,0.1nm,0.7s,baz=30,slow=5.2,SNR=2.7						

*ISCJB **08** 12:46:38.3±0.4, 35°.24N±0°.02×92°.39W±0°.02, h3km±3km, Error ellipse: s-maj=3.4km s-min=3.1km az=144.9*
*NEIC **08** 12:46:39.0, 35°.24N×92°.37W, h6km, MD2.6(CERI), After CERI.*
NEIC Felt [II] at Greenbrier. Also felt at Vilonia.
ISC 08 12:46:38.6±0.8, **35°.24N**±0°.02×**92°.39W**±0°.02, **h6**km±6km, **n29**, σ**0s.66**/47, **Arkansas**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
X201	Greenbrier Sit	0.06	19	ePg	Pg	12 46 40.2	+0.1
X201				eSg	Sg	12 46 41.6	+0.3
WHAR	Wooly Hollow	0.09	58	ePg	Pg	12 46 40.8	0.0
WHAR				eSg	Sg	12 46 42.4	+0.2
W41B	Gary Mavity, V	0.13	121	P	Pg	12 46 41.2	-0.1
	baz=303						
W41B				S	Sg	12 46 43.2	0.0
	baz=303						
UALR	University of	0.47	176	ePg	Pg	12 46 48.3	+0.7
UALR				eSg	Sg	12 46 53.8	+0.2
W40A	Ferguson Farm,	0.56	265	P	Pg	12 46 49.6	+0.2
	baz=85,SNR=13						
V40A	Witts Springs	0.67	328	P	Pg	12 46 51.3	-0.2
	baz=147,SNR=54						
V40A				S	Sg	12 47 00.2	+0.1
	baz=147						
X40A	Basin Creek Fa	0.84	206	P	Pg	12 46 54.5	-0.2
	baz=27						
W39A	Magazine	1.15	268	P	Pb	12 47 00.3	-0.4
	baz=88,SNR=6.2						
W39A				S	Sb	12 47 16.0	+0.1
	baz=88						
U40A	Yellville	1.18	341	P	Pb	12 47 00.4	-0.9
	baz=160,SNR=52						
V39A	Pettigrew	1.19	301	P	Pb	12 47 00.8	-0.8
	baz=120						
V39A				S	Sb	12 47 16.5	-0.7
	baz=120						
MIAR	Mount Ida	1.20	235	Pg	Pn	12 47 01.3	-0.5
	baz=55						
MIAR				S	Sb	12 47 17.5	0.0
	baz=55						
MIAR	Mount Ida	1.20	235	ePg	Pn	12 47 01.3	-0.5
MIAR				eSg	Sg	12 47 18.0	+0.8
Y40A	Okolona	1.43	211	Pg	Pn	12 47 05.2	+0.2
	baz=31						
Y40A				Sb	Sb	12 47 24.2	+0.2
	baz=31						
U39A	Green Forest	1.45	322	Pb	Pn	12 47 05.1	-0.2
	baz=141,SNR=19						
U39A				S	Sn	12 47 24.1	-0.5
	baz=141						
X39A	Fountain Ranch	1.60	243	Pb	Pn	12 47 08.0	+0.7
	baz=63,SNR=41						
X39A				Sb	Sb	12 47 28.9	+0.1
	baz=63						
HHAR	Hobbs	1.64	310	ePn	Pb	12 47 09.0	-0.2
HHAR				eSn	Sb	12 47 30.1	0.0
W38A	Poteau	1.76	265	Sb	Sb	12 47 34.4	+1.0
	baz=84						
V38A	Canehill	1.76	291	Pb	Pn	12 47 10.3	+0.7
	baz=110,SNR=30						
V38A				Sb	Sb	12 47 33.9	+0.3
	baz=110						
T40A	Mansfield	1.91	357	Pb	Pn	12 47 12.7	+1.1
	baz=176,SNR=19						
T40A				Sb	Sb	12 47 38.1	+0.2
	baz=176						
T39A	Clever	1.95	336	Pb	Pn	12 47 13.4	+1.2
	baz=155,SNR=20						
T39A				Sb	Sb	12 47 39.7	+0.5
	baz=155						
U38A	Gravette	2.02	307	Pb	Pn	12 47 14.3	+1.2
	baz=126,SNR=20						
X38A	Whitesboro	2.09	255	Pb	Pb	12 47 16.0	-0.8
	baz=74,SNR=17						
PBMO	Poplar Bluff	2.21	45	ePn	Pn	12 47 16.7	+1.0
PBMO				eSn	Sb	12 47 46.9	+0.4
V37A	Hulbert	2.34	287	Sb	Sb	12 47 48.9	-1.2
	baz=105						
S40A	Lebanon	2.36	358	Pb	Pb	12 47 19.7	-1.7
	baz=177,SNR=9.1						
EBZ	Ebenezer Churc	2.49	91	eSn	Sn	12 47 50.9	+0.7
U37A	Salina	2.51	298	P	Pn	12 47 20.7	+0.9
	baz=117,SNR=6.2						
OXF	Oxford	2.55	106	eSn	Sb	12 47 55.9	-0.4
PLAL	Pickwick Lake	3.54	93	ePn	Pn	12 47 34.2	+0.2
PLAL				eSn	Sn	12 48 15.9	-0.3

*NIED **08** 12:46:00, 37°.60N×141°.90E, h47km, Mw3.9 Best double couple: M0 6.97000×10^14 NP1:φs52.00000°, δ10.00000°, λ126.00000°. NP2:φs195.00000°, δ82.00000°, λ84.00000°.*
*ISCJB **08** 12:46:49.0±0.9, 37°.61N±0°.04×141°.95E±0°.09, h55km±7km, mb3.9/13, MS3.8/2, Error ellipse: s-maj=11.7km s-min=5.9km az=10.1*
*JMA **08** 12:46:49.7±0.1, 37°.63N×141°.92E, h40km±3km, M4.1*
JMA Felt II J1.
*IDC **08** 12:46:52.2±2.6, 37°.63N×141°.88E, h67km±24km, mb3.6/13, mb1 3.8/17, mb1mx3.6/56, mbtmp3.9/17, MS3.2/5, Ms1 3.2/5, ms1mx2.8/44, Error ellipse: s-maj=21.5km s-min=15.4km az=70.0*
ISC 08 12:46:49.7±1.7, **37°.65N**±0°.04×**142°.02E**±0°.09, **h43**km±16km, **n39**, σ**1s.42**/41, **mb4.0**/13, **Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
JFK	Kawauchi	0.95	253	P	Pn	12 47 05.6	-1.0
JFK				S	Sn	12 47 17.1	-1.9
JIO	Ouri	0.96	327	P	Pn	12 47 06.6	-0.1
JIO				S	Sn	12 47 18.1	-1.1
JMM	Marumori	0.99	283	P	Pn	12 47 06.4	-0.7
JMM				S	Sn	12 47 18.2	-1.8
ONAJ	Iwakimizuishiy	1.11	241	P	Pn	12 47 07.9	-1.0
ONAJ				S	Sn	12 47 21.0	-2.0
JOU	Okura	1.29	304	P	Pn	12 47 11.0	-0.2
JOU				S	Sn	12 47 26.8	-0.4
JFT	Otama	1.34	265	P	Pn	12 47 12.0	+0.1
JFT				S	Sn	12 47 28.1	-0.5
JMK	Ichinoseki	1.44	335	P	Pn	12 47 13.7	+0.4
JMK				S	Sn	12 47 31.5	+0.5
JYS	Shirataka	1.65	291	P	Pn	12 47 16.2	+0.1
JYS				S	Sn	12 47 36.5	+0.5
JYK	Kaneyama	1.82	315	P	Pn	12 47 18.7	+0.2
JFY	Yanaizu	1.85	263	P	Pn	12 47 19.0	0.0
JOM	Ohasama	1.91	343	P	Pn	12 47 20.4	+0.7
MJAR	Matsushiro Arr	3.24	251	P	Pn	12 47 38.8	+0.8
	6.7nm,0.3s,baz=82,slow=17,SNR=31						
MJAR				S	Sn	12 48 20.3	+5.0
	6.1nm,0.3s,baz=324,slow=25,SNR=5.6						
MJAR				LR	LR	12 49 08.2	
	comp=Z,126nm,20.8s,baz=80,slow=44						
MAT	Matsushiro	3.24	251	P	Pn	12 47 38.2	+0.2
MAT				eS	Sn	12 48 18.8	+3.4
JHJ	Hachijo jima 2	4.87	203	P	Pn	12 48 01.5	+1.0
	11nm,0.3s,baz=336,slow=20,SNR=12						
JHJ				S	Sn	12 48 53.9	-1.7
	40nm,0.3s,baz=80,slow=22,SNR=6.7						
USRK	Ussuriysk Ar.	10.02	314	P	Pn	12 49 12.2	+1.3
	0.7nm,0.3s,baz=120,slow=14,SNR=9.7						
JNU	Nakatsue	10.15	247	LR	LR	12 53 19.7	
	comp=Z,75nm,19.7s,baz=294,slow=39						
KSRS	Korea Array	11.19	273	P	Pn	12 49 29.8	+2.8
	0.3nm,0.3s,baz=83,slow=14,SNR=5.7						
KSRS				LR	LR	12 53 26.3	
	comp=Z,55nm,18.7s,baz=116,slow=36						
SONM	Songino Array	27.85	303	P	P	12 52 34.7	-0.4
	3.0nm,0.8s,baz=97,slow=8.8,SNR=11						
H11N2	WAKE ISLAND Hy	28.06	123	T	T	13 22 13.7	
	baz=311						
H11N1	WAKE ISLAND Hy	28.07	123	T	T	13 22 20.0	
	baz=311,slow=74						
H11N3	WAKE ISLAND Hy	28.08	123	T	T	13 22 20.7	
	baz=311,slow=74						
H11S1	WAKE ISLAND Hy	28.80	125	T	T	13 23 06.2	
	baz=316,slow=76						
H11S3	WAKE ISLAND Hy	28.80	125	T	T	13 23 08.1	
	baz=316,slow=76						
H11S2	WAKE ISLAND Hy	28.82	125	T	T	13 23 09.2	
	baz=316,slow=76						
ZALV	Zalesovo Beam	41.86	312	P	P	12 54 34.7	-0.6
	1.2nm,0.4s,baz=90,slow=8.9,SNR=5.7						
MKAR	Makanchi Array	44.20	302	P	P	12 54 54.0	-0.5
	0.8nm,0.6s,baz=80,slow=7.5,SNR=5.3						
KURBB	Kurchatov Arra	46.01	308	P	P	12 55 08.0	-0.7
	6.1nm,0.4s,baz=81,slow=7.9,SNR=41						
ILAR	Eielson Array	48.72	33	P	P	12 55 28.9	-0.6
	0.3nm,0.5s,baz=270,slow=6.9,SNR=3.1						
BVAR	Borovoye Array	50.52	312	P	P	12 55 42.2	-1.2
	0.6nm,0.4s,baz=73,slow=7.0,SNR=4.7						
ARU	Arti	56.22	318	P	P	12 56 23.8	-1.4
	2.9nm,0.2s,baz=119,slow=3.5,SNR=6.3						
WRA	Warramunga Arr	57.74	189	P	P	12 56 35.6	-0.7
	1.1nm,0.6s,baz=6.0,slow=6.8,SNR=12						
ASAR	Alice Springs	61.47	188	P	P	12 57 01.5	-0.4
	0.4nm,0.7s,baz=13,slow=5.2,SNR=6.6						
YKA	Yellowknife Ar	63.03	30	P	P	12 57 12.4	+0.5
	0.2nm,0.6s,baz=303,slow=6.7,SNR=4.1						
FINES	FINESS Array B	68.49	332	P	P	12 57 46.9	-0.3
	1.7nm,0.7s,baz=34,slow=10,SNR=2.5						
PDAR	Pinedale Array	76.89	46	P	P	12 58 38.5	+0.9
	0.3nm,0.5s,baz=258,slow=2.4,SNR=4.3						
ULM	Lac du Bonnet	78.72	34	LR	LR	13 36 54.1	
	comp=Z,46nm,18.7s,baz=116,slow=38						
PPT	Papeete	84.48	117	LR	LR	13 27 39.2	
	comp=Z,34nm,21.4s,baz=328,slow=29						
TXAR	Lajitas Array	89.37	53	P	P	12 59 42.8	+0.8
	0.2nm,0.5s,baz=307,slow=3.3,SNR=3.2						
LPAZ	La Paz	145.97	60	PKPbc	PKPdf	13 06 25.1	-0.1
	0.8nm,0.4s,baz=23,slow=5.5,SNR=3.8						

*NIED **08** 12:58:00, 38°.40N×141°.80E, h74km, Mw3.8 Best double couple: M0 6.29000×10^14 NP1:φs67.00000°, δ29.00000°, λ101.00000°. NP2:φs235.00000°, δ62.00000°, λ84.00000°.*
*ISCJB **08** 12:58:26.0±0.8, 38°.38N±0°.04×141°.85E±0°.09, h64km±6km, mb3.6/7, Error ellipse: s-maj=12.2km s-min=6.8km az=10.8*
*JMA **08** 12:58:27.2±0.1, 38°.40N×141°.78E, h58km±1km, M3.9*
JMA Felt I J1.
*IDC **08** 12:58:28.9±2.8, 38°.29N×141°.75E, h75km±25km, mb3.4/7, mb1 3.5/11, mb1mx3.3/56, mbtmp3.7/11, Error ellipse: s-maj=28.2km s-min=15.7km az=83.0*
ISC 08 12:58:26.6±1.4, **38°.36N**±0°.05×**141°.9E**±0°.1, **h51**km±12km, **n29**, σ**1s.02**/32, **mb3.7**/7, **Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
JIO	Ouri	0.45	283	P	Pn	12 58 37.6	+0.3
JIO				S	Sn	12 58 44.6	-0.4
JMK	Ichinoseki	0.80	318	P	Pn	12 58 41.7	0.0
JMK				S	Sn	12 58 51.8	-0.9
JOU	Okura	0.97	271	P	Pn	12 58 43.8	-0.2
JOU				S	Sn	12 58 55.9	-0.9
JMM	Marumori	1.00	241	P	Pn	12 58 44.3	0.0
JMM				S	Sn	12 58 56.7	-0.8
JOM	Ohasama	1.21	337	P	Pn	12 58 47.3	+0.1
JFK	Kawauchi	1.28	220	P	Pn	12 58 48.7	+0.6
JFK				S	Sn	12 59 04.4	+0.2
JYK	Kaneyama	1.33	295	P	Pn	12 58 48.6	-0.2
JYK				S	Sn	12 59 04.5	-1.0
JRG	Rokugo	1.44	317	P	Pn	12 58 50.1	-0.1
JYS	Shirataka	1.45	265	P	Pn	12 58 50.5	+0.1
JYS				S	Sn	12 59 07.8	-0.6
JFT	Otama	1.50	236	P	Pn	12 58 51.8	+0.8
JYA	Atsumi	1.73	278	P	Pn	12 58 54.5	+0.2
MJAR	Matsushiro Arr	3.45	239	P	Pn	12 59 20.0	+2.2
	2.7nm,0.3s,baz=38,slow=12,SNR=34						
MJAR				S	Sn	13 00 03.6	+6.1
	1.8nm,0.3s,baz=255,slow=25,SNR=4.4						
MAT	Matsushiro	3.45	240	P	Pn	12 59 20.0	+2.1
MAT				eS	Sn	12 59 58.6	+1.1
JHJ	Hachijo jima 2	5.50	199	P	Pn	12 59 46.1	+0.1
	12nm,0.3s,baz=203,slow=13,SNR=13						
JHJ				S	Sn	13 00 45.9	-2.0
	11nm,0.3s,baz=34,slow=17,SNR=3.7						
USRK	Ussuriysk Ar.	9.47	311	P	Pn	13 00 40.9	+0.6
	0.5nm,0.3s,baz=116,slow=15,SNR=10						
KSRS	Korea Array	11.08	270	P	Pn	13 01 02.1	-0.2
	0.0nm,0.3s,baz=82,slow=13,SNR=2.7						
SEY	Seymchan	25.42	11	P	P	13 03 51.5	+2.5
	0.6nm,0.5s,baz=212,slow=12,SNR=4.8						
H11N2	WAKE ISLAND Hy	28.52	124	T	T	13 34 34.2	
	baz=316,slow=75,SNR=131						
H11N1	WAKE ISLAND Hy	28.53	124	T	T	13 34 34.9	
	baz=316,slow=75,SNR=234						
H11N3	WAKE ISLAND Hy	28.54	124	T	T	13 34 35.6	
	baz=316,slow=75,SNR=217						
H11S1	WAKE ISLAND Hy	29.28	126	T	T	13 35 32.2	
	baz=318,slow=76,SNR=73						
H11S3	WAKE ISLAND Hy	29.28	126	T	T	13 35 32.3	
	baz=318,slow=76,SNR=123						
H11S2	WAKE ISLAND Hy	29.30	126	T	T	13 35 31.9	
	baz=318,slow=76,SNR=80						
ZALV	Zalesovo Beam	41.32	311	P	P	13 06 06.2	-0.7
	0.5nm,0.3s,baz=87,slow=11,SNR=3.4						
MKAR	Makanchi Array	43.76	301	P	P	13 06 26.9	0.0
	0.5nm,0.6s,baz=86,slow=8.8,SNR=6.3						
KURBB	Kurchatov Arra	45.51	307	P	P	13 06 39.5	-1.1
	0.9nm,0.4s,baz=79,slow=8.1,SNR=14						
WRA	Warramunga Arr	58.42	188	P	P	13 08 16.1	-0.9
	0.9nm,0.5s,baz=6.3,slow=6.8,SNR=22						
ASAR	Alice Springs	62.15	188	P	P	13 08 41.8	-0.6
	0.5nm,0.7s,baz=11,slow=4.6,SNR=7.2						
YKA	Yellowknife Ar	62.47	31	P	P	13 08 44.0	-0.1
	0.2nm,0.9s,baz=301,slow=5.9,SNR=3.2						

*NEIC **08** 13:00:18.0, 31°.25S×68°.64W, h105km, MD4.5(SJA), After SJA.*
NEIC Felt [IV] at San Juan.
*GUC **08** 13:00:18.9±0.4, 31°.28S×69°.46W, h202km±11km, ML4.2*
*ISCJB **08** 13:00:19.2±0.3, 31°.32S±0°.03×68°.63W±0°.04, h113km±3km, mb4.1/9, Error ellipse: s-maj=6.5km s-min=5.3km az=29.5*
*IDC **08** 13:00:19.7±0.6, 31°.36S×68°.53W, h106km±5km, mb3.7/7, mb1 3.8/10, mb1mx3.7/25, mbtmp4.0/10, Error ellipse: s-maj=23.6km s-min=14.2km az=84.0*
*SJA **08** 13:00:19.0±0.7, 31°.32S×68°.63W, h109km±3km, ML4.3, MW4.1*
ISC 08 13:00:19.7±0.6, **31°.29S**±0°.04×**68°.66W**±0°.05, **h107**km±4km, **n47**, σ**1s.04**/56, **mb4.2**/9, **San Juan Province**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
RTLL	Cerro Villicun	0.16	105	eP	Pn	13 00 34.5	-0.2
RTLL				eS	Sn	13 00 46.4	+0.5
SJA	San Juan	0.25	161	eP	Pn	13 00 35.1	+0.1
AMOG	MOGNA	0.38	22	eP	Pn	13 00 36.0	+0.4
RTCV	Cerro Valdivia	0.58	170	eP	Pn	13 00 36.8	-0.1
RTLS	Leoncito	0.75	227	eP	Pn	13 00 39.0	+0.5
AUSP	Uspallata	1.12	214	eP	Pn	13 00 42.9	+0.6
AVFE	Valle Fertil	1.21	59	eP	Pn	13 00 43.2	+0.2
AVFE				IAML		13 01 01.4	
	comp=Z,3μm,0.2s						
ASAL	Salagasta	1.31	187	eP	Pn	13 00 44.5	+0.4
ARCO	CERRO ARCO	1.57	189	eP	Pn	13 00 47.8	+0.4
ARCO				IAML		13 01 11.2	
	comp=Z,4μm,0.3s						
ACAN	Cantantal	1.59	129	eP	Pn	13 00 47.9	+0.4
AAGR	Agrelo	1.80	185	eP	Pn	13 00 50.4	+0.3
APLL	PUNTA DE LOS L	2.04	65	eP	Pn	13 00 53.6	+0.6
TLL	Tololo Astrono	2.16	301	eP	Pn	13 00 55.2	+0.3
TLL				eS	Sn	13 01 22.1	+0.4
TLL				IAML		13 01 25.4	
	comp=N,2μm,0.3s						
ACLC	CERRO LA CRUZ	2.37	39	eP	Pn	13 00 58.1	+0.6
PEL	Peldehue	2.53	222	eP	Pn	13 00 59.7	+0.2
PEL				eS	Sn	13 01 30.7	+0.8
PEL				IAML		13 01 31.8	
	comp=E,405nm,0.3s						
VCA	Vinchina	2.57	9	eP	Pn	13 01 01.5	+1.3
VCA				IAML		13 01 38.0	
	comp=Z,1μm,0.4s						
ROCH	El Roble	2.61	229	eP	Pn	13 01 00.2	-0.5
ROCH				eS	Sn	13 01 31.8	-0.4
ROCH				IAML		13 01 38.4	
	comp=N,822nm,0.4s						
ROC1	El Roble	2.62	229	ePn	Pn	13 01 00.0	-0.8
CLCH	Cerro Calan	2.64	217	eP	Pn	13 01 01.4	+0.5
CLCH				eS	Sn	13 01 33.9	+1.4
CLCH				IAML		13 01 40.5	
	comp=E,841nm,0.3s						
MRA	San Martin	2.74	115	eP	Pn	13 01 02.1	-0.2
MRA				IAML		13 01 29.8	
	comp=Z,803nm,0.5s						
LCO	Las Campanas	2.88	322	eP	Pn	13 01 05.1	+0.8
LCO	Las Campanas	2.88	322	eP	Pn	13 01 04.4	+0.1
LCO				eS	Sn	13 01 39.0	+0.4
LCO				IAML		13 01 40.8	
	comp=E,744nm,0.1s						
LCO	Las Campanas	2.88	322	ePn	Pn	13 01 04.1	-0.3
LCO				eSn	Sn	13 01 33.9	-4.7
SUCO	SUCO	3.79	124	eP	Pn	13 01 15.9	-0.4
PB10	IPOC Station P	7.93	347	ePn	Pn	13 02 08.9	-3.4
TRQA	Tornquist	8.70	143	ePn	Pn	13 02 20.9	-1.8
PB04	IPOC Station P	9.02	351	ePn	Pn	13 02 22.9	-4.3
PLCA	Paso Flores	9.55	189	P	Pn	13 02 33.0	-1.3
	comp=E,0.2nm,0.3s,baz=7.5,slow=13,SNR=5.9						
PB01	IPOC Station P	10.23	356	ePn	Pn	13 02 39.2	-4.4
CPUP	Villa Florida	11.09	66	P	Pn	13 02 50.6	-4.6
	comp=E,0.1nm,0.3s,baz=231,slow=13,SNR=3.3						
PB11	IPOC Station P	11.52	355	ePn	Pn	13 02 55.2	-5.8
LPAZ	La Paz	14.94	2	P	Pn	13 03 47.2	+1.2
	comp=E,0.6nm,0.3s,baz=182,slow=8.5,SNR=9.5						
SIV	San Ignacio	16.73	26	P	Pn	13 04 08.0	+0.2
	comp=E,0.3nm,0.3s,baz=212,slow=9.1,SNR=6.6						
USHA	Ushuaia	23.53	180	P	P	13 05 20.8	+0.8
	comp=E,84nm,0.9s,baz=341,slow=10,SNR=5.7						
VNDA	Vanda	67.30	190	P	P	13 11 02.3	-0.1
	comp=E,0.4nm,0.6s,baz=126,slow=4.4,SNR=2.1						
LPIG	La Paz	68.00	319	P	P	13 11 10.0	+2.5
	comp=E,26nm,0.3s,baz=132,slow=12,SNR=2.9						
TXAR	Lajitas Array	68.88	328	P	P	13 11 13.7	+0.7
	comp=E,0.5nm,0.6s,baz=156,slow=8.8,SNR=8.0						
MAW	Mawson	74.94	163	P	P	13 11 48.1	-0.5
	comp=E,3.9nm,0.7s,baz=217,slow=10,SNR=4.1						
MAW				pP	pP	13 12 16.5	+0.8
	comp=E,1.9nm,0.5s,baz=236,slow=7.3,SNR=1.9						
BOSA	Boshof	78.76	117	P	P	13 12 10.9	-0.1
	comp=E,2.9nm,0.8s,baz=265,slow=5.9,SNR=4.2						
BOSA				pP	pP	13 12 37.4	-0.9
	comp=E,3.5nm,0.8s,baz=234,slow=8.7,SNR=2.6						
TORD	Torodi Ar. Bea	80.58	68	P	P	13 12 20.6	-0.2
	comp=E,3.6nm,0.7s,baz=262,slow=4.8,SNR=22						
TORD				pP	pP	13 12 48.1	-0.1
	comp=E,0.4nm,0.5s,baz=282,slow=6.7,SNR=1.9						
PDAR	Pinedale Array	82.71	331	P	P	13 12 31.6	-0.1
	comp=E,0.2nm,0.5s,baz=134,slow=5.2,SNR=3.1						

NVAR	**Mina Array Bea**	**83.37**	**323**	P		**P**	**13 12 36.0**	**+0.9**	
	comp=E,0.2nm,0.6s,baz=134,slow=5.2,SNR=3.8								
ASAR	**Alice Springs**	**121.24**	**204**	PKP		**PKPdf**	**13 18 58.9**	**-1.9**	
	comp=E,0.2nm,0.4s,baz=152,slow=1.4,SNR=5.4								
WRA	**Warramunga Arr**	**124.48**	**206**	PKP		**PKPdf**	**13 19 05.3**	**-1.8**	
	comp=E,0.9nm,0.6s,baz=161,slow=1.7,SNR=16								
WRA				pPKP		**pPKPdf**	**13 19 35.5**	**-0.6**	
	comp=E,0.4nm,0.5s,baz=162,slow=1.9,SNR=2.4								
ZALV	**Zalesovo Beam**	**150.41**	**32**	PKPbc		**PKPbc**	**13 19 58.1**	**0.0**	
	comp=E,5.4nm,0.6s,baz=301,slow=3.6,SNR=21								
ZALV				pPKPbc		**pPKPbc**	**13 20 26.1**	**-1.0**	
	comp=E,3.3nm,0.8s,baz=294,slow=2.9,SNR=4.9								
MKAR	**Makanchi Array**	**152.83**	**47**	PKPbc		**PKPbc**	**13 20 03.6**	**-0.4**	
	comp=E,1.3nm,0.8s,baz=318,slow=1.4,SNR=14								
MKAR				PKPab		**PKPab**	**13 20 15.2**	**-0.2**	
	comp=E,1.2nm,0.6s,baz=302,slow=3.5,SNR=11								
MKAR				pPKPbc		**pPKPbc**	**13 20 32.2**	**-0.9**	
	comp=E,0.6nm,0.7s,baz=294,slow=1.9,SNR=3.6								
SONM	**Songino Array**	**163.05**	**12**	PKPab		**PKPab**	**13 20 59.6**	**+0.1**	
	comp=E,0.4nm,0.6s,baz=332,slow=4.0,SNR=3.2								

WEL 08 13:14:56.0±0.3, 44.97S×167.47E, h90km±2km, ML3.6/13, 8C-2D, Error ellipse: s-maj=2.2km s-min=1.6km az=90.0, South Island

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op	ISC		h m s	ISC
MSZ	**Milford Sound**	**0.44**	**48**	PN	Pn		13 15 10.3	0.0
MSZ				SN	Sn		13 15 20.8	-0.1
MSZ				AML	AML		13 15 21.9	
MSZ				AML	AML		13 15 21.9	
MSZ				AML	AML		13 15 21.9	
DCZ	**Deep Cove**	**0.54**	**204**	↓PN	Pn		13 15 10.8	-0.3
DCZ				SN	Sn		13 15 22.1	-0.1
DCZ				AML	AML		13 15 23.4	
DCZ				AML	AML		13 15 23.4	
DCZ				AML	AML		13 15 23.5	
MLZ	**Mavora Lakes**	**0.60**	**131**	↓PN	Pn		13 15 11.5	-0.2
MLZ				SN	Sn		13 15 23.1	-0.2
MLZ				AML	AML		13 15 24.1	
WHZ	**Wether Hill Ro**	**0.98**	**160**	↑PN	Pn		13 15 15.2	-0.2
WHZ				AML	AML		13 15 31.3	
WHZ				AML	AML		13 15 31.4	
WKZ	**Wanaka**	**1.11**	**83**	PN	Pn		13 15 17.0	0.0
WKZ				AML	AML		13 15 35.3	
WKZ				AML	AML		13 15 36.5	
WKZ				AML	AML		13 15 36.9	
JCZ	**Jackson Bay**	**1.30**	**47**	↑PN	Pn		13 15 18.5	-0.8
JCZ				SN	Sn		13 15 34.7	-2.1
JCZ				AML	AML		13 15 35.7	
PYZ	**Puysegur Point**	**1.32**	**205**	PN	Pn		13 15 19.8	+0.3
EAZ	**Earnscleugh**	**1.32**	**102**	↑PN	Pn		13 15 19.3	-0.2
EAZ				AML	AML		13 15 36.7	
EAZ				AML	AML		13 15 37.1	
TUZ	**Tuapeka**	**1.81**	**124**	↑PN	Pn		13 15 25.4	-0.3
TUZ				AML	AML		13 15 46.9	
TUZ				AML	AML		13 15 46.9	
TUZ				AML	AML		13 15 47.3	
TUZ				AML	AML		13 15 47.3	
APZ	**The Paps**	**1.90**	**169**	PN	Pn		13 15 26.7	-0.2
APZ				AML	AML		13 15 52.7	
APZ				AML	AML		13 15 54.4	
SYZ	**Scrubby Hill**	**1.95**	**144**	PN	Pn		13 15 27.4	-0.1
SYZ				SN	Sn		13 15 49.7	-1.8
SYZ				AML	AML		13 15 51.2	
SYZ				AML	AML		13 15 51.2	
LBZ	**Lake Benmore**	**2.02**	**74**	↑PN	Pn		13 15 26.9	-1.5
LBZ				SN	Sn		13 15 49.9	-3.3
LBZ				AML	AML		13 15 51.0	
LBZ				AML	AML		13 15 51.0	
LBZ				AML	AML		13 15 51.6	
FOZ	**Fox Glacier**	**2.21**	**50**	PN	Pn		13 15 29.1	-1.9
ODZ	**Otahua Downs**	**2.25**	**93**	↑PN	Pn		13 15 30.2	-1.3
ODZ				SN	Sn		13 15 54.5	-4.1
ODZ				AML	AML		13 15 55.3	
ODZ				AML	AML		13 15 55.4	
ODZ				AML	AML		13 15 55.9	
HHSZ	**Highcliff Hill**	**2.38**	**114**	PN	Pn		13 15 33.0	-0.2
RPZ	**Rata Peaks**	**2.86**	**65**	↑PN	Pn		13 15 37.2	-2.4
RPZ				SN	Sn		13 16 09.5	-3.7
RPZ				AML	AML		13 16 10.4	
WVZ	**Waitaha Valley**	**3.02**	**52**	PN	Pn		13 15 39.8	-2.0
INZ	**Inchbonnie**	**3.65**	**53**	↑PN	Pn		13 15 48.4	-1.7
OXZ	**Oxford**	**3.67**	**65**	PN	Pn		13 15 47.6	-3.0
OXZ				SN	Sn		13 16 27.0	-5.9
LTZ	**Lake Taylor**	**4.10**	**59**	PN	Pn		13 15 53.1	-3.2
DSZ	**Denniston Nort**	**4.51**	**46**	PN	Pn		13 16 00.2	-1.8

*ISCJB **08** 13:16:47.8±0.6, 35.24N±0.02×92.35W±0.04, h5km±5km, Error ellipse: s-maj=5.5km s-min=3.6km az=13.3*
*NEIC **08** 13:16:48.0, 35.24N×92.37W, h6km, MD2.6(CERI), After CERI.*
NEIC Felt at Conway and Greenbrier.

ISC 08 13:16:48.1±0.9, 35.23N±0.03×92.35W±0.04, h13km±7km, n29, σ0.73/44, Arkansas

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op	ISC		h m s	ISC
W41B	**Gary Mavity, V**	**0.10**	**125**	P	**Pg**		**13 16 51.3**	**+0.3**
	baz=303							
W41B				S	**Sg**		**13 16 53.2**	**0.0**
	baz=303							
W40A	**Ferguson Farm,**	**0.59**	**266**	P	**Pb**		**13 16 59.9**	**-0.3**
	baz=86							
V40A	**Witts Springs**	**0.69**	**326**	P	**Pg**		**13 17 01.3**	**-0.2**
	baz=147,SNR=263							
V40A				S	**Sg**		**13 17 10.3**	**-0.2**
	baz=147							
X40A	**Basin Creek Fa**	**0.84**	**208**	P	**Pb**		**13 17 04.6**	**0.0**
	baz=27							
X40A				S	**Sb**		**13 17 16.1**	**+0.3**
	baz=27							
W39A	**Magazine**	**1.17**	**269**	P	**Pg**		**13 17 10.4**	**-0.3**
	baz=88,SNR=24							
W39A				S	**Sn**		**13 17 26.2**	**0.0**
	baz=88							
U40A	**Yellville**	**1.19**	**340**	P	**Pb**		**13 17 10.5**	**-0.1**
	baz=160,SNR=120							
V39A	**Pettigrew**	**1.22**	**300**	P	**Pb**		**13 17 10.9**	**-0.2**
	baz=120							
V39A				S	**Sb**		**13 17 26.5**	**-0.1**
	baz=120							
MIAR	**Mount Ida**	**1.22**	**236**	Pb	**Pg**		**13 17 11.3**	**-0.2**
	baz=55,SNR=70							
MIAR				S	**Sn**		**13 17 27.4**	**+0.2**
	baz=55							
MIAR	**Mount Ida**	**1.22**	**236**	*e*Pg	**Pg**		**13 17 11.3**	**-0.2**
MIAR				*e*Sg	**Sg**		**13 17 27.2**	**-0.2**
Y40A	**Okolona**	**1.44**	**212**	Pb	**Pb**		**13 17 15.2**	**+0.4**
	baz=31							
Y40A				S	**Sg**		**13 17 34.2**	**-0.2**
	baz=31							
U39A	**Green Forest**	**1.47**	**322**	Pb	**Pb**		**13 17 15.0**	**-0.3**
	baz=141,SNR=74							
X39A	**Fountain Ranch**	**1.62**	**244**	Pb	**Pb**		**13 17 18.1**	**+0.2**
	baz=63,SNR=74							
X39A				Sb	**Sg**		**13 17 39.5**	**-0.7**
	baz=63							
W38A	**Poteau**	**1.78**	**265**	Pb	**Pb**		**13 17 20.6**	**0.0**
	baz=84,SNR=65							
W38A				Sb	**Sg**		**13 17 44.9**	**-0.6**
	baz=84							
V38A	**Canehill**	**1.79**	**291**	Pb	**Pb**		**13 17 20.4**	**-0.4**
	baz=110,SNR=46							
V38A				Sb	**Sb**		**13 17 44.1**	**+1.0**
	baz=110							
T40A	**Mansfield**	**1.92**	**356**	Pb	**Pb**		**13 17 22.6**	**-0.3**
	baz=176,SNR=29							
T40A				Sb	**Sb**		**13 17 48.0**	**+1.1**
	baz=176							
T39A	**Clever**	**1.97**	**335**	Pb	**Pb**		**13 17 23.3**	**-0.6**
	baz=155,SNR=33							
U38A	**Gravette**	**2.04**	**307**	Sb	**Sb**		**13 17 51.6**	**+1.1**
	baz=126							
X38A	**Whitesboro**	**2.11**	**255**	Pb	**Pb**		**13 17 26.5**	**+0.3**
	baz=74,SNR=53							
X38A				Sb	**Sg**		**13 17 55.1**	**-0.8**
	baz=74							
S40A	**Lebanon**	**2.36**	**357**	Pb	**Pb**		**13 17 29.6**	**-0.9**
	baz=177,SNR=20							
S40A				Sb	**Sb**		**13 18 00.8**	**+1.1**
	baz=177							
V37A	**Hulbert**	**2.37**	**287**	Sb	**Sb**		**13 18 00.8**	**+1.1**
	baz=105							
T38A	**Diamond**	**2.39**	**319**	P	**Pb**		**13 17 29.5**	**-1.5**
	baz=139,SNR=16							
OXF	**Oxford**	**2.52**	**106**	*e*Pn	**Pn**		**13 17 27.5**	**-1.3**
W37B	**Quinton**	**2.52**	**269**	Pb	**Pb**		**13 17 32.7**	**-0.6**
	baz=87							
X37A	**Clayton**	**2.56**	**256**	Pb	**Pb**		**13 17 34.0**	**+0.1**
	baz=74							
S39A	**Bolivar**	**2.58**	**343**	P	**Pn**		**13 17 31.5**	**+2.0**
	baz=162,SNR=18							
S38A	**Stockton**	**2.70**	**333**	Pb	**Pb**		**13 17 35.0**	**-1.3**
	baz=152							
TUL1	**Leonard**	**2.88**	**285**	*e*Pn	**Pn**		**13 17 33.7**	**0.0**
V34A	**Guthrie**	**4.26**	**280**	*e*Pn	**Pn**		**13 17 51.7**	**-1.0**
WMOK	**Wichita Mounta**	**5.30**	**266**	*e*Pn	**Pn**		**13 18 07.0**	**0.0**
	1.8nm,0.4s							
WMOK				*e*Sn	**Sn**		**13 19 08.8**	**+0.7**

JMA 08 13:19:22.4±0.2, 38.43N×142.23E, h35km±3km, M3.5, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op	ISC		h m s	ISC
JIO	**Ouri**	**0.69**	**272**	P	Pn		13 19 35.7	0.0
JIO				S	Sn		13 19 44.6	-0.6
JMK	**Ichinoseki**	**0.95**	**304**	P	Pn		13 19 39.7	+0.5
JMK				S	Sn		13 19 51.8	+0.3
MIYJ	**Miyakonagasawa**	**1.19**	**345**	P	Pn		13 19 42.9	+0.4
MIYJ				S	Sn		13 19 57.1	-0.4
JOU	**Okura**	**1.23**	**267**	P	Pn		13 19 44.6	+1.5
JOU				*e*S	Sn		13 19 59.8	+1.2
JMM	**Marumori**	**1.27**	**244**	P	Pn		13 19 43.6	0.0
JMM				*e*S	Sn		13 19 59.1	-0.2
JOM	**Ohasama**	**1.27**	**325**	P	Pn		13 19 44.6	+0.9
JOM				S	Sn		13 20 00.8	+1.3
JFK	**Kawauchi**	**1.51**	**226**	P	Pn		13 19 46.8	-0.2
JFK				S	Sn		13 20 03.8	-1.6
JYK	**Kaneyama**	**1.54**	**289**	P	Pn		13 19 48.9	+1.5
JKZ	**Kuzumaki**	**1.70**	**336**	P	Pn		13 19 51.1	+1.5
JKZ				S	Sn		13 20 12.0	+1.8
JFT	**Otama**	**1.75**	**239**	P	Pn		13 19 51.6	+1.3
JFT				*e*S	Sn		13 20 11.3	-0.1

*NIED **08** 13:20:00, 37.90N×142.30E, h20km, Mw4.0 Best double couple: M0 1.07000×10^15 NP1:φs161.00000°, δ32.00000°, λ-141.00000°. NP2:φs36.00000°, δ71.00000°, λ-64.00000°.*
*IDC **08** 13:20:23.0±0.7, 37.89N×142.37E, h0km, mb4.1/22, mb1 4.2/26, mb1mx4.1/50, mbtmp4.0/26, ML2.9/3, MS3.0/5, Ms1 3.0/5, ms1mx2.7/36, Error ellipse: s-maj=19.1km s-min=14.2km az=108.0*
*ISCJB **08** 13:20:23.5±1.1, 37.86N±0.03×142.39E±0.05, h17km±7km, mb4.1/39, MS2.9/2, Error ellipse: s-maj=7.6km s-min=4.5km az=28.2*
*MOS **08** 13:20:24.8±1.1, 37.94N×142.40E, h25km, mb4.4/28, Error ellipse: s-maj=9.6km s-min=6.7km az=101.0*
*JMA **08** 13:20:25.8±0.3, 37.89N×142.31E, h26km±5km, M4.2*
JMA Felt I J1.
*NEIC **08** 13:20:28.2±0.5, 37.91N×142.25E, h35km, mb4.5/5, Error ellipse: s-maj=12.1km s-min=7.6km az=119.0*

ISC 08 13:20:24.2±1.7, 37.89N±0.05×142.33E±0.05, h8km±9km, n86, σ1.14/85, mb4.2/39, 5C-6D, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op	ISC		h m s	ISC
JIO	**Ouri**	**0.96**	**307**	P	**Pg**		**13 20 43.1**	**+0.5**
JIO				S	**Sg**		**13 20 55.1**	**0.0**
JMM	**Marumori**	**1.21**	**270**	P	**Pn**		**13 20 46.9**	**-0.6**
JMM				S	**Sb**		**13 21 01.8**	**-1.4**
JFK	**Kawauchi**	**1.26**	**246**	P	**Pn**		**13 20 47.3**	**-0.9**
JFK				S	**Sb**		**13 21 02.7**	**-2.0**
JMK	**Ichinoseki**	**1.37**	**321**	P	**Pn**		**13 20 49.3**	**-0.4**
JMK				*e*S	**Sn**		**13 21 06.0**	**-2.0**
JOU	**Okura**	**1.40**	**291**	P	**Pn**		**13 20 50.4**	**+0.4**
JOU				S	**Sn**		**13 21 07.7**	**-0.9**
JFT	**Otama**	**1.62**	**257**	P	**Pn**		**13 20 53.6**	**+0.5**
JFT				S	**Sn**		**13 21 13.9**	**-0.2**
JOM	**Ohasama**	**1.78**	**333**	P	**Pn**		**13 20 55.8**	**+0.5**
JYS	**Shiratake**	**1.82**	**281**	P	**Pn**		**13 20 56.8**	**+1.0**
JYK	**Kaneyama**	**1.86**	**304**	P	**Pn**		**13 20 56.8**	**+0.5**
MJAR	**Matsushiro Arr**	**3.55**	**249**	Pn	**Pn**		**13 21 21.5**	**+1.9**
	1.1nm,0.3s,baz=93,slow=26,SNR=4.4							
MJAR				LR	LR		13 22 48.5	
	comp=Z,166nm,18.3s,baz=85,slow=41							
MAJO	**Matsushiro**	**3.55**	**249**	↓*i*P	**Pn**		**13 21 21.9**	**+2.3**
MAJO	**Matsushiro**	**3.55**	**249**	*e*Pn	Pn		13 21 17.6	-2.0
MAJO				*e*Sn	**Sn**		**13 22 01.2**	**-0.6**
MAT	**Matsushiro**	**3.55**	**249**	P	**Pn**		**13 21 21.6**	**+2.0**
MAT				*e*S	**Sn**		**13 22 02.5**	**+0.7**
ERM	**Erimo**	**4.17**	**9**	↓*i*P	**Pn**		**13 21 28.0**	**-0.1**
JHJ2	**Mitsune**	**5.18**	**204**	*e*Pn	**Pn**		**13 21 43.4**	**+1.3**
JHJ2				*e*Sn	**Sn**		**13 22 41.3**	**-0.7**
JHJ	**Hachijo jima 2**	**5.19**	**204**	Pn	**Pn**		**13 21 43.2**	**+1.1**
	31nm,0.3s,baz=100,slow=22,SNR=16							
JHJ				Sn	**Sn**		**13 22 40.8**	**-1.3**
	30nm,0.3s,baz=66,slow=20,SNR=2.7							
YUK	**Yuzh-Kuril'sk**	**6.70**	**22**	P	**Pn**		**13 22 02.9**	**+0.1**
YUK				*e*S	Sn		13 23 12.3	-7.0
YUK				pmax	pmax			
	comp=Z,86nm,0.6s							
YUK				pmax	pmax			
	comp=N,50nm,0.3s							
YUK				pmax	pmax			
	comp=E,64nm,0.2s							
SHO	**Shikotan**	**6.88**	**28**	*e*P	**Pn**		**13 22 03.1**	**-2.2**
YSS	**Yuzh-Sakhalins**	**9.07**	**2**	↑*e*P	**Pn**		**13 22 36.0**	**+0.7**
YSS				pmax	pmax			
	comp=Z,30nm,0.9s							
YSS	**Yuzh-Sakhalins**	**9.07**	**2**	*e*Pn	**Pn**		**13 22 33.8**	**-1.5**
	comp=Z,17nm,0.9s							
USRK	**Ussuriysk Ar.**	**10.03**	**312**	Pn	**Pn**		**13 22 49.6**	**+1.0**
	comp=Z,0.4nm,0.3s,baz=123,slow=15,SNR=4.6							
KSRS	**Korea Array**	**11.43**	**272**	Pn	Pn		13 23 11.2	+3.5
	comp=Z,0.1nm,0.3s,baz=87,slow=14,SNR=5.5							
KSRS				LR	LR		13 26 38.6	
	comp=Z,45nm,21.9s,baz=86,slow=33							
KSAR	**Wonju Array Be**	**11.46**	**272**	P	**Pn**		**13 23 11.2**	**+3.1**
KSAR	**Wonju Array Be**	**11.46**	**272**	Pn	**Pn**		**13 23 11.2**	**+3.1**
KLR	**Kul'dur**	**13.67**	**329**	Pn	**Pn**		**13 23 37.2**	**-1.0**
	comp=Z,0.2nm,0.3s,baz=148,slow=12,SNR=4.5							
KLR				LR	LR		13 28 55.0	
	comp=Z,145nm,18.6s,baz=156,slow=37							
JOW	**Kunigami**	**16.18**	**231**	*e*Pn	**Pn**		**13 24 09.9**	**-2.0**
MA2	**Magadan**	**22.37**	**11**	P	**P**		**13 25 23.2**	**+0.6**
	comp=Z,3.3nm,0.5s,baz=227,slow=8.0,SNR=6.0							
MA2				LR	LR		13 34 44.8	
	comp=Z,30nm,18.3s,baz=106,slow=38							
MA2	**Magadan**	**22.37**	**11**	P	**P**		**13 25 23.2**	**+0.6**
MA2				pmax	pmax			
	comp=Z,4.0nm,0.6s							
MA2				MLR	MLR			
	comp=Z,30nm,18.3s							
MA2	**Magadan**	**22.37**	**11**	*e*P	**P**		**13 25 22.9**	**+0.3**
GUMO	**Guam**	**24.30**	**174**	LR	LR		13 35 26.7	
	comp=Z,44nm,20.2s,baz=50,slow=37							
YAK	**Yakutsk**	**25.41**	**346**	P	**P**		**13 25 51.8**	**0.0**
	comp=Z,7.1nm,0.3s,baz=164,slow=2.0,SNR=8.0							
YAK	**Yakutsk**	**25.41**	**346**	*e*P	**P**		**13 25 52.0**	**+0.2**
YAK				pmax	pmax			
	comp=E,3.0nm,0.8s							
YAK				pmax	pmax			
	comp=Z,17nm,0.9s							
YAK				pmax	pmax			
	comp=N,5.0nm,1.0s							
SEY	**Seymchan**	**25.82**	**11**	P	**P**		**13 25 56.4**	**+0.8**
SEY	**Seymchan**	**25.82**	**11**	↓*i*P	**P**		**13 25 57.2**	**+1.6**
BOD	**Bodaibo**	**27.21**	**326**	*e*P	**P**		**13 26 07.3**	**-0.9**
BOD				pmax	pmax			
	comp=Z,17nm,1.3s							
ULN	**Ulaanbaatar**	**27.49**	**303**	↓*i*P	**P**		**13 26 12.6**	**+1.5**
ULN				pmax	pmax			
	comp=Z,4.0nm,1.2s							
ULN	**Ulaanbaatar**	**27.49**	**303**	*e*P	**P**		**13 26 10.5**	**-0.6**
	comp=Z,1.7nm,0.5s							
SONM	**Songino Array**	**27.93**	**302**	P	**P**		**13 26 15.6**	**+0.7**
	comp=N,6.2nm,0.5s,baz=188,slow=8.8,SNR=51							
SEY	**Seymchan**	**25.82**	**11**	↓*i*P	**P**		**13 25 57.2**	**+1.6**
BOD	**Bodaibo**	**27.21**	**326**	*e*P	**P**		**13 26 07.3**	**-0.9**
BOD				pmax	pmax			
	comp=Z,17nm,1.3s							
ULN	**Ulaanbaatar**	**27.49**	**303**	↓*i*P	**P**		**13 26 12.6**	**+1.5**
ULN				pmax	pmax			
	comp=Z,4.0nm,1.2s							
ULN	**Ulaanbaatar**	**27.49**	**303**	*e*P	**P**		**13 26 10.5**	**-0.6**
	comp=Z,1.7nm,0.5s							
SONM	**Songino Array**	**27.93**	**302**	P	**P**		**13 26 15.6**	**+0.7**
	comp=Z,2.4nm,0.8s,baz=102,slow=8.5,SNR=11							
H11N2	**WAKE ISLAND Hy**	**27.98**	**123**	T	T		13 55 21.9	
	baz=316,slow=75,SNR=332							
H11N1	**WAKE ISLAND Hy**	**27.99**	**123**	T	T		13 55 47.2	
	baz=316,slow=75,SNR=285							
H11N3	**WAKE ISLAND Hy**	**28.00**	**123**	T	T		13 55 27.0	
	baz=316,slow=75,SNR=265							
ENH	**Enshi**	**28.14**	**264**	*e*P	**P**		**13 26 16.5**	**-0.3**
	comp=Z,5.4nm,0.4s							
H11S1	**WAKE ISLAND Hy**	**28.74**	**125**	T	T		13 56 34.4	
	baz=317,slow=76,SNR=190							
H11S3	**WAKE ISLAND Hy**	**28.74**	**125**	T	T		13 56 34.5	
	baz=317,slow=76,SNR=201							
H11S2	**WAKE ISLAND Hy**	**28.75**	**125**	T	T		13 56 30.5	
	baz=317,slow=76,SNR=227							
ZAK	**Zakamensk**	**30.32**	**307**	*e*P	**P**		**13 26 35.0**	**-1.1**
ZAK				pmax	pmax			
	comp=Z,3.0nm,1.6s							
ZALV	**Zalesovo Beam**	**41.88**	**312**	P	**P**		**13 28 15.2**	**+0.5**
	comp=Z,3.8nm,0.4s,baz=84,slow=7.5,SNR=18							
ZALV				PcP	**PcP**		**13 30 09.8**	**-0.5**
	comp=Z,1.2nm,0.6s,baz=105,slow=3.5,SNR=4.1							
CMAR	**Chiang Mai Arr**	**42.42**	**255**	P	**P**		**13 28 19.8**	**+0.3**
	comp=Z,0.4nm,0.4s,baz=44,slow=7.1,SNR=4.8							
NVS	**Novosibirsk**	**42.78**	**313**	*e*P	**P**		**13 28 22.2**	**+0.2**
MK31	**Makanchi Array**	**44.29**	**302**	*i*P	**P**		**13 28 33.7**	**-0.6**
MK31				pmax	pmax			
	comp=Z,1.0nm,0.6s							
MKAR	**Makanchi Array**	**44.29**	**302**	P	**P**		**13 28 34.5**	**+0.2**
	comp=Z,1.2nm,0.6s,baz=85,slow=9.2,SNR=16							
KURK	**Kurchatov**	**45.98**	**308**	*e*P	**P**		**13 28 47.4**	**-0.3**
KURK				pmax	pmax			
	comp=Z,22nm,0.8s							
KURK	**Kurchatov**	**45.98**	**308**	*e*P	**P**		**13 28 47.4**	**-0.3**
	comp=Z,22nm,0.8s							
PDGK	**Podgornoye**	**47.03**	**297**	P	**P**		**13 28 55.5**	**-0.4**
PDGK				pmax	pmax			
	comp=Z,2.0nm,0.8s							
ILAR	**Eielson Array**	**48.39**	**33**	P	P		13 29 01.6	-4.6
	comp=Z,0.4nm,0.8s,baz=266,slow=6.6,SNR=6.0							
TKM2	**Tokmak 2**	**49.87**	**298**	*e*P	**P**		**13 29 16.7**	**-1.5**
TKM2				pmax	pmax			
	comp=Z,3.0nm,0.7s							
TKM2	**Tokmak 2**	**49.87**	**298**	*e*P	**P**		**13 29 16.7**	**-1.5**
	comp=Z,2.7nm,0.7s							
CHKZ	**Chkalovo**	**50.26**	**313**	P	P		13 29 16.8	-3.9
CHKZ				pmax	pmax			
	comp=E,1.0nm,0.5s							
BRVK	**Borovoye**	**50.59**	**312**	↑*i*P	**P**		**13 29 24.2**	**+1.0**
BRVK				pmax	pmax			
	comp=Z,7.0nm,2.5s							
ZRNK	**Zerenda**	**51.37**	**312**	P	**P**		**13 29 27.3**	**-1.8**
ZRNK				pmax	pmax			
	comp=Z,3.0nm,0.8s							
MNAS	**Manas**	**52.16**	**298**	P	P		13 29 29.6	-5.8
INK	**Inuvik**	**53.30**	**27**	P	**P**		**13 29 44.0**	**+0.9**
	comp=Z,0.8nm,0.6s,baz=289,slow=7.7,SNR=6.6							
ARU	**Arti**	**56.20**	**318**	*d*P	**P**		**13 30 04.3**	**-0.1**
ARU				S	**S**		**13 37 53.6**	**-0.2**
ARU				SS	**SS**		**13 41 43.2**	**+3.4**
ARU				pmax	pmax			
	comp=Z,7.0nm,1.2s							
AB31	**Akbulak array**	**57.95**	**310**	*i*P	P		13 30 13.7	-3.2
AB31				pmax	pmax			
	comp=Z,1.0nm,0.5s							
ABKAR	**Akbulak array**	**57.95**	**310**	*e*P	P		13 30 14.0	-2.9
	comp=Z,3.4nm,0.6s							
WRAB	**Tennant Creek**	**58.00**	**189**	*e*P	**P**		**13 30 17.4**	**0.0**
WRAB	**Tennant Creek**	**58.00**	**189**	*e*P	**P**		**13 30 17.4**	**0.0**
WRA	**Warramunga Arr**	**58.01**	**189**	P	**P**		**13 30 16.9**	**-0.6**
	comp=Z,1.3nm,0.6s,baz=6.5,slow=7.0,SNR=13							
WRA	**Warramunga Arr**	**58.01**	**189**	*e*P	**P**		**13 30 16.8**	**-0.7**
WRA				pmax	pmax			
	comp=Z,1.0nm,0.6s							
ASAR	**Alice Springs**	**61.74**	**189**	P	**P**		**13 30 43.6**	**+0.5**
	comp=Z,0.5nm,0.8s,baz=8.5,slow=5.3,SNR=6.5							
YKA	**Yellowknife Ar**	**62.71**	**31**	P	**P**		**13 30 49.5**	**+0.3**
	comp=Z,0.5nm,0.8s,baz=304,slow=6.9,SNR=9.1							
ARCES	**ARCESS Array B**	**63.45**	**339**	P	**P**		**13 30 54.3**	**+0.2**
	comp=Z,4.3nm,1.0s,baz=27,slow=5.6,SNR=4.9							
FINES	**FINESS Array B**	**68.40**	**332**	P	**P**		**13 31 25.8**	**-0.1**
	comp=Z,3.9nm,0.7s,baz=67,slow=5.0,SNR=8.2							
KIV	**Kislovodsk**	**70.90**	**311**	↑*i*P	**P**		**13 31 43.4**	**+1.6**
KIV				pmax	pmax			
	comp=Z,11nm,1.7s							
KBZ	**Khabaz**	**70.90**	**311**	P	**P**		**13 31 41.8**	**+0.1**
	comp=Z,2.4nm,0.8s,baz=20,slow=4.1,SNR=4.4							
HFS	**Hagfors**	**73.61**	**336**	P	**P**		**13 31 57.7**	**+0.1**
	comp=Z,2.1nm,0.7s,baz=50,slow=7.9,S

KMSK	**Kamenskaya**	**6.52**	**7**	*eP*	Pn	13 48 29.4	+4.6
KMSK				*eS*	Sn	13 49 41.3	+3.7

NIED ***08*** *13:58:00.37˚.30N×142˚.20E, h5km, Mw3.6 Best double couple: M₀2.90000×10¹⁴ NP1:φ₁70.00000°, δ53.00000°, λ-44.00000°. NP2:φ₂189.00000°, δ56.00000°, λ-134.00000°.*

IDC ***08*** *13:58:27.3±0.9, 36˚.93N×142˚.63E, h0km, mb3.6/9, mb1 3.7/12, mb1mx3.6/48, mbtmp3.6/12, ML2.9/3, MS2.3/1, Ms1 2.3/1, ms1mx2.0/43, Error ellipse: s-maj=23.6km s-min=17.3km az=100.0*

ISCJB ***08*** *13:58:28.7±1.4, 37˚.14N±0˚.07×142˚.38E±0˚.07, h15km±9km, mb3.5/9, Error ellipse: s-maj=11.6km s-min=8.6km az=25.2*

JMA ***08*** *13:58:31.2±0.3, 37˚.33N×142˚.19E, h5km±3km, M3.8*

ISC 08 13:58:28.2±2.2, 37˚.14N±0˚.06×142˚.24E±0˚.07, h1km±13km, n24, σ1§38/26, mb3.6/9, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**1.11**	**282**	P		**Pn**	**Pn**	**13 58 51.0**	**0.0**
JFK				*eS*		**Sb**	**Sb**	**13 59 05.0**	**-0.3**
ONAJ	**Iwakimizuishiy**	**1.15**	**269**	P		**Pn**	**Pn**	**13 58 52.3**	**+0.8**
JMM	**Marumori**	**1.36**	**303**	P		**Pg**	**Pg**	**13 58 54.4**	**+0.1**
JMM				*eS*		**Sb**	**Sb**	**13 59 11.0**	**-1.4**
JIO	**Ouri**	**1.49**	**332**	P		**Pn**	**Pn**	**13 58 55.1**	**-1.1**
JFT	**Otama**	**1.56**	**285**	P		**Pg**	**Pg**	**13 58 58.8**	**+0.6**
JFT				*eS*		**Sg**	**Sg**	**13 59 19.0**	**+0.6**
JOU	**Okura**	**1.75**	**315**	P		**Pb**	**Pb**	**13 59 00.3**	**-0.8**
JOU				*eS*		**Sn**	**Sn**	**13 59 21.3**	**-1.4**
JMK	**Ichinoseki**	**1.98**	**336**	P		**Pn**	**Pn**	**13 59 03.0**	**+0.1**
JMK				*eS*		Sn	Sn	13 59 21.4	-7.0
JYS	**Shirataka**	**2.04**	**303**	P		**Pg**	**Pg**	**13 59 07.2**	**0.0**
JYS				S		**Sb**	**Sb**	**13 59 30.9**	**-1.0**
JFY	**Yanaizu**	**2.04**	**278**	P		**Pb**	**Pb**	**13 59 05.8**	**-0.3**
JFY				*eS*		**Sb**	**Sb**	**13 59 31.9**	**-0.1**
MJAR	**Matsushiro Arr**	**3.29**	**261**	Pn		**Pb**	**Pb**	**13 59 25.0**	**-2.3**
	2.1nm,0.3s,baz=87,slow=15,SNR=14								
MJAR				LR		LR	LR	14 00 51.7	
	comp=Z,49nm,20.4s,baz=30,slow=41								
JHJ	**Hachijo jima 2**	**4.48**	**207**	Pn		**Pn**	**Pn**	**13 59 37.5**	**+0.3**
	4.8nm,0.3s,baz=234,slow=19,SNR=2.2								
USRK	**Ussuriysk Ar.**	**10.50**	**315**	Pn		Pn	Pn	14 01 06.2	+6.3
	0.2nm,0.3s,baz=112,slow=18,SNR=4.5								
SEY	**Seymchan**	**26.57**	**10**	P		**P**	**P**	**14 04 09.5**	**+2.0**
	1.6nm,0.8s,baz=232,slow=17,SNR=8.9								
SONM	**Songino Array**	**28.28**	**304**	P		**P**	**P**	**14 04 25.0**	**+1.9**
	0.6nm,0.6s,baz=106,slow=11,SNR=2.6								
H11S1	**WAKE ISLAND Hy**	**28.36**	**124**	T		T	T	14 34 02.8	
	baz=316,slow=76,SNR=25								
H11S3	**WAKE ISLAND Hy**	**28.36**	**124**	T		T	T	14 34 04.5	
	baz=316,slow=76,SNR=23								
H11S2	**WAKE ISLAND Hy**	**28.38**	**124**	T		T	T	14 34 09.5	
	baz=316,slow=76,SNR=21								
ZALV	**Zalesovo Beam**	**42.34**	**312**	P		**P**	**P**	**14 06 25.2**	**+1.7**
	0.5nm,0.5s,baz=74,slow=11,SNR=3.4								
MKAR	**Makanchi Array**	**44.62**	**302**	P		**P**	**P**	**14 06 44.9**	**+2.8**
	0.5nm,0.5s,baz=91,slow=10,SNR=5.1								
ILAR	**Eielson Array**	**49.05**	**32**	P		**P**	**P**	**14 07 16.9**	**+0.4**
	0.4nm,0.7s,baz=255,slow=5.9,SNR=5.4								
WRA	**Warramunga Arr**	**57.26**	**189**	P		**P**	**P**	**14 08 15.8**	**-1.6**
	0.9nm,0.8s,baz=7.5,slow=7.3,SNR=3.9								
ASAR	**Alice Springs**	**60.98**	**189**	P		**P**	**P**	**14 08 40.8**	**-2.3**
	0.3nm,0.9s,baz=9.4,slow=8.0,SNR=2.7								
YKA	**Yellowknife Ar**	**63.39**	**30**	P		**P**	**P**	**14 08 57.6**	**-1.2**
	0.1nm,0.6s,baz=301,slow=7.1,SNR=3.0								
FINES	**FINESS Array B**	**69.03**	**332**	P		**P**	**P**	**14 09 34.8**	**-0.3**
	1.7nm,0.9s,baz=21,slow=5.9,SNR=2.5								

IDC 08 14:00:36.0±1.4, 49˚.69S×117˚.50E, h0km, mb3.9/4, mb1 4.2/4, mb1mx3.9/29, mbtmp3.9/4, MS3.6/8, Ms1 3.6/8, ms1mx3.3/33, Error ellipse: s-maj=61.9km s-min=26.4km az=91.0, Western Indian-Antarctic Ridge

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
H01W2	**Cape Leeuwin H**	**14.99**	**349**	T		T	T	14 19 37.3	
	baz=170,slow=74,SNR=27								
H01W1	**Cape Leeuwin H**	**14.99**	**349**	T		T	T	14 19 30.6	
	baz=170,slow=74,SNR=22								
H01W3	**Cape Leeuwin H**	**15.01**	**349**	T		T	T	14 19 34.6	
	baz=170,slow=74,SNR=26								
NWAO	**Narrogin (SRO)**	**16.75**	**359**	Pn		P	P	14 04 35.9	+1.5
	0.6nm,0.3s,baz=117,slow=0.4,SNR=6.5								
STKA	**Stephens Creek**	**25.31**	**54**	LR		LR	LR	14 14 37.9	
	comp=Z,100nm,19.3s,baz=210,slow=33								
ASAR	**Alice Springs**	**28.99**	**32**	P		P	P	14 06 37.5	+0.1
	1.2nm,0.9s,baz=202,slow=8.4,SNR=7.9								
ASAR				LR		LR	LR	14 17 09.8	
	comp=Z,170nm,19.0s,baz=141,slow=34								
MAW	**Mawson**	**32.17**	**216**	LR		LR	LR	14 18 16.9	
	comp=Z,175nm,18.2s,baz=61,slow=33								
VNDA	**Vanda**	**32.52**	**164**	P		P	P	14 07 07.5	-0.5
	1.2nm,0.7s,baz=281,slow=8.3,SNR=6.7								
VNDA				LR		LR	LR	14 19 26.0	
	comp=Z,103nm,18.8s,baz=294,slow=35								
WRA	**Warramunga Arr**	**32.59**	**30**	P		P	P	14 07 08.6	-0.5
	2.7nm,1.0s,baz=200,slow=11,SNR=7.4								
H08S2	**Diego Garcia H**	**56.25**	**303**	T		T	T	15 10 52.1	
	baz=147,slow=76,SNR=4.1								
H08S1	**Diego Carcia H**	**56.26**	**303**	T		T	T	15 10 52.5	
	baz=147,slow=76,SNR=5.0								
H08S3	**Diego Garcia H**	**56.27**	**303**	T		T	T	15 10 52.0	
	baz=147,slow=76,SNR=4.4								
PALK	**Palkekele**	**65.15**	**319**	LR		LR	LR	14 33 07.6	
	comp=Z,43nm,19.2s,baz=117,slow=30								
RAR	**Rarotonga**	**69.50**	**99**	LR		LR	LR	14 40 06.3	
	comp=Z,36nm,18.3s,baz=256,slow=34								
CMAR	**Chiang Mai Arr**	**69.81**	**341**	P		P	P	14 11 48.1	-0.1
	0.4nm,0.4s,baz=199,slow=4.1,SNR=5.1								
CMAR				LR		LR	LR	14 41 35.6	
	comp=Z,15nm,19.1s,baz=165,slow=35								
PLCA	**Paso Flores**	**89.67**	**174**	LR		LR	LR	14 51 57.9	
	comp=Z,41nm,18.2s,baz=194,slow=34								
TXAR	**Lajitas Array**	**142.89**	**108**	PKP		PKPdf	PKPdf	14 20 11.5	+0.1
	0.4nm,0.8s,baz=225,slow=2.2,SNR=2.8								
PDAR	**Pinedale Array**	**147.17**	**84**	PKPbc		PKPbc	PKPbc	14 20 20.9	+0.1
	0.5nm,0.8s,baz=242,slow=3.2,SNR=5.1								
YKA	**Yellowknife Ar**	**149.17**	**46**	PKPbc		PKPbc	PKPbc	14 20 24.5	-0.5
	1.6nm,0.7s,baz=277,slow=2.2,SNR=28								

JMA ***08*** *14:03:13.1, 24˚.14N×122˚.61E, h43km±2km, M2.3*

ISCJB ***08*** *14:03:14.0±0.3, 24˚.21N±0˚.04×122˚.63E±0˚.02, h41km±13km, Error ellipse: s-maj=6.3km s-min=2.7km az=173.1*

TAP ***08*** *14:03:14.0, 24˚.17N×122˚.53E, h19km, ML2.9, D*

ISC 08 14:03:12.6±1.2, 24˚.17N±0˚.04×122˚.62E±0˚.02, h23km±14km, n34, σ0§86/59, Taiwan region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
JYNG	**Yonagunijimaku**	**0.41**	**47**	P		**Pn**	**Pn**	**14 03 23.2**	**+0.1**
JYNG				S		**Sn**	**Sn**	**14 03 30.4**	**+0.4**
YOJ	**Yonaguni jima**	**0.46**	**51**	P		**Pn**	**Pn**	**14 03 23.8**	**0.0**
YOJ				*eS*		**Sn**	**Sn**	**14 03 31.4**	**+0.1**
TWC	**Suao**	**0.83**	**302**	P		**Pn**	**Pn**	**14 03 29.0**	**+0.1**
	baz=305								
TWC				S		**Sn**	**Sn**	**14 03 39.7**	**-0.7**
	baz=305								
ENA	**Nanau**	**0.84**	**288**	P		**Pn**	**Pn**	**14 03 28.9**	**-0.1**
	baz=289								
ENA				*eS*		**Sn**	**Sn**	**14 03 40.8**	**0.0**
	baz=289								
TWD	**Chiawan**	**0.94**	**265**	*eP*		**Pn**	**Pn**	**14 03 31.3**	**+0.9**
	baz=263								
TWD				*eS*		**Sb**	**Sb**	**14 03 42.2**	**-0.1**
	baz=263								
TWB1	**Santiao Chiao**	**1.01**	**326**	*eP*		**Pn**	**Pn**	**14 03 30.3**	**-1.1**
	baz=329								
TWB1				*eS*		**Sb**	**Sb**	**14 03 43.7**	**-0.8**
	baz=329								
IRIF	**Iriomote-Funau**	**1.03**	**81**	P		**Pn**	**Pn**	**14 03 31.6**	**0.0**
IRIF				S		**Sn**	**Sn**	**14 03 45.6**	**+0.3**
TWE	**Neicheng**	**1.03**	**303**	P		**Pb**	**Pb**	**14 03 32.4**	**+0.6**
	baz=305								
TWE				S		**Sn**	**Sn**	**14 03 45.5**	**+0.3**
	baz=305								
ENTT	**Nioudou**	**1.07**	**296**	P		**Pb**	**Pb**	**14 03 32.8**	**+0.3**
	baz=298								
ENTT				*eS*		**Sb**	**Sb**	**14 03 45.4**	**-0.6**
	baz=298								
ESL	**Shilin**	**1.14**	**252**	*eS*		**Sb**	**Sb**	**14 03 47.0**	**-1.1**
	baz=250								
NNS	**Nan Shan**	**1.17**	**284**	*eP*		**Pb**	**Pb**	**14 03 35.9**	**+1.7**
	baz=284								
NNS				*eS*		**Sn**	**Sn**	**14 03 51.6**	**+2.6**
	baz=284								
NWF	**Wu-fen Shan**	**1.18**	**320**	*eP*		**Pn**	**Pn**	**14 03 33.5**	**-0.2**
	baz=322								
NWF				*eS*		**Sb**	**Sb**	**14 03 48.3**	**-0.9**
	baz=322								
WHF	**Hehuan Shan**	**1.24**	**269**	*eP*		**Pb**	**Pb**	**14 03 36.3**	**+0.7**
	baz=268								
NSK	**Sanguang**	**1.26**	**294**	*eP*		**Pb**	**Pb**	**14 03 35.5**	**-0.2**
	baz=295								
NSK				*eS*		**Sn**	**Sn**	**14 03 50.1**	**-0.9**
	baz=295								
JKRS	**Kuro-shima**	**1.27**	**87**	P		**Pb**	**Pb**	**14 03 35.9**	**0.0**
JKRS				*eS*		**Sb**	**Sb**	**14 03 52.2**	**+0.4**
TWT	**Tachien**	**1.32**	**274**	*eP*		**Pb**	**Pb**	**14 03 38.7**	**+1.8**
	baz=273								
EHY	**Hungye**	**1.36**	**241**	*eP*		**Pb**	**Pb**	**14 03 37.5**	**+0.1**
	baz=238								
EHY				*eS*		**Sn**	**Sn**	**14 03 52.8**	**-0.8**
	baz=238								
JIJ	**Ishigaki jima**	**1.40**	**82**	P		**Pn**	**Pn**	**14 03 36.7**	**-0.1**
JIJ				S		**Sn**	**Sn**	**14 03 53.8**	**-0.8**
WDT	**Danda**	**1.42**	**253**	P		**Pn**	**Pn**	**14 03 37.8**	**+0.4**
	baz=251								
WDT				*eS*		**Sn**	**Sn**	**14 03 53.2**	**-2.3**
	baz=251								
TWF1	**Yuli**	**1.46**	**236**	*eP*		**Pn**	**Pn**	**14 03 37.9**	**+0.3**
	baz=233								
TWF1				*eS*		**Sn**	**Sn**	**14 03 55.0**	**-1.0**
	baz=233								
JISG	**Ishigakijimahi**	**1.60**	**75**	P		**Pn**	**Pn**	**14 03 39.1**	**-0.3**
JISG				*eS*		**Sn**	**Sn**	**14 03 58.9**	**-0.4**
SMLT	**Sun Moon Lake**	**1.60**	**260**	*eP*		**Pb**	**Pb**	**14 03 42.6**	**+1.0**
	baz=258								
SMLT				*eS*		**Sn**	**Sn**	**14 03 59.5**	**-0.1**
	baz=258								
TYC	**Yuchr**	**1.63**	**261**	*eP*		**Pb**	**Pb**	**14 03 42.3**	**+0.2**
	baz=260								
TYC				*eS*		**Sn**	**Sn**	**14 04 01.1**	**+0.8**
	baz=260								
YUS	**Yu-Shan**	**1.67**	**246**	*eP*		**Pn**	**Pn**	**14 03 41.8**	**+0.9**
	baz=244								
YUS				*eS*		**Sn**	**Sn**	**14 04 00.3**	**-1.5**
	baz=244								
TWQ1	**Liyutan**	**1.69**	**276**	*eS*		**Sb**	**Sb**	**14 04 03.7**	**-0.3**
	baz=276								
ELDTW	**Lidau**	**1.76**	**237**	*eP*		**Pn**	**Pn**	**14 03 42.5**	**+0.6**
	baz=234								
ALS	**Alishan**	**1.79**	**249**	*eP*		**Pb**	**Pb**	**14 03 44.2**	**-0.6**
	baz=247								
CHN5	**Tsauling**	**1.87**	**253**	*eP*		**Pb**	**Pb**	**14 03 46.8**	**+0.7**
	baz=251								
CHN5				*eS*		**Sn**	**Sn**	**14 04 06.8**	**+0.7**
	baz=251								
JTJ	**Tarama**	**1.96**	**76**	P		**Pn**	**Pn**	**14 03 44.9**	**+0.5**
JTJ				*eS*		**Sn**	**Sn**	**14 04 08.0**	**-0.2**
STYT	**Tauyuan**	**1.98**	**240**	*eS*		**Sn**	**Sn**	**14 04 09.9**	**+0.9**
	baz=238								
CHN4	**Tsaushan**	**2.03**	**247**	*eS*		**Sb**	**Sb**	**14 04 13.3**	**-0.3**
	baz=245								
WTP	**Ta-pu**	**2.06**	**244**	*eS*		**Sb**	**Sb**	**14 04 13.3**	**-1.2**
	baz=242								
CHN1	**Nanshi**	**2.15**	**243**	*eP*		**Pb**	**Pb**	**14 03 50.9**	**-0.1**
	baz=241								
CHN1				*eS*		**Sb**	**Sb**	**14 04 15.9**	**-1.3**
	baz=241								
JIKM	**Ikemajima**	**2.51**	**72**	P		**Pn**	**Pn**	**14 03 52.6**	**+0.6**
JIKM				*eS*		**Sn**	**Sn**	**14 04 22.0**	**+0.2**

IDC 08 14:03:28.5±16.0, 21˚.80N×143˚.35E, h201km±157km, mb3.1/7, mb1 3.4/7, mb1mx3.0/44, mbtmp3.6/7, Error ellipse: s-maj=45.5km s-min=19.9km az=70.0, Mariana Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**42.41**	**193**	P		P	P	14 11 03.4	-0.2
	0.7nm,0.6s,baz=17,slow=9.1,SNR=11								
ASAR	**Alice Springs**	**46.12**	**192**	P		P	P	14 11 32.4	-0.5
	0.2nm,0.6s,baz=14,slow=12,SNR=4.5								
MKAR	**Makanchi Array**	**54.74**	**313**	P		P	P	14 12 37.7	+0.5
	0.1nm,0.4s,baz=96,slow=5.9,SNR=3.0								
YKA	**Yellowknife Ar**	**76.29**	**28**	P		P	P	14 14 54.0	-0.8
	0.1nm,0.4s,baz=290,slow=5.5,SNR=4.2								
ARCES	**ARCESS Array B**	**78.87**	**342**	P		P	P	14 15 09.3	+0.3
	1.4nm,0.8s,baz=64,slow=8.4,SNR=5.5								
NVAR	**Mina Array Bea**	**82.96**	**52**	P		P	P	14 15 32.1	+0.5
	0.3nm,0.6s,baz=305,slow=5.4,SNR=3.1								
FINES	**FINESS Array B**	**83.15**	**335**	P		P	P	14 15 30.0	-1.7
	0.8nm,0.6s,baz=72,slow=4.5,SNR=4.6								
PLCA	**Paso Flores**	**145.71**	**131**	PKPbc		PKPbc	PKPbc	14 22 43.8	-0.2
	0.9nm,0.7s,baz=254,slow=0.7,SNR=4.4								

ISCJB ***08*** *14:13:09.8±0.4, 7˚.46S±0˚.06×156˚.14E±0˚.05, h44km, mb4.5/26, MS3.7/10, Error ellipse: s-maj=8.8km s-min=7.6km az=8.7*

NEIC ***08*** *14:13:12.3±1.3, 7˚.48S×156˚.18E, h54km±12km, mb4.7/7, Error ellipse: s-maj=10.6km s-min=9.3km az=216.0*

IDC ***08*** *14:13:12.3±2.9, 7˚.48S×156˚.14E, h49km±27km, mb4.2/18, mb1 4.3/20, mb1mx4.2/30, mbtmp4.5/20, ML3.8/2, MS3.6/13, Ms1 3.6/13, ms1mx3.3/47, Error ellipse: s-maj=18.7km s-min=13.8km az=88.0*

BJI ***08*** *14:13:15.0, 7˚.70S×156˚.30E, h106km, mb4.7/12, mB5.0/6*

ISC 08 14:13:11.5±0.4, 7˚.43S±0˚.08×156˚.19E±0˚.07, h44km, n51, σ1§29/48, mb4.6/26, MS3.8/10, 1D, Bougainville-Solomon Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
HNR	**Honiara**	**4.21**	**118**	P		**Pn**	**Pn**	**14 14 14.2**	**+0.9**
	11nm,0.3s,baz=327,slow=1.9,SNR=6.1								
HNR				S		Sn	Sn	14 15 10.0	+8.7
	60nm,0.3s,baz=54,slow=22,SNR=8.8								
HNR				LR		LR	LR	14 15 27.5	
	comp=Z,280nm,20.0s,baz=312,slow=32								
HNR	**Honiara**	**4.21**	**118**	*eP*		Pn	Pn	14 14 17.0	+3.7
HNR				*eS*		Sn	Sn	14 15 10.0	+8.8
HNR	**Honiara**	**4.21**	**118**	*ePn*		**Pn**	**Pn**	**14 14 12.9**	**-0.3**
HNR				*eSn*		**Sn**	**Sn**	**14 15 02.2**	**+1.0**
HNR				S		Sn	Sn	14 15 10.0	+8.7
PMG	**Port Moresby**	**9.15**	**257**	P		**Pn**	**Pn**	**14 15 24.2**	**+3.1**
	0.2nm,0.3s,baz=77,slow=18,SNR=1.9								
PMG				LR		LR	LR	14 18 50.9	
	comp=Z,505nm,18.7s,baz=68,slow=37								
PMG	**Port Moresby**	**9.15**	**257**	*ePn*		**Pn**	**Pn**	**14 15 22.5**	**+1.4**
PMG				*eSn*		**Sn**	**Sn**	**14 17 03.5**	**+0.7**
DZM	**Mont Dzumac**	**17.59**	**147**	P		**Pn**	**Pn**	**14 17 13.3**	**-0.4**
	0.1nm,0.3s,baz=32,slow=9.5,SNR=3.2								
DZM				LR		LR	LR	14 23 36.7	
	comp=Z,134nm,18.5s,baz=226,slow=36								
WRAB	**Tennant Creek**	**24.55**	**237**	*eP*		**P**	**P**	**14 18 26.1**	**-1.3**
	21nm,0.9s								
WRA	**Warramunga Arr**	**24.56**	**237**	P		**P**	**P**	**14 18 27.6**	**+0.1**
	12nm,0.7s,baz=61,slow=9.7,SNR=35								
WRA				PcP		**PcP**	**PcP**	**14 22 05.3**	**+0.4**
	1.4nm,0.6s,baz=62,slow=2.4,SNR=8.9								
ASAR	**Alice Springs**	**26.79**	**230**	P		**P**	**P**	**14 18 47.0**	**-0.7**
	2.0nm,0.7s,baz=63,slow=8.8,SNR=27								
ASAR				PcP		**PcP**	**PcP**	**14 22 10.4**	**+0.4**
	1.2nm,0.7s,baz=50,slow=2.2,SNR=6.9								
STKA	**Stephens Creek**	**27.87**	**207**	P		**P**	**P**	**14 18 56.2**	**-1.0**
	5.6nm,0.9s,baz=30,slow=12,SNR=7.0								
STKA				LR		LR	LR	14 30 01.5	
	comp=Z,200nm,18.0s,baz=22,slow=36								
H11N1	**WAKE ISLAND Hy**	**28.96**	**21**	T		T	T	14 48 47.2	
	baz=202,slow=76,SNR=19								
H11N3	**WAKE ISLAND Hy**	**28.97**	**21**	T		T	T	14 48 49.1	
	baz=202,slow=76,SNR=11								
H11N2	**WAKE ISLAND Hy**	**28.98**	**21**	T		T	T	14 48 49.9	
	baz=202,slow=76,SNR=6.7								
FITZ	**Fitzroy Crossi**	**31.57**	**247**	LR		LR	LR	14 32 17.9	
	comp=Z,108nm,18.1s,slow=36								
FITZ	**Fitzroy Crossi**	**31.57**	**247**	*eP*		**P**	**P**	**14 19 29.2**	**-1.0**
	5.3nm,0.8s								
URZ	**Urewera**	**36.05**	**151**	LR		LR	LR	14 33 04.8	
	comp=Z,184nm,18.1s,baz=310,slow=33								
RPZ	**Rata Peaks**	**38.41**	**163**	P		**P**	**P**	**14 20 29.0**	**+0.2**
	17nm,0.9s,baz=267,slow=4.8,SNR=4.0								
MJAR	**Matsushiro Arr**	**46.89**	**340**	P		**P**	**P**	**14 21 37.0**	**-0.6**
	1.5nm,0.8s,baz=172,slow=8.6,SNR=4.9								
MJAR				PcP		**PcP**	**PcP**	**14 23 09.5**	**-0.4**
	2.2nm,0.7s,baz=163,slow=4.3,SNR=5.8								
KSRS	**Korea Array**	**51.88**	**331**	P		**P**	**P**	**14 22 16.1**	**+0.5**
	2.7nm,0.7s,baz=147,slow=7.5,SNR=15								
KSRS				LR		LR	LR	14 45 24.2	
	comp=Z,16nm,18.2s,baz=140,slow=37								
KSAR	**Wonju Array Be**	**51.89**	**331**	P		**P**	**P**	**14 22 16.1**	**+0.4**
PPT	**Papeete**	**53.73**	**106**	LR		LR	LR	14 41 22.3	
	comp=Z,40nm,19.7s,baz=336,slow=31								
ENH	**Enshi**	**58.41**	**312**	P		**P**	**P**	**14 23 02.9**	**-0.1**
PETK	**Petropavlovsk-**	**60.32**	**1**	P		**P**	**P**	**14 23 17.2**	**+1.6**
	7.2nm,1.1s,baz=207,slow=11,SNR=5.3								
PETK				LR		LR	LR	14 46 00.2	
	comp=Z,70nm,22.0s,baz=145,slow=33								
CMAR	**Chiang Mai Arr**	**62.04**	**295**	P		**P**	**P**	**14 23 29.0**	**+0.9**
	1.7nm,0.6s,baz=122,slow=5.3,SNR=15								
GTA	**Gaotai**	**69.87**	**317**	*eP*		**P**	**P**	**14 24 19.5**	**+1.3**
GTA				pmax		pmax			
	comp=Z,4.0nm,1.0s								
ULN	**Ulaanbaatar**	**70.01**	**327**	*eP*		**P**	**P**	**14 24 17.3**	**-1.6**
	9.9nm,1.4s								
VNDA	**Vanda**	**70.12**	**179**	P		**P**	**P**	**14 24 19.5**	**+0.7**
	1.9nm,0.9s,baz=331,slow=6.7,SNR=4.7								
SONM	**Songino Array**	**70.35**	**327**	P		**P**	**P**	**14 24 22.1**	**+1.2**
	5.1nm,0.8s,baz=137,slow=6.6,SNR=29								
SONM				LR		LR	LR	14 55 34.6	
	comp=Z,36nm,19.3s,baz=143,slow=36								
LSA	**Lhasa**	**72.50**	**304**	*eP*		**P**	**P**	**14 24 33.6**	**-1.0**
	11nm,1.0s								
QSPA	**South Pole Qui**	**82.55**	**180**	*eP*		**P**	**P**	**14 25 28.1**	**-1.5**
	57nm,1.0s								
ILAR	**Eielson Array**	**83.35**	**21**	P		**P**	**P**	**14 25 33.5**	**-0.1**
	0.9nm,0.8s,baz=241,slow=5.6,SNR=8.0								
MAW	**Mawson**	**84.45**	**203**	P		**P**	**P**	**14 25 39.6**	**+0.4**
	2.8nm,0.6s,baz=110,slow=7.7,SNR=8.3								
MKAR	**Makanchi Array**	**84.52**	**318**	P		**P**	**P**	**14 25 40.3**	**+0.3**
	1.0nm,0.7s,baz=102,slow=6.0,SNR=301								
ZALV	**Zalesovo Beam**	**85.21**	**326**	P		**P**	**P**	**14 25 42.6**	**-0.6**
	14nm,0.6s,baz=117,slow=5.7,SNR=70								
KURK	**Kurchatov**	**87.91**	**322**	*eP*		**P**	**P**	**14 25 53.9**	**-2.7**
	35nm,1.5s								
DLBC	**Dease Lake**	**87.91**	**30**	LR		LR	LR	14 57 16.5	
	comp=Z,59nm,21.4s,baz=328,slow=30								
TKM2	**Tokmak 2**	**88.18**	**314**	*eP*		**P**	**P**	**14 25 55.9**	**-2.4**
	3.4nm,0.7s								
NRIK	**Noril'sk**	**89.54**	**341**	P		**P**	**P**	**14 26 03.4**	**-0.5**
	1.0nm,0.3s,baz=127,slow=3.9,SNR=3.8								
NVAR	**Mina Array Bea**	**91.06**	**52**	P		**P**	**P**	**14 26 13.2**	**+1.3**
	0.4nm,0.7s,baz=257,slow=8.0,SNR=3.3								
NVAR				LR		LR	LR	15 05 37.4	
	comp=Z,46nm,18.1s,baz=280,slow=34								
BVAR	**Borovoye Array**	**93.36**	**323**	P		**P**	**P**	**14 26 21.1**	**-0.9**
	2.9nm,0.6s,baz=108,slow=5.4,SNR=18								
BVAR				LR		LR	LR	15 08 29.6	
	comp=Z,81nm,21.3s,baz=254,slow=36								
YKA	**Yellowknife Ar**	**96.17**	**28**	P		**P**	**P**	**14 26 34.7**	**+0.2**
	0.5nm,0.7s,baz=265,slow=4.9,SNR=8.1								
BOSA	**Boshof**	**120.67**	**231**	PKP		**PKPdf**	**PKPdf**	**14 31 57.8**	**-1.8**
	2.6nm,0.8s,baz=27,slow=2.3,SNR=3.2								
STHS	**Stebnicka Huta**	**123.70**	**326**	*e*PKP		**PKPdf**	**PKPdf**	**14 32 02.4**	**-2.2**
BRG	**Berggiesshubel**	**126.60**	**331**	*e*PKP		PKPdf	PKPdf	14 32 18.3	+8.2
	3.3nm,0.9s								
CLL

WHF				*e*S	**Sn**	**14 29 16.5**	**-2.1**
	baz=242						
TWT	**Tachien**	**1.15**	**244**	*e*P	**Pn**	**14 29 04.3**	**+2.3**
	baz=250						
TWT				*e*S	**Sn**	**14 29 17.0**	**-1.5**
	baz=250						
IRIF	**Iriomote-Funau**	**1.37**	**108**	P	**Pn**	**14 29 06.4**	**+2.0**
IRIF				*e*S	**Sn**	**14 29 21.8**	**-1.1**
JKRS	**Kuro-shima**	**1.64**	**108**	P	**Pn**	**14 29 09.8**	**+2.0**
JKRS				*e*S	**Sn**	**14 29 27.8**	**-1.1**
JIJ	**Ishigaki jima**	**1.72**	**103**	P	**Pn**	**14 29 10.2**	**+1.3**
JIJ				S	**Sn**	**14 29 27.2**	**-3.6**
JISG	**Ishigakijimahi**	**1.84**	**95**	P	**Pn**	**14 29 11.2**	**+0.9**
JISG				*e*S	**Sn**	**14 29 29.5**	**-3.9**

IDC ***08*** *14:44:04.2±1.1, 37˚.72N×143˚.24E, h0km, mb3.4/5, mb1 3.5/6, mb1mx3.4/46, mbtmp3.3/6, ML2.7/1, MS2.8/1, Ms1 3.0/1, ms1mx2.2/28, Error ellipse: s-maj=31.1km s-min=25.0km az=88.0*

JMA ***08*** *14:44:10.3±0.2, 37˚.41N×142˚.42E, h2km±3km, M3.5*

ISC 08 14:44:09.5±3.4, 37˚.41N±0˚.09×142˚.48E±0˚.10, h11km±19km, n18, σ1s03/19, mb3.4/5, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JFK	**Kawauchi**	**1.28**	**268**	P	**Pb**	**14 44 33.8**	**+0.2**
JFK				*e*S	**Sn**	**14 44 50.2**	**-0.3**
JIO	**Ouri**	**1.37**	**320**	P	**Pb**	**14 44 35.4**	**+0.2**
JIO				*e*S	**Sg**	**14 44 53.4**	**-0.3**
ONAJ	**Iwakimizuishiy**	**1.38**	**257**	P	**Pn**	**14 44 35.0**	**+0.3**
ONAJ				*e*S	**Sb**	**14 44 52.5**	**-0.4**
JMM	**Marumori**	**1.41**	**289**	P	**Pb**	**14 44 35.9**	**0.0**
JMM				*e*S	**Sg**	**14 44 54.4**	**-0.6**
JFT	**Otama**	**1.71**	**274**	P	**Pb**	**14 44 41.0**	**+0.1**
JFT				S	**Sb**	**14 45 02.7**	**+0.3**
JOU	**Okura**	**1.72**	**304**	P	**Pb**	**14 44 41.5**	**+0.3**
JOU				*e*S	**Sg**	**14 45 04.0**	**-0.9**
JMK	**Ichinoseki**	**1.83**	**327**	P	**Pn**	**14 44 42.2**	**+1.3**
JYS	**Shirataka**	**2.08**	**294**	P	**Pb**	**14 44 46.8**	**-0.4**
MJAR	**Matsushiro Arr**	**3.53**	**257**	Pn	**Pn**	**14 45 07.3**	**+3.1**
	0.4nm,0.3s,baz=73,slow=9.4,SNR=3.7						
H11N2	**WAKE ISLAND Hy**	**27.62**	**123**	T	T	15 18 49.9	
	baz=315,slow=75,SNR=5.3						
H11N1	**WAKE ISLAND Hy**	**27.63**	**123**	T	T	15 18 48.5	
	baz=315,slow=75,SNR=4.3						
H11N3	**WAKE ISLAND Hy**	**27.64**	**123**	T	T	15 18 48.4	
	baz=315,slow=75,SNR=4.0						
SONM	**Songino Array**	**28.29**	**303**	P	**P**	**14 50 03.4**	**+0.4**
	0.5nm,0.7s,baz=112,slow=9.8,SNR=4.3						
CMAR	**Chiang Mai Arr**	**42.42**	**256**	LR	LR	15 10 44.3	
	comp=Z,11nm,18.8s,baz=160,slow=37						
MKAR	**Makanchi Array**	**44.64**	**302**	P	**P**	**14 52 20.9**	**-1.1**
	0.2nm,0.6s,baz=89,slow=7.6,SNR=2.4						
WRA	**Warramunga Arr**	**57.56**	**189**	P	**P**	**14 53 58.3**	**-0.9**
	1.0nm,0.9s,baz=7.2,slow=7.3,SNR=5.1						
ASAR	**Alice Springs**	**61.29**	**189**	P	**P**	**14 54 24.3**	**-0.6**
	0.5nm,0.8s,baz=6.6,slow=7.7,SNR=8.0						
YKA	**Yellowknife Ar**	**63.05**	**31**	P	P	14 54 28.6	-7.7
	0.2nm,0.8s,baz=320,slow=5.6,SNR=3.4						

NIED ***08*** *14:55:00, 37˚.30N×141˚.80E, h5km, Mw3.5 Best double couple: M0 1.85000×10^14 NP1:φs76.00000°, δ49.00000°, λ-55.00000°. NP2:φs210.00000°, δ52.00000°, λ-123.00000°.*

IDC ***08*** *14:55:50.9±2.5, 37˚.10N×141˚.90E, h0km, mb3.6/3, mb1 3.6/4, mb1mx3.3/62, mbtmp3.5/4, ML3.2/1, Error ellipse: s-maj=63.7km s-min=30.6km az=63.0*

ISCJB ***08*** *14:55:52.2±1.9, 37˚.22N±0˚.05×141˚.9E±0˚.1, h20km±11km, mb3.6/3, Error ellipse: s-maj=14.9km s-min=8.7km az=4.4*

JMA ***08*** *14:55:54.2±0.2, 37˚.30N×141˚.79E, h26km±3km, M3.6*

ISC 08 14:55:53.3±2.5, 37˚.23N±0˚.06×141˚.78E±0˚.09, h16km±12km, n12, σ0s79/18, mb3.6/3, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JFK	**Kawauchi**	**0.74**	**281**	P	**Pg**	**14 56 07.8**	**0.0**
JFK				S	**Sg**	**14 56 17.9**	**+0.4**
ONAJ	**Iwakimizuishiy**	**0.80**	**261**	P	**Pb**	**14 56 09.0**	**+0.2**
ONAJ				*e*S	**Sb**	**14 56 19.0**	**-0.4**
JMM	**Marumori**	**1.01**	**309**	P	**Pb**	**14 56 11.8**	**-0.6**
JMM				S	**Sb**	**14 56 24.6**	**-0.8**
JHO	**Hitachi**	**1.16**	**238**	P	**Pn**	**14 56 14.6**	**-0.2**
JFT	**Otama**	**1.19**	**284**	P	**Pn**	**14 56 15.4**	**+0.2**
JFT				S	**Sb**	**14 56 30.3**	**-0.3**
JIO	**Ouri**	**1.27**	**344**	S	**Sb**	**14 56 31.5**	**-1.3**
JOU	**Okura**	**1.44**	**322**	P	**Pn**	**14 56 19.2**	**+0.5**
JOU				*e*S	**Sn**	**14 56 37.3**	**+0.1**
MJAR	**Matsushiro Arr**	**2.95**	**258**	Pn	**Pn**	**14 56 39.5**	**0.0**
	2.9nm,0.3s,baz=78,slow=14,SNR=21						
MAT	**Matsushiro**	**2.95**	**258**	P	**Pn**	**14 56 38.8**	**-0.7**
MAT				*e*S	**Sb**	**14 57 20.4**	**-0.9**
MKAR	**Makanchi Array**	**44.26**	**302**	P	**P**	**15 04 03.7**	**+1.8**
	0.6nm,0.7s,baz=81,slow=8.6,SNR=4.5						
KURBB	**Kurchatov Arra**	**46.11**	**308**	P	**P**	**15 04 17.2**	**+0.7**
	1.1nm,0.6s,baz=84,slow=7.8,SNR=7.8						
WRA	**Warramunga Arr**	**57.30**	**188**	P	**P**	**15 05 39.6**	**-0.7**
	0.4nm,0.9s,baz=7.1,slow=7.8,SNR=2.9						

IDC ***08*** *14:56:31.7±0.8, 35˚.43N×92˚.38W, h0km, mb3.6/7, mb1 4.0/14, mb1mx3.7/74, mbtmp3.8/14, ML4.2/6, MS3.2/6, Ms1 3.2/6, ms1mx2.9/44, Error ellipse: s-maj=15.3km s-min=10.6km az=168.0*

NEIC ***08*** *14:56:32.0, 35˚.26N×92˚.36W, h6km, mb3.9/7, MW3.9, Moment Tensor Solution. s25 Moment tensor: Scale 10^14Nm; Mrr=0.34; Mθθ6.72; Mφφ-6.38; Mrθ0.49; Mθφ3.59; Mφr2.03; Best double couple: M0 7.80000×10^14 NP1: φs120.00000°, δ75.00000°, λ-5.00000°. NP2:φs211.00000°, δ85.00000°, λ-165.00000°. Principal axes: T 7.7600, Plg7.0000°, Azm345.0000°; N 0.0000, Plg74.0000°, Azm229.0000°; P -7.7600, Plg14.0000°, Azm77.0000°; After CERI.*

NEIC Felt [IV] at Damascus, Greenbrier and Mayflower; [III] at Bentonville, Fort Smith, Higden and Van Buren; [II] at Benton, Conway, Fayetteville, Little Rock, Springdale and Stuttgart. Felt widely in central and northwestern Arkansas.

ISC 08 14:56:32.0±0.8, 35˚.27N±0˚.02×92˚.34W±0˚.03, h11km±5km, n328, σ1s11/335, mb4.0/8, MS3.5/4, Arkansas

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
WHAR	**Wooly Hollow**	**0.05**	**64**	*e*Pg	**Pg**	**14 56 34.0**	**-0.2**
W41B	**Gary Mavity, V**	**0.12**	**141**	P	**Pg**	**14 56 34.6**	**-0.4**
	baz=314						
W41B				S	**Sg**	**14 56 36.7**	**-0.4**
	baz=314						
UALR	**University of**	**0.49**	**180**	*e*Pg	**Pg**	**14 56 41.7**	**+0.1**
W40A	**Ferguson Farm,**	**0.60**	**263**	P	**Pg**	**14 56 43.2**	**-0.5**
	baz=83,SNR=489						
V40A	**Witts Springs**	**0.66**	**324**	P	**Pg**	**14 56 44.6**	**-0.3**
	baz=145,SNR=1000						
V40A				S	**Sg**	**14 56 53.7**	**+0.1**
	baz=145						
X40A	**Basin Creek Fa**	**0.88**	**208**	P	**Pg**	**14 56 48.3**	**-0.6**
	baz=26,SNR=724						
X40A				S	**Sg**	**14 57 00.2**	**-0.2**
	baz=26						
U40A	**Yellville**	**1.16**	**339**	P	**Pg**	**14 56 53.6**	**-0.8**
	baz=160,SNR=1000						
W39A	**Magazine**	**1.18**	**267**	P	**Pg**	**14 56 53.8**	**-0.9**
	baz=86,SNR=486						
W39A				S	**Sg**	**14 57 10.0**	**-0.2**
	baz=86						
V39A	**Pettigrew**	**1.21**	**299**	P	**Pg**	**14 56 54.3**	**-0.9**
	baz=118,SNR=1000						
V39A				S	**Sg**	**14 57 10.1**	**-0.7**
	baz=118						
MIAR	**Mount Ida**	**1.24**	**235**	P	**Pg**	**14 56 54.5**	**-1.4**
	baz=54,SNR=1000						
MIAR				S	**Sg**	**14 57 11.2**	**-0.8**
	baz=54						
MIAR	**Mount Ida**	**1.24**	**235**	*e*Pg	**Pg**	**14 56 54.7**	**-1.2**
MIAR				*e*Sg	**Sg**	**14 57 10.3**	**-1.7**
HBAR	**Harrisburg**	**1.41**	**78**	*e*Pn	**Pn**	**14 56 58.4**	**+0.8**
CCAR	**Cane Creek**	**1.43**	**161**	*e*Pn	**Pn**	**14 56 58.5**	**+0.6**
QUAR	**Qualls**	**1.43**	**74**	*e*Pn	**Pb**	**14 56 59.1**	**+0.3**
U39A	**Green Forest**	**1.45**	**321**	Pb	**Pn**	**14 56 58.4**	**+0.3**
	baz=141,SNR=789						
U39A				Sb	**Sb**	**14 57 17.7**	**+0.3**
	baz=141						
Y40A	**Okolona**	**1.47**	**212**	Pb	**Pn**	**14 56 59.1**	**+0.6**
	baz=31						
Y40A				Sb	**Sb**	**14 57 18.3**	**+0.2**
	baz=31						
X39A	**Fountain Ranch**	**1.64**	**243**	Pb	**Pn**	**14 57 01.6**	**+0.8**
	baz=62,SNR=1000						
X39A				Sb	**Sn**	**14 57 23.1**	**+1.1**
	baz=62						
HHAR	**Hobbs**	**1.65**	**308**	*e*Pn	**Pn**	**14 57 02.0**	**+1.1**
WLAR	**White Oak Lake**	**1.70**	**202**	*e*Pn	**Pb**	**14 57 03.2**	**-0.1**
V38A	**Canehill**	**1.79**	**290**	Pb	**Pn**	**14 57 03.9**	**+1.1**
	baz=109,SNR=241						
V38A				Sb	**Sb**	**14 57 27.9**	**+0.7**
	baz=109						
W38A	**Poteau**	**1.79**	**264**	Pb	**Pn**	**14 57 04.3**	**+1.4**
	baz=83,SNR=1000						
W38A				Sb	**Sb**	**14 57 28.8**	**+1.4**
	baz=83						
T40A	**Mansfield**	**1.88**	**356**	Pb	**Pn**	**14 57 05.8**	**+1.6**
	baz=176,SNR=866						
T40A				Sb	**Sb**	**14 57 31.2**	**+1.2**
	baz=176						
SFTN	**Shelby Forest**	**1.90**	**87**	*e*Pn	**Pn**	**14 57 05.5**	**+1.1**
T39A	**Clever**	**1.94**	**335**	Pb	**Pn**	**14 57 06.8**	**+1.8**
	baz=155,SNR=360						
T39A				Sb	**Sb**	**14 57 33.0**	**+1.3**
	baz=155						
Y39A	**Lockesburg**	**1.96**	**228**	S	**Sn**	**14 57 31.0**	**+1.2**
	baz=47						
MET	**Memphis--Engin**	**1.98**	**94**	*e*Pn	**Pn**	**14 57 06.8**	**+1.3**
DLAR	**Dell**	**1.98**	**73**	*e*Pn	**Pn**	**14 57 07.0**	**+1.5**
GNAR	**Gosnell**	**2.02**	**69**	*e*Pn	**Pn**	**14 57 07.4**	**+1.4**
U38A	**Gravette**	**2.03**	**306**	Pb	**Pn**	**14 57 07.8**	**+1.6**
	baz=125,SNR=181						
U38A				Sb	**Sb**	**14 57 34.9**	**+0.7**
	baz=125						
Z41A	**Richland Creek**	**2.04**	**191**	P	**Pn**	**14 57 06.7**	**+0.4**
	baz=10						
Z41A				S	**Sn**	**14 57 32.9**	**+1.1**
	baz=10						
X38A	**Whitesboro**	**2.13**	**254**	Pb	**Pn**	**14 57 09.5**	**+2.0**
	baz=73,SNR=567						
X38A				Sb	**Sb**	**14 57 38.7**	**+1.7**
	baz=73						
PBMO	**Poplar Bluff**	**2.16**	**45**	*e*Pn	**Pn**	**14 57 10.0**	**+2.0**
Z40A	**Long Farm, Mag**	**2.19**	**204**	P	**Pn**	**14 57 07.9**	**-0.4**
	baz=23						
Z40A				S	**Sn**	**14 57 36.1**	**+0.7**
	baz=23						
S40A	**Lebanon**	**2.33**	**357**	P	**Pn**	**14 57 11.9**	**+1.6**
	baz=177,SNR=249						
WADM	**Wardell**	**2.34**	**61**	*e*Pn	**Pb**	**14 57 13.6**	**-0.7**
V37A	**Hulbert**	**2.36**	**286**	P	**Pn**	**14 57 11.9**	**+1.2**
	baz=138,SNR=199						
T38A	**Diamond**	**2.37**	**319**	P	**Pn**	**14 57 12.4**	**+1.6**
	baz=138,SNR=82						
Y38A	**Idabel**	**2.38**	**237**	P	**Pn**	**14 57 12.1**	**+1.1**
	baz=55,SNR=23						
EBZ	**Ebenezer Churc**	**2.45**	**92**	*e*Pn	**Pn**	**14 57 13.2**	**+1.2**
PARMO	**Parma**	**2.52**	**56**	*e*Pn	**Pn**	**14 57 14.6**	**+1.7**
U37A	**Salina**	**2.52**	**298**	P	**Pn**	**14 57 14.2**	**+1.2**
	baz=116,SNR=94						
HALT	**Halls**	**2.53**	**74**	*e*Pn	**Pn**	**14 57 14.2**	**+1.1**
Z39A	**Irene McRaven,**	**2.53**	**218**	P	**Pn**	**14 57 14.2**	**+1.1**
	baz=36,SNR=16						
W37B	**Quinton**	**2.53**	**268**	P	**Pn**	**14 57 14.1**	**+1.0**
	baz=86,SNR=81						
S39A	**Bolivar**	**2.54**	**342**	P	**Pn**	**14 57 14.9**	**+1.6**
	baz=162,SNR=318						
X37A	**Clayton**	**2.58**	**256**	P	**Pn**	**14 57 14.5**	**+0.8**
	baz=74,SNR=92						
RELT	**Roellen**	**2.59**	**72**	*e*Pn	**Pn**	**14 57 16.0**	**+2.1**
S38A	**Stockton**	**2.67**	**332**	P	**Pn**	**14 57 16.3**	**+1.3**
	baz=152,SNR=99						
143A	**Socs Landing,**	**2.67**	**163**	P	**Pn**	**14 57 15.6**	**+0.6**
	baz=343						
GLAT	**Glass**	**2.68**	**67**	*e*Pn	**Pn**	**14 57 17.0**	**+1.9**
141A	**Papa Simpson,**	**2.70**	**190**	P	**Pn**	**14 57 15.5**	**+0.2**
	baz=9.5						
142A	**Monroe**	**2.73**	**173**	P	**Pn**	**14 57 16.6**	**+0.8**
	baz=353						
T37A	**Cheneyville 18**	**2.79**	**312**	P	**Pn**	**14 57 17.5**	**+0.9**
	baz=131,SNR=49						
140A	**Cam and Jess,**	**2.81**	**202**	P	**Pn**	**14 57 17.4**	**+0.5**
	baz=21						
TUL1	**Leonard**	**2.88**	**284**	P	**Pn**	**14 57 19.0**	**+1.1**
	baz=102,SNR=32						
TUL1	**Leonard**	**2.88**	**284**	*e*Pn	**Pn**	**14 57 18.9**	**+0.9**
U36A	**Oologah**	**2.97**	**293**	P	**Pn**	**14 57 20.2**	**+1.1**
	baz=112,SNR=13						
Z38A	**Mt. Pleasant**	**2.97**	**228**	P	**Pn**	**14 57 20.0**	**+0.8**
	baz=46						
V36A	**Jenks**	**2.98**	**281**	P	**Pn**	**14 57 20.5**	**+1.2**
	baz=99,SNR=50						
Y37A	**Hugo**	**2.99**	**245**	P	**Pn**	**14 57 21.4**	**+2.0**
	baz=64,SNR=36						
R40A	**Maddies Statio**	**3.02**	**1**	P	**Pn**	**14 57 21.4**	**+1.6**
	baz=181,SNR=51						
144A	**Alexander Plac**	**3.08**	**148**	P	**Pn**	**14 57 21.8**	**+1.2**
	baz=329						
R39A	**Chumby, Stover**	**3.09**	**350**	P	**Pn**	**14 57 22.3**	**+1.6**
	baz=170,SNR=93						
139A	**Bunkhouse Ranc**	**3.09**	**214**	P	**Pn**	**14 57 21.4**	**+0.5**
	baz=33						
R38A	**Fenwick Farm,**	**3.17**	**337**	P	**Pn**	**14 57 23.3**	**+1.5**
	baz=157,SNR=38						
W36A	**Wetumka**	**3.18**	**269**	P	**Pn**	**14 57 22.8**	**+0.7**
	baz=87,SNR=33						
S37A	**Fort Scott**	**3.19**	**322**	P	**Pn**	**14 57 23.4**	**+1.2**
	baz=141,SNR=23						
241A	**Mo Tay, Goldon**	**3.27**	**189**	P	**Pn**	**14 57 23.6**	**+0.4**
	baz=8.0						
145A	**Houston Renfro**	**3.33**	**142**	P	**Pn**	**14 57 25.0**	**+0.9**
	baz=324						
X36A	**Centrahoma**	**3.37**	**259**	P	**Pn**	**14 57 26.0**	**+1.4**
	baz=77,SNR=48						
T36A	**Boggs Farm, Ca**	**3.37**	**303**	P	**Pn**	**14 57 26.0**	**+1.3**
	baz=121,SNR=49						
Z37A	**Pogue Cattle C**	**3.41**	**234**	P	**Pn**	**14 57 25.4**	**+0.2**
	baz=52,SNR=8.4						
138A	**Matatall Enter**	**3.46**	**222**	P	**Pn**	**14 57 26.4**	**+0.5**
	baz=40,SNR=16						
244A	**Avery, Jackson**	**3.50**	**156**	P	**Pn**	**14 57 27.1**	**+0.7**
	baz=337						
PLAL	**Pickwick Lake**	**3.51**	**93**	*e*Pn	**Pn**	**14 57 27.5**	**+1.0**
S36A	**Lake Cedric, C**	**3.59**	**314**	P	**Pn**	**14 57 28.8**	**+1.3**
	baz=132,SNR=8.7						
R37A	**Teagarden Farm**	**3.63**	**327**	P	**Pn**	**14 57 29.5**	**+1.2**
	baz=146,SNR=37						
239A	**Gary**	**3.70**	**209**	P	**Pn**	**14 57 30.0**	**+0.9**
	baz=28,SNR=12						
V35A	**Meyer Ranch, C**	**3.70**	**279**	P	**Pn**	**14 57 30.1**	**+1.0**
	baz=96,SNR=34						
W35A	**Tecumseh**	**3.71**	**270**	P	**Pn**	**14 57 30.2**	**+0.9**
	baz=87,SNR=58						
Q40A	**Laux Farm, Aux**	**3.73**	**3**	P	**Pn**	**14 57 31.1**	**+1.6**
	baz=184,SNR=23						
U35A	**Pawnee**	**3.73**	**288**	P	**Pn**	**14 57 30.4**	**+0.8**
	baz=106						
T35A	**Sooner Cattle**	**3.75**	**297**	P	**Pn**	**14 57 31.0**	**+1.0**
	baz=115,SNR=17						
WVT	**Waverly**	**3.77**	**76**	*e*Pn	**Pn**	**14 57 31.4**	**+1.3**
Q39A	**Willow Grove F**	**3.80**	**353**	P	**Pn**	**14 57 32.0**	**+1.4**
	baz=172,SNR=22						
245A	**Little AP, Sta**	**3.82**	**147**	P	**Pn**	**14 57 32.1**	**+1.3**
	baz=328						
Q38A	**Cooks Store, C**	**3.82**	**345**	P	**Pn**	**14 57 32.2**	**+1.4**
	baz=164,SNR=17						
342A	**Flagon Creek P**	**3.88**	**180**	P	**Pn**	**14 57 32.3**	**+0.7**
	baz=360,SNR=6.6						
137A	**Heron Place, G**	**3.89**	**228**	P	**Pn**	**14 57 32.9**	**+1.1**
	baz=46						
X35A	**Drake**	**3.91**	**258**	P	**Pn**	**14 57 32.5**	**+0.5**
	baz=76,SNR=15						
Z36A	**Blue Ridge**	**3.93**	**241**	P	**Pn**	**14 57 33.6**	**+1.3**
	baz=58						
R36A	**Gordon, Harris**	**3.97**	**321**	P	**Pn**	**14 57 34.0**	**+1.1**
	baz=140,SNR=17						
Q37A	**Longview Farm,**	**3.98**	**336**	P	**Pn**	**14 57 34.4**	**+1.4**
	baz=155						
341A	**Kurthwood**	**3.98**	**190**	P	**Pn**	**14 57 34.2**	**+1.2**
	baz=9.5,SNR=20						
238A	**Jacksonville**	**4.00**	**216**	P	**Pn**	**14 57 34.1**	**+0.9**
	baz=34						
NATX	**Nacogdoches**	**4.00**	**210**	P	**Pn**	**14 57 34.4**	**+1.2**
	baz=28						
S35A	**Otter Creek Ra**	**4.01**	**308**	P	**Pn**	**14 57 34.4**	**+1.0**
	baz=126						
344A	**Westbrook Farm**	**4.04**	**160**	P	**Pn**	**14 57 35.3**	**+1.5**
	baz=341,SNR=7.5						
340A	**Bronson**	**4.05**	**199**	P	**Pn**	**14 57 34.7**	**+0.7**
	baz=18						
Y35A	**Marietta**	**4.11**	**252**	P	**Pn**	**14 57 35.8**	**+1.1**
	baz=69,SNR=12						
246A	**Jackson Lee, B**	**4.21**	**140**	P	**Pn**	**14 57 37.3**	**+1.2**
	baz=321						
P39A	**Salisbury**	**4.22**	**356**	P	**Pn**	**14 57 38.0**	**+1.6**
	baz=176						
V34A	**Guthrie**	**4.26**	**279**	P	**Pn**	**14 57 37.6**	**+0.8**
	baz=96,SNR=12						
V34A	**Guthrie**	**4.26**	**279**	*e*Pn	**Pn**	**14 57 37.5**	**+0.7**
V34A				*e*Sn	**Sn**	**14 58 26.6**	**+0.1**
P40A	**Paris**	**4.26**	**3**	P	**Pn**	**14 57 38.3**	**+1.5**
	baz=183,SNR=10						
T34A	**McClaskey Farm**	**4.29**	**295**	P	**Pn**	**14 57 38.3**	**+0.9**
	baz=113,SNR=8.7						
339A	**Huntington**	**4.34**	**206**	P	**Pn**	**14 57 38.8**	**+0.9**
	baz=24						
R35A	**Emporia Munici**	**4.34**	**316**	P	**Pn**	**14 57 39.1**	**+1.0**
	baz=134						
237A	**Washetta, Mont**	**4.36**	**223**	P	**Pn**	**14 57 38.8**	**+0.6**
	baz=40,SNR=8.2						
U34A	**Anderson Ranch**	**4.38**	**287**	P	**Pn**	**14 57 39.2**	**+0.8**
	baz=104						
U34A	**Anderson Ranch**	**4.38**	**287**	*e*Pn	**Pn**	**14 57 39.4**	**+0.9**
U34A				*e*Sn	**Sn**	**14 58 31.7**	**+2.3**
345A	**Thompson Farm,**	**4.40**	**153**	P	**Pn**	**14 57 39.6**	**+0.9**
	baz=334						
W34A	**Bridge Creek,**	**4.44**	**271**	P	**Pn**	**14 57 40.4**	**+1.0**
	baz=88,SNR=8.7						
W34A	**Bridge Creek,**	**4.44**	**271**	*e*Pn	**Pn**	**14 57 40.2**	**+0.8**
W34A				*e*Sn	**Sn**	**14 58 32.6**	**+1.4**
Q36A	**Arnold C. Orve**	**4.45**	**327**	P	**Pn**	**14 57 41.1**	**+1.6**
	baz=145,SNR=7.8						
P38A	**Dawn**	**4.45**	**348**	P	**Pn**	**14 57 40.8**	**+1.4**
	baz=168,SNR=23						
136A	**Ennis**	**4.46**	**233**	P	**Pn**	**14 57 40.4**	**+0.8**
	baz=50,SNR=7.1						
Z35A	**Perchaven, San**	**4.50**	**246**	P	**Pn**	**14 57 41.2**	**+1.0**
	baz=63						
S34A	**Willow Spring**	**4.54**	**304**	P	**Pn**	**14 57 41.3**	**+0.5**
	baz=121						
346A	**Big Creek Wild**	**4.56**	**147**	P	**Pn**	**14 57 42.0**	**+1.1**
	baz=329						
X34A	**Smith Ranch, M**	**4.56**	**263**	P	**Pn**	**14 57 42.0**	**+1.1**
	baz=80,SNR=28						
441A	**DeRidder**	**4.56**	**189**	P	**Pn**	**14 57 42.8**	**+1.8**
	baz=8.5						
P37A	**Lathrop**	**4.60**	**340**	P	**Pn**	**14 57 42.6**	**+1.1**
	baz=159,SNR=13						
338A	**Crockett**	**4.62**	**213**	P	**Pn**	**14 57 43.2**	**+1.4**
	baz=32,SNR=6.3						
USIN	**University of**	**4.62**	**53**	*e*Pn	**Pn**	**14 57 43.6**	**+1.7**
Y34A	**Reagan Ranch,**	**4.65**	**255**	P	**Pn**	**14 57 42.9**	**+0.6**
	baz=72,SNR=21						
440A	**Kirbyville**	**4.71**	**197**	P	**Pn**	**14 57 44.6**	**+1.6**
	baz=16						
236A	**Katherine and**	**4.78**	**228**	P	**Pn**	**14 57 44.8**	**+0.8**
	baz=46,SNR=7.4						
U33A	**Lingo Farm, Me**	**4.83**	**286**	P	**Pn**	**14 57 45.6**	**+0.9**
	baz=102						
O40A	**La Belle**	**4.86**	**4**	P	**Pn**	**14 57 46.4**	**+1.4**
	baz=185						
V33A	**Lossen Ranch,**	**4.88**	**278**	P	**Pn**	**14 57 45.9**	**+0.5**
	baz=95						
439A	**Center Grove,**	**4.91**	**205**	P	**Pn**	**14 57 47.5**	**+1.8**
	baz=24						
O38A	**Galt**	**4.93**	**350**	P	**Pn**	**14 57 47.3**	**+1.3**
	baz=169,SNR=21						
LRAL	**Lakeview Retre**	**4.96**	**115**	*e*Sn	**Sn**	**14 58 43.6**	**-0.2**
R34A	**Isabella, Hill**	**4.96**	**309**	P	**Pn**	**14 57 47.8**	**+1.2**
	baz=126,SNR=37						
O39A	**Kirksville**	**4.98**	**358**	P	**Pn**	**14 57 48.0**	**+1.2**
	baz=178,SNR=25						
Z34A	**Collier Ranch,**	**4.99**	**249**	P	**Pn**	**14 57 48.4**	**+1.5**
	baz=66,SNR=12						
135A	**Vickery Place,**	**5.01**	**239**	P	**Pn**	**14 57 47.9**	**+0.8**
	baz=56						
W33A	**Caddo, Fort Co**	**5.02**	**270**	P	**Pn**	**14 57 48.3**	**+1.0**
	baz=87,SNR=20						
O37A	**Wolven Farm, M**	**5.09**	**344**	P	**Pn**	**14 57 49.4**	**+1.1**
	baz=163,SNR=16						
X33A	**Lawton**	**5.11**	**264**	P	**Pn**	**14 57 49.7**	**+1.1**
	baz=80						
446A	**Poplarville**	**5.12**	**150**	P	**Pn**	**14 57 50.1**	**+1.4**
	baz=332						
S33A	**Kaszmaul Farm,**	**5.12**	**299**	P	**Pn**	**14 57 49.6**	**+0.9**
	baz=116						
KSU1	**Kansas State U**	**5.12**	**320**	P	**Pn**	**14 57 49.1**	**+0.5**
	baz=137						
KSU1	**Kansas State U**	**5.12**	**320**	*e*Pn	**Pn**	**14 57 49.2**	**+0.5**
KSU1				*e*Sn	**Sn**	**14 58 48.5**	**+0.7**
P35A	**Duane Minner,**	**5.16**	**327**	P	**Pn**	**14 57 50.2**	**+0.9**
	baz=145						
Q34A	**Chapman**	**5.18**	**316**	P	**Pn**	**14 57 49.9**	**+0.5**
	baz=134						
438A	**Sam Houston St**	**5.22**	**211**	P	**Pn**	**14 57 51.9**	**+1.9**
	baz=29,S

BLO	Bloomington	6.06 48	ePn	Pn	14 58 02.7	+1.1
HKT	Hockley	6.07 210	ePn	Pn	14 58 02.9	+1.3
133A	Hamilton Ranch baz=62	6.07 246	P	Pn	14 58 01.8	0.0
BRAL	Brewton	6.14 132	ePn	Pn	14 58 01.1	-1.6
BRAL			eSn	Sn	14 59 11.2	-1.6
N35A	Tabor baz=154,SNR=26	6.16 336	P	Pn	14 58 04.2	+1.2
537A	Green Hill Far baz=32	6.16 214	P	Pn	14 58 04.0	+1.0
M38A	Pleasantville baz=174	6.18 354	P	Pn	14 58 03.9	+0.7
Q32A	Meitler Ranch, baz=125,SNR=16	6.20 309	P	Pn	14 58 04.4	+0.8
M37A	Trindle Farm, baz=167	6.27 348	P	Pn	14 58 05.8	+1.4
435B	Jarrell baz=43,SNR=6.5	6.28 226	P	Pn	14 58 05.1	+0.5
334A	Lometa baz=50,SNR=29	6.30 233	P	Pn	14 58 05.2	+0.2
O33A	Hebron baz=138,SNR=20	6.35 321	P	Pn	14 58 06.6	+1.0
233A	Rising Star baz=57,SNR=13	6.36 241	P	Pn	14 58 05.7	0.0
CPCT	Cooper Cave	6.39 86	ePn	Pn	14 58 07.2	+1.0
N34A	Lincoln baz=148,SNR=13	6.46 331	P	Pn	14 58 08.1	+1.1
SFIN	Lafayette baz=221,SNR=15	6.58 38	P	Pn	14 58 11.0	+2.3
P32A	Huiting Farm, baz=129	6.61 313	P	Pn	14 58 10.1	+1.0
ABTX	Abilene, Hawle baz=64,SNR=22	6.62 249	P	Pn	14 58 09.6	+0.3
ABTX	Abilene, Hawle	6.62 249	ePn	Pn	14 58 09.5	+0.3
SCIA	State Center	6.66 354	ePn	Pn	14 58 12.1	+2.2
434A	Burnet baz=46	6.67 230	P	Pn	14 58 09.9	-0.1
N33A	J Bar K, Exete baz=142	6.79 325	P	Pn	14 58 12.6	+1.0
333A	Richland Sprin baz=53	6.81 237	P	Pn	14 58 11.8	-0.1
CBKS	Cedar Bluff baz=119,SNR=20	6.89 303	P	Pn	14 58 13.6	+0.6
CBKS	Cedar Bluff	6.89 303	ePn	Pn	14 58 13.4	+0.4
L37A	Phoenix Point, baz=170	6.93 351	P	Pn	14 58 14.5	+0.9
TKL	Tuckaleechee C 2.0nm,0.3s,baz=225,slow=9.3,SNR=16	7.00 84	Pn	Pn	14 58 15.0	+0.4
TKL			Sn	Sn	14 59 29.9	-4.3
	5.2nm,0.3s,baz=359,slow=19,SNR=3.6					
TKL			Lg	Lg	15 00 03.9	
	24nm,0.3s,baz=56,slow=12,SNR=4.7					
TKL			LR	LR	15 01 01.1	
	comp=Z,170nm,18.1s,baz=307,slow=38					
M34A	Aspy Farms, Fr baz=151	7.06 333	P	Pn	14 58 16.6	+1.3
N32A	Stulken Farm, baz=138	7.22 321	P	Pn	14 58 17.6	+0.1
433A	Art baz=50	7.24 233	P	Pn	14 58 17.6	-0.2
TZTN	Tazewell	7.25 77	ePn	Pn	14 58 19.2	+1.3
534A	Blanco baz=43,SNR=10.0	7.35 226	P	Pn	14 58 19.0	-0.4
M33A	Taylor Creek F baz=148	7.36 330	P	Pn	14 58 19.7	+0.4
O31A	Woolen Ranch, baz=129	7.37 313	P	Pn	14 58 20.0	+0.4
L34A	Svendsen Farm, baz=154,SNR=12	7.39 336	P	Pn	14 58 20.5	+0.6
635A	Leesville baz=36	7.45 220	P	Pn	14 58 20.9	+0.3
GOGA	Godfrey	7.57 102	ePn	Pn	14 58 23.1	+0.7
N31A	Bailey Ranch, baz=135	7.61 319	P	Pn	14 58 23.9	+1.0
AMTX	Amarillo baz=84	7.67 270	P	Pn	14 58 23.7	0.0
AMTX	Amarillo	7.67 270	ePn	Pn	14 58 23.9	+0.2
634A	China Grove, S baz=39	7.76 223	P	Pn	14 58 25.9	+0.9
JFWS	Jewell Farm	7.81 11	ePn	Pn	14 58 26.1	+0.6
JCT	Junction City baz=51	7.88 235	P	Pn	14 58 26.5	-0.1
JCT	Junction City	7.88 235	ePn	Pn	14 58 26.3	-0.4
735A	Kenedy baz=34	7.90 217	P	Pn	14 58 27.1	+0.3
M31A	Lambtecht Ranc baz=137,SNR=11	8.00 321	P	Pn	14 58 28.8	+0.6
633A	Saathoff Ranch baz=43	8.18 227	P	Pn	14 58 30.3	-0.4
J35A	Milford baz=164	8.38 346	P	Pn	14 58 34.6	+1.1
J34A	George baz=160	8.48 342	P	Pn	14 58 36.1	+1.3
L31A	Butterfield Fa baz=142	8.56 326	P	Pn	14 58 36.7	+0.8
N29A	Votaw Ranch, W baz=128,SNR=15	8.56 313	P	Pn	14 58 36.5	+0.5
MSTX	Muleshoe baz=78,SNR=12	8.70 264	P	Pn	14 58 37.5	-0.4
MSTX	Muleshoe	8.70 264	ePn	Pn	14 58 36.8	-1.1
I37A	Lemond, Waseca baz=174	8.77 355	P	Pn	14 58 39.9	+1.1
733A	Divot King Ran baz=40	8.80 224	P	Pn	14 58 40.0	+0.7
I35A	Creekview Farm baz=166	8.81 347	P	Pn	14 58 40.4	+1.0
L30A	Spencer Herefo baz=137	8.82 321	P	Pn	14 58 40.2	+0.7
834A	Tilden baz=35	8.87 218	P	Pn	14 58 40.4	+0.2
K31A	O'Neill baz=144	8.88 328	P	Pn	14 58 40.9	+0.7
ACSO	Alum Creek Sta	8.91 53	ePn	Pn	14 58 40.4	-0.3
ECSD	EROS Data Cent baz=157,SNR=27	9.07 340	P	Pn	14 58 43.1	+0.2
ECSD	EROS Data Cent	9.07 340	ePn	Pn	14 58 43.2	+0.2
J32A	Parkston baz=151	9.14 334	P	Pn	14 58 44.7	+0.8
833A	Chaparral WMA, baz=39	9.16 223	P	Pn	14 58 44.3	+0.1
I34A	Hadley baz=162	9.17 344	P	Pn	14 58 45.1	+0.9
L29A	Maesberg Ranch baz=134,SNR=15	9.30 319	P	Pn	14 58 47.0	+1.0
K30A	Basset baz=140	9.31 325	P	Pn	14 58 46.7	+0.5
M28A	Bar X Bar Ranc baz=128	9.36 313	P	Pn	14 58 47.0	0.0
OGNE	Ogallala baz=124	9.51 309	P	Pn	14 58 49.3	+0.4
I32A	Karley and Nic baz=154	9.60 337	P	Pn	14 58 50.1	0.0
H35A	Sunnyside Ranc baz=168	9.61 349	P	Pn	14 58 51.2	+1.0
K29A	Lazy Trails An baz=138	9.72 323	P	Pn	14 58 52.4	+0.7
H34A	Spellman Lake, baz=163	9.75 345	P	Pn	14 58 53.6	+1.4
J30A	Dallas baz=143,SNR=9.0	9.76 328	P	Pn	14 58 52.5	+0.1
034A	Hebbronville baz=32	9.81 215	P	Pn	14 58 54.2	+1.0
BLA	Blacksburg	9.82 75	ePn	Pn	14 58 53.6	+0.3
T25A	Trinidad baz=97	9.93 284	P	Pn	14 58 55.0	+0.1
H32A	Carlson Farm, baz=156	10.02 339	P	Pn	14 58 56.1	+0.2
I30A	Oacoma baz=146	10.21 330	P	Pn	14 58 59.0	+0.5
G34A	Benson baz=165	10.27 347	P	Pn	14 59 00.3	+1.0
F36A	Milaca baz=175	10.62 356	P	Pn	14 59 04.2	+0.1
F35A	Swanville baz=170	10.71 352	P	Pn	14 59 05.5	+0.2
SDCO	Great Sand Dun	10.88 287	ePn	Pn	14 59 10.0	+2.0
F33A	5 Mile Ranch, baz=163	10.98 345	P	Pn	14 59 08.7	-0.2
I28A	Midland baz=139	11.05 325	P	Pn	14 59 09.4	-0.6
COWI	Conover	11.09 12	ePn	Pn	14 59 09.6	-0.9
TXAR	Lajitas Array 0.9nm,0.3s,baz=66,slow=13,SNR=33	11.26 241	Pn	Pn	14 59 11.8	-1.2
TXAR			Sn	Sn	15 01 16.3	-2.6
	1.6nm,0.3s,baz=71,slow=25,SNR=2.9					
TXAR			Lg	Lg	15 02 25.2	
	1.3nm,0.3s,baz=64,slow=31,SNR=3.0					
TXAR			LR	LR	15 04 03.2	
	comp=Z,101nm,21.3s,baz=0.0,slow=40					
TX31	Lajitas Ar. Si	11.26 241	ePn	Pn	14 59 11.7	-1.3
E34A	Wadena baz=168	11.43 350	P	Pn	14 59 14.4	-0.8
MNTX	Cornudas Mount baz=68	11.45 256	P	Pn	14 59 14.9	-0.7
MNTX	Cornudas Mount	11.45 256	ePn	Pn	14 59 14.6	-1.0
ISCO	Idaho Springs baz=109	11.46 297	P	Pn	14 59 15.2	-0.7
ISCO	Idaho Springs	11.46 297	ePn	Pn	14 59 16.1	+0.1
H28A	Mission Ridge baz=142	11.51 327	P	Pn	14 59 15.1	-1.1
E33A	Westby DABS, E baz=165	11.56 347	P	Pn	14 59 15.5	-1.4
ANMO	Albuquerque 0.2nm,0.3s,baz=91,slow=14,SNR=6.0	11.57 272	Pn	Pn	14 59 17.2	-0.1
ANMO			Lg	Lg	15 02 37.2	
	4.5nm,0.3s,baz=345,slow=17,SNR=4.5					
ANMO	Albuquerque baz=84	11.57 272	P	Pn	14 59 16.2	-1.0
F30A	Leola baz=152	11.71 336	P	Pn	14 59 18.5	-0.5
M54A	Oil Creek Stat baz=242	11.73 54	P	Pn	14 59 18.2	-1.1
BNM	Barren Site	11.81 269	ePn	Pn	14 59 20.1	-0.6
D37A	Cotton baz=180	11.88 360	P	Pn	14 59 19.6	-1.8
F29A	Eureka baz=149	11.98 334	P	Pn	14 59 21.4	-1.4
O56A	Blue Knob Stat baz=250	11.99 61	P	Pn	14 59 22.3	-0.5
E31A	Nome baz=158	12.03 341	P	Pn	14 59 22.9	-0.5
RSSD	Black Hills	12.61 318	ePn	Pn	14 59 34.4	+2.9
EYMN	Ely baz=183	12.68 3	P	Pn	14 59 29.6	-2.7
EYMN	Ely	12.68 3	ePn	Pn	14 59 29.3	-3.0
D30A	Buchanan baz=156	12.77 340	P	Pn	14 59 31.1	-2.4
B35A	Bob, Littlefor baz=175	13.12 356	P	Pn	14 59 35.4	-2.9
C31A	Landman Farms, baz=160	13.14 344	P	Pn	14 59 35.5	-3.1
C30A	Mose, Pekin baz=158	13.24 342	P	Pn	14 59 37.0	-2.9
AGMN	Agassiz Nation baz=168	13.28 350	P	Pn	14 59 38.0	-2.5
AGMN	Agassiz Nation	13.28 350	ePn	Pn	14 59 37.0	-3.4
D28A	Regan baz=150	13.41 335	P	Pn	14 59 39.6	-2.7
E26A	Carlson Angus baz=142	13.54 329	P	Pn	14 59 42.6	-1.5
B31A	Greenbush Farm baz=162	13.72 345	P	Pn	14 59 42.9	-3.6
SADO	Sadowa 0.6nm,0.3s,baz=266,slow=11,SNR=4.8	13.85 43	Pn	Pn	14 59 44.7	-3.6
SADO			Sn	Sn	15 02 08.6	-13
	1.9nm,0.3s,baz=296,slow=16,SNR=5.8					
SADO			Lg	Lg	15 03 37.5	
	1.2nm,0.3s,baz=142,slow=21,SNR=5.1					
SADO			LR	LR	15 04 22.1	
	comp=Z,59nm,21.1s,baz=182,slow=34					
B30A	Myrvik Farm, E baz=159	13.90 343	P	Pn	14 59 46.0	-2.9
D26A	Manning baz=144	13.98 330	P	Pn	14 59 47.5	-2.5
A30A	Hoffart Farm, baz=160	14.35 344	P	Pn	14 59 51.6	-3.5
C26A	Wahner Farm, P baz=146	14.50 333	P	Pn	14 59 53.8	-3.4
A29A	Manning Farm, baz=157	14.56 342	P	Pn	14 59 54.4	-3.5
ULM	Lac du Bonnet 0.5nm,0.3s,baz=180,slow=16,SNR=3.5	15.19 351	Pn	Pn	15 00 02.2	-4.2
ULM			Sn	Sn	15 02 39.3	-15
	0.5nm,0.3s,baz=294,slow=20,SNR=1.8					
ULM			Lg	Lg	15 04 20.6	
	0.6nm,0.3s,baz=239,slow=18,SNR=3.6					
ULM	Lac du Bonnet 12nm,1.3s	15.19 351	ePn	Pn	15 00 07.2	+0.7
ULM			Sn	Sn	15 02 39.3	-15
ULM			Lg	Lg	15 04 20.6	
BW06	Boulder Array	15.32 304	ePn	Pn	15 00 06.2	-2.2
PD31	Pinedale Array	15.32 304	ePn	Pn	15 00 07.7	-0.7
PDAR	Pinedale Array 0.3nm,0.3s,baz=122,slow=16,SNR=11	15.32 304	Pn	Pn	15 00 07.7	-0.7
PDAR			Sn	Sn	15 02 57.8	-0.3
	0.3nm,0.3s,baz=114,slow=24,SNR=3.0					
PDAR			Lg	Lg	15 04 32.7	
	1.2nm,0.3s,baz=93,slow=32,SNR=7.1					
TEIG	Tepich 0.8nm,0.3s,baz=270,slow=20,SNR=5.5	15.41 165	Pn	Pn	15 00 12.2	+2.8
RLMT	Red Lodge 8.1nm,1.3s	16.22 312	ePn	P	15 00 23.9	+0.8
HWUT	Hardware Ranch 3.6nm,0.8s	16.32 299	ePn	Pn	15 00 21.8	+0.4
LOHW	Long Hollow 2.0nm,0.6s	16.36 306	ePn	Pn	15 00 22.4	+0.6
BZMT	Bozeman Pass	17.42 312	ePn	Pn	15 00 32.5	-2.6
FFC	Flin Flon 12nm,1.3s	20.58 344	eP	P	15 01 10.9	+0.2
NVAR	Mina Array Bea 0.8nm,0.8s,baz=94,slow=9.3,SNR=6.1	20.99 286	P	P	15 01 17.8	+2.1
WVOR	Wild Horse Val 3.2nm,0.5s	21.64 297	eP	P	15 01 21.8	-0.7
FCC	Fort Churchill 6.6nm,0.7s	23.53 358	eP	P	15 01 41.6	-0.4
JTS	JuntasAbangare comp=Z,30nm,19.0s,baz=298,slow=38	25.76 163	LR	LR	15 12 42.6	
BBB	Bella Bella comp=Z,66nm,20.6s,baz=345,slow=35	30.49 315	LR	LR	15 14 25.5	
YKA	Yellowknife Ar 0.2nm,0.7s,baz=134,slow=8.8,SNR=3.4	30.60 340	P	P	15 02 44.8	-0.9
INK	Inuvik 1.3nm,0.9s,baz=113,slow=5.8,SNR=2.9	40.31 338	P	P	15 04 08.1	-0.9
ILAR	Eielson Array 0.3nm,0.7s,baz=100,slow=5.9,SNR=5.7	43.72 330	P	P	15 04 35.4	-1.4
ARCES	ARCESS Array B 2.6nm,1.1s,baz=325,slow=1.9,SNR=4.7	66.19 20	P	P	15 07 19.3	0.0
HFS	Hagfors 1.4nm,0.7s,baz=46,slow=6.8,SNR=2.5	67.39 31	P	P	15 07 28.9	+1.9
FINES	FINESS Array B 1.0nm,0.8s,baz=322,slow=8.8,SNR=2.3	71.52 26	P	P	15 07 54.0	+1.4
NRIK	Norilʹsk comp=Z,48nm,18.6s,baz=90,slow=36	75.70 0	LR	LR	15 41 49.4	
HHC	Hu-ho-hao-te	101.12 342	SS	SS	15 29 09.3	+11
HHC			pmax	pmax		
	comp=Z,10.0nm,1.4s					
HHC			pmax	pmax		
	comp=Z,130nm,3.3s					
HHC			LR	LR		
	comp=N,150nm,13.7s					
HHC			LR	LR		
	comp=E,160nm,14.9s					
HHC			LR	LR		
	comp=Z,120nm,13.7s					
WMQ	Urumqi	101.28 360	eP	Pdif	15 10 25.2	+2.1
WMQ			pmax	pmax		
	comp=Z,3.0nm,0.6s					

JMA 08 14:59:37.9, 36.77N×140.57E, h9$^{km\pm1km}$, M2.5, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JHO	Hitachi	0.16	180	P	Pg	14 59 41.4	+0.1
JHO				S	Sg	14 59 43.9	+0.3
ONAJ	Iwakimizuishiy	0.38	29	P	Pg	14 59 45.3	-0.1
ONAJ				eS	Sg	14 59 50.7	+0.3
JFK	Kawauchi	0.64	22	P	Pg	14 59 49.9	-0.5
JFK				S	Sg	14 59 58.3	-0.5
JFT	Otama	0.77	346	eS	Sg	15 00 02.5	-0.3
MAT	Matsushiro	1.91	264	P	Pn	15 00 11.0	+0.3
MAT				S	Sb	15 00 36.6	-0.4

*NIED **08** 15:02:00.39,37.00N×142.30E,h38^{km},Mw4.0 Best double couple: M$_0$9.87000×10^{14} NP1:ϕ_s2.00000°,δ12.00000°, λ144.00000°. NP2:ϕ_s127.00000°,δ83.00000°,λ81.00000°.*
*IDC **08** 15:02:06.8$\pm$2.7,39.12N×142.94E,h0^{km},mb3.4/3, mb1 3.5/4,mb1mx3.2/61,mbtmp3.3/4,ML3.0/1,Error ellipse: s-maj=70.9km s-min=30.5km az=69.0*
*ISCJB **08** 15:02:11.6$\pm$1.6,38.95N$\pm$0.05×142.5E$\pm$0.1,h25$^{km\pm8km}$, mb3.4/3,Error ellipse: s-maj=13.4km s-min=7.4km az=10.2*
*JMA **08** 15:02:13.9$\pm$0.1,39.00N×142.34E,h35$^{km\pm2km}$,M3.5*

ISC 08 15:02:11.3$\pm$2.2, 38.99N$\pm$0.05×142.4E$\pm$0.1, h17$^{km\pm14km}$, n12,σ1^{s}13/18, mb3.6/3, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MIYJ	Miyakonagasawa	0.75	321	P	Pn	15 02 27.2	0.0
MIYJ				S	Sb	15 02 36.4	+0.5
JIO	Ouri	1.01	238	P	Pn	15 02 30.2	-0.4
JIO				S	Sb	15 02 41.4	-1.8
JOM	Ohasama	1.01	299	P	Pn	15 02 31.1	+0.4
JOM				S	Sb	15 02 43.1	-0.2
JTH	Tanohata	1.04	335	P	Pg	15 02 31.4	-0.1
JRG	Rokugo	1.46	287	P	Pn	15 02 38.1	+1.3
JRG				eS	Sn	15 02 55.8	+0.3
JOU	Okura	1.52	246	P	Pn	15 02 38.4	+0.7
JOU				eS	Sn	15 02 56.5	-0.7
JANG	Nango	1.55	333	P	Pb	15 02 39.1	-0.4
JANG				eS	Sb	15 02 58.3	-0.6
JYK	Kaneyama	1.62	268	P	Pn	15 02 39.8	+0.7
MJAR	Matsushiro Arr 0.7nm,0.3s,baz=45,slow=12,SNR=5.1	4.15	235	Pn	Pn	15 03 17.0	+3.1
MKAR	Makanchi Array 0.2nm,0.5s,baz=69,slow=7.9,SNR=2.5	43.79	301	P	P	15 10 15.8	-0.3
KURBB	Kurchatov Arra 0.3nm,0.4s,baz=80,slow=7.9,SNR=3.9	45.46	307	P	P	15 10 29.7	+0.5
WRA	Warramunga Arr 0.7nm,1.0s,baz=6.1,slow=7.3,SNR=3.7	59.12	189	P	P	15 12 10.3	-0.5

*ISCJB **08** 15:03:08.0$\pm$0.4,33.00N$\pm$0.02×116.32W$\pm$0.03,h12$^{km\pm4km}$, Error ellipse: s-maj=4.3km s-min=3.6km az=23.7*
*ECX **08** 15:03:09.0$\pm$0.6,33.00N×116.33W,h7^{km},MD2.4,ML2.6*

ISC 08 15:03:07.5$\pm$0.9, 33.00N$\pm$0.02×116.32W$\pm$0.03, h16$^{km\pm8km}$, n23,σ0^{s}47/34, 1C-4D, California-Baja California border region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CBKC	Canebrake	0.11	150	⇓*i* P	Pb	15 03 11.4	+0.1
MONP	Monument Peak,	0.14	220	*i* P	Pb	15 03 11.8	0.0
MONP2	Monument Peak baz=27,SNR=449	0.14	220	P	Pb	15 03 11.8	0.0
MONP2				S	Sg	15 03 13.9	-0.3
	baz=27						
BORC	Borrego Spring	0.28	343	⇓*i* P	Pg	15 03 13.9	+0.4
IBP	Imperial Bould	0.38	150	*eP*	Pb	15 03 16.4	+0.4
IBP	Imperial Bould baz=327,SNR=20	0.38	150	P	Pb	15 03 16.3	+0.4
IBP				S	Sb	15 03 21.9	+0.2
	baz=327						
BAR	Barrett	0.43	223	⇑*eP*	Pb	15 03 16.8	0.0
SWSC	Sam W. Stewart baz=277,SNR=24	0.44	97	P	Pb	15 03 17.3	+0.4
SWSC				S	Sb	15 03 23.3	+0.1
	baz=277						
RMX	La Rumorosa	0.44	153	*eP*	Pg	15 03 16.6	+0.1
RMX				*eS*	Sb	15 03 23.3	-0.1
YUH	Yuha Desert	0.48	136	⇓*i* P	Pb	15 03 18.1	+0.5
SDRC	San Diego Road	0.59	244	*eP*	Pg	15 03 19.2	+0.2
PFO	Pinyon Flats O baz=172,SNR=8.0	0.62	349	P	Pb	15 03 20.1	0.0
PFO				S	Sg	15 03 28.0	-0.2
	baz=172						
TJIG	Tijuana	0.64	208	*eP*	Pg	15 03 20.2	+0.2
109C	Camp Elliot, M baz=80,SNR=6.4	0.67	261	P	Pg	15 03 20.6	0.0
109C				S	Sg	15 03 29.3	-0.2
	baz=80						
CBX	Cerro Bola	0.74	203	*eP*	Pb	15 03 22.3	+0.2
CBX				*eS*	Sb	15 03 32.2	+0.2
CBX				⇓*e*		15 03 34.7	
CBX	comp=N,409nm,0.3s			AML	AML	15 03 34.7	
CBX				*e*		15 03 36.0	
CBX	comp=E,394nm,0.4s			AML	AML	15 03 36.0	
MURC	Murrieta baz=130,SNR=20	0.95	310	P	Pb	15 03 25.7	+0.1
MURC				S	Sb	15 03 37.8	-0.2
	baz=130						
BC3	Big Chuckawall baz=229,SNR=26	0.98	48	P	Pb	15 03 26.2	+0.1
BC3				S	Sb	15 03 38.6	-0.3
	baz=229						
BELC	Belle Mtn. Jos baz=197,SNR=8.4	1.04	15	P	Pg	15 03 27.8	+0.3
BELC				Sb	Sb	15 03 40.7	+0.1
	baz=197						
GLA	Glamis baz=268,SNR=5.1	1.25	87	P	Pn	15 03 30.1	-0.3
ZAX	El Zacaton	1.48	179	*eP*	Pb	15 03 35.1	+0.4
ZAX				*eS*	Sg	15 03 54.7	-0.6
IRM	Iron Mountain baz=221	1.52	40	Sb	Sb	15 03 54.1	-0.2
GMRC	Granite Mounta baz=198	1.86	17	Sb	Sg	15 04 06.7	-0.9
EDW2	Edwards Air Fo baz=144	2.34	324	Sb	Sb	15 04 19.9	+1.9

*NIED **08** 15:05:00,37.00N×141.10E,h35^{km},Mw3.8 Best double couple: M$_0$6.63000×10^{14} NP1:ϕ_s60.00000°,δ30.00000°, λ-122.00000°. NP2:ϕ_s276.00000°,δ65.00000°, λ-73.00000°.*

JMA 08 15:05:14.5$\pm$0.1, 36.95N×141.05E, h50$^{km\pm1km}$, M3.7, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	Iwakimizuishiy	0.25	307	P	Pn	15 05 23.0	-0.3
ONAJ				S	Sn	15 05 29.1	-0.5
JFK	Kawauchi	0.44	341	P	Pn	15 05 24.7	-0.4
JFK				S	Sn	15 05 32.0	-0.7
JHO	Hitachi	0.51	229	P	Pn	15 05 25.6	-0.3
JHO				S	Sn	15 05 33.3	-0.8
JFT	Otama	0.80	315	P	Pn	15 05 30.2	+0.6
JFT				S	Sn	15 05 41.6	+0.9
JMM	Marumori	0.94	347	P	Pn	15 05 31.1	-0.3
JMM				S	Sn	15 05 43.1	-0.7
JFY	Yanaizu	1.17	293	P	Pn	15 05 34.7	+0.2
MAT	Matsushiro	2.32	261	P	Pn	15 05 51.3	+1.1
MAT				S	Sn	15 06 19.9	+2.3

*NIED **08** 15:06:00,37.20N×142.20E,h5^{km},Mw3.5 Best double couple: M$_0$2.19000×10^{14} NP1:ϕ_s174.00000°,δ40.00000°, λ-133.00000°. NP2:ϕ_s45.00000°,δ62.00000°, λ-60.00000°.*
*IDC **08** 15:06:56.1$\pm$0.9,37.17N×142.34E,h0^{km},mb3.5/8, mb1 3.6/10,mb1mx3.5/52,mbtmp3.5/10,ML2.3/2,MS4.1/1, Ms1 4.1/1,ms1mx2.5/40,Error ellipse: s-maj=23.7km s-min=19.7km az=94.0*
*ISCJB **08** 15:06:57.6$\pm$0.7,37.24N$\pm$0.05×142.28E$\pm$0.06,h21^{km}, mb3.5/8,MS4.2/1,Error ellipse: s-maj=8.0km s-min=6.7km az=18.2*
*JMA **08** 15:06:58.2$\pm$0.3,37.24N×142.25E,h27$^{km\pm5km}$,M3.9*

ISC 08 15:06:59.3$\pm$1.1, 37.26N$\pm$0.06×142.15E$\pm$0.08, h21^{km}, n22, σ1^{s}41/20, mb3.5/8, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JFK	Kawauchi	1.02	277	P	Pb	15 07 17.8	-0.5
JFK				eS	Sb	15 07 31.9	+0.6
ONAJ	Iwakimizuishiy	1.09	262	P	Pb	15 07 18.8	-0.7
JMM	Marumori	1.24	300	P	Pb	15 07 21.3	-0.6
JMM				eS	Sb	15 07 37.8	+0.4
JIO	Ouri	1.35	332	P	Pb	15 07 21.9	-2.0
JIO				eS	Sb	15 07 40.9	+0.2
JHO	Hitachi	1.42	243	P	Pb	15 07 23.7	-1.4
JFT	Otama	1.47	281	P	Pb	15 07 25.2	-0.7
JOU	Okura	1.61	314	P	Pb	15 07 26.7	-1.7
JOU				S	Sb	15 07 47.7	-0.6
MJAR	Matsushiro Arr 0.5nm,0.3s,baz=84,slow=15,SNR=2.9	3.24	258	Pn	Pn	15 07 49.7	+0.8
MAT	Matsushiro	3.24	258	P	Pn	15 07 50.8	+1.9
MAT				eS	Sb	15 08 31.6	-3.5
USRK	Ussuriysk Ar. 0.2nm,0.3s,baz=140,slow=14,SNR=2.3	10.36	315	Pn	Pn	15 09 29.9	+3.2
SEY	Seymchan	26.46	11	P	P	15 12 36.3	+1.7

0.7nm,0.5s,baz=253,slow=11,SNR=6.2
H11S1 WAKE ISLAND Hy 28.49 124 T T 15 42 30.2
baz=318,slow=74
H11S3 WAKE ISLAND Hy 28.50 124 T T 15 42 30.3
baz=318
H11S2 WAKE ISLAND Hy 28.51 124 T T 15 42 31.4
baz=318,slow=74
ZALV Zalesovo Beam 42.20 312 P P 15 14 51.7 +1.3
0.4nm,0.3s,baz=108,slow=9.3,SNR=2.7
MKAR Makanchi Array 44.50 302 P **P 15 15 10.3 +1.2**
0.3nm,0.6s,baz=86,slow=8.7,SNR=3.4
KURBB Kurchatov Arra 46.33 308 P **P 15 15 23.9 +0.5**
0.8nm,0.5s,baz=82,slow=8.1,SNR=4.9
ILAR Eielson Array 48.99 32 P **P 15 15 42.9 -1.1**
0.4nm,0.8s,baz=262,slow=6.2,SNR=4.9
CTA Charters Tower 57.17 175 LR LR 15 37 53.1
comp=Z,204nm,21.9s,baz=117,slow=32
WRA Warramunga Arr 57.37 189 P **P 15 16 46.0 0.0**
0.4nm,0.8s,baz=5.7,slow=7.2,SNR=4.3
ASAR Alice Springs 61.09 189 P **P 15 17 11.5 -0.3**
0.5nm,1.0s,baz=3.3,slow=6.2,SNR=3.1
PDAR Pinedale Array 77.09 46 P P 15 18 51.4 +0.1
0.3nm,0.7s,baz=250,slow=2.6,SNR=2.8

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*CSEM **08** 15:07:10.5±0.1,41°.20N×1°.14W,h2km,ML4.5/45,Mw3.8, Error ellipse: s-maj=1.7km s-min=1.1km az=137.0*
*IGIL **08** 15:07:11.8,41°.16N×1°.07W,h2km,ML3.5*
*INMG **08** 15:07:12.7±1.9,41°.18N×1°.09W,h6km±3km,ML4.0, Error ellipse: s-maj=2.2km s-min=1.6km az=108.0*
*NEIC **08** 15:07:13.0,41°.18N×1°.09W,h11km,MW3.8(MDD), After MDD.*
NEIC Felt [IV] in the Villar de los Navarros area.
*SFS **08** 15:07:13.0,41°.16N×1°.07W,h10km,ML3.8*
*MDD **08** 15:07:13.0±0.2,41°.18N×1°.08W,h11km,mbLg4.1/47, Error ellipse: s-maj=2.3km s-min=1.7km az=134.0, PRXIMO*
MDD EMS: IV-V INTENSIDAD MAXIMA.
*LDG **08** 15:07:13.3±0.1,41°.19N×1°.06W,h10km,Md3.9/5,Ml4.5/47, Error ellipse: s-maj=1.8km s-min=1.1km az=133.0*
*CRAAG **08** 15:07:13.0,41°.16N×1°.07W,Ml4.0*
*IDC **08** 15:07:14.0±3.8,41°.13N×1°.20W,h24km±27km,mb3.6/12, mb1 3.8/17,mb1mx3.6/59,mbtmp3.8/17,ML4.1/5,MS3.2/1, Ms1 3.2/1,ms1mx2.4/51,Error ellipse: s-maj=18.6km s-min=12.7km az=144.0*
*STR **08** 15:07:17.6±0.2,41°.51N×0°.92W,h5km,Ml4.2,Error ellipse: s-maj=0.0km s-min=0.0km az=0.0*
ISC 08 15:07:10.1±1.0,41°.23N±0°.02×1°.16W±0°.02,h3km±7km, n515,σ1§85/843,mb3.7/12,16C-7D,Spain

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
ESAC	**San Caprasio**	**0.72**	**46**	⇑Pg		**Pb**		**15 07 25.8**	**+0.5**
	5μm,0.3s,SNR=18								
ESAC				Lg		Lg	Lg	15 07 36.1	
	35μm,0.4s,SNR=19								
ESAC	**San Caprasio**	**0.72**	**46**	Pg		**Pb**		**15 07 25.8**	**+0.5**
	5μm,0.3s,SNR=18								
ESAC				Lg		Lg	Lg	15 07 36.1	
	35μm,0.4s,SNR=19								
ESAC	**San Caprasio**	**0.72**	**46**	Pg		**Pb**		**15 07 25.8**	**+0.5**
ESAC				Lg		Lg	Lg	15 07 36.1	
ETOR	**Torete**	**0.79**	**239**	⇑Pg		**Pb**		**15 07 27.4**	**+0.9**
	3μm,0.3s,SNR=18								
ETOR				Lg		Lg	Lg	15 07 38.5	
	6μm,0.3s,SNR=31								
ETOR	**Torete**	**0.79**	**239**	Pg		**Pb**		**15 07 27.4**	**+0.9**
	3μm,0.3s,SNR=18								
ETOR				Lg		Lg	Lg	15 07 38.5	
	6μm,0.3s,SNR=31								
EMOS	**Mosqueruela**	**1.01**	**148**	⇑Pg		**Pg**		**15 07 29.1**	**-0.3**
	520nm,0.2s,SNR=18								
EMOS				Lg		Lg	Lg	15 07 43.3	
	2μm,0.3s,SNR=7.9								
EMOS	**Mosqueruela**	**1.01**	**148**	Pg		**Pg**		**15 07 29.1**	**-0.3**
	520nm,0.2s,SNR=18								
EMOS				Lg		Lg	Lg	15 07 43.2	
EMOS	**Mosqueruela**	**1.01**	**148**	Pg		**Pg**		**15 07 29.1**	**-0.3**
EMOS				Lg		Lg	Lg	15 07 43.2	
ERTA	**Horta de San J**	**1.16**	**103**	⇑Pg		**Pg**		**15 07 32.2**	**-0.2**
	2μm,0.3s,SNR=18								
ERTA				Lg		Lg	Lg	15 07 47.6	
	1μm,0.2s,SNR=12								
ERTA	**Horta de San J**	**1.16**	**103**	Pg		**Pg**		**15 07 32.2**	**-0.2**
	2μm,0.3s,SNR=18								
ERTA				Lg		Lg	Lg	15 07 47.6	
	1μm,0.2s,SNR=12								
ERTA	**Horta de San J**	**1.16**	**103**	Pg		**Pg**		**15 07 32.2**	**-0.2**
ERTA				Lg		Lg	Lg	15 07 47.6	
EBR	**Ebro Roquetas**	**1.32**	**107**	⇑Pg		**Pb**		**15 07 37.3**	**+1.9**
	8μm,0.4s,SNR=18								
EBR				Lg		Lg	Lg	15 07 52.7	
	13μm,0.9s,SNR=7.9								
EBR	**Ebro Roquetas**	**1.32**	**107**	Pg		**Pb**		**15 07 37.3**	**+1.9**
	8μm,0.4s,SNR=18								
EBR				Lg		Lg	Lg	15 07 52.7	
	13μm,0.9s,SNR=7.9								
EBR	**Ebro Roquetas**	**1.32**	**107**	Pg		**Pb**		**15 07 37.3**	**+1.9**
EBR				Lg		Lg	Lg	15 07 52.6	
YNAR	**Nardues-Alduna**	**1.42**	**354**	Pg		**Pg**		**15 07 39.8**	**+2.6**
	SNR=7.9								
YNAR				Lg		Lg	Lg	15 07 59.5	
	SNR=7.9								
YNAR	**Nardues-Alduna**	**1.42**	**354**	Pg		**Pg**		**15 07 39.8**	**+2.6**
	SNR=7.9								
YNAR				Lg		Lg	Lg	15 07 59.5	
	SNR=7.9								
EARA	**Aranguren**	**1.58**	**349**	Pn		**Pg**		**15 07 41.5**	**+1.2**
	9.1nm,0.1s,SNR=7.9								
EARA				⇑Pg		**Pb**		**15 07 42.6**	**+2.8**
	171nm,0.2s,SNR=18								
EARA				Sn		**Sg**		**15 08 01.2**	**+0.5**
	130nm,0.1s,SNR=7.9								
EARA				Lg		Lg	Lg	15 08 03.7	
	2μm,0.3s,SNR=6.8								
EARA	**Aranguren**	**1.58**	**349**	Pn		**Pg**		**15 07 41.5**	**+1.2**
	9.1nm,0.1s,SNR=7.9								
IPRE	**Itoiz**	**1.58**	**355**	Pn		**Pg**		**15 07 41.2**	**+0.8**
	10nm,0.2s,SNR=7.9								
IPRE				Pg		**Pb**		**15 07 43.1**	**+3.1**
	182nm,0.3s,SNR=63								
IPRE				Lg		Lg	Lg	15 08 02.9	
	2μm,0.4s,SNR=30								
IPRE	**Itoiz**	**1.58**	**355**	Pn		**Pg**		**15 07 41.2**	**+0.8**
	10nm,0.2s,SNR=7.9								
IELO	**Elcoad**	**1.62**	**358**	Pn		**Pg**		**15 07 41.4**	**+0.4**
	320nm,0.2s,SNR=7.9								
IELO				⇑Pg		**Pb**		**15 07 43.4**	**+2.8**
	320nm,0.2s,SNR=18								
IELO				Lg		Lg	Lg	15 08 03.6	
	3μm,0.4s,SNR=7.9								
IELO	**Elcoad**	**1.62**	**358**	Pn		**Pg**		**15 07 41.4**	**+0.4**
	320nm,0.2s,SNR=7.9								
EPOB	**Poblet**	**1.69**	**85**	⇑Pg		**Pn**		**15 07 41.1**	**+0.5**
	997nm,0.4s,SNR=18								
EPOB				Lg		Lg	Lg	15 08 02.7	
	578nm,0.3s,SNR=13								
EPOB	**Poblet**	**1.69**	**85**	Pg		**Pn**		**15 07 41.1**	**+0.5**
	997nm,0.4s,SNR=18								
EPOB				Lg		Lg	Lg	15 08 02.7	
	578nm,0.3s,SNR=13								
ETSF	**Etsaut**	**1.73**	**15**	*e*Pn		**Pb**		**15 07 42.9**	**+0.4**
ETSF	**Etsaut**	**1.73**	**15**	*e*Pg		**Pg**		**15 07 44.9**	**+1.7**
ETSF				*e*Sg		**Sg**		**15 08 08.3**	**+2.6**
	1μm,0.4s								
ETSF	**Etsaut**	**1.73**	**15**	Pn		**Pb**		**15 07 42.9**	**+0.4**
ETSF				Pg		**Pg**		**15 07 44.9**	**+1.7**
ETSF				Lg		Lg	Lg	15 08 08.3	
	552nm,0.4s								
ETSF	**Etsaut**	**1.73**	**15**	Pn		**Pb**		**15 07 42.9**	**+0.4**
ETSF	**Etsaut**	**1.73**	**15**	Pg		**Pg**		**15 07 44.9**	**+1.7**
ETSF				*e*Sg		**Sg**		**15 08 08.3**	**+2.6**
	552nm,0.4s								
ETSF	**Etsaut**	**1.73**	**15**	*e*Pn		**Pb**		**15 07 42.9**	**+0.4**
ETSF				*e*Pg		**Pg**		**15 07 44.9**	**+1.7**
ETSF				*e*Sg		**Sg**		**15 08 08.3**	**+2.6**
ECHI	**Chisagues Biel**	**1.76**	**35**	Pn		**Pb**		**15 07 42.9**	**-0.2**
	12nm,0.0s,SNR=147								
ECHI				Pg		**Pg**		**15 07 44.8**	**+1.1**
	179nm,0.2s,SNR=7.9								
ECHI				Sn		**Sb**		**15 08 05.9**	**+0.3**
	257nm,0.1s,SNR=7.9								
ECHI				Lg		Lg	Lg	15 08 08.6	
	604nm,0.1s,SNR=13								
ECHI	**Chisagues Biel**	**1.76**	**35**	Pn		**Pb**		**15 07 42.9**	**-0.2**
	12nm,0.0s,SNR=147								
LARF	**Larrau**	**1.81**	**4**	Pn		**Pg**		**15 07 44.6**	**-0.2**
LARF	**Larrau**	**1.81**	**4**	Pg		**Pg**		**15 07 47.0**	**+2.2**
LARF				Sg		**Sb**		**15 08 07.6**	**+0.5**
LARF	**Larrau**	**1.81**	**4**	Pn		**Pg**		**15 07 44.6**	**-0.2**
LARF	**Larrau**	**1.81**	**4**	Pg		**Pg**		**15 07 47.0**	**+2.2**
LARF				Sg		**Sb**		**15 08 07.6**	**+0.5**
VIEF	**Viey**	**1.88**	**28**	Pn		**Pb**		**15 07 44.6**	**-0.4**
VIEF	**Viey**	**1.88**	**28**	Pg		**Pg**		**15 07 46.7**	**+0.7**
VIEF				Sg		**Sn**		**15 08 07.9**	**+0.5**
VIEF	**Viey**	**1.88**	**28**	Pn		**Pb**		**15 07 44.6**	**-0.4**
VIEF	**Viey**	**1.88**	**28**	Pg		**Pg**		**15 07 46.7**	**+0.7**
VIEF				Sg		**Sn**		**15 08 07.9**	**+0.5**
SJPF	**Ste Jean**	**1.89**	**359**	*e*Pn		**Pb**		**15 07 45.5**	**+0.4**
SJPF	**Ste Jean**	**1.89**	**359**	*e*Pg		**Pg**		**15 07 48.1**	**+1.9**
SJPF				*e*Sg		**Sg**		**15 08 13.9**	**+3.2**
	1μm,0.3s								
SJPF	**Ste Jean**	**1.89**	**359**	Pn		**Pb**		**15 07 45.5**	**+0.4**
SJPF				Pg		**Pg**		**15 07 48.1**	**+1.9**
SJPF				Lg		Lg	Lg	15 08 13.9	
	668nm,0.3s								
SJPF	**Ste Jean**	**1.89**	**359**	Pn		**Pb**		**15 07 45.5**	**+0.4**
SJPF	**Ste Jean**	**1.89**	**359**	Pg		**Pg**		**15 07 48.1**	**+1.9**
SJPF				*e*Sg		**Sg**		**15 08 13.9**	**+3.2**
	668nm,0.3s								
SJPF	**Ste Jean**	**1.89**	**359**	*e*Pn		**Pb**		**15 07 45.5**	**+0.4**
SJPF				*e*Pg		**Pg**		**15 07 48.1**	**+1.9**
SJPF				*e*Sg		**Sg**		**15 08 13.9**	**+3.2**
ATE	**Arette**	**1.89**	**10**	Pn		**Pb**		**15 07 44.4**	**-0.8**
ATE	**Arette**	**1.89**	**10**	Pg		**Pg**		**15 07 46.8**	**+0.5**
ATE				Sg		**Sb**		**15 08 09.0**	**-0.2**
ATE	**Arette**	**1.89**	**10**	Pn		**Pb**		**15 07 45.1**	**-0.1**
	15nm,0.2s,SNR=7.9								
ATE				Pg		**Pg**		**15 07 47.8**	**+1.5**
	279nm,0.3s,SNR=7.9								
ATE				Sn		**Sb**		**15 08 09.1**	**-0.2**
	916nm,0.2s,SNR=7.9								
ATE				Lg		Lg	Lg	15 08 13.6	
	1μm,0.3s,SNR=7.9								
ATE	**Arette**	**1.89**	**10**	Pn		**Pb**		**15 07 44.4**	**-0.8**
ATE	**Arette**	**1.89**	**10**	Pg		**Pg**		**15 07 46.8**	**+0.5**
ATE				Sn		**Sb**		**15 08 09.1**	**-0.2**
	916nm,0.2s,SNR=7.9								
ATE				Lg		Lg	Lg	15 08 13.6	
	1μm,0.3s,SNR=7.9								
REYF	**Montagne du Re**	**1.93**	**17**	Pn		**Pb**		**15 07 45.7**	**-0.2**
REYF	**Montagne du Re**	**1.93**	**17**	Pg		**Pg**		**15 07 48.1**	**+1.1**
REYF				Sg		**Sb**		**15 08 13.3**	**-0.1**
REYF	**Montagne du Re**	**1.93**	**17**	Pn		**Pb**		**15 07 45.7**	**-0.2**
REYF	**Montagne du Re**	**1.93**	**17**	Pg		**Pg**		**15 07 48.1**	**+1.1**
REYF				Sg		**Sb**		**15 08 10.3**	**-0.1**
ELIZ	**Elizondo**	**1.96**	**352**	Pn		**Pb**		**15 07 46.6**	**+0.3**
	12nm,0.2s,SNR=42								
ELIZ				Pg		**Pg**		**15 07 49.0**	**+1.5**
	61nm,0.2s,SNR=7.9								
ELIZ				Sn		**Sb**		**15 08 10.3**	**-0.8**
	618nm,0.3s,SNR=14								
ELIZ				Lg		Lg	Lg	15 08 17.0	
	328nm,0.2s,SNR=21								
ELIZ	**Elizondo**	**1.96**	**352**	Pn		**Pb**		**15 07 46.6**	**+0.3**
	12nm,0.2s,SNR=42								
ORDF	**Ordiarp**	**1.99**	**5**	Pn		**Pb**		**15 07 46.7**	**-0.2**
ORDF	**Ordiarp**	**1.99**	**5**	Pg		**Pg**		**15 07 49.9**	**+1.7**
ORDF				Sg		**Sg**		**15 08 13.6**	**-0.5**
ORDF	**Ordiarp**	**1.99**	**5**	Pn		**Pb**		**15 07 46.7**	**-0.2**
ORDF	**Ordiarp**	**1.99**	**5**	Pg		**Pg**		**15 07 49.9**	**+1.7**
ORDF				Sg		**Sg**		**15 08 13.6**	**-0.5**
EALK	**Alkurruntz**	**2.01**	**353**	Pn		**Pb**		**15 07 47.0**	**-0.3**
	23nm,0.2s,SNR=74								
EALK				Pg		**Pg**		**15 07 50.3**	**+1.8**
	94nm,0.2s,SNR=7.9								
EALK				Sn		**Sn**		**15 08 10.9**	**+0.3**
	2μm,0.2s,SNR=13								
EALK				Lg		Lg	Lg	15 08 18.4	
	2μm,0.2s,SNR=15								
EALK	**Alkurruntz**	**2.01**	**353**	Pn		**Pb**		**15 07 47.0**	**-0.3**
	23nm,0.2s,SNR=74								
OSSF	**Osses**	**2.03**	**358**	Pn		**Pb**		**15 07 47.2**	**-0.4**
OSSF	**Osses**	**2.03**	**358**	Pg		**Pg**		**15 07 50.4**	**+1.4**
OSSF				Sg		**Sg**		**15 08 15.2**	**-0.1**
OSSF	**Osses**	**2.03**	**358**	Pn		**Pb**		**15 07 47.2**	**-0.4**
OSSF	**Osses**	**2.03**	**358**	Pg		**Pg**		**15 07 50.4**	**+1.4**
OSSF				Sg		**Sg**		**15 08 15.2**	**-0.1**
LABF	**Labassere**	**2.04**	**26**	Pn		**Pb**		**15 07 47.0**	**-0.8**
LABF	**Labassere**	**2.04**	**26**	Pg		**Pg**		**15 07 50.0**	**+0.9**
LABF				Sg		**Sb**		**15 08 13.9**	**+0.3**
LABF	**Labassere**	**2.04**	**26**	Pn		**Pb**		**15 07 47.0**	**-0.8**
LABF	**Labassere**	**2.04**	**26**	Pg		**Pg**		**15 07 50.0**	**+0.9**
LABF				Sg		**Sb**		**15 08 13.9**	**+0.3**
CSOR	**Sort**	**2.07**	**55**	⇑Pn		**Pn**		**15 07 46.6**	**+0.8**
	72nm,0.4s,SNR=18								
CSOR				Pg		**Pg**		**15 07 49.6**	**-0.1**
	182nm,0.2s,SNR=7.9								
CSOR				Sn		**Sn**		**15 08 11.3**	**-0.8**
	141nm,0.2s,SNR=7.9								
CSOR				Lg		Lg	Lg	15 08 17.4	
	2μm,0.3s,SNR=6.9								
CSOR	**Sort**	**2.07**	**55**	Pn		**Pn**		**15 07 46.6**	**+0.8**
	72nm,0.4s,SNR=18								
EPF	**Esparros**	**2.12**	**31**	*e*Pn		**Pb**		**15 07 48.1**	**-1.1**
EPF	**Esparros**	**2.12**	**31**	*e*Pg		**Pg**		**15 07 51.0**	**+0.3**
EPF				*e*Sg		**Sg**		**15 08 17.5**	**-0.7**
	7μm,0.6s								
EPF	**Esparros**	**2.12**	**31**	Pn		**Pb**		**15 07 48.1**	**-1.1**
EPF				Pg		**Pg**		**15 07 51.0**	**+0.3**
EPF				Lg		Lg	Lg	15 08 17.5	
	3μm,0.6s								
EPF	**Esparros**	**2.12**	**31**	Pn		**Pb**		**15 07 48.1**	**-1.1**
EPF	**Esparros**	**2.12**	**31**	Pg		**Pg**		**15 07 51.0**	**+0.3**
EPF				*e*Sg		**Sg**		**15 08 17.5**	**-0.7**
	3μm,0.6s								
EPF	**Esparros**	**2.12**	**31**	*e*Pn		**Pb**		**15 07 48.1**	**-1.1**
EPF				*e*Pg		**Pg**		**15 07 51.0**	**+0.3**
EPF				*e*Sg		**Sg**		**15 08 17.5**	**-0.7**
EMIR	**Miracle**	**2.13**	**70**	⇑Pn		**Pn**		**15 07 47.5**	**+0.9**
	396nm,0.2s,SNR=18								
EMIR				Pg		**Pg**		**15 07 50.8**	**-0.2**
	605nm,0.2s,SNR=7.9								
EMIR				Sn		**Sn**		**15 08 13.3**	**-0.3**
	451nm,0.3s,SNR=7.9								
EMIR				Lg		Lg	Lg	15 08 18.8	
	2μm,0.4s,SNR=22								
EMIR	**Miracle**	**2.13**	**70**	Pn		**Pn**		**15 07 47.5**	**+0.9**
	396nm,0.2s,SNR=18								
MELF	**Melles**	**2.18**	**40**	Pn		**Pn**		**15 07 48.9**	**+1.6**
MELF	**Melles**	**2.18**	**40**	Pg		**Pg**		**15 07 52.1**	**+0.2**
MELF				Sg		**Sb**		**15 08 17.7**	**0.0**
MELF	**Melles**	**2.18**	**40**	Pn		**Pn**		**15 07 48.9**	**+1.6**
MELF	**Melles**	**2.18**	**40**	Pg		**Pg**		**15 07 52.1**	**+0.2**
MELF				Sg		**Sb**		**15 08 17.7**	**0.0**
SALF	**Salau**	**2.33**	**48**	Pn		**Pn**		**15 07 51.0**	**+1.7**
SALF	**Salau**	**2.33**	**48**	Pg		**Pg**		**15 07 54.5**	**-0.2**
SALF				Sg		**Sb**		**15 08 23.2**	**+1.3**
SALF	**Salau**	**2.33**	**48**	Pn		**Pn**		**15 07 51.0**	**+1.7**
SALF	**Salau**	**2.33**	**48**	Pg		**Pg**		**15 07 54.5**	**-0.2**
SALF				Sg		**Sb**		**15 08 23.2**	**+1.3**
GUD	**Guadarrama**	**2.34**	**257**	⇓Pn		**Pn**		**15 07 51.3**	**+1.7**
	265nm,0.4s,SNR=18								
GUD				Pg		**Pg**		**15 07 57.6**	**+2.7**
	166nm,0.2s,SNR=7.9								
GUD				Sn		**Sn**		**15 08 15.7**	**-3.1**
	238nm,0.4s,SNR=7.9								
GUD	**Guadarrama**	**2.34**	**257**	Pn		**Pn**		**15 07 51.3**	**+1.7**
	265nm,0.4s,SNR=18								
ETOB	**Tobarra**	**2.60**	**187**	Pn		**Pn**		**15 07 54.1**	**+1.1**
	2.1nm,0.1s,SNR=7.9								
ETOB				Pg		**Pb**		**15 07 59.4**	**+2.1**
	70nm,0.4s,SNR=7.9								
ETOB				Sn		**Sn**		**15 08 24.0**	**-1.1**
	12nm,0.2s,SNR=7.9								
ETOB				Lg		Lg	Lg	15 08 34.1	
	550nm,0.6s,SNR=7.9								
ETOB	**Tobarra**	**2.60**	**187**	Pn		**Pn**		**15 07 54.1**	**+1.1**
	2.1nm,0.1s,SNR=7.9								
AFON	**Font Roja**	**2.60**	**169**	Pn		**Pn**		**15 07 55.2**	**+2.1**
	2.3nm,0.2s,SNR=7.9								
AFON				Lg		Lg	Lg	15 08 33.6	
	1μm,1.2s,SNR=7.9								
AFON	**Font Roja**	**2.60**	**169**	Pn		**Pn**		**15 07 55.2**	**+2.1**
	2.3nm,0.2s,SNR=7.9								
AFON				Lg		Lg	Lg	15 08 33.6	
	1μm,1.2s,SNR=7.9								
ELAN	**Lanestosa**	**2.62**	**321**	Pn		**Pn**		**15 07 55.5**	**+2.2**
	30nm,0.2s,SNR=65								
ELAN				Pg		**Pg**		**15 08 02.0**	**+1.8**
	115nm,0.2s,SNR=7.9								
ELAN				Sn		**Sn**		**15 08 27.8**	**+2.2**
	284nm,0.3s,SNR=7.9								
ELAN				Lg		Lg	Lg	15 08 37.6	
	1μm,0.4s,SNR=7.9								
ELAN	**Lanestosa**	**2.62**	**321**	Pn		**Pn**		**15 07 55.5**	**+2.2**
	30nm,0.2s,SNR=65								
ESDC	**Sonseca Array**	**2.64**	**235**	Pn		**Pn**		**15 07 54.3**	**+0.7**
	78nm,0.3s,baz=58,slow=14,SNR=449								
ESDC				Sn		**Sn**		**15 08 23.6**	**-2.6**
	64nm,0.3s,baz=54,slow=26,SNR=11								
ESDC				Lg		Lg	Lg	15 08 35.6	
	132nm,0.3s,baz=53,slow=32,SNR=9.0								
ESDC	**Sonseca Array**	**2.64**	**235**	Pn		**Pn**		**15 07 54.2**	**+0.6**
	43nm,0.3s,baz=59,slow=14,SNR=221								
ESDC				Pg		**Pg**		**15 08 00.8**	**+0.2**
	42nm,0.1s,baz=56,slow=15,SNR=7.9								
ESDC				Sn		**Sn**		**15 08 26.1**	**-0.1**
	63nm,0.1s,baz=55,slow=24,SNR=7.9								
ESDC				Lg		Lg	Lg	15 08 37.1	
	133nm,0.5s,baz=52,slow=29,SNR=10								
ESDC	**Sonseca Array**	**2.64**	**235**	Pg		**Pg**		**15 08 00.8**	**+0.2**
	42nm,0.1s,SNR=7.9								
ESDC				Sn		**Sn**		**15 08 26.1**	**-0.1**
	63nm,0.1s,SNR=7.9								
ESDC				Lg		Lg	Lg	15 08 37.1	
	133nm,0.5s,SNR=10								
VALF	**Valcebollere**	**2.65**	**63**	Pn		**Pn**		**15 07 54.9**	**+1.0**
VALF				Sn		**Sn**		**15 08 26.1**	**-0.5**
VALF				Sg		**Sg**		**15 08 34.2**	**-1.0**
VALF	**Valcebollere**	**2.65**	**63**	Pn		**Pn**		**15 07 54.9**	**+1.0**
VALF				Sn		**Sn**		**15 08 26.1**	**-0.5**
VALF				Sg		**Sg**		**15 08 34.2**	**-1.0**
CLLI	**Llivia**	**2.66**	**61**	⇑Pn		**Pn**		**15 07 55.0**	**+1.1**
	81nm,0.4s,SNR=18								
CLLI				Pg		**Pg**		**15 08 01.4**	**+0.4**
	300nm,0.3s,SNR=7.9								
CLLI				Sn		**Sn**		**15 08 26.1**	**-0.6**
	71nm,0.2s,SNR=7.9								
CLLI				Lg		Lg	Lg	15 08 37.2	
	852nm,0.5s,SNR=7.9								
CLLI	**Llivia**	**2.66**	**61**	Pn		**Pn**		**15 07 55.0**	**+1.1**
	81nm,0.4s,SNR=18								
CLLI	**Llivia**	**2.66**	**61**	Pg		**Pg**		**15 08 01.4**	**+0.4**
	300nm,0.3s,SNR=7.9								
CLLI				Sn		**Sn**		**15 08 26.1**	**-0.6**
	71nm,0.2s,SNR=7.9								
CLLI				Lg		Lg	Lg	15 08 37.2	
	852nm,0.5s,SNR=7.9								
CFON	**Fontmartina**	**2.76**	**78**	Pn		**Pn**		**15 07 55.8**	**+0.6**
	293nm,0.3s,SNR=338								
CFON				Pg		**Pg**		**15 08 03.8**	**+0.9**
	405nm,0.3s,SNR=7.9								
CFON				Sn		**Sn**		**15 08 28.2**	**-0.9**
	672nm,0.3s,SNR=7.9								
CFON				Lg		Lg	Lg	15 08 39.1	
	1μm,0.3s,SNR=7.9								
CFON	**Fontmartina**	**2.76**	**78**	Pn		**Pn**		**15 07 55.8**	**+0.6**
	293nm,0.3s,SNR=338								
CFON	**Fontmartina**	**2.76**	**78**	Pg		**Pg**		**15 08 03.8**	**+0.9**
	405nm,0.3s,SNR=7.9								
CFON				Sn		**Sn**		**15 08 28.2**	**-0.9**
	672nm,0.3s,SNR=7.9								
CFON				Lg		Lg	Lg	15 08 39.1	
	1μm,0.3s,SNR=7.9								
CARF	**Carcanieres**	**2.86**	**58**	Pn		**Pn**		**15 07 58.3**	**+1.7**
CARF	**Carcanieres**	**2.86**	**58**	Pg		**Pg**		**15 08 05.7**	**+0.9**
CARF				Sg		**Sg**		**15 08 41.2**	**-0.6**
CARF	**Carcanieres**	**2.86**	**58**	Pn		**Pn**		**15 07 58.3**	**+1.7**
CARF	**Carcanieres**	**2.86**	**58**	Pg		**Pg**		**15 08 05.7**	**+0.9**
CARF				Sg		**Sg**		**15 08 41.2**	**-0.6**
PAB	**San Pablo**	**2.96**	**236**	*e*Pn		**Pn**		**15 07 58.5**	**+0.5**
PAB				*e*Sn		**Sn**		**15 08 33.7**	**-0.3**
PAB	**San Pablo**	**2.96**	**236**	*e*Pn		**Pn**		**15 07 58.5**	**+0.5**
PAB				*e*Sn		**Sn**		**15 08 33.7**	**-0.3**
FILF	**Fillols**	**3.08**	**63**	Pn		**Pn**		**15 07 59.6**	**-0.1**
FILF	**Fillols**	**3.08**	**

12nm,0.2s,SNR=7.9
EHUE Lg Lg 15 09 09.6
109nm,0.6s,SNR=7.9
EARI Arriondas 3.65 306 ⇓Pn **Pn 15 08 09.6 +2.2**
131nm,0.5s,SNR=18
EARI Pg **Pg 15 08 20.7 +0.8**
51nm,0.3s,SNR=7.9
EARI Sn **Sn 15 08 50.5 -0.6**
65nm,0.3s,SNR=7.9
EARI Lg Lg 15 09 10.7
471nm,0.8s,SNR=4.0
EARI Arriondas 3.65 306 Pn **Pn 15 08 09.6 +2.2**
131nm,0.5s,SNR=18
EQES Quesada 3.72 204 Pn **Pn 15 08 08.6 0.0**
3.1nm,0.3s,SNR=10.0
EQES Pg **Pg 15 08 20.8 -0.6**
55nm,0.3s,SNR=7.9
EQES Sn **Sn 15 08 51.4 -1.6**
31nm,0.4s,SNR=7.9
EQES Lg Lg 15 09 08.7
312nm,0.8s,SNR=7.9
EQES Quesada 3.72 204 Pn **Pn 15 08 08.6 0.0**
3.1nm,0.3s,SNR=10.0
EPLA Plasencia 3.92 254 Pn **Pn 15 08 12.4 +1.3**
39nm,0.1s,SNR=122
EPLA Pg **Pg 15 08 24.6 -0.5**
21nm,0.2s,SNR=7.9
EPLA Sn **Sn 15 08 56.8 -0.8**
58nm,0.2s,SNR=7.9
EPLA Lg Lg 15 09 15.2
206nm,0.5s,SNR=5.8
EPLA Plasencia 3.92 254 Pn **Pn 15 08 12.4 +1.3**
39nm,0.1s,SNR=122
LFF La Frestale 3.96 20 *e*Pn **Pn 15 08 12.8 +1.1**
LFF *e*Sn **Sn 15 08 55.6 -3.1**
LFF *e*Sg **Sg 15 09 17.7 +0.3**
585nm,0.6s
LFF La Frestale 3.96 20 Pn **Pn 15 08 12.8 +1.1**
LFF Sn **Sn 15 08 55.6 -3.1**
LFF Lg Lg 15 09 17.7
292nm,0.6s
LFF La Frestale 3.96 20 Pn **Pn 15 08 12.8 +1.1**
LFF *e*Sn **Sn 15 08 55.6 -3.1**
LFF *e*Sg **Sg 15 09 17.7 +0.3**
292nm,0.6s
LFF La Frestale 3.96 20 *e*Pn **Pn 15 08 12.8 +1.1**
LFF *e*Sn **Sn 15 08 55.6 -3.1**
LFF *e*Sg **Sg 15 09 17.7 +0.3**
GORA Gorafe 4.01 202 Pn **Pn 15 08 13.6 +1.1**
5.7nm,0.1s,SNR=7.9
GORA Pg **Pg 15 08 26.8 -0.2**
22nm,0.2s,SNR=7.9
GORA Sn **Sn 15 09 02.2 +2.1**
16nm,0.1s,SNR=7.9
GORA Lg Lg 15 09 18.0
1µm,1.0s,SNR=7.9
GORA Gorafe 4.01 202 Pn **Pn 15 08 13.6 +1.1**
5.7nm,0.1s,SNR=7.9
EADA Adamuz 4.03 222 Pn **Pn 15 08 12.8 +0.1**
6.8nm,0.1s,SNR=22
EADA Pg **Pg 15 08 27.1 -0.2**
52nm,0.3s,SNR=7.9
EADA Sn **Sn 15 08 59.5 -1.0**
16nm,0.1s,SNR=4.1
EADA Lg Lg 15 09 16.9
191nm,0.6s,SNR=4.2
EADA Adamuz 4.03 222 Pn **Pn 15 08 12.8 +0.1**
6.8nm,0.1s,SNR=22
PBRG Braganca 4.23 280 *e*Pn **Pn 15 08 17.0 +1.6**
PBRG *e*Sn **Sn 15 09 06.2 +0.9**
PBRG *e*Sg **Sg 15 09 25.4 -0.4**
PBRG A A 15 09 32.8
207nm,0.6s
PBRG Braganca 4.23 280 Pn **Pn 15 08 17.0 +1.6**
PBRG Sn **Sn 15 09 06.2 +0.9**
PBRG Lg Lg 15 09 25.4
104nm,0.6s
PBRG Braganca 4.23 280 Pn **Pn 15 08 17.0 +1.6**
PBRG Sn **Sn 15 09 06.2 +0.9**
PBRG *e*Sg **Sg 15 09 25.4 -0.4**
207nm,0.6s
ECAL Calabor 4.24 282 Pn **Pn 15 08 17.1 +1.5**
50nm,0.1s,SNR=178
ECAL Pg **Pg 15 08 31.3 0.0**
165nm,0.4s,SNR=7.9
ECAL Sn **Sn 15 09 05.9 +0.2**
198nm,0.3s,SNR=5.9
ECAL Lg Lg 15 09 28.1
440nm,0.3s,SNR=5.0
ECAL Calabor 4.24 282 Pn **Pn 15 08 17.1 +1.5**
50nm,0.1s,SNR=178
ENIJ Nijar 4.33 191 Pn **Pn 15 08 16.2 -0.5**
5.0nm,0.3s,SNR=7.9
ENIJ Pg **Pg 15 08 31.6 -1.3**
36nm,0.4s,SNR=7.9
ENIJ Lg Lg 15 09 25.3
111nm,0.6s,SNR=7.9
ENIJ Nijar 4.33 191 Pn **Pn 15 08 16.2 -0.5**
5.0nm,0.3s,SNR=7.9
ECOG Cogollos-Vega 4.36 206 Pn **Pn 15 08 18.7 +1.4**
7.9nm,0.4s,SNR=4.5
ECOG Lg Lg 15 09 31.6
314nm,0.7s,SNR=5.0
ECOG Cogollos-Vega 4.36 206 Pn **Pn 15 08 18.7 +1.4**
7.9nm,0.4s,SNR=4.5
ECOG Lg Lg 15 09 31.6
314nm,0.7s,SNR=5.0
CAF Calviac 4.39 32 *e*Pn **Pn 15 08 17.9 +0.3**
CAF *e*Sn **Sn 15 09 05.9 -3.3**
CAF *e*Sg **Sg 15 09 30.3 -0.7**
239nm,0.4s
CAF Calviac 4.39 32 Pn **Pn 15 08 17.9 +0.3**
CAF Sn **Sn 15 09 05.9 -3.3**
CAF Lg Lg 15 09 30.3
119nm,0.4s
CAF Calviac 4.39 32 Pn **Pn 15 08 17.9 +0.3**
CAF *e*Sn **Sn 15 09 05.9 -3.3**
CAF *e*Sg **Sg 15 09 30.3 -0.7**
119nm,0.4s
CAF Calviac 4.39 32 *e*Pn **Pn 15 08 17.9 +0.3**
CAF *e*Sn **Sn 15 09 05.9 -3.3**
CAF *e*Sg **Sg 15 09 30.3 -0.7**
EQUE Quentar 4.39 204 Pn **Pn 15 08 18.4 +0.7**
2.4nm,0.2s,SNR=7.9
EQUE Pg **Pg 15 08 32.6 -1.5**
6.3nm,0.2s,SNR=7.9
EQUE Lg Lg 15 09 30.4
134nm,0.7s,SNR=7.9
EQUE Quentar 4.39 204 Pn **Pn 15 08 18.4 +0.7**
2.4nm,0.2s,SNR=7.9
MVO Moncorvo 4.43 271 *e*Pn **Pn 15 08 19.6 +1.4**
MVO *e*Sn **Sn 15 09 11.5 +1.3**
MVO *e*Sg **Sg 15 09 32.6 +0.4**
MVO A A 15 09 43.9
353nm,0.4s
MVO Moncorvo 4.43 271 ⇓Pn **Pn 15 08 19.6 +1.4**
76nm,0.1s,SNR=18
MVO Pg **Pg 15 08 34.1 -0.7**
3.6nm,0.1s,SNR=7.9
MVO Sn **Sn 15 09 10.4 +0.1**
72nm,0.2s,SNR=7.9
MVO Lg Lg 15 09 34.3
659nm,0.6s,SNR=7.9
MVO Moncorvo 4.43 271 Pn **Pn 15 08 19.6 +1.4**
76nm,0.1s,SNR=18
MVO Moncorvo 4.43 271 Pg **Pg 15 08 34.1 -0.7**
3.6nm,0.1s,SNR=7.9
MVO *e*Sn **Sn 15 09 11.5 +1.3**
MVO *e*Sg **Sg 15 09 32.6 +0.4**
353nm,0.4s
MVO Lg Lg 15 09 34.3
659nm,0.6s,SNR=7.9
SELV Sierra Elvira 4.45 207 Lg Lg 15 09 33.9
290nm,1.1s,SNR=7.9
SELV Sierra Elvira 4.45 207 Lg Lg 15 09 33.9
290nm,1.1s,SNR=7.9
RJF Les Rejaudoux 4.52 25 *e*Pn **Pn 15 08 19.6 +0.2**
RJF *e*Sn **Sn 15 09 08.9 -3.6**
610nm,0.4s
RJF Les Rejaudoux 4.52 25 Pn **Pn 15 08 19.6 +0.2**
RJF Sn **Sn 15 09 08.9 -3.6**
305nm,0.4s
RJF Les Rejaudoux 4.52 25 Pn **Pn 15 08 19.6 +0.2**
RJF *e*Sn **Sn 15 09 08.9 -3.6**
RJF Les Rejaudoux 4.52 25 *e*Pn **Pn 15 08 19.6 +0.2**
RJF *e*Sn **Sn 15 09 08.9 -3.6**

ECAB El Cabril 4.55 228 ⇓Pn **Pn 15 08 20.1 +0.3**
11nm,0.3s,SNR=18
ECAB Sn **Sn 15 09 10.1 -3.1**
18nm,0.2s,SNR=5.7
ECAB Lg Lg 15 09 36.9
664nm,1.4s,SNR=5.0
ECAB El Cabril 4.55 228 Pn **Pn 15 08 20.1 +0.3**
11nm,0.3s,SNR=18
ECAB Lg Lg 15 09 36.9
664nm,1.4s,SNR=5.0
MATF Mathat 4.65 8 Pn **Pn 15 08 22.6 +1.5**
MATF Sg **Sg 15 09 38.8 -0.4**
MATF Mathat 4.65 8 Pn **Pn 15 08 22.6 +1.5**
MATF Sg **Sg 15 09 38.8 -0.4**
LASF Ste Croix 4.67 51 *e*Pn **Pn 15 08 21.8 +0.3**
LASF Ste Croix 4.67 51 *e*Pg **Pg 15 08 38.6 -0.9**
LASF *e*Sg **Sg 15 09 38.1 -1.9**
439nm,0.7s
LASF Ste Croix 4.67 51 Pn **Pn 15 08 21.8 +0.3**
LASF Pg **Pg 15 08 38.6 -0.9**
LASF Lg Lg 15 09 38.1
220nm,0.7s
LASF Ste Croix 4.67 51 Pn **Pn 15 08 21.8 +0.3**
LASF Ste Croix 4.67 51 Pg **Pg 15 08 38.6 -0.9**
LASF *e*Sg **Sg 15 09 38.1 -1.9**
220nm,0.7s
LASF Ste Croix 4.67 51 *e*Pn **Pn 15 08 21.8 +0.3**
LASF *e*Pg **Pg 15 08 38.6 -0.9**
LASF *e*Sg **Sg 15 09 38.1 -1.9**
EGOR Sierra Gorda, 4.71 210 Pn **Pn 15 08 23.0 +0.9**
5.4nm,0.3s,SNR=7.9
EGOR Sn **Sn 15 09 14.3 -2.9**
65nm,0.7s,SNR=4.0
EGOR Lg Lg 15 09 42.7
185nm,0.9s,SNR=7.9
EGOR Sierra Gorda, 4.71 210 Pn **Pn 15 08 23.0 +0.9**
5.4nm,0.3s,SNR=7.9
EGOR Lg Lg 15 09 42.7
185nm,0.9s,SNR=7.9
EPON Pontenova 4.91 297 Pn **Pn 15 08 26.8 +2.0**
7.7nm,0.1s,SNR=35
EPON Pg **Pg 15 08 43.3 -0.9**
69nm,0.4s,SNR=7.9
EPON Lg Lg 15 09 43.5
314nm,0.5s,SNR=5.0
EPON Pontenova 4.91 297 Pn **Pn 15 08 26.8 +2.0**
7.7nm,0.1s,SNR=35
MTE Manteigas 4.91 262 *e*Pn **Pn 15 08 25.7 +0.9**
MTE *e*Sn **Sn 15 09 22.0 -0.2**
MTE *e*Sg **Sg 15 09 48.9 +1.1**
MTE A A 15 09 54.2
235nm,0.4s
MTE Manteigas 4.91 262 Pn **Pn 15 08 25.7 +0.9**
MTE Sn **Sn 15 09 22.0 -0.2**
MTE Lg Lg 15 09 48.9
118nm,0.4s
MTE Manteigas 4.91 262 Pn **Pn 15 08 25.7 +0.9**
MTE Sn **Sn 15 09 22.0 -0.2**
MTE *e*Sg **Sg 15 09 48.9 +1.1**
235nm,0.4s
MTE Manteigas 4.91 262 *e*Pn **Pn 15 08 24.6 -0.3**
MTE *e*Sn **Sn 15 09 21.4 -0.8**
PVRL Vila Real 4.94 273 *e*Pn **Pn 15 08 26.4 +1.2**
PVRL *e*Sn **Sn 15 09 22.3 -0.6**
PVRL *e*Sg **Sg 15 09 47.6 -1.1**
PVRL A A 15 09 59.8
179nm,0.9s
PVRL Vila Real 4.94 273 Pn **Pn 15 08 26.4 +1.2**
PVRL Sn **Sn 15 09 22.3 -0.6**
PVRL Lg Lg 15 09 47.6
89nm,0.9s
PVRL Vila Real 4.94 273 Pn **Pn 15 08 26.4 +1.2**
PVRL Sn **Sn 15 09 22.3 -0.6**
PVRL *e*Sg **Sg 15 09 47.6 -1.1**
179nm,0.9s
FRNF Fournols 4.97 32 Pn **Pn 15 08 25.5 -0.1**
FRNF Fournols 4.97 32 Pn **Pn 15 08 25.5 -0.1**
POLO Lamas de Olo 5.00 274 ⇓*e*Pn **Pn 15 08 27.3 +1.3**
POLO *e*Sn **Sn 15 09 24.2 -0.1**
POLO *e*Sg **Sg 15 09 49.8 -0.7**
POLO A A 15 10 07.7
85nm,0.7s
POLO Lamas de Olo 5.00 274 ⇓*e*Pn **Pn 15 08 27.3 +1.3**
POLO *e*Sn **Sn 15 09 24.2 -0.1**
POLO *e*Sg **Sg 15 09 49.8 -0.7**
85nm,0.7s
PCBR Castelo Branco 5.01 256 ⇓*e*Pn **Pn 15 08 26.8 +0.7**
PCBR *e*Sg **Sg 15 09 49.8 -1.0**
PCBR A A 15 10 03.9
106nm,0.8s
PCBR Castelo Branco 5.01 256 Pn **Pn 15 08 26.8 +0.7**
PCBR Lg Lg 15 09 49.8
53nm,0.8s
PCBR Castelo Branco 5.01 256 Pn **Pn 15 08 26.8 +0.7**
PCBR *e*Sg **Sg 15 09 49.8 -1.0**
106nm,0.8s
PMRV Marv??o 5.09 251 *e*Pn **Pn 15 08 28.1 +0.9**
PMRV *e*Sn **Sn 15 09 24.2 -2.3**
PMRV *e*Sg **Sg 15 09 52.3 -1.1**
PMRV A A 15 10 01.6
194nm,0.5s
PMRV Marv??o 5.09 251 Pn **Pn 15 08 28.1 +0.9**
PMRV Sn **Sn 15 09 24.2 -2.3**
PMRV Lg Lg 15 09 52.3
194nm,0.5s
PMRV Marv??o 5.09 251 Pn **Pn 15 08 28.1 +0.9**
PMRV *e*Sn **Sn 15 09 24.2 -2.3**
PMRV *e*Sg **Sg 15 09 52.3 -1.1**
194nm,0.5s
PVIS Viseu 5.12 266 *e*Pn **Pn 15 08 28.7 +1.0**
PVIS *e*Sn **Sn 15 09 26.6 -0.7**
PVIS *e*Sg **Sg 15 09 55.0 +0.5**
PVIS A A 15 10 08.3
130nm,0.7s
PVIS Viseu 5.12 266 Pn **Pn 15 08 28.7 +1.0**
PVIS Sn **Sn 15 09 26.6 -0.7**
PVIS Lg Lg 15 09 55.0
65nm,0.7s
PVIS Viseu 5.12 266 Pn **Pn 15 08 28.7 +1.0**
PVIS Sn **Sn 15 09 26.6 -0.7**
PVIS *e*Sg **Sg 15 09 55.0 +0.5**
130nm,0.7s
EBAD Badajoz 5.13 243 Pn **Pn 15 08 28.5 +0.8**
3.3nm,0.1s,SNR=12
EBAD Sn **Sn 15 09 25.6 -1.8**
32nm,0.2s,SNR=7.9
EBAD Lg Lg 15 09 55.4
118nm,0.4s,SNR=5.0
EBAD Badajoz 5.13 243 Pn **Pn 15 08 28.5 +0.8**
3.3nm,0.1s,SNR=12
EBAD Lg Lg 15 09 55.4
118nm,0.4s,SNR=5.0
EMAL Malaga-Limoner 5.13 211 *e*P **Pn 15 08 28.6 +0.8**
LBL Lubilhac 5.14 37 Pn **Pn 15 08 28.6 +0.6**
LBL Lubilhac 5.14 37 Pn **Pn 15 08 28.6 +0.6**
PCAB Cabril 5.18 278 *e*Pn **Pn 15 08 29.8 +1.3**
PCAB *e*Sn **Sn 15 09 26.8 -1.9**
PCAB *e*Sg **Sg 15 09 56.2 -0.2**
PCAB A A 15 10 04.2
155nm,0.5s
PCAB Cabril 5.18 278 Pn **Pn 15 08 29.8 +1.3**
PCAB Sn **Sn 15 09 26.8 -1.9**
PCAB Lg Lg 15 09 56.2
78nm,0.5s
PCAB Cabril 5.18 278 Pn **Pn 15 08 29.8 +1.3**
PCAB *e*Sn **Sn 15 09 26.8 -1.9**
PCAB *e*Sg **Sg 15 09 56.2 -0.2**
155nm,0.5s
ELOB Lobios 5.21 279 Pn **Pn 15 08 30.3 +1.3**
26nm,0.2s,SNR=78
ELOB Sn **Sn 15 09 28.6 -1.1**
21nm,0.2s,SNR=7.9
ELOB Lg Lg 15 09 59.6
390nm,0.7s,SNR=5.0
ELOB Lobios 5.21 279 Pn **Pn 15 08 30.3 +1.3**
26nm,0.2s,SNR=78
ELOB Sn **Sn 15 09 28.6 -1.1**
21nm,0.2s,SNR=7.9
ELOB Lg Lg 15 09 59.6
390nm,0.7s,SNR=5.0
EBNR Beni Rached 5.36 156 P **Pb 15 08 45.2 +0.8**
OKGL Djebel Kef Gue 5.37 164 Pn **Pn 15 08 30.7 -0.4**
8.6nm,0.2s,SNR=7.9
OKGL Sn **Sn 15 09 32.4 -1.1**
SNR=7.9

OKGL Djebel Kef Gue 5.37 164 Pn **Pn 15 08 30.7 -0.4**
8.6nm,0.2s,SNR=7.9
OKGL Sn **Sn 15 09 32.4 -1.1**
SNR=7.9
PGAV Gavieira, Arco 5.38 280 *e*Pn **Pn 15 08 32.5 +1.2**
PGAV *e*Sg **Sg 15 10 01.2 -1.6**
PGAV A A 15 10 11.2
132nm,0.7s
PGAV Gavieira, Arco 5.38 280 *e*Pn **Pn 15 08 32.5 +1.2**
EAGO Agolada(Pontev 5.39 289 Pn **Pn 15 08 32.4 +1.0**
12nm,0.1s,SNR=7.9
EAGO Pg **Pg 15 08 51.9 -1.4**
32nm,0.4s,SNR=7.9
EAGO Sn **Sn 15 09 33.8 -0.2**
22nm,0.2s,SNR=7.9
EAGO Lg Lg 15 10 00.6
288nm,0.9s,SNR=7.9
EAGO Agolada(Pontev 5.39 289 Pn **Pn 15 08 32.4 +1.0**
12nm,0.1s,SNR=7.9
EAGO Sn **Sn 15 09 33.8 -0.2**
22nm,0.2s,SNR=7.9
EAGO Lg Lg 15 10 00.6
288nm,0.9s,SNR=7.9
MFF Saint Martin d 5.42 7 *e*Pn **Pn 15 08 32.1 +0.3**
MFF *e*Sn **Sn 15 09 31.4 -3.3**
129nm,0.5s
MFF Saint Martin d 5.42 7 Pn **Pn 15 08 32.1 +0.3**
MFF Sn **Sn 15 09 31.4 -3.3**
64nm,0.5s
MFF Saint Martin d 5.42 7 Pn **Pn 15 08 32.1 +0.3**
MFF Saint Martin d 5.42 7 *e*Pn **Pn 15 08 32.1 +0.3**
MFF *e*Sn **Sn 15 09 31.4 -3.3**
EMIJ Mijas 5.44 212 Pn **Pn 15 08 34.0 +2.0**
5.2nm,0.3s,SNR=6.1
EMIJ Sn **Sn 15 09 33.0 -2.2**
21nm,0.6s,SNR=4.0
EMIJ Lg Lg 15 10 06.1
144nm,0.9s,SNR=7.9
EMIJ Mijas 5.44 212 Pn **Pn 15 08 34.0 +2.0**
5.2nm,0.3s,SNR=6.1
EMIJ Lg Lg 15 10 06.1
144nm,0.9s,SNR=7.9
PYM Petit Puy Mans 5.45 32 Pn **Pn 15 08 33.4 +1.2**
PYM Petit Puy Mans 5.45 32 Pn **Pn 15 08 33.4 +1.2**
PBAR Barrancos 5.46 238 *e*Pn **Pn 15 08 32.9 +0.6**
PBAR *e*Sg **Sg 15 10 02.8 -2.6**
PBAR A A 15 10 19.5
254nm,0.6s
PBAR Barrancos 5.46 238 Pn **Pn 15 08 32.9 +0.6**
PBAR Lg Lg 15 10 02.8
254nm,0.6s
PBAR Barrancos 5.46 238 Pn **Pn 15 08 32.9 +0.6**
PBAR Lg Lg 15 10 02.8
254nm,0.6s
PESTR Estremoz 5.46 247 *e*Pn **Pn 15 08 32.9 +0.5**
PESTR *e*Sg **Sg 15 10 03.3 -2.3**
PESTR A A 15 10 14.0
123nm,0.7s
PESTR Estremoz 5.46 247 Pn **Pn 15 08 32.9 +0.5**
PESTR Lg Lg 15 10 03.3
123nm,0.7s
PESTR Estremoz 5.46 247 Pn **Pn 15 08 32.9 +0.5**
PESTR Lg Lg 15 10 03.3
123nm,0.7s
EMIN Mina Concepcio 5.49 233 Pn **Pn 15 08 33.2 +0.6**
5.7nm,0.4s,SNR=15
EMIN Sn **Sn 15 09 33.4 -2.8**
10nm,0.3s,SNR=7.9
EMIN Lg Lg 15 10 06.6
389nm,1.0s,SNR=7.9
EMIN Mina Concepcio 5.49 233 Pn **Pn 15 08 33.2 +0.6**
5.7nm,0.4s,SNR=15
EMIN Lg Lg 15 10 06.6
389nm,1.0s,SNR=7.9
EANR 'Ain N'Sour 5.56 161 P **Pn 15 08 35.5 +1.8**
EANR 'Ain N'Sour 5.56 161 Pn **Pn 15 08 35.5 +1.8**
EANR 'Ain N'Sour 5.56 161 P **Pn 15 08 35.5 +1.8**
VIVF Saint-Julien-l 5.61 48 *e*Pn **Pn 15 08 34.7 +0.4**
VIVF *e*Sg **Sg 15 10 06.4 -3.7**
228nm,0.7s
VIVF Saint-Julien-l 5.61 48 Pn **Pn 15 08 34.7 +0.4**
VIVF Lg Lg 15 10 06.4
114nm,0.7s
VIVF Saint-Julien-l 5.61 48 Pn **Pn 15 08 34.7 +0.4**
VIVF Lg Lg 15 10 06.4
114nm,0.7s
VIVF Saint-Julien-l 5.61 48 *e*Pn **Pn 15 08 34.7 +0.4**
VIVF *e*Sg **Sg 15 10 06.4 -3.7**
PTO Porto 5.61 272 *e*Pn **Pn 15 08 35.9 +1.5**
PTO *e*Sg **Sg 15 10 11.0 +0.7**
PTO A A 15 10 13.1
106nm,0.5s
PTO Porto 5.61 272 Pn **Pn 15 08 35.9 +1.5**
PTO Lg Lg 15 10 11.0
53nm,0.5s
PTO Porto 5.61 272 Pn **Pn 15 08 35.9 +1.5**
PTO *e*Sg **Sg 15 10 11.0 +0.7**
106nm,0.5s
TCF Toulx Ste Croi 5.62 25 *e*Pn **Pn 15 08 34.0 -0.5**
TCF *e*Sn **Sn 15 09 35.4 -4.1**
TCF *e*Sg **Sg 15 10 09.2 -1.2**
150nm,0.5s
TCF Toulx Ste Croi 5.62 25 Pn **Pn 15 08 34.0 -0.5**
TCF Sn **Sn 15 09 35.4 -4.1**
TCF Lg Lg 15 10 09.2
75nm,0.5s
TCF Toulx Ste Croi 5.62 25 Pn **Pn 15 08 34.0 -0.5**
TCF *e*Sg **Sg 15 10 09.2 -1.2**
75nm,0.5s
TCF Toulx Ste Croi 5.62 25 *e*Pn **Pn 15 08 34.0 -0.5**
TCF *e*Sn **Sn 15 09 35.4 -4.1**
TCF *e*Sg **Sg 15 10 09.2 -1.2**
ESPR Espera 5.68 222 Pn **Pn 15 08 36.4 +1.1**
10.0nm,0.5s,SNR=7.0
ESPR Lg Lg 15 10 13.0
287nm,1.1s,SNR=7.9
ESPR Espera 5.68 222 Pn **Pn 15 08 36.4 +1.1**
10.0nm,0.5s,SNR=7.0
ESPR Lg Lg 15 10 13.0
287nm,1.1s,SNR=7.9
SMRF Simiane la Rot 5.68 59 *e*Pn **Pn 15 08 35.7 +0.3**
SMRF *e*Sg **Sg 15 10 09.3 -3.2**
382nm,1.3s
SMRF Simiane la Rot 5.68 59 Pn **Pn 15 08 35.7 +0.3**
SMRF Lg Lg 15 10 09.3
382nm,1.3s
SMRF Simiane la Rot 5.68 59 Pn **Pn 15 08 35.7 +0.3**
SMRF Lg Lg 15 10 09.3
382nm,1.3s
SMRF Simiane la Rot 5.68 59 *e*Pn **Pn 15 08 35.7 +0.3**
SMRF *e*Sg **Sg 15 10 09.3 -3.2**
PCAS Casmilo, Conde 5.70 261 *e*Pn **Pn 15 08 36.5 +0.9**
PCAS *e*Sn **Sn 15 09 40.4 -1.2**
PCAS *e*Sg **Sg 15 10 12.9 -0.2**
PCAS A A 15 10 28.7
297nm,0.6s
PCAS Casmilo, Conde 5.70 261 *e*Pn **Pn 15 08 36.5 +0.9**
PCAS *e*Sg **Sg 15 10 12.9 -0.2**
297nm,0.6s
AGO Saint Agoulin 5.74 31 Pn **Pn 15 08 36.5 +0.3**
AGO Saint Agoulin 5.74 31 Pn **Pn 15 08 36.5 +0.3**
PTOM Tomar 5.76 256 ⇓*e*Pn **Pn 15 08 37.4 +1.0**
PTOM *e*Sn **Sn 15 09 39.8 -3.2**
PTOM *e*Sg **Sg 15 10 13.8 -1.2**
PTOM A A 15 10 26.8
130nm,0.4s
PTOM Tomar 5.76 256 Pn **Pn 15 08 37.4 +1.0**
PTOM Sn **Sn 15 09 39.8 -3.2**
PTOM Lg Lg 15 10 13.8
65nm,0.4s
PTOM Tomar 5.76 256 Pn **Pn 15 08 37.4 +1.0**
PTOM Lg Lg 15 10 13.8
65nm,0.4s
OG26 St.-Nazaire-De 5.81 53 Pn **Pn 15 08 38.3 +1.1**
OG26 St.-Nazaire-De 5.81 53 Pn **Pn 15 08 38.3 +1.1**
SSB Saint Sauveur 5.81 44 Pn **Pn 15 08 38.3 +1.2**
SSB Saint Sauveur 5.81 44 Pn **Pn 15 08 38.3 +1.2**
SSB *e*Sn **Sn 15 09 44.8 +0.5**
SSB Saint Sauveur 5.81 44 *e*Pn **Pn 15 08 36.4 -0.7**
28nm,0.5s
SSB *e*Sn **Sn 15 09 44.8 +0.5**
PMTG Montargil 5.82 251 *e*Pn **Pn 15 08 37.5 +0.2**
PMTG *e*Sn **Sn 15 09 43.0 -1.6**
PMTG *e*Sg **Sg 15 10 14.1 -3.0**
PMTG A A 15 10 25.4

138nm,0.9s
PMTG Montargil 5.82 251 *e*Pn **Pn 15 08 37.5 +0.2**
EJIF Jimena Fronter 5.83 217 Lg Lg 15 10 15.9
52nm,0.7s,SNR=4.0
EJIF Jimena Fronter 5.83 217 Lg Lg 15 10 15.9
52nm,0.7s,SNR=4.0
PLDF La Plantade 5.88 35 Pn **Pn 15 08 38.8 +0.7**
PLDF La Plantade 5.88 35 Pn **Pn 15 08 38.8 +0.7**
EVO Evora 5.92 245 *e*Pn **Pn 15 08 38.8 +0.2**
EVO *e*Sg **Sg 15 10 18.1 -1.9**
EVO A A 15 10 24.4
74nm,0.8s
EVO Evora 5.92 245 Pn **Pn 15 08 38.8 +0.2**
EVO Lg Lg 15 10 18.1
74nm,0.8s
EVO Evora 5.92 245 Pn **Pn 15 08 38.8 +0.2**
EVO Lg Lg 15 10 18.1
74nm,0.8s
EMHD Djebel Mahouad 5.96 146 P **Pn 15 08 41.2 +1.9**
EMHD Djebel Mahouad 5.96 146 Pn **Pn 15 08 41.2 +1.9**
EMHD Djebel Mahouad 5.96 146 P **Pn 15 08 41.2 +1.9**
ALMR Almeirim 6.04 252 *e*P **Pn 15 08 40.5 +0.2**
ALMR *e*S **Sn 15 09 45.0 -4.9**
ALMR AML AML 15 09 52.1
comp=E,148nm,0.6s
ALMR Almeirim 6.04 252 *e*P **Pn 15 08 40.5 +0.2**
ALMR *e*S **Sn 15 09 45.0 -4.9**
ALMR Almeirim 6.04 252 Pn **Pn 15 08 40.5 +0.2**
ALMR Sn **Sn 15 09 45.0 -4.9**
comp=E,74nm,0.6s
ALMR Almeirim 6.04 252 *e*P **Pn 15 08 40.5 +0.2**
EMAZ Mazaricos 6.06 289 Pn **Pn 15 08 41.3 +0.7**
comp=E,16nm,0.2s,SNR=7.9
EMAZ Sn **Sn 15 09 48.5 -2.0**
comp=E,24nm,0.2s,SNR=7.9
EMAZ Lg Lg 15 10 26.9
comp=E,117nm,0.6s,SNR=7.9
EMAZ Mazaricos 6.06 289 Pn **Pn 15 08 41.3 +0.7**
comp=E,16nm,0.2s,SNR=7.9
EMAZ Lg Lg 15 10 27.0
comp=E,117nm,0.6s,SNR=7.9
BGF Bois d'Agland 6.07 27 *e*Pn **Pn 15 08 40.4 -0.2**
BGF *e*Sn **Sn 15 09 45.9 -4.6**
BGF *e*Sg **Sg 15 10 22.9 -1.9**
comp=E,366nm,0.5s
BGF Bois d'Agland 6.07 27 Pn **Pn 15 08 40.4 -0.2**
BGF Sn **Sn 15 09 45.9 -4.6**
BGF Lg Lg 15 10 22.9
comp=E,183nm,0.5s
BGF Bois d'Agland 6.07 27 Pn **Pn 15 08 40.4 -0.2**
BGF *e*Sg **Sg 15 10 22.9 -1.9**
comp=E,183nm,0.5s
BGF Bois d'Agland 6.07 27 *e*Pn **Pn 15 08 40.4 -0.2**
BGF *e*Sn **Sn 15 09 45.9 -4.6**
BGF *e*Sg **Sg 15 10 22.9 -1.9**
LMR La Mourre 6.07 67 *e*Pn **Pn 15 08 40.5 -0.1**
LMR *e*Sn Sn 15 09 44.5 -6.1
LMR *e*Sg **Sg 15 10 20.6 -4.3**
comp=E,86nm,0.9s
LMR La Mourre 6.07 67 Pn **Pn 15 08 40.5 -0.1**
LMR Sn Sn 15 09 44.5 -6.1
LMR Lg Lg 15 10 20.6
comp=E,43nm,0.9s
LMR La Mourre 6.07 67 Pn **Pn 15 08 40.5 -0.1**
LMR Lg Lg 15 10 20.6
comp=E,43nm,0.9s
LMR La Mourre 6.07 67 *e*Pn **Pn 15 08 40.5 -0.1**
LMR *e*Sn Sn 15 09 44.5 -6.1
LMR *e*Sg **Sg 15 10 20.6 -4.3**
PBEJ Beja 6.08 240 *e*Pn **Pn 15 08 40.9 +0.1**
PBEJ *e*Sn **Sn 15 09 47.7 -3.2**
PBEJ *e*Sg **Sg 15 10 24.3 -1.0**
PBEJ A A 15 10 37.7
comp=E,72nm,0.5s
PBEJ Beja 6.08 240 Pn **Pn 15 08 40.9 +0.1**
PBEJ Sn **Sn 15 09 47.7 -3.2**
PBEJ Lg Lg 15 10 24.3
comp=E,36nm,0.5s
PBEJ Beja 6.08 240 Pn **Pn 15 08 40.9 +0.1**
PBEJ *e*Sg **Sg 15 10 24.3 -1.0**
comp=E,72nm,0.5s
EGRO El Granado 6.13 235 ⇑Pn **Pn 15 08 41.7 +0.2**
comp=E,17nm,0.3s,SNR=18
EGRO Sn **Sn 15 09 49.4 -2.6**
comp=E,1.0nm,0.2s,SNR=7.9
EGRO Lg Lg 15 10 26.4
comp=E,469nm,1.3s,SNR=7.9
EGRO El Granado 6.13 235 Pn **Pn 15 08 41.7 +0.2**
comp=E,17nm,0.3s,SNR=18
EGRO Lg Lg 15 10 26.4
comp=E,469nm,1.3s,SNR=7.9
ETRT Tiaret 6.14 161 P Pn 15 08 35.2 -6.6
ETRT Tiaret 6.14 161 Pn Pn 15 08 35.2 -6.6
ADJB Djebel Djouab 6.21 143 P **Pn 15 08 44.9 +2.2**
ADJB Djebel Djouab 6.21 143 Pn **Pn 15 08 44.9 +2.2**
ADJB Djebel Djouab 6.21 143 Pn **Pn 15 08 44.9 +2.2**
FRF La Foret Royal 6.24 65 *e*Pn **Pn 15 08 43.4 +0.5**
FRF *e*Sg **Sg 15 10 26.1 -4.1**
comp=E,84nm,0.8s
FRF La Foret Royal 6.24 65 Pn **Pn 15 08 43.4 +0.5**
FRF Lg Lg 15 10 26.1
comp=E,42nm,0.8s
FRF La Foret Royal 6.24 65 Pn **Pn 15 08 43.4 +0.5**
FRF Lg Lg 15 10 26.1
comp=E,42nm,0.8s
FRF La Foret Royal 6.24 65 *e*Pn **Pn 15 08 43.4 +0.5**
FRF *e*Sg **Sg 15 10 26.1 -4.1**
ORIF Oris-en-Rattie 6.34 52 *e*Pn **Pn 15 08 45.2 +0.7**
ORIF *e*Sg **Sg 15 10 30.3 -3.3**
comp=E,126nm,0.9s
ORIF Oris-en-Rattie 6.34 52 Pn **Pn 15 08 45.2 +0.7**
ORIF Lg Lg 15 10 30.3
comp=E,63nm,0.9s
ORIF Oris-en-Rattie 6.34 52 Pn **Pn 15 08 45.2 +0.7**
ORIF Lg Lg 15 10 30.3
comp=E,63nm,0.9s
ORIF Oris-en-Rattie 6.34 52 *e*Pn **Pn 15 08 45.2 +0.7**
ORIF *e*Sg **Sg 15 10 30.3 -3.3**
PVAQ Vaqueiros 6.36 235 *e*Pn **Pn 15 08 44.5 -0.1**
PVAQ *e*Sn **Sn 15 09 55.8 -1.9**
PVAQ *e*Sg **Sg 15 10 29.8 -4.3**
PVAQ A A 15 10 45.1
comp=E,66nm,0.6s
PVAQ Vaqueiros 6.36 235 Pn **Pn 15 08 44.5 -0.1**
PVAQ Sn **Sn 15 09 55.8 -1.9**
PVAQ Lg Lg 15 10 29.8
comp=E,66nm,0.6s
PVAQ Vaqueiros 6.36 235 Pn **Pn 15 08 44.5 -0.1**
PVAQ Lg Lg 15 10 29.8
comp=E,66nm,0.6s
PACT Alcochete 6.38 250 *e*Sn **Sn 15 09 57.9 -0.3**
PACT *e*Sg **Sg 15 10 33.2 -1.7**
PACT A A 15 10 59.3
comp=E,110nm,0.8s
PACT Alcochete 6.38 250 *e*Sn **Sn 15 09 57.9 -0.3**
MESJ Messejana 6.42 240 *e*P **Pn 15 08 45.3 -0.1**
MESJ *e*S Sn 15 09 53.4 -5.8
MESJ AML AML 15 09 56.4
comp=E,27nm,0.4s
MESJ Messejana 6.42 240 *e*Pn **Pn 15 08 46.4 +1.0**
MESJ *e*Sn **Sn 15 09 55.4 -3.8**
MESJ A A 15 10 46.4
comp=E,68nm,0.5s
MESJ Messejana 6.42 240 Pn **Pn 15 08 46.4 +1.0**
MESJ Sn **Sn 15 09 55.4 -3.8**
comp=E,68nm,0.5s
MESJ Messejana 6.42 240 Pn **Pn 15 08 46.4 +1.0**
PCVE Castro Verde 6.42 238 *e*Pn **Pn 15 08 45.3 -0.2**
PCVE *e*Sn **Sn 15 09 56.7 -2.5**
PCVE A A 15 10 41.9
comp=E,52nm,0.5s
PCVE Castro Verde 6.42 238 Pn **Pn 15 08 45.3 -0.2**
PCVE Sn **Sn 15 09 56.7 -2.5**
comp=E,52nm,0.5s
PCVE Castro Verde 6.42 238 Pn **Pn 15 08 45.3 -0.2**
AVF Avril sur Loir 6.44 29 *e*Pn **Pn 15 08 45.5 -0.3**
AVF *e*Sn **Sn 15 09 55.0 -4.8**
AVF *e*Sg **Sg 15 10 34.2 -2.7**
comp=E,75nm,0.5s
AVF Avril sur Loir 6.44 29 Pn **Pn 15 08 45.5 -0.3**
AVF Sn **Sn 15 09 55.0 -4.8**
AVF Lg Lg 15 10 34.2
comp=E,38nm,0.5s
AVF Avril sur Loir 6.44 29 Pn **Pn 15 08 45.5 -0.3**
AVF Lg Lg 15 10 34.2
comp=E,38nm,0.5s
AVF Avril sur Loir 6.44 29 *e*Pn **Pn 15 08 45.5 -0.3**
AVF *e*Sn **Sn 15 09 55.0 -4.8**
AVF *e*Sg **Sg 15 10 34.2 -2.7**
PNCL Nicolau / Gran 6.48 244 *e*Pn **Pn 15 08 46.7 +0.4**
PNCL *e*Sn **Sn 15 09 57.3 -3.4**
PNCL *e*Sg **Sg 15 10 35.8 -2.2**
PNCL A A 15 10 58.0
comp=E,53nm,0.7s
PNCL Nicolau / Gran 6.48 244 *e*Pn **Pn 15 08 46.7 +0.4**
SMF Signal de Mont 6.51 32 *e*Pn **Pn 15 08 46.8 +0.1**
SMF *e*Sn **Sn 15 09 56.1 -5.4**
SMF *e*Sg **Sg 15 10 36.4 -2.6**
comp=E,126nm,0.7s
SMF Signal de Mont 6.51 32 Pn **Pn 15 08 46.8 +0.1**
SMF Sn **Sn 15 09 56.1 -5.4**
SMF Lg Lg 15 10 36.4
comp=E,63nm,0.7s
SMF Signal de Mont 6.51 32 Pn **Pn 15 08 46.8 +0.1**
SMF Lg Lg 15 10 36.4
comp=E,63nm,0.7s
SMF Signal de Mont 6.51 32 *e*Pn **Pn 15 08 46.8 +0.1**
SMF *e*Sn **Sn 15 09 56.1 -5.4**
SMF *e*Sg **Sg 15 10 36.4 -2.6**
PBDV Barranco-do-Ve 6.59 235 *e*Pn **Pn 15 08 48.8 +1.0**
PBDV *e*Sn **Sn 15 10 00.1 -3.4**
PBDV A A 15 10 51.9
comp=E,77nm,0.7s
PBDV Barranco-do-Ve 6.59 235 Pn **Pn 15 08 48.8 +1.0**
PBDV Sn **Sn 15 10 00.1 -3.4**
comp=E,77nm,0.7s
PBDV Barranco-do-Ve 6.59 235 Pn **Pn 15 08 48.8 +1.0**
PMAFR Mafra 6.63 253 *e*Pn **Pn 15 08 50.2 +1.9**
PMAFR *e*Sn **Sn 15 10 01.8 -2.5**
PMAFR *e*Sg **Sg 15 10 39.8 -3.0**
PMAFR A A 15 10 53.4
comp=E,111nm,0.5s
PMAFR Mafra 6.63 253 Pn **Pn 15 08 49.1 +0.8**
comp=E,8.1nm,0.2s,SNR=7.9
PMAFR Sn **Sn 15 10 02.3 -2.0**
comp=E,103nm,0.4s,SNR=7.9
PMAFR Lg Lg 15 10 41.6
comp=E,576nm,0.9s,SNR=7.9
PMAFR Mafra 6.63 253 Pn **Pn 15 08 49.1 +0.8**
comp=E,8.1nm,0.2s,SNR=7.9
PMAFR Lg Lg 15 10 41.6
comp=E,576nm,0.9s,SNR=7.9
HYF Humbligny 6.63 23 *e*Pn **Pn 15 08 48.4 +0.1**
HYF *e*Sn **Sn 15 09 59.8 -4.6**
HYF *e*Sg **Sg 15 10 40.8 -2.0**
HYF Humbligny 6.63 23 Pn **Pn 15 08 48.4 +0.1**
HYF Sn **Sn 15 09 59.8 -4.6**
HYF Lg Lg 15 10 40.8
HYF Humbligny 6.63 23 Pn **Pn 15 08 48.4 +0.1**
HYF *e*Sg **Sg 15 10 40.8 -2.0**
HYF Humbligny 6.63 23 *e*Pn **Pn 15 08 48.4 +0.1**
HYF *e*Sn **Sn 15 09 59.8 -4.6**
HYF *e*Sg **Sg 15 10 40.8 -2.0**
PMST Lisbon--Monsan 6.64 251 *e*Sg **Sg 15 10 39.5 -3.8**
SSF Saint Saulge 6.73 28 *e*Pn **Pn 15 08 49.1 -0.6**
SSF *e*Sn **Sn 15 10 01.7 -5.2**
SSF *e*Sg **Sg 15 10 43.4 -2.7**
comp=E,122nm,0.9s
SSF Saint Saulge 6.73 28 Pn **Pn 15 08 49.1 -0.6**
SSF Sn **Sn 15 10 01.7 -5.2**
SSF Lg Lg 15 10 43.4
comp=E,61nm,0.9s
SSF Saint Saulge 6.73 28 Pn **Pn 15 08 49.1 -0.6**
SSF Lg Lg 15 10 43.4
comp=E,61nm,0.9s
SSF Saint Saulge 6.73 28 *e*Pn **Pn 15 08 49.1 -0.6**
SSF *e*Sn **Sn 15 10 01.7 -5.2**
SSF *e*Sg **Sg 15 10 43.4 -2.7**
MBDF Montbardon 6.79 56 *e*Pn **Pn 15 08 51.9 +1.2**
MBDF *e*Sg **Sg 15 10 43.7 -4.3**
comp=E,64nm,1.0s
MBDF Montbardon 6.79 56 Pn **Pn 15 08 51.9 +1.2**
MBDF Lg Lg 15 10 43.7
comp=E,32nm,1.0s
MBDF Montbardon 6.79 56 Pn **Pn 15 08 51.9 +1.2**
MBDF Lg Lg 15 10 43.7
comp=E,32nm,1.0s
MBDF Montbardon 6.79 56 *e*Pn **Pn 15 08 51.9 +1.2**
MBDF *e*Sg **Sg 15 10 43.7 -4.3**
QUIF Quistinic 6.84 349 *e*Pn **Pn 15 08 52.2 +1.0**
QUIF *e*Sn **Sn 15 10 05.7 -3.8**
comp=E,101nm,0.4s
QUIF Quistinic 6.84 349 Pn **Pn 15 08 52.2 +1.0**
QUIF Sn **Sn 15 10 05.7 -3.8**
comp=E,50nm,0.4s
QUIF Quistinic 6.84 349 Pn **Pn 15 08 52.2 +1.0**
QUIF Quistinic 6.84 349 *e*Pn **Pn 15 08 52.2 +1.0**
QUIF *e*Sn **Sn 15 10 05.7 -3.8**
SBF Sospel 6.88 65 *e*Pn **Pn 15 08 52.0 +0.2**
SBF *e*Sn Sn 15 10 04.6 -5.9
SBF *e*Sg **Sg 15 10 46.7 -4.1**
comp=E,127nm,0.7s
SBF Sospel 6.88 65 Pn **Pn 15 08 52.0 +0.2**
SBF Sn Sn 15 10 04.6 -5.9
SBF Lg Lg 15 10 46.7
comp=E,64nm,0.7s
SBF Sospel 6.88 65 Pn **Pn 15 08 52.0 +0.2**
SBF Lg Lg 15 10 46.7
comp=E,64nm,0.7s
SBF Sospel 6.88 65 *e*Pn **Pn 15 08 52.0 +0.2**
SBF *e*Sn Sn 15 10 04.6 -5.9
SBF *e*Sg **Sg 15 10 46.7 -4.1**
BNI Bardonecchia 6.89 54 *e*Sn **Sn 15 10 10.9 -0.2**
BNI Bardonecchia 6.89 54 *e*Pn Pn 15 08 43.7 -8.4
BNI *e*Sn **Sn 15 10 10.9 -0.2**
PTEO Sao Teotonio 6.91 240 *e*Pn **Pn 15 08 53.4 +1.2**
PTEO *e*Sn **Sn 15 10 07.7 -3.7**
PTEO *e*Sg **Sg 15 10 51.0 -1.0**
PTEO A A 15 11 04.5
comp=E,77nm,0.7s
PTEO Sao Teotonio 6.91 240 Pn **Pn 15 08 53.4 +1.2**
PTEO Sn **Sn 15 10 07.7 -3.7**
PTEO Lg Lg 15 10 51.0
comp=E,38nm,0.7s
PTEO Sao Teotonio 6.91 240 Pn **Pn 15 08 53.4 +1.2**
PTEO *e*Sg **Sg 15 10 51.0 -1.0**
comp=E,77nm,0.7s
MORF Marmelete 7.00 238 *e*P **Pn 15 08 52.7 -0.8**
MORF *e*S Sn 15 10 06.9 -6.9
MORF AML AML 15 10 10.4
comp=E,29nm,0.7s
MORF Marmelete 7.00 238 *e*Pn **Pn 15 08 53.1 -0.5**
MORF *e*Sn **Sn 15 10 11.3 -2.4**
MORF A A 15 11 08.5
comp=E,43nm,0.6s
MORF Marmelete 7.00 238 Pn **Pn 15 08 53.1 -0.5**
MORF Sn **Sn 15 10 11.3 -2.4**
comp=E,43nm,0.6s
MORF Marmelete 7.00 238 Pn **Pn 15 08 53.1 -0.5**
LOR Lormes 7.03 29 *e*Pn **Pn 15 08 53.3 -0.6**
baz=216
LOR *e*Sn **Sn 15 10 08.4 -6.0**
baz=215
LOR *e*Sg **Sg 15 10 52.9 -2.9**
comp=E,70nm,0.6s,baz=218
LOR Lormes 7.03 29 Pn **Pn 15 08 53.3 -0.6**
LOR Sn **Sn 15 10 08.4 -6.0**
LOR Lg Lg 15 10 52.9
comp=E,35nm,0.6s
LOR Lormes 7.03 29 Pn **Pn 15 08 53.3 -0.6**
LOR Lg Lg 15 10 52.9
comp=E,35nm,0.6s
LOR Lormes 7.03 29 *e*Pn **Pn 15 08 53.3 -0.6**
LOR *e*Sn **Sn 15 10 08.4 -6.0**
LOR *e*Sg **Sg 15 10 52.9 -2.9**
SGMF Saint Gilles 7.10 352 *e*Pn **Pn 15 08 56.1 +1.4**
SGMF *e*Sn **Sn 15 10 11.8 -4.1**
comp=E,26nm,0.3s
SGMF Saint Gilles 7.10 352 Pn **Pn 15 08 56.1 +1.4**
SGMF Sn **Sn 15 10 11.8 -4.1**
comp=E,13nm,0.3s
SGMF Saint Gilles 7.10 352 Pn **Pn 15 08 56.1 +1.4**
SGMF Saint Gilles 7.10 352 *e*Pn **Pn 15 08 56.1 +1.4**
SGMF *e*Sn **Sn 15 10 11.8 -4.1**
GRR Gorron 7.17 2 *e*Pn **Pn 15 08 56.6 +0.9**
GRR *e*Sn **Sn 15 10 12.6 -4.9**
comp=E,84nm,0.5s
GRR Gorron 7.17 2 Pn **Pn 15 08 56.6 +0.9**
GRR Gorron 7.17 2 *e*Pn **Pn 15 08 56.6 +0.9**
GRR *e*Sn **Sn 15 10 12.6 -4.9**
LPL La Plagne 7.17 51 *e*Pn **Pn 15 08 57.8 +1.8**
LPL *e*Sg **Sg 15 10 56.6 -3.7**
comp=E,50nm,0.8s
LPL La Plagne 7.17 51 Pn **Pn 15 08 57.8 +1.8**
LPL Lg Lg 15 10 56.6
comp=E,25nm,0.8s
LPL La Plagne 7.17 51 Pn **Pn 15 08 57.8 +1.8**
LPL Lg Lg 15 10 56.6
comp=E,25nm,0.8s
LPL La Plagne 7.17 51 *e*Pn **Pn 15 08 57.8 +1.8**
LPL *e*Sg **Sg 15 10 56.6 -3.7**
LPG La Plagne 7.17 51 *e*Pn **Pn 15 08 58.0 +1.9**
LPG *e*Sg **Sg 15 10 56.7 -3.7**
comp=E,72nm,1.0s
LPG La Plagne 7.17 51 Pn **Pn 15 08 58.0 +1.9**
LPG Lg Lg 15 10 56.7
comp=E,36nm,1.0s
LPG La Plagne 7.17 51 Pn **Pn 15 08 58.0 +1.9**
LPG Lg Lg 15 10 56.7
comp=E,36nm,1.0s
LPG La Plagne 7.17 51 *e*Pn **Pn 15 08 58.0 +1.9**
LPG *e*Sg **Sg 15 10 56.7 -3.7**
RSL Roselend 7.21 49 Pn **Pn 15 08 57.3 +0.8**
RSL Roselend 7.21 49 Pn **Pn 15 08 57.3 +0.8**
PFVI Vila Bisbo 7.22 238 *e*Pn **Pn 15 08 57.5 +1.0**
PFVI *e*Sn **Sn 15 10 18.0 -0.9**
PFVI *e*Sg **Sg 15 11 01.7 -0.1**
PFVI A A 15 11 16.6
comp=E,46nm,0.9s
PFVI Vila Bisbo 7.22 238 Pn **Pn 15 08 57.5 +1.0**
comp=E,15nm,0.3s,SNR=6.5
PFVI Sn **Sn 15 10 14.7 -4.3**
comp=E,7.4nm,0.1s,SNR=7.9
PFVI Lg Lg 15 11 01.0
comp=E,311nm,1.1s,SNR=7.9
PFVI Vila Bisbo 7.22 238 Pn **Pn 15 08 57.5 +1.0**
comp=E,15nm,0.3s,SNR=6.5
PFVI *e*Sn **Sn 15 10 18.0 -0.9**
PFVI Lg Lg 15 11 01.0
comp=E,311nm,1.1s,SNR=7.9
PFVI *e*Sg **Sg 15 11 01.7 -0.1**
comp=E,46nm,0.9s
ROSF Rostrenen 7.27 349 *e*Pn **Pn 15 08 57.8 +0.7**
ROSF *e*Sn **Sn 15 10 16.0 -4.0**
comp=E,60nm,0.3s
ROSF Rostrenen 7.27 349 Pn **Pn 15 08 57.8 +0.7**
ROSF Sn **Sn 15 10 16.0 -4.0**
comp=E,30nm,0.3s
ROSF Rostrenen 7.27 349 Pn **Pn 15 08 57.8 +0.7**
ROSF Rostrenen 7.27 349 *e*Pn **Pn 15 08 57.8 +0.7**
ROSF *e*Sn **Sn 15 10 16.0 -4.0**
LDF La Druitiere 7.40 5 *e*Pn **Pn 15 08 59.0 0.0**
LDF *e*Sn **Sn 15 10 17.8 -5.6**
LDF *e*Sg **Sg 15 11 06.0 -1.7**
comp=E,81nm,0.7s
LDF La Druitiere 7.40 5 *e*Pn **Pn 15 08 59.0 0.0**
LDF *e*Sg **Sg 15 11 06.0 -1.7**
comp=E,40nm,0.7s
LDF La Druitiere 7.40 5 *e*Pn **Pn 15 08 59.0 0.0**
LDF *e*Sn **Sn 15 10 17.8 -5.6**
LDF *e*Sg **Sg 15 11 06.0 -1.7**
CABF La Chapelle 7.51 42 *e*Pn **Pn 15 09 00.5 0.0**
CABF *e*Sg **Sg 15 11 07.1 -3.9**
comp=E,620nm,1.3s
CABF La Chapelle 7.51 42 Pn **Pn 15 09 00.5 0.0**
CABF Lg Lg 15 11 07.1
comp=E,310nm,1.3s
CABF La Chapelle 7.51 42 Pn **Pn 15 09 00.5 0.0**
CABF Lg Lg 15 11 07.1
comp=E,310nm,1.3s
CABF La Chapelle 7.51 42 *e*Pn **Pn 15 09 00.5 0.0**
CABF *e*Sg **Sg 15 11 07.1 -3.9**
FLN La Foliniere 7.55 3 *e*Pn **Pn 15 09 01.8 +0.8**
baz=185
FLN *e*Sn **Sn 15 10 22.1 -4.9**
baz=180
FLN *e*Sg **Sg 15 11 10.6 -1.8**
comp=E,63nm,0.6s
FLN La Foliniere 7.55 3 Pn **Pn 15 09 01.8 +0.8**
FLN Sn **Sn 15 10 22.1 -4.9**
FLN Lg Lg 15 11 10.6
comp=E,31nm,0.6s
FLN La Foliniere 7.55 3 Pn **Pn 15 09 01.8 +0.8**
FLN Lg Lg 15 11 10.6
comp=E,31nm,0.6s
FLN La Foliniere 7.55 3 *e*Pn **Pn 15 09 01.8 +0.8**
FLN *e*Sn **Sn 15 10 22.1 -4.9**
FLN *e*Sg **Sg 15 11 10.6 -1.8**
OG01 Vacheresse 7.63 45 Pn **Pn 15 09 02.8 +0.6**
OG01 Vacheresse 7.63 45 Pn **Pn 15 09 02.8 +0.6**
PGF Pioggiola 7.70 77 *e*Pn **Pn 15 09 01.9 -1.2**
PGF *e*Sn Sn 15 10 22.8 -8.1
comp=E,38nm,0.6s
PGF Pioggiola 7.70 77 Pn **Pn 15 09 01.9 -1.2**
PGF Sn Sn 15 10 22.8 -8.1
comp=E,19nm,0.6s
PGF Pioggiola 7.70 77 Pn **Pn 15 09 01.9 -1.2**
PGF Pioggiola 7.70 77 *e*Pn **Pn 15 09 01.9 -1.2**
PGF *e*Sn Sn 15 10 22.8 -8.1
JSA Saint Aubin 7.99 355 *e*P **Pn 15 09 06.5 -0.5**
VSL Villasalto 8.23 99 *e*Pn **Pn 15 09 10.0 -0.4**
comp=E,26nm,0.8s
VSL Villasalto 8.23 99 *e*Pn **Pn 15 09 10.0 -0.4**
comp=E,26nm,0.8s
SFTF Sexfontaines 8.25 30 *e*Pn **Pn 15 09 10.2 -0.4**
SFTF *e*Sn Sn 15 10 37.9 -6.5
baz=200
SFTF *e*Sg **Sg 15 11 31.2 -3.7**
comp=E,224nm,1.1s
SFTF Sexfontaines 8.25 30 Pn **Pn 15 09 10.2 -0.4**
SFTF Sn Sn 15 10 37.9 -6.5
SFTF Lg Lg 15 11 31.2
comp=E,224nm,1.1s
SFTF Sexfontaines 8.25 30 Pn **Pn 15 09 10.2 -0.4**
SFTF Lg Lg 15 11 31.2
comp=E,224nm,1.1s
SFTF Sexfontaines 8.25 30 *e*Pn **Pn 15 09 10.2 -0.4**
SFTF *e*Sn Sn 15 10 37.9 -6.5
SFTF *e*Sg **Sg 15 11 31.2 -3.7**
MEZF Maizieres J'vi 8.51 29 *e*Pn **Pn 15 09 13.8 -0.3**
baz=222
MEZF *e*Sn Sn 15 10 43.5 -7.0
baz=224
MEZF *e*Sg **Sg 15 11 38.8 -4.2**
comp=E,213nm,1.1s
MEZF Maizieres J'vi 8.51 29 Pn **Pn 15 09 13.8 -0.3**
MEZF Sn Sn 15 10 43.5 -7.0
MEZF Lg Lg 15 11 38.8
comp=E,213nm,1.1s
MEZF Maizieres J'vi 8.51 29 Pn **Pn 15 09 13.8 -0.3**
MEZF Lg Lg 15 11 38.8
comp=E,213nm,1.1s
MEZF Maizieres J'vi 8.51 29 *e*Pn **Pn 15 09 13.8 -0.3**
MEZF *e*Sn Sn 15 10 43.5 -7.0
MEZF *e*Sg **Sg 15 11 38.8 -4.2**
HAU Haudompre 8.64 36 *e*Pn **Pn 15 09 15.3 -0.6**
HAU *e*Sg **Sg 15 11 42.5 -4.6**
comp=E,85nm,1.0s
HAU Haudompre 8.64 36 Pn **Pn 15 09 15.3 -0.6**
HAU Lg Lg 15 11 42.5
comp=E,42nm,1.0s
HAU Haudompre 8.64 36 Pn **Pn 15 09 15.3 -0.6**
HAU Lg Lg 15 11 42.5
comp=E,42nm,1.0s
HAU Haudompre 8.64 36 *e*Pn **Pn 15 09 15.3 -0.6**
HAU *e*Sg **Sg 15 11 42.5 -4.6**
HINF Hinteralfeld 8.73 38 *e*Pn **Pn 15 09 16.4 -0.7**
HINF *e*Sg **Sg 15 11 45.0 -5.0**
comp=E,111nm,1.2s
HINF Hinteralfeld 8.73 38 Pn **Pn 15 09 16.4 -0.7**
HINF Lg Lg 15 11 45.0
comp=E,56nm,1.2s
HINF Hinteralfeld 8.73 38 Pn **Pn 15 09 16.4 -0.7**
HINF Lg Lg 15 11 45.0
comp=E,56nm,1.2s
HINF Hinteralfeld 8.73 38 *e*Pn **Pn 15 09 16.4 -0.7**
HINF *e*Sg **Sg 15 11 45.0 -5.0**
PAGF Fort de Pagny 8.80 31 *e*Pn **Pn 15 09 17.8 -0.4**

	baz=221								
PAGF					*e*Sn		Sn	15 10 50.7	-7.2
PAGF					*e*Sg		**Sg**	**15 11 48.2**	**-4.4**
	comp=E,44nm,0.9s								
PAGF	**Fort de Pagny**	**8.80**	**31**	*e*Pn		**Pn**		**15 09 17.8**	**-0.4**
PAGF	**Fort de Pagny**	**8.80**	**31**	*e*Pn		**Pn**		**15 09 17.8**	**-0.4**
PAGF					*e*Sn		Sn	15 10 50.7	-7.2
PAGF					*e*Sg		**Sg**	**15 11 48.2**	**-4.4**
MDT	**Midelt**	**8.83**	**199**	Pn		**Pn**		**15 09 19.2**	**+0.5**
	comp=E,0.3nm,0.3s,baz=352,slow=12,SNR=6.5								
MDT					Sn		**Sn**	**15 10 57.8**	**-1.1**
	comp=E,0.2nm,0.3s,baz=166,slow=22,SNR=3.4								
MDT					Lg		Lg	15 11 47.5	
	comp=E,0.2nm,0.3s,baz=249,slow=1.7,SNR=2.3								
TUE	**Stuetta**	**9.22**	**52**	*e*Pn		**Pn**		**15 09 21.8**	**-2.3**
	comp=E,6.3nm,0.6s								
CDF	**Champ du Feu**	**9.35**	**37**	*e*Pn		**Pn**		**15 09 25.7**	**-0.1**
CDF					*e*Sg		Sn	15 12 04.9	+53
	comp=E,60nm,1.0s								
CDF	**Champ du Feu**	**9.35**	**37**	Pn		**Pn**		**15 09 25.7**	**-0.1**
CDF					Lg		Lg	15 12 04.9	
	comp=E,30nm,1.0s								
CDF	**Champ du Feu**	**9.35**	**37**	Pn		**Pn**		**15 09 25.7**	**-0.1**
CDF					Lg		Lg	15 12 04.9	
	comp=E,30nm,1.0s								
CDF	**Champ du Feu**	**9.35**	**37**	*e*Pn		**Pn**		**15 09 25.7**	**-0.1**
CDF					*e*Sg		Sn	15 12 04.9	+53
CCA1	**Carnmenellis**	**9.40**	**344**	*e*P		**Pn**		**15 09 27.2**	**+0.9**
DYA	**Yadsworthy**	**9.41**	**349**	*e*P		**Pn**		**15 09 27.2**	**+0.8**
BAIF	**Baives**	**9.60**	**21**	*e*Pn		**Pn**		**15 09 28.9**	**-0.1**
BAIF					*e*Sn		Sn	15 11 10.2	-7.1
BAIF					*e*Sg			15 12 13.3	
	comp=E,37nm,0.8s								
BAIF	**Baives**	**9.60**	**21**	Pn		**Pn**		**15 09 28.9**	**-0.1**
BAIF					Sn		Sn	15 11 10.2	-7.1
BAIF					Lg		Lg	15 12 13.3	
	comp=E,18nm,0.8s								
BAIF	**Baives**	**9.60**	**21**	Pn		**Pn**		**15 09 28.9**	**-0.1**
BAIF					Lg		Lg	15 12 13.3	
	comp=E,18nm,0.8s								
BAIF	**Baives**	**9.60**	**21**	*e*Pn		**Pn**		**15 09 28.9**	**-0.1**
BAIF					*e*Sn		Sn	15 11 10.2	-7.1
BAIF					*e*Sg			15 12 13.3	
SBD	**Saint Breward**	**9.66**	**346**	*e*P		**Pn**		**15 09 30.5**	**+0.7**
DAVOX	**Davos/Dischmat**	**9.70**	**51**	Pn		**Pn**		**15 09 33.0**	**+2.4**
	comp=E,0.8nm,0.3s,baz=296,slow=15,SNR=6.2								
DAVOX					LR		LR	15 13 49.1	
	comp=E,135nm,18.6s,baz=259,slow=40								
DAVOX	**Davos/Dischmat**	**9.70**	**51**	Pn		**Pn**		**15 09 33.0**	**+2.4**
DOU	**Dourbes**	**9.74**	**22**	P		**Pn**		**15 09 31.5**	**+0.5**
DOU	**Dourbes**	**9.74**	**22**	P		**Pn**		**15 09 31.4**	**+0.5**
GIVF	**Givet**	**9.81**	**23**	*e*Pn		**Pn**		**15 09 32.1**	**+0.1**
GIVF					*e*Sn		Sn	15 11 15.7	-6.9
GIVF					*e*Sg			15 12 20.0	
	comp=E,62nm,0.8s								
GIVF	**Givet**	**9.81**	**23**	Pn		**Pn**		**15 09 32.1**	**+0.1**
GIVF					Sn		Sn	15 11 15.7	-6.9
GIVF					Lg		Lg	15 12 20.0	
	comp=E,31nm,0.8s								
GIVF	**Givet**	**9.81**	**23**	Pn		**Pn**		**15 09 32.1**	**+0.1**
GIVF					Lg		Lg	15 12 20.0	
	comp=E,31nm,0.8s								
GIVF	**Givet**	**9.81**	**23**	*e*Pn		**Pn**		**15 09 32.1**	**+0.1**
GIVF					*e*Sn		Sn	15 11 15.7	-6.9
GIVF					*e*Sg			15 12 20.0	
KEST	**Kesra**	**9.89**	**120**	Pn		**Pn**		**15 09 34.2**	**+1.0**
	comp=E,1.8nm,0.3s,baz=123,slow=1.8,SNR=17								
DAVA	**Damuels**	**9.97**	**49**	*e*Pn		**Pn**		**15 09 36.6**	**+2.3**
	comp=E,2.2nm,0.4s								
DAVA	**Damuels**	**9.97**	**49**	Pn		**Pn**		**15 09 36.6**	**+2.3**
	comp=E,2.2nm,0.4s								
BCLA	**Clavier**	**10.24**	**24**	P		**Pn**		**15 09 40.1**	**+2.3**
BCLA	**Clavier**	**10.24**	**24**	P		**Pn**		**15 09 40.1**	**+2.3**
FETA	**Feichten**	**10.32**	**52**	*i* Pn		**Pn**		**15 09 41.6**	**+2.5**
	comp=E,5.1nm,0.5s								
FETA	**Feichten**	**10.32**	**52**	Pn		**Pn**		**15 09 41.6**	**+2.5**
	comp=E,5.1nm,0.5s								
OLDB	**Oldbury-Upon-S**	**10.48**	**355**	*e*P		**Pn**		**15 09 41.9**	**+0.8**
RETA	**Reutte**	**10.58**	**50**	*i* Pn		**Pn**		**15 09 44.1**	**+1.5**
	comp=E,5.9nm,0.6s								
RETA	**Reutte**	**10.58**	**50**	Pn		**Pn**		**15 09 44.1**	**+1.5**
	comp=E,5.9nm,0.6s								
MEM	**Membach**	**10.62**	**26**	P		**Pn**		**15 09 43.8**	**+0.7**
MEM	**Membach**	**10.62**	**26**	P		**Pn**		**15 09 43.7**	**+0.7**
MONM	**Monmouth**	**10.68**	**354**	*e*P		**Pn**		**15 09 44.3**	**+0.5**
MOTA	**Moosalm**	**10.71**	**51**	*e*Pn		**Pn**		**15 09 46.3**	**+1.9**
MOTA	**Moosalm**	**10.71**	**51**	Pn		**Pn**		**15 09 46.3**	**+1.9**
MCH1	**Michaelchurch**	**10.85**	**354**	*e*P		**Pn**		**15 09 46.9**	**+0.8**
WTTA	**Wattenberg**	**10.98**	**52**	*i* Pn		**Pn**		**15 09 49.6**	**+1.4**
	comp=E,4.5nm,0.5s								
WTTA	**Wattenberg**	**10.98**	**52**	Pn		**Pn**		**15 09 49.6**	**+1.4**
	comp=E,4.5nm,0.5s								
LPW	**Lampeter**	**11.07**	**351**	*e*P		**Pn**		**15 09 49.8**	**+0.6**
ABTA	**Abfaltersbach**	**11.29**	**56**	*i* Pn		**Pn**		**15 09 54.3**	**+2.0**
	comp=E,2.5nm,0.4s								
ABTA	**Abfaltersbach**	**11.29**	**56**	Pn		**Pn**		**15 09 54.3**	**+2.0**
	comp=E,2.5nm,0.4s								
HLM1	**Long Mynd**	**11.36**	**355**	*e*P		**Pn**		**15 09 53.7**	**+0.6**
	comp=E,11nm,0.6s								
YRE	**Yr Eifl**	**11.97**	**350**	*e*P		**Pn**		**15 10 01.6**	**+0.2**
WLF1	**Llynfaes**	**12.27**	**351**	*e*P		**Pn**		**15 10 06.5**	**+1.0**
SOKA	**Soboth**	**12.87**	**60**	*e*Pn		**Pn**		**15 10 14.5**	**+0.6**
	comp=E,3.4nm,1.1s								
SOKA	**Soboth**	**12.87**	**60**	Pn		**Pn**		**15 10 14.5**	**+0.6**
	comp=E,3.4nm,1.1s								
GERES	**GERESS Array B**	**12.97**	**49**	Pn		**Pn**		**15 10 15.3**	**0.0**
	comp=E,0.3nm,0.3s,baz=247,slow=14,SNR=8.3								
EKA	**Eskdalemuir Ar**	**14.18**	**355**	Pn		**Pn**		**15 10 29.8**	**-1.8**
	baz=172,slow=13,SNR=4.7								
HFS	**Hagfors**	**21.05**	**21**	P		**P**		**15 11 58.6**	**+3.7**
	comp=E,2.0nm,0.5s,baz=192,slow=13,SNR=5.9								
IDI	**Anoyia**	**21.26**	**98**	P		**P**		**15 11 57.6**	**+0.1**
	comp=E,11nm,0.9s,baz=355,slow=6.4,SNR=4.5								
FINES	**FINESS Array B**	**26.10**	**30**	P		**P**		**15 12 47.3**	**+2.6**
	comp=E,2.4nm,0.7s,baz=226,slow=7.7,SNR=7.3								
BRTR	**Keskin Array B**	**26.41**	**82**	P		**P**		**15 12 50.0**	**+2.0**
	comp=E,0.7nm,0.6s,baz=302,slow=8.4,SNR=2.7								
TORD	**Torodi Ar. Bea**	**28.09**	**174**	P		**P**		**15 13 03.5**	**+0.6**
	comp=E,0.4nm,0.8s,baz=352,slow=8.7,SNR=2.7								
MMAI	**Mount Meron Ar**	**30.11**	**94**	P		**P**		**15 13 21.6**	**+0.7**
	comp=E,1.8nm,0.8s,baz=251,slow=14,SNR=2.5								
ARCES	**ARCESS Array B**	**31.61**	**18**	P		**P**		**15 13 34.6**	**+0.9**
	comp=E,1.8nm,1.0s,baz=205,slow=5.4,SNR=6.8								
AKTO	**Aktyubinsk**	**41.25**	**56**	P		**P**		**15 14 57.4**	**+1.2**
	comp=E,1.1nm,0.7s,baz=310,slow=12,SNR=3.6								
KURBB	**Kurchatov Arra**	**53.70**	**51**	P		**P**		**15 16 34.2**	**+1.2**
	comp=E,0.6nm,0.6s,baz=294,slow=8.0,SNR=3.7								
KURK	**Kurchatov**	**53.71**	**51**	P		**P**		**15 16 34.2**	**+1.1**
KURK	**Kurchatov**	**53.71**	**51**	P		**P**		**15 16 34.2**	**+1.1**
MKAR	**Makanchi Array**	**57.58**	**54**	P		**P**		**15 17 01.8**	**-0.8**
	comp=E,0.4nm,0.6s,baz=319,slow=5.3,SNR=4.5								
YKA	**Yellowknife Ar**	**63.76**	**332**	P		**P**		**15 17 43.6**	**+0.8**
	comp=E,0.2nm,0.7s,baz=48,slow=5.9,SNR=4.0								
TXAR	**Lajitas Array**	**79.78**	**300**	P		**P**		**15 19 20.4**	**+0.6**
	comp=E,0.3nm,0.8s,baz=79,slow=4.7,SNR=3.0								

MAN 08 15:08:04,10.94N×124.43E,h1km,mb4.6,ML3.5,MS3.4, 2C-4D,Leyte

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
OCLP	**Ormoc**	**0.21**	**59**		*e*P		Pg	15 08 07.9	-0.1
OCLP					*e*S		Sg	15 08 11.2	+0.4
PLP	**Palo**	**0.58**	**68**	↓	*e*P		Pg	15 08 15.1	-0.1
PLP					*i* S		Sg	15 08 23.3	+0.5
LLP	**Lapu-Lapu**	**0.77**	**216**	↑	*i* P		Pb	15 08 19.6	-0.6
LLP					*i* S		Sn	15 08 33.3	-1.0
TBP	**Tagbilaran**	**1.36**	**204**	↓	*i* P		Pb	15 08 30.8	+0.5
TBP					*i* S		Sn	15 08 53.0	+4.1
SCPH	**Surigao**	**1.56**	**138**	↓	*e*P		Pn	15 08 33.1	+0.2
RCP	**Roxas**	**1.76**	**291**	↑	*e*P		Pn	15 08 36.0	+0.4
RCP					*e*S		Sb	15 08 59.8	0.0
GUIM	**Jordan**	**1.83**	**260**		*e*P		Pn	15 08 37.1	+0.5
GUIM					*e*S		Sg	15 09 03.0	0.0
CGP	**Cagayan de Oro**	**2.49**	**174**	↓	*e*P		Pn	15 08 47.5	+1.9
CGP					*e*S		Sb	15 09 20.4	-0.2
BUKP	**Musuan**	**3.11**	**168**		*e*P		Pn	15 08 56.2	+2.0
PAGZ	**Pagadian**	**3.24**	**199**		*e*P		Pn	15 08 56.7	+0.7

CSEM ***08*** *15:09:07.4,43.34N×13.22E,h5km,MD2.1/10*
ROM 08 15:09:07.4±0.1,43.34N×13.22E,h5km±1km,Md2.1/10, Ml1.3/4,Error ellipse: s-maj=1.6km s-min=1.5km az=83.0,Central Italy

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
CING	**Cingoli**	**0.04**	**339**			Pg	Pg	15 09 08.8	+0.1
CING						Sg	Sg	15 09 09.8	+0.1
CING	**Cingoli**	**0.04**	**339**			Pg	Pg	15 09 08.8	+0.1
CING						Sg	Sg	15 09 09.8	+0.1
SNTG	**Esanatoglia**	**0.22**	**248**			Pg	Pg	15 09 12.4	+0.7
SNTG						Sg	Sg	15 09 16.7	+2.2
	44nm,0.1s								
SNTG	**Esanatoglia**	**0.22**	**248**			Pg	Pg	15 09 12.4	+0.7
SNTG						Sg	Sg	15 09 16.7	+2.2
	44nm,0.1s								
ARVD	**Arcevia**	**0.26**	**309**			Pg	Pg	15 09 13.1	+0.6
ARVD						Sg	Sb	15 09 17.9	-1.4
	25nm,0.1s								
ARVD	**Arcevia**	**0.26**	**309**			Pg	Pg	15 09 13.1	+0.6
ARVD						Sg	Sb	15 09 17.9	-1.4
	25nm,0.1s								
FDMO	**Fiordimonte**	**0.31**	**198**			Pg	Pg	15 09 14.0	+0.5
FDMO						Sg	Sb	15 09 19.8	-1.1
	32nm,0.1s								
FDMO	**Fiordimonte**	**0.31**	**198**			Pg	Pg	15 09 14.0	+0.5
FDMO						Sg	Sb	15 09 19.8	-1.1
	32nm,0.1s								
SSFR	**Montelago di S**	**0.33**	**288**			Pg	Pg	15 09 14.6	+0.7
SSFR						Sg	Sb	15 09 20.7	-0.8
SSFR	**Montelago di S**	**0.33**	**288**			Pg	Pg	15 09 14.6	+0.7
SSFR						Sg	Sb	15 09 20.7	-0.8
AOI	**Ancona**	**0.35**	**52**			Pg	Pb	15 09 15.5	-0.7
AOI						Sg	Sb	15 09 22.1	0.0
AOI	**Ancona**	**0.35**	**52**			Pg	Pb	15 09 15.5	-0.7
AOI						Sg	Sb	15 09 22.1	0.0
FRON	**Frontone**	**0.40**	**297**			Pg	Pg	15 09 15.8	+0.6
FRON						Sg	Sb	15 09 23.2	-0.3
FRON	**Frontone**	**0.40**	**297**			Pg	Pg	15 09 15.8	+0.6
FRON						Sg	Sb	15 09 23.2	-0.3
NRCA	**Norcia**	**0.51**	**189**			Pg	Pg	15 09 17.7	+0.6
NRCA						Sg	Sb	15 09 26.8	+0.3
NRCA	**Norcia**	**0.51**	**189**			Pg	Pg	15 09 17.7	+0.6
NRCA						Sg	Sb	15 09 26.8	+0.3
PIEI	**Pieia**	**0.54**	**292**			Pg	Pg	15 09 18.1	+0.4
PIEI						Sg	Sb	15 09 27.4	+0.1
PIEI	**Pieia**	**0.54**	**292**			Pg	Pg	15 09 18.1	+0.4
PIEI						Sg	Sb	15 09 27.4	+0.1

MEX 08 15:20:50.3±0.6,15.09N×94.32W,h16km±15km,MD3.7, Near coast of Oaxaca

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
PCIG		**1.22**	**60**		*e*P		Pn	15 21 09.2	-3.6
PCIG					*e*S		Sb	15 21 23.1	-5.6
HUIG	**Huatulco**	**1.85**	**292**		*e*P		Pn	15 21 18.5	-2.9
HUIG					*e*S		Sn	15 21 39.2	-5.3
TGIG		**2.03**	**34**		*e*P		Pn	15 21 21.1	-2.8
TGIG					*e*S		Sn	15 21 44.8	-4.3
CCIG	**Comitan**	**2.41**	**60**		*e*P		Pn	15 21 25.3	-4.0
CCIG					*e*S		Sn	15 21 54.4	-4.2

KRSC 08 15:28:05.7±0.5,55.75N×161.89E,h82km±9km,ML3.9, Near east coast of Kamchatka Peninsula

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
ZLN	**Zelenaya**	**0.67**	**294**		*e*P		Pn	15 28 22.6	+1.3
ZLN					*e*S		Sn	15 28 34.5	+1.6
KBG	**Krutoberegovo**	**0.69**	**42**		*e*P		Pn	15 28 22.8	+1.5
KBG					*e*S		Sn	15 28 35.8	+2.9
CIRR	**Tsirk**	**0.74**	**300**		*e*P		Pn	15 28 23.2	+1.1
CIRR					*e*S		Sn	15 28 35.0	+0.7
LGNR	**Loginova**	**0.76**	**297**		*e*P		Pn	15 28 23.7	+1.3
LGNR					*e*S		Sn	15 28 36.2	+1.4
BZMR	**Bezymyannaya**	**0.81**	**284**		*e*P		Pn	15 28 23.9	+1.1
BZMR					*e*S		Sn	15 28 36.9	+1.3
SMKR	**Semkarok**	**0.87**	**344**		*e*P		Pn	15 28 25.4	+2.0
SMKR					*e*S		Sn	15 28 39.1	+2.5
KRSR	**Krestovskiy**	**0.88**	**303**		*e*P		Pn	15 28 24.4	+0.8
KRSR					*e*S		Sn	15 28 37.8	+0.9
KIRR	**Kirishev**	**0.90**	**284**		*e*P		Pn	15 28 24.9	+1.1
KIRR					*e*S		Sn	15 28 38.4	+1.1
KLY	**Klyuchi**	**0.90**	**310**		*e*P		Pn	15 28 23.8	+0.2
KLY					*e*S		Sn	15 28 36.8	-0.2
BDR	**Baidarnaya**	**0.91**	**335**		*e*P		Pn	15 28 25.7	+1.9
BDR					*e*S		Sn	15 28 40.1	+2.7
KMNR	**Kamenistaya**	**0.94**	**271**		*e*P		Pn	15 28 25.3	+1.1
KMNR					*e*S		Sn	15 28 39.3	+1.3
KPT	**Kopyto**	**0.97**	**284**		*e*P		Pn	15 28 25.3	+0.8
KPT					*e*S		Sn	15 28 39.7	+1.1
SRKR	**Sorokina**	**1.00**	**336**		*e*P		Pn	15 28 26.4	+1.6
SRKR					*e*S		Sn	15 28 41.7	+2.5
TUMD	**Tumrok D**	**1.01**	**238**		*e*P		Pn	15 28 25.9	+1.0
TUMD					*e*S		Sn	15 28 39.5	+0.2
TUMR	**Tumrok**	**1.09**	**246**		*e*P		Pn	15 28 27.3	+1.2
TUMR					*e*S		Sn	15 28 42.3	+1.0
KZV	**Kizimen**	**1.11**	**236**		*e*P		Pn	15 28 27.1	+0.8
KOZ	**Kozyrevsk**	**1.18**	**286**		*e*P		Pn	15 28 28.3	+1.3
KOZ					*e*S		Sn	15 28 44.9	+1.9
MKZ	**Mys Kozlova**	**1.20**	**184**		*e*P		Pn	15 28 27.9	+0.7
MKZ					*e*S		Sn	15 28 43.9	+0.6
ESO	**Esso**	**1.81**	**277**		*e*P		Pn	15 28 36.0	+0.9
ESO					*e*S		Sn	15 28 56.9	-0.5
KII	**Karymskiy**	**2.22**	**220**		*e*P		Pn	15 28 42.3	+1.7
BKI	**Bering**	**2.39**	**101**		*e*P		Pn	15 28 44.6	+1.9
BKI					*e*S		Sn	15 29 12.5	+1.4
NLC	**Nalytchevo**	**2.98**	**211**		*e*P		Pn	15 28 52.4	+1.7
NLC					*e*S		Sn	15 29 26.0	+0.7
SDLR	**Sedlovina**	**3.03**	**217**		*e*P		Pn	15 28 54.0	+2.5
SDLR					*e*S		Sn	15 29 29.3	+2.5
KRX	**Arik**	**3.05**	**220**		*e*P		Pn	15 28 55.7	+3.9
KRX					*e*S		Sn	15 29 32.0	+4.7
SMAR	**Somma**	**3.07**	**217**		*e*P		Pn	15 28 54.6	+2.4
SMAR					*e*S		Sn	15 29 30.5	+2.5
GNL	**Ganaly**	**3.08**	**230**		*e*P		Pn	15 28 54.0	+1.9
AVH	**Avacha**	**3.09**	**218**		*e*P		Pn	15 28 55.3	+3.0
AVH					*e*S		Sn	15 29 30.8	+2.5
UGLR	**Uglovaya**	**3.11**	**216**		*e*P		Pn	15 28 55.8	+3.2
UGLR					*e*S		Sn	15 29 32.5	+3.8
PET	**Petropavlovsk**	**3.32**	**216**		*e*P		Pn	15 28 57.7	+2.4
PET					*e*S		Sn	15 29 35.9	+2.3
PALN	**Palana**	**3.51**	**344**		*e*P		Pn	15 28 59.9	+2.1
OSSR	**Ossora**	**3.57**	**10**		*e*P		Pn	15 29 00.9	+2.2
OSSR					*e*S		Sn	15 29 41.0	+1.3
KRMR	**Karymshinskiy**	**3.66**	**219**		*e*P		Pn	15 29 03.0	+3.1
KRMR					*e*S		Sn	15 29 45.3	+3.4
RUS	**Russkaya**	**3.87**	**212**		*e*P		Pn	15 29 05.9	+3.1
RUS					*e*S		Sn	15 29 47.9	+0.9
APC	**Apacha**	**3.96**	**226**		*e*P		Pn	15 29 08.0	+4.0
ASAK	**Asacha**	**4.11**	**217**		*e*P		Pn	15 29 10.1	+4.0
TILK	**Tilichiki**	**5.22**	**24**		*e*P		Pn	15 29 24.1	+2.9
TILK					*e*S		Sn	15 30 21.6	+1.6
KMSK	**Kamenskaya**	**7.10**	**16**		*e*S		Sn	15 31 08.3	+2.7

IDC 08 15:28:33.9±1.9,3.06N×127.24E,h0km,mb3.6/4, mb1 3.8/4,mb1mx3.4/46,mbtmp3.6/4,MS3.1/1,Ms1 3.1/1, ms1mx2.3/41,Error ellipse: s-maj=150.0km s-min=23.1km az=66.0,Talaud Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
LEM	**Lembang**	**21.92**	**243**			LR	LR	15 43 41.1	
	comp=Z,48nm,20.9s,baz=234,slow=41								
WRA	**Warramunga Arr**	**23.90**	**163**		P	P		15 33 50.0	+0.4
	0.9nm,0.5s,baz=343,slow=11,SNR=20								
ASAR	**Alice Springs**	**27.35**	**167**		P	P		15 34 21.5	+0.6
	0.2nm,0.3s,baz=351,slow=7.5,SNR=14								
STKA	**Stephens Creek**	**37.33**	**160**		P	P		15 35 46.9	-1.2
	2.0nm,0.6s,baz=324,slow=11,SNR=4.8								
MKAR	**Makanchi Array**	**58.39**	**325**		P	P		15 38 31.2	-0.1
	0.2nm,0.4s,baz=113,slow=8.6,SNR=2.5								

NIED ***08*** *15:28:00,37.20N×144.10E,h5km,Mw3.8 Best double couple: M₀5.70000×10¹⁴ NP1:φ=59.00000°,δ26.00000°, λ=-77.00000°. NP2:φ=226.00000°,δ65.00000°, λ=-96.00000°.*
IDC ***08*** *15:28:41.3±0.8,36.95N×144.29E,h0km,mb3.7/12, mb1 3.9/16,mb1mx3.7/54,mbtmp3.7/16,ML3.3/4,MS2.6/4, Ms1 2.6/4,ms1mx2.4/46,Error ellipse: s-maj=20.2km s-min=16.4km az=128.0*
ISCJB ***08*** *15:28:44.8±0.6,37.02N±0.06×144.11E±0.05,h33km, mb3.6/12,Error ellipse: s-maj=9.1km s-min=5.3km az=6.7*
JMA ***08*** *15:28:46.3±0.4,37.18N×144.06E,h47km,M4.1*
ISC 08 15:28:46.6±0.7,36.99N±0.06×144.12E±0.07,h35km,n28, σ1.139/31,mb3.6/12,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**2.62**	**279**			S	**Sn**	**15 29 55.6**	**-1.5**
JIO	**Ouri**	**2.64**	**304**			Pn	**Pn**	**15 29 25.6**	**-1.1**
JIO						S	**Sn**	**15 29 54.6**	**-2.9**
ONAJ	**Iwakimizuishiy**	**2.66**	**273**			P	**Pn**	**15 29 26.6**	**-0.5**
ONAJ						S	**Sn**	**15 29 56.9**	**-1.3**
JMM	**Marumori**	**2.79**	**289**			P	**Pn**	**15 29 28.5**	**-0.3**
JMM						S	**Sn**	**15 30 01.0**	**-0.2**
JFT	**Otama**	**3.07**	**281**			P	**Pn**	**15 29 33.0**	**+0.4**
JFT						S	**Sn**	**15 30 07.8**	**-0.3**
JOU	**Okura**	**3.07**	**298**			P	**Pn**	**15 29 32.7**	**+0.1**
JOU						S	**Sn**	**15 30 06.9**	**-1.2**
JOM	**Ohasama**	**3.33**	**319**			S	**Sn**	**15 30 11.2**	**-3.4**
MJAR	**Matsushiro Arr**	**4.77**	**266**			Pn	**Pn**	**15 29 56.8**	**+0.7**
	2.9nm,0.3s,baz=91,slow=16,SNR=18								
MJAR						Sn	**Sn**	**15 30 50.9**	**+0.8**
	0.9nm,0.3s,baz=102,slow=19,SNR=5.8								
MJAR						LR	LR	15 31 29.5	
	comp=Z,34nm,21.0s,baz=310,slow=34								
JHJ	**Hachijo jima 2**	**5.25**	**224**			Pn	**Pn**	**15 30 02.6**	**0.0**
	17nm,0.3s,baz=111,slow=22,SNR=10								
JHJ						Sn	**Sn**	**15 30 57.6**	**-4.3**
	43nm,0.3s,baz=99,slow=22,SNR=8.6								
JNU	**Nakatsue**	**11.52**	**254**			LR	LR	15 35 24.0	
	comp=Z,27nm,21.1s,baz=306,slow=35								
USRK	**Ussuriysk Ar.**	**11.69**	**312**			Pn	**Pn**	**15 31 31.4**	**+0.5**
	0.2nm,0.3s,baz=145,slow=15,SNR=4.0								
KSRS	**Korea Array**	**12.93**	**277**			LR	LR	15 35 58.6	
	comp=Z,28nm,20.8s,baz=79,slow=33								
KLR	**Kul'dur**	**15.18**	**328**			Pn	**Pn**	**15 32 19.5**	**+1.2**
	0.1nm,0.3s,baz=146,slow=17,SNR=3.1								
KLR						LR	LR	15 37 41.7	
	comp=Z,41nm,18.8s,baz=44,slow=35								
H11N2	**WAKE ISLAND Hy**	**26.30**	**125**			T	T	16 01 21.2	
	baz=316,slow=75,SNR=9.3								
H11N1	**WAKE ISLAND Hy**	**26.31**	**125**			T	T	16 01 23.2	
	baz=316,slow=75,SNR=7.1								
H11N3	**WAKE ISLAND Hy**	**26.32**	**125**			T	T	16 01 18.0	
	baz=316,slow=75,SNR=7.4								
SEY	**Seymchan**	**26.46**	**8**			P	**P**	**15 34 20.1**	**+0.1**
	2.5nm,0.9s,baz=197,slow=6.4,SNR=8.7								
SONM	**Songino Array**	**29.61**	**303**			P	**P**	**15 34 48.4**	**-0.1**
	0.4nm,0.7s,baz=106,slow=11,SNR=2.1								
ZALV	**Zalesovo Beam**	**43.55**	**312**			P	**P**	**15 36 47.9**	**+1.2**
	0.3nm,0.3s,baz=74,slow=5.1,SNR=2.5								
ZALV						PcP	**PcP**	**15 38 34.6**	**+0.6**
	0.2nm,0.3s,baz=100,slow=3.3,SNR=3.8								
CMAR	**Chiang Mai Arr**	**43.59**	**258**			P	**P**	**15 36 48.6**	**+1.0

ARNB	**Al Arnab**	**2.13**	**5**	*eP*	**Pb**	**15 39 03.0**	**-0.9**
ARNB				*eS*	**Sb**	**15 39 31.3**	**+1.3**
	comp=N,12nm,0.4s						

NIED ***08*** *15:39:00,36.90N×141.10E,h50km,Mw4.2 Best double couple: M₀2.18000×10¹⁵ NP1:φs356.00000°,δ15.00000°, λ-108.00000°. NP2:φs195.00000°,δ76.00000°, λ-85.00000°.*

ISCJB ***08*** *15:39:38.7±0.6,36.84N±0.04×141.14E±0.07,h51km±4km, mb4.0/19,MS3.0/3,Error ellipse: s-maj=9.5km s-min=5.7km az=17.0*

JMA ***08*** *15:39:39.9±0.1,36.88N×141.07E,h50km±1km,M4.2*

JMA Felt III J1.

IDC ***08*** *15:39:42.0±1.8,36.78N×140.96E,h69km±17km,mb3.7/19, mb1 3.9/22,mb1mx3.8/41,mbtmp4.1/22,MS3.1/7, Ms1 3.1/7,ms1mx2.8/42,Error ellipse: s-maj=15.9km s-min=10.2km az=90.0*

ISC 08 15:39:39.3±1.0,36.86N±0.04×141.14E±0.08,h43km±9km, n47,σ1°02/43,mb4.0/19,MS3.1/3,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.36**	**312**	P	**Pn**	**15 39 48.9**	**+0.3**
ONAJ				S	**Sn**	**15 39 55.1**	**0.0**
JHO	**Hitachi**	**0.52**	**242**	P	**Pn**	**15 39 50.8**	**+0.3**
JHO				S	**Sn**	**15 39 58.4**	**+0.1**
JFK	**Kawauchi**	**0.55**	**337**	P	**Pn**	**15 39 51.0**	**+0.1**
JFK				S	**Sn**	**15 39 58.6**	**-0.5**
JFT	**Otama**	**0.92**	**316**	P	**Pn**	**15 39 56.5**	**+0.7**
JFT				S	**Sn**	**15 40 07.9**	**0.0**
JSB	**Shiboa**	**0.98**	**277**	P	**Pn**	**15 39 57.1**	**+0.4**
JSB				S	**Sn**	**15 40 09.5**	**0.0**
JMM	**Marumori**	**1.04**	**345**	P	**Pn**	**15 39 57.4**	**-0.1**
JMM				S	**Sn**	**15 40 10.2**	**-0.7**
JFY	**Yanaizu**	**1.27**	**296**	P	**Pn**	**15 40 00.8**	**+0.2**
MJAR	**Matsushiro Arr**	**2.38**	**263**	P	**Pn**	**15 40 16.7**	**+0.9**
	74nm,0.3s,baz=86,slow=15,SNR=278						
MJAR				S	Sn	15 40 55.3	+12
	73nm,0.3s,baz=77,slow=30,SNR=11						
MJAR				LR	LR	15 41 23.8	
	comp=Z,424nm,21.3s,baz=100,slow=46						
MAT	**Matsushiro**	**2.38**	**263**	P	**Pn**	**15 40 17.1**	**+1.3**
MAT				S	**Sn**	**15 40 43.7**	**-0.1**
JHJ	**Hachijo jima 2**	**3.89**	**197**	P	**Pn**	**15 40 38.0**	**+1.3**
	44nm,0.3s,baz=324,slow=22,SNR=29						
JHJ				S	**Sn**	**15 41 21.2**	**+0.1**
	136nm,0.3s,baz=57,slow=22,SNR=8.3						
JNU	**Nakatsue**	**9.21**	**249**	P	**Pn**	**15 41 52.5**	**+3.0**
	0.4nm,0.3s,baz=59,slow=8.7,SNR=5.0						
JNU				S	Sn	15 43 24.8	-7.0
	0.3nm,0.3s,baz=33,slow=22,SNR=7.6						
JCJ	**Chichijima**	**9.78**	**174**	P	**Pn**	**15 41 55.5**	**-1.8**
JCJ				S	Sn	15 43 39.9	-5.9
USRK	**Ussuriysk Ar.**	**10.11**	**319**	P	Pn	15 42 05.3	+3.6
	0.9nm,0.3s,baz=136,slow=12,SNR=28						
USRK				LR	LR	15 45 34.7	
	comp=Z,124nm,21.8s,baz=125,slow=35						
KSRS	**Korea Array**	**10.57**	**277**	P	Pn	15 42 11.8	+3.7
	0.5nm,0.3s,baz=90,slow=14,SNR=24						
KSRS				LR	LR	15 46 01.4	
	comp=Z,109nm,19.5s,baz=65,slow=36						
KLR	**Kul'dur**	**14.12**	**334**	LR	LR	15 48 21.5	
	comp=Z,61nm,18.6s,baz=122,slow=37						
GUMO	**Guam**	**23.41**	**171**	LR	LR	15 53 47.1	
	comp=Z,14nm,18.4s,baz=38,slow=36						
MA2	**Magadan**	**23.57**	**12**	P	**P**	**15 44 46.1**	**+0.4**
	2.4nm,0.5s,baz=204,slow=14,SNR=3.4						
SEY	**Seymchan**	**27.00**	**11**	P	**P**	**15 45 18.6**	**+1.7**
	2.8nm,0.8s,baz=208,slow=6.6,SNR=12						
SONM	**Songino Array**	**27.70**	**304**	P	**P**	**15 45 23.8**	**+0.3**
	4.2nm,0.6s,baz=111,slow=9.5,SNR=30						
H11N2	**WAKE ISLAND Hy**	**28.25**	**120**	T	T	16 14 54.7	
	SNR=32						
H11N1	**WAKE ISLAND Hy**	**28.26**	**120**	T	T	16 15 21.6	
	baz=312,slow=74,SNR=34						
H11N3	**WAKE ISLAND Hy**	**28.27**	**120**	T	T	16 15 34.6	
	baz=200,slow=74,SNR=45						
H11S1	**WAKE ISLAND Hy**	**28.95**	**122**	T	T	16 16 23.4	
	baz=314,slow=76,SNR=244						
H11S3	**WAKE ISLAND Hy**	**28.95**	**122**	T	T	16 16 23.8	
	baz=314,slow=76,SNR=88						
H11S2	**WAKE ISLAND Hy**	**28.97**	**122**	T	T	16 16 22.4	
	baz=314,slow=76,SNR=148						
CMAR	**Chiang Mai Arr**	**41.24**	**255**	P	**P**	**15 47 18.2**	**-2.1**
	0.2nm,0.5s,baz=49,slow=8.4,SNR=2.8						
CMAR				LR	LR	16 04 49.4	
	comp=Z,26nm,19.0s,baz=70,slow=37						
ZALV	**Zalesovo Beam**	**41.87**	**313**	P	**P**	**15 47 24.9**	**-0.2**
	2.3nm,0.6s,baz=32,slow=6.6,SNR=11						
MKAR	**Makanchi Array**	**44.02**	**302**	P	**P**	**15 47 42.3**	**-0.3**
	1.7nm,0.7s,baz=89,slow=9.6,SNR=16						
MKAR				LR	LR	16 06 06.9	
	comp=Z,39nm,20.6s,baz=9.0,slow=36						
RAMN	**Ramite**	**46.80**	**274**	*eP*	P	15 47 59.8	-5.3
	14nm,0.7s						
KKN	**Kakani**	**47.48**	**276**	*eP*	**P**	**15 48 09.8**	**-0.6**
	11nm,0.5s						
GKN	**Gorkha**	**47.90**	**276**	*eP*	**P**	**15 48 13.4**	**-0.2**
	22nm,0.6s						
PYUN	**Piuthan**	**49.17**	**277**	*eP*	**P**	**15 48 24.0**	**+0.6**
	8.5nm,0.4s						
ILAR	**Eielson Array**	**49.76**	**32**	P	**P**	**15 48 27.5**	**+0.4**
	1.6nm,0.8s,baz=265,slow=5.6,SNR=18						
INK	**Inuvik**	**54.64**	**27**	P	**P**	**15 49 04.4**	**+1.1**
	2.0nm,0.7s,baz=291,slow=5.7,SNR=8.2						
WRA	**Warramunga Arr**	**56.86**	**188**	P	**P**	**15 49 17.5**	**-2.2**
	3.8nm,0.7s,baz=5.2,slow=7.4,SNR=41						
ASAR	**Alice Springs**	**60.59**	**188**	P	**P**	**15 49 45.7**	**+0.1**
	1.8nm,0.8s,baz=2.8,slow=7.9,SNR=19						
YKA	**Yellowknife Ar**	**64.07**	**30**	P	**P**	**15 50 08.8**	**+0.4**
	0.5nm,0.7s,baz=304,slow=6.8,SNR=14						
ARCES	**ARCESS Array B**	**64.08**	**339**	P	**P**	**15 50 07.4**	**-1.1**
	2.0nm,1.0s,baz=42,slow=5.8,SNR=5.6						
STKA	**Stephens Creek**	**68.38**	**180**	P	**P**	**15 50 36.4**	**+0.1**
	1.3nm,0.7s,baz=329,slow=6.8,SNR=2.4						
FINES	**FINESS Array B**	**68.86**	**332**	P	**P**	**15 50 37.4**	**-1.7**
	1.4nm,0.8s,baz=39,slow=7.6,SNR=5.5						
NVAR	**Mina Array Bea**	**75.27**	**53**	P	**P**	**15 51 19.7**	**+1.6**
	1.1nm,0.7s,baz=287,slow=5.6,SNR=8.7						
PDAR	**Pinedale Array**	**77.94**	**45**	P	**P**	**15 51 33.8**	**+0.6**
	0.7nm,0.6s,baz=280,slow=3.1,SNR=8.0						
BRTR	**Keskin Array B**	**78.80**	**311**	P	**P**	**15 51 38.4**	**+0.5**
	0.6nm,0.7s,baz=83,slow=6.2,SNR=2.8						
GERES	**GERESS Array B**	**82.74**	**328**	P	**P**	**15 51 58.1**	**-0.5**
	0.5nm,0.4s,baz=35,slow=4.9,SNR=4.1						
TXAR	**Lajitas Array**	**90.40**	**52**	P	**P**	**15 52 37.5**	**+1.0**
	0.5nm,0.7s,baz=232,slow=4.1,SNR=5.6						
H06S1	**SOCORRO T**	**92.46**	**65**	T	T	17 35 09.5	
	SNR=9.7						
LPAZ	**La Paz**	**146.97**	**59**	PKPbc	**PKPbc**	**15 59 18.7**	**+0.2**
	1.9nm,0.6s,baz=20,slow=14,SNR=9.0						

IDC 08 15:40:48.9±14.0,19.70S×179.55W,h589km±122km, mb2.9/3,mb1 3.2/3,mb1mx2.7/32,mbtmp3.9/3,Error ellipse: s-maj=186.7km s-min=41.2km az=134.0,Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**43.27**	**262**	P	P	15 48 00.2	+0.3
	0.5nm,0.3s,baz=95,slow=8.7,SNR=24						
ASAR	**Alice Springs**	**43.29**	**256**	P	P	15 47 59.6	-0.5
	1.1nm,0.7s,baz=91,slow=8.2,SNR=19						
ASAR				PcP	PcP	15 49 35.3	-0.3
	0.6nm,0.6s,baz=107,slow=3.9,SNR=13						
ILAR	**Eielson Array**	**87.87**	**13**	P	P	15 52 35.8	-0.3
	0.5nm,0.5s,baz=215,slow=5.3,SNR=13						
BVAR	**Borovoye Array**	**117.53**	**320**	PKP	PKPdf	15 58 27.9	-0.5
	0.6nm,0.4s,baz=114,slow=3.3,SNR=5.4						
BRTR	**Keskin Array B**	**145.23**	**312**	PKPbc	PKPdf	15 59 20.5	-0.2
	0.5nm,0.6s,baz=141,slow=6.8,SNR=2.9						
GERES	**GERESS Array B**	**149.03**	**343**	PKPbc	PKPbc	15 59 31.7	+0.3
	0.4nm,0.4s,baz=22,slow=3.6,SNR=2.9						

ISCJB ***08*** *15:45:58.6±0.6,32.06N±0.03×115.13W±0.06,h6km±8km, Error ellipse: s-maj=9.4km s-min=3.9km az=166.7*

ECX ***08*** *15:46:00.7±0.5,32.10N×115.12W,h7km,MD2.8,ML3.0*

MEX ***08*** *15:46:00.0±0.7,32.18N×114.87W,h27km±18km,MD3.6*

ISC 08 15:45:58.3±1.1,32.05N±0.03×115.14W±0.04, h10km±10km,n21,σ0°38/33,4C-4D,California-Baja California border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MBIG	**Mexicali**	**0.36**	**352**	*eP*	**Pb**	**15 46 06.8**	**0.0**
MBIG	**Mexicali**	**0.36**	**352**	*eP*	**Pb**	**15 46 06.8**	**0.0**
MBIG				*eS*	**Sb**	**15 46 11.8**	**-0.6**
CPBX	**Cerro Prieto**	**0.39**	**339**	*eP*	**Pb**	**15 46 07.2**	**-0.2**
CPBX				*eS*	**Sb**	**15 46 12.5**	**-0.9**
CPBX				⇑*e*		15 46 16.6	
CPBX				AML	AML	15 46 16.6	
	comp=E,4μm,0.2s						
ECBX	**El Chinero**	**0.58**	**173**	⇓*eP*	**Pg**	**15 46 09.0**	**-0.6**
ECBX				*eS*	**Sg**	**15 46 17.4**	**+0.1**
EMSC	**East Mesa**	**0.70**	**10**	⇓*iP*	**Pg**	**15 46 12.1**	**+0.2**
YMD	**Yuma Desert**	**0.71**	**45**	*iP*	**Pg**	**15 46 11.9**	**-0.1**
SGL	**Mount Signal**	**0.78**	**320**	⇓*iP*	**Pb**	**15 46 13.8**	**-0.1**
COA	**Coachella**	**0.81**	**1**	⇑*iP*	**Pb**	**15 46 14.5**	**0.0**
YUH	**Yuha Desert**	**0.89**	**312**	⇓*iP*	**Pg**	**15 46 15.5**	**0.0**
RMX	**La Rumorosa**	**0.97**	**305**	*eP*	**Pg**	**15 46 16.9**	**-0.1**
RMX				*eS*	**Sg**	**15 46 29.8**	**+0.2**
IBP	**Imperial Bould**	**1.01**	**307**	*eP*	**Pb**	**15 46 18.2**	**+0.2**
SPIG	**San Pedro Mart**	**1.04**	**196**	*eP*	**Pn**	**15 46 19.9**	**+0.7**
SPIG	**San Pedro Mart**	**1.04**	**196**	*eP*	**Pn**	**15 46 19.2**	**0.0**
SPIG				*eS*	**Sn**	**15 46 34.2**	**+0.2**
SPX	**San Pedro Mart**	**1.04**	**196**	*eP*	**Pn**	**15 46 19.9**	**+0.7**
SPX				*eS*	**Sn**	**15 46 34.5**	**+0.5**
SPX				⇑*e*		15 46 36.0	
SPX				AML	AML	15 46 36.0	
	comp=N,180nm,0.1s						
ZAX	**El Zacaton**	**1.11**	**241**	*eP*	**Pb**	**15 46 19.4**	**-0.2**
ZAX				*eS*	**Sn**	**15 46 35.0**	**-0.2**
ECNX	**Esteban Cantu**	**1.30**	**253**	*eP*	**Pn**	**15 46 22.8**	**+0.1**
ECNX				*eS*	**Sg**	**15 46 40.5**	**+0.2**
CBX	**Cerro Bola**	**1.32**	**282**	*eP*	**Pb**	**15 46 23.3**	**+0.1**
CBX				*eS*	**Sg**	**15 46 41.1**	**+0.2**
CBX				⇑*e*		15 46 42.7	
CBX				AML	AML	15 46 42.7	
	comp=N,353nm,0.4s						
CBX	**Cerro Bola**	**1.32**	**282**	*eP*	**Pn**	**15 46 22.6**	**-0.3**
CBX				*iS*	**Sg**	**15 46 41.6**	**+0.7**
TJIG	**Tijuana**	**1.36**	**287**	*eP*	**Pg**	**15 46 24.3**	**-0.1**
TJIG				*eS*	**Sn**	**15 46 41.7**	**+0.3**
PBX	**Punta Banda**	**1.39**	**258**	*eP*	**Pn**	**15 46 23.6**	**0.0**
PBX				*eS*	**Sn**	**15 46 42.3**	**+0.2**
BAR	**Barrett**	**1.44**	**296**	*eP*	**Pb**	**15 46 25.3**	**+0.1**

JMA ***08*** *15:49:59.6±0.2,23.93N×122.38E,h13km±4km,M2.2*

ISCJB ***08*** *15:50:00.6±0.6,23.93N±0.04×122.42E±0.02,h22km±7km, Error ellipse: s-maj=7.5km s-min=3.0km az=160.7*

TAP ***08*** *15:50:00.6,23.93N×122.45E,h29km,ML2.7,D*

ISC 08 15:50:00.2±0.9,23.94N±0.05×122.40E±0.03,h22km±10km, n23,σ0°54/41,Taiwan region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JYNG	**Yonagunijimaku**	**0.71**	**44**	P	**Pb**	**15 50 13.6**	**-0.3**
JYNG				S	**Sb**	**15 50 22.9**	**-0.4**
HWA	**Hwalien**	**0.73**	**273**	*eP*	**Pn**	**15 50 15.0**	**-0.2**
	baz=273						
HWA				*eS*	**Sn**	**15 50 25.5**	**-0.2**
	baz=273						
TWD	**Chiawan**	**0.75**	**281**	*eP*	**Pn**	**15 50 15.4**	**-0.1**
	baz=280						
TWD				*eS*	**Sn**	**15 50 26.0**	**-0.2**
	baz=280						
YOJ	**Yonaguni jima**	**0.76**	**47**	P	**Pb**	**15 50 14.6**	**-0.2**
YOJ				*eS*	**Sb**	**15 50 25.3**	**+0.6**
ENA	**Nanau**	**0.78**	**309**	P	**Pn**	**15 50 15.6**	**-0.3**
	baz=307						
ENA				*eS*	**Sn**	**15 50 26.8**	**-0.1**
	baz=307						
TWC	**Suao**	**0.84**	**323**	*eP*	**Pb**	**15 50 15.8**	**-0.3**
	baz=321						
TWC				*eS*	**Sn**	**15 50 27.7**	**-0.6**
	baz=321						
ESL	**Shilin**	**0.90**	**262**	*eP*	**Pn**	**15 50 17.3**	**-0.2**
	baz=262						
ESL				*eS*	**Sn**	**15 50 30.0**	**+0.2**
	baz=262						
TWE	**Neicheng**	**1.03**	**319**	*eP*	**Pn**	**15 50 20.5**	**+1.2**
	baz=318						
ENTT	**Nioudou**	**1.04**	**313**	*eP*	**Pn**	**15 50 19.4**	**0.0**
	baz=311						
ENTT				*eS*	**Sn**	**15 50 33.2**	**0.0**
	baz=311						
WHF	**Hehuan Shan**	**1.06**	**281**	*eP*	**Pn**	**15 50 21.0**	**+0.9**
	baz=280						
WHF				*eS*	**Sb**	**15 50 33.6**	**-0.2**
	baz=280						
EHY	**Hungye**	**1.08**	**247**	*eP*	**Pn**	**15 50 20.0**	**0.0**
	baz=247						
EHY				*eS*	**Sn**	**15 50 34.6**	**+0.2**
	baz=247						
TWT	**Tachien**	**1.17**	**286**	*eS*	**Sn**	**15 50 37.1**	**+0.5**
	baz=284						
TWF1	**Yuli**	**1.17**	**240**	*eP*	**Pn**	**15 50 21.3**	**+0.1**
	baz=241						
TWF1				S	**Sb**	**15 50 36.6**	**+0.1**
	baz=241						
WDT	**Danda**	**1.18**	**261**	*eP*	**Pn**	**15 50 21.5**	**-0.1**
	baz=261						
WDT				*eS*	**Sb**	**15 50 36.8**	**-0.2**
	baz=261						
NSK	**Sanguang**	**1.21**	**308**	*eP*	**Pn**	**15 50 21.9**	**+0.1**
	baz=306						
NSK				*eS*	**Sn**	**15 50 38.5**	**+1.0**
	baz=306						
IRIF	**Iriomote-Funau**	**1.27**	**72**	P	**Pb**	**15 50 23.5**	**0.0**
IRIF				*eS*	**Sb**	**15 50 40.0**	**+0.5**
YUS	**Yu-Shan**	**1.40**	**252**	*eP*	**Pb**	**15 50 25.7**	**-0.3**
	baz=251						
YUS				*eS*	**Sb**	**15 50 43.6**	**-0.1**
	baz=251						
ELDTW	**Lidau**	**1.47**	**240**	*eP*	**Pn**	**15 50 25.8**	**+0.2**
	baz=240						
JKRS	**Kuro-shima**	**1.50**	**78**	P	**Pb**	**15 50 27.4**	**+0.1**
JKRS				*eS*	**Sb**	**15 50 47.7**	**+1.8**
CHN5	**Tsauling**	**1.62**	**258**	*eP*	**Pb**	**15 50 28.9**	**-0.5**
	baz=258						
JIJ	**Ishigaki jima**	**1.64**	**75**	P	**Pn**	**15 50 27.8**	**0.0**
JIJ				*eS*	**Sb**	**15 50 49.5**	**-0.6**
WTP	**Ta-pu**	**1.78**	**248**	*eP*	**Pb**	**15 50 32.5**	**+0.3**
	baz=247						
JISG	**Ishigakijimahi**	**1.86**	**69**	P	**Pn**	**15 50 30.4**	**-0.3**
JISG				S	**Sn**	**15 50 52.3**	**-1.2**

NIED ***08*** *15:50:00,38.20N×142.30E,h32km,Mw3.7 Best double couple: M₀3.66000×10¹⁴ NP1:φs30.00000°,δ76.00000°, λ-170.00000°. NP2:φs298.00000°,δ80.00000°, λ-14.00000°.*

JMA 08 15:50:20.7±0.3,38.25N×142.25E,h41km±4km,M3.5, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**0.74**	**286**	P	Pn	15 50 34.9	+0.3
JIO				S	Sn	15 50 44.5	-0.2
JMM	**Marumori**	**1.21**	**252**	P	Pn	15 50 41.4	+0.2
JOU	**Okura**	**1.25**	**276**	P	Pn	15 50 42.8	+1.1
MIYJ	**Miyakonagasawa**	**1.37**	**346**	P	Pn	15 50 43.5	+0.2
MIYJ				S	Sn	15 51 00.3	+0.1
JFK	**Kawauchi**	**1.40**	**231**	P	Pn	15 50 43.7	-0.1
JFK				S	Sn	15 50 59.9	-1.2
JOM	**Ohasama**	**1.43**	**329**	P	Pn	15 50 45.2	+1.0
JOM				S	Sn	15 51 02.7	+0.9
JYK	**Kaneyama**	**1.62**	**295**	P	Pn	15 50 48.0	+1.2
JFT	**Otama**	**1.68**	**245**	P	Pn	15 50 49.1	+1.5
JRG	**Rokugo**	**1.70**	**313**	P	Pn	15 50 50.1	+2.2
JYS	**Shirataka**	**1.72**	**270**	P	Pn	15 50 49.5	+1.3
JKZ	**Kuzumaki**	**1.87**	**338**	P	Pn	15 50 52.2	+1.9
JANG	**Nango**	**2.20**	**345**	P	Pn	15 50 56.6	+1.9

IDC 08 15:52:46.0±3.0,25.37N×141.84E,h0km,mb3.9/4, mb1 4.1/4,mb1mx3.4/38,mbtmp3.9/4,Error ellipse: s-maj=172.7km s-min=27.0km az=78.0,Volcano Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**45.62**	**190**	P	P	16 01 07.8	-0.5
	0.9nm,1.0s,baz=9.0,slow=8.4,SNR=5.8						
STKA	**Stephens Creek**	**56.92**	**180**	P	P	16 02 33.4	+0.4
	1.8nm,0.8s,baz=10,slow=11,SNR=3.1						
BVAR	**Borovoye Array**	**59.11**	**318**	P	P	16 02 48.8	+0.5
	0.5nm,0.5s,baz=104,slow=8.2,SNR=4.7						
FINES	**FINESS Array B**	**79.36**	**334**	P	P	16 04 53.0	-0.5
	3.2nm,1.1s,baz=69,slow=4.6,SNR=6.8						

NEIC ***08*** *16:02:39.0,35.25N×92.37W,h6km,MD2.9(CERI),After CERI.*

ISC 08 16:02:38.9±0.9,35.26N±0.03×92.34W±0.03,h11km±8km, n25,σ0°97/41,Arkansas

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
W41B	**Gary Mavity, V**	**0.11**	**138**	P	**Pg**	**16 02 41.9**	**+0.1**
	baz=309						
W41B				S	**Sg**	**16 02 43.9**	**0.0**
	baz=309						
W40A	**Ferguson Farm,**	**0.60**	**264**	P	**Pg**	**16 02 50.5**	**-0.2**
	baz=84,SNR=36						
V40A	**Witts Springs**	**0.68**	**324**	P	**Pg**	**16 02 51.9**	**-0.2**
	baz=146,SNR=231						
V40A				S	**Sg**	**16 03 00.8**	**-0.1**
	baz=146						
X40A	**Basin Creek Fa**	**0.87**	**208**	P	**Pg**	**16 02 55.5**	**-0.3**
	baz=26						
X40A				S	**Sg**	**16 03 07.0**	**-0.1**
	baz=26						
U40A	**Yellville**	**1.18**	**339**	P	**Pb**	**16 03 01.0**	**-0.2**
	baz=160,SNR=133						
W39A	**Magazine**	**1.19**	**268**	P	**Pb**	**16 03 01.1**	**-0.3**
	baz=87,SNR=66						
W39A				S	**Sg**	**16 03 16.8**	**-0.4**
	baz=87						
V39A	**Pettigrew**	**1.22**	**299**	P	**Pb**	**16 03 01.5**	**-0.5**
	baz=119,SNR=66						
V39A				S	**Sb**	**16 03 17.2**	**-0.5**
	baz=119						
MIAR	**Mount Ida**	**1.24**	**236**	Pg	**Pn**	**16 03 02.0**	**-0.2**
	baz=54						
MIAR				S	**Sb**	**16 03 17.9**	**-0.5**
	baz=54						
MIAR	**Mount Ida**	**1.24**	**236**	*e*Pg	**Pn**	**16 03 02.0**	**-0.2**
MIAR				*e*Sg	**Sb**	**16 03 17.5**	**-0.9**
U39A	**Green Forest**	**1.46**	**321**	Pb	**Pn**	**16 03 05.6**	**+0.4**
	baz=141,SNR=33						
U39A				Sb	**Sb**	**16 03 24.8**	**+0.1**
	baz=141						
Y40A	**Okolona**	**1.46**	**212**	Pb	**Pb**	**16 03 05.9**	**-0.2**
	baz=31						
Y40A				Sb	**Sg**	**16 03 25.2**	**-0.9**
	baz=31						
X39A	**Fountain Ranch**	**1.64**	**244**	Pb	**Pb**	**16 03 08.6**	**-0.5**
	baz=62,SNR=131						
X39A				Sb	**Sb**	**16 03 30.0**	**+0.2**
	baz=62						
V38A	**Canehill**	**1.79**	**290**	Pb	**Pb**	**16 03 11.0**	**-0.8**
	baz=110,SNR=33						
V38A				Sb	**Sb**	**16 03 34.8**	**+0.5**
	baz=110						
W38A	**Poteau**	**1.80**	**265**	Pb	**Pb**	**16 03 11.3**	**-0.5**
	baz=84,SNR=120						
W38A				Sb	**Sg**	**16 03 35.7**	**-1.1**
	baz=84						
T40A	**Mansfield**	**1.90**	**356**	Pb	**Pb**	**16 03 13.2**	**-0.4**
	baz=176,SNR=56						
T40A				Sb	**Sb**	**16 03 38.4**	**+1.1**
	baz=176						
T39A	**Clever**	**1.96**	**335**	Pb	**Pb**	**16 03 13.9**	**-0.7**
	baz=155,SNR=15						
T39A				Sb	**Sb**	**16 03 39.9**	**+1.0**
	baz=155						
X38A	**Whitesboro**	**2.13**	**255**	Pb	**Pb**	**16 03 16.7**	**-0.8**
	baz=73,SNR=100						
OXF	**Oxford**	**2.52**	**106**	*e*Pn	**Pn**	**16 03 20.9**	**+1.1**
TUL1	**Leonard**	**2.89**	**284**	*e*Pg	**Pb**	**16 03 31.9**	**+1.4**
TUL1				*e*Sg	**Sb**	**16 04 07.1**	**+1.2**
U34A	**Anderson Ranch**	**4.38**	**287**	*e*Pn	**Pn**	**16 03 47.2**	**+1.7**
W34A	**Bridge Creek,**	**4.45**	**271**	*e*Pg	**Pb**	**16 03 58.4**	**+1.3**
LRAL	**Lakeview Retre**	**4.95**	**115**	*e*Pn	**Pn**	**16 03 53.5**	**+0.3**
WMOK	**Wichita Mounta**	**5.32**	**266**	*e*Pn	**Pn**	**16 03 57.7**	**-0.5**
	6.2nm,0.3s						
WMOK				*e*Pg	**Pb**	**16 04 14.6**	**+2.7**
HDIL	**Hopedale**	**5.81**	**24**	Pg	**Pb**	**16 04 20.1**	**-0.2**
HDIL				*e*Sg	**Sg**	**16 05 42.5**	**-2.9**
SFIN	**Lafayette**	**6.58**	**37**	*e*Sg	Sb	16 06 01.6	+10

IDC ***08*** *16:15:08.3±3.5,14.35N×123.27E,h0km,mb3.3/3, mb1 3.5/3,mb1mx3.2/48,mbtmp3.3/3,Error ellipse: s-maj=290.6km s-min=29.2km az=63.0*

MAN ***08*** *16:15:09,15.23N×122.31E,h30km,mb4.1,ML2.9,MS2.7*

ISC 08 16:15:04.6±2.0,15.39N±0.10×122.7E±0.1,h35km,n12, σ1°39/10,mb3.2/3,3C-1D,Philippine Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BALP	**Baler**	**1.17**	**288**	*eP*	**Pn**	**16 15 25.9**	**+1.4**
BALP				*eS*	**Sn**	**16 15 37.7**	**-1.6**
GQP	**Guinayangan**	**1.50**	**191**	⇑*iP*	**Pn**	**16 15 30.2**	**+1.3**
GQP				*iS*	**Sn**	**16 15 47.0**	**-0.3**
PCPH	**Palayan**	**1.59**	**277**	⇑*eP*	**Pn**	**16 15 31.8**	**+1.6**
LQP	**Lukban**	**1.72**	**223**	⇑*eP*	**Pn**	**16 15 32.4**	**+0.2**
CAUP	**Cauayan**	**1.78**	**331**	*eP*	Pn	16 15 37.8	+4.9
BOAC	**Boac**	**2.10**	**204**	*eP*	**Pn**	**16 15 38.8**	**+1.5**
BOAC				*eS*	**Sn**	**16 16 01.8**	**-0.4**
BCPH	**Baguio City Da**	**2.30**	**296**	⇓*eP*	Pn	16 15 43.8	+3.6
APYP	**Conner**	**2.85**	**330**	*eP*	Pn	16 15 51.8	+4.3
ABRA	**Dolores**	**2.97**	**319**	*eP*	Pn	16 15 54.9	+5.6
WRA	**Warramunga Arr**	**36.91**	**162**	P	**P**	**16

λ172.00000°. NP2:ϕ=27.00000°,δ82.00000°,λ11.00000°.
*JMA **08** 16:28:00.6±0.3,38˚.16N×142˚.64E,h12km±3km,M3.9*
*IDC **08** 16:28:06.2±2.3,38˚.50N×141˚.76E,h0km,mb3.4/4, mb1 3.5/5,mb1mx3.3/39,mbtmp3.3/5,ML2.9/1,MS2.8/1, Ms1 3.0/1,ms1mx2.2/21,Error ellipse: s-maj=65.1km s-min=26.2km az=65.0*

ISC 08 16:28:01.8±2.8,38.18N±0.05×142.5E±0.1,h7km±13km, n16,σ1s43/23,mb3.5/4,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**0.91**	**288**	P	**Pn**	**16 28 20.4**	**-0.6**
JIO				S	**Sn**	**16 28 34.2**	**-0.2**
JMM	**Marumori**	**1.35**	**257**	P	**Pn**	**16 28 26.3**	**-0.8**
JMM				S	**Sg**	**16 28 47.0**	**+1.7**
JOU	**Okura**	**1.42**	**278**	P	**Pb**	**16 28 28.9**	**+0.2**
JOU				*e*S	**Sg**	**16 28 48.8**	**+1.2**
JFK	**Kawauchi**	**1.50**	**238**	P	**Pb**	**16 28 29.1**	**-0.8**
JFK				*e*S	**Sb**	**16 28 49.2**	**+0.1**
JOM	**Ohasama**	**1.58**	**325**	P	**Pb**	**16 28 30.5**	**-0.8**
JOM				*e*S	**Sb**	**16 28 51.2**	**-0.2**
JYK	**Kaneyama**	**1.80**	**295**	P	**Pb**	**16 28 34.4**	**-0.7**
JYK				*e*S	**Sg**	**16 28 59.6**	**-0.1**
JFT	**Otama**	**1.81**	**249**	P	**Pn**	**16 28 33.8**	**+0.5**
JFT				*e*S	**Sb**	**16 28 58.8**	**+0.8**
JRG	**Rokugo**	**1.87**	**311**	P	**Pg**	**16 28 37.1**	**-0.6**
JRG				S	**Sb**	**16 29 01.3**	**+1.4**
JYS	**Shirataka**	**1.89**	**272**	P	**Pb**	**16 28 36.7**	**+0.2**
JYS				*e*S	**Sg**	**16 29 02.3**	**-0.1**
MJAR	**Matsushiro Arr**	**3.76**	**245**	Pn	**Pn**	**16 29 00.8**	**+0.6**
	1.1nm,0.3s,baz=65,slow=12,SNR=6.1						
MAT	**Matsushiro**	**3.76**	**246**	P	**Pn**	**16 29 02.8**	**+2.6**
MAT				*e*S	**Sb**	**16 29 49.8**	**-4.5**
CMAR	**Chiang Mai Arr**	**42.59**	**255**	LR	LR	16 55 51.7	
	comp=Z,10nm,18.3s,baz=195,slow=40						
MKAR	**Makanchi Array**	**44.22**	**301**	P	**P**	**16 36 11.5**	**0.0**
	0.2nm,0.6s,baz=88,slow=8.6,SNR=3.5						
KURBB	**Kurchatov Arra**	**45.96**	**307**	P	**P**	**16 36 26.0**	**+0.8**
	0.7nm,0.5s,baz=81,slow=8.0,SNR=4.6						
WRA	**Warramunga Arr**	**58.32**	**189**	P	P	16 38 04.8	+7.4
	0.5nm,0.9s,baz=8.3,slow=7.4,SNR=3.5						
ASAR	**Alice Springs**	**62.04**	**189**	P	P	16 38 29.9	+7.0
	0.3nm,1.0s,baz=20,slow=11,SNR=3.4						

*ISCJB **08** 16:39:55.6±1.3,37˚.29N±0˚.04×20˚.37E±0˚.05,h3km±8km, mb3.3/5,Error ellipse: s-maj=7.3km s-min=5.8km az=153.0*
*ATH **08** 16:39:55.3,37˚.27N×20˚.36E,h18km±1km,ML3.2/3,Error ellipse: s-maj=3.9km s-min=1.3km az=53.0*
*IDC **08** 16:39:56.0±1.4,37˚.50N×20˚.62E,h0km,mb3.5/5, mb1 3.5/5,mb1mx3.3/56,mbtmp3.5/5,Error ellipse: s-maj=45.3km s-min=24.7km az=123.0*
*CSEM **08** 16:39:56.9±0.5,37˚.31N×20˚.45E,h2km,ML3.3,Error ellipse: s-maj=8.3km s-min=3.8km az=57.0*
*THE **08** 16:39:58.3,37˚.37N×20˚.51E,h0km±1km,ML3.3/5,Error ellipse: s-maj=1.6km s-min=0.6km az=222.0*

ISC 08 16:39:56.6±1.8,37.33N±0.05×20.45E±0.06,h12km±9km, n60,σ0s58/81,mb3.5/5,Ionian Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KFL	**Anninata**	**0.83**	**19**	P	**Pb**	**16 40 12.7**	**-0.2**
KFL	**Anninata**	**0.83**	**19**	P	**Pb**	**16 40 12.7**	**-0.2**
KFL				S	**Sn**	**16 40 26.2**	**0.0**
KFL	**Anninata**	**0.83**	**19**	P	**Pb**	**16 40 12.7**	**-0.2**
KFL				S	**Sn**	**16 40 26.2**	**0.0**
VLS	**Valsamata**	**0.86**	**8**	P	**Pb**	**16 40 13.5**	**+0.1**
VLS				S	**Sb**	**16 40 25.6**	**+0.7**
VLS	**Valsamata**	**0.86**	**8**	P	**Pb**	**16 40 13.5**	**+0.1**
VLS				S	**Sb**	**16 40 25.6**	**+0.7**
AMT	**Artemida-Makis**	**1.02**	**78**	P	**Pn**	**16 40 16.8**	**0.0**
AMT				S	**Sn**	**16 40 30.8**	**-0.3**
AMT	**Artemida-Makis**	**1.02**	**78**	P	**Pn**	**16 40 16.8**	**0.0**
AMT				S	**Sn**	**16 40 30.8**	**-0.3**
AMT	**Artemida-Makis**	**1.02**	**78**	P	**Pg**	**16 40 15.5**	**-0.9**
AMT				S	**Sn**	**16 40 32.8**	**+1.7**
AMT				AML	AML	16 40 35.9	
	comp=N,4627μm,0.7s						
AMT				AML	AML	16 40 36.4	
	comp=E,4006μm,0.9s						
RLS	**Riolos of Patr**	**1.09**	**48**	P	**Pb**	**16 40 17.1**	**-0.3**
RLS				S	**Sn**	**16 40 32.6**	**0.0**
RLS	**Riolos of Patr**	**1.09**	**48**	P	**Pb**	**16 40 17.1**	**-0.3**
RLS				S	**Sn**	**16 40 32.6**	**0.0**
PYL	**PYLOS**	**1.12**	**112**	P	**Pn**	**16 40 17.8**	**-0.3**
PYL	**PYLOS**	**1.12**	**112**	P	**Pn**	**16 40 17.8**	**-0.3**
PYL				S	**Sn**	**16 40 34.4**	**+1.0**
PYL	**PYLOS**	**1.12**	**112**	P	**Pn**	**16 40 17.8**	**-0.3**
PYL				S	**Sn**	**16 40 34.4**	**+1.0**
PYL				AML	AML	16 40 36.8	
	comp=E,2439μm,0.6s						
PYL				AML	AML	16 40 37.6	
	comp=N,1779μm,0.5s						
AXS	**Araxos**	**1.14**	**40**	P	**Pb**	**16 40 18.0**	**-0.2**
AXS	**Araxos**	**1.14**	**40**	P	**Pb**	**16 40 18.0**	**-0.2**
AXS	**Araxos**	**1.14**	**40**	P	**Pb**	**16 40 17.6**	**-0.6**
DRO	**Drossia**	**1.18**	**58**	P	**Pg**	**16 40 19.2**	**-0.1**
DRO	**Drossia**	**1.18**	**58**	P	**Pg**	**16 40 19.2**	**-0.1**
DRO	**Drossia**	**1.18**	**58**	P	**Pb**	**16 40 18.1**	**-0.8**
ITM	**Ithomi**	**1.19**	**97**	P	**Pg**	**16 40 19.9**	**+0.4**
ITM				S	**Sn**	**16 40 36.8**	**+1.7**
ITM	**Ithomi**	**1.19**	**97**	P	**Pg**	**16 40 19.2**	**-0.3**
ITM				S	**Sn**	**16 40 36.1**	**+1.0**
ITM	**Ithomi**	**1.19**	**97**	P	**Pg**	**16 40 19.2**	**-0.3**
ITM				S	**Sn**	**16 40 36.1**	**+1.0**
ITM				AML	AML	16 40 43.2	
	comp=N,1193μm,0.7s						
ITM				AML	AML	16 40 49.1	
	comp=E,1144μm,0.7s						
PDO	**Prodromos**	**1.40**	**24**	P	**Pg**	**16 40 23.2**	**-0.3**
PDO				S	**Sg**	**16 40 42.9**	**+1.3**
PDO	**Prodromos**	**1.40**	**24**	P	**Pg**	**16 40 23.2**	**-0.3**
PDO				S	**Sg**	**16 40 42.9**	**+1.3**
PDO	**Prodromos**	**1.40**	**24**	P	**Pg**	**16 40 23.1**	**-0.4**
TRIP	**Tripoli**	**1.47**	**82**	P	**Pg**	**16 40 25.1**	**+0.4**
TRIP	**Tripoli**	**1.47**	**82**	P	**Pg**	**16 40 25.1**	**+0.4**
LKD2	**Lefkada island**	**1.47**	**6**	P	**Pg**	**16 40 24.6**	**-0.2**
LKD2				S	**Sg**	**16 40 45.0**	**+1.0**
LKD2	**Lefkada island**	**1.47**	**6**	P	**Pg**	**16 40 24.6**	**-0.2**
LKD2				S	**Sg**	**16 40 45.0**	**+1.0**
LKD2	**Lefkada island**	**1.47**	**6**	P	**Pg**	**16 40 24.6**	**-0.2**
LAKA	**Lakka**	**1.52**	**53**	P	**Pg**	**16 40 25.3**	**-0.5**
LAKA				S	**Sg**	**16 40 45.6**	**+0.1**
LAKA	**Lakka**	**1.52**	**53**	P	**Pg**	**16 40 25.3**	**-0.5**
LAKA				S	**Sg**	**16 40 45.6**	**+0.1**
LAKA	**Lakka**	**1.52**	**53**	P	**Pb**	**16 40 24.3**	**-0.4**
KLV	**Kalavryta, Ach**	**1.53**	**62**	P	**Pb**	**16 40 24.9**	**0.0**
KLV	**Kalavryta, Ach**	**1.53**	**62**	P	**Pb**	**16 40 24.9**	**0.0**
KLV	**Kalavryta, Ach**	**1.53**	**62**	P	**Pb**	**16 40 24.5**	**-0.4**
VLX	**Vlachokerasia**	**1.54**	**88**	P	**Pb**	**16 40 25.2**	**+0.1**
VLX	**Vlachokerasia**	**1.54**	**88**	P	**Pb**	**16 40 25.2**	**+0.1**
EFP	**Efpalio**	**1.59**	**46**	P	**Pg**	**16 40 26.4**	**-0.8**
EFP	**Efpalio**	**1.59**	**46**	P	**Pg**	**16 40 26.4**	**-0.8**
EFP	**Efpalio**	**1.59**	**46**	P	**Pg**	**16 40 27.2**	**0.0**
GUR	**Goura**	**1.62**	**67**	P	**Pb**	**16 40 26.3**	**-0.2**
GUR				S	**Sg**	**16 40 48.5**	**-0.4**
GUR	**Goura**	**1.62**	**67**	P	**Pb**	**16 40 26.3**	**-0.2**
GUR				S	**Sg**	**16 40 48.5**	**-0.4**
GUR	**Goura**	**1.62**	**67**	P	**Pb**	**16 40 25.8**	**-0.8**
SERG	**Sergoula**	**1.67**	**49**	P	**Pb**	**16 40 27.3**	**0.0**
SERG	**Sergoula**	**1.67**	**49**	P	**Pb**	**16 40 27.3**	**0.0**
KALE	**Kalithea**	**1.71**	**51**	P	**Pb**	**16 40 28.0**	**0.0**
KALE	**Kalithea**	**1.71**	**51**	P	**Pb**	**16 40 27.7**	**-0.3**
KALE	**Kalithea**	**1.71**	**51**	P	**Pb**	**16 40 27.7**	**-0.3**
ANX	**Ano Chora**	**1.72**	**42**	P	**Pb**	**16 40 28.1**	**-0.1**
ANX	**Ano Chora**	**1.72**	**42**	P	**Pb**	**16 40 28.1**	**-0.1**
DSL	**Palaion Diasel**	**1.88**	**16**	P	**Pg**	**16 40 31.8**	**-0.8**
DSL	**Palaion Diasel**	**1.88**	**16**	P	**Pg**	**16 40 31.8**	**-0.8**
VLI	**Veliai**	**2.08**	**106**	P	**Pb**	**16 40 33.7**	**-0.6**
VLI	**Veliai**	**2.08**	**106**	P	**Pb**	**16 40 33.7**	**-0.6**
FINES	**FINESS Array B**	**24.40**	**7**	P	**P**	**16 45 14.4**	**-0.1**
	comp=E,1.9nm,0.9s,baz=202,slow=10,SNR=3.1						
NOA	**NORSAR Array B**	**24.44**	**349**	P	**P**	**16 45 14.8**	**-0.2**
	comp=E,1.0nm,0.8s,baz=171,slow=10.0,SNR=2.5						
TORD	**Torodi Ar. Bea**	**29.34**	**220**	P	P	16 46 02.5	+3.2
	comp=E,0.1nm,0.4s,baz=42,slow=8.1,SNR=2.6						
MKAR	**Makanchi Array**	**45.80**	**58**	P	**P**	**16 48 17.7**	**-0.4**
	comp=E,0.2nm,0.5s,baz=271,slow=7.6,SNR=4.1						
ZALV	**Zalesovo Beam**	**46.31**	**47**	P	**P**	**16 48 21.1**	**-0.8**
	comp=E,0.4nm,0.4s,baz=272,slow=8.5,SNR=2.8						

DHMR 08 16:44:02.4±1.2,11.92N×43.93E,h11km±114km,ML3.9, Ethiopia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ADEN	**Aden**	**1.34**	**50**	*i* P	Pb	16 44 27.5	0.0
ADEN				*i* S	Sg	16 44 45.7	+0.2
ADEN				AML	AML	16 44 53.6	
	comp=E,4μm,0.5s						
UDYN	**Al 'Udayn**	**2.04**	**1**	*i* P	Pn	16 44 38.1	+1.2
UDYN				*i* S	Sb	16 45 05.7	+0.7
BDHA	**Al Bayda'**	**2.60**	**38**	*i* P	Pn	16 44 46.8	+2.3
BDHA				*i* S	Sb	16 45 21.7	+0.6
BDHA				AML	AML	16 45 35.4	
	comp=E,606nm,0.8s						
DHBB	**Dhamar BB**	**2.68**	**10**	*i* P	Pb	16 44 48.2	-2.4
DHBB				*i* S	Sb	16 45 25.2	+1.7

*ISCJB **08** 16:46:18.6±0.5,35˚.25N±0˚.01×92˚.36W±0˚.02,h3km±3km, Error ellipse: s-maj=2.6km s-min=2.4km az=165.7*
*NEIC **08** 16:46:19.0,35˚.26N×92˚.38W,h6km,MN3.5,After CERI.*
NEIC Felt [III] at Greenbrier and [II] at Conway. Also felt at Batesville, Bauxite, Benton, Damascus, Eureka Springs, Fayetteville, Harrison, Hot Springs National Park, Kingston, Midway, Shirley, Springdale and West Memphis.

ISC 08 16:46:19.1±1.0,35.25N±0.02×92.38W±0.02,h5km±9km, n104,σ0s99/123,Arkansas

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
W41B	**Gary Mavity, V**	**0.13**	**127**	P	**Pg**	**16 46 21.9**	**+0.1**
W41B	baz=309			S	**Sg**	**16 46 24.0**	**+0.5**
	baz=309						
UALR	**University of**	**0.48**	**177**	*e*Pg	**Pg**	**16 46 28.9**	**+0.7**
W40A	**Ferguson Farm,**	**0.57**	**264**	P	**Pg**	**16 46 30.5**	**+0.5**
	baz=83,SNR=131						
V40A	**Witts Springs**	**0.66**	**327**	P	**Pg**	**16 46 31.9**	**+0.1**
	baz=146,SNR=795						
V40A				S	**Sg**	**16 46 41.0**	**+0.7**
	baz=146						
X40A	**Basin Creek Fa**	**0.85**	**206**	P	**Pg**	**16 46 35.7**	**+0.3**
	baz=26						
W39A	**Magazine**	**1.15**	**268**	P	**Pg**	**16 46 41.2**	**0.0**
	baz=86,SNR=95						
W39A				S	**Sn**	**16 46 57.1**	**-0.9**
	baz=86						
U40A	**Yellville**	**1.17**	**341**	P	**Pb**	**16 46 41.1**	**-0.6**
	baz=160,SNR=753						
V39A	**Pettigrew**	**1.19**	**300**	P	**Pb**	**16 46 41.6**	**-0.5**
	baz=119,SNR=486						
V39A				S	**Sg**	**16 46 57.3**	**+0.1**
	baz=119						
MIAR	**Mount Ida**	**1.21**	**235**	P	**Pb**	**16 46 42.2**	**-0.3**
	baz=54,SNR=477						
MIAR				S	**Sn**	**16 46 58.7**	**-0.8**
	baz=54						
MIAR	**Mount Ida**	**1.21**	**235**	*e*Pg	**Pn**	**16 46 41.7**	**-0.9**
MIAR				*e*Sg	**Sn**	**16 46 58.4**	**-1.1**
CCAR	**Cane Creek**	**1.42**	**159**	*e*Pn	**Pb**	**16 46 45.8**	**-0.3**
HBAR	**Harrisburg**	**1.44**	**77**	*e*Pn	**Pb**	**16 46 45.6**	**-0.7**
U39A	**Green Forest**	**1.44**	**322**	Pb	**Pb**	**16 46 45.7**	**-0.7**
	baz=141,SNR=215						
U39A				S	**Sg**	**16 47 04.8**	**-0.5**
	baz=141						
Y40A	**Okolona**	**1.44**	**211**	Pb	**Pb**	**16 46 46.3**	**-0.1**
	baz=31						
Y40A				S	**Sg**	**16 47 05.5**	**0.0**
	baz=31						
QUAR	**Qualls**	**1.46**	**74**	*e*Pn	**Pb**	**16 46 46.3**	**-0.5**
X39A	**Fountain Ranch**	**1.61**	**243**	Pb	**Pb**	**16 46 48.8**	**-0.5**
	baz=62,SNR=435						
HHAR	**Hobbs**	**1.63**	**309**	*e*Pn	**Pb**	**16 46 49.2**	**-0.5**
WLAR	**White Oak Lake**	**1.68**	**201**	*e*Pn	**Pb**	**16 46 49.8**	**-0.6**
V38A	**Canehill**	**1.76**	**291**	Pb	**Pb**	**16 46 51.3**	**-0.6**
	baz=110,SNR=256						
V38A				Sb	**Sg**	**16 47 14.9**	**-0.8**
	baz=110						
W38A	**Poteau**	**1.76**	**265**	Pb	**Pb**	**16 46 51.5**	**-0.4**
	baz=83,SNR=141						
W38A				Sb	**Sg**	**16 47 15.8**	**+0.1**
	baz=83						
T40A	**Mansfield**	**1.90**	**357**	Pb	**Pb**	**16 46 53.3**	**-0.9**
	baz=176,SNR=265						
T40A				Sb	**Sb**	**16 47 18.6**	**+0.4**
	baz=176						
SFTN	**Shelby Forest**	**1.93**	**86**	*e*Pn	**Pn**	**16 46 53.0**	**+0.4**
T39A	**Clever**	**1.94**	**336**	Pb	**Pb**	**16 46 54.1**	**-0.9**
	baz=155,SNR=213						
T39A				Sb	**Sb**	**16 47 20.0**	**+0.5**
	baz=155						
DLAR	**Dell**	**2.01**	**73**	*e*Pn	**Pb**	**16 46 55.0**	**-1.1**
U38A	**Gravette**	**2.02**	**307**	Pb	**Pb**	**16 46 55.1**	**-1.1**
	baz=125,SNR=64						
U38A				Sb	**Sb**	**16 47 22.2**	**+0.6**
	baz=125						
Z41A	**Richland Creek**	**2.02**	**190**	S	**Sb**	**16 47 20.0**	**-1.7**
	baz=9.9						
X38A	**Whitesboro**	**2.10**	**255**	Pb	**Pb**	**16 46 56.9**	**-0.7**
	baz=73,SNR=299						
X38A				Sb	**Sg**	**16 47 26.3**	**-0.1**
	baz=73						
Z40A	**Long Farm, Mag**	**2.16**	**203**	S	**Sn**	**16 47 23.4**	**+0.5**
	baz=23						
PBMO	**Poplar Bluff**	**2.19**	**45**	*e*Pn	**Pb**	**16 46 57.9**	**-1.4**
V37A	**Hulbert**	**2.34**	**286**	P	**Pn**	**16 46 59.2**	**+1.0**
	baz=105,SNR=67						
S40A	**Lebanon**	**2.34**	**358**	Pb	**Pb**	**16 47 00.2**	**-1.6**
	baz=178,SNR=64						
S40A				Sb	**Sb**	**16 47 30.8**	**-0.2**
	baz=178						
Y38A	**Idabel**	**2.35**	**236**	P	**Pn**	**16 46 59.2**	**+0.9**
	baz=55,SNR=11						
T38A	**Diamond**	**2.36**	**319**	P	**Pn**	**16 46 59.3**	**+0.9**
	baz=138,SNR=41						
WADM	**Wardell**	**2.37**	**61**	*e*Pn	**Pb**	**16 47 02.0**	**-0.3**
EBZ	**Ebenezer Churc**	**2.48**	**92**	*e*Pn	**Pn**	**16 47 00.5**	**+0.4**
W37B	**Quinton**	**2.50**	**268**	P	**Pn**	**16 47 01.4**	**+0.9**
	baz=86,SNR=105						
U37A	**Salina**	**2.51**	**298**	P	**Pn**	**16 47 01.3**	**+0.8**
	baz=116,SNR=40						
X37A	**Clayton**	**2.55**	**256**	Sb	**Sb**	**16 47 38.2**	**+1.2**
	baz=74						
OXF	**Oxford**	**2.55**	**106**	*e*Pn	**Pn**	**16 47 01.1**	**+0.1**
OXF				*e*Sn	**Sn**	**16 47 32.4**	**-0.1**
S39A	**Bolivar**	**2.55**	**343**	P	**Pn**	**16 47 02.2**	**+1.1**
	baz=162,SNR=122						
RELT	**Roellen**	**2.62**	**72**	*e*Pn	**Pb**	**16 47 04.2**	**-2.4**
S38A	**Stockton**	**2.67**	**333**	P	**Pn**	**16 47 03.7**	**+0.9**
	baz=152,SNR=47						
141A	**Papa Simpson,**	**2.68**	**190**	P	**Pn**	**16 47 03.7**	**+0.9**
	baz=9.2						
141A				S	**Sn**	**16 47 36.0**	**+0.3**
	baz=9.2						
T37A	**Cheneyville 18**	**2.78**	**313**	P	**Pn**	**16 47 05.0**	**+0.8**
	baz=132,SNR=18						
T37A				Sb	**Sb**	**16 47 43.6**	**+0.1**
	baz=132						
140A	**Cam and Jess,**	**2.79**	**201**	S	**Sn**	**16 47 38.4**	**0.0**
	baz=20						
TUL1	**Leonard**	**2.86**	**284**	P	**Pn**	**16 47 06.1**	**+0.8**
	baz=102,SNR=7.4						
TUL1	**Leonard**	**2.86**	**284**	*e*Pn	**Pn**	**16 47 05.1**	**-0.3**
TUL1				*e*Sn	**Sb**	**16 47 45.5**	**-0.4**
U36A	**Oologah**	**2.95**	**294**	P	**Pn**	**16 47 07.6**	**+1.0**
	baz=112,SNR=6.8						
U36A				Sb	**Sb**	**16 47 49.2**	**+0.6**
	baz=112						
V36A	**Jenks**	**2.96**	**281**	P	**Pn**	**16 47 07.4**	**+0.7**
	baz=99,SNR=27						
Y37A	**Hugo**	**2.96**	**246**	P	**Pn**	**16 47 08.0**	**+1.2**
	baz=64,SNR=8.3						
R40A	**Maddies Statio**	**3.03**	**2**	P	**Pn**	**16 47 08.7**	**+1.0**
	baz=182,SNR=28						
139A	**Bunkhouse Ranc**	**3.06**	**214**	P	**Pn**	**16 47 09.1**	**+0.9**
	baz=32						
139A				S	**Sn**	**16 47 45.2**	**-0.1**
	baz=32						
144A	**Alexander Plac**	**3.08**	**148**	P	**Pn**	**16 47 09.1**	**+0.7**
	baz=329						
R39A	**Chumby, Stover**	**3.10**	**350**	P	**Pn**	**16 47 09.7**	**+1.0**
	baz=170,SNR=40						
W36A	**Wetumka**	**3.15**	**269**	P	**Pn**	**16 47 10.0**	**+0.6**
	baz=87						
R38A	**Fenwick Farm,**	**3.17**	**338**	P	**Pn**	**16 47 10.7**	**+1.0**
	baz=157						
S37A	**Fort Scott**	**3.19**	**322**	P	**Pn**	**16 47 10.7**	**+0.9**
	baz=141						
145A	**Houston Renfro**	**3.34**	**142**	P	**Pn**	**16 47 12.9**	**+1.0**
	baz=323						
X36A	**Centrahoma**	**3.34**	**259**	P	**Pn**	**16 47 12.9**	**+1.0**
	baz=77,SNR=14						
T36A	**Boggs Farm, Ca**	**3.36**	**303**	P	**Pn**	**16 47 13.2**	**+1.0**
	baz=122,SNR=17						
Z37A	**Pogue Cattle C**	**3.38**	**234**	P	**Pn**	**16 47 13.5**	**+1.0**
	baz=52						
244A	**Avery, Jackson**	**3.50**	**156**	P	**Pn**	**16 47 15.4**	**+1.3**
	baz=337						
PLAL	**Pickwick Lake**	**3.54**	**93**	*e*Pn	**Pn**	**16 47 14.9**	**+0.2**
S36A	**Lake Cedric, C**	**3.58**	**315**	P	**Pn**	**16 47 16.3**	**+1.1**
	baz=133						
239A	**Gary**	**3.67**	**209**	P	**Pn**	**16 47 17.4**	**+0.9**
	baz=28						
V35A	**Meyer Ranch, C**	**3.67**	**279**	P	**Pn**	**16 47 17.4**	**+0.8**
	baz=97,SNR=8.6						
W35A	**Tecumseh**	**3.68**	**270**	P	**Pn**	**16 47 17.5**	**+0.8**
	baz=87,SNR=15						
T35A	**Sooner Cattle**	**3.74**	**298**	P	**Pn**	**16 47 18.3**	**+0.9**
	baz=115,SNR=17						
Q40A	**Laux Farm, Aux**	**3.74**	**4**	P	**Pn**	**16 47 18.4**	**+0.9**
	baz=184						
WVT	**Waverly**	**3.80**	**75**	*e*Pn	**Pn**	**16 47 18.7**	**+0.4**
Q39A	**Willow Grove F**	**3.81**	**353**	P	**Pn**	**16 47 19.5**	**+1.0**
	baz=173,SNR=9.5						
Q38A	**Cooks Store, C**	**3.83**	**345**	P	**Pn**	**16 47 19.7**	**+1.0**
	baz=165						
R36A	**Gordon, Harris**	**3.96**	**322**	P	**Pn**	**16 47 21.4**	**+0.9**
	baz=140						
NATX	**Nacogdoches**	**3.97**	**209**	*e*Pn	**Pn**	**16 47 22.3**	**+1.7**
V34A	**Guthrie**	**4.23**	**279**	*e*Pn	**Pn**	**16 47 25.1**	**+0.9**
V34A				*e*Sn	**Sb**	**16 48 20.4**	**-5.0**
P40A	**Paris**	**4.28**	**3**	P	**Pn**	**16 47 25.6**	**+0.7**
	baz=184,SNR=31						
U34A	**Anderson Ranch**	**4.35**	**287**	*e*Pn	Pn	16 47 29.2	+3.3
W34A	**Bridge Creek,**	**4.42**	**271**	*e*Pn	**Pn**	**16 47 27.7**	**+0.9**
Q36A	**Arnold C. Orve**	**4.45**	**327**	P	**Pn**	**16 47 28.1**	**+1.0**
	baz=146,SNR=7.2						
P38A	**Dawn**	**4.46**	**348**	P	**Pn**	**16 47 28.6**	**+1.3**
	baz=168,SNR=11						
P37A	**Lathrop**	**4.60**	**341**	P	**Pn**	**16 47 30.3**	**+1.0**
	baz=160,SNR=9.5						
O40A	**La Belle**	**4.88**	**5**	P	**Pn**	**16 47 33.8**	**+0.8**
	baz=185,SNR=11						
P36A	**Good Intent, A**	**4.91**	**334**	P	**Pn**	**16 47 34.6**	**+1.1**
	baz=152,SNR=16						
R34A	**Isabella, Hill**	**4.95**	**309**	P	**Pn**	**16 47 34.8**	**+0.6**
	baz=126,SNR=8.7						
LRAL	**Lakeview Retre**	**4.98**	**115**	*e*Pn	**Pn**	**16 47 35.0**	**+0.5**
KSU1	**Kansas State U**	**5.12**	**320**	*e*Pn	Pn	16 47 39.9	+3.6
	100nm,0.7s						
KSU1				*e*Sn	Sn	16 48 41.9	+6.1
WMOK	**Wichita Mounta**	**5.28**	**266**	*e*Pn	**Pn**	**16 47 40.1**	**+1.4**
WMOK				*e*Sn	Sn	16 48 45.6	+5.7
P34A	**Walnut Farm, R**	**5.56**	**322**	P	**Pn**	**16 47 42.9**	**+0.4**
	baz=139,SNR=11						
W32A	**Sentinel**	**5.63**	**271**	P	**Pn**	**16 47 44.1**	**+0.7**
	baz=87,SNR=8.8						
Z33A	**Whitaker Ranch**	**5.64**	**251**	P	**Pn**	**16 47 44.3**	**+0.7**
	baz=68,SNR=8.8						
WCI	**Wyandotte Cave**	**5.72**	**57**	*e*Pn	Pn	16 47 48.1	+3.5
O35A	**Humboldt**	**5.73**	**332**	P	**Pn**	**16 47 45.7**	**+0.9**
	baz=150,SNR=12						
335A	**Moody**	**5.79**	**228**	P	**Pn**	**16 47 46.3**	**+0.6**
	baz=45,SNR=8.0						
334A	**Lometa**	**6.27**	**233**	P	**Pn**	**16 47 52.5**	**+0.2**
	baz=50,SNR=11						
O33A	**Hebron**	**6.34**	**321**	P	**Pn**	**16 47 53.9**	**+0.7**
	baz=138,SNR=8.7						
CPCT	**Cooper Cave**	**6.42**	**86**	*e*Pn	**Pn**	**16 47 55.2**	**+0.9**
SFIN	**Lafayette**	**6.61**	**38**	P	**Pn**	**16 47 57.4**	**+0.6**
	baz=221,SNR=5.6						
SCIA	**State Center**	**6.68**	**355**	*e*Pn	Pn	16 48 02.4	+4.6
	76nm,0.9s						
AMTX	**Amarillo**	**7.64**	**270**	*e*Pn	**Pn**	**16 48 11.1**	**0.0**
AMTX				*e*Sn	**Sn**	**16 49 41.5**	**+3.4**
ECSD	**EROS Data Cent**	**9.08**	**340**	*e*Pn	**Pn**	**16 48 30.8**	**0.0**
TX31	**Lajitas Ar. Si**	**11.23**	**241**	*e*Pn	**Pn**	**16 48 59.3**	**-1.0**
MNTX	**Cornudas Mount**	**11.42**	**256**	P	**Pn**	**16 49 02.3**	**-0.6**
	baz=68,SNR=6.7						
MNTX	**Cornudas Mount**	**11.42**	**256**	*e*Pn	**Pn**	**16 49 02.6**	**-0.4**
ISCO	**Idaho Springs**	**11.45**	**297**	*e*Pn	**Pn**	**16 49 03.3**	**-0.2**
ISCO				*e*Sn	Sn	16 51 01.5	-10

*ISCJB **08** 16

WRA	**Warramunga Arr**	**14.53**	**157**	Pn	Pn	17 00 20.4	-1.4
	0.1nm,0.3s,baz=336,slow=13,SNR=7.4							
ASAR	**Alice Springs**	**17.85**	**164**	P	P	17 01 05.5	+0.1
	0.1nm,0.3s,baz=345,slow=9.3,SNR=8.9							
PMG	**Port Moresby**	**18.74**	**100**	LR	LR	17 10 47.5		
	comp=Z,67nm,18.2s,baz=134,slow=44							
MKAR	**Makanchi Array**	**66.98**	**327**	P	P	17 07 49.4	0.0	
	0.1nm,0.4s,baz=115,slow=5.5,SNR=2.8							

NIED ***08*** *17:00:00,38˚.30N×141˚.90E,h56km,Mw3.8 Best double couple: M₀5.29000×10¹⁴ NP1:φ₁69.00000°,δ73.00000°, λ-17.00000°. NP2:φ₂264.00000°,δ74.00000°, λ-162.00000°.*

IDC ***08*** *17:00:30.6±3.9,38˚.54N×142˚.51E,h0km,mb3.7/3, mb1 4.0/6,mb1mx3.6/46,mbtmp4.1/6,ML3.9/3,Error ellipse: s-maj=80.5km s-min=26.4km az=83.0*

NEIC ***08*** *17:00:35.3±1.0,38˚.47N×142˚.55E,h35km,mb4.1/3,Error ellipse: s-maj=17.9km s-min=7.2km az=90.0*

ISCJB ***08*** *17:00:38.5±0.9,38˚.24N±0˚.03×142˚.06E±0˚.10,h70km±6km, mb3.8/5,Error ellipse: s-maj=12.7km s-min=5.7km az=175.5*

JMA ***08*** *17:00:41.3±0.1,38˚.31N×141˚.88E,h65km±1km,M3.6*

JMA Felt I J1.

ISC 08 17:00:38.7±1.5,38˚27N±0˚.05×142˚2E±0˚.1,h54km±13km, n31,σt¹ˢ23/41,mb3.7/5,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**0.65**	**287**	P		**Pn**	**17 00 53.2**	**+1.2**
JIO				S		**Sn**	**17 01 01.5**	**-0.2**
JMM	**Marumori**	**1.14**	**250**	P		**Pn**	**17 00 59.0**	**+0.6**
JMM				S		**Sn**	**17 01 11.8**	**-1.3**
JOU	**Okura**	**1.17**	**275**	P		**Pn**	**17 00 59.3**	**+0.5**
JOU				S		**Sn**	**17 01 12.5**	**-1.3**
JFK	**Kawauchi**	**1.35**	**229**	P		**Pn**	**17 01 02.7**	**+1.4**
JFK				S		**Sn**	**17 01 18.1**	**-0.1**
JOM	**Ohasama**	**1.37**	**331**	P		**Pn**	**17 01 03.1**	**+1.5**
JOM				S		**Sn**	**17 01 19.2**	**+0.5**
JYK	**Kaneyama**	**1.54**	**295**	P		**Pn**	**17 01 04.4**	**+0.5**
JYK				eS		**Sn**	**17 01 21.7**	**-1.1**
JFT	**Otama**	**1.62**	**243**	S		**Sn**	**17 01 23.7**	**-0.9**
JRG	**Rokugo**	**1.63**	**314**	P		**Pn**	**17 01 06.1**	**+1.0**
JRG				S		**Sn**	**17 01 25.0**	**+0.1**
JYS	**Shirataka**	**1.64**	**269**	P		**Pn**	**17 01 05.8**	**+0.6**
JYS				S		**Sn**	**17 01 24.3**	**-0.9**
MJAR	**Matsushiro Arr**	**3.58**	**242**	Pn		**Pn**	**17 01 32.6**	**+0.9**
	1.7nm,0.3s,baz=57,slow=10,SNR=13							
MAJO	**Matsushiro**	**3.58**	**242**	ePn		**Pn**	**17 01 34.2**	**+2.5**
MAT	**Matsushiro**	**3.58**	**242**	P		**Pn**	**17 01 34.1**	**+2.4**
MAT				eS		**Sn**	**17 02 16.8**	**+4.0**
INU	**Inuyama**	**5.04**	**236**	ePn		**Pn**	**17 01 53.7**	**+1.9**
JHJ2	**Mitsune**	**5.49**	**201**	ePn		**Pn**	**17 01 58.8**	**+1.0**
JHJ	**Hachijo jima 2**	**5.49**	**201**	Pn		**Pn**	**17 01 58.4**	**+0.5**
	9.6nm,0.3s,baz=320,slow=23,SNR=19							
JHJ				Sn		**Sn**	**17 02 58.8**	**-0.9**
	9.8nm,0.3s,baz=79,slow=15,SNR=4.5							
USRK	**Ussuriysk Ar.**	**9.67**	**311**	Pn		**Pn**	**17 02 56.2**	**+1.1**
	0.3nm,0.3s,baz=118,slow=14,SNR=7.1							
CBIJ	**Chichi jima**	**11.14**	**180**	ePn		**Pn**	**17 03 14.6**	**-0.7**
JCJ	**Chichijima**	**11.14**	**180**	Pn		**Pn**	**17 03 14.6**	**-0.8**
	3.7nm,0.3s,baz=100,slow=19,SNR=4.8							
HIA	**Hailar**	**19.48**	**312**	eP		**P**	**17 05 00.3**	**-0.7**
	2.9nm,0.7s							
SONA0	**Songino Array**	**27.60**	**302**	eP		**P**	**17 06 19.7**	**-1.2**
	12nm,1.9s							
SONM	**Songino Array**	**27.60**	**302**	P		**P**	**17 06 19.7**	**-1.2**
	0.4nm,0.4s,baz=91,slow=8.6,SNR=2.0							
ZAA0	**Zalesovo Array**	**41.52**	**311**	eP		**P**	**17 08 19.8**	**-0.6**
ZAA1	**Zalesovo Array**	**41.52**	**311**	eP		**P**	**17 08 20.0**	**-0.4**
ZALV	**Zalesovo Beam**	**41.52**	**311**	P		**P**	**17 08 20.0**	**-0.4**
	0.7nm,0.5s,baz=82,slow=7.2,SNR=5.8							
ZALV	**Zalesovo Beam**	**41.52**	**311**	P		**P**	**17 08 20.0**	**-0.4**
MK01	**Makanchi Array**	**43.97**	**301**	eP		**P**	**17 08 40.7**	**+0.4**
MK31	**Makanchi Array**	**43.97**	**301**	eP		**P**	**17 08 40.5**	**+0.1**
MK32	**Makanchi Array**	**43.97**	**301**	eP		**P**	**17 08 40.4**	**0.0**
MKAR	**Makanchi Array**	**43.97**	**301**	P		**P**	**17 08 40.4**	**0.0**
	0.8nm,0.7s,baz=81,slow=8.5,SNR=8.8							
MKAR	**Makanchi Array**	**43.97**	**301**	eP		**P**	**17 08 40.2**	**-0.2**
KURK	**Kurchatov**	**45.64**	**307**	eP		**P**	**17 08 54.1**	**+0.5**
	8.2nm,1.9s							

JMA ***08*** *17:01:01.6±0.1,24˚.25N×122˚.65E,h49km±2km,M2.9*

TAP ***08*** *17:01:02.1,24˚.15N×122˚.54E,h12km±1km,ML3.4,D*

ISC 08 17:00:59.8±1.2,24˚13N±0˚.03×122˚68E±0˚.02,h20km±5km, n53,σt¹ˢ73/82,2C,Taiwan region

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
JYNG	**Yonagunijimaku**	**0.41**	**37**	P		**Pn**	**17 01 11.1**	**+0.5**
JYNG				eS		**Sn**	**17 01 17.6**	**-0.1**
YOJ	**Yonaguni jima**	**0.45**	**42**	P		**Pn**	**17 01 11.6**	**+0.3**
YOJ				S		**Sn**	**17 01 18.5**	**-0.3**
TWC	**Suao**	**0.90**	**303**	P		**Pg**	**17 01 17.2**	**-0.1**
	baz=306							
TWC				eS		**Sb**	**17 01 27.9**	**-0.3**
	baz=306							
ENA	**Nanau**	**0.91**	**290**	⇑ *i*P		**Pn**	**17 01 17.8**	**+0.3**
	baz=290							
ENA				eS		**Sn**	**17 01 30.6**	**+0.6**
	baz=290							
IRIF	**Iriomote-Funau**	**0.98**	**78**	P		**Pg**	**17 01 19.1**	**+0.1**
IRIF				S		**Sn**	**17 01 32.7**	**+0.8**
TWD	**Chiawan**	**0.99**	**268**	P		**Pg**	**17 01 19.3**	**+0.2**
	baz=265							
TWD				eS		**Sg**	**17 01 32.0**	**-0.1**
	baz=265							
HATJ	**Hateruma jima**	**1.03**	**94**	P		**Pg**	**17 01 21.6**	**+1.6**
ILA	**Ilan**	**1.06**	**307**	eP		**Pg**	**17 01 20.8**	**+0.4**
	baz=310							
ILA				S		**Sn**	**17 01 33.9**	**+0.1**
	baz=310							
TWB1	**Santiao Chiao**	**1.08**	**325**	eP		**Pb**	**17 01 19.0**	**-0.9**
	baz=330							
TWE	**Neicheng**	**1.09**	**303**	P		**Pn**	**17 01 20.5**	**+0.5**
	baz=305							
TWE				eS		**Sb**	**17 01 34.2**	**+0.2**
	baz=305							
ENTT	**Nioudou**	**1.14**	**297**	⇑ *i*P		**Pg**	**17 01 21.5**	**-0.3**
	baz=298							
ENTT				S		**Sn**	**17 01 35.9**	**+0.2**
	baz=298							
ESL	**Shilin**	**1.18**	**255**	P		**Pb**	**17 01 21.9**	**+0.4**
	baz=251							
ESL				eS		**Sn**	**17 01 37.2**	**+0.5**
	baz=251							
JKRS	**Kuro-shima**	**1.22**	**84**	P		**Pg**	**17 01 23.2**	**-0.3**
JKRS				S		**Sg**	**17 01 39.6**	**0.0**
NNS	**Nan Shan**	**1.23**	**285**	P		**Pb**	**17 01 22.8**	**+0.2**
	baz=285							
NNS				eS		**Sb**	**17 01 37.9**	**-0.1**
	baz=285							
NWF	**Wu-fen Shan**	**1.25**	**319**	eP		**Pn**	**17 01 21.7**	**-0.5**
	baz=323							
WHF	**Hehuan Shan**	**1.29**	**271**	P		**Pb**	**17 01 23.8**	**+0.1**
	baz=269							
TWA	**Mucha**	**1.31**	**311**	eP		**Pg**	**17 01 25.2**	**0.0**
	baz=313							
NSK	**Sanguang**	**1.32**	**295**	P		**Pb**	**17 01 24.1**	**0.0**
	baz=295							
NSK				eS		**Sb**	**17 01 40.8**	**+0.2**
	baz=295							
JIJ	**Ishigaki jima**	**1.36**	**80**	P		**Pn**	**17 01 24.1**	**+0.4**
JIJ				S		**Sn**	**17 01 40.8**	**-0.4**
TWT	**Tachien**	**1.38**	**276**	eP		**Pg**	**17 01 26.2**	**-0.3**
	baz=274							
EHY	**Hungye**	**1.39**	**244**	P		**Pb**	**17 01 25.4**	**+0.3**
	baz=239							
EHY				S		**Sb**	**17 01 43.3**	**+1.0**
	baz=239							
TWF1	**Yuli**	**1.48**	**239**	P		**Pb**	**17 01 27.0**	**+0.3**
	baz=234							
TWF1				eS		**Sb**	**17 01 45.4**	**+0.3**
	baz=234							
JISG	**Ishigakijimahi**	**1.56**	**73**	P		**Pn**	**17 01 26.5**	**0.0**
JISG				S		**Sn**	**17 01 45.4**	**-0.7**
CHKT	**Chengkung**	**1.58**	**230**	eP		**Pb**	**17 01 27.9**	**-0.5**
	baz=225							
CHKT				eS		**Sn**	**17 01 46.7**	**+0.2**
	baz=225							
PCYT	**Pengchaiyu**	**1.59**	**340**	eP		**Pb**	**17 01 29.5**	**+0.8**
	baz=344							
PCYT				eS		**Sg**	**17 01 49.9**	**-1.6**
	baz=344							
NSTT	**Nanjuang**	**1.61**	**289**	eP		**Pb**	**17 01 28.7**	**-0.2**
	baz=288							
SMLT	**Sun Moon Lake**	**1.64**	**262**	P		**Pb**	**17 01 29.5**	**0.0**
	baz=259							
SMLT				eS		**Sb**	**17 01 49.4**	**-0.5**
	baz=259							
TYC	**Yuchr**	**1.68**	**263**	eP		**Pb**	**17 01 29.9**	**-0.1**
	baz=260							
YUS	**Yu-Shan**	**1.70**	**249**	eP		**Pb**	**17 01 31.1**	**+0.3**
	baz=245							
YUS				eS		**Sb**	**17 01 51.3**	**-0.6**
	baz=245							
TWQ1	**Liyutan**	**1.75**	**278**	P		**Pb**	**17 01 31.2**	**-0.1**
	baz=276							
ELDTW	**Lidau**	**1.78**	**239**	eP		**Pb**	**17 01 31.1**	**-0.9**
	baz=235							
ELDTW				eS		**Sn**	**17 01 52.3**	**+0.5**
	baz=235							
ALS	**Alishan**	**1.82**	**251**	eP		**Pb**	**17 01 33.0**	**+0.3**
	baz=247							
WNT	**Mingjian**	**1.84**	**263**	eP		**Pb**	**17 01 33.4**	**+0.6**
	baz=260							
CHN5	**Tsauling**	**1.90**	**254**	eP		**Pb**	**17 01 34.2**	**+0.3**
	baz=252							
CHN5				eS		**Sb**	**17 01 57.5**	**+0.1**
	baz=252							
JTJ	**Tarama**	**1.92**	**74**	P		**Pn**	**17 01 32.1**	**+0.7**
JTJ				S		**Sn**	**17 01 54.6**	**-0.4**
TWG	**Pinlang**	**1.96**	**229**	eP		**Pb**	**17 01 34.2**	**-0.7**
	baz=225							
WGK	**Gukeng**	**1.98**	**258**	eP		**Pb**	**17 01 35.2**	**0.0**
	baz=255							
STYT	**Tauyuan**	**2.00**	**242**	eP		**Pb**	**17 01 35.4**	**-0.3**
	baz=238							
CHN4	**Tsaushan**	**2.06**	**248**	eP		**Pb**	**17 01 37.3**	**+0.7**
	baz=245							
CHN4				eS		**Sb**	**17 02 03.1**	**+1.4**
	baz=245							
WTP	**Ta-pu**	**2.08**	**246**	eP		**Pb**	**17 01 37.0**	**-0.1**
	baz=242							
TWK	**Hsinying**	**2.18**	**247**	eP		**Pb**	**17 01 38.6**	**-0.1**
	baz=244							
CHN1	**Nanshi**	**2.18**	**245**	eP		**Pb**	**17 01 38.7**	**0.0**
	baz=242							
SGST	**Jiashian**	**2.18**	**242**	eP		**Pb**	**17 01 38.9**	**+0.2**
	baz=239							
ECL	**Taimali**	**2.19**	**226**	eP		**Pn**	**17 01 36.9**	**+1.7**
	baz=223							
WSF	**Szhu**	**2.30**	**258**	P		**Pb**	**17 01 39.2**	**-1.5**
	baz=256							
WSF				eS		**Sb**	**17 02 07.6**	**-1.0**
	baz=256							
LAY	**Lan-yu**	**2.32**	**207**	eP		**Pb**	**17 01 39.4**	**-1.7**
	baz=203							
SSD	**Sandimen**	**2.33**	**234**	eP		**Pb**	**17 01 40.6**	**-0.5**
	baz=231							
JIRB	**Irabujima**	**2.38**	**72**	P		**Pn**	**17 01 38.5**	**+0.7**
JIRB				eS		**Sn**	**17 02 06.4**	**0.0**
EAST	**Anshuo**	**2.42**	**224**	eP		**Pb**	**17 01 41.2**	**-1.5**
	baz=221							
JIKM	**Ikemajima**	**2.47**	**71**	P		**Pn**	**17 01 39.9**	**+0.9**
JIKM				S		**Sn**	**17 02 08.0**	**-0.7**
JOGS	**Gusukube**	**2.57**	**75**	P		**Pn**	**17 01 42.0**	**+1.7**
SCZT	**Fangliau**	**2.57**	**228**	eP		**Pb**	**17 01 45.2**	**-0.1**
	baz=224							
TSEB	**Hengchuen, Pin**	**2.75**	**217**	eP		**Pb**	**17 01 46.6**	**-1.8**
	baz=214							
TSEB				eS		**Sb**	**17 02 19.5**	**-2.2**
	baz=214							

ISCJB ***08*** *17:05:56.4±0.3,5˚.47S±0˚.03×147˚.23E±0˚.04,h195km, mb4.5/37,Error ellipse: s-maj=5.7km s-min=4.6km az=24.2*

IDC ***08*** *17:05:56.9±1.3,5˚.52S×147˚.26E,h188km±11km,mb4.0/17, mb1 4.2/21,mb1mx4.1/32,mbtmp4.5/21,MS3.1/1, Ms1 3.1/1,ms1mx2.5/28,Error ellipse: s-maj=12.5km s-min=8.8km az=94.0*

NEIC ***08*** *17:05:58.0±0.6,5˚.53S×147˚.23E,h201km±5km,mb4.8/26, Error ellipse: s-maj=6.7km s-min=4.9km az=100.0*

DJA ***08*** *17:05:58.1±1.0,5˚S±6˝×14˚7E±˚,h183km±7km,M4.8/10, mb4.4/10,MLv4.9/1*

ISC 08 17:05:57.6±0.4,5˚58S±0˚.05×147˚19E±0˚.06,h195km,n89, σt¹ˢ17/98,mb4.5/37,Eastern New Guinea region

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
MANU	**Manus Island**	**3.52**	**3**	ePn		**Pn**	**17 06 55.0**	**+1.8**
PMG	**Port Moresby**	**3.80**	**180**	P		**Pn**	**17 06 56.0**	**-0.7**
	114nm,0.3s,baz=335,slow=6.2,SNR=605							
PMG				S		**Sn**	**17 07 38.7**	**-4.6**
	96nm,0.3s,baz=211,slow=19,SNR=10.0							
RABL	**Rabaul**	**5.14**	**75**	ePn		**Pn**	**17 07 13.7**	**0.0**
JAY	**Jayapura**	**7.15**	**295**	P		**Pn**	**17 07 38.7**	**-1.1**
	0.3nm,0.3s,baz=121,slow=21,SNR=21							
JAY				S		**Sn**	**17 08 58.8**	**-2.1**
	0.3nm,0.3s,baz=142,slow=19,SNR=3.1							
JAY	**Jayapura**	**7.15**	**295**	P		**Pn**	**17 07 38.7**	**-1.1**
GENI	**Genyem**	**7.61**	**293**	P		**Pn**	**17 07 45.8**	**0.0**
COEN	**Coen**	**9.22**	**205**	ePn		**Pn**	**17 08 08.6**	**+1.8**
HNR	**Honiara**	**13.21**	**108**	P		**Pn**	**17 08 57.3**	**-0.7**
	24nm,0.3s,baz=88,slow=1.5,SNR=4.5							
CTA	**Charters Tower**	**14.45**	**184**	P		**P**	**17 09 15.3**	**+0.5**
	1.8nm,0.3s,baz=8.3,slow=12,SNR=21							
CTAO	**Charters Tower**	**14.45**	**184**	ePn		**P**	**17 09 15.5**	**+0.7**
SWI	**Sorong**	**16.58**	**286**	P		**Pn**	**17 09 39.4**	**+0.2**
	12nm,1.2s							
BNDI	**Bandanaira**	**17.25**	**273**	P		**Pn**	**17 09 48.3**	**+1.1**
	164nm,1.9s							
MTN	**Manton Dam**	**17.41**	**244**	eP		**Pn**	**17 09 49.0**	**-0.1**
	23nm,0.4s							
WRAB	**Tennant Creek**	**18.96**	**220**	eP		**P**	**17 10 05.6**	**+1.3**
	25nm,0.8s							
WRAB				eS		**S**	**17 13 29.9**	**+0.6**
WB2	**Warramunga Arr**	**18.97**	**220**	eP		**P**	**17 10 05.7**	**+1.3**
	23nm,0.8s							
WB2				eS		**S**	**17 13 30.2**	**+0.7**
WR1	**Warramunga Arr**	**18.98**	**220**	eP		**P**	**17 10 05.3**	**+0.9**
	26nm,0.8s							
WR1				eS		**S**	**17 13 28.7**	**-0.9**
WR1				ePcP		**PcP**	**17 14 21.7**	**+0.3**
WRA	**Warramunga Arr**	**18.98**	**220**	P		**P**	**17 10 05.3**	**+0.8**
	3.8nm,0.3s,baz=45,slow=12,SNR=200							
WRA				S		**S**	**17 13 28.7**	**-0.9**
	0.5nm,0.3s,baz=41,slow=21,SNR=7.0							
WRA				PcP		**PcP**	**17 14 21.7**	**+0.2**
	0.2nm,0.3s,baz=30,slow=1.9,SNR=4.8							
WRA				ScP		**ScP**	**17 17 39.2**	**+0.3**
	baz=42,slow=2.6,SNR=2.9							
WRA				LR		LR	17 19 07.7	
	comp=Z,66nm,21.6s,baz=145,slow=42							
EIDS	**Eidsvold**	**20.03**	**170**	eP		**P**	**17 10 13.3**	**-2.3**
	34nm,1.3s							
AS01	**Alice Springs**	**22.04**	**214**	eP		**P**	**17 10 37.9**	**+1.2**
AS31	**Alice Springs**	**22.07**	**214**	eP		**P**	**17 10 38.3**	**+1.2**
	13nm,1.0s							
ASAR	**Alice Springs**	**22.07**	**214**	P		**P**	**17 10 38.1**	**+1.1**
	13nm,0.5s,baz=50,slow=8.4,SNR=215							
ASAR				S		**S**	**17 14 28.3**	**+2.1**
	8.3nm,0.7s,baz=40,slow=22,SNR=12							
ASAR				ScP		**ScP**	**17 17 47.8**	**+1.4**
	1.0nm,0.8s,baz=53,slow=3.3,SNR=4.9							
SOEI	**Soe**	**23.09**	**258**	P		**P**	**17 10 47.5**	**+1.0**
	35nm,0.8s							
SOEI	**Soe**	**23.09**	**258**	eP		**P**	**17 10 47.5**	**+1.0**
	30nm,1.0s							
BATI	**Baumata**	**23.75**	**257**	P		**P**	**17 10 54.8**	**+2.4**
	29nm,0.7s,baz=92,slow=23,SNR=16							
BATI	**Baumata**	**23.75**	**257**	P		**P**	**17 10 54.3**	**+1.9**
FITZ	**Fitzroy Crossi**	**24.45**	**238**	P		**P**	**17 10 59.4**	**+0.7**
	20nm,0.6s,baz=73,slow=8.2,SNR=33							
FITZ	**Fitzroy Crossi**	**24.45**	**238**	eP		**P**	**17 10 59.5**	**+0.7**
	23nm,0.6s							
DZM	**Mont Dzumac**	**24.81**	**133**	P		**P**	**17 11 01.0**	**-1.0**
	7.2nm,0.8s,baz=124,slow=22,SNR=8.6							
MMRI	**Maumere**	**24.94**	**262**	P		**P**	**17 11 02.3**	**-0.9**
MMRI	**Maumere**	**24.94**	**262**	eP		**P**	**17 11 02.3**	**-0.9**
	34nm,0.5s							
DAV	**Davao City (W)**	**24.96**	**300**	P		**P**	**17 11 02.7**	**-0.7**
	326nm,0.4s,baz=66,slow=9.7,SNR=3.8							
DAV	**Davao City (W)**	**24.96**	**300**	eP		**P**	**17 11 02.7**	**-0.7**
	494nm,0.4s							
ARMA	**Armidale**	**25.06**	**171**	eP		**P**	**17 11 04.0**	**-0.2**
	68nm,2.0s							
APSI	**Ampana**	**25.91**	**279**	P		**P**	**17 11 13.6**	**+1.6**
STKA	**Stephens Creek**	**26.68**	**191**	P		**P**	**17 11 18.5**	**-0.1**
	1.4nm,0.7s,baz=3.4,slow=7.3,SNR=5.0							
STKA	**Stephens Creek**	**26.68**	**191**	eP		**P**	**17 11 19.1**	**+0.5**
	1.8nm,0.8s							
CBIJ	**Chichi jima**	**32.84**	**352**	eP		**P**	**17 12 13.1**	**+0.2**
	256nm,1.2s							
JAGI	**Jajag, Banyuwa**	**32.91**	**263**	eP		**P**	17 12 10.6	-3.2
	24nm,1.3s							
UGM	**Wanagama**	**36.48**	**264**	eP		**P**	**17 12 44.4**	**-0.1**
	166nm,1.3s							
JOW	**Kunigami**	**37.06**	**331**	eP		**P**	**17 12 50.1**	**+1.0**
	134nm,2.0s							
OUZ	**Omahuta**	**38.25**	**144**	eP		**P**	**17 13 00.2**	**+1.3**
	97nm,1.9s							
SSLB	**Suanglung**	**38.82**	**320**	eP		**P**	**17 13 04.5**	**+0.6**
	96nm,2.0s							
CISI	**Cisompet, Garu**	**39.16**	**265**	eP		**P**	**17 13 05.8**	**-1.0**
	23nm,0.9s							
TNG	**Tangerang**	**40.33**	**267**	P		P	17 13 23.5	+7.0
TNG				P		P	17 13 23.4	+6.9
KS15	**Wonju Array Si**	**46.43**	**339**	eP		**P**	**17 14 03.6**	**-1.2**
KS01	**Wonju Array Si**	**46.46**	**339**	eP		**P**	**17 14 02.3**	**-2.7**
USRK	**Ussuriysk Ar.**	**51.41**	**346**	P		**P**	**17 14 43.0**	**+0.5**
	1.1nm,0.5s,baz=179,slow=8.8,SNR=7.2							
CMAR	**Chiang Mai Arr**	**53.22**	**298**	P		**P**	**17 14 56.4**	**+0.1**
	0.6nm,0.7s,baz=123,slow=5.5,SNR=4.9							
PETK	**Petropavlovsk-**	**59.14**	**7**	P		**P**	**17 15 40.3**	**+2.8**
	2.2nm,0.8s,baz=168,slow=7.5,SNR=3.4							
PEA1	**Petropavlovsk-**	**59.14**	**7**	eP		**P**	**17 15 40.3**	**+2.7**
SONA0	**Songino Array**	**64.13**	**331**	eP		**P**	**17 16 11.9**	**+0.6**
	3.9nm,1.0s							
SONM	**Songino Array**	**64.13**	**331**	P		**P**	**17 16 11.9**	**+0.6**
	3.8nm,0.9s,baz=142,slow=7.4,SNR=8.0							
SONA1	**Songino Array**	**64.14**	**331**	eP		**P**	**17 16 11.0**	**-0.2**
MA2	**Magadan**	**65.01**	**2**	P		**P**	**17 16 17.1**	**+0.7**
	5.1nm,0.6s,baz=207,slow=5.1,SNR=5.6							
SEY	**Seynhan**	**68.43**	**3**	P		**P**	**17 16 38.6**	**+0.5**
	3.2nm,0.8s,baz=162,slow=5.1,SNR=12							
VNDA	**Vanda**	**72.32**	**177**	P		**P**	**17 17 02.0**	**+0.5**
	5.4nm,0.6s,baz=334,slow=6.7,SNR=51							
VNDA	**Vanda**	**72.32**	**177**	eP		**P**	**17 17 01.9**	**+0.5**
	6.1nm,0.7s							
MK01	**Makanchi Array**	**77.28**	**320**	eP		**P**	**17 17 30.2**	**-0.3**
MK31	**Makanchi Array**	**77.30**	**320**	eP		**P**	**17 17 30.7**	**+0.1**
MK32	**Makanchi Array**	**77.30**	**320**	eP		**P**	**17 17 30.0**	**-0.5**
MKAR	**Makanchi Array**	**77.30**	**320**	P		**P**	**17 17 30.0**	**-0.5**
	0.9nm,0.5s,baz=99,slow=7.5,SNR=11							
MKAR	**Makanchi Array**	**77.30**	**320**	eP		**P**	**17 17 30.6**	**0.0**
MAKZ	**Makanchi**	**77.50**	**320**	eP		**P**	**17 17 31.6**	**-0.1**
	2.7nm,0.8s							
ZALV	**Zalesovo Beam**	**78.76**	**328**	P		**P**	**17 17 37.3**	**-1.1**
	1.8nm,0.4s,baz=112,slow=4.8,SNR=15							
ZAA1	**Zalesovo Array**	**78.76**	**328**	eP		**P**	**17 17 37.3**	**-1.1**
MLY	**Manley**	**83.66**	**22**	eP		**P**	**17 18 04.0**	**0.0**
	5.0nm,0.6s							
RND	**Reindeer**	**83.66**	**24**	eP		**P**	**17 18 03.6**	**-0.4**
	46nm,1.9s							
DHY	**Denali Highway**	**84.12**	**25**	eP		**P**	**17 18 06.8**	**+0.3**
	50nm,2.0s							
QSPA	**South Pole Qui**	**84.39**	**180**	eP		**P**	**17 18 07.6**	**-0.2**
CCB	**Clear Creek Bu**	**84.61**	**23**	eP		**P**	**17 18 07.8**	**-1.0**
	12nm,1.3s							
COLD	**Coldfoot**	**84.88**	**20**	eP		**P**	**17 18 10.8**	**+0.8**
	4.4nm,1.0s							
NRIK	**Noril'sk**	**84.94**	**342**	P		**P**	**17 18 09.4**	**-0.8**
	2.6nm,0.5s,baz=129,slow=5.9,SNR=5.1							
IL1	**Eielson Array**	**85.02**	**23**	eP		**P**	**17 18 09.6**	**-1.3**
ILAR	**Eielson Array**	**85.02**	**23**	P		**P**	**17 18 09.5**	**-1.3**
	5.3nm,0.6s,baz=252,slow=4.8,SNR=72							
ILB	**Eielson Array**	**85.02**	**23**	eP		**P**	**17 18 09.3**	**-1.5**
SHW	**Mount Saint He**	**94.38**	**44**	eP		P	17 18 59.1	+3.7
NVAR	**Mina Array Bea**	**96.96**	**52**	P		**P**	**17 19 08.1**	**+0.7**
	0.1nm,0.3s,baz=261,slow=4.6,SNR=4.3							
NV01	**Mina Array Sit**	**96.96**	**52**	eP		**P**	**17 19 07.8**	**+0.4**
YKA	**Yellowknife Ar**	**98.71**	**28**	P		**P**	**17 19 13.4**	**-1.0**
	0.3nm,0.6s,baz=274,slow=4.7,SNR=8.7							
YKB5	**Yellowknife Ar**	**98.71**	**28**	eP		**P**	**17 19 13.3**	**-1.1**
ARCES	**ARCESS Array B**	**105.92**	**342**	PKiKP		**PKiKP**	**17 23 57.2**	**-0.5**
	3.7nm,1.1s,baz=132,slow=1.3,SNR=3.7							
FIA0	**FINESS Array S**	**109.38**	**334**	ePKiKP		**PKiKP**	**17 24 03.6**	**-0.6**
FINES	**FINESS Array B**	**109.38**	**334**	PKiKP		**PKiKP**	**17 24 03.6**	**-0.6**
	0.2nm,0.3s,baz=318,slow=1.9,SNR=3.5			

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TNDR	**Tynda**	**1.56**	**45**	*e*Pg	Pb	17 12 45.1	-0.5
TNDR				*e*Sg	Sb	17 13 05.3	-0.2
TUP	**Tupik**	**1.70**	**284**	*e*Pg	Pb	17 12 47.4	-0.6
TUP	136nm,0.2s			AMB	AMB	17 12 48.0	
TUP				*e*Sg	Sb	17 13 10.0	+0.4
TUP	1µm,0.4s			A	A	17 13 11.6	
IENR	**Iengra**	**2.47**	**28**	*e*Pn	Pn	17 12 57.3	+0.3
IENR				*e*Pg	Pb	17 13 01.4	+0.3
IENR				*e*Sn	Sn	17 13 28.0	+0.6
IENR				*e*Sg	Sg	17 13 34.0	-1.8
KROS	**Kirovskiy**	**2.48**	**80**	*e*Pn	Pn	17 12 56.7	-0.4
KROS				pPn	pPn	17 12 59.1	+0.2
KROS				*e*Pg	Pb	17 13 01.0	-0.2
KROS	25nm,0.5s			AMB	AMB	17 13 02.1	
KROS				*e*Sg	Sb	17 13 33.5	+1.6
KROS	200nm,0.4s			A	A	17 13 58.1	
KROS	670nm,0.4s			A	A	17 13 58.1	
KROS	640nm,0.4s			A	A	17 13 58.1	
YKLR	**Yuktali**	**2.62**	**346**	*e*Pn	Pn	17 12 59.4	+0.4
YKLR				*e*Pg	Pb	17 13 03.4	-0.1
YKLR				*e*Sg	Sb	17 13 37.7	+1.9
ZEA	**Zeya**	**2.66**	**95**	*e*Pg	Pb	17 13 04.2	0.0
ZEA	39nm,0.5s			AMB	AMB	17 13 06.2	
ZEA	48nm,0.5s			AMB	AMB	17 13 06.2	
ZEA				sPg	Pg	17 13 09.5	+2.2
ZEA				*e*Sg	Sb	17 13 39.0	+2.0
ZEA	200nm,0.5s			A	A	17 13 40.7	
ZEA	230nm,0.5s			A	A	17 13 40.7	
ZEA	75nm,0.5s			A	A	17 13 40.7	
BMKR	**Bomnak**	**3.60**	**77**	*e*Pn	Pn	17 13 12.1	-0.3
BMKR				pPn	pPn	17 13 14.5	+0.2
BMKR				*e*Pg	Pb	17 13 20.5	+0.3
BMKR	13nm,0.5s			AMB	AMB	17 13 23.0	
BMKR	26nm,0.5s			AMB	AMB	17 13 23.0	
BMKR	30nm,0.5s			AMB	AMB	17 13 23.0	
BMKR				*e*Sg	Sb	17 14 07.5	+3.5
BMKR	40nm,0.4s			A	A	17 14 12.8	
BMKR	94nm,0.4s			A	A	17 14 12.8	
BMKR	50nm,0.4s			A	A	17 14 12.8	
CRS	**Chara**	**3.84**	**320**	*e*Pn	Pn	17 13 17.0	+1.3
CRS				*e*Pg	Pb	17 13 25.7	+1.4
CRS	45nm,0.7s			AMB	AMB	17 13 27.8	
CRS				*e*Sg	Sg	17 14 15.7	-3.8
CRS	100nm,0.7s			A	A	17 14 23.8	
UKT	**Uakit**	**5.49**	**289**	*e*Pn	Pn	17 13 38.5	0.0
UKT				*e*Pg	Pb	17 13 55.2	+2.6
UKT				*e*Sg	Sg	17 15 07.9	-4.8
EKMR	**Ekimchan**	**6.13**	**95**	*e*Pn	Pn	17 13 47.0	-0.3
EKMR	5.0nm,0.5s			AMB	AMB	17 13 51.0	
EKMR				*e*Pg	Pb	17 14 07.0	+3.6
EKMR				*e*Sg	Sg	17 15 28.2	-5.0
EKMR	38nm,0.7s			A	A	17 15 38.7	
EKMR	9.0nm,0.7s			A	A	17 15 38.7	
EKMR	23nm,0.7s			A	A	17 15 38.7	
BOD	**Bodaibo**	**6.21**	**311**	*e*Pg	Pb	17 14 07.8	+3.2
BOD				*e*Sg	Sg	17 15 28.2	-7.3
GRNR	**Gornyy**	**8.96**	**106**	*e*Sg	Sg	17 16 57.0	-6.7

IDC 08 17:21:23.9±39.0, 7°.05N×126°.22E, h0km, mb3.6/3, mb1 3.8/3, mb1mx3.4/32, mbtmp3.6/3, Error ellipse: s-maj=662.5km s-min=253.3km az=156.0, Mindanao

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**27.99**	**164**	P	P	17 27 16.3	-0.3
	0.3nm,0.8s,baz=344,slow=9.3,SNR=3.4						
ASAR	**Alice Springs**	**31.44**	**166**	P	P	17 27 47.2	0.0
	0.4nm,0.6s,baz=346,slow=7.4,SNR=7.4						
STKA	**Stephens Creek**	**41.40**	**160**	P	P	17 29 12.4	+0.2
	1.5nm,0.7s,baz=348,slow=9.3,SNR=3.6						

*ISCJB **08** 17:22:26.7±0.4, 37°.02N±0°.03×35°.89E±0°.04, h11km±5km, Error ellipse: s-maj=5.5km s-min=4.0km az=31.3*
*CSEM **08** 17:22:26.7±0.1, 37°.04N×35°.91E, h15km, MD2.5, Error ellipse: s-maj=2.7km s-min=2.4km az=47.0*
*NSSC **08** 17:22:26.2±1.2, 37°.01N×35°.87E, h3km±10km, ML2.0*
*ISK **08** 17:22:26.2, 37°.02N×35°.90E, h16km, MD2.5*
*DDA **08** 17:22:27.1, 36°.98N×35°.94E, h7km, Md3.0*
ISC 08 17:22:26.7±0.8, 37°.03N±0°.02×35°.90E±0°.02, h17km±6km, n37, σ0°.42/56, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CEYT	**Ceyhan**	**0.12**	**262**	PG	**Pg**	**17 22 30.3**	**-0.1**
CEYT				*e*SG	**Sg**	**17 22 33.1**	**+0.2**
CEYT	**Ceyhan**	**0.12**	**262**	*i* Pg	**Pg**	**17 22 30.3**	**-0.1**
CEYT				*e*Sg	**Sg**	**17 22 33.1**	**+0.2**
KOZT	**Kozan**	**0.46**	**353**	*e*PG	**Pg**	**17 22 35.6**	**-0.3**
KOZT				*e*SG	**Sb**	**17 22 43.1**	**+0.2**
KOZT	**Kozan**	**0.46**	**353**	*e*Pg	**Pg**	**17 22 35.6**	**-0.3**
KOZT				*e*Sg	**Sb**	**17 22 43.1**	**+0.2**
KRTS	**Karatas**	**0.62**	**223**	*e*PG	**Pg**	**17 22 38.8**	**-0.1**
KRTS	**Karatas**	**0.62**	**223**	*e*Pg	**Pg**	**17 22 38.8**	**-0.1**
KAMA	**Osmaniye**	**0.64**	**75**	*i* P	**Pg**	**17 22 38.8**	**-0.4**
ANDN	**Andirin**	**0.66**	**33**	*i* P	**Pg**	**17 22 38.9**	**-0.8**
ANDN	**Andirin**	**0.66**	**33**	P	**Pg**	**17 22 38.9**	**-0.8**
TAHT	**Tahtakopru-Hat**	**0.69**	**160**	*e*PG	**Pg**	**17 22 40.0**	**-0.3**
TAHT	**Tahtakopru-Hat**	**0.69**	**160**	*e*Pg	**Pg**	**17 22 40.0**	**-0.3**
KARA	**Karaisali**	**0.71**	**289**	*e*PG	**Pg**	**17 22 40.2**	**-0.5**
KARA	**Karaisali**	**0.71**	**289**	*e*Pg	**Pg**	**17 22 40.2**	**-0.5**
DRWC	**Darouich**	**0.74**	**123**	*e*P	**Pg**	**17 22 41.0**	**-0.2**
DRWC				*e*S	**Sb**	**17 22 51.0**	**-0.1**
DRWC	comp=E,138nm,0.3s			AML	AML	17 22 53.0	
DRWC	comp=N,68nm,0.3s			AML	AML	17 22 53.7	
DRWC	**Darouich**	**0.74**	**123**	*e*P	**Pg**	**17 22 41.0**	**-0.2**
DRWC				*e*S	**Sb**	**17 22 51.0**	**-0.1**
AYKD	**Aykdinkavak**	**0.82**	**62**	*i* P	**Pb**	**17 22 43.2**	**+0.6**
AYKD				*i* S	**Sn**	**17 22 54.8**	**-0.6**
DED	**Mersin**	**0.88**	**266**	*i* P	**Pb**	**17 22 42.6**	**-1.0**
GULE	**Gulek**	**0.93**	**286**	*i* P	**Pn**	**17 22 45.8**	**+0.6**
GULE	**Gulek**	**0.93**	**286**	P	**Pn**	**17 22 45.8**	**+0.6**
KMRS	**Kahramanmaras**	**0.93**	**59**	*e*PG	**Pg**	**17 22 44.9**	**+0.1**
KMRS	**Kahramanmaras**	**0.93**	**59**	*e*Pg	**Pg**	**17 22 44.9**	**+0.1**
KUZU	**Kuzuini**	**0.98**	**105**	*i* P	**Pg**	**17 22 45.5**	**-0.2**
KUZU				*i* S	**Sg**	**17 22 58.3**	**-0.2**
KUZU	**Kuzuini**	**0.98**	**105**	P	**Pg**	**17 22 45.5**	**-0.2**
KUZU				S	**Sg**	**17 22 58.3**	**-0.2**
YAYL	**Yayladag**	**1.01**	**170**	*i* P	**Pb**	**17 22 45.5**	**-0.3**
YAYL				*i* S	**Sn**	**17 23 00.7**	**+0.6**
YAYL	**Yayladag**	**1.01**	**170**	P	**Pb**	**17 22 45.5**	**-0.3**
YAYL				S	**Sn**	**17 23 00.7**	**+0.6**
GAZ	**Gaziantep**	**1.06**	**82**	*e*PG	**Pg**	**17 22 47.1**	**-0.2**
GAZ	**Gaziantep**	**1.06**	**82**	*e*Pg	**Pg**	**17 22 47.1**	**-0.2**
BTCH	**Batrach**	**1.09**	**155**	*e*P	**Pb**	**17 22 47.0**	**-0.1**
BTCH				*e*S	**Sn**	**17 23 02.1**	**+0.1**
BTCH	comp=N,60nm,0.3s			AML	AML	17 23 05.8	
BTCH	comp=E,120nm,0.5s			AML	AML	17 23 05.9	
BTCH	**Batrach**	**1.09**	**155**	*e*P	**Pb**	**17 22 47.0**	**-0.1**
BTCH				*e*S	**Sn**	**17 23 02.1**	**+0.1**
MERS	**Mersin**	**1.11**	**262**	*e*PN	**Pb**	**17 22 47.5**	**-0.1**
MERS	**Mersin**	**1.11**	**262**	*e*Pn	**Pb**	**17 22 47.5**	**-0.1**
ARNB	**Al Arnab**	**1.17**	**177**	*e*P	**Pn**	**17 22 48.4**	**0.0**
ARNB				*e*S	**Sb**	**17 23 03.6**	**+0.2**
ARNB	comp=N,39nm,0.3s			AML	AML	17 23 08.5	
ARNB	comp=E,24nm,0.4s			AML	AML	17 23 11.1	
ARNB	**Al Arnab**	**1.17**	**177**	*e*P	**Pn**	**17 22 48.4**	**0.0**
ARNB				*e*S	**Sb**	**17 23 03.6**	**+0.2**
GZT	**Gaziantep**	**1.37**	**76**	*i* P	**Pb**	**17 22 51.8**	**-0.2**
GZT				*i* S	**Sg**	**17 23 11.4**	**+0.4**
WRDH	**Warideh**	**1.57**	**165**	*e*P	**Pn**	**17 22 53.4**	**-0.6**
WRDH				*e*S	**Sb**	**17 23 14.8**	**-0.2**
WRDH	comp=E,34nm,0.4s			AML	AML	17 23 18.2	
WRDH	comp=N,26nm,0.3s			AML	AML	17 23 19.7	
BIDA	**Albida**	**2.04**	**170**	*e*P	**Pn**	**17 23 01.1**	**+0.7**
BIDA				*e*S	**Sn**	**17 23 26.0**	**+0.4**
BIDA	comp=N,40nm,0.5s			AML	AML	17 23 31.4	
BIDA	comp=E,14nm,0.4s			AML	AML	17 23 40.3	
BIDA	**Albida**	**2.04**	**170**	*e*P	**Pn**	**17 23 01.1**	**+0.7**
BIDA	comp=E,14nm,0.4s			*e*S	**Sb**	**17 23 27.4**	**-1.1**

*NNC **08** 17:23:43.5±2.7, 36°.81N×70°.63E, h151km±51km, mb2.9, mpv3.8, Error ellipse: s-maj=29.1km s-min=20.4km az=70.0*
*IDC **08** 17:23:49.3±7.9, 36°.37N×71°.36E, h230km±180km, mb3.2/4, mb1 3.1/6, mb1mx2.8/29, mbtmp3.6/6, Error ellipse: s-maj=288.9km s-min=35.1km az=144.0*
ISC 08 17:23:51.7±1.5, 37°.3N±0°.1×70°.95E±0°.09, h200km, n13, σ2°.44/20, mb3.5/4, 3C-9D, Afghanistan-Tajikistan border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SFK	**Sufi-Kurgan**	**3.38**	**35**	⇓P	**Pn**	**17 24 42.2**	**-3.8**
SFK	18nm,0.3s			⇓S	**Sn**	**17 25 30.4**	**+1.8**
MNAS	**Manas**	**5.33**	**12**	⇑P	**Pn**	**17 25 08.2**	**-2.2**
MNAS	12nm,0.2s			⇑S	**Sn**	**17 26 16.4**	**+3.8**
KK31	**Karatay Array**	**5.82**	**357**	⇓P	**Pn**	**17 25 14.4**	**-2.2**
KK31	8.3nm,0.6s			S	**Sn**	**17 26 24.9**	**+1.2**
AAK	**Ala-Archa**	**5.99**	**26**	⇓P	**Pn**	**17 25 17.0**	**-2.0**
AAK	2.8nm,0.4s			⇓S	**Sn**	**17 26 30.5**	**+2.5**
TKM2	**Tokmak 2**	**6.66**	**31**	⇓P	**Pn**	**17 25 25.7**	**-1.9**
TKM2	9.0nm,0.7s			⇓S	**Sn**	**17 26 46.6**	**+2.9**
MKAR	**Makanchi Array**	**12.68**	**38**	P	**P**	**17 26 47.5**	**-1.3**
AB31	**Akbulak array**	**14.38**	**330**	P	**Pn**	**17 27 05.2**	**-0.9**
AB31	2.7nm,0.7s			⇑S	**S**	**17 29 42.8**	**-3.1**
AKTO	**Aktyubinsk**	**16.08**	**329**	⇓P	**Pn**	**17 27 27.9**	**+1.0**
AKTO	0.8nm,1.1s			⇓S	**Sn**	**17 30 26.5**	**-0.8**
ZALV	**Zalesovo Beam**	**19.22**	**25**	P	**Pn**	**17 28 03.8**	**-0.1**
BRTR	**Keskin Array B**	**29.17**	**286**	P	**P**	**17 29 34.9**	**+0.5**
FINES	**FINESS Array B**	**36.81**	**326**	P	**P**	**17 30 43.3**	**+3.2**
ARCES	**ARCESS Array B**	**40.40**	**337**	P	**P**	**17 31 13.0**	**+3.2**
NOA	**NORSAR Array B**	**43.73**	**323**	P	**P**	**17 31 37.7**	**+0.8**

*ISK **08** 17:34:51.7, 37°.45N×42°.71E, h2km, ML3.3*
*DDA **08** 17:34:52.7, 37°.54N×42°.68E, h7km, Ml3.5*
*ISCJB **08** 17:34:53.8±0.4, 37°.49N±0°.04×42°.75E±0°.03, h15km, Error ellipse: s-maj=6.0km s-min=3.8km az=176.3*
*CSEM **08** 17:34:53.2±0.2, 37°.54N×42°.74E, h2km, ML3.3, Error ellipse: s-maj=6.0km s-min=4.1km az=165.0*
ISC 08 17:34:53.8±0.8, 37°.55N±0°.04×42°.70E±0°.02, h15km, n52, σ1°.26/58, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SIRT	**Sirnak**	**0.21**	**258**	*e*PG	**Pg**	**17 34 57.4**	**-1.4**
SIRT	**Sirnak**	**0.21**	**258**	*e*Pg	**Pg**	**17 34 57.4**	**-1.4**
SIRN	**S¯¯rnak**	**0.24**	**258**	*i* P	**Pg**	**17 34 57.4**	**-1.7**
SIRN				*i* S	**Sg**	**17 35 01.2**	**-1.5**
SIRN	**S¯¯rnak**	**0.24**	**258**	P	**Pg**	**17 34 57.4**	**-1.7**
SIRN				S	**Sg**	**17 35 01.2**	**-1.5**
CUKT	**Cukurca**	**0.78**	**112**	*e*PG	**Pg**	**17 35 07.1**	**-1.9**
CUKT				*e*SG	**Sg**	**17 35 18.5**	**-0.9**
CUKT	**Cukurca**	**0.78**	**112**	*e*Pg	**Pg**	**17 35 07.1**	**-1.9**
CUKT				*e*Sg	**Sg**	**17 35 18.5**	**-0.9**
HAKT	**HAKKARI**	**0.80**	**89**	*i* P	**Pg**	**17 35 08.2**	**-1.2**
HAKT	**HAKKARI**	**0.80**	**89**	P	**Pg**	**17 35 08.2**	**-1.2**
GEVA	**Gevas**	**0.81**	**20**	*i* P	**Pg**	**17 35 08.2**	**-1.5**
GEVA	**Gevas**	**0.81**	**20**	P	**Pg**	**17 35 08.2**	**-1.5**
HKR	**Hakkari**	**0.83**	**88**	*e*PG	**Pg**	**17 35 08.1**	**-1.8**
HKR	**Hakkari**	**0.83**	**88**	*e*Pg	**Pg**	**17 35 08.1**	**-1.8**
TATV	**Tatvan**	**1.02**	**340**	*i* P	**Pb**	**17 35 12.7**	**-0.6**
TATV	**Tatvan**	**1.02**	**340**	P	**Pb**	**17 35 12.7**	**-0.6**
TVAN	**Van**	**1.13**	**29**	*i* P	**Pb**	**17 35 14.9**	**-0.2**
TVAN	**Van**	**1.13**	**29**	P	**Pb**	**17 35 14.9**	**-0.2**
VANB	**Van**	**1.18**	**27**	*e*PN	**Pb**	**17 35 16.1**	**+0.1**
VANB	**Van**	**1.18**	**27**	*e*Pn	**Pb**	**17 35 16.1**	**+0.1**
BTMN	**Batman**	**1.19**	**287**	*i* P	**Pn**	**17 35 15.5**	**-0.5**
BTMN	**Batman**	**1.19**	**287**	P	**Pn**	**17 35 15.5**	**-0.5**
SVAN	**Silvan-Diyarba**	**1.33**	**297**	*e*PN	**Pn**	**17 35 18.1**	**+0.1**
SVAN	**Silvan-Diyarba**	**1.33**	**297**	*e*Pn	**Pn**	**17 35 18.1**	**+0.1**
MARD	**Mardin**	**1.55**	**262**	*i* P	**Pn**	**17 35 21.5**	**+0.5**
VMUR	**Van-Muradiye**	**1.59**	**25**	*i* P	**Pb**	**17 35 23.5**	**+0.4**
VMUR	**Van-Muradiye**	**1.59**	**25**	P	**Pb**	**17 35 23.5**	**+0.4**
EKAR	**Karacoban**	**1.78**	**344**	*i* P	**Pb**	**17 35 26.9**	**+0.6**
EKAR	**Karacoban**	**1.78**	**344**	P	**Pb**	**17 35 26.9**	**+0.6**
MAZI	**Mazidag**	**1.80**	**268**	*e*PN	**Pn**	**17 35 24.8**	**+0.4**
MAZI	**Mazidag**	**1.80**	**268**	*e*Pn	**Pn**	**17 35 24.8**	**+0.4**
CLDR	**Caldiran**	**1.86**	**31**	*e*PN	**Pb**	**17 35 27.0**	**-0.6**
CLDR	**Caldiran**	**1.86**	**31**	*e*Pn	**Pb**	**17 35 27.0**	**-0.6**
BNGL	**BINGOL**	**1.86**	**319**	*i* P	**Pn**	**17 35 26.7**	**+1.3**
VRTB	**Varto-Mus**	**1.89**	**329**	*e*PN	**Pb**	**17 35 27.8**	**-0.2**
VRTB	**Varto-Mus**	**1.89**	**329**	*e*Pn	**Pb**	**17 35 27.8**	**-0.2**
DIY	**Diyarbakir**	**1.99**	**281**	*e*Pn	**Pb**	**17 35 29.0**	**-0.8**
AGRB	**Hanur-Agry**	**2.04**	**6**	*e*PN	**Pb**	**17 35 30.2**	**-0.4**
AGRB	**Hanur-Agry**	**2.04**	**6**	*e*Pn	**Pb**	**17 35 30.2**	**-0.4**
DYBB	**Diyarbakir**	**2.07**	**282**	*e*PN	**Pn**	**17 35 29.0**	**+0.9**
DIYA	**Diyarbakir**	**2.08**	**281**	*i* P	**Pb**	**17 35 31.2**	**-0.1**
DIYA	**Diyarbakir**	**2.08**	**281**	P	**Pb**	**17 35 31.2**	**-0.1**
BNGB	**Bing ¶ll**	**2.15**	**313**	*e*PN	**Pn**	**17 35 31.0**	**+1.8**
BGOL	**Bingol**	**2.15**	**313**	*i* P	**Pb**	**17 35 31.3**	**-1.2**
BGOL	**Bingol**	**2.15**	**313**	P	**Pb**	**17 35 31.3**	**-1.2**
BINT	**Bingol**	**2.19**	**308**	*e*Pn	**Pn**	**17 35 31.0**	**+1.2**
SFNV	**Sufian**	**2.36**	**242**	*e*P	**Pn**	**17 35 33.0**	**+0.9**
MZRK	**Al-Mazaregh**	**2.38**	**224**	*e*P	**Pn**	**17 35 34.3**	**+2.0**
MZRK	139nm,0.7s			*e*S	**Sb**	**17 36 06.0**	**+0.5**
EZM	**Erzurum**	**2.58**	**336**	*e*PN	**Pn**	**17 35 37.6**	**+2.3**
SVRC	**Sivrice-ELAZID**	**2.81**	**288**	*e*PN	**Pn**	**17 35 38.5**	**+0.1**
SVRC	**Sivrice-ELAZID**	**2.81**	**288**	*e*Pn	**Pn**	**17 35 38.5**	**+0.1**
PTK	**Pertek**	**2.93**	**298**	*e*PN	**Pn**	**17 35 41.5**	**+1.5**
PTK	**Pertek**	**2.93**	**298**	*e*Pn	**Pn**	**17 35 41.6**	**+1.5**
KSRV	**Kasrt alli**	**3.42**	**242**	*e*P	**Pn**	**17 35 48.3**	**+1.8**
KSRV	71nm,0.5s			*e*S	**Sn**	**17 36 31.0**	**+4.3**

*ISCJB **08** 17:37:06.6±0.8, 6°.83N±0°.06×73°.07W±0°.07, h164km±7km, Error ellipse: s-maj=13.7km s-min=5.7km az=41.4*
*FUNV **08** 17:37:07.2, 7°.01N×73°.27W, h179km, MW2.6*
*RSNC **08** 17:37:09.6±0.7, 6°.79N×73°.11W, h144km±5km, ML2.5*
ISC 08 17:37:06.8±1.7, 6°.81N±0°.07×73°.06W±0°.07, h164km±11km, n15, σ1°.14/24, 2C, Northern Colombia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BARC	**Barichara**	**0.24**	**209**	*i* P	**Pn**	**17 37 29.1**	**-0.1**
BARC				*e*S	**Sn**	**17 37 43.6**	**-2.6**
BARC	comp=Z,92nm,0.3s			*i*		17 37 45.0	
PAMC	**Pamplona, Colo**	**0.64**	**34**	*e*P	**Pn**	**17 37 31.9**	**+0.8**
PAMC	comp=Z,35nm,0.2s			*i*		17 37 32.1	
PAMC				*e*S	**Sn**	**17 37 49.0**	**-0.6**
BRRC	**Barranca, Sant**	**0.71**	**295**	⇑*i* P	**Pn**	**17 37 30.9**	**+0.1**
BRRC	comp=Z,148nm,0.2s			*i*		17 37 31.2	
BRRC				*e*S	**Sn**	**17 37 47.9**	**-1.4**
GRMC	**Gramalote, San**	**0.94**	**16**	*e*P	**Pn**	**17 37 34.9**	**+2.3**
GRMC	comp=Z,52nm,0.3s			*i*		17 37 36.3	
GRMC				*e*S	**Sn**	**17 37 54.0**	**+1.5**
CAPV	**Capacho**	**1.29**	**35**	⇑*e*P	**Pn**	**17 37 36.9**	**+1.2**
CAPV				*e*S	**Sn**	**17 37 58.0**	**+0.1**
OCAC	**Ocana**	**1.45**	**350**	*e*P	**Pn**	**17 37 37.6**	**+0.5**
OCAC				*e*S	**Sn**	**17 38 00.0**	**-0.4**
OCAC	comp=Z,42nm,0.2s			*i*		17 38 02.7	
NORC	**Norcasia**	**2.18**	**236**	*e*P	**Pn**	**17 37 45.5**	**+0.6**
NORC				*e*S	**Sn**	**17 38 13.5**	**-0.8**
CHIC	**Chingaza**	**2.26**	**197**	*e*P	**Pn**	**17 37 47.3**	**+1.0**
CHIC				*e*S	**Sn**	**17 38 16.8**	**+0.1**
CHIC	comp=Z,14nm,0.5s			*i*		17 38 23.4	
HELC	**Santa Helena**	**2.52**	**256**	*e*P	**Pn**	**17 37 50.1**	**+0.8**
HELC	comp=Z,19nm,0.4s			*i*		17 38 28.1	
VIGV	**El Vigia**	**2.63**	**40**	*e*P	**Pn**	**17 37 49.6**	**-0.6**
VIGV				*e*S	**Sn**	**17 38 22.7**	**-1.2**
SOCV	**Socops**	**2.63**	**56**	*e*P	**Pn**	**17 37 51.6**	**+1.3**
SOCV				*e*S	**Sn**	**17 38 23.5**	**-0.5**
VIRV	**Villa del Rosa**	**3.73**	**10**	*e*P	**Pn**	**17 38 01.5**	**-2.5**
CURV	**Curarigua**	**4.42**	**44**	*e*P	**Pn**	**17 38 12.7**	**-0.4**
BAUV	**El Baul**	**5.41**	**67**	*e*P	**Pn**	**17 38 26.3**	**+0.5**
MAPV	**Macapo**	**5.46**	**56**	*e*P	**Pn**	**17 38 26.1**	**-0.4**

*NEIC **08** 17:42:04.0, 51°.07N×179°.66E, h10km, ML3.6(AEIC), After AEIC.*
*ISCJB **08** 17:42:05.3±1.1, 51°.4N±0°.2×179°.39E±0°.06, h48km, mb3.9/16, MS3.1/2, Error ellipse: s-maj=31.7km s-min=5.4km az=177.3*
*IDC **08** 17:42:10.9±5.6, 51°.35N×179°.62E, h86km±51km, mb3.6/16, mb1 3.7/17, mb1mx3.4/59, mbtmp3.9/17, ML2.4/1, MS3.1/2, Ms1 3.1/2, ms1mx2.5/47, Error ellipse: s-maj=41.4km s-min=14.5km az=168.0*
ISC 08 17:42:07.2±1.5, 51°.3N±0°.3×179°.56E±0°.07, h48km, n27, σ1°.21/26, mb4.0/16, Rat Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GAEA	**Gareloi East**	**1.16**	**65**	*e*Pn	**Pn**	**17 42 27.1**	**+0.1**
TASE	**Tanaga Southea**	**1.59**	**70**	*e*Pn	**Pn**	**17 42 31.9**	**-1.0**
TASE				*e*Sn	**Sn**	**17 42 54.9**	**+2.6**
TAFL	**Tanaga Flats**	**1.65**	**73**	*e*Pn	**Pn**	**17 42 33.3**	**-0.3**
TAPA	**Tanaga Point A**	**1.72**	**72**	*e*Pn	**Pn**	**17 42 33.6**	**-1.0**
TAPA				*e*Sn	**Sn**	**17 42 57.0**	**+1.6**
KIKV	**Kanaga Island**	**2.12**	**73**	*e*Pn	**Pn**	**17 42 41.1**	**+1.0**
GSMY	**Great Sitkin M**	**2.83**	**73**	*e*Sn	**Sn**	**17 43 23.8**	**+1.2**
ATKA	**Atka Island**	**3.98**	**75**	*e*Pn	**Pn**	**17 43 05.8**	**+0.2**
PETK	**Petropavlovsk-**	**13.52**	**286**	P	**Pn**	**17 45 19.2**	**+3.1**
	0.1nm,0.3s,baz=110,slow=17,SNR=2.9						
KDAK	**Kodiak Island**	**17.33**	**57**	P	P	17 46 17.2	+11
	0.5nm,0.3s,baz=228,slow=7.7,SNR=13						
ILAR	**Eielson Array**	**21.95**	**39**	P	**P**	**17 46 56.2**	**-0.2**
	0.3nm,0.6s,baz=238,slow=7.8,SNR=7.3						
INK	**Inuvik**	**28.11**	**35**	P	**P**	**17 47 54.7**	**+0.7**
	0.3nm,0.3s,baz=275,slow=7.6,SNR=3.8						
KLR	**Kul'dur**	**30.21**	**285**	P	**P**	**17 48 12.4**	**-0.3**
	3.9nm,0.5s,baz=64,slow=5.9,SNR=19						
JHJ	**Hachijo jima 2**	**34.09**	**253**	LR	LR	18 02 40.7	
	comp=Z,30nm,19.3s,baz=14,slow=36						
YKA	**Yellowknife Ar**	**36.03**	**46**	P	**P**	**17 49 02.5**	**-0.7**
	0.4nm,0.4s,baz=281,slow=7.9,SNR=15						
JCJ	**Chichijima**	**37.12**	**244**	LR	LR	18 01 29.5	
	comp=Z,32nm,21.2s,baz=334,slow=31						
SONM	**Songino Array**	**45.76**	**296**	P	**P**	**17 50 24.2**	**+0.5**
	1.0nm,0.7s,baz=61,slow=6.9,SNR=3.5						
PDAR	**Pinedale Array**	**47.31**	**71**	P	**P**	**17 50 35.5**	**-0.5**
	1.0nm,0.7s,baz=310,slow=3.0,SNR=8.3						
SPITS	**Spitsbergen Ar**	**50.37**	**356**	P	**P**	**17 50 58.4**	**-0.4**
	2.7nm,0.4s,baz=44,slow=6.1,SNR=34						
ZALV	**Zalesovo Beam**	**53.33**	**313**	P	**P**	**17 51 20.5**	**-0.5**
	0.3nm,0.3s,baz=55,slow=9.6,SNR=3.0						
ARCES	**ARCESS Array B**	**57.98**	**350**	P	**P**	**17 51 53.1**	**-1.1**
	1.9nm,1.0s,baz=30,slow=9.3,SNR=2.7						
KURBB	**Kurchatov Arra**	**58.43**	**313**	P	**P**	**17 51 57.5**	**0.0**
	1.8nm,0.7s,baz=43,slow=6.7,SNR=14						
MKAR	**Makanchi Array**	**59.27**	**308**	P	**P**	**17 52 02.8**	**-0.6**
	0.7nm,0.4s,baz=49,slow=6.8,SNR=21						
BVAR	**Borovoye Array**	**60.27**	**319**	P	**P**	**17 52 10.8**	**+0.6**
	1.2nm,0.3s,baz=59,slow=7.1,SNR=9.0						
FINES	**FINESS Array B**	**65.62**	**346**	P	**P**	**17 52 43.8**	**-1.8**
	3.7nm,1.1s,baz=325,slow=9.3,SNR=3.6						
AKTO	**Aktyubinsk**	**67.14**	**324**	P	**P**	**17 52 55.2**	**-0.3**
	1.2nm,0.6s,baz=34,slow=4.7,SNR=5.2						
NOA	**NORSAR Array B**	**67.62**	**354**	P	**P**	**17 52 56.8**	**-1.6**
	0.7nm,0.6s,baz=7.5,slow=6.1,SNR=3.1						
CMAR	**Chiang Mai Arr**	**69.99**	**275**	P	**P**	**17 53 13.4**	**-0.4**
	0.4nm,0.8s,baz=35,slow=8.1,SNR=3.8						

JMA 08 17:44:45.6, 37°.72N×139°.95E, h8km±1km, M1.4, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFT	**Otama**	**0.37**	**123**	S

*IDC **08** 17:49:23.9±2.8, 35°.70N×142°.03E, h0km, mb3.3/4, mb1 3.4/5, mb1mx3.2/63, mbtmp3.2/5, ML2.9/1, Error ellipse: s-maj=89.2km s-min=23.9km az=61.0*
*ISCJB **08** 17:49:28.1±1.0, 35°.40N±0°.08×141°.41E±0°.10, h25km, mb3.3/4, Error ellipse: s-maj=12.7km s-min=9.1km az=137.6*
*JMA **08** 17:49:29.4±0.2, 35°.43N×141°.25E, h17km±2km, M3.3*
ISC 08 17:49:30.2±1.4, 35°.45N±0°.08×141°.26E±0°.10, h25km, n9, σ1§26/13, mb3.3/4, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CHOJ	**Chosi**	**0.41**	**308**	P	**Pb**	**17 49 37.8**	**-1.2**
CHOJ				S	**Sb**	**17 49 44.1**	**-0.9**
JCN	**Nagara**	**0.86**	**268**	P	**Pn**	**17 49 46.7**	**0.0**
JCN				*e*S	**Sb**	**17 49 59.5**	**+1.8**
JHO	**Hitachi**	**1.29**	**335**	P	**Pb**	**17 49 53.4**	**-0.4**
JHO				*e*S	**Sb**	**17 50 10.1**	**+0.2**
MJAR	**Matsushiro Arr**	**2.70**	**295**	Pn	**Pb**	**17 50 15.6**	**-2.3**
	1.5nm,0.3s,baz=104,slow=14,SNR=6.1						
MAT	**Matsushiro**	**2.71**	**295**	P	**Pn**	**17 50 14.1**	**+2.0**
MAT				*e*S	**Sb**	**17 50 51.6**	**+0.9**
MKAR	**Makanchi Array**	**44.87**	**303**	P	**P**	**17 57 42.4**	**0.0**
	0.3nm,0.8s,baz=98,slow=7.2,SNR=3.7						
KURBB	**Kurchatov Arra**	**46.89**	**309**	P	**P**	**17 57 58.4**	**+0.1**
	0.2nm,0.5s,baz=83,slow=7.5,SNR=3.5						
WRA	**Warramunga Arr**	**55.47**	**188**	P	**P**	**17 59 02.7**	**-0.2**
	0.2nm,0.5s,baz=5.0,slow=8.4,SNR=6.7						
ASAR	**Alice Springs**	**59.20**	**188**	P	**P**	**17 59 29.3**	**+0.1**
	0.2nm,0.9s,baz=16,slow=8.9,SNR=2.8						

*IDC **08** 17:50:39.1±1.3, 39°.04N×143°.46E, h0km, mb3.3/5, mb1 3.4/7, mb1mx3.3/61, mbtmp3.3/7, ML3.1/1, Error ellipse: s-maj=29.5km s-min=26.5km az=113.0*
*ISCJB **08** 17:50:40.0±1.3, 39°.0N±0°.2×143°.4E±0°.2, h20km, mb3.3/4, Error ellipse: s-maj=26.1km s-min=18.7km az=139.0*
ISC 08 17:50:42.2±1.4, 39°.0N±0°.2×143°.4E±0°.2, h20km, n7, σ0§57/7, mb3.4/4, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MJAR	**Matsushiro Arr**	**4.79**	**240**	Pn	**Pn**	**17 51 53.1**	**-0.2**
	baz=46,slow=15,SNR=2.2						
KSRS	**Korea Array**	**12.26**	**267**	Pn	**Pn**	**17 53 35.4**	**-0.2**
	0.1nm,0.3s,baz=76,slow=15,SNR=4.0						
ZALV	**Zalesovo Beam**	**41.76**	**311**	P	**P**	**17 58 30.8**	**+1.0**
	0.2nm,0.4s,baz=98,slow=10,SNR=2.6						
MKAR	**Makanchi Array**	**44.41**	**301**	P	**P**	**17 58 51.4**	**0.0**
	0.3nm,0.7s,baz=92,slow=12,SNR=3.8						
KURBB	**Kurchatov Arra**	**46.03**	**307**	P	**P**	**17 59 04.0**	**-0.2**
	0.3nm,0.5s,baz=81,slow=8.3,SNR=3.8						
WRA	**Warramunga Arr**	**59.27**	**190**	P	**P**	**18 00 42.6**	**+0.3**
	0.4nm,0.8s,baz=5.4,slow=7.7,SNR=2.8						
YKA	**Yellowknife Ar**	**61.30**	**31**	P	**P**	**18 00 55.5**	**-0.4**
	0.0nm,0.3s,baz=311,slow=8.8,SNR=2.4						

*ISCJB **08** 17:55:39.0±0.6, 84°.53N±0°.10×±°, h10km, mb3.5/10, MS3.3/11, Error ellipse: s-maj=19.4km s-min=9.3km az=142.3*
*IDC **08** 17:55:40.6±1.0, 84°.76N×7°.31E, h0km, mb3.6/11, mb1 3.7/13, mb1mx3.5/71, mbtmp3.6/13, ML3.2/2, MS3.3/14, Ms1 3.3/14, ms1mx3.1/44, Error ellipse: s-maj=24.2km s-min=16.0km az=61.0*
ISC 08 17:55:41.3±0.8, 84°.52N±0°.09×6°.0E±0°.1, h10km, n21, σ3§08/16, mb3.5/10, MS3.3/11, North of Svalbard

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SPITS	**Spitsbergen Ar**	**6.55**	**161**	Pn	**Pn**	**17 57 18.5**	**+1.0**
	baz=15,slow=13,SNR=24						
SPITS				Sn	**Sn**	**17 58 31.1**	**-0.9**
	baz=12,slow=22,SNR=2.0						
SPITS				LR	LR	17 59 44.3	
	comp=Z,327nm,19.8s,baz=340,slow=36						
ARCES	**ARCESS Array B**	**15.49**	**154**	Pn	**Pn**	**17 59 18.9**	**-0.6**
	0.1nm,0.3s,baz=356,slow=9.9,SNR=4.3						
ARCES				Sn	**Sn**	**18 02 02.0**	**-8.8**
	0.0nm,0.3s,baz=3.5,slow=19,SNR=2.5						
ARCES				LR	LR	18 04 42.1	
	comp=Z,71nm,18.8s,baz=347,slow=35						
RES	**Resolute Bay**	**17.30**	**299**	P	**Pn**	**17 59 38.5**	**-3.9**
	0.3nm,0.3s,baz=29,slow=11,SNR=17						
RES				LR	LR	18 06 20.6	
	comp=Z,138nm,19.5s,baz=24,slow=37						
NRIK	**Noril'sk**	**20.68**	**84**	P	**P**	**18 00 18.9**	**-2.0**
	1.5nm,0.3s,baz=1.7,slow=11,SNR=3.4						
TIXI	**Tiksi**	**21.94**	**45**	LR	LR	18 07 09.2	
	comp=Z,54nm,20.2s,baz=352,slow=32						
FINES	**FINESS Array B**	**23.61**	**156**	P	**P**	**18 00 52.5**	**+0.7**
	1.5nm,0.8s,baz=359,slow=7.6,SNR=4.4						
INK	**Inuvik**	**26.26**	**327**	LR	LR	18 12 00.0	
	comp=Z,48nm,21.8s,baz=287,slow=38						
ILAR	**Eielson Array**	**30.39**	**337**	P	**P**	**18 01 51.8**	**-1.1**
	0.9nm,1.1s,baz=184,slow=11,SNR=6.4						
ILAR				LR	LR	18 14 30.1	
	comp=Z,50nm,18.1s,baz=286,slow=37						
YKA	**Yellowknife Ar**	**30.81**	**309**	P	**P**	**18 01 56.6**	**0.0**
	0.1nm,0.7s,baz=9.9,slow=7.9,SNR=4.1						
AKASG	**Malin Array Be**	**34.47**	**154**	P	**P**	**18 02 30.3**	**+1.6**
	0.5nm,0.6s,baz=351,slow=8.5,SNR=4.0						
AKASG				LR	LR	18 16 48.5	
	comp=Z,84nm,18.9s,baz=325,slow=37						
BVAR	**Borovoye Array**	**35.08**	**109**	P	**P**	**18 02 34.6**	**+0.7**
	0.5nm,0.7s,baz=354,slow=12,SNR=4.4						
ZALV	**Zalesovo Beam**	**35.52**	**94**	P	**P**	**18 02 38.6**	**+0.9**
	0.2nm,0.3s,baz=339,slow=3.7,SNR=3.3						
ZALV				LR	LR	18 18 23.2	
	comp=Z,42nm,19.7s,baz=66,slow=38						
GERES	**GERESS Array B**	**35.88**	**171**	LR	LR	18 16 46.4	
	comp=Z,48nm,19.4s,baz=285,slow=35						
AKTO	**Aktyubinsk**	**36.58**	**122**	P	**P**	**18 02 47.4**	**+0.6**
	1.1nm,0.7s,baz=11,slow=7.1,SNR=5.0						
KURBB	**Kurchatov Arra**	**36.82**	**101**	P	**P**	**18 03 00.4**	**-0.2**
	0.6nm,0.8s,baz=352,slow=7.8,SNR=7.6						
ULM	**Lac du Bonnet**	**41.37**	**288**	LR	LR	18 20 44.7	
	comp=Z,60nm,19.6s,baz=348,slow=36						
MKAR	**Makanchi Array**	**42.37**	**98**	LR	LR	18 24 05.6	
	comp=Z,37nm,18.5s,baz=355,slow=40						
ESDC	**Sonseca Array**	**45.09**	**191**	P	**P**	**18 04 00.9**	**+3.8**
	0.1nm,0.3s,baz=351,slow=9.0,SNR=3.8						
BRTR	**Keskin Array B**	**45.63**	**150**	LR	LR	18 23 59.0	
	comp=Z,15nm,20.1s,baz=296,slow=47						
GEYT	**Alibeck**	**49.01**	**124**	P	**P**	**18 04 29.5**	**+1.8**
	0.8nm,0.4s,baz=1.9,slow=4.3,SNR=2.9						
GEYT				LR	LR	18 28 22.8	
	comp=Z,74nm,21.6s,baz=230,slow=40						
PDAR	**Pinedale Array**	**49.99**	**300**	LR	LR	18 24 48.5	
	comp=Z,71nm,18.5s,baz=57,slow=35						

*IDC **08** 17:59:00.8±0.9, 43°.42N×105°.17W, h0km, mb4.0/4, mb1 3.8/9, mb1mx3.5/55, mbtmp3.6/9, ML3.0/4, Error ellipse: s-maj=19.1km s-min=8.6km az=150.0*
*NEIC **08** 17:59:03.5±0.4, 43°.76N×105°.10W, h0km, ML3.3, Error ellipse: s-maj=5.9km s-min=5.3km az=93.0, Suspected Mining explosion.*
NEIC 67 km [41 miles] SSE of Gillette.
*ISCJB **08** 17:59:04.2±0.2, 43°.74N±0°.02×105°.34W±0°.02, h0km, mb4.0/4, Error ellipse: s-maj=3.5km s-min=2.0km az=157.7*
ISC 08 17:59:03.6±0.7, 43°.73N±0°.03×105°.20W±0°.03, h0km, n90, σ1§43/98, mb4.0/4, Wyoming

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
RSSD	**Black Hills**	**0.93**	**65**	P	**Pb**	**17 59 22.9**	**+0.2**
	baz=245						
RSSD	**Black Hills**	**0.93**	**65**	*e*Pb	**Pb**	**17 59 22.6**	**0.0**
J25A	**Sunshine Ranch**	**1.07**	**108**	P	**Pn**	**17 59 25.8**	**-0.1**
	baz=292						
I25A	**Rochford**	**1.10**	**74**	P	**Pn**	**17 59 25.9**	**-0.5**
	baz=256						
I25A				S	**Sn**	**17 59 42.5**	**+0.1**
	baz=256						
K22A	**Casper**	**1.45**	**222**	P	**Pn**	**17 59 30.6**	**-0.6**
	baz=42						
K22A				S	**Sg**	**17 59 50.8**	**+0.7**
	baz=42						
K22A	**Casper**	**1.45**	**222**	*e*Pn	**Pn**	**17 59 30.5**	**-0.7**
H25A	**Fruitdale**	**1.46**	**52**	P	**Pb**	**17 59 32.0**	**+0.4**
	baz=232						
H25A				S	**Sn**	**17 59 53.2**	**+2.1**
	baz=232						
J26A	**Sides Ranch, S**	**1.60**	**104**	P	**Pg**	**17 59 35.0**	**+0.8**
	baz=288,SNR=31						
J26A				S	**Sb**	**17 59 58.2**	**+3.4**
	baz=288						
I26A	**New Underwood**	**1.72**	**79**	P	**Pg**	**17 59 36.9**	**+0.4**
	baz=261						
G25A	**Newell**	**1.94**	**40**	Sb	**Sg**	**18 00 07.5**	**+1.5**
	baz=221						
H26A	**Fairpoint**	**1.96**	**62**	P	**Pg**	**17 59 40.7**	**-0.4**
	baz=244						
H26A				Sb	**Sg**	**18 00 09.5**	**+3.0**
	baz=244						
I27A	**Quinn**	**2.30**	**80**	P	**Pb**	**17 59 46.1**	**+0.2**
	baz=263						
I27A				Sb	**Sg**	**18 00 19.1**	**+1.7**
	baz=263						
J27A	**Elkhorn Farm,**	**2.37**	**100**	P	**Pb**	**17 59 47.2**	**0.0**
	baz=284,SNR=9.1						
H27A	**Howes**	**2.42**	**67**	P	**Pb**	**17 59 47.5**	**-0.5**
	baz=249						
H27A				Sb	**Sg**	**18 00 22.6**	**+1.2**
	baz=249						
G26A	**Maurine**	**2.43**	**49**	P	**Pn**	**17 59 46.2**	**+1.6**
	baz=230						
G26A				Sb	**Sg**	**18 00 21.1**	**-0.5**
	baz=230						
PHWY	**Pilot Hill**	**2.43**	**185**	*e*Pn	**Pb**	**17 59 46.8**	**-1.5**
F25A	**Bowman**	**2.52**	**29**	P	**Pn**	**17 59 47.5**	**+1.7**
	baz=209,SNR=13						
F26A	**Lodgepole**	**2.78**	**39**	P	**Pn**	**17 59 50.8**	**+1.4**
	baz=220						
F26A				Sb	**Sg**	**18 00 31.3**	**-1.7**
	baz=220						
G27A	**Dupree**	**2.86**	**54**	P	**Pn**	**17 59 52.2**	**+1.7**
	baz=236						
G27A				Sb	**Sg**	**18 00 35.2**	**-0.2**
	baz=236						
N23A	**Red Feather La**	**2.89**	**191**	P	**Pn**	**17 59 52.6**	**+1.6**
	baz=12						
N23A	**Red Feather La**	**2.89**	**191**	*e*Pn	**Pn**	**17 59 53.1**	**+2.0**
J28A	**Allard Ranch,**	**2.90**	**95**	P	**Pb**	**17 59 54.1**	**-2.0**
	baz=278,SNR=19						
J28A				Sb	**Sg**	**18 00 37.4**	**+0.8**
	baz=278						
I28A	**Midland**	**2.93**	**83**	P	**Pb**	**17 59 54.7**	**-2.0**
	baz=267,SNR=16						
LAO	**LASA Array**	**3.05**	**347**	*e*Pn	**Pb**	**17 59 58.3**	**-0.4**
E25A	**Miller Ranch,**	**3.05**	**24**	P	**Pn**	**17 59 54.2**	**+1.1**
	baz=204						
F27A	**Lemmon**	**3.12**	**45**	Pb	**Pb**	**18 00 01.0**	**+1.1**
	baz=227						
H28A	**Mission Ridge**	**3.15**	**71**	Pb	**Pg**	**18 00 02.6**	**-1.3**
	baz=254						
RLMT	**Red Lodge**	**3.23**	**297**	P	**Pn**	**17 59 55.8**	**+0.1**
	baz=113						
RLMT	**Red Lodge**	**3.23**	**297**	*e*Pn	**Pn**	**17 59 56.1**	**+0.3**
BW06	**Boulder Array**	**3.33**	**255**	*e*Pn	**Pn**	**17 59 57.8**	**+0.7**
PD31	**Pinedale Array**	**3.33**	**255**	*e*Pn	**Pn**	**17 59 58.0**	**+0.9**
PDAR	**Pinedale Array**	**3.33**	**255**	Pn	**Pn**	**17 59 58.0**	**+0.9**
	6.5nm,0.3s,baz=71,slow=15,SNR=52						
PDAR				Lg	Lg	18 00 42.5	
	13nm,0.3s,baz=72,slow=30,SNR=9.7						
E26A	**Carlson Angus**	**3.36**	**34**	P	**Pn**	**17 59 58.6**	**+1.2**
	baz=216						
OGNE	**Ogallala**	**3.64**	**139**	*e*Pn	Pb	18 00 05.0	-3.8
D25A	**Fairfield**	**3.67**	**20**	P	**Pn**	**18 00 03.2**	**+1.6**
	baz=201						
YMP	**Mirror Lake PI**	**3.70**	**288**	*e*Pn	**Pn**	**18 00 03.0**	**+0.7**
YTP	**The Promontory**	**3.73**	**282**	*e*Pn	**Pn**	**18 00 03.7**	**+1.1**
GCMT	**Greycliff**	**3.79**	**304**	*e*Pn	**Pn**	**18 00 03.4**	**0.0**
LKWY	**Lake**	**3.84**	**284**	*e*Pn	**Pn**	**18 00 05.3**	**+1.2**
LOHW	**Long Hollow**	**3.92**	**270**	*e*Pn	**Pn**	**18 00 07.0**	**+1.7**
CRMT	**Chrome Mountai**	**3.93**	**298**	*e*Pb	**Pb**	**18 00 14.6**	**+0.7**
H17A	**Grant Village**	**3.93**	**282**	*e*Pn	**Pn**	**18 00 07.1**	**+1.7**
ISCO	**Idaho Springs**	**3.94**	**185**	*e*Pn	**Pn**	**18 00 08.0**	**+2.5**
MOOW	**Moose Ponds**	**4.02**	**272**	*e*Pn	**Pn**	**18 00 07.9**	**+1.3**
YNR	**Norris Junctio**	**4.06**	**286**	*e*Pn	**Pn**	**18 00 08.0**	**+0.8**
YFT	**Old Faithful**	**4.12**	**282**	*e*Pn	**Pn**	**18 00 09.1**	**+1.0**
REDW	**Red Top Meadow**	**4.13**	**267**	*e*Pn	**Pn**	**18 00 09.8**	**+1.8**
FXWY	**Fox Creek**	**4.23**	**271**	*e*Pn	**Pn**	**18 00 10.6**	**+1.2**
O20A	**White River Ci**	**4.25**	**213**	*e*Pn	**Pn**	**18 00 10.7**	**+1.0**
YMR	**Madison River**	**4.25**	**285**	*e*Pn	**Pn**	**18 00 11.3**	**+1.5**
YMC	**Maple Creek**	**4.30**	**286**	*e*Pn	**Pn**	**18 00 10.6**	**+0.1**
AHID	**Auburn Hatcher**	**4.42**	**259**	*e*Pn	**Pn**	**18 00 13.9**	**+1.9**
QLMT	**Earthquake Lak**	**4.61**	**286**	*e*Pn	**Pn**	**18 00 16.9**	**+2.2**
SMCO	**Snowmass**	**4.74**	**197**	*e*Pn	**Pn**	**18 00 16.3**	**-0.3**
Q24A	**Divide**	**4.76**	**180**	*e*Pb	**Pb**	**18 00 29.6**	**+1.5**
Q24A				*e*Sg	**Sg**	**18 01 35.1**	**-1.4**
DGMT	**Dagmar**	**4.79**	**8**	*e*Pn	**Pn**	**18 00 19.8**	**+2.8**
BOZ	**Bozeman (W)**	**4.97**	**295**	*e*Pn	**Pn**	**18 00 22.7**	**+3.1**
HWUT	**Hardware Ranch**	**5.15**	**248**	*e*Pn	**Pn**	**18 00 21.2**	**-0.9**
TCUT	**Toone Canyon**	**5.28**	**243**	*e*Pn	**Pn**	**18 00 23.6**	**-0.4**
EGMT	**Eagleton**	**5.34**	**325**	*e*Pn	**Pn**	**18 00 24.2**	**-0.4**
MLI	**Malad Range**	**5.37**	**254**	*e*Pn	**Pn**	**18 00 27.0**	**+2.0**
HRY	**Holter Researc**	**5.55**	**305**	*e*Pn	**Pn**	**18 00 28.0**	**+0.4**
LRM	**Limekiln Ridge**	**5.57**	**295**	*e*Pn	**Pn**	**18 00 28.5**	**+0.6**
P18A	**Preston Nutter**	**5.57**	**224**	*e*Pn	**Pn**	**18 00 29.3**	**+1.3**
JLU	**Jordanelle**	**5.60**	**238**	*e*Pn	**Pn**	**18 00 27.0**	**-1.3**
MCMT	**McKenzie Canyo**	**5.60**	**284**	*e*Pn	**Pn**	**18 00 29.4**	**+1.0**
MDND	**Maddock**	**5.68**	**42**	*e*Pn	Pn	18 00 25.4	-3.8
BGNE	**Belgrade**	**5.70**	**112**	*e*Pn	Pn	18 00 25.9	-3.6
HVU	**Hansel Valley**	**5.91**	**253**	*e*Pn	**Pn**	**18 00 33.0**	**+0.6**
P17A	**Butcher Ranch,**	**5.94**	**226**	*e*Pn	**Pn**	**18 00 35.0**	**+2.1**
SDCO	**Great Sand Dun**	**5.98**	**182**	*e*Pb	**Pb**	**18 00 47.5**	**-1.4**
SDCO				*e*Sg	**Sg**	**18 02 16.0**	**+0.3**
MPU	**Maple Canyon**	**6.07**	**235**	*e*Pn	**Pn**	**18 00 34.8**	**+0.1**
PV10	**Paradox Valley**	**6.08**	**210**	*e*Pn	**Pn**	**18 00 36.0**	**+1.0**
PV10				*e*Sb	**Sb**	**18 02 07.2**	**+3.2**
SRU	**San Rafael Swe**	**6.11**	**223**	*e*Pn	**Pn**	**18 00 34.6**	**-0.6**
TMUT	**Trail Mountain**	**6.32**	**228**	*e*Pn	**Pn**	**18 00 39.6**	**+1.3**
PV05	**Paradox Valley**	**6.37**	**209**	*e*Pn	**Pn**	**18 00 38.1**	**-0.8**
CHMT	**Chamberlain Mo**	**6.51**	**302**	*e*Pn	**Pn**	**18 00 40.7**	**0.0**
YBMT	**Yellow Bay**	**7.42**	**307**	*e*Pn	**Pn**	**18 00 53.4**	**+0.2**
AGMN	**Agassiz Nation**	**7.94**	**52**	*e*Pb	Pg	18 01 29.9	-5.7
AGMN				*e*Sg	**Sg**	**18 03 15.5**	**-3.0**
WALA	**Waterton Lakes**	**8.04**	**315**	*e*Pn	**Pn**	**18 01 00.4**	**-1.3**
ULM	**Lac du Bonnet**	**9.11**	**41**	Pn	**Pn**	**18 01 15.5**	**-0.8**
	0.8nm,0.3s,baz=228,slow=13,SNR=6.8						
ULM				Lg	Lg	18 03 46.8	
	0.4nm,0.3s,baz=120,slow=18,SNR=3.8						
FFC	**Flin Flon**	**11.20**	**10**	*e*Pn	**Pn**	**18 01 42.8**	**-2.0**
NVAR	**Mina Array Bea**	**11.21**	**246**	Pn	**Pn**	**18 01 43.6**	**-1.7**
	0.1nm,0.3s,baz=51,slow=13,SNR=2.4						
LTX	**Lajitas**	**14.42**	**175**	*e*Pn	Pn	18 02 22.6	-6.4
TXAR	**Lajitas Array**	**14.42**	**175**	Pn	Pn	18 02 22.6	-6.4
	0.1nm,0.3s,baz=358,slow=16,SNR=2.8						
YKA	**Yellowknife Ar**	**19.59**	**347**	P	**P**	**18 03 33.4**	**+0.5**
	0.1nm,0.3s,baz=163,slow=12,SNR=4.7						
PETK	**Petropavlovsk-**	**60.30**	**316**	P	P	18 09 10.8	-2.8
	6.2nm,1.1s,baz=24,slow=2.3,SNR=3.7						
ARCES	**ARCESS Array B**	**61.41**	**18**	P	**P**	**18 09 20.4**	**-0.6**
	2.3nm,0.9s,baz=352,slow=7.5,SNR=3.6						
ZALV	**Zalesovo Beam**	**82.32**	**354**	P	**P**	**18 11 24.9**	**-1.9**
	0.2nm,0.3s,baz=23,slow=4.8,SNR=2.6						
MKAR	**Makanchi Array**	**89.62**	**355**	P	**P**	**18 12 00.4**	**-2.6**
	0.3nm,0.8s,baz=358,slow=2.9,SNR=3.9						

*IDC **08** 18:01:15.4±1.1, 36°.16N×142°.19E, h0km, mb3.5/6, mb1 3.7/9, mb1mx3.5/46, mbtmp3.7/9, ML3.7/3, MS3.2/2, Ms1 3.2/2, ms1mx2.5/35, Error ellipse: s-maj=27.7km s-min=18.3km az=86.0*
ISC 08 18:01:18.9±1.1, 35°.95N±0°.06×141°.80E±0°.10, h23km, n18, σ1§58/12, mb3.5/6, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MJAR	**Matsushiro Arr**	**2.96**	**283**	Pn	**Pb**	**18 02 08.9**	**-2.1**
	4.5nm,0.3s,baz=113,slow=8.6,SNR=10						
MAT	**Matsushiro**	**2.96**	**283**	P	**Pb**	**18 02 09.5**	**-1.5**
MAT				*e*S	**Sb**	**18 02 47.8**	**+1.1**
JHJ	**Hachijo jima 2**	**3.28**	**211**	Pn	**Pb**	**18 02 14.7**	**-1.6**
	18nm,0.3s,baz=328,slow=20,SNR=17						
JHJ				Sn	**Sb**	**18 02 56.0**	**+0.3**
	36nm,0.3s,baz=254,slow=23,SNR=9.7						
JCJ	**Chichijima**	**8.83**	**178**	Pn	**Pn**	**18 03 26.9**	**+1.7**
	2.0nm,0.3s,baz=267,slow=17,SNR=3.9						
JCJ				Sn	**Sn**	**18 05 02.8**	**-1.2**
	3.6nm,0.3s,baz=285,slow=19,SNR=3.3						
USRK	**Ussuriysk Ar.**	**11.14**	**321**	LR	LR	18 07 42.8	
	comp=Z,45nm,21.6s,baz=355,slow=35						
H11N2	**WAKE ISLAND Hy**	**27.34**	**120**	T	T	18 35 36.4	
	baz=312,slow=75,SNR=9.9						
H11N1	**WAKE ISLAND Hy**	**27.34**	**120**	T	T	18 35 36.9	
	baz=312,slow=75,SNR=8.3						
H11N3	**WAKE ISLAND Hy**	**27.35**	**120**	T	T	18 35 38.8	
	baz=312,slow=75,SNR=7.5						
H11S1	**WAKE ISLAND Hy**	**28.02**	**122**	T	T	18 36 29.5	
	baz=314,slow=76,SNR=8.1						
H11S3	**WAKE ISLAND Hy**	**28.02**	**122**	T	T	18 36 20.9	
	baz=314,slow=76,SNR=7.7						
H11S2	**WAKE ISLAND Hy**	**28.04**	**122**	T	T	18 36 21.2	
	baz=314,slow=76,SNR=6.3						
SONM	**Songino Array**	**28.66**	**306**	P	**P**	**18 07 16.1**	**+2.2**
	0.9nm,0.6s,baz=111,slow=11,SNR=3.6						
ZALV	**Zalesovo Beam**	**42.88**	**313**	P	**P**	**18 09 14.1**	**-1.1**
	0.4nm,0.6s,baz=93,slow=8.7,SNR=3.6						
MKAR	**Makanchi Array**	**44.96**	**303**	P	**P**	**18 09 32.7**	**+0.6**
	0.9nm,0.6s,baz=88,slow=10,SNR=15						
WRA	**Warramunga Arr**	**56.03**	**188**	P	**P**	**18 10 56.0**	**+0.2**
	0.4nm,0.8s,baz=5.7,slow=9.2,SNR=3.1						
ASAR	**Alice Springs**	**59.76**	**188**	P	P	18 11 24.8	+2.8
	0.5nm,1.0s,baz=24,slow=5.3,SNR=3.4						
YKA	**Yellowknife Ar**	**64.59**	**30**	P	**P**	**18 11 52.7**	**-1.2**
	0.1nm,0.7s,baz=304,slow=6.2,SNR=2.6						
AFI	**Afiamalu**	**66.20**	**130**	LR	LR	18 33 20.0	
	comp=Z,50nm,21.1s,baz=105,slow=29						

JMA 08 18:01:20.3±0.2, 36°.84N×138°.56E, h0km±2km, M1.5, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JGK	**Kuni**	**0.28**	**167**	P	Pg	18 01 26.5	+0.8
JGK				S	Sg	18 01 30.9	+1.5
MAT	**Matsushiro**	**0.41**	**224**	P	Pg	18 01 28.1	-0.1
MAT				S	Sg	18 01 33.5	0.0
MAT	**Matsushiro**	**0.41**	**224**	P	Pg	18 01 28.1	-0.1
MAT				S	Sg	18 01 33.4	-0.1
JJN	**Nakama**	**0.41**	**310**	P	Pg	18 01 29.1	+0.9
JJN				S	Sb	18 01 35.5	-1.8
JHK	**Hiroka**	**0.55**	**42**	P	Pg	18 01 30.9	+0.1
JHK				S	Sg	18 01 38.3	+0.4
JKT	**Katashina**	**0.56**	**97**	S	Sg	18 01 38.7	+0.5
JNG	**Nsakai**	**0.57**	**221**	P	Pg	18 01 31.1	-0.1
JNG				S	Sg	18 01 38.6	0.0

*IDC **08** 18:24:32.8±1.3, 22°.59S×179°.71E, h0km, mb4.1/5, mb1 4.5/6, mb1mx4.0/43, mbtmp4.2/6, ML4.5/1, Error ellipse: s-maj=59.3km s-min=25.1km az=154.0*
*NEIC **08** 18:25:04.8±0.7, 24°.00S×179°.78E, h300km, mb4.6/9, Error ellipse: s-maj=16.0km s-min=13.5km az=111.0*
ISC 08 18:25:23.0±1.2, 25°.0S±0°.2×179°.7E±0°.2, h500km, n21, σ2§01/18, mb3.9/9, South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
URZ	**Urewera**	**13.45**	**189**	Pn	**P**	**18 28 16.9**	**+0.1**
	1.8nm,0.3s,baz=300,slow=2.5,SNR=8.7						
URZ	**Urewera**	**13.45**	**189**	*e*P	**P**	**18 28 16.1**	**-0.6**
BKZ	**Black Stump Fm**	**14.43**	**190**	*e*P	**P**	**18 28 27.5**	**+0.4**
	87nm,1.5s						
THZ	**Tophouse**	**17.69**	**197**	*e*P	**P**	**18 29 00.4**	**0.0**
	101nm,1.5s						
LTZ	**Lake Taylor**	**18.81**	**197**	*e*P	**P**	**18 29 11.9**	**+1.2**
	107nm,1.8s						
LHI	**Lord Howe Isla**	**19.33**	**246**	*e*P	**P**	**18 29 12.5**	**-3.0**
	124nm,1.3s						
OXZ	**Oxford**	**19.38**	**197**	*e*P	**P**	**18 29 18.1**	**+2.2**
	107nm,1.6s						
STKA	**Stephens Creek**	**34.11**	**250**	P	**P**	**18 31 26.7**	**+1.2**
	1.5nm,0.5s,baz=81,slow=9.6,SNR=6.4						
STKA	**Stephens Creek**	**34.11**	**250**	*e*P	**P**	**18 31 26.7**	**+1.2**
	7.7nm,1.8s						
AS01	**Alice Springs**	**41.58**	**262**	*e*P	**P**	**18 32 26.9**	**+0.1**
AS31	**Alice Springs**	**41.62**	**262**	*e*P	**P**	**18 32 26.1**	**-1.0**
	1.6nm,1.0s						

PMG	**Port Moresby**	**25.07 128**	LR	LR	18 44 27.2		
	comp=Z,301nm,21.2s,baz=88,slow=39						
IPM	**Ipoh**	**26.15 268**	*e*P	**P**	**18 33 49.6**	**-1.0**	
	64nm,0.8s						
WRAB	**Tennant Creek**	**26.71 165**	*e*P	**P**	**18 33 56.3**	**+0.7**	
	4.9nm,0.6s						
WR1	**Warramunga Arr**	**26.72 165**	*e*P	**P**	**18 33 56.0**	**+0.4**	
	18nm,1.2s						
WRA	**Warramunga Arr**	**26.72 165**	P	**P**	**18 33 56.0**	**+0.4**	
	4.0nm,0.5s,baz=345,slow=10,SNR=28						
WB2	**Warramunga Arr**	**26.72 165**	*e*P	**P**	**18 33 58.0**	**+2.3**	
	6.9nm,0.8s						
AS31	**Alice Springs**	**30.20 168**	*e*P	**P**	**18 34 26.1**	**-0.6**	
	1.0nm,0.6s						
ASAR	**Alice Springs**	**30.20 168**	P	**P**	**18 34 26.2**	**-0.5**	
	0.8nm,0.5s,baz=352,slow=7.6,SNR=16						
AS01	**Alice Springs**	**30.21 168**	*e*P	**P**	**18 34 26.4**	**-0.4**	
MAJO	**Matsushiro**	**32.01 17**	*e*P	**P**	**18 34 40.8**	**-1.6**	
	9.9nm,1.1s						
BBOO	**Buckleboo**	**39.51 168**	*e*P	**P**	**18 35 47.0**	**+0.3**	
	42nm,1.5s						
NWAO	**Narrogin (SRO)**	**39.87 193**	*e*P	**P**	**18 35 48.0**	**-1.8**	
	40nm,1.5s						
STKA	**Stephens Creek**	**40.09 161**	P	**P**	**18 35 54.0**	**+2.4**	
	5.2nm,0.6s,baz=335,slow=8.4,SNR=12						
STKA	**Stephens Creek**	**40.09 161**	*e*P	**P**	**18 35 54.2**	**+2.6**	
	1.0nm,0.6s						
ILAR	**Eielson Array**	**82.84 26**	P	**P**	**18 40 39.7**	**-0.2**	
	0.2nm,0.5s,baz=258,slow=5.5,SNR=2.8						
ILB	**Eielson Array**	**82.84 26**	*e*P	**P**	**18 40 39.8**	**-0.2**	
ARCES	**ARCESS Array B**	**88.50 340**	P	**P**	**18 41 08.9**	**+1.0**	
	1.3nm,0.7s,baz=78,slow=6.8,SNR=12						
BR101	**Keskin Array S**	**88.97 310**	*e*P	**P**	**18 41 09.9**	**-1.1**	
BRTR	**Keskin Array B**	**88.97 310**	P	**P**	**18 41 09.9**	**-1.1**	
	1.0nm,0.7s,baz=110,slow=3.7,SNR=4.9						
BR231	**Keskin MP Arra**	**89.61 310**	*e*P	P	18 41 10.5	-3.5	
FIA0	**FINESS Array S**	**90.08 332**	*e*P	**P**	**18 41 16.3**	**+0.8**	
FINES	**FINESS Array B**	**90.08 332**	P	**P**	**18 41 16.3**	**+0.8**	
	2.4nm,0.8s,baz=92,slow=5.7,SNR=8.4						
MDVR	**Moldovita**	**96.70 316**⇑	*i*P	**P**	**18 41 46.9**	**+0.5**	
NB200	**NORSAR Array S**	**96.98 334**	*e*P	**P**	**18 41 47.9**	**+0.6**	
NOA	**NORSAR Array B**	**96.98 334**	P	**P**	**18 41 47.9**	**+0.6**	
	1.0nm,0.7s,baz=50,slow=6.1,SNR=3.2						
TORD	**Torodi Ar. Bea**	**122.67 290**	PKP	**PKPdf**	**18 47 13.6**	**+1.1**	
	1.0nm,0.6s,baz=74,slow=2.2,SNR=7.8						
TOA1	**Torodi Ar. Sit**	**122.67 290**	*e*PKPdf	**PKPdf**	**18 47 13.6**	**+1.1**	

*BJI **08** 18:29:11.2, 13˚.65N×120˚.28E, h20km, mb4.8/74, mB4.9/62, Ms4.9/78, MS7 4.7/68*

*MOS **08** 18:29:15.6±0.9, 13˚.91N×120˚.14E, h33km, mb5.3/57, MS4.7/4, Error ellipse: s-maj=8.5km s-min=4.3km az=113.2*

*BKK **08** 18:29:15.5±0.3, 14˚N±4˚×12˚0E±˚, h10km, M4.7/41, mB5.2/26, mb5.1/41, MLv5.5/1, Mw(mB)4.5/26*

*IDC **08** 18:29:17.0±2.1, 13˚.93N×120˚.22E, h30km±14km, mb4.6/31, mb1 4.7/33, mb1mx4.6/46, mbtmp4.7/33, ML4.0/2, MS4.3/13, Ms1 4.2/13, ms1mx3.9/56, Error ellipse: s-maj=14.0km s-min=8.8km az=80.0*

*MAN **08** 18:29:16, 13˚.84N×119˚.79E, h33km, mb5.9, ML4.9, MS5.4*

MAN INTENSITY IV - LOOC & LUBANG OCCIDENTAL MINDORO; INTENSITY III - PUERTO GALERA SAN TEODORO & BACO ORIENTAL MINDORO; MANILA & GUIGINTO BULACAN; MAKATI CITY; MUNTINLUPA CITY; MARIKINA CITY.

*ISCJB **08** 18:29:19.2±0.3, 13˚.91N±0˚.02×120˚.10E±0˚.02, h65km±3km, mb5.0/179, Error ellipse: s-maj=3.6km s-min=2.6km az=179.9*

*NEIC **08** 18:29:20.3±0.5, 13˚.87N×120˚.13E, h64km±4km, mb5.1/90, Error ellipse: s-maj=4.3km s-min=2.7km az=88.0*

NEIC Felt [IV PIVS] at Looc and Lubang, Lubang Island and [III PIVS] at Abra de Ilog, Baco, Puerto Galera and San Teodoro. Felt [III PIVS] at Guiguinto, Makati, Manila, Marikina, Muntinlupa City and Quezon City, Luzon. Also felt at Olongapo, Salcedo and Tarlac.

*GCMT **08** 18:29:20.3±0.2, 13˚.99N×119˚.89E, h21km±1km, MW5.2/72, Moment Tensor Solution. s48,c62; s72,c106; Duration: 0 Moment tensor: Scale 10^16 Nm; Mrr 3.26±.26; Mθθ 0.79±.14; Mφφ -4.05±.19; Mrθ -0.22±.29; Mθφ 0.15±.09; Mφr -6.21±.64; Best double couple: M0 7.21200×10^16 NP1: φs 182.00000°, δ 75.00000°, λ 92.00000°. NP2: φs 353.00000°, δ 15.00000°, λ 81.00000°. Principal axes: T 6.8220, Plg60.0000°, Azm95.0000°; N 0.7820, Plg2.0000°, Azm1.0000°; P -7.6010, Plg30.0000°, Azm270.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

*KLM **08** 18:29:20.3, 13˚.78N×120˚.33E, h66km, mb5.3, MS5.9*

*DJA **08** 18:29:26.4±0.4, 14˚N±2˚×12˚0E±˚, h99km±5km, M4.8/78, mb5.2/78, mB5.3/45, MLv5.3/2, Mw(mB)4.8/45*

ISC 08 18:29:17.2±0.4, 13˚.87N±0˚.02×120˚.04E±0˚.03, h31km±2km, h31km: pP-P, n488, σ 2.9 01/559, mb5.1/177, MS4.6/31, 45C-19D, Mindoro

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TGY	**Tagaytay City**	**0.90**	**75**	*e*P	**Pb**	**18 29 36.2**	**+1.8**
TGY				*i* S	**Sb**	**18 29 50.7**	**+4.6**
PGP	**Puerto Galera**	**0.96**	**112**⇓	*e*P	**Pb**	**18 29 36.0**	**+0.6**
PGP				*i* S	**Sb**	**18 29 53.5**	**+5.8**
LQP	**Lukban**	**1.47**	**80**⇓	*i*P	**Pb**	**18 29 44.4**	**+0.2**
SJMP	**San Jose**	**1.75**	**143**	*e*P	**Pb**	**18 29 47.4**	**-1.4**
BOAC	**Boac**	**1.80**	**103**	*e*P	**Pb**	**18 29 49.2**	**-0.3**
BUSP	**Coron**	**1.86**	**175**	*e*P	**Pn**	**18 29 47.2**	**+0.2**
PCPH	**Palayan**	**1.97**	**31**⇑	*e*P	**Pn**	**18 29 49.6**	**+1.2**
PCPH				*e*S	**Sb**	**18 30 15.7**	**-0.8**
GQP	**Guinayangan**	**2.33**	**89**⇑	*i*P	**Pb**	**18 29 57.6**	**-1.0**
GQP				*e*S	**Sb**	**18 30 32.1**	**+5.0**
BALP	**Baler**	**2.38**	**38**	*e*P	**Pb**	**18 29 56.7**	**-2.7**
OTRP	**Odiongan**	**2.44**	**128**	*e*P	**Pb**	**18 29 57.4**	**-3.1**
BCPH	**Baguio City Da**	**2.55**	**12**⇑	*i*P	**Pb**	**18 30 01.6**	**-0.9**
BCPH				*i* S	**Sb**	**18 30 31.9**	**-1.6**
AUQP	**San Andres**	**2.62**	**102**	*e*P	**Pb**	**18 30 02.8**	**-0.6**
ENPP	**El Nido**	**2.72**	**193**	*e*P	**Pn**	**18 29 58.2**	**-0.5**
CUYO	**Cuyo Island**	**3.15**	**162**	*e*P	**Pn**	**18 30 05.3**	**+0.6**
CAUP	**Cauayan**	**3.51**	**29**	*e*P	**Pn**	**18 30 12.8**	**+3.3**
ABRA	**Dolores**	**3.81**	**10**	*e*P	**Pn**	**18 30 17.1**	**+3.4**
SIPP	**Brgy, Tapao**	**4.05**	**6**⇓	*e*P	**Pb**	**18 30 29.6**	**+1.8**
SIPP				*e*S	Sb	18 31 33.4	+17
GUIM	**Jordan**	**4.07**	**142**	*e*P	**Pn**	**18 30 19.8**	**+2.4**
APYP	**Conner**	**4.13**	**16**	*e*P	**Pn**	**18 30 21.7**	**+3.5**
CVP	**Callao Caves**	**4.18**	**24**⇓	*e*P	**Pn**	**18 30 21.3**	**+2.5**
PPR	**Puerto Princes**	**4.27**	**198**⇓	*e*P	**Pn**	**18 30 19.3**	**-0.7**
PPR				*e*S	**Sn**	**18 31 06.5**	**-2.3**
PIP	**Pasuquin**	**4.46**	**7**⇑	*e*P	Pn	18 30 27.6	+4.8
PIP				*e*S	**Sb**	**18 31 27.4**	**-1.0**
SGCP	**Mt. Cagua**	**4.75**	**24**	*e*P	**Pn**	**18 30 30.0**	**+3.3**
LLP	**Lapu-Lapu**	**5.21**	**132**⇓	*e*P	**Pn**	**18 30 36.8**	**+3.7**
LLP				*e*S	**Sn**	**18 31 31.3**	**-0.9**
KKM	**Kota Kinabalu**	**8.64**	**206**	*e*Pn	**Pn**	**18 31 19.8**	**-0.5**
KKM				*e*Sn	Sn	18 32 46.7	-10
DAV	**Davao City (W)**	**8.68**	**141**	LR	LR	18 35 32.0	
	comp=Z,9μm,18.4s,baz=322,slow=44						
DAV	**Davao City (W)**	**8.68**	**141**	*e*Pn	**Pn**	**18 31 22.2**	**+1.5**
MYLDM	**Lahad Datu**	**8.77**	**190**	⇑P	**Pn**	**18 31 25.2**	**+3.3**
MYLDM	**Lahad Datu**	**8.77**	**190**	*e*Pn	**Pn**	**18 31 24.8**	**+2.9**
MYLDM				*e*Sn	**Sn**	**18 32 54.6**	**-5.1**
TWG	**Pinlang**	**8.96**	**6**	*e*Pn	**Pn**	**18 31 27.4**	**+3.0**
TWG				*e*Sn	Sn	18 32 51.6	-13
TPUB	**Ta-pu**	**9.40**	**3**	*e*Pn	**Pn**	**18 31 34.4**	**+3.9**
YULB	**Yu-li**	**9.55**	**7**	*e*Pn	**Pn**	**18 31 35.7**	**+3.2**
SSLB	**Suanglung**	**9.90**	**5**	*e*Pn	**Pn**	**18 31 40.8**	**+3.3**
HKC	**Hong Kong Obse**	**10.07**	**327**	P	**Pn**	**18 31 38.0**	**-1.7**
MCO	**Taipa Grande**	**10.26**	**324**	P	**Pn**	**18 31 41.0**	**-1.4**
NACB	**Ninganchiao**	**10.35**	**8**	*e*Pn	**Pn**	**18 31 44.0**	**+0.4**
YHNB	**Yeheng**	**10.82**	**6**	*e*Pn	**Pn**	**18 31 53.7**	**+3.6**
YOJ	**Yonaguni jima**	**10.90**	**14**	*e*P	**Pn**	**18 31 53.3**	**+2.2**
YOJ	**Yonaguni jima**	**10.90**	**14**	*e*Pn	**Pn**	**18 31 53.3**	**+2.2**
QZH	**Quanzhou**	**11.10**	**353**	P	**Pn**	**18 31 51.9**	**-1.9**
QZH				LR	LR		
	comp=N,4μm,16.7s						
QZH				LR	LR		
	comp=E,3μm,17.1s						
QZH				LR	LR		
	comp=Z,5μm,19.4s						
GZH	**Guangzhou**	**11.15**	**326**	P	**Pn**	**18 31 55.3**	**+0.8**
SBUM	**Sibu**	**13.73**	**215**	⇑P	**Pn**	**18 32 31.6**	**+1.7**
SBUM	**Sibu**	**13.73**	**215**	*e*Pn	**Pn**	**18 32 29.9**	**0.0**
TNTI	**Ternate**	**14.90**	**150**	P	**P**	**18 32 55.2**	**+4.1**
	266nm,1.5s,3μm						
TNTI	**Ternate**	**14.90**	**150**	*e*Pn	**Pn**	**18 32 46.1**	**+0.4**
JOW	**Kunigami**	**15.02**	**30**	Pn	**Pn**	**18 32 47.0**	**-0.3**
	0.5nm,0.3s,baz=197,slow=9.1,SNR=5.6						
JOW	**Kunigami**	**15.02**	**30**	*e*Pn	**Pn**	**18 32 48.6**	**+1.2**
KSM	**Kuching**	**15.63**	**219**	⇑P	**Pn**	**18 32 57.3**	**+1.9**
KSM	**Kuching**	**15.63**	**219**	*e*Pn	**Pn**	**18 32 55.5**	**+0.1**
	80nm,0.9s						
SKNT	**Sakolnakorn**	**15.79**	**283**	P	**Pn**	**18 32 58.7**	**+1.3**
	102nm,1.1s						
STKI	**Sintang**	**16.13**	**212**	P	**P**	**18 33 04.3**	**-0.4**
LBMI	**Labuha**	**16.20**	**152**	P	**P**	**18 33 07.7**	**+2.2**
	217nm,0.9s,3μm						
KHON	**Khomkaen**	**16.81**	**281**	P	**P**	**18 33 12.9**	**+0.6**
	16nm,1.0s,655nm						
SANI	**Sanana**	**16.88**	**159**	P	**P**	**18 33 14.2**	**+1.1**
	130nm,1.1s,1μm						
SSE	**Sheshan**	**17.18**	**3**	P	**P**	**18 33 15.9**	**-0.3**
SSE				S	**Sn**	**18 36 27.1**	**+2.1**
SSE				pmax	pmax		
	comp=Z,25nm,0.6s						
SSE				pmax	pmax		
	comp=Z,130nm,5.8s						
SSE				LR	LR		
	comp=N,1μm,19.9s						
SSE				LR	LR		
	comp=E,190nm,19.9s						
SSE				LR	LR		
	comp=Z,2μm,18.1s						
CHBT	**CHBT**	**17.27**	**268**	P	**P**	**18 33 18.5**	**+1.1**
	104nm,1.0s,2μm						
WHN	**Wuhan**	**17.40**	**343**	P	**P**	**18 33 21.8**	**+3.0**
WHN				S	**Sn**	**18 36 27.3**	**-3.2**
WHN				pmax	pmax		
	comp=Z,40nm,0.6s						
WHN				pmax	pmax		
	comp=Z,640nm,2.9s						
WHN				LR	LR		
	comp=N,5μm,20.5s						
WHN				LR	LR		
	comp=E,2μm,15.2s						
WHN				LR	LR		
	comp=Z,4μm,20.9s						
KBKI	**Kotabaru**	**17.49**	**193**	P	**P**	**18 33 23.5**	**+3.7**
GYA	**Guiyang**	**17.71**	**317**⇑	*i*P	**P**	**18 33 22.6**	**+0.2**
GYA				pP	pP	18 33 29.4	-1.3
GYA				PP	**sP**	**18 33 38.2**	**+3.5**
GYA				S	**Sn**	**18 36 38.0**	**-0.4**
GYA				sS	S	18 36 47.8	+2.9
GYA				SS	**SnSn**	**18 37 01.6**	**+9.4**
GYA				pmax	pmax		
	comp=Z,20nm,0.9s						
GYA				pmax	pmax		
	comp=Z,140nm,5.0s						
GYA				LR	LR		
	comp=N,4μm,13.0s						
GYA				LR	LR		
	comp=E,3μm,14.5s						
GYA				LR	LR		
	comp=Z,3μm,13.6s						
BBKI	**Banjar Baru**	**17.98**	**197**	P	**P**	**18 33 29.3**	**+4.1**
	94nm,1.3s,2μm						
NJ2	**Nanjing**	**18.13**	**357**	*e*P	**Pn**	**18 33 25.7**	**-0.9**
NJ2				pP	**P**	**18 33 30.2**	**+3.4**
NJ2				S	**Sn**	**18 36 48.7**	**+0.6**
NJ2				sS	**sS**	**18 37 00.0**	**-6.1**
NJ2				pmax	pmax		
	comp=Z,11nm,0.6s						
NJ2				pmax	pmax		
	comp=Z,120nm,4.9s						
NJ2				LR	LR		
	comp=N,2μm,21.7s						
NJ2				LR	LR		
	comp=E,1μm,16.3s						
NJ2				LR	LR		
	comp=Z,2μm,20.6s						
SWI	**Sorong**	**18.38**	**142**	P	**Pn**	**18 33 32.0**	**+2.2**
	82nm,0.9s,1μm						
NLAI	**Namlea**	**18.38**	**157**	P	**Pn**	**18 33 33.1**	**+3.2**
	275nm,0.7s,2μm						
PBKI	**Pangkalan Bun**	**18.44**	**207**	P	**Pn**	**18 33 35.1**	**+4.5**
	162nm,1.0s,2μm						
PBKT	**Sadao Pong**	**18.60**	**281**	P	**Pn**	**18 33 33.1**	**+0.6**
	103nm,1.1s,2μm						
PATY	**Pattaya**	**18.68**	**269**	P	**Pn**	**18 33 35.4**	**+1.9**
	34nm,0.9s,1μm						
KAPI	**Kappang**	**18.76**	**181**	P	**Pn**	**18 33 35.7**	**+1.2**
	2.4nm,0.3s,baz=351,slow=6.3,SNR=4.1						
KAPI				LR	LR	18 41 29.7	
	comp=Z,795nm,18.9s,baz=16,slow=39						
KAPI	**Kappang**	**18.76**	**181**	*e*P	**Pn**	**18 33 36.4**	**+1.9**
	54nm,0.7s						
ENH	**Enshi**	**19.01**	**331**	*e*P	**Pn**	**18 33 37.5**	**+0.1**
	45nm,1.0s						
UTTA	**Uttaradit**	**19.14**	**284**	P	**Pn**	**18 33 39.1**	**+0.1**
	10nm,0.9s,81nm						
PHIT	**Phitsanulok**	**19.19**	**282**	P	**Pn**	**18 33 40.6**	**+0.9**
	98nm,1.0s						
MSAI	**Masohi**	**19.24**	**152**	P	**Pn**	**18 33 42.5**	**+2.2**
	252nm,0.8s,2μm						
KMI	**Kunming**	**19.76**	**307**	P	**Pn**	**18 33 47.2**	**+0.6**
KMI				pP	pP	18 33 54.4	+1.1
KMI				sP	sP	18 33 57.5	+0.2
KMI				S	**S**	**18 37 25.5**	**-0.7**
KMI				pmax	pmax		
	comp=Z,21nm,1.7s						
KMI				pmax	pmax		
	comp=Z,400nm,5.0s						
KMI				LR	LR		
	comp=N,710nm,13.2s						
KMI				LR	LR		
	comp=E,2μm,15.9s						
KMI				LR	LR		
	comp=Z,2μm,17.1s						
CRAI	**Chiangrai**	**19.83**	**291**	P	**P**	**18 33 46.2**	**+0.6**
	62nm,0.9s						
MYKOM	**Kota Tinggi**	**20.01**	**235**	⇓P	Pn	18 33 50.2	+0.8
MYKOM	**Kota Tinggi**	**20.01**	**235**	*e*P	Pn	18 33 49.8	+0.4
	62nm,1.0s						
TPRI	**Tanjung Pinang**	**20.03**	**231**	P	Pn	18 33 50.8	+1.1
LAMP	**Lampung**	**20.13**	**286**	P	Pn	18 33 50.7	-0.2
	19nm,0.9s,178nm						
SKLT	**Songkhla**	**20.21**	**253**	P	Pn	18 33 52.3	+0.5
	130nm,1.2s						
KGM	**Kluang**	**20.30**	**236**	⇓P	Pn	18 33 53.4	+0.6
FAKI	**Fak Fak**	**20.61**	**143**	P	Pn	18 33 57.4	+0.9
	129nm,1.0s,1μm						
FAKI	**Fak Fak**	**20.61**	**143**	*e*P	Pn	18 33 55.5	-1.0
	108nm,0.9s						
BNDI	**Bandanaira**	**20.73**	**151**	P	Pn	18 33 57.9	+0.1
	1μm,1.0s,12μm						
CM01	**Chiang Mai Arr**	**20.75**	**285**	*e*P	**P**	**18 33 56.9**	**+1.3**
CM31	**Chiang Mai Arr**	**20.77**	**285**	*e*P	Pn	18 33 57.5	-0.7
CMAR	**Chiang Mai Arr**	**20.77**	**285**	P	**P**	**18 33 57.5**	**+1.7**
	126nm,0.9s,baz=97,slow=9.3,SNR=583						
CMAR				PcP	**PcP**	**18 38 05.8**	**+1.3**
	3.6nm,0.5s,baz=124,slow=1.0,SNR=12						
CMAR				ScP	**ScP**	**18 41 40.1**	**+1.1**
	3.7nm,0.9s,baz=70,slow=0.9,SNR=13						
KHLT	**Khaolaem Dam**	**20.81**	**275**	P	Pn	18 33 58.0	-0.7
	35nm,1.1s,481nm						
CMMT	**Chiang Mai**	**20.82**	**286**	P	**P**	**18 33 57.1**	**+0.7**
	76nm,1.0s,819nm						
CHTO	**Chiang Mai**	**20.83**	**286**	P	**P**	**18 33 57.1**	**+0.7**
	337nm,1.0s,4μm						
CHTO	**Chiang Mai**	**20.83**	**286**	*e*P	**P**	**18 33 57.3**	**+0.9**
CHTO				pmax	pmax		
	comp=Z,61nm,0.8s						
CHTO	**Chiang Mai**	**20.83**	**286**	*e*P	**P**	**18 33 57.3**	**+0.9**
	comp=Z,61nm,0.8s						
TRTT	**Trang**	**20.86**	**255**	P	Pn	18 33 58.5	-0.8
	comp=Z,129nm,1.0s,comp=Z,1μm						
KULM	**Kulim**	**20.92**	**248**	⇓P	Pn	18 33 59.5	-0.6
KULM	**Kulim**	**20.92**	**248**	*e*P	Pn	18 33 59.2	-0.8
	comp=Z,89nm,1.1s						
DSRI	**Dabo**	**20.93**	**228**	P	Pn	18 34 00.5	+0.4
	comp=Z,292nm,1.1s,comp=Z,3μm						
IPM	**Ipoh**	**20.95**	**245**	⇑P	**P**	**18 33 59.3**	**+1.5**
IPM	**Ipoh**	**20.95**	**245**	*e*P	**P**	**18 33 58.6**	**+0.9**
	comp=Z,64nm,0.8s						
CMAI	**Chiengmai2**	**20.96**	**290**	P	**P**	**18 33 59.4**	**+1.3**
	comp=Z,133nm,1.1s						
FRIM	**Kepong**	**21.03**	**242**	⇑P	**P**	**18 34 00.4**	**+1.7**
PPBI	**Pangkal Pinang**	**21.07**	**222**	P	**P**	**18 34 00.9**	**+1.9**
	comp=Z,61nm,0.9s,comp=Z,579nm						
SURT	**Suratani**	**21.39**	**259**	P	**P**	**18 34 03.9**	**+1.5**
	comp=Z,39nm,1.0s,comp=Z,440nm						
JNU	**Nakatsue**	**21.56**	**25**	P	**P**	**18 34 01.6**	**-2.6**
	comp=Z,14nm,0.9s,baz=218,slow=17,SNR=3.9						
JNU				LR	LR	18 44 04.1	
	comp=Z,336nm,18.1s,baz=218,slow=41						
JNU	**Nakatsue**	**21.56**	**25**	*e*P	**P**	**18 34 05.2**	**+1.0**
	comp=Z,51nm,1.1s						
MHMT	**Maesariang**	**21.67**	**284**	P	**P**	**18 34 07.0**	**+1.5**
	comp=Z,38nm,0.9s,comp=Z,431nm						
KMPI	**Kaimana, Papua**	**22.07**	**141**	P	**P**	**18 34 13.5**	**+3.8**
	comp=Z,193nm,0.9s,comp=Z,2μm						
PKDT	**Phuket**	**22.12**	**257**	P	**P**	**18 34 11.5**	**+1.2**
	comp=Z,61nm,1.0s,comp=Z,865nm						
ABJI	**Asem Bagus**	**22.28**	**195**	P	**P**	**18 34 15.1**	**+3.1**
TIA	**Tai'an**	**22.40**	**354**⇑	P	**P**	**18 34 12.6**	**-0.5**
TIA				S	**S**	**18 38 18.4**	**+1.0**
TIA				pmax	pmax		
	comp=Z,10.0nm,1.0s						
TIA				pmax	pmax		
	comp=Z,240nm,7.0s						
TIA				LR	LR		
	comp=Z,900nm,18.0s						
TIA				LR	LR		
	comp=Z,600nm,15.0s						
TIA				LR	LR		
	comp=Z,1μm,19.6s						
MMRI	**Maumere**	**22.47**	**174**	P	**P**	**18 34 16.8**	**+2.8**
	comp=Z,184nm,1.1s,comp=Z,2μm						
MMRI	**Maumere**	**22.47**	**174**	*e*P	**P**	**18 34 15.1**	**+1.1**
	comp=Z,124nm,0.8s						
CD2	**Chengdu**	**22.63**	**321**	P	**P**	**18 34 15.3**	**-0.4**
CD2				pP	pP	18 34 22.2	-1.9
CD2				PcP	**PcP**	**18 38 11.0**	**+3.0**
CD2				S	**S**	**18 38 18.0**	**-3.7**
CD2				sS	sS	18 38 34.3	-1.7
CD2				SS	**SnSn**	**18 39 02.8**	**+10**
CD2				pmax	pmax		
	comp=Z,160nm,0.9s						
CD2				pmax	pmax		
	comp=Z,450nm,4.9s						
CD2				LR	LR		
	comp=Z,2μm,16.7s						
CD2				LR	LR		
	comp=Z,2μm,17.8s						
PLAI	**Plampang**	**22.66**	**186**	P	**P**	**18 34 18.3**	**+2.2**
	comp=Z,399nm,1.5s,comp=Z,4μm						
TWSI	**Taliwang, Sumb**	**22.68**	**188**	P	**P**	**18 34 19.1**	**+2.9**
	comp=Z,106nm,1.0s,comp=Z,838nm						
NGJI	**Ngawi**	**22.75**	**202**	P	**P**	**18 34 22.7**	**+5.7**
	comp=Z,129nm,1.5s						
DNP	**Denpasar**	**22.91**	**192**	P	**P**	**18 34 25.7**	**+7.1**
	comp=Z,203nm,1.3s,comp=Z,10μm						
JAGI	**Jajag, Banyuwa**	**22.95**	**195**	P	**P**	**18 34 21.8**	**+2.7**
	comp=Z,72nm,1.4s,comp=Z,1μm						
JAGI	**Jajag, Banyuwa**	**22.95**	**195**	*e*P	**P**	**18 34 21.0**	**+1.9**
	comp=Z,305nm,1.8s						
JAGI				*e*PcP	**PcP**	**18 38 07.3**	**-1.6**
GMJI	**Gumukmas**	**22.95**	**197**	P	**P**	**18 34 25.1**	**+6.0**
	comp=Z,64nm,1.1s						
BKNI	**Bangkinang**	**23.13**	**236**	P	**P**	**18 34 21.9**	**+1.0**
BKNI	**Bangkinang**	**23.13**	**236**	*e*P	**P**	**18 34 20.9**	**-0.1**
	comp=Z,210nm,1.3s						
WOJI	**Wonogiri, Jawa**	**23.39**	**203**	P	**P**	**18 34 27.1**	**+3.6**
	comp=Z,103nm,1.4s,comp=Z,5μm						
TSI	**Tuntungan**	**23.57**	**246**	P	**P**	**18 34 26.8**	**+1.5**
	comp=Z,256nm,1.0s,comp=Z,6μm						
PSI	**Prapat**	**23.58**	**244**	P	**P**	**18 34 26.0**	**+0.4**
	comp=Z,71nm,0.8s,baz=52,slow=6.6,SNR=38						
PSI				PcP	**PcP**	**18 38 10.6**	**+0.2**
	comp=Z,4.1nm,0.3s,baz=181,slow=3.1,SNR=4.9						
PSI				LR	LR	18 43 05.1	
	comp=Z,701nm,21.0s,baz=82,slow=35						
PSI	**Prapat**	**23.58**	**244**	*e*P	**P**	**18 34 25.8**	**+0.2**
PSI				*e*		18 38 10.2	
PSI				pmax	pmax		
	comp=Z,82nm,0.9s						
PSI	**Prapat**	**23.58**	**244**	*e*P	**P**	**18 34 25.8**	**+0.2**
	comp=Z,82nm,0.9s						
PSI				*e*PcP	**PcP**	**18 38 10.2**	**-0.2**
KPJI	**Karang Pucung**	**23.78**	**208**	P	**P**	**18 34 31.1**	**+3.9**
	comp=Z,69nm,1.4s						
SOEI	**Soe**	**23.84**	**170**	P	**P**	**18 34 29.4**	**+1.4**
	comp=Z,118nm,1.1s,comp=Z,2μm						
SOEI	**Soe**	**23.84**	**170**	*e*P	**P**	**18 34 28.0**	**0.0**
	comp=Z,247nm,0.8s						
BASI	**Baing, Sumba**	**23.94**	**179**	P	**P**	**18 34 31.9**	**+3.2**
	comp=Z,262nm,1.0s						
LEM	**Lembang**	**23.98**	**212**	LR	LR	18 45 42.7	
	comp=Z,549nm,18.6s,baz=42,slow=41						
LEM	**Lembang**	**23.98**	**212**	P	**P**	**18 34 32.2**	**+2.9**
LHSI	**Lahat**	**24.04**	**224**	P	**P**	**18 34 32.0**	**+2.3**
	comp=Z,61nm,1.7s						
MNSI	**Mandailing Nat**	**24.06**	**239**	P	**P**	**18 34 30.8**	**+0.9**
	comp=Z,78nm,0.9s,comp=Z,1μm						
MDSI	**Maura Dua**	**24.09**	**222**	P	**P**	**18 34 31.8**	**+1.6**
	comp=Z,23nm,0.8s,comp=Z,452nm						
GUMO	**Guam**	**24.12**	**88**	LR	LR	18 43 53.5	
	comp=Z,998nm,18.6s,baz=246,slow=37						
BATI	**Baumata**	**24.19**	**171**	P	**P**	**18 34 31.6**	**+0.5**
	comp=

LZH PcP **PcP** **18 38 18.3 +1.8**
LZH *e*S **S** **18 39 25.0 +1.1**
LZH sS sS 18 39 38.0 -0.9
LZH SS **SnSn** **18 40 33.0 +6.3**
LZH ScP **ScP** **18 41 55.8 +1.5**
LZH pmax pmax
comp=Z,42nm,1.0s
LZH pmax pmax
comp=Z,170nm,5.3s
LZH LR LR
comp=Z,2μm,17.2s
LZH LR LR
comp=Z,1μm,14.5s
LZH LR LR
comp=Z,3μm,18.6s
MAJO Matsushiro 27.82 33 P **P** **18 35 04.8 +1.0**
MAJO pmax pmax
comp=Z,41nm,1.4s
MJAR Matsushiro Arr 27.82 33 P **P** **18 35 01.5 -2.3**
comp=Z,1.4nm,0.7s,baz=212,slow=8.6,SNR=4.5
HHC Hu-ho-hao-te 27.88 346 *e*P **P** **18 35 06.6 +2.2**
HHC PP **PnPn** **18 35 57.5 +5.9**
HHC S **S** **18 39 49.6 +3.7**
HHC sS sS 18 40 02.7 +1.8
HHC SS **SnSn** **18 41 13.8 +13**
HHC pmax pmax
comp=Z,35nm,1.6s
HHC pmax pmax
comp=Z,130nm,3.4s
HHC LR LR
comp=Z,2μm,16.2s
HHC LR LR
comp=Z,2μm,14.9s
HHC LR LR
comp=Z,2μm,16.2s
SNY Shenyang 28.02 6 ⇑P **P** **18 35 04.4 -1.1**
SNY pmax pmax
comp=Z,64nm,0.9s
SNY pmax pmax
comp=Z,260nm,4.3s
SNY LR LR
comp=Z,440nm,14.3s
SNY LR LR
comp=Z,1μm,18.6s
SNY LR LR
comp=Z,1μm,18.4s
MTN Manton Dam 28.73 157 *e*P **P** **18 35 10.7 -1.2**
comp=Z,41nm,0.9s
SHL Shillong 28.88 298 *e*P **P** **18 35 13.5 0.0**
CN2 Changchun 30.19 8 *e*P **P** **18 35 23.3 -1.3**
CN2 *e*sP pP 18 35 34.0 +0.3
CN2 *e*S **S** **18 40 19.9 -2.0**
CN2 pmax pmax
comp=Z,10.0nm,1.0s
CN2 pmax pmax
comp=Z,200nm,4.0s
CN2 LR LR
comp=Z,1μm,20.0s
CN2 LR LR
comp=Z,800nm,20.0s
CN2 LR LR
comp=Z,500nm,19.0s
LSA Lhasa 30.99 305 *e*P **P** **18 35 32.8 +0.3**
LSA pmax pmax
comp=Z,14nm,1.0s
LSA Lhasa 30.99 305 *e*P **P** **18 35 32.8 +0.3**
comp=Z,14nm,1.0s
GTA Gaotai 31.06 329 ⇑P **P** **18 35 32.9 +0.3**
GTA pP pP 18 35 41.7 0.0
GTA sP sP 18 35 45.7 +0.2
GTA PcP **PcP** **18 38 28.6 +0.7**
GTA S **S** **18 40 35.2 -0.8**
GTA sS sS 18 40 48.0 -3.0
GTA ScP **ScP** **18 42 08.8 +0.2**
GTA PcS **PcS** **18 42 11.6 -0.4**
GTA pmax pmax
comp=Z,3.0nm,1.0s
GTA pmax pmax
comp=Z,67nm,6.4s
GTA LR LR
comp=Z,1μm,15.7s
GTA LR LR
comp=Z,2μm,18.1s
GTA LR LR
comp=Z,2μm,18.5s
MDJ Mudanjiang 31.71 13 P **P** **18 35 37.4 -0.7**
MDJ pP pP 18 35 42.2 -5.0
MDJ sP sP 18 35 45.4 -5.6
MDJ S **S** **18 40 46.3 +0.6**
MDJ sS sS 18 40 55.8 -4.9
MDJ pmax pmax
comp=Z,21nm,1.4s
MDJ pmax pmax
comp=Z,98nm,5.0s
MDJ LR LR
comp=Z,1μm,11.6s
MDJ LR LR
comp=Z,1μm,17.1s
MDJ LR LR
comp=Z,2μm,24.0s
MDJ Mudanjiang 31.71 13 *e*P **P** **18 35 38.1 +0.1**
comp=Z,34nm,1.1s
USRK Ussuriysk Ar. 31.91 16 P **P** **18 35 39.2 -0.6**
comp=Z,11nm,0.8s,baz=202,slow=7.5,SNR=22
USRK PcP **PcP** **18 38 28.6 -1.2**
comp=Z,1.8nm,0.8s,baz=230,slow=1.1,SNR=3.9
FITZ Fitzroy Crossi 32.25 170 P **P** **18 35 43.1 +0.1**
comp=Z,24nm,0.9s,baz=13,slow=7.5,SNR=15
FITZ Fitzroy Crossi 32.25 170 *e*P **P** **18 35 42.8 -0.2**
comp=Z,56nm,1.3s
TAPN Taplejung 32.99 299 *e*P **P** **18 35 49.4 -0.5**
comp=Z,16nm,0.6s
ODAN Odare 33.12 298 *e*P **P** **18 35 50.5 -0.5**
comp=Z,43nm,0.8s
RAMN Ramite 33.82 298 *e*P **P** **18 35 57.0 -0.1**
comp=Z,43nm,0.7s
GUN Gumba 34.70 299 *e*P **P** **18 36 04.5 -0.4**
comp=Z,69nm,0.6s
MBWA Marble Bar 34.81 181 *e*P **P** **18 36 04.9 -0.4**
comp=Z,28nm,0.8s
PKIN Phulchoki 35.02 298 *e*P **P** **18 36 07.1 -0.4**
comp=Z,18nm,0.6s
KKN Kakani 35.18 299 *e*P **P** **18 36 07.9 -0.9**
comp=Z,33nm,0.7s
DMN Daman 35.28 298 *e*P **P** **18 36 09.1 -0.6**
comp=Z,34nm,0.7s
HIA Hailar 35.30 360 *e*P **P** **18 36 08.2 -1.1**
HIA *e* 18 38 38.6
HIA pmax pmax
comp=Z,14nm,0.8s
HIA Hailar 35.30 360 *e*P **P** **18 36 08.2 -1.1**
comp=Z,14nm,0.8s
HIA *e*PcP **PcP** **18 38 38.6 -0.7**
PMG Port Moresby 35.48 129 P **P** **18 36 10.5 -0.7**
comp=Z,13nm,0.7s,baz=294,slow=7.9,SNR=8.2
PMG Port Moresby 35.48 129⇓ *i*P **P** **18 36 11.7 +0.5**
PMG pmax pmax
comp=Z,67nm,0.9s
PMG Port Moresby 35.48 129 *e*P **P** **18 36 10.7 -0.6**
comp=Z,15nm,0.8s
ULN Ulaanbaatar 35.58 345⇑ *e*P **P** **18 36 12.9 +1.0**
ULN pmax pmax
comp=Z,4.0nm,0.9s
ULN Ulaanbaatar 35.58 345 *e*P **P** **18 36 12.5 +0.7**
comp=Z,11nm,1.0s
ULN *e*PcP **PcP** **18 38 39.8 -0.6**
SONA0 Songino Array 35.72 344 *e*P **P** **18 36 13.5 +0.4**
comp=Z,11nm,1.0s
SONA0 *e*PcP **PcP** **18 38 41.0 +0.2**
SONA0 *e*ScP **ScP** **18 42 24.0 -0.8**
SONM Songino Array 35.72 344 P **P** **18 36 13.5 +0.4**
comp=Z,4.9nm,0.8s,baz=160,slow=8.9,SNR=16
SONM PcP **PcP** **18 38 41.0 +0.2**
comp=Z,10nm,0.8s,baz=153,slow=2.9,SNR=9.9
SONM ScP **ScP** **18 42 24.0 -0.8**
comp=Z,1.9nm,1.0s,baz=128,slow=2.4,SNR=4.3
SONA1 Songino Array 35.73 344 *e*P **P** **18 36 13.2 0.0**
SONA1 *e*PcP **PcP** **18 38 40.2 -0.6**
SONA1 *e*ScP **ScP** **18 42 24.5 -0.2**
GKN Gorkha 35.78 299 *e*P **P** **18 36 12.9 -1.0**
comp=Z,29nm,0.8s
WRAB Tennant Creek 36.42 157*c* *i*P **P** **18 36 18.5 -0.7**
WRAB pmax pmax
comp=Z,309nm,0.9s
WRAB Tennant Creek 36.42 157 *e*P **P** **18 36 18.8 -0.4**
comp=Z,136nm,0.7s
WR1 Warramunga Arr 36.43 157 *e*P **P** **18 36 18.5 -0.7**
comp=Z,169nm,0.6s
WR1 *e*S **S** **18 41 55.5 -3.6**
WR1 *e*ScP **ScP** **18 42 26.5 -1.1**
WRA Warramunga Arr 36.43 157 P **P** **18 36 18.5 -0.7**
comp=Z,126nm,0.8s,baz=336,slow=9.5,SNR=72
WRA S **S** **18 41 55.5 -3.6**
comp=Z,1.0nm,0.9s,baz=342,slow=15,SNR=3.0
WRA ScP **ScP** **18 42 26.5 -1.1**
comp=Z,1.7nm,0.7s,baz=341,slow=4.2,SNR=5.3
WRA LR LR 18 53 22.2
comp=Z,321nm,21.9s,baz=0.0,slow=40
WB2 Warramunga Arr 36.43 157 *e*P **P** **18 36 18.7 -0.6**
comp=Z,166nm,0.6s
KLR Kul'dur 36.55 13 P **P** **18 36 19.3 -0.7**
comp=Z,18nm,0.7s,baz=209,slow=6.7,SNR=72
KLR PcP **PcP** **18 38 41.6 -1.4**
comp=Z,4.4nm,0.7s,baz=222,slow=3.1,SNR=6.1
KLR Kul'dur 36.55 13 *i*P **P** **18 36 19.6 -0.4**
KOLN Koldanda 36.61 298 *e*P **P** **18 36 20.3 -0.8**
comp=Z,21nm,0.7s
HABR Khabarovsk 36.67 17 *e*P **P** **18 36 18.9 -2.1**
HABR *e**PP **pP** **18 36 28.5 -1.7**
HABR *e**SP **sP** **18 36 32.6 -1.4**
HABR *e* 18 37 42.4
HABR *e*PPP PPP 18 37 58.2
HABR *e* 18 38 40.8
HABR *e*S **S** **18 42 00.8 -1.4**
HABR *e**SS **sS** **18 42 17.1 -0.3**
HABR pmax pmax
comp=Z,13nm,1.5s
HABR pmax pmax
comp=Z,20nm,1.5s
HABR pmax pmax
comp=Z,17nm,1.5s
HABR MLR MLR
comp=Z,409nm,18.0s
PYUN Piuthan 37.21 298 *e*P **P** **18 36 25.8 -0.4**
comp=Z,68nm,0.7s
YSS Yuzh-Sakhalins 38.07 25 P **P** **18 36 32.4 -0.5**
YSS pmax pmax
comp=Z,12nm,1.0s
YSS Yuzh-Sakhalins 38.07 25 *e*P **P** **18 36 30.6 -2.3**
comp=Z,17nm,1.0s
CIT Chita 38.41 354 *e*P **P** **18 36 35.8 0.0**
CIT *e* 18 36 44.5
CIT *e* 18 38 49.6
CIT *e* 18 42 27.8
CIT pmax pmax
comp=Z,85nm,1.3s
ZAK Zakamensk 38.89 343 *e*P **P** **18 36 40.1 +0.2**
ZAK *e* 18 38 48.7
ZAK pmax pmax
comp=Z,17nm,1.0s
ZAK pmax pmax
comp=Z,12nm,1.2s
KUR Kuril'sk 39.15 31 ⇑P **P** **18 36 41.6 -0.4**
AS31 Alice Springs 39.69 160 *e*P **P** **18 36 46.8 0.0**
comp=Z,24nm,0.7s
ASAR Alice Springs 39.69 160 P **P** **18 36 46.6 -0.1**
comp=Z,69nm,0.7s,baz=335,slow=7.1,SNR=182
ASAR S **S** **18 42 46.1 -2.4**
comp=Z,2.4nm,0.9s,baz=350,slow=15,SNR=6.6
ASAR LR LR 18 55 07.4
comp=Z,134nm,21.1s,baz=338,slow=39
AS01 Alice Springs 39.71 160 *e*P **P** **18 36 46.3 -0.6**
TLY Talaya 39.96 344 *e*P **P** **18 36 50.5 +1.8**
TLY *e* 18 38 19.2
TLY pmax pmax
comp=Z,14nm,0.8s
TLY MLR MLR
comp=Z,719nm,17.0s
TLY Talaya 39.96 344 *e*P **P** **18 36 49.5 +0.8**
comp=Z,27nm,0.8s
TLY *e*PcP **PcP** **18 38 54.0 +0.4**
HYB Hyderabad 40.05 281 *i*P **P** **18 36 51.0 +1.0**
comp=Z,60nm,1.0s
HYB *e* 18 36 57.5
IRK Irkutsk 40.31 345 *e*P **P** **18 36 51.4 -0.2**
IRK pmax pmax
comp=Z,59nm,1.3s
WMQ Urumqi 40.69 324 *e*P **P** **18 36 56.2 +1.3**
WMQ pP pP 18 37 04.0 -0.2
WMQ sP sP 18 37 06.2 -1.8
WMQ PP **PnPn** **18 38 34.0 +0.9**
WMQ PcP **PcP** **18 38 59.6 +3.4**
WMQ S **S** **18 43 05.2 +2.0**
WMQ sS sS 18 43 17.2 -1.2
WMQ SS **SS** **18 46 02.9 -1.4**
WMQ pmax pmax
comp=Z,6.0nm,0.5s
WMQ pmax pmax
comp=Z,48nm,4.6s
WMQ LR LR
comp=Z,900nm,15.8s
WMQ LR LR
comp=Z,630nm,16.8s
WMQ LR LR
comp=Z,630nm,19.6s
MOY Mondy 40.70 342 *e*P **P** **18 36 55.4 +0.5**
MOY pmax pmax
comp=Z,38nm,1.0s
CTAO Charters Tower 42.47 142 *e*P **P** **18 37 09.9 +0.2**
CTAO pmax pmax
comp=Z,46nm,0.9s
CTAO Charters Tower 42.47 142 *e*P **P** **18 37 09.9 +0.2**
comp=Z,46nm,0.9s
TRD Trivandrum 42.55 268⇑ *e*P P 18 37 19.6 +9.1
TRD *e*S S 18 43 41.6 +10
BOD Bodaibo 44.10 355 *e*P **P** **18 37 21.6 -0.8**
BOD pmax pmax
comp=Z,17nm,1.3s
THN Thein Dam 44.38 302 *e*P **P** **18 37 23.6 -1.4**
PDGK Podgornoye 45.47 318 P **P** **18 37 33.5 +0.1**
PDGK pmax pmax
comp=Z,24nm,0.8s
MK31 Makanchi Array 45.52 324 *i*P **P** **18 37 34.0 +0.1**
MK31 pmax pmax
comp=Z,18nm,0.9s
MK32 Makanchi Array 45.52 324 *e*P **P** **18 37 34.3 +0.5**
MK32 *e*PcP **PcP** **18 39 12.2 -0.1**
MK32 *e*ScP **ScP** **18 43 02.2 -0.9**
MKAR Makanchi Array 45.52 324 P **P** **18 37 34.3 +0.4**
comp=Z,15nm,0.8s,baz=129,slow=8.7,SNR=132
MKAR PcP **PcP** **18 39 12.2 -0.1**
comp=Z,6.4nm,0.8s,baz=112,slow=2.8,SNR=4.1
MKAR ScP **ScP** **18 43 02.2 -0.9**
comp=Z,2.9nm,1.0s,baz=116,slow=5.5,SNR=5.8
MAKZ Makanchi 45.70 324 *e*P **P** **18 37 36.0 +0.7**
MAKZ pmax pmax
comp=Z,20nm,1.0s
MAKZ Makanchi 45.70 324 *e*P **P** **18 37 36.0 +0.7**
comp=Z,20nm,1.0s
KSH Kashi 46.31 312 P **P** **18 37 42.8 +2.4**
KSH *e*pP pP 18 37 50.2 +0.4
KSH *e*sP sP 18 37 53.4 -0.1
KSH *e*PP **PP** **18 39 31.7 +2.3**
KSH S **S** **18 44 28.3 +2.7**
KSH SS **SS** **18 47 48.7 -2.7**
KSH pmax pmax
comp=Z,14nm,0.8s
KSH pmax pmax
comp=Z,130nm,3.7s
KSH LR LR
comp=Z,320nm,11.8s
KSH LR LR
comp=Z,910nm,19.3s
KSH LR LR
comp=Z,1μm,17.9s
NWAO Narrogin (SRO) 46.61 183 *e*P **P** **18 37 42.3 -0.2**
NWAO pmax pmax
comp=Z,25nm,0.6s
NWAO Narrogin (SRO) 46.61 183 *e*P **P** **18 37 42.2 -0.2**
comp=Z,25nm,0.6s
KRAR Krasnoyarsk 46.97 339⇓ P **P** **18 37 44.4 -0.7**
KRAR pmax pmax
comp=Z,36nm,0.9s
TKM2 Tokmak 2 47.86 316 P **P** **18 37 52.4 -0.1**
TKM2 pmax pmax
comp=Z,10.0nm,0.8s
TKM2 Tokmak 2 47.86 316 *e*P **P** **18 37 52.9 +0.4**
comp=Z,16nm,0.9s
SFK Sufi-Kurgan 48.27 312 P **P** **18 37 56.0 +0.2**
SFK pmax pmax
comp=Z,12nm,1.0s
FRU Bishkek 48.49 316 *e*P **P** **18 37 58.0 +0.8**
FRU pmax pmax
comp=Z,49nm,1.9s
FRU MLR MLR
comp=E,1μm,20.0s
AAK Ala-Archa 48.49 315 *e*P **P** **18 37 57.8 +0.4**
AAK pmax pmax
comp=Z,19nm,1.0s
AAK Ala-Archa 48.49 315 *e*P **P** **18 37 57.8 +0.4**
comp=Z,19nm,1.0s
YAK Yakutsk 48.59 6*c* *i*P **P** **18 37 55.9 -1.6**
YAK *e* 18 39 21.3
YAK *e*PPP PPP 18 40 37.1
YAK *e*S **S** **18 44 54.5 -2.5**
YAK pmax pmax
comp=E,10.0nm,1.0s
YAK pmax pmax
comp=Z,75nm,0.9s
YAK pmax pmax
comp=N,24nm,1.0s
YAK pmax pmax
comp=Z,103nm,3.2s
YAK pmax pmax
comp=N,44nm,2.8s
YAK pmax pmax
comp=E,35nm,3.0s
YAK smax smax
comp=N,37nm,1.5s
YAK smax smax
comp=E,22nm,1.5s
YAK Yakutsk 48.59 6 *e*P **P** **18 37 56.2 -1.3**
comp=E,76nm,0.9s
ZAA0 Zalesovo Array 48.62 333 *e*P **P** **18 37 57.0 -0.9**
ZALV Zalesovo Beam 48.62 333 P **P** **18 37 57.5 -0.4**
comp=E,3.3nm,0.4s,baz=133,slow=7.2,SNR=20
ZAA1 Zalesovo Array 48.62 333 *e*P **P** **18 37 57.5 -0.4**
BBOO Buckleboo 48.88 162 *e*P **P** **18 37 59.3 -0.8**
comp=E,98nm,0.8s
EKS2 Erkin-Say 49.00 315 *e*P **P** **18 38 01.4 +0.2**
EKS2 pmax pmax
comp=Z,39nm,1.1s
EKS2 Erkin-Say 49.00 315 *e*P **P** **18 38 01.4 +0.2**
comp=Z,39nm,1.1s
PEA0 Petropavlovsk- 49.19 29 *e*P **P** **18 38 00.5 -1.8**
PEA0B Petropavlovsk- 49.19 29 *e*P **P** **18 38 01.4 -0.8**
comp=Z,129nm,1.6s
PETK Petropavlovsk- 49.19 29 P **P** **18 38 00.8 -1.5**
comp=Z,11nm,0.8s,baz=213,slow=6.9,SNR=7.6
PEA1 Petropavlovsk- 49.19 29 *e*P **P** **18 38 00.8 -1.5**
EIDS Eidsvold 49.36 142 *e*P **P** **18 38 02.5 -1.4**
comp=Z,30nm,1.1s
KURK Kurchatov 49.70 327 P **P** **18 38 06.4 +0.2**
KURK pmax pmax
comp=Z,103nm,1.1s
KURK Kurchatov 49.70 327 *e*P **P** **18 38 06.4 +0.2**
comp=Z,88nm,0.7s
MNAS Manas 49.81 314 P **P** **18 38 07.9 +0.5**
MNAS pmax pmax
comp=Z,13nm,0.8s
NVS Novosibirsk 49.90 333 *e*P **P** **18 38 07.2 -0.5**
NVS *e*S **S** **18 45 14.6 -1.1**
NVS pmax pmax
comp=N,10.0nm,1.0s
NVS pmax pmax
comp=E,16nm,1.0s
NVS pmax pmax
comp=Z,19nm,1.0s
NVS smax smax
comp=N,24nm,2.1s
NVS smax smax
comp=E,23nm,2.1s
STKA Stephens Creek 49.96 156 P **P** **18 38 07.6 -0.8**
comp=E,27nm,0.8s,baz=338,slow=9.1,SNR=21
STKA PP **PP** **18 40 03.0 -0.7**
comp=E,12nm,1.0s,baz=323,slow=12,SNR=2.9
STKA PKKP **PKKPdf** **19 00 37.1 -5.5**
comp=E,2.0nm,0.8s,baz=1.7,slow=7.0,SNR=2.9
STKA LR LR 19 03 55.9
comp=E,128nm,18.8s,baz=341,slow=42
STKA Stephens Creek 49.96 156 *e*P **P** **18 38 07.3 -1.1**
STKA pmax pmax
comp=Z,5.0nm,0.8s
STKA Stephens Creek 49.96 156 *e*P **P** **18 38 07.3 -1.1**
comp=Z,5.1nm,0.8s
STKA PKKP **PKKPdf** **19 00 37.1 -5.5**
KBL Kabul 50.28 303 *e*P **P** **18 38 11.3 +0.1**
KBL pmax pmax
comp=Z,33nm,0.8s
KBL Kabul 50.28 303 *e*P **P** **18 38 11.3 +0.1**
comp=Z,33nm,0.8s
MA2 Magadan 50.95 20⇓ *e*P **P** **18 38 16.3 +0.7**
KK31 Karatay Array 51.40 315 *i*P **P** **18 38 19.4 +0.1**
KK31 pmax pmax
comp=Z,10.0nm,0.7s
KKAR Karatay Array 51.40 315 *e*P **P** **18 38 19.2 -0.1**
KKAR Karatay Array 51.40 315 *e*P **P** **18 38 19.2 -0.1**
OTUK Ortayu 52.12 321 P **P** **18 38 24.7 +0.2**
OTUK pmax pmax
comp=Z,18nm,1.1s
SEY Seymchan 54.04 18⇑ *i*P **P** **18 38 37.7 -0.7**
VOSK Vostochnaya 54.82 326 *e*P **P** **18 38 44.4 +0.2**
VOSK pmax pmax
comp=Z,15nm,0.8s
VOSK Vostochnaya 54.82 326 *e*P **P** **18 38 44.4 +0.2**
comp=Z,15nm,0.8s
BVA0 Borovoye Array 55.27 326 P **P** **18 38 47.6 +0.1**
BVA0 pmax pmax
comp=Z,15nm,1.2s
BRVK Borovoye 55.35 326*c* *i*P **P** **18 38 49.0 +1.0**
BRVK pmax pmax
comp=Z,34nm,1.7s
BRVK Borovoye 55.35 326 *e*P **P** **18 38 48.9 +0.9**
comp=Z,30nm,1.0s
CHKZ Chkalovo 55.44 327 P **P** **18 38 47.3 -1.4**
CHKZ pmax pmax
comp=Z,15nm,1.3s
ZRNK Zerenda 56.00 325 *e*P **P** **18 38 53.1 +0.4**
ZRNK pmax pmax
comp=Z,84nm,1.6s
ZRNK Zerenda 56.00 325 *e*P **P** **18 38 53.1 +0.4**
comp=Z,84nm,1.6s
CAN Canberra 56.09 152 *e*P **P** **18 38 53.3 -0.4**
CAN pmax pmax
comp=Z,26nm,1.1s
CAN Canberra 56.09 152 *e*P **P** **18 38 53.3 -0.4**
comp=Z,26nm,1.1s
TIXI Tiksi 58.00 3*d* *i*P **P** **18 39 05.6 -0.9**
TIXI pmax pmax
comp=Z,44nm,0.9s
TIXI Tiksi 58.00 3 *e*P **P** **18 39 04.3 -2.2**
comp=Z,45nm,1.0s
NRIK Noril'sk 59.11 347 P **P** **18 39 14.0 -0.3**
comp=Z,21nm,1.0s,baz=134,slow=6.5,SNR=20
NRIK PcP **PcP** **18 40 02.9 +0.1**
comp=Z,35nm,0.8s,baz=129,slow=4.5,SNR=10
GEYT Alibeck 59.52 306 P **P** **18 39 19.1 +1.3**
comp=Z,12nm,0.9s,baz=129,slow=4.0,SNR=23
AB31 Akbulak array 60.19 319 P **P** **18 39 20.8 -1.3**
AB31 pmax pmax
comp=Z,25nm,1.2s
ABKAR Akbulak array 60.19 319 *e*P **P** **18 39 22.4 +0.3**
SVE Sverdlovsk 61.92 328⇑ *e*P **P** **18 39 34.2 +0.5**
SVE pmax pmax
comp=Z,42nm,0.9s
ARU Arti 62.89 327*c* *i*P **P** **18 39 39.7 -0.5**
ARU 18 41 56.7
ARU S **S** **18 48 09.3 +1.5**
ARU SS **SS** **18 52 14.6 +1.5**
ARU pmax pmax
comp=Z,19nm,1.7s
ARU Arti 62.89 327 *e*P **P** **18 39 39.5 -0.8**
comp=Z,18nm,0.7s
SOKR Solikamsk 64.69 330⇑ *i*P **P** **18 39 50.6 -1.4**
SOKR pmax pmax
comp=Z,39nm,1.2s
SOKR MLR MLR
comp=Z,831nm,20.0s
MSVF Nonsavu 65.27 117 *e*P **P** **18 39 56.7 +0.1**
MSVF pmax pmax
comp=Z,41nm,0.9s
MSVF Nonsavu 65.27 117 *e*P **P** **18 39 56.7 +0.1**
comp=Z,41nm,0.9s
GAMB Gambell 68.08 26 *e*P **P** **18 40 13.6 -0.1**
comp=Z,27nm,1.0s
DGRG David-gareji 69.50 309 P **P** **18 40 26.0 +3.0**
DGRG David-gareji 69.50 309 P **P** **18 40 26.0 +3.0**

TBLG	**Delisi**	**69.98**	**310**	P	**P**		18 40 29.2	+3.3
TBLG	**Delisi**	**69.98**	**310**	P	**P**		18 40 29.2	+3.3
GNI	**Garni**	**70.01**	**308**	P	**P**		18 40 25.9	-0.4
GNI	comp=Z,36nm,1.3s			pmax	pmax			
GNI	**Garni**	**70.01**	**308**	*e*P	**P**		18 40 27.9	+1.6
	comp=Z,81nm,1.4s							
GUDG	**Gudauri**	**70.16**	**310**	P	**P**		18 40 31.6	+4.3
ZEI	**Tsey**	**70.58**	**311**	*e*P	**P**		18 40 29.3	-0.5
ZEI	comp=Z,42nm,1.0s			pmax	pmax			
RAYN	**Ar Rayn**	**70.60**	**290**	*e*P	**P**		18 40 29.9	-0.2
	comp=Z,31nm,1.1s							
AKH	**Akhalkalaki**	**70.92**	**309**	P	**P**		18 40 33.2	+1.4
AKH	**Akhalkalaki**	**70.92**	**309**	P	**P**		18 40 33.2	+1.4
KBZ	**Khabaz**	**71.29**	**312**	P	**P**		18 40 34.8	+1.0
	comp=Z,10nm,1.0s,baz=124,slow=5.8,SNR=6.3							
NEY	**Neytrino**	**71.43**	**311**	P	**P**		18 40 34.0	-0.9
NEY	comp=Z,1.0nm,0.8s			pmax	pmax			
KIV	**Kislovodsk**	**71.44**	**312**⇓	*e*P	**P**		18 40 35.6	+0.8
KIV				*e*			18 43 11.3	
KIV				*e*S	S		18 49 41.9	-10
KIV	comp=Z,14nm,0.8s			pmax	pmax			
KIV	comp=Z,291nm,16.0s			MLR	MLR			
KIV	**Kislovodsk**	**71.44**	**312**	*e*P	**P**		18 40 34.8	0.0
	comp=Z,22nm,0.8s							
CHVG	**Ch'k'valeri**	**71.92**	**311**	P	P		18 40 29.2	-8.5
VRH	**Novokhopyorsk**	**72.01**	**320**	*e*P	**P**		18 40 36.4	-1.6
VRH				*e**PP	**pP**		18 40 44.7	-3.1
VRH	comp=Z,10.0nm,0.9s			pmax	pmax			
KLMR	**Klimovskoe**	**73.38**	**330**	*e*P	**P**		18 40 42.2	-3.7
KLMR				*e*			18 40 58.6	
KLMR	comp=Z,38nm,0.9s			pmax	pmax			
VSR	**Storozhevoye**	**73.62**	**320**	*e*P	**P**		18 40 46.1	-1.4
VSR				*e**PP	**pP**		18 40 53.5	-3.9
VSR	comp=Z,10.0nm,1.2s			pmax	pmax			
LPSR	**Galich'ya Gora**	**73.72**	**321**	*e*P	**P**		18 40 47.3	-0.8
LPSR				*e**PP	**pP**		18 40 53.7	-4.2
LPSR	comp=Z,10.0nm,0.9s			pmax	pmax			
TMCR	**Tamitsa**	**74.14**	**333**	*e*P	**P**		18 40 50.0	-0.3
TMCR	comp=Z,44nm,0.8s			pmax	pmax			
URZ	**Urewera**	**74.41**	**137**	LR	LR		19 17 36.6	
	comp=Z,97nm,18.1s,baz=5.0,slow=39							
OBN	**Obninsk**	**75.03**	**324**⇑	*e*P	**P**		18 40 54.2	-1.4
OBN				*e*			18 43 39.8	
OBN				*e*PPP	PPP		18 45 28.0	
OBN				*e*S	**SKiKP**		18 50 20.1	+2.6
OBN	comp=Z,6.0nm,1.0s			pmax	pmax			
OBN	comp=Z,726nm,19.0s			MLR	MLR			
LVZ	**Lovozero**	**75.52**	**337**	P	**P**		18 40 58.4	+0.1
LVZ	comp=Z,3.0nm,0.6s			pmax	pmax			
LVZ	**Lovozero**	**75.52**	**337**	*e*P	**P**		18 41 03.1	+4.7
	comp=Z,25nm,1.1s							
APA	**Apatity**	**76.00**	**337**⇑	*i*P	**P**		18 41 02.0	+1.0
APA				*i*			18 41 12.0	
APA				*i*			18 43 47.0	
APA				*i*S	**S**		18 50 44.0	+2.2
APA	comp=Z,1μm,11.0s			MLR	MLR			
RSO	**Redoubt South**	**76.68**	**31**	*e*P	**P**		18 41 04.8	-0.5
CAST	**Castle Rocks**	**76.77**	**28**	*e*P	**P**		18 41 04.8	-0.7
	comp=Z,18nm,0.7s							
KDAK	**Kodiak Island**	**77.00**	**33**	*ce*P	**P**		18 41 06.3	-0.5
BPAW	**Bear Paw Mtn.**	**77.19**	**27**	*e*P	**P**		18 41 07.5	-0.4
	comp=Z,18nm,0.7s							
MLY	**Manley**	**77.21**	**26**	*e*P	**P**		18 41 07.6	-0.4
	comp=Z,13nm,0.8s							
COLD	**Coldfoot**	**77.23**	**24**	*e*P	**P**		18 41 08.1	+0.1
	comp=Z,7.2nm,1.1s							
MCK	**McKinley**	**78.14**	**27**	*e*P	**P**		18 41 12.0	-1.1
MCK	comp=Z,15nm,0.7s			pmax	pmax			
MCK	**McKinley**	**78.14**	**27**	*e*P	**P**		18 41 12.0	-1.1
	comp=Z,15nm,0.7s							
RND	**Reindeer**	**78.21**	**27**	*e*P	**P**		18 41 12.2	-1.4
RND	comp=Z,13nm,0.9s			pmax	pmax			
RND	**Reindeer**	**78.21**	**27**	*e*P	**P**		18 41 12.2	-1.4
	comp=Z,13nm,0.9s							
MDM	**Murphy Dome**	**78.28**	**26**	*e*P	**P**		18 41 13.1	-0.9
	comp=Z,10nm,0.9s							
WRH	**Wood River Hil**	**78.41**	**26**	*e*P	**P**		18 41 14.0	-0.6
	comp=Z,40nm,1.8s							
COLA	**College**	**78.45**	**26**⇑	*e*P	**P**		18 41 14.6	-0.2
COLA	comp=Z,7.0nm,0.8s			pmax	pmax			
CCB	**Clear Creek Bu**	**78.50**	**26**	*e*P	**P**		18 41 13.6	-1.5
	comp=Z,9.9nm,1.2s							
BR101	**Keskin Array S**	**78.54**	**308**	*e*P	**P**		18 41 15.6	-0.4
BR101				*e*PKKPbc	**PKKPdf**		19 00 04.9	+4.4
BRTR	**Keskin Array B**	**78.54**	**308**	P	**P**		18 41 15.6	-0.4
	comp=Z,2.6nm,0.9s,baz=132,slow=6.2,SNR=9.0							
BRTR				PKKP	**PKKPdf**		19 00 04.9	+4.4
	comp=Z,0.8nm,1.0s,baz=289,slow=9.0,SNR=3.8							
OPO	**Ambohidratompo**	**78.69**	**248**	P	**P**		18 41 17.3	+0.2
	comp=Z,3.9nm,0.7s,baz=66,slow=8.6,SNR=4.8							
ARA0	**ARCESS Array S**	**78.70**	**339**	*e*P	**P**		18 41 14.8	-1.3
ARCES	**ARCESS Array B**	**78.70**	**339**	P	**P**		18 41 16.0	-0.1
	comp=Z,5.9nm,0.6s,baz=77,slow=7.3,SNR=31							
IL1	**Eielson Array**	**78.88**	**26**	*e*P	**P**		18 41 15.9	-1.3
ILAR	**Eielson Array**	**78.88**	**26**	P	**P**		18 41 15.3	-1.8
	comp=Z,1.6nm,0.7s,baz=278,slow=6.8,SNR=14							
ILAR				PKKPbc	**PKKPbc**		19 00 09.8	-2.9
	comp=Z,1.0nm,0.8s,baz=121,slow=1.3,SNR=9.1							
ILB	**Eielson Array**	**78.88**	**26**	*e*P	**P**		18 41 15.9	-1.3
ILB				*e*PKKPbc	**PKKPbc**		19 00 09.8	-2.9
HDA	**Harding Lake**	**78.91**	**26**	*e*P	**P**		18 41 14.7	-2.6
	comp=Z,6.6nm,0.7s							
DHY	**Denali Highway**	**78.92**	**28**	*e*P	**P**		18 41 15.4	-2.2
	comp=Z,20nm,1.4s							
SPA0	**Spitsbergen Ar**	**79.30**	**348**	*e*P	**P**		18 41 19.4	+0.1
SPITS	**Spitsbergen Ar**	**79.30**	**348**	LR	LR		19 19 43.8	
	comp=Z,640nm,21.0s,baz=65,slow=38							
CSS	**Mathiatis**	**79.53**	**304**	*e*P	**P**		18 41 21.6	+0.3
	comp=Z,10.0nm,1.0s							
FIA0	**FINESS Array S**	**79.83**	**331**	*e*P	**P**		18 41 23.0	+0.6
FIA0	**FINESS Array S**	**79.83**	**331**	*e*P	**P**		18 41 23.0	+0.6
FINES	**FINESS Array B**	**79.83**	**331**	P	**P**		18 41 23.0	+0.6
	comp=Z,2.6nm,0.5s,baz=60,slow=5.5,SNR=28							
FINES	**FINESS Array B**	**79.83**	**331**	P	**P**		18 41 23.0	+0.6
KBS	**Kingsbay**	**79.90**	**349**	*e*P	**P**		18 41 22.0	-0.5
KBS	comp=Z,15nm,0.9s			pmax	pmax			
KBS	**Kingsbay**	**79.90**	**349**	*e*P	**P**		18 41 22.0	-0.5
	comp=Z,15nm,0.9s							
AKASG	**Malin Array Be**	**79.92**	**320**	P	**P**		18 41 22.8	-0.3
	comp=Z,1.8nm,0.7s,baz=69,slow=5.3,SNR=4.7							
AKBB	**Malin Array Si**	**79.92**	**320**	*e*P	**P**		18 41 23.9	+0.8
AKBB	comp=Z,37nm,1.8s			pmax	pmax			
AKBB	**Malin Array Si**	**79.92**	**320**	*e*P	**P**		18 41 23.9	+0.8
	comp=Z,37nm,1.8s							
KIEV	**Kiev**	**79.93**	**320**	P	**P**		18 41 21.8	-1.4
KIEV	comp=Z,4.0nm,0.9s			pmax	pmax			
VSU	**Vasula**	**80.03**	**328**⇑	*i*P	**P**		18 41 23.5	0.0
VSU	comp=Z,77nm,1.7s			pmax	pmax			
CASY	**Casey**	**80.23**	**184**	*e*P	**P**		18 41 23.6	-0.7
	comp=Z,60nm,0.9s							
DOT	**Dot Lake**	**80.29**	**27**	*e*P	**P**		18 41 24.9	0.0
	comp=Z,14nm,1.0s							
EGAK	**Eagle**	**81.28**	**25**	*e*P	**P**		18 41 29.8	-0.4
	comp=Z,9.2nm,0.6s							
CFR	**Carcaliu**	**81.63**	**314**⇑	*i*P	**P**		18 41 32.9	+0.5
CFR	**Carcaliu**	**81.63**	**314**	⇑P	**P**		18 41 32.9	+0.5
MSAB	**Monastry St. A**	**82.06**	**313**⇑	*i*P	**P**		18 41 36.0	+1.3
ODBI	**Odobesti**	**82.26**	**315**⇓	*i*P	P		18 41 41.7	+6.0
TESR	**Tescani**	**82.38**	**316**⇑	*i*P	**P**		18 41 38.3	+2.0
VRI	**Vrincioaia**	**82.46**	**315**⇓	*i*P	**P**		18 41 37.4	+0.6
VRI	**Vrincioaia**	**82.46**	**315**	⇓P	**P**		18 41 37.4	+0.6
PLOR	**Plostina**	**82.52**	**315**⇑	*i*P	P		18 41 43.3	+6.2
PLOR	**Plostina**	**82.52**	**315**	⇑P	P		18 41 43.3	+6.2
MLR	**Muntele Rosu**	**83.08**	**315**	⇓*i*P	**P**		18 41 40.3	+0.2
MLR	**Muntele Rosu**	**83.08**	**315**	*e*P	**P**		18 41 39.2	-0.9
	comp=Z,8.5nm,0.8s							
BURAR	**Bucovina Array**	**83.10**	**317**	⇓*i*P	**P**		18 41 40.2	0.0
BURAR	**Bucovina Array**	**83.10**	**317**	⇓P	**P**		18 41 40.2	0.0
BUR08	**Bucovina Ar. S**	**83.10**	**317**	*e*P	**P**		18 41 39.6	-0.6
INK	**Inuvik**	**83.17**	**21**	PKKPbc	PKKPbc		18 59 58.6	-4.4
	comp=Z,1.8nm,0.8s,baz=78,slow=4.2,SNR=4.6							
INK	**Inuvik**	**83.17**	**21**	*e*P	**P**		18 41 38.8	-1.1
INK	comp=Z,9.0nm,0.9s			pmax	pmax			
INK	**Inuvik**	**83.17**	**21**	*e*P	**P**		18 41 38.8	-1.1
	comp=Z,9.3nm,0.9s							
KMBO	**Kilima Mbogo**	**83.27**	**267**	P	**P**		18 41 43.5	+1.7
	comp=Z,1.3nm,0.3s,baz=36,slow=10,SNR=6.3							
KMBO				LR	LR		19 18 27.9	
	comp=Z,264nm,18.1s,baz=90,slow=35							
KMBO	**Kilima Mbogo**	**83.27**	**267**	*e*P	**P**		18 41 43.5	+1.7
KMBO	comp=Z,22nm,1.5s			pmax	pmax			
KMBO	**Kilima Mbogo**	**83.27**	**267**	*e*P	**P**		18 41 43.5	+1.7
	comp=Z,22nm,1.5s							
DOPR	**Dopca**	**83.35**	**316**⇑	*i*P	**P**		18 41 40.1	-1.3
VOIR		**83.70**	**315**⇑	*i*P	**P**		18 41 45.2	+1.9
VOIR		**83.70**	**315**	⇑P	**P**		18 41 45.2	+1.9
ARR	**Arges**	**84.01**	**315**⇑	*i*P	**P**		18 41 45.5	+0.7
KARP	**Karpathos**	**84.37**	**305**	*e*P	**P**		18 41 46.6	-0.3
	comp=Z,21nm,1.0s							
KOLS	**Kolonicke sedl**	**84.69**	**319**	*e*P	**P**		18 41 50.2	+2.1
KOLS	comp=Z,47nm,2.3s			pmax	pmax			
KOLS	**Kolonicke sedl**	**84.69**	**319**	*e*P	**P**		18 41 50.2	+2.1
UZH	**Uzhgorod**	**84.76**	**319**	⇑P	**P**		18 41 48.0	-0.4
UZH				*e*			18 41 58.6	
UZH				*e*			18 42 03.4	
DRGR		**84.95**	**317**⇑	*i*P	**P**		18 41 48.4	-1.2
DRGR		**84.95**	**317**	⇑P	**P**		18 41 48.4	-1.2
CRVS	**Cervenica-Dubn**	**85.22**	**319**	*e*P	**P**		18 41 51.1	+0.3
CRVS	**Cervenica-Dubn**	**85.22**	**319**	*e*P	**P**		18 41 51.1	+0.3
GZR	**Gura Zlata**	**85.27**	**315**⇑	*i*P	**P**		18 41 52.8	+1.6
GZR	**Gura Zlata**	**85.27**	**315**	⇑P	**P**		18 41 52.8	+1.6
LAST	**Lasithi**	**85.80**	**305**	*e*P	**P**		18 41 53.7	-0.4
	comp=Z,17nm,0.8s							
OJC	**Ojcow**	**85.89**	**321**	*e*P	**P**		18 41 53.2	-0.9
OJC	comp=Z,20nm,1.1s			pmax	pmax			
OJC	**Ojcow**	**85.89**	**321**	*e*P	**P**		18 41 53.2	-0.9
	comp=Z,20nm,1.1s							
DAG	**Danmarks Havn**	**86.34**	**351**	*i*P	**P**		18 41 53.9	-1.9
	comp=Z,11nm,0.7s							
DAG	**Danmarks Havn**	**86.34**	**351**	*i*P	**P**		18 41 53.9	-1.9
DAG	comp=Z,7.0nm,0.7s			pmax	pmax			
NC405	**NORSAR Array S**	**86.56**	**332**	*e*P	**P**		18 41 56.2	-1.0
NC303	**NORSAR Array S**	**86.67**	**333**	*e*P	**P**		18 41 53.6	-4.1
NB2	**NORSAR Subarra**	**86.81**	**333**	P	**P**		18 41 57.3	-1.2
	comp=Z,18nm,0.8s,baz=68,slow=5.1							
NB2	**NORSAR Subarra**	**86.81**	**333**	P	**P**		18 41 57.3	-1.2
	baz=68,slow=5.1							
NB200	**NORSAR Array S**	**86.81**	**333**	*e*P	**P**		18 41 57.2	-1.2
NOA	**NORSAR Array B**	**86.81**	**333**	P	**P**		18 41 57.2	-1.2
	comp=Z,4.1nm,0.7s,baz=68,slow=4.4,SNR=8.0							
NC204	**NORSAR Array S**	**86.92**	**333**	*e*P	**P**		18 41 57.0	-2.0
VYHS	**Vyhne**	**87.00**	**319**	*e*P	**P**		18 42 01.6	+2.0
VYHS	**Vyhne**	**87.00**	**319**	*e*P	**P**		18 42 01.6	+2.0
OKC	**Ostrava-Krasne**	**87.02**	**321**	*e*P	**P**		18 41 59.9	+0.3
OKC				*ex*	x		18 42 07.3	
OKC	**Ostrava-Krasne**	**87.02**	**321**	*e*P	**P**		18 41 59.9	+0.3
OKC				*e*			18 42 07.3	
DPC	**Dobruska-Polom**	**87.97**	**321**	*e*P	**P**		18 42 04.5	+0.2
DPC				*ex*	x		18 42 13.5	
DPC	**Dobruska-Polom**	**87.97**	**321**	*e*P	**P**		18 42 04.5	+0.2
DPC				*e*			18 42 13.5	
UPC	**Upice**	**88.11**	**322**	AMS	AMS		19 23 00.0	
	comp=Z,900nm,19.7s							
RES	**Resolute Bay**	**88.97**	**9**	*e*P	**P**		18 42 07.2	-1.2
RES	comp=Z,14nm,0.9s			pmax	pmax			
RES	**Resolute Bay**	**88.97**	**9**	*e*P	**P**		18 42 07.2	-1.2
	comp=Z,14nm,0.9s							
PRU	**Pruhonice**	**89.17**	**322**	*e*P	**P**		18 42 09.8	-0.1
PRU	**Pruhonice**	**89.17**	**322**	*e*P	**P**		18 42 09.8	-0.1
BRG	**Berggiesshubel**	**89.22**	**322**	*e*P	**P**		18 42 11.4	+1.3
	comp=Z,9.8nm,1.3s							
BRG	**Berggiesshubel**	**89.22**	**322**	*e*P	**P**		18 42 11.4	+1.3
BRG	comp=Z,10.0nm,1.3s			pmax	pmax			
KHC	**Kasperske Hory**	**90.07**	**321**	*e*P	**P**		18 42 12.5	-1.6
KHC				*ex*	x		18 42 21.4	
KHC	**Kasperske Hory**	**90.07**	**321**	*e*P	**P**		18 42 12.5	-1.6
KHC				*e*			18 42 21.4	
GERES	**GERESS Array B**	**90.10**	**321**	P	**P**		18 42 14.6	+0.3
	comp=Z,17nm,0.9s,baz=49,slow=10,SNR=2.6							
GEA0	**GERESS Array S**	**90.10**	**321**	*e*P	**P**		18 42 11.7	-2.7
BOJS	**Bojanci**	**90.29**	**317**	*i*P	**P**		18 42 16.0	+0.8
VISS	**Visnje**	**90.45**	**318**	*e*P	**P**		18 42 16.8	+0.9
JAVS	**Javornik**	**90.93**	**318**	*i*P	**P**		18 42 19.6	+1.3
MAW	**Mawson**	**91.05**	**199**	P	**P**		18 42 18.4	+0.5
	comp=Z,4.2nm,0.6s,baz=47,slow=7.8,SNR=4.5							
MAW	**Mawson**	**91.05**	**199**	*e*P	**P**		18 42 18.5	+0.5
MAW	comp=Z,13nm,1.9s			pmax	pmax			
MAW	**Mawson**	**91.05**	**199**	*e*P	**P**		18 42 18.5	+0.5
	comp=Z,13nm,1.9s							
SCO	**Scoresbysund**	**91.88**	**348**	*i*P	**P**		18 42 21.0	-1.0
	comp=Z,22nm,1.3s							
SCO	**Scoresbysund**	**91.88**	**348**	*e*P	**P**		18 42 21.0	-1.0
SCO	comp=Z,22nm,1.3s			pmax	pmax			
SUMG	**Summit**	**92.58**	**354**	*i*P	**P**		18 42 25.4	-0.4
	comp=Z,35nm,1.4s							
SUMG	**Summit**	**92.58**	**354**	*i*P	**P**		18 42 25.4	-0.4
SUMG	comp=Z,35nm,1.4s			pmax	pmax			
SUMG	**Summit**	**92.58**	**354**	*e*P	**P**		18 42 24.1	-1.7
	comp=Z,21nm,1.2s							
YKW3	**Yellowknife Ar**	**92.82**	**22**	*e*P	**P**		18 42 25.2	-1.3
	comp=Z,29nm,1.9s							
YKA	**Yellowknife Ar**	**92.86**	**22**	P	**P**		18 42 25.9	-0.8
	comp=Z,2.8nm,0.5s,baz=307,slow=4.4,SNR=58							
YKA				PKKP	**PKKPdf**		18 59 36.1	-0.3
	comp=Z,1.9nm,0.7s,baz=126,slow=2.6,SNR=19							
YKB5	**Yellowknife Ar**	**92.86**	**22**	*e*P	**P**		18 42 25.2	-1.5
FUORN	**Ofenpass-Fuorn**	**93.09**	**319**	*e*P	**P**		18 42 27.3	-1.2
	comp=Z,7.8nm,0.9s							
VNDA	**Vanda**	**94.30**	**172**	P	**P**		18 42 32.8	-0.1
	comp=Z,6.6nm,0.9s,baz=304,slow=5.5,SNR=21							
VNDA				PP	**PP**		18 46 20.8	+0.5
	comp=Z,3.9nm,1.0s,baz=324,slow=7.5,SNR=6.2							
VNDA				PKKPbc	**PKKPdf**		18 59 34.6	-1.4
	comp=Z,1.6nm,0.8s,baz=171,slow=6.9,SNR=6.3							
VNDA	**Vanda**	**94.30**	**172**	*e*P	**P**		18 42 32.8	-0.1
VNDA				*e*			18 46 20.8	
VNDA	comp=Z,9.0nm,1.0s			pmax	pmax			
VNDA	**Vanda**	**94.30**	**172**	*e*P	**P**		18 42 32.8	-0.1
	comp=Z,9.4nm,1.0s							
VNDA				*e*PP	**PP**		18 46 20.8	+0.5
VNDA				*e*PKKPdf	**PKKPdf**		18 59 34.6	-1.4
PPT2	**Papeete2**	**94.46**	**107**	*e*S	**S**		18 53 42.6	-3.2
	comp=Z,170nm,25.8s							
PPT2	**Papeete2**	**94.46**	**107**	*e*LR	LR		19 12 57.8	
	comp=Z,335nm,23.0s							
LSZ	**Lusaka**	**95.32**	**256**	P	**P**		18 42 39.2	+0.1
	comp=Z,1.7nm,0.7s,baz=121,slow=5.9,SNR=3.2							
LSZ	**Lusaka**	**95.32**	**256**	*e*P	**P**		18 42 39.2	+0.1
LSZ	comp=Z,29nm,1.9s			pmax	pmax			
LSZ	**Lusaka**	**95.32**	**256**	*e*P	**P**		18 42 39.2	+0.1
	comp=Z,29nm,1.9s							
TBI	**Tubuai**	**95.83**	**113**	*e*S	**S**		18 53 53.1	-4.3
	comp=Z,244nm,34.5s							
TBI	**Tubuai**	**95.83**	**113**	*e*LR	LR		19 13 45.9	
	comp=Z,322nm,25.0s							
B06A	**Marblemount**	**97.47**	**36**	*e*P	Pdif		18 42 47.9	-0.2
	comp=Z,90nm,0.1s							
NVAR	**Mina Array Bea**	**104.65**	**44**	PKKPbc	PKKPbc		18 59 05.5	-0.6
	comp=Z,0.6nm,0.7s,baz=131,slow=4.2,SNR=4.1							
ESDC	**Sonseca Array**	**105.53**	**318**	PP	PP		18 47 51.4	+5.5
	comp=Z,0.5nm,0.7s,baz=51,slow=7.5,SNR=3.4							
PDAR	**Pinedale Array**	**107.60**	**36**	PKKPbc	PKKPbc		18 58 55.9	-1.3
	comp=Z,0.7nm,0.7s,baz=108,slow=4.8,SNR=4.0							
PDAR				PKKPab	**PKKPab**		**18 59 11.8**	**-0.5**
	comp=Z,0.8nm,0.7s,baz=114,slow=4.4,SNR=4.3							
ULM	**Lac du Bonnet**	**108.80**	**23**	PKKPab	PKKPab		18 59 04.3	-2.4
	comp=Z,3.6nm,0.8s,baz=150,slow=8.1,SNR=4.2							
TORD	**Torodi Ar. Bea**	**113.29**	**291**	PKiKP	**PKiKP**		**18 47 52.0**	**-0.8**
	comp=Z,0.7nm,0.4s,baz=70,slow=2.4,SNR=7.3							
TORD				PP	**PP**		**18 48 49.8**	**+6.7**
	comp=Z,1.4nm,0.9s,baz=59,slow=3.3,SNR=3.9							
TORD				PKKPab	**PKKPab**		**18 58 44.8**	**-1.3**
	comp=Z,0.9nm,0.7s,baz=262,slow=4.4,SNR=6.0							
TOA1	**Torodi Ar. Sit**	**113.29**	**291**	*e*PKiKP	**PKiKP**		**18 47 52.0**	**-0.8**
TOA1				*e*PP	**PP**		**18 48 49.8**	**+6.7**
TOA1				*e*PKKPab	**PKKPab**		**18 58 44.8**	**-1.3**
VNA2	**Neumayer--Watz**	**114.78**	**197**	PKiKP	**PKiKP**		**18 47 52.4**	**-1.6**
	baz=97,slow=1.8							
VNA3	**Neumayer Olymp**	**115.22**	**196**	PKiKP	**PKiKP**		**18 47 53.2**	**-1.7**
TX31	**Lajitas Ar. Si**	**119.80**	**44**	*e*PKPdf	**PKPdf**		**18 48 01.3**	**-3.9**
TX31				*e*PKPdf	**PKiKP**		**18 48 03.6**	**-1.6**
LTX	**Lajitas**	**119.80**	**44**	*e*PKiKP	**PKPdf**		**18 48 03.8**	**-1.3**
LTX	**Lajitas**	**119.80**	**44**	*e*PKPdf	**PKPdf**		**18 48 03.8**	**-1.3**
TXAR	**Lajitas Array**	**119.80**	**44**	PKP	**PKPdf**		**18 48 03.8**	**-1.3**
	comp=Z,1.6nm,0.7s,baz=259,slow=1.3,SNR=12							
DBIC	**Dimbokro**	**121.63**	**287**	PKP	**PKPdf**		**18 48 08.9**	**0.0**
	comp=Z,4.5nm,0.6s,baz=77,slow=2.1,SNR=14							
DBIC	**Dimbokro**	**121.63**	**287**	*e*PKiKP	**PKPdf**		**18 48 08.5**	**-0.4**
DBIC	**Dimbokro**	**121.63**	**287**	*e*PKPdf	**PKPdf**		**18 48 08.5**	**-0.4**
KIC	**Kosan Boka**	**121.63**	**287**	*e*P	**PKPdf**		**18 48 08.5**	**-0.4**
	comp=Z,48nm,1.1s							
TIC	**Toumodi**	**121.79**	**287**	*e*P	**PKPdf**		**18 48 08.7**	**-0.5**
LIC	**Lamto**	**121.95**	**286**	*e*P	**PKPdf**		**18 48 10.4**	**+0.9**
MCWV	**Mont Chateau**	**123.61**	**18**	*e*PKPdf	**PKPdf**		**18 48 10.1**	**-2.0**
WVT	**Waverly**	**123.73**	**27**	*e*PKiKP	**PKPdf**		**18 48 10.0**	**-2.3**
WVT	**Waverly**	**123.73**	**27**	*e*PKPdf	**PKPdf**		**18 48 10.0**	**-2.3**
TKL	**Tuckaleechee C**	**125.83**	**24**	PKP	**PKPdf**		**18 48 16.5**	**+0.1**
	comp=Z,2.8nm,0.6s,baz=140,slow=10,SNR=4.3							
JSC	**Jenkinsville**	**128.00**	**22**	*e*PKiKP	**PKPdf**		**18 48 17.7**	**-2.9**
JSC	**Jenkinsville**	**128.00**	**22**	*e*PKPdf	**PKPdf**		**18 48 17.7**	**-2.9**
CHRN	**Cochrane**	**145.09**	**165**	*e*PKPbc	**PKPdf**		**18 48 51.5**	**-0.1**
JTS	**JuntasAbangare**	**145.49**	**47**	PKPbc	**PKPbc**		**18 48 50.9**	**-2.4**
	comp=Z,7.5nm,0.6s,baz=316,slow=4.3,SNR=6.5							
SDDR	**Presa de Saban**	**145.50**	**19**	*e*PKPdf	**PKPbc**		**18 48 51.7**	**-1.5**
CBYP	**Canovanas**	**147.54**	**10**	*e*PKPdf	**PKPdf**		**18 48 56.8**	**+0.1**
CELP	**Cerrillos**	**147.59**	**12**	*e*PKPbc	**PKPbc**		**18 48 57.9**	**-1.5**
SJG	**San Juan**	**147.64**	**11**	PKPbc	**PKPbc**		**18 48 58.9**	**-0.5**
	comp=Z,6.5nm,0.4s,baz=324,slow=19,SNR=3.3							
PLCA	**Paso Flores**	**151.68**	**163**	PKPbc	**PKPbc**		**18 49 08.8**	**-0.1**
	comp=Z,16nm,0.8s,baz=236,slow=4.2,SNR=33							
PLCA	**Paso Flores**	**151.68**	**163**	*e*PKPbc	**PKPbc**		**18 49 08.7**	**-0.2**
SDV	**Santo Domingo**	**155.03**	**26**	PKP	**PKPdf**		**18 49 07.9**	**-0.5**
	comp=Z,5.1nm,0.8s,baz=72,slow=6.1,SNR=7.7							
SDV				PKPbc	PKPbc		18 49 16.6	
	comp=Z,6.0nm,0.6s,baz=46,slow=4.2,SNR=7.0							
SDV				PKPab	**PKPab**		**18 49 32.1**	**-0.4**
	comp=Z,7.5nm,0.7s,baz=196,slow=2.5,SNR=5.1							
SDV	**Santo Domingo**	**155.03**	**26**	*e*PKPdf	**PKPdf**		**18 49 08.4**	**0.0**
SDV				*e*PKPbc	PKPbc		18 49 14.6	
SDV				PKPab	**PKPab**		**18 49 32.1**	**-0.4**
TRQA	**Tornquist**	**155.84**	**176**	*e*PKPab	**PKPab**		**18 49 34.8**	**-0.4**
PTGA	**Pitinga**	**166.94**	**0**	PKPab	**PKPab**		**18 50 22.6**	**-1.5**
	comp=Z,3.9nm,0.7s,baz=301,slow=1.9,SNR=4.0							
CPUP	**Villa Florida**	**167.36**	**191**	PKPab	**PKPab**		**18 50 26.0**	**+0.3**
	comp=Z,12nm,1.0s,baz=162,slow=5.0,SNR=11							
CPUP	**Villa Florida**	**167.36**	**191**	*e*PKP2	**PKPab**		**18 50 25.7**	**0.0**
CPUP	**Villa Florida

comp=Z,11μm,0.2s
YUK pmax pmax
comp=N,3μm,0.1s
YUK smax smax
comp=E,50μm,0.7s
YUK smax smax
comp=N,37μm,0.6s
YUK smax smax
comp=E,89μm,2.0s
YUK smax smax
comp=N,146μm,2.1s
NEM2 Nemuro 2 1.36 254 ⇓P **Pn 18 42 51.8 -0.5**
NEM2 *e*S **Sn 18 43 08.4 -1.0**
KUR Kuril'sk 1.50 9 *e*P **Pn 18 42 55.2 +1.0**
KUR AMB AMB 18 42 57.0
comp=N,1μm,0.4s
KUR AMB AMB 18 42 57.0
comp=N,1μm,0.4s
KUR AMB AMB 18 42 57.0
comp=N,6μm,0.4s
KUR AMB AMB 18 42 59.3
comp=N,14μm,2.0s
KUR *i* S **Sn 18 43 14.5 +1.6**
KUR A A 18 43 16.7
comp=N,52μm,2.0s
KUR A A 18 43 16.7
comp=N,47μm,2.0s
KUR A A 18 43 17.3
comp=N,15μm,0.3s
KUR A A 18 43 17.3
comp=N,22μm,0.3s
KUR Kuril'sk 1.50 9*c i*PN **Pn 18 42 55.3 +1.0**
KUR *i* S **Sn 18 43 14.5 +1.6**
KUR pmax pmax
comp=Z,14μm,2.1s
KUR pmax pmax
comp=E,2μm,0.3s
KUR pmax pmax
comp=Z,6μm,0.3s
KUR pmax pmax
comp=N,2μm,0.2s
KUR smax smax
comp=E,79μm,2.6s
KUR smax smax
comp=N,103μm,2.1s
KUR smax smax
comp=N,31μm,0.2s
KUR smax smax
comp=E,44μm,0.3s
JRA Rausu 1.75 277 ⇓P **Pn 18 42 58.6 +0.9**
JRA *e*S **Sn 18 43 20.4 +1.4**
JNK Nakash 2.05 266 ⇓P **Pn 18 43 01.8 +0.1**
JNK *e*S **Sn 18 43 26.2 +0.1**
JAK Akkeshi 2.20 251 ⇑P **Pn 18 43 03.1 -0.6**
JAK *e*S **Sn 18 43 28.6 -1.2**
JTKR Abashiri--Toko 2.63 276 ⇓P **Pn 18 43 11.2 +1.6**
JAR Ashorobuto 2.77 262 ⇓P **Pn 18 43 12.4 +0.9**
JAR *e*S **Sn 18 43 45.0 +1.1**
JOB Onbets 2.83 254 ⇓P **Pn 18 43 12.6 +0.3**
JOB *e*S **Sn 18 43 44.5 -0.6**
JMP Maruseppu 3.03 276 ⇓P **Pn 18 43 16.8 +1.8**
HRK Horoka 3.21 266 *e*P **Pn 18 43 19.2 +1.6**
JCH Churui 3.25 251 P **Pn 18 43 17.6 -0.5**
JCH *e*S **Sn 18 43 54.0 -1.6**
JKK2 Kamakawa 2 3.47 274 P **Pn 18 43 23.0 +2.0**
JFR Furan 3.64 262 ⇓P **Pn 18 43 25.1 +1.7**
ERM Erimo 3.65 243 *e*P **Pn 18 43 25.5 +2.0**
ERM Erimo 3.65 243 ⇑*i*PN **Pn 18 43 25.5 +2.0**
ERM Erimo 3.65 243 *e*Pn **Pn 18 43 24.1 +0.5**
JSE Soyaes 3.75 291 ⇓P **Pn 18 43 27.1 +2.2**
JNBK Urakawa-nobuka 3.80 249 P **Pn 18 43 25.4 -0.2**
JNBK *e*S **Sn 18 44 07.6 -1.4**
JHR Hokuryu 4.21 272 P **Pn 18 43 34.0 +2.8**
JWK2 Keihoku 4.32 293 ⇓P **Pn 18 43 36.4 +3.7**
JYG Yagishiri 4.45 281 P **Pn 18 43 37.7 +3.2**
JEW Eniwo 4.53 261 ⇓P **Pn 18 43 37.5 +1.9**
YSS Yuzh-Sakhalins 4.65 315 *e*P **Pn 18 43 39.8 +2.6**
YSS AMB AMB 18 43 40.5
comp=E,390nm,0.5s
YSS AMB AMB 18 43 40.5
comp=E,560nm,3.0s
YSS *e*S **Sn 18 44 31.8 +2.0**
YSS A A 18 44 34.5
comp=E,450nm,0.7s
YSS A A 18 44 34.5
comp=E,520nm,0.7s
YSS A A 18 44 40.7
comp=E,980nm,3.0s
YSS Yuzh-Sakhalins 4.65 315κ*e*PN **Pn 18 43 39.8 +2.6**
YSS *e*S **Sn 18 44 31.8 +2.0**
YSS pmax pmax
comp=Z,390nm,0.5s
YSS pmax pmax
comp=Z,1μm,3.0s
YSS smax smax
comp=N,450nm,0.8s
YSS smax smax
comp=E,520nm,0.6s
YSS MLR MLR
comp=N,5μm,20.0s
YSS MLR MLR
comp=E,4μm,20.0s
YSS MLR MLR
comp=Z,5μm,20.0s
YSS Yuzh-Sakhalins 4.65 315 *e*Pn **Pn 18 43 39.8 +2.6**
UGL Uglegorsk 6.53 327 *e*P **Pn 18 44 06.7 +3.8**
UGL AMB AMB 18 44 08.5
comp=Z,230nm,0.8s
UGL *e*S **Sn 18 45 19.3 +3.3**
UGL A A 18 45 23.5
comp=Z,570nm,0.6s
UGL A A 18 45 23.5
comp=Z,540nm,0.6s
UGL A A 18 45 24.0
comp=Z,350nm,3.0s
UGL A A 18 45 24.0
comp=Z,280nm,3.0s
UGL AMS AMS 18 47 08.0
comp=Z,3μm,14.0s
UGL Uglegorsk 6.53 327 *e*PN **Pn 18 44 06.7 +3.8**
UGL *e* 18 45 25.0
UGL pmax pmax
comp=Z,230nm,0.8s
UGL MLR MLR
comp=N,3μm,14.0s
UGL MLR MLR
comp=E,3μm,14.0s
UGL MLR MLR
comp=Z,3μm,14.0s
TYV Tymovskoe 7.85 337 *e*P **Pn 18 44 24.5 +3.6**
TYV AMB AMB 18 44 28.0
comp=Z,2μm,4.0s
TYV AMB AMB 18 44 28.0
comp=Z,1μm,4.0s
TYV AMB AMB 18 44 28.2
comp=Z,30nm,0.6s
TYV *e*S **Sn 18 45 51.2 +3.0**
TYV A A 18 45 54.5
comp=Z,140nm,0.8s
TYV A A 18 46 06.0
comp=Z,3μm,10.0s
TYV AMS AMS 18 47 33.0
comp=Z,6μm,14.0s
TYV Tymovskoe 7.85 337 *e*PN **Pn 18 44 24.5 +3.6**
TYV *e*S **Sn 18 45 51.2 +3.0**
TYV pmax pmax
comp=N,2μm,5.0s
TYV pmax pmax
comp=Z,1μm,3.0s
TYV pmax pmax
comp=Z,27nm,0.6s
TYV smax smax
comp=N,143nm,0.8s
TYV smax smax
comp=E,3μm,10.0s
TYV MLR MLR
comp=E,6μm,14.0s
TYV MLR MLR
comp=Z,4μm,17.0s
TEY Ternei 7.94 283 *e*P Pn 18 44 27.0 +4.9
TEY AMB AMB 18 44 27.7
comp=Z,100nm,1.0s
TEY AMB AMB 18 44 27.7
comp=Z,70nm,1.0s
SKR Severo-Kuril's 9.06 37 *e*P **Pn 18 44 36.9 -0.6**
SKR AMB AMB 18 44 41.9
comp=Z,370nm,0.5s
SKR AMB AMB 18 44 48.3
comp=Z,2μm,2.0s
SKR *e*S **Sn 18 46 13.2 -4.7**
SKR A A 18 46 26.4
comp=Z,400nm,0.6s
SKR Severo-Kuril's 9.06 37 *e*PN **Pn 18 44 34.1 -3.4**
SKR pmax pmax
comp=N,150nm,0.5s
SKR pmax pmax
comp=E,180nm,0.5s
SKR pmax pmax
comp=Z,250nm,0.5s
SKR MLR MLR
comp=N,3μm,16.0s
SKR MLR MLR
comp=Z,3μm,16.0s
SKR MLR MLR
comp=E,3μm,14.0s
HABR Khabarovsk 9.87 303 *de*PN **Pn 18 44 47.4 -1.1**
HABR pmax pmax
comp=N,19nm,0.9s
HABR pmax pmax
comp=Z,92nm,0.9s
HABR pmax pmax
comp=E,85nm,0.9s
HABR MLR MLR
comp=Z,2μm,15.0s
PAU Pauzhetka 9.94 36 *e*P **Pn 18 44 48.4 -1.0**
PAU AMB AMB 18 44 50.1
comp=Z,340nm,0.6s
PAU *e*S **Sn 18 46 34.0 -5.3**
PAU AMS AMS 18 48 01.2
comp=Z,6μm,17.0s
PAU AMS AMS 18 48 01.2
comp=Z,11μm,17.0s
MJAR Matsushiro Arr 10.13 228 P **Pn 18 44 50.7 -1.5**
comp=Z,7.5nm,0.3s,baz=27,slow=15,SNR=92
MAJO Matsushiro 10.13 228 *d i*PN **Pn 18 44 50.7 -1.5**
MAJO Matsushiro 10.13 228 *e*Pn **Pn 18 44 50.9 -1.3**
OKH Okha 10.27 344 *i* P **Pn 18 44 56.8 +2.9**
OKH AMB AMB 18 44 58.0
comp=Z,2μm,5.0s
OKH AMB AMB 18 44 58.0
comp=Z,3μm,5.0s
OKH *e*S **Sn 18 46 49.5 +2.2**
OKH A A 18 46 58.6
comp=Z,2μm,4.0s
OKH AMS AMS 18 49 56.2
comp=Z,3μm,13.0s
OKH Okha 10.27 344 *i* PN **Pn 18 44 56.8 +2.9**
OKH *e*S **Sn 18 46 54.6 +7.3**
OKH pmax pmax
comp=Z,3μm,5.0s
OKH MLR MLR
comp=Z,3μm,13.0s
GRNR Gornyy 10.31 317 *e*P **Pn 18 44 58.6 +4.1**
GRNR AMB AMB 18 44 59.4
comp=Z,20nm,0.7s
NKL Nikolayevsk 10.45 337 *i* P **Pn 18 44 58.2 +1.8**
NKL AMB AMB 18 45 00.5
comp=Z,900nm,5.0s
NKL AMB AMB 18 45 00.5
comp=Z,500nm,5.0s
NKL AMB AMB 18 45 00.5
comp=Z,1μm,5.0s
NKL AMB AMB 18 45 01.5
comp=Z,70nm,1.0s
NKL AMB AMB 18 45 01.5
comp=Z,110nm,1.0s
NKL *e*S **Sn 18 46 55.0 +3.3**
NKL A A 18 46 57.0
comp=Z,40nm,0.5s
NKL A A 18 46 57.0
comp=Z,30nm,0.5s
NKL A A 18 47 04.0
comp=Z,1μm,5.0s
NKL AMS AMS 18 49 11.0
comp=Z,2μm,18.0s
NKL AMS AMS 18 49 11.0
comp=Z,3μm,18.0s
NKL Nikolayevsk 10.45 337 *i* PN **Pn 18 44 58.5 +2.1**
NKL pmax pmax
comp=N,900nm,6.0s
NKL pmax pmax
comp=E,500nm,6.0s
NKL pmax pmax
comp=Z,1μm,4.0s
NKL pmax pmax
comp=N,65nm,1.0s
NKL pmax pmax
comp=Z,110nm,1.0s
NKL MLR MLR
comp=N,1μm,16.0s
NKL MLR MLR
comp=E,2μm,16.0s
NKL MLR MLR
comp=Z,2μm,16.0s
USRK Ussuriysk Ar. 11.22 278 P **Pn 18 45 08.3 +1.4**
comp=Z,1.5nm,0.3s,baz=87,slow=13,SNR=54
VLA Vladivostok 11.40 272 *e*P **Pn 18 45 11.1 +1.6**
VLA Vladivostok 11.40 272 ⇓*e*PN **Pn 18 45 11.1 +1.6**
PEA0 Petropavlovsk- 11.53 32 *e*Pn **Pn 18 45 10.3 -0.9**
PEA0B Petropavlovsk- 11.53 32 *e*Pn **Pn 18 45 10.5 -0.8**
PETK Petropavlovsk- 11.53 32 P **Pn 18 45 10.2 -1.1**
comp=Z,9.1nm,0.3s,baz=198,slow=12,SNR=152
PETK LR LR 18 50 26.3
comp=Z,1μm,19.6s,baz=226,slow=41
PEA1 Petropavlovsk- 11.54 32 *e*Pn **Pn 18 45 10.2 -1.2**
INU Inuyama 11.66 228 *e*Pn **Pn 18 45 11.5 -1.6**
PET Petropavlovsk 11.85 35 *e*P **Pn 18 45 14.3 -1.2**
PET AMB AMB 18 45 15.5
comp=Z,920nm,4.0s
PET *e*S **Sn 18 47 21.5 -4.5**
PET A A 18 47 23.0
comp=Z,1μm,4.0s
PET A A 18 47 23.0
comp=Z,710nm,4.0s
PET AMS AMS 18 50 00.0
comp=Z,2μm,17.0s
PET Petropavlovsk 11.85 35 *e*PN **Pn 18 45 14.1 -1.4**
PET MLR MLR
comp=Z,2μm,18.0s
PET MLR MLR
comp=Z,2μm,17.0s
PET Petropavlovsk 11.85 35 *e*Pn **Pn 18 45 13.5 -2.1**
KLR Kul'dur 12.17 302 P **Pn 18 45 23.0 +3.0**
comp=Z,0.9nm,0.3s,baz=112,slow=14,SNR=26
JHJ2 Mitsune 12.21 212 *e*Pn **Pn 18 45 16.8 -3.8**
JHJ Hachijo jima 2 12.22 212 P Pn 18 45 15.6 -5.2
comp=Z,23nm,0.3s,baz=77,slow=21,SNR=17
JHJ S Sn 18 47 24.2 -11
comp=Z,39nm,0.3s,baz=55,slow=22,SNR=8.9
JHJ LR LR 18 50 40.4
comp=Z,258nm,18.7s,baz=80,slow=40
JKY Yasaka 12.54 234 P **Pn 18 45 24.0 -1.0**
MDJ Mudanjiang 12.91 280 P **Pn 18 45 30.4 +0.3**
MDJ S **Sn 18 47 50.4 -1.6**
MDJ ScP **ScP 18 54 28.7 +1.0**
MDJ PcS **PcS 18 54 35.8 +1.6**
MDJ pmax pmax
comp=Z,27nm,1.0s
MDJ pmax pmax
comp=Z,69nm,4.3s
MDJ Mudanjiang 12.91 280 *e*Pn **Pn 18 45 28.2 -1.9**
JKS Kasai 13.14 233 P **Pn 18 45 31.4 -1.8**
EKMR Ekimchan 13.42 319 *e*P **Pn 18 45 38.6 +1.6**
EKMR AMB AMB 18 46 00.1
comp=Z,110nm,1.0s
EKMR AMB AMB 18 46 00.1
comp=Z,50nm,1.0s
EKMR AMB AMB 18 46 00.1
comp=Z,160nm,1.0s
CN2 Changchun 15.95 278 *e*P **Pn 18 46 08.3 -1.7**
CN2 *es*P pP 18 46 27.4 +2.0
CN2 *e*S **Sn 18 49 01.5 -4.3**
CN2 pmax pmax
comp=Z,30nm,1.3s
CN2 pmax pmax
comp=Z,200nm,4.0s
CN2 LR LR
comp=Z,900nm,12.0s
CN2 LR LR
comp=Z,700nm,12.0s
MA2 Magadan 15.97 6 P **Pn 18 46 09.2 -1.0**
comp=Z,4.1nm,0.3s,baz=211,slow=11,SNR=52
MA2 LR LR 18 51 54.9
comp=Z,1μm,21.4s,baz=220,slow=35
KSRS Korea Array 16.15 254 P **Pn 18 46 11.7 -0.9**
comp=Z,1.0nm,0.3s,baz=61,slow=12,SNR=50
KSRS LR LR 18 52 12.6
comp=Z,694nm,18.3s,baz=93,slow=36
KS01 Wonju Array Si 16.16 254 *e*Pn **Pn 18 46 10.3 -2.4**
KS15 Wonju Array Si 16.18 254 *e*Pn **Pn 18 46 10.3 -2.7**
KSAR Wonju Array Be 16.18 254 P **Pn 18 46 11.7 -1.3**
KSAR Wonju Array Be 16.18 254 P **Pn 18 46 11.7 -1.3**
BMKR Bomnak 16.36 319 *e*P **Pn 18 46 15.4 +0.4**
BMKR AMB AMB 18 46 19.7
comp=Z,60nm,1.0s
ZEA Zeya 16.64 314 *e*P **P 18 46 19.7 -0.4**
ZEA AMB AMB 18 46 20.8
comp=Z,600nm,3.0s
ZEA *e*S Sn 18 49 11.0 -11
ZEA A A 18 49 26.0
comp=Z,1μm,6.0s
ZEA A A 18 49 26.0
comp=Z,1μm,6.0s
ZEA AMS AMS 18 53 26.0
comp=Z,1μm,6.0s
ZEA AMS AMS 18 53 26.0
comp=Z,1μm,6.0s
JNU Nakatsue 16.79 236 P **Pn 18 46 20.6 +0.1**
comp=Z,0.7nm,0.3s,baz=45,slow=11,SNR=9.7
JNU LR LR 18 52 37.2
comp=Z,714nm,20.1s,baz=42,slow=36
JNU Nakatsue 16.79 236 *e*Pn **Pn 18 46 18.8 -1.8**
comp=Z,192nm,1.2s
INCN Inchon 17.04 256 *e*Pn **Pn 18 46 22.4 -1.2**
comp=Z,57nm,1.1s
KROS Kirovskiy 17.13 316 *e*P **Pn 18 46 24.0 -0.6**
KROS AMB AMB 18 46 48.0
comp=Z,190nm,2.0s
KROS AMB AMB 18 46 48.0
comp=Z,30nm,2.0s
KROS AMB AMB 18 46 48.0
comp=Z,490nm,2.0s
CBIJ Chichi jima 17.17 196 *e*Pn **Pn 18 46 21.3 -4.0**
comp=Z,1μm,2.0s
CBIJ *e*Sn Sn 18 49 15.8 -20
JCJ Chichijima 17.17 196 P **Pn 18 46 21.1 -4.2**
comp=Z,11nm,0.3s,baz=10.0,slow=22,SNR=6.6
JCJ S Sn 18 49 19.0 -16
comp=Z,22nm,0.3s,baz=292,slow=24,SNR=8.5
JCJ LR LR 18 51 43.6
comp=Z,657nm,22.0s,baz=360,slow=32
SNY Shenyang 17.68 272 ⇓P **P 18 46 31.7 +0.1**
SNY S **S 18 49 51.2 -0.3**
SNY pmax pmax
comp=Z,64nm,0.8s
SNY LR LR
comp=Z,2μm,25.5s
SNY LR LR
comp=Z,570nm,26.3s
SNY LR LR
comp=Z,1μm,21.1s
SEY Seymchan 19.43 7 P **P 18 46 49.9 -0.7**
comp=Z,6.5nm,0.3s,baz=179,slow=9.5,SNR=97
SEY Seymchan 19.43 7*ce*P **P 18 46 50.4 -0.2**
HIA Hailar 19.85 296 *e*P **P 18 46 54.0 -1.3**
HIA pmax pmax
comp=Z,51nm,1.0s
HIA Hailar 19.85 296 *e*P **P 18 46 54.0 -1.3**
comp=Z,51nm,1.0s
DL2 Dalian 20.01 265 P **P 18 46 57.8 +0.7**
DL2 pP **pP 18 47 08.3 -2.0**
DL2 sP **sP 18 47 17.4 -0.5**
DL2 S **S 18 50 39.2 +0.5**
DL2 pmax pmax
comp=Z,75nm,0.8s
DL2 pmax pmax
comp=Z,510nm,8.6s
DL2 LR LR
comp=Z,580nm,13.7s
DL2 LR LR
comp=Z,440nm,14.2s
DL2 LR LR
comp=Z,580nm,13.1s
YAK Yakutsk 21.11 336 P **P 18 47 05.9 -2.9**
comp=Z,117nm,0.5s,baz=264,slow=0.5,SNR=97
YAK S **S 18 50 52.0 -8.0**
comp=Z,2.5nm,0.3s,baz=131,slow=19,SNR=4.8
YAK LR LR 18 55 47.6
comp=Z,1μm,19.1s,baz=151,slow=38
YAK Yakutsk 21.11 336*c i*P **P 18 47 05.0 -3.8**
YAK *e* 18 47 24.9
YAK *e*S **S 18 50 56.1 -3.9**
YAK *e* 18 51 11.3
YAK *e*SS **SnSn 18 51 19.7 -5.8**
YAK *e* 18 58 24.4
YAK pmax pmax
comp=Z,221nm,0.9s
YAK pmax pmax
comp=E,57nm,1.0s
YAK pmax pmax
comp=N,47nm,1.1s
YAK smax smax
comp=N,302nm,1.9s
YAK smax smax
comp=E,62nm,1.6s
YAK MLR MLR
comp=Z,1μm,16.0s
YAK MLR MLR
comp=N,858nm,15.0s
YAK MLR MLR
comp=E,522nm,16.0s
YAK Yakutsk 21.11 336 *e*P **P 18 47 05.9 -2.9**
comp=E,239nm,0.8s
YAK *e*S **S 18 50 52.0 -8.0**
JOW Kunigami 22.97 229 LR LR 18 55 56.1
comp=E,617nm,21.6s,baz=76,slow=35
JOW Kunigami 22.97 229 *e*P **P 18 47 29.3 +0.4**
comp=E,138nm,1.2s
BJI Beijing 23.56 272 P **P 18 47 34.4 0.0**
BJI S **S 18 51 42.1 -1.8**
BJI pmax pmax
comp=E,28nm,0.6s
BJI LR LR
comp=E,410nm,13.5s
BJI LR LR
comp=E,550nm,14.4s
BJT Baijiatuau 23.57 272 *e*P **P 18 47 34.5 0.0**
BJT pmax pmax
comp=Z,52nm,1.0s
BJT Baijiatuau 23.57 272 *e*P **P 18 47 34.5 0.0**
comp=Z,52nm,1.0s
TIA Tai'an 24.39 262 ⇓P **P 18 47 42.6 +0.6**
TIA pmax pmax
comp=Z,80nm,1.0s
BOD Bodaibo 25.12 316 *e*P **P 18 47 45.3 -3.2**
BOD pmax pmax
comp=Z,33nm,1.2s
NJ2 Nanjing 25.34 252 *e*P **P 18 47 50.9 +0.3**
NJ2 S **S 18 52 16.0 +3.5**
NJ2 pmax pmax
comp=Z,14nm,0.5s
NJ2 pmax pmax
comp=Z,390nm,10.8s
NJ2 LR LR
comp=Z,2μm,26.0s
NJ2 LR LR
comp=Z,1μm,16.3s
NJ2 LR LR
comp=Z,470nm,19.5s
HHC Hu-ho-hao-te 26.63 276 *e*P **P 18 48 04.3 +1.9**
HHC pP pP 18 48 18.9 +1.6
HHC sP sP 18 48 27.0 +2.5
HHC S **S 18 52 33.2 +0.1**
HHC pmax pmax
comp=Z,66nm,1.1s
HHC pmax pmax
comp=Z,970nm,9.0s
HHC LR LR
comp=Z,3μm,12.4s
HHC LR LR
comp=Z,4μm,13.7s
HHC LR LR
comp=Z,4μm,14.9s
comp=Z,306nm,1.4s
ATKA Atka Island 26.71 58 *e*P **P 18 48 01.3 -1.5**
BTO Baotou 27.82 277 *e*P **P 18 48 15.6 +2.5**
ULN Ulaanbaatar 28.28 293 *e*P **P 18 48 18.4 +1.2**
ULN Ulaanbaatar 28.28 293 ⇑*i*P **P 18 48 18.4 +1.2**

ULN pmax pmax
comp=Z,66nm,1.7s
ULN Ulaanbaatar 28.28 293 *e*P **P** **18 48 17.8 +0.6**
comp=Z,29nm,0.9s
SONA1 Songino Array 28.72 293 *e*P **P** **18 48 21.5 +0.5**
SONA0 Songino Array 28.73 293 *e*P **P** **18 48 22.1 +1.0**
comp=Z,51nm,1.3s
SONM Songino Array 28.73 293 P **P** **18 48 22.1 +1.0**
comp=Z,15nm,0.9s,baz=82,slow=8.0,SNR=51
SONM LR LR 19 01 08.6
comp=Z,1µm,19.1s,baz=96,slow=39
H11N2 WAKE ISLAND Hy 28.92 140 T T 19 19 07.8
baz=331,slow=75,SNR=229
H11N1 WAKE ISLAND Hy 28.93 140 T T 19 19 07.8
baz=331,slow=75,SNR=1442
H11N3 WAKE ISLAND Hy 28.94 140 T T 19 19 14.6
baz=331,slow=75,SNR=592
TIXI Tiksi 29.42 348 P **P** **18 48 22.9 -3.9**
comp=Z,13nm,0.6s,baz=151,slow=5.9,SNR=58
TIXI Tiksi 29.42 348⇑ *i*P **P** **18 48 24.0 -2.8**
TIXI pmax pmax
comp=Z,10.0nm,0.8s
TIXI Tiksi 29.42 348 *e*P **P** **18 48 23.4 -3.3**
comp=Z,13nm,0.6s
H11S1 WAKE ISLAND Hy 29.89 141 T T 19 20 19.7
baz=332,slow=76,SNR=548
H11S3 WAKE ISLAND Hy 29.90 141 T T 19 20 21.0
baz=332,slow=76,SNR=617
H11S2 WAKE ISLAND Hy 29.91 141 T T 19 20 21.0
baz=332,slow=76,SNR=422
GUMO Guam 30.14 185 LR LR 18 58 42.3
comp=Z,285nm,21.9s,baz=9.0,slow=32
TLY Talaya 30.19 301 P **P** **18 48 33.4 -0.5**
comp=Z,3.4nm,0.5s,baz=36,slow=8.7,SNR=3.9
TLY LR LR 19 01 57.5
comp=Z,801nm,19.1s,baz=98,slow=39
TLY Talaya 30.19 301 *e*P **P** **18 48 35.0 +1.2**
TLY Talaya 30.19 301 *e*P **P** **18 48 34.6 +0.8**
TLY pmax pmax
comp=Z,8.0nm,1.3s
TLY MLR MLR
comp=Z,764nm,20.0s
TLY Talaya 30.19 301 *e*P **P** **18 48 33.1 -0.8**
comp=Z,8.9nm,1.2s
ZAK Zakamensk 30.50 298 *e*P **P** **18 48 36.8 +0.1**
ZAK pmax pmax
comp=Z,9.0nm,1.3s
GAMB Gambell 30.55 35 *e*P **P** **18 48 37.5 +0.7**
comp=Z,98nm,1.5s
XAN Xi'an 31.33 265 P **P** **18 48 46.4 +2.3**
XAN pP pP 18 48 56.3 -2.8
XAN pmax pmax
comp=Z,8.0nm,1.0s
XAN pmax pmax
comp=Z,540nm,13.7s
MOY Mondy 31.84 301 *e*P **P** **18 48 49.2 +0.7**
MOY pmax pmax
comp=Z,28nm,1.9s
ENH Enshi 32.93 259 *e*P **P** **18 48 57.8 -0.4**
comp=Z,47nm,1.1s
LZH Lanzhou 34.05 272 *e*P **P** **18 49 09.8 +1.8**
LZH pP pP 18 49 23.2 +0.1
LZH sP sP 18 49 28.0 -2.2
LZH pmax pmax
comp=Z,110nm,1.2s
LZH pmax pmax
comp=Z,410nm,4.5s
LZH LR LR
comp=Z,330nm,12.4s
LZH LR LR
comp=Z,600nm,16.6s
LZH LR LR
comp=Z,630nm,17.5s
GTA Gaotai 35.57 280 *e*P **P** **18 49 21.9 +0.9**
GTA pP pP 18 49 36.1 -0.1
GTA sP sP 18 49 43.5 +0.2
GTA S **S** **18 54 51.4 -1.1**
GTA ScP **ScP** **18 55 30.1 +0.8**
GTA PcS **PcS** **18 55 37.9 +1.8**
GTA pmax pmax
comp=Z,5.0nm,1.3s
GTA LR LR
comp=Z,520nm,15.7s
GTA LR LR
comp=Z,330nm,17.1s
GTA LR LR
comp=Z,310nm,19.0s
KRAR Krasnoyarsk 36.34 309⇑ *e*P **P** **18 49 26.3 -0.9**
KRAR pmax pmax
comp=Z,24nm,1.1s
CD2 Chengdu 36.68 265 P **P** **18 49 31.0 +0.5**
CD2 pP pP 18 49 46.7 +1.0
CD2 sP sP 18 49 54.4 +1.6
CD2 PP **PP** **18 50 55.0 +0.1**
CD2 S **S** **18 55 09.6 +0.1**
CD2 sS sS 18 55 36.7 +1.4
CD2 pmax pmax
comp=Z,30nm,0.6s
CD2 pmax pmax
comp=Z,240nm,11.3s
CD2 LR LR
comp=Z,520nm,13.1s
CD2 LR LR
comp=Z,460nm,14.9s
GYA Guiyang 37.19 256 P **P** **18 49 36.8 +1.8**
GYA pP pP 18 49 53.2 +3.0
GYA PP **PnPn** **18 51 05.0 +3.3**
GYA PcP **PcP** **18 51 56.4 +2.6**
GYA S **S** **18 55 18.6 +1.1**
GYA ScP **ScP** **18 55 37.8 +2.3**
GYA SS **SnSn** **18 57 51.0 -6.4**
GYA ScS **ScS** **18 59 43.2 -0.4**
GYA pmax pmax
comp=Z,40nm,0.8s
GYA pmax pmax
comp=Z,130nm,5.8s
GYA LR LR
comp=Z,850nm,17.8s
GYA LR LR
comp=Z,780nm,18.5s
GYA LR LR
comp=Z,800nm,18.6s
TT01 Tatalina 37.25 39 *e*P **P** **18 49 36.4 +1.5**
TTA Tatalina 37.26 39 *e*P **P** **18 49 35.9 +0.8**
TTA Tatalina 37.26 39 *e*P **P** **18 49 35.9 +0.8**
SVW2 Sparrevohn 37.38 42 *e*P **P** **18 49 36.5 +0.5**
comp=Z,107nm,1.3s
RSO Redoubt South 38.77 43 *e*P **P** **18 49 47.3 -0.7**
KWAJ Kwajalein Atol 38.97 147 *e*P **P** **18 49 50.0 +0.2**
KWAJ pmax pmax
comp=Z,84nm,0.8s
KWAJ Kwajalein Atol 38.97 147 *e*P **P** **18 49 50.0 +0.2**
comp=Z,84nm,0.8s
PPLA Purkeypile 39.01 39 *e*P **P** **18 49 51.5 +1.7**
comp=Z,225nm,1.5s
KDAK Kodiak Island 39.05 47 P P 18 50 04.8 +15
comp=Z,37nm,0.8s,baz=265,slow=3.9,SNR=16
KDAK LR LR 19 06 34.1
comp=Z,161nm,20.5s,baz=266,slow=37
KDAK Kodiak Island 39.05 47 *e*P **P** **18 49 49.8 -0.3**
KDAK Kodiak Island 39.05 47 *e*P **P** **18 49 49.7 -0.3**
KDAK *e**PP **pP** **18 50 04.8 -0.5**
KDAK Kodiak Island 39.05 47 *e*P **P** **18 49 49.7 -0.3**
KDAK *e*pP **pP** **18 50 04.8 -0.5**
CAST Castle Rocks 39.06 38 *e*P **P** **18 49 51.4 +1.3**
comp=Z,252nm,1.8s
SPU Mount Spurr 39.09 42 *e*P **P** **18 49 52.0 +1.5**
NRIK Noril'sk 39.39 331 P **P** **18 49 50.3 -2.4**
comp=Z,4.8nm,0.4s,baz=101,slow=7.9,SNR=9.8
NRIK pPcP 18 52 18.1
comp=Z,19nm,0.9s,baz=48,slow=1.9,SNR=6.1
BPAW Bear Paw Mtn. 39.55 37 *e*P **P** **18 49 55.3 +1.0**
comp=Z,178nm,1.7s
KTH Kantishna Hill 39.58 38 *e*P **P** **18 49 56.0 +1.5**
comp=Z,212nm,1.3s
MLY Manley 39.68 36 *e*P **P** **18 49 56.3 +1.0**
comp=Z,84nm,0.8s
BRLK Bradley Lake 39.75 44 *e*P **P** **18 49 56.6 +0.7**
comp=Z,34nm,0.6s
COLD Coldfoot 40.00 32 *e*P **P** **18 49 58.7 +0.8**
comp=Z,135nm,0.6s
RC01 Rabbit Creek A 40.22 42 *e*P **P** **18 50 00.0 +0.2**
comp=Z,56nm,0.8s
SEW Seward 40.44 43 *e*P **P** **18 50 01.6 0.0**
comp=Z,52nm,1.0s
MCK McKinley 40.46 38 *e*P **P** **18 50 02.4 +0.6**
MCK pmax pmax
comp=Z,107nm,1.4s
MCK McKinley 40.46 38 *e*P **P** **18 50 02.4 +0.6**
comp=Z,107nm,1.4s
PMR Palmer 40.48 41 *e*P **P** **18 50 02.0 +0.2**
PMR pmax pmax
comp=Z,37nm,1.1s
PMR Palmer 40.48 41 *e*P **P** **18 50 02.0 +0.2**
comp=Z,37nm,1.1s
RND Reindeer 40.51 38 *e*P **P** **18 50 02.5 +0.3**
RND pmax pmax
comp=Z,157nm,1.5s
RND Reindeer 40.51 38 *e*P **P** **18 50 02.5 +0.3**
comp=Z,156nm,1.5s
MDM Murphy Dome 40.75 36 *e*P **P** **18 50 05.3 +1.2**
comp=Z,150nm,1.1s
KMI Kunming 40.79 258 P **P** **18 50 06.0 +0.9**
KMI pP pP 18 50 20.2 -0.3
KMI sP sP 18 50 28.3 +0.7
KMI PP **PnPn** **18 51 42.6 -2.0**
KMI S **S** **18 56 11.0 -0.8**
KMI sS sS 18 56 36.2 -1.7
KMI SS **SS** **18 59 09.3 -5.2**
KMI pmax pmax
comp=Z,7.0nm,0.5s
KMI pmax pmax
comp=Z,220nm,4.6s
KMI LR LR
comp=Z,410nm,19.2s
KMI LR LR
comp=Z,280nm,13.3s
KMI LR LR
comp=Z,290nm,12.3s
WRH Wood River Hil 40.82 37 *e*P **P** **18 50 05.5 +0.8**
comp=Z,57nm,0.8s
SML Sawmill 40.84 41 *e*P **P** **18 50 05.9 +1.0**
SML pmax pmax
comp=Z,87nm,0.8s
SML Sawmill 40.84 41 *e*P **P** **18 50 05.9 +1.0**
comp=Z,87nm,0.8s
COLA College 40.91 36 *e*P **P** **18 50 06.8 +1.4**
COLA College 40.91 36*c i*P **P** **18 50 06.8 +1.4**
COLA pmax pmax
comp=Z,133nm,1.1s
COLA College 40.91 36 *e*P **P** **18 50 06.6 +1.2**
comp=Z,205nm,1.2s
CCB Clear Creek Bu 40.94 36 *e*P **P** **18 50 06.2 +0.6**
comp=Z,63nm,1.3s
DHY Denali Highway 41.20 39 *e*P **P** **18 50 08.3 +0.3**
comp=Z,167nm,1.5s
ZAA1 Zalesovo Array 41.22 307 *e*P **P** **18 50 07.4 -0.7**
ZAA1 *e*PcP **PcP** **18 52 06.3 +0.4**
ZAA0 Zalesovo Array 41.22 307 *e*P **P** **18 50 07.6 -0.5**
ZALV Zalesovo Beam 41.22 307 P **P** **18 50 07.4 -0.7**
comp=Z,6.2nm,0.5s,baz=77,slow=6.5,SNR=31
ZALV PcP **PcP** **18 52 06.3 +0.4**
comp=Z,7.8nm,0.6s,baz=89,slow=2.9,SNR=6.6
ZALV pPcP 18 52 24.1
comp=Z,56nm,0.7s,baz=80,slow=2.8,SNR=37
DAV Davao City (W) 41.29 214 LR LR 19 08 53.9
comp=Z,127nm,18.9s,baz=40,slow=38
SCM Sheep Creek Mo 41.31 41 *e*P **P** **18 50 09.4 +0.6**
SCM pmax pmax
comp=Z,86nm,1.2s
SCM Sheep Creek Mo 41.31 41 *e*P **P** **18 50 09.4 +0.6**
comp=Z,86nm,1.2s
HDA Harding Lake 41.31 37 *e*P **P** **18 50 08.9 +0.2**
comp=Z,60nm,0.5s
IL1 Eielson Array 41.33 36 *e*P **P** **18 50 08.7 -0.1**
ILAR Eielson Array 41.33 36 P **P** **18 50 09.7 +0.8**
comp=Z,30nm,0.7s,baz=268,slow=8.6,SNR=221
ILAR LR LR 19 07 09.4
comp=Z,199nm,21.5s,baz=298,slow=36
ILB Eielson Array 41.33 36 *e*P **P** **18 50 09.2 +0.4**
NVS Novosibirsk 41.94 309 *e*P **P** **18 50 12.7 -1.2**
NVS *e* 18 52 25.4
NVS pmax pmax
comp=N,6.0nm,1.6s
NVS pmax pmax
comp=E,28nm,1.6s
NVS pmax pmax
comp=Z,30nm,1.6s
FYU Fort Yukon 41.95 33 *e*P **P** **18 50 15.4 +1.5**
comp=Z,527nm,1.2s
KLU Klutina 42.02 41 *e*P **P** **18 50 15.6 +1.0**
comp=Z,50nm,0.8s
PAX Paxson 42.07 39 *e*P **P** **18 50 17.1 +2.0**
PAX pmax pmax
comp=Z,35nm,1.2s
PAX Paxson 42.07 39 *e*P **P** **18 50 17.1 +2.0**
comp=Z,35nm,1.2s
DIV Divide 42.13 42 *e*P **P** **18 50 16.5 +1.0**
comp=Z,64nm,1.0s
EYAK Cordova Ski Ar 42.22 42 *e*P **P** **18 50 16.1 0.0**
comp=Z,66nm,1.2s
WMQ Urumqi 42.35 292 P **P** **18 50 19.1 +1.5**
WMQ pP pP 18 50 34.8 +1.8
WMQ sP sP 18 50 40.8 +0.7
WMQ PcP **PcP** **18 52 12.5 +2.5**
WMQ S **S** **18 56 34.1 -0.2**
WMQ sS sS 18 57 03.5 +3.0
WMQ ScS **ScS** **19 00 11.5 -2.0**
WMQ pmax pmax
comp=Z,20nm,1.0s
WMQ pmax pmax
comp=Z,130nm,4.0s
WMQ LR LR
comp=Z,250nm,17.8s
WMQ LR LR
comp=Z,250nm,22.2s
WMQ LR LR
comp=Z,260nm,25.2s
DOT Dot Lake 42.64 38 *e*P **P** **18 50 19.8 +0.2**
comp=Z,159nm,1.3s
BMRM Bremner River 42.72 42 *e*P **P** **18 50 21.4 +1.1**
comp=Z,90nm,1.0s
RAGM Ragged Mountai 42.77 43 *e*P **P** **18 50 22.1 +1.4**
comp=Z,131nm,1.3s
MENT Mentasta 42.87 39 *e*P **P** **18 50 23.3 +1.8**
comp=Z,34nm,0.6s
EGAK Eagle 43.77 36 *e*P **P** **18 50 29.1 +0.5**
comp=Z,155nm,1.3s
BALM Baldy 43.79 41 *e*P **P** **18 50 30.6 +1.6**
BALM pmax pmax
comp=Z,68nm,1.0s
BALM Baldy 43.79 41 *e*P **P** **18 50 30.6 +1.6**
comp=Z,68nm,1.0s
MK31 Makanchi Array 44.83 298 *e*P **P** **18 50 37.7 +0.3**
MK31 Makanchi Array 44.83 298 *e*P **P** **18 50 37.7 +0.3**
MK32 Makanchi Array 44.83 298 *e*P **P** **18 50 38.0 +0.6**
MK32 *e*PP PP 18 52 36.1 +13
MK32 *e*S **S** **18 57 11.3 +1.0**
MKAR Makanchi Array 44.83 298 P **P** **18 50 38.0 +0.6**
comp=Z,11nm,0.6s,baz=79,slow=8.6,SNR=124
MKAR pPcP 18 52 36.1
comp=Z,20nm,0.8s,baz=58,slow=4.6,SNR=8.4
MKAR S **S** **18 57 11.3 +1.0**
comp=Z,1.2nm,0.9s,baz=75,slow=17,SNR=3.8
MKAR LR LR 19 10 49.9
comp=Z,526nm,18.6s,baz=68,slow=38
MKAR Makanchi Array 44.83 298 *e*P **P** **18 50 38.0 +0.6**
MK01 Makanchi Array 44.83 298 *e*P **P** **18 50 37.1 -0.3**
MAKZ Makanchi 45.03 298 *e*P **P** **18 50 39.2 +0.3**
MAKZ pmax pmax
comp=Z,30nm,0.9s
MAKZ Makanchi 45.03 298 *e*P **P** **18 50 39.2 +0.3**
comp=Z,30nm,0.9s
SKNT Sakolnakorn 45.37 248 P pP 18 50 58.3 +0.8
comp=Z,30nm,1.6s
KURK Kurchatov 45.76 304 *e*P **P** **18 50 45.7 +1.1**
KURK Kurchatov 45.76 304 *e*P **P** **18 50 45.0 +0.4**
KURK *e* 18 52 39.6
KURK pmax pmax
comp=Z,98nm,1.4s
KURK Kurchatov 45.76 304 *e*P **P** **18 50 45.0 +0.4**
comp=Z,98nm,1.4s
KURK *e*PP **PP** **18 52 39.5 +7.0**
KURBB Kurchatov Arra 45.85 304 P **P** **18 50 45.8 +0.5**
comp=Z,15nm,0.4s,baz=74,slow=8.8,SNR=96
KURBB pPcP 18 52 39.5
comp=Z,33nm,0.8s,baz=72,slow=3.5,SNR=19
INK Inuvik 46.27 30 P **P** **18 50 49.6 +1.3**
comp=Z,124nm,0.8s,baz=289,slow=7.4,SNR=385
INK Inuvik 46.27 30 *e*P **P** **18 50 49.6 +1.3**
comp=Z,222nm,1.0s
TNTI Ternate 46.41 208 P sP 18 51 16.9 +4.2
LSA Lhasa 46.47 272 P **P** **18 50 52.8 +1.8**
LSA pmax pmax
comp=Z,12nm,1.0s
LSA Lhasa 46.47 272 *e*P **P** **18 50 52.4 +1.4**
LSA pmax pmax
comp=Z,29nm,0.9s
LSA Lhasa 46.47 272 *e*P **P** **18 50 52.4 +1.4**
comp=Z,29nm,0.9s
KHON Khomkaen 46.60 248 P pP 18 51 08.8 +1.6
comp=Z,14nm,1.1s
GENI Genyem 46.60 190 P sP 18 51 18.1 +3.9
RKPI Ransiki, Papua 46.62 199 P sP 18 51 19.4 +5.0
CMAI Chiengmai2 46.73 255 P **P** **18 50 55.4 +2.6**
comp=Z,31nm,1.7s
SWI Sorong 46.74 203 P sP 18 51 21.0 +5.7
UTTA Uttaradit 47.16 252 P P 18 51 03.5 +7.5
comp=Z,4.2nm,1.1s
LAMP Lampang 47.27 253 P P 18 51 06.2 +9.4
comp=Z,13nm,1.0s
CMMT Chiang Mai 47.55 254 P **P** **18 51 01.4 +2.4**
comp=Z,34nm,1.1s
CHTO Chiang Mai 47.55 254 P **P** **18 51 01.4 +2.4**
comp=Z,170nm,1.1s
CHTO Chiang Mai 47.55 254 *e*P **P** **18 51 00.0 +1.0**
CHTO pmax pmax
comp=Z,35nm,1.0s
CHTO Chiang Mai 47.55 254 *e*P **P** **18 50 60.0 +1.0**
comp=Z,36nm,1.0s
PBKT Sadao Pong 47.69 250 P pP 18 51 16.0 +0.2
comp=Z,13nm,1.3s
CM31 Chiang Mai Arr 47.79 254 *e*P **P** **18 51 02.0 +1.1**
CM31 *e*PP **PP** **18 52 48.5 -4.5**
CMAR Chiang Mai Arr 47.79 254 P **P** **18 51 02.3 +1.4**
comp=Z,3.1nm,0.8s,baz=46,slow=7.4,SNR=8.8
CMAR pP **pP** **18 51 17.4 +0.7**
comp=Z,7.8nm,1.0s,baz=35,slow=7.8,SNR=12
CMAR pPcP 18 52 48.5
comp=Z,1.8nm,0.7s,baz=19,slow=4.0,SNR=4.7
CMAR LR LR 19 11 40.2
comp=Z,185nm,19.8s,baz=58,slow=37
CM01 Chiang Mai Arr 47.80 254 *e*P **P** **18 51 01.7 +0.7**
RABL Rabaul 47.90 174 *e*P **P** **18 51 01.5 -0.2**
comp=Z,95nm,0.8s
PDGK Podgornoye 48.02 294 P **P** **18 51 02.1 -0.3**
PDGK pmax pmax
comp=Z,20nm,1.1s
WAMI Wamena 48.08 192 P sP 18 51 29.6 +3.9
MHMT Maesarieng 48.69 255 P P 18 51 15.3 +7.5
comp=Z,20nm,0.7s
MRSI Marisa 48.76 215 P sP 18 51 37.1 +6.1
CHKZ Chkalovo 49.35 310 P **P** **18 51 11.8 -0.6**
CHKZ pmax pmax
comp=Z,58nm,1.3s
VOSK Vostochnaya 49.50 309 *e*P **P** **18 51 13.3 -0.3**
VOSK pmax pmax
comp=Z,28nm,0.8s
VOSK Vostochnaya 49.50 309 *e*P **P** **18 51 13.3 -0.3**
comp=Z,28nm,0.8s
BVA0 Borovoye Array 49.72 309 *i*P **P** **18 51 15.9 +0.6**
BVA0 pmax pmax
comp=Z,25nm,1.4s
BVAR Borovoye Array 49.72 309 P **P** **18 51 16.1 +0.8**
comp=Z,8.2nm,0.6s,baz=78,slow=9.4,SNR=62
BVAR pP **pP** **18 51 31.0 -0.1**
comp=Z,7.1nm,0.7s,baz=74,slow=11,SNR=6.3
BVAR PcP **PcP** **18 52 36.5 +1.0**
comp=Z,4.7nm,0.7s,baz=93,slow=5.1,SNR=3.7
BVAR pPcP 18 52 53.4
comp=Z,23nm,0.8s,baz=79,slow=2.3,SNR=12
BVAR S **S** **18 58 19.5 -0.1**
comp=Z,1.9nm,0.9s,baz=67,slow=11,SNR=4.8
BVAR LR LR 19 14 29.2
comp=Z,585nm,18.8s,baz=74,slow=39
BRVK Borovoye 49.77 310 *e*P **P** **18 51 16.6 +1.0**
BRVK Borovoye 49.77 310‖ *i*P **P** **18 51 16.6 +1.0**
BRVK pmax pmax
comp=Z,72nm,1.7s
BRVK Borovoye 49.77 310 *e*P **P** **18 51 15.8 +0.2**
comp=Z,43nm,1.1s
TAPN Taplejung 50.29 272 *e*P **P** **18 51 21.1 +0.8**
comp=Z,94nm,0.9s
PATY Pattaya 50.36 247 P pP 18 51 44.9 +8.6
OTUK Ortayu 50.48 303 P **P** **18 51 21.3 +0.1**
OTUK pmax pmax
comp=Z,40nm,0.7s
DLBC Dease Lake 50.49 43 P **P** **18 51 23.4 +2.2**
comp=Z,19nm,0.9s,baz=288,slow=8.8,SNR=22
DLBC pP **pP** **18 51 38.1 +1.1**
comp=Z,14nm,0.8s,baz=228,slow=8.0,SNR=5.1
DLBC Dease Lake 50.49 43 *e*P **P** **18 51 23.0 +1.9**
comp=Z,36nm,1.1s
DLBC pP **pP** **18 51 38.1 +1.1**
SRDT SRDT 50.51 250 P pP 18 51 38.8 +1.3
comp=Z,55nm,1.1s
ZRNK Zerenda 50.52 310 *i*P **P** **18 51 21.7 +0.4**
ZRNK pmax pmax
comp=Z,63nm,1.2s
ZRNK Zerenda 50.52 310 *e*P **P** **18 51 21.3 0.0**
comp=Z,46nm,1.0s
KHLT Khaolaem Dam 50.56 251 P pP 18 51 39.7 +1.8
comp=Z,12nm,1.2s
TKM2 Tokmak 2 50.76 296 *e*P **P** **18 51 24.9 +1.4**
TKM2 pmax pmax
comp=Z,55nm,0.9s
TKM2 Tokmak 2 50.76 296 *e*P **P** **18 51 24.9 +1.4**
comp=Z,55nm,0.9s
ODAN Odare 50.80 271 *e*P **P** **18 51 24.7 +0.6**
comp=Z,89nm,1.1s
GUN Gumba 51.29 274 *e*P **P** **18 51 28.6 +0.7**
comp=Z,352nm,1.2s
RAMN Ramite 51.33 272 *e*P **P** **18 51 28.4 +0.4**
comp=Z,180nm,0.9s
FRU Bishkek 51.44 296 *e*P **P** **18 51 29.0 +0.6**
FRU *e* 18 51 43.0
FRU *i* 18 51 49.0
FRU *e*S **S** **18 58 45.0 +1.3**
FRU *e* 18 58 53.0
FRU pmax pmax
comp=Z,90nm,2.0s
AAK Ala-Archa 51.61 296 *e*P **P** **18 51 30.3 +0.4**
AAK Ala-Archa 51.61 296 P **P** **18 51 30.3 +0.4**
AAK pmax pmax
comp=Z,12nm,1.0s
AAK Ala-Archa 51.61 296 *e*P **P** **18 51 30.3 +0.4**
comp=Z,28nm,1.0s
KKN Kakani 51.79 274 *e*P **P** **18 51 31.9 +0.4**
comp=Z,214nm,1.4s
PKIN Phulchoki 51.83 273 *e*P **P** **18 51 32.3 +0.5**
comp=Z,29nm,0.7s
DMN Daman 52.02 274 *e*P **P** **18 51 34.0 +0.8**
EKS2 Erkin-Say 52.06 296 *e*P **P** **18 51 33.5 +0.3**
EKS2 pmax pmax
comp=Z,170nm,1.9s
EKS2 Erkin-Say 52.06 296 *e*P **P** **18 51 33.5 +0.3**
comp=Z,170nm,1.9s
KSH Kashi 52.12 292 P P 18 51 38.5 +4.9
KSH *e*pP pP 18 51 54.5 +5.0
KSH *e*sP sP 18 52 01.3 +4.8
KSH *e*PP **PP** **18 53 39.1 +7.0**
KSH *e*ScP **ScP** **18 56 39.5 +3.1**
KSH PcS **PcS** **18 56 48.9 +5.7**
KSH S **S** **18 58 58.1 +4.8**
KSH pmax pmax
comp=Z,8.0nm,0.7s
KSH pmax pmax
comp=Z,170nm,2.8s
KSH LR LR
comp=Z,270nm,7.5s
KSH LR LR
comp=Z,250nm,10.0s
KSH LR LR
comp=Z,620nm,17.9s
GKN Gorkha 52.14 274 *e*P **P** **18 51 34.5 +0.6**
PMG Port Moresby 52.90 180 LR LR 19 10 39.6
comp=Z,176nm,21.7s,baz=345,slow=32
MNAS Manas 52.97 296 P **P** **18 51 41.3 +1.4**
MNAS pmax pmax
comp=Z,23nm,0.8s
KOLN Koldanda 53.02 275 *e*P **P** **18 51 41.1 +0.6**
comp=Z,68nm,0.8s
PYUN Piuthan 53.27 276 *e*P **P** **18 51 43.2 +0.8**
comp=Z,160nm,1.0s
SVE Sverdlovsk 53.33 317 *e*P **P** **18 51 42.6 +0.5**
SVE pmax pmax
comp=Z,72nm,1.4s

SFK Sufi-Kurgan 53.53 293 P **P** 18 51 44.6 +0.5
SFK pmax pmax
comp=Z,28nm,1.3s
SAUI Saumlaki 53.55 200 *e*P **P** 18 51 44.1 0.0
comp=Z,238nm,0.8s
KK31 Karatay Array 53.96 298 *i* P **P** 18 51 47.1 +0.1
KK31 pmax pmax
comp=Z,11nm,0.6s
KKAR Karatay Array 53.96 298 *e*P **P** 18 51 47.2 +0.2
KKAR Karatay Array 53.96 298 *e*P **P** 18 51 47.2 +0.2
BBB Bella Bella 54.06 49 P **P** 18 51 48.0 +0.5
comp=Z,13nm,0.9s,baz=8.5,slow=4.1,SNR=3.6
HNR Honiara 54.12 165 LR LR 19 10 17.7
comp=Z,463nm,21.8s,baz=354,slow=31
ARU Arti 54.54 317 LR LR 19 18 01.0
comp=Z,557nm,18.3s,baz=72,slow=39
ARU Arti 54.54 317 *e*P **P** 18 51 50.6 -0.4
ARU Arti 54.54 317 *c i*P **P** 18 51 50.5 -0.4
ARU *PP **pP** 18 52 06.9 0.0
ARU 18 52 51.8
ARU S **S** 18 59 24.0 -1.3
ARU pmax pmax
comp=Z,110nm,1.7s
ARU Arti 54.54 317 *e*P **P** 18 51 50.4 -0.5
comp=Z,142nm,1.5s
HOPEN Hopen 54.67 346 *e*P **P** 18 51 50.6 -1.0
KBS Kingsbay 54.83 350 *e*P **P** 18 51 52.2 -0.6
KBS IAmb IAmb 18 51 53.7
comp=Z,20nm,0.7s
KBS Kingsbay 54.83 350 *e*P **P** 18 51 52.2 -0.6
KBS Kingsbay 54.83 350 *e*P **P** 18 51 51.9 -0.9
KBS pmax pmax
comp=Z,19nm,0.8s
KBS Kingsbay 54.83 350 *e*P **P** 18 51 51.9 -0.9
comp=Z,19nm,0.8s
RES Resolute Bay 54.89 17 P **P** 18 51 53.6 +0.4
comp=Z,80nm,0.5s,baz=322,slow=7.8,SNR=389
RES Resolute Bay 54.89 17 *e*P **P** 18 51 52.8 -0.4
RES Resolute Bay 54.89 17 *e*P **P** 18 51 52.9 -0.4
comp=Z,110nm,0.7s
YKW3 Yellowknife Ar 55.61 34 *e*P **P** 18 51 59.4 +0.8
comp=Z,49nm,1.0s
YKA Yellowknife Ar 55.65 34 P **P** 18 51 60.0 +1.2
comp=Z,28nm,0.6s,baz=299,slow=6.8,SNR=397
YKA pP **pP** 18 52 16.2 +1.3
comp=Z,7.4nm,0.6s,baz=301,slow=7.0,SNR=3.9
YKA Yellowknife Ar 55.65 34 P **P** 18 52 00.0 +1.2
YKA *PP **pP** 18 52 16.2 +1.3
YKA pmax pmax
comp=Z,27nm,0.6s
YKB5 Yellowknife Ar 55.65 34 *e*P **P** 18 51 58.9 +0.1
SMLA Simla 55.72 282 *i* P **P** 18 52 00.2 +0.4
SMLA *i* S **pP** 18 52 14.9 -0.9
SMLA *i* S **pP** 18 52 14.9 -0.9
SMLA AML AML 18 52 17.3
comp=E,366nm,0.4s
HSPB Hornsund (broa 55.85 348 *e*P **P** 18 51 59.7 -0.4
HSPB Hornsund (broa 55.85 348 *e*P **P** 18 51 59.9 -0.1
THN Thein Dam 56.01 284 *e*P **P** 18 52 00.8 -1.1
MMRI Maumere 56.97 210 P sP 18 52 30.0 -1.7
comp=E,874nmcomp=E,49nm,1.9s
ABKAR Akbulak array 57.28 309 *e*P **P** 18 52 10.8 +0.2
SOEI Soe 57.30 208 P sP 18 52 32.9 -1.3
comp=E,40nm,1.1s
AKTO Aktyubinsk 57.75 311 LR LR 19 19 18.2
comp=E,495nm,19.0s,baz=52,slow=38
AKTO Aktyubinsk 57.75 311 P **P** 18 52 14.1 +0.2
AKTO pmax pmax
comp=Z,48nm,1.2s
LVZ Lovozero 57.91 336 ||| *i* P **P** 18 52 14.1 -0.8
LVZ pmax pmax
comp=Z,67nm,2.5s
LVZ Lovozero 57.91 336 *e*P **P** 18 52 13.9 -1.0
comp=Z,17nm,0.8s
APA Apatity 58.49 336 ||| *i* P 18 52 14.0 -4.8
APA *i* 18 53 12.4
APA MLR MLR
comp=Z,1μm,11.0s
KEV Kevo 58.81 339 *e*P **P** 18 52 20.3 -0.7
KEV pmax pmax
comp=Z,26nm,0.9s
KEV Kevo 58.81 339 *e*P **P** 18 52 20.3 -0.7
comp=Z,26nm,0.9s
NLWA Neilton Lookou 58.83 53 *e*P **P** 18 52 23.2 +1.7
comp=Z,27nm,0.9s
HAMF Hammerfest 59.00 341 *e*P **P** 18 52 21.2 -1.1
HAMF IAmb IAmb 18 52 22.7
comp=Z,28nm,0.9s
TMCR Tamitsa 59.11 331 *e*P **P** 18 52 22.6 -0.5
TMCR pmax pmax
comp=Z,105nm,1.4s
MBW Mount Baker 59.20 50 P **P** 18 52 24.9 +0.6
PSI Prapat 59.20 241 pP **pP** 18 52 41.1 +0.3
comp=Z,4.1nm,0.5s,baz=352,slow=14,SNR=3.0
PSI LR LR 19 19 57.1
comp=Z,141nm,19.4s,baz=26,slow=38
ARA0 ARCESS Array S 59.34 340 *e*P **P** 18 52 24.2 -0.5
ARCES ARCESS Array B 59.34 340 P **P** 18 52 23.9 -0.8
comp=Z,7.0nm,0.4s,baz=40,slow=7.1,SNR=88
ARCES PcP **PcP** 18 53 12.7 +0.6
comp=Z,7.0nm,0.8s,baz=40,slow=1.5,SNR=5.7
ARE0 ARCESS Array S 59.34 340 *e*P **P** 18 52 23.9 -0.8
ARE0 IAmb IAmb 18 52 25.8
comp=Z,46nm,1.2s
ARE0 ARCESS Array S 59.34 340 *e*P **P** 18 52 24.5 -0.2
comp=Z,31nm,1.0s
B05A Bryant 59.37 51 P **P** 18 52 26.0 +0.8
baz=303
DAG Danmarks Havn 59.44 356 *i* P **P** 18 52 24.6 -0.7
comp=Z,22nm,0.8s
DAG Danmarks Havn 59.44 356 *i* P **P** 18 52 24.6 -0.7
DAG pmax pmax
comp=Z,16nm,0.8s
KBL Kabul 59.45 290 *e*P **P** 18 52 26.0 -0.3
KBL pmax pmax
comp=Z,47nm,1.1s
KBL Kabul 59.45 290 *e*P **P** 18 52 26.0 -0.3
comp=Z,46nm,1.1s
E03A Lebam 59.46 53 *e*P **P** 18 52 27.8 +1.9
comp=Z,90nm,1.3s
JCW Jim Creek 59.50 51 *e*P **P** 18 52 27.2 +1.1
B06A Marblemount 59.57 50 *e*P **P** 18 52 26.5 0.0
comp=Z,29nm,1.1s
D05A Enumclaw 60.01 52 *e*P **P** 18 52 31.1 +1.4
comp=Z,53nm,1.4s
C06D Leavenworth 60.23 51 P **P** 18 52 32.3 +1.1
baz=304
OBSR Observation Ro 60.27 52 *e*P **P** 18 52 32.9 +1.2
KTK1 Kautokeino 60.29 340 *e*P **P** 18 52 30.7 -0.5
LON Longmire 60.36 52 *e*P **P** 18 52 32.3 +0.2
LON pmax pmax
comp=Z,26nm,1.5s
LON Longmire 60.36 52 *e*P **P** 18 52 32.3 +0.2
comp=Z,26nm,1.5s
G03D McMinnville, O 60.36 54 P **P** 18 52 33.5 +1.5
baz=304
VALT Mount Saint He 60.43 53 *e*P **P** 18 52 34.4 +1.6
NLW Nelson Butte 60.45 50 P **P** 18 52 33.9 +1.0
F04A Amboy 60.46 53 *e*P **P** 18 52 33.5 +0.8
comp=Z,53nm,0.9s
KLMR Klimovskoe 60.59 328 *e*P P 18 52 28.4 -4.9
KLMR *e*SP sP 18 52 55.5 -0.9
KLMR pmax pmax
comp=Z,83nm,1.3s
COR Corvallis 60.69 55 *e*P **P** 18 52 36.0 +1.7
COR pmax pmax
comp=Z,152nm,1.5s
COR Corvallis 60.69 55 *e*P **P** 18 52 36.0 +1.7
comp=Z,152nm,1.5s
LTY Liberty 60.72 51 *e*P **P** 18 52 35.0 +0.4
comp=Z,9.5nm,0.7s
KULLO Kullorsuaq 60.80 7 *i* P **P** 18 52 33.8 -0.8
comp=Z,30nm,0.7s
KULLO Kullorsuaq 60.80 7 *i* P **P** 18 52 33.8 -0.8
KULLO pmax pmax
comp=Z,30nm,0.7s
TRO Tromso 60.85 342 *e*P **P** 18 52 34.7 -0.3
TRO IAmb IAmb 18 52 35.9
comp=Z,74nm,0.8s
B08A Colville Reser 60.86 50 *e*P **P** 18 52 35.7 +0.2
comp=Z,14nm,0.8s
WTV Waterville 60.88 51 *e*P **P** 18 52 36.1 +0.4
I03D Drain, OR 61.15 56 P **P** 18 52 38.9 +1.4
baz=304
H04A Detroit Lake 61.29 54 *e*P **P** 18 52 39.6 +1.2
comp=Z,28nm,1.0s

G05D Wamic, OR 61.48 54 P **P** 18 52 41.0 +1.3
baz=304
I04A Tendick Farm, 61.66 55 P **P** 18 52 41.8 +0.8
baz=305
KPJI Karang Pucung 61.68 225 P sP 18 53 03.6 -0.8
comp=Z,19nm,1.5s
LHSI Lahat 61.68 232 P sP 18 53 00.4 -4.0
comp=Z,50nm,2.0s
C09A Chrisman Ranch 61.76 50 *e*P **P** 18 52 42.2 +0.7
comp=Z,44nm,1.4s
D08A Wollman Farm, 61.82 51 *e*P **P** 18 52 42.2 +0.3
comp=Z,14nm,0.8s
MDSI Maura Dua 61.85 231 P sP 18 53 02.0 -3.6
comp=Z,15nm,1.9s
HAWA Hanford 61.86 52 *e*P **P** 18 52 43.1 +0.9
comp=Z,20nm,1.0s
L02D Cave Junction, 61.87 57 P **P** 18 52 43.4 +1.0
baz=305
LEM Lembang 61.93 226 LR LR 19 21 55.3
comp=Z,84nm,19.4s,baz=32,slow=38
LEM Lembang 61.93 226 P sP 18 53 10.4 +4.1
I05D Terrebonne, OR 61.98 54 P **P** 18 52 44.0 +0.9
baz=305
HUMO Hull Mountain 62.01 57 *e*P **P** 18 52 44.6 +1.3
comp=Z,31nm,1.6s
NEW Newport 62.12 49 P **P** 18 52 44.6 +0.6
comp=Z,19nm,0.9s,baz=303,slow=6.2,SNR=20
NEW pP **pP** 18 53 01.0 +0.7
comp=Z,19nm,0.9s,baz=290,slow=5.6,SNR=8.0
NEW Newport 62.12 49 P **P** 18 52 44.5 +0.6
baz=305,SNR=17
NEW Newport 62.12 49 *e*P **P** 18 52 44.6 +0.6
comp=Z,25nm,0.9s
NEW *e*pP **pP** 18 53 01.0 +0.7
KHMM Horse Mountain 62.53 59 *e*P **P** 18 52 47.4 +0.4
comp=Z,138nm,1.9s
J05D Fock, OR 62.65 55 P **P** 18 52 48.7 +0.9
baz=305
YBH Yreka Blue Hor 62.66 57 P **P** 18 52 49.2 +1.5
comp=Z,12nm,1.0s,baz=342,slow=5.1,SNR=12
YBH pP **pP** 18 53 04.8 +0.7
comp=Z,8.3nm,0.9s,baz=174,slow=5.1,SNR=4.8
YBH Yreka Blue Hor 62.66 57 *e*P **P** 18 52 48.8 +1.0
comp=Z,31nm,1.4s
YBH pP **pP** 18 53 04.8 +0.7
K04D Chiloquin, OR 62.72 56 P **P** 18 52 49.2 +1.0
baz=306
M02C Callahan 62.77 58 P **P** 18 52 49.5 +1.1
baz=306
STEI Steigen 63.02 342 *e*P **P** 18 52 49.5 0.0
HYB Hyderabad 63.05 269 *i* P **P** 18 52 51.0 +0.4
HYB *e*pP **pP** 18 53 06.5 -0.4
HYB *e*sP **sP** 18 53 14.0 +0.2
HYB *e*PcP **PcP** 18 53 31.0 +3.1
N02D Trinity Center 63.10 58 P **P** 18 52 52.0 +1.3
baz=306
M04C Macdoel 63.16 57 P **P** 18 52 52.4 +1.2
baz=306
K05A Summer Lake 63.18 56 *e*P **P** 18 52 52.5 +1.2
comp=Z,56nm,1.1s
LOF Lofoten 63.24 342 *e*P **P** 18 52 50.8 -0.2
WALA Waterton Lakes 63.38 47 *e*P **P** 18 52 52.7 +0.3
comp=Z,28nm,1.0s
F10A Beach Ranch, E 63.40 51 *e*P **P** 18 52 53.2 +0.5
comp=Z,18nm,1.1s
WDC Whiskeytown Da 63.43 58 *e*P **P** 18 52 54.1 +1.3
WDC pmax pmax
comp=Z,15nm,0.9s
WDC Whiskeytown Da 63.43 58 *e*P **P** 18 52 54.1 +1.3
comp=Z,15nm,0.9s
BSMT Bassoo Peak 63.63 48 *e*P **P** 18 52 54.8 +0.6
BLMT Blacktail Moun 63.77 48 *e*P **P** 18 52 55.8 +0.7
SUMG Summit 63.90 2 *i* P **P** 18 52 56.2 +0.4
SUMG Summit 63.90 2 *i* P **P** 18 52 56.2 +0.4
SUMG Summit 63.90 2 *e*P **P** 18 52 56.0 +0.2
comp=Z,255nm,1.4s
JTMT Jette 63.97 48 *e*P **P** 18 52 57.0 +0.7
MOD Modoc Plateau 64.02 56 *e*P **P** 18 52 57.2 +0.4
comp=Z,13nm,0.8s
BMO Blue Mountains 64.03 52 *e*P **P** 18 52 57.9 +1.2
BMO pmax pmax
comp=Z,11nm,1.2s
BMO Blue Mountains 64.03 52 *e*P **P** 18 52 57.9 +1.2
comp=Z,11nm,1.2s
YBMT Yellow Bay 64.05 48 *e*P **P** 18 52 57.8 +0.9
O03D Paynes Creek 64.06 58 P **P** 18 52 57.6 +0.6
baz=306
SWMT Swartz Lake 64.27 48 *e*P **P** 18 52 59.4 +1.1
WRAB Tennant Creek 64.51 194 ||| *e*P P 18 53 05.9 +6.0
WRAB pmax pmax
comp=Z,27nm,1.2s
WR1 Warramunga Arr 64.52 194 *e*P **P** 18 52 58.6 -1.4
WR1 *e*pP **pP** 18 53 18.0 +1.6
WRA Warramunga Arr 64.52 194 P **P** 18 52 58.6 -1.4
comp=Z,2.0nm,0.7s,baz=16,slow=7.2,SNR=14
WRA pP **pP** 18 53 18.0 +1.6
comp=Z,44nm,0.9s,baz=11,slow=6.8,SNR=34
WRA LR LR 19 16 04.2
comp=Z,67nm,21.1s,baz=75,slow=31
MOS Moscow 64.61 324 *e*P **P** 18 52 59.5 -0.7
MOS *e* 18 53 19.3
MOS *e* 18 53 31.6
MOS *e*S **S** 19 01 33.6 -1.4
MOS pmax pmax
comp=Z,400nm,1.8s
MOS pmax pmax
comp=Z,201nm,1.5s
MOS pmax pmax
comp=N,96nm,1.0s
MOR8 Moi Rana 64.63 341 *e*P **P** 18 52 58.3 -1.9
MOR8 IAmb IAmb 18 52 59.8
comp=Z,82nm,0.7s
GEYT Alibeck 64.68 299 P **P** 18 53 01.9 +0.9
comp=Z,12nm,0.9s,baz=29,slow=3.4,SNR=29
GEYT pP **pP** 18 53 17.4 0.0
comp=Z,9.5nm,0.8s,baz=57,slow=5.5,SNR=5.7
GEYT sP **sP** 18 53 24.8 +0.5
comp=Z,45nm,1.1s,baz=5.7,slow=3.0,SNR=9.7
GEYT LR LR 19 24 06.0
comp=Z,593nm,18.8s,baz=55,slow=39
ORV Oroville 64.68 59 *e*P **P** 18 53 00.5 -0.5
ORV pmax pmax
comp=Z,11nm,0.9s
ORV Oroville 64.68 59 *e*P **P** 18 53 00.5 -0.5
comp=Z,11nm,0.9s
WVOR Wild Horse Val 64.70 55 *e*P **P** 18 53 01.9 +0.7
WVOR pmax pmax
comp=Z,12nm,0.9s
WVOR Wild Horse Val 64.70 55 *e*P **P** 18 53 01.9 +0.7
comp=Z,12nm,0.9s
MSO Missoula 64.71 49 P **P** 18 53 01.5 +0.3
baz=308,SNR=18
MSO Missoula 64.71 49 *e*P **P** 18 53 01.8 +0.6
comp=Z,35nm,1.0s
FITZ Fitzroy Crossi 64.74 203 *e*P **P** 18 53 01.1 -0.3
comp=Z,14nm,0.9s
FIA1 FINESS Array S 65.00 333 *e*P **P** 18 53 02.2 -0.4
FIA0 FINESS Array S 65.00 333 *e*P **P** 18 53 02.3 -0.4
FIA0 FINESS Array S 65.00 333 *e*P **P** 18 53 02.3 -0.4
FINES FINESS Array B 65.00 333 P **P** 18 53 02.3 -0.4
comp=Z,47nm,0.6s,baz=43,slow=7.7,SNR=304
CHMT Chamberlain Mo 65.03 48 *e*P **P** 18 53 03.5 +0.1
AFDM Forest Hills D 65.38 59 *e*P **P** 18 53 06.4 +0.8
comp=Z,13nm,1.2s
OBN Obninsk 65.48 324 *e*P **P** 18 53 06.5 +0.6
OBN Obninsk 65.48 324 *d i*P **P** 18 53 06.4 +0.6
OBN *e* 18 55 33.0
OBN *e*S SKiKP 19 02 29.8 -38
OBN pmax pmax
comp=Z,286nm,1.7s
OBN MLR MLR
comp=Z,300nm,16.0s
OBN Obninsk 65.48 324 *e*P **P** 18 53 06.2 +0.4
comp=Z,169nm,1.1s
FFC Flin Flon 65.53 37 *e*P **P** 18 53 06.6 +0.4
FFC pmax pmax
comp=Z,63nm,0.9s
FFC Flin Flon 65.53 37 *e*P **P** 18 53 06.6 +0.4
comp=Z,63nm,0.9s
VRH Novokhopyorsk 65.71 318 *e*P **P** 18 53 06.8 -0.6
VRH pmax pmax
comp=Z,210nm,1.7s
MFID Camas Ranch 65.74 53 *e*P **P** 18 53 08.0 +0.1
comp=Z,7.9nm,0.8s
SCO Scoresbysund 65.83 356 *i* P **P** 18 53 08.4 +0.6
comp=Z,42nm,1.0s

SCO Scoresbysund 65.83 356 *i* P **P** 18 53 08.4 +0.6
SCO pmax pmax
comp=Z,42nm,1.0s
FCC Fort Churchill 65.89 30 *e*P **P** 18 53 08.4 +0.1
FCC Fort Churchill 65.89 30 *e*P **P** 18 53 08.5 +0.1
FCC pmax pmax
comp=Z,113nm,1.5s
FCC Fort Churchill 65.89 30 *e*P **P** 18 53 08.5 +0.1
comp=Z,113nm,1.5s
HRY Holter Research 65.92 48 *e*P **P** 18 53 09.8 +0.8
LPSR Galich'ya Gora 66.11 321 *e*P **P** 18 53 09.9 0.0
LPSR pmax pmax
comp=Z,100nm,1.1s
LRM Limekiln Ridge 66.14 49 *e*P **P** 18 53 11.1 +0.5
EGMT Eagleton 66.19 46 P **P** 18 53 11.1 +0.4
baz=310,SNR=14
EGMT Eagleton 66.19 46 *e*P **P** 18 53 10.9 +0.2
comp=Z,61nm,1.1s
CMB Columbia Colle 66.30 60 *e*P **P** 18 53 12.3 +0.8
CMB pmax pmax
comp=Z,41nm,1.6s
CMB Columbia Colle 66.30 60 *e*P **P** 18 53 12.2 +0.8
comp=Z,41nm,1.6s
DLMT Dillon 66.35 49 *e*P **P** 18 53 12.8 +1.0
comp=Z,26nm,1.1s
HLID Hailey 66.46 52 P **P** 18 53 13.4 +0.8
baz=309,SNR=12
HLID Hailey 66.46 52 *e*P **P** 18 53 13.4 +0.8
comp=Z,8.2nm,0.9s
ILULI Ilulissat 66.52 7 *i* P **P** 18 53 12.0 -0.3
comp=Z,47nm,0.9s
ILULI Ilulissat 66.52 7 *i* P **P** 18 53 12.0 -0.3
ILULI pmax pmax
comp=Z,47nm,0.9s
MCMT McKenzie Canyo 66.55 50 *e*P **P** 18 53 13.6 +0.3
WAKR Walker 66.60 59 *e*P **P** 18 53 14.8 +1.2
BOZ Bozeman (W) 66.70 49 P **P** 18 53 14.4 +0.3
baz=309,SNR=43
BOZ Bozeman (W) 66.70 49 *e*P **P** 18 53 14.9 +0.8
BOZ pmax pmax
comp=Z,31nm,0.9s
BOZ Bozeman (W) 66.70 49 *e*P **P** 18 53 14.9 +0.8
comp=Z,32nm,0.9s
BMN Battle Mountai 66.76 56 *e*P **P** 18 53 15.3 +0.8
BMN pmax pmax
comp=Z,19nm,1.0s
BMN Battle Mountai 66.76 56 *e*P **P** 18 53 15.3 +0.8
comp=Z,18nm,1.0s
VSR Storozhevoye 66.92 320 *e*P **P** 18 53 15.1 0.0
VSR pmax pmax
comp=Z,50nm,0.5s
VSU Vasula 66.97 331 *d i*P **P** 18 53 16.2 +0.9
VSU pmax pmax
comp=Z,355nm,1.7s
QLMT Earthquake Lak 67.33 49 *e*P **P** 18 53 18.5 +0.4
NV01 Mina Array Sit 67.34 58 *e*P **P** 18 53 18.9 +0.5
NVAR Mina Array Bea 67.34 58 P **P** 18 53 19.2 +0.9
comp=Z,14nm,0.6s,baz=294,slow=7.0,SNR=100
NVAR pP **pP** 18 53 36.5 +1.7
comp=Z,16nm,0.8s,baz=286,slow=7.4,SNR=9.2
NV11 Mina Array Sit 67.43 58 *e*P **P** 18 53 19.3 +0.5
comp=Z,22nm,1.0s
GCMT Greycliff 67.67 48 *e*P **P** 18 53 21.2 +1.0
YMR Madison River 67.69 49 *e*P **P** 18 53 21.5 +1.0
comp=Z,19nm,0.9s
ELK Elko 67.75 55 *e*P **P** 18 53 21.3 +0.4
ELK pmax pmax
comp=Z,4.0nm,0.8s
ELK Elko 67.75 55 *e*P **P** 18 53 21.3 +0.4
comp=Z,3.7nm,0.8s
YNR Norris Junctio 67.81 49 *e*P **P** 18 53 22.8 +1.5
comp=Z,20nm,1.1s
YFT Old Faithful 67.90 49 *e*P **P** 18 53 24.0 +2.2
comp=Z,20nm,1.0s
LKWY Lake 68.06 49 *e*P **P** 18 53 24.8 +1.9
LKWY pmax pmax
comp=Z,18nm,1.0s
LKWY Lake 68.06 49 *e*P **P** 18 53 24.8 +1.9
comp=Z,18nm,1.0s
H17A Grant Village 68.08 49 *e*P **P** 18 53 25.4 +2.4
comp=Z,35nm,1.0s
AS01 Alice Springs 68.23 193 *e*P **P** 18 53 22.9 -0.8
AS31 Alice Springs 68.24 193 *e*P **P** 18 53 23.5 -0.2
comp=Z,8.9nm,1.4s
ASAR Alice Springs 68.24 193 P **P** 18 53 23.5 -0.2
comp=Z,1.0nm,0.5s,baz=13,slow=6.1,SNR=53
ASAR LR LR 19 20 53.6
comp=Z,77nm,21.9s,baz=28,slow=34
FXWY Fox Creek 68.32 50 *e*P **P** 18 53 25.4 +1.0
comp=Z,34nm,1.4s
RLMT Red Lodge 68.32 48 P **P** 18 53 25.0 +0.7
baz=311,SNR=14
RLMT Red Lodge 68.32 48 *e*P **P** 18 53 24.8 +0.5
comp=Z,42nm,1.4s
MOOW Moose Ponds 68.40 50 *e*P **P** 18 53 25.9 +1.0
comp=Z,33nm,1.3s
HVU Hansel Valley 68.52 52 *e*P **P** 18 53 26.6 +0.9
HVU pmax pmax
comp=Z,16nm,1.1s
HVU Hansel Valley 68.52 52 *e*P **P** 18 53 26.6 +0.9
comp=Z,16nm,1.1s
LOHW Long Hollow 68.57 50 *e*P **P** 18 53 26.8 +0.9
comp=Z,54nm,1.7s
SNOW Snow King Moun 68.58 50 *e*P **P** 18 53 27.2 +1.1
comp=Z,44nm,1.4s
REDW Red Top Meadow 68.59 50 *e*P **P** 18 53 27.1 +1.0
comp=Z,36nm,1.2s
DGMT Dagmar 68.71 43 P **P** 18 53 27.0 +0.4
baz=312,SNR=15
DGMT Dagmar 68.71 43 *e*P **P** 18 53 27.1 +0.6
comp=Z,66nm,0.8s
SFJD Kangerlussuaq 68.72 8 P **P** 18 53 26.2 +0.1
comp=Z,12nm,0.5s,baz=341,slow=5.7,SNR=11
SFJD Kangerlussuaq 68.72 8 *i* P **P** 18 53 26.2 +0.1
comp=Z,24nm,1.0s
SFJD Kangerlussuaq 68.72 8 *i* P **P** 18 53 26.2 +0.1
SFJD pmax pmax
comp=Z,24nm,1.0s
GRAC Grapevine Rang 68.82 59 P **P** 18 53 28.0 +0.6
baz=309,SNR=5.6
AHID Auburn Hatcher 68.84 51 *e*P **P** 18 53 27.8 +0.2
comp=Z,27nm,1.3s
LAO LASA Array 68.88 45 P **P** 18 53 28.3 +0.6
baz=312,SNR=7.5
LAO LASA Array 68.88 45 *e*P **P** 18 53 28.8 +1.1
comp=Z,63nm,1.1s
A25A Svangstu Ranch 68.92 42 P **P** 18 53 28.1 +0.3
baz=313,SNR=7.8
BGU Big Grassy Mou 68.92 53 *e*P **P** 18 53 27.6 -0.5
comp=Z,9.8nm,1.1s
GOF Gofitskoye 69.05 313 ||| *i*P **P** 18 53 30.2 +1.6
GOF *e*S **S** 19 02 30.9 +2.0
GOF pmax pmax
comp=Z,109nm,0.7s
GOF smax smax
comp=E,182nm,2.0s
R11A Troy Canyon, C 69.05 57 P **P** 18 53 29.7 +0.7
baz=310
R11A Troy Canyon, C 69.05 57 *e*P **P** 18 53 29.1 0.0
comp=E,12nm,0.9s
DAC Darwin (Calif) 69.13 60 *e*P **P** 18 53 29.6 0.0
DAC pmax pmax
comp=Z,6.0nm,0.8s
DAC Darwin (Calif) 69.13 60 *e*P **P** 18 53 29.6 0.0
comp=Z,6.3nm,0.8s
IZAR Zarasai 69.17 329 *e*P **P** 18 53 29.6 +0.4
IZAR IAmb IAmb 18 53 31.1
comp=Z,33nm,0.7s
IDID Didziasalis 69.31 328 *e*P **P** 18 53 30.6 +0.5
IDID IAmb IAmb 18 53 32.1
comp=Z,42nm,0.8s
HWUT Hardware Ranch 69.33 52 *e*P **P** 18 53 31.3 +0.6
comp=Z,18nm,1.0s
MPMC Manual Prospec 69.34 60 P **P** 18 53 31.4 +0.5
baz=310,SNR=12
ISAL Salakas 69.35 329 *e*P **P** 18 53 30.8 +0.5
ISAL IAmb IAmb 18 53 32.5
comp=Z,46nm,0.9s
A26A Wade Farm, Ken 69.46 41 P **P** 18 53 31.1 -0.1
baz=314,SNR=6.1
FURC Furnace Creek, 69.47 59 P **P** 18 53 32.3 +0.9
baz=310,SNR=5.5
MICGM Minsk 69.47 327 ||| *e*P **P** 18 53 31.0 -0.1
MICGM PM 18 53 32.0
comp=Z,0.3nm,1.4s
MNK Minsk 69.47 327 ||| *e*P **P** 18 53 31.0 -0.1
MNK pmax pmax

comp=Z,260nm,1.4s
IIGN Ignalina 69.48 329 *e*P **P** **18 53 31.6 +0.5**
IIGN IAmb IAmb 18 53 33.2
comp=Z,58nm,0.7s
NC303 NORSAR Array S 69.51 339 *e*P **P** **18 53 31.4 +0.2**
NC405 NORSAR Array S 69.51 339 *e*P **P** **18 53 31.4 +0.2**
DUG Dugway, Tooele 69.52 54 P **P** **18 53 32.3 +0.4**
baz=310,SNR=16
DUG Dugway, Tooele 69.52 54 *e*P **P** **18 53 32.8 +1.0**
DUG pmax pmax
comp=Z,27nm,1.1s
DUG Dugway, Tooele 69.52 54 *e*P **P** **18 53 32.8 +1.0**
comp=Z,27nm,1.1s
TPNV Topopah Spring 69.54 58 P **P** **18 53 32.2 +0.2**
baz=310,SNR=14
TPNV Topopah Spring 69.54 58 *e*P **P** **18 53 32.9 +0.8**
TPNV pmax pmax
comp=Z,22nm,0.9s
TPNV Topopah Spring 69.54 58 *e*P **P** **18 53 32.9 +0.8**
comp=Z,22nm,0.9s
NACGM Naroch 69.60 328 *e* **P** **18 53 32.0 +0.1**
NC204 NORSAR Array S 69.62 339 *e*P **P** **18 53 32.2 +0.3**
NB201 NORSAR Array S 69.67 339 *e*P **P** **18 53 32.0 -0.2**
C25A Freed Ranch, W 69.69 43 P **P** **18 53 33.3 +0.7**
baz=313
BW06 Boulder Array 69.70 50 P **P** **18 53 33.0 0.0**
baz=311,SNR=16
BW06 Boulder Array 69.70 50 *e*P **P** **18 53 32.5 -0.5**
PD31 Pinedale Array 69.70 50 *e*P **P** **18 53 33.0 0.0**
PDAR Pinedale Array 69.70 50 P **P** **18 53 33.1 +0.2**
comp=Z,7.7nm,0.7s,baz=258,slow=2.3,SNR=62
PDAR pP **pP** **18 53 50.4 +0.8**
comp=Z,6.8nm,0.7s,baz=283,slow=1.7,SNR=7.9
NB2 NORSAR Subarra 69.70 339 P **P** **18 53 32.3 -0.2**
comp=Z,72nm,0.8s,baz=31,slow=6.5
NB2 NORSAR Subarra 69.70 339 P **P** **18 53 32.3 -0.2**
baz=31,slow=6.5
NB200 NORSAR Array S 69.70 339 *e*P **P** **18 53 32.5 0.0**
NB200 *e*pP **pP** **18 53 49.2 +0.2**
NOA NORSAR Array B 69.70 339 P **P** **18 53 32.5 0.0**
comp=Z,42nm,0.6s,baz=32,slow=6.3,SNR=130
NOA pP **pP** **18 53 49.2 +0.2**
comp=Z,5.6nm,0.6s,baz=32,slow=6.6,SNR=2.3
NOA NORSAR Array B 69.70 339 P **P** **18 53 32.5 0.0**
NOA *PP **pP** **18 53 49.2 +0.2**
NOA pmax pmax
comp=Z,43nm,0.6s
TCUT Toone Canyon 69.73 52 *e*P **P** **18 53 34.1 +0.8**
comp=Z,100nm,1.8s
EDW2 Edwards Air Fo 69.77 61 P **P** **18 53 33.7 +0.4**
baz=310,SNR=5.3
NCK Nalchik 69.78 311⇓ *e*P **P** **18 53 33.7 +0.5**
NCK pmax pmax
comp=Z,33nm,1.0s
NBO02 NORSAR Array S 69.79 339 *e*P **P** **18 53 33.0 +0.1**
A27A Ledoux Ranch, 69.81 41 P **P** **18 53 34.1 +0.8**
baz=314
CTU Camp Tracy 69.81 53 *e*P **P** **18 53 34.0 +0.4**
comp=Z,19nm,1.4s
NBO00 NORSAR Array S 69.83 339 *e*P **P** **18 53 33.4 +0.2**
NC602 NORSAR Array S 69.88 339 *e*P **P** **18 53 33.0 -0.5**
NC602 NORSAR Array S 69.88 339 *e*P **P** **18 53 33.1 -0.3**
NAO01 NORSAR Array S 69.96 339 *e*P **P** **18 53 33.5 -0.5**
KIV Kislovodsk 69.97 312 *e*P **P** **18 53 36.3 +1.8**
KIV Kislovodsk 69.97 312⇑ *i*P **P** **18 53 35.3 +0.8**
KIV *e* 18 56 05.8
KIV *e*PPP PPP 18 57 52.2
KIV *e*S **S** **19 02 43.5 +3.5**
KIV pmax pmax
comp=Z,113nm,1.0s
KIV MLR MLR
comp=Z,609nm,21.0s
KIV Kislovodsk 69.97 312 *e*P **P** **18 53 35.0 +0.5**
comp=Z,150nm,1.0s
GUDG Gudauri 69.98 310 P **P** **18 53 36.2 +1.5**
KBZ Khabaz 70.01 312 P **P** **18 53 36.0 +1.5**
comp=Z,39nm,0.8s,baz=74,slow=4.3,SNR=74
KBZ LR LR 19 29 20.0
comp=Z,495nm,18.5s,baz=40,slow=40
KBZ Khabaz 70.01 312 P **P** **18 53 36.0 +1.5**
KBZ pmax pmax
comp=Z,39nm,0.8s
KBZ MLR MLR
comp=Z,495nm,18.5s
D25A Fairfield 70.04 43 P **P** **18 53 35.1 +0.3**
baz=313
JLU Jordanelle 70.05 53 *e*P **P** **18 53 36.0 +0.8**
comp=Z,11nm,1.0s
ZEI Tsey 70.08 310⇑ *d i*P **P** **18 53 36.2 +0.9**
ZEI *e* 18 53 57.1
ZEI pmax pmax
comp=Z,44nm,0.8s
NLU North Lily Min 70.11 54 *e*P **P** **18 53 36.2 +0.7**
comp=Z,12nm,1.0s
DGRG David-gareji 70.14 309 P **P** **18 53 36.9 +1.4**
DGRG David-gareji 70.14 309 P **P** **18 53 36.9 +1.4**
C26A Wahner Farm, P 70.18 42 P **P** **18 53 36.0 +0.4**
baz=314,SNR=12
B27A Peters Farms, 70.18 41 P **P** **18 53 36.4 +0.8**
baz=314
SHOC Shoshone, Teco 70.20 59 P **P** **18 53 36.5 +0.6**
baz=310
GSC Goldstone, Bar 70.25 60 P **P** **18 53 36.7 +0.4**
baz=310
GSC Goldstone, Bar 70.25 60 *e*P **P** **18 53 36.7 +0.4**
GSC pmax pmax
comp=Z,14nm,1.0s
GSC Goldstone, Bar 70.25 60 *e*P **P** **18 53 36.7 +0.4**
comp=Z,14nm,1.0s
A28A Rude Farm, Bot 70.30 40 P **P** **18 53 36.8 +0.5**
baz=315,SNR=11
TBLG Delisi 70.32 309 P **P** **18 53 32.6 -3.9**
TBLG Delisi 70.32 309 P **P** **18 53 32.6 -3.9**
MPU Maple Canyon 70.32 53 *e*P **P** **18 53 37.3 +0.4**
comp=Z,12nm,0.8s
BFSC Mount Baldy Ra 70.39 61 P **P** **18 53 37.8 +0.6**
baz=310
NEY Neytrino 70.42 311⇑ *e*P **P** **18 53 38.8 +1.5**
NEY *e**PP **sP** **18 54 00.7 0.0**
NEY pmax pmax
comp=Z,7.0nm,1.0s
E25A Miller Ranch, 70.44 44 P **P** **18 53 37.7 +0.4**
baz=314,SNR=11
C27A Sayler Ranch, 70.54 42 P **P** **18 53 38.6 +0.8**
baz=314,SNR=9.5
D26A Manning 70.56 43 P **P** **18 53 38.4 +0.4**
baz=314,SNR=12
B28A Dugan Ranch, T 70.57 41 P **P** **18 53 38.5 +0.6**
baz=315,SNR=13
TUQ Turquoise Moun 70.71 59 P **P** **18 53 39.6 +0.4**
baz=310
A29A Manning Farm, 70.77 40 P **P** **18 53 39.4 +0.3**
baz=315,SNR=33
F25A Bowman 70.81 44 P **P** **18 53 39.8 +0.3**
baz=314
HYA Hoyanger 70.83 341 *e*P **P** **18 53 39.7 +0.5**
HYA IAmb IAmb 18 53 40.6
comp=Z,103nm,1.1s
HEC Hector,Ludlow 70.85 60 P **P** **18 53 40.3 +0.3**
baz=310,SNR=9.3
E26A Carlson Angus 70.93 43 P **P** **18 53 40.7 +0.4**
baz=314,SNR=12
D27A Center 70.95 42 P **P** **18 53 40.6 +0.3**
baz=314
B29A Wagenman Farm, 71.04 40 P **P** **18 53 41.2 +0.4**
baz=315,SNR=22
TMUT Trail Mountain 71.04 54 *e*P **P** **18 53 41.9 +0.6**
comp=Z,11nm,0.9s
C28A Hausauer Farms 71.08 41 P **P** **18 53 41.9 +0.8**
baz=315
MURC Murrieta 71.10 61 P **P** **18 53 41.9 +0.4**
baz=310
CHVG Ch'k'valeri 71.13 311 P **P** **18 53 43.4 +2.0**
A30A Hoffart Farm, 71.19 39 P **P** **18 53 42.0 +0.3**
baz=316,SNR=35
P17A Butcher Ranch, 71.20 53 *e*P **P** **18 53 42.3 +0.2**
comp=Z,23nm,1.0s
AKH Akhalkalaki 71.23 310 P **P** **18 53 43.5 +1.2**
AKH Akhalkalaki 71.23 310⇓ *i*P **P** **18 53 44.8 +2.5**
AKH Akhalkalaki 71.23 310 P **P** **18 53 43.5 +1.2**
F26A Lodgepole 71.26 44 P **P** **18 53 42.6 +0.3**
baz=314,SNR=10
GMRC Granite Mounta 71.30 60 P **P** **18 53 42.9 +0.1**
baz=311,SNR=8.5
ULM Lac du Bonnet 71.33 37 P **P** **18 53 42.2 -0.3**
comp=Z,14nm,0.7s,baz=314,slow=7.2,SNR=29
ULM pP **pP** **18 53 58.8 -0.3**
comp=Z,6.4nm,0.5s,baz=292,slow=3.6,SNR=4.6
ULM Lac du Bonnet 71.33 37 *e*P **P** **18 53 42.0 -0.5**
comp=Z,21nm,0.9s
ULM pP **pP** **18 53 58.8 -0.3**
LCMT Little Creek M 71.33 57 *e*P **P** **18 53 43.5 +0.6**
comp=Z,15nm,1.0s
G25A Newell 71.34 45 P **P** **18 53 42.8 +0.1**
baz=314
D28A Regan 71.36 42 P **P** **18 53 43.2 +0.4**
baz=315
MDND Maddock 71.36 41 P **P** **18 53 43.1 +0.3**
baz=315,SNR=13
MDND Maddock 71.36 41 *e*P **P** **18 53 43.4 +0.7**
comp=Z,82nm,0.8s
GNI Garni 71.36 308 P **P** **18 53 44.3 +1.3**
comp=Z,7.4nm,0.7s,baz=135,slow=1.9,SNR=7.3
GNI LR LR 19 28 33.4
comp=Z,258nm,18.2s,baz=56,slow=39
GNI Garni 71.36 308 *c i*P **P** **18 53 45.5 +2.4**
GNI pmax pmax
comp=Z,187nm,1.8s
P18A Preston Nutter 71.38 53 *e*P **P** **18 53 44.2 +0.8**
comp=Z,16nm,1.0s
E27A Carson 71.41 43 P **P** **18 53 43.2 +0.1**
baz=314,SNR=9.2
K22A Casper 71.44 48 P **P** **18 53 43.4 -0.1**
baz=313
K22A Casper 71.44 48 *e*P **P** **18 53 43.5 -0.1**
comp=Z,26nm,0.9s
LDFC Landfair 71.45 59 *e*P **P** **18 53 43.5 -0.1**
comp=Z,36nm,0.9s
BORG Borgarnes 71.49 355 LR LR 19 24 37.3
comp=Z,74nm,18.4s,baz=26,slow=35
B30A Myrvik Farm, E 71.53 40 P **P** **18 53 44.2 +0.4**
baz=316,SNR=30
PFO Pinyon Flats O 71.56 61 P **P** **18 53 44.6 +0.3**
comp=Z,3.9nm,0.6s,baz=333,slow=7.1,SNR=5.7
PFO pP **PcP** **18 54 02.2 -1.2**
comp=Z,7.1nm,0.8s,baz=291,slow=5.4,SNR=5.2
PFO Pinyon Flats O 71.56 61 *e*P **P** **18 53 44.0 -0.3**
PFO *e*PP **PcP** **18 54 02.2 -1.2**
PFO Pinyon Flats O 71.56 61 *e*P **P** **18 53 44.0 -0.3**
PFO *e*pP **PcP** **18 54 02.2 -1.2**
SRU San Rafael Swe 71.56 53 *e*P **P** **18 53 43.1 -1.2**
SRU pmax pmax
comp=Z,28nm,0.8s
SRU San Rafael Swe 71.56 53 *e*P **P** **18 53 43.1 -1.2**
comp=Z,28nm,0.8s
F27A Lemmon 71.57 44 P **P** **18 53 44.0 0.0**
baz=314,SNR=6.0
BELC Belle Mtn. Jos 71.60 60 P **P** **18 53 44.7 +0.1**
baz=311
109C Camp Elliot, M 71.61 62 P **P** **18 53 44.4 -0.1**
baz=311
H25A Fruitdale 71.64 45 P **P** **18 53 44.3 -0.3**
baz=314
SUW Suwalki 71.64 329 *e*P **P** **18 53 44.4 +0.1**
SUW Suwalki 71.64 329 *e*P **P** **18 53 44.4 +0.1**
G26A Maurine 71.68 44 P **P** **18 53 44.6 -0.2**
baz=314,SNR=15
E28A Huff 71.73 42 P **P** **18 53 45.5 +0.5**
baz=315
AKASG Malin Array Be 71.75 324 P **P** **18 53 44.9 0.0**
comp=Z,27nm,0.6s,baz=38,slow=6.0,SNR=98
AKASG S **S** **19 02 59.5 -0.6**
comp=Z,0.2nm,0.3s,baz=39,slow=12,SNR=6.8
AKBB Malin Array Si 71.75 324 *e*P **P** **18 53 44.6 -0.3**
AKBB pmax pmax
comp=Z,53nm,0.8s
AKBB Malin Array Si 71.75 324 *e*P **P** **18 53 44.6 -0.3**
comp=Z,53nm,0.8s
KIEV Kiev 71.76 324 *e*P **P** **18 53 45.7 +0.7**
KIEV Kiev 71.76 324 *d i*P **P** **18 53 45.7 +0.7**
KIEV *e**PP **PcP** **18 54 05.7 +2.0**
KIEV pmax pmax
comp=Z,45nm,0.9s
KIEV Kiev 71.76 324 *e*P **P** **18 53 45.1 +0.1**
comp=Z,49nm,0.8s
RSSD Black Hills 71.76 46 P **P** **18 53 45.3 -0.2**
baz=314
RSSD Black Hills 71.76 46 *e*P **P** **18 53 44.9 -0.6**
RSSD pmax pmax
comp=Z,27nm,1.0s
RSSD Black Hills 71.76 46 *e*P **P** **18 53 44.9 -0.6**
comp=Z,27nm,1.0s
AK11 Malin Array Si 71.79 324 *e*P **P** **18 53 44.9 -0.3**
B31A Greenbush Farm 71.86 40 P **P** **18 53 45.7 0.0**
baz=316,SNR=6.9
D29A Pettibone, Tap 71.92 42 P **P** **18 53 46.0 -0.2**
baz=316,SNR=10
G27A Dupree 71.96 44 P **P** **18 53 46.2 -0.3**
baz=315,SNR=7.5
I25A Rochford 71.99 46 P **P** **18 53 47.0 +0.2**
baz=314
C30A Mose, Pekin 71.99 40 P **P** **18 53 46.6 +0.1**
baz=316,SNR=12
BAR Barrett 72.03 62 *e*P **P** **18 53 46.9 -0.1**
comp=Z,24nm,1.1s
A32A Rocking H Ranc 72.03 39 P **P** **18 53 46.8 +0.1**
baz=317,SNR=15
IRM Iron Mountain 72.03 60 P **P** **18 53 47.5 +0.5**
baz=311
H26A Fairpoint 72.07 45 P **P** **18 53 47.3 +0.2**
baz=314
ANN Anapa 72.15 315 *e*P P 18 53 54.8 +7.4
ANN pmax pmax
comp=Z,227nm,2.3s
BC3 Big Chuckawall 72.16 60 P **P** **18 53 47.9 -0.1**
baz=311,SNR=5.0
O20A White River Ci 72.19 51 *e*P **P** **18 53 47.9 -0.2**
comp=Z,22nm,1.1s
W13A Hualapai Mount 72.20 58 *e*P **P** **18 53 48.9 +0.7**
comp=Z,5.5nm,0.8s
E29A Napoleon 72.25 42 P **P** **18 53 47.8 -0.3**
baz=316
C31A Landman Farms, 72.28 40 P **P** **18 53 48.1 -0.2**
baz=316,SNR=9.5
D30A Buchanan 72.29 41 P **P** **18 53 48.3 0.0**
baz=316,SNR=8.0
U15A North Rim 72.29 56 *e*P **P** **18 53 49.3 +0.5**
comp=Z,15nm,0.9s
J25A Sunshine Ranch 72.39 46 P **P** **18 53 48.8 -0.3**
baz=314
B32A Ashes, Strandq 72.39 39 P **P** **18 53 48.8 -0.1**
baz=312,SNR=25
SWSC Sam W. Stewart 72.41 61 P **P** **18 53 49.6 +0.4**
baz=311
H27A Howes 72.41 45 P **P** **18 53 49.0 -0.1**
baz=315
I26A New Underwood 72.43 45 P **P** **18 53 49.1 -0.2**
baz=314
A33A Warroad 72.51 38 P **P** **18 53 49.4 -0.2**
baz=318,SNR=35
PDMCI Parker Dam,Lak 72.56 59 P **P** **18 53 50.6 +0.4**
baz=311
E30A Jud 72.65 42 P **P** **18 53 49.8 -0.7**
baz=316,SNR=6.7
F29A Eureka 72.69 43 P **P** **18 53 50.2 -0.5**
baz=316,SNR=8.1
G28A Parade 72.69 44 P **P** **18 53 50.6 -0.2**
baz=315
Y12C Blythe 72.69 60 P **P** **18 53 51.5 +0.6**
baz=311
Y12C Blythe 72.69 60 *e*P **P** **18 53 51.7 +0.8**
comp=Z,19nm,0.8s
AGMN Agassiz Nation 72.77 39 P **P** **18 53 50.7 -0.4**
baz=317,SNR=19
AGMN Agassiz Nation 72.77 39 *e*P **P** **18 53 50.9 -0.2**
comp=Z,44nm,1.1s
PV09 Paradox Valley 72.78 53 *e*P **P** **18 53 49.6 -2.1**
C32A Crookston 72.81 39 P **P** **18 53 51.2 -0.2**
baz=317
I27A Quinn 72.82 45 P **P** **18 53 52.1 +0.5**
baz=315,SNR=8.1
J26A Sides Ranch, S 72.82 46 P **P** **18 53 51.6 0.0**
baz=314
D31A Mcclaflin, Tow 72.82 41 P **P** **18 53 51.1 -0.4**
baz=317
B33A Robert and Kas 72.91 39 P **P** **18 53 51.5 -0.4**
baz=318,SNR=8.0
H28A Mission Ridge 72.92 44 P **P** **18 53 52.4 +0.2**
baz=315
PHWY Pilot Hill 72.94 49 *e*P **P** **18 53 52.8 +0.1**
comp=Z,56nm,2.0s
N23A Red Feather La 72.95 49 P **P** **18 53 52.9 +0.2**
baz=314
N23A Red Feather La 72.95 49 *e*P **P** **18 53 53.5 +0.8**
comp=Z,32nm,1.2s
GLA Glamis 72.95 61 P **P** **18 53 53.1 +0.5**
baz=311
GLA Glamis 72.95 61 *e*P **P** **18 53 52.6 0.0**
GLA pmax pmax
comp=Z,17nm,0.9s
GLA Glamis 72.95 61 *e*P **P** **18 53 52.6 0.0**
comp=Z,17nm,0.9s
F30A Leola 73.08 42 P **P** **18 53 52.5 -0.5**
baz=316
PV05 Paradox Valley 73.08 53 *e*P **P** **18 53 54.1 +0.7**
D32A Dogwood Acres, 73.09 40 P **P** **18 53 52.9 -0.2**
baz=317
E31A Nome 73.10 41 P **P** **18 53 52.5 -0.7**
baz=317,SNR=8.3
B34A Aery, Baudette 73.17 38 P **P** **18 53 53.1 -0.5**
baz=318,SNR=11
C33A Trail 73.21 39 P **P** **18 53 53.7 -0.1**
baz=318,SNR=15
I28A Midland 73.32 45 P **P** **18 53 54.8 +0.2**
baz=315,SNR=9.4
H29A Onida 73.36 44 P **P** **18 53 54.7 0.0**
baz=316
F31A Hecla 73.43 42 P **P** **18 53 55.1 0.0**
baz=316
E32A Braaten, Kindr 73.46 41 P **P** **18 53 55.3 +0.1**
baz=317
Y14A Wickenburg 73.51 59 *e*P **P** **18 53 56.4 +0.6**
comp=Z,59nm,0.9s
G30A Faulkton 73.52 43 P **P** **18 53 55.3 -0.4**
baz=316,SNR=12
SMCO Snowmass 73.56 51 *e*P **P** **18 53 56.5 +0.1**
comp=Z,10nm,0.8s
D33A AnnSam, Waubun 73.63 39 P **P** **18 53 55.6 -0.7**
baz=318,SNR=5.9
B35A Bob, Littlefor 73.68 38 P **P** **18 53 56.0 -0.5**
baz=319,SNR=34
C34A RKJ Ranch, Bem 73.68 39 P **P** **18 53 55.9 -0.6**
baz=318,SNR=5.2
J28A Allard Ranch, 73.69 45 P **P** **18 53 57.5 +0.7**
baz=315,SNR=10
SIM Simferopol' 73.70 317 *e*P **P** **18 53 57.9 +1.2**
SIM pmax pmax
comp=Z,40nm,0.9s
SIM MLR MLR
comp=Z,400nm,19.0s
I29A Vivian Onida 73.74 44 P **P** **18 53 57.1 +0.1**
baz=316
113A Mohawk Valley, 73.81 60 *e*P **P** **18 53 56.7 -0.8**
comp=Z,12nm,1.0s
ISCO Idaho Springs 73.89 50 P **P** **18 53 59.1 +0.8**
baz=314,SNR=8.9
ISCO Idaho Springs 73.89 50 *e*P **P** **18 53 58.8 +0.5**
ISCO pmax pmax
comp=Z,19nm,1.1s
ISCO Idaho Springs 73.89 50 *e*P **P** **18 53 58.8 +0.5**
comp=Z,19nm,1.1s
G31A Conde 73.91 42 P **P** **18 53 58.0 +0.1**
baz=317
F32A Veblen 73.96 41 P **P** **18 53 58.1 -0.1**
baz=317
D34A Park Rapids 73.97 39 P **P** **18 53 57.9 -0.3**
baz=318,SNR=11
MVCO Mesa Verde 74.02 54 P **P** **18 53 59.5 +0.5**
baz=313,SNR=5.2
MVCO Mesa Verde 74.02 54 *e*P **P** **18 53 59.5 +0.5**
comp=Z,15nm,0.9s
E33A Westby DABS, E 74.03 40 P **P** **18 53 58.4 -0.2**
baz=316,SNR=10
SORM Soroca 74.04 323⇓ *i*P **P** **18 53 59.2 +0.6**
C35A Jirik Farms, M 74.06 38 P **P** **18 53 58.2 -0.6**
baz=319,SNR=16
SUSD Miller 74.11 43 P **P** **18 53 58.8 -0.4**
baz=316
UOSS Minazif 74.11 289 *e*P **P** **18 53 59.8 +0.4**
comp=Z,9.4nm,1.3s
X16A Lo Mia Camp, P 74.15 58 *e*P **P** **18 53 59.9 +0.1**
comp=Z,17nm,0.8s
J29A Okreek 74.17 45 P **P** **18 53 59.6 +0.1**
baz=316
G32A Webster 74.23 42 P **P** **18 53 59.5 -0.3**
baz=317,SNR=11
BEL Belsk 74.25 329 *e*P **P** **18 54 00.9 +1.2**
BEL Belsk 74.25 329 *e*P **P** **18 54 01.0 +1.2**
I30A Oacoma 74.26 44 P **P** **18 54 00.0 0.0**
baz=316
F33A 5 Mile Ranch, 74.38 41 P **P** **18 54 00.2 -0.4**
baz=318,SNR=10
E34A Wadena 74.41 40 P **P** **18 54 00.5 -0.3**
baz=318
D35A Remer 74.49 39 P **P** **18 54 00.9 -0.3**
baz=319,SNR=5.4
C36A Pine Crest Far 74.52 37 P **P** **18 54 01.1 -0.3**
baz=319,SNR=20
L28A Connealy Angus 74.55 46 P **P** **18 54 02.2 +0.3**
baz=316
LVV L'vov 74.58 326 *e*P **P** **18 54 01.6 -0.1**
LVV *e* 18 56 48.0
LVV *e*S **S** **19 03 29.6 -2.7**
LVV MLR MLR
comp=N,500nm,14.0s
LVV MLR MLR
comp=E,600nm,14.0s
LVV MLR MLR
comp=Z,800nm,14.0s
S22A 4UR Ranch, Cre 74.62 52 P **P** **18 54 02.9 +0.4**
baz=314
S22A 4UR Ranch, Cre 74.62 52 *e*P **P** **18 54 03.4 +0.8**
comp=Z,15nm,1.0s
K29A Lazy Trails An 74.64 45 P **P** **18 54 02.6 +0.4**
baz=316,SNR=5.8
J30A Dallas 74.65 44 P **P** **18 54 02.1 -0.2**
baz=316,SNR=5.7
KIS Kishinev 74.69 322⇓ *i*P **P** **18 54 03.0 +0.6**
KIS XM 18 54 03.5
comp=Z,100nm,1.4s
KIS Kishinev 74.69 322⇓ *i*P **P** **18 54 03.0 +0.6**
KIS *i* 18 54 18.0
KIS *i* 18 54 26.0
KIS pmax pmax
comp=Z,110nm,1.4s
W18A Petrified Fore 74.71 56 P **P** **18 54 03.2 +0.2**
baz=313
E35A Pequot Lakes 74.72 39 P **P** **18 54 02.2 -0.4**
baz=319,SNR=6.2
Q24A Divide 74.73 50 *e*P **P** **18 54 02.8 -0.4**
comp=Z,12nm,0.9s
G33A Ortonville 74.79 41 P **P** **18 54 02.9 -0.1**
baz=318,SNR=8.3
H32A Carlson Farm, 74.81 42 P **P** **18 54 02.8 -0.4**
baz=317
D36A Goodland 74.82 38 P **P** **18 54 02.8 -0.3**
baz=319,SNR=9.4
C37A Embarrass 74.83 37 P **P** **18 54 02.9 -0.3**
baz=320,SNR=19
F34A Alexandria 74.90 40 P **P** **18 54 03.5 -0.2**
baz=318
214A Organ Pipe Nat 74.95 60 P **P** **18 54 05.0 +0.8**
baz=312
EYMN Ely 74.97 37 P **P** **18 54 03.6 -0.4**
baz=320,SNR=16
EYMN Ely 74.97 37 *e*P **P** **18 54 03.9 -0.1**
comp=Z,46nm,1.0s
H33A Prehn Over Nor 75.02 42 P **P** **18 54 04.1 -0.3**
baz=318,SNR=9.7
OGNE Ogallala 75.04 47 P **P** **18 54 04.6 0.0**
baz=315,SNR=14
OGNE Ogallala 75.04 47 *e*P **P** **18 54 05.0 +0.4**
comp=Z,84nm,0.8s
J31A Geddes 75.06 44 P **P** **18 54 04.7 +0.1**
baz=317
L29A Maesberg Ranch 75.06 46 P **P** **18 54 04.7 0.0**
baz=316
K30A Basset 75.06 45 P **P** **18 54 04.7 0.0**
baz=316,SNR=5.5
M28A Bar X Bar Ranc 75.07 47 P **P** **18 54 04.4 -0.4**
baz=316
IAS Iasi 75.11 322⇓ *i*P **P** **18 54 05.8 +1.0**
G34A Benson 75.13 41 P **P** **18 54 04.7 -0.3**
baz=318
D37A Cotton 75.16 38 P **P** **18 54 04.3 -0.8**
baz=320,SNR=9.7
F35A Swanville 75.17 40 P **P** **18 54 05.0 -0.2**
baz=319,SNR=6.2
C38A Sawbill Land. 75.24 37 P **P** **18 54 05.0 -0.6**
baz=320,SNR=23
KWP Kalwaria Pacla 75.26 327 *e*P **P** **18 54 06.9 +1.2**

KWP Kalwaria Pacla 75.26 327 eP P 18 54 06.9 +1.2
E36A McGregor 75.28 39 P P 18 54 05.1 -0.7
baz=319,SNR=20
LEOM Leova 75.34 321⇓ iP P 18 54 07.5 +1.4
J32A Parkston 75.44 43 P P 18 54 06.7 -0.1
baz=317
STKA Stephens Creek 75.46 185 P P 18 54 07.1 +0.3
comp=Z,1.0nm,0.5s,baz=350,slow=11,SNR=5.6
STKA pP pP 18 54 23.7 +0.2
comp=Z,23nm,0.9s,baz=359,slow=7.8,SNR=9.4
STKA LR LR 19 23 56.6
comp=Z,69nm,21.1s,baz=17,slow=33
STKA Stephens Creek 75.46 185 eP P 18 54 07.2 +0.5
STKA *PP pP 18 54 23.7 +0.2
STKA pmax pmax
comp=Z,8.0nm,1.1s
STKA Stephens Creek 75.46 185 eP P 18 54 07.2 +0.5
comp=Z,7.8nm,1.1s
STKA pP pP 18 54 23.7 +0.2
I33A Coleman 75.46 42 P P 18 54 06.9 0.0
baz=318
H34A Spellman Lake, 75.49 41 P P 18 54 07.1 0.0
baz=318
L30A Spencer Herefo 75.53 45 P P 18 54 06.7 -0.7
baz=316
K31A O'Neill 75.53 44 P P 18 54 07.4 0.0
baz=317,SNR=6.2
PRAR RASCA 75.56 323⇓ iP P 18 54 08.2 +0.8
F36A Milaca 75.65 39 P P 18 54 07.3 -0.7
baz=319,SNR=7.6
C39A Grand Marais 75.65 36 P P 18 54 07.6 -0.3
baz=321
G35A Watkins 75.69 40 P P 18 54 08.3 +0.1
baz=319,SNR=6.0
ECSD EROS Data Cent 75.78 42 P P 18 54 08.4 -0.4
baz=318,SNR=31
ECSD EROS Data Cent 75.78 42 eP P 18 54 08.5 -0.2
comp=Z,48nm,1.1s
BUR08 Bucovina Ar. S 75.79 324 eP P 18 54 09.9 +1.1
BURAR Bucovina Array 75.80 324⇑ iP P 18 54 09.3 +0.4
L31A Butterfield Fa 75.82 45 P P 18 54 09.2 +0.1
baz=317,SNR=6.5
N29A Votaw Ranch, W 75.87 47 P P 18 54 09.2 -0.2
baz=316
K32A Verdigre 75.90 44 P P 18 54 09.1 -0.3
baz=317
J33A Davis 75.92 43 P P 18 54 09.2 -0.3
baz=318
H35A Sunnyside Ranc 75.92 41 P P 18 54 09.9 +0.4
baz=319,SNR=18
I34A Hadley 75.92 42 P P 18 54 09.3 -0.3
baz=318
OJC Ojcow 75.93 328 eP P 18 54 10.4 +1.0
OJC Ojcow 75.93 328 eP P 18 54 10.4 +1.0
OJC Ojcow 75.93 328 eP P 18 54 10.3 +0.9
comp=Z,70nm,1.1s
TUC Tucson 75.98 59 P P 18 54 10.5 +0.3
baz=313
TUC Tucson 75.98 59 eP P 18 54 10.5 +0.3
TUC pmax pmax
comp=Z,9.0nm,0.9s
TUC Tucson 75.98 59 eP P 18 54 10.5 +0.3
comp=Z,8.8nm,0.9s
KOLS Kolonicke sedl 75.99 326 eP P 18 54 10.3 +0.5
KOLS e 18 54 26.0
KOLS pmax pmax
comp=Z,30nm,1.2s
KOLS Kolonicke sedl 75.99 326 eP P 18 54 10.3 +0.5
KOLS epP pP 18 54 26.0 -0.6
STHS Stebnicka Huta 76.01 327 epP pP 18 54 27.3 +0.6
G36A St. Michael 76.02 40 P P 18 54 09.9 -0.1
baz=319
TESR Tescani 76.03 322⇑ iP P 18 54 11.0 +0.9
TLCR 76.06 320⇑ iP P 18 54 11.3 +1.1
KSCO Kaye Shedlock' 76.09 49 P P 18 54 10.8 0.0
baz=316
UZH Uzhgorod 76.22 326 iP P 18 54 11.8 +0.7
UZH e 18 54 25.1
UZH e 18 54 33.7
CRVS Cervenica-Dubn 76.34 327 eP P 18 54 12.9 +1.1
CRVS Cervenica-Dubn 76.34 327 eP P 18 54 12.9 +1.1
M31A Lambtecht Ranc 76.35 45 P P 18 54 12.0 -0.1
baz=317
PETR Petresti 76.37 322⇓ iP P 18 54 14.3 +2.3
CFR Carcaliu 76.38 321⇑ iP P 18 54 12.7 +0.7
NIE Niedzica 76.38 328 eP P 18 54 13.4 +1.3
NIE Niedzica 76.38 328 eP P 18 54 13.4 +1.3
ODBI Odobesti 76.42 322⇑ iP P 18 54 14.7 +2.4
T25A Trinidad 76.42 51 P P 18 54 12.2 -0.5
baz=315
T25A Trinidad 76.42 51 eP P 18 54 12.8 0.0
comp=Z,19nm,1.0s
H36A Jessenland, He 76.44 40 P P 18 54 12.7 +0.2
baz=319,SNR=9.0
J34A George 76.44 42 P P 18 54 12.4 -0.1
baz=318
SPMN Marine on St. 76.46 39 P P 18 54 12.4 -0.2
baz=320,SNR=6.1
SPMN Marine on St. 76.46 39 eP P 18 54 12.3 -0.3
comp=Z,28nm,0.9s
I35A Creekview Farm 76.48 41 P P 18 54 12.6 -0.1
baz=319
BMR Baia Mare 76.48 325⇓ iP P 18 54 14.2 +1.6
VRI Vrincioaia 76.49 322⇓ iP P 18 54 14.2 +1.5
TRPA Tarpa 76.52 326⇑ eP P 18 54 14.1 +1.3
SFNV Sufian 76.57 308 eP P 18 54 09.8 -3.6
L33A Hoskins 76.61 44 P P 18 54 13.4 -0.1
baz=318
MZRK Al-Mazaregh 76.67 307 eP P 18 54 14.0 +0.1
KSP Ksiaz 76.70 331 eP P 18 54 14.7 +0.9
KSP Ksiaz 76.70 331 eP P 18 54 14.8 +0.9
BGNE Belgrade 76.73 45 P P 18 54 13.7 -0.4
baz=317
BGNE Belgrade 76.73 45 eP P 18 54 13.8 -0.4
comp=Z,66nm,0.9s
J35A Milford 76.74 42 P P 18 54 14.2 0.0
baz=319
ANMO Albuquerque 76.78 54 P P 18 54 14.7 -0.1
comp=Z,3.7nm,0.7s,baz=325,slow=6.9,SNR=9.1
ANMO pP pP 18 54 33.4 +1.8
comp=Z,8.9nm,1.1s,baz=319,slow=7.4,SNR=5.1
ANMO Albuquerque 76.78 54 P P 18 54 15.2 +0.4
baz=314
ANMO Albuquerque 76.78 54 eP P 18 54 14.1 -0.7
comp=Z,8.9nm,0.9s
ANMO pP pP 18 54 33.4 +1.8
TIRR Tirgusor 76.80 320⇓ iP P 18 54 15.6 +1.2
K34A Le Mars 76.81 43 P P 18 54 14.3 -0.3
baz=318
I36A Fitzsimmons Fa 76.82 41 P P 18 54 14.2 -0.4
baz=319
HARR Harsova 76.84 320⇑ iP P 18 54 15.5 +0.8
OKC Ostrava-Krasne 76.86 329⇑ eP P 18 54 16.0 +1.3
OKC epP pP 18 54 31.8 +0.3
OKC Ostrava-Krasne 76.86 329 eP P 18 54 16.0 +1.3
OKC e 18 54 31.8
H37A Dierke Farm, C 76.90 40 P P 18 54 15.0 0.0
baz=320,SNR=5.8
LANS Liptovska Anna 76.92 328 eP P 18 54 16.8 +1.7
LANS e 18 54 32.2
LANS Liptovska Anna 76.92 328 eP P 18 54 16.8 +1.7
LANS epP pP 18 54 32.2 +0.3
DOPR Dopca 77.01 323⇓ iP P 18 54 19.1 +3.5
O31A Woolen Ranch, 77.04 46 P P 18 54 15.7 -0.3
baz=317
KECS Kecovo 77.06 327 eP P 18 54 16.8 +0.9
KECS pmax pmax
comp=Z,9.0nm,1.0s
KECS Kecovo 77.06 327 eP P 18 54 16.8 +0.9
UPC Upice 77.08 331⇑ eP P 18 54 17.0 +1.0
UPC epP pP 18 54 32.6 -0.2
UPC Upice 77.08 331 eP P 18 54 17.0 +1.0
UPC e 18 54 32.6
M33A Taylor Creek F 77.09 44 P P 18 54 16.1 -0.1
baz=318
DPC Dobruska-Polom 77.10 330⇑ iP P 18 54 17.4 +1.3
DPC epP pP 18 54 33.0 +0.1
DPC esP sP 18 54 40.2 +0.5
DPC Dobruska-Polom 77.10 330⇑ iP P 18 54 17.4 +1.3
DPC e 18 54 33.0
I37A Lemond, Waseca 77.11 40 P P 18 54 16.5 +0.2
baz=320,SNR=16
MLR Muntele Rosu 77.13 322⇑ iP P 18 54 18.0 +1.5
MLR Muntele Rosu 77.13 322 eP P 18 54 17.3 +0.8
MLR pmax pmax
comp=Z,46nm,1.0s
MLR Muntele Rosu 77.13 322 eP P 18 54 17.3 +0.8
comp=Z,46nm,1.0s
MORC Moravsky Berou 77.13 329 eP P 18 54 17.1 +0.8
MORC pmax pmax
comp=Z,139nm,1.0s
MORC Moravsky Berou 77.13 329 eP P 18 54 17.1 +0.8
comp=Z,138nm,1.0s
J36A Seneca 1, Swea 77.18 41 P P 18 54 16.8 +0.1
baz=319
CJR Cluj-Napoca 77.20 324⇓ iP P 18 54 18.5 +1.8
K35A Storm Lake 77.21 42 P P 18 54 16.2 -0.6
baz=319
L34A Svendsen Farm, 77.21 43 P P 18 54 16.8 -0.1
baz=318
MSAB Monastry St. A 77.35 320⇓ iP P 18 54 19.1 +1.6
COWI Conover 77.42 37 eP P 18 54 18.1 +0.1
comp=Z,32nm,1.1s
CLL Collm 77.44 333 eP P 18 54 18.2 +0.3
CLL Collm 77.44 333 iP P 18 54 18.2 +0.3
comp=Z,73nm,1.2s
CLL i pP pP 18 54 34.0 -0.8
CLL i sP sP 18 54 41.4 -0.1
CLL LmV 19 32 00.0
comp=Z,500nm,18.8s
CLL Collm 77.44 333 iP P 18 54 18.2 +0.3
CLL i *PP pP 18 54 34.0 -0.8
CLL i *SP sP 18 54 41.4 -0.1
CLL pmax pmax
comp=Z,73nm,1.2s
CLL Collm 77.44 333 eP P 18 54 18.1 +0.1
comp=Z,47nm,0.7s
M34A Aspy Farms, Fr 77.45 44 P P 18 54 18.6 +0.4
baz=318
BRG Berggiesshubel 77.50 332 eP P 18 54 18.5 +0.3
comp=Z,19nm,1.0s
BRG e 18 54 27.0
comp=Z,21nm,1.4s
BRG e 18 54 34.2
comp=Z,18nm,1.2s
BRG Berggiesshubel 77.50 332 eP P 18 54 18.5 +0.3
BRG e 18 54 27.0
BRG e 18 54 34.2
BRG pmax pmax
comp=Z,19nm,1.0s
O32A Brockman Farm, 77.51 46 P P 18 54 17.6 -0.9
baz=318
DRGR 77.51 325⇑ iP P 18 54 19.3 +0.8
SCHQ Schefferville 77.53 20 P P 18 54 18.6 +0.2
comp=Z,22nm,0.9s,baz=349,slow=6.6,SNR=11
SCHQ pP pP 18 54 36.1 +0.9
comp=Z,24nm,1.2s,baz=316,slow=10,SNR=2.9
SCHQ LR LR 19 31 36.6
comp=Z,280nm,20.6s,baz=334,slow=38
SCHQ Schefferville 77.53 20 eP P 18 54 18.4 0.0
comp=Z,41nm,1.1s
SCHQ pP pP 18 54 36.1 +0.9
319A Douglas 77.55 59 eP P 18 54 19.9 +0.8
comp=Z,31nm,0.8s
VOIR 77.57 323⇓ iP P 18 54 20.6 +1.7
PVCC Panska Ves 77.57 331⇑ eP P 18 54 19.8 +1.1
PVCC Panska Ves 77.57 331 eP P 18 54 19.8 +1.1
J37A Redenius Farm, 77.57 41 P P 18 54 18.5 -0.4
baz=320,SNR=9.1
I38A Scanlan Farm, 77.59 40 P P 18 54 18.0 -0.9
baz=320,SNR=7.2
KSRV Kasrt alli 77.59 308 eP P 18 54 20.0 +0.9
K36A Gilmore City 77.65 42 P P 18 54 19.1 -0.2
baz=319
VYHS Vyhne 77.69 328 eP P 18 54 20.6 +1.2
VYHS e 18 54 35.1
VYHS pmax pmax
comp=Z,21nm,1.4s
VYHS Vyhne 77.69 328 eP P 18 54 20.6 +1.2
VYHS epP pP 18 54 35.1 -1.2
BR101 Keskin Array S 77.75 314 eP P 18 54 21.1 +1.1
BR101 epP pP 18 54 36.5 -0.4
BR131 Keskin Array S 77.75 314 eP P 18 54 21.2 +1.1
BRTR Keskin Array B 77.75 314 P P 18 54 21.1 +1.1
comp=Z,6.6nm,0.8s,baz=88,slow=3.2,SNR=23
BRTR pP pP 18 54 36.5 -0.4
comp=Z,9.0nm,0.8s,baz=79,slow=3.9,SNR=9.5
BRTR LR LR 19 35 22.6
comp=Z,187nm,18.4s,baz=57,slow=41
PSZ Piszkesteto 77.75 327⇑ eP P 18 54 20.9 +1.1
PSZ Piszkesteto 77.75 327 eP P 18 54 20.5 +0.7
PSZ pmax pmax
comp=Z,43nm,1.1s
PSZ Piszkesteto 77.75 327 eP P 18 54 20.5 +0.7
comp=Z,43nm,1.1s
CBKS Cedar Bluff 77.80 47 P P 18 54 19.7 -0.5
baz=317
ARR Arges 77.81 323⇓ iP P 18 54 22.3 +2.1
P32A Huiting Farm, 77.81 46 P P 18 54 19.1 -1.1
baz=317,SNR=6.4
VRAC Vranov 77.87 330⇓ iP P 18 54 21.8 +1.4
M35A Neola 77.92 43 P P 18 54 20.4 -0.4
baz=319,SNR=7.8
K37A Belmond 77.94 41 P P 18 54 20.7 -0.2
baz=320
L36A Harm Buss Farm 77.95 42 P P 18 54 20.6 -0.3
baz=319
N34A Lincoln 77.99 44 P P 18 54 20.8 -0.4
baz=318
O33A Hebron 78.00 45 P P 18 54 20.4 -0.9
baz=318
PRA Prague 78.00 331⇑ eP P 18 54 22.6 +1.5
PRA Prague 78.00 331 eP P 18 54 22.6 +1.5
GOPC GO Pecny, Ondr 78.01 331⇑ eP P 18 54 22.2 +1.0
GOPC epP pP 18 54 37.8 -0.2
GOPC esP sP 18 54 45.2 +0.5
GOPC GO Pecny, Ondr 78.01 331 eP P 18 54 22.2 +1.0
GOPC e 18 54 37.8
GOPC e 18 54 45.2
PRU Pruhonice 78.03 331⇑ eP P 18 54 22.2 +0.9
PRU epP pP 18 54 37.8 -0.3
PRU esP sP 18 54 45.3 +0.5
PRU Pruhonice 78.03 331 eP P 18 54 22.2 +0.9
PRU e 18 54 37.8
PRU e 18 54 45.3
J38A Wedel Dairy, R 78.07 40 P P 18 54 20.9 -0.8
baz=320,SNR=6.1
ANTO Ankara 78.08 314 eP P 18 54 22.8 +1.0
ANTO pmax pmax
comp=Z,174nm,1.5s
ANTO Ankara 78.08 314 eP P 18 54 22.8 +1.0
comp=Z,174nm,1.5s
BR231 Keskin MP Arra 78.11 314 eP P 18 54 21.6 -0.4
SMOL Smolenice 78.22 329 eP P 18 54 24.0 +1.7
SMOL e 18 54 39.4
SMOL Smolenice 78.22 329 eP P 18 54 24.0 +1.7
SMOL epP pP 18 54 39.4 +0.2
ESK Eskdalemuir 78.23 343 ceP P 18 54 23.5 +1.3
ESK Eskdalemuir 78.23 343 eP P 18 54 22.8 +0.6
comp=Z,19nm,0.6s
TREC Trest 78.28 330⇑ eP P 18 54 23.9 +1.2
TREC Trest 78.28 330 eP P 18 54 23.9 +1.2
Q32A Meitler Ranch, 78.29 47 P P 18 54 22.3 -0.6
baz=318,SNR=8.4
SIRR Siria 78.36 325⇓ iP P 18 54 24.6 +1.4
DRWC Darouich 78.37 310 eP P 18 54 22.2 -1.3
M36A Felix, Anita 78.37 43 P P 18 54 23.4 0.0
baz=319
L37A Phoenix Point, 78.38 42 P P 18 54 22.5 -0.8
baz=320,SNR=8.8
O34A Beatrice 78.38 45 P P 18 54 22.5 -0.9
baz=318,SNR=5.4
N35A Tabor 78.40 44 P P 18 54 22.8 -0.7
baz=319,SNR=7.1
P33A Williams Farm, 78.42 46 P P 18 54 22.7 -0.9
baz=318
BUD Budapest 78.45 327⇑ eP P 18 54 24.8 +1.2
K38A Parkersburg 78.45 41 P P 18 54 23.5 -0.2
baz=320
NKC Novy Kostel 78.55 332⇑ iP P 18 54 24.7 +0.6
NKC Novy Kostel 78.55 332⇑ iP P 18 54 24.7 +0.6
GZR Gzra Zlata 78.59 324⇓ iP P 18 54 25.4 +0.9
R32A Long Quarter, 78.63 47 P P 18 54 24.1 -0.8
baz=318
Q33A Connelly Farm, 78.67 46 P P 18 54 24.6 -0.4
baz=318,SNR=23
O35A Humboldt 78.71 44 P P 18 54 24.7 -0.5
baz=319
L38A Oak Wood Farm, 78.75 41 P P 18 54 25.1 -0.2
baz=320,SNR=6.1
PKSG 78.77 328⇑ eP P 18 54 26.4 +1.0
N36A Muff Farm, Cla 78.78 43 P P 18 54 25.5 -0.1
baz=319
M37A Trindle Farm, 78.78 42 P P 18 54 25.1 -0.5
baz=320
P34A Walnut Farm, R 78.78 45 P P 18 54 25.0 -0.7
baz=318,SNR=14
WTSB Winterswijk 78.80 336 iP P 18 54 25.9 +0.5
comp=Z,36nm,0.8s
SCIA State Center 78.80 42 eP P 18 54 26.4 +0.7
SCIA epP pP 18 54 43.8 +1.3
CSKK Cs˙ákó 78.84 328⇑ eP P 18 54 26.7 +0.9
SZH Strazhica 78.86 321 P P 18 54 26.3 +0.3
BZS Buzias 78.90 325⇑ iP P 18 54 26.4 +0.3
PKST T˜'s 79.02 328⇑ eP P 18 54 27.4 +0.6
S32A Newby Ranch, P 79.04 48 P P 18 54 26.8 -0.2
baz=318
KHC Kasperske Hory 79.10 331⇑ eP P 18 54 28.0 +0.8
KHC epP pP 18 54 43.8 -0.3
KHC esP sP 18 54 51.3 +0.5
KHC Kasperske Hory 79.10 331 eP P 18 54 28.0 +0.8
KHC e 18 54 43.8
KHC e 18 54 51.3
KHC Kasperske Hory 79.10 331 eP P 18 54 27.8 +0.6
comp=Z,13nm,0.7s
R33A Olander Ranch, 79.10 47 P P 18 54 26.4 -1.0
baz=318,SNR=5.2
M38A Pleasantville 79.19 42 P P 18 54 27.3 -0.5
baz=320,SNR=10
Q34A Chapman 79.19 46 P P 18 54 27.3 -0.5
baz=318
N37A Lee Faris, Mou 79.19 43 P P 18 54 27.6 -0.2
baz=320
P35A Duane Minner, 79.21 45 P P 18 54 27.3 -0.7
baz=319,SNR=6.9
KSU1 Kansas State U 79.23 45 P P 18 54 27.7 -0.3
baz=318
KSU1 Kansas State U 79.23 45 eP P 18 54 27.8 -0.3
KSU1 epP pP 18 54 45.4 +0.5
SOP Sopron 79.23 329⇑ eP P 18 54 29.4 +1.5
CONA Conrad Observa 79.29 329 iP P 18 54 29.4 +1.1
comp=Z,40nm,1.5s,SNR=17
O36A Bolckow 79.29 44 P P 18 54 28.1 -0.3
baz=319
GEC2 GERESS Array S 79.30 331 eP P 18 54 28.1 -0.2
GEC2 pmax pmax
comp=Z,21nm,1.2s
GEC2 GERESS Array S 79.30 331 eP P 18 54 28.1 -0.2
comp=Z,21nm,1.2s
GERES GERESS Array B 79.30 331 P P 18 54 28.7 +0.3
comp=Z,7.1nm,0.6s,baz=39,slow=6.6,SNR=20
GERES pP pP 18 54 44.5 -0.7
comp=Z,5.5nm,0.8s,baz=40,slow=7.1,SNR=4.5
GERES LR LR 19 33 51.4
comp=Z,330nm,18.4s,baz=37,slow=39
GEA0 GERESS Array S 79.30 331 eP P 18 54 28.3 -0.1
ARNB Al Arnab 79.31 310 eP P 18 54 25.9 -2.7
WRDH Warideh 79.32 309 eP P 18 54 29.4 +0.8
SLNF Slenfeh 79.36 309 eP P 18 54 28.5 -0.5
GRFO Grafenberg 79.42 333 eP P 18 54 29.9 +1.0
GRFO pmax pmax
comp=Z,45nm,0.9s
GRFO Grafenberg 79.42 333 eP P 18 54 29.9 +1.0
comp=Z,45nm,0.9s
T32A Huddler Ranch, 79.43 48 P P 18 54 28.7 -0.5
baz=318,SNR=7.0
R34A Isabella, Hill 79.49 46 P P 18 54 29.3 -0.3
baz=318
MDVR Moldovita 79.53 324⇑ iP P 18 54 29.9 +0.2
P36A Good Intent, A 79.56 44 P P 18 54 29.3 -0.5
baz=319,SNR=5.3
AMTX Amarillo 79.58 51 P P 18 54 30.3 +0.1
baz=317
MSTX Muleshoe 79.61 53 P P 18 54 30.4 0.0
baz=316
MSTX Muleshoe 79.61 53 eP P 18 54 29.5 -0.9
comp=Z,21nm,1.1s
S33A Kaszmaul Farm, 79.62 47 P P 18 54 30.1 -0.1
baz=318
RABH Abou Rabah 79.64 308 eP P 18 54 25.4 -5.1
N38A Joes South For 79.64 42 P P 18 54 29.8 -0.5
baz=320,SNR=5.6
O37A Wolven Farm, M 79.67 43 P P 18 54 30.4 -0.1
baz=321,SNR=6.0
MNTX Cornudas Mount 79.70 56 P P 18 54 30.9 +0.1
baz=315,SNR=13
MNTX Cornudas Mount 79.70 56 eP P 18 54 31.3 +0.6
comp=Z,14nm,0.8s
Q35A Mercer Eighty, 79.70 45 P P 18 54 30.3 -0.4
baz=319
BIDA Albida 79.73 309 eP P 18 54 28.8 -2.1
MPEP Malo Peshtene 79.78 322 P P 18 54 31.4 +0.4
ROOS tl_alroos 79.79 308 eP P 18 54 24.6 -6.7
T33A Patterson Ranc 79.87 48 P P 18 54 31.4 -0.2
baz=318
Q36A Arnold C. Orve 79.92 45 P P 18 54 31.1 -0.8
baz=319
MOA Molln 79.94 330 iP P 18 54 32.6 +0.8
comp=Z,14nm,1.0s,SNR=7.2
N39A Derby Farms, D 79.94 42 P P 18 54 31.8 -0.1
baz=320,SNR=7.5
U32A Winter Ranch, 79.98 49 P P 18 54 32.4 +0.2
baz=318
ARSA Arzberg 79.98 329 iP P 18 54 32.8 +0.8
comp=Z,23nm,1.5s,SNR=8.1
S34A Willow Spring 80.01 47 P P 18 54 31.5 -0.9
baz=318
P37A Lathrop 80.01 44 P P 18 54 32.0 -0.3
baz=320,SNR=13
R35A Emporia Munici 80.02 46 P P 18 54 32.5 +0.1
baz=319,SNR=8.3
HAWK Haweek 80.04 309 eP P 18 54 30.6 -2.1
O38A Galt 80.04 43 P P 18 54 32.2 -0.2
baz=320
HGN Heimansgroeve 80.12 336 iP P 18 54 32.6 0.0
comp=Z,40nm,1.1s
BEBN Eben Emael 80.17 337 P P 18 54 33.6 +0.8
comp=Z,14nm,0.9s
CWF Charnwood Fore 80.21 341 eP P 18 54 33.4 +0.3
comp=Z,45nm,1.3s
MEM Membach 80.24 336 P P 18 54 34.0 +0.8
comp=Z,19nm,1.1s
VLDQ Val d'Or 80.33 29 eP P 18 54 32.5 -1.3
comp=Z,56nm,1.0s
MARH Ras Al Marh 80.35 308 eP P 18 54 33.6 -1.0
GDZ Gediz 80.36 316 iP P 18 54 35.1 +0.8
GDZ i S pP 18 54 51.7 +0.4
R36A Gordon, Harris 80.38 45 P P 18 54 34.0 -0.3
baz=319,SNR=15
P38A Dawn 80.39 43 P P 18 54 34.5 +0.2
baz=320
O39A Kirksville 80.39 42 P P 18 54 34.1 -0.2
baz=321,SNR=5.5
U33A Lingo Farm, Me 80.42 48 P P 18 54 34.7 +0.2
baz=318
V32A Arapaho 80.44 49 P P 18 54 35.2 +0.5
baz=318
S35A Otter Creek Ra 80.44 46 P P 18 54 34.1 -0.5
baz=319,SNR=12
DURS Dursunbey 80.47 317 iP P 18 54 35.6 +0.7
DURS i S pP 18 54 51.7 -0.1
T34A McClaskey Farm 80.48 47 P P 18 54 34.6 -0.2
baz=318,SNR=8.7
Q37A Longview Farm, 80.50 44 P P 18 54 34.5 -0.4
baz=320
BCLA Clavier 80.61 337 P P 18 54 35.7 +0.4
comp=Z,22nm,1.6s
VTS Vitosha 80.63 322⇑ iP P 18 54 36.9 +1.2
VTS Vitosha 80.63 322 P pP 18 54 51.0 -1.6
VTS Vitosha 80.63 322 eP P 18 54 36.5 +0.8
VTS pmax pmax
comp=Z,101nm,1.3s
VTS Vitosha 80.63 322 P P 18 54 36.2 +0.5
VTS Vitosha 80.63 322 eP P 18 54 36.5 +0.8
comp=Z,101nm,1.3s
SOKA Soboth 80.64 329 iP P 18 54 36.1 +0.5
comp=Z,25nm,1.0s,SNR=21
PERS Pernice 80.65 329 iP P 18 54 36.1 +0.4
PERS i 18 54 51.7
ZALF Zalf 80.66 307 eP P 18 54 33.4 -2.5
U34A Anderson Ranch 80.73 48 P P 18 54 36.2 0.0
baz=318,SNR=5.6
U34A Anderson Ranch 80.73 48 eP P 18 54 36.5 +0.4
comp=Z,89nm,0.9s
R37A Teagarden Farm 80.74 45 P P 18 54 35.6 -0.6
baz=320

W32A Sentinel 80.77 50 P P 18 54 36.8 +0.3
baz=318
DEMI Demirci 80.78 316 *i* P P 18 54 37.7 +1.1
DEMI *i* S **pP** 18 54 53.6 +0.2
V33A Lossen Ranch, 80.78 49 P P 18 54 36.5 +0.1
baz=318
BALY Balya 80.79 317 *i* P P 18 54 37.7 +1.2
BALY *i* S **pP** 18 54 54.0 +0.6
S36A Lake Cedric, C 80.79 46 P P 18 54 36.2 -0.2
baz=319,SNR=9.3
DSB Dublin 80.82 344 *e*P P 18 54 36.2 -0.1
comp=Z,15nm,0.7s
SNF Seneffe 80.82 337 P P 18 54 37.2 +0.8
O40A La Belle 80.82 42 P P 18 54 36.4 -0.2
baz=321,SNR=5.6
Q38A Cooks Store, C 80.86 44 P P 18 54 36.4 -0.4
baz=320,SNR=12
P39A Salisbury 80.88 43 P P 18 54 36.6 -0.3
baz=320,SNR=5.8
KHAL Karahalli 80.90 315 *i* P P 18 54 38.0 +0.8
KHAL *i* S **pP** 18 54 54.3 +0.2
T35A Sooner Cattle 80.91 47 P P 18 54 37.3 +0.1
baz=319,SNR=12
KBA Koelnbreinsper 80.92 330 *i* P P 18 54 37.8 +0.6
comp=Z,63nm,1.4s,SNR=18
OBKA Obir 80.96 329 *i* P P 18 54 37.7 +0.3
comp=Z,7.9nm,0.8s,SNR=6.7
WLF Walferdange 81.03 336 P P 18 54 39.4 +1.9
comp=Z,23nm,1.5s
WLF Walferdange 81.03 336 *e*P P 18 54 38.8 +1.3
WLF pmax pmax
comp=Z,29nm,1.1s
WLF Walferdange 81.03 336 *e*P P 18 54 38.8 +1.3
comp=Z,29nm,1.1s
BRBR Barbar 81.10 308 *e*P P 18 54 32.3 -6.2
DOU Dourbes 81.10 337 P P 18 54 38.4 +0.5
comp=Z,17nm,1.5s
Q39A Willow Grove F 81.11 43 P P 18 54 38.0 -0.2
baz=320,SNR=17
LANF Langenberg 81.14 334 *e*P P 18 54 38.7 +0.6
T36A Boggs Farm, Ca 81.14 46 P P 18 54 38.3 -0.1
baz=319,SNR=7.6
S37A Fort Scott 81.16 45 P P 18 54 38.2 -0.2
baz=320,SNR=10
SALA Sala 81.16 307 *e*P P 18 54 32.0 -6.8
W33A Caddo, Fort Co 81.17 49 P P 18 54 38.7 +0.1
baz=318
V34A Guthrie 81.19 48 P P 18 54 38.7 +0.1
baz=318
V34A Guthrie 81.19 48 *e*P P 18 54 38.7 +0.1
comp=Z,48nm,0.9s
MMB Musomiste 81.19 321 P P 18 54 39.5 +0.9
MYKA Terra Mystica 81.20 330 *i* P P 18 54 38.5 -0.1
comp=Z,17nm,1.2s,SNR=6.6
P40A Paris 81.20 42 P P 18 54 38.4 -0.2
baz=321,SNR=14
U35A Pawnee 81.21 47 P P 18 54 38.7 -0.1
baz=319
X32A Elmer 81.26 50 P P 18 54 38.9 -0.2
baz=318
R38A Fenwick Farm, 81.30 44 P P 18 54 38.3 -0.9
baz=320,SNR=9.0
WMOK Wichita Mounta 81.31 50 *e*P P 18 54 39.8 +0.4
WMOK pmax pmax
comp=Z,19nm,0.9s
WMOK Wichita Mounta 81.31 50 *e*P P 18 54 39.8 +0.4
comp=Z,19nm,0.9s
NVR Nevrokopi 81.31 321 P pP 18 54 52.6 -3.6
WATA Walderalm 81.33 331 *i* P P 18 54 40.0 +0.7
SNR=8.2
WTTA Wattenberg 81.37 331 *i* P P 18 54 40.4 +0.8
comp=Z,27nm,0.8s,SNR=8.9
CSS Mathiatis 81.43 311 *e*P P 18 54 40.8 +0.8
comp=Z,7.7nm,0.9s
VISS Visnje 81.45 329 *i* P P 18 54 39.7 -0.1
VISS *i* 18 54 54.9
RETA Reutte 81.47 332 *i* P P 18 54 40.3 +0.3
comp=Z,29nm,1.1s,SNR=12
MOTA Moosalm 81.48 332 *i* PcP P 18 54 41.7 +1.5
SNR=21
W34A Bridge Creek, 81.49 49 P P 18 54 40.6 +0.3
baz=318
W34A Bridge Creek, 81.49 49 *e*P P 18 54 40.6 +0.3
comp=Z,37nm,0.9s
BFO Black Forest 81.54 334 *ce*P P 18 54 40.9 +0.6
BFO Black Forest 81.54 334 *e*P P 18 54 39.6 -0.7
comp=Z,17nm,1.0s
BOJS Bojanci 81.55 328 *i* P P 18 54 40.6 +0.2
BOJS *i* 18 54 57.3
T37A Cheneyville 18 81.59 46 P P 18 54 40.8 0.0
baz=320,SNR=8.5
Q40A Laux Farm, Aux 81.60 43 P P 18 54 40.3 -0.4
baz=321,SNR=11
X33A Lawton 81.61 50 P P 18 54 41.3 +0.3
baz=318
TCHB Talchebab 81.63 308 *e*P P 18 54 37.8 -3.3
R39A Chumby, Stover 81.64 44 P P 18 54 40.4 -0.7
baz=320,SNR=12
JAVS Javornik 81.67 329 *i* P P 18 54 40.4 -0.7
JAVS *i* 18 54 56.1
PLE Pljevlja 81.69 325 ǁ *i* P P 18 54 41.8 +0.5
HDIL Hopedale 81.71 40 P P 18 54 41.0 -0.3
baz=322,SNR=7.4
HDIL Hopedale 81.71 40 *e*P P 18 54 41.3 0.0
comp=Z,77nm,0.9s
U36A Oologah 81.72 47 P P 18 54 41.6 +0.2
baz=319
S38A Stockton 81.73 45 P P 18 54 40.3 -1.1
baz=320,SNR=6.9
IVA Berane 81.85 324 ǁ *i* P P 18 54 43.0 +0.9
FETA Feichten 81.89 332 *i* P P 18 54 43.0 +0.7
comp=Z,18nm,1.2s,SNR=8.7
KNT Kendrikon 81.91 321 P pP 18 54 55.8 -3.5
TRI Trieste 81.93 329 *e*P P 18 54 41.0 -1.4
TRI pmax pmax
comp=Z,36nm,1.1s
TRI Trieste 81.93 329 *e*P P 18 54 41.0 -1.4
comp=Z,36nm,1.1s
X34A Smith Ranch, M 81.93 49 P P 18 54 42.8 +0.2
baz=318
Y33A Hilltop Ranch, 81.94 50 P P 18 54 42.7 +0.1
baz=318
DAVA Damuels 81.95 332 *i* P P 18 54 43.1 +0.5
comp=Z,29nm,1.1s,SNR=14
S39A Bolivar 81.98 44 P P 18 54 41.8 -1.0
baz=320,SNR=15
T38A Diamond 81.98 45 P P 18 54 42.3 -0.5
baz=320,SNR=17
UPM Unac-Piva 82.00 325 ǁ *i* P P 18 54 43.7 +0.7
ECH Echery 82.01 334 ǁ *e*P P 18 54 43.0 +0.2
U37A Salina 82.03 46 P P 18 54 42.9 -0.2
baz=320,SNR=6.1
W35A Tecumseh 82.04 48 P P 18 54 43.2 +0.1
baz=319
R40A Maddies Statio 82.05 43 P P 18 54 42.6 -0.5
baz=321,SNR=13
PVY Plav 82.05 324 ǁ *i* P P 18 54 41.9 -1.3
TUL1 Leonard 82.05 47 P P 18 54 43.0 -0.2
baz=319
TUL1 Leonard 82.05 47 *e*P P 18 54 43.2 0.0
comp=Z,28nm,0.9s
V36A Jenks 82.07 47 P P 18 54 43.6 +0.3
baz=319
RAYN Ar Rayn 82.25 295 *e*P P 18 54 44.9 +0.4
comp=Z,66nm,1.3s
AYDN Tasoluk 82.26 316 *i* P P 18 54 45.9 +1.6
AYDN *i* S **pP** 18 55 02.5 +1.3
NKY Niksic 82.28 324 ǁ *i* P P 18 54 44.1 -0.3
MOF Molkenrain 82.34 334 ǁ *e*P P 18 54 44.7 +0.1
U38A Gravette 82.39 46 P P 18 54 44.4 -0.6
baz=320,SNR=5.4
Z33A Whitaker Ranch 82.39 51 P P 18 54 44.9 -0.1
baz=318
FUORN Ofenpass-Fuorn 82.40 332 *e*P P 18 54 46.0 +0.9
comp=Z,53nm,1.2s
BRY Bratogost 82.40 325 ǁ *i* P P 18 54 44.5 -0.6
W36A Wetumka 82.40 48 P P 18 54 45.0 -0.1
baz=319,SNR=5.5
TX31 Lajitas Ar. Si 82.42 56 *e*P P 18 54 45.5 +0.2
V37A Hulbert 82.42 47 P P 18 54 45.1 0.0
baz=320,SNR=13
LTX Lajitas 82.42 56 *e*P P 18 54 45.8 +0.5
LTX *e**PP **pP** 18 55 03.5 +1.2
LTX Lajitas 82.42 56 *e*P P 18 54 45.8 +0.5
LTX *ep*P **pP** 18 55 03.5 +1.2
TXAR Lajitas Array 82.42 56 P P 18 54 45.8 +0.5
comp=Z,7.8nm,0.7s,baz=295,slow=3.8,SNR=41
TXAR pP **pP** 18 55 03.5 +1.2
comp=Z,26nm,0.8s,baz=291,slow=3.4,SNR=22
Y34A Reagan Ranch, 82.45 50 P P 18 54 45.3 0.0
baz=318
T39A Clever 82.46 45 P P 18 54 44.8 -0.5
baz=320
S40A Lebanon 82.47 44 P P 18 54 45.0 -0.3
baz=321,SNR=8.0
TTG Podgorica 82.48 324 *e*P P 18 54 45.1 -0.2
GCAM G?zelcaml? 82.55 316 *i* P P 18 54 46.7 +1.0
GCAM *i* S **pP** 18 55 03.3 +0.5
X35A Drake 82.55 49 P P 18 54 45.6 -0.3
baz=319,SNR=5.2
SADO Sadowa 82.56 32 P P 18 54 45.0 -0.7
comp=Z,9.2nm,1.1s,baz=349,slow=10,SNR=5.4
SADO pP **pP** 18 55 02.4 -0.3
comp=Z,4.3nm,0.7s,baz=330,slow=8.3,SNR=3.2
SADO PP **PP** 18 57 53.2 -1.7
comp=Z,5.0nm,0.9s,baz=327,slow=9.3,SNR=3.1
SADO Sadowa 82.56 32 *e*P P 18 54 45.3 -0.4
comp=Z,23nm,1.3s
SADO pP **pP** 18 55 02.4 -0.3
SADO PP **PP** 18 57 53.2 -1.7
BUM Brajici-Budva 82.74 324 ǁ *i* P P 18 54 46.5 -0.3
HHAR Hobbs 82.74 46 *e*P P 18 54 46.1 -0.7
comp=Z,22nm,0.8s
X36A Centrahoma 82.76 48 P P 18 54 46.9 0.0
baz=319
HCY Herceg Novi 82.79 325 ǁ *i* P P 18 54 46.3 -0.6
T40A Mansfield 82.80 44 P P 18 54 46.6 -0.5
baz=321,SNR=5.3
133A Hamilton Ranch 82.81 51 P P 18 54 47.0 -0.2
baz=318
V38A Canehill 82.82 46 P P 18 54 47.1 -0.1
baz=320,SNR=9.4
W37B Quinton 82.83 47 P P 18 54 47.3 +0.1
baz=320,SNR=5.5
TUE Stita 82.84 332 *e*P P 18 54 47.9 +0.5
comp=Z,111nm,1.9s
SFIN Lafayette 82.86 39 P P 18 54 47.0 -0.4
baz=324
SFIN Lafayette 82.86 39 *e*P P 18 54 47.2 -0.1
comp=Z,46nm,1.2s
ULC Ulcinj 82.87 324 ǁ *i* P P 18 54 47.8 +0.4
LOMF Lomont 82.88 334 ǁ *e*P P 18 54 48.0 +0.6
U39A Green Forest 82.90 45 P P 18 54 47.3 -0.4
baz=320,SNR=14
PMOR Pomarico Ree 82.91 118 *e*T T 20 26 11.2
comp=Z,134nm,0.2s
BDRM Kayabasi 82.94 316 *i* P P 18 54 48.9 +1.1
BDRM *i* S **pP** 18 55 05.8 +1.0
DYA Yadsworthy 82.96 342 *e*P P 18 54 48.1 +0.5
AOS Alonnisos 83.03 319 P pP 18 55 02.9 -2.3
TIR Tirane 83.11 323 *e*P P 18 54 48.3 -0.3
TIR pmax pmax
comp=Z,69nm,0.8s
TIR Tirane 83.11 323 *e*P P 18 54 48.3 -0.3
comp=Z,69nm,0.8s
LMQ La Malbaie 83.15 25 *e*P P 18 54 48.5 -0.2
comp=Z,46nm,1.1s
Z35A Perchaven, San 83.20 50 P P 18 54 49.2 0.0
baz=319
V39A Pettigrew 83.23 46 P P 18 54 49.0 -0.4
baz=320,SNR=10
U40A Yellville 83.25 45 P P 18 54 49.0 -0.4
baz=321,SNR=20
X37A Clayton 83.28 48 P P 18 54 49.6 +0.1
baz=320
Y36A Durant 83.31 49 P P 18 54 49.7 0.0
baz=319
W38A Poteau 83.36 47 P P 18 54 49.9 -0.1
baz=320,SNR=7.0
X38A Whitesboro 83.51 47 P P 18 54 50.8 +0.1
baz=320
TAOE Nuku Hiva Isla 83.56 109 *e*LR LR 19 21 21.4
comp=Z,716nm,23.8s
TAOE Nuku Hiva Isla 83.56 109 *e*T T 20 26 56.1
comp=Z,217nm,0.3s
SENIN Lac Senin/Sane 83.61 334 *e*P P 18 54 51.6 +0.3
comp=Z,113nm,2.0s
W39A Magazine 83.66 46 P P 18 54 51.4 -0.1
baz=320,SNR=7.7
V40A Witts Springs 83.69 45 P P 18 54 51.2 -0.5
baz=321,SNR=5.9
135A Vickery Place, 83.69 50 P P 18 54 51.9 +0.1
baz=319
Z36A Blue Ridge 83.70 49 P P 18 54 51.4 -0.4
baz=319
234A Clairette 83.70 51 P P 18 54 52.2 +0.4
baz=318
OLIL Olney 83.72 41 *e*P P 18 54 52.2 +0.4
comp=Z,56nm,0.6s
333A Richland Sprin 83.72 52 P P 18 54 52.6 +0.6
baz=318
PPT Papeete 83.78 121 LR LR 19 30 57.2
comp=Z,137nm,19.2s,baz=342,slow=35
PPT2 Papeete2 83.80 121 *e*LR LR 19 21 19.5
comp=Z,1μm,29.5s,baz=318
PPT2 Papeete2 83.80 121 *e*T T 20 27 19.9
comp=Z,13nm,0.3s
PAE Paea 83.85 121 *e*T T 20 27 23.1
comp=Z,2.1nm,0.3s
JCT Junction City 83.88 53 P P 18 54 52.9 +0.2
baz=318
JCT Junction City 83.88 53 *e*P P 18 54 53.2 +0.4
JCT pmax pmax
comp=Z,46nm,1.0s
JCT Junction City 83.88 53 *e*P P 18 54 53.2 +0.4
comp=Z,46nm,1.0s
SIUC Southern Illin 83.99 42 *e*P P 18 54 53.6 +0.4
comp=Z,90nm,0.8s
X39A Fountain Ranch 84.01 47 P P 18 54 53.9 +0.5
baz=320
W40A Ferguson Farm, 84.03 46 P P 18 54 53.5 0.0
baz=321,SNR=5.6
433A Art 84.08 53 P P 18 54 53.7 -0.1
baz=318
WHTX Lake Whitney, 84.09 51 P P 18 54 54.2 +0.4
baz=319
WHTX Lake Whitney, 84.09 51 *e*P P 18 54 53.7 -0.1
comp=Z,33nm,1.0s
PBMO Poplar Bluff 84.14 43 *e*P P 18 54 53.9 0.0
comp=Z,52nm,0.9s
334A Loeta 84.14 52 P P 18 54 54.2 +0.1
baz=318,SNR=8.1
TVO Taravao 84.14 121 *e*T T 20 27 44.9
comp=Z,1.5nm,0.3s
KARP Karpathos 84.26 315 *e*P P 18 54 54.8 +0.1
comp=Z,40nm,0.9s
MIAR Mount Ida 84.26 47 P P 18 54 54.9 +0.3
baz=320,SNR=13
MIAR Mount Ida 84.26 47 *e*P P 18 54 54.8 +0.2
MIAR pmax pmax
comp=Z,51nm,0.9s
MIAR Mount Ida 84.26 47 *e*P P 18 54 54.8 +0.2
comp=Z,51nm,0.9s
X201 Greenbrier Sit 84.32 45 *e*P P 18 54 54.8 0.0
comp=Z,52nm,1.3s
X301 Greenbrier Sit 84.34 45 *e*P P 18 54 54.8 -0.2
comp=Z,27nm,1.1s
LONY Lake Ozonia 84.35 29 *e*P P 18 54 54.5 -0.3
comp=Z,20nm,1.3s
DSL Palaion Diasel 84.36 321 P pP 18 55 06.9 -5.2
SGD Sagiada 84.36 322 P pP 18 55 08.6 -3.4
WHAR Wooly Hollow 84.36 45 *e*P P 18 54 54.9 -0.2
comp=Z,60nm,1.0s
IGT Igoumenitsa 84.38 322 P pP 18 55 09.6 -2.5
Y39A Lockesburg 84.46 47 P P 18 54 55.7 +0.1
baz=320
KEK Kerkira 84.47 322 P pP 18 55 07.2 -5.4
SERG Sergoula 84.49 320 P pP 18 55 09.7 -3.1
FRNY Flat Rock 84.50 28 *e*P P 18 54 54.8 -0.8
comp=Z,14nm,1.0s
434A Burnet 84.51 52 P P 18 54 55.9 -0.1
baz=318
533A Kerrville 84.62 53 P P 18 54 56.6 0.0
baz=318
LAKA Lakka 84.67 320 P pP 18 55 07.6 -6.1
X40A Basin Creek Fa 84.70 46 P P 18 54 57.3 +0.5
baz=321
GUR Goura 84.74 320 P pP 18 55 10.0 -4.2
PDO Prodromos 84.75 321 P P 18 54 56.1 -0.9
ACSO Alum Creek Sta 84.81 36 *e*P P 18 54 57.8 +0.5
ACSO *epP* **pP** 18 55 15.2 +0.9
LKD2 Lefkada island 84.83 321 P pP 18 55 11.9 -2.6
WCI Wyandotte Cave 84.97 40 *e*P P 18 54 57.5 -0.6
WCI pmax pmax
comp=Z,51nm,1.1s
WCI Wyandotte Cave 84.97 40 *e*P P 18 54 57.5 -0.6
comp=Z,51nm,1.1s
534A Blanco 84.98 53 P P 18 54 58.5 +0.2
baz=318,SNR=6.8
633A Saathoff Ranch 84.99 54 P P 18 54 59.1 +0.7
baz=318
ZKR Zakros 85.08 315 P pP 18 55 10.4 -5.4
PLDF La Plantade 85.10 336 *e*P P 18 54 59.7 +1.0
M54A Oil Creek Stat 85.12 34 P P 18 54 58.4 -0.4
baz=328
WLAR White Oak Lake 85.17 47 *e*P P 18 54 58.6 -0.6
comp=Z,79nm,1.1s
AGO Saint Agoulin 85.17 336 ǁ *e*P P 18 55 00.0 +1.0
H06E1 SOCORRO T-PHAS 85.23 69 T T 20 29 15.8
KFL Anninata 85.33 321 P pP 18 55 13.4 -3.5
Z40A Long Farm, Mag 85.35 47 P P 18 55 00.5 +0.5
baz=321
VLS Valsamata 85.36 321 P pP 18 55 14.5 -2.6
832A Faith Ranch, C 85.39 55 P P 18 55 00.8 +0.4
baz=318
LAST Lasithi 85.42 316 P pP 18 55 11.2 -6.4
LAST Lasithi 85.42 316 *e*P P 18 55 00.8 +0.3
comp=Z,278nm,0.9s
SSB Saint Sauveur 85.45 335 *e*P P 18 55 00.9 +0.5
SSB pmax pmax
comp=Z,19nm,1.0s
SSB Saint Sauveur 85.45 335 *e*P P 18 55 00.9 +0.5
comp=Z,19nm,1.0s
N54A Moraine State 85.45 34 P P 18 55 00.7 +0.3
baz=328
733A Divot King Ran 85.47 54 P P 18 55 01.2 +0.4
baz=318
PYM Petit Puy Mans 85.48 336 ǁ *e*P P 18 55 01.4 +0.8
PKME Peaks-Kenny Pk 85.52 25 *e*P P 18 55 01.1 +0.4
comp=Z,26nm,1.0s
ITM Ithomi 85.55 319 P pP 18 55 12.9 -5.2
IDI Anoyia 85.61 316 *e*P P 18 55 01.1 -0.3
comp=Z,79nm,0.9s
239A Gary 85.72 49 P P 18 55 02.8 +0.9
baz=320
536A Bastrop 85.75 52 P P 18 55 02.8 +0.7
baz=319
ACCN Adirondack Com 85.75 29 *e*P P 18 55 01.7 -0.2
comp=Z,42nm,1.4s
PYL PYLOS 85.86 319 P pP 18 55 15.6 -4.0
LBL Lubilhac 85.88 336 *e*P P 18 55 03.7 +1.1
WVT Waverly 85.93 42 *e*P P 18 55 02.5 -0.4
WVT pmax pmax
comp=Z,20nm,0.8s
WVT Waverly 85.93 42 *e*P P 18 55 02.5 -0.4
comp=Z,20nm,0.8s
IMMV Iera Moni Meta 85.93 317 P pP 18 55 17.8 -2.2
240A Hunter Patters 86.09 48 P P 18 55 03.8 0.0
baz=321
636A Smothers Creek 86.20 52 P P 18 55 05.2 +0.8
baz=319
TIP Timpagrande 86.23 324 *e*P P 18 55 04.0 -0.5
comp=Z,104nm,1.4s
LMN Caledonia Moun 86.28 22 *e*P P 18 55 05.2 +0.7
comp=Z,29nm,0.8s
933A Laredo 86.31 55 P P 18 55 06.1 +1.1
baz=318,SNR=5.9
OXF Oxford 86.44 44 *e*P P 18 55 05.9 +0.5
OXF Oxford 86.44 44 *e*P P 18 55 05.9 +0.5
SSPA Standing Stone 86.56 33 *e*P P 18 55 06.4 +0.4
comp=Z,90nm,1.0s
KSPA Keystone Colle 86.58 31 *e*P P 18 55 04.2 -1.8
comp=Z,89nm,1.8s
034A Hebbronville 87.06 55 P P 18 55 10.0 +1.4
baz=318
N59A State Game Lan 87.14 31 P P 18 55 09.0 +0.2
baz=330
ODNJ Ogdensburg 87.43 31 *e*P P 18 55 10.0 -0.1
comp=Z,11nm,1.0s
LUPA Lehigh Univers 87.56 31 *e*P P 18 55 11.2 +0.4
comp=Z,48nm,1.4s
SWET Sewanee 87.57 41 *e*P P 18 55 11.0 0.0
comp=Z,13nm,0.8s
TZTN Tazewell 87.60 39 *e*P P 18 55 11.1 +0.1
comp=Z,33nm,1.0s
145A Houston Renfro 87.68 45 P P 18 55 12.2 +0.7
baz=322
244A Avery, Jackson 87.73 46 P P 18 55 12.4 +0.7
baz=322
BRNJ Basking Ridge 87.79 31 *e*P P 18 55 12.3 +0.4
comp=Z,28nm,0.9s
CPCT Cooper Cave 88.05 40 *e*P P 18 55 13.6 +0.3
comp=Z,15nm,0.9s
LRDF Laroque-de-Fa 88.18 335 *e*P P 18 55 14.8 +1.1
TKL Tuckaleechee C 88.22 39 P P 18 55 12.9 -1.2
comp=Z,16nm,0.9s,baz=311,slow=4.2,SNR=12
TKL pP **pP** 18 55 31.3 +0.1
comp=Z,27nm,0.9s,baz=102,slow=1.0,SNR=10
TKL LR LR 19 37 41.1
comp=Z,115nm,20.1s,baz=326,slow=38
TKL Tuckaleechee C 88.22 39 *e*P P 18 55 14.5 +0.4
TKL *PP **pP** 18 55 31.3 +0.1
TKL pmax pmax
comp=Z,31nm,0.9s
TKL Tuckaleechee C 88.22 39 *e*P P 18 55 14.5 +0.4
comp=Z,31nm,0.9s
TKL pP **pP** 18 55 31.3 +0.1
TBI Tubuai 88.24 125 *e*LR LR 19 22 52.5
comp=Z,624nm,32.5s,baz=323
CARF Carcanieres 88.51 335 *e*P P 18 55 16.0 +0.6
VALF Valcebollere 88.83 335 *e*P P 18 55 18.0 +1.0
KMSC Kings Mountain 89.76 38 *e*P P 18 55 21.1 -0.2
comp=Z,21nm,1.0s
KEST Kesra 92.23 327 P P 18 55 32.7 -0.1
comp=Z,3.3nm,0.7s,baz=312,slow=3.5,SNR=5.3
KEST pP **pP** 18 55 49.1 -0.9
comp=Z,6.7nm,0.7s,baz=309,slow=3.6,SNR=7.5
KEST LR LR 19 42 07.2
comp=Z,354nm,18.9s,baz=335,slow=39
KEST Kesra 92.23 327 *e*P P 18 55 32.5 -0.3
comp=Z,12nm,0.8s
KEST pP **pP** 18 55 49.1 -0.9
POLO Lamas de Olo 92.40 342 *e*P P 18 55 33.2 -0.3
POLO *i* P **pP** 18 55 49.1 -1.6
PVRL Vila Real 92.48 342 *e*P P 18 55 33.4 -0.4
PVRL *i* P **pP** 18 55 49.3 -1.7
ES19 SONSECA Array 93.02 338 *e*P P 18 55 36.0 -0.3
ESDC Sonseca Array 93.06 338 P P 18 55 36.1 -0.4
comp=Z,2.2nm,0.8s,baz=15,slow=3.7,SNR=14
ESDC pP **pP** 18 55 52.9 -0.8
comp=Z,2.4nm,0.6s,baz=16,slow=4.3,SNR=7.6
ESDC LR LR 19 42 25.5
comp=Z,211nm,20.2s,baz=15,slow=39
PCVE Castro Verde 96.02 341 *i* P P 18 55 59.2 +9.1
RKT Rikitea 97.15 115 *e*LR LR 19 27 06.0
comp=Z,604nm,35.8s
TOA1 Torodi Ar. Sit 115.36 323 *e*PKPdf **PKPdf** 19 01 04.0 -0.6
TOA1 *e* 19 01 21.9
TOA1 *e*PP **PP** 19 02 00.2 -5.2
TOA0 Torodi Ar. Sit 115.37 323 *e*PKPdf **PKPdf** 19 01 03.7 -1.0
TOA0 *e*PP **PP** 19 01 60.0 -5.4
TOA0 *e*PP **PP** 19 02 02.0 -3.4
TORD Torodi Ar. Bea 115.37 323 PKP **PKPdf** 19 01 04.0 -0.6
comp=Z,0.8nm,0.4s,baz=13,slow=1.7,SNR=13
TORD pPKP **pPKiKP** 19 01 21.9 -0.6
comp=Z,2.0nm,0.5s,baz=15,slow=1.9,SNR=12
TORD PP **PP** 19 02 00.2 -5.2
comp=Z,6.0nm,1.2s,baz=15,slow=5.2,SNR=5.1
SDV Santo Domingo 117.21 43 PKP **PKPdf** 19 01 07.5 -1.0
comp=Z,1.9nm,0.7s,baz=248,slow=19,SNR=4.5
SDV pPKP **pPKPdf** 19 01 26.9 +0.6
comp=Z,2.0nm,0.3s,baz=5.0,slow=4.6,SNR=3.6
VNDA Vanda 121.32 176 pPKP pPKPdf 19 01 32.8 +0.8
comp=Z,1.7nm,1.0s,baz=290,slow=4.6,SNR=3.9
DBIC Dimbokro 123.94 326 PKP **PKPdf** 19 01 19.8 -1.3
comp=Z,4.9nm,0.8s,baz=49,slow=0.7,SNR=8.6
DBIC pPKP **pPKPdf** 19 01 38.5 -0.5
comp=Z,7.1nm,0.6s,baz=17,slow=3.4,SNR=5.1
TIC Toumodi 124.03 326 *e*PKP2 pPKPdf 19 01 39.2 0.0
KIC Kosan Boka 124.18 326 *e*PKP2 pPKPdf 19 01 39.5 0.0
comp=Z,144nm,2.1s
LIC Lamto 124.42 326 *e*PKP2 pPKPdf 19 01 40.7 +0.8
comp=Z,25nm,0.8s
PTGA Pitinga 130.66 37 PKP **PKPdf** 19 01 32.7 -1.3
comp=Z,2.1nm,0.7s,baz=297,slow=14,SNR=3.3
SAML Samuel 136.22 47 *e*PKPdf **PKPdf** 19 01 44.5 +0.1
LPAZ La Paz 139.25 59 PKhKP PKPpre 19 01 43.6
comp=Z,0.8nm,0.7s,baz=14,slow=8.5,SNR=2.2
LPAZ PKP **PKPdf** 19 01 51.0 +0.4

	comp=Z,1.0nm,0.5s,baz=333,slow=4.5,SNR=4.0							
LPAZ					pPKP	pPKPdf	19 02 09.3	+0.8
	comp=Z,1.7nm,0.9s,baz=28,slow=5.6,SNR=2.5							
SIV	**San Ignacio**	**143.19**	**50**	PKhKP	PKPpre		19 01 49.4	
	comp=Z,1.5nm,0.8s,baz=333,slow=2.3,SNR=2.4							
SIV					PKP	**PKPdf**	**19 01 55.8**	**-1.1**
	comp=Z,3.7nm,0.8s,baz=325,slow=3.6,SNR=5.9							
SIV					pPKP	pPKPdf	19 02 14.1	-0.8
	comp=Z,1.8nm,0.5s,baz=274,slow=4.1,SNR=3.1							
NVL	**N'lazarevskaya**	**145.29**	**204**	*e*PKIKP	**PKPab**		**19 01 59.1**	**+0.1**
LCO	**Las Campanas**	**146.21**	**77**	*e*PKPdf	**PKPbc**		**19 02 03.1**	**-0.2**
ROC1	**El Roble**	**148.18**	**83**	*e*PKPbc	**PKPbc**		**19 02 08.5**	**-0.2**
SNAA	**Sanae**	**148.54**	**197**	PKP	**PKPbc**		**19 02 07.8**	**-0.3**
SNAA	**Sanae**	**148.54**	**197**⇑	*e*PKP2	**PKPbc**		**19 02 07.3**	**-0.9**
SNAA	**Sanae**	**148.54**	**197**	*e*PKPdf	**PKPbc**		**19 02 07.0**	**-1.2**
BDFB	**Brasilia**	**149.01**	**30**	PKPbc	**PKPbc**		**19 02 11.5**	**+0.4**
	comp=Z,9.3nm,0.7s,baz=63,slow=3.1,SNR=6.4							
BDFB					pPKPbc	**pPKPbc**	**19 02 28.6**	**-0.2**
	comp=Z,15nm,0.9s,baz=338,slow=4.4,SNR=4.7							
BDFB	**Brasilia**	**149.01**	**30**	*e*PKIKP	**PKPdf**		**19 02 06.7**	**-0.3**
BDFB				*e*			19 02 11.5	
BDFB				*e*			19 02 28.6	
BDFB	**Brasilia**	**149.01**	**30**	*e*PKPdf	**PKPdf**		**19 02 06.7**	**-0.3**
BDFB				*e*PKPbc	**PKPbc**		**19 02 11.5**	**+0.4**
BDFB				*e*pPKPdf	**pPKPbc**		**19 02 28.6**	**-0.2**
VNA2	**Neumayer--Watz**	**150.06**	**196**	PKP	**PKPbc**		**19 02 11.2**	**-0.7**
	baz=106,slow=1.0							
VNA3	**Neumayer Olymp**	**150.24**	**195**	PKP	**PKPbc**		**19 02 12.2**	**-0.2**
PLCA	**Paso Flores**	**151.81**	**97**	PKP	**PKPdf**		**19 02 10.8**	**+0.2**
	comp=Z,2.6nm,1.0s,baz=292,slow=1.2,SNR=2.9							
PLCA					PKPbc	**PKiKP**	**19 02 17.8**	**+0.4**
	comp=Z,12nm,0.9s,baz=296,slow=2.6,SNR=19							
PLCA					PKPab	**PKPab**	**19 02 26.2**	**-0.1**
	comp=Z,9.2nm,1.0s,baz=342,slow=4.4,SNR=5.2							
PLCA					pPKPbc	**pPKPbc**	**19 02 34.5**	**-0.3**
	comp=Z,14nm,0.9s,baz=248,slow=3.3,SNR=5.8							
PLCA	**Paso Flores**	**151.81**	**97**	PKIKP	**PKPdf**		**19 02 10.8**	**+0.2**
PLCA							19 02 26.3	
PLCA							19 02 34.5	
PLCA					pmax	pmax		
	comp=Z,5.0nm,0.9s							
PLCA					pmax	pmax		
	comp=Z,9.0nm,1.0s							
PLCA	**Paso Flores**	**151.81**	**97**	*e*PKPdf	**PKPdf**		**19 02 10.9**	**+0.4**
PLCA				*e*PKPbc	**PKiKP**		**19 02 17.5**	**+0.1**
PLCA				PKPab	**PKPab**		**19 02 26.2**	**-0.1**
PLCA				pPKPbc	**pPKPbc**		**19 02 34.5**	**-0.3**
CPUP	**Villa Florida**	**153.39**	**57**	PKPbc	**PKPbc**		**19 02 21.1**	**+0.3**
	comp=Z,4.3nm,0.8s,baz=220,slow=1.0,SNR=6.1							
CPUP				PKPab	**PKPab**		**19 02 33.4**	**+0.2**
	comp=Z,5.8nm,0.8s,baz=303,slow=4.5,SNR=6.8							
CPUP				pPKPbc	**pPKPbc**		**19 02 39.2**	**+0.6**
	comp=Z,2.9nm,0.7s,baz=349,slow=5.2,SNR=2.1							
CPUP				pPKPab	**pPKPab**		**19 02 50.3**	**-0.2**
	comp=Z,13nm,1.1s,baz=340,slow=6.0,SNR=4.6							
CPUP	**Villa Florida**	**153.39**	**57**	*e*PKIKP	**PKPbc**		**19 02 20.7**	**-0.2**
CPUP							19 02 33.4	
CPUP							19 02 39.2	
CPUP	**Villa Florida**	**153.39**	**57**	*e*PKPbc	**PKPbc**		**19 02 20.7**	**-0.2**
CPUP				PKPab	**PKPab**		**19 02 33.4**	**+0.2**
CPUP				pPKPbc	**pPKPbc**		**19 02 39.2**	**+0.6**
CPUP				pPKPab	**pPKPab**		**19 02 50.3**	**-0.2**

*NSSC **08** 18:45:59.5±1.4, 34˚13N×36˚75E, h2km±6km, MD1.2, ML1.9*
*ISCJB **08** 18:46:01.4±0.5, 34˚14N±0˚03×36˚35E±0˚05, h9km±4km, Error ellipse: s-maj=7.3km s-min=4.5km az=173.4*
*CSEM **08** 18:46:01.3±0.1, 34˚15N×36˚38E, h5km, ML2.9, Error ellipse: s-maj=3.3km s-min=2.1km az=108.0*
*GRAL **08** 18:46:01.0±0.3, 34˚32N×36˚42E, h14km±2km, MD2.9*

ISC 08 18:46:00.4±0.9, 34˚15N±0˚02×36˚41E±0˚04, h14km±6km, n17, σ0s45/30, Jordan-Syria region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FKH	**Fakeheh**	**0.10**	**2**	*e*P	**Pg**	**18 46 03.7**	**+0.1**
FKH				*e*S	**Sg**	**18 46 05.8**	**-0.1**
FKH	**Fakeheh**	**0.10**	**2**	*e*P	**Pg**	**18 46 03.7**	**+0.1**
FKH				*e*S	**Sg**	**18 46 05.8**	**-0.1**
MARH	**Ras Al Marh**	**0.13**	**152**	*e*P	**Pb**	**18 46 04.8**	**-0.1**
MARH				*e*S	**Sb**	**18 46 09.2**	**+1.2**
MARH				AML	AML	18 46 10.7	
	comp=E,1μm,0.3s						
MARH				AML	AML	18 46 13.9	
	comp=N,726nm,0.4s						
MARH	**Ras Al Marh**	**0.13**	**152**	*e*P	**Pb**	**18 46 04.9**	**-0.1**
MARH				*e*S	**Sb**	**18 46 08.5**	**+0.5**
	comp=N,727nm,0.4s						
HAWK	**Haweek**	**0.38**	**360**	*e*P	**Pb**	**18 46 08.7**	**-0.3**
HAWK				*e*S	**Sb**	**18 46 15.1**	**+0.4**
HAWK				AML	AML	18 46 19.8	
	comp=E,49nm,0.4s						
HAWK				AML	AML	18 46 21.3	
	comp=N,40nm,0.5s						
HAWK	**Haweek**	**0.38**	**360**	*e*P	**Pb**	**18 46 08.7**	**-0.3**
HAWK				*e*S	**Sb**	**18 46 14.5**	**-0.2**
	comp=N,40nm,0.5s						
HWQ	**Hawqa**	**0.40**	**289**	*e*P	**Pg**	**18 46 08.5**	**-0.1**
HWQ				*e*S	**Sg**	**18 46 14.0**	**-0.1**
HWQ	**Hawqa**	**0.40**	**289**	*e*P	**Pg**	**18 46 08.5**	**-0.1**
HWQ				*e*S	**Sg**	**18 46 14.0**	**-0.1**
BHL	**Bhannes**	**0.67**	**249**	*e*P	**Pb**	**18 46 14.3**	**+0.3**
BHL	**Bhannes**	**0.67**	**249**	*e*P	**Pb**	**18 46 14.3**	**+0.3**
TOTH	**TOTAH**	**0.78**	**179**	*e*P	**Pg**	**18 46 15.2**	**-0.5**
TOTH				*e*S	**Sb**	**18 46 26.8**	**+0.4**
DQRL	**Deir Qamar**	**0.82**	**238**	*e*P	**Pn**	**18 46 17.2**	**-0.5**
DQRL	**Deir Qamar**	**0.82**	**238**	*e*P	**Pn**	**18 46 17.2**	**-0.5**
WRDH	**Warideh**	**1.36**	**0**	*e*P	**Pb**	**18 46 25.8**	**0.0**
WRDH				*e*S	**Sg**	**18 46 44.9**	**+0.6**
WRDH				AML	AML	18 46 51.2	
	comp=N,18nm,0.3s						
WRDH				AML	AML	18 47 01.3	
	comp=E,16nm,0.4s						
WRDH	**Warideh**	**1.36**	**0**	*e*P	**Pg**	**18 46 26.6**	**0.0**
WRDH				*e*S	**Sg**	**18 46 44.7**	**+0.4**
	comp=E,16nm,0.4s						
ARNB	**Al Arnab**	**1.75**	**348**	*e*P	**Pb**	**18 46 32.0**	**-0.3**
ARNB				*e*S	**Sb**	**18 46 55.3**	**+1.0**
ARNB				AML	AML	18 47 02.6	
	comp=N,16nm,0.3s						
ARNB				AML	AML	18 47 03.4	
	comp=E,6.9nm,0.3s						
ARNB	**Al Arnab**	**1.75**	**348**	*e*P	**Pb**	**18 46 32.3**	**-0.1**
ARNB				*e*S	**Sb**	**18 46 54.6**	**+0.3**
	comp=E,7.0nm,0.3s						

*ISCJB **08** 18:49:47.6±0.5, 22˚12N±0˚03×121˚54E±0˚03, h15km±5km, Error ellipse: s-maj=5.4km s-min=4.6km az=179.6*
*TAP **08** 18:49:47.4, 22˚14N×121˚43E, h14km±1km, ML3.0, B*
*JMA **08** 18:49:49.4±0.3, 22˚37N×121˚59E, h9km*

ISC 08 18:49:47.3±1.2, 22˚16N±0˚03×121˚50E±0˚04, h15km±10km, n40, σ0s77/58, 4C, Taiwan region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LAY	**Lan-yu**	**0.13**	**157**⇑	*i*P	**Pb**	**18 49 51.9**	**+0.3**
	baz=130						
LAY				*e*S	**Sb**	**18 49 54.9**	**+0.5**
	baz=130						
TAW	**Tawu**	**0.59**	**289**	*e*P	**Pb**	**18 49 59.3**	**+0.1**
	baz=294						
TAW				S	**Sg**	**18 50 06.8**	**+0.1**
	baz=294						
TSEB	**Hengchuen, Pin**	**0.61**	**245**⇑	*e*P	**Pg**	**18 49 59.5**	**+0.2**
	baz=246						
TSEB				*e*S	**Sb**	**18 50 08.1**	**+0.1**
	baz=246						
EAST	**Anshuo**	**0.64**	**290**	⇑P	**Pg**	**18 49 59.7**	**0.0**
	baz=294						
EAST				S	**Sg**	**18 50 08.0**	**-0.3**
	baz=294						
ECL	**Taimali**	**0.66**	**311**	P	**Pg**	**18 50 00.3**	**+0.1**
	baz=316						
ECL				*e*S	**Sb**	**18 50 09.8**	**+0.2**
	baz=316						
TWK1	**Hengchun**	**0.68**	**251**	⇑P	**Pg**	**18 49 59.7**	**-0.8**
	baz=251						
TWK1				*e*S	**Sg**	**18 50 08.5**	**-0.9**
	baz=251						
HEN	**Hengchun**	**0.72**	**258**	*e*P	**Pg**	**18 50 00.7**	**-0.6**
	baz=258						
TWG	**Pinlang**	**0.76**	**329**	*e*P	**Pb**	**18 50 02.6**	**+0.3**
	baz=334						
TWG				*e*S	**Sb**	**18 50 13.0**	**+0.5**
	baz=334						
SCZT	**Fangliau**	**0.84**	**285**	*e*P	**Pg**	**18 50 02.9**	**-0.6**
	baz=287						
CHKT	**Chengkung**	**0.94**	**353**	*e*P	**Pg**	**18 50 05.4**	**0.0**
	baz=356						
CHKT				*e*S	**Sn**	**18 50 18.6**	**-0.6**
	baz=356						
SSD	**Sandimen**	**0.99**	**306**	*e*P	**Pn**	**18 50 06.6**	**0.0**
	baz=309						
SGLT	**Jiouru**	**1.08**	**301**	*e*P	**Pg**	**18 50 08.3**	**+0.1**
	baz=304						
ELDTW	**Lidau**	**1.11**	**337**	*e*P	**Pb**	**18 50 07.7**	**-0.7**
	baz=340						
TWM1	**Shoushan**	**1.19**	**304**	*e*P	**Pg**	**18 50 12.0**	**+1.8**
	baz=306						
TWF1	**Yuli**	**1.20**	**351**	*e*P	**Pg**	**18 50 10.1**	**-0.3**
	baz=354						
TWF1				*e*S	**Sg**	**18 50 26.3**	**+0.3**
	baz=354						
STYT	**Tauyuan**	**1.21**	**326**	*e*P	**Pg**	**18 50 10.6**	**+0.1**
	baz=328						
SGST	**Jiashian**	**1.24**	**318**	*e*P	**Pg**	**18 50 11.7**	**+0.4**
	baz=320						
EHY	**Hungye**	**1.35**	**353**	*e*P	**Pb**	**18 50 12.3**	**+0.1**
	baz=355						
EHY				*e*S	**Sg**	**18 50 30.4**	**-0.3**
	baz=355						
WTP	**Ta-pu**	**1.35**	**323**	*e*P	**Pg**	**18 50 13.6**	**+0.3**
	baz=325						
CHN1	**Nanshi**	**1.35**	**319**	*e*P	**Pg**	**18 50 14.2**	**+0.8**
	baz=321						
YUS	**Yu-Shan**	**1.41**	**339**	*e*P	**Pb**	**18 50 13.9**	**+0.2**
	baz=342						
TWK	**Hsinying**	**1.44**	**320**	*e*P	**Pg**	**18 50 15.4**	**+0.4**
	baz=322						
CHN4	**Tsaushan**	**1.45**	**325**	*e*P	**Pg**	**18 50 14.9**	**-0.2**
	baz=327						
ALS	**Alishan**	**1.48**	**335**	*e*P	**Pg**	**18 50 15.8**	**-0.1**
	baz=337						
CHN5	**Tsauling**	**1.61**	**332**	*e*P	**Pg**	**18 50 17.9**	**-0.4**
	baz=334						
CHN5				*e*S	**Sg**	**18 50 39.0**	**-0.3**
	baz=334						
ESL	**Shilin**	**1.65**	**358**	*e*P	**Pb**	**18 50 16.8**	**-0.5**
SMLT	**Sun Moon Lake**	**1.80**	**342**	*e*P	**Pg**	**18 50 21.3**	**-0.5**
	baz=344						
SMLT				*e*S	**Sb**	**18 50 43.1**	**+0.6**
	baz=344						
TYC	**Yuchr**	**1.83**	**341**	*e*P	**Pb**	**18 50 20.8**	**+0.3**
	baz=343						
TYC				*e*S	**Sb**	**18 50 42.5**	**-0.7**
	baz=343						
WHF	**Hehuan Shan**	**1.98**	**354**	*e*P	**Pb**	**18 50 23.3**	**-0.1**
	baz=355						
ENA	**Nanau**	**2.27**	**6**	*e*P	**Pn**	**18 50 25.6**	**+1.4**
	baz=7.0						
NNS	**Nan Shan**	**2.27**	**357**	*e*P	**Pb**	**18 50 28.0**	**-0.1**
	baz=358						
TWQ1	**Liyutan**	**2.27**	**343**	*e*P	**Pb**	**18 50 27.9**	**-0.1**
	baz=344						
ENTT	**Nioudou**	**2.47**	**2**	*e*P	**Pn**	**18 50 29.1**	**+2.0**
	baz=3.0						
NSK	**Sanguang**	**2.50**	**357**	*e*P	**Pb**	**18 50 30.6**	**-1.5**
	baz=358						
TWE	**Neicheng**	**2.55**	**4**	*e*P	**Pb**	**18 50 32.3**	**-0.5**
	baz=5.0						
IRIF	**Iriomote-Funau**	**2.98**	**43**	P	**Pn**	**18 50 34.9**	**+0.8**
IRIF				S	**Sn**	**18 51 09.4**	**-0.2**
JKRS	**Kuro-shima**	**3.10**	**48**	P	**Pn**	**18 50 36.5**	**+0.8**
JKRS				S	**Sn**	**18 51 11.1**	**-1.4**
JIJ	**Ishigaki jima**	**3.28**	**48**	P	**Pn**	**18 50 39.2**	**+1.1**
JIJ				S	**Sn**	**18 51 15.0**	**-1.9**
JISG	**Ishigakijimahi**	**3.54**	**46**	P	**Pn**	**18 50 41.9**	**+0.2**
JISG				*e*S	**Sn**	**18 51 21.8**	**-1.5**
JTJ	**Tarama**	**3.84**	**49**	P	**Pn**	**18 50 47.6**	**+1.7**
JTJ				*e*S	**Sn**	**18 51 30.5**	**-0.3**

*NIED **08** 18:53:00, 36˚90N×140˚50E, h5km, Mw4.0 Best double couple: M0 9.81000×10^14 NP1:φs196.00000°, δ25.00000°, λ-114.00000°. NP2:φs42.00000°, δ67.00000°, λ-79.00000°.*
*IDC **08** 18:53:31.2±0.7, 37˚00N×140˚45E, h0km, mb3.9/21, mb1 4.0/23, mb1mx3.9/61, mbtmp3.9/23, ML3.1/2, Error ellipse: s-maj=16.6km s-min=14.6km az=122.0*
*ISCJB **08** 18:53:32.3±0.4, 36˚94N±0˚02×140˚60E±0˚04, h24km±2km, mb4.1/30, Error ellipse: s-maj=5.1km s-min=3.6km az=22.2*
*JMA **08** 18:53:32.6, 36˚94N×140˚54E, h5km±2km, M3.9 Broadband fault plane solution: P waves. NP1: φs41.00000°, δ68.00000°, λ-81.00000°. NP2:φs198.00000°, δ24.00000°, λ-111.00000°. Principal axes: T Plg22.0000°, Azm124.0000°; N Plg8.0000°, Azm217.0000°; P Plg66.0000°, Azm327.0000°;*
JMA Felt II J1.
*NEIC **08** 18:53:37.0±0.8, 36˚91N×140˚48E, h46km±8km, mb4.3/8 Error ellipse: s-maj=8.1km s-min=7.2km az=74.0*

ISC 08 18:53:32.1±1.0, 36˚96N±0˚03×140˚48E±0˚04, h9km±7km, n74, σ0s91/75, mb4.1/30, 5C-1D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.29**	**61**	⇑P	**Pg**	**18 53 37.9**	**-0.1**
ONAJ				S	**Sg**	**18 53 42.1**	**+0.2**
JHO	**Hitachi**	**0.35**	**168**	⇑P	**Pg**	**18 53 39.0**	**-0.1**
JHO				S	**Sg**	**18 53 43.6**	**-0.1**
JSB	**Shiboa**	**0.45**	**272**	⇑P	**Pb**	**18 53 42.8**	**+0.6**
JSB				S	**Sb**	**18 53 50.0**	**+1.0**
JFK	**Kawauchi**	**0.52**	**38**	⇑P	**Pg**	**18 53 42.2**	**+0.1**
JFK				*e*S	**Sg**	**18 53 49.2**	**+0.3**
JFT	**Otama**	**0.57**	**349**	⇓P	**Pb**	**18 53 44.3**	**0.0**
JFT				S	**Sb**	**18 53 52.1**	**-0.5**
JFY	**Yanaizu**	**0.76**	**306**	⇑P	**Pb**	**18 53 48.1**	**+0.5**
JFY				S	**Sb**	**18 53 58.7**	**+0.6**
JYT	**Yasato**	**0.76**	**198**	P	**Pg**	**18 53 46.8**	**0.0**
JYT				S	**Sg**	**18 53 56.6**	**-0.1**
JMM	**Marumori**	**0.94**	**15**	P	**Pg**	**18 53 50.3**	**+0.1**
JMM				S	**Sb**	**18 54 03.0**	**-0.2**
MJAR	**Matsushiro Arr**	**1.87**	**258**	Pn	**Pb**	**18 54 06.0**	**-0.4**
	72nm,0.3s,baz=81,slow=15,SNR=12.6						
MJAR				Sn	**Sb**	**18 54 31.0**	**+1.0**
	166nm,0.3s,baz=78,slow=30,SNR=34						
MAJO	**Matsushiro**	**1.87**	**258**	*e*Pn	**Pb**	**18 54 06.3**	**-0.2**
MAJO				*e*Sn	**Sn**	**18 54 27.6**	**-0.5**
MAT	**Matsushiro**	**1.87**	**258**	P	**Pb**	**18 54 06.1**	**-0.4**
MAT				S	**Sg**	**18 54 31.7**	**-0.5**
INU	**Inuyama**	**3.23**	**241**	*e*Pn	**Pn**	**18 54 25.8**	**+2.8**
JHJ	**Hachijo jima 2**	**3.87**	**189**	Pn	**Pn**	**18 54 34.2**	**+2.3**
	18nm,0.3s,baz=80,slow=4.7,SNR=6.6						
JHJ				Sn	**Sn**	**18 55 17.9**	**+0.4**
	15nm,0.3s,baz=90,slow=20,SNR=3.3						
JHJ2	**Mitsune**	**3.88**	**188**	*e*Pn	**Pn**	**18 54 33.7**	**+1.8**
ERM	**Erimo**	**5.46**	**21**	*e*Pn	**Pn**	18 54 57.0	+3.4
JNU	**Nakatsue**	**8.75**	**247**	Pn	**Pn**	**18 55 40.0**	**+1.1**
	0.1nm,0.3s,baz=39,slow=6.5,SNR=2.2						
JNU	**Nakatsue**	**8.75**	**247**	*e*Pn	Pn	18 55 43.0	+4.1
USRK	**Ussuriysk Ar.**	**9.69**	**321**	Pn	Pn	18 55 58.6	+6.9
	0.2nm,0.3s,baz=134,slow=12,SNR=11						
CBIJ	**Chichi jima**	**9.94**	**171**	*e*Pn	**Pn**	**18 55 53.3**	**-1.8**
KSRS	**Korea Array**	**10.03**	**277**	Pn	Pn	18 56 02.5	+6.1
	0.1nm,0.3s,baz=97,slow=14,SNR=16						
KSAR	**Wonju Array Be**	**10.06**	**277**	Pn	Pn	18 56 02.5	+5.7
MA2	**Magadan**	**23.59**	**13**	P	**P**	**18 58 41.6**	**-1.3**
	3.3nm,0.5s,baz=205,slow=15,SNR=3.0						
GUMO	**Guam**	**23.60**	**169**	*e*P	**P**	**18 58 42.3**	**-1.1**
SEY	**Seymchan**	**27.02**	**12**	P	**P**	**18 59 16.1**	**+2.0**
	1.7nm,0.8s,baz=207,slow=2.3,SNR=6.0						
SONA1	**Songino Array**	**27.20**	**304**	*e*P	**P**	**18 59 16.0**	**-0.3**
SONA0	**Songino Array**	**27.21**	**304**	*e*P	**P**	**18 59 15.7**	**-0.6**
	2.2nm,0.7s						
SONM	**Songino Array**	**27.21**	**304**	P	**P**	**18 59 15.6**	**-0.6**
	2.2nm,0.6s,baz=104,slow=9.2,SNR=8.6						
H11N2	**WAKE ISLAND Hy**	**28.76**	**119**	T	T	19 29 17.9	
	baz=312,slow=75,SNR=11						
H11N1	**WAKE ISLAND Hy**	**28.77**	**119**	T	T	19 29 18.3	
	baz=312,slow=75,SNR=18						
H11N3	**WAKE ISLAND Hy**	**28.77**	**119**	T	T	19 29 19.7	
	baz=312,slow=75,SNR=3.7						
H11S1	**WAKE ISLAND Hy**	**29.45**	**121**	T	T	19 30 10.0	
	baz=314,slow=76,SNR=33						
H11S3	**WAKE ISLAND Hy**	**29.45**	**122**	T	T	19 30 09.9	
	baz=314,slow=76,SNR=47						
H11S2	**WAKE ISLAND Hy**	**29.47**	**122**	T	T	19 30 06.7	
	baz=314,slow=76,SNR=15						
TIXI	**Tiksi**	**35.28**	**354**	P	**P**	**19 00 26.1**	**-0.7**
	0.8nm,0.3s,baz=145,slow=8.3,SNR=4.4						
ZAA0	**Zalesovo Array**	**41.41**	**312**	*e*P	**P**	**19 01 18.3**	**-0.4**
ZAA1	**Zalesovo Array**	**41.41**	**312**	*e*P	**P**	**19 01 18.9**	**+0.2**
ZALV	**Zalesovo Beam**	**41.41**	**312**	P	**P**	**19 01 18.9**	**+0.2**
	1.9nm,0.6s,baz=102,slow=7.8,SNR=6.0						
MK01	**Makanchi Array**	**43.52**	**302**	*e*P	**P**	**19 01 36.0**	**0.0**
MK31	**Makanchi Array**	**43.52**	**302**	*e*P	**P**	**19 01 36.5**	**+0.6**
MK32	**Makanchi Array**	**43.52**	**302**	*e*P	**P**	**19 01 36.8**	**+0.8**
MKAR	**Makanchi Array**	**43.52**	**302**	P	**P**	**19 01 36.8**	**+0.8**
	0.6nm,0.6s,baz=85,slow=9.2,SNR=8.4						
MKAR	**Makanchi Array**	**43.52**	**302**	*e*P	**P**	**19 01 36.5**	**+0.6**
MAKZ	**Makanchi**	**43.73**	**302**	*e*P	**P**	**19 01 39.0**	**+1.4**
	7.4nm,1.9s						
KURK	**Kurchatov**	**45.39**	**308**	*e*P	**P**	**19 01 50.1**	**-0.7**
	3.5nm,0.8s						
KURBB	**Kurchatov Arra**	**45.46**	**308**	P	**P**	**19 01 51.4**	**+0.1**
	2.1nm,0.5s,baz=83,slow=8.1,SNR=15						
TKM2	**Tokmak 2**	**49.01**	**298**	*e*P	**P**	**19 02 17.4**	**-2.0**
	4.2nm,0.9s						
VOSK	**Vostochnaya**	**49.77**	**312**	*e*P	**P**	**19 02 24.4**	**-0.4**
	2.9nm,0.9s						
AAK	**Ala-Archa**	**49.87**	**298**	P	**P**	**19 02 26.7**	**+0.8**
	0.5nm,0.4s,baz=148,slow=8.4,SNR=4.0						
ILAR	**Eielson Array**	**49.96**	**32**	P	**P**	**19 02 26.0**	**-0.1**
	0.4nm,0.6s,baz=266,slow=5.5,SNR=5.5						
ILB	**Eielson Array**	**49.96**	**32**	*e*P	**P**	**19 02 26.1**	**+0.1**
BVAR	**Borovoye Array**	**50.07**	**312**	P	**P**	**19 02 27.7**	**+0.6**
	0.9nm,0.7s,baz=77,slow=6.5,SNR=5.2						
ZRNK	**Zerenda**	**50.90**	**312**	*e*P	**P**	**19 02 33.5**	**+0.1**
	2.9nm,0.9s						
KKAR	**Karatay Array**	**52.51**	**300**	*e*P	**P**	**19 02 44.6**	**-1.0**
YKU2	**Yakutat**	**54.06**	**38**	*e*P	**P**	**19 02 55.8**	**-0.8**
	2μm,1.0s						
ARU	**Arti**	**55.92**	**318**	*e*P	**P**	**19 03 10.2**	**0.0**
	5.5nm,1.1s						
WR1	**Warramunga Arr**	**56.89**	**187**	*e*P	**P**	**19 03 16.9**	**-0.5**
	18nm,1.5s						
WRA	**Warramunga Arr**	**56.89**	**187**	P	**P**	**19 03 16.9**	**-0.5**
	1.4nm,0.7s,baz=3.1,slow=7.3,SNR=8.2						
ABKAR	**Akbulak array**	**57.41**	**310**	*e*P	**P**	**19 03 20.6**	**-0.3**
AS01	**Alice Springs**	**60.61**	**187**	*e*P	**P**	**19 03 42.9**	**-0.4**
ASAR	**Alice Springs**	**60.62**	**187**	P	**P**	**19 03 43.8**	**+0.4**
	0.7nm,0.6s,baz=15,slow=5.9,SNR=7.8						
GEYT	**Alibeck**	**63.22**	**299**	P	**P**	**19 04 00.6**	**-0.3**
	1.3nm,0.7s,baz=45,slow=6.7,SNR=4.0						
ARCES	**ARCESS Array B**	**63.80**	**339**	P	**P**	**19 04 03.6**	**-0.6**
	0.7nm,0.7s,baz=52,slow=12,SNR=4.1						
YKA	**Yellowknife Ar**	**64.25**	**30**	P	**P**	**19 04 07.5**	**+0.3**
	0.1nm,0.6s,baz=298,slow=6.7,SNR=3.0						
FIA1	**FINESS Array S**	**68.53**	**332**	*e*P	**P**	**19 04 34.3**	**-0.3**
FIA0	**FINESS Array S**	**68.53**	**332**	*e*P	**P**	**19 04 34.7**	**+0.1**
FINES	**FINESS Array B**	**68.53**	**332**	P	**P**	**19 04 34.7**	**+0.1**
	1.7nm,0.8s,baz=77,slow=7.3,SNR=5.9						
KBZ	**Khabaz**	**70.38**	**310**	P	**P**	**19 04 47.0**	**+0.6**
	2.1nm,0.9s,baz=201,slow=8.6,SNR=2.8						
AKASG	**Malin Array Be**	**73.90**	**322**	P	**P**	**19 05 07.5**	**+0.2**
	0.7nm,0.4s,baz=46,slow=6.0,SNR=4.2						
NVAR	**Mina Array Bea**	**75.63**	**53**	P	**P**	**19 05 19.7**	**+1.8**
	0.4nm,0.7s,baz=294,slow=6.7,SNR=2.9						
BR101	**Keskin Array S**	**78.34**	**311**	*e*P	**P**	**19 05 31.4**	**-1.7**
BRTR	**Keskin Array B**	**78.34**	**311**	P	**P**	**19 05 31.3**	**-1.7**
	1.4nm,1.0s,baz=21,slow=8.4,SNR=3.3						
LTX	**Lajitas**	**90.76**	**52**	*e*P	**P**	**19 06 37.2**	**+1.2**
TXAR	**Lajitas Array**	**90.76**	**52**	P	**P**	**19 06 37.2**	**+1.2**
	0.2nm,0.4s,baz=310,slow=4.6,SNR=2.5						
LPAZ	**La Paz**	**147.37**	**59**	PKPbc	**PKPbc**	**19 13 17.2**	**-0.3**
	0.8nm,0.5s,baz=15,slow=7.5,SNR=2.6						

*NIED **08** 18:56:00, 36˚20N×140˚00E, h56km, Mw4.2 Best double couple: M0 2.02000×10^15 NP1:φs277.00000°, δ35.00000°, λ140.00000°. NP2:φs41.00000°, δ68.00000°, λ62.00000°.*
*ISCJB **08** 18:56:55.1±0.4, 36˚15N±0˚03×140˚09E±0˚05, h62km±3km, mb4.1/21, Error ellipse: s-maj=6.2km s-min=4.5km az=11.5*
*NEIC **08** 18:56:56.5±0.6, 36˚12N×140˚07E, h59km±5km, mb4.6/5, Error ellipse: s-maj=7.2km

baz=314,slow=76,SNR=9.2
H11S2 WAKE ISLAND Hy 29.36 120 T T 19 33 46.4
baz=314,slow=76,SNR=2.9
ZAA0 Zalesovo Array 41.70 313 *e*P **P** **19 04 38.4 -1.1**
ZAA1 Zalesovo Array 41.70 313 *e*P **P** **19 04 39.0 -0.6**
ZAA1 *e*PcP **PcP** **19 06 34.0 -1.2**
ZALV Zalesovo Beam 41.70 313 P **P** **19 04 39.0 -0.5**
2.7nm,0.7s,baz=94,slow=6.3,SNR=9.8
ZALV PcP **PcP** **19 06 34.0 -1.1**
2.3nm,0.6s,baz=108,slow=2.9,SNR=6.8
MK32 Makanchi Array 43.66 303 *e*P **P** **19 04 55.3 -0.3**
MK32 *e*PcP **PcP** **19 06 41.7 -0.3**
MKAR Makanchi Array 43.66 303 P **P** **19 04 55.3 -0.3**
1.9nm,0.7s,baz=92,slow=10.0,SNR=19
MKAR pP **pP** **19 05 09.8 -0.1**
0.8nm,0.8s,baz=88,slow=8.6,SNR=4.3
MKAR PcP **PcP** **19 06 41.7 -0.3**
0.4nm,0.7s,baz=69,slow=5.0,SNR=3.6
KURK Kurchatov 45.62 309 *e*P **P** **19 05 10.9 -0.1**
KURK *e*PcP **PcP** **19 06 48.0 -0.6**
KURBB Kurchatov Arra 45.68 309 P **P** **19 05 10.9 -0.6**
5.6nm,0.7s,baz=84,slow=7.9,SNR=37
KURBB PcP **PcP** **19 06 48.0 -0.8**
0.7nm,0.6s,baz=86,slow=3.8,SNR=6.0
TKM2 Tokmak 2 49.09 299 *e*P **P** **19 05 38.3 -0.1**
MTN Manton Dam 49.46 191 *e*P **P** **19 05 40.2 -1.0**
AAK Ala-Archa 49.95 299 *e*P **P** **19 05 44.0 -0.9**
VOSK Vostochnaya 50.05 312 *e*P **P** **19 05 44.3 -1.1**
BVAR Borovoye Array 50.35 313 P **P** **19 05 47.8 +0.1**
0.8nm,0.5s,baz=77,slow=6.7,SNR=5.9
BVAR PcP **PcP** **19 07 05.2 -0.3**
0.6nm,0.5s,baz=72,slow=4.8,SNR=3.8
BRVK Borovoye 50.41 313 *e*P **P** **19 05 47.9 -0.1**
IL1 Eielson Array 50.81 32 *e*P **P** **19 05 49.8 -1.1**
ILAR Eielson Array 50.81 32 P **P** **19 05 51.2 +0.3**
1.2nm,0.8s,baz=271,slow=6.3,SNR=9.6
ILB Eielson Array 50.81 32 *e*P **P** **19 05 50.9 0.0**
ZRNK Zerenda 51.19 313 *e*P **P** **19 05 53.9 0.0**
KKAR Karatay Array 52.62 300 *e*P **P** **19 06 03.8 -0.9**
INK Inuvik 55.66 27 P **P** **19 06 27.0 +0.7**
0.9nm,0.6s,baz=263,slow=4.2,SNR=5.6
INK pP **pP** **19 06 40.8 -0.3**
0.7nm,0.5s,baz=287,slow=9.4,SNR=2.8
INK Inuvik 55.66 27 *e*P **P** **19 06 26.6 +0.3**
8.9nm,1.5s
FITZ Fitzroy Crossi 55.66 197 P **P** **19 06 27.4 +0.5**
1.8nm,0.5s,baz=8.2,slow=7.3,SNR=5.6
FITZ Fitzroy Crossi 55.66 197 *e*P **P** **19 06 27.0 0.0**
29nm,1.9s
WB2 Warramunga Arr 56.06 186 *e*P **P** **19 06 29.3 -0.5**
WR1 Warramunga Arr 56.06 186 *e*P **P** **19 06 29.4 -0.4**
42nm,1.9s
WRA Warramunga Arr 56.06 186 P **P** **19 06 29.4 -0.4**
1.6nm,0.5s,baz=1.1,slow=7.4,SNR=30
ARU Arti 56.29 319 *e*P **P** **19 06 30.9 -0.1**
ABKAR Akbulak array 57.67 310 *e*P **P** **19 06 39.8 -1.1**
AS31 Alice Springs 59.78 187 *e*P **P** **19 06 56.1 +0.2**
2.4nm,1.4s
ASAR Alice Springs 59.78 187 P **P** **19 06 56.5 +0.6**
0.6nm,0.6s,baz=16,slow=12,SNR=9.6
YKA Yellowknife Ar 65.11 30 P **P** **19 07 30.6 -0.3**
0.6nm,0.8s,baz=303,slow=6.7,SNR=8.8
FIA0 FINESS Array S 69.07 332 *e*P **P** **19 07 55.4 -0.6**
FINES FINESS Array B 69.07 332 P **P** **19 07 55.4 -0.6**
1.4nm,0.8s,baz=48,slow=5.7,SNR=4.0
NB2 NORSAR Subarra 74.56 337 P **P** **19 08 27.6 -1.5**
comp=Z,2.6nm,0.8s,baz=41,slow=5.9
NB200 NORSAR Array S 74.56 337 *e*P **P** **19 08 28.0 -1.1**
NOA NORSAR Array B 74.56 337 P **P** **19 08 28.0 -1.1**
comp=Z,1.6nm,0.8s,baz=40,slow=5.8,SNR=4.1
NV01 Mina Array Sit 76.39 52 *e*P **P** **19 08 40.9 +0.7**
NVAR Mina Array Bea 76.39 52 P **P** **19 08 40.1 -0.1**
comp=Z,0.8nm,0.7s,baz=263,slow=4.5,SNR=6.5
NVAR pP **pP** **19 08 55.5 0.0**
comp=Z,0.5nm,0.6s,baz=294,slow=4.9,SNR=3.2
TXAR Lajitas Array 91.52 52 P **P** **19 09 58.0 +0.6**
comp=Z,0.4nm,0.5s,baz=333,slow=5.5,SNR=3.5
TXAR pP **pP** **19 10 13.4 +0.3**
comp=Z,0.2nm,0.5s,baz=316,slow=2.5,SNR=2.6

IDC ***08*** *18:59:29.5±1.2, 37.68N×144.40E, h0km, mb3.6/5, mb1 3.8/9, mb1mx3.5/74, mbtmp3.6/9, ML3.6/3, Error ellipse: s-maj=28.5km s-min=22.7km az=82.0*
ISCJB ***08*** *18:59:33.0±0.7, 37.70N±0.04×144.13E±0.06, h33km, mb3.6/5, Error ellipse: s-maj=7.2km s-min=6.1km az=9.9*
JMA ***08*** *18:59:34.5±0.2, 37.87N×143.92E, h14km, M3.7*
ISC 08 18:59:34.5±1.1, 37.70N±0.06×144.19E±0.08, h35km, n22, σ1§92/30, mb3.6/5, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**2.37**	**289**	P	**Pn**	**19 00 10.4**	**-0.4**
JIO				S	**Sn**	**19 00 36.6**	**-2.0**
JOM	**Ohasama**	**2.88**	**309**	P	**Pn**	**19 00 17.9**	**0.0**
JOM				*e*S	**Sn**	**19 00 49.6**	**-1.7**
JFT	**Otama**	**3.07**	**268**	P	**Pn**	**19 00 21.1**	**+0.6**
JFT				S	**Sn**	**19 00 54.7**	**-1.2**
JYK	**Kaneyama**	**3.25**	**293**	P	**Pn**	**19 00 23.3**	**+0.3**
JYK				S	**Sn**	**19 00 59.3**	**-1.1**
JANG	**Nango**	**3.39**	**323**	*e*S	**Sn**	**19 01 01.2**	**-2.6**
JRY	**Ryogami san**	**4.56**	**250**	P	**Pn**	**19 00 40.1**	**-1.0**
JRY				S	**Sn**	**19 01 28.6**	**-4.3**
JOD2	**Odawara 2**	**4.78**	**241**	P	**Pn**	**19 00 42.8**	**-1.2**
JKB	**Kayabe**	**4.84**	**331**	P	**Pn**	**19 00 45.9**	**+1.1**
JKB				S	**Sn**	**19 01 36.2**	**-3.3**
MJAR	**Matsushiro Arr**	**4.92**	**258**	Pn	**Pn**	**19 00 46.5**	**+0.6**
	3.3nm,0.3s,baz=335,slow=20,SNR=13						
MAT	**Matsushiro**	**4.92**	**258**	P	**Pn**	**19 00 47.1**	**+1.1**
MAT				S	**Sn**	**19 01 41.6**	**0.0**
JCH	**Churui**	**4.95**	**353**	P	**Pn**	**19 00 47.7**	**+1.4**
JCH				*e*S	**Sn**	**19 01 39.0**	**-3.3**
JHJ	**Hachijo jima 2**	**5.82**	**220**	Pn	**Pn**	**19 00 57.1**	**-1.2**
	8.0nm,0.3s,baz=53,slow=20,SNR=5.9						
JHJ				Sn	Sn	19 01 55.8	-8.0
	7.7nm,0.3s,baz=158,slow=19,SNR=3.6						
JTKR	**Abashiri--Toko**	**6.27**	**358**	S	**Sn**	**19 02 10.6**	**-4.1**
JHR	**Hokuryu**	**6.32**	**344**	P	**Pn**	**19 01 06.3**	**+1.2**
JHR				*e*S	**Sn**	**19 02 17.2**	**+1.2**
JCJ	**Chichijima**	**10.71**	**190**	Pn	Pn	19 02 00.3	-5.0
	1.6nm,0.3s,baz=344,slow=20,SNR=2.4						
JCJ				Sn	Sn	19 03 50.0	-14
	3.6nm,0.3s,baz=216,slow=19,SNR=2.3						
USRK	**Ussuriysk Ar.**	**11.28**	**309**	Pn	**Pn**	**19 02 15.0**	**+1.9**
	0.2nm,0.3s,baz=105,slow=14,SNR=3.2						
KSRS	**Korea Array**	**12.91**	**274**	Pn	**Pn**	**19 02 37.9**	**+2.5**
	0.1nm,0.3s,baz=95,slow=16,SNR=3.5						
MKAR	**Makanchi Array**	**45.64**	**302**	P	**P**	**19 07 51.5**	**+0.1**
	0.2nm,0.6s,baz=90,slow=12,SNR=3.4						
KURBB	**Kurchatov Arra**	**47.34**	**308**	P	**P**	**19 08 06.5**	**+1.8**
	0.3nm,0.5s,baz=83,slow=8.4,SNR=4.8						
ILAR	**Eielson Array**	**47.74**	**33**	P	**P**	**19 08 07.0**	**-0.6**
	0.4nm,0.6s,baz=264,slow=6.2,SNR=4.1						
WRA	**Warramunga Arr**	**58.08**	**191**	P	**P**	**19 09 24.4**	**+0.1**
	1.7nm,0.8s,baz=9.3,slow=7.2,SNR=7.0						
ASAR	**Alice Springs**	**61.80**	**191**	P	**P**	**19 09 50.8**	**+1.0**
	0.6nm,0.8s,baz=14,slow=12,SNR=4.5						

JMA 08 19:04:45.7, 36.88N×140.65E, h5km±1km, M2.5, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.25**	**28**	P	Pg	19 04 50.7	+0.1
ONAJ				S	Sg	19 04 54.7	+0.7
JHO	**Hitachi**	**0.28**	**194**	P	Pg	19 04 51.0	-0.1
JFK	**Kawauchi**	**0.52**	**20**	P	Pg	19 04 55.6	-0.1
JFK				S	Sg	19 05 02.7	+0.3
MAT	**Matsushiro**	**1.99**	**261**	P	Pn	19 05 20.9	+0.8
MAT				S	Sb	19 05 47.3	-0.2

NIED ***08*** *19:06:00, 37.30N×141.70E, h11km, Mw3.8 Best double couple: M0 6.51000×10^14 NP1:φs60.00000°, δ44.00000°, λ-78.00000°. NP2:φs223.00000°, δ47.00000°, λ-101.00000°.*
IDC ***08*** *19:06:54.8±0.7, 37.23N×141.59E, h0km, mb3.8/17, mb1 4.0/19, mb1mx3.8/64, mbtmp3.8/19, ML3.6/2, Error ellipse: s-maj=18.2km s-min=15.0km az=126.0*
ISCJB ***08*** *19:06:55.8±0.9, 37.23N±0.03×141.70E±0.05, h20km±6km, mb3.9/20, Error ellipse: s-maj=7.2km s-min=4.8km az=16.9*

JMA ***08*** *19:06:56.9±0.1, 37.26N×141.65E, h27km±1km, M4.2*
JMA Felt I J1.
NEIC ***08*** *19:06:59.2±2.0, 37.22N×141.63E, h30km±14km, mb4.7/4, Error ellipse: s-maj=6.8km s-min=6.0km az=113.0*
ISC 08 19:06:55.3±1.7, 37.25N±0.04×141.65E±0.06, h5km±10km, n65, σ1§02/67, mb3.9/20, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JFK	**Kawauchi**	**0.63**	**281**	P	**Pb**	**19 07 09.1**	**+0.2**
JFK				*e*S	**Sb**	**19 07 17.9**	**-0.2**
ONAJ	**Iwakimizuishiy**	**0.70**	**258**	P	**Pb**	**19 07 10.2**	**+0.1**
ONAJ				S	**Sb**	**19 07 19.6**	**-0.4**
JMM	**Marumori**	**0.92**	**312**	P	**Pg**	**19 07 13.3**	**+0.3**
JMM				*e*S	**Sg**	**19 07 25.0**	**+0.1**
JHO	**Hitachi**	**1.08**	**234**	P	**Pg**	**19 07 15.8**	**-0.2**
JHO				*e*S	**Sg**	**19 07 29.3**	**-0.7**
JFT	**Otama**	**1.08**	**285**	P	**Pb**	**19 07 16.7**	**+0.1**
JFT				*e*S	**Sg**	**19 07 30.4**	**+0.3**
JIO	**Ouri**	**1.23**	**349**	P	**Pn**	**19 07 17.8**	**-1.4**
JIO				S	**Sb**	**19 07 32.7**	**-2.5**
JOU	**Okura**	**1.36**	**325**	P	**Pn**	**19 07 20.9**	**-0.2**
JOU				*e*S	**Sb**	**19 07 38.4**	**-0.7**
JFY	**Yanaizu**	**1.56**	**276**	P	**Pn**	**19 07 23.8**	**0.0**
MJAR	**Matsushiro Arr**	**2.85**	**257**	Pn	**Pn**	**19 07 42.3**	**+0.7**
	3.6nm,0.3s,baz=333,slow=14,SNR=20						
MJAR				Sn	**Sn**	**19 08 15.5**	**-0.7**
	11nm,0.3s,baz=72,slow=16,SNR=6.4						
MAJO	**Matsushiro**	**2.85**	**257**	*e*Pn	**Pn**	**19 07 43.3**	**+1.7**
MAT	**Matsushiro**	**2.85**	**257**	P	**Pn**	**19 07 43.1**	**+1.5**
MAT				S	**Sb**	**19 08 18.7**	**-3.3**
INU	**Inuyama**	**4.20**	**245**	*e*Pn	**Pn**	**19 08 02.0**	**+2.0**
JHJ2	**Mitsune**	**4.39**	**201**	*e*Pn	**Pn**	**19 08 03.9**	**+1.1**
JHJ	**Hachijo jima 2**	**4.40**	**201**	Pn	**Pn**	**19 08 03.2**	**+0.5**
	26nm,0.3s,baz=143,slow=24,SNR=19						
JHJ				Sn	**Sn**	**19 08 51.7**	**-2.7**
	42nm,0.3s,baz=246,slow=22,SNR=10						
ERM	**Erimo**	**4.90**	**13**	*e*Pn	**Pn**	**19 08 09.9**	**+0.2**
USRK	**Ussuriysk Ar.**	**10.09**	**316**	Pn	Pn	19 09 24.8	+3.8
	0.2nm,0.3s,baz=132,slow=14,SNR=6.1						
CBIJ	**Chichi jima**	**10.13**	**177**	*e*Pn	**Pn**	**19 09 20.3**	**-1.3**
CBIJ				Sn	Sn	19 11 03.9	-12
JCJ	**Chichijima**	**10.13**	**177**	Pn	Pn	19 09 18.4	-3.2
	3.7nm,0.3s,baz=285,slow=19,SNR=3.2						
JCJ				Sn	Sn	19 11 03.9	-12
	3.3nm,0.3s,baz=267,slow=18,SNR=2.2						
SEY	**Seymchan**	**26.54**	**11**	P	**P**	**19 12 35.1**	**+1.3**
	0.5nm,0.5s,baz=169,slow=16,SNR=3.1						
ENH	**Enshi**	**27.54**	**265**	*e*P	**P**	**19 12 42.8**	**-0.4**
SONA1	**Songino Array**	**27.82**	**304**	*e*P	**P**	**19 12 45.9**	**+0.2**
SONA0	**Songino Array**	**27.82**	**304**	*e*P	**P**	**19 12 46.4**	**+0.8**
SONM	**Songino Array**	**27.82**	**304**	P	**P**	**19 12 46.4**	**+0.8**
	0.6nm,0.7s,baz=119,slow=8.4,SNR=3.3						
H11N2	**WAKE ISLAND Hy**	**28.09**	**121**	T	T	19 42 13.8	
	baz=314,slow=75,SNR=212						
H11N1	**WAKE ISLAND Hy**	**28.10**	**121**	T	T	19 42 12.7	
	baz=314,slow=75,SNR=146						
H11N3	**WAKE ISLAND Hy**	**28.11**	**121**	T	T	19 42 13.6	
	baz=314,slow=75,SNR=135						
H11S1	**WAKE ISLAND Hy**	**28.82**	**124**	T	T	19 43 06.2	
	baz=316,slow=76,SNR=61						
H11S3	**WAKE ISLAND Hy**	**28.82**	**124**	T	T	19 43 03.7	
	baz=316,slow=76,SNR=53						
H11S2	**WAKE ISLAND Hy**	**28.83**	**124**	T	T	19 43 01.7	
	baz=316,slow=76,SNR=55						
TLY	**Talaya**	**30.33**	**311**	*e*P	**P**	**19 13 09.3**	**+1.5**
BILL	**Bilibino**	**33.77**	**16**	*e*P	**P**	**19 13 39.7**	**+2.0**
TIXI	**Tiksi**	**35.10**	**353**	P	**P**	**19 13 48.8**	**-0.4**
	0.5nm,0.2s,baz=121,slow=11,SNR=3.0						
ZAA0	**Zalesovo Array**	**41.91**	**312**	*e*P	**P**	**19 14 46.2**	**-0.4**
ZAA1	**Zalesovo Array**	**41.91**	**312**	*e*P	**P**	**19 14 46.8**	**+0.2**
ZALV	**Zalesovo Beam**	**41.91**	**312**	P	**P**	**19 14 46.8**	**+0.2**
	0.4nm,0.3s,baz=72,slow=4.8,SNR=4.1						
MK01	**Makanchi Array**	**44.16**	**302**	*e*P	**P**	**19 15 04.7**	**-0.3**
MK31	**Makanchi Array**	**44.17**	**302**	*e*P	**P**	**19 15 04.6**	**-0.4**
MK32	**Makanchi Array**	**44.17**	**302**	*e*P	**P**	**19 15 04.8**	**-0.2**
MKAR	**Makanchi Array**	**44.17**	**302**	P	**P**	**19 15 04.8**	**-0.2**
	1.0nm,0.7s,baz=88,slow=9.5,SNR=16						
MKAR	**Makanchi Array**	**44.17**	**302**	*e*P	**P**	**19 15 04.7**	**-0.3**
MAKZ	**Makanchi**	**44.38**	**302**	*e*P	**P**	**19 15 06.3**	**-0.4**
	3.3nm,0.9s						
KURK	**Kurchatov**	**45.95**	**308**	*e*P	**P**	**19 15 18.8**	**-0.3**
	5.8nm,0.7s						
KURBB	**Kurchatov Arra**	**46.02**	**308**	P	**P**	**19 15 19.4**	**-0.2**
	1.5nm,0.6s,baz=82,slow=7.8,SNR=23						
ILAR	**Eielson Array**	**49.21**	**32**	P	**P**	**19 15 44.6**	**+0.3**
	1.3nm,0.7s,baz=270,slow=6.0,SNR=16						
ILB	**Eielson Array**	**49.21**	**32**	*e*P	**P**	**19 15 44.0**	**-0.2**
IL1	**Eielson Array**	**49.21**	**32**	*e*P	**P**	**19 15 44.3**	**+0.1**
VOSK	**Vostochnaya**	**50.28**	**312**	*e*P	**P**	**19 15 51.7**	**-0.8**
BVAR	**Borovoye Array**	**50.57**	**312**	P	**P**	**19 15 54.3**	**-0.4**
	0.4nm,0.5s,baz=99,slow=8.9,SNR=4.1						
INK	**Inuvik**	**54.11**	**27**	P	**P**	**19 16 22.5**	**+1.7**
	0.9nm,0.9s,baz=284,slow=8.7,SNR=4.4						
INK	**Inuvik**	**54.11**	**27**	*e*P	**P**	**19 16 22.5**	**+1.7**
	20nm,1.9s						
WR1	**Warramunga Arr**	**57.30**	**188**	*e*P	**P**	**19 16 43.6**	**-0.6**
	36nm,1.8s						
WRA	**Warramunga Arr**	**57.30**	**188**	P	**P**	**19 16 43.6**	**-0.6**
	1.0nm,0.6s,baz=6.2,slow=7.4,SNR=14						
ABKAR	**Akbulak array**	**57.95**	**310**	*e*P	**P**	**19 16 48.0**	**-0.6**
XMIS	**Christmas Isla**	**58.27**	**223**	*e*P	**P**	**19 16 51.2**	**+0.1**
ASAR	**Alice Springs**	**61.03**	**188**	P	**P**	**19 17 10.0**	**0.0**
	0.7nm,0.7s,baz=18,slow=6.8,SNR=7.2						
YKA	**Yellowknife Ar**	**63.52**	**30**	P	**P**	**19 17 26.6**	**+0.3**
	0.3nm,0.6s,baz=303,slow=6.6,SNR=6.8						
FIA0	**FINESS Array S**	**68.71**	**332**	*e*P	**P**	**19 17 59.2**	**-0.5**
FINES	**FINESS Array B**	**68.71**	**332**	P	**P**	**19 17 59.2**	**-0.5**
	1.3nm,1.0s,baz=74,slow=10,SNR=3.3						
NB200	**NORSAR Array S**	**74.06**	**337**	*e*P	**P**	**19 18 31.1**	**-1.0**
NOA	**NORSAR Array B**	**74.06**	**337**	P	**P**	**19 18 31.1**	**-1.0**
	0.6nm,0.8s,baz=38,slow=5.8,SNR=2.6						
NV01	**Mina Array Sit**	**74.71**	**53**	*e*P	**P**	**19 18 37.2**	**+0.8**
NVAR	**Mina Array Bea**	**74.71**	**53**	P	**P**	**19 18 38.0**	**+1.6**
	0.9nm,0.8s,baz=288,slow=5.4,SNR=5.0						
PDAR	**Pinedale Array**	**77.38**	**46**	P	**P**	**19 18 51.6**	**0.0**
	0.5nm,0.7s,baz=302,slow=5.2,SNR=4.2						
LTX	**Lajitas**	**89.84**	**53**	*e*P	**P**	**19 19 56.0**	**+0.3**
TXAR	**Lajitas Array**	**89.84**	**53**	P	**P**	**19 19 56.0**	**+0.3**
	0.4nm,0.6s,baz=321,slow=8.5,SNR=3.5						

IDC 08 19:07:49.6±2.0, 5.85N×126.45E, h0km, mb3.3/4, mb1 3.5/4, mb1mx3.3/56, mbtmp3.3/4, Error ellipse: s-maj=174.0km s-min=24.1km az=66.0, Mindanao

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
WRA	**Warramunga Arr**	**26.78**	**163**	P	P	19 13 31.9	+0.4
	0.4nm,0.9s,baz=343,slow=10,SNR=4.5						
ASAR	**Alice Springs**	**30.23**	**166**	P	P	19 14 01.8	-0.5
	0.2nm,0.7s,baz=348,slow=7.6,SNR=1.0						
MKAR	**Makanchi Array**	**55.67**	**325**	P	P	19 17 27.7	0.0
	0.2nm,0.4s,baz=112,slow=7.3,SNR=4.2						
KURBB	**Kurchatov Arra**	**59.82**	**327**	P	P	19 17 56.7	-0.1
	0.3nm,0.6s,baz=124,slow=7.4,SNR=4.5						

NIED ***08*** *19:13:00, 38.50N×143.80E, h5km, Mw4.2 Best double couple: M0 2.62000×10^15 NP1:φs43.00000°, δ34.00000°, λ-63.00000°. NP2:φs191.00000°, δ61.00000°, λ-107.00000°.*
BJI ***08*** *19:13:25.6, 38.79N×144.09E, h9km, mb4.5/23, mB4.9/17, Ms4.2/3, Ms7 4.0/1*
IDC ***08*** *19:13:25.2±0.5, 38.37N×143.96E, h0km, mb4.3/30, mb1 4.3/37, mb1mx4.3/57, mbtmp4.2/37, ML3.4/7, MS3.5/12, Ms1 3.5/12, ms1mx3.2/45, Error ellipse: s-maj=13.7km s-min=11.3km az=143.0*
ISCJB ***08*** *19:13:26.6±1.1, 38.43N±0.03×143.86E±0.03, h17km±7km, mb4.4/73, MS3.6/9, Error ellipse: s-maj=4.6km s-min=3.4km az=160.8*
JMA ***08*** *19:13:28.6±0.2, 38.48N×143.82E, h34km, M4.5*
MOS ***08*** *19:13:28.5±1.1, 38.47N×143.80E, h31km, mb4.5/37, Error ellipse: s-maj=8.1km s-min=6.0km az=94.3*
NEIC ***08*** *19:13:29.2±1.4, 38.39N×143.87E, h24km±10km, mb4.7/42, Error ellipse: s-maj=5.0km s-min=3.5km az=141.0*
ISC 08 19:13:29.5±2.3, 38.49N±0.04×143.89E±0.05, h26km±15km, n229, σ1§09/239, mb4.5/73, MS3.6/9, 4C-5D, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MIYJ	**Miyakonagasawa**	**1.94**	**305**	P	**Pn**	**19 13 59.8**	**-1.1**
MIYJ				*e*S	**Sn**	**19 14 22.8**	**-1.6**
JIO	**Ouri**	**1.99**	**270**	P	**Pn**	**19 14 00.5**	**-1.1**
JIO				*e*S	**Sn**	**19 14 22.9**	**-2.8**
JTH	**Tanohata**	**2.13**	**313**	P	**Pn**	**19 14 03.0**	**-0.5**
JTH				S	**Sn**	**19 14 28.9**	**-0.3**
JOM	**Ohasama**	**2.25**	**297**	P	**Pn**	**19 14 04.4**	**-0.7**
JOM				*e*S	**Sn**	**19 14 31.4**	**-0.6**
JKZ	**Kuzumaki**	**2.48**	**308**	P	**Pn**	**19 14 07.7**	**-0.7**
JMM	**Marumori**	**2.52**	**257**	P	**Pn**	**19 14 07.6**	**-1.2**
JMM				*e*S	**Sn**	**19 14 36.2**	**-2.4**
JOU	**Okura**	**2.54**	**268**	P	**Pn**	**19 14 08.8**	**-0.3**
JOU				*e*S	**Sn**	**19 14 38.2**	**-0.9**
JANG	**Nango**	**2.63**	**316**	*e*S	**Sn**	**19 14 40.5**	**-0.9**
JFK	**Kawauchi**	**2.63**	**246**	P	**Pn**	**19 14 09.3**	**-1.1**
JFK				S	**Sn**	**19 14 38.4**	**-3.2**
JRG	**Rokugo**	**2.69**	**291**	P	**Pn**	**19 14 11.1**	**-0.1**
JYK	**Kaneyama**	**2.79**	**280**	P	**Pn**	**19 14 12.6**	**0.0**
JYK				*e*S	**Sn**	**19 14 46.5**	**+1.0**
JFT	**Otama**	**2.97**	**252**	P	**Pn**	**19 14 14.9**	**-0.1**
JFT				S	**Sn**	**19 14 49.0**	**-0.8**
JAH	**Hinai**	**3.04**	**305**	P	**Pn**	**19 14 16.1**	**+0.2**
JAH				*e*S	**Sn**	**19 14 52.0**	**+0.5**
JTM	**Tenmabayashi**	**3.16**	**317**	P	**Pn**	**19 14 16.8**	**-0.8**
JTM				*e*S	**Sn**	**19 14 53.5**	**-1.0**
ERM	**Erimo**	**3.56**	**351↓**	*e*P	**Pn**	**19 14 22.8**	**-0.3**
ERM	**Erimo**	**3.56**	**351**	*e*Pn	**Pn**	**19 14 22.1**	**-1.0**
JOT	**Ohata**	**3.62**	**324**	*e*S	**Sn**	**19 15 03.1**	**-2.7**
JNBK	**Urakawa-nobuka**	**3.88**	**347**	P	**Pn**	**19 14 26.7**	**-0.8**
JNBK				*e*S	**Sn**	**19 15 10.7**	**-1.5**
JKB	**Kayabe**	**4.03**	**328**	P	**Pn**	**19 14 29.7**	**+0.1**
JKB				*e*S	**Sn**	**19 15 13.8**	**-2.2**
JCH	**Churui**	**4.14**	**355**	P	**Pn**	**19 14 29.4**	**-1.6**
JCH				*e*S	**Sn**	**19 15 15.1**	**-3.4**
JRY	**Ryogami san**	**4.68**	**240**	P	**Pn**	**19 14 37.8**	**-0.8**
MJAR	**Matsushiro Arr**	**4.92**	**248**	Pn	**Pn**	**19 14 42.4**	**+0.5**
	14nm,0.3s,baz=58,slow=13,SNR=100						
MJAR				LR	LR	19 17 01.8	
	comp=Z,250nm,18.6s,baz=85,slow=44						
MAJO	**Matsushiro**	**4.92**	**248**	*e*P	**Pn**	**19 14 42.3**	**+0.5**
MAJO	**Matsushiro**	**4.92**	**248**	*e*Pn	**Pn**	**19 14 42.2**	**+0.5**
MAT	**Matsushiro**	**4.92**	**248**	P	**Pn**	**19 14 42.2**	**+0.4**
MAT				S	**Sn**	**19 15 38.7**	**+0.8**
YUK	**Yuzh-Kuril'sk**	**5.73**	**14**	*e*P	Pn	19 14 49.9	-3.0
YUK				pmax	pmax		
	comp=Z,446nm,0.3s						
YUK				pmax	pmax		
	comp=E,124nm,0.2s						
YUK				pmax	pmax		
	comp=N,133nm,0.3s						
SHO	**Shikotan**	**5.81**	**22**	*e*P	Pn	19 14 50.0	-4.0
SHO				*e*S	Sn	19 15 52.8	-7.0
SHO				pmax	pmax		
	comp=Z,138nm,0.7s						
SHO				pmax	pmax		
	comp=E,155nm,0.5s						
SHO				pmax	pmax		
	comp=N,73nm,0.3s						
JHJ2	**Mitsune**	**6.31**	**213**	*e*Pn	**Pn**	**19 14 58.1**	**-2.8**
JHJ	**Hachijo jima 2**	**6.31**	**213**	Pn	**Pn**	**19 14 58.1**	**-2.8**
	comp=N,17nm,0.3s,baz=82,slow=21,SNR=8.3						
JHJ				Sn	Sn	19 16 04.4	-7.8
	comp=N,27nm,0.3s,baz=41,slow=20,SNR=4.0						
INU	**Inuyama**	**6.33**	**242**	*e*Pn	**Pn**	**19 14 59.6**	**-1.7**
KUR	**Kuril'sk**	**7.36**	**23**	*e*P	Pn	19 15 11.9	-3.4
KUR				pmax	pmax		
	comp=N,14nm,0.3s						
KUR				pmax	pmax		
	comp=E,17nm,0.3s						
KUR				pmax	pmax		
	comp=Z,39nm,0.3s						
YSS	**Yuzh-Sakhalins**	**8.50**	**355**	*e*P	**Pn**	**19 15 30.6**	**-0.3**
USRK	**Ussuriysk Ar.**	**10.60**	**306**	Pn	**Pn**	**19 16 01.1**	**+1.4**
	comp=Z,0.6nm,0.3s,baz=106,slow=13,SNR=11						
USRK				LR	LR	19 19 57.2	
	comp=Z,237nm,21.0s,baz=133,slow=37						
CBIJ	**Chichi jima**	**11.46**	**188**	*e*Pn	Pn	19 16 06.2	-5.3
CBIJ				Sn	Sn	19 18 02.9	-16
JCJ	**Chichijima**	**11.46**	**188**	Pn	Pn	19 16 04.7	-6.8
	baz=112,slow=19						
JCJ				Sn	Sn	19 18 02.9	-16
	baz=270,slow=19						
JNU	**Nakatsue**	**11.84**	**247**	Pn	**Pn**	**19 16 15.0**	**-1.7**
	comp=Z,0.1nm,0.3s,baz=49,slow=20,SNR=2.5						
JNU				LR	LR	19 21 10.8	
	comp=Z,188nm,19.7s,baz=92,slow=39						
JNU	**Nakatsue

TIXI	Tiksi	34.11	352	eP	P	19 20 11.3	-0.3
ZAA0	Zalesovo Array	42.41	311	eP	P	19 21 21.9	+0.2
ZAA1	Zalesovo Array	42.41	311	eP	P	19 21 22.3	+0.6
ZAA1				ePcP	PcP	19 23 14.7	+0.3
ZALV	Zalesovo Beam	42.41	311	P	P	19 21 22.3	+0.6
	comp=Z,1.2nm,0.4s,baz=90,slow=8.9,SNR=7.8						
ZALV				PcP	PcP	19 23 14.7	+0.3
	comp=Z,3.0nm,0.6s,baz=84,slow=2.7,SNR=6.4						
ZALV				LR	LR	19 38 36.9	
	comp=Z,57nm,18.5s,baz=64,slow=36						
NRIK	Noril'sk	42.79	334	LR	LR	19 40 04.4	
	comp=Z,111nm,19.2s,baz=115,slow=37						
CHTO	Chiang Mai	43.55	256	eP	P	19 21 31.6	+0.2
CHTO	Chiang Mai	43.55	256	eP	P	19 21 31.6	+0.2
CMAR	Chiang Mai Arr	43.76	256	P	P	19 21 32.8	-0.2
	comp=Z,0.9nm,0.8s,baz=48,slow=7.0,SNR=5.1						
CMAR				LR	LR	19 41 35.6	
	comp=Z,21nm,19.4s,baz=70,slow=39						
CM01	Chiang Mai Arr	43.77	256	eP	P	19 21 32.8	-0.3
KDAK	Kodiak Island	44.70	43	ceP	P	19 21 40.2	+0.1
MK32	Makanchi Array	45.02	301	eP	P	19 21 43.5	+0.7
MKAR	Makanchi Array	45.02	301	P	P	19 21 43.5	+0.7
	comp=Z,2.2nm,0.7s,baz=86,slow=9.2,SNR=29						
MKAR				LR	LR	19 41 16.3	
	comp=Z,103nm,19.3s,baz=40,slow=37						
MKAR	Makanchi Array	45.02	301	eP	P	19 21 43.4	+0.5
MKAR	Makanchi Array	45.02	301	eP	P	19 21 43.4	+0.5
MAKZ	Makanchi	45.23	301	eP	P	19 21 44.7	+0.2
MAKZ	Makanchi	45.23	301	eP	P	19 21 44.6	+0.2
MLY	Manley	45.57	33	eP	P	19 21 47.9	+0.9
KURK	Kurchatov	46.59	307	eP	P	19 21 55.5	+0.3
KURK	Kurchatov	46.59	307	eP	P	19 21 55.5	+0.3
MDM	Murphy Dome	46.63	33	eP	P	19 21 56.1	+0.8
	comp=Z,19nm,1.6s						
KURBB	Kurchatov Arra	46.67	307	P	P	19 21 56.0	+0.2
	comp=Z,1.3nm,0.4s,baz=79,slow=8.4,SNR=30						
IL1	Eielson Array	47.21	33	eP	P	19 21 59.8	0.0
ILAR	Eielson Array	47.21	33	P	P	19 21 59.6	-0.2
	comp=Z,1.2nm,0.7s,baz=260,slow=6.1,SNR=18						
ILB	Eielson Array	47.21	33	eP	P	19 21 58.8	-1.0
TAPN	Taplejung	47.80	274	eP	P	19 22 07.8	+2.6
	comp=Z,15nm,1.1s						
ODAN	Odare	48.28	274	eP	P	19 22 11.4	+2.5
	comp=Z,14nm,0.9s						
KAPI	Kappang	48.73	213	P	P	19 22 12.1	+0.1
	comp=Z,7.0nm,0.9s,baz=27,slow=3.7,SNR=4.4						
KAPI	Kappang	48.73	213	eP	P	19 22 11.3	-0.7
	comp=Z,8.3nm,0.9s						
RAMN	Ramite	48.85	274	eP	P	19 22 16.4	+3.1
	comp=Z,18nm,0.7s						
GUN	Gumba	48.96	276	eP	P	19 22 15.7	+1.4
	comp=Z,14nm,0.5s						
KKN	Kakani	49.49	276	eP	P	19 22 19.2	+1.1
	comp=Z,12nm,0.6s						
GKN	Gorkha	49.89	276	eP	P	19 22 21.7	+0.6
	comp=Z,9.8nm,0.6s						
TKM2	Tokmak 2	50.67	298	eP	P	19 22 25.3	-1.6
TKM2				pmax	pmax		
	comp=Z,9.0nm,0.8s						
TKM2	Tokmak 2	50.67	298	eP	P	19 22 25.3	-1.6
	comp=Z,8.9nm,0.8s						
VOSK	Vostochnaya	50.78	311	eP	P	19 22 27.5	+0.2
VOSK				pmax	pmax		
	comp=Z,5.0nm,1.1s						
VOSK	Vostochnaya	50.78	311	eP	P	19 22 27.5	+0.2
	comp=Z,4.9nm,1.1s						
BVAR	Borovoye Array	51.05	312	P	P	19 22 29.0	-0.3
	comp=Z,0.9nm,0.6s,baz=78,slow=9.2,SNR=8.0						
BVAR				PcP	PcP	19 23 45.4	+0.4
	comp=Z,1.8nm,0.7s,baz=64,slow=3.4,SNR=5.5						
PYUN	Piuthan	51.13	277	eP	P	19 22 31.7	+1.2
AAK	Ala-Archa	51.53	298	⇓ iP	P	19 22 33.8	+0.5
AAK				pmax	pmax		
	comp=Z,9.0nm,1.6s						
AAK	Ala-Archa	51.53	298	eP	P	19 22 33.5	+0.2
ZRNK	Zerenda	51.88	312	eP	P	19 22 35.6	+0.1
ZRNK				pmax	pmax		
	comp=Z,18nm,1.8s						
ZRNK	Zerenda	51.88	312	eP	P	19 22 35.6	+0.1
	comp=Z,18nm,1.8s						
EKS2	Erkin-Say	52.02	298	eP	P	19 22 37.4	+0.5
EKS2				pmax	pmax		
	comp=Z,3.0nm,0.9s						
EKS2	Erkin-Say	52.02	298	eP	P	19 22 37.4	+0.5
	comp=Z,2.7nm,0.9s						
INK	Inuvik	52.19	28	eP	P	19 22 38.4	+0.8
INK	Inuvik	52.19	28	eP	P	19 22 38.4	+0.8
MTN	Manton Dam	52.44	196	eP	P	19 22 39.0	-1.0
ARU	Arti	56.57	318	P	P	19 23 10.0	+0.3
	comp=Z,5.0nm,0.8s,baz=106,slow=4.9,SNR=8.6						
ARU	Arti	56.57	318	d iP	P	19 23 08.2	-1.4
ARU						19 25 10.8	
ARU				S	S	19 30 58.1	-1.5
ARU				SS	SS	19 34 43.7	-2.9
ARU				pmax	pmax		
	comp=Z,9.0nm,1.2s						
ARU	Arti	56.57	318	eP	P	19 23 09.5	-0.1
	comp=Z,6.8nm,0.9s						
ABKAR	Akbulak array	58.50	310	eP	P	19 23 23.8	+0.5
KBL	Kabul	58.72	291	eP	P	19 23 25.3	-0.1
KBL	Kabul	58.72	291	eP	P	19 23 25.3	-0.1
WRAB	Tennant Creek	58.80	191	⇓ iP	P	19 23 24.0	-1.7
WRAB				pmax	pmax		
	comp=Z,42nm,2.5s						
WRAB	Tennant Creek	58.80	191	eP	P	19 23 21.2	-4.5
	comp=Z,20nm,0.8s						
WB2	Warramunga Arr	58.81	190	eP	P	19 23 24.1	-1.6
	comp=Z,10nm,1.0s						
WR1	Warramunga Arr	58.81	191	eP	P	19 23 24.2	-1.6
	comp=Z,9.4nm,0.9s						
WRA	Warramunga Arr	58.81	191	P	P	19 23 24.2	-1.6
	comp=Z,4.1nm,0.8s,baz=8.3,slow=6.9,SNR=24						
WRA	Warramunga Arr	58.81	191	P	P	19 23 24.2	-1.6
WRA				pmax	pmax		
	comp=Z,5.0nm,0.8s						
FITZ	Fitzroy Crossi	58.84	200	eP	P	19 23 25.5	-0.4
AKTO	Aktyubinsk	59.16	312	P	P	19 23 27.8	-0.1
	comp=Z,1.9nm,0.8s,baz=78,slow=13,SNR=5.4						
RES	Resolute Bay	60.69	15	eP	P	19 23 37.9	-0.1
RES				pmax	pmax		
	comp=Z,6.0nm,1.0s						
RES	Resolute Bay	60.69	15	eP	P	19 23 37.9	-0.1
	comp=Z,5.6nm,1.0s						
YKW3	Yellowknife Ar	61.52	31	eP	P	19 23 43.5	-0.3
YKA	Yellowknife Ar	61.55	31	P	P	19 23 44.0	0.0
	comp=Z,0.8nm,0.7s,baz=301,slow=6.5,SNR=15						
YKA				PcP	PcP	19 24 24.8	-0.8
	comp=Z,0.6nm,0.7s,baz=299,slow=3.8,SNR=7.4						
AS01	Alice Springs	62.53	190	eP	P	19 23 49.4	-1.6
AS31	Alice Springs	62.53	190	eP	P	19 23 49.5	-1.6
	comp=Z,1.8nm,1.2s						
ASAR	Alice Springs	62.54	190	P	P	19 23 49.8	-1.3
	comp=Z,1.2nm,0.8s,baz=2.8,slow=6.2,SNR=14						
ARCES	ARCESS Array B	63.32	340	P	P	19 23 56.7	+0.9
	comp=Z,2.5nm,0.9s,baz=24,slow=4.1,SNR=7.4						
ARCES	ARCESS Array B	63.32	340	P	P	19 23 56.7	+0.9
ARCES				pmax	pmax		
	comp=Z,2.0nm,0.8s						
GEYT	Alibeck	64.84	299	P	P	19 24 06.6	+0.3
	comp=Z,0.8nm,0.5s,baz=29,slow=3.3,SNR=3.8						
F04A	Amboy	65.88	50	eP	P	19 24 13.3	+0.5
ASR	Mount Adams--S	66.26	49	eP	P	19 24 11.8	-3.6
B08A	Colville Reser	66.42	46	eP	P	19 24 16.6	+0.3
H04A	Detroit Lake	66.67	51	eP	P	19 24 18.9	+0.9
	comp=Z,17nm,1.1s						
C09A	Chrisman Ranch	67.32	46	eP	P	19 24 22.1	0.0
NEW	Newport	67.71	46	P	P	19 24 24.9	+0.3
	comp=Z,2.8nm,0.8s,baz=322,slow=6.8,SNR=3.6						
NEW	Newport	67.71	46	eP	P	19 24 24.9	+0.3
	comp=Z,6.7nm,1.2s						
YBH	Yreka Blue Hor	67.90	54	P	P	19 24 24.6	-1.3
	comp=Z,2.0nm,0.7s,baz=320,slow=9.6,SNR=4.0						
FIA1	FINESS Array S	68.42	333	eP	P	19 24 28.6	-0.2
FIA0	FINESS Array S	68.43	333	eP	P	19 24 28.9	+0.1
FIA0	FINESS Array S	68.43	333	eP	P	19 24 28.9	+0.1
FINES	FINESS Array B	68.43	333	P	P	19 24 28.9	+0.1
	comp=Z,3.2nm,0.8s,baz=51,slow=6.1,SNR=13						
FINES	FINESS Array B	68.43	333	i P	P	19 24 27.7	-1.0
FINES				pmax	pmax		
	comp=Z,4.0nm,0.9s						
K05A	Summer Lake	68.50	52	eP	P	19 24 31.5	+1.7
	comp=Z,20nm,1.0s						
WALA	Waterton Lakes	69.03	44	eP	P	19 24 33.2	+0.3
	comp=Z,23nm,1.8s						
SUMG	Summit	69.22	1	eP	P	19 24 34.2	+0.2
SUMG	Summit	69.22	1	eP	P	19 24 34.1	+0.2
MOD	Modoc Plateau	69.32	53	eP	P	19 24 35.9	+1.0
	comp=Z,4.9nm,0.8s						
JTMT	Jette	69.58	45	eP	P	19 24 37.2	+0.8
SWMT	Swartz Lake	69.88	45	eP	P	19 24 38.7	+0.5
FFC	Flin Flon	71.41	34	eP	P	19 24 47.1	-0.1
FFC				pmax	pmax		
	comp=Z,8.0nm,1.1s						
FFC	Flin Flon	71.41	34	eP	P	19 24 47.1	-0.1
	comp=Z,8.2nm,1.1s						
KIV	Kislovodsk	71.42	312	⇑ eP	P	19 24 48.9	+1.3
KIV				e		19 27 26.3	
KIV				ePPP	PPP	19 29 11.3	
KIV				pmax	pmax		
	comp=Z,16nm,1.0s						
KIV				MLR	MLR		
	comp=Z,43nm,14.0s						
KIV	Kislovodsk	71.42	312	eP	P	19 24 49.0	+1.4
	comp=Z,16nm,1.0s						
CMB	Columbia Colle	71.43	56	eP	P	19 24 48.6	+0.9
CMB				pmax	pmax		
	comp=Z,13nm,1.4s						
CMB	Columbia Colle	71.43	56	eP	P	19 24 48.6	+0.9
	comp=Z,13nm,1.4s						
KBZ	Khabaz	71.43	311	P	P	19 24 48.5	+1.1
	comp=Z,6.2nm,0.9s,baz=60,slow=2.8,SNR=8.3						
LRM	Limekiln Ridge	71.73	46	eP	P	19 24 50.4	+0.7
WAKR	Walker	71.78	55	eP	P	19 24 50.4	+0.5
FCC	Fort Churchill	71.81	28	eP	P	19 24 49.2	-0.3
FCC				pmax	pmax		
	comp=Z,6.0nm,1.0s						
FCC	Fort Churchill	71.81	28	eP	P	19 24 49.2	-0.3
	comp=Z,5.7nm,1.0s						
HLID	Hailey	71.94	48	eP	P	19 24 52.5	+1.6
	comp=Z,11nm,1.8s						
BMN	Battle Mountai	72.07	52	eP	P	19 24 52.6	+1.0
BMN				pmax	pmax		
	comp=Z,6.0nm,1.1s						
BMN	Battle Mountai	72.07	52	eP	P	19 24 52.6	+1.0
	comp=Z,6.3nm,1.1s						
BOZ	Bozeman (W)	72.30	45	eP	P	19 24 54.0	+1.1
BOZ				pmax	pmax		
	comp=Z,4.0nm,0.9s						
BOZ	Bozeman (W)	72.30	45	eP	P	19 24 54.0	+1.1
	comp=Z,3.7nm,0.9s						
NV01	Mina Array Sit	72.55	55	eP	P	19 24 55.5	+0.8
NVAR	Mina Array Bea	72.55	55	P	P	19 24 55.6	+1.0
	comp=Z,4.0nm,0.8s,baz=285,slow=7.1,SNR=19						
NV11	Mina Array Sit	72.64	55	eP	P	19 24 54.8	-0.3
QLMT	Earthquake Lak	72.90	46	eP	P	19 24 57.8	+1.1
ELK	Elko	73.11	51	LR	LR	19 54 14.0	
	comp=Z,32nm,21.6s,baz=311,slow=34						
NB2	NORSAR Subarra	73.58	338	P	P	19 25 00.1	0.0
	comp=Z,1.2nm,0.6s,baz=39,slow=5.9						
NB200	NORSAR Array S	73.58	338	eP	P	19 25 00.2	+0.1
NOA	NORSAR Array B	73.58	338	P	P	19 25 00.2	+0.1
	comp=Z,2.1nm,0.8s,baz=40,slow=5.8,SNR=4.7						
H17A	Grant Village	73.65	46	eP	P	19 25 03.5	+2.4
	comp=Z,5.8nm,0.9s						
MOOW	Moose Ponds	73.95	47	eP	P	19 25 03.9	+1.1
	comp=Z,2.1nm,0.6s						
DAC	Darwin (Calif)	74.26	56	eP	P	19 25 05.3	+0.6
DAC				pmax	pmax		
	comp=Z,4.0nm,1.0s						
DAC	Darwin (Calif)	74.26	56	eP	P	19 25 05.3	+0.6
	comp=Z,3.8nm,1.0s						
AKASG	Malin Array Be	74.33	323	P	P	19 25 04.0	-0.6
	comp=Z,1.2nm,0.4s,baz=44,slow=6.0,SNR=11						
AKASG	Malin Array Be	74.33	323	P	P	19 25 04.0	-0.6
AKASG				pmax	pmax		
	comp=Z,1.0nm,0.4s						
TPNV	Topopah Spring	74.73	55	eP	P	19 25 08.5	+1.1
TPNV				pmax	pmax		
	comp=Z,5.0nm,0.9s						
TPNV	Topopah Spring	74.73	55	eP	P	19 25 08.4	+1.1
	comp=Z,5.4nm,0.9s						
HWUT	Hardware Ranch	74.80	49	eP	P	19 25 08.4	+0.7
	comp=Z,15nm,0.6s						
BW06	Boulder Array	75.24	47	eP	P	19 25 10.2	-0.2
PD31	Pinedale Array	75.24	47	eP	P	19 25 10.3	0.0
PDAR	Pinedale Array	75.24	47	P	P	19 25 10.5	+0.2
	comp=Z,1.9nm,0.6s,baz=261,slow=2.6,SNR=22						
NLU	North Lily Min	75.51	50	eP	P	19 25 12.1	+0.2
	comp=Z,3.7nm,1.0s						
LCMT	Little Creek M	76.61	53	eP	P	19 25 19.3	+1.2
	comp=Z,5.2nm,0.9s						
P17A	Butcher Ranch,	76.62	50	eP	P	19 25 19.1	+0.9
	comp=Z,6.4nm,0.7s						
SRU	San Rafael Swe	76.97	50	eP	P	19 25 21.0	+0.8
SRU				pmax	pmax		
	comp=Z,10.0nm,0.7s						
SRU	San Rafael Swe	76.97	50	eP	P	19 25 21.0	+0.8
	comp=Z,10nm,0.7s						
ULM	Lac du Bonnet	77.20	35	P	P	19 25 20.4	-0.6
	comp=Z,3.1nm,0.8s,baz=326,slow=7.3,SNR=4.8						
BUR08	Bucovina Ar. S	78.35	323	eP	P	19 25 28.2	+0.6
N23A	Red Feather La	78.51	47	eP	P	19 25 29.9	+1.1
	comp=Z,7.4nm,0.9s						
AGMN	Agassiz Nation	78.61	36	eP	P	19 25 28.5	-0.4
	comp=Z,4.9nm,0.8s						
CLL	Collm	80.79	331	eP	P	19 25 42.0	+1.4
CLL				e		19 25 48.0	
CLL	Collm	80.79	331	eP	P	19 25 42.0	+1.4
CLL				e		19 25 48.0	
EYMN	Ely	80.84	34	eP	P	19 25 41.0	-0.1
	comp=Z,7.7nm,0.9s						
ECSD	EROS Data Cent	81.55	40	eP	P	19 25 44.9	0.0
	comp=Z,5.6nm,0.9s						
ANMO	Albuquerque	82.15	51	P	P	19 25 49.1	+0.7
	comp=Z,2.6nm,0.9s,baz=315,slow=10.0,SNR=4.8						
ANMO	Albuquerque	82.15	51	⇑ iP	P	19 25 49.5	+1.1
ANMO				pmax	pmax		
	comp=Z,2.0nm,0.8s						
ANMO	Albuquerque	82.15	51	eP	P	19 25 48.9	+0.5
	comp=Z,4.9nm,1.1s						
319A	Douglas	82.72	56	eP	P	19 25 52.2	+0.9
	comp=Z,22nm,0.7s						
BFO	Black Forest	84.97	332	ceP	P	19 26 04.1	+1.7
MNTX	Cornudas Mount	84.99	53	eP	P	19 26 03.5	+0.6
	comp=Z,4.3nm,1.0s						
FUORN	Ofenpass-Fuorn	85.65	330	eP	P	19 26 06.4	+0.3
	comp=Z,5.7nm,0.8s						
DAVOX	Davos/Dischmat	85.66	330	P	P	19 26 07.0	+0.9
	comp=Z,2.4nm,0.8s,baz=320,slow=7.9,SNR=3.8						
LTX	Lajitas	87.68	54	eP	P	19 26 16.6	+0.4
LTX	Lajitas	87.68	54	eP	P	19 26 16.6	+0.4
TX31	Lajitas Ar. Si	87.68	54	eP	P	19 26 15.6	-0.6
TXAR	Lajitas Array	87.68	54	P	P	19 26 16.6	+0.4
	comp=Z,1.3nm,0.6s,baz=294,slow=3.4,SNR=11						
TOA1	Torodi Ar. Sit	117.63	318	ePKPdf	PKPdf	19 32 12.9	-0.8
TORD	Torodi Ar. Bea	117.64	318	PKP	PKPdf	19 32 13.0	-0.8
	comp=Z,0.3nm,0.5s,baz=50,slow=1.1,SNR=3.6						
VNA2	Neumayer--Watz	144.26	196	PKP	PKPab	19 32 59.6	-0.3
	baz=96,slow=1.9						
LPAZ	La Paz	144.27	61	PKP	PKPab	19 33 01.6	-0.7
	comp=Z,1.1nm,0.6s,baz=18,slow=6.4,SNR=3.7						
VNA3	Neumayer Olymp	144.47	194	PKP	PKPab	19 32 59.0	-1.7
VNA1	Neumayer--Stat	144.65	196	PKP	PKPab	19 33 01.0	-0.4

DJA 08 19:23:49.5±4.4, 10°S±4°×10°8E±°, h31km±55km, M3.7/4, MLv3.7/4, South of Jawa

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CMJI	Cimerak	1.89	21	P	Pn	19 24 19.9	+0.3
CMJI				S	Sn	19 24 44.0	+1.6
CISI	Cisompet, Garu	1.99	1	P	Pn	19 24 21.9	+0.8
CISI				S	Sn	19 24 44.0	-1.1
CNJI	Cibinong	2.33	344	P	Pn	19 24 25.4	-0.2
CNJI				S	Sn	19 24 51.5	-1.7
KPJI	Karang Pucung	2.49	28	P	Pn	19 24 30.2	+2.2
LEM	Lembang	2.72	357	P	Pn	19 24 31.4	+0.2
SKJI	Sukabumi	2.81	335	P	Pn	19 24 32.1	-0.2
DBJI	Dramaga	3.15	341	P	Pn	19 24 37.2	+0.1
UGM	Wanagama	3.18	59	P	Pn	19 24 38.0	+0.6
CGJI	Cibinong	3.58	325	P	Pn	19 24 42.8	-0.1
PCJI	Pacitan	3.63	68	P	Pn	19 24 43.3	-0.3
PWJI	Pagerwojo	4.27	69	P	Pn	19 24 51.6	-0.8
UWJI	Ujung Watu	4.43	45	P	Pn	19 24 55.2	+0.6
MDSI	Maura Dua	6.17	324	P	Pn	19 25 18.5	-0.1
JAGI	Jajag, Banyuwa	6.40	81	P	Pn	19 25 20.7	-1.0

*IDC **08** 19:23:50.7±1.5, 37°.25N×142°.29E, h0km, mb3.2/4, mb1 3.5/6, mb1mx3.3/44, mbtmp3.3/6, ML3.1/2, Error ellipse: s-maj=32.4km s-min=25.2km az=126.0*

*ISCJB **08** 19:23:54.3±1.8, 37°.29N±0°.05×142°.0E±0°.1, h20km±11km, mb3.2/4, Error ellipse: s-maj=14.1km s-min=8.2km az=6.4*

*JMA **08** 19:23:57.6±0.2, 37°.26N×141°.79E, h42km±3km, M3.4*

ISC 08 19:23:54.7±3.1, 37°.26N±0°.05×141°.94E±0°.09, h23km±22km, n14, σ1°33/23, mb3.3/4, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	Kawauchi	0.86	278	P	Pn	19 24 11.6	+0.2
JFK				S	Sb	19 24 21.3	-0.8
ONAJ	Iwakimizuishiy	0.93	261	P	Pn	19 24 12.6	+0.2
ONAJ				S	Sb	19 24 23.3	-0.8
JMM	Marumori	1.10	304	P	Pn	19 24 15.1	+0.4
JMM				eS	Sn	19 24 27.9	-1.2
JHO	Hitachi	1.28	240	P	Pn	19 24 17.5	+0.4
JIO	Ouri	1.28	339	P	Pn	19 24 18.1	+0.9
JIO				S	Sn	19 24 32.4	-1.3
JFT	Otama	1.31	282	P	Pn	19 24 18.9	+1.3
JFT				S	Sn	19 24 33.8	-0.5
JOU	Okura	1.50	318	P	Pn	19 24 22.2	+2.0
JOU				S	Sn	19 24 39.6	+0.5
MJAR	Matsushiro Arr	3.08	258	Pn	Pn	19 24 44.2	+2.2
	1.0nm,0.3s,baz=79,slow=16,SNR=8.7						
MJAR				Sn	Sb	19 25 25.3	-0.7
	2.1nm,0.3s,baz=103,slow=18,SNR=5.3						
MAT	Matsushiro	3.08	258	P	Pn	19 24 44.5	+2.5
MAT				S	Sb	19 25 25.8	-0.2
JHJ	Hachijo jima 2	4.49	204	Pn	Pn	19 25 03.2	+1.8
	5.3nm,0.3s,baz=247,slow=18,SNR=12						
JHJ				Sn	Sn	19 25 51.8	-1.1
	10nm,0.3s,baz=74,slow=20,SNR=1.5						
MKAR	Makanchi Array	44.36	302	P	P	19 32 03.6	+0.5
	0.1nm,0.6s,baz=79,slow=7.5,SNR=1.6						
KURBB	Kurchatov Arra	46.20	308	P	P	19 32 19.2	+1.7
	0.2nm,0.6s,baz=80,slow=7.9,SNR=2.1						
ILAR	Eielson Array	49.08	32	P	P	19 32 38.6	-1.1
	0.3nm,0.7s,baz=264,slow=6.6,SNR=4.4						
WRA	Warramunga Arr	57.34	189	P	P	19 33 40.0	-1.0
	0.4nm,0.8s,baz=12,slow=7.0,SNR=1.8						

*IDC **08** 19:28:44.0±1.6, 36°.84N×140°.58E, h0km, mb3.3/3, mb1 3.6/3, mb1mx3.2/45, mbtmp3.3/3, Error ellipse: s-maj=33.5km s-min=26.5km az=154.0*

*ISCJB **08** 19:28:45.0±0.6, 36°.92N±0°.03×140°.60E±0°.05, h16km±7km, mb3.4/3, Error ellipse: s-maj=7.4km s-min=4.8km az=27.5*

*JMA **08** 19:28:45.2, 36°.94N×140°.54E, h4km±1km, M2.8*

ISC 08 19:28:45.4±1.0, 36°.94N±0°.03×140°.55E±0°.04, h10km±8km, n13, σ0°59/21, mb3.4/3, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	Iwakimizuishiy	0.25	51	P	Pg	19 28 50.6	0.0
ONAJ				S	Sg	19 28 54.3	+0.2
JHO	Hitachi	0.33	178	P	Pg	19 28 51.6	-0.4
JHO				S	Sg	19 28 56.1	-0.3
JFK	Kawauchi	0.49	31	P	Pg	19 28 54.9	-0.2
JFK				S	Sg	19 29 01.6	0.0
JSB	Shiboa	0.51	273	P	Pg	19 28 55.5	+0.2
JSB				S	Sg	19 29 02.7	+0.7
JFT	Otama	0.60	343	P	Pg	19 28 56.8	-0.3
JFT				S	Sg	19 29 05.0	0.0
JYT	Yasato	0.77	202	P	Pg	19 29 00.3	0.0
JFY	Yanaizu	0.82	305	P	Pg	19 29 00.7	-0.6
JMM	Marumori	0.94	12	P	Pg	19 29 03.0	-0.5
JMM				S	Sg	19 29 15.6	-0.2
MJAR	Matsushiro Arr	1.93	259	Pn	Pn	19 29 18.9	+0.6
	5.6nm,0.3s,baz=79,slow=17,SNR=26						
MJAR				Sn	Sn	19 29 42.0	-0.5
	6.4nm,0.3s,baz=52,slow=24,SNR=5.8						
MAT	Matsushiro	1.93	259	P	Pn	19 29 19.1	+0.8
MAT				S	Sb	19 29 43.9	-0.9
KURBB	Kurchatov Arra	45.52	308	P	P	19 37 04.5	-0.4
	0.2nm,0.4s,baz=81,slow=7.4,SNR=4.2						
WRA	Warramunga Arr	56.88	187	P	P	19 38 29.8	-0.7
	0.5nm,0.8s,baz=0.8,slow=6.9,SNR=2.3						
YKA	Yellowknife Ar	64.23	30	P	P	19 39 21.5	+1.3
	0.1nm,0.4s,baz=297,slow=8.2,SNR=2.0						

*IDC **08** 19:32:47.5±3.2, 38°.42N×144°.26E, h0km, mb3.4/2, mb1 3.6/3, mb1mx3.2/47, mbtmp3.4/3, ML3.7/1, Error ellipse: s-maj=71.8km s-min=41.9km az=62.0*

*ISCJB **08** 19:32:49.5±1.0, 38°.54N±0°.04×143°.89E±0°.07, h14km, mb3.4/2, Error ellipse: s-maj=8.6km s-min=4.9km az=22.1*

*JMA **08** 19:32:51.4±0.2, 38°.48N×143°.88E, h35km, M3.4*

ISC 08 19:32:50.0±1.4, 38°.49N±0°.06×143°.96E±0°.09, h14km, n19, σ1°23/28, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	Ouri	2.05	270	P	Pn	19 33 23.8	-0.2
JIO				S	Sn	19 33 47.2	-2.1
JTH	Tanohata	2.17	312	P	Pn	19 33 26.0	+0.3
J

PLCA	Paso Flores	33.45	283	P	P	19 48 49.5	+0.6	
	2.8nm,0.8s,baz=152,slow=7.2,SNR=5.4							
PLCA	Paso Flores	33.45	283	eP	P	19 48 48.5	-0.5	
MAW	Mawson	37.28	141	P	P	19 49 21.7	+0.4	
	2.5nm,0.7s,baz=204,slow=10.0,SNR=3.5							
MAW				LR	LR	20 02 32.2		
	comp=Z,205nm,20.0s,baz=56,slow=32							
MAW	Mawson	37.28	141	eP	P	19 49 22.0	+0.7	
ROC1	El Roble	39.76	290	eP	P	19 49 48.4	+5.5	
LCO	Las Campanas	42.89	294	eP	P	19 50 08.2	-0.4	
	25nm,1.5s							
VNDA	Vanda	43.67	182	P	P	19 50 15.5	+1.5	
	4.7nm,0.6s,baz=189,slow=7.2,SNR=23							
VNDA	Vanda	43.67	182	eP	P	19 50 15.3	+1.3	
CRZF	Crozet Islands	45.90	110	eP	P	19 50 30.5	-1.7	
BOSA	Boshof	45.95	71	P	P	19 50 33.7	+0.8	
	2.6nm,0.8s,baz=202,slow=5.4,SNR=3.7							
LBTB	Lobatse	49.12	69	P	P	19 50 58.2	+0.7	
	2.4nm,0.8s,baz=242,slow=9.6,SNR=2.9							
PB01	IPOC Station P	49.18	301	eP	P	19 50 57.8	-0.1	
SIV	San Ignacio	50.24	313	P	P	19 51 06.5	+0.4	
	1.4nm,0.5s,baz=166,slow=4.2,SNR=3.2							
H10S2	ASCENSION HYDR	50.61	14	T	T	20 45 52.4		
	baz=188,slow=75,SNR=18							
H10S3	ASCENSION HYDR	50.61	14	T	T	20 46 14.2		
	baz=188,slow=75,SNR=17							
H10S1	ASCENSION HYDR	50.62	14	T	T	20 46 14.6		
	baz=188,slow=75,SNR=18							
H10N1	ASCENSION HYDR	51.73	14	T	T	20 47 26.4		
	baz=193,slow=76							
H10N3	ASCENSION HYDR	51.73	14	T	T	20 47 22.2		
	baz=193,slow=76							
H10N2	ASCENSION HYDR	51.74	14	T	T	20 47 42.9		
	baz=193,slow=76							
LPAZ	La Paz	52.80	305	P	P	19 51 24.8	-1.0	
	0.5nm,0.3s,baz=149,slow=5.9,SNR=3.1							
SAML	Samuel	57.50	314	eP	P	19 51 57.0	-2.0	
LSZ	Lusaka	58.70	66	eP	P	19 52 07.8	+0.2	
DBIC	Dimbokro	67.52	22	P	P	19 53 06.8	+1.0	
	3.9nm,0.6s,baz=178,slow=8.6,SNR=9.7							
DBIC	Dimbokro	67.52	22	eP	P	19 53 06.9	+1.1	
	33nm,1.6s							
TOA0	Torodi Ar. Sit	75.22	27	eP	P	19 53 53.4	+1.1	
TORD	Torodi Ar. Bea	75.22	27	P	P	19 53 53.8	+1.5	
	9.0nm,0.6s,baz=194,slow=6.4,SNR=64							
TORD				LR	LR	20 21 45.0		
	comp=Z,46nm,19.0s,baz=155,slow=32							
TOA1	Torodi Ar. Sit	75.23	27	eP	P	19 53 53.8	+1.5	
	9.4nm,0.6s							
STKA	Stephens Creek	88.84	169	P	P	19 55 04.0	+0.3	
	3.9nm,0.9s,baz=180,slow=8.1,SNR=3.6							
STKA				LR	LR	20 33 57.1		
	comp=Z,60nm,18.2s,baz=203,slow=35							
STKA	Stephens Creek	88.84	169	eP	P	19 55 03.6	-0.1	
	6.8nm,1.8s							
RAR	Rarotonga	91.67	222	LR	LR	20 30 51.3		
	comp=Z,26nm,18.2s,baz=116,slow=32							
ASAR	Alice Springs	95.92	161	P	P	19 55 35.9	-0.7	
	1.7nm,0.7s,baz=183,slow=4.0,SNR=27							
AS31	Alice Springs	95.92	161	eP	P	19 55 35.7	-0.8	
WR1	Warramunga Arr	99.63	161	ePdif	Pdif	19 55 52.0	-1.2	
WRA	Warramunga Arr	99.63	161	P	Pdif	19 55 52.0	-1.2	
	0.3nm,0.7s,baz=196,slow=4.4,SNR=2.9							
AKASG	Malin Array Be	118.06	36	PKP	PKPdf	20 00 53.6	-1.6	
	0.4nm,0.5s,baz=229,slow=1.4,SNR=3.9							
PDAR	Pinedale Array	122.61	300	PKP	PKPdf	20 01 03.7	-0.9	
	0.1nm,0.4s,baz=191,slow=3.4,SNR=2.5							
ULM	Lac du Bonnet	122.96	314	PKP	PKPdf	20 01 03.6	-1.0	
	1.0nm,0.3s,baz=186,slow=1.8,SNR=3.8							
CM01	Chiang Mai Arr	123.18	111	ePKPdf	PKPdf	20 01 05.7	-0.4	
CMAR	Chiang Mai Arr	123.20	111	PKP	PKPdf	20 01 06.4	+0.2	
	1.5nm,0.8s,baz=229,slow=3.7,SNR=14							
NVAR	Mina Array Bea	123.30	290	PKP	PKPdf	20 01 06.2	+0.2	
	0.3nm,0.6s,baz=142,slow=4.6,SNR=3.6							
FIA0	FINESS Array S	126.57	28	ePKPdf	PKPdf	20 01 11.1	-0.1	
FINES	FINESS Array B	126.57	28	PKP	PKPdf	20 01 11.1	-0.1	
	1.7nm,0.6s,baz=201,slow=1.2,SNR=10							
ABKAR	Akbulak array	128.29	56	ePKPdf	PKPdf	20 01 14.8	-0.1	
AKTO	Aktyubinsk	128.36	54	PKP	PKPdf	20 01 15.1	+0.1	
	3.0nm,0.9s,baz=165,slow=4.1,SNR=6.3							
ARCES	ARCESS Array B	133.35	22	PKP	PKPdf	20 01 24.2	+0.3	
	2.3nm,0.8s,baz=208,slow=3.4,SNR=8.3							
BVAR	Borovoye Array	135.58	59	PKP	PKPdf	20 01 28.7	+0.2	
	1.7nm,0.7s,baz=222,slow=1.9,SNR=10							
MK32	Makanchi Array	136.94	73	ePKPpre	PKPpre	20 01 23.0		
MK32				ePKPdf	PKPdf	20 01 30.3	-1.0	
MKAR	Makanchi Array	136.94	73	PKhKP	PKPpre	20 01 23.0		
	0.2nm,0.5s,baz=240,slow=5.4,SNR=4.6							
MKAR				PKP	PKPdf	20 01 30.3	-1.0	
	0.8nm,0.8s,baz=240,slow=1.2,SNR=6.4							
YKA	Yellowknife Ar	138.92	315	PKP	PKPdf	20 01 33.8	-0.6	
	3.6nm,0.6s,baz=128,slow=2.4,SNR=61							
YKB5	Yellowknife Ar	138.92	315	ePKPdf	PKPdf	20 01 34.1	-0.3	
YKW3	Yellowknife Ar	138.96	315	ePKPdf	PKPdf	20 01 33.8	-0.7	
ZALV	Zalesovo Beam	142.81	66	PKhKP	PKPpre	20 01 37.7		
	0.7nm,0.5s,baz=222,slow=4.1,SNR=5.1							
ZALV				PKP	PKPdf	20 01 40.8	-0.9	
	0.6nm,0.4s,baz=240,slow=3.5,SNR=5.9							
ZAA1	Zalesovo Array	142.81	66	ePKPpre	PKPpre	20 01 37.6		
ZAA1				ePKPdf	PKPdf	20 01 40.8	-0.9	
INK	Inuvik	148.60	317	PKPbc	PKPbc	20 01 54.2	-0.7	
	4.7nm,0.7s,baz=78,slow=0.7,SNR=19							
INK	Inuvik	148.60	317	ePKPbc	PKPbc	20 01 54.0	-0.8	
SONA0	Songino Array	149.93	90	ePKPdf	PKPdf	20 01 54.3	+0.2	
SONA0				ePKPbc	PKPbc	20 01 59.2	+0.2	
SONM	Songino Array	149.93	90	PKP	PKPdf	20 01 54.3	+0.2	
	3.6nm,0.8s,baz=217,slow=4.5,SNR=2.2							
SONM				PKPbc	PKPbc	20 01 59.2	+0.2	
	4.7nm,0.9s,baz=229,slow=2.3,SNR=15							
SONA1	Songino Array	149.94	90	ePKPbc	PKPbc	20 01 58.8	-0.2	
NRIK	Noril'sk	150.69	42	PKPbc	PKPbc	20 02 00.4	+0.4	
	3.2nm,0.7s,baz=282,slow=6.4,SNR=3.3							
TLY	Talaya	150.83	82	PKPbc	PKPbc	20 02 02.3	+1.4	
	5.3nm,0.6s,baz=141,slow=6.5,SNR=3.2							
DOT	Dot Lake	151.15	306	ePKPbc	PKPbc	20 02 01.2	-0.1	
KSAR	Wonju Array Be	152.44	130	PKPbc	PKPbc	20 02 05.2	+0.2	
KSRS	Korea Array	152.47	130	PKPbc	PKPbc	20 02 05.2	+0.1	
	0.3nm,0.3s,baz=197,slow=1.6,SNR=4.2							
IL1	Eielson Array	152.67	307	ePKPbc	PKPbc	20 02 04.1	-0.5	
ILAR	Eielson Array	152.67	307	PKPbc	PKPbc	20 02 04.3	-0.4	
	2.3nm,0.9s,baz=143,slow=2.1,SNR=18							
ILAR				PKPab	PKPab	20 02 12.9	-2.7	
	0.9nm,0.7s,baz=179,slow=0.1,SNR=5.8							
ILB	Eielson Array	152.67	307	ePKPbc	PKPbc	20 02 04.7	0.0	

JMA 08 19:46:44.9,35°.89N×140°.40E,h16km±1km,M1.2,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JYT	Yasato	0.38	334	P	Pg	19 46 52.6	0.0
JYT				S	Sg	19 46 57.7	-0.2

*ISCJB **08** 19:47:44.0±0.6,35°.74N±0°.08×142°.5E±0°.1,h10km, mb3.5/10,Error ellipse: s-maj=12.4km s-min=11.5km az=16.8*

*IDC **08** 19:47:44.5±0.7,35°.84N×142°.53E,h0km,mb3.5/10, mb1 3.8/13,mb1mx3.7/46,mbtmp3.6/13,ML3.7/2,Error ellipse: s-maj=19.7km s-min=17.4km az=138.0*

ISC 08 19:47:45.8±0.8,35°.73N±0°.08×142°.55E±0°.1,h10km,n20, σ1§78/16,mb3.6/10,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHJ	Hachijo jima 2	3.46	222	Pn	Pn	19 48 36.9	-2.8
	4.8nm,0.3s,baz=246,slow=20,SNR=2.2						
JHJ				Sn	Sn	19 49 24.6	+3.8
	13nm,0.3s,baz=252,slow=20,SNR=3.8						
MJAR	Matsushiro Arr	3.60	284	Pn	Pn	19 48 41.5	-0.2
	1.3nm,0.3s,baz=90,slow=12,SNR=10						
JCJ	Chichijima	8.61	182	Pn	Pn	19 49 52.2	+1.7
	4.3nm,0.3s,baz=294,slow=20,SNR=4.2						
JCJ				Sn	Sn	19 51 24.9	-2.8
	2.6nm,0.3s,baz=342,slow=20,SNR=2.0						
KSRS	Korea Array	11.88	283	Pn	Pn	19 50 34.9	-0.4
	baz=96,slow=12,SNR=3.6						
H11N2	WAKE ISLAND Hy	26.70	120	T	T	20 21 31.2	
	baz=312,slow=75,SNR=36						
H11N1	WAKE ISLAND Hy	26.70	120	T	T	20 21 31.8	
	baz=312,slow=75,SNR=45						
H11N3	WAKE ISLAND Hy	26.71	120	T	T	20 21 32.6	
	baz=312,slow=75,SNR=39						
H11S1	WAKE ISLAND Hy	27.38	122	T	T	20 22 21.8	
	baz=314,slow=75,SNR=31						
H11S3	WAKE ISLAND Hy	27.39	122	T	T	20 22 21.8	
	baz=314,slow=75,SNR=28						
H11S2	WAKE ISLAND Hy	27.40	122	T	T	20 22 25.6	
	baz=314,slow=75,SNR=18						
SONM	Songino Array	29.28	306	P	P	19 53 48.8	+0.6
	1.3nm,0.8s,baz=99,slow=6.4,SNR=4.2						
CMAR	Chiang Mai Arr	42.08	258	P	P	19 55 38.0	0.0
	0.4nm,0.8s,baz=55,slow=6.7,SNR=3.9						
ZALV	Zalesovo Beam	43.47	313	P	P	19 55 46.8	-2.1
	0.6nm,0.5s,baz=101,slow=7.5,SNR=4.4						
MKAR	Makanchi Array	45.59	303	P	P	19 56 05.7	-0.3
	0.9nm,0.7s,baz=85,slow=9.4,SNR=14						
ILAR	Eielson Array	50.11	32	P	P	19 56 40.1	-0.7
	0.3nm,0.8s,baz=263,slow=5.3,SNR=3.2						
WRA	Warramunga Arr	55.91	189	P	P	19 57 24.5	+0.5
	0.9nm,0.9s,baz=9.5,slow=7.5,SNR=4.5						
ASAR	Alice Springs	59.63	189	P	P	19 57 51.6	+1.5
	0.6nm,1.0s,baz=12,slow=9.5,SNR=3.1						
YKA	Yellowknife Ar	64.48	30	P	P	19 58 22.4	+0.2
	0.1nm,0.6s,baz=306,slow=6.9,SNR=3.0						
NVAR	Mina Array Bea	75.03	53	P	P	19 59 27.9	0.0
	0.6nm,0.8s,baz=274,slow=12,SNR=3.4						
PDAR	Pinedale Array	77.92	46	P	P	19 59 44.4	+0.1
	0.3nm,0.5s,baz=270,slow=1.8,SNR=3.3						

*NIED **08** 19:59:00,36°.50N×143°.40E,h5km,Mw3.8 Best double couple: M0:6.64000×10^14 NP1:φs60.00000°,δ29.00000°, λ-96.00000°. NP2:φs247.00000°,δ61.00000°, λ-87.00000°.*

*IDC **08** 19:59:21.7±0.7,36°.35N×143°.63E,h0km,mb3.8/17, mb1 4.0/21,mb1mx3.9/44,mbtmp3.8/21,ML3.4/4,MS2.9/2, Ms1 2.9/2,ms1mx2.4/49,Error ellipse: s-maj=19.4km s-min=16.1km az=125.0*

*ISCJB **08** 19:59:25.0±0.3,36°.37N±0°.04×143°.45E±0°.03,h33km, mb3.9/20,MS3.7/1,Error ellipse: s-maj=5.7km s-min=3.9km az=169.3*

*NEIC **08** 19:59:25.3±2.8,36°.29N×143°.64E,h26km±20km,mb4.4/3, Error ellipse: s-maj=8.4km s-min=7.6km az=210.0*

*JMA **08** 19:59:25.7±0.3,36°.46N×143°.43E,h45km,M4.0*

ISC 08 19:59:27.2±0.6,36°.40N±0°.05×143°.48E±0°.06,h35km,n72, σ1§42/75,mb3.9/20,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	Chosi	2.23	253	P	Pn	20 00 00.0	-1.7
ONAJ	Iwakimizuishiy	2.26	289	eS	Sn	20 00 27.5	-1.3
JHO	Hitachi	2.35	276	P	Pn	20 00 02.7	-0.6
JHO				S	Sn	20 00 28.8	-2.2
JMM	Marumori	2.59	305	P	Pn	20 00 05.5	-1.1
JMM				S	Sn	20 00 34.6	-2.3
JIO	Ouri	2.66	321	P	Pn	20 00 05.6	-1.9
JIO				eS	Sn	20 00 34.8	-3.7
JFT	Otama	2.75	295	P	Pn	20 00 07.7	-1.1
JFT				eS	Sn	20 00 39.5	-1.3
JOU	Okura	2.98	312	P	Pn	20 00 11.1	-0.8
JAG	Ashikaga	3.25	272	P	Pn	20 00 15.6	0.0
JAG				S	Sn	20 00 51.3	-1.7
JOM	Ohasama	3.52	331	S	Sn	20 00 56.9	-2.8
JYK	Kaneyama	3.52	316	P	Pn	20 00 18.7	-0.7
JYK				eS	Sn	20 00 57.6	-2.3
JRY	Ryogami san	3.72	265	P	Pn	20 00 22.0	-0.1
JRY				S	Sn	20 01 02.9	-1.9
JOD2	Odawara 2	3.74	254	P	Pn	20 00 23.0	+0.6
JOD2				S	Sn	20 01 04.9	-0.4
MJAR	Matsushiro Arr	4.25	273	Pn	Pn	20 00 29.1	-0.3
	1.9nm,0.3s,baz=89,slow=15,SNR=12						
MJAR				LR	LR	20 01 56.1	
	comp=Z,28nm,19.7s,baz=110,slow=36						
MAJO	Matsushiro	4.25	273	ePn	Pn	20 00 30.8	+1.4
MAT	Matsushiro	4.25	273	P	Pn	20 00 30.5	+1.1
MAT				eS	Sn	20 01 16.1	-1.7
JHJ2	Mitsune	4.46	224	ePn	Pn	20 00 31.9	-0.3
JHJ2				eSn	Sn	20 01 18.0	-4.8
JHJ	Hachijo jima 2	4.47	224	Pn	Pn	20 00 31.6	-0.8
	7.0nm,0.3s,baz=351,slow=18,SNR=14						
JHJ				Sn	Sn	20 01 20.2	-3.0
	30nm,0.3s,baz=259,slow=23,SNR=8.2						
INU	Inuyama	5.35	261	ePn	Pn	20 00 45.3	+0.8
ERM	Erimo	5.61	358	ePn	Pn	20 00 45.5	-2.6
ERM				eSn	Sn	20 01 42.7	-8.5
CBIJ	Chichi jima	9.34	187	ePn	Pn	20 01 32.1	-7.3
CBIJ				eSn	Sn	20 03 11.1	-12
JCJ	Chichijima	9.34	187	Pn	Pn	20 01 34.5	-4.8
	2.9nm,0.3s,baz=280,slow=19,SNR=4.7						
JCJ				Sn	Sn	20 03 12.7	-11
	5.5nm,0.3s,baz=291,slow=23,SNR=5.6						
JNU	Nakatsue	10.87	256	Pn	Pn	20 01 59.8	-0.4
	0.2nm,0.3s,baz=115,slow=14,SNR=3.0						
USRK	Ussuriysk Ar.	11.72	315	Pn	Pn	20 02 14.9	+3.1
	0.2nm,0.3s,baz=109,slow=10,SNR=4.3						
KLR	Kul'dur	15.41	330	Pn	Pn	20 03 00.9	-1.0
	0.1nm,0.3s,baz=160,slow=12,SNR=3.4						
H11N2	WAKE ISLAND Hy	26.41	123	T	T	20 32 25.8	
	baz=314,slow=75,SNR=7.0						
H11N1	WAKE ISLAND Hy	26.41	123	T	T	20 32 32.4	
	baz=314,slow=75,SNR=5.4						
H11N3	WAKE ISLAND Hy	26.42	123	T	T	20 32 29.7	
	baz=314,slow=75,SNR=5.5						
SEY	Seymchan	27.12	9	P	P	20 05 07.8	+1.2
	0.2nm,0.3s,baz=178,slow=6.0,SNR=3.8						
H11S1	WAKE ISLAND Hy	27.13	125	T	T	20 33 26.5	
	baz=316,slow=76,SNR=6.2						
H11S3	WAKE ISLAND Hy	27.13	125	T	T	20 33 20.4	
	baz=316,slow=76,SNR=5.4						
H11S2	WAKE ISLAND Hy	27.15	125	T	T	20 33 28.8	
	baz=316,slow=76,SNR=6.7						
SONA0	Songino Array	29.51	304	eP	P	20 05 30.8	+2.6
	9.5nm,1.9s						
SONM	Songino Array	29.51	304	P	P	20 05 30.8	+2.6
	1.0nm,1.0s,baz=106,slow=9.1,SNR=3.4						
TIXI	Tiksi	36.13	352	eP	P	20 06 27.2	+1.8
CHGN	Chignik	43.27	44	eP	P	20 07 25.2	+0.2
ZAA0	Zalesovo Array	43.56	313	eP	P	20 07 28.2	+0.8
ZAA1	Zalesovo Array	43.56	313	eP	P	20 07 28.6	+1.2
ZAA1				ePcP	PcP	20 09 15.1	+0.5
ZALV	Zalesovo Beam	43.56	313	P	P	20 07 28.6	+1.2
	0.4nm,0.4s,baz=101,slow=6.0,SNR=3.5						
ZALV				PcP	PcP	20 09 15.1	+0.5
	0.9nm,0.8s,baz=82,slow=2.0,SNR=3.6						
TARA	Tarawa	44.26	135	eP	P	20 07 29.8	-3.5
NRIK	Noril'sk	44.53	335	P	P	20 07 34.5	-0.4
	1.6nm,0.3s,baz=65,slow=3.8,SNR=2.3						
MK01	Makanchi Array	45.85	303	eP	P	20 07 46.5	+0.7
MK31	Makanchi Array	45.86	303	eP	P	20 07 45.9	0.0
MK32	Makanchi Array	45.86	303	eP	P	20 07 45.0	-0.9
MKAR	Makanchi Array	45.86	303	P	P	20 07 45.0	-0.9
	0.4nm,0.8s,baz=64,slow=3.0,SNR=3.6						
KURK	Kurchatov	47.62	309	eP	P	20 08 00.3	+0.7
	3.2nm,0.9s						
IL1	Eielson Array	49.14	32	eP	P	20 08 10.2	-0.9
ILAR	Eielson Array	49.14	32	P	P	20 08 10.9	-0.1
	1.1nm,0.8s,baz=270,slow=6.4,SNR=9.2						
ILB	Eielson Array	49.14	32	eP	P	20 08 10.4	-0.6
PAX	Paxson	49.81	34	eP	P	20 08 15.0	-1.4
VOSK	Vostochnaya	51.93	313	eP	P	20 08 33.4	+1.1
BVAR	Borovoye Array	52.22	313	P	P	20 08 35.2	+0.7
	0.7nm,0.8s,baz=60,slow=8.8,SNR=3.8						
BRVK	Borovoye	52.27	313	eP	P	20 08 35.3	+0.5
ZRNK	Zerenda	53.05	313	eP	P	20 08 41.7	+1.1
INK	Inuvik	54.19	27	P	P	20 08 49.0	+0.3
	0.9nm,0.7s,baz=313,slow=2.2,SNR=4.4						
KKAR	Karatay Array	54.87	301	eP	P	20 08 54.9	+0.8
WR1	Warramunga Arr	56.70	190	eP	P	20 09 06.9	-0.4
	11nm,1.3s						
WRA	Warramunga Arr	56.70	190	P	P	20 09 06.9	-0.4
	1.5nm,0.7s,baz=11,slow=7.3,SNR=9.6						
ABKAR	Akbulak array	59.61	311	eP	P	20 09 28.0	+0.7
AKTO	Aktyubinsk	60.33	313	P	P	20 09 33.6	+1.3
	1.0nm,0.5s,baz=60,slow=13,SNR=4.0						
ASAR	Alice Springs	60.42	190	P	P	20 09 32.9	-0.3
	0.5nm,0.7s,baz=3.3,slow=6.8,SNR=6.2						
ASAR				LR	LR	20 35 19.0	
	comp=Z,54nm,21.4s,baz=204,slow=36						
RES	Resolute Bay	62.79	15	eP	P	20 09 48.5	0.0
YKA	Yellowknife Ar	63.52	31	P	P	20 09 52.6	-0.9
	0.6nm,0.7s,baz=301,slow=6.7,SNR=12						
YKB5	Yellowknife Ar	63.52	31	eP	P	20 09 52.9	-0.6
FIA0	FINESS Array S	70.14	333	eP	P	20 10 35.3	-0.3
FINES	FINESS Array B	70.14	333	P	P	20 10 35.3	-0.3
	1.8nm,0.8s,baz=38,slow=7.0,SNR=4.5						
NV01	Mina Array Sit	74.03	54	eP	P	20 10 59.6	0.0
NVAR	Mina Array Bea	74.03	54	P	P	20 10 60.0	+0.3
	0.6nm,0.7s,baz=302,slow=5.2,SNR=5.5						
NB200	NORSAR Array S	75.40	338	eP	P	20 11 06.7	-0.2
NOA	NORSAR Array B	75.40	338	P	P	20 11 06.7	-0.2
	1.6nm,0.7s,baz=38,slow=5.6,SNR=3.2						
AKASG	Malin Array Be	75.80	323	P	P	20 11 10.3	+0.9
	0.4nm,0.5s,baz=42,slow=6.0,SNR=4.7						
LTX	Lajitas	89.18	54	eP	P	20 12 18.4	-1.2
TXAR	Lajitas Array	89.18	54	P	P	20 12 18.4	-1.2
	0.4nm,0.6s,baz=298,slow=2.7,SNR=3.8						

*NIED **08** 20:08:00,37°.20N×144°.10E,h5km,Mw3.8 Best double couple: M0:5.97000×10^14 NP1:φs38.00000°,δ40.00000°, λ-83.00000°. NP2:φs209.00000°,δ51.00000°, λ-96.00000°.*

*IDC **08** 20:08:49.5±0.7,37°.01N×144°.37E,h0km,mb3.9/19, mb1 4.1/24,mb1mx3.9/53,mbtmp4.0/24,ML3.6/5,MS2.6/3, Ms1 2.6/3,ms1mx2.3/54,Error ellipse: s-maj=18.2km s-min=14.1km az=119.0*

*ISCJB **08** 20:08:51.5±0.3,37°.01N±0°.04×144°.21E±0°.03,h26km, mb4.0/24, Error ellipse: s-maj=5.7km s-min=3.8km az=162.3*

*NEIC **08** 20:08:52.3±2.3,36°.96N×144°.40E,h20km±16km,mb4.4/6, Error ellipse: s-maj=8.0km s-min=6.5km az=99.0*

*JMA **08** 20:08:53.7±0.2,37°.16N×144°.13E,h50km,M4.2*

ISC 08 20:08:53.3±0.6,37°.11N±0°.05×144°.28E±0°.06,h26km,n81, σ1§54/87,mb4.0/24,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	Ouri	2.68	301	P	Pn	20 09 33.6	-1.2
JIO				eS	Sn	20 10 02.9	-3.5
JFK	Kawauchi	2.73	276	P	Pn	20 09 34.6	-0.9
JFK				eS	Sn	20 10 05.5	-2.1
ONAJ	Iwakimizuishiy	2.78	271	P	Pn	20 09 35.2	-1.0
ONAJ				S	Sn	20 10 06.7	-2.3
JMM	Marumori	2.87	286	P	Pn	20 09 36.3	-1.1
JMM				eS	Sn	20 10 08.3	-2.8
JHO	Hitachi	3.02	262	P	Pn	20 09 38.6	-0.8
CHOJ	Chosi	3.10	244	P	Pn	20 09 40.1	-0.4
JOU	Okura	3.13	295	P	Pn	20 09 40.7	-0.2
JOU				S	Sn	20 10 15.6	-1.8
JFT	Otama	3.17	279	P	Pn	20 09 41.9	+0.4
JFT				S	Sn	20 10 17.2	-1.3
JOM	Ohasama	3.33	316	P	Pn	20 09 42.5	-1.2
JOM				S	Sn	20 10 18.5	-3.9
JYK	Kaneyama	3.58	301	P	Pn	20 09 46.7	-0.5
JANG	Nango	3.91	327	eS	Sn	20 10 31.2	-5.5
JAG	Ashikaga	3.93	261	P	Pn	20 09 51.8	-0.2
JRY	Ryogami san	4.46	257	P	Pn	20 09 58.7	-0.6
JRY				S	Sn	20 10 47.7	-2.8
JOD2	Odawara 2	4.58	248	P	Pn	20 10 01.1	+0.1
JOD2				eS	Sn	20 10 50.6	-2.8
MJAR	Matsushiro Arr	4.90	265	Pn	Pn	20 10 05.7	+0.3
	5.6nm,0.3s,baz=71,slow=11,SNR=47						
MJAR				Sn	Sn	20 11 00.4	-0.8
	2.4nm,0.3s,baz=61,slow=23,SNR=7.1						
MJAR				LR	LR	20 12 06.9	
	comp=Z,78nm,20.6s,baz=0.0,slow=40						
MAJO	Matsushiro	4.90	265	ePn	Pn	20 10 06.1	+0.7
MAT	Matsushiro	4.90	265	P	Pn	20 10 06.3	+0.9
MAT				S	Sn	20 11 01.6	+0.3
ERM	Erimo	4.97	350	ePn	Pn	20 10 04.5	-1.8
ERM				eSn	Sn	20 10 55.1	-7.8
JHJ2	Mitsune	5.41	224	ePn	Pn	20 10 11.3	-1.0
JHJ2				eSn	Sn	20 11 09.1	-4.7
JHJ	Hachijo jima 2	5.42	224	Pn	Pn	20 10 11.1	-1.4
	17nm,0.3s,baz=52,slow=16,SNR=11						
JHJ				Sn	Sn	20 11 10.5	-3.6
	35nm,0.3s,baz=57,slow=23,SNR=7.6						
INU	Inuyama	6.13	255	ePn	Pn	20 10 20.4	-1.7
CBIJ	Chichi jima	10.14	191	ePn	Pn	20 11 13.8	-3.5
CBIJ				eSn	Sn	20 12 53.8	-16
JCJ	Chichijima	10.14	191	Pn

YKA	Yellowknife Ar	62.58	31	P	P	20 19 15.2	+0.5
	0.2nm,0.6s,baz=299,slow=7.0,SNR=3.9						
YKB5	Yellowknife Ar	62.58	31	eP	P	20 19 14.9	+0.2
FIA0	FINESS Array S	69.80	333	eP	P	20 20 01.6	+0.7
FINES	FINESS Array B	69.80	333	P	P	20 20 01.6	+0.7
	1.1nm,0.7s,baz=57,slow=5.9,SNR=3.6						
BSMT	Bassoo Peak	70.00	45	eP	P	20 20 01.5	-1.3
NVAR	Mina Array Bea	73.09	54	P	P	20 20 21.8	+0.2
	0.4nm,0.4s,baz=300,slow=7.2,SNR=3.7						
AKASG	Malin Array Be	75.62	324	P	P	20 20 36.6	+0.8
	1.4nm,0.5s,baz=42,slow=6.1,SNR=7.1						
GERES	GERESS Array B	83.83	330	P	P	20 21 21.0	+0.5
	0.8nm,0.6s,baz=38,slow=5.0,SNR=2.2						

GUC 08 20:14:35.3±0.3, 33.49S×72.57W, h15km±26km, ML3.5, Off coast of central Chile

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
TACH	Talagante	1.37	97	eP	Pn	20 14 57.4	-2.6
TACH				eS	Sn	20 15 14.4	-3.5
ROCH	El Roble	1.41	69	eP	Pn	20 14 58.5	-2.1
ROCH				eS	Sn	20 15 16.0	-3.0
RCDM	Rinconada Maip	1.48	91	eP	Pn	20 14 59.0	-2.4
PEL	Peldehue	1.62	78	eP	Pn	20 15 01.5	-1.8
PEL				eS	Sn	20 15 21.4	-2.5
PEL				IAML		20 15 26.0	
	comp=E,930nm,0.5s						
ANTU	Antumapu	1.62	93	eS	Sn	20 15 21.6	-2.5
ANTU				IAML		20 15 23.3	
	comp=N,875nm,0.9s						
CHCH	Chadas Angostu	1.66	106	eP	Pn	20 15 02.0	-1.9
CHCH				eS	Sn	20 15 22.6	-2.4
CLCH	Cerro Calan	1.70	88	eP	Pn	20 15 03.1	-1.5
CLCH				eS	Sn	20 15 23.9	-2.2
CLCH				IAML		20 15 28.5	
	comp=E,846nm,0.8s						

IDC 08 20:21:31.5±2.2, 12.05S×171.46E, h0km, mb3.8/5, mb1 4.0/5, mb1mx3.7/46, mbtmp3.8/5, Error ellipse: s-maj=101.4km s-min=27.4km az=134.0, Santa Cruz Islands region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
STKA	Stephens Creek	33.82	230	P	P	20 28 15.2	-0.4
	2.5nm,0.4s,baz=79,slow=11,SNR=8.6						
ASAR	Alice Springs	37.45	247	P	P	20 28 47.5	+0.5
	0.3nm,0.3s,baz=75,slow=9.5,SNR=7.0						
CMAR	Chiang Mai Arr	77.66	322	P	P	20 33 30.1	-0.4
	0.3nm,0.7s,baz=132,slow=5.1,SNR=3.8						
ILAR	Eielson Array	82.77	17	P	P	20 33 57.8	+0.7
	0.7nm,0.7s,baz=233,slow=6.0,SNR=7.8						
YKA	Yellowknife Ar	93.33	27	P	P	20 34 47.0	-1.0
	0.2nm,0.5s,baz=259,slow=4.9,SNR=3.7						

IDC 08 20:22:47.5±1.7, 8.97S×125.39E, h0km, mb3.2/1, mb1 3.5/5, mb1mx3.3/53, mbtmp3.3/5, ML3.4/3, Error ellipse: s-maj=42.0km s-min=26.5km az=75.0, Timor region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
BATI	Baumata	2.10	234	Pn	Pn	20 23 23.7	-0.3
	baz=72,slow=19						
FITZ	Fitzroy Crossi	9.08	178	Pn	Pn	20 25 00.1	+0.1
	0.2nm,0.3s,baz=0.0,slow=12,SNR=4.8						
FITZ				Sn	Sn	20 26 38.7	-4.2
	0.4nm,0.3s,baz=71,slow=18,SNR=5.4						
WRA	Warramunga Arr	13.92	143	Pn	Pn	20 26 06.2	-0.1
	0.2nm,0.3s,baz=320,slow=13,SNR=6.9						
WRA				Sn	Sn	20 28 33.3	-8.4
	0.1nm,0.3s,baz=319,slow=25,SNR=3.2						
ASAR	Alice Springs	16.73	152	Pn	Pn	20 26 43.5	0.0
	0.1nm,0.3s,baz=320,slow=11,SNR=9.0						
ASAR				Sn	Sn	20 29 40.7	-9.4
	0.0nm,0.3s,baz=329,slow=28,SNR=2.6						
MKAR	Makanchi Array	67.48	329	P	P	20 33 45.4	+0.1
	0.1nm,0.5s,baz=123,slow=7.2,SNR=3.6						

JMA 08 20:32:21.1±0.1, 36.22N×141.07E, h45km±2km, M2.1, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
CHOJ	Chosi	0.54	198	P	Pn	20 32 32.6	0.0
CHOJ				S	Sn	20 32 40.5	-0.3
JHO	Hitachi	0.56	314	P	Pn	20 32 32.6	-0.3
JHO				S	Sn	20 32 40.2	-1.1
JYT	Yasato	0.71	271	P	Pn	20 32 35.0	+0.2
JYT				S	Sn	20 32 44.3	-0.3
JAG	Ashikaga	1.32	279	P	Pn	20 32 43.9	+0.8
JAG				S	Sn	20 32 59.8	+0.3

IDC 08 20:32:33.1±3.3, 36.78N×143.25E, h0km, mb3.4/3, mb1 3.6/4, mb1mx3.3/47, mbtmp3.4/4, ML3.7/1, MS2.6/1, Ms1 2.6/1, ms1mx2.0/31, Error ellipse: s-maj=84.5km s-min=33.7km az=52.0, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
MJAR	Matsushiro Arr	4.06	268	Pn	Pn	20 33 35.8	-0.7
	5.2nm,0.3s,baz=78,slow=10,SNR=26						
MAT	Matsushiro	4.06	268	P	Pn	20 33 36.3	-0.2
MAT				S	Sn	20 34 01.8	-23
ZALV	Zalesovo Beam	43.17	313	LR	LR	20 57 04.6	
	comp=Z,7.5nm,21.3s,baz=9.5,slow=34						
MKAR	Makanchi Array	45.49	303	P	P	20 40 54.2	0.0
	0.2nm,0.6s,baz=91,slow=8.5,SNR=2.3						
WRA	Warramunga Arr	57.04	190	P	P	20 42 20.8	-0.2
	0.8nm,0.7s,baz=9.3,slow=7.2,SNR=6.0						
ASAR	Alice Springs	60.76	190	P	P	20 42 46.8	0.0
	0.1nm,0.6s,baz=14,slow=9.3,SNR=2.6						

*NIED **08** 20:38:00, 38.40N×142.30E, h35km, Mw3.8 Best double couple: M₀5.59000×10¹⁴ NP1:ϕs=85.00000°, δ49.00000°, λ-128.00000°. NP2:ϕs=315.00000°, δ53.00000°, λ-54.00000°.*

*IDC **08** 20:38:12.8±2.1, 38.31N×142.59E, h0km, mb3.8/7, mb1 3.8/9, mb1mx3.6/49, mbtmp3.8/9, ML3.6/2, MS2.8/1, Ms1 2.8/1, ms1mx2.2/43, Error ellipse: s-maj=48.4km s-min=23.4km az=85.0*

*ISCJB **08** 20:38:16.3±1.4, 38.32N±0.04×142.40E±0.06, h30km±9km, mb3.8/9, Error ellipse: s-maj=8.8km s-min=5.5km az=20.9*

*NEIC **08** 20:38:16.9±1.0, 38.25N×142.69E, h35km, mb4.1/2, Error ellipse: s-maj=20.7km s-min=9.4km az=108.0*

*JMA **08** 20:38:17.6±0.2, 38.36N×142.29E, h36km±3km, M3.6*

ISC 08 20:38:15.7±2.2, 38.34N±0.05×142.36E±0.08, h13km±11km, n41, σ1°39/44, mb3.9/9, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JIO	Ouri	0.81	278	P	Pg	20 38 31.7	+0.4
JIO				S	Sg	20 38 41.3	-0.6
MIYJ	Miyakonagasawa	1.30	341	P	Pn	20 38 39.0	-0.6
MIYJ				S	Sb	20 38 54.4	-2.2
JMM	Marumori	1.33	249	P	Pn	20 38 39.9	0.0
JMM				S	Sb	20 38 54.4	-2.9
JOU	Okura	1.34	271	P	Pn	20 38 40.0	-0.1
JOU				S	Sb	20 38 55.8	-1.8
JOM	Ohasama	1.40	324	P	Pn	20 38 41.1	+0.1
JOM				S	Sb	20 38 57.8	-1.8
JFK	Kawauchi	1.53	231	P	Pn	20 38 41.6	-1.1
JFK				S	Sn	20 38 58.4	-4.1
JYK	Kaneyama	1.67	291	P	Pn	20 38 45.0	+0.4
JRG	Rokugo	1.71	308	P	Pn	20 38 46.0	+0.8
JRG				eS	Sn	20 39 07.7	+0.8
JFT	Otama	1.80	243	P	Pn	20 38 47.4	+0.9
JFT				S	Sn	20 39 07.7	-1.5
JYS	Shirataka	1.81	267	P	Pn	20 38 46.9	+0.3
JKZ	Kuzumaki	1.82	334	P	Pn	20 38 47.6	+0.8
JANG	Nango	2.13	342	P	Pn	20 38 52.0	+1.0
ERM	Erimo	3.72	9	eP	Pn	20 39 12.1	-0.7
MJAR	Matsushiro Arr	3.76	243	Pn	Pn	20 39 15.9	+2.5
	1.2nm,0.3s,baz=88,slow=16,SNR=9.5						
MAJO	Matsushiro	3.77	243	ePn	Pn	20 39 15.6	+2.2
MAT	Matsushiro	3.77	243	P	Pn	20 39 16.3	+2.9
MAT				eS	Sn	20 40 00.2	+2.6
INU	Inuyama	5.23	237	ePn	Pn	20 39 34.5	+1.0
JHJ2	Mitsune	5.62	202	ePn	Pn	20 39 33.9	-4.9
JHJ	Hachijo jima 2	5.62	203	Pn	Pn	20 39 37.4	-1.5
	16nm,0.3s,baz=45,slow=14,SNR=7.1						
JHJ				Sn	Sn	20 40 38.9	-4.4
	11nm,0.3s,baz=45,slow=10.0,SNR=4.0						
ASAJ	Asahikawa	5.77	2	ePn	Pn	20 39 39.3	-1.6
YSS	Yuzh-Sakhalins	8.61	2	ePn	Pn	20 40 15.0	-4.9
USRK	Ussuriysk Ar.	9.75	310	Pn	Pn	20 40 40.8	+5.2
	0.1nm,0.3s,baz=120,slow=14,SNR=2.6						
JNU	Nakatsue	10.69	244	LR	LR	20 45 11.9	
	comp=Z,47nm,19.9s,baz=125,slow=39						
SONA0	Songino Array	27.71	302	eP	P	20 44 04.8	+1.1
	4.0nm,1.6s						
SONM	Songino Array	27.71	302	P	P	20 44 04.8	+1.1
	0.5nm,0.7s,baz=92,slow=11,SNR=2.7						
ZAA0	Zalesovo Array	41.60	311	eP	P	20 46 03.2	+0.1
ZAA1	Zalesovo Array	41.60	311	eP	P	20 46 03.4	+0.3
ZALV	Zalesovo Beam	41.60	311	P	P	20 46 03.4	+0.3
	1.5nm,0.5s,baz=92,slow=7.7,SNR=7.0						
CMAR	Chiang Mai Arr	42.56	255	P	P	20 46 11.0	-0.4
	0.3nm,0.6s,baz=51,slow=8.0,SNR=5.1						
CM01	Chiang Mai Arr	42.57	255	eP	P	20 46 11.3	-0.1
LSA	Lhasa	42.85	274	eP	P	20 46 15.0	+0.8
MK32	Makanchi Array	44.08	301	eP	P	20 46 23.2	0.0
MKAR	Makanchi Array	44.08	301	P	P	20 46 23.2	0.0
	0.3nm,0.6s,baz=86,slow=7.4,SNR=6.8						
MAKZ	Makanchi	44.28	301	eP	P	20 46 25.3	+0.4
KURK	Kurchatov	45.73	307	eP	P	20 46 36.1	-0.2
	3.2nm,0.9s						
KURBB	Kurchatov Arra	45.80	307	P	P	20 46 37.2	+0.3
	2.3nm,0.5s,baz=80,slow=7.8,SNR=36						
ABKAR	Akbulak array	57.68	310	eP	P	20 48 05.9	+0.3
WR1	Warramunga Arr	58.46	189	eP	P	20 48 10.8	-0.6
WRA	Warramunga Arr	58.46	189	P	P	20 48 10.8	-0.6
	0.4nm,0.6s,baz=6.7,slow=7.0,SNR=4.6						
FIA0	FINESS Array S	68.01	332	eP	P	20 49 14.6	+0.4
FINES	FINESS Array B	68.01	332	P	P	20 49 14.6	+0.4
	1.3nm,0.7s,baz=51,slow=4.4,SNR=5.2						

NNC 08 20:48:40.5±3.8, 36.97N×70.10E, h0km, mb3.6, mpv3.2, 3C-6D, Error ellipse: s-maj=32.2km s-min=26.9km az=150.0, Hindu Kush region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
SFK	Sufi-Kurgan	4.05	40	⇓Pn	Pn	20 49 44.7	+0.8
	1.5nm,0.4s						
SFK				⇓Sn	Sn	20 50 34.3	+2.2
	8.7nm,0.6s						
MNAS	Manas	5.81	18	⇓Pn	Pn	20 50 08.7	+0.6
	1.2nm,0.5s						
MNAS				⇑Sn	Sn	20 51 16.1	+0.6
	4.5nm,0.7s						
KK31	Karatay Array	6.13	3	Pn	Pn	20 50 13.9	+1.5
	0.3nm,0.2s,baz=163,slow=8.4,SNR=18						
KK31				⇓Sn	Sn	20 51 25.4	+2.1
	1.5nm,0.8s						
AAK	Ala-Archa	6.59	30	⇑Pn	Pn	20 50 18.0	-0.8
	2.2nm,0.7s						
AAK				⇓Sn	Sn	20 51 33.6	-1.1
	3.2nm,0.6s						
TKM2	Tokmak 2	7.29	34	⇑Pn	Pn	20 50 25.8	-2.7
	2.4nm,0.5s						
AB31	Akbulak array	14.33	332	⇓Pn	Pn	20 52 02.5	-2.0
	0.2nm,0.4s,baz=154,slow=12,SNR=5.7						

*IDC **08** 20:49:40.5±2.5, 34.98N×141.45E, h0km, mb3.7/3, mb1 3.8/6, mb1mx3.5/54, mbtmp3.8/6, ML3.6/3, MS2.5/1, Ms1 2.5/1, ms1mx2.2/41, Error ellipse: s-maj=63.9km s-min=22.1km az=69.0*

*JMA **08** 20:49:43.9±0.4, 34.94N×141.33E, h43km±4km, M3.1*

ISC 08 20:49:42.3±2.2, 34.88N±0.05×141.11E±0.08, h5km±13km, n19, σ1°00/20, mb3.5/3, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
BSO1	Boso 1	0.25	206	P	Pn	20 49 53.5	+1.3
BSO1				X		20 50 01.3	
BSO3	Boso 3	0.50	261	P	Pn	20 49 57.5	+1.6
BSO3				X		20 50 08.2	
BSO4	Boso 4	0.65	280	P	Pn	20 49 59.5	+1.4
KTR	Katsuura	0.71	292	P	Pn	20 49 59.6	+0.6
KTR				eS	Sn	20 50 11.2	+0.9
CHOJ	Chosi	0.85	346	P	Pb	20 49 59.2	-0.3
JCN	Nagara	0.92	306	P	Pn	20 50 03.3	+1.4
JIM2	Oshima 3	1.39	264	P	Pg	20 50 09.2	+0.2
JIM2				S	Sn	20 50 27.2	-0.1
JOD2	Odawara 2	1.70	284	P	Pb	20 50 13.3	-0.9
JOD2				S	Sg	20 50 37.5	+0.4
JHJ	Hachijo jima 2	2.08	213	Pn	Pb	20 50 19.8	-0.6
	12nm,0.3s,baz=31,slow=19,SNR=6.7						
JHJ				Sn	Sn	20 50 44.0	0.0
	35nm,0.3s,baz=51,slow=17,SNR=6.1						
MJAR	Matsushiro Arr	2.89	306	Pn	Pn	20 50 30.0	+1.0
	3.3nm,0.3s,baz=105,slow=13,SNR=27						
MAT	Matsushiro	2.89	306	P	Pb	20 50 32.8	-1.5
MAT				eS	Sb	20 51 08.7	-1.3
JCJ	Chichijima	7.81	173	Pn	Pn	20 51 36.5	-0.2
	7.5nm,0.3s,baz=319,slow=19,SNR=5.5						
JNU	Nakatsue	8.68	261	LR	LR	20 55 26.1	
	comp=Z,31nm,19.7s,baz=300,slow=39						
H11N2	WAKE ISLAND Hy	27.33	117	T	T	21 24 21.7	
	baz=308						
H11N1	WAKE ISLAND Hy	27.33	117	T	T	21 24 12.7	
	baz=309						
H11N3	WAKE ISLAND Hy	27.34	117	T	T	21 24 18.6	
	baz=308						
ZALV	Zalesovo Beam	43.21	314	P	P	20 57 44.0	-0.1
	0.5nm,0.5s,baz=100,slow=7.9,SNR=3.7						
MKAR	Makanchi Array	45.09	304	P	P	20 57 59.3	0.0
	0.3nm,0.7s,baz=83,slow=9.9,SNR=4.8						
WRA	Warramunga Arr	54.90	188	P	P	20 59 13.7	-0.3
	1.9nm,1.0s,baz=5.4,slow=7.4,SNR=8.4						

*IDC **08** 20:51:58.0±1.4, 38.15S×75.44W, h0km, mb3.9/6, mb1 4.1/8, mb1mx3.9/35, mbtmp3.9/8, ML3.7/1, MS3.2/1, Ms1 3.3/1, ms1mx2.7/19, Error ellipse: s-maj=46.2km s-min=26.7km az=48.0*

*ISCJB **08** 20:52:02.3±1.2, 38.15S±0.2×75.35W±0.2, h33km, mb3.9/6, Error ellipse: s-maj=31.3km s-min=16.8km az=141.3*

ISC 08 20:52:03.5±1.3, 38.15S±0.2×75.55W±0.2, h35km, n10, σ1°66/12, mb3.9/6, Off coast of central Chile

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
PLCA	Paso Flores	4.69	126	Pn	Pn	20 53 09.9	-1.9
	0.9nm,0.3s,baz=325,slow=8.9,SNR=17						
PLCA				Sn	Sn	20 54 08.3	+3.3
	1.5nm,0.3s,baz=244,slow=16,SNR=6.3						
CPUP	Villa Florida	19.29	58	P	P	20 56 24.8	-0.5
	baz=233,slow=16,SNR=3.9						
CPUP				LR	LR	21 04 23.6	
	comp=Z,75nm,18.7s,baz=216,slow=39						
LPAZ	La Paz	22.63	19	P	P	20 57 03.4	+1.3
	1.4nm,0.8s,baz=168,slow=9.6,SNR=4.4						
TXAR	Lajitas Array	72.02	334	P	P	21 03 24.9	+1.1
	1.0nm,0.7s,baz=159,slow=11,SNR=5.2						
DBIC	Dimbokro	79.11	73	P	P	21 04 03.1	-1.5
	2.4nm,1.0s,baz=236,slow=7.3,SNR=3.6						
LBTB	Lobtse	83.11	116	P	P	21 04 26.2	+0.2
	1.9nm,0.6s,baz=242,slow=7.2,SNR=3.6						
PDAR	Pinedale Array	86.19	336	P	P	21 04 41.6	+0.5
	0.6nm,0.9s,baz=148,slow=7.1,SNR=4.0						
TORD	Torodi Ar. Bea	88.19	72	P	P	21 04 51.0	-0.2
	0.4nm,0.7s,baz=238,slow=4.4,SNR=2.6						
BVAR	Borovoye Array	152.13	46	PKPbc	PKPbc	21 11 54.8	+0.3
	0.9nm,0.6s,baz=298,slow=3.2,SNR=5.4						
BVAR				PKPab	PKPab	21 12 02.2	-2.1
	0.5nm,0.5s,baz=294,slow=4.9,SNR=3.3						
ZALV	Zalesovo Beam	159.15	34	PKPab	PKPab	21 12 34.9	+0.6
	0.5nm,0.3s,baz=305,slow=5.2,SNR=4.1						

*NIED **08** 21:12:00, 37.30N×142.20E, h5km, Mw3.6 Best double couple: M₀2.64000×10¹⁴ NP1:ϕs=85.00000°, δ60.00000°, λ-33.00000°. NP2:ϕs=193.00000°, δ62.00000°, λ-145.00000°.*

*IDC **08** 21:12:16.7±1.1, 37.34N×142.39E, h0km, mb3.5/8, mb1 3.6/9, mb1mx3.4/46, mbtmp3.5/9, ML2.8/1, Error ellipse: s-maj=29.5km s-min=22.5km az=76.0*

*ISCJB **08** 21:12:18.2±2.2, 37.28N±0.07×142.31E±0.09, h22km±14km, mb3.5/8, Error ellipse: s-maj=14.2km s-min=9.5km az=140.5*

*JMA **08** 21:12:18.7±0.3, 37.28N×142.23E, h16km±3km, M3.6*

ISC 08 21:12:17.8±2.3, 37.33N±0.07×142.23E±0.08, h5km±12km, n16, σ0°79/22, mb3.5/8, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JFK	Kawauchi	1.08	273	P	Pg	21 12 38.7	+0.2
JFK				S	Sg	21 12 52.8	+0.2
ONAJ	Iwakimizuishiy	1.17	259	P	Pg	21 12 39.4	-0.7
ONAJ				eS	Sg	21 12 56.0	+0.7
JMM	Marumori	1.26	296	P	Pg	21 12 42.0	0.0
JMM				eS	Sg	21 12 58.4	0.0
JIO	Ouri	1.32	328	P	Pb	21 12 42.7	-0.4
JIO				eS	Sn	21 13 01.1	+0.1
JFT	Otama	1.52	278	P	Pn	21 12 46.0	+0.3
JFT				eS	Sn	21 13 05.4	-0.5
JOU	Okura	1.62	310	P	Pn	21 12 47.4	+0.4
JOU				eS	Sn	21 13 08.5	+0.2
MJAR	Matsushiro Arr	3.32	258	Pn	Pn	21 13 12.2	+1.8
	1.0nm,0.3s,baz=86,slow=15,SNR=11						
MAT	Matsushiro	3.32	258	P	Pn	21 13 13.8	+3.4
MAT				eS	Sb	21 13 56.2	-1.6
SONM	Songino Array	28.17	303	P	P	21 18 11.9	+0.8
	0.6nm,0.8s,baz=110,slow=8.1,SNR=3.2						
ZALV	Zalesovo Beam	42.20	312	P	P	21 20 10.9	-0.4
	0.3nm,0.3s,baz=100,slow=8.1,SNR=3.1						
MKAR	Makanchi Array	44.52	302	P	P	21 20 30.6	+0.4
	0.4nm,0.7s,baz=83,slow=9.2,SNR=5.5						
KURBB	Kurchatov Arra	46.34	308	P	P	21 20 44.9	+0.3
	0.8nm,0.5s,baz=82,slow=7.9,SNR=13						
WRA	Warramunga Arr	57.45	189	P	P	21 22 06.4	-1.2
	0.6nm,0.9s,baz=6.2,slow=6.8,SNR=2.9						
ASAR	Alice Springs	61.17	189	P	P	21 22 33.9	+0.5
	0.3nm,0.8s,baz=16,slow=6.9,SNR=2.6						
YKA	Yellowknife Ar	63.23	30	P	P	21 22 46.1	-0.6
	0.1nm,0.4s,baz=300,slow=6.4,SNR=3.2						
FINES	FINESS Array B	68.86	332	P	P	21 23 23.1	+0.2
	0.6nm,0.7s,baz=24,slow=7.8,SNR=3.1						

*IDC **08** 21:16:03.7±2.3, 36.87N×141.46E, h0km, mb3.3/4, mb1 3.4/6, mb1mx3.2/43, mbtmp3.3/6, ML3.3/2, Error ellipse: s-maj=52.2km s-min=22.5km az=75.0*

*ISCJB **08** 21:16:08.9±1.0, 36.85N±0.04×141.25E±0.1, h46km±7km, mb3.1/4, Error ellipse: s-maj=14.7km s-min=6.8km az=6.8*

*JMA **08** 21:16:10.6±0.1, 36.90N×141.06E, h50km±1km, M3.5*

JMA Felt I J1.

ISC 08 21:16:09.9±1.5, 36.88N±0.04×141.20E±0.10, h38km±2km, n13, σ0°49/20, mb3.2/4, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
ONAJ	Iwakimizuishiy	0.40	305	P	Pn	21 16 19.5	+0.6
ONAJ				S	Sn	21 16 25.7	-0.1
JFK	Kawauchi	0.56	332	P	Pn	21 16 21.5	+0.1
JFK				S	Sn	21 16 29.0	-0.4
JHO	Hitachi	0.57	243	P	Pn	21 16 21.5	-0.2
JHO				S	Sn	21 16 29.3	-0.6
JFT	Otama	0.94	313	P	Pn	21 16 26.9	+0.3
JFT				S	Sn	21 16 38.1	-0.8
JMM	Marumori	1.04	342	P	Pn	21 16 28.0	+0.1
JMM				S	Sn	21 16 40.5	-0.7
JFY	Yanaizu	1.31	294	P	Pn	21 16 31.5	-0.1
MJAR	Matsushiro Arr	2.43	263	Pn	Pn	21 16 47.3	+0.2
	3.8nm,0.3s,baz=86,slow=15,SNR=13						
MAT	Matsushiro	2.43	263	P	Pn	21 16 47.5	+0.5
MAT				eS	Sn	21 17 15.5	0.0
JHJ	Hachijo jima 2	3.93	198	Pn	Pn	21 17 07.5	-0.1
	6.9nm,0.3s,baz=53,slow=20,SNR=4.6						
JHJ				Sn	Sn	21 17 52.6	+0.2
	12nm,0.3s,baz=86,slow=19,SNR=4.4						
SONM	Songino Array	27.73	304	P	P	21 21 55.5	+0.7
	0.3nm,0.6s,baz=90,slow=9.1,SNR=2.6						
MKAR	Makanchi Array	44.06	302	P	P	21 24 14.7	+0.7
	0.1nm,0.6s,baz=100,slow=7.9,SNR=2.4						
KURBB	Kurchatov Arra	45.97	308	P	P	21 24 29.2	+0.2
	0.2nm,0.5s,baz=83,slow=7.8,SNR=4.1						
WRA	Warramunga Arr	56.88	188	P	P	21 25 50.2	-0.7
	0.2nm,0.6s,baz=3.1,slow=7.2,SNR=4.2						

*IDC **08** 21:18:19.4±2.6, 31.03N×78.27E, h0km, mb3.6/2, mb1 3.5/4, mb1mx3.2/54, mbtmp3.3/4, ML2.8/2, Error ellipse: s-maj=105.6km s-min=33.0km az=66.0*

*NDI **08** 21:18:23.2±2.2, 30.98N×77.97E, h9km±5km, ML3.4*

ISC 08 21:18:20.2±1.3, 31.00N±0.04×78.18E±0.04, h6km±9km, n19, σ1°47/31, Western Xizang-India border region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
DDI	Dehra Dun	0.69	189	eP	Pn	21 18 37.1	+0.5
DDI				eS	Sn	21 18 47.3	-0.3
DDI				IAML		21 18 47.4	
	comp=N,57μm,0.3s						
DDI				IAML		21 18 48.2	
	comp=E,102μm,0.3s						
SMLA	Simla	0.88	278	*i* P	Pg	21 18 37.4	+0.3
SMLA				*i* S	Sg	21 18 47.4	-1.2
SMLA				*i* S	Sg	21 18 47.5	-1.1
SMLA				AML	AML	21 18 48.8	
	comp=E,5μm,0.3s						
SMLA				AML	AML	21 18 49.3	
	comp=N,5μm,0.3s						
SMLA	Simla	0.88	278	eP	Pg	21 18 37.4	+0.3
SMLA				eS	Sg	21 18 47.4	-1.1
SMLA				IAML		21 18 48.2	
	comp=N,696nm,0.6s						
SMLA				IAML		21 18 49.0	
	comp=E,514nm,0.5s						
SDNR	Sundarnagar	1.15	296	eP	Pg	21 18 44.0	+1.7
SDNR				ex	Sn	21 19 01.0	+2.0
KKR	Kurukshetra	1.57	229	eP	Pg	21 18 51.6	+1.3
KKR				ex	Sg	21 19 11.7	+1.0
KALG	Kalgarh	1.57	162	ex	Pn	21 18 40.0	-8.6
KALG				ex	Sn	21 19 02.3	-7.0
DHRM	DHARAMSHALA	2.03	308	eP	P

λ-88.00000°.
IDC ***08*** *21:24:02.5±1.0, 37.°01N×144.°35E, h0km, mb3.7/8, mb1 3.8/12, mb1mx3.6/45, mbtmp3.7/12, ML3.2/4, Error ellipse: s-maj=26.1km s-min=18.7km az=107.0*
ISCJB ***08*** *21:24:05.4±0.6, 37.°16N±0.°04×144.°16E±0.°05, h33km, mb3.7/8, Error ellipse: s-maj=6.6km s-min=4.8km az=139.6*
JMA ***08*** *21:24:06.4±0.5, 37.°20N×144.°15E, h56km, M4.0*
ISC 08 21:24:08.0±0.9, 37.°18N±0.°05×144.°17E±0.°08, h35km, n28, σ1§72/37, mb3.9/8, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
JIO	**Ouri**	**2.57**	**300**	S		**Sn**	**21 25 15.8**	**-1.4**
JFK	**Kawauchi**	**2.64**	**275**	P		**Pn**	**21 24 47.9**	**-0.2**
JFK				*eS*		**Sn**	**21 25 17.2**	**-1.7**
ONAJ	**Iwakimizuishiy**	**2.70**	**269**	S		**Sn**	**21 25 19.3**	**-1.1**
JFT	**Otama**	**3.08**	**277**	P		**Pn**	**21 24 54.8**	**+0.7**
JFT				S		**Sn**	**21 25 30.0**	**+0.4**
JOM	**Ohasama**	**3.22**	**316**	P		**Pn**	**21 24 54.5**	**-1.5**
JOM				S		**Sn**	**21 25 31.4**	**-1.8**
BSO1	**Boso 1**	**3.62**	**227**	P		**Pn**	**21 24 59.8**	**-1.2**
BSO1				S		**Sn**	**21 25 42.2**	**0.0**
JRY	**Ryogami san**	**4.40**	**256**	P		**Pn**	**21 25 11.8**	**-0.5**
JRY				S		**Sn**	**21 26 00.3**	**-2.0**
JOD2	**Odawara 2**	**4.53**	**247**	P		**Pn**	**21 25 13.9**	**-0.2**
JOD2				*eS*		**Sn**	**21 26 02.9**	**-2.7**
MJAR	**Matsushiro Arr** 2.3nm,0.3s,baz=86,slow=15,SNR=29	**4.82**	**264**	Pn		**Pn**	**21 25 18.1**	**-0.1**
MJAR				Sn		**Sn**	**21 26 12.0**	**-0.8**
MAT	**Matsushiro**	**4.83**	**264**	P		**Pn**	**21 25 19.4**	**+1.3**
MAT				S		**Sn**	**21 26 13.1**	**+0.3**
JOT	**Ohata**	**4.84**	**331**	P		**Pn**	**21 25 18.3**	**-0.1**
JKB	**Kayabe**	**5.29**	**334**	P		**Pn**	**21 25 23.6**	**-0.9**
JKB				*eS*		**Sn**	**21 26 19.5**	**-4.7**
JHJ	**Hachijo jima 2** 6.8nm,0.3s,baz=63,slow=13,SNR=3.1	**5.42**	**223**	Pn		**Pn**	**21 25 24.1**	**-2.2**
JHJ				Sn		**Sn**	**21 26 23.4**	**-3.9**
JCH	**Churui**	**5.46**	**354**	P		**Pn**	**21 25 24.2**	**-2.6**
JCH				S		Sn	21 26 21.9	-6.5
JOSM	**Okushiri--Mats**	**6.09**	**325**	P		**Pn**	**21 25 34.5**	**-1.0**
NEM2	**Nemuro 2**	**6.29**	**11**	P		Pn	21 25 33.4	-4.8
NEM2				*eS*		Sn	21 26 39.7	-9.1
JTKR	**Abashiri--Toko**	**6.79**	**358**	P		**Pn**	**21 25 42.3**	**-2.7**
JTKR				*eS*		Sn	21 26 53.0	-8.0
JHR	**Hokuryu**	**6.81**	**345**	P		**Pn**	**21 25 44.9**	**-0.5**
USRK	**Ussuriysk Ar.** 0.2nm,0.3s,baz=120,slow=15,SNR=4.7	**11.60**	**311**	Pn		**Pn**	**21 26 52.1**	**+1.2**
KLR	**Kul'dur** 0.1nm,0.3s,baz=161,slow=10,SNR=4.0	**15.04**	**327**	Pn		**Pn**	**21 27 40.2**	**+2.4**
SEY	**Seymchan** 0.9nm,0.2s,baz=178,slow=5.5,SNR=6.4	**26.27**	**8**	P		**P**	**21 29 40.6**	**+0.9**
MKAR	**Makanchi Array** 0.2nm,0.7s,baz=84,slow=9.1,SNR=3.6	**45.91**	**302**	P		**P**	**21 32 28.5**	**+1.4**
KURBB	**Kurchatov Arra** 0.6nm,0.5s,baz=81,slow=7.7,SNR=9.2	**47.65**	**308**	P		**P**	**21 32 41.6**	**+1.1**
ILAR	**Eielson Array** 0.6nm,1.0s,baz=263,slow=7.4,SNR=5.3	**48.19**	**32**	P		**P**	**21 32 44.8**	**+0.2**
INK	**Inuvik** 0.9nm,0.6s,baz=288,slow=5.3,SNR=5.6	**53.25**	**27**	P		**P**	**21 33 22.9**	**+0.3**
WRA	**Warramunga Arr** 0.9nm,0.6s,baz=11,slow=7.2,SNR=5.7	**57.57**	**191**	P		**P**	**21 33 53.0**	**-1.2**
ASAR	**Alice Springs** 0.5nm,0.8s,baz=17,slow=9.7,SNR=4.9	**61.29**	**191**	P		**P**	**21 34 18.9**	**-1.0**
AKASG	**Malin Array Be** 0.6nm,0.5s,baz=43,slow=5.9,SNR=4.7	**75.51**	**323**	P		**P**	**21 35 49.7**	**+1.1**

NIED ***08*** *21:30:00, 36.°80N×143.°00E, h8km, Mw4.5 Best double couple: M07.35000×10^15 NP1:φ=24.00000°, δ36.00000°, λ-90.00000°. NP2:φ=204.00000°, δ54.00000°, λ-90.00000°.*
IDC ***08*** *21:30:06.2±0.5, 36.°70N×143.°21E, h0km, mb4.5/26, mb1 4.6/33, mb1mx4.6/40, mbtmp4.5/33, ML3.7/6, MS3.7/21, Ms1 3.7/21, ms1mx3.6/37, Error ellipse: s-maj=13.5km s-min=11.4km az=121.0*
ISCJB ***08*** *21:30:08.2±0.9, 36.°71N±0.°03×143.°18E±0.°02, h20km±6km, mb4.8/139, MS3.9/25, Error ellipse: s-maj=4.5km s-min=2.9km az=168.7*
BJI ***08*** *21:30:10.5, 36.°99N×143.°35E, h43km, mb4.5/60, mB4.9/47, Ms4.4/35, Ms7 4.3/15*
JMA ***08*** *21:30:11.5±0.2, 36.°80N×143.°02E, h65km, M4.5*
MOS ***08*** *21:30:12.8±0.9, 37.°17N×143.°16E, h37km, mb4.9/61, Error ellipse: s-maj=9.0km s-min=5.1km az=99.7*
NEIC ***08*** *21:30:12.2±0.5, 36.°64N×143.°20E, h38km±4km, mb4.8/94, Error ellipse: s-maj=4.1km s-min=3.4km az=142.0*
ISC 08 21:30:11.9±0.4, 36.°72N±0.°04×143.°26E±0.°03, h35km±2km, h35km:pP-P, n519, σ1§14/557, mb4.8/141, MS3.9/27, 20C-8D, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**2.01**	**282**	P		**Pn**	**21 30 40.4**	**-3.0**
ONAJ				S		**Sn**	**21 31 03.7**	**-3.7**
JFK	**Kawauchi**	**2.02**	**289**	P		**Pn**	**21 30 40.7**	**-2.8**
JFK				*eS*		**Sn**	**21 31 03.3**	**-4.3**
JHO	**Hitachi**	**2.17**	**268**	P		**Pn**	**21 30 43.4**	**-2.1**
JHO				*eS*		**Sn**	**21 31 07.3**	**-3.9**
CHOJ	**Chosi**	**2.19**	**243**	P		**Pn**	**21 30 44.7**	**-1.1**
CHOJ				*eS*		**Sn**	**21 31 08.3**	**-3.4**
JFT	**Otama**	**2.47**	**290**	P		**Pn**	**21 30 47.9**	**-1.8**
JFT				S		**Sn**	**21 31 16.0**	**-2.7**
BSO1	**Boso 1**	**2.77**	**223**	P		**Pn**	**21 30 52.5**	**-0.9**
BSO1				S		**Sn**	**21 31 24.9**	**-0.4**
JOM	**Ohasama**	**3.16**	**331**	P		**Pn**	**21 30 57.5**	**-1.7**
JOM				S		**Sn**	**21 31 31.5**	**-4.2**
JYK	**Kaneyama**	**3.18**	**315**	P		**Pn**	**21 30 57.5**	**-2.0**
JYK				*eS*		**Sn**	**21 31 33.3**	**-2.9**
JAW	**Awa shima**	**3.63**	**300**	P		**Pn**	**21 31 04.2**	**-1.4**
JOD2	**Odawara 2**	**3.68**	**248**	S		**Sn**	**21 31 45.0**	**-3.6**
MJAR	**Matsushiro Arr** 24nm,0.3s,baz=92,slow=8.9,SNR=11	**4.07**	**269**	Pn		**Pn**	**21 31 10.2**	**-1.5**
MJAR				Sn		**Sn**	**21 31 54.9**	**-3.2**
MJAR	6.4nm,0.3s,baz=78,slow=12,SNR=4.7			LR		LR	21 32 59.9	
	comp=Z,780nm,20.6s,baz=75,slow=44							
MAJO	**Matsushiro**	**4.07**	**269**	‖	*iP*	**Pn**	**21 31 11.7**	**0.0**
MAJO	**Matsushiro**	**4.07**	**269**	*ePn*		**Pn**	**21 31 11.3**	**-0.4**
JHJ2	**Mitsune**	**4.58**	**219**	P		**Pn**	**21 31 16.9**	**-1.7**
JHJ2	**Mitsune**	**4.58**	**219**	*ePn*		**Pn**	**21 31 17.1**	**-1.5**
JHJ	**Hachijo jima 2** 46nm,0.3s,baz=337,slow=22,SNR=31	**4.59**	**220**	Pn		**Pn**	**21 31 17.0**	**-1.8**
JHJ				Sn		Sn	21 32 04.7	-6.2
	324nm,0.3s,baz=102,slow=22,SNR=12							
INU	**Inuyama**	**5.24**	**257**	*ePn*		**Pn**	**21 31 26.3**	**-1.5**
ERM	**Erimo**	**5.29**	**359**	‖	*iP*	Pn	21 31 24.5	-3.9
ERM					pmax	pmax		
	comp=Z,21nm,0.5s							
ERM	**Erimo**	**5.29**	**359**	*ePn*		Pn	21 31 24.6	-3.8
ASAJ	**Asahikawa**	**7.41**	**356**	*ePn*		**Pn**	**21 31 59.8**	**+2.3**
YUK	**Yuzh-Kuril'sk**	**7.58**	**14**	*eP*		Pn	21 31 55.1	-4.6
YUK				*eS*		Sn	21 33 12.3	-12
YUK					pmax	pmax		
	comp=E,87nm,0.3s							
YUK					pmax	pmax		
	comp=Z,145nm,0.3s							
YUK					pmax	pmax		
	comp=N,63nm,0.2s							
YUK					MLR	MLR		
	comp=Z,1μm,11.0s							
SHO	**Shikotan**	**7.65**	**20**	*eP*		Pn	21 31 54.6	-6.2
SHO				*eS*		Sn	21 33 13.4	-13
SHO					pmax	pmax		
	comp=Z,62nm,0.7s							
SHO					pmax	pmax		
	comp=E,57nm,0.5s							
SHO					pmax	pmax		
	comp=N,20nm,0.4s							
KUR	**Kuril'sk**	**9.19**	**21**	*eP*		**Pn**	**21 32 19.8**	**-2.1**
KUR				*eS*		Sn	21 33 52.1	-12
KUR					pmax	pmax		
	comp=Z,45nm,0.7s							
KUR					pmax	pmax		
	comp=E,18nm,0.3s							
KUR					pmax	pmax		
	comp=N,20nm,0.6s							
CBIJ	**Chichi jima**	**9.63**	**186**	Pn		Pn	21 32 24.2	-3.9
CBIJ				Sn		Sn	21 34 04.0	-11
JCJ	**Chichijima**	**9.63**	**186**	Pn		Pn	21 32 24.2	-3.9
	comp=N,15nm,0.3s,baz=273,slow=22,SNR=39							
JCJ					Sn	Sn	21 34 04.0	-11
	comp=N,58nm,0.3s,baz=4.7,slow=23,SNR=9.0							
YSS	**Yuzh-Sakhalins**	**10.24**	**358**	*eP*		**Pn**	**21 32 34.6**	**-1.6**
YSS					pmax	pmax		
	comp=Z,20nm,0.5s							
YSS	**Yuzh-Sakhalins**	**10.24**	**358**	*ePn*		**Pn**	**21 32 38.9**	**+2.7**
JNU	**Nakatsue**	**10.78**	**254**	Pn		**Pn**	**21 32 42.9**	**-0.9**
	comp=Z,0.6nm,0.3s,baz=52,slow=5.4,SNR=9.2							
JNU					LR	LR	21 37 33.4	
	comp=Z,253nm,19.1s,baz=104,slow=42							
JNU	**Nakatsue**	**10.78**	**254**	*ePn*		**Pn**	**21 32 44.3**	**+0.5**
USRK	**Ussuriysk Ar.**	**11.38**	**315**	Pn		**Pn**	**21 32 50.0**	**-1.8**
	comp=Z,0.7nm,0.3s,baz=130,slow=14,SNR=18							
USRK					LR	LR	21 36 46.8	
	comp=Z,328nm,20.9s,baz=115,slow=35							
KSRS	**Korea Array**	**12.28**	**278**	Pn		**Pn**	**21 33 02.9**	**-1.3**
	comp=Z,0.4nm,0.3s,baz=91,slow=13,SNR=22							
KSRS					LR	LR	21 37 31.3	
	comp=Z,226nm,21.9s,baz=82,slow=36							
KS01	**Wonju Array Si**	**12.30**	**278**	*ePn*		**Pn**	**21 33 05.5**	**+0.9**
KS15	**Wonju Array Si**	**12.31**	**278**	*ePn*		**Pn**	**21 33 05.9**	**+1.3**
KSAR	**Wonju Array Be**	**12.31**	**278**	P		**Pn**	**21 33 02.9**	**-1.7**
KSAR	**Wonju Array Be**	**12.31**	**278**	Pn		**Pn**	**21 33 02.9**	**-1.7**
MDJ	**Mudanjiang**	**13.03**	**312**	P		**Pn**	**21 33 14.5**	**+0.1**
MDJ				S		**Sn**	**21 35 38.1**	**+0.1**
MDJ					pmax	pmax		
	comp=Z,5.0nm,1.0s							
MDJ					pmax	pmax		
	comp=Z,140nm,5.8s							
HABR	**Khabarovsk**	**13.21**	**335**	*ce*	P	**Pn**	**21 33 13.9**	**-2.9**
HABR				*eS*		**Sn**	**21 35 39.2**	**-3.1**
HABR					pmax	pmax		
	comp=N,24nm,1.8s							
HABR					pmax	pmax		
	comp=E,24nm,1.8s							
HABR					pmax	pmax		
	comp=Z,22nm,1.8s							
HABR					MLR	MLR		
	comp=Z,206nm,14.0s							
INCN	**Inchon**	**13.30**	**278**	*ePn*		**Pn**	**21 33 19.8**	**+1.6**
KLR	**Kul'dur**	**15.06**	**330**	Pn		Pn	21 33 37.1	-4.9
	comp=Z,0.4nm,0.3s,baz=126,slow=14,SNR=8.0							
CN2	**Changchun**	**15.32**	**303**	*eP*		**Pn**	**21 33 46.1**	**+0.7**
CN2					pmax	pmax		
	comp=Z,10.0nm,1.0s							
SNY	**Shenyang**	**16.07**	**295**	‖	P	**P**	**21 34 00.6**	**+2.5**
SNY					S	**S**	**21 37 04.6**	**-0.1**
SNY					pmax	pmax		
	comp=Z,190nm,6.3s							
SNY					AMB	AMB		
	comp=Z,200nm,6.2s							
SNY					LR	LR		
	comp=N,200nm,10.3s							
SNY					LR	LR		
	comp=E,450nm,14.1s							
SNY					LR	LR		
	comp=Z,490nm,14.7s							
NKL	**Nikolayevsk**	**16.53**	**355**	*eP*		**Pn**	**21 33 57.7**	**-3.2**
NKL					pmax	pmax		
	comp=Z,15nm,0.9s							
NKL					MLR	MLR		
	comp=N,450nm,19.0s							
NKL					MLR	MLR		
	comp=Z,500nm,19.0s							
DL2	**Dalian**	**17.23**	**284**	P		P	21 34 20.4	+9.4
DL2				pP		sP	21 34 31.8	+7.2
DL2				*eS*		S	21 37 38.6	+10
DL2					pmax	pmax		
	comp=Z,47nm,1.4s							
DL2					pmax	pmax		
	comp=Z,110nm,4.3s							
DL2					LR	LR		
	comp=N,300nm,12.0s							
DL2					LR	LR		
	comp=E,320nm,15.5s							
DL2					LR	LR		
	comp=Z,340nm,16.8s							
PETK	**Petropavlovsk-**	**19.25**	**27**	P		**P**	**21 34 32.9**	**-0.3**
	comp=Z,0.2nm,0.3s,baz=206,slow=11,SNR=3.4							
PETK					LR	LR	21 44 59.4	
	comp=Z,140nm,18.3s,baz=217,slow=46							
PET	**Petropavlovsk**	**19.55**	**29**	*eP*		Pn	21 34 44.4	+6.6
PET					MLR	MLR		
	comp=Z,300nm,19.0s							
PET					MLR	MLR		
	comp=Z,800nm,20.0s							
NJ2	**Nanjing**	**20.66**	**264**	*eP*		**P**	**21 34 48.8**	**+0.2**
NJ2				pP		**pP**	**21 34 59.0**	**+1.2**
NJ2				S		**S**	**21 38 38.7**	**+1.2**
NJ2				sS		**sS**	**21 38 51.7**	**-0.4**
NJ2					pmax	pmax		
	comp=Z,9.0nm,0.5s							
NJ2					pmax	pmax		
	comp=Z,160nm,10.7s							
NJ2					LR	LR		
	comp=Z,1μm,22.5s							
NJ2					LR	LR		
	comp=Z,1μm,20.2s							
TIA	**Tai'an**	**21.01**	**276**	*eP*		**P**	**21 34 52.9**	**+0.5**
TIA					pmax	pmax		
	comp=Z,10.0nm,0.8s							
MA2	**Magadan**	**23.39**	**10**	P		**P**	**21 35 16.2**	**-1.0**
	comp=Z,2.8nm,0.4s,baz=210,slow=11,SNR=7.5							
WHN	**Wuhan**	**24.79**	**264**	‖	P	**P**	**21 35 29.3**	**-1.3**
WHN					S	**S**	**21 39 51.5**	**+0.7**
WHN					pmax	pmax		
	comp=Z,20nm,0.5s							
WHN					LR	LR		
	comp=Z,530nm,13.2s							
WHN					LR	LR		
	comp=Z,2μm,23.0s							
WHN					LR	LR		
	comp=Z,640nm,22.0s							
HHC	**Hu-ho-hao-te**	**24.98**	**289**	*eP*		**P**	**21 35 35.1**	**+2.8**
HHC				PP		**PnPn**	**21 36 09.6**	**+3.5**
HHC				S		**S**	**21 39 55.1**	**+1.3**
HHC				sS		sS	21 40 11.3	+1.1
HHC				SS		**SnSn**	**21 40 53.2**	**+9.4**
HHC					pmax	pmax		
	comp=Z,18nm,1.1s							
HHC					pmax	pmax		
	comp=Z,71nm,3.7s							
HHC					LR	LR		
	comp=Z,2μm,14.9s							
HHC					LR	LR		
	comp=Z,2μm,13.7s							
CIT	**Chita**	**25.94**	**316**	*eP*		**P**	**21 35 43.4**	**+2.6**
CIT				*e*			21 35 54.4	
H11N2	**WAKE ISLAND Hy** baz=311,slow=75,SNR=13	**26.72**	**123**	T		T	22 03 18.5	
YAK	**Yakutsk**	**26.72**	**346**	P		**P**	**21 35 46.8**	**-0.9**
	comp=Z,26nm,0.6s,baz=301,slow=1.0,SNR=12							
YAK	**Yakutsk**	**26.72**	**346**	*eP*		**P**	**21 35 46.4**	**-1.3**
YAK					pmax	pmax		
	comp=Z,26nm,0.9s							
YAK					pmax	pmax		
	comp=N,10.0nm,1.0s							
YAK					pmax	pmax		
	comp=E,3.0nm,1.2s							
YAK					pmax	pmax		
	comp=Z,27nm,0.9s							
YAK					pmax	pmax		
	comp=E,11nm,0.9s							
YAK					pmax	pmax		
	comp=N,11nm,0.9s							
YAK					MLR	MLR		
	comp=Z,251nm,18.0s							
YAK					MLR	MLR		
	comp=N,162nm,17.0s							
YAK					MLR	MLR		
	comp=E,119nm,19.0s							
YAK	**Yakutsk**	**26.72**	**346**	*eP*		**P**	**21 35 46.7**	**-0.9**
	comp=E,31nm,0.8s							
H11N1	**WAKE ISLAND Hy** baz=311,SNR=10	**26.73**	**123**	T		T	22 03 19.7	
H11N3	**WAKE ISLAND Hy** baz=311,slow=75,SNR=12	**26.74**	**123**	T		T	22 03 17.3	
SEY	**Seymchan**	**26.84**	**9**	P		**P**	**21 35 48.6**	**-0.2**
	comp=E,4.0nm,0.3s,baz=193,slow=6.3,SNR=25							
SEY	**Seymchan**	**26.84**	**9**	‖	*eP*	**P**	**21 35 49.2**	**+0.4**
WAKE	**Wake Island**	**26.87**	**124**	*eP*		**P**	**21 35 49.2**	**-0.2**
	comp=E,417nm,1.6s							
H11S1	**WAKE ISLAND Hy** baz=316,slow=76,SNR=8.4	**27.45**	**125**	T		T	22 04 45.5	
H11S3	**WAKE ISLAND Hy**	**27.45**	**125**	T		T	22 04 43.7	
	baz=316,slow=76,SNR=7.1							
H11S2	**WAKE ISLAND Hy** baz=316,slow=76,SNR=9.4	**27.47**	**125**	T		T	22 04 51.4	
XAN	**Xi'an**	**28.04**	**275**	P		**P**	**21 36 01.2**	**+1.3**
XAN					pmax	pmax		
	comp=E,4.0nm,0.7s							
XAN					pmax	pmax		
	comp=E,110nm,4.8s							
BOD	**Bodaibo**	**28.60**	**327**	*eP*		**P**	**21 36 02.7**	**-1.8**
BOD					pmax	pmax		
	comp=Z,13nm,1.8s							
ULN	**Ulaanbaatar**	**28.76**	**304**	‖	*iP*	**P**	**21 36 07.9**	**+1.6**
ULN					pmax	pmax		
	comp=Z,21nm,2.5s							
ULN	**Ulaanbaatar**	**28.76**	**304**	*eP*		**P**	**21 36 07.8**	**+1.5**
	comp=Z,9.8nm,1.1s							
ENH	**Enshi**	**28.79**	**267**	*eP*		**P**	**21 36 06.6**	**0.0**
	comp=Z,26nm,1.0s							
ENH				*e*			21 36 19.6	
SONA1	**Songino Array**	**29.19**	**304**	*eP*		**P**	**21 36 10.8**	**+0.7**
SONM	**Songino Array**	**29.19**	**304**	P		**P**	**21 36 08.7**	**-1.5**
	comp=Z,3.4nm,0.6s,baz=99,slow=9.0,SNR=18							
SONM					LR	LR	21 49 06.1	
	comp=Z,130nm,18.1s,baz=169,slow=39							
LZH	**Lanzhou**	**31.58**	**281**	*eP*		P	21 36 34.6	+3.2
LZH					pP	sP	21 36 44.6	-1.0
LZH					sP	pP	21 36 48.0	+6.6
LZH					pmax	pmax		
	comp=Z,23nm,1.2s							
LZH					pmax	pmax		
	comp=Z,150nm,4.0s							
LZH					LR	LR		
	comp=Z,230nm,12.4s							
LZH					LR	LR		
	comp=Z,330nm,14.0s							
ZAK	**Zakamensk**	**31.63**	**308**	*eP*		**P**	**21 36 30.7**	**-0.9**
ZAK				*e*			21 39 23.2	
ZAK					pmax	pmax		
	comp=Z,6.0nm,1.2s							
ZAK					pmax	pmax		
	comp=Z,3.0nm,1.3s							
TLY	**Talaya**	**31.66**	**311**	P		**P**	**21 36 30.9**	**-0.8**
	comp=Z,3.8nm,0.9s,baz=113,slow=9.1,SNR=3.9							
TLY	**Talaya**	**31.66**	**311**	*eP*		**P**	**21 36 34.5**	**+2.8**
TLY				*eS*		**S**	**21 41 43.7**	**+5.1**
TLY					pmax	pmax		
	comp=Z,7.0nm,1.1s							
TLY					MLR	MLR		
	comp=Z,156nm,20.0s							
TLY	**Talaya**	**31.66**	**311**	*eP*		**P**	**21 36 32.0**	**+0.3**
	comp=Z,7.5nm,0.9s							
GYA	**Guiyang**	**32.64**	**262**	‖	*iP*	**P**	**21 36 39.8**	**-0.9**
GYA					pP	pP	21 36 52.3	+1.6
GYA					PP	**PnPn**	**21 37 51.0**	**+1.9**
GYA					PcP	**PcP**	**21 39 27.6**	**+1.4**
GYA					S	**S**	**21 41 51.8**	**-2.7**
GYA					ScP	**ScP**	**21 43 07.2**	**-0.2**
GYA					ScS	**ScS**	**21 47 05.0**	**-2.4**
GYA					pmax	pmax		
	comp=Z,20nm,0.8s							
GYA					pmax	pmax		
	comp=Z,120nm,5.5s							
GYA					LR	LR		
	comp=Z,550nm,16.6s							
GYA					LR	LR		
	comp=Z,480nm,17.4s							
GYA					LR	LR		
	comp=Z,500nm,17.3s							
CD2	**Chengdu**	**33.16**	**272**	P		**P**	**21 36 44.3**	**-0.8**
CD2				sP		sP	21 37 01.3	+1.9
CD2				PP		**PP**	**21 37 59.6**	**-0.8**
CD2				S		**S**	**21 42 00.8**	**-1.6**
CD2				sS		sS	21 42 20.9	+1.9
CD2					pmax	pmax		
	comp=Z,20nm,0.5s							
CD2					pmax	pmax		
	comp=Z,70nm,4.9s							
CD2					LR	LR		
	comp=Z,260nm,14.3s							
MOY	**Mondy**	**33.28**	**310**	*eP*		**P**	**21 36 47.7**	**+1.7**
BILL	**Bilibino**	**33.93**	**15**	*eP*		**P**	**21 36 50.3**	**-1.0**
BILL				*e*			21 37 04.7	
BILL					pmax	pmax		
	comp=Z,12nm,1.3s							
BILL	**Bilibino**	**33.93**	**15**	*eP*		**P**	**21 36 50.3**	**-1.0**
	comp=Z,12nm,1.3s							
BILL				*e*			21 37 04.7	
GTA	**Gaotai**	**34.07**	**288**	*eP*		**P**	**21 36 53.6**	**+0.5**
GTA					pP	sP	21 37 06.0	-1.4
GTA					sP	pP	21 37 11.4	+8.2
GTA					PcP	**PcP**	**21 39 30.9**	**+0.8**
GTA					S	**S**	**21 42 16.8**	**+0.2**
GTA					sS	sS	21 42 38.0	+4.8
GTA					pmax	pmax		
	comp=Z,6.0nm,1.2s							
GTA					pmax	pmax		
	comp=Z,170nm,5.5s							
GTA					LR	LR		
	comp=Z,130nm,15.7s							
GTA					LR	LR		
	comp=Z,160nm,17.1s							
MIDW	**Midway**	**34.09**	**93**	*eP*		**P**	**21 36 53.4**	**+0.3**
	comp=Z,154nm,1.2s							
KWAJ	**Kwajalein Atol**	**35.51**	**135**	*eP*		**P**	**21 37 05.4**	**-0.1**
KWAJ					pmax	pmax		
	comp=Z,139nm,1.2s							
KWAJ	**Kwajalein Atol**	**35.51**	**135**	*eP*		**P**	**21 37 05.4**	**-0.1**
	comp=Z,139nm,1.2s							
TIXI	**Tiksi**	**35.79**	**352**	P		**P**	**21 37 06.2**	**-1.2**
	comp=Z,2.7nm,0.8s,baz=159,slow=2.6,SNR=10							
TIXI	**Tiksi**	**35.79**	**352**	‖	*iP*	**P**	**21 37 06.4**	**-0.9**
TIXI					pmax	pmax		
	comp=Z,3.0nm,0.7s							
KMI	**Kunming**	**36.39**	**263**	P		**P**	**21 37 14.9**	**+1.6**
KMI				pP		sP	21 37 25.7	-1.9
KMI				sP		pP	21 37 31.6	+8.2
KMI				PP		**PP**	**21 38 38.0**	**+1.7**
KMI				S		**S**	**21 42 50.3**	**-2.3**
KMI				SS		**SnSn**	**21 45 17.2**	**-4.6**
KMI					pmax	pmax		
	comp=Z,11nm,0.9s							
KMI					pmax	pmax		
	comp=Z,76nm,4.5s							
KMI					LR	LR		
	comp=Z,89nm,5.8s							
KMI					LR	LR		
	comp=Z,57nm,6.0s							
KMI					LR	LR		
	comp=Z,130nm,5.8s							
NIKH	**Nikolski High** comp=Z,450nm,0.6s	**36.87**	**48**	*eP*		**P**	**21 37 17.9**	**+1.1**
TNTI	**Ternate** comp=Z,41nm,0.8s	**38.68**	**206**	*eP*		**P**	**21 37 32.6**	**+0.2**
MANU	**Manus Island** comp=Z,14nm,1.1s	**38.75**	**173**	*eP*		**P**	**21 37 33.3**	**+0.3**
LUWI	**Luwuk** comp=Z,64nm,0.8s	**42.11**	**211**	*eP*		**P**	**21 38 00.8**	**0.0**
WMQ	**Urumqi**	**42.30**	**298**	*eP*		**P**	**21 38 03.5**	**+1.3**
WMQ					pP	sP	21 38 15.7	-0.9
WMQ					PP	**PP**	**21 39 43.0**	**+2.6**
WMQ					S	**S**	**21 44 20

ZALV PcP **PcP** **21 39 57.7 -0.5**
comp=Z,2.3nm,0.6s,baz=88,slow=2.8,SNR=5.3
ZALV LR LR 21 56 45.6
comp=Z,107nm,18.8s,baz=66,slow=37
NVS **Novosibirsk** **44.13 314** *e*P **P** **21 38 16.5 -0.2**
NVS pmax pmax
comp=E,33nm,1.3s
NVS pmax pmax
comp=Z,19nm,1.3s
NRIK **Noril'sk** **44.18 335** LR LR 21 58 30.7
comp=Z,136nm,18.6s,baz=106,slow=39
SBUM **Sibu** **44.51 227** *e*P **P** **21 38 19.2 -1.0**
comp=Z,16nm,1.5s
TT01 **Tatalina** **44.83 35** *e*P **P** **21 38 22.9 +0.6**
SVW2 **Sparrevohn** **44.88 37** *e*P **P** **21 38 23.1 +0.4**
comp=Z,38nm,1.6s
MK01 **Makanchi Array** **45.54 303** *e*P **P** **21 38 28.0 -0.1**
MK31 **Makanchi Array** **45.54 303** *e*P **P** **21 38 28.1 0.0**
MK31 **Makanchi Array** **45.54 303** *e*P **P** **21 38 28.1 0.0**
MKAR **Makanchi Array** **45.54 303** P **P** **21 38 27.4 -0.8**
comp=Z,2.0nm,0.6s,baz=87,slow=9.1,SNR=21
MKAR PcP **PcP** **21 40 05.9 -0.4**
comp=Z,0.4nm,0.4s,baz=83,slow=3.6,SNR=2.4
MKAR LR LR 21 56 52.9
comp=Z,47nm,19.6s,baz=76,slow=35
MKAR **Makanchi Array** **45.54 303** *e*P **P** **21 38 28.1 0.0**
MKAR PcP **PcP** **21 40 05.9 -0.4**
MAKZ **Makanchi** **45.75 303** *e*P **P** **21 38 29.8 0.0**
MAKZ **Makanchi** **45.75 303** *e*P **P** **21 38 29.8 0.0**
SAUI **Saumlaki** **45.86 197** *e*P **P** **21 38 30.3 -0.5**
comp=Z,185nm,0.8s
PMG **Port Moresby** **46.02 175**⇓ *e*P **P** **21 38 33.2 +1.1**
PMG pmax pmax
comp=Z,60nm,1.2s
JOHN **Johnston Islan** **46.10 103** *e*P **P** **21 38 32.2 -0.6**
comp=Z,172nm,1.2s
KDAK **Kodiak Island** **46.34 42** *i*P **P** **21 38 33.9 -0.3**
SPU **Mount Spurr** **46.59 37** *e*P **P** **21 38 37.6 +1.4**
CAST **Castle Rocks** **46.66 34** *e*P **P** **21 38 38.4 +1.7**
comp=Z,10nm,1.1s
BPAW **Bear Paw Mtn.** **47.18 33** *e*P **P** **21 38 41.6 +0.9**
comp=Z,8.9nm,1.2s
KTH **Kantishna Hill** **47.18 34** *e*P **P** **21 38 42.3 +1.4**
comp=Z,20nm,1.2s
KURK **Kurchatov** **47.29 309** *e*P **P** **21 38 41.1 -0.7**
KURK pmax pmax
comp=Z,15nm,0.9s
KURK **Kurchatov** **47.29 309** *e*P **P** **21 38 41.1 -0.7**
comp=Z,15nm,0.9s
MLY **Manley** **47.33 32** *e*P **P** **21 38 43.0 +1.1**
comp=Z,10nm,0.9s
TAPN **Taplejung** **47.45 275** *e*P **P** **21 38 43.3 -0.3**
comp=Z,6.4nm,0.5s
ODAN **Odare** **47.92 275** *e*P **P** **21 38 47.5 +0.3**
MCK **McKinley** **48.07 34** *e*P **P** **21 38 48.0 +0.3**
MCK pmax pmax
comp=Z,8.0nm,1.1s
MCK **McKinley** **48.07 34** *e*P **P** **21 38 48.0 +0.3**
comp=Z,7.6nm,1.1s
RND **Reindeer** **48.11 34** *e*P **P** **21 38 48.0 0.0**
RND pmax pmax
comp=Z,15nm,1.1s
RND **Reindeer** **48.11 34** *e*P **P** **21 38 48.0 0.0**
comp=Z,15nm,1.1s
MDM **Murphy Dome** **48.40 32** *e*P **P** **21 38 51.0 +0.9**
comp=Z,24nm,1.1s
RAMN **Ramite** **48.51 275** *e*P **P** **21 38 51.8 0.0**
comp=Z,36nm,0.9s
GUN **Gumba** **48.66 277** *e*P **P** **21 38 53.5 +0.4**
comp=Z,19nm,0.5s
IL1 **Eielson Array** **48.97 32** *e*P **P** **21 38 52.9 -1.6**
ILAR **Eielson Array** **48.97 32** P **P** **21 38 54.4 -0.2**
comp=Z,5.6nm,0.8s,baz=265,slow=6.5,SNR=57
ILB **Eielson Array** **48.97 32** *e*P **P** **21 38 54.3 -0.2**
KKN **Kakani** **49.20 277** *e*P **P** **21 38 56.9 -0.1**
comp=Z,15nm,0.6s
KLU **Klutina** **49.54 37** *e*P **P** **21 39 00.1 +1.1**
comp=Z,32nm,1.3s
GKN **Gorkha** **49.62 278** *e*P **P** **21 39 00.2 0.0**
comp=Z,55nm,1.1s
DIV **Divide** **49.63 37** *e*P **P** **21 39 01.2 +1.5**
comp=Z,20nm,1.0s
FYU **Fort Yukon** **49.64 30** *e*P **P** **21 39 01.0 +1.4**
comp=Z,28nm,1.1s
MENT **Mentasta** **50.45 35** *e*P **P** **21 39 07.0 +1.1**
comp=Z,7.7nm,1.0s
PYUN **Piuthan** **50.88 279** *e*P **P** **21 39 10.2 +0.4**
TKM2 **Tokmak 2** **51.08 299** *e*P **P** **21 39 12.3 +1.1**
TKM2 pmax pmax
comp=Z,12nm,1.1s
TKM2 **Tokmak 2** **51.08 299** *e*P **P** **21 39 12.2 +1.1**
comp=Z,12nm,1.1s
KSH **Kashi** **51.89 295** P P 21 39 21.3 +4.2
KSH *e*PP PP 21 41 21.0 +6.0
KSH *e*ScP **ScP** **21 44 24.3 +0.6**
KSH PcS **PcS** **21 44 28.2 +0.4**
KSH S **S** **21 46 41.2 +3.7**
KSH ScS **ScS** **21 49 03.8 -0.8**
KSH SS **SS** **21 50 16.7 +2.5**
KSH pmax pmax
comp=Z,80nm,4.6s
KSH LR LR
comp=Z,180nm,5.4s
KSH LR LR
comp=Z,210nm,6.6s
AAK **Ala-Archa** **51.94 299**⇑ *i*P **P** **21 39 18.1 +0.6**
AAK pmax pmax
comp=Z,5.0nm,0.9s
AAK **Ala-Archa** **51.94 299** *e*P **P** **21 39 17.7 +0.2**
comp=Z,7.3nm,1.5s
EKS2 **Erkin-Say** **52.44 299** *e*P **P** **21 39 21.4 +0.3**
EKS2 pmax pmax
comp=Z,10.0nm,1.5s
EKS2 **Erkin-Say** **52.44 299** *e*P **P** **21 39 21.4 +0.3**
comp=Z,10nm,1.5s
ZRNK **Zerenda** **52.71 313** *e*P **P** **21 39 22.9 0.0**
ZRNK pmax pmax
comp=Z,9.0nm,1.4s
ZRNK **Zerenda** **52.71 313** *e*P **P** **21 39 22.9 0.0**
comp=Z,9.0nm,1.4s
INK **Inuvik** **53.99 27** P **P** **21 39 31.9 0.0**
baz=263,slow=8.1
INK **Inuvik** **53.99 27** *e*P **P** **21 39 32.3 +0.3**
INK pmax pmax
comp=Z,8.0nm,0.8s
INK **Inuvik** **53.99 27** *e*P **P** **21 39 32.3 +0.3**
comp=Z,8.3nm,0.8s
KKAR **Karatay Array** **54.56 301** *e*P **P** **21 39 36.8 +0.2**
KKAR **Karatay Array** **54.56 301** *e*P **P** **21 39 36.8 +0.2**
WRAB **Tennant Creek** **56.97 190**⇑ *i*P **P** **21 39 53.6 -0.3**
WRAB pmax pmax
comp=Z,83nm,1.7s
WRAB **Tennant Creek** **56.97 190** *e*P **P** **21 39 53.3 -0.6**
comp=Z,27nm,0.9s
WB2 **Warramunga Arr** **56.98 190** *e*P **P** **21 39 53.1 -0.9**
comp=Z,21nm,0.8s
WRA **Warramunga Arr** **56.98 190** P **P** **21 39 53.1 -0.9**
comp=Z,16nm,0.8s,baz=9.0,slow=7.3,SNR=87
ARU **Arti** **57.58 319** *d i*P **P** **21 39 56.7 -1.2**
ARU 21 40 46.1
ARU 21 42 03.5
ARU S **S** **21 47 53.8 +0.7**
ARU SS **SS** **21 51 44.4 +1.6**
ARU pmax pmax
comp=Z,16nm,1.7s
ARU **Arti** **57.58 319** *e*P **P** **21 39 57.0 -0.9**
comp=Z,47nm,2.0s
ABKAR **Akbulak array** **59.27 311** *e*P **P** **21 40 09.0 -0.8**
AS01 **Alice Springs** **60.70 190** *e*P **P** **21 40 19.0 -0.8**
AS31 **Alice Springs** **60.70 190** *e*P **P** **21 40 19.2 -0.7**
comp=Z,3.0nm,0.9s
ASAR **Alice Springs** **60.70 190** P **P** **21 40 19.2 -0.6**
comp=Z,6.7nm,0.8s,baz=11,slow=6.4,SNR=57
RES **Resolute Bay** **62.53 15** *e*P **P** **21 40 31.4 -0.1**
RES pmax pmax
comp=Z,12nm,0.8s
RES **Resolute Bay** **62.53 15** *e*P **P** **21 40 31.4 -0.1**
comp=Z,12nm,0.8s
YKW3 **Yellowknife Ar** **63.30 30** *e*P **P** **21 40 36.2 -0.6**
comp=Z,3.7nm,0.8s
YKA **Yellowknife Ar** **63.33 31** P **P** **21 40 36.9 -0.1**
comp=Z,3.2nm,0.8s,baz=301,slow=6.7,SNR=46
YKA PcP **PcP** **21 41 13.8 -0.1**
comp=Z,1.1nm,0.5s,baz=300,slow=3.9,SNR=11
YKB5 **Yellowknife Ar** **63.33 31** *e*P **P** **21 40 36.5 -0.5**
ARCES **ARCESS Array B** **64.81 340** P **P** **21 40 46.4 -0.3**
comp=Z,0.9nm,0.6s,baz=46,slow=6.4,SNR=4.0
KLMR **Klimovskoe** **64.81 328** *e*P **P** **21 40 44.5 -2.3**
KLMR *e**SP **pP** **21 40 59.1 +1.7**
KLMR *e* 21 41 18.8
KLMR pmax pmax
comp=Z,34nm,3.0s
GEYT **Alibeck** **65.28 300** P **P** **21 40 49.5 -0.8**
comp=Z,6.3nm,0.9s,baz=66,slow=4.9,SNR=11
GEYT LR LR 22 10 12.1
comp=Z,51nm,18.4s,baz=355,slow=37
B05A **Bryant** **66.46 47** P **P** **21 40 57.9 +0.3**
baz=299
B08A **Colville Reser** **68.01 46** *e*P **P** **21 41 08.2 +0.7**
comp=Z,14nm,1.3s
STKA **Stephens Creek** **68.25 182** P **P** **21 41 08.7 -0.3**
comp=Z,2.5nm,0.7s,baz=353,slow=8.1,SNR=4.5
MOS **Moscow** **68.38 324** *e*P P 21 40 58.9 -11
G05D **Wamic, OR** **68.43 49** P **P** **21 41 09.8 -0.3**
baz=301
I04A **Tendick Farm,** **68.49 51** P **P** **21 41 10.8 +0.1**
baz=301
I05D **Terrebonne, OR** **68.88 50** P **P** **21 41 13.3 +0.2**
baz=301
C09A **Chrisman Ranch** **68.91 46** *e*P **P** **21 41 13.8 +0.8**
comp=Z,9.8nm,0.8s
D08A **Wollman Farm,** **68.92 47** *e*P **P** **21 41 14.1 +0.9**
comp=Z,8.0nm,0.7s
OBN **Obninsk** **69.23 324**⇑ *e*P **P** **21 41 14.9 0.0**
OBN *e* 21 43 47.8
OBN *e*S **S** **21 50 21.2 +2.9**
OBN pmax pmax
comp=Z,32nm,2.5s
OBN MLR MLR
comp=Z,132nm,16.0s
NEW **Newport** **69.32 45** P **P** **21 41 16.2 +0.5**
baz=302
NEW **Newport** **69.32 45** *e*P **P** **21 41 16.4 +0.7**
NEW pmax pmax
comp=Z,10.0nm,1.1s
NEW **Newport** **69.32 45** *e*P **P** **21 41 16.4 +0.7**
comp=Z,9.9nm,1.1s
M02C **Callahan** **69.44 53** P **P** **21 41 17.4 +0.8**
baz=301
N02D **Trinity Center** **69.75 54** P **P** **21 41 18.3 -0.3**
baz=301
FINES **FINESS Array B** **69.78 333** P **P** **21 41 17.9 -0.3**
comp=Z,3.4nm,0.8s,baz=64,slow=8.7,SNR=8.1
FINES LR LR 22 12 51.3
comp=Z,25nm,19.8s,baz=28,slow=37
FINES **FINESS Array B** **69.78 333** *i*P **P** **21 41 18.1 -0.1**
FINES pmax pmax
comp=Z,3.0nm,0.8s
M04C **Macdoel** **69.89 53** P **P** **21 41 19.1 -0.4**
baz=302
K05A **Summer Lake** **69.99 51** *e*P **P** **21 41 21.6 +1.5**
comp=Z,23nm,1.0s
WALA **Waterton Lakes** **70.67 43** *e*P **P** **21 41 24.5 +0.4**
comp=Z,31nm,1.9s
O03D **Paynes Creek** **70.69 54** P **P** **21 41 24.5 +0.2**
baz=302
MOD **Modoc Plateau** **70.80 52** *e*P **P** **21 41 25.9 +0.9**
comp=Z,12nm,1.3s
SUMG **Summit** **71.00 1** *e*P **P** **21 41 26.7 +0.7**
SUMG pmax pmax
comp=Z,35nm,1.5s
SUMG **Summit** **71.00 1** *e*P **P** **21 41 26.7 +0.7**
comp=Z,35nm,1.5s
BMO **Blue Mountains** **71.05 48** *e*P **P** **21 41 27.3 +0.9**
BMO pmax pmax
comp=Z,5.0nm,0.8s
BMO **Blue Mountains** **71.05 48** *e*P **P** **21 41 27.3 +0.9**
comp=Z,4.7nm,0.8s
JTMT **Jette** **71.20 44** *e*P **P** **21 41 28.3 +1.0**
GOF **Gofitskoye** **71.41 313**⇑ *e*P **P** **21 41 28.8 +0.4**
SWMT **Swartz Lake** **71.49 44** *e*P **P** **21 41 29.7 +0.7**
MSO **Missoula** **71.91 45** P **P** **21 41 31.2 -0.4**
baz=304
MSO **Missoula** **71.91 45** *e*P **P** **21 41 31.9 +0.4**
comp=Z,8.8nm,1.1s
KBZ **Khabaz** **72.23 312** P **P** **21 41 33.5 +0.2**
comp=Z,10nm,0.8s,baz=35,slow=4.7,SNR=20
KBZ LR LR 22 15 49.6
comp=Z,55nm,18.0s,baz=22,slow=38
KIV **Kislovodsk** **72.23 312** *d i*P **P** **21 41 35.0 +1.5**
KIV *e* 21 44 12.1
KIV *e*S **SKSac** **21 51 34.5 -0.9**
KIV pmax pmax
comp=Z,28nm,1.2s
KIV MLR MLR
comp=Z,83nm,14.0s
KIV **Kislovodsk** **72.23 312** *e*P **P** **21 41 34.3 +0.8**
comp=Z,19nm,0.8s
NEY **Neytrino** **72.60 311** ⇓P **P** **21 41 36.7 +0.8**
NEY pmax pmax
comp=Z,10.0nm,2.2s
MFID **Camas Ranch** **72.73 49** *e*P **P** **21 41 37.4 +0.9**
comp=Z,7.6nm,1.0s
CMB **Columbia Colle** **72.84 55** *e*P **P** **21 41 38.1 +0.9**
CMB pmax pmax
comp=Z,9.0nm,1.1s
CMB **Columbia Colle** **72.84 55** *e*P **P** **21 41 38.1 +0.9**
comp=Z,8.6nm,1.1s
GNI **Garni** **73.08 308**⇑ *e*P **P** **21 41 39.5 +0.8**
GNI pmax pmax
comp=Z,53nm,1.3s
AKH **Akhalkalaki** **73.16 309**⇑ *i*P **P** **21 41 40.4 +1.2**
FFC **Flin Flon** **73.16 33** *e*P **P** **21 41 38.8 +0.1**
FFC *e* 21 41 52.6
FFC pmax pmax
comp=Z,19nm,1.1s
FFC **Flin Flon** **73.16 33** *e*P **P** **21 41 38.8 +0.1**
comp=Z,19nm,1.1s
FFC *e* 21 41 52.6
LRM **Limekiln Ridge** **73.33 45** *e*P **P** **21 41 40.5 +0.2**
HLID **Hailey** **73.49 48** P **P** **21 41 40.4 -0.7**
baz=305
HLID **Hailey** **73.49 48** *e*P **P** **21 41 41.4 +0.2**
comp=Z,6.7nm,1.6s
DLMT **Dillon** **73.51 45** *e*P **P** **21 41 42.6 +1.4**
comp=Z,28nm,0.5s
BMN **Battle Mountai** **73.55 52** *e*P **P** **21 41 42.8 +1.3**
BMN pmax pmax
comp=Z,5.0nm,0.8s
BMN **Battle Mountai** **73.55 52** *e*P **P** **21 41 42.8 +1.3**
comp=Z,5.4nm,0.8s
FCC **Fort Churchill** **73.61 27** *e*P **P** **21 41 41.0 -0.3**
FCC *e**PP **sP** **21 41 54.2 -1.9**
FCC pmax pmax
comp=Z,17nm,1.2s
FCC **Fort Churchill** **73.61 27** *e*P **P** **21 41 41.0 -0.3**
comp=Z,17nm,1.2s
FCC *e*pP **sP** **21 41 54.2 -1.9**
BOZ **Bozeman (W)** **73.90 45** P **P** **21 41 43.1 -0.3**
baz=306
BOZ **Bozeman (W)** **73.90 45** *e*P **P** **21 41 44.1 +0.6**
BOZ pmax pmax
comp=Z,10.0nm,0.8s
BOZ **Bozeman (W)** **73.90 45** *e*P **P** **21 41 44.1 +0.6**
comp=Z,9.7nm,0.8s
NV01 **Mina Array Sit** **73.98 54** *e*P **P** **21 41 44.5 +0.4**
NV01 *e*pP **PcP** **21 41 59.3 -0.1**
NVAR **Mina Array Bea** **73.98 54** P **P** **21 41 44.9 +0.8**
comp=Z,6.5nm,0.8s,baz=282,slow=6.4,SNR=36
NV11 **Mina Array Sit** **74.08 54** *e*P **P** **21 41 45.6 +1.0**
comp=Z,12nm,1.5s
ANN **Anapa** **74.81 315** *e*P P 21 41 52.6 +4.1
ANN pmax pmax
comp=Z,258nm,1.5s
YMR **Madison River** **74.86 45** *e*P **P** **21 41 50.9 +1.8**
comp=Z,9.4nm,0.8s
NB2 **NORSAR Subarra** **75.04 338** P **P** **21 41 49.2 -0.5**
comp=Z,1.9nm,0.8s,baz=38,slow=5.9
NOA **NORSAR Array B** **75.04 338** P **P** **21 41 49.4 -0.2**
comp=Z,4.0nm,0.9s,baz=37,slow=5.9,SNR=7.3
NOA LR LR 22 19 25.6
comp=Z,87nm,18.8s,baz=20,slow=39
YFT **Old Faithful** **75.06 45** *e*P **P** **21 41 53.3 +3.0**
comp=Z,17nm,1.3s
H17A **Grant Village** **75.25 45** *e*P **P** **21 41 52.6 +1.2**
comp=Z,22nm,1.1s
GRAC **Grapevine Rang** **75.41 55** P **P** **21 41 52.6 +0.3**
baz=305
AKASG **Malin Array Be** **75.45 323** P **P** **21 41 51.8 -0.3**
comp=Z,1.2nm,0.4s,baz=45,slow=6.1,SNR=12
AKASG LR LR 22 16 56.8
comp=Z,47nm,18.1s,baz=325,slow=37
AKASG **Malin Array Be** **75.45 323** *i*P **P** **21 41 52.0 -0.1**
AKASG pmax pmax
comp=Z,2.0nm,0.5s
DAC **Darwin (Calif)** **75.67 55** *e*P **P** **21 41 54.0 +0.1**
DAC pmax pmax
comp=Z,7.0nm,1.0s
DAC **Darwin (Calif)** **75.67 55** *e*P **P** **21 41 54.0 +0.1**
comp=Z,7.1nm,1.0s
R11A **Troy Canyon, C** **75.78 53** P **P** **21 41 54.9 +0.4**
baz=306
R11A **Troy Canyon, C** **75.78 53** *e*P **P** **21 41 55.3 +0.8**
comp=Z,6.4nm,0.9s
MPMC **Manual Prospec** **75.86 56** P **P** **21 41 54.9 -0.1**
baz=305
BGU **Big Grassy Mou** **75.87 49** *e*P **P** **21 41 56.1 +1.1**
comp=Z,3.5nm,1.0s
DGMT **Dagmar** **76.15 39** P **P** **21 41 56.3 0.0**
baz=310
TPNV **Topopah Spring** **76.17 54** P **P** **21 41 57.0 +0.3**
baz=306
TPNV **Topopah Spring** **76.17 54** *e*P **P** **21 41 57.5 +0.8**
TPNV pmax pmax
comp=Z,12nm,1.1s
TPNV **Topopah Spring** **76.17 54** *e*P **P** **21 41 57.5 +0.8**
comp=Z,12nm,1.1s
EDW2 **Edwards Air Fo** **76.20 57** P **P** **21 41 57.3 +0.5**
baz=305
HWUT **Hardware Ranch** **76.34 48** *e*P **P** **21 41 58.7 +1.1**
comp=Z,9.1nm,1.0s
DUG **Dugway, Tooele** **76.43 50** P **P** **21 41 58.6 +0.4**
baz=307
DUG **Dugway, Tooele** **76.43 50** *e*P **P** **21 41 59.4 +1.3**
DUG pmax pmax
comp=Z,9.0nm,0.8s
DUG **Dugway, Tooele** **76.43 50** *e*P **P** **21 41 59.4 +1.3**
comp=Z,9.5nm,0.8s
FRB **Frobisher Bay** **76.73 14** LR LR 22 20 24.4
comp=Z,59nm,19.1s,baz=1.0,slow=39
GSC **Goldstone, Bar** **76.75 56** P **P** **21 42 00.3 +0.3**
baz=306
GSC **Goldstone, Bar** **76.75 56** *e*P **P** **21 42 00.7 +0.7**
GSC pmax pmax
comp=Z,8.0nm,1.1s
GSC **Goldstone, Bar** **76.75 56** *e*P **P** **21 42 00.7 +0.7**
comp=Z,8.3nm,1.1s
BFSC **Mount Baldy Ra** **76.80 57** P **P** **21 42 00.4 +0.1**
baz=306
PDAR **Pinedale Array** **76.82 46** P **P** **21 42 00.4 0.0**
comp=Z,2.7nm,0.7s,baz=236,slow=1.6,SNR=4.4
NLU **North Lily Min** **77.03 50** *e*P **P** **21 42 02.7 +1.1**
comp=Z,6.1nm,0.9s
HEC **Hector,Ludlow** **77.34 56** P **P** **21 42 03.4 +0.2**
baz=306
D25A **Fairfield** **77.46 40** P **P** **21 42 04.0 +0.4**
baz=311
A28A **Rude Farm, Bot** **77.82 37** P **P** **21 42 05.9 +0.3**
baz=313
GMRC **Granite Mounta** **77.82 56** P **P** **21 42 05.8 -0.2**
baz=306
E25A **Miller Ranch,** **77.84 40** P **P** **21 42 05.8 0.0**
baz=311
LCMT **Little Creek M** **78.07 53** *e*P **P** **21 42 08.6 +1.3**
comp=Z,10nm,0.9s
P17A **Butcher Ranch,** **78.14 49** *e*P **P** **21 42 09.4 +1.7**
comp=Z,13nm,0.9s
A29A **Manning Farm,** **78.31 37** P **P** **21 42 07.9 -0.4**
baz=313,SNR=6.7
E26A **Carlson Angus** **78.35 40** P **P** **21 42 08.9 +0.2**
baz=312
SRU **San Rafael Swe** **78.50 50** *e*P **P** **21 42 10.8 +1.1**
SRU **San Rafael Swe** **78.50 50** *e*P **P** **21 42 10.8 +1.1**
B29A **Wagenman Farm,** **78.56 37** P **P** **21 42 09.7 0.0**
baz=313
F26A **Lodgepole** **78.66 41** P **P** **21 42 10.1 -0.3**
baz=312
A30A **Hoffart Farm,** **78.74 36** P **P** **21 42 10.7 0.0**
baz=314
E27A **Carson** **78.84 40** P **P** **21 42 11.2 -0.1**
baz=312
MDND **Maddock** **78.86 38** P **P** **21 42 11.4 0.0**
baz=313
MDND **Maddock** **78.86 38** *e*P **P** **21 42 11.4 0.0**
comp=Z,13nm,0.6s
ULM **Lac du Bonnet** **78.94 34** P **P** **21 42 10.8 -0.9**
comp=Z,4.6nm,0.9s,baz=307,slow=9.2,SNR=6.0
H25A **Fruitdale** **78.98 42** P **P** **21 42 12.3 +0.2**
baz=311
F27A **Lemmon** **78.98 40** P **P** **21 42 12.0 -0.1**
baz=312
G26A **Maurine** **79.06 41** P **P** **21 42 12.7 +0.1**
baz=312
B30A **Myrvik Farm, E** **79.07 37** P **P** **21 42 12.3 -0.2**
baz=314,SNR=5.2
RSSD **Black Hills** **79.07 43** P **P** **21 42 12.4 -0.5**
baz=311
PDMCI **Parker Dam,Lak** **79.11 55** P **P** **21 42 13.1 +0.1**
baz=307
E28A **Huff** **79.19 39** P **P** **21 42 13.5 +0.3**
baz=313
Y12C **Blythe** **79.19 56** P **P** **21 42 13.9 +0.5**
baz=307
I25A **Rochford** **79.30 43** P **P** **21 42 13.9 -0.2**
baz=311
G27A **Dupree** **79.36 41** P **P** **21 42 13.9 -0.3**
baz=312
B31A **Greenbush Farm** **79.41 36** P **P** **21 42 14.1 -0.2**
baz=314
BUR08 **Bucovina Ar. S** **79.46 323** *e*P **P** **21 42 15.3 +0.6**
BURAR **Bucovina Array** **79.47 323**⇑ *i*P **P** **21 42 14.8 0.0**
TESR **Tescani** **79.52 321**⇑ *i*P **P** **21 42 15.4 +0.4**
A32A **Rocking H Ranc** **79.61 35** P **P** **21 42 14.9 -0.5**
baz=315
H27A **Howes** **79.78 41** P **P** **21 42 16.3 -0.1**
baz=312
D30A **Buchanan** **79.79 38** P **P** **21 42 16.0 -0.5**
baz=314
C31A **Landman Farms,** **79.81 37** P **P** **21 42 16.1 -0.5**
baz=314
PV10 **Paradox Valley** **79.86 50** *e*P **P** **21 42 16.7 -0.6**
KOLS **Kolonicke sedl** **79.94 325** *e*P **P** **21 42 17.6 +0.4**
KOLS pmax pmax
comp=Z,6.0nm,1.1s
KOLS **Kolonicke sedl** **79.94 325** *e*P **P** **21 42 17.6 +0.4**
B32A **Ashes, Strandq** **79.96 36** P **P** **21 42 16.9 -0.3**
baz=315
A33A **Warroad** **80.10 35** P **P** **21 42 17.7 -0.3**
baz=316
OJC **Ojcow** **80.12 327** *e*P **P** **21 42 18.7 +0.5**
OJC *e*PP **sP** **21 42 31.8 -1.3**
OJC pmax pmax
comp=Z,13nm,1.0s
OJC **Ojcow** **80.12 327** *e*P **P** **21 42 18.7 +0.5**
comp=Z,13nm,1.0s
OJC *e*pP **sP** **21 42 31.8 -1.3**
F29A **Eureka** **80.13 39** P **P** **21 42 18.5 +0.1**
baz=313
BR131 **Keskin Array S** **80.17 313** *e*P **P** **21 42 19.2 +0.4**
BRTR **Keskin Array B** **80.17 313** P **P** **21 42 18.5 -0.3**
comp=Z,3.7nm,1.0s,baz=128,slow=3.7,SNR=11
BRTR LR LR 22 21 44.2
comp=Z,13nm,18.8s,baz=14,slow=39
BRTR **Keskin Array B** **80.17 313** *i*P **P** **21 42 19.1 +0.3**
BRTR pmax pmax
comp=Z,9.0nm,1.2s
ARCR **ARCALIA** **80.26 323**⇑ *i*P **P** **21 42 20.4 +1.4**
H28A **Mission Ridge** **80.31 41** P **P** **21 42 19.5 +0.2**
baz=313
CRVS **Cervenica-Dubn** **80.34 325** *e*P **P** **21 42 19.1 -0.3**
CRVS **Cervenica-Dubn** **80.34 325** *e*P **P** **21 42 19.1 -0.3**
AGMN **Agassiz Nation** **80.34 36** P **P** **21 42 19.0 -0.4**
baz=316
F30A **Leola** **80.54 39** P **P** **21 42 20.3 -0.3**
baz=314
BR231 **Keskin MP Arra** **80.60 313** *e*P **P** **21 42 19.7 -1.3**
E31A **Nome** **80.60 38** P **P** **21 42 20.4 -0.4**
baz=315
I28A **Midland** **80.69 41** P **P** **21 42 21.0 -0.4**
baz=313
B34A **Aery, Baudette** **80.77 35** P **P** **21 42 21.0 -0.6**
baz=316
C33A **Trail** **80.77 36** P **P** **21 42 21.1 -0.6**
baz=316
MVCO **Mesa Verde** **80.93 50** P **P** **21 42 22.7 -0.4**
baz=310
MVCO **Mesa Verde** **80.93 50** *e*P **P** **21 42 24.0 +1.0**
comp=Z,9.7nm,1.1s
G30A **Faulkton** **80.97 39** P **P** **21 42 22.7 -0.1**
baz=314

J28A	**Allard Ranch,** baz=313	**81.04**	**42**	P		**P**	**21 42 23.7**	**+0.4**
LANS	**Liptovska Anna**	**81.05**	**326**	*e*P		**P**	**21 42 24.6**	**+1.4**
LANS	**Liptovska Anna**	**81.05**	**326**	*e*P		**P**	**21 42 24.6**	**+1.4**
KECS	**Kecovo**	**81.09**	**326**	*e*P		**P**	**21 42 23.3**	**0.0**
KECS	comp=Z,2.0nm,1.0s				pmax	pmax		
KECS	**Kecovo**	**81.09**	**326**	*e*P		**P**	**21 42 23.3**	**0.0**
OKC	**Ostrava-Krasne**	**81.12**	**328**	*e*P		**P**	**21 42 22.0**	**-1.5**
OKC	**Ostrava-Krasne**	**81.12**	**328**	*e*P		**P**	**21 42 22.0**	**-1.5**
I29A	**Vivian Onida** baz=313	**81.13**	**41**	P		**P**	**21 42 23.4**	**-0.3**
D33A	**AnnSam, Waubun** baz=316	**81.18**	**36**	P		**P**	**21 42 23.4**	**-0.5**
B35A	**Bob, Littlefor** baz=317	**81.28**	**34**	P		**P**	**21 42 23.8**	**-0.6**
ARR	**Arges**	**81.33**	**321**	⇓*i*P		**P**	**21 42 26.5**	**+1.7**
G31A	**Conde** baz=314	**81.38**	**39**	P		**P**	**21 42 24.7**	**-0.2**
MORC	**Moravsky Berou**	**81.43**	**328**	*e*P		**P**	**21 42 26.3**	**+1.1**
MORC	comp=Z,32nm,1.1s				pmax	pmax		
MORC	**Moravsky Berou** comp=Z,32nm,1.1s	**81.43**	**328**	*e*P		**P**	**21 42 26.3**	**+1.1**
F32A	**Veblen** baz=315	**81.46**	**38**	P		**P**	**21 42 25.2**	**-0.2**
DPC	**Dobruska-Polom**	**81.51**	**329**	*e*P		**P**	**21 42 26.4**	**+0.8**
DPC				*e*PCP		**PcP**	**21 42 30.9**	**-0.6**
DPC	**Dobruska-Polom**	**81.51**	**329**	*e*P		**P**	**21 42 26.4**	**+0.8**
UPC	**Upice**	**81.52**	**329**	*e*P		**P**	**21 42 26.0**	**+0.4**
UPC	**Upice**	**81.52**	**329**	*e*P		**P**	**21 42 26.0**	**+0.4**
D34A	**Park Rapids** baz=316	**81.53**	**36**	P		**P**	**21 42 25.1**	**-0.6**
SUSD	**Miller** baz=314	**81.54**	**40**	P		**P**	**21 42 25.4**	**-0.5**
E33A	**Westby DABS, E** baz=316	**81.56**	**37**	P		**P**	**21 42 25.6**	**-0.3**
S22A	**4UR Ranch, Cre** baz=310	**81.61**	**49**	P		**P**	**21 42 27.2**	**+0.5**
S22A	**4UR Ranch, Cre** comp=Z,8.8nm,1.0s	**81.61**	**49**	*e*P		**P**	**21 42 27.2**	**+0.5**
C35A	**Jirik Farms, M** baz=317	**81.65**	**35**	P		**P**	**21 42 25.7**	**-0.6**
I30A	**Oacoma** baz=314	**81.66**	**40**	P		**P**	**21 42 26.6**	**+0.1**
PSZ	**Piszkesteto**	**81.77**	**325**	*e*P		**P**	**21 42 27.9**	**+0.8**
PSZ	comp=Z,12nm,1.0s				pmax	pmax		
PSZ	**Piszkesteto** comp=Z,12nm,1.0s	**81.77**	**325**	*e*P		**P**	**21 42 27.9**	**+0.8**
VYHS	**Vyhne**	**81.82**	**326**	*e*P		**P**	**21 42 27.4**	**+0.1**
VYHS	comp=Z,2.0nm,0.9s				pmax	pmax		
VYHS	**Vyhne**	**81.82**	**326**	*e*P		**P**	**21 42 27.4**	**+0.1**
F33A	**5 Mile Ranch,** baz=316	**81.89**	**38**	P		**P**	**21 42 27.5**	**-0.1**
D35A	**Remer** baz=317	**82.07**	**36**	P		**P**	**21 42 28.0**	**-0.5**
BRG	**Berggiesshubel** comp=Z,7.7nm,1.1s	**82.07**	**330**	*e*P		**P**	**21 42 28.7**	**+0.2**
BRG	comp=Z,10nm,1.3s			*e*			21 42 42.6	
BRG	**Berggiesshubel**	**82.07**	**330**	*e*P		**P**	**21 42 28.7**	**+0.2**
BRG				*e*			21 42 42.6	
BRG	comp=Z,8.0nm,1.1s				pmax	pmax		
CLL	**Collm** comp=Z,15nm,1.1s	**82.10**	**331**	⇑*i*P		**P**	**21 42 28.7**	**+0.1**
CLL	**Collm**	**82.10**	**331**	⇑*i*P		**P**	**21 42 28.7**	**+0.1**
CLL	comp=Z,15nm,1.1s				pmax	pmax		
C36A	**Pine Crest Far** baz=318	**82.13**	**34**	P		**P**	**21 42 28.2**	**-0.6**
RAYN	**Ar Rayn** comp=Z,6.6nm,1.1s	**82.15**	**293**	*e*P		**P**	**21 42 28.5**	**-1.0**
VRAC	**Vranov**	**82.19**	**328**	⇑*i*P		**P**	**21 42 29.9**	**+0.7**
SDCO	**Great Sand Dun** baz=311	**82.41**	**48**	P		**P**	**21 42 30.9**	**0.0**
SDCO	**Great Sand Dun** comp=Z,15nm,1.4s	**82.41**	**48**	*e*P		**P**	**21 42 31.9**	**+1.0**
D36A	**Goodland** baz=318	**82.41**	**35**	P		**P**	**21 42 29.2**	**-1.2**
K30A	**Basset** baz=314	**82.42**	**41**	P		**P**	**21 42 30.5**	**-0.1**
F34A	**Alexandria** baz=316	**82.43**	**37**	P		**P**	**21 42 30.1**	**-0.4**
C37A	**Embarrass** baz=318	**82.44**	**34**	P		**P**	**21 42 29.3**	**-1.3**
H33A	**Prehn Over Nor** baz=316	**82.50**	**39**	P		**P**	**21 42 30.7**	**-0.2**
PRU	**Pruhonice**	**82.52**	**329**	*e*P		**P**	**21 42 31.4**	**+0.5**
PRU				*e*pP		**sP**	**21 42 45.6**	**-0.2**
PRU	**Pruhonice**	**82.52**	**329**	*e*P		**P**	**21 42 31.4**	**+0.5**
PRU				*e*			21 42 45.6	
EYMN	**Ely** baz=319	**82.59**	**34**	P		**P**	**21 42 31.1**	**-0.2**
I32A	**Karley and Nic** baz=315	**82.60**	**39**	P		**P**	**21 42 30.9**	**-0.5**
G34A	**Benson** baz=316	**82.64**	**38**	P		**P**	**21 42 31.6**	**0.0**
F35A	**Swanville** baz=317	**82.71**	**37**	P		**P**	**21 42 31.7**	**-0.3**
D37A	**Cotton** baz=318	**82.76**	**35**	P		**P**	**21 42 31.3**	**-0.9**
E36A	**McGregor** baz=318	**82.85**	**35**	P		**P**	**21 42 32.4**	**-0.3**
C38A	**Sawbill Land.** baz=319	**82.86**	**34**	P		**P**	**21 42 32.2**	**-0.6**
H34A	**Spellman Lake,** baz=316	**82.99**	**38**	P		**P**	**21 42 33.3**	**-0.1**
PPT	**Papeete** comp=Z,73nm,20.7s,baz=356,slow=32	**83.17**	**118**	LR		LR	22 15 05.0	
L31A	**Butterfield Fa** baz=314	**83.18**	**41**	P		**P**	**21 42 34.3**	**-0.2**
MDVR	**Moldovita**	**83.20**	**322**	⇑*i*P		**P**	**21 42 34.5**	**-0.1**
F36A	**Milaca** baz=318	**83.21**	**36**	P		**P**	**21 42 34.2**	**-0.3**
ECSD	**EROS Data Cent** baz=316	**83.24**	**39**	P		**P**	**21 42 33.7**	**-1.0**
ECSD	**EROS Data Cent** comp=Z,12nm,1.3s	**83.24**	**39**	*e*P		**P**	**21 42 33.8**	**-1.0**
C39A	**Grand Marais** baz=320	**83.29**	**33**	P		**P**	**21 42 34.1**	**-0.8**
H35A	**Sunnyside Ranc** baz=317,SNR=7.2	**83.43**	**38**	P		**P**	**21 42 35.2**	**-0.5**
T25A	**Trinidad** baz=312	**83.46**	**48**	P		**P**	**21 42 37.0**	**+0.7**
T25A	**Trinidad** comp=Z,13nm,1.1s	**83.46**	**48**	*e*P		**P**	**21 42 37.2**	**+0.9**
KHC	**Kasperske Hory**	**83.58**	**329**	*e*P		**P**	**21 42 36.7**	**+0.3**
KHC				*e*pP		**sP**	**21 42 50.5**	**-0.9**
KHC	**Kasperske Hory**	**83.58**	**329**	*e*P		**P**	**21 42 36.7**	**+0.3**
KHC				*e*			21 42 50.5	
KHC	**Kasperske Hory** comp=Z,4.6nm,1.0s	**83.58**	**329**	*e*P		**P**	**21 42 36.8**	**+0.3**
ANMO	**Albuquerque** baz=311	**83.65**	**51**	P		**P**	**21 42 38.1**	**+0.9**
ANMO	**Albuquerque**	**83.65**	**51**	*e*P		**P**	**21 42 37.6**	**+0.3**
ANMO				*e**PP		**sP**	**21 42 54.2**	**+2.0**
ANMO	comp=Z,10.0nm,1.2s				pmax	pmax		
ANMO	**Albuquerque** comp=Z,10nm,1.2s	**83.65**	**51**	*e*P		**P**	**21 42 37.6**	**+0.3**
ANMO				*e*pP		**sP**	**21 42 54.2**	**+2.0**
GEC2	**GERESS Array S**	**83.75**	**329**	*e*P		**P**	**21 42 37.5**	**+0.1**
GEC2	comp=Z,4.0nm,1.0s				pmax	pmax		
GEC2	**GERESS Array S** comp=Z,4.3nm,1.0s	**83.75**	**329**	*e*P		**P**	**21 42 37.5**	**+0.1**
GERES	**GERESS Array B** comp=Z,2.9nm,0.9s,baz=28,slow=6.0,SNR=8.9	**83.75**	**329**	P		**P**	**21 42 37.1**	**-0.3**
GERES				LR		LR	22 22 34.0	
H36A	**Jessenland, He** baz=317	**83.96**	**37**	P		**P**	**21 42 39.0**	**+0.6**
VTS	**Vitosha**	**84.02**	**320**	⇑*i*P		**P**	**21 42 39.7**	**+0.8**
VTS	**Vitosha**	**84.02**	**320**	*e*P		**P**	**21 42 39.6**	**+0.7**
VTS	comp=Z,10.0nm,0.8s				pmax	pmax		
VTS	**Vitosha** comp=Z,10nm,0.8s	**84.02**	**320**	*e*P		**P**	**21 42 39.6**	**+0.7**
H37A	**Dierke Farm, C** baz=318	**84.44**	**37**	P		**P**	**21 42 40.8**	**-0.1**
L34A	**Svendsen Farm,** baz=316	**84.62**	**40**	P		**P**	**21 42 41.7**	**-0.2**
I37A	**Lemond, Waseca**	**84.63**	**37**	P		**P**	**21 42 41.3**	**-0.5**
	baz=318,SNR=5.1							
O32A	**Brockman Farm,** baz=315	**84.83**	**42**	P		**P**	**21 42 42.3**	**-0.6**
P32A	**Huiting Farm,** baz=315	**85.10**	**43**	P		**P**	**21 42 43.8**	**-0.4**
I38A	**Scanlan Farm,** baz=318	**85.13**	**37**	P		**P**	**21 42 43.9**	**-0.4**
SCHQ	**Schefferville** comp=Z,52nm,18.0s,baz=18,slow=40	**85.22**	**17**	LR		LR	22 27 18.7	
MEM	**Membach**	**85.25**	**334**	P		**P**	**21 42 44.8**	**0.0**
M35A	**Neola** baz=316	**85.34**	**40**	P		**P**	**21 42 45.4**	**-0.1**
K37A	**Belmond** baz=318	**85.43**	**38**	P		**P**	**21 42 45.4**	**-0.4**
Q32A	**Meitler Ranch,** baz=315	**85.56**	**44**	P		**P**	**21 42 46.2**	**-0.5**
J38A	**Wedel Dairy, R** baz=318	**85.60**	**37**	P		**P**	**21 42 46.5**	**-0.2**
BCLA	**Clavier**	**85.65**	**335**	P		**P**	**21 42 46.5**	**-0.3**
P33A	**Williams Farm,** baz=315	**85.73**	**43**	P		**P**	**21 42 46.8**	**-0.6**
CWF	**Charnwood Fore** comp=Z,13nm,1.1s	**85.73**	**339**	*e*P		**P**	**21 42 47.9**	**+0.7**
CWF				*e*pP		**sP**	**21 43 02.0**	**-0.2**
O34A	**Beatrice** baz=316	**85.73**	**42**	P		**P**	**21 42 46.1**	**-1.3**
N35A	**Tabor** baz=316	**85.80**	**41**	P		**P**	**21 42 47.7**	**-0.1**
M36A	**Felix, Anita** baz=317	**85.81**	**40**	P		**P**	**21 42 47.8**	**0.0**
L37A	**Phoenix Point,** baz=318	**85.85**	**39**	P		**P**	**21 42 47.6**	**-0.3**
SNF	**Seneffe**	**85.93**	**335**	P		**P**	**21 42 48.2**	**+0.1**
Q33A	**Connelly Farm,** baz=315	**85.96**	**43**	P		**P**	**21 42 48.1**	**-0.4**
WLF	**Walferdange**	**85.99**	**334**	P		**P**	**21 42 48.1**	**-0.4**
P34A	**Walnut Farm, R** baz=316	**86.12**	**42**	P		**P**	**21 42 48.8**	**-0.6**
DOU	**Dourbes**	**86.17**	**335**	P		**P**	**21 42 49.5**	**+0.2**
L38A	**Oak Wood Farm,** baz=318	**86.23**	**38**	P		**P**	**21 42 49.0**	**-0.8**
BFO	**Black Forest**	**86.30**	**332**	*e*P		**P**	**21 42 50.2**	**+0.1**
BFO				*e**PP		**sP**	**21 43 04.1**	**-1.0**
BFO	comp=Z,11nm,1.0s				pmax	pmax		
BFO	**Black Forest** comp=Z,11nm,1.0s	**86.30**	**332**	*e*P		**P**	**21 42 50.2**	**+0.1**
BFO				*e*pP		**sP**	**21 43 04.0**	**-1.0**
R33A	**Olander Ranch,** baz=315	**86.36**	**44**	P		**P**	**21 42 50.1**	**-0.5**
MNTX	**Cornudas Mount** baz=312	**86.45**	**53**	P		**P**	**21 42 51.1**	**0.0**
MNTX	**Cornudas Mount** comp=Z,9.5nm,1.5s	**86.45**	**53**	*e*P		**P**	**21 42 51.5**	**+0.4**
MNTX				*e*pP		**sP**	**21 43 06.4**	**+0.2**
Q34A	**Chapman** baz=316	**86.50**	**43**	P		**P**	**21 42 51.3**	**+0.1**
KSU1	**Kansas State U** baz=316	**86.56**	**42**	P		**P**	**21 42 51.1**	**-0.4**
N37A	**Lee Faris, Mou** baz=317	**86.62**	**40**	P		**P**	**21 42 51.7**	**-0.1**
T32A	**Huddler Ranch,** baz=315	**86.63**	**45**	P		**P**	**21 42 51.7**	**-0.2**
M38A	**Pleasantville** baz=318	**86.65**	**39**	P		**P**	**21 42 51.7**	**-0.2**
O36A	**Bolckow** baz=317	**86.69**	**41**	P		**P**	**21 42 51.7**	**-0.4**
FUORN	**Ofenpass-Fuorn** comp=Z,8.9nm,1.1s	**86.93**	**330**	*e*P		**P**	**21 42 53.7**	**+0.2**
FUORN				*e*pP		**sP**	**21 43 07.7**	**-0.8**
P36A	**Good Intent, A** baz=317	**86.93**	**41**	P		**P**	**21 42 53.1**	**-0.2**
O37A	**Wolven Farm, M** baz=317	**87.09**	**40**	P		**P**	**21 42 54.2**	**+0.2**
N38A	**Joes South For** baz=318	**87.10**	**39**	P		**P**	**21 42 54.0**	**-0.1**
S34A	**Willow Spring** baz=316	**87.28**	**44**	P		**P**	**21 42 54.9**	**-0.2**
R35A	**Emporia Munici** baz=316	**87.34**	**43**	P		**P**	**21 42 55.1**	**-0.2**
N39A	**Derby Farms, D** baz=318	**87.40**	**39**	P		**P**	**21 42 55.2**	**-0.3**
P37A	**Lathrop** baz=317	**87.41**	**41**	P		**P**	**21 42 55.4**	**-0.2**
O38A	**Galt** baz=318	**87.47**	**40**	P		**P**	**21 42 55.8**	**-0.1**
R36A	**Gordon, Harris** baz=317	**87.71**	**42**	P		**P**	**21 42 56.9**	**-0.2**
T34A	**McClaskey Farm** baz=316	**87.72**	**44**	P		**P**	**21 42 56.9**	**-0.3**
S35A	**Otter Creek Ra** baz=316	**87.73**	**43**	P		**P**	**21 42 57.3**	**0.0**
O39A	**Kirksville** baz=318	**87.85**	**39**	P		**P**	**21 42 57.9**	**+0.2**
W32A	**Sentinel** baz=315	**87.89**	**47**	P		**P**	**21 42 57.7**	**-0.3**
U34A	**Anderson Ranch** baz=316	**87.94**	**45**	P		**P**	**21 42 58.3**	**0.0**
R37A	**Teagarden Farm** baz=317	**88.08**	**42**	P		**P**	**21 42 58.5**	**-0.3**
S36A	**Lake Cedric, C** baz=317	**88.10**	**43**	P		**P**	**21 42 58.6**	**-0.3**
T35A	**Sooner Cattle** baz=316	**88.18**	**44**	P		**P**	**21 42 58.9**	**-0.5**
Q38A	**Cooks Store, C** baz=318	**88.25**	**41**	P		**P**	**21 42 59.1**	**-0.6**
O40A	**La Belle** baz=319	**88.29**	**39**	P		**P**	**21 42 59.0**	**-0.8**
P39A	**Salisbury** baz=318	**88.31**	**40**	P		**P**	**21 42 59.2**	**-0.7**
V34A	**Guthrie** baz=316	**88.38**	**45**	P		**P**	**21 42 59.9**	**-0.5**
T36A	**Boggs Farm, Ca** baz=316	**88.42**	**43**	P		**P**	**21 42 59.8**	**-0.7**
S37A	**Fort Scott** baz=317	**88.49**	**42**	P		**P**	**21 43 00.3**	**-0.5**
Q39A	**Willow Grove F** baz=318	**88.53**	**40**	P		**P**	**21 43 00.5**	**-0.5**
P40A	**Paris** baz=319	**88.64**	**40**	P		**P**	**21 43 01.4**	**-0.1**
Q40A	**Laux Farm, Aux** baz=319	**89.03**	**40**	P		**P**	**21 43 02.5**	**-0.9**
R39A	**Chumby, Stover** baz=318	**89.04**	**41**	P		**P**	**21 43 02.8**	**-0.6**
X34A	**Smith Ranch, M** baz=315	**89.08**	**46**	P		**P**	**21 43 03.4**	**-0.2**
S38A	**Stockton** baz=318	**89.08**	**42**	P		**P**	**21 43 03.0**	**-0.6**
TX31	**Lajitas Ar. Si**	**89.13**	**53**	*e*P		**P**	**21 43 04.5**	**+0.4**
TXAR	**Lajitas Array** comp=Z,2.2nm,0.7s,baz=301,slow=3.4,SNR=18	**89.13**	**53**	P		**P**	**21 43 04.2**	**+0.1**
TXAR				LR		LR	22 20 32.3	
W35A	**Tecumseh** baz=316	**89.23**	**45**	P		**P**	**21 43 04.0**	**-0.3**
TUL1	**Leonard** baz=316	**89.30**	**44**	P		**P**	**21 43 04.1**	**-0.6**
V36A	**Jenks** baz=316	**89.31**	**44**	P		**P**	**21 43 04.4**	**-0.3**
T38A	**Diamond** baz=317	**89.31**	**42**	P		**P**	**21 43 04.3**	**-0.4**
U37A	**Salina** baz=317	**89.32**	**43**	P		**P**	**21 43 04.4**	**-0.3**
S39A	**Bolivar** baz=318	**89.35**	**41**	P		**P**	**21 43 04.2**	**-0.6**
R40A	**Maddies Statio** baz=319	**89.46**	**40**	P		**P**	**21 43 05.0**	**-0.4**
W36A	**Wetumka** baz=316	**89.61**	**45**	P		**P**	**21 43 05.9**	**-0.2**
V37A	**Hulbert** baz=317	**89.69**	**44**	P		**P**	**21 43 05.7**	**-0.7**
U38A	**Gravette** baz=317	**89.70**	**43**	P		**P**	**21 43 06.1**	**-0.4**
T39A	**Clever** baz=318	**89.81**	**42**	P		**P**	**21 43 06.5**	**-0.5**
S40A	**Lebanon** baz=318	**89.85**	**41**	P		**P**	**21 43 06.7**	**-0.5**
X36A	**Centrahoma** baz=316	**89.95**	**45**	P		**P**	**21 43 07.6**	**-0.1**
V38A	**Canehill** baz=317	**90.11**	**43**	P		**P**	**21 43 08.1**	**-0.4**
T40A	**Mansfield** baz=318	**90.18**	**41**	P		**P**	**21 43 08.2**	**-0.5**
U39A	**Green Forest** baz=318	**90.23**	**42**	P		**P**	**21 43 08.6**	**-0.4**
233A	**Rising Star** baz=315	**90.27**	**49**	P		**P**	**21 43 09.0**	**-0.2**
134A	**White-Moore Ra**	**90.37**	**48**	P		**P**	**21 43 09.1**	**-0.6**
	baz=315							
Y36A	**Durant** baz=316	**90.47**	**46**	P		**P**	**21 43 10.2**	**0.0**
X37A	**Clayton** baz=317	**90.50**	**45**	P		**P**	**21 43 10.0**	**-0.2**
V39A	**Pettigrew** baz=318	**90.54**	**43**	P		**P**	**21 43 10.2**	**-0.3**
U40A	**Yellville** baz=318,SNR=8.5	**90.59**	**42**	P		**P**	**21 43 10.1**	**-0.6**
W38A	**Poteau** baz=317	**90.62**	**44**	P		**P**	**21 43 10.2**	**-0.6**
333A	**Richland Sprin** baz=315	**90.70**	**49**	P		**P**	**21 43 11.6**	**+0.3**
234A	**Clairette** baz=315	**90.73**	**48**	P		**P**	**21 43 11.7**	**+0.3**
X38A	**Whitesboro** baz=317	**90.74**	**44**	P		**P**	**21 43 11.3**	**-0.1**
W39A	**Magazine** baz=318	**90.94**	**43**	P		**P**	**21 43 12.1**	**-0.2**
V40A	**Witts Springs** baz=318	**91.02**	**42**	P		**P**	**21 43 12.0**	**-0.7**
433A	**Art** baz=315	**91.04**	**50**	P		**P**	**21 43 12.9**	**0.0**
334A	**Lometa** baz=315	**91.15**	**49**	P		**P**	**21 43 13.5**	**+0.1**
X39A	**Fountain Ranch** baz=318,SNR=6.7	**91.26**	**44**	P		**P**	**21 43 13.6**	**-0.2**
434A	**Burnet** baz=315	**91.50**	**49**	P		**P**	**21 43 15.0**	**0.0**
MIAR	**Mount Ida** baz=318,SNR=6.5	**91.53**	**44**	P		**P**	**21 43 14.7**	**-0.4**
MIAR	**Mount Ida**	**91.53**	**44**	*e*P		**P**	**21 43 15.4**	**+0.3**
MIAR	comp=Z,11nm,0.9s				pmax	pmax		
MIAR	**Mount Ida** comp=Z,11nm,0.9s	**91.53**	**44**	*e*P		**P**	**21 43 15.4**	**+0.3**
PBMO	**Poplar Bluff** comp=Z,8.0nm,0.7s	**91.56**	**40**	*e*P		**P**	**21 43 15.3**	**+0.2**
WHAR	**Wooly Hollow** comp=Z,18nm,0.5s	**91.69**	**42**	*e*P		**P**	**21 43 15.6**	**-0.2**
Y39A	**Lockesburg** baz=318	**91.69**	**44**	P		**P**	**21 43 15.8**	**0.0**
X40A	**Basin Creek Fa** baz=318	**91.99**	**43**	P		**P**	**21 43 17.2**	**0.0**
TZTN	**Tazewell** comp=Z,11nm,0.8s	**95.16**	**36**	*e*P		**P**	**21 43 32.1**	**+0.3**
TKL	**Tuckaleechee C**	**95.77**	**37**	*e*P		**P**	**21 43 34.7**	**+0.1**
TKL	comp=Z,24nm,0.8s				pmax	pmax		
TKL	**Tuckaleechee C** comp=Z,24nm,0.8s	**95.77**	**37**	*e*P		**P**	**21 43 34.6**	**+0.1**
TORD	**Torodi Ar. Bea** comp=Z,0.4nm,0.7s,baz=49,slow=2.9,SNR=5.4	**118.60**	**316**	PKP		**PKPdf**	**21 48 55.1**	**-1.5**
DBIC	**Dimbokro** comp=Z,1.0nm,0.5s,baz=30,slow=4.6,SNR=4.2	**127.52**	**319**	PKP		**PKPdf**	**21 49 13.1**	**-0.8**
SNAA	**Sanae**	**140.87**	**196**	PKP		PKPpre	21 49 29.5	
VNA2	**Neumayer--Watz** baz=110,slow=3.1	**142.41**	**195**	PKP		PKPpre	21 49 36.3	
VNA3	**Neumayer Olymp**	**142.63**	**194**	PKP		PKPpre	21 49 36.3	
LPAZ	**La Paz** comp=Z,4.6nm,0.6s,baz=347,slow=2.9,SNR=13	**145.55**	**62**	PKPbc		**PKPdf**	**21 49 47.5**	**-0.1**
LCO	**Las Campanas**	**150.57**	**85**	*e*PKPbc		**PKPbc**	**21 50 00.9**	**+0.4**
PLCA	**Paso Flores** comp=Z,2.3nm,0.8s,baz=278,slow=3.5,SNR=4.6	**153.41**	**109**	PKPbc		**PKPbc**	**21 50 06.7**	**+0.3**

WEL 08 21:31:02.7±0.3, 36.84S×177.36E, h139km±5km, ML3.6/4, 3C, Error ellipse: s-maj=4.7km s-min=4.1km az=0.0, Off east coast of North Island

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
HAZ	**Te Kaha**	**0.98**	**160**	⇑P	N		Pn	21 31 26.3	+0.2
HAZ					S	N	Sn	21 31 43.8	-0.2
MXZ	**Matakaoa Point**	**1.04**	**134**	P	N		Pn	21 31 26.6	-0.1
PKGZ	**Pakihiroa**	**1.19**	**152**	P	N		Pn	21 31 28.3	+0.1
PKGZ					S	N	Sn	21 31 47.5	-0.3
WMGZ	**Waiomatatini S**	**1.29**	**140**	⇑P	N		Pn	21 31 29.0	-0.2
WMGZ					S	N	Sn	21 31 49.1	-0.3
PUZ	**Puketiti**	**1.42**	**150**	P	N		Pn	21 31 30.1	-0.4
PUZ					A	ML	AML	21 31 54.8	
PUZ					A	ML	AML	21 31 59.6	
TWGZ	**Tauwhareparae**	**1.42**	**160**	P	N		Pn	21 31 31.0	+0.4
TWGZ					S	N	Sn	21 31 51.8	-0.2
URZ	**Urewera**	**1.43**	**188**	⇑P	N		Pn	21 31 31.0	+0.3
URZ					S	N	Sn	21 31 52.1	+0.1
URZ					A	ML	AML	21 31 52.7	
MWZ	**Matawai**	**1.50**	**175**	P	N		Pn	21 31 31.3	-0.1
MWZ					S	N	Sn	21 31 53.3	-0.1
MWZ					A	ML	AML	21 31 54.5	
CNGZ	**Carnagh Statio**	**1.77**	**158**	P	N		Pn	21 31 34.5	+0.1
RIGZ	**Rimuhau**	**1.89**	**170**	P	N		Pn	21 31 35.3	-0.6
RIGZ					S	N	Sn	21 32 00.0	-1.3
SNGZ	**Shannon Statio**	**1.94**	**181**	P	N		Pn	21 31 36.0	-0.4
RAHZ	**Arahi**	**2.09**	**186**	P	N		Pn	21 31 37.9	-0.3
RAHZ					S	N	Sn	21 32 05.0	-0.5
KNZ	**Kokohu**	**2.19**	**174**	P	N		Pn	21 31 38.4	-1.0
KNZ					A	ML	AML	21 32 09.6	
KNZ					A	ML	AML	21 32 16.0	
NMHZ	**Naumai**	**2.30**	**191**	P	N		Pn	21 31 40.8	0.0
MHGZ	**Mahia Peninsul**	**2.35**	**170**	P	N		Pn	21 31 40.5	-0.9
MCHZ	**McNeill Hill**	**2.65**	**191**	P	N		Pn	21 31 45.7	+0.5
KWHZ	**Kaweka Forest**	**2.69**	**196**	P	N		Pn	21 31 44.6	-1.0
WNVZ	**Wahianoa**	**2.85**	**209**	P	N		Pn	21 31 49.3	+1.5
KRHZ	**Kereru**	**2.91**	**195**	P	N		Pn	21 31 46.7	-1.7
KAHZ	**Kahuranaki**	**2.98**	**187**	P	N		Pn	21 31 47.6	-1.7
PXZ	**Pawanui**	**3.21**	**187**	P	N		Pn	21 31 50.0	-2.3
TSZ	**Takapari Road**	**3.40**	**198**	P	N		Pn	21 31 52.9	-1.9
BFZ	**Birch Farm**	**3.94**	**192**	P	N		Pn	21 31 59.5	-2.3
MRZ	**Mangatainoka R**	**4.06**	**200**	P	N		Pn	21 32 00.7	-2.7
HOWZ	**Holdsworth Sta**	**4.30**	**199**	P	N		Pn	21 32 03.3	-2.3
OGWZ	**Otaki Gorge**	**4.33**	**203**	P	N		Pn	21 32 04.5	-2.4
KIW	**Kapiti Island**	**4.45**	**205**	P	N		Pn	21 32 05.1	-3.4

*ISCJB **08** 21:38:33.8±0.7, 32.35N±0.04×115.32W±0.05, h21km±6km, Error ellipse: s-maj=8.8km s-min=5.2km az=141.8*
*ECX **08** 21:38:35.3±0.4, 32.31N×115.36W, h6km, MD2.5, ML2.6*
*MEX **08** 21:38:36.2±0.5, 32.36N×115.30W, h10km, MD3.3*
ISC 08 21:38:33.6±3.3, 32.32N±0.04×115.36W±0.03, h16km±25km, n16, σ0.39/25, 5C-1D, California-Baja California border region

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
CPBX	**Cerro Prieto**	**0.11**	**25**	*e*P			**Pb**	**21 38 38.0**	**+0.6**
CPBX					e	S	**Sb**	**21 38 40.1**	**+0.2**
CPBX				⇓*e*				21 38 43.3	
CPBX					A	ML	AML	21 38 43.3	
	comp=E,7μm,0.3s								
MBIG	**Mexicali**	**0.17**	**56**	*i*P			**Pb**	**21 38 38.6**	**+0.3**
MBIG					e	S	**Sb**	**21 38 40.4**	**-1.1**
SGL	**Mount Signal**	**0.45**	**317**	⇑*i*P			**Pb**	**21 38 43.4**	**+0.1**
WESC	**Westside Schoo**	**0.54**	**325**	*e*P			**Pb**	**21 38 44.9**	**+0.2**
YUH	**Yuha Desert**	**0.58**	**305**	⇑*i*P			**Pb**	**21 38 45.3**	**-0.1**
RMX	**La Rumorosa**	**0.67**	**295**	*e*P			**Pb**	**21 38 46.4**	**-0.7**
RMX					e	S	**Sb**	**21 38 55.6**	**-0.6**
IBP	**Imperial Bould**	**0.71**	**299**	*e*P			**Pb**	**21 38 47.8**	**+0.1**
IKP	**In-Ko-Pah, Jac**	**0.72**	**298**	⇑*i*P			**Pb**	**21 38 48.0**	**+0.2**
ECBX	**El Chinero**	**0.88**	**163**	*e*P			**Pb**	**21 38 50.3**	**-0.2**
ECBX					e	S	**Sb**	**21 39 02.2**	**+0.2**
ECBX					A	ML	AML	21 39 02.9	
	comp=N,212nm,0.2s								
ECBX				⇑*e*				21 39 02.9	
CBX	**Cerro

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PIP	**Pasuquin**	**0.79**	**224**⇓	*e*P	Pb	21 57 28.1	-0.5
PIP				*e*S	Sn	21 57 43.1	+0.4
APYP	**Conner**	**1.03**	**178**	*e*P	Pn	21 57 34.0	+0.5
APYP				*e*S	Sn	21 57 50.9	+2.3
SGCP	**Mt. Cagua**	**1.03**	**129**	*e*P	Pn	21 57 33.3	-0.3
SGCP				*e*S	Sn	21 57 50.1	+1.4
SIPP	**Brgy, Tapao**	**1.20**	**216**⇓	*e*P	Pg	21 57 30.1	-4.9
SIPP				*e*S	Sg	21 57 43.2	-7.3
ABRA	**Dolores**	**1.32**	**201**	*e*P	Pb	21 57 38.2	+0.5
CAUP	**Cauayan**	**2.03**	**163**	*e*P	Pg	21 57 50.3	-0.6

IDC ***08*** *22:07:26.7±2.0, 1°.80N×96°.56E, h0km, mb3.8/4, mb1 4.0/5, mb1mx3.6/45, mbtmp3.8/5, ML3.4/2, Error ellipse: s-maj=41.9km s-min=25.4km az=38.0*

ISCJB ***08*** *22:07:28.6±0.7, 1°.80N±0°.07×96°.51E±0°.07, h28km, mb4.2/8, Error ellipse: s-maj=10.7km s-min=9.3km az=163.5*

NEIC ***08*** *22:07:30.8±2.4, 1°.83N×96°.57E, h28km±18km, mb4.3/3, Error ellipse: s-maj=13.0km s-min=6.8km az=74.0*

ISC 08 22:07:30.7±0.9, 1°.81N±0°.08×96°.56E±0°.09, h28km, n19, σ0$67/17, mb4.2/8, Off west coast of northern Sumatera

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GSI	**Gunungsitoli**	**1.14**	**116**	*e*Pn	**Pb**	**22 07 52.1**	**+0.4**
PSI	**Prapat**	**2.56**	**67**	Pn	**Pn**	**22 08 09.4**	**-1.1**
	1.2nm,0.3s,baz=236,slow=11,SNR=5.3						
PSI				Sn	**Sn**	**22 08 41.7**	**+0.8**
	2.4nm,0.3s,baz=267,slow=13,SNR=6.2						
LHMI	**Lhok Sumawe**	**3.42**	**7**	*e*Pn	**Pn**	**22 08 21.8**	**-0.4**
KULM	**Kulim**	**5.36**	**50**	*e*Pn	**Pn**	**22 08 47.8**	**-1.1**
KSM	**Kuching**	**13.75**	**91**	*e*Pn	**Pn**	**22 10 44.6**	**+0.7**
COCO	**West Island**	**13.91**	**179**	*e*Pn	**Pn**	**22 10 45.9**	**-0.2**
CMAR	**Chiang Mai Arr**	**16.71**	**8**	Pn	**Pn**	**22 11 22.7**	**-0.3**
	0.2nm,0.3s,baz=198,slow=11,SNR=21						
CHTO	**Chiang Mai**	**17.06**	**8**	*e*Pn	**Pn**	**22 11 27.9**	**+0.5**
	0.6nm,0.4s						
H08S2	**Diego Garcia H**	**25.77**	**248**	T	T	22 39 49.7	
	baz=69,slow=75,SNR=93						
H08S3	**Diego Garcia H**	**25.78**	**248**	T	T	22 39 51.0	
	baz=69,slow=75,SNR=70						
H08S1	**Diego Garcia H**	**25.79**	**248**	T	T	22 39 52.2	
	baz=69,slow=75,SNR=97						
WRA	**Warramunga Arr**	**42.90**	**122**	P	**P**	**22 15 27.2**	**0.0**
	0.5nm,0.6s,baz=301,slow=9.2,SNR=4.8						
WRAB	**Tennant Creek**	**42.91**	**122**	*e*P	**P**	**22 15 27.3**	**+0.1**
	3.9nm,1.0s						
MKAR	**Makanchi Array**	**46.50**	**347**	P	**P**	**22 15 55.9**	**+0.3**
	1.0nm,0.6s,baz=162,slow=7.6,SNR=11						
SONM	**Songino Array**	**46.63**	**9**	P	**P**	**22 15 56.7**	**0.0**
	0.4nm,0.5s,baz=180,slow=8.6,SNR=3.0						
TLY	**Talaya**	**50.06**	**6**	*e*P	**P**	**22 16 23.7**	**+0.8**
	1.7nm,0.6s						
MAJO	**Matsushiro**	**51.68**	**43**	*e*P	**P**	**22 16 34.3**	**-1.1**
	6.4nm,0.6s						
ZALV	**Zalesovo Beam**	**52.86**	**351**	P	**P**	**22 16 44.0**	**+0.2**
	1.3nm,0.4s,baz=171,slow=7.2,SNR=13						
HNR	**Honiara**	**64.11**	**101**	*e*P	**P**	**22 18 03.0**	**0.0**
	38nm,0.5s						

NIED ***08*** *22:09:00, 37°.20N×141°.40E, h50km, Mw3.4 Best double couple: Mo1.55000×10^14 NP1:φs=267.00000°, δ10.00000°, λ-7.00000°. NP2:φs=4.00000°, δ89.00000°, λ-100.00000°.*

IDC ***08*** *22:09:15.1±2.5, 37°.38N×141°.98E, h0km, mb3.3/2, mb1 3.5/3, mb1mx3.2/46, mbtmp3.2/3, ML3.2/1, MS2.2/1, Ms1 2.2/1, ms1mx1.9/20, Error ellipse: s-maj=48.5km s-min=36.0km az=42.0*

ISCJB ***08*** *22:09:20.7±1.6, 37°.17N±0°.05×141°.62E±0°.10, h32km±7km, mb3.3/2, Error ellipse: s-maj=13.3km s-min=8.4km az=177.4*

JMA ***08*** *22:09:23.2±0.1, 37°.20N×141°.41E, h47km±1km, M3.7*

JMA Felt I J1.

ISC 08 22:09:18.4±2.2, 37°.22N±0°.06×141°.70E±0°.09, h13km±11km, n12, σ1$00/20, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**0.67**	**283**	P	**Pn**	**22 09 33.7**	**0.0**
JFK				S	**Sb**	**22 09 40.9**	**-0.4**
ONAJ	**Iwakimizuishiy**	**0.73**	**261**	P	**Pn**	**22 09 34.3**	**-0.2**
ONAJ				S	**Sg**	**22 09 42.0**	**-0.1**
JMM	**Marumori**	**0.96**	**312**	P	**Pn**	**22 09 38.3**	**+0.6**
JMM				S	**Sg**	**22 09 49.4**	**-0.2**
JHO	**Hitachi**	**1.09**	**236**	P	**Pb**	**22 09 39.0**	**-0.1**
JHO				S	**Sb**	**22 09 50.7**	**-2.5**
JFT	**Otama**	**1.12**	**286**	P	**Pn**	**22 09 40.6**	**+0.7**
JFT				S	**Sb**	**22 09 52.9**	**-1.4**
JOU	**Okura**	**1.41**	**325**	P	**Pg**	**22 09 45.7**	**+0.3**
JOU				S	**Sn**	**22 10 02.2**	**-0.1**
JFY	**Yanaizu**	**1.60**	**277**	P	**Pn**	**22 09 47.0**	**+0.6**
JYS	**Shirataka**	**1.63**	**308**	S	**Sn**	**22 10 07.7**	**-0.2**
MJAR	**Matsushiro Arr**	**2.88**	**257**	Pn	**Pn**	**22 10 04.8**	**+0.8**
	2.7nm,0.3s,baz=80,slow=15,SNR=13						
MJAR				Sn	**Sb**	**22 10 45.4**	**+0.7**
	3.8nm,0.3s,baz=93,slow=28,SNR=5.5						
MJAR				LR	LR	22 11 31.6	
	comp=Z,45nm,21.7s,baz=95,slow=44						
MAT	**Matsushiro**	**2.88**	**257**	P	**Pn**	**22 10 05.3**	**+1.3**
MAT				*e*S	**Sn**	**22 10 40.3**	**+1.7**
MKAR	**Makanchi Array**	**44.21**	**302**	P	**P**	**22 17 26.7**	**-0.5**
	0.2nm,0.7s,baz=79,slow=7.5,SNR=2.4						
WRA	**Warramunga Arr**	**57.28**	**188**	P	**P**	**22 19 05.9**	**+0.1**
	0.4nm,0.6s,baz=7.8,slow=7.4,SNR=5.3						

SCB ***08*** *22:09:18.8±0.3, 20°.67S×67°.31W, h179km, Ml3.6/2, Error ellipse: s-maj=11.1km s-min=3.4km az=46.0*

SJA ***08*** *22:09:18.5±0.7, 21°.01S×67°.65W, h196km±41km, ML4.0, MW3.9*

ISCJB ***08*** *22:09:18.6±0.3, 21°.13S±0°.04×67°.92W±0°.04, h171km±3km, mb3.9/13, Error ellipse: s-maj=6.7km s-min=4.8km az=42.3*

GUC ***08*** *22:09:20.2±0.5, 21°.02S×68°.19W, h178km±5km, ML4.2*

NEIC ***08*** *22:09:21.4±0.8, 20°.91S×67°.53W, h178km±6km, mb4.0/8, Error ellipse: s-maj=10.7km s-min=6.1km az=67.0*

IDC ***08*** *22:09:21.8±1.9, 20°.87S×67°.52W, h179km±15km, mb3.8/6, mb1 3.9/10, mb1mx3.6/32, mbtmp4.3/10, Error ellipse: s-maj=20.2km s-min=15.0km az=55.0*

ISC 08 22:09:19.0±0.7, 21°.04S±0°.05×67°.84W±0°.04, h161km±6km, n46, σ1$33/57, mb3.9/13, 12C-2D, Chile-Bolivia border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PB09	**IPOC Station P**	**1.51**	**240**⇓	*e*P	**Pn**	**22 09 50.3**	**+0.5**
PB09				*e*S	**Sn**	**22 10 13.5**	**+0.2**
PB09				IAML		22 10 14.0	
	comp=N,3μm,0.3s						
PB08	**IPOC Station P**	**1.53**	**306**⇑	*e*P	**Pn**	**22 09 51.0**	**+0.8**
PB08				*e*S	**Sn**	**22 10 14.5**	**+0.5**
PB08				IAML		22 10 15.1	
	comp=N,4μm,0.4s						
PB01	**IPOC Station P**	**1.54**	**270**⇑	*e*P	**Pn**	**22 09 49.6**	**-0.4**
PB01				*e*S	**Sn**	**22 10 12.2**	**-1.5**
PB01				IAML		22 10 16.6	
	comp=N,2μm,0.2s						
PB07	**IPOC Station P**	**2.03**	**250**⇑	*e*P	**Pn**	**22 09 55.2**	**-0.2**
PB07				*e*S	**Sn**	**22 10 21.5**	**-1.8**
PB07				IAML		22 10 22.0	
	comp=N,2μm,0.5s						
MOCB	**Mochara**	**2.06**	**96**⇑	*i*Pn	**Pn**	**22 09 57.5**	**+1.5**
MOCB				⇑*i*Sn	**Sn**	**22 10 25.4**	**+0.9**
	comp=N,234nm,0.5s						
PB11	**IPOC Station P**	**2.13**	**306**⇑	*e*P	**Pn**	**22 09 56.6**	**0.0**
PB11				*e*S	**Sn**	**22 10 24.2**	**-1.2**
YJA	**Yavi**	**2.44**	**118**	*e*P	**Pn**	**22 10 01.9**	**+1.5**
YJA				*e*S	**Sn**	**22 10 33.2**	**+0.9**
YJA				IAML		22 10 34.8	
	comp=Z,161nm,0.7s						
PB04	**IPOC Station P**	**2.50**	**239**	*e*P	**Pn**	**22 10 00.9**	**-0.1**
PB04				*e*S	**Sn**	**22 10 30.7**	**-2.7**
HJA	**Humahuaca**	**3.12**	**134**	*e*P	**Pn**	**22 10 10.2**	**+1.5**
PB13	**IPOC Station P**	**3.12**	**329**⇑	*e*P	**Pn**	**22 10 10.3**	**+1.4**
PB13				*e*S	**Sn**	**22 10 47.9**	**+0.3**
BBOJ	**La Paz, Jacaqu**	**4.06**	**355**⇑	*i*Pn	**Pn**	**22 10 23.0**	**+2.1**
AZAP	**Zapla**	**4.07**	**142**	*e*P	**Pn**	**22 10 21.0**	**+0.2**
AZAP				IAML		22 10 22.9	
	comp=Z,110nm,0.9s						
BBOE	**La Paz, Chanca**	**4.21**	**358**⇑	*i*Pn	**Pn**	**22 10 25.0**	**+2.1**
SLA	**San Lorenzo**	**4.25**	**150**	*e*P	**Pn**	**22 10 23.4**	**+0.4**
SLA				IAML		22 10 24.8	
	comp=Z,218nm,0.6s						
ASTB	**Santa Barbara**	**4.26**	**133**	*e*P	**Pn**	**22 10 23.2**	**+0.1**
BBOD	**La Paz, Gloria**	**4.44**	**351**⇑	*i*Pn	**Pn**	**22 10 27.9**	**+2.0**
LPAZ	**La Paz**	**4.74**	**357**	*e*P	**Pn**	**22 10 30.5**	**+0.6**
LPAZ	**La Paz**	**4.74**	**357**	P	**Pn**	**22 10 31.3**	**+1.4**
	comp=Z,34nm,0.3s,baz=149,slow=5.2,SNR=278						
LPAZ				S	**Sn**	**22 11 26.2**	**+1.1**
	comp=Z,0.9nm,0.3s,baz=282,slow=19,SNR=2.1						
LPAZ	**La Paz**	**4.74**	**357**⇑	*i*Pn	**Pn**	**22 10 31.3**	**+1.4**
LPAZ				*e*Sn	**Sn**	**22 11 24.5**	**-0.6**
	comp=Z,25nm,0.6s						
BBOB	**La Paz, Bander**	**4.88**	**357**⇑	*i*Pn	**Pn**	**22 10 33.0**	**+1.3**
AHML	**Horco Molle**	**6.16**	**159**	IAML		22 10 49.3	
	comp=Z,71nm,0.7s						
SIV	**San Ignacio**	**8.15**	**53**	P	**Pn**	**22 11 12.4**	**-2.1**
	comp=Z,5.8nm,0.3s,baz=248,slow=13,SNR=55						
SIV				S	**Sn**	**22 12 40.4**	**-5.2**
	comp=Z,1.3nm,0.3s,baz=247,slow=7.5,SNR=4.2						
SIV	**San Ignacio**	**8.15**	**53**⇓	*i*Pn	**Pn**	**22 11 12.2**	**-2.3**
CPUP	**Villa Florida**	**10.97**	**121**	P	**Pn**	**22 11 51.3**	**-0.3**
	comp=Z,0.7nm,0.3s,baz=302,slow=12,SNR=20						
TRQA	**Tornquist**	**17.70**	**165**	*e*P	**P**	**22 13 14.6**	**+0.4**
	comp=Z,6.9nm,0.5s						
PLCA	**Paso Flores**	**19.76**	**186**	P	**Pn**	**22 13 40.6**	**+0.7**
	comp=Z,0.2nm,0.3s,baz=31,slow=10,SNR=4.4						
OTAV	**Otavalo**	**23.56**	**333**	*e*P	**P**	**22 14 16.6**	**+1.0**
	comp=Z,1.7nm,0.5s						
ACSO	**Alum Creek Sta**	**62.57**	**347**	*e*P	**P**	**22 19 25.7**	**-0.1**
	comp=Z,2.1nm,0.4s						
KSU1	**Kansas State U**	**65.61**	**336**	*e*P	**P**	**22 19 46.3**	**+0.6**
	comp=Z,3.8nm,0.5s						
DBIC	**Dimbokro**	**67.64**	**73**	P	**P**	**22 19 57.9**	**-1.2**
	comp=Z,2.0nm,0.6s,baz=229,slow=6.7,SNR=6.9						
PDAR	**Pinedale Array**	**74.22**	**329**	P	**P**	**22 20 39.1**	**+0.7**
	comp=Z,0.3nm,0.6s,baz=90,slow=6.1,SNR=3.8						
TORD	**Torodi Ar. Bea**	**76.26**	**70**	P	**P**	**22 20 49.9**	**-0.5**
	comp=Z,3.8nm,0.4s,baz=258,slow=5.5,SNR=139						
HLID	**Hailey**	**77.20**	**327**	*e*P	**P**	**22 20 56.4**	**+1.2**
	comp=Z,1.0nm,0.6s						
WALA	**Waterton Lakes**	**80.94**	**331**	*e*P	**P**	**22 21 16.1**	**+0.7**
	comp=Z,1.3nm,0.7s						
FCC	**Fort Churchill**	**82.42**	**347**	*e*P	**P**	**22 21 22.5**	**-0.1**
	comp=Z,1.0nm,0.4s						
BOSA	**Boshof**	**82.78**	**118**	P	**P**	**22 21 25.5**	**-0.1**
	comp=Z,4.9nm,1.2s,baz=242,slow=5.3,SNR=3.8						
ESDC	**Sonseca Array**	**84.81**	**44**	P	**P**	**22 21 34.1**	**-1.3**
	comp=Z,0.6nm,0.8s,baz=248,slow=4.8,SNR=4.2						
LSZ	**Lusaka**	**90.07**	**106**	*e*P	**P**	**22 22 00.8**	**-0.5**
	comp=Z,0.6nm,0.6s						
YKA	**Yellowknife Ar**	**91.09**	**340**	P	**P**	**22 22 05.4**	**+0.6**
	comp=Z,2.1nm,0.6s,baz=134,slow=4.4,SNR=56						
ASAR	**Alice Springs**	**130.77**	**207**	PKP	**PKPdf**	**22 28 12.3**	**+0.4**
	comp=Z,0.6nm,0.5s,baz=130,slow=1.5,SNR=7.0						
WRA	**Warramunga Arr**	**133.85**	**209**	PKP	**PKPdf**	**22 28 18.7**	**+1.0**
	comp=Z,0.7nm,0.5s,baz=130,slow=1.3,SNR=3.1						
ZALV	**Zalesovo Beam**	**141.11**	**26**	PKP	**PKPdf**	**22 28 29.8**	**-0.2**
	comp=Z,1.2nm,0.6s,baz=288,slow=2.7,SNR=6.9						
MKAR	**Makanchi Array**	**144.68**	**36**	PKP	**PKPdf**	**22 28 36.4**	**-0.1**
	comp=Z,3.0nm,0.4s,baz=317,slow=3.5,SNR=73						
KLR	**Kul'dur**	**147.83**	**336**	PKPbc	**PKPbc**	**22 28 44.5**	**-0.3**
	comp=Z,1.1nm,0.4s,baz=32,slow=4.2,SNR=6.9						
USRK	**Ussuriysk Ar.**	**151.65**	**329**	PKPbc	**PKPbc**	**22 28 54.7**	**+0.4**
	comp=Z,1.6nm,0.6s,baz=14,slow=2.7,SNR=5.4						
SONM	**Songino Array**	**152.87**	**9**	PKPbc	**PKPbc**	**22 28 56.4**	**-0.7**
	comp=Z,1.0nm,0.5s,baz=312,slow=2.2,SNR=5.2						

IDC 08 22:10:30.8±20.0, 5°.64N×122°.15E, h520km±293km, mb3.1/4, mb1 3.2/4, mb1mx2.7/42, mbtmp4.1/4, Error ellipse: s-maj=206.0km s-min=40.0km az=61.0, Celebes Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**28.11**	**155**	P	P	22 15 40.1	-0.6
	1.3nm,0.5s,baz=332,slow=10,SNR=17						
ASAR	**Alice Springs**	**31.31**	**159**	P	P	22 16 09.0	+0.7
	1.1nm,0.3s,baz=341,slow=6.6,SNR=15						
STKA	**Stephens Creek**	**41.66**	**155**	P	P	22 17 33.1	-0.5
	1.0nm,0.4s,baz=340,slow=7.2,SNR=3.6						
MKAR	**Makanchi Array**	**53.43**	**327**	P	P	22 19 01.7	-0.1
	0.8nm,0.4s,baz=121,slow=8.0,SNR=26						

JMA 08 22:28:41.9±0.2, 39°.77N×143°.54E, h11km±3km, M3.8, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JTH	**Tanohata**	**1.30**	**278**	P	Pn	22 29 05.7	-0.3
JTH				*e*S	Sg	22 29 23.6	-0.2
MIYJ	**Miyakonagasawa**	**1.34**	**262**	P	Pn	22 29 06.5	-0.1
MIYJ				S	Sb	22 29 24.3	+0.1
JANG	**Nango**	**1.67**	**292**	P	Pn	22 29 11.1	+0.1
JANG				S	Sn	22 29 32.9	+0.5
JOM	**Ohasama**	**1.76**	**261**	P	Pn	22 29 13.0	+0.7
JOM				S	Sn	22 29 35.1	+0.4
JTM	**Tenmabayashi**	**2.15**	**299**	P	Pn	22 29 18.6	+1.0
JTM				S	Sb	22 29 46.0	-1.4
JAH	**Hinai**	**2.27**	**282**	P	Pn	22 29 20.5	+1.2
JRG	**Rokugo**	**2.28**	**261**	P	Pn	22 29 20.7	+1.3
JNBK	**Urakawa-nobuka**	**2.58**	**347**	P	Pb	22 29 26.0	-2.1
JNBK				*e*S	Sn	22 29 57.0	+2.1
JYK	**Kaneyama**	**2.61**	**252**	P	Pn	22 29 25.0	+1.0
JOU	**Okura**	**2.64**	**239**	P	Pn	22 29 25.0	+0.5
JCH	**Churui**	**2.84**	**357**	P	Pn	22 29 28.8	+1.6
JCH				*e*S	Sn	22 30 01.2	-0.3
JKB	**Kayabe**	**2.84**	**319**	P	Pn	22 29 29.5	+2.3
JAR	**Ashorobuto**	**3.53**	**3**	P	Pn	22 29 37.9	+1.3
JAR				S	Sn	22 30 17.7	-0.6
NEM2	**Nemuro 2**	**3.95**	**24**	P	Pn	22 29 43.5	+1.0
JTKR	**Abashiri--Toko**	**4.21**	**4**	P	Pn	22 29 47.6	+1.7
JTKR				S	Sn	22 30 34.8	-0.2

IDC ***08*** *22:28:58.0±1.3, 34°.43S×71°.70W, h0km, mb4.0/6, mb1 4.2/8, mb1mx4.0/30, mbtmp4.0/8, ML4.2/2, MS3.3/4, Ms1 3.3/4, ms1mx3.1/21, Error ellipse: s-maj=36.2km s-min=27.2km az=72.0*

ISCJB ***08*** *22:28:59.5±0.6, 34°.56S±0°.03×71°.95W±0°.06, h24km±4km, mb4.0/14, MS3.2/1, Error ellipse: s-maj=8.0km s-min=5.3km az=175.2*

NEIC ***08*** *22:28:59.0, 34°.52S×71°.89W, h26km, mb4.0/9, ML4.1(GUC), After GUC.*

NEIC Felt [IV] at Lolol and Talca; [III] at Curico, Duao, Iloca, Longavi, Molina, Paredones, Pencahue, Pichilemu and San Fernando; [II] at Constitucion, Linares and San Vicente de Taguatagua.

GUC ***08*** *22:28:59.7±0.3, 34°.52S×71°.90W, h26km±3km, ML4.1*

ISC 08 22:28:60.0±0.7, 34°.49S±0°.03×71°.75W±0°.04, h15km±5km, n38, σ1$01/39, mb4.1/14, Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHPI	**Pichilemu**	**0.23**	**295**	*e*P	**Pg**	**22 29 04.5**	**-0.5**
CHPI				*e*S	**Sg**	**22 29 07.7**	**-0.8**
NICH	**Los Niches**	**0.67**	**140**	*e*P	**Pb**	**22 29 13.3**	**-0.1**
NICH				*e*S	**Sb**	**22 29 23.6**	**+1.0**
TALC	**Talca**	**0.91**	**174**	*e*P	**Pg**	**22 29 16.0**	**-1.7**
TALC				*e*S	**Sg**	**22 29 28.4**	**-1.3**
ANTU	**Antumapu**	**1.30**	**46**	*e*P	**Pg**	**22 29 24.1**	**-1.0**
ANTU				*e*S	**Sg**	**22 29 43.1**	**+1.0**
ANTU				IAML		22 29 45.0	
	comp=N,5μm,0.5s						
CLCH	**Cerro Calan**	**1.48**	**43**	*e*P	**Pb**	**22 29 27.3**	**-0.1**
CLCH				*e*S	**Sg**	**22 29 48.0**	**+0.1**
CLCH				IAML		22 29 52.7	
	comp=E,5μm,0.9s						
PEL	**Peldehue**	**1.61**	**34**	*e*P	**Pb**	**22 29 28.9**	**-0.6**
PEL				*e*S	**Sg**	**22 29 51.0**	**-0.7**
PEL				IAML		22 29 58.3	
	comp=E,3μm,0.5s						
ROC1	**El Roble**	**1.63**	**22**	*e*P	**Pg**	**22 29 30.2**	**-1.0**
ROC1				*e*S	**Sg**	**22 29 53.3**	**+0.8**
AAGR	**Agrelo**	**2.81**	**61**	*e*P	**Pg**	**22 29 53.2**	**-0.6**
ARCO	**CERRO ARCO**	**2.87**	**56**	*e*P	**Pg**	**22 29 53.9**	**-1.1**
ARCO				IAML		22 29 56.8	
	comp=Z,418nm,0.5s						

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AUSP	**Uspallata**	**3.00**	**42**	*e*P	**Pb**	**22 29 52.9**	**-0.5**
RTLS	**Leoncito**	**3.38**	**38**	*e*P	**Pb**	**22 29 57.1**	**-2.7**
RTCV	**Cerro Valdivia**	**3.75**	**47**	*e*P	**Pb**	**22 30 03.2**	**-2.9**
RTLL	**Cerro Villicun**	**4.18**	**42**	*e*P	Pn	22 30 07.6	+4.2
AMOG	**MOGNA**	**4.48**	**39**	*e*P	Pn	22 30 10.7	+3.3
AVFE	**Valle Fertil**	**5.26**	**45**	IAML		22 31 42.3	
	comp=Z,63nm,0.5s						
LCO	**Las Campanas**	**5.53**	**10**	*e*Pn	**Pn**	**22 30 22.2**	**+0.1**
	comp=Z,29nm,0.8s						
PLCA	**Paso Flores**	**6.31**	**172**	Pn	**Pn**	**22 30 33.9**	**+1.4**
	comp=Z,3.1nm,0.3s,baz=358,slow=14,SNR=37						
PLCA				Lg	Lg	22 32 14.8	
	comp=Z,1.1nm,0.3s,baz=293,slow=14,SNR=6.1						
PLCA				LR	LR	22 33 10.0	
	comp=Z,296nm,18.7s,baz=46,slow=40						
VCA	**Vinchina**	**6.48**	**29**	IAML		22 32 49.1	
	comp=Z,76nm,0.8s						
ACLC	**CERRO LA CRUZ**	**6.49**	**40**	IAML		22 32 34.6	
	comp=Z,44nm,1.4s						
TRQA	**Tornquist**	**8.66**	**117**	*e*Pn	**Pn**	**22 31 05.7**	**+1.0**
CPUP	**Villa Florida**	**14.85**	**61**	LR	LR	22 38 49.6	
	comp=Z,140nm,18.7s,baz=234,slow=40						
LPAZ	**La Paz**	**18.41**	**11**	P	**P**	**22 33 16.1**	**+0.7**
	comp=Z,0.1nm,0.3s,baz=200,slow=17,SNR=4.5						
LPAZ				LR	LR	22 40 11.8	
	comp=Z,44nm,18.2s,baz=228,slow=37						
SIV	**San Ignacio**	**20.77**	**30**	P	**P**	**22 33 39.8**	**-0.7**
	comp=Z,1.7nm,0.5s,baz=219,slow=10,SNR=7.4						
NNA	**Nana**	**22.87**	**347**	*e*P	**P**	**22 34 03.1**	**0.0**
	comp=Z,1.2nm,0.3s						
SPB	**Sao Paulo**	**23.81**	**69**	*e*P	**P**	**22 34 12.3**	**-0.1**
	comp=Z,6.7nm,0.6s						
SAML	**Samuel**	**26.61**	**19**	*e*P	**P**	**22 34 37.6**	**-0.3**
	comp=Z,0.8nm,0.6s						
SAML				*e*pP	**sP**	**22 34 45.7**	**+1.6**
BDFB	**Brasilia**	**28.42**	**55**	LR	LR	22 46 06.7	
	comp=Z,50nm,18.1s,baz=232,slow=36						
PTGA	**Pitinga**	**35.34**	**21**	P	**P**	**22 35 54.6**	**-0.4**
	comp=Z,1.1nm,0.3s,baz=201,slow=12,SNR=5.3						
SDV	**Santo Domingo**	**43.15**	**2**	*e*P	**P**	**22 37 00.2**	**-0.1**
	comp=Z,1.9nm,0.6s						
TXAR	**Lajitas Array**	**70.27**	**331**	P	**P**	**22 40 13.2**	**+0.5**
	comp=Z,0.8nm,0.5s,baz=159,slow=9.2,SNR=12						
OXF	**Oxford**	**70.60**	**345**	*e*P	**P**	**22 40 14.7**	**+0.2**
	comp=Z,3.4nm,0.4s						
MIAR	**Mount Ida**	**71.65**	**341**	*e*P	**P**	**22 40 21.4**	**+0.5**
	comp=Z,0.6nm,0.6s						
DBIC	**Dimbokro**	**75.11**	**71**	P	**P**	**22 40 41.9**	**0.0**
	comp=Z,4.2nm,1.1s,baz=248,slow=5.4,SNR=2.4						
ANMO	**Albuquerque**	**76.32**	**331**	*e*P	**P**	**22 40 49.0**	**+0.5**
	comp=Z,0.8nm,0.6s						
HWUT	**Hardware Ranch**	**84.09**	**331**	*e*P	**P**	**22 41 30.2**	**0.0**
	comp=Z,0.9nm,0.7s						
TORD	**Torodi Ar. Bea**	**84.15**	**70**	P	**P**	**22 41 30.9**	**0.0**
	comp=Z,0.9nm,0.6s,baz=256,slow=4.2,SNR=18						
PDAR	**Pinedale Array**	**84.30**	**333**	P	**P**	**22 41 31.2**	**-0.1**
	comp=Z,0.2nm,0.6s,baz=133,slow=3.8,SNR=3.1						
FCC	**Fort Churchill**	**94.75**	**349**	*e*P	**P**	**22 42 20.2**	**0.0**
	comp=Z,0.2nm,0.5s						

NIED ***08*** *22:29:00, 36°.20N×141°.80E, h23km, Mw3.8 Best double couple: Mo5.87000×10^14 NP1:φs=196.00000°, δ30.00000°, λ100.00000°. NP2:φs=5.00000°, δ60.00000°, λ84.00000°.*

IDC ***08*** *22:29:40.2±1.8, 36°.14N×142°.08E, h0km, mb3.8/6, mb1 3.9/8, mb1mx3.6/47, mbtmp3.8/8, ML3.9/2, MS2.7/3, Ms1 2.8/3, ms1mx2.5/39, Error ellipse: s-maj=50.1km s-min=21.6km az=71.0*

ISCJB ***08*** *22:29:42.2±0.7, 36°.16N±0°.05×142°.00E±0°.07, h23km, mb3.9/11, MS3.6/2, Error ellipse: s-maj=8.4km s-min=6.2km az=23.5*

JMA ***08*** *22:29:44.8±0.2, 36°.18N×141°.80E, h62km±4km, M3.5*

NEIC ***08*** *22:29:46.1±0.6, 36°.05N×141°.82E, h35km, mb4.0/5, Error ellipse: s-maj=13.9km s-min=10.5km az=57.0*

ISC 08 22:29:44.2±1.0, 36°.12N±0°.05×141°.88E±0°.08, h23km, n26, σ0$87/28, mb3.9/11, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.92**	**244**	P	**Pn**	**22 30 01.7**	**0.0**
CHOJ				*e*S	**Sn**	**22 30 14.8**	**+0.5**
JHO	**Hitachi**	**1.16**	**295**	P	**Pb**	**22 30 04.2**	**-1.4**
ONAJ	**Iwakimizuishiy**	**1.31**	**319**	P	**P

URZ	Urewera	1.25 187	P	Pn	22 30 34.7	-0.3	
	99nm,0.3s,baz=4.6,slow=5.8,SNR=554						
URZ			S	Sn	22 30 57.0	-1.3	
	53nm,0.3s,baz=188,slow=22,SNR=19						
URZ	Urewera	1.25 187	PN	Pn	22 30 34.8	-0.2	
URZ			AML	AML	22 30 57.8		
URZ			AML	AML	22 31 00.9		
URZ	Urewera	1.25 187	⇑*i*Pn	Pn	22 30 34.9	-0.2	
TWGZ	Tauwhareparae	1.27 156	⇑PN	Pn	22 30 35.3	0.0	
TWGZ	Tauwhareparae	1.27 156	Pn	Pn	22 30 35.3	0.0	
PUZ	Puketiti	1.29 145	PN	Pn	22 30 34.7	-0.7	
PUZ			AML	AML	22 31 07.7		
PUZ			AML	AML	22 31 07.8		
PUZ	Puketiti	1.29 145	Pn	Pn	22 30 34.7	-0.7	
KUZ	Kuaotunu	1.31 281	PN	Pn	22 30 34.1	-1.4	
KUZ	Kuaotunu	1.31 281	Pn	Pn	22 30 33.3	-2.2	
MWZ	Matawai	1.33 173	⇑PN	Pn	22 30 35.4	-0.3	
MWZ			SN	Sn	22 30 58.6	-1.0	
MWZ			AML	AML	22 31 07.7		
MWZ	Matawai	1.33 173	Pn	Pn	22 30 35.4	-0.3	
TARZ	Mount Tarawera	1.38 208	PN	Pn	22 30 37.0	+0.8	
TARZ	Mount Tarawera	1.38 208	Pn	Pn	22 30 37.0	+0.8	
HLRZ	Highlands Stat	1.45 212	PN	Pn	22 30 37.7	+0.9	
RRRZ	Republican Roa	1.47 206	PN	Pn	22 30 37.9	+0.9	
RRRZ	Republican Roa	1.47 206	Pn	Pn	22 30 37.9	+0.9	
RAGZ	Rawiri	1.48 177	PN	Pn	22 30 37.3	+0.2	
RAGZ	Rawiri	1.48 177	Pn	Pn	22 30 37.3	+0.2	
TKGZ	Te Karaka	1.48 164	⇑PN	Pn	22 30 36.9	-0.1	
TKGZ	Te Karaka	1.48 164	Pn	Pn	22 30 36.9	-0.1	
HRRZ	Handcock Road	1.60 211	PN	Pn	22 30 39.7	+1.5	
HRRZ	Handcock Road	1.60 211	Pn	Pn	22 30 39.7	+1.5	
CNGZ	Carnagh Statio	1.63 155	⇑PN	Pn	22 30 38.7	+0.2	
CNGZ	Carnagh Statio	1.63 155	Pn	Pn	22 30 38.7	+0.2	
PRRZ	Plateau Road	1.65 206	⇑PN	Pn	22 30 39.6	+0.8	
PRRZ	Plateau Road	1.65 206	Pn	Pn	22 30 39.6	+0.8	
GRZ	Great Barrier	1.68 297	PN	Pn	22 30 37.1	-1.9	
RIGZ	Rimuhau	1.72 168	⇑PN	Pn	22 30 39.4	0.0	
ALRZ	Allen Road	1.73 206	⇑PN	Pn	22 30 40.4	+0.9	
ALRZ	Allen Road	1.73 206	Pn	Pn	22 30 40.4	+0.9	
MKAZ	Moumakai	1.73 266	PN	Pn	22 30 39.4	-0.1	
MKAZ	Moumakai	1.73 266	Pn	Pn	22 30 39.4	-0.1	
SNGZ	Shannon Statio	1.76 179	PN	Pn	22 30 39.9	+0.1	
SNGZ			SN	Sn	22 31 06.7	-0.3	
SNGZ	Shannon Statio	1.76 179	Pn	Pn	22 30 39.9	+0.1	
SNGZ			Sn	Sn	22 31 06.7	-0.3	
RAHZ	Arahi	1.91 185	⇓PN	Pn	22 30 41.7	+0.4	
RAHZ			SN	Sn	22 31 10.0	+0.3	
RAHZ	Arahi	1.91 185	Pn	Pn	22 30 41.7	+0.4	
RAHZ			Sn	Sn	22 31 10.0	+0.3	
MRHZ	Matea Rd	1.95 201	PN	Pn	22 30 42.2	+0.4	
PRGZ	Paritu Road	1.96 167	PN	Pn	22 30 41.9	0.0	
PRGZ	Paritu Road	1.96 167	Pn	Pn	22 30 41.9	0.0	
KNZ	Kokohu	2.02 172	⇑PN	Pn	22 30 42.5	0.0	
KNZ			AML	AML	22 31 13.3		
KNZ			AML	AML	22 31 13.7		
KNZ	Kokohu	2.02 172	Pn	Pn	22 30 42.5	0.0	
WHHZ	Waihua	2.06 182	PN	Pn	22 30 43.4	+0.4	
NMHZ	Naumai	2.12 191	⇓PN	Pn	22 30 44.5	+0.8	
NMHZ			SN	Sn	22 31 14.9	+1.1	
NMHZ	Naumai	2.12 191	Pn	Pn	22 30 44.5	+0.8	
NMHZ			Sn	Sn	22 31 14.9	+1.1	
MHGZ	Mahia Peninsul	2.18 168	⇑PN	Pn	22 30 44.5	+0.2	
MHGZ	Mahia Peninsul	2.18 168	Pn	Pn	22 30 44.5	+0.2	
BKZ	Black Stump Fm	2.24 197	PN	Pn	22 30 44.9	-0.1	
BKZ			AML	AML	22 31 23.3		
BKZ			AML	AML	22 31 25.2		
BKZ	Black Stump Fm	2.24 197	Pn	Pn	22 30 44.9	-0.1	
ARHZ	Aropaoanui	2.26 186	⇑PN	Pn	22 30 45.6	+0.5	
ARHZ	Aropaoanui	2.26 186	Pn	Pn	22 30 45.6	+0.5	
HIZ	Hauiti	2.46 232	PN	Pn	22 30 49.1	+1.7	
KRVZ	Karewarewa	2.46 212	PN	Pn	22 30 49.0	+1.4	
MCHZ	McNeill Hill	2.47 191	PN	Pn	22 30 48.1	+0.5	
MCHZ			SN	Sn	22 31 21.6	+0.8	
WTVZ	West Tongariro	2.50 213	PN	Pn	22 30 48.9	+0.9	
KWHZ	Kaweka Forest	2.51 196	⇓PN	Pn	22 30 48.3	+0.3	
KWHZ			SN	Sn	22 31 21.9	+0.3	
OTVZ	Oturere	2.51 211	PN	Pn	22 30 49.1	+1.0	
TWVZ	Taurewa	2.53 215	PN	Pn	22 30 49.6	+1.2	
NGZ	Ngauruhoe	2.55 212	PN	Pn	22 30 49.9	+1.3	
TUVZ	Tukino	2.60 210	PN	Pn	22 30 50.0	+0.8	
FWZ	Far West T-bar	2.63 211	PN	Pn	22 30 50.0	+0.8	
WHVZ	Whangaehu Hut	2.64 211	PN	Pn	22 30 50.4	+0.6	
CKHZ	Cape Kidnapper	2.65 184	⇓PN	Pn	22 30 49.6	+0.1	
CKHZ			SN	Sn	22 31 24.4	0.0	
BHHZ	Black Hill Sta	2.66 201	PN	Pn	22 30 49.7	-0.1	
BHHZ			SN	Sn	22 31 24.2	-0.6	
TRVZ	Turoa	2.67 211	PN	Pn	22 30 50.9	+0.8	
WNVZ	Wahianoa	2.68 210	⇑PN	Pn	22 30 50.6	+0.5	
MOVZ	Moawhango	2.69 207	PN	Pn	22 30 50.1	0.0	
MOVZ			SN	Sn	22 31 24.5	-0.9	
KRHZ	Kereru	2.73 196	PN	Pn	22 30 50.3	-0.2	
PKVZ	Pokaka	2.75 214	PN	Pn	22 30 52.1	+1.2	
MTVZ	Mangateitei	2.78 211	PN	Pn	22 30 52.2	+1.0	
KAHZ	Kahuranaki	2.80 187	PN	Pn	22 30 51.4	0.0	
PNHZ	Pukenui	3.02 197	⇓PN	Pn	22 30 53.6	-0.5	
PXZ	Pawanui	3.03 187	PN	Pn	22 30 53.5	-0.6	
PXZ			AML	AML	22 31 32.4		
PXZ			AML	AML	22 31 34.4		
WPHZ	Waipukurau	3.12 192	⇓PN	Pn	22 30 54.7	-0.5	
TSZ	Takapari Road	3.22 199	⇑PN	Pn	22 30 55.7	-0.8	
TSZ			AML	AML	22 31 37.1		
TSZ			AML	AML	22 31 39.3		
PRHZ	Porangahau	3.29 189	⇓PN	Pn	22 30 56.7	-0.6	
WAZ	Wanganui	3.29 213	PN	Pn	22 30 58.2	+0.9	
NEZ	North Egmont	3.39 227	PN	Pn	22 31 01.7	+3.0	
DVHZ	Dannevirke	3.40 195	⇓PN	Pn	22 30 57.6	-1.1	
ANWZ	Angora Road	3.50 191	PN	Pn	22 30 59.2	-0.7	
ANWZ			SN	Sn	22 31 41.9	-1.0	
POWZ	Post Office Ro	3.58 199	PN	Pn	22 31 00.1	-0.8	
POWZ			SN	Sn	22 31 43.6	-1.2	
PRWZ	Pori Road	3.69 196	PN	Pn	22 31 01.5	-0.7	
BFZ	Birch Farm	3.75 193	PN	Pn	22 31 01.8	-1.3	
BFZ			AML	AML	22 31 51.1		
BFZ			AML	AML	22 31 52.0		
MRZ	Mangatainoka R	3.88 200	PN	Pn	22 31 03.3	-1.4	
MRZ			AML	AML	22 31 50.6		
MRZ			AML	AML	22 31 50.7		
TIWZ	Tintock	3.92 196	⇓PN	Pn	22 31 04.0	-1.2	
TIWZ			SN	Sn	22 31 50.3	-2.1	
TIWZ			AML	AML	22 31 53.7		
CPWZ	Castlepoint	3.98 192	PN	Pn	22 31 05.6	-0.4	
HOWZ	Holdsworth Sta	4.12 199	⇓PN	Pn	22 31 06.1	-1.7	
HOWZ			SN	Sn	22 31 54.1	-3.0	
OGWZ	Otaki Gorge	4.15 203	PN	Pn	22 31 06.7	-1.4	
OGWZ			SN	Sn	22 31 55.1	-2.5	
TMWZ	Te Maipa	4.23 195	PN	Pn	22 31 07.7	-1.5	
KIW	Kapiti Island	4.27 205	PN	Pn	22 31 08.3	-1.4	
KIW			SN	Sn	22 31 57.6	-2.8	
KIW			AML	AML	22 31 59.8		
MTW	Mount Morrison	4.37 198	PN	Pn	22 31 09.0	-1.9	
MTW			AML	AML	22 32 01.2		
MTW			AML	AML	22 32 01.6		
CAW	Cannon Point	4.45 203	PN	Pn	22 31 10.2	-1.7	
CAW			SN	Sn	22 32 00.8	-3.6	
CAW			AML	AML	22 32 04.0		
TRWZ	Traveller	4.55 196	PN	Pn	22 31 11.5	-1.8	
TRWZ			AML	AML	22 32 05.8		
TRWZ			AML	AML	22 32 06.0		
PAWZ	Paruwai Farm	4.60 198	PN	Pn	22 31 11.8	-2.1	
PAWZ			SN	Sn	22 32 04.0	-4.0	
PAWZ			AML	AML	22 32 07.4		
DUWZ	D'Urville Isla	4.62 214	PN	Pn	22 31 12.7	-1.4	
MSWZ	Moikau Station	4.68 199	PN	Pn	22 31 12.7	-2.2	
MSWZ			AML	AML	22 32 07.0		
MSWZ			AML	AML	22 32 08.1		
WEL	Wellington	4.70 204	PN	Pn	22 31 13.8	-1.3	
TCW	Tory Channel	4.81 209	PN	Pn	22 31 15.0	-1.6	
TCW			AML	AML	22 32 13.2		
TCW			AML	AML	22 32 13.3		
PLWZ	Palliser	4.82 199	PN	Pn	22 31 14.4	-2.4	
TUWZ	Tuamarina	5.13 210	PN	Pn	22 31 18.5	-2.1	
TUWZ			SN	Sn	22 32 16.6	-3.5	
TUWZ			AML	AML	22 32 20.0		
NNZ	Nelson	5.19 215	PN	Pn	22 31 19.8	-1.7	
NNZ			SN	Sn	22 32 19.3	-2.4	
QRZ	Quartz Range	5.33 223	PN	Pn	22 31 21.3	-2.0	
QRZ			SN	Sn	22 32 22.7	-2.2	
BSWZ	Blackbirch Sta	5.40 209	PN	Pn	22 31 22.7	-1.5	
BSWZ			AML	AML	22 32 27.7		
BSWZ			AML	AML	22 32 29.4		
THZ	Tophouse	5.84 214	PN	Pn	22 31 28.2	-1.8	
KHZ	Kahutara	6.13 207	⇓PN	Pn	22 31 31.6	-2.0	
KHZ	Kahutara	6.13 207	*e*Pn	Pn	22 31 31.8	-1.9	
	130nm,0.3s						
DSZ	Denniston Nort	6.37 220	PN	Pn	22 31 34.6	-2.3	
LTZ	Lake Taylor	6.94 212	PN	Pn	22 31 41.9	-2.5	
INZ	Inchbonnie	7.27 217	PN	Pn	22 31 46.3	-2.3	
OXZ	Oxford	7.49 211	PN	Pn	22 31 48.0	-3.5	
MQZ	McQueen's Vall	7.57 207	PN	Pn	22 31 48.7	-3.9	
WVZ	Waitaha Valley	7.88 218	PN	Pn	22 31 54.8	-1.8	
RPZ	Rata Peaks	8.22 214	P	Pn	22 31 59.2	-2.0	
	2.1nm,0.3s,baz=50,slow=15,SNR=6.5						
RPZ			S	Sn	22 33 26.0	-7.3	
	5.4nm,0.3s,baz=51,slow=17,SNR=11						
ASAR	Alice Springs	39.43 277	P	P	22 37 19.2	+1.8	
	1.9nm,0.5s,baz=121,slow=8.2,SNR=23						
WRA	Warramunga Arr	41.05 282	P	P	22 37 32.3	+1.5	
	0.8nm,0.4s,baz=121,slow=8.0,SNR=9.8						
FINES	FINESS Array B	149.64 333	PKPbc	PKPbc	22 49 32.2	+0.1	
	0.5nm,0.4s,baz=29,slow=4.4,SNR=8.9						
TORD	Torodi Ar. Bea	155.91 190	PKPab	PKPab	22 50 07.2	+1.8	
	0.4nm,0.4s,baz=169,slow=3.7,SNR=12						

*NNC **08** 22:43:39.1±2.5, 44.68N×82.89E, h0km, mb2.9, mpv2.5, Error ellipse: s-maj=26.8km s-min=7.2km az=113.0*
*SOME **08** 22:43:40.8, 44.668N×82.78E, h5km*
ISC 08 22:43:41.3±1.6, 44.74N±0.07×82.92E±0.08, h17km, n10, σ1§40/17, 4C-4D, Northern Xinjiang

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
MK31	Makanchi Array	2.10 348		⇓Pg	Pb		22 44 18.9	0.0
	1.2nm,0.4s,baz=169,slow=15,SNR=61							
MK31				Lg	Lg		22 44 47.4	
	2.8nm,0.2s,baz=162,slow=28,SNR=20							
MAKZ	Makanchi	2.17 343		⇑Pg	Pb		22 44 19.4	-0.7
	2.6nm,0.3s							
MAKZ				⇑Lg	Lg		22 44 49.6	
	3.8nm,0.5s							
KTMS	Ketmen	2.26 236		*e*P	Pb		22 44 21.2	-0.5
	2.7nm,0.1s							
KTMS				*e*S	Sb		22 44 50.1	+0.7
	27nm,0.2s							
DJR	Jarkent	2.28 261		*e*P	Pb		22 44 23.2	+1.2
	4.1nm,0.1s							
DJR				*e*S	Sg		22 44 53.5	-1.0
	9.0nm,0.3s							
KAPS	Kapalarasan	2.59 283		⇓*i*P	Pg		22 44 29.2	-1.7
	0.8nm,0.1s							
KAPS				⇓*i*S	Sg		22 45 03.7	-0.7
	5.3nm,0.2s							
PDGK	Podgornoye	2.85 242		⇑Pg	Pb		22 44 30.4	-1.3
	0.7nm,0.4s							
PDGK				⇑Lg	Lg		22 45 07.5	
	3.6nm,0.4s							
ZSN	Zaisan	2.90	20	*e*P	Pg		22 44 35.8	-1.0
	2.0nm,0.2s							
ZSN				⇓*i*S	Sg		22 45 15.5	+1.2
	7.0nm,0.1s							
MNBS	Baschi	3.31 260		*e*P	Pb		22 44 39.4	-0.1
	1.8nm,0.2s							
MNBS				*e*S	Sb		22 45 21.7	+2.2
	3.1nm,0.4s							
KPKS	Kokpek	3.31 249		*e*P	Pb		22 44 40.1	+0.6
	6.2nm,0.3s							
KPKS				*e*S	Sb		22 45 22.2	+2.7
	10nm,0.2s							
SATY	Saty	3.67 244		*e*P	Pb		22 44 45.5	-0.2
	0.9nm,0.2s							
SATY				*e*S	Sb		22 45 32.0	+2.0
	8.6nm,0.3s							

*NEIC **08** 22:56:24.1±0.6, 19.86S×167.89E, h10km, mb4.4/2, Error ellipse: s-maj=18.6km s-min=12.2km az=153.0*
*IDC **08** 22:56:27.7±3.4, 20.66S×168.79E, h89km±31km, mb3.9/9, mb1 4.1/10, mb1mx3.8/33, mbtmp4.2/10, MS3.6/9, Ms1 3.6/9, ms1mx3.3/39, Error ellipse: s-maj=56.8km s-min=25.8km az=154.0*
ISC 08 22:56:22.2±1.5, 20.3S±0.2×168.8E±0.2, h31km, n20, σ1§39/14, mb4.3/11, MS3.9/8, Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
DZM	Mont Dzumac	2.85 231		P	P		22 57 07.0	+1.2
	24nm,0.3s,baz=73,slow=9.5,SNR=130							
DZM				S	Sn		22 57 39.7	+0.5
	66nm,0.3s,baz=123,slow=23,SNR=11							
DZM				LR	LR		22 57 47.6	
	comp=Z,297nm,19.9s,baz=137,slow=31							
MSVF	Nonsavu	9.08	75	*e*Pn	Pn		22 58 46.4	+15
	80nm,1.4s							
CTA	Charters Tower	21.19 267		P	P		23 01 07.5	+2.2
	20nm,0.9s,baz=81,slow=11,SNR=8.2							
STKA	Stephens Creek	26.98 239		P	P		23 01 59.1	-2.2
	3.1nm,0.9s,baz=75,slow=10.0,SNR=1.7							
STKA				LR	LR		23 11 39.7	
	comp=Z,114nm,20.1s,baz=32,slow=34							
WRA	Warramunga Arr	32.35 265		P	P		23 02 46.7	-2.4
	3.1nm,0.7s,baz=87,slow=8.5,SNR=25							
ASAR	Alice Springs	32.52 258		P	P		23 02 49.4	-1.2
	8.9nm,0.8s,baz=83,slow=9.1,SNR=61							
ASAR				LR	LR		23 15 57.1	
	comp=Z,128nm,18.8s,baz=100,slow=36							
PPT	Papeete	39.37	93	LR	LR		23 17 03.1	
	comp=Z,64nm,20.9s,baz=222,slow=31							
FITZ	Fitzroy Crossi	40.76 266		*e*P	P		23 03 59.6	-1.2
	8.7nm,0.9s							
KSRS	Korea Array	69.14 326		P	P		23 07 25.6	+0.1
	0.5nm,0.3s,baz=140,slow=5.9,SNR=4.2							
KSAR	Wonju Array Be	69.15 326		P	P		23 07 25.6	0.0
CMAR	Chiang Mai Arr	78.58 295		P	P		23 08 21.5	+0.2
	1.5nm,0.8s,baz=125,slow=4.5,SNR=8.1							
ULN	Ulaanbaatar	87.46 324		*e*P	P		23 09 07.6	+0.7
	3.0nm,0.9s							
SONM	Songino Array	87.81 323		P	P		23 09 08.7	+0.2
	1.5nm,0.9s,baz=131,slow=4.5,SNR=6.9							
SNAA	Sanae	88.12 183		*e*P	P		23 09 15.7	+6.1
NVAR	Mina Array Bea	89.77	49	P	P		23 09 18.0	-0.1
	0.3nm,0.5s,baz=227,slow=6.0,SNR=2.9							
NVAR				LR	LR		23 43 34.8	
	comp=Z,49nm,18.8s,baz=268,slow=31							
LPIG	La Paz	90.21	64	LR	LR		23 43 13.8	
	comp=Z,36nm,18.5s,baz=240,slow=31							
BBB	Bella Bella	90.55	33	LR	LR		23 45 45.7	
	comp=Z,41nm,18.9s,baz=136,slow=32							
ILAR	Eielson Array	91.33	17	P	P		23 09 25.1	+0.7
	0.4nm,0.9s,baz=236,slow=6.4,SNR=2.9							
TXAR	Lajitas Array	97.60	62	LR	LR		23 47 49.4	
	comp=Z,36nm,18.7s,baz=0.0,slow=32							
PDAR	Pinedale Array	97.60	47	LR	LR		23 49 52.8	
	comp=Z,34nm,18.6s,baz=345,slow=33							

*JMA **08** 23:10:21.8±0.5, 37.49N×143.70E, h32km, M3.4*
*ISCJB **08** 23:10:23.2±1.7, 37.51N±0.08×143.7E±0.1, h33km, mb3.4/3, Error ellipse: s-maj=15.1km s-min=9.6km az=33.3*
*IDC **08** 23:10:23.4±1.6, 36.56N×143.55E, h0km, mb3.4/3, mb1 3.7/5, mb1mx3.3/51, mbtmp3.4/5, ML3.4/2, Error ellipse: s-maj=35.7km s-min=26.9km az=161.0*
ISC 08 23:10:21.9±2.0, 37.49N±0.09×143.9E±0.1, h35km, n13, σ1§39/17, mb3.5/3, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
JIO	Ouri	2.22 297		P	P		23 10 56.2	+0.1
JFK	Kawauchi	2.39 268		P	Pn		23 10 58.5	-0.1
JFK				S	Sn		23 11 25.1	-1.6
JFT	Otama	2.81 272		P	Pn		23 11 05.2	+0.8
JFT				S	Sn		23 11 37.1	0.0
JOM	Ohasama	2.83 315		P	Pn		23 11 05.0	+0.3
JOM				S	Sn		23 11 36.5	-1.1
JYK	Kaneyama	3.12 298		P	Pn		23 11 09.6	+1.1
JAG	Ashikaga	3.70 255		P	Pn		23 11 17.0	+0.5
JAG				S	Sn		23 11 57.5	-1.4
JRY	Ryogami san	4.25 251		P	Pn		23 11 24.2	0.0
JRY				S	Sn		23 12 09.7	-3.0
MJAR	Matsushiro Arr	4.63 260		Pn	Pn		23 11 31.1	+1.7
	2.3nm,0.3s,baz=89,slow=15,SNR=12							
MJAR				Sn	Sn		23 12 22.9	+0.9
	0.7nm,0.3s,baz=108,slow=24,SNR=5.9							
MAT	Matsushiro	4.63 260		P	Pn		23 11 31.3	+1.9
MAT				*e*S	Sn		23 12 23.8	+1.8
KSRS	Korea Array	12.68 275		Pn	Pn		23 13 24.5	+4.9
	0.2nm,0.3s,baz=92,slow=13,SNR=3.0							
ZALV	Zalesovo Beam	43.06 312		P	P		23 18 26.5	+8.4
	0.3nm,0.5s,baz=89,slow=9.2,SNR=2.9							
ILAR	Eielson Array	48.06	33	P	P		23 19 11.8	+14
	0.5nm,1.0s,baz=259,slow=8.7,SNR=2.9							
WRA	Warramunga Arr	57.83 191		P	P		23 20 09.7	-0.2
	0.3nm,0.6s,baz=10.0,slow=7.2,SNR=2.9							

*CSEM **08** 23:16:08.9, 38.65N×28.59W, h7km, ML3.3*
PDA 08 23:16:08.9±1.0, 38.65N×28.59W, h7km±4km, MD3.7, ML3.3, 8C-2D, Error ellipse: s-maj=4.3km s-min=2.5km az=63.0, Azores Islands

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
PCED	Cedros	0.09 256		⇑*i*P		Pg	23 16 10.9	-0.1
PCED				*e*S		Sg	23 16 12.7	+0.2
PCED	Cedros	0.09 256		⇑*i*P		Pg	23 16 10.9	-0.1
PCED				*e*S		Sg	23 16 12.7	+0.2
CALA	Caldeira	0.11 232		⇑*i*P		Pg	23 16 11.6	+0.2
CALA	Caldeira	0.11 232		⇑*i*P		Pg	23 16 11.6	+0.2
HOR	Horta	0.13 195		⇑*i*P		Pg	23 16 11.1	-0.5
HOR				*e*S		Sg	23 16 13.4	-0.1
HOR	Horta	0.13 195		⇑*i*P		Pg	23 16 11.1	-0.5
HOR				*e*S		Sg	23 16 13.4	-0.1
HOR				A		A	23 16 14.0	
	5μm,0.2s							
PICO	Pico	0.20 140		⇓*i*P		Pg	23 16 12.4	-0.5
PICO				*e*S		Sg	23 16 15.8	+0.3
PICO	Pico	0.20 140		⇓*i*P		Pg	23 16 12.4	-0.5
PICO				*e*S		Sg	23 16 15.8	+0.3
PICO				A		A	23 16 16.8	
	4μm,0.2s							
PCAN	Candelaria	0.20 157		*e*P		Pg	23 16 12.4	-0.6
PCAN				*e*S		Sg	23 16 15.7	0.0
PCAN	Candelaria	0.20 157		*e*P		Pg	23 16 12.4	-0.6
PCAN				*e*S		Sg	23 16 15.7	0.0
PCAN				A		A	23 16 16.0	
	5μm,0.2s							
ROSA	Rosais	0.28 76		⇑*i*P		Pg	23 16 13.9	-0.5
ROSA				*e*S		Sg	23 16 17.9	-0.2
ROSA	Rosais	0.28 76		⇑*i*P		Pg	23 16 13.9	-0.5
ROSA				*e*S		Sg	23 16 17.9	-0.2
ROSA				A		A	23 16 19.4	
	4μm,0.3s							
PMAN	Manadas	0.39	93	*e*P		Pg	23 16 15.4	-1.1
PMAN				*e*S		Sg	23 16 20.9	-0.7
PMAN	Manadas	0.39	93	*e*P		Pg	23 16 15.4	-1.1
PMAN				*e*S		Sg	23 16 20.9	-0.7
PMAN				A		A	23 16 21.9	
	2μm,0.1s							
PGRA	Graciosa	0.60	51	*e*P		Pg	23 16 18.8	-1.8
PGRA				*e*S		Sg	23 16 26.7	-1.8
PGRA	Graciosa	0.60	51	*e*P		Pg	23 16 18.8	-1.8
PGRA				*e*S		Sg	23 16 26.7	-1.8
PGRA				A		A	23 16 30.5	
	183nm,0.2s							
ADH	Angra Heroismo	1.06	89	*e*P		Pg	23 16 25.0	-4.2
ADH				*e*S		Sg	23 16 37.7	-5.3
ADH	Angra Heroismo	1.06	89	*e*P		Pg	23 16 25.0	-4.2
ADH				*e*S		Sg	23 16 37.7	-5.3
ADH				A		A	23 16 38.6	
	160nm,0.2s							
PSET	Sete Cidades	2.40 109		*e*P		Pn	23 16 44.4	-4.3
PSET				*e*S		Sn	23 17 10.6	-7.8
PSET	Sete Cidades	2.40 109		*e*P		Pn	23 16 44.4	-4.3
PSET				*e*S		Sn	23 17 10.6	-7.8
PSET				A		A	23 17 14.2	
	35nm,0.3s							
CMLA	Cha da Macela	2.57 109		*e*P		Pn	23 16 45.9	-5.1
CMLA				*e*S		Sn	23 17 14.7	-7.8
CMLA	Cha da Macela	2.57 109		*e*P		Pn	23 16 45.9	-5.1
CMLA				*e*S		Sn	23 17 14.7	-7.8
PSMA	Santa Maria	3.20 120		*e*P		Pn	23 16 55.2	-4.4
PSMA				*e*S		Sn	23 17 29.4	-8.6
PSMA				A		A	23 17 31.6	
	24nm,0.5s							
PSMN	Pico do Norte,	3.24 119		*e*P		Pn	23 16 55.5	-4.6
PSMN				*e*S		Sn	23 17 30.3	-8.6
PSMN	Pico do Norte,	3.24 119		*e*P		Pn	23 16 55.5	-4.6
PSMN				*e*S		Sn	23 17 30.3	-8.6
PSMN				A		A	23 17 30.6	
	11nm,0.4s							

*ISCJB **08** 23:24:28.2±1.1, 43.05N±0.08×145.78E±0.07, h49km±10km, Error ellipse: s-maj=13.9km s-min=5.5km az=151.9*
*JMA **08** 23:24:28.5±0.1, 43.05N×145.75E, h50km±1km, M3.7*
JMA Felt I J1.
*SKHL **08** 23:24:28.9±0.3, 43.04N×145.81E, h33km±1km, mb4.5/3*
ISC 08 23:24:28.4±1.8, 43.01N±0.10×145.79E±0.06, h42km±17km, n11, σ0§86/20, Hokkaido region

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
NEM2	Nemuro 2	0.36 354		P		Pn	23 24 37.7	+0.2
NEM2				*e*S		Sn	23 24

MIYJ	**Miyakonagasawa**	**1.33 265**	P		**Pn**	**23 27 45.9**	**-1.4**
MIYJ			*e*S		**Sg**	**23 28 06.3**	**0.0**
JANG	**Nango**	**1.69 294**	P		**Pn**	**23 27 50.8**	**-1.4**
JKZ	**Kuzumaki**	**1.72 280**	P		**Pn**	**23 27 51.8**	**-0.9**
JKZ			*e*S		**Sb**	**23 28 15.2**	**-0.9**
JOM	**Ohasama**	**1.75 263**	P		**Pn**	**23 27 52.4**	**-0.7**
JIO	**Ouri**	**2.11 234**	P		**Pn**	**23 27 56.2**	**-1.8**
JIO			S		**Sb**	**23 28 25.7**	**-1.6**
JTM	**Tenmabayashi**	**2.18 301**	P		**Pn**	**23 27 58.7**	**-0.2**
JRG	**Rokugo**	**2.27 263**	P		**Pn**	**23 27 59.3**	**-0.9**
JRG			*e*S		**Sb**	**23 28 31.4**	**-0.3**
JAH	**Hinai**	**2.28 283**	P		**Pn**	**23 28 00.0**	**-0.4**
JAH			*e*S		**Sb**	**23 28 30.8**	**-1.4**
JOT	**Ohata**	**2.53 312**	P		**Pn**	**23 28 03.9**	**+0.1**
JYW	**Yuwa**	**2.58 267**	P		**Pn**	**23 28 04.1**	**-0.3**
JYW			*e*S		**Sb**	**23 28 41.2**	**+0.6**
JYK	**Kaneyama**	**2.59 253**	P		**Pn**	**23 28 04.2**	**-0.4**
JYK			*e*S		**Sn**	**23 28 37.1**	**+1.3**
JNBK	**Urakawa-nobuka**	**2.64 347**	P		**Pn**	**23 28 06.1**	**+0.8**
JNBK			*e*S		**Sn**	**23 28 36.9**	**-0.1**
JSI2	**Shiura 2**	**2.74 300**	P		**Pn**	**23 28 06.4**	**-0.3**
JIW	**Iwasaki**	**2.85 289**	P		**Pn**	**23 28 07.8**	**-0.4**
JKB	**Kayabe**	**2.89 320**	P		**Pn**	**23 28 08.5**	**-0.2**
JCH	**Churui**	**2.91 357**	P		**Pn**	**23 28 09.0**	**0.0**
JCH			*e*S		**Sn**	**23 28 42.0**	**-1.7**
JHR	**Hokuryu**	**4.26 342**	P		**Pn**	**23 28 29.4**	**+1.9**
JTKR	**Abashiri--Toko**	**4.27 4**	P		**Pn**	**23 28 27.9**	**+0.2**
JTKR			S		**Sn**	**23 29 16.9**	**-0.3**
JMP	**Maruseppu**	**4.30 358**	P		**Pn**	**23 28 27.6**	**-0.5**
JMP			*e*S		**Sn**	**23 29 16.5**	**-1.5**
JRA	**Rausu**	**4.39 15**	P		**Pn**	**23 28 28.9**	**-0.4**
JRA			*e*S		**Sn**	**23 29 17.3**	**-2.9**
MJAR	**Matsushiro Arr**	**5.26 235**	P		**Pn**	**23 28 41.6**	**+0.3**
	2.6nm,0.3s,baz=36,slow=13,SNR=19						
MJAR			LR		LR	23 30 54.1	
	comp=Z,136nm,18.9s,baz=35,slow=40						
MAT	**Matsushiro**	**5.26 235**	P		**Pn**	**23 28 41.4**	**+0.1**
MAT			*e*S		**Sn**	**23 29 44.5**	**+2.9**
USRK	**Ussuriysk Ar.**	**9.70 301**	P		**Pn**	**23 29 44.7**	**+2.5**
	0.5nm,0.3s,baz=99,slow=13,SNR=12						
KSRS	**Korea Array**	**12.43 265**	P		**Pn**	**23 30 21.7**	**+2.2**
	0.2nm,0.3s,baz=83,slow=14,SNR=4.0						
KSRS			LR		LR	23 34 37.5	
	comp=Z,70nm,18.9s,baz=95,slow=35						
KLR	**Kul'dur**	**12.70 322**	P		Pn	23 30 26.7	+3.5
	0.1nm,0.3s,baz=114,slow=12,SNR=3.5						
MA2	**Magadan**	**20.41 11**	P		Pn	23 32 01.0	-0.6
	8.1nm,0.6s,baz=212,slow=11,SNR=6.8						
SEY	**Seymchan**	**23.86 10**	P		**P**	**23 32 36.5**	**+0.8**
	2.1nm,0.3s,baz=187,slow=7.0,SNR=11						
SONM	**Songino Array**	**27.81 299**	P		**P**	**23 33 11.6**	**-0.2**
	1.9nm,0.7s,baz=97,slow=9.4,SNR=7.9						
SONM			LR		LR	23 45 17.6	
	comp=Z,89nm,18.2s,baz=229,slow=38						
ZALV	**Zalesovo Beam**	**41.41 310**	P		**P**	**23 35 08.7**	**-0.1**
	1.3nm,0.4s,baz=91,slow=7.1,SNR=8.3						
ZALV			PcP		**PcP**	**23 37 05.5**	**-1.1**
	0.8nm,0.6s,baz=90,slow=4.3,SNR=4.0						
MKAR	**Makanchi Array**	**44.17 300**	P		**P**	**23 35 31.0**	**-0.3**
	1.8nm,0.8s,baz=82,slow=9.1,SNR=22						
ILAR	**Eielson Array**	**46.33**	P		**P**	**23 35 48.4**	**+0.1**
	0.4nm,0.7s,baz=263,slow=6.8,SNR=5.9						
INK	**Inuvik**	**51.25 28**	P		**P**	**23 36 27.0**	**+1.1**
	0.5nm,0.6s,baz=294,slow=4.0,SNR=3.1						
RES	**Resolute Bay**	**59.59 15**	P		**P**	**23 37 26.1**	**+0.3**
	1.0nm,0.8s,baz=334,slow=5.0,SNR=5.4						
WRA	**Warramunga Arr**	**59.96 190**	P		**P**	**23 37 27.2**	**-1.7**
	0.5nm,0.6s,baz=7.2,slow=6.9,SNR=6.9						
YKA	**Yellowknife Ar**	**60.66 31**	P		**P**	**23 37 33.8**	**+0.5**
	0.2nm,0.7s,baz=302,slow=6.9,SNR=3.4						
FINES	**FINESS Array B**	**67.23 332**	P		**P**	**23 38 16.5**	**0.0**
	1.7nm,0.7s,baz=55,slow=7.9,SNR=8.2						
KBZ	**Khabaz**	**70.43 311**	P		**P**	**23 38 37.4**	**+0.6**
	3.0nm,0.9s,baz=76,slow=4.2,SNR=3.7						
NB2	**NORSAR Subarra**	**72.36 338**	P		**P**	**23 38 48.1**	**-0.1**
	comp=Z,1.2nm,0.8s,baz=40,slow=5.9						
NOA	**NORSAR Array B**	**72.36 338**	P		**P**	**23 38 48.2**	**0.0**
	comp=Z,2.1nm,0.8s,baz=39,slow=5.7,SNR=5.3						
NOA			LR		LR	00 15 27.9	
	comp=Z,25nm,19.5s,baz=355,slow=40						
AKASG	**Malin Array Be**	**73.20 323**	P		**P**	**23 38 52.9**	**-0.3**
	comp=Z,0.3nm,0.3s,baz=42,slow=6.6,SNR=5.0						
FRB	**Frobisher Bay**	**73.79 14**	P		**P**	**23 38 56.8**	**+0.3**
	comp=Z,2.7nm,0.8s,baz=344,slow=6.8,SNR=4.3						

*ISCJB **08** 23:42:26.0±0.6,32.21N±0.03×115.27W±0.04,h20km±8km, Error ellipse: s-maj=6.2km s-min=4.9km az=164.8*
*MEX **08** 23:42:27.6±0.5,32.30N×115.13W,h27km±7km,MD3.5*
*ECX **08** 23:42:27.0±0.5,32.19N×115.29W,h7km,MD2.4,ML2.6*
ISC 08 23:42:25.3±1.2,32°23'N±0.04×115°24'W±0.04,h21km±1km, n18,σ0°8/27,2C-2D,California-Baja California border region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time	Res
								h m s	ISC
MBIG	**Mexicali**	**0.18**	**10**	*e*P		**Pb**		**23 42 31.4**	**+0.4**
MBIG	**Mexicali**	**0.18**	**10**	*i* P		**Pb**		**23 42 31.4**	**+0.4**
MBIG				*e*S		**Sb**		**23 42 34.6**	**-0.4**
CPBX	**Cerro Prieto**	**0.20**	**343**	*e*P		**Pb**		**23 42 31.1**	**0.0**
CPBX				*e*S		**Sb**		**23 42 35.0**	**-0.2**
CPBX				*e*				23 42 40.3	
CPBX				AML		AML		23 42 40.3	
	comp=E,3μm,0.3s								
EMSC	**East Mesa**	**0.55**	**23**	*i* P		**Pn**		**23 42 37.9**	**0.0**
SGL	**Mount Signal**	**0.59**	**315**	*i* P		**Pb**		**23 42 37.5**	**+0.5**
COA	**Coachella**	**0.64**	**9**	*i* P		**Pb**		**23 42 38.9**	**-0.2**
YMD	**Yuma Desert**	**0.67**	**61**	*i* P		**Pb**		**23 42 39.7**	**+0.2**
YUH	**Yuha Desert**	**0.71**	**306**	*i* P		**Pb**		**23 42 39.3**	**+0.3**
ECBX	**El Chinero**	**0.77**	**168**	*e*P		**Pb**		**23 42 39.6**	**-0.3**
ECBX				*e*S		**Sb**		**23 42 50.0**	**0.0**
RMX	**La Rumorosa**	**0.80**	**298**	*e*P		**Pb**		**23 42 40.3**	**-0.3**
RMX				*e*S		**Sb**		**23 42 51.1**	**0.0**
IBP	**Imperial Bould**	**0.84**	**301**	*e*P		**Pn**		**23 42 41.8**	**-0.2**
ZAX	**El Zacaton**	**1.14**	**231**	*e*P		**Pn**		**23 42 46.0**	**0.0**
ZAX				*e*S		**Sb**		**23 43 00.4**	**-0.2**
SPIG	**San Pedro Mart**	**1.20**	**189**	*e*P		**Pb**		**23 42 47.7**	**+0.3**
SPIG				*e*S		**Sb**		**23 43 02.9**	**+0.3**
CBX	**Cerro Bola**	**1.21**	**274**	*e*P		**Pb**		**23 42 47.6**	**0.0**
CBX				*e*S		**Sn**		**23 43 03.0**	**0.0**
CBX	**Cerro Bola**	**1.21**	**274**	*e*P		**Pn**		**23 42 47.4**	**+0.3**
CBX				*e*S		**Sn**		**23 43 02.8**	**-0.2**
TJIG	**Tijuana**	**1.23**	**280**	*e*P		**Pb**		**23 42 48.2**	**+0.4**
TJIG				*e*S		**Sn**		**23 43 03.2**	**-0.2**
ECNX	**Esteban Cantu**	**1.29**	**244**	*e*P		**Pn**		**23 42 48.4**	**+0.2**
BAR	**Barrett**	**1.29**	**291**	*e*P		**Pb**		**23 42 48.9**	**0.0**

*IDC **08** 23:45:08.0±0.9,11.72N×139.05E,h0km,mb3.9/10, mb1 4.1/10,mb1mx3.8/51,mbtmp3.9/10,MS3.2/5, Ms1 3.2/5,ms1mx2.8/47,Error ellipse: s-maj=34.9km s-min=18.1km az=89.0*
*ISCJB **08** 23:45:11.2±0.8,11.7N±0.1×139.0E±0.2,h33km,mb3.9/10, MS3.1/4,Error ellipse: s-maj=30.6km s-min=15.3km az=178.2*
ISC 08 23:45:13.2±1.0,11°7'N±0.1×139°0'E±0.2,h35km,n13, σ0°81/10,mb3.9/10,MS3.1/4,Western Caroline Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time	Res
								h m s	ISC
JOW	**Kunigami**	**18.13**	**328**	LR		LR	LR	23 54 36.9	
	comp=Z,61nm,19.9s,baz=160,slow=31								
MJAR	**Matsushiro Arr**	**24.74**	**358**	LR		LR		23 59 07.0	
	comp=Z,28nm,19.2s,baz=70,slow=34								
KSRS	**Korea Array**	**57.50**	**341**	P		**P**		**23 50 55.9**	**-0.4**
	1.5nm,0.7s,baz=169,slow=9.7,SNR=3.2								
KSRS				LR		LR		00 00 13.5	
	comp=Z,36nm,21.5s,baz=164,slow=33								
WRA	**Warramunga Arr**	**31.79**	**188**	P		**P**		**23 51 34.1**	**-0.4**
	0.3nm,0.5s,baz=13,slow=10,SNR=3.6								
ASAR	**Alice Springs**	**35.51**	**188**	P		**P**		**23 52 07.4**	**+0.5**
	0.9nm,0.5s,baz=16,slow=13,SNR=13								
ASAR				LR		LR		00 05 57.9	
	comp=Z,49nm,20.1s,baz=338,slow=35								
KLR	**Kul'dur**	**37.89**	**352**	P		**P**		**23 52 27.8**	**+0.9**
	4.7nm,0.7s,baz=168,slow=6.8,SNR=20								
CMAR	**Chiang Mai Arr**	**39.21**	**285**	P		**P**		**23 52 38.9**	**+0.5**
	1.8nm,0.8s,baz=91,slow=6.5,SNR=5.6								
MKAR	**Makanchi Array**	**58.96**	**318**	P		**P**		**23 55 09.6**	**+0.4**
	1.6nm,0.7s,baz=102,slow=8.3,SNR=21								
ZALV	**Zalesovo Beam**	**59.91**	**326**	P		**P**		**23 55 14.9**	**-0.7**
	0.3nm,0.3s,baz=111,slow=6.5,SNR=4.0								
ILAR	**Eielson Array**	**72.71**	**26**	P		**P**		**23 56 37.2**	**-0.2**
	0.5nm,0.6s,baz=253,slow=5.6,SNR=6.4								
ARU	**Arti**	**75.06**	**325**	LR		LR		00 31 36.1	
	comp=Z,26nm,20.4s,baz=168,slow=37								
YKA	**Yellowknife Ar**	**87.11**	**26**	P		**P**		**23 57 56.0**	**+0.7**
	0.9nm,0.9s,baz=291,slow=4.9,SNR=8.5								
FINES	**FINESS Array B**	**90.38**	**334**	P		**P**		**23 58 09.3**	**-1.4**
	1.2nm,0.8s,baz=72,slow=4.5,SNR=3.4								

*NIED **08** 23:50:00,35.80N×141.80E,h32km,Mw3.6 Best double couple: M0 2.55000×10^14 NP1:φs26.00000°,δ58.00000°, λ2.00000°. NP2:φs295.00000°,δ88.00000°,λ148.00000°.*
*IDC **08** 23:50:30.6±1.0,35.68N×141.93E,h0km,mb3.5/5, mb1 3.7/7,mb1mx3.5/55,mbtmp3.5/7,ML3.4/2,MS3.5/3, Ms1 3.5/3,ms1mx2.5/42,Error ellipse: s-maj=30.0km s-min=20.5km az=109.0*
*ISCJB **08** 23:50:32.4±0.8,35.81N±0.06×141.87E±0.07,h23km, mb3.6/5,MS3.7/2,Error ellipse: s-maj=8.7km s-min=8.2km az=173.9*
*JMA **08** 23:50:33.7±0.2,35.83N×141.77E,h21km±3km,M3.5*
ISC 08 23:50:34.3±1.0,35°76'N±0.06×141°78'E±0.08,h23km,n16, σ0°89/16,mb3.6/5,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time	Res
								h m s	ISC
CHOJ	**Chosi**	**0.75**	**266**	P		**Pb**		**23 50 48.0**	**-0.7**
CHOJ				S		**Sb**		**23 50 58.2**	**-0.3**
BSO1	**Boso 1**	**1.29**	**211**	P		**Pn**		**23 50 56.9**	**+0.5**
BSO1				S		**Sb**		**23 51 15.5**	**+2.1**
BSO3	**Boso 3**	**1.42**	**228**	P		**Pb**		**23 50 59.5**	**-0.3**
JAG	**Ashikaga**	**2.00**	**290**	P		**Pn**		**23 51 06.9**	**+0.3**
JKT	**Katashina**	**2.28**	**297**	P		**Pn**		**23 51 10.5**	**-0.1**
MJAR	**Matsushiro Arr**	**2.99**	**286**	Pn		**Pn**		**23 51 21.0**	**+0.6**
	2.8nm,0.3s,baz=117,slow=7.8,SNR=12								
MAT	**Matsushiro**	**2.99**	**286**	P		**Pn**		**23 51 20.9**	**+0.6**
MAT				*e*S		**Sn**		**23 51 55.0**	**-0.5**
JHJ	**Hachijo jima 2**	**3.11**	**213**	Pn		**Pn**		**23 51 20.7**	**-1.3**
	21nm,0.3s,baz=86,slow=13,SNR=4.1								
JNU	**Nakatsue**	**9.38**	**257**	LR		LR		23 57 06.1	
	comp=Z,104nm,19.1s,baz=122,slow=42								
MKAR	**Makanchi Array**	**45.05**	**303**	P		**P**		**23 58 49.2**	**+0.9**
	0.3nm,0.8s,baz=94,slow=8.8,SNR=3.6								
ILAR	**Eielson Array**	**50.41**	**32**	P		**P**		**23 59 30.0**	**+0.5**
	0.6nm,0.8s,baz=270,slow=5.6,SNR=6.3								
BVAR	**Borovoye Array**	**51.65**	**313**	LR		LR		00 23 11.1	
	comp=Z,108nm,20.3s,baz=251,slow=38								
WRA	**Warramunga Arr**	**55.85**	**188**	P		**P**		**00 00 09.2**	**-0.7**
	0.8nm,0.7s,baz=2.7,slow=7.4,SNR=6.7								
DLBC	**Dease Lake**	**59.45**	**38**	LR		LR		00 28 52.4	
	comp=Z,43nm,19.4s,baz=270,slow=39								
ASAR	**Alice Springs**	**59.58**	**188**	P		**P**		**00 00 35.6**	**-0.5**
	0.3nm,0.5s,baz=11,slow=7.8,SNR=3.3								
YKA	**Yellowknife Ar**	**64.76**	**30**	P		**P**		**00 01 09.9**	**-0.5**
	0.4nm,0.8s,baz=305,slow=6.9,SNR=6.8								

*DDA **09** 00:09:46.8,39°.50N×37°.18E,h7km,Md2.7*
*ISK **09** 00:09:46.7,39.46N×37.13E,h5km,MD2.4*
*ISCJB **09** 00:09:47.1±0.5,39.47N±0.03×37.18E±0.04,h13km±7km, Error ellipse: s-maj=5.8km s-min=4.9km az=10.9*
*CSEM **09** 00:09:47.2±0.2,39.47N×37.18E,h5km,MD2.7,Error ellipse: s-maj=3.9km s-min=3.4km az=100.0*
ISC 09 00:09:47.2±1.0,39°48'N±0.03×37°17'E±0.03,h13km±10km, n15,σ0°44/27,Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time	Res
								h m s	ISC
CUKAN	**kangal_SIVAS**	**0.28**	**126**	*i* P		**Pg**		**00 09 52.7**	**-0.4**
CUKAN				*i* S		**Sg**		**00 09 57.3**	**+0.2**
CUKAN	**kangal_SIVAS**	**0.28**	**126**	P		**Pg**		**00 09 52.7**	**-0.4**
CUKAN				S		**Sg**		**00 09 57.3**	**+0.2**
CUALT	**Altinyayla-SIV**	**0.38**	**237**	*i* P		**Pg**		**00 09 55.0**	**+0.1**
CUALT				*i* S		**Sg**		**00 10 00.6**	**+0.5**
CUALT	**Altinyayla-SIV**	**0.38**	**237**	P		**Pg**		**00 09 55.0**	**+0.1**
CUALT				S		**Sg**		**00 10 00.6**	**+0.5**
SVSK	**Karacayir**	**0.45**	**343**	*e*PG		**Pg**		**00 09 56.2**	**0.0**
SVSK				*e*SG		**Sb**		**00 10 03.3**	**-0.4**
SVSK	**Karacayir**	**0.45**	**343**	*e*Pg		**Pg**		**00 09 56.2**	**0.0**
SVSK				*e*Sg		**Sb**		**00 10 03.3**	**-0.4**
CUZAR	**Zara_SIVAS**	**0.61**	**49**	*i* P		**Pg**		**00 09 58.7**	**-0.5**
CUZAR				*i* S		**Sb**		**00 10 09.2**	**+0.7**
CUZAR	**Zara_SIVAS**	**0.61**	**49**	P		**Pg**		**00 09 58.7**	**-0.5**
CUZAR				S		**Sb**		**00 10 09.2**	**+0.7**
CUSAR	**Sarkisla-SIVAS**	**0.72**	**265**	*i* P		**Pg**		**00 10 00.6**	**-0.6**
CUSAR				*i* S		**Sb**		**00 10 11.5**	**-0.1**
CUSAR	**Sarkisla-SIVAS**	**0.72**	**265**	P		**Pg**		**00 10 00.6**	**-0.6**
CUSAR				S		**Sb**		**00 10 11.5**	**-0.1**
RSDY	**Resadiye-TOKAT**	**0.92**	**7**	*e*PG		**Pb**		**00 10 05.3**	**+0.3**
RSDY	**Resadiye-TOKAT**	**0.92**	**7**	*e*Pg		**Pb**		**00 10 05.3**	**+0.3**
DARE	**Darende-Malaty**	**0.94**	**165**	*e*PG		**Pb**		**00 10 05.1**	**-0.3**
DARE				*e*SG		**Sb**		**00 10 18.5**	**+0.6**
DARE	**Darende-Malaty**	**0.94**	**165**	*e*Pg		**Pb**		**00 10 05.1**	**-0.3**
DARE				*e*Sg		**Sb**		**00 10 18.5**	**+0.6**
TOKA	**Tokat**	**0.99**	**328**	*i* P		Pg		00 10 02.3	-4.1
TOKA				*i* S		**Sg**		**00 10 19.2**	**-0.1**

*NIED **09** 00:10:00,38.30N×144.10E,h8km,Mw3.7 Best double couple: M0 3.98000×10^14 NP1:φs22.00000°,δ23.00000°, λ-67.00000°. NP2:φs177.00000°,δ69.00000°, λ-99.00000°.*
*ISCJB **09** 00:10:57.9±0.6,38.27N±0.04×144.04E±0.05,h14km, mb3.6/10,Error ellipse: s-maj=6.1km s-min=4.8km az=151.1*
*IDC **09** 00:10:57.1±0.9,38.06N×144.37E,h0km,mb3.6/9, mb1 3.9/12,mb1mx3.7/60,mbtmp3.7/12,ML4.1/2,MS2.7/1, Ms1 2.7/1,ms1mx2.3/34,Error ellipse: s-maj=25.1km s-min=18.8km az=146.0*
*JMA **09** 00:10:59.7±0.3,38.27N×144.06E,h41km,M4.1*
ISC 09 00:10:59.8±0.8,38°28N±0.06×144°09E±0.07,h14km,n32, σ1°91/43,mb3.8/10,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time	Res
								h m s	ISC
JIO	**Ouri**	**2.16**	**275**	P		**Pn**		**00 11 34.1**	**-1.3**
JIO				S		**Sn**		**00 11 59.2**	**-2.7**
JTH	**Tanohata**	**2.39**	**314**	P		**Pn**		**00 11 37.5**	**-1.1**
JTH				*e*S		**Sn**		**00 12 05.8**	**-1.9**
JOM	**Ohasama**	**2.48**	**299**	P		**Pn**		**00 11 39.2**	**-0.7**
JOM				*e*S		**Sn**		**00 12 08.6**	**-1.4**
JMM	**Marumori**	**2.63**	**262**	P		**Pn**		**00 11 40.7**	**-1.2**
JMM				*e*S		**Sn**		**00 12 10.5**	**-3.1**
JOU	**Okura**	**2.69**	**273**	P		**Pn**		**00 11 42.3**	**-0.5**
JOU				*e*S		**Sn**		**00 12 13.9**	**-1.3**
JFK	**Kawauchi**	**2.70**	**251**	P		**Pn**		**00 11 41.2**	**-1.7**
JFK				*e*S		**Sn**		**00 12 13.1**	**-2.3**
JANG	**Nango**	**2.89**	**317**	*e*S		**Sn**		**00 12 17.8**	**-2.1**
JRG	**Rokugo**	**2.92**	**293**	P		**Pn**		**00 11 45.5**	**-0.3**
JRG				*e*S		**Sn**		**00 12 19.9**	**-0.7**
JYK	**Kaneyama**	**2.99**	**283**	P		**Pn**		**00 11 46.4**	**-0.4**
JYK				*e*S		**Sn**		**00 12 21.5**	**-0.9**
JFT	**Otama**	**3.06**	**257**	P		**Pn**		**00 11 47.6**	**-0.2**
JFT				*e*S		**Sn**		**00 12 21.8**	**-2.5**
JTM	**Tenmabayashi**	**3.42**	**318**	P		**Pn**		**00 11 51.8**	**-0.9**
JTM				*e*S		**Sn**		**00 12 29.9**	**-3.2**
JOT	**Ohata**	**3.88**	**324**	P		**Pn**		**00 11 59.3**	**+0.3**
JOT				S		**Sn**		**00 12 40.4**	**-4.0**
JNBK	**Urakawa-nobuka**	**4.12**	**346**	P		**Pn**		**00 12 01.2**	**-1.2**
JKB	**Kayabe**	**4.29**	**328**	P		**Pn**		**00 12 05.0**	**+0.3**
JKB				S		**Sn**		**00 12 50.2**	**-4.4**
JCH	**Churui**	**4.36**	**353**	P		**Pn**		**00 12 03.8**	**-1.9**
JCH				*e*S		Sn		00 12 50.5	-5.8
JRY	**Ryogami san**	**4.72**	**243**	P		**Pn**		**00 12 09.4**	**-1.2**
MJAR	**Matsushiro Arr**	**4.99**	**251**	Pn		**Pn**		**00 12 14.3**	**0.0**
	6.0nm,0.3s,baz=311,slow=5.7,SNR=21								
MAT	**Matsushiro**	**4.99**	**251**	P		**Pn**		**00 12 14.8**	**+0.4**
MAT				*e*S		**Sn**		**00 13 10.9**	**-1.0**
JHJ	**Hachijo jima 2**	**6.23**	**215**	Pn		**Pn**		**00 12 28.9**	**-2.4**
	17nm,0.3s,baz=73,slow=22,SNR=4.2								
JHJ				Sn		Sn		00 13 35.2	-7.1
	26nm,0.3s,baz=71,slow=21,SNR=4.6								
USRK	**Ussuriysk Ar.**	**10.85**	**307**	Pn		**Pn**		**00 13 36.2**	**+1.5**
	0.3nm,0.3s,baz=108,slow=14,SNR=4.6								
KSRS	**Korea Array**	**12.80**	**271**	LR		LR		00 18 11.1	
	comp=Z,34nm,21.3s,baz=92,slow=33								
KLR	**Kul'dur**	**14.09**	**325**	Pn		**P**		**00 14 29.1**	**+2.4**
	0.1nm,0.3s,baz=102,slow=8.4,SNR=3.6								
SEY	**Seymchan**	**25.19**	**9**	P		**P**		**00 16 25.5**	**+0.9**
	1.5nm,0.5s,baz=182,slow=5.6,SNR=6.4								
SONM	**Songino Array**	**28.90**	**302**	P		**P**		**00 17 00.9**	**+2.6**
	0.2nm,0.3s,baz=97,slow=9.0,SNR=3.0								
ZALV	**Zalesovo Beam**	**42.66**	**311**	P		P		00 19 01.8	+6.1
	0.9nm,0.3s,baz=94,slow=8.5,SNR=4.9								
KURBB	**Kurchatov Arra**	**46.92**	**307**	P		**P**		**00 19 31.6**	**+1.9**
	0.2nm,0.3s,baz=81,slow=8.7,SNR=3.8								
ILAR	**Eielson Array**	**47.30**	**33**	P		**P**		**00 19 31.0**	**-1.5**
	0.4nm,0.8s,baz=265,slow=6.8,SNR=4.0								
BVAR	**Borovoye Array**	**51.31**	**312**	P		**P**		**00 20 06.4**	**+3.1**
	0.3nm,0.5s,baz=96,slow=15,SNR=3.4								
WRA	**Warramunga Arr**	**58.63**	**191**	P		**P**		**00 20 54.6**	**-1.9**
	0.8nm,0.6s,baz=13,slow=7.4,SNR=5.8								
YKA	**Yellowknife Ar**	**61.65**	**31**	P		**P**		**00 21 15.9**	**-0.9**
	0.1nm,0.7s,baz=305,slow=7.1,SNR=4.3								
NVAR	**Mina Array Bea**	**72.54**	**55**	P		**P**		**00 22 27.1**	**+0.4**
	1.3nm,0.7s,baz=294,slow=5.9,SNR=8.4								
PDAR	**Pinedale Array**	**75.27**	**47**	P		**P**		**00 22 42.1**	**-0.5**
	0.6nm,0.6s,baz=264,slow=1.2,SNR=9.2								

*NIED **09** 00:30:00,36.80N×141.00E,h50km,Mw3.6 Best double couple: M0 3.09000×10^14 NP1:φs37.00000°,δ26.00000°, λ107.00000°. NP2:φs198.00000°,δ65.00000°,λ82.00000°.*
*ISCJB **09** 00:30:24.5±0.8,36.77N±0.05×141.12E±0.08,h54km±5km, mb3.7/5,Error ellipse: s-maj=10.9km s-min=6.9km az=28.4*
*JMA **09** 00:30:26.2±0.1,36.81N×141.01E,h52km±1km,M3.8*
JMA Felt II J1.
*IDC **09** 00:30:27.2±5.0,36.79N×141.06E,h62km±39km,mb3.5/5, mb1 3.7/7,mb1mx3.3/37,mbtmp3.8/7,ML2.8/2,MS2.3/3, Ms1 2.3/3,ms1mx2.1/41,Error ellipse: s-maj=37.7km s-min=20.3km az=75.0*
ISC 09 00:30:25.2±1.5,36°77'N±0.06×141°2'E±0.1,h45km±11km, n25,σ0°86/27,mb3.8/5,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time	Res
								h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.43**	**320**	P		**Pn**		**00 30 35.6**	**+0.1**
ONAJ				S		**Sn**		**00 30 42.3**	**-0.4**
JHO	**Hitachi**	**0.49**	**251**	P		**Pn**		**00 30 36.4**	**+0.3**
JHO				S		**Sn**		**00 30 43.5**	**-0.3**
JFK	**Kawauchi**	**0.64**	**340**	P		**Pn**		**00 30 38.0**	**0.0**
JFK				S		**Sn**		**00 30 46.4**	**-0.7**
JYT	**Yasato**	**0.94**	**235**	P		**Pn**		**00 30 42.1**	**+0.1**
JYT				S		**Sn**		**00 30 53.2**	**-1.1**
JFT	**Otama**	**0.99**	**319**	P		**Pn**		**00 30 43.1**	**+0.4**
JFT				S		**Sn**		**00 30 54.9**	**-0.7**
JMM	**Marumori**	**1.13**	**346**	P		**Pn**		**00 30 44.9**	**+0.3**
JFY	**Yanaizu**	**1.32**	**299**	P		**Pn**		**00 30 47.3**	**+0.1**
JFY				S		**Sn**		**00 31 02.3**	**-1.3**
JAG	**Ashikaga**	**1.41**	**256**	P		**Pn**		**00 30 48.2**	**-0.2**
JAG				S		**Sn**		**00 31 04.0**	**-1.8**
JKT	**Katashina**	**1.52**	**270**	P		**Pn**		**00 30 50.4**	**+0.3**
JKT				S		**Sn**		**00 31 08.0**	**-0.8**
MJAR	**Matsushiro Arr**	**2.37**	**265**	P		**Pn**		**00 31 01.7**	**0.0**
	6.6nm,0.3s,baz=68,slow=14,SNR=25								
MJAR				S		**Sn**		**00 31

baz=315,slow=76,SNR=31
H11S2 WAKE ISLAND Hy 28.81 123 T T 01 33 22.9
baz=315,slow=76,SNR=19
ZALV Zalesovo Beam 41.99 312 P **P** **01 05 11.1 -0.4**
0.6nm,0.5s,baz=99,slow=9.2,SNR=3.7
MKAR Makanchi Array 44.18 302 P **P** **01 05 28.9 -0.5**
0.3nm,0.6s,baz=84,slow=10,SNR=3.9
ILAR Eielson Array 49.55 32 P **P** **01 06 10.7 -0.5**
0.4nm,0.7s,baz=272,slow=5.8,SNR=4.9

NIED ***09*** *01:01:00,37.90N×144.00E,h5km,Mw3.5 Best double couple: M₀1.90000×10¹⁴ NP1:φs16.00000°,δ24.00000°, λ-70.00000°. NP2:φs174.00000°,δ67.00000°, λ-99.00000°.*

IDC ***09*** *01:01:11.5±2.0,37.57N×144.36E,h0km,mb3.7/4, mb1 3.8/5,mb1mx3.4/40,mbtmp3.6/5,ML3.3/1,Error ellipse: s-maj=48.9km s-min=27.6km az=59.0*

ISCJB ***09*** *01:01:14.2±0.9,37.78N±0.05×144.34E±0.06,h33km, mb3.7/4,Error ellipse: s-maj=7.8km s-min=7.2km az=155.2*

JMA ***09*** *01:01:16.1±0.4,37.92N×143.96E,h0km,M3.6*

ISC 09 01:01:15.4±1.3,37.77N±0.06×144.41E±0.09,h35km,n16, σ1s71/26,mb3.7/4,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
JIO	**Ouri**	**2.51**	**287**	P		**Pn**	**Pn**	**01 01 53.8**	**+0.1**
JIO					*e*S		**Sn**	**01 02 21.3**	**-1.8**
JMM	**Marumori**	**2.86**	**273**	S		**Sn**	**Sn**	**01 02 29.9**	**-1.9**
JOM	**Ohasama**	**2.98**	**306**	P		**Pn**	**Pn**	**01 02 00.6**	**+0.4**
JOM					*e*S		**Sn**	**01 02 33.3**	**-1.3**
JOU	**Okura**	**3.02**	**283**	P		**Pn**	**Pn**	**01 02 00.9**	**+0.2**
JOU					*e*S		**Sn**	**01 02 34.8**	**-0.8**
JFT	**Otama**	**3.24**	**267**	P		**Pn**	**Pn**	**01 02 05.6**	**+1.8**
JFT					*e*S		**Sn**	**01 02 39.9**	**-1.3**
JRG	**Rokugo**	**3.38**	**300**	P		**Pn**	**Pn**	**01 02 07.4**	**+1.8**
JYK	**Kaneyama**	**3.38**	**291**	P		**Pn**	**Pn**	**01 02 06.6**	**+0.8**
JYK					*e*S		**Sn**	**01 02 44.6**	**-0.1**
JTM	**Tenmabayashi**	**3.98**	**320**	P		**Pn**	**Pn**	**01 02 14.5**	**+0.6**
JTM					*e*S		**Sn**	**01 02 56.8**	**-2.5**
JNBK	**Urakawa-nobuka**	**4.69**	**345**	P		**Pn**	**Pn**	**01 02 24.5**	**+0.9**
JNBK					*e*S		**Sn**	**01 03 14.9**	**-1.8**
JRY	**Ryogami san**	**4.75**	**250**	P		**Pn**	**Pn**	**01 02 24.0**	**-0.5**
JRY					S		**Sn**	**01 03 13.9**	**-4.4**
JCH	**Churui**	**4.91**	**351**	P		**Pn**	**Pn**	**01 02 25.9**	**-0.8**
JCH					*e*S		**Sn**	**01 03 19.0**	**-3.2**
MJAR	**Matsushiro Arr**	**5.10**	**258**	Pn		**Pn**	**Pn**	**01 02 28.1**	**-1.2**
	1.0nm,0.3s,baz=86,slow=15,SNR=8.4								
MJAR					Sn		**Sn**	**01 03 27.0**	**-0.1**
	0.7nm,0.3s,baz=326,slow=25,SNR=3.5								
MKAR	**Makanchi Array**	**45.75**	**302**	P		**P**	**P**	**01 09 35.3**	**+2.0**
	0.4nm,0.7s,baz=81,slow=9.5,SNR=4.8								
KURBB	**Kurchatov Arra**	**47.43**	**308**	P		**P**	**P**	**01 09 47.9**	**+1.5**
	0.8nm,0.5s,baz=81,slow=7.8,SNR=12								
WRA	**Warramunga Arr**	**58.18**	**191**	P		**P**	**P**	**01 11 05.7**	**-0.2**
	1.0nm,0.6s,baz=12,slow=7.4,SNR=5.1								
ASAR	**Alice Springs**	**61.90**	**191**	P		**P**	**P**	**01 11 31.6**	**+0.2**
	0.3nm,0.7s,baz=14,slow=7.9,SNR=3.0								

NIED ***09*** *01:13:00,39.60N×142.90E,h8km,Mw3.7 Best double couple: M₀4.28000×10¹⁴ NP1:φs358.00000°,δ27.00000°, λ-119.00000°. NP2:φs210.00000°,δ67.00000°, λ-76.00000°.*

JMA ***09*** *01:13:20.9±0.2,39.62N×142.86E,h21km±2km,M4.1*

ISCJB ***09*** *01:13:21.1±1.1,39.62N±0.04×142.87E±0.06,h15km±7km, mb3.6/10,Error ellipse: s-maj=7.6km s-min=5.8km az=28.7*

IDC ***09*** *01:13:28.5±3.5,39.49N×142.81E,h68km±33km,mb3.4/10, mb1 3.5/12,mb1mx3.3/39,mbtmp3.6/12,ML2.8/2,MS2.7/1, Ms1 2.7/1,ms1mx2.1/33,Error ellipse: s-maj=25.2km s-min=21.6km az=131.0*

ISC 09 01:13:21.4±2.6,39.57N±0.05×142.75E±0.06,h9km±16km, n34,σ1s01/37,mb3.7/10,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
MIYJ	**Miyakonagasawa**	**0.72**	**271**	P		**Pb**	**Pb**	**01 13 36.1**	**0.0**
MIYJ					S		**Sb**	**01 13 46.4**	**+0.3**
JTH	**Tanohata**	**0.78**	**298**	P		**Pb**	**Pb**	**01 13 36.8**	**-0.3**
JTH					S		**Sb**	**01 13 48.1**	**+0.4**
JOM	**Ohasama**	**1.13**	**265**	P		**Pb**	**Pb**	**01 13 43.0**	**-0.2**
JOM					S		**Sn**	**01 13 58.6**	**-0.5**
JKZ	**Kuzumaki**	**1.17**	**291**	P		**Pb**	**Pb**	**01 13 43.1**	**-0.8**
JKZ					S		**Sb**	**01 13 58.8**	**-0.3**
JANG	**Nango**	**1.24**	**310**	P		**Pn**	**Pn**	**01 13 43.6**	**-1.4**
JIO	**Ouri**	**1.56**	**225**	P		**Pn**	**Pn**	**01 13 49.1**	**-0.2**
JIO					*e*S		**Sn**	**01 14 09.1**	**-0.5**
JRG	**Rokugo**	**1.65**	**265**	P		**Pb**	**Pb**	**01 13 51.8**	**-0.2**
JRG					S		**Sg**	**01 14 14.4**	**0.0**
JAH	**Hinai**	**1.74**	**291**	P		**Pn**	**Pn**	**01 13 52.5**	**+0.7**
JAH					S		**Sb**	**01 14 16.0**	**+0.5**
JTM	**Tenmabayashi**	**1.77**	**314**	P		**Pn**	**Pn**	**01 13 51.5**	**-0.7**
JTM					*e*S		**Sn**	**01 14 14.5**	**-0.3**
JYK	**Kaneyama**	**1.97**	**251**	P		**Pb**	**Pb**	**01 13 56.2**	**-1.2**
JOT	**Ohata**	**2.23**	**325**	P		**Pn**	**Pn**	**01 13 58.2**	**-0.3**
JOT					*e*S		**Sn**	**01 14 25.5**	**-0.6**
JEM	**Erimo**	**2.46**	**7**	P		**Pn**	**Pn**	**01 14 01.8**	**+0.1**
JKB	**Kayabe**	**2.66**	**331**	P		**Pn**	**Pn**	**01 14 04.3**	**-0.1**
JKB					S		**Sn**	**01 14 35.5**	**-1.2**
JNBK	**Urakawa-nobuka**	**2.71**	**360**	P		**Pn**	**Pn**	**01 14 07.0**	**+2.0**
JCH	**Churui**	**3.07**	**8**	P		**Pn**	**Pn**	**01 14 09.1**	**-1.0**
JCH					*e*S		**Sn**	**01 14 43.9**	**-3.1**
MJAR	**Matsushiro Arr**	**4.69**	**231**	P		Pn	**Pn**	01 14 36.3	+3.9
	2.1nm,0.3s,baz=37,slow=12,SNR=11								
MAT	**Matsushiro**	**4.69**	**231**	P		Pn	**Pn**	01 14 36.3	+3.9
MAT					*e*S		**Sn**	**01 15 25.6**	**-1.3**
USRK	**Ussuriysk Ar.**	**9.26**	**303**	P		Pn	**Pn**	01 15 40.2	+5.2
	0.2nm,0.3s,baz=113,slow=15,SNR=4.8								
JNU	**Nakatsue**	**11.53**	**240**	LR		LR	LR	01 20 40.9	
	comp=Z,38nm,20.4s,baz=304,slow=38								
SEY	**Seymchan**	**24.10**	**11**	P		**P**	**P**	**01 18 38.4**	**+1.3**
	1.1nm,0.5s,baz=188,slow=4.1,SNR=5.3								
SONM	**Songino Array**	**27.35**	**300**	P		**P**	**P**	**01 19 09.3**	**+2.5**
	0.3nm,0.5s,baz=95,slow=11,SNR=2.9								
H11N2	**WAKE ISLAND Hy 28.68**	**127**		T		T	T	01 49 16.7	
	baz=320,slow=74,SNR=148								
H11N1	**WAKE ISLAND Hy 28.69**	**127**		T		T	T	01 49 18.3	
	baz=74,slow=74,SNR=114								
H11S1	**WAKE ISLAND Hy 29.48**	**129**		T		T	T	01 50 22.0	
	baz=321,slow=76,SNR=20								
H11S3	**WAKE ISLAND Hy 29.48**	**129**		T		T	T	01 50 26.7	
	baz=321,slow=76,SNR=23								
H11S2	**WAKE ISLAND Hy 29.50**	**129**		T		T	T	01 50 17.8	
	baz=321,slow=76,SNR=24								
ZALV	**Zalesovo Beam**	**41.03**	**310**	P		**P**	**P**	**01 21 05.2**	**+0.4**
	1.0nm,0.4s,baz=97,slow=7.1,SNR=6.0								
MKAR	**Makanchi Array**	**43.71**	**300**	P		**P**	**P**	**01 21 27.0**	**+0.3**
	0.9nm,0.6s,baz=82,slow=11,SNR=8.5								
KURBB	**Kurchatov Arra**	**45.31**	**306**	P		**P**	**P**	**01 21 39.5**	**+0.1**
	1.1nm,0.4s,baz=80,slow=8.7,SNR=12								
ILAR	**Eielson Array**	**46.80**	**34**	P		**P**	**P**	**01 21 50.9**	**0.0**
	0.3nm,0.7s,baz=268,slow=6.1,SNR=4.1								
INK	**Inuvik**	**51.65**	**28**	P		**P**	**P**	**01 22 27.9**	**0.0**
	0.6nm,0.6s,baz=276,slow=7.3,SNR=4.6								
WRA	**Warramunga Arr**	**59.72**	**189**	P		**P**	**P**	**01 23 25.6**	**-0.8**
	0.9nm,0.7s,baz=7.3,slow=6.8,SNR=4.2								
YKA	**Yellowknife Ar**	**61.09**	**31**	P		**P**	**P**	**01 23 35.3**	**0.0**
	0.2nm,0.5s,baz=302,slow=6.7,SNR=4.4								
FINES	**FINESS Array B**	**67.06**	**332**	P		**P**	**P**	**01 24 14.5**	**-0.1**
	0.5nm,0.5s,baz=350,slow=7.3,SNR=3.2								

MAN 09 01:15:01,17.42N×120.34E,h9km,mb4.2,ML3.0,MS2.8, 1D,Luzon

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
ABRA	**Dolores**	**0.42**	**57**	*e*P		Pb	Pb	01 15 11.1	+0.5
ABRA					*e*S		Sb	01 15 18.9	+1.8
PIP	**Pasuquin**	**0.94**	**16**	⇓*i*P		Pb	Pb	01 15 19.9	+0.4
PIP					*e*S		Sn	01 15 34.7	+0.7
APYP	**Conner**	**0.96**	**63**	*e*P		Pg	Pg	01 15 19.8	-0.5
APYP					*e*S		Sb	01 15 33.5	+0.7
BOLP	**Bolinao**	**1.11**	**202**	*e*P		Pg	Pg	01 15 22.1	-0.3
CAUP	**Cauayan**	**1.49**	**108**	*e*P		Pg	Pg	01 15 29.8	+0.2

NIED ***09*** *01:25:00,36.80N×142.30E,h11km,Mw5.0 Best double couple: M₀3.16000×10¹⁶ NP1:φs179.00000°,δ32.00000°, λ86.00000°. NP2:φs4.00000°,δ58.00000°,λ93.00000°.*

JMA ***09*** *01:25:24.0±0.3,36.78N×142.25E,h20km±4km,M5.1*

JMA Felt II J1.

ISCJB ***09*** *01:25:25.2±0.6,36.75N±0.02×142.13E±0.02,h19km±4km, mb5.2/351,MS4.6/119,Error ellipse: s-maj=3.0km s-min=2.1km az=164.0*

BJI ***09*** *01:25:25.7,36.78N×142.02E,h25km,mb5.0/81,mB5.1/55, Ms4.9/89,Ms7 4.9/64*

GCMT ***09*** *01:25:26.7±0.3,36.81N×142.16E,h22km,MW5.1/94, Moment Tensor Solution. s37,c46; s94,c139; Duration: 0 Moment tensor: Scale 10¹⁶Nm; Mrr4.57±.21; Mθθ0.29±.14; Mϕϕ-4.86±.15; Mrθ-0.36±.24; Mrϕ-0.62±.08; Mθϕ1.31±.20; Best double couple: M₀4.94400×10¹⁶ NP1:φs0.00000°,δ53.00000°,λ82.00000°. NP2: φs193.00000°,δ38.00000°,λ100.00000°. Principal axes: T 4.7910, Plg80.0000°, Azm235.0000°; N 0.3090, Plg6.0000°, Azm5.0000°; P -5.0970, Plg7.0000°, Azm96.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

NEIC ***09*** *01:25:26.7±1.5,36.75N×142.05E,h19km±9km,mb5.4/229 Error ellipse: s-maj=3.0km s-min=2.1km az=146.0*

MOS ***09*** *01:25:27.9±0.8,37.10N×142.03E,h27km,mb5.4/123, MS4.4/40,Error ellipse: s-maj=6.1km s-min=3.9km az=109.8*

IDC ***09*** *01:25:28.3±0.3,36.74N×142.16E,h32km±1km,mb4.8/44, mb1 4.8/51,mb1mx4.8/57,mbtmp4.9/51,ML4.1/6,MS4.3/38, Ms1 4.3/38,ms1mx4.1/67,Error ellipse: s-maj=9.3km s-min=8.4km az=154.0*

ISC 09 01:25:28.0±0.3,36.77N±0.03×142.12E±0.03,h30km±1km, h30km:pP-P,n1193,σ1s24/1282,mb5.3/359,MS4.6/120, 63C-29D,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**1.11**	**288**	⇓P		**Pn**	**Pn**	**01 25 45.5**	**-2.1**
ONAJ					*e*S		**Sn**	**01 26 01.8**	**-0.1**
JFK	**Kawauchi**	**1.16**	**301**	⇓P		**Pn**	**Pn**	**01 25 46.0**	**-2.3**
JFK					*e*S		**Sn**	**01 26 02.1**	**-1.1**
JHO	**Hitachi**	**1.26**	**263**	⇓P		**Pn**	**Pn**	**01 25 47.7**	**-1.9**
JHO					*e*S		**Sn**	**01 26 05.4**	**-0.1**
JMM	**Marumori**	**1.52**	**316**	⇓P		**Pn**	**Pn**	**01 25 51.5**	**-1.7**
JMM					S		**Sn**	**01 26 12.8**	**+0.8**
JFT	**Otama**	**1.61**	**298**	⇓P		**Pn**	**Pn**	**01 25 53.5**	**-0.9**
JFT					*e*S		**Sn**	**01 26 15.0**	**+0.8**
JIO	**Ouri**	**1.79**	**340**	P		**Pn**	**Pn**	**01 25 55.5**	**-1.3**
JIO					S		**Sn**	**01 26 18.7**	**+0.2**
JOU	**Okura**	**1.97**	**324**	P		**Pn**	**Pn**	**01 25 58.8**	**-0.6**
JOU					*e*S		**Sn**	**01 26 23.7**	**+0.7**
JFY	**Yanaizu**	**2.04**	**289**	⇓P		**Pn**	**Pn**	**01 25 59.8**	**-0.5**
JFY					*e*S		**Sn**	**01 26 25.2**	**+0.5**
JAG	**Ashikaga**	**2.18**	**262**	P		**Pn**	**Pn**	**01 26 01.2**	**-1.0**
JAG					S		**Sn**	**01 26 29.6**	**+1.5**
JYS	**Shirataka**	**2.19**	**312**	P		**Pn**	**Pn**	**01 26 02.1**	**-0.2**
JYS					*e*S		**Sn**	**01 26 28.6**	**+0.3**
BSO1	**Boso 1**	**2.31**	**204**	P		**Pn**	**Pn**	**01 26 03.2**	**-0.3**
BSO1					S		**Sn**	**01 26 32.1**	**+1.5**
JNS	**Sasagawa**	**2.47**	**296**	P		**Pn**	**Pn**	**01 26 06.8**	**+0.6**
JNS					*e*S		**Sn**	**01 26 38.1**	**+2.8**
JYK	**Kaneyama**	**2.56**	**327**	P		**Pn**	**Pn**	**01 26 07.1**	**-0.3**
JYK					*e*S		**Sn**	**01 26 37.9**	**+0.4**
MJAR	**Matsushiro Arr**	**3.16**	**267**	Pn		**Pn**	**Pn**	**01 26 15.7**	**+0.1**
	103nm,0.3s,baz=120,slow=10,SNR=208								
MJAR					Sn		**Sn**	**01 26 53.1**	**+0.8**
	67nm,0.3s,baz=77,slow=15,SNR=8.1								
MAJO	**Matsushiro**	**3.16**	**267**	*c i*P		**Pn**	**Pn**	**01 26 16.5**	**+0.8**
MAJO	**Matsushiro**	**3.16**	**267**	*e*Pn		**Pn**	**Pn**	**01 26 16.4**	**+0.8**
MAT	**Matsushiro**	**3.16**	**267**	P		**Pn**	**Pn**	**01 26 16.3**	**+0.6**
MAT					*e*S		**Sn**	**01 26 53.4**	**+1.1**
JHJ2	**Mitsune**	**4.11**	**208**	*e*Pn		**Pn**	**Pn**	**01 26 27.5**	**-1.3**
JHJ	**Hachijo jima 2**	**4.12**	**209**	Pn		**Pn**	**Pn**	**01 26 27.2**	**-1.6**
	112nm,0.3s,baz=252,slow=22,SNR=8.6								
JHJ					Sn		**Sn**	**01 27 13.7**	**-2.3**
	582nm,0.3s,baz=212,slow=24,SNR=15								
INU	**Inuyama**	**4.37**	**253**	*e*Pn		**Pn**	**Pn**	**01 26 33.0**	**+0.6**
ERM	**Erimo**	**5.30**	**8**	⇑*i*P		**Pn**	**Pn**	**01 26 42.9**	**-2.1**
ERM					pmax		pmax		
	comp=Z,105nm,0.7s								
ERM	**Erimo**	**5.30**	**8**	*e*Pn		**Pn**	**Pn**	**01 26 42.8**	**-2.3**
ERM					*e*Sn		**Sn**	**01 27 39.7**	**-5.3**
YUK	**Yuzh-Kuril'sk**	**7.79**	**20**	*e*P		**Pn**	**Pn**	**01 27 15.1**	**-4.2**
YUK					*e*S		**Sn**	**01 28 38.1**	**-8.4**
YUK					pmax		pmax		
	comp=N,111nm,0.6s								
YUK					pmax		pmax		
	comp=E,313nm,0.6s								
YUK					pmax		pmax		
	comp=Z,419nm,0.6s								
YUK					MLR		MLR		
	comp=N,2μm,14.0s								
YUK					MLR		MLR		
	comp=Z,2μm,14.0s								
YUK					MLR		MLR		
	comp=E,2μm,11.0s								
SHO	**Shikotan**	**7.95**	**25**	*e*P		**Pn**	**Pn**	**01 27 17.4**	**-4.0**
SHO					*e*S		Sn	01 28 39.8	-10
SHO					pmax		pmax		
	comp=Z,201nm,0.7s								
SHO					pmax		pmax		
	comp=N,146nm,0.6s								
SHO					pmax		pmax		
	comp=E,142nm,0.6s								
KUR	**Kuril'sk**	**9.50**	**25**	*e*P		**Pn**	**Pn**	**01 27 45.6**	**+2.9**
KUR					*e*S		**Sn**	**01 29 21.1**	**-7.2**
KUR					pmax		pmax		
	comp=Z,344nm,3.3s								
KUR					pmax		pmax		
	comp=Z,72nm,0.8s								
KUR					pmax		pmax		
	comp=N,45nm,0.7s								
KUR					pmax		pmax		
	comp=E,25nm,0.8s								
KUR					pmax		pmax		
	comp=N,427nm,3.3s								
KUR					pmax		pmax		
	comp=E,409nm,2.4s								
KUR					pmax		pmax		
	comp=N,100nm,0.5s								
KUR					pmax		pmax		
	comp=E,51nm,0.4s								
CBIJ	**Chichi jima**	**9.65**	**180**	*e*Pn		**Pn**	**Pn**	**01 27 42.1**	**-2.6**
CBIJ					Sn		Sn	01 29 22.4	-10
JCJ	**Chichijima**	**9.65**	**180**	Pn		**Pn**	**Pn**	**01 27 41.7**	**-3.1**
	comp=E,17nm,0.3s,baz=54,slow=21,SNR=6.8								
JCJ					Sn		Sn	01 29 22.4	-10
	comp=E,22nm,0.3s,baz=336,slow=23,SNR=4.7								
JNU	**Nakatsue**	**9.92**	**252**	Pn		**Pn**	**Pn**	**01 27 50.8**	**+2.2**
	comp=E,1.1nm,0.3s,baz=63,slow=10,SNR=8.9								
JNU					LR		LR	01 31 56.1	
	comp=E,2μm,18.1s,baz=78,slow=39								
JNU	**Nakatsue**	**9.92**	**252**	*e*Pn		**Pn**	**Pn**	**01 27 50.9**	**+2.4**
YSS	**Yuzh-Sakhalins**	**10.19**	**2**	⇑*e*P		**Pn**	**Pn**	**01 27 50.3**	**-1.8**
YSS					*e*S		**Sn**	**01 29 43.1**	**-2.1**
YSS					pmax		pmax		
	comp=Z,110nm,0.7s								
YSS					MLR		MLR		
	comp=N,3μm,17.0s								
YSS					MLR		MLR		
	comp=Z,2μm,17.0s								
YSS	**Yuzh-Sakhalins**	**10.19**	**2**	*e*Pn		**Pn**	**Pn**	**01 27 49.8**	**-2.3**
USRK	**Ussuriysk Ar.**	**10.70**	**317**	Pn		**Pn**	**Pn**	**01 28 01.2**	**+2.0**
	comp=Z,0.9nm,0.3s,baz=140,slow=13,SNR=26								
USRK					LR		LR	01 31 55.9	
	comp=Z,2μm,18.1s,baz=119,slow=36								
KSRS	**Korea Array**	**11.36**	**278**	Pn		**Pn**	**Pn**	**01 28 11.2**	**+3.0**
	comp=Z,1.4nm,0.3s,baz=87,slow=13,SNR=27								
KSRS					LR		LR	01 32 21.8	
	comp=Z,2μm,19.0s,baz=72,slow=36								
KS01	**Wonju Array Si**	**11.38**	**278**	*e*Pn		**Pn**	**Pn**	**01 28 10.7**	**+2.2**
KS15	**Wonju Array Si**	**11.39**	**278**	*e*Pn		**Pn**	**Pn**	**01 28 10.6**	**+2.0**
KSAR	**Wonju Array Be**	**11.39**	**278**	P		**Pn**	**Pn**	**01 28 11.2**	**+2.6**
KSAR	**Wonju Array Be**	**11.39**	**278**	Pn		**Pn**	**Pn**	**01 28 11.2**	**+2.6**
MDJ	**Mudanjiang**	**12.31**	**313**	P		**Pn**	**Pn**	**01 28 25.2**	**+4.0**
MDJ					S		**Sn**	**01 30 36.3**	**-1.0**
MDJ					pmax		pmax		
	comp=Z,26nm,1.0s								
MDJ					pmax		pmax		
	comp=Z,190nm,4.7s								
MDJ					LR		LR		
	comp=Z,1μm,20.7s								
MDJ					LR		LR		
	comp=Z,1μm,24.9s								
MDJ					LR		LR		
	comp=Z,2μm,15.9s								
MDJ	**Mudanjiang**	**12.31**	**313**	*e*Pn		**Pn**	**Pn**	**01 28 20.3**	**-0.9**
	comp=Z,60nm,1.0s								
INCN	**Inchon**	**12.39**	**278**	*e*Pn		**Pn**	**Pn**	**01 28 22.4**	**+0.1**
HABR	**Khabarovsk**	**12.79**	**338**	*e*P		**Pn**	**Pn**	**01 28 24.3**	**-3.4**
HABR					*e*S		**Sn**	**01 30 43.8**	**-5.2**
HABR					pmax		pmax		
	comp=Z,25nm,1.4s								
HABR					MLR		MLR		
	comp=Z,4μm,13.0s								
TYV	**Tymovskoe**	**14.09**	**1**	*e*P		**Pn**	**Pn**	**01 28 43.0**	**-2.4**
TYV					pmax		pmax		
	comp=Z,24nm,0.8s								
TYV					MLR		MLR		
	comp=N,4μm,16.0s								
TYV					MLR		MLR		
	comp=Z,4μm,16.0s								
CN2	**Changchun**	**14.52**	**304**	*e*P		**Pn**	**Pn**	**01 28 49.9**	**-1.5**
CN2					*e*S		**Sn**	**01 31 29.0**	**-2.2**
CN2					pmax		pmax		
	comp=Z,30nm,1.4s								
CN2					pmax		pmax		
	comp=Z,200nm,3.0s								
CN2					LR		LR		
	comp=Z,2μm,14.0s								
CN2					LR		LR		
	comp=Z,3μm,14.0s								
CN2					LR		LR		
	comp=Z,2μm,15.0s								
KLR	**Kul'dur**	**14.56**	**332**	Pn		**Pn**	**Pn**	**01 28 48.6**	**-3.3**
	comp=Z,0.3nm,0.3s,baz=125,slow=13,SNR=11								
KLR					LR		LR	01 34 19.6	
	comp=Z,1μm,18.8s,baz=145,slow=36								
SNY	**Shenyang**	**15.21**	**295**	⇑P		**Pn**	**Pn**	**01 28 59.8**	**-0.8**
SNY					pmax		pmax		
	comp=Z,20nm,1.3s								
SNY					LR		LR		
	comp=Z,4μm,15.7s								
SNY					LR		LR		
	comp=Z,5μm,14.0s								
JOW	**Kunigami**	**15.37**	**234**	Pn		**Pn**	**Pn**	**01 29 01.2**	**-1.6**
	comp=Z,0.9nm,0.3s,baz=42,slow=8.2,SNR=2.6								
JOW	**Kunigami**	**15.37**	**234**	*e*Pn		**Pn**	**Pn**	**01 29 01.4**	**-1.4**
DL2	**Dalian**	**16.33**	**284**	P		**P**	**P**	**01 29 17.9**	**+0.2**
DL2					S		**Sn**	**01 32 19.9**	**+4.7**
DL2					pmax		pmax		
	comp=Z,110nm,1.4s								
DL2					pmax		pmax		
	comp=Z,510nm,7.2s								
DL2					LR		LR		
	comp=Z,2μm,12.4s								
DL2					LR		LR		
	comp=Z,3μm,13.7s								
DL2					LR		LR		
	comp=Z,3μm,13.8s								
NKL	**Nikolayevsk**	**16.41**	**357**	*e*P		**Pn**	**Pn**	**01 29 11.0**	**-4.9**
NKL					pmax		pmax		
	comp=N,33nm,0.9s								
NKL					pmax		pmax		
	comp=Z,33nm,0.9s								
NKL					MLR		MLR		
	comp=N,2μm,16.0s								
NKL					MLR		MLR		
	comp=Z,3μm,16.0s								
SSE	**Sheshan**	**18.26**	**258**	P		**Pn**	**Pn**	**01 29 37.6**	**-1.5**
SSE					S		**Sn**	**01 32 58.4**	**-3.7**
SSE					pmax		pmax		
	comp=Z,53nm,1.0s								
SSE					pmax		pmax		
	comp=Z,320nm,8.1s								
SSE					LR		LR		
	comp=Z,1μm,13.7s								
SSE					LR		LR		
	comp=Z,2μm,13.7s								
SSE					LR		LR		
	comp=Z,3μm,13.3s								
PEA0	**Petropavlovsk-**	**19.64**	**29**	*e*P		**P**	**P**	**01 29 53.9**	**-0.1**
PETK	**Petropavlovsk-**	**19.64**	**29**	P		**P**	**P**	**01 29 54.1**	**+0.2**
	comp=Z,0.7nm,0.3s,baz=208,slow=8.0,SNR=13								
PETK					LR		LR	01 37 53.2	
	comp=Z,512nm,18.9s,baz=215,slow=38								
NJ2	**Nanjing**	**19.75**	**263**	*e*P		**P**	**P**	**01 29 53.3**	**-2.1**
NJ2					pP		**pP**	**01 30 02.2**	**-1.3**
NJ2					S		**S**	**01 33 34.3**	**-2.1**
NJ2					pmax		pmax		
	comp=Z,26nm,0.8s								
NJ2					LR		LR		
	comp=Z,1μm,16.0s								
NJ2					LR		LR		
	comp=Z,3μm,15.8s								
NJ2					LR		LR		
	comp=Z,3μm,15.2s								
PET	**Petropavlovsk**	**19.95**	**30**	*e*P		Pn	01 30 06.7	+7.5	
PET					MLR		MLR		
	comp=Z,1μm,17.0s								
TIA	**Tai'an**	**20.10**	**276**	⇓P		**P**	**P**	**01 29 57.6**	**-1.6**
TIA					pmax		pmax		
	comp=Z,20nm,1.1s								
TIA					LR		LR		
	comp=Z,2μm,13.1s								
TIA					LR		LR		
	comp=Z,2μm,14.3s

TIY LR LR
comp=Z,4μm,14.0s
WHN Wuhan 23.89 263 P **P** **01 30 36.9 -2.1**
WHN S **S** **01 34 52.8 -0.5**
WHN pmax pmax
comp=Z,460nm,3.6s
WHN LR LR
comp=Z,3μm,9.4s
WHN LR LR
comp=Z,2μm,10.2s
HHC Hu-ho-hao-te 24.10 289 *e*P **P** **01 30 40.2 -0.8**
HHC pP pP 01 30 49.4 -0.4
HHC PP **PnPn** **01 31 13.0 +2.4**
HHC S **S** **01 34 53.2 -3.5**
HHC sS sS 01 35 04.9 -6.2
HHC SS **SnSn** **01 35 47.2 +8.3**
HHC pmax pmax
comp=Z,24nm,1.4s
HHC pmax pmax
comp=Z,100nm,3.5s
HHC LR LR
comp=Z,2μm,12.4s
HHC LR LR
comp=Z,2μm,14.9s
HHC LR LR
comp=Z,2μm,13.7s
CIT Chita 25.26 316 *e*P **P** **01 30 50.7 -0.7**
CIT *e* 01 30 57.0
CIT *e* 01 31 25.4
CIT *e* 01 31 43.8
CIT pmax pmax
comp=Z,367nm,1.4s
YAK Yakutsk 26.45 347 P **P** **01 31 01.8 -0.1**
comp=Z,86nm,0.6s,baz=154,slow=1.2,SNR=23
YAK Yakutsk 26.45 347 *e*P **P** **01 31 01.3 -0.7**
YAK *e**PP **pP** **01 31 07.5 -3.3**
YAK *e* 01 31 43.7
YAK *e*PPP PPP 01 31 51.5
YAK *e*S **S** **01 35 35.4 +1.9**
YAK *e**SS **sS** **01 35 50.1 +2.0**
YAK *e*SS **SnSn** **01 36 43.8 +7.9**
YAK *e*SSS SSS 01 36 55.4
YAK pmax pmax
comp=Z,111nm,0.8s
YAK pmax pmax
comp=N,42nm,1.0s
YAK pmax pmax
comp=E,30nm,1.4s
YAK pmax pmax
comp=Z,99nm,1.3s
YAK pmax pmax
comp=N,198nm,2.4s
YAK pmax pmax
comp=E,103nm,2.7s
YAK smax smax
comp=N,439nm,3.7s
YAK smax smax
comp=E,351nm,5.0s
YAK MLR MLR
comp=N,2μm,16.0s
YAK MLR MLR
comp=Z,2μm,14.0s
YAK MLR MLR
comp=E,822nm,15.0s
YAK Yakutsk 26.45 347 *e*P **P** **01 31 01.5 -0.4**
comp=E,128nm,0.8s
YAK LR LR
comp=Z,194nm,20.0s
SEY Seymchan 26.94 10 P **P** **01 31 07.3 +0.9**
comp=Z,58nm,0.8s,baz=194,slow=6.9,SNR=119
SEY Seymchan 26.94 10⇑ *i*P **P** **01 31 07.4 +1.0**
XAN Xi'an 27.13 274 P **P** **01 31 08.4 0.0**
XAN pP pP 01 31 17.7 +0.5
XAN sP sP 01 31 21.7 +0.8
XAN S **S** **01 35 39.2 -5.7**
XAN pmax pmax
comp=Z,40nm,1.2s
XAN pmax pmax
comp=Z,130nm,3.0s
XAN LR LR
comp=Z,580nm,12.3s
XAN LR LR
comp=Z,640nm,13.4s
XAN LR LR
comp=Z,960nm,13.0s
H11N2 WAKE ISLAND Hy 27.52 121 T T 02 00 04.2
SNR=121
H11N1 WAKE ISLAND Hy 27.53 121 T T 02 00 51.2
baz=200,slow=74,SNR=132
H11N3 WAKE ISLAND Hy 27.54 121 T T 02 00 31.1
baz=313,slow=74,SNR=129
ENH Enshi 27.88 266 *e*P **P** **01 31 14.4 -0.8**
comp=Z,155nm,0.8s
ENH LR LR
comp=Z,719nm,20.0s
ULN Ulaanbaatar 27.97 304*c i*P **P** **01 31 16.6 +0.6**
ULN pmax pmax
comp=Z,61nm,1.7s
ULN Ulaanbaatar 27.97 304 *e*P **P** **01 31 16.2 +0.2**
comp=Z,66nm,1.1s
ULN LR LR
comp=Z,385nm,21.0s
ULN Ulaanbaatar 27.97 304 P **P** **01 31 16.6 +0.6**
SNR=45
ULN P **P** **01 31 16.6 +0.6**
SNR=45
ULN Ulaanbaatar 27.97 304 P **P** **01 31 16.6 +0.6**
SNR=45
BOD Bodaibo 28.06 328 *e*P **P** **01 31 16.3 -0.1**
BOD pmax pmax
comp=Z,42nm,1.2s
H11S1 WAKE ISLAND Hy 28.24 123 T T 02 01 54.0
baz=316,slow=74,SNR=98
H11S3 WAKE ISLAND Hy 28.24 124 T T 02 02 02.3
baz=130,slow=74,SNR=108
H11S2 WAKE ISLAND Hy 28.25 123 T T 02 01 18.2
SNR=112
GZH Guangzhou 28.30 249 P **P** **01 31 14.5 -4.4**
GZH S **S** **01 35 59.6 -3.8**
GZH LR LR
comp=Z,3μm,14.3s
SONA1 Songino Array 28.40 304 *e*P **P** **01 31 19.6 -0.2**
SONM Songino Array 28.40 304 P **P** **01 31 20.0 +0.1**
comp=Z,33nm,0.8s,baz=102,slow=9.0,SNR=162
SONM pP **sP** **01 31 31.5 -0.9**
comp=Z,59nm,0.8s,baz=101,slow=6.8,SNR=22
SONM LR LR 01 42 49.2
comp=Z,470nm,18.9s,baz=90,slow=37
LZH Lanzhou 30.67 280 *e*P **P** **01 31 39.8 -0.3**
LZH pP pP 01 31 49.7 +0.8
LZH sP sP 01 31 53.9 +1.3
LZH PP **PnPn** **01 32 40.3 +0.2**
LZH S **S** **01 36 39.2 -1.7**
LZH sS sS 01 36 55.0 -0.5
LZH SS **SnSn** **01 38 21.0 +1.4**
LZH pmax pmax
comp=Z,150nm,1.5s
LZH pmax pmax
comp=Z,240nm,4.9s
LZH LR LR
comp=Z,1μm,13.3s
LZH LR LR
comp=Z,2μm,13.0s
IRK Irkutsk 30.70 312⇑ *i*P **P** **01 31 39.9 0.0**
IRK pmax pmax
comp=Z,60nm,1.4s
ZAK Zakamensk 30.88 309 *e*P **P** **01 31 41.2 -0.5**
ZAK *e* 01 34 38.6
ZAK pmax pmax
comp=Z,40nm,1.1s
ZAK pmax pmax
comp=Z,7.0nm,1.0s
TLY Talaya 30.93 311 P **P** **01 31 42.6 +0.6**
comp=Z,9.1nm,0.7s,baz=123,slow=10,SNR=14
TLY pP **sP** **01 31 53.3 -1.3**
comp=Z,25nm,0.9s,baz=144,slow=1.7,SNR=7.0
TLY LR LR 01 44 48.4
comp=Z,903nm,18.2s,baz=104,slow=37
TLY Talaya 30.93 311*c i*P **P** **01 31 42.6 +0.6**
TLY *e* 01 32 41.6
TLY *e*S **S** **01 36 46.1 +1.8**
TLY *e*SS **SnSn** **01 38 27.4 +2.1**
TLY pmax pmax
comp=Z,56nm,1.5s
TLY MLR MLR
comp=Z,957nm,14.0s
TLY Talaya 30.93 311 *e*P **P** **01 31 42.8 +0.7**
comp=Z,37nm,0.9s
TLY pP **sP** **01 31 53.3 -1.3**
TLY Talaya 30.93 311 P **P** **01 31 42.7 +0.6**
SNR=16
TLY P **P** **01 31 42.7 +0.6**
SNR=16
TLY Talaya 30.93 311 P **P** **01 31 42.7 +0.6**
SNR=16
GYA Guiyang 31.74 261⇑ *i*P **P** **01 31 48.8 -0.7**
GYA pP sP 01 32 01.0 -1.1
GYA PP **PnPn** **01 32 55.8 +1.7**
GYA PcP **PcP** **01 34 41.6 +1.0**
GYA S **S** **01 36 55.6 -2.0**
GYA sS sS 01 37 14.0 +1.8
GYA ScP **ScP** **01 38 21.4 -0.2**
GYA SS **SnSn** **01 38 48.2 +2.5**
GYA ScS **ScS** **01 42 18.8 -1.3**
GYA pmax pmax
comp=Z,100nm,0.9s
GYA pmax pmax
comp=Z,110nm,7.2s
GYA LR LR
comp=Z,5μm,15.8s
GYA LR LR
comp=Z,3μm,16.0s
CD2 Chengdu 32.24 271⇑ *i*P **P** **01 31 53.1 -0.7**
CD2 sP sP 01 32 07.6 +1.2
CD2 PcP **PcP** **01 34 41.5 -0.3**
CD2 S **S** **01 37 04.6 -0.7**
CD2 sS sS 01 37 21.4 +1.5
CD2 pmax pmax
comp=Z,50nm,1.1s
CD2 pmax pmax
comp=Z,100nm,3.5s
CD2 LR LR
comp=Z,2μm,15.5s
CD2 LR LR
comp=Z,2μm,15.5s
MOY Mondy 32.54 310 *e*P **P** **01 31 56.7 +0.4**
MOY pmax pmax
comp=Z,43nm,1.6s
GTA Gaotai 33.19 288 *e*P **P** **01 32 02.4 +0.3**
GTA pP pP 01 32 11.8 +0.8
GTA sP sP 01 32 15.5 +0.9
GTA PcP **PcP** **01 34 45.5 +1.1**
GTA S **S** **01 37 20.6 +0.7**
GTA sS sS 01 37 36.3 +1.7
GTA ScP **ScP** **01 38 26.0 -0.4**
GTA SS **SnSn** **01 39 23.6 +3.1**
GTA pmax pmax
comp=Z,19nm,0.9s
GTA pmax pmax
comp=Z,120nm,6.4s
GTA LR LR
comp=Z,940nm,15.2s
GTA LR LR
comp=Z,850nm,14.3s
GTA LR LR
comp=Z,810nm,14.3s
DAV Davao City (W) 33.19 211 LR LR 01 45 24.8
comp=Z,426nm,20.1s,baz=358,slow=36
BILL Bilibino 34.12 16⇓ *i*P **P** **01 32 09.8 +0.1**
BILL *i* 01 32 18.0
BILL *e*S **S** **01 37 35.5 +2.0**
BILL MLR MLR
comp=Z,312nm,18.0s
BILL Bilibino 34.12 16 *e*P **P** **01 32 09.3 -0.4**
comp=Z,52nm,1.2s
BILL LR LR
comp=Z,478nm,19.0s
KMI Kunming 35.49 262 P **P** **01 32 22.2 -0.1**
KMI pP pP 01 32 30.9 -0.3
KMI PP **PP** **01 33 44.9 +1.9**
KMI S **S** **01 37 55.2 -0.7**
KMI SS **SnSn** **01 40 09.4 -7.4**
KMI pmax pmax
comp=Z,59nm,1.5s
KMI pmax pmax
comp=Z,200nm,3.1s
KMI LR LR
comp=Z,330nm,16.1s
KMI LR LR
comp=Z,590nm,12.2s
KMI LR LR
comp=Z,710nm,15.2s
TIXI Tiksi 35.62 353 P **P** **01 32 21.9 -0.6**
comp=Z,9.6nm,0.5s,baz=140,slow=5.4,SNR=23
TIXI Tiksi 35.62 353*c i*P **P** **01 32 22.3 -0.3**
TIXI pmax pmax
comp=Z,44nm,1.7s
TIXI Tiksi 35.62 353 *e*P **P** **01 32 22.0 -0.6**
comp=Z,19nm,0.9s
TIXI LR LR
comp=Z,590nm,20.0s
MYLDM Lahad Datu 38.17 220⇓ P **P** **01 32 47.5 +2.6**
MYLDM Lahad Datu 38.17 220 *e*P **P** **01 32 47.4 +2.6**
comp=Z,115nm,1.1s
PANO Nakornpanom 38.41 250 P **P** **01 32 48.3 +1.5**
comp=Z,142nm,1.3s
SDKM Sandakan 38.48 222⇓ P **P** **01 32 48.7 +1.2**
SWI Sorong 38.78 198 P **P** **01 32 50.9 +1.0**
comp=Z,39nm,1.0s
NONG Nongkai 38.97 252 P **P** **01 32 52.4 +0.9**
comp=Z,76nm,1.0s
SKNT Sakolnakorn 38.99 250 P **P** **01 32 52.5 +0.8**
comp=Z,80nm,1.2s
LBMI Labuha 39.62 203 P **P** **01 32 57.8 +0.8**
CRAI Chiangrai 39.88 257 P **P** **01 32 59.1 -0.1**
comp=Z,97nm,0.9s,comp=Z,6μm
FAKI Fak Fak 40.54 195 P **P** **01 33 06.9 +2.3**
comp=Z,54nm,1.3s,comp=Z,788nm
FAKI Fak Fak 40.54 195 *e*P **P** **01 33 04.7 +0.1**
comp=Z,58nm,1.1s
MRSI Marisa 40.66 212 P **P** **01 33 07.2 +1.6**
comp=Z,87nm,1.3s,comp=Z,2μm
LOEI Loei 40.73 253 P **P** **01 33 03.8 -2.5**
comp=Z,43nm,1.2s,comp=Z,556nm
PHRA Phrae 40.96 255 P **P** **01 33 08.7 +0.6**
comp=Z,208nm,1.6s,comp=Z,4μm
UTTA Uttaradit 41.14 254 P P 01 33 16.4 +6.8
CHAI Chaiyaphum 41.15 250 P **P** **01 33 10.0 +0.3**
comp=Z,31nm,1.2s,comp=Z,254nm
LAMP Lampang 41.41 256 P **P** **01 33 13.1 +1.3**
comp=Z,10.0nm,0.7s
SANI Sanana 41.44 205 P **P** **01 33 13.8 +1.8**
comp=Z,76nm,1.1s,comp=Z,928nm
WMQ Urumqi 41.47 297 P **P** **01 33 13.5 +1.4**
WMQ pP pP 01 33 21.8 +0.7
WMQ sP sP 01 33 26.5 +1.7
WMQ PcP **PcP** **01 35 10.0 +0.5**
WMQ S **S** **01 39 25.4 -0.1**
WMQ sS sS 01 39 40.8 +0.5
WMQ SS **SS** **01 42 26.3 -3.9**
WMQ pmax pmax
comp=Z,25nm,1.0s
WMQ pmax pmax
comp=Z,140nm,4.0s
WMQ LR LR
comp=Z,850nm,19.2s
WMQ LR LR
comp=Z,430nm,18.0s
PBKT Sadao Pong 41.52 252 P **P** **01 33 13.5 +0.8**
comp=Z,70nm,1.2s,comp=Z,3μm
MSAI Masohi 41.76 200 P **P** **01 33 17.5 +2.8**
comp=Z,25nm,1.5s,comp=Z,2μm
CMMT Chiang Mai 41.78 257 P **P** **01 33 15.2 +0.3**
comp=Z,26nm,1.1s
CHTO Chiang Mai 41.78 257 P **P** **01 33 15.3 +0.4**
comp=Z,119nm,1.1s
CHTO Chiang Mai 41.78 257 *e*P **P** **01 33 15.6 +0.7**
CHTO pmax pmax
comp=Z,20nm,0.9s
CHTO MLR MLR
comp=Z,692nm,22.0s
CHTO Chiang Mai 41.78 257 *e*P **P** **01 33 15.6 +0.7**
comp=Z,20nm,0.9s
CHTO LR LR
comp=Z,692nm,22.0s
CHTO Chiang Mai 41.78 257 P **P** **01 33 14.7 -0.2**
SNR=13
CHTO Chiang Mai 41.78 257 P **P** **01 33 14.7 -0.2**
SNR=13
CMAR Chiang Mai Arr 41.98 256 P **P** **01 33 16.9 +0.3**
comp=Z,4.6nm,0.8s,baz=45,slow=7.2,SNR=25
CMAR pP **pP** **01 33 27.1 +1.5**
comp=Z,8.9nm,0.8s,baz=52,slow=6.4,SNR=10
CMAR PcP **PcP** **01 35 12.7 +1.3**
comp=Z,2.8nm,0.9s,baz=349,slow=0.8,SNR=4.0
CMAR LR LR 01 52 19.2
comp=Z,308nm,19.3s,baz=52,slow=38
CM01 Chiang Mai Arr 41.99 256 *e*P **P** **01 33 16.9 +0.3**
SUKH Sukhothai 42.01 254 P **P** **01 33 17.9 +1.2**
comp=Z,10nm,0.9s,comp=Z,188nm
APSI Ampana 42.04 211 P **P** **01 33 17.1 +0.2**
comp=Z,189nm,1.2s,comp=Z,2μm
SRAK Srakaew 42.29 248 P **P** **01 33 16.5 -2.5**
comp=Z,100nm,1.3s,comp=Z,1μm
ZAA0 Zalesovo Array 42.51 313 *e*P **P** **01 33 20.4 +0.1**
ZALV Zalesovo Beam 42.51 313 P **P** **01 33 19.8 -0.6**
comp=Z,29nm,1.0s,baz=93,slow=6.4,SNR=84
ZALV pP **sP** **01 33 31.7 -1.4**
comp=Z,60nm,0.9s,baz=94,slow=7.5,SNR=22
ZALV PcP **PcP** **01 35 12.8 +0.2**
comp=Z,16nm,0.8s,baz=95,slow=3.4,SNR=5.8
ZALV LR LR 01 51 38.1
comp=Z,447nm,19.4s,baz=72,slow=37
BNDI Bandanaira 42.64 198 P **P** **01 33 24.8 +3.1**
comp=Z,367nm,1.3s
LSA Lhasa 42.80 276 *e*P **P** **01 33 23.8 +0.2**
LSA pmax pmax
comp=Z,35nm,0.9s
LSA MLR MLR
comp=Z,568nm,19.0s
LSA Lhasa 42.80 276 *e*P **P** **01 33 23.8 +0.2**
comp=Z,36nm,0.9s
LSA LR LR
comp=Z,568nm,19.0s
PCI Palu 42.82 214 P **P** **01 33 24.5 +1.2**
comp=Z,87nm,1.3s
CHBT CHBT 42.89 247 P **P** **01 33 25.1 +1.2**
comp=Z,52nm,0.8s
MHMT Maesariang 42.93 257 P **P** **01 33 25.7 +1.5**
comp=Z,19nm,0.9s,comp=Z,735nm
NVS Novosibirsk 43.43 314⇑ *i*P **P** **01 33 27.8 0.0**
NVS *e*S **S** **01 39 56.3 +2.4**
NVS pmax pmax
comp=N,12nm,1.1s
NVS pmax pmax
comp=E,55nm,1.1s
NVS pmax pmax
comp=Z,68nm,1.1s
NVS smax smax
comp=N,10.0nm,1.6s
NVS smax smax
comp=E,17nm,1.6s
NRIK Noril'sk 43.74 335 P **P** **01 33 30.1 0.0**
comp=E,9.6nm,0.8s,baz=122,slow=6.8,SNR=27
NRIK pP **sP** **01 33 41.5 -1.4**
comp=E,15nm,0.7s,baz=138,slow=4.4,SNR=7.2
NRIK PcP **PcP** **01 35 16.9 +0.4**
comp=E,14nm,0.9s,baz=72,slow=2.8,SNR=3.9
NRIK LR LR 01 52 36.2
comp=E,696nm,19.4s,baz=111,slow=37
SBUM Sibu 43.88 226⇓ P **P** **01 33 32.7 +0.8**
SBUM Sibu 43.88 226 *e*P **P** **01 33 32.9 +1.0**
comp=E,20nm,1.0s
SRDT SRDT 44.28 251 P **P** **01 33 36.2 +1.1**
comp=E,137nm,1.2s,comp=E,3μm
KHLT Khaolaem Dam 44.41 252 P **P** **01 33 39.2 +3.1**
comp=E,18nm,1.1s,comp=E,233nm
TTSI Tana Toraja 44.73 213 P **P** **01 33 40.4 +1.8**
MK31 Makanchi Array 44.74 302 *i* P **P** **01 33 38.5 0.0**
MK31 pmax pmax
comp=Z,55nm,0.9s
MKAR Makanchi Array 44.74 302 P **P** **01 33 38.5 0.0**
comp=Z,15nm,0.8s,baz=86,slow=9.8,SNR=88
MKAR pP **pP** **01 33 47.7 +0.1**
comp=Z,29nm,0.8s,baz=78,slow=9.6,SNR=21
MKAR PcP **PcP** **01 35 20.8 +0.4**
comp=Z,7.5nm,0.9s,baz=76,slow=6.4,SNR=3.3
MKAR LR LR 01 52 35.9
comp=Z,262nm,19.0s,baz=86,slow=36
MAKZ Makanchi 44.95 303 *e*P **P** **01 33 40.4 +0.3**
MAKZ pmax pmax
comp=Z,52nm,1.0s
MAKZ Makanchi 44.95 303 *e*P **P** **01 33 40.4 +0.3**
comp=Z,52nm,1.0s
TT01 Tatalina 45.31 35 *e*P **P** **01 33 43.3 +0.6**
TT01 *e*pP **pP** **01 33 53.1 +1.3**
TTA Tatalina 45.31 35 *e*P **P** **01 33 43.4 +0.5**
TTA Tatalina 45.31 35 *e*P **P** **01 33 43.4 +0.5**
SVW2 Sparrevohn 45.39 37 *e*P **P** **01 33 44.8 +1.4**
comp=Z,47nm,0.9s
KSM Kuching 45.79 227 *e*P **P** **01 33 47.5 +0.5**
comp=Z,27nm,0.8s
KSM LR LR
comp=Z,216nm,19.0s
PMG Port Moresby 46.17 173 LR LR 01 52 18.6
comp=Z,138nm,21.2s,baz=5.5,slow=35
PMG Port Moresby 46.17 173 *e*P **P** **01 33 48.8 -1.2**
PMG Port Moresby 46.17 173 *e*P **P** **01 33 48.8 -1.2**
STKI Stntang 46.25 225 P **P** **01 33 52.8 +2.1**
comp=Z,98nm,0.3s,comp=Z,20μm
TAPN Taplejung 46.53 275 *e*P **P** **01 33 53.9 +0.7**
comp=Z,141nm,1.0s
KAPI Kappang 46.53 211 *e*P **P** **01 33 53.4 +0.6**
comp=Z,137nm,1.1s
KAPI LR LR
comp=Z,143nm,19.0s
KAPI Kappang 46.53 211 P **P** **01 33 53.6 +0.8**
SNR=13
KAPI P **P** **01 33 53.6 +0.8**
SNR=13
KAPI Kappang 46.53 211 P **P** **01 33 53.6 +0.8**
SNR=13
KURK Kurchatov 46.54 308 *e*P **P** **01 33 52.8 +0.2**
KURK pmax pmax
comp=Z,82nm,0.9s
KURK MLR MLR
comp=Z,1μm,19.0s
KURK Kurchatov 46.54 308 *e*P **P** **01 33 52.8 +0.2**
comp=Z,82nm,0.9s
KURK LR LR
comp=Z,1μm,19.0s
KURK Kurchatov 46.54 308 P **P** **01 33 52.8 +0.2**
SNR=45
KURK Kurchatov 46.54 308 P **P** **01 33 52.8 +0.2**
SNR=45
OHAK Old Harbor 46.56 43 *e*P **P** **01 33 52.1 -0.6**
comp=Z,32nm,1.0s
KBKI Kotabaru 46.63 217 P **P** **01 33 56.1 +2.5**
RSO Redoubt South 46.76 38 *e*P **P** **01 33 54.9 +0.5**
KDAK Kodiak Island 46.91 42 P P 01 34 10.6 +15
comp=Z,38nm,0.8s,baz=281,slow=5.1,SNR=15
KDAK pP sP 01 34 19.9 +12
comp=Z,51nm,0.8s,baz=264,slow=5.9,SNR=10
KDAK Kodiak Island 46.91 42 *e*P **P** **01 33 55.6 +0.2**
KDAK pmax pmax
comp=Z,59nm,0.8s
KDAK Kodiak Island 46.91 42 *e*P **P** **01 33 55.6 +0.2**
comp=Z,59nm,0.8s
KDAK pP sP 01 34 19.9 +12
ODAN Odare 47.00 274 *e*P **P** **01 33 57.3 +0.5**
comp=Z,179nm,1.2s
PPLA Purkeypile 47.06 35 *e*P **P** **01 33 58.1 +1.4**
comp=Z,80nm,1.2s
SPU Mount Spurr 47.10 37 *e*P **P** **01 33 57.7 +0.8**
CAST Castle Rocks 47.12 34 *e*P **P** **01 33 58.2 +1.2**
comp=Z,31nm,0.8s
PDGK Podgornoye 47.41 298 P **P** **01 33 58.6 -0.8**
PDGK pmax pmax
comp=Z,73nm,1.0s
BBKI Banjar Baru 47.42 218 P **P** **01 34 00.2 +0.4**
comp=Z,97nm,1.0s,comp=Z,6μm
RAMN Ramite 47.59 275 *e*P **P** **01 34 01.9 +0.5**
comp=Z,163nm,0.8s
BPAW Bear Paw Mtn. 47.63 33 *e*P **P** **01 34 01.9 +0.9**
comp=Z,68nm,1.7s
KTH Kantishna Hill 47.65 34 *e*P **P** **01 34 01.6 +0.5**
comp=Z,62nm,1.0s
GUN Gumba 47.75 276 *e*P **P** **01 34 03.3 +0.5**
comp=Z,177nm,1.0s
MLY Manley 47.77 32 *e*P **P** **01 34 03.2 +1.1**
comp=Z,55nm,0.9s
TRF Thorofare Moun 47.93 34 *e*P **P** **01 34 03.8 +0.3**
comp=Z,17nm,0.8s
SURT Suratani 47.99 246 P **P** **01 34 05.7 +1.4**
comp=Z,15nm,0.7s,comp=Z,174nm
TRTT Trang 48.09 244 P **P** **01 34 06.5 +1.4**
comp=Z,21nm,1.2s
COLD Coldfoot 48.11 29 *e*P **P** **01 34 05.0 +0.5**
comp=Z,11nm,1.0s

RC01	**Rabbit Creek A**	**48.22**	**37**	*e*P		**P**	**01 34 05.9**	**+0.3**
	comp=Z,44nm,0.9s								
KKN	**Kakani**	**48.28**	**276**	*e*P		**P**	**01 34 07.4**	**+0.7**
	comp=Z,95nm,0.8s								
SEW	**Seward**	**48.41**	**39**	*e*P		**P**	**01 34 06.0**	**-1.0**
	comp=Z,215nm,1.9s								
PMR	**Palmer**	**48.50**	**37**	*e*P		**P**	**01 34 07.8**	**+0.2**
PMR					pmax	pmax			
	comp=Z,39nm,1.0s								
PMR	**Palmer**	**48.50**	**37**	*e*P		**P**	**01 34 07.8**	**+0.2**
	comp=Z,39nm,1.0s								
MCK	**McKinley**	**48.53**	**34**	*e*P		**P**	**01 34 08.5**	**+0.5**
MCK					pmax	pmax			
	comp=Z,38nm,0.9s								
MCK	**McKinley**	**48.53**	**34**	*e*P		**P**	**01 34 08.5**	**+0.5**
	comp=Z,38nm,0.9s								
RND	**Reindeer**	**48.58**	**34**	*e*P		**P**	**01 34 08.3**	**0.0**
RND					pmax	pmax			
	comp=Z,49nm,0.8s								
RND	**Reindeer**	**48.58**	**34**	*e*P		**P**	**01 34 08.3**	**0.0**
	comp=Z,49nm,0.8s								
GKN	**Gorkha**	**48.70**	**277**	*e*P		**P**	**01 34 10.4**	**+0.5**
	comp=Z,276nm,1.0s								
MDM	**Murphy Dome**	**48.84**	**32**	*e*P		**P**	**01 34 11.2**	**+1.0**
	comp=Z,87nm,0.9s								
SML	**Sawmill**	**48.87**	**36**	*e*P		**P**	**01 34 11.3**	**+0.7**
SML					pmax	pmax			
	comp=Z,48nm,0.8s								
SML	**Sawmill**	**48.87**	**36**	*e*P		**P**	**01 34 11.3**	**+0.7**
	comp=Z,48nm,0.8s								
MMRI	**Maumere**	**48.87**	**207**	P		**P**	**01 34 12.0**	**+1.0**
	comp=Z,62nm,1.3s								
MMRI	**Maumere**	**48.87**	**207**	*e*P		**P**	**01 34 10.5**	**-0.5**
	comp=Z,76nm,1.2s								
WRH	**Wood River Hil**	**48.90**	**33**	*e*P		**P**	**01 34 11.3**	**+0.6**
	comp=Z,22nm,0.8s								
HNR	**Honiara**	**48.91**	**156**	LR		LR	01 52 57.1		
	comp=Z,236nm,21.4s,baz=352,slow=34								
COLA	**College**	**49.00**	**32**	*e*P		**P**	**01 34 12.6**	**+1.2**
COLA					pmax	pmax			
	comp=Z,30nm,0.8s								
COLA	**College**	**49.00**	**32**	*e*P		**P**	**01 34 12.6**	**+1.2**
	comp=Z,30nm,0.8s								
CCB	**Clear Creek Bu**	**49.02**	**32**	*e*P		**P**	**01 34 12.1**	**+0.5**
	comp=Z,15nm,1.0s								
PKDT	**Phuket**	**49.04**	**245**	P		**P**	**01 34 13.8**	**+1.4**
	comp=Z,68nm,1.1s,comp=Z,1μm								
KULM	**Kulim**	**49.18**	**241**	⇑P		**P**	**01 34 14.1**	**+0.6**
KULM	**Kulim**	**49.18**	**241**	*e*P		**P**	**01 34 14.5**	**+1.0**
	comp=Z,25nm,1.1s								
KULM					LR	LR			
	comp=Z,255nm,19.0s								
SOEI	**Soe**	**49.23**	**204**	P		P	01 34 24.8	+11	
DHY	**Denali Highway**	**49.26**	**34**	*e*P		**P**	**01 34 14.0**	**+0.4**
	comp=Z,23nm,1.0s								
SCM	**Sheep Creek Mo**	**49.34**	**36**	*e*P		**P**	**01 34 14.4**	**+0.2**
SCM					pmax	pmax			
	comp=Z,42nm,0.9s								
SCM	**Sheep Creek Mo**	**49.34**	**36**	*e*P		**P**	**01 34 14.4**	**+0.2**
	comp=Z,42nm,0.9s								
HDA	**Harding Lake**	**49.40**	**33**	*e*P		**P**	**01 34 14.2**	**-0.3**
	comp=Z,42nm,0.8s								
IL1	**Eielson Array**	**49.41**	**32**	*e*P		**P**	**01 34 14.2**	**-0.5**
ILAR	**Eielson Array**	**49.41**	**32**	P		**P**	**01 34 14.1**	**-0.5**
	comp=Z,25nm,0.8s,baz=266,slow=6.3,SNR=248								
ILAR					pP	**pP**	**01 34 23.7**	**-0.1**	
	comp=Z,36nm,0.8s,baz=262,slow=6.2,SNR=32								
ILAR					LR	LR	01 56 58.6		
	comp=Z,69nm,19.4s,baz=284,slow=38								
ILB	**Eielson Array**	**49.41**	**32**	*e*P		**P**	**01 34 14.6**	**-0.1**
IPM	**Ipoh**	**49.49**	**240**	*e*P		**P**	**01 34 15.5**	**-0.4**
	comp=Z,54nm,1.1s								
KOLN	**Koldanda**	**49.63**	**277**	*e*P		**P**	**01 34 17.6**	**+0.6**
	comp=Z,124nm,1.1s								
KGM	**Kluang**	**49.75**	**235**	⇓P		**P**	**01 34 19.2**	**+1.4**
PYUN	**Piuthan**	**49.97**	**278**	*e*P		**P**	**01 34 20.3**	**+0.7**
	comp=Z,575nm,1.2s								
KLU	**Klutina**	**50.04**	**37**	*e*P		**P**	**01 34 20.2**	**+0.7**
	comp=Z,42nm,1.1s								
FYU	**Fort Yukon**	**50.05**	**30**	*e*P		**P**	**01 34 21.2**	**+1.7**
	comp=Z,142nm,1.4s								
PAX	**Paxson**	**50.13**	**35**	*e*P		**P**	**01 34 21.0**	**+0.8**
PAX				*e*			01 35 40.1		
PAX					pmax	pmax			
	comp=Z,17nm,0.9s								
PAX	**Paxson**	**50.13**	**35**	*e*P		**P**	**01 34 21.0**	**+0.8**
	comp=Z,17nm,0.9s								
PAX				*e*PcP		**PcP**	**01 35 40.1**	**+0.8**	
DIV	**Divide**	**50.14**	**37**	*e*P		**P**	**01 34 21.1**	**+0.8**
	comp=Z,66nm,0.9s								
EYAK	**Cordova Ski Ar**	**50.21**	**38**	*e*P		**P**	**01 34 22.0**	**+1.3**
	comp=Z,53nm,0.8s								
TKM2	**Tokmak 2**	**50.26**	**299**	*e*P		**P**	**01 34 22.7**	**+1.1**
TKM2					pmax	pmax			
	comp=Z,37nm,0.9s								
TKM2					MLR	MLR			
	comp=Z,699nm,21.0s								
TKM2	**Tokmak 2**	**50.26**	**299**	*e*P		**P**	**01 34 22.7**	**+1.1**
	comp=Z,37nm,0.9s								
TKM2					LR	LR			
	comp=Z,699nm,21.0s								
MTN	**Manton Dam**	**50.42**	**194**	*e*P		**P**	**01 34 22.3**	**-0.4**
	comp=Z,49nm,1.0s								
COEN	**Coen**	**50.46**	**179**	*e*P		**P**	**01 34 23.0**	**-0.1**
	comp=Z,32nm,1.2s								
DOT	**Dot Lake**	**50.71**	**34**	*e*P		**P**	**01 34 24.4**	**-0.1**
	comp=Z,60nm,0.8s								
DOT				*e*PcP		**PcP**	**01 35 41.8**	**+0.4**	
BMRM	**Bremner River**	**50.73**	**37**	*e*P		**P**	**01 34 25.5**	**+0.8**
	comp=Z,46nm,0.8s								
BMRM				*e*PcP		**PcP**	**01 35 42.2**	**+0.7**	
RAGM	**Ragged Mountai**	**50.76**	**38**	*e*P		**P**	**01 34 25.6**	**+0.6**
	comp=Z,105nm,1.2s								
PLAI	**Plampang**	**50.79**	**212**	P		**P**	**01 34 28.0**	**+2.4**
VOSK	**Vostochnaya**	**50.88**	**312**	*e*P		**P**	**01 34 25.9**	**0.0**
VOSK					pmax	pmax			
	comp=Z,29nm,0.9s								
VOSK	**Vostochnaya**	**50.88**	**312**	*e*P		**P**	**01 34 25.9**	**0.0**
	comp=Z,29nm,0.9s								
CHKZ	**Chkalovo**	**50.91**	**313**	P		**P**	**01 34 21.8**	**-4.3**
CHKZ					pmax	pmax			
	comp=Z,20nm,1.0s								
MENT	**Mentasta**	**50.93**	**35**	*e*P		**P**	**01 34 27.4**	**+1.2**
	comp=Z,25nm,0.9s								
FRU	**Bishkek**	**50.97**	**299**	*e*P		**P**	**01 34 27.0**	**+0.2**
FRU					pmax	pmax			
	comp=Z,50nm,2.0s								
KSH	**Kashi**	**51.03**	**295**	P		**P**	**01 34 31.7**	**+4.3**
KSH				*e*pP		sP	01 34 41.7	+1.4	
KSH				*e*sP		pP	01 34 45.6	+9.0	
KSH				*e*ScP		**ScP**	**01 39 37.8**	**+0.6**	
KSH				S		**S**	**01 41 46.6**	**+3.7**	
KSH				sS		sS	01 42 03.1	+5.1	
KSH				ScS		**ScS**	**01 44 16.4**	**+0.4**	
KSH					pmax	pmax			
	comp=Z,73nm,2.0s								
KSH					pmax	pmax			
	comp=Z,240nm,4.4s								
KSH					LR	LR			
	comp=Z,1μm,15.3s								
KSH					LR	LR			
	comp=Z,820nm,15.1s								
OTUK	**Ortayu**	**51.04**	**306**	P		**P**	**01 34 26.4**	**-0.8**
OTUK					pmax	pmax			
	comp=Z,70nm,1.3s								
TWSI	**Taliwang, Sumb**	**51.10**	**213**	P		**P**	**01 34 28.0**	**+0.1**
	comp=Z,38nm,1.1s								
TWSI					P	**pP**	**01 34 37.8**	**+0.7**	
	comp=Z,38nm,1.1s								
AAK	**Ala-Archa**	**51.12**	**299**	⇑*i*P		**P**	**01 34 28.2**	**+0.1**
AAK					pmax	pmax			
	comp=Z,22nm,0.9s								
AAK	**Ala-Archa**	**51.12**	**299**	*e*P		**P**	**01 34 28.0**	**-0.1**
	comp=Z,24nm,1.1s								
AAK					LR	LR			
	comp=Z,773nm,20.0s								
BVA0	**Borovoye Array**	**51.17**	**313**	*i* P		**P**	**01 34 28.0**	**-0.1**
BVA0					pmax	pmax			
	comp=Z,17nm,1.1s								
BVAR	**Borovoye Array**	**51.17**	**313**	P		**P**	**01 34 28.0**	**-0.1**
	comp=Z,8.5nm,0.8s,baz=80,slow=8.1,SNR=40								
BVAR					PcP	**PcP**	**01 35 43.7**	**+0.5**	
	comp=Z,11nm,0.7s,baz=84,slow=4.6,SNR=6.7								
PPBI	**Pangkal Pinang**	**51.18**	**229**	P		**P**	**01 34 30.2**	**+1.6**
	comp=Z,31nm,1.1s								
BRVK	**Borovoye**	**51.23**	**313**	*e*P		**P**	**01 34 28.8**	**+0.3**
BRVK				*e*			01 35 43.8		
BRVK					pmax	pmax			
	comp=Z,25nm,1.0s								
BRVK					MLR	MLR			
	comp=Z,575nm,21.0s								
BRVK	**Borovoye**	**51.23**	**313**	*e*P		**P**	**01 34 28.8**	**+0.3**
	comp=Z,25nm,1.0s								
BRVK				*e*PcP		**PcP**	**01 35 43.8**	**+0.3**	
BRVK					LR	LR			
	comp=Z,575nm,21.0s								
BRVK	**Borovoye**	**51.23**	**313**	P		**P**	**01 34 29.1**	**+0.6**
	SNR=10.0								
BRVK					P	**P**	**01 34 29.1**	**+0.6**	
	SNR=10.0								
BRVK	**Borovoye**	**51.23**	**313**	P		**P**	**01 34 29.1**	**+0.6**
	SNR=10.0								
EKS2	**Erkin-Say**	**51.61**	**299**	*e*P		**P**	**01 34 32.2**	**+0.5**
EKS2				*e*			01 35 45.8		
EKS2					pmax	pmax			
	comp=Z,19nm,1.1s								
EKS2					MLR	MLR			
	comp=Z,887nm,20.0s								
EKS2	**Erkin-Say**	**51.61**	**299**	*e*P		**P**	**01 34 32.2**	**+0.5**
	comp=Z,18nm,1.1s								
EKS2				*e*PcP		**PcP**	**01 35 45.8**	**+0.5**	
EKS2					LR	LR			
	comp=Z,887nm,20.0s								
LHMI	**Lhok Sumawe**	**51.85**	**244**	P		**P**	**01 34 31.2**	**-2.5**
LHMI	**Lhok Sumawe**	**51.85**	**244**	*e*P		**P**	**01 34 32.3**	**-1.3**
	comp=Z,75nm,1.0s								
EGAK	**Eagle**	**51.86**	**32**	*e*P		**P**	**01 34 32.8**	**-0.3**
	comp=Z,17nm,0.9s								
TSI	**Tuntungan**	**51.91**	**241**	P		**P**	**01 34 34.9**	**+0.9**
ZRNK	**Zerenda**	**52.00**	**313**	P		**P**	**01 34 32.1**	**-2.2**
ZRNK					pmax	pmax			
	comp=Z,32nm,1.2s								
PSI	**Prapat**	**52.15**	**240**	*e*P		**P**	**01 34 36.5**	**+0.5**
PSI					pmax	pmax			
	comp=Z,18nm,0.9s								
PSI	**Prapat**	**52.15**	**240**	*e*P		**P**	**01 34 36.5**	**+0.5**
	comp=Z,18nm,0.9s								
KCSI	**Kotacane, Aceh**	**52.45**	**242**	P		**P**	**01 34 39.1**	**+1.0**
BKNI	**Bangkinang**	**52.51**	**236**	P		**P**	**01 34 40.6**	**+2.1**
BKNI	**Bangkinang**	**52.51**	**236**	*e*P		**P**	**01 34 39.2**	**+0.7**
MNAS	**Manas**	**52.56**	**299**	P		**P**	**01 34 39.2**	**+0.4**
MNAS					pmax	pmax			
	comp=Z,22nm,0.8s								
PWJI	**Pagerwojo**	**52.86**	**219**	P		**P**	**01 34 40.2**	**-0.8**
TPTI		**53.05**	**242**	P		P	01 34 54.2	+12	
SDSI	**Sungai Dareh**	**53.20**	**235**	P		**P**	**01 34 44.8**	**+1.2**
	comp=Z,511nm,0.8s								
KK31	**Karatay Array**	**53.75**	**300**	*i* P		**P**	**01 34 47.5**	**+0.1**
KK31					pmax	pmax			
	comp=Z,33nm,1.2s								
KKAR	**Karatay Array**	**53.75**	**300**	*e*P		**P**	**01 34 47.7**	**+0.3**
KKAR					pmax	pmax			
	comp=Z,17nm,0.8s								
KKAR	**Karatay Array**	**53.75**	**300**	*e*P		**P**	**01 34 47.7**	**+0.3**
	comp=Z,16nm,0.8s								
LEM	**Lembang**	**54.08**	**224**	P		P	01 34 56.4	+6.2	
LHSI	**Lahat**	**54.08**	**230**	P		**P**	**01 34 51.8**	**+1.8**
	comp=Z,71nm,0.9s,comp=Z,7μm								
GSI	**Gunungsitoli**	**54.16**	**240**	P		**P**	**01 34 51.6**	**+1.0**
	comp=Z,105nm,1.3s								
GSI	**Gunungsitoli**	**54.16**	**240**	*e*P		**P**	**01 34 50.9**	**+0.3**
	comp=Z,161nm,1.2s								
MDSI	**Maura Dua**	**54.20**	**229**	P		**P**	**01 34 50.7**	**-0.2**
INK	**Inuvik**	**54.36**	**27**	P		**P**	**01 34 52.1**	**+0.7**
	comp=Z,21nm,0.9s,baz=290,slow=6.7,SNR=73								
INK					pP	**pP**	**01 35 01.5**	**+0.8**	
	comp=Z,28nm,0.8s,baz=281,slow=7.0,SNR=24								
INK	**Inuvik**	**54.36**	**27**	*e*P		**P**	**01 34 52.1**	**+0.7**
	comp=Z,34nm,0.8s								
INK					pP	**pP**	**01 35 01.5**	**+0.8**	
SVE	**Sverdlovsk**	**55.72**	**319**	⇓*e*P		**P**	**01 35 02.2**	**+0.8**
SVE					pmax	pmax			
	comp=Z,67nm,1.1s								
SVE					MLR	MLR			
	comp=Z,809nm,14.0s								
FITZ	**Fitzroy Crossi**	**56.75**	**199**	LR		LR	02 00 38.7		
	comp=Z,63nm,18.9s,baz=26,slow=37								
FITZ	**Fitzroy Crossi**	**56.75**	**199**	*e*P		**P**	**01 35 08.4**	**-0.7**
	comp=Z,60nm,1.6s								
WRAB	**Tennant Creek**	**56.87**	**189**	*c i*P		**P**	**01 35 09.0**	**-1.0**
WRAB					pmax	pmax			
	comp=Z,119nm,1.0s								
WRAB	**Tennant Creek**	**56.87**	**189**	*e*P		**P**	**01 35 09.6**	**-0.4**
	comp=Z,54nm,1.0s								
SOKR	**Solikamsk**	**56.88**	**323**	*c i*P		**P**	**01 35 07.7**	**-1.9**
SOKR					pmax	pmax			
	comp=Z,39nm,1.1s								
SOKR					MLR	MLR			
	comp=Z,380nm,17.0s								
WB2	**Warramunga Arr**	**56.88**	**189**	*e*P		**P**	**01 35 09.2**	**-0.9**
	comp=Z,64nm,1.1s								
WRA	**Warramunga Arr**	**56.88**	**189**	P		**P**	**01 35 08.8**	**-1.3**
	comp=Z,32nm,0.9s,baz=6.8,slow=7.3,SNR=77								
WRA					pP	**pP**	**01 35 20.2**	**+0.8**	
	comp=Z,20nm,0.9s,baz=5.4,slow=7.6,SNR=7.3								
FUNA	**Funafuti**	**56.91**	**135**	PFAKE			01 35 20.0	+10	
FUNA					LR	LR			
	comp=Z,4μm,19.0s								
ARU	**Arti**	**56.93**	**319**	P		**P**	**01 35 10.3**	**+0.2**
	comp=Z,29nm,0.8s,baz=78,slow=4.2,SNR=5.2								
ARU					pP	**pP**	**01 35 20.4**	**+1.0**	
	comp=Z,30nm,0.9s,baz=48,slow=4.3,SNR=3.9								
ARU	**Arti**	**56.93**	**319**	*c i*P		**P**	**01 35 10.1**	**0.0**
ARU							01 36 04.9		
ARU					S	**S**	**01 43 02.7**	**+0.9**	
ARU					pmax	pmax			
	comp=Z,74nm,1.2s								
ARU					MLR	MLR			
	comp=Z,821nm,20.0s								
ARU	**Arti**	**56.93**	**319**	*e*P		**P**	**01 35 10.2**	**+0.2**
	comp=Z,52nm,1.0s								
ARU					pP	**pP**	**01 35 20.4**	**+1.0**	
ARU					LR	LR			
	comp=Z,644nm,19.0s								
KBL	**Kabul**	**58.04**	**291**	*e*P		**P**	**01 35 18.4**	**-0.1**
KBL					pmax	pmax			
	comp=Z,42nm,1.0s								
KBL	**Kabul**	**58.04**	**291**	*e*P		**P**	**01 35 18.4**	**-0.1**
	comp=Z,42nm,1.0s								
DLBC	**Dease Lake**	**58.48**	**38**	*e*P		**P**	**01 35 23.1**	**+2.1**
	comp=Z,31nm,1.0s								
AB31	**Akbulak array**	**58.54**	**310**	*i* P		**P**	**01 35 21.4**	**-0.1**
AB31					pmax	pmax			
	comp=Z,31nm,1.0s								
ABKAR	**Akbulak array**	**58.54**	**310**	*e*P		**P**	**01 35 21.4**	**-0.1**
HYB	**Hyderabad**	**58.77**	**269**	*i* P		**P**	**01 35 23.0**	**-0.5**
HYB				*e*pP		**pP**	**01 35 30.0**	**-2.9**
HYB				*e*			01 35 43.5		
AKTO	**Aktyubinsk**	**59.27**	**312**	P		**P**	**01 35 26.3**	**-0.3**
	comp=Z,16nm,0.9s,baz=72,slow=6.8,SNR=21								
AKTO					pP	**pP**	**01 35 37.1**	**+1.2**	
	comp=Z,13nm,0.8s,baz=48,slow=7.7,SNR=6.3								
AKTO					PcP	**PcP**	**01 36 14.8**	**+0.3**	
	comp=Z,10nm,0.8s,baz=126,slow=3.4,SNR=4.0								
AS01	**Alice Springs**	**60.60**	**189**	*e*P		**P**	**01 35 35.2**	**-0.7**
AS31	**Alice Springs**	**60.61**	**189**	*e*P		**P**	**01 35 35.7**	**-0.2**
	comp=Z,5.5nm,0.8s								
ASAR	**Alice Springs**	**60.61**	**189**	P		**P**	**01 35 35.4**	**-0.5**
	comp=Z,18nm,0.9s,baz=9.5,slow=5.8,SNR=94								
ASAR					pP	**pP**	**01 35 44.8**	**-0.5**	
	comp=Z,7.2nm,0.8s,baz=4.9,slow=6.9,SNR=7.3								
ASAR					LR	LR	02 02 03.3		
	comp=Z,125nm,20.1s,baz=1.0,slow=36								
ASAR	**Alice Springs**	**60.61**	**189**	P		**P**	**01 35 35.4**	**-0.5**
ASAR					*PP	**pP**	**01 35 44.8**	**-0.5**	
ASAR					pmax	pmax			
	comp=Z,17nm,0.9s								
ASAR					pmax	pmax			
	comp=Z,7.0nm,0.8s								
ASAR					MLR	MLR			
	comp=Z,125nm,20.1s								
SPITS	**Spitsbergen Ar**	**60.89**	**349**	P		**P**	**01 35 37.4**	**+0.2**
	comp=Z,3.1nm,0.8s,baz=60,slow=3.5,SNR=6.6								
KBS	**Kingsbay**	**61.01**	**350**	*e*P		**P**	**01 35 36.6**	**-1.4**
KBS					pmax	pmax			
	comp=Z,41nm,1.2s								
KBS					MLR	MLR			
	comp=Z,215nm,20.0s								
KBS	**Kingsbay**	**61.01**	**350**	*e*P		**P**	**01 35 36.6**	**-1.4**
	comp=Z,41nm,1.2s								
KBS					LR	LR			
	comp=Z,215nm,20.0s								
MBWA	**Marble Bar**	**61.38**	**204**	*e*P		**P**	**01 35 40.9**	**-0.2**
	comp=Z,26nm,1.0s								
EIDS	**Eidsvold**	**62.38**	**171**	*e*P		**P**	**01 35 47.5**	**-0.3**
	comp=Z,22nm,1.1s								
LVZ	**Lovozero**	**62.58**	**336**	⇑*i*P		**P**	**01 35 49.6**	**+0.8**
LVZ					pmax	pmax			
	comp=Z,14nm,1.1s								
LVZ	**Lovozero**	**62.58**	**336**	*e*P		**P**	**01 35 49.5**	**+0.7**
	comp=Z,86nm,1.8s								
RES	**Resolute Bay**	**62.71**	**15**	*e*P		**P**	**01 35 49.5**	**0.0**
RES					pmax	pmax			
	comp=Z,28nm,1.0s								
RES	**Resolute Bay**	**62.71**	**15**	*e*P		**P**	**01 35 49.5**	**0.0**
	comp=Z,28nm,1.0s								
APA	**Apatity**	**63.16**	**336**	⇓*i*P		**P**	**01 35 53.0**	**+0.4**
APA					MLR	MLR			
	comp=Z,1μm,15.0s								
TMCR	**Tamitsa**	**63.25**	**332**	*e*P		**P**	**01 35 52.7**	**-0.5**
TMCR					pmax	pmax			
	comp=Z,32nm,0.9s								
YKW3	**Yellowknife Ar**	**63.71**	**30**	*e*P		**P**	**01 35 56.0**	**-0.2**
	comp=Z,15nm,0.8s								
YKA	**Yellowknife Ar**	**63.75**	**30**	P		**P**	**01 35 56.4**	**-0.1**
	comp=Z,6.9nm,0.8s,baz=301,slow=6.7,SNR=114								
YKA					pP	**pP**	**01 36 06.1**	**+0.2**	
	comp=Z,14nm,0.7s,baz=302,slow=6.5,SNR=35								
YKB5	**Yellowknife Ar**	**63.75**	**30**	*e*P		**P**	**01 35 55.5**	**-1.0**
MSVF	**Nonsavu**	**63.94**	**142**	*e*P		**P**	**01 36 00.7**	**+2.3**
MSVF					pmax	pmax			
	comp=Z,61nm,1.5s								
MSVF	**Nonsavu**	**63.94**	**142**	*e*P		**P**	**01 36 00.7**	**+2.3**
	comp=Z,61nm,1.5s								
KLMR	**Klimovskoe**	**64.28**	**328**	*e*P		**P**	**01 35 57.0**	**-3.0**
KLMR				*e*			01 36 32.6		
KLMR					pmax	pmax			
	comp=Z,45nm,1.3s								
ARCES	**ARCESS Array B**	**64.44**	**340**	P		**P**	**01 36 01.5**	**+0.5**
	comp=Z,4.7nm,0.8s,baz=46,slow=6.9,SNR=11								
ARCES					LR	LR	02 08 19.9		
	comp=Z,249nm,18.7s,baz=37,slow=40								
GEYT	**Alibeck**	**64.46**	**299**	P		**P**	**01 36 01.7**	**0.0**
	comp=Z,13nm,0.7s,baz=29,slow=3.4,SNR=36								
GEYT					pP	**pP**	**01 36 11.2**	**+0.1**	
	comp=Z,12nm,0.8s,baz=33,slow=3.5,SNR=10								
GEYT					LR	LR	02 07 46.0		
	comp=Z,187nm,18.8s,baz=100,slow=39								
XMAS	**Kiritimati**	**65.35**	**107**	PFAKE			01 36 20.0	+12	
XMAS					LR	LR			
	comp=Z,2.0nm,21.0s								
DAG	**Danmarks Havn**	**66.08**	**355**	*i* P		**P**	**01 36 11.3**	**-0.2**
	comp=Z,12nm,1.1s								
DAG	**Danmarks Havn**	**66.08**	**355**	*i* P		**P**	**01 36 11.3**	**-0.2**
DAG					pmax	pmax			
	comp=Z,15nm,1.1s								
NLWA	**Neilton Lookou**	**66.47**	**48**	*e*P		**P**	**01 36 15.5**	**+1.0**
	comp=Z,64nm,1.0s								
AFI	**Afiamalu**	**66.53**	**130**	LR		LR	02 01 40.0		
	comp=Z,152nm,18.5s,baz=356,slow=33								
B05A	**Bryant**	**67.08**	**46**	P		**P**	**01 36 19.1**	**+0.8**
	baz=300								
JCW	**Jim Creek**	**67.21**	**46**	*e*P		**P**	**01 36 19.2**	**0.0**
B06A	**Marblemount**	**67.31**	**46**	*e*P		**P**	**01 36 20.8**	**+1.0**
	comp=Z,21nm,1.0s								
ARMA	**Armidale**	**67.43**	**171**	*e*P		**P**	**01 36 21.2**	**+0.5**
	comp=Z,26nm,1.3s								
D05A	**Enumclaw**	**67.68**	**47**	*e*P		**P**	**01 36 24.1**	**+2.0**
D05A				*e*pP		**pP**	**01 36 31.0**	**-0.7**
GSM	**Grass Mountain**	**67.79**	**47**	P		**P**	**01 36 24.4**	**+1.3**
GSM	**Grass Mountain**	**67.79**	**47**	P		**P**	**01 36 24.4**	**+1.3**
MOS	**Moscow**	**67.80**	**324**	*e*P		**P**	**01 36 21.0**	**-1.7**
MOS				*e*			01 36 55.0		
MOS					pmax	pmax			
	comp=Z,84nm,1.4s								
TDL	**Tradedollar La**	**67.97**	**48**	P		**P**	**01 36 25.4**	**+1.2**
LON	**Longmire**	**68.01**	**48**	*e*P		**P**	**01 36 25.8**	**+1.5**
LON					pmax	pmax			
	comp=Z,14nm,1.0s								
LON	**Longmire**	**68.01**	**48**	*e*P		**P**	**01 36 25.8**	**+1.5**
	comp=Z,14nm,1.0s								
F04A	**Amboy**	**68.06**	**49**	*e*P		**P**	**01 36 25.7**	**+1.1**
	comp=Z,61nm,0.9s								
VRH	**Novokhopyorsk**	**68.16**	**318**	*e*P		**P**	**01 36 24.4**	**-0.6**
VRH					pmax	pmax			
	comp=Z,70nm,1.5s								
STKA	**Stephens Creek**	**68.29**	**180**	P		**P**	**01 36 25.8**	**-0.1**
	comp=Z,7.7nm,0.8s,baz=343,slow=7.6,SNR=7.6								
STKA					LR	LR	02 04 48.5		
	comp=Z,84nm,21.8s,baz=20,slow=35								
LTY	**Liberty**	**68.42**	**47**	*e*P		**P**	**01 36 26.9**	**0.0**
	comp=Z,82nm,1.8s								
B08A	**Colville Reser**	**68.62**	**45**	*e*P		**P**	**01 36 28.6**	**+0.5**
	comp=Z,31nm,1.3s								
I03D	**Drain, OR**	**68.63**	**51**	P		**P**	**01 36 29.2**	**+1.0**
	baz=301					

comp=Z,81nm,1.1s
GOF Gofitskoye 70.69 312 ⇓*i* P **P 01 36 41.6 +0.7**
GOF pmax pmax
comp=Z,50nm,0.9s
WDC Whiskeytown Da 70.77 53 *e*P **P 01 36 42.7 +1.3**
WDC pmax pmax
comp=Z,20nm,1.0s
WDC Whiskeytown Da 70.77 53 *e*P **P 01 36 42.7 +1.3**
comp=Z,20nm,1.0s
SUMG Summit 70.95 0 *i* P **P 01 36 42.8 +0.4**
comp=Z,56nm,1.4s
SUMG Summit 70.95 0 *i* P **P 01 36 42.8 +0.4**
SUMG pmax pmax
comp=Z,56nm,1.4s
SUMG Summit 70.95 0 *e*P **P 01 36 42.6 +0.2**
comp=Z,45nm,1.3s
VSU Vasula 70.97 330 ⇓*i* P **P 01 36 42.9 +0.6**
VSU pmax pmax
comp=Z,68nm,1.1s
F10A Beach Ranch, E 71.11 46 *e*P **P 01 36 44.0 +0.4**
comp=Z,58nm,1.8s
NCK Nalchik 71.21 311 ⇓P **P 01 36 44.9 +0.8**
NCK pmax pmax
comp=Z,17nm,1.0s
GUDG Gudauri 71.22 309 P **P 01 36 45.9 +1.4**
GUDG Gudauri 71.22 309 P **P 01 36 45.9 +1.4**
WALA Waterton Lakes 71.25 42 *e*P **P 01 36 44.9 +0.6**
comp=Z,20nm,0.9s
O03D Paynes Creek 71.40 53 P **P 01 36 45.7 +0.4**
baz=303
ZEI Tsey 71.41 310 *e*P **P 01 36 44.5 -1.0**
ZEI pmax pmax
comp=Z,20nm,0.8s
BSMT Bassoo Peak 71.45 44 *e*P **P 01 36 46.7 +1.0**
TBLG Delisi 71.46 308 P **P 01 36 47.3 +1.7**
TBLG Delisi 71.46 308 P **P 01 36 47.3 +1.7**
MOD Modoc Plateau 71.48 51 *e*P **P 01 36 46.8 +0.9**
comp=Z,21nm,1.0s
KBZ Khabaz 71.50 311 P **P 01 36 46.5 +0.7**
comp=Z,25nm,0.9s,baz=33,slow=2.4,SNR=30
KBZ LR LR 02 09 25.0
comp=Z,212nm,18.0s,baz=47,slow=37
KIV Kislovodsk 71.51 311 *i* P **P 01 36 46.8 +0.8**
SNR=18
KIV Kislovodsk 71.51 311 *d i*P **P 01 36 47.3 +1.3**
KIV *i* 01 36 56.7
KIV *e* 01 37 03.9
KIV pmax pmax
comp=Z,73nm,1.0s
KIV MLR MLR
comp=Z,391nm,16.0s
KIV Kislovodsk 71.51 311 *e*P **P 01 36 47.1 +1.1**
comp=Z,68nm,0.9s
KIV LR LR
comp=Z,244nm,19.0s
KIV Kislovodsk 71.51 311 P **P 01 36 46.9 +1.0**
SNR=9.3
KIV Kislovodsk 71.51 311 P **P 01 36 46.9 +1.0**
SNR=9.3
BLMT Blacktail Moun 71.60 43 *e*P **P 01 36 47.8 +1.3**
BMO Blue Mountains 71.69 47 *e*P **P 01 36 47.6 +0.6**
BMO pmax pmax
comp=Z,36nm,1.0s
BMO MLR MLR
comp=Z,286nm,20.0s
BMO Blue Mountains 71.69 47 *e*P **P 01 36 47.6 +0.6**
comp=Z,36nm,1.0s
BMO LR LR
comp=Z,286nm,20.0s
ONI Oni 71.79 310 P **P 01 36 47.8 +0.2**
ONI Oni 71.79 310 P **P 01 36 47.8 +0.2**
JTMT Jette 71.79 44 *e*P **P 01 36 48.4 +0.7**
NEY Neytrino 71.88 311 ⇓*e*P **P 01 36 49.9 +1.6**
NEY pmax pmax
comp=Z,4.0nm,1.1s
YBMT Yellow Bay 71.88 43 *e*P **P 01 36 48.8 +0.6**
ORV Oroville 72.00 54 *e*P **P 01 36 49.5 +0.7**
ORV *e**PP **pP 01 36 59.0 +0.6**
ORV Oroville 72.00 54 *e*P **P 01 36 49.5 +0.7**
ORV *ep*P **pP 01 36 59.0 +0.6**
SMDO Samad 72.03 286 P **P 01 36 49.8 +0.3**
SNR=8.7
SMDO Samad 72.03 286 P **P 01 36 49.8 +0.3**
SNR=8.7
SWMT Swartz Lake 72.08 44 *e*P **P 01 36 49.9 +0.5**
WVOR Wild Horse Val 72.23 50 *e*P **P 01 36 51.2 +0.9**
WVOR pmax pmax
comp=Z,24nm,1.1s
WVOR Wild Horse Val 72.23 50 *e*P **P 01 36 51.2 +0.9**
comp=Z,24nm,1.1s
GNI Garni 72.32 307 P **P 01 36 51.3 +0.3**
comp=Z,6.5nm,0.8s,baz=72,slow=4.9,SNR=3.7
GNI Garni 72.32 307 ⇓*i* P **P 01 36 52.7 +1.7**
GNI pmax pmax
comp=Z,46nm,1.1s
GNI Garni 72.32 307 *e*P **P 01 36 50.4 -0.6**
comp=Z,74nm,0.7s
GNI LR LR
comp=Z,380nm,19.0s
AKH Akhalkalaki 72.42 309 ⇓*i* P **P 01 36 52.6 +1.0**
SCO Scoresbysund 72.43 354 *i* P **P 01 36 51.1 +0.2**
comp=Z,7.1nm,1.0s
SCO Scoresbysund 72.43 354 *i* P **P 01 36 51.1 +0.2**
SCO pmax pmax
comp=Z,7.0nm,1.0s
UOSS Minazif 72.43 288 *e*P **P 01 36 52.3 +0.6**
comp=Z,2.5nm,0.8s
MSO Missoula 72.51 44 P **P 01 36 52.1 +0.2**
baz=305
MSO Missoula 72.51 44 *e*P **P 01 36 52.5 +0.5**
comp=Z,29nm,1.0s
HATD Hatta, Dubai 72.55 288 *i* P **P 01 36 53.0 +0.6**
SNR=19
CHVG Ch'k'valeri 72.56 310 P **P 01 36 53.0 +0.8**
CHVG Ch'k'valeri 72.56 310 P **P 01 36 53.0 +0.8**
AFDM Forest Hills D 72.67 54 *e*P **P 01 36 54.0 +1.1**
comp=Z,11nm,1.0s
ASHO Ashiyiah 72.68 288 *i* P **P 01 36 53.7 +0.5**
SNR=16
CHMT Chamberlain Mo 72.84 44 *e*P **P 01 36 54.4 +0.3**
IZAR Zarasai 72.93 328 *e*P **P 01 36 54.7 +0.6**
IZAR IAmb IAmb 01 37 09.9
comp=Z,10nm,0.9s
FAQ Al Faqa, Dubai 73.01 288 *i* P **P 01 36 55.3 +0.2**
SNR=9.2
IDID Didziasalis 73.01 327 *e*P **P 01 36 55.1 +0.6**
IDID IAmb IAmb 01 37 05.7
comp=Z,11nm,0.8s
ARQ Araqi 73.06 287 P **P 01 36 55.4 -0.1**
SNR=13
ARQ Araqi 73.06 287 P **P 01 36 55.4 -0.1**
SNR=13
ISAL Salakas 73.10 328 *e*P **P 01 36 55.7 +0.6**
ISAL IAmb IAmb 01 37 06.3
comp=Z,28nm,1.1s
IIGN Ignalina 73.21 328 *e*P **P 01 36 56.3 +0.6**
IIGN IAmb IAmb 01 37 07.0
comp=Z,12nm,0.7s
NACGM Naroch 73.26 327 *e* **P 01 36 56.0 0.0**
ASUD Al Ashush, Dub 73.27 288 *i* P **P 01 36 57.1 +0.5**
SNR=6.7
MFID Camas Ranch 73.38 48 *e*P **P 01 36 57.9 +0.7**
comp=Z,30nm,1.0s
CMB Columbia Colle 73.56 55 *e*P **P 01 36 59.0 +0.8**
CMB pmax pmax
comp=Z,27nm,1.1s
CMB Columbia Colle 73.56 55 *e*P **P 01 36 59.0 +0.8**
comp=Z,27nm,1.1s
FFC Flin Flon 73.62 33 *e*P **P 01 36 58.4 +0.2**
FFC pmax pmax
comp=Z,35nm,1.0s
FFC Flin Flon 73.62 33 *e*P **P 01 36 58.4 +0.2**
comp=Z,35nm,1.0s
WAKR Walker 73.91 54 *e*P **P 01 37 01.6 +1.1**
LRM Limekiln Ridge 73.94 45 *e*P **P 01 37 01.2 +0.6**
FCC Fort Churchill 73.98 27 *e*P **P 01 37 00.1 -0.1**
FCC pmax pmax
comp=Z,48nm,1.3s
FCC Fort Churchill 73.98 27 *e*P **P 01 37 00.1 -0.1**
comp=Z,48nm,1.3s
EGMT Eagleton 74.09 42 P **P 01 37 01.5 +0.3**
baz=308
EGMT Eagleton 74.09 42 *e*P **P 01 37 01.6 +0.4**
comp=Z,42nm,1.1s
DLMT Dillon 74.13 45 *e*P **P 01 37 02.8 +1.2**
comp=Z,52nm,0.9s
HLID Hailey 74.13 47 P **P 01 37 02.1 +0.5**
baz=306
HLID Hailey 74.13 47 *e*P **P 01 37 02.5 +0.9**
comp=Z,26nm,1.0s
BMN Battle Mountai 74.23 51 *e*P **P 01 37 03.4 +1.1**
BMN pmax pmax
comp=Z,31nm,1.1s
BMN Battle Mountai 74.23 51 *e*P **P 01 37 03.4 +1.1**
comp=Z,31nm,1.1s
LCCM Lewis and Clar 74.25 44 P **P 01 37 02.9 +0.6**
MCMT McKenzie Canyo 74.30 46 *e*P **P 01 37 02.9 +0.2**
NC405 NORSAR Array S 74.44 337 *e*P **P 01 37 03.6 +0.7**
NC405 *ep*P **pP 01 37 13.8 +1.4**
BOZ Bozeman (W) 74.50 44 P **P 01 37 04.4 +0.7**
baz=307
BOZ Bozeman (W) 74.50 44 *e*P **P 01 37 03.8 +0.1**
BOZ pmax pmax
comp=Z,49nm,1.0s
BOZ Bozeman (W) 74.50 44 *e*P **P 01 37 03.8 +0.1**
comp=Z,49nm,1.0s
HFS Hagfors 74.56 336 P **P 01 37 03.9 +0.3**
comp=Z,13nm,0.8s,baz=58,slow=5.8,SNR=14
NC204 NORSAR Array S 74.60 338 *e*P **P 01 37 04.7 +0.8**
NB201 NORSAR Array S 74.62 338 *e*P **P 01 37 04.7 +0.8**
NB2 NORSAR Subarra 74.65 338 P **P 01 37 04.3 +0.2**
comp=Z,16nm,0.8s,baz=39,slow=6.2
NB2 NORSAR Subarra 74.65 338 P **P 01 37 04.3 +0.2**
baz=39,slow=6.2
NOA NORSAR Array B 74.65 338 P **P 01 37 04.4 +0.2**
comp=Z,11nm,0.8s,baz=39,slow=5.8,SNR=22
NOA *ep* **pP 01 37 14.1 +0.4**
comp=Z,0.9nm,0.8s,baz=325,slow=16,SNR=1.8
NOA LR LR 02 12 16.7
comp=Z,360nm,21.4s,baz=30,slow=38
NV01 Mina Array Sit 74.69 53 *e*P **P 01 37 05.8 +0.8**
NVAR Mina Array Bea 74.69 53 P **P 01 37 05.9 +0.9**
comp=Z,14nm,0.9s,baz=283,slow=6.3,SNR=67
NVAR *ep* **pP 01 37 15.8 +1.2**
comp=Z,19nm,0.9s,baz=284,slow=6.3,SNR=25
NVAR LR LR 02 01 44.7
comp=Z,104nm,21.3s,baz=294,slow=29
NV11 Mina Array Sit 74.78 53 *e*P **P 01 37 06.2 +0.8**
comp=Z,30nm,1.3s
AKASG Malin Array Be 74.85 323 P **P 01 37 05.5 0.0**
comp=Z,12nm,0.7s,baz=44,slow=5.9,SNR=60
AKASG *ep* **pP 01 37 14.8 -0.2**
comp=Z,12nm,0.7s,baz=43,slow=5.9,SNR=9.4
AKASG LR LR 02 14 40.6
comp=Z,180nm,19.4s,baz=55,slow=39
AKBB Malin Array Si 74.85 323 *e*P **P 01 37 05.4 0.0**
AKBB Malin Array Si 74.85 323 *e*P **P 01 37 05.4 0.0**
KIEV Kiev 74.86 323 ⇓*i* P **P 01 37 05.9 +0.4**
KIEV pmax pmax
comp=Z,20nm,0.9s
KIEV Kiev 74.86 323 *e*P **P 01 37 05.2 -0.3**
comp=Z,20nm,0.7s
KIEV LR LR
comp=Z,847nm,19.0s
AK11 Malin Array Si 74.89 323 *e*P **P 01 37 05.6 -0.1**
QLMT Earthquake Lak 75.11 45 *e*P **P 01 37 08.2 +0.9**
ELK Elko 75.28 50 *e*P **P 01 37 09.5 +1.1**
ELK pmax pmax
comp=Z,18nm,1.1s
ELK Elko 75.28 50 *e*P **P 01 37 09.5 +1.1**
comp=Z,18nm,1.1s
SUW Suwalki 75.42 328 *e*P **P 01 37 08.5 -0.1**
SUW Suwalki 75.42 328 *e*P **P 01 37 08.5 -0.1**
YMR Madison River 75.47 45 *e*P **P 01 37 11.0 +1.5**
GCMT Greycliff 75.51 43 *e*P **P 01 37 10.4 +0.9**
YPM Purple Mountai 75.53 45 *e*P **P 01 37 11.0 +1.1**
YNR Norris Junctio 75.60 45 *e*P **P 01 37 12.3 +2.1**
comp=Z,48nm,1.4s
YFT Old Faithful 75.67 45 *e*P **P 01 37 13.4 +2.8**
comp=Z,29nm,0.9s
PKM Mcpherson Peak 75.71 57 P **P 01 37 11.9 +1.0**
baz=305
LKWY Lake 75.85 45 *e*P **P 01 37 13.5 +1.8**
LKWY pmax pmax
comp=Z,45nm,1.1s
LKWY MLR MLR
comp=Z,272nm,20.0s
LKWY Lake 75.85 45 *e*P **P 01 37 13.5 +1.8**
comp=Z,45nm,1.1s
LKWY LR LR
comp=Z,272nm,20.0s
SIM Simferopol' 75.91 316 *e*P **P 01 37 12.1 +0.4**
SIM pmax pmax
comp=Z,39nm,0.7s
YTP The Promontory 76.02 45 *e*P **P 01 37 14.7 +2.0**
FXWY Fox Creek 76.06 46 *e*P **P 01 37 13.4 +0.5**
comp=Z,30nm,1.0s
SFJD Kangerlussuaq 76.10 5 P **P 01 37 13.3 +1.1**
comp=Z,7.3nm,0.8s,baz=2,6,slow=1.1,SNR=3.8
SFJD Kangerlussuaq 76.10 5 *i* P **P 01 37 12.6 +0.3**
comp=Z,11nm,0.9s
GRAC Grapevine Rang 76.12 54 P **P 01 37 14.1 +1.1**
baz=306
RLMT Red Lodge 76.14 44 P **P 01 37 14.2 +1.0**
baz=308
RLMT Red Lodge 76.14 44 *e*P **P 01 37 14.2 +1.0**
comp=Z,40nm,1.3s
MOOW Moose Ponds 76.16 46 *e*P **P 01 37 14.6 +1.2**
comp=Z,34nm,1.1s
HVU Hansel Valley 76.16 48 *e*P **P 01 37 14.8 +1.5**
HVU pmax pmax
comp=Z,25nm,1.0s
HVU Hansel Valley 76.16 48 *e*P **P 01 37 14.8 +1.5**
comp=Z,24nm,1.0s
ARVC Arvin 76.24 56 P **P 01 37 14.1 +0.5**
baz=305
LOHW Long Hollow 76.32 46 *e*P **P 01 37 15.5 +1.2**
comp=Z,26nm,1.1s
SNOW Snow King Moun 76.32 46 *e*P **P 01 37 14.7 +0.3**
comp=Z,29nm,0.9s
REDW Red Top Meadow 76.33 46 *e*P **P 01 37 15.8 +1.5**
comp=Z,46nm,1.1s
DAC Darwin (Calif) 76.39 55 *e*P **P 01 37 15.2 +0.4**
DAC pmax pmax
comp=Z,22nm,1.1s
DAC Darwin (Calif) 76.39 55 *e*P **P 01 37 15.2 +0.4**
comp=Z,22nm,1.1s
R11A Troy Canyon, C 76.47 52 P **P 01 37 15.9 +0.7**
baz=306
R11A Troy Canyon, C 76.47 52 *e*P **P 01 37 15.9 +0.7**
comp=Z,39nm,1.1s
BGU Big Grassy Mou 76.52 49 *e*P **P 01 37 16.8 +1.4**
comp=Z,19nm,1.1s
AHID Auburn Hatcher 76.55 46 *e*P **P 01 37 15.8 +0.2**
comp=Z,32nm,1.1s
MPMC Manual Prospec 76.59 55 P **P 01 37 16.3 +0.4**
baz=306
DGMT Dagmar 76.69 39 P **P 01 37 16.3 +0.2**
baz=311
DGMT Dagmar 76.69 39 *e*P **P 01 37 16.5 +0.5**
comp=Z,52nm,1.1s
FURC Furnace Creek, 76.76 54 P **P 01 37 17.2 +0.7**
baz=306
LAO LASA Array 76.80 41 P **P 01 37 17.6 +0.8**
baz=310
LAO LASA Array 76.80 41 *e*P **P 01 37 18.0 +1.2**
TPNV Topopah Spring 76.87 54 P **P 01 37 18.1 +0.7**
baz=306
TPNV Topopah Spring 76.87 54 *e*P **P 01 37 18.2 +0.7**
TPNV pmax pmax
comp=Z,51nm,1.2s
TPNV Topopah Spring 76.87 54 *e*P **P 01 37 18.2 +0.7**
comp=Z,51nm,1.2s
A25A Svangstu Ranch 76.92 38 P **P 01 37 17.6 +0.3**
baz=312
EDW2 Edwards Air Fo 76.94 56 P **P 01 37 18.3 +0.6**
baz=306
HWUT Hardware Ranch 76.99 48 *e*P **P 01 37 19.1 +1.1**
comp=Z,54nm,1.1s
DUG Dugway, Tooele 77.10 49 P **P 01 37 19.7 +1.0**
baz=307
DUG Dugway, Tooele 77.10 49 *e*P **P 01 37 19.6 +1.0**
DUG pmax pmax
comp=Z,48nm,1.0s
DUG Dugway, Tooele 77.10 49 *e*P **P 01 37 19.6 +1.0**
comp=Z,48nm,1.0s
MWC Mount Wilson 77.28 57 *e*P **P 01 37 19.8 0.0**
MWC *e**PP **pP 01 37 30.0 +0.6**
MWC Mount Wilson 77.28 57 *e*P **P 01 37 19.8 0.0**
MWC *ep*P **pP 01 37 30.0 +0.6**
B25A Knox Farm, Ray 77.34 38 P **P 01 37 20.3 +0.6**
baz=312
TCUT Toone Canyon 77.38 48 *e*P **P 01 37 21.8 +1.4**
comp=Z,58nm,1.0s
CTU Camp Tracy 77.44 48 *e*P **P 01 37 21.6 +1.0**
comp=Z,24nm,0.9s
SFNV Sufian 77.44 306 *e*P **P 01 37 21.1 +0.6**
BW06 Boulder Array 77.44 46 *e*P **P 01 37 20.8 +0.1**
PD31 Pinedale Array 77.44 46 *e*P **P 01 37 20.4 -0.3**
PDAR Pinedale Array 77.44 46 P **P 01 37 20.9 +0.2**
comp=Z,6.6nm,0.7s,baz=269,slow=2.5,SNR=68
PDAR pP **pP 01 37 30.4 +0.1**
comp=Z,12nm,0.8s,baz=268,slow=2.7,SNR=25
KIS Kishinev 77.46 320 *e*P **P 01 37 20.0 -0.3**
KIS LRM MLR 02 14 26.0
comp=Z,1μm,16.0s
KIS Kishinev 77.46 320 *e*P **P 01 37 20.0 -0.3**
KIS *e* 01 37 30.0
KIS MLR MLR
comp=N,700nm,16.0s
KIS MLR MLR
comp=Z,1μm,16.0s
KIS MLR MLR
comp=Z,1μm,16.0s
A26A Wade Farm, Ken 77.47 37 P **P 01 37 20.7 +0.3**
baz=312
GSC Goldstone, Bar 77.48 55 P **P 01 37 21.1 +0.3**
baz=306
GSC Goldstone, Bar 77.48 55 *e*P **P 01 37 21.6 +0.8**
GSC pmax pmax
comp=Z,19nm,1.1s
GSC Goldstone, Bar 77.48 55 *e*P **P 01 37 21.6 +0.8**
comp=Z,19nm,1.1s
BFSC Mount Baldy Ra 77.54 57 P **P 01 37 21.6 +0.5**
baz=306
JLU Jordanelle 77.67 48 *e*P **P 01 37 23.3 +1.3**
comp=Z,32nm,1.0s
NLU North Lily Min 77.69 49 *e*P **P 01 37 23.1 +1.0**
comp=Z,30nm,1.0s
MPU Maple Canyon 77.92 49 *e*P **P 01 37 24.4 +1.1**
comp=Z,44nm,1.0s
LVV L'vov 77.93 324 *e*P **P 01 37 22.9 0.0**
LVV *e* 01 40 16.7
LVV MLR MLR
comp=Z,600nm,16.0s
BEL Belsk 77.98 327 *e*P **P 01 37 24.2 +1.1**
BEL Belsk 77.98 327 *e*P **P 01 37 24.2 +1.1**
TUQ Turquoise Moun 77.98 55 P **P 01 37 24.1 +0.5**
baz=307
D25A Fairfield 78.00 39 P **P 01 37 24.0 +0.5**
baz=312
HEC Hector,Ludlow 78.07 55 P **P 01 37 24.6 +0.5**
baz=307
LEOM Leova 78.10 320 ⇑*i* P **P 01 37 24.3 +0.4**
LEVU Levan 78.12 49 *e*P **P 01 37 25.6 +1.1**
C26A Wahner Farm, P 78.17 38 P **P 01 37 24.9 +0.6**
baz=312
MURC Murrieta 78.22 57 P **P 01 37 25.3 +0.4**
baz=306
A28A Rude Farm, Bot 78.32 37 P **P 01 37 25.7 +0.5**
baz=314
E25A Miller Ranch, 78.39 40 P **P 01 37 26.2 +0.5**
baz=312
KSRV Kasrt alli 78.49 306 *e*P **P 01 37 26.9 +0.6**
MSU Marysvale 78.51 50 *e*P **P 01 37 28.1 +1.4**
MSU Marysvale 78.51 50 *e*P **P 01 37 28.1 +1.4**
C27A Sayler Ranch, 78.54 38 P **P 01 37 27.0 +0.6**
baz=313
GMRC Granite Mounta 78.54 55 P **P 01 37 27.2 +0.5**
baz=307
B28A Dugan Ranch, T 78.59 37 P **P 01 37 27.0 +0.4**
baz=314
TMUT Tail Mountain 78.62 49 *e*P **P 01 37 28.6 +1.2**
comp=Z,20nm,0.6s
KWP Kalwaria Pacla 78.67 325 *e*P **P 01 37 28.3 +1.2**
KWP Kalwaria Pacla 78.67 325 *e*P **P 01 37 28.3 +1.2**
GIRR Girov 78.68 321 ⇑*i* P **P 01 37 27.9 +0.8**
PFO Pinyon Flats O 78.71 57 *e*P **P 01 37 28.4 +0.7**
PFO *e**PP **pP 01 37 37.9 +0.6**
PFO Pinyon Flats O 78.71 57 *e*P **P 01 37 28.4 +0.7**
PFO *ep*P **pP 01 37 37.9 +0.6**
F25A Bowman 78.75 40 P **P 01 37 27.8 +0.2**
baz=312
LCMT Little Creek M 78.76 52 *e*P **P 01 37 29.1 +1.2**
comp=Z,44nm,1.0s
BELC Belle Mtn. Jos 78.79 56 P **P 01 37 28.1 0.0**
baz=307
MTPU Mount Pierson 78.80 51 *e*P **P 01 37 30.3 +1.9**
comp=Z,41nm,1.0s
P17A Butcher Ranch, 78.80 49 *e*P **P 01 37 29.6 +1.5**
comp=Z,88nm,1.0s
A29A Manning Farm, 78.81 36 P **P 01 37 28.1 +0.3**
baz=314
BUR08 Bucovina Ar. S 78.86 322 *e*P **P 01 37 29.0 +0.8**
BURAR Bucovina Array 78.87 322 ⇑*i* P **P 01 37 29.2 +0.9**
E26A Carlson Angus 78.90 40 P **P 01 37 28.6 +0.2**
baz=312
TESR Tescani 78.90 321 ⇓*i* P **P 01 37 28.9 +0.6**
P18A Preston Nutter 79.00 49 *e*P **P 01 37 30.5 +1.1**
comp=Z,68nm,1.4s
CFR Carcaliu 79.02 319 ⇓*i* P **P 01 37 29.6 +0.6**
B29A Wagenman Farm, 79.07 37 P **P 01 37 29.6 +0.3**
baz=314
PKCU Pink Cliffs 79.08 51 *e*P **P 01 37 34.6 +4.7**
comp=Z,28nm,1.1s
SRU San Rafael Swe 79.16 49 *e*P **P 01 37 31.1 +1.0**
SRU pmax pmax
comp=Z,70nm,0.9s
SRU San Rafael Swe 79.16 49 *e*P **P 01 37 31.1 +1.0**
comp=Z,70nm,0.9s
MONP2 Monument Peak 79.16 57 P **P 01 37 30.5 +0.2**
baz=307
ODBI Odobesti 79.19 320 ⇑*i* P **P 01 37 32.0 +2.1**
A30A Hoffart Farm, 79.23 36 P **P 01 37 30.2 +0.1**
baz=315
K22A Casper 79.24 44 P **P 01 37 30.5 0.0**
baz=311
K22A Casper 79.24 44 *e*P **P 01 37 31.2 +0.7**
comp=Z,49nm,1.2s
IRM Iron Mountain 79.26 55 P **P 01 37 30.9 +0.3**
baz=307
VRI Vrincioaia 79.30 320 ⇑*i* P **P 01 37 31.3 +0.8**
BC3 Big Chuckawall 79.36 56 P **P 01 37 31.9 +0.7**
baz=307
KOLS Kolonicke sedl 79.37 324 *e*P **P 01 37 31.4 +0.5**
KOLS *e* 01 37 41.3
KOLS pmax pmax
comp=Z,19nm,1.2s
KOLS Kolonicke sedl 79.37 324 *e*P **P 01 37 31.4 +0.5**
KOLS *e* 01 37 41.3
MDND Maddock 79.38 37 P **P 01 37 31.1 +0.1**
baz=314
MDND Maddock 79.38 37 *e*P **P 01 37 31.5 +0.6**
comp=Z,87nm,1.3s
E27A Carson 79.38 39 P **P 01 37 31.4 +0.3**
baz=313
ULM Lac du Bonnet 79.41 34 P **P 01 37 31.0 0.0**
comp=Z,8.0nm,1.0s,baz=314,slow=6.0,SNR=11
ULM pP **pP 01 37 40.5 -0.2**
comp=Z,14nm,1.1s,baz=304,slow=6.5,SNR=9.2
ULM Lac du Bonnet 79.41 34 *e*P **P 01 37 31.0 0.0**
comp=Z,19nm,1.1s
ULM pP **pP 01 37 40.5 -0.2**
BR131 Keskin Array S 79.45 312 *e*P **P 01 37 32.5 +0.8**
BRTR Keskin Array B 79.45 312 P **P 01 37 32.2 +0.5**
comp=Z,12nm,1.0s,baz=106,slow=4.4,SNR=30
BRTR pP **pP 01 37 42.0 +0.6**
comp=Z,7.8nm,1.0s,baz=108,slow=4.0,SNR=5.9
BRTR LR LR 02 19 02.7
comp=Z,140nm,18.0s,baz=40,slow=40
GRER 79.50 320 ⇓*i* P **P 01 37 34.1 +2.5**
STHS Stebnicka Huta 79.50 325 *e*P **P 01 37 33.5 +1.9**
STHS pmax pmax
comp=Z,16nm,1.1s
STHS Stebnicka Huta 79.50 325 *e*P **P 01 37 33.5 +1.9**
W13A Hualapai Mount 79.51 54 *e*P **P 01 37 32.8 +0.6**
F27A Lemmon 79.53 40 P **P 01 37 31.8 0.0**
baz=313
H25A Fruitdale 79.54 41 P **P 01 37 31.9 -0.1**
baz=312
RAR Rarotonga 79.54 126 LR LR 02 08 35.5
comp=Z,341nm,19.0s,baz=286,slow=32
B30A Myrvik Farm, E 79.56 36 P **P 01 37 32.2 +0.2**
baz=315
UZH Uzhgorod 79.57 324 *e*P **P 01 37 32.0 +0.1**
UZH *e* 01 37 37.7
UZH *e* 01 40 36.3
UZH *e*PPP PPP 01 42 31.3
UZH *e*S **S 01 47 28.7 -2.8**

UZH MLR MLR
comp=N,2µm,13.0s
UZH MLR MLR
comp=E,2µm,13.0s
UZH MLR MLR
comp=Z,1µm,13.0s
OJC Ojcow 79.57 326 *e*P **P** 01 37 33.1 +1.1
OJC Ojcow 79.57 326 *e*P **P** 01 37 33.2 +1.2
OJC Ojcow 79.57 326 *e*P **P** 01 37 31.9 -0.1
comp=Z,49nm,1.0s
G26A Maurine 79.62 40 P **P** 01 37 32.3 -0.1
baz=313
RSSD Black Hills 79.64 42 P **P** 01 37 32.6 -0.1
baz=312
RSSD Black Hills 79.64 42 *e*P **P** 01 37 33.0 +0.3
RSSD pmax pmax
comp=Z,22nm,0.9s
RSSD Black Hills 79.64 42 *e*P **P** 01 37 33.0 +0.3
comp=Z,22nm,0.9s
ARCR ARCALIA 79.66 322⇑*i*P **P** 01 37 34.1 +1.6
BMR Baia Mare 79.67 323⇑*i*P **P** 01 37 33.7 +1.2
U15A North Rim 79.72 52 *e*P **P** 01 37 34.5 +1.2
CRVS Cervenica-Dubn 79.77 325 *e*P **P** 01 37 34.2 +1.2
CRVS Cervenica-Dubn 79.77 325 *e*P **P** 01 37 34.2 +1.2
PDMCI Parker Dam,Lak 79.83 55 P **P** 01 37 33.7 0.0
baz=308
ANTO Ankara 79.86 312 *e*P **P** 01 37 34.7 +0.9
ANTO pmax pmax
comp=Z,35nm,1.1s
ANTO MLR MLR
comp=Z,72nm,22.0s
ANTO Ankara 79.86 312 *e*P **P** 01 37 34.7 +0.9
comp=Z,35nm,1.1s
ANTO LR LR
comp=Z,72nm,22.0s
O20A White River Ci 79.87 47 P **P** 01 37 34.3 +0.3
baz=310
O20A White River Ci 79.87 47 *e*P **P** 01 37 34.5 +0.5
comp=Z,39nm,0.9s
I25A Rochford 79.88 42 P **P** 01 37 33.8 -0.1
baz=312
BR231 Keskin MP Arra 79.89 312 *e*P **P** 01 37 35.2 +1.1
ISR Istrita 79.90 320⇓*i*P **P** 01 37 35.5 +1.6
B31A Greenbush Farm 79.90 36 P **P** 01 37 33.8 0.0
baz=315
G27A Dupree 79.91 40 P **P** 01 37 34.0 +0.1
baz=313
MSAB Monastry St. A 79.91 318⇑*i*P **P** 01 37 34.8 +0.9
DOPR Dopca 79.91 321⇓*i*P **P** 01 37 35.5 +1.6
Y12C Blythe 79.92 55 P **P** 01 37 34.8 +0.7
baz=308
Y12C Blythe 79.92 55 *e*P **P** 01 37 35.2 +1.1
Y12C *ep*P **pP** 01 37 44.6 +0.8
D29A Pettibone, Tap 79.93 38 P **P** 01 37 34.4 +0.4
baz=314
NIE Niedzica 79.93 326 *e*P **P** 01 37 35.4 +1.5
NIE Niedzica 79.93 326 *e*P **P** 01 37 35.5 +1.5
MLR Muntele Rosu 79.95 320 P **P** 01 37 35.4 +1.2
comp=Z,0.6nm,0.4s,baz=118,slow=1.1,SNR=6.9
MLR Muntele Rosu 79.95 320⇑*i*P **P** 01 37 36.1 +1.8
H26A Fairpoint 79.98 41 P **P** 01 37 34.5 +0.1
baz=312
C30A Mose, Pekin 80.02 37 P **P** 01 37 34.2 -0.2
baz=315
A32A Rocking H Ranc 80.09 35 P **P** 01 37 34.3 -0.4
baz=316
GLA Glamis 80.14 56 P **P** 01 37 36.0 +0.6
baz=308
GLA Glamis 80.14 56 *e*P **P** 01 37 36.6 +1.2
GLA pmax pmax
comp=Z,43nm,1.2s
GLA Glamis 80.14 56 *e*P **P** 01 37 36.6 +1.2
comp=Z,43nm,1.2s
F28A McLaughlin 80.17 39 P **P** 01 37 35.4 +0.1
baz=314
SECR 80.20 320⇑*i*P **P** 01 37 35.9 +0.4
E29A Napoleon 80.25 38 P **P** 01 37 35.6 -0.1
baz=314
J25A Sunshine Ranch 80.26 42 P **P** 01 37 35.7 -0.3
baz=312
CJR Cluj-Napoca 80.29 322⇑*i*P **P** 01 37 37.5 +1.5
D30A Buchanan 80.30 37 P **P** 01 37 35.6 -0.4
baz=315
KFRA Kufra 80.31 307 *e*P **P** 01 37 36.4 +0.2
C31A Landman Farms, 80.31 36 P **P** 01 37 35.8 -0.2
baz=315
I26A New Underwood 80.33 42 P **P** 01 37 36.4 +0.1
baz=313
H27A Howes 80.34 41 P **P** 01 37 36.4 +0.2
baz=313
WRDH Warideh 80.37 307 *e*P **P** 01 37 35.0 -1.6
PV09 Paradox Valley 80.38 49 *e*P **P** 01 37 38.0 +1.0
B32A Ashes, Strandq 80.44 35 P **P** 01 37 36.3 -0.4
baz=316
VOIR 80.45 321⇑*i*P **P** 01 37 38.2 +1.3
LANS Liptovska Anna 80.50 326 *e*P **P** 01 37 39.2 +2.2
LANS Liptovska Anna 80.50 326 *e*P **P** 01 37 39.2 +2.2
PV10 Paradox Valley 80.52 49 *e*P **P** 01 37 37.3 -0.3
KECS Kecovo 80.52 325 *e*P **P** 01 37 38.5 +1.4
KECS pmax pmax
comp=Z,5.0nm,1.0s
KECS Kecovo 80.52 325 *e*P **P** 01 37 38.5 +1.4
A33A Warroad 80.58 34 P **P** 01 37 36.9 -0.5
baz=317
OKC Ostrava-Krasne 80.58 327⇑*i*P **P** 01 37 38.0 +0.6
OKC *es*P **pP** 01 37 48.0 +1.0
OKC Ostrava-Krasne 80.58 327⇑*i*P **P** 01 37 38.0 +0.6
OKC *e* 01 37 48.0
KSP Ksiaz 80.62 329 *e*P **P** 01 37 38.9 +1.3
KSP Ksiaz 80.62 329 *e*P **P** 01 37 38.9 +1.3
G28A Parade 80.64 40 P **P** 01 37 37.9 +0.1
baz=314
E30A Jud 80.66 38 P **P** 01 37 37.9 0.0
baz=315
F29A Eureka 80.67 39 P **P** 01 37 37.9 -0.1
baz=314
DRGR 80.67 323⇑*i*P **P** 01 37 38.8 +0.8
PV05 Paradox Valley 80.67 49 *e*P **P** 01 37 39.5 +1.0
J26A Sides Ranch, S 80.70 42 P **P** 01 37 38.4 +0.1
baz=312
ARR Arges 80.71 321⇑*i*P **P** 01 37 39.8 +1.5
N23A Red Feather La 80.72 45 P **P** 01 37 39.5 +0.8
baz=311
N23A Red Feather La 80.72 45 *e*P **P** 01 37 39.6 +1.0
comp=Z,54nm,1.0s
PHWY Pilot Hill 80.72 45 *e*P **P** 01 37 39.4 +0.7
comp=Z,40nm,1.6s
I27A Quinn 80.74 41 P **P** 01 37 38.7 +0.2
baz=313
AGMN Agassiz Nation 80.83 35 P **P** 01 37 38.2 -0.6
baz=316
AGMN Agassiz Nation 80.83 35 *e*P **P** 01 37 38.1 -0.6
comp=Z,15nm,0.9s
D31A Mcclaflin, Tow 80.85 37 P **P** 01 37 38.6 -0.3
baz=315
H28A Mission Ridge 80.86 40 P **P** 01 37 39.4 +0.4
baz=314
WUAZ Wupatki 80.87 52 P **P** 01 37 40.2 +0.8
baz=309
WUAZ Wupatki 80.87 52 *e*P **P** 01 37 40.9 +1.4
comp=Z,51nm,1.0s
MORC Moravsky Berou 80.89 327 *e*P **P** 01 37 39.8 +0.7
MORC pmax pmax
comp=Z,131nm,1.1s
MORC Moravsky Berou 80.89 327 *e*P **P** 01 37 39.8 +0.7
comp=Z,131nm,1.1s
PV01 Paradox Valley 80.96 49 *e*P **P** 01 37 40.1 +0.1
B33A Robert and Kas 80.97 35 P **P** 01 37 38.9 -0.6
baz=317
DPC Dobruska-Polom 80.98 328⇑*i*P **P** 01 37 40.5 +0.9
DPC *es*P **sP** 01 37 51.2 -1.6
DPC AMS AMS 02 17 50.0
comp=Z,900nm,16.6s
DPC Dobruska-Polom 80.98 328⇑*i*P **P** 01 37 40.5 +0.9
DPC *e* 01 37 51.2
DPC MLR MLR
comp=Z,900nm,16.6s
HAWK Haweek 80.99 306 *e*P **P** 01 37 40.5 +0.5
KRLC Kraliky 80.99 328⇑*e*P **P** 01 37 40.3 +0.6
KRLC Kraliky 80.99 328 *e*P **P** 01 37 40.3 +0.6
UPC Upice 80.99 329⇑*e*P **P** 01 37 40.4 +0.8
UPC *es*P **pP** 01 37 49.8 +0.6
UPC AMS AMS 02 18 00.0
comp=Z,700nm,15.2s
UPC Upice 80.99 329 *e*P **P** 01 37 40.4 +0.8
UPC *e* 01 37 49.8
UPC MLR MLR
comp=Z,700nm,15.2s
113A Mohawk Valley, 81.02 56 *e*P **P** 01 37 40.8 +0.8
G29A Hoven 81.06 39 P **P** 01 37 39.9 -0.2
baz=314
F30A Leola 81.07 38 P **P** 01 37 39.9 -0.3
baz=315
E31A Nome 81.11 37 P **P** 01 37 40.0 -0.3
baz=315
D32A Dogwood Acres, 81.12 36 P **P** 01 37 40.0 -0.3
baz=316
PSZ Piszkesteto 81.20 325⇑*e*P **P** 01 37 41.9 +1.1
PSZ Piszkesteto 81.20 325 *e*P **P** 01 37 41.7 +0.9
PSZ pmax pmax
comp=Z,51nm,1.1s
PSZ MLR MLR
comp=Z,762nm,21.0s
PSZ Piszkesteto 81.20 325 *e*P **P** 01 37 41.7 +0.9
comp=Z,51nm,1.1s
PSZ LR LR
comp=Z,762nm,21.0s
SMCO Snowmass 81.24 47 *e*P **P** 01 37 42.5 +0.9
comp=Z,28nm,1.1s
B34A Aery, Baudette 81.24 34 P **P** 01 37 40.5 -0.4
baz=317
MARH Ras Al Marh 81.25 306 *e*P **P** 01 37 42.1 +0.5
I28A Midland 81.25 41 P **P** 01 37 41.1 0.0
baz=314
C33A Trail 81.26 35 P **P** 01 37 40.6 -0.4
baz=317
VYHS Vyhne 81.26 326 *e*P **P** 01 37 42.1 +1.0
VYHS *e* 01 37 51.8
VYHS *e* 01 40 47.6
VYHS pmax pmax
comp=Z,13nm,1.1s
VYHS Vyhne 81.26 326 *e*P **P** 01 37 42.1 +1.0
VYHS *e* 01 37 51.8
VYHS *e*PP **PP** 01 40 47.6 +1.5
RAYN Ar Rayn 81.28 293 *e*P **P** 01 37 42.0 +0.3
comp=Z,28nm,1.0s
RAYN LR LR
comp=Z,375nm,19.0s
H29A Onida 81.31 40 P **P** 01 37 41.4 0.0
baz=314
J27A Elkhorn Farm, 81.32 42 P **P** 01 37 42.0 +0.5
baz=313
URZ Urewera 81.35 153 LR LR 02 09 08.8
comp=Z,169nm,20.0s,baz=335,slow=32
ZALF Zalf 81.37 305 *e*P **P** 01 37 41.9 -0.1
F31A Hecla 81.43 38 P **P** 01 37 41.7 -0.3
baz=315
G30A Faulkton 81.50 39 P **P** 01 37 42.3 -0.1
baz=315
X16A Lo Mia Camp, P 81.52 53 *e*P **P** 01 37 44.4 +1.5
BRG Berggiesshubel 81.57 330 *i*P **P** 01 37 43.1 +0.5
comp=Z,24nm,1.1s
BRG *e* 01 41 01.7
comp=Z,5.6nm,1.1s
comp=N,618nm,17.2s
comp=E,934nm,17.9s
comp=Z,618nm,17.2s
BRG Berggiesshubel 81.57 330 *i*P **P** 01 37 43.1 +0.5
BRG pmax pmax
comp=Z,24nm,1.1s
BRG MLR MLR
comp=N,618nm,17.2s
BRG MLR MLR
comp=E,934nm,17.9s
BRG MLR MLR
comp=Z,618nm,17.2s
PVCC Panska Ves 81.58 329⇑*i*P **P** 01 37 43.7 +1.0
PVCC AMS AMS 02 17 30.0
comp=Z,900nm,19.7s
PVCC Panska Ves 81.58 329⇑*i*P **P** 01 37 43.7 +1.0
PVCC MLR MLR
comp=Z,900nm,19.7s
MVCO Mesa Verde 81.59 50 P **P** 01 37 44.3 +0.9
comp=Z,47nm,1.0s
MVCO Mesa Verde 81.59 50 *e*P **P** 01 37 44.2 +0.9
comp=Z,47nm,1.0s
CLL Collm 81.61 331⇑*i*P **P** 01 37 43.0 +0.2
comp=Z,41nm,1.0s
CLL *e* 01 37 52.0
CLL *e* 01 37 58.0
CLL *e* 01 38 02.0
CLL LmH 02 13 00.0
comp=N,300nm,18.2s
CLL LmH 02 13 00.0
comp=E,300nm,19.9s
CLL Collm 81.61 331⇑*i*P **P** 01 37 43.0 +0.2
CLL *e* 01 37 52.0
CLL pmax pmax
comp=Z,41nm,1.0s
CLL Collm 81.61 331 *e*P **P** 01 37 43.0 +0.2
comp=Z,42nm,1.0s
J28A Allard Ranch, 81.61 41 P **P** 01 37 43.3 +0.2
baz=314
ISCO Idaho Springs 81.62 46 P **P** 01 37 44.4 +0.9
baz=311
ISCO Idaho Springs 81.62 46 *e*P **P** 01 37 44.4 +0.9
ISCO pmax pmax
comp=Z,14nm,0.9s
ISCO Idaho Springs 81.62 46 *e*P **P** 01 37 44.4 +0.9
comp=Z,14nm,0.9s
GZR Gura Zlata 81.63 322⇑*i*P **P** 01 37 43.7 +0.6
VRAC Vranov 81.65 327 P **P** 01 37 44.1 +1.0
comp=Z,17nm,0.9s,baz=37,slow=4.5,SNR=22
VRAC Vranov 81.65 327⇑*i*P **P** 01 37 44.1 +1.0
I29A Vivian Onida 81.68 40 P **P** 01 37 43.4 0.0
baz=314
C34A RKJ Ranch, Bem 81.74 35 P **P** 01 37 43.0 -0.6
baz=317
B35A Bob, Littlefor 81.75 34 P **P** 01 37 43.3 -0.4
baz=318
SALA Sala 81.90 305 *e*P **P** 01 37 44.6 -0.4
G31A Conde 81.90 38 P **P** 01 37 44.3 -0.2
baz=315
GOPC GO Pecny, Ondr 81.96 329⇑*e*P **P** 01 37 45.6 +0.9
GOPC *es*P **pP** 01 37 56.1 +1.7
GOPC GO Pecny, Ondr 81.96 329 *e*P **P** 01 37 45.6 +0.9
GOPC *e* 01 37 56.1
BRBR Barbar 81.98 306 *e*P **P** 01 37 45.6 +0.2
F32A Veblen 81.98 37 P **P** 01 37 44.5 -0.4
baz=316
PRU Pruhonice 82.00 329⇑*i*P **P** 01 37 45.6 +0.7
PRU Pruhonice 82.00 329⇑*i*P **P** 01 37 45.6 +0.7
EDRB Edirne 82.01 317 P **P** 01 37 45.9 +0.8
EDRB Edirne 82.01 317 P **P** 01 37 45.9 +0.8
D34A Park Rapids 82.02 36 P **P** 01 37 44.6 -0.5
baz=317
BZS Buzias 82.04 322⇑*i*P **P** 01 37 45.4 +0.2
E33A Westby DABS, E 82.06 36 P **P** 01 37 45.0 -0.3
baz=317
SUSD Miller 82.08 39 P **P** 01 37 45.3 -0.2
baz=315
J29A Okreek 82.10 41 P **P** 01 37 45.6 -0.1
baz=314
C35A Jirik Farms, M 82.13 34 P **P** 01 37 45.0 -0.6
baz=318
TREC Trest 82.14 328⇑*e*P **P** 01 37 46.7 +1.0
TREC Trest 82.14 328 *e*P **P** 01 37 46.7 +1.0
I30A Oacoma 82.21 40 P **P** 01 37 46.3 +0.1
baz=315
G32A Webster 82.23 38 P **P** 01 37 46.2 -0.1
baz=316
S22A 4UR Ranch, Cre 82.26 48 P **P** 01 37 48.3 +1.5
baz=311
S22A 4UR Ranch, Cre 82.26 48 *e*P **P** 01 37 48.1 +1.2
comp=Z,43nm,1.1s
X18A Snowflake 82.40 52 *e*P **P** 01 37 48.8 +1.2
F33A 5 Mile Ranch, 82.40 37 P **P** 01 37 47.0 -0.1
baz=316
TCHB Talchebab 82.43 305 *e*P **P** 01 37 47.5 0.0
Q24A Divide 82.45 46 P **P** 01 37 48.4 +0.5
baz=312
Q24A Divide 82.45 46 *e*P **P** 01 37 48.9 +1.0
comp=Z,20nm,0.9s
ISP Isparta 82.54 312 PFAKE 01 38 00.0 +12
ISP LR LR
comp=Z,256nm,19.0s
D35A Remer 82.55 35 P **P** 01 37 47.2 -0.7
baz=318
MPEP Malo Peshtene 82.57 320 *e*P **P** 01 37 48.5 +0.5
MMAI Mount Meron Ar 82.58 306 LR LR 02 17 15.7
comp=Z,49nm,19.7s,baz=80,slow=38
I31A Royce, Wessing 82.59 39 P **P** 01 37 48.0 -0.1
baz=315
MDVR Moldovita 82.59 322⇑*i*P **P** 01 37 48.4 +0.2
J30A Dallas 82.59 40 P **P** 01 37 48.1 -0.1
baz=315
C36A Pine Crest Far 82.60 34 P **P** 01 37 47.7 -0.4
baz=319
NKC Novy Kostel 82.67 330⇑*e*P **P** 01 37 48.8 +0.4
NKC *es*P **pP** 01 37 59.0 +0.9
NKC Novy Kostel 82.67 330 *e*P **P** 01 37 48.8 +0.4
NKC *e* 01 37 59.0
CSS Mathiatis 82.67 308 P **P** 01 37 49.0 +0.3
CSS Mathiatis 82.67 308 P **P** 01 37 49.0 +0.3
G33A Ortonville 82.80 37 P **P** 01 37 49.1 -0.1
baz=316
OGNE Ogallala 82.88 43 P **P** 01 37 49.7 -0.1
baz=313
OGNE Ogallala 82.88 43 *e*P **P** 01 37 50.5 +0.7
comp=Z,48nm,1.1s
OGNE LR LR
comp=Z,400nm,20.0s
SOP Sopron 82.89 326⇑*e*P **P** 01 37 50.8 +1.2
C37A Embarrass 82.91 34 P **P** 01 37 49.3 -0.4
baz=319
F34A Alexandria 82.93 36 P **P** 01 37 49.8 -0.1
baz=317
K30A Basset 82.98 41 P **P** 01 37 49.9 -0.4
baz=315
J31A Geddes 83.00 40 P **P** 01 37 49.9 -0.5
baz=315
CONA Conrad Observa 83.01 327 *i* PcP **P** 01 37 51.4 +1.1
comp=Z,35nm,1.2s,SNR=15
H33A Prehn Over Nor 83.02 38 P **P** 01 37 50.2 -0.2
baz=316
SDCO Great Sand Dun 83.05 48 P **P** 01 37 51.8 +0.8
baz=312
SDCO Great Sand Dun 83.05 48 *e*P **P** 01 37 51.9 +0.8
comp=Z,23nm,1.0s
EYMN Ely 83.05 33 P **P** 01 37 50.1 -0.3
baz=320
EYMN Ely 83.05 33 *e*P **P** 01 37 50.5 +0.1
comp=Z,23nm,0.9s
KHC Kasperske Hory 83.06 329⇑*i*P **P** 01 37 51.1 +0.6
KHC *es*P **pP** 01 38 00.6 +0.4
KHC AMS AMS 02 19 00.0
comp=Z,700nm,19.3s
KHC Kasperske Hory 83.06 329⇑*i*P **P** 01 37 51.1 +0.6
KHC *e* 01 38 00.6
KHC MLR MLR
comp=Z,700nm,19.3s
KHC Kasperske Hory 83.06 329 *e*P **P** 01 37 51.1 +0.6
comp=Z,13nm,1.0s
G34A Benson 83.15 37 P **P** 01 37 50.9 -0.1
baz=317
F35A Swanville 83.21 36 P **P** 01 37 50.9 -0.4
baz=318
GEC2 GERESS Array S 83.23 329 *e*P **P** 01 37 51.8 +0.3
GEC2 pmax pmax
comp=Z,20nm,1.1s
GEC2 GERESS Array S 83.23 329 *e*P **P** 01 37 51.8 +0.3
comp=Z,20nm,1.1s
GERES GERESS Array B 83.23 329 P **P** 01 37 51.8 +0.3
comp=Z,8.2nm,0.8s,baz=38,slow=5.0,SNR=31
GERES LR LR 02 19 11.9
comp=Z,285nm,19.3s,baz=38,slow=39
TUC Tucson 83.27 55 P **P** 01 37 52.6 +0.7
baz=310
TUC Tucson 83.27 55 *e*P **P** 01 37 52.9 +0.9
TUC pmax pmax
comp=Z,24nm,1.4s
TUC Tucson 83.27 55 *e*P **P** 01 37 52.9 +0.9
comp=Z,24nm,1.4s
C38A Sawbill Land. 83.32 33 P **P** 01 37 51.5 -0.4
baz=320
E36A McGregor 83.33 35 P **P** 01 37 51.8 -0.1
baz=318
VTS Vitosha 83.39 319⇓*i*P **P** 01 37 53.3 +0.8
VTS Vitosha 83.39 319 P **P** 01 37 53.4 +0.9
VTS Vitosha 83.39 319 *e*P **P** 01 37 53.1 +0.6
VTS pmax pmax
comp=Z,19nm,0.9s
VTS Vitosha 83.39 319 *e*P **P** 01 37 53.0 +0.6
VTS Vitosha 83.39 319 *e*P **P** 01 37 53.1 +0.6
comp=Z,19nm,0.9s
L30A Spencer Herefo 83.44 41 P **P** 01 37 52.7 +0.1
baz=315
K31A O'Neill 83.47 40 P **P** 01 37 52.6 -0.1
baz=315
PMOR Pomariorio Ree 83.55 114 *e*T T 03 09 47.0
comp=Z,2.8nm,0.2s
EKA Ekdalemuir Ar 83.57 341 P **P** 01 37 53.7 +0.7
comp=Z,3.5nm,0.7s,baz=22,slow=5.9,SNR=16
GRFO Grafenberg 83.58 330 *e*P **P** 01 37 54.1 +0.9
GRFO pmax pmax
comp=Z,45nm,1.1s
GRFO Grafenberg 83.58 330 *e*P **P** 01 37 54.0 +0.9
comp=Z,45nm,1.1s
EZN Ezine 83.62 316 P pP 01 38 05.9 +2.7
EZN Ezine 83.62 316 P pP 01 38 05.9 +2.7
ARSA Arzberg 83.67 327 *i* P **P** 01 37 54.5 +0.8
comp=Z,17nm,1.4s,SNR=7.2
G35A Watkins 83.72 36 P **P** 01 37 54.0 0.0
baz=318
N29A Votaw Ranch, W 83.74 43 P **P** 01 37 53.9 -0.3
baz=314
C39A Grand Marais 83.74 32 P **P** 01 37 53.4 -0.6
baz=320
L31A Butterfield Fa 83.74 41 P **P** 01 37 54.3 +0.1
baz=315
MOA Molln 83.76 328 *i* P **P** 01 37 54.7 +0.6
comp=Z,18nm,1.2s,SNR=9.4
ECSD EROS Data Cent 83.77 39 P **P** 01 37 54.1 -0.2
baz=316
ECSD EROS Data Cent 83.77 39 *e*P **P** 01 37 54.0 -0.3
comp=Z,23nm,0.9s
MMB Musomiste 83.82 318 *e*P **P** 01 37 55.0 +0.4
KSCO Kaye Shedlock' 83.87 45 *e*P **P** 01 37 56.3 +1.3
J33A Davis 83.89 39 P **P** 01 37 55.0 +0.1
baz=316
NVR Nevrokopi 83.91 318 P **P** 01 37 55.5 +0.4
NVR Nevrokopi 83.91 318 P **P** 01 37 55.5 +0.4
H35A Sunnyside Ranc 83.94 37 P **P** 01 37 55.3 +0.3
baz=318
KKB Krupnik 83.96 319 *e*P **P** 01 37 56.0 +0.7
PPT Papeete 84.01 117 LR LR 02 12 35.4
comp=Z,254nm,18.6s,baz=299,slow=34
PPT2 Papeete2 84.02 117 *e*LR LR 02 04 11.7
comp=Z,183nm,20.5s
T25A Trinidad 84.10 47 P **P** 01 37 57.0 +0.7
baz=312
T25A Trinidad 84.10 47 *e*P **P** 01 37 57.2 +0.9
comp=Z,46nm,0.9s
FETY Fethiye 84.18 312 P **P** 01 37 54.6 -1.9
FETY Fethiye 84.18 312 P **P** 01 37 54.6 -1.9
LAZ Ladron 84.25 51 *e*P **P** 01 37 58.1 +1.0
M31A Lambtecht Ranc 84.26 41 P **P** 01 37 56.3 -0.5
baz=315
RPZ Rata Peaks 84.31 159 LR LR 02 08 56.4
comp=Z,187nm,20.8s,baz=333,slow=31
ANMO Albuquerque 84.32 50 P **P** 01 37 58.1 +0.6
baz=312
ANMO Albuquerque 84.32 50 *c i*P **P** 01 37 58.4 +0.9
ANMO pmax pmax
comp=Z,29nm,1.1s
ANMO Albuquerque 84.32 50 *e*P **P** 01 37 58.3 +0.9
comp=Z,45nm,1.1s
PERS Pernice 84.32 326 *i* P **P** 01 37 57.3 +0.2
comp=Z,73nm,1.3s
YER Yerkesik 84.32 313 P **P** 01 37 58.1 +0.9
YER Yerkesik 84.32 313 P **P** 01 37 58.1 +0.9
YER Yerkesik 84.32 313 P **P** 01 37 58.1 +0.9
SOKA Soboth 84.33 327 *i* P **P** 01 37 57.4 +0.3
comp=Z,46nm,1.3s,SNR=31
H36A Jessenland, He 84.47 37 P **P** 01 37 57.9 +0.2
baz=318
SPMN Marine on St. 84.51 36 P **P** 01 37 57.7 -0.3
baz=319
SPMN Marine on St. 84.51 36 *e*P **P** 01 37 58.2 +0.2
comp=Z,18nm,1.1s
KNT Kendrikon 84.56 319 P **P** 01 37 58.7 +0.4
KNT Kendrikon 84.56 319 P **P** 01 37 58.7 +0.4
KNT Kendrikon 84.56 319 P **P** 01 37 58.7 +0.4
OUR Ouranopolis 84.56 317 P **P** 01 37 58.5 +0.2
OUR Ouranopolis 84.56 317 P **P** 01 37 58.5 +0.2
OUR Ouranopolis 84.56 317 P **P** 01 37 58.5 +0.2
VAY Valandovo 84.62 319 P **P** 01 37 59.3 +0.7

VAY Valandovo 84.62 319 *i* P P 01 37 59.2 +0.6
VAY Valandovo 84.62 319 P P 01 37 59.3 +0.7
VAY Valandovo 84.62 319 P P 01 37 59.3 +0.7
LPM Los Pinos Moun 84.63 51 *e*P P 01 38 00.2 +1.2
BGNE Belgrade 84.65 41 P P 01 37 58.2 -0.6
baz=316
BGNE Belgrade 84.65 41 *e*P P 01 37 58.5 -0.3
LBZ Lake Benmore 84.69 160 *e*P P 01 37 59.8 +1.3
comp=Z,38nm,1.1s
BNM Barren Site 84.74 51 *e*P P 01 38 00.8 +1.1
SKO Skopje 84.75 320 P P 01 38 00.4 +1.2
SKO Skopje 84.75 320 *i* P P 01 38 00.4 +1.2
SKO Skopje 84.75 320 P P 01 38 00.4 +1.2
SKO Skopje 84.75 320 P P 01 38 00.4 +1.2
KBA Koelnbreinsper 84.76 328 *i* P P 01 37 59.4 0.0
comp=Z,22nm,1.6s,SNR=7.2
BEBN Eben Emael 84.76 334 P P 01 37 59.4 +0.4
comp=Z,9.2nm,1.1s
K34A Le Mars 84.79 39 P P 01 37 59.0 -0.4
baz=317
MEM Membach 84.80 334 P P 01 37 59.8 +0.5
comp=Z,15nm,1.3s
O31A Woolen Ranch, 84.91 43 P P 01 37 59.8 -0.4
baz=315
H37A Dierke Farm, C 84.94 36 P P 01 38 00.3 +0.1
baz=319
BODT Bodrum 84.94 313 P P 01 38 00.2 -0.1
BODT Bodrum 84.94 313 P P 01 38 00.2 -0.1
MYKA Terra Mystica 84.98 327 *i* P P 01 37 59.9 -0.4
comp=Z,12nm,1.1s,SNR=7.0
M33A Taylor Creek F 85.03 40 P P 01 38 00.2 -0.5
baz=316
LJU Ljubljana 85.04 326 *i* P P 01 38 00.3 -0.3
121A Cookes Peak, D 85.07 53 P P 01 38 02.1 +0.9
baz=311
121A Cookes Peak, D 85.07 53 *e*P P 01 38 01.8 +0.5
comp=Z,42nm,1.0s
STU Stuttgart 85.11 331 *e*P P 01 38 01.4 +0.5
STU pmax pmax
comp=Z,47nm,0.9s
STU Stuttgart 85.11 331 *e*P P 01 38 01.4 +0.5
comp=Z,47nm,0.9s
BOJS Bojanci 85.13 326 *i* P P 01 38 01.0 -0.1
I37A Lemond, Waseca 85.14 37 P P 01 38 01.4 +0.2
baz=318
L34A Svendsen Farm, 85.17 40 P P 01 38 01.0 -0.3
baz=317
K35A Storm Lake 85.20 39 P P 01 38 01.0 -0.4
baz=317
HSIG 85.25 57 *e*P P 01 38 02.2 +0.3
HSIG *e*pP pP 01 38 12.1 +0.5
CWF Charnwood Fore 85.35 339 *e*P P 01 38 02.8 +0.8
comp=Z,32nm,1.1s
JAVS Javornik 85.36 327 *i* P P 01 38 01.5 -0.8
comp=Z,49nm,1.3s
ABTA Abfaltersbach 85.37 328 *i* P P 01 38 01.3 -1.0
comp=Z,14nm,1.1s,SNR=8.0
SCHQ Schefferville 85.43 16 P P 01 38 02.4 0.0
comp=Z,8.0nm,1.0s,baz=342,slow=6.3,SNR=6.2
SCHQ pP pP 01 38 12.8 +0.7
comp=Z,17nm,1.2s,baz=330,slow=9.5,SNR=4.6
SCHQ LR LR 02 16 16.9
comp=Z,103nm,22.0s,baz=24,slow=36
SCHQ Schefferville 85.43 16 *e*P P 01 38 02.6 +0.2
SCHQ *e*pP pP 01 38 12.6 +0.5
LANF Langenberg 85.48 332⇑ *e*P P 01 38 03.1 +0.3
MOTA Moosalm 85.49 329 *i* PcP P 01 38 04.0 +0.9
SNR=14
BIA Bitola 85.49 319 *i* P P 01 38 02.3 -0.7
N33A J Bar K, Exete 85.50 41 P P 01 38 02.7 -0.4
baz=316
COWI Conover 85.50 33 *e*P P 01 38 02.9 0.0
comp=Z,20nm,1.2s
RETA Reutte 85.52 329 *i* PcP P 01 38 03.5 +0.4
comp=Z,41nm,1.1s,SNR=21
PDG Podgorica 85.53 321 P P 01 38 03.2 +0.1
TTG Podgorica 85.53 321 P P 01 38 03.2 +0.1
TTG Podgorica 85.53 321 P P 01 38 03.2 +0.1
WLF Walferdange 85.53 333 P P 01 38 04.0 +1.0
comp=Z,17nm,1.5s
WLF Walferdange 85.53 333 *e*P P 01 38 03.8 +0.8
WLF pmax pmax
comp=Z,55nm,1.6s
WLF MLR MLR
comp=Z,336nm,19.0s
WLF Walferdange 85.53 333 *e*P P 01 38 03.8 +0.8
comp=Z,55nm,1.6s
WLF LR LR
comp=Z,336nm,19.0s
LIT Litokhoron 85.53 318 P P 01 38 02.9 -0.3
LIT Litokhoron 85.53 318 P P 01 38 02.9 -0.3
LIT Litokhoron 85.53 318 P P 01 38 02.9 -0.3
TAOE Nuku Hiva Isla 85.55 104 *e*S S 01 48 31.5 -2.3
comp=Z,78nm,26.1s
TAOE Nuku Hiva Isla 85.55 104 *e*LR LR 02 04 41.0
comp=Z,208nm,21.5s
J37A Redenius Farm, 85.59 37 P P 01 38 03.5 +0.1
baz=318
I38A Scanlan Farm, 85.63 36 P P 01 38 03.1 -0.5
baz=319
CBKS Cedar Bluff 85.63 44 P P 01 38 03.3 -0.5
baz=315
CBKS Cedar Bluff 85.63 44 *e*P P 01 38 03.7 -0.1
CBKS Cedar Bluff 85.63 44 *e*P P 01 38 03.7 -0.1
FNA Florina 85.64 319 P P 01 38 03.5 -0.3
FNA Florina 85.64 319 P P 01 38 03.5 -0.3
FNA Florina 85.64 319 P P 01 38 03.5 -0.3
TRI Trieste 85.64 327 *e*P P 01 38 02.1 -1.5
TRI pmax pmax
comp=Z,16nm,1.1s
TRI Trieste 85.64 327 *e*P P 01 38 02.1 -1.5
comp=Z,16nm,1.1s
K36A Gilmore City 85.65 38 P P 01 38 03.5 -0.2
baz=318
P32A Huiting Farm, 85.68 43 P P 01 38 03.3 -0.6
baz=316
OHR Ohrid 85.70 320 *i* P P 01 38 04.2 +0.1
DOU Dourbes 85.73 334 P P 01 38 03.9 0.0
comp=Z,9.8nm,1.6s
BFO Black Forest 85.81 331 *i* P P 01 38 04.8 +0.4
BFO Black Forest 85.81 331 *e*P P 01 38 04.7 +0.2
comp=Z,46nm,1.0s
BFO LR LR
comp=Z,174nm,20.0s
M35A Neola 85.88 40 P P 01 38 04.8 -0.1
baz=317
FETA Feichten 85.90 329 *i* PcP P 01 38 05.2 +0.1
comp=Z,19nm,1.1s,SNR=13
O33A Hebron 85.90 42 P P 01 38 04.3 -0.7
baz=316
N34A Lincoln 85.92 40 P P 01 38 04.4 -0.7
baz=317
L36A Harm Buss Farm 85.94 39 P P 01 38 05.1 0.0
baz=318
K37A Belmond 85.95 38 P P 01 38 05.2 0.0
baz=318
TIR Tirane 86.01 320 *e*P P 01 38 06.1 +0.6
TIR MLR MLR
comp=Z,594nm,19.0s
TIR Tirane 86.01 320 *e*P P 01 38 06.1 +0.6
TIR LR LR
comp=Z,594nm,19.0s
DAVA Damuels 86.04 330 *i* PcP P 01 38 06.0 +0.2
comp=Z,39nm,1.0s,SNR=23
NEST Nestorio 86.08 319 P P 01 38 05.8 -0.2
Q32A Meitler Ranch, 86.15 43 P P 01 38 05.7 -0.6
baz=316
KPRO Kipourio 86.24 319 P pP 01 38 15.8 -0.7
LKR Lokris 86.29 317 P P 01 38 06.0 -0.9
LKR Lokris 86.29 317 P P 01 38 06.0 -0.9
O34A Beatrice 86.30 41 P P 01 38 06.2 -0.8
baz=317
P33A Williams Farm, 86.30 42 P P 01 38 06.4 -0.7
baz=316
M36A Felix, Anita 86.35 39 P P 01 38 07.1 -0.1
baz=318
N35A Tabor 86.35 40 P P 01 38 07.2 0.0
baz=317
ECH Echery 86.35 332⇑ *e*P P 01 38 07.0 -0.1
L37A Phoenix Point, 86.38 38 P P 01 38 07.1 -0.2
baz=318
FUORN Ofenpass-Fuorn 86.42 329 *e*P P 01 38 08.0 +0.2
comp=Z,36nm,1.0s
DAVOX Davos/Dischmat 86.45 329 P P 01 38 07.9 +0.1
comp=Z,9.3nm,1.1s,baz=63,slow=2.6,SNR=11
R32A Long Quarter, 86.47 43 P P 01 38 07.2 -0.7
baz=316
SANT Santorini 86.50 314 PFAKE 01 38 20.0 +12
SANT LR LR
comp=Z,143nm,20.0s
Q33A Connelly Farm, 86.54 43 P P 01 38 07.7 -0.5
baz=316
O35A Humboldt 86.65 41 P P 01 38 08.0 -0.7
baz=317
MOF Molkenrain 86.66 332⇑ *e*P P 01 38 08.3 -0.4
P34A Walnut Farm, R 86.69 42 P P 01 38 08.3 -0.6
baz=317
L38A Oak Wood Farm, 86.75 38 P P 01 38 09.1 -0.1
baz=319
M37A Trindle Farm, 86.76 39 P P 01 38 09.4 +0.1
baz=318
THEF They Montfort 86.79 332⇑ *e*P P 01 38 09.4 +0.2
SCIA State Center 86.80 38 *e*P P 01 38 10.3 +0.8
S32A Newby Ranch, P 86.86 44 P P 01 38 09.6 -0.2
baz=315
TUE Stuetta 86.91 329 *e*P P 01 38 09.3 -0.8
comp=Z,14nm,1.1s
TUE LR LR
comp=Z,403nm,19.0s
R33A Olander Ranch, 86.95 43 P P 01 38 09.9 -0.3
baz=316
Q34A Chapman 87.08 42 P P 01 38 10.6 -0.3
baz=317
KSU1 Kansas State U 87.13 42 P P 01 38 10.7 -0.4
baz=317
KSU1 Kansas State U 87.13 42 *e*P P 01 38 10.9 -0.2
comp=Z,45nm,0.9s
P35A Duane Minner, 87.13 41 P P 01 38 10.8 -0.3
baz=317
MNTX Cornudas Mount 87.14 52 P P 01 38 11.7 +0.4
baz=312
MNTX Cornudas Mount 87.14 52 *e*P P 01 38 11.9 +0.6
comp=Z,12nm,1.1s
GUR Goura 87.16 317 P P 01 38 02.9 -8.5
GUR Goura 87.16 317 P P 01 38 02.9 -8.5
N37A Lee Faris, Mou 87.16 39 P P 01 38 11.5 +0.3
baz=318
M38A Pleasantville 87.18 38 P P 01 38 11.5 +0.2
baz=319
LOMF Lomont 87.19 331 *e*P P 01 38 11.3 0.0
MSTX Muleshoe 87.23 49 P P 01 38 11.6 -0.2
baz=313
MSTX Muleshoe 87.23 49 *e*P P 01 38 12.1 +0.3
comp=Z,18nm,1.1s
T32A Huddler Ranch, 87.24 44 P P 01 38 11.8 +0.1
baz=315
O36A Bolckow 87.24 40 P P 01 38 11.5 -0.1
baz=318
AMTX Amarillo 87.25 48 P P 01 38 12.5 +0.6
baz=314
AMTX Amarillo 87.25 48 *e*P P 01 38 13.0 +1.1
comp=Z,43nm,0.9s
LAST Lathi 87.33 313 *e*P P 01 38 12.9 +0.7
comp=Z,36nm,1.1s
R34A Isabella, Hill 87.36 43 P P 01 38 12.3 0.0
baz=316
DAMY Dhamar 87.45 286 *e*P P 01 38 14.3 +0.9
comp=Z,12nm,1.0s
S33A Kaszmaul Farm, 87.46 44 P P 01 38 12.7 0.0
baz=316
JFWS Jewell Farm 87.47 36 *e*P P 01 38 12.6 0.0
JFWS pmax pmax
comp=Z,23nm,1.1s
JFWS Jewell Farm 87.47 36 *e*P P 01 38 12.6 0.0
comp=Z,23nm,1.1s
P36A Good Intent, A 87.49 41 P P 01 38 12.5 -0.3
baz=318
IDI Anoyia 87.58 313 P P 01 38 13.2 -0.2
comp=Z,18nm,1.0s,baz=333,slow=7.3,SNR=4.1
IDI Anoyia 87.58 313 *e*P P 01 38 13.8 +0.4
comp=Z,62nm,1.4s
Q35A Meyer Eighty, 87.61 42 P P 01 38 13.3 -0.1
baz=317
N38A Joes South For 87.63 39 P P 01 38 13.3 -0.1
baz=319
O37A Wolven Farm, M 87.64 40 P P 01 38 13.7 +0.2
baz=318
U32A Winter Ranch, 87.76 45 P P 01 38 14.5 +0.3
baz=315
S34A Willow Spring 87.87 43 P P 01 38 14.7 0.0
baz=316
TBI Tubuai 87.90 121 *e*LR LR 02 05 30.4
comp=Z,148nm,22.2s
TBI Tubuai 87.90 121 *e*T T 03 15 13.4
comp=Z,8.7nm,0.3s
R35A Emporia Munici 87.91 42 P P 01 38 15.2 +0.3
baz=317
ITM Ithomi 87.93 316 P P 01 38 13.5 -1.5
ITM Ithomi 87.93 316 P P 01 38 13.5 -1.5
N39A Derby Farms, D 87.93 38 P P 01 38 15.0 +0.1
baz=319
VLS Valsamata 87.94 318 P sP 01 38 31.4 +3.2
VLS Valsamata 87.94 318 P sP 01 38 31.4 +3.2
P37A Lathrop 87.96 40 P P 01 38 15.0 -0.1
baz=318
O38A Galt 88.01 39 P P 01 38 15.2 0.0
baz=319
DYA Yadsworthy 88.15 339 *e*P P 01 38 16.4 +0.7
comp=Z,32nm,1.3s
V32A Arapaho 88.20 45 P P 01 38 17.3 +1.0
baz=315
U33A Lingo Farm, Me 88.22 44 P P 01 38 16.7 +0.3
baz=316
R36A Gordon, Harris 88.28 42 P P 01 38 16.6 0.0
baz=317
S35A Otter Creek Ra 88.31 43 P P 01 38 17.0 +0.2
baz=317
T34A McClaskey Farm 88.32 44 P P 01 38 17.0 +0.2
baz=316
VLC Villacollemand 88.33 328 PFAKE 01 38 30.0 +13
VLC LR LR
comp=Z,204nm,19.0s
P38A Dawn 88.35 40 P P 01 38 16.8 -0.1
baz=319
O39A Kirksville 88.38 39 P P 01 38 17.2 +0.2
baz=319
VLDQ Val d'Or 88.42 25 *e*P P 01 38 16.1 -0.8
comp=Z,54nm,1.3s
GLMI Grayling 88.44 31 *e*P P 01 38 18.0 +0.8
comp=Z,98nm,0.9s
W32A Sentinel 88.51 46 P P 01 38 18.3 +0.5
baz=315
U34A Anderson Ranch 88.55 44 P P 01 38 18.5 +0.6
baz=316
U34A Anderson Ranch 88.55 44 *e*P P 01 38 18.9 +1.0
comp=Z,78nm,1.2s
V33A Lossen Ranch, 88.56 45 P P 01 38 18.2 +0.2
baz=316
R37A Teagarden Farm 88.65 41 P P 01 38 17.9 -0.4
baz=318
S36A Lake Cedric, C 88.68 42 P P 01 38 18.5 0.0
baz=317
T35A Sooner Cattle 88.77 43 P P 01 38 19.1 +0.1
baz=317
Q38A Cooks Store, C 88.81 40 P P 01 38 18.6 -0.4
baz=319
O40A La Belle 88.82 38 P P 01 38 19.1 0.0
baz=320
P39A Salisbury 88.85 39 P P 01 38 19.4 +0.2
baz=319
W33A Caddo, Fort Co 88.94 46 P P 01 38 20.8 +1.0
baz=316
X32A Elmer 88.98 47 P P 01 38 20.1 +0.1
baz=315
V34A Guthrie 88.99 45 P P 01 38 20.1 +0.2
baz=316
V34A Guthrie 88.99 45 *e*P P 01 38 20.6 +0.6
comp=Z,48nm,1.0s
T36A Boggs Farm, Ca 89.01 43 P P 01 38 20.1 +0.1
baz=317
U35A Pawnee 89.04 44 P P 01 38 20.3 +0.1
baz=317
WMOK Wichita Mounta 89.05 46 *e*P P 01 38 15.6 -4.7
WMOK Wichita Mounta 89.05 46 *e*P P 01 38 15.6 -4.8
S37A Fort Scott 89.06 42 P P 01 38 20.0 -0.2
baz=318
CUC Castrocucco 89.07 322 PFAKE 01 38 30.0 +10
CUC LR LR
comp=Z,243nm,20.0s
Q39A Willow Grove F 89.07 40 P P 01 38 20.3 0.0
baz=319
BNI Bardonecchia 89.15 330 PFAKE 01 38 30.0 +9.3
BNI LR LR
comp=Z,329nm,22.0s
P40A Paris 89.18 39 P P 01 38 21.0 +0.2
baz=320
TIP Timpagrande 89.21 321 *e*P P 01 38 21.1 +0.1
comp=Z,12nm,0.9s
TIP LR LR
comp=Z,362nm,20.0s
R38A Fenwick Farm, 89.23 41 P P 01 38 20.4 -0.7
baz=318
W34A Bridge Creek, 89.28 45 *e*P P 01 38 22.4 +1.0
V35A Meyer Ranch, C 89.42 44 P P 01 38 22.1 +0.1
baz=317
T37A Cheneyville 18 89.48 42 P P 01 38 22.2 0.0
baz=318
PLDF La Plantade 89.56 332⇑ *e*P P 01 38 22.7 +0.2
Q40A Laux Farm, Aux 89.57 39 P P 01 38 22.7 +0.1
baz=320
U36A Oologah 89.58 43 P P 01 38 22.7 0.0
baz=317
R39A Chumby, Stover 89.59 40 P P 01 38 22.4 -0.4
baz=319
S38A Stockton 89.65 41 P P 01 38 22.5 -0.5
baz=318
Y33A Hilltop Ranch, 89.66 46 P P 01 38 23.3 +0.1
baz=316
AGO Saint Agoulin 89.67 333 *e*P P 01 38 23.5 +0.5
X34A Smith Ranch, M 89.70 46 P P 01 38 23.7 +0.4
baz=316
HDIL Hopedale 89.74 37 P P 01 38 23.4 0.0
baz=321
HDIL Hopedale 89.74 37 *e*P P 01 38 23.9 +0.5
comp=Z,41nm,0.9s
SSB Saint Sauveur 89.80 332 *e*P P 01 38 23.0 -0.6
SSB pmax pmax
comp=Z,18nm,1.5s
SSB Saint Sauveur 89.80 332 *e*P P 01 38 23.0 -0.6
comp=Z,18nm,1.5s
TX31 Lajitas Ar. Si 89.83 53 *e*P P 01 38 24.4 +0.3
TXAR Lajitas Array 89.83 53 P P 01 38 24.5 +0.4
comp=Z,9.4nm,0.8s,baz=296,slow=3.6,SNR=92
TXAR pP pP 01 38 34.0 +0.1
comp=Z,16nm,0.8s,baz=313,slow=3.1,SNR=25
W35A Tecumseh 89.84 45 P P 01 38 24.2 +0.3
baz=317
T38A Diamond 89.88 42 P P 01 38 23.9 -0.2
baz=318
TUL1 Leonard 89.90 43 P P 01 38 24.3 +0.1
baz=317
TUL1 Leonard 89.90 43 *e*P P 01 38 24.4 +0.1
comp=Z,28nm,0.9s
U37A Salina 89.90 43 P P 01 38 24.3 0.0
baz=318
V36A Jenks 89.90 44 P P 01 38 24.6 +0.3
baz=317
S39A Bolivar 89.91 41 P P 01 38 23.5 -0.7
baz=319
PYM Petit Puy Mans 89.97 333 *e*P P 01 38 25.0 +0.5
R40A Maddies Statio 90.00 40 P P 01 38 24.7 0.0
baz=319
ABTX Abilene, Hawle 90.04 48 P P 01 38 25.5 +0.5
baz=315
ABTX Abilene, Hawle 90.04 48 *e*P P 01 38 25.4 +0.4
comp=Z,34nm,1.0s
Z33A Whitaker Ranch 90.09 47 P P 01 38 25.4 +0.2
baz=316
Y34A Reagan Ranch, 90.20 46 P P 01 38 25.6 -0.1
baz=316
W36A Wetumka 90.22 44 P P 01 38 26.0 +0.3
baz=317
V37A Hulbert 90.28 43 P P 01 38 26.1 +0.1
baz=318
LBL Lubilhac 90.33 332 *e*P P 01 38 26.6 +0.5
X35A Drake 90.33 45 P P 01 38 26.1 -0.2
baz=317
T39A Clever 90.38 41 P P 01 38 26.1 -0.4
baz=319
S40A Lebanon 90.41 40 P P 01 38 26.1 -0.5
baz=319
133A Hamilton Ranch 90.49 48 P P 01 38 27.2 +0.1
baz=316
ATD Arta Tunnel 90.49 285 LR LR 02 22 37.9
comp=Z,70nm,20.3s,slow=38
X36A Centrahoma 90.56 45 P P 01 38 27.5 +0.2
baz=317
HHAR Hobbs 90.63 42 *e*P P 01 38 27.4 -0.2
comp=Z,16nm,0.9s
W37B Quinton 90.66 44 P P 01 38 28.1 +0.3
baz=318
SADO Sadowa 90.66 28 *e*P P 01 38 27.7 +0.1
comp=Z,15nm,1.1s
V38A Canehill 90.69 43 P P 01 38 27.8 -0.1
baz=318
T40A Mansfield 90.74 41 P P 01 38 27.8 -0.3
baz=319
U39A Green Forest 90.80 42 P P 01 38 28.2 -0.3
baz=319
233A Rising Star 90.91 48 P P 01 38 29.4 +0.3
baz=316
SFIN Lafayette 90.92 35 P P 01 38 29.0 +0.2
baz=323
SFIN Lafayette 90.92 35 *e*P P 01 38 29.4 +0.6
comp=Z,19nm,0.9s
Z35A Perchaven, San 90.94 46 P P 01 38 29.0 -0.1
baz=316
134A White-Moore Ra 91.00 47 P P 01 38 29.8 +0.4
baz=316
Y36A Durant 91.09 45 P P 01 38 29.7 -0.1
baz=317
X37A Clayton 91.10 44 P P 01 38 29.9 +0.1
baz=318
V39A Pettigrew 91.12 42 P P 01 38 29.7 -0.3
baz=319
U40A Yellville 91.16 41 P P 01 38 29.8 -0.3
baz=319
LMQ La Malbaie 91.18 21 *e*P P 01 38 30.6 +0.6
comp=Z,35nm,1.1s
W38A Poteau 91.22 43 P P 01 38 30.3 0.0
baz=318
X38A Whitesboro 91.34 44 P P 01 38 31.3 +0.3
baz=318
333A Richland Sprin 91.36 49 P P 01 38 31.1 0.0
baz=316
234A Clairette 91.38 48 P P 01 38 31.7 +0.5
baz=316
135A Vickery Place, 91.41 47 P P 01 38 32.2 +0.8
baz=316
JCT Junction City 91.46 50 PFAKE 01 38 40.0 +8.4
JCT LR LR
comp=Z,468nm,22.0s
Z36A Blue Ridge 91.46 46 P P 01 38 31.5 0.0
baz=317
W39A Magazine 91.53 43 P P 01 38 31.7 -0.1
baz=318
V40A Witts Springs 91.59 42 P P 01 38 31.7 -0.4
baz=319
433A Art 91.69 49 P P 01 38 32.6 -0.1
baz=315
OLIL Olney 91.74 37 *e*P P 01 38 33.4 +0.7
OLIL *e*pP pP 01 38 43.4 +1.0
WHTX Lake Whitney, 91.79 47 P P 01 38 33.5 +0.4
baz=316
WHTX Lake Whitney, 91.79 47 *e*P P 01 38 33.5 +0.4
comp=Z,36nm,1.2s
334A Lometa 91.80 48 P P 01 38 33.4 +0.2
baz=316
X39A Fountain Ranch 91.85 43 P P 01 38 33.6 +0.2
baz=318
W40A Ferguson Farm, 91.92 42 P P 01 38 33.5 -0.1
baz=319
Y38A Idabel 91.94 44 P P 01 38 33.2 -0.5
baz=318
Z37A Pogue Cattle C 91.98 45 P P 01 38 33.7 -0.2
baz=317
136A Ennis 91.98 46 P P 01 38 33.9 -0.1
baz=317
SIUC Southern Illin 91.99 38 *e*P P 01 38 34.4 +0.6
comp=Z,25nm,0.8s
PBMO Poplar Bluff 92.10 40 *e*P P 01 38 34.8 +0.4
comp=Z,27nm,0.9s
MIAR Mount Ida 92.12 43 P P 01 38 34.8 +0.3
baz=319
MIAR Mount Ida 92.12 43 *e*P P 01 38 35.0 +0.4
MIAR pmax pmax
comp=Z,39nm,0.9s
MIAR Mount Ida 92.12 43 *e*P P 01 38 35.0 +0.4
comp=Z,39nm,0.9s
434A Burnet 92.15 48 P P 01 38 34.4 -0.4
baz=316
WHAR Wooly Hollow 92.26 42 *e*P P 01 38 35.4 +0.2

comp=Z,39nm,0.9s
Y39A Lockesburg 92.29 44 P **P** 01 38 35.5 **+0.2**
baz=318
W41A Tony Mavity, V 92.37 42 P **P** 01 38 35.6 **-0.1**
baz=319
VSL Villasalto 92.53 325 PFAKE 01 38 50.0 +14
VSL LR LR
comp=Z,194nm,19.0s
633A Saathoff Ranch 92.56 50 P **P** **01 38 37.1 +0.4**
baz=315
X40A Basin Creek Fa 92.57 43 P **P** **01 38 36.6 0.0**
baz=319
534A Blanco 92.58 49 P **P** **01 38 36.8 -0.1**
baz=316
Y40A Okolona 92.69 43 P **P** **01 38 37.1 -0.1**
baz=319
WDD Wied Dalam 92.88 320 PFAKE 01 38 50.0 +12
WDD LR LR
comp=Z,295nm,19.0s
832A Faith Ranch, C 92.89 51 P **P** **01 38 38.5 +0.2**
baz=315
ACSO Alum Creek Sta 92.89 33 *e*P **P** **01 38 38.2 +0.2**
comp=Z,24nm,0.9s
733A Divot King Ran 93.01 51 P **P** **01 38 39.0 +0.2**
baz=315
WLAR White Oak Lake 93.02 43 *e*P **P** **01 38 40.2 +1.5**
WLAR *e*pP **pP** **01 38 49.6 +1.1**
M54A Oil Creek Stat 93.22 30 P **P** **01 38 39.5 -0.1**
baz=328
N54A Moraine State 93.55 31 P **P** **01 38 41.1 +0.1**
baz=328
NATX Nacogdoches 93.58 46 PFAKE 01 38 50.0 +8.7
NATX LR LR
comp=Z,101nm,20.0s
933A Laredo 93.80 51 P **P** **01 38 43.2 +0.8**
baz=315
636A Smothers Creek 93.83 49 P **P** **01 38 43.7 +1.2**
baz=316
WVT Waverly 93.92 38 *e*P **P** **01 38 43.1 +0.3**
WVT pmax pmax
comp=Z,7.0nm,1.0s
WVT Waverly 93.92 38 *e*P **P** **01 38 43.1 +0.3**
comp=Z,6.7nm,1.0s
OXF Oxford 94.38 40 *e*P **P** **01 38 45.5 +0.5**
OXF pmax pmax
comp=Z,32nm,0.9s
OXF Oxford 94.38 40 *e*P **P** **01 38 45.5 +0.5**
comp=Z,32nm,0.9s
034A Hebbronville 94.56 51 P **P** **01 38 46.9 +1.0**
baz=316
O56A Blue Knob Stat 94.71 30 P **P** **01 38 46.0 -0.4**
baz=328
ZAIG Zacatecas 95.02 57 *e*P **P** **01 38 50.0 +1.5**
ZAIG *epP* **pP** **01 38 59.5 +1.3**
KEST Kesra 95.58 323 P **P** **01 38 50.6 +0.1**
comp=Z,5.2nm,1.1s,baz=300,slow=9.8,SNR=4.2
KEST LR LR 02 28 38.3
comp=Z,218nm,19.6s,baz=211,slow=40
SWET Sewanee 95.58 38 *e*P **P** **01 38 50.2 -0.3**
comp=Z,5.2nm,1.2s
SWET *epP* **pP** **01 38 59.8 -0.5**
TZTN Tazewell 95.65 35 *e*P **P** **01 38 50.6 -0.2**
comp=Z,28nm,1.4s
ES19 SONSECA Array 97.73 334 *e*P **P** **01 39 00.3 +0.1**
ESDC Sonseca Array 97.78 334 P **P** **01 39 00.3 0.0**
comp=Z,1.7nm,0.8s,baz=18,slow=4.4,SNR=10
ESDC PP **PP** **01 42 50.6 -7.0**
comp=Z,0.6nm,0.7s,baz=22,slow=6.4,SNR=4.1
ESDC LR LR 02 27 43.8
comp=Z,254nm,18.2s,baz=245,slow=38
PAB San Pablo 98.02 334 PFAKE 01 39 10.0 +8.4
PAB LR LR
comp=Z,413nm,20.0s
GOGA Godfrey 98.24 37 PFAKE 01 39 10.0 +7.5
GOGA LR LR
comp=Z,193nm,19.0s
MTE Manteigas 98.31 337 PFAKE 01 39 10.0 +7.2
MTE LR LR
comp=Z,405nm,19.0s
CNNC Cliffs of the 99.27 32 PFAKE 01 39 20.0 +13
CNNC LR LR
comp=Z,668nm,19.0s
NHSC New Hope 100.05 35 PFAKE 01 39 20.0 +9.5
NHSC LR LR
comp=Z,293nm,19.0s
KMBO Kilima Mbogo 102.57 278 PFAKE 01 39 30.0 +7.6
KMBO LR LR
comp=Z,73nm,20.0s
TEIG Tepich 106.01 49 PFAKE 01 44 00.0
TEIG LR LR
comp=Z,117nm,19.0s
TAM Tamanrasset 107.99 318 PFAKE 01 44 10.0
TAM LR LR
comp=Z,175nm,20.0s
GRTK Grand Turk 114.08 34 PFAKE 01 44 20.0 +15
GRTK LR LR
comp=Z,132nm,19.0s
SDDR Presa de Saban 116.20 36 PFAKE 01 44 20.0 +11
SDDR LR LR
comp=Z,166nm,19.0s
TORD Torodi Ar. Bea 117.92 315 PKP **PKPdf** **01 44 11.3 -0.8**
comp=Z,2.2nm,0.9s,baz=21,slow=0.9,SNR=15
TORD PKKPab **PKKPbc** **01 54 32.7 +1.6**
comp=Z,0.7nm,1.0s,baz=263,slow=2.6,SNR=4.1
SDV Santo Domingo 125.16 41 *e*PKPdf **PKPdf** **01 44 26.1 -0.2**
SDV LR LR
comp=Z,128nm,19.0s
QSPA South Pole Qui 126.51 180 *e*PKPdf **PKPdf** **01 44 26.4 -0.7**
DBIC Dimbokro 126.87 317 PKP **PKPdf** **01 44 29.3 -0.1**
comp=Z,5.8nm,0.9s,baz=342,slow=4.8,SNR=5.2
DBIC pPKP **pPKPdf** **01 44 38.0 -1.4**
comp=Z,5.5nm,0.9s,baz=291,slow=5.5,SNR=3.0
OTAV Otavalo 127.40 55 PFAKE 01 44 40.0 +9.0
OTAV LR LR
comp=Z,113nm,19.0s
SYO Syowa Base 128.23 207 ǁ *e*pPKPdf pPKPdf 01 44 40.0 -0.2
VNA2 Neumayer--Watz 142.22 196 PKP **PKPdf** **01 44 52.1 -4.1**
baz=105,slow=2.8
VNA3 Neumayer Olymp 142.46 195 PKP **PKPdf** **01 44 52.6 -4.0**
VNA1 Neumayer--Stat 142.62 196 PKP **PKPdf** **01 44 53.6 -3.3**
SAML Samuel 144.03 46 *e*PKPpre PKPpre 01 44 56.0
SAML *e*PKPdf **PKPdf** **01 45 01.2 +0.1**
SAML LR LR
comp=Z,116nm,21.0s
ASCN Ascension 144.20 317 PFAKE 01 45 10.0 +8.6
ASCN LR LR
comp=Z,987nm,21.0s
LPAZ La Paz 146.33 61 PKPbc **PKPbc** **01 45 06.8 -0.1**
comp=Z,17nm,0.8s,baz=341,slow=3.3,SNR=44
LPAZ pPKPbc pPKPbc 01 45 16.8 -0.1
comp=Z,21nm,0.9s,baz=23,slow=6.8,SNR=13
LCO Las Campanas 151.47 84 *e*PKPdf **PKPdf** **01 45 13.8 +0.5**
LCO *e*PKPbc **PKPbc** **01 45 19.6 +0.2**
PLCA Paso Flores 154.30 109 PKP **PKPdf** **01 45 18.4 +1.7**
comp=Z,3.4nm,1.1s,baz=300,slow=6.3,SNR=4.0
PLCA PKPbc **PKiKP** **01 45 25.4 +0.2**
comp=Z,5.6nm,1.0s,baz=324,slow=3.6,SNR=6.6
PLCA PKPab **PKPab** **01 45 40.4 +1.2**
comp=Z,5.6nm,0.9s,baz=260,slow=3.8,SNR=7.7
PLCA Paso Flores 154.30 109 PKIKP **PKPdf** **01 45 18.5 +1.7**
PLCA 01 45 25.4
PLCA 01 45 40.4
PLCA pmax pmax
comp=Z,3.0nm,0.9s
PLCA pmax pmax
comp=Z,6.0nm,1.0s
PLCA pmax pmax
comp=Z,6.0nm,0.9s
BDFB Brasilia 157.11 26 PKPbc PKPbc 01 45 37.1
comp=Z,1.4nm,0.7s,baz=80,slow=8.0,SNR=3.3
BDFB PKPab **PKPab** **01 45 51.8 0.0**
comp=Z,5.0nm,0.9s,baz=317,slow=7.4,SNR=5.7
CPUP Villa Florida 160.46 63 PKPab **PKPab** **01 46 05.5 -0.6**
comp=Z,5.6nm,1.1s,baz=330,slow=5.5,SNR=4.2
CPUP pPKPab **pPKPab** **01 46 15.4 -0.4**
comp=Z,8.4nm,1.1s,baz=324,slow=2.1,SNR=5.8
SPB Sao Paulo 164.50 35 PFAKE 01 45 40.0 +11
SPB LR LR
comp=Z,117nm,19.0s

*NNC **09** 01:36:17.9±6.0, 38°.27N×73°.53E, h0km, mb4.0, mpv3.6, Error ellipse: s-maj=47.7km s-min=40.1km az=66.0*
*IDC **09** 01:36:20.9±3.7, 38°.90N×75°.01E, h0km, mb3.8/5, mb1 3.7/7, mb1mx3.4/68, mbtmp3.8/7, ML3.3/2, Error ellipse: s-maj=84.5km s-min=18.4km az=101.0*
*SOME **09** 01:36:22.4, 39°.03N×74°.62E, h0km*
ISC 09 01:36:21.7±1.4, 38°.97N±0°.08×74°.98E±0°.05, h10km, n26, σ1§88/40, mb3.6/3, 7C-11D, Tajikistan-Xinjiang border region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SFK	**Sufi-Kurgan**	**1.55**	**313**	⇑Pn	**Pn**	**01 36 47.3**	**-2.2**
	24nm,0.3s						
SFK				⇓Sn	**Sg**	**01 37 14.1**	**+2.5**
	50nm,0.3s						
AAK	**Ala-Archa**	**3.68**	**354**	Pn	**Pb**	**01 37 24.5**	**-2.4**
	2.2nm,0.3s,baz=157,slow=9.7,SNR=17						
AAK				Lg	Lg	01 38 18.0	
	2.9nm,0.3s,baz=291,slow=20,SNR=9.1						
AAK	**Ala-Archa**	**3.68**	**354**	⇑Pn	**Pb**	**01 37 29.5**	**+2.7**
	7.5nm,0.5s						
AAK				⇑Sn	**Sb**	**01 38 16.1**	**+4.5**
	26nm,0.8s						
TKM2	**Tokmak 2**	**3.97**	**7**	⇑Pn	**Pb**	**01 37 29.3**	**-2.7**
	5.0nm,0.3s						
MNAS	**Manas**	**3.98**	**333**	⇓Pn	**Pn**	**01 37 25.7**	**+2.7**
	6.8nm,0.6s						
MNAS				⇓Sn	**Sb**	**01 38 19.9**	**-0.5**
	14nm,0.6s						
MRKS	**Merke**	**4.00**	**341**	*e*P	**Pb**	**01 37 32.6**	**+0.3**
	12nm,0.5s						
MRKS				*e*S	**Sb**	**01 38 21.2**	**+0.4**
	13nm,0.6s						
KST	**Kastek**	**4.13**	**10**	*e*P	**Pb**	**01 37 33.9**	**-0.8**
	4.9nm,0.4s						
KST				⇑*i*S	**Sb**	**01 38 23.2**	**-1.5**
	37nm,0.7s						
IZV	**Izvestkoviy**	**4.24**	**16**	*e*P	**Pg**	**01 37 41.7**	**-1.3**
	5.5nm,0.6s						
IZV				*e*S	**Sg**	**01 38 39.1**	**+1.1**
	98nm,0.8s						
DGS	**Degeres**	**4.31**	**8**	*e*P	**Pg**	**01 37 42.1**	**-2.1**
	15nm,0.6s						
DGS				*e*S	**Sg**	**01 38 39.9**	**-0.2**
	43nm,0.6s						
TNSS	**Tian-Shan**	**4.33**	**19**	⇑*i*P	**Pg**	**01 37 43.9**	**-0.8**
	20nm,0.5s						
TNSS				⇓*i*S	**Sg**	**01 38 42.7**	**+1.9**
	16nm,0.7s						
MDOK	**Medeo**	**4.47**	**20**	*e*P	**Pg**	**01 37 45.9**	**-1.4**
	9.5nm,0.7s						
MDOK				⇓*i*S	**Sg**	**01 38 45.1**	**-0.1**
	34nm,0.8s						
KOTS	**Kotyrbulak**	**4.55**	**20**	*e*P	**Pg**	**01 37 47.2**	**-1.7**
KOTS				*e*S	**Sg**	**01 38 48.6**	**+0.7**
SATY	**Saty**	**4.83**	**31**	⇓*i*P	**Pg**	**01 37 53.2**	**-1.1**
	23nm,0.6s						
SATY				⇓*i*S	**Sg**	**01 39 00.0**	**+3.1**
	22nm,0.8s						
KTBS	**Karatobe**	**4.91**	**15**	*e*P	**Pg**	**01 37 54.0**	**-1.7**
KTBS				*e*S	**Sg**	**01 39 00.2**	**+1.0**
CHKK	**Chushkaly**	**5.12**	**17**	*e*P	**Pg**	**01 37 57.5**	**-2.3**
	12nm,0.7s						
CHKK				*e*S	**Sg**	**01 39 06.2**	**0.0**
	53nm,1.2s						
KK31	**Karatay Array**	**5.34**	**322**	⇓Pn	**Pn**	**01 37 42.9**	**+1.4**
	0.7nm,0.3s,baz=150,slow=15,SNR=13						
KK31				⇓Sn	**Sn**	**01 38 39.9**	**-3.0**
	1.1nm,0.3s,baz=127,slow=25						
KK31				⇓Lg	Lg	01 39 06.4	
	1.9nm,0.5s,baz=156,slow=36						
PDGK	**Podgornoye**	**5.52**	**37**	⇑Pn	Pg	01 38 03.3	-4.1
	6.9nm,0.6s						
PDGK				⇓Sn	**Sg**	**01 39 18.9**	**+0.1**
	19nm,0.8s						
ARXS	**Arharly**	**5.65**	**21**	*e*P	Pg	01 38 06.7	-3.2
	3.0nm,0.4s						
ARXS				*e*S	**Sg**	**01 39 22.1**	**-1.1**
	27nm,0.8s						
MNBS	**Baschi**	**5.71**	**26**	*e*P	**Pg**	**01 38 09.9**	**-1.2**
	3.4nm,0.6s						
MNBS				*e*S	**Sg**	**01 39 27.7**	**+2.7**
	4.0nm,0.6s						
KTMS	**Ketmen**	**6.03**	**40**	*e*P	**Pg**	**01 38 15.9**	**-1.3**
	3.3nm,1.0s						
KTMS				*e*S	**Sg**	**01 39 37.9**	**+2.6**
	15nm,0.8s						
AKTO	**Aktyubinsk**	**16.59**	**319**	Pn	**Pn**	**01 40 14.5**	**+0.2**
	0.1nm,0.3s,baz=128,slow=12,SNR=2.9						
ARU	**Arti**	**20.57**	**333**	P	Pn	01 41 03.2	+0.5
	1.7nm,0.4s,baz=194,slow=3.3,SNR=4.1						
WSAR	**Wadi Sarin**	**20.97**	**226**	P	Pn	01 41 06.4	-1.2
	2.5nm,0.5s,baz=199,slow=13,SNR=6.3						
FINES	**FINESS Array B**	**37.30**	**323**	P	**P**	**01 43 34.6**	**+1.0**
	0.6nm,0.5s,baz=106,slow=10,SNR=4.0						
ARCES	**ARCESS Array B**	**40.14**	**335**	P	**P**	**01 43 58.5**	**+1.1**
	0.8nm,0.5s,baz=103,slow=8.8,SNR=10						
TORD	**Torodi Ar. Bea**	**68.91**	**270**	P	**P**	**01 47 27.0**	**-0.1**
	0.5nm,0.6s,baz=53,slow=5.6,SNR=9.4						

IDC 09 01:37:13.5±1.3, 38°.03N×144°.07E, h0km, mb3.7/5, mb1 3.9/6, mb1mx3.5/66, mbtmp3.6/6, ML3.5/1, Error ellipse: s-maj=32.8km s-min=29.3km az=61.0, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MJAR	**Matsushiro Arr**	**4.90**	**254**	Pn	Pn	01 38 28.3	-0.2
	1.9nm,0.3s,baz=60,slow=10,SNR=8.1						
MAT	**Matsushiro**	**4.90**	**254**	P	Pn	01 38 28.3	-0.2
SONM	**Songino Array**	**29.02**	**302**	P	P	01 43 15.6	+0.4
	0.4nm,0.5s,baz=83,slow=8.4,SNR=3.0						
ZALV	**Zalesovo Beam**	**42.82**	**312**	P	P	01 45 14.0	+1.1
	0.6nm,0.4s,baz=81,slow=12,SNR=2.3						
KURBB	**Kurchatov Arra**	**47.06**	**308**	P	P	01 45 45.0	-1.7
	0.3nm,0.4s,baz=81,slow=8.7,SNR=3.3						
WRA	**Warramunga Arr**	**58.38**	**191**	P	P	01 47 10.7	0.0
	1.6nm,0.7s,baz=11,slow=7.3,SNR=9.7						
PDAR	**Pinedale Array**	**75.46**	**47**	P	P	01 48 59.6	0.0
	0.2nm,0.5s,baz=252,slow=3.0,SNR=4.2						

JMA 09 01:37:58.7±0.1, 38°.36N×141°.92E, h63km±2km, M2.9, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**0.46**	**282**	P	Pn	01 38 10.6	+0.1
JIO				S	Sn	01 38 18.8	-0.2
JOU	**Okura**	**0.99**	**271**	S	Sn	01 38 29.9	-0.2
JMM	**Marumori**	**1.02**	**241**	*e*S	Sn	01 38 29.9	-0.8
JOM	**Ohasama**	**1.21**	**336**	*e*S	Sn	01 38 35.7	+0.4
MIYJ	**Miyakonagasawa**	**1.22**	**356**	P	Pn	01 38 19.7	0.0
MIYJ				S	Sn	01 38 34.6	-0.8
JFK	**Kawauchi**	**1.29**	**220**	P	Pn	01 38 20.7	0.0
JFK				*e*S	Sn	01 38 36.5	-0.7
JYK	**Kaneyama**	**1.34**	**295**	P	Pn	01 38 21.7	+0.3
JKZ	**Kuzumaki**	**1.69**	**344**	P	Pn	01 38 26.9	+0.9
JKZ				*e*S	Sn	01 38 47.1	+0.5

IDC 09 01:45:48.1±5.5, 5°.22S×152°.55E, h65km±47km, mb3.7/6, mb1 3.9/7, mb1mx3.6/40, mbtmp4.0/7, ML1.9/1, Error ellipse: s-maj=53.6km s-min=28.0km az=131.0, New Britain region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PMG	**Port Moresby**	**6.77**	**232**	P	Pn	01 47 26.0	+1.1
	1.5nm,0.3s,baz=26,slow=10.0,SNR=6.0						
PMG				S	Sn	01 48 42.1	+1.4
	5.8nm,0.3s,baz=208,slow=2.6,SNR=5.0						
WRA	**Warramunga Arr**	**22.98**	**229**	P	P	01 50 46.5	-1.0
	1.3nm,0.6s,baz=52,slow=9.9,SNR=4.8						
ASAR	**Alice Springs**	**25.67**	**223**	P	P	01 51 11.8	-0.4
	1.0nm,0.6s,baz=59,slow=8.7,SNR=10						
FITZ	**Fitzroy Crossi**	**29.24**	**242**	P	P	01 51 43.5	-0.7
	1.6nm,0.5s,baz=86,slow=7.2,SNR=4.7						
MKAR	**Makanchi Array**	**80.47**	**319**	P	P	01 57 54.8	+1.7
	0.6nm,0.7s,baz=107,slow=6.6,SNR=5.1						
ILAR	**Eielson Array**	**82.64**	**22**	P	P	01 58 02.6	-1.5
	3.2nm,0.8s,baz=248,slow=5.4,SNR=24						
YKA	**Yellowknife Ar**	**95.91**	**28**	P	P	01 59 07.5	+0.1
	0.3nm,0.5s,baz=269,slow=5.0,SNR=10						
PTGA	**Pitinga**	**147.00**	**99**	PKPbc	PKPab	02 05 25.7	-0.5
	3.9nm,0.6s,baz=220,slow=3.4,SNR=6.0						
TORD	**Torodi Ar. Bea**	**150.19**	**287**	PKPbc	PKPbc	02 05 32.4	-0.5
	1.2nm,0.7s,baz=84,slow=2.5,SNR=15						

*ISCJB **09** 01:51:40.4±0.7, 16°.7N±0°.1×46°.5W±0°.1, h13km, mb4.1/18, MS3.5/12, Error ellipse: s-maj=17.0km s-min=15.9km az=23.3*
*IDC **09** 01:51:40.4±1.0, 16°.64N×46°.55W, h0km, mb3.9/8, mb1 4.2/8, mb1mx3.7/45, mbtmp4.0/8, MS3.5/13, Ms1 3.5/13, ms1mx3.3/44, Error ellipse: s-maj=28.0km s-min=23.3km az=102.0*
*NEIC **09** 01:51:41.9±0.5, 16°.63N×46°.50W, h10km, mb4.3/9, Error ellipse: s-maj=12.7km s-min=11.8km az=115.0*
ISC 09 01:51:42.3±0.8, 16°.6N±0°.1×46°.5W±0°.1, h13km, n36, σ0§74/18, mb4.2/18, MS3.4/12, Northern Mid-Atlantic Ridge

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
H05N1	**Guadeloupe/Mar**	**13.96**	**271**	T	T	02 08 59.3	
	SNR=16						
H05S1	**Guadeloupe/Mar**	**13.98**	**263**	T	T	02 09 08.4	
	SNR=4.3						
SJG	**San Juan**	**18.80**	**277**	LR	LR	02 02 10.1	
	comp=Z,104nm,21.4s,baz=89,slow=34						
PTGA	**Pitinga**	**21.76**	**219**	P	**P**	**01 56 34.0**	**+0.1**
	4.8nm,0.7s,baz=30,slow=11,SNR=5.1						
PTGA				LR	LR	02 04 10.8	
	comp=Z,92nm,20.6s,baz=48,slow=34						
RCBR	**Riachuelo**	**24.65**	**154**	LR	LR	02 04 24.4	
	comp=Z,85nm,18.7s,baz=335,slow=31						
SDV	**Santo Domingo**	**24.73**	**255**	P	**P**	**01 57 05.5**	**+1.5**
	4.8nm,0.9s,baz=86,slow=11,SNR=4.4						
SDV				LR	LR	02 08 25.7	
	comp=Z,42nm,18.9s,baz=62,slow=41						
BBTS	**Babate**	**28.92**	**90**	LR	LR	02 06 03.0	
	comp=Z,112nm,18.6s,baz=216,slow=30						
ROSC	**El Rosal**	**29.68**	**250**	LR	LR	02 10 33.2	
	comp=Z,53nm,19.6s,baz=76,slow=38						
LPAZ	**La Paz**	**39.04**	**214**	LR	LR	02 15 56.7	
	comp=Z,26nm,18.5s,baz=38,slow=37						
H10N3	**ASCENSION HYDR**	**39.92**	**125**	T	T	02 41 42.0	
	baz=307,slow=76,SNR=34						
H10N2	**ASCENSION HYDR**	**39.92**	**125**	T	T	02 41 38.4	
	baz=307,slow=76,SNR=45						
H10N1	**ASCENSION HYDR**	**39.94**	**125**	T	T	02 41 42.4	
	baz=307,slow=76,SNR=45						
H10S3	**ASCENSION HYDR**	**40.48**	**127**	T	T	02 42 23.0	
	baz=309,slow=75,SNR=21						
H10S1	**ASCENSION HYDR**	**40.48**	**127**	T	T	02 42 25.2	
	baz=309,slow=75,SNR=22						
H10S2	**ASCENSION HYDR**	**40.50**	**127**	T	T	02 42 26.3	
	baz=309,slow=75,SNR=23						
MDT	**Midelt**	**41.04**	**59**	LR	LR	02 11 35.2	
	comp=Z,49nm,20.2s,baz=311,slow=29						
DBIC	**Dimbokro**	**41.90**	**99**	LR	LR	02 14 02.2	
	comp=Z,70nm,20.4s,baz=262,slow=32						
CPUP	**Villa Florida**	**43.97**	**194**	P	**P**	**01 59 48.1**	**-1.3**
	6.0nm,0.9s,baz=27,slow=6.3,SNR=7.8						
TORD	**Torodi Ar. Bea**	**46.63**	**87**	P	**P**	**02 00 12.2**	**+1.4**
	1.5nm,1.0s,baz=287,slow=6.7,SNR=6.8						
TORD				LR	LR	02 17 32.0	
	comp=Z,65nm,20.0s,baz=210,slow=33						
JCT	**Junction City**	**50.34**	**296**	*e*P	**P**	**02 00 39.6**	**+0.3**
	8.8nm,0.8s						
ULM	**Lac du Bonnet**	**51.77**	**322**	LR	LR	02 22 21.9	
	comp=Z,116nm,18.8s,baz=346,slow=36						
TXAR	**Lajitas Array**	**53.66**	**294**	LR	LR	02 22 22.0	
	comp=Z,57nm,22.0s,baz=0.0,slow=34						
DAVOX	**Davos/Dischmat**	**55.16**	**44**	LR	LR	02 22 16.2	
	comp=Z,332nm,18.5s,baz=22,slow=33						
MNTX	**Cornudas Mount**	**55.17**	**297**	*e*P	**P**	**02 01 15.3**	**+0.4**
	4.5nm,1.4s						
SDCO	**Great Sand Dun**	**55.61**	**305**	*e*P	**P**	**02 01 18.5**	**+0.2**
	1.0nm,0.8s						
PDAR	**Pinedale Array**	**59.18**	**310**	P	**P**	**02 01 43.7**	**+0.3**
	0.9nm,1.0s,baz=88,slow=5.2,SNR=6.3						
LOHW	**Long Hollow**	**60.02**	**311**	*e*P	**P**	**02 01 49.3**	**+0.1**
	2.8nm,1.2s						
MOOW	**Moose Ponds**	**60.14**	**311**	*e*P	**P**	**02 01 49.9**	**-0.1**
	2.2nm,1.2s						
HWUT	**Hardware Ranch**	**60.57**	**309**	*e*P	**P**	**02 01 53.4**	**+0.4**
	2.6nm,1.0s						
PSZ	**Piszkesteto**	**62.06**	**44**	*e*P	**P**	**02 02 02.1**	**-0.7**
	2.4nm,0.7s						
HLID	**Hailey**	**62.78**	**311**	*e*P	**P**	**02 02 07.5**	**-0.3**
	0.7nm,0.5s						
ELK	**Elko**	**63.31**	**308**	*e*P	**P**	**02 02 11.2**	**-0.2**
	0.9nm,0.4s						
NEW	**Newport**	**64.90**	**316**	*e*P	**P**	**02 02 21.7**	**+0.2**
	3.6nm,1.0s						
YKA	**Yellowknife Ar**	**65.30**	**332**	P	**P**	**02 02 22.9**	**-0.8**
	0.3nm,0.8s,baz=97,slow=6.8,SNR=3.8						
INK	**Inuvik**	**73.59**	**337**	P	**P**	**02 03 14.3**	**-0.6**
	1.2nm,1.0s,baz=42,slow=6.1,SNR=3.2						
ILAR	**Eielson Array**	**79.46**	**335**	P	**P**	**02 03 48.4**	**+0.2**
	2.0nm,1.1s,baz=75,slow=5.2,SNR=12						

JMA 09 01:53:02.9±0.2, 36°.75N×143°.29E, h37km, M3.7, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**2.03**	**281**	P	Pn	01 53 36.3	+1.8
ONAJ				*e*S	Sn	01 54 00.9	+2.3
JFK	**Kawauchi**	**2.03**	**288**	P	Pn	01 53 35.6	+1.1
JFK				*e*S	Sn	01 53 59.9	+1.3
JHO	**Hitachi**	**2.19**	**267**	P	Pn	01 53 38.0	+1.3
JMM	**Marumori**	**2.28**	**300**	P	Pn	01 53 39.2	+1.2
JMM				S	Sn	01 54 06.4	+1.6
JIO	**Ouri**	**2.30**	**318**	P	Pn	01 53 39.2	+1.0
JIO				S	Sn	01 54 06.1	+1.0
JFT	**Otama**	**2.48**	**289**	P	Pn	01 53 42.8	+2.1
JFT				*e*S	Sn	01 54 12.2	+2.4
JOU	**Okura**	**2.64**	**308**	P	Pn	01 53 45.0	+2.1
JOU				*e*S	Sn	01 54 15.8	+2.2
MAT	**Matsushiro**	**4.09**	**269**	P	Pn	01 54 05.5	+2.6
MAT				*e*S	Sn	01 54 51.5	+2.0

*NIED **09** 01:55:00, 37°.30N×143°.60E, h5km, Mw4.0 Best double couple: M0 1.01000×10^15 NP1:ϕs 15.00000°, δ26.00000°, λ-91.00000°. NP2:ϕs 196.00000°, δ64.00000°, λ-89.00000°.*
*IDC **09** 01:55:09.1±0.8, 37°.11N×143°.85E, h0km, mb3.7/11, mb1 3.9/14, mb1mx3.7/55, mbtmp3.7/14, ML3.8/2, MS3.1/4, Ms1 3.2/4, ms1mx2.8/46, Error ellipse: s-maj=20.6km s-min=18.4km az=136.0*
*JMA **09** 01:55:11.9±0.3, 37°.31N×143°.57E, h39km, M3.7*
*ISCJB **09** 01:55:12.3±0.6, 37°.26N±0°.05×143°.55E±0°.05, h33km, mb3.7/11, MS3.3/1, Error ellipse: s-maj=7.0km s-min=5.5km az=169.3*
ISC 09 01:55:14.4±0.8, 37°.29N±0°.07×143°.54E±0°.07, h35km, n35, σ1§22/35, mb3.8/11, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**2.09**	**305**	P	**Pn**	**01 55 45.3**	**-1.6**
JIO				S	**Sn**	**01 56 10.4**	**-1.3**
JFK	**Kawauchi**	**2.13**	**273**	P	**Pn**	**01 55 46.5**	**-0.9**
JFK				*e*S	**Sn**	**01 56 12.1**	**-0.5**
ONAJ	**Iwakimizuishiy**	**2.20**	**266**	P	**Pn**	**01 55 47.1**	**-1.3**
JMM	**Marumori**	**2.26**	**286**	P	**Pn**	**01 55 48.3**	**-0.9**
JMM				*e*S	**Sn**	**01 56 15.7**	**-0.1**
JHO	**Hitachi**	**2.47**	**255**	P	**Pn**	**01 55 51.7**	**-0.5**
JOU	**Okura**	**2.52**	**296**	P	**Pn**	**01 55 52.3**	**-0.5**
JOU				*e*S	**Sn**	**01 56 22.2**	**-0.1**
JFT	**Otama**	**2.56**	**276**	P	**Pn**	**01 55 53.8**	**+0.4**
JFT				*e*S	**Sn**	**01 56 24.2**	**+0.9**
JOM	**Ohasama**	**2.81**	**322**	P	**Pn**	**01 55 55.6**	**-1.2**
JOM				*e*S	**Sn**	**01 56 27.9**	**-1.5**
JYK	**Kaneyama**	**2.99**	**304**	P	**Pn**	**01 55 58.9**	**-0.4**
JAG	**Ashikaga**	**3.39**	**257**	P	**Pn**	**01 56 04.8**	**0.0**
JRY	**Ryogami san**	**3.94**	**253**	P	**Pn**	**01 56 12.0**	**-0.4**
JRY				*e*S	**Sn**	**01 56 55.8**	**-1.5**
JOD2	**Odawara 2**	**4.12**	**242**	P	**Pn**	**01 56 14.0**	**-0.9**
JOD2				*e*S	**Sn**	**01 57 00.7**	**-1.2**
MJAR	**Matsushiro Arr**	**4

USRK LR LR 02 01 54.4
comp=Z,98nm,18.5s,baz=82,slow=35
KSRS Korea Array 12.43 276 Pn **Pn 01 58 09.2 +0.5**
0.5nm,0.3s,baz=83,slow=13,SNR=4.7
KSRS LR LR 02 03 52.1
comp=Z,47nm,18.2s,baz=65,slow=41
KLR Kul'dur 14.68 328 Pn **Pn 01 58 37.2 -2.2**
0.1nm,0.3s,baz=134,slow=14,SNR=5.3
SEY Seymchan 26.24 9 P **P 02 00 46.7 +0.9**
1.0nm,0.4s,baz=191,slow=13,SNR=4.5
H11N2 WAKE ISLAND Hy 26.85 124 T T 02 28 46.7
baz=74
H11N1 WAKE ISLAND Hy 26.86 124 T T 02 28 50.1
baz=74
H11N3 WAKE ISLAND Hy 26.87 124 T T 02 28 52.6
baz=74
H11S1 WAKE ISLAND Hy 27.60 126 T T 02 29 45.3
baz=322
H11S3 WAKE ISLAND Hy 27.61 126 T T 02 29 47.5
baz=322
H11S2 WAKE ISLAND Hy 27.62 126 T T 02 29 54.9
baz=322
SONM Songino Array 29.06 303 P P 02 01 15.6 +4.2
0.6nm,0.5s,baz=116,slow=11,SNR=4.9
ZALV Zalesovo Beam 43.00 312 P **P 02 03 13.1 +3.0**
0.5nm,0.2s,baz=66,slow=7.0,SNR=3.8
CMAR Chiang Mai Arr 43.20 257 LR LR 02 23 06.9
comp=Z,36nm,18.6s,baz=265,slow=39
MKAR Makanchi Array 45.42 302 P **P 02 03 31.8 +2.2**
0.6nm,0.7s,baz=82,slow=12,SNR=4.2
KURBB Kurchatov Arra 47.18 308 P **P 02 03 44.4 +1.0**
0.6nm,0.8s,baz=84,slow=8.0,SNR=4.3
ILAR Eielson Array 48.37 33 P **P 02 03 51.8 -0.5**
1.3nm,0.9s,baz=266,slow=6.0,SNR=7.8
INK Inuvik 53.39 27 P **P 02 04 30.3 +0.3**
1.3nm,1.0s,baz=316,slow=6.3,SNR=2.7
WRA Warramunga Arr 57.58 190 P **P 02 04 59.3 -1.3**
1.2nm,0.8s,baz=8.2,slow=7.6,SNR=5.4
ASAR Alice Springs 61.30 190 P **P 02 05 25.9 -0.4**
1.0nm,0.8s,baz=13,slow=5.7,SNR=7.2
YKA Yellowknife Ar 62.73 31 P **P 02 05 35.8 +0.3**
0.3nm,0.9s,baz=297,slow=6.2,SNR=3.4
TXAR Lajitas Array 88.61 54 P **P 02 08 04.0 -0.1**
0.4nm,0.8s,baz=294,slow=1.2,SNR=4.6

*IDC **09** 01:55:20.6±0.9, 37.°16N×143.°90E, h0km, mb3.9/9, mb1 4.0/12, mb1mx3.8/55, mbtmp3.8/12, ML3.6/3, Error ellipse: s-maj=24.6km s-min=19.0km az=117.0*
*ISCJB **09** 01:55:23.4±0.8, 37.°1N±0.°1×143.°8E±0.°1, h33km, mb3.8/9, Error ellipse: s-maj=16.2km s-min=12.9km az=154.2*
ISC 09 01:55:25.9±1.0, 37.°2N±0.°1×143.°9E±0.°1, h35km, n12, σ0s72/11, mb3.9/9, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MJAR	**Matsushiro Arr**	**4.61**	**264**	Pn	Pn	01 56 29.9	-3.2
	3.5nm,0.3s,baz=90,slow=16,SNR=9.0						
KSRS	**Korea Array**	**12.73**	**276**	Pn	**Pn**	**01 58 24.4**	**+0.1**
	0.6nm,0.3s,baz=88,slow=14,SNR=5.7						
KLR	**Kul'dur**	**14.93**	**328**	Pn	**Pn**	**01 58 54.4**	**+0.1**
	0.1nm,0.3s,baz=135,slow=10.0,SNR=3.0						
SEY	**Seymchan**	**26.31**	**9**	P	**P**	**02 00 57.4**	**-0.5**
	3.1nm,0.9s,baz=152,slow=5.3,SNR=6.2						
SONM	**Songino Array**	**29.37**	**303**	P	**P**	**02 01 26.7**	**+1.1**
	0.7nm,0.7s,baz=111,slow=7.3,SNR=4.1						
ZALV	**Zalesovo Beam**	**43.29**	**312**	P	**P**	**02 03 22.6**	**-1.3**
	0.4nm,0.4s,baz=57,slow=5.5,SNR=4.0						
ILAR	**Eielson Array**	**48.31**	**32**	P	**P**	**02 04 03.3**	**-0.1**
	1.7nm,0.8s,baz=271,slow=6.4,SNR=4.4						
INK	**Inuvik**	**53.35**	**27**	P	**P**	**02 04 41.4**	**+0.2**
	1.1nm,0.9s,baz=298,slow=5.8,SNR=4.3						
WRA	**Warramunga Arr**	**57.52**	**191**	P	**P**	**02 05 11.1**	**-0.7**
	1.4nm,0.7s,baz=8.0,slow=7.4,SNR=5.5						
ASAR	**Alice Springs**	**61.24**	**190**	P	**P**	**02 05 37.8**	**+0.4**
	1.1nm,0.8s,baz=5.6,slow=5.9,SNR=7.6						
YKA	**Yellowknife Ar**	**62.68**	**31**	P	**P**	**02 05 46.6**	**0.0**
	0.4nm,0.9s,baz=299,slow=6.3,SNR=4.0						
TXAR	**Lajitas Array**	**88.44**	**54**	P	**P**	**02 08 15.4**	**+0.6**
	0.6nm,0.8s,baz=302,slow=2.4,SNR=5.3						

*NEIC **09** 01:57:25.6±4.4, 23.°00S×179.°38W, h450km±45km, mb4.2/2, Error ellipse: s-maj=44.1km s-min=24.2km az=220.0*
*IDC **09** 01:57:25.8±6.2, 23.°02S×179.°61W, h429km±58km, mb3.8/5, mb1 3.9/6, mb1mx3.3/34, mbtmp4.6/6, Error ellipse: s-maj=45.3km s-min=33.9km az=51.0*
ISC 09 01:57:34.3±1.8, 23.°6S±0.°1×179.°8W±0.°2, h526km, n14, σ0s89/14, mb4.3/8, South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
URZ	**Urewera**	**14.82**	**189**	P	**P**	**02 00 42.2**	**+0.2**
	2.4nm,0.3s,baz=24,slow=2.6,SNR=4.1						
URZ				S	**S**	**02 03 16.0**	**-0.9**
	0.9nm,0.3s,baz=61,slow=22,SNR=7.3						
HNR	**Honiara**	**23.93**	**303**	P	P	02 02 02.3	-4.7
	71nm,0.3s,baz=246,slow=4.4,SNR=4.3						
CTA	**Charters Tower**	**31.63**	**270**	P	**P**	**02 03 15.3**	**+1.0**
	18nm,0.3s,baz=92,slow=11,SNR=18						
CTAO	**Charters Tower**	**31.63**	**270**	*eP*	**P**	**02 03 14.9**	**+0.6**
	19nm,0.4s						
PMG	**Port Moresby**	**34.55**	**289**	*eP*	**P**	**02 03 37.2**	**-1.8**
	2.5nm,0.4s						
STKA	**Stephens Creek**	**34.97**	**248**	P	**P**	**02 03 43.3**	**+1.0**
	2.0nm,0.4s,baz=87,slow=10,SNR=5.5						
ASAR	**Alice Springs**	**42.23**	**260**	P	**P**	**02 04 41.5**	**+0.1**
	2.8nm,0.4s,baz=95,slow=7.4,SNR=38						
WRAB	**Tennant Creek**	**42.57**	**266**	*eP*	**P**	**02 04 43.3**	**-0.8**
	3.5nm,0.3s						
WRA	**Warramunga Arr**	**42.58**	**266**	P	**P**	**02 04 43.9**	**-0.3**
	5.1nm,0.4s,baz=90,slow=5.9,SNR=69						
FITZ	**Fitzroy Crossi**	**51.01**	**265**	P	**P**	**02 05 48.5**	**+0.8**
	1.6nm,0.5s,baz=51,slow=5.1,SNR=3.9						
HFS	**Hagfors**	**142.31**	**349**	PKhKP	PKPpre	02 16 02.0	
	1.9nm,0.3s,baz=72,slow=4.7,SNR=14						
AKASG	**Malin Array Be**	**144.82**	**328**	PKP	**PKPdf**	**02 16 10.7**	**-0.3**
	1.6nm,0.5s,baz=45,slow=4.2,SNR=12						
BRTR	**Keskin Array B**	**147.53**	**308**	PKPbc	**PKPbc**	**02 16 19.3**	**-0.3**
	0.6nm,0.6s,baz=144,slow=39,SNR=3.1						
BRTR				PKPab	**PKPab**	**02 16 24.0**	**+0.4**
	0.8nm,0.6s,baz=134,slow=6.1,SNR=4.7						
MMAI	**Mount Meron Ar**	**147.73**	**295**	PKPbc	**PKPbc**	**02 16 21.0**	**+0.8**
	1.4nm,0.5s,baz=82,slow=6.0,SNR=6.6						

*ISCJB **09** 02:02:51.9±0.8, 16.°5N±0.°1×46.°5W±0.°2, h13km, mb3.9/13, MS3.0/3, Error ellipse: s-maj=21.9km s-min=17.1km az=166.0*
*IDC **09** 02:02:51.6±1.0, 16.°50N×46.°60W, h0km, mb3.8/7, mb1 4.0/7, mb1mx3.6/54, mbtmp3.8/7, MS3.1/4, Ms1 3.1/4, ms1mx2.9/37, Error ellipse: s-maj=30.6km s-min=24.6km az=87.0*
*NEIC **09** 02:02:53.2±0.7, 16.°47N×46.°50W, h10km, mb4.1/6, Error ellipse: s-maj=19.2km s-min=14.9km az=80.0*
ISC 09 02:02:53.7±0.9, 16.°5N±0.°2×46.°5W±0.°2, h13km, n23, σ0s96/13, mb4.0/13, MS3.1/3, Northern Mid-Atlantic Ridge

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
H05S1	**Guadeloupe/Mar**	**13.96**	**264**	T	T	02 20 32.0	
	SNR=6.2						
SJG	**San Juan**	**18.83**	**278**	LR	LR	02 13 22.4	
	comp=Z,46nm,19.9s,baz=94,slow=34						
PTGA	**Pitinga**	**21.63**	**219**	P	**P**	**02 07 44.9**	**+1.1**
	2.6nm,0.7s,baz=336,slow=20,SNR=3.9						
PTGA				LR	LR	02 15 12.5	
	comp=Z,77nm,19.4s,baz=66,slow=34						
RCBR	**Riachuelo**	**24.50**	**154**	LR	LR	02 15 06.3	
	comp=Z,68nm,20.4s,baz=286,slow=30						
SDV	**Santo Domingo**	**24.69**	**255**	LR	LR	02 17 53.3	
	comp=Z,41nm,21.7s,baz=84,slow=37						
H10N3	**ASCENSION HYDR**	**39.82**	**125**	T	T	02 52 51.2	
	baz=307,slow=76,SNR=45						
H10N2	**ASCENSION HYDR**	**39.83**	**125**	T	T	02 52 59.5	
	baz=307,slow=76,SNR=46						
H10N1	**ASCENSION HYDR**	**39.84**	**125**	T	T	02 52 52.7	
	baz=307,slow=76,SNR=51						
H10S3	**ASCENSION HYDR**	**40.38**	**126**	T	T	02 53 26.3	
	baz=308,slow=75,SNR=28						
H10S1	**ASCENSION HYDR**	**40.38**	**126**	T	T	02 53 41.5	
	baz=308,slow=75,SNR=22						
H10S2	**ASCENSION HYDR**	**40.40**	**126**	T	T	02 53 38.6	
	baz=308,slow=75,SNR=31						

CPUP Villa Florida 43.81 194 P **P 02 10 58.2 -1.2**
3.5nm,0.8s,baz=5.6,slow=10.0,SNR=4.5
TORD Torodi Ar. Bea 46.64 87 P **P 02 11 22.8 +0.6**
0.8nm,0.8s,baz=291,slow=7.1,SNR=7.9
MNTX Cornudas Mount 55.25 297 *eP* **P 02 12 27.7 +0.8**
1.2nm,1.0s
ISCO Idaho Springs 56.01 307 *eP* **P 02 12 32.5 -0.1**
3.6nm,1.1s
PDAR Pinedale Array 59.29 310 P **P 02 12 54.3 -1.2**
0.5nm,0.7s,baz=84,slow=9.2,SNR=5.1
MOOW Moose Ponds 60.25 311 *eP* **P 02 13 01.8 -0.3**
1.3nm,1.0s
HWUT Hardware Ranch 60.68 309 *eP* **P 02 13 06.2 +1.2**
0.8nm,0.5s
BOZ Bozeman (W) 61.07 313 *eP* **P 02 13 07.5 0.0**
0.7nm,0.4s
NEW Newport 65.02 316 *eP* **P 02 13 34.2 +0.6**
2.0nm,0.8s
YKA Yellowknife Ar 65.45 332 P **P 02 13 34.8 -1.3**
0.2nm,0.6s,baz=110,slow=7.1,SNR=4.7
INK Inuvik 73.74 337 P **P 02 14 26.9 -0.3**
0.6nm,0.5s,baz=90,slow=6.0,SNR=5.1
ILAR Eielson Array 79.61 335 P **P 02 15 01.1 +0.6**
1.8nm,1.1s,baz=63,slow=4.6,SNR=8.6

*DDA **09** 02:05:32.6, 36.°44N×28.°77E, h7km, Md2.8*
*CSEM **09** 02:05:32.6±0.4, 36.°43N×28.°77E, h8km, MD2.7, Error ellipse: s-maj=9.1km s-min=4.3km az=19.0*
*ISK **09** 02:05:32.8, 36.°51N×28.°77E, h10km, MD2.7*
ISC 09 02:05:32.5±1.7, 36.°43N±0.°07×28.°77E±0.°05, h6km±11km, n20, σ0s50/32, Dodecanese Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
FETY	**Fethiye**	**0.33**	**51**	*e*PG	**Pg**	**02 05 39.0**	**+0.1**
FETY				*e*SG	**Sg**	**02 05 43.4**	**+0.2**
FETY	**Fethiye**	**0.33**	**51**	*e*Pg	**Pg**	**02 05 39.0**	**+0.1**
FETY				*e*Sg	**Sg**	**02 05 43.4**	**+0.2**
DALY	**Dalyan (Mu¨la**	**0.40**	**347**	*e*PG	**Pg**	**02 05 39.9**	**-0.3**
DALY				*e*SG	**Sg**	**02 05 45.0**	**-0.4**
DALY	**Dalyan (Mu¨la**	**0.40**	**347**	*e*Pg	**Pg**	**02 05 39.9**	**-0.3**
DALY				*e*Sg	**Sg**	**02 05 45.0**	**-0.4**
TURN	**Turunc**	**0.46**	**343**	*i* P	**Pb**	**02 05 42.9**	**-0.1**
TURN				*i* S	**Sb**	**02 05 51.0**	**+0.9**
TURN	**Turunc**	**0.46**	**343**	P	**Pb**	**02 05 42.9**	**-0.1**
TURN				S	**Sb**	**02 05 51.0**	**+0.9**
AKAS	**Kas**	**0.70**	**106**	*i* P	**Pg**	**02 05 46.2**	**+0.2**
AKAS				*i* S	**Sn**	**02 05 59.3**	**-1.1**
AKAS	**Kas**	**0.70**	**106**	P	**Pg**	**02 05 46.2**	**+0.2**
AKAS				S	**Sn**	**02 05 59.3**	**-1.1**
YER	**Yerkesik**	**0.80**	**331**	*e*PG	**Pg**	**02 05 47.2**	**-0.7**
YER	**Yerkesik**	**0.80**	**331**	*e*Pg	**Pg**	**02 05 47.3**	**-0.7**
ELL	**Elmali**	**0.97**	**71**	*e*PG	**Pb**	**02 05 51.9**	**+0.1**
ELL	**Elmali**	**0.97**	**71**	*e*Pg	**Pb**	**02 05 51.9**	**+0.1**
BDRM	**Kayabasi**	**1.24**	**301**	*i* P	**Pn**	**02 05 56.5**	**+0.1**
BDRM				*i* S	**Sn**	**02 06 13.8**	**+0.5**
BDRM	**Kayabasi**	**1.24**	**301**	P	**Pn**	**02 05 56.5**	**+0.1**
BDRM				S	**Sn**	**02 06 13.8**	**+0.5**
BODT	**Bodrum**	**1.33**	**299**	*e*PN	**Pn**	**02 05 57.4**	**-0.2**
BODT	**Bodrum**	**1.33**	**299**	*e*Pn	**Pn**	**02 05 57.4**	**-0.2**
AYDN	**Tasoluk**	**1.42**	**330**	*i* P	**Pn**	**02 05 59.0**	**+0.1**
AYDN				*i* S	**Sg**	**02 06 18.6**	**+0.5**
AYDN	**Tasoluk**	**1.42**	**330**	P	**Pn**	**02 05 59.0**	**+0.1**
AYDN				S	**Sg**	**02 06 18.6**	**+0.5**
AYDB	**Zeytinkoy-Aydi**	**1.67**	**335**	*e*PN	**Pn**	**02 06 01.9**	**-0.5**
AYDB	**Zeytinkoy-Aydi**	**1.67**	**335**	*e*Pn	**Pn**	**02 06 01.9**	**-0.5**

*ISK **09** 02:10:15.6, 39.°96N×38.°76E, h5km, MD2.6*
*ISCJB **09** 02:10:17.3±0.6, 39.°90N±0.°04×38.°81E±0.°04, h8km, Error ellipse: s-maj=6.5km s-min=4.2km az=13.1*
*CSEM **09** 02:10:17.0±0.4, 39.°93N×38.°81E, h10km, MD2.6, Error ellipse: s-maj=10.7km s-min=8.2km az=171.0*
*DDA **09** 02:10:17.7, 39.°88N×38.°80E, h16km, Md2.6*
ISC 09 02:10:16.7±0.9, 39.°96N±0.°04×38.°82E±0.°03, h8km, n17, σ0s62/24, Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
KELT	**Kelkit**	**0.39**	**60**	*i* P	**Pb**	**02 10 26.4**	**+0.5**
KELT	**Kelkit**	**0.39**	**60**	P	**Pb**	**02 10 26.4**	**+0.5**
SUSE	**Susehri**	**0.54**	**298**	*i* P	**Pb**	**02 10 29.1**	**+0.7**
SUSE				*i* S	**Sb**	**02 10 37.3**	**+1.0**
SUSE	**Susehri**	**0.54**	**298**	P	**Pb**	**02 10 29.1**	**+0.7**
SUSE				S	**Sb**	**02 10 37.3**	**+1.0**
ILIC	**ilic-Erzincan**	**0.54**	**201**	*e*PG	**Pg**	**02 10 26.3**	**-0.8**
ILIC				*e*SG	**Sg**	**02 10 34.2**	**-0.1**
ILIC	**ilic-Erzincan**	**0.54**	**201**	*e*Pg	**Pg**	**02 10 26.3**	**-0.8**
ILIC				*e*Sg	**Sg**	**02 10 34.2**	**-0.1**
EUZM	**Uzumlu**	**0.72**	**110**	*i* P	**Pb**	**02 10 31.8**	**+0.2**
EUZM	**Uzumlu**	**0.72**	**110**	P	**Pb**	**02 10 31.8**	**+0.2**
ERZN	**Erzincan**	**0.79**	**118**	*e*PG	**Pg**	**02 10 31.8**	**0.0**
ERZN				*e*SG	**Sb**	**02 10 44.0**	**+0.4**
CUZAR	**Zara_SIVAS**	**0.81**	**265**	*i* P	**Pg**	**02 10 32.0**	**-0.3**
CUZAR				*i* S	**Sb**	**02 10 44.3**	**+0.1**
CUZAR	**Zara_SIVAS**	**0.81**	**265**	P	**Pg**	**02 10 32.0**	**-0.3**
CUZAR				S	**Sb**	**02 10 44.3**	**+0.1**
ESPY	**Espiye-Giresun**	**0.96**	**356**	*e*PG	**Pg**	**02 10 34.0**	**-1.1**
ESPY	**Espiye-Giresun**	**0.96**	**356**	*e*Pg	**Pg**	**02 10 34.0**	**-1.1**
BAYT	**Ayd¨–ntepe-Bay**	**1.10**	**66**	*e*PN	**Pn**	**02 10 38.6**	**0.0**
BAYT	**Ayd¨–ntepe-Bay**	**1.10**	**66**	*e*Pn	**Pn**	**02 10 38.6**	**0.0**
SVSK	**Karacayir**	**1.40**	**269**	*e*PN	**Pn**	**02 10 42.1**	**-0.4**
SVSK	**Karacayir**	**1.40**	**269**	*e*Pn	**Pn**	**02 10 42.1**	**-0.4**

*ISCJB **09** 02:15:15.4±0.6, 43.°81N±0.°04×11.°96E±0.°06, h13km±6km, Error ellipse: s-maj=9.0km s-min=3.8km az=42.9*
*ROM **09** 02:15:15.1±0.1, 43.°81N×11.°97E, h8km, 1km, Md2.5/16, Ml1.9/14, Error ellipse: s-maj=1.8km s-min=0.9km az=46.0*
*CSEM **09** 02:15:15.7±0.1, 43.°81N×11.°96E, h10km, ML2.5/8, Error ellipse: s-maj=3.3km s-min=1.8km az=35.0*
ISC 09 02:15:15.2±0.8, 43.°80N±0.°03×11.°93E±0.°03, h14km±6km, n34, σ0s42/52, Central Italy

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ASQU	**Asqua**	**0.10**	**269**	Pg	**Pg**	**02 15 18.6**	**+0.2**
ASQU				Sg	**Sg**	**02 15 20.9**	**+0.3**
	555nm,0.3s						
ASQU	**Asqua**	**0.10**	**269**	Pg	**Pg**	**02 15 18.6**	**+0.2**
ASQU				Sg	**Sg**	**02 15 20.9**	**+0.3**
	555nm,0.3s						
SFI	**Santa Sofia**	**0.12**	**331**	Pg	**Pg**	**02 15 18.4**	**-0.3**
SFI				Sg	**Sg**	**02 15 20.6**	**-0.4**
	476nm,0.2s						
SFI	**Santa Sofia**	**0.12**	**331**	Pg	**Pg**	**02 15 18.4**	**-0.3**
SFI				Sg	**Sg**	**02 15 20.6**	**-0.4**
	476nm,0.2s						
CRE	**Caprese Michel**	**0.18**	**175**	Pg	**Pg**	**02 15 19.8**	**+0.3**
CRE				Sg	**Sb**	**02 15 23.5**	**-0.4**
	483nm,0.3s						
CRE	**Caprese Michel**	**0.18**	**175**	Pg	**Pg**	**02 15 19.8**	**+0.3**
CRE				Sg	**Sb**	**02 15 23.5**	**-0.4**
	483nm,0.3s						
PARC	**Parchiule**	**0.27**	**124**	Pg	**Pg**	**02 15 20.9**	**0.0**
PARC				Sg	**Sg**	**02 15 25.4**	**+0.6**
	160nm,0.3s						
PARC	**Parchiule**	**0.27**	**124**	Pg	**Pg**	**02 15 20.9**	**0.0**
PARC				Sg	**Sg**	**02 15 25.4**	**+0.6**
	160nm,0.3s						
VMG	**Vicchio**	**0.32**	**301**	Pg	**Pb**	**02 15 22.6**	**-0.3**
VMG				Sg	**Sb**	**02 15 28.5**	**+0.5**
	93nm,0.2s						
VMG	**Vicchio**	**0.32**	**301**	Pg	**Pb**	**02 15 22.6**	**-0.3**
VMG				Sg	**Sb**	**02 15 28.5**	**+0.5**
	93nm,0.2s						
BADI	**Badiali**	**0.37**	**142**	Pg	**Pg**	**02 15 22.8**	**+0.1**
BADI				Sg	**Sb**	**02 15 28.8**	**-0.4**
	173nm,0.4s						
BADI	**Badiali**	**0.37**	**142**	Pg	**Pg**	**02 15 22.8**	**+0.1**
BADI				Sg	**Sb**	**02 15 28.8**	**-0.4**
	173nm,0.4s						
RSM	**Repubblica di**	**0.40**	**70**	Pg	**Pb**	**02 15 23.9**	**-0.2**
	72nm,0.9s						
RSM	**Repubblica di**	**0.40**	**70**	Pg	**Pb**	**02 15 23.9**	**-0.2**
	72nm,0.9s						
CAFI	**Castiglion Fio**	**0.47**	**177**	Pg	**Pb**	**02 15 25.2**	**-0.1**
	52nm,0.6s						
CAFI	**Castiglion Fio**	**0.47**	**177**	Pg	**Pb**	**02 15 25.2**	**-0.1**
	52nm,0.6s						
SEI	**Scarperia**	**0.49**	**302**	Pg	**Pb**	**02 15 25.4**	**-0.3**
	79nm,0.2s						
SEI	**Scarperia**	**0.49**	**302**	Pg	**Pb**	**02 15 25.4**	**-0.3**
	79nm,0.2s						
ATPC	**Poggio Castell**	**0.50**	**129**	Pg	**Pg**	**02 15 25.0**	**0.0**
ATPC				Sg	**Sb**	**02 15 33.1**	**+0.1**
	76nm,0.3s						
ATPC	**Poggio Castell**	**0.50**	**129**	Pg	**Pg**	**02 15 25.0**	**0.0**
ATPC				Sg	**Sb**	**02 15 33.1**	**+0.1**
	76nm,0.3s						
PIEI	**Pieia**	**0.51**	**121**	Pg	**Pg**	**02 15 25.1**	**-0.2**
PIEI				Sg	**Sb**	**02 15 33.0**	**-0.4**
	54nm,0.2s						
PIEI	**Pieia**	**0.51**	**121**	Pg	**Pg**	**02 15 25.1**	**-0.2**
PIEI				Sg	**Sb**	**02 15 33.0**	**-0.4**
	54nm,0.2s						
ATVO	**AVT- Monte Val**	**0.54**	**140**	Pg	**Pg**	**02 15 25.9**	**0.0**
	70nm,0.3s						
ATVO	**AVT- Monte Val**	**0.54**	**140**	Pg	**Pg**	**02 15 25.9**	**0.0**
	70nm,0.3s						
FRON	**Frontone**	**0.64**	**116**	Pg	**Pg**	**02 15 27.7**	**-0.1**
	22nm,0.3s						
FRON	**Frontone**	**0.64**	**116**	Pg	**Pg**	**02 15 27.7**	**-0.1**
	22nm,0.3s						
ATTE	**AVT- Monte Tez**	**0.67**	**153**	Pg	**Pb**	**02 15 28.8**	**-0.1**
	55nm,0.3s						
ATTE	**AVT- Monte Tez**	**0.67**	**153**	Pg	**Pb**	**02 15 28.8**	**-0.1**
	55nm,0.3s						
MURB	**Monte Urbino**	**0.69**	**141**	Pg	**Pn**	**02 15 29.7**	**-1.0**
	115nm,0.3s						
MURB	**Monte Urbino**	**0.69**	**141**	Pg	**Pn**	**02 15 29.7**	**-1.0**
	115nm,0.3s						
SSFR	**Montelago di S**	**0.72**	**120**	Pg	**Pg**	**02 15 28.9**	**-0.3**
	51nm,0.2s						
SSFR	**Montelago di S**	**0.72**	**120**	Pg	**Pg**	**02 15 28.9**	**-0.3**
	51nm,0.2s						
NVLJ	**Novalja**	**2.25**	**69**	*e*Pn	**Pn**	**02 15 52.1**	**+0.1**
NVLJ				Sn	**Sn**	**02 16 20.8**	**+1.2**
NVLJ	**Novalja**	**2.25**	**69**	*e*Pn	**Pn**	**02 15 52.1**	**+0.1**
NVLJ				Sn	**Sn**	**02 16 20.8**	**+1.2**

*IDC **09** 02:30:59.3±0.6, 39.°84N×143.°30E, h0km, mb4.4/29, mb1 4.6/35, mb1mx4.5/45, mbtmp4.5/35, ML3.7/6, MS4.2/22, Ms1 4.2/22, ms1mx3.9/45, Error ellipse: s-maj=14.6km s-min=12.1km az=129.0*
*NIED **09** 02:31:00, 40.°00N×143.°30E, h14km, Mw4.8 Best double couple: M0 1.72000×10^16 NP1:φs159.00000°, δ20.00000°, λ34.00000°. NP2:φs36.00000°, δ79.00000°, λ107.00000°.*
*ISCJB **09** 02:31:01.3±0.7, 39.°86N±0.°03×143.°28E±0.°03, h21km±4km, mb4.7/127, MS4.3/33, Error ellipse: s-maj=4.8km s-min=3.5km az=143.2*
*JMA **09** 02:31:01.4±0.2, 39.°96N×143.°28E, h11km±3km, M4.6*
JMA Felt I J1.
*BJI **09** 02:31:02.0, 39.°82N×143.°16E, h29km, mb4.8/64, mB5.0/46, Ms4.6/53, Ms7 4.4/49*
*MOS **09** 02:31:03.0±1.0, 39.°99N×143.°18E, h30km, mb4.9/60, MS4.2/16, Error ellipse: s-maj=7.3km s-min=4.4km az=103.6*
*NEIC **09** 02:31:04.4±1.2, 39.°90N×143.°17E, h29km±8km, mb4.7/53, Error ellipse: s-maj=4.7km s-min=3.3km az=127.0*
ISC 09 02:31:03.6±0.7, 39.°96N±0.°04×143.°28E±0.°04, h24km±4km, n313, σ1s28/339, mb4.8/127, MS4.4/34, 14C-9D, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JTH	**Tanohata**	**1.09**	**269**	P	**Pn**	**02 31 21.9**	**-1.5**
JTH				*e*S	**Sb**	**02 31 37.0**	**-0.6**
MIYJ	**Miyakonagasawa**	**1.19**	**252**	P	**Pn**	**02 31 23.4**	**-1.3**
MIYJ				*e*S	**Sn**	**02 31 38.9**	**-1.3**
JANG	**Nango**	**1.42**	**288**	P	**Pn**	**02 31 27.0**	**-0.9**
JANG				*e*S	**Sn**	**02 31 46.1**	**+0.3**
JOM	**Ohasama**	**1.61**	**253**	P	**Pn**	**02 31 30.1**	**-0.4**
JOM				*e*S	**Sb**	**02 31 52.2**	**-0.3**
ERM	**Erimo**	**2.06**	**357**	*i* P	**Pn**	**02 31 37.5**	**+0.8**
ERM	**Erimo**	**2.06**	**357**	*e*Pn	**Pn**	**02 31 36.6**	**-0.1**
JEM	**Erimo**	**2.06**	**357**	P	**Pn**	**02 31 36.7**	**0.0**
JEM				*e*S	**Sn**	**02 32 02.6**	**+1.0**
JOT	**Ohata**	**2.22**	**311**	P	**Pn**	**02 31 39.3**	**+0.5**
JOT				*e*S	**Sb**	**02 32 08.0**	**-1.9**
JNBK	**Urakawa-nobuka**	**2.35**	**350**	P	**Pn**	**02 31 42.1**	**+1.4**
JNBK				*e*S	**Sn**	**02 32 11.2**	**+2.3**
JKB	**Kayabe**	**2.57**	**319**	P	**Pn**	**02 31 45.0**	**+1.3**
JKB				*e*S	**Sb**	**02 32 19.1**	**-1.1**
YUK	**Yuzh-Kuril'sk**	**4.50**	**24**	*e*P	**Pn**	**02 32 10.3**	**0.0**
YUK				*e*S	**Sn**	**02 32 59.1**	**-2.7**
YUK				pmax	pmax		
	comp=Z,327nm,0.3s						
YUK				pmax	pmax		
	comp=E,61nm,0.1s						
YUK				pmax	pmax		
	comp=N,121nm,0.2s						
YUK				MLR	MLR		
	comp=Z,2µm,20.0s						
SHO	**Shikotan**	**4.72**	**33**	*e*P	**Pn**	**02 32 11.7**	**-1.5**
SHO				*e*S	**Sn**	**02 33 03.3**	**-3.9**
SHO				pmax	pmax		
	comp=Z,282nm,0.5s						
SHO				pmax	pmax		
	comp=N,182nm,0.6s						
SHO				pmax	pmax		
	comp=E,224nm,0.7s						
MAJO	**Matsushiro**	**5.25**	**231**	*c i* P	**Pn**	**02 32 20.9**	**+0.3**
MAJO	**Matsushiro**	**5.25**	**231**	*e*Pn	**Pn**	**02 32 20.7**	**+0.1**
MAT	**Matsushiro**	**5.25**	**231**	P	**Pn**	**02 32 20.7**	**+0.1**
MAT				*e*S	**Sn**	**02 33 25.0**	**+4.6**
MJAR	**Matsushiro Arr**	**5.25**	**231**	Pn	**Pn**	**02 32 20.1**	**-0.5**
	comp=E,4.9nm,0.3s,baz=36,slow

comp=Z,0.3nm,0.3s,baz=13,slow=11,SNR=3.9
JNU LR LR 02 38 51.2
comp=Z,2µm,18.7s,baz=60,slow=39
KSRS Korea Array 12.26 263 Pn **Pn 02 33 56.9 +0.2**
comp=Z,1.1nm,0.3s,baz=79,slow=13,SNR=22
KSRS LR LR 02 38 23.7
comp=Z,1µm,18.3s,baz=78,slow=36
KS01 Wonju Array Si 12.28 263 *e*Pn Pn 02 34 02.7 +5.9
KSAR Wonju Array Be 12.29 263 P **Pn 02 33 56.9 -0.2**
KSAR Wonju Array Be 12.29 263 Pn **Pn 02 33 56.9 -0.2**
KLR Kul'dur 12.38 322 Pn **Pn 02 33 59.1 +1.0**
comp=Z,0.1nm,0.3s,baz=132,slow=13,SNR=13
KLR LR LR 02 38 59.7
comp=Z,1µm,20.0s,baz=133,slow=38
CBIJ Chichi jima 12.86 184 *e*Pn **Pn 02 34 04.4 -0.5**
JCJ Chichijima 12.86 184 Pn Pn 02 34 00.2 -4.7
comp=Z,3.2nm,0.3s,baz=107,slow=19,SNR=3.7
NKL Nikolayevsk 13.32 353 *e*P **Pn 02 34 10.3 -0.6**
NKL pmax pmax
comp=N,20nm,1.0s
NKL pmax pmax
comp=Z,43nm,1.0s
NKL MLR MLR
comp=N,900nm,15.0s
NKL MLR MLR
comp=Z,2µm,15.0s
CN2 Changchun 13.83 292 *e*P **Pn 02 34 19.8 +1.8**
CN2 *e*S **Sn 02 36 54.8 +4.0**
CN2 pmax pmax
comp=Z,10.0nm,0.6s
CN2 pmax pmax
comp=Z,200nm,4.0s
CN2 LR LR
comp=Z,900nm,14.0s
CN2 LR LR
comp=Z,1µm,14.0s
CN2 LR LR
comp=Z,1µm,15.0s
PETK Petropavlovsk- 16.43 32 LR LR 02 40 46.1
comp=Z,384nm,20.6s,baz=217,slow=36
HIA Hailar 19.10 307 *e*P **P 02 35 23.2 -1.4**
HIA pmax pmax
comp=Z,22nm,0.8s
HIA Hailar 19.10 307 *e*P **P 02 35 23.2 -1.4**
comp=Z,22nm,0.8s
MA2 Magadan 20.20 11 P **P 02 35 36.5 +0.1**
comp=Z,28nm,0.7s,baz=220,slow=8.8,SNR=26
MA2 LR LR 02 43 21.8
comp=Z,236nm,21.5s,baz=218,slow=37
MA2 Magadan 20.20 11 *e*P **P 02 35 37.3 +1.0**
comp=Z,147nm,1.0s
CLNS Chul'man 20.73 331 *e*P **P 02 35 41.3 -0.9**
CLNS pmax pmax
comp=Z,14nm,1.2s
CLNS pmax pmax
comp=N,17nm,1.0s
CLNS pmax pmax
comp=E,7.0nm,0.8s
CLNS MLR MLR
comp=Z,783nm,13.0s
CLNS MLR MLR
comp=N,522nm,10.0s
CLNS MLR MLR
comp=E,505nm,11.0s
BJI Beijing 20.74 279 P **P 02 35 40.1 -2.3**
BJI S **S 02 39 30.9 -1.9**
BJI pmax pmax
comp=E,20nm,1.1s
BJI LR LR
comp=E,440nm,16.4s
BJI LR LR
comp=E,970nm,18.0s
BJI LR LR
comp=E,630nm,17.6s
TIA Tai'an 20.90 268 ⇓P **P 02 35 41.6 -2.6**
TIA pmax pmax
comp=E,40nm,1.1s
TIA LR LR
comp=E,570nm,15.2s
TIA LR LR
comp=E,2µm,16.8s
TIA LR LR
comp=E,2µm,16.0s
NJ2 Nanjing 21.24 256 *e*P **P 02 35 45.9 -1.9**
NJ2 S **S 02 39 41.5 -1.1**
NJ2 pmax pmax
comp=E,20nm,0.7s
NJ2 LR LR
comp=E,740nm,16.3s
NJ2 LR LR
comp=E,860nm,14.1s
NJ2 LR LR
comp=E,1µm,15.4s
YAK Yakutsk 23.60 344 P **P 02 36 12.0 -0.3**
comp=E,47nm,0.7s,baz=4.1,slow=2.0,SNR=9.3
YAK LR LR 02 45 50.8
comp=E,312nm,21.8s,baz=173,slow=38
YAK Yakutsk 23.60 344 *e*P **P 02 36 10.9 -1.4**
YAK *e**PP **pP 02 36 20.1 +0.9**
YAK *e* 02 36 40.7
YAK *e*PPP PPP 02 36 48.2
YAK *e*S **S 02 40 24.2 -0.9**
YAK *e*SS **SnSn 02 41 03.9 +1.2**
YAK *e*SSS SSS 02 41 20.6
YAK pmax pmax
comp=E,7.0nm,1.0s
YAK pmax pmax
comp=N,17nm,1.0s
YAK pmax pmax
comp=E,48nm,0.9s
YAK pmax pmax
comp=E,32nm,2.3s
YAK pmax pmax
comp=Z,31nm,0.9s
YAK pmax pmax
comp=N,68nm,2.0s
YAK smax smax
comp=N,373nm,5.3s
YAK smax smax
comp=E,139nm,3.3s
YAK MLR MLR
comp=N,487nm,18.0s
YAK MLR MLR
comp=Z,505nm,14.0s
YAK MLR MLR
comp=N,438nm,16.0s
YAK Yakutsk 23.60 344 *e*P **P 02 36 12.4 +0.1**
comp=N,49nm,0.7s
SEY Seymchan 23.65 10 P **P 02 36 12.2 -0.6**
comp=N,29nm,0.9s,baz=192,slow=6.5,SNR=28
SEY Seymchan 23.65 10 ⇑*i*P **P 02 36 13.3 +0.5**
HHC Hu-ho-hao-te 24.11 282 *e*P **P 02 36 16.4 -1.1**
HHC PP **PnPn 02 36 52.0 +5.2**
HHC S **S 02 40 29.0 -4.8**
HHC sS sS 02 40 43.3 -2.1
HHC SS **SnSn 02 41 21.9 +6.4**
HHC pmax pmax
comp=N,22nm,1.3s
HHC pmax pmax
comp=N,41nm,3.7s
HHC LR LR
comp=N,1µm,14.9s
HHC LR LR
comp=N,1µm,17.4s
HHC LR LR
comp=N,1µm,17.4s
SSLB Suanglung 24.79 236 *e*P **P 02 36 21.1 -2.6**
comp=N,7.6nm,0.4s
WHN Wuhan 25.34 257 ⇓P **P 02 36 28.2 -0.3**
WHN pmax pmax
comp=N,210nm,1.4s
TPUB Ta-pu 25.34 236 *e*P **P 02 36 27.7 -1.0**
comp=N,12nm,0.4s
GUMO Guam 26.30 177 LR LR 02 45 46.4
comp=N,184nm,21.0s,baz=328,slow=34
ULN Ulaanbaatar 27.07 299 *e*P **P 02 36 44.3 0.0**
ULN pmax pmax
comp=Z,23nm,1.0s
ULN Ulaanbaatar 27.07 299 *e*P **P 02 36 44.3 0.0**
comp=Z,23nm,1.0s
SONA1 Songino Array 27.51 299 *e*P **P 02 36 47.9 -0.4**
SONM Songino Array 27.51 299 P **P 02 36 48.1 -0.1**
comp=Z,11nm,0.8s,baz=99,slow=9.2,SNR=57
SONM LR LR 02 48 15.9
comp=Z,1µm,19.9s,baz=74,slow=38
XAN Xi'an 27.96 269 P **P 02 36 50.0 -2.2**
XAN pmax pmax
comp=Z,5.0nm,0.8s
XAN pmax pmax
comp=Z,28nm,6.6s
H11N2 WAKE ISLAND Hy 28.59 128 T T 03 06 52.6
baz=320,slow=75
H11N1 WAKE ISLAND Hy 28.59 128 T T 03 06 55.6
baz=320,slow=75
H11N3 WAKE ISLAND Hy 28.60 128 T T 03 06 56.2
baz=320,slow=75
ENH Enshi 29.14 261 *e*P **P 02 37 01.2 -1.6**
comp=Z,56nm,1.0s
H11S1 WAKE ISLAND Hy 29.41 130 T T 03 07 55.7
baz=321,slow=74
H11S3 WAKE ISLAND Hy 29.41 130 T T 03 07 55.7
baz=321,slow=74
H11S2 WAKE ISLAND Hy 29.43 130 T T 03 08 08.2
baz=321
TLY Talaya 29.65 307 P **P 02 37 06.7 -0.3**
comp=Z,2.5nm,0.5s,baz=118,slow=8.2,SNR=5.3
TLY LR LR 02 49 34.9
comp=Z,348nm,18.6s,baz=89,slow=38
TLY Talaya 29.65 307 *e*P **P 02 37 07.8 +0.7**
TLY *e*SS SS 02 43 39.8 -27
TLY *e*SSS SSS 02 43 53.7
TLY pmax pmax
comp=Z,9.0nm,1.0s
TLY MLR MLR
comp=Z,334nm,11.0s
TLY Talaya 29.65 307 *e*P **P 02 37 06.8 -0.3**
comp=Z,5.7nm,0.8s
ZAK Zakamensk 29.73 304 *e*P **P 02 37 08.0 +0.1**
ZAK pmax pmax
comp=Z,10.0nm,1.3s
BILL Bilibino 30.81 17⇑*i*P **P 02 37 18.1 +1.0**
BILL *i* 02 37 24.1
BILL *e*S **S 02 42 19.7 +0.8**
BILL pmax pmax
comp=Z,8.0nm,1.7s
BILL MLR MLR
comp=Z,250nm,16.0s
BILL Bilibino 30.81 17 *e*P **P 02 37 17.7 +0.6**
comp=Z,17nm,1.4s
LZH Lanzhou 31.13 276 *e*P **P 02 37 19.3 -1.2**
LZH pP pP 02 37 26.5 -1.2
LZH sP sP 02 37 29.8 -0.8
LZH PP **PnPn 02 38 21.5 -0.8**
LZH *e*S **S 02 42 21.0 -4.0**
LZH sS sS 02 42 33.2 -3.6
LZH *e*SS **SnSn 02 44 06.5 -0.7**
LZH pmax pmax
comp=Z,65nm,1.5s
LZH pmax pmax
comp=Z,160nm,6.2s
LZH LR LR
comp=Z,440nm,12.7s
LZH LR LR
comp=Z,920nm,13.0s
LZH LR LR
comp=Z,1µm,16.2s
TIXI Tiksi 32.59 352 P **P 02 37 32.4 -0.3**
comp=Z,3.2nm,0.4s,baz=81,slow=6.3,SNR=3.6
TIXI Tiksi 32.59 352⇑*i*P **P 02 37 32.1 -0.6**
TIXI pmax pmax
comp=Z,3.0nm,0.8s
TIXI Tiksi 32.59 352 *e*P **P 02 37 32.3 -0.3**
comp=Z,3.7nm,0.8s
GTA Gaotai 33.21 283 *e*P **P 02 37 39.0 +0.3**
GTA pP pP 02 37 44.5 -1.4
GTA sP sP 02 37 47.8 -1.0
GTA PcP **PcP 02 40 21.8 +0.9**
GTA S **S 02 42 56.2 -1.1**
GTA sS sS 02 43 07.4 -1.7
GTA SS **SnSn 02 44 59.0 +1.5**
GTA pmax pmax
comp=Z,20nm,1.1s
GTA pmax pmax
comp=Z,160nm,6.7s
GTA LR LR
comp=Z,370nm,20.0s
GTA LR LR
comp=Z,1µm,16.6s
GTA LR LR
comp=Z,1µm,16.6s
CD2 Chengdu 33.22 267 P **P 02 37 37.4 -1.4**
CD2 sP sP 02 37 47.7 -1.2
CD2 PP **PP 02 38 52.3 -1.7**
CD2 S **S 02 42 55.6 -1.8**
CD2 sS sS 02 43 07.8 -1.4
CD2 pmax pmax
comp=Z,30nm,0.9s
CD2 pmax pmax
comp=Z,130nm,5.5s
CD2 LR LR
comp=Z,700nm,13.1s
CD2 LR LR
comp=Z,860nm,14.3s
GYA Guiyang 33.23 257⇑*i*P **P 02 37 37.5 -1.4**
GYA pP pP 02 37 46.0 -0.1
GYA PP **PnPn 02 38 50.8 +1.5**
GYA PcP **PcP 02 40 21.2 0.0**
GYA S **S 02 42 55.6 -2.0**
GYA sS sS 02 43 08.4 -1.0
GYA SS **SnSn 02 44 55.8 -2.4**
GYA ScS **ScS 02 48 03.0 -1.7**
GYA pmax pmax
comp=Z,20nm,1.1s
GYA pmax pmax
comp=Z,120nm,6.2s
GYA LR LR
comp=Z,530nm,15.8s
GYA LR LR
comp=Z,470nm,16.0s
GYA LR LR
comp=Z,500nm,16.2s
KRAR Krasnoyarsk 36.45 313⇓*i*P **P 02 38 07.3 +1.1**
KMI Kunming 36.91 259 P **P 02 38 10.9 +0.1**
KMI pP pP 02 38 18.2 +0.2
KMI sP sP 02 38 20.3 -0.6
KMI S **S 02 43 57.1 +2.6**
KMI sS sS 02 44 07.6 +1.2
KMI pmax pmax
comp=Z,18nm,1.2s
KMI pmax pmax
comp=Z,190nm,5.0s
KMI LR LR
comp=Z,260nm,13.9s
KMI LR LR
comp=Z,580nm,18.0s
KMI LR LR
comp=Z,640nm,16.0s
NONG Nongkai 40.87 250 P **P 02 38 44.5 +0.7**
comp=Z,13nm,0.9s,comp=Z,4µm
WMQ Urumqi 40.91 294 P **P 02 38 44.2 +0.3**
WMQ pP pP 02 38 51.6 +0.4
WMQ sP sP 02 38 55.3 +1.2
WMQ S **S 02 44 54.2 +0.1**
WMQ pmax pmax
comp=Z,16nm,0.8s
WMQ pmax pmax
comp=Z,110nm,4.0s
WMQ LR LR
comp=Z,71nm,18.0s
WMQ LR LR
comp=Z,54nm,21.2s
SKNT Sakolnakorn 40.99 248 P **P 02 38 45.3 +0.5**
comp=Z,10nm,1.0s,comp=Z,2µm
ZAA0 Zalesovo Array 41.10 310 *e*P **P 02 38 45.2 -0.1**
ZALV Zalesovo Beam 41.10 310 P **P 02 38 45.0 -0.2**
comp=Z,8.7nm,0.5s,baz=90,slow=7.6,SNR=44
ZALV PcP **PcP 02 40 43.9 -0.5**
comp=Z,3.8nm,0.7s,baz=85,slow=3.1,SNR=4.1
NRIK Noril'sk 41.27 334 P **P 02 38 46.5 +0.1**
comp=Z,1.7nm,0.3s,baz=112,slow=8.0,SNR=9.0
NRIK LR LR 02 57 26.5
comp=Z,648nm,18.4s,baz=113,slow=38
CRAI Chiangrai 41.54 255 P **P 02 38 48.4 -0.8**
comp=Z,260nm,1.5s,comp=Z,6µm
NVS Novosibirsk 41.95 311 *e*P **P 02 38 52.2 0.0**
NVS pmax pmax
comp=N,5.0nm,1.4s
NVS pmax pmax
comp=E,18nm,1.4s
NVS pmax pmax
comp=Z,23nm,1.4s
LOEI Loei 42.59 251 P **P 02 38 54.9 -3.0**
comp=Z,8.9nm,1.1s
CMAI Chiengmai2 42.70 255 P **P 02 38 59.3 +0.4**
comp=Z,9.3nm,1.2s
UTTA Uttaradit 42.96 252 P **P 02 39 01.4 +0.6**
comp=Z,3.5nm,0.9s
CHAI Chaiyaphum 43.13 248 P **P 02 39 01.9 -0.3**
comp=Z,4.8nm,1.0s,comp=Z,81nm
CMMT Chiang Mai 43.46 254 P **P 02 39 04.8 -0.1**
comp=Z,13nm,1.0s
CHTO Chiang Mai 43.47 254 P **P 02 39 04.9 -0.1**
comp=Z,43nm,0.9s
CHTO Chiang Mai 43.47 254 *e*P **P 02 39 04.9 -0.1**
CHTO pmax pmax
comp=Z,6.0nm,0.9s
CHTO Chiang Mai 43.47 254 *e*P **P 02 39 04.9 -0.1**
comp=Z,6.0nm,0.9s
CMAR Chiang Mai Arr 43.69 254 P **P 02 39 05.6 -1.1**
comp=Z,1.4nm,0.4s,baz=47,slow=6.2,SNR=11
CMAR LR LR 02 59 03.7
comp=Z,166nm,18.2s,baz=50,slow=39
CM01 Chiang Mai Arr 43.70 254 *e*P **P 02 39 06.3 -0.5**
SUKH Sukhothai 43.80 252 P **P 02 39 08.0 +0.4**
comp=Z,3.9nm,0.9s
MK31 Makanchi Array 43.87 300 *i* P **P 02 39 07.6 -0.4**
MK31 pmax pmax
comp=Z,13nm,0.9s
MKAR Makanchi Array 43.87 300 P **P 02 39 07.9 -0.1**
comp=Z,10.0nm,0.9s,baz=82,slow=9.9,SNR=60
MKAR LR LR 02 58 22.8
comp=Z,496nm,18.9s,baz=52,slow=37
MKAR Makanchi Array 43.87 300 *e*P **P 02 39 08.2 +0.2**
MKAR Makanchi Array 43.87 300 *e*P **P 02 39 08.2 +0.2**
KDAK Kodiak Island 43.96 44 LR LR 02 57 25.7
comp=Z,186nm,21.2s,baz=271,slow=36
MAKZ Makanchi 44.08 300 *e*P **P 02 39 10.1 +0.5**
MAKZ pmax pmax
comp=Z,17nm,1.0s
MAKZ Makanchi 44.08 300 *e*P **P 02 39 10.1 +0.5**
comp=Z,17nm,1.0s
SRAK Srakaew 44.37 246 P **P 02 39 09.8 -2.4**
comp=Z,27nm,1.1s
BPAW Bear Paw Mtn. 44.48 35 *e*P **P 02 39 13.5 +0.9**
comp=Z,2.0nm,1.3s
MLY Manley 44.60 34 *e*P **P 02 39 15.3 +1.7**
comp=Z,6.1nm,0.9s
TRF Thorofare Moun 44.80 36 *e*P **P 02 39 17.0 +1.7**
comp=Z,9.0nm,1.1s
COLD Coldfoot 44.89 30 *e*P **P 02 39 16.7 +0.9**
comp=Z,4.4nm,1.0s
KURK Kurchatov 45.34 306 *e*P **P 02 39 19.5 0.0**
KURK pmax pmax
comp=Z,23nm,0.8s
KURK Kurchatov 45.34 306 *e*P **P 02 39 19.5 0.0**
comp=Z,23nm,0.8s
KURBB Kurchatov Arra 45.42 306 P **P 02 39 20.1 0.0**
comp=Z,17nm,0.8s,baz=80,slow=8.3,SNR=76
RND Reindeer 45.45 36 *e*P **P 02 39 21.8 +1.5**
RND pmax pmax
comp=Z,8.0nm,1.1s
RND Reindeer 45.45 36 *e*P **P 02 39 21.8 +1.5**
comp=Z,8.3nm,1.1s
MDM Murphy Dome 45.67 34 *e*P **P 02 39 23.5 +1.5**
comp=Z,9.1nm,1.1s
SML Sawmill 45.78 38 *e*P **P 02 39 23.5 +0.5**
SML pmax pmax
comp=Z,3.0nm,1.0s
SML Sawmill 45.78 38 *e*P **P 02 39 23.4 +0.5**
comp=Z,3.1nm,1.0s
COLA College 45.83 34 *e*P **P 02 39 24.1 +0.9**
COLA pmax pmax
comp=Z,13nm,1.2s
COLA College 45.83 34 *e*P **P 02 39 24.1 +0.9**
comp=Z,13nm,1.2s
HDA Harding Lake 46.24 34 *e*P **P 02 39 28.3 +1.8**
comp=Z,9.2nm,1.1s
IL1 Eielson Array 46.25 34 *e*P **P 02 39 26.6 +0.1**
ILAR Eielson Array 46.25 34 P **P 02 39 27.0 +0.5**
comp=Z,2.3nm,0.8s,baz=265,slow=6.4,SNR=18
ILB Eielson Array 46.25 34 *e*P **P 02 39 27.5 +0.9**
DOT Dot Lake 47.57 35 *e*P **P 02 39 37.4 +0.5**
comp=Z,13nm,1.0s
ODAN Odare 47.74 272 *e*P **P 02 39 38.9 -0.1**
comp=Z,40nm,1.0s
RAMN Ramite 48.30 273 *e*P **P 02 39 43.1 -0.2**
comp=Z,85nm,0.9s
GUN Gumba 48.37 274 *e*P **P 02 39 43.8 -0.2**
comp=Z,76nm,0.8s
EGAK Eagle 48.69 34 *e*P **P 02 39 46.4 +0.9**
comp=Z,5.4nm,1.0s
KKN Kakani 48.89 274 *e*P **P 02 39 48.0 +0.2**
GKN Gorkha 49.28 275 *e*P **P 02 39 50.3 -0.4**
comp=Z,25nm,0.7s
CHKZ Chkalovo 49.43 312 P **P 02 39 50.5 -0.8**
CHKZ pmax pmax
comp=Z,14nm,1.0s
VOSK Vostochnaya 49.47 310 *e*P **P 02 39 51.7 0.0**
VOSK pmax pmax
comp=Z,16nm,0.9s
VOSK Vostochnaya 49.47 310 *e*P **P 02 39 51.7 0.0**
comp=Z,16nm,0.9s
TKM2 Tokmak 2 49.58 297 *e*P **P 02 39 53.6 +0.7**
TKM2 pmax pmax
comp=Z,39nm,0.9s
TKM2 Tokmak 2 49.58 297 *e*P **P 02 39 53.6 +0.7**
comp=Z,39nm,0.9s
BVA0 Borovoye Array 49.73 311 *i* P **P 02 39 53.4 -0.3**
BVA0 pmax pmax
comp=Z,10.0nm,0.8s
BVAR Borovoye Array 49.73 311 P **P 02 39 53.8 +0.1**
baz=84,slow=10
BRVK Borovoye 49.78 311 *e*P **P 02 39 54.5 +0.5**
BRVK pmax pmax
comp=Z,16nm,0.9s
BRVK Borovoye 49.78 311 *e*P **P 02 39 54.5 +0.5**
comp=Z,16nm,0.9s
KOLN Koldanda 50.19 275 *e*P **P 02 39 57.5 -0.2**
FRU Bishkek 50.28 297 *e*P **P 02 39 58.0 0.0**
AAK Ala-Archa 50.44 297 *e*P **P 02 39 59.5 +0.1**
AAK pmax pmax
comp=Z,7.0nm,0.8s
AAK Ala-Archa 50.44 297 *e*P **P 02 39 59.5 +0.1**
comp=Z,6.9nm,0.8s
PYUN Piuthan 50.49 276 *e*P **P 02 39 59.9 -0.1**
comp=Z,88nm,1.0s
KSH Kashi 50.60 293 P P 02 40 04.4 +3.8
KSH *e*pP sP 02 40 12.0 +1.1
KSH *e*sP pP 02 40 15.1 +7.1
KSH *e*PcP **PcP 02 41 21.0 +3.0**
KSH *e*ScP **ScP 02 45 15.2 +2.7**
KSH S **S 02 47 17.6 +3.8**
KSH SS **SS 02 50 46.9 -0.8**
KSH pmax pmax
comp=Z,210nm,5.2s
KSH LR LR
comp=Z,180nm,6.8s
KSH LR LR
comp=Z,230nm,10.5s
KSH LR LR
comp=Z,790nm,15.9s
EKS2 Erkin-Say 50.92 297 *e*P **P 02 40 03.0 0.0**
EKS2 pmax pmax
comp=Z,12nm,0.8s
EKS2 Erkin-Say 50.92 297 *e*P **P 02 40 03.0 0.0**
comp=Z,12nm,0.8s
INK Inuvik 51.12 28 P **P 02 40 04.8 +0.9**
comp=Z,2.1nm,0.8s,baz=301,slow=8.4,SNR=13
INK Inuvik 51.12 28 *e*P **P 02 40 04.9 +1.0**
INK pmax pmax
comp=Z,5.0nm,0.9s
INK Inuvik 51.12 28 *e*P **P 02 40 04.9 +1.0**
comp=Z,5.0nm,0.9s
MNAS Manas 51.85 297 P **P 02 40 09.6 -0.4**
MNAS pmax pmax
comp=Z,27nm,0.9s
IPM Ipoh 51.92 238 *e*P **P 02 40 08.8 -1.8**
KK31 Karatay Array 52.97 299 *i* P **P 02 40 15.8 -2.3**
KK31 pmax pmax
comp=Z,10.0nm,0.9s
KKAR Karatay Array 52.97 299 *e*P **P 02 40 16.1 -2.0**
KKAR pmax pmax
comp=Z,6.0nm,0.6s
KKAR Karatay Array 52.97 299 *e*P **P 02 40 16.1 -2.0**
comp=Z,5.8nm,0.6s
SVE Sverdlovsk 53.95 318⇓*e*P **P 02 40 25.7 +0.7**
SVE pmax pmax
comp=Z,23nm,1.4s
SVE MLR MLR

	comp=Z,1μm,14.0s								
SOKR	**Solikamsk**	**54.92**	**322**	⇑*i*	P		P	02 40 38.8	+6.8
SOKR					pmax		pmax		
	comp=Z,12nm,1.0s								
SOKR					MLR		MLR		
	comp=Z,269nm,16.0s								
ARU	**Arti**	**55.17**	**318**	*d i*	P		P	02 40 33.8	-0.1
ARU								02 41 32.8	
ARU								02 42 36.6	
ARU					S		S	02 48 15.3	0.0
ARU					SS		SS	02 51 50.5	-8.4
ARU					pmax		pmax		
	comp=Z,31nm,1.2s								
ARU					MLR		MLR		
	comp=Z,898nm,17.0s								
ARU	**Arti**	**55.17**	**318**	*eP*	P		P	02 40 34.2	+0.3
	comp=Z,32nm,1.2s								
DLBC	**Dease Lake**	**55.43**	**40**	*eP*	P		P	02 40 37.7	+1.9
	comp=Z,11nm,1.2s								
GSI	**Gunungsitoli**	**56.56**	**239**	*eP*	P		P	02 40 43.9	-0.4
	comp=Z,40nm,1.3s								
AB31	**Akbulak array**	**57.20**	**309**	*i* P	P		P	02 40 47.8	-0.7
AB31					pmax		pmax		
	comp=Z,16nm,1.0s								
ABKAR	**Akbulak array**	**57.20**	**309**	*eP*	P		P	02 40 48.5	0.0
KBL	**Kabul**	**57.77**	**290**	*eP*	P		P	02 40 52.6	-0.4
KBL					pmax		pmax		
	comp=Z,20nm,0.9s								
KBL	**Kabul**	**57.77**	**290**	*eP*	P		P	02 40 52.6	-0.4
	comp=Z,20nm,0.9s								
AKTO	**Aktyubinsk**	**57.84**	**311**	P	P		P	02 40 52.1	-0.9
AKTO					pmax		pmax		
	comp=Z,11nm,0.9s								
RES	**Resolute Bay**	**59.40**	**15**	P	P		P	02 41 03.5	+0.1
	comp=Z,4.2nm,0.9s,baz=314,slow=6.4,SNR=21								
RES	**Resolute Bay**	**59.40**	**15**	*eP*	P		P	02 41 03.7	+0.2
RES					pmax		pmax		
	comp=Z,5.0nm,0.8s								
RES	**Resolute Bay**	**59.40**	**15**	*eP*	P		P	02 41 03.7	+0.2
	comp=Z,5.3nm,0.8s								
HYB	**Hyderabad**	**59.76**	**268**	*i* P	P		P	02 41 07.0	+0.2
FITZ	**Fitzroy Crossi**	**60.06**	**199**	*eP*	P		P	02 41 08.6	0.0
	comp=Z,19nm,1.4s								
WRAB	**Tennant Creek**	**60.16**	**190**	*eP*	P		P	02 41 08.2	-1.1
WRAB					pmax		pmax		
	comp=Z,8.0nm,0.9s								
WRAB	**Tennant Creek**	**60.16**	**190**	*eP*	P		P	02 41 08.2	-1.1
	comp=Z,8.0nm,0.9s								
WRA	**Warramunga Arr**	**60.17**	**190**	P	P		P	02 41 07.5	-1.9
	comp=Z,3.1nm,0.6s,baz=7.1,slow=7.0,SNR=15								
WRA					LR		LR	03 07 08.3	
	comp=Z,51nm,19.0s,baz=150,slow=36								
YKA	**Yellowknife Ar**	**60.55**	**31**	P	P		P	02 41 11.9	+0.4
	comp=Z,0.5nm,0.6s,baz=300,slow=6.5,SNR=11								
TMCR	**Tamitsa**	**60.89**	**331**	*eP*	P		P	02 41 14.3	+0.5
TMCR					pmax		pmax		
	comp=Z,20nm,1.0s								
ARCES	**ARCESS Array B**	**61.78**	**339**	P	P		P	02 41 19.8	0.0
	comp=Z,4.1nm,0.9s,baz=20,slow=5.4,SNR=4.8								
KLMR	**Klimovskoe**	**62.08**	**327**	*eP*	P		P	02 41 19.9	-2.0
KLMR					pmax		pmax		
	comp=Z,17nm,1.4s								
DAG	**Danmarks Havn**	**62.99**	**355**	*i* P	P		P	02 41 27.7	0.0
	comp=Z,9.1nm,1.1s								
DAG	**Danmarks Havn**	**62.99**	**355**	*i* P	P		P	02 41 27.7	0.0
DAG					pmax		pmax		
	comp=Z,12nm,1.1s								
GEYT	**Alibeck**	**63.72**	**299**	P	P		P	02 41 33.4	+0.2
	comp=Z,9.7nm,0.9s,baz=28,slow=3.5,SNR=16								
GEYT					LR		LR	03 11 15.2	
	comp=Z,248nm,18.5s,baz=195,slow=38								
AS01	**Alice Springs**	**63.89**	**190**	*eP*	P		P	02 41 33.1	-1.2
ASAR	**Alice Springs**	**63.90**	**190**	P	P		P	02 41 33.0	-1.4
	comp=Z,1.6nm,0.7s,baz=8.6,slow=5.3,SNR=11								
ASAR	**Alice Springs**	**63.90**	**190**	P	P		P	02 41 33.0	-1.4
ASAR					pmax		pmax		
	comp=Z,1.0nm,0.6s								
EIDS	**Eidsvold**	**65.39**	**172**	*eP*	P		P	02 41 44.0	-0.1
	comp=Z,38nm,1.6s								
VRH	**Novokhopyorsk**	**66.40**	**318**	*eP*	P		P	02 41 49.7	-0.7
VRH					pmax		pmax		
	comp=Z,20nm,1.1s								
OBN	**Obninsk**	**66.64**	**323**	⇓P	P		P	02 41 52.3	+0.5
OBN					pmax		pmax		
	comp=Z,4.0nm,0.4s								
FINES	**FINESS Array B**	**66.91**	**332**	P	P		P	02 41 53.7	+0.2
	comp=Z,6.0nm,0.7s,baz=48,slow=8.5,SNR=19								
FINES					LR		LR	03 14 13.2	
	comp=Z,485nm,18.4s,baz=24,slow=39								
LPSR	**Galich'ya Gora**	**67.00**	**320**	*eP*	P		P	02 41 53.9	-0.3
LPSR					pmax		pmax		
	comp=Z,10.0nm,1.1s								
VSR	**Storozhevoye**	**67.70**	**319**	*eP*	P		P	02 41 57.9	-0.7
VSR					pmax		pmax		
	comp=Z,10.0nm,0.9s								
SUMG	**Summit**	**67.76**	**1**	*i* P	P		P	02 41 59.3	+0.1
	comp=Z,12nm,0.9s								
SUMG	**Summit**	**67.76**	**1**	*i* P	P		P	02 41 59.3	+0.1
SUMG					pmax		pmax		
	comp=Z,12nm,0.9s								
SUMG	**Summit**	**67.76**	**1**	*eP*	P		P	02 42 00.1	+0.9
	comp=Z,6.0nm,0.9s								
VSU	**Vasula**	**68.68**	**330**	⇑P	P		P	02 42 05.9	+1.3
VSU					pmax		pmax		
	comp=Z,35nm,1.0s								
GOF	**Gofitskoye**	**69.24**	**312**	⇑*eP*	P		P	02 42 09.4	+1.0
GOF					pmax		pmax		
	comp=Z,30nm,0.8s								
SCO	**Scoresbysund**	**69.35**	**355**	*i* P	P		P	02 42 09.3	+0.7
SCO	**Scoresbysund**	**69.35**	**355**	*i* P	P		P	02 42 09.3	+0.7
GUDG	**Gudauri**	**69.93**	**309**	P	P		P	02 42 14.1	+1.1
KIV	**Kislovodsk**	**70.10**	**311**	*c i* P	P		P	02 42 14.9	+1.1
KIV				*i*				02 42 30.0	
KIV					pmax		pmax		
	comp=Z,52nm,1.0s								
KIV					MLR		MLR		
	comp=Z,368nm,17.0s								
KIV	**Kislovodsk**	**70.10**	**311**	*eP*	P		P	02 42 14.5	+0.7
	comp=Z,48nm,1.0s								
KBZ	**Khabaz**	**70.11**	**311**	P	P		P	02 42 14.1	+0.4
	comp=Z,14nm,0.9s,baz=55,slow=3.5,SNR=15								
FFC	**Flin Flon**	**70.46**	**34**	*eP*	P		P	02 42 16.3	+0.6
FFC					pmax		pmax		
	comp=Z,7.0nm,1.3s								
FFC	**Flin Flon**	**70.46**	**34**	*eP*	P		P	02 42 16.3	+0.6
	comp=Z,6.6nm,1.3s								
ONI	**Oni**	**70.46**	**309**	P	P		P	02 42 17.6	+1.5
ONI	**Oni**	**70.46**	**309**	P	P		P	02 42 17.5	+1.5
NEY	**Neytrino**	**70.50**	**310**	⇓*eP*	P		P	02 42 17.4	+1.0
NEY					pmax		pmax		
	comp=Z,3.0nm,0.9s								
EGMT	**Eagleton**	**71.12**	**43**	P	P		P	02 42 20.0	0.0
	baz=309								
EGMT	**Eagleton**	**71.12**	**43**	*eP*	P		P	02 42 20.7	+0.8
	comp=Z,4.7nm,1.0s								
GNI	**Garni**	**71.14**	**307**	*eP*	P		P	02 42 20.2	-0.1
GNI					pmax		pmax		
	comp=Z,65nm,1.0s								
GNI	**Garni**	**71.14**	**307**	*eP*	P		P	02 42 20.2	-0.1
	comp=Z,65nm,1.0s								
BOZ	**Bozeman (W)**	**71.61**	**46**	P	P		P	02 42 23.1	+0.1
	baz=309								
BOZ	**Bozeman (W)**	**71.61**	**46**	*eP*	P		P	02 42 24.2	+1.2
BOZ					pmax		pmax		
	comp=Z,13nm,1.8s								
BOZ	**Bozeman (W)**	**71.61**	**46**	*eP*	P		P	02 42 24.2	+1.2
	comp=Z,13nm,1.8s								
NB2	**NORSAR Subarra**	**72.05**	**338**	P	P		P	02 42 25.3	0.0
	comp=Z,3.6nm,0.8s,baz=39,slow=6.2								
NOA	**NORSAR Array B**	**72.05**	**338**	P	P		P	02 42 25.4	+0.1
	comp=Z,7.6nm,0.9s,baz=38,slow=6.0,SNR=13								
NV01	**Mina Array Sit**	**72.08**	**55**	*eP*	P		P	02 42 28.4	+2.3
NVAR	**Mina Array Bea**	**72.08**	**55**	P	P		P	02 42 26.8	+0.7
	comp=Z,1.1nm,0.8s,baz=291,slow=5.5,SNR=6.3								
AKASG	**Malin Array Be**	**72.88**	**323**	P	P		P	02 42 30.1	-0.1
	comp=Z,5.3nm,0.9s,baz=40,slow=5.8,SNR=14								
AKASG	**Malin Array Be**	**72.88**	**323**	P	P		P	02 42 30.2	-0.1
AKASG					pmax		pmax		
	comp=Z,3.0nm,0.7s								
KIEV	**Kiev**	**72.89**	**323**	⇑*iP*	P		P	02 42 30.0	-0.4
KIEV					pmax		pmax		
	comp=Z,8.0nm,1.1s								
KIEV	**Kiev**	**72.89**	**323**	*eP*	P		P	02 42 30.6	+0.2
	comp=Z,8.6nm,1.0s								
SBC	**Santa Barbara**	**73.58**	**59**	P	P		P	02 42 35.3	+0.5
	baz=307								
R11A	**Troy Canyon, C**	**73.82**	**53**	P	P		P	02 42 37.2	+0.8
	baz=308								
TPNV	**Topopah Spring**	**74.28**	**55**	P	P		P	02 42 39.5	+0.5
	baz=308								
TPNV	**Topopah Spring**	**74.28**	**55**	*eP*	P		P	02 42 40.5	+1.5
TPNV					pmax		pmax		
	comp=Z,12nm,1.3s								
TPNV	**Topopah Spring**	**74.28**	**55**	*eP*	P		P	02 42 40.5	+1.5
	comp=Z,12nm,1.3s								
DUG	**Dugway, Tooele**	**74.35**	**51**	P	P		P	02 42 39.4	0.0
	baz=309								
A26A	**Wade Farm, Ken**	**74.41**	**39**	P	P		P	02 42 39.5	+0.2
	baz=314								
PDAR	**Pinedale Array**	**74.59**	**47**	P	P		P	02 42 40.3	-0.5
	comp=Z,0.6nm,0.9s,baz=265,slow=5.5,SNR=5.1								
BORG	**Borgarnes**	**74.93**	**353**	*eP*	P		P	02 42 41.2	-0.9
BORG					pmax		pmax		
	comp=Z,167nm,1.6s								
BORG	**Borgarnes**	**74.93**	**353**	*eP*	P		P	02 42 41.2	-0.9
	comp=Z,167nm,1.6s								
LCMT	**Little Creek M**	**76.11**	**53**	*eP*	P		P	02 42 51.8	+2.3
	comp=Z,8.2nm,1.4s								
BUR08	**Bucovina Ar. S**	**76.90**	**322**	*eP*	P		P	02 42 54.6	+0.8
STHS	**Stebnicka Huta**	**77.40**	**325**	*eP*	P		P	02 42 57.4	+0.9
STHS					pmax		pmax		
	comp=Z,4.0nm,0.9s								
STHS	**Stebnicka Huta**	**77.40**	**325**	*eP*	P		P	02 42 57.4	+0.9
OJC	**Ojcow**	**77.42**	**327**	*eP*	P		P	02 42 57.3	+0.8
OJC					pmax		pmax		
	comp=Z,14nm,1.1s								
OJC	**Ojcow**	**77.42**	**327**	*eP*	P		P	02 42 57.3	+0.8
	comp=Z,14nm,1.1s								
CRVS	**Cervenica-Dubn**	**77.69**	**325**	*eP*	P		P	02 43 00.8	+2.7
CRVS	**Cervenica-Dubn**	**77.69**	**325**	*eP*	P		P	02 43 00.8	+2.7
BRTR	**Keskin Array B**	**78.00**	**312**	P	P		P	02 43 00.3	+0.2
	comp=Z,2.8nm,1.0s,baz=108,slow=4.0,SNR=8.2								
BRTR					LR		LR	03 23 28.0	
	comp=Z,92nm,18.9s,baz=30,slow=40								
LANS	**Liptovska Anna**	**78.37**	**326**	*eP*	P		P	02 43 03.8	+1.9
LANS	**Liptovska Anna**	**78.37**	**326**	*eP*	P		P	02 43 03.8	+1.9
OKC	**Ostrava-Krasne**	**78.40**	**327**	*eP*	P		P	02 43 02.6	+0.6
OKC	**Ostrava-Krasne**	**78.40**	**327**	*eP*	P		P	02 43 02.6	+0.6
BR231	**Keskin MP Arra**	**78.41**	**313**	*eP*	P		P	02 43 01.4	-1.0
G30A	**Faulkton**	**78.46**	**40**	P	P		P	02 43 02.3	-0.1
	baz=316								
MORC	**Moravsky Berou**	**78.70**	**328**	*eP*	P		P	02 43 04.8	+1.1
MORC					pmax		pmax		
	comp=Z,43nm,1.1s								
MORC	**Moravsky Berou**	**78.70**	**328**	*eP*	P		P	02 43 04.8	+1.1
	comp=Z,43nm,1.1s								
DPC	**Dobruska-Polom**	**78.75**	**329**	*eP*	P		P	02 43 04.2	+0.2
DPC					*ep*P		PcP	02 43 13.4	+0.6
DPC					*ex*		x	02 43 22.1	
DPC	**Dobruska-Polom**	**78.75**	**329**	*eP*	P		P	02 43 04.2	+0.2
DPC					*e*			02 43 13.4	
PSZ	**Piszkesteto**	**79.12**	**325**	*eP*	P		P	02 43 07.0	+0.9
PSZ	**Piszkesteto**	**79.12**	**325**	*eP*	P		P	02 43 07.0	+0.9
VYHS	**Vyhne**	**79.14**	**326**	*eP*	P		P	02 43 06.8	+0.7
VYHS					pmax		pmax		
	comp=Z,4.0nm,1.2s								
VYHS	**Vyhne**	**79.14**	**326**	*eP*	P		P	02 43 06.8	+0.7
BRG	**Berggiesshubel**	**79.27**	**330**	*eP*	P		P	02 43 07.3	+0.6
	comp=Z,5.4nm,1.1s								
BRG	**Berggiesshubel**	**79.27**	**330**	*eP*	P		P	02 43 07.3	+0.6
BRG					pmax		pmax		
	comp=Z,5.0nm,1.1s								
CLL	**Collm**	**79.28**	**331**	⇑*iP*	P		P	02 43 06.7	0.0
	comp=Z,12nm,1.1s								
CLL				*e*				02 43 16.0	
CLL					Lm		MLR	03 20 00.0	
	comp=Z,300nm,18.1s								
CLL	**Collm**	**79.28**	**331**	⇑*iP*	P		P	02 43 06.7	0.0
CLL				*e*				02 43 16.0	
CLL					pmax		pmax		
	comp=Z,12nm,1.1s								
CLL					MLR		MLR		
	comp=Z,300nm,18.1s								
CLL	**Collm**	**79.28**	**331**	*eP*	P		P	02 43 07.2	+0.5
PVCC	**Panska Ves**	**79.30**	**330**	*eP*	P		P	02 43 07.3	+0.4
PVCC	**Panska Ves**	**79.30**	**330**	*eP*	P		P	02 43 07.3	+0.4
GOPC	**GO Pecny, Ondr**	**79.70**	**329**	*eP*	P		P	02 43 09.8	+0.7
GOPC					*ep*P		sP	02 43 19.3	-0.4
GOPC	**GO Pecny, Ondr**	**79.70**	**329**	*eP*	P		P	02 43 09.8	+0.7
GOPC					*e*			02 43 19.3	
PRU	**Pruhonice**	**79.74**	**329**	*eP*	P		P	02 43 10.0	+0.7
PRU	**Pruhonice**	**79.74**	**329**	*eP*	P		P	02 43 10.0	+0.7
KHC	**Kasperske Hory**	**80.80**	**329**	*eP*	P		P	02 43 15.6	+0.5
KHC					*ep*P		pP	02 43 23.3	+0.4
KHC					*ex*		x	02 43 30.0	
KHC	**Kasperske Hory**	**80.80**	**329**	*eP*	P		P	02 43 15.6	+0.5
KHC					*e*			02 43 23.3	
KHC					*e*			02 43 30.0	
KHC	**Kasperske Hory**	**80.80**	**329**	*eP*	P		P	02 43 15.5	+0.3
	comp=Z,3.3nm,0.9s								
CONA	**Conrad Observa**	**80.83**	**327**	*i* P	P		P	02 43 16.4	+1.1
	comp=Z,6.3nm,1.1s								
RAYN	**Ar Rayn**	**80.89**	**293**	*eP*	P		P	02 43 15.5	-0.5
	comp=Z,5.2nm,1.0s								
GERES	**GERESS Array B**	**80.98**	**329**	P	P		P	02 43 15.5	-0.7
	comp=Z,1.5nm,0.7s,baz=46,slow=5.8,SNR=8.6								
GRFO	**Grafenberg**	**81.26**	**331**	*eP*	P		P	02 43 16.9	-0.6
GRFO					pmax		pmax		
	comp=Z,12nm,0.7s								
GRFO	**Grafenberg**	**81.26**	**331**	*eP*	P		P	02 43 16.9	-0.6
	comp=Z,12nm,0.7s								
VTS	**Vitosha**	**81.55**	**320**	*eP*	P		P	02 43 20.4	+1.0
VTS	**Vitosha**	**81.55**	**320**	*eP*	P		P	02 43 20.4	+1.0
ANMO	**Albuquerque**	**81.60**	**51**	⇓*iP*	P		P	02 43 21.3	+1.5
ANMO					pmax		pmax		
	comp=Z,2.0nm,1.0s								
ANMO	**Albuquerque**	**81.60**	**51**	*eP*	P		P	02 43 21.6	+1.8
SCHQ	**Schefferville**	**82.12**	**17**	LR	LR		LR	03 22 31.5	
	comp=Z,63nm,19.6s,baz=12,slow=38								
SOKA	**Soboth**		**82.17**	**327**	*eP*	P		P	02 43 22.8	+0.4
	comp=Z,11nm,1.0s,SNR=9.8								
OBKA	**Obir**		**82.51**	**327**	*eP*	P		P	02 43 24.3	+0.1
	comp=Z,3.6nm,0.7s								
KBA	**Koelnbreinsper**		**82.55**	**328**	*i* P	P		P	02 43 24.4	-0.1
	comp=Z,6.6nm,0.9s								
CWF	**Charnwood Fore**		**82.71**	**339**	*eP*	P		P	02 43 25.7	+0.7
MYKA	**Terra Mystica**		**82.78**	**328**	*i* P	P		P	02 43 25.6	-0.1
	comp=Z,6.2nm,1.0s								
MOTA	**Mosalm**		**83.22**	**330**	*ePcP*	P		P	02 43 29.1	+1.1
	SNR=7.1								
RETA	**Reutte**		**83.24**	**330**	*i* P	P		P	02 43 28.5	+0.5
	comp=Z,11nm,1.1s								
BFO	**Black Forest**		**83.45**	**332**	*ceP*	P		P	02 43 30.0	+1.0
DAVA	**Damuels**		**83.74**	**330**	*eP*	P		P	02 43 30.7	0.0
	comp=Z,12nm,1.0s								
PMOR	**Pomariorio Ree**		**84.04**	**115**	*eT*	T			04 16 14.4	
	comp=Z,4.7nm,0.2s								
FUORN	**Ofenpass-Fuorn**		**84.14**	**330**	*eP*	P		P	02 43 33.8	+1.0
DAVOX	**Davos/Dischmat**		**84.16**	**330**	LR	LR		LR	03 26 20.7	
	comp=Z,164nm,18.7s,baz=0.5,slow=39								
MNTX	**Cornudas Mount**		**84.48**	**53**	P	P		P	02 43 34.6	+0.1
	baz=314								
TUE	**Stuetta**		**84.62**	**330**	*eP*	P		P	02 43 35.9	+0.6
PPT	**Papeete**		**84.67**	**118**	LR	LR		LR	03 13 40.7	
	comp=Z,166nm,21.1s,baz=300,slow=30								
PPT2	**Papeete2**		**84.68**	**118**	*e*LR	LR		LR	03 10 27.5	
	comp=Z,309nm,22.8s								
R35A	**Emporia Munici**		**84.95**	**43**	P	P		P	02 43 37.0	+0.3
	baz=318								
SENIN	**Lac Senin/Sane**		**85.49**	**331**	*eP*	P		P	02 43 40.0	+0.4
TAOE	**Nuku Hiva Isla**		**85.49**	**105**	*e*LR	LR		LR	03 10 45.5	
	comp=Z,263nm,20.8s								
R37A	**Teagarden Farm**		**85.67**	**42**	P	P		P	02 43 40.4	0.0
	baz=319								
Q39A	**Willow Grove F**		**86.05**	**40**	P	P		P	02 43 42.0	-0.2
	baz=320								
X32A	**Elmer**		**86.14**	**47**	P	P		P	02 43 42.7	-0.1
	baz=317								
R38A	**Fenwick Farm,**		**86.24**	**42**	P	P		P	02 43 42.9	-0.3
	baz=320								
TXAR	**Lajitas Array**		**87.19**	**54**	P	P		P	02 43 48.8	+0.6
	comp=Z,0.9nm,0.9s,baz=311,slow=4.9,SNR=4.5								
TBI	**Tubuai**		**88.80**	**122**	*e*LR	LR		LR	03 12 10.0	
	comp=Z,120nm,28.0s								
ESDC	**Sonseca Array**		**95.29**	**335**	P	P		P	02 44 24.9	-0.7
	comp=Z,0.4nm,0.7s,baz=15,slow=4.4,SNR=4.7								
SDV	**Santo Domingo**		**122.15**	**41**	*e*PKPdf		**PKPdf**		02 49 56.5	-0.5
SNAA	**Sanae**		**143.97**	**197**	*e*PKIKP		PKPab		02 50 33.3	+0.1
SNAA	**Sanae**		**143.97**	**197**	*e*PKPpre		PKPab		02 50 33.3	+0.1
VNA2	**Neumayer--Watz**		**145.53**	**197**	PKP		**PKPdf**		**02 50 37.5**	**-1.0**
	baz=114,slow=5.0									
VNA3	**Neumayer Olymp**		**145.77**	**195**	PKP		**PKPab**		**02 50 41.0**	**+1.2**
LCO	**Las Campanas**		**150.10**	**79**	*e*PKPbc		**PKPbc**		**02 50 53.1**	**+0.5**

NIED ***09*** *02:33:00.0, 40.00N × 143.20E, h23km, Mw4.5 Best double couple: M0 7.30000 × 1015 NP1: φ = 199.00000°, δ = 23.00000°, λ = 81.00000°. NP2: φ = 29.00000°, δ = 68.00000°, λ = 94.00000°.*
IDC ***09*** *02:33:45.8 ± 0.7, 39.85N × 143.28E, h0km, mb4.4/26, mb1 4.5/31, mb1mx4.4/44, mbtmp4.4/31, ML3.9/4, Error ellipse: s-maj = 16.7km s-min = 13.4km az = 140.0*
ISCJB ***09*** *02:33:46.6 ± 0.8, 39.83N ± 0.03 × 143.38E ± 0.03, h19km ± 5km, mb4.6/75, MS4.3/10, Error ellipse: s-maj = 6.2km s-min = 3.9km az = 152.1*
JMA ***09*** *02:33:47.5 ± 0.2, 39.96N × 143.25E, h3km ± 3km, M4.5*
JMA Felt I J1.
BJI ***09*** *02:33:47.4, 39.73N × 143.09E, h20km, mb4.9/53, mB4.9/32, Ms4.5/30, Ms7 4.4/28*
MOS ***09*** *02:33:48.4 ± 1.0, 39.87N × 143.31E, h30km, mb4.8/39, Error ellipse: s-maj = 8.2km s-min = 5.3km az = 98.4*
NEIC ***09*** *02:33:50.3 ± 1.7, 39.76N × 143.30E, h34km ± 12km, mb4.7/32, Error ellipse: s-maj = 6.7km s-min = 4.7km az = 118.0*
ISC 09 02:33:49.5 ± 0.9, 39.86N ± 0.05 × 143.35E ± 0.05, h28km ± 5km, n197, σ1 s53/222, mb4.7/75, MS4.3/10, 11C-4D, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JTH	**Tanohata**	**1.14**	**275**	P	**Pn**	**02 34 08.0**	**-1.6**
JTH				*e*S	**Sn**	**02 34 22.5**	**-1.8**
MIYJ	**Miyakonagasawa**	**1.21**	**257**	P	**Pn**	**02 34 10.0**	**-0.5**
MIYJ				*e*S	**Sn**	**02 34 25.3**	**-0.7**
JANG	**Nango**	**1.50**	**291**	P	**Pn**	**02 34 13.3**	**-1.2**
JANG				*e*S	**Sn**	**02 34 32.1**	**-1.0**
JOM	**Ohasama**	**1.63**	**257**	P	**Pn**	**02 34 16.6**	**+0.3**
JOM				S	**Sn**	**02 34 38.1**	**+1.7**
JTM	**Tenmabayashi**	**1.97**	**299**	P	**Pn**	**02 34 21.0**	**0.0**
JTM				S	**Sn**	**02 34 45.9**	**+1.1**
JAH	**Hinai**	**2.11**	**280**	P	**Pn**	**02 34 23.3**	**+0.4**
JAH				S	**Sn**	**02 34 50.2**	**+2.1**
JRG	**Rokugo**	**2.15**	**258**	P	**Pn**	**02 34 24.9**	**+1.5**
JRG				S	**Sn**	**02 34 50.0**	**+1.0**
ERM	**Erimo**	**2.16**	**356**	⇑*iP*	**Pn**	**02 34 25.3**	**+1.7**
ERM	**Erimo**	**2.16**	**356**	*e*Pn	**Pn**	**02 34 24.7**	**+1.1**
JOT	**Ohata**	**2.32**	**312**	P	**Pn**	**02 34 25.8**	**0.0**
JOT				*e*S	**Sn**	**02 34 53.4**	**+0.1**
YUK	**Yuzh-Kuril'sk**	**4.58**	**23**	*e*P	**Pn**	**02 34 55.6**	**-1.2**
YUK				*e*S	**Sn**	**02 35 44.1**	**-4.9**
YUK				pmax	pmax		
	comp=Z,297nm,0.5s						
YUK				pmax	pmax		
	comp=N,158nm,0.6s						
YUK				pmax	pmax		
	comp=E,196nm,0.5s						
YUK				MLR	MLR		
	comp=Z,998nm,13.0s						
SHO	**Shikotan**	**4.78**	**32**	*e*P	**Pn**	**02 34 57.8**	**-1.8**
SHO				*e*S	**Sn**	**02 35 47.2**	**-6.8**
SHO				pmax	pmax		
	comp=Z,202nm,0.6s						
SHO				pmax	pmax		
	comp=N,44nm,0.3s						
MJAR	**Matsushiro Arr**	**5.23**	**232**	Pn	**Pn**	**02 35 06.4**	**+0.7**
	comp=N,5.5nm,0.3s,baz=33,slow=12,SNR=9.1						
MAJO	**Matsushiro**	**5.23**	**232**	*e*P	**Pn**	**02 35 06.6**	**+0.8**
MAJO	**Matsushiro**	**5.23**	**232**	*e*Pn	**Pn**	**02 35 06.5**	**+0.8**
MAT	**Matsushiro**	**5.23**	**232**	P	**Pn**	**02 35 07.1**	**+1.3**
MAT				*e*S	**Sn**	**02 36 08.5**	**+3.4**
KUR	**Kuril'sk**	**6.33**	**30**	*e*P	**Pn**	**02 35 20.1**	**-0.7**
KUR				*e*S	**Sn**	**02 36 28.3**	**-3.7**
KUR				pmax	pmax		
	comp=Z,106nm,0.4s						
KUR				pmax	pmax		
	comp=E,40nm,0.2s						
KUR				pmax	pmax		
	comp=N,47nm,0.4s						
KUR				MLR	MLR		
	comp=Z,1μm,13.0s						
YSS	**Yuzh-Sakhalins**	**7

comp=Z,100nm,0.6s
BOD Bodaibo 26.06 323 *e*P **P 02 39 20.1 -0.1**
BOD pmax pmax
comp=Z,29nm,0.9s
ULN Ulaanbaatar 27.16 299⇓ *i*P **P 02 39 30.0 -0.5**
ULN pmax pmax
comp=Z,21nm,1.1s
ULN Ulaanbaatar 27.16 299 *e*P **P 02 39 30.7 +0.2**
comp=Z,17nm,1.0s
SONM Songino Array 27.61 299 P **P 02 39 35.0 +0.6**
comp=Z,11nm,0.9s,baz=92,slow=8.6,SNR=16
SONM Songino Array 27.61 299 P **P 02 39 35.0 +0.6**
SONM pmax pmax
comp=Z,11nm,0.9s
XAN Xi'an 28.00 269 P **P 02 39 36.9 -1.1**
XAN pmax pmax
comp=Z,7.0nm,0.7s
XAN pmax pmax
comp=Z,90nm,6.7s
H11N2 WAKE ISLAND Hy 28.48 128 T T 03 09 36.7
baz=321,slow=75,SNR=20
H11N1 WAKE ISLAND Hy 28.49 128 T T 03 09 39.2
baz=321,slow=75,SNR=16
H11N3 WAKE ISLAND Hy 28.50 128 T T 03 09 41.0
baz=321,slow=75,SNR=18
ENH Enshi 29.17 261 *e*P **P 02 39 47.6 -0.8**
comp=Z,42nm,0.8s
H11S1 WAKE ISLAND Hy 29.31 130 T T 03 10 41.9
baz=322,slow=76,SNR=11
H11S3 WAKE ISLAND Hy 29.31 130 T T 03 10 44.3
baz=322,slow=76,SNR=10
H11S2 WAKE ISLAND Hy 29.32 130 T T 03 10 43.4
baz=322,slow=76,SNR=101
TLY Talaya 29.75 307 *e*P **P 02 39 53.9 +0.6**
TLY pmax pmax
comp=Z,4.0nm,0.9s
TLY MLR MLR
comp=Z,176nm,11.0s
TLY Talaya 29.75 307 *e*P **P 02 39 53.7 +0.4**
ZAK Zakamensk 29.83 304 *e*P **P 02 39 53.7 -0.4**
ZAK pmax pmax
comp=Z,7.0nm,1.4s
BILL Bilibino 30.89 17⇑ *e*P **P 02 40 04.7 +1.5**
BILL pmax pmax
comp=Z,2.0nm,0.9s
LZH Lanzhou 31.19 276 *e*P **P 02 40 06.7 +0.3**
LZH pP pP 02 40 16.3 +1.6
LZH sP sP 02 40 20.2 +2.0
LZH PP **PnPn 02 41 09.0 +0.5**
LZH pmax pmax
comp=Z,21nm,1.3s
LZH pmax pmax
comp=Z,69nm,4.8s
LZH LR LR
comp=Z,300nm,13.0s
LZH LR LR
comp=Z,340nm,13.2s
LZH LR LR
comp=Z,380nm,16.5s
MOY Mondy 31.38 306 *e*P **P 02 40 08.2 +0.4**
GYA Guiyang 33.25 258⇑ *i*P **P 02 40 23.8 -0.7**
GYA pP pP 02 40 33.2 +0.4
GYA PP **PnPn 02 41 36.0 +0.9**
GYA PcP **PcP 02 43 07.6 +1.1**
GYA S **S 02 45 40.8 -2.2**
GYA sS sS 02 45 57.2 +0.5
GYA SS **SnSn 02 47 43.0 -1.1**
GYA ScS **ScS 02 50 45.4 -4.3**
GYA pmax pmax
comp=Z,20nm,0.9s
GYA pmax pmax
comp=Z,120nm,6.0s
GYA LR LR
comp=Z,510nm,15.9s
GYA LR LR
comp=Z,470nm,16.0s
GYA LR LR
comp=Z,500nm,16.2s
CD2 Chengdu 33.27 267 P **P 02 40 23.5 -1.0**
CD2 sP sP 02 40 37.2 +0.9
CD2 PP **PP 02 41 38.9 -1.0**
CD2 S **S 02 45 41.7 -1.3**
CD2 sS sS 02 45 57.9 +1.1
CD2 pmax pmax
comp=Z,30nm,0.6s
CD2 pmax pmax
comp=Z,120nm,4.7s
CD2 LR LR
comp=Z,710nm,15.5s
CD2 LR LR
comp=Z,560nm,14.3s
GTA Gaotai 33.28 284 *e*P **P 02 40 25.2 +0.6**
GTA pP pP 02 40 33.2 +0.2
GTA sP sP 02 40 35.8 -0.6
GTA PcP **PcP 02 43 08.7 +2.3**
GTA S **S 02 45 43.5 +0.2**
GTA sS sS 02 45 54.7 -2.4
GTA pmax pmax
comp=Z,20nm,1.1s
GTA pmax pmax
comp=Z,72nm,5.5s
GTA LR LR
comp=Z,300nm,16.6s
GTA LR LR
comp=Z,630nm,18.5s
GTA LR LR
comp=Z,660nm,18.1s
KRAR Krasnoyarsk 36.55 313⇓ *i*P **P 02 40 52.2 -0.3**
KRAR pmax pmax
comp=Z,17nm,1.0s
KMI Kunming 36.94 259 P **P 02 40 56.1 -0.3**
KMI pP pP 02 41 04.8 0.0
KMI sP sP 02 41 08.9 +0.7
KMI S S 02 46 31.0 -8.9
KMI SS **SnSn 02 49 04.2 -9.4**
KMI pmax pmax
comp=Z,17nm,0.6s
KMI pmax pmax
comp=Z,100nm,4.6s
KMI LR LR
comp=Z,480nm,15.0s
KMI LR LR
comp=Z,370nm,14.4s
KMI LR LR
comp=Z,640nm,16.1s
WMQ Urumqi 40.99 294 P **P 02 41 30.5 +0.6**
WMQ pP pP 02 41 39.6 +1.2
WMQ sP sP 02 41 43.8 +2.0
WMQ S **S 02 47 40.3 0.0**
WMQ SS **SS 02 50 38.6 -3.9**
WMQ pmax pmax
comp=Z,13nm,0.6s
WMQ pmax pmax
comp=Z,36nm,4.0s
WMQ LR LR
comp=Z,65nm,18.2s
WMQ LR LR
comp=Z,67nm,18.2s
WMQ LR LR
comp=Z,95nm,18.2s
ZALV Zalesovo Beam 41.20 310 P **P 02 41 31.9 +0.5**
comp=Z,18nm,0.4s,baz=96,slow=8.2,SNR=40
ZALV PcP **PcP 02 43 30.1 +0.1**
comp=Z,2.9nm,0.5s,baz=86,slow=2.3,SNR=5.6
NRIK Noril'sk 41.38 334 P **P 02 41 33.0 +0.3**
comp=Z,2.9nm,0.5s,baz=99,slow=9.5,SNR=3.3
NVS Novosibirsk 42.05 312 *e*P **P 02 41 38.7 +0.4**
NVS pmax pmax
comp=E,7.0nm,0.5s
NVS pmax pmax
comp=Z,7.0nm,0.5s
CHTO Chiang Mai 43.49 254 *e*P **P 02 41 50.1 -0.3**
CHTO pmax pmax
comp=Z,6.0nm,0.7s
CHTO Chiang Mai 43.49 254 *e*P **P 02 41 50.1 -0.3**
comp=Z,5.8nm,0.7s
CMAR Chiang Mai Arr 43.71 254 P **P 02 41 52.5 +0.4**
comp=Z,2.6nm,0.7s,baz=47,slow=6.4,SNR=6.8
CMAR Chiang Mai Arr 43.71 254 P **P 02 41 52.6 +0.4**
CMAR pmax pmax
comp=Z,2.0nm,0.6s
MKAR Makanchi Array 43.97 300 P **P 02 41 54.2 +0.3**
comp=Z,16nm,1.0s,baz=81,slow=11,SNR=13
MKAR Makanchi Array 43.97 300 P **P 02 41 54.3 +0.3**
MKAR pmax pmax
comp=Z,11nm,0.8s

BPAW Bear Paw Mtn. 44.54 35 *e*P **P 02 41 59.5 +1.1**
comp=Z,2.9nm,1.6s
COLD Coldfoot 44.95 30 *e*P **P 02 42 02.9 +1.3**
comp=Z,5.4nm,1.1s
KURK Kurchatov 45.44 306 *e*P **P 02 42 05.2 -0.5**
KURK pmax pmax
comp=Z,45nm,0.7s
KURK Kurchatov 45.44 306 *e*P **P 02 42 05.2 -0.5**
comp=Z,45nm,0.7s
MCK McKinley 45.45 35 *e*P **P 02 42 06.8 +1.2**
MCK pmax pmax
comp=Z,8.0nm,1.0s
MCK McKinley 45.45 35 *e*P **P 02 42 06.8 +1.2**
comp=Z,8.5nm,1.0s
KURBB Kurchatov Arra 45.52 306 P **P 02 42 06.4 +0.2**
comp=Z,16nm,0.6s,baz=80,slow=8.8,SNR=18
COLA College 45.89 34⇓ *e*P **P 02 42 10.5 +1.5**
COLA pmax pmax
comp=Z,2.0nm,0.9s
ILAR Eielson Array 46.30 34 P **P 02 42 13.6 +1.3**
comp=Z,2.5nm,0.8s,baz=264,slow=6.4,SNR=7.4
ILAR Eielson Array 46.30 34 P **P 02 42 13.6 +1.3**
ILAR pmax pmax
comp=Z,2.0nm,0.8s
DOT Dot Lake 47.62 35 *e*P **P 02 42 23.1 +0.4**
comp=Z,4.9nm,0.6s
ODAN Odare 47.79 272 *e*P **P 02 42 25.4 +0.7**
comp=Z,33nm,0.8s
RAMN Ramite 48.35 273 *e*P **P 02 42 29.5 +0.5**
comp=Z,86nm,0.9s
GUN Gumba 48.43 274 *e*P **P 02 42 30.2 +0.5**
comp=Z,58nm,0.6s
KKN Kakani 48.95 274 *e*P **P 02 42 34.2 +0.6**
comp=Z,42nm,0.6s
GKN Gorkha 49.33 275 *e*P **P 02 42 36.7 +0.2**
comp=Z,28nm,0.6s
TKM2 Tokmak 2 49.67 297 *e*P **P 02 42 39.4 +0.5**
TKM2 pmax pmax
comp=Z,30nm,0.7s
TKM2 Tokmak 2 49.67 297 *e*P **P 02 42 39.4 +0.5**
comp=Z,30nm,0.7s
BRVK Borovoye 49.89 311 *d i*P **P 02 42 41.0 +0.9**
BRVK pmax pmax
comp=Z,9.0nm,0.8s
BRVK Borovoye 49.89 311 *e*P **P 02 42 40.3 +0.2**
comp=Z,13nm,0.8s
KOLN Koldanda 50.24 275 *e*P **P 02 42 43.8 +0.4**
comp=Z,10nm,0.4s
FRU Bishkek 50.37 297 *e*P **P 02 42 43.0 -1.0**
AAK Ala-Archa 50.53 297⇑ *i*P **P 02 42 44.8 -0.6**
AAK pmax pmax
comp=Z,11nm,0.9s
AAK Ala-Archa 50.53 297 *e*P **P 02 42 45.0 -0.4**
comp=Z,4.8nm,0.4s
PYUN Piuthan 50.55 276 *e*P **P 02 42 46.4 +0.7**
KSH Kashi 50.68 293 P **P 02 42 51.0 +4.5**
KSH *e*pP sP 02 43 01.0 +2.5
KSH *e*PP **PP 02 44 47.6 +5.2**
KSH S **S 02 50 03.9 +4.0**
KSH pmax pmax
comp=Z,160nm,4.5s
KSH LR LR
comp=Z,180nm,7.7s
KSH LR LR
comp=Z,150nm,5.6s
KSH LR LR
comp=Z,760nm,15.6s
EKS2 Erkin-Say 51.01 297 *e*P **P 02 42 48.8 -0.1**
EKS2 pmax pmax
comp=Z,10.0nm,0.8s
EKS2 Erkin-Say 51.01 297 *e*P **P 02 42 48.8 -0.1**
comp=Z,9.5nm,0.8s
INK Inuvik 51.19 28 P **P 02 42 51.4 +1.7**
comp=Z,1.9nm,0.5s,baz=292,slow=8.0,SNR=7.1
INK Inuvik 51.19 28 *e*P **P 02 42 50.4 +0.7**
INK pmax pmax
comp=Z,3.0nm,0.6s
INK Inuvik 51.19 28 *e*P **P 02 42 50.4 +0.7**
comp=Z,2.9nm,0.6s
KULM Kulim 51.55 240 *e*P **P 02 42 52.6 -0.4**
KKAR Karatay Array 53.06 299 *e*P **P 02 43 03.8 -0.3**
KKAR pmax pmax
comp=Z,8.0nm,0.7s
KKAR Karatay Array 53.06 299 *e*P **P 02 43 03.8 -0.3**
comp=Z,7.6nm,0.7s
SVE Sverdlovsk 54.06 318 *e*P **P 02 43 12.5 +1.4**
ARU Arti 55.27 318 *e i*P **P 02 43 20.4 +0.5**
ARU 02 45 19.4
ARU S **S 02 51 03.2 +1.5**
ARU SS **SS 02 54 43.1 -2.4**
ARU pmax pmax
comp=Z,19nm,1.2s
ARU Arti 55.27 318 *e*P **P 02 43 19.9 0.0**
comp=Z,20nm,1.1s
GSI Gunungsitoli 56.55 239 *e*P **P 02 43 27.8 -1.8**
comp=Z,30nm,1.1s
ABKAR Akbulak array 57.30 309 *e*P **P 02 43 34.6 +0.1**
RES Resolute Bay 59.49 15 P **P 02 43 49.9 +0.6**
comp=Z,3.3nm,0.8s,baz=328,slow=6.0,SNR=7.3
RES Resolute Bay 59.49 15 *e*P **P 02 43 49.7 +0.3**
RES pmax pmax
comp=Z,5.0nm,0.7s
RES Resolute Bay 59.49 15 *e*P **P 02 43 49.7 +0.3**
comp=Z,4.9nm,0.7s
FITZ Fitzroy Crossi 59.98 200 *e*P **P 02 43 52.6 -0.7**
comp=Z,6.4nm,1.0s
WRAB Tennant Creek 60.07 190 *e*P **P 02 43 53.2 -0.7**
WRAB pmax pmax
comp=Z,9.0nm,1.0s
WRAB Tennant Creek 60.07 190 *e*P **P 02 43 53.2 -0.7**
comp=Z,9.4nm,1.0s
WRA Warramunga Arr 60.08 190 P **P 02 43 53.7 -0.3**
comp=Z,2.2nm,0.7s,baz=6.6,slow=6.8,SNR=6.7
YKA Yellowknife Ar 60.61 31 P **P 02 43 57.9 +0.7**
comp=Z,0.4nm,0.7s,baz=301,slow=6.6,SNR=4.4
YKA Yellowknife Ar 60.61 31 P **P 02 43 57.9 +0.7**
YKA pmax pmax
comp=Z,1.0nm,0.7s
TMCR Tamitsa 61.01 331 *e*P **P 02 44 00.0 +0.1**
TMCR pmax pmax
comp=Z,23nm,1.0s
ARCES ARCESS Array B 61.89 339 P **P 02 44 06.3 +0.4**
comp=Z,2.1nm,0.8s,baz=46,slow=7.0,SNR=6.1
ASAR Alice Springs 63.80 190 P **P 02 44 19.6 +0.5**
comp=Z,1.1nm,0.6s,baz=5.2,slow=5.7,SNR=6.9
GEYT Alibeck 63.81 299 P **P 02 44 19.1 0.0**
comp=Z,7.7nm,0.7s,baz=47,slow=2.8,SNR=11
FINES FINESS Array B 67.02 332 P **P 02 44 39.7 +0.2**
comp=Z,6.9nm,0.7s,baz=53,slow=7.3,SNR=13
SUMG Summit 67.86 1 *e*P **P 02 44 46.1 +1.0**
SUMG pmax pmax
comp=Z,8.0nm,0.8s
SUMG Summit 67.86 1 *e*P **P 02 44 46.1 +1.0**
comp=Z,8.4nm,0.8s
BMO Blue Mountains 68.92 49 *e*P **P 02 44 51.4 -0.4**
BMO pmax pmax
comp=Z,3.0nm,0.7s
BMO Blue Mountains 68.92 49 *e*P **P 02 44 51.4 -0.4**
comp=Z,3.0nm,0.7s
DGRG David-gareji 70.08 308 P **P 02 44 58.8 -0.3**
DGRG David-gareji 70.08 308 P **P 02 44 58.7 -0.3**
ZEI Tsey 70.18 309 *e*P **P 02 45 00.3 +0.5**
ZEI pmax pmax
comp=Z,12nm,0.8s
KIV Kislovodsk 70.20 311 *e*P **P 02 45 01.5 +1.7**
KIV pmax pmax
comp=Z,20nm,0.8s
KIV Kislovodsk 70.20 311 *e*P **P 02 45 01.4 +1.7**
comp=Z,20nm,0.8s
KBZ Khabaz 70.22 311 P **P 02 45 00.1 +0.4**
comp=Z,10nm,0.8s,baz=43,slow=4.2,SNR=9.2
FFC Flin Flon 70.52 34 *e*P **P 02 45 02.2 +0.9**
FFC Flin Flon 70.52 34 *e*P **P 02 45 02.2 +0.9**
EGMT Eagleton 71.16 43 *e*P **P 02 45 06.7 +1.2**
comp=Z,3.1nm,0.7s
NVAR Mina Array Bea 72.10 55 P **P 02 45 13.3 +1.8**
comp=Z,1.1nm,0.8s,baz=288,slow=6.4,SNR=4.4
NB2 NORSAR Subarra 72.16 338 P **P 02 45 11.7 +0.5**
comp=Z,2.7nm,0.6s,baz=36,slow=6.2
NOA NORSAR Array B 72.16 338 P **P 02 45 11.7 +0.5**
comp=Z,4.4nm,0.7s,baz=44,slow=5.5,SNR=13
AKASG Malin Array Be 72.99 323 P **P 02 45 15.9 -0.4**
comp=Z,1.8nm,0.4s,baz=41,slow=5.9,SNR=8.5
KIEV Kiev 73.00 323 *e*P **P 02 45 16.7 +0.4**
KIEV pmax pmax
comp=Z,3.0nm,0.8s

KIEV Kiev 73.00 323 *e*P **P 02 45 16.2 -0.1**
PDAR Pinedale Array 74.62 47 P **P 02 45 27.9 +1.6**
comp=Z,0.4nm,0.7s,baz=323,slow=2.2,SNR=3.5
BURAR Bucovina Array 77.03 322⇑ *i*P **P 02 45 40.7 +0.9**
CRVS Cervenica-Dubn 77.80 325 *e*P **P 02 45 44.1 +0.1**
CRVS Cervenica-Dubn 77.80 325 *e*P **P 02 45 44.1 +0.1**
BRTR Keskin Array B 78.10 312 P **P 02 45 46.7 +0.7**
comp=Z,1.4nm,0.8s,baz=103,slow=3.0,SNR=5.8
OKC Ostrava-Krasne 78.51 327 *e*P **P 02 45 49.2 +1.4**
OKC Ostrava-Krasne 78.51 327 *e*P **P 02 45 49.2 +1.4**
DRGR 78.80 323⇑ *i*P **P 02 45 51.2 +1.6**
DPC Dobruska-Polom 78.86 329 *e*P **P 02 45 51.5 +1.7**
DPC Dobruska-Polom 78.86 329 *e*P **P 02 45 51.5 +1.7**
PSZ Piszkesteto 79.23 325 *e*P **P 02 45 52.6 +0.7**
PSZ pmax pmax
comp=Z,3.0nm,0.7s
PSZ Piszkesteto 79.23 325 *e*P **P 02 45 52.6 +0.7**
comp=Z,3.2nm,0.7s
VYHS Vyhne 79.25 326 *e*P **P 02 45 53.1 +1.1**
VYHS Vyhne 79.25 326 *e*P **P 02 45 53.1 +1.1**
BRG Berggiesshubel 79.38 330 *e*P **P 02 45 52.7 +0.1**
comp=Z,5.4nm,1.2s
BRG Berggiesshubel 79.38 330 *e*P **P 02 45 52.7 +0.1**
BRG pmax pmax
comp=Z,5.0nm,1.2s
BRG Berggiesshubel 79.38 330 *e* **P 02 45 53.2 +0.6**
comp=Z,5.4nm,1.2s
CLL Collm 79.39 331 *i* P **P 02 45 53.2 +0.6**
comp=Z,7.0nm,1.0s
CLL *e* 02 46 12.0
CLL *e*PP **PP 02 48 53.0 +0.9**
CLL Collm 79.39 331 *i* P **P 02 45 53.2 +0.6**
CLL pmax pmax
comp=Z,7.0nm,1.0s
PVCC Panska Ves 79.41 330 *e*P **P 02 45 54.2 +1.4**
PVCC Panska Ves 79.41 330 *e*P **P 02 45 54.2 +1.4**
GOPC GO Pecny, Ondr 79.81 329 *e*P **P 02 45 56.5 +1.5**
GOPC GO Pecny, Ondr 79.81 329 *e*P **P 02 45 56.5 +1.5**
PRU Pruhonice 79.85 329 *e*P **P 02 45 56.1 +0.9**
PRU Pruhonice 79.85 329 *e*P **P 02 45 56.1 +0.9**
KHC Kasperske Hory 80.92 329 *e*P **P 02 46 02.0 +1.0**
KHC *e*pP **sP 02 46 12.9 -0.4**
KHC Kasperske Hory 80.92 329 *e*P **P 02 46 02.0 +1.0**
KHC *e* 02 46 12.9
KHC Kasperske Hory 80.92 329 *e*P **P 02 46 01.9 +0.9**
comp=Z,3.0nm,1.1s
RAYN Ar Rayn 80.97 293 *e*P **P 02 45 59.7 -2.1**
comp=Z,4.3nm,0.8s
GERES GERESS Array B 81.10 329 P **P 02 46 02.6 +0.6**
comp=Z,1.6nm,0.7s,baz=39,slow=5.6,SNR=7.6
GRFO Grafenberg 81.37 331 *e*P **P 02 46 03.6 +0.3**
GRFO pmax pmax
comp=Z,7.0nm,0.8s
GRFO Grafenberg 81.37 331 *e*P **P 02 46 03.6 +0.3**
comp=Z,7.3nm,0.8s
ANMO Albuquerque 81.62 51 *e*P **P 02 46 04.4 -0.8**
ANMO pmax pmax
comp=Z,2.0nm,1.1s
VTS Vitosha 81.66 320⇑ *i*P **P 02 46 06.1 +0.9**
MEM Membach 82.45 334 P **P 02 46 09.3 +0.3**
BCLA Clavier 82.85 334 P **P 02 46 11.4 +0.4**
DOU Dourbes 83.36 335 P **P 02 46 14.9 +1.2**
TXAR Lajitas Array 87.21 54 P **P 02 46 34.8 +1.3**
comp=Z,0.5nm,0.6s,baz=294,slow=3.2,SNR=7.1
ESDC Sonseca Array 95.40 335 P **P 02 47 11.0 -0.3**
comp=Z,0.1nm,0.4s,baz=22,slow=4.4,SNR=5.2
TORD Torodi Ar. Bea 116.35 318 PKP **PKPdf 02 52 31.0 +0.2**
comp=Z,0.5nm,1.1s,baz=24,slow=2.5,SNR=3.3
SDV Santo Domingo 122.19 41 *e*PKPdf **PKPdf 02 52 40.4 -1.9**
SAML Samuel 141.18 45 *e*PKPdf **PKPdf 02 53 17.3 -0.4**
SNAA Sanae 143.89 197 *e*PKIKP PKPbc 02 53 19.5 +0.7
SNAA Sanae 143.89 197 *e*PKPdf PKPbc 02 53 19.5 +0.7
LCO Las Campanas 150.07 79 *e*PKPbc **PKPbc 02 53 38.5 +0.7**

NIED ***09*** *02:36:00,39.90N×143.20E,h23km,Mw4.0 Best double couple: M0 1.28000×10^15 NP1:φs 171.00000°, δ26.00000°, λ70.00000°. NP2:φs 13.00000°, δ66.00000°, λ100.00000°.*
JMA 09 02:36:27.0±0.3,39.93N×143.25E,h9km,M3.9,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JTH	**Tanohata**	**1.07**	**271**	P		02 36 46.6	-0.9
MIYJ	**Miyakonagasawa**	**1.16**	**253**	P		02 36 48.7	-0.5
MIYJ				*e*S		02 37 04.3	0.0
JANG	**Nango**	**1.40**	**289**	P		02 36 52.1	-0.6
JKZ	**Kuzumaki**	**1.48**	**273**	P		02 36 53.8	0.0
JOM	**Ohasama**	**1.58**	**254**	P		02 36 55.4	+0.2
JTM	**Tenmabayashi**	**1.87**	**298**	P		02 37 00.0	+0.8
JTM				*e*S		02 37 24.2	-0.7
JIO	**Ouri**	**2.09**	**226**	*e*S		02 37 28.7	+0.5
JRG	**Rokugo**	**2.09**	**256**	*e*S		02 37 32.5	+1.4

ISCJB ***09*** *02:38:00.8±0.7,36.60N×141.10E±0.08,h48km±6km, mb3.8/15, Error ellipse: s-maj=10.5km s-min=5.6km az=10.7*
NIED ***09*** *02:38:00,36.60N×141.00E,h50km,Mw4.1 Best double couple: M0 1.57000×10^15 NP1:φs 29.00000°, δ45.00000°, λ59.00000°. NP2:φs 249.00000°, δ53.00000°, λ117.00000°.*
JMA ***09*** *02:38:01.8±0.1,36.63N×141.04E,h45km±1km,M4.0*
JMA Felt II J1.
IDC ***09*** *02:38:04.3±2.2,36.55N×140.93E,h65km±21km,mb3.6/15, mb1 3.8/18,mb1mx3.7/37,mbtmp3.9/18, Error ellipse: s-maj=21.1km s-min=12.3km az=78.0*
ISC 09 02:38:00.8±1.5,36.61N±0.04×141.09E±0.06,h32km±10km, n35,σ0 88/39,mb3.9/15,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JHO	**Hitachi**	**0.42**	**270**	P	**Pn**	**02 38 11.3**	**+0.6**
JHO				S	**Sn**	**02 38 17.8**	**+0.4**
ONAJ	**Iwakimizuishiy**	**0.54**	**334**	P	**Pn**	**02 38 12.7**	**+0.3**
ONAJ				S	**Sn**	**02 38 20.2**	**-0.3**
JFK	**Kawauchi**	**0.77**	**347**	P	**Pb**	**02 38 15.9**	**0.0**
JFK				*e*S	**Sb**	**02 38 25.4**	**-0.7**
JYT	**Yasato**	**0.82**	**242**	P	**Pn**	**02 38 16.5**	**+0.3**
JSB	**Shiboa**	**1.00**	**291**	P	**Pb**	**02 38 19.7**	**0.0**
JSB				S	**Sb**	**02 38 32.5**	**-0.2**
JFT	**Otama**	**1.09**	**326**	P	**Pb**	**02 38 21.1**	**0.0**
JFT				S	**Sb**	**02 38 34.7**	**-0.3**
JMM	**Marumori**	**1.27**	**349**	P	**Pn**	**02 38 22.9**	**+0.5**
JMM				S	**Sn**	**02 38 38.8**	**+0.4**
JAG	**Ashikaga**	**1.33**	**262**	P	**Pn**	**02 38 23.8**	**+0.5**
JAG				S	**Sn**	**02 38 39.1**	**-0.8**
JFY	**Yanaizu**	**1.36**	**306**	P	**Pn**	**02 38 24.7**	**+1.0**
JFY				S	**Sb**	**02 38 42.5**	**-0.4**
MJAR	**Matsushiro Arr**	**2.32**	**269**	P	**Pn**	**02 38 38.1**	**+1.2**
	11nm,0.3s,baz=82,slow=8.1,SNR=17						
MAT	**Matsushiro**	**2.32**	**269**	P	**Pn**	**02 38 38.7**	**+1.8**
MAT				S	**Sb**	**02 39 09.0**	**-1.3**
JHJ	**Hachijo jima 2**	**3.65**	**198**	P	**Pn**	**02 38 56.5**	**+1.4**
	97nm,0.3s,baz=252,slow=19,SNR=4.6						
JHJ				S	**Sn**	**02 39 38.5**	**+1.4**
	124nm,0.3s,baz=240,slow=20,SNR=3.8						
JCJ	**Chichijima**	**9.53**	**174**	P	**Pn**	**02 40 14.7**	**-1.3**
	baz=279,slow=19						
USRK	**Ussuriysk Ar.**	**10.27**	**320**	P	**Pn**	**02 40 28.4**	**+2.5**
	0.2nm,0.3s,baz=134,slow=12,SNR=7.5						
SONM	**Songino Array**	**27.81**	**305**	P	**P**	**02 43 46.8**	**-0.4**
	2.5nm,0.7s,baz=105,slow=9.5,SNR=6.9						
H11N2	**WAKE ISLAND Hy**	**28.16**	**120**	T	T	03 13 23.4	
	baz=313,slow=75,SNR=22						
H11N1	**WAKE ISLAND Hy**	**28.17**	**120**	T	T	03 13 26.7	
	baz=313,slow=75,SNR=20						
H11N3	**WAKE ISLAND Hy**	**28.18**	**120**	T	T	03 13 27.3	
	baz=313,slow=75,SNR=19						
H11S1	**WAKE ISLAND Hy**	**28.85**	**122**	T	T	03 14 17.8	
	baz=314,slow=76,SNR=31						
H11S3	**WAKE ISLAND Hy**	**28.85**	**122**	T	T	03 14 19.1	
	baz=314,slow=76,SNR=37						
H11S2	**WAKE ISLAND Hy**	**28.87**	**122**	T	T	03 14 17.9	
	baz=314,slow=76,SNR=35						
ZALV	**Zalesovo Beam**	**42.01**	**313**	P	**P**	**02 45 48.5**	**-0.5**
	2.0nm,0.5s,baz=90,slow=5.3,SNR=5.1						
MKAR	**Makanchi Array**	**44.12**	**302**	P	**P**	**02 46 05.2**	**-1.0**
	0.4nm,0.4s,baz=90,slow=7.6,SNR=2.5						
ILAR	**Eielson Array**	**49.99**	**32**	P	**P**	**02 46 52.1**	**+0.5**
	0.7nm,0.7s,baz=271,slow=6.0,SNR=6.7						
INK	**Inuvik**	**54.88**	**27**	P	**P**	**02 47 28.4**	**+0.7**

0.8nm,0.5s,baz=299,slow=7.7,SNR=3.9
WRA Warramunga Arr 56.61 188 P **P 02 47 39.9 -0.8**
1.8nm,0.5s,baz=5.2,slow=7.4,SNR=16
ASAR Alice Springs 60.34 188 P **P 02 48 05.8 -1.0**
0.9nm,0.7s,baz=14,slow=7.0,SNR=4.5
ARCES ARCESS Array B 64.30 339 P **P 02 48 32.3 -0.4**
3.5nm,1.1s,baz=45,slow=9.0,SNR=3.1
YKA Yellowknife Ar 64.30 30 P **P 02 48 33.0 +0.2**
0.1nm,0.3s,baz=306,slow=6.8,SNR=4.4
FINES FINESS Array B 69.07 332 P **P 02 49 02.5 -0.7**
1.0nm,0.6s,baz=46,slow=8.0,SNR=3.5
AKASG Malin Array Be 74.47 322 P **P 02 49 35.1 -0.7**
0.5nm,0.4s,baz=47,slow=6.0,SNR=4.7
NOA NORSAR Array B 74.47 337 P **P 02 49 36.1 +0.3**
1.0nm,0.7s,baz=40,slow=5.8,SNR=3.3
NVAR Mina Array Bea 75.45 53 P **P 02 49 42.5 +0.5**
0.7nm,0.7s,baz=294,slow=7.0,SNR=4.9
PDAR Pinedale Array 78.15 45 P **P 02 49 57.6 +0.4**
0.3nm,0.5s,baz=307,slow=3.0,SNR=4.4
TXAR Lajitas Array 90.58 52 P **P 02 51 00.4 +0.1**
0.3nm,0.6s,baz=308,slow=4.1,SNR=3.8

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*IDC **09** 02:52:55.2±0.8,36.97N×141.92E,h0km,mb3.8/9, mb1 3.9/15,mb1mx3.7/42,mbtmp3.9/15,ML3.7/4,MS2.8/1, Ms1 2.8/1,ms1mx2.4/35,Error ellipse: s-maj=21.8km s-min=16.6km az=84.0*
*ISCJB **09** 02:52:56.1±1.3,36.96N±0.03×141.91E±0.07,h20km±8km, mb3.9/12,Error ellipse: s-maj=9.1km s-min=5.6km az=4.9*
*NEIC **09** 02:52:59.7±2.2,36.93N×141.88E,h32km±16km,mb4.2/2, Error ellipse: s-maj=9.3km s-min=7.8km az=92.0*
*NIED **09** 02:53:00,37.10N×141.60E,h44km,Mw3.9 Best double couple: M0 7.79000×10^14 NP1:φs273.00000°,δ17.00000°, λ-180.00000°. NP2:φs183.00000°,δ90.00000°, λ-73.00000°.*
*JMA **09** 02:53:01.2±0.2,37.05N×141.59E,h44km±2km,M3.9*
JMA Felt I J1.

ISC 09 02:52:55.6±2.1,37.01N±0.05×141.88E±0.07,h3km±12km, n37,σ1§35/39,mb3.9/12,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.87**	**277**	P	**Pb**	**02 53 13.7**	**+0.4**
ONAJ				*e*S	**Sg**	**02 53 22.8**	**-0.6**
JFK	**Kawauchi**	**0.88**	**295**	P	**Pb**	**02 53 13.9**	**+0.4**
JFK				S	**Sg**	**02 53 23.4**	**-0.3**
JHO	**Hitachi**	**1.12**	**250**	P	**Pn**	**02 53 18.1**	**-0.1**
JMM	**Marumori**	**1.22**	**315**	P	**Pg**	**02 53 19.2**	**+0.3**
JMM				S	**Sg**	**02 53 31.0**	**-3.7**
JFT	**Otama**	**1.33**	**293**	P	**Pn**	**02 53 21.3**	**+0.2**
JIO	**Ouri**	**1.50**	**344**	P	**Pn**	**02 53 23.9**	**+0.5**
JIO				S	**Sn**	**02 53 40.6**	**-3.0**
JOU	**Okura**	**1.66**	**325**	P	**Pn**	**02 53 26.7**	**+1.0**
JOU				S	**Sn**	**02 53 46.0**	**-1.5**
JFY	**Yanaizu**	**1.78**	**284**	P	**Pn**	**02 53 27.9**	**+0.7**
MJAR	**Matsushiro Arr**	**2.98**	**262**	Pn	**Pn**	**02 53 44.9**	**+1.2**
	14nm,0.3s,baz=88,slow=15,SNR=47						
MAJO	**Matsushiro**	**2.98**	**262**	*e*Pn	**Pn**	**02 53 45.9**	**+2.1**
MAT	**Matsushiro**	**2.98**	**262**	P	**Pn**	**02 53 46.1**	**+2.3**
MAT				*e*S	**Sn**	**02 54 20.5**	**+0.4**
JHJ	**Hachijo jima 2**	**4.24**	**204**	Pn	**Pn**	**02 54 02.2**	**+1.2**
	baz=108,slow=20,SNR=2.8						
JHJ					Sn	**02 54 48.1**	**-3.0**
	18nm,0.3s,baz=90,slow=20,SNR=3.3						
ERM	**Erimo**	**5.10**	**11**	*e*Pn	**Pn**	**02 54 14.8**	**+1.9**
ERM				*e*Sn	**Sn**	**02 55 12.2**	**0.0**
JNU	**Nakatsue**	**9.81**	**250**	Pn	**Pn**	**02 55 18.1**	**+0.5**
	0.4nm,0.3s,baz=84,slow=7.0,SNR=5.4						
CBIJ	**Chichi jima**	**9.88**	**178**	Pn	**Pn**	**02 55 17.7**	**-0.8**
JCJ	**Chichijima**	**9.88**	**178**	Pn	**Pn**	**02 55 17.7**	**-0.9**
	2.8nm,0.3s,baz=288,slow=20,SNR=3.2						
USRK	**Ussuriysk Ar.**	**10.39**	**317**	Pn	**Pn**	**02 55 27.3**	**+1.9**
	0.1nm,0.3s,baz=119,slow=13,SNR=2.4						
KSRS	**Korea Array**	**11.13**	**277**	Pn	**Pn**	**02 55 36.9**	**+1.3**
	0.3nm,0.3s,baz=83,slow=14,SNR=3.8						
KSRS					LR	02 59 15.8	
	comp=Z,51nm,19.0s,baz=140,slow=34						
KSAR	**Wonju Array Be**	**11.17**	**276**	Pn	**Pn**	**02 55 36.9**	**+0.8**
H11N2	**WAKE ISLAND Hy**	**27.82**	**121**	T	T	03 28 13.2	
	baz=314,slow=75,SNR=26						
H11N1	**WAKE ISLAND Hy**	**27.82**	**121**	T	T	03 28 13.2	
	baz=314,slow=75,SNR=24						
H11N3	**WAKE ISLAND Hy**	**27.84**	**121**	T	T	03 28 19.7	
	baz=314,slow=75,SNR=17						
SONM	**Songino Array**	**28.11**	**304**	P	**P**	**02 58 49.2**	**+0.5**
	1.1nm,0.5s,baz=102,slow=8.7,SNR=10						
H11S1	**WAKE ISLAND Hy**	**28.54**	**123**	T	T	03 29 13.5	
	baz=316,slow=76,SNR=28						
H11S3	**WAKE ISLAND Hy**	**28.54**	**124**	T	T	03 29 00.6	
	baz=316,slow=76,SNR=26						
H11S2	**WAKE ISLAND Hy**	**28.55**	**124**	T	T	03 29 25.7	
	baz=316,slow=76,SNR=19						
ZALV	**Zalesovo Beam**	**42.21**	**312**	P	**P**	**03 00 49.8**	**+0.3**
	0.7nm,0.3s,baz=100,slow=7.4,SNR=4.7						
MKAR	**Makanchi Array**	**44.45**	**302**	P	**P**	**03 01 07.5**	**-0.3**
	0.5nm,0.3s,baz=88,slow=10,SNR=12						
KURK	**Kurchatov**	**46.24**	**308**	*e*P	**P**	**03 01 21.5**	**-0.4**
	4.6nm,0.6s						
ILAR	**Eielson Array**	**49.32**	**32**	P	**P**	**03 01 46.9**	**+1.3**
	0.6nm,0.7s,baz=264,slow=6.6,SNR=7.7						
TKM2	**Tokmak 2**	**49.97**	**299**	*e*P	**P**	**03 01 51.3**	**+0.1**
	2.7nm,0.6s						
WRA	**Warramunga Arr**	**57.09**	**188**	P	**P**	**03 02 43.0**	**-0.2**
	0.4nm,0.5s,baz=7.3,slow=7.3,SNR=3.6						
ABKAR	**Akbulak array**	**58.24**	**310**	*e*P	**P**	**03 02 50.2**	**-0.9**
	0.7nm,0.5s						
ASAR	**Alice Springs**	**60.81**	**188**	P	**P**	**03 03 08.4**	**-0.7**
	0.4nm,0.7s,baz=14,slow=8.6,SNR=3.6						
FINES	**FINESS Array B**	**69.01**	**332**	P	**P**	**03 04 02.0**	**0.0**
	1.6nm,0.9s,baz=46,slow=4.8,SNR=2.8						
NOA	**NORSAR Array B**	**74.35**	**337**	P	**P**	**03 04 34.7**	**+0.4**
	1.3nm,1.0s,baz=49,slow=5.9,SNR=2.5						
TXAR	**Lajitas Array**	**89.84**	**53**	P	**P**	**03 05 55.9**	**-0.2**
	0.3nm,0.8s,baz=328,slow=4.4,SNR=3.9						

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*NIED **09** 02:59:00,38.40N×141.80E,h50km,Mw4.2 Best double couple: M0 2.24000×10^15 NP1:φs219.00000°,δ28.00000°, λ59.00000°. NP2:φs73.00000°,δ66.00000°,λ105.00000°.*
*MOS **09** 02:59:30.9±1.0,38.37N×141.70E,h35km,mb4.6/42,Error ellipse: s-maj=10.8km s-min=5.8km az=102.2*
*NEIC **09** 02:59:34.1±0.3,38.62N×141.81E,h35km,mb4.6/30,Error ellipse: s-maj=8.5km s-min=5.7km az=121.0*
NEIC Recorded [3 JMA] in Miyagi.
*ISCJB **09** 02:59:34.6±0.4,38.50N±0.03×141.80E±0.04,h61km±3km, mb4.4/70,Error ellipse: s-maj=6.3km s-min=4.9km az=36.4*
*JMA **09** 02:59:35.5±0.1,38.43N×141.80E,h57km±1km,M4.3*
JMA Felt III J1.
*IDC **09** 02:59:36.4±2.3,38.41N×141.76E,h67km±21km,mb3.9/18, mb1 4.2/21,mb1mx4.0/35,mbtmp4.3/21,MS3.2/6, Ms1 3.2/6,ms1mx2.9/38,Error ellipse: s-maj=16.6km s-min=13.2km az=97.0*

ISC 09 02:59:35.1±0.9,38.46N±0.05×141.88E±0.06,h54km±7km, n178,σ1§09/175,mb4.4/70,MS4.2/3,12C-4D,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**0.42**	**270**	P	**Pn**	**02 59 45.8**	**+0.1**
JIO				S	**Sn**	**02 59 53.0**	**-0.3**
JOU	**Okura**	**0.96**	**265**	P	**Pn**	**02 59 52.2**	**-0.2**
JOU				S	**Sn**	**03 00 04.6**	**-0.6**
JMM	**Marumori**	**1.04**	**236**	P	**Pn**	**02 59 52.9**	**-0.5**
JMM				S	**Sn**	**03 00 05.6**	**-1.4**
JOM	**Ohasama**	**1.11**	**336**	P	**Pn**	**02 59 55.1**	**+0.7**
JYK	**Kaneyama**	**1.28**	**292**	P	**Pn**	**02 59 56.8**	**+0.2**
JYK				S	**Sn**	**03 00 12.7**	**0.0**
JFK	**Kawauchi**	**1.35**	**216**	P	**Pn**	**02 59 57.3**	**-0.3**
JFK				S	**Sn**	**03 00 13.6**	**-0.9**
JRG	**Rokugo**	**1.35**	**314**	P	**Pn**	**02 59 58.1**	**+0.5**
JFT	**Otama**	**1.54**	**233**	P	**Pn**	**03 00 00.3**	**+0.1**
JFT				S	**Sn**	**03 00 18.3**	**-0.8**
MJAR	**Matsushiro Arr**	**3.49**	**238**	P	**Pn**	**03 00 28.4**	**+1.5**
	6.0nm,0.3s,baz=38,slow=12,SNR=34						
MJAR					LR	03 02 05.8	
	comp=Z,237nm,20.6s,baz=40,slow=44						
MAJO	**Matsushiro**	**3.49**	**238**	*c i*P	**Pn**	**03 00 28.5**	**+1.6**
MAJO	**Matsushiro**	**3.49**	**238**	*e*Pn	**Pn**	**03 00 28.6**	**+1.8**
MAT	**Matsushiro**	**3.49**	**238**	P	**Pn**	**03 00 28.5**	**+1.6**
MAT				*e*S	Sn	03 01 11.8	+4.8
ERM	**Erimo**	**3.68**	**15**	*i*‖*e*P	**Pn**	**03 00 29.6**	**+0.2**
ERM	**Erimo**	**3.68**	**15**	*e*Pn	**Pn**	**03 00 28.9**	**-0.5**
INU	**Inuyama**	**4.98**	**233**	*e*Pn	**Pn**	**03 00 48.2**	**+0.9**
JHJ2	**Mitsune**	**5.59**	**198**	*e*Pn	**Pn**	**03 00 54.9**	**-0.7**
JHJ	**Hachijo jima 2**	**5.59**	**198**	P	**Pn**	**03 00 54.2**	**-1.5**
	27nm,0.3s,baz=299,slow=22,SNR=7.2						
JHJ					S	**Sn**	**03 01 56.4**	**-2.2**
	63nm,0.3s,baz=73,slow=22,SNR=7.8						
YUK	**Yuzh-Kuril'sk**	**6.33**	**27**	*e*P	**Pn**	**03 01 04.3**	**-1.3**
YUK				*e*S	Sn	03 02 11.7	-4.8
YUK				pmax	pmax		
	comp=E,43nm,0.4s						
YUK				pmax	pmax		
	comp=Z,100nm,0.4s						
YUK				pmax	pmax		
	comp=N,48nm,0.3s						
SHO	**Shikotan**	**6.57**	**33**	*e*P	Pn	03 01 06.6	-2.4
SHO				pmax	pmax		
	comp=Z,65nm,0.6s						
SHO				pmax	pmax		
	comp=N,10.0nm,0.4s						
SHO				pmax	pmax		
	comp=E,29nm,0.6s						
KUR	**Kuril'sk**	**8.11**	**31**	*e*P	**Pn**	**03 01 30.0**	**0.0**
KUR				*i* S	**Sn**	**03 02 56.9**	**-3.3**
KUR				pmax	pmax		
	comp=Z,22nm,0.5s						
KUR				smax	smax		
	comp=N,28nm,0.5s						
KUR				smax	smax		
	comp=E,42nm,0.5s						
YSS	**Yuzh-Sakhalins**	**8.52**	**4**	*i* P	**Pn**	**03 01 37.2**	**+1.6**
YSS				pmax	pmax		
	comp=Z,21nm,1.0s						
USRK	**Ussuriysk Ar.**	**9.39**	**311**	P	**Pn**	**03 01 48.9**	**+1.2**
	comp=Z,1.7nm,0.3s,baz=123,slow=13,SNR=24						
USRK				LR	LR	03 05 03.5	
	comp=Z,140nm,20.6s,baz=116,slow=35						
JNU	**Nakatsue**	**10.40**	**243**	LR	LR	03 06 27.4	
	comp=Z,98nm,19.5s,baz=114,slow=40						
KSRS	**Korea Array**	**11.07**	**269**	P	Pn	03 02 13.6	+3.0
	comp=Z,0.2nm,0.3s,baz=74,slow=13,SNR=2.3						
KSAR	**Wonju Array Be**	**11.10**	**269**	P	**Pn**	**03 02 13.6**	**+2.6**
KSAR	**Wonju Array Be**	**11.10**	**269**	P	**Pn**	**03 02 13.6**	**+2.6**
CBIJ	**Chichi jima**	**11.33**	**179**	*e*Pn	Pn	03 02 18.3	+4.0
JCJ	**Chichijima**	**11.34**	**179**	P	Pn	03 02 10.3	-4.0
	baz=270,slow=20						
KLR	**Kul'dur**	**13.00**	**329**	P	**Pn**	**03 02 35.2**	**-1.7**
	comp=Z,0.2nm,0.3s,baz=311,slow=20,SNR=4.0						
KLR					LR	03 07 32.8	
	comp=Z,120nm,18.8s,baz=132,slow=37						
PETK	**Petropavlovsk-**	**18.27**	**32**	LR	LR	03 12 08.2	
	comp=Z,31nm,18.0s,baz=228,slow=41						
NJ2	**Nanjing**	**19.84**	**258**	*e*P	**Pn**	**03 04 02.0**	**-1.3**
NJ2				pmax	pmax		
	comp=Z,13nm,0.5s						
MA2	**Magadan**	**21.89**	**12**	P	**P**	**03 04 23.1**	**-0.1**
	comp=Z,19nm,0.7s,baz=220,slow=9.2,SNR=18						
MA2	**Magadan**	**21.89**	**12**	*e*P	**P**	**03 04 23.2**	**0.0**
MA2				pmax	pmax		
	comp=Z,73nm,0.8s						
MA2	**Magadan**	**21.89**	**12**	*e*P	**P**	**03 04 23.2**	**0.0**
	comp=Z,73nm,0.8s						
SSLB	**Suanglung**	**23.05**	**237**	*e*P	**P**	**03 04 38.0**	**+2.2**
	comp=Z,5.3nm,0.4s						
YULB	**Yu-li**	**23.11**	**235**	*e*P	**P**	**03 04 38.5**	**+2.2**
	comp=Z,20nm,1.2s						
HHC	**Hu-ho-hao-te**	**23.41**	**285**	*e*P	**P**	**03 04 37.9**	**-1.4**
HHC				S	**S**	**03 08 44.6**	**-3.9**
HHC				pmax	pmax		
	comp=Z,24nm,1.4s						
HHC				pmax	pmax		
	comp=Z,87nm,3.7s						
HHC				LR	LR		
	comp=N,830nm,11.2s						
HHC				LR	LR		
	comp=E,870nm,12.4s						
HHC				LR	LR		
	comp=Z,830nm,10.0s						
YAK	**Yakutsk**	**24.77**	**346**	*e*P	**P**	**03 04 51.2**	**-0.2**
YAK				pmax	pmax		
	comp=Z,29nm,1.0s						
SEY	**Seymchan**	**25.32**	**11**	P	**P**	**03 04 56.7**	**+0.3**
	comp=Z,8.5nm,0.9s,baz=194,slow=6.3,SNR=19						
SEY	**Seymchan**	**25.32**	**11**	‖*i*P	**P**	**03 04 58.4**	**+2.0**
BOD	**Bodaibo**	**26.54**	**326**	*e*P	**P**	**03 05 06.8**	**-0.7**
BOD				pmax	pmax		
	comp=Z,7.0nm,0.8s						
ULN	**Ulaanbaatar**	**26.89**	**302**	⇑*i*P	**P**	**03 05 11.5**	**+0.6**
ULN				pmax	pmax		
	comp=Z,9.0nm,2.5s						
ULN	**Ulaanbaatar**	**26.89**	**302**	*e*P	**P**	**03 05 11.1**	**+0.1**
	comp=Z,2.2nm,0.5s						
SONM	**Songino Array**	**27.33**	**302**	P	**P**	**03 05 14.5**	**-0.3**
	comp=Z,0.9nm,0.6s,baz=103,slow=8.7,SNR=7.4						
H11N2	**WAKE ISLAND Hy**	**28.59**	**124**	T	T	03 35 42.6	
	baz=316,slow=76,SNR=977						
H11N1	**WAKE ISLAND Hy**	**28.60**	**124**	T	T	03 35 47.9	
	baz=316,slow=76,SNR=782						
H11N3	**WAKE ISLAND Hy**	**28.61**	**124**	T	T	03 35 48.6	
	baz=316,slow=76,SNR=1057						
H11S1	**WAKE ISLAND Hy**	**29.35**	**126**	T	T	03 36 42.3	
	baz=318,slow=76,SNR=767						
H11S3	**WAKE ISLAND Hy**	**29.36**	**126**	T	T	03 36 42.4	
	baz=318,slow=76,SNR=840						
H11S2	**WAKE ISLAND Hy**	**29.37**	**126**	T	T	03 36 43.5	
	baz=318,slow=76,SNR=949						
ZAK	**Zakamensk**	**29.70**	**306**	*e*P	**P**	**03 05 34.2**	**-1.7**
ZAK				pmax	pmax		
	comp=Z,3.0nm,0.9s						
LZH	**Lanzhou**	**30.22**	**277**	*e*P	**P**	**03 05 43.3**	**+2.6**
LZH				pP	pP	03 05 53.5	-0.9
LZH				sP	sP	03 05 57.6	-3.1
LZH				PP	**PnPn**	**03 06 41.5**	**+1.5**
LZH				pmax	pmax		
	comp=Z,20nm,1.1s						
LZH				pmax	pmax		
	comp=Z,65nm,5.2s						
LZH				LR	LR		
	comp=N,300nm,13.5s						
LZH				LR	LR		
	comp=E,320nm,12.9s						
LZH				LR	LR		
	comp=Z,370nm,15.7s						
GYA	**Guiyang**	**31.85**	**258**	*e*P	**P**	**03 05 55.8**	**+0.8**
GYA				pmax	pmax		
	comp=Z,10.0nm,0.8s						
CD2	**Chengdu**	**32.07**	**268**	P	**P**	**03 05 56.1**	**-0.8**
CD2				pmax	pmax		
	comp=Z,1.0nm,0.5s						
BILL	**Bilibino**	**32.56**	**17**	‖*e*P	**P**	**03 06 01.6**	**+0.9**
BILL				pmax	pmax		
	comp=Z,3.0nm,1.0s						
TIXI	**Tiksi**	**33.92**	**353**	*ce*P	**P**	**03 06 11.2**	**-1.3**
TIXI				pmax	pmax		
	comp=Z,2.0nm,0.9s						
WMQ	**Urumqi**	**40.55**	**295**	P	**P**	**03 07 10.0**	**+1.0**
WMQ				pP	pP	03 07 19.0	-4.0
WMQ				pmax	pmax		
	comp=Z,13nm,0.8s						
WMQ				pmax	pmax		
	comp=Z,100nm,5.4s						
ZAA0	**Zalesovo Array**	**41.24**	**311**	*e*P	**P**	**03 07 13.9**	**-0.6**
ZALV	**Zalesovo Beam**	**41.24**	**311**	P	**P**	**03 07 14.3**	**-0.2**
	comp=Z,5.9nm,0.5s,baz=85,slow=7.5,SNR=27						
ZALV				PcP	**PcP**	**03 09 12.1**	**-0.3**
	comp=Z,1.4nm,0.4s,baz=102,slow=3.9,SNR=4.9						
NRIK	**Noril'sk**	**42.14**	**335**	LR	LR	03 26 17.9	
	comp=Z,81nm,18.4s,baz=88,slow=38						
NVS	**Novosibirsk**	**42.14**	**313**	*e*P	**P**	**03 07 21.2**	**-0.6**
MK31	**Makanchi Array**	**43.69**	**301**	*i* P	**P**	**03 07 34.1**	**-0.5**
MK31				pmax	pmax		
	comp=Z,4.0nm,0.8s						
MKAR	**Makanchi Array**	**43.69**	**301**	P	**P**	**03 07 34.1**	**-0.5**
	comp=Z,3.9nm,0.7s,baz=85,slow=9.4,SNR=37						
MKAR	**Makanchi Array**	**43.69**	**301**	*ce*P	**P**	**03 07 34.5**	**-0.1**
MKAR				pmax	pmax		
	comp=Z,4.0nm,0.7s						
MKAR	**Makanchi Array**	**43.69**	**301**	*e*P	**P**	**03 07 34.3**	**-0.2**
KURK	**Kurchatov**	**45.36**	**307**	*e*P	**P**	**03 07 47.2**	**-0.5**
KURK				pmax	pmax		
	comp=Z,23nm,0.8s						
KURK	**Kurchatov**	**45.36**	**307**	*e*P	**P**	**03 07 47.2**	**-0.5**
	comp=Z,23nm,0.8s						
KDAK	**Kodiak Island**	**45.80**	**43**	*i* P	**P**	**03 07 53.0**	**+1.9**
SML	**Sawmill**	**47.63**	**37**	*e*P	**P**	**03 08 06.4**	**+1.0**
SML				pmax	pmax		
	comp=Z,2.0nm,0.8s						
SML	**Sawmill**	**47.63**	**37**	*e*P	**P**	**03 08 06.4**	**+1.0**
	comp=Z,1.8nm,0.8s						
COLA	**College**	**47.68**	**33**	⇑*i*P	**P**	**03 08 07.0**	**+1.3**
COLA				pmax	pmax		
	comp=Z,2.0nm,0.9s						
ILAR	**Eielson Array**	**48.10**	**33**	P	**P**	**03 08 09.8**	**+0.9**
	comp=Z,1.7nm,0.7s,baz=268,slow=6.4,SNR=25						
ILB	**Eielson Array**	**48.10**	**33**	*e*P	**P**	**03 08 10.2**	**+1.3**
TKM2	**Tokmak 2**	**49.29**	**297**	*e*P	**P**	**03 08 19.2**	**+0.5**
TKM2				pmax	pmax		
	comp=Z,5.0nm,0.8s						
TKM2	**Tokmak 2**	**49.29**	**297**	*e*P	**P**	**03 08 19.2**	**+0.5**
	comp=Z,5.0nm,0.8s						
DOT	**Dot Lake**	**49.42**	**34**	*e*P	**P**	**03 08 19.6**	**+0.4**
	comp=Z,3.7nm,0.7s						
VOSK	**Vostochnaya**	**49.62**	**311**	*e*P	**P**	**03 08 20.2**	**-0.6**
VOSK				pmax	pmax		
	comp=Z,4.0nm,0.9s						
VOSK	**Vostochnaya**	**49.62**	**311**	*e*P	**P**	**03 08 20.2**	**-0.6**
	comp=Z,4.4nm,0.9s						
CHKZ	**Chkalovo**	**49.62**	**312**	P	**P**	**03 08 18.8**	**-1.9**
CHKZ				pmax	pmax		
	comp=Z,4.0nm,0.8s						
KULM	**Kulim**	**49.86**	**239**	*e*P	P	03 08 26.4	+3.4
	comp=Z,12nm,1.1s						
BVA0	**Borovoye Array**	**49.90**	**312**	P	**P**	**03 08 20.2**	**-2.7**
BVA0				pmax	pmax		
	comp=Z,3.0nm,0.7s						
OTUK	**Ortayu**	**49.90**	**305**	P	**P**	**03 08 21.3**	**-1.7**
OTUK				pmax	pmax		
	comp=Z,3.0nm,0.7s						
BRVK	**Borovoye**	**49.95**	**312**	‖*i*P	**P**	**03 08 23.6**	**+0.3**
BRVK				pmax	pmax		
	comp=Z,3.0nm,0.8s						
BRVK	**Borovoye**	**49.95**	**312**	*e*P	**P**	**03 08 23.4**	**+0.1**
	comp=Z,3.4nm,0.8s						
AAK	**Ala-Archa**	**50.15**	**297**	⇑*i*P	**P**	**03 08 24.9**	**-0.3**
AAK	**Ala-Archa**	**50.15**	**297**	*e*P	**P**	**03 08 24.3**	**-0.9**
	comp=Z,1.1nm,0.4s						
EKS2	**Erkin-Say**	**50.64**	**298**	*e*P	**P**	**03 08 28.0**	**-0.8**
EKS2				pmax	pmax		
	comp=Z,2.0nm,0.7s						
EKS2	**Erkin-Say**	**50.64**	**298**	*e*P	**P**	**03 08 28.0**	**-0.8**
	comp=Z,1.7nm,0.7s						
ZRNK	**Zerenda**	**50.73**	**312**	P	**P**	**03 08 28.3**	**-0.9**
ZRNK				pmax	pmax		
	comp=Z,5.0nm,0.8s						
COEN	**Coen**	**52.15**	**178**	*e*P	**P**	**03 08 41.8**	**+1.6**
	comp=Z,32nm,1.3s						
KKAR	**Karatay Array**	**52.74**	**299**	*e*P	**P**	**03 08 42.3**	**-2.0**
KKAR				pmax	pmax		
	comp=Z,2.0nm,0.8s						
KKAR	**Karatay Array**	**52.74**	**299**	*e*P	**P**	**03 08 42.3**	**-2.0**
	comp=Z,2.4nm,0.8s						
SVE	**Sverdlovsk**	**54.33**	**318**	*e*P	**P**	**03 08 55.7**	**0.0**
SVE				pmax	pmax		
	comp=Z,13nm,0.9s						
GSI	**Gunungsitoli**	**54.85**	**239**	*e*P	**P**	**03 09 02.3**	**+2.2**
	comp=Z,28nm,1.1s						
ARU	**Arti**	**55.55**	**318**	*c i*P	**P**	**03 09 04.2**	**-0.3**
ARU				S	**S**	**03 16 47.6**	**+1.8**
ARU				SS	**SS**	**03 20 29.2**	**-1.5**
ARU				pmax	pmax		
	comp=Z,13nm,1.2s						
ARU	**Arti**	**55.55**	**318**	*e*P	**P**	**03 09 04.3**	**-0.2**
	comp=Z,6.9nm,0.7s						
AB31	**Akbulak array**	**57.31**	**310**	*i* P	**P**	**03 09 16.0**	**-1.2**
AB31				pmax	pmax		
	comp=Z,2.0nm,0.6s						
ABKAR	**Akbulak array**	**57.31**	**310**	*e*P	**P**	**03 09 16.5**	**-0.7**
AKTO	**Aktyubinsk**	**58.01**	**311**	P	**P**	**03 09 19.8**	**-2.3**
AKTO				pmax	pmax		
	comp=Z,8.0nm,1.1s						
WRAB	**Tennant Creek**	**58.51**	**188**	‖*i*P	**P**	**03 09 25.0**	**-0.8**
WRAB				pmax	pmax		
	comp=Z,12nm,1.0s						
WRA	**Warramunga Arr**	**58.52**	**188**	P	**P**	**03 09 25.2**	**-0.7**
	comp=Z,3.1nm,0.5s,baz=6.3,slow=7.0,SNR=48						
RES	**Resolute Bay**	**61.13**	**15**	*e*P	**P**	**03 09 43.6**	**+0.4**
RES				pmax	pmax		
	comp=Z,5.0nm,1.0s						
RES	**Resolute Bay**	**61.13**	**15**	*e*P	**P**	**03 09 43.6**	**+0.4**
	comp=Z,5.2nm,1.0s						
ASAR	**Alice Springs**	**62.25**	**188**	P	**P**	**03 09 50.4**	**-0.9**
	comp=Z,1.3nm,0.7s,baz=6.3,slow=4.9,SNR=15						
YKA	**Yellowknife Ar**	**62.39**	**31**	P	**P**	**03 09 52.3**	**+0.5**
	comp=Z,1.2nm,0.6s,baz=302,slow=6.7,SNR=29						
YKB5	**Yellowknife Ar**	**62.39**	**31**	*e*P	**P**	**03 09 52.6**	**+0.8**
ARCES	**ARCESS Array B**	**62.80**	**339**	P	**P**	**03 09 54.5**	**+0.1**
	comp=Z,2.6nm,0.9s,baz=335,slow=1.7,SNR=8.1						
ARCES	**ARCESS Array B**	**62.80**	**339**	P	**P**	**03 09 54.5**	**+0.1**
ARCES				pmax	pmax		
	comp=Z,2.0nm,0.9s						
FINES	**FINESS Array B**	**67.73**	**332**	P	**P**	**03 10 26.0**	**-0.4**
	comp=Z,2.4nm,0.7s,baz=38,slow=7.2,SNR=12						
SUMG	**Summit**	**69.26**	**0**	*e*P	**P**	**03 10 36.6**	**+0.3**
SUMG				pmax	pmax		
	comp=Z,9.0nm,0.7s						
SUMG	**Summit**	**69.26**	**0**	*e*P	**P**	**03 10 36.6**	**+0.3**
	comp=Z,9.0nm,0.7s						
KIV	**Kislovodsk**	**70.26**	**311**	*ce*P	**P**	**03 10 44.4**	**+1.8**
KIV				pmax	pmax		
	comp=Z,8.0nm,1.0s						
KIV	**Kislovodsk**	**70.26**	**311**	*e*P	**P**	**03 10 42.

PSZ					pmax		pmax		
	comp=Z,5.0nm,0.8s								
PSZ	**Piszkesteto**	**79.71**	**325**	*e*P		P		03 11 33.7	-3.3
	comp=Z,4.9nm,0.8s								
BRG	**Berggiesshubel**	**80.02**	**330**	*e*P		**P**		**03 11 37.7**	**-0.8**
	comp=Z,15nm,1.6s								
BRG	**Berggiesshubel**	**80.02**	**330**	*e*P		**P**		**03 11 37.7**	**-0.8**
BRG					pmax		pmax		
	comp=Z,15nm,1.7s								
CLL	**Collm**	**80.05**	**330**	*i* P		**P**		03 11 38.5	**-0.1**
	comp=Z,5.0nm,0.8s								
CLL				*i*				03 11 59.0	
CLL	**Collm**	**80.05**	**330**	*i* P		**P**		**03 11 38.5**	**-0.1**
CLL					pmax		pmax		
	comp=Z,5.0nm,0.8s								
G30A	**Faulkton**	**80.31**	**39**	P		**P**		**03 11 40.6**	**+0.4**
	baz=316								
RAYN	**Ar Rayn**	**80.46**	**292**	*e*P		**P**		**03 11 39.9**	**-1.5**
	comp=Z,2.7nm,1.1s								
E33A	**Westby DABS, E**	**80.82**	**36**	P		**P**		**03 11 42.9**	**0.0**
	baz=318								
S22A	**4UR Ranch, Cre**	**81.28**	**48**	P		**P**		**03 11 46.6**	**+0.7**
	baz=312								
KHC	**Kasperske Hory**	**81.52**	**329**	*e*P		**P**		**03 11 45.0**	**-1.6**
KHC	**Kasperske Hory**	**81.52**	**329**	*e*P		**P**		**03 11 45.8**	**-0.8**
KHC					pmax		pmax		
	comp=Z,1.0nm,0.8s								
KHC	**Kasperske Hory**	**81.52**	**329**	*e*P		**P**		**03 11 45.8**	**-0.8**
	comp=Z,1.3nm,0.8s								
GERES	**GERESS Array B**	**81.70**	**328**	P		**P**		**03 11 47.3**	**-0.3**
	comp=Z,1.5nm,0.8s,baz=40,slow=7.1,SNR=5.9								
OGNE	**Ogallala**	**81.79**	**43**	P		**P**		**03 11 48.2**	**0.0**
	baz=315								
VTS	**Vitosha**	**81.98**	**319**	*e*P		**P**		**03 11 49.7**	**+0.4**
VTS					pmax		pmax		
	comp=Z,3.0nm,0.7s								
VTS	**Vitosha**	**81.98**	**319**	*e*P		**P**		**03 11 49.7**	**+0.4**
	comp=Z,2.9nm,0.7s								
GRFO	**Grafenberg**	**82.02**	**330**	*e*P		**P**		**03 11 48.9**	**-0.3**
GRFO					pmax		pmax		
	comp=Z,6.0nm,0.8s								
GRFO	**Grafenberg**	**82.02**	**330**	*e*P		**P**		**03 11 48.9**	**-0.3**
	comp=Z,6.2nm,0.8s								
E36A	**McGregor**	**82.06**	**35**	P		**P**		**03 11 49.4**	**-0.1**
	baz=320								
L31A	**Butterfield Fa**	**82.59**	**41**	P		**P**		**03 11 52.4**	**0.0**
	baz=317								
ANMO	**Albuquerque**	**83.39**	**50**	⇓P		**P**		**03 11 58.1**	**+1.3**
ANMO					pmax		pmax		
	comp=Z,1.0nm,1.0s								
BFO	**Black Forest**	**84.24**	**331**	*i* P		**P**		**03 12 01.4**	**+0.7**
BFO	**Black Forest**	**84.24**	**331**	*e*P		**P**		**03 12 01.0**	**+0.3**
	comp=Z,5.2nm,0.9s								
FUORN	**Ofenpass-Fuorn**	**84.87**	**329**	*e*P		**P**		**03 12 04.7**	**+0.5**
	comp=Z,7.7nm,0.7s								
Q39A	**Willow Grove F**	**87.90**	**40**	P		**P**		**03 12 19.4**	**+0.6**
	baz=320								
P40A	**Paris**	**87.98**	**39**	P		**P**		**03 12 19.6**	**+0.4**
	baz=321								
R39A	**Chumby, Stover**	**88.42**	**40**	P		**P**		**03 12 21.4**	**0.0**
	baz=320								
R40A	**Maddies Statio**	**88.83**	**40**	P		**P**		**03 12 23.4**	**+0.1**
	baz=321								
TX31	**Lajitas Ar. Si**	**88.96**	**53**	*e*P		**P**		**03 12 25.4**	**+1.2**
TXAR	**Lajitas Array**	**88.96**	**53**	P		**P**		**03 12 24.9**	**+0.8**
	comp=Z,1.0nm,0.7s,baz=287,slow=3.3,SNR=17								
TXAR	**Lajitas Array**	**88.96**	**53**	P		**P**		**03 12 25.0**	**+0.8**
TXAR					pmax		pmax		
	comp=Z,1.0nm,0.7s								
U39A	**Green Forest**	**89.67**	**42**	P		**P**		**03 12 27.6**	**+0.3**
	baz=320								
U40A	**Yellville**	**90.02**	**41**	P		**P**		**03 12 29.1**	**+0.2**
	baz=320								
Y36A	**Durant**	**90.03**	**45**	P		**P**		**03 12 30.0**	**+1.0**
	baz=318								
W40A	**Ferguson Farm,**	**90.80**	**42**	P		**P**		**03 12 33.0**	**+0.5**
	baz=320								
LCO	**Las Campanas**	**151.44**	**81**	*e*PKPbc		**PKPbc**		**03 19 24.0**	**+0.7**

*SOME **09** 03:13:03.1,40˚.17N×77˚.65E,h5km*
*KRNET **09** 03:13:03.8±0.1,40˚.19N×77˚.55E,mb3.6*
*NNC **09** 03:13:07.6±4.7,40˚.30N×77˚.62E,h0km,mb3.9,mpv3.5, Error ellipse: s-maj=40.1km s-min=24.1km az=147.0*
ISC 09 03:13:07.1±1.4,40˚.29N±0˚.06×77˚.61E±0˚.04,h10km,n41, σ1§83/75,33C-23D,Kyrgyzstan-Xinjiang border region

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
NRN	**Naryn**	**1.67**	**314**	⇓*i*P		**Pn**	**03 13 35.7**	**-1.0**
	baz=317							
NRN				⇓*i*S		**Sb**	**03 13 59.8**	**+0.5**
	baz=317							
KDJ	**Kajisay**	**1.87**	**350**	⇑*i*P		**Pb**	**03 13 40.3**	**-1.1**
	baz=352							
KDJ				⇑*i*S		**Sg**	**03 14 07.0**	**-0.1**
	baz=352							
ULHL	**Ulahol**	**2.21**	**333**	⇑*i*P		**Pn**	**03 13 44.9**	**+0.9**
	baz=334							
ULHL				⇑*i*S		**Sg**	**03 14 16.5**	**-1.6**
	baz=334							
ANVS	**Anan'yevo**	**2.49**	**1**	⇑*i*P		**Pn**	**03 13 49.3**	**+1.4**
	baz=2.0							
ANVS				⇑*i*S		**Sb**	**03 14 23.3**	**+0.4**
	baz=2.0							
KZA	**Kyzart**	**2.52**	**316**	⇑*i*P		**Pn**	**03 13 49.8**	**+1.3**
	baz=318							
KZA				⇑*i*S		**Sb**	**03 14 25.4**	**+1.5**
	baz=318							
BOOM	**Boomskoye usch**	**2.53**	**331**	⇑*e*P		**Pn**	**03 13 48.9**	**+0.5**
	baz=333							
BOOM				⇑*e*S		**Sb**	**03 14 22.4**	**-1.6**
	baz=333							
TNSS	**Tian-Shan**	**2.79**	**350**	⇓*i*P		**Pb**	**03 13 57.7**	**+0.3**
	82nm,0.5s							
TNSS				⇓*i*S		**Sg**	**03 14 35.7**	**-1.2**
	50nm,0.3s							
SATY	**Saty**	**2.83**	**12**	⇓*i*P		**Pb**	**03 13 57.6**	**-0.2**
	56nm,0.8s							
SATY				⇑*i*S		**Sg**	**03 14 36.0**	**-2.1**
	99nm,0.4s							
IZV	**Izvestkoviy**	**2.84**	**345**	*e*P		**Pb**	**03 13 57.9**	**-0.1**
	11nm,0.5s							
IZV				*e*S		**Sg**	**03 14 37.7**	**-0.7**
	126nm,0.5s							
MDOK	**Medeo**	**2.90**	**352**	⇓*i*P		**Pb**	**03 13 58.7**	**-0.3**
	39nm,0.6s							
MDOK				⇓*i*S		**Sb**	**03 14 37.4**	**+2.8**
	51nm,0.6s							
ARLS	**Aral**	**2.94**	**303**	⇑*e*P		**Pn**	**03 13 54.2**	**+0.2**
	baz=306							
ARLS				⇑*e*S		**Sn**	**03 14 31.1**	**+1.7**
	baz=306							
KNDC	**Almaty**	**2.96**	**351**	⇓Pg		**Pb**	**03 14 00.8**	**+0.7**
	27nm,0.4s							
KNDC				⇓Lg		Lg	03 14 42.1	
	102nm,0.7s							
KOTS	**Kotyrbulak**	**2.96**	**353**	*e*P		**Pb**	**03 13 59.5**	**-0.6**
KOTS				*e*S		**Sg**	**03 14 40.4**	**-1.9**
MTBS	**Maitube**	**2.97**	**343**	*e*P		**Pb**	**03 14 00.2**	**+0.1**
	38nm,0.3s							
MTBS				*e*S		**Sg**	**03 14 40.9**	**-1.7**
	28nm,0.4s							
KST	**Kastek**	**3.01**	**336**	⇓*i*P		**Pb**	**03 14 01.0**	**+0.1**
	8.9nm,0.4s							
KST				⇑*i*S		**Sg**	**03 14 42.7**	**-1.2**
	52nm,0.5s							
AAA	**Alma-Ata**	**3.02**	**351**	⇑*i*P		**Pb**	**03 14 00.9**	**-0.1**
	159nm,0.1s							
AAA				⇑*i*S		**Sg**	**03 14 42.1**	**-2.0**
	151nm,0.2s							
TKM2	**Tokmak 2**	**3.03**	**331**	⇑Pg		**Pb**	**03 14 00.8**	**-0.4**
	7.2nm,0.3s							
TKM2				⇑Lg		Lg	03 14 43.2	
	26nm,0.6s							
UCH	**Uchtor**	**3.03**	**311**	⇑*i*P		**Pn**	**03 13 55.5**	**0.0**
	baz=313							
UCH				⇑*i*S		**Sb**	**03 14 41.3**	**+2.7**
	baz=313							
UZB	**Uzynbulak**	**3.05**	**20**	*e*P		**Pb**	**03 14 00.8**	**-0.7**
	11nm,0.4s							
UZB				⇑*i*S		**Sb**	**03 14 41.1**	**+2.3**
	30nm,0.6s							
KBK	**Karagaybulak**	**3.10**	**321**	⇑*i*P		**Pb**	**03 14 01.8**	**-0.5**
	baz=322							
KBK				⇑*i*S		**Sg**	**03 14 43.6**	**-2.9**
	baz=322							
SFK	**Sufi-Kurgan**	**3.16**	**266**	⇑*i*P		**Pn**	**03 13 56.8**	**-0.3**
	baz=268							
SFK				⇑*i*S		**Sn**	**03 14 35.2**	**+0.3**
	baz=268							
SFK	**Sufi-Kurgan**	**3.16**	**266**	⇑Pg		**Pb**	**03 14 02.5**	**-0.9**
	3.6nm,0.3s							
SFK				⇓Lg		Lg	03 14 42.8	
	8.1nm,0.3s							
BMNS	**Besmoynak**	**3.17**	**333**	⇓*i*P		**Pb**	**03 14 03.8**	**+0.2**
	85nm,0.3s							
BMNS				⇓*i*S		**Sg**	**03 14 46.1**	**-2.7**
	95nm,0.7s							
KURS	**Kuram**	**3.22**	**7**	⇓*e*P		**Pb**	**03 14 04.5**	**+0.1**
	14nm,0.6s							
KURS				*e*S		**Sg**	**03 14 48.1**	**-2.6**
	20nm,0.4s							
DGS	**Degeres**	**3.25**	**336**	*e*P		**Pb**	**03 14 05.2**	**+0.2**
	11nm,0.5s							
DGS				*e*S		**Sg**	**03 14 50.2**	**-1.4**
	99nm,0.6s							
KPKS	**Kokpek**	**3.27**	**14**	*e*P		**Pb**	**03 14 05.1**	**-0.3**
	45nm,0.3s							
KPKS				*e*S		**Sb**	**03 14 48.9**	**+3.5**
	97nm,1.2s							
AAK	**Ala-Archa**	**3.31**	**316**	⇓Pn		**Pb**	**03 14 05.7**	**-0.3**
	22nm,0.6s							
AAK				⇓Lg		Lg	03 14 51.0	
	27nm,0.7s							
SHLS	**Shalkode**	**3.33**	**30**	*e*P		**Pb**	**03 14 08.0**	**+1.6**
	18nm,0.3s							
SHLS				⇓*i*S		**Sg**	**03 14 52.9**	**-1.3**
	35nm,0.4s							
PDGK	**Podgornoye**	**3.34**	**24**	⇓*e*P		**Pn**	**03 13 59.3**	**-0.1**
	baz=24							
PDGK				⇓*e*S		**Sb**	**03 14 43.2**	**-4.0**
	baz=24							
PDGK	**Podgornoye**	**3.34**	**24**	⇑Pn		**Pn**	**03 13 59.7**	**+0.3**
	10nm,0.5s							
PDGK				⇓Lg		Lg	03 14 50.8	
	41nm,0.6s							
KTBS	**Karatobe**	**3.49**	**349**	*e*P		**Pb**	**03 14 08.4**	**-0.5**
KTBS				*e*S		**Sg**	**03 14 55.7**	**-3.5**
CHKK	**Chushkaly**	**3.61**	**353**	⇑*i*P		**Pb**	**03 14 11.2**	**+0.2**
	28nm,0.4s							
CHKK				⇑*i*S		**Sg**	**03 15 01.0**	**-1.9**
	38nm,0.2s							
KUU	**Kurty**	**3.72**	**346**	*e*P		**Pb**	**03 14 13.2**	**+0.2**
	24nm,0.7s							
KUU				*e*S		**Sg**	**03 15 04.0**	**-2.6**
	40nm,0.8s							
KTMS	**Ketmen**	**3.76**	**32**	*e*P		**Pb**	**03 14 12.6**	**-1.1**
	5.2nm,0.5s							
KTMS				*e*S		**Sb**	**03 15 02.7**	**+3.3**
	62nm,0.6s							
MNBS	**Baschi**	**3.83**	**9**	*e*P		**Pb**	**03 14 13.1**	**-1.8**
	9.4nm,0.7s							
MNBS				*e*S		**Sb**	**03 15 03.5**	**+2.1**
	16nm,0.7s							
ARXS	**Arharly**	**3.92**	**2**	*e*P		**Pb**	**03 14 16.4**	**0.0**
	6.1nm,0.6s							
ARXS				*e*S		**Sg**	**03 15 09.5**	**-3.6**
	52nm,0.5s							
MRKS	**Merke**	**4.10**	**308**	*e*P		**Pb**	**03 14 20.0**	**+0.5**
	6.7nm,0.4s							
MRKS				⇓*i*S		**Sg**	**03 15 15.0**	**-3.8**
	15nm,0.7s							
DJR	**Jarkent**	**4.35**	**21**	*e*P		**Pb**	**03 14 24.2**	**+0.5**
	9.5nm,0.5s							
DJR				*e*S		**Sg**	**03 15 22.4**	**-4.4**
	34nm,0.5s							
MNAS	**Manas**	**4.42**	**301**	⇑Pg		**Pg**	**03 14 32.6**	**+0.9**
	2.5nm,0.5s							
MNAS				⇑Lg		Lg	03 15 26.1	
	9.6nm,0.7s							
KAPS	**Kapalarasan**	**5.16**	**14**	⇑*i*P		**Pb**	**03 14 38.4**	**+1.0**
	3.9nm,0.9s							
KAPS				⇓*i*S		**Sg**	**03 15 47.1**	**-5.5**
	7.8nm,0.6s							
KK31	**Karatay Array**	**6.01**	**300**	⇓Pg		**Pg**	**03 15 02.9**	**+0.8**
	1.9nm,0.7s,baz=119,slow=15,SNR=8.8							
KK31				⇑Lg		Lg	03 16 14.6	
	1.2nm,0.4s,baz=125,slow=28,SNR=7.5							

*IDC **09** 03:15:26.6±2.8,21˚.41S×69˚.47W,h0km,mb3.4/2, mb1 3.6/3,mb1mx3.4/27,mbtmp3.4/3,ML3.2/1,Error ellipse: s-maj=74.1km s-min=57.8km az=56.0*
*ISCJB **09** 03:15:45.5±0.8,20˚.13S±0˚.04×69˚.3W±0˚.1,h106km±6km, mb3.2/2, Error ellipse: s-maj=17.2km s-min=6.6km az=179.0*
*GUC **09** 03:15:45.3±0.6,20˚.10S×69˚.20W,h97km±3km,ML3.3*
ISC 09 03:15:45.3±1.0,20˚.12S±0˚.04×69˚.2W±0˚.1,h101km±7km, n12,σ1§22/19,3C-5D,Northern Chile

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
PB08	**IPOC Station P**	**0.08**	**103**	⇓*i*P		**Pn**	**03 15 59.7**	**-0.2**
PB08				*i* S		**Sn**	**03 16 10.4**	**-0.4**
PB08				IAML			03 16 12.6	
	comp=N,2μm,0.1s							
PB11	**IPOC Station P**	**0.54**	**312**	⇓*i*P		**Pn**	**03 16 01.6**	**-0.1**
PB11				*i* S		**Sn**	**03 16 14.2**	**+0.3**
PB01	**IPOC Station P**	**0.95**	**194**	⇓*i*P		**Pn**	**03 16 05.9**	**+0.5**
PB01				*i* S		**Sn**	**03 16 21.4**	**+0.9**
PB01				IAML			03 16 22.3	
	comp=N,1μm,0.2s							
PSGC	**Pisagua**	**0.99**	**302**	⇓*i*P		**Pn**	**03 16 05.9**	**+0.1**
PSGC				*i* S		**Sn**	**03 16 21.8**	**+0.5**
PSGC				IAML			03 16 26.1	
	comp=E,726nm,0.2s							
MNMC	**Minye Minye**	**1.04**	**341**	⇓*i*P		**Pn**	**03 16 07.0**	**+0.3**
MNMC				*i* S		**Sn**	**03 16 23.1**	**+0.5**
MNMC				IAML			03 16 24.6	
	comp=E,2μm,0.2s							
PB07	**IPOC Station P**	**1.71**	**201**	⇑*i*P		**Pn**	**03 16 15.3**	**+0.8**
PB07				*i* S		**Sn**	**03 16 38.4**	**+1.8**
PB07				IAML			03 16 44.6	
	comp=E,469nm,0.2s							
PB13	**IPOC Station P**	**1.79**	**352**	⇑*i*P		**Pn**	**03 16 17.1**	**+1.2**
PB13				*i* S		**Sn**	**03 16 40.9**	**+1.8**
PB12	**IPOC Station P**	**1.82**	**325**	⇑*i*P		**Pn**	**03 16 15.9**	**+0.1**
PB04	**IPOC Station P**	**2.36**	**201**	*e*P		**Pn**	**03 16 24.1**	**+1.2**
LPAZ	**La Paz**	**3.96**	**16**	Pn		**Pn**	**03 16 46.9**	**+2.3**
	comp=E,0.5nm,0.3s,baz=193,slow=8.5,SNR=10							
TORD	**Torodi Ar. Bea**	**77.19**	**71**	P		**P**	**03 27 26.4**	**-2.2**
	comp=E,0.2nm,0.6s,baz=253,slow=5.1,SNR=5.9							
YKA	**Yellowknife Ar**	**89.79**	**341**	P		**P**	**03 28 31.7**	**-0.3**
	comp=E,0.2nm,0.7s,baz=131,slow=4.7,SNR=6.2							

*IDC **09** 03:30:01.6±3.4,12˚.03S×13˚.62W,h0km,mb4.0/7, mb1 4.1/7,mb1mx3.7/38,mbtmp4.0/7,MS3.6/6,Ms1 3.6/6, ms1mx3.2/27,Error ellipse: s-maj=153.8km s-min=20.9km az=137.0*
*ISCJB **09** 03:30:02.6±0.7,11˚.6S±0˚.1×14˚.0W±0˚.1,h7km,mb4.1/10, MS3.5/6,Error ellipse: s-maj=21.3km s-min=11.7km az=135.8*
*NEIC **09** 03:30:04.9±0.6,11˚.61S×14˚.03W,h10km,mb4.3/5,Error ellipse: s-maj=19.4km s-min=10.5km az=137.0*
ISC 09 03:30:04.5±0.9,11˚.6S±0˚.1×14˚.0W±0˚.1,h7km,n20, σ0§97/13,mb4.2/10,MS3.5/6,Ascension Island region

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
H10S2	**ASCENSION HYDR**	**2.70**	**347**	T		T	03 33 51.6	
	baz=164,slow=74,SNR=306							
H10S3	**ASCENSION HYDR**	**2.71**	**347**	T		T	03 33 38.1	
	baz=164,slow=74,SNR=32							
H10S1	**ASCENSION HYDR**	**2.72**	**347**	T		T	03 33 39.5	
	baz=164,slow=74,SNR=22							
ASCN	**Ascension**	**3.67**	**355**	*e*Pn		**Pn**	**03 31 01.0**	**-0.7**
DBIC	**Dimbokro**	**20.32**	**27**	P		**P**	**03 34 41.9**	**+0.5**
	7.3nm,0.9s,baz=175,slow=9.9,SNR=14							
RCBR	**Riachuelo**	**22.36**	**283**	LR		LR	03 41 27.3	
	comp=Z,106nm,19.6s,baz=96,slow=30							
TORD	**Torodi Ar. Bea**	**29.12**	**33**	P		**P**	**03 36 04.7**	**-1.6**
	2.1nm,0.6s,baz=216,slow=11,SNR=30							
TORD					LR	LR	03 46 46.0	
	comp=Z,113nm,18.3s,baz=15,slow=34							
BOSA	**Boshof**	**40.35**	**121**	LR		LR	03 51 22.6	
	comp=Z,98nm,19.4s,baz=322,slow=32							
LSZ	**Lusaka**	**41.17**	**100**	*e*P		**P**	**03 37 49.9**	**-0.2**
	2.5nm,0.8s							
CPUP	**Villa Florida**	**43.27**	**244**	P		**P**	**03 38 07.5**	**+0.4**
	4.0nm,0.9s,baz=72,slow=3.1,SNR=4.8							
CPUP					LR	LR	03 53 22.0	
	comp=Z,46nm,18.8s,baz=88,slow=32							
SAML	**Samuel**	**48.40**	**268**	*e*P		**P**	**03 38 47.2**	**-0.5**
	1.5nm,0.8s							
ESDC	**Sonseca Array**	**51.87**	**10**	P		**P**	**03 39 14.4**	**+0.8**
	0.0nm,0.2s,baz=32,slow=25,SNR=4.0							
KEST	**Kesra**	**52.01**	**24**	P		**P**	**03 39 16.4**	**+1.7**
	3.4nm,0.8s,baz=266,slow=7.6,SNR=5.5							
LPAZ	**La Paz**	**52.60**	**258**	P		**P**	**03 39 19.6**	**-0.6**
	1.3nm,0.8s,baz=116,slow=5.7,SNR=5.1							
LCO	**Las Campanas**	**55.39**	**243**	*e*P		**P**	**03 39 39.7**	**-0.4**
	4.8nm,0.7s							
GERES	**GERESS Array B**	**64.98**	**20**	LR		LR	04 08 41.5	
	comp=Z,68nm,19.0s,baz=272,slow=36							
OTAV	**Otavalo**	**65.03**	**276**	*e*P		**P**	**03 40 47.2**	**+0.6**
	1.9nm,0.8s							
PSZ	**Piszkesteto**	**66.48**	**24**	*e*P		**P**	**03 40 55.4**	**+0.6**
	2.0nm,0.5s							
AKASG	**Malin Array Be**	**72.57**	**27**	P		**P**	**03 41 31.2**	**-1.0**
	0.3nm,0.3s,baz=231,slow=6.3,SNR=4.4							
NOA	**NORSAR Array B**	**75.13**	**12**	LR		LR	04 14 05.3	
	comp=Z,22nm,18.4s,baz=295,slow=35							

*NIED **09** 03:32:00,36˚.50N×140˚.90E,h23km,Mw4.0 Best double couple: M0 1.12000×10^15 NP1:φs289.00000°,δ64.00000°, λ163.00000°. NP2:φs26.00000°,δ75.00000°,λ27.00000°.*
*ISCJB **09** 03:32:57.2±0.9,36˚.45N±0˚.04×141˚.01E±0˚.06,h27km±5km, mb4.0/15,Error ellipse: s-maj=8.2km s-min=5.4km az=24.8*
*JMA **09** 03:32:58.2±0.1,36˚.47N×140˚.94E,h33km±1km,M4.0*
JMA Felt III J1.
*IDC **09** 03:33:02.8±2.2,36˚.35N×140˚.74E,h63km±20km,mb3.7/15, mb1 3.9/19,mb1mx3.7/57,mbtmp4.0/19,Error ellipse: s-maj=18.5km s-min=14.7km az=89.0*
ISC 09 03:32:58.9±1.3,36˚.51N±0˚.04×140˚.93E±0˚.06,h26km±9km, n37,σ1§13/38,mb4.0/15,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
JHO	**Hitachi**	**0.30**	**290**	P		**Pb**	**03 33 06.0**	**-0.1**
JHO				S		**Sb**	**03 33 11.3**	**+0.3**
ONAJ	**Iwakimizuishiy**	**0.60**	**350**	P		**Pn**	**03 33 10.2**	**-1.6**
ONAJ				S		**Sb**	**03 33 19.0**	**-0.1**
JYT	**Yasato**	**0.65**	**245**	P		**Pn**	**03 33 10.5**	**-1.9**
JYT				S		**Sb**	**03 33 19.6**	**-0.9**
JFK	**Kawauchi**	**0.86**	**357**	P		**Pn**	**03 33 13.8**	**-1.5**
JFK				S		**Sn**	**03 33 25.1**	**-1.9**
JSB	**Shiboa**	**0.93**	**300**	P		**Pb**	**03 33 16.0**	**-0.4**
JSB				S		**Sb**	**03 33 29.5**	**+1.1**
JFT	**Otama**	**1.11**	**335**	P		**Pb**	**03 33 19.1**	**-0.4**
JFT				S		**Sb**	**03 33 33.9**	**+0.3**
JAG	**Ashikaga**	**1.19**	**266**	P		**Pn**	**03 33 18.7**	**-1.1**
JFY	**Yanaizu**	**1.32**	**313**	P		**Pn**	**03 33 22.0**	**+0.3**
MJAR	**Matsushiro Arr**	**2.19**	**272**	P		**Pn**	**03 33 33.6**	**+0.1**
	17nm,0.3s,baz=100,slow=9.4,SNR=196							
MJAR				S		**Sn**	**03 34 00.5**	**+0.7**
	28nm,0.3s,baz=89,slow=25,SNR=8.5							
MAT	**Matsushiro**	**2.19**	**272**	P		**Pn**	**03 33 34.2**	**+0.6**
MAT				S		**Sb**	**03 34 04.0**	**-0.5**
JHJ	**Hachijo jima 2**	**3.51**	**196**	P		**Pn**	**03 33 52.3**	**+0.5**
	16nm,0.3s,baz=342,slow=20,SNR=4.6							
JHJ				S		**Sn**	**03 34 31.9**	**-0.6**
	56nm,0.3s,baz=236,slow=22,SNR=6.8							
JCJ	**Chichijima**	**9.45**	**173**	P		Pn	03 35 09.6	-3.7
	15nm,0.3s,baz=282,slow=23,SNR=7.6							
USRK	**Uusuriysk Ar.**	**10.27**	**321**	P		Pn	03 35 29.3	+4.9
	0.2nm,0.3s,baz=134,slow=13,SNR=3.5							
KSRS	**Korea Array**	**10.45**	**279**	P		**Pn**	**03 35 28.4**	**+1.5**
	0.4nm,0.3s,baz=93,slow=15,SNR=8.0							
SEY	**Seymchan**	**27.38**	**11**	P		**P**	**03 38 45.0**	**+3.3**
	1.4nm,0.3s,baz=354,slow=23,SNR=6.8							
H11N2	**WAKE ISLAND Hy**	**28.23**	**119**	T		T	04 08 12.9	
	baz=320,slow=75,SNR=318							
H11N1	**WAKE ISLAND Hy**	**28.23**	**119**	T		T	04 08 47.2	
	SNR=291							
H11N3	**WAKE ISLAND Hy**	**28.24**	**119**	T		T	04 08 14.2	
	baz=314,slow=75,SNR=183							
H11S1	**WAKE ISLAND Hy**	**28.91**	**121**	T		T	04 09 01.6	
	baz=314,slow=76,SNR=895							
H11S3	**WAKE ISLAND Hy**	**28.91**	**121**	T		T	04 09 27.2	
	baz=314,slow=76,SNR=413							
H11S2	**WAKE ISLAND Hy**	**28.93**	**121**	T		T	04 09 02.8	
	baz=314,slow=76,SNR=426							
ZALV	**Zalesovo Beam**	**41.98**	**313**	P		**P**	**03 40 47.3**	**-0.2**
	2.4nm,0.5s,baz=91,slow=6.8,SNR=7.0							
MKAR	**Makanchi Array**	**44.07**	**302**	P		**P**	**03 41 04.2**	**-0.3**
	0.8nm,0.6s,baz=89,slow=10,SNR=3.9							
KURBB	**Kurchatov Arra**	**46.02**	**308**	P		**P**	**03 41 19.4**	**-0.5**
	0.9nm,0.3s,baz=81,slow=7.1,SNR=3.5							
ILAR	**Eielson Array**	**50.15**	**32**	P		**P**	**03 41 52.2**	**+0.6**
	1.0nm,0.6s,baz=265,slow=5.9,SNR=22							
INK	**Inuvik**	**55.03**	**27**	P		**P**	**03 42 28.8**	**+1.1**
	0.9nm,0.6s,baz=290,slow=4.5,SNR=7.1							
WRA	**Warramunga Arr**	**56.49**	**187**	P		**P**	**03 42 37.3**	**-1.4**
	0.5nm,0.3s,baz=4.4,slow=7.2,SNR=20							
ARU	**Arti**	**56.49**	**319**	P		**P**	**03 42 38.1**	**-0.3**
	2.3

GKN				*e*Sn		**Sn**	**03 37 37.9**	**-3.2**
	86nm,0.5s							
KOLN	**Koldanda**	**12.00 278**	*e*Pn			**Pn**	**03 35 49.3**	**-1.0**
KOLN				*e*Sn		**Sn**	**03 37 59.4**	**-4.0**
	39nm,0.5s							
PYUN	**Piuthan**	**12.55 279**	*e*Pn			**Pn**	**03 35 57.1**	**-0.8**
DGPR	**DIGLIPUR**	**14.10 197**	*e*P			**Pn**	**03 36 20.1**	**+1.2**
DGPR				IAmb		IAmb	03 36 27.8	
	comp=Z,17nm,1.3s							
SMLA	**Simla**	**17.92 289**	*e*P			**Pn**	**03 37 07.0**	**-1.1**
BHPL	**Bhopal**	**18.13 263**	*ex*			**Pn**	**03 37 07.7**	**-3.1**
DHRM	**DHARAMSHALA**	**18.84 292**	*e*P			**Pn**	**03 37 20.1**	**+0.5**
DHRM				IAmb		IAmb	03 37 22.5	
	comp=Z,11nm,0.9s							
CMBY	**CAMPBELL BAY**	**19.91 189**	*e*P			**P**	**03 37 29.5**	**-1.0**
SONM	**Songino Array**	**22.23 17**	P			**P**	**03 37 54.4**	**-1.0**
	comp=Z,0.8nm,0.7s,baz=196,slow=8.3,SNR=4.8							
SONM				LR		LR	03 47 27.7	
	comp=Z,88nm,19.0s,baz=64,slow=39							
ULN	**Ulaanbaatar**	**22.43 18**	*e*P			**P**	**03 37 54.9**	**-2.8**
	comp=Z,7.5nm,1.3s							
MKAR	**Makanchi Array**	**23.11 334**	P			**P**	**03 38 03.6**	**-0.9**
	comp=Z,2.4nm,0.7s,baz=141,slow=12,SNR=17							
AAK	**Ala-Archa**	**24.24 316**	P			**P**	**03 38 16.6**	**+1.0**
	comp=Z,3.3nm,0.7s,baz=115,slow=9.7,SNR=13							
AAK	**Ala-Archa**	**24.24 316**	*e*P			**P**	**03 38 17.3**	**+1.7**
	comp=Z,3.2nm,0.6s							
EKS2	**Erkin-Say**	**24.70 316**	*e*P			**P**	**03 38 20.1**	**+0.3**
	comp=Z,5.6nm,0.9s							
KURBB	**Kurchatov Arra**	**27.67 334**	P			**P**	**03 38 46.8**	**+0.5**
	comp=Z,1.0nm,0.4s,baz=142,slow=10.0,SNR=5.3							
KURK	**Kurchatov**	**27.71 334**	*e*P			**P**	**03 38 50.8**	**+4.2**
	comp=Z,16nm,1.1s							
ZALV	**Zalesovo Beam**	**28.58 345**	P			**P**	**03 38 54.5**	**+0.1**
	comp=Z,0.7nm,0.3s,baz=310,slow=18,SNR=4.6							
BRVK	**Borovoye**	**32.93 330**	*e*P			**P**	**03 39 32.8**	**0.0**
	comp=Z,2.1nm,0.6s							
USRK	**Ussuriysk Ar.**	**33.01 49**	P			**P**	**03 39 30.6**	**-2.9**
	comp=Z,1.0nm,0.6s,baz=156,slow=39,SNR=2.4							
GEYT	**Alibeck**	**34.47 299**	P			**P**	**03 39 47.8**	**+1.4**
	comp=Z,2.9nm,0.6s,baz=134,slow=6.4,SNR=4.6							
ABKAR	**Akbulak array**	**36.30 318**	*e*P			**P**	**03 40 02.8**	**+0.9**
	comp=Z,2.8nm,0.5s							
AKTO	**Aktyubinsk**	**37.92 319**	P			**P**	**03 40 16.4**	**+0.7**
	comp=Z,3.7nm,0.8s,baz=102,slow=8.0,SNR=9.2							
ARU	**Arti**	**40.39 328**	P			**P**	**03 40 36.9**	**+0.7**
	comp=Z,1.8nm,0.4s,baz=124,slow=2.1,SNR=4.3							
ARU	**Arti**	**40.39 328**	*e*P			**P**	**03 40 36.4**	**+0.2**
	comp=Z,2.8nm,0.5s							
MBWA	**Marble Bar**	**52.51 153**	*e*P			**P**	**03 42 12.3**	**+0.6**
	comp=Z,6.6nm,0.6s							
BRTR	**Keskin Array B**	**53.55 301**	P			**P**	**03 42 19.9**	**+0.4**
	comp=Z,1.4nm,0.7s,baz=121,slow=7.2,SNR=8.7							
BRTR				LR		LR	04 10 05.0	
	comp=Z,22nm,20.8s,baz=266,slow=42							
AKASG	**Malin Array Be**	**55.89 315**	P			**P**	**03 42 35.5**	**-0.5**
	comp=Z,0.8nm,0.4s,baz=74,slow=6.1,SNR=4.2							
FINES	**FINESS Array B**	**57.76 328**	P			**P**	**03 42 49.4**	**+0.3**
	comp=Z,1.7nm,0.5s,baz=117,slow=6.3,SNR=18							
FINES				PcP		**PcP**	**03 43 41.4**	**-0.3**
	comp=Z,0.9nm,0.4s,baz=119,slow=3.9,SNR=4.5							
ARCES	**ARCESS Array B**	**58.70 337**	P			**P**	**03 42 55.2**	**-0.4**
	comp=Z,1.9nm,0.8s,baz=82,slow=6.7,SNR=9.5							
WRAB	**Tennant Creek**	**58.88 138**	*e*P			**P**	**03 42 58.2**	**+0.7**
	comp=Z,11nm,0.6s							
WRA	**Warramunga Arr**	**58.88 138**	P			**P**	**03 42 58.3**	**+0.8**
	comp=Z,1.1nm,0.6s,baz=328,slow=7.5,SNR=21							
ASAR	**Alice Springs**	**61.54 141**	P			**P**	**03 43 16.7**	**+1.0**
	comp=Z,7.4nm,0.4s,baz=323,slow=6.6,SNR=109							
KMBO	**Kilima Mbogo**	**63.85 254**	P			**P**	**03 43 32.3**	**+0.7**
	comp=Z,2.5nm,0.8s,baz=46,slow=9.2,SNR=6.7							
NB2	**NORSAR Subarra**	**64.94 328**	P			**P**	**03 43 37.6**	**-0.2**
	comp=Z,1.7nm,0.6s,baz=81,slow=6.9							
NOA	**NORSAR Array B**	**64.94 328**	P			**P**	**03 43 37.5**	**-0.3**
	comp=Z,1.5nm,0.6s,baz=81,slow=6.6,SNR=5.6							
GERES	**GERESS Array B**	**66.03 314**	P			**P**	**03 43 46.4**	**+0.8**
	comp=Z,1.2nm,0.5s,baz=63,slow=5.4,SNR=8.6							
TIP	**Timpagrande**	**66.46 303**	*e*P			**P**	**03 43 49.4**	**+1.4**
	comp=Z,8.4nm,1.1s							
VAE	**Valguarnera**	**68.72 302**	LR			LR	04 17 03.7	
	comp=Z,82nm,18.2s,baz=12,slow=38							
DAVOX	**Davos/Dischmat**	**69.13 313**	LR			LR	04 18 33.0	
	comp=Z,56nm,19.3s,baz=31,slow=40							
WLF	**Walferdange**	**70.61 316**	*e*P			**P**	**03 44 14.3**	**+0.7**
	comp=Z,9.3nm,0.9s							
STKA	**Stephens Creek**	**72.18 141**	P			**P**	**03 44 22.8**	**-0.4**
	comp=Z,6.2nm,0.7s,baz=311,slow=6.2,SNR=5.5							
KEST	**Kesra**	**73.14 302**	P			**P**	**03 44 29.1**	**-0.2**
	comp=Z,1.9nm,0.5s,baz=69,slow=2.5,SNR=6.7							
ILAR	**Eielson Array**	**76.29 23**	P			**P**	**03 44 45.9**	**-0.9**
	comp=Z,0.3nm,0.6s,baz=292,slow=4.3,SNR=5.1							
INK	**Inuvik**	**78.14 17**	P			**P**	**03 44 56.4**	**-0.7**
	comp=Z,1.4nm,0.5s,baz=342,slow=4.9,SNR=12							
INK	**Inuvik**	**78.14 17**	*e*P			**P**	**03 44 57.5**	**+0.4**
	comp=Z,1.3nm,0.5s							
ESDC	**Sonseca Array**	**81.17 310**	P			**P**	**03 45 14.5**	**+0.3**
	comp=Z,0.4nm,0.6s,baz=50,slow=4.8,SNR=5.2							
YKA	**Yellowknife Ar**	**87.47 14**	P			**P**	**03 45 45.5**	**-0.1**
	comp=Z,0.9nm,0.7s,baz=326,slow=4.4,SNR=13							
TORD	**Torodi Ar. Bea**	**88.84 284**	P			**P**	**03 45 53.4**	**+0.4**
	comp=Z,2.1nm,0.7s,baz=86,slow=5.2,SNR=30							
DBIC	**Dimbokro**	**97.55 281**	P			**P**	**03 46 32.9**	**-0.3**
	comp=Z,2.0nm,0.6s,baz=44,slow=7.3,SNR=5.2							
TXAR	**Lajitas Array**	**120.75 21**	PKP			**PKPdf**	**03 51 50.6**	**-0.3**
	comp=Z,0.6nm,0.7s,baz=208,slow=0.9,SNR=7.8							
HKT	**Hockley**	**122.23 13**	*e*PKPdf			**PKPdf**	**03 51 53.6**	**0.0**
BDFB	**Brasilia**	**145.70 282**	PKPbc			**PKPab**	**03 52 38.6**	**+0.3**
	comp=Z,2.4nm,0.5s,baz=95,slow=3.3,SNR=6.9							
ROSC	**El Rosal**	**147.44 344**	PKPbc			**PKPbc**	**03 52 43.4**	**-0.1**
	comp=Z,6.8nm,0.5s,baz=74,slow=4.4,SNR=7.1							

*ISCJB **09** 03:39:00.1±0.8, 38°.39N±0°.04×141°.86E±0°.09, h60km±6km, mb3.8/10, Error ellipse: s-maj=12.1km s-min=6.7km az=14.5*

*NIED **09** 03:39:00, 38°.40N× 141°.80E, h50km, Mw4.0 Best double couple: M₀9.84000×10¹⁴ NP1:φ₀213.00000°, δ34.00000°, λ74.00000°. NP2:φ₀51.00000°, δ58.00000°, λ100.00000°.*

*JMA **09** 03:39:01.0±0.1, 38°.40N×141°.80E, h56km±1km, M3.9*

JMA Felt II J1.

*IDC **09** 03:39:01.3±3.6, 38°.36N×141°.79E, h56km±33km, mb3.5/10, mb1 3.8/12, mb1mx3.5/46, mbtmp3.8/12, ML2.9/2, MS2.7/2, Ms1 2.7/2, ms1mx2.4/42, Error ellipse: s-maj=22.7km s-min=16.9km az=92.0*

ISC 09 03:39:00.7±1.4, 38°.40N±0°.06×141°.9E±0°.1, h49km±12km, n31, σ1s01/32, mb3.7/10, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
JIO	**Ouri**	**0.42**	**277**	P		**Pn**	**03 39 11.3**	**+0.4**
JIO				S		**Sn**	**03 39 18.3**	**+0.1**
JOU	**Okura**	**0.96**	**268**	P		**Pn**	**03 39 17.7**	**-0.1**
JOU				S		**Sn**	**03 39 29.9**	**-0.5**
JMM	**Marumori**	**1.01**	**238**	P		**Pn**	**03 39 18.2**	**-0.3**
JMM				S		**Sn**	**03 39 30.6**	**-1.0**
JOM	**Ohasama**	**1.16**	**337**	P		**Pn**	**03 39 21.1**	**+0.5**
JOM				S		**Sn**	**03 39 36.3**	**+1.0**
JYK	**Kaneyama**	**1.30**	**294**	P		**Pn**	**03 39 22.6**	**+0.2**
JYK				S		**Sn**	**03 39 38.3**	**-0.3**
JFK	**Kawauchi**	**1.30**	**218**	P		**Pn**	**03 39 22.5**	**-0.1**
JFK				S		**Sn**	**03 39 38.4**	**-0.5**
JRG	**Rokugo**	**1.39**	**316**	P		**Pn**	**03 39 24.0**	**+0.3**
JYS	**Shirataka**	**1.44**	**263**	P		**Pn**	**03 39 24.5**	**+0.2**
JYS				S		**Sn**	**03 39 42.3**	**+0.2**
JFT	**Otama**	**1.51**	**235**	P		**Pn**	**03 39 25.8**	**+0.5**
JFT				S		**Sn**	**03 39 44.1**	**+0.3**
MJAR	**Matsushiro Arr**	**3.46**	**239**	P		**Pn**	**03 39 52.6**	**+0.5**
	4.9nm,0.3s,baz=35,slow=14,SNR=39							
MJAR				LR		LR	03 41 22.4	
	comp=Z,98nm,19.2s,baz=80,slow=42							
MAT	**Matsushiro**	**3.46**	**239**	P		**Pn**	**03 39 54.0**	**+1.9**
MAT				*e*S		**Sn**	**03 40 35.7**	**+3.9**
USRK	**Ussuriysk Ar.**	**9.43**	**311**	P		**Pn**	**03 41 12.3**	**-1.5**
	0.3nm,0.3s,baz=124,slow=13,SNR=4.3							
KSRS	**Korea Array**	**11.07**	**269**	P		Pn	03 41 39.5	+3.3
	0.2nm,0.3s,baz=78,slow=12,SNR=3.6							
JCJ	**Chichijima**	**11.28**	**179**	LR		LR	03 49 07.5	
	comp=Z,45nm,18.6s,baz=120,slow=54							
SONM	**Songino Array**	**27.35**	**302**	P		**P**	**03 44 41.7**	**+0.5**
	0.2nm,0.4s,baz=128,slow=9.7,SNR=2.6							
H11N2	**WAKE ISLAND Hy**	**28.56**	**124**	T		T	04 15 28.5	
	baz=317,slow=76,SNR=14							
H11N1	**WAKE ISLAND Hy**	**28.57**	**124**	T		T	04 15 26.6	
	baz=317,slow=76,SNR=22							
H11N3	**WAKE ISLAND Hy**	**28.58**	**124**	T		T	04 15 28.0	
	baz=317,slow=76,SNR=18							
H11S1	**WAKE ISLAND Hy**	**29.32**	**126**	T		T	04 16 08.7	
	baz=318,slow=76,SNR=12							
H11S3	**WAKE ISLAND Hy**	**29.32**	**126**	T		T	04 16 06.3	
	baz=318,slow=76,SNR=13							
H11S2	**WAKE ISLAND Hy**	**29.34**	**126**	T		T	04 16 13.9	
	baz=318,slow=76,SNR=12							
ZALV	**Zalesovo Beam**	**41.28**	**311**	P		**P**	**03 46 40.2**	**-0.7**
	0.9nm,0.5s,baz=59,slow=7.9,SNR=3.7							
MKAR	**Makanchi Array**	**43.72**	**301**	P		**P**	**03 47 00.3**	**-0.6**
	0.9nm,0.6s,baz=88,slow=9.2,SNR=9.0							
KURBB	**Kurchatov Arra**	**45.46**	**307**	P		**P**	**03 47 14.0**	**-0.7**
	3.3nm,0.6s,baz=82,slow=8.2,SNR=19							
ILAR	**Eielson Array**	**48.14**	**33**	P		**P**	**03 47 35.5**	**+0.1**
	0.5nm,0.8s,baz=264,slow=5.8,SNR=4.9							
WRA	**Warramunga Arr**	**58.47**	**188**	P		**P**	**03 48 50.8**	**-0.9**
	3.0nm,0.6s,baz=5.9,slow=7.1,SNR=42							
ASAR	**Alice Springs**	**62.19**	**188**	P		**P**	**03 49 16.5**	**-0.6**
	1.2nm,0.6s,baz=11,slow=4.8,SNR=15							
YKA	**Yellowknife Ar**	**62.44**	**31**	P		**P**	**03 49 18.6**	**+0.3**
	0.3nm,0.6s,baz=303,slow=6.6,SNR=6.8							
NVAR	**Mina Array Bea**	**73.88**	**54**	P		**P**	**03 50 31.4**	**+0.6**
	0.3nm,0.6s,baz=272,slow=8.8,SNR=3.6							
PDAR	**Pinedale Array**	**76.45**	**46**	P		**P**	**03 50 46.0**	**+0.5**
	0.7nm,0.7s,baz=226,slow=1.9,SNR=5.9							
LPAZ	**La Paz**	**145.67**	**58**	PKPbc		**PKPbc**	**03 58 34.8**	**-0.4**
	1.3nm,0.6s,baz=49,slow=3.2,SNR=5.9							

*NIED **09** 03:42:00, 37°.10N×142°.70E, h14km, Mw4.0 Best double couple: M₀1.13000×10¹⁵ NP1:φ₀173.00000°, δ45.00000°, λ-100.00000°. NP2:φ₀7.00000°, δ46.00000°, λ-81.00000°.*

*IDC **09** 03:42:17.7±0.7, 37°.02N×142°.71E, h0km, mb3.9/14, mb1 4.0/17, mb1mx3.9/45, mbtmp3.8/17, ML3.6/3, MS3.3/4, Ms1 3.3/4, ms1mx2.7/41, Error ellipse: s-maj=19.6km s-min=16.3km az=138.0*

*JMA **09** 03:42:19.4±0.3, 37°.11N×142°.66E, h12km, M4.1*

*NEIC **09** 03:42:21.1±3.1, 37°.12N×142°.73E, h20km±22km, mb4.4/4, Error ellipse: s-maj=13.4km s-min=8.3km az=131.0*

ISC 09 03:42:18.4±3.7, 37°.07N±0°.05×142°.67E±0°.06, h5km±23km, n39, σ1s35/45, mb3.9/18, MS3.2/3, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
JFK	**Kawauchi**	**1.47**	**282**	P		**Pn**	**03 42 45.4**	**-0.1**
JFK				*e*S		**Sn**	**03 43 03.7**	**-1.4**
ONAJ	**Iwakimizuishiy**	**1.50**	**272**	P		**Pn**	**03 42 46.1**	**+0.1**
JMM	**Marumori**	**1.70**	**299**	P		**Pn**	**03 42 48.4**	**-0.2**
JMM				*e*S		**Sn**	**03 43 09.9**	**-0.8**
JIO	**Ouri**	**1.74**	**323**	P		**Pn**	**03 42 49.1**	**-0.1**
JIO				*e*S		**Sn**	**03 43 10.3**	**-1.4**
JFT	**Otama**	**1.92**	**284**	P		**Pn**	**03 42 52.5**	**+0.8**
JFT				*e*S		**Sb**	**03 43 17.1**	**-1.0**
JOU	**Okura**	**2.06**	**310**	P		**Pb**	**03 42 54.8**	**-1.4**
JOU				*e*S		**Sb**	**03 43 20.0**	**-2.0**
JYK	**Kaneyama**	**2.60**	**316**	P		**Pn**	**03 43 01.9**	**+0.9**
JYK				*e*S		**Sn**	**03 43 33.8**	**+0.8**
JAG	**Ashikaga**	**2.67**	**257**	P		**Pn**	**03 43 02.6**	**+0.7**
JRY	**Ryogami san**	**3.21**	**252**	P		**Pn**	**03 43 10.0**	**+0.5**
JRY				*e*S		**Sn**	**03 43 46.4**	**-1.8**
MJAR	**Matsushiro Arr**	**3.62**	**263**	Pn		**Pn**	**03 43 16.9**	**+1.8**
	5.2nm,0.3s,baz=90,slow=15,SNR=17							
MAJO	**Matsushiro**	**3.62**	**263**	*e*Pn		**Pn**	**03 43 17.7**	**+2.5**
MAT	**Matsushiro**	**3.62**	**263**	P		**Pn**	**03 43 17.2**	**+2.1**
MAT				*e*S		**Sn**	**03 43 59.1**	**+0.8**
JHJ	**Hachijo jima 2**	**4.60**	**212**	Pn		**Pn**	**03 43 27.7**	**-0.8**
	13nm,0.3s,baz=75,slow=20,SNR=2.6							
JHJ				Sn		**Sn**	**03 44 18.5**	**-3.7**
	20nm,0.3s,baz=72,slow=20,SNR=3.2							
ERM	**Erimo**	**4.96**	**4**	*e*Pn		**Pn**	**03 43 32.0**	**-1.4**
ERM				*e*Sn		**Sn**	**03 44 28.2**	**-2.9**
JNU	**Nakatsue**	**10.43**	**251**	Pn		Pn	03 44 52.1	+3.5
	0.2nm,0.3s,baz=90,slow=6.1,SNR=3.1							
JNU	**Nakatsue**	**10.43**	**251**	*e*Pn		**Pn**	**03 44 51.1**	**+2.5**
USRK	**Ussuriysk Ar.**	**10.80**	**315**	Pn		Pn	03 44 57.9	+4.4
	0.1nm,0.3s,baz=128,slow=14,SNR=2.9							
KSRS	**Korea Array**	**11.76**	**276**	Pn		**Pn**	**03 45 08.9**	**+2.1**
	0.2nm,0.3s,baz=88,slow=13,SNR=3.7							
KSRS				LR		LR	03 49 31.5	
	comp=Z,143nm,18.1s,baz=68,slow=37							
KSAR	**Wonju Array Be**	**11.79**	**276**	Pn		**Pn**	**03 45 08.9**	**+1.7**
YAK	**Yakutsk**	**26.27**	**346**	LR		LR	04 00 01.8	
	comp=Z,39nm,18.9s,baz=190,slow=40							
SEY	**Seymchan**	**26.57**	**10**	P		**P**	**03 47 57.0**	**-0.1**
	2.3nm,0.8s,baz=206,slow=11,SNR=3.9							
SONM	**Songino Array**	**28.61**	**304**	P		**P**	**03 48 16.1**	**+0.6**
	1.8nm,0.9s,baz=95,slow=7.8,SNR=9.7							
CMAR	**Chiang Mai Arr**	**42.48**	**256**	LR		LR	04 10 10.5	
	comp=Z,30nm,19.8s,baz=180,slow=39							
ZALV	**Zalesovo Beam**	**42.64**	**312**	P		**P**	**03 50 15.8**	**+0.4**
	0.6nm,0.4s,baz=76,slow=6.3,SNR=4.7							
MKAR	**Makanchi Array**	**44.95**	**302**	P		**P**	**03 50 34.7**	**+0.4**
	1.1nm,0.7s,baz=88,slow=9.3,SNR=7.3							
KURK	**Kurchatov**	**46.70**	**308**	*e*P		**P**	**03 50 48.1**	**+0.1**
	10nm,0.8s							
KURBB	**Kurchatov Arra**	**46.77**	**308**	P		**P**	**03 50 48.5**	**0.0**
	2.4nm,0.5s,baz=85,slow=7.9,SNR=9.6							
ILAR	**Eielson Array**	**48.93**	**32**	P		**P**	**03 51 05.5**	**+0.5**
	1.5nm,0.8s,baz=268,slow=6.7,SNR=12							
INK	**Inuvik**	**53.90**	**27**	P		**P**	**03 51 43.2**	**+1.1**
	0.4nm,0.5s,baz=298,slow=5.3,SNR=3.8							
ARU	**Arti**	**57.00**	**319**	*e*P		**P**	**03 52 04.7**	**0.0**
	1.6nm,0.4s							
WRA	**Warramunga Arr**	**57.24**	**189**	P		**P**	**03 52 06.2**	**-0.5**
	1.9nm,0.9s,baz=6.8,slow=7.1,SNR=7.4							
ABKAR	**Akbulak array**	**58.69**	**310**	*e*P		**P**	**03 52 16.5**	**-0.1**
	0.6nm,0.6s							
ASAR	**Alice Springs**	**60.97**	**189**	P		**P**	**03 52 32.2**	**-0.3**
	0.9nm,0.9s,baz=12,slow=6.4,SNR=5.4							
YKA	**Yellowknife Ar**	**63.27**	**30**	P		**P**	**03 52 46.9**	**-0.7**
	0.1nm,0.3s,baz=302,slow=5.8,SNR=4.3							
FINES	**FINESS Array B**	**69.25**	**333**	P		**P**	**03 53 25.9**	**0.0**
	1.7nm,0.8s,baz=34,slow=8.4,SNR=3.7							
FFC	**Flin Flon**	**73.13**	**33**	*e*P		**P**	**03 53 49.8**	**+0.2**
	4.4nm,1.4s							
NVAR	**Mina Array Bea**	**74.16**	**54**	P		**P**	**03 53 56.9**	**+0.7**
	0.8nm,0.9s,baz=283,slow=6.2,SNR=4.8							
PDAR	**Pinedale Array**	**76.92**	**46**	P		**P**	**03 54 12.9**	**+0.9**
	0.4nm,0.6s,baz=253,slow=4.5,SNR=3.5							
PDAR				LR		LR	04 27 32.2	
	comp=Z,19nm,18.7s,baz=309,slow=35							
TXAR	**Lajitas Array**	**89.30**	**53**	P		**P**	**03 55 16.7**	**+0.7**
	0.5nm,0.8s,baz=284,slow=2.6,SNR=5.8							

IDC 09 04:09:57.1±2.2, 14°.35N×145°.70E, h92km±19km, mb3.1/4, mb1 3.4/4, mb1mx3.1/39, mbtmp3.4/4, Error ellipse: s-maj=45.7km s-min=26.9km az=104.0, Mariana Islands

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
GUMO	**Guam**	**1.10**	**227**	P		Pn	04 10 18.7	+0.6
	84nm,0.3s,baz=326,slow=5.6,SNR=20							
GUMO				S		Sn	04 10 33.9	0.0
	261nm,0.3s,baz=163,slow=19,SNR=21							
WRA	**Warramunga Arr**	**35.86**	**198**	P		P	04 16 48.2	0.0
	0.2nm,0.5s,baz=24,slow=8.9,SNR=3.4							
MKAR	**Makanchi Array**	**61.51**	**316**	P		P	04 20 04.3	-0.1
	0.6nm,0.4s,baz=90,slow=8.6,SNR=8.6							
ILAR	**Eielson Array**	**67.54**	**25**	P		P	04 20 42.7	-0.6
	0.2nm,0.4s,baz=244,slow=6.0,SNR=4.3							
YKA	**Yellowknife Ar**	**81.82**	**28**	P		P	04 22 06.2	+0.5
	0.1nm,0.3s,baz=287,slow=5.1,SNR=4.0							

*NIED **09** 04:17:00, 38°.70N×142°.40E, h50km, Mw4.2 Best double couple: M₀2.13000×10¹⁵ NP1:φ₀29.00000°, δ19.00000°, λ159.00000°. NP2:φ₀139.00000°, δ83.00000°, λ72.00000°.*

JMA 09 04:17:55.0±0.1, 38°.75N×142°.37E, h38km±2km, M3.6, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
JIO	**Ouri**	**0.85**	**250**	P		Pn	04 18 10.4	-0.1
JIO				S		Sn	04 18 21.5	-0.2
MIYJ	**Miyakonagasawa**	**0.93**	**333**	P		Pn	04 18 11.5	0.0
MIYJ				S		Sn	04 18 23.3	-0.4
JOM	**Ohasama**	**1.11**	**311**	P		Pn	04 18 14.6	+0.7
JOM				S		Sn	04 18 28.9	+0.9
JOU	**Okura**	**1.39**	**255**	P		Pn	04 18 18.6	+0.7
JOU				S		Sn	04 18 36.5	+1.5
JKZ	**Kuzumaki**	**1.47**	**327**	P		Pn	04 18 20.3	+1.3
JRG	**Rokugo**	**1.50**	**296**	P		Pn	04 18 20.4	+1.1
JMM	**Marumori**	**1.52**	**235**	P		Pn	04 18 20.0	+0.4

*NIED **09** 04:34:00, 37°.30N×142°.20E, h5km, Mw3.9 Best double couple: M₀8.48000×10¹⁴ NP1:φ₀87.00000°, δ60.00000°, λ-34.00000°. NP2:φ₀196.00000°, δ61.00000°, λ-145.00000°.*

*IDC **09** 04:34:05.0±0.8, 37°.10N×142°.47E, h0km, mb3.8/12, mb1 3.9/14, mb1mx3.7/54, mbtmp3.8/14, ML2.7/2, MS2.9/5, Ms1 2.9/5, ms1mx2.6/45, Error ellipse: s-maj=21.7km s-min=17.9km az=118.0*

*ISCJB **09** 04:34:06.5±0.6, 37°.21N±0°.06×142°.33E±0°.05, h19km, mb3.9/14, MS3.3/1, Error ellipse: s-maj=9.2km s-min=6.1km az=167.4*

*JMA **09** 04:34:06.8±0.2, 37°.27N×142°.24E, h17km±3km, M3.9*

*NEIC **09** 04:34:10.3±0.5, 37°.14N×142°.41E, h35km, mb4.3/1, Error ellipse: s-maj=12.8km s-min=8.3km az=140.0*

ISC 09 04:34:08.4±0.8, 37°.21N±0°.07×142°.13E±0°.06, h19km, n36, σ1s31/28, mb3.9/14, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
JFK	**Kawauchi**	**1.02**	**279**	P		**Pb**	**04 34 27.0**	**-0.4**
JFK				*e*S		**Sn**	**04 34 41.2**	**-0.3**
ONAJ	**Iwakimizuishiy**	**1.07**	**264**	P		**Pn**	**04 34 28.1**	**-0.4**
JMM	**Marumori**	**1.25**	**302**	P		**Pn**	**04 34 30.2**	**-0.7**
JIO	**Ouri**	**1.39**	**334**	P		**Pn**	**04 34 31.2**	**-1.5**
JHO	**Hitachi**	**1.39**	**245**	P		**Pb**	**04 34 32.9**	**-0.9**
JFT	**Otama**	**1.46**	**283**	P		**Pn**	**04 34 34.6**	**-0.5**
JOU	**Okura**	**1.64**	**315**	P		**Pn**	**04 34 36.0**	**-0.2**
JOU				*e*S		**Sn**	**04 34 57.3**	**+0.5**
MJAR	**Matsushiro Arr**	**3.22**	**259**	Pn		**Pn**	**04 34 59.5**	**+1.5**
	2.4nm,0.3s,baz=88,slow=16,SNR=15							
MAJO	**Matsushiro**	**3.22**	**259**	*e*Pn		**Pb**	**04 35 02.4**	**-2.6**
MAT	**Matsushiro**	**3.22**	**259**	P		**Pn**	**04 34 59.9**	**+1.9**
MAT				S		**Sb**	**04 35 41.7**	**-2.1**
ERM	**Erimo**	**4.86**	**9**	*e*Pn		**Pn**	**04 35 21.0**	**+0.5**
USRK	**Ussuriysk Ar.**	**10.39**	**315**	Pn		Pn	04 36 41.0	+4.7
	0.1nm,0.3s,baz=127,slow=13,SNR=3.5							
USRK				LR		LR	04 40 31.6	
	comp=Z,113nm,18.3s,baz=176,slow=36							
KSRS	**Korea Array**	**11.32**	**276**	LR		LR	04 41 20.7	
	comp=Z,18nm,19.2s,baz=79,slow=38							
KLR	**Kul'dur**	**14.18**	**331**	LR		LR	04 42 47.0	
	comp=Z,53nm,21.3s,baz=88,slow=36							
PETK	**Petropavlovsk-**	**19.25**	**29**	LR		LR	04 47 37.6	
	comp=Z,23nm,18.7s,baz=83,slow=42							
SEY	**Seymchan**	**26.51**	**11**	P		**P**	**04 39 43.2**	**-1.1**
	0.7nm,0.3s,baz=188,slow=9.2,SNR=5.1							
H11N2	**WAKE ISLAND Hy**	**27.75**	**122**	T		T	05 08 51.7	
	baz=314,slow=

σ1§55/15, **3C-3D, Northern Xinjiang**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KTMS	**Ketmen** 3.6nm,0.3s	**2.48**	**252**	*eP*	**Pb**	**04 52 44.1**	**+0.3**
KTMS	48nm,0.4s			*eS*	**Sg**	**04 53 17.7**	**-1.1**
MK31	**Makanchi Array** 0.7nm,0.3s,baz=155,slow=17,SNR=14	**2.71**	**341**	⇑Pn	**Pb**	**04 52 47.4**	**-0.2**
MK31	1.8nm,0.2s,baz=156,slow=28,SNR=4.1			⇑Lg	Lg	04 53 22.3	
DJR	**Jarkent** 5.9nm,0.4s	**2.74**	**273**	*eP*	**Pb**	**04 52 48.7**	**+0.6**
DJR	18nm,0.5s			*eS*	**Sg**	**04 53 26.3**	**-0.7**
MAKZ	**Makanchi** 0.9nm,0.3s	**2.81**	**337**	⇓Pn	**Pb**	**04 52 49.4**	**+0.1**
MAKZ	5.9nm,0.5s			⇓Lg	Lg	04 53 25.9	
SHLS	**Shalkode** 4.6nm,0.3s	**2.91**	**249**	*eP*	**Pb**	**04 52 52.0**	**+0.9**
SHLS	26nm,0.3s			*eS*	**Sg**	**04 53 30.7**	**-1.8**
PDGK	**Podgornoye** 0.9nm,0.4s	**3.12**	**254**	⇑Pg	**Pg**	**04 52 57.2**	**-1.6**
PDGK	15nm,0.5s			⇓Lg	Lg	04 53 35.1	
KAPS	**Kapalarasan** 1.2nm,0.4s	**3.20**	**290**	*eP*	**Pb**	**04 52 57.6**	**+1.7**
KAPS	4.7nm,0.8s			*eS*	**Sg**	**04 53 40.6**	**-1.1**
ZSN	**Zaisan** 3.8nm,0.2s	**3.25**	**10**	*eP*	**Pb**	**04 52 58.3**	**+1.4**
ZSN	9.2nm,0.5s			*eS*	**Sg**	**04 53 42.4**	**-1.1**
KPKS	**Kokpek** 11nm,0.5s	**3.64**	**259**	*eP*	**Pb**	**04 53 04.2**	**+0.7**
KPKS	21nm,0.4s			*eS*	**Sb**	**04 53 51.3**	**+3.5**

JMA 09 04:58:03.5±0.1, 38°37N×141°77E, h58km±1km, M3.9, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**0.34**	**284**	P	Pn	04 58 13.8	+0.1
JIO				S	Sn	04 58 20.9	-0.2
JMK	**Ichinoseki**	**0.72**	**324**	P	Pn	04 58 18.1	+0.2
JMK				*i* S	Sn	04 58 28.9	+0.5
JOU	**Okura**	**0.87**	**270**	P	Pn	04 58 20.0	+0.2
JOU				S	Sn	04 58 31.9	+0.1
JMM	**Marumori**	**0.92**	**237**	P	Pn	04 58 20.3	-0.1
JMM				S	Sn	04 58 32.3	-0.6
JOM	**Ohasama**	**1.16**	**341**	P	Pn	04 58 23.8	+0.2
JOM				S	Sn	04 58 39.1	+0.5
JFK	**Kawauchi**	**1.23**	**216**	P	Pn	04 58 24.5	0.0
JFK				S	Sn	04 58 40.1	-0.1
JYK	**Kaneyama**	**1.23**	**297**	P	Pn	04 58 24.9	+0.4
JYK				S	Sn	04 58 40.6	+0.3
JRG	**Rokugo**	**1.35**	**319**	P	Pn	04 58 26.9	+0.7
JFT	**Otama**	**1.42**	**234**	P	Pn	04 58 27.7	+0.7
JFT				S	Sn	04 58 45.1	+0.4
JYA	**Atsumi**	**1.63**	**278**	P	Pn	04 58 30.7	+0.8
MAT	**Matsushiro**	**3.37**	**238**	P	Pn	04 58 55.7	+2.0
MAT				*e*S	Sn	04 59 39.2	+6.7

JMA 09 05:06:38.9±0.2, 37°66N×142°94E, h9km, M3.7, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**1.48**	**303**	P	Pn	05 07 06.0	+0.2
JIO				S	Sb	05 07 25.8	+0.2
JFK	**Kawauchi**	**1.67**	**261**	P	Pn	05 07 08.7	+0.4
JMM	**Marumori**	**1.71**	**278**	P	Pn	05 07 09.1	+0.2
JMM				S	Sn	05 07 31.1	+0.2
ONAJ	**Iwakimizuishiy**	**1.79**	**253**	P	Pn	05 07 10.5	+0.4
ONAJ				S	Sn	05 07 32.9	-0.1
JMK	**Ichinoseki**	**1.87**	**314**	P	Pn	05 07 11.2	+0.1
JOU	**Okura**	**1.93**	**292**	P	Pn	05 07 12.9	+1.0
JFT	**Otama**	**2.07**	**267**	P	Pn	05 07 15.2	+1.3
JFT				S	Sb	05 07 41.6	-1.0
JOM	**Ohasama**	**2.22**	**325**	P	Pn	05 07 16.5	+0.6
JYK	**Kaneyama**	**2.39**	**303**	P	Pn	05 07 19.2	+1.0

*IDC **09** 05:08:39.6±2.5, 36°20N×142°40E, h0km, mb3.8/5, mb1 3.9/6, mb1mx3.5/48, mbtmp3.8/6, ML3.4/1, MS2.6/2, Ms1 2.6/2, ms1mx2.3/45, Error ellipse: s-maj=78.2km s-min=21.9km az=62.0*
*JMA **09** 05:08:42.8±0.5, 36°23N×142°23E, h71km, M3.4*
ISC 09 05:08:44.1±1.4, 36°30N±0°08×142°1E±0°1, h23km, n14, σ1§35/14, **mb3.7/5, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**1.16**	**240**	P	**Pb**	**05 09 04.5**	**-1.0**
JHO	**Hitachi**	**1.27**	**285**	P	**Pb**	**05 09 06.4**	**-0.8**
JFT	**Otama**	**1.86**	**311**	P	**Pb**	**05 09 15.9**	**-1.5**
JFT				*e*S	**Sb**	**05 09 40.1**	**-0.1**
JMM	**Marumori**	**1.88**	**327**	P	**Pn**	**05 09 14.5**	**-0.3**
JAG	**Ashikaga**	**2.13**	**274**	P	**Pn**	**05 09 18.9**	**+0.6**
MJAR	**Matsushiro Arr** 3.5nm,0.3s,baz=90,slow=16,SNR=9.5	**3.14**	**276**	Pn	**Pn**	**05 09 33.3**	**+1.1**
MAT	**Matsushiro**	**3.14**	**276**	P	**Pn**	**05 09 33.6**	**+1.4**
MAT				*e*S	**Sb**	**05 10 15.5**	**-1.6**
JNU	**Nakatsue** comp=Z,35nm,20.5s,baz=114,slow=38	**9.76**	**254**	LR	LR	05 14 58.1	
KSRS	**Korea Array** comp=Z,28nm,18.5s,baz=58,slow=34	**11.41**	**280**	LR	LR	05 15 18.8	
SONM	**Songino Array** 0.9nm,0.6s,baz=100,slow=8.9,SNR=7.5	**28.65**	**305**	P	**P**	**05 14 41.0**	**+2.0**
ZALV	**Zalesovo Beam** 0.4nm,0.3s,baz=93,slow=8.7,SNR=3.0	**42.81**	**313**	P	**P**	**05 16 40.7**	**+0.8**
MKAR	**Makanchi Array** 1.2nm,0.6s,baz=88,slow=9.7,SNR=13	**44.97**	**303**	P	**P**	**05 16 58.0**	**+0.7**
WRA	**Warramunga Arr** 1.4nm,0.6s,baz=12,slow=7.5,SNR=8.3	**56.41**	**189**	P	**P**	**05 18 23.4**	**-0.4**
ASAR	**Alice Springs** 0.5nm,0.8s,baz=13,slow=8.8,SNR=3.1	**60.14**	**189**	P	**P**	**05 18 47.7**	**-2.1**

JMA 09 05:14:29.5±0.2, 38°39N×142°26E, h31km±3km, M3.5, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**0.72**	**275**	P	Pn	05 14 43.2	-0.3
JIO				S	Sb	05 14 52.0	-1.1
JMK	**Ichinoseki**	**0.99**	**305**	P	Pn	05 14 47.4	+0.2
JMK				S	Sn	05 14 59.9	-0.2
MIYJ	**Miyakonagasawa**	**1.23**	**344**	P	Pn	05 14 50.6	0.0
MIYJ				S	Sn	05 15 06.2	0.0
JOU	**Okura**	**1.25**	**269**	P	Pn	05 14 51.3	+0.4
JOU				S	Sn	05 15 07.5	+0.7
JMM	**Marumori**	**1.27**	**246**	P	Pn	05 14 51.1	0.0
JMM				S	Sn	05 15 06.7	-0.4
JOM	**Ohasama**	**1.32**	**325**	P	Pn	05 14 52.5	+0.7
JOM				S	Sn	05 15 08.9	+0.6
JFK	**Kawauchi**	**1.50**	**227**	P	Pn	05 14 53.9	-0.4
JFK				S	Sn	05 15 11.1	-1.7
JYK	**Kaneyama**	**1.58**	**290**	P	Pb	05 14 57.1	-1.0
JRG	**Rokugo**	**1.62**	**309**	P	Pb	05 14 57.6	-1.1
JKZ	**Kuzumaki**	**1.75**	**336**	P	Pn	05 14 59.2	+1.5
JKZ				S	Sb	05 15 20.9	-1.7
JFT	**Otama**	**1.75**	**241**	P	Pn	05 14 59.1	+1.4
JFT				S	Sn	05 15 20.3	+1.3
JANG	**Nango**	**2.06**	**344**	P	Pn	05 15 03.5	+1.5
JANG				*e*S	Sn	05 15 29.1	+2.4

*IDC **09** 05:31:34.8±5.3, 22°17S×67°34W, h150km±39km, mb3.5/5, mb1 3.6/8, mb1mx3.4/34, mbtmp3.9/8, Error ellipse: s-maj=46.9km s-min=18.4km az=19.0*
*ISCJB **09** 05:31:35.3±0.4, 22°19S±0°04×67°54W±0°04, h174km±5km, mb3.6/5, Error ellipse: s-maj=8.3km s-min=4.1km az=37.0*
*GUC **09** 05:31:36.6±0.7, 22°17S×67°87W, h191km±19km, ML4.2*
*SJA **09** 05:31:36.2±0.8, 22°23S×67°27W, h200km±16km, ML2.4, MW2.9*
ISC 09 05:31:36.3±0.8, 22°15S±0°05×67°48W±0°04, h168km±7km, n28, σ1§51/42, **mb3.8/5, 7C-1D, Chile-Bolivia border region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
YJA	**Yavi**	**1.82**	**91**	*eP*	**Pn**	**05 32 12.8**	**+1.7**
YJA				*e*S	**Sn**	**05 32 39.5**	**+1.6**
PB06	**IPOC Station P**	**2.02**	**254**	⇓*i*P	**Pn**	**05 32 12.2**	**-0.7**
PB06				*i* S	**Sn**	**05 32 39.1**	**-2.1**
PB06	comp=E,547nm,0.3s			IAML		05 32 42.0	
PB01	**IPOC Station P**	**2.17**	**300**	⇑*i*P	**Pn**	**05 32 15.1**	**+0.5**
PB01				*i* S	**Sn**	**05 32 44.4**	**+0.2**
PB01	comp=N,1μm,0.3s			IAML		05 32 45.4	
HJA	**Humahuaca**	**2.19**	**119**	*eP*	**Pn**	**05 32 16.1**	**+1.0**
HJA				IAML		05 32 41.1	
HJA				*e*S	**Sn**	**05 32 45.2**	**+0.1**
PB07	**IPOC Station P**	**2.27**	**280**	⇑*i*P	**Pn**	**05 32 15.7**	**-0.1**
PB07				*i* S	**Sn**	**05 32 44.6**	**-1.9**
PB07	comp=N,1μm,0.4s			IAML		05 32 45.2	
PB04	**IPOC Station P**	**2.48**	**265**	⇑*i*P	**Pn**	**05 32 17.4**	**-0.9**
PB04				*i* S	**Sn**	**05 32 47.9**	**-2.9**
PB04	comp=E,849nm,0.4s			IAML		05 32 53.6	
PB08	**IPOC Station P**	**2.53**	**322**	⇑*i*P	**Pn**	**05 32 21.3**	**+2.1**
PB08				*i* S	**Sn**	**05 32 54.5**	**+2.1**
PB08	comp=N,283nm,0.4s			IAML		05 32 55.6	
HMBC	**Humberstone**	**2.92**	**309**	⇑*i*P	**Pn**	**05 32 23.2**	**-0.3**
HMBC				*i* S	**Sn**	**05 32 59.1**	**-1.1**
HMBC	comp=E,1μm,0.5s			IAML		05 32 59.9	
AZAP	**Zapla**	**3.04**	**133**	*eP*	**Pn**	**05 32 24.4**	**-0.7**
PB11	**IPOC Station P**	**3.12**	**319**	*eP*	**Pn**	**05 32 26.3**	**+0.1**
PB11				*i* S	**Sn**	**05 33 04.7**	**-0.2**
SLA	**San Lorenzo**	**3.14**	**145**	*eP*	**Pn**	**05 32 26.4**	**+0.1**
SLA				*e*S	**Sn**	**05 33 03.8**	**-1.5**
SLA	comp=Z,7.5nm,0.6s			IAML		05 33 05.0	
PB10	**IPOC Station P** comp=N,943nm,0.3s	**3.15**	**244**	IAML		05 33 00.6	
ASTB	**Santa Barbara**	**3.31**	**123**	*eP*	**Pn**	**05 32 28.2**	**-0.3**
PSGC	**Pisagua**	**3.54**	**315**	⇑*i*P	**Pn**	**05 32 30.6**	**-0.7**
PSGC				*i* S	**Sn**	**05 33 12.1**	**-2.1**
PSGC	comp=E,215nm,0.5s			IAML		05 33 14.1	
MNMC	**Minye Minye**	**3.59**	**326**	⇑*i*P	**Pn**	**05 32 33.3**	**+1.1**
MNMC				*i* S	**Sn**	**05 33 16.6**	**+1.0**
MNMC	comp=E,494nm,0.2s			IAML		05 33 18.3	
ALOL	**LOMAS DE OLMED**	**3.63**	**118**	*eP*	**Pn**	**05 32 31.6**	**-0.7**
PB12	**IPOC Station P**	**4.41**	**322**	*i* P	**Pn**	**05 32 41.8**	**-0.8**
PB12				*i* S	**Sn**	**05 33 32.2**	**-2.1**
LPAZ	**La Paz** comp=E,0.4nm,0.3s,baz=73,slow=2.0,SNR=11	**5.86**	**354**	P	**Pn**	**05 33 01.6**	**-0.4**
LPAZ	comp=E,0.2nm,0.3s,baz=129,slow=17,SNR=1.9			S	**Sn**	**05 34 07.2**	**-1.9**
SIV	**San Ignacio** comp=E,13nm,0.3s,baz=242,slow=10,SNR=128	**8.61**	**46**	P	**Pn**	**05 33 36.6**	**-1.2**
SIV	comp=E,2.1nm,0.3s,baz=326,slow=23,SNR=11			S	**Sn**	**05 35 09.1**	**-4.8**
BDFB	**Brasilia** comp=E,0.3nm,0.3s,baz=241,slow=8.0,SNR=4.6	**19.51**	**74**	P	**P**	**05 35 50.3**	**-0.6**
DBIC	**Dimbokro** comp=E,0.7nm,0.4s,baz=219,slow=5.6,SNR=8.2	**67.65**	**72**	P	**P**	**05 42 15.5**	**-0.1**
ANMO	**Albuquerque** comp=E,0.5nm,0.6s,baz=60,slow=4.7,SNR=3.6	**67.77**	**326**	P	**P**	**05 42 18.1**	**+2.0**
PDAR	**Pinedale Array** comp=E,0.2nm,0.5s,baz=168,slow=4.6,SNR=3.2	**75.33**	**329**	P	**P**	**05 43 02.6**	**+1.3**
TORD	**Torodi Ar. Bea** comp=E,2.2nm,0.5s,baz=253,slow=5.4,SNR=50	**76.33**	**70**	P	**P**	**05 43 07.1**	**-0.1**
YKA	**Yellowknife Ar** comp=E,0.5nm,0.6s,baz=134,slow=4.4,SNR=22	**92.24**	**340**	P	**P**	**05 44 27.3**	**+0.8**
ASAR	**Alice Springs** comp=E,0.4nm,0.7s,baz=123,slow=1.6,SNR=4.3	**129.94**	**206**	PKP	**PKPdf**	**05 50 25.6**	**-1.0**
WRA	**Warramunga Arr** comp=E,0.2nm,0.3s,baz=153,slow=1.8,SNR=10	**133.05**	**209**	PKP	**PKPdf**	**05 50 32.5**	**-0.1**
MKAR	**Makanchi Array** comp=E,0.9nm,0.6s,baz=316,slow=4.1,SNR=12	**145.35**	**37**	PKPbc	**PKPab**	**05 50 54.5**	**-0.1**

*ISCJB **09** 05:54:38.4±0.5, 51°52N±0°02×16°08E±0°03, h0km, Error ellipse: s-maj=3.5km s-min=2.8km az=11.7*
*CSEM **09** 05:54:40.3±0.2, 51°53N×16°01E, h2km, ML3.5/10, Error ellipse: s-maj=4.0km s-min=3.6km az=81.0*
*VIE **09** 05:54:43.7±0.8, 51°28N×16°29E, h0km, mb2.2/3, ml2.9/4, Error ellipse: s-maj=6.8km s-min=5.4km az=53.0, Suspected Mining induced.*
*UPP **09** 05:54:43.5±3.1, 51°66N×15°37E, h0km, ML1.6, Suspected explosion*
ISC 09 05:54:39.8±0.8, 51°56N±0°03×16°04E±0°02, h0km, n43, σ1§34/80, **Poland**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KSP	**Ksiaz**	**0.74**	**167**	*i* Pg	**Pg**	**05 54 53.8**	**-0.1**
KSP				*e*Sg	**Sg**	**05 55 02.7**	**-0.7**
KSP	**Ksiaz**	**0.74**	**167**	*i* Pg	**Pg**	**05 54 53.8**	**-0.1**
KSP				*e*Sg	**Sg**	**05 55 02.7**	**-0.7**
UPC	**Upice**	**1.06**	**181**	*e*PG	**Pg**	**05 54 59.8**	**-0.2**
UPC	comp=Z,109nm,0.4s			*e*SG	**Sg**	**05 55 12.7**	**-1.0**
UPC	**Upice** 109nm,0.4s	**1.06**	**181**	Pg	**Pg**	**05 54 59.8**	**-0.2**
UPC				Sg	**Sg**	**05 55 12.7**	**-1.0**
DPC	**Dobruska-Polom**	**1.23**	**172**	*e*PG	**Pg**	**05 55 02.6**	**-0.7**
DPC	comp=Z,56nm,0.4s			*e*SG	**Sg**	**05 55 17.1**	**-2.0**
DPC	**Dobruska-Polom** 56nm,0.4s	**1.23**	**172**	Pg	**Pg**	**05 55 02.6**	**-0.7**
DPC				Sg	**Sg**	**05 55 17.1**	**-2.0**
PVCC	**Panska Ves**	**1.39**	**222**	*e*PG	**Pb**	**05 55 07.2**	**+0.6**
PVCC	comp=Z,189nm,0.2s			*e*SG	**Sn**	**05 55 25.3**	**-0.2**
PVCC	**Panska Ves** 189nm,0.2s	**1.39**	**222**	Pg	**Pb**	**05 55 07.2**	**+0.6**
PVCC				Sg	**Sn**	**05 55 25.3**	**-0.2**
BRG	**Berggiesshubel** 81nm,0.6s	**1.49**	**243**	PG	**Pb**	**05 55 09.7**	**+1.4**
BRG				SG	**Sn**	**05 55 29.1**	**+1.2**
KRLC	**Kraliky**	**1.56**	**162**	*e*PG	**Pn**	**05 55 09.1**	**+0.3**
KRLC				*e*SG	**Sg**	**05 55 27.4**	**-2.5**
KRLC	**Kraliky**	**1.56**	**162**	Pg	**Pn**	**05 55 09.1**	**+0.3**
KRLC				Sg	**Sg**	**05 55 27.4**	**-2.5**
PRA	**Prague** comp=Z,45nm,0.8s	**1.81**	**215**	*e*SG	**Sb**	**05 55 37.1**	**+0.2**
PRA	**Prague** 45nm,0.8s	**1.81**	**215**	Sg	**Sb**	**05 55 37.1**	**+0.2**
GOPC	**GO Pecny, Ondr**	**1.83**	**206**	*e*PG	**Pb**	**05 55 14.4**	**+0.2**
GOPC	comp=Z,37nm,0.7s			*e*SG	**Sb**	**05 55 37.4**	**-0.2**
GOPC	**GO Pecny, Ondr** 37nm,0.7s	**1.83**	**206**	Pg	**Pb**	**05 55 14.4**	**+0.2**
GOPC				Sg	**Sb**	**05 55 37.4**	**-0.2**
PRU	**Pruhonice** comp=Z,34nm,0.4s	**1.84**	**212**	*e*PG	**Pb**	**05 55 14.6**	**+0.3**
PRU				*e*SG	**Sb**	**05 55 37.6**	**-0.3**
PRU	**Pruhonice** 34nm,0.4s	**1.84**	**212**	Pg	**Pb**	**05 55 14.6**	**+0.3**
PRU				Sg	**Sb**	**05 55 37.6**	**-0.3**
CLL	**Collm**	**1.92**	**264**	*e*Pg	**Pg**	**05 55 17.0**	**+0.5**
CLL				*e*		05 55 21.0	
CLL	comp=Z,26nm,0.4s			*e*Sg	**Sg**	**05 55 43.0**	**+1.6**
OKC	**Ostrava-Krasne** comp=Z,26nm,0.8s	**2.19**	**141**	*e*SG	**Sn**	**05 55 46.5**	**+1.4**
NKC	**Novy Kostel**	**2.64**	**241**	*e*PN	**Pn**	**05 55 24.6**	**+1.0**
NKC				*e*PG	**Pg**	**05 55 30.5**	**+0.3**
NKC	comp=Z,55nm,0.3s			*e*SG	**Sg**	**05 56 05.2**	**+0.8**
NKC	**Novy Kostel**	**2.64**	**241**	Pn	**Pn**	**05 55 24.6**	**+1.0**
OJC	**Ojcow**	**2.73**	**118**	*e*Pg	**Pg**	**05 55 32.9**	**+0.8**
OJC				*e*Sg	**Sg**	**05 56 07.8**	**+0.3**
OJC	**Ojcow**	**2.73**	**118**	*e*Pg	**Pg**	**05 55 32.9**	**+0.8**
OJC				*e*Sg	**Sg**	**05 56 07.8**	**+0.3**
KHC	**Kasperske Hory**	**2.90**	**214**	*e*PN	**Pn**	**05 55 27.6**	**+0.4**
KHC				*e*PG	**Pb**	**05 55 33.7**	**+1.3**
KHC				*e*SN	**Sn**	**05 56 00.8**	**-2.0**
KHC	comp=Z,16nm,0.3s			*e*SG	**Sg**	**05 56 11.0**	**-1.9**
KHC	**Kasperske Hory**	**2.90**	**214**	Pn	**Pn**	**05 55 27.6**	**+0.4**
LANS	**Liptovska Anna**	**3.26**	**136**	*e*Pg	**Pg**	**05 55 43.3**	**+1.0**
LANS				*e*Sg	**Sg**	**05 56 23.3**	**-1.2**
LANS	**Liptovska Anna**	**3.26**	**136**	*e*PG	**Pg**	**05 55 43.3**	**+1.0**
LANS				*e*SG	**Sg**	**05 56 23.3**	**-1.2**
VYHS	**Vyhne**	**3.56**	**149**	*e*Pg	**Pg**	**05 55 50.5**	**+2.5**
VYHS				*e*Sg	**Sg**	**05 56 31.1**	**-3.1**
VYHS	**Vyhne**	**3.56**	**149**	*e*PN	**Pg**	**05 55 50.5**	**+2.5**
VYHS				*e*SN	**Sg**	**05 56 31.0**	**-3.1**
CONA	**Conrad Observa** comp=Z,0.1nm,0.0s	**3.64**	**182**	*i* Pn	**Pn**	**05 55 38.0**	**+0.6**
CONA	comp=Z,12nm,0.4s			*e*Sg	**Sg**	**05 56 34.2**	**-2.5**
CONA	**Conrad Observa** comp=Z,0.1nm,0.0s	**3.64**	**182**	Pn	**Pn**	**05 55 38.0**	**+0.6**
CONA	comp=Z,12nm,0.4s			Sg	**Sg**	**05 56 34.2**	**-2.5**
MOA	**Molln** comp=Z,0.8nm,0.2s	**3.89**	**198**	*i* Pn	**Pn**	**05 55 41.7**	**+0.9**
MOA	comp=Z,6.6nm,0.4s			Sg	**Sg**	**05 56 44.3**	**-0.4**
MOA	**Molln** comp=Z,0.8nm,0.2s	**3.89**	**198**	Pn	**Pn**	**05 55 41.7**	**+0.9**
MOA	comp=Z,6.6nm,0.4s			Sg	**Sg**	**05 56 44.3**	**-0.4**
STHS	**Stebnicka Huta**	**3.96**	**121**	*e*Pg	**Pg**	**05 55 56.5**	**+1.0**
STHS				*e*Sg	**Sg**	**05 56 47.9**	**+1.1**
STHS	**Stebnicka Huta**	**3.96**	**121**	*e*PG	**Pg**	**05 55 56.5**	**+1.0**
STHS				*e*SG	**Sg**	**05 56 47.9**	**+1.1**
STHS				*e*LG	Lg	05 57 00.1	
BJUU	**Bjuv**	**4.86**	**340**	P	**Pn**	**05 55 53.9**	**-0.1**
BJUU				S	**Sn**	**05 56 47.7**	**-3.3**
BJUU	**Bjuv**	**4.86**	**340**	P	**Pn**	**05 55 53.9**	**-0.1**
BJUU				S	**Sn**	**05 56 47.7**	**-3.3**
DEL	**Delary**	**5.08**	**346**	P	**Pn**	**05 55 57.2**	**+0.1**
DEL				S	**Sn**	**05 56 54.1**	**-2.3**
DEL	**Delary**	**5.08**	**346**	P	**Pn**	**05 55 57.2**	**+0.1**
DEL				S	**Sn**	**05 56 54.1**	**-2.3**
FABU	**Falkenberg**	**5.79**	**342**	P	**Pn**	**05 56 07.0**	**+0.2**
FABU	**Falkenberg**	**5.79**	**342**	P	**Pn**	**05 56 07.0**	**+0.2**
VIKU	**Vikbolandet**	**6.96**	**3**	P	**Pn**	**05 56 23.9**	**+1.0**
VIKU	**Vikbolandet**	**6.96**	**3**	P	**Pn**	**05 56 23.9**	**+1.0**

*CSEM **09** 06:11:15.6, 42°37N×13°40E, h10km, MD1.9/10*
ROM 09 06:11:15.6±0.1, 42°37N×13°40E, h10km±1km, Md1.9/10, Ml1.3/8, Error ellipse: s-maj=1.6km s-min=1.3km az=37.0, Central Italy

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
T0104	**Madonna delle**	**0.05**	**255**	Pg	Pg	06 11 17.8	+0.2
T0104				Sg	Sg	06 11 19.0	0.0
CAMP	**Campotosto** 35nm,0.4s	**0.16**	**2**	Pg	Pg	06 11 19.8	+0.6
CAMP				Sg	Sg	06 11 22.7	+0.9
CAMP	**Campotosto** 35nm,0.4s	**0.16**	**2**	Pg	Pg	06 11 19.8	+0.6
CAMP				Sg	Sg	06 11 22.7	+0.9
FAGN	**Fagnano** 27nm,0.3s	**0.17**	**128**	Pg	Pg	06 11 20.2	+0.9
FAGN				Sg	Sg	06 11 23.2	+1.3
FAGN	**Fagnano** 27nm,0.3s	**0.17**	**128**	Pg	Pg	06 11 20.2	+0.9
FAGN				Sg	Sg	06 11 23.2	+1.3
RM33	**Pellescritta (** 49nm,0.2s	**0.19**	**315**	Pg	Pg	06 11 20.4	+0.7
RM33				Sg	Sg	06 11 23.9	+1.3
RM33	**Pellescritta (** 49nm,0.2s	**0.19**	**315**	Pg	Pg	06 11 20.4	+0.7
RM33				Sg	Sg	06 11 23.9	+1.3
RM32	**Poggio Cancell** 27nm,0.4s	**0.21**	**338**	Pg	Pg	06 11 20.7	+0.6
RM32	**Poggio Cancell** 27nm,0.4s	**0.21**	**338**	Pg	Pg	06 11 20.7	+0.6
FIAM	**Fiamignano** 27nm,0.3s	**0.23**	**244**	Pg	Pg	06 11 20.9	+0.5
FIAM				Sg	Sg	06 11 25.0	+1.3
FIAM	**Fiamignano** 27nm,0.3s	**0.23**	**244**	Pg	Pg	06 11 20.9	+0.5
FIAM				Sg	Sg	06 11 25.0	+1.3
RM29	**Verrico (Monte** 5μm,2.4s	**0.24**	**322**	Pg	Pg	06 11 21.7	+1.2
RM29				Sg	Sg	06 11 25.9	+2.0
RM29	**Verrico (Monte** 5μm,2.4s	**0.24**	**322**	Pg	Pg	06 11 21.7	+1.2
RM29				Sg	Sg	06 11 25.9	+2.0
SMA1	**SAN MARTINO** 25nm,0.2s	**0.26**	**350**	Pg	Pg	06 11 21.6	+0.6
SMA1				Sg	Sg	06 11 25.7	+1.1
SMA1	**SAN MARTINO** 25nm,0.2s	**0.26**	**350**	Pg	Pg	06 11 21.6	+0.6
SMA1				Sg	Sg	06 11 25.7	+1.1
TERO	**Teramo**	**0.29**	**31**	Pg	Pg	06 11 21.8	+0.3
TERO	**Teramo**	**0.29**	**31**	Pg	Pg	06 11 21.8	+0.3
LNSS	**Leonessa** 19nm,0.4s	**0.35**	**311**	Pg	Pb	06 11 24.4	+0.3
LNSS				Sg	Sb	06 11 29.8	0.0
LNSS	**Leonessa** 19nm,0.4s	**0.35**	**311**	Pg	Pb	06 11 24.4	+0.3
LNSS				Sg	Sb	06 11 29.8	0.0
NRCA	**Norcia** 14nm,0.1s	**0.51**	**336**	Pg	Pg	06 11 25.8	+0.3
NRCA	**Norcia** 14nm,0.1s	**0.51**	**336**	Pg	Pg	06 11 25.8	+0.3

*ISCJB **09** 06:12:33.6±1.0, 51°51N±0°04×16°12E±0°04, h0km, Error ellipse: s-maj=6.5km s-min=3.7km az=14.7*
*CSEM **09** 06:12:35.4±0.3, 51°49N×16°14E, h1km, ML3.1/5*
*PRU **09** 06:12:36.5, 51°46N×16°12E, h0km*
ISC 09 06:12:35.5±1.2, 51°50N±0°06×16°13E±0°03, h0km, n21, σ0§44/40, **Poland**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KSP	**Ksiaz**	**0.67**	**171**	*e*Pg	**Pg**	**06 12 48.6**	**+0.4**
KSP				*e*Sg	**Sg**	**06 12 57.8**	**+0.9**
KSP	**Ksiaz**	**0.67**	**171**	*e*Pg	**Pg**	**06 12 48.6**	**+0.4**
KSP				*e*Sg	**Sg**	**06 12 57.8**	**+0.9**
UPC	**Upice**	**1.00**	**184**	*e*PG	**Pg**	**06 12 54.7**	**+0.1**
UPC	comp=Z,21nm,0.2s			*e*SG	**Sg**	**06 13 07.5**	**0.0**
UPC	**Upice** 21nm,0.2s	**1.00**	**184**	Pg	**Pg**	**06 12 54.7**	**+0.1**
UPC				Sg	**Sg**	**06 13 07.5**	**0.0**
DPC	**Dobruska-Polom**	**1.16**	**174**	*e*PG	**Pg**	**06 12 57.4**	**-0.3**
DPC	comp=Z,12nm,0.3s			*e*SG	**Sg**	**06 13 12.6**	**-0.1**
DPC	**Dobruska-Polom** 12nm,0.3s	**1.16**	**174**	Pg	**Pg**	**06 12 57.4**	**-0.3**
DPC				Sg	**Sg**	**06 13 12.6**	**-0.1**
PVCC	**Panska Ves**	**1.39**	**226**	*e*PG	**Pg**	**06 13 02

KHC *e*SG **Sg** **06 14 06.9 -1.2**

MEX 09 06:25:42.5±0.3,17°32'N×101°31'W,h10km±2km,MD3.8, Near coast of Guerrero

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ZIIG	**Zihuatanejo**	**0.33**	**333**	*i* P	Pg	06 25 48.7	-0.3
ZIIG				*e*S	Sg	06 25 53.2	-0.1
CAIG	**El Cayaco**	**1.03**	**105**	*e*P	Pg	06 25 59.2	-3.1
CAIG				*i* S	Sg	06 26 11.9	-3.8
ARIG	**Puente Sto Nin**	**1.32**	**44**	*i* P	Pn	06 26 03.3	-3.8
ARIG				*e*S	Sb	06 26 19.7	-4.9
ACX	**Acapulco**	**1.46**	**108**	*e*P	Pn	06 26 07.9	-1.0
ACX				*e*S	Sn	06 26 26.1	-2.0
MEIG	**Mezcala**	**1.72**	**69**	*e*P	Pn	06 26 09.8	-2.9
MEIG				*e*S	Sn	06 26 30.2	-4.6
PLIG	**Platanillo**	**2.02**	**58**	*e*P	Pn	06 26 13.4	-3.5
PLIG				*e*S	Sn	06 26 37.8	-4.5
TLIG	**Tlapa**	**2.63**	**84**	*e*P	Pn	06 26 22.0	-3.1
TLIG				*e*S	Sn	06 26 53.7	-3.5
YAIG	**Yautepec**	**2.63**	**54**	*e*P	Pn	06 26 22.3	-2.9
YAIG				*e*S	Sn	06 26 54.2	-3.1
EZ5V		**3.06**	**315**	*e*P	Pn	06 26 31.9	+0.6
R15V		**3.14**	**306**	*e*P	Pn	06 26 33.3	+1.2
R15V				*e*S	Sn	06 27 07.0	-2.8

NIED ***09*** *06:29:00,39.°00N×142.°60E,h8km,Mw4.1 Best double couple: M₀1.54000×10¹⁵ NP1:φs233.00000°,δ54.00000°, λ-152.00000°. NP2:φs125.00000°,δ67.00000°, λ-40.00000°.*

IDC ***09*** *06:29:36.9±0.7,38.°86N×142.°73E,h0km,mb4.0/16, mb1 4.2/20,mb1mx4.1/44,mbtmp4.0/20,ML3.4/4,MS2.7/2, Ms1 2.7/2,ms1mx2.4/44,Error ellipse: s-maj=19.0km s-min=14.1km az=128.0*

ISCJB ***09*** *06:29:37.7±1.0,38.°97N±0.°03×142.°63E±0.°05,h16km±6km, mb4.1/29,Error ellipse: s-maj=7.6km s-min=4.3km az=29.9*

MOS ***09*** *06:29:39.9±1.2,39.°00N×142.°69E,h34km,mb4.3/20,Error ellipse: s-maj=11.1km s-min=7.0km az=77.3*

JMA ***09*** *06:29:39.1±0.2,39.°00N×142.°56E,h25km±2km,M4.1*

JMA Felt I J1.

NEIC ***09*** *06:29:42.5±0.9,38.°92N×142.°65E,h39km±8km,mb4.6/6, Error ellipse: s-maj=11.3km s-min=5.9km az=120.0*

ISC 09 06:29:38.0±1.5,38°97'N±0'.04×142°55'E±0'.05,h7km±8km, n75,σ1§22/73,mb4.2/29,1D,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MIYJ	**Miyakonagasawa**	**0.83**	**317**	P	**Pg**	**06 29 53.8**	**-0.1**
MIYJ				*e*S	**Sg**	**06 30 04.8**	**+0.1**
JMK	**Ichinoseki**	**1.04**	**269**	P	**Pb**	**06 29 58.1**	**-0.1**
JMK				S	**Sb**	**06 30 11.8**	**-0.2**
JIO	**Ouri**	**1.07**	**242**	P	**Pg**	**06 29 58.1**	**-0.5**
JIO				S	**Sg**	**06 30 11.7**	**-0.8**
JOM	**Ohasama**	**1.10**	**298**	P	**Pg**	**06 29 58.8**	**-0.3**
JOM				S	**Sg**	**06 30 12.9**	**-0.4**
JKZ	**Kuzumaki**	**1.38**	**317**	P	**Pn**	**06 30 03.3**	**-0.5**
JKZ				*e*S	**Sb**	**06 30 20.6**	**-1.5**
JRG	**Rokugo**	**1.55**	**287**	P	**Pb**	**06 30 06.8**	**-0.2**
JOU	**Okura**	**1.59**	**248**	P	**Pn**	**06 30 06.9**	**+0.3**
JOU				*e*S	**Sn**	**06 30 26.8**	**-0.7**
JANG	**Nango**	**1.61**	**331**	P	**Pn**	**06 30 06.3**	**-0.6**
JANG				*e*S	**Sn**	**06 30 26.3**	**-1.6**
JYK	**Kaneyama**	**1.71**	**269**	P	**Pb**	**06 30 09.0**	**-0.7**
JMM	**Marumori**	**1.77**	**232**	P	**Pn**	**06 30 08.9**	**-0.1**
JMM				S	**Sn**	**06 30 29.9**	**-1.8**
JFK	**Kawauchi**	**2.08**	**220**	P	**Pn**	**06 30 12.4**	**-0.9**
JFK				S	**Sn**	**06 30 37.9**	**-1.5**
JYS	**Shirataka**	**2.08**	**250**	P	**Pb**	**06 30 14.7**	**-1.4**
JYS				*e*S	**Sn**	**06 30 40.1**	**+0.5**
JFT	**Otama**	**2.27**	**231**	P	**Pn**	**06 30 16.6**	**+0.7**
ERM	**Erimo**	**3.08**	**8**	*i* P	**Pn**	**06 30 26.8**	**-0.2**
ERM				pmax	pmax		
	comp=Z,41nm,0.7s						
ERM	**Erimo**	**3.08**	**8**	*e*Pn	**Pn**	**06 30 28.0**	**+1.0**
MAJO	**Matsushiro**	**4.21**	**236**	*e*P	**Pn**	**06 30 44.8**	**+2.2**
MAJO	**Matsushiro**	**4.21**	**236**	*e*Pn	**Pn**	**06 30 44.8**	**+2.2**
MAT	**Matsushiro**	**4.21**	**236**	P	**Pn**	**06 30 45.0**	**+2.4**
MAT				*e*S	**Sb**	**06 31 42.8**	**-0.6**
MJAR	**Matsushiro Arr**	**4.21**	**236**	Pn	**Pn**	**06 30 44.5**	**+1.9**
	comp=Z,8.6nm,0.3s,baz=38,slow=12,SNR=51						
MJAR				LR	LR	06 31 59.7	
	comp=Z,53nm,20.7s,baz=40,slow=34						
YUK	**Yuzh-Kuril'sk**	**5.64**	**25**	*e*P	**Pn**	**06 31 00.2**	**-1.9**
YUK				*e*S	Sn	06 32 00.6	-6.5
YUK				pmax	pmax		
	comp=Z,156nm,0.3s						
YUK				pmax	pmax		
	comp=E,143nm,0.5s						
YUK				pmax	pmax		
	comp=N,87nm,0.1s						
SHO	**Shikotan**	**5.86**	**32**	*e*P	**Pn**	**06 31 02.1**	**-3.1**
SHO				*e*S	Sn	06 32 04.3	-8.2
SHO				pmax	pmax		
	comp=Z,34nm,0.5s						
SHO				pmax	pmax		
	comp=N,33nm,0.6s						
KUR	**Kuril'sk**	**7.40**	**31**	*e*P	**Pn**	**06 31 24.0**	**-2.4**
KUR				S	Sn	06 32 43.5	-7.0
YSS	**Yuzh-Sakhalins**	**7.98**	**1**	*e*P	Pn	06 31 41.2	+6.9
YSS	**Yuzh-Sakhalins**	**7.98**	**1**	*e*Pn	Pn	06 31 37.5	+3.2
	comp=N,23nm,0.8s						
USRK	**Ussuriysk Ar.**	**9.48**	**307**	Pn	Pn	06 32 00.5	+5.6
	comp=N,0.2nm,0.3s,baz=119,slow=16,SNR=6.8						
JNU	**Nakatsue**	**11.10**	**242**	Pn	**Pn**	**06 32 19.9**	**+2.7**
	comp=N,0.2nm,0.3s,baz=0.0,slow=5.1,SNR=2.5						
KSRS	**Korea Array**	**11.61**	**267**	Pn	**Pn**	06 32 27.9	+3.9
	comp=N,0.2nm,0.3s,baz=83,slow=14,SNR=5.8						
KSRS				LR	LR	06 36 21.1	
	comp=N,60nm,18.8s,baz=89,slow=34						
KSAR	**Wonju Array Be**	**11.64**	**267**	P	Pn	06 32 27.9	+3.4
KSAR	**Wonju Array Be**	**11.64**	**267**	Pn	Pn	06 32 27.9	+3.4
KLR	**Kul'dur**	**12.85**	**326**	Pn	**Pn**	**06 32 42.9**	**+2.0**
	comp=N,0.1nm,0.3s,baz=138,slow=14,SNR=3.1						
NKL	**Nikolayevsk**	**14.24**	**355**	*e*P	Pn	06 32 54.0	-5.9
MA2	**Magadan**	**21.28**	**12**	P	**P**	**06 34 25.2**	**+0.4**
	comp=N,8.2nm,0.6s,baz=222,slow=9.6,SNR=11						
MA2	**Magadan**	**21.28**	**12**	*e*P	**P**	**06 34 25.0**	**+0.3**
MA2				pmax	pmax		
	comp=Z,32nm,0.6s						
MA2	**Magadan**	**21.28**	**12**	*e*P	**P**	**06 34 25.0**	**+0.3**
	comp=Z,32nm,0.6s						
YAK	**Yakutsk**	**24.40**	**345**	P	P	06 35 01.8	+5.2
	comp=Z,16nm,0.4s,baz=317,slow=5.5,SNR=4.9						
YAK	**Yakutsk**	**24.40**	**345**	*e*P	P	06 35 02.9	+6.2
YAK				pmax	pmax		
	comp=Z,28nm,1.0s						
YAK				pmax	pmax		
	comp=N,22nm,1.3s						
SEY	**Seymchan**	**24.72**	**11**	P	**P**	**06 35 01.4**	**+1.8**
	comp=N,5.0nm,0.7s,baz=203,slow=7.5,SNR=17						
SEY	**Seymchan**	**24.72**	**11**	*i* P	**P**	**06 34 59.7**	**+0.1**
BOD	**Bodaibo**	**26.42**	**325**	*e*P	**P**	**06 35 14.7**	**-0.3**
BOD				pmax	pmax		
	comp=Z,4.0nm,1.0s						
SONM	**Songino Array**	**27.51**	**301**	P	**P**	**06 35 27.4**	**+2.3**
	comp=Z,0.7nm,0.6s,baz=101,slow=7.7,SNR=3.6						
H11N2	**WAKE ISLAND Hy**	**28.45**	**125**	T	T	07 05 17.2	
	baz=318,slow=74,SNR=312						
H11N1	**WAKE ISLAND Hy**	**28.46**	**125**	T	T	07 05 18.8	
	baz=318,slow=74,SNR=254						
H11N3	**WAKE ISLAND Hy**	**28.47**	**125**	T	T	07 05 20.6	
	baz=318,slow=74,SNR=342						
H11S1	**WAKE ISLAND Hy**	**29.24**	**127**	T	T	07 06 38.0	
	baz=319,slow=76,SNR=35						
H11S3	**WAKE ISLAND Hy**	**29.24**	**127**	T	T	07 06 22.9	
	baz=319,slow=76,SNR=39						
H11S2	**WAKE ISLAND Hy**	**29.26**	**127**	T	T	07 06 20.4	
	baz=319,slow=76,SNR=30						
ZAK	**Zakamensk**	**29.82**	**305**	*e*P	**P**	**06 35 45.1**	**-0.6**
ZAK				pmax	pmax		
	comp=Z,2.0nm,1.3s						
BILL	**Bilibino**	**31.92**	**17**	*e*P	**P**	**06 36 04.6**	**+0.8**
BILL				pmax	pmax		
	comp=Z,1.0nm,0.9s						
ZALV	**Zalesovo Beam**	**41.30**	**311**	P	**P**	**06 37 24.2**	**+0.3**
	comp=Z,1.2nm,0.5s,baz=94,slow=7.5,SNR=6.0						
MKAR	**Makanchi Array**	**43.88**	**301**	P	**P**	**06 37 45.6**	**+0.6**
	comp=Z,2.0nm,0.8s,baz=83,slow=9.9,SNR=12						
KURK	**Kurchatov**	**45.47**	**307**	*e*P	**P**	**06 37 57.4**	**-0.1**
KURK				pmax	pmax		
	comp=Z,11nm,0.8s						
KURK	**Kurchatov**	**45.47**	**307**	*e*P	**P**	**06 37 57.4**	**-0.1**
	comp=Z,11nm,0.8s						
COLA	**College**	**46.97**	**33**	*e*P	**P**	**06 38 08.7**	**-0.4**
COLA				pmax	pmax		
	comp=Z,3.0nm,1.0s						
ILAR	**Eielson Array**	**47.38**	**33**	P	**P**	**06 38 13.1**	**+0.6**
	comp=Z,3.0nm,0.7s,baz=269,slow=6.5,SNR=33						
BRVK	**Borovoye**	**50.00**	**311**	*e*P	**P**	**06 38 32.8**	**+0.1**
BRVK				pmax	pmax		
	comp=Z,1.0nm,0.9s						
AAK	**Ala-Archa**	**50.38**	**297**	*e*P	**P**	**06 38 36.2**	**+0.3**
AAK				pmax	pmax		
	comp=Z,2.0nm,0.9s						
INK	**Inuvik**	**52.26**	**28**	P	**P**	**06 38 50.6**	**+1.3**
	comp=Z,2.9nm,0.5s,baz=303,slow=7.1,SNR=27						
ARU	**Arti**	**55.52**	**318**	*d i* P	**P**	**06 39 14.0**	**+0.6**
ARU						06 41 17.0	
ARU				S	**S**	**06 46 59.8**	**+1.1**
ARU				SS	**SS**	**06 50 39.2**	**-3.7**
ARU				pmax	pmax		
	comp=Z,8.0nm,1.7s						
ABKAR	**Akbulak array**	**57.39**	**310**	*e*P	**P**	**06 39 26.7**	**-0.1**
	comp=Z,2.1nm,0.5s						
WRAB	**Tennant Creek**	**59.09**	**189**	*e*P	**P**	**06 39 38.7**	**-0.3**
WRAB				pmax	pmax		
	comp=Z,7.0nm,0.9s						
WRAB	**Tennant Creek**	**59.09**	**189**	*e*P	**P**	**06 39 38.7**	**-0.3**
	comp=Z,7.0nm,0.9s						
WRA	**Warramunga Arr**	**59.11**	**189**	P	**P**	**06 39 38.6**	**-0.5**
	comp=Z,1.3nm,0.4s,baz=6.7,slow=6.9,SNR=36						
RES	**Resolute Bay**	**60.50**	**15**	P	**P**	**06 39 47.8**	**-0.3**
	comp=Z,2.0nm,0.8s,baz=312,slow=6.3,SNR=12						
YKA	**Yellowknife Ar**	**61.69**	**31**	P	**P**	**06 39 56.6**	**+0.4**
	comp=Z,0.8nm,0.7s,baz=303,slow=6.7,SNR=18						
ASAR	**Alice Springs**	**62.83**	**189**	P	**P**	**06 40 03.5**	**-0.9**
	comp=Z,0.8nm,0.6s,baz=5.3,slow=4.8,SNR=9.0						
FINES	**FINESS Array B**	**67.52**	**332**	P	**P**	**06 40 35.9**	**+1.5**
	comp=Z,1.5nm,0.9s,baz=141,slow=31,SNR=3.3						
FFC	**Flin Flon**	**71.59**	**33**	*e*P	**P**	**06 40 59.8**	**+0.1**
FFC				pmax	pmax		
	comp=Z,2.0nm,0.8s						
FFC	**Flin Flon**	**71.59**	**33**	*e*P	**P**	**06 40 59.8**	**+0.1**
	comp=Z,2.3nm,0.8s						
FCC	**Fort Churchill**	**71.87**	**27**	*e*P	**P**	**06 41 01.0**	**-0.2**
FCC				pmax	pmax		
	comp=Z,2.0nm,0.8s						
FCC	**Fort Churchill**	**71.87**	**27**	*e*P	**P**	**06 41 01.0**	**-0.2**
	comp=Z,2.0nm,0.8s						
NVAR	**Mina Array Bea**	**73.12**	**54**	P	**P**	**06 41 09.1**	**-0.3**
	comp=Z,1.6nm,0.9s,baz=288,slow=7.2,SNR=7.9						
AKASG	**Malin Array Be**	**73.31**	**322**	P	**P**	**06 41 09.8**	**-0.2**
	comp=Z,0.9nm,0.5s,baz=47,slow=6.2,SNR=4.5						
PDAR	**Pinedale Array**	**75.68**	**46**	P	**P**	**06 41 24.1**	**-0.2**
	comp=Z,0.6nm,0.7s,baz=233,slow=0.9,SNR=6.9						
ANMO	**Albuquerque**	**82.66**	**51**	*e*P	**P**	**06 42 03.2**	**+0.7**
ANMO				pmax	pmax		
	comp=Z,2.0nm,1.2s						
TXAR	**Lajitas Array**	**88.24**	**53**	P	**P**	**06 42 28.3**	**-2.0**
	comp=Z,0.2nm,0.6s,baz=307,slow=3.6,SNR=3.6						

NIED ***09*** *06:33:00,36.°50N×142.°50E,h8km,Mw3.9 Best double couple: M₀9.05000×10¹⁴ NP1:φs30.00000°,δ52.00000°, λ40.00000°. NP2:φs272.00000°,δ59.00000°,λ134.00000°.*

ISCJB ***09*** *06:33:09.7±0.7,37.°0N±0.°1×142.°32E±0.°08,h9km, mb3.7/11,MS3.6/2,Error ellipse: s-maj=17.3km s-min=7.0km az=159.0*

IDC ***09*** *06:33:10.4±0.8,37.°12N×142.°53E,h0km,mb3.7/11, mb1 3.9/12,mb1mx3.7/43,mbtmp3.7/12,ML3.4/1,MS3.4/3, Ms1 3.5/3,ms1mx2.7/47,Error ellipse: s-maj=23.3km s-min=18.6km az=101.0*

JMA ***09*** *06:33:24.6±0.6,36.°65N×141.°71E,h11km,M3.1*

ISC 09 06:33:11.1±1.0,37°0N±0°2×142°3E±0°1,h9km,n19, σ1§40/14,mb3.8/11,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHO	**Hitachi**	**1.45**	**255**	*e*S	**Sn**	**06 33 54.6**	**-2.0**
MJAR	**Matsushiro Arr**	**3.32**	**263**	Pn	**Pn**	**06 34 02.1**	**-1.1**
	7.5nm,0.3s,baz=91,slow=9.8,SNR=24						
MAT	**Matsushiro**	**3.32**	**263**	P	**Pn**	**06 34 02.3**	**-1.0**
MAT				*e*S	**Sn**	**06 34 43.3**	**+0.4**
USRK	**Ussuriysk Ar.**	**10.63**	**316**	Pn	Pn	06 35 51.1	+7.6
	0.2nm,0.3s,baz=137,slow=42,SNR=2.9						
KSRS	**Korea Array**	**11.48**	**277**	Pn	Pn	06 35 58.4	+3.3
	0.2nm,0.3s,baz=96,slow=12,SNR=3.7						
KLR	**Kul'dur**	**14.43**	**331**	LR	LR	06 42 13.8	
	comp=Z,49nm,20.2s,baz=143,slow=38						
SEY	**Seymchan**	**26.68**	**10**	P	**P**	**06 38 50.7**	**+0.5**
	0.7nm,0.3s,baz=293,slow=23,SNR=3.6						
SONM	**Songino Array**	**28.39**	**304**	P	**P**	**06 39 06.7**	**+0.9**
	1.9nm,0.8s,baz=106,slow=8.5,SNR=9.1						
CMAR	**Chiang Mai Arr**	**42.18**	**256**	LR	LR	06 58 22.7	
	comp=Z,77nm,19.3s,baz=322,slow=36						
ZALV	**Zalesovo Beam**	**42.46**	**312**	P	**P**	**06 41 06.1**	**0.0**
	0.3nm,0.3s,baz=46,slow=8.3,SNR=2.8						
MKAR	**Makanchi Array**	**44.74**	**302**	P	**P**	**06 41 26.4**	**+1.7**
	1.1nm,0.9s,baz=88,slow=9.0,SNR=6.1						
ILAR	**Eielson Array**	**49.13**	**32**	P	**P**	**06 41 57.5**	**-1.2**
	0.6nm,0.8s,baz=261,slow=6.8,SNR=5.5						
WRA	**Warramunga Arr**	**57.14**	**189**	P	**P**	**06 42 59.2**	**+1.1**
	0.5nm,0.4s,baz=22,slow=7.3,SNR=9.9						
AKTO	**Aktyubinsk**	**59.22**	**312**	LR	LR	07 12 47.4	
	comp=Z,44nm,18.2s,baz=5.2,slow=40						
ASAR	**Alice Springs**	**60.87**	**189**	P	P	06 43 26.3	+2.3
	0.3nm,0.5s,baz=8.8,slow=15,SNR=3.9						
RES	**Resolute Bay**	**62.45**	**15**	P	**P**	**06 43 33.3**	**-0.7**
	0.9nm,1.0s,baz=286,slow=7.4,SNR=3.5						
YKA	**Yellowknife Ar**	**63.47**	**30**	P	**P**	**06 43 39.0**	**-2.0**
	0.3nm,0.8s,baz=297,slow=6.4,SNR=4.1						
FINES	**FINESS Array B**	**69.17**	**333**	P	**P**	**06 44 19.5**	**+1.9**
	2.5nm,1.0s,baz=186,slow=11,SNR=2.8						
TXAR	**Lajitas Array**	**89.57**	**53**	P	**P**	**06 46 09.8**	**+0.4**
	0.2nm,0.7s,baz=289,slow=5.5,SNR=2.6						

IDC 09 06:40:07.0±2.4,16°28S×173°32W,h0km,mb3.7/5, mb1 4.0/6,mb1mx3.7/36,mbtmp3.6/6,ML3.4/1,MS3.3/2, Ms1 3.3/2,ms1mx2.7/37,Error ellipse: s-maj=137.7km s-min=21.8km az=146.0,Tonga Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AFI	**Afiamalu**	**2.79**	**33**	Pn	Pn	06 40 51.5	-1.5
	5.6nm,0.3s,baz=233,slow=4.4,SNR=9.1						
AFI				Sn	Sn	06 41 18.7	-8.6
	26nm,0.3s,baz=50,slow=21,SNR=12						
AFI				LR	LR	06 41 53.9	
	comp=Z,237nm,20.6s,baz=178,slow=38						
WRA	**Warramunga Arr**	**49.72**	**257**	P	P	06 49 01.1	-0.4
	0.2nm,0.5s,baz=95,slow=7.0,SNR=6.4						
ASAR	**Alice Springs**	**49.92**	**253**	P	P	06 49 02.1	-0.8
	1.0nm,0.6s,baz=90,slow=8.0,SNR=18						
ASAR				LR	LR	07 08 52.2	
	comp=Z,62nm,18.2s,baz=105,slow=35						
NVAR	**Mina Array Bea**	**74.93**	**42**	P	P	06 51 49.7	-0.6
	0.8nm,0.8s,baz=243,slow=9.8,SNR=4.5						
PDAR	**Pinedale Array**	**82.86**	**42**	P	P	06 52 33.9	0.0
	0.6nm,0.8s,baz=188,slow=3.0,SNR=6.3						
YKA	**Yellowknife Ar**	**90.87**	**23**	P	P	06 53 12.8	+0.7
	0.2nm,0.8s,baz=232,slow=4.0,SNR=3.9						
BRTR	**Keskin Array B**	**146.88**	**320**	PKPbc	PKPab	06 59 53.0	-0.2
	0.6nm,0.6s,baz=90,slow=2.5,SNR=3.8						

IDC ***09*** *06:50:58.8±1.1,26.°52N×143.°56E,h0km,mb3.7/6, mb1 3.8/7,mb1mx3.6/46,mbtmp3.7/7,Error ellipse: s-maj=25.7km s-min=21.8km az=41.0*

ISCJB ***09*** *06:51:02.3±1.0,26.°5N±0.°1×143.°6E±0.°1,h38km,mb3.6/6, Error ellipse: s-maj=21.4km s-min=12.2km az=21.3*

ISC 09 06:51:04.3±1.1,26°5N±0°2×143°5E±0°1,h38km,n9, σ1§10/9,mb3.7/6,Bonin Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JCJ	**Chichijima**	**1.32**	**295**	Pn	**Pn**	**06 51 25.4**	**-0.8**
JCJ				Sn	**Sn**	**06 51 43.5**	**+1.0**
MJAR	**Matsushiro Arr**	**10.95**	**337**	Pn	Pn	06 53 33.6	-4.8
	0.5nm,0.3s,baz=146,slow=12,SNR=4.5						
USRK	**Ussuriysk Ar.**	**19.94**	**335**	P	**Pn**	**06 55 34.2**	**-0.5**
	baz=153,slow=11,SNR=3.6						
KLR	**Kul'dur**	**24.43**	**341**	P	**P**	**06 56 19.6**	**+0.4**
	2.1nm,0.8s,baz=138,slow=6.7,SNR=6.9						
WRA	**Warramunga Arr**	**47.05**	**192**	P	**P**	**06 59 32.2**	**0.0**
	0.5nm,0.4s,baz=16,slow=8.7,SNR=12						
MKAR	**Makanchi Array**	**51.75**	**310**	P	**P**	**07 00 06.6**	**-1.3**
	0.6nm,0.7s,baz=92,slow=8.7,SNR=3.7						
ILAR	**Eielson Array**	**57.63**	**28**	P	**P**	**07 00 49.9**	**-0.4**
	0.5nm,0.9s,baz=268,slow=6.9,SNR=3.8						
YKA	**Yellowknife Ar**	**72.06**	**29**	P	**P**	**07 02 24.3**	**+0.2**
	0.3nm,0.8s,baz=293,slow=6.5,SNR=4.7						
AKASG	**Malin Array Be**	**83.77**	**324**	P	**P**	**07 03 31.2**	**+1.8**
	0.4nm,0.4s,baz=47,slow=9.4,SNR=4.2						

IDC 09 07:05:49.7±2.4,12°26S×167°67E,h0km,mb4.1/7, mb1 4.3/7,mb1mx3.9/43,mbtmp4.0/7,Error ellipse: s-maj=103.0km s-min=23.7km az=144.0,Santa Cruz Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**32.87**	**252**	P	P	07 12 25.7	0.0
	0.9nm,0.5s,baz=84,slow=8.9,SNR=13						
ASAR	**Alice Springs**	**33.97**	**246**	P	P	07 12 35.2	-0.1
	1.2nm,0.7s,baz=73,slow=9.6,SNR=16						
FITZ	**Fitzroy Crossi**	**40.91**	**256**	P	P	07 13 34.9	+0.8
	1.1nm,0.3s,baz=63,slow=11,SNR=4.9						
CMAR	**Chiang Mai Arr**	**74.32**	**293**	P	P	07 17 29.2	-0.4
	1.6nm,0.8s,baz=119,slow=5.1,SNR=8.4						
ILAR	**Eielson Array**	**84.07**	**18**	P	P	07 18 23.4	+1.4
	1.5nm,0.7s,baz=248,slow=5.1,SNR=26						
YKA	**Yellowknife Ar**	**95.18**	**27**	P	P	07 19 14.1	-0.7
	0.2nm,0.6s,baz=258,slow=4.9,SNR=6.4						
MKAR	**Makanchi Array**	**95.69**	**317**	P	P	07 19 16.7	-0.9
	1.0nm,0.6s,baz=98,slow=6.2,SNR=3.9						
ARCES	**ARCESS Array B**	**117.97**	**346**	PKP	PKPdf	07 24 36.3	-1.6
	0.9nm,0.6s,baz=93,slow=2.4,SNR=7.1						

ISCJB ***09*** *07:14:27.6±0.5,24.°45N±0.°04×122.°00E±0.°03, h18km±11km,Error ellipse: s-maj=7.1km s-min=4.7km az=164.5*

JMA ***09*** *07:14:27.3,24.°36N×121.°95E,h31km*

TAP ***09*** *07:14:28.0,24.°45N×121.°92E,h12km,ML2.7,D*

ISC 09 07:14:27.2±0.9,24°44N±0°04×121°99E±0°03,h16km±8km, n15,σ0§29/25,2C-1D,Taiwan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TWC	**Suao**	**0.22**	**323**	*i* P	**Pg**	**07 14 32.5**	**+0.2**
	baz=339						
TWC				S	**Sg**	**07 14 35.4**	**-0.3**
	baz=339						
ENA	**Nanau**	**0.23**	**268**	*i* P	**Pg**	**07 14 32.5**	**+0.1**
	baz=260						
ENA				*i* S	**Sg**	**07 14 35.6**	**-0.4**
	baz=260						
TWE	**Neicheng**	**0.41**	**314**	*e*P	**Pb**	**07 14 36.2**	**+0.1**
	baz=320						
TWE				*e*S	**Sg**	**07 14 41.5**	**+0.2**
	baz=320						
TWD	**Chiawan**	**0.51**	**226**	*e*P	**Pb**	**07 14 37.6**	**-0.1**
	baz=218						
TWD				*e*S	**Sg**	**07 14 44.4**	**+0.2**
	baz=218						
NNS	**Nan Shan**	**0.56**	**271**	P	**Pb**	**07 14 38.7**	**-0.1**
	baz=268						
NNS				S	**Sg**	**07 14 46.1**	**0.0**
	baz=268						
HWA	**Hwalien**	**0.58**	**218**	*e*P	**Pb**	**07 14 39.0**	**+0.1**
	baz=210						
NSK	**Sanguang**	**0.62**	**293**	*e*P	**Pb**	**07 14 40.4**	**+0.5**
	baz=293						
NSK				*e*S	**Sg**	**07 14 47.9**	**-0.1**
	baz=293						
NWF	**Wu-fen Shan**	**0.66**	**343**	*e*P	**Pn**	**07 14 41.6**	**-0.4**
	baz=348						
WHF	**Hehuan Shan**	**0.72**	**247**	P	**Pg**	**07 14 41.5**	**0.0**
	baz=242						
WHF				*e*S	**Sb**	**07 14 51.6**	**0.0**
	baz=242						
TWT	**Tachien**	**0.77**	**257**	*e*P	**Pn**	**07 14 43.1**	**-0.4**
	baz=253						
TWT				*e*S	**Sb**	**07 14 53.0**	**+0.5**
	baz=253						
JYNG	**Yonagunijimaku**	**0.87**	**89**	P	**Pb**	**07 14 43.9**	**0.0**
JYNG				*e*S	**Sb**	**07 14 55.4**	**+0.1**
YOJ	**Yonaguni jima**	**0.93**	**88**	P	**Pb**	**07 14 45.0**	**0.0**
WDT	**Danda**	**1.04**	**229**	*e*P	**Pg**	**07 14 47.6**	**+0.3**
	baz=225						
IRIF	**Iriomote-Funau**	**1.59**	**93**	P	**Pn**	**07 14 54.4**	**-0.3**
JKRS	**Kuro-shima**	**1.85**	**96**	P	**Pn**	**07 14 58.7**	**+0.4**
JKRS				*e*S	**Sn**	**07 15 21.0**	**-0.3**

WEL 09 07:20:24.8±0.4,36°30S×177°20E,h245km±7km,ML3.6/8, 1C-1D,Error ellipse: s-maj=10.5km s-min=9.4km az=90.0,Off east coast of North Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HAZ	**Te Kaha**	**1.53**	**162**	PN	Pn	07 21 02.7	-0.1
HAZ				SN	S	07 21 31.7	-1.0
**M

HELC	**Santa Helena**	**7.13**	**89**	*eP*	**Pn**	**07 29 47.7**	**+0.7**
CRUC	**La Cruz**	**7.28**	**128**	*eP*	**Pn**	**07 29 50.3**	**+1.2**
GUYC	**Guyana, Colomb**	**7.32**	**96**	*eP*	**Pn**	**07 29 52.8**	**+3.1**

NIED ***09*** *07:28:00, 36.60N×141.00E, h50km, Mw3.9 Best double couple: M₀9.08000×10¹⁴ NP1:φs177.00000°, δ25.00000°, λ53.00000°. NP2:φs36.00000°, δ70.00000°, λ105.00000°.*
ISCJB ***09*** *07:28:37.1±0.9, 36.61N±0.05×141.10E±0.08, h47km±6km, mb3.9/17, MS3.4/2, Error ellipse: s-maj=11.9km s-min=5.9km az=30.9*
JMA ***09*** *07:28:38.5±0.1, 36.65N×140.99E, h48km±1km, M3.8*
JMA Felt III J1.
IDC ***09*** *07:28:42.9±2.1, 36.60N×140.86E, h84km±18km, mb3.7/17, mb1 3.8/20, mb1mx3.7/50, mbtmp4.0/20, MS3.1/4, Ms1 3.1/4, ms1mx2.6/48, Error ellipse: s-maj=17.7km s-min=13.9km az=109.0*
ISC 09 07:28:38.1±1.1, 36.62N±0.07×141.1E±0.1, h40km±9km, n41, σ1§16/40, mb3.9/17, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JHO	**Hitachi**	**0.44**	**270**	P	**Pn**	**07 28 47.9**	**-0.1**
JHO				S	**Sn**	**07 28 54.2**	**-0.8**
ONAJ	**Iwakimizuishiy**	**0.55**	**333**	P	**Pn**	**07 28 49.1**	**-0.5**
ONAJ				*eS*	**Sn**	**07 28 56.6**	**-1.0**
JFK	**Kawauchi**	**0.77**	**346**	P	**Pn**	**07 28 52.0**	**-0.6**
JFK				S	**Sn**	**07 29 01.6**	**-1.5**
JYT	**Yasato**	**0.84**	**243**	P	**Pn**	**07 28 52.9**	**-0.5**
JYT				S	**Sn**	**07 29 03.2**	**-1.3**
JFT	**Otama**	**1.09**	**326**	P	**Pn**	**07 28 57.2**	**+0.2**
JFT				S	**Sn**	**07 29 10.3**	**-0.6**
JMM	**Marumori**	**1.27**	**349**	P	**Pn**	**07 28 59.2**	**-0.2**
JMM				S	**Sn**	**07 29 14.5**	**-0.8**
JAG	**Ashikaga**	**1.35**	**262**	P	**Pn**	**07 28 59.9**	**-0.6**
JAG				S	**Sn**	**07 29 15.3**	**-1.9**
JFY	**Yanaizu**	**1.38**	**305**	P	**Pn**	**07 29 00.4**	**-0.5**
JKT	**Katashina**	**1.50**	**276**	P	**Pn**	**07 29 02.4**	**-0.3**
MJAR	**Matsushiro Arr**	**2.34**	**269**	P	**Pn**	**07 29 14.4**	**+0.4**
	38nm,0.3s,baz=89,slow=14,SNR=255						
MJAR				LR	LR	07 29 39.2	
	comp=Z,25nm,22.0s,baz=115,slow=27						
MJAR				S	**Sn**	**07 29 42.9**	**+1.3**
	21nm,0.3s,baz=98,slow=27,SNR=10						
MAT	**Matsushiro**	**2.34**	**269**	P	**Pn**	**07 29 14.6**	**+0.5**
MAT				S	**Sn**	**07 29 43.8**	**+2.2**
JNU	**Nakatsue**	**9.10**	**250**	LR	LR	07 34 19.0	
	comp=Z,48nm,19.3s,baz=296,slow=38						
USRK	**Ussuriysk Ar.**	**10.28**	**320**	P	**Pn**	**07 31 05.5**	**+2.5**
	0.2nm,0.3s,baz=125,slow=12,SNR=5.4						
KSRS	**Korea Array**	**10.58**	**278**	LR	LR	07 34 56.0	
	comp=Z,46nm,18.5s,baz=102,slow=36						
KLR	**Kul'dur**	**14.34**	**334**	P	**Pn**	**07 31 59.5**	**+1.2**
	0.1nm,0.3s,baz=89,slow=15,SNR=4.0						
MA2	**Magadan**	**23.81**	**12**	P	**P**	**07 33 48.0**	**+1.0**
	3.7nm,0.7s,baz=217,slow=14,SNR=4.9						
SEY	**Seymchan**	**27.25**	**11**	P	**P**	**07 34 21.2**	**+3.0**
	3.9nm,0.7s,baz=201,slow=8.0,SNR=14						
SONM	**Songino Array**	**27.82**	**305**	P	**P**	**07 34 23.5**	**-0.1**
	1.2nm,0.6s,baz=103,slow=8.1,SNR=7.0						
H11N2	**WAKE ISLAND Hy**	**28.15**	**120**	T	T	08 04 29.0	
	baz=313,slow=75,SNR=105						
H11N1	**WAKE ISLAND Hy**	**28.15**	**120**	T	T	08 04 29.4	
	baz=313,slow=75,SNR=72						
H11N3	**WAKE ISLAND Hy**	**28.16**	**120**	T	T	08 04 30.5	
	baz=313,slow=75,SNR=62						
H11S1	**WAKE ISLAND Hy**	**28.84**	**122**	T	T	08 05 21.9	
	baz=314,slow=76,SNR=170						
H11S3	**WAKE ISLAND Hy**	**28.84**	**122**	T	T	08 05 22.1	
	baz=314,slow=76,SNR=105						
H11S2	**WAKE ISLAND Hy**	**28.86**	**122**	T	T	08 05 23.1	
	baz=314,slow=76,SNR=118						
ZALV	**Zalesovo Beam**	**42.02**	**313**	P	**P**	**07 36 24.6**	**-0.8**
	5.5nm,0.6s,baz=94,slow=7.1,SNR=20						
MKAR	**Makanchi Array**	**44.14**	**302**	P	**P**	**07 36 41.8**	**-0.8**
	1.0nm,0.6s,baz=87,slow=9.9,SNR=9.0						
KAPI	**Kappang**	**45.98**	**210**	LR	LR	07 54 56.5	
	comp=Z,32nm,20.7s,baz=319,slow=34						
KURBB	**Kurchatov Arra**	**46.07**	**308**	P	**P**	**07 36 56.2**	**-1.7**
	2.1nm,0.4s,baz=82,slow=7.6,SNR=31						
ILAR	**Eielson Array**	**49.98**	**32**	P	**P**	**07 37 28.6**	**+0.7**
	0.7nm,0.7s,baz=270,slow=6.3,SNR=12						
AAK	**Ala-Archa**	**50.48**	**299**	LR	LR	07 59 58.7	
	comp=Z,56nm,18.0s,baz=51,slow=37						
INK	**Inuvik**	**54.87**	**27**	P	**P**	**07 38 04.8**	**+0.8**
	0.5nm,0.5s,baz=287,slow=6.2,SNR=7.1						
WRA	**Warramunga Arr**	**56.61**	**188**	P	**P**	**07 38 16.7**	**-0.3**
	1.5nm,0.5s,baz=5.1,slow=7.3,SNR=30						
ASAR	**Alice Springs**	**60.34**	**189**	P	**P**	**07 38 43.1**	**+0.1**
	0.8nm,0.7s,baz=16,slow=6.2,SNR=9.4						
YKA	**Yellowknife Ar**	**64.29**	**30**	P	**P**	**07 39 09.6**	**+0.6**
	0.2nm,0.7s,baz=302,slow=6.6,SNR=6.9						
ARCES	**ARCESS Array B**	**64.30**	**339**	P	**P**	**07 39 08.9**	**-0.1**
	1.2nm,0.6s,baz=67,slow=3.2,SNR=3.8						
FINES	**FINESS Array B**	**69.07**	**332**	P	**P**	**07 39 38.8**	**-0.7**
	2.2nm,0.7s,baz=69,slow=10,SNR=6.9						
NB2	**NORSAR Subarra**	**74.48**	**337**	P	**P**	**07 40 11.5**	**-0.5**
	comp=Z,1.0nm,0.6s,baz=40,slow=5.9						
NOA	**NORSAR Array B**	**74.49**	**337**	P	**P**	**07 40 11.2**	**-0.8**
	comp=Z,0.8nm,0.7s,baz=43,slow=5.5,SNR=6.9						
AKASG	**Malin Array Be**	**74.48**	**322**	P	**P**	**07 40 11.2**	**-1.0**
	comp=Z,1.6nm,0.4s,baz=45,slow=6.2,SNR=14						
NVAR	**Mina Array Bea**	**75.43**	**53**	P	**P**	**07 40 19.0**	**+0.8**
	comp=Z,0.3nm,0.5s,baz=292,slow=4.8,SNR=3.1						
GERES	**GERESS Array B**	**82.94**	**328**	P	**P**	**07 40 57.2**	**-1.7**
	comp=Z,0.5nm,0.5s,baz=59,slow=8.4,SNR=4.1						

IDC ***09*** *07:37:34.3±1.2, 37.35N×141.61E, h0km, mb3.4/6, mb1 3.5/7, mb1mx3.4/53, mbtmp3.4/7, ML3.0/1, MS3.1/1, Ms1 3.1/1, ms1mx2.2/35, Error ellipse: s-maj=26.3km s-min=25.2km az=139.0*
ISCJB ***09*** *07:37:42.0±1.0, 37.30N±0.07×141.3E±0.1, h69km±5km, mb3.3/6, Error ellipse: s-maj=18.4km s-min=10.6km az=13.2*
JMA ***09*** *07:37:43.8±0.1, 37.33N×141.18E, h63km±1km, M3.4*
ISC 09 07:37:42.3±1.4, 37.31N±0.07×141.4E±0.1, h57km±10km, n22, σ1§03/20, mb3.4/6, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JFK	**Kawauchi**	**0.43**	**278**	P	**Pn**	**07 37 53.9**	**+0.5**
JFK				S	**Sn**	**07 38 01.0**	**-0.4**
ONAJ	**Iwakimizuishiy**	**0.53**	**247**	P	**Pn**	**07 37 55.0**	**+0.5**
ONAJ				S	**Sn**	**07 38 03.2**	**-0.1**
JMM	**Marumori**	**0.74**	**319**	P	**Pn**	**07 37 57.3**	**+0.4**
JMM				S	**Sn**	**07 38 07.4**	**-0.2**
JFT	**Otama**	**0.88**	**284**	P	**Pn**	**07 37 58.7**	**0.0**
JFT				S	**Sn**	**07 38 09.5**	**-1.3**
JHO	**Hitachi**	**0.97**	**224**	P	**Pn**	**07 38 00.0**	**+0.1**
JIO	**Ouri**	**1.15**	**358**	P	**Pn**	**07 38 03.5**	**+1.3**
JOU	**Okura**	**1.21**	**331**	P	**Pn**	**07 38 03.4**	**+0.3**
MJAR	**Matsushiro Arr**	**2.68**	**254**	P	**Pn**	**07 38 22.6**	**-0.4**
	2.4nm,0.3s,baz=82,slow=15,SNR=13						
MJAR				Sn	**Sn**	**07 38 57.5**	**+3.2**
	3.1nm,0.3s,baz=184,slow=17,SNR=4.9						
MAT	**Matsushiro**	**2.68**	**254**	P	**Pn**	**07 38 23.9**	**+0.9**
MAT				S	Sn	07 38 41.3	-13
SONM	**Songino Array**	**27.63**	**304**	P	**P**	**07 43 25.0**	**+0.4**
	0.4nm,0.5s,baz=95,slow=7.8,SNR=3.2						
H11N2	**WAKE ISLAND Hy**	**28.29**	**121**	T	T	08 13 47.3	
	baz=319,slow=75,SNR=3.5						
H11N1	**WAKE ISLAND Hy**	**28.30**	**121**	T	T	08 14 06.8	
H11N3	**WAKE ISLAND Hy**	**28.31**	**121**	T	T	08 13 48.9	
	baz=315,slow=75,SNR=2.6						
H11S1	**WAKE ISLAND Hy**	**29.01**	**123**	T	T	08 14 37.1	
	baz=316,slow=76,SNR=5.1						
H11S3	**WAKE ISLAND Hy**	**29.01**	**123**	T	T	08 14 38.9	
	baz=316,slow=76,SNR=3.6						
H11S2	**WAKE ISLAND Hy**	**29.03**	**123**	T	T	08 14 38.5	
	baz=316,slow=76,SNR=4.9						
ZALV	**Zalesovo Beam**	**41.73**	**312**	P	**P**	**07 45 25.5**	**0.0**
	0.4nm,0.5s,baz=75,slow=6.3,SNR=3.0						
MKAR	**Makanchi Array**	**43.97**	**302**	P	**P**	**07 45 43.4**	**-0.3**
	0.2nm,0.4s,baz=84,slow=11,SNR=2.7						
KURBB	**Kurchatov Arra**	**45.83**	**308**	P	**P**	**07 45 57.5**	**-1.0**
	0.5nm,0.4s,baz=80,slow=8.2,SNR=7.3						
HNR	**Honiara**	**49.64**	**156**	LR	LR	08 04 09.0	
	comp=Z,24nm,21.9s,baz=106,slow=32						
WRA	**Warramunga Arr**	**57.33**	**188**	P	**P**	**07 47 24.1**	**-0.4**
	0.4nm,0.6s,baz=3.1,slow=7.1,SNR=10						

YKA	**Yellowknife Ar**	**63.57**	**30**	P	**P**	**07 48 06.3**	**-0.3**
	0.1nm,0.6s,baz=307,slow=6.3,SNR=3.3							

NIED ***09*** *07:48:00, 37.90N×143.00E, h5km, Mw3.6 Best double couple: M₀2.74000×10¹⁴ NP1:φs340.00000°, δ69.00000°, λ-19.00000°. NP2:φs76.00000°, δ73.00000°, λ-158.00000°.*
IDC ***09*** *07:48:56.5±0.9, 37.81N×143.50E, h0km, mb3.5/7, mb1 3.7/9, mb1mx3.5/53, mbtmp3.5/9, ML2.5/2, Error ellipse: s-maj=26.1km s-min=19.1km az=103.0*
ISCJB ***09*** *07:48:57.6±0.7, 37.92N±0.06×143.25E±0.06, h18km, mb3.6/7, Error ellipse: s-maj=8.9km s-min=5.9km az=143.9*
JMA ***09*** *07:48:58.2±0.4, 37.93N×143.01E, h0km, M3.9*
ISC 09 07:48:59.6±1.0, 37.93N±0.08×143.19E±0.08, h18km, n26, σ1§11/24, mb3.6/7, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**1.54**	**290**	P	**Pn**	**07 49 25.1**	**-1.1**
JIO				*eS*	**Sn**	**07 49 43.8**	**-2.0**
JMK	**Ichinoseki**	**1.85**	**304**	P	**Pn**	**07 49 30.2**	**-0.3**
JMM	**Marumori**	**1.90**	**269**	P	**Pn**	**07 49 30.4**	**-0.7**
JMM				*eS*	**Sn**	**07 49 53.6**	**-1.0**
JFK	**Kawauchi**	**1.92**	**254**	P	**Pn**	**07 49 30.7**	**-0.8**
JFK				*eS*	**Sn**	**07 49 54.6**	**-0.6**
JOU	**Okura**	**2.04**	**283**	P	**Pn**	**07 49 32.9**	**-0.2**
JOM	**Ohasama**	**2.14**	**317**	P	**Pn**	**07 49 35.3**	**+0.8**
JFT	**Otama**	**2.30**	**261**	P	**Pn**	**07 49 37.0**	**+0.3**
JFT				*eS*	**Sn**	**07 50 04.3**	**-0.2**
JYK	**Kaneyama**	**2.43**	**295**	P	**Pn**	**07 49 38.2**	**-0.3**
JRY	**Ryogami san**	**3.93**	**242**	P	**Pn**	**07 49 59.3**	**+0.2**
MJAR	**Matsushiro Arr**	**4.21**	**252**	Pn	**Pn**	**07 50 04.5**	**+1.5**
	0.9nm,0.3s,baz=74,slow=14,SNR=11						
JNBK	**Urakawa-nobuka**	**4.36**	**356**	P	**Pn**	**07 50 04.6**	**-0.4**
JNBK				*eS*	**Sn**	**07 50 55.1**	**-0.2**
JCH	**Churui**	**4.68**	**2**	P	Pn	07 50 05.5	-3.9
USRK	**Ussuriysk Ar.**	**10.52**	**310**	Pn	**Pn**	**07 51 31.0**	**+1.5**
	0.1nm,0.3s,baz=111,slow=16,SNR=2.1						
SEY	**Seymchan**	**25.66**	**10**	P	**P**	**07 54 29.2**	**+1.1**
	0.6nm,0.2s,baz=11,slow=20,SNR=3.6						
H11N2	**WAKE ISLAND Hy**	**27.44**	**125**	T	T	08 23 27.3	
	baz=317,slow=75,SNR=54						
H11N1	**WAKE ISLAND Hy**	**27.45**	**125**	T	T	08 23 39.4	
	baz=317,slow=75,SNR=24						
H11N3	**WAKE ISLAND Hy**	**27.46**	**125**	T	T	08 23 30.4	
	baz=317,slow=75,SNR=23						
H11S1	**WAKE ISLAND Hy**	**28.21**	**127**	T	T	08 24 30.7	
	baz=318,slow=76,SNR=13						
H11S3	**WAKE ISLAND Hy**	**28.21**	**127**	T	T	08 24 27.8	
	baz=318,slow=76,SNR=14						
H11S2	**WAKE ISLAND Hy**	**28.23**	**127**	T	T	08 24 29.2	
	baz=318,slow=76,SNR=10						
ZALV	**Zalesovo Beam**	**42.37**	**312**	P	**P**	**07 56 53.3**	**+0.8**
	0.3nm,0.3s,baz=64,slow=3.4,SNR=3.0						
MKAR	**Makanchi Array**	**44.85**	**302**	P	**P**	**07 57 15.4**	**+2.7**
	0.3nm,0.6s,baz=83,slow=12,SNR=3.4						
ILAR	**Eielson Array**	**47.98**	**33**	P	**P**	**07 57 36.2**	**-0.8**
	0.5nm,0.8s,baz=270,slow=6.3,SNR=6.1						
WRA	**Warramunga Arr**	**58.16**	**190**	P	**P**	**07 58 51.4**	**-1.0**
	1.8nm,0.6s,baz=8.0,slow=7.1,SNR=23						
ASAR	**Alice Springs**	**61.89**	**190**	P	**P**	**07 59 17.3**	**-0.7**
	0.5nm,0.8s,baz=12,slow=6.9,SNR=6.5						
YKA	**Yellowknife Ar**	**62.32**	**31**	P	**P**	**07 59 19.6**	**-0.8**
	0.1nm,0.6s,baz=301,slow=6.6,SNR=4.0						

JMA 09 08:00:35.1±0.3, 37.24N×142.54E, h9km, M3.6, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**1.40**	**265**	*eS*	Sn	08 01 19.5	+0.1
JMM	**Marumori**	**1.52**	**295**	*eS*	Sg	08 01 23.8	-0.3
JHO	**Hitachi**	**1.70**	**249**	*eS*	Sn	08 01 26.5	-0.3
JFT	**Otama**	**1.78**	**280**	*eS*	Sn	08 01 29.3	+0.6

NIED ***09*** *08:02:00, 36.30N×140.10E, h56km, Mw4.4 Best double couple: M₀3.80000×10¹⁵ NP1:φs279.00000°, δ23.00000°, λ132.00000°. NP2:φs54.00000°, δ73.00000°, λ74.00000°.*
IDC ***09*** *08:02:11.3±0.6, 36.22N×139.97E, h0km, mb4.1/22, mb1 4.3/23, mb1mx4.2/44, mbtmp4.2/23, MS3.4/11, Ms1 3.4/11, ms1mx3.1/45, Error ellipse: s-maj=17.4km s-min=14.8km az=90.0*
MOS ***09*** *08:02:17.4±1.4, 36.29N×140.11E, h59km, mb4.4/26, Error ellipse: s-maj=10.3km s-min=7.5km az=110.3*
ISCJB ***09*** *08:02:17.7±0.4, 36.18N±0.03×140.12E±0.05, h66km±3km, mb4.1/42, Error ellipse: s-maj=6.9km s-min=5.3km az=0.4*
JMA ***09*** *08:02:19.0±0.1, 36.23N×140.09E, h54km±1km, M4.3 Broadband fault plane solution: P waves. NP1: φs38.00000°, δ71.00000°, λ88.00000°. NP2:φs226.00000°, δ19.00000°, λ97.00000°. Principal axes: T Plg64.0000°, Azm304.0000°; N Plg2.0000°, Azm39.0000°; P Plg26.0000°, Azm130.0000°;*
JMA Felt IV J1.
NEIC ***09*** *08:02:19.3±0.7, 36.19N×140.08E, h61km±6km, mb4.4/13 Error ellipse: s-maj=7.5km s-min=6.9km az=67.0*
NEIC Recorded [4 JMA] in Ibaraki.
ISC 09 08:02:18.6±0.7, 36.20N±0.05×140.05E±0.05, h58km±6km, n97, σ1§11/91, mb4.2/42, MS3.5/12, 1C-7D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JYT	**Yasato**	**0.12**	**77**	↑P	**Pn**	**08 02 27.5**	**0.0**
JYT				S	**Sn**	**08 02 33.5**	**-0.4**
JAG	**Ashikaga**	**0.53**	**295**	↓P	**Pn**	**08 02 31.3**	**+0.5**
JAG				S	**Sn**	**08 02 39.9**	**+0.3**
JKT	**Katashina**	**0.86**	**312**	↓P	**Pn**	**08 02 35.2**	**+0.3**
JKT				S	**Sn**	**08 02 48.2**	**+1.4**
JRY	**Ryogami san**	**0.94**	**259**	↓P	**Pn**	**08 02 36.9**	**+1.0**
JRY				S	**Sn**	**08 02 49.9**	**+1.2**
JOD2	**Odawara 2**	**1.22**	**220**	P	**Pn**	**08 02 41.2**	**+1.7**
JFY	**Yanaizu**	**1.24**	**347**	↓P	**Pn**	**08 02 40.1**	**+0.3**
JFY				S	**Sn**	**08 02 56.5**	**+1.0**
MJAR	**Matsushiro Arr**	**1.52**	**284**	Pn	**Pn**	**08 02 44.5**	**+0.9**
	90nm,0.3s,baz=96,slow=9.8,SNR=280						
MJAR				Sn	**Sn**	**08 02 59.1**	**-3.3**
	82nm,0.3s,baz=93,slow=15,SNR=22						
MAJO	**Matsushiro**	**1.52**	**284**	*d* iP	**Pn**	**08 02 44.8**	**+1.2**
MAJO	**Matsushiro**	**1.52**	**284**	*e*Pn	**Pn**	**08 02 44.9**	**+1.3**
JHJ	**Hachijo jima 2**	**3.08**	**184**	Pn	**Pn**	**08 03 05.6**	**+0.8**
	137nm,0.3s,baz=359,slow=0.7,SNR=26						
JHJ				Sn	**Sn**	**08 03 39.9**	**-0.6**
	169nm,0.3s,baz=229,slow=21,SNR=7.1						
JHJ2	**Mitsune**	**3.09**	**184**	*e*Pn	**Pn**	**08 03 06.4**	**+1.5**
ERM	**Erimo**	**6.29**	**22**	*e*P	**Pn**	**08 03 48.7**	**0.0**
ERM				*e*		08 04 57.8	
ERM				pmax	pmax		
	comp=Z,25nm,0.6s						
ERM	**Erimo**	**6.29**	**22**	*e*Pn	**Pn**	**08 03 48.7**	**0.0**
	comp=Z,25nm,0.6s						
ERM				*e*Sn	**Sn**	**08 04 57.8**	**-1.4**
JNU	**Nakatsue**	**8.15**	**251**	Pn	**Pn**	**08 04 15.4**	**+1.1**
	comp=Z,0.2nm,0.3s,baz=76,slow=4.5,SNR=2.7						
SHO	**Shikotan**	**9.26**	**32**	*e*P	**Pn**	**08 04 31.9**	**+2.6**
SHO				pmax	pmax		
	comp=Z,40nm,0.9s						
SHO				pmax	pmax		
	comp=E,17nm,0.6s						
CBIJ	**Chichi jima**	**9.26**	**168**	Pn	**Pn**	**08 04 27.4**	**-2.0**
CBIJ				Sn	Sn	08 06 05.8	-6.2
JCJ	**Chichijima**	**9.26**	**168**	Pn	**Pn**	**08 04 27.4**	**-2.0**
	baz=344,slow=20						
JCJ				Sn	Sn	08 06 05.8	-6.2
KSRS	**Korea Array**	**9.80**	**281**	Pn	Pn	08 04 40.9	+4.1
	comp=E,0.5nm,0.3s,baz=94,slow=14,SNR=12						
KSAR	**Wonju Array Be**	**9.83**	**281**	P	Pn	08 04 40.9	+3.7
KSAR	**Wonju Array Be**	**9.83**	**281**	Pn	Pn	08 04 40.9	+3.7
USRK	**Ussuriysk Ar.**	**10.09**	**325**	Pn	Pn	08 04 44.2	+3.5
	comp=E,0.4nm,0.3s,baz=140,slow=12,SNR=13						
KLR	**Kul'dur**	**14.37**	**338**	Pn	**P**	**08 05 44.0**	**-0.2**
	comp=E,0.1nm,0.3s,baz=148,slow=14,SNR=7.3						
KLR				LR	LR	08 10 53.3	
	comp=E,135nm,18.4s,baz=138,slow=36						
KLR	**Kul'dur**	**14.37**	**338**	*e*P	**P**	**08 05 42.7**	**-1.5**
TYV	**Tymovskoe**	**14.78**	**6**	*e*P	**P**	**08 05 50.0**	**+1.3**
TYV				pmax	pmax		
	comp=Z,13nm,0.8s						
PETK	**Petropavlovsk-**	**20.96**	**31**	P	Pn	08 07 02.1	+2.3
	comp=Z,4.3nm,0.9s,baz=227,slow=9.6,SNR=2.3						
PETK				LR	LR	08 14 36.9	
	comp=Z,57nm,19.5s,baz=228,slow=36						
GUMO	**Guam**	**22.93**	**168**	LR	LR	08 14 12.8	
	comp=Z,44nm,21.6s,baz=99,slow=31						
MA2	**Magadan**	**24.41**	**13**	P	**P**	**08 07 31.0**	**-0.4**
	comp=Z,10nm,0.8s,baz=219,slow=9.6,SNR=13						
MA2	**Magadan**	**24.41**	**13**	*e*P	**P**	**08 07 30.7**	**-0.6**
MA2				pmax	pmax		
	comp=Z,39nm,0.8s						
MA2	**Magadan**	**24.41**	**13**	*e*P	**P**	**08 07 30.7**	**-0.6**
	comp=Z,39nm,0.8s						
ENH	**Enshi**	**26.17**	**266**	*e*P	**P**	**08 07 47.1**	**-0.5**
	comp=Z,9.4nm,0.8s						
YAK	**Yakutsk**	**26.66**	**349**	LR	LR	08 18 02.2	
	comp=Z,67nm,20.2s,baz=147,slow=36						
YAK	**Yakutsk**	**26.66**	**349**	*e*P	**P**	**08 07 51.4**	**-0.3**
YAK				pmax	pmax		
	comp=Z,7.0nm,0.8s						
ULN	**Ulaanbaatar**	**26.93**	**306**	*e*P	**P**	**08 07 52.7**	**-1.8**
ULN				pmax	pmax		
	comp=Z,1.0nm,1.0s						
SONM	**Songino Array**	**27.36**	**306**	P	**P**	**08 07 57.7**	**-0.6**
	comp=Z,0.7nm,0.6s,baz=121,slow=12,SNR=3.9						
SONM				LR	LR	08 18 48.6	
	comp=Z,78nm,18.7s,baz=60,slow=36						
SEY	**Seymchan**	**27.83**	**12**	P	**P**	**08 08 02.5**	**+0.4**
	comp=Z,4.0nm,0.9s,baz=212,slow=7.0,SNR=12						
SEY	**Seymchan**	**27.83**	**12**	*i* P	**P**	**08 08 00.7**	**-1.4**
H11N2	**WAKE ISLAND Hy**	**28.70**	**118**	T	T	08 38 21.9	
	baz=313,slow=75,SNR=63						
H11N1	**WAKE ISLAND Hy**	**28.71**	**118**	T	T	08 38 22.5	
	baz=313,slow=75,SNR=38						
H11N3	**WAKE ISLAND Hy**	**28.72**	**118**	T	T	08 38 23.2	
	baz=313,slow=75,SNR=38						
H11S3	**WAKE ISLAND Hy**	**29.36**	**120**	T	T	08 39 10.3	
	baz=314,slow=76,SNR=108						
H11S1	**WAKE ISLAND Hy**	**29.37**	**120**	T	T	08 39 11.2	
	baz=314,slow=76,SNR=63						
H11S2	**WAKE ISLAND Hy**	**29.38**	**120**	T	T	08 39 10.9	
	baz=314,slow=76,SNR=14						
BILL	**Bilibino**	**35.14**	**17**	↓*i* P	**P**	**08 09 03.9**	**-2.4**
BILL				*e*		08 09 16.7	
BILL				*i*		08 09 24.1	
BILL				pmax	pmax		
	comp=Z,9.0nm,2.5s						
BILL				MLR	MLR		
	comp=Z,59nm,16.0s						
TIXI	**Tiksi**	**35.99**	**354**	*e*P	**P**	**08 09 12.5**	**-1.0**
TIXI				pmax	pmax		
	comp=Z,2.0nm,1.1s						
ZALV	**Zalesovo Beam**	**41.67**	**313**	P	**P**	**08 10 01.3**	**+0.1**
	comp=Z,3.3nm,0.7s,baz=90,slow=7.4,SNR=17						
ZALV				PcP	**PcP**	**08 11 56.6**	**-0.3**
	comp=Z,2.6nm,0.8s,baz=104,slow=3.6,SNR=6.0						
NVS	**Novosibirsk**	**42.63**	**314**	*e*P	**P**	**08 10 07.6**	**-1.4**
NVS				pmax	pmax		
	comp=N,6.0nm,1.2s						
NVS				pmax	pmax		
	comp=E,11nm,1.2s						
NVS				pmax	pmax		
	comp=Z,9.0nm,1.2s						
NRIK	**Noril'sk**	**43.57**	**336**	P	**P**	**08 10 15.8**	**-0.6**
	comp=Z,1.3nm,0.5s,baz=98,slow=8.5,SNR=3.7						
MKAR	**Makanchi Array**	**43.64**	**303**	P	**P**	**08 10 17.8**	**+0.5**
	comp=Z,2.7nm,0.8s,baz=90,slow=10.0,SNR=26						
MKAR				PcP	**PcP**	**08 12 03.8**	**0.0**
	comp=Z,1.2nm,0.7s,baz=76,slow=5.1,SNR=4.2						
MKAR				LR	LR	08 27 23.9	
	comp=Z,51nm,21.2s,baz=34,slow=35						
KURK	**Kurchatov**	**45.59**	**309**	*e*P	**P**	**08 10 32.8**	**+0.1**
KURK				pmax	pmax		
	comp=Z,10.0nm,0.6s						
KURK	**Kurchatov**	**45.59**	**309**	*e*P	**P**	**08 10 32.8**	**+0.1**
	comp=Z,10nm,0.6s						
KURBB	**Kurchatov Arra**	**45.65**	**308**	P	**P**	**08 10 33.5**	**+0.3**
	comp=Z,3.0nm,0.2s,baz=86,slow=8.5,SNR=19						
TKM2	**Tokmak 2**	**49.06**	**299**	*e*P	**P**	**08 11 01.8**	**+1.7**
TKM2				pmax	pmax		
	comp=Z,5.0nm,0.8s						
TKM2	**Tokmak 2**	**49.06**	**299**	*e*P	**P**	**08 11 01.8**	**+1.7**
	comp=Z,5.3nm,0.8s						
AAK	**Ala-Archa**	**49.92**	**299**	*e*P	**P**	**08 11 06.7**	**+0.1**
AAK				pmax	pmax		
	comp=Z,2.0nm,0.8s						
AAK	**

FFC					pmax	pmax		
	comp=Z,2.0nm,0.7s							
FFC	**Flin Flon**	**75.00**	**32**	*e*P	**P**		**08 13 53.9**	**+0.3**
	comp=Z,1.7nm,0.7s							
DLMT	**Dillon**	**75.70**	**44**	*e*P	**P**		**08 13 59.2**	**+1.2**
	comp=Z,2.5nm,0.8s							
NVAR	**Mina Array Bea**	**76.37**	**52**	P	**P**		**08 14 03.5**	**+1.5**
	comp=Z,1.4nm,0.8s,baz=288,slow=5.6,SNR=6.6							
BRTR	**Keskin Array B**	**78.57**	**311**	P	**P**		**08 14 13.7**	**-0.5**
	comp=Z,1.2nm,0.9s,baz=96,slow=5.0,SNR=4.7							
STHS	**Stebnicka Huta**	**79.00**	**324**	*e*P	**P**		**08 14 17.4**	**+1.2**
STHS	**Stebnicka Huta**	**79.00**	**324**	*e*	**P**		**08 14 17.4**	**+1.2**
PDAR	**Pinedale Array**	**79.03**	**45**	P	**P**		**08 14 17.6**	**+0.8**
	comp=Z,0.5nm,0.6s,baz=265,slow=2.3,SNR=7.3							
GERES	**GERESS Array B**	**82.83**	**328**	P	**P**		**08 14 37.0**	**+0.3**
	comp=Z,0.5nm,0.5s,baz=77,slow=2.1,SNR=3.8							
RPZ	**Rata Peaks**	**84.39**	**158**	LR	LR		08 46 38.9	
	comp=Z,46nm,21.9s,baz=31,slow=32							
ECSD	**EROS Data Cent**	**85.25**	**37**	*e*P	**P**		**08 14 49.3**	**+0.3**
	comp=Z,1.0nm,0.6s							
TXAR	**Lajitas Array**	**91.50**	**52**	P	**P**		**08 15 20.4**	**+1.2**
	comp=Z,0.4nm,0.6s,baz=291,slow=2.8,SNR=4.7							
SAML	**Samuel**	**145.61**	**44**	*e*PKPdf	**PKPdf**		**08 21 50.9**	**-0.1**
LPAZ	**La Paz**	**148.06**	**59**	PKPbc	**PKPbc**		**08 21 59.9**	**+1.0**
	comp=Z,1.4nm,0.6s,baz=288,slow=6.4,SNR=3.1							
LCO	**Las Campanas**	**153.20**	**83**	*e*PKPbc	**PKPbc**		**08 22 10.9**	**+0.5**

*IDC **09** 08:07:18.9±0.6,37.°53N×143.°67E,h0km,mb4.0/18, mb1 4.2/25,mb1mx4.1/46,mbtmp4.0/25,ML3.5/6,MS3.2/2, Ms1 3.3/2,ms1mx2.6/49,Error ellipse: s-maj=16.3km s-min=12.8km az=130.0*

*ISCJB **09** 08:07:21.5±0.4,37.°36N±0.°04×143.°66E±0.°06,h33km, mb4.0/26,MS3.2/2,Error ellipse: s-maj=7.6km s-min=4.9km az=136.0*

*NEIC **09** 08:07:24.0±0.4,37.°51N×143.°62E,h35km,mb4.3/7,Error ellipse: s-maj=9.4km s-min=7.1km az=125.0*

ISC 09 08:07:23.7±0.5,37.°52N±0.°06×143.°67E±0.°07,h35km,n48, σ1§52/47,mb4.0/26,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MJAR	**Matsushiro Arr**	**4.47**	**259**	Pn	**Pn**	**08 08 28.4**	**-0.7**
	15nm,0.3s,baz=89,slow=16,SNR=39						
MJAR				Sn	**Sn**	**08 09 20.6**	**+0.7**
	7.5nm,0.3s,baz=305,slow=13,SNR=6.0						
MAJO	**Matsushiro**	**4.48**	**259**	*e*Pn	**Pn**	**08 08 29.1**	**-0.1**
MAT	**Matsushiro**	**4.48**	**259**	P	**Pn**	**08 08 28.8**	**-0.3**
MAT				S	**Sn**	**08 09 19.2**	**-0.8**
ERM	**Erimo**	**4.51**	**355**	*e*Pn	**Pn**	**08 08 26.9**	**-2.6**
ERM				*e*Sn	**Sn**	**08 09 15.6**	**-5.1**
JHJ2	**Mitsune**	**5.41**	**217**	*e*Pn	**Pn**	**08 08 39.6**	**-2.3**
JHJ2				*e*Sn	**Sn**	**08 09 40.7**	**-2.1**
JHJ	**Hachijo jima 2**	**5.42**	**217**	Pn	**Pn**	**08 08 40.2**	**-1.8**
	38nm,0.3s,baz=144,slow=23,SNR=11						
JHJ				Sn	**Sn**	**08 09 38.9**	**-4.2**
	78nm,0.3s,baz=105,slow=23,SNR=6.7						
CBIJ	**Chichi jima**	**10.47**	**187**	Pn	**Pn**	**08 09 48.9**	**-2.4**
JCJ	**Chichijima**	**10.47**	**187**	Pn	**Pn**	**08 09 48.9**	**-2.4**
	7.4nm,0.3s,baz=324,slow=19,SNR=7.7						
USRK	**Ussuriysk Ar.**	**11.07**	**311**	Pn	**Pn**	**08 09 59.5**	**0.0**
	0.5nm,0.3s,baz=112,slow=12,SNR=8.8						
JNU	**Nakatsue**	**11.33**	**251**	Pn	**Pn**	**08 10 02.9**	**-0.2**
	0.2nm,0.3s,baz=48,slow=9.3,SNR=3.5						
KSRS	**Korea Array**	**12.51**	**275**	Pn	**Pn**	**08 10 20.4**	**+1.2**
	0.1nm,0.3s,baz=82,slow=14,SNR=7.9						
KSAR	**Wonju Array Be**	**12.54**	**274**	Pn	**Pn**	**08 10 20.4**	**+0.8**
KLR	**Kul'dur**	**14.54**	**327**	Pn	**Pn**	**08 10 44.2**	**-2.6**
	0.2nm,0.3s,baz=126,slow=15,SNR=6.1						
SEY	**Seymchan**	**26.00**	**9**	P	**P**	**08 12 52.0**	**-1.0**
	2.9nm,0.8s,baz=177,slow=6.6,SNR=8.0						
H11N2	**WAKE ISLAND Hy**	**26.90**	**125**	T	T	08 41 17.0	
	baz=320,slow=74,SNR=19						
H11N1	**WAKE ISLAND Hy**	**26.90**	**125**	T	T	08 41 17.4	
H11N3	**WAKE ISLAND Hy**	**26.91**	**125**	T	T	08 41 21.4	
	baz=314,slow=74,SNR=19						
H11S1	**WAKE ISLAND Hy**	**27.66**	**127**	T	T	08 42 18.7	
	baz=322,slow=74,SNR=12						
H11S3	**WAKE ISLAND Hy**	**27.66**	**127**	T	T	08 42 22.0	
H11S2	**WAKE ISLAND Hy**	**27.68**	**127**	T	T	08 42 20.0	
	baz=7.5,slow=74,SNR=11						
SONM	**Songino Array**	**29.02**	**303**	P	**P**	**08 13 21.4**	**+1.0**
	0.5nm,0.5s,baz=102,slow=7.5,SNR=3.8						
ZALV	**Zalesovo Beam**	**42.92**	**312**	P	**P**	**08 15 18.8**	**0.0**
	0.8nm,0.6s,baz=76,slow=9.1,SNR=2.8						
ZALV				PcP	**PcP**	**08 17 08.8**	**-0.2**
	1.2nm,0.4s,baz=80,slow=2.1,SNR=7.5						
CMAR	**Chiang Mai Arr**	**43.36**	**257**	P	**P**	**08 15 23.8**	**+1.0**
	0.7nm,0.4s,baz=53,slow=7.3,SNR=4.5						
CMAR				LR	LR	08 33 58.0	
	comp=Z,22nm,19.9s,baz=95,slow=37						
MKAR	**Makanchi Array**	**45.39**	**302**	P	**P**	**08 15 38.9**	**+0.2**
	1.0nm,0.7s,baz=87,slow=11,SNR=5.9						
ILAR	**Eielson Array**	**48.12**	**33**	P	**P**	**08 16 00.3**	**+0.5**
	1.6nm,0.7s,baz=262,slow=6.2,SNR=21						
TKM2	**Tokmak 2**	**50.98**	**299**	*e*P	**P**	**08 16 22.2**	**+0.1**
	1.4nm,0.7s						
AAK	**Ala-Archa**	**51.84**	**299**	*e*P	**P**	**08 16 30.3**	**+1.8**
	1.6nm,0.8s						
INK	**Inuvik**	**53.13**	**27**	P	**P**	**08 16 38.4**	**+0.9**
	0.6nm,0.4s,baz=298,slow=5.5,SNR=7.8						
WRAB	**Tennant Creek**	**57.81**	**190**	*e*P	**P**	**08 17 11.8**	**+0.1**
	9.9nm,0.7s						
WRA	**Warramunga Arr**	**57.82**	**190**	P	**P**	**08 17 11.8**	**+0.1**
	9.9nm,0.7s,baz=8.4,slow=7.1,SNR=61						
ABKAR	**Akbulak array**	**59.00**	**311**	*e*P	**P**	**08 17 19.5**	**-0.2**
	1.8nm,0.6s						
ASAR	**Alice Springs**	**61.55**	**190**	P	**P**	**08 17 37.9**	**+0.5**
	2.8nm,0.7s,baz=11,slow=6.8,SNR=25						
YKA	**Yellowknife Ar**	**62.48**	**31**	P	**P**	**08 17 43.6**	**+0.4**
	0.6nm,0.6s,baz=303,slow=6.7,SNR=15						
ARCES	**ARCESS Array B**	**64.17**	**340**	P	**P**	**08 17 53.9**	**-0.4**
	3.5nm,1.0s,baz=5.6,slow=5.0,SNR=4.6						
FINES	**FINESS Array B**	**69.22**	**333**	P	**P**	**08 18 26.9**	**+0.4**
	1.6nm,0.8s,baz=54,slow=9.7,SNR=5.0						
KBZ	**Khabaz**	**71.94**	**311**	P	**P**	**08 18 45.0**	**+1.6**
	4.6nm,1.0s,baz=12,slow=9.3,SNR=3.4						
FFC	**Flin Flon**	**72.32**	**34**	*e*P	**P**	**08 18 46.1**	**+0.6**
	3.1nm,0.6s						
FCC	**Fort Churchill**	**72.75**	**27**	*e*P	**P**	**08 18 47.9**	**-0.1**
	1.6nm,0.6s						
NVAR	**Mina Array Bea**	**73.25**	**54**	P	**P**	**08 18 53.1**	**+1.4**
	0.4nm,0.7s,baz=308,slow=4.4,SNR=3.6						
NOA	**NORSAR Array B**	**74.42**	**338**	P	**P**	**08 18 57.6**	**-0.3**
	0.2nm,0.4s,baz=50,slow=5.4,SNR=3.3						
AKASG	**Malin Array Be**	**75.00**	**323**	P	**P**	**08 19 01.2**	**-0.1**
	0.4nm,0.2s,baz=45,slow=5.9,SNR=7.0						
PDAR	**Pinedale Array**	**76.04**	**47**	P	**P**	**08 19 08.7**	**+0.9**
	0.9nm,0.6s,baz=268,slow=2.5,SNR=10						
BRTR	**Keskin Array B**	**79.86**	**313**	LR	LR	08 58 07.4	
	comp=Z,15nm,19.4s,baz=66,slow=38						
GERES	**GERESS Array B**	**83.23**	**329**	P	**P**	**08 19 47.0**	**+0.5**
	0.3nm,0.3s,baz=120,slow=7.9,SNR=3.7						
BFO	**Black Forest**	**85.74**	**332**	*e*P	**P**	**08 19 59.3**	**+0.2**
	8.6nm,1.2s						
TXAR	**Lajitas Array**	**88.39**	**54**	P	**P**	**08 20 13.5**	**+1.1**
	0.3nm,0.6s,baz=290,slow=3.8,SNR=4.3						
QSPA	**South Pole Qui**	**127.26**	**180**	*e*PKPdf	**PKPdf**	**08 26 23.6**	**+0.1**
LCO	**Las Campanas**	**150.16**	**84**	*e*PKPbc	**PKPbc**	**08 27 12.3**	**+1.0**

*ISCJB **09** 08:11:10.7±0.9,50.°10N±0.°05×18.°35E±0.°04,h0km,Error ellipse: s-maj=7.1km s-min=3.3km az=19.5*

*IPEC **09** 08:11:11.9±0.2,50.°06N×18.°46E,h2km±4km,ML1.6/3, Error ellipse: s-maj=2.0km s-min=1.1km az=160.0*

*CSEM **09** 08:11:11.9±0.4,50.°08N×18.°36E,h1km,ML2.6/5,Error ellipse: s-maj=6.3km s-min=3.0km az=20.0*

*PRU **09** 08:11:13.6,50.°03N×18.°33E,h0km*

ISC 09 08:11:11.7±1.1,50.°06N±0.°05×18.°33E±0.°03,h0km,n21, σ0§98/30,Poland

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OKC	**Ostrava-Krasne**	**0.25**	**209**	*e*PG	**Pb**	**08 11 18.1**	**-1.1**
OKC				*e*SG	**Sg**	**08 11 21.9**	**+2.1**
	comp=Z,24nm,0.5s						
OKC	**Ostrava-Krasne**	**0.25**	**209**	Pg	**Pb**	**08 11 18.1**	**-1.1**
OKC				Sg	**Sg**	**08 11 21.9**	**+2.1**
	24nm,0.5s						
MORC	**Moravsky Berou**	**0.58**	**241**	*e*Pg	**Pb**	**08 11 24.5**	**-0.4**
	baz=64						
MORC				*e*Sg	**Sb**	**08 11 32.8**	**-0.9**
	11nm,0.1s,baz=64						
KRLC	**Kraliky**	**1.00**	**271**	*e*SG	**Sg**	**08 11 44.8**	**+1.0**
KRLC	**Kraliky**	**1.00**	**271**	Sg	**Sg**	**08 11 44.8**	**+1.0**
LANS	**Liptovska Anna**	**1.17**	**141**	*e*Pg	**Pb**	**08 11 34.1**	**-0.8**
LANS				*e*Sg	**Sb**	**08 11 50.7**	**+0.1**
LANS	**Liptovska Anna**	**1.17**	**141**	*e*PG	**Pb**	**08 11 34.1**	**-0.8**
LANS				*e*SG	**Sb**	**08 11 50.7**	**+0.1**
DPC	**Dobruska-Polom**	**1.32**	**283**	*e*PG	**Pn**	**08 11 37.5**	**0.0**
DPC				*e*SG	**Sn**	**08 11 55.6**	**-0.3**
	comp=Z,11nm,0.5s						
DPC	**Dobruska-Polom**	**1.32**	**283**	Pg	**Pn**	**08 11 37.5**	**0.0**
DPC				Sg	**Sn**	**08 11 55.6**	**-0.3**
	11nm,0.5s						
VRAC	**Vranov**	**1.36**	**237**	*e*Pg	**Pb**	**08 11 38.1**	**+0.1**
	baz=57						
VRAC				*e*Sg	**Sn**	**08 11 56.6**	**-0.1**
	7.1nm,0.2s,baz=57						
UPC	**Upice**	**1.56**	**288**	*e*SG	**Sg**	**08 12 03.3**	**+1.6**
UPC	**Upice**	**1.56**	**288**	Sg	**Sg**	**08 12 03.3**	**+1.6**
VYHS	**Vyhne**	**1.60**	**168**	*e*Sn	**Sn**	**08 12 02.0**	**-0.7**
VYHS	**Vyhne**	**1.60**	**168**	*e*SN	**Sn**	**08 12 02.0**	**-0.7**
KRUC	**Moravsky**	**1.61**	**232**	*e*Pg	**Pb**	**08 11 42.2**	**-0.1**
	baz=53						
KRUC				*e*Sg	**Sg**	**08 12 04.1**	**+0.7**
	4.5nm,0.2s,baz=53						
STHS	**Stebnicka Huta**	**1.99**	**108**	*e*Sg	**Sg**	**08 12 17.0**	**+1.3**
STHS	**Stebnicka Huta**	**1.99**	**108**	*e*SG	**Sg**	**08 12 17.0**	**+1.3**
PRU	**Pruhonice**	**2.45**	**270**	*e*SG	**Sg**	**08 12 30.3**	**0.0**
PRU	**Pruhonice**	**2.45**	**270**	Sg	**Sg**	**08 12 30.3**	**0.0**
KHC	**Kasperske Hory**	**3.23**	**255**	*e*SG	**Sg**	**08 12 56.1**	**+0.6**
	comp=Z,2.9nm,0.5s						
KHC	**Kasperske Hory**	**3.23**	**255**	Sg	**Sg**	**08 12 56.1**	**+0.6**
	2.9nm,0.5s						

*AZER **09** 08:11:19.0±1.1,42.°06N×47.°17E,h12km,Error ellipse: s-maj=1.9km s-min=1.3km az=343.0*

*CSEM **09** 08:11:20.8±0.2,42.°12N×47.°24E,h2km,mb4.1,Error ellipse: s-maj=4.8km s-min=3.0km az=46.0*

*TIF **09** 08:11:20.0,42.°25N×47.°27E,h23km±1km*

*MOS **09** 08:11:20.1±1.5,42.°20N×47.°32E,h10km,mb4.1/1,Error ellipse: s-maj=10.9km s-min=6.3km az=42.5*

ISC 09 08:11:20.4±1.0,42.°15N±0.°02×47.°22E±0.°02,h8km±8km, n64,σ0§93/119,13C-14D,Eastern Caucasus

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GNBR	**Gunib**	**0.31**	**322**	*i*PG	**Pg**	**08 11 26.7**	**+0.1**
GNBR				*i* S	**Sg**	**08 11 31.7**	**+1.0**
GNBR	**Gunib**	**0.31**	**322**	*i* Pg	**Pg**	**08 11 26.7**	**+0.1**
GNBR				*i* Sg	**Sg**	**08 11 31.7**	**+1.0**
URKR	**Urkarakh**	**0.31**	**86**	*i* PG	**Pg**	**08 11 27.0**	**+0.3**
URKR				*e*S	**Sg**	**08 11 32.0**	**+1.2**
URKR	**Urkarakh**	**0.31**	**86**	*i* Pg	**Pg**	**08 11 27.0**	**+0.3**
URKR				*e*Sg	**Sg**	**08 11 32.0**	**+1.2**
XNZR	**Khunzakh**	**0.55**	**316**	⇑*i*PG	**Pg**	**08 11 31.0**	**-0.1**
XNZR				*e*S	**Sg**	**08 11 38.5**	**+0.2**
XNZR	**Khunzakh**	**0.55**	**316**	*i* Pg	**Pg**	**08 11 31.0**	**-0.1**
XNZR				*e*Sg	**Sg**	**08 11 38.5**	**+0.2**
UNCR	**Uncukul**	**0.65**	**331**	⇓*i*PG	**Pg**	**08 11 32.5**	**-0.5**
UNCR				*i* S	**Sg**	**08 11 41.5**	**0.0**
UNCR				pmax	pmax		
	comp=Z,205nm,0.3s						
UNCR	**Uncukul**	**0.65**	**331**	*i* Pg	**Pg**	**08 11 32.5**	**-0.5**
	comp=Z,205nm,0.3s						
UNCR				*i* Sg	**Sg**	**08 11 41.5**	**0.0**
ZKTA	**Zakatala**	**0.67**	**221**	⇑P	**Pg**	**08 11 33.0**	**-0.4**
	SNR=82						
ZKTA				⇑S	**Sb**	**08 11 42.8**	**-1.1**
BUJR	**Buynaksk**	**0.68**	**353**	*e*PG	**Pg**	**08 11 32.0**	**-1.6**
BUJR				*e*S	**Sg**	**08 11 40.0**	**-2.6**
BUJR				pmax	pmax		
	comp=Z,136nm,0.2s						
AKT	**Akhty**	**0.77**	**150**	⇑*i*PG	**Pg**	**08 11 34.3**	**-0.9**
AKT				*i* S	**Sg**	**08 11 44.3**	**-0.9**
AKT	**Akhty**	**0.77**	**150**	*i* Pg	**Pg**	**08 11 34.3**	**-0.9**
AKT				*i* Sg	**Sg**	**08 11 44.3**	**-0.9**
DRN	**Derbent**	**0.84**	**98**	*e*PG	**Pg**	**08 11 36.4**	**-0.1**
DRN				*e*S	**Sb**	**08 11 48.5**	**-0.1**
DRN	**Derbent**	**0.84**	**98**	*e*Pg	**Pg**	**08 11 36.4**	**-0.1**
DRN				*e*Sg	**Sb**	**08 11 48.5**	**-0.1**
BTLR	**Botlikh**	**0.90**	**305**	*i* PG	**Pg**	**08 11 37.0**	**-0.8**
BTLR				*i* S	**Sg**	**08 11 48.8**	**-0.7**
BTLR	**Botlikh**	**0.90**	**305**	*i* Pg	**Pg**	**08 11 37.0**	**-0.8**
DBC	**Dubki**	**0.92**	**342**	⇑*i*PG	**Pn**	**08 11 39.9**	**+0.2**
DBC				*i* S	**Sn**	**08 11 53.4**	**+0.2**
DBC				pmax	pmax		
	comp=Z,88nm,0.2s						
DBC	**Dubki**	**0.92**	**342**	*i* Pg	**Pn**	**08 11 39.9**	**+0.2**
	comp=Z,88nm,0.2s						
DBC				*i* Sg	**Sn**	**08 11 53.4**	**+0.2**
SEKA	**Sheki**	**0.94**	**181**	⇓P	**Pg**	**08 11 37.3**	**-1.1**
	SNR=32						
SEKA				⇑S	**Sg**	**08 11 50.2**	**-0.4**
SEKA	**Sheki**	**0.94**	**181**	P	**Pg**	**08 11 37.3**	**-1.1**
	SNR=32						
SEKA				S	**Sg**	**08 11 50.2**	**-0.4**
XNQ	**Khinaliq**	**1.19**	**144**	⇓Pn	**Pg**	**08 11 42.3**	**-1.1**
	SNR=14						
XNQ				⇓S	**Sg**	**08 11 58.4**	**-0.5**
XNQ	**Khinaliq**	**1.19**	**144**	Pn	**Pg**	**08 11 42.3**	**-1.1**
	SNR=14						
XNQ				S	**Sg**	**08 11 58.4**	**-0.5**
QUBA	**Quba, Azerbaij**	**1.24**	**129**	⇓P	**Pg**	**08 11 43.5**	**-0.7**
	SNR=6.4						
QUBA				⇑S	**Sn**	**08 12 01.2**	**+0.2**
QUBA	**Quba, Azerbaij**	**1.24**	**129**	P	**Pg**	**08 11 43.5**	**-0.7**
	SNR=6.4						
QUBA				S	**Sn**	**08 12 01.2**	**+0.2**
MNGR	**Mingechevir, A**	**1.38**	**184**	⇑P	**Pb**	**08 11 46.2**	**-0.2**
MNGR				⇓S	**Sn**	**08 12 06.3**	**+2.1**
MNGR	**Mingechevir, A**	**1.38**	**184**	P	**Pb**	**08 11 46.2**	**-0.2**
MNGR				S	**Sn**	**08 12 06.3**	**+2.1**
GROC	**Groznyy**	**1.49**	**316**	*e*PG	**Pg**	**08 11 49.1**	**+0.1**
GROC				*e*S	**Sg**	**08 12 09.4**	**+1.1**
GROC	**Groznyy**	**1.49**	**316**	*e*Pg	**Pg**	**08 11 49.1**	**+0.1**
GROC				*e*Sg	**Sg**	**08 12 09.4**	**+1.1**
IML	**Ismayilli**	**1.53**	**151**	⇓P	**Pb**	**08 11 49.1**	**0.0**
	SNR=7.4						
IML				⇑S	**Sg**	**08 12 12.3**	**+2.5**
IML	**Ismayilli**	**1.53**	**151**	P	**Pb**	**08 11 49.1**	**0.0**
	SNR=7.4						
IML				S	**Sg**	**08 12 12.3**	**+2.5**
DGRG	**David-gareji**	**1.54**	**244**	P	**Pg**	**08 11 49.6**	**-0.4**
DGRG				S	**Sg**	**08 12 12.7**	**+2.7**
DGRG	**David-gareji**	**1.54**	**244**	PN	**Pg**	**08 11 49.6**	**-0.4**
DGRG				S	**Sg**	**08 12 12.7**	**+2.7**
DGRG	**David-gareji**	**1.54**	**244**	P	**Pg**	**08 11 49.6**	**-0.4**
DGRG				S	**Sg**	**08 12 12.7**	**+2.7**
GANJ	**Ganja**	**1.64**	**204**	⇓P	**Pn**	**08 11 49.5**	**-0.1**
	SNR=11						
GANJ				⇓S	**Sb**	**08 12 12.0**	**+0.2**
GANJ	**Ganja**	**1.64**	**204**	P	**Pn**	**08 11 49.5**	**-0.1**
	SNR=11						
GANJ				S	**Sb**	**08 12 12.0**	**+0.2**
SIZA	**Siyzn**	**1.65**	**130**	⇓P	**Pb**	**08 11 50.9**	**-0.3**
SIZA				⇓S	**Sg**	**08 12 15.4**	**+1.8**
SIZA	**Siyzn**	**1.65**	**130**	P	**Pb**	**08 11 50.9**	**-0.3**
SIZA				S	**Sg**	**08 12 15.4**	**+1.8**
QZX	**Qazax, Azerbai**	**1.76**	**232**	⇓P	**Pn**	**08 11 51.2**	**0.0**
	SNR=65						
QZX				⇑S	**Sb**	**08 12 15.3**	**+0.1**
QZX	**Qazax, Azerbai**	**1.76**	**232**	P	**Pn**	**08 11 51.2**	**0.0**
	SNR=65						
QZX				S	**Sb**	**08 12 15.3**	**+0.1**
GDB	**GEDABAY**	**1.80**	**218**	⇓Pg	**Pn**	**08 11 51.4**	**-0.5**
GDB				⇑Sg	**Sn**	**08 12 15.0**	**+0.1**
GDB	**GEDABAY**	**1.80**	**218**	Pg	**Pn**	**08 11 51.4**	**-0.5**
GDB				Sg	**Sn**	**08 12 15.0**	**+0.1**
ATGJ	**Altiaghaj**	**1.82**	**134**	⇓P	**Pb**	**08 11 53.9**	**-0.2**
	SNR=5.2						
ATGJ				⇑S	**Sg**	**08 12 19.3**	**+0.3**
ATGJ	**Altiaghaj**	**1.82**	**134**	P	**Pb**	**08 11 53.9**	**-0.2**
	SNR=5.2						
ATGJ				S	**Sg**	**08 12 19.3**	**+0.3**
DUS	**Dusheti**	**1.87**	**269**	P	**Pb**	**08 11 54.8**	**-0.1**
DUS				S	**Sb**	**08 12 18.9**	**+0.4**
DUS	**Dusheti**	**1.87**	**269**	PN	**Pb**	**08 11 54.8**	**-0.1**
DUS	**Dusheti**	**1.87**	**269**	P	**Pb**	**08 11 54.8**	**-0.1**
DUS				S	**Sb**	**08 12 18.9**	**+0.4**
TBLG	**Delisi**	**1.90**	**258**	P	**Pb**	**08 11 55.7**	**+0.4**
TBLG				S	**Sg**	**08 12 21.8**	**+0.5**
TBLG	**Delisi**	**1.90**	**258**	PN	**Pb**	**08 11 55.6**	**+0.4**
TBLG				S	**Sg**	**08 12 21.8**	**+0.5**
TBLG	**Delisi**	**1.90**	**258**	Pn	**Pb**	**08 11 55.6**	**+0.4**
TBLG				S	**Sg**	**08 12 21.8**	**+0.5**
KMGR	**Komgaron**	**1.96**	**298**	*e*PN	**Pb**	**08 11 56.3**	**-0.1**
KMGR	**Komgaron**	**1.96**	**298**	*e*Pn	**Pb**	**08 11 56.3**	**-0.1**
GUDG	**Gudauri**	**2.06**	**280**	P	**Pb**	**08 11 58.0**	**-0.2**
GUDG				S	**Sb**	**08 12 23.1**	**-0.8**
GUDG	**Gudauri**	**2.06**	**280**	P	**Pb**	**08 11 58.0**	**-0.2**
GUDG				S	**Sb**	**08 12 23.1**	**-0.8**
LACR	**Lac**	**2.26**	**288**	*e*PN	**Pb**	**08 12 00.3**	**-1.3**
LACR				*e*S	**Sb**	**08 12 29.5**	**-0.3**
LACR	**Lac**	**2.26**	**288**	*e*Pn	**Pb**	**08 12 00.3**	**-1.3**
LACR				*e*Sn	**Sb**	**08 12 29.5**	**-0.3**
KORR	**Kora**	**2.51**	**293**	*e*PN	**Pb**	**08 12 05.7**	**0.0**
KORR				*e*S	**Sb**	**08 12 37.2**	**+0.5**
KORR	**Kora**	**2.51**	**293**	*e*Pn	**Pb**	**08 12 05.7**	**0.0**
KORR				*e*Sn	**Sb**	**08 12 37.2**	**+0.5**
ZEI	**Tsey**	**2.54**	**286**	*e*PN	**Pb**	**08 12 05.7**	**-0.6**
ZEI				*e*S	**Sb**	**08 12 37.3**	**-0.4**
ZEI	**Tsey**	**2.54**	**286**	*e*Pn	**Pb**	**08 12 05.7**	**-0.6**
ZEI				*e*Sn	**Sb**	**08 12 37.3**	**-0.4**
GNI	**Garni**	**2.73**	**224**	*e*PN	**Pb**	**08 12 07.5**	**-2.1**
GNI	**Garni**	**2.73**	**224**	*e*Pn	**Pb**	**08 12 07.5**	**-2.1**
NEY	**Neytrino**	**3.49**	**290**	*e*PN	**Pn**	**08 12 15.3**	**+0.1**
NEY	**Neytrino**	**3.49**	**290**	*e*Pn	**Pn**	**08 12 15.3**	**+0.1**
KIV	**Kislovodsk**	**3.78**	**300**	*e*PN	**Pn**	**08 12 18.5**	**-0.6**
KIV				pmax	pmax		
	comp=Z,6.0nm,0.6s						

KRSC 09 08:16:21.0±0.8,50.°19N×157.°20E,h60km±20km,ML3.5, Kuril Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SKR	**Severo-Kuril's**	**0.85**	**306**	*e*P	Pn	08 16 38.1	+1.0
SKR				*e*S	Sn	08 16 50.0	+1.1
PAU	**Pauzhetka**	**1.31**	**349**	*e*P	Pn	08 16 44.9	+1.8
PAU				*e*S	Sn	08 17 02.1	+2.5
ASAK	**Asacha**	**2.25**	**11**	*e*P	Pn	08 16 58.4	+2.5
RUS	**Russkaya**	**2.40**	**20**	*e*P	Pn	08 17 00.3	+2.5
RUS				*e*S	Sn	08 17 28.5	+2.5
AVH	**Avacha**	**3.23**	**17**	*e*P	Pn	08 17 12.8	+3.5
KRER	**Koryakskii**	**3.27**	**17**	*e*P	Pn	08 17 12.7	+2.8
SDLR	**Sedlovina**	**3.27**	**18**	P	Pn	08 17 12.0	+2.1
KRX	**Arik**	**3.31**	**15**	*e*P	Pn	08 17 13.6	+3.2

*JMA **09** 08:17:00.1±0.3,37.°83N×142.°72E,h15km±5km,M4.3 JMA Felt I J1.*

*ISCJB **09** 08:17:00.9±0.3,37.°83N±0.°03×142.°71E±0.°04,h14km, mb4.0/26,MS3.4/5,Error ellipse: s-maj=4.7km s-min=4.2km az=141.3*

*NIED **09** 08:17:00,37.80N×142.°70E,h23km,Mw4.2 Best double couple: M0 2.15000×10^15 NP1:φ0=57.00000°,δ33.00000°, λ=-58.00000°. NP2:φ0=201.00000°,δ62.00000°, λ=-109.00000°.*

*IDC **09** 08:17:00.3±0.6,37.°83N×142.°63E,h0km,mb4.0/17, mb1 4.1/20,mb1mx4.0/46,mbtmp4.0/20,ML3.3/3,MS3.4/9, Ms1 3.4/9,ms1mx3.0/63,Error ellipse: s-maj=19.2km s-min=14.1km az=119.0*

*MOS **09** 08:17:04.6±1.2,37.°93N×142.°61E,h39km,mb4.2/21,Error ellipse: s-maj=10.5km s-min=7.2km az=84.5*

*NEIC **09** 08:17:04.5±2.9,37.°90N×142.°72E,h26km±20km,mb4.2/5, Error ellipse: s-maj=12.6km s-min=8.1km az=118.0*

ISC 09 08:17:02.6±0.5,37.°88N±0.°05×142.°59E±0.°05,h14km,n79, σ1§22/70,mb4.0/26,MS3.3/5,4C-1D,Off east coast of Honshu

| Code | Station Name | Δ° | AZ° | Phase ID Op | ISC | Time h m s | Res ISC |

BILL	**Bilibino**	**32.95**	**16**‖	*e*P		**P**	**08 23 36.0**	**-0.4**
BILL				pmax	pmax				
	comp=Z,7.0nm,2.5s								
TIXI	**Tiksi**	**34.57**	**352**	*i* P		**P**	**08 23 51.3**	**+0.9**
ZALV	**Zalesovo Beam**	**42.04**	**312**	P		**P**	**08 24 53.3**	**-0.2**
	comp=Z,1.5nm,0.5s,baz=82,slow=7.5,SNR=4.9								
NRIK	**Noril'sk**	**42.90**	**335**	LR		LR	08 43 47.1		
	comp=Z,82nm,20.2s,baz=117,slow=37								
MKAR	**Makanchi Array**	**44.47**	**302**	P		**P**	**08 25 13.5**	**+0.3**
	comp=Z,1.8nm,0.8s,baz=87,slow=9.5,SNR=8.8								
MKAR				LR		LR	08 44 28.5		
	comp=Z,20nm,18.9s,baz=20,slow=37								
MKAR	**Makanchi Array**	**44.47**	**302**	*ce*P		**P**	**08 25 15.1**	**+1.9**
MKAR				pmax	pmax				
	comp=Z,2.0nm,0.7s								
KDAK	**Kodiak Island**	**45.84**	**43**	*i* P		**P**	**08 25 24.2**	**+0.3**
KURK	**Kurchatov**	**46.15**	**308**	*e*P		**P**	**08 25 26.1**	**-0.3**
KURK				pmax	pmax				
	comp=Z,20nm,1.1s								
KURK	**Kurchatov**	**46.15**	**308**	*e*P		**P**	**08 25 26.1**	**-0.3**
	comp=Z,20nm,1.1s								
ILAR	**Eielson Array**	**48.28**	**33**	P		**P**	**08 25 42.9**	**0.0**
	comp=Z,1.3nm,0.7s,baz=262,slow=6.0,SNR=22								
TKM2	**Tokmak 2**	**50.05**	**298**	*e*P		**P**	**08 25 59.6**	**+2.6**
TKM2				pmax	pmax				
	comp=Z,2.0nm,0.7s								
TKM2	**Tokmak 2**	**50.05**	**298**	*e*P		**P**	**08 25 59.6**	**+2.6**
	comp=Z,2.1nm,0.7s								
INK	**Inuvik**	**53.21**	**27**	P		**P**	**08 26 20.3**	**+0.4**
	comp=Z,0.6nm,0.5s,baz=304,slow=4.4,SNR=7.3								
ARU	**Arti**	**56.35**	**318**	LR		LR	08 52 51.3		
	comp=Z,72nm,18.1s,baz=125,slow=38								
DLBC	**Dease Lake**	**57.38**	**39**	P		**P**	**08 26 51.3**	**+1.0**
	comp=Z,1.9nm,0.7s,baz=232,slow=8.1,SNR=3.2								
WRA	**Warramunga Arr**	**58.04**	**189**	P		**P**	**08 26 54.1**	**-1.1**
	comp=Z,1.8nm,0.9s,baz=6.4,slow=6.9,SNR=11								
ABKAR	**Akbulak array**	**58.11**	**310**	*e*P		**P**	**08 26 54.9**	**-0.5**
	comp=Z,2.5nm,0.8s								
AKTO	**Aktyubinsk**	**58.80**	**312**	LR		LR	08 53 58.1		
	comp=Z,25nm,21.2s,slow=38								
ASAR	**Alice Springs**	**61.76**	**189**	P		**P**	**08 27 20.4**	**-0.3**
	comp=Z,0.7nm,0.8s,baz=11,slow=7.1,SNR=6.1								
YKA	**Yellowknife Ar**	**62.60**	**31**	P		**P**	**08 27 25.8**	**-0.1**
	comp=Z,0.5nm,0.7s,baz=302,slow=6.3,SNR=14								
FINES	**FINESS Array B**	**68.50**	**332**	P		**P**	**08 28 04.0**	**0.0**
	comp=Z,3.1nm,1.0s,baz=35,slow=7.0,SNR=5.0								
FINES	**FINESS Array B**	**68.50**	**332**	*i* P		**P**	**08 28 05.0**	**+1.0**
FINES				pmax	pmax				
	comp=Z,3.0nm,1.0s								
FFC	**Flin Flon**	**72.49**	**33**	*e*P		**P**	**08 28 28.6**	**+0.1**
FFC				pmax	pmax				
	comp=Z,3.0nm,1.1s								
FFC	**Flin Flon**	**72.49**	**33**	*e*P		**P**	**08 28 28.6**	**+0.1**
	comp=Z,2.6nm,1.1s								
BOZ	**Bozeman (W)**	**73.45**	**45**	*e*P		**P**	**08 28 34.5**	**-0.1**
BOZ				pmax	pmax				
	comp=Z,1.0nm,0.7s								
BOZ	**Bozeman (W)**	**73.45**	**45**	*e*P		**P**	**08 28 34.5**	**-0.1**
	comp=Z,0.9nm,0.7s								
NVAR	**Mina Array Bea**	**73.73**	**54**	P		**P**	**08 28 37.0**	**+0.5**
	comp=Z,0.4nm,0.5s,baz=276,slow=6.4,SNR=4.7								
NB2	**NORSAR Subarra**	**73.76**	**338**	P		**P**	**08 28 35.8**	**-0.3**
	comp=Z,0.6nm,0.6s,baz=36,slow=6.2								
NOA	**NORSAR Array B**	**73.76**	**338**	P		**P**	**08 28 35.7**	**-0.3**
	comp=Z,2.6nm,1.3s,baz=43,slow=5.5,SNR=4.2								
NOA	**NORSAR Array B**	**73.76**	**338**	P		**P**	**08 28 35.7**	**-0.3**
NOA				pmax	pmax				
	comp=Z,1.0nm,0.8s								
AKASG	**Malin Array Be**	**74.20**	**323**	P		**P**	**08 28 38.1**	**-0.6**
	comp=Z,0.6nm,0.3s,baz=43,slow=6.6,SNR=4.8								
PDAR	**Pinedale Array**	**76.41**	**46**	P		**P**	**08 28 52.0**	**+0.1**
	comp=Z,0.6nm,0.6s,baz=234,slow=1.7,SNR=7.3								
CLL	**Collm**	**80.82**	**331**	*e*P		**P**	**08 29 16.0**	**+0.3**
CLL	**Collm**	**80.82**	**331**	*e*P		**P**	**08 29 16.0**	**+0.3**
ANMO	**Albuquerque**	**83.33**	**51**	*ce*P		**P**	**08 29 31.0**	**+1.6**
ANMO				pmax	pmax				
	comp=Z,3.0nm,1.7s								
TXAR	**Lajitas Array**	**88.86**	**53**	P		**P**	**08 29 56.4**	**-0.4**
	comp=Z,0.4nm,0.8s,baz=337,slow=2.9,SNR=3.7								
LPAZ	**La Paz**	**145.46**	**60**	PKPbc		**PKPdf**	**08 36 41.1**	**-0.3**
	comp=Z,1.2nm,0.6s,baz=315,slow=5.7,SNR=2.8								
LCO	**Las Campanas**	**150.97**	**82**	*e*PKPbc		**PKPbc**	**08 36 55.3**	**-0.1**

*IDC **09** 08:21:54.8±0.9,51°.57N×178°.86W,h0km,mb3.9/16, mb1 4.0/17,mb1mx3.9/47,mbtmp3.9/17,ML3.3/1,MS3.9/1, Ms1 3.9/1,ms1mx2.5/59,Error ellipse: s-maj=27.2km s-min=14.0km az=178.0*

*ISCJB **09** 08:21:56.1±1.2,51°.6N±0°.1×178°.87W±0°.06,h19km±6km, mb3.8/16,MS3.7/1,Error ellipse: s-maj=18.6km s-min=6.1km az=2.6*

*NEIC **09** 08:21:57.9,51°.70N×178°.61W,h3km,ML3.9(AEIC),After AEIC.*

ISC 09 08:21:55.9±2.2,51°.5N±0°.1×178°.75W±0°.05,h9km±12km, n44,σ1s02/40,mb3.9/16,Andreanof Islands

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
GALAA	**Gareloi Lava P**	**0.27**	**357**	P	**Pg**	**08 22 01.9**	**+0.5**
GAEA	**Gareloi East**	**0.29**	**1**	P	**Pg**	**08 22 02.1**	**+0.4**
GANE	**Gareloi Northe**	**0.33**	**357**	P	**Pg**	**08 22 02.5**	**+0.1**
TAFL	**Tanaga Flats**	**0.59**	**63**	P	**Pb**	**08 22 08.0**	**-0.5**
TAFP	**Tanaga Falls P**	**0.63**	**49**	P	**Pb**	**08 22 08.1**	**-1.1**
TAPA	**Tanaga Point A**	**0.67**	**61**	P	**Pb**	**08 22 09.1**	**-0.7**
KIKV	**Kanaga Island**	**1.06**	**68**	P	**Pg**	**08 22 15.7**	**-0.5**
KICM	**Kanaga Island**	**1.06**	**66**	P	**Pb**	**08 22 16.1**	**-0.3**
KIRH	**Kanaga Island**	**1.11**	**68**	P	**Pg**	**08 22 16.6**	**-0.6**
KIRH				S	**Sb**	**08 22 31.4**	**-0.5**
ADAG	**Mount Adagdak**	**1.42**	**69**	P	**Pn**	**08 22 22.0**	**+0.1**
ETKA	**Kagalaska Isla**	**1.51**	**75**	P	**Pn**	**08 22 22.8**	**-0.3**
GSCK	**Great Sitkin C**	**1.69**	**71**	P	**Pn**	**08 22 25.9**	**+0.2**
GSTD	**Great Sitkin T**	**1.72**	**70**	P	**Pn**	**08 22 26.5**	**+0.4**
GSTD				S	**Sn**	**08 22 48.7**	**+0.6**
GSMY	**Great Sitkin M**	**1.76**	**71**	P	**Pn**	**08 22 26.7**	**0.0**
ATKA	**Atka Island**	**2.91**	**74**	P	**Pn**	**08 22 43.6**	**+1.2**
ATKA				S	**Sn**	**08 23 19.0**	**+1.5**
KOWE	**Korovin West**	**2.92**	**71**	P	**Pn**	**08 22 43.6**	**+1.0**
KOKL	**Mount Kliuchef**	**2.94**	**72**	P	**Pn**	**08 22 44.2**	**+1.3**
KOFP	**Korovin Flat P**	**2.99**	**73**	P	**Pn**	**08 22 45.2**	**+1.7**
SEY	**Seymchan**	**19.18**	**318**	P	**P**	**08 26 19.5**	**-0.1**
	0.1nm,0.3s,baz=266,slow=24,SNR=3.0						
ILAR	**Eielson Array**	**21.14**	**39**	P	**P**	**08 26 42.0**	**+1.2**
	0.7nm,0.6s,baz=236,slow=7.2,SNR=7.6						
INK	**Inuvik**	**27.35**	**35**	P	**P**	**08 27 42.6**	**+1.8**
	1.0nm,0.7s,baz=264,slow=8.2,SNR=5.0						
DLBC	**Dease Lake**	**28.27**	**57**	LR	LR	08 38 56.3	
	comp=Z,210nm,19.6s,baz=307,slow=36						
USRK	**Ussuriysk Ar.**	**33.31**	**277**	P	**P**	**08 28 32.7**	**-1.0**
	1.7nm,0.6s,baz=26,slow=6.0,SNR=4.8						
H11N2	**WAKE ISLAND Hy**	**33.65**	**205**	T	T	09 04 12.7	
	baz=16,slow=76,SNR=159						
H11N3	**WAKE ISLAND Hy**	**33.66**	**205**	T	T	09 04 13.5	
	baz=16,slow=76,SNR=146						
H11N1	**WAKE ISLAND Hy**	**33.66**	**205**	T	T	09 04 14.2	
	baz=16,slow=76,SNR=132						
H11S1	**WAKE ISLAND Hy**	**34.87**	**205**	T	T	09 05 44.4	
	baz=16,slow=76,SNR=112						
H11S2	**WAKE ISLAND Hy**	**34.88**	**205**	T	T	09 05 54.6	
	baz=16,slow=76,SNR=97						
H11S3	**WAKE ISLAND Hy**	**34.88**	**205**	T	T	09 05 44.3	
	baz=16,slow=76,SNR=68						
YKA	**Yellowknife Ar**	**35.13**	**47**	P	**P**	**08 28 48.0**	**-1.3**
	0.3nm,0.6s,baz=280,slow=8.5,SNR=8.5						
YKA	**Yellowknife Ar**	**35.13**	**47**	P	**P**	**08 28 48.0**	**-1.3**
NEW	**Newport**	**38.81**	**70**	P	**P**	**08 29 21.2**	**+0.3**
	2.7nm,0.7s,baz=9.5,slow=8.4,SNR=4.3						
YBH	**Yreka Blue Hor**	**38.83**	**82**	P	**P**	**08 29 23.1**	**+1.9**
	2.1nm,0.8s,baz=25,slow=11,SNR=3.9						
KSRS	**Korea Array**	**39.67**	**271**	P	**P**	**08 29 28.9**	**+0.9**
	0.3nm,0.3s,baz=49,slow=9.4,SNR=4.1						
KSAR	**Wonju Array Be**	**39.70**	**271**	P	**P**	**08 29 28.9**	**+0.6**
NVAR	**Mina Array Bea**	**43.51**	**83**	P	**P**	**08 30 00.2**	**+0.4**
	0.7nm,0.5s,baz=287,slow=7.9,SNR=6.1						
PDAR	**Pinedale Array**	**46.25**	**72**	P	**P**	**08 30 21.9**	**+0.3**
	1.5nm,0.6s,baz=302,slow=3.6,SNR=15						
SONM	**Songino Array**	**46.62**	**297**	P	**P**	**08 30 25.2**	**+0.8**
	0.7nm,0.7s,baz=64,slow=6.8,SNR=3.5						
ARCES	**ARCESS Array B**	**57.98**	**350**	P	**P**	**08 31 46.3**	**-2.0**
	1.5nm,0.8s,baz=9.2,slow=7.3,SNR=4.0						
TXAR	**Lajitas Array**	**58.61**	**81**	P	**P**	**08 31 53.3**	**0.0**
	0.4nm,0.4s,baz=308,slow=6.4,SNR=11						
MKAR	**Makanchi Array**	**59.99**	**308**	P	**P**	**08 32 00.4**	**-2.1**
	0.4nm,0.3s,baz=50,slow=7.4,SNR=5.9						
FINES	**FINESS Array B**	**65.68**	**347**	P	**P**	**08 32 39.4**	**-0.7**
	0.9nm,0.7s,baz=352,slow=4.2,SNR=3.4						
AKASG	**Malin Array Be**	**75.45**	**342**	P	**P**	**08 33 40.6**	**+0.7**
	0.9nm,0.4s,baz=19,slow=6.6,SNR=3.8						
ASAR	**Alice Springs**	**85.59**	**223**	P	**P**	**08 34 34.9**	**+0.3**
	0.8nm,0.8s,baz=25,slow=5.9,SNR=7.5						

*CSEM **09** 08:26:01.7±0.1,40°.13N×29°.87E,h2km,MD2.0,Error ellipse: s-maj=3.7km s-min=2.6km az=44.0*

ISK 09 08:26:01.2,40°.14N×29°.85E,h4km,MD2.0,Turkey

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
CAVI	**Cavuskoy**	**0.06**	**353**	*e*PG	Pg	08 26 02.8	+0.2
CAVI				*e*SG	Sg	08 26 04.3	+0.7
CAVI	**Cavuskoy**	**0.06**	**353**	*e*Pg	Pg	08 26 02.8	+0.2
CAVI				*e*Sg	Sg	08 26 04.3	+0.7
ADVT	**Abdulvahap**	**0.30**	**343**	*e*PG	Pg	08 26 08.1	+0.9
ADVT				*e*SG	Sb	08 26 12.9	-1.7
ADVT	**Abdulvahap**	**0.30**	**343**	*e*Pg	Pg	08 26 08.1	+1.0
ADVT				*e*Sg	Sb	08 26 12.9	-1.7
IZI	**Iznik**	**0.35**	**304**	*e*PG	Pg	08 26 08.8	+0.8
IZI	**Iznik**	**0.35**	**304**	*e*Pg	Pg	08 26 08.8	+0.8
BORA	**Eskisehir**	**0.53**	**119**	*i* P	Pg	08 26 11.5	+0.1
BORA				*i* S	Sg	08 26 18.2	0.0
BORA	**Eskisehir**	**0.53**	**119**	P	Pg	08 26 11.5	+0.1
BORA				S	Sg	08 26 18.2	-0.1
GULT	**Gulveren**	**0.58**	**60**	*e*PG	Pb	08 26 13.3	-0.7
GULT	**Gulveren**	**0.58**	**60**	*e*Pg	Pb	08 26 13.3	-0.8
TVSB	**Tavsanli**	**0.75**	**204**	*e*PG	Pb	08 26 16.6	-0.3
TVSB	**Tavsanli**	**0.75**	**204**	*e*Pg	Pb	08 26 16.6	-0.3
ARMT	**Armutlu**	**0.87**	**300**	*e*PG	Pb	08 26 18.6	-0.2
ARMT	**Armutlu**	**0.87**	**300**	*e*Pg	Pb	08 26 18.7	-0.1

*ISCJB **09** 08:27:57.4±0.6,38°.44N±0°.03×29°.12E±0°.04,h11km±5km, Error ellipse: s-maj=6.0km s-min=4.9km az=156.0*

*DDA **09** 08:27:57.1,38°.44N×29°.11E,h7km,Md2.5*

*CSEM **09** 08:27:57.5±0.1,38°.44N×29°.12E,h12km,MD2.5,Error ellipse: s-maj=3.0km s-min=2.4km az=152.0*

*ISK **09** 08:27:57.4,38°.45N×29°.11E,h10km,MD2.7*

ISC 09 08:27:57.6±0.9,38°.45N±0°.03×29°.11E±0°.02,h14km±8km, n19,σ0s64/32,Turkey

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
KHAL	**Karahalli**	**0.31**	**105**	*i* P	**Pg**	**08 28 04.0**	**-0.1**
KHAL				*i* S	**Sg**	**08 28 07.9**	**-0.5**
KHAL	**Karahalli**	**0.31**	**105**	P	**Pg**	**08 28 04.0**	**-0.1**
KHAL				S	**Sg**	**08 28 07.9**	**-0.5**
KHL	**Karahalli**	**0.35**	**111**	*e*PG	**Pg**	**08 28 04.9**	**+0.2**
KHL	**Karahalli**	**0.35**	**111**	*e*Pg	**Pg**	**08 28 04.9**	**+0.2**
KULA	**Kula-Manisa**	**0.36**	**280**	*e*PG	**Pg**	**08 28 04.9**	**+0.1**
KULA				*e*SG	**Sg**	**08 28 10.4**	**+0.6**
KULA	**Kula-Manisa**	**0.36**	**280**	*e*Pg	**Pg**	**08 28 04.9**	**+0.1**
KULA				*e*Sg	**Sg**	**08 28 10.4**	**+0.6**
GDZ	**Gediz**	**0.70**	**25**	*i* P	**Pg**	**08 28 11.0**	**-0.2**
GDZ				*i* S	**Sg**	**08 28 20.7**	**+0.2**
GDZ	**Gediz**	**0.70**	**25**	P	**Pg**	**08 28 11.0**	**-0.2**
GDZ				S	**Sg**	**08 28 20.7**	**+0.2**
TVSB	**Tavsanli**	**1.03**	**15**	*e*PG	**Pg**	**08 28 17.6**	**0.0**
TVSB				*e*SG	**Sn**	**08 28 32.6**	**+0.4**
TVSB	**Tavsanli**	**1.03**	**15**	*e*Pg	**Pg**	**08 28 17.6**	**0.0**
TVSB				*e*Sg	**Sn**	**08 28 32.6**	**+0.4**
AYDB	**Zeytinkoy-Aydi**	**1.08**	**243**	*e*PG	**Pg**	**08 28 18.5**	**0.0**
AYDB	**Zeytinkoy-Aydi**	**1.08**	**243**	*e*Pg	**Pg**	**08 28 18.5**	**0.0**
AKS	**Akhisar**	**1.10**	**293**	*e*PN	**Pg**	**08 28 18.8**	**0.0**
AKS	**Akhisar**	**1.10**	**293**	*e*Pn	**Pg**	**08 28 18.8**	**0.0**
DURS	**Dursunbey**	**1.25**	**337**	*i* P	**Pg**	**08 28 21.8**	**+0.1**
DURS				*i* S	**Sb**	**08 28 36.9**	**-0.2**
DURS	**Dursunbey**	**1.25**	**337**	P	**Pg**	**08 28 21.8**	**+0.1**
DURS				S	**Sb**	**08 28 36.9**	**-0.2**
AYDN	**Tasoluk**	**1.25**	**231**	*i* P	**Pb**	**08 28 20.9**	**-0.1**
AYDN				*i* S	**Sb**	**08 28 36.5**	**-0.5**
AYDN	**Tasoluk**	**1.25**	**231**	P	**Pb**	**08 28 20.9**	**-0.1**
AYDN				S	**Sb**	**08 28 36.5**	**-0.5**
BAGO	**Egridir - ISPA**	**1.40**	**109**	*i* P	**Pn**	**08 28 22.2**	**-0.6**
BAGO				*i* S	**Sg**	**08 28 45.7**	**+2.9**

*DDA **09** 08:29:26.5,40°.73N×41°.29E,h7km,Md2.6*

*CSEM **09** 08:29:26.0±0.1,40°.72N×41°.23E,h5km,MD2.6,Error ellipse: s-maj=5.0km s-min=2.5km az=137.0*

*ISK **09** 08:29:26.3,40°.71N×41°.18E,h5km,MD3.0*

ISC 09 08:29:25.6±1.1,40°.72N±0°.04×41°.23E±0°.03,h11km±12km, n29,σ0s55/38,Turkey

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
DDEM	**Demirkent**	**0.43**	**66**	*i* P	**Pg**	**08 29 34.4**	**+0.3**
DDEM	**Demirkent**	**0.43**	**66**	P	**Pg**	**08 29 34.4**	**+0.3**
DBAD	**Bademkaya**	**0.46**	**50**	*i* P	**Pb**	**08 29 35.4**	**-0.3**
DBAD				*i* S	**Sg**	**08 29 40.7**	**0.0**
DBAD	**Bademkaya**	**0.46**	**50**	P	**Pb**	**08 29 35.4**	**-0.3**
DBAD				S	**Sg**	**08 29 40.7**	**0.0**
DAGI	**Agillar**	**0.63**	**55**	*i* P	**Pb**	**08 29 38.4**	**-0.2**
DAGI				*i* S	**Sg**	**08 29 44.9**	**-1.2**
ARTV	**Artvin**	**0.70**	**49**	*i* P	**Pb**	**08 29 39.8**	**-0.1**
ARTV				*i* S	**Sb**	**08 29 49.2**	**-0.5**
ARTV	**Artvin**	**0.70**	**49**	P	**Pb**	**08 29 39.8**	**-0.1**
ARTV				S	**Sb**	**08 29 49.2**	**-0.5**
DBOC	**Borcka**	**0.70**	**28**	*i* P	**Pb**	**08 29 39.7**	**-0.2**
DBOC				*i* S	**Sb**	**08 29 49.2**	**-0.4**
DBOC	**Borcka**	**0.70**	**28**	P	**Pb**	**08 29 39.7**	**-0.2**
DBOC				S	**Sb**	**08 29 49.2**	**-0.4**
ERZM	**Erzurum**	**0.82**	**173**	*i* P	**Pb**	**08 29 42.0**	**0.0**
ERZM	**Erzurum**	**0.82**	**173**	P	**Pb**	**08 29 42.0**	**0.0**
EZM	**Erzurum**	**0.82**	**173**	*e*PG	**Pb**	**08 29 42.1**	**+0.1**
EZM	**Erzurum**	**0.82**	**173**	*e*Pg	**Pb**	**08 29 42.1**	**+0.1**
BAYT	**Ayd¨–ntepe-Bay**	**0.89**	**249**	*e*PG	**Pg**	**08 29 43.1**	**+0.3**
BAYT				*e*SG	**Sb**	**08 29 55.2**	**0.0**
BAYT	**Ayd¨–ntepe-Bay**	**0.89**	**249**	*e*Pg	**Pg**	**08 29 43.1**	**+0.3**
BAYT				*e*Sg	**Sb**	**08 29 55.2**	**0.0**
KTUT	**Trabzon**	**1.14**	**284**	*e*PN	**Pg**	**08 29 47.9**	**+0.4**
KTUT	**Trabzon**	**1.14**	**284**	*e*Pn	**Pg**	**08 29 47.9**	**+0.4**
GUMT	**Gumushane**	**1.36**	**259**	*e*PN	**Pg**	**08 29 51.6**	**-0.1**
GUMT	**Gumushane**	**1.36**	**259**	*e*Pn	**Pg**	**08 29 51.6**	**-0.1**
EPOS	**Posof**	**1.37**	**55**	*i* P	**Pg**	**08 29 52.1**	**+0.1**
EPOS	**Posof**	**1.37**	**55**	P	**Pg**	**08 29 52.1**	**+0.1**
ERZN	**Erzincan**	**1.62**	**226**	*e*PN	**Pb**	**08 29 55.9**	**+0.3**
BNGB	**Bing¨ll**	**1.78**	**194**	*e*PN	**Pb**	**08 29 58.9**	**+0.6**
ESPY	**Espiye-Giresun**	**1.91**	**277**	*e*PN	**Pb**	**08 30 00.2**	**-0.2**
ESPY	**Espiye-Giresun**	**1.91**	**277**	*e*Pn	**Pb**	**08 30 00.2**	**-0.2**
BINT	**Bingol**	**1.93**	**197**	*e*Pn	**Pn**	**08 29 58.9**	**+0.4**
CHVG	**Ch¨k'valeri**	**2.09**	**17**	*e*PN	**Pg**	**08 30 07.5**	**+1.8**
PTK	**Pertek**	**2.31**	**218**	*e*PN	**Pb**	**08 30 06.2**	**-1.2**
PTK	**Pertek**	**2.31**	**218**	*e*Pn	**Pb**	**08 30 06.2**	**-1.2**

*ISCJB **09** 08:45:03.1±1.4,32°.70S±0°.07×179°.3W±0°.2,h150km, mb3.7/1,Error ellipse: s-maj=20.9km s-min=10.2km az=1.9*

*IDC **09** 08:45:08.1±6.4,32°.66S×179°.89W,h148km±54km,mb3.5/1, mb1 3.7/2,mb1mx3.2/46,mbtmp4.0/2,Error ellipse: s-maj=54.7km s-min=38.9km az=53.0*

ISC 09 08:45:06.7±1.3,32°.78S±0°.09×179°.4W±0°.2,h150km,n25, σ1s86/30,South of Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
MXZ	**Matakaoa Point**	**5.12**	**201**	PN	Pn	08 46 25.2	+3.6
MXZ				SN	**Sn**	**08 47 19.8**	**-0.4**
WMGZ	**Waiomatatini S**	**5.33**	**199**	*e*PN	**Pn**	**08 46 27.1**	**+2.7**
WMGZ				SN	**Sn**	**08 47 27.3**	**+2.2**
HAZ	**Te Kaha**	**5.46**	**204**	PN	**Pn**	**08 46 27.2**	**+1.1**
HAZ				SN	**Sn**	**08 47 31.0**	**+2.7**
PKGZ	**Pakihiroa**	**5.49**	**201**	*e*PN	**Pn**	**08 46 25.9**	**-0.7**
PUZ	**Puketiti**	**5.61**	**199**	*e*PN	**Pn**	**08 46 26.6**	**-1.5**
PUZ				SN	**Sn**	**08 47 30.6**	**-1.2**
TKGZ	**Te Karaka**	**6.07**	**201**	PN	**Pn**	**08 46 36.6**	**+2.4**
TKGZ				*e*SN	**Sn**	**08 47 43.5**	**+0.8**
MWZ	**Matawai**	**6.07**	**203**	*e*PN	**Pn**	**08 46 33.7**	**-0.6**
URZ	**Urewera**	**6.15**	**206**	P	**Pn**	**08 46 37.8**	**+2.5**
	3.4nm,0.3s,baz=270,slow=4.0,SNR=30						
URZ				S	**Sn**	**08 47 43.2**	**-1.5**
	4.3nm,0.3s,baz=175,slow=22,SNR=11						
URZ	**Urewera**	**6.15**	**206**	*e*PN	**Pn**	**08 46 34.9**	**-0.4**
SNGZ	**Shannon Statio**	**6.54**	**203**	PN	**Pn**	**08 46 43.3**	**+2.8**
BKZ	**Black Stump Fm**	**7.18**	**206**	PN	**Pn**	**08 46 50.0**	**+0.8**
KAHZ	**Kahuranaki**	**7.61**	**202**	PN	**Pn**	**08 46 54.2**	**-0.6**
BHHZ	**Black Hill Sta**	**7.62**	**207**	PN	**Pn**	**08 46 55.2**	**+0.2**
PXZ	**Pawanui**	**7.83**	**201**	*e*PN	**Pn**	**08 46 55.3**	**-2.4**
TSZ	**Takapari Road**	**8.16**	**206**	*e*PN	**Pn**	**08 46 59.8**	**-2.3**
BFZ	**Birch Farm**	**8.62**	**203**	*e*PN	**Pn**	**08 47 05.9**	**-2.4**
MRZ	**Mangatainoka R**	**8.83**	**206**	*e*PN	Pn	08 47 06.1	-5.0
MRZ				*e*SN	Sn	08 48 39.0	-10
OGWZ	**Otaki Gorge**	**9.11**	**207**	PN	**Pn**	**08 47 12.5**	**-2.3**
KIW	**Kapiti Island**	**9.25**	**208**	PN	**Pn**	**08 47 14.2**	**-2.5**
CTZ	**Chatham Island**	**11.15**	**169**	*e*PN	**P**	**08 47 50.6**	**+0.5**
CTZ				*e*SN	**Sn**	**08 49 42.5**	**-2.5**
WRA	**Warramunga Arr**	**43.05**	**275**	P	**P**	**08 52 50.3**	**-1.5**
	0.6nm,0.3s,baz=114,slow=8.0,SNR=6.6						
FINES	**FINESS Array B**	**146.92**	**338**	PKPbc	**PKPbc**	**09 04 30.8**	**+0.1**
	1.9nm,0.4s,baz=38,slow=3.1,SNR=26						
NOA	**NORSAR Array B**	**150.89**	**349**	PKPbc	**PKPbc**	**09 04 41.4**	**+0.6**
	0.7nm,0.5s,baz=15,slow=4.1,SNR=3.3						
HFS	**Hagfors**	**151.30**	**346**	PKPbc	**PKPbc**	**09 04 41.8**	**+0.1**
	0.9nm,0.3s,baz=50,slow=4.5,SNR=9.3						
TORD	**Torodi Ar. Bea**	**160.43**	**183**	PKPab	**PKPab**	**09 05 32.9**	**+2.4**
	0.4nm,0.7s,baz=185,slow=4.3,SNR=3.0						

*ISCJB **09** 08:47:58.1±0.7,11°.32S±0°.05×117°.63E±0°.06,h34km, mb3.6/1,Error ellipse: s-maj=9.4km s-min=6.4km az=143.5*

*DJA **09** 08:48:07.4±1.3,11°.S±8°.×117°.7E±°.,h10km,M4.5/10, mB6.0/1,mb4.9/4,MLv4.3/10,Mw(mB)5.7/1*

*IDC **09** 08:48:08.4±2.1,11°.27S×118°.78E,h0km,mb3.6/1, mb1 4.2/5,mb1mx3.6/54,mbtmp4.0/5,ML4.0/4,Error ellipse: s-maj=67.3km s-min=19.6km az=50.0*

ISC 09 08:48:00.4±1.1,11°.26S±0°.08×117°.6E±0°.1,h34km,n13, σ1s31/12,South of Sumbawa

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
PLAI	**Plampang**	**2.42**	**4**	P	**Pb**	**08 48 41.9**	**-1.4**
PLAI				S	**Sn**	**08 49 08.2**	**+2.2**
TWSI	**Taliwang, Sumb**	**2.60**	**344**	P	Pn	08 48 43.7	+3.6
TWSI				S	**Sn**	**08 49 09.8**	**-0.7**
JAGI	**Jajag, Banyuwa**	**4.38**	**309**	P	**Pn**	**08 49 04.6**	**0.0**
ABJI	**Asem Bagus**	**4.78**	**316**	P	**Pn**	**08 49 09.2**	**-0.9**
GMJI	**Gumukmas**	**5.06**	**306**	P	**Pn**	**08 49 14.0**	**+0.1**
KAPI	**Kappang**	**6.56**	**19**	Pn	Pn	08 49 40.8	+6.3
	1.8nm,0.3s,baz=186,slow=10,SNR=8.0						
KAPI				Sn	**Sn**	**08 50 50.0**	**+1.8**
	7.7nm,0.3s,baz=179,slow=22,SNR=25						
PWJI	**Pagerwojo**	**6.56**	**299**	P	**Pn**	**08 49 35.5**	**+1.0**

	2.7nm,0.6s								
ZALV	**Zalesovo Beam**	**42.04**	**313**	P		**P**	**09 01 19.4**	**-1.0**
	3.1nm,0.5s,baz=87,slow=6.6,SNR=17								
ZALV				PcP		**PcP**	**09 03 14.5**	**-0.7**
	0.8nm,0.6s,baz=90,slow=1.4,SNR=3.4								
MKAR	**Makanchi Array**	**44.18**	**302**	P		**P**	**09 01 37.3**	**-0.5**
	0.9nm,0.4s,baz=86,slow=9.8,SNR=11								
KURK	**Kurchatov**	**46.03**	**308**	*e*P		**P**	**09 01 51.5**	**-0.9**
	16nm,0.7s								
KURBB	**Kurchatov Arra**	**46.10**	**308**	P		**P**	**09 01 52.5**	**-0.4**
	3.6nm,0.7s,baz=84,slow=8.1,SNR=28								
TKM2	**Tokmak 2**	**49.66**	**299**	*e*P		**P**	**09 02 21.3**	**+0.4**
	3.3nm,0.8s								
ILAR	**Eielson Array**	**49.88**	**32**	P		**P**	**09 02 22.4**	**+0.4**
	2.1nm,0.8s,baz=271,slow=6.0,SNR=19								
AAK	**Ala-Archa**	**50.52**	**299**	P		**P**	**09 02 27.6**	**+0.2**
	1.3nm,0.5s,baz=177,slow=2.1,SNR=4.9								
AAK	**Ala-Archa**	**50.52**	**299**	*e*P		**P**	**09 02 27.1**	**-0.3**
	1.5nm,0.5s								
BRVK	**Borovoye**	**50.76**	**313**	*e*P		**P**	**09 02 27.9**	**-0.9**
	3.2nm,0.7s								
KKAR	**Karatay Array**	**53.17**	**300**	*e*P		**P**	**09 02 47.5**	**+0.5**
	0.6nm,0.3s								
INK	**Inuvik**	**54.78**	**27**	P		**P**	**09 02 59.2**	**+0.9**
	2.5nm,0.8s,baz=297,slow=6.0,SNR=12								
ARU	**Arti**	**56.53**	**319**	*e*P		**P**	**09 03 10.6**	**-0.4**
	14nm,0.8s								
WRAB	**Tennant Creek**	**56.67**	**188**	*e*P		**P**	**09 03 11.4**	**-1.0**
	3.7nm,0.7s								
WRA	**Warramunga Arr**	**56.68**	**188**	P		**P**	**09 03 11.3**	**-1.1**
	2.9nm,0.5s,baz=4.9,slow=7.4,SNR=48								
ABKAR	**Akbulak array**	**58.05**	**310**	*e*P		**P**	**09 03 21.3**	**-0.7**
	4.7nm,0.6s								
DLBC	**Dease Lake**	**59.01**	**38**	P		**P**	**09 03 30.5**	**+2.0**
	4.0nm,1.0s,baz=301,slow=14,SNR=4.5								
ASAR	**Alice Springs**	**60.41**	**188**	P		**P**	**09 03 37.9**	**-0.6**
	1.3nm,0.7s,baz=14,slow=12,SNR=12								
SPITS	**Spitsbergen Ar**	**60.85**	**349**	P		**P**	**09 03 41.8**	**+1.0**
	3.0nm,0.8s,baz=102,slow=7.0,SNR=4.7								
RES	**Resolute Bay**	**62.99**	**14**	P		**P**	**09 03 55.0**	**-0.3**
	1.9nm,0.5s,baz=308,slow=6.9,SNR=20								
RES	**Resolute Bay**	**62.99**	**14**	*e*P		**P**	**09 03 55.1**	**-0.1**
	3.1nm,0.8s								
GEYT	**Ailbeck**	**63.87**	**299**	P		**P**	**09 04 00.7**	**-1.1**
	1.4nm,0.5s,baz=329,slow=4.2,SNR=3.5								
YKA	**Yellowknife Ar**	**64.20**	**30**	P		**P**	**09 04 03.5**	**+0.2**
	0.8nm,0.7s,baz=305,slow=7.1,SNR=23								
YKA				PcP		**PcP**	**09 04 37.9**	**-0.4**
	0.2nm,0.5s,baz=296,slow=3.7,SNR=6.1								
ARCES	**ARCESS Array B**	**64.28**	**339**	P		**P**	**09 04 03.9**	**0.0**
	1.7nm,0.8s,baz=59,slow=7.2,SNR=8.5								
STKA	**Stephens Creek**	**68.19**	**180**	P		**P**	**09 04 28.0**	**-1.3**
	2.0nm,0.4s,baz=351,slow=5.6,SNR=3.2								
YBH	**Yreka Blue Hor**	**70.69**	**52**	P		**P**	**09 04 46.4**	**+1.4**
	1.1nm,0.7s,baz=342,slow=3.2,SNR=5.1								
KBZ	**Khabaz**	**71.02**	**311**	P		**P**	**09 04 46.7**	**-0.1**
	4.7nm,0.8s,baz=37,slow=2.9,SNR=7.5								
KIV	**Kislovodsk**	**71.03**	**311**	*e*P		**P**	**09 04 47.9**	**+0.9**
	8.4nm,0.6s								
FFC	**Flin Flon**	**74.09**	**33**	*e*P		**P**	**09 05 05.3**	**+0.4**
	2.8nm,0.9s								
HFS	**Hagfors**	**74.35**	**336**	P		**P**	**09 05 06.3**	**-0.1**
	20nm,1.3s,baz=58,slow=8.9,SNR=6.0								
FCC	**Fort Churchill**	**74.39**	**26**	*e*P		**P**	**09 05 06.5**	**-0.1**
	3.8nm,1.1s								
NB2	**NORSAR Subarra**	**74.46**	**337**	P		**P**	**09 05 06.8**	**-0.2**
	comp=Z,1.3nm,0.6s,baz=40,slow=6.2								
NOA	**NORSAR Array B**	**74.46**	**337**	P		**P**	**09 05 07.0**	**0.0**
	comp=Z,2.6nm,0.8s,baz=43,slow=5.5,SNR=7.6								
AKASG	**Malin Array Be**	**74.49**	**322**	P		**P**	**09 05 06.8**	**-0.5**
	comp=Z,3.2nm,0.4s,baz=44,slow=5.7,SNR=12								
KIEV	**Kiev**	**74.50**	**322**	*e*P		**P**	**09 05 06.5**	**-0.9**
	comp=Z,4.8nm,0.5s								
DLMT	**Dillon**	**74.71**	**45**	*e*P		**P**	**09 05 10.1**	**+1.2**
	comp=Z,4.2nm,0.7s								
BOZ	**Bozeman (W)**	**75.08**	**44**	*e*P		**P**	**09 05 12.1**	**+1.1**
	comp=Z,1.6nm,0.7s								
NVAR	**Mina Array Bea**	**75.33**	**53**	P		**P**	**09 05 13.8**	**+1.1**
	comp=Z,0.2nm,0.3s,baz=299,slow=5.4,SNR=3.9								
PDAR	**Pinedale Array**	**78.03**	**45**	P		**P**	**09 05 28.4**	**+0.5**
	comp=Z,0.9nm,0.6s,baz=260,slow=1.1,SNR=7.8								
BRTR	**Keskin Array B**	**78.97**	**311**	P		**P**	**09 05 33.6**	**+0.5**
	comp=Z,1.3nm,0.7s,baz=123,slow=4.6,SNR=6.8								
ULM	**Lac du Bonnet**	**79.89**	**33**	P		**P**	**09 05 37.4**	**-0.2**
	comp=Z,0.9nm,0.4s,baz=324,slow=6.7,SNR=4.3								
AGMN	**Agassiz Nation**	**81.32**	**35**	*e*P		**P**	**09 05 45.1**	**-0.3**
	comp=Z,2.4nm,0.7s								
KHC	**Kasperske Hory**	**82.77**	**328**	*e*P		**P**	**09 05 53.0**	**0.0**
	comp=Z,1.2nm,0.8s								
GERES	**GERESS Array B**	**82.94**	**328**	P		**P**	**09 05 53.2**	**-0.8**
	comp=Z,0.5nm,0.3s,baz=90,slow=6.7,SNR=4.9								
ECSD	**EROS Data Cent**	**84.30**	**38**	*e*P		**P**	**09 06 00.7**	**-0.2**
	comp=Z,2.6nm,0.8s								
BFO	**Black Forest**	**85.54**	**331**	*e*P		**P**	**09 06 07.3**	**+0.2**
	comp=Z,4.2nm,0.8s								
TXAR	**Lajitas Array**	**90.47**	**52**	P		**P**	**09 06 31.8**	**+0.6**
	comp=Z,1.0nm,1.0s,baz=288,slow=3.2,SNR=3.7								
QSPA	**South Pole Qui**	**126.42**	**180**	*e*PKPdf		**PKPdf**	**09 12 30.6**	**-0.4**
LPAZ	**La Paz**	**147.01**	**60**	PKPbc		**PKPbc**	**09 13 13.4**	**+0.3**
	comp=Z,3.1nm,0.6s,baz=22,slow=9.4,SNR=7.8								
LCO	**Las Campanas**	**152.21**	**83**	*e*PKPbc		**PKPbc**	**09 13 25.3**	**0.0**

*IASPEI **09** 08:58:48.2±0.8, 32.67N±0.02×115.72W±0.02, h18km±2km, Error ellipse: s-maj=3.6km s-min=2.8km az=3.0, GT5 selection from ISC bulletin GT5 identified by Bond˙ȷr and McLaughlin (2009) selection criteria Bond˙ȷr and McLaughlin, A new ground truth data set for seismic studies, Seism. Res. Let., 80, 465-472, 2009*

*ISCJB **09** 08:58:48.4±0.3, 32.65N±0.02×115.69W±0.02, h14km±2km, Error ellipse: s-maj=2.8km s-min=2.1km az=174.8*

*NEIC **09** 08:58:49.9, 32.63N×115.73W, h4km, MD4.1(MEX), ML3.9(ECX), ML4.1(PAS), After ECX.*

NEIC Felt [III] at Mexicali. Also felt at Tecate. Felt [II] at Calexico, El Centro and Imperial, California. Also felt at Blythe, Bonita, Chula Vista, Coronado, El Cajon, Heber, Holtville, Pauma Valley, Ramona, San Diego and San Ysidro.

*ECX **09** 08:58:49.9±0.7, 32.63N×115.73W, h4km, MD3.9, ML4.1, Fault plane solution: NP1:ϕs239.29000°, δ60.00000°, λ-90.00000°.*

*MEX **09** 08:58:50.5±1.2, 32.68N×115.63W, h20km±261km, MD4.1*

ISC 09 08:58:48.3±0.6, 32°62N±0°02×115°73W±0°02, h11km±4km, n120, σ1°30/140, 13C-5D, California-Baja California border region

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
SGL	**Mount Signal**	**0.03**	**14**	↑	*i*P	**Pg**	**08 58 50.9**	**+0.5**
ERPC	**Ernies Place**	**0.14**	**26**	↑	*i*P	**Pg**	**08 58 52.4**	**+0.8**
WESC	**Westside Schoo**	**0.14**	**1**	↓	*i*P	**Pg**	**08 58 52.3**	**+0.7**
WESC					*i* S	**Sg**	**08 58 55.1**	**+1.2**
YUH	**Yuha Desert**	**0.16**	**279**	↑	*i*P	**Pb**	**08 58 53.0**	**-0.4**
COK	**Cook Ranch**	**0.23**	**1**	↓	*i*P	**Pg**	**08 58 53.9**	**+0.8**
RMX	**La Rumorosa**	**0.29**	**266**	↑	*i*P	**Pg**	**08 58 54.9**	**+0.6**
RMX					*i* S	**Sg**	**08 58 59.2**	**+0.9**
DREC	**Desert Rsrch C**	**0.30**	**53**	↑	*i*P	**Pg**	**08 58 55.6**	**+1.1**
IBP	**Imperial Bould**	**0.31**	**277**		*i* P	**Pb**	**08 58 55.6**	**-0.3**
IBP	**Imperial Bould**	**0.31**	**277**		P	**Pb**	**08 58 55.3**	**-0.5**
	baz=100,SNR=1000							
IBP					S	**Sb**	**08 58 60.0**	**-0.9**
	baz=100							
IKP	**In-Ko-Pah, Jac**	**0.32**	**275**	↑	*i*P	**Pb**	**08 58 55.8**	**-0.3**
SWSC	**Sam W. Stewart**	**0.32**	**351**		P	**Pg**	**08 58 54.9**	**+0.1**
	baz=169,SNR=473							
CPBX	**Cerro Prieto**	**0.42**	**119**	↓	*e*P	**Pb**	**08 58 57.6**	**0.0**
CPBX				↑	*e*P	**Pg**	**08 58 58.1**	**+1.5**
CPBX					AML	AML	08 59 21.1	
	comp=N,43μm,0.6s							
CPBX	**Cerro Prieto**	**0.42**	**119**		*i* P	**Pb**	**08 58 57.7**	**0.0**
CPBX					*e*S	**Sb**	**08 59 04.0**	**+0.1**
MBIG	**Mexicali**	**0.50**	**115**	↓	*e*P	**Pb**	**08 58 59.3**	**+0.2**
MBIG	**Mexicali**	**0.50**	**115**		*e*P	**Pb**	**08 58 59.3**	**+0.2**
MBIG					*e*S	**Sg**	**08 59 04.0**	**-0.8**
BTCC	**Brunts Corner**	**0.58**	**48**	↑	*i*P	**Pg**	**08 58 59.8**	**+0.1**
MONP2	**Monument Peak**	**0.64**	**295**		P	**Pg**	**08 59 01.3**	**+0.5**
	baz=116,SNR=223							
MONP2					S	**Sg**	**08 59 09.6**	**+0.4**
	baz=116							
EMSC	**East Mesa**	**0.64**	**79**	↑	*i*P	**Pg**	**08 59 01.3**	**+0.5**
BAR	**Barrett**	**0.79**	**274**	↑	*i*P	**Pb**	**08 59 04.2**	**0.0**
BAR	**Barrett**	**0.79**	**274**		*e*Pg	**Pb**	**08 59 04.2**	**0.0**
BAR					*e*Sg	**Sb**	**08 59 14.6**	**-0.3**
TJIG	**Tijuana**	**0.82**	**257**		*i* P	**Pb**	**08 59 04.6**	**+0.1**
TJIG					*i* S	**Sb**	**08 59 15.2**	**-0.4**
CBX	**Cerro Bola**	**0.84**	**249**	↑	*i*P	**Pb**	**08 59 05.4**	**+0.4**
CBX				↑	*e*		08 59 21.1	
CBX					AML	AML	08 59 21.1	
	comp=N,7μm,0.5s							
CBX	**Cerro Bola**	**0.84**	**249**		*i* P	**Pb**	**08 59 05.5**	**+0.4**
CBX					*i* S	**Sb**	**08 59 16.7**	**+0.2**
CBX	**Cerro Bola**	**0.84**	**249**		*i* P	**Pb**	**08 59 05.5**	**+0.4**
CBX					*i* S	**Sb**	**08 59 16.7**	**+0.2**
GLA	**Glamis**	**0.88**	**60**		P	**Pg**	**08 59 04.2**	**-1.0**
	baz=240,SNR=203							
GLA					S	**Sg**	**08 59 15.5**	**-1.2**
	baz=240							
GLA	**Glamis**	**0.88**	**60**		*e*Pg	**Pg**	**08 59 04.4**	**-0.9**
GLA					*e*Sg	**Sg**	**08 59 15.9**	**-0.8**
SDRC	**San Diego Road**	**1.03**	**277**		*i* P	**Pg**	**08 59 08.1**	**0.0**
BC3	**Big Chuckawall**	**1.06**	**13**		P	**Pb**	**08 59 07.2**	**-1.5**
	baz=192,SNR=198							
BC3					S	**Sg**	**08 59 19.9**	**-2.6**
	baz=192							
PFO	**Pinyon Flats O**	**1.16**	**329**		P	**Pb**	**08 59 08.8**	**-1.7**
	baz=148,SNR=142							
PFO					S	**Sb**	**08 59 23.2**	**-2.2**
	baz=148							
PFO	**Pinyon Flats O**	**1.16**	**329**		*e*Pg	**Pb**	**08 59 08.6**	**-1.8**
PFO					*e*Sg	**Sb**	**08 59 23.5**	**-1.9**
109C	**Camp Elliot, M**	**1.19**	**283**		P	**Pb**	**08 59 10.5**	**-0.3**
	baz=103,SNR=206							
109C					S	**Sb**	**08 59 25.8**	**-0.4**
	baz=103							
ZAX	**El Zacaton**	**1.20**	**203**		*e*P	**Pg**	**08 59 11.0**	**-0.4**
ZAX					*i* S	**Sn**	**08 59 27.2**	**-0.2**
PBX	**Punta Banda**	**1.22**	**224**	↑	*i*P	**Pg**	**08 59 11.3**	**-0.4**
ECBX	**El Chinero**	**1.28**	**153**		*e*P	**Pn**	**08 59 11.2**	**-1.0**
ECBX					*e*S	**Sn**	**08 59 28.9**	**-0.4**
BELC	**Belle Mtn. Jos**	**1.39**	**351**		P	**Pn**	**08 59 12.1**	**-1.7**
	baz=171,SNR=133							
Y12C	**Blythe**	**1.52**	**42**		P	**Pn**	**08 59 13.8**	**-1.5**
	baz=222,SNR=63							
Y12C	**Blythe**	**1.52**	**42**		*e*Pn	**Pn**	**08 59 13.9**	**-1.5**
Y12C					*e*Sg	**Sn**	**08 59 36.1**	**+1.1**
MURC	**Murrieta**	**1.57**	**309**		P	**Pn**	**08 59 14.9**	**-1.2**
	baz=128,SNR=116							
SPIG	**San Pedro Mart**	**1.59**	**172**	↓	*e*P	**Pn**	**08 59 16.6**	**-0.1**
SPIG	**San Pedro Mart**	**1.59**	**172**		*e*P	**Pn**	**08 59 16.7**	**-0.6**
SPIG					*e*S	**Sb**	**08 59 37.7**	**-0.4**
SPIG	**San Pedro Mart**	**1.59**	**172**		*e*P	**Pn**	**08 59 16.1**	**-0.6**
SPIG					*e*S	**Sn**	**08 59 34.7**	**-2.7**
SPX	**San Pedro Mart**	**1.59**	**172**		*e*P	**Pn**	**08 59 16.7**	**0.0**
SPX					AML	AML	08 59 42.8	
	comp=E,1μm,0.7s							
SPX	**San Pedro Mart**	**1.59**	**172**		*e*P	**Pn**	**08 59 16.1**	**-0.5**
SPX					*e*S	**Sn**	**08 59 36.3**	**-1.1**
IRM	**Iron Mountain**	**1.61**	**17**		P	**Pn**	**08 59 15.3**	**-1.4**
	baz=197,SNR=42							
113A	**Mohawk Valley,**	**1.67**	**84**		*e*Pn	**Pn**	**08 59 16.1**	**-1.3**
BBRC	**Big Bear Solar**	**1.91**	**329**		P	**Pn**	**08 59 20.3**	**-0.7**
	baz=149,SNR=48							
BFSC	**Mount Baldy Ra**	**2.28**	**316**		Sb	**Sb**	**08 59 58.1**	**+0.3**
	baz=135							
SSK	**Sunset Peak**	**2.28**	**315**		*e*Pn	**Pb**	**08 59 30.4**	**+0.8**
NEE2	**Needles Airpor**	**2.33**	**23**		P	**Pn**	**08 59 25.7**	**-1.0**
	baz=203,SNR=7.1							
CIS	**Catalina Islan**	**2.38**	**290**		S	**Sb**	**08 59 58.7**	**-1.8**
	baz=109							
SCI2	**San Clemente I**	**2.40**	**279**		P	**Pn**	**08 59 27.6**	**+0.1**
	baz=98							
FMP	**Fort Macarthur**	**2.41**	**298**		Sb	**Sb**	**09 00 02.7**	**+1.4**
	baz=116							
LDFC	**Landfair**	**2.50**	**12**		*e*Pn	**Pn**	**08 59 29.4**	**+0.3**
LDFC					*e*Pg	**Pg**	**08 59 37.4**	**+1.1**
MWC	**Mount Wilson**	**2.52**	**310**		*e*Pn	**Pb**	**08 59 34.2**	**+0.6**
MWC					*e*Sn	**Sb**	**09 00 06.1**	**+1.5**
214A	**Organ Pipe Nat**	**2.56**	**104**		P	**Pn**	**08 59 28.2**	**-1.6**
	baz=286							
PASC	**Pasadena Art C**	**2.57**	**308**		*e*Pn	**Pb**	**08 59 34.8**	**+0.3**
Y14A	**Wickenburg**	**2.64**	**59**		*e*Pn	**Pn**	**08 59 29.9**	**-1.0**
DECC	**Green Verdugo**	**2.71**	**307**		P	**Pb**	**08 59 37.3**	**+0.4**
	baz=126							
DECC					Sb	**Sb**	**09 00 11.7**	**+1.5**
	baz=126							
GSC	**Goldstone, Bar**	**2.82**	**342**		*e*Pn	**Pn**	**08 59 32.8**	**-0.6**
W13A	**Hualapai Mount**	**2.91**	**31**		*e*Pn	**Pn**	**08 59 33.7**	**-1.1**
EDW2	**Edwards Air Fo**	**2.93**	**321**		P	**Pb**	**08 59 41.4**	**+0.7**
	baz=140							
EDW2					Sb	**Sb**	**09 00 18.6**	**+2.1**
	baz=140							
BLG	**Laguna Peak, P**	**3.16**	**299**		P	**Pb**	**08 59 42.6**	**-1.8**
	baz=117							
OSI	**Osito Audit: C**	**3.19**	**309**		*e*Pn	**Pn**	**08 59 40.3**	**+1.9**
OSI					*e*Sg	**Sg**	**09 00 28.1**	**-2.8**
SNCC	**San Nicolas Is**	**3.25**	**282**		*e*Pg	**Pg**	**08 59 49.6**	**-0.9**
LRMC	**Laurel Mtn Rad**	**3.28**	**331**		P	**Pb**	**08 59 48.8**	**+2.2**
	baz=150							
SHOC	**Shoshone, Teco**	**3.30**	**352**		P	**Pg**	**08 59 50.4**	**-1.2**
	baz=172							
ARVC	**Arvin**	**3.59**	**315**		P	**Pb**	**08 59 53.7**	**+1.9**
	baz=134							
MPMC	**Manual Prospec**	**3.73**	**338**		P	**Pb**	**08 59 56.5**	**+2.3**
	baz=157							
ISA	**Isabella, Lake**	**3.79**	**324**		P	**Pb**	**08 59 57.8**	**+2.5**
	baz=143							
ISA	**Isabella, Lake**	**3.79**	**324**		*e*Pn	**Pn**	**08 59 47.9**	**+1.1**
ISA					*e*Pg	**Pb**	**08 59 57.6**	**+2.4**
FURC	**Furnace Creek,**	**3.95**	**347**		P	**Pg**	**09 00 02.3**	**-1.7**
	baz=166							
DAC	**Darwin (Calif)**	**3.96**	**338**		*e*Pn	**Pn**	**08 59 48.9**	**-0.3**
DAC					*e*Pg	Pb	09 00 01.5	+3.3
X16A	**Lo Mia Camp, P**	**4.01**	**62**		*e*Pn	**Pn**	**08 59 50.2**	**+0.4**
TUC	**Tucson**	**4.19**	**93**		P	**Pn**	**08 59 52.0**	**-0.3**
	baz=275							
TUC	**Tucson**	**4.19**	**93**		*e*Pn	**Pn**	**08 59 51.5**	**-0.8**
TPNV	**Topopah Spring**	**4.34**	**355**		P	**Pg**	**09 00 11.2**	**-0.2**
	baz=174							
TPNV	**Topopah Spring**	**4.34**	**355**		*e*Pn	**Pn**	**08 59 55.3**	**+1.0**
WUAZ	**Wupatki**	**4.63**	**50**		*e*Pn	**Pn**	**08 59 59.9**	**+1.5**
WUAZ					*e*Pg	**Pg**	**09 00 19.0**	**+2.0**
U15A	**North Rim**	**4.74**	**36**		*e*Pn	**Pn**	**09 00 00.9**	**+0.9**
LCMT	**Little Creek M**	**4.83**	**24**		*e*Pn	**Pn**	**09 00 01.9**	**+0.7**
EKU	**East Kanab**	**5.18**	**30**		*e*Pn	**Pn**	**09 00 07.1**	**+1.2**
X18A	**Snowflake**	**5.19**	**67**		*e*Pn	**Pn**	**09 00 06.5**	**+0.4**
BHU	**Blowhard Mount**	**5.49**	**25**		*e*Pn	**Pn**	**09 00 12.3**	**+1.9**
PKCU	**Pink Cliffs**	**5.57**	**29**		*e*Pn	**Pn**	**09 00 13.5**	**+2.0**
PKCU					*e*Pg	**Pg**	**09 00 34.4**	**-0.6**
W18A	**Petrified Fore**	**5.58**	**62**		P	**Pn**	**09 00 12.4**	**+1.0**
	baz=245							
W18A	**Petrified Fore**	**5.58**	**62**		*e*Pn	**Pn**	**09 00 12.9**	**+1.5**
319A	**Douglas**	**5.62**	**101**		*e*Pn	Pn	09 00 16.1	+4.1
R11A	**Troy Canyon, C**	**5.72**	**1**		P	Pb	09 00 25.2	-2.9
	baz=181							
BTU	**Barney Top**	**6.02**	**31**		*e*Pn	**Pn**	**09 00 19.8**	**+2.2**
WAKR	**Walker**	**6.60**	**334**		*e*Pg	**Pg**	**09 00 52.4**	**-2.3**
MMU	**Miners Mountai**	**6.64**	**32**		*e*Pn	**Pn**	**09 00 24.0**	**-2.0**
121A	**Cookes Peak, D**	**6.71**	**89**		P	**Pn**	**09 00 26.9**	**0.0**
	baz=273,SNR=17							
LAZ	**Ladron**	**7.39**	**74**		*e*Pn	**Pn**	**09 00 38.1**	**+1.7**
MVCO	**Mesa Verde**	**7.50**	**50**		P	**Pn**	**09 00 40.7**	**+2.9**
	baz=234							
MVCO	**Mesa Verde**	**7.50**	**50**		*e*Pn	**Pn**	**09 00 40.7**	**+2.9**
PV05	**Paradox Valley**	**7.68**	**43**		*e*Pn	**Pn**	**09 00 42.8**	**+2.4**
SRU	**San Rafael Swe**	**7.73**	**32**		*e*Pn	**Pn**	**09 00 40.7**	**-0.2**
BNM	**Barren Site**	**7.77**	**76**		*e*Pn	**Pn**	**09 00 42.4**	**+0.9**
NLU	**North Lily Min**	**7.89**	**21**		*e*Pn	**Pn**	**09 00 42.9**	**-0.3**
DUG	**Dugway, Tooele**	**7.92**	**16**		*e*Pn	Pn	09 00 46.6	+3.2
PV10	**Paradox Valley**	**7.92**	**42**		*e*Pn	**Pn**	**09 00 46.6**	**+2.9**
P17A	**Butcher Ranch,**	**7.94**	**29**		*e*Pn	**Pn**	**09 00 42.8**	**-1.0**
PV09	**Paradox Valley**	**7.95**	**41**		*e*Pn	Pn	09 00 47.4	+3.3
PV01	**Paradox Valley**	**8.03**	**45**		*e*Pn	Pn	09 00 48.6	+3.5
ANMO	**Albuquerque**	**8.06**	**71**		P	**Pn**	**09 00 46.7**	**+1.2**
	baz=256							
ANMO	**Albuquerque**	**8.06**	**71**		*e*Pn	**Pn**	**09 00 47.3**	**+1.8**
MPU	**Maple Canyon**	**8.09**	**23**		*e*Pn	**Pn**	**09 00 45.4**	**-0.4**
ELK	**Elko**	**8.12**	**3**		*e*Pg	Pg	09 01 26.3	+2.6
P18A	**Preston Nutter**	**8.28**	**31**		*e*Pn	**Pn**	**09 00 49.6**	**+1.0**
JLLI	**Jordanelle**	**8.68**	**22**		*e*Pn	**Pn**	**09 00 54.9**	**+0.9**
MNTX	**Cornudas Mount**	**8.82**	**93**		P	**Pn**	**09 00 56.3**	**+0.4**
	baz=279							
MNTX	**Cornudas Mount**	**8.82**	**93**		*e*Pn	**Pn**	**09 00 56.5**	**+0.6**
S22A	**4UR Ranch, Cre**	**8.90**	**52**		P	**Pn**	**09 00 59.1**	**+2.0**
	baz=237							
S22A	**4UR Ranch, Cre**	**8.90**	**52**		*e*Pn	**Pn**	**09 00 59.5**	**+2.4**
O20A	**White River Ci**	**9.62**	**37**		*e*Pn	Pn	09 01 10.0	+3.1
SDCO	**Great Sand Dun**	**9.81**	**56**		*e*Pn	**Pn**	**09 01 11.7**	**+2.1**
AHID	**Auburn Hatcher**	**10.77**	**19**		*e*Pn	Pn	09 01 26.0	+3.4
TX31	**Lajitas Ar. Si**	**10.86**	**104**		*e*Pn	Pn	09 01 28.1	+4.2
MSTX	**Muleshoe**	**10.93**	**79**		P	Pn	09 01 29.1	+4.3
	baz=266							
MSTX	**Muleshoe**	**10.93**	**79**		*e*Pn	Pn	09 01 30.1	+5.3

*BYKL **09** 09:00:08.9±0.9, 56.61N×121.64E*
*YARS **09** 09:00:09.8±0.2, 56.60N±0.01×121.61E±0.01, h10km*

ISC 09 09:00:08.0±0.7, 56.65N±0.03×121.66E±0.02, h10km, n23, σ2.9/47/51, 1D, Southeastern Siberia

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
YKLR	**Yuktali**	**0.06**	**184**	↓	*i*P	**Pg**	**09 00 07.4**	**-2.8**
YKLR					*e*Sg	**Sg**	**09 00 08.8**	**-2.9**
KHNR	**Khani**	**0.96**	**287**		*e*Pg	**Pn**	**09 00 27.0**	**-0.7**
KHNR					*e*Sg	**Sb**	**09 00 39.5**	**-0.2**
KHN	**Khani**	**1.06**	**285**		*e*P	**Pg**	**09 00 27.1**	**-1.4**
KHN					*e*S	**Sg**	**09 00 38.8**	**-3.5**
CLNS	**Chul'man**	**1.79**	**83**		*e*P	**Pg**	**09 00 42.6**	**+0.3**
CLNS					*e*S	**Sg**	**09 01 06.2**	**+0.7**
CRS	**Chara**	**1.88**	**279**		*e*Pg	**Pg**	**09 00 44.1**	**-0.1**
CRS					*e*Sg	**Sg**	**09 01 07.7**	**-0.8**
CRS					Pmax			
	326nm,0.6s							
CRS					Smax			
	438nm,0.5s							
CRS	**Chara**	**1.88**	**279**		*e*P	**Pg**	**09 00 44.0**	**-0.1**
CRS					*e*S	**Sg**	**09 01 07.8**	**-0.8**
TUP	**Tupik**	**2.44**	**204**		*e*Pn	**Pn**	**09 00 49.4**	**+1.5**
TUP					*e*Pg	**Pb**	**09 00 52.3**	**+0.4**
TUP					*e*Sn	**Sn**	**09 01 18.2**	**+0.5**
TUP					*e*Sg	**Sb**	**09 01 22.6**	**+0.7**
TUP					Pmax			
	59nm,0.3s							
TUP					Smax			
	791nm,0.7s							
TUP	**Tupik**	**2.44**	**204**		*e*P	**Pn**	**09 00 49.3**	**+1.4**
TUP					*e*P	**Pb**	**09 00 52.2**	**+0.4**
TUP					*e*S	**Sn**	**09 01 18.0**	**+0.3**
TUP					*e*S	**Sb**	**09 01 22.4**	**+0.5**
ALDR	**Aldan**	**2.81**	**44**		*e*P	**Pg**	**09 01 01.6**	**-0.3**
ALDR					*e*S	**Sg**	**09 01 38.6**	**+0.3**
NLYR	**Nelyaty**	**3.30**	**270**		*e*Pn	**Pn**	**09 01 02.5**	**+2.8**
NLYR					*e*Pg	**Pb**	**09 01 07.8**	**+1.2**

comp=Z,166nm,19.2s,baz=153,slow=35
JCJ Chichijima 9.94 171 P Pn 09 04 00.5 -3.5
5.9nm,0.3s,baz=330,slow=20,SNR=3.5
KSRS Korea Array 10.07 277 P Pn 09 04 11.1 +5.2
0.1nm,0.3s,baz=88,slow=14,SNR=12
KSRS LR LR 09 08 00.7
comp=Z,118nm,18.1s,baz=76,slow=36
KLR Kul'dur 13.83 335 P **P 09 05 05.1 -0.4**
0.1nm,0.3s,baz=142,slow=14,SNR=5.1
PETK Petropavlovsk- 20.11 31 LR LR 09 13 51.6
comp=Z,25nm,20.2s,baz=72,slow=36
MA2 Magadan 23.58 13 P **P 09 06 52.4 +0.8**
4.3nm,0.5s,baz=207,slow=8.3,SNR=7.2
SEY Seymchan 27.00 12 P **P 09 07 24.0 +1.2**
3.6nm,0.7s,baz=199,slow=7.4,SNR=8.9
SONM Songino Array 27.24 304 P **P 09 07 25.5 +0.2**
3.3nm,0.9s,baz=128,slow=9.4,SNR=3.9
H11N2 WAKE ISLAND Hy 28.72 119 T T 09 37 28.1
baz=313,slow=75,SNR=88
H11N1 WAKE ISLAND Hy 28.73 120 T T 09 37 28.6
baz=313,slow=75,SNR=79
H11N3 WAKE ISLAND Hy 28.74 119 T T 09 37 29.4
baz=313,slow=75,SNR=52
H11S1 WAKE ISLAND Hy 29.41 122 T T 09 38 19.1
baz=314,slow=76,SNR=176
H11S3 WAKE ISLAND Hy 29.42 122 T T 09 38 21.4
baz=314,slow=76,SNR=88
H11S2 WAKE ISLAND Hy 29.43 122 T T 09 38 19.6
baz=314,slow=76,SNR=142
TLY Talaya 29.85 311 LR LR 09 20 16.4
comp=Z,58nm,19.0s,baz=87,slow=37
ZALV Zalesovo Beam 41.45 312 P **P 09 09 27.4 -0.1**
1.3nm,0.5s,baz=82,slow=5.5,SNR=5.8
ZALV LR LR 09 27 23.3
comp=Z,33nm,19.5s,baz=70,slow=37
MKAR Makanchi Array 43.56 302 P **P 09 09 45.4 +0.4**
0.7nm,0.6s,baz=91,slow=8.3,SNR=8.3
ILAR Eielson Array 49.93 32 P **P 09 10 34.8 +0.3**
0.5nm,0.6s,baz=259,slow=5.0,SNR=6.5
INK Inuvik 54.77 27 P **P 09 11 11.4 +1.1**
0.6nm,0.6s,baz=307,slow=7.1,SNR=4.8
WRA Warramunga Arr 56.90 187 P P 09 11 19.5 -6.6
0.4nm,0.4s,baz=7.6,slow=7.6,SNR=11
ASAR Alice Springs 60.62 167 P P 09 11 47.0 -5.0
0.2nm,0.7s,baz=9.2,slow=6.2,SNR=2.6
RES Resolute Bay 62.85 14 P **P 09 12 06.5 +0.2**
0.6nm,0.4s,baz=308,slow=8.8,SNR=9.9
ARCES ARCESS Array B 63.82 339 P **P 09 12 13.9 +1.0**
3.5nm,0.9s,baz=44,slow=7.1,SNR=4.9
YKA Yellowknife Ar 64.22 30 P **P 09 12 15.8 +0.2**
0.3nm,0.7s,baz=303,slow=6.8,SNR=7.8
FINES FINESS Array B 68.55 332 P **P 09 12 43.4 +0.1**
4.1nm,0.8s,baz=46,slow=5.5,SNR=8.1
AKASG Malin Array Be 73.92 322 P **P 09 13 15.7 -0.4**
0.2nm,0.3s,baz=48,slow=5.8,SNR=5.6
NB2 NORSAR Subarra 73.98 337 P **P 09 13 16.5 +0.2**
comp=Z,2.4nm,0.9s,baz=41,slow=6.2
NOA NORSAR Array B 73.98 337 P **P 09 13 16.2 -0.1**
comp=Z,2.1nm,1.0s,baz=45,slow=5.7,SNR=3.4
NVAR Mina Array Bea 75.59 53 P **P 09 13 25.2 -1.0**
comp=Z,0.6nm,0.8s,baz=284,slow=7.3,SNR=2.9
PDAR Pinedale Array 78.22 45 P **P 09 13 40.2 -0.8**
comp=Z,0.4nm,0.8s,baz=300,slow=1.8,SNR=2.8
BRTR Keskin Array B 78.37 311 P P 09 13 37.9 -3.9
comp=Z,0.5nm,0.6s,baz=32,slow=7.6,SNR=2.4
GERES GERESS Array B 82.40 328 P **P 09 14 02.5 -0.7**
comp=Z,0.3nm,0.4s,baz=41,slow=6.6,SNR=2.8
TXAR Lajitas Array 90.72 52 P **P 09 14 43.8 -0.6**
comp=Z,0.2nm,0.6s,baz=316,slow=2.5,SNR=4.0

JMA 09 09:12:29.2±0.4, 37°.83N×144°.30E, h59km, M3.6, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**2.41**	**286**	P	Pn	09 13 07.7	+1.5
JIO				*eS*	Sn	09 13 34.6	+0.1
JMK	**Ichinoseki**	**2.67**	**296**	S	Sn	09 13 42.1	+1.3
JOM	**Ohasama**	**2.87**	**306**	P	Pn	09 13 14.1	+1.6
JOM				*eS*	Sn	09 13 48.0	+2.2
JOU	**Okura**	**2.92**	**282**	P	Pn	09 13 14.6	+1.4
JANG	**Nango**	**3.34**	**320**	P	Pn	09 13 20.6	+1.7
JANG				*eS*	Sn	09 13 58.9	+1.6
JNBK	**Urakawa-nobuka**	**4.60**	**346**	P	Pn	09 13 37.6	+1.4
JNBK				S	Sn	09 14 29.6	+1.3
JCH	**Churui**	**4.83**	**352**	P	Pn	09 13 39.6	+0.3
JCH				S	Sn	09 14 33.9	0.0

*ISCJB **09** 09:12:51.5±0.5, 35°.51N±0°.04×140°.20E±0°.06, h75km±4km, mb3.6/15, Error ellipse: s-maj=8.9km s-min=5.5km az=154.0*
*JMA **09** 09:12:51.7±0.2, 35°.64N×140°.21E, h67km±2km, M3.1*
*IDC **09** 09:12:51.9±2.1, 35°.25N×140°.11E, h72km±19km, mb3.4/14, mb1 3.6/17, mb1mx3.5/64, mbtmp3.7/17, MS2.5/1, Ms1 2.5/1, ms1mx2.2/33, Error ellipse: s-maj=21.4km s-min=15.8km az=66.0*
ISC 09 09:12:52.9±0.8, 35°.51N±0°.05×140°.18E±0°.06, h69km±7km, n37, σ0°.94/40, mb3.8/15, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JCN	**Nagara**	**0.09**	**168**	P	**Pn**	**09 13 02.8**	**-0.2**
TOK	**Tokyo**	**0.38**	**297**	P	**Pn**	**09 13 04.2**	**-0.3**
TOK				*eS*	**Sn**	**09 13 13.6**	**+0.5**
BSO3	**Boso 3**	**0.76**	**159**	P	**Pn**	**09 13 08.2**	**+0.1**
JOD2	**Odawara 2**	**0.92**	**255**	P	**Pn**	**09 13 09.9**	**-0.5**
JOD2				S	**Sn**	**09 13 23.2**	**-0.2**
JIM2	**Oshima 3**	**1.00**	**218**	P	**Pn**	**09 13 11.2**	**-0.2**
JIM2				S	**Sn**	**09 13 25.6**	**+0.5**
BSO1	**Boso 1**	**1.08**	**142**	P	**Pn**	**09 13 11.2**	**-0.6**
JAG	**Ashikaga**	**1.09**	**327**	P	**Pn**	**09 13 10.3**	**-2.1**
JRY	**Ryogami san**	**1.15**	**296**	P	**Pn**	**09 13 12.6**	**-0.7**
JIZS	**Izushimoda**	**1.33**	**234**	P	**Pn**	**09 13 15.4**	**-0.1**
JIZS				S	**Sn**	**09 13 32.6**	**+0.1**
JYN	**Shimob**	**1.33**	**270**	P	**Pn**	**09 13 15.3**	**-0.4**
JYN				S	**Sn**	**09 13 32.9**	**+0.1**
JKT	**Katashina**	**1.46**	**329**	P	**Pn**	**09 13 15.5**	**-1.9**
MJAR	**Matsushiro Arr**	**1.90**	**303**	P	**Pn**	**09 13 22.1**	**-1.1**
	23nm,0.3s,baz=131,slow=13,SNR=126						
MJAR				S	**Sn**	**09 13 48.4**	**+2.2**
	15nm,0.3s,baz=131,slow=21,SNR=7.4						
MAT	**Matsushiro**	**1.90**	**303**	P	**Pn**	**09 13 22.6**	**-0.6**
MAT				S	**Sn**	**09 13 45.2**	**-1.0**
JHJ	**Hachijo jima 2**	**2.41**	**188**	P	**Pn**	**09 13 30.6**	**+0.6**
	59nm,0.3s,baz=116,slow=18,SNR=14						
JHJ				S	**Sn**	**09 13 58.2**	**-0.3**
	67nm,0.3s,baz=306,slow=22,SNR=9.2						
JNU	**Nakatsue**	**8.05**	**255**	LR	LR	09 18 18.1	
	comp=Z,31nm,20.4s,baz=118,slow=41						
JCJ	**Chichijima**	**8.56**	**168**	P	**Pn**	**09 14 51.6**	**-2.6**
	9.0nm,0.3s,baz=274,slow=18,SNR=5.3						
JCJ				S	**Sn**	**09 16 28.5**	**-0.7**
	baz=279,slow=19						
KSRS	**Korea Array**	**10.06**	**285**	P	**Pn**	**09 15 15.6**	**+1.2**
	0.1nm,0.3s,baz=94,slow=14,SNR=4.3						
USRK	**Ussuriysk Ar.**	**10.71**	**327**	P	**Pn**	**09 15 24.7**	**+1.3**
	0.1nm,0.3s,baz=148,slow=14,SNR=4.6						
SONM	**Songino Array**	**27.85**	**307**	P	**P**	**09 18 35.1**	**-0.7**
	0.3nm,0.6s,baz=113,slow=7.0,SNR=2.7						
H11N2	**WAKE ISLAND Hy**	**28.29**	**117**	T	T	09 48 29.9	
	baz=310						
H11N1	**WAKE ISLAND Hy**	**28.30**	**117**	T	T	09 48 23.1	
	baz=310						
H11N3	**WAKE ISLAND Hy**	**28.31**	**117**	T	T	09 48 27.0	
	baz=310						
ZALV	**Zalesovo Beam**	**42.22**	**314**	P	**P**	**09 20 38.3**	**-0.5**
	1.0nm,0.6s,baz=126,slow=11,SNR=1.5						
MKAR	**Makanchi Array**	**44.10**	**303**	P	**P**	**09 20 54.4**	**+0.2**
	0.7nm,0.4s,baz=87,slow=9.9,SNR=9.2						
KURBB	**Kurchatov Arra**	**46.17**	**309**	P	**P**	**09 21 10.2**	**-0.2**
	1.3nm,0.6s,baz=84,slow=7.7,SNR=12						
ILAR	**Eielson Array**	**51.31**	**32**	P	**P**	**09 21 49.6**	**0.0**
	0.7nm,0.9s,baz=264,slow=6.3,SNR=6.3						
WRA	**Warramunga Arr**	**55.42**	**187**	P	P	09 22 16.5	-3.7
	0.6nm,0.5s,baz=2.4,slow=7.4,SNR=5.3						
INK	**Inuvik**	**56.20**	**27**	P	**P**	**09 22 25.5**	**+0.3**
	1.0nm,0.9s,baz=305,slow=3.3,SNR=3.3						
ARU	**Arti**	**56.84**	**319**	P	**P**	**09 22 30.2**	**+0.2**
	3.5nm,0.2s,baz=14,slow=3.9,SNR=5.1						
ASAR	**Alice Springs**	**59.15**	**187**	P	P	09 22 42.3	-4.2
	0.4nm,0.9s,baz=14,slow=8.6,SNR=3.5						
ARCES	**ARCESS Array B**	**65.07**	**339**	P	**P**	**09 23 25.5**	**0.0**
	1.7nm,0.8s,baz=57,slow=5.1,SNR=3.7						
YKA	**Yellowknife Ar**	**65.62**	**29**	P	**P**	**09 23 29.5**	**+0.3**
	0.1nm,0.7s,baz=307,slow=7.1,SNR=5.4						
AKASG	**Malin Array Be**	**74.89**	**322**	P	**P**	**09 24 26.0**	**0.0**
	0.7nm,0.4s,baz=47,slow=5.6,SNR=4.2						
NOA	**NORSAR Array B**	**75.20**	**337**	P	**P**	**09 24 26.8**	**-0.9**
	0.7nm,0.6s,baz=40,slow=8.1,SNR=3.2						
PDAR	**Pinedale Array**	**79.45**	**45**	P	**P**	**09 24 52.7**	**+0.7**
	0.3nm,0.6s,baz=298,slow=3.2,SNR=4.1						
TXAR	**Lajitas Array**	**91.84**	**52**	P	**P**	**09 25 54.1**	**+0.5**
	0.1nm,0.6s,baz=293,slow=2.7,SNR=2.3						
TORD	**Torodi Ar. Bea**	**117.67**	**313**	PKP	**PKPdf**	**09 31 30.7**	**-0.9**
	0.2nm,0.5s,baz=0.0,slow=2.9,SNR=2.6						

IDC 09 09:18:04.1±2.9, 53°.77N×88°.13E, h0km, mb1 3.0/2, mb1mx2.9/69, mbtmp3.0/2, ML2.7/2, Error ellipse: s-maj=23.9km s-min=16.3km az=58.0, Southwestern Siberia

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
I46RU	**ZALESOVO INFRA**	**1.97**	**277**	*i*		09 31 40.0	
	baz=94,slow=327,SNR=26						
ZALV	**Zalesovo Beam**	**1.97**	**277**	Pg	Pn	09 18 39.0	+0.3
	1.7nm,0.3s,baz=98,slow=11,SNR=36						
ZALV				Lg	Lg	09 19 06.8	
	7.2nm,0.3s,baz=97,slow=26,SNR=27						
KURBB	**Kurchatov Arra**	**6.69**	**246**	Pn	Pn	09 19 44.1	+0.6
	0.1nm,0.3s,baz=62,slow=14,SNR=15						
KURBB				Sn	Sn	09 20 59.5	-0.9
	0.0nm,0.3s,baz=62,slow=23,SNR=3.3						
KURBB				Lg	Lg	09 21 36.0	
	0.0nm,0.3s,baz=59,slow=29,SNR=6.8						
MKAR	**Makanchi Array**	**7.92**	**211**	Pn	Pn	09 20 01.4	+1.0
	0.1nm,0.3s,baz=28,slow=15,SNR=5.2						
MKAR				Sn	Sn	09 21 30.8	+0.2
	0.1nm,0.3s,baz=33,slow=24,SNR=3.1						
MKAR				Lg	Lg	09 22 16.2	
	0.1nm,0.3s,baz=27,slow=26,SNR=4.2						

*ISCJB **09** 09:18:14.6±0.6, 6°.48N×126°.42E±0°.1, h137km±5km, mb3.8/10, Error ellipse: s-maj=18.0km s-min=11.2km az=176.8*
*IDC **09** 09:18:15.9±1.2, 6°.48N×126°.42E, h132km±11km, mb3.7/10, mb1 3.9/11, mb1mx3.5/58, mbtmp4.1/11, Error ellipse: s-maj=40.4km s-min=12.2km az=75.0*
*MAN **09** 09:18:18, 6°.90N×126°.43E, h125km, mb4.7, ML3.6, MS3.5*
ISC 09 09:18:15.9±0.8, 6°.50N±0°.08×126°.4E±0°.1, h134km±7km, n17, σ1°.91/24, mb4.0/10, 1C-1D, Mindanao

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MATI	**Mati**	**0.47**	**342**	*eP*	**Pn**	**09 18 35.1**	**-0.2**
MATI				*eS*	**Sn**	**09 18 50.2**	**+0.2**
DAV	**Davao City (W)**	**1.00**	**305**	P	**Pn**	**09 18 38.4**	**-0.7**
	140nm,0.3s,baz=228,slow=1.3,SNR=5.2						
DAV				S	**Sn**	**09 18 57.3**	**+0.4**
	292nm,0.3s,baz=254,slow=23,SNR=34						
DMPH	**Davao City--Mi**	**1.06**	**303**	*eP*	**Pn**	**09 18 41.3**	**+1.5**
DMPH				*eS*	**Sn**	**09 19 00.6**	**+2.6**
BIPH	**Bislig**	**1.68**	**358**	*i*	**Pn**	**09 18 45.8**	**-0.4**
BIPH				*i*	**Sn**	**09 19 09.0**	**-0.5**
BUKP	**Musuan**	**1.91**	**316**	*eP*	**Pn**	**09 18 48.8**	**-0.3**
BUKP				*eS*	**Sn**	**09 19 12.0**	**-2.6**
KAPI	**Kappang**	**13.22**	**210**	P	**Pn**	**09 21 16.8**	**-1.9**
	0.8nm,0.3s,baz=32,slow=13,SNR=4.6						
FITZ	**Fitzroy Crossi**	**24.45**	**182**	P	**P**	**09 23 21.9**	**-0.5**
	4.0nm,0.7s,baz=353,slow=8.8,SNR=6.6						
WRA	**Warramunga Arr**	**27.41**	**164**	P	**P**	**09 23 49.5**	**+0.4**
	0.6nm,0.4s,baz=347,slow=11,SNR=16						
WRA				PcP	**PcP**	**09 27 05.2**	**+0.5**
	0.3nm,0.5s,baz=337,slow=2.6,SNR=3.8						
ASAR	**Alice Springs**	**30.86**	**167**	P	**P**	**09 24 19.5**	**-0.2**
	0.7nm,0.4s,baz=341,slow=7.0,SNR=12						
ASAR				PcP	**PcP**	**09 27 13.7**	**+0.2**
	0.4nm,0.5s,baz=353,slow=2.6,SNR=6.8						
STKA	**Stephens Creek**	**40.82**	**160**	P	**P**	**09 25 45.0**	**+0.7**
	1.7nm,0.5s,baz=326,slow=8.2,SNR=4.2						
SONM	**Songino Array**	**44.59**	**341**	PcP	**PcP**	**09 27 56.2**	**+0.8**
	0.5nm,0.5s,baz=169,slow=3.4,SNR=3.6						
MKAR	**Makanchi Array**	**55.12**	**324**	P	**P**	**09 27 34.8**	**+0.5**
	0.4nm,0.5s,baz=121,slow=5.6,SNR=2.6						
BVAR	**Borovoye Array**	**64.84**	**326**	P	**P**	**09 28 41.6**	**+1.1**
	0.4nm,0.5s,baz=126,slow=7.3,SNR=3.1						
ILAR	**Eielson Array**	**82.76**	**26**	P	**P**	**09 30 24.7**	**0.0**
	1.1nm,0.5s,baz=250,slow=5.1,SNR=24						
SPITS	**Spitsbergen Ar**	**87.72**	**349**	P	**P**	**09 30 48.5**	**-0.6**
	4.5nm,0.9s,baz=98,slow=4.4,SNR=4.1						
ARCES	**ARCESS Array B**	**87.76**	**340**	P	**P**	**09 30 48.9**	**-0.5**
	2.5nm,0.9s,baz=79,slow=6.3,SNR=7.1						
YKA	**Yellowknife Ar**	**97.12**	**24**	P	**P**	**09 31 32.9**	**+0.2**
	0.4nm,0.6s,baz=299,slow=4.4,SNR=12						

JMA 09 09:20:18.8±0.1, 36°.17N×141°.27E, h32km±2km, M3.0, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CHOJ	**Chosi**	**0.57**	**216**	P	Pb	09 20 30.2	-0.3
CHOJ				S	Sb	09 20 38.7	+0.2
JHO	**Hitachi**	**0.72**	**308**	P	Pn	09 20 32.5	-0.2
JHO				S	Sb	09 20 42.5	0.0
BSO1	**Boso 1**	**1.53**	**189**	S	Sn	09 21 02.0	+0.1

*JMA **09** 09:40:48.7±0.1, 36°.41N×141°.00E, h44km±1km, M3.7*
JMA Felt I J1.
*IDC **09** 09:40:50.8±1.7, 37°.25N×140°.51E, h0km, mb3.6/5, mb1 3.7/5, mb1mx3.4/65, mbtmp3.6/5, Error ellipse: s-maj=36.1km s-min=24.4km az=66.0*
ISC 09 09:40:47.6±2.5, 36°.43N±0°.09×141°.1E±0°.1, h25km±13km, n16, σ0°.65/23, mb3.7/5, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JHO	**Hitachi**	**0.43**	**296**	P	**Pn**	**09 40 58.2**	**0.0**
JHO				S	**Sn**	**09 41 04.5**	**-0.8**
ONAJ	**Iwakimizuishiy**	**0.70**	**344**	P	**Pn**	**09 41 01.9**	**-0.2**
ONAJ				S	**Sb**	**09 41 10.9**	**+0.3**
JYT	**Yasato**	**0.72**	**254**	P	**Pn**	**09 41 01.9**	**-0.2**
JYT				S	**Sb**	**09 41 10.7**	**-0.2**
JFK	**Kawauchi**	**0.95**	**352**	P	**Pb**	**09 41 05.2**	**-0.3**
JFT	**Otama**	**1.23**	**333**	P	**Pb**	**09 41 10.5**	**+0.3**
JFT				S	**Sb**	**09 41 25.5**	**-0.2**
JAG	**Ashikaga**	**1.28**	**270**	P	**Pn**	**09 41 10.1**	**+0.1**
JAG				S	**Sn**	**09 41 25.6**	**-0.8**
JMM	**Marumori**	**1.45**	**352**	P	**Pn**	**09 41 13.0**	**+0.7**
JMM				S	**Sn**	**09 41 30.2**	**-0.4**
JFY	**Yanaizu**	**1.46**	**313**	P	**Pb**	**09 41 13.7**	**-0.3**
JKT	**Katashina**	**1.49**	**284**	P	**Pn**	**09 41 13.4**	**+0.5**
JKT				S	**Sn**	**09 41 31.6**	**+0.1**
MJAR	**Matsushiro Arr**	**2.29**	**274**	Pn	**Pn**	**09 41 24.4**	**+0.5**
	16nm,0.3s,baz=101,slow=8.7,SNR=123						
MJAR				Sn	**Sn**	**09 41 52.8**	**+1.5**
	5.5nm,0.3s,baz=159,slow=21,SNR=5.7						
MAT	**Matsushiro**	**2.29**	**274**	P	**Pn**	**09 41 25.2**	**+1.3**
MAT				*eS*	**Sn**	**09 41 50.8**	**-0.5**
SONM	**Songino Array**	**27.89**	**305**	P	**P**	**09 46 35.2**	**-0.4**
	0.3nm,0.5s,baz=106,slow=11,SNR=3.1						
ZALV	**Zalesovo Beam**	**42.11**	**313**	P	**P**	**09 48 38.1**	**+0.7**
	0.6nm,0.4s,baz=104,slow=4.8,SNR=2.9						
KURBB	**Kurchatov Arra**	**46.15**	**308**	P	**P**	**09 49 09.3**	**-0.6**
	0.9nm,0.5s,baz=85,slow=7.5,SNR=13						
WRA	**Warramunga Arr**	**56.42**	**188**	P	P	09 50 39.1	+12
	0.7nm,1.0s,baz=5.8,slow=7.4,SNR=4.9						
ASAR	**Alice Springs**	**60.15**	**188**	P	P	09 51 06.2	+13
	0.7nm,1.0s,baz=13,slow=38,SNR=4.2						

IDC 09 09:41:11.6±14.0, 14°.24S×166°.14E, h0km, mb3.6/3, mb1 3.8/4, mb1mx3.6/40, mbtmp3.6/4, ML3.3/1, MS3.0/1, Ms1 3.0/1, ms1mx2.5/33, Error ellipse: s-maj=245.4km s-min=38.2km az=58.0, Vanuatu Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
DZM	**Mont Dzumac**	**7.79**	**178**	Pn	Pn	09 43 06.3	-0.1
	0.5nm,0.3s,baz=3.1,slow=6.6,SNR=13						
DZM				Sn	Sn	09 44 35.9	+0.5
	0.4nm,0.3s,baz=15,slow=20,SNR=3.0						
PMG	**Port Moresby**	**19.18**	**282**	LR	LR	09 52 13.6	
	comp=Z,46nm,18.4s,baz=330,slow=34						
STKA	**Stephens Creek**	**28.49**	**228**	P	P	09 47 09.3	+0.6
	1.7nm,0.6s,baz=41,slow=8.8,SNR=4.2						
WRA	**Warramunga Arr**	**30.89**	**255**	P	P	09 47 30.4	+0.2
	0.4nm,1.0s,baz=81,slow=7.6,SNR=3.1						
ASAR	**Alice Springs**	**31.83**	**248**	P	P	09 47 37.7	-0.7
	0.3nm,0.7s,baz=74,slow=9.5,SNR=6.4						

*NIED **09** 09:42:00, 38°.20N×141°.80E, h68km, Mw5.4 Best double couple: M0 1.21000×10^17 NP1:φs=57.00000°, δ53.00000°, λ156.00000°. NP2:φs 162.00000°, δ71.00000°, λ39.00000°.*
*MOS **09** 09:42:19.0±0.8, 38°.50N×141°.74E, h44km, mb5.4/118, MS4.4/23, Error ellipse: s-maj=5.6km s-min=3.7km az=97.8*
*BJI **09** 09:42:19.0, 38°.20N×141°.62E, h59km, mb5.1/82, mB5.2/60, Ms4.8/86, Ms7 4.6/77*
*JMA **09** 09:42:20.3±0.1, 38°.25N×141°.81E, h58km±1km, M5.4*
*IDC **09** 09:42:20.9±1.4, 38°.32N×141°.79E, h57km±12km, mb4.6/48, mb1 4.7/55, mb1mx4.7/70, mbtmp4.9/55, MS4.5/18, Ms1 4.5/18, ms1mx4.4/25, Error ellipse: s-maj=9.9km s-min=8.6km az=88.0*
*ISCJB **09** 09:42:20.5±0.3, 38°.29N±0°.02×141°.71E±0°.02, h66km±2km, mb5.1/341, Error ellipse: s-maj=3.4km s-min=2.3km az=160.1*
*GCMT **09** 09:42:21.9±0.2, 38°.37N×141°.81E, h62km±1km, MW5.3/110, Moment Tension Solution. s81,c127; s110,c200; Duration: 1s1 Moment tensor: Scale 10^17 Nm; Mrr0.39±.02; Mθθ 0.73±.02; Mφφ -1.12±.02; Mrθ 0.21±.02; Mrφ -0.66±.02; Mθφ -0.57±.02; Best double couple: M0 1.30000×10^17 NP1:φs 157.00000°, δ81.00000°, λ32.00000°. NP2:φs 61.00000°, δ58.00000°, λ169.00000°. Principal axes: T 1.1440, Plg29.0000°, Azm24.0000°; N 0.3120, Plg56.0000°, Azm172.0000°; P -1.4560, Plg15.0000°, Azm285.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
*NEIC **09** 09:42:21.9±0.4, 38°.28N×141°.70E, h65km±3km, mb5.4/233 Error ellipse: s-maj=3.1km s-min=2.1km az=140.0*
NEIC Recorded [5L JMA] in Miyagi.
ISC 09 09:42:20.7±0.3, 38°.32N±0°.03×141°.78E±0°.03, h58km±2km, h58km:pP-P, n1095, σ1s40/1189, mb5.2/345, MS4.7/36, 54C-13D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**0.36**	**292**	↑P	**Pn**	**09 42 31.4**	**+0.3**
JIO				S	**Sn**	**09 42 39.1**	**+0.4**
JMK	**Ichinoseki**	**0.77**	**326**	↓P	**Pn**	**09 42 36.5**	**+0.8**
JMK				S	**Sn**	**09 42 47.9**	**+1.3**
JOU	**Okura**	**0.88**	**273**	↓P	**Pn**	**09 42 37.3**	**+0.2**
JOU				S	**Sn**	**09 42 50.0**	**+0.9**
JMM	**Marumori**	**0.90**	**240**	↑P	**Pn**	**09 42 36.7**	**-0.6**
JMM				S	**Sn**	**09 42 49.0**	**-0.6**
JFK	**Kawauchi**	**1.19**	**217**	↑P	**Pn**	**09 42 40.3**	**-0.9**
JFK				S	**Sn**	**09 42 55.5**	**-0.9**
JOM	**Ohasama**	**1.21**	**342**	↑P	**Pn**	**09 42 42.6**	**+1.1**
JOM				S	**Sn**	**09 42 58.6**	**+1.6**
JYK	**Kaneyama**	**1.26**	**299**	↓P	**Pn**	**09 42 42.9**	**+0.8**
JYS	**Shirataka**	**1.35**	**266**	↓P	**Pn**	**09 42 43.7**	**+0.4**
JYS				S	**Sn**	**09 43 01.4**	**+1.1**
JFT	**Otama**	**1.39**	**235**	↑P	**Pn**	**09 42 44.0**	**+0.1**
JFT				S	**Sn**	**09 43 01.1**	**-0.2**
JRG	**Rokugo**	**1.40**	**321**	↓P	**Pn**	**09 42 45.2**	**+1.2**
JRG				*eS*	**Sn**	**09 43 04.3**	**+2.9**
MAJO	**Matsushiro**	**3.35**	**239**	*d iP*	**Pn**	**09 43 12.1**	**+1.5**
MAJO	**Matsushiro**	**3.35**	**239**	*e*Pn	**Pn**	**09 43 12.2**	**+1.6**
MAJO				*e*Sn	**Sn**	**09 43 53.6**	**+4.6**
MAT	**Matsushiro**	**3.35**	**239**	P	**Pn**	**09 43 12.1**	**+1.5**
MAT				*eS*	**Sn**	**09 43 47.7**	**-1.4**
MJAR	**Matsushiro Arr**	**3.35**	**239**	P	**Pn**	**09 43 12.1**	**+1.5**
	162nm,0.3s,baz=50,slow=11,SNR=102						
MJAR				LR	LR	09 44 47.7	
	comp=Z,13μm,21.7s,baz=60,slow=44						
ERM	**Erimo**	**3.84**	**16**	*c eP*	**Pn**	**09 43 16.4**	**-0.8**
ERM				pmax	pmax		
	comp=Z,310nm,0.7s						
ERM	**Erimo**	**3.84**	**16**	*e*Pn	**Pn**	**09 43 16.6**	**-0.6**
ERM				*e*Sn	**Sn**	**09 44 03.0**	**+1.9**
INU	**Inuyama**	**4.83**	**234**	*e*Pn	**Pn**	**09 43 32.4**	**+1.6**
JHJ2	**Mitsune**	**5.43**	**198**	*e*Pn	**Pn**	**09 43 37.9**	**-1.2**
JHJ2				*e*Sn	**Sn**	**09 44 37.8**	**-2.5**
JHJ	**Hachijo jima 2**	**5.43**	**198**	P	**Pn**	**09 43 37.4**	**-1.7**
	comp=Z,499nm,0.3s,baz=318,slow=22,SNR=47						
JHJ				S	**Sn**	**09 44 35.6**	**-4.7**
	comp=Z,606nm,0.3s,baz=218,slow=22,SNR=12						
YUK	**Yuzh-Kuril'sk**	**6.49**	**27**	*c iP*	**Pn**	**09 43 51.7**	**-1.8**
YUK				*i* S	**Sn**	**09 45 00.1**	**-6.0**
YUK				pmax	pmax		
	comp=E,299nm,0.2s						
YUK				pmax	pmax		
	comp=Z,1μm,0.2s						
YUK				pmax	pmax		
	comp=N,287nm,0.1s						
YUK				MLR	MLR		
	comp=Z,4μm,10.0s						
SHO	**Shikotan**	**6.73**	**33**	*c iP*	**Pn**	**09 43 54.0**	**-2.8**
SHO				*i* S	**Sn**	**09 45 04.3**	**-7.7**
SHO				pmax	pmax		
	comp=Z,444nm,0.4s						
SHO				pmax	pmax		
	comp=N,304nm,0.5s						
SHO				pmax	pmax		
	comp=E,359nm,0.5s						
KUR	**Kuril'sk**	**8.27**	**31**	*c iP*	**Pn**	**09 44 16.4**	**-1.5**
KU

comp=N,2μm,17.8s
MDJ LR LR
comp=N,3μm,22.2s
MDJ Mudanjiang 11.09 308 *e*Pn **Pn 09 44 58.4 +2.0**
comp=N,181nm,0.9s
MDJ *e*Sn **Sn 09 47 07.0 +8.1**
CBIJ Chichi jima 11.20 178 *e*Pn **Pn 09 44 54.1 -3.9**
CBIJ *e*Sn Sn 09 46 51.8 -10
JCJ Chichijima 11.20 178 P **Pn 09 44 53.6 -4.4**
JCJ S Sn 09 46 49.5 -12
comp=N,53nm,0.3s,baz=17,slow=19,SNR=5.9
HABR Khabarovsk 11.26 336 *e*P **Pn 09 44 56.5 -2.2**
HABR *e*S **Sn 09 47 00.5 -2.4**
HABR pmax pmax
comp=N,21nm,1.5s
HABR pmax pmax
comp=E,40nm,1.5s
HABR pmax pmax
comp=Z,45nm,1.5s
HABR MLR MLR
comp=Z,1μm,14.0s
INCN Inchon 11.99 271 *e*Pn **Pn 09 45 11.1 +2.3**
INCN Inchon 11.99 271 Pn **Pn 09 45 10.7 +1.9**
SNR=11
INCN Inchon 11.99 271 P **Pn 09 45 10.7 +1.9**
SNR=11
TYV Tymovskoe 12.56 3 *e*P **Pn 09 45 15.5 -0.9**
TYV *e*S Sn 09 47 23.0 -12
TYV pmax pmax
comp=Z,19nm,0.6s
TYV smax smax
comp=E,2μm,7.0s
TYV MLR MLR
comp=N,1μm,8.0s
TYV MLR MLR
comp=Z,2μm,15.0s
KLR Kul'dur 13.08 330 P **Pn 09 45 23.4 -0.1**
comp=Z,0.4nm,0.3s,baz=127,slow=12,SNR=11
KLR LR LR 09 50 29.7
comp=Z,2μm,18.8s,baz=144,slow=37
CN2 Changchun 13.48 299 *e*P **Pn 09 45 29.6 +0.6**
CN2 *e*S **Sn 09 47 58.6 +1.6**
CN2 pmax pmax
comp=Z,30nm,1.5s
CN2 pmax pmax
comp=Z,200nm,4.0s
CN2 LR LR
comp=Z,2μm,14.0s
CN2 LR LR
comp=Z,2μm,14.0s
CN2 LR LR
comp=Z,3μm,15.0s
SNY Shenyang 14.37 290 ⇑P **Pn 09 45 42.2 +1.3**
SNY S **Sn 09 48 23.4 +4.8**
SNY pmax pmax
comp=Z,37nm,2.1s
SNY pmax pmax
comp=Z,1μm,11.1s
SNY LR LR
comp=Z,2μm,12.6s
SNY LR LR
comp=Z,5μm,18.6s
SNY LR LR
comp=Z,6μm,18.2s
NKL Nikolayevsk 14.85 357 *e*P **Pn 09 45 44.0 -3.1**
NKL *e* 09 48 28.0
NKL pmax pmax
comp=N,70nm,1.6s
NKL pmax pmax
comp=E,80nm,1.6s
NKL MLR MLR
comp=E,2μm,21.0s
NKL MLR MLR
comp=N,500nm,15.0s
NKL MLR MLR
comp=Z,1μm,15.0s
DL2 Dalian 15.76 278 P **Pn 09 45 59.7 +0.8**
DL2 S **Sn 09 48 52.4 -0.2**
DL2 pmax pmax
comp=Z,390nm,1.2s
DL2 pmax pmax
comp=Z,910nm,9.9s
DL2 LR LR
comp=Z,1μm,11.7s
DL2 LR LR
comp=Z,2μm,17.7s
DL2 LR LR
comp=Z,3μm,22.2s
JOW Kunigami 16.12 229 *e*Pn **Pn 09 46 01.1 -2.5**
comp=Z,40nm,0.9s
SSE Sheshan 18.38 253 P **P 09 46 28.7 -2.0**
SSE S **Sn 09 49 53.4 -2.5**
SSE pmax pmax
comp=Z,200nm,1.0s
SSE pmax pmax
comp=Z,420nm,4.9s
SSE LR LR
comp=Z,1μm,24.7s
SSE LR LR
comp=Z,2μm,24.7s
SSE LR LR
comp=Z,2μm,30.0s
PEA0 Petropavlovsk- 18.44 32 *e*P **Pn 09 46 33.9 +2.0**
PEA0B Petropavlovsk- 18.44 32 *e*P **Pn 09 46 33.3 +1.4**
comp=Z,450nm,1.4s
PETK Petropavlovsk- 18.44 32 P **P 09 46 30.4 -0.8**
comp=Z,1.0nm,0.3s,baz=190,slow=7.5,SNR=14
PET Petropavlovsk 18.78 33α *i*P **P 09 46 35.4 +0.5**
PET *e*S **Sn 09 49 59.0 -6.2**
PET pmax pmax
comp=Z,2μm,3.1s
PET pmax pmax
comp=Z,1μm,8.1s
PET pmax pmax
comp=Z,147nm,1.4s
PET MLR MLR
comp=Z,2μm,15.0s
PET MLR MLR
comp=Z,1μm,18.0s
PET Petropavlovsk 18.78 33 *e*P **Pn 09 46 36.1 +0.2**
comp=Z,403nm,1.6s
HIA Hailar 19.24 312 *e*P **P 09 46 38.2 -1.8**
HIA *e*S **S 09 50 07.4 -7.4**
HIA pmax pmax
comp=Z,76nm,1.3s
HIA Hailar 19.24 312 *e*P **P 09 46 38.2 -1.8**
comp=Z,76nm,1.3s
HIA *e*S **S 09 50 07.4 -7.4**
TIA Tai'an 19.72 271 ⇓P **P 09 46 43.4 -2.0**
TIA S **S 09 50 18.0 -6.6**
TIA pmax pmax
comp=Z,40nm,1.5s
TIA pmax pmax
comp=Z,770nm,3.5s
TIA LR LR
comp=Z,2μm,15.2s
TIA LR LR
comp=Z,2μm,16.8s
TIA LR LR
comp=Z,2μm,22.3s
NJ2 Nanjing 19.73 258 *e*P **P 09 46 44.3 -1.2**
NJ2 pmax pmax
comp=Z,99nm,1.4s
NJ2 pmax pmax
comp=Z,1μm,4.9s
NJ2 LR LR
comp=Z,1μm,17.6s
NJ2 LR LR
comp=Z,2μm,17.9s
NJ2 LR LR
comp=Z,2μm,17.3s
BJI Beijing 19.91 283 P **P 09 46 45.5 -1.8**
BJI S **S 09 50 21.2 -6.9**
BJI pmax pmax
comp=Z,36nm,1.3s
BJI LR LR
comp=Z,2μm,12.9s
BJI LR LR
comp=Z,1μm,16.3s
BJI LR LR
comp=Z,2μm,30.8s
BJT Baijiatuau 19.91 283 *e*P **P 09 46 44.4 -3.0**
BJT *e*S **S 09 50 21.9 -6.4**
BJT pmax pmax
comp=Z,150nm,1.0s
BJT Baijiatuau 19.91 283 *e*P **P 09 46 44.4 -3.0**
comp=Z,150nm,1.0s
BJT *e*S **S 09 50 21.9 -6.4**
CLNS Chul'man 21.64 334 *e*P **P 09 47 05.4 -0.5**
CLNS *e* 09 47 22.5
CLNS *e*S **S 09 50 56.5 -5.8**
CLNS *e* 09 51 12.0
CLNS pmax pmax
comp=Z,27nm,1.1s
CLNS pmax pmax
comp=N,22nm,1.0s
CLNS pmax pmax
comp=E,8.0nm,1.0s
CLNS pmax pmax
comp=Z,22nm,1.1s
CLNS pmax pmax
comp=E,9.0nm,0.8s
CLNS pmax pmax
comp=N,31nm,0.9s
CLNS smax smax
comp=N,327nm,10.1s
CLNS smax smax
comp=E,345nm,8.1s
CLNS MLR MLR
comp=Z,762nm,16.0s
CLNS MLR MLR
comp=N,1μm,15.0s
CLNS MLR MLR
comp=E,668nm,13.0s
YHNB Yeheng 22.02 238 *e*P **P 09 47 09.5 -0.9**
comp=E,128nm,1.7s
MA2 Magadan 22.04 12 P **P 09 47 09.1 -1.1**
comp=E,57nm,0.6s,baz=221,slow=10.0,SNR=54
MA2 Magadan 22.04 12 *e*P **P 09 47 10.2 +0.1**
MA2 pmax pmax
comp=Z,239nm,0.7s
MA2 Magadan 22.04 12 *e*P **P 09 47 10.2 +0.1**
comp=Z,239nm,0.7s
NACB Ninganchiao 22.22 236 *e*P **P 09 47 08.4 -3.9**
comp=Z,38nm,1.1s
SSLB Suanglung 22.91 237 *e*P **P 09 47 17.5 -2.2**
comp=Z,41nm,1.1s
YULB Yu-li 22.96 236 *e*P **P 09 47 15.5 -4.7**
comp=Z,44nm,1.2s
TIY Taiyuan 23.09 278 *e*P **P 09 47 21.3 -0.2**
TIY S **S 09 51 29.5 +1.4**
TIY pmax pmax
comp=Z,57nm,0.7s
TIY LR LR
comp=Z,100nm,8.3s
TIY LR LR
comp=Z,730nm,11.7s
TIY LR LR
comp=Z,2μm,24.1s
HHC Hu-ho-hao-te 23.37 286 *e*P **P 09 47 22.8 -1.4**
HHC pP pP 09 47 37.3 -0.3
HHC sP sP 09 47 42.3 -2.5
HHC PP **PnPn 09 47 56.8 +4.2**
HHC S **S 09 51 29.6 -3.1**
HHC sS Sn 09 51 52.0 -3.6
HHC SS **SnSn 09 52 20.0 +7.5**
HHC pmax pmax
comp=Z,84nm,1.3s
HHC pmax pmax
comp=Z,240nm,4.1s
HHC LR LR
comp=Z,3μm,12.4s
HHC LR LR
comp=Z,3μm,16.2s
HHC LR LR
comp=Z,3μm,16.2s
TPUB Ta-pu 23.46 236 *e*P **P 09 47 25.5 +0.4**
comp=Z,161nm,1.4s
TWG Pinlang 23.51 235 *e*P **P 09 47 25.0 -0.5**
comp=Z,200nm,0.8s
WHN Wuhan 23.85 259⇑ *i*P **P 09 47 27.9 -0.7**
WHN S S 09 51 27.5 -13
WHN pmax pmax
comp=Z,400nm,1.8s
WHN pmax pmax
comp=Z,910nm,5.3s
WHN LR LR
comp=Z,7μm,23.0s
WHN LR LR
comp=Z,3μm,15.4s
WHN LR LR
comp=Z,4μm,19.6s
CIT Chita 23.97 314 *e*P **P 09 47 30.4 +0.8**
CIT *e* 09 47 42.9
CIT *e* 09 47 49.9
CIT *e* 09 48 05.1
CIT *e* 09 48 12.6
CIT *e*S **S 09 51 44.0 +1.9**
CIT pmax pmax
comp=Z,380nm,1.6s
BTO Baotou 24.56 285 *e*P **P 09 47 35.2 +0.1**
YAK Yakutsk 24.89 346 P **P 09 47 36.4 -1.3**
comp=Z,59nm,0.6s,baz=2.5,slow=2.6,SNR=12
YAK LR LR 09 56 48.2
comp=Z,276nm,21.0s,baz=160,slow=35
YAK Yakutsk 24.89 346 *e*P **P 09 47 36.6 -1.1**
YAK *e**PP **pP 09 47 51.3 -0.7**
YAK *e* 09 48 08.7
YAK *e* 09 51 17.0
YAK *e*S **S 09 51 53.3 -3.1**
YAK *e* 09 58 34.0
YAK pmax pmax
comp=E,13nm,1.3s
YAK pmax pmax
comp=Z,84nm,1.3s
YAK pmax pmax
comp=N,33nm,1.2s
YAK pmax pmax
comp=Z,334nm,3.0s
YAK pmax pmax
comp=N,201nm,1.8s
YAK pmax pmax
comp=E,235nm,2.8s
YAK smax smax
comp=N,2μm,3.2s
YAK smax smax
comp=E,2μm,5.8s
YAK Yakutsk 24.89 346 *e*P **P 09 47 37.7 +0.1**
YAK *e*pP **pP 09 47 51.9 -0.1**
SEY Seymchan 25.48 11 P **P 09 47 44.3 +1.3**
comp=E,48nm,1.0s,baz=202,slow=7.1,SNR=54
BOD Bodaibo 26.61 326 *e*P **P 09 47 53.3 0.0**
BOD pmax pmax
comp=Z,29nm,1.1s
XAN Xi'an 26.78 271 P **P 09 47 54.5 -0.7**
XAN pP pP 09 48 09.1 -0.4
XAN sP sP 09 48 16.4 0.0
XAN S **S 09 52 18.1 -9.0**
XAN pmax pmax
comp=Z,21nm,0.5s
XAN pmax pmax
comp=Z,310nm,3.6s
XAN LR LR
comp=Z,530nm,13.9s
XAN LR LR
comp=Z,950nm,17.4s
XAN LR LR
comp=Z,940nm,15.1s
ULN Ulaanbaatar 26.89 302*c i*P **P 09 47 55.4 -0.8**
ULN pmax pmax
comp=Z,59nm,1.5s
ULN Ulaanbaatar 26.89 302 *e*P **P 09 47 56.2 0.0**
comp=Z,105nm,1.7s
ULN Ulaanbaatar 26.89 302 P **P 09 47 55.2 -1.0**
SNR=30
ULN Ulaanbaatar 26.89 302 P **P 09 47 55.2 -1.0**
SNR=30
SONA1 Songino Array 27.33 302 *e*P **P 09 48 00.6 +0.6**
SONM Songino Array 27.33 302 P **P 09 48 00.6 +0.6**
comp=Z,6.9nm,0.6s,baz=93,slow=8.7,SNR=42
SONM PcP **PcP 09 51 18.6 +0.6**
comp=Z,2.4nm,0.8s,baz=102,slow=5.0,SNR=3.6
SONM ScP **ScP 09 54 53.7 +0.3**
comp=Z,1.3nm,1.0s,baz=80,slow=3.7,SNR=4.0
SONM LR LR 09 59 13.9
comp=Z,1μm,18.7s,baz=83,slow=37
ENH Enshi 27.75 263 *e*P **P 09 48 02.8 -1.1**
comp=Z,130nm,0.7s
ENH *e*PcP **PcP 09 51 20.1 +0.9**
H11N2 WAKE ISLAND Hy 28.58 123 T T 10 18 28.6
baz=316,slow=75,SNR=1220
H11N1 WAKE ISLAND Hy 28.59 123 T T 10 18 25.3
baz=316,slow=75,SNR=1003
H11N3 WAKE ISLAND Hy 28.60 123 T T 10 18 26.0
baz=316,slow=75,SNR=1772
H11S1 WAKE ISLAND Hy 29.34 125 T T 10 19 27.6
baz=318,slow=76,SNR=2215
H11S3 WAKE ISLAND Hy 29.34 125 T T 10 19 28.4
baz=318,slow=76,SNR=3022
H11S2 WAKE ISLAND Hy 29.36 125 T T 10 19 34.5
baz=318,slow=76,SNR=1613
IRK Irkutsk 29.47 310 *e*P **P 09 48 18.4 -0.5**
IRK pmax pmax
comp=Z,52nm,1.7s
ZAK Zakamensk 29.72 307 *e*P **P 09 48 20.7 -0.6**
ZAK pmax pmax
comp=Z,26nm,1.3s
TLY Talaya 29.73 309 P **P 09 48 21.4 +0.2**
comp=Z,8.9nm,0.6s,baz=101,slow=5.6,SNR=11
TLY LR LR 10 00 44.3
comp=Z,1μm,20.1s,baz=102,slow=37
TLY Talaya 29.73 309 *e*P **P 09 48 20.9 -0.3**
TLY *e*S **S 09 53 10.1 -2.9**
TLY pmax pmax
comp=Z,30nm,1.2s
TLY MLR MLR
comp=Z,1μm,18.0s
TLY Talaya 29.73 309 *e*P **P 09 48 21.8 +0.6**
comp=Z,27nm,1.1s
TLY Talaya 29.73 309 P **P 09 48 20.7 -0.5**
SNR=13
TLY Talaya 29.73 309 P **P 09 48 20.7 -0.5**
SNR=13
LZH Lanzhou 30.16 278 *e*P **P 09 48 25.1 -0.3**
LZH pP pP 09 48 40.0 +0.2
LZH sP sP 09 48 47.2 +0.5
LZH PP **PnPn 09 49 23.2 -1.5**
LZH S **S 09 53 17.0 -3.4**
LZH sS sS 09 53 43.2 -1.8
LZH SS **SnSn 09 54 58.1 -0.1**
LZH pmax pmax
comp=Z,100nm,1.3s
LZH pmax pmax
comp=Z,310nm,4.2s
LZH LR LR
comp=Z,1μm,12.7s
LZH LR LR
comp=Z,1μm,13.0s
LZH LR LR
comp=Z,2μm,16.2s
MOY Mondy 31.35 309 *e*P **P 09 48 35.7 +0.1**
MOY pmax pmax
comp=Z,46nm,2.4s
GYA Guiyang 31.74 259⇓ *i*P **P 09 48 38.1 -1.2**
GYA pP pP 09 48 54.8 +1.0
GYA sP sP 09 49 02.0 +1.3
GYA PP **PnPn 09 49 46.2 +1.0**
GYA PcP **PcP 09 51 31.6 +1.9**
GYA S **S 09 53 44.9 -0.3**
GYA sS sS 09 54 10.0 +0.2
GYA ScP **ScP 09 55 07.2 -0.7**
GYA SS **SnSn 09 55 35.6 -1.2**
GYA ScS **ScS 09 59 02.4 -4.0**
GYA pmax pmax
comp=Z,60nm,1.0s
GYA pmax pmax
comp=Z,160nm,5.3s
GYA LR LR
comp=Z,590nm,16.3s
GYA LR LR
comp=Z,820nm,17.9s
GYA LR LR
comp=Z,920nm,17.7s
CD2 Chengdu 31.98 268 P **P 09 48 39.8 -1.5**
CD2 pP pP 09 48 55.4 -0.4
CD2 sP sP 09 49 02.7 0.0
CD2 S **S 09 53 40.0 -8.7**
CD2 sS sS 09 54 13.5 +0.1
CD2 pmax pmax
comp=Z,60nm,0.4s
CD2 LR LR
comp=Z,1μm,13.7s
CD2 LR LR
comp=Z,1μm,20.2s
GTA Gaotai 32.48 285 *e*P **P 09 48 46.0 +0.3**
GTA pP pP 09 48 54.9 -5.4
GTA PP **PnPn 09 49 55.9 +1.3**
GTA PcP **PcP 09 51 32.2 +0.7**
GTA S **S 09 53 58.3 +1.7**
GTA sS sS 09 54 14.7 -6.5
GTA PcS **PcS 09 55 17.5 +0.8**
GTA SS **SnSn 09 55 56.6 +2.1**
GTA pmax pmax
comp=Z,19nm,1.0s
GTA pmax pmax
comp=Z,220nm,6.4s
GTA LR LR
comp=Z,910nm,20.4s
GTA LR LR
comp=Z,2μm,18.5s
GTA LR LR
comp=Z,2μm,20.0s
BILL Bilibino 32.72 17⇑ *e*P **P 09 48 46.4 -0.9**
BILL *e* 09 49 59.3
BILL *i* 09 51 33.8
BILL *e*S **S 09 53 53.2 -6.1**
BILL pmax pmax
comp=Z,51nm,1.2s
BILL MLR MLR
comp=Z,564nm,19.0s
BILL Bilibino 32.72 17 *e*P **P 09 48 47.1 -0.2**
comp=Z,81nm,1.5s
TIXI Tiksi 34.05 353*ce*P **P 09 48 59.0 +0.2**
TIXI pmax pmax
comp=Z,14nm,1.2s
KMI Kunming 35.45 260 P **P 09 49 12.0 +0.2**
KMI pP pP 09 49 26.5 +0.1
KMI sP sP 09 49 33.0 -0.2
KMI PP **PnPn 09 50 32.1 +0.1**
KMI S **S 09 54 39.6 -3.3**
KMI sS sS 09 55 05.2 -2.6
KMI SS **SnSn 09 56 58.9 -8.1**
KMI pmax pmax
comp=Z,47nm,1.3s
KMI pmax pmax
comp=Z,210nm,3.1s
KMI LR LR
comp=Z,1μm,16.0s
KMI LR LR
comp=Z,990nm,16.6s
KMI LR LR
comp=Z,1μm,17.9s
GAMB Gambell 37.47 32 *e*P **P 09 49 29.0 +0.8**
comp=Z,82nm,1.8s
NONG Nongkai 39.21 250 P **P 09 49 44.8 +1.5**
comp=Z,28nm,1.8s
SKNT Sakolnakorn 39.29 248 P P 09 49 50.5 +6.5
TNTI Ternate 39.64 203 *e*P **P 09 49 46.7 -0.2**
CRAI Chiangrai 39.98 255 P **P 09 49 48.7 -1.0**
comp=Z,38nm,0.7s,comp=Z,508nm
WMQ Urumqi 40.53 296 P **P 09 49 55.3 +1.2**
WMQ pP pP 09 50 10.3 +1.3
WMQ sP sP 09 50 17.4 +1.6
WMQ PP **PnPn 09 51 33.5 +1.0**
WMQ PcP **PcP 09 51 56.8 +1.3**
WMQ S **S 09 56 00.0 +0.9**
WMQ SS **SS 09 58 57.0 -3.3**
WMQ pmax pmax
comp=Z,62nm,0.6s
WMQ pmax pmax
comp=Z,210nm,4.0s
WMQ LR LR
comp=Z,310nm,25.4s
WMQ LR LR
comp=Z,430nm,29.8s
WMQ LR LR
comp=Z,530nm,26.8s
JAY Jayapura 40.64 182 P **P 09 49 56.0 +0.8**
comp=Z,1.2nm,0.8s,baz=73,slow=19,SNR=3.0
JAY Jayapura 40.64 182 P **P 09 49 56.0 +0.8**
JAY pmax pmax
comp=Z,1.0nm,0.8s
LOEI Loei 40.95 251 P **P 09 49 55.4 -2.3**
comp=Z,17nm,1.2s,comp=Z,379nm
CMAI Chiengmai2 41.16 256 P **P 09 50 00.5 +0.8**
comp=Z,31nm,1.3s,comp=Z,829nm
ZAA0 Zalesovo Array 41.27 311 *e*P **P 09 50 00.2 +0.3**
ZALV Zalesovo Beam 41.27 311 P **P 09 50 00.1 +0.1**

comp=Z,22nm,0.4s,baz=83,slow=7.5,SNR=60
ZALV PcP **PcP** **09 51 58.2 +0.5**
comp=Z,3.1nm,0.3s,baz=89,slow=2.2,SNR=4.0
ZALV ScP **ScP** **09 55 42.3 -0.2**
comp=Z,1.5nm,0.7s,baz=90,slow=2.9,SNR=4.3
ZALV Zalesovo Beam 41.27 311 P **P** **09 50 00.1 +0.1**
ZALV 09 51 58.2
ZALV pmax pmax
comp=Z,22nm,0.4s
ZALV pmax pmax
comp=Z,3.0nm,0.4s
ZALV pmax pmax
comp=N,2.0nm,0.7s
UTTA Uttaradit 41.33 252 P **P** **09 50 02.0 +1.1**
comp=N,4.4nm,0.9s,comp=N,61nm
CHAI Chaiyaphum 41.44 249 P **P** **09 50 03.7 +2.0**
comp=N,4.8nm,0.9s,comp=N,96nm
LAMP Lampang 41.55 254 P **P** **09 50 03.5 +0.8**
comp=N,8.4nm,0.5s
PBKT Sadao Pong 41.76 250 P **P** **09 50 05.7 +1.4**
comp=N,17nm,0.8s,comp=N,743nm
CMMT Chiang Mai 41.90 255 P **P** **09 50 05.4 -0.1**
comp=N,20nm,0.9s,comp=N,380nm
CHTO Chiang Mai 41.90 255 P **P** **09 50 05.4 -0.1**
comp=N,91nm,1.1s
CHTO Chiang Mai 41.90 255 *eP* **P** **09 50 05.5 -0.1**
CHTO pmax pmax
comp=Z,13nm,0.6s
CHTO Chiang Mai 41.90 255 *eP* **P** **09 50 05.5 -0.1**
comp=Z,13nm,0.6s
CHTO Chiang Mai 41.90 255 P **P** **09 50 05.0 -0.5**
SNR=12
CHTO Chiang Mai 41.90 255 P **P** **09 50 05.0 -0.5**
SNR=12
FAKI Fak Fak 41.97 194 *eP* **P** **09 50 04.8 -1.2**
comp=Z,37nm,1.0s
CMAR Chiang Mai Arr 42.11 254 P **P** **09 50 06.8 -0.4**
comp=Z,1.7nm,0.4s,baz=44,slow=4.7,SNR=9.6
CMAR PcP **PcP** **09 52 02.2 +1.2**
comp=Z,2.2nm,0.5s,baz=22,slow=1.5,SNR=4.0
CMAR ScP **ScP** **09 55 46.5 +0.1**
comp=Z,0.5nm,0.3s,baz=46,slow=3.9,SNR=3.8
CMAR LR LR 10 08 42.5
comp=Z,314nm,18.7s,baz=67,slow=38
CM01 Chiang Mai Arr 42.12 254 *eP* **P** **09 50 06.9 -0.4**
NVS Novosibirsk 42.17 313 *eP* **P** **09 50 07.5 +0.2**
NVS *eS* **S** **09 56 21.4 -1.5**
NVS pmax pmax
comp=N,19nm,1.3s
NVS pmax pmax
comp=E,46nm,1.3s
NVS pmax pmax
comp=Z,70nm,1.3s
NVS smax smax
comp=N,45nm,2.4s
NVS smax smax
comp=E,62nm,2.4s
SUKH Sukhothai 42.19 252 P **P** **09 50 08.7 +0.9**
comp=E,5.5nm,0.7s
NRIK Noril'sk 42.23 335 P **P** **09 50 08.8 +1.2**
comp=E,4.7nm,0.4s,baz=193,slow=3.1,SNR=5.9
LSA Lhasa 42.39 274 *eP* **P** **09 50 10.6 +0.6**
LSA pmax pmax
comp=Z,40nm,0.6s
LSA Lhasa 42.39 274 *eP* **P** **09 50 10.6 +0.6**
comp=Z,40nm,0.6s
MHMT Maesarieng 43.05 255 P **P** **09 50 15.8 +1.0**
comp=Z,14nm,0.6s,comp=Z,900nm
CHBT CHBT 43.27 245 P P 09 50 23.3 +6.6
MK31 Makanchi Array 43.69 301 *eP* **P** **09 50 19.9 +0.1**
MK31 pmax pmax
comp=Z,38nm,0.9s
MKAR Makanchi Array 43.69 301 P **P** **09 50 20.4 +0.6**
comp=Z,22nm,0.7s,baz=85,slow=9.3,SNR=112
MKAR Makanchi Array 43.69 301 *eP* **P** **09 50 20.0 +0.2**
SHL Shillong 43.72 268 *ex* **P** **09 50 20.0 -0.4**
MAKZ Makanchi 43.90 301 *eP* **P** **09 50 22.4 +1.0**
MAKZ pmax pmax
comp=Z,165nm,1.7s
MAKZ Makanchi 43.90 301 *eP* **P** **09 50 22.4 +1.0**
comp=Z,165nm,1.7s
TT01 Tatalina 44.20 36 *eP* **P** **09 50 24.6 +1.0**
TT01 *epP* **pP** **09 50 41.5 +2.9**
TTA Tatalina 44.21 35 *eP* **P** **09 50 24.6 +0.9**
TTA *e*PP **pP** **09 50 40.8 +2.1**
TTA pmax pmax
comp=Z,44nm,1.5s
TTA Tatalina 44.21 35 *eP* **P** **09 50 24.6 +0.9**
comp=Z,44nm,1.5s
TTA *epP* **pP** **09 50 40.8 +2.1**
SVW2 Sparrevohn 44.33 38 *eP* **P** **09 50 26.4 +1.7**
comp=Z,46nm,1.2s
SRDT SRDT 44.54 249 P **P** **09 50 28.4 +1.6**
comp=Z,62nm,0.8s,comp=Z,27μm
KHLT Khaolaem Dam 44.65 250 P **P** **09 50 29.5 +1.8**
comp=Z,8.4nm,1.2s,comp=Z,2μm
KURK Kurchatov 45.38 307 *eP* **P** **09 50 33.1 0.0**
KURK pmax pmax
comp=Z,84nm,0.7s
KURK Kurchatov 45.38 307 *eP* **P** **09 50 33.1 0.0**
comp=Z,84nm,0.7s
KURK Kurchatov 45.38 307 P **P** **09 50 33.1 0.0**
SNR=33
KURK Kurchatov 45.38 307 P **P** **09 50 33.1 0.0**
SNR=33
KURBB Kurchatov Arra 45.45 307 P **P** **09 50 33.5 -0.1**
comp=Z,50nm,0.5s,baz=82,slow=8.2,SNR=150
RSO Redoubt South 45.72 39 *eP* **P** **09 50 37.0 +1.1**
PPLA Purkypile 45.96 36 *eP* **P** **09 50 39.1 +1.4**
comp=Z,133nm,1.5s
KDAK Kodiak Island 45.96 43 *i* P **P** **09 50 37.9 +0.4**
CAST Castle Rocks 46.01 35 *eP* **P** **09 50 39.4 +1.5**
comp=Z,50nm,1.3s
SPU Mount Spurr 46.04 38 *eP* **P** **09 50 39.4 +1.2**
TAPN Taplejung 46.15 273 *eP* **P** **09 50 40.1 +0.2**
comp=Z,47nm,0.4s
PDGK Podgornoye 46.44 297 P **P** **09 50 40.7 -0.9**
PDGK pmax pmax
comp=Z,18nm,0.6s
BPAW Bear Paw Mtn. 46.50 34 *eP* **P** **09 50 43.0 +1.2**
comp=Z,43nm,1.3s
KTH Kantishna Hill 46.53 35 *eP* **P** **09 50 43.4 +1.3**
comp=Z,149nm,1.6s
MLY Manley 46.61 33 *eP* **P** **09 50 44.2 +1.5**
comp=Z,39nm,1.2s
ODAN Odare 46.63 273 *eP* **P** **09 50 43.6 0.0**
comp=Z,44nm,0.4s
TRF Thorofare Moun 46.81 35 *eP* **P** **09 50 45.5 +1.1**
comp=Z,113nm,2.0s
COLD Coldfoot 46.89 30 *eP* **P** **09 50 46.0 +1.2**
comp=Z,33nm,1.4s
RC01 Rabbit Creek A 47.17 38 *eP* **P** **09 50 47.8 +0.7**
comp=Z,112nm,1.7s
RAMN Ramite 47.21 273 *eP* **P** **09 50 48.1 0.0**
comp=Z,118nm,0.6s
GUN Gumba 47.33 275 *eP* **P** **09 50 49.4 +0.3**
comp=Z,163nm,0.4s
SEW Seward 47.39 39 *eP* **P** **09 50 49.6 +0.9**
comp=Z,68nm,1.4s
MCK McKinley 47.41 34 *eP* **P** **09 50 49.6 +0.7**
MCK pmax pmax
comp=Z,115nm,1.8s
MCK McKinley 47.41 34 *eP* **P** **09 50 49.6 +0.7**
comp=Z,115nm,1.8s
PMR Palmer 47.43 37 *eP* **P** **09 50 49.2 +0.2**
PMR pmax pmax
comp=Z,70nm,1.4s
PMR Palmer 47.43 37 *eP* **P** **09 50 49.2 +0.2**
comp=Z,70nm,1.4s
RND Reindeer 47.46 35 *eP* **P** **09 50 49.6 +0.3**
RND pmax pmax
comp=Z,134nm,1.7s
RND Reindeer 47.46 35 *eP* **P** **09 50 49.6 +0.3**
comp=Z,134nm,1.7s
MDM Murphy Dome 47.68 33 *eP* **P** **09 50 52.3 +1.4**
comp=Z,112nm,1.4s
KAPI Kappang 47.71 210 *eP* **P** **09 50 52.6 +0.9**
comp=Z,66nm,1.1s
KAPI Kappang 47.71 210 P **P** **09 50 53.8 +2.1**
SNR=9.1
KAPI Kappang 47.71 210 P **P** **09 50 53.8 +2.1**
SNR=9.1
PMG Port Moresby 47.74 173 P **P** **09 50 52.1 +0.3**
comp=Z,5.6nm,0.8s,baz=331,slow=18,SNR=1.9
WRH Wood River Hil 47.75 33 *eP* **P** **09 50 52.6 +1.1**
comp=Z,19nm,1.0s
SML Sawmill 47.79 37 *eP* **P** **09 50 53.0 +1.1**
SML pmax pmax
comp=Z,34nm,1.0s
SML Sawmill 47.79 37 *eP* **P** **09 50 53.0 +1.1**
comp=Z,34nm,1.0s
COLA College 47.84 33 *i* P **P** **09 50 53.2 +1.1**
COLA pmax pmax
comp=Z,66nm,1.8s
COLA College 47.84 33 *eP* **P** **09 50 53.3 +1.1**
comp=Z,138nm,1.8s
KKN Kakani 47.85 275 *eP* **P** **09 50 53.2 +0.2**
comp=Z,85nm,0.5s
CCB Clear Creek Bu 47.87 33 *eP* **P** **09 50 52.9 +0.5**
comp=Z,55nm,1.6s
DHY Denali Highway 48.15 35 *eP* **P** **09 50 55.1 +0.4**
comp=Z,56nm,1.4s
GKN Gorkha 48.26 275 *eP* **P** **09 50 56.1 0.0**
comp=Z,86nm,0.4s
IL1 Eielson Array 48.26 33 *eP* **P** **09 50 55.5 +0.1**
ILAR Eielson Array 48.26 33 P **P** **09 50 55.6 +0.2**
comp=Z,14nm,0.9s,baz=266,slow=6.0,SNR=44
ILB Eielson Array 48.26 33 *eP* **P** **09 50 56.0 +0.6**
SCM Sheep Creek Mo 48.27 37 *eP* **P** **09 50 56.5 +0.9**
SCM pmax pmax
comp=Z,31nm,1.1s
SCM Sheep Creek Mo 48.27 37 *eP* **P** **09 50 56.5 +0.9**
comp=Z,31nm,1.1s
FYU Fort Yukon 48.86 31 *eP* **P** **09 51 02.0 +2.0**
comp=Z,154nm,1.4s
KLU Klutina 48.97 37 *eP* **P** **09 51 02.1 +1.1**
comp=Z,60nm,1.4s
PAX Paxson 49.02 35 *eP* **P** **09 51 02.9 +1.5**
PAX pmax pmax
comp=Z,43nm,1.7s
PAX Paxson 49.02 35 *eP* **P** **09 51 02.9 +1.5**
comp=Z,43nm,1.7s
DIV Divide 49.08 38 *eP* **P** **09 51 02.8 +1.0**
comp=Z,180nm,1.8s
KOLN Koldanda 49.18 276 *eP* **P** **09 51 03.4 +0.2**
comp=Z,62nm,0.4s
TKM2 Tokmak 2 49.28 298 *eP* **P** **09 51 04.8 +1.0**
TKM2 pmax pmax
comp=Z,39nm,0.6s
TKM2 Tokmak 2 49.28 298 *eP* **P** **09 51 04.8 +1.0**
comp=Z,39nm,0.6s
PKDT Phuket 49.46 244 P **P** **09 51 07.3 +2.1**
comp=Z,38nm,1.0s,comp=Z,2μm
PYUN Piuthan 49.50 276 *eP* **P** **09 51 05.9 +0.2**
comp=Z,141nm,0.4s
DOT Dot Lake 49.58 34 *eP* **P** **09 51 05.7 +0.1**
comp=Z,46nm,1.0s
CHKZ Chkalovo 49.65 312 P **P** **09 51 06.8 +0.6**
CHKZ pmax pmax
comp=Z,9.0nm,0.5s
BMRM Bremner River 49.67 38 *eP* **P** **09 51 07.2 +0.9**
comp=Z,57nm,1.3s
MENT Mentasta 49.82 35 *eP* **P** **09 51 08.9 +1.5**
comp=Z,66nm,1.4s
OTUK Ortayu 49.92 305 P **P** **09 51 08.9 +0.6**
OTUK pmax pmax
comp=Z,8.0nm,0.9s
BVA0 Borovoye Array 49.93 312 *i* P **P** **09 51 08.5 +0.2**
BVA0 pmax pmax
comp=Z,9.0nm,0.6s
BVAR Borovoye Array 49.93 312 P **P** **09 51 08.3 0.0**
comp=Z,10nm,0.6s,baz=66,slow=7.8,SNR=42
BVAR PcP **PcP** **09 52 28.7 +0.9**
comp=Z,7.9nm,0.6s,baz=103,slow=3.1,SNR=4.8
BVAR LR LR 10 13 18.6
comp=Z,704nm,19.9s,baz=78,slow=37
BRVK Borovoye 49.98 312 *eP* **P** **09 51 09.6 +0.9**
BRVK pmax pmax
comp=Z,150nm,2.0s
BRVK Borovoye 49.98 312 *eP* **P** **09 51 09.6 +0.9**
comp=Z,150nm,2.0s
BRVK Borovoye 49.98 312 P **P** **09 51 10.0 +1.3**
SNR=7.6
BRVK Borovoye 49.98 312 P **P** **09 51 10.0 +1.3**
SNR=7.6
FRU Bishkek 49.99 298⇑ *eP* **P** **09 51 09.0 0.0**
FRU *i* 09 51 23.0
FRU *eS* **S** **09 58 17.0 +1.5**
FRU pmax pmax
comp=Z,70nm,2.0s
FRU smax smax
comp=E,135nm,2.6s
FRU MLR MLR
comp=E,700nm,22.0s
MMRI Maumere 50.14 206 *eP* **P** **09 51 11.0 +0.7**
comp=E,112nm,1.6s
AAK Ala-Archa 50.14 298 LR LR 10 12 57.8
comp=E,983nm,21.5s,baz=63,slow=37
AAK Ala-Archa 50.14 298 *eP* **P** **09 51 10.7 +0.4**
AAK pmax pmax
comp=Z,17nm,1.0s
AAK Ala-Archa 50.14 298 *eP* **P** **09 51 10.7 +0.4**
comp=Z,17nm,1.0s
AAK Ala-Archa 50.14 298 P **P** **09 51 10.8 +0.5**
SNR=9.1
AAK Ala-Archa 50.14 298 P **P** **09 51 10.8 +0.5**
SNR=9.1
KSH Kashi 50.16 293 P **P** **09 51 14.9 +4.5**
KSH *epP* sP 09 51 29.3 -3.0
KSH *es*P pP 09 51 36.0 +10
KSH *e*PcP **PcP** **09 52 31.8 +2.7**
KSH S **S** **09 58 22.3 +4.3**
KSH ScS **ScS** **10 00 57.9 +1.5**
KSH SS **SS** **10 01 52.3 +0.8**
KSH pmax pmax
comp=Z,15nm,0.8s
KSH pmax pmax
comp=Z,290nm,4.9s
KSH LR LR
comp=Z,380nm,10.7s
KSH LR LR
comp=Z,620nm,14.7s
KSH LR LR
comp=Z,750nm,18.8s
SOEI Soe 50.54 203 *eP* **P** **09 51 11.6 -1.9**
comp=Z,54nm,0.6s
SOEI *e*ScP **ScP** **09 56 21.9 +0.3**
EKS2 Erkin-Say 50.63 298 *eP* **P** **09 51 14.2 +0.2**
EKS2 pmax pmax
comp=Z,12nm,0.8s
EKS2 Erkin-Say 50.63 298 *eP* **P** **09 51 14.2 +0.2**
comp=Z,12nm,0.8s
EGAK Eagle 50.70 33 *eP* **P** **09 51 14.3 +0.3**
comp=Z,51nm,1.5s
ZRNK Zerenda 50.76 312 P **P** **09 51 14.1 -0.5**
ZRNK pmax pmax
comp=Z,18nm,0.9s
MNAS Manas 51.58 298 P **P** **09 51 20.5 -0.6**
MNAS pmax pmax
comp=Z,15nm,0.8s
SFK Sufi-Kurgan 51.75 295 P **P** **09 51 23.4 +0.9**
SFK pmax pmax
comp=Z,12nm,0.5s
COEN Coen 52.02 178 *eP* **P** **09 51 24.6 +0.3**
COEN *epP* **pP** **09 51 41.2 +1.5**
SMLA Simla 52.64 283 *i x* **P** **09 51 28.9 0.0**
PSI Prapat 52.70 239 *eP* **P** **09 51 29.5 -0.2**
PSI pmax pmax
comp=Z,9.0nm,0.6s
PSI Prapat 52.70 239 *eP* **P** **09 51 29.5 -0.2**
comp=Z,8.9nm,0.6s
KK31 Karatay Array 52.74 299 *i* P **P** **09 51 29.6 +0.1**
KK31 pmax pmax
comp=Z,22nm,1.2s
KKAR Karatay Array 52.74 299 *eP* **P** **09 51 30.0 +0.5**
KKAR Karatay Array 52.74 299 *eP* **P** **09 51 30.0 +0.5**
INK Inuvik 53.12 28 P **P** **09 51 31.9 +0.1**
comp=Z,15nm,0.8s,baz=297,slow=6.7,SNR=106
INK Inuvik 53.12 28 *eP* **P** **09 51 32.7 +0.9**
INK pmax pmax
comp=Z,48nm,1.2s
INK Inuvik 53.12 28 *eP* **P** **09 51 32.7 +0.9**
comp=Z,48nm,1.2s
THN Thein Dam 53.17 285 *eP* **P** **09 51 31.0 -1.8**
SVE Sverdlovsk 54.38 318⇓ *eP* **P** **09 51 42.4 +1.1**
SVE pmax pmax
comp=Z,58nm,1.2s
SVE MLR MLR
comp=Z,942nm,18.0s
SKAG Skagway 54.51 38 *eP* **P** **09 51 43.1 +1.0**
comp=Z,47nm,1.3s
GSI Gunungsitoli 54.71 239 *eP* **P** **09 51 43.9 -0.3**
comp=Z,68nm,1.0s
SOKR Solikamsk 55.49 322⇑ *i*P **P** **09 51 53.4 +4.2**
SOKR S **S** **09 59 28.9 -0.7**
SOKR pmax pmax
comp=Z,24nm,1.2s
SOKR MLR MLR
comp=Z,352nm,19.0s
ARU Arti 55.59 318 P **P** **09 51 50.3 +0.2**
comp=Z,17nm,0.4s,baz=84,slow=6.6,SNR=33
ARU LR LR 10 17 56.9
comp=Z,879nm,18.2s,baz=66,slow=38
ARU Arti 55.59 318 *eP* **P** **09 51 50.3 +0.2**
comp=Z,112nm,1.4s
KBL Kabul 57.23 290 *eP* **P** **09 52 02.4 +0.1**
KBL pmax pmax
comp=Z,25nm,0.7s
KBL Kabul 57.23 290 *eP* **P** **09 52 02.4 +0.1**
comp=Z,25nm,0.7s
AB31 Akbulak array 57.34 310 *i* P **P** **09 52 02.3 -0.3**
AB31 pmax pmax
comp=Z,6.0nm,0.6s
ABKAR Akbulak array 57.34 310 *eP* **P** **09 52 02.4 -0.1**
DLBC Dease Lake 57.44 39 P **P** **09 52 04.0 +0.7**
comp=Z,6.6nm,0.6s,baz=335,slow=7.5,SNR=8.3
DLBC Dease Lake 57.44 39 *eP* **P** **09 52 04.3 +1.1**
comp=Z,86nm,1.5s
AKTO Aktyubinsk 58.04 311 P **P** **09 52 07.6 +0.1**
comp=Z,5.2nm,0.6s,baz=48,slow=8.3,SNR=13
AKTO Aktyubinsk 58.04 311 P **P** **09 52 09.1 +1.6**
AKTO pmax pmax
comp=Z,21nm,1.3s
FITZ Fitzroy Crossi 58.13 198 *eP* **P** **09 52 08.7 +0.3**
comp=Z,32nm,0.9s
WRAB Tennant Creek 58.36 188 *eP* **P** **09 52 09.4 -0.5**
WRAB pmax pmax
comp=Z,55nm,0.9s
WRAB Tennant Creek 58.36 188 *eP* **P** **09 52 09.4 -0.5**
comp=Z,55nm,0.9s
WB2 Warramunga Arr 58.37 188 *eP* **P** **09 52 09.5 -0.5**
comp=Z,59nm,0.9s
WRA Warramunga Arr 58.37 188 P **P** **09 52 09.3 -0.7**
comp=Z,23nm,0.6s,baz=5.9,slow=7.1,SNR=440
WRA LR LR 10 16 58.0
comp=Z,90nm,21.8s,baz=345,slow=36
WRA PKP2bc 10 21 59.4
comp=Z,1.4nm,1.1s,baz=188,slow=1.8,SNR=4.0
HYB Hyderabad 58.53 268 *i* P **P** **09 52 11.0 -0.4**
SPITS Spitsbergen Ar 59.32 349 P **P** **09 52 16.4 +0.4**
comp=Z,0.7nm,0.3s,baz=62,slow=5.8,SNR=16
KBS Kingsbay 59.44 350 *eP* **P** **09 52 17.9 +1.1**
KBS pmax pmax
comp=Z,86nm,1.8s
KBS Kingsbay 59.44 350 *eP* **P** **09 52 17.9 +1.1**
comp=Z,86nm,1.8s
HSPB Hornsund (broa 60.25 348 *eP* **P** **09 52 23.0 +0.7**
RES Resolute Bay 61.29 15 *eP* **P** **09 52 29.5 +0.1**
RES pmax pmax
comp=Z,33nm,1.0s
RES Resolute Bay 61.29 15 *eP* **P** **09 52 29.4 +0.1**
comp=Z,33nm,1.0s
APA Apatity 61.64 336⇓ *i*P **P** **09 52 33.0 +1.1**
APA MLR MLR
comp=Z,1μm,13.0s
TMCR Tamitsa 61.76 331 *eP* **P** **09 52 34.1 +1.4**
TMCR pmax pmax
comp=Z,32nm,1.1s
AS01 Alice Springs 62.09 188 *eP* **P** **09 52 35.0 -0.4**
AS31 Alice Springs 62.10 188 *eP* **P** **09 52 35.2 -0.3**
comp=Z,9.4nm,1.0s
ASAR Alice Springs 62.10 188 P **P** **09 52 35.2 -0.3**
comp=Z,8.0nm,0.6s,baz=2.2,slow=3.8,SNR=139
ASAR PKP2bc 10 21 51.2
comp=Z,0.7nm,0.9s,baz=182,slow=2.1,SNR=9.4
ASAR Alice Springs 62.10 188 P **P** **09 52 35.2 -0.3**
ASAR pmax pmax
comp=Z,9.0nm,0.6s
YKW3 Yellowknife Ar 62.52 30 *eP* **P** **09 52 38.0 +0.2**
comp=Z,55nm,1.4s
YKA Yellowknife Ar 62.56 31 P **P** **09 52 38.2 +0.1**
comp=Z,7.9nm,0.9s,baz=300,slow=5.9,SNR=98
YKA Yellowknife Ar 62.56 31 P **P** **09 52 38.2 +0.1**
YKA pmax pmax
comp=Z,4.0nm,0.6s
YKB5 Yellowknife Ar 62.56 31 *eP* **P** **09 52 37.6 -0.5**
MBWA Marble Bar 62.68 203 *eP* **P** **09 52 38.8 -0.5**
MBWA *epP* **pP** **09 52 54.4 -0.7**
KLMR Klimovskoe 62.83 327 *eP* **P** **09 52 37.9 -2.0**
KLMR *eS* **S** **10 00 59.8 -4.7**
KLMR pmax pmax
comp=Z,29nm,1.5s
ARA0 ARCESS Array S 62.90 339 *eP* **P** **09 52 40.4 +0.1**
ARCES ARCESS Array B 62.90 339 P **P** **09 52 40.8 +0.5**
comp=Z,3.8nm,0.4s,baz=53,slow=7.7,SNR=47
GEYT Alibeck 63.47 299 P **P** **09 52 43.7 -1.0**
comp=Z,5.8nm,0.3s,baz=39,slow=5.5,SNR=6.3
GEYT LR LR 10 22 21.1
comp=Z,468nm,18.9s,baz=20,slow=38
DZM Mont Dzumac 64.38 155 P **P** **09 52 51.7 +1.0**
comp=Z,9.3nm,0.6s,baz=47,slow=21,SNR=8.7
DAG Danmarks Havn 64.52 355 *i* P **P** **09 52 50.3 -0.5**
comp=Z,28nm,1.1s
DAG Danmarks Havn 64.52 355 *i* P **P** **09 52 50.3 -0.5**
DAG pmax pmax
comp=Z,35nm,1.1s
PGC Sidney 65.24 47 *eP* **P** **09 52 56.6 +0.7**
comp=Z,91nm,1.6s
NLWA Neilton Lookou 65.64 48 *eP* **P** **09 53 00.5 +1.8**
comp=Z,95nm,1.4s
B05A Bryant 66.22 47 P **P** **09 53 03.4 +1.2**
baz=301,SNR=9.3
MOS Moscow 66.39 323 *eP* **P** **09 53 02.4 -0.8**
MOS *e* 09 53 24.5
MOS *eS* **S** **10 01 47.0 -1.6**
MOS pmax pmax
comp=Z,51nm,1.2s
B06A Marblemount 66.43 46 *eP* **P** **09 53 04.9 +1.3**
comp=Z,88nm,1.4s
VRH Novokhopyorsk 66.82 318 *eP* **P** **09 53 05.3 -0.7**
VRH *e*SP **sP** **09 53 26.1 -2.4**
VRH pmax pmax
comp=Z,30nm,1.7s
D05A Enumclaw 66.84 48 *eP* **P** **09 53 08.6 +2.3**
comp=Z,141nm,1.5s
TDL Tradedollar La 67.15 48 P **P** **09 53 09.8 +1.4**
LON Longmire 67.18 48 *eP* **P** **09 53 10.0 +1.5**
LON pmax pmax
comp=Z,30nm,1.6s
LON Longmire 67.18 48 *eP* **P** **09 53 10.0 +1.5**
comp=Z,30nm,1.6s
OBN Obninsk 67.24 323 P **P** **09 53 09.8 +1.1**
comp=Z,13nm,0.4s,baz=45,slow=14,SNR=4.3
OBN Obninsk 67.24 323⇑ *i*P **P** **09 53 09.7 +1.1**
OBN *i* 09 53 36.8
OBN *e* 09 55 39.3
OBN *i* S **S** **10 01 57.8 -1.0**
OBN pmax pmax
comp=Z,27nm,1.0s
OBN Obninsk 67.24 323 *eP* **P** **09 53 09.2 +0.6**
OBN *epP* **sP** **09 53 30.1 -1.0**
F04A Amboy 67.25 49 *eP* **P** **09 53 09.9 +1.1**
comp=Z,89nm,1.6s
NLW Nelson Butte 67.31 46 P **P** **09 53 10.5 +1.0**
LPSR Galich'ya Gora 67.50 320 *eP* **P** **09 53 11.1 +0.8**
LPSR pmax pmax
comp=Z,20nm,1.1s
LTY Liberty 67.56 47 *eP* **P** **09 53 11.7 +0.7**
comp=Z,74nm,1.5s
ETW Entiat 67.57 46 P **P** **09 53 11.9 +0.8**
B08A Colville Reser 67.73 45 *eP* **P** **09 53 12.7 +0.8**
comp=Z,76nm,1.4s
B08A *epP* **pP** **09 53 23.6 -4.2**
FIA1 FINESS Array S 67.81 332 *eP* **P** **09 53 12.1 -0.1**
FINES FINESS Array B 67.81 332 P **P** **09 53 11.9 -0.2**
comp=Z,7.0nm,0.6s,baz=48,slow=7.5,SNR=36
FINES FINESS Array B 67.81 332 *i* P **P** **09 53 12.3 +0.2**
FINES pmax pmax
comp=Z,7.0nm,0.6s
I03D Drain, OR 67.88 51 P **P** **09 53 15.0 +2.1**
baz=302,SNR=7.1
H04A Detroit Lake 68.06 50 *eP* **P** **09 53 15.5 +1.5**
comp=Z,64nm,1.4s
VSR Storozhevoye 68.16 319 *eP* **P** **09 53 14.6 +0.1**
VSR *e*SP **sP** **09 53 35.2 -1.7**
VSR pmax pmax
comp=Z,10.0nm,0.5s
I04A Tendick Farm, 68.40 51 P **P** **09 53 17.5 +1.3**
baz=303,SNR=10.0

L02D	**Cave Junction,**	**68.55**	**53**	P		**P**	**09 53 17.4**	**+0.3**
	baz=303								
C09A	**Chrisman Ranch**	**68.63**	**45**	*e*P		**P**	**09 53 18.5**	**+1.0**
	comp=Z,68nm,1.3s								
C09A				*e*pP		**sP**	**09 53 37.8**	**-2.2**
G06A	**Carlson Farm,**	**68.68**	**49**	*e*P		**P**	**09 53 19.6**	**+1.6**
	comp=Z,116nm,1.7s								
HAWA	**Hanford**	**68.69**	**47**	*e*P		**P**	**09 53 18.9**	**+1.0**
	comp=Z,31nm,1.6s								
I05D	**Terrebonne, OR**	**68.75**	**50**	P		**P**	**09 53 19.3**	**+0.9**
	baz=303,SNR=5.3								
VTHM	**Trough**	**68.76**	**49**	P		**P**	**09 53 19.5**	**+1.1**
ARMA	**Armidale**	**69.00**	**171**	*e*P		**P**	**09 53 20.7**	**+0.8**
ARMA				*e*pP		**pP**	**09 53 36.9**	**+1.0**
NEW	**Newport**	**69.01**	**45**	P		**P**	**09 53 20.7**	**+0.8**
	baz=304,SNR=21								
NEW	**Newport**	**69.01**	**45**	*e*P		**P**	**09 53 20.8**	**+0.8**
NEW				pmax	pmax				
	comp=Z,49nm,1.3s								
NEW	**Newport**	**69.01**	**45**	*e*P		**P**	**09 53 20.8**	**+0.8**
	comp=Z,49nm,1.3s								
YBH	**Yreka Blue Hor**	**69.33**	**53**	*e*P		**P**	**09 53 24.1**	**+2.0**
YBH				*e**PP		**sP**	**09 53 44.1**	**-0.5**
YBH				pmax	pmax				
	comp=Z,26nm,1.1s								
YBH	**Yreka Blue Hor**	**69.33**	**53**	*e*P		**P**	**09 53 24.1**	**+2.0**
	comp=Z,26nm,1.1s								
YBH				*e*pP		**sP**	**09 53 44.1**	**-0.5**
J05D	**Fort Rock, OR**	**69.39**	**51**	P		**P**	**09 53 23.6**	**+1.1**
	baz=304,SNR=20								
SUMG	**Summit**	**69.40**	**0**	⇑*i*P		**P**	**09 53 23.2**	**+0.8**
	comp=Z,34nm,0.9s								
SUMG	**Summit**	**69.40**	**0**	⇑*i*P		**P**	**09 53 23.2**	**+0.8**
SUMG				pmax	pmax				
	comp=Z,34nm,0.9s								
SUMG	**Summit**	**69.40**	**0**	*e*P		**P**	**09 53 23.1**	**+0.7**
	comp=Z,31nm,0.8s								
M02C	**Callahan**	**69.43**	**53**	P		**P**	**09 53 23.7**	**+1.0**
	baz=303,SNR=7.3								
N02D	**Trinity Center**	**69.75**	**53**	P		**P**	**09 53 25.4**	**+0.7**
	baz=304								
STKA	**Stephens Creek**	**69.84**	**180**	P		**P**	**09 53 25.2**	**+0.2**
	comp=Z,4.8nm,0.5s,baz=1.8,slow=6.2,SNR=14								
M04C	**Macdoel**	**69.85**	**52**	P		**P**	**09 53 26.3**	**+1.0**
	baz=304,SNR=11								
K05A	**Summer Lake**	**69.91**	**51**	*e*P		**P**	**09 53 27.4**	**+1.6**
	comp=Z,108nm,1.3s								
WDC	**Whiskeytown Da**	**70.08**	**54**	*e*P		**P**	**09 53 27.7**	**+1.1**
WDC				pmax	pmax				
	comp=Z,45nm,1.4s								
WDC	**Whiskeytown Da**	**70.08**	**54**	*e*P		**P**	**09 53 27.7**	**+1.1**
	comp=Z,44nm,1.4s								
F10A	**Beach Ranch, E**	**70.25**	**47**	*e*P		**P**	**09 53 28.9**	**+1.2**
	comp=Z,26nm,1.5s								
KIV	**Kislovodsk**	**70.29**	**311**	*c i*P		**P**	**09 53 29.9**	**+2.0**
KIV				*i*			09 53 43.5		
KIV				*i*			09 53 50.6		
KIV				*i* S		**S**	**10 02 42.3**	**+6.8**
KIV				*i* SS		**SS**	**10 07 07.5**	**+1.5**
KIV				pmax	pmax				
	comp=Z,39nm,1.0s								
KIV				MLR	MLR				
	comp=Z,341nm,18.0s								
KIV	**Kislovodsk**	**70.29**	**311**	*e*P		**P**	**09 53 30.1**	**+2.2**
	comp=Z,40nm,0.7s								
KBZ	**Khabaz**	**70.29**	**310**	P		**P**	**09 53 28.4**	**+0.6**
	comp=Z,8.6nm,0.8s,baz=24,slow=3.7,SNR=12								
WALA	**Waterton Lakes**	**70.30**	**43**	*e*P		**P**	**09 53 28.8**	**+0.8**
	comp=Z,30nm,0.9s								
BSMT	**Bassoo Peak**	**70.53**	**44**	P		**P**	**09 53 30.6**	**+1.1**
NEY	**Neytrino**	**70.66**	**310**	*e*P		**P**	**09 53 32.0**	**+1.7**
NEY				pmax	pmax				
	comp=Z,2.0nm,0.7s								
BLMT	**Blacktail Moun**	**70.67**	**44**	*e*P		**P**	**09 53 31.5**	**+1.2**
O03D	**Paynes Creek**	**70.70**	**54**	P		**P**	**09 53 30.8**	**+0.3**
	baz=304,SNR=12								
MOD	**Modoc Plateau**	**70.74**	**52**	*e*P		**P**	**09 53 31.9**	**+1.1**
	comp=Z,18nm,1.0s								
WSAR	**Wadi Sarin**	**70.82**	**285**	P		**P**	**09 53 31.9**	**+0.6**
	comp=Z,7.1nm,0.8s,baz=122,slow=6.2,SNR=6.6								
BMO	**Blue Mountains**	**70.85**	**48**	*e*P		**P**	**09 53 32.4**	**+1.1**
BMO				pmax	pmax				
	comp=Z,49nm,1.4s								
BMO	**Blue Mountains**	**70.85**	**48**	*e*P		**P**	**09 53 32.4**	**+1.1**
	comp=Z,49nm,1.4s								
SCO	**Scoresbysund**	**70.87**	**354**	*i* P		**P**	**09 53 30.9**	**+0.1**
SCO	**Scoresbysund**	**70.87**	**354**	*i* P		**P**	**09 53 30.9**	**+0.1**
JTMT	**Jette**	**70.87**	**44**	*e*P		**P**	**09 53 32.5**	**+1.1**
YBMT	**Yellow Bay**	**70.95**	**44**	*e*P		**P**	**09 53 33.0**	**+1.1**
SWMT	**Swartz Lake**	**71.16**	**44**	*e*P		**P**	**09 53 34.1**	**+0.9**
GNI	**Garni**	**71.17**	**307**	P		**P**	**09 53 34.4**	**+1.0**
	comp=Z,4.3nm,0.3s,baz=70,slow=8.5,SNR=3.6								
ORV	**Oroville**	**71.31**	**54**	*e*P		**P**	**09 53 35.0**	**+0.9**
ORV				pmax	pmax				
	comp=Z,42nm,1.4s								
ORV	**Oroville**	**71.31**	**54**	*e*P		**P**	**09 53 35.0**	**+0.9**
	comp=Z,42nm,1.4s								
WVOR	**Wild Horse Val**	**71.45**	**50**	*e*P		**P**	**09 53 36.1**	**+1.0**
WVOR				pmax	pmax				
	comp=Z,77nm,1.5s								
WVOR	**Wild Horse Val**	**71.45**	**50**	*e*P		**P**	**09 53 36.1**	**+1.0**
	comp=Z,77nm,1.5s								
IZAR	**Zarasai**	**71.48**	**327**	*e*P		**P**	**09 53 35.4**	**+0.6**
IZAR				IAmb	IAmb		09 53 36.7		
	comp=Z,14nm,0.5s								
IDID	**Didziasalis**	**71.56**	**327**	*e*P		**P**	**09 53 36.0**	**+0.7**
IDID				IAmb	IAmb		09 53 37.2		
	comp=Z,10nm,0.6s								
MSO	**Missoula**	**71.60**	**45**	P		**P**	**09 53 36.2**	**+0.3**
	baz=307,SNR=16								
MSO	**Missoula**	**71.60**	**45**	*e*P		**P**	**09 53 36.3**	**+0.4**
	comp=Z,37nm,1.4s								
ISAL	**Salakas**	**71.65**	**327**	*e*P		**P**	**09 53 36.7**	**+0.9**
ISAL				IAmb	IAmb		09 53 37.9		
	comp=Z,15nm,0.6s								
UOSS	**Minazif**	**71.69**	**288**	*e*P		**P**	**09 53 37.0**	**+0.4**
	comp=Z,4.7nm,1.6s								
IIGN	**Ignalina**	**71.76**	**327**	*e*P		**P**	**09 53 37.1**	**+0.6**
IIGN				IAmb	IAmb		09 53 38.5		
	comp=Z,16nm,0.5s								
NACGM	**Naroch**	**71.81**	**327**	*e*		**P**	**09 53 36.0**	**-0.8**
CHMT	**Chamberlain Mo**	**71.93**	**44**	*e*P		**P**	**09 53 38.5**	**+0.6**
AFDM	**Forest Hills D**	**71.99**	**54**	*e*P		**P**	**09 53 39.4**	**+1.2**
	comp=Z,46nm,1.6s								
FFC	**Flin Flon**	**72.47**	**33**	*e*P		**P**	**09 53 40.9**	**+0.1**
FFC				pmax	pmax				
	comp=Z,25nm,1.0s								
FFC	**Flin Flon**	**72.47**	**33**	*e*P		**P**	**09 53 40.9**	**+0.1**
	comp=Z,25nm,1.0s								
MFID	**Camas Ranch**	**72.55**	**48**	*e*P		**P**	**09 53 42.6**	**+1.0**
	comp=Z,60nm,1.4s								
FCC	**Fort Churchill**	**72.73**	**27**	*e*P		**P**	**09 53 42.2**	**0.0**
FCC				pmax	pmax				
	comp=Z,78nm,1.4s								
FCC	**Fort Churchill**	**72.73**	**27**	*e*P		**P**	**09 53 42.2**	**0.0**
	comp=Z,78nm,1.4s								
CMB	**Columbia Colle**	**72.89**	**55**	*e*P		**P**	**09 53 44.5**	**+0.9**
CMB				pmax	pmax				
	comp=Z,31nm,1.1s								
CMB	**Columbia Colle**	**72.89**	**55**	*e*P		**P**	**09 53 44.5**	**+0.9**
	comp=Z,31nm,1.1s								
LRM	**Limekiln Ridge**	**73.03**	**45**	*e*P		**P**	**09 53 45.4**	**+0.8**
HFS	**Hagfors**	**73.04**	**336**	P		**P**	**09 53 44.0**	**0.0**
	comp=Z,11nm,0.5s,baz=40,slow=5.8,SNR=54								
HFS	**Hagfors**	**73.04**	**336**	P		**P**	**09 53 44.0**	**0.0**
HFS				pmax	pmax				
	comp=Z,11nm,0.5s								
HFS	**Hagfors**	**73.04**	**336**	P		**P**	**09 53 44.0**	**0.0**
NB2	**NORSAR Subarra**	**73.11**	**337**	P		**P**	**09 53 44.4**	**-0.1**
	comp=Z,77nm,1.4s,baz=38,slow=5.9								
NB2	**NORSAR Subarra**	**73.11**	**337**	P		**P**	**09 53 44.4**	**-0.1**
	baz=38,slow=5.9								
NOA	**NORSAR Array B**	**73.11**	**337**	P		**P**	**09 53 44.6**	**+0.1**
	comp=Z,6.7nm,0.6s,baz=39,slow=6.0,SNR=27								
NOA				LR	LR		10 28 38.1		
	comp=Z,488nm,21.9s,baz=30,slow=38								
EGMT	**Eagleton**	**73.12**	**42**	P		**P**	**09 53 45.5**	**+0.7**
	baz=309,SNR=27								
EGMT	**Eagleton**	**73.12**	**42**	*e*P		**P**	**09 53 45.7**	**+0.8**
	comp=Z,136nm,1.6s								
WAKR	**Walker**	**73.23**	**54**	*e*P		**P**	**09 53 47.1**	**+1.2**
DLMT	**Dillon**	**73.23**	**45**	*e*P		**P**	**09 53 46.4**	**+0.8**
	comp=Z,104nm,1.6s								
HLID	**Hailey**	**73.29**	**47**	P		**P**	**09 53 47.0**	**+0.9**
	baz=307,SNR=18								
HLID	**Hailey**	**73.29**	**47**	*e*P		**P**	**09 53 47.1**	**+1.0**
	comp=Z,37nm,1.4s								
MCMT	**McKenzie Canyo**	**73.42**	**46**	*e*P		**P**	**09 53 47.8**	**+0.9**
AKASG	**Malin Array Be**	**73.46**	**322**	P		**P**	**09 53 46.7**	**0.0**
	comp=Z,9.5nm,0.4s,baz=42,slow=5.9,SNR=33								
AKASG	**Malin Array Be**	**73.46**	**322**	P		**P**	**09 53 46.7**	**0.0**
AKASG				pmax	pmax				
	comp=Z,8.0nm,0.4s								
KIEV	**Kiev**	**73.47**	**322**	⇑*i*P		**P**	**09 53 46.4**	**-0.3**
KIEV				pmax	pmax				
	comp=Z,17nm,0.7s								
KIEV	**Kiev**	**73.47**	**322**	*e*P		**P**	**09 53 46.5**	**-0.3**
	comp=Z,29nm,0.6s								
BMN	**Battle Mountai**	**73.48**	**51**	*e*P		**P**	**09 53 48.6**	**+1.4**
BMN				*e**PP		**pP**	**09 54 05.1**	**+1.8**
BMN				pmax	pmax				
	comp=Z,34nm,1.1s								
BMN	**Battle Mountai**	**73.48**	**51**	*e*P		**P**	**09 53 48.6**	**+1.4**
	comp=Z,34nm,1.1s								
BMN				*e*pP		**pP**	**09 54 05.1**	**+1.8**
BOZ	**Bozeman (W)**	**73.59**	**44**	P		**P**	**09 53 48.8**	**+1.0**
	baz=308,SNR=39								
BOZ	**Bozeman (W)**	**73.59**	**44**	*e*P		**P**	**09 53 48.8**	**+1.0**
BOZ				pmax	pmax				
	comp=Z,84nm,1.5s								
BOZ	**Bozeman (W)**	**73.59**	**44**	*e*P		**P**	**09 53 48.8**	**+1.0**
	comp=Z,84nm,1.5s								
NV01	**Mina Array Sit**	**73.99**	**54**	*e*P		**P**	**09 53 50.6**	**+0.2**
NVAR	**Mina Array Bea**	**73.99**	**54**	P		**P**	**09 53 50.7**	**+0.3**
	comp=Z,27nm,1.2s,baz=286,slow=5.5,SNR=45								
NV11	**Mina Array Sit**	**74.08**	**54**	*e*P		**P**	**09 53 51.7**	**+0.9**
	comp=Z,40nm,1.4s								
QLMT	**Earthquake Lak**	**74.21**	**45**	*e*P		**P**	**09 53 52.7**	**+1.2**
ELK	**Elko**	**74.50**	**50**	*e*P		**P**	**09 53 54.5**	**+1.2**
ELK				pmax	pmax				
	comp=Z,22nm,1.3s								
ELK	**Elko**	**74.50**	**50**	*e*P		**P**	**09 53 54.5**	**+1.2**
	comp=Z,22nm,1.3s								
YMR	**Madison River**	**74.57**	**45**	*e*P		**P**	**09 53 55.0**	**+1.4**
	comp=Z,34nm,1.1s								
GCMT	**Greyclift**	**74.57**	**43**	*e*P		**P**	**09 53 54.6**	**+1.1**
SFJD	**Kangerlussuaq**	**74.58**	**5**	P		**P**	**09 53 53.6**	**+0.7**
	comp=Z,10nm,0.8s,baz=352,slow=8.8,SNR=4.4								
SMMC	**Simmler**	**74.74**	**57**	P		**P**	**09 53 55.1**	**+0.6**
	baz=306								
LKWY	**Lake**	**74.95**	**45**	*e*P		**P**	**09 53 58.0**	**+2.2**
LKWY				*e*			09 56 44.9		
LKWY				pmax	pmax				
	comp=Z,151nm,1.9s								
LKWY	**Lake**	**74.95**	**45**	*e*P		**P**	**09 53 58.0**	**+2.2**
	comp=Z,151nm,1.9s								
LKWY				*e*PP		**PP**	**09 56 44.9**	**+1.3**
PKM	**Mcpherson Peak**	**75.11**	**57**	P		**P**	**09 53 57.8**	**+1.0**
	baz=306								
RLMT	**Red Lodge**	**75.22**	**44**	P		**P**	**09 53 58.3**	**+1.0**
	baz=310,SNR=24								
RLMT	**Red Lodge**	**75.22**	**44**	*e*P		**P**	**09 53 58.3**	**+1.0**
	comp=Z,103nm,1.6s								
MOOW	**Moose Ponds**	**75.27**	**46**	*e*P		**P**	**09 53 59.1**	**+1.5**
	comp=Z,51nm,1.4s								
HVU	**Hansel Valley**	**75.34**	**48**	*e*P		**P**	**09 53 59.3**	**+1.3**
HVU				pmax	pmax				
	comp=Z,22nm,1.0s								
HVU	**Hansel Valley**	**75.34**	**48**	*e*P		**P**	**09 53 59.3**	**+1.3**
	comp=Z,22nm,1.0s								
LOHW	**Long Hollow**	**75.44**	**46**	*e*P		**P**	**09 53 60.0**	**+1.4**
	comp=Z,58nm,1.6s								
GRAC	**Grapevine Rang**	**75.44**	**54**	P		**P**	**09 53 59.6**	**+1.1**
	baz=307,SNR=15								
SNOW	**Snow King Moun**	**75.44**	**46**	*e*P		**P**	**09 54 00.2**	**+1.5**
	comp=Z,16nm,0.8s								
REDW	**Red Top Meadow**	**75.45**	**46**	*e*P		**P**	**09 54 00.1**	**+1.4**
	comp=Z,47nm,1.3s								
ISA	**Isabella, Lake**	**75.53**	**56**	P		**P**	**09 53 59.1**	**+0.1**
	baz=307,SNR=5.2								
ISA	**Isabella, Lake**	**75.53**	**56**	*e*P		**P**	**09 53 59.2**	**+0.1**
ISA				pmax	pmax				
	comp=Z,18nm,1.3s								
ISA	**Isabella, Lake**	**75.53**	**56**	*e*P		**P**	**09 53 59.2**	**+0.1**
	comp=Z,18nm,1.3s								
ARVC	**Arvin**	**75.61**	**57**	P		**P**	**09 54 00.4**	**+0.9**
	baz=307,SNR=5.5								
DGMT	**Dagmar**	**75.66**	**39**	P		**P**	**09 53 59.9**	**+0.3**
	baz=312,SNR=17								
DGMT	**Dagmar**	**75.66**	**39**	*e*P		**P**	**09 53 60.0**	**+0.5**
	comp=Z,47nm,0.9s								
AHID	**Auburn Hatcher**	**75.69**	**47**	*e*P		**P**	**09 54 01.1**	**+1.0**
	comp=Z,16nm,0.8s								
BGU	**Big Grassy Mou**	**75.72**	**49**	*e*P		**P**	**09 54 01.7**	**+1.5**
	comp=Z,59nm,1.6s								
DAC	**Darwin (Calif)**	**75.73**	**55**	*e*P		**P**	**09 54 00.0**	**-0.4**
DAC				pmax	pmax				
	comp=Z,20nm,1.2s								
DAC	**Darwin (Calif)**	**75.73**	**55**	*e*P		**P**	**09 54 00.0**	**-0.4**
	comp=Z,20nm,1.2s								
R11A	**Troy Canyon, C**	**75.75**	**52**	P		**P**	**09 54 01.2**	**+0.8**
	baz=308,SNR=41								
R11A	**Troy Canyon, C**	**75.75**	**52**	*e*P		**P**	**09 54 01.4**	**+1.0**
	comp=Z,62nm,1.4s								
LAO	**LASA Array**	**75.82**	**41**	P		**P**	**09 54 01.4**	**+0.9**
	baz=311,SNR=27								
LAO	**LASA Array**	**75.82**	**41**	*e*P		**P**	**09 54 01.6**	**+1.0**
	comp=Z,129nm,1.4s								
A25A	**Svangstu Ranch**	**75.87**	**38**	P		**P**	**09 54 01.3**	**+0.6**
	baz=313,SNR=7.5								
MPMC	**Manual Prospec**	**75.93**	**55**	P		**P**	**09 54 02.2**	**+0.7**
	baz=307,SNR=18								
FURC	**Furnace Creek,**	**76.08**	**55**	P		**P**	**09 54 02.8**	**+0.7**
	baz=308,SNR=16								
HWUT	**Hardware Ranch**	**76.15**	**48**	*e*P		**P**	**09 54 03.9**	**+1.2**
	comp=Z,92nm,1.4s								
LRMC	**Laurel Mtn Rad**	**76.15**	**56**	P		**P**	**09 54 03.1**	**+0.4**
	baz=307,SNR=11								
TPNV	**Topopah Spring**	**76.18**	**54**	P		**P**	**09 54 03.6**	**+0.7**
	baz=308,SNR=26								
TPNV	**Topopah Spring**	**76.18**	**54**	*e*P		**P**	**09 54 03.8**	**+0.9**
TPNV				pmax	pmax				
	comp=Z,60nm,1.4s								
TPNV	**Topopah Spring**	**76.18**	**54**	*e*P		**P**	**09 54 03.8**	**+0.9**
	comp=Z,60nm,1.4s								
SNCC	**San Nicolas Is**	**76.28**	**59**	P		**P**	**09 54 04.0**	**+0.7**
	baz=307								
DUG	**Dugway, Tooele**	**76.30**	**49**	P		**P**	**09 54 04.6**	**+1.2**
	baz=309,SNR=29								
DUG	**Dugway, Tooele**	**76.30**	**49**	*e*P		**P**	**09 54 04.7**	**+1.2**
DUG				pmax	pmax				
	comp=Z,46nm,1.2s								
DUG	**Dugway, Tooele**	**76.30**	**49**	*e*P		**P**	**09 54 04.7**	**+1.2**
	comp=Z,46nm,1.2s								
B25A	**Knox Farm, Ray**	**76.30**	**39**	P		**P**	**09 54 04.0**	**+0.8**
	baz=313								
EDW2	**Edwards Air Fo**	**76.31**	**56**	P		**P**	**09 54 04.2**	**+0.7**
	baz=307,SNR=14								
A26A	**Wade Farm, Ken**	**76.42**	**38**	P		**P**	**09 54 04.3**	**+0.5**
	baz=314,SNR=13								
LVV	**L'vov**	**76.51**	**324**	*e*P		**P**	**09 54 05.0**	**+0.7**
LVV				MLR	MLR				
	comp=Z,500nm,17.0s								
LVV				MLR	MLR				
	comp=N,400nm,16.0s								
LVV				MLR	MLR				
	comp=E,500nm,16.0s								
TCUT	**Toone Canyon**	**76.55**	**48**	*e*P		**P**	**09 54 06.3**	**+1.3**
	comp=E,52nm,0.9s								
BW06	**Boulder Array**	**76.56**	**46**	P		**P**	**09 54 05.3**	**+0.3**
	baz=310,SNR=23								
BW06	**Boulder Array**	**76.56**	**46**	*e*P		**P**	**09 54 05.5**	**+0.5**
	comp=E,14nm,0.8s								
PD31	**Pinedale Array**	**76.56**	**46**	*e*P		**P**	**09 54 05.5**	**+0.4**
PDAR	**Pinedale Array**	**76.56**	**46**	P		**P**	**09 54 05.5**	**+0.4**
	comp=E,8.4nm,0.5s,baz=261,slow=2.0,SNR=108								
CTU	**Camp Tracy**	**76.62**	**49**	*e*P		**P**	**09 54 06.7**	**+1.4**
	comp=E,29nm,1.2s								
C25A	**Freed Ranch, W**	**76.64**	**39**	P		**P**	**09 54 05.8**	**+0.7**
	baz=313,SNR=8.2								
MWC	**Mount Wilson**	**76.67**	**57**	*e*P		**P**	**09 54 06.3**	**+0.6**
MWC				pmax	pmax				
	comp=Z,42nm,1.3s								
MWC	**Mount Wilson**	**76.67**	**57**	*e*P		**P**	**09 54 06.3**	**+0.6**
	comp=Z,42nm,1.3s								
A27A	**Ledoux Ranch,**	**76.76**	**37**	P		**P**	**09 54 06.2**	**+0.5**
	baz=314								
SHOC	**Shoshone, Teco**	**76.81**	**55**	P		**P**	**09 54 06.7**	**+0.4**
	baz=308,SNR=5.1								
GSC	**Goldstone, Bar**	**76.83**	**55**	P		**P**	**09 54 07.2**	**+0.8**
	baz=308,SNR=11								
GSC	**Goldstone, Bar**	**76.83**	**55**	*e*P		**P**	**09 54 07.3**	**+0.8**
GSC				pmax	pmax				
	comp=Z,18nm,1.1s								
GSC	**Goldstone, Bar**	**76.83**	**55**	*e*P		**P**	**09 54 07.3**	**+0.8**
	comp=Z,18nm,1.1s								
JLU	**Jordanelle**	**76.85**	**48**	*e*P		**P**	**09 54 08.1**	**+1.3**
	comp=Z,61nm,1.5s								
NLU	**North Lily Min**	**76.89**	**49**	*e*P		**P**	**09 54 08.1**	**+1.2**
	comp=Z,24nm,1.2s								
BFSC	**Mount Baldy Ra**	**76.92**	**57**	P		**P**	**09 54 08.0**	**+0.9**
	baz=308								
RRX	**Edison Barstow**	**76.97**	**56**	P		**P**	**09 54 08.2**	**+1.0**
	baz=308								
D25A	**Fairfield**	**76.98**	**39**	P		**P**	**09 54 07.9**	**+0.8**
	baz=313,SNR=8.5								
SCI2	**San Clemente I**	**77.09**	**58**	P		**P**	**09 54 08.7**	**+0.8**
	baz=307								
MPU	**Maple Canyon**	**77.12**	**49**	*e*P		**P**	**09 54 09.2**	**+1.1**
	comp=Z,30nm,1.1s								
C26A	**Wahner Farm, P**	**77.13**	**38**	P		**P**	**09 54 08.4**	**+0.5**
	baz=314,SNR=7.7								
A28A	**Rude Farm, Bot**	**77.25**	**37**	P		**P**	**09 54 09.1**	**+0.6**
	baz=315,SNR=27								
KWP	**Kalwaria Pacla**	**77.25**	**324**	*e*P		**P**	**09 54 09.7**	**+1.2**
KWP	**Kalwaria Pacla**	**77.25**	**324**	*e*P		**P**	**09 54 09.8**	**+1.2**
TUQ	**Turquoise Moun**	**77.32**	**55**	P		**P**	**09 54 09.9**	**+0.6**
	baz=308,SNR=11								
E25A	**Miller Ranch,**	**77.39**	**40**	P		**P**	**09 54 09.9**	**+0.5**
	baz=313,SNR=16								
HEC	**Hector,Ludlow**	**77.42**	**56**	P		**P**	**09 54 10.6**	**+0.8**
	baz=308,SNR=9.1								
BUR08	**Bucovina Ar. S**	**77.47**	**322**	*e*P		**P**	**09 54 10.7**	**+0.8**
BURAR	**Bucovina Array**	**77.48**	**322**	⇑*i*P		**P**	**09 54 09.9**	**0.0**
BURAR	**Bucovina Array**	**77.48**	**322**	⇑P		**P**	**09 54 09.9**	**0.0**
C27A	**Sayler Ranch,**	**77.49**	**38**	P		**P**	**09 54 10.6**	**+0.7**
	baz=314,SNR=7.8								
B28A	**Dugan Ranch, T**	**77.53**	**37**	P		**P**	**09 54 10.6**	**+0.5**
	baz=315,SNR=19								
TESR	**Tescani**	**77.53**	**320**	⇑*i*P		**P**	**09 54 11.0**	**+0.9**
MURC	**Murrieta**	**77.61**	**57**	P		**P**	**09 54 11.5**	**+0.7**
	baz=308								
A29A	**Manning Farm,**	**77.72**	**36**	P		**P**	**09 54 11.3**	**+0.2**
	baz=315,SNR=20								
MSU	**Marysvale**	**77.74**	**50**	*e*P		**P**	**09 54 13.3**	**+1.6**
MSU				*e**PP		**PcP**	**09 54 24.4**	**+2.8**
MSU	**Marysvale**	**77.74**	**50**	*e*P		**P**	**09 54 13.3**	**+1.6**
MSU				*e*pP		**PcP**	**09 54 24.4**	**+2.8**
F25A	**Bowman**	**77.75**	**40**	P		**P**	**09 54 12.0**	**+0.5**
	baz=313,SNR=6.0								
TMUT	**Trail Mountain**	**77.83**	**49**	*e*P		**P**	**09 54 13.7**	**+1.4**
	comp=Z,59nm,1.6s								
E26A	**Carlson Angus**	**77.88**	**40**	P		**P**	**09 54 12.4**	**+0.3**
	baz=314,SNR=9.3								
GMRC	**Granite Mounta**	**77.89**	**55**	P		**P**	**09 54 12.9**	**+0.4**
	baz=308,SNR=9.9								
D27A	**Center**	**77.90**	**39**	P		**P**	**09 54 13.0**	**+0.8**
	baz=314								
VRI	**Vrincioaia**	**77.94**	**320**	⇓*i*P		**P**	**09 54 14.0**	**+1.6**
VRI	**Vrincioaia**	**77.94**	**320**	⇓P		**P**	**09 54 14.0**	**+1.6**
KOLS	**Kolonicke sedl**	**77.95**	**324**	*e*P		**P**	**09 54 13.8**	**+1.4**
KOLS				pmax	pmax				
	comp=Z,12nm,1.3s								
KOLS	**Kolonicke sedl**	**77.95**	**324**	*e*P		**P**	**09 54 13.8**	**+1.4**
B29A	**Wagenman Farm,**	**77.99**	**37**	P		**P**	**09 54 13.1**	**+0.4**
	baz=315,SNR=12								
P17A	**Butcher Ranch,**	**77.99**	**49**	*e*P		**P**	**09 54 14.2**	**+1.2**
	comp=Z,44nm,1.0s								
C28A	**Hausauer Farms**	**78.03**	**38**	P		**P**	**09 54 13.7**	**+0.9**
	baz=315,SNR=8.1								
LCMT	**Little Creek M**	**78.03**	**52**	*e*P		**P**	**09 54 14.6**	**+1.4**
	comp=Z,58nm,1.4s								
MTPU	**Mount Pierson**	**78.03**	**51**	*e*P		**P**	**09 54 15.6**	**+2.1**
	comp=Z,38nm,1.2s								
STHS	**Stebnicka Huta**	**78.

RSSD **Black Hills** 78.68 42 *e*P P 09 54 17.1 +0.3
comp=Z,58nm,1.4s
E28A **Huff** 78.69 39 P P 09 54 16.9 +0.4
baz=315,SNR=5.8
BC3 **Big Chuckawall** 78.72 56 P P 09 54 17.6 +0.6
baz=309,SNR=7.3
B31A **Greenbush Farm** 78.81 36 P P 09 54 17.2 0.0
baz=316,SNR=10.0
W13A **Hualapai Mount** 78.83 54 *e*P P 09 54 18.9 +1.2
comp=Z,26nm,1.4s
D29A **Pettibone, Tap** 78.88 38 P P 09 54 17.5 -0.1
baz=315,SNR=6.7
G27A **Dupree** 78.90 40 P P 09 54 18.0 +0.2
baz=314,SNR=18
I25A **Rochford** 78.91 42 P P 09 54 18.2 +0.1
baz=313,SNR=12
SWSC **Sam W. Stewart** 78.94 57 P P 09 54 18.4 +0.3
baz=309
C30A **Mose, Pekin** 78.95 37 P P 09 54 17.9 0.0
baz=316,SNR=17
A32A **Rocking H Ranc** 78.98 35 P P 09 54 17.7 -0.3
baz=317,SNR=9.4
U15A **North Rim** 78.99 52 *e*P P 09 54 20.2 +1.5
H26A **Fairpoint** 79.00 41 P P 09 54 18.6 +0.3
baz=314,SNR=16
O20A **White River Ci** 79.03 47 P P 09 54 19.1 +0.4
baz=311,SNR=13
O20A **White River Ci** 79.03 47 *e*P P 09 54 19.7 +1.0
comp=Z,58nm,1.4s
LANS **Liptovska Anna** 79.07 326 *e*P P 09 54 19.4 +0.8
LANS **Liptovska Anna** 79.07 326 *e*P P 09 54 19.4 +0.8
VOIR 79.08 320⇑*i*P P 09 54 21.2 +2.4
VOIR 79.08 320⇑P P 09 54 21.2 +2.4
OKC **Ostrava-Krasne** 79.14 327⇑*e*P P 09 54 19.9 +1.0
OKC *es*P **sP** 09 54 42.2 +0.6
OKC **Ostrava-Krasne** 79.14 327 *e*P P 09 54 19.9 +1.0
OKC *e* 09 54 42.2
F28A **McLaughlin** 79.14 39 P P 09 54 19.3 +0.3
baz=315,SNR=15
KSP **Ksiaz** 79.16 328 *e*P P 09 54 19.7 +0.7
KSP **Ksiaz** 79.16 328 *e*P P 09 54 19.7 +0.7
PDMCI **Parker Dam,Lak** 79.17 55 P P 09 54 19.7 +0.4
baz=309,SNR=7.0
E29A **Napoleon** 79.20 38 P P 09 54 19.2 -0.1
baz=315,SNR=9.2
C31A **Landman Farms,** 79.23 36 P P 09 54 19.4 0.0
baz=316,SNR=8.4
D30A **Buchanan** 79.24 37 P P 09 54 19.5 -0.1
baz=316,SNR=5.7
Y12C **Blythe** 79.27 55 P P 09 54 20.7 +0.8
baz=309,SNR=6.8
Y12C **Blythe** 79.27 55 *e*P P 09 54 20.9 +1.0
comp=Z,28nm,1.0s
DRGR 79.28 322⇑*i*P P 09 54 21.3 +1.5
DRGR 79.28 322⇑P P 09 54 21.3 +1.5
J25A **Sunshine Ranch** 79.31 42 P P 09 54 20.1 +0.1
baz=313
ARR **Arges** 79.34 320⇑*i*P P 09 54 22.3 +2.1
B32A **Ashes, Strandq** 79.34 35 P P 09 54 19.7 -0.4
baz=317,SNR=18
H27A **Howes** 79.35 41 P P 09 54 20.5 +0.3
baz=314,SNR=26
I26A **New Underwood** 79.36 42 P P 09 54 20.9 +0.6
baz=314,SNR=12
MORC **Moravsky Berou** 79.44 327 *e*P P 09 54 21.6 +1.0
MORC pmax pmax
comp=Z,53nm,0.9s
MORC **Moravsky Berou** 79.44 327 *e*P P 09 54 21.6 +1.0
comp=Z,52nm,0.9s
A33A **Warroad** 79.46 34 P P 09 54 20.3 -0.3
baz=318,SNR=13
GLA **Glamis** 79.51 56 P P 09 54 22.0 +0.7
baz=309
GLA **Glamis** 79.51 56 *e*P P 09 54 22.3 +1.0
GLA pmax pmax
comp=Z,48nm,1.4s
GLA **Glamis** 79.51 56 *e*P P 09 54 22.3 +1.0
comp=Z,48nm,1.4s
DPC **Dobruska-Polom** 79.53 328⇑*i*P P 09 54 21.8 +0.7
DPC *ex* x 09 54 42.9
DPC **Dobruska-Polom** 79.53 328⇑*i*P P 09 54 21.8 +0.7
DPC *e* 09 54 42.9
UPC **Upice** 79.53 328⇑*e*P P 09 54 22.0 +1.0
UPC *es*P **sP** 09 54 44.1 +0.3
UPC **Upice** 79.53 328 *e*P P 09 54 22.0 +1.0
UPC *e* 09 54 44.1
KRLC **Kraliky** 79.54 328⇑*e*P P 09 54 22.5 +1.4
KRLC **Kraliky** 79.54 328 *e*P P 09 54 22.5 +1.4
PV09 **Paradox Valley** 79.58 49 *e*P P 09 54 23.1 +1.2
E30A **Jud** 79.60 38 P P 09 54 21.7 +0.1
baz=316,SNR=16
G28A **Parade** 79.63 40 P P 09 54 22.2 +0.5
baz=315,SNR=14
F29A **Eureka** 79.63 39 P P 09 54 22.0 +0.3
baz=315,SNR=15
PV10 **Paradox Valley** 79.71 49 *e*P P 09 54 24.2 +1.6
LOT **Lotru** 79.72 321⇑*i*P P 09 54 23.2 +0.9
AGMN **Agassiz Nation** 79.72 35 P P 09 54 21.7 -0.4
baz=318,SNR=12
AGMN **Agassiz Nation** 79.72 35 *e*P P 09 54 21.6 -0.4
comp=Z,36nm,1.4s
J26A **Sides Ranch, S** 79.74 42 P P 09 54 22.7 +0.3
baz=314,SNR=9.8
I27A **Quinn** 79.75 41 P P 09 54 23.1 +0.7
baz=314,SNR=20
C32A **Crookston** 79.76 36 P P 09 54 22.1 -0.2
baz=317
D31A **Mcclaflin, Tow** 79.78 37 P P 09 54 22.4 0.0
baz=317,SNR=9.3
PSZ **Piszkesteto** 79.78 325 *e*P P 09 54 24.0 +1.5
PSZ pmax pmax
comp=Z,29nm,1.2s
PSZ **Piszkesteto** 79.78 325 *e*P P 09 54 24.0 +1.5
comp=Z,29nm,1.2s
PV04 **Paradox Valley** 79.78 49 *e*P P 09 54 23.6 +0.7
PHWY **Pilot Hill** 79.83 45 *e*P P 09 54 23.8 +0.6
comp=Z,62nm,1.6s
N23A **Red Feather La** 79.83 45 P P 09 54 24.3 +1.1
baz=312,SNR=28
N23A **Red Feather La** 79.83 45 *e*P P 09 54 24.3 +1.1
comp=Z,71nm,1.3s
VYHS **Vyhne** 79.83 325 *e*P P 09 54 24.1 +1.3
VYHS pmax pmax
comp=Z,15nm,1.6s
VYHS **Vyhne** 79.83 325 *e*P P 09 54 24.0 +1.3
H28A **Mission Ridge** 79.86 40 P P 09 54 23.4 +0.5
baz=315,SNR=44
B33A **Robert and Kas** 79.86 35 P P 09 54 23.0 +0.1
baz=318
PV05 **Paradox Valley** 79.87 49 *e*P P 09 54 24.7 +1.3
F30A **Leola** 80.03 38 P P 09 54 23.7 -0.1
baz=316
D32A **Dogwood Acres,** 80.04 36 P P 09 54 23.7 -0.2
baz=317,SNR=9.7
G29A **Hoven** 80.04 39 P P 09 54 24.0 +0.1
baz=315,SNR=14
E31A **Nome** 80.05 37 P P 09 54 24.1 +0.2
baz=316,SNR=8.6
BRG **Berggiesshubel** 80.09 329 *e*P P 09 54 25.1 +1.0
comp=Z,11nm,0.8s
BRG *e* 09 54 46.4
comp=Z,9.9nm,0.8s
comp=N,673nm,29.3s
comp=E,461nm,21.0s
comp=Z,664nm,20.8s
BRG **Berggiesshubel** 80.09 329 *e*P P 09 54 25.1 +1.0
BRG *e* 09 54 46.4
BRG pmax pmax
comp=Z,11nm,0.8s
BRG pmax pmax
comp=Z,10.0nm,0.8s
BRG MLR MLR
comp=N,673nm,29.3s
BRG MLR MLR
comp=E,461nm,21.0s
BRG MLR MLR
comp=Z,664nm,20.8s
B34A **Aery, Baudette** 80.12 34 P P 09 54 24.0 -0.2
baz=318,SNR=6.4
CLL **Collm** 80.13 330 *i*P P 09 54 24.3 +0.1
comp=Z,25nm,1.0s
CLL *e* 09 54 42.0
CLL *es* **S** **10 04 23.0 -1.1**
CLL *es*SSS SSS 10 13 00.0
CLL LmH 10 27 00.0
comp=N,400nm,18.7s
CLL LmH 10 27 00.0
comp=E,600nm,18.3s
CLL LmV 10 32 00.0
comp=Z,300nm,20.1s
CLL **Collm** 80.13 330 *i*P P 09 54 24.3 +0.1
CLL *e* 09 54 42.0
CLL *es* **S** **10 04 23.0 -1.1**
CLL pmax pmax
comp=Z,25nm,1.0s
CLL MLR MLR
comp=Z,300nm,20.1s
CLL **Collm** 80.13 330 *e*P P 09 54 24.4 +0.1
comp=Z,23nm,0.9s
WUAZ **Wupatki** 80.15 52 P P 09 54 25.9 +1.1
baz=310
WUAZ **Wupatki** 80.15 52 *e*P P 09 54 25.3 +0.4
comp=Z,36nm,1.1s
PV01 **Paradox Valley** 80.15 49 *e*P P 09 54 25.8 +0.9
C33A **Trail** 80.16 35 P P 09 54 24.1 -0.4
baz=318,SNR=11
VRAC **Vranov** 80.20 327 P P 09 54 25.3 +0.7
comp=Z,6.6nm,0.8s,baz=42,slow=5.7,SNR=14
VRAC **Vranov** 80.20 327⇑*i*P P 09 54 26.5 +1.9
VRAC **Vranov** 80.20 327⇑P P 09 54 26.6 +1.9
GZR **Gura Zlata** 80.25 321⇑*i*P P 09 54 25.1 0.0
GZR **Gura Zlata** 80.25 321⇑P P 09 54 25.1 0.0
I28A **Midland** 80.26 41 P P 09 54 25.5 +0.4
baz=315,SNR=22
H29A **Onida** 80.30 40 P P 09 54 25.6 +0.3
baz=315,SNR=23
J27A **Elkhorn Farm,** 80.35 42 P P 09 54 26.3 +0.6
baz=314,SNR=15
113A **Mohawk Valley,** 80.38 56 *e*P P 09 54 27.0 +1.1
F31A **Hecla** 80.38 38 P P 09 54 25.7 0.0
baz=316,SNR=18
SMCO **Snowmass** 80.39 47 *e*P P 09 54 27.3 +0.9
comp=Z,36nm,1.3s
E32A **Braaten, Kindr** 80.41 37 P P 09 54 25.8 -0.1
baz=317
RAYN **Ar Rayn** 80.44 292 *e*P P 09 54 26.7 +0.3
comp=Z,72nm,1.5s
G30A **Faulkton** 80.47 39 P P 09 54 26.4 +0.1
baz=316,SNR=24
GOPC **GO Pecny, Ondr** 80.50 328⇑*e*P P 09 54 27.8 +1.5
GOPC *es*P **sP** 09 54 49.2 +0.2
GOPC **GO Pecny, Ondr** 80.50 328 *e*P P 09 54 27.8 +1.5
GOPC *e* 09 54 49.2
PRU **Pruhonice** 80.54 329⇑*e*P P 09 54 27.4 +0.9
PRU *es*P **sP** 09 54 49.4 +0.2
PRU **Pruhonice** 80.54 329 *e*P P 09 54 27.4 +0.9
PRU *e* 09 54 49.4
D33A **AnnSam, Waubun** 80.58 36 P P 09 54 26.3 -0.5
baz=318,SNR=9.8
B35A **Bob, Littlefor** 80.62 34 P P 09 54 27.2 +0.2
baz=319,SNR=12
J28A **Allard Ranch,** 80.63 41 P P 09 54 27.5 +0.4
baz=315,SNR=19
C34A **RKJ Ranch, Bem** 80.63 35 P P 09 54 26.4 -0.6
baz=318,SNR=6.1
I29A **Vivian Onida** 80.68 40 P P 09 54 27.5 +0.1
baz=315,SNR=18
ISCO **Idaho Springs** 80.75 46 P P 09 54 29.3 +1.1
baz=313,SNR=15
ISCO **Idaho Springs** 80.75 46 *e*P P 09 54 29.3 +1.1
ISCO pmax pmax
comp=Z,39nm,1.4s
ISCO **Idaho Springs** 80.75 46 *e*P P 09 54 29.2 +1.1
comp=Z,39nm,1.4s
MVCO **Mesa Verde** 80.80 50 P P 09 54 29.3 +1.0
baz=312,SNR=20
MVCO **Mesa Verde** 80.80 50 *e*P P 09 54 29.4 +1.0
comp=Z,72nm,1.4s
X16A **Lo Mia Camp, P** 80.81 53 *e*P P 09 54 30.2 +1.8
G31A **Conde** 80.86 38 P P 09 54 28.3 0.0
baz=316,SNR=9.6
F32A **Veblen** 80.92 37 P P 09 54 28.4 -0.2
baz=317,SNR=13
D34A **Park Rapids** 80.92 35 P P 09 54 28.2 -0.4
baz=318,SNR=17
E33A **Westby DABS, E** 80.98 36 P P 09 54 28.9 0.0
baz=316,SNR=16
C35A **Jirik Farms, M** 81.01 34 P P 09 54 28.5 -0.5
baz=319,SNR=14
ASF **Jabal al Asfar** 81.03 304 P P 09 54 30.7 +1.2
comp=Z,3.7nm,0.7s,baz=45,slow=4.3,SNR=5.4
SUSD **Miller** 81.06 39 P P 09 54 29.5 +0.1
baz=316,SNR=13
J29A **Okreek** 81.11 41 P P 09 54 29.8 +0.2
baz=315,SNR=12
G32A **Webster** 81.19 38 P P 09 54 30.0 0.0
baz=317,SNR=8.0
NKC **Novy Kostel** 81.19 330⇑*e*P P 09 54 31.3 +1.3
NKC **Novy Kostel** 81.19 330 *e*P P 09 54 31.3 +1.3
I30A **Oacoma** 81.20 40 P P 09 54 30.2 0.0
baz=316,SNR=26
MDVR **Moldovita** 81.21 321⇑*i*P P 09 54 30.1 -0.1
MPEP **Malo Peshtene** 81.22 319 *e*P P 09 54 30.5 +0.3
H31A **Wolsey** 81.27 39 P P 09 54 30.4 -0.1
baz=316
F33A **5 Mile Ranch,** 81.33 37 P P 09 54 30.7 -0.1
baz=318,SNR=23
W18A **Petrified Fore** 81.42 52 P P 09 54 32.8 +1.1
baz=311
S22A **4UR Ranch, Cre** 81.44 48 P P 09 54 33.3 +1.5
baz=312,SNR=22
S22A **4UR Ranch, Cre** 81.44 48 *e*P P 09 54 33.4 +1.5
comp=Z,37nm,1.3s
D35A **Remer** 81.44 35 P P 09 54 30.7 -0.7
baz=319,SNR=5.8
MMAI **Mount Meron Ar** 81.46 305 P P 09 54 32.4 +0.6
comp=Z,7.0nm,0.6s,baz=40,slow=6.6,SNR=12
C36A **Pine Crest Far** 81.47 34 P P 09 54 31.6 +0.1
baz=320,SNR=8.8
214A **Organ Pipe Nat** 81.52 56 P P 09 54 32.7 +0.6
baz=310
CONA **Conrad Observa** 81.57 327 *i*P P 09 54 33.0 +0.9
comp=Z,42nm,1.7s,SNR=15
I31A **Royce, Wessing** 81.57 39 P P 09 54 32.0 -0.1
baz=316
Q24A **Divide** 81.58 46 P P 09 54 33.2 +0.5
baz=313
Q24A **Divide** 81.58 46 *e*P P 09 54 33.8 +1.1
comp=Z,22nm,1.4s
J30A **Dallas** 81.59 40 P P 09 54 32.4 +0.1
baz=316,SNR=18
KHC **Kasperske Hory** 81.60 329⇑*i*P P 09 54 32.6 +0.4
KHC *es*P **sP** 09 54 55.2 +0.3
KHC AMS AMS 10 32 30.0
comp=Z,600nm,20.2s
KHC **Kasperske Hory** 81.60 329⇑*i*P P 09 54 32.6 +0.4
KHC *e* 09 54 55.2
KHC MLR MLR
comp=Z,600nm,20.2s
KHC **Kasperske Hory** 81.60 329 *e*P P 09 54 32.5 +0.4
comp=Z,5.2nm,0.8s
E35A **Pequot Lakes** 81.68 35 P P 09 54 32.2 -0.4
baz=319,SNR=9.5
X18A **Snowflake** 81.68 52 *e*P P 09 54 34.0 +1.0
G33A **Ortonville** 81.74 37 P P 09 54 33.0 +0.1
baz=318,SNR=19
H32A **Carlson Farm,** 81.77 38 P P 09 54 32.8 -0.3
baz=317,SNR=6.4
D36A **Goodland** 81.77 34 P P 09 54 32.9 -0.2
baz=320
GEC2 **GERESS Array S** 81.77 328 *e*P P 09 54 33.9 +0.7
GEC2 pmax pmax
comp=Z,7.0nm,0.8s
GEC2 **GERESS Array S** 81.77 328 *e*P P 09 54 33.9 +0.7
comp=Z,6.5nm,0.8s
GERES **GERESS Array B** 81.77 328 P P 09 54 33.5 +0.3
comp=Z,3.2nm,0.5s,baz=46,slow=3.9,SNR=15
GERES LR LR 10 33 22.3
comp=Z,442nm,20.0s,baz=32,slow=37
C37A **Embarrass** 81.77 33 P P 09 54 32.6 -0.4
baz=320,SNR=9.4
F34A **Alexandria** 81.85 36 P P 09 54 33.3 -0.2
baz=318
RZN **Rozhen** 81.89 318 *e*P P 09 54 34.8 +0.8
EYMN **Ely** 81.90 33 P P 09 54 33.5 -0.2
baz=321,SNR=11
EYMN **Ely** 81.90 33 *e*P P 09 54 33.5 -0.2
comp=Z,37nm,1.1s
OGNE **Ogallala** 81.95 43 P P 09 54 34.4 +0.2
baz=315
OGNE **Ogallala** 81.95 43 *e*P P 09 54 35.0 +0.8
comp=Z,137nm,1.5s
H33A **Prehn Over Nor** 81.97 38 P P 09 54 34.3 +0.1
baz=318,SNR=20
M28A **Bar X Bar Ranc** 81.98 43 P P 09 54 34.4 0.0
baz=315
K30A **Basset** 82.00 41 P P 09 54 34.8 +0.4
baz=316,SNR=15
J31A **Geddes** 82.00 40 P P 09 54 34.2 -0.2
baz=316,SNR=6.8
EKA **Eskdalemuir Ar** 82.02 341 P P 09 54 34.9 +0.8
comp=Z,1.0nm,0.4s,baz=27,slow=4.8,SNR=15
VTS **Vitosha** 82.03 319⇑*i*P P 09 54 35.4 +0.7
VTS **Vitosha** 82.03 319⇑P P 09 54 35.4 +0.7
VTS **Vitosha** 82.03 319 *e*P P 09 54 35.5 +0.7
VTS **Vitosha** 82.03 319 *e*P P 09 54 35.2 +0.5
comp=Z,48nm,1.6s
ESK **Eskdalemuir** 82.05 341 *i*P P 09 54 37.1 +2.8
G34A **Benson** 82.09 37 P P 09 54 35.0 +0.2
baz=318,SNR=7.6
I32A **Karley and Nic** 82.10 39 P P 09 54 34.7 -0.2
baz=317,SNR=9.2
GRFO **Grafenberg** 82.10 330 *e*P P 09 54 35.9 +1.1
GRFO pmax pmax
comp=Z,83nm,1.7s
GRFO **Grafenberg** 82.10 330 *e*P P 09 54 35.9 +1.1
comp=Z,83nm,1.7s
F35A **Swanville** 82.12 36 P P 09 54 35.1 +0.1
baz=319,SNR=5.2
C38A **Sawbill Land.** 82.18 33 P P 09 54 34.8 -0.4
baz=321,SNR=16
SDCO **Great Sand Dun** 82.21 48 P P 09 54 37.0 +1.0
baz=313,SNR=19
SDCO **Great Sand Dun** 82.21 48 *e*P P 09 54 36.7 +0.7
comp=Z,34nm,1.4s
E36A **McGregor** 82.22 35 P P 09 54 35.1 -0.4
baz=320,SNR=13
ARSA **Arzberg** 82.23 326 *i*P P 09 54 36.4 +0.9
comp=Z,15nm,1.7s,SNR=6.5
MOA **Molln** 82.31 327 *i*P P 09 54 36.4 +0.5
comp=Z,17nm,1.2s,SNR=6.3
J32A **Parkston** 82.39 39 P P 09 54 36.1 -0.3
baz=317,SNR=13
I33A **Coleman** 82.41 38 P P 09 54 36.4 -0.1
baz=318,SNR=18
H34A **Spellman Lake,** 82.45 37 P P 09 54 36.7 +0.1
baz=318
L30A **Spencer Herefo** 82.46 41 P P 09 54 36.6 -0.2
baz=316
K31A **O'Neill** 82.47 40 P P 09 54 37.0 +0.1
baz=316,SNR=18
MMB **Musomiste** 82.48 318 *e*P P 09 54 37.7 +0.8
C39A **Grand Marais** 82.58 32 P P 09 54 36.6 -0.7
baz=322
TUC **Tucson** 82.60 55 P P 09 54 38.5 +0.8
baz=311
TUC **Tucson** 82.60 55 *e*P P 09 54 39.0 +1.2
TUC pmax pmax
comp=Z,28nm,1.4s
TUC **Tucson** 82.60 55 *e*P P 09 54 39.0 +1.2
comp=Z,28nm,1.4s
KKB **Krupnik** 82.62 319 *e*P P 09 54 38.5 +0.9
G35A **Watkins** 82.64 36 P P 09 54 37.9 +0.2
baz=319,SNR=8.7
ECSD **EROS Data Cent** 82.73 38 P P 09 54 38.1 -0.1
baz=318,SNR=19
ECSD **EROS Data Cent** 82.73 38 *e*P P 09 54 38.0 -0.1
comp=Z,30nm,1.1s
L31A **Butterfield Fa** 82.75 41 P P 09 54 38.5 +0.2
baz=316,SNR=26
N29A **Votaw Ranch, W** 82.79 43 P P 09 54 38.5 -0.1
baz=316,SNR=6.4
K32A **Verdigre** 82.84 40 P P 09 54 38.4 -0.4
baz=317
J33A **Davis** 82.86 39 P P 09 54 38.7 -0.2
baz=318,SNR=7.3
H35A **Sunnyside Ranc** 82.87 37 P P 09 54 39.2 +0.4
baz=319,SNR=24
I34A **Hadley** 82.87 38 P P 09 54 39.0 +0.1
baz=318
SOKA **Soboth** 82.89 326 *i*P P 09 54 39.3 +0.3
comp=Z,42nm,1.6s,SNR=21
G36A **St. Michael** 82.97 36 P P 09 54 39.2 -0.1
baz=319
KSCO **Kaye Shedlock'** 82.97 45 P P 09 54 40.1 +0.4
baz=314,SNR=7.2
KSCO **Kaye Shedlock'** 82.97 45 *e*P P 09 54 39.9 +0.2
comp=Z,66nm,1.4s
BEBN **Eben Ecmael** 83.25 334 P P 09 54 41.3 +0.6
T25A **Trinidad** 83.26 47 P P 09 54 42.2 +1.0
baz=314,SNR=9.0
T25A **Trinidad** 83.26 47 *e*P P 09 54 42.3 +1.0
comp=Z,42nm,1.2s
M31A **Lambtecht Ranc** 83.28 41 P P 09 54 40.8 -0.3
baz=316,SNR=5.8
L32A **Elgin** 83.30 40 P P 09 54 41.2 0.0
baz=317
KBA **Koelbreisnper** 83.31 327 *i*P P 09 54 41.4 +0.2
comp=Z,14nm,0.8s,SNR=14
LEGS **Legarje** 83.33 326 *i*P P 09 54 41.0 -0.2
J34A **George** 83.39 38 P P 09 54 41.4 -0.1
baz=318
H36A **Jessenland, He** 83.39 36 P P 09 54 42.0 +0.5
baz=319,SNR=7.3
SPMN **Marine on St.** 83.42 35 P P 09 54 41.8 +0.1
baz=320,SNR=6.1
SPMN **Marine on St.** 83.42 35 *e*P P 09 54 41.4 -0.2
comp=Z,28nm,1.2s
I35A **Creekview Farm** 83.43 38 P P 09 54 41.6 -0.2
baz=319
LAZ **Ladron** 83.50 51 *e*P P 09 54 43.8 +1.3
MYKA **Terra Mystica** 83.53 327 *i*P P 09 54 41.8 -0.5
comp=Z,7.4nm,0.5s,SNR=9.3
ANMO **Albuquerque** 83.54 50 P P 09 54 43.8 +1.1
baz=313
ANMO **Albuquerque** 83.54 50 *ce*P P 09 54 42.7 -0.1
ANMO pmax pmax
comp=Z,55nm,1.7s
ANMO **Albuquerque** 83.54 50 *e*P P 09 54 43.8 +1.1
comp=Z,58nm,1.4s
L33A **Hoskins** 83.56 40 P P 09 54 42.3 -0.1
baz=317
LJU **Ljubljana** 83.60 326 *e*P P 09 54 42.3 -0.3
VISS **Visnje** 83.65 326 *i*P P 09 54 43.5 +0.6
BGNE **Belgrade** 83.66 41 P P 09 54 42.9 -0.1
baz=317,SNR=8.8
BGNE **Belgrade** 83.66 41 *e*P P 09 54 43.3 +0.3
comp=Z,55nm,0.8s
BGNE *ep*P **sP** 09 55 04.6 -1.3
N31A **Bailey Ranch,** 83.67 42 P P 09 54 42.8 -0.3
baz=316,SNR=6.7
J35A **Milford** 83.69 38 P P 09 54 43.0 -0.1
baz=319
BCLA **Clavier** 83.70 334 P P 09 54 42.9 -0.1
comp=Z,11nm,1.6s
K34A **Le Mars** 83.76 39 P P 09 54 43.4 -0.1
baz=318
I36A **Fitzsimmons Fa** 83.77 37 P P 09 54 43.6 +0.1
baz=319,SNR=6.8
CWF **Charnwood Fore** 83.81 338 *e*P P 09 54 44.7 +1.2
comp=Z,62nm,1.9s
H37A **Dierke Farm, C** 83.85 36 P P 09 54 44.1 +0.2
baz=320,SNR=11
EIL **Elat** 83.92 303 P P 09 54 45.3 +0.8
comp=Z,7.6nm,0.7s,baz=67,slow=1.9,SNR=12
JAVS **Javornik** 83.92 326 *i*P P 09 54 43.4 -1.0
O31A **Woolen Ranch,** 83.96 42 P P 09 54 44.0 -0.6
baz=316,SNR=10
SNF **Seneffe** 83.98 334 P P 09 54 45.2 +0.9
BNM **Barren Site** 83.98 51 *e*P P 09 54 46.1 +1.0
SCHQ **Schefferville** 84.03 16 P P 09 54 44.9 +0.3
comp=Z,5.9nm,0.6s,baz=355,slow=7.2,SNR=16
SCHQ **Schefferville** 84.03 16 *e*P P 09 54 45.1 +0.5
comp=Z,75nm,1.8s
MOTA **Moosalm** 84.03 329 *i*P P 09 54 45.3 +0.4
SNR=9.1
WLF **Walferdange** 84.03 333 P P 09 54 45.7 +1.0
comp=Z,26nm,2.2s
M33A **Taylor Creek F** 84.03 40 P P 09 54 44.7 -0.2
baz=318
RETA **Reutte** 84.05 329 *i*P P 09 54 45.2 +0.2
comp=Z,46nm,1.6s,SNR=12
N32A **Stulken Farm,** 84.06 41 P P 09 54 44.8 -0.3
baz=317
I37A **Lemond, Waseca** 84.06 37 P P 09 54 45.6 +0.6
baz=320,SNR=21
J36A **Seneca 1, Swea** 84.14 38 P P 09 54 45.3 -0.1
baz=319,SNR=11
L34A **Svendsen Farm,** 84.16 40 P P 09 54 45.5 0.0
baz=318,SNR=6.1

K35A	Storm Lake baz=319	84.16	38	P		P	09 54 45.2	-0.3
TRI	Trieste	84.20	326	eP		P	09 54 45.4	-0.2
TRI	comp=Z,11nm,0.8s			pmax		pmax		
TRI	Trieste comp=Z,11nm,0.8s	84.20	326	eP		P	09 54 45.4	-0.2
DOU	Dourbes comp=Z,9.3nm,1.8s	84.22	334	P		P	09 54 46.3	+0.7
BFO	Black Forest	84.33	331	eP		P	09 54 46.8	+0.5
BFO	comp=Z,50nm,1.4s			pmax		pmax		
BFO	Black Forest comp=Z,50nm,1.4s	84.33	331	eP		P	09 54 46.8	+0.5
121A	Cookes Peak, D baz=312,SNR=23	84.35	53	P		P	09 54 48.0	+1.1
121A	Cookes Peak, D comp=Z,50nm,1.3s	84.35	53	eP		P	09 54 47.9	+1.0
COWI	Conover comp=Z,22nm,1.3s	84.35	33	eP		P	09 54 46.5	+0.1
M34A	Aspy Farms, Fr baz=318	84.39	40	P		P	09 54 46.6	-0.2
PMOR	Pomariorio Ree comp=Z,83nm,0.2s	84.43	114	eT		T	11 27 53.6	
O32A	Brockman Farm, baz=317	84.43	42	P		P	09 54 46.5	-0.5
FETA	Feichten comp=Z,11nm,0.9s,SNR=9.9	84.44	329	i P		P	09 54 47.1	+0.1
L35A	Bielow Farm, R baz=318	84.46	39	P		P	09 54 47.1	0.0
N33A	J Bar K, Exete baz=317	84.52	41	P		P	09 54 47.1	-0.3
J37A	Redenius Farm, baz=320,SNR=15	84.53	37	P		P	09 54 47.4	+0.1
I38A	Scanlan Farm, baz=320,SNR=8.3	84.54	36	P		P	09 54 47.2	-0.2
DAVA	Damuels comp=Z,25nm,0.9s,SNR=10.0	84.57	329	i P		P	09 54 47.7	0.0
K36A	Gilmore City baz=319,SNR=12	84.60	38	P		P	09 54 47.9	+0.1
HSIG	comp=Z,45nm,1.4s	84.64	57	eP		P	09 54 48.3	+0.1
CBKS	Cedar Bluff baz=316	84.70	44	P		P	09 54 48.1	-0.3
CBKS	Cedar Bluff	84.70	44	eP		P	09 54 48.6	+0.2
CBKS	comp=Z,88nm,1.5s			pmax		pmax		
CBKS	Cedar Bluff comp=Z,88nm,1.5s	84.70	44	eP		P	09 54 48.6	+0.2
P32A	Huiting Farm, baz=317,SNR=17	84.73	42	P		P	09 54 47.9	-0.6
ECH	Echery	84.86	331	eP		P	09 54 48.8	-0.2
M35A	Neola baz=318,SNR=10	84.87	40	P		P	09 54 49.4	+0.2
K37A	Belmond baz=320,SNR=23	84.90	37	P		P	09 54 49.1	-0.1
L36A	Harm Buss Farm baz=319,SNR=7.5	84.90	39	P		P	09 54 49.2	0.0
N34A	Lincoln baz=318,SNR=7.0	84.93	40	P		P	09 54 48.8	-0.6
O33A	Hebron baz=317,SNR=5.5	84.93	42	P		P	09 54 48.7	-0.8
FUORN	Ofenpass-Fuorn comp=Z,26nm,0.6s	84.95	329	eP		P	09 54 50.1	+0.4
PPT2	Papeete2 comp=Z,1µm,25.2s,baz=317	84.97	117	eLR		LR	10 21 17.4	
PPT2	Papeete2 comp=Z,13nm,0.3s	84.97	117	eT		T	11 28 32.8	
DAVOX	Davos/Dischmat comp=Z,10.0nm,1.1s,baz=7.4,slow=3.6,SNR=10	84.98	329	P		P	09 54 50.2	+0.4
DAVOX	Davos/Dischmat	84.98	329	P		P	09 54 50.2	+0.4
DAVOX	comp=Z,6.0nm,0.8s			pmax		pmax		
PAE	Paea comp=Z,2.1nm,0.3s	85.01	117	eT		T	11 28 35.6	
J38A	Wedel Dairy, R baz=320,SNR=16	85.03	36	P		P	09 54 49.6	-0.3
MOF	Molkenrain	85.17	331⇑	eP		P	09 54 50.3	-0.3
Q32A	Meitler Ranch, baz=317,SNR=5.2	85.21	43	P		P	09 54 50.6	-0.3
THEF	They Montfort	85.29	332	eP		P	09 54 51.2	+0.1
O34A	Beatrice baz=318	85.31	41	P		P	09 54 50.8	-0.6
M36A	Felix, Anita baz=319,SNR=5.4	85.32	39	P		P	09 54 51.5	+0.1
TVO	Taravao comp=Z,1.6nm,0.3s	85.33	117	eT		T	11 28 59.2	
L37A	Phoenix Point, baz=320	85.33	38	P		P	09 54 51.4	0.0
P33A	Williams Farm, baz=317	85.34	42	P		P	09 54 51.3	-0.3
N35A	Tabor baz=318,SNR=6.3	85.35	40	P		P	09 54 51.7	+0.2
K38A	Parkersburg baz=320	85.40	37	P		P	09 54 51.7	0.0
TUE	Stuetta comp=Z,71nm,2.0s	85.44	329	eP		P	09 54 52.2	0.0
R32A	Long Quarter, baz=317	85.54	43	P		P	09 54 52.1	-0.4
Q33A	Connelly Farm, baz=317,SNR=9.7	85.59	42	P		P	09 54 52.4	-0.3
O35A	Humboldt baz=318,SNR=6.5	85.65	40	P		P	09 54 52.9	-0.2
L38A	Oak Wood Farm, baz=320,SNR=8.5	85.70	38	P		P	09 54 53.1	-0.1
LOMF	Lomont	85.71	331⇑	eP		P	09 54 53.1	-0.2
P34A	Walnut Farm, R baz=318,SNR=12	85.72	41	P		P	09 54 52.8	-0.6
N36A	Muff Farm, Cla baz=319	85.72	40	P		P	09 54 53.7	+0.4
M37A	Trindle Farm, baz=319,SNR=6.8	85.73	39	P		P	09 54 53.7	+0.3
SCIA	State Center comp=Z,107nm,1.4s	85.75	38	eP		P	09 54 54.1	+0.6
S32A	Newby Ranch, P baz=317,SNR=7.1	85.94	44	P		P	09 54 54.5	-0.1
R33A	Olander Ranch, baz=317	86.01	43	P		P	09 54 54.7	-0.2
LAST	Lasithi comp=Z,130nm,1.7s	86.08	313	eP		P	09 54 55.3	0.0
Q34A	Chapman baz=318	86.12	42	P		P	09 54 55.2	-0.1
M38A	Pleasantville baz=320,SNR=11	86.14	38	P		P	09 54 55.6	+0.2
N37A	Lee Faris, Mou baz=319,SNR=18	86.14	39	P		P	09 54 55.6	+0.2
P35A	Duane Minner, baz=318	86.15	41	P		P	09 54 55.6	0.0
KSU1	Kansas State U baz=318,SNR=5.6	86.16	42	P		P	09 54 55.2	-0.4
KSU1	Kansas State U comp=Z,97nm,1.6s	86.16	42	eP		P	09 54 55.4	-0.1
TAOE	Nuku Hiva Isla comp=Z,731nm,23.3s,baz=317	86.20	104	eLR		LR	10 22 13.5	
TAOE	Nuku Hiva Isla comp=Z,27nm,0.2s	86.20	104	eT		T	11 30 10.6	
O36A	Bolckow baz=319,SNR=7.4	86.23	40	P		P	09 54 56.0	0.0
IDI	Anoyia comp=Z,15nm,0.5s,baz=34,slow=11,SNR=16	86.33	313	P		P	09 54 55.7	-0.9
T32A	Huddler Ranch, baz=317,SNR=7.5	86.33	44	P		P	09 54 56.4	0.0
SENIN	Lac Senin/Sane comp=Z,6.5nm,0.8s	86.34	330	eP		P	09 54 57.5	+0.9
JFWS	Jewell Farm	86.37	35	eP		P	09 54 56.1	-0.4
JFWS	comp=Z,57nm,1.5s			pmax		pmax		
JFWS	Jewell Farm comp=Z,57nm,1.5s	86.37	35	eP		P	09 54 56.1	-0.4
MNTX	Cornudas Mount baz=314,SNR=15	86.41	52	P		P	09 54 57.4	+0.4
MNTX	Cornudas Mount comp=Z,20nm,1.2s	86.41	52	eP		P	09 54 57.4	+0.4
R34A	Isabella, Hill baz=318	86.41	43	P		P	09 54 56.8	0.0
AMTX	Amarillo baz=315	86.41	47	P		P	09 54 57.8	+0.8
AMTX	Amarillo comp=Z,43nm,1.2s	86.41	47	eP		P	09 54 58.2	+1.2
MSTX	Muleshoe baz=315,SNR=12	86.42	49	P		P	09 54 57.2	+0.1
MSTX	Muleshoe comp=Z,47nm,1.4s	86.42	49	eP		P	09 54 57.2	+0.1
P36A	Good Intent, A baz=319,SNR=6.6	86.50	40	P		P	09 54 57.1	-0.1
N38A	Joes South For baz=320,SNR=12	86.59	39	P		P	09 54 57.8	+0.1
O37A	Wolven Farm, M baz=319	86.62	39	P		P	09 54 58.0	+0.2
Q35A	Mercer Eighty, baz=318,SNR=11	86.64	41	P		P	09 54 57.9	0.0
Q36A	Arnold C. Orve baz=319,SNR=6.9	86.86	41	P		P	09 54 58.7	-0.3
U32A	Winter Ranch, baz=317	86.86	45	P		P	09 54 59.6	+0.5
N39A	Derby Farms, D baz=320,SNR=10	86.89	38	P		P	09 54 59.4	+0.3
S34A	Willow Spring baz=318,SNR=5.3	86.93	43	P		P	09 54 59.3	-0.1
R35A	Emporia Munici baz=318,SNR=5.7	86.95	42	P		P	09 54 59.7	+0.3
P37A	Lathrop baz=319,SNR=8.6	86.95	40	P		P	09 54 59.4	-0.1
O38A	Galt baz=320,SNR=5.5	86.99	39	P		P	09 54 59.7	+0.1
VLDQ	Val d'Or comp=Z,52nm,1.3s	87.14	25	eP		P	09 54 59.1	-1.0
GLMI	Grayling comp=Z,40nm,0.8s	87.27	31	eP		P	09 55 01.7	+0.8
R36A	Gordon, Harris baz=319,SNR=21	87.31	41	P		P	09 55 01.3	+0.1
U33A	Lingo Farm, Me baz=317,SNR=6.7	87.31	44	P		P	09 55 01.6	+0.3
V32A	Arapaho baz=317,SNR=8.3	87.32	45	P		P	09 55 02.0	+0.7
P38A	Dawn baz=320,SNR=17	87.34	39	P		P	09 55 01.5	+0.2
O39A	Kirksville baz=320,SNR=9.1	87.35	38	P		P	09 55 01.4	+0.1
S35A	Otter Creek Ra baz=318,SNR=15	87.36	42	P		P	09 55 01.6	+0.1
T34A	McClaskey Farm baz=318,SNR=7.5	87.39	43	P		P	09 55 01.8	+0.2
Q37A	Longview Farm, baz=319	87.44	41	P		P	09 55 01.9	+0.1
U34A	Anderson Ranch baz=318,SNR=11	87.63	44	P		P	09 55 03.2	+0.4
U34A	Anderson Ranch comp=Z,64nm,1.2s	87.63	44	eP		P	09 55 03.6	+0.9
W32A	Sentinel baz=317,SNR=8.1	87.64	46	P		P	09 55 03.5	+0.7
V33A	Lossen Ranch, baz=317	87.67	45	P		P	09 55 03.4	+0.4
R37A	Teagarden Farm baz=319	87.67	41	P		P	09 55 02.6	-0.3
S36A	Lake Cedric, C baz=319,SNR=7.6	87.72	42	P		P	09 55 03.2	+0.1
O40A	La Belle baz=321,SNR=12	87.78	38	P		P	09 55 03.4	0.0
Q38A	Cooks Store, C baz=320,SNR=9.9	87.80	40	P		P	09 55 03.3	-0.2
T35A	Sooner Cattle baz=318,SNR=7.7	87.83	43	P		P	09 55 04.2	+0.5
P39A	Salisbury baz=320,SNR=9.9	87.83	39	P		P	09 55 03.7	0.0
TIP	Timpagrande comp=Z,26nm,1.5s	87.84	320	eP		P	09 55 03.7	-0.1
W33A	Caddo, Fort Co baz=317,SNR=7.1	88.05	45	P		P	09 55 05.9	+1.1
Q39A	Willow Grove F baz=320,SNR=28	88.06	40	P		P	09 55 05.0	+0.3
T36A	Boggs Farm, Ca baz=318,SNR=8.6	88.06	43	P		P	09 55 05.3	+0.5
PLDF	La Plantade	88.06	332	eP		P	09 55 05.1	+0.4
V34A	Guthrie baz=318,SNR=11	88.08	44	P		P	09 55 05.4	+0.5
V34A	Guthrie comp=Z,99nm,1.5s	88.08	44	eP		P	09 55 05.1	+0.2
S37A	Fort Scott baz=319,SNR=14	88.09	41	P		P	09 55 04.9	0.0
U35A	Pawnee baz=318,SNR=6.0	88.11	44	P		P	09 55 05.4	+0.3
X32A	Elmer baz=317,SNR=10	88.12	46	P		P	09 55 05.7	+0.6
P40A	Paris baz=321,SNR=20	88.15	39	P		P	09 55 05.4	+0.3
AGO	Saint Agoulin	88.17	333	eP		P	09 55 05.3	+0.1
WMOK	Wichita Mounta	88.18	46	eP		P	09 55 05.4	-0.1
WMOK	comp=Z,40nm,1.4s			pmax		pmax		
WMOK	Wichita Mounta comp=Z,40nm,1.4s	88.18	46	eP		P	09 55 05.4	-0.1
R38A	Fenwick Farm, baz=320,SNR=8.0	88.24	41	P		P	09 55 05.2	-0.5
SSB	Saint Sauveur	88.31	331	eP		P	09 55 06.4	+0.5
SSB	comp=Z,20nm,1.6s			pmax		pmax		
SSB	Saint Sauveur comp=Z,20nm,1.6s	88.31	331	eP		P	09 55 06.4	+0.5
W34A	Bridge Creek, baz=317,SNR=5.4	88.38	45	P		P	09 55 07.1	+0.7
W34A	Bridge Creek, comp=Z,76nm,1.4s	88.38	45	eP		P	09 55 07.5	+1.2
X33A	Lawton baz=317,SNR=9.2	88.48	46	P		P	09 55 06.8	0.0
V35A	Meyer Ranch, C baz=318	88.50	44	P		P	09 55 07.1	+0.2
T37A	Cheneyville 18 baz=319,SNR=7.3	88.52	42	P		P	09 55 07.2	+0.2
Q40A	Laux Farm, Aux baz=321,SNR=14	88.55	39	P		P	09 55 07.3	+0.2
R39A	Chumby, Stover baz=320,SNR=14	88.59	40	P		P	09 55 07.0	-0.3
U36A	Oologah baz=319	88.64	43	P		P	09 55 07.7	+0.2
S38A	Stockton baz=320,SNR=8.4	88.66	41	P		P	09 55 07.1	-0.6
HDIL	Hopedale baz=320,SNR=10	88.66	36	P		P	09 55 07.7	+0.2
HDIL	Hopedale comp=Z,45nm,0.9s	88.66	36	eP		P	09 55 07.9	+0.3
HDIL				epP		pP	09 55 26.3	+2.2
Y33A	Hilltop Ranch, baz=317,SNR=6.3	88.80	46	P		P	09 55 08.6	+0.2
X34A	Smith Ranch, M baz=317,SNR=10	88.81	45	P		P	09 55 09.1	+0.7
T38A	Diamond baz=319,SNR=23	88.91	42	P		P	09 55 08.7	-0.2
S39A	Bolivar baz=320,SNR=17	88.92	41	P		P	09 55 08.2	-0.7
W35A	Tecumseh baz=318,SNR=7.9	88.94	44	P		P	09 55 09.2	+0.2
TBI	Tubuai comp=Z,519nm,29.8s,baz=321	88.94	121	eLR		LR	10 22 36.0	
TBI	Tubuai comp=Z,218nm,0.3s	88.94	121	eT		T	11 33 27.5	
U37A	Salina baz=319,SNR=12	88.95	43	P		P	09 55 09.3	+0.2
TUL1	Leonard baz=318,SNR=7.3	88.96	43	P		P	09 55 09.3	+0.3
TUL1	Leonard comp=Z,46nm,1.4s	88.96	43	eP		P	09 55 09.8	+0.7
V36A	Jenks baz=318,SNR=8.5	88.97	43	P		P	09 55 09.6	+0.5
R40A	Maddies Statio baz=321,SNR=20	88.99	40	P		P	09 55 09.1	0.0
TX31	Lajitas Ar. Si	89.11	53	eP		P	09 55 10.4	+0.3
TXAR	Lajitas Array comp=Z,4.1nm,0.5s,baz=295,slow=2.9,SNR=138	89.11	53	P		P	09 55 10.4	+0.4
ABTX	Abilene, Hawle baz=316,SNR=5.3	89.21	48	P		P	09 55 10.5	+0.2
ABTX	Abilene, Hawle comp=Z,53nm,1.4s	89.21	48	eP		P	09 55 11.3	+0.9
Z33A	Whitaker Ranch baz=317,SNR=8.7	89.24	47	P		P	09 55 10.5	+0.1
W36A	Wetumka baz=318,SNR=8.0	89.30	44	P		P	09 55 11.0	+0.3
U38A	Gravette baz=319,SNR=6.1	89.31	42	P		P	09 55 10.8	0.0
Y34A	Reagan Ranch, baz=318,SNR=6.2	89.32	46	P		P	09 55 10.9	+0.1
V37A	Hulbert baz=319,SNR=15	89.33	43	P		P	09 55 11.0	+0.2
T39A	Clever baz=320,SNR=7.9	89.40	41	P		P	09 55 11.1	0.0
S40A	Lebanon baz=320,SNR=10	89.41	40	P		P	09 55 10.9	-0.3
SADO	Sadowa	89.43	28	eP		P	09 55 11.2	+0.1
X35A	Drake baz=318,SNR=16	89.44	45	P		P	09 55 11.3	0.0
HPIG	comp=Z,19nm,1.2s	89.50	56	eP		P	09 55 11.2	-0.8
133A	Hamilton Ranch baz=317	89.65	47	P		P	09 55 12.6	+0.2
X36A	Centrahoma baz=318,SNR=7.5	89.66	44	P		P	09 55 12.8	+0.5
Z34A	Collier Ranch, baz=317	89.66	46	P		P	09 55 12.7	+0.2
HHAR	Hobbs comp=Z,24nm,1.2s	89.67	42	eP		P	09 55 12.6	+0.1
W37B	Quinton baz=319,SNR=5.9	89.73	44	P		P	09 55 13.2	+0.5
V38A	Canehill baz=319,SNR=26	89.74	42	P		P	09 55 12.8	0.0
T40A	Mansfield baz=320,SNR=11	89.74	40	P		P	09 55 12.8	+0.1
Y35A	Marietta baz=318	89.77	45	P		P	09 55 13.2	+0.3
SFIN	Lafayette baz=324,SNR=11	89.81	35	P		P	09 55 13.3	+0.3
SFIN	Lafayette comp=Z,27nm,0.8s	89.81	35	eP		P	09 55 13.4	+0.5
U39A	Green Forest baz=320,SNR=20	89.83	42	P		P	09 55 12.9	-0.2
LMQ	La Malbaie	89.84	21	eP		P	09 55 13.4	+0.5
Z35A	Perchaven, San baz=318,SNR=8.4	90.07	46	P		P	09 55 14.2	-0.1
233A	Rising Star baz=317,SNR=13	90.08	48	P		P	09 55 14.6	+0.1
134A	White-Moore Ra baz=317,SNR=7.6	90.15	47	P		P	09 55 15.1	+0.4
V39A	Pettigrew baz=320,SNR=13	90.16	42	P		P	09 55 14.6	-0.1
U40A	Yellville baz=320,SNR=20	90.18	41	P		P	09 55 14.7	-0.1
X37A	Clayton baz=319	90.18	44	P		P	09 55 14.9	+0.2
Y36A	Durant baz=318,SNR=9.9	90.19	45	P		P	09 55 15.2	+0.4
W38A	Poteau baz=319,SNR=9.3	90.28	43	P		P	09 55 15.8	+0.5
X38A	Whitesboro baz=319,SNR=8.3	90.41	43	P		P	09 55 16.5	+0.6
Y37A	Hugo baz=319	90.50	44	P		P	09 55 16.5	+0.2
234A	Clairette baz=317,SNR=20	90.54	47	P		P	09 55 16.9	+0.4
333A	Richland Sprin baz=317,SNR=24	90.54	48	P		P	09 55 16.8	+0.2
135A	Vickery Place, baz=318	90.55	46	P		P	09 55 17.1	+0.6
Z36A	Blue Ridge baz=318,SNR=9.6	90.57	45	P		P	09 55 16.8	+0.1
W39A	Magazine baz=320	90.58	42	P		P	09 55 17.0	+0.4
V40A	Witts Springs baz=320,SNR=6.9	90.62	42	P		P	09 55 16.5	-0.4
JCT	Junction City baz=316	90.66	49	P		P	09 55 17.4	+0.2
OLIL	Olney comp=Z,98nm,1.5s	90.67	37	eP		P	09 55 17.3	+0.3
433A	Art baz=317,SNR=7.1	90.89	49	P		P	09 55 18.3	+0.1
X39A	Fountain Ranch baz=320,SNR=12	90.92	43	P		P	09 55 18.9	+0.6
WHTX	Lake Whitney, baz=318	90.94	47	P		P	09 55 18.8	+0.4
WHTX	Lake Whitney, comp=Z,126nm,1.5s	90.94	47	eP		P	09 55 18.7	+0.4
SIUC	Southern Illin comp=Z,109nm,1.5s	90.94	38	eP		P	09 55 19.1	+0.8
W40A	Ferguson Farm, baz=320,SNR=6.6	90.96	42	P		P	09 55 18.5	+0.1
334A	Lometa baz=317,SNR=18	90.97	48	P		P	09 55 18.7	+0.2
Y38A	Idabel baz=319,SNR=5.4	91.02	44	P		P	09 55 18.6	-0.2
BLO	Bloomington	91.05	35	eP		P	09 55 20.2	+1.5
BLO	comp=Z,37nm,1.3s			pmax		pmax		
BLO	Bloomington comp=Z,37nm,1.3s	91.05	35	eP		P	09 55 20.2	+1.5
PBMO	Poplar Bluff comp=Z,50nm,1.3s	91.08	39	eP		P	09 55 19.2	+0.3
136A	Ennis baz=318	91.11	46	P		P	09 55 19.2	+0.1
MIAR	Mount Ida baz=320,SNR=13	91.18	43	P		P	09 55 19.8	+0.4
MIAR	Mount Ida	91.18	43	eP		P	09 55 19.9	+0.4
MIAR	comp=Z,32nm,1.1s			pmax		pmax		
MIAR	Mount Ida comp=Z,32nm,1.1s	91.18	43	eP		P	09 55 19.9	+0.4
WHAR	Wooly Hollow comp=Z,86nm,1.5s	91.29	41	eP		P	09 55 20.4	+0.4
434A	Burnet baz=317,SNR=7.3	91.33	48	P		P	09 55 20.0	-0.2
Y39A	Lockesburg baz=320,SNR=12	91.36	44	P		P	09 55 20.5	+0.2
ERPA	Erie comp=Z,69nm,1.4s	91.37	30	eP		P	09 55 21.2	+1.0
Z38A	Mt. Pleasant baz=319	91.39	45	P		P	09 55 20.5	+0.1
W41A	Tony Mavity, V baz=321	91.40	42	P		P	09 55 20.4	-0.1
533A	Kerrville baz=317,SNR=6.9	91.42	49	P		P	09 55 20.9	+0.3
335A	Moody baz=318	91.48	47	P		P	09 55 21.0	+0.2
X40A	Basin Creek Fa baz=320,SNR=9.9	91.62	42	P		P	09 55 21.8	+0.3
ALLY	Alegheny Colle comp=Z,107nm,1.9s	91.71	30	eP		P	09 55 23.3	+1.5
336A	Riesel baz=318,SNR=9.4	91.73	47	P		P	09 55 22.4	+0.3
ACSO	Alum Creek Sta comp=Z,35nm,1.3s	91.74	33	eP		P	09 55 22.5	+0.6
Y40A	Okolona baz=320	91.75	43	P		P	09 55 22.0	-0.1
435B	Jarrell baz=318	91.75	48	P		P	09 55 22.3	+0.1
633A	Saathoff Ranch baz=317	91.77	50	P		P	09 55 22.6	+0.3
534A	Blanco baz=317,SNR=18	91.78	49	P		P	09 55 22.2	-0.1
237A	Washita, Mont baz=318	91.87	46	P		P	09 55 23.0	+0.4
WCI	Wyandotte Cave	91.92	36	eP		P	09 55 23.5	+0.7
WCI	comp=Z,49nm,1.4s			pmax		pmax		
WCI	Wyandotte Cave comp=Z,49nm,1.4s	91.92	36	eP		P	09 55 23.5	+0.7
WLAR	White Oak Lake comp=Z,55nm,1.3s	92.08	43	eP		P	09 55 24.8	+1.1
832A	Faith Ranch, C baz=316,SNR=5.3	92.14	51	P		P	09 55 24.4	+0.4
PKME	Peaks-Kenny Pk comp=Z,65nm,1.6s	92.22	21	eP		P	09 55 24.9	+0.9
436A	Wall Ranch, Ga baz=318	92.22	47	P		P	09 55 25.2	+0.9
733A	Divot King Ran baz=317	92.24	50	P		P	09 55 25.0	+0.6
238A	Jacksonville baz=319	92.25	45	P		P	09 55 25.3	+0.9
Z40A	Long Farm, Mag baz=320,SNR=7.8	92.25	44	P		P	09 55 25.2	+0.7
535A	Dale baz=318	92.31	48	P		P	09 55 25.2	+0.4
634A	China Grove, S baz=317	92.32	49	P		P	09 55 25.3	+0.5
337A	Centerville baz=318	92.34	46	P		P	09 55 25.6	+0.7
N54A	Moraine State baz=328	92.36	30	P		P	09 55 25.0	+0.2
833A	Chaparral WMA, baz=317,SNR=6.3	92.46	51	P		P	09 55 26.0	+0.5
ACCN	Adirondack Com comp=Z,22nm,1.4s	92.56	25	eP		P	09 55 26.2	+0.6
536A	Bastrop baz=318	92.57	48	P		P	09 55 26.7	+0.7
CCAR	Cane Creek comp=Z,110nm,1.5s	92.62	42	eP		P	09 55 27.5	+1.4
338A	Crockett baz=319	92.63	46	P		P	09 55 26.5	+0.3
635A	Leesville baz=317	92.66	49	P		P	09 55 27.0	+0.6
Y42A	Garnett, Star baz=321	92.67	42	P		P	09 55 26.9	+0.6
WVT	Waverly	92.88	38	eP		P	09 55 27.7	+0.5
WVT	comp=Z,19nm,1.3s			pmax		pmax		
WVT	Waverly comp=Z,18nm,1.3s	92.88	38	eP		P	09 55 27.7	+0.5
537A	Green Hill Far	93.01	47	P		P	09 55 29.3	+1.4

	baz=318							
636A	**Smothers Creek**	**93.02**	**48**	P		**P**	**09 55 29.9**	**+1.9**
	baz=318,SNR=5.3							
735A	**Kenedy**	**93.03**	**49**	P		**P**	**09 55 29.8**	**+1.7**
	baz=317							
933A	**Laredo**	**93.05**	**51**	P		**P**	**09 55 30.0**	**+1.8**
	baz=317,SNR=8.3							
339A	**Huntington**	**93.07**	**45**	P		**P**	**09 55 30.2**	**+2.0**
	baz=319							
OXF	**Oxford**	**93.38**	**40**	*e*P		**P**	**09 55 30.6**	**+1.0**
OXF				pmax		pmax		
	comp=Z,25nm,1.1s							
OXF	**Oxford**	**93.38**	**40**	*e*P		**P**	**09 55 30.6**	**+1.0**
	comp=Z,25nm,1.1s							
HKT	**Hockley**	**93.38**	**47**	*e*P		**P**	**09 55 31.5**	**+1.9**
HKT				pmax		pmax		
	comp=Z,30nm,1.4s							
HKT	**Hockley**	**93.38**	**47**	*e*P		**P**	**09 55 31.5**	**+1.9**
	comp=Z,30nm,1.4s							
736A	**Circle Diamond**	**93.40**	**49**	P		**P**	**09 55 31.9**	**+2.1**
	baz=318							
835A	**Beeville**	**93.43**	**50**	P		**P**	**09 55 31.8**	**+1.8**
	baz=317							
637A	**Eagle Lake**	**93.47**	**48**	P		**P**	**09 55 32.1**	**+2.0**
	baz=318							
934A	**Benavides**	**93.52**	**51**	P		**P**	**09 55 32.0**	**+1.6**
	baz=317							
034A	**Hebbronville**	**93.81**	**51**	P		**P**	**09 55 33.5**	**+1.8**
	baz=317							
ZAIG	**Zacatecas**	**94.40**	**57**	*e*P		**P**	**09 55 35.9**	**+1.0**
	comp=Z,22nm,1.3s							
SWET	**Sewanee**	**94.53**	**37**	*e*P		**P**	**09 55 34.9**	**-0.1**
	comp=Z,6.1nm,1.1s							
TZTN	**Tazewell**	**94.55**	**35**	*e*P		**P**	**09 55 35.2**	**+0.2**
TKL	**Tuckaleechee C**	**95.18**	**36**	LR		LR	10 41 09.9	
	comp=Z,106nm,21.0s,slow=37							
TKL	**Tuckaleechee C**	**95.18**	**36**	*e*P		**P**	**09 55 38.2**	**+0.3**
TKL				pmax		pmax		
	comp=Z,36nm,1.5s							
TKL	**Tuckaleechee C**	**95.18**	**36**	*e*P		**P**	**09 55 38.2**	**+0.3**
	comp=Z,36nm,1.5s							
ESDC	**Sonseca Array**	**96.27**	**334**	P		**P**	**09 55 42.3**	**-0.4**
	comp=Z,0.4nm,0.5s,baz=31,slow=5.6,SNR=3.8							
RKT	**Rikitea**	**98.97**	**112**	*e*LR		LR	10 27 52.0	
	comp=Z,656nm,27.2s,baz=308							
TORD	**Torodi Ar. Bea**	**116.62**	**316**	PKP		**PKPdf**	**10 00 57.9**	**-0.8**
	comp=Z,0.7nm,0.4s,baz=28,slow=2.6,SNR=18							
TORD				PP		**PP**	**10 02 10.9**	**+5.0**
	comp=Z,2.4nm,1.1s,baz=40,slow=7.0,SNR=5.8							
MAW	**Mawson**	**120.82**	**206**	PKP		**PKPdf**	**10 01 05.6**	**+0.5**
	comp=Z,1.5nm,0.6s,baz=79,slow=5.2,SNR=3.3							
DBIC	**Dimbokro**	**125.54**	**318**	PKP		**PKPdf**	**10 01 15.4**	**-0.4**
	comp=Z,1.9nm,0.6s,baz=317,slow=2.3,SNR=7.4							
BOSA	**Boshof**	**127.08**	**260**	PKP		**PKPdf**	**10 01 18.9**	**+0.5**
	comp=Z,3.1nm,0.9s,baz=141,slow=1.8,SNR=3.9							
BOSA	**Boshof**	**127.08**	**260**	PKIKP		**PKPdf**	**10 01 19.0**	**+0.5**
BOSA				pmax		pmax		
	comp=Z,3.0nm,0.9s							
QSPA	**South Pole Qui**	**128.06**	**180**	*e*PKPdf		**PKPdf**	**10 01 18.1**	**-1.0**
PTGA	**Pitinga**	**137.60**	**33**	PKP		**PKPdf**	**10 01 39.8**	**+1.2**
	comp=Z,1.6nm,0.5s,baz=31,slow=5.9,SNR=3.4							
SNAA	**Sanae**	**142.06**	**197**	PKP		PKPpre	10 01 39.1	
SNAA	**Sanae**	**142.06**	**197**	*e*PKIKP		**PKPdf**	**10 01 42.3**	**-2.7**
SNAA	**Sanae**	**142.06**	**197**	*e*PKPdf		**PKPdf**	**10 01 42.3**	**-2.7**
SAML	**Samuel**	**143.13**	**44**	*e*PKPdf		**PKPdf**	**10 01 48.5**	**0.0**
VNA2	**Neumayer--Watz**	**143.63**	**197**	PKP		PKPbc	10 01 45.2	-0.2
	baz=114,slow=2.8							
VNA3	**Neumayer Olymp**	**143.88**	**195**	PKP		PKPab	10 01 45.7	+0.2
VNA1	**Neumayer--Stat**	**144.03**	**196**	PKP		PKPbc	10 01 46.6	+0.1
LPAZ	**La Paz**	**145.78**	**58**	PKPbc		**PKPdf**	**10 01 54.3**	**+0.4**
	comp=Z,102nm,1.3s,baz=351,slow=4.9,SNR=51							
SIV	**San Ignacio**	**150.02**	**48**	PKPbc		**PKPbc**	**10 02 05.2**	**+0.1**
	comp=Z,4.9nm,0.4s,baz=322,slow=2.1,SNR=15							
SIV				PKPab		**PKPab**	**10 02 11.2**	**+0.2**
	comp=Z,5.5nm,0.5s,baz=296,slow=5.1,SNR=10							
LCO	**Las Campanas**	**151.54**	**81**	*e*PKPbc		**PKPbc**	**10 02 08.8**	**+0.1**
PLCA	**Paso Flores**	**155.02**	**106**	PKPbc		PKPbc	10 02 16.3	
	comp=Z,4.9nm,1.1s,baz=273,slow=7.4,SNR=4.9							
BDFB	**Brasília**	**155.82**	**24**	PKPab		**PKPab**	**10 02 36.1**	**+0.7**
	comp=Z,2.9nm,0.6s,baz=288,slow=1.7,SNR=4.7							
CPUP	**Villa Florida**	**159.96**	**59**	PKPab		**PKPab**	**10 02 53.0**	**0.0**
	comp=Z,5.7nm,1.1s,baz=334,slow=5.1,SNR=3.8							

*ISCJB **09** 09:51:06.1±0.7,39.03N±0.06×143.24E±0.06,h16km, mb3.6/10,Error ellipse: s-maj=8.7km s-min=6.5km az=176.1*
*JMA **09** 09:51:07.3±0.2,39.02N×143.09E,h10km±2km,M3.8*
*IDC **09** 09:51:11.8±3.8,39.06N×143.15E,h48km±38km,mb3.5/10, mb1 3.6/11,mb1mx3.4/34,mbtmp3.7/11,ML3.4/1,Error ellipse: s-maj=31.5km s-min=18.3km az=98.0*
ISC 09 09:51:07.9±0.9,39.05N±0.07×143.09E±0.07,h16km,n21, σ1ₚ94/25,mb3.6/10,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MIYJ	**Miyakonagasawa**	**1.12**	**299**	P	**Pb**	**09 51 28.4**	**-0.4**
MIYJ				*e*S	**Sb**	**09 51 43.5**	**+0.3**
JOM	**Ohasama**	**1.46**	**288**	P	**Pn**	**09 51 33.8**	**+0.2**
JOM				S	**Sb**	**09 51 53.3**	**+0.3**
JMK	**Ichinoseki**	**1.46**	**267**	P	**Pn**	**09 51 33.8**	**+0.3**
JMK				*e*S	**Sb**	**09 51 53.0**	**0.0**
JIO	**Ouri**	**1.48**	**247**	*e*S	**Sn**	**09 51 53.1**	**+0.2**
JKZ	**Kuzumaki**	**1.65**	**305**	P	**Pn**	**09 51 37.0**	**+0.7**
JKZ				*e*S	**Sb**	**09 51 59.1**	**+0.5**
JRG	**Rokugo**	**1.94**	**281**	P	**Pb**	**09 51 41.8**	**-1.0**
JOU	**Okura**	**2.02**	**251**	P	**Pn**	**09 51 42.3**	**+1.1**
JYK	**Kaneyama**	**2.13**	**267**	P	**Pb**	**09 51 44.7**	**-1.4**
JMM	**Marumori**	**2.15**	**238**	P	**Pn**	**09 51 43.7**	**+0.6**
MJAR	**Matsushiro Arr**	**4.60**	**239**	P	**Pn**	**09 52 19.4**	**+2.6**
	1.9nm,0.3s,baz=46,slow=11,SNR=19						
KSRS	**Korea Array**	**12.13**	**267**	P	**Pn**	**09 53 57.0**	**-1.6**
	0.1nm,0.3s,baz=66,slow=12,SNR=2.7						
MA2	**Magadan**	**21.12**	**11**	P	**P**	**09 55 52.5**	**+0.8**
	2.1nm,0.4s,baz=183,slow=19,SNR=3.4						
SEY	**Seymchan**	**24.57**	**10**	P	**P**	**09 56 26.3**	**-0.4**
	0.6nm,0.4s,baz=192,slow=9.5,SNR=5.2						
SONM	**Songino Array**	**27.84**	**300**	P	**P**	**09 56 56.7**	**+0.2**
	0.3nm,0.4s,baz=81,slow=8.9,SNR=2.4						
ZALV	**Zalesovo Beam**	**41.57**	**311**	P	**P**	**09 58 54.9**	**+0.4**
	0.6nm,0.5s,baz=86,slow=8.8,SNR=3.1						
NRIK	**Noril'sk**	**42.02**	**334**	P	**P**	**09 58 57.8**	**-0.3**
	2.8nm,0.3s,baz=100,slow=5.4,SNR=3.3						
MKAR	**Makanchi Array**	**44.20**	**301**	P	**P**	**09 59 15.9**	**-0.1**
	0.2nm,0.3s,baz=87,slow=9.4,SNR=3.4						
ILAR	**Eielson Array**	**47.09**	**33**	P	**P**	**09 59 37.9**	**-0.6**
	0.3nm,0.8s,baz=282,slow=4.5,SNR=2.8						
WRA	**Warramunga Arr**	**59.25**	**190**	P	**P**	**10 01 07.3**	**-1.1**
	0.4nm,0.5s,baz=7.6,slow=6.9,SNR=6.7						
ASAR	**Alice Springs**	**62.97**	**189**	P	**P**	**10 01 35.0**	**+1.3**
	0.5nm,1.1s,baz=14,slow=5.7,SNR=2.9						
FINES	**FINESS Array B**	**67.65**	**332**	P	**P**	**10 02 03.8**	**+0.2**
	3.0nm,1.1s,baz=64,slow=8.7,SNR=3.4						

*IDC **09** 09:56:22.4±1.0,37.79N×144.16E,h0km,mb3.5/7, mb1 3.7/12,mb1mx3.6/36,mbtmp3.6/12,ML3.3/4,Error ellipse: s-maj=24.7km s-min=18.5km az=109.0*
*ISCJB **09** 09:56:25.9±0.7,37.86N±0.05×143.82E±0.05,h33km, mb3.5/7,Error ellipse: s-maj=7.7km s-min=6.0km az=178.1*
*JMA **09** 09:56:26.2±0.3,37.97N×143.80E,h41km,M3.8*
ISC 09 09:56:27.6±0.9,37.83N±0.06×143.85E±0.08,h35km,n22, σ1ₚ67/30,mb3.5/7,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**2.07**	**288**	P	**Pn**	**09 56 58.4**	**-1.4**
JIO				S	**Sn**	**09 57 21.9**	**-2.5**
JMK	**Ichinoseki**	**2.35**	**299**	P	**Pn**	**09 57 02.1**	**-1.6**
JMK				S	**Sn**	**09 57 29.2**	**-2.2**
JFK	**Kawauchi**	**2.41**	**260**	P	**Pn**	**09 57 03.6**	**-1.0**
JFK				S	**Sn**	**09 57 31.3**	**-1.6**
JMM	**Marumori**	**2.42**	**272**	P	**Pn**	**09 57 03.8**	**-0.9**
JMM				S	**Sn**	**09 57 31.6**	**-1.5**
JOU	**Okura**	**2.57**	**283**	P	**Pn**	**09 57 06.2**	**-0.6**
JOM	**Ohasama**	**2.59**	**310**	P	**Pn**	**09 57 05.3**	**-1.7**
JOM				S	**Sn**	**09 57 34.6**	**-2.7**
JFT	**Otama**	**2.81**	**265**	P	**Pn**	**09 57 10.1**	**+0.1**
JFT				*e*S	**Sn**	**09 57 42.2**	**-0.4**
JYK	**Kaneyama**	**2.95**	**293**	P	**Pn**	**09 57 11.2**	**-0.8**
JYK				*e*S	**Sn**	**09 57 44.5**	**-1.7**
JRG	**Rokugo**	**2.97**	**303**	P	**Pn**	**09 57 11.3**	**-0.9**
MJAR	**Matsushiro Arr**	**4.69**	**256**	Pn	**Pn**	**09 57 37.1**	**+1.3**
	1.5nm,0.3s,baz=90,slow=15,SNR=12						
MAT	**Matsushiro**	**4.69**	**256**	P	**Pn**	**09 57 37.2**	**+1.3**
MAT				*e*S	**Sn**	**09 58 28.9**	**-0.1**
JHJ	**Hachijo jima 2**	**5.75**	**216**	Pn	**Pn**	**09 57 49.9**	**-0.6**
	3.7nm,0.3s,baz=55,slow=20,SNR=2.6						
JHJ				Sn	**Sn**	**09 58 50.7**	**-4.5**
	4.3nm,0.3s,baz=82,slow=16,SNR=2.1						
USRK	**Ussuriysk Ar.**	**10.99**	**309**	Pn	**Pn**	**09 59 03.9**	**+1.7**
	0.1nm,0.3s,baz=129,slow=30,SNR=3.2						
KSRS	**Korea Array**	**12.64**	**273**	Pn	Pn	09 59 28.0	+3.2
	0.1nm,0.3s,baz=85,slow=32,SNR=2.9						
KLR	**Kul'dur**	**14.36**	**326**	Pn	**Pn**	**09 59 49.8**	**+1.5**
	0.1nm,0.3s,baz=190,slow=18,SNR=2.3						
SEY	**Seymchan**	**25.67**	**9**	P	**P**	**10 01 53.9**	**+0.1**
	0.9nm,0.6s,baz=218,slow=19,SNR=3.1						
SONM	**Songino Array**	**28.98**	**302**	P	**P**	**10 02 26.3**	**+2.4**
	0.6nm,0.6s,baz=98,slow=10,SNR=4.0						
MKAR	**Makanchi Array**	**45.35**	**302**	P	**P**	**10 04 42.8**	**+0.6**
	0.2nm,0.3s,baz=88,slow=9.0,SNR=3.9						
ILAR	**Eielson Array**	**47.78**	**33**	P	**P**	**10 05 00.2**	**-0.8**
	0.3nm,0.7s,baz=263,slow=6.6,SNR=4.7						
WRA	**Warramunga Arr**	**58.16**	**191**	P	**P**	**10 06 17.9**	**0.0**
	1.0nm,0.7s,baz=12,slow=7.2,SNR=11						
ASAR	**Alice Springs**	**61.88**	**190**	P	**P**	**10 06 44.1**	**+0.7**
	0.3nm,0.7s,baz=9.4,slow=8.0,SNR=4.7						
YKA	**Yellowknife Ar**	**62.14**	**31**	P	**P**	**10 06 43.8**	**-0.9**
	0.2nm,0.8s,baz=301,slow=6.6,SNR=4.0						

*IDC **09** 10:02:17.9±1.2,35.65N×141.06E,h0km,mb3.7/7, mb1 3.8/10,mb1mx3.5/48,mbtmp3.8/10,ML3.7/3,MS2.8/1, Ms1 2.8/1,ms1mx2.5/43,Error ellipse: s-maj=36.1km s-min=15.7km az=73.0*
*ISCJB **09** 10:02:23.9±0.6,35.60N±0.04×140.83E±0.07,h55km±4km, mb3.6/7,Error ellipse: s-maj=9.9km s-min=5.8km az=168.0*
*JMA **09** 10:02:25.0±0.1,35.65N×140.69E,h48km±1km,M3.0*
ISC 09 10:02:25.2±0.9,35.60N±0.04×140.72E±0.06,h47km±7km, n24,σ1ₚ64/30,mb3.6/7,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.15**	**50**	P	**Pn**	**10 02 32.8**	**-0.1**
CHOJ				*e*S	**Sn**	**10 02 38.2**	**-0.1**
JCN	**Nagara**	**0.46**	**246**	P	**Pn**	**10 02 36.3**	**+0.6**
JCN				*e*S	**Sn**	**10 02 44.9**	**+1.7**
BSO4	**Boso 4**	**0.69**	**207**	P	**Pn**	**10 02 39.1**	**+0.6**
JYT	**Yasato**	**0.75**	**326**	P	**Pn**	**10 02 38.7**	**-0.8**
JYT				S	**Sn**	**10 02 48.9**	**-1.0**
BSO3	**Boso 3**	**0.82**	**192**	P	**Pn**	**10 02 41.0**	**+0.9**
BSO1	**Boso 1**	**0.97**	**167**	P	**Pn**	**10 02 42.9**	**+1.0**
JHO	**Hitachi**	**1.01**	**353**	P	**Pn**	**10 02 42.1**	**-0.9**
JHO				S	**Sn**	**10 02 57.8**	**+1.7**
JAG	**Ashikaga**	**1.31**	**309**	P	**Pn**	**10 02 46.0**	**-1.1**
JAG				S	**Sn**	**10 02 59.5**	**-3.9**
JOD2	**Odawara 2**	**1.37**	**256**	P	**Pn**	**10 02 47.5**	**-0.4**
JOD2				S	**Sn**	**10 03 01.5**	**-3.4**
JIM2	**Oshima 3**	**1.37**	**230**	P	**Pn**	**10 02 47.3**	**-0.6**
MJAR	**Matsushiro Arr**	**2.24**	**295**	Pn	**Pn**	**10 03 00.4**	**+0.7**
	5.5nm,0.3s,baz=100,slow=14,SNR=26						
MJAR				Sn	**Sn**	**10 03 29.6**	**+3.4**
	4.8nm,0.3s,baz=118,slow=15,SNR=7.0						
MJAR				LR	LR	10 04 01.4	
	comp=Z,195nm,18.8s,baz=85,slow=42						
MAT	**Matsushiro**	**2.24**	**295**	P	**Pn**	**10 03 01.1**	**+1.3**
MAT				*e*S	**Sn**	**10 03 29.2**	**+3.0**
JHJ	**Hachijo jima 2**	**2.59**	**198**	Pn	**Pn**	**10 03 03.9**	**-0.8**
	19nm,0.3s,baz=86,slow=22,SNR=9.5						
JHJ				Sn	**Sn**	**10 03 35.7**	**+0.7**
	59nm,0.3s,baz=71,slow=23,SNR=12						
JCJ	**Chichijima**	**8.57**	**171**	Pn	**Pn**	**10 04 24.3**	**-2.4**
	6.4nm,0.3s,baz=284,slow=23,SNR=7.8						
H11S3	**WAKE ISLAND Hy**	**28.60**	**120**	T	T	10 38 03.1	
	baz=311,SNR=5.4						
H11S1	**WAKE ISLAND Hy**	**28.60**	**120**	T	T	10 38 02.9	
	baz=311						
H11S2	**WAKE ISLAND Hy**	**28.61**	**120**	T	T	10 38 04.3	
	baz=311						
ZALV	**Zalesovo Beam**	**42.48**	**314**	P	**P**	**10 10 15.7**	**+0.2**
	0.4nm,0.3s,baz=111,slow=7.9,SNR=3.2						
MKAR	**Makanchi Array**	**44.41**	**303**	P	**P**	**10 10 31.6**	**+0.4**
	0.3nm,0.4s,baz=84,slow=10,SNR=4.8						
KURBB	**Kurchatov Arra**	**46.45**	**309**	P	**P**	**10 10 47.2**	**0.0**
	0.6nm,0.5s,baz=84,slow=8.5,SNR=7.7						
WRA	**Warramunga Arr**	**55.57**	**187**	P	**P**	**10 11 55.7**	**-0.3**
	0.2nm,0.3s,baz=3.0,slow=7.8,SNR=12						
ASAR	**Alice Springs**	**59.30**	**187**	P	**P**	**10 12 21.6**	**-0.6**
	0.2nm,0.6s,baz=21,slow=11,SNR=3.8						
FINES	**FINESS Array B**	**69.81**	**332**	P	**P**	**10 13 30.4**	**+0.1**
	1.5nm,0.9s,baz=54,slow=11,SNR=2.9						
NOA	**NORSAR Array B**	**75.28**	**337**	P	**P**	**10 14 03.4**	**+0.4**
	0.8nm,0.8s,baz=31,slow=4.9,SNR=3.3						

*NEIC **09** 10:02:34.0,34.75S×71.77W,h45km,MG4.3(GUC),After GUC.*
NEIC Felt [III] at Constitucion, Curico, Iloca, Linares, Pencahue, Pichilemu and Talca and [II] at Rancagua.
*IDC **09** 10:02:34.7±0.8,34.67S×71.60W,h43km±5km,mb3.7/6, mb1 3.9/8,mb1mx3.7/27,mbtmp3.9/8,ML4.1/2,MS3.4/3, Ms1 3.3/3,ms1mx2.9/23,Error ellipse: s-maj=29.2km s-min=15.2km az=82.0*
*GUC **09** 10:02:34.3±0.7,34.76S×71.78W,h45km±4km,ML4.3*
ISC 09 10:02:33.1±0.7,34.71S±0.03×71.78W±0.05,h28km±4km, n37,σ1ₚ68/41,mb4.3/5,6D,Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHPI	**Pichilemu**	**0.37**	**330**	*i* P	**Pn**	**10 02 43.5**	**+0.9**
CHPI				*i* S	**Sn**	**10 02 51.1**	**+2.4**
NICH	**Los Niches**	**0.54**	**123**	⇓*i* P	**Pn**	**10 02 45.2**	**+0.2**
NICH				*i* S	**Sn**	**10 02 53.6**	**+0.5**
NICH				IAML		10 02 53.9	
	comp=E,30μm,0.4s						
TALC	**Talca**	**0.70**	**170**	*i* P	**Pb**	**10 02 47.2**	**+0.4**
TALC				*e*S	**Sb**	**10 02 56.3**	**+0.2**
ANTU	**Antumapu**	**1.48**	**40**	*i* P	**Pb**	**10 03 00.7**	**+0.6**
ANTU				*i* S	**Sb**	**10 03 20.4**	**+1.9**
ANTU				IAML		10 03 24.5	
	comp=E,6μm,0.3s						
CLCH	**Cerro Calan**	**1.67**	**39**	*i* P	**Pb**	**10 03 03.0**	**-0.3**
CLCH				*i* S	**Sb**	**10 03 24.4**	**+0.6**
CLCH				IAML		10 03 29.9	
	comp=N,7μm,0.5s						
PEL	**Peldehue**	**1.81**	**31**	⇓*i* P	**Pb**	**10 03 04.8**	**-0.7**
PEL				*i* S	**Sb**	**10 03 27.9**	**+0.1**
PEL				IAML		10 03 32.4	
	comp=E,3μm,0.4s						
ROC1	**El Roble**	**1.84**	**20**	*e*P	**Pb**	**10 03 05.7**	**-0.6**
ROC1				⇓*e*S	**Sb**	**10 03 31.9**	**+2.9**
ARCO	**CERRO ARCO**	**3.02**	**53**	*e*P	**Pb**	**10 03 23.6**	**-2.7**
ARCO				*e*S	**Sb**	**10 04 05.3**	**+2.6**
ARCO				IAML		10 04 14.4	
	comp=Z,208nm,0.4s						
AUSP	**Uspallata**	**3.19**	**40**	*e*P	**Pb**	**10 03 26.0**	**-3.2**
AUSP				⇓*e*S	Sb	10 04 17.6	+10
CANA	**Caviahue**	**3.23**	**170**	*e*P	Pn	10 03 26.1	+4.1
ASAL	**Salagasta**	**3.24**	**50**	*e*P	**Pb**	**10 03 27.1**	**-3.0**
ASAL				*e*S	Sb	10 04 16.6	+7.6
RTLS	**Leoncito**	**3.57**	**36**	*e*P	Pn	10 03 31.0	+4.1
RTCV	**Cerro Valdivia**	**3.93**	**46**	*e*P	Pn	10 03 35.1	+3.5
RTLL	**Cerro Villicun**	**4.37**	**40**	*e*P	**Pn**	**10 03 53.2**	**+2.5**
AVFE	**Valle Fertil**	**5.44**	**43**	*e*P	**Pn**	**10 03 53.1**	**+0.7**
AVFE				⇓*e*S	Sb	10 05 05.1	-7.2
LCO	**Las Campanas**	**5.75**	**9**	*e*Pn	**Pn**	**10 03 56.6**	**-0.3**
LCO				*e*Sn	**Sn**	**10 05 02.6**	**+0.5**
PLCA	**Paso Flores**	**6.09**	**171**	P	**Pn**	**10 04 02.5**	**+1.1**
	comp=Z,1.5nm,0.3s,baz=358,slow=11,SNR=31						
PLCA				S	**Sn**	**10 05 12.2**	**+2.0**
	comp=Z,0.3nm,0.3s,baz=324,slow=23,SNR=1.8						
PLCA				LR	LR	10 06 38.4	
	comp=Z,128nm,20.6s,baz=351,slow=40						
ACLC	**CERRO LA CRUZ**	**6.67**	**39**	*e*P	**Pn**	**10 04 08.8**	**-0.6**
ACLC				IAML		10 06 03.0	
	comp=Z,47nm,0.6s						
VCA	**Vinchina**	**6.69**	**28**	*e*P	**Pn**	**10 04 10.5**	**+0.8**
VCA				*e*S	Sb	10 05 40.7	-7.5
VCA				IAML		10 05 49.4	
	comp=Z,80nm,0.5s						
TCA	**Tanti**	**6.91**	**63**	*e*P	**Pn**	**10 04 13.7**	**+1.1**
TCA				⇓*e*S	**Sn**	**10 05 34.7**	**+4.4**
TCA				IAML		10 05 40.2	
	comp=Z,23nm,0.7s						
TRQA	**Tornquist**	**8.58**	**116**	*e*Pn	**Pn**	**10 04 36.8**	**+1.3**
TRQA				*e*Sn	Sn	10 05 59.1	-12
LPAZ	**La Paz**	**18.63**	**11**	P	**Pn**	**10 06 50.0**	**+0.3**
	comp=Z,0.2nm,0.3s,baz=184,slow=7.8,SNR=4.1						
SIV	**San Ignacio**	**20.97**	**30**	P	**P**	**10 07 13.6**	**-0.5**
	comp=Z,4.2nm,0.8s,baz=217,slow=14,SNR=6.3						
BDFB	**Brasília**	**28.56**	**54**	LR	LR	10 21 05.6	
	comp=Z,56nm,18.1s,baz=228,slow=39						
PTGA	**Pitinga**	**35.56**	**21**	P	**P**	**10 09 27.2**	**-0.9**
	comp=Z,5.5nm,0.8s,baz=204,slow=11,SNR=7.3						
TXAR	**Lajitas Array**	**70.45**	**331**	P	**P**	**10 13 45.3**	**+0.3**
	comp=Z,0.2nm,0.4s,baz=158,slow=7.8,SNR=9.8						
TXAR				pP	**sP**	**10 13 57.6**	**+0.4**
	comp=Z,0.7nm,0.5s,baz=158,slow=9.1,SNR=9.5						
MAW	**Mawson**	**72.44**	**163**	LR	LR	10 46 35.6	
	comp=Z,54nm,18.3s,baz=59,slow=36						
DBIC	**Dimbokro**	**75.21**	**71**	P	**P**	**10 14 11.8**	**-1.7**
	comp=Z,2.4nm,0.7s,baz=232,slow=6.4,SNR=3.7						
DBIC				pP	**sP**	**10 14 24.4**	**-1.3**
	comp=Z,2.4nm,0.9s,baz=243,slow=6.8,SNR=1.4						
TORD	**Torodi Ar. Bea**	**84.25**	**70**	P	**P**	**10 15 01.2**	**-1.3**
	comp=Z,1.7nm,0.8s,baz=245,slow=3.2,SNR=8.3						
TORD				pP	**sP**	**10 15 15.0**	**+0.2**
	comp=Z,0.7nm,0.6s,baz=256,slow=3.4,SNR=4.0						
TORD				sP	pP	10 15 19.1	+7.5
	comp=Z,1.2nm,0.7s,baz=276,slow=4.3,SNR=5.0						
PDAR	**Pinedale Array**	**84.49**	**333**	P	**P**	**10 15 01.9**	**-1.5**
	comp=Z,0.1nm,0.4s,baz=157,slow=5.6,SNR=2.7						
H11S2	**WAKE ISLAND Hy**	**125.97**	**268**	T	T	12 40 08.0	
	baz=116						
H11S1	**WAKE ISLAND Hy**	**125.98**	**268**	T	T	12 40 06.0	
	baz=116,SNR=8.2						
H11S3	**WAKE ISLAND Hy**	**125.99**	**268**	T	T	12 40 08.4	
	baz=116						
H11N3	**WAKE ISLAND Hy**	**126.40**	**270**	T	T	12 40 36.4	
	baz=121,slow=76,SNR=7.3						
H11N1	**WAKE ISLAND Hy**	**126.41**	**270**	T	T	12 40 37.1	
	baz=121,slow=76,SNR=7.0						
H11N2	**WAKE ISLAND Hy**	**126.42**	**270**	T	T	12 40 37.1	
	baz=121,slow=76,SNR=6.5						
AAK	**Ala-Archa**	**152.64**	**63**	PKPbc	**PKPbc**	**10 22 26.3**	**-0.7**
	comp=Z,1.5nm,0.7s,baz=183,slow=5.1,SNR=5.1						
AAK				pPKPbc	**PKPab**	**10 22 39.8**	**+2.1**
	comp=Z,1.5nm,0.7s,baz=188,slow=3.1,SNR=3.1						

*ISCJB **09** 10:02:58.8±0.7,37.87N±0.07×143.9E±0.1,h33km, mb3.8/15,MS3.8/1,Error ellipse: s-maj=12.6km s-min=8.5km az=31.0*
*IDC **09** 10:03:01.7±0.8,37.89N×143.90E,h37km±7km,mb3.5/10, mb1 3.6/14,mb1mx3.5/46,mbtmp3.7/14,ML2.9/3,MS3.8/1, Ms1 3.8/1,ms1mx2.7/36,Error ellipse: s-maj=20.9km s-min=17.3km az=108.0*
*NEIC **09** 10:03:01.1±0.6,37.90N×143.89E,h35km,mb4.1/4,Error ellipse: s-maj=11.7km s-min=7.7km az=120.0*
ISC 09 10:03:01.1±0.7,37.97N±0.07×143.9E±0.1,h35km,n27, σ1ₚ36/29,mb3.7/15,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ERM	**Erimo**	**4.09**	**352**	*e*Pn	**Pn**	**10 03 59.8**	**-1.2**
ERM				*e*Sn	**Sn**	**10 04 45.3**	**-2.4**
MJAR	**Matsushiro Arr**	**4.77**	**254**	Pn	**Pn**	**10 04 10.1**	**-0.4**
	baz=87,slow=16,SNR=2.0						
JHJ2	**Mitsune**	**5.88**	**216**	*e*Pn	**Pn**	**10 04 23.7**	**-2.1**
USRK	**Ussuriysk Ar.**	**10.94**	**308**	Pn	**Pn**	**10 05 36.1**	**+1.1**
	0.2nm,0.3s,baz=115,slow=14,SNR=4.9						
JNU	**Nakatsue**	**11.66**	**249**	*e*Pn	**Pn**	**10 05

comp=N,1.7nm,0.5s,baz=233,slow=5.0,SNR=6.4
TORD Torodi Ar. Bea 76.56 71 P **P 10 24 24.0 -0.4**
comp=N,1.6nm,0.7s,baz=254,slow=5.4,SNR=13
YKA Yellowknife Ar 87.27 341 P **P 10 25 20.2 +1.0**
comp=N,0.1nm,0.6s,baz=134,slow=4.8,SNR=6.8

*ISCJB **09** 10:29:13.0±0.6,5°.67S±0°.05×129°.2E±0°.2,h264km, mb3.5/7, Error ellipse: s-maj=21.6km s-min=6.7km az=171.1*
*IDC **09** 10:29:21.6±2.2,5°.98S×128°.80E,h349km±23km,mb3.2/7, mb1 3.2/11,mb1mx3.1/35,mbtmp3.9/11, Error ellipse: s-maj=27.6km s-min=9.7km az=75.0*
ISC 09 10:29:13.9±0.8,5°.82S±0°.07×129°.2E±0°.2,h264km,n11, σ2ˢ05/13,mb3.5/7,Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JAY	**Jayapura**	**11.98**	**75**	P	P	10 32 08.6	+8.9
	0.1nm,0.3s,baz=198,slow=19,SNR=3.0						
FITZ	**Fitzroy Crossi**	**12.68**	**195**	P	**P**	**10 32 09.4**	**+2.1**
	0.1nm,0.3s,baz=27,slow=16,SNR=2.1						
FITZ				S	**S**	**10 34 26.7**	**+0.1**
	0.2nm,0.3s,baz=211,slow=22,SNR=1.7						
WRA	**Warramunga Arr**	**14.92**	**161**	P	**Pn**	**10 32 35.5**	**+2.8**
	0.7nm,0.3s,baz=341,slow=12,SNR=38						
WRA				S	**S**	**10 35 13.3**	**-3.5**
	0.3nm,0.3s,baz=342,slow=22,SNR=4.8						
ASAR	**Alice Springs**	**18.32**	**166**	P	**Pn**	**10 33 12.0**	**-0.8**
	1.1nm,0.3s,baz=343,slow=11,SNR=50						
ASAR				S	**S**	**10 36 21.9**	**-2.9**
	0.6nm,0.3s,baz=346,slow=21,SNR=40						
ASAR				ScP	ScP	10 40 29.7	-9.0
	0.0nm,0.3s,baz=354,slow=1.9,SNR=6.9						
CMAR	**Chiang Mai Arr**	**38.33**	**310**	P	**P**	**10 36 09.0**	**-1.0**
	0.6nm,0.3s,baz=143,slow=7.2,SNR=8.5						
KSRS	**Korea Array**	**43.07**	**359**	P	**P**	**10 36 49.6**	**+1.5**
	1.0nm,0.5s,baz=178,slow=9.1,SNR=5.8						
USRK	**Ussuriysk Ar.**	**49.86**	**3**	P	**P**	**10 37 40.6**	**0.0**
	1.2nm,0.6s,baz=179,slow=8.9,SNR=4.4						
SONM	**Songino Array**	**57.06**	**342**	P	**P**	**10 38 32.7**	**-0.2**
	0.3nm,0.7s,baz=156,slow=7.6,SNR=3.5						
MKAR	**Makanchi Array**	**66.78**	**327**	P	**P**	**10 39 36.2**	**-1.1**
	1.8nm,0.7s,baz=132,slow=7.6,SNR=18						
ZALV	**Zalesovo Beam**	**70.16**	**334**	P	**P**	**10 39 55.9**	**-2.1**
	0.7nm,0.4s,baz=116,slow=5.9,SNR=5.4						
SEY	**Seymchan**	**70.81**	**11**	P	**P**	**10 40 02.5**	**+0.8**
	0.8nm,0.5s,baz=193,slow=3.6,SNR=4.3						

*IASPEI **09** 10:42:26.8±0.9,32°.65N±0°.03×115°.74W±0°.02,h18km±3km, Error ellipse: s-maj=3.8km s-min=3.0km az=179.8,GT5 selection from ISC bulletin GT5 identified by Bond¨¡r and McLaughlin (2009) selection criteria Bond¨¡r and McLaughlin, A new ground truth data set for seismic studies, Seism. Res. Let., 80, 465-472, 2009*
*ISCJB **09** 10:42:27.2±0.3,32°.64N±0°.02×115°.70W±0°.02,h18km±4km, Error ellipse: s-maj=3.7km s-min=3.0km az=18.0*
*NEIC **09** 10:42:28.7,32°.63N×115°.74W,h21km,ML3.1(PAS), ML3.5(ECX), After ECX.*
*MEX **09** 10:42:28.6±0.7,32°.71N×115°.61W,h20km±93km,MD3.5*
*ECX **09** 10:42:28.7±0.6,32°.63N×115°.74W,h4km,MD3.0,ML3.2*
ISC 09 10:42:26.8±0.9,32°.65N±0°.02×115°.73W±0°.02,h19km±2km, n44,σ0ˢ81/64,8C-7D,California-Baja California border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SGL	**Mount Signal**	**0.01**	**96**	⇓*i*P	**Pg**	**10 42 29.6**	**-0.5**
WESC	**Westside Schoo**	**0.11**	**1**	⇓*i*P	**Pg**	**10 42 31.0**	**+0.3**
WESC				*i* S	**Sg**	**10 42 33.9**	**+0.5**
ERPC	**Ernies Place**	**0.11**	**33**	⇑*i*P	**Pg**	**10 42 31.1**	**+0.4**
YUH	**Yuha Desert**	**0.16**	**269**	⇑*i*P	**Pg**	**10 42 31.6**	**+0.3**
COK	**Cook Ranch**	**0.20**	**2**	⇓*i*P	**Pg**	**10 42 32.7**	**+0.8**
DREC	**Desert Rsrch C**	**0.29**	**57**	⇑*i*P	**Pb**	**10 42 34.3**	**+1.0**
RMX	**La Rumorosa**	**0.29**	**261**	⇑*i*P	**Pb**	**10 42 33.5**	**0.0**
RMX				*e*S	**Sb**	**10 42 37.5**	**-0.5**
SWSC	**Sam W. Stewart**	**0.29**	**350**	⇓*i*P	**Pg**	**10 42 34.0**	**+0.6**
SWSC	**Sam W. Stewart**	**0.29**	**350**	P	**Pg**	**10 42 33.9**	**+0.6**
	baz=170,SNR=67						
IBP	**Imperial Bould**	**0.30**	**272**	⇑*i*P	**Pb**	**10 42 34.2**	**+0.6**
IBP	**Imperial Bould**	**0.30**	**272**	P	**Pb**	**10 42 34.2**	**+0.6**
	baz=95,SNR=254						
IBP				S	**Sg**	**10 42 38.6**	**+0.4**
	baz=95						
IKP	**In-Ko-Pah, Jac**	**0.32**	**270**	⇓*i*P	**Pb**	**10 42 34.5**	**+0.5**
CPBX	**Cerro Prieto**	**0.43**	**122**	*e*P	**Pb**	**10 42 36.3**	**+0.4**
CPBX				*e*S	**Sb**	**10 42 42.8**	**+0.8**
CPBX				AML	AML	10 42 47.1	
	comp=N,6μm,0.2s						
CPBX				AML	AML	10 42 49.1	
	comp=E,6μm,0.2s						
CPBX				⇓*e*		10 42 49.1	
CPBX	**Cerro Prieto**	**0.43**	**122**	*i*P	**Pb**	**10 42 36.3**	**+0.4**
CPBX				*i* S	**Sg**	**10 42 37.0**	**+0.7**
MBIG	**Mexicali**	**0.51**	**118**	*e*P	**Pb**	**10 42 37.3**	**+0.1**
MBIG				*e*S	**Sb**	**10 42 42.8**	**-1.4**
MONP2	**Monument Peak**	**0.62**	**293**	P	**Pg**	**10 42 40.0**	**+0.7**
	baz=114,SNR=19						
MONP2				S	**Sg**	**10 42 48.3**	**+0.5**
	baz=114						
EMSC	**East Mesa**	**0.64**	**82**	⇑*i*P	**Pg**	**10 42 40.0**	**+0.5**
BAR	**Barrett**	**0.79**	**272**	*i*P	**Pg**	**10 42 42.8**	**+0.5**
TJIG	**Tijuana**	**0.82**	**255**	*i*P	**Pg**	**10 42 43.2**	**+0.2**
TJIG				*i* S	**Sg**	**10 42 54.0**	**+0.1**
CBX	**Cerro Bola**	**0.85**	**247**	*e*P	**Pg**	**10 42 44.0**	**+0.4**
CBX				*i*P	**Pg**	**10 42 44.0**	**+0.4**
CBX	**Cerro Bola**	**0.85**	**247**	*i*P	**Pg**	**10 42 43.9**	**+0.4**
CBX				*i* S	**Sn**	**10 42 56.0**	**0.0**
CBX	**Cerro Bola**	**0.85**	**247**	*i*P	**Pg**	**10 42 43.9**	**+0.4**
CBX				*i* S	**Sn**	**10 42 56.0**	**0.0**
GLA	**Glamis**	**0.86**	**62**	P	**Pb**	**10 42 43.0**	**-0.2**
	baz=241,SNR=41						
GLA				S	**Sb**	**10 42 54.3**	**-0.1**
	baz=241						
SDRC	**San Diego Road**	**1.02**	**275**	*e*P	**Pg**	**10 42 46.7**	**0.0**
BC3	**Big Chuckawall**	**1.03**	**13**	P	**Pb**	**10 42 45.9**	**-0.2**
	baz=193,SNR=8.4						
BC3				S	**Sb**	**10 42 58.6**	**-0.7**
	baz=193						
PFO	**Pinyon Flats O**	**1.13**	**328**	P	**Pn**	**10 42 47.5**	**-0.3**
	baz=148,SNR=26						
PFO				S	**Sb**	**10 43 02.1**	**-0.1**
	baz=148						
109C	**Camp Elliot, M**	**1.18**	**282**	P	**Pb**	**10 42 49.3**	**+0.7**
	baz=102,SNR=18						
109C				S	**Sn**	**10 43 04.4**	**+0.6**
	baz=102						
ZAX	**El Zacaton**	**1.22**	**202**	*e*P	**Pb**	**10 42 49.9**	**+0.6**
ZAX				*i* S	**Sn**	**10 43 05.8**	**+0.8**
ECNX	**Esteban Cantu**	**1.23**	**217**	⇓*i*P	**Pb**	**10 42 50.0**	**+0.4**
PBX	**Punta Banda**	**1.23**	**223**	⇑*i*P	**Pb**	**10 42 49.9**	**+0.3**
ECBX	**El Chinero**	**1.31**	**154**	⇑*i*P	**Pb**	**10 42 51.4**	**+0.6**
BELC	**Belle Mtn. Jos**	**1.36**	**351**	P	**Pb**	**10 42 51.0**	**0.0**
	baz=171,SNR=11						
Y12C	**Blythe**	**1.50**	**42**	P	**Pn**	**10 42 52.5**	**-0.2**
	baz=222,SNR=15						
MURC	**Murrieta**	**1.55**	**308**	P	**Pn**	**10 42 53.8**	**+0.3**
	baz=128,SNR=17						
MURC				Sb	**Sg**	**10 43 16.4**	**-0.6**
	baz=128						
IRM	**Iron Mountain**	**1.58**	**18**	P	**Pn**	**10 42 54.1**	**+0.2**
	baz=198,SNR=17						
SPIG	**San Pedro Mart**	**1.62**	**172**	*e*P	**Pn**	**10 42 55.1**	**+0.5**
SPIG				*e*S	**Sn**	**10 43 14.0**	**-1.1**
SPIG	**San Pedro Mart**	**1.62**	**172**	*e*P	**Pn**	**10 42 55.1**	**+0.5**
SPIG				*e*S	**Sn**	**10 43 14.0**	**-1.1**
SPX	**San Pedro Mart**	**1.62**	**172**	*e*P	**Pn**	**10 42 54.1**	**-0.5**
SPX				*e*S	**Sn**	**10 43 13.7**	**-1.4**
BBRC	**Big Bear Solar**	**1.89**	**329**	Sg	**Sg**	**10 43 27.8**	**0.0**
	baz=148						
BFSC	**Mount Baldy Ra**	**2.26**	**315**	Sb	**Sb**	**10 43 37.1**	**+2.4**
	baz=134						
CIS	**Catalina Islan**	**2.37**	**289**	Sn	**Sb**	**10 43 37.0**	**-0.7**
	baz=108						
SCI2	**San Clemente I**	**2.39**	**279**	Sn	**Sb**	**10 43 37.3**	**-1.0**
	baz=98						
DECC	**Green Verdugo**	**2.69**	**307**	Sb	**Sg**	**10 43 51.0**	**-2.4**
	baz=126						
EDW2	**Edwards Air Fo**	**2.91**	**320**	Sb	**Sg**	**10 43 57.6**	**-2.8**
	baz=140						

*IDC **09** 11:13:47.0±2.7,37°.83N×143°.68E,h0km,mb3.5/3, mb1 3.7/5,mb1mx3.3/61,mbtmp3.6/5,ML3.5/2,Error ellipse: s-maj=59.1km s-min=30.3km az=74.0*
*ISCJB **09** 11:13:51.9±1.5,38°.03N±0°.08×143°.2E±0°.1,h19km, mb3.4/3, Error ellipse: s-maj=13.7km s-min=10.8km az=14.4*
*JMA **09** 11:13:52.8±0.2,38°.09N×143°.03E,h9km±4km,M3.3*
ISC 09 11:13:50.9±1.5,37°.95N±0°.07×143°.3E±0°.1,h19km,n13, σ1ˢ33/17,mb3.7/3,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**1.65**	**288**	P	**Pn**	**11 14 18.0**	**-0.8**
JMK	**Ichinoseki**	**1.94**	**302**	P	**Pn**	**11 14 22.2**	**-0.6**
JMM	**Marumori**	**2.02**	**268**	P	**Pn**	**11 14 24.0**	**+0.1**
JMM				*e*S	**Sn**	**11 14 46.8**	**-1.7**
JOU	**Okura**	**2.15**	**282**	P	**Pn**	**11 14 26.0**	**+0.3**
JOM	**Ohasama**	**2.21**	**314**	P	**Pn**	**11 14 26.6**	**+0.1**
JOM				*e*S	**Sn**	**11 14 51.1**	**-2.1**
JFT	**Otama**	**2.42**	**261**	P	**Pn**	**11 14 30.3**	**+0.9**
JFT				*e*S	**Sn**	**11 14 58.1**	**-0.5**
JYK	**Kaneyama**	**2.53**	**293**	P	**Pn**	**11 14 31.3**	**+0.4**
JRG	**Rokugo**	**2.56**	**305**	P	**Pn**	**11 14 31.3**	**-0.1**
JRG				*e*S	**Sn**	**11 14 59.9**	**-2.1**
MJAR	**Matsushiro Arr**	**4.33**	**253**	Pn	**Pn**	**11 14 56.9**	**+1.2**
	0.8nm,0.3s,baz=77,slow=15,SNR=9.2						
JHJ	**Hachijo jima 2**	**5.63**	**212**	Pn	**Pn**	**11 15 12.3**	**-1.2**
	13nm,0.3s,baz=60,slow=20,SNR=5.4						
SONM	**Songino Array**	**28.57**	**302**	P	**P**	**11 19 48.0**	**+2.4**
	0.3nm,0.7s,baz=77,slow=7.6,SNR=2.8						
KURBB	**Kurchatov Arra**	**46.65**	**308**	P	**P**	**11 22 18.5**	**+0.6**
	0.6nm,0.7s,baz=83,slow=8.3,SNR=5.7						
WRA	**Warramunga Arr**	**58.21**	**190**	P	**P**	**11 23 42.6**	**-1.2**
	0.4nm,0.6s,baz=8.4,slow=7.7,SNR=4.6						

*NEIC **09** 11:20:19.5, 17°.59N×95°.02W,h141km,MD4.1(MEX),After MEX.*
MEX 09 11:20:19.7±0.7,17°.59N×95°.02W,h139km±7km,MD4.1, Oaxaca

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TUIG	**Tuzandepetl**	**0.71**	**52**	*i*P	Pn	11 20 39.8	-1.4
TUIG				*i* S	Sn	11 20 55.5	-2.0
TUIG	**Tuzandepetl**	**0.71**	**52**	*i*P	Pn	11 20 39.8	-1.4
TUIG				*i* S	Sn	11 20 55.5	-2.0
OXBJ	**Oaxaca**	**1.71**	**252**	*e*P	Pn	11 20 49.7	-1.4
OXBJ				*e*S	Sn	11 21 13.2	-1.8
VHO	**Vista Hermosa**	**1.72**	**253**	*i*P	Pn	11 20 49.7	-1.5
VHO				*i* S	Sn	11 21 13.4	-1.8
VHO	**Vista Hermosa**	**1.72**	**253**	*i*P	Pn	11 20 49.7	-1.5
VHO				*i* S	Sn	11 21 13.4	-1.8
TGBT	**Tuxtla Gutierr**	**2.01**	**114**	*e*P	Pn	11 20 53.5	-0.8
TGBT				*e*S	Sn	11 21 18.3	-2.6
HUIG	**Huatulco**	**2.10**	**210**	*e*P	Pn	11 20 52.3	-3.1
HUIG				*e*S	Sn	11 21 18.8	-4.0
HUIG	**Huatulco**	**2.10**	**210**	*e*P	Pn	11 20 52.3	-3.1
HUIG				*e*S	Sn	11 21 18.8	-4.0
TPIG	**Tehuac#an**	**2.38**	**291**	*e*P	Pn	11 20 58.3	-0.7
TPIG				*i* S	Sn	11 21 27.0	-2.1
TPIG	**Tehuac#an**	**2.38**	**291**	*e*P	Pn	11 20 58.3	-0.7
TPIG				*i* S	Sn	11 21 27.0	-2.1
PCIG		**2.55**	**137**	*i*P	Pn	11 21 00.0	-0.9
PCIG				*i* S	Sn	11 21 30.5	-2.2
PCIG		**2.55**	**137**	*i*P	Pn	11 21 00.0	-0.9
PCIG				*i* S	Sn	11 21 30.5	-2.2
CCIG	**Comitan**	**3.05**	**115**	*e*P	Pn	11 21 06.6	-0.8
CCIG				*e*S	Sn	11 21 43.2	-1.1
CCIG	**Comitan**	**3.05**	**115**	*e*P	Pn	11 21 06.6	-0.8
CCIG				*e*S	Sn	11 21 43.2	-1.1
PNIG	**Pinotepa**	**3.21**	**249**	*i*P	Pn	11 21 05.4	-4.0
PNIG				*e*S	Sn	11 21 43.4	-4.4
PNIG	**Pinotepa**	**3.21**	**249**	*i*P	Pn	11 21 05.4	-4.0
PNIG				*e*S	Sn	11 21 43.4	-4.4
TLIG	**Tlapa**	**3.39**	**270**	*e*P	Pn	11 21 10.1	-1.7
TLIG				*i* S	Sn	11 21 49.8	-2.3

IDC 09 11:20:37.8±8.9,5°.94S×149°.11E,h40km±74km,mb3.3/2, mb1 3.7/3,mb1mx3.2/47,mbtmp3.6/3,ML1.5/1,Error ellipse: s-maj=134.0km s-min=51.1km az=118.0,New Britain region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**3.95**	**209**	P	Pn	11 21 36.7	+0.8
	2.3nm,0.3s,baz=38,slow=12,SNR=8.6						
PMG				S	Sn	11 22 21.6	+0.6
	3.5nm,0.3s,baz=92,slow=14,SNR=9.1						
WRA	**Warramunga Arr**	**20.00**	**225**	P	P	11 25 06.8	-0.3
	1.3nm,0.6s,baz=49,slow=10,SNR=13						
WRA				pP	pP	11 25 17.9	+0.7
	0.8nm,0.5s,baz=51,slow=11,SNR=6.8						
ASAR	**Alice Springs**	**22.91**	**218**	P	P	11 25 37.5	-1.0
	1.0nm,0.7s,baz=56,slow=9.2,SNR=9.5						
TORD	**Torodi Ar. Bea**	**147.11**	**285**	PKPbc	PKPbc	11 40 17.3	-0.3
	0.2nm,0.5s,baz=90,slow=3.6,SNR=2.6						

SKHL 09 11:26:50.0±0.3,45°.40N×152°.12E,h36km±3km,mb4.2/2, East of Kuril Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KUR	**Kuril'sk**	**3.00**	**268**	*e*P	Pn	11 27 35.4	+0.4
KUR				AMB	AMB	11 27 39.9	
	10.0nm,0.2s						
KUR				AMB	AMB	11 27 39.9	
	20nm,0.2s						
KUR				*e*S	Sn	11 28 09.7	0.0
KUR				A	A	11 28 13.9	
	60nm,0.4s						
KUR				A	A	11 28 13.9	
	20nm,0.4s						
SHO	**Shikotan**	**4.07**	**250**	*i*P	Pn	11 27 50.6	+0.9
SHO				AMB	AMB	11 27 57.5	
	50nm,1.0s						
SHO				*i* S	Sn	11 28 35.8	-0.3
SHO				A	A	11 28 47.7	
	60nm,0.6s						
SHO				A	A	11 28 47.7	
	50nm,0.6s						
YSS	**Yuzh-Sakhalins**	**6.69**	**287**	*e*P	Pn	11 28 27.5	+2.0
TYV	**Tymovskoe**	**8.36**	**314**	*e*P	Pn	11 28 50.3	+1.8

*ISCJB **09** 11:26:49.9±0.6,9°.81S±0°.05×120°.26E±0°.04,h61km, mb3.5/1, Error ellipse: s-maj=7.2km s-min=4.9km az=22.0*
*IDC **09** 11:26:50.4±4.7,9°.82S×120°.04E,h67km±46km,mb3.2/1, mb1 3.7/5,mb1mx3.3/44,mbtmp3.8/5,ML3.7/4,MS2.1/1, Ms1 2.1/1,ms1mx2.0/20,Error ellipse: s-maj=98.1km s-min=15.3km az=68.0*
*DJA **09** 11:26:52.8±0.7,10°.S±6°×12°0E±°,h33km±13km,M4.0/7, MLv4.0/7*
ISC 09 11:26:51.6±0.9,9°.71S±0°.05×120°.24E±0°.04,h61km,n12, σ1ˢ82/18,Sumba region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BASI	**Baing, Sumba**	**0.60**	**147**	P	**Pn**	**11 27 06.9**	**+2.0**
BASI				S	**Sn**	**11 27 16.8**	**+2.3**
MMRI	**Maumere**	**2.24**	**62**	P	**Pn**	**11 27 28.2**	**+1.8**
MMRI				S	**Sn**	**11 27 54.2**	**+1.3**
PLAI	**Plampang**	**2.59**	**290**	P	**Pn**	**11 27 32.6**	**+1.5**
PLAI				S	**Sn**	**11 28 02.0**	**+0.5**
TWSI	**Taliwang, Sumb**	**3.46**	**286**	P	**Pn**	**11 27 44.7**	**+1.7**
TWSI				S	**Sn**	**11 28 23.7**	**+0.9**
BSSI	**Bau Bau, Buton**	**3.55**	**4**	P	**Pn**	**11 27 45.4**	**+1.1**
BSSI				S	**Sn**	**11 28 25.4**	**+0.3**
SOEI	**Soe**	**3.97**	**91**	P	**Pn**	**11 27 52.5**	**+2.4**
SOEI				S	**Sn**	**11 28 34.9**	**-0.6**
KAPI	**Kappang**	**4.69**	**354**	P	**Pn**	**11 28 01.9**	**+2.0**
	3.8nm,0.3s,baz=152,slow=6.8,SNR=37						
KAPI				S	**Sn**	**11 28 54.1**	**+1.1**
	4.1nm,0.3s,baz=29,slow=23,SNR=7.1						
FITZ	**Fitzroy Crossi**	**9.85**	**148**	P	**Pn**	**11 29 07.9**	**-2.6**
	0.7nm,0.3s,baz=327,slow=12,SNR=14						
FITZ				S	Sn	11 30 50.7	-9.0
	1.3nm,0.3s,baz=172,slow=20,SNR=12						
WRA	**Warramunga Arr**	**16.99**	**128**	P	**Pn**	**11 30 43.3**	**-2.1**
	0.2nm,0.3s,baz=301,slow=13,SNR=11						
WRA				S	Sn	11 33 38.8	-15
	0.4nm,0.3s,baz=312,slow=23,SNR=7.1						
ASAR	**Alice Springs**	**19.05**	**138**	P	**P**	**11 31 09.4**	**+0.3**
	0.3nm,0.3s,baz=318,slow=12,SNR=17						
ASAR				S	S	11 34 31.5	-11
	0.1nm,0.3s,baz=312,slow=22,SNR=7.5						
JAY	**Jayapura**	**21.55**	**72**	LR	LR	11 41 47.3	
	comp=Z,5.1nm,21.2s,baz=116,slow=41						
MKAR	**Makanchi Array**	**65.65**	**332**	P	**P**	**11 37 27.2**	**-2.2**
	0.2nm,0.4s,baz=148,slow=7.3,SNR=3.6						

*NIED **09** 11:30:00,38°.20N×142°.10E,h53km,Mw3.8 Best double couple: M0ˢ5.97000×10¹⁴ NP1:φ0ˢ259.00000°,δ50.00000°, λ-125.00000°. NP2:φ0ˢ127.00000°,δ52.00000°, λ-56.00000°.*
*ISCJB **09** 11:30:05.6±1.1,38°.13N±0°.03×142°.13E±0°.09, h42km±10km,mb3.7/12,Error ellipse: s-maj=12.2km s-min=5.8km az=5.4*
*JMA **09** 11:30:06.3±0.2,38°.18N×142°.09E,h44km±2km,M4.0*
JMA Felt II J1.
*IDC **09** 11:30:08.0±2.4,38°.12N×142°.09E,h48km±24km,mb3.5/12, mb1 3.7/15,mb1mx3.5/56,mbtmp3.7/15,ML3.4/3,MS2.6/2, Ms1 2.6/2,ms1mx2.2/36,Error ellipse: s-maj=23.2km s-min=14.4km az=90.0*
ISC 09 11:30:04.9±2.9,38°.11N±0°.04×142°.09E±0°.07,h23km±19km, n35,σ1ˢ14/37,mb3.8/12,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**0.68**	**300**	P	**Pn**	**11 30 19.2**	**+0.1**
JIO				S	**Sb**	**11 30 27.7**	**+0.6**
JMM	**Marumori**	**1.06**	**257**	P	**Pb**	**11 30 24.9**	**+0.4**
JMM				*e*S	**Sn**	**11 30 38.4**	**+0.1**
JMK	**Ichinoseki**	**1.08**	**321**	P	**Pn**	**11 30 24.6**	**-0.1**
JMK				S	**Sb**	**11 30 37.8**	**-0.9**
JOU	**Okura**	**1.15**	**283**	P	**Pb**	**11 30 26.5**	**+0.3**
JOU				S	**Sn**	**11 30 41.3**	**+0.5**
JFK	**Kawauchi**	**1.22**	**233**	P	**Pb**	**11 30 27.3**	**0.0**
JFK				*e*S	**Sn**	**11 30 42.3**	**-0.1**
JOM	**Ohasama**	**1.50**	**336**	P	**Pn**	**11 30 30.4**	**0.0**
JOM				*e*S	**Sn**	**11 30 48.2**	**-1.0**
JFT	**Otama**	**1.51**	**247**	P	**Pb**	**11 30 32.2**	**-0.1**
JFT				*e*S	**Sb**	**11 30 51.3**	**+0.2**
JYK	**Kaneyama**	**1.58**	**301**	P	**Pn**	**11 30 31.9**	**+0.3**
JYK				*e*S	**Sn**	**11 30 51.3**	**0.0**
JYS	**Shirataka**	**1.60**	**275**	P	**Pb**	**11 30 33.1**	**-0.7**
JRG	**Rokugo**	**1.72**	**319**	P	**Pn**	**11 30 33.9**	**+0.5**
MJAR	**Matsushiro Arr**	**3.47**	**244**	P	**Pn**	**11 31 00.2**	**+2.7**
	2.8nm,0.3s,baz=56,slow=9.8,SNR=19						
MJAR				LR	LR	11 32 40.1	
	comp=Z,74nm,19.9s,baz=70,slow=44						
MAT	**Matsushiro**	**3.47**	**244**	P	**Pn**	**11 30 54.9**	**-2.7**
MAT	**Matsushiro**	**3.47**	**244**	P	Pb	11 31 01.8	-3.9
MAT				*e*S	**Sb**	**11 31 43.6**	**-3.8**
JHJ	**Hachijo jima 2**	**5.33**	**201**	P	**Pn**	**11 31 24.9**	**+1.9**
	19nm,0.3s,baz=335,slow=20,SNR=12						
JHJ				S	**Sn**	**11 32 24.4**	**+0.7**
	22nm,0.3s,baz=75,slow=22,SNR=1.5						
USRK	**Ussuriysk Ar.**	**9.74**	**112**	P	**Pn**	**11 32 25.2**	**+1.6**
	0.8nm,0.3s,baz=117,slow=14,SNR=5.2						
JCJ	**Chichijima**	**10.99**	**180**	P	**Pn**	**11 32 39.8**	**-0.9**
	baz=270,slow=19						
JCJ				S	Sn	11 34 36.8	-6.1
	5.3nm,0.3s,baz=306,slow=18,SNR=2.2						
KSRS	**Korea Array**	**11.23**	**271**	LR	LR	11 36 47.7	
	comp=Z,29nm,18.6s,baz=50,slow=36						
SEY	**Seymchan**	**25.63**	**11**	P	**P**	**11 35 33.4**	**+0.9**
	0.7nm,0.4s,baz=214,slow=7.6,SNR=4.0						
H11N2	**WAKE ISLAND Hy**	**28.26**	**123**	T	T	12 06 16.4	
	baz=316,slow=76,SNR=85						
H11N1	**WAKE ISLAND Hy**	**28.27**	**123**	T	T	12 06 17.2	
	baz=316,slow=76,SNR=111						
H11N3	**WAKE ISLAND Hy**	**28.28**	**123**	T	T	12 06 18.0	
	baz=316,slow=76,SNR=82						
H11S1	**WAKE ISLAND Hy**	**29.02**	**125**	T	T	12 07 10.0	
	baz=318,slow=76,SNR=23						
H11S3	**WAKE ISLAND Hy**	**29.02**	**125**	T	T	12 07 10.0	
	baz=318,slow=76,SNR=27						
H11S2	**WAKE ISLAND Hy**	**29.03**	**125**	T	T	12 07 11.1	
	baz=318,slow=76,SNR=24						
ZALV	**Zalesovo Beam**	**41.60**	**311**	P	**P**	**11 37 51.2**	**+0.4**
	0.9nm,0.3s,baz=90,slow=6.0,SNR=3.8						
MKAR	**Makanchi Array**	**44.01**	**301**	P	**P**	**11 38 10.7**	**+0.1**
	0.1nm,0.2s,baz=109,slow=6.6,SNR=2.2						
ILAR	**Eielson Array**	**48.30**	**33**	P	**P**	**11 38 43.8**	**-0.2**
	0.8nm,0.7s,baz=267,slow=6.1,SNR=10						
WRA	**Warramunga Arr**	**58.20**	**189**	P	**P**	**11 39 57.2**	**-0.1**
	0.3nm,0.4s,baz=6.3,slow=7.0,SNR=8.5						
ASAR	**Alice Springs**	**61.93**	**189**	P	**P**	**11 40 23.3**	**+0.5**
	0.2nm,0.7s,baz=16,slow=14,SNR=3.5						
YKA	**Yellowknife Ar**	**62.61**	**31**	P	**P**	**11 40 26.0**	**-0.9**
	0.2nm,0.6s,baz=303,slow=6.2,SNR=5.6						
FINES	**FINESS Array B**	**68.11**	**332**	P	**P**	**11 41 01.8**	**-0.8**
	0.9nm,0.6s,baz=23,slow=10,SNR=6.1						
HFS	**Hagfors**	**73.33**	**336**	P	**P**	**11 41 34.3**	**-0.1**
	2.5nm,0.9s,baz=36,slow=6.1,SNR=2.9						
AKASG	**Malin Array Be**	**73.78**	**322**	P	**P**	**11 41 36.4**	**-0.7**
	0.2nm,0.3s,baz=39,slow=6

PRA	**Prague**	**1.77 217**	*e*SG	**Sg**	**11 44 06.9**	**+0.6**
	comp=Z,22nm,0.4s					
PRA	**Prague**	**1.77 217**	Sg	**Sg**	**11 44 06.9**	**+0.6**
	22nm,0.4s					
GOPC	**GO Pecny, Ondr**	**1.78 208**	*e*PG	**Pb**	**11 43 42.6**	**-0.5**
GOPC			*e*SG	**Sg**	**11 44 07.0**	**+0.2**
GOPC	**GO Pecny, Ondr**	**1.78 208**	Pg	**Pb**	**11 43 42.6**	**-0.5**
GOPC			Sg	**Sg**	**11 44 07.0**	**+0.2**
PRU	**Pruhonice**	**1.80 213**	*e*PN	**Pn**	**11 43 41.5**	**-0.3**
PRU			*e*PG	**Pb**	**11 43 43.4**	**+0.1**
PRU			*e*SG	**Sg**	**11 44 07.6**	**+0.4**
	comp=Z,41nm,0.3s					
PRU	**Pruhonice**	**1.80 213**	Pn	**Pn**	**11 43 41.5**	**-0.3**
PRU	**Pruhonice**	**1.80 213**	Pg	**Pb**	**11 43 43.4**	**+0.1**
PRU			Sg	**Sg**	**11 44 07.6**	**+0.4**
	41nm,0.3s					
CLL	**Collm**	**1.93 265**	*e*Pn	**Pn**	**11 43 42.0**	**-1.6**
CLL			*e*Pg	**Pb**	**11 43 45.0**	**-0.5**
CLL			*e*		11 43 49.0	
CLL			*e*Sg	**Sg**	**11 44 11.0**	**-0.4**
	comp=Z,27nm,0.6s					
OKC	**Ostrava-Krasne**	**2.13 141**	*e*PG	**Pg**	**11 43 50.1**	**-0.2**
OKC			*e*SG	**Sb**	**11 44 16.4**	**+0.5**
OKC	**Ostrava-Krasne**	**2.13 141**	Pg	**Pg**	**11 43 50.1**	**-0.2**
OKC			Sg	**Sb**	**11 44 16.4**	**+0.5**
NKC	**Novy Kostel**	**2.62 242**	*e*PN	**Pn**	**11 43 53.5**	**+0.4**
NKC			*e*PG	**Pg**	**11 43 59.7**	**0.0**
NKC			*e*SG	**Sg**	**11 44 34.8**	**+1.2**
	comp=Z,36nm,0.3s					
NKC	**Novy Kostel**	**2.62 242**	Pn	**Pn**	**11 43 53.5**	**+0.4**
NKC	**Novy Kostel**	**2.62 242**	Pg	**Pg**	**11 43 59.7**	**0.0**
NKC			Sg	**Sg**	**11 44 34.8**	**+1.2**
	comp=Z,36nm,0.3s					
OJC	**Ojcow**	**2.69 117**	*e*Pg	**Pg**	**11 44 01.8**	**+0.7**
OJC			*e*Sg	**Sg**	**11 44 37.1**	**+1.1**
OJC	**Ojcow**	**2.69 117**	*e*Pg	**Pg**	**11 44 01.8**	**+0.7**
OJC			*e*Sg	**Sg**	**11 44 37.1**	**+1.1**
KHC	**Kasperske Hory**	**2.86 215**	*e*PN	**Pn**	**11 43 56.3**	**-0.1**
KHC			*e*PG	**Pb**	**11 44 02.3**	**+0.9**
KHC			*e*SN	**Sn**	**11 44 31.0**	**-0.5**
KHC			*e*SG	**Sg**	**11 44 40.5**	**-0.8**
	comp=Z,7.2nm,0.3s					
KHC	**Kasperske Hory**	**2.86 215**	Pn	**Pn**	**11 43 56.3**	**-0.1**
KHC	**Kasperske Hory**	**2.86 215**	Pg	**Pb**	**11 44 02.3**	**+0.9**
KHC			Sn	**Sn**	**11 44 31.0**	**-0.5**
KHC			Sg	**Sg**	**11 44 40.5**	**-0.8**
	comp=Z,7.2nm,0.3s					
LANS	**Liptovska Anna**	**3.21 136**	*e*Pg	**Pg**	**11 44 10.7**	**-0.3**
LANS			*e*Sg	**Sg**	**11 44 51.9**	**-0.7**
LANS	**Liptovska Anna**	**3.21 136**	*e*PG	**Pg**	**11 44 10.7**	**-0.3**
LANS			*e*SG	**Sg**	**11 44 51.9**	**-0.7**
VYHS	**Vyhne**	**3.50 148**	*e*Sg	**Sg**	**11 45 01.6**	**-0.3**
VYHS	**Vyhne**	**3.50 148**	*e*SG	**Sg**	**11 45 01.6**	**-0.3**
MOA	**Molln**	**3.84 198**	*i* Pn	**Sg**	**11 44 10.6**	**+0.7**
	comp=Z,1.7nm,0.2s					
MOA			Sg	**Sg**	**11 45 13.4**	**+0.7**
	comp=Z,4.6nm,0.3s					
MOA	**Molln**	**3.84 198**	Pn	**Pn**	**11 44 10.6**	**+0.7**
	comp=Z,1.7nm,0.2s					
MOA			Sg	**Sg**	**11 45 13.4**	**+0.7**
	comp=Z,4.6nm,0.3s					
ARSA	**Arzberg**	**4.27 185**	*e*Sg	**Sg**	**11 45 26.9**	**+0.3**
	comp=Z,5.2nm,0.5s					
ARSA	**Arzberg**	**4.27 185**	Sg	**Sg**	**11 45 26.9**	**+0.3**
	comp=Z,5.2nm,0.5s					

*ISCJB **09** 11:44:51.9±1.2, 4.°9S±0.°1×144.°2E±0.°1, h98km, mb3.2/4, Error ellipse: s-maj=24.0km s-min=9.7km az=142.1*
*IDC **09** 11:44:54.9±1.8, 4.°91S×144.°15E, h116km±16km, mb3.1/4, mb1 3.1/7, mb1mx2.9/41, mbtmp3.4/7, Error ellipse: s-maj=31.2km s-min=11.0km az=51.0*

ISC 09 11:44:53.8±1.2, 4.°9S±0.°1×144.°2E±0.°2, h98km, n7, σ1°85/9, mb3.4/4, Near north coast of New Guinea

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
JAY	**Jayapura**	**4.18**	**305**	P		**Pn**	**Pn**	**11 45 56.1**	**+0.6**
	0.2nm,0.3s,baz=139,slow=19,SNR=6.2								
JAY				S		**Sn**	**Sn**	**11 46 45.8**	**+2.4**
	0.2nm,0.3s,baz=314,slow=22,SNR=3.2								
PMG	**Port Moresby**	**5.37**	**146**	P		**Pn**	**Pn**	**11 46 11.2**	**-0.4**
	0.4nm,0.3s,baz=294,slow=20,SNR=2.0								
PMG				S		**Sn**	**Sn**	**11 47 15.3**	**+3.1**
	0.8nm,0.3s,baz=311,slow=23,SNR=3.6								
WRA	**Warramunga Arr**	**17.74**	**212**	P		**Pn**	**Pn**	**11 48 53.2**	**-1.4**
	0.1nm,0.3s,baz=27,slow=12,SNR=8.6								
ASAR	**Alice Springs**	**21.11**	**207**	P		**P**	**P**	**11 49 30.1**	**-0.6**
	0.3nm,0.7s,baz=35,slow=11,SNR=16								
FITZ	**Fitzroy Crossi**	**22.35**	**233**	P		**P**	**P**	**11 49 44.0**	**+0.1**
	0.8nm,0.4s,baz=69,slow=8.6,SNR=3.6								
MKAR	**Makanchi Array**	**74.86**	**321**	P		**P**	**P**	**11 56 22.7**	**-1.2**
	0.2nm,0.4s,baz=97,slow=7.5,SNR=3.2								
BVAR	**Borovoye Array**	**84.23**	**324**	P		**P**	**P**	**11 57 13.8**	**-0.6**
	0.6nm,0.6s,baz=118,slow=6.4,SNR=5.0								

IDC 09 11:52:00.0±2.8, 2.°25S×134.°26E, h0km, mb3.6/2, mb1 4.0/3, mb1mx3.5/33, mbtmp3.8/3, ML3.7/1, MS2.8/1, Ms1 2.8/1, ms1mx2.4/34, Error ellipse: s-maj=127.1km s-min=28.7km az=77.0, Irian Jaya region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
DAV	**Davao City (W)**	**12.68**	**317**	LR		LR	LR	11 59 29.7	
	comp=Z,50nm,20.8s,baz=292,slow=36								
WRA	**Warramunga Arr**	**17.59**	**180**	P		Pn		11 56 07.2	+0.5
	0.3nm,0.3s,baz=359,slow=12,SNR=23								
ASAR	**Alice Springs**	**21.29**	**181**	P		P		11 56 48.1	-0.3
	2.5nm,0.7s,baz=3.5,slow=11,SNR=27								
MKAR	**Makanchi Array**	**66.75**	**324**	P		P		12 02 53.4	+0.1
	0.4nm,0.7s,baz=115,slow=8.2,SNR=5.0								

*IDC **09** 11:53:23.6±2.6, 38.°41N×142.°70E, h0km, mb3.6/3, mb1 3.6/5, mb1mx3.4/36, mbtmp3.5/5, ML2.8/2, Error ellipse: s-maj=65.3km s-min=27.9km az=65.0*
*ISCJB **09** 11:53:33.2±1.1, 38.°25N±0.°04×141.°9E±0.°1, h66km±7km, mb3.5/3, Error ellipse: s-maj=15.1km s-min=6.5km az=10.7*
*JMA **09** 11:53:34.2±0.1, 38.°27N×141.°83E, h59km±1km, M3.6*
JMA Felt I J1.

ISC 09 11:53:33.0±1.7, 38.°22N±0.°05×142.°0E±0.°1, h52km±14km, n20, σ0°77/27, mb3.6/3, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**0.54**	**296**	P		**Pn**	**Pn**	**11 53 45.4**	**+0.6**
JIO				S		**Sn**	**Sn**	**11 53 53.2**	**-0.2**
JMK	**Ichinoseki**	**0.94**	**322**	P		**Pn**	**Pn**	**11 53 50.4**	**+0.5**
JMK				S		**Sn**	**Sn**	**11 54 01.8**	**-0.6**
JMM	**Marumori**	**0.99**	**250**	P		**Pn**	**Pn**	**11 53 50.9**	**+0.3**
JMM				S		**Sn**	**Sn**	**11 54 03.1**	**-0.6**
JOU	**Okura**	**1.04**	**279**	P		**Pn**	**Pn**	**11 53 51.4**	**+0.1**
JOU				S		**Sn**	**Sn**	**11 54 03.9**	**-0.9**
JFK	**Kawauchi**	**1.21**	**226**	P		**Pn**	**Pn**	**11 53 54.6**	**+1.0**
JFK				S		**Sn**	**Sn**	**11 54 09.3**	**+0.3**
JOM	**Ohasama**	**1.36**	**337**	P		**Pn**	**Pn**	**11 53 56.2**	**+0.6**
JOM				S		**Sn**	**Sn**	**11 54 12.6**	**0.0**
JYK	**Kaneyama**	**1.44**	**299**	P		**Pn**	**Pn**	**11 53 56.8**	**+0.1**
JYK				eS		**Sn**	**Sn**	**11 54 14.0**	**-0.6**
JFT	**Otama**	**1.47**	**242**	P		**Pn**	**Pn**	**11 53 58.1**	**+1.0**
JFT				S		**Sn**	**Sn**	**11 54 15.5**	**+0.3**
JYS	**Shirataka**	**1.50**	**271**	P		**Pn**	**Pn**	**11 53 57.8**	**+0.3**
JYS				S		**Sn**	**Sn**	**11 54 15.9**	**0.0**
JRG	**Rokugo**	**1.57**	**319**	P		**Pn**	**Pn**	**11 53 58.9**	**+0.4**
JRG				eS		**Sn**	**Sn**	**11 54 17.5**	**-0.2**
JYA	**Atsumi**	**1.81**	**283**	P		**Pn**	**Pn**	**11 54 01.9**	**+0.2**
MJAR	**Matsushiro Arr**	**3.43**	**242**	Pn		**Pn**	**Pn**	**11 54 26.1**	**+2.1**
	1.0nm,0.3s,baz=51,slow=10,SNR=8.5								
JHJ	**Hachijo jima 2**	**5.39**	**200**	Sn		**Sn**	**Sn**	**11 55 49.7**	**-1.8**
	9.3nm,0.3s,baz=134,slow=23,SNR=3.9								
USRK	**Ussuriysk Ar.**	**9.60**	**312**	Pn		**Pn**	**Pn**	**11 55 49.0**	**+0.6**
	0.4nm,0.3s,baz=124,slow=14,SNR=6.2								
H11S1	**WAKE ISLAND Hy**	**29.16**	**125**	T		T	T	12 30 41.7	
	baz=318,slow=76,SNR=16								
H11S3	**WAKE ISLAND Hy**	**29.16**	**125**	T		T	T	12 30 41.4	
	baz=318,slow=76,SNR=23								
H11S2	**WAKE ISLAND Hy**	**29.17**	**125**	T		T	T	12 30 42.6	
	baz=318,slow=76,SNR=13								
ZALV	**Zalesovo Beam**	**41.45**	**311**	P		**P**	**P**	**12 01 13.8**	**-0.5**
	0.5nm,0.4s,baz=116,slow=16,SNR=3.0								
MKAR	**Makanchi Array**	**43.88**	**301**	P		**P**	**P**	**12 01 34.0**	**0.0**
	0.1nm,0.2s,baz=64,slow=10.0,SNR=3.6								
WRA	**Warramunga Arr**	**58.29**	**188**	P		**P**	**P**	**12 03 22.2**	**-0.1**
	0.4nm,0.5s,baz=7.8,slow=7.7,SNR=13								

*ISCJB **09** 11:59:28.4±0.3, 20.°61S±0.°03×69.°33W±0.°08, h103km±4km, mb3.9/8, Error ellipse: s-maj=12.8km s-min=4.9km az=11.5*
*NEIC **09** 11:59:28.0, 20.°51S×69.°67W, h78km, mb4.4/1, After GUC.*
NEIC Felt [III] at Alto Hospicio, Camina and Iquique; [II] at Huara, La Tirana, Mamina and Pozo Almonte.
*GUC **09** 11:59:28.8±0.4, 20.°51S×69.°67W, h78km±4km, ML4.1*
*IDC **09** 11:59:29.0±0.7, 20.°44S×69.°34W, h83km±4km, mb3.8/10, mb1 4.0/12, mb1mx3.8/27, mbtmp4.2/12, MS2.9/2, Ms1 3.0/2, ms1mx2.6/27, Error ellipse: s-maj=21.7km s-min=16.3km az=11.0*
*SCB **09** 11:59:34.4±0.8, 20.°09S×68.°86W, h100km, Ml3.8/1, Error ellipse: s-maj=25.3km s-min=6.7km az=59.0*

ISC 09 11:59:28.7±0.6, 20.°55S±0.°04×69.°37W±0.°08, h93km±5km, n43, σ1°73/49, mb4.1/8, 9C, Northern Chile

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
PB08	**IPOC Station P**	**0.46**	**26**	*e*P		**Pn**	**Pn**	**11 59 44.3**	**+0.4**
PB08				*e*S		**Sn**	**Sn**	**11 59 56.2**	**+1.0**
PB08				IAML				11 59 59.9	
	comp=N,11μm,0.2s								
PB01	**IPOC Station P**	**0.50**	**193**	*e*P		**Pn**	**Pn**	**11 59 44.8**	**+0.9**
PB01				*e*S		**Sn**	**Sn**	**11 59 55.7**	**+0.6**
PB07	**IPOC Station P**	**1.26**	**202**	*e*P		**Pn**	**Pn**	**11 59 51.6**	**-0.3**
PB07				*e*S		**Sn**	**Sn**	**12 00 08.5**	**-0.8**
PB07				IAML				12 00 12.5	
	comp=N,5μm,0.6s								
PB04	**IPOC Station P**	**1.92**	**202**	*e*P		**Pn**	**Pn**	**12 00 00.0**	**-0.1**
PB04				*e*S		**Sn**	**Sn**	**12 00 23.6**	**-0.4**
PB04				IAML				12 00 31.6	
	comp=E,2μm,1.0s								
PB12	**IPOC Station P**	**2.13**	**335**	⇑*e*P		**Pn**	**Pn**	**12 00 01.2**	**-1.6**
PB06	**IPOC Station P**	**2.15**	**185**	*e*P		**Pn**	**Pn**	**12 00 04.3**	**+1.1**
PB06				*e*S		**Sn**	**Sn**	**12 00 31.3**	**+1.8**
PB06				IAML				12 00 31.6	
	comp=N,1μm,0.7s								
PB13	**IPOC Station P**	**2.21**	**357**	⇑*e*P		**Pn**	**Pn**	**12 00 05.2**	**+0.8**
PB13				*e*S		**Sn**	**Sn**	**12 00 32.6**	**+1.0**
PB10	**IPOC Station P**	**3.14**	**200**	*e*P		**Pn**	**Pn**	**12 00 16.5**	**+0.2**
MOCB	**Mochara**	**3.56**	**102**	⇑*i*Pn		Pn	Pn	12 00 27.8	+5.6
BBOJ	**La Paz, Jacaqu**	**3.73**	**18**	⇑*i*Pn		**Pn**	**Pn**	**12 00 27.4**	**+2.7**
BBOE	**La Paz, Chanca**	**3.95**	**20**	⇑*i*Pn		**Pn**	**Pn**	**12 00 30.6**	**+3.0**
BBOD	**La Paz, Gloria**	**3.96**	**11**	⇑*i*Pn		**Pn**	**Pn**	**12 00 30.6**	**+2.7**
LPAZ	**La Paz**	**4.40**	**16**	P		**Pn**	**Pn**	**12 00 36.3**	**+2.4**
	comp=N,2.9nm,0.3s,baz=200,slow=7.5,SNR=42								
LPAZ				LR		LR		12 02 42.8	
	comp=N,133nm,20.6s,baz=187,slow=45								
LPAZ	**La Paz**	**4.40**	**16**	⇑*i*Pn		**Pn**	**Pn**	**12 00 36.0**	**+2.1**
BBOB	**La Paz, Bander**	**4.54**	**15**	⇑*i*Pn		**Pn**	**Pn**	**12 00 38.7**	**+3.0**
BBOB				⇑*i*Sn		**Sn**	**Sn**	**12 01 23.9**	**-3.7**
	comp=N,44nm,0.3s								
LCO	**Las Campanas**	**8.51**	**188**	*e*Pn		**Pn**	**Pn**	**12 01 27.7**	**-1.7**
	comp=N,7.8nm,0.4s								
LCO				*e*Sn		**Sn**	**Sn**	**12 02 57.5**	**-6.3**
SIV	**San Ignacio**	**9.09**	**61**	P		**Pn**	**Pn**	**12 01 36.5**	**-0.8**
	comp=N,2.6nm,0.3s,baz=260,slow=11,SNR=27								
SIV	**San Ignacio**	**9.09**	**61**	*e*P		**Pn**	**Pn**	**12 01 35.9**	**-1.3**
CPUP	**Villa Florida**	**12.45**	**120**	P		**Pn**	**Pn**	**12 02 22.8**	**+0.2**
	comp=N,0.2nm,0.3s,baz=323,slow=10,SNR=3.5								
SAML	**Samuel**	**12.99**	**28**	Pn		**Pn**	**Pn**	**12 02 29.7**	**-0.1**
TRQA	**Tornquist**	**18.58**	**161**	P		**Pn**	**Pn**	**12 03 38.6**	**-1.2**
	comp=N,49nm,2.1s								
PLCA	**Paso Flores**	**20.14**	**183**	P		Pn		12 03 58.2	0.0
	comp=N,8.4nm,0.7s,baz=25,slow=11,SNR=22								
BDFB	**Brasilia**	**20.87**	**80**	P		**P**		**12 04 03.0**	**-0.6**
	comp=N,9.2nm,0.5s,baz=241,slow=8.1,SNR=6.0								
BDFB				LR		LR		12 12 59.6	
	comp=N,50nm,21.7s,baz=253,slow=39								
PTGA	**Pitinga**	**21.74**	**26**	P		**P**		**12 04 10.9**	**-1.9**
	comp=N,3.8nm,0.3s,baz=209,slow=21,SNR=7.5								
RCBR	**Riachuelo**	**35.61**	**70**	P		**P**		**12 06 18.5**	**+0.6**
	comp=N,11nm,0.5s,baz=241,slow=7.0,SNR=15								
TXAR	**Lajitas Array**	**59.61**	**325**	P		**P**		**12 09 22.8**	**-0.5**
	comp=N,0.2nm,0.5s,baz=157,slow=7.0,SNR=4.1								
DBIC	**Dimbokro**	**68.88**	**74**	P		**P**		**12 10 23.2**	**-0.9**
	comp=N,1.3nm,0.5s,baz=209,slow=5.0,SNR=4.7								
DBIC				pP		**PcP**		**12 10 48.2**	**+0.2**
	comp=N,4.1nm,0.9s,baz=212,slow=9.5,SNR=2.3								
PDAR	**Pinedale Array**	**73.08**	**330**	P		**P**		**12 10 50.0**	**+0.9**
	comp=N,0.2nm,0.6s,baz=129,slow=7.1,SNR=3.1								
NVAR	**Mina Array Bea**	**74.49**	**322**	P		**P**		**12 10 58.9**	**+1.5**
	comp=N,0.6nm,0.7s,baz=146,slow=6.0,SNR=4.3								
TORD	**Torodi Ar. Bea**	**77.44**	**71**	P		**P**		**12 11 14.1**	**-0.3**
	comp=N,2.3nm,0.4s,baz=254,slow=5.2,SNR=26								
TORD				pP		**pP**		**12 11 39.0**	**+0.5**
	comp=N,1.8nm,0.5s,baz=256,slow=5.5,SNR=3.9								
YKA	**Yellowknife Ar**	**90.16**	**341**	P		**P**		**12 12 18.3**	**+0.2**
	comp=N,1.0nm,0.8s,baz=134,slow=4.7,SNR=23								
YKA				pP		**pP**		**12 12 43.0**	**+0.2**
	comp=N,1.0nm,0.7s,baz=133,slow=4.6,SNR=8.1								
H11S2	**WAKE ISLAND Hy**	**27.33**	**278**	T		T		14 38 11.2	
	baz=102,slow=74,SNR=98								
H11S1	**WAKE ISLAND Hy**	**27.34**	**278**	T		T		14 38 10.8	
	baz=102,slow=74,SNR=51								
H11S3	**WAKE ISLAND Hy**	**27.35**	**278**	T		T		14 38 11.5	
	baz=102,slow=74,SNR=53								
H11N3	**WAKE ISLAND Hy**	**27.39**	**280**	T		T		14 38 14.1	
	baz=102,slow=75,SNR=30								
H11N2	**WAKE ISLAND Hy**	**27.40**	**280**	T		T		14 38 15.3	
	baz=102,slow=75,SNR=25								
H11N1	**WAKE ISLAND Hy**	**27.40**	**280**	T		T		14 38 15.4	
	baz=102,slow=75,SNR=30								
WRA	**Warramunga Arr**	**133.54**	**211**	PKP		**PKPdf**		**12 18 36.3**	**+1.1**
	comp=N,0.5nm,0.6s,baz=139,slow=1.5,SNR=6.1								
WRA				pPKP		**pPKPdf**		**12 19 01.1**	**+0.2**
	comp=N,0.3nm,0.6s,baz=158,slow=1.6,SNR=1.6								
ZALV	**Zalesovo Beam**	**141.28**	**24**	PKP		**PKPdf**		**12 18 50.1**	**+1.8**
	comp=N,0.3nm,0.4s,baz=282,slow=1.3,SNR=2.4								
ZALV				pPKP		**pPKPdf**		**12 19 13.9**	**-0.1**
	comp=N,1.1nm,0.7s,baz=305,slow=3.6,SNR=3.9								
MKAR	**Makanchi Array**	**145.11**	**35**	PKPbc		**PKPbc**		**12 18 55.3**	**+0.2**
	comp=N,0.7nm,0.7s,baz=324,slow=6.0,SNR=6.8								
MKAR				pPKPbc	pPKPbc			12 19 20.2	-0.4
	comp=N,0.9nm,0.6s,baz=320,slow=4.5,SNR=4.6								
MKAR				sPKPbc	sPKPbc			12 19 30.1	-0.2
	comp=N,0.8nm,0.7s,baz=306,slow=4.2,SNR=4.4								
USRK	**Ussuriysk Ar.**	**150.48**	**328**	PKPbc		**PKPbc**		**12 19 10.6**	**+0.9**
	comp=N,3.1nm,0.8s,baz=1.8,slow=4.2,SNR=6.3								
MJAR	**Matsushiro Arr**	**151.15**	**309**	PKPbc		**PKPbc**		**12 19 12.6**	**+1.0**
	comp=N,0.6nm,0.6s,baz=160,slow=1.5,SNR=4.6								
SONM	**Songino Array**	**152.57**	**6**	PKPbc		**PKPbc**		**12 19 15.8**	**+1.3**
	comp=N,0.2nm,0.4s,baz=323,slow=0.7,SNR=2.9								
SONM				pPKPbc		**pPKPbc**		**12 19 38.7**	**-1.4**
	comp=N,0.6nm,0.4s,baz=298,slow=1.5,SNR=3.9								

*NIED **09** 11:59:00, 37.°30N×142.°40E, h35km, Mw3.8 Best double couple: M0 5.66000×10^14 NP1:φs353.00000°, δ15.00000°, λ-106.00000°. NP2:φs190.00000°, δ75.00000°, λ-86.00000°.*
*JMA **09** 11:59:30.5±0.2, 37.°29N×142.°42E, h0km, M4.0*
*IDC **09** 11:59:30.7±0.9, 37.°06N×142.°54E, h0km, mb3.6/9, mb1 3.8/11, mb1mx3.6/36, mbtmp3.6/11, ML3.6/2, MS3.1/3, Ms1 3.1/3, ms1mx2.5/54, Error ellipse: s-maj=23.4km s-min=19.1km az=125.0*
*ISCJB **09** 11:59:31.9±1.7, 37.°25N±0.°05×142.°49E±0.°06, h16km±11km, mb3.5/9, MS3.3/2, Error ellipse: s-maj=9.2km s-min=7.8km az=25.7*

ISC 09 11:59:31.3±2.1, 37.°21N±0.°05×142.°36E±0.°07, h2km±12km, n30, σ1°44/29, mb3.5/9, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**1.20**	**278**	P		**Pg**	**Pg**	**11 59 54.2**	**-0.1**
JFK				eS		**Sn**	**Sn**	**12 00 11.8**	**-0.2**
ONAJ	**Iwakimizuishiy**	**1.26**	**265**	P		**Pg**	**Pg**	**11 59 55.3**	**-0.1**
ONAJ				eS		**Sn**	**Sn**	**12 00 13.9**	**+0.5**
JMM	**Marumori**	**1.41**	**298**	P		**Pn**	**Pn**	**11 59 58.9**	**-1.1**
JMM				eS		**Sb**	**Sb**	**12 00 16.3**	**-0.5**
JIO	**Ouri**	**1.48**	**327**	P		**Pn**	**Pn**	**11 59 57.8**	**-1.1**
JIO				eS		**Sb**	**Sb**	**12 00 17.6**	**-1.1**
JHO	**Hitachi**	**1.56**	**248**	P		**Pb**	**Pb**	**12 00 01.0**	**+0.1**
JHO				eS		**Sg**	**Sg**	**12 00 21.7**	**+0.3**
JFT	**Otama**	**1.64**	**281**	P		**Pn**	**Pn**	**12 00 01.6**	**+0.4**
JFT				eS		**Sg**	**Sg**	**12 00 23.6**	**-0.6**
JOU	**Okura**	**1.77**	**311**	P		**Pn**	**Pn**	**12 00 03.0**	**0.0**
JOU				eS		**Sn**	**Sn**	**12 00 25.1**	**-1.0**
JYS	**Shirataka**	**2.08**	**300**	eS		**Sn**	**Sn**	**12 00 33.9**	**+0.1**
MJAR	**Matsushiro Arr**	**3.40**	**260**	Pn		**Pn**	**Pn**	**12 00 27.1**	**+1.8**
	4.2nm,0.3s,baz=78,slow=16,SNR=22								
MAT	**Matsushiro**	**3.40**	**260**	P		**Pn**	**Pn**	**12 00 28.3**	**+2.9**
MAT				S		**Sb**	**Sb**	**12 01 10.7**	**-3.4**
JHJ	**Hachijo jima 2**	**4.60**	**208**	Pn		**Pn**	**Pn**	**12 00 42.5**	**+0.7**
	11nm,0.3s,baz=17,slow=14,SNR=5.3								
JHJ				Sn		**Sn**	**Sn**	**12 01 32.9**	**-2.9**
	10nm,0.3s,baz=81,slow=22,SNR=2.3								
USRK	**Ussuriysk Ar.**	**10.52**	**315**	Pn		Pn	Pn	12 02 08.8	+5.7
	0.5nm,0.3s,baz=130,slow=13,SNR=12								
KSRS	**Korea Array**	**11.50**	**276**	Pn		Pn	Pn	12 02 23.4	+6.9
	0.2nm,0.3s,baz=84,slow=14,SNR=3.0								
KSRS				LR		LR	LR	12 06 26.1	
	comp=Z,39nm,18.8s,baz=84,slow=36								
H11N2	**WAKE ISLAND Hy**	**27.59**	**122**	T		T	T	12 34 13.9	
	baz=315,slow=75,SNR=55								
H11N1	**WAKE ISLAND Hy**	**27.60**	**122**	T		T	T	12 34 16.0	
	baz=315,slow=75,SNR=37								
H11N3	**WAKE ISLAND Hy**	**27.61**	**122**	T		T	T	12 34 15.2	
	baz=315,slow=75,SNR=38								
SONM	**Songino Array**	**28.32**	**303**	P		**P**	**P**	**12 05 27.6**	**+1.2**
	1.6nm,0.8s,baz=99,slow=8.4,SNR=9.0								
H11S1	**WAKE ISLAND Hy**	**28.32**	**124**	T		T	T	12 35 06.6	
	baz=317,slow=76,SNR=31								
H11S3	**WAKE ISLAND Hy**	**28.33**	**125**	T		T	T	12 35 09.6	
	baz=317,slow=76,SNR=34								
H11S2	**WAKE ISLAND Hy**	**28.34**	**125**	T		T	T	12 35 10.4	
	baz=317,slow=76,SNR=29								
ZALV	**Zalesovo Beam**	**42.36**	**312**	P		**P**	**P**	**12 07 26.4**	**-0.2**
	0.3nm,0.4s,baz=114,slow=6.6,SNR=3.6								
MKAR	**Makanchi Array**	**44.67**	**302**	P		**P**	**P**	**12 07 46.2**	**+0.8**
	0.5nm,0.6s,baz=86,slow=10,SNR=5.2								
ILAR	**Eielson Array**	**48.94**	**32**	P		**P**	**P**	**12 08 19.2**	**+0.7**
	0.2nm,0.7s,baz=263,slow=6.3,SNR=3.9								
BVAR	**Borovoye Array**	**51.01**	**312**	P		**P**	**P**	**12 08 36.4**	**+1.9**
	0.2nm,0.4s,baz=48,slow=8.6,SNR=2.1								
WRA	**Warramunga Arr**	**57.35**	**189**	P		**P**	**P**	**12 09 19.5**	**-1.5**
	0.4nm,0.7s,baz=9.5,slow=7.5,SNR=9.8								
YKA	**Yellowknife Ar**	**63.27**	**30**	P		**P**	**P**	**12 10 01.8**	**+0.7**
	0.2nm,0.8s,baz=302,slow=6.3,SNR=3.2								
GEYT	**Alibeck**	**64.41**	**299**	LR		LR		12 38 47.5	
	comp=Z,55nm,21.8s,baz=60,slow=36								
FINES	**FINESS Array B**	**69.01**	**333**	P		**P**	**P**	**12 10 39.4**	**+1.5**
	2.2nm,1.0s,baz=99,slow=4.6,SNR=2.6								
MLR	**Muntele Rosu**	**79.74**	**320**	LR		LR		12 47 55.8	
	comp=Z,5.6nm,18.8s,baz=288,slow=36								
TXAR

LEM					LR	LR	12 21 58.9				
	comp=Z,194nm,21.4s,baz=196,slow=47										
LEM	**Lembang**	**3.14**	**359**		P	**Pb**	**12 20 10.7**	**-0.6**			
LEM					S	**Sn**	**12 20 40.5**	**-0.6**			
DBJI	**Dramaga**	**3.54**	**345**		P	**Pn**	**12 20 08.8**	**-0.7**			
CGJI	**Cibinong**	**3.89**	**329**		P	**Pn**	**12 20 13.5**	**-0.9**			
PWJI	**Pagerwojo**	**4.51**	**65**		P	**Pn**	**12 20 22.8**	**-0.1**			
FITZ	**Fitzroy Crossi**	**19.18**	**117**		P	**P**	**12 23 38.1**	**0.0**			
	0.2nm,0.3s,baz=263,slow=7.4,SNR=4.4										
FITZ					S	Sn	12 26 54.4	-19			
	0.2nm,0.3s,baz=198,slow=20,SNR=3.0										
WRA	**Warramunga Arr**	**27.54**	**114**		P	**P**	**12 25 00.3**	**-1.0**			
	1.5nm,0.5s,baz=287,slow=11,SNR=15										
ASAR	**Alice Springs**	**28.47**	**122**		P	**P**	**12 25 08.6**	**-1.0**			
	0.5nm,0.6s,baz=296,slow=7.9,SNR=11										
CMAR	**Chiang Mai Arr**	**29.55**	**343**		P	P	12 25 25.3	+6.2			
	0.3nm,0.4s,baz=168,slow=9.1,SNR=3.3										
STKA	**Stephens Creek**	**38.18**	**130**		P	**P**	**12 26 33.7**	**-0.2**			
	3.9nm,0.6s,baz=302,slow=8.0,SNR=8.5										
SONM	**Songino Array**	**57.58**	**359**		P	**P**	**12 29 04.5**	**+0.6**			
	0.4nm,0.5s,baz=169,slow=7.7,SNR=4.1										
MKAR	**Makanchi Array**	**60.91**	**340**		P	**P**	**12 29 29.6**	**+2.6**			
	0.5nm,0.4s,baz=149,slow=7.6,SNR=7.3										
BVAR	**Borovoye Array**	**70.37**	**337**		P	**P**	**12 30 28.6**	**+0.8**			
	0.5nm,0.5s,baz=156,slow=7.4,SNR=3.0										
YKA	**Yellowknife Ar**	**119.40**	**21**		PKP	**PKPdf**	**12 38 02.7**	**-0.5**			
	0.2nm,0.7s,baz=313,slow=1.1,SNR=5.2										
TXAR	**Lajitas Array**	**144.94**	**52**		PKPbc	**PKPdf**	**12 38 52.1**	**0.0**			
	0.7nm,0.8s,baz=259,slow=1.6,SNR=10										

*IDC **09** 12:30:22.8±0.5, 41.92N×74.81E, h0km, mb4.3/32, mb1 4.5/39, mb1mx4.4/62, mbtmp4.4/39, ML4.2/7, MS3.8/14, Ms1 3.8/14, ms1mx3.6/58, Error ellipse: s-maj=9.5km s-min=8.6km az=42.0*

*KRNET **09** 12:30:24.8±0.1, 42.06N×74.82E, h16km, mb5.1*

*KNET **09** 12:30:24.8±0.4, 42.06N×74.83E, h18km±2km, ml4.7, Error ellipse: s-maj=3.9km s-min=1.9km az=16.0*

*BJI **09** 12:30:24.9, 42.23N×74.67E, h27km, mb4.5/22, mB4.6/19, ML4.7/8, Ms4.2/9, Ms7 3.9/11*

*NEIC **09** 12:30:25.6±1.6, 42.07N×74.82E, h14km±9km, mb4.9/11, Error ellipse: s-maj=8.3km s-min=5.3km az=172.0*

NEIC Felt [III] at Bishkek.

*SOME **09** 12:30:25.9, 42.08N×74.82E, h10km, MS3.8*

*ISCJB **09** 12:30:25.7±0.3, 42.01N±0.02×74.78E±0.02, h24km±2km, mb4.3/59, MS3.9/14, Error ellipse: s-maj=3.6km s-min=2.5km az=170.9*

*NNC **09** 12:30:25.4±1.0, 42.14N×74.86E, h0km, mb5.2, mpv4.8, Error ellipse: s-maj=9.2km s-min=4.2km az=155.0*

*MOS **09** 12:30:27.7±1.1, 42.29N×74.74E, h31km, mb4.7/43, Error ellipse: s-maj=7.1km s-min=4.5km az=97.3*

MOS Felt (III) at Bishkek.

ISC 09 12:30:25.9±0.8, 42.05N±0.02×74.78E±0.01, h18km±3km, n221, σ1.9 49/281, mb4.4/58, MS3.9/14, 52C-49D, Kyrgyzstan

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
UCH	**Uchtor**	**0.27**	**312**		⇓P		**Pg**	**12 30 31.7**	**-0.5**
	29μm,0.2s								
UCH					⇑S		**Sb**	**12 30 36.5**	**0.0**
	188μm,0.3s								
KZA	**Kyzart**	**0.35**	**85**		⇓P		**Pg**	**12 30 32.1**	**-1.5**
	8μm,0.2s								
KZA					⇓S		**Sg**	**12 30 37.2**	**-1.6**
	100μm,0.5s								
ARLS	**Aral**	**0.39**	**241**		⇑*i*P		**Pg**	**12 30 33.3**	**-0.8**
	baz=243								
ARLS					⇑*i*S		**Sg**	**12 30 39.0**	**-0.7**
	baz=243								
AAK	**Ala-Archa**	**0.62**	**340**		Pg		**Pg**	**12 30 37.7**	**-0.6**
	6μm,0.3s,baz=138,slow=8.8								
AAK					Lg		Lg	12 30 46.6	
	2μm,0.3s,baz=326,slow=18,SNR=8.8								
AAK					LR		LR	12 31 10.6	
	comp=Z,3μm,19.0s,baz=217,slow=63								
AAK	**Ala-Archa**	**0.62**	**340**		⇓P		**Pg**	**12 30 37.8**	**-0.5**
AAK					⇑S		**Sb**	**12 30 46.6**	**-0.2**
AAK	**Ala-Archa**	**0.62**	**340**		⇓P		**Pg**	**12 30 37.9**	**-0.4**
	24μm,0.3s								
AAK					⇓S		**Sb**	**12 30 46.7**	**-0.1**
	25μm,0.3s								
AAK	**Ala-Archa**	**0.62**	**340**		PG		**Pg**	**12 30 37.3**	**-1.0**
AAK					S		**Sg**	**12 30 46.3**	**-0.4**
AAK					pmax	pmax			
	comp=Z,9μm,0.3s								
AAK					smax	smax			
	comp=N,16μm,0.4s								
AAK	**Ala-Archa**	**0.62**	**340**		*e*Pg		**Pg**	**12 30 37.9**	**-0.4**
AAK					Lg		Lg	12 30 46.6	
AAK					*e*Sg		**Sb**	**12 30 46.9**	**+0.2**
FRU	**Bishkek**	**0.79**	**351**		*i* PG		**Pb**	**12 30 41.0**	**-0.2**
FRU					*e*			12 30 53.0	
FRU					pmax	pmax			
	comp=E,5μm,1.4s								
FRU					smax	smax			
	comp=E,42μm,2.0s								
AML	**Almayashu**	**0.81**	**276**		⇓P		**Pb**	**12 30 41.3**	**-0.4**
	comp=E,9μm,0.2s								
AML					⇓S		**Sg**	**12 30 52.9**	**+0.1**
	comp=E,34μm,0.3s								
CHMS	**Chumysh**	**0.95**	**359**		⇓P		**Pb**	**12 30 43.4**	**-0.4**
	comp=E,3μm,0.2s								
CHMS					⇑S		**Sg**	**12 30 56.4**	**-0.5**
	comp=E,18μm,0.4s								
EKS2	**Erkin-Say**	**0.96**	**310**		⇓P		**Pb**	**12 30 43.9**	**-0.2**
	comp=E,2μm,0.2s								
EKS2	**Erkin-Say**	**0.96**	**310**		*e*PG		**Pb**	**12 30 44.0**	**-0.2**
EKS2					*e*			12 30 57.6	
EKS2	**Erkin-Say**	**0.96**	**310**		*e*Pg		**Pb**	**12 30 44.0**	**-0.2**
EKS2					*e*Sg		**Sn**	**12 30 57.6**	**-0.4**
BOOM	**Boomskoye usch**	**0.97**	**63**		⇑*i*P		**Pb**	**12 30 42.7**	**-1.6**
	baz=62								
BOOM					⇑*i*S		**Sb**	**12 30 55.7**	**-1.1**
	baz=62								
TKM2	**Tokmak 2**	**1.06**	**34**		⇑P		**Pb**	**12 30 44.8**	**-1.1**
	comp=E,282nm,0.2s								
TKM2					⇑S		**Sb**	**12 30 55.7**	**-3.8**
	comp=E,3μm,0.3s								
TKM2	**Tokmak 2**	**1.06**	**34**		⇑P		**Pb**	**12 30 44.7**	**-1.1**
	comp=E,1μm,0.2s								
TKM2					⇑S		**Sb**	**12 30 58.8**	**-0.7**
	comp=E,8μm,0.3s								
TKM2	**Tokmak 2**	**1.06**	**34**		PG		**Pb**	**12 30 44.6**	**-1.3**
TKM2					S		**Sb**	**12 30 58.6**	**-0.8**
TKM2					pmax	pmax			
	comp=Z,634nm,0.5s								
TKM2					smax	smax			
	comp=N,5μm,0.6s								
TKM2	**Tokmak 2**	**1.06**	**34**		*e*Pg		**Pb**	**12 30 44.7**	**-1.1**
TKM2					*e*Sg		**Sb**	**12 30 58.7**	**-0.8**
NRN	**Naryn**	**1.10**	**124**		⇓*i*P		**Pb**	**12 30 45.1**	**-1.5**
	baz=126								
NRN					⇓*i*S		**Sb**	**12 31 00.5**	**-0.3**
	baz=126								
ULHL	**Ulahol**	**1.10**	**79**		⇓P		**Pb**	**12 30 44.8**	**-1.8**
	comp=N,803nm,0.2s								
ULHL					⇑S		**Sb**	**12 30 59.4**	**-1.3**
	comp=N,7μm,0.4s								
USP	**Ospenovka**	**1.23**	**350**		⇓P		**Pb**	**12 30 48.6**	**-0.1**
	comp=N,2μm,0.2s								
USP					⇑S		**Sg**	**12 31 05.1**	**-0.8**
	comp=N,9μm,0.3s								
BMNS	**Besmoynak**	**1.24**	**32**		*e*P		**Pb**	**12 30 48.8**	**-0.2**
	comp=N,4μm,0.4s								
BMNS					*e*S		**Sg**	**12 31 05.6**	**-0.7**
	comp=N,7μm,0.3s								
KST	**Kastek**	**1.32**	**41**		⇓*i*P		**Pb**	**12 30 50.2**	**-0.1**
	comp=N,720nm,0.3s								
KST					⇑*i*S		**Sg**	**12 31 07.8**	**-1.0**
	comp=N,20μm,0.4s								
MRKS	**Merke**	**1.34**	**302**		⇓*i*P		**Pb**	**12 30 50.5**	**-0.1**
	comp=N,6μm,0.3s								
MRKS					⇑*i*S		**Sg**	**12 31 09.1**	**-0.4**
	comp=N,5μm,0.5s								
DGS	**Degeres**	**1.40**	**31**		*e*P		**Pb**	**12 30 52.1**	**+0.5**
	comp=N,376nm,0.8s								
DGS					*e*S		**Sg**	**12 31 10.4**	**-0.8**
	comp=N,4μm,0.9s								
TOKL	**Toktogul**	**1.43**	**266**		⇓*i*P		**Pb**	**12 30 52.2**	**+0.1**
	baz=266								
TOKL					⇓*i*S		**Sg**	**12 31 11.7**	**-0.4**
	baz=266								

MTBS	**Maitube**	**1.63**	**48**		⇑*i*P		**Pb**	**12 30 54.9**	**-0.5**		
	comp=N,2μm,0.3s										
MTBS					⇓*i*S		**Sb**	**12 31 16.5**	**+0.9**		
	comp=N,7μm,0.2s										
IZV	**Izvestkoviy**	**1.67**	**53**		*e*P		**Pb**	**12 30 56.0**	**-0.4**		
	comp=N,260nm,0.7s										
IZV					*e*S		**Sb**	**12 31 17.2**	**0.0**		
	comp=N,4μm,0.6s										
MNAS	**Manas**	**1.75**	**285**		⇓*i*P		**Pb**	**12 30 57.4**	**-0.2**		
	baz=285										
MNAS					⇓*i*S		**Sg**	**12 31 21.3**	**-0.9**		
	baz=285										
MNAS	**Manas**	**1.75**	**285**		⇓P		**Pb**	**12 30 57.3**	**-0.2**		
	comp=N,2μm,0.4s										
MNAS					⇑S		**Sg**	**12 31 20.9**	**-1.4**		
	comp=N,3μm,0.4s										
MNAS	**Manas**	**1.75**	**285**		PN		**Pb**	**12 30 57.3**	**-0.2**		
MNAS					S		**Sg**	**12 31 20.6**	**-1.6**		
MNAS					pmax	pmax					
	comp=Z,2μm,0.4s										
MNAS					smax	smax					
	comp=N,3μm,0.4s										
KDJ	**Kajisay**	**1.79**	**87**		⇓*i*P		**Pn**	**12 30 57.2**	**+1.1**		
	baz=87										
KDJ					⇓*i*S		**Sb**	**12 31 21.0**	**+0.6**		
	baz=87										
TNSS	**Tian-Shan**	**1.88**	**57**		⇑*i*P		**Pb**	**12 31 00.3**	**+0.3**		
	comp=N,3μm,0.4s										
TNSS					⇑*i*S		**Sg**	**12 31 26.5**	**-0.2**		
	comp=N,6μm,0.6s										
KNDC	**Almaty**	**1.99**	**53**		⇑Pg		**Pb**	**12 31 02.0**	**+0.4**		
	comp=N,4μm,0.5s										
KNDC					⇑Lg		Lg	12 31 28.5			
	comp=N,22μm,0.7s										
MDOK	**Medeo**	**2.01**	**56**		⇓*i*P		**Pb**	**12 31 02.1**	**+0.1**		
	comp=N,4μm,0.6s										
MDOK					⇓*i*S		**Sb**	**12 31 28.5**	**+1.8**		
	comp=N,5μm,1.3s										
AAA	**Alma-Ata**	**2.01**	**52**		⇑*i*P		**Pb**	**12 31 01.2**	**-0.8**		
	comp=N,14μm,0.2s										
AAA					⇑*i*S		**Sb**	**12 31 27.1**	**+0.4**		
	comp=N,22μm,0.3s										
KOTS	**Kotyrbulak**	**2.09**	**55**		*e*P		**Pb**	**12 31 03.2**	**-0.1**		
KOTS					*e*S		**Sb**	**12 31 29.5**	**+0.4**		
ARK	**Arkit**	**2.12**	**264**		⇑*e*P		**Pb**	**12 31 03.6**	**-0.2**		
	baz=263										
ARK					⇑*i*S		**Sb**	**12 31 30.8**	**+1.0**		
	baz=263										
KUU	**Kurty**	**2.17**	**31**		*e*P		**Pb**	**12 31 04.5**	**-0.2**		
	comp=N,5μm,0.4s										
KUU					⇓*i*S		**Sb**	**12 31 32.7**	**+1.5**		
	comp=N,13μm,0.4s										
KTBS	**Karatobe**	**2.17**	**39**		*e*P		**Pb**	**12 31 03.7**	**-1.0**		
KTBS					*e*S		**Sb**	**12 31 30.5**	**-0.8**		
SFK	**Sufi-Kurgan**	**2.25**	**206**		⇓*i*P		**Pb**	**12 31 05.7**	**-0.5**		
	baz=207										
SFK					⇓*i*S		**Sb**	**12 31 34.4**	**+0.5**		
	baz=207										
SFK	**Sufi-Kurgan**	**2.25**	**206**		⇑Pg		**Pb**	**12 31 06.1**	**-0.2**		
	comp=N,322nm,0.5s										
SFK	**Sufi-Kurgan**	**2.25**	**206**		PN		**Pb**	**12 31 05.5**	**-0.7**		
SFK					pmax	pmax					
	comp=Z,322nm,0.5s										
SFK					pmax	pmax					
	comp=N,2μm,0.8s										
ANVS	**Anan'yevo**	**2.26**	**70**		⇑*i*P		**Pb**	**12 31 05.2**	**-1.1**		
	baz=70										
ANVS					⇑*e*S		**Sb**	**12 31 32.8**	**-1.2**		
	baz=70										
CHKK	**Chushkaly**	**2.44**	**41**		*e*P		**Pb**	**12 31 08.6**	**-0.7**		
	comp=N,2μm,0.4s										
CHKK					⇑*i*S		**Sb**	**12 31 41.1**	**+2.0**		
	comp=N,8μm,0.3s										
DZA	**Taraz**	**2.69**	**289**		*e*P		**Pg**	**12 31 15.4**	**-2.0**		
	comp=N,1μm,0.4s										
DZA					*e*S		**Sg**	**12 31 51.2**	**-1.1**		
	comp=N,6μm,0.6s										
KSH	**Kashi**	**2.69**	**160**		Pn		**Pb**	**12 31 15.3**	**+1.7**		
KSH					Sn		**Sg**	**12 31 53.9**	**+1.5**		
KSH					smax	smax					
	comp=N,2μm,0.5s										
KSH					smax	smax					
	comp=N,2μm,0.6s										
PRZ	**Przheval'sk**	**2.72**	**80**		⇑*e*P		**Pn**	**12 31 10.6**	**+1.7**		
	baz=80										
PRZ					⇑*e*S		**Sn**	**12 31 44.3**	**+2.9**		
	baz=80										
SATY	**Saty**	**2.86**	**68**		*e*P		**Pb**	**12 31 16.7**	**+0.2**		
	comp=N,1μm,0.6s										
SATY					⇑*i*S		**Sb**	**12 31 52.7**	**+1.4**		
	comp=N,4μm,0.6s										
KURS	**Kuram**	**2.88**	**59**		*e*P		**Pb**	**12 31 16.6**	**-0.2**		
	comp=N,1μm,0.5s										
KURS					*e*S		**Sb**	**12 31 54.1**	**+2.4**		
	comp=N,3μm,0.9s										
ZHN	**Zhinishke**	**2.92**	**66**		*e*P		**Pb**	**12 31 17.7**	**+0.2**		
	comp=N,408nm,0.4s										
ZHN					*e*S		**Sb**	**12 31 55.2**	**+2.3**		
	comp=N,4μm,0.2s										
ARXS	**Arharly**	**3.10**	**45**		*e*P		**Pb**	**12 31 20.3**	**-0.4**		
	comp=N,276nm,0.8s										
ARXS					*e*S		**Sb**	**12 31 58.8**	**+0.6**		
	comp=N,4μm,0.6s										
KPKS	**Kokpek**	**3.20**	**62**		*e*P		**Pb**	**12 31 22.7**	**+0.3**		
	comp=N,2μm,0.5s										
KPKS					*e*S		**Sb**	**12 32 02.6**	**+1.5**		
	comp=N,7μm,0.6s										
KK31	**Karatay Array**	**3.32**	**290**		⇓Pn		**Pn**	**12 31 19.7**	**+2.7**		
	comp=N,36nm,0.8s										
KK31					⇓Pg		**Pb**	**12 31 25.1**	**+0.8**		
	comp=N,211nm,0.4s,baz=117,slow=15,SNR=849										
KK31					⇓Lg		Lg	12 32 09.3			
	comp=N,668nm,0.4s,baz=106,slow=28,SNR=48										
KK31	**Karatay Array**	**3.32**	**290**		PN		**Pn**	**12 31 19.7**	**+2.7**		
KK31					pmax	pmax					
	comp=Z,23nm,0.6s										
KKAR	**Karatay Array**	**3.32**	**290**		*e*PN		Pn	12 31 20.3	+3.3		
KKAR								12 32 07.5			
KKAR	**Karatay Array**	**3.32**	**290**		*e*Pn		Pn	12 31 20.3	+3.2		
KKAR					Sn		**Sb**	**12 32 07.5**	**+3.0**		
MNBS	**Baschi**	**3.34**	**51**		*e*P		**Pb**	**12 31 24.7**	**+0.1**		
	comp=Z,345nm,0.8s										
MNBS					*e*S		**Sb**	**12 32 06.3**	**+1.3**		
	comp=Z,310nm,0.8s										
IUG	**Iuzhnay**	**3.54**	**273**		*e*P		**Pb**	**12 31 30.6**	**+2.6**		
	comp=Z,1μm,0.4s										
IUG					*e*S		**Sg**	**12 32 17.1**	**-2.4**		
	comp=Z,4μm,0.6s										
BTK	**Batken**	**3.60**	**238**		⇑*i*P		**Pn**	**12 31 23.4**	**+2.5**		
	baz=238										
BTK					⇑*i*S		**Sn**	**12 32 06.3**	**+3.4**		
	baz=238										
PDGK	**Podgornoye**	**3.69**	**68**		⇑*e*P		**Pn**	**12 31 24.2**	**+2.1**		
	baz=68										
PDGK					⇑*e*S		**Sn**	**12 32 07.6**	**+2.5**		
	baz=68										
PDGK	**Podgornoye**	**3.69**	**68**		⇓Pn		**Pn**	**12 31 24.6**	**+2.4**		
	comp=Z,84nm,0.4s										
PDGK					⇓Lg		Lg	12 32 18.6			
	comp=Z,818nm,0.4s										
PDGK	**Podgornoye**	**3.69**	**68**		PN		**Pn**	**12 31 24.5**	**+2.4**		
PDGK								12 32 18.3			
PDGK					pmax	pmax					
	comp=Z,187nm,0.5s										
PDGK					pmax	pmax					
	comp=N,1μm,0.6s										
BRLS	**Borolday**	**3.84**	**283**		*e*P		**Pb**	**12 31 34.9**	**+1.6**		
	comp=N,87nm,0.7s										
BRLS					*e*S		**Sg**	**12 32 25.9**	**-3.4**		
	comp=N,381nm,0.5s										
CHM	**Chimkent**	**3.86**	**276**		⇓*i*P		**Pg**	**12 31 37.3**	**-2.5**		
	comp=N,709nm,0.5s										
CHM					⇑*i*S		**Sg**	**12 32 27.7**	**-2.0**		
	comp=N,4μm,0.4s										
SHLS	**Shalkode**	**3.92**	**72**		*e*P		**Pb**	**12 31 37.2**	**+2.5**		
	comp=N,446nm,0.7s										
SHLS					*e*S		**Sg**	**12 32 28.2**	**-3.8**		
	comp=N,2μm,0.8s										
TDK	**Taldyqorghan**	**3.96**	**41**		*e*P		**Pb**	**12 31 36.8**	**+1.7**		
	comp=N,743nm,0.5s										
TDK					*e*S		**Sb**	**12 32 27.0**	**+4.2**		
	comp=N,3μm,0.8s										
KTMS	**Ketmen**	**4.33**	**69**		*e*P		**Pb**	**12 31 43.3**	**+1.7**		
	comp=N,150nm,0.8s										
KTMS					*e*S		**Sb**	**12 32 38.2**	**+4.6**		
	comp=N,3μm,0.8s										
KAPS	**Kapalarasan**	**4.63**	**44**		*e*P		**Pb**	**12 31 47.9**	**+1.2**		
	comp=N,243nm,0.4s										

KAPS					*e*S		**Sb**	**12 32 46.0**	**+3.8**		
	comp=N,716nm,0.6s										
OTUK	**Ortayu**	**6.43**	**345**		⇑Pn		**Pn**	**12 32 01.1**	**+1.4**		
	comp=N,25nm,0.6s										
OTUK					⇓Lg		Lg	12 33 45.3			
	comp=N,499nm,0.7s										
OTUK	**Ortayu**	**6.43**	**345**		PN		**Pn**	**12 32 00.7**	**+1.0**		
OTUK					pmax	pmax					
	comp=Z,41nm,1.0s										
OTUK					pmax	pmax					
	comp=N,499nm,0.7s										
MK31	**Makanchi Array**	**7.17**	**46**		⇑Pn		**Pn**	**12 32 12.0**	**+2.2**		
	comp=N,26nm,0.3s										
MK31					⇑Lg		Lg	12 34 10.5			
	comp=N,148nm,0.7s,baz=225,slow=26,SNR=6.6										
MK31	**Makanchi Array**	**7.17**	**46**		PN		**Pn**	**12 32 11.7**	**+1.9**		
MK31					pmax	pmax					
	comp=Z,16nm,0.4s										
MK31					pmax	pmax					
	comp=N,118nm,0.6s										
MKAR	**Makanchi Array**	**7.17**	**46**		Pn		**Pn**	**12 32 11.9**	**+2.1**		
	comp=N,21nm,0.3s,baz=224,slow=15,SNR=375										
MKAR					Lg		Lg	12 34 09.6			
	comp=N,40nm,0.3s,baz=224,slow=29,SNR=9.5										
MKAR	**Makanchi Array**	**7.17**	**46**		*i* PN		**Pn**	**12 32 11.8**	**+2.0**		
MKAR					pmax	pmax					
	comp=Z,42nm,0.4s										
KURBB	**Kurchatov Arra**	**8.96**	**16**		Pn		**Pn**	**12 32 33.8**	**-0.5**		
	comp=Z,1.1nm,0.3s,baz=202,slow=13,SNR=23										
KURBB					Lg		Lg	12 35 03.0			
	comp=Z,7.1nm,0.3s,baz=203,slow=29,SNR=19										
KURK	**Kurchatov**	**9.06**	**16**		⇑Lg		Lg	12 35 08.0			
	comp=Z,952nm,0.7s										
KURK	**Kurchatov**	**9.06**	**16**		*e*P		**Pn**	**12 32 35.4**	**-0.4**		
KURK					*e*			12 34 19.7			
KURK	**Kurchatov**	**9.06**	**16**		*e*Pn		**Pn**	**12 32 35.4**	**-0.4**		
KURK					*e*Sn		**Sn**	**12 34 19.7**	**+2.5**		
KURK					Lg		Lg	12 35 03.0			
THN	**Thein Dam**	**9.63**	**175**		*e*P		**Pn**	**12 32 43.0**	**-0.6**		
THN					*e*S		**Sn**	**12 34 27.0**	**-4.2**		
SDNR	**Sundarnagar**	**10.68**	**170**		*e*P		**Pn**	**12 32 57.0**	**-1.0**		
VOSK	**Vostochnaya**	**10.98**	**348**		⇓Lg		Lg	12 36 13.7			
	comp=Z,262nm,0.8s										
BVA0	**Borovoye Array**	**11.37**	**346**		⇓Pn		**Pn**	**12 33 06.8**	**-0.5**		
	comp=Z,32nm,0.7s,baz=158,slow=14,SNR=236										
BVA0					⇑Sn		**Sn**	**12 35 13.4**	**-0.5**		
	comp=Z,77nm,1.0s,baz=158,slow=25,SNR=4.5										
BVA0					⇓Lg		Lg	12 36 21.1			
	comp=Z,310nm,0.9s,baz=163,slow=29,SNR=4.0										
BVA0	**Borovoye Array**	**11.37**	**346**		*i* P		**Pn**	**12 33 06.4**	**-1.0**		
BVA0					pmax	pmax					
	comp=Z,32nm,0.7s										
BVAR	**Borovoye Array**	**11.37**	**346**		Pn		**Pn**	**12 33 06.5**	**-0.9**		
	comp=Z,7.0nm,0.3s,baz=156,slow=13,SNR=177										
BVAR					Sn		**Sn**	**12 35 12.2**	**-1.7**		
	comp=Z,3.9nm,0.3s,baz=153,slow=19,SNR=4.0										
BVAR					Lg		Lg	12 36 15.9			
	comp=Z,7.2nm,0.3s,baz=160,slow=27,SNR=6.6										
BVAR					LR		LR	12 37 34.5			
	comp=Z,686nm,18.6s,baz=221,slow=38										
BRVK	**Borovoye**	**11.42**	**346**		*ce*P		**Pn**	**12 33 06.7**	**-1.3**		
BRVK					pmax	pmax					
	comp=Z,60nm,1.2s										
BRVK	**Borovoye**	**11.42**	**346**		*e*Pn		**Pn**	**12 33 06.2**	**-1.8**		
	comp=Z,32nm,0.7s										
BRVK					*e*Sn		**Sn**	**12 35 11.5**	**-3.6**		
ZRNK	**Zerenda**	**11.58**	**342**		⇓Pn		**Pn**	**12 33 09.9**	**-0.3**		
	comp=Z,8.9nm,0.6s										
ZRNK					⇑Lg		Lg	12 36 33.0			
	comp=Z,202nm,0.8s										
ZRNK	**Zerenda**	**11.58**	**342**		P		**Pn**	**12 33 09.1**	**-1.1**		
ZRNK					pmax	pmax					
	comp=Z,13nm,0.5s										
CHKZ	**Chkalovo**	**11.96**	**348**		⇓Pn		**Pn**	**12 33 14.0**	**-1.3**		
	comp=Z,6.9nm,0.5s										
CHKZ					⇓Sn		**Sn**	**12 35 25.6**	**-2.6**		
	comp=Z,50nm,0.7s										
CHKZ				

SOKR	**Solikamsk**	**20.80**	**334**	*c*	*i*P		**P**	**12 35 06.1**	**+0.2**
SOKR					pmax	pmax			
	comp=Z,52nm,1.0s								
SOKR					MLR	MLR			
	comp=Z,425nm,20.0s								
ZAK	**Zakamensk**	**21.30**	**57**		*e*P		**P**	**12 35 13.2**	**+1.6**
ZAK					pmax	pmax			
	comp=Z,27nm,0.9s								
TLY	**Talaya**	**21.83**	**54**		P		**P**	**12 35 16.9**	**-0.2**
	comp=Z,2.2nm,0.4s,baz=246,slow=12,SNR=3.5								
TLY					LR	LR		12 44 32.2	
	comp=Z,86nm,21.0s,baz=242,slow=39								
TLY	**Talaya**	**21.83**	**54**		*e*P		**P**	**12 35 19.9**	**+2.8**
TLY					pmax	pmax			
	comp=Z,11nm,1.0s								
TLY					MLR	MLR			
	comp=Z,141nm,13.0s								
DGRG	**David-gareji**	**21.91**	**278**		P		P	12 35 23.4	+5.3
DGRG	**David-gareji**	**21.91**	**278**		P		P	12 35 23.3	+5.2
GNI	**Garni**	**22.66**	**275**		P		**P**	**12 35 29.8**	**+3.4**
	comp=Z,4.3nm,0.4s,baz=144,slow=7.7,SNR=3.9								
GNI	**Garni**	**22.66**	**275**	⇑	*i*P		P	12 35 31.2	+4.9
GNI					pmax	pmax			
	comp=Z,43nm,1.0s								
SONM	**Songino Array**	**23.01**	**65**		P		**P**	**12 35 30.4**	**+0.5**
	comp=Z,3.9nm,0.6s,baz=266,slow=10,SNR=29								
SONM					LR	LR		12 44 47.7	
	comp=Z,144nm,18.8s,baz=253,slow=38								
WSAR	**Wadi Sarin**	**23.10**	**221**		P		**P**	**12 35 32.3**	**+1.5**
	comp=Z,3.5nm,0.7s,baz=70,slow=9.9,SNR=2.4								
KBZ	**Khabaz**	**23.35**	**285**		P		P	12 35 40.4	+7.3
	comp=Z,2.4nm,0.6s,baz=113,slow=9.7,SNR=5.4								
KBZ					LR	LR		12 46 25.8	
	comp=Z,139nm,19.0s,baz=72,slow=41								
ULN	**Ulaanbaatar**	**23.45**	**65**	*c*	*e*P		**P**	**12 35 35.0**	**+0.7**
ULN					pmax	pmax			
	comp=Z,31nm,1.7s								
ULN	**Ulaanbaatar**	**23.45**	**65**		*e*P		**P**	**12 35 35.2**	**+0.9**
	comp=Z,11nm,0.9s								
KVAR	**Kislovodsk Arr**	**23.47**	**286**		P		P	12 35 39.9	+5.5
	comp=Z,5.1nm,0.5s,baz=114,slow=10,SNR=2.7								
KIV	**Kislovodsk**	**23.47**	**286**	⇓	*e*P		**P**	**12 35 37.5**	**+3.0**
KIV					*i*			12 35 48.4	
KIV					*i*			12 36 07.1	
KIV					pmax	pmax			
	comp=Z,19nm,1.7s								
KIV					MLR	MLR			
	comp=Z,224nm,15.0s								
VRH	**Novokhopyorsk**	**24.30**	**303**		*e*P		**P**	**12 35 41.6**	**-0.5**
VRH					pmax	pmax			
	comp=Z,10.0nm,0.7s								
VSR	**Storozhevoye**	**25.89**	**303**		*e*P		**P**	**12 35 56.5**	**-0.1**
VSR					pmax	pmax			
	comp=Z,5.0nm,0.5s								
LPSR	**Galich'ya Gora**	**26.23**	**306**		*e*P		**P**	**12 36 00.1**	**+0.5**
LPSR					pmax	pmax			
	comp=Z,6.0nm,0.6s								
OBN	**Obninsk**	**28.07**	**311**		*e*P		**P**	**12 36 16.7**	**+0.7**
OBN					pmax	pmax			
	comp=Z,6.0nm,0.8s								
NRIK	**Noril'sk**	**28.16**	**10**		P		**P**	**12 36 16.8**	**0.0**
	comp=Z,1.8nm,0.5s,baz=184,slow=5.9,SNR=4.4								
NRIK					LR	LR		12 49 07.1	
	comp=Z,298nm,18.8s,baz=263,slow=40								
KLMR	**Klimovskoe**	**28.41**	**324**		*e*P		**P**	**12 36 18.1**	**-0.9**
KLMR					pmax	pmax			
	comp=Z,25nm,1.7s								
BOD	**Bodaibo**	**29.25**	**44**		*e*P		**P**	**12 36 26.5**	**-0.1**
BOD					pmax	pmax			
	comp=Z,4.0nm,1.0s								
RAYN	**Ar Rayn**	**30.56**	**242**		*e*P		**P**	**12 36 39.3**	**+0.8**
	comp=Z,13nm,1.0s								
BRTR	**Keskin Array B**	**30.98**	**280**		P		**P**	**12 36 43.5**	**+1.3**
	comp=Z,3.3nm,0.6s,baz=93,slow=8.1,SNR=15								
CMAR	**Chiang Mai Arr**	**31.24**	**131**		P		**P**	**12 36 44.4**	**-0.2**
	comp=Z,0.6nm,0.6s,baz=320,slow=8.3,SNR=3.7								
CMAR					PcP		**PcP**	**12 39 38.8**	**-0.1**
	comp=Z,1.9nm,1.0s,baz=308,slow=3.7,SNR=7.1								
AKASG	**Malin Array Be**	**32.15**	**301**		LR		LR	12 51 16.4	
	comp=Z,282nm,18.1s,baz=75,slow=39								
MMAI	**Mount Meron Ar**	**32.27**	**267**		LR		LR	12 52 49.4	
	comp=Z,62nm,19.1s,baz=35,slow=42								
LVZ	**Lovozero**	**33.57**	**334**	*c*	*e*P		**P**	**12 37 04.9**	**+0.4**
LVZ					pmax	pmax			
	comp=Z,21nm,1.0s								
FINES	**FINESS Array B**	**34.77**	**321**		P		**P**	**12 37 15.7**	**+0.8**
	comp=Z,3.8nm,0.7s,baz=107,slow=8.2,SNR=18								
FINES					LR	LR		12 52 28.8	
	comp=Z,236nm,19.8s,baz=34,slow=38								
FINES	**FINESS Array B**	**34.77**	**321**		*i* P		**P**	**12 37 16.3**	**+1.4**
FINES					pmax	pmax			
	comp=Z,4.0nm,0.7s								
MLR	**Muntele Rosu**	**35.00**	**293**		P		**P**	**12 37 19.8**	**+2.5**
	comp=Z,0.8nm,0.4s,baz=8.0,slow=19,SNR=3.1								
ARCES	**ARCESS Array B**	**37.29**	**334**		P		**P**	**12 37 37.1**	**+0.7**
	comp=Z,13nm,0.7s,baz=102,slow=9.5,SNR=57								
ARCES					LR	LR		12 53 31.0	
	comp=Z,248nm,19.0s,baz=101,slow=37								
CRVS	**Cervenica-Dubn**	**37.35**	**299**		*e*P		**P**	**12 37 36.6**	**-0.6**
CRVS	**Cervenica-Dubn**	**37.35**	**299**		*e*P		**P**	**12 37 36.6**	**-0.6**
IDI	**Anoyia**	**39.08**	**277**		LR		LR	12 56 43.4	
	comp=Z,51nm,20.6s,baz=91,slow=40								
TIXI	**Tiksi**	**39.53**	**24**		P		**P**	**12 37 55.0**	**-0.2**
	comp=Z,6.6nm,0.5s,baz=272,slow=5.7,SNR=28								
TIXI	**Tiksi**	**39.53**	**24**	⇓	*i*P		**P**	**12 37 54.6**	**-0.5**
TIXI					pmax	pmax			
	comp=Z,12nm,1.0s								
TIXI	**Tiksi**	**39.53**	**24**		*e*P		**P**	**12 37 55.0**	**-0.2**
TIXI					*e*PP		**PP**	**12 39 25.1**	**-0.6**
KLR	**Kul'dur**	**39.64**	**59**		P		**P**	**12 37 56.8**	**+0.4**
	comp=Z,1.2nm,0.4s,baz=280,slow=7.7,SNR=5.2								
KSAR	**Wonju Array Be**	**40.55**	**78**		P		**P**	**12 38 03.9**	**-0.2**
KSAR	**Wonju Array Be**	**40.55**	**78**		P		**P**	**12 38 03.9**	**-0.2**
KSRS	**Korea Array**	**40.57**	**78**		P		**P**	**12 38 03.9**	**-0.4**
	comp=Z,1.0nm,0.7s,baz=286,slow=7.4,SNR=4.7								
HFS	**Hagfors**	**40.72**	**318**		P		**P**	**12 38 06.2**	**+1.0**
	comp=Z,6.0nm,0.6s,baz=113,slow=9.8,SNR=17								
USRK	**Ussuriysk Ar.**	**41.09**	**67**		P		**P**	**12 38 08.3**	**-0.1**
	comp=Z,1.7nm,0.5s,baz=294,slow=9.2,SNR=6.7								
BRG	**Berggiesshubel**	**41.74**	**304**		*e*P		**P**	**12 38 14.6**	**+0.9**
	comp=Z,2.5nm,0.6s								
BRG	**Berggiesshubel**	**41.74**	**304**		*e*P		**P**	**12 38 14.6**	**+0.9**
BRG					pmax	pmax			
	comp=Z,3.0nm,0.6s								
NB2	**NORSAR Subarra**	**41.90**	**319**		P		**P**	**12 38 15.4**	**+0.4**
	comp=Z,2.3nm,0.6s,baz=88,slow=8.6								
NOA	**NORSAR Array B**	**41.90**	**319**		P		**P**	**12 38 15.3**	**+0.4**
	comp=Z,6.6nm,0.9s,baz=89,slow=8.2,SNR=10								
CLL	**Collm**	**42.22**	**305**	⇓	*i*P		**P**	**12 38 18.4**	**+0.8**
CLL					*e*			12 38 24.0	
CLL	**Collm**	**42.22**	**305**	⇓	*i*P		**P**	**12 38 18.4**	**+0.8**
CLL					*e*			12 38 24.0	
GERES	**GERESS Array B**	**42.36**	**301**		P		**P**	**12 38 20.0**	**+1.1**
	comp=Z,0.9nm,0.4s,baz=79,slow=14,SNR=6.3								
SPITS	**Spitsbergen Ar**	**42.83**	**345**		P		**P**	**12 38 23.6**	**+1.4**
	comp=Z,7.1nm,0.9s,baz=126,slow=15,SNR=5.1								
SPITS					PcP		**PcP**	**12 40 13.2**	**+0.2**
	comp=Z,1.4nm,0.5s,baz=146,slow=3.7,SNR=5.9								
SPITS					LR	LR		12 58 52.5	
	comp=Z,235nm,19.3s,baz=110,slow=40								
SPITS	**Spitsbergen Ar**	**42.83**	**345**		P		**P**	**12 38 23.6**	**+1.4**
SPITS								12 40 13.2	
SPITS					pmax	pmax			
	comp=Z,4.0nm,0.8s								
SPITS					pmax	pmax			
	comp=Z,1.0nm,0.5s								
SPITS					MLR	MLR			
	comp=Z,235nm,19.3s								
TRI	**Trieste**	**43.20**	**296**		*e*P		**P**	**12 38 25.9**	**+0.3**
TRI					pmax	pmax			
	comp=Z,9.0nm,0.8s								
TRI	**Trieste**	**43.20**	**296**		*e*P		**P**	**12 38 25.9**	**+0.3**
	comp=Z,9.1nm,0.8s								
DAVOX	**Davos/Dischmat**	**45.42**	**299**		P		**P**	**12 38 43.8**	**+0.2**
	comp=Z,2.9nm,0.5s,baz=135,slow=5.7,SNR=6.2								
JOW	**Kunigami**	**45.93**	**92**		P		**P**	**12 38 47.0**	**-0.7**
	comp=Z,8.4nm,0.9s,baz=299,slow=10,SNR=3.0								
SEY	**Seymchan**	**48.20**	**37**		P		**P**	**12 39 06.0**	**+1.1**
	comp=Z,0.4nm,0.4s,baz=287,slow=19,SNR=2.4								
SEY					PcP		**PcP**	**12 40 32.1**	**+0.3**
	comp=Z,2.8nm,0.6s,baz=258,slow=3.7,SNR=9.3								
SEY					LR	LR		13 01 46.8	
	comp=Z,4μm,20.4s,baz=150,slow=39								
MA2	**Magadan**	**48.23**	**41**		PcP		**PcP**	**12 40 31.8**	**-0.2**
	comp=Z,4.5nm,0.5s,baz=9.4,slow=3.7,SNR=7.9								
EKA	**Eskdalemuir Ar**	**50.46**	**314**		P		**P**	**12 39 22.6**	**+0.3**
	comp=Z,4.0nm,0.6s,baz=79,slow=8.2,SNR=30								
EKA					PcP		**PcP**	**12 40 41.2**	**+0.9**
	comp=Z,0.9nm,0.4s,baz=118,slow=4.6,SNR=5.4								
BILL	**Bilibino**	**52.34**	**28**	*c*	*e*P		**P**	**12 39 35.5**	**-0.7**
BILL					*e*			12 39 41.4	
BILL					*e*			12 39 52.3	
BILL					*e*			12 40 47.6	
BILL					*e*S		**S**	**12 46 59.0**	**-1.4**
BILL					pmax	pmax			
	comp=Z,4.0nm,1.7s								
BILL					MLR	MLR			
	comp=Z,189nm,16.0s								
KMBO	**Kilima Mbogo**	**54.72**	**228**	*c*	*e*P		P	12 40 02.5	+7.9
KMBO					pmax	pmax			
	comp=Z,1.0nm,0.2s								
SUMG	**Summit**	**56.78**	**341**		*i* P		**P**	**12 40 09.3**	**+0.4**
	comp=Z,3.9nm,0.7s								
SUMG	**Summit**	**56.78**	**341**		*i* P		**P**	**12 40 09.3**	**+0.4**
SUMG					pmax	pmax			
	comp=Z,4.0nm,0.7s								
ESDC	**Sonseca Array**	**57.55**	**296**		P		**P**	**12 40 14.4**	**0.0**
	comp=Z,1.4nm,0.6s,baz=56,slow=7.1,SNR=16								
RES	**Resolute Bay**	**63.35**	**357**		P		**P**	**12 40 53.2**	**-0.1**
	comp=Z,1.1nm,0.9s,baz=26,slow=8.8,SNR=5.2								
COLD	**Coldfoot**	**65.82**	**18**		*e*P		**P**	**12 41 09.9**	**+0.3**
	comp=Z,8.8nm,1.0s								
INK	**Inuvik**	**67.93**	**11**		P		**P**	**12 41 23.1**	**+0.1**
	comp=Z,6.3nm,0.8s,baz=3.3,slow=8.6								
INK	**Inuvik**	**67.93**	**11**		*e*P		**P**	**12 41 23.1**	**+0.1**
	comp=Z,6.5nm,0.9s								
COLA	**College**	**68.32**	**18**		*e*P		**P**	**12 41 25.6**	**+0.2**
COLA					pmax	pmax			
	comp=Z,8.0nm,0.8s								
COLA	**College**	**68.32**	**18**		*e*P		**P**	**12 41 25.6**	**+0.2**
	comp=Z,8.0nm,0.8s								
ILAR	**Eielson Array**	**68.62**	**18**		P		**P**	**12 41 26.9**	**-0.5**
	comp=Z,3.7nm,0.7s,baz=324,slow=5.2,SNR=54								
TORD	**Torodi Ar. Bea**	**68.78**	**269**		P		**P**	**12 41 28.2**	**-0.9**
	comp=Z,2.9nm,0.6s,baz=48,slow=5.3,SNR=28								
KDAK	**Kodiak Island**	**72.95**	**24**	*i*	P		**P**	**12 41 53.9**	**+0.1**
YKA	**Yellowknife Ar**	**75.53**	**4**		P		**P**	**12 42 08.6**	**-0.1**
	comp=Z,7.1nm,0.6s,baz=349,slow=5.8,SNR=112								
DBIC	**Dimbokro**	**77.87**	**268**		P		**P**	**12 42 22.3**	**-0.5**
	comp=Z,1.7nm,0.5s,baz=22,slow=6.4,SNR=7.0								
WRA	**Warramunga Arr**	**82.60**	**125**		P		**P**	**12 42 46.8**	**-1.2**
	comp=Z,1.7nm,0.8s,baz=329,slow=4.8,SNR=17								
FFC	**Flin Flon**	**83.56**	**358**		*e*P		**P**	**12 42 52.8**	**+0.2**
FFC					pmax	pmax			
	comp=Z,10.0nm,1.1s								
FFC	**Flin Flon**	**83.56**	**358**		*e*P		**P**	**12 42 52.8**	**+0.2**
	comp=Z,10nm,1.1s								
BOSA	**Boshof**	**83.85**	**222**		P		**P**	**12 42 54.0**	**-0.4**
	comp=Z,1.5nm,0.6s,baz=54,slow=5.8,SNR=3.4								
ASAR	**Alice Springs**	**85.18**	**128**		P		**P**	**12 42 59.6**	**-1.5**
	comp=Z,1.1nm,0.8s,baz=323,slow=4.8,SNR=9.6								
ULM	**Lac du Bonnet**	**87.72**	**354**		P		**P**	**12 43 12.9**	**-0.4**
	comp=Z,4.0nm,0.8s,baz=325,slow=2.2,SNR=5.8								
B05A	**Bryant**	**88.84**	**11**		P		**P**	**12 43 18.5**	**-0.1**
	baz=348								
WALA	**Waterton Lakes**	**88.95**	**6**		*e*P		**P**	**12 43 19.3**	**-0.1**
	comp=Z,8.9nm,1.0s								
NEW	**Newport**	**89.45**	**8**		P		**P**	**12 43 21.8**	**+0.2**
	baz=351								
EYMN	**Ely**	**89.57**	**351**		P		**P**	**12 43 22.7**	**+0.6**
	baz=10								
AGMN	**Agassiz Nation**	**89.66**	**354**		P		**P**	**12 43 22.1**	**-0.4**
	baz=6.9								
B31A	**Greenbush Farm**	**89.66**	**355**		P		**P**	**12 43 22.6**	**+0.1**
	baz=5.6								
B30A	**Myrvik Farm, E**	**89.68**	**355**		P		**P**	**12 43 23.2**	**+0.6**
	baz=5.1								
C38A	**Sawbill Land.**	**89.77**	**351**		P		**P**	**12 43 22.6**	**-0.4**
	baz=10								
EGMT	**Eagleton**	**90.22**	**3**		P		**P**	**12 43 25.2**	**-0.1**
	baz=357								
LAO	**LASA Array**	**91.64**	**1**		P		**P**	**12 43 32.2**	**+0.3**
	baz=359								
BOZ	**Bozeman (W)**	**92.50**	**4**		P		**P**	**12 43 36.7**	**+0.8**
	baz=355								
BOZ	**Bozeman (W)**	**92.50**	**4**		*e*P		**P**	**12 43 36.1**	**+0.1**
BOZ					pmax	pmax			
	comp=Z,1.0nm,0.5s								
BOZ	**Bozeman (W)**	**92.50**	**4**		*e*P		**P**	**12 43 36.1**	**+0.1**
	comp=Z,1.5nm,0.5s								
RLMT	**Red Lodge**	**93.14**	**3**		P		**P**	**12 43 37.4**	**-1.6**
	baz=357								
LKWY	**Lake**	**93.64**	**4**		*e*P		**P**	**12 43 43.7**	**+2.3**
LKWY					pmax	pmax			
	comp=Z,6.0nm,0.6s								
LKWY	**Lake**	**93.64**	**4**		*e*P		**P**	**12 43 43.7**	**+2.3**
	comp=Z,6.3nm,0.6s								
J05D	**Fort Rock, OR**	**93.83**	**12**		P		**P**	**12 43 42.5**	**+0.3**
	baz=348								
HLID	**Hailey**	**94.37**	**7**		P		**P**	**12 43 43.2**	**-1.4**
	baz=353								
PDAR	**Pinedale Array**	**95.47**	**3**		P		**P**	**12 43 50.1**	**+0.3**
	comp=Z,2.3nm,0.7s,baz=36,slow=2.9,SNR=28								
HWUT	**Hanaw Ranch**	**96.53**	**5**		*e*P		**P**	**12 43 55.6**	**+1.0**
	comp=Z,11nm,0.8s								
NVAR	**Mina Array Bea**	**99.02**	**10**		P		**Pdif**	**12 44 06.6**	**+0.7**
	comp=Z,1.1nm,0.8s,baz=72,slow=5.3,SNR=7.6								
SIV	**San Ignacio**	**134.16**	**291**		PKP		**PKPdf**	**12 49 42.8**	**0.0**
	comp=Z,1.2nm,0.5s,baz=101,slow=2.5,SNR=4.5								
CPUP	**Villa Florida**	**137.95**	**276**		PKP		**PKPdf**	**12 49 48.5**	**-0.9**
	comp=Z,5.1nm,1.0s,baz=37,slow=5.1,SNR=4.0								
PMSA	**Palmer Station**	**147.48**	**212**		PKPbc		**PKPbc**	**12 50 06.6**	**-1.0**
	comp=Z,30nm,1.0s,baz=137,slow=19,SNR=8.9								
LCO	**Las Campanas**	**149.26**	**284**	*e*	PKPbc		**PKPbc**	**12 50 14.2**	**+0.4**
PLCA	**Paso Flores**	**154.06**	**261**		PKPbc		**PKPbc**	**12 50 23.8**	**-0.4**
	comp=Z,2.1nm,0.8s,baz=32,slow=2.0,SNR=5.7								

*ECX **09** 12:33:16.2±0.6,31°.22N×115°.67W,h5km,MD2.6,ML2.8*
*MEX **09** 12:33:16.1±0.6,31°.04N×115°.76W,h6km±27km,MD3.6*
ISC 09 12:33:14.4±1.2,31°.19N±0°.04×115°.68W±0°.03,
h14km±10km,n21,σ0s54/36,4C-1D,Baja California

Code	Station Name	Δ°	AZ°	Phase ID			Time		Res
						Op	ISC	h m s	ISC
SPIG	**San Pedro Mart**	**0.23**	**127**		*e*P		**Pb**	**12 33 20.6**	**0.0**
SPIG					*e*S		**Sb**	**12 33 24.6**	**-0.1**
SPIG	**San Pedro Mart**	**0.23**	**127**		*i* P		**Pb**	**12 33 20.9**	**+0.3**
SPIG					*i* S		**Sb**	**12 33 24.6**	**-0.1**
SPX	**San Pedro Mart**	**0.23**	**127**	⇓	*e*P		**Pb**	**12 33 20.9**	**+0.3**
SPX					*e*S		**Sb**	**12 33 24.7**	**-0.1**
SPX					AML		AML	12 33 25.5	
	comp=E,2μm,0.3s								
SPX					*e*			12 33 25.5	
ZAX	**El Zacaton**	**0.60**	**303**		*e*P		**Pg**	**12 33 26.4**	**+0.1**
ZAX					*e*S		**Sb**	**12 33 35.0**	**-0.2**
ZAX				⇑	*e*			12 33 38.6	
ZAX					AML		AML	12 33 38.6	
	comp=E,550nm,0.5s								
ECBX	**El Chinero**	**0.61**	**62**	⇑	*e*P		**Pg**	**12 33 25.9**	**-0.5**
ECBX					*e*S		**Sg**	**12 33 33.3**	**-1.2**
ECBX					AML		AML	12 33 34.1	
	comp=E,462nm,0.3s								
ECBX				⇑	*e*			12 33 34.1	
ECNX	**Esteban Cantu**	**0.92**	**301**		*e*P		**Pg**	**12 33 32.2**	**0.0**
ECNX					*e*S		**Sg**	**12 33 44.5**	**+0.3**
PBX	**Punta Banda**	**1.05**	**302**		*e*P		**Pb**	**12 33 34.4**	**0.0**
PBX					*e*S		**Sg**	**12 33 48.6**	**0.0**
CPBX	**Cerro Prieto**	**1.27**	**15**		*e*P		**Pn**	**12 33 37.6**	**-0.1**
CPBX					*e*S		**Sn**	**12 33 54.4**	**-0.2**
MBIG	**Mexicali**	**1.28**	**18**		*e*P		**Pg**	**12 33 39.2**	**0.0**
MBIG					*i* S		**Sg**	**12 33 57.6**	**+1.6**
CBX	**Cerro Bola**	**1.40**	**324**		*e*P		**Pb**	**12 33 40.2**	**-0.3**
CBX					AML		AML	12 34 03.1	
	comp=E,186nm,0.3s								
CBX				⇑	*e*			12 34 03.1	
CBX	**Cerro Bola**	**1.40**	**324**		*e*P		**Pb**	**12 33 40.1**	**-0.4**
CBX					*e*S		**Sn**	**12 33 57.7**	**-0.3**
RMX	**La Rumorosa**	**1.45**	**347**		*e*P		**Pb**	**12 33 41.0**	**-0.3**
RMX					*e*S		**Sb**	**12 33 59.7**	**0.0**
TJIG	**Tijuana**	**1.50**	**326**		*e*P		**Pn**	**12 33 40.6**	**-0.3**
TJIG					*e*S		**Sb**	**12 34 00.7**	**-0.5**
IBP	**Imperial Bould**	**1.51**	**347**		*e*P		**Pb**	**12 33 42.1**	**-0.2**
IBP	**Imperial Bould**	**1.51**	**347**		P		**Pb**	**12 33 42.2**	**-0.2**
	baz=168								
IBP					S		**Sb**	**12 34 01.3**	**-0.1**
	baz=168								
BAR	**Barrett**	**1.71**	**331**		*e*P		**Pb**	**12 33 45.4**	**-0.3**
SWSC	**Sam W. Stewart**	**1.75**	**357**		P		**Pb**	**12 33 46.7**	**+0.3**
	baz=179								
MONP2	**Monument Peak**	**1.81**	**340**		P		**Pb**	**12 33 47.0**	**-0.5**
	baz=160								
MONP2					S		**Sb**	**12 34 09.9**	**-0.2**
	baz=160								
109C	**Camp Elliot, M**	**2.08**	**325**		S		**Sb**	**12 34 17.3**	**-0.5**
	baz=143								
PFO	**Pinyon Flats O**	**2.50**	**345**		P		**Pn**	**12 33 55.8**	**+0.9**
	baz=165								
PFO					Sb		**Sb**	**12 34 31.5**	**+1.5**
	baz=165								
MURC	**Murrieta**	**2.73**	**332**		Sb		**Sb**	**12 34 36.4**	**+0.1**
	baz=151								

*NIED **09** 12:37:00.37°.50N×142°.40E,h5km,Mw3.7 Best double couple: M0 4.37000×10^14 NP1:φs17.00000°,δ43.00000°, λ-133.00000°. NP2:φs249.00000°,δ60.00000°, λ-57.00000°.*
*IDC **09** 12:37:42.9±0.8,37°.38N×142°.53E,h0km,mb3.7/9, mb1 3.9/12,mb1mx3.7/61,mbtmp3.8/12,ML3.8/3,MS2.7/1, Ms1 2.7/1,ms1mx2.2/59,Error ellipse: s-maj=23.6km s-min=16.5km az=90.0*
*ISCJB **09** 12:37:43.8±0.6,37°.38N±0°.05×142°.61E±0°.06,h21km, mb3.8/10, Error ellipse: s-maj=6.9km s-min=6.3km az=31.7*
*JMA **09** 12:37:43.7±0.4,37°.50N×142°.37E,h0km,M4.1*
*NEIC **09** 12:37:49.2±1.3,37°.31N×142°.49E,h47km±12km,mb4.4/1, Error ellipse: s-maj=13.9km s-min=8.9km az=55.0*
ISC 09 12:37:45.9±0.8,37°.39N±0°.05×142°.56E±0°.08,h21km,n37,
σ1s93/36,mb3.8/10,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID			Time		Res
						Op	ISC	h m s	ISC
JFK	**Kawauchi**	**1.34**	**270**		P		**Pn**	**12 38 06.4**	**-3.1**
JIO	**Ouri**	**1.43**	**318**		P		**Pn**	**12 38 07.8**	**-2.9**
JIO					S		**Sn**	**12 38 24.6**	**-4.2**
ONAJ	**Iwakimizuishiy**	**1.43**	**259**		P		**Pn**	**12 38 08.9**	**-1.8**
ONAJ					*e*S		**Sn**	**12 38 27.5**	**-1.4**
JMM	**Marumori**	**1.48**	**289**		P		**Pn**	**12 38 08.4**	**-2.9**
JFT	**Otama**	**1.77**	**275**		P		**Pn**	**12 38 13.7**	**-1.7**
JOU	**Okura**	**1.79**	**304**		P		**Pn**	**12 38 13.7**	**-1.9**
JMK	**Ichinoseki**	**1.89**	**326**		P		**Pn**	**12 38 15.2**	**-1.7**
JYS	**Shirataka**	**2.14**	**294**		P		**Pn**	**12 38 20.6**	**+0.1**
JYS					*e*S		**Sn**	**12 38 45.4**	**-1.0**
JFY	**Yanaizu**	**2.27**	**271**		P		**Pn**	**12 38 22.1**	**-0.1**
JFY					*e*S		**Sn**	**12 38 49.9**	**+0.3**
JOM	**Ohasama**	**2.31**	**335**		P		**Pn**	**12 38 22.5**	**-0.2**
JYK	**Kaneyama**	**2.31**	**312**		P		**Pn**	**12 38 22.7**	**-0.1**
MJAR	**Matsushiro Arr**	**3.58**	**258**		Pn		**Pn**	**12 38 40.9**	**+0.6**
	2.2nm,0.3s,baz=69,slow=9.2,SNR=36								
MAJO	**Matsushiro**	**3.58**	**258**	*e*	Pn		**Pn**	**12 38 41.2**	**+0.9**
MAT	**Matsushiro**	**3.58**	**258**		P		**Pn**	**12 38 41.3**	**+1.0**
MAT					S		**Sn**	**12 39 25.4**	**+3.4**
JHJ	**Hachijo jima 2**	**4.83**	**209**		Pn		**Pn**	**12 38 57.9**	**+0.6**
	10nm,0.3s,baz=75,slow=19,SNR=3.8								
JHJ							Sn	**12 39 46.8**	**-5.7**
	4.8nm,0.3s,baz=35,slow=19,SNR=2.2								
CBIJ	**Chichi jima**	**10.27**	**182**		Pn		**Pn**	**12 40 12.5**	**+0.5**
CBIJ							Sn	12 41 58.4	-8.0
JCJ	**Chichijima**	**10.27**	**182**		Pn		**Pn**	**12 40 12.5**	**+0.5**
	2.8nm,0.3s,baz=58,slow=18,SNR=3.2								
JCJ							Sn	12 41 58.4	-8.0
	2.8nm,0.3s,baz=7.6,slow=15,SNR=3.4								
USRK

MKAR	**Makanchi Array**	**142.17 279**	PKhKP	PKPpre	13 01 57.2		
	0.7nm,0.7s,baz=112,slow=3.9,SNR=7.1						
AAK	**Ala-Archa**	**143.35 268**	PKP	PKPbc	13 02 04.4	+0.8	
	1.9nm,0.7s,baz=120,slow=3.2,SNR=7.2						
AAK	**Ala-Archa**	**143.35 268**	PKP	PKPbc	13 02 04.4	+0.8	
AAK			*e*PKPdf	**PKPdf**	**13 02 04.6**	**-1.8**	
ZALV	**Zalesovo Beam**	**145.33 291**	PKPbc	**PKPbc**	**13 02 07.5**	**-1.6**	
	3.2nm,0.8s,baz=130,slow=2.3,SNR=22						
KKAR	**Karatay Array**	**145.75 265**	*e*PKPdf	**PKPdf**	**13 02 09.9**	**-0.5**	
KURBB	**Kurchatov Arra**	**146.52 282**	PKPbc	**PKPdf**	**13 02 12.1**	**+0.7**	
	4.5nm,0.7s,baz=121,slow=2.8,SNR=53						
KURK	**Kurchatov**	**146.53 282**	*e*PKPbc	**PKPbc**	**13 02 12.3**	**-0.6**	
GEYT	**Alibeck**	**148.08 246**	PKPbc	**PKPbc**	**13 02 17.9**	**+0.2**	
	4.3nm,0.8s,baz=219,slow=1.8,SNR=6.6						
NRIK	**Noril'sk**	**150.54 318**	PKPbc	**PKPbc**	**13 02 23.1**	**+0.4**	
	2.4nm,0.6s,baz=123,slow=1.9,SNR=11						
BVAR	**Borovoye Array**	**152.05 280**	PKPbc	**PKPbc**	**13 02 26.2**	**-0.6**	
	2.7nm,0.7s,baz=116,slow=3.4,SNR=15						
BRVK	**Borovoye**	**152.12 280**	*e*PKPbc	**PKPbc**	**13 02 26.7**	**-0.2**	
ESDC	**Sonseca Array**	**155.26 130**	PKP	**PKPdf**	**13 02 26.2**	**+1.0**	
	0.1nm,0.4s,baz=187,slow=0.3,SNR=6.5						
ESDC			PKPab	**PKPab**	**13 02 50.0**	**-0.4**	
	1.8nm,0.9s,baz=216,slow=3.9,SNR=7.4						
AKTO	**Aktyubinsk**	**157.02 265**	PKPab	**PKPab**	**13 02 57.2**	**-0.4**	
	3.1nm,0.8s,baz=118,slow=5.0,SNR=8.1						

NIED ***09*** *12:47:00,36.00N×139.60E,h53km,Mw4.0 Best double couple: M0 9.70000×10^14 NP1:φs139.00000°,δ72.00000°, λ1.00000°. NP2:φs49.00000°,δ89.00000°,λ162.00000°.*

ISCJB ***09*** *12:47:49.5±0.5,35.99N±0.03×139.66E±0.07,h54km±4km, mb3.8/17, Error ellipse: s-maj=9.1km s-min=4.9km az=173.5*

JMA ***09*** *12:47:50.9±0.1,36.00N×139.64E,h43km±1km,M4.1 Broadband fault plane solution: P waves. NP1: φs136.00000°,δ86.00000°,λ30.00000°. NP2:φs44.00000°, δ60.00000°,λ175.00000°. Principal axes: T Plg24.0000°, Azm4.0000°; N Plg59.0000°, Azm143.0000°; P Plg18.0000°, Azm266.0000°;*

JMA Felt III J1.

IDC ***09*** *12:47:51.3±1.9,35.97N×139.59E,h52km±18km, mb3.5/16, mb1 3.7/19,mb1mx3.6/57,mbtmp3.8/19,ML3.5/1 Error ellipse: s-maj=18.7km s-min=13.9km az=83.0*

ISC 09 12:47:50.4±0.9,35.99N±0.04×139.67E±0.07,h45km±8km, n39,σ0 88/41,mb3.9/17,4C-2D,Near south coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JHU	**Hanno**	**0.35**	**247**	⇑P	**Pn**	**12 47 59.7**	**+0.2**
JHU				S	**Sn**	**12 48 06.0**	**0.0**
JAG	**Ashikaga**	**0.47**	**338**	⇑P	**Pn**	**12 48 01.2**	**+0.2**
JAG				S	**Sn**	**12 48 08.5**	**0.0**
JRY	**Ryogami san**	**0.63**	**273**	⇓P	**Pn**	**12 48 02.9**	**-0.1**
JRY				S	**Sn**	**12 48 11.5**	**-0.5**
JKT	**Katashina**	**0.85**	**336**	⇑P	**Pn**	**12 48 05.9**	**-0.1**
JKT				S	**Sn**	**12 48 17.3**	**-0.1**
JOD2	**Odawara 2**	**0.87**	**213**	⇑P	**Pn**	**12 48 06.3**	**+0.1**
JOD2				S	**Sn**	**12 48 18.2**	**+0.4**
JYN	**Shimob**	**1.04**	**242**	⇓P	**Pn**	**12 48 09.1**	**+0.5**
JYN				S	**Sn**	**12 48 22.7**	**+0.6**
JIM2	**Oshima 3**	**1.29**	**189**	P	**Pn**	**12 48 11.3**	**-0.6**
JIM2				S	**Sn**	**12 48 27.5**	**-0.5**
MJAR	**Matsushiro Arr**	**1.30**	**295**	P	**Pn**	**12 48 12.1**	**-0.1**
	93nm,0.3s,baz=108,slow=14,SNR=713						
MJAR				S	**Sn**	**12 48 27.7**	**-0.7**
	80nm,0.3s,baz=146,slow=20,SNR=12						
MJAR				LR	LR	12 48 54.6	
	comp=Z,82nm,20.5s,baz=170,slow=52						
MAT	**Matsushiro**	**1.31**	**295**	P	**Pn**	**12 48 12.2**	**0.0**
MAT				S	**Sn**	**12 48 27.8**	**-0.7**
MAT	**Matsushiro**	**1.31**	**295**	P	**Pn**	**12 48 12.5**	**+0.3**
JHJ	**Hachijo jima 2**	**2.87**	**178**	P	**Pn**	**12 48 33.7**	**+0.1**
	180nm,0.3s,baz=319,slow=17,SNR=74						
JHJ				S	**Sn**	**12 49 06.0**	**-0.9**
	257nm,0.3s,baz=245,slow=23,SNR=16						
JNU	**Nakatsue**	**7.80**	**251**	P	**Pn**	**12 49 41.6**	**+0.3**
	0.7nm,0.3s,baz=47,slow=6.0,SNR=9.9						
JCJ	**Chichijima**	**9.12**	**166**	P	Pn	12 49 55.6	-3.8
	3.0nm,0.3s,baz=292,slow=18,SNR=4.1						
JCJ				S	Sn	12 51 32.2	-8.6
	2.7nm,0.3s,baz=221,slow=20,SNR=2.2						
KSRS	**Korea Array**	**9.55**	**282**	P	Pn	12 50 08.9	+3.8
	0.6nm,0.3s,baz=97,slow=14,SNR=14						
USRK	**Ussuriysk Ar.**	**10.09**	**327**	P	**Pn**	**12 50 12.2**	**-0.4**
	0.1nm,0.3s,baz=146,slow=13,SNR=2.4						
MA2	**Magadan**	**24.68**	**14**	P	**P**	**12 53 07.2**	**+0.4**
	3.4nm,0.7s,baz=245,slow=11,SNR=4.9						
SONM	**Songino Array**	**27.23**	**306**	P	**P**	**12 53 31.7**	**+1.5**
	0.4nm,0.6s,baz=97,slow=11,SNR=3.3						
SEY	**Seymchan**	**28.09**	**12**	P	**P**	**12 53 39.0**	**+1.4**
	0.8nm,0.6s,baz=240,slow=20,SNR=3.0						
H11N2	**WAKE ISLAND Hy**	**28.88**	**117**	T	T	13 23 36.4	
	baz=308,slow=75,SNR=25						
H11N1	**WAKE ISLAND Hy**	**28.88**	**117**	T	T	13 23 32.7	
	baz=308,slow=75,SNR=18						
H11N3	**WAKE ISLAND Hy**	**28.89**	**117**	T	T	13 23 35.8	
	baz=308,slow=75,SNR=24						
H11S1	**WAKE ISLAND Hy**	**29.53**	**119**	T	T	13 24 23.0	
	baz=310,slow=76,SNR=10						
H11S3	**WAKE ISLAND Hy**	**29.53**	**119**	T	T	13 24 23.6	
	baz=310,slow=76,SNR=9.4						
H11S2	**WAKE ISLAND Hy**	**29.54**	**119**	T	T	13 24 25.6	
	baz=310,slow=76,SNR=8.3						
TIXI	**Tiksi**	**36.17**	**354**	P	**P**	**12 54 45.7**	**-2.3**
	0.6nm,0.4s,baz=122,slow=4.6,SNR=3.6						
ZALV	**Zalesovo Beam**	**41.59**	**313**	P	**P**	**12 55 34.1**	**+0.5**
	0.7nm,0.5s,baz=106,slow=11,SNR=4.5						
MKAR	**Makanchi Array**	**43.49**	**303**	P	**P**	**12 55 48.5**	**-0.7**
	0.3nm,0.5s,baz=96,slow=9.4,SNR=5.3						
KURBB	**Kurchatov Arra**	**45.55**	**309**	P	**P**	**12 56 04.2**	**-1.3**
	1.2nm,0.5s,baz=83,slow=7.7,SNR=19						
BVAR	**Borovoye Array**	**50.24**	**313**	P	**P**	**12 56 41.5**	**-0.4**
	0.6nm,0.5s,baz=92,slow=7.9,SNR=5.4						
ILAR	**Eielson Array**	**51.12**	**32**	P	**P**	**12 56 48.8**	**+0.5**
	1.4nm,0.9s,baz=270,slow=6.7,SNR=12						
WRA	**Warramunga Arr**	**55.86**	**186**	P	**P**	**12 57 22.1**	**-1.3**
	1.0nm,0.4s,baz=0.5,slow=7.5,SNR=15						
INK	**Inuvik**	**55.95**	**27**	P	**P**	**12 57 24.1**	**+0.6**
	1.2nm,0.8s,baz=252,slow=4.1,SNR=8.0						
ASAR	**Alice Springs**	**59.58**	**186**	P	**P**	**12 57 51.3**	**+1.8**
	0.4nm,0.5s,baz=15,slow=9.4,SNR=6.2						
ARCES	**ARCESS Array B**	**64.47**	**339**	P	**P**	**12 58 23.2**	**+1.4**
	1.7nm,0.7s,baz=49,slow=8.2,SNR=7.5						
YKA	**Yellowknife Ar**	**65.41**	**29**	P	**P**	**12 58 27.8**	**-0.2**
	0.3nm,0.8s,baz=302,slow=6.4,SNR=6.9						
FINES	**FINESS Array B**	**69.08**	**332**	P	**P**	**12 58 50.2**	**-1.0**
	2.1nm,0.9s,baz=68,slow=5.1,SNR=4.6						
NB2	**NORSAR Subarra**	**74.60**	**337**	P	**P**	**12 59 23.3**	**-1.1**
	comp=Z,4.0nm,1.1s,baz=41,slow=5.9						
NOA	**NORSAR Array B**	**74.60**	**337**	P	**P**	**12 59 23.1**	**-1.4**
	comp=Z,1.2nm,0.7s,baz=40,slow=5.8,SNR=3.9						
PDAR	**Pinedale Array**	**79.39**	**44**	P	**P**	**12 59 52.7**	**+0.7**
	comp=Z,0.2nm,0.7s,baz=310,slow=7.0,SNR=2.5						

NIED ***09*** *12:57:00,30.00N×131.80E,h20km,Mw5.8 Best double couple: M0 5.88000×10^17 NP1:φs348.00000°,δ47.00000°, λ-121.00000°. NP2:φs210.00000°,δ51.00000°, λ-61.00000°.*

ISCJB ***09*** *12:57:46.3±0.5,30.00N±0.01×131.81E±0.01,h10km±3km, mb6.0/386,MS5.7/257, Error ellipse: s-maj=2.1km s-min=1.7km az=135.1*

NEIC ***09*** *12:57:47.8±0.1,30.00N×131.78E,h11km,mb6.1/180, ME6.0,MS5.6/143,MW6.0,MW5.9, Error ellipse: s-maj=2.5km s-min=1.9km az=119.0 Broadband fault plane solution: P waves. NP1:φs18.00000°,δ20.00000°, λ-90.00000°. NP2:φs198.00000°,δ70.00000°, λ-90.00000°. Principal axes: T Plg25.0000°, Azm288.0000°; N Plg0.0000°, Azm0.0000°; P Plg65.0000°, Azm108.0000°; Depth from synthetics of broadband displacement seismograms. Energy computed from BB mechanism.*

NEIC Felt at Kagoshima and Makurazaki, Kyushu. Also felt at P'yongt'aek, South Korea. Recorded [3 JMA] in Kagoshima.

BJI ***09*** *12:57:47.0,29.90N×131.77E,h24km,mb5.7/67,mB5.9/72, Ms6.0/98,Ms7 6.0/89*

GCMT ***09*** *12:57:48.8±0.1,30.04N×131.84E,h12km,MW6.0/128, Moment Tensor Solution. s118,c263; s128,c462;*

Duration: 2s4 Moment tensor: Scale 10^18Nm; Mrr-1.04±.01; Mθθ-0.05±.01; Mφφ 1.09±.01; Mrθ 0.25±.02; Mrφ 0.18±.01; Mθφ 0.35±.02; Best double couple: M0 1.16400×10^18 NP1:φs199.00000°,δ56.00000°, λ-78.00000°. NP2:φs358.00000°,δ36.00000°, λ-107.00000°. Principal axes: T 1.1860, Plg10.0000°, Azm280.0000°; N -0.0470, Plg10.0000°, Azm12.0000°; P -1.1420, Plg76.0000°, Azm146.0000°; nsta1 refers to body waves, cutoff=50s. nsta2 refers to surface/mantle waves, cutoff=50s.

MOS ***09*** *12:57:49.6±1.0,30.06N×131.81E,h33km,mb6.2/110, MS5.8/88 Error ellipse: s-maj=6.5km s-min=3.6km az=108.6*

JMA ***09*** *12:57:49.4±0.1,30.02N×131.84E,h62km±3km,M5.8*

JMA Felt III J1.

NEIC ***09*** *12:57:49.0±0.0,30.01N×132.01E,h21km,Moment Tensor Solution. s60 Moment tensor: Scale 10^17Nm; Mrr-9.33; Mθθ-0.30; Mφφ 9.63; Mrθ-1.10; Mφλ 1.46; Mθr-0.36; Best double couple: M0 9.70000×10^17 NP1:φs15.00000°, δ47.00000°,λ-80.00000°. NP2:φs182.00000°,δ44.00000°, λ-99.00000°. Principal axes: T 9.8600, Plg1.0000°, Azm98.0000°; N -0.3900, Plg6.0000°, Azm188.0000°; P -9.4700, Plg83.0000°, Azm355.0000°;*

IDC ***09*** *12:57:51.5±0.5,30.05N×131.83E,h34km±3km, mb5.6/52, mb1 5.6/58,mb1mx5.6/59,mbtmp5.7/58,ML5.2/5,MS5.6/38, Ms1 5.6/38,ms1mx5.4/54 Error ellipse: s-maj=9.4km s-min=6.3km az=76.0*

NEIC ***09*** *12:58:06.6±0.0,30.04N×131.89E,h10km,Moment Tensor Solution. s45 Moment tensor: Scale 10^18Nm; Mrr-1.09; Mθθ 0.07; Mφφ 1.02; Mrθ 0.18; Mθφ 0.19; Mφr-0.52; Best double couple: M0 1.20000×10^18 NP1:φs203.00000°, δ34.00000°,λ-70.00000°. NP2:φs359.00000°,δ58.00000°, λ-103.00000°. Principal axes: T 1.1600, Plg12.0000°, Azm98.0000°; N 0.0900, Plg11.0000°, Azm6.0000°; P -1.2500, Plg73.0000°, Azm234.0000°;*

ISC 09 12:57:50.1±0.3,30.02N±0.02×131.85E±0.02,h26km±2km, h26km:pP-P,n1714,σ1 57/1902,mb6.0/425,MS5.7/268, 85C-201D,Kyushu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JTN	**Tanegashima 3**	**0.98**	**311**	⇑P	**Pn**	**12 58 07.4**	**-0.8**
JTN				S	**Sn**	**12 58 21.0**	**-0.3**
JYAK	**Yakushimahirau**	**1.18**	**281**	P	**Pn**	**12 58 10.0**	**-0.8**
JYAK				*e*S	**Sn**	**12 58 25.6**	**-0.5**
JTSR	**Tashiro 2**	**1.40**	**325**	⇑P	**Pn**	**12 58 13.1**	**-0.8**
JTSR				S	**Sn**	**12 58 30.3**	**-1.2**
JKC	**Kuchinoerabu**	**1.50**	**288**	⇑P	**Pn**	**12 58 14.5**	**-0.7**
JKC				*e*S	**Sn**	**12 58 33.7**	**-0.2**
JNAR	**Kushima--Naru**	**1.58**	**342**	⇑P	**Pn**	**12 58 16.0**	**-0.4**
JNAR				*e*S	**Sn**	**12 58 35.2**	**-0.9**
JNN	**Nakanoshima**	**1.72**	**265**	⇑P	**Pn**	**12 58 17.7**	**-0.6**
JSU	**Suzuyama**	**1.91**	**321**	⇑P	**Pn**	**12 58 19.9**	**-1.0**
JTZ	**Takazaki**	**1.99**	**341**	⇑P	**Pn**	**12 58 21.8**	**-0.2**
JTZ				*e*S	**Sn**	**12 58 45.7**	**-0.4**
JTSN	**Tsuno**	**2.24**	**353**	⇑P	**Pn**	**12 58 24.7**	**-0.8**
JZK	**Kikaishima**	**2.36**	**225**	P	**Pn**	**12 58 27.0**	**-0.1**
JZO	**Okuchi**	**2.37**	**333**	⇑P	**Pn**	**12 58 26.7**	**-0.6**
JTAJ	**Takarajima**	**2.46**	**250**	⇑P	**Pn**	**12 58 28.0**	**-0.4**
JTAJ				*e*S	**Sn**	**12 58 54.9**	**-2.7**
JSJ	**Shimokoshiki**	**2.47**	**313**	⇑P	**Pn**	**12 58 27.0**	**-1.6**
JSJ				*e*S	**Sn**	**12 58 55.5**	**-2.5**
JAM	**Amami Oshima**	**2.53**	**231**	⇑P	**Pn**	**12 58 28.5**	**-0.9**
JAM				S	**Sn**	**12 58 58.2**	**-1.2**
JKIT	**Kitakata**	**2.62**	**353**	⇑P	**Pn**	**12 58 30.3**	**-0.4**
JIU2	**Izumi 2**	**2.67**	**341**	⇑P	**Pn**	**12 58 31.1**	**-0.3**
JAMN	**Amaminishikomi**	**2.93**	**234**	P	**Pn**	**12 58 34.0**	**-0.9**
JTO	**Tosashimizu**	**2.95**	**16**	⇑P	**Pn**	**12 58 33.3**	**-1.9**
JTO				S	**Sn**	**12 59 04.6**	**-5.2**
NGSJ	**Nagasakinomoza**	**3.14**	**327**	⇑P	**Pn**	**12 58 37.0**	**-0.9**
JTA	**Tamana**	**3.15**	**339**	⇑P	**Pn**	**12 58 37.5**	**-0.4**
JNU	**Nakatsue**	**3.21**	**345**	Pn	**Pn**	**12 58 38.9**	**+0.1**
JNU	504nm,0.3s,baz=69,slow=4.3,SNR=980			Sn	**Sn**	**12 59 12.8**	**-3.3**
	263nm,0.3s,baz=183,slow=17,SNR=7.8						
JNU	**Nakatsue**	**3.21**	**345**	⇑P	**Pn**	**12 58 38.6**	**-0.2**
UWA2	**Uwa jima 2**	**3.26**	**12**	⇑P	**Pn**	**12 58 38.1**	**-1.4**
JTK	**Tokunoshima**	**3.37**	**230**	⇑P	**Pn**	**12 58 40.0**	**-1.1**
JKU	**Kubokawa**	**3.44**	**17**	⇑P	**Pn**	**12 58 41.0**	**-1.0**
JUR	**Ureshino**	**3.47**	**333**	⇑P	**Pn**	**12 58 42.1**	**-0.3**
JNA	**Nagahama**	**3.57**	**9**	⇑P	**Pn**	**12 58 43.1**	**-0.7**
JFU	**Fukue jima 2**	**3.73**	**316**	⇑P	**Pn**	**12 58 45.0**	**-1.0**
JFA	**Akaike**	**3.79**	**347**	⇑P	**Pn**	**12 58 46.4**	**-0.4**
MRT2	**Murotomisaki 2**	**3.89**	**30**	⇑P	**Pn**	**12 58 46.4**	**-1.7**
JOKE	**Okinoerabujima**	**3.91**	**228**	P	**Pn**	**12 58 47.2**	**-1.2**
JOKE				S	**Sn**	**12 59 31.1**	**-2.4**
JOW	**Kunigami**	**4.47**	**226**	Pn	**Pn**	**12 58 54.4**	**-1.7**
JOW	165nm,0.3s,baz=106,slow=24,SNR=468			Sn	**Sn**	**12 59 42.6**	**-4.6**
	389nm,0.3s,baz=68,slow=15,SNR=9.0						
JOW	**Kunigami**	**4.47**	**226**	*e*Pn	**Pn**	**12 58 54.7**	**-1.4**
JOW				Sn	**Sn**	**12 59 42.6**	**-4.6**
JIH	**Iheya**	**4.52**	**230**	⇑P	**Pn**	**12 58 55.1**	**-1.8**
JJS	**Sakaide**	**4.69**	**22**	⇑P	**Pn**	**12 58 58.6**	**-0.5**
JJG	**Jouge**	**4.74**	**13**	⇑P	**Pn**	**12 58 59.6**	**-0.3**
JNTH	**Nagotoyohara**	**4.85**	**225**	P	**Pn**	**12 58 59.5**	**-1.8**
JJT2	**Tamagusuku 2**	**5.29**	**224**	P	**Pn**	**12 59 05.7**	**-1.7**
JJT2				S	**Sn**	**13 00 04.2**	**-3.4**
JAGN	**Aguni-jima**	**5.30**	**231**	P	**Pn**	**12 59 05.8**	**-1.8**
JNM	**Ikuma**	**5.55**	**10**	⇑P	**Pn**	**12 59 11.5**	**+0.5**
JKE	**Kume jima 2**	**5.78**	**232**	⇑P	**Pn**	**12 59 12.0**	**-2.2**
JEG	**Eigenji**	**6.38**	**36**	⇓P	**Pn**	**12 59 22.6**	**+0.2**
INU	**Inuyama**	**6.88**	**38**	*e*Pn	**Pn**	**12 59 29.2**	**+0.1**
JHJ	**Hachijo jima 2**	**7.45**	**63**	Pn	**Pn**	**12 59 37.6**	**+0.6**
JHJ	184nm,0.3s,baz=207,slow=11,SNR=33			Sn	**Sn**	**13 00 56.2**	**-4.3**
	baz=77,slow=19,SNR=1.5						
JHJ				LR	LR	13 02 17.9	
	comp=Z,46μm,18.2s,baz=271,slow=36						
JHJ2	**Mitsune**	**7.47**	**64**	*e*Pn	**Pn**	**12 59 36.9**	**-0.4**
KSRS	**Korea Array**	**8.11**	**337**	Pn	**Pn**	**12 59 46.9**	**+0.9**
	9.7nm,0.3s,baz=158,slow=14,SNR=117						
KSRS				Sn	**Sn**	**13 01 22.6**	**+5.9**
	baz=147,slow=26,SNR=3.1						
KSRS				PcP	**PcP**	**13 06 21.4**	**+0.9**
	baz=158,slow=0.8,SNR=6.5						
KSRS				PKiKP	**PKiKP**	**13 14 20.5**	**-0.8**
	0.0nm,0.3s,baz=183,slow=1.2,SNR=8.4						
KSAR	**Wonju Array Be**	**8.11**	**337**	Pn	**Pn**	**12 59 46.9**	**+0.9**
KSAR				Sn	**Sn**	**13 01 22.6**	**+5.8**
KSAR				PcP	**PcP**	**13 06 21.4**	**+0.8**
KSAR				PKiKP	**PKiKP**	**13 14 20.5**	**-0.8**
MAJO	**Matsushiro**	**8.41**	**38**	*c* *i*P	**Pn**	**12 59 50.9**	**+0.7**
MAJO	**Matsushiro**	**8.41**	**38**	*e*Pn	**Pn**	**12 59 51.1**	**+0.9**
MAT	**Matsushiro**	**8.41**	**38**	P	**Pn**	**12 59 50.0**	**-0.2**
MAT				S	**Sn**	**13 01 22.8**	**-1.5**
MJAR	**Matsushiro Arr**	**8.41**	**38**	Pn	**Pn**	**12 59 50.6**	**+0.4**
	37nm,0.3s,baz=233,slow=14,SNR=984						
MJAR				LR	LR	13 03 12.0	
	comp=Z,23μm,20.6s,baz=200,slow=38						
INCN	**Inchon**	**8.62**	**331**	*e*Pn	**Pn**	**12 59 54.5**	**+1.4**
SSE	**Sheshan**	**9.26**	**279**	P	**Pn**	**13 00 01.4**	**-0.4**
SSE				S	**Sn**	**13 01 44.2**	**-0.9**
SSE				pmax	pmax		
	comp=Z,310nm,0.9s						
SSE				pmax	pmax		
	comp=Z,8μm,9.2s						
SSE				LR	LR		
	comp=N,78μm,20.1s						
SSE				LR	LR		
	comp=E,29μm,20.2s						
SSE				LR	LR		
	comp=Z,61μm,12.4s						
CBIJ	**Chichi jima**	**9.54**	**105**	*e*Pn	**Pn**	**13 00 05.7**	**-0.1**
CBIJ				Sn	**Sn**	**13 01 45.6**	**-6.6**
JCJ	**Chichijima**	**9.54**	**105**	Pn	**Pn**	**13 00 03.5**	**-2.3**
	baz=315,slow=5.7						
JCJ				Sn	**Sn**	**13 01 45.6**	**-6.7**
	baz=288,slow=20						
YOJ	**Yonaguni jima**	**9.61**	**237**	*e*P	**Pn**	**13 00 04.9**	**-1.8**
YOJ	**Yonaguni jima**	**9.61**	**237**	*e*Pn	**Pn**	**13 00 04.9**	**-1.8**
JFY	**Yanaizu**	**9.85**	**40**	P	**Pn**	**13 00 11.4**	**+1.4**
TATO	**Taipei**	**10.47**	**244**	*e*Pn	**Pn**	**13 00 16.8**	**-1.8**
YHNB	**Yeheng**	**10.72**	**243**	*e*Pn	**Pn**	**13 00 19.9**	**-2.1**
NACB	**Ninganchiao**	**10.83**	**240**	*e*Pn	**Pn**	**13 00 19.7**	**-3.7**
JOU	**Okura**	**11.07**	**39**	P	**Pn**	**13 00 29.0**	**+2.3**
NJ2	**Nanjing**	**11.33**	**284**	*e*P	**Pn**	**13 00 30.0**	**-0.2**
NJ2				pP		13 00 37.4	
NJ2				S	**Sn**	**13 02 33.0**	**-2.9**
NJ2				sS		13 02 43.2	
NJ2				pmax	pmax		
	comp=Z,66nm,1.1s						
NJ2				pmax	pmax		
	comp=Z,2μm,6.9s						
NJ2				LR	LR		
	comp=N,52μm,15.6s						
NJ2				LR	LR		
	comp=E,50μm,14.9s						
NJ2				LR	LR		
	comp=Z,62μm,14.9s						
YULB	**Yu-li**	**11.50**	**238**	*e*Pn	Pn	13 00 27.4	-5.3
SSLB	**Suanglung**	**11.53**	**240**	*e*Pn	Pn	13 00 28.1	-4.9
TWG	**Pinlang**	**12.02**	**236**	*e*Pn	Pn	13 00 31.2	-8.5
TPUB	**Ta-pu**	**12.05**	**239**	*e*Pn	**Pn**	**13 00 35.9**	**-4.3**
DL2	**Dalian**	**12.23**	**319**	⇑ *i*P	**Pn**	**13 00 44.5**	**+2.0**
DL2				S	**Sn**	**13 03 04.3**	**+6.4**
DL2				pmax	pmax		
	comp=Z,120nm,0.9s						
DL2				pmax	pmax		
	comp=Z,6μm,10.8s						
DL2				LR	LR		
	comp=N,50μm,19.9s						
DL2				LR	LR		
	comp=E,37μm,18.6s						
DL2				LR	LR		
	comp=Z,37μm,14.9s						
QZH	**Quanzhou**	**12.80**	**250**	⇑ *i*P	**Pn**	**13 00 46.5**	**-3.9**
QZH				S	**Sn**	**13 03 14.0**	**+1.9**
QZH				pmax	pmax		
	comp=Z,280nm,0.9s						
QZH				pmax	pmax		
	comp=Z,18μm,9.2s						
QZH				LR	LR		
	comp=N,42μm,11.8s						
QZH				LR	LR		
	comp=E,49μm,12.1s						
QZH				LR	LR		
	comp=Z,69μm,16.6s						
VLA	**Vladivostok**	**13.08**	**0**	‖ *e*P	**Pn**	**13 00 55.0**	**+0.9**
SNY	**Shenyang**	**13.55**	**333**	⇑ *i*P	**Pn**	**13 01 02.2**	**+1.7**
SNY				S	**Sn**	**13 03 37.1**	**+7.0**
SNY				pmax	pmax		
	comp=Z,71nm,0.8s						
SNY				pmax	pmax		
	comp=Z,7μm,8.8s						
SNY				LR	LR		
	comp=N,54μm,12.8s						
SNY				LR	LR		
	comp=E,46μm,16.1s						
SNY				LR	LR		
	comp=Z,76μm,13.7s						
TIA	**Tai'an**	**13.79**	**300**	⇑P	**Pn**	**13 01 04.0**	**+0.1**
TIA				pmax	pmax		
	comp=Z,90nm,0.9s						
TIA				pmax	pmax		
	comp=Z,11μm,10.1s						
TIA				LR	LR		
	comp=N,31μm,13.5s						
TIA				LR	LR		
	comp=E,58μm,17.3s						
TIA				LR	LR		
	comp=Z,57μm,15.5s						
USRK	**Ussuriysk Ar.**	**14.16**	**0**	Pn	**Pn**	**13 01 10.8**	**+1.9**
	1.3nm,0.3s,baz=180,slow=11,SNR=27						
CN2	**Changchun**	**14.67**	**341**	*e*P	**Pn**	**13 01 18.4**	**+2.6**
CN2				*e*S	**Sn**	**13 04 00.7**	**+3.2**
CN2				*e*SS	**S**	**13 04 18.2**	**+2.2**
CN2				pmax	pmax		
	comp=Z,90nm,1.0s						
CN2				pmax	pmax		
	comp=Z,200nm,5.0s						
CN2				LR	LR		
	comp=N,37μm,14.0s						
CN2				LR	LR		
	comp=E,53μm,14.0s						
CN2				LR	LR		
	comp=Z,28μm,15.0s						
MDJ	**Mudanjiang**	**14.68**	**354**	P	**Pn**	**13 01 18.0**	**+2.0**
MDJ				S	**Sn**	**13 03 58.2**	**+0.4**
MDJ				PcP	**PcP**	**13 06 28.4**	**+0.9**
MDJ				ScP	**ScP**	**13 10 00.0**	**+0.4**
MDJ				PcS	**PcS**	**13 10 03.4**	**+1.0**
MDJ				ScS	**ScS**	**13 13 39.8**	**+2.6**
MDJ				pmax	pmax		
	comp=Z,2μm,8.1s						
MDJ				LR	LR		
	comp=N,16μm,18.4s						
MDJ				LR	LR		
	comp=E,23μm,16.0s						
MDJ				LR	LR		
	comp=Z,19μm,17.0s						
MDJ	**Mudanjiang**	**14.68**	**354**	*e*Pn	**Pn**	**13 01 16.4**	**+0.4**
	230nm,1.1s						
MDJ				*e*S	**S**	**13 04 09.6**	**-6.6**
SGCP	**Mt. Cagua**	**14.73**	**220**	*e*P	**Pn**	**13 01 12.8**	**-4.0**
ERM	**Erimo**	**15.05**	**34**	*d* *i*P	**Pn**	**13 01 17.5**	**-3.4**
ERM	**Erimo**	**15.05**	**34**	*e*Pn	**Pn**	**13 01 17.2**	**-3.7**
	309nm,1.0s						
WHN	**Wuhan**	**15.13**	**276**	P	**Pn**	**13 01 20.0**	**-2.0**
WHN				pmax	pmax		
	comp=Z,12μm,9.6s						
WHN				LR	LR		
	comp=N,55μm,11.9s						
WHN				LR

SHO pmax pmax
comp=N,234nm,3.2s
SHO pmax pmax
comp=E,346nm,2.8s
LQP Lukban 18.47 213⇑ eP Pn 13 02 05.7 +1.3
HABR Khabarovsk 18.60 7 deP P 13 02 03.4 -1.7
HABR eS Sn 13 05 31.1 -1.5
HABR pmax pmax
comp=N,213nm,2.5s
HABR pmax pmax
comp=E,110nm,2.5s
HABR pmax pmax
comp=Z,470nm,2.5s
HABR MLR MLR
comp=N,20μm,15.0s
HABR MLR MLR
comp=Z,38μm,15.0s
HABR MLR MLR
comp=E,12μm,15.0s
AUQP San Andres 18.65 209 eP Pn 13 02 16.7 +10
BOAC Boac 18.90 211 eP Pn 13 02 11.1 +1.7
YSS Yuzh-Sakhalins 18.91 24k iP P 13 02 07.9 -0.7
YSS eS Sn 13 05 30.5 -10
YSS pmax pmax
comp=Z,100nm,1.7s
YSS pmax pmax
comp=Z,4μm,3.7s
YSS MLR MLR
comp=Z,20μm,16.0s
YSS MLR MLR
comp=N,21μm,14.0s
YSS Yuzh-Sakhalins 18.91 24 eP P 13 02 08.0 -0.7
comp=N,230nm,0.9s
YSS ePcP PcP 13 06 35.3 +1.2
KLR Kul'dur 19.19 360 P P 13 02 11.4 -0.3
comp=N,5,4nm,0.3s,baz=172,slow=8.8,SNR=154
KLR PcP PcP 13 06 35.5 +1.0
comp=N,0.4nm,0.3s,baz=249,slow=3.3,SNR=5.4
KLR PKiKP PKiKP 13 14 23.6 -0.8
comp=N,0.1nm,0.3s,baz=164,slow=2.7,SNR=4.5
KLR P3KPbc 13 36 40.3
comp=N,0.1nm,0.3s,baz=333,slow=5.3,SNR=6.4
ENH Enshi 19.34 276 eP P 13 02 11.3 -2.2
comp=N,17nm,0.6s
ENH eS Sn 13 05 48.3 -2.6
HHC Hu-ho-hao-te 19.70 309⇑ iP P 13 02 17.6 +0.1
HHC PP PnPn 13 02 36.1 +3.2
HHC S S 13 05 58.7 +0.4
HHC SS SnSn 13 06 21.1 +7.1
HHC pmax pmax
comp=N,190nm,1.6s
HHC pmax pmax
comp=N,3μm,3.7s
HHC LR LR
comp=N,31μm,14.9s
HHC LR LR
comp=N,30μm,18.7s
HHC LR LR
comp=N,32μm,14.9s
KUR Kuril'sk 19.74 35d iP Pn 13 02 18.7 -0.6
KUR pmax pmax
comp=N,28nm,1.1s
KUR pmax pmax
comp=Z,109nm,1.1s
KUR pmax pmax
comp=E,11nm,0.9s
KUR pmax pmax
comp=Z,2μm,6.9s
KUR pmax pmax
comp=N,8μm,8.4s
KUR pmax pmax
comp=E,6μm,8.4s
KUR MLR MLR
comp=N,12μm,17.0s
KUR MLR MLR
comp=E,19μm,17.0s
KUR MLR MLR
comp=Z,19μm,17.0s
PLP Palo 19.82 200⇓ iP Pn 13 02 21.3 +0.9
XAN Xi'an 19.84 288 P P 13 02 17.4 -1.6
XAN pP Pn 13 02 22.9 +2.3
XAN sP pP 13 02 26.4 +0.3
XAN PP PnPn 13 02 35.9 +1.1
XAN S S 13 05 51.5 -10
XAN SS SnSn 13 06 19.0 +1.7
XAN pmax pmax
comp=Z,6μm,11.2s
XAN LR LR
comp=Z,28μm,15.0s
XAN LR LR
comp=Z,28μm,13.0s
XAN LR LR
comp=Z,36μm,12.2s
OCLP Ormoc 20.04 201 eP Pn 13 02 24.5 +1.5
RCP Roxas 20.22 207⇓ eP Pn 13 02 25.3 +0.1
GUMO Guam 20.30 141 P P 13 02 24.9 +0.8
comp=Z,1μm,1.1s,baz=273,slow=4.9,SNR=13
GUMO Guam 20.30 141 eP P 13 02 24.4 +0.4
GUMO pmax pmax
comp=Z,4μm,1.5s
GUMO MLR MLR
comp=Z,10μm,21.0s
GUMO Guam 20.30 141 eP P 13 02 24.4 +0.4
comp=Z,4μm,1.5s
GUMO LR LR
comp=Z,10μm,21.0s
UGL Uglegorsk 20.57 19 eP Pn 13 02 28.0 -1.0
UGL e 13 02 40.0
UGL e 13 02 44.0
UGL eS S 13 06 03.0 -12
UGL i 13 06 50.0
UGL pmax pmax
comp=Z,358nm,1.0s
UGL pmax pmax
comp=N,2μm,5.0s
UGL pmax pmax
comp=E,2μm,5.0s
UGL pmax pmax
comp=Z,4μm,5.0s
UGL smax smax
comp=N,13μm,11.0s
UGL smax smax
comp=E,15μm,8.0s
UGL MLR MLR
comp=N,13μm,16.0s
UGL MLR MLR
comp=E,13μm,16.0s
UGL MLR MLR
comp=Z,17μm,16.0s
BTO Baotou 20.66 307 eP P 13 02 28.1 +0.2
LLP Lapu-Lapu 20.93 202⇓ eP Pn 13 02 32.8 -0.7
GUIM Jordan 21.13 206 eP P 13 02 34.3 +1.3
HIA Hailar 21.32 338 eP P 13 02 33.7 -1.1
HIA pmax pmax
comp=Z,301nm,1.3s
HIA MLR MLR
comp=Z,27μm,19.0s
HIA Hailar 21.32 338 eP P 13 02 33.7 -1.1
comp=Z,301nm,1.3s
HIA LR LR
comp=Z,27μm,19.0s
TYV Tymovskoe 22.34 18 eP P 13 02 45.8 0.0
TYV eS S 13 06 47.0 -2.9
TYV pmax pmax
comp=Z,84nm,0.8s
TYV pmax pmax
comp=E,4μm,8.0s
TYV pmax pmax
comp=Z,6μm,8.0s
TYV smax smax
comp=E,14μm,12.0s
TYV MLR MLR
comp=E,18μm,15.0s
TYV MLR MLR
comp=Z,22μm,16.0s
GYA Guiyang 22.45 267⇓ iP P 13 02 46.2 -1.1
GYA pP pP 13 02 52.8 -1.7
GYA PP PnPn 13 03 15.0 +4.3
GYA PcP PcP 13 06 42.4 +1.1
GYA S S 13 06 48.1 -4.5
GYA SS SnSn 13 07 27.6 +5.9
GYA ScP ScP 13 10 18.0 +0.9
GYA pmax pmax
comp=Z,350nm,1.1s
GYA pmax pmax
comp=Z,3μm,13.9s

GYA LR LR
comp=Z,34μm,19.9s
GYA LR LR
comp=Z,18μm,20.6s
GYA LR LR
comp=Z,28μm,20.3s
CGP Cagayan de Oro 22.47 199⇓ eP P 13 02 47.2 -0.2
BUKP Musuan 22.92 197 eP P 13 02 51.7 -0.5
PAGZ Pagadian 23.44 202 eP P 13 02 56.3 -1.1
MATI Mati 23.54 194 eP P 13 02 57.3 -1.1
DAV Davao City (W) 23.57 196 P P 13 02 58.2 -0.5
comp=Z,136nm,0.4s,baz=21,slow=4.0,SNR=12
DAV LR LR 13 13 06.3
comp=Z,11μm,18.5s,baz=4.0,slow=39
DAV Davao City (W) 23.57 196⇓ eP P 13 02 57.1 -1.6
DAV Davao City (W) 23.57 196 ⇑S Sn 13 07 26.8 -5.9
DAV Davao City (W) 23.57 196 P P 13 02 57.9 -0.8
NKL Nikolayevsk 24.00 13 iP P 13 03 03.0 +0.6
NKL iS S 13 07 20.0 +2.3
NKL pmax pmax
comp=N,220nm,1.0s
NKL pmax pmax
comp=E,180nm,1.0s
NKL pmax pmax
comp=Z,540nm,1.0s
NKL pmax pmax
comp=N,4μm,5.0s
NKL pmax pmax
comp=E,2μm,5.0s
NKL pmax pmax
comp=Z,8μm,7.0s
NKL smax smax
comp=N,12μm,13.0s
NKL smax smax
comp=E,10μm,13.0s
NKL MLR MLR
comp=N,24μm,15.0s
NKL MLR MLR
comp=Z,32μm,15.0s
LZH Lanzhou 24.19 292 ⇓P P 13 03 03.9 -0.7
LZH pP pP 13 03 10.0 -2.3
LZH sP sP 13 03 13.0 -2.5
LZH PP PnPn 13 03 38.2 +3.7
LZH PcP PcP 13 06 46.5 +1.7
LZH S S 13 07 17.0 -4.5
LZH sS sS 13 07 29.1 -5.0
LZH SS SnSn 13 08 08.3 +4.1
LZH pmax pmax
comp=Z,820nm,1.5s
LZH pmax pmax
comp=Z,4μm,4.9s
LZH LR LR
comp=Z,32μm,13.5s
LZH LR LR
comp=Z,48μm,16.2s
LZH LR LR
comp=Z,57μm,17.0s
CD2 Chengdu 24.21 279 ⇓P P 13 03 03.3 -1.3
CD2 sP pP 13 03 12.6 +0.3
CD2 PcP PcP 13 06 43.7 -1.1
CD2 S S 13 07 21.0 -0.5
CD2 sS sS 13 07 32.0 -2.2
CD2 SS SnSn 13 08 11.0 +6.6
CD2 pmax pmax
comp=Z,470nm,1.5s
CD2 pmax pmax
comp=Z,3μm,7.4s
CD2 LR LR
comp=Z,55μm,20.2s
CD2 LR LR
comp=Z,58μm,13.1s
CIT Chita 25.82 334 eP P 13 03 15.4 -3.6
CIT e 13 03 59.8
CIT e 13 06 47.7
CIT pmax pmax
comp=Z,173nm,1.7s
ULN Ulaanbaatar 26.08 320 eP P 13 03 20.8 -0.8
ULN pmax pmax
comp=Z,445nm,1.2s
ULN Ulaanbaatar 26.08 320 eP P 13 03 20.8 -0.8
comp=Z,445nm,1.2s
ULN Ulaanbaatar 26.08 320 P P 13 03 21.0 -0.6
SNR=202
KMI Kunming 26.22 266 P P 13 03 23.1 -0.1
KMI pP pP 13 03 29.2 -1.7
KMI sP sP 13 03 31.9 -2.2
KMI S S 13 07 49.4 -4.7
KMI sS sS 13 08 00.0 -6.9
KMI pmax pmax
comp=Z,120nm,1.0s
KMI pmax pmax
comp=Z,2μm,10.7s
KMI LR LR
comp=Z,12μm,13.1s
KMI LR LR
comp=Z,21μm,15.2s
KMI LR LR
comp=Z,26μm,15.5s
SONM Songino Array 26.43 319 P P 13 03 23.7 -1.1
comp=Z,91nm,1.1s,baz=132,slow=8.6,SNR=136
SONM PcP PcP 13 06 50.1 +0.5
comp=Z,11nm,0.9s,baz=116,slow=3.4,SNR=4.7
SONM PKiKP PKiKP 13 14 26.7 -1.6
comp=Z,2.2nm,1.0s,baz=196,slow=2.6,SNR=4.0
SONM LR LR 13 15 37.9
comp=Z,26μm,19.6s,baz=120,slow=40
SONM P3KPbc 13 36 12.0
comp=Z,4.5nm,1.1s,baz=272,slow=3.8,SNR=23
SONA1 Songino Array 26.44 319 eP P 13 03 23.6 -1.2
SGSI Sangihe 26.86 194 P P 13 03 31.9 +3.2
comp=Z,1μm,0.9s
KDM Kudat 26.97 215 ⇑P P 13 03 33.8 +4.1
CLNS Chul'man 27.25 352 eP P 13 03 31.6 -0.3
CLNS e*PP pP 13 03 41.2 +1.6
CLNS ePPP PPP 13 04 17.1
CLNS e 13 06 52.2
CLNS eS S 13 08 03.9 -5.5
CLNS pmax pmax
comp=Z,98nm,1.0s
CLNS pmax pmax
comp=N,95nm,1.0s
CLNS pmax pmax
comp=Z,24nm,1.0s
CLNS pmax pmax
comp=N,44nm,0.9s
CLNS pmax pmax
comp=E,36nm,1.0s
CLNS smax smax
comp=E,1μm,12.7s
CLNS smax smax
comp=N,3μm,13.9s
CLNS MLR MLR
comp=Z,16μm,13.0s
CLNS MLR MLR
comp=N,5μm,13.0s
CLNS MLR MLR
comp=E,6μm,16.0s
SKR Severo-Kuril's 27.50 34 eP P 13 03 24.4 -10
SKR e 13 04 18.0
SKR eS S 13 08 08.0 -5.3
SKR eSS SnSn 13 09 44.0 +20
SKR pmax pmax
comp=Z,150nm,0.7s
SKR MLR MLR
comp=N,8μm,16.0s
SKR MLR MLR
comp=E,8μm,16.0s
SKR MLR MLR
comp=Z,14μm,16.0s
MYLDM Lahad Datu 27.73 210 ⇑P P 13 03 39.3 +2.8
MYLDM Lahad Datu 27.73 210 eP P 13 03 36.1 -0.4
comp=Z,365nm,1.1s
GTA Gaotai 27.83 298 ⇑P P 13 03 35.6 -1.8
GTA pP pP 13 03 42.3 -2.8
GTA sP sP 13 03 45.3 -3.0
GTA PP PnPn 13 04 26.9 +2.8
GTA PcP PcP 13 06 53.3 +0.2
GTA S S 13 08 18.8 -0.3
GTA sS sS 13 08 29.2 -2.6
GTA ScP ScP 13 10 32.0 -0.1
GTA PcS PcS 13 10 34.2 -1.0
GTA pmax pmax
comp=Z,1μm,8.6s
GTA LR LR
comp=Z,20μm,19.0s

GTA LR LR
comp=Z,23μm,14.7s
GTA LR LR
comp=Z,30μm,13.3s
SDKM Sandakan 27.91 213 ⇓P P 13 03 39.6 +1.4
PANO Nakornpanom 27.97 249 P P 13 03 40.0 +1.3
comp=Z,82nm,1.4s
KKM Kota Kinabalu 28.03 215 ⇓P P 13 03 41.8 +2.5
KKM Kota Kinabalu 28.03 215 PFAKE 13 03 50.0 +11
KKM LR LR
comp=Z,8μm,20.0s
SKNT Sakolnakorn 28.57 249 P P 13 03 44.7 +0.6
comp=Z,89nm,1.3s
NONG Nongkai 28.70 252 P P 13 03 46.0 +0.8
comp=Z,57nm,1.0s,comp=Z,5μm
TNTI Ternate 29.39 189 P P 13 03 50.4 -0.9
comp=Z,1μm,1.2s,comp=Z,17μm
TNTI Ternate 29.39 189 eP P 13 03 51.8 +0.5
comp=Z,1μm,1.1s
ZAK Zakamensk 29.54 322 eP P 13 03 51.0 -1.4
ZAK e 13 06 57.5
ZAK e 13 10 37.7
ZAK pmax pmax
comp=Z,55nm,1.2s
ZAK pmax pmax
comp=Z,31nm,1.3s
ZAK pmax pmax
comp=Z,12nm,2.0s
PEA0 Petropavlovsk- 29.81 32 eP P 13 03 55.3 +0.6
PEA0B Petropavlovsk- 29.81 32 eP P 13 03 55.4 +0.7
comp=Z,371nm,1.4s
PETK Petropavlovsk- 29.81 32 P P 13 03 55.5 +0.8
comp=Z,38nm,0.8s,baz=213,slow=7.0,SNR=24
PETK PcP PcP 13 06 57.6 0.0
comp=Z,25nm,0.8s,baz=204,slow=3.2,SNR=5.8
PETK LR LR 13 17 05.5
comp=Z,8μm,18.3s,baz=218,slow=39
KHON Khomkaen 29.85 249 P P 13 03 56.1 +0.7
comp=Z,36nm,1.0s,comp=Z,798nm
CRAI Chiangrai 30.03 258 P P 13 03 56.1 -0.9
comp=Z,36nm,1.2s,comp=Z,2μm
TLY Talaya 30.07 324 P P 13 03 56.5 -0.6
comp=Z,3.9nm,0.5s,baz=164,slow=4.1,SNR=10
TLY PcP PcP 13 06 59.6 +1.2
comp=Z,32nm,0.9s,baz=217,slow=3.2,SNR=12
TLY Talaya 30.07 324c iP P 13 03 56.9 -0.2
TLY e 13 06 59.0
TLY eS S 13 08 51.1 -2.8
TLY pmax pmax
comp=Z,89nm,1.5s
TLY MLR MLR
comp=Z,11μm,14.0s
TLY Talaya 30.07 324 eP P 13 03 56.4 -0.6
comp=Z,66nm,1.2s
TLY PcP PcP 13 06 59.6 +1.2
TLY LR LR
comp=Z,11μm,19.0s
TLY Talaya 30.07 324 P P 13 03 57.0 -0.1
SNR=36
IRK Irkutsk 30.09 325 eP P 13 03 56.4 -0.8
IRK e 13 05 06.6
IRK e 13 06 59.5
IRK eS S 13 08 57.2 +3.1
IRK e 13 14 29.9
IRK pmax pmax
comp=Z,127nm,1.8s
PET Petropavlovsk 30.20 33 eP P 13 03 58.7 +0.6
PET eS S 13 08 53.7 -2.0
PET pmax pmax
comp=Z,2μm,6.5s
PET pmax pmax
comp=Z,164nm,1.3s
PET MLR MLR
comp=Z,12μm,17.0s
PET MLR MLR
comp=Z,12μm,17.0s
PET Petropavlovsk 30.20 33 eP P 13 03 58.2 +0.1
PET esP pP 13 04 05.4 -0.4
PET LR LR
comp=Z,6μm,20.0s
BOD Bodaibo 30.43 341 eP P 13 03 58.9 -1.2
BOD pmax pmax
comp=Z,36nm,1.6s
LOEI Loei 30.53 253 P P 13 03 58.3 -3.1
comp=Z,36nm,1.1s,comp=Z,1μm
SWI Sorong 30.71 181 P P 13 04 04.4 +1.5
comp=Z,204nm,1.4s,comp=Z,4μm
LBMI Labuha 30.76 189 P P 13 04 02.9 -0.5
comp=Z,518nm,1.4s,comp=Z,7μm
MRSI Marisa 30.85 200 P P 13 04 03.4 -0.8
comp=Z,202nm,1.6s,comp=Z,4μm
UTTA Utaradit 31.01 254 P P 13 04 05.9 +0.3
comp=Z,37nm,0.8s,comp=Z,259nm
PHIT Phitsanulok 31.39 253 P P 13 04 10.4 +1.4
comp=Z,97nm,1.0s,comp=Z,908nm
LAMP Lampang 31.41 256 P P 13 04 09.7 +0.5
comp=Z,46nm,1.1s,comp=Z,361nm
MOY Mondy 31.45 322 eP P 13 04 08.2 -1.1
MOY pmax pmax
comp=Z,96nm,2.8s
CMMT Chiang Mai 31.86 257 P P 13 04 12.9 -0.2
comp=Z,118nm,1.4s,comp=Z,2μm
CHTO Chiang Mai 31.86 257 P P 13 04 12.9 -0.3
comp=Z,518nm,1.4s,comp=Z,5μm
CHTO Chiang Mai 31.86 257 eP P 13 04 13.1 0.0
CHTO pmax pmax
comp=Z,82nm,0.8s
CHTO MLR MLR
comp=Z,13μm,19.0s
CHTO Chiang Mai 31.86 257 eP P 13 04 13.1 0.0
comp=Z,82nm,0.8s
CHTO LR LR
comp=Z,13μm,19.0s
CM31 Chiang Mai Arr 32.02 257 eP P 13 04 15.5 +0.9
CMAR Chiang Mai Arr 32.02 257 P P 13 04 14.8 +0.2
comp=Z,14nm,0.6s,baz=51,slow=7.8,SNR=70
CMAR PcP PcP 13 07 05.6 +1.5
comp=Z,46nm,0.9s,baz=46,slow=0.9,SNR=25
CMAR PKiKP PKiKP 13 14 32.4 -0.1
comp=Z,2.4nm,0.8s,baz=251,slow=1.3,SNR=6.6
CMAR LR LR 13 19 21.7
comp=Z,12μm,18.4s,baz=70,slow=40
CMAR P3KPbc 13 35 45.9
comp=Z,1.1nm,1.0s,baz=246,slow=5.0,SNR=5.2
CMAR P3KP 13 37 05.2
comp=Z,0.7nm,0.9s,baz=286,slow=3.7,SNR=3.5
CMAR Chiang Mai Arr 32.02 257 P P 13 04 14.8 +0.2
CMAR 13 07 05.6
CMAR pmax pmax
comp=Z,13nm,0.6s
CMAR pmax pmax
comp=Z,46nm,0.9s
CM01 Chiang Mai Arr 32.03 256 eP P 13 04 13.5 -1.1
BTM Bintulu 32.05 217 ⇓P P 13 04 16.3 +1.5
YAK Yakutsk 32.05 358 P P 13 04 13.9 -0.4
comp=Z,617nm,0.8s,baz=177,slow=3.4,SNR=167
YAK PcP PcP 13 07 03.7 +0.3
comp=Z,98nm,0.8s,baz=160,slow=2.4,SNR=6.1
YAK LR LR 13 17 43.4
comp=Z,11μm,18.9s,baz=180,slow=37
YAK Yakutsk 32.05 358d iP P 13 04 14.1 -0.2
YAK e*PP sP 13 04 24.4 -0.9
YAK e 13 05 16.6
YAK ePPP PPP 13 05 30.3
YAK e 13 07 03.0
YAK eS S 13 09 22.5 -2.0
YAK e*SS sS 13 09 37.0 -0.3
YAK eSS SnSn 13 11 11.3 -3.7
YAK e 13 14 37.4
YAK pmax pmax
comp=N,341nm,1.2s
YAK pmax pmax
comp=Z,849nm,1.0s
YAK pmax pmax
comp=E,42nm,0.8s
YAK pmax pmax
comp=N,425nm,2.3s
YAK pmax pmax
comp=E,140nm,2.0s
YAK pmax pmax
comp=Z,185nm,2.2s
YAK smax smax
comp=E,1μm,4.6s
YAK smax smax
comp=N,2μm,3.8s
YAK MLR MLR

comp=E,6µm,13.0s
YAK MLR MLR
comp=Z,9µm,14.0s
YAK MLR MLR
comp=N,9µm,15.0s
YAK Yakutsk 32.05 358 *e*P **P 13 04 14.3 0.0**
comp=N,678nm,0.8s
YAK PcP **PcP 13 07 03.7 +0.3**
LUWI Luwuk 32.08 197 P **P 13 04 13.8 -1.2**
comp=N,297nm,0.9s,comp=N,4µm
LUWI Luwuk 32.08 197 *e*P **P 13 04 13.5 -1.5**
comp=N,275nm,1.0s
MA2 Magadan 32.22 18 P **P 13 04 15.8 0.0**
comp=N,157nm,0.8s,baz=234,slow=9.0,SNR=192
MA2 PcP **PcP 13 07 04.3 +0.5**
comp=N,53nm,1.0s,baz=171,slow=3.2,SNR=4.2
MA2 LR LR 13 19 15.4
comp=N,6µm,18.4s,baz=222,slow=40
MA2 Magadan 32.22 18 *e*P **P 13 04 15.9 +0.1**
MA2 *e* 13 07 03.9
MA2 *e*S **S 13 09 31.1 +3.9**
MA2 pmax pmax
comp=Z,948nm,1.0s
MA2 Magadan 32.22 18 *e*P **P 13 04 15.9 +0.1**
comp=Z,948nm,1.0s
MA2 *e*PcP **PcP 13 07 03.9 0.0**
MA2 *e*S **S 13 09 31.1 +3.9**
APSI Ampana 32.26 199 P **P 13 04 15.8 -0.8**
comp=Z,246nm,1.1s,comp=Z,3µm
CHBT CHBT 32.27 244 P **P 13 04 18.7 +2.0**
comp=Z,527nm,1.1s,comp=Z,6µm
SANI Sanana 32.37 191 P **P 13 04 17.9 +0.3**
comp=Z,629nm,1.1s,comp=Z,8µm
FAKI Fak Fak 32.75 179 P **P 13 04 20.5 -0.4**
comp=Z,2µm,1.1s,comp=Z,16µm
FAKI Fak Fak 32.75 179 *e*P **P 13 04 21.4 +0.5**
comp=Z,1µm,1.0s
PCI Palu 32.81 203 P **P 13 04 19.0 -2.5**
comp=Z,273nm,1.1s,comp=Z,3µm
SBUM Sibu 33.14 218 ⇑P **P 13 04 26.1 +1.8**
SBUM Sibu 33.14 218 *e*P **P 13 04 25.1 +0.7**
comp=Z,372nm,1.9s
WAKE Wake Island 33.27 101 *e*P **P 13 04 25.4 -0.1**
comp=Z,577nm,1.5s
H11N2 WAKE ISLAND Hy 33.29 100 T T 13 40 46.0
baz=296,slow=75,SNR=49
MSAI Masohi 33.29 185 P **P 13 04 25.4 -0.2**
comp=Z,214nm,1.3s,comp=Z,3µm
H11N1 WAKE ISLAND Hy 33.29 100 T T 13 40 43.7
baz=296,slow=75,SNR=42
H11N3 WAKE ISLAND Hy 33.31 100 T T 13 40 48.3
baz=296,slow=75,SNR=38
PATY Pattaya 33.32 246 P **P 13 04 30.4 +4.5**
comp=Z,16nm,1.3s
NLAI Namlea 33.38 189 P **P 13 04 27.4 +1.1**
comp=Z,661nm,1.2s,comp=Z,7µm
GENI Genyem 33.39 165 P **P 13 04 26.2 -0.2**
comp=Z,759nm,1.5s,comp=Z,11µm
JAY Jayapura 33.44 164 P **P 13 04 27.8 +0.9**
comp=Z,21nm,1.0s,baz=285,slow=20,SNR=40
JAY Jayapura 33.44 164 P **P 13 04 26.8 -0.1**
comp=Z,269nm,1.4s,comp=Z,3µm
KMPI Kaimana, Papua 33.53 177 P **P 13 04 26.2 -1.5**
comp=Z,505nm,1.4s,comp=Z,7µm
PATS Pohnpei 33.92 128 *e*P **P 13 04 30.3 -0.8**
comp=Z,420nm,1.7s
SRDT SRDT 33.92 250 P **P 13 04 32.4 +1.2**
comp=Z,169nm,1.4s,comp=Z,5µm
KHLT Khaolaem Dam 34.12 251 P **P 13 04 34.3 +1.4**
comp=Z,24nm,1.3s,comp=Z,644nm
BKB Balikpapan 34.22 207 P **P 13 04 35.1 +1.4**
comp=Z,383nm,1.7s,comp=Z,7µm
BNDI Bandanaira 34.39 183 P **P 13 04 34.3 -0.9**
comp=Z,1µm,1.5s,comp=Z,17µm
MTKI Muara Teweh, K 34.77 211 P **P 13 04 40.0 +1.5**
comp=Z,212nm,1.1s,comp=Z,5µm
TTSI Tana Toraja 34.83 201 P **P 13 04 38.9 -0.1**
comp=Z,73nm,1.1s,comp=Z,1µm
KSM Kuching 34.99 220 ⇓P **P 13 04 42.9 +2.5**
KSM Kuching 34.99 220 *e*P **P 13 04 41.0 +0.5**
comp=Z,515nm,1.3s
KSM LR LR
comp=Z,4µm,22.0s
MANU Manus Island 35.16 152 *e*P **P 13 04 42.2 +0.4**
comp=Z,241nm,1.1s
LSA Lhasa 35.16 280 P **P 13 04 43.0 +0.6**
LSA Lhasa 35.16 280 *e*P **P 13 04 41.9 -0.5**
LSA pmax pmax
comp=Z,74nm,1.1s
LSA MLR MLR
comp=Z,22µm,21.0s
LSA Lhasa 35.16 280 *e*P **P 13 04 41.9 -0.5**
comp=Z,74nm,1.1s
LSA LR LR
comp=Z,22µm,21.0s
SEY Seymchan 35.50 16 P **P 13 04 44.9 +0.6**
comp=Z,92nm,0.8s,baz=210,slow=6.3,SNR=343
SEY PKiKP **PKiKP 13 14 33.1 -0.6**
comp=Z,2.4nm,0.8s,baz=270,slow=2.6,SNR=3.9
SEY Seymchan 35.50 16*d* *i*P **P 13 04 45.3 +1.1**
SHL Shillong 35.51 273 *e*P **P 13 04 43.5 -1.5**
SHL IAmb IAmb 13 04 48.4
comp=Z,1µm,2.4s
SHL *ex* **S 13 10 13.5 -5.7**
STKI Sintang 35.54 217 P **P 13 04 44.7 -0.5**
comp=Z,120nm,1.3s
SPSI Sidrap Palu 35.71 201 P **P 13 04 44.7 -1.9**
comp=Z,62nm,1.2s,comp=Z,2µm
KBKI Kotabaru 36.37 207 P **P 13 04 51.6 -0.6**
comp=Z,121nm,1.1s,comp=Z,3µm
KTGM Kuala Trenggan 36.55 233 ⇑P **P 13 04 56.6 +2.8**
KAPI Kappang 36.71 200 P **P 13 04 54.4 -0.7**
comp=Z,64nm,1.1s,baz=22,slow=3.9,SNR=22
KAPI PcP **PcP 13 07 18.4 +0.9**
comp=Z,60nm,1.0s,baz=311,slow=2.1,SNR=5.2
KAPI Kappang 36.71 200 *e*P **P 13 04 54.4 -0.7**
comp=Z,298nm,1.6s
KAPI PcP **PcP 13 07 18.4 +0.9**
KAPI LR LR
comp=Z,4µm,22.0s
KAPI Kappang 36.71 200 P **P 13 04 54.7 -0.4**
SNR=25
KAPI P **P 13 04 54.7 -0.4**
SNR=25
BBKI Banjar Baru 37.05 209 P **P 13 04 56.5 -1.6**
comp=Z,284nm,1.1s,comp=Z,5µm
SKLT Songkhla 37.09 239 P **P 13 05 02.0 +3.6**
comp=Z,100nm,1.2s
SURT Suratani 37.32 243 P **P 13 05 02.2 +1.8**
comp=Z,84nm,1.2s,comp=Z,1µm
TRTT Trang 37.35 240 P **P 13 05 02.5 +1.9**
comp=Z,117nm,1.1s,comp=Z,3µm
WMQ Urumqi 37.45 304 P **P 13 05 01.3 0.0**
WMQ sP sP 13 05 11.4 -0.9
WMQ PP **PnPn 13 06 30.4 +2.7**
WMQ PcP **PcP 13 07 20.0 +0.5**
WMQ S **S 13 10 46.0 -2.3**
WMQ sS sS 13 11 02.1 +0.9
WMQ SS **SnSn 13 13 18.2 -8.2**
WMQ pmax pmax
comp=Z,90nm,1.2s
WMQ pmax pmax
comp=Z,510nm,6.0s
WMQ LR LR
comp=Z,12µm,17.2s
WMQ LR LR
comp=Z,8µm,19.2s
WMQ LR LR
comp=Z,7µm,21.2s
BSSI Bau Bau, Buton 37.57 199 P **P 13 05 01.2 -1.2**
comp=Z,292nm,1.0s,comp=Z,6µm
KRAR Krasnoyarsk 37.77 325⇑ *i*P **P 13 05 03.6 -0.1**
KRAR pmax pmax
comp=Z,130nm,2.6s
KRAR MLR MLR
comp=Z,7µm,14.0s
SAUI Saumlaki 37.78 181 P **P 13 05 04.3 +0.1**
comp=Z,979nm,1.2s,comp=Z,15µm
SAUI Saumlaki 37.78 181 *e*P **P 13 05 05.1 +0.9**
comp=Z,1µm,1.4s
PBKI Pangkalan Bun 37.83 214 P P 13 05 09.9 +5.3
KULM Kulim 38.34 236 ⇓P **P 13 05 11.3 +2.4**
KULM Kulim 38.34 236 *e*P **P 13 05 10.1 +1.2**
comp=Z,160nm,1.0s
KULM LR LR
comp=Z,8µm,22.0s
PKDT Phuket 38.34 242 P **P 13 05 11.1 +2.1**
comp=Z,300nm,1.4s,comp=Z,4µm
IPM Ipoh 38.63 235 ⇑P **P 13 05 13.2 +1.7**
IPM Ipoh 38.63 235 *e*P **P 13 05 11.6 +0.1**
comp=Z,201nm,1.1s
TAPN Taplejung 38.64 277 *e*P **P 13 05 11.9 +0.1**
comp=Z,233nm,1.1s
MYKOM Kota Tinggi 38.66 229 ⇓P **P 13 05 14.0 +2.4**
MYKOM Kota Tinggi 38.66 229 *e*P **P 13 05 11.5 -0.1**
comp=Z,101nm,1.0s
KGM Kluang 38.84 230 ⇓P **P 13 05 15.6 +2.5**
TPRI Tanjung Pinang 38.88 227 P **P 13 05 15.6 +2.1**
comp=Z,192nm,0.8s,comp=Z,61µm
ODAN Odare 39.04 277 *e*P **P 13 05 14.9 -0.2**
comp=Z,424nm,1.0s
FRIM Kepong 39.09 233 ⇓P **P 13 05 17.4 +2.2**
MMPI Merauke 39.13 167 P **P 13 05 18.4 +2.9**
comp=Z,701nm,1.3s,comp=Z,14µm
RABL Rabaul 39.19 147 *e*P **P 13 05 17.2 +1.2**
comp=Z,1µm,1.5s
MMRI Maumere 39.52 195 P **P 13 05 17.3 -1.5**
comp=Z,570nm,1.2s,comp=Z,7µm
MMRI Maumere 39.52 195 *e*P **P 13 05 18.1 -0.7**
comp=Z,897nm,1.3s
DGPR DIGLIPUR 39.64 254 *e*P **P 13 05 19.3 -0.5**
RAMN Ramite 39.70 277 *e*P **P 13 05 20.2 -0.3**
comp=Z,76nm,0.6s
DSRI Dabo 39.93 226 P **P 13 05 21.7 -0.6**
comp=Z,288nm,1.1s,comp=Z,7µm
GUN Gumba 40.07 279 *e*P **P 13 05 23.5 -0.3**
comp=Z,798nm,0.8s
SOEI Soe 40.21 192 P **P 13 05 23.7 -0.9**
comp=Z,1µm,1.0s,comp=Z,10µm
SOEI Soe 40.21 192 *e*P **P 13 05 24.0 -0.6**
comp=Z,1µm,1.0s
ZSN Zaisan 40.22 309⇑ *i*P **P 13 05 21.2 -3.1**
comp=Z,226nm,1.1s
ZSN *e*PP **PnPn 13 06 59.5 -1.2**
ZSN *e*S **S 13 11 24.6 -5.2**
ZSN LR LR 13 22 18.6
comp=Z,7µm,14.9s
PPBI Pangkal Pinang 40.34 222 P **P 13 05 25.7 +0.1**
comp=Z,171nm,1.9s,comp=Z,3µm
PBA Port Blair 40.60 252 *e*P P 13 05 28.3 +0.5
KKN Kakani 40.61 279 *e*P **P 13 05 28.3 +0.2**
comp=Z,560nm,1.1s
DMN Daman 40.81 279 *e*P **P 13 05 29.8 0.0**
comp=Z,560nm,1.2s
PLAI Plampang 40.92 202 P **P 13 05 29.8 -0.6**
comp=Z,473nm,1.2s,comp=Z,7µm
TSI Tuntungan 41.07 236 P **P 13 05 34.4 +2.7**
comp=Z,169nm,0.9s,comp=Z,5µm
LHMI Lhok Sumawe 41.11 240 P P 13 05 37.5 +5.5
LHMI Lhok Sumawe 41.11 240 *e*P **P 13 05 32.6 +0.6**
comp=Z,366nm,1.1s
GKN Gorkha 41.11 279 *e*P **P 13 05 31.9 -0.2**
comp=Z,91nm,0.6s
TWSI Taliwang, Sumb 41.13 203 P **P 13 05 31.5 -0.6**
comp=Z,597nm,1.4s,comp=Z,8µm
ABJI Asem Bagus 41.23 207 P **P 13 05 33.3 +0.4**
comp=Z,226nm,1.4s
BOK Bokaro 41.24 273 *e*P **P 13 05 32.0 -1.1**
BOK IAmb IAmb 13 05 37.6
comp=Z,778nm,2.0s
PSI Prapat 41.29 235 P **P 13 05 34.3 +0.6**
comp=Z,56nm,0.8s,baz=26,slow=6.2,SNR=32
PSI PcP **PcP 13 07 32.9 +0.7**
comp=Z,112nm,1.0s,baz=61,slow=2.1,SNR=11
PSI Prapat 41.29 235 *e*P **P 13 05 34.7 +1.0**
comp=Z,85nm,0.9s
PSI PcP **PcP 13 07 32.9 +0.7**
ZALV Zalesovo Beam 41.33 319 P **P 13 05 32.4 -1.0**
comp=Z,49nm,1.0s,baz=102,slow=6.7,SNR=70
ZALV PcP **PcP 13 07 31.2 -0.2**
comp=Z,82nm,0.8s,baz=111,slow=3.2,SNR=17
ZALV ScP **ScP 13 11 20.0 +0.3**
comp=Z,1.3nm,0.6s,baz=114,slow=3.5,SNR=2.4
ZALV PKiKP **PKiKP 13 14 38.0 -0.9**
comp=Z,3.5nm,0.9s,baz=183,slow=1.8,SNR=3.8
ZALV LR LR 13 24 30.8
comp=Z,12µm,20.9s,baz=116,slow=39
ZALV P3KP 13 36 43.5
comp=Z,1.3nm,0.9s,baz=285,slow=2.9,SNR=4.8
ZALV P4KPbc 13 43 38.2
comp=Z,0.4nm,0.5s,baz=105,slow=3.4,SNR=4.9
UWJI Ujung Watu 41.41 212 P **P 13 05 36.1 +1.7**
comp=Z,396nm,1.8s,comp=Z,7µm
JMBI JAMBI 41.41 226 P **P 13 05 39.1 +4.6**
comp=Z,726nm,1.3s,comp=Z,11µm
BASI Baing, Sumba 41.45 197 P **P 13 05 32.9 -1.8**
comp=Z,392nm,1.3s,comp=Z,5µm
MKAR Makanchi Array 41.56 308 P **P 13 05 34.8 -0.7**
comp=Z,48nm,0.9s,baz=96,slow=8.2,SNR=149
MKAR PP **PnPn 13 07 14.1 -2.5**
comp=Z,34nm,1.1s,baz=94,slow=8.6,SNR=3.6
MKAR PcP **PcP 13 07 32.6 +0.2**
comp=Z,74nm,1.0s,baz=86,slow=5.0,SNR=7.5
MKAR ScP **ScP 13 11 19.6 -1.2**
comp=Z,3.2nm,0.9s,baz=94,slow=3.6,SNR=2.6
MKAR PKiKP **PKiKP 13 14 38.2 -1.2**
comp=Z,3.0nm,0.9s,baz=49,slow=3.7,SNR=4.0
MKAR LR LR 13 23 34.0
comp=Z,9µm,22.0s,baz=92,slow=37
MKAR P3KPbc 13 35 04.9
comp=Z,0.2nm,0.7s,baz=307,slow=0.7,SNR=4.0
MKAR P3KP 13 36 40.8
comp=Z,0.1nm,0.5s,baz=191,slow=1.5,SNR=2.0
MKAR P4KPbc 13 43 40.9
comp=Z,0.9nm,0.8s,baz=76,slow=5.1,SNR=8.5
BKNI Bangkinang 41.60 230 P **P 13 05 37.8 +1.7**
comp=Z,508nm,0.9s,comp=Z,7µm
BKNI Bangkinang 41.60 230 *e*P **P 13 05 37.5 +1.4**
comp=Z,330nm,0.9s
KCSI Kotacane, Aceh 41.63 237 P **P 13 05 36.7 +0.4**
comp=Z,83nm,1.1s,comp=Z,3µm
TIXI Tiksi 41.72 359 P **P 13 05 35.9 -0.5**
comp=Z,118nm,0.8s,baz=149,slow=7.4,SNR=168
TIXI S **S 13 11 50.0 -1.4**
comp=Z,6.4nm,1.1s,baz=344,slow=19,SNR=3.2
TIXI LR LR 13 24 08.7
comp=Z,14µm,19.0s,baz=183,slow=38
TIXI Tiksi 41.72 359*d* *i*P **P 13 05 35.8 -0.5**
TIXI pmax pmax
comp=Z,415nm,2.5s
TIXI MLR MLR
comp=Z,15µm,20.0s
TIXI Tiksi 41.72 359 *e*P **P 13 05 35.8 -0.6**
comp=Z,124nm,0.8s
TIXI S **S 13 11 50.0 -1.4**
PMBI Palembang 41.75 223 P **P 13 05 40.3 +3.1**
comp=Z,755nm,1.0s
MAKZ Makanchi 41.78 308 *e*P **P 13 05 36.9 -0.3**
MAKZ pmax pmax
comp=Z,305nm,2.0s
MAKZ Makanchi 41.78 308 *e*P **P 13 05 36.9 -0.3**
comp=Z,305nm,2.0s
PMG Port Moresby 41.87 157 P **P 13 05 38.2 +0.1**
comp=Z,143nm,1.0s,baz=345,slow=7.2,SNR=28
PMG Port Moresby 41.87 157*d* *i*P **P 13 05 37.9 -0.3**
PMG pmax pmax
comp=Z,1µm,1.2s
PMG Port Moresby 41.87 157 *e*P **P 13 05 38.3 +0.1**
comp=Z,219nm,1.1s
PMG LR LR
comp=Z,6µm,19.0s
JAGI Jajag, Banyuwa 41.88 207 P **P 13 05 38.8 +0.5**
comp=Z,160nm,1.3s,comp=Z,4µm
JAGI Jajag, Banyuwa 41.88 207 *e*P **P 13 05 37.5 -0.8**
comp=Z,111nm,0.9s
NGJI Ngawi 42.01 211 P **P 13 05 41.3 +1.9**
comp=Z,542nm,1.3s
KOLN Koldanda 42.06 279 *e*P **P 13 05 38.9 -1.1**
comp=Z,115nm,0.9s
MNSI Mandailing Nat 42.25 233 P **P 13 05 42.0 +0.6**
comp=Z,217nm,1.2s,comp=Z,3µm
SDSI Sungai Dareh 42.28 229 P **P 13 05 43.1 +1.5**
comp=Z,416nm,1.1s,comp=Z,31µm
CMBY CAMPBELL BAY 42.31 245 *e*P **P 13 05 42.5 +0.7**
NVS Novosibirsk 42.46 320⇓ *i*P **P 13 05 42.6 0.0**
NVS *i* 13 07 28.2
NVS *i*S **S 13 12 02.2 -0.6**
NVS *i* 13 15 46.0
NVS pmax pmax
comp=Z,146nm,1.7s
NVS pmax pmax
comp=N,55nm,1.9s
NVS pmax pmax
comp=E,136nm,1.9s
NVS smax smax
comp=N,303nm,3.9s
NVS smax smax
comp=E,350nm,3.4s
PYUN Piuthan 42.49 280 *e*P **P 13 05 43.1 -0.4**
comp=E,642nm,1.1s
PPI Padang Panjang 42.61 230 P **P 13 05 45.4 +1.1**
comp=E,212nm,1.8s,comp=E,4µm
MTN Manton Dam 42.62 181 *e*P **P 13 05 43.8 -0.4**
comp=E,977nm,1.0s
WOJI Wonogiri, Jawa 42.67 211 P **P 13 05 46.4 +1.7**
comp=E,273nm,1.6s,comp=E,8µm
JCJI Jatiwangi 42.77 216 P **P 13 05 48.9 +3.3**
comp=E,658nm,1.5s,comp=E,12µm
PDSI Padang 42.91 230 P **P 13 05 47.5 +0.8**
comp=E,144nm,0.7s,comp=E,13µm
UGM Wanagama 42.92 212 P **P 13 05 47.1 +0.3**
comp=E,698nm,1.2s,comp=E,10µm
UGM Wanagama 42.92 212 *e*P **P 13 05 47.4 +0.6**
comp=E,918nm,1.2s
SHLS Shalkode 43.09 302 *i*P **P 13 05 48.5 +0.3**
comp=E,677nm,1.0s
SHLS LR LR 13 24 24.5
comp=E,2µm,13.5s
BILL Bilibino 43.09 18*d* *i*P **P 13 05 48.3 +0.7**
BILL *i* 13 06 00.0
BILL *e* 13 07 38.1
BILL *e*S **S 13 12 13.8 +2.1**
BILL pmax pmax
comp=Z,567nm,1.7s
BILL MLR MLR
comp=Z,9µm,16.0s
BILL Bilibino 43.09 18 *e*P **P 13 05 47.9 +0.4**
comp=Z,311nm,1.0s
BILL LR LR
comp=Z,5µm,20.0s
KPJI Karang Pucung 43.17 214 P **P 13 05 49.4 +0.6**
comp=Z,606nm,1.4s,comp=Z,8µm
LHSI Lahat 43.21 224 P **P 13 05 51.0 +1.9**
comp=Z,278nm,1.9s,comp=Z,8µmcomp=Z,9µm
KLI Kotabumi 43.26 221 P **P 13 05 50.9 +1.4**
comp=Z,371nm,1.0s,comp=Z,5µmcomp=Z,106µm
GSI Gunungsitoli 43.30 235 P **P 13 05 50.4 +0.5**
comp=Z,513nm,1.6s,comp=Z,8µm
GSI Gunungsitoli 43.30 235 *e*P **P 13 05 50.3 +0.4**
comp=Z,816nm,1.3s
SEM Semipalatinsk 43.34 313 *i*P **P 13 05 48.9 -0.9**
comp=Z,422nm,1.0s
SEM *e*S **S 13 12 13.1 -2.8**
SEM LR LR 13 24 05.3
comp=Z,5µm,13.3s
MDSI Maura Dua 43.35 222 P **P 13 05 51.3 +1.1**
comp=Z,266nm,1.8s,comp=Z,5µm
PDGK Podgornoye 43.38 303 P **P 13 05 48.6 -1.6**
PDGK pmax pmax
comp=Z,217nm,0.9s
LEM Lembang 43.40 216 P P 13 05 57.2 +6.4
comp=Z,402nm,0.9s,baz=30,slow=6.7,SNR=86
LEM Lembang 43.40 216 P P 13 05 57.7 +6.9
BLSI Bandar Lampung 43.45 220 P **P 13 05 53.0 +1.9**
comp=Z,301nm,1.3s,comp=Z,6µm
MASI Maura Aman, Be 43.46 226 P **P 13 05 52.8 +1.6**
comp=Z,708nm,1.3s,comp=Z,9µm
SBJI Serang 43.59 219 P **P 13 05 53.7 +1.6**
comp=Z,759nm,1.3s,comp=Z,11µm
DBJI Damaga 43.62 218 P **P 13 05 53.5 +1.1**
comp=Z,1µm,1.3s,comp=Z,14µm
PBSI Pulau Batu 43.76 233 P **P 13 05 54.1 +0.5**
comp=Z,489nm,1.6s,comp=Z,7µm
LWLI Liwa 43.85 222 P **P 13 05 55.2 +0.8**
comp=Z,262nm,0.8s,comp=Z,30µm
CISI Cisompet, Garu 43.92 216 P **P 13 05 54.2 -0.7**
comp=Z,209nm,1.8s,comp=Z,4µm
CISI Cisompet, Garu 43.92 216 *e*P **P 13 05 53.4 -1.5**
comp=Z,224nm,1.1s
KASI Kota Agung 44.01 221 P **P 13 05 55.7 +0.2**
comp=Z,169nm,1.0s,comp=Z,3µm
CNJI Cibinong 44.06 217 P **P 13 05 55.5 -0.4**
comp=Z,264nm,1.2s,comp=Z,3µm
MIDW Midway 44.11 79 PFAKE 13 06 10.0 +14
MIDW LR LR
comp=Z,5µm,20.0s
SATY Saty 44.17 302⇑ *i*P **P 13 05 56.5 -0.3**
comp=Z,1µm,1.1s
SATY *i* PP **PcP 13 07 42.0 +0.7**
SATY *e*S **S 13 12 27.4 -1.1**
SATY *e*SS **ScS 13 15 51.5 -2.2**
SATY LRM MLR 13 29 25.2
comp=Z,5µm,13.0s
CGJI Cibinong 44.24 219 P **P 13 05 56.0 -1.3**
comp=Z,210nm,0.9s,comp=Z,5µm
KURK Kurchatov 44.41 313 *e*P **P 13 05 57.5 -0.9**
KURK 13 07 41.8
KURK pmax pmax
comp=Z,118nm,1.0s
KURK MLR MLR
comp=Z,45µm,19.0s
KURK Kurchatov 44.41 313 *e*P **P 13 05 57.5 -0.9**
comp=Z,118nm,1.0s
KURK PcP **PcP 13 07 41.8 0.0**
KURK PKiKP **PKiKP 13 14 41.3 -0.5**
KURK PKKKP 13 36 43.2
KURK *e* 13 43 49.5
KURK LR LR
comp=Z,45µm,19.0s
KURK Kurchatov 44.41 313 P **P 13 05 58.0 -0.4**
SNR=65
KURBB Kurchatov Arra 44.46 313 P **P 13 05 58.0 -0.8**
comp=Z,69nm,1.1s,baz=98,slow=7.8,SNR=175
KURBB PcP **PcP 13 07 41.8 -0.2**
comp=Z,24nm,0.8s,baz=99,slow=4.0,SNR=6.8
KURBB PKiKP **PKiKP 13 14 41.3 -0.5**
comp=Z,2.7nm,0.9s,baz=86,slow=0.7,SNR=5.2
KURBB P3KP 13 36 43.2
comp=Z,0.2nm,0.7s,baz=247,slow=3.1,SNR=2.9
KURBB P4KPbc 13 43 49.5
comp=Z,0.5nm,0.8s,baz=109,slow=3.4,SNR=6.9
LGTI Lohaghat 44.49 283 *e*P **P 13 06 02.8 +3.5**
ATKA Atka Island 45.06 45 *e*P **P 13 06 03.4 -0.1**
COEN Coen 45.06 164 *e*P **P 13 06 04.9 +1.0**
comp=Z,306nm,1.0s
MDOK Medeo 45.16 303⇓ *i*P **P 13 06 05.0 +0.3**
comp=Z,919nm,0.8s
MDOK *i* S **S 13 12 41.9 -1.0**
MDOK LR LR 13 25 12.8
comp=Z,5µm,16.3s
CHKK Chushkaly 45.18 304⇑ *i*P **P 13 06 04.5 -0.1**
comp=Z,406nm,0.8s
AAA Alma-Ata 45.23 303 *e*P **P 13 06 05.4 +0.2**
comp=Z,1µm,1.0s
AAA LR LR 13 25 09.3
comp=Z,4µm,18.3s
KUU Kurty 45.66 304⇑ *i*P **P 13 06 08.4 -0.1**
comp=Z,1µm,0.9s
KUU *i* PP **PP 13 07 53.6 -1.8**
KUU *e*S **S 13 12 48.2 -1.6**
KUU LRM MLR 13 28 24.7
comp=Z,6µm,16.0s
VIS Vishakhapatnam 45.72 266 *e*P **P 13 06 08.8 -0.4**
DDI Dehra Dun 46.13 285 *e*P **P 13 06 11.3 -1.1**
DDI IAmb IAmb 13 06 15.3
comp=Z,67nm,0.4s
KSH Kashi 46.23 298 P **P 13 06 16.8 +3.7**
KSH *e*pP pP 13 06 22.4 +1.3
KSH *e*sP sP 13 06 25.4 +1.1
KSH *e*PcP **PcP 13 07 52.0 +3.5**
KSH *e*ScP **ScP 13 11 42.7 +2.6**
KSH S **S 13 13 02.6 +4.4**
KSH sS sS 13 13 12.6 +1.3
KSH SS **SS 13 16 19.2 -4.4**
KSH pmax pmax
comp=Z,230nm,1.4s
KSH pmax pmax
comp=Z,820nm,4.7s
KSH LR LR
comp=Z,9µm,12.6s
KSH LR LR
comp=Z,4µm,11.9s
KSH LR LR
comp=Z,12µm,14.4s
TKM2 Tokmak 2 46.24 302 P **P 13 06 12.4 -0.9**
TKM2 pmax pmax
comp=Z,115nm,0.9s
TKM2 Tokmak 2 46.24 302 *e*P **P 13 06 13.9 +0.7**
comp=Z,218nm,1.1s
TKM2 LR LR
comp=Z,12µm,21.0s

SMLA Simla 46.68 286 *i* P P **13 06 17.2 +0.5**
SMLA IAmb IAmb 13 06 18.4
comp=Z,2µm,3.0s
NRIK Noril'sk 46.71 340 P P **13 06 15.5 -0.8**
comp=Z,84nm,0.9s,baz=119,slow=9.1,SNR=38
NRIK PcP **PcP** **13 07 49.9 +0.4**
comp=Z,50nm,0.8s,baz=146,slow=4.4,SNR=5.0
NRIK LR LR 13 27 26.5
comp=Z,12µm,18.0s,baz=131,slow=38
SDNR Sundarnagar 46.76 286 *eP* P **13 06 19.0 +1.7**
FRU Bishkek 46.96 302⇑ *iP* P **13 06 18.0 -0.8**
FRU *eS* S **13 13 05.0 -3.5**
FRU pmax pmax
comp=Z,400nm,2.0s
FRU smax smax
comp=E,2µm,17.0s
AAK Ala-Archa 47.06 302 *eP* P **13 06 19.9 +0.2**
AAK pmax pmax
comp=Z,84nm,1.0s
AAK MLR MLR
comp=Z,15µm,19.0s
AAK Ala-Archa 47.06 302 *eP* P **13 06 19.9 +0.2**
comp=Z,84nm,1.0s
AAK LR LR
comp=Z,15µm,19.0s
BISR Bishrakh 47.09 282 *eP* P **13 06 18.9 -1.0**
DHRM DHARAMSHALA 47.15 288 *eP* P **13 06 21.0 +0.4**
DHRM IAmb IAmb 13 06 27.0
comp=Z,179nm,1.6s
DHRM IAMs_20 IAMs_20 13 27 32.8
comp=Z,14µm,21.5s
NDI New Delhi 47.25 283 *eP* P **13 06 19.5 -1.7**
KKR Kurukshetra 47.25 284 *eP* P **13 06 20.9 -0.3**
AYAN Aya Nagar 47.38 282 *eP* P **13 06 21.7 -0.4**
PVM Polavaram 47.39 266 *eP* P **13 06 22.4 0.0**
PVM IAmb IAmb 13 06 26.7
comp=Z,93nm,1.2s
PVM *eS* S **13 13 11.4 -3.7**
PVM IVMs_BB IVMs_BB 13 28 35.1
comp=Z,2µm,17.8s
SONA Sohna 47.48 282 *eP* P **13 06 22.5 -0.4**
XMIS Christmas Isla 47.51 216 *eP* P **13 06 22.3 -0.9**
comp=Z,353nm,1.2s
EKS2 Erkin-Say 47.59 302 *eP* P **13 06 24.3 +0.5**
EKS2 pmax pmax
comp=Z,141nm,1.4s
EKS2 MLR MLR
comp=Z,13µm,20.0s
EKS2 Erkin-Say 47.59 302 *eP* P **13 06 24.3 +0.5**
comp=Z,141nm,1.4s
EKS2 LR LR
comp=Z,13µm,20.0s
THN Thein Dam 47.59 288 *eP* P **13 06 22.5 -1.2**
HNR Honiara 47.63 141 P P **13 06 23.9 -0.3**
comp=Z,142nm,1.0s,baz=177,slow=6.6,SNR=16
HNR Honiara 47.63 141 *eP* P **13 06 23.0 -1.2**
HNR Honiara 47.63 141 *eP* P **13 06 24.3 +0.1**
HNR pmax pmax
comp=Z,435nm,1.0s
HNR MLR MLR
comp=Z,3µm,19.0s
HNR Honiara 47.63 141 *eP* P **13 06 24.3 +0.1**
comp=Z,435nm,1.0s
HNR LR LR
comp=Z,3µm,19.0s
RTK Rohtak 47.84 283 *eP* P **13 06 25.6 -0.1**
KUDL Kundal 48.02 282 *eP* P **13 06 26.5 -0.6**
SFK Sufi-Kurgan 48.06 298 P P **13 06 27.2 -0.4**
SFK pmax pmax
comp=Z,227nm,1.3s
FITZ Fitzroy Crossi 48.21 188 P P **13 06 28.6 +0.1**
comp=Z,131nm,1.0s,baz=13,slow=8.4,SNR=136
FITZ Fitzroy Crossi 48.21 188 *eP* P **13 06 28.8 +0.3**
TARA Tarawa 48.29 118 *eP* P **13 06 29.4 +0.1**
comp=Z,281nm,1.2s
TARA LR LR
comp=Z,272nm,20.0s
OTUK Ortayu 48.37 310 P P **13 06 28.9 -0.7**
OTUK pmax pmax
comp=Z,141nm,1.2s
MNAS Manas 48.54 302 P P **13 06 30.8 -0.4**
MNAS pmax pmax
comp=Z,50nm,1.0s
KHET Khetri 48.61 282 *eP* P **13 06 31.0 -0.7**
KHET IAmb IAmb 13 06 34.8
comp=Z,64nm,0.6s
BHPL Bhopal 48.74 276 *eP* P **13 06 30.1 -2.7**
BHPL IAMs_20 IAMs_20 13 35 36.0
comp=Z,4µm,11.5s
RPR Rampur 48.75 269 *eP* P **13 06 33.3 +0.5**
RPR IAmb IAmb 13 06 36.9
comp=Z,116nm,1.1s
RPR *eS* S **13 13 34.0 -0.4**
RPR IVMs_BB IVMs_BB 13 25 16.6
comp=Z,2µm,33.6s
GAMB Gambell 48.79 29 *eP* P **13 06 33.6 +1.1**
ADKI Addanki 49.43 265 *eP* P **13 06 37.8 -0.2**
ADKI IAmb IAmb 13 06 43.5
comp=Z,50nm,0.9s
ADKI *eS* S **13 13 45.0 +1.1**
ADKI IVMs_BB IVMs_BB 13 29 01.2
comp=Z,3µm,21.0s
SRSP Sriramsagar 49.55 270 *eP* P **13 06 38.3 -0.7**
SRSP IAmb IAmb 13 06 42.9
comp=Z,78nm,0.9s
SRSP *eS* S **13 13 45.6 +0.1**
SRSP IVMs_BB IVMs_BB 13 27 37.4
comp=Z,2µm,26.2s
CHKZ Chkalovo 49.58 317 P P **13 06 37.0 -1.7**
CHKZ pmax pmax
comp=Z,75nm,1.0s
BVA0 Borovoye Array 49.69 316 *i* P P **13 06 38.6 -1.0**
BVA0 pmax pmax
comp=Z,121nm,1.0s
BVAR Borovoye Array 49.69 316 P P **13 06 39.1 -0.5**
comp=Z,80nm,0.8s,baz=92,slow=7.7,SNR=151
BVAR PcP **PcP** **13 08 00.9 +0.4**
comp=Z,73nm,0.8s,baz=135,slow=4.5,SNR=9.9
BVAR LR LR 13 29 18.0
comp=Z,13µm,19.9s,baz=98,slow=38
BVAR P4KPbc 13 44 13.6
comp=Z,1.2nm,0.7s,baz=76,slow=6.3,SNR=6.8
NJS Nagarjunasagar 49.70 267 *eP* P **13 06 39.7 -0.4**
NJS IAmb IAmb 13 06 44.5
comp=Z,87nm,1.2s
NJS *eS* S **13 13 48.1 +0.5**
NJS IVMs_BB IVMs_BB 13 32 06.9
comp=Z,2µm,14.3s
WRAB Tennant Creek 49.72 177 *eP* P **13 06 40.2 +0.1**
WRAB MLR MLR
comp=Z,5µm,20.0s
WRAB Tennant Creek 49.72 177 *eP* P **13 06 40.2 +0.1**
WRAB LR LR
comp=Z,5µm,20.0s
WB2 Warramunga Arr 49.73 177 *eP* P **13 06 40.2 +0.1**
WRA Warramunga Arr 49.73 177 P P **13 06 40.1 -0.1**
comp=Z,375nm,1.0s,baz=351,slow=8.2,SNR=462
WRA pP **sP** **13 06 51.2 -0.1**
comp=Z,201nm,0.9s,baz=355,slow=8.5,SNR=13
WRA LR LR 13 26 39.9
comp=Z,3µm,20.6s,baz=350,slow=35
WRA PKPPKP **P'P'df** **13 37 32.5 +4.5**
comp=Z,2.3nm,0.9s,baz=168,slow=1.5,SNR=6.3
WRA PKP2ab 13 38 23.7
comp=Z,2.3nm,0.9s,baz=196,slow=3.1,SNR=5.6
WRA P4KPbc 13 44 14.4
comp=Z,4.1nm,0.9s,baz=355,slow=5.3,SNR=19
WRA Warramunga Arr 49.73 177 *i* P P **13 06 40.0 -0.1**
WRA pmax pmax
comp=Z,359nm,1.0s
BRVK Borovoye 49.75 316 *eP* P **13 06 39.8 -0.3**
BRVK MLR MLR
comp=Z,14µm,21.0s
BRVK Borovoye 49.75 316 *eP* P **13 06 39.8 -0.3**
BRVK LR LR
comp=Z,14µm,21.0s
KK31 Karatay Array 49.94 303 *i* P P **13 06 41.7 0.0**
KK31 pmax pmax
comp=Z,239nm,1.3s
KKAR Karatay Array 49.94 303 *eP* P **13 06 41.9 +0.2**
KKAR Karatay Array 49.94 303 *eP* P **13 06 41.9 +0.2**
HYB Hyderabad 49.98 268 *i* P P **13 06 42.0 -0.3**
HYB *eS* P **pP** **13 06 50.5 +0.1**
HYB *ePcP* **PcP** **13 08 03.0 +0.8**
HYB *eS* S **13 13 54.0 +2.3**
HYB *eScS* **ScS** **13 16 32.0 -0.4**

HYB Hyderabad 49.98 268 *eP* P **13 06 40.0 -2.3**
HYBB Hyderabad (bro 49.98 268 *eP* P **13 06 41.5 -0.8**
HYBB IAmb IAmb 13 06 46.5
comp=Z,100nm,1.3s
HYBB *eS* S **13 13 52.1 +0.4**
HYBB IVMs_BB IVMs_BB 13 28 24.1
comp=Z,2µm,22.7s
SRLM Srisailam 50.25 266 *eP* P **13 06 43.8 -0.6**
SRLM IAmb IAmb 13 06 49.3
comp=Z,244nm,1.5s
SRLM *eS* S **13 13 54.6 -0.8**
SRLM IVMs_BB IVMs_BB 13 32 39.9
comp=Z,3µm,15.7s
IUG luzhnay 50.40 302⇑ *iP* P **13 06 45.8 +0.5**
IUG comp=Z,837nm,0.7s *eS* S **13 13 55.9 -1.2**
IUG LR LR 13 30 55.6
comp=Z,2µm,13.1s
MDRS Chennai 50.45 262 *eP* P **13 06 46.7 +0.9**
MDRS IAmb IAmb 13 06 48.9
comp=Z,4µm,4.4s
RCLA Racherla 50.47 266 *eP* P **13 06 45.6 -0.4**
RCLA IAmb IAmb 13 06 50.5
comp=Z,46nm,1.0s
RCLA *eS* S **13 13 55.8 -2.7**
RCLA IVMs_BB IVMs_BB 13 29 41.1
comp=Z,3µm,22.4s
ZRNK Zerenda 50.52 316 *eP* P **13 06 45.4 -0.5**
ZRNK Zerenda 50.52 316 *eP* P **13 06 45.4 -0.5**
SKHT Srikalahasti 50.60 263 *eP* P **13 06 47.5 +0.6**
SKHT IAmb IAmb 13 06 51.6
comp=Z,72nm,1.0s
SKHT *eS* S **13 13 58.2 -1.9**
SKHT IVMs_BB IVMs_BB 13 34 04.3
comp=Z,2µm,13.6s
KLRI Killari 51.41 270 *eP* P **13 06 52.5 -0.6**
KLRI IAmb IAmb 13 06 55.6
comp=Z,135nm,0.8s
KLRI *eS* S **13 14 08.8 -2.7**
KLRI IVMs_BB IVMs_BB 13 31 27.6
comp=Z,3µm,19.2s
CTA Charters Tower 51.71 163 P P **13 06 55.3 +0.2**
comp=Z,266nm,1.0s,baz=341,slow=9.3,SNR=67
CTA pP **sP** **13 07 06.5 +0.2**
comp=Z,147nm,1.0s,baz=341,slow=11,SNR=10
CTAO Charters Tower 51.71 163 *eP* P **13 06 55.8 +0.7**
CTAO MLR MLR
comp=Z,3µm,21.0s
CTAO Charters Tower 51.71 163 *eP* P **13 06 55.8 +0.7**
CTAO LR LR
comp=Z,3µm,21.0s
URV Uravakonda 52.17 266 *eP* P **13 06 58.7 -0.1**
URV IAmb IAmb 13 07 03.3
comp=Z,125nm,1.1s
URV *eS* S **13 14 22.6 +0.7**
URV IVMs_BB IVMs_BB 13 31 50.2
comp=Z,3µm,22.2s
MBWA Marble Bar 52.20 194 *eP* P **13 06 58.8 +0.1**
MBWA LR LR
comp=Z,1µm,22.0s
KBL Kabul 52.54 292 *eP* P **13 07 02.7 +1.1**
KBL Kabul 52.54 292 *eP* P **13 07 02.7 +1.1**
JASL Jaisalmer 53.11 283 *eP* P **13 07 05.4 -0.2**
AS31 Alice Springs 53.41 178 *eP* P **13 07 07.9 +0.2**
AS01 Alice Springs 53.41 178 *eP* P **13 07 05.9 -1.8**
ASAR Alice Springs 53.41 178 P P **13 07 08.0 +0.3**
comp=Z,247nm,0.9s,baz=355,slow=5.9,SNR=465
ASAR pP **sP** **13 07 18.6 -0.2**
comp=Z,91nm,0.8s,baz=356,slow=5.9,SNR=11
ASAR LR LR 13 28 57.2
comp=Z,4µm,20.9s,baz=358,slow=35
ASAR PKPPKP **P'P'df** **13 37 30.2 +7.2**
comp=Z,1.5nm,0.9s,baz=152,slow=3.6,SNR=5.5
ASAR P4KPbc 13 44 30.6
comp=Z,2.8nm,0.9s,baz=357,slow=4.9,SNR=17
ASAR Alice Springs 53.41 178 P P **13 07 08.0 +0.3**
ASAR *PP **sP** **13 07 18.7 -0.2**
ASAR pmax pmax
comp=Z,244nm,0.9s
ASAR pmax pmax
comp=Z,91nm,0.8s
POO Poona 53.61 272 *eP* P **13 07 08.7 -0.7**
POO *iS* S **13 14 43.0 +1.5**
POO *iSS* **SKiKP** **13 18 24.0 +1.0**
COCO West Island 53.83 224 PFAKE 13 07 20.0 +9.1
COCO LR LR
comp=Z,3µm,21.0s
JOHN Johnston Islan 54.89 90 *eP* P **13 07 19.4 +0.7**
JOHN LR LR
comp=Z,365nm,20.0s
GOA Goa 54.90 268 *eP* P **13 07 17.8 -0.9**
SVE Sverdlovsk 55.30 321*ceP* P **13 07 21.7 +0.7**
SVE *e* 13 08 25.8
SVE *e* 13 09 31.2
SVE *ePPP* PPP 13 10 38.8
SVE *eS* S **13 15 02.8 -0.4**
SVE pmax pmax
comp=Z,227nm,1.7s
SVE pmax pmax
comp=Z,1µm,15.0s
SVE MLR MLR
comp=Z,12µm,20.0s
SVE MLR MLR
comp=E,10µm,19.0s
SVE MLR MLR
comp=N,6µm,17.0s
BHJ Bhuj 55.42 279 *eP* P **13 07 23.5 +1.1**
BHJ IAMs_20 IAMs_20 13 36 54.3
comp=Z,5µm,15.4s
TRD Trivandrum 55.49 259 *eP* P **13 07 23.5 +0.5**
TT01 Tatalina 55.65 32 *eP* P **13 07 24.3 +0.8**
TTA Tatalina 55.65 32 *eP* P **13 07 24.2 +0.6**
TTA Tatalina 55.65 32 *eP* P **13 07 24.2 +0.6**
SVW2 Sparrevohn 55.86 34 *eP* P **13 07 26.4 +1.3**
AB31 Akbulak array 56.46 312 *i* P P **13 07 29.0 -0.5**
AB31 pmax pmax
comp=Z,82nm,0.8s
ABKAR Akbulak array 56.46 312 *eP* P **13 07 29.3 -0.2**
comp=Z,0.7nm,0.2s
ABKAR *eS* S **13 15 16.0 -2.9**
ARU Arti 56.47 320 P P **13 07 29.3 -0.2**
comp=Z,65nm,0.8s,baz=92,slow=4.1,SNR=118
ARU LR LR 13 34 04.7
comp=Z,13µm,20.5s,baz=82,slow=38
ARU Arti 56.47 320*d iP* P **13 07 29.3 -0.2**
ARU 13 08 24.8
ARU 13 09 33.1
ARU S S **13 15 19.1 +0.3**
ARU 13 17 15.2
ARU SS **SS** **13 18 58.7 -7.0**
ARU pmax pmax
comp=Z,117nm,0.8s
ARU MLR MLR
comp=Z,18µm,16.0s
ARU Arti 56.47 320 *eP* P **13 07 28.8 -0.6**
SOKR Solikamsk 57.16 324*d iP* P **13 07 32.7 -1.5**
SOKR S S **13 15 25.6 -2.2**
SOKR pmax pmax
comp=Z,128nm,1.1s
SOKR MLR MLR
comp=Z,14µm,16.0s
OHAK Old Harbor 57.26 39 *eP* P **13 07 35.4 +0.4**
RSO Redoubt South 57.27 35 *eP* P **13 07 35.8 +0.4**
PPLA Purkeypile 57.40 32 *eP* P **13 07 37.4 +1.2**
CAST Castle Rocks 57.42 31 *eP* P **13 07 37.3 +1.2**
AKTO Aktyubinsk 57.51 313 P P **13 07 36.8 -0.2**
comp=Z,79nm,0.8s,baz=88,slow=5.8,SNR=56
AKTO LR LR 13 34 46.6
comp=Z,22µm,18.6s,slow=38
AKTO Aktyubinsk 57.51 313 P P **13 07 36.0 -1.0**
AKTO pmax pmax
comp=Z,93nm,0.8s
SPU Mount Spurr 57.56 34 *eP* P **13 07 37.8 +0.6**
KDAK Kodiak Island 57.58 38 P P 13 07 52.3 +15
comp=Z,108nm,0.7s,baz=286,slow=3.6,SNR=86
KDAK Kodiak Island 57.58 38 *eP* P **13 07 37.5 +0.2**
KDAK MLR MLR
comp=Z,4µm,20.0s
KDAK Kodiak Island 57.58 38 *eP* P **13 07 37.5 +0.2**
KDAK LR LR
comp=Z,4µm,20.0s
BPAW Bear Paw Mtn. 57.88 30 *eP* P **13 07 40.3 +0.9**
HOM Homer 57.89 36 *eP* P **13 07 39.3 -0.1**
MLY Manley 57.94 29 *eP* P **13 07 40.9 +1.1**
KTH Kantishna Hill 57.94 31 *eP* P **13 07 40.8 +1.0**

COLD Coldfoot 58.07 27 *eP* P **13 07 41.6 +1.0**
EIDS Eidsvold 58.08 159 *eP* P **13 07 41.2 +0.1**
TRF Thorofare Moun 58.23 31 *eP* P **13 07 42.4 +0.4**
BRLK Bradley Lake 58.26 35 *eP* P **13 07 41.7 -0.4**
RC01 Rabbit Creek A 58.69 34 *eP* P **13 07 44.9 -0.1**
MCK McKinley 58.81 31 *eP* P **13 07 46.0 +0.2**
MCK McKinley 58.81 31 *eP* P **13 07 46.0 +0.2**
PMR Palmer 58.93 33 *eP* P **13 07 45.8 -0.8**
PMR Palmer 58.93 33 *eP* P **13 07 45.8 -0.8**
SEW Seward 58.94 35 *eP* P **13 07 46.7 -0.1**
COLA College 59.17 29 *eP* P **13 07 48.9 +0.6**
COLA MLR MLR
comp=Z,2µm,20.0s
COLA College 59.17 29 *eP* P **13 07 48.9 +0.6**
COLA LR LR
comp=Z,2µm,20.0s
SML Sawmill 59.28 33 *eP* P **13 07 49.2 0.0**
SML *e* 13 08 37.2
SML pmax pmax
comp=Z,24nm,0.9s
SML Sawmill 59.28 33 *eP* P **13 07 49.1 0.0**
comp=Z,24nm,0.9s
SML *ePcP* **PcP** **13 08 37.2 0.0**
FUNA Funafuti 59.47 122 *eP* P **13 07 51.9 +0.8**
FUNA LR LR
comp=Z,6µm,19.0s
ILAR Eielson Array 59.59 29 P P **13 07 50.7 -0.5**
comp=Z,30nm,0.8s,baz=263,slow=5.1,SNR=164
ILAR LR LR 13 34 34.7
comp=Z,2µm,21.0s,baz=288,slow=37
ILAR PKPPKP P'P'df 13 37 17.2 -8.7
comp=Z,1.2nm,1.0s,baz=48,slow=1.3,SNR=6.4
ILAR PKP2bc 13 37 30.7
comp=Z,3.2nm,1.1s,baz=71,slow=1.8,SNR=5.3
ILAR Eielson Array 59.59 29 P P **13 07 50.7 -0.5**
ILAR pmax pmax
comp=Z,28nm,0.8s
ILAR MLR MLR
comp=Z,2µm,21.0s
GEYT Alibeck 60.21 299 P P **13 07 57.3 +1.3**
comp=Z,38nm,0.8s,baz=58,slow=3.7,SNR=36
GEYT LR LR 13 38 21.3
comp=Z,10µm,18.9s,baz=40,slow=40
PAX Paxson 60.45 31 *eP* P **13 07 57.5 +0.2**
PAX *e* 13 08 42.7
PAX pmax pmax
comp=Z,75nm,1.0s
PAX Paxson 60.45 31 *eP* P **13 07 57.5 +0.2**
comp=Z,75nm,1.0s
PAX *ePcP* **PcP** **13 08 42.7 +0.8**
DIV Divide 60.59 34 *eP* P **13 07 58.8 +0.5**
comp=Z,150nm,0.8s
DOT Dot Lake 60.97 31 *eP* P **13 08 00.5 -0.3**
comp=Z,166nm,0.7s
DOT *ePcP* **PcP** **13 08 45.0 +1.1**
BMRM Bremner River 61.18 34 *eP* P **13 08 02.8 +0.6**
comp=Z,205nm,0.8s
BMRM *ePcP* **PcP** **13 08 45.8 +1.0**
BMRM *ePP* **PP** **13 10 20.1 +3.4**
DZM Mont Dzumac 61.55 143 P P **13 08 06.3 +1.1**
comp=Z,272nm,0.8s,baz=277,slow=5.5,SNR=98
EGAK Eagle 62.02 29 *eP* P **13 08 07.8 +0.1**
comp=Z,86nm,1.3s
EGAK LR LR
comp=Z,3µm,20.0s
STKA Stephens Creek 62.25 171 P P **13 08 10.1 +0.6**
comp=Z,238nm,0.8s,baz=341,slow=7.1,SNR=192
STKA LR LR 13 34 05.4
comp=Z,5µm,21.5s,baz=347,slow=35
KIP Kipapa 62.92 80*ceP* P **13 08 15.9 +1.5**
KIP pmax pmax
comp=Z,638nm,1.2s
KIP Kipapa 62.92 80 PFAKE 13 08 20.0 +5.6
KIP LR LR
comp=Z,10µm,19.0s
NWAO Narrogin (SRO) 64.11 194 P P **13 08 21.8 -0.1**
comp=Z,133nm,1.0s,baz=69,slow=0.0,SNR=25
NWAO LR LR 13 37 58.3
comp=Z,6.9nm,18.9s,slow=38
NWAO Narrogin (SRO) 64.11 194 *eP* P **13 08 21.8 -0.1**
comp=Z,270nm,1.3s
INK Inuvik 64.15 24 P P **13 08 22.1 +0.3**
comp=Z,87nm,0.7s,baz=293,slow=6.2,SNR=411
INK PKiKP **PKiKP** **13 15 03.5 -0.2**
comp=Z,3.8nm,1.0s,baz=187,slow=1.9,SNR=3.8
INK PKPPKP **P'P'df** **13 37 12.5 -6.0**
comp=Z,7.4nm,1.2s,baz=105,slow=5.5,SNR=10
INK LR LR 13 41 21.0
INK Inuvik 64.15 24 *eP* P **13 08 22.2 +0.4**
INK *e* 13 08 56.9
INK pmax pmax
comp=Z,114nm,0.8s
INK Inuvik 64.15 24 *eP* P **13 08 22.2 +0.4**
comp=Z,114nm,0.8s
INK *ePcP* **PcP** **13 08 56.9 +0.3**
INK PKiKP **PKiKP** **13 15 03.5 -0.2**
INK P'P' 13 37 12.5
WSAR Wadi Sarin 64.81 283 P P **13 08 27.7 +0.8**
comp=Z,33nm,0.9s,baz=105,slow=4.9,SNR=24
HOPEN Hopen 64.86 346 *eP* P **13 08 26.7 +0.4**
HOPEN IAMs_20 IAMs_20 13 39 00.5
comp=Z,8µm,20.2s
TMCR Tamitsa 65.03 331 *eP* P **13 08 27.6 0.0**
TMCR *eS* S **13 17 08.0 +0.2**
TMCR pmax pmax
comp=Z,169nm,0.8s
MSVF Nonsavu 65.07 131 *eP* P **13 08 30.5 +1.9**
MSVF pmax pmax
comp=Z,455nm,1.1s
MSVF MLR MLR
comp=Z,3µm,19.0s
MSVF Nonsavu 65.07 131 *eP* P **13 08 30.5 +1.9**
comp=Z,455nm,1.1s
MSVF LR LR
comp=Z,3µm,19.0s
LVZ Lovozero 65.19 336 *eP* P **13 08 28.0 -0.7**
LVZ pmax pmax
comp=Z,121nm,0.8s
LVZ MLR MLR
comp=Z,6µm,21.0s
LVZ Lovozero 65.19 336 *eP* P **13 08 28.0 -0.7**
comp=Z,121nm,0.8s
LVZ LR LR
comp=Z,6µm,21.0s
KLMR Klimovskoe 65.37 327 *eP* P **13 08 26.3 -3.5**
KLMR *e**PP **pP** **13 08 32.9 -5.2**
KLMR *eS* S **13 17 08.0 -4.1**
KLMR *e* 13 18 18.4
KLMR pmax pmax
comp=Z,98nm,0.8s
KLMR MLR MLR
comp=Z,9µm,16.0s
BANOM Banah 65.71 287 *i* P P **13 08 34.3 +1.6**
SNR=8.2
POHA Pohakuloa 65.72 80 *eP* P **13 08 33.5 +0.5**
comp=Z,643nm,0.8s
POHA LR LR
comp=Z,3µm,21.0s
APA Apatity 65.75 335⇑ *iP* P **13 08 31.8 -0.4**
APA *i* 13 10 53.0
APA *iS* S **13 17 10.0 -6.6**
APA *i* 13 18 22.0
APA *iSS* **SS** **13 21 36.0 +5.6**
APA MLR MLR
comp=Z,7µm,15.0s
SPA0 Spitsbergen Ar 65.79 348 *eP* P **13 08 32.0 -0.3**
SPITS Spitsbergen Ar 65.79 348 LR LR 13 40 40.6
comp=Z,4µm,19.3s,baz=45,slow=39
SKAG Skagway 66.04 34 *eP* P **13 08 35.1 +0.9**
comp=Z,144nm,1.1s
KBS Kingsbay 66.13 349 *eP* P **13 08 34.6 +0.2**
KBS *eS* S **13 17 22.1 +1.2**
HATD Hatta, Dubai 66.28 286 *i* P P **13 08 37.6 +1.3**
SNR=20
ASHO Ashiyiah 66.40 286 *i* P P **13 08 38.5 +1.3**
SNR=27
HSPB Hornsund (broa 66.56 347 *eP* P **13 08 37.0 -0.3**
HSPB IAmb IAmb 13 08 39.5
comp=Z,172nm,0.9s
HSPB *eS* S **13 17 27.6 +1.4**
HSPB Hornsund (broa 66.56 347 *eP* P **13 08 37.7 +0.4**
HSPB *eS* S **13 17 27.4 +1.2**
NAZ Nazwa, Dubai 66.61 286 *i* P P **13 08 39.6 +1.2**
SNR=12

FAQ Al Faqa, Dubai 66.76 286 *i* P **P 13 08 40.5 +1.1**
SNR=19
CAN Canberra 66.97 165 *e*P **P 13 08 41.3 +0.9**
CAN *e* 13 09 10.3
CAN pmax pmax
comp=Z,237nm,1.2s
CAN MLR MLR
comp=Z,4μm,19.0s
CAN Canberra 66.97 165 *e*P **P 13 08 41.3 +0.9**
comp=Z,237nm,1.2s
CAN *e*PcP **PcP 13 09 10.3 +1.6**
CAN LR LR
comp=Z,4μm,19.0s
ASUD Al Ashush, Dub 67.03 286 *i* P **P 13 08 42.6 +1.5**
SNR=15
BJO Bjornoya 67.07 344 *e* **P 13 08 43.9 +3.3**
KEV Kevo 67.09 339 *e*P **P 13 08 40.5 -0.3**
KEV pmax pmax
comp=Z,247nm,0.9s
KEV MLR MLR
comp=Z,9μm,21.0s
KEV Kevo 67.09 339 *e*P **P 13 08 40.5 -0.3**
comp=Z,247nm,0.9s
KEV LR LR
comp=Z,9μm,21.0s
VRH Novokhopyorsk 67.31 317 *e*P **P 13 08 41.9 -0.6**
VRH *e*S **S 13 17 31.3 -4.7**
VRH pmax pmax
comp=Z,210nm,0.7s
VRH pmax pmax
comp=Z,80nm,0.5s
VRH smax smax
comp=E,2μm,3.9s
VRH MLR MLR
comp=Z,10μm,15.0s
ARCES ARCESS Array B 67.66 339 P **P 13 08 44.2 -0.1**
comp=Z,124nm,0.9s,baz=61,slow=7.6,SNR=157
ARCES LR LR 13 41 35.8
comp=Z,7μm,21.8s,baz=58,slow=39
ARE0 ARCESS Array S 67.66 339 *e*P **P 13 08 44.0 -0.4**
ARE0 IAmb IAmb 13 08 45.9
comp=Z,206nm,1.1s
HAMF Hammerfest 67.72 340 *e*P **P 13 08 44.2 -0.6**
HAMF IAmb IAmb 13 08 46.0
comp=Z,188nm,1.0s
MOS Moscow 68.02 323k*e*P **P 13 08 46.3 -0.5**
MOS *e* 13 09 09.7
MOS *i*S **S 13 17 43.1 -1.2**
MOS *e*SS **SS 13 22 03.6 -2.4**
MOS pmax pmax
comp=Z,460nm,1.0s
MOS pmax pmax
comp=N,97nm,1.1s
MOS pmax pmax
comp=E,124nm,1.0s
MOS pmax pmax
comp=Z,1μm,1.8s
MOS smax smax
comp=E,4μm,4.4s
MOS smax smax
comp=N,2μm,3.6s
MOS MLR MLR
comp=N,7μm,17.0s
MOS MLR MLR
comp=E,9μm,17.0s
MOS MLR MLR
comp=Z,13μm,17.0s
DGAR Diego Garcia 68.03 247 PFAKE 13 09 00.0 +13
DGAR LR LR
comp=Z,3μm,19.0s
DGRG David-gareji 68.39 306 P **P 13 08 50.6 +1.1**
DGRG David-gareji 68.39 306 P **P 13 08 50.6 +1.1**
LPSR Galich'ya Gora 68.44 319 *e*P **P 13 08 49.3 -0.2**
LPSR *e*S S 13 17 39.8 -10
LPSR pmax pmax
comp=Z,250nm,0.9s
LPSR pmax pmax
comp=Z,170nm,0.8s
LPSR smax smax
comp=N,810nm,5.7s
LPSR MLR MLR
comp=Z,6μm,15.0s
WRAK Wrangell Islan 68.59 36 *e*P **P 13 08 51.2 +0.8**
comp=Z,48nm,0.9s
KTK1 Kautokeino 68.62 338 *e*P **P 13 08 50.3 -0.1**
KTK1 IAmb IAmb 13 08 51.7
comp=Z,245nm,0.7s
VORR Voronezh 68.62 318 *e*P **P 13 08 49.0 -1.7**
VORR pmax pmax
comp=Z,500nm,1.0s
DUS Dusheti 68.62 307 P **P 13 08 53.0 +2.0**
DUS Dusheti 68.62 307 P **P 13 08 53.0 +2.0**
GUDG Gudauri 68.64 307 P **P 13 08 53.1 +1.9**
GOF Gofitskoye 68.66 310⇓*i*P **P 13 08 51.7 +0.6**
GOF *e*S **S 13 17 53.0 +0.7**
GOF pmax pmax
comp=Z,401nm,0.9s
GOF smax smax
comp=E,158nm,2.0s
TBLG Delisi 68.73 307 P **P 13 08 53.3 +1.7**
TBLG Delisi 68.73 307 P **P 13 08 53.3 +1.7**
OBN Obninsk 68.81 322 P **P 13 08 51.3 -0.4**
comp=E,145nm,0.8s,baz=47,slow=1.5,SNR=38
OBN Obninsk 68.81 322*d* *i*P **P 13 08 51.5 -0.3**
OBN *e* 13 11 24.1
OBN *e*S **S 13 17 46.3 -7.4**
OBN *e*SS **SS 13 22 16.5 -1.7**
OBN pmax pmax
comp=Z,244nm,1.0s
OBN MLR MLR
comp=Z,11μm,16.0s
OBN Obninsk 68.81 322 *e*P **P 13 08 51.5 -0.3**
comp=Z,182nm,1.0s
OBN LR LR
comp=Z,8μm,21.0s
VSR Storozhevoye 68.81 318 *e*P **P 13 08 51.5 -0.4**
VSR *e*S **S 13 17 50.3 -3.6**
VSR pmax pmax
comp=Z,250nm,0.8s
VSR pmax pmax
comp=Z,150nm,0.8s
VSR smax smax
comp=E,2μm,4.3s
VSR MLR MLR
comp=Z,10μm,16.0s
ZEI Tsey 68.91 308 *e*P **P 13 08 51.3 -1.7**
ZEI *e*S **S 13 17 55.9 0.0**
ZEI pmax pmax
comp=Z,473nm,0.8s
ZEI pmax pmax
comp=N,348nm,0.9s
ZEI pmax pmax
comp=E,651nm,0.9s
DLBC Dease Lake 68.97 34 P **P 13 08 53.7 +0.8**
comp=E,55nm,0.9s,baz=301,slow=5.4,SNR=74
DLBC Dease Lake 68.97 34 *e*P **P 13 08 54.2 +1.3**
comp=E,308nm,1.5s
KBZ Khabaz 69.25 309 P **P 13 08 55.6 +0.9**
comp=E,424nm,0.8s,baz=78,slow=4.9,SNR=306
KBZ LR LR 13 42 20.1
comp=E,8μm,18.9s,baz=68,slow=39
KBZ Khabaz 69.25 309 P **P 13 08 55.6 +0.9**
KBZ pmax pmax
comp=Z,424nm,0.8s
KBZ MLR MLR
comp=Z,8μm,18.9s
ONI Oni 69.30 308 P **P 13 08 56.5 +1.4**
ONI Oni 69.30 308 P **P 13 08 56.5 +1.4**
KVAR Kislovodsk Arr 69.30 309 P **P 13 08 55.8 +0.6**
comp=Z,272nm,1.0s,baz=56,slow=11,SNR=78
KIV Kislovodsk 69.30 309 *i* P **P 13 08 56.1 +0.9**
SNR=76
KIV Kislovodsk 69.30 309*d* *i*P **P 13 08 55.2 0.0**
KIV *e* 13 09 17.7
KIV *i*S **S 13 18 01.4 +1.2**
KIV pmax pmax
comp=Z,614nm,1.2s
KIV MLR MLR
comp=Z,8μm,21.0s
KIV Kislovodsk 69.30 309 *e*P **P 13 08 55.7 +0.5**
comp=Z,529nm,1.1s
KIV LR LR
comp=Z,8μm,21.0s
GNI Garni 69.31 305 P **P 13 08 57.2 +1.7**
comp=Z,117nm,0.9s,baz=3,3,slow=2.2,SNR=49
GNI Garni 69.31 305 *i* P **P 13 08 57.1 +1.7**
SNR=35
GNI Garni 69.31 305*d* *i*P **P 13 08 54.5 -0.9**
GNI pmax pmax
comp=Z,2μm,1.7s
GNI MLR MLR
comp=Z,12μm,20.0s
GNI Garni 69.31 305 *e*P **P 13 08 56.8 +1.4**
comp=Z,2μm,1.3s
GNI *e*PP **PP 13 11 27.4 -1.1**
GNI LR LR
comp=Z,6μm,21.0s
NEY Neytrino 69.54 309⇑*i*P **P 13 08 56.5 -0.3**
NEY pmax pmax
comp=Z,42nm,0.8s
NEY MLR MLR
comp=Z,6μm,17.0s
TRO Tromso 69.64 340 *e*P **P 13 08 56.3 -0.3**
TRO IAmb IAmb 13 08 57.8
comp=Z,161nm,0.8s
TRO *e*S **S 13 18 04.7 +1.7**
AFI Afiamalu 69.67 120 P **P 13 08 58.2 +0.4**
comp=Z,113nm,0.8s,baz=318,slow=5.6,SNR=18
AFI LR LR 13 33 38.0
comp=Z,2μm,21.7s,baz=304,slow=31
AKH Akhalkalaki 69.71 307 P **P 13 08 59.4 +1.5**
AKH Akhalkalaki 69.71 307 P **P 13 08 59.4 +1.5**
PUL Pulkovo 70.03 328*ce*P **P 13 09 00.0 +0.8**
PUL pmax pmax
comp=Z,322nm,1.2s
PUL MLR MLR
comp=Z,8μm,17.0s
FINES FINESS Array B 71.14 331 P **P 13 09 05.6 -0.4**
comp=Z,125nm,0.8s,baz=73,slow=5.1,SNR=295
FINES LR LR 13 43 28.0
comp=Z,10μm,20.1s,baz=65,slow=38
RES Resolute Bay 71.22 12 PKPPKP **P'P'ab 13 36 58.1 -4.5**
comp=Z,3.2nm,1.1s,baz=203,slow=2.3,SNR=3.6
RES Resolute Bay 71.22 12 *e*P **P 13 09 06.8 +0.5**
RES pmax pmax
comp=Z,406nm,0.9s
RES Resolute Bay 71.22 12 *e*P **P 13 09 06.8 +0.5**
comp=Z,406nm,0.9s
RES P'P' 13 36 58.1
SOC Sochi 71.43 310*d* *i*P **P 13 09 08.4 +0.3**
SOC *e* 13 09 25.8
SOC *e* 13 11 42.8
SOC *e*PPP PPP 13 13 23.8
SOC *i*S **S 13 18 25.2 +0.4**
SOC *i* 13 19 06.7
SOC *e*SS **SS 13 23 02.4 +3.3**
SOC pmax pmax
comp=Z,406nm,0.8s
SOC pmax pmax
comp=Z,436nm,0.8s
SOC MLR MLR
comp=Z,5μm,15.0s
STEI Steigen 71.70 339 *e*P **P 13 09 09.3 +0.1**
STEI IAmb IAmb 13 09 10.5
comp=Z,332nm,0.9s
DAG Danmarks Havn 71.91 353⇓*i*P **P 13 09 10.3 -0.1**
comp=Z,201nm,0.9s
DAG *i*S **S 13 18 26.3 -3.0**
DAG Danmarks Havn 71.91 353⇓*i*P **P 13 09 10.3 -0.1**
DAG *i*S **S 13 18 26.3 -3.0**
DAG pmax pmax
comp=Z,170nm,0.9s
DAG MLR MLR
comp=Z,2μm,15.0s
VSU Vasula 72.27 328*d* *i*P **P 13 09 12.8 0.0**
VSU pmax pmax
comp=Z,508nm,1.0s
VSU MLR MLR
comp=Z,19μm,17.0s
ANN Anapa 72.42 312 *e*P **P 13 09 13.7 -0.3**
ANN *e*S **S 13 18 35.6 -0.6**
ANN pmax pmax
comp=Z,477nm,0.8s
ANN MLR MLR
comp=N,6μm,18.0s
ANN MLR MLR
comp=Z,8μm,18.0s
ANN MLR MLR
comp=E,7μm,18.0s
MOR8 Moi Rana 72.99 338 *e*P **P 13 09 15.6 -1.4**
MOR8 IAmb IAmb 13 09 17.0
comp=Z,438nm,0.9s
KONS Konsvik 73.22 338 *e*P **P 13 09 18.1 -0.2**
STOK Stokkvaagen 73.35 338 *e*P **P 13 09 19.2 +0.2**
MICGM Minsk 73.61 324⇓*i*P **P 13 09 21.0 +0.2**
MICGM PM 13 09 22.0
comp=Z,0.5nm,1.0s
MICGM *e*PcP **PcP 13 09 43.0 +6.3**
MICGM *e*PP **PP 13 12 12.0 +7.4**
MICGM *e*PPP PPP 13 13 44.0
MICGM *e*S **SKiKP 13 18 48.0 -1.1**
MICGM SM 13 18 50.0
comp=E,6.3nm,4.0s
MICGM *e*PS **PnS 13 19 10.0 -14**
MICGM *e*SS SS 13 24 15.0 +43
MICGM *e*SSS SSS 13 27 40.0
MICGM *e*LR LR 13 39 20.0
MICGM LRM MLR 13 46 10.0
comp=E,9.4nm,14.0s
MICGM LRM MLR 13 46 29.0
comp=Z,19nm,16.0s
MICGM LRM MLR 13 46 32.0
comp=N,8.3nm,16.0s
MICGM LRM MLR 13 46 35.0
comp=Z,19nm,14.0s
MNK Minsk 73.61 324⇓*i*P **P 13 09 21.0 +0.2**
MNK *e* 13 09 43.0
MNK *e* 13 12 12.0
MNK *e*PPP PPP 13 13 44.0
MNK *e*S **SKiKP 13 18 48.0 -1.1**
MNK pmax pmax
comp=Z,480nm,1.0s
MNK smax smax
comp=E,6μm,4.0s
MNK MLR MLR
comp=E,9μm,14.0s
MNK MLR MLR
comp=Z,19μm,16.0s
MNK MLR MLR
comp=N,8μm,16.0s
MNK MLR MLR
comp=Z,19μm,14.0s
YKA Yellowknife Ar 73.74 26 P **P 13 09 21.5 +0.1**
comp=Z,31nm,0.8s,baz=299,slow=5.8,SNR=484
YKA PKiKP **PKiKP 13 15 16.2 -1.0**
comp=Z,1.8nm,0.8s,baz=299,slow=1.8,SNR=5.3
YKA PKKPbc **PKKPbc 13 28 53.8 -1.7**
comp=Z,0.5nm,0.9s,baz=121,slow=2.6,SNR=4.4
YKA PKPPKP **P'P'df 13 36 57.2 -4.6**
comp=Z,1.2nm,1.1s,baz=129,slow=2.7,SNR=5.4
IDID Didziasalis 73.79 325 *e*P **P 13 09 22.6 +0.7**
IDID IAmb IAmb 13 09 23.6
comp=Z,75nm,0.9s
IZAR Zarasai 73.82 325 *e*P **P 13 09 22.8 +0.7**
IZAR IAmb IAmb 13 09 23.8
comp=Z,82nm,0.9s
TAU Tasmania Unive 73.95 168 *e*P **P 13 09 23.8 +1.0**
TAU pmax pmax
comp=Z,484nm,1.4s
TAU MLR MLR
comp=Z,4μm,20.0s
TAU Tasmania Unive 73.95 168 *e*P **P 13 09 23.8 +1.0**
comp=Z,484nm,1.4s
TAU LR LR
comp=Z,4μm,20.0s
ISAL Salakas 73.97 325 *e*P **P 13 09 23.6 +0.6**
ISAL IAmb IAmb 13 09 24.7
comp=Z,80nm,1.0s
NACGM Naroch 73.97 325 *e*P **P 13 09 23.0 0.0**
NACGM *e*PcP **PcP 13 09 40.0 +1.8**
NACGM *e*S **S 13 18 53.0 -0.4**
NACGM *e*LQ LQ 13 36 36.0
NACGM *e*LR LR 13 42 13.0
NACGM LRM MLR 13 46 51.0
comp=E,14nm,15.0s
NACGM LRM MLR 13 46 54.0
comp=Z,21nm,15.0s
NACGM LRM MLR 13 47 04.0
comp=N,14nm,15.0s
MZRK Al-Mazaregh 74.02 302 *e*P **P 13 09 24.9 +1.3**
MZRK Al-Mazaregh 74.02 302 *e*P **P 13 09 24.9 +1.3**
IIGN Ignalina 74.03 325 *e*P **P 13 09 24.0 +0.7**
IIGN IAmb IAmb 13 09 25.1
comp=Z,52nm,0.9s
SFNV Sufian 74.16 303 *e*P **P 13 09 25.4 +0.8**
SFNV Sufian 74.16 303 *e*P **P 13 09 25.4 +0.8**
SIM Simferopol' 74.48 313*d* *i*P **P 13 09 25.7 -0.4**
SIM *i*S **S 13 18 57.0 -2.5**
SIM pmax pmax
comp=Z,201μm,0.9s
AKASG Malin Array Be 74.72 320 P **P 13 09 27.1 -0.3**
comp=Z,222nm,0.8s,baz=53,slow=6.1,SNR=341
AKASG LR LR 13 46 11.3
comp=Z,6μm,19.9s,baz=80,slow=39
AKASG Malin Array Be 74.72 320 P **P 13 09 27.1 -0.3**
AKASG pmax pmax
comp=Z,205nm,0.8s
AKASG MLR MLR
comp=Z,6μm,19.9s
KIEV Kiev 74.73 320*d* *i*P **P 13 09 27.0 -0.4**
KIEV pmax pmax
comp=Z,260nm,0.9s
KIEV MLR MLR
comp=Z,10μm,16.0s
KIEV Kiev 74.73 320 *e*P **P 13 09 27.1 -0.4**
comp=Z,228nm,0.8s
KIEV LR LR
comp=Z,7μm,21.0s
KSRV Kasrt alli 75.21 303 *e*P **P 13 09 31.4 +0.9**
KSRV Kasrt alli 75.21 303 *e*P **P 13 09 31.8 +1.3**
JMIC Jan Mayen 75.44 348 *e*P **P 13 09 34.4 +3.2**
KULLO Kullorsuaq 75.50 2⇓*i*P **P 13 09 31.5 0.0**
KULLO Kullorsuaq 75.50 2⇓*i*P **P 13 09 31.5 0.0**
KULLO MLR MLR
comp=Z,7μm,16.0s
RAYN Ar Rayn 75.62 289 *e*P **P 13 09 33.9 +0.7**
comp=Z,318nm,0.9s
RAYN LR LR
comp=Z,4μm,21.0s
OUZ Omahuta 75.87 146 *e*P **P 13 09 35.3 +1.2**
comp=Z,59nm,1.0s
OUZ *e*PP **PP 13 12 24.6 -0.3**
TBLU Trondheim 76.21 337 *e*P **P 13 09 34.8 -1.0**
SUW Suwalki 76.23 325 *e*P **P 13 09 36.1 +0.1**
SUW *e*S **S 13 19 18.4 -0.2**
SUW LMZ LR 13 46 37.7
SUW Suwalki 76.23 325⇓*e*P **P 13 09 36.1 +0.1**
SUW *e*S **S 13 19 18.4 -0.2**
SUW MLR MLR
comp=Z,12μm,20.5s
SORM Soroca 76.47 318⇓*i*P **P 13 09 37.5 0.0**
DRWC Darouich 76.55 305 *e*P **P 13 09 39.3 +1.0**
DRWC Darouich 76.55 305 *e*P **P 13 09 39.3 +1.0**
KIS Kishinev 76.76 317⇓*i*P **P 13 09 39.0 -0.1**
comp=Z,900nm,2.5s
KIS Kishinev 76.76 317 *i* PcP **PcP 13 09 56.0 +5.6**
KIS *e*S **S 13 19 25.0 +0.4**
KIS Kishinev 76.76 317⇑*i*P **P 13 09 39.0 -0.1**
KIS *i* 13 09 56.0
KIS *e* 13 14 26.0
KIS *e*S **S 13 19 25.0 +0.4**
KIS pmax pmax
comp=Z,900nm,2.5s
KIS MLR MLR
comp=N,6μm,16.0s
KIS MLR MLR
comp=Z,10μm,16.0s
KIS MLR MLR
comp=E,4μm,14.0s
KIS MLR MLR
comp=Z,10μm,16.0s
PGC Sidney 76.91 41 *e*P **P 13 09 39.6 -0.3**
comp=Z,210nm,1.5s
BTCH Batrach 76.97 304 *e*P **P 13 09 41.2 +0.5**
BTCH Batrach 76.97 304 *e*P **P 13 09 41.2 +0.5**
KFRA Kufra 77.10 303 *e*P **P 13 09 41.9 +0.5**
KFRA Kufra 77.10 303 *e*P **P 13 09 41.9 +0.5**
BRTR Keskin Array B 77.21 308 P **P 13 09 42.4 +0.4**
comp=Z,317nm,0.9s,baz=99,slow=4.0,SNR=612
BRTR LR LR 13 46 46.1
comp=Z,4μm,21.8s,baz=54,slow=38
BRTR Keskin Array B 77.21 308 P **P 13 09 42.4 +0.4**
BRTR pmax pmax
comp=Z,321nm,0.9s
BRTR MLR MLR
comp=Z,4μm,21.8s
ROOS tl_alroos 77.23 302 *e*P **P 13 09 43.0 +0.9**
ROOS tl_alroos 77.23 302 *e*P **P 13 09 43.0 +0.9**
WRDH Warideh 77.25 304 *e*P **P 13 09 42.0 -0.2**
WRDH Warideh 77.25 304 *e*P **P 13 09 42.0 -0.2**
A04D Lummi Island 77.29 41 P **P 13 09 43.1 +1.1**
baz=301
NLWA Neilton Lookou 77.30 42 *e*P **P 13 09 43.5 +1.2**
comp=Z,247nm,1.4s
NLWA LR LR
comp=Z,1μm,21.0s
NB2 NORSAR Subarra 77.31 335 P **P 13 09 41.4 -0.6**
comp=Z,187nm,1.1s,baz=50,slow=5.9
NB2 NORSAR Subarra 77.31 335 P **P 13 09 41.4 -0.6**
baz=50,slow=5.9
NOA NORSAR Array B 77.31 335 P **P 13 09 41.4 -0.6**
comp=Z,101nm,0.8s,baz=48,slow=5.5,SNR=205
NOA PKKP **PKKPdf 13 28 31.2 -2.6**
comp=Z,1.1nm,0.8s,baz=279,slow=7.4,SNR=3.8
NOA LR LR 13 47 23.7
comp=Z,4μm,18.2s,baz=65,slow=38
ARNB Al Arnab 77.40 304 *e*P **P 13 09 44.0 +1.0**
ARNB Al Arnab 77.40 304 *e*P **P 13 09 44.0 +1.0**
SUMG Summit 77.47 357⇓*i*P **P 13 09 44.2 +1.0**
comp=Z,249nm,0.9s
SUMG Summit 77.47 357⇓*i*P **P 13 09 44.2 +1.0**
SUMG pmax pmax
comp=Z,250nm,0.9s
SUMG Summit 77.47 357 *e*P **P 13 09 43.8 +0.6**
comp=Z,269nm,0.9s
BIDA Albida 77.54 303 *e*P **P 13 09 44.0 +0.1**
BIDA Albida 77.54 303 *e*P **P 13 09 44.0 +0.1**
MOL Molde 77.60 337 *e*P **P 13 09 43.7 +0.2**
MOL *e*S **S 13 19 32.8 -0.3**
ON2 Olympics--Nort 77.61 43 P **P 13 09 45.4 +1.4**
TLCR 77.67 315⇑*i*P **P 13 09 45.0 +0.8**
HAWK Haweek 77.71 303 *e*P **P 13 09 45.3 +0.5**
HAWK Haweek 77.71 303 *e*P **P 13 09 45.3 +0.5**
ANTO Ankara 77.72 309 PFAKE 13 09 50.0 +5.2
ANTO LR LR
comp=Z,113nm,20.0s
ZALF Zalf 77.77 301 *e*P **P 13 09 46.1 +1.0**
ZALF Zalf 77.77 301 *e*P **P 13 09 46.1 +1.0**
CMW Cultus Mountai 77.78 41 P **P 13 09 45.9 +0.9**
B05A Bryant 77.88 41 P **P 13 09 46.1 +0.8**
baz=302
MARH Ras Al Marh 77.89 302 *e*P **P 13 09 46.9 +0.8**
MARH Ras Al Marh 77.89 302 *e*P **P 13 09 46.9 +0.8**
JCW Jim Creek 78.01 41 P **P 13 09 46.9 +0.7**
LVV L'vov 78.03 321 *i* P **P 13 09 46.3 +0.1**
LVV *i*S **S 13 19 34.3 -4.1**
SCO Scoresbysund 78.04 351⇓*i*P **P 13 09 46.7 +0.8**
comp=Z,284nm,1.2s
SCO *i*S **S 13 19 37.4 -0.3**
SCO Scoresbysund 78.04 351⇓*i*P **P 13 09 46.7 +0.8**
SCO *i*S **S 13 19 37.4 -0.3**
SCO pmax pmax
comp=Z,280nm,1.2s
SCO MLR MLR
comp=Z,3μm,20.0s
AKN Aaknes 78.05 337 *e*P **P 13 09 46.4 +0.2**
AKN IAmb IAmb 13 09 46.9
comp=Z,452nm,1.3s
CFR Carcaliu 78.08 315⇑*i*P **P 13 09 46.5 -0.1**
PRAR RASCA 78.10 318⇓*i*P **P 13 09 47.3 +0.6**
RPW Rockport 78.11 41 P **P 13 09 47.1 +0.3**
OSL Oslo 78.21 334 *e*P **P 13 09 46.9 -0.1**
OSL IAmb IAmb 13 09 51.8
comp=Z,317nm,1.4s
TOTH TOTAH 78.24 302 *e*P **P 13 09 47.6 -0.1**
TOTH TOTAH 78.24 302 *e*P **P 13 09 47.6 -0.1**
QASN Qassioun 78.27 302 *e*P **P 13 09 46.9 -1.1**
QASN Qassioun 78.27 302 *e*P **P 13 09 48.5 +0.5**
TIRR Tirgusor 78.28 315⇓*i*P **P 13 09 48.0 +0.3**
TIRR Tirgusor 78.28 315 *e*P **P 13 09 47.8 +0.1**
TIRR pmax pmax
comp=E,81nm,0.8s
TIRR Tirgusor 78.28 315 *e*P **P 13 09 47.8 +0.1**
comp=Z,81nm,0.8s
TESR Tescani 78.29 317⇓*i*P **P 13 09 47.9 +0.2**

SALA **Sala** 78.32 301 *e*P P 13 09 49.4 +1.0
SALA **Sala** 78.32 301 *e*P P 13 09 49.4 +1.0
PETR **Petresti** 78.35 316⇓*i*P P 13 09 49.9 +1.8
ODBI **Odobesti** 78.44 316⇑*i*P P 13 09 49.1 +0.6
HARR **Harsova** 78.46 315⇑*i*P P 13 09 49.6 +0.9
F04D **Rainier, OR** 78.48 43 P P 13 09 49.8 +1.0
baz=301,SNR=6.0
BURAR **Bucovina Array** 78.55 319⇓*i*P P 13 09 49.5 +0.2
BRBR **Barbar** 78.56 302 *e*P P 13 09 50.1 +0.3
BRBR **Barbar** 78.56 302 *e*P P 13 09 50.1 +0.3
VRI Vrincioaia 78.58 317⇓*i*P P 13 09 50.3 +0.9
PLOR **Plostina** 78.64 317⇓*i*P P 13 09 50.2 +0.5
BEL **Belsk** 78.64 324 *e*P P 13 09 50.6 +1.1
BEL *e*S S 13 19 46.8 +2.0
BEL LMZ LR 13 49 34.4
BEL **Belsk** 78.64 324⇓*e*P P 13 09 50.6 +1.1
BEL *e*S S 13 19 46.9 +2.1
BEL MLR MLR
comp=Z,13μm,16.1s
GRER 78.69 316⇓*i*P P 13 09 52.1 +2.2
C06D **Leavenworth** 78.74 41 P P 13 09 50.8 +0.5
baz=302
G03D **McMinnville, O** 78.78 44 P P 13 09 51.5 +1.0
baz=301,SNR=8.4
TDL **Tradedollar La** 78.81 43 P P 13 09 51.4 +0.6
PSN **Preselentsi** 78.82 314 *i* P P 13 09 51.8 +1.1
RCS **Mount Rainier-** 78.82 42 P P 13 09 51.9 +0.8
KONO **Kongsberg** 78.83 334 *e*P P 13 09 50.2 -0.2
KONO *e*S S 13 19 46.9 +0.4
KONO **Kongsberg** 78.83 334 *e*P P 13 09 49.9 -0.5
KONO pmax pmax
comp=Z,41nm,0.9s
KONO MLR MLR
comp=Z,5μm,22.0s
KONO **Kongsberg** 78.83 334 *e*P P 13 09 49.9 -0.5
comp=Z,41nm,0.9s
KONO LR LR
comp=Z,5μm,22.0s
MSAB **Monastry St. A** 78.83 315⇑*i*P P 13 09 51.5 +0.8
LVP **Lakeview Peak** 78.85 43 P P 13 09 51.6 +0.7
KWP **Kalwaria Pacla** 78.86 321 *e*P P 13 09 51.9 +1.1
KWP *e*S S 13 19 48.8 +1.6
KWP LMZ LR 13 48 12.3
KWP **Kalwaria Pacla** 78.86 321⇓*e*P P 13 09 52.0 +1.1
KWP *e*S S 13 19 48.9 +1.7
KWP MLR MLR
comp=Z,16μm,17.1s
TCHB **Talchebab** 78.90 301 *e*P P 13 09 51.1 -0.3
TCHB **Talchebab** 78.90 301 *e*P P 13 09 51.1 -0.3
PGOR **Pogoanele** 78.92 316⇓*i*P P 13 09 53.9 +2.7
NLW **Nelson Butte** 78.97 41 P P 13 09 52.0 +0.4
HYA **Hoyanger** 79.03 336 *e*P P 13 09 51.4 -0.1
HYA IAmb IAmb 13 09 53.2
comp=Z,253nm,1.0s
ISR **Istrita** 79.08 316⇑*i*P P 13 09 53.5 +1.3
COR **Corvallis** 79.08 45 *e*P P 13 09 52.6 +0.5
COR pmax pmax
comp=Z,181nm,1.0s
COR **Corvallis** 79.08 45 *e*P P 13 09 52.6 +0.5
comp=Z,181nm,1.0s
HIZ **Hauiti** 79.11 147 *e*PN P 13 09 53.2 +1.1
FOO **Floro** 79.12 337 *e*P P 13 09 52.1 +0.1
PHNC **Paralimni** 79.20 304 P P 13 09 51.8 -1.1
MLR **Muntele Rosu** 79.25 316⇑*i*P P 13 09 53.9 +0.7
DOPR **Dopca** 79.32 317⇑*i*P P 13 09 54.8 +1.4
ARCR **ARCALIA** 79.33 318⇑*i*P P 13 09 54.9 +1.5
WTV **Waterville** 79.40 41 P P 13 09 53.9 0.0
SECR 79.41 316⇑*i*P P 13 09 55.1 +1.2
KOLS **Kolonicke sedl** 79.48 321 *e*P P 13 09 54.9 +0.7
KOLS pmax pmax
comp=Z,138nm,1.3s
KOLS **Kolonicke sedl** 79.48 321 *e*P P 13 09 54.9 +0.7
KOLS *e*L L 13 48 37.5
SULR 79.49 316⇑*i*P P 13 09 55.1 +0.8
BMR **Baia Mare** 79.50 319⇑*i*P P 13 09 55.5 +1.2
I03D **Drain, OR** 79.52 45 P P 13 09 55.7 +1.2
baz=302,SNR=28
BSD **Bornholm Skovb** 79.53 329⇓*i*P P 13 09 54.3 0.0
comp=Z,359nm,0.8s
BSD *i* S S 13 19 54.3 +0.2
BSD **Bornholm Skovb** 79.53 329⇓*i*P P 13 09 54.3 0.0
BSD *i* S S 13 19 54.3 +0.2
BSD pmax pmax
comp=Z,360nm,0.8s
BSD MLR MLR
comp=Z,8μm,14.0s
PRD **Provadia** 79.56 314 *i* P P 13 09 55.5 +0.8
ISK **Istanbul-Kandi** 79.60 311 P P 13 09 55.2 +0.2
SUE **Sulen** 79.60 337 *e*P P 13 09 54.9 +0.3
SUE IAmb IAmb 13 09 56.5
comp=Z,210nm,1.0s
HSRZ **Hossack Road** 79.62 146 PN P 13 09 55.6 +0.7
UZH **Uzhgorod** 79.64 321 *e*P P 13 09 53.3 -1.8
UZH *e* 13 10 06.7
UZH *e*S S 13 19 50.5 -5.0
UZH *e*PS PnS 13 20 56.9 +16
MAMC **Mammari** 79.70 305 P P 13 09 57.1 +1.4
BTMR **Bucharest-Geot** 79.70 316⇑*i*P P 13 09 57.3 +1.8
CSS **Mathiatis** 79.72 304 P P 13 09 57.3 +1.5
CSS **Mathiatis** 79.72 304 P P 13 09 55.9 +0.1
CSS **Mathiatis** 79.72 304 *e*P P 13 09 56.0 +0.1
comp=Z,53nm,0.9s
CSS LR LR
comp=Z,2μm,20.0s
ODD1 **Odda** 79.75 335 *e*P P 13 09 55.5 0.0
ODD1 IAmb IAmb 13 09 57.3
comp=Z,178nm,0.9s
STHS **Stebnicka Huta** 79.77 322 *e*P P 13 09 57.0 +1.2
STHS pmax pmax
comp=Z,102nm,0.9s
STHS **Stebnicka Huta** 79.77 322 *e*P P 13 09 57.0 +1.2
TRPA **Tarpa** 79.78 320⇓*e*SKSdf P 13 09 56.9 +1.1
ASK **Askoy** 79.86 336 *e*P P 13 09 56.0 0.0
BER **Bergen** 79.88 336 *e*P P 13 09 56.1 0.0
QRZ **Quartz Range** 79.92 150 PN P 13 09 56.4 -0.1
G05D **Wamic, OR** 79.94 43 P P 13 09 57.5 +0.7
baz=303,SNR=18
CRVS **Cervenica-Dubn** 79.94 321 *e*P P 13 09 57.8 +1.1
CRVS **Cervenica-Dubn** 79.94 321 *e*P P 13 09 57.8 +1.1
HAZ **Te Kaha** 79.94 145 PN P 13 09 55.5 -1.1
CJR **Cluj-Napoca** 79.96 318⇑*i*P P 13 09 58.4 +1.5
URZ **Urewera** 80.00 145 PN P 13 09 55.8 -1.1
URZ **Urewera** 80.00 145 *e*P P 13 09 55.8 -1.1
comp=Z,380nm,1.4s
I04A **Tendick Farm,** 80.05 45 P P 13 09 57.9 +0.5
baz=302,SNR=45
OJC **Ojcow** 80.08 323 *e*P P 13 09 58.3 +0.9
OJC *e*S S 13 20 01.3 +1.2
OJC LMZ LR 13 49 11.0
OJC **Ojcow** 80.08 323⇓*e*P P 13 09 58.4 +1.0
OJC *e*S S 13 20 01.4 +1.3
OJC MLR MLR
comp=Z,16μm,17.3s
ARR **Arges** 80.09 317⇓*i*P P 13 09 58.4 +0.7
SZAC **Souni** 80.14 304 P P 13 09 59.6 +1.5
ALFC **Alefka** 80.15 305 P P 13 09 58.9 +0.8
BLS5 **Blasjo** 80.16 335 *e*P P 13 09 56.7 -1.0
L02D **Cave Junction,** 80.17 47 P P 13 09 59.1 +1.0
baz=302,SNR=23
HOMB **Homborsund** 80.18 333 *e*P P 13 09 57.3 -0.5
HOMB IAmb IAmb 13 10 02.2
comp=Z,123nm,1.0s
HOMB IAMs_20 IAMs_20 13 50 48.6
comp=Z,8μm,21.2s
MWZ **Matawai** 80.26 145 PN P 13 09 58.0 -0.4
ISP **Isparta** 80.27 308 P P 13 09 58.2 -0.6
ISP **Isparta** 80.27 308 *e*P P 13 09 58.4 -0.4
ISP pmax pmax
comp=Z,147nm,0.8s
ISP MLR MLR
comp=Z,4μm,22.0s
ISP **Isparta** 80.27 308 *e*P P 13 09 58.4 -0.4
comp=Z,147nm,0.8s
ISP LR LR
comp=Z,4μm,22.0s
CROR **Criterion Ridg** 80.27 43 P P 13 09 59.2 +0.6
COP **Copenhagen** 80.27 330⇓*i*P P 13 09 58.7 +0.4
comp=Z,182nm,0.9s
COP **Copenhagen** 80.27 330⇓*i*P P 13 09 58.7 +0.4
COP pmax pmax
comp=Z,180nm,0.9s
COP MLR MLR
comp=Z,4μm,24.0s

NIE **Niedzica** 80.28 322 *e*P P 13 09 59.9 +1.4
NIE *e*S S 13 20 05.0 +2.7
NIE LMZ LR 13 49 12.0
NIE **Niedzica** 80.28 322⇓*e*P P 13 10 00.0 +1.4
NIE *e*S S 13 20 05.1 +2.7
NIE MLR MLR
comp=Z,5μm,17.8s
HUMO **Hull Mountain** 80.34 46 *e*P P 13 09 59.5 +0.5
comp=Z,792nm,1.4s
HUMR **Humele** 80.34 316⇑*i*P P 13 09 59.0 +0.1
HAWA **Hanford** 80.35 42 *e*P P 13 09 59.4 +0.4
comp=Z,48nm,0.9s
HAWA LR LR
comp=Z,1μm,19.0s
AKMC **Akamas** 80.40 305 P P 13 10 00.5 +1.0
I05D **Terrebonne, OR** 80.41 44 P P 13 09 60.0 +0.6
baz=303,SNR=30
VTHM **Trough** 80.42 43 P P 13 10 00.2 +0.8
PUZ **Puketiti** 80.42 145 *e*PN P 13 09 58.7 -0.6
DRGR 80.43 319⇑*i*P P 13 09 59.9 +0.4
SZH **Strazhica** 80.43 315 *i* P P 13 10 00.0 +0.5
JMB **Yambol** 80.45 314 *i* P P 13 10 00.4 +0.8
PPCY **Paphos** 80.46 305 P P 13 10 00.9 +1.1
DUWZ **D'Urville Isla** 80.52 149 PN P 13 09 59.2 -0.5
LOT **Lotru** 80.56 317⇓*i*P P 13 10 00.7 +0.4
ZIMR 80.57 315⇓*i*P P 13 10 00.9 +0.7
RGN **Rugen** 80.61 329 *e*P P 13 10 00.7 +0.6
comp=Z,377nm,1.2s
SNART **Snartemo** 80.63 334 *e*P P 13 10 00.2 0.0
SNART IAmb IAmb 13 10 01.7
comp=Z,87nm,0.9s
NEW **Newport** 80.66 39 P P 13 10 01.0 +0.3
baz=305
NEW **Newport** 80.66 39 *e*P P 13 10 01.0 +0.3
NEW pmax pmax
comp=Z,126nm,1.3s
NEW MLR MLR
comp=Z,1μm,20.0s
NEW **Newport** 80.66 39 *e*P P 13 10 01.0 +0.3
comp=Z,126nm,1.3s
NEW LR LR
comp=Z,1μm,20.0s
RIGZ **Rimuhau** 80.67 145 PN P 13 09 59.9 -0.7
DAMY **Dhamar** 80.69 281 *e*P P 13 10 03.4 +1.7
comp=Z,330nm,1.1s
KECS **Kecovo** 80.71 321 *e*P P 13 10 02.0 +1.1
KECS pmax pmax
comp=Z,42nm,1.3s
KECS **Kecovo** 80.71 321 *e*P P 13 10 02.0 +1.1
KMY **Karmoy** 80.75 335 *e*P P 13 10 00.9 +0.1
KMY IAmb IAmb 13 10 02.5
comp=Z,192nm,1.0s
DEV **Deva** 80.82 318⇑*i*P P 13 10 02.7 +1.2
PVL **Pavlikeni** 80.83 315 *i* P P 13 10 02.8 +1.2
KNZ **Kokohu** 80.87 146 PN P 13 10 01.3 -0.3
LANS **Liptovska Anna** 80.88 322 *e*P P 13 10 03.6 +1.8
LANS **Liptovska Anna** 80.88 322 *e*P P 13 10 03.5 +1.8
YBH **Yreka Blue Hor** 80.96 47 LR LR 13 41 16.7
comp=Z,150nm,21.7s,baz=296,slow=32
YBH **Yreka Blue Hor** 80.96 47 *e*P P 13 10 03.1 +0.7
YBH pmax pmax
comp=Z,170nm,1.1s
YBH **Yreka Blue Hor** 80.96 47 *e*P P 13 10 03.1 +0.7
comp=Z,170nm,1.1s
RAC **Raciborz** 81.00 323 *e*P P 13 10 03.6 +1.3
RAC *e*S S 13 20 10.5 +0.8
RAC MLR MLR
comp=Z,5μm,19.9s
INZ **Inchbonnie** 81.02 152 PN P 13 10 01.3 -1.0
WVZ **Waitaha Valley** 81.03 152 PN P 13 10 02.1 -0.2
J05D **Fort Rock, OR** 81.04 45 P P 13 10 03.9 +0.9
baz=303
FOZ **Fox Glacier** 81.04 153 *e*PN P 13 10 02.2 -0.2
M02C **Callahan** 81.05 47 P P 13 10 03.9 +1.0
baz=302,SNR=9.9
K04D **Chiloquin, OR** 81.08 46 P P 13 10 03.8 +0.7
baz=303,SNR=41
JCZ **Jackson Bay** 81.10 154 *e*PN P 13 10 02.9 0.0
MUD **Monsted U'grnd** 81.14 332⇓*i*P P 13 10 03.1 +0.2
comp=Z,225nm,1.0s
MUD **Monsted U'grnd** 81.14 332⇓*i*P P 13 10 03.1 +0.2
MUD pmax pmax
comp=Z,220nm,1.0s
OKC **Ostrava-Krasne** 81.17 323⇓*i*P P 13 10 04.2 +0.9
OKC *e*S S 13 20 14.7 +3.2
OKC AMS AMS 13 51 10.0
comp=Z,14μm,15.1s
OKC **Ostrava-Krasne** 81.17 323⇓*i*P P 13 10 04.2 +0.9
OKC *e* 13 20 14.7
OKC MLR MLR
comp=Z,14μm,15.1s
GZR **Gura Zlata** 81.17 318⇓*i*P P 13 10 03.5 0.0
KULA **Kula-Manisa** 81.17 309 P P 13 10 03.8 +0.2
SNZO **South Karori** 81.28 149 *e*P P 13 10 02.5 -1.2
comp=Z,1μm,1.4s
SNZO LR LR
comp=Z,2μm,20.0s
LHEM **Herd Peak** 81.32 47 P P 13 10 05.3 +0.7
SRE **Strehaia** 81.33 317⇑*i*P P 13 10 05.5 +1.3
DIM **Dimitrovgrad** 81.33 314 *i* P P 13 10 05.3 +1.0
N02D **Trinity Center** 81.36 48 P P 13 10 05.5 +0.9
baz=302,SNR=49
PSZ **Piszkesteto** 81.36 321⇓*e*SKSdf P 13 10 05.4 +1.0
PSZ **Piszkesteto** 81.36 321 *e*P P 13 10 05.1 +0.6
PSZ pmax pmax
comp=Z,302nm,1.3s
PSZ MLR MLR
comp=Z,6μm,19.0s
PSZ **Piszkesteto** 81.36 321 *e*P P 13 10 05.1 +0.6
comp=Z,302nm,1.3s
PSZ LR LR
comp=Z,6μm,19.0s
LTZ **Lake Taylor** 81.42 151 PN P 13 10 03.9 -0.6
M04C **Macdoel** 81.48 47 P P 13 10 06.0 +0.7
baz=303
KSP **Ksiaz** 81.51 325 *e*P P 13 10 06.0 +1.0
KSP *e*S S 13 20 16.8 +1.8
KSP LMZ LR 13 50 09.4
KSP **Ksiaz** 81.51 325⇓*e*P P 13 10 06.0 +1.0
KSP *e*S S 13 20 16.9 +1.9
KSP MLR MLR
comp=Z,14μm,16.6s
VYHS **Vyhne** 81.60 322 *e*P P 13 10 06.7 +1.1
VYHS pmax pmax
comp=Z,125nm,1.2s
VYHS **Vyhne** 81.60 322 *e*P P 13 10 06.7 +1.1
VYHS **Vyhne** 81.60 322 *e*S S 13 20 18.3 +2.2
VYHS *e*L L 13 50 18.2
KDZ **Kurdzhali** 81.62 313 *i* P P 13 10 06.7 +0.8
ALN **Alexandroupoli** 81.63 313 P P 13 10 06.2 +0.3
ENEZ **Enez** 81.65 312 P P 13 10 06.5 +0.5
KHZ **Kahutara** 81.66 150 *e*P P 13 10 04.3 -1.4
comp=Z,1μm,1.5s
WDC **Whiskeytown Da** 81.68 48 *e*P P 13 10 06.4 +0.2
WDC pmax pmax
comp=Z,199nm,1.1s
WDC **Whiskeytown Da** 81.68 48 *e*P P 13 10 06.3 +0.2
comp=Z,199nm,1.1s
RPZ **Rata Peaks** 81.69 152 LR LR 13 41 37.1
comp=Z,1μm,22.0s,baz=329,slow=32
RPZ **Rata Peaks** 81.69 152 *e*P P 13 10 03.9 -1.9
comp=Z,178nm,1.1s
BZS **Buzias** 81.72 318⇑*i*P P 13 10 06.1 -0.2
KRLC **Kraliky** 81.73 324⇓*i*P P 13 10 07.2 +0.9
KRLC **Kraliky** 81.73 324⇓*i*P P 13 10 07.2 +0.9
MPEP **Malo Peshtene** 81.73 316 *i* P P 13 10 06.9 +0.5
DPC **Dobruska-Polom** 81.79 324⇓*i*P P 13 10 07.7 +1.1
DPC *e*S S 13 20 20.4 +2.3
DPC AMS AMS 13 54 30.0
comp=Z,11μm,15.2s
DPC **Dobruska-Polom** 81.79 324⇓*i*P P 13 10 07.7 +1.1
DPC *e* 13 20 20.4
DPC MLR MLR
comp=Z,11μm,15.2s
PLD **Plovdiv** 81.82 314 *i* P P 13 10 07.5 +0.6
UPC **Upice** 81.85 325⇓*i*P P 13 10 07.9 +1.0
UPC *ex* x 13 10 18.6
UPC *e*S S 13 20 21.5 +2.9
UPC AMS AMS 13 51 30.0
comp=Z,14μm,16.3s
UPC **Upice** 81.85 325⇓*i*P P 13 10 07.9 +1.0
UPC *i* 13 10 18.6
UPC *e* 13 20 21.5
UPC MLR MLR

comp=Z,14μm,16.3s
FETY **Fethiye** 81.86 308 P P 13 10 06.8 -0.4
LBZ **Lake Benmore** 81.90 153 PN P 13 10 06.7 -0.3
YEL1 **Yell** 81.91 339⇓*i*P P 13 10 06.7 -0.2
PGB **Panagyurishte** 81.91 315 *i* P P 13 10 08.2 +0.8
WALA **Waterton Lakes** 81.92 37 *e*P P 13 10 08.0 +0.6
comp=Z,264nm,1.5s
RZN **Rozhen** 82.04 314 *i* P P 13 10 09.1 +0.8
BUD **Budapest** 82.09 321⇓*e*P P 13 10 09.3 +1.1
MDVR **Moldovita** 82.14 318⇓*i*P P 13 10 08.7 +0.1
YER **Yerkesik** 82.15 308 P P 13 10 09.6 +0.8
BSMT **Bassoo Peak** 82.17 39 P P 13 10 09.6 +0.7
SMTH **Samothraki Isl** 82.19 312 P P 13 10 08.4 -0.5
LRW **Lerwick** 82.26 338⇓*e*P P 13 10 08.3 -0.5
LRW AMB AMB 13 10 09.7
comp=Z,384nm,1.0s
LRW AMS AMS 13 49 11.9
comp=Z,5μm,22.0s
PKS7 **Kunszentmiklos** 82.28 320 *e*P P 13 10 10.4 +1.3
VRAC **Vranov** 82.29 323⇓*i*P P 13 10 10.0 +0.8
WAL1 **Walls** 82.30 339⇓*e*P P 13 10 08.7 -0.3
O03D **Paynes Creek** 82.31 48 P P 13 10 09.4 -0.1
baz=303,SNR=44
PKS6 **Bocsa** 82.31 320⇓*e*P P 13 10 10.5 +1.1
SMOL **Smolenice** 82.34 322 *e*P P 13 10 11.7 +2.2
SMOL **Smolenice** 82.34 322 *e*P P 13 10 11.6 +2.1
SAN1 **Sandwick** 82.37 338⇓*e*P P 13 10 09.3 -0.1
PRK **Paraskevi** 82.37 311 P P 13 10 10.0 +0.2
MOD **Modoc Plateau** 82.37 46 *e*P P 13 10 10.4 +0.4
comp=Z,180nm,1.1s
SOFL **Sornfelli, Far** 82.43 342 *e*P P 13 10 10.4 +0.6
VTS **Vitosha** 82.48 315⇑*i*P P 13 10 11.3 +0.8
VTS **Vitosha** 82.48 315 P P 13 10 11.3 +0.8
VTS **Vitosha** 82.48 315 *i* P P 13 10 11.3 +0.8
PKSG 82.50 321⇓*e*P P 13 10 11.2 +0.9
BMO **Blue Mountains** 82.51 42 *e*P P 13 10 11.0 +0.4
BMO pmax pmax
comp=Z,182nm,1.4s
BMO MLR MLR
comp=Z,1μm,22.0s
BMO **Blue Mountains** 82.51 42 *e*P P 13 10 11.0 +0.4
comp=Z,182nm,1.4s
BMO LR LR
comp=Z,1μm,22.0s
KAVA **Kavala** 82.55 313 P P 13 10 10.7 0.0
PKS2 **Kecel** 82.58 320⇓*e*P P 13 10 11.1 +0.4
CSKK **Cs‡kako** 82.58 321⇑*e*P P 13 10 12.0 +1.2
ODZ **Otahua Downs** 82.64 153 *e*P P 13 10 11.7 +1.0
comp=Z,52nm,1.1s
BRG **Berggiesshubel** 82.65 326 *i* P P 13 10 12.0 +0.9
comp=Z,282nm,1.4s
BRG *i* 13 10 22.0
comp=Z,374nm,1.8s
BRG PP PP 13 13 21.0 +0.8
BRG S S 13 20 31.0 +4.2
BRG SS SS 13 25 56.0 +8.2
BRG **Berggiesshubel** 82.65 326 *i* P P 13 10 12.0 +0.9
BRG *i* 13 10 22.0
BRG 13 13 21.0
BRG S S 13 20 31.0 +4.2
BRG SS SS 13 25 56.0 +8.2
BRG pmax pmax
comp=Z,282nm,1.4s
BRG pmax pmax
comp=Z,374nm,1.8s
BRG MLR MLR
comp=N,10μm,15.8s
BRG MLR MLR
comp=E,13μm,16.5s
BRG MLR MLR
comp=Z,20μm,16.4s
SIGR **SIGRI** 82.66 311 P P 13 10 11.3 0.0
MMB **Musomiste** 82.72 314 *i* P P 13 10 12.0 +0.4
LIA **Limnos Island** 82.72 312 P P 13 10 11.0 -0.6
ARG **Arkhangelos** 82.74 308 P P 13 10 11.6 -0.2
NVR **Nevrokopi** 82.76 314 P P 13 10 11.6 -0.3
PKST **T˜'s** 82.77 321⇓*e*P P 13 10 12.3 +0.5
SMG **Samos** 82.82 309 P P 13 10 12.3 +0.1
CLL **Collm** 82.83 326⇓*i*P P 13 10 12.4 +0.4
comp=Z,457nm,1.0s
CLL *e*Pmax 13 10 15.0
CLL *i* 13 10 16.8
CLL *i* 13 10 23.4
CLL *i* 13 13 09.7
CLL *e*PP PP 13 13 19.0 -2.7
CLL *e* 13 13 36.0
CLL *e*S S 13 20 27.0 -1.6
CLL *e* 13 20 34.0
CLL *e* 13 20 57.0
CLL *e*PPS PPS 13 21 54.0
CLL *e*SS SS 13 25 48.0 -2.4
CLL *e* 13 26 54.0
CLL *e*(SSS) 13 30 42.0
CLL *i* (PKKS) 13 32 02.9
CLL Lm MLR 13 52 00.0
comp=Z,10μm,18.5s
CLL Lmax 13 52 00.0
CLL **Collm** 82.83 326⇓*i*P P 13 10 12.4 +0.4
CLL *i* 13 10 23.4
CLL *e*S S 13 20 27.0 -1.6
CLL pmax pmax
comp=Z,457nm,1.0s
CLL MLR MLR
comp=Z,10μm,18.5s
GOPC **GO Pecny, Ondr** 82.84 325⇓*i*P P 13 10 12.9 +0.8
GOPC *e*S S 13 20 28.5 -0.3
GOPC AMS AMS 13 50 50.0
comp=Z,12μm,15.9s
GOPC **GO Pecny, Ondr** 82.84 325⇓*i*P P 13 10 12.9 +0.8
GOPC *e* 13 20 28.5
GOPC MLR MLR
comp=Z,12μm,15.9s
BODT **Bodrum** 82.85 309 P P 13 10 12.3 -0.1
TREC **Trest** 82.87 324⇓*e*P P 13 10 13.2 +0.9
TREC AMS AMS 13 55 10.0
comp=Z,10μm,15.4s
TREC **Trest** 82.87 324 *e*P P 13 10 13.2 +0.9
TREC MLR MLR
comp=Z,10μm,15.4s
PRU **Pruhonice** 82.92 325⇓*i*P P 13 10 13.3 +0.9
PRU *e*S S 13 20 29.0 -0.5
PRU AMS AMS 13 52 00.0
comp=Z,13μm,15.6s
PRU **Pruhonice** 82.92 325⇓*i*P P 13 10 13.3 +0.9
PRU *e* 13 20 29.0
PRU MLR MLR
comp=Z,13μm,15.6s
PRA **Prague** 82.92 325⇓*i*P P 13 10 13.7 +1.3
PRA *e*S S 13 20 32.3 +2.8
PRA AMS AMS 13 52 00.0
comp=Z,14μm,16.3s
PRA **Prague** 82.92 325⇓*i*P P 13 10 13.7 +1.3
PRA *e* 13 20 32.3
PRA MLR MLR
comp=Z,14μm,16.3s
KKB **Krupnik** 82.96 315 *i* P P 13 10 13.3 +0.4
CHOS **Chios island** 82.97 310 P P 13 10 12.8 -0.3
TUZ **Tuapeka** 83.01 154 *e*PN P 13 10 13.7 +1.0
PKS9 **Tamasi** 83.04 320⇑*e*P P 13 10 14.1 +1.0
SRS **Serrai** 83.06 314 P P 13 10 13.0 -0.4
WVOR **Wild Horse Val** 83.10 45 *e*P P 13 10 14.2 +0.5
WVOR pmax pmax
comp=Z,131nm,1.1s
WVOR **Wild Horse Val** 83.10 45 *e*P P 13 10 14.2 +0.5
comp=Z,132nm,1.1s
RAR **Rarotonga** 83.16 119 LR LR 13 39 50.8
comp=Z,918nm,21.5s,baz=302,slow=30
RAR **Rarotonga** 83.16 119 *e*P P 13 10 15.7 +1.7
RAR pmax pmax
comp=Z,531nm,1.9s
RAR **Rarotonga** 83.16 119 *e*P P 13 10 15.7 +1.7
comp=Z,531nm,1.9s
MSO **Missoula** 83.25 39 P P 13 10 14.2 -0.2
baz=307
BORG **Borgarnes** 83.25 349 *e*P P 13 10 15.8 +2.0
BORG pmax pmax
comp=Z,121nm,1.0s
BORG MLR MLR
comp=Z,1μm,19.0s
BORG **Borgarnes** 83.25 349 *e*P P 13 10 15.8 +2.0
comp=Z,121nm,1.0s
BORG LR LR
comp=Z,1μm,19.0s
OUR **Ouranopolis** 83.25 313 P P 13 10 14.1 -0.2

SFJD **Kangerlussuaq** 83.28 1 ⇓ *i* P P 13 10 14.0 0.0
comp=Z,100nm,0.9s
SFJD **Kangerlussuaq** 83.28 1 ⇓ *i* P P 13 10 14.0 0.0
SFJD pmax pmax
comp=Z,100nm,0.9s
SFJD MLR MLR
comp=Z,4μm,16.0s
SFJD **Kangerlussuaq** 83.28 1 *e* P P 13 10 13.9 0.0
comp=Z,108nm,0.9s
SFJD LR LR
comp=Z,3μm,19.0s
SOP **Sopron** 83.31 322 ⇓ *e* P P 13 10 15.8 +1.3
CONA **Conrad Observa** 83.53 323 *i* PcP P 13 10 17.2 +1.4
comp=Z,394nm,1.0s,SNR=257
PLG **Polygyros** 83.57 313 P P 13 10 15.7 -0.4
VAY **Valandovo** 83.59 314 P P 13 10 16.3 +0.3
VAY **Valandovo** 83.59 314 *i* P P 13 10 16.4 +0.3
FCC **Fort Churchill** 83.66 22 *e* P P 13 10 16.2 +0.2
FCC pmax pmax
comp=Z,452nm,1.4s
FCC **Fort Churchill** 83.66 22 *e* P P 13 10 16.2 +0.2
comp=Z,452nm,1.4s
HORT **Hortiatis** 83.66 313 P P 13 10 16.0 -0.6
PAIG **Paliouri** 83.67 313 P P 13 10 15.9 -0.6
KARP **Karpathos** 83.76 307 P P 13 10 17.1 0.0
FFC **Flin Flon** 83.77 28 *e* P P 13 10 16.6 -0.2
FFC pmax pmax
comp=Z,107nm,1.0s
FFC MLR MLR
comp=Z,1μm,20.0s
FFC **Flin Flon** 83.77 28 *e* P P 13 10 16.6 -0.2
comp=Z,107nm,1.0s
FFC LR LR
comp=Z,1μm,20.0s
NKC **Novy Kostel** 83.80 326 ⇓ *i* P P 13 10 17.8 +0.8
NKC *e* S S 13 20 36.2 -2.3
NKC AMS AMS 13 52 20.0
comp=Z,18μm,15.7s
NKC **Novy Kostel** 83.80 326 ⇓ *i* P P 13 10 17.8 +0.8
NKC *e* 13 20 36.2
NKC MLR MLR
comp=Z,18μm,15.7s
GRG **Griva** 83.90 314 P P 13 10 17.5 -0.2
SKO **Skopje** 83.91 315 P P 13 10 18.8 +1.1
SKO **Skopje** 83.91 315 *i* P P 13 10 18.6 +0.9
BEHE **Becsehely** 83.93 321 ⇓ *e* P P 13 10 18.8 +1.0
KHC **Kasperske Hory** 83.94 324 ⇓ *i* P P 13 10 18.3 +0.5
KHC *ex* x 13 10 29.0
KHC *eS* S 13 20 38.5 -1.5
KHC AMS AMS 13 51 30.0
comp=Z,12μm,15.3s
KHC **Kasperske Hory** 83.94 324 ⇓ *i* P P 13 10 18.3 +0.5
KHC *e* 13 10 29.0
KHC *e* 13 20 38.5
KHC MLR MLR
comp=Z,12μm,15.3s
KHC **Kasperske Hory** 83.94 324 *e* P P 13 10 18.4 +0.6
comp=Z,88nm,1.1s
AOS **Alonnisos** 83.97 312 P P 13 10 17.5 -0.6
APE **Apeiranthos** 84.04 309 P P 13 10 17.2 -1.3
APE **Apeiranthos** 84.04 309 *d* P P 13 10 17.2 -1.3
APE pmax pmax
comp=Z,139nm,0.9s
GERES **GERESS Array B** 84.07 324 P P 13 10 18.9 +0.3
comp=Z,74nm,0.9s,baz=48,slow=4.3,SNR=320
GERES PKKPbc **PKKPbc** 13 28 32.1 -0.5
comp=Z,2.8nm,0.8s,baz=205,slow=2.6,SNR=13
GERES LR LR 13 51 15.3
comp=Z,7μm,19.7s,baz=48,slow=38
ARSA **Arzberg** 84.13 322 *i* PcP P 13 10 19.8 +1.0
comp=Z,226nm,1.0s,SNR=165
MFID **Camas Ranch** 84.22 43 *e* P P 13 10 20.1 +0.6
comp=Z,289nm,1.4s
KOGS **Kog** 84.23 321 ⇓ *i* P P 13 10 19.6 +0.3
comp=Z,1μm,1.8s
KOGS *eS* S 13 20 43.6 +0.7
SKIA **Skiathos** 84.23 312 P P 13 10 18.4 -1.0
XOR **Xorichti** 84.30 312 P P 13 10 18.6 -1.2
IVA **Berane** 84.32 317 ⇓ *i* P P 13 10 21.0 +1.1
LIT **Litokhoron** 84.33 313 P P 13 10 19.3 -0.6
PLE **Pljevlja** 84.34 317 ⇓ *i* P P 13 10 21.2 +1.1
MLA1 **Latheron** 84.39 338 ⇓ *e* P P 13 10 19.7 -0.1
MOA **Molln** 84.41 323 *i* PcP P 13 10 21.2 +1.0
comp=Z,206nm,1.2s,SNR=95
BIGH **Upper Bighouse** 84.42 338 ⇓ *e* P P 13 10 19.7 -0.2
BIGH AMB AMB 13 10 20.8
comp=Z,627nm,1.2s
BIGH AMS AMS 13 51 47.7
comp=Z,7μm,19.8s
FYTO **Fytoko, Volos** 84.44 313 P P 13 10 19.2 -1.2
PVY **Plav** 84.44 316 ⇓ *i* P P 13 10 20.7 +0.1
CMB **Columbia Colle** 84.47 49 *e* P P 13 10 20.9 +0.2
CMB pmax pmax
comp=Z,1μm,1.1s
CMB **Columbia Colle** 84.47 49 *e* P P 13 10 20.9 +0.2
comp=Z,1μm,1.1s
SAO **San Andreas Ge** 84.47 51 *e* P P 13 10 20.7 0.0
SAO pmax pmax
comp=Z,53nm,1.0s
SAO **San Andreas Ge** 84.47 51 *e* P P 13 10 20.7 0.0
comp=Z,53nm,1.0s
SANT **Santorini** 84.47 309 *e* P P 13 10 19.5 -1.2
comp=Z,426nm,1.2s
SANT LR LR
comp=Z,4μm,19.0s
SMIA **Simia** 84.56 312 P P 13 10 20.3 -0.8
PTL **Penteli** 84.60 311 P P 13 10 19.9 -1.5
ZKR **Zakros** 84.64 308 P P 13 10 21.8 +0.2
KZN **Kozani** 84.66 314 P P 13 10 20.7 -1.0
UPM **Unac-Piva** 84.70 317 ⇓ *i* P P 13 10 22.0 0.0
EGMT **Eagleton** 84.72 36 P P 13 10 22.0 +0.1
baz=310
EGMT **Eagleton** 84.72 36 *e* P P 13 10 22.2 +0.3
comp=Z,175nm,1.1s
EGMT LR LR
comp=Z,2μm,20.0s
PERS **Pernice** 84.73 322 ⇓ *i* P P 13 10 22.2 +0.4
comp=Z,750nm,1.2s
PERS *eS* S 13 20 47.6 -0.3
SOKA **Soboth** 84.75 322 *i* PcP P 13 10 22.7 +0.7
comp=Z,513nm,1.1s,SNR=382
GRFO **Grafenberg** 84.75 326 *e* P P 13 10 22.5 +0.6
GRFO *e* 13 13 38.2
GRFO pmax pmax
comp=Z,857nm,1.5s
GRFO **Grafenberg** 84.75 326 *e* P P 13 10 22.5 +0.6
comp=Z,857nm,1.5s
GRFO *e* PP PP 13 13 38.2 +0.8
VLY **Voula,Athens** 84.76 311 P P 13 10 20.4 -1.7
OHR **Ohrid** 84.80 315 *i* P P 13 10 22.0 -0.3
LKR **Lokris** 84.83 312 P P 13 10 21.2 -1.2
DLMT **Dillon** 84.88 40 *e* P P 13 10 23.4 +0.6
comp=Z,189nm,1.1s
NKY **Niksic** 84.89 317 ⇓ *i* P P 13 10 23.3 +0.5
MCD **Coleburn Disti** 84.93 338 ⇓ *e* P P 13 10 21.7 -0.9
RSC **Scourie** 84.93 339 ⇓ *e* P P 13 10 22.5 0.0
THL **Klokotos Trika** 84.94 313 P P 13 10 21.0 -1.9
NKME **Niksic** 84.94 317 ⇓ *i* P P 13 10 23.3 +0.3
HLID **Hailey** 84.95 42 P P 13 10 24.2 +1.0
baz=307
HLID **Hailey** 84.95 42 *e* P P 13 10 24.2 +1.0
comp=Z,189nm,1.3s
HLID LR LR
comp=Z,1μm,20.0s
PDG **Podgorica** 84.96 317 P P 13 10 23.4 +0.5
TTG **Podgorica** 84.96 317 ⇓ *i* P P 13 10 23.5 +0.5
MVH1 **Achvaich** 84.96 338 ⇓ *i* P P 13 10 22.4 -0.2
MVH1 *e* P PcP 13 10 22.7 -3.3
NPS **Neapolis** 84.97 308 P P 13 10 22.6 -0.7
CEME **Cevo** 85.09 317 ⇓ *i* P P 13 10 23.8 0.0
BRY **Bratogost** 85.10 317 ⇓ *i* P P 13 10 23.8 -0.1
OBKA **Obir** 85.11 322 *i* PcP P 13 10 24.1 +0.3
comp=Z,176nm,1.1s,SNR=89
KPRO **Kipourio** 85.12 314 P P 13 10 22.7 -1.3
LAST **Lasithi** 85.12 308 P P 13 10 24.1 0.0
BMN **Battle Mountai** 85.12 46 *e* P P 13 10 25.0 +0.9
BMN pmax pmax
comp=Z,244nm,1.2s
BMN **Battle Mountai** 85.12 46 *e* P P 13 10 24.9 +0.9
comp=Z,244nm,1.2s
DRME **Dracevica, Mon** 85.14 317 ⇓ *i* P P 13 10 24.3 +0.3
DRUM **Mains of Drumt** 85.20 337 ⇓ *e* P P 13 10 23.2 -0.7
DRUM AMB AMB 13 10 24.3
comp=Z,238nm,1.7s
DRUM AMS AMS 13 55 36.9
comp=Z,3μm,14.9s
TIR **Tirane** 85.23 316 *e* P P 13 10 25.3 +0.9
TIR pmax pmax
comp=Z,230nm,0.9s
TIR MLR MLR
comp=Z,9μm,21.0s
TIR **Tirane** 85.23 316 *e* P P 13 10 25.3 +0.9
comp=Z,230nm,0.9s
TIR LR LR
comp=Z,9μm,21.0s
BOZ **Bozeman (W)** 85.24 39 P P 13 10 25.1 +0.5
baz=309
BOZ **Bozeman (W)** 85.24 39 *e* P P 13 10 25.1 +0.5
BOZ pmax pmax
comp=Z,192nm,1.6s
BOZ MLR MLR
comp=Z,2μm,20.0s
BOZ **Bozeman (W)** 85.24 39 *e* P P 13 10 25.1 +0.5
comp=Z,192nm,1.6s
BOZ LR LR
comp=Z,2μm,20.0s
ULC **Ulcinj** 85.24 316 ⇓ *i* P P 13 10 24.4 -0.1
WTSB **Winterswijk** 85.25 329 *e* P P 13 10 24.0 -0.2
comp=Z,792nm,2.1s
BUM **Brajici-Budva** 85.25 317 ⇓ *i* P P 13 10 24.6 0.0
DID **Didima** 85.32 311 P P 13 10 22.1 -2.9
KBA **Koelnbreinsper** 85.39 323 *i* PcP P 13 10 25.5 +0.2
comp=Z,63nm,1.1s,SNR=89
HCY **Herceg Novi** 85.40 317 ⇓ *i* P P 13 10 25.0 -0.2
MDO **Dochfour** 85.41 338 ⇓ *i* P P 13 10 24.1 -0.9
MDO *e* PcP 13 10 24.3 -3.6
LJU **Ljubljana** 85.42 322 ⇓ *i* P P 13 10 25.4 +0.1
comp=Z,601nm,1.2s
LJU *eS* S 13 20 54.5 -0.2
LJU *e* 13 21 46.6
EVR **Evrytania** 85.44 313 P P 13 10 24.4 -1.2
IDI **Anoyia** 85.45 308 P P 13 10 25.2 -0.5
IDI **Anoyia** 85.45 308 *e* P P 13 10 24.6 -1.2
comp=Z,473nm,1.4s
MYKA **Terra Mystica** 85.52 322 *i* P P 13 10 25.4 -0.4
comp=Z,164nm,1.2s,SNR=54
RRR **Rubha Reidh** 85.53 339 ⇓ *i* P P 13 10 25.2 -0.3
ANX **Ano Chora** 85.55 312 P P 13 10 25.4 -0.8
SERG **Sergoula** 85.57 312 P P 13 10 24.6 -1.6
NVAR **Mina Array Bea** 85.60 48 P P 13 10 27.2 +0.6
comp=Z,110nm,0.8s,baz=297,slow=5.3,SNR=618
NVAR pP **sP** 13 10 37.5 -0.7
comp=Z,68nm,0.8s,baz=308,slow=4.4,SNR=13
NVAR PKKPbc **PKKPbc** 13 28 30.4 +1.4
comp=Z,1.4nm,0.8s,baz=125,slow=2.7,SNR=6.3
NVAR PKPPKP **P'P'df** 13 36 32.6 -7.6
comp=Z,0.8nm,0.8s,baz=85,slow=3.1,SNR=4.2
NVAR LR LR 13 46 54.0
comp=Z,749nm,18.3s,baz=292,slow=34
STON **Ston** 85.61 318 P P 13 10 25.5 -0.7
JAN **Janina** 85.61 314 P P 13 10 26.4 0.0
GUR **Goura** 85.66 312 P P 13 10 24.8 -1.9
KAC **Achnashellach** 85.66 338 ⇓ *i* P P 13 10 25.9 -0.3
EDU **Dundee** 85.67 337 ⇓ *i* P P 13 10 25.8 -0.4
MLAC **Mammoth, Mammc** 85.71 49 P P 13 10 28.0 +0.8
baz=305,SNR=18
LAKA **Lakka** 85.72 312 P P 13 10 26.1 -0.8
KLV **Kalavryta, Ach** 85.72 312 P P 13 10 25.6 -1.4
RRH **Rhenigidale** 85.75 339 ⇓ *i* P P 13 10 26.3 -0.3
DSL **Palaion Diasel** 85.76 313 P P 13 10 26.3 -0.9
JAVS **Javornik** 85.76 322 ⇓ *i* P P 13 10 26.4 -0.7
comp=Z,707nm,1.2s
JAVS *e* 13 21 49.7
VAM **Vamos** 85.85 309 P P 13 10 27.5 -0.1
KPL **Plockton** 85.90 338 ⇓ *e* P P 13 10 27.1 -0.3
KPL AMB AMB 13 10 28.1
comp=Z,380nm,1.1s
KPL AMS AMS 13 53 12.9
comp=Z,3μm,17.5s
KSB **Sheil Bridge** 85.93 338 ⇓ *i* P P 13 10 27.0 -0.6
VLX **Viachorasia** 85.96 311 P P 13 10 26.8 -1.4
IMMV **Iera Moni Meta** 85.97 309 P P 13 10 27.8 -0.4
IGT **Igoumenitsa** 86.01 314 P P 13 10 27.5 -0.8
PDO **Prodromos** 86.02 313 P P 13 10 27.4 -1.0
ESY **Stoneypath** 86.02 336 ⇓ *i* P P 13 10 27.4 -0.7
SGD **Sagiada** 86.03 314 P P 13 10 27.6 -0.8
ABTA **Abfaltersbach** 86.03 323 *i* P P 13 10 27.6 -0.8
comp=Z,62nm,0.8s,SNR=49
TRI **Trieste** 86.04 322 *e* P P 13 10 27.4 -0.9
TRI pmax pmax
comp=Z,296nm,1.3s
TRI **Trieste** 86.04 322 *e* P P 13 10 27.4 -0.9
comp=Z,296nm,1.3s
DRO **Drossia** 86.06 312 P P 13 10 28.1 -0.5
AXS **Araxos** 86.13 312 P P 13 10 28.7 -0.2
WATA **Walderalm** 86.13 324 *i* P P 13 10 28.4 -0.6
SNR=6.6
WTTA **Wattenberg** 86.15 324 *i* PcP P 13 10 29.0 -0.1
comp=Z,112nm,1.8s,SNR=25
RLS **Riolos of Patr** 86.15 312 P P 13 10 28.0 -1.0
ELK **Elko** 86.16 45 *e* P P 13 10 30.3 +0.9
ELK pmax pmax
comp=Z,171nm,1.4s
ELK **Elko** 86.16 45 *e* P P 13 10 30.3 +0.9
comp=Z,171nm,1.4s
NVLJ **Novalja** 86.17 320 P P 13 10 28.9 -0.1
RCTC **Rector, Farmer** 86.19 50 P P 13 10 29.0 -0.3
baz=305,SNR=18
EDI **Edinburgh** 86.22 337 ⇓ *e* P P 13 10 27.3 -1.7
EDI AMB AMB 13 10 29.2
comp=Z,198nm,2.5s
EDI AMS AMS 13 52 02.3
comp=Z,4μm,20.0s
KEK **Kerkira** 86.24 314 P P 13 10 28.9 -0.6
LKD2 **Lefkada island** 86.24 313 P P 13 10 28.7 -0.8
SMMC **Simmler** 86.25 51 P P 13 10 30.3 +0.6
baz=304,SNR=23
AMT **Artemida-Makis** 86.30 312 P P 13 10 28.9 -0.9
STU **Stuttgart** 86.35 326 *e* P P 13 10 29.9 +0.1
STU pmax pmax
comp=Z,219nm,1.3s
STU **Stuttgart** 86.35 326 *e* P P 13 10 29.9 +0.1
comp=Z,219nm,1.3s
ITM **Ithomi** 86.36 311 P P 13 10 29.2 -0.9
MOTA **Moosalm** 86.36 324 *i* PcP P 13 10 30.6 +0.5
SNR=27
EAB **Aberfoyle** 86.40 337 ⇓ *e* P P 13 10 29.3 -0.6
TIN **Tinemaha, Big** 86.44 49 P P 13 10 31.3 +0.7
baz=305,SNR=20
RETA **Reutte** 86.44 324 *i* PcP P 13 10 30.4 0.0
comp=Z,31nm,1.1s,SNR=27
HGN **Heimansgroeve** 86.48 329 *i* P P 13 10 30.1 -0.3
comp=Z,713nm,2.4s
HGN **Heimansgroeve** 86.48 329 *eS* S 13 20 56.2 -8.7
KFL **Anninata** 86.56 312 P P 13 10 30.9 -0.1
MEM **Membach** 86.56 329 P P 13 10 30.4 -0.4
BEBN **Eben Emael** 86.57 329 P P 13 10 30.6 -0.2
LKWY **Lake** 86.60 39 *e* P P 13 10 33.7 +2.2
LKWY pmax pmax
comp=Z,135nm,1.1s
LKWY MLR MLR
comp=Z,4μm,19.0s
LKWY **Lake** 86.60 39 *e* P P 13 10 33.7 +2.2
comp=Z,134nm,1.1s
LKWY LR LR
comp=Z,4μm,19.0s
PKM **Mcpherson Peak** 86.61 51 P P 13 10 32.2 +0.6
baz=305,SNR=22
VLS **Valsamata** 86.64 313 P P 13 10 30.2 -1.3
PYL **PYLOS** 86.64 311 P P 13 10 29.8 -1.7
EKA **Eskdalemuir Ar** 86.67 336 PKKPbc PKKPbc 13 28 24.6 -2.0
comp=Z,5.0nm,1.0s,baz=243,slow=3.3,SNR=6.3
ESK **Eskdalemuir** 86.70 336 ⇓ *e* P P 13 10 30.4 -1.0
ESK AMB AMB 13 10 31.8
comp=Z,202nm,2.3s
ESK AMS AMS 13 52 48.9
comp=Z,4μm,19.5s
ESK **Eskdalemuir** 86.70 336 *e* P P 13 10 30.7 -0.7
ESK pmax pmax
comp=Z,110nm,0.9s
ESK MLR MLR
comp=Z,5μm,20.0s
ESK **Eskdalemuir** 86.70 336 *e* P P 13 10 30.7 -0.7
comp=Z,110nm,0.9s
ESK LR LR
comp=Z,5μm,20.0s
PGBU **Glenifferbraes** 86.75 337 ⇓ *e* P P 13 10 30.9 -0.7
PGBU AMB AMB 13 10 32.2
comp=Z,260nm,1.2s
PGBU AMS AMS 13 55 42.9
comp=Z,3μm,17.8s
FETA **Feichten** 86.77 324 *i* PcP P 13 10 31.9 -0.2
comp=Z,33nm,0.9s,SNR=23
ECK **Cauldkaine Hil** 86.78 336 ⇓ *i* P P 13 10 31.2 -0.6
RLMT **Red Lodge** 86.85 38 P P 13 10 33.5 +0.8
baz=311,SNR=74
RLMT **Red Lodge** 86.85 38 *e* P P 13 10 33.2 +0.6
comp=Z,197nm,1.4s
RLMT LR LR
comp=Z,2μm,19.0s
LANF **Langenberg** 86.87 327 ⇓ *e* P P 13 10 32.6 +0.2
BHH **Howats Hill** 86.89 336 ⇓ *i* P P 13 10 32.0 -0.3
MOOW **Moose Ponds** 86.93 40 *e* P P 13 10 33.9 +0.8
comp=Z,137nm,1.5s
SBC **Santa Barbara** 86.94 52 P P 13 10 33.6 +0.7
baz=305,SNR=5.6
BWH **Wardlaw** 86.97 336 ⇓ *e* P P 13 10 31.8 -0.9
BCLA **Clavier** 87.01 329 P P 13 10 32.6 -0.4
DAVA **Damuels** 87.02 325 *i* PcP P 13 10 33.2 -0.2
comp=Z,68nm,0.9s,SNR=39
GRAC **Grapevine Rang** 87.03 49 P P 13 10 34.0 +0.5
baz=306,SNR=57
BFO **Black Forest** 87.07 326 *e* P P 13 10 33.1 -0.3
BFO pmax pmax
comp=Z,241nm,1.4s
BFO MLR MLR
comp=Z,6μm,22.0s
BFO **Black Forest** 87.07 326 *e* P P 13 10 33.0 -0.3
comp=Z,241nm,1.4s
BFO LR LR
comp=Z,6μm,22.0s
ISA **Isabella, Lake** 87.07 50 P P 13 10 33.0 -0.8
baz=305,SNR=14
LOHW **Long Hollow** 87.09 40 *e* P P 13 10 34.5 +0.6
comp=Z,67nm,1.3s
LMK **Market Rasen** 87.09 334 ⇓ *e* P P 13 10 32.5 -0.9
LMK AMB AMB 13 10 33.6
comp=Z,216nm,1.3s
LMK AMS AMS 13 55 54.6
comp=Z,7μm,17.9s
SNOW **Snow King Moun** 87.10 40 *e* P P 13 10 35.1 +1.2
comp=Z,64nm,0.9s
REDW **Red Top Meadow** 87.11 40 *e* P P 13 10 34.6 +0.7
comp=Z,107nm,1.3s
ARVC **Arvin** 87.14 51 P P 13 10 33.8 -0.2
baz=305,SNR=18
UCC **Uccle** 87.15 330 P P 13 10 33.2 -0.4
WLF **Walferdange** 87.16 328 P P 13 10 33.9 +0.2
comp=Z,180nm,2.1s
WLF **Walferdange** 87.16 328 *e* P P 13 10 34.0 +0.2
WLF pmax pmax
comp=Z,369nm,1.4s
WLF MLR MLR
comp=Z,7μm,20.0s
WLF **Walferdange** 87.16 328 *e* P P 13 10 34.0 +0.2
comp=Z,369nm,1.4s
WLF LR LR
comp=Z,7μm,20.0s
BBO1 **Bothel** 87.18 336 ⇓ *e* P P 13 10 33.5 -0.3
DGMT **Dagmar** 87.19 34 P P 13 10 34.2 +0.2
baz=314,SNR=50
DGMT **Dagmar** 87.19 34 *e* P P 13 10 34.2 +0.2
comp=Z,402nm,1.5s
DGMT LR LR
comp=Z,2μm,19.0s
SCZ2 **Santa Cruz Isl** 87.24 52 P P 13 10 34.7 +0.2
baz=305
KESW **Keswick, Cumbr** 87.25 336 ⇓ *e* P P 13 10 33.1 -1.0
KESW AMB AMB 13 10 35.7
comp=Z,207nm,2.3s
MRIV **Mauritius Mete** 87.25 245 *e* P P 13 10 35.0 +0.4
DAC **Darwin (Calif)** 87.30 49 *e* P P 13 10 34.8 -0.1
DAC pmax pmax
comp=Z,133nm,1.4s
DAC **Darwin (Calif)** 87.30 49 *e* P P 13 10 34.8 -0.1
comp=Z,132nm,1.4s
AHID **Auburn Hatcher** 87.35 41 *e* P P 13 10 35.6 +0.5
comp=Z,47nm,1.1s
AHID LR LR
comp=Z,997nm,20.0s
A25A **Svangstu Ranch** 87.37 33 P P 13 10 35.5 +0.7
baz=315,SNR=45
R11A **Troy Canyon, C** 87.37 47 P P 13 10 35.7 +0.4
baz=307,SNR=79
R11A **Troy Canyon, C** 87.37 47 *e* P P 13 10 35.8 +0.6
comp=Z,209nm,1.6s
SNF **Seneffe** 87.40 330 P P 13 10 34.5 -0.4
LAO **LASA Array** 87.41 36 P P 13 10 35.7 +0.6
baz=313,SNR=94
LAO **LASA Array** 87.41 36 *e* P P 13 10 35.7 +0.6
comp=Z,240nm,1.1s
LAO LR LR
comp=Z,1μm,21.0s
MPMC **Manual Prospec** 87.50 49 P P 13 10 36.0 +0.1
baz=306,SNR=44
GMK **Mull of Kintyr** 87.50 337 ⇓ *i* P P 13 10 34.6 -0.6
OSI **Osito Audit: C** 87.51 51 P P 13 10 36.0 +0.2
baz=305
DOU **Dourbes** 87.56 329 P P 13 10 35.0 -0.6
BLG **Laguna Peak, P** 87.56 52 P P 13 10 35.8 -0.2
baz=305,SNR=6.9
GAL1 **Galloway** 87.59 337 ⇓ *e* P P 13 10 35.0 -0.7
GAL1 AMB AMB 13 10 36.5
comp=Z,70nm,1.2s
FURC **Furnace Creek,** 87.67 49 P P 13 10 36.8 +0.3
baz=306,SNR=57
LRMC **Laurel Mtn Rad** 87.71 50 P P 13 10 36.8 0.0
baz=306,SNR=32
ECH **Echery** 87.71 327 ⇓ *e* P P 13 10 36.3 -0.2
SNCC **San Nicolas Is** 87.74 53 P P 13 10 37.0 +0.1
baz=305
TPNV **Topopah Spring** 87.78 48 P P 13 10 37.2 0.0
baz=306,SNR=88
HWUT **Hardware Ranch** 87.81 42 *e* P P 13 10 38.1 +0.8
comp=Z,232nm,1.2s
HWUT LR LR
comp=Z,1μm,19.0s
B25A **Knox Farm, Ray** 87.82 33 P P 13 10 38.1 +1.1
baz=315,SNR=20
TUE **Stuetta** 87.84 324 *e* P P 13 10 37.0 -0.4
comp=Z,77nm,1.0s
TUE LR LR
comp=Z,10μm,20.0s
EDW2 **Edwards Air Fo** 87.84 51 P P 13 10 37.6 +0.2
baz=306,SNR=37
A26A **Wade Farm, Ken** 87.90 32 P P 13 10 37.8 +0.4
baz=316,SNR=24
DUG **Dugway, Tooele** 87.96 44 P P 13 10 38.8 +0.8
baz=308,SNR=126
DUG **Dugway, Tooele** 87.96 44 *e* P P 13 10 38.6 +0.6
DUG pmax pmax
comp=Z,179nm,1.2s
DUG MLR MLR
comp=Z,865nm,20.0s
DUG **Dugway, Tooele** 87.96 44 *e* P P 13 10 38.6 +0.6
comp=Z,179nm,1.2s
DUG LR LR
comp=Z,865nm,20.0s
DECC **Green Verdugo** 87.98 51 P P 13 10 37.8 -0.2
baz=305
MOF **Molkenrain** 87.98 326 ⇓ *e* P P 13 10 37.6 -0.3
CWF **Charnwood Fore** 88.03 334 ⇓ *e* P P 13 10 36.6 -1.2
CWF AMS AMS 13 56 32.3
comp=Z,8μm,16.1s
STNC **Stoke** 88.09 334 *e* P P 13 10 37.4 -0.7
STNC AMS AMS 13 57 42.7
comp=Z,5μm,16.3s
PASC **Pasadena Art C** 88.13 51 *e* P P 13 10 38.5 -0.2
comp=Z,281nm,2.0s
WIM **Isle of Man** 88.15 336 ⇓ *e* P P 13 10 37.6 -0.8
C25A **Freed Ranch, W** 88.17 34 P P 13 10 39.7 +1.0
baz=315,SNR=13
B26A **Jensen Ranch,** 88.18 33 P P 13 10 39.6 +0.8
baz=316
BW06 **Boulder Array** 88.22 40 P P 13 10 39.2 0.0
baz=310,SNR=84
BW06 **Boulder Array** 88.22 40 *e* P P 13 10 39.3 0.0
comp=Z,68nm,1.0s
BW06 LR LR
comp=Z,1μm,20.0s
PDAR **Pinedale Array** 88.22 40 P P 13 10 39.2 -0.1
comp=Z,28nm,0.8s,baz=288,slow=1.5,SNR=245
PDAR pP **sP** 13 10 50.4 -0.5
comp=Z,12nm,0.7s,baz=296,slow=0.8,SNR=6.4
PDAR PKKPbc **PKKPbc** 13 28 22.9 0.0
comp=Z,3.2nm,0.9s,baz=118,slow=3.1,SNR=15

PDAR PKPPKP P'P'df 13 36 27.4 -8.1
comp=Z,2.3nm,1.1s,baz=69,slow=4.9,SNR=6.4
A27A Ledoux Ranch, 88.23 32 P **P 13 10 39.5 +0.6**
baz=316
THEF They Montfort 88.26 327⇓*eP* **P 13 10 38.9 -0.2**
FMP Fort Macarthur 88.32 52 P **P 13 10 39.6 0.0**
baz=305
FURI Furi 88.33 279 P **P 13 10 43.3 +2.9**
SHOC Shoshone, Teco 88.39 49 P **P 13 10 40.1 +0.1**
baz=306,SNR=17
GSC Goldstone, Bar 88.39 50 P **P 13 10 40.2 +0.1**
baz=306,SNR=37
CIS Catalina Islan 88.41 52 P **P 13 10 40.1 -0.1**
baz=305
TIP Timpagrande 88.44 315 P **P 13 10 40.9 +0.7**
TIP Timpagrande 88.44 315 *eP* **P 13 10 40.3 +0.2**
comp=Z,211nm,1.3s
TIP LR LR
comp=Z,7μm,21.0s
BFSC Mount Baldy Ra 88.44 51 P **P 13 10 40.0 -0.4**
baz=306,SNR=5.6
LOMF Lomont 88.48 326⇓*eP* **P 13 10 40.0 -0.2**
CUC Castrocucco 88.50 316 *eP* **P 13 10 39.5 -0.9**
comp=Z,63nm,1.3s
CUC LR LR
comp=Z,5μm,19.0s
GMM Mts of Mourne 88.52 337⇓*eP* **P 13 10 39.0 -1.1**
D25A Fairfield 88.53 34 P **P 13 10 41.3 +0.9**
baz=315,SNR=27
SCI2 San Clemente I 88.57 52 P **P 13 10 41.3 +0.5**
baz=305
WPM1 Penmaenmawr 88.59 335⇓*eP* **P 13 10 39.6 -0.9**
B27A Peters Farms, 88.62 32 P **P 13 10 41.1 +0.3**
baz=316
WME Myndd Eilian 88.62 335⇓*eP* **P 13 10 39.6 -1.0**
FOEL Foel Wylfa 88.62 335⇓*eP* **P 13 10 40.2 -0.5**
FOEL AMS AMS 13 55 54.8
comp=Z,5μm,18.2s
C26A Wahner Farm, P 88.64 33 P **P 13 10 41.6 +0.7**
baz=316,SNR=33
A28A Rude Farm, Bot 88.70 31 P **P 13 10 41.9 +0.7**
baz=317,SNR=63
WLF1 Llynfaes 88.74 335⇓*eP* **P 13 10 40.5 -0.7**
WLF1 AMB AMB 13 10 41.5
comp=Z,135nm,2.5s
WLF1 AMS AMS 13 52 27.0
comp=Z,5μm,20.1s
HLM1 Long Mynd 88.80 334⇓*eP* **P 13 10 40.0 -1.5**
HLM1 AMB AMB 13 10 41.6
comp=Z,78nm,3.2s
HLM1 AMS AMS 13 58 52.9
comp=Z,4μm,16.3s
HMNX Herstmonceux 88.81 332 *eP* **P 13 10 41.1 -0.4**
HMNX AMS AMS 13 56 55.6
comp=Z,7μm,15.1s
SSW Stow on the Wo 88.84 333⇓*eP* **P 13 10 40.8 -0.9**
YRC Rhoscolyn 88.84 336⇓*iP* **P 13 10 40.8 -0.8**
VLC Villacollemand 88.87 322 PFAKE 13 10 50.0 +8.0
VLC LR LR
comp=Z,5μm,21.0s
TUQ Turquoise Moun 88.89 49 P **P 13 10 42.7 +0.2**
baz=307,SNR=41
BBRC Big Bear Solar 88.92 51 P **P 13 10 42.5 -0.3**
baz=306
E25A Miller Ranch, 88.95 35 P **P 13 10 43.2 +0.8**
baz=315,SNR=12
HEC Hector,Ludlow 88.98 50 P **P 13 10 43.1 +0.3**
baz=306
B28A Dugan Ranch, T 89.00 32 P **P 13 10 43.4 +0.8**
baz=317,SNR=31
C27A Sayler Ranch, 89.00 33 P **P 13 10 43.5 +0.9**
baz=316,SNR=31
YRE Yr Eifl 89.00 335⇓*eP* **P 13 10 41.5 -0.9**
D26A Manning 89.04 34 P **P 13 10 43.6 +0.7**
baz=315,SNR=32
RER Riviere de l'E 89.09 245 *eP* **P 13 10 42.4 -1.0**
comp=Z,150nm,0.9s
RER LR LR
comp=Z,2μm,20.0s
STRD Stroud 89.11 333⇓*eP* **P 13 10 42.4 -0.5**
STRD AMS AMS 13 57 03.1
comp=Z,5μm,19.3s
MURC Murrieta 89.13 51 P **P 13 10 43.3 -0.2**
baz=306,SNR=7.5
A29A Manning Farm, 89.16 31 P **P 13 10 43.7 +0.5**
baz=318,SNR=40
PPT Papeete 89.17 111 P **P 13 10 44.8 +1.0**
comp=Z,88nm,1.1s,baz=29,slow=10,SNR=9.0
PPT2 Papeete2 89.18 111 *eP* **P 13 10 45.3 +1.4**
comp=Z,152nm,1.4s
PPT2 Papeete2 89.18 111 *e*PP PP 13 14 13.2 -1.4
comp=Z,213nm,25.8s
PPT2 *e*S **S 13 21 28.7 -3.0**
comp=Z,3μm,24.8s
PPT2 *e*SS **SS 13 27 27.8 +1.4**
comp=Z,2μm,26.0s
PPT2 Papeete2 89.18 111 *e*LR LR 13 38 37.7
comp=Z,4μm,28.5s
PMOR Pomariorio Ree 89.21 108 *eP* **P 13 10 44.9 +1.0**
comp=Z,347nm,1.3s
PMOR Pomariorio Ree 89.21 108 *eT* T 14 48 31.3
comp=Z,3.9nm,0.2s
PAE Paea 89.21 111 *eP* **P 13 10 45.1 +1.2**
comp=Z,25nm,1.2s
MCH1 Michaelchurch 89.25 334⇓*eP* **P 13 10 42.8 -0.8**
MCH1 AMB AMB 13 10 45.1
comp=Z,155nm,2.8s
MCH1 AMS AMS 13 58 26.8
comp=Z,5μm,17.5s
MONM Monmouth 89.30 334⇓*eP* **P 13 10 42.9 -0.9**
MONM AMB AMB 13 10 45.1
comp=Z,144nm,3.2s
MONM AMS AMS 13 57 20.6
comp=Z,6μm,16.2s
F25A Bowman 89.32 35 P **P 13 10 45.1 +0.9**
baz=315,SNR=37
OLDB Oldbury-Upon-S 89.35 334⇓*eP* **P 13 10 43.1 -0.9**
OLDB AMB AMB 13 10 44.0
comp=Z,94nm,2.6s
OLDB AMS AMS 13 57 21.4
comp=Z,5μm,17.1s
D27A Center 89.42 33 P **P 13 10 45.5 +0.9**
baz=316,SNR=13
E26A Carlson Angus 89.43 34 P **P 13 10 45.3 +0.6**
baz=315,SNR=38
BATH Bath 89.43 333⇓*eP* **P 13 10 43.3 -1.1**
BATH AMS AMS 13 57 01.5
comp=Z,6μm,18.3s
B29A Wagenman Farm, 89.44 31 P **P 13 10 45.2 +0.6**
baz=318,SNR=49
GMRC Granite Mounta 89.45 50 P **P 13 10 45.3 +0.2**
baz=307,SNR=24
DSB Dublin 89.48 336 *eP* **P 13 10 44.3 -0.3**
comp=Z,31nm,0.9s
C28A Hausauer Farms 89.52 32 P **P 13 10 46.1 +1.1**
baz=317,SNR=12
TVO Taravao 89.54 111 *eP* **P 13 10 47.2 +1.7**
comp=Z,72nm,1.3s
VAH Vaihoa 89.55 108 *eP* **P 13 10 46.2 +0.7**
comp=Z,161nm,1.3s
A30A Hoffart Farm, 89.56 30 P **P 13 10 45.6 +0.5**
baz=318,SNR=80
LPW Lampeter 89.56 335⇓*eP* **P 13 10 43.7 -1.4**
LPW AMB AMB 13 10 46.5
comp=Z,130nm,3.0s
LPW AMS AMS 13 56 31.1
comp=Z,5μm,20.1s
ULM Lac du Bonnet 89.60 28 P **P 13 10 45.4 +0.1**
comp=Z,62nm,0.9s,baz=319,slow=5.4,SNR=90
ULM PKKPbc **PKKPbc 13 28 18.6 -0.9**
comp=Z,4.4nm,0.8s,baz=218,slow=1.1,SNR=5.9
ULM LR LR 13 52 59.3
comp=Z,948nm,20.2s,baz=328,slow=37
109C Camp Elliot, M 89.61 52 P **P 13 10 45.8 +0.1**
baz=306
PFO Pinyon Flats O 89.62 51 P **P 13 10 46.0 0.0**
baz=306,SNR=12
PFO Pinyon Flats O 89.62 51 *eP* **P 13 10 45.9 0.0**
PFO *e* 13 14 16.5
PFO pmax pmax
comp=Z,54nm,1.1s
PFO MLR MLR
comp=Z,2μm,22.0s
PFO Pinyon Flats O 89.62 51 *eP* **P 13 10 45.9 0.0**
comp=Z,54nm,1.1s
PFO *e*PP **PP 13 14 16.5 -0.8**
PFO LR LR
comp=Z,2μm,22.0s
BELC Belle Mtn. Jos 89.70 50 P **P 13 10 46.0 -0.2**
baz=307,SNR=13
F26A Lodgepole 89.77 35 P **P 13 10 47.1 +0.8**
baz=315,SNR=30
MDND Maddock 89.78 32 P **P 13 10 47.0 +0.8**
baz=317,SNR=17
MDND Maddock 89.78 32 *eP* **P 13 10 47.0 +0.8**
comp=Z,977nm,1.7s
D28A Regan 89.81 33 P **P 13 10 47.3 +0.9**
baz=317,SNR=18
G25A Newell 89.86 36 P **P 13 10 47.2 +0.5**
baz=315,SNR=23
E27A Carson 89.89 34 P **P 13 10 47.7 +0.9**
baz=316,SNR=42
B30A Myrvik Farm, E 89.91 31 P **P 13 10 47.3 +0.5**
baz=318,SNR=58
K22A Casper 89.98 39 P **P 13 10 47.6 +0.2**
baz=312,SNR=23
K22A Casper 89.98 39 *eP* **P 13 10 47.3 -0.1**
comp=Z,102nm,1.2s
A31A Linda, St. Vin 90.05 30 P **P 13 10 47.3 -0.1**
baz=319
MONP2 Monument Peak 90.07 51 P **P 13 10 48.4 +0.2**
baz=306,SNR=9.7
F27A Lemmon 90.07 34 P **P 13 10 48.4 +0.7**
baz=316,SNR=48
NEE2 Needles Airpor 90.15 49 P **P 13 10 48.5 +0.3**
baz=308
H25A Fruitdale 90.17 36 P **P 13 10 48.7 +0.5**
baz=315,SNR=39
IRM Iron Mountain 90.17 50 P **P 13 10 48.8 +0.4**
baz=307,SNR=18
G26A Maurine 90.20 35 P **P 13 10 49.0 +0.7**
baz=315,SNR=92
E28A Huff 90.20 33 P **P 13 10 49.1 +0.8**
baz=317,SNR=16
B31A Greenbush Farm 90.23 30 P **P 13 10 48.5 +0.3**
baz=319,SNR=23
BC3 Big Chuckawall 90.27 50 P **P 13 10 49.0 +0.1**
baz=307,SNR=20
RSSD Black Hills 90.29 37 P **P 13 10 49.3 +0.3**
baz=314
RSSD Black Hills 90.29 37 *eP* **P 13 10 49.2 +0.3**
RSSD pmax pmax
comp=Z,114nm,0.9s
RSSD Black Hills 90.29 37 *eP* **P 13 10 49.2 +0.3**
comp=Z,114nm,0.9s
GDM Grand'Maison 90.35 325 *eP* **P 13 10 49.1 0.0**
A32A Rocking H Ranc 90.36 30 P **P 13 10 48.8 -0.1**
baz=320,SNR=41
D29A Pettibone, Tap 90.36 32 P **P 13 10 49.3 +0.3**
baz=317,SNR=20
C30A Mose, Pekin 90.40 31 P **P 13 10 49.4 +0.3**
baz=318,SNR=13
IBP Imperial Bould 90.43 51 P **P 13 10 49.9 +0.3**
baz=307
SWSC Sam W. Stewart 90.46 51 P **P 13 10 49.8 +0.2**
baz=307
G27A Dupree 90.47 35 P **P 13 10 50.3 +0.7**
baz=316,SNR=23
GRN Grenoble 90.50 325 *eP* **P 13 10 50.2 +0.4**
I25A Rochford 90.52 37 P **P 13 10 50.3 +0.4**
baz=314
AUTN L'Aution 90.53 323 *eP* **P 13 10 51.2 +1.1**
H26A Fairpoint 90.59 36 P **P 13 10 50.9 +0.8**
baz=315,SNR=36
HTL Hartland 90.61 334⇓*eP* **P 13 10 49.7 -0.3**
HTL AMS AMS 13 58 04.6
comp=Z,3μm,17.6s
LUCF Luceram 90.65 323 *eP* **P 13 10 49.7 -0.8**
C31A Landman Farms, 90.67 31 P **P 13 10 50.6 +0.3**
baz=319,SNR=26
F28A McLaughlin 90.68 34 P **P 13 10 51.4 +0.9**
baz=315,SNR=46
O20A White River Ci 90.69 42 P **P 13 10 51.3 +0.5**
baz=311,SNR=50
O20A White River Ci 90.69 42 *eP* **P 13 10 51.4 +0.5**
comp=Z,149nm,1.2s
E29A Napoleon 90.70 33 P **P 13 10 50.9 +0.3**
baz=317,SNR=23
D30A Buchanan 90.72 32 P **P 13 10 51.1 +0.5**
baz=318,SNR=12
B32A Ashes, Strandq 90.74 30 P **P 13 10 50.4 -0.2**
baz=320,SNR=43
PDMCI Parker Dam,Lak 90.74 49 P **P 13 10 51.2 +0.3**
baz=308,SNR=11
REVF Revere 90.74 323 *eP* **P 13 10 50.3 -0.5**
MVIF Mont Vial 90.75 324 *eP* **P 13 10 49.3 -1.7**
A33A Warroad 90.81 29 P **P 13 10 51.0 0.0**
baz=321,SNR=20
Y12C Blythe 90.83 50 P **P 13 10 52.0 +0.7**
baz=308,SNR=12
DYA Yadsworthy 90.85 334⇓*eP* **P 13 10 50.3 -0.8**
DYA AMB AMB 13 10 51.1
comp=Z,101nm,2.0s
DYA AMS AMS 13 58 16.5
comp=Z,6μm,18.4s
J25A Sunshine Ranch 90.92 37 P **P 13 10 51.8 +0.1**
baz=314,SNR=23
H27A Howes 90.93 35 P **P 13 10 52.3 +0.6**
baz=316,SNR=30
I26A New Underwood 90.96 36 P **P 13 10 52.6 +0.8**
baz=315,SNR=9.7
CALN Calern 90.98 324 *eP* **P 13 10 51.9 -0.2**
PLDF La Plantade 91.01 327⇓*eP* **P 13 10 53.1 +1.0**
GLA Glamis 91.05 50 P **P 13 10 53.0 +0.5**
baz=307,SNR=12
SSB Saint Sauveur 91.07 326⇓*eP* **P 13 10 51.8 -0.6**
SSB Saint Sauveur 91.07 326 *eP* **P 13 10 51.7 -0.6**
SSB pmax pmax
comp=Z,40nm,1.0s
SSB MLR MLR
comp=Z,5μm,19.0s
SSB Saint Sauveur 91.07 326 *eP* **P 13 10 51.7 -0.6**
comp=Z,40nm,1.0s
SSB LR LR
comp=Z,5μm,19.0s
E30A Jud 91.10 32 P **P 13 10 52.9 +0.5**
baz=318,SNR=58
AGMN Agassiz Nation 91.10 30 P **P 13 10 52.0 -0.4**
baz=320,SNR=36
AGMN Agassiz Nation 91.10 30 *eP* **P 13 10 52.0 -0.4**
comp=Z,74nm,1.1s
AGMN LR LR
comp=Z,2μm,20.0s
JSA Saint Aubin 91.14 332⇓*eP* **P 13 10 51.6 -0.9**
JSA AMB AMB 13 10 52.7
comp=Z,84nm,1.3s
F29A Eureka 91.16 33 P **P 13 10 53.4 +0.7**
baz=317,SNR=62
C32A Crookston 91.17 30 P **P 13 10 52.6 -0.1**
baz=320,SNR=7.2
AGO Saint Agoulin 91.18 327⇓*eP* **P 13 10 53.8 +1.0**
G28A Parade 91.18 34 P **P 13 10 53.6 +0.8**
baz=316,SNR=29
OG26 St.-Nazaire-De 91.20 325⇓*eP* **P 13 10 52.5 -0.5**
D31A Mcclaflin, Tow 91.23 31 P **P 13 10 53.4 +0.4**
baz=319,SNR=17
B33A Robert and Kas 91.24 29 P **P 13 10 52.8 -0.2**
baz=320,SNR=5.3
I27A Quinn 91.34 36 P **P 13 10 54.4 +0.8**
baz=316,SNR=36
J26A Sies Ranch, S 91.35 37 P **P 13 10 54.4 +0.7**
baz=315,SNR=53
H28A Mission Ridge 91.42 35 P **P 13 10 54.6 +0.6**
baz=316,SNR=19
PYM Petit Puy Mans 91.46 327⇓*eP* **P 13 10 55.0 +0.8**
B34A Aery, Baudette 91.47 29 P **P 13 10 53.9 -0.2**
baz=321,SNR=32
PHWY Pilot Hill 91.47 39 *eP* **P 13 10 55.1 +0.4**
comp=Z,101nm,1.1s
D32A Dogwood Acres, 91.48 31 P **P 13 10 54.0 -0.1**
baz=319
N23A Red Feather La 91.48 40 P **P 13 10 55.7 +1.0**
baz=313,SNR=64
E31A Nome 91.52 32 P **P 13 10 54.7 +0.3**
baz=319,SNR=12
F30A Leola 91.53 33 P **P 13 10 54.9 +0.4**
baz=318,SNR=5.0
CCA1 Carnmenellis 91.55 334⇓*eP* **P 13 10 53.6 -0.8**
CCA1 AMB AMB 13 10 54.6
comp=Z,98nm,1.6s
CCA1 AMS AMS 13 58 41.4
comp=Z,5μm,16.2s
C33A Trail 91.55 30 P **P 13 10 54.4 -0.1**
baz=320,SNR=18
G29A Hoven 91.58 34 P **P 13 10 55.1 +0.4**
baz=317,SNR=19
LBL Lubilhac 91.73 326⇓*eP* **P 13 10 56.5 +1.1**
WUAZ Wupatki 91.77 47 P **P 13 10 56.8 +0.9**
baz=309,SNR=58
WUAZ Wupatki 91.77 47 *eP* **P 13 10 56.7 +0.7**
comp=Z,155nm,1.3s
I28A Midland 91.83 35 P **P 13 10 56.4 +0.5**
baz=316,SNR=29
H29A Onida 91.85 34 P **P 13 10 56.3 +0.3**
baz=317,SNR=54
E32A Braaten, Kindr 91.87 31 P **P 13 10 56.0 0.0**
baz=319,SNR=6.9
VAL Valentia 91.88 338⇓*iP* **P 13 10 56.2 +0.4**
F31A Hecla 91.88 32 P **P 13 10 56.3 +0.2**
baz=318,SNR=19
WDD Wied Dalam 91.89 314 PFAKE 13 11 10.0 +14
WDD LR LR
comp=Z,3μm,21.0s
FRNF Fournols 91.94 327 *eP* **P 13 10 56.7 +0.3**
J27A Elkhorn Farm, 91.95 36 P **P 13 10 57.4 +0.9**
baz=316,SNR=20
B35A Bob, Littlefor 91.95 28 P **P 13 10 56.5 +0.2**
baz=322,SNR=64
D33A AnnSam, Waubun 92.00 30 P **P 13 10 56.4 -0.1**
baz=320,SNR=12
G30A Faulkton 92.00 33 P **P 13 10 56.9 +0.3**
baz=318,SNR=58
C34A RKJ Ranch, Bem 92.01 30 P **P 13 10 56.5 -0.1**
baz=321,SNR=6.9
SMCO Snowmass 92.06 42 *eP* **P 13 10 58.5 +1.0**
comp=Z,110nm,1.0s
J28A Allard Ranch, 92.22 36 P **P 13 10 58.4 +0.7**
baz=316,SNR=14
I29A Vivian Onida 92.25 35 P **P 13 10 58.1 +0.3**
baz=317,SNR=39
TBI Tubuai 92.28 116 *eP* **P 13 10 59.2 +1.1**
comp=Z,190nm,1.3s
TBI Tubuai 92.28 116 *e*PP PP 13 14 28.2 -11
comp=Z,239nm,29.5s
TBI *e*S **S 13 21 56.2 -3.6**
comp=Z,1μm,29.5s
TBI *e*SP **SP 13 23 10.4 0.0**
comp=Z,2μm,28.8s
TBI *e*SS **SS 13 28 09.7 -1.3**
comp=Z,1μm,25.8s
TBI Tubuai 92.28 116 *e*LR LR 13 40 27.6
comp=Z,7μm,35.0s,baz=305
D34A Park Rapids 92.32 30 P **P 13 10 58.0 0.0**
baz=321,SNR=18
C35A Jirik Farms, M 92.36 29 P **P 13 10 58.1 -0.2**
baz=322,SNR=35
G31A Conde 92.37 33 P **P 13 10 58.5 +0.2**
baz=318
F32A Veblen 92.39 32 P **P 13 10 58.5 +0.2**
baz=319,SNR=12
ISCO Idaho Springs 92.41 41 P **P 13 10 59.8 +0.7**
baz=313,SNR=48
ISCO Idaho Springs 92.41 41 *eP* **P 13 10 59.7 +0.7**
ISCO pmax pmax
comp=Z,48nm,1.0s
ISCO MLR MLR
comp=Z,1μm,19.0s
ISCO Idaho Springs 92.41 41 *eP* **P 13 10 59.6 +0.7**
comp=Z,48nm,1.0s
ISCO LR LR
comp=Z,1μm,19.0s
E33A Westby DABS, E 92.41 31 P **P 13 10 58.7 +0.2**
baz=320,SNR=15
MVCO Mesa Verde 92.46 44 P **P 13 10 59.9 +0.7**
baz=311,SNR=53
MVCO Mesa Verde 92.46 44 *eP* **P 13 10 59.8 +0.7**
comp=Z,165nm,1.3s
MVCO LR LR
comp=Z,1μm,19.0s
VSL Villasalto 92.58 319 *eP* **P 13 10 59.5 +0.1**
comp=Z,90nm,1.3s
VSL LR LR
comp=Z,3μm,21.0s
SUSD Miller 92.60 34 P **P 13 10 59.6 +0.2**
baz=318,SNR=14
TAOE Nuku Hiva Isla 92.65 99 *e*SP SP 13 23 13.1 -1.8
comp=Z,2μm,26.7s
TAOE *e*SS **SS 13 28 16.9 +0.2**
comp=Z,2μm,25.6s
TAOE Nuku Hiva Isla 92.65 99 *e*LR LR 13 40 19.7
comp=Z,7μm,34.4s,baz=300
G32A Webster 92.68 32 P **P 13 10 60.0 +0.2**
baz=319,SNR=21
I30A Oacoma 92.76 34 P **P 13 11 00.6 +0.5**
baz=318,SNR=15
E34A Wadena 92.78 30 P **P 13 11 00.1 -0.1**
baz=321,SNR=6.4
F33A 5 Mile Ranch, 92.79 31 P **P 13 11 00.4 +0.2**
baz=320,SNR=48
C36A Pine Crest Far 92.79 28 P **P 13 11 00.3 +0.1**
baz=322,SNR=33
H31A Wolsey 92.80 33 P **P 13 11 00.1 -0.2**
baz=318
D35A Remer 92.82 29 P **P 13 11 00.1 -0.2**
baz=322,SNR=13
MATF Mathat 92.92 329⇓*eP* **P 13 11 01.1 +0.3**
W18A Petrified Fore 93.06 46 P **P 13 11 02.6 +0.7**
baz=310
W18A Petrified Fore 93.06 46 *eP* **P 13 11 02.7 +0.7**
comp=Z,156nm,1.6s
214A Organ Pipe Nat 93.06 50 P **P 13 11 02.5 +0.7**
baz=308,SNR=19
214A Organ Pipe Nat 93.06 50 *eP* **P 13 11 02.4 +0.6**
comp=Z,509nm,1.2s
E35A Pequot Lakes 93.08 30 P **P 13 11 01.3 -0.3**
baz=321,SNR=14
C37A Embarrass 93.08 28 P **P 13 11 01.6 +0.1**
baz=323,SNR=38
L28A Connealy Angus 93.09 37 P **P 13 11 02.1 +0.3**
baz=316
S22A 4UR Ranch, Cre 93.10 43 P **P 13 11 03.3 +1.1**
baz=312,SNR=49
I31A Royce, Wessing 93.11 34 P **P 13 11 01.9 +0.1**
baz=318
D36A Goodland 93.12 29 P **P 13 11 01.3 -0.4**
baz=322,SNR=18
J30A Dallas 93.16 35 P **P 13 11 02.4 +0.4**
baz=317,SNR=9.5
EYMN Ely 93.19 28 P **P 13 11 02.3 +0.3**
baz=324,SNR=49
EYMN Ely 93.19 28 *eP* **P 13 11 02.1 +0.1**
comp=Z,129nm,1.2s
EYMN LR LR
comp=Z,2μm,21.0s
G33A Ortonville 93.22 32 P **P 13 11 02.4 +0.2**
baz=320,SNR=5.6
Q24A Divide 93.25 41 P **P 13 11 03.1 +0.3**
baz=313,SNR=38
H32A Carlson Farm, 93.28 33 P **P 13 11 02.4 -0.1**
baz=319,SNR=13
F34A Alexandria 93.29 31 P **P 13 11 02.5 0.0**
baz=321,SNR=13
D37A Cotton 93.44 29 P **P 13 11 03.0 -0.2**
baz=323,SNR=14
C38A Sawbill Land. 93.46 28 P **P 13 11 03.3 0.0**
baz=324,SNR=36
H33A Prehn Over Nor 93.47 32 P **P 13 11 03.6 +0.2**
baz=320,SNR=24
F35A Swanville 93.55 30 P **P 13 11 03.7 0.0**
baz=321,SNR=6.3
G34A Benson 93.55 31 P **P 13 11 04.1 +0.4**
baz=320,SNR=33
J31A Geddes 93.56 34 P **P 13 11 03.9 +0.1**
baz=318
OGNE Ogallala 93.58 38 P **P 13 11 04.2 +0.2**
baz=316,SNR=8.0
OGNE Ogallala 93.58 38 *eP* **P 13 11 04.3 +0.2**
comp=Z,97nm,1.1s
OGNE LR LR
comp=Z,2μm,20.0s
K30A Basset 93.58 35 P **P 13 11 04.4 +0.4**
baz=317,SNR=12
L29A Maesberg Ranch 93.58 36 P **P 13 11 04.2 +0.2**
baz=317,SNR=14
E36A McGregor 93.60 29 P **P 13 11 04.0 +0.1**
baz=322,SNR=30
M28A Bar X Bar Ranc 93.60 37 P **P 13 11 04.4 +0.2**
baz=316,SNR=5.0
I32A Karley and Nic 93.62 33 P **P 13 11 04.1 0.0**
baz=319
C39A Grand Marais 93.83 27 P **P 13 11 04.8 -0.2**
baz=325,SNR=14

SDCO	**Great Sand Dun**	93.87	42	P		P		13 11 06.3	+0.6	
	baz=313,SNR=30									
SDCO	**Great Sand Dun**	93.87	42	*e*P		P		13 11 06.2	+0.4	
	comp=Z,120nm,1.8s									
SDCO				LR		LR				
	comp=Z,1μm,19.0s									
E37A	**Wrenshall**	93.92	29	P		P		13 11 05.2	-0.2	
	baz=323									
I33A	**Coleman**	93.92	33	P		P		13 11 05.4	-0.1	
	baz=319,SNR=5.9									
H34A	**Spellman Lake,**	93.92	32	P		P		13 11 05.8	+0.3	
	baz=320									
SJAF	**Saint Jean de**	93.93	325	‖ *e*P		P		13 11 04.6	-0.9	
J32A	**Parkston**	93.93	34	P		P		13 11 05.3	-0.2	
	baz=319									
SCHQ	**Schefferville**	93.98	11	P		P		13 11 04.6	-0.9	
	comp=Z,24nm,0.9s,baz=3.4,slow=5.4,SNR=17									
SCHQ				pP		pP		13 11 15.7	+1.6	
	comp=Z,17nm,0.9s,baz=330,slow=7.4,SNR=7.5									
SCHQ				PP		PP		13 14 55.8	+5.2	
	comp=Z,7.1nm,0.8s,baz=30,slow=12,SNR=3.8									
SCHQ				LR		LR		13 57 33.2		
	comp=Z,2μm,18.2s,baz=352,slow=38									
F36A	**Milaca**	94.00	30	P		P		13 11 05.5	-0.3	
	baz=322,SNR=13									
FILF	**Fillols**	94.03	325	‖ *e*P		P		13 11 05.4	-0.7	
K31A	**O'Neill**	94.04	35	P		P		13 11 06.2	+0.2	
	baz=318,SNR=11									
L30A	**Spencer Herefo**	94.06	36	P		P		13 11 06.1	-0.1	
	baz=317,SNR=5.5									
G35A	**Watkins**	94.08	31	P		P		13 11 06.7	+0.5	
	baz=321,SNR=14									
TUC	**Tucson**	94.18	49	P		P		13 11 07.7	+0.8	
	baz=310									
TUC	**Tucson**	94.18	49	*e*P		P		13 11 07.8	+0.8	
TUC				pmax		pmax				
	comp=Z,91nm,1.0s									
TUC	**Tucson**	94.18	49	*e*P		P		13 11 07.8	+0.8	
	comp=Z,91nm,1.0s									
ECSD	**EROS Data Cent**	94.25	33	P		P		13 11 06.8	-0.2	
	baz=320,SNR=22									
ECSD	**EROS Data Cent**	94.25	33	*e*P		P		13 11 06.8	-0.2	
	comp=Z,78nm,1.5s									
ECSD				LR		LR				
	comp=Z,2μm,19.0s									
H35A	**Sunnyside Ranc**	94.33	31	P		P		13 11 07.7	+0.4	
	baz=321,SNR=33									
L31A	**Butterfield Fa**	94.33	35	P		P		13 11 07.5	+0.1	
	baz=318,SNR=8.1									
I34A	**Hadley**	94.37	32	P		P		13 11 07.6	+0.1	
	baz=320									
G36A	**St. Michael**	94.39	30	P		P		13 11 07.8	+0.2	
	baz=322,SNR=8.2									
J33A	**Davis**	94.39	33	P		P		13 11 07.6	-0.1	
	baz=319									
K32A	**Verdigre**	94.40	34	P		P		13 11 07.2	-0.5	
	baz=316									
N29A	**Votaw Ranch, W**	94.41	37	P		P		13 11 07.8	-0.1	
	baz=316,SNR=7.0									
VALF	**Valcebollere**	94.42	325	‖ *e*P		P		13 11 07.7	-0.3	
KMBO	**Kilima Mbogo**	94.54	271	P		P		13 11 09.1	0.0	
	comp=Z,18nm,1.0s,baz=40,slow=5.5,SNR=26									
KMBO				PP		PP		13 15 02.6	+5.5	
	comp=Z,1.0nm,0.3s,baz=45,slow=11,SNR=3.3									
KMBO				LR		LR		13 55 14.4		
	comp=Z,1μm,21.4s,baz=74,slow=36									
KMBO	**Kilima Mbogo**	94.54	271	P		P		13 11 09.1	0.0	
KMBO								13 15 02.6		
KMBO				pmax		pmax				
	comp=Z,18nm,1.0s									
KMBO				pmax		pmax				
	comp=Z,1.0nm,0.3s									
KMBO				MLR		MLR				
	comp=Z,1μm,21.4s									
KMBO	**Kilima Mbogo**	94.54	271	*e*P		P		13 11 09.6	+0.5	
	comp=Z,22nm,1.1s									
KMBO				PP		PP		13 15 02.6	+5.5	
KSCO	**Kaye Shedlock'**	94.62	40	P		P		13 11 08.9	0.0	
	baz=315									
KSCO	**Kaye Shedlock'**	94.62	40	*e*P		P		13 11 09.2	+0.2	
	comp=Z,230nm,1.8s									
KSCO				*e*PP		PP		13 14 56.9	+0.5	
SPMN	**Marine on St.**	94.81	30	P		P		13 11 09.3	-0.2	
	baz=322,SNR=11									
SPMN	**Marine on St.**	94.81	30	*e*P		P		13 11 09.6	0.0	
	comp=Z,21nm,0.9s									
H36A	**Jessenland, He**	94.83	31	P		P		13 11 10.3	+0.6	
	baz=322,SNR=20									
ABPO	**Ambohimpanom**	94.83	251	*e*P		P		13 11 10.1	-0.1	
ABPO				pmax		pmax				
	comp=Z,250nm,0.9s									
ABPO				MLR		MLR				
	comp=Z,929nm,19.0s									
ABPO	**Ambohimpanom**	94.83	251	*e*P		P		13 11 10.1	-0.1	
	comp=Z,250nm,0.9s									
ABPO				LR		LR				
	comp=Z,929nm,19.0s									
M31A	**Lambtecht Ranc**	94.88	36	P		P		13 11 09.5	-0.5	
	baz=318									
J34A	**George**	94.90	33	P		P		13 11 09.8	-0.1	
	baz=320									
I35A	**Creekview Farm**	94.91	32	P		P		13 11 09.7	-0.3	
	baz=321									
K33A	**Hardington**	94.92	34	P		P		13 11 10.0	-0.1	
	baz=319									
T25A	**Trinidad**	94.92	42	P		P		13 11 10.7	+0.3	
	baz=314,SNR=11									
VIEF	**Viey**	95.03	327	‖ *e*P		P		13 11 10.8	+0.1	
L33A	**Hoskins**	95.11	34	P		P		13 11 10.8	-0.2	
	baz=319									
KEST	**Kesra**	95.15	316	P		P		13 11 11.1	-0.2	
	comp=Z,29nm,0.9s,baz=321,slow=2.6,SNR=29									
KEST				LR		LR		14 00 05.4		
	comp=Z,5μm,18.6s,baz=342,slow=39									
J35A	**Milford**	95.19	32	P		P		13 11 11.1	-0.2	
	baz=320									
ANMO	**Albuquerque**	95.20	45	P		P		13 11 12.6	+0.8	
	baz=312									
ANMO	**Albuquerque**	95.20	45	*e*P		P		13 11 12.4	+0.7	
ANMO				*e*				13 15 01.1		
ANMO				pmax		pmax				
	comp=Z,79nm,1.5s									
ANMO				MLR		MLR				
	comp=Z,1μm,20.0s									
ANMO	**Albuquerque**	95.20	45	*e*P		P		13 11 12.4	+0.7	
	comp=Z,79nm,1.5s									
ANMO				*e*PP		PP		13 15 01.1	0.0	
ANMO				LR		LR				
	comp=Z,1μm,20.0s									
I36A	**Fitzsimmons Fa**	95.23	31	P		P		13 11 11.5	+0.1	
	baz=321									
BGNE	**Belgrade**	95.25	35	P		P		13 11 11.3	-0.3	
	baz=318,SNR=8.5									
BGNE	**Belgrade**	95.25	35	*e*P		P		13 11 11.3	-0.3	
	comp=Z,160nm,1.2s									
H37A	**Dierke Farm, C**	95.27	30	P		P		13 11 11.9	+0.2	
	baz=322									
K34A	**Le Mars**	95.29	33	P		P		13 11 11.6	-0.2	
	baz=320,SNR=5.7									
I37A	**Lemond, Waseca**	95.51	31	P		P		13 11 13.3	+0.5	
	baz=322,SNR=14									
O31A	**Woolen Ranch,**	95.57	37	P		P		13 11 12.6	-0.6	
	baz=317,SNR=5.2									
M33A	**Taylor Creek F**	95.60	35	P		P		13 11 12.7	-0.5	
	baz=319									
J36A	**Seneca 1, Swea**	95.62	32	P		P		13 11 13.2	0.0	
	baz=321,SNR=14									
COWI	**Conover**	95.63	27	*e*P		P		13 11 13.3	0.0	
	comp=Z,62nm,1.4s									
COWI				LR		LR				
	comp=Z,2μm,19.0s									
N32A	**Stulken Farm,**	95.65	36	P		P		13 11 13.0	-0.5	
	baz=318									
K35A	**Storm Lake**	95.67	33	P		P		13 11 13.1	-0.4	
	baz=320									
CMAH	**Djebel Manchou**	95.67	318	P		P		13 11 13.3	-0.4	
L34A	**Svendsen Farm,**	95.70	34	P		P		13 11 13.6	-0.1	
	baz=320,SNR=6.9									
ABSA	**Djebel Ababsia**	95.88	318	P		P		13 11 14.9	+0.2	
CAEH	**'Ain El Ouahch**	95.89	319	P		P		13 11 14.3	-0.3	
I38A	**Scanlan Farm,**	95.96	30	P		P		13 11 14.6	-0.2	
	baz=323									
121A	**Cookes Peak, D**	95.97	47	P		P		13 11 16.1	+0.8	
	baz=311,SNR=21									
121A	**Cookes Peak, D**	95.97	47	*e*P		P		13 11 16.0	+0.8	
	comp=Z,156nm,1.8s									
J37A	**Redenius Farm,**	95.99	32	P		P		13 11 14.8	-0.2	
	baz=322,SNR=7.8									
L35A	**Bielow Farm, R**	95.99	33	P		P		13 11 14.6	-0.3	
	baz=320									
O32A	**Brockman Farm,**	96.03	36	P		P		13 11 14.4	-0.8	
	baz=318									
N33A	**J Bar K, Exete**	96.10	35	P		P		13 11 15.2	-0.4	
	baz=319									
K36A	**Gilmore City**	96.10	32	P		P		13 11 15.5	0.0	
	baz=321,SNR=9.4									
CKFL	**Kef-Lekhel**	96.23	318	P		P		13 11 16.0	-0.3	
CBKS	**Cedar Bluff**	96.33	38	P		P		13 11 16.0	-0.6	
	baz=317,SNR=6.4									
CBKS	**Cedar Bluff**	96.33	38	*e*P		P		13 11 16.5	-0.2	
CBKS				pmax		pmax				
	comp=Z,15nm,0.8s									
CBKS				MLR		MLR				
	comp=Z,2μm,19.0s									
CBKS	**Cedar Bluff**	96.33	38	*e*P		P		13 11 16.5	-0.2	
	comp=Z,16nm,0.8s									
CBKS				LR		LR				
	comp=Z,2μm,19.0s									
P32A	**Huiting Farm,**	96.34	37	P		P		13 11 16.1	-0.6	
	baz=318,SNR=8.0									
K37A	**Belmond**	96.38	32	P		P		13 11 16.5	-0.2	
	baz=322,SNR=17									
M35A	**Neola**	96.41	34	P		P		13 11 17.0	+0.1	
	baz=320,SNR=5.5									
L36A	**Harm Buss Farm**	96.42	33	P		P		13 11 16.8	-0.1	
	baz=321,SNR=5.9									
CASM	**Ain Smara**	96.46	318	P		P		13 11 16.8	-0.5	
J38A	**Wedel Dairy, R**	96.47	31	P		P		13 11 16.7	-0.5	
	baz=323,SNR=8.0									
N34A	**Lincoln**	96.50	35	P		P		13 11 16.5	-0.8	
	baz=319									
O33A	**Hebron**	96.53	36	P		P		13 11 16.7	-0.7	
	baz=319									
DFRA	**Djebel Bou Aff**	96.61	319	P		P		13 11 18.0	-0.1	
CTEI	**Djebel Teioual**	96.65	318	P		P		13 11 18.7	+0.5	
L37A	**Phoenix Point,**	96.82	32	P		P		13 11 18.6	-0.2	
	baz=322									
Q32A	**Meitler Ranch,**	96.83	37	P		P		13 11 18.4	-0.5	
	baz=318									
M36A	**Felix, Anita**	96.85	33	P		P		13 11 19.0	+0.1	
	baz=321,SNR=5.5									
K38A	**Parkersburg**	96.86	31	P		P		13 11 18.7	-0.2	
	baz=322									
O34A	**Beatrice**	96.90	35	P		P		13 11 18.4	-0.8	
	baz=319									
N35A	**Tabor**	96.90	34	P		P		13 11 19.3	+0.2	
	baz=320									
P33A	**Williams Farm,**	96.95	36	P		P		13 11 19.1	-0.3	
	baz=318									
SET	**Setif**	97.13	319	P		Pdif		13 11 21.0	+0.5	
R32A	**Long Quarter,**	97.17	38	P		P		13 11 19.7	-0.7	
	baz=318									
L38A	**Oak Wood Farm,**	97.18	32	P		P		13 11 20.1	-0.2	
	baz=322,SNR=8.8									
Q33A	**Connelly Farm,**	97.20	37	P		P		13 11 20.3	-0.3	
	baz=318,SNR=6.7									
O35A	**Humboldt**	97.22	35	P		P		13 11 20.3	-0.3	
	baz=320									
M37A	**Trindle Farm,**	97.25	33	P		Pdif		13 11 21.0	+0.3	
	baz=321,SNR=5.2									
SCIA	**State Center**	97.25	32	*e*P		Pdif		13 11 21.1	+0.4	
	comp=Z,36nm,1.2s									
SCIA				LR		LR				
	comp=Z,2μm,20.0s									
P34A	**Walnut Farm, R**	97.31	36	P		P		13 11 20.9	-0.1	
	baz=319,SNR=9.1									
CASY	**Casey**	97.37	189	*e*P		Pdif		13 11 20.9	+0.5	
	comp=Z,33nm,1.7s									
CASY				LR		LR				
	comp=Z,292nm,20.0s									
S32A	**Newby Ranch, P**	97.58	38	P		P		13 11 22.1	-0.2	
	baz=318,SNR=6.5									
R33A	**Olander Ranch,**	97.64	37	P		P		13 11 22.4	-0.1	
	baz=318									
M38A	**Pleasantville**	97.64	32	P		Pdif		13 11 22.5	+0.1	
	baz=322,SNR=11									
N37A	**Lee Faris, Mou**	97.67	33	P		Pdif		13 11 22.8	+0.1	
	baz=321									
Q34A	**Chapman**	97.72	36	P		P		13 11 22.8	0.0	
	baz=319									
P35A	**Duane Minner,**	97.73	35	P		P		13 11 22.4	-0.5	
	baz=320									
KSU1	**Kansas State U**	97.75	36	P		P		13 11 22.7	-0.3	
	baz=319									
KSU1	**Kansas State U**	97.75	36	*e*P		P		13 11 22.9	-0.2	
	comp=Z,30nm,1.1s									
KSU1				LR		LR				
	comp=Z,2μm,19.0s									
JFWS	**Jewell Farm**	97.77	30	PFAKE				13 11 30.0	+7.0	
JFWS				LR		LR				
	comp=Z,2μm,22.0s									
O36A	**Bolckow**	97.79	34	P		Pdif		13 11 23.4	+0.2	
	baz=320									
T32A	**Huddler Ranch,**	97.97	39	P		P		13 11 24.1	+0.1	
	baz=317									
ATAF	**Djebel Tarf**	98.00	319	P		Pdif		13 11 25.0	+0.7	
R34A	**Isabella, Hill**	98.03	37	P		P		13 11 24.2	-0.1	
	baz=319,SNR=5.3									
MNTX	**Cornudas Mount**	98.04	46	P		Pdif		13 11 24.8	+0.3	
	baz=313									
MNTX	**Cornudas Mount**	98.04	46	*e*P		Pdif		13 11 24.6	+0.1	
	comp=Z,15nm,1.1s									
MNTX				LR		LR				
	comp=Z,1μm,21.0s									
P36A	**Good Intent, A**	98.06	35	P		P		13 11 24.2	-0.2	
	baz=320									
AMTX	**Amarillo**	98.08	42	P		Pdif		13 11 25.1	+0.4	
	baz=315									
AMTX	**Amarillo**	98.08	42	*e*P		Pdif		13 11 25.1	+0.3	
	comp=Z,19nm,0.8s									
MSTX	**Muleshoe**	98.08	43	P		P		13 11 24.7	0.0	
	baz=315									
MSTX	**Muleshoe**	98.08	43	*e*P		P		13 11 24.4	-0.4	
	comp=Z,9.6nm,0.4s									
AKET	**Djebel Ketaf**	98.09	320	P		Pdif		13 11 25.6	+0.8	
N38A	**Joes South For**	98.11	33	P		P		13 11 24.5	-0.1	
	baz=322									
S33A	**Kaszmaul Farm,**	98.16	38	P		Pdif		13 11 25.1	+0.2	
	baz=318									
O37A	**Wolven Farm, M**	98.16	34	P		Pdif		13 11 25.0	+0.1	
	baz=321									
Q35A	**Mercer Eighty,**	98.23	36	P		P		13 11 25.1	0.0	
	baz=320									
ADJB	**Djebel Djouab**	98.26	320	P		Pdif		13 11 26.0	+0.5	
N39A	**Derby Farms, D**	98.39	32	P		P		13 11 25.8	0.0	
	baz=322									
GLMI	**Grayling**	98.44	25	*e*P		Pdif		13 11 26.6	+0.6	
	comp=Z,59nm,1.0s									
GLMI				*e*PP		PP		13 15 26.3	+1.0	
GLMI				LR		LR				
	comp=Z,2μm,21.0s									
Q36A	**Arnold C. Orve**	98.44	35	P		P		13 11 25.7	-0.4	
	baz=320									
P37A	**Lathrop**	98.51	34	P		P		13 11 26.2	-0.2	
	baz=321									
O38A	**Galt**	98.52	33	P		P		13 11 26.5	0.0	
	baz=322									
S34A	**Willow Spring**	98.55	37	P		P		13 11 26.5	-0.1	
	baz=319,SNR=5.3									
R35A	**Emporia Munici**	98.55	36	P		Pdif		13 11 26.8	+0.2	
	baz=319									
O39A	**Kirksville**	98.86	33	P		P		13 11 28.0	+0.1	
	baz=322									
P38A	**Dawn**	98.88	34	P		P		13 11 28.1	+0.1	
	baz=322									
R36A	**Gordon, Harris**	98.91	36	P		P		13 11 28.0	-0.2	
	baz=320									
U33A	**Lingo Farm, Me**	98.96	39	P		P		13 11 28.4	-0.1	
	baz=318									
PBRG	**Braganca**	98.96	330	*e*Pdif		P		13 11 27.9	-0.5	
PBRG	**Braganca**	98.96	330	*e*PP		PP		13 15 31.4	+1.9	
PBRG	**Braganca**	98.96	330	*e*PP		PP		13 15 31.5	+2.0	
S35A	**Otter Creek Ra**	98.97	37	P		P		13 11 28.5	0.0	
	baz=319									
Q37A	**Longview Farm,**	99.01	35	P		Pdif		13 11 28.1	-0.6	
	baz=321									
T34A	**McClaskey Farm**	99.02	38	P		Pdif		13 11 28.9	+0.2	
	baz=319									
R37A	**Teagarden Farm**	99.26	35	P		Pdif		13 11 29.2	-0.6	
	baz=320									
U34A	**Anderson Ranch**	99.27	38	P		Pdif		13 11 30.2	+0.3	
	baz=318									
U34A	**Anderson Ranch**	99.27	38	*e*P		Pdif		13 11 29.9	+0.1	
	comp=Z,83nm,1.6s									
O40A	**La Belle**	99.28	32	P		Pdif		13 11 29.8	0.0	
	baz=323									
W32A	**Sentinel**	99.29	40	P		Pdif		13 11 30.4	+0.4	
	baz=317									
S36A	**Lake Cedric, C**	99.32	36	P		Pdif		13 11 30.0	-0.1	
	baz=320									
Q38A	**Cooks Store, C**	99.36	34	P		Pdif		13 11 29.8	-0.4	
	baz=321									
P39A	**Salisbury**	99.36	33	P		Pdif		13 11 30.1	-0.1	
	baz=322									
ESDC	**Sonseca Array**	99.41	327	P		Pdif		13 11 29.9	-0.6	
	comp=Z,12nm,0.8s,baz=25,slow=4.5,SNR=72									
ESDC				PP		PP		13 15 36.0	+3.0	
	comp=Z,6.5nm,0.9s,baz=32,slow=8.5,SNR=8.2									
ESDC				PKKP		PKKPbc		13 27 54.0	+0.5	
	comp=Z,2.1nm,1.0s,baz=267,slow=2.1,SNR=7.7									
ESDC				LR		LR		13 59 31.8		
	comp=Z,2μm,19.1s,baz=45,slow=37									
T35A	**Sooner Cattle**	99.45	37	P		Pdif		13 11 30.6	-0.1	
	baz=319									
PGAV	**Gavieira, Arco**	99.48	331	*e*Pdif		Pdif		13 11 30.7	-0.1	
PGAV	**Gavieira, Arco**	99.48	331	*e*PP		PP		13 15 34.4	+0.9	
PGAV	**Gavieira, Arco**	99.48	331	*e*LR		LR		13 51 51.5		
	comp=Z,4μm,20.0s									
Q39A	**Willow Grove F**	99.60	34	P		Pdif		13 11 31.3	0.0	
	baz=322									
MVO	**Moncorvo**	99.61	330	*e*Pdif		Pdif		13 11 31.1	-0.3	
MVO	**Moncorvo**	99.61	330	*e*PP		PP		13 15 35.7	+1.2	
MVO	**Moncorvo**	99.61	330	*e*PP		PP		13 15 35.9	+1.4	
MVO				*e*SKS		SKSac		13 22 13.8	+5.4	
MVO	**Moncorvo**	99.61	330	*e*LQ		LQ		13 45 29.6		
MVO				*e*LR		LR		13 53 11.8		
	comp=Z,6μm,20.0s									
P40A	**Paris**	99.66	33	P		Pdif		13 11 31.5	0.0	
	baz=323									
T36A	**Boggs Farm, Ca**	99.67	37	P		Pdif		13 11 31.7	0.0	
	baz=320									
S37A	**Fort Scott**	99.68	36	P		Pdif		13 11 31.1	-0.5	
	baz=320									
PAB	**San Pablo**	99.69	327	*e*P		Pdif		13 11 31.5	-0.3	
PAB				pmax		pmax				
	comp=Z,19nm,1.3s									
PAB				MLR		MLR				
	comp=Z,4μm,19.0s									
PAB	**San Pablo**	99.69	327	*e*Pdif		Pdif		13 11 31.5	-0.3	
	comp=Z,19nm,1.3s									
PAB				LR		LR				
	comp=Z,4μm,19.0s									
V34A	**Guthrie**	99.72	39	P		Pdif		13 11 32.1	+0.2	
	baz=318									
U35A	**Pawnee**	99.75	38	P		Pdif		13 11 32.0	0.0	
	baz=319									
POLO	**Lamas de Olo**	99.77	330	*e*Pdif		Pdif		13 11 31.7	-0.4	
POLO	**Lamas de Olo**	99.77	330	*e*PP		PP		13 15 37.6	+1.9	
PVRL	**Vila Real**	99.82	330	*e*Pdif		Pdif		13 11 32.4	+0.2	
PVRL	**Vila Real**	99.82	330	*e*PP		PP		13 15 43.6	+7.6	
Q40A	**Laux Farm, Aux**	100.07	33	P		Pdif		13 11 33.0	-0.3	
	baz=322									
HDIL	**Hopedale**	100.10	31	PFAKE				13 11 40.0	+6.6	
HDIL				LR		LR				
	comp=Z,2μm,19.0s									
T37A	**Cheneyville 18**	100.12	36	P		Pdif		13 11 33.4	-0.2	
	baz=320									
R39A	**Chumby, Stover**	100.14	34	P		Pdif		13 11 33.3	-0.4	
	baz=322									
S38A	**Stockton**	100.25	35	P		Pdif		13 11 33.4	-0.8	
	baz=321									
PVIS	**Viseu**	100.35	330	*e*Pdif		Pdif		13 11 34.5	-0.1	
Y33A	**Hilltop Ranch,**	100.45	41	P		Pdif		13 11 34.7	-0.5	
	baz=317									
MTE	**Manteigas**	100.46	330	*e*Pdif		Pdif		13 11 35.1	0.0	
MTE	**Manteigas**	100.46	330	*e*PP		PP		13 15 44.5	+3.6	
MTE				*e*SKS		SKSac		13 22 15.9	+3.3	
MTE	**Manteigas**	100.46	330	*e*LQ		LQ		13 46 40.1		
MTE				*e*LR		LR		13 53 11.4		
	comp=Z,6μm,20.0s									
MTE	**Manteigas**	100.46	330	*e*Pdif		Pdif		13 11 34.6	-0.5	
	comp=Z,20nm,0.8s									
MTE				LR		LR				
	comp=Z,7μm,21.0s									
S39A	**Bolivar**	100.49	35	P		Pdif		13 11 34.4	-0.8	
	baz=321									
T38A	**Diamond**	100.51	36	P		Pdif		13 11 34.9	-0.5	
	baz=321									
U37A	**Salina**	100.57	37	P		Pdif		13 11 35.5	-0.1	
	baz=320									
W35A	**Tecumseh**	100.58	39	P		Pdif		13 11 35.1	-0.6	
	baz=319									
TUL1	**Leonard**	100.59	38	P		Pdif		13 11 35.8	0.0	
	baz=320									
V36A	**Jenks**	100.61	38	P		Pdif		13 11 35.7	-0.1	
	baz=319									
TXAR	**Lajitas Array**	100.73	47	P		Pdif		13 11 37.2	+0.6	
	comp=Z,5.7nm,0.7s,baz=292,slow=3.6,SNR=33									
TXAR				PP		PP		13 15 49.1	+5.6	
	comp=Z,2.9nm,1.0s,baz=285,slow=4.9,SNR=3.9									
TXAR				PKKP		PKKPbc		13 27 51.1	+1.5	
	comp=Z,3.0nm,0.8s,baz=141,slow=6.4,SNR=18									
ABTX	**Abilene, Hawle**	100.88	42	P		Pdif		13 11 37.2	+0.1	
	baz=316									
PCBR	**Castelo Branco**	100.89	329	*e*Pdif		Pdif		13 11 36.5	-0.5	
U38A	**Gravette**	100.92	36	P		Pdif		13 11

MIAR	**Mount Ida**	**102.80**	**37**	PFAKE			13 12 00.0	+14	
MIAR				LR	LR				
	comp=Z,2μm,19.0s								
MESJ	**Messejana**	**102.86**	**329**	*e*P		**Pdif**	**13 11 45.5**	**-0.3**	
MESJ				*e*SS		SS	13 30 40.0	+2.7	
MESJ				AMS		AMS	13 56 19.5		
	comp=E,6μm,23.5s								
MESJ	**Messejana**	**102.86**	**329**	*e*Pdif		**Pdif**	**13 11 45.9**	**+0.1**	
MESJ	**Messejana**	**102.86**	**329**	*e*PP		PP	13 16 05.0	+6.1	
MESJ	**Messejana**	**102.86**	**329**	*e*P		**Pdif**	**13 11 45.4**	**-0.3**	
MESJ				*e*S		**SS**	**13 30 40.0**	**+2.7**	
PCVE	**Castro Verde**	**102.94**	**328**	*e*Pdif		**Pdif**	**13 11 46.2**	**0.0**	
PCVE	**Castro Verde**	**102.94**	**328**	*e*PP		PP	13 16 00.7	+1.1	
PVAQ	**Vaqueiros**	**102.98**	**328**	*e*Pdif		**Pdif**	**13 11 46.3**	**0.0**	
PVAQ	**Vaqueiros**	**102.98**	**328**	*e*PP		PP	13 16 02.3	+2.4	
PVAQ				*e*SKS		**SKSac**	**13 22 31.3**	**+6.7**	
PVAQ	**Vaqueiros**	**102.98**	**328**	*e*LR		LR	13 53 48.7		
	comp=E,5μm,18.0s								
ACSO	**Alum Creek Sta**	**102.99**	**27**	PFAKE			13 12 00.0	+14	
ACSO				LR	LR				
	comp=Z,1μm,19.0s								
M54A	**Oil Creek Stat**	**103.11**	**24**	P		**Pdif**	**13 11 46.9**	**+0.1**	
	baz=332								
PBDV	**Barranco-do-Ve**	**103.21**	**328**	*e*PP		PP	13 16 03.6	+2.0	
PBDV				*e*SKS		**SKSac**	**13 22 25.5**	**-0.3**	
N54A	**Moraine State**	**103.47**	**24**	P		**Pdif**	**13 11 48.4**	**-0.1**	
	baz=332								
MORF	**Marmelete**	**103.49**	**329**	*e*P		**Pdif**	**13 11 48.1**	**-0.6**	
MORF				*e*PP		**PP**	**13 16 03.7**	**0.0**	
MORF				AMS		AMS	13 56 23.7		
	comp=E,6μm,22.2s								
MORF	**Marmelete**	**103.49**	**329**	*e*PP		PP	13 16 07.0	+3.3	
MORF	**Marmelete**	**103.49**	**329**	*e*P		**Pdif**	**13 11 48.0**	**-0.6**	
MORF				*e*			13 16 03.6		
BINY	**Binghamton**	**103.70**	**21**	PFAKE			13 12 00.0	+11	
BINY				LR	LR				
	comp=Z,3μm,21.0s								
PFVI	**Vila Bisbo**	**103.71**	**329**	*e*PP		PP	13 16 05.8	+0.5	
RKT	**Rikitea**	**103.81**	**109**	*e*SP		SP	13 25 16.2	+0.9	
	comp=Z,1μm,31.5s								
RKT				*e*SS		**SS**	**13 30 51.7**	**-1.5**	
	comp=Z,2μm,30.2s								
RKT	**Rikitea**	**103.81**	**109**	*e*LR		LR	13 45 18.4		
	comp=Z,3μm,29.2s								
NATX	**Nacogdoches**	**104.35**	**40**	PFAKE			13 12 00.0	+7.5	
NATX				LR	LR				
	comp=Z,2μm,21.0s								
MDT	**Midelt**	**105.13**	**323**	PP		PP	13 16 12.9	-3.3	
	comp=Z,2.5nm,0.8s,baz=81,slow=10,SNR=3.6								
MDT				PKKPbc		**PKKPbc**	**13 27 37.1**	**+0.3**	
	comp=Z,3.7nm,1.1s,baz=182,slow=6.5,SNR=3.6								
KVTX	**Kingsville**	**105.59**	**45**	PFAKE			13 16 20.0		
KVTX				LR	LR				
	comp=Z,2μm,21.0s								
TAM	**Tamanrasset**	**106.40**	**309**	PFAKE			13 16 20.0		
TAM				LR	LR				
	comp=Z,2μm,20.0s								
BLA	**Blacksburg**	**106.61**	**26**	PFAKE			13 16 20.0		
BLA				LR	LR				
	comp=Z,2μm,22.0s								
CBN	**Corbin Frederi**	**106.85**	**24**	PFAKE			13 16 20.0		
CBN				LR	LR				
	comp=Z,2μm,19.0s								
GOGA	**Godfrey**	**108.61**	**31**	PFAKE			13 16 30.0		
GOGA				LR	LR				
	comp=Z,2μm,19.0s								
PTCN	**Pitcairn Islan**	**108.66**	**109**	PFAKE			13 16 30.0		
PTCN				LR	LR				
	comp=Z,1μm,19.0s								
BRAL	**Brewton**	**108.80**	**35**	PFAKE			13 16 30.0		
BRAL				LR	LR				
	comp=Z,1μm,21.0s								
VNDA	**Vanda**	**108.81**	**173**	Pdiff		**Pdif**	**13 12 14.2**	**+3.0**	
	comp=Z,0.9nm,1.0s,baz=333,slow=6.8,SNR=2.9								
VNDA				PP		**PP**	**13 16 44.6**	**+1.4**	
	comp=Z,13nm,1.0s,baz=330,slow=7.4,SNR=7.7								
VNDA				PKKPbc		**PKKPbc**	**13 27 25.8**	**-0.8**	
	comp=Z,4.2nm,1.0s,baz=81,slow=3.6,SNR=7.9								
LSZ	**Lusaka**	**109.15**	**263**	*e*PKPdf		**PKiKP**	**13 16 18.6**	**+0.3**	
LSZ				LR	LR				
	comp=Z,3μm,20.0s								
CNNC	**Cliffs of the**	**109.30**	**25**	PFAKE			13 16 30.0		
CNNC				LR	LR				
	comp=Z,2μm,20.0s								
CMLA	**Cha da Macela**	**109.33**	**341**	PFAKE			13 16 30.0		
CMLA				LR	LR				
	comp=Z,3μm,22.0s								
SBA	**Scott Base**	**109.62**	**173**	PFAKE			13 16 30.0		
SBA				LR	LR				
	comp=Z,2μm,19.0s								
MAW	**Mawson**	**109.91**	**202**	PKiKP		**PKiKP**	**13 16 17.2**	**-0.8**	
	comp=Z,3.0nm,0.8s,baz=342,slow=2.5,SNR=4.2								
MAW				PKKPbc		**PKKPbc**	**13 27 21.0**	**-1.9**	
	comp=Z,6.8nm,0.8s,baz=289,slow=8.0,SNR=7.0								
NHSC	**New Hope**	**110.28**	**28**	PFAKE			13 16 30.0		
NHSC				LR	LR				
	comp=Z,2μm,19.0s								
PMOZ	**Porto Moniz, M**	**110.96**	**332**	*e*LR		LR	13 54 59.7		
	comp=Z,3μm,20.0s								
TORD	**Torodi Ar. Bea**	**115.61**	**304**	Pdiff		**Pdif**	**13 12 51.6**	**+8.7**	
	comp=Z,0.6nm,0.9s,baz=79,slow=3.2,SNR=3.9								
TORD				PKP		**PKiKP**	**13 16 29.4**	**-1.1**	
	comp=Z,12nm,0.9s,baz=44,slow=1.2,SNR=49								
TORD				PP		**PP**	**13 17 31.6**	**-0.8**	
	comp=Z,7.7nm,1.0s,baz=25,slow=6.9,SNR=4.3								
TORD				PKKPbc		**PKKPbc**	**13 27 03.8**	**+1.4**	
	comp=Z,9.7nm,1.0s,baz=249,slow=2.8,SNR=22								
TORD				SKKP			13 31 03.7		
	comp=Z,2.7nm,1.1s,baz=263,slow=4.2,SNR=5.0								
BBSR	**BB Station**	**116.00**	**16**	PFAKE			13 16 40.0	+9.1	
BBSR				LR	LR				
	comp=Z,1μm,20.0s								
TEIG	**Tepich**	**116.86**	**43**	PFAKE			13 16 40.0	+7.2	
TEIG				LR	LR				
	comp=Z,495nm,20.0s								
BOSA	**Boshof**	**117.06**	**251**	PKP		**PKPdf**	**13 16 33.0**	**-0.1**	
	comp=Z,20nm,0.8s,baz=73,slow=1.3,SNR=32								
SYO	**Syowa Base**	**118.46**	**204**	↑PKPdf		**PKPdf**	**13 16 32.7**	**-1.6**	
QSPA	**South Pole Qui**	**119.78**	**180**	*e*PKPdf		**PKPdf**	**13 16 36.4**	**-0.7**	
QSPA				*e*PP		**PP**	**13 17 57.5**	**-3.5**	
QSPA				LR	LR				
	comp=Z,2μm,20.0s								
TSUM	**Tsumeb**	**119.97**	**264**	PKKPbc		PKKPbc	13 26 47.5	+0.6	
	comp=Z,5.8nm,0.9s,baz=212,slow=5.3,SNR=6.7								
TSUM	**Tsumeb**	**119.97**	**264**	*e*PKPdf		**PKPdf**	**13 16 39.1**	**+0.2**	
TSUM				PKKPbc		**PKKPbc**	**13 26 47.5**	**+0.6**	
SUR	**Sutherland**	**121.92**	**248**	*e*PKPdf		**PKPdf**	**13 16 42.4**	**-0.1**	
SUR				LR	LR				
	comp=Z,4μm,21.0s								
GTBY	**Guantanamo Bay**	**123.97**	**31**	PFAKE			13 17 00.0	+13	
GTBY				LR	LR				
	comp=Z,1μm,20.0s								
GRTK	**Grand Turk**	**124.20**	**26**	PFAKE			13 17 00.0	+13	
GRTK				LR	LR				
	comp=Z,2μm,20.0s								
MTDJ	**Mount Denham**	**124.31**	**34**	PFAKE			13 17 00.0	+13	
MTDJ				LR	LR				
	comp=Z,1μm,19.0s								
DBIC	**Dimbokro**	**124.72**	**304**	PKP		**PKPdf**	**13 16 47.8**	**-0.3**	
	comp=Z,61nm,0.8s,baz=34,slow=2.2,SNR=70								
KIC	**Kosan Boka**	**124.85**	**304**	*e*PKIKP		**PKPdf**	**13 16 47.4**	**-1.0**	
	comp=Z,226nm,1.0s								
TIC	**Toumodi**	**124.86**	**304**	*e*PKIKP		**PKPdf**	**13 16 47.5**	**-0.9**	
LIC	**Lamto**	**125.15**	**304**	*e*PKIKP		**PKPdf**	**13 16 47.9**	**-1.0**	
	comp=Z,104nm,1.0s								
BBTS	**Babate**	**126.13**	**321**	PKP		**PKPdf**	**13 16 50.1**	**-0.6**	
	comp=Z,45nm,0.8s,baz=33,slow=2.1,SNR=5.8								
SDDR	**Presa de Saban**	**126.43**	**28**	PFAKE			13 17 00.0	+8.7	
SDDR				LR	LR				
	comp=Z,3μm,20.0s								
JTS	**JuntasAbangare**	**126.52**	**47**	PKP		**PKPdf**	**13 16 50.9**	**-0.6**	
	comp=Z,27nm,1.1s,baz=326,slow=2.7,SNR=3.5								
JTS	**JuntasAbangare**	**126.52**	**47**	*e*PKIKP		**PKPdf**	**13 16 50.5**	**-1.1**	
JTS				MLR	MLR				
	comp=Z,816nm,22.0s								
JTS	**JuntasAbangare**	**126.52**	**47**	*e*PKPdf		**PKPdf**	**13 16 50.5**	**-1.1**	
JTS				LR	LR				
	comp=Z,816nm,22.0s								
NVL	**N'lazarevskaya**	**127.83**	**201**	*e*PKIKP		**PKPdf**	**13 16 52.4**	**+0.1**	
SJG	**San Juan**	**129.10**	**22**	PKP		**PKPdf**	**13 16 55.3**	**-1.0**	
	comp=Z,15nm,0.7s,baz=268,slow=3.5,SNR=5.9								
SJG	**San Juan**	**129.10**	**22**	*e*PKPdf		**PKPdf**	**13 16 55.9**	**-0.5**	
SJG				LR	LR				
	comp=Z,1μm,22.0s								
PAYG	**Puerto Ayora**	**130.47**	**62**	PFAKE			13 17 10.0	+11	
PAYG				LR	LR				
	comp=Z,1μm,20.0s								
BCIP	**Isla Barro Col**	**130.54**	**43**	*e*PKPdf		**PKPdf**	**13 16 58.5**	**-0.7**	
BCIP				LR	LR				
	comp=Z,823nm,20.0s								
BCIP	**Isla Barro Col**	**130.54**	**43**	*e*P		**PKPdf**	**13 16 58.0**	**-1.2**	
ANWB	**Willy Bob**	**130.81**	**17**	PFAKE			13 17 10.0	+10	
ANWB				LR	LR				
	comp=Z,1μm,21.0s								
SNAA	**Sanae**	**131.69**	**198**	PKP		**PKPdf**	**13 16 59.6**	**-0.1**	
SNAA	**Sanae**	**131.69**	**198**	*e*PKIKP		**PKPdf**	**13 16 58.8**	**-0.9**	
SNAA	**Sanae**	**131.69**	**198**	*e*PKPdf		**PKPdf**	**13 16 58.8**	**-0.9**	
MOTC	**Monteria, Cord**	**133.23**	**39**	*e*P		**PKPdf**	**13 17 03.9**	**-0.4**	
VNA2	**Neumayer--Watz**	**133.32**	**197**	PKP		**PKPdf**	**13 17 02.6**	**-0.1**	
	baz=88,slow=3.5								
VNA3	**Neumayer Olymp**	**133.68**	**196**	PKP		**PKPdf**	**13 17 04.7**	**+1.3**	
BAMF	**Morne Balai**	**133.70**	**18**	*e*P		**PKPdf**	**13 17 05.0**	**-0.2**	
VNA1	**Neumayer--Stat**	**133.72**	**197**	PKP		**PKPdf**	**13 17 04.5**	**+1.1**	
FDF	**Fort de France**	**133.78**	**18**	*e*P		**PKPdf**	**13 17 02.8**	**-2.6**	
FDF	**Fort de France**	**133.78**	**18**	*e*PKIKP		**PKPdf**	**13 17 05.5**	**+0.2**	
FDF				MLR	MLR				
	comp=Z,1μm,22.0s								
FDF	**Fort de France**	**133.78**	**18**	*e*PKPdf		**PKPdf**	**13 17 05.5**	**+0.2**	
FDF				LR	LR				
	comp=Z,1μm,22.0s								
TRMF	**Trois Ilets**	**134.00**	**17**	*e*P		**PKPdf**	**13 17 05.6**	**-0.1**	
SOLC	**Bahia Solano**	**134.32**	**43**	*e*P		PKPpre	13 16 56.0		
DBBC	**Dabeiba**	**134.38**	**41**	*e*P		**PKPdf**	**13 17 05.0**	**-1.5**	
MCLT	**Moule a Chique**	**134.81**	**18**	*e*P		**PKPdf**	**13 17 09.1**	**+1.8**	
OCAC	**Ocana**	**134.92**	**36**	*e*P		**PKPdf**	**13 17 07.7**	**+0.1**	
GRMC	**Gramalote, San**	**135.63**	**36**	*e*P		**PKPdf**	**13 17 09.0**	**0.0**	
BRRC	**Barranca, Sant**	**135.67**	**38**	*e*P		**PKPdf**	**13 17 09.0**	**+0.1**	
SDV	**Santo Domingo**	**135.69**	**33**	PKhKP		PKPpre	13 17 00.1		
	comp=Z,13nm,0.8s,baz=356,slow=2.3,SNR=17								
SDV				PKP		**PKPdf**	**13 17 09.0**	**-0.2**	
	comp=Z,121nm,0.8s,baz=50,slow=1.4,SNR=54								
SDV				SKP			13 20 40.4		
	comp=Z,19nm,0.9s,baz=325,slow=19,SNR=16								
SDV	**Santo Domingo**	**135.69**	**33**	*e*PKPdf		**PKPdf**	**13 17 09.4**	**+0.2**	
SDV				SKP			13 20 40.4		
SDV				LR	LR				
	comp=Z,1μm,20.0s								
SDV	**Santo Domingo**	**135.69**	**33**	*e*P		**PKPdf**	**13 17 09.0**	**-0.2**	
BBGH	**Gun Hill**	**135.71**	**16**	PFAKE			13 17 20.0	+11	
BBGH				LR	LR				
	comp=Z,2μm,22.0s								
PAMC	**Pamplona, Colo**	**136.01**	**36**	*e*P		**PKPdf**	**13 17 08.4**	**-1.7**	
GRGR	**Grenville**	**136.12**	**19**	PFAKE			13 17 20.0	+10	
GRGR				LR	LR				
	comp=Z,1μm,22.0s								
GUYC	**Guyana, Colomb**	**136.30**	**41**	*e*P		**PKPdf**	**13 17 10.1**	**-0.5**	
NORC	**Norcasia**	**136.32**	**40**	*e*P		**PKPdf**	**13 17 09.3**	**-0.9**	
BARC	**Barichara**	**136.39**	**38**	*e*P		PKPpre	13 17 05.6		
TOLC	**Tolima**	**136.86**	**42**	*e*P		PKPpre	13 17 06.0		
ROSC	**El Rosal**	**137.22**	**40**	PKhKP		PKPpre	13 17 03.9		
	comp=Z,6.5nm,0.4s,baz=294,slow=20,SNR=4.1								
ROSC				PKP		**PKPdf**	**13 17 12.3**	**0.0**	
	comp=Z,32nm,0.8s,baz=324,slow=5.4,SNR=21								
TOSP	**Speyside**	**137.23**	**18**	*e*P		**PKPdf**	**13 17 12.5**	**+0.8**	
POPC	**Popayan, Colom**	**137.68**	**45**	*e*P		**PKPdf**	**13 17 10.3**	**-2.6**	
CHIC	**Chingaza**	**137.72**	**40**	*e*P		**PKPdf**	**13 17 13.0**	**-0.2**	
PRAC	**Prado**	**137.82**	**42**	*e*P		**PKPdf**	**13 17 11.8**	**-1.1**	
VILC	**Villavicencio,**	**138.17**	**40**	*e*P		**PKPdf**	**13 17 12.4**	**-1.3**	
CMBC	**Cumbal**	**138.19**	**48**	*e*P		**PKPdf**	**13 17 10.5**	**-3.6**	
CRUC	**La Cruz**	**138.27**	**46**	*e*P		PKPpre	13 17 01.6		
OTAV	**Otavalo**	**138.32**	**49**	*e*PKPdf		**PKPdf**	**13 17 14.4**	**0.0**	
OTAV				LR	LR				
	comp=Z,631nm,20.0s								
OTAV	**Otavalo**	**138.32**	**49**	*e*P		**PKPdf**	**13 17 14.4**	**0.0**	
FLOC	**Florencia**	**139.06**	**45**	*e*P		PKPpre	13 17 07.2		
ASCN	**Ascension**	**141.47**	**298**	PFAKE			13 17 30.0	+11	
ASCN				LR	LR				
	comp=Z,2μm,21.0s								
ATAH	**Atahualpa**	**143.61**	**57**	PKP		PKPbc	13 17 21.5	+0.3	
	comp=Z,39nm,0.9s,baz=316,slow=2.9,SNR=32								
PMSA	**Palmer Station**	**143.82**	**169**	PKhKP		PKPpre	13 17 16.1		
	baz=172,slow=3.7								
PMSA	**Palmer Station**	**143.82**	**169**	PKPpre		PKPpre	13 17 16.1		
PMSA				LR	LR				
	comp=Z,829nm,19.0s								
NNA	**Nana**	**147.91**	**62**	*e*PKIKP		**PKPdf**	**13 17 31.1**	**+0.5**	
NNA				MLR	MLR				
	comp=Z,540nm,21.0s								
NNA	**Nana**	**147.91**	**62**	*e*PKPdf		**PKPdf**	**13 17 31.1**	**+0.5**	
NNA				LR	LR				
	comp=Z,540nm,21.0s								
PTGA	**Pitinga**	**148.78**	**23**	PKPbc		**PKPdf**	**13 17 33.0**	**+0.9**	
	comp=Z,218nm,0.9s,baz=348,slow=1.5,SNR=40								
PTGA	**Pitinga**	**148.78**	**23**	PKPbc		**PKPdf**	**13 17 33.0**	**+0.9**	
PTGA				LR	LR				
	comp=Z,38μm,20.0s								
TRIS	**Tristan da Cun**	**149.44**	**247**	PKPbc		**PKPbc**	**13 17 38.2**	**+1.4**	
USHA	**Ushuaia**	**151.24**	**155**	PKPbc		**PKPbc**	**13 17 40.9**	**+0.3**	
	comp=Z,562nm,1.0s,baz=208,slow=1.6,SNR=23								
RCBR	**Riachuelo**	**153.31**	**332**	PKP		**PKPdf**	**13 17 38.9**	**-0.2**	
	comp=Z,18nm,0.9s,baz=32,slow=1.9,SNR=6.3								
RCBR				PKPbc		**PKPbc**	**13 17 46.7**	**+0.1**	
	comp=Z,53nm,0.9s,baz=66,slow=3.5,SNR=17								
RCBR				PKPab		**PKPab**	**13 17 57.9**	**-0.5**	
	comp=Z,30nm,0.8s,baz=85,slow=7.6,SNR=5.9								
RCBR	**Riachuelo**	**153.31**	**332**	*e*PKPdf		**PKPdf**	**13 17 39.6**	**+0.5**	
RCBR				*e*PKPbc		**PKiKP**	**13 17 47.1**	**+0.4**	
RCBR				*e*PKPab		**PKPab**	**13 17 58.1**	**-0.3**	
RCBR				LR	LR				
	comp=Z,1μm,19.0s								
HOPE	**Hope Point**	**154.32**	**196**	PFAKE			13 17 50.0	+2.6	
HOPE				LR	LR				
	comp=Z,801nm,19.0s								
SAML	**Samuel**	**154.76**	**37**	*e*PKPdf		**PKPdf**	**13 17 41.1**	**+0.1**	
SAML				*e*PKPbc		**PKiKP**	**13 17 49.8**	**+0.2**	
SAML				*e*PKPab		**PKPab**	**13 18 03.9**	**-0.6**	
SAML				*e*PP		**PP**	**13 21 38.2**	**-1.0**	
SAML				LR	LR				
	comp=Z,1μm,20.0s								
EFI	**East Falkland**	**157.14**	**164**	PFAKE			13 17 50.0	+7.0	
EFI				LR	LR				
	comp=Z,1μm,20.0s								
LPAZ	**La Paz**	**157.16**	**58**	PKP		**PKPdf**	**13 17 45.6**	**+0.7**	
	comp=Z,22nm,1.2s,baz=2.9,slow=3.3,SNR=44								
LPAZ				PKPab		**PKPab**	**13 18 15.1**	**-0.5**	
	comp=Z,17nm,0.9s,baz=7.1,slow=9.2,SNR=5.1								
PLCA	**Paso Flores**	**158.89**	**126**	PKP		**PKPdf**	**13 17 45.3**	**-0.3**	
	comp=Z,15nm,1.3s,baz=320,slow=3.1,SNR=7.7								
PLCA				PKPab		**PKPab**	**13 18 20.9**	**-0.9**	
	comp=Z,50nm,1.3s,baz=215,slow=3.4,SNR=3.7								
LCO	**Las Campanas**	**160.35**	**93**	*e*PKPdf		**PKPdf**	**13 17 48.2**	**+0.3**	
LCO				*e*PP		**PP**	**13 22 10.5**	**-1.1**	
LCO				LR	LR				
	comp=Z,1μm,19.0s								
SIV	**San Ignacio**	**161.69**	**43**	PKP		**PKPdf**	**13 17 50.3**	**+0.9**	
	comp=Z,77nm,0.9s,baz=323,slow=0.6,SNR=84								
BDFB	**Brasilia**	**165.69**	**359**	PKP		**PKPdf**	**13 17 53.9**	**+0.7**	
	comp=Z,36nm,0.9s,baz=1.8,slow=1.6,SNR=34								
BDFB				PKPab		**PKPab**	**13 18 52.0**	**0.0**	
	comp=Z,46nm,0.9s,baz=357,slow=4.5,SNR=14								
BDFB				PP		PP	13 22 46.2	+8.5	
	comp=Z,17nm,1.1s,baz=19,slow=9.3,SNR=4.0								
TRQA	**Tornquist**	**166.02**	**129**	*e*PKPdf		**PKPdf**	**13 17 52.4**	**-0.3**	
TRQA				*e*PP		**PP**	**13 22 39.6**	**-0.9**	
LPA	**La Plata**	**170.41**	**123**	*de*PKIKP		**PKPdf**	**13 17 58.0**	**+2.3**	
LPA	**La Plata**	**170.41**	**123**	PKP		**PKPab**	**13 19 13.0**	**+0.5**	
LPA				PP		**PP**	**13 23 04.0**	**+1.0**	
LPA				PPP		PPP	13 27 08.0		
CPUP	**Villa Florida**	**171.11**	**68**	PKP		**PKPdf**	**13 17 56.5**	**+0.1**	
	comp=Z,37nm,1.0s,baz=23,slow=1.6,SNR=30								
CPUP				PKPab		**PKPab**	**13 19 15.7**	**-0.2**	
	comp=Z,19nm,1.0s,baz=324,slow=4.0,SNR=6.7								
CPUP				PP		**PP**	**13 23 05.1**	**-1.7**	
	comp=Z,9.7nm,1.2s,baz=324,slow=7.3,SNR=3.8								
SPB	**Sao Paulo**	**173.57**	**354**	*e*PKPdf		**PKPdf**	**13 17 58.7**	**+1.2**	
SPB				*e*PKPab		**PKPab**	**13 19 26.7**	**+0.2**	
SPB				LR	LR				
	comp=Z,2μm,20.0s								

IDC 09 12:59:25.6±2.2,2.30S×134.30E,h0km,mb4.3/2,mb1 4.3/5,mb1mx4.0/43,mbtmp4.2/5,ML4.0/3,Error ellipse: s-maj=61.6km s-min=24.1km az=73.0,Irian Jaya region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SIJI	**Sorong**	**3.34**	**295**	Pn	Pn	13 00 19.8	+0.5
	18nm,0.3s,baz=24,slow=1.7,SNR=3.6						
SIJI				Sn	Sn	13 00 57.4	-2.4
	15nm,0.3s,baz=90,slow=19,SNR=2.6						
WRA	**Warramunga Arr**	**17.54**	**180**	P	P	13 03 32.9	-0.1
	0.4nm,0.3s,baz=359,slow=11,SNR=34						
FITZ	**Fitzroy Crossi**	**17.85**	**208**	P	Pn	13 03 33.7	-2.0
	0.3nm,0.3s,baz=49,slow=14,SNR=5.1						
ASAR	**Alice Springs**	**21.25**	**181**	P	P	13 04 13.9	+0.4
	8.8nm,0.8s,baz=5.4,slow=12,SNR=60						
MKAR	**Makanchi Array**	**66.82**	**324**	P	P	13 10 19.2	-0.1
	3.9nm,0.8s,baz=110,slow=6.3,SNR=4.0						

*IDC **09** 13:07:39.7±3.1,35.96N×142.20E,h0km,mb3.7/2,mb1 3.8/3,mb1mx3.4/46,mbtmp3.5/3,ML2.9/1,Error ellipse: s-maj=92.2km s-min=27.9km az=58.0*
*JMA **09** 13:07:44.2±0.2,35.82N×141.83E,h22km±3km,M3.2*
ISC 09 13:07:44.5±2.1,35.88N±0.10×141.7E±0.1,h26km,n11,σ1s60/12,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CHOJ	**Chosi**	**0.67**	**255**	P	Pn	**13 07 59.0**	**+0.7**
CHOJ				S	Sn	**13 08 09.7**	**+1.8**
BSO1	**Boso 1**	**1.34**	**204**	P	Pb	**13 08 07.6**	**-1.0**
JAG	**Ashikaga**	**1.86**	**288**	P	Pb	**13 08 17.3**	**-0.5**
JKT	**Katashina**	**2.13**	**295**	P	Pb	**13 08 22.0**	**-0.5**
JOD2	**Odawara 2**	**2.18**	**254**	P	Pb	**13 08 21.3**	**-2.0**
JRY	**Ryogami san**	**2.24**	**274**	P	Pb	**13 08 23.1**	**-1.1**
MJAR	**Matsushiro Arr**	**2.86**	**284**	Pn	Pb	**13 08 32.0**	**-2.9**
	1.4nm,0.3s,baz=90,slow=8.2,SNR=4.7						
MAT	**Matsushiro**	**2.86**	**284**	P	Pb	**13 08 33.4**	**-1.5**
MAT				S	Sn	**13 09 03.4**	**+1.2**
KURBB	**Kurchatov Arra**	**46.87**	**309**	P	P	13 16 13.7	+1.4
	baz=80,slow=7.2						
WRA	**Warramunga Arr**	**55.95**	**188**	P	**P**	**13 17 20.5**	**0.0**
	0.8nm,0.7s,baz=6.3,slow=6.9,SNR=7.4						
ASAR	**Alice Springs**	**59.67**	**188**	P	**P**	**13 17 47.0**	**+0.3**
	0.3nm,0.5s,baz=4.0,slow=7.4,SNR=8.2						

IDC 09 13:26:51.7±5.6,17.60S×69.32W,h154km±34km,mb3.0/2,mb1 3.2/3,mb1mx3.0/35,mbtmp3.5/3,Error ellipse: s-maj=73.6km s-min=39.2km az=28.0,Peru-Bolivia border region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
LPAZ	**La Paz**	**1.73**	**41**	P	Pn	13 27 24.7	0.0
	3.2nm,0.3s,baz=214,slow=5.8,SNR=56						
LPAZ				S	Sn	13 27 50.2	+0.2
	1.3nm,0.3s,baz=96,slow=23,SNR=8.8						
SIV	**San Ignacio**	**8.06**	**80**	P	Pn	13 28 45.5	-0.6
	1.0nm,0.3s,baz=282,slow=12,SNR=8.9						
TORD	**Torodi Ar. Bea**	**76.45**	**71**	P	P	13 38 25.3	+0.2
	0.4nm,0.6s,baz=248,slow=5.5,SNR=5.7						
YKA	**Yellowknife Ar**	**87.40**	**341**	P	P	13 39 20.9	-0.2
	0.1nm,0.6s,baz=144,slow=3.5,SNR=4.0						

*ISCJB **09** 13:32:36.9±1.1,36.39S±0.03×73.47W±0.06,h8km±6km,mb4.6/22,Error ellipse: s-maj=8.0km s-min=5.6km az=8.5*
*IDC **09** 13:32:37.4±0.6,36.36S×73.11W,h0km,mb4.3/12,mb1 4.4/14,mb1mx4.3/36,mbtmp4.3/14,ML4.0/2

comp=Z,6.8nm,1.0s
ABTX Abilene, Hawle 73.04 337 *e*P **P** 13 44 09.3 **+1.2**
WVT Waverly 73.49 348 *e*P **P** 13 44 09.3 **-1.2**
comp=Z,13nm,1.0s
MNTX Cornudas Mount 74.21 332 *e*P **P** 13 44 14.2 **-0.7**
comp=Z,2.6nm,0.8s
SUR Sutherland 74.47 119 P **P** 13 44 19.0 **+2.1**
comp=Z,0.6nm,0.8s,baz=244,slow=4.8,SNR=6.3
WMOK Wichita Mounta 74.74 338 *e*P **P** 13 44 16.4 **-1.5**
comp=Z,6.3nm,0.6s
LIC Lamto 76.43 72 *e*PKP1 **P** 13 44 30.0 **+1.9**
comp=Z,68nm,2.0s
TIC Toumodi 76.70 71 *e*PKP1 **P** 13 44 30.6 **+0.9**
KIC Kosan Boka 76.74 72 *e*PKP1 **P** 13 44 30.8 **+0.9**
comp=Z,21nm,0.8s
DBIC Dimbokro 76.85 71 P **P** 13 44 31.4 **+0.9**
comp=Z,8.1nm,0.9s,baz=225,slow=4.4,SNR=14
ANMO Albuquerque 77.50 333 P **P** 13 44 34.4 **+0.5**
comp=Z,3.0nm,0.8s,baz=161,slow=7.5,SNR=10.0
SDCO Great Sand Dun 79.66 334 *e*P **P** 13 44 48.1 **+2.3**
ECSD EROS Data Cent 82.61 343 *e*P **P** 13 45 00.5 **-0.5**
comp=Z,7.1nm,0.9s
R11A Troy Canyon, C 84.11 328 *e*P **P** 13 45 11.6 **+2.5**
DUG Dugway, Tooele 84.53 331 *e*P **P** 13 45 11.9 **+0.8**
comp=Z,5.2nm,1.2s
HWUT Hardware Ranch 85.26 332 *e*P **P** 13 45 15.4 **+0.5**
comp=Z,5.9nm,1.0s
NV01 Mina Array Sit 85.38 326 *e*P **P** 13 45 13.4 **-2.1**
NVAR Mina Array Bea 85.38 326 P **P** 13 45 17.2 **+1.7**
comp=Z,1.8nm,0.8s,baz=157,slow=6.3,SNR=12
BW06 Boulder Array 85.54 334 *e*P **P** 13 45 15.5 **-0.8**
PDAR Pinedale Array 85.54 334 P **P** 13 45 17.1 **+0.9**
comp=Z,1.0nm,0.9s,baz=138,slow=5.1,SNR=6.0
TOA0 Torodi Ar. Sit 85.92 71 *e*P **P** 13 45 17.5 **-0.9**
TORD Torodi Ar. Bea 85.92 71 P **P** 13 45 18.8 **+0.4**
comp=Z,2.4nm,0.9s,baz=239,slow=3.9,SNR=13
WRA Warramunga Arr 118.17 210 PKP **PKPdf** 13 51 25.2 **-0.5**
comp=Z,0.5nm,0.8s,baz=151,slow=1.5,SNR=3.5
SEY Seymchan 141.55 328 PKPbc **PKPdf** 13 52 09.6 **+1.1**
comp=Z,1.1nm,0.8s,baz=87,slow=9.2,SNR=4.5
NRIK Noril'sk 145.41 12 PKPbc **PKPab** 13 52 15.7 **+0.6**
comp=Z,1.2nm,0.3s,baz=43,slow=3.6,SNR=3.6
PSI Prapat 145.73 166 PKPbc **PKPbc** 13 52 18.1 **+0.4**
comp=Z,9.4nm,0.7s,baz=216,slow=4.9,SNR=9.1
HYB Hyderabad 148.64 120 *i* PKP **PKPbc** 13 52 26.5 **+0.8**
BVAR Borovoye Array 149.69 45 PKPbc **PKPbc** 13 52 27.8 **+0.6**
comp=Z,1.7nm,0.7s,baz=276,slow=2.8,SNR=10
YAK Yakutsk 150.69 338 PKPbc **PKPbc** 13 52 29.7 **+0.5**
comp=Z,8.6nm,0.3s,baz=27,slow=0.6,SNR=6.0
KURBB Kurchatov Arra 155.26 46 PKP **PKPdf** 13 52 30.0 **-0.8**
comp=Z,0.5nm,0.8s,baz=302,slow=2.0,SNR=5.3
KURBB PKPab **PKPab** 13 52 56.2 **+0.2**
comp=Z,0.6nm,0.6s,baz=289,slow=4.3,SNR=6.7
KURK Kurchatov 155.28 46 PKP **PKPdf** 13 52 30.0 **-0.8**
KURK PKPab **PKPab** 13 52 56.2 **+0.2**
KSH Kashi 155.55 73 *e*PKP **PKPdf** 13 52 30.1 **-1.7**
KSH *ep*PKP pPKPdf 13 52 40.9 -1.1
KSH PKS **PKSdf** 13 56 01.8 **-4.1**
KSH *e*PP **PP** 13 56 33.1 **-2.1**
KSH SKS **SKSdf** 13 59 30.5 **-5.5**
KSH SKKS **SKKSac** 14 03 17.2 **-5.0**
KSH AMB AMB
comp=Z,300nm,5.6s
KSH LR LR
comp=Z,210nm,7.5s
KSH LR LR
comp=Z,120nm,5.3s
ZALV Zalesovo Beam 156.78 34 PKP **PKPdf** 13 52 33.0 **+0.3**
comp=Z,0.8nm,0.5s,baz=342,slow=3.3,SNR=8.1
ZALV PKPab **PKPab** 13 53 01.9 **-0.6**
comp=Z,1.2nm,0.6s,baz=320,slow=4.3,SNR=5.7
MKAR Makanchi Array 159.03 53 PKP **PKPdf** 13 52 36.0 **+0.2**
comp=Z,0.8nm,0.8s,baz=297,slow=1.1,SNR=8.6
MKAR PKPab **PKPab** 13 53 12.8 **+0.3**
comp=Z,1.2nm,0.8s,baz=290,slow=3.1,SNR=7.9
WMQ Urumqi 163.65 57 *e*PKP **PKPdf** 13 52 41.0 **+0.2**
WMQ pPKP pPKPdf 13 52 51.0 0.0
SONM Songino Array 168.62 1 PKPab **PKPab** 13 53 55.7 **+1.2**
comp=Z,0.7nm,0.8s,baz=298,slow=3.2,SNR=4.1
NJ2 Nanjing 169.12 250 *e*PKP **PKPdf** 13 52 46.0 **+0.7**
CD2 Chengdu 173.91 154 PKP **PKPdf** 13 52 47.2 **-0.6**
HHC Hu-ho-hao-te 174.25 321 *e*PKP **PKPdf** 13 52 47.5 **-0.1**
LZH Lanzhou 177.57 98 *e*PKP **PKPdf** 13 52 47.5 **-1.2**
LZH pPKP pPKPdf 13 52 58.0 -0.9
LZH sPKP 13 53 02.0
LZH PKPab PKPab 13 54 35.6 +0.7
LZH LR LR
comp=Z,170nm,18.5s
LZH LR LR
comp=Z,160nm,18.2s
LZH LR LR
comp=Z,200nm,20.3s

*ISK **09** 13:33:42.3, 40.03°N×38.79°E, h14km, MD2.9*
*ISCJB **09** 13:33:43.1±0.5, 39.85°N±0.03°×38.71°E±0.03, h7km±7km, Error ellipse: s-maj=5.8km s-min=4.4km az=10.3*
*CSEM **09** 13:33:43.0±0.3, 39.87°N×38.71°E, h10km, MD2.9, Error ellipse: s-maj=8.2km s-min=6.7km az=152.0*
*DDA **09** 13:33:43.1, 39.85°N×38.64°E, h7km, Md2.6*
ISC 09 13:33:41.5±1.0, **39.95N**±0.03°×**38.74E**±0.02, **h14**km±9km, **n26**, σ0**66**/38, **Turkey**

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
KELT	**Kelit**	**0.44**	**64**	*i*	P		**Pn**	**13 33 54.0**	**+0.4**
KELT				*i*	S		**Sn**	**13 34 00.9**	**-0.5**
KELT	**Kelit**	**0.44**	**64**		P		**Pn**	**13 33 54.0**	**+0.4**
KELT					S		**Sn**	**13 34 00.9**	**-0.5**
SUSE	**Susehri**	**0.48**	**302**	*i*	P		**Pn**	**13 33 53.9**	**-0.2**
SUSE				*i*	S		**Sn**	**13 34 01.7**	**-0.8**
SUSE	**Susehri**	**0.48**	**302**		P		**Pn**	**13 33 53.9**	**-0.2**
SUSE					S		**Sn**	**13 34 01.7**	**-0.8**
EZC	**Erzincan**	**0.51**	**113**	*e*	Pg		Pn	13 33 59.1	+4.6
EZC				*e*	Sg		Sn	13 34 11.1	+8.0
REFA	**Refahiye_ERZ**	**0.56**	**178**	*i*	P		Pg	13 33 46.2	-6.3
REFA				*i*	S		Sg	13 33 48.0	-12
REFA	**Refahiye_ERZ**	**0.56**	**178**		P		Pg	13 33 46.2	-6.3
REFA					S		Sg	13 33 48.0	-12
KEMA	**Kemaliye**	**0.71**	**196**	*i*	P		**Pg**	**13 33 54.7**	**-0.6**
KEMA				*i*	S		**Sg**	**13 34 03.4**	**-1.3**
KEMA	**Kemaliye**	**0.71**	**196**		P		**Pg**	**13 33 54.7**	**-0.6**
KEMA					S		**Sg**	**13 34 03.4**	**-1.3**
CUZAR	**Zara_SIVAS**	**0.75**	**265**	*i*	P		**Pb**	**13 33 56.7**	**+0.4**
CUZAR				*i*	S		**Sg**	**13 34 06.3**	**+0.4**
CUZAR	**Zara_SIVAS**	**0.75**	**265**		P		**Pb**	**13 33 56.7**	**+0.4**
CUZAR					S		**Sg**	**13 34 06.3**	**+0.4**
GUMT	**Gumushane**	**0.76**	**48**	*e*	PG		**Pg**	**13 33 56.0**	**-0.3**
GUMT				*e*	SG		**Sg**	**13 34 06.0**	**-0.3**
GUMT	**Gumushane**	**0.76**	**48**	*e*	Pg		**Pg**	**13 33 56.0**	**-0.3**
GUMT				*e*	Sg		**Sg**	**13 34 06.0**	**-0.3**
ERZN	**Erzincan**	**0.84**	**115**	*e*	PG		**Pn**	**13 33 59.1**	**+0.2**
ERZN				*e*	SG		**Sn**	**13 34 11.1**	**0.0**
BAYT	**Ayd¯–ntepe-Bay**	**1.16**	**67**	*e*	PN		**Pg**	**13 34 04.0**	**+0.1**
BAYT	**Ayd¯–ntepe-Bay**	**1.16**	**67**	*e*	Pn		**Pg**	**13 34 04.0**	**+0.1**
CUKAN	**kangal_SIVAS**	**1.17**	**238**	*i*	P		**Pn**	**13 34 03.2**	**-0.4**
CUKAN				*i*	S		**Sn**	**13 34 19.4**	**0.0**
CUKAN	**kangal_SIVAS**	**1.17**	**238**		P		**Pn**	**13 34 03.2**	**-0.4**
CUKAN					S		**Sn**	**13 34 19.4**	**0.0**
PTK	**Pertek**	**1.17**	**154**	*e*	PN		**Pg**	**13 34 05.5**	**+1.3**
PTK	**Pertek**	**1.17**	**154**	*e*	Pn		**Pg**	**13 34 05.5**	**+1.3**
SVSK	**Karacayir**	**1.34**	**269**	*e*	PN		**Pg**	**13 34 07.9**	**+0.6**
SVSK	**Karacayir**	**1.34**	**269**	*e*	Pn		**Pg**	**13 34 07.9**	**+0.6**
ELZG	**Elazig**	**1.47**	**172**	*i*	P		**Pb**	**13 34 08.7**	**+0.1**
ELZG				*i*	S		**Sn**	**13 34 26.0**	**-0.7**
ELZG	**Elazig**	**1.47**	**172**		P		**Pb**	**13 34 08.7**	**+0.1**
ELZG					S		**Sn**	**13 34 26.0**	**-0.7**
DARE	**Darende-Malaty**	**1.69**	**216**	*e*	PN		**Pb**	**13 34 13.3**	**+0.9**
DARE	**Darende-Malaty**	**1.69**	**216**	*e*	Pn		**Pb**	**13 34 13.3**	**+0.9**

MAN 09 13:34:37, 15.77N×121.98E, h27km, mb4.2, ML3.0, MS2.8, 1C, Luzon

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
BALP	**Baler**	**0.39**	**266**	*e*	P		Pn	13 34 47.5	+0.5
BALP				*e*	S		Sn	13 34 55.6	+2.1
CAUP	**Cauayan**	**1.18**	**352**	*e*	P		Pn	13 34 57.0	-0.7
BCPH	**Baguio City Da**	**1.48**	**294**	*i*	P		Pb	13 35 03.6	-0.4
BCPH				*i*	S		Sn	13 35 21.3	+0.7
APYP	**Conner**	**2.20**	**341**	*e*	P		Pn	13 35 13.1	+1.3

*ISCJB **09** 13:40:00.6±0.3, 17.08°N±0.04°×94.12°W±0.03, h167km±3km, mb3.9/9, Error ellipse: s-maj=7.4km s-min=4.8km az=28.4*
*IDC **09** 13:40:03.5±3.1, 17.20°N×93.87°W, h170km±26km, mb3.6/10, mb1 3.8/13, mb1mx3.6/40, mbtmp4.1/13, Error ellipse: s-maj=30.3km s-min=13.2km az=66.0*
*MEX **09** 13:40:04.1±0.8, 17.05°N×94.15°W, h155km±9km, MD4.6*
*NEIC **09** 13:40:04.1, 17.05°N×94.15°W, h155km, mb4.6/3, MD4.6(MEX), After MEX.*
ISC 09 13:40:01.8±0.6, **17.03N**±0.04°×**94.13W**±0.03, **h162**km±5km, **n80**, σ1**42**/99, **mb4.0**/9, **Chiapas**

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
TUIG	**Tuzandepetl**	**1.03**	**344**	*i*	P		**Pn**	**13 40 27.9**	**-0.1**
TUIG				*i*	S		**Sn**	**13 40 46.6**	**-1.5**
TUIG	**Tuzandepetl**	**1.03**	**344**	*i*	P		**Pn**	**13 40 27.9**	**-0.1**
TUIG				*i*	S		**Sn**	**13 40 46.6**	**-1.5**
PCIG		**1.58**	**146**	*e*	P		**Pn**	**13 40 34.0**	**+0.9**
PCIG				*i*	S		**Sn**	**13 40 57.1**	**-0.2**
PCIG		**1.58**	**146**	*e*	P		**Pn**	**13 40 34.0**	**+0.9**
PCIG				*i*	S		**Sn**	**13 40 57.1**	**-0.2**
CCIG	**Comitan**	**2.05**	**111**	*e*	P		**Pn**	**13 40 38.8**	**+0.4**
CCIG				*e*	S		**Sn**	**13 41 06.5**	**-0.1**
CCIG	**Comitan**	**2.05**	**111**	*e*	P		**Pn**	**13 40 38.8**	**+0.4**
CCIG				*e*	S		**Sn**	**13 41 06.5**	**-0.1**
HUIG	**Huatulco**	**2.28**	**237**	*i*	P		**Pn**	**13 40 39.3**	**-1.6**
HUIG				*e*	S		**Sn**	**13 41 10.5**	**-0.6**
HUIG	**Huatulco**	**2.28**	**237**	*i*	P		**Pn**	**13 40 39.3**	**-1.6**
HUIG				*e*	S		**Sn**	**13 41 10.5**	**-0.6**
OXBJ	**Oaxaca**	**2.48**	**271**	*e*	P		**Pn**	**13 40 43.8**	**+0.3**
OXBJ				*e*	S		**Sn**	**13 41 15.3**	**-0.4**
VHO	**Vista Hermosa**	**2.49**	**271**	*i*	P		**Pn**	**13 40 44.4**	**+0.8**
VHO				*e*	S		**Sn**	**13 41 15.8**	**-0.1**
VHO	**Vista Hermosa**	**2.49**	**271**	*i*	P		**Pn**	**13 40 44.4**	**+0.8**
VHO				*e*	S		**Sn**	**13 41 15.8**	**-0.1**
TPIG	**Tehuac#an**	**3.38**	**295**	*e*	P		**Pn**	**13 40 55.3**	**+0.8**
TPIG				*i*	S		**Sn**	**13 41 34.0**	**-1.4**
TPIG	**Tehuac#an**	**3.38**	**295**	*e*	P		**Pn**	**13 40 55.3**	**+0.8**
TPIG				*i*	S		**Sn**	**13 41 34.0**	**-1.4**
PNIG	**Pinotepa**	**3.88**	**261**	*i*	P		**Pn**	**13 40 59.7**	**-1.2**
PNIG				*e*	S		**Sn**	**13 41 42.9**	**-3.9**
PNIG	**Pinotepa**	**3.88**	**261**	*i*	P		**Pn**	**13 40 59.7**	**-1.2**
PNIG				*e*	S		**Sn**	**13 41 42.9**	**-3.9**
PPM	**Popocatepetl**	**4.73**	**296**	*e*	P		**Pn**	**13 41 14.7**	**+2.3**
PPM	**Popocatepetl**	**4.73**	**296**	*e*	P		**Pn**	**13 41 14.7**	**+2.3**
TEIG	**Tepich**	**6.39**	**59**		P		**Pn**	**13 41 31.6**	**-2.2**
	11nm,0.3s,baz=286,slow=1.8,SNR=61								
TEIG					S		**Sn**	**13 42 39.9**	**-6.2**
	4.1nm,0.3s,baz=180,slow=20,SNR=5.7								
TEIG	**Tepich**	**6.39**	**59**	*e*	Pn		**Pn**	**13 41 31.5**	**-2.4**
	38nm,0.4s								
TEIG				*e*	Sn		**Sn**	**13 42 44.5**	**-1.7**
JTS	**JuntasAbangare**	**11.15**	**126**		P		**Pn**	**13 42 37.3**	**+0.4**
	2.0nm,0.3s,baz=310,slow=20,SNR=6.7								
JTS					S		**Sn**	**13 44 39.6**	**-0.9**
	0.7nm,0.3s,baz=15,slow=20,SNR=2.3								
833A	**Chaparral WMA,**	**12.24**	**338**		P		**P**	**13 42 57.7**	**+1.2**
	baz=156,SNR=8.9								
734A	**La Parita Cree**	**12.45**	**342**		P		**P**	**13 42 59.9**	**+1.1**
	baz=160								
733A	**Divot King Ran**	**12.56**	**339**		P		**P**	**13 43 01.5**	**+1.3**
	baz=157								
633A	**Saathoff Ranch**	**13.21**	**340**		P		**P**	**13 43 09.8**	**+2.5**
	baz=158,SNR=8.6								
434A	**Burnet**	**14.23**	**345**		P		**P**	**13 43 19.8**	**+1.1**
	baz=164,SNR=7.0								
341A	**Kurthwood**	**14.27**	**3**		P		**P**	**13 43 20.5**	**+1.5**
	baz=184								
342A	**Flagon Creek P**	**14.37**	**6**		P		**P**	**13 43 21.0**	**+0.8**
	baz=187								
433A	**Art**	**14.39**	**343**		P		**P**	**13 43 22.0**	**+1.6**
	baz=161,SNR=12								
333A	**Richland Sprin**	**14.90**	**344**		P		**P**	**13 43 27.6**	**+1.6**
	baz=162,SNR=7.4								
TXAR	**Lajitas Array**	**15.05**	**326**		P		**P**	**13 43 28.4**	**+0.5**
	0.1nm,0.3s,baz=148,slow=14,SNR=8.6								
242A	**Grayson**	**15.07**	**6**		P		**P**	**13 43 31.2**	**+3.3**
	baz=187,SNR=8.2								
WHTX	**Lake Whitney,**	**15.20**	**349**	*e*	Pn		**P**	**13 43 30.0**	**+0.6**
	25nm,0.5s								
ABTX	**Abilene, Hawle**	**16.30**	**343**	*e*	Pn		**Pn**	**13 43 42.8**	**+1.1**
	22nm,0.8s								
MIAR	**Mount Ida**	**17.45**	**2**		P		**P**	**13 43 54.2**	**0.0**
	baz=182								
MIAR	**Mount Ida**	**17.45**	**2**		P		**P**	**13 43 53.8**	**-0.4**
	11nm,0.6s								
X35A	**Drake**	**17.48**	**352**		P		**Pn**	**13 43 55.6**	**-0.2**
	baz=171,SNR=9.8								
X38A	**Whitesboro**	**17.58**	**358**		P		**Pn**	**13 43 56.8**	**0.0**
	baz=178								
X36A	**Centrahoma**	**17.58**	**354**		P		**Pn**	**13 43 56.5**	**-0.4**
	baz=173								
X32A	**Elmer**	**17.92**	**346**		P		**Pn**	**13 44 00.9**	**-0.1**
	baz=164								
W38A	**Poteau**	**17.97**	**359**		P		**Pn**	**13 44 01.5**	**0.0**
	baz=179,SNR=6.7								
W39A	**Magazine**	**18.09**	**1**		P		**P**	**13 44 01.6**	**+0.4**
	baz=181								
W36A	**Wetumka**	**18.13**	**354**		P		**P**	**13 44 02.1**	**+0.5**
	baz=174								
W35A	**Tecumseh**	**18.21**	**353**		P		**P**	**13 44 03.1**	**+0.6**
	baz=172								
W34A	**Bridge Creek,**	**18.42**	**351**		P		**P**	**13 44 05.8**	**+1.0**
	baz=169								
W32A	**Sentinel**	**18.59**	**347**		P		**P**	**13 44 07.2**	**+0.6**
	baz=165								
V40A	**Witts Springs**	**18.73**	**3**		P		**P**	**13 44 08.3**	**+0.1**
	baz=184,SNR=6.8								
V39A	**Pettigrew**	**18.74**	**1**		P		**P**	**13 44 08.6**	**+0.3**
	baz=182								
V36A	**Jenks**	**18.75**	**355**		P		**P**	**13 44 08.4**	**0.0**
	baz=175								
V35A	**Meyer Ranch, C**	**18.81**	**353**		P		**P**	**13 44 09.3**	**+0.3**
	baz=172								
AMTX	**Amarillo**	**19.02**	**341**		P		**P**	**13 44 12.3**	**+0.9**
	baz=157								
V33A	**Lossen Ranch,**	**19.08**	**350**		P		**P**	**13 44 12.3**	**+0.3**
	baz=168								
TKL	**Tuckaleechee C**	**20.72**	**24**		P		**P**	**13 44 27.6**	**-1.9**
	1.7nm,0.4s,baz=203,slow=6.6,SNR=3.6								
SDV	**Santo Domingo**	**24.27**	**107**		P		**P**	**13 45 03.8**	**-0.6**
	1.5nm,0.3s,baz=290,slow=12,SNR=3.5								
NVAR	**Mina Array Bea**	**30.04**	**320**		pP		pP	13 46 34.5	+4.7
	1.1nm,1.0s,baz=125,slow=11,SNR=2.6								
D33A	**AnnSam, Waubun**	**30.06**	**358**		P		**P**	**13 45 53.7**	**-1.9**
	baz=177								
D37A	**Cotton**	**30.07**	**2**		P		**P**	**13 45 53.9**	**-1.9**
	baz=183								
E26A	**Carlson Angus**	**30.16**	**349**		P		**P**	**13 45 56.5**	**-0.1**
	baz=164								
C31A	**Landman Farms,**	**30.82**	**355**		P		**P**	**13 46 01.2**	**-1.1**
	baz=173								
EYMN	**Ely**	**30.91**	**3**		P		**P**	**13 46 01.3**	**-1.8**
	baz=185								
D25A	**Fairfield**	**30.98**	**348**		P		**P**	**13 46 04.1**	**+0.3**
	baz=163								
AGMN	**Agassiz Nation**	**31.21**	**358**		P		**P**	**13 46 04.7**	**-1.0**
	baz=177								
B35A	**Bob, Littlefor**	**31.25**	**1**		P		**P**	**13 46 04.0**	**-2.0**
	baz=181								
B32A	**Ashes, Strandq**	**31.34**	**357**		P		**P**	**13 46 05.6**	**-1.3**
	baz=176								
B30A	**Myrvik Farm, E**	**31.52**	**355**		P		**P**	**13 46 07.5**	**-1.0**
	baz=172								
B29A	**Wagenman Farm,**	**31.64**	**353**		P		**P**	**13 46 08.7**	**-0.8**
	baz=170								
A30A	**Hoffart Farm,**	**32.01**	**355**		P		**P**	**13 46 11.9**	**-0.8**
	baz=172								
A29A	**Manning Farm,**	**32.08**	**354**		P		**P**	**13 46 12.7**	**-0.6**
	baz=171								
A28A	**Rude Farm, Bot**	**32.19**	**352**		P		**P**	**13 46 13.7**	**-0.6**
	baz=169								
A26A	**Wade Farm, Ken**	**32.43**	**350**		P		**P**	**13 46 16.1**	**-0.3**
	baz=166								
LPAZ	**La Paz**	**41.87**	**141**		P		**P**	**13 47 37.2**	**+0.2**
	1.4nm,0.6s,baz=29,slow=2.0,SNR=4.8								
YKA	**Yellowknife Ar**	**47.63**	**347**		P		**P**	**13 48 20.9**	**-0.3**
	3.7nm,0.7s,baz=153,slow=7.3,SNR=79								
YKA						pP	**pP**	**13 48 58.8**	**+1.4**
	0.1nm,0.3s,baz=154,slow=7.5,SNR=2.1								
ILAR	**Eielson Array**	**59.26**	**337**		P		**P**	**13 49 46.8**	**+0.8**
	0.6nm,0.5s,baz=144,slow=4.8,SNR=20								
ILAR						pP	**pP**	**13 50 26.3**	**+2.7**
	0.1nm,0.5s,baz=152,slow=6.4,SNR=1.9								

PLCA Paso Flores 61.51 160 P **P** 13 50 02.9 **+1.3**
1.4nm,0.5s,baz=346,slow=9.0,SNR=8.2
SPITS Spitsbergen Ar 77.54 11 P **P** 13 51 38.1 **-1.1**
1.5nm,0.6s,baz=300,slow=2.8,SNR=6.4
NB2 NORSAR Subarra 82.47 28 P **P** 13 52 06.5 **+0.5**
comp=Z,3.5nm,0.9s,baz=292,slow=5.1
NOA NORSAR Array B 82.47 28 P **P** 13 52 06.0 **0.0**
comp=Z,1.2nm,0.7s,baz=292,slow=5.2,SNR=5.0
ARCES ARCESS Array B 83.91 18 P **P** 13 52 13.0 **-0.2**
comp=Z,1.4nm,0.5s,baz=296,slow=5.1,SNR=18
GERES GERESS Array B 88.57 39 P **P** 13 52 36.4 **-0.1**
comp=Z,0.8nm,0.8s,baz=272,slow=9.2,SNR=5.2
WRA Warramunga Arr 134.06 259 PKP **PKPdf** 13 59 01.6 **+0.9**
comp=Z,0.3nm,0.5s,baz=81,slow=2.0,SNR=7.0
ASAR Alice Springs 134.65 253 PKP **PKPdf** 13 59 02.0 **+0.2**
comp=Z,0.5nm,0.9s,baz=100,slow=2.8,SNR=3.3

*IDC **09** 14:29:32.7±1.9, 36.34°N×140.34E, h0km, mb3.5/4, mb1 3.6/4, mb1mx3.3/46, mbtmp3.5/4, MS3.9/1, Ms1 3.9/1, ms1mx3.1/28, Error ellipse: s-maj=46.4km s-min=21.6km az=44.0*
*ISCJB **09** 14:29:40.5±0.7, 36.13°N±0.05°×139.83E±0.07, h58km±5km, mb3.5/4, MS3.9/1, Error ellipse: s-maj=9.3km s-min=7.5km az=17.1*
*JMA **09** 14:29:41.3±0.1, 36.13°N×139.83E, h50km±1km, M3.3 Broadband fault plane solution: P waves. NP1: φs48.00000°, δ59.00000°, λ90.00000°. NP2:φs228.00000°, δ31.00000°, λ90.00000°. Principal axes: T Plg76.0000°, Azm318.0000°; N Plg0.0000°, Azm48.0000°; P Plg14.0000°, Azm138.0000°;*
JMA Felt I J1.
ISC 09 14:29:41.4±1.0, **36.15N**±0.05°×**139.80E**±0.05, **h50**km±9km, **n15**, σ0**99**/21, **mb3.5**/4, **1C-4D, Eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
JYT	**Yasato**	**0.33**	**75**	⇑	P		**Pn**	**14 29 50.5**	**-0.3**
JYT					S		**Sn**	**14 29 57.1**	**-0.4**
JAG	**Ashikaga**	**0.40**	**315**	⇓	P		**Pn**	**14 29 51.8**	**+0.3**
JAG					S		**Sn**	**14 29 59.1**	**+0.4**
JRY	**Ryogami san**	**0.74**	**260**	⇓	P		**Pn**	**14 29 55.9**	**+0.2**
JRY					S		**Sn**	**14 30 06.3**	**+0.2**
JKT	**Katashina**	**0.76**	**324**	⇓	P		**Pn**	**14 29 56.1**	**0.0**
JKT					S		**Sn**	**14 30 07.3**	**+0.5**
JOD2	**Odawara 2**	**1.05**	**214**		P		**Pn**	**14 30 00.4**	**+0.5**
JOD2					S		**Sn**	**14 30 14.3**	**+0.8**
JFY	**Yanaizu**	**1.26**	**356**		P		**Pn**	**14 30 03.1**	**+0.4**
JFY					S		**Sn**	**14 30 19.9**	**+1.3**
JHK	**Hiroka**	**1.27**	**330**	⇓	P		**Pn**	**14 30 03.1**	**+0.3**
MJAR	**Matsushiro Arr**	**1.35**	**288**		Pg		**Pn**	**14 30 04.0**	**+0.1**
	33nm,0.3s,baz=90,slow=9.8,SNR=96								
MAT	**Matsushiro**	**1.35**	**288**		P		**Pn**	**14 30 04.1**	**+0.3**
MAT					S		**Sn**	**14 30 18.2**	**-2.4**
MAT	**Matsushiro**	**1.35**	**288**		P		**Pn**	**14 30 04.5**	**+0.7**
ZALV	**Zalesovo Beam**	**41.56**	**313**		P		**P**	**14 37 22.9**	**-1.0**
	0.8nm,0.6s,baz=85,slow=6.1,SNR=4.2								
MKAR	**Makanchi Array**	**43.50**	**303**		P		**P**	**14 37 39.9**	**+0.1**
	0.4nm,0.7s,baz=87,slow=9.3,SNR=4.2								
AAK	**Ala-Archa**	**49.77**	**299**		LR		LR	14 59 33.4	
	comp=Z,144nm,21.8s,baz=301,slow=36								
WRA	**Warramunga Arr**	**56.02**	**186**		P		**P**	**14 39 13.4**	**-1.6**
	0.3nm,0.4s,baz=1.9,slow=7.6,SNR=11								
ASAR	**Alice Springs**	**59.75**	**186**		P		**P**	**14 39 42.8**	**+1.7**
	0.2nm,0.5s,baz=18,slow=12,SNR=5.1								

*ISCJB **09** 14:39:17.9±0.5, 33.61°N±0.03°×35.93E±0.03, h7km±5km, Error ellipse: s-maj=4.6km s-min=4.3km az=172.2*
*CSEM **09** 14:39:17.5±0.2, 33.62°N×35.92E, h8km, ML2.8, Error ellipse: s-maj=3.9km s-min=3.2km az=69.0*
*GRAL **09** 14:39:17.8±0.2, 33.62°N×36.00E, h0km±13km, MD2.8*
*NSSC **09** 14:39:17.7±1.4, 33.60°N×35.92E, h7km±5km, MD0.9, ML1.8*
ISC 09 14:39:17.2±0.9, **33.62N**±0.02°×**35.91E**±0.03, **h14**km±6km, **n23**, σ0**37**/42, **Jordan-Syria region**

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
RCY	**Rachaya**	**0.13**	**206**	*e*	P		**Pg**	**14 39 21.1**	**+0.2**
RCY				*e*	S		**Sg**	**14 39 23.6**	**+0.2**
DQRL	**Deir Qamar**	**0.29**	**288**	*e*	P		**Pb**	**14 39 24.4**	**+0.1**
DQRL				*e*	S		**Sb**	**14 39 29.2**	**+0.2**
DQRL	**Deir Qamar**	**0.29**	**288**	*e*	P		**Pb**	**14 39 24.4**	**+0.1**
DQRL				*e*	S		**Sb**	**14 39 29.2**	**+0.2**
QASN	**Qassioun**	**0.32**	**105**	*e*	P		**Pg**	**14 39 23.6**	**-0.2**
QASN				*e*	S		**Sg**	**14 39 28.2**	**-0.2**
QASN

JMA ***09*** *14:47:05.6±0.2,38.14N×142.66E,h34km±4km,M3.8*
IDC ***09*** *14:47:20.7±3.0,37.84N×141.56E,h131km±28km,mb3.1/6, mb1 3.2/7,mb1mx2.9/62,mbtmp3.4/7,Error ellipse: s-maj=29.9km s-min=18.1km az=94.0*

ISC 09 14:47:03.0±2.3,38.16N±0.05×142.61E±0.09,h6km±13km, n19,σ0949/22,mb3.6/6,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
JIO	**Ouri**	**1.04**	**287**	P		Pn	**14 47 24.7**	**+0.6**
JIO				S		Sn	**14 47 38.7**	**-0.2**
JMK	**Ichinoseki**	**1.35**	**307**	P		Pg	**14 47 29.4**	**+0.5**
JMM	**Marumori**	**1.47**	**259**	P		Pb	**14 47 30.7**	**0.0**
JOU	**Okura**	**1.55**	**278**	P		Pg	**14 47 32.5**	**-0.2**
JOU				*e*S		Sb	**14 47 51.9**	**0.0**
MIYJ	**Miyakonagasawa**	**1.55**	**337**	P		Pb	**14 47 31.8**	**-0.3**
MIYJ				*e*S		Sn	**14 47 51.5**	**0.0**
JFK	**Kawauchi**	**1.59**	**241**	P		Pn	**14 47 32.0**	**+0.3**
JOM	**Ohasama**	**1.67**	**322**	P		Pb	**14 47 34.2**	**0.0**
JOM				S		Sn	**14 47 54.9**	**+0.3**
JFT	**Otama**	**1.91**	**251**	P		Pb	**14 47 37.8**	**-0.5**
JFT				*e*S		Sn	**14 48 00.6**	**+0.1**
JYK	**Kaneyama**	**1.92**	**294**	P		Pb	**14 47 38.0**	**-0.5**
JRG	**Rokugo**	**1.98**	**309**	P		Pb	**14 47 38.8**	**-0.7**
JKZ	**Kuzumaki**	**2.08**	**332**	P		Pb	**14 47 40.3**	**-0.9**
JKZ				*e*S		Sn	**14 48 05.6**	**+0.8**
MJAR	**Matsushiro Arr**	**3.86**	**247**	P		Pn	14 48 06.8	+3.9
	1.4nm,0.3s,baz=76,slow=16,SNR=9.8							
MAT	**Matsushiro**	**3.86**	**247**	P		Pb	14 48 08.2	-3.3
MAT				S		**Sb**	**14 48 58.5**	**0.0**
SEY	**Seymchan**	**25.51**	**10**	P		P	14 52 40.9	+9.0
	0.5nm,0.4s,baz=75,slow=20,SNR=6.7							
MKAR	**Makanchi Array**	**44.34**	**301**	P		**P**	**14 55 13.4**	**-0.4**
	0.1nm,0.5s,baz=91,slow=8.6,SNR=3.0							
KURBB	**Kurchatov Arra**	**46.07**	**307**	P		**P**	**14 55 26.7**	**-0.7**
	0.5nm,0.3s,baz=82,slow=7.9,SNR=4.0							
ILAR	**Eielson Array**	**48.04**	**33**	P		P	14 55 51.7	+9.0
	0.5nm,0.9s,baz=266,slow=6.8,SNR=4.1							
WRA	**Warramunga Arr**	**58.31**	**189**	P		**P**	**14 56 58.8**	**+0.1**
	0.6nm,0.7s,baz=7.4,slow=7.0,SNR=7.9							
ASAR	**Alice Springs**	**62.04**	**189**	P		**P**	**14 57 24.7**	**+0.5**
	0.3nm,1.0s,baz=8.5,slow=7.3,SNR=3.7							

NIED ***09*** *14:53:00,36.30N×141.80E,h20km,Mw4.3 Best double couple: M₀2.67000×10¹⁵ NP1:φ₀233.00000°,δ24.00000°, λ124.00000°. NP2:φ₀17.00000°,δ71.00000°,λ76.00000°.*
IDC ***09*** *14:53:22.6±0.6,36.22N×141.85E,h0km,mb4.2/30, mb1 4.2/34,mb1mx4.2/59,mbtmp4.1/34,ML3.8/3,MS3.7/5, Ms1 3.7/5,ms1mx3.1/45,Error ellipse: s-maj=15.2km s-min=13.6km az=131.0*
MOS ***09*** *14:53:24.4±1.1,36.29N×142.02E,h28km,mb4.6/18,Error ellipse: s-maj=9.1km s-min=6.1km az=108.3*
ISCJB ***09*** *14:53:24.5±1.2,36.26N±0.03×141.93E±0.05,h27km±8km, mb4.2/45,MS4.0/3,Error ellipse: s-maj=7.8km s-min=4.4km az=23.6*
JMA ***09*** *14:53:26.7±0.2,36.31N×141.77E,h58km±4km,M4.3*
NEIC ***09*** *14:53:28.7±1.1,36.23N×141.77E,h43km±9km,mb4.5/10, Error ellipse: s-maj=8.9km s-min=6.8km az=121.0*

ISC 09 14:53:24.6±1.6,36.28N±0.04×141.84E±0.05,h13km±10km, n108,σ0999/106,mb4.4/45,MS3.9/3,1C-2D,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.98**	**235**	P		**Pg**	**14 53 44.4**	**+0.8**
CHOJ				S		**Sb**	**14 53 56.8**	**+0.5**
JHO	**Hitachi**	**1.08**	**288**	P		**Pb**	**14 53 44.8**	**-0.4**
ONAJ	**Iwakimizuishiy**	**1.18**	**315**	P		**Pn**	**14 53 46.1**	**-0.7**
JFK	**Kawauchi**	**1.34**	**325**	P		**Pn**	**14 53 48.7**	**-0.3**
JFT	**Otama**	**1.73**	**316**	P		**Pn**	**14 53 55.0**	**+0.6**
BSO1	**Boso 1**	**1.77**	**204**	P		**Pn**	**14 53 55.2**	**+0.8**
BSO1				*e*S		**Sn**	**14 54 17.6**	**+1.2**
JMM	**Marumori**	**1.80**	**332**	P		**Pn**	**14 53 55.2**	**-0.1**
BSO3	**Boso 3**	**1.83**	**217**	P		**Pn**	**14 53 56.1**	**+0.6**
BSO3				S		**Sn**	**14 54 16.9**	**-1.5**
JAG	**Ashikaga**	**1.94**	**275**	P		**Pn**	**14 53 57.5**	**+0.3**
JFY	**Yanaizu**	**2.05**	**304**	P		**Pn**	**14 53 59.9**	**+1.0**
JRY	**Ryogami san**	**2.40**	**265**	P		**Pn**	**14 54 04.0**	**+0.4**
JRY				*e*S		**Sn**	**14 54 31.0**	**-1.8**
JOD2	**Odawara 2**	**2.46**	**247**	P		**Pn**	**14 54 05.3**	**+0.9**
MJAR	**Matsushiro Arr**	**2.94**	**276**	Pn		**Pn**	**14 54 12.4**	**+1.3**
	27nm,0.3s,baz=114,slow=8.8,SNR=200							
MJAR				LR		LR	14 55 35.7	
	comp=Z,708nm,18.1s,baz=130,slow=46							
MAJO	**Matsushiro**	**2.94**	**276**	*e*P		**Pn**	**14 54 12.8**	**+1.7**
MAJO				*e*			14 54 42.5	
MAJO	**Matsushiro**	**2.94**	**276**	*e*Pn		**Pn**	**14 54 12.8**	**+1.7**
MAJO				*e*Sn		**Sn**	**14 54 42.5**	**-3.9**
MAT	**Matsushiro**	**2.94**	**276**	P		**Pn**	**14 54 12.7**	**+1.6**
MAT				*e*S		**Sn**	**14 54 47.1**	**+0.7**
JHJ2	**Mitsune**	**3.57**	**208**	*e*Pn		Pn	14 54 15.3	-4.4
JHJ2				*e*Sn		**Sn**	**14 55 00.9**	**-0.8**
JHJ	**Hachijo jima 2**	**3.58**	**209**	Pn		**Pn**	**14 54 19.4**	**-0.4**
	36nm,0.3s,baz=112,slow=22,SNR=17							
JHJ				Sn		**Sn**	**14 54 59.7**	**-2.2**
	69nm,0.3s,baz=256,slow=22,SNR=7.7							
ERM	**Erimo**	**5.82**	**10**	*e*P		**Pn**	**14 54 48.8**	**-1.8**
YUK	**Yuzh-Kuril'sk**	**8.34**	**20**	*e*P		**Pn**	**14 55 23.6**	**-1.5**
YUK				*e*S		Sn	14 56 50.5	-8.6
YUK				pmax	pmax			
	comp=E,41nm,0.6s							
YUK				pmax	pmax			
	comp=Z,67nm,0.6s							
YUK				pmax	pmax			
	comp=N,39nm,0.4s							
JNU	**Nakatsue**	**9.56**	**254**	Pn		**Pn**	**14 55 44.4**	**+2.4**
	comp=N,0.4nm,0.3s,baz=191,slow=6.5,SNR=4.8							
KUR	**Kuril'sk**	**10.04**	**25**	P		**Pn**	**14 55 46.9**	**-1.6**
KUR				pmax	pmax			
	comp=Z,8.0nm,1.1s							
YSS	**Yuzh-Sakhalins**	**10.69**	**3**	*e*P		**Pn**	**14 55 57.8**	**+0.4**
YSS				pmax	pmax			
	comp=Z,10.0nm,0.9s							
YSS				MLR	MLR			
	comp=Z,400nm,13.0s							
USRK	**Ussuriysk Ar.**	**10.92**	**319**	Pn		**Pn**	**14 56 01.9**	**+1.4**
	comp=Z,0.1nm,0.3s,baz=127,slow=12,SNR=3.6							
USRK				LR		LR	14 59 45.6	
	comp=Z,429nm,18.4s,baz=128,slow=35							
KSRS	**Korea Array**	**11.21**	**280**	Pn		Pn	14 56 09.2	+4.6
	comp=Z,0.2nm,0.3s,baz=94,slow=14,SNR=13							
KSRS				LR		LR	15 00 20.1	
	comp=Z,219nm,19.9s,baz=265,slow=37							
KSAR	**Wonju Array Be**	**11.25**	**280**	P		Pn	14 56 09.2	+4.2
KSAR	**Wonju Array Be**	**11.25**	**280**	Pn		Pn	14 56 09.2	+4.2
KLR	**Kul'dur**	**14.90**	**333**	Pn		**Pn**	**14 56 54.2**	**-0.7**
	comp=Z,0.1nm,0.3s,baz=148,slow=11,SNR=4.6							
PET	**Petropavlovsk**	**20.49**	**30**	*i* P		**P**	**14 58 01.3**	**-0.7**
PET				pmax	pmax			
	comp=Z,81nm,1.7s							
MA2	**Magadan**	**24.02**	**11**	P		**P**	**14 58 39.2**	**+0.2**
	comp=Z,3.2nm,0.7s,baz=195,slow=6.8,SNR=6.0							
YAK	**Yakutsk**	**26.88**	**347**	P		**P**	**14 59 05.0**	**+0.2**
	comp=Z,7.6nm,0.4s,baz=340,slow=2.5,SNR=9.4							
YAK	**Yakutsk**	**26.88**	**347**	*e*P		**P**	**14 59 04.2**	**-0.7**
YAK				pmax	pmax			
	comp=Z,18nm,0.8s							
YAK				pmax	pmax			
	comp=N,13nm,1.3s							
YAK				pmax	pmax			
	comp=E,6.0nm,1.5s							
H11N2	**WAKE ISLAND Hy**	**27.47**	**120**	T		T	15 28 21.3	
	baz=312,slow=74,SNR=43							
SEY	**Seymchan**	**27.47**	**10**	P		**P**	**14 59 11.1**	**+1.0**
	comp=E,1.2nm,0.8s,baz=233,slow=16,SNR=5.0							
SEY	**Seymchan**	**27.47**	**10**	*e*P		**P**	**14 59 09.9**	**-0.2**
H11N1	**WAKE ISLAND Hy**	**27.47**	**120**	T		T	15 28 07.1	
	baz=312,slow=74,SNR=27							
H11N3	**WAKE ISLAND Hy**	**27.48**	**120**	T		T	15 28 21.1	
	baz=312,slow=74,SNR=24							
ENH	**Enshi**	**27.62**	**267**	*e*P		**P**	**14 59 10.0**	**-1.9**
	comp=E,24nm,0.7s							
ULN	**Ulaanbaatar**	**28.07**	**305**	*i* P		**P**	**14 59 15.4**	**-0.5**
ULN				pmax	pmax			
	comp=Z,10.0nm,1.2s							
ULN	**Ulaanbaatar**	**28.07**	**305**	*e*P		**P**	**14 59 15.8**	**-0.1**
	comp=Z,5.7nm,0.8s							
H11S1	**WAKE ISLAND Hy**	**28.16**	**122**	T		T	15 28 44.7	
	baz=314,slow=75,SNR=36							
H11S3	**WAKE ISLAND Hy**	**28.16**	**122**	T		T	15 29 10.4	
	baz=314,slow=75,SNR=22							
H11S2	**WAKE ISLAND Hy**	**28.18**	**122**	T		T	15 28 41.6	
	baz=314,slow=75,SNR=24							
BOD	**Bodaibo**	**28.35**	**328**	*e*P		**P**	**14 59 17.8**	**-0.3**
BOD				pmax	pmax			
	comp=Z,4.0nm,1.0s							
SONM	**Songino Array**	**28.50**	**305**	P		**P**	**14 59 20.0**	**+0.3**
	comp=Z,9.5nm,0.8s,baz=106,slow=7.4,SNR=51							
TLY	**Talaya**	**31.09**	**312**	*e*P		**P**	**14 59 43.7**	**+1.3**
TLY				pmax	pmax			
	comp=Z,7.0nm,0.9s							
TLY				MLR	MLR			
	comp=Z,209nm,15.0s							
MOY	**Mondy**	**32.69**	**311**	*e*P		**P**	**14 59 57.1**	**+0.5**
TIXI	**Tiksi**	**36.08**	**353**	P		**P**	**15 00 26.3**	**+0.7**
	comp=Z,1.0nm,0.3s,baz=138,slow=6.8,SNR=5.8							
TIXI	**Tiksi**	**36.08**	**353**	*i* P		**P**	**15 00 25.4**	**-0.2**
TIXI				pmax	pmax			
	comp=Z,3.0nm,1.0s							
CHTO	**Chiang Mai**	**41.45**	**257**	*e*P		**P**	**15 01 09.3**	**-1.9**
CHTO				pmax	pmax			
	comp=Z,1.0nm,0.6s							
CHTO	**Chiang Mai**	**41.45**	**257**	*e*P		**P**	**15 01 09.2**	**-1.9**
	comp=Z,1.5nm,0.6s							
CMAR	**Chiang Mai Arr**	**41.65**	**256**	P		**P**	**15 01 13.1**	**+0.2**
	comp=Z,2.1nm,0.8s,baz=49,slow=5.7,SNR=14							
LSA	**Lhasa**	**42.63**	**276**	*e*P		**P**	**15 01 20.8**	**-0.5**
LSA				pmax	pmax			
	comp=Z,6.0nm,0.9s							
LSA	**Lhasa**	**42.63**	**276**	*e*P		**P**	**15 01 20.8**	**-0.5**
	comp=Z,6.2nm,0.9s							
ZALV	**Zalesovo Beam**	**42.68**	**313**	P		**P**	**15 01 21.3**	**+0.5**
	comp=Z,4.7nm,0.8s,baz=96,slow=7.6,SNR=22							
NVS	**Novosibirsk**	**43.61**	**314**	*e*P		**P**	**15 01 29.0**	**+0.6**
NVS				pmax	pmax			
	comp=Z,7.0nm,1.0s							
NVS				pmax	pmax			
	comp=E,7.0nm,1.4s							
MKAR	**Makanchi Array**	**44.82**	**303**	P		**P**	**15 01 38.5**	**+0.3**
	comp=E,5.0nm,0.7s,baz=90,slow=9.7,SNR=37							
TAPN	**Taplejung**	**46.34**	**275**	*e*P		**P**	**15 01 51.3**	**+0.5**
	comp=E,6.4nm,0.5s							
KURK	**Kurchatov**	**46.67**	**309**	P		**P**	**15 01 53.3**	**+0.6**
KURK				pmax	pmax			
	comp=Z,1.0nm,0.7s							
KURK	**Kurchatov**	**46.67**	**309**	P		**P**	**15 01 53.3**	**+0.6**
	comp=Z,1.4nm,0.7s							
KURBB	**Kurchatov Arra**	**46.74**	**309**	P		**P**	**15 01 53.3**	**0.0**
	comp=Z,5.7nm,0.7s,baz=85,slow=8.2,SNR=49							
ODAN	**Odarc**	**46.81**	**274**	*e*P		**P**	**15 01 54.9**	**+0.5**
	comp=Z,17nm,0.7s							
RAMN	**Ramite**	**47.41**	**275**	*e*P		**P**	**15 01 59.4**	**+0.3**
	comp=Z,50nm,0.9s							
GKN	**Gorkha**	**48.54**	**277**	*e*P		**P**	**15 02 07.9**	**+0.1**
	comp=Z,12nm,0.5s							
KOLN	**Koldanda**	**49.47**	**278**	*e*P		**P**	**15 02 15.4**	**+0.5**
	comp=Z,5.3nm,0.5s							
PYUN	**Piuthan**	**49.81**	**278**	*e*P		**P**	**15 02 18.0**	**+0.4**
ILAR	**Eielson Array**	**49.95**	**32**	P		**P**	**15 02 18.1**	**+0.3**
	comp=Z,0.8nm,0.7s,baz=268,slow=6.7,SNR=11							
TKM2	**Tokmak 2**	**50.30**	**299**	*e*P		**P**	**15 02 21.0**	**0.0**
TKM2				pmax	pmax			
	comp=Z,4.0nm,0.6s							
TKM2	**Tokmak 2**	**50.30**	**299**	*e*P		**P**	**15 02 21.0**	**0.0**
	comp=Z,4.5nm,0.6s							
AAK	**Ala-Archa**	**51.16**	**299**	P		**P**	**15 02 27.5**	**0.0**
	comp=Z,2.4nm,0.5s,baz=96,slow=6.3,SNR=11							
AAK	**Ala-Archa**	**51.16**	**299**	*e*P		**P**	**15 02 28.5**	**+1.0**
AAK				pmax	pmax			
	comp=Z,5.0nm,0.8s							
AAK	**Ala-Archa**	**51.16**	**299**	P		**P**	**15 02 27.5**	**0.0**
	comp=Z,0.6nm,0.6s							
BVAR	**Borovoye Array**	**51.34**	**313**	P		**P**	**15 02 28.8**	**+0.3**
	comp=Z,2.4nm,0.8s,baz=72,slow=9.3,SNR=9.8							
BRVK	**Borovoye**	**51.40**	**313**	*i* P		**P**	**15 02 29.7**	**+0.8**
BRVK				pmax	pmax			
	comp=Z,4.0nm,0.8s							
KKAR	**Karatay Array**	**53.80**	**301**	*e*P		**P**	**15 02 46.8**	**-0.1**
KKAR				pmax	pmax			
	comp=Z,2.0nm,0.6s							
KKAR	**Karatay Array**	**53.80**	**301**	*e*P		**P**	**15 02 46.8**	**-0.1**
	comp=Z,1.7nm,0.6s							
INK	**Inuvik**	**54.90**	**27**	P		**P**	**15 02 55.3**	**+0.8**
	comp=Z,1.2nm,0.6s,baz=283,slow=6.0,SNR=11							
WRAB	**Tennant Creek**	**56.35**	**188**	*e*P		**P**	**15 03 04.2**	**-1.2**
WRAB	**Tennant Creek**	**56.35**	**188**	*e*P		**P**	**15 03 04.2**	**-1.2**
WRA	**Warramunga Arr**	**56.36**	**188**	P		**P**	**15 03 04.6**	**-0.9**
	comp=Z,1.3nm,0.7s,baz=65,slow=7.4,SNR=11							
ARU	**Arti**	**57.16**	**319**	P		**P**	**15 03 10.6**	**-0.2**
	comp=Z,2.3nm,0.4s,baz=305,slow=0.5,SNR=7.0							
ARU	**Arti**	**57.16**	**319**	*d iP*		**P**	**15 03 11.1**	**+0.3**
ARU							15 05 17.5	
ARU				S		**S**	**15 11 06.7**	**+1.1**
ARU				SS		**SS**	**15 14 55.8**	**+1.8**
ARU				pmax	pmax			
	comp=Z,14nm,1.7s							
ARU	**Arti**	**57.16**	**319**	P		**P**	**15 03 10.6**	**-0.2**
	comp=Z,0.7nm,1.1s							
ABKAR	**Akbulak array**	**58.69**	**311**	*e*P		**P**	**15 03 21.4**	**-0.3**
	comp=Z,2.4nm,0.5s							
AKTO	**Aktyubinsk**	**59.44**	**312**	P		**P**	**15 03 26.4**	**-0.5**
	comp=Z,1.1nm,0.4s,baz=90,slow=8.1,SNR=5.7							
ASAR	**Alice Springs**	**60.09**	**188**	P		**P**	**15 03 30.9**	**-0.6**
	comp=Z,0.6nm,0.8s,baz=14,slow=7.6,SNR=7.9							
YKA	**Yellowknife Ar**	**64.29**	**30**	P		**P**	**15 03 59.6**	**+0.3**
	comp=Z,0.7nm,0.7s,baz=303,slow=6.8,SNR=18							
GEYT	**Alibeck**	**64.51**	**299**	P		**P**	**15 04 02.1**	**+0.9**
	comp=Z,0.7nm,0.3s,baz=76,slow=6.3,SNR=3.6							
KLMR	**Klimovskoe**	**64.58**	**328**	*e*P		**P**	**15 03 59.3**	**-1.9**
KLMR				pmax	pmax			
	comp=Z,14nm,1.8s							
ARCES	**ARCESS Array B**	**64.83**	**340**	P		**P**	**15 04 03.3**	**+0.6**
	comp=Z,4.0nm,0.9s,baz=43,slow=9.0,SNR=5.9							
FINES	**FINESS Array B**	**69.64**	**333**	P		**P**	**15 04 33.2**	**-0.2**
	comp=Z,3.4nm,0.8s,baz=54,slow=7.6,SNR=8.6							
FINES				LR		LR	15 36 27.5	
	comp=Z,95nm,18.1s,baz=222,slow=37							
KIV	**Kislovodsk**	**71.66**	**311**	*e*P		**P**	**15 04 46.6**	**+0.5**
KIV				pmax	pmax			
	comp=Z,10.0nm,1.0s							
HFS	**Hagfors**	**74.92**	**336**	P		**P**	**15 05 05.9**	**+1.0**
	comp=Z,3.2nm,0.8s,baz=65,slow=8.1,SNR=3.6							
NB2	**NORSAR Subarra**	**75.02**	**338**	P		**P**	**15 05 05.6**	**+0.1**
	comp=Z,3.4nm,0.8s,baz=38,slow=5.9							
NOA	**NORSAR Array B**	**75.02**	**338**	P		**P**	**15 05 06.0**	**+0.5**
	comp=Z,3.0nm,0.8s,baz=39,slow=5.7,SNR=8.3							
NOA				LR		LR	15 41 32.6	
	comp=Z,50nm,19.3s,baz=10.0,slow=38							
AKASG	**Malin Array Be**	**75.11**	**323**	P		**P**	**15 05 06.1**	**0.0**
	comp=Z,3.4nm,0.6s,baz=47,slow=6.1,SNR=20							
KIEV	**Kiev**	**75.12**	**323**	*e*P		**P**	**15 05 05.4**	**-0.8**
KIEV				pmax	pmax			
	comp=Z,4.0nm,0.9s							
NVAR	**Mina Array Bea**	**75.17**	**53**	P		**P**	**15 05 08.3**	**+1.3**
	comp=Z,0.6nm,0.7s,baz=297,slow=6.5,SNR=4.4							
PDAR	**Pinedale Array**	**77.95**	**46**	P		**P**	**15 05 23.2**	**+0.5**
	comp=Z,0.3nm,0.6s,baz=253,slow=2.2,SNR=4.8							
BRTR	**Keskin Array B**	**79.61**	**312**	P		**P**	**15 05 32.1**	**+0.3**
	comp=Z,1.1nm,0.6s,baz=67,slow=3.0,SNR=4.7							
CLL	**Collm**	**81.92**	**330**	*e*P		P	15 05 40.0	-3.7
CLL				*e*			15 05 44.0	
CLL	**Collm**	**81.92**	**330**	*e*P		P	15 05 40.0	-3.7
CLL				*e*			15 05 44.0	
KHC	**Kasperske Hory**	**83.37**	**329**	*e*P		**P**	**15 05 51.0**	**-0.4**
KHC	**Kasperske Hory**	**83.37**	**329**	*e*P		**P**	**15 05 51.0**	**-0.4**
GERES	**GERESS Array B**	**83.54**	**328**	P		**P**	**15 05 52.1**	**-0.2**
	comp=Z,0.9nm,0.6s,baz=35,slow=4.9,SNR=6.0							
EKA	**Eskdalemuir Ar**	**83.96**	**341**	P		**P**	**15 05 54.5**	**+0.2**
	comp=Z,0.2nm,0.5s,baz=8.6,slow=5.2,SNR=3.7							
TXAR	**Lajitas Array**	**90.31**	**53**	P		**P**	**15 06 25.7**	**0.0**
	comp=Z,0.4nm,0.8s,baz=298,slow=2.7,SNR=4.7							
LPAZ	**La Paz**	**146.77**	**61**	PKPbc		**PKPbc**	**15 13 07.7**	**+0.1**
	comp=Z,1.3nm,0.6s,baz=2.5,slow=3.9,SNR=5.2							

JMA 09 14:56:53.5±0.1,36.01N×141.05E,h22km±1km,M2.8, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.34**	**207**	P		Pb	14 57 00.8	-0.1
CHOJ				S		Sb	14 57 05.9	-0.1
JHO	**Hitachi**	**0.71**	**327**	P		Pb	14 57 06.9	-0.4
JHO				S		Sb	14 57 16.9	+0.2
MAT	**Matsushiro**	**2.36**	**284**	P		Pn	14 57 31.7	+0.8
MAT				S		Sb	14 58 06.2	+2.2

IDC ***09*** *15:02:39.5±1.9,39.65N×144.82E,h0km,mb3.8/3, mb1 3.9/4,mb1mx3.4/41,mbtmp3.7/4,ML3.4/1,Error ellipse: s-maj=62.4km s-min=32.3km az=87.0*
ISCJB ***09*** *15:02:44.8±1.0,39.85N±0.05×144.29E±0.07,h34km, mb3.8/3,Error ellipse: s-maj=8.6km s-min=6.0km az=35.6*
JMA ***09*** *15:02:45.5±0.3,39.87N×144.21E,h37km,M3.4*

ISC 09 15:02:45.3±1.3,39.83N±0.06×144.35E±0.09,h34km,n15, σ1903/26,mb3.9/3,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
JTH	**Tanohata**	**1.91**	**274**	P		**Pn**	**15 03 15.1**	**-0.3**
JTH				S		**Sn**	**15 03 37.4**	**-0.9**
MIYJ	**Miyakonagasawa**	**1.96**	**263**	P		**Pn**	**15 03 16.2**	**+0.1**
MIYJ				S		**Sn**	**15 03 38.6**	**-1.0**
JANG	**Nango**	**2.24**	**285**	P		**Pn**	**15 03 19.5**	**-0.4**
JANG				*e*S		**Sn**	**15 03 44.2**	**-2.2**
JOM	**Ohasama**	**2.38**	**262**	P		**Pn**	**15 03 22.4**	**+0.5**
JOM				*e*S		**Sn**	**15 03 49.7**	**-0.3**
JTM	**Tenmabayashi**	**2.68**	**292**	P		**Pn**	**15 03 26.2**	**+0.2**
JTM				S		**Sn**	**15 03 57.4**	**+0.1**
JNBK	**Urakawa-nobuka**	**2.73**	**334**	P		**Pn**	**15 03 27.2**	**+0.6**
JNBK				*e*S		**Sn**	**15 03 59.1**	**+0.7**
JAH	**Hinai**	**2.87**	**278**	P		**Pn**	**15 03 29.6**	**+1.0**
JAH				S		**Sn**	**15 04 02.2**	**+0.2**
JCH	**Churui**	**2.88**	**345**	P		**Pn**	**15 03 28.7**	**0.0**
JCH				*e*S		**Sn**	**15 04 01.3**	**-0.9**
JRG	**Rokugo**	**2.90**	**263**	P		**Pn**	**15 03 30.0**	**+1.0**
JRG				*e*S		**Sn**	**15 04 03.0**	**+0.3**
JOT	**Ohata**	**2.95**	**303**	P		**Pn**	**15 03 30.4**	**+0.7**
JOT				*e*S		**Sn**	**15 04 03.3**	**-0.6**
JYK	**Kaneyama**	**3.22**	**255**	P		**Pn**	**15 03 35.1**	**+1.7**
JYK				*e*S		**Sn**	**15 04 10.5**	**-0.1**
MJAR	**Matsushiro Arr**	**5.84**	**238**	Pn		**Pn**	**15 04 10.2**	**+0.7**
	1.0nm,0.3s,baz=54,slow=13,SNR=10							
WRA	**Warramunga Arr**	**60.19**	**191**	P		**P**	**15 12 49.5**	**-0.3**
	0.5nm,0.5s,baz=9.0,slow=7.0,SNR=8.7							
ASAR	**Alice Springs**	**63.91**	**191**	P		**P**	**15 13 12.1**	**-2.6**
	0.7nm,1.0s,baz=27,slow=6.3,SNR=3.6							
FINES	**FINESS Array B**	**67.40**	**333**	P		**P**	**15 13 38.5**	**+1.7**
	1.6nm,0.9s,baz=46,slow=8.0,SNR=4.3							

IDC ***09*** *15:03:52.6±2.1,36.03N×141.86E,h0km,mb3.3/4, mb1 3.5/6,mb1mx3.3/43,mbtmp3.4/6,ML3.5/2,MS3.7/1, Ms1 3.7/1,ms1mx2.7/29,Error ellipse: s-maj=42.6km s-min=23.1km az=63.0*

ISC 09 15:03:56.2±1.5,36.00N±0.10×141.8E±0.1,h23km,n8, σ1917/10,mb3.3/4,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
MJAR	**Matsushiro Arr**	**2.97**	**281**	Pn		**Pn**	**15 04 41.6**	**-0.3**
	5.1nm,0.3s,baz=108,slow=8.6,SNR=41							
MJAR				Sn		**Sn**	**15 05 18.6**	**+1.7**
	1.7nm,0.3s,baz=231,slow=32,SNR=4.2							
MAT	**Matsushiro**	**2.97**	**281**	P		**Pn**	**15 04 42.5**	**+0.5**
MAT				S		**Sb**	**15 05 22.9**	**-1.4**
JHJ	**Hachijo jima 2**	**3.33**	**211**	Pn		**Pn**	**15 04 46.7**	**-0.2**
	13nm,0.3s,baz=13,slow=14,SNR=3.0							
JHJ				Sn		**Sn**	**15 05 26.4**	**+0.6**
	12nm,0.3s,baz=52,slow=19,SNR=3.8							
SONM	**Songino Array**	**28.64**	**305**	P		**P**	**15 09 50.1**	**-1.0**
	0.1nm,0.3s,baz=106,slow=9.2,SNR=1.8							
DAV	**Davao City (W)**	**32.41**	**211**	LR		LR	15 23 25.7	
	comp=Z,136nm,18.8s,baz=126,slow=36							
MKAR	**Makanchi Array**	**44.95**	**303**	P		**P**	**15 12 09.9**	**+0.5**
	0.2nm,0.6s,baz=92,slow=9.2,SNR=3.4							
WRA	**Warramunga Arr**	**56.09**	**188**	P		**P

FAKI				*e*Sn	**Sn**	**15 19 20.4**	**-1.1**
LUWI	**Luwuk**	**6.62**	**245**	P	**Pn**	**15 18 29.1**	**+1.5**
	138nm,0.7s,1µm0.5nm						
LUWI	**Luwuk**	**6.62**	**245**	*e*Pn	**Pn**	**15 18 28.9**	**+1.3**
	127nm,0.8s						
MRSI	**Marisa**	**6.95**	**260**	P	**Pn**	**15 18 35.0**	**+2.8**
KAPI	**Kappang**	**11.25**	**233**	P	**Pn**	**15 19 32.7**	**+1.6**
	4.4nm,0.3s,baz=79,slow=12,SNR=7.8						
KAPI				S	**Sn**	**15 21 32.9**	**-2.8**
	0.4nm,0.3s,baz=156,slow=20,SNR=3.7						
KAPI	**Kappang**	**11.25**	**233**	*e*Pn	**Pn**	**15 19 29.8**	**-1.3**
	14nm,0.6s						
KAPI				S	**Sn**	**15 21 32.9**	**-2.8**
GUMO	**Guam**	**19.79**	**53**	LR	LR	15 27 18.9	
	comp=Z,139nm,20.3s,baz=11,slow=32						
FITZ	**Fitzroy Crossi**	**19.97**	**189**	P	**P**	**15 21 22.4**	**+0.2**
	0.6nm,0.3s,baz=17,slow=8.0,SNR=15						
FITZ	**Fitzroy Crossi**	**19.97**	**189**	*e*P	**P**	**15 21 20.0**	**-2.1**
	4.4nm,0.8s						
WRAB	**Tennant Creek**	**22.24**	**166**	*e*P	**P**	**15 21 46.4**	**-0.2**
	8.2nm,0.8s						
WRA	**Warramunga Arr**	**22.24**	**166**	P	**P**	**15 21 46.8**	**+0.2**
	4.3nm,0.6s,baz=344,slow=11,SNR=27						
ASAR	**Alice Springs**	**25.76**	**169**	P	**P**	**15 22 20.6**	**+0.3**
	4.2nm,0.9s,baz=350,slow=9.7,SNR=21						
ASAR				PcP	**PcP**	**15 25 49.4**	**-0.5**
	0.4nm,0.6s,baz=356,slow=2.8,SNR=4.7						
PSI	**Prapat**	**29.85**	**273**	P	**P**	**15 22 57.0**	**-0.2**
	9.9nm,0.8s,baz=162,slow=4.7,SNR=6.1						
GSI	**Gunungsitoli**	**31.20**	**270**	*e*P	P	15 23 05.8	-3.2
	36nm,0.6s						
CMAR	**Chiang Mai Arr**	**33.64**	**302**	P	**P**	**15 23 31.4**	**+1.1**
	1.2nm,0.9s,baz=116,slow=6.6,SNR=7.6						
CHTO	**Chiang Mai**	**33.79**	**302**	*e*P	**P**	**15 23 29.8**	**-1.9**
	4.4nm,0.8s						
KSAR	**Wonju Array Be**	**35.52**	**359**	P	**P**	**15 23 46.9**	**+0.6**
KSRS	**Korea Array**	**35.53**	**359**	P	**P**	**15 23 46.9**	**+0.5**
	4.1nm,0.8s,baz=175,slow=9.3,SNR=10						
STKA	**Stephens Creek**	**35.59**	**161**	P	**P**	**15 23 47.7**	**+0.7**
	2.8nm,0.7s,baz=321,slow=11,SNR=4.1						
H11S3	**WAKE ISLAND Hy**	**40.71**	**63**	T	T	16 08 18.9	
	baz=249,slow=74						
H11S2	**WAKE ISLAND Hy**	**40.73**	**63**	T	T	16 08 31.6	
	baz=249,slow=74						
H11S1	**WAKE ISLAND Hy**	**40.73**	**63**	T	T	16 08 26.3	
	baz=249						
H11N1	**WAKE ISLAND Hy**	**41.31**	**62**	T	T	16 09 01.9	
	baz=248,slow=76,SNR=13						
H11N2	**WAKE ISLAND Hy**	**41.32**	**62**	T	T	16 09 07.4	
	baz=248,slow=76,SNR=7.3						
H11N3	**WAKE ISLAND Hy**	**41.33**	**62**	T	T	16 09 01.3	
	baz=248,slow=76,SNR=15						
USRK	**Ussuriysk Ar.**	**42.36**	**3**	P	**P**	**15 24 43.9**	**+0.4**
	2.1nm,0.6s,baz=188,slow=7.4,SNR=7.4						
LSA	**Lhasa**	**45.27**	**312**	*e*P	P	15 25 03.3	-4.4
	6.7nm,0.6s						
TAPN	**Taplejung**	**46.83**	**307**	*e*P	**P**	**15 25 19.9**	**+0.1**
	23nm,0.9s						
ODAN	**Odare**	**46.88**	**306**	*e*P	**P**	**15 25 20.3**	**+0.2**
	24nm,0.6s						
KLR	**Kul'dur**	**47.37**	**3**	P	**P**	**15 25 23.4**	**+0.1**
	0.6nm,0.4s,baz=166,slow=4.9,SNR=5.0						
RAMN	**Ramite**	**47.55**	**306**	*e*P	**P**	**15 25 25.5**	**+0.1**
	28nm,0.7s						
GUN	**Gumba**	**48.54**	**306**	*e*P	**P**	**15 25 33.1**	**0.0**
	52nm,0.8s						
KKN	**Kakani**	**48.97**	**306**	*e*P	**P**	**15 25 36.1**	**-0.2**
	10nm,0.7s						
GKN	**Gorkha**	**49.58**	**306**	*e*P	**P**	**15 25 40.4**	**-0.5**
	10nm,0.7s						
SONM	**Songino Array**	**49.82**	**340**	P	**P**	**15 25 41.7**	**-0.6**
	0.7nm,0.5s,baz=148,slow=7.6,SNR=3.5						
KOLN	**Koldanda**	**50.33**	**305**	*e*P	**P**	**15 25 46.7**	**+0.1**
	26nm,0.7s						
PYUN	**Piuthan**	**50.95**	**305**	*e*P	**P**	**15 25 51.5**	**+0.1**
	30nm,0.7s						
MSVF	**Nonsavu**	**52.24**	**114**	*e*P	P	15 26 05.4	+4.4
	23nm,0.8s						
PETK	**Petropavlovsk-**	**56.51**	**20**	P	**P**	**15 26 32.3**	**+1.0**
	2.8nm,0.7s,baz=170,slow=3.5,SNR=4.2						
MA2	**Magadan**	**60.14**	**13**	P	**P**	**15 26 57.3**	**+0.7**
	2.4nm,0.6s,baz=213,slow=12,SNR=4.6						
MKAR	**Makanchi Array**	**60.34**	**325**	P	**P**	**15 26 57.5**	**-0.7**
	3.8nm,0.4s,baz=116,slow=8.3,SNR=35						
TKM2	**Tokmak 2**	**62.57**	**319**	*e*P	**P**	**15 27 12.1**	**-1.5**
	2.9nm,0.7s						
ZALV	**Zalesovo Beam**	**63.27**	**333**	P	P	15 27 16.0	-1.8
	0.7nm,0.4s,baz=110,slow=5.8,SNR=3.0						
SEY	**Seymchan**	**63.51**	**12**	P	**P**	**15 27 20.6**	**+1.4**
	1.7nm,0.6s,baz=180,slow=1.0,SNR=12						
GEYT	**Alibeck**	**73.72**	**309**	P	**P**	**15 28 22.9**	**-0.6**
	1.2nm,0.5s,baz=123,slow=5.3,SNR=2.9						
VNDA	**Vanda**	**81.23**	**173**	P	**P**	**15 29 04.9**	**+0.3**
	1.1nm,0.5s,baz=325,slow=6.5,SNR=5.9						
ILAR	**Eielson Array**	**86.00**	**25**	P	**P**	**15 29 29.7**	**+0.4**
	0.5nm,0.9s,baz=245,slow=6.0,SNR=4.4						
ARCES	**ARCESS Array B**	**92.99**	**340**	P	P	15 30 00.2	-1.9
	2.3nm,0.8s,baz=82,slow=6.5,SNR=3.2						
TORD	**Torodi Ar. Bea**	**125.47**	**287**	PKP	**PKPdf**	**15 35 49.8**	**-1.4**
	0.3nm,0.7s,baz=87,slow=3.7,SNR=2.8						

*ISCJB **09** 15:17:31.9±0.3,46.°05N±0.°02×6.°80E±0.°03,h14km±3km, Error ellipse: s-maj=3.1km s-min=2.8km az=155.4*
*ZUR **09** 15:17:33.8,46.°04N×6.°87E,h2km±2km, ML1.3/6*
*CSEM **09** 15:17:33.1±0.1,46.°03N×6.°85E,h5km,ML1.9/15, Error ellipse: s-maj=1.9km s-min=1.6km az=66.0*
*LDG **09** 15:17:33.8±0.0,46.°03N×6.°88E,h2km,Md2.2/3,Ml2.0/12, Error ellipse: s-maj=0.9km s-min=0.7km az=91.0*
*GEN **09** 15:17:34.4,46.°00N×6.°94E,h10km,ML1.0*
ISC 09 15:17:32.8±0.8,46.°04N±0.°02×6.°86E±0.°02,h12km±6km, n47,σ0§59/81,9C-2D,Switzerland

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SALAN	**Lac Salanfe**	**0.13**	**35**	⇑*i*Pg	**Pg**	**15 17 36.7**	**+0.5**
	98nm,0.1s						
SALAN				*i* Sg	**Sg**	**15 17 38.5**	**-0.2**
	98nm,0.1s						
SALAN	**Lac Salanfe**	**0.13**	**35**	⇑*i*Pg	**Pg**	**15 17 36.7**	**+0.5**
	98nm,0.1s						
SALAN				*i* Sg	**Sg**	**15 17 38.5**	**-0.2**
	98nm,0.1s						
SMUR	**Muraz-Reservoi**	**0.24**	**9**	*e*Sg	**Sg**	**15 17 39.2**	**-2.2**
GRYON	**Gryon**	**0.27**	**39**	⇑*i*Pg	**Pb**	**15 17 39.8**	**0.0**
	8.9nm,0.1s						
GRYON	**Gryon**	**0.27**	**39**	⇑*i*Pg	**Pb**	**15 17 39.8**	**0.0**
	8.9nm,0.1s						
MRGE	**Morge**	**0.30**	**153**	⇓*i*Pg	**Pb**	**15 17 39.9**	**-0.3**
	204nm,0.1s						
MRGE	**Morge**	**0.30**	**153**	⇓*i*Pg	**Pb**	**15 17 39.9**	**-0.3**
	204nm,0.1s						
AIGLE	**Aigle**	**0.31**	**11**	*e*Sg	**Sg**	**15 17 41.1**	**-2.3**
	98nm,0.2s						
AIGLE	**Aigle**	**0.31**	**11**	⇑*i*Pg	**Pn**	**15 17 44.0**	**+0.7**
	98nm,0.2s						
DIX	**Grande Dixence**	**0.38**	**83**	*i* Pg	**Pb**	**15 17 41.4**	**-0.3**
	147nm,0.2s						
DIX				*e*Sg	**Sg**	**15 17 46.4**	**+0.8**
	147nm,0.2s						
DIX	**Grande Dixence**	**0.38**	**83**	*i* Pg	**Pb**	**15 17 41.4**	**-0.3**
	147nm,0.2s						
DIX				*e*Sg	**Sg**	**15 17 46.4**	**+0.8**
	147nm,0.2s						
RSL	**Roselend**	**0.39**	**206**	⇑*i*Pg	**Pb**	**15 17 41.7**	**0.0**
RSL	**Roselend**	**0.39**	**206**	⇑*i*Pg	**Pb**	**15 17 41.7**	**0.0**
SENIN	**Lac Senin/Sane**	**0.45**	**43**	⇑*i*Pg	**Pb**	**15 17 42.4**	**-0.3**
	27nm,0.3s						
SENIN	**Lac Senin/Sane**	**0.45**	**43**	⇑*i*Pg	**Pb**	**15 17 42.4**	**-0.3**
	27nm,0.3s						
LPL	**La Plagne**	**0.53**	**190**	*e*Pg	**Pb**	**15 17 43.9**	**-0.3**
LPL				*e*Sg	**Sg**	**15 17 50.8**	**+0.6**
	4.6nm,0.3s						
LPL	**La Plagne**	**0.53**	**190**	*e*Pg	**Pb**	**15 17 43.9**	**-0.3**
LPL				*e*Sg	**Sg**	**15 17 50.8**	**+0.6**
	2.3nm,0.3s						
LPG	**La Plagne**	**0.55**	**188**	*e*Pg	**Pb**	**15 17 44.2**	**-0.3**
LPG				*e*Sg	**Sg**	**15 17 51.2**	**+0.4**
	7.8nm,0.2s						
LPG	**La Plagne**	**0.55**	**188**	*e*Pg	**Pb**	**15 17 44.2**	**-0.3**
LPG				*e*Sg	**Sg**	**15 17 51.2**	**+0.4**
	3.9nm,0.2s						
LSD	**Lago del Serru**	**0.61**	**162**	P	**Pb**	**15 17 45.2**	**-0.3**
LSD				S	**Sg**	**15 17 52.6**	**-0.1**
CIRO	**Champorcher**	**0.66**	**131**	P	**Pg**	**15 17 45.9**	**+0.3**
CIRO				S	**Sg**	**15 17 53.7**	**-0.6**
SATI	**Passo dei Sala**	**0.72**	**103**	P	**Pg**	**15 17 47.0**	**+0.2**
SATI				S	**Sg**	**15 17 55.7**	**-0.6**
CABF	**La Chapelle**	**0.79**	**317**	*e*Pg	**Pb**	**15 17 48.8**	**+0.3**
CABF				*e*Sg	**Sb**	**15 17 59.4**	**+0.2**
	4.4nm,0.3s						
CABF	**La Chapelle**	**0.79**	**317**	*e*Pg	**Pb**	**15 17 48.8**	**+0.3**
CABF				*e*Sg	**Sb**	**15 17 59.4**	**+0.2**
	2.2nm,0.3s						
TRAV	**Traversella**	**0.81**	**130**	P	**Pg**	**15 17 48.5**	**0.0**
TRAV				S	**Sg**	**15 17 57.9**	**-1.2**
MBDF	**Montbardon**	**1.31**	**183**	*e*Pg	**Pg**	**15 17 58.2**	**+0.2**
MBDF				*e*Sg	**Sn**	**15 18 14.7**	**+0.1**
	0.6nm,0.2s						
MBDF	**Montbardon**	**1.31**	**183**	*e*Pg	**Pg**	**15 17 58.2**	**+0.2**
MBDF				*e*Sg	**Sn**	**15 18 14.7**	**+0.1**
	0.3nm,0.2s						
ORIF	**Oris-en-Rattie**	**1.32**	**212**	*e*Pg	**Pg**	**15 17 58.5**	**+0.4**
ORIF				*e*Sg	**Sg**	**15 18 15.6**	**+0.4**
	3.1nm,0.3s						
ORIF	**Oris-en-Rattie**	**1.32**	**212**	*e*Pg	**Pg**	**15 17 58.5**	**+0.4**
ORIF				*e*Sg	**Sg**	**15 18 15.6**	**+0.4**
	1.5nm,0.3s						
HINF	**Hinteralfeld**	**1.78**	**360**	*e*Pg	**Pg**	**15 18 07.5**	**+0.6**
HINF				*e*Sg	**Sg**	**15 18 30.2**	**+0.2**
	3.6nm,0.3s						
HINF	**Hinteralfeld**	**1.78**	**360**	*e*Pg	**Pg**	**15 18 07.5**	**+0.6**
HINF				*e*Sg	**Sg**	**15 18 30.2**	**+0.2**
	1.8nm,0.3s						
VIVF	**Saint-Julien-l**	**1.94**	**233**	*e*Pg	**Pg**	**15 18 10.3**	**+0.3**
VIVF				*e*Sg	**Sg**	**15 18 35.1**	**-0.1**
	5.7nm,0.3s						
VIVF	**Saint-Julien-l**	**1.94**	**233**	*e*Pg	**Pg**	**15 18 10.3**	**+0.3**
VIVF				*e*Sg	**Sg**	**15 18 35.1**	**-0.1**
	2.8nm,0.3s						
SMF	**Signal de Mont**	**2.18**	**287**	*e*Pg	**Pg**	**15 18 14.8**	**+0.2**
SMF				*e*Sn	**Sn**	**15 18 35.4**	**-0.5**
	1.7nm,0.2s						
SMF	**Signal de Mont**	**2.18**	**287**	*e*Pg	**Pg**	**15 18 14.8**	**+0.2**
SMF				*e*Sn	**Sn**	**15 18 35.4**	**-0.5**
	0.9nm,0.2s						
SBF	**Sospel**	**2.21**	**169**	*e*Pn	**Pn**	**15 18 09.7**	**+0.3**
SBF	**Sospel**	**2.21**	**169**	*e*Pg	**Pg**	**15 18 15.2**	**0.0**
SBF				*e*Sg	**Sg**	**15 18 42.6**	**-1.2**
	2.2nm,0.3s						
SBF	**Sospel**	**2.21**	**169**	*e*Pn	**Pn**	**15 18 09.7**	**+0.3**
SBF	**Sospel**	**2.21**	**169**	*e*Pg	**Pg**	**15 18 15.2**	**0.0**
SBF				*e*Sg	**Sg**	**15 18 42.6**	**-1.2**
	1.1nm,0.3s						
SMRF	**Simiane la Rot**	**2.25**	**204**	*e*Pg	**Pg**	**15 18 15.5**	**-0.5**
SMRF				*e*Sg	**Sg**	**15 18 44.4**	**-0.8**
	1.4nm,0.4s						
SMRF	**Simiane la Rot**	**2.25**	**204**	*e*Pg	**Pg**	**15 18 15.5**	**-0.5**
SMRF				*e*Sg	**Sg**	**15 18 44.4**	**-0.8**
	0.7nm,0.4s						
LOR	**Lormes**	**2.41**	**302**	*e*Pg	**Pg**	**15 18 19.1**	**+0.2**
	baz=122						
LOR				*e*Sg	**Sg**	**15 18 49.9**	**-0.3**
	1.3nm,0.4s,baz=124						
LOR	**Lormes**	**2.41**	**302**	*e*Pg	**Pg**	**15 18 19.1**	**+0.2**
	baz=122						
LOR				*e*Sg	**Sg**	**15 18 49.9**	**-0.3**
	0.6nm,0.4s,baz=124						
SSF	**Saint Saulge**	**2.53**	**295**	*e*Pg	**Pg**	**15 18 21.0**	**-0.3**
SSF				*e*Sg	**Sg**	**15 18 53.8**	**-0.4**
	2.1nm,0.5s						
SSF	**Saint Saulge**	**2.53**	**295**	*e*Pg	**Pg**	**15 18 21.0**	**-0.3**
SSF				*e*Sg	**Sg**	**15 18 53.8**	**-0.4**
	1.0nm,0.5s						
AVF	**Avril sur Loir**	**2.54**	**288**	*e*Pg	**Pg**	**15 18 21.2**	**-0.3**
AVF				*e*Sg	**Sg**	**15 18 53.6**	**-0.9**
	1.0nm,0.3s						
AVF	**Avril sur Loir**	**2.54**	**288**	*e*Pg	**Pg**	**15 18 21.2**	**-0.3**
AVF				*e*Sg	**Sg**	**15 18 53.6**	**-0.9**
	0.5nm,0.3s						

*ISCJB **09** 15:18:16.1±0.6,37.°34N±0.°09×142.°73E±0.°06,h35km, mb3.5/12,MS3.4/1,Error ellipse: s-maj=13.7km s-min=5.9km az=159.0*
*IDC **09** 15:18:21.2±3.2,37.°42N×142.°55E,h65km±29km,mb3.3/12, mb1 3.6/16,mb1mx3.4/45,mbtmp3.7/16,ML3.4/3,MS3.3/4, Ms1 3.3/4,ms1mx3.0/22,Error ellipse: s-maj=25.1km s-min=15.7km az=116.0*
*JMA **09** 15:18:24.9±0.3,36.°59N×142.°06E,h27km,M4.1*
ISC 09 15:18:17.4±0.8,37.°2N±0.°1×142.°71E±0.°08,h35km,n28, σ2§39/22,mb3.5/12,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**1.53**	**267**	P	Pn	15 18 45.9	+3.6
ONAJ				S	**Sn**	**15 19 00.8**	**-0.2**
JMM	**Marumori**	**1.66**	**294**	P	Pn	15 18 52.0	+8.0
JMM				S	Sn	15 19 11.3	+7.2
JHO	**Hitachi**	**1.82**	**252**	P	**Pn**	**15 18 45.6**	**-0.6**
JHO				*e*S	**Sn**	**15 19 00.3**	**-7.7**
JFT	**Otama**	**1.92**	**280**	P	Pn	15 18 53.1	+5.5
JFT				S	**Sn**	**15 19 13.4**	**+2.9**
MJAR	**Matsushiro Arr**	**3.67**	**261**	P	**Pn**	**15 19 13.8**	**+2.2**
	18nm,0.3s,baz=99,slow=9.5,SNR=254						
MJAR				S	**Sn**	**15 19 55.6**	**+1.8**
	9.3nm,0.3s,baz=101,slow=25,SNR=5.9						
MJAR				LR	LR	15 20 39.3	
	comp=Z,417nm,19.3s,baz=205,slow=39						
MAT	**Matsushiro**	**3.67**	**261**	P	**Pn**	**15 19 14.0**	**+2.3**
MAT				S	**Sn**	**15 19 53.7**	**-0.1**
JNU	**Nakatsue**	**10.51**	**251**	P	**Pn**	**15 20 48.3**	**+2.8**
	0.2nm,0.3s,baz=56,slow=7.3,SNR=3.0						
USRK	**Ussuriysk Ar.**	**10.72**	**314**	P	**Pn**	**15 20 48.8**	**+0.5**
	0.2nm,0.3s,baz=119,slow=13,SNR=3.5						
USRK				LR	LR	15 24 12.7	
	comp=Z,125nm,20.3s,baz=120,slow=34						
KSRS	**Korea Array**	**11.78**	**276**	P	Pn	15 21 06.2	+3.4
	0.1nm,0.3s,baz=86,slow=13,SNR=2.7						
KSRS				LR	LR	15 25 21.1	
	comp=Z,128nm,18.2s,baz=66,slow=36						
MA2	**Magadan**	**22.98**	**11**	P	**P**	**15 23 16.4**	**-2.2**
	2.8nm,0.7s,baz=229,slow=9.6,SNR=4.7						
SEY	**Seymchan**	**26.43**	**10**	P	**P**	**15 23 50.2**	**-0.3**
	2.0nm,0.6s,baz=83,slow=23,SNR=14						
H11N2	**WAKE ISLAND Hy**	**27.36**	**123**	T	T	15 52 47.5	
	baz=315,slow=75,SNR=251						
H11N1	**WAKE ISLAND Hy**	**27.36**	**123**	T	T	15 52 48.2	
	baz=315,slow=75,SNR=219						
H11N3	**WAKE ISLAND Hy**	**27.37**	**123**	T	T	15 52 47.8	
	baz=315,slow=75,SNR=151						
H11S1	**WAKE ISLAND Hy**	**28.09**	**125**	T	T	15 53 46.2	
	baz=317,slow=76,SNR=240						
H11S3	**WAKE ISLAND Hy**	**28.09**	**125**	T	T	15 53 46.4	
	baz=317,slow=76,SNR=290						
H11S2	**WAKE ISLAND Hy**	**28.11**	**125**	T	T	15 53 44.8	
	baz=317,slow=76,SNR=259						
SONM	**Songino Array**	**28.55**	**303**	P	**P**	**15 24 08.2**	**-1.6**
	0.5nm,0.5s,baz=112,slow=7.8,SNR=3.9						
TLY	**Talaya**	**31.01**	**310**	LR	LR	15 37 20.0	
	comp=Z,84nm,19.5s,baz=326,slow=37						
ZALV	**Zalesovo Beam**	**42.57**	**312**	P	**P**	**15 26 07.8**	**-1.8**
	0.5nm,0.6s,baz=98,slow=8.9,SNR=3.0						
MKAR	**Makanchi Array**	**44.91**	**302**	P	**P**	**15 26 27.5**	**-1.0**
	0.4nm,0.6s,baz=92,slow=9.7,SNR=4.5						
ILAR	**Eielson Array**	**48.79**	**32**	P	**P**	**15 26 58.2**	**-0.4**
	0.5nm,0.8s,baz=264,slow=5.2,SNR=6.2						
WRA	**Warramunga Arr**	**57.39**	**189**	P	**P**	**15 28 03.1**	**+0.8**
	0.7nm,0.8s,baz=7.6,slow=8.1,SNR=4.8						
ASAR	**Alice Springs**	**61.11**	**189**	P	**P**	**15 28 30.4**	**+2.4**
	0.5nm,0.9s,baz=5.3,slow=6.8,SNR=4.4						
YKA	**Yellowknife Ar**	**63.13**	**31**	P	**P**	**15 28 41.6**	**+0.5**
	0.1nm,0.5s,baz=305,slow=6.6,SNR=3.5						
FINES	**FINESS Array B**	**69.14**	**333**	P	**P**	**15 29 19.0**	**-0.7**
	1.6nm,0.8s,baz=46,slow=9.9,SNR=4.1						
PDAR	**Pinedale Array**	**76.80**	**46**	P	**P**	**15 30 06.4**	**+0.7**
	0.2nm,0.6s,baz=316,slow=3.8,SNR=3.4						
TXAR	**Lajitas Array**	**89.19**	**53**	P	**P**	**15 31 10.1**	**+0.3**
	0.1nm,0.5s,baz=316,slow=5.1,SNR=3.3						

*ISCJB **09** 15:20:33.7±0.8,24.°78N±0.°07×122.°88E±0.°03, h126km±6km,Error ellipse: s-maj=11.8km s-min=3.8km az=0.2*
*TAP **09** 15:20:33.1,24.°97N×122.°85E,h133km±1km,ML3.1,C*
*JMA **09** 15:20:34.0±0.2,24.°86N×122.°90E,h126km±3km,M2.1*
ISC 09 15:20:32.6±2.2,24.°82N±0.°10×122.°88E±0.°03, h138km±14km,n25,σ0§95/46,Taiwan region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JYNG	**Yonagunijimaku**	**0.37**	**171**	P	**Pn**	**15 20 52.3**	**+0.3**
JYNG				*e*S	**Sn**	**15 21 06.2**	**-0.4**
TWB1	**Santiao Chiao**	**0.83**	**283**	*e*P	**Pn**	**15 20 54.9**	**+0.2**
	baz=273						
TWB1				*e*S	**Sn**	**15 21 11.5**	**-0.1**
	baz=273						
IRIF	**Iriomote-Funau**	**0.91**	**122**	P	**Pn**	**15 20 55.8**	**+0.4**
IRIF				S	**Sn**	**15 21 12.0**	**-0.7**
TWC	**Suao**	**0.96**	**258**	*e*P	**Pn**	**15 20 54.6**	**-1.2**
	baz=251						
TWC				*e*S	**Sn**	**15 21 12.6**	**-0.9**
	baz=251						
NWF	**Wu-fen Shan**	**1.03**	**284**	*e*P	**Pn**	**15 20 57.6**	**+1.1**
	baz=281						
TWE	**Neicheng**	**1.11**	**265**	P	**Pn**	**15 20 57.7**	**+0.5**
	baz=251						
TWE				*e*S	**Sn**	**15 21 15.9**	**0.0**
	baz=251						
ENA	**Nanau**	**1.11**	**250**	*e*P	**Pn**	**15 20 58.2**	**+1.0**
	baz=236						
ENA				S	**Sn**	**15 21 15.8**	**-0.1**
	baz=236						
HATJ	**Hateruma jima**	**1.13**	**132**	P	**Pn**	**15 20 58.6**	**+1.2**
HATJ				*e*S	**Sn**	**15 21 16.0**	**-0.3**
JKRS	**Kuro-shima**	**1.18**	**119**	P	**Pn**	**15 20 58.9**	**+1.0**
JKRS				S	**Sn**	**15 21 16.7**	**-0.4**
ENTT	**Nioudou**	**1.21**	**262**	*e*P	**Pn**	**15 20 59.2**	**+1.0**
	baz=250						
ENTT				*e*S	**Sn**	**15 21 18.2**	**+0.5**
	baz=250						
JIJ	**Ishigaki jima**	**1.23**	**111**	P	**Pn**	**15 20 58.9**	**+0.5**
JIJ				S	**Sn**	**15 21 16.6**	**-1.5**
JISG	**Ishigakijimahi**	**1.32**	**100**	P	**Pn**	**15 20 59.8**	**+0.5**
JISG				S	**Sn**	**15 21 18.6**	**-1.0**
TWD	**Chiawan**	**1.38**	**238**	*e*P	**Pn**	**15 21 00.9**	**+0.9**
	baz=228						
TWD				*e*S	**Sn**	**15 21 20.4**	**-0.4**
	baz=228						
NSK	**Sanguang**	**1.39**	**264**	*e*P	**Pn**	**15 21 01.2**	**+1.1**
	baz=258						
NSK				*e*S	**Sn**	**15 21 20.9**	**-0.2**
	baz=258						
NNS	**Nan Shan**	**1.42**	**255**	*e*P	**Pn**	**15 21 01.7**	**+1.2**
	baz=242						
NNS				*e*S	**Sn**	**15 21 21.2**	**-0.7**
	baz=242						
WHF	**Hehuan Shan**	**1.62**	**246**	*e*P	**Pn**	**15 21 03.9**	**+0.9**
	baz=235						
WHF				*e*S	**Sn**	**15 21 25.4**	**-0.8**
	baz=235						
JTJ	**Tarama**	**1.67**	**96**	P	**Pn**	**15 21 03.9**	**+0.8**
JTJ				*e*S	**Sn**	**15 21 25.6**	**-0.7**
NSTT	**Nanjuang**	**1.72**	**264**	*e*P	**Pn**	**15 21 02.9**	**-0.8**
	baz=259						
NSTT				*e*S	**Sn**	**15 21 26.7**	**-0.8**
	baz=259						
WDT	**Danda**	**1.92**	**237**	*e*P	**Pn**	**15 21 07.4**	**+1.1**
	baz=228						
WDT				*e*S	**Sn**	**15 21 31.0**	**-1.1**
	baz=228						
EHY	**Hungye**	**1.93**	**228**	*e*P	**Pn**	**15 21 07.6**	**+1.4**
	baz=224						
EHY				*e*S	**Sn**	**15 21 30.4**	**-1.6**
	baz=224						
TWQ1	**Liyutan**	**1.98**	**257**	*e*P	**Pn**	**15 21 05.0**	**-1.7**
	baz=252						
TWF1	**Yuli**	**2.06**	**225**	*e*P	**Pn**	**15 21 07.2**	**-0.5**
	baz=229						
TYC	**Yuchr**	**2.06**	**244**	*e*P	**Pn**	**15 21 09.8**	**+2.1**
	baz=240						
TYC				*e*S	**Sn**	**15 21 35.9**	**+1.3**
	baz=240						
YUS	**Yu-Shan**	**2.20**	**233**	*e*P	**Pn**	**15 21 10.3**	**+0.3**
	baz=225						
YUS				*e*S	**Sn**	**15 21 38.1**	**-0.5**
	baz=225						
CHN5	**Tsauling**	**2.35**	**239**	*e*P	**Pn**	**15 21 10.8**	**-0.6**
	baz=244						

*IDC **09** 15:21:27.4±2.9,37.°31N×142.°42E,h0km,mb3.4/2, mb1 3.6/4,mb1mx3.3/40,mbtmp3.6/4,ML3.3/2,Error ellipse: s-maj=59.9km s-min=33.4km az=67.0*
*ISCJB **09** 15:21:32.2±1.6,37.°20N±0.°05×141.°91E±0.°10,h26km±8km, mb3.4/2,Error ellipse: s-maj=12.7km s-min=7.6km az=177.9*
*JMA **09** 15:21:34.3±0.2,37.°26N×141.°81E,h38km±3km,M3.4*
ISC 09 15:21:29.8±2.3,37.°25N±0.°05×142.°01E±0.°08,h7km±12km, n12,σ1§79/21,Off east coast of Honshu

| Code | Station Name | Δ° | AZ° | Phase | ID |

JMA ***09*** *15:43:18.3±0.2, 37.13N×141.46E, h34km±1km, M3.4*
IDC ***09*** *15:43:19.5±2.5, 36.44N×141.42E, h0km, mb3.3/3, mb1 3.4/4, mb1mx3.1/42, mbtmp3.1/4, ML2.6/1, Error ellipse: s-maj=60.3km s-min=26.7km az=42.0*
ISC 09 15:43:15.0±2.0, **37.15N**±0.05×**141.60E**±0.08, **h0**km±12km, **n13**, σ0**81**/20, **mb3.4**/3, **Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JFK	**Kawauchi**	**0.62**	**291**	P	**Pb**	**15 43 28.8**	**+0.1**
ONAJ	**Iwakimizuishiy**	**0.64**	**266**	P	**Pb**	**15 43 28.9**	**-0.2**
ONAJ				S	**Sg**	**15 43 36.3**	**+0.7**
JMM	**Marumori**	**0.96**	**319**	P	**Pb**	**15 43 34.6**	**+0.1**
JHO	**Hitachi**	**0.98**	**237**	P	**Pg**	**15 43 34.3**	**+0.4**
JHO				S	**Sg**	**15 43 45.6**	**-1.0**
JFT	**Otama**	**1.07**	**291**	P	**Pb**	**15 43 36.5**	**+0.1**
JFT				S	**Sg**	**15 43 49.5**	**+0.1**
JIO	**Ouri**	**1.32**	**352**	P	**Pb**	**15 43 40.8**	**+0.2**
JIO				S	**Sg**	**15 43 56.9**	**-0.5**
JOU	**Okura**	**1.42**	**329**	P	**Pb**	**15 43 42.6**	**+0.2**
JOU				S	**Sb**	**15 44 00.8**	**-0.3**
JFY	**Yanaizu**	**1.53**	**280**	P	**Pn**	**15 43 43.7**	**+0.1**
JFY				S	**Sg**	**15 44 02.4**	**-1.8**
MJAR	**Matsushiro Arr**	**2.78**	**258**	Pn	**Pn**	**15 44 01.5**	**+0.6**
	1.1nm,0.3s,baz=82,slow=16,SNR=14						
MJAR				Sn	**Sn**	**15 44 36.5**	**+1.4**
	2.2nm,0.3s,baz=122,slow=38,SNR=5.5						
MAT	**Matsushiro**	**2.79**	**258**	P	**Pn**	**15 44 01.7**	**+0.9**
MAT				S	**Sn**	**15 44 34.2**	**-0.9**
MKAR	**Makanchi Array**	**44.18**	**302**	P	P	15 51 32.1	+6.6
	0.3nm,0.8s,baz=64,slow=9.8,SNR=3.3						
WRA	**Warramunga Arr**	**57.19**	**188**	P	**P**	**15 53 02.8**	**-1.0**
	0.2nm,0.4s,baz=6.4,slow=7.3,SNR=5.5						
ASAR	**Alice Springs**	**60.92**	**188**	P	**P**	**15 53 29.7**	**0.0**
	0.3nm,1.0s,baz=358,slow=4.6,SNR=4.0						

NIED ***09*** *16:25:00, 24.00N×122.30E, h32km, Mw4.0 Best double couple: M0 1.30000×10^15 NP1:φ=277.00000°, δ=5.00000°, λ=128.00000°. NP2:φ=59.00000°, δ=86.00000°, λ=87.00000°.*
IDC ***09*** *16:25:25.4±0.8, 24.11N×122.29E, h0km, mb3.9/10, mb1 4.0/11, mb1mx3.7/41, mbtmp3.9/11, ML3.1/1, MS3.2/6, Ms1 3.2/6, ms1mx2.8/55, Error ellipse: s-maj=28.8km s-min=17.5km az=61.0*
ISCJB ***09*** *16:25:28.6±0.6, 23.94N±0.01×122.33E±0.01, h13km±4km, mb3.9/10, MS3.2/5, Error ellipse: s-maj=2.4km s-min=1.7km az=156.6*
JMA ***09*** *16:25:28.7±0.2, 23.96N×122.29E, h21km±4km, M3.7*
TAP ***09*** *16:25:29.3, 24.03N×122.30E, h22km, ML4.1, C*
ISC 09 16:25:27.5±1.0, **23.93N**±0.02×**122.29E**±0.02, **h12**km±7km, **n96**, σ0**87**/163, **mb4.0**/10, **MS3.2**/5, **8C-8D, Taiwan region**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
EHP	**Heping Village**	**0.63**	**307**	*e*P	**Pn**	**16 25 43.8**	**+1.6**
	baz=298						
HWA	**Hwalien**	**0.63**	**274**	*e*P	**Pn**	**16 25 42.0**	**-0.2**
	baz=250						
TWD	**Chiawan**	**0.66**	**283**	⇓P	**Pb**	**16 25 41.9**	**+1.1**
	baz=274						
TWD				S	**Sb**	**16 25 51.1**	**+1.3**
	baz=274						
ENA	**Nanau**	**0.71**	**315**	⇑*i*P	**Pb**	**16 25 41.7**	**+0.1**
	baz=317						
ENA				*e*S	**Sb**	**16 25 52.1**	**+0.8**
	baz=317						
TEGC	**Jichi Village**	**0.72**	**252**	*e*P	**Pn**	**16 25 43.9**	**+0.5**
	baz=245						
TWC	**Suao**	**0.79**	**329**	⇑*i*P	**Pg**	**16 25 42.6**	**-0.1**
	baz=324						
TWC				*e*S	**Sg**	**16 25 51.0**	**-2.0**
	baz=324						
JYNG	**Yonagunijimaku**	**0.79**	**49**	P	**Pb**	**16 25 43.2**	**+0.1**
JYNG				S	**Sg**	**16 25 53.2**	**+0.1**
ESL	**Shilin**	**0.80**	**262**	⇑P	**Pb**	**16 25 44.0**	**+0.8**
	baz=244						
ESL				*e*S	**Sb**	**16 25 54.4**	**+0.5**
	baz=244						
YOJ	**Yonaguni jima**	**0.84**	**51**	P	**Pb**	**16 25 44.4**	**+0.4**
YOJ				S	**Sg**	**16 25 54.5**	**-0.3**
WHF	**Hehuan Shan**	**0.96**	**283**	*e*S	**Sb**	**16 25 59.5**	**+0.3**
	baz=277						
ENTT	**Nioudou**	**0.97**	**317**	⇑*i*P	**Pb**	**16 25 46.6**	**+0.4**
	baz=323						
ENTT				*e*S	**Sb**	**16 25 59.4**	**+0.4**
	baz=323						
ILA	**Ilan**	**0.97**	**329**	P	**Pb**	**16 25 46.4**	**+0.2**
	baz=324						
ILA				*e*S	**Sn**	**16 26 00.8**	**+0.3**
	baz=324						
TWE	**Neicheng**	**0.97**	**324**	⇑*i*P	**Pb**	**16 25 46.3**	**+0.1**
	baz=328						
TWE				*e*S	**Sg**	**16 25 59.0**	**+0.1**
	baz=328						
NNS	**Nan Shan**	**0.98**	**301**	⇓*i*P	**Pb**	**16 25 47.0**	**+0.6**
	baz=295						
NNS				*e*S	**Sb**	**16 25 59.7**	**+0.3**
	baz=295						
EHY	**Hungye**	**0.98**	**245**	*e*P	**Pn**	**16 25 47.5**	**+0.4**
	baz=240						
EHY				*e*S	**Sb**	**16 26 00.6**	**+1.3**
	baz=240						
TWT	**Tachien**	**1.07**	**288**	P	**Pn**	**16 25 49.1**	**+0.7**
	baz=271						
TWT				S	**Sn**	**16 26 03.5**	**+0.2**
	baz=271						
WDT	**Danda**	**1.08**	**261**	*e*P	**Pn**	**16 25 49.1**	**+0.5**
	baz=256						
WDT				*e*S	**Sb**	**16 26 03.4**	**+1.1**
	baz=256						
TWF1	**Yuli**	**1.08**	**238**	⇑*i*P	**Pn**	**16 25 49.2**	**+0.8**
	baz=222						
TWF1				*e*S	**Sn**	**16 26 03.6**	**+0.4**
	baz=222						
TWB1	**Santiao Chiao**	**1.11**	**346**	*i* P	**Pg**	**16 25 48.2**	**-0.7**
	baz=330						
TWB1				S	**Sg**	**16 26 02.3**	**-1.0**
	baz=330						
NSK	**Sanguang**	**1.13**	**311**	⇓*i*P	**Pg**	**16 25 49.1**	**-0.2**
	baz=305						
NSK				S	**Sg**	**16 26 03.0**	**-1.0**
	baz=305						
CHKT	**Chengkung**	**1.19**	**226**	*e*P	**Pb**	**16 25 49.9**	**0.0**
	baz=212						
CHKT				*e*S	**Sg**	**16 26 05.0**	**-0.8**
	baz=212						
NWF	**Wu-fen Shan**	**1.23**	**338**	⇓P	**Pb**	**16 25 50.4**	**-0.2**
	baz=333						
NWF				S	**Sg**	**16 26 06.0**	**-1.1**
	baz=333						
TWA	**Mucha**	**1.23**	**328**	P	**Pg**	**16 25 51.4**	**+0.3**
	baz=324						
TWA				*e*S	**Sn**	**16 26 08.4**	**+1.5**
	baz=324						
SMLT	**Sun Moon Lake**	**1.28**	**268**	*e*P	**Pg**	**16 25 52.2**	**+0.2**
	baz=252						
SMLT				*i* S	**Sg**	**16 26 08.6**	**0.0**
	baz=252						
YUS	**Yu-Shan**	**1.30**	**251**	⇑*e*P	**Pb**	**16 25 53.0**	**+0.9**
	baz=247						
YUS				*e*S	**Sb**	**16 26 09.7**	**+0.6**
	baz=247						
TAP1	**Taipei**	**1.31**	**328**	*e*P	**Pn**	**16 25 52.0**	**+0.5**
	baz=322						
TAP1				*e*S	**Sn**	**16 26 09.6**	**+0.8**
	baz=322						
TYC	**Yuchr**	**1.31**	**269**	⇓P	**Pg**	**16 25 52.6**	**-0.1**
	baz=265						
TYC				S	**Sb**	**16 26 09.0**	**+0.2**
	baz=265						
TAP	**Taipei**	**1.32**	**327**	*e*P	**Pb**	**16 25 52.4**	**+0.3**
	baz=322						
TAP				*e*S	**Sn**	**16 26 10.3**	**+1.3**
	baz=322						
NSTT	**Nanjuang**	**1.37**	**301**	⇓*i*P	**Pg**	**16 25 53.8**	**0.0**
	baz=296						
NSTT				*e*S	**Sn**	**16 26 11.2**	**+0.7**
	baz=296						
IRIF	**Iriomote-Funau**	**1.37**	**73**	P	**Pg**	**16 25 53.7**	**-0.2**
IRIF				S	**Sg**	**16 26 11.8**	**+0.1**
ELDTW	**Lidau**	**1.38**	**238**	⇑P	**Pn**	**16 25 53.2**	**+0.6**
	baz=235						
ELDTW				*e*S	**Sb**	**16 26 10.7**	**-0.3**
	baz=235						
HATJ	**Hateruma jima**	**1.39**	**85**	P	**Pb**	**16 25 53.6**	**+0.3**
HATJ				*e*S	**Sg**	**16 26 12.3**	**+0.1**
TWS1	**Kuangyinshan**	**1.41**	**326**	⇓P	**Pn**	**16 25 53.6**	**+0.7**
	baz=333						
TWS1				*e*S	**Sg**	**16 26 12.5**	**-0.4**
	baz=333						
ALS	**Alishan**	**1.43**	**253**	*e*P	**Pg**	**16 25 55.1**	**+0.2**
	baz=250						
ALS				*e*S	**Sg**	**16 26 13.2**	**-0.2**
	baz=250						
NCU	**National Centr**	**1.45**	**316**	P	**Pb**	**16 25 54.2**	**0.0**
	baz=311						
NCU				*e*S	**Sn**	**16 26 12.7**	**+0.4**
	baz=311						
TWQ1	**Liyutan**	**1.45**	**287**	⇓*i*P	**Pg**	**16 25 55.5**	**+0.2**
	baz=282						
TWQ1				*e*S	**Sg**	**16 26 13.9**	**-0.3**
	baz=282						
WNT	**Mingjian**	**1.47**	**268**	*e*P	**Pg**	**16 25 56.0**	**+0.2**
	baz=264						
WNT				*e*S	**Sg**	**16 26 15.2**	**+0.2**
	baz=264						
NSY	**Sanyi**	**1.48**	**289**	*e*P	**Pg**	**16 25 55.8**	**-0.1**
	baz=284						
NSY				*e*S	**Sg**	**16 26 15.2**	**0.0**
	baz=284						
TWY	**Chenhua**	**1.48**	**335**	*e*P	**Pb**	**16 25 55.0**	**+0.1**
	baz=330						
TWY				*e*S	**Sg**	**16 26 14.8**	**-0.4**
	baz=330						
HSN	**Hsinchu**	**1.49**	**306**	*e*P	**Pb**	**16 25 55.0**	**0.0**
	baz=302						
HSN				*e*S	**Sg**	**16 26 14.8**	**-0.6**
	baz=302						
TCU	**Taichung**	**1.49**	**279**	*e*P	**Pg**	**16 25 56.1**	**-0.1**
	baz=274						
TCU				*e*S	**Sg**	**16 26 15.8**	**+0.2**
	baz=274						
CHN5	**Tsauling**	**1.52**	**258**	*e*P	**Pg**	**16 25 56.7**	**+0.1**
	baz=243						
CHN5				*e*S	**Sg**	**16 26 16.7**	**+0.3**
	baz=243						
TTN	**Taitung**	**1.57**	**222**	*e*P	**Pn**	**16 25 56.0**	**+0.8**
	baz=221						
TTN				*e*S	**Sb**	**16 26 17.4**	**+1.0**
	baz=221						
TWG	**Pinlang**	**1.57**	**226**	*e*P	**Pb**	**16 25 55.5**	**+0.3**
	baz=237						
TWG				*e*S	**Sn**	**16 26 15.1**	**-0.3**
	baz=237						
JKRS	**Kuro-shima**	**1.60**	**79**	P	**Pb**	**16 25 56.9**	**0.0**
JKRS				S	**Sn**	**16 26 16.5**	**+0.5**
STYT	**Tauyuan**	**1.60**	**242**	*e*P	**Pb**	**16 25 57.1**	**+0.1**
	baz=229						
STYT				*e*S	**Sb**	**16 26 17.9**	**+0.6**
	baz=229						
WGK	**Gukeng**	**1.60**	**262**	*e*P	**Pg**	**16 25 58.0**	**-0.2**
	baz=258						
WGK				*e*S	**Sb**	**16 26 18.2**	**+1.0**
	baz=258						
CHN4	**Tsaushan**	**1.66**	**250**	*e*P	**Pg**	**16 25 59.1**	**-0.3**
	baz=248						
CHN4				*e*S	**Sg**	**16 26 21.1**	**+0.1**
	baz=248						
WTP	**Ta-pu**	**1.68**	**246**	*e*P	**Pb**	**16 25 59.0**	**+0.6**
	baz=244						
WTP				*e*S	**Sg**	**16 26 21.3**	**-0.4**
	baz=244						
PCYT	**Pengchaiyu**	**1.70**	**353**	P	**Pn**	**16 25 56.2**	**-0.7**
	baz=334						
PCYT				*e*S	**Sn**	**16 26 19.6**	**+1.0**
	baz=334						
CHN2	**Minshiung**	**1.71**	**257**	*e*P	**Pb**	**16 25 59.2**	**+0.3**
	baz=254						
CHN2				*e*S	**Sb**	**16 26 21.5**	**+1.2**
	baz=254						
JIJ	**Ishigaki jima**	**1.74**	**75**	P	**Pn**	**16 25 58.1**	**+0.6**
JIJ				S	**Sn**	**16 26 20.5**	**+0.9**
CHY	**Chiayi**	**1.77**	**256**	*e*P	**Pb**	**16 26 00.1**	**+0.3**
	baz=253						
CHY				*e*S	**Sb**	**16 26 22.7**	**+0.9**
	baz=253						
CHN1	**Nanshi**	**1.78**	**246**	*e*P	**Pb**	**16 26 00.7**	**+0.7**
	baz=243						
CHN1				*e*S	**Sb**	**16 26 23.7**	**+1.4**
	baz=243						
SGST	**Jiashian**	**1.78**	**242**	*e*P	**Pb**	**16 26 00.5**	**+0.4**
	baz=228						
SGST				*e*S	**Sg**	**16 26 24.1**	**-0.8**
	baz=228						
TWK	**Hsinying**	**1.78**	**249**	*e*P	**Pb**	**16 26 00.4**	**+0.3**
	baz=246						
TWK				*e*S	**Sb**	**16 26 23.4**	**+1.0**
	baz=246						
ECL	**Taimali**	**1.81**	**223**	P	**Pn**	**16 25 58.6**	**+0.2**
	baz=223						
ECL				*e*S	**Sn**	**16 26 20.1**	**-1.2**
	baz=223						
WTCT	**Ta-ch'eng**	**1.84**	**268**	*e*P	**Pb**	**16 26 01.4**	**+0.4**
	baz=265						
WTCT				*e*S	**Sb**	**16 26 25.4**	**+1.3**
	baz=265						
WSF	**Szhu**	**1.92**	**262**	*e*P	**Pb**	**16 26 02.4**	**0.0**
	baz=259						
WSF				*e*S	**Sb**	**16 26 27.8**	**+1.6**
	baz=259						
SSD	**Sandimen**	**1.93**	**233**	*e*P	**Pb**	**16 26 02.2**	**-0.3**
	baz=225						
SSD				*e*S	**Sb**	**16 26 27.2**	**+0.6**
	baz=225						
JISG	**Ishigakijimahi**	**1.95**	**70**	P	**Pn**	**16 26 00.8**	**+0.4**
JISG				*e*S	**Sn**	**16 26 25.3**	**+0.5**
CHN8	**Yiju**	**2.00**	**253**	*e*P	**Pb**	**16 26 03.6**	**0.0**
	baz=251						
CHN8				*e*S	**Sb**	**16 26 28.6**	**+0.1**
	baz=251						
LAY	**Lan-yu**	**2.00**	**200**	*e*P	**Pn**	**16 26 01.2**	**+0.1**
	baz=200						
TAW	**Tawu**	**2.03**	**220**	*e*P	**Pb**	**16 26 04.0**	**-0.2**
	baz=219						
EAST	**Anshuo**	**2.04**	**221**	*e*P	**Pn**	**16 26 02.3**	**+0.7**
	baz=221						
EAST				*e*S	**Sn**	**16 26 27.4**	**+0.5**
	baz=221						
TWM1	**Shoushan**	**2.04**	**238**	*e*P	**Pg**	**16 26 05.8**	**-0.9**
	baz=235						
SGLT	**Jiouru**	**2.04**	**234**	*e*P	**Pb**	**16 26 04.4**	**-0.1**
	baz=223						
SGLT				*e*S	**Sg**	**16 26 32.7**	**-0.6**
	baz=223						
SCLT	**Jiali**	**2.07**	**249**	*e*P	**Pb**	**16 26 04.5**	**-0.3**
	baz=247						
SCLT				*e*S	**Sb**	**16 26 30.9**	**+0.3**
	baz=247						
SCZT	**Fangliau**	**2.19**	**225**	*e*P	**Pb**	**16 26 06.4**	**-0.5**
	baz=218						
SCZT				*e*S	**Sb**	**16 26 33.6**	**-0.4**
	baz=218						
JTJ	**Tarama**	**2.31**	**72**	P	**Pn**	**16 26 06.5**	**+1.2**
JTJ				*e*S	**Sn**	**16 26 35.3**	**+1.7**
HEN	**Hengchun**	**2.39**	**217**	*e*P	**Pb**	**16 26 10.4**	**0.0**
	baz=218						
HEN				*e*S	**Sn**	**16 26 37.0**	**+1.3**
	baz=218						
TSEB	**Hengchuen, Pin**	**2.40**	**213**	*e*P	**Pb**	**16 26 09.4**	**-1.1**
	baz=215						
TSEB				*e*S	**Sn**	**16 26 38.1**	**+2.4**
	baz=215						
TWK1	**Hengchun**	**2.41**	**215**	*e*P	**Pn**	**16 26 08.6**	**+2.0**
	baz=216						
TWK1				*e*S	**Sb**	**16 26 39.0**	**-1.3**
	baz=216						
WDGT	**Dungji**	**2.51**	**255**	*e*P	**Pn**	**16 26 09.8**	**+1.9**
	baz=241						
WDGT				*e*S	**Sn**	**16 26 38.8**	**+0.3**
	baz=241						
PNG	**Penghu**	**2.54**	**262**	*e*P	**Pn**	**16 26 10.1**	**+1.8**
	baz=260						
PNG				*e*S	**Sn**	**16 26 40.6**	**+1.5**
	baz=260						
JIRB	**Irabujima**	**2.77**	**71**	P	**Pn**	**16 26 13.2**	**+1.5**
JIRB				S	**Sn**	**16 26 46.4**	**+1.3**
JIKM	**Ikemajima**	**2.87**	**69**	P	**Pn**	**16 26 14.6**	**+1.6**
JIKM				S	**Sn**	**16 26 48.5**	**+1.1**
JMJ	**Miyako jima 2**	**2.87**	**72**	S	**Sn**	**16 26 48.2**	**+0.7**
JOGS	**Gusukube**	**2.96**	**73**	P	**Pn**	**16 26 16.0**	**+1.8**
JOGS				*e*S	**Sn**	**16 26 51.8**	**+2.2**
JOW	**Kunigami**	**6.13**	**61**	Pn	**Pn**	**16 26 56.9**	**-1.0**
	1.1nm,0.3s,baz=127,slow=22,SNR=8.3						
JOW				Sn	**Sn**	**16 28 07.5**	**-0.5**
	baz=120,slow=20,SNR=2.0						
KSRS	**Korea Array**	**14.32**	**18**	Pn	**Pn**	**16 28 52.6**	**+2.7**
	0.1nm,0.3s,baz=197,slow=12,SNR=7.5						
KSRS				LR	LR	16 35 01.8	
	comp=Z,40nm,19.1s,baz=195,slow=41						
SONM	**Songino Array**	**27.00**	**336**	P	**P**	**16 31 08.0**	**-1.3**
	7.4nm,1.0s,baz=150,slow=9.7,SNR=44						
TLY	**Talaya**	**31.19**	**337**	LR	LR	16 45 36.2	
	comp=Z,45nm,18.1s,baz=156,slow=39						
YAK	**Yakutsk**	**38.41**	**6**	LR	LR	16 49 36.2	
	comp=Z,42nm,18.8s,baz=190,slow=38						
MKAR	**Makanchi Array**	**39.23**	**316**	P	**P**	**16 32 54.5**	**-1.1**
	0.8nm,0.6s,baz=99,slow=9.3,SNR=14						
PETK	**Petropavlovsk-**	**39.52**	**33**	LR	LR	16 49 19.9	
	comp=Z,38nm,19.8s,baz=166,slow=36						
MA2	**Magadan**	**40.84**	**22**	LR	LR	16 50 07.4	
	comp=Z,26nm,18.2s,baz=209,slow=36						
ZALV	**Zalesovo Beam**	**41.01**	**327**	P	**P**	**16 33 08.0**	**-2.2**
	2.1nm,0.6s,baz=121,slow=7.7,SNR=14						
WRA	**Warramunga Arr**	**45.16**	**164**	P	**P**	**16 33 44.9**	**+0.7**
	1.0nm,0.7s,baz=345,slow=8.8,SNR=7.4						
TIXI	**Tiksi**	**47.89**	**3**	LR	LR	16 57 22.4	
	comp=Z,39nm,18.9s,baz=232,slow=40						
BVAR	**Borovoye Array**	**48.51**	**321**	P	**P**	**16 34 08.7**	**-1.3**
	0.9nm,0.6s,baz=106,slow=7.8,SNR=7.9						
ASAR	**Alice Springs**	**48.64**	**166**	P	**P**	**16 34 12.8**	**+1.4**
	0.3nm,0.5s,baz=347,slow=8.8,SNR=12						
FINES	**FINESS Array B**	**72.17**	**330**	P	**P**	**16 36 50.9**	**-0.9**
	3.6nm,1.1s,baz=72,slow=4.5,SNR=4.5						
BRTR	**Keskin Array B**	**74.14**	**307**	P	**P**	**16 37 03.6**	**-0.4**
	1.7nm,0.9s,baz=82,slow=4.3,SNR=5.2						
YKA	**Yellowknife Ar**	**82.81**	**23**	P	**P**	**16 37 50.0**	**-1.2**
	0.4nm,0.7s,baz=313,slow=5.1,SNR=10						
GERES	**GERESS Array B**	**83.68**	**321**	P	**P**	**16 37 55.5**	**-0.7**
	0.2nm,0.3s,baz=28,slow=4.7,SNR=3.7						

JMA 09 16:30:46.9±0.3, **39.63N**×**143.52E**, **h9**km±4km, **M3.6, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JTH	**Tanohata**	**1.31**	**284**	P	Pn	16 31 11.0	-0.4
JTH				*e*S	Sb	16 31 28.4	-0.3
MIYJ	**Miyakonagasawa**	**1.31**	**268**	P	Pn	16 31 11.0	-0.4
JKZ	**Kuzumaki**	**1.72**	**283**	P	Pn	16 31 17.1	0.0
JOM	**Ohasama**	**1.73**	**266**	P	Pn	16 31 17.6	+0.5
JIO	**Ouri**	**2.06**	**236**	P	Pn	16 31 22.2	+0.6

WEL 09 16:33:45.5±0.2, **43.54S**×**172.81E**, **h7**km, **ML3.5**/14, **5C-6D, Error ellipse: s-maj=1.9km s-min=0.9km az=90.0, South Island**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CRLZ	**Canterbury Las**	**0.14**	**254**	⇑PG	Pg	16 33 48.6	+0.1
CRLZ				SG	Sg	16 33 50.9	+0.4
CRLZ				AML	AML	16 33 53.1	
MQZ	**McQueen's Vall**	**0.21**	**214**	⇑PG	Pg	16 33 49.8	+0.2
MQZ				SG	Sg	16 33 53.1	+0.7
MQZ				AML	AML	16 33 53.6	
OXZ	**Oxford**	**0.60**	**290**	⇓P*	Pg	16 33 57.0	-0.1
OXZ				SG	Sb	16 34 06.7	-0.4
LTZ	**Lake Taylor**	**0.85**	**332**	⇓P*	Pg	16 34 02.0	+0.2
LTZ				S*	Sb	16 34 13.9	-0.3
LTZ				AML	AML	16 34 14.9	
INZ	**Inchbonnie**	**1.29**	**309**	P*	Pn	16 34 09.8	-0.1
RPZ	**Rata Peaks**	**1.29**	**261**	⇓P*	Pn	16 34 08.7	-1.3
RPZ				AML	AML	16 34 32.7	
RPZ				AML	AML	16 34 40.0	
WVZ	**Waitaha Valley**	**1.58**	**286**	PN	Pn	16 34 13.2	-0.8
WVZ				AML	AML	16 34 39.9	
WVZ				AML	AML	16 34 48.1	
THZ	**Tophouse**	**1.77**	**2**	⇑PN	Pn	16 34 15.2	-1.4
THZ				AML	AML	16 34 42.4	
THZ				AML	AML	16 35 00.1	
DSZ	**Denniston Nort**	**1.94**	**337**	PN	Pn	16 34 18.2	-0.7
DSZ				AML	AML	16 34 51.8	
DSZ				AML	AML	16 34 56.0	
BSWZ	**Blackbirch Sta**	**1.98**	**24**	PN	Pn	16 34 18.3	-1.2
LBZ	**Lake Benmore**	**2.08**	**245**	PN	Pn	16 34 20.3	-0.6
LBZ				AML	AML	16 34 59.3	
LBZ				AML	AML	16 35 00.8	
ODZ	**Otahua Downs**	**2.17**	**225**	⇓PN	Pn	16 34 20.6	-1.4
ODZ				AML	AML	16 35 01.8	
ODZ				AML	AML	16 35 03.9	
ODZ				AML	AML	16 35 03.9	
FOZ	**Fox Glacier**	**2.18**	**269**	⇑PN	Pn	16 34 22.6	+0.5
FOZ				AML	AML	16 34 51.4	
FOZ				AML	AML	16 35 03.8	
TUWZ	**Tuamarina**	**2.27**	**22**	PN	Pn	16 34 21.9	-1.5
TCW	**Tory Channel**	**2.56**	**26**	PN	Pn	16 34 26.0	-1.4
PLWZ	**Palliser**	**2.67**	**43**	PN	Pn	16 34 26.7	-2.3
WEL	**Wellington**	**2.68**	**33**	⇓PN	Pn	16 34 27.2	-1.8
QRZ	**Quartz Range**	**2.72**	**355**	PN	Pn	16 34 29.4	-0.2
QRZ				AML	AML	16 35 37.2	
DUWZ	**D'Urville Isla**	**2.85**	**17**	PN	Pn	16 34 31.5	0.0
JCZ	**Jackson Bay**	**2.96**	**258**	PN	Pn	16 34 32.6	-0.5
JCZ				AML	AML	16 35 28.8	
WKZ	**Wanaka**	**3.02**	**243**	PN	Pn	16 34 33.1	-0.7
EAZ	**Earnscleugh**	**3.03**	**235**	⇓PN	Pn	16 34 32.8	-1.1
EAZ				AML	AML	16 35 25.9	
EAZ				AML	AML	16 35 28.2	
MTW	**Mount Morrison**	**3.10**	**41**	PN	Pn	16 34 31.9	-3.0
TUZ	**Tuapeka**	**3.31**	**222**	⇑PN	Pn	16 34 36.9	-0.9
TUZ				AML	AML	16 35 38.7	
TUZ				AML	AML	16 35 45.4	
MRZ	**Mangatainoka R**	**3.53**	**37**	PN	Pn	16 34 38.5	-2.3
MSZ	**Milford Sound**	**3.70**	**250**	PN	Pn	16 34 41.9	-1.1
MLZ	**Mavora Lakes**	**3.83**	**240**	PN	Pn	16 34 43.6	-1.3
BFZ	**Birch Farm**	**3.83**	**43**	PN	Pn	16 34 41.9	-2.9
SYZ	**Scrubby Hill**	**3.97**	**220**	PN	Pn	16 34 46.2	-0.6
WAZ	**Wanganui**	**4.11**	**24**	PN	Pn	16 34 49.3	+0.5
WHZ	**Wether Hill Ro**	**4.19**	**234**	PN	Pn	16 34 47.8	-2.0
TSZ	**Takapari Road**	**4.20**	**35**	PN	Pn	16 34 47.5	-2.4
PREZ	**Palmer Road**	**4.31**	**14**	PN	Pn	16 34 52.6	+1.1
DRDZ	**Durham Road**	**4.47**	**14**	PN	Pn	16 34 53.5	-0.2
MTZ	**Mangatitei**	**4.60**	**27**	PN	Pn	16 34 56.3	+0.7
VRZ	**Vera Road**	**4.64**	**19**	PN	Pn	16 34 56.1	0.0
WNVZ	**Wahianoa**	**4.70**	**27**	PN	Pn	16 34 56.0	-0.9
BKZ	**Black Stump Fm**	**5.17**	**34**	PN

	33nm,0.3s							
PYUN	**Piuthan**	**11.02**	**293**	*e*Sn	**Sn**	**16 43 14.4**	**-3.8**
	49nm,0.6s							
MKAR	**Makanchi Array**	**24.57**	**340**	P	**P**	**16 43 54.2**	**+1.1**
	5.8nm,0.5s,baz=147,slow=9.3,SNR=111							
MKAR				pP	**pP**	**16 44 17.5**	**+3.2**
	1.2nm,0.5s,baz=150,slow=8.9,SNR=2.2							
AAK	**Ala-Archa**	**24.71**	**323**	P	**P**	**16 43 57.2**	**+2.7**
	1.6nm,0.4s,baz=127,slow=7.8,SNR=12							
SONM	**Songino Array**	**25.43**	**19**	P	**P**	**16 44 00.1**	**-0.9**
	1.7nm,0.6s,baz=202,slow=8.4,SNR=14							
KURBB	**Kurchatov Arra**	**29.13**	**339**	P	**P**	**16 44 34.4**	**+0.5**
	1.3nm,0.7s,baz=149,slow=8.9,SNR=8.7							
KURBB				pP	**pP**	**16 44 59.7**	**+4.2**
	0.9nm,0.7s,baz=145,slow=9.6,SNR=4.1							
ZALV	**Zalesovo Beam**	**30.58**	**349**	P	**P**	**16 44 47.0**	**+0.3**
	0.4nm,0.3s,baz=170,slow=8.8,SNR=3.3							
BVAR	**Borovoye Array**	**34.06**	**334**	P	**P**	**16 45 17.4**	**+0.3**
	0.7nm,0.4s,baz=147,slow=12,SNR=6.7							
BVAR				pP	**sP**	**16 45 44.9**	**-5.2**
	1.0nm,0.6s,baz=127,slow=12,SNR=5.1							
TIXI	**Tiksi**	**51.30**	**13**	P	**P**	**16 47 34.0**	**-2.0**
	1.7nm,0.3s,baz=237,slow=3.8,SNR=9.1							
AKASG	**Malin Array Be**	**56.10**	**316**	P	**P**	**16 48 11.4**	**+0.1**
	0.6nm,0.3s,baz=79,slow=6.9,SNR=4.5							
WRA	**Warramunga Arr**	**58.59**	**135**	P	**P**	**16 48 28.0**	**-1.3**
	0.7nm,0.9s,baz=325,slow=7.7,SNR=3.8							
WRA				pP	**pP**	**16 48 55.2**	**+2.2**
	0.4nm,0.5s,baz=325,slow=7.5,SNR=2.7							
FINES	**FINESS Array B**	**58.73**	**328**	P	**P**	**16 48 29.7**	**+0.1**
	2.8nm,1.0s,baz=97,slow=7.1,SNR=7.3							
ARCES	**ARCESS Array B**	**60.21**	**338**	P	**P**	**16 48 40.2**	**+0.4**
	3.7nm,1.1s,baz=108,slow=6.5,SNR=7.5							
ASAR	**Alice Springs**	**61.06**	**138**	P	**P**	**16 48 45.3**	**-0.9**
	0.1nm,0.4s,baz=320,slow=6.3,SNR=4.3							
ASAR				pP	**pP**	**16 49 11.2**	**+1.2**
	0.6nm,0.7s,baz=319,slow=6.7,SNR=4.5							
HFS	**Hagfors**	**64.78**	**327**	P	**P**	**16 49 10.8**	**+0.6**
	1.0nm,0.6s,baz=90,slow=7.2,SNR=4.0							
NOA	**NORSAR Array B**	**65.90**	**328**	P	**P**	**16 49 17.8**	**+0.2**
	0.5nm,0.7s,baz=89,slow=4.9,SNR=2.7							
GERES	**GERESS Array B**	**66.25**	**315**	P	**P**	**16 49 20.8**	**+0.7**
	0.2nm,0.3s,baz=64,slow=7.8,SNR=3.6							
INK	**Inuvik**	**81.31**	**16**	P	**P**	**16 50 45.9**	**-1.6**
	0.4nm,0.4s,baz=307,slow=2.1,SNR=4.7							

*ISCJB **09** 16:46:40.7±0.3,32.66N±0.02×115.71W±0.02,h20km±3km, Error ellipse: s-maj=3.9km s-min=3.4km az=7.7*
*MEX **09** 16:46:41.8±0.9,32.78N×115.62W,h16km±73km,MD3.5*
*ECX **09** 16:46:42.4±0.6,32.64N×115.75W,h3km,MD2.7,ML2.9*
*NEIC **09** 16:46:42.4,32.64N×115.75W,h3km,ML2.9(PAS), ML2.9(ECX),After ECX.*
NEIC Felt at Calexico, California.

ISC 09 16:46:40.5±0.9,32.66N±0.02×115.72W±0.02,h18km±3km, n35,σ0s52/54,8C-5D,California-Baja California border region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
SGL	**Mount Signal**	**0.01**	**214**	⇓*i*P	**Pg**	**16 46 43.2**	**-0.4**
ERPC	**Ernies Place**	**0.09**	**28**	⇓*i*P	**Pg**	**16 46 44.7**	**+0.6**
WESC	**Westside Schoo**	**0.10**	**352**	⇓*i*P	**Pg**	**16 46 44.6**	**+0.5**
WESC				*e*S	**Sg**	**16 46 47.2**	**+0.6**
YUH	**Yuha Desert**	**0.17**	**266**	⇑*i*P	**Pg**	**16 46 45.2**	**+0.1**
COK	**Cook Ranch**	**0.19**	**357**	⇓*i*P	**Pg**	**16 46 46.2**	**+1.0**
SWSC	**Sam W. Stewart**	**0.29**	**346**	P	**Pb**	**16 46 47.5**	**+0.4**
	baz=170,SNR=36						
RMX	**La Rumorosa**	**0.31**	**259**	⇑*i*P	**Pg**	**16 46 47.1**	**-0.2**
RMX				*e*S	**Sg**	**16 46 51.3**	**-0.7**
IBP	**Imperial Bould**	**0.32**	**270**	⇑*i*P	**Pb**	**16 46 47.8**	**+0.1**
IBP	**Imperial Bould**	**0.32**	**270**	P	**Pb**	**16 46 47.8**	**+0.1**
	baz=100,SNR=36						
IKP	**In-Ko-Pah, Jac**	**0.33**	**268**	⇑*i*P	**Pb**	**16 46 48.0**	**+0.1**
CPBX	**Cerro Prieto**	**0.42**	**125**	*e*P	**Pb**	**16 46 50.0**	**+0.6**
CPBX				*e*S	**Sb**	**16 46 56.7**	**+1.2**
CPBX				⇑*e*		16 47 01.0	
CPBX				AML	AML	16 47 01.0	
	comp=N,2μm,0.2s						
CPBX				AML	AML	16 47 01.5	
	comp=E,5μm,0.3s						
CPBX				⇓*e*		16 47 01.5	
CPBX	**Cerro Prieto**	**0.42**	**125**	*i*P	**Pb**	**16 46 49.7**	**+0.2**
CPBX				*i*S	**Sb**	**16 46 57.0**	**+1.4**
MBIG	**Mexicali**	**0.51**	**120**	*e*P	**Pg**	**16 46 50.5**	**-0.1**
MBIG				*e*S	**Sg**	**16 46 56.7**	**-0.8**
MONP2	**Monument Peak**	**0.64**	**291**	P	**Pg**	**16 46 53.6**	**+0.5**
	baz=116,SNR=47						
MONP2				S	**Sg**	**16 47 02.0**	**+0.3**
	baz=116						
BAR	**Barrett**	**0.81**	**272**	⇑*e*P	**Pg**	**16 46 56.4**	**+0.1**
TJIG	**Tijuana**	**0.84**	**255**	*e*P	**Pb**	**16 46 56.7**	**+0.2**
TJIG				*i*S	**Sb**	**16 47 07.4**	**-0.1**
GLA	**Glamis**	**0.84**	**62**	P	**Pb**	**16 46 56.5**	**-0.1**
	baz=240,SNR=13						
GLA				S	**Sb**	**16 47 07.3**	**-0.4**
	baz=240						
CBX	**Cerro Bola**	**0.87**	**247**	⇑*e*P	**Pg**	**16 46 57.6**	**+0.1**
CBX				AML	AML	16 47 12.1	
	comp=N,466nm,0.4s						
CBX	**Cerro Bola**	**0.87**	**247**	*e*P	**Pg**	**16 46 57.6**	**+0.1**
CBX				*i*S	**Sb**	**16 47 08.8**	**+0.3**
CBX	**Cerro Bola**	**0.87**	**247**	*e*P	**Pg**	**16 46 57.6**	**+0.1**
CBX				*i*S	**Sb**	**16 47 08.8**	**+0.3**
BC3	**Big Chuckawall**	**1.02**	**12**	P	**Pb**	**16 46 59.3**	**-0.3**
	baz=192,SNR=18						
BC3				S	**Sb**	**16 47 12.0**	**-0.7**
	baz=192						
SDRC	**San Diego Road**	**1.04**	**274**	⇑*e*P	**Pn**	**16 47 00.3**	**+0.2**
PFO	**Pinyon Flats O**	**1.13**	**327**	P	**Pn**	**16 47 01.0**	**-0.5**
	baz=148,SNR=12						
PFO				S	**Sb**	**16 47 15.6**	**-0.4**
	baz=148						
PFO	**Pinyon Flats O**	**1.13**	**327**	*e*Pg	**Pn**	**16 47 00.9**	**-0.6**
PFO				*e*Sg	**Sb**	**16 47 15.2**	**-0.8**
109C	**Camp Elliot, M**	**1.19**	**281**	P	**Pb**	**16 47 02.9**	**+0.4**
	baz=104,SNR=14						
109C				S	**Sn**	**16 47 17.9**	**0.0**
	baz=104						
ECNX	**Esteban Cantu**	**1.25**	**217**	*e*P	**Pb**	**16 47 03.7**	**+0.1**
PBX	**Punta Banda**	**1.25**	**223**	*e*P	**Pb**	**16 47 03.7**	**+0.1**
ECBX	**El Chinero**	**1.31**	**154**	*e*P	**Pn**	**16 47 02.8**	**-1.1**
ECBX				*e*S	**Sn**	**16 47 20.7**	**-0.2**
BELC	**Belle Mtn. Jos**	**1.36**	**350**	P	**Pn**	**16 47 04.5**	**-0.2**
	baz=171						
Y12C	**Blythe**	**1.48**	**42**	S	**Sn**	**16 47 25.0**	**0.0**
	baz=222						
IRM	**Iron Mountain**	**1.57**	**17**	P	**Pn**	**16 47 07.7**	**+0.3**
	baz=198,SNR=10						
SPIG	**San Pedro Mart**	**1.62**	**172**	*e*P	**Pn**	**16 47 08.9**	**+0.4**
SPIG				*e*S	**Sn**	**16 47 29.2**	**+0.1**
SPIG	**San Pedro Mart**	**1.62**	**172**	*e*P	**Pn**	**16 47 08.9**	**+0.4**
SPIG				*e*S	**Sn**	**16 47 29.2**	**+0.1**
SPX	**San Pedro Mart**	**1.62**	**172**	*e*P	**Pn**	**16 47 08.6**	**0.0**
SPX				*e*S	**Sn**	**16 47 29.2**	**+0.1**
214A	**Organ Pipe Nat**	**2.56**	**105**	*e*Pn	**Pn**	**16 47 20.6**	**-0.4**
214A				*e*Sn	**Sb**	**16 47 56.0**	**-1.0**

*ATH **09** 16:46:47.9,39.52N×26.05E,h14km±6km,ML2.1/4,Error ellipse: s-maj=6.4km s-min=0.8km az=191.0*
*ISK **09** 16:46:47.7,39.53N×26.00E,h6km,MD2.9*
*DDA **09** 16:46:48.7,39.54N×26.13E,h8km,Md3.0*
*THE **09** 16:46:48.3,39.52N×26.04E,h1km±1km,ML2.2/7,Error ellipse: s-maj=1.3km s-min=0.4km az=103.0*
*CSEM **09** 16:46:48.1±0.1,39.51N×26.05E,h5km,ML2.1,Error ellipse: s-maj=3.0km s-min=2.0km az=87.0*
*ISCJB **09** 16:46:48.2±0.4,39.51N±0.02×26.06E±0.03,h7km±3km, Error ellipse: s-maj=4.3km s-min=2.7km az=176.6*

ISC 09 16:46:48.1±0.8,39.50N±0.01×26.03E±0.02,h14km±7km, n66,σ0s56/102,Turkey

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
PRK	**Paraskevi**	**0.32**	**144**	P	**Pg**	**16 46 54.7**	**+0.1**
PRK				S	**Sg**	**16 46 59.5**	**+0.4**
PRK	**Paraskevi**	**0.32**	**144**	P	**Pg**	**16 46 54.7**	**+0.1**
PRK				S	**Sg**	**16 46 59.4**	**+0.4**
PRK	**Paraskevi**	**0.32**	**144**	P	**Pg**	**16 46 55.0**	**+0.3**
PRK				S	**Sg**	**16 46 59.4**	**+0.4**
PRK				AML	AML	16 46 59.8	
	comp=N,2194μm,0.2s						
PRK				AML	AML	16 46 60.0	
	comp=E,2270μm,0.2s						
SIGR	**SIGRI**	**0.32**	**205**	*e*PG	**Pg**	**16 46 54.2**	**-0.5**
SIGR				*e*SG	**Sb**	**16 46 59.9**	**-0.7**
SIGR	**SIGRI**	**0.32**	**205**	P	**Pg**	**16 46 54.7**	**0.0**
SIGR				S	**Sg**	**16 46 59.7**	**+0.5**
SIGR	**SIGRI**	**0.32**	**205**	*e*Pg	**Pg**	**16 46 54.2**	**-0.5**
SIGR	**SIGRI**	**0.32**	**205**	P	**Pg**	**16 46 54.7**	**0.0**
SIGR				S	**Sg**	**16 46 59.2**	**0.0**
SIGR	**SIGRI**	**0.32**	**205**	P	**Pg**	**16 46 54.7**	**0.0**
SIGR				S	**Sg**	**16 46 59.2**	**0.0**
SIGR				AML	AML	16 46 60.0	
	comp=E,861μm,0.3s						
SIGR				AML	AML	16 47 00.3	
	comp=N,1417μm,0.4s						
BOZC	**Bozcaada**	**0.34**	**3**	*i*P	**Pg**	**16 46 55.0**	**-0.1**
BOZC				*i*S	**Sg**	**16 46 59.9**	**0.0**
EZN	**Ezine**	**0.40**	**35**	*e*PG	**Pg**	**16 46 55.8**	**-0.3**
EZN				*e*SG	**Sg**	**16 47 01.7**	**+0.2**
EZN	**Ezine**	**0.40**	**35**	P	**Pg**	**16 46 55.9**	**-0.2**
EZN				S	**Sg**	**16 47 01.8**	**+0.3**
EZN	**Ezine**	**0.40**	**35**	P	**Pg**	**16 46 55.9**	**-0.2**
AYVA	**Ayvalik**	**0.55**	**110**	*i*P	**Pg**	**16 46 58.8**	**0.0**
AYVA				*i*S	**Sn**	**16 47 10.4**	**+0.1**
AYVA	**Ayvalik**	**0.55**	**110**	P	**Pg**	**16 46 58.8**	**0.0**
AYVA				S	**Sn**	**16 47 10.4**	**+0.1**
GADA	**Gvkgeada**	**0.70**	**352**	*e*PG	**Pg**	**16 47 01.4**	**-0.3**
GADA	**Gvkgeada**	**0.70**	**352**	P	**Pg**	**16 47 01.6**	**-0.1**
GADA				S	**Sb**	**16 47 11.2**	**-0.3**
GADA	**Gvkgeada**	**0.70**	**352**	*e*Pg	**Pg**	**16 47 01.4**	**-0.3**
GADA				S	**Sb**	**16 47 11.2**	**-0.3**
LIA	**Limnos Island**	**0.77**	**301**	P	**Pg**	**16 47 03.0**	**0.0**
LIA				S	**Sb**	**16 47 14.4**	**+1.0**
LIA	**Limnos Island**	**0.77**	**301**	P	**Pg**	**16 47 03.0**	**0.0**
LIA				S	**Sb**	**16 47 13.7**	**+0.3**
DKL	**Dikili**	**0.80**	**122**	*e*PG	**Pb**	**16 47 04.1**	**+0.3**
DKL	**Dikili**	**0.80**	**122**	*e*Pg	**Pb**	**16 47 04.1**	**+0.3**
GELI	**Tayfur-Gelibol**	**0.96**	**21**	*e*PG	**Pb**	**16 47 06.2**	**-0.3**
GELI	**Tayfur-Gelibol**	**0.96**	**21**	*e*Pg	**Pb**	**16 47 06.2**	**-0.3**
SMTH	**Samothraki Isl**	**1.04**	**338**	P	**Pb**	**16 47 07.9**	**-0.1**
SMTH				S	**Sn**	**16 47 22.2**	**-0.5**
SMTH	**Samothraki Isl**	**1.04**	**338**	P	**Pb**	**16 47 07.9**	**-0.1**
SMTH				S	**Sb**	**16 47 21.5**	**0.0**
SMTH	**Samothraki Isl**	**1.04**	**338**	P	**Pb**	**16 47 07.9**	**-0.1**
SMTH				S	**Sb**	**16 47 21.5**	**0.0**
SMTH				AML	AML	16 47 22.5	
	comp=N,151μm,0.1s						
SMTH				AML	AML	16 47 22.9	
	comp=E,117μm,0.1s						
CHOS	**Chios island**	**1.11**	**179**	*e*PN	**Pg**	**16 47 10.5**	**+0.9**
CHOS	**Chios island**	**1.11**	**179**	P	**Pn**	**16 47 09.2**	**-0.1**
CHOS				S	**Sn**	**16 47 26.2**	**+1.7**
CHOS	**Chios island**	**1.11**	**179**	P	**Pn**	**16 47 09.3**	**-0.1**
CHOS	**Chios island**	**1.11**	**179**	*e*Pn	**Pg**	**16 47 10.5**	**+0.9**
CHOS				S	**Sn**	**16 47 26.2**	**+1.7**
CHOS	**Chios island**	**1.11**	**179**	P	**Pn**	**16 47 09.3**	**-0.1**
URLA	**Izmir**	**1.22**	**159**	*i*P	**Pn**	**16 47 10.2**	**-0.5**
URLA				*i*S	**Sn**	**16 47 27.1**	**0.0**
URLA	**Izmir**	**1.22**	**159**	P	**Pn**	**16 47 10.2**	**-0.5**
URLA				S	**Sn**	**16 47 27.1**	**0.0**
ERIK	**Erikli-Kesan**	**1.23**	**17**	*e*PN	**Pn**	**16 47 10.7**	**-0.1**
ERIK	**Erikli-Kesan**	**1.23**	**17**	*e*Pn	**Pn**	**16 47 10.7**	**-0.1**
ENEZ	**Enez**	**1.24**	**4**	*e*PN	**Pg**	**16 47 12.0**	**0.0**
ENEZ	**Enez**	**1.24**	**4**	P	**Pb**	**16 47 11.1**	**-0.1**
ENEZ				S	**Sg**	**16 47 29.2**	**+1.1**
ENEZ	**Enez**	**1.24**	**4**	P	**Pb**	**16 47 11.1**	**-0.1**
ENEZ	**Enez**	**1.24**	**4**	*e*Pn	**Pg**	**16 47 12.0**	**0.0**
ENEZ				S	**Sg**	**16 47 29.2**	**+1.1**
BALY	**Balya**	**1.25**	**78**	*i*P	**Pg**	**16 47 11.8**	**-0.4**
BALY	**Balya**	**1.25**	**78**	P	**Pg**	**16 47 11.8**	**-0.4**
ZEY	**˙zmir**	**1.31**	**164**	*i*P	**Pn**	**16 47 11.2**	**-0.7**
ZEY				*i*S	**Sb**	**16 47 28.7**	**-0.5**
KRBG	**Karabiga-Canak**	**1.32**	**47**	*e*PN	**Pb**	**16 47 12.8**	**+0.2**
KRBG	**Karabiga-Canak**	**1.32**	**47**	*e*Pn	**Pb**	**16 47 12.8**	**+0.2**
KNL	**Bal˘kesir**	**1.38**	**56**	*i*P	**Pn**	**16 47 12.6**	**-0.4**
KNL				*i*S	**Sb**	**16 47 31.4**	**+0.2**
ALN	**Alexandroupoli**	**1.40**	**0**	*e*PN	**Pb**	**16 47 14.1**	**+0.2**
ALN	**Alexandroupoli**	**1.40**	**0**	P	**Pn**	**16 47 13.1**	**0.0**
ALN				S	**Sg**	**16 47 33.0**	**-0.1**
ALN	**Alexandroupoli**	**1.40**	**0**	P	**Pn**	**16 47 13.1**	**0.0**
ALN	**Alexandroupoli**	**1.40**	**0**	*e*Pn	**Pb**	**16 47 14.1**	**+0.2**
ALN				S	**Sg**	**16 47 32.6**	**-0.5**
ALN	**Alexandroupoli**	**1.40**	**0**	P	**Pn**	**16 47 13.1**	**0.0**
ALN				S	**Sg**	**16 47 32.6**	**-0.5**
ALN				AML	AML	16 47 33.0	
	comp=N,73μm,0.5s						
ALN				AML	AML	16 47 33.2	
	comp=E,102μm,0.5s						
KESN	**Edirne-Kesan**	**1.41**	**20**	*i*P	**Pn**	**16 47 13.8**	**+0.1**
KESN				*i*S	**Sg**	**16 47 33.1**	**-0.7**
KESN	**Edirne-Kesan**	**1.41**	**20**	P	**Pn**	**16 47 13.8**	**+0.1**
KESN				S	**Sg**	**16 47 33.1**	**-0.7**
RKY	**Sarkoy-Tekirda**	**1.48**	**36**	*e*PN	**Pb**	**16 47 15.1**	**-0.3**
RKY	**Sarkoy-Tekirda**	**1.48**	**36**	*e*Pn	**Pb**	**16 47 15.1**	**-0.3**
MRMT	**Marmara Adasi**	**1.63**	**47**	*e*PN	**Pb**	**16 47 17.7**	**-0.3**
MRMT	**Marmara Adasi**	**1.63**	**47**	*e*Pn	**Pb**	**16 47 17.7**	**-0.3**
AOS	**Alonnisos**	**1.70**	**259**	P	**Pb**	**16 47 18.9**	**-0.2**
AOS				S	**Sg**	**16 47 42.4**	**-0.5**
AOS	**Alonnisos**	**1.70**	**259**	P	**Pb**	**16 47 18.9**	**-0.2**
AOS				S	**Sg**	**16 47 42.4**	**-0.5**
DURS	**Dursunbey**	**1.89**	**86**	*i*P	**Pn**	**16 47 20.3**	**+0.3**
DURS				*i*S	**Sn**	**16 47 43.2**	**-0.5**
DURS	**Dursunbey**	**1.89**	**86**	P	**Pn**	**16 47 20.3**	**+0.3**
DURS				S	**Sn**	**16 47 43.2**	**-0.5**
SMG	**Samos**	**1.90**	**160**	P	**Pb**	**16 47 21.3**	**-1.2**
SMG	**Samos**	**1.90**	**160**	P	**Pb**	**16 47 21.3**	**-1.2**
AYDB	**Zeytinkoy-Aydi**	**2.13**	**136**	*e*PN	**Pb**	**16 47 25.6**	**-0.9**
AYDB	**Zeytinkoy-Aydi**	**2.13**	**136**	*e*Pn	**Pb**	**16 47 25.6**	**-0.9**
CTKS	**Kestanelik-??a**	**2.56**	**47**	*e*PN	**Pn**	**16 47 30.9**	**+1.8**
CTKS	**Kestanelik-??a**	**2.56**	**47**	*e*Pn	**Pn**	**16 47 31.0**	**+1.8**

IDC 09 16:47:09.9±2.5,36.97N×143.74E,h0km,mb3.3/3, mb1 3.5/5,mb1mx3.2/66,mbtmp3.4/5,ML2.9/2,Error ellipse: s-maj=56.1km s-min=32.8km az=62.0,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
MJAR	**Matsushiro Ar**	**4.46**	**266**	Pn	Pn	16 48 19.6	+0.7
	0.4nm,0.3s,baz=77,slow=11,SNR=5.3						
MJAR				Sn	Sn	16 49 08.1	-3.5
	0.2nm,0.3s,baz=144,slow=11,SNR=2.7						
JHJ	**Hachijo jima 2**	**5.03**	**221**	Pn	Pn	16 48 25.6	-1.1
	1.5nm,0.3s,baz=174,slow=22,SNR=4.4						
JHJ				Sn	Sn	16 49 17.2	-8.2
	2.9nm,0.3s,baz=126,slow=23,SNR=2.2						
KURBB	**Kurchatov Arra**	**47.51**	**308**	P	P	16 55 46.2	-0.4
	0.2nm,0.5s,baz=85,slow=7.8,SNR=3.5						
WRA	**Warramunga Arr**	**57.30**	**191**	P	P	16 56 59.7	+0.1
	0.5nm,0.9s,baz=10,slow=7.5,SNR=5.6						
ASAR	**Alice Springs**	**61.02**	**190**	P	P	16 57 25.1	-0.1
	0.4nm,1.0s,baz=5.3,slow=7.1,SNR=5.4						

*ISCJB **09** 16:49:25.3±0.4,44.82N±0.02×17.99E±0.02,h4km±3km, Error ellipse: s-maj=3.9km s-min=2.2km az=33.8*
*CSEM **09** 16:49:26.3±0.1,44.81N×17.97E,h5km,ML2.8/4,Error ellipse: s-maj=3.1km s-min=1.5km az=30.0*
*BEO **09** 16:49:27.2±0.3,44.86N×17.99E,h9km±2km,M2.6/1*

ISC 09 16:49:26.4±1.0,44.79N±0.02×17.97E±0.02,h6km±8km, n67,σ0s86/106,1C-1D,Northwestern Balkan Peninsula

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
DOB	**Doboj**	**0.11**	**122**	⇓*i*Pg	**Pg**	**16 49 28.6**	**-0.2**
DOB				*e*Sg	**Sg**	**16 49 30.9**	**+0.5**
BLY	**Banja Luka**	**0.56**	**266**	*e*Pg	**Pg**	**16 49 37.0**	**-0.2**
BLY				*e*Sg	**Sb**	**16 49 46.8**	**0.0**
BLY	**Banja Luka**	**0.56**	**266**	*e*Pg	**Pg**	**16 49 37.0**	**-0.2**
BLY				*e*Sg	**Sg**	**16 49 44.8**	**+0.4**
MRAK	**Mrakovica**	**0.79**	**287**	*e*Pg	**Pg**	**16 49 40.7**	**-0.9**
MRAK				*e*Sg	**Sg**	**16 49 52.1**	**+0.3**
BLJ	**Bijeljina**	**0.93**	**90**	*e*Pg	**Pg**	**16 49 43.5**	**-0.7**
BLJ				*e*Sg	**Sg**	**16 49 55.3**	**-0.9**
HAPS	**Han Pijesak,BI**	**1.00**	**135**	⇑*i*Pg	**Pg**	**16 49 44.3**	**-1.2**
HAPS				*e*Sg	**Sg**	**16 49 58.7**	**+0.2**
TEKS	**Tekeris**	**1.14**	**102**	*e*Pg	**Pn**	**16 49 49.2**	**+0.3**
TEKS				*e*Sg	**Sb**	**16 50 04.1**	**+0.5**
TEKS	**Tekeris**	**1.14**	**102**	*e*Pg	**Pg**	**16 49 47.8**	**-0.5**
TEKS				*e*Sg	**Sb**	**16 50 04.1**	**+0.5**
SISC	**Sisak**	**1.32**	**302**	*e*Pg	**Pg**	**16 49 51.9**	**+0.3**
SISC				Sg	**Sg**	**16 50 08.6**	**-0.2**
SISC	**Sisak**	**1.32**	**302**	*e*Pg	**Pg**	**16 49 51.9**	**+0.3**
SISC				Sg	**Sg**	**16 50 08.5**	**-0.2**
FGSL	**Fruska Gora**	**1.36**	**74**	*e*Pg	**Pb**	**16 49 52.1**	**-0.1**
FGSL				*e*Sg	**Sg**	**16 50 09.7**	**-0.4**
FRGS	**Fruska Gora**	**1.36**	**74**	*e*Pg	**Pb**	**16 49 52.1**	**-0.1**
FRGS				*e*Sg	**Sg**	**16 50 09.7**	**-0.4**
BBLS	**Lazići**	**1.39**	**131**	*e*Pg	**Pn**	**16 49 52.1**	**-0.2**
BBLS				*e*Sg	**Sn**	**16 50 11.8**	**+0.8**
BBLS	**Lazići**	**1.39**	**131**	*e*Pg	**Pn**	**16 49 52.6**	**+0.3**
BBLS				*e*Sg	**Sn**	**16 50 11.6**	**+0.6**
DIVS	**Divibare**	**1.61**	**115**	*e*Pn	**Pn**	**16 49 55.4**	**0.0**
DIVS	**Divibare**	**1.61**	**115**	*e*Pn	**Pn**	**16 49 55.4**	**0.0**
UPM	**Unac-Piva**	**1.73**	**157**	*e*Pn	**Pn**	**16 49 57.0**	**-0.1**
UPM				*e*Sn	**Sn**	**16 50 19.9**	**+0.4**
ZAG	**Zagreb**	**1.74**	**307**	*e*Sn	**Sb**	**16 50 20.8**	**+0.1**
TRUS	**Trudelj**	**1.84**	**107**	*e*Pn	**Pb**	**16 50 00.4**	**+0.1**
TRUS	**Trudelj**	**1.84**	**107**	*e*Pn	**Pb**	**16 50 00.4**	**+0.1**
BEHE	**Becsehely**	**1.87**	**334**	*e*Sn	**Sb**	**16 50 24.7**	**0.0**
STON	**Ston**	**1.93**	**186**	*e*Pn	**Pn**	**16 49 59.6**	**0.0**
STON				Sn	**Sn**	**16 50 24.6**	**+0.4**
STON	**Ston**	**1.93**	**186**	*e*Pn	**Pn**	**16 49 59.9**	**+0.2**
STON				*e*Sn	**Sb**	**16 50 27.3**	**+1.1**
STON	**Ston**	**1.93**	**186**	*e*Pn	**Pn**	**16 49 59.9**	**+0.2**
STON				*e*Sn	**Sn**	**16 50 24.5**	**+0.3**
BRY	**Bratogost**	**1.94**	**167**	*e*Pn	**Pn**	**16 50 00.4**	**+0.5**
BRY				*e*Sn	**Sn**	**16 50 24.9**	**+0.3**
IVAS	**Ivanjica**	**1.99**	**127**	*e*Pn	**Pn**	**16 50 01.8**	**+1.2**
IVAS				*e*Sg	**Sg**	**16 50 29.4**	**-0.8**
IVAS	**Ivanjica**	**1.99**	**127**	*e*Pn	**Pn**	**16 50 01.8**	**+1.2**
CRES	**Cresnjev**	**2.05**	**301**	*i*Pn	**Pn**	**16 50 01.2**	**-0.2**
CRES	**Cresnjev**	**2.05**	**301**	*e*Pn	**Pn**	**16 50 01.8**	**+0.4**
CRES				*e*Sn	**Sn**	**16 50 27.5**	**+0.2**
SJES	**Sjenica**	**2.11**	**136**	*e*Pg	**Pb**	**16 50 05.8**	**+0.8**
SJES				*e*Sg	**Sg**	**16 50 35.2**	**+1.1**
GRUS	**Gruza**	**2.17**	**114**	*e*Pn	**Pn**	**16 50 03.3**	**+0.3**
GRUS	**Gruza**	**2.17**	**114**	*e*Pn	**Pn**	**16 50 03.3**	**+0.3**
NVLJ	**Novalja**	**2.22**	**265**	*e*Pn	**Pn**	**16 50 03.8**	**+0.1**
NVLJ				Sn	**Sn**	**16 50 31.5**	**+0.1**
NVLJ	**Novalja**	**2.22**	**265**	*e*Pn	**Pn**	**16 50 03.7**	**+0.1**
NVLJ				Sn	**Sn**	**16 50 31.4**	**+0.1**
HCY	**Herceg Novi**	**2.38**	**171**	*e*Pn	**Pn**	**16 50 06.6**	**+0.8**
HCY				*e*Sn	**Sn**	**16 50 34.9**	**-0.4**
VISS	**Visnje**	**2.43**	**296**	*i*Pn	**Pn**	**16 50 06.9**	**+0.3**
VISS	**Visnje**	**2.43**	**296**	*i*Pn	**Pn**	**16 50 06.9**	**+0.3**
PDG	**Podgorica**	**2.54**	**158**	*e*Pn	**Pb**	**16 50 10.5**	**-1.8**
PDG				*e*Sn	**Sb**	**16 50 42.0**	**-1.8**
PDG	**Podgorica**	**2.54**	**158**	*e*Pn	**Pn**	**16 50 09.2**	**+1.1**
PDG				*e*Sn	**Sn**	**16 50 40.1**	**+0.8**
CEY	**Cerknica**	**2.67**	**292**	*e*Pn	**Pn**	**16 50 10.6**	**+0.6**
CEY				*e*Sn	**Sn**	**16 50 42.7**	**+0.1**
KUBS	**Kucevo**	**2.68**	**97**	*e*Pn	**Pn**	**16 50 09.7**	**-0.3**
**

0.5nm,0.3s,baz=108,slow=12,SNR=12
KSRS Korea Array 11.82 270 P Pn 17 00 15.3 +5.1
0.1nm,0.3s,baz=78,slow=13,SNR=4.0
KSAR Wonju Array Be 11.85 270 P Pn 17 00 15.3 +4.7
KLR Kul'dur 13.47 327 P **P** **17 00 38.7 -3.1**
0.1nm,0.3s,baz=141,slow=13,SNR=4.1
KLR LR LR 17 05 44.9
comp=Z,59nm,20.4s,baz=146,slow=37
PETK Petropavlovsk- 17.96 30 LR LR 17 09 22.9
comp=Z,44nm,19.0s,baz=221,slow=40
MA2 Magadan 21.82 11 P **P** **17 02 13.9 +0.4**
5.0nm,0.7s,baz=223,slow=8.8,SNR=10.0
MA2 LR LR 17 11 28.5
comp=Z,33nm,18.9s,baz=206,slow=38
MA2 Magadan 21.82 11 P **P** **17 02 13.9 +0.4**
2.9nm,0.8s
YAK Yakutsk 25.04 345 LR LR 17 13 22.6
comp=Z,34nm,18.8s,baz=151,slow=38
SEY Seymchan 25.27 10 P **P** **17 02 48.8 +1.5**
4.7nm,0.6s,baz=188,slow=8.3,SNR=41
H11N2 WAKE ISLAND Hy 27.92 125 T T 17 32 21.1
baz=317,slow=76,SNR=216
H11N1 WAKE ISLAND Hy 27.93 125 T T 17 32 23.5
baz=317,slow=76,SNR=147
H11N3 WAKE ISLAND Hy 27.94 125 T T 17 32 24.9
baz=317,slow=76,SNR=159
SONM Songino Array 28.01 302 P **P** **17 03 14.8 +2.5**
1.2nm,0.6s,baz=98,slow=9.6,SNR=8.8
ENH Enshi 28.59 264 *eP* **P** **17 03 18.8 +1.3**
20nm,0.9s
H11S1 WAKE ISLAND Hy 28.70 127 T T 17 33 20.6
baz=319,slow=74
H11S3 WAKE ISLAND Hy 28.70 127 T T 17 33 20.8
baz=319,slow=74
H11S2 WAKE ISLAND Hy 28.71 127 T T 17 33 27.2
baz=319
TIXI Tiksi 34.11 352 LR LR 17 19 37.6
comp=Z,52nm,18.1s,baz=171,slow=39
ZALV Zalesovo Beam 41.87 311 P **P** **17 05 11.8 +0.7**
1.6nm,0.5s,baz=89,slow=7.3,SNR=9.3
ZALV PcP **PcP** **17 07 07.5 +0.9**
0.7nm,0.6s,baz=93,slow=2.9,SNR=2.8
CMAR Chiang Mai Arr 42.93 255 P **P** **17 05 21.0 +0.7**
0.3nm,0.6s,baz=51,slow=7.1,SNR=3.7
LSA Lhasa 43.22 275 *eP* **P** **17 05 22.9 -0.2**
MKAR Makanchi Array 44.38 301 P **P** **17 05 32.8 +1.1**
2.0nm,0.7s,baz=84,slow=10,SNR=21
KURK Kurchatov 46.01 307 *eP* **P** **17 05 41.8 -2.6**
10nm,0.6s
KURBB Kurchatov Arra 46.08 307 P **P** **17 05 45.5 +0.5**
3.9nm,0.4s,baz=82,slow=8.0,SNR=31
ILAR Eielson Array 47.76 33 P **P** **17 05 56.7 -1.3**
0.5nm,0.7s,baz=270,slow=6.2,SNR=6.4
TKM2 Tokmak 2 50.00 298 *eP* **P** **17 06 15.1 -0.7**
2.3nm,0.8s
BVAR Borovoye Array 50.52 312 P **P** **17 06 19.5 +0.3**
1.3nm,0.6s,baz=75,slow=7.3,SNR=9.2
BVAR LR LR 17 28 07.2
comp=Z,138nm,21.4s,baz=73,slow=36
AAK Ala-Archa 50.86 298 LR LR 17 28 35.9
comp=Z,41nm,18.1s,baz=52,slow=37
INK Inuvik 52.68 28 P **P** **17 06 35.9 +0.8**
0.4nm,0.4s,baz=279,slow=9.6,SNR=5.2
ARU Arti 56.11 318 P **P** **17 07 00.6 +0.3**
1.8nm,0.5s,baz=82,slow=4.2,SNR=5.3
ABKAR Akbulak array 57.95 310 *eP* **P** **17 07 12.1 -1.3**
2.0nm,0.6s
WRA Warramunga Arr 58.55 189 P **P** **17 07 17.9 +0.1**
6.8nm,0.5s,baz=7.6,slow=7.0,SNR=129
RES Resolute Bay 61.02 15 P **P** **17 07 34.4 +0.2**
0.9nm,0.6s,baz=320,slow=6.6,SNR=11
YKA Yellowknife Ar 62.08 31 P **P** **17 07 41.6 0.0**
0.6nm,0.6s,baz=302,slow=6.6,SNR=13
ASAR Alice Springs 62.28 189 P **P** **17 07 41.8 -1.5**
1.4nm,0.6s,baz=13,slow=8.4,SNR=36
FINES FINESS Array B 68.16 332 P **P** **17 08 20.7 -0.3**
3.0nm,1.0s,baz=56,slow=7.8,SNR=5.3
STKA Stephens Creek 69.90 181 LR LR 17 42 06.6
comp=Z,8.5nm,19.5s,baz=13,slow=38
NVAR Mina Array Bea 73.29 54 P **P** **17 08 54.0 +1.1**
0.7nm,0.7s,baz=288,slow=6.1,SNR=5.2
HFS Hagfors 73.33 336 P **P** **17 08 52.4 -0.1**
1.0nm,0.6s,baz=62,slow=4.1,SNR=7.6
NOA NORSAR Array B 73.39 338 P **P** **17 08 52.8 -0.1**
0.8nm,0.7s,baz=40,slow=6.0,SNR=3.9
NOA LR LR 17 44 35.5
comp=Z,16nm,18.9s,baz=10.0,slow=38
AKASG Malin Array Be 73.93 323 P **P** **17 08 56.3 +0.1**
0.9nm,0.5s,baz=43,slow=5.7,SNR=6.0
PDAR Pinedale Array 75.92 46 P **P** **17 09 08.7 +0.6**
1.0nm,0.7s,baz=265,slow=2.0,SNR=7.8
TXAR Lajitas Array 88.41 53 P **P** **17 10 14.0 +0.3**
0.9nm,0.6s,baz=298,slow=3.7,SNR=3.8
VNA2 Neumayer--Watz 143.91 196 PKP PKPbc 17 16 53.8 +0.6
baz=116,slow=0.6
VNA3 Neumayer Olymp 144.15 195 PKP PKPbc 17 16 54.2 +0.3
LPAZ La Paz 145.04 60 PKPbc **PKPbc** **17 16 58.2 -0.8**
1.6nm,0.8s,baz=15,slow=8.3,SNR=4.6

JMA 09 16:57:55.0±0.1, 37.83N×141.62E, h42km±2km, M4.0, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JMM	**Marumori**	**0.66**	**273**	P	Pn	16 58 07.8	-0.1
JMM				S	Sn	16 58 17.0	-0.1
JIO	**Ouri**	**0.66**	**341**	P	Pn	16 58 07.8	-0.1
JIO				S	Sn	16 58 16.8	-0.4
JFK	**Kawauchi**	**0.75**	**232**	P	Pn	16 58 09.0	-0.2
JFK				S	Sn	16 58 19.2	-0.3
JOU	**Okura**	**0.93**	**306**	P	Pn	16 58 11.8	+0.2
JOU				*eS*	Sn	16 58 23.5	-0.2
ONAJ	**Iwakimizuishiy**	**0.98**	**222**	P	Pn	16 58 12.3	0.0
ONAJ				*eS*	Sn	16 58 25.2	+0.2
JFT	**Otama**	**1.06**	**253**	*eS*	Sn	16 58 28.0	+0.9
JMK	**Ichinoseki**	**1.16**	**344**	P	Pn	16 58 15.8	+1.0
JMK				*eS*	Sn	16 58 29.6	+0.1
JYS	**Shirataka**	**1.29**	**288**	P	Pn	16 58 17.4	+0.9
JYS				*eS*	Sn	16 58 33.6	+1.0
JYK	**Kaneyama**	**1.47**	**318**	P	Pn	16 58 19.6	+0.6
JYK				*eS*	Sn	16 58 37.7	+0.6

DJA 09 17:09:06.8±0.7, 10°S±13°×111°E±°, h55km±44km, M3.9/5, mb4.0/1, MLv3.8/5, South of Jawa

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
UGM	**Wanagama**	**1.72**	**12**	P	Pn	17 09 34.0	-0.4
UGM				S	Sn	17 09 55.4	+0.1
PCJI	**Pacitan**	**1.73**	**36**	P	Pn	17 09 34.2	-0.3
PCJI				S	Sn	17 09 55.9	+0.5
PWJI	**Pagerwojo**	**2.27**	**46**	P	Pn	17 09 40.4	-1.4
PWJI				S	Sn	17 10 05.6	-3.0
CMJI	**Cimerak**	**2.47**	**317**	P	Pn	17 09 44.3	-0.3
CMJI				S	Sn	17 10 13.5	-0.1
KPJI	**Karang Pucung**	**2.56**	**332**	P	Pn	17 09 45.4	-0.4
NGJI	**Ngawi**	**2.57**	**30**	P	Pn	17 09 46.3	+0.3
CISI	**Cisompet, Garu**	**3.08**	**311**	P	Pn	17 09 52.6	-0.4
GMJI	**Gumukmas**	**3.51**	**68**	P	Pn	17 09 59.3	+0.4
CNJI	**Cibinong**	**3.76**	**307**	P	Pn	17 10 01.5	-0.8
CGJI	**Cibinong**	**5.32**	**304**	P	Pn	17 10 24.5	+0.8

*IDC **09** 17:10:48.0±5.8, 36.65N×142.60E, h0km, mb3.4/2, mb1 3.4/4, mb1mx3.2/49, mbtmpb3.5/4, ML3.3/2, Error ellipse: s-maj=97.6km s-min=33.3km az=100.0*
*JMA **09** 17:10:51.7±0.3, 36.76N×142.32E, h30km, M3.0*
ISC 09 17:10:52.9±1.9, 36.70N±0.09×142.2E±0.1, h19km, n10, σ1s01/13, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JFK	**Kawauchi**	**1.27**	**302**	P	**Pn**	**17 11 14.8**	**-0.9**
JHO	**Hitachi**	**1.34**	**267**	P	**Pn**	**17 11 16.1**	**-0.5**
JHO				S	**Sn**	**17 11 33.5**	**-0.4**
JFT	**Otama**	**1.72**	**299**	P	Pn	17 11 19.9	-1.9
JAG	**Ashikaga**	**2.25**	**264**	P	**Pn**	**17 11 29.3**	**+0.1**
JRY	**Ryogami san**	**2.77**	**257**	P	**Pn**	**17 11 36.5**	**+0.2**
JRY				S	**Sn**	**17 12 09.5**	**+0.2**
MJAR	**Matsushiro Arr**	**3.24**	**268**	Pn	**Pn**	**17 11 44.2**	**+1.5**
MAT	**Matsushiro**	**3.24**	**268**	P	**Pn**	**17 11 44.2**	**+1.4**
MAT				S	**Sn**	**17 12 19.2**	**-1.6**
JHJ	**Hachijo jima 2**	**4.10**	**210**	Pn	**Pn**	**17 11 54.5**	**-0.1**
JHJ				Sn	**Sn**	**17 12 41.2**	**-0.8**
SONM	**Songino Array**	**28.51**	**304**	P	**P**	**17 16 48.2**	**+1.0**
MKAR	**Makanchi Array**	**44.85**	**303**	P	**P**	**17 19 05.4**	**-0.4**

5.9nm,0.3s,baz=342,slow=20,SNR=4.1
5.7nm,0.3s,baz=233,slow=20,SNR=2.1
0.5nm,0.8s,baz=104,slow=9.1,SNR=4.0
0.2nm,0.6s,baz=87,slow=8.8,SNR=3.0

*IDC **09** 17:12:24.3±2.5, 6.18S×129.82E, h0km, mb3.2/1, mb1 3.9/3, mb1mx3.3/47, mbtmpb3.6/3, ML3.9/2, Error ellipse: s-maj=155.3km s-min=32.8km az=69.0*
*ISCJB **09** 17:12:36.3±0.8, 6.38S±0.07×130.4E±0.1, h200km, mb3.6/2, Error ellipse: s-maj=15.0km s-min=8.9km az=163.0*
*NEIC **09** 17:12:36.9±0.7, 6.33S×130.29E, h184km±10km, mb4.0/2, Error ellipse: s-maj=12.9km s-min=9.2km az=77.0*
ISC 09 17:12:36.4±1.1, 6.48S±0.08×130.5E±0.1, h200km, n13, σ2s67/15, Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
SAUI	**Saumlaki**	**1.69**	**152**	*e*Pn	**Pn**	**17 13 13.4**	**+1.5**
SAUI				*e*Sn	**Sn**	**17 13 34.0**	**-5.6**
FAKI	**Fak Fak**	**3.95**	**26**	*e*Pn	**Pn**	**17 13 37.1**	**-0.5**
FAKI				*e*Sn	Sn	17 14 18.3	-7.5
MTN	**Manton Dam**	**6.35**	**174**	*e*Pn	**Pn**	**17 14 10.3**	**+2.0**
MTN				*e*Sn	**Sn**	**17 15 19.2**	**-1.9**
SOEI	**Soe**	**6.96**	**242**	*e*Pn	**Pn**	**17 14 16.0**	**-0.4**
SOEI				*e*Sn	Sn	17 15 20.2	-1.5
FITZ	**Fitzroy Crossi**	**12.48**	**202**	*e*Pn	**Pn**	**17 15 28.4**	**+1.0**
WRAB	**Tennant Creek**	**13.89**	**165**	*e*Pn	P	17 15 49.8	+2.8
WR1	**Warramunga Arr**	**13.89**	**165**	*e*Pn	**P**	**17 15 48.6**	**+1.5**
WR1				*e*Sn	**S**	**17 18 17.2**	**-2.7**
WRA	**Warramunga Ar**	**13.89**	**165**	Pn	**P**	**17 15 48.6**	**+1.5**
	0.7nm,0.3s,baz=346,slow=13,SNR=39						
WRA				Sn	**S**	**17 18 17.2**	**-2.7**
	0.5nm,0.3s,baz=80,slow=9.6,SNR=6.4						
WB2	**Warramunga Arr**	**13.90**	**165**	*e*Pn	**P**	**17 15 48.7**	**+1.5**
AS31	**Alice Springs**	**17.40**	**169**	*e*P	**Pn**	**17 16 29.2**	**+1.7**
	2.3nm,1.4s						
ASAR	**Alice Springs**	**17.40**	**169**	P	Pn	17 16 34.5	+7.0
	0.4nm,0.3s,baz=346,slow=10.0,SNR=52						
ASAR				S	**S**	**17 19 40.7**	**+4.3**
	0.1nm,0.3s,baz=72,slow=33,SNR=3.1						
PSI	**Prapat**	**32.84**	**285**	*e*P	**P**	**17 18 51.1**	**-0.6**
	6.6nm,0.4s						
MKAR	**Makanchi Array**	**68.06**	**326**	P	P	17 23 22.0	+7.5
	0.1nm,0.6s,baz=111,slow=8.1,SNR=3.0						

IDC 09 17:15:15.9±1.4, 1.70S×136.85E, h0km, mb3.5/3, mb1 3.8/4, mb1mx3.4/44, mbtmpb3.6/4, ML3.5/1, MS3.1/1, Ms1 3.1/1, ms1mx2.5/26, Error ellipse: s-maj=75.1km s-min=26.3km az=92.0, Irian Jaya region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
WRA	**Warramunga Arr**	**18.30**	**188**	P	Pn	17 19 31.0	-0.5
	0.1nm,0.3s,baz=359,slow=11,SNR=6.5						
ASAR	**Alice Springs**	**22.02**	**187**	P	P	17 20 12.3	+0.1
	2.6nm,0.9s,baz=4.8,slow=12,SNR=14						
KLR	**Kul'dur**	**50.92**	**356**	LR	LR	17 42 52.9	
	comp=Z,18nm,21.0s,baz=202,slow=32						
MKAR	**Makanchi Array**	**67.86**	**323**	P	P	17 26 17.3	+1.1
	0.3nm,0.5s,baz=128,slow=6.7,SNR=3.9						
ILAR	**Eielson Array**	**85.69**	**25**	P	P	17 27 55.6	-0.9
	0.2nm,0.4s,baz=267,slow=6.3,SNR=3.2						

*ISCJB **09** 17:22:39.0±0.4, 36.60N±0.04×71.15E±0.05, h150km, mb3.5/11, Error ellipse: s-maj=6.7km s-min=4.5km az=146.3*
*IDC **09** 17:22:39.3±2.7, 36.39N×71.27E, h166km±23km, mb3.3/11, mb1 3.4/18, mb1mx3.1/65, mbtmpb3.8/18, Error ellipse: s-maj=20.4km s-min=13.9km az=171.0*
*NNC **09** 17:22:47.0±3.2, 37.05N×71.09E, h174km±39km, mb2.9, mpv3.9, Error ellipse: s-maj=32.9km s-min=22.4km az=43.0*
ISC 09 17:22:40.1±0.6, 36.64N±0.06×71.15E±0.06, h150km, n35, σ1s59/38, mb3.5/11, 6C-7D, Afghanistan-Tajikistan border region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
SFK	**Sufi-Kurgan**	**3.84**	**28**	⇓P	**Pn**	**17 23 41.8**	**+3.4**
	11nm,0.4s						
SFK				⇑S	**Sn**	**17 24 25.7**	**+2.0**
	32nm,0.2s						
THN	**Thein Dam**	**5.64**	**137**	*e*P	**Pn**	**17 24 04.0**	**+2.0**
THN				*e*S	**Sn**	**17 25 06.6**	**+0.6**
MNAS	**Manas**	**5.93**	**10**	⇓P	**Pn**	**17 24 08.2**	**+2.3**
	3.8nm,0.4s						
MNAS				⇑S	**Sn**	**17 25 10.7**	**-2.4**
	37nm,0.6s						
KK31	**Karatay Array**	**6.47**	**356**	⇑P	**Pn**	**17 24 15.3**	**+2.2**
	6.1nm,0.3s,baz=171,slow=12,SNR=100						
KK31				S	**Sn**	**17 25 24.4**	**-1.4**
	4.4nm,0.3s,baz=180,slow=20,SNR=9.4						
AAK	**Ala-Archa**	**6.51**	**22**	P	**Pn**	**17 24 16.2**	**+2.5**
	3.8nm,0.3s,baz=193,slow=7.8,SNR=62						
AAK				S	**Sn**	**17 25 27.5**	**+0.4**
	1.3nm,0.3s,baz=333,slow=23,SNR=18						
AAK	**Ala-Archa**	**6.51**	**22**	⇑P	**Pn**	**17 24 15.8**	**+2.0**
	6.6nm,0.4s						
AAK				⇑S	**Sn**	**17 25 26.9**	**-0.2**
	17nm,0.6s						
PDGK	**Podgornoye**	**9.24**	**41**	⇓P	**Pn**	**17 24 50.0**	**+0.1**
	1.9nm,0.7s						
GEYT	**Alibeck**	**10.46**	**281**	P	**Pn**	**17 25 06.0**	**-0.2**
	0.5nm,0.3s,baz=108,slow=9.5,SNR=6.1						
GEYT				S	**Sn**	**17 27 03.5**	**+1.5**
	0.4nm,0.3s,baz=39,slow=28,SNR=2.7						
MK31	**Makanchi Array**	**13.11**	**36**	⇓P	**P**	**17 25 44.7**	**-0.4**
	0.6nm,0.5s,baz=209,slow=10,SNR=14						
MKAR	**Makanchi Array**	**13.11**	**36**	P	**Pn**	**17 25 40.7**	**+0.2**
	0.2nm,0.3s,baz=206,slow=9.5,SNR=11						
KOLN	**Koldanda**	**13.75**	**127**	*e*P	Pn	17 25 47.5	-1.6
	6.7nm,0.5s						
GKN	**Gorkha**	**14.28**	**123**	*e*P	**Pn**	**17 25 54.7**	**-1.0**
	8.1nm,0.3s						
KKN	**Kakani**	**14.85**	**122**	*e*P	Pn	17 26 01.6	-1.3
	12nm,0.5s						
KURBB	**Kurchatov Arra**	**14.95**	**18**	P	**Pn**	**17 26 04.7**	**+1.0**
	0.1nm,0.3s,baz=205,slow=10,SNR=6.4						
AB31	**Akbulak array**	**15.02**	**331**	⇓P	**Pn**	**17 26 07.0**	**+2.4**
	1.0nm,0.5s,baz=146,slow=12,SNR=42						
AB31				⇓S	**Sn**	**17 28 48.2**	**-3.1**
	1.0nm,0.5s,baz=162,slow=21,SNR=5.9						
PKIN	**Phulchoki**	**15.07**	**123**	*e*P	**Pn**	**17 26 04.8**	**-0.8**
VOSK	**Vostochnaya**	**16.08**	**360**	⇑P	**Pn**	**17 26 19.5**	**+1.9**
	2.2nm,1.1s						
RAMN	**Ramite**	**16.29**	**122**	*e*P	**Pn**	**17 26 20.8**	**+0.2**
	5.6nm,0.3s						
BVAR	**Borovoye Array**	**16.39**	**358**	P	**Pn**	**17 26 22.4**	**+1.1**
	0.3nm,0.3s,baz=172,slow=12,SNR=9.3						
AKTO	**Aktyubinsk**	**16.72**	**330**	P	**P**	**17 26 26.9**	**+1.8**
	0.3nm,0.3s,baz=141,slow=8.6,SNR=5.9						
AKTO	**Aktyubinsk**	**16.72**	**330**	⇓P	**P**	**17 26 26.6**	**+1.5**
	2.9nm,0.9s						
TAPN	**Taplejung**	**16.81**	**119**	*e*P	**P**	**17 26 26.5**	**-0.1**
	4.9nm,0.4s						
ZALV	**Zalesovo Beam**	**19.73**	**24**	P	**P**	**17 26 57.8**	**-0.1**
	0.7nm,0.3s,baz=222,slow=11,SNR=12						
BRTR	**Keskin Array B**	**29.50**	**288**	P	**P**	**17 28 30.9**	**+0.6**
	0.4nm,0.6s,baz=63,slow=11,SNR=2.4						
AKASG	**Malin Array Be**	**32.95**	**309**	P	**P**	**17 29 00.3**	**+0.1**
	0.3nm,0.4s,baz=80,slow=7.3,SNR=3.7						
FINES	**FINESS Array B**	**37.43**	**326**	P	**P**	**17 29 38.3**	**0.0**
	0.7nm,0.4s,baz=124,slow=9.4,SNR=9.3						
ARCES	**ARCESS Array B**	**41.06**	**337**	P	**P**	**17 30 08.3**	**0.0**
	1.7nm,0.6s,baz=106,slow=8.9,SNR=6.2						
NB2	**NORSAR Subarra**	**44.34**	**323**	P	**P**	**17 30 33.8**	**-1.1**
	comp=Z,0.5nm,0.5s,baz=94,slow=7.9						
NOA	**NORSAR Array B**	**44.34**	**323**	P	**P**	**17 30 33.8**	**-1.1**
	comp=Z,0.8nm,0.6s,baz=106,slow=7.2,SNR=4.9						
TIXI	**Tiksi**	**45.60**	**22**	P	**P**	**17 30 43.0**	**-1.6**
	comp=Z,1.2nm,0.3s,baz=296,slow=5.8,SNR=7.6						
TORD	**Torodi Ar. Bea**	**65.84**	**269**	P	P	17 33 07.0	-2.7
	comp=Z,0.7nm,0.5s,baz=50,slow=5.9,SNR=11						
INK	**Inuvik**	**73.74**	**9**	P	**P**	**17 33 55.8**	**-1.4**
	comp=Z,0.9nm,0.9s,baz=342,slow=4.2,SNR=3.5						
YKA	**Yellowknife Ar**	**81.10**	**3**	P	**P**	**17 34 36.6**	**-1.5**
	comp=Z,0.6nm,0.6s,baz=349,slow=5.4,SNR=19						
WRA	**Warramunga Arr**	**81.97**	**122**	P	P	17 34 39.5	-3.8
	comp=Z,0.5nm,0.8s,baz=322,slow=4.8,SNR=3.6						
ASAR	**Alice Springs**	**84.24**	**125**	P	P	17 34 51.8	-3.2
	comp=Z,0.3nm,0.7s,baz=301,slow=22,SNR=5.7						

IDC 09 17:25:35.9±5.6, 39.51N×141.02E, h137km±38km, mb3.1/7, mb1 3.1/10, mb1mx3.0/53, mbtmpb3.4/10, Error ellipse: s-maj=73.4km s-min=16.1km az=69.0, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
MJAR	**Matsushiro Arr**	**3.70**	**218**	P	Pn	17 26 33.1	+1.2
	0.4nm,0.3s,baz=33,slow=13,SNR=13						
USRK	**Ussuriysk Ar.**	**8.21**	**308**	P	Pn	17 27 30.9	-1.1
	0.1nm,0.3s,baz=94,slow=13,SNR=4.6						
KSRS	**Korea Array**	**10.47**	**263**	P	Pn	17 28 01.5	-0.8
	0.1nm,0.3s,baz=70,slow=13,SNR=3.6						
SONM	**Songino Array**	**26.21**	**300**	P	P	17 30 57.8	-0.1
	0.3nm,0.5s,baz=84,slow=6.5,SNR=3.6						
H11N2	**WAKE ISLAND Hy**	**29.73**	**124**	T	T	18 01 56.5	
	baz=318,slow=75,SNR=45						
H11N1	**WAKE ISLAND Hy**	**29.74**	**124**	T	T	18 01 57.2	
	baz=318,slow=75,SNR=34						
H11N3	**WAKE ISLAND Hy**	**29.75**	**124**	T	T	18 01 58.0	
	baz=318,slow=75,SNR=22						
H11S1	**WAKE ISLAND Hy**	**30.51**	**126**	T	T	18 03 05.2	
	baz=319,slow=74						
H11S3	**WAKE ISLAND Hy**	**30.51**	**126**	T	T	18 03 01.0	
	baz=319						
H11S2	**WAKE ISLAND Hy**	**30.53**	**126**	T	T	18 03 05.5	
	baz=319,slow=74						
ZALV	**Zalesovo Beam**	**40.05**	**310**	P	P	17 32 56.8	-0.5
	0.5nm,0.5s,baz=91,slow=7.2,SNR=3.4						
MKAR	**Makanchi Array**	**42.58**	**300**	P	P	17 33 18.9	+0.8
	0.2nm,0.5s,baz=86,slow=12,SNR=5.4						
KURBB	**Kurchatov Arra**	**44.27**	**306**	P	P	17 33 31.4	-0.1
	0.8nm,0.5s,baz=80,slow=8.3,SNR=8.9						
WRA	**Warramunga Arr**	**59.47**	**187**	P	P	17 35 23.4	-1.0
	0.4nm,0.9s,baz=5.9,slow=6.7,SNR=3.3						
ASAR	**Alice Springs**	**63.20**	**187**	P	P	17 35 49.9	+0.5
	0.3nm,0.9s,baz=1.9,slow=5.6,SNR=3.4						
FINES	**FINESS Array B**	**66.49**	**332**	P	P	17 36 10.5	+0.3
	1.5nm,1.0s,baz=46,slow=8.2,SNR=3.9						

IDC 09 17:26:10.7±2.8, 11.56S×115.74E, h0km, mb3.3/2, mb1 3.5/4, mb1mx3.2/43, mbtmpb3.3/4, ML3.4/2, Error ellipse: s-maj=141.0km s-min=25.6km az=46.0, South of Bali

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
FITZ	**Fitzroy Crossi**	**11.57**	**125**	Pn	Pn	17 28 55.4	-1.8
	0.3nm,0.3s,baz=313,slow=16,SNR=6.2						
FITZ				Sn	Sn	17 30 52.0	-15
	0.7nm,0.3s,baz=180,slow=22,SNR=7.5						
WRA	**Warramunga Arr**	**19.73**	**117**	P	P	17 30 42.3	+0.1
	0.1nm,0.3s,baz=291,slow=12,SNR=7.3						
WRA				S	S	17 34 06.4	-19
	0.1nm,0.3s,baz=289,slow=26,SNR=5.0						
ASAR	**Alice Springs**	**21.06**	**127**	P	P	17 30 57.2	+0.7
	0.7nm,0.6s,baz=299,slow=10,SNR=16						
ASAR				S	S	17 34 40.0	-12
	0.6nm,0.7s,baz=299,slow=23,SNR=2.9						
MKAR	**Makanchi Array**	**65.34**	**335**	P	P	17 36 54.7	0.0
	0.2nm,0.4s,baz=146,slow=7.5,SNR=5.0						

MEX 09 17:26:44.3±0.8, 16.98N×94.18W, h163km±22km, MD3.8, Oaxaca

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
PCIG		**1.57**	**144**	*e*P	Pn	17 27 14.6	-0.9
PCIG				*i* S	Sn	17 27 37.4	-2.3
CCIG	**Comitan**	**2.08**	**109**	*e*P	Pn	17 27 20.3	-1.0
CCIG				*e*S	Sn	17 27 47.3	-2.5
HUIG	**Huatulco**	**2.21**	**237**	*e*P	Pn	17 27 19.6	-3.1
HUIG				*i* S	Sn	17 27 50.5	-1.7
VHO	**Vista Hermosa**	**2.45**	**273**	*e*P	Pn	17 27 24.1	-1.5
VHO				*e*S	Sn	17 27 55.8	-1.8

*ISCJB **09** 17:27:09.7±0.5, 39.67N±0.02×38.48E±0.03, h10km±4km, Error ellipse: s-maj=4.7km s-min=3.7km az=142.6*
*CSEM **09** 17:27:09.6±0.2, 39.66N×38.49E, h10km, MD2.7, Error ellipse: s-maj=6.1km s-min=4.1km az=51.0*
*DDA **09** 17:27:09.4, 39.63N×38.47E, h7km, Md2.8*
*ISK **09** 17:27:09.7, 39.66N×38.49E, h9km, MD2.7*
ISC 09 17:27:09.5±0.9, 39.66N±0.03×38.48E±0.03, h14km±7km, n27, σ0s56/46, Turkey

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
ILIC	**ilic-Erzincan**	**0.22**	**162**	*e*PG	**Pg**	**17 27 14.3**	**-0.1**
ILIC				*e*SG	**Sg**	**17 27 18.1**	**+0.4**
ILIC	**ilic-Erzincan**	**0.22**	**162**	*e*Pg	**Pg**	**17 27 14.3**	**-0.1**
ILIC				*e*Sg	**Sg**	**17 27 18.1**	**+0.4**
REFA	**Refahiye_ERZ~**	**0.34**	**140**	*i* P	**Pg**	**17 27 16.7**	**+0.1**
REFA				*i* S	**Sb**	**17 27 22.5**	**-0.3**
REFA	**Refahiye_ERZ~**	**0.34**	**140**	P	**Pg**	**17 27 16.7**	**+0.1**
REFA				S	**Sb**	**17 27 22.5**	**-0.3**
KEMA	**Kemaliye**	**0.39**	**179**	*i* P	**Pg**	**17 27 16.8**	**-0.6**
KEMA				*i* S	**Sg**	**17 27 22.9**	**+0.2**
KEMA	**Kemaliye**	**0.39**	**179**	P	**Pg**	**17 27 16.8**	**-0.6**
SUSE	**Susehri**	**0.59**	**339**	*i* P	**Pb**	**17 27 21.7**	**0.0**
SUSE				*i* S	**Sb**	**17 27 30.1**	**+0.1**
SUSE	**Susehri**	**0.59**	**339**	P	**Pb**	**17 27 21.7**	**0.0**
SUSE				S	**Sb**	**17 27 30.1**	**+0.1**
CUZAR	**Zara_SIVAS**	**0.59**	**293**	*i* P	**Pg**	**17 27 20.9**	**-0.3**
CUZAR				*i* S	**Sb**	**17 27 30.5**	**+0.5**
CUZAR	**Zara_SIVAS**	**0.59**	**293**	P	**Pg**	**17 27 20.9**	**-0.3**
CUZAR				S	**Sb**	**17 27 30.5**	**+0.5**
KELT	**Kelkit**	**0.77**	**50**	*i* P	**Pg**	**17 27 24.1**	**-0.5**
KELT				*i*

JOM	**Ohasama**	**2.64**	**317**	P	**Pn**	**17 29 13.3**	**-0.9**
JOM				S	**Sn**	**17 29 42.8**	**-2.1**
JYK	**Kaneyama**	**2.89**	**299**	P	**Pn**	**17 29 18.0**	**+0.3**
JYK				S	**Sn**	**17 29 51.1**	**-0.1**
JANG	**Nango**	**3.25**	**331**	P	**Pn**	**17 29 22.8**	**+0.1**
JAG	**Ashikaga**	**3.50**	**253**	P	**Pn**	**17 29 27.2**	**+1.1**
JAG				S	**Sn**	**17 30 05.9**	**-0.4**
BSO1	**Boso 1**	**3.58**	**217**	P	**Pn**	**17 29 26.5**	**-0.2**
JRY	**Ryogami san**	**4.07**	**249**	P	**Pn**	**17 29 34.3**	**+0.4**
JRY				S	**Sn**	**17 30 19.0**	**-1.3**
JOD2	**Odawara 2**	**4.29**	**239**	P	**Pn**	**17 29 38.4**	**+1.4**
JOD2				S	**Sn**	**17 30 23.6**	**-2.2**
MJAR	**Matsushiro Arr**	**4.42**	**258**	Pn	**Pn**	**17 29 41.1**	**+2.3**
	0.9nm,0.3s,baz=91,slow=16,SNR=10						
MAT	**Matsushiro**	**4.42**	**258**	S	**Sn**	**17 30 26.1**	**-3.0**
JYN	**Shimob**	**4.55**	**245**	P	**Pn**	**17 29 42.3**	**+1.7**
JYN				*e*S	**Sn**	**17 30 30.8**	**-1.6**
JHJ	**Hachijo jima 2**	**5.41**	**216**	Pn	**Pn**	**17 29 52.2**	**-0.1**
	5.3nm,0.3s,baz=72,slow=19,SNR=3.6						
JHJ				Sn	**Sn**	**17 30 49.2**	**-4.1**
	6.5nm,0.3s,baz=258,slow=20,SNR=2.5						
JNU	**Nakatsue**	**11.28**	**251**	LR	LR	17 35 06.8	
	comp=Z,73nm,19.9s,baz=124,slow=35						
JAY	**Jayapura**	**39.95**	**184**	LR	LR	17 51 35.4	
	comp=Z,6.4nm,20.3s,baz=59,slow=35						
KURBB	**Kurchatov Arra**	**47.06**	**308**	P	**P**	**17 37 03.6**	**+1.4**
	0.5nm,0.5s,baz=82,slow=8.0,SNR=6.0						
WRA	**Warramunga Arr**	**57.84**	**190**	P	**P**	**17 38 22.8**	**+0.5**
	0.5nm,0.5s,baz=8.9,slow=7.3,SNR=7.9						
ASAR	**Alice Springs**	**61.57**	**190**	P	**P**	**17 38 48.8**	**+0.9**
	0.3nm,0.9s,baz=5.9,slow=6.3,SNR=2.8						
YKA	**Yellowknife Ar**	**62.48**	**31**	P	**P**	**17 38 53.3**	**-0.3**
	0.1nm,0.6s,baz=299,slow=6.3,SNR=3.6						
NEW	**Newport**	**68.54**	**45**	LR	LR	18 08 20.9	
	comp=Z,22nm,18.4s,baz=262,slow=35						

*IDC **09** 17:35:16.9±22.0, 36°68N×71°29E, h254km±136km, mb3.2/1, mb1 2.9/5, mb1mx2.6/52, mbtmp3.6/5, Error ellipse: s-maj=246.8km s-min=54.7km az=175.0*
*NNC **09** 17:35:20.1±2.2, 37°09N×70°85E, h226km±28km, mb2.3, mpv3.5, Error ellipse: s-maj=24.5km s-min=19.8km az=68.0*
ISC 09 17:35:17.0±2.8, 36°9N±0°2×70°9E±0°1, h200km, n12, σ1§66/14, 5C-6D, Hindu Kush region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SFK	**Sufi-Kurgan**	**3.77**	**33**	⇓P	**Pn**	**17 36 17.4**	**+1.4**
	4.7nm,0.3s						
SFK				⇑S	**Sn**	**17 37 04.9**	**+2.5**
	7.4nm,0.2s						
MNAS	**Manas**	**5.76**	**12**	⇓P	**Pn**	**17 36 42.6**	**+1.5**
	2.8nm,0.4s						
MNAS				⇓S	**Sn**	**17 37 48.2**	**+0.5**
	6.9nm,0.6s						
KK31	**Karatay Array**	**6.24**	**358**	⇑P	**Pn**	**17 36 49.0**	**+1.8**
	0.7nm,0.3s,baz=172,slow=12,SNR=7.7						
KK31				⇑S	**Sn**	**17 37 56.8**	**-2.0**
	1.3nm,0.4s,baz=180,slow=23,SNR=12						
AAK	**Ala-Archa**	**6.40**	**25**	⇓P	**Pn**	**17 36 50.0**	**+0.5**
	1.8nm,0.3s						
AAK				⇑S	**Sn**	**17 38 03.2**	**+0.3**
	2.9nm,0.6s						
TKM2	**Tokmak 2**	**7.06**	**30**	⇑P	**Pn**	**17 36 58.1**	**+0.1**
	2.0nm,0.5s						
TKM2				⇓S	**Sn**	**17 38 17.3**	**-1.0**
	2.5nm,0.7s						
MKAR	**Makanchi Array**	**13.06**	**37**	P	Pn	17 38 12.6	-2.5
	0.1nm,0.3s,baz=225,slow=14,SNR=6.4						
AB31	**Akbulak array**	**14.71**	**331**	P	**P**	**17 38 36.9**	**+0.4**
	0.1nm,0.3s,baz=154,slow=11,SNR=9.9						
KURBB	**Kurchatov Arra**	**14.81**	**19**	P	Pn	17 38 33.9	-2.8
	0.0nm,0.3s,baz=206,slow=11,SNR=4.2						
AKTO	**Aktyubinsk**	**16.41**	**330**	P	**P**	**17 38 55.7**	**+0.5**
	0.6nm,0.3s,baz=128,slow=10,SNR=4.4						
AKTO	**Aktyubinsk**	**16.41**	**330**	⇓P	**P**	**17 38 55.4**	**+0.1**
	0.8nm,0.4s						
ZALV	**Zalesovo Beam**	**19.63**	**25**	P	**P**	**17 39 26.8**	**-3.3**
	0.3nm,0.3s,baz=214,slow=11,SNR=4.9						
FINES	**FINESS Array B**	**37.12**	**326**	P	P	17 42 05.5	-2.4
	1.1nm,0.8s,baz=117,slow=6.8,SNR=3.5						

*ISCJB **09** 17:35:43.3±0.8, 6°95N±0°05×73°17W±0°05, h157km±7km, Error ellipse: s-maj=10.2km s-min=5.3km az=142.5*
*FUNV **09** 17:35:44.9, 6°86N×73°16W, h158km, MW2.8*
*RSNC **09** 17:35:46.1±1.1, 6°75N×73°10W, h137km±11km, ML2.5*
ISC 09 17:35:43.1±1.5, 6°88N±0°06×73°14W±0°05, h159km±9km, n17, σ1§18/26, Northern Colombia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BTLC	**Betulia, Santa**	**0.14**	**286**	*e*P	**Pn**	**17 36 03.9**	**-0.8**
BARC	**Barichara**	**0.29**	**189**	*e*P	**Pn**	**17 36 04.8**	**-0.2**
BARC				*i*		17 36 22.1	
	comp=Z,83nm,0.3s						
BRRC	**Barranca, Sant**	**0.61**	**292**	*e*P	**Pn**	**17 36 06.7**	**+0.7**
BRRC				*e*S	**Sn**	**17 36 23.1**	**-0.5**
BRRC				*i*		17 36 27.6	
	comp=Z,94nm,0.1s						
PAMC	**Pamplona, Colo**	**0.63**	**44**	*i* P	**Pn**	**17 36 07.8**	**+1.0**
PAMC				*e*S	**Sn**	**17 36 24.3**	**-0.5**
PAMC				*i*		17 36 26.5	
	comp=Z,35nm,0.4s						
GRMC	**Gramalote, San**	**0.90**	**22**	*e*P	**Pn**	**17 36 10.7**	**+2.5**
GRMC				*i*		17 36 31.4	
	comp=Z,69nm,0.3s						
CAPV	**Capacho**	**1.27**	**40**	*e*P	**Pn**	**17 36 13.0**	**+1.6**
CAPV				*e*S	**Sn**	**17 36 33.0**	**-0.1**
NORC	**Norcasia**	**2.16**	**233**	*e*P	**Pn**	**17 36 21.3**	**+0.5**
NORC				*e*S	**Sn**	**17 36 48.8**	**-1.0**
CHIC	**Chingaza**	**2.31**	**195**	*e*P	**Pn**	**17 36 23.2**	**+0.3**
CHIC				*i*		17 36 56.8	
	comp=Z,9.6nm,0.4s						
HELC	**Santa Helena**	**2.47**	**254**	*e*P	**Pn**	**17 36 27.0**	**+2.2**
HELC				*e*S	**Sn**	**17 36 57.1**	**+0.3**
HELC				*i*		17 37 04.8	
	comp=Z,18nm,0.6s						
VIGV	**El Vigia**	**2.62**	**42**	*e*P	**Pn**	**17 36 27.3**	**+1.1**
VIGV				*e*S	**Sn**	**17 36 59.2**	**-0.4**
SOCV	**Socops**	**2.66**	**58**	*e*P	**Pn**	**17 36 27.4**	**+0.8**
SOCV				*e*S	**Sn**	**17 36 59.1**	**-1.2**
MOTC	**Monteria, Cord**	**3.13**	**307**	*e*P	**Pn**	**17 36 32.6**	**0.0**
MOTC				*e*S	**Sn**	**17 37 09.3**	**-1.6**
PRAC	**Prado**	**3.60**	**209**	*e*P	**Pn**	**17 36 39.0**	**+0.5**
VIRV	**Villa del Rosa**	**3.67**	**11**	*e*P	**Pn**	**17 36 40.0**	**+0.6**
VIRV				*e*S	**Sn**	**17 37 20.9**	**-2.3**
CURV	**Curarigua**	**4.42**	**45**	*e*P	**Pn**	**17 36 50.1**	**+0.9**
BAUV	**El Baul**	**5.45**	**68**	*e*P	**Pn**	**17 37 02.8**	**+0.1**
MONV	**Montecano**	**5.93**	**32**	*e*P	**Pn**	**17 37 09.2**	**+0.2**

*IDC **09** 17:43:58.7±2.1, 34°64N×142°58E, h0km, mb3.4/3, mb1 3.4/5, mb1mx3.2/43, mbtmp3.3/5, ML2.9/2, MS2.9/2, Ms1 2.9/2, ms1mx2.3/26, Error ellipse: s-maj=41.2km s-min=25.2km az=54.0*
*JMA **09** 17:44:00.0±0.4, 34°99N×142°63E, h41km, M3.5*
ISC 09 17:44:02.2±1.8, 34°88N±0°07×142°6E±0°1, h42km, n17, σ1§30/21, mb3.3/3, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BSO1	**Boso 1**	**1.34**	**261**	P	**Pn**	**17 44 23.6**	**-0.3**
BSO1				*e*S	**Sn**	**17 44 42.1**	**+1.8**
CHOJ	**Chosi**	**1.63**	**301**	P	**Pn**	**17 44 26.7**	**-1.7**
BSO3	**Boso 3**	**1.71**	**268**	P	**Pn**	**17 44 29.2**	**0.0**
JCN	**Nagara**	**2.02**	**286**	P	**Pn**	**17 44 33.9**	**+0.1**
JIM2	**Oshima 3**	**2.60**	**267**	P	**Pn**	**17 44 40.5**	**-1.2**
JIM2				*e*S	**Sn**	**17 45 11.4**	**-0.7**
JOD2	**Odawara 2**	**2.89**	**279**	P	**Pn**	**17 44 44.8**	**-1.0**
JOD2				*e*S	**Sn**	**17 45 18.5**	**-0.8**
JHJ2	**Mitsune**	**2.90**	**233**	S	**Sn**	**17 45 19.8**	**+0.4**
JHJ	**Hachijo jima 2**	**2.92**	**234**	Pn	**Pn**	**17 44 45.8**	**-0.3**
	6.2nm,0.3s,baz=72,slow=19,SNR=9.6						
JHJ				Sn	**Sn**	**17 45 18.6**	**-1.3**
	22nm,0.3s,baz=95,slow=23,SNR=9.5						
JAG	**Ashikaga**	**2.98**	**302**	P	**Pn**	**17 44 46.1**	**-0.8**
JAG				*e*S	**Sn**	**17 45 20.4**	**-1.0**
JIZS	**Izushimoda**	**3.05**	**268**	P	**Pn**	**17 44 47.2**	**-0.8**
JIZS				*e*S	**Sn**	**17 45 22.9**	**-0.3**
JRY	**Ryogami san**	**3.21**	**292**	P	**Pn**	**17 44 50.2**	**0.0**
MJAR	**Matsushiro Arr**	**3.92**	**296**	Pn	**Pn**	**17 44 59.2**	**-0.7**
	0.7nm,0.3s,baz=117,slow=10,SNR=11						
MJAR				Sn	**Sn**	**17 45 48.6**	**+3.9**
	0.8nm,0.3s,baz=106,slow=13,SNR=5.6						
JCJ	**Chichijima**	**7.77**	**183**	LR	LR	17 49 53.5	
	comp=Z,29nm,20.3s,baz=278,slow=47						
MKAR	**Makanchi Array**	**46.09**	**304**	P	P	17 52 26.4	+4.4
	0.4nm,0.9s,baz=82,slow=6.3,SNR=3.9						
WRA	**Warramunga Arr**	**55.08**	**189**	P	**P**	**17 53 30.2**	**+0.2**
	0.7nm,0.7s,baz=7.3,slow=7.7,SNR=8.3						
FITZ	**Fitzroy Crossi**	**55.10**	**200**	LR	LR	18 18 40.0	
	comp=Z,25nm,18.3s,baz=178,slow=38						
ASAR	**Alice Springs**	**58.81**	**189**	P	**P**	**17 53 57.1**	**+0.7**
	0.2nm,0.8s,baz=3.2,slow=7.2,SNR=5.5						

*ISCJB **09** 17:47:29.5±0.4, 35°45N±0°04×140°08E±0°06, h77km±3km, mb3.5/11, Error ellipse: s-maj=8.9km s-min=5.7km az=150.2*
*JMA **09** 17:47:29.7±0.2, 35°58N×140°12E, h70km±2km, M3.2*
JMA Felt I J1.
*IDC **09** 17:47:30.9±1.6, 35°42N×140°02E, h74km±15km, mb3.4/11, mb1 3.5/14, mb1mx3.4/48, mbtmp3.7/14, MS2.8/1, Ms1 2.8/1, ms1mx2.3/23, Error ellipse: s-maj=23.1km s-min=10.6km az=75.0*
ISC 09 17:47:30.6±0.8, 35°48N±0°05×140°08E±0°06, h70km±6km, n31, σ0§89/32, mb3.5/11, 2C-3D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JCN	**Nagara**	**0.12**	**121**	⇑P	**Pn**	**17 47 40.7**	**-0.1**
JCN				*e*S	**Sn**	**17 47 49.1**	**+0.8**
TOK	**Tokyo**	**0.33**	**309**	P	**Pn**	**17 47 42.0**	**+0.1**
TOK				*e*S	**Sn**	**17 47 51.2**	**+1.0**
BSO3	**Boso 3**	**0.77**	**152**	⇑P	**Pn**	**17 47 45.9**	**0.0**
BSO3				X		17 47 58.9	
JOD2	**Odawara 2**	**0.83**	**255**	⇓P	**Pn**	**17 47 46.8**	**-0.3**
JOD2				S	**Sn**	**17 47 59.0**	**-0.3**
JIM2	**Oshima 3**	**0.93**	**215**	P	**Pn**	**17 47 47.7**	**-0.5**
JIM2				S	**Sn**	**17 48 01.5**	**+0.3**
JAG	**Ashikaga**	**1.07**	**332**	⇓P	**Pn**	**17 47 48.6**	**-1.3**
JAG				*e*S	**Sn**	**17 48 01.9**	**-2.5**
JRY	**Ryogami san**	**1.09**	**300**	⇓P	**Pn**	**17 47 50.0**	**-0.3**
BSO1	**Boso 1**	**1.11**	**138**	P	**Pn**	**17 47 49.5**	**-0.4**
BSO1				S	**Sn**	**17 48 05.2**	**+0.8**
MJAR	**Matsushiro Arr**	**1.85**	**306**	P	**Pn**	**17 47 59.8**	**-0.3**
	16nm,0.3s,baz=149,slow=15,SNR=127						
MJAR				LR	LR	17 48 43.3	
	comp=Z,54nm,21.2s,baz=225,slow=40						
MAT	**Matsushiro**	**1.85**	**306**	P	**Pn**	**17 48 00.1**	**-0.1**
MAT				S	**Sn**	**17 48 24.0**	**+1.3**
JHJ	**Hachijo jima 2**	**2.37**	**186**	P	**Pn**	**17 48 07.3**	**+0.1**
	33nm,0.3s,baz=137,slow=23,SNR=15						
JHJ				S	**Sn**	**17 48 34.9**	**-0.3**
	91nm,0.3s,baz=243,slow=22,SNR=11						
JNU	**Nakatsue**	**7.96**	**255**	P	**Pn**	**17 49 23.8**	**+0.1**
	0.1nm,0.3s,baz=32,slow=12,SNR=2.5						
JCJ	**Chichijima**	**8.55**	**167**	P	**Pn**	**17 49 29.4**	**-2.2**
	7.9nm,0.3s,baz=84,slow=16,SNR=9.1						
JCJ				S	Sn	17 50 58.5	-8.1
	baz=288,slow=20						
KSRS	**Korea Array**	**9.98**	**285**	P	Pn	17 49 55.2	+4.1
	baz=101,slow=13,SNR=4.3						
KSRS				LR	LR	17 53 37.0	
	comp=Z,66nm,21.9s,baz=132,slow=37						
MA2	**Magadan**	**25.10**	**13**	P	**P**	**17 52 49.8**	**+1.3**
	1.2nm,0.2s,baz=201,slow=14,SNR=3.6						
SONM	**Songino Array**	**27.80**	**307**	P	**P**	**17 53 12.9**	**-0.2**
	0.3nm,0.6s,baz=124,slow=11,SNR=3.5						
H11N2	**WAKE ISLAND Hy**	**28.35**	**116**	T	T	18 22 44.2	
	baz=309,slow=75,SNR=17						
H11N1	**WAKE ISLAND Hy**	**28.36**	**117**	T	T	18 22 50.9	
	baz=309,slow=75,SNR=15						
H11N3	**WAKE ISLAND Hy**	**28.37**	**116**	T	T	18 22 43.9	
	baz=309,slow=75,SNR=12						
H11S1	**WAKE ISLAND Hy**	**29.00**	**119**	T	T	18 23 26.7	
	baz=311,slow=75,SNR=12						
H11S3	**WAKE ISLAND Hy**	**29.00**	**119**	T	T	18 23 29.3	
	baz=311,slow=75,SNR=8.8						
H11S2	**WAKE ISLAND Hy**	**29.01**	**119**	T	T	18 23 30.4	
	baz=311,slow=75,SNR=7.4						
ZALV	**Zalesovo Beam**	**42.18**	**314**	P	**P**	**17 55 15.4**	**-0.7**
	0.6nm,0.4s,baz=95,slow=6.3,SNR=5.1						
MKAR	**Makanchi Array**	**44.05**	**303**	P	**P**	**17 55 31.9**	**+0.5**
	1.1nm,0.9s,baz=89,slow=9.7,SNR=8.4						
ILAR	**Eielson Array**	**51.38**	**32**	P	**P**	**17 56 27.9**	**+0.1**
	0.3nm,0.6s,baz=269,slow=7.2,SNR=3.0						
WRA	**Warramunga Arr**	**55.39**	**187**	P	**P**	**17 56 57.1**	**-0.5**
	0.4nm,0.4s,baz=0.8,slow=7.5,SNR=18						
ASAR	**Alice Springs**	**59.11**	**187**	P	**P**	**17 57 23.0**	**-0.9**
	0.2nm,0.7s,baz=19,slow=11,SNR=6.1						
FINES	**FINESS Array B**	**69.68**	**332**	P	**P**	**17 58 32.3**	**-0.1**
	1.1nm,0.7s,baz=56,slow=3.4,SNR=4.7						
AKASG	**Malin Array Be**	**74.86**	**322**	P	**P**	**17 59 03.3**	**-0.1**
	0.2nm,0.3s,baz=39,slow=5.0,SNR=2.8						
NOA	**NORSAR Array B**	**75.19**	**337**	P	**P**	**17 59 05.3**	**+0.1**
	0.5nm,0.9s,baz=23,slow=2.9,SNR=2.2						
PDAR	**Pinedale Array**	**79.53**	**45**	P	**P**	**17 59 30.9**	**+0.8**
	0.2nm,0.6s,baz=284,slow=0.6,SNR=3.8						

*ISCJB **09** 17:56:13.5±0.4, 56°00N±0°04×161°81W±0°08, h10km, mb3.7/6, Error ellipse: s-maj=7.9km s-min=3.9km az=37.8*
*NEIC **09** 17:56:16.3, 55°88N×161°61W, h16km, ML3.2(AEIC), After AEIC.*
*IDC **09** 17:56:21.1±9.1, 56°16N×161°68W, h50km±70km, mb3.4/6, mb1 3.6/8, mb1mx3.3/54, mbtmp3.6/8, ML3.3/2, Error ellipse: s-maj=67.3km s-min=25.8km az=37.0*
ISC 09 17:56:15.1±0.7, 55°93N±0°06×161°68W±0°05, h10km, n31, σ1§09/33, mb3.6/6, Alaska Peninsula

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PN6	**Pavlof North-6**	**0.50**	**196**	*e*Pn	**Pb**	**17 56 26.6**	**+0.6**
PN6				*e*Sn	**Sb**	**17 56 34.6**	**+1.3**
PVV	**Pavlof Volcano**	**0.56**	**186**	P	**Pg**	**17 56 26.7**	**+0.7**
PS4A	**Pavlof South-4**	**0.60**	**190**	P	**Pg**	**17 56 27.4**	**+0.7**
HAG	**Hague Volcano**	**0.63**	**192**	P	**Pb**	**17 56 28.2**	**0.0**
SDPT	**Sand Point**	**0.90**	**130**	*e*Pn	**Pg**	**17 56 32.2**	**-0.1**
SDPT				*e*Sn	**Sb**	**17 56 43.6**	**-1.1**
BALA	**Baldy Mountain**	**0.97**	**221**	*e*Pn	**Pg**	**17 56 34.7**	**+0.9**
VNWF	**Veniaminof 8**	**1.21**	**79**	P	**Pb**	**17 56 38.0**	**-0.1**
VNSS	**Veniaminof 8**	**1.28**	**76**	P	**Pn**	**17 56 39.0**	**-0.2**
FALS	**False Pass**	**1.46**	**223**	*e*Pn	**Pn**	**17 56 40.8**	**-0.7**
FALS				*e*Sn	**Sn**	**17 56 57.2**	**-3.5**
ISLZ	**Isanotski Laza**	**1.68**	**225**	P	**Pn**	**17 56 43.7**	**-0.8**
CHGN	**Chignik**	**1.87**	**77**	*e*Pn	**Pn**	**17 56 46.3**	**-0.7**
CHGN				*e*Sn	**Sn**	**17 57 10.9**	**+0.3**
PLK1	**Peulik 1**	**3.36**	**54**	P	**Pn**	**17 57 07.2**	**-0.3**
UNV	**Unalaska Valle**	**3.48**	**235**	*e*Pn	**Pn**	**17 57 09.1**	**-0.2**
KABR	**Katmai Barrier**	**4.28**	**56**	P	**Pn**	**17 57 22.2**	**+1.9**
OHAK	**Old Harbor**	**4.82**	**71**	*e*Pn	**Pn**	**17 57 27.5**	**-0.1**
KDAK	**Kodiak Island**	**5.33**	**66**	P	Pb	17 57 50.2	+2.1
	3.7nm,0.3s,baz=235,slow=7.6,SNR=45						
KDAK				S	Sb	17 58 49.7	-2.3
	0.5nm,0.3s,baz=345,slow=20,SNR=3.4						
KDAK	**Kodiak Island**	**5.33**	**66**	*e*Pn	**Pn**	**17 57 35.1**	**+0.6**
PPLA	**Purkeypile**	**8.49**	**31**	*e*Pn	**Pn**	**17 58 19.0**	**+0.9**
BPAW	**Bear Paw Mtn.**	**9.77**	**29**	*e*Pn	Pn	17 58 40.5	+5.0
RND	**Reindeer**	**9.89**	**36**	*e*Pn	**Pn**	**17 58 36.5**	**-0.7**
MLY	**Manley**	**10.58**	**26**	*e*Pn	Pn	17 58 52.9	+6.2
WRH	**Wood River Hil**	**10.88**	**33**	*e*Pn	**Pn**	**17 58 52.6**	**+1.9**
CCB	**Clear Creek Bu**	**11.10**	**32**	*e*Pn	**Pn**	**17 58 54.7**	**+1.1**
ILAR	**Eielson Array**	**11.46**	**33**	P	**Pn**	**17 58 58.9**	**+0.3**
	0.1nm,0.3s,baz=222,slow=13,SNR=7.2						
INK	**Inuvik**	**17.86**	**35**	P	**Pn**	**18 00 23.8**	**+0.6**
	0.1nm,0.3s,baz=236,slow=10,SNR=5.1						
YKA	**Yellowknife Ar**	**24.48**	**55**	P	**P**	**18 01 33.7**	**-0.2**
	0.6nm,0.6s,baz=273,slow=8.5,SNR=22						
YKA				PcP	**PcP**	**18 05 11.2**	**-0.8**
	0.1nm,0.6s,baz=285,slow=1.9,SNR=3.9						
NVAR	**Mina Array Bea**	**33.60**	**103**	P	**P**	**18 02 56.8**	**+1.3**
	0.4nm,0.5s,baz=346,slow=3.0,SNR=3.5						
TXAR	**Lajitas Array**	**48.45**	**98**	P	**P**	**18 04 58.9**	**+1.2**
	0.5nm,0.7s,baz=299,slow=4.4,SNR=4.2						
FINES	**FINESS Array B**	**62.81**	**356**	P	**P**	**18 06 39.7**	**-0.4**
	4.6nm,1.2s,baz=10,slow=8.5,SNR=4.4						
MKAR	**Makanchi Array**	**64.47**	**317**	P	**P**	**18 06 51.1**	**-0.4**
	0.1nm,0.4s,baz=53,slow=6.5,SNR=2.3						
AKASG	**Malin Array Be**	**73.35**	**353**	P	**P**	**18 07 45.2**	**-1.3**
	0.5nm,0.4s,baz=7.3,slow=6.2,SNR=3.4						

*IDC **09** 17:59:32.1±1.0, 37°91N×144°36E, h0km, mb3.4/9, mb1 3.7/11, mb1mx3.5/50, mbtmp3.6/11, ML3.6/2, Error ellipse: s-maj=31.6km s-min=17.4km az=117.0*
*ISCJB **09** 17:59:34.8±0.6, 37°96N±0°04×144°16E±0°04, h33km, mb3.4/9, Error ellipse: s-maj=6.1km s-min=4.7km az=162.0*
*JMA **09** 17:59:35.2±0.2, 38°01N×144°13E, h39km, M4.0*
ISC 09 17:59:36.6±0.9, 37°93N±0°05×144°18E±0°07, h35km, n28, σ1§54/41, mb3.5/9, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**2.29**	**284**	P	**Pn**	**18 00 11.0**	**-0.9**
JIO				S	**Sn**	**18 00 37.1**	**-1.8**
JMK	**Ichinoseki**	**2.54**	**295**	P	**Pn**	**18 00 14.7**	**-0.6**
JMK				S	**Sn**	**18 00 44.2**	**-0.8**
JMM	**Marumori**	**2.68**	**270**	P	**Pn**	**18 00 16.4**	**-0.8**
JMM				S	**Sn**	**18 00 46.7**	**-1.8**
JFK	**Kawauchi**	**2.68**	**259**	S	**Sn**	**18 00 46.2**	**-2.4**
JTH	**Tanohata**	**2.70**	**319**	P	**Pn**	**18 00 16.6**	**-0.9**
JTH				*e*S	**Sn**	**18 00 48.1**	**-0.9**
JOM	**Ohasama**	**2.74**	**305**	P	**Pn**	**18 00 17.4**	**-0.6**
JOM				S	**Sn**	**18 00 48.8**	**-1.1**
JOU	**Okura**	**2.81**	**280**	P	**Pn**	**18 00 18.5**	**-0.5**
JOU				S	**Sn**	**18 00 50.7**	**-0.9**
JFT	**Otama**	**3.08**	**264**	P	**Pn**	**18 00 22.7**	**0.0**
JFT				S	**Sn**	**18 00 57.5**	**-0.7**
JRG	**Rokugo**	**3.14**	**299**	P	**Pn**	**18 00 24.3**	**+0.7**
JRG				*e*S	**Sn**	**18 00 59.9**	**+0.1**
JYK	**Kaneyama**	**3.16**	**289**	P	**Pn**	**18 00 23.5**	**-0.3**
JYK				*e*S	**Sn**	**18 01 00.5**	**+0.2**
JANG	**Nango**	**3.20**	**321**	P	**Pn**	**18 00 23.3**	**-1.1**
JANG				*e*S	**Sn**	**18 00 58.8**	**-2.6**
JTM	**Tenmabayashi**	**3.74**	**321**	P	**Pn**	**18 00 31.3**	**-0.5**
JNBK	**Urakawa-nobuka**	**4.49**	**346**	P	**Pn**	**18 00 40.5**	**-1.5**
JRY	**Ryogami san**	**4.64**	**247**	P	**Pn**	**18 00 43.3**	**-0.9**
JRY				S	**Sn**	**18 01 33.8**	**-3.0**
JKB	**Kayabe**	**4.64**	**330**	P	**Pn**	**18 00 43.6**	**-0.5**
JCH	**Churui**	**4.72**	**353**	P	**Pn**	**18 00 42.9**	**-2.4**
MJAR	**Matsushiro Arr**	**4.96**	**256**	Pn	**Pn**	**18 00 49.3**	**+0.6**
	3.1nm,0.3s,baz=83,slow=15,SNR=50						
MJAR				Sn	**Sn**	**18 01 46.0**	**+1.2**
	1.1nm,0.3s,baz=88,slow=30,SNR=3.7						
MAT	**Matsushiro**	**4.96**	**256**	P	**Pn**	**18 00 49.4**	**+0.8**
MAT				S	**Sn**	**18 01 47.4**	**+2.6**
JHJ	**Hachijo jima 2**	**5.99**	**218**	Pn	**Pn**	**18 01 00.7**	**-2.0**
	3.9nm,0.3s,baz=72,slow=20,SNR=4.0						
JHJ				Sn	**Sn**	**18 02 05.0**	**-5.0**
	22nm,0.3s,baz=242,slow=24,SNR=7.0						
MA2	**Magadan**	**22.08**	**9**	P	**P**	**18 04 27.3**	**-1.0**
	2.1nm,0.7s,baz=213,slow=7.7,SNR=3.8						
SEY	**Seymchan**	**25.53**	**9**	P	**P**	**18 05 02.0**	**+0.4**
	1.0nm,0.6s,baz=199,slow=9.6,SNR=5.3						
ZALV	**Zalesovo Beam**	**42.95**	**312**	P	P	18 07 34.8	+2.9
	0.2nm,0.4s,baz=86,slow=4.8,SNR=2.3						
MKAR	**Makanchi Array**	**45.52**	**302**	P	**P**	**18 07 53.8**	**+1.2**
	0.2nm,0.8s,baz=88,slow=10,SNR=2.5						
ILAR	**Eielson Array**	**47.56**	**33**	P	**P**	**18 08 08.5**	**+0.2**
	0.5nm,0.7s,baz=260,slow=6.7,SNR=6.2						
INK	**Inuvik**	**52.59**	**28**	P	**P**	**18 08 46.6**	**+0.3**
	0.5nm,0.9s,baz=299,slow=13,SNR=3.7						
WRA	**Warramunga Arr**	**58.30**	**191**	P	**P**	**18 09 29.7**	**+1.8**
	0.5nm,0.7s,baz=12,slow=7.2,SNR=4.2						
YKA	**Yellowknife Ar**	**61.92**	**31**	P	**P**	**18 09 52.5**	**+0.3**
	0.2nm,0.7s,baz=304,slow=6.5,SNR=4.2						
ASAR	**Alice Springs**	**62.02**	**191**	P	**P**	**18 09 54.0**	**+0.7**
	0.3nm,0.9s,baz=7.8,slow=6.9,SNR=3.5						

*ISCJB **09** 18:02:40.

	baz=242							
SGST	**Jiashian**	**2.21**	**245**	*e*P		**Pb**	**18 03 17.9**	**-0.4**
	baz=229							
CHN1	**Nanshi**	**2.22**	**248**	*e*P		**Pb**	**18 03 19.0**	**+0.7**
	baz=242							
CHN1				*e*S		**Sg**	**18 03 47.6**	**-1.5**
	baz=242							

*ISCJB **09** 18:02:50.6±0.6, 44°.21N±0°.02×78°.60E±0°.03, h6km±4km, Error ellipse: s-maj=4.0km s-min=3.5km az=32.3*
*SOME **09** 18:02:50.7, 44°.23N×78°.57E, h15km*
*NNC **09** 18:02:51.3±1.4, 44°.15N×78°.58E, h0km, mb2.7, mpv2.6, Error ellipse: s-maj=11.2km s-min=6.4km az=8.0*

ISC 09 18:02:49.7±1.5, 44°.21N±0°.03×78°.57E±0°.03, h3km±12km, n24, σ0s53/41, 14C-17D, Eastern Kazakhstan

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
ARXS	**Arharly**	**0.54**	**271**	*e*P		**Pb**	**18 03 02.0**	**+0.3**
	9.9nm,0.1s							
ARXS				*e*S		**Sb**	**18 03 09.9**	**0.0**
	185nm,0.2s							
KPKS	**Kokpek**	**0.74**	**174**	*e*P		**Pb**	**18 03 05.4**	**0.0**
	69nm,0.2s							
KPKS				*e*S		**Sb**	**18 03 15.5**	**-0.4**
	151nm,0.3s							
KURS	**Kuram**	**0.77**	**202**	⇓*e*P		**Pb**	**18 03 06.1**	**+0.3**
	40nm,0.2s							
KURS				*e*S		**Sb**	**18 03 16.6**	**-0.1**
	22nm,0.3s							
TDK	**Taldyqorghan**	**0.81**	**352**	*e*P		**Pb**	**18 03 06.5**	**+0.1**
	112nm,0.1s							
TDK				*e*S		**Sb**	**18 03 17.4**	**-0.4**
	139nm,0.3s							
ZHN	**Zhinishke**	**1.04**	**185**	*e*P		**Pb**	**18 03 10.4**	**-0.1**
	42nm,0.2s							
ZHN				*e*S		**Sb**	**18 03 24.0**	**-0.5**
	124nm,0.2s							
PDGK	**Podgornoye**	**1.10**	**143**	⇓P		**Pb**	**18 03 11.2**	**-0.2**
	4.7nm,0.2s							
PDGK				⇓S		**Sb**	**18 03 26.1**	**0.0**
	21nm,0.3s							
SATY	**Saty**	**1.15**	**186**	⇓*i*P		**Pb**	**18 03 12.4**	**+0.1**
	97nm,0.2s							
SATY				⇓*i*S		**Sb**	**18 03 28.1**	**+0.4**
	215nm,0.2s							
CHKK	**Chushkaly**	**1.18**	**254**	⇓*i*P		**Pb**	**18 03 12.6**	**-0.2**
	7.9nm,0.4s							
CHKK				⇑*i*S		**Sb**	**18 03 28.7**	**+0.2**
	124nm,0.2s							
KAPS	**Kapalarasan**	**1.22**	**27**	⇓*i*P		**Pn**	**18 03 13.6**	**-0.1**
	9.2nm,0.4s							
KAPS				⇓*i*S		**Sb**	**18 03 29.8**	**+0.2**
	43nm,0.4s							
SHLS	**Shalkode**	**1.42**	**137**	*e*P		**Pb**	**18 03 16.8**	**-0.1**
	17nm,0.3s							
SHLS				⇓*i*S		**Sn**	**18 03 35.7**	**-0.2**
	49nm,0.3s							
KTBS	**Karatobe**	**1.45**	**251**	*e*P		**Pn**	**18 03 17.0**	**+0.1**
KTBS				*e*S		**Sb**	**18 03 35.5**	**-0.7**
MDOK	**Medeo**	**1.52**	**227**	⇓*i*P		**Pb**	**18 03 18.4**	**-0.2**
	12nm,0.4s							
MDOK				*e*S		**Sg**	**18 03 38.4**	**0.0**
	51nm,0.7s							
KNDC	**Almaty**	**1.53**	**230**	⇓P		**Pg**	**18 03 18.9**	**-0.1**
	5.9nm,0.2s							
KNDC				⇑S		**Sg**	**18 03 39.8**	**+1.1**
	52nm,0.5s							
KUU	**Kurty**	**1.64**	**260**	⇓*i*P		**Pb**	**18 03 20.1**	**-0.4**
	12nm,0.2s							
KUU				⇑*i*S		**Sn**	**18 03 40.8**	**-0.3**
	81nm,0.4s							
TNSS	**Tian-Shan**	**1.66**	**226**	⇑*i*P		**Pb**	**18 03 20.8**	**-0.3**
	9.1nm,0.3s							
TNSS				⇑*i*S		**Sg**	**18 03 43.3**	**+0.3**
	37nm,0.4s							
MTBS	**Maitube**	**1.89**	**236**	⇓*i*P		**Pb**	**18 03 24.4**	**-0.5**
	15nm,0.2s							
MTBS				⇑*i*S		**Sg**	**18 03 49.6**	**-0.7**
	58nm,0.3s							
KST	**Kastek**	**2.22**	**239**	*e*P		**Pb**	**18 03 30.2**	**-0.4**
	2.6nm,0.2s							
KST				⇓*i*S		**Sb**	**18 03 59.0**	**+0.4**
	24nm,0.6s							
DGS	**Degeres**	**2.25**	**246**	*e*P		**Pb**	**18 03 30.1**	**-0.8**
	1.3nm,0.3s							
DGS				*e*S		**Sb**	**18 03 59.0**	**-0.2**
	16nm,0.3s							
TKM2	**Tokmak 2**	**2.51**	**240**	⇑Pn		**Pb**	**18 03 34.2**	**-1.4**
	0.7nm,0.3s							
TKM2				⇓Lg		Lg	18 04 07.8	
	2.6nm,0.3s							
AAK	**Ala-Archa**	**3.36**	**244**	⇑Pg		**Pb**	**18 03 51.6**	**+1.6**
	0.6nm,0.3s							
AAK				⇓Sn		**Sn**	**18 04 24.4**	**+0.7**
	2.3nm,0.5s							
AAK				⇑Lg		Lg	18 04 38.6	
	2.9nm,0.5s							
MK31	**Makanchi Array**	**3.68**	**44**	⇑Pn		**Pb**	**18 03 55.3**	**-0.1**
	0.2nm,0.3s,baz=221,slow=16,SNR=9.3							
MK31				⇑Pg		Pg	18 04 03.8	+3.7
	0.1nm,0.2s,baz=235,slow=22,SNR=7.0							
MK31				⇑Sn		**Sn**	**18 04 31.6**	**+0.2**
	0.3nm,0.3s,baz=219,slow=25,SNR=4.2							
MK31				⇓Lg		Lg	18 04 45.3	
	0.7nm,0.3s,baz=223,slow=33,SNR=8.7							
MNAS	**Manas**	**4.75**	**251**	⇑Lg		Lg	18 05 18.3	
	1.9nm,0.6s							
OTUK	**Ortayu**	**5.92**	**315**	⇑Lg		Lg	18 05 55.4	
	3.4nm,1.0s							
KK31	**Karatay Array**	**5.95**	**262**	Lg		Lg	18 05 59.1	
	0.8nm,0.5s,baz=78,slow=26,SNR=7.4							

*ISCJB **09** 18:11:24.6±0.4, 41°.97N±0°.03×17°.52E±0°.05, h9km±9km, Error ellipse: s-maj=6.9km s-min=2.9km az=31.4*
*CSEM **09** 18:11:26.1±0.2, 41°.95N×17°.49E, h10km, ML2.1, Error ellipse: s-maj=7.1km s-min=3.5km az=121.0*
*ROM **09** 18:11:27.9±0.5, 41°.87N×17°.35E, h5km, Md2.7/8, Ml2.3/7, Error ellipse: s-maj=6.8km s-min=3.7km az=54.0*
*BEO **09** 18:11:34.2±1.0, 42°.20N×17°.73E, h0km, M2.1/6*

ISC 09 18:11:27.1±1.1, 41°.94N±0°.02×17°.50E±0°.03, h18km±6km, n35, σ0s92/53, Adriatic Sea

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
STON	**Ston**	**0.94**	**9**	*e*Pg		**Pb**	**18 11 44.7**	**-0.1**
STON				Sg		**Sb**	**18 11 56.9**	**-0.2**
STON	**Ston**	**0.94**	**9**	*e*Pg		**Pg**	**18 11 45.7**	**+0.3**
STON				*e*Sg		**Sb**	**18 11 56.1**	**-0.9**
STON	**Ston**	**0.94**	**9**	*e*Pg		**Pg**	**18 11 45.7**	**+0.3**
STON				*e*Sg		**Sb**	**18 11 56.1**	**-0.9**
BAI	**Bari**	**0.96**	**209**	*e*Pg		**Pb**	**18 11 44.8**	**-0.3**
BAI				Sg		**Sn**	**18 11 58.7**	**-0.1**
NOCI	**Noci**	**1.20**	**196**	Pg		**Pn**	**18 11 48.9**	**-0.1**
NOCI				Sg		**Sb**	**18 12 04.2**	**-0.3**
	29nm,0.2s							
NOCI	**Noci**	**1.20**	**196**	Pg		**Pn**	**18 11 48.9**	**-0.1**
NOCI				Sg		**Sb**	**18 12 04.2**	**-0.3**
	29nm,0.2s							
MSAG	**Monte S. Angel**	**1.21**	**260**	Pg		**Pn**	**18 11 49.0**	**-0.3**
	78nm,0.5s							
MSAG	**Monte S. Angel**	**1.21**	**260**	Pg		**Pn**	**18 11 49.0**	**-0.3**
	78nm,0.5s							
AMUR	**Altamura**	**1.23**	**213**	Pg		**Pn**	**18 11 48.8**	**-0.7**
AMUR				Sg		**Sb**	**18 12 04.7**	**-0.8**
	38nm,0.2s							
AMUR	**Altamura**	**1.23**	**213**	Pg		**Pn**	**18 11 48.8**	**-0.7**
AMUR				Sg		**Sb**	**18 12 04.7**	**-0.8**
	38nm,0.2s							
CDT	**Castel del Mon**	**1.26**	**227**	*e*Pg		**Pg**	**18 11 52.6**	**+1.1**
CDT				Sg		**Sg**	**18 12 08.2**	**+0.3**
SG1	**Sgolgore (BA)**	**1.26**	**210**	*e*Pg		**Pg**	**18 11 51.9**	**+0.4**
SG1				Sg		**Sg**	**18 12 08.0**	**0.0**
MRVN	**Minervino Murg**	**1.32**	**229**	Pg		**Pn**	**18 11 49.5**	**-1.2**
MRVN	**Minervino Murg**	**1.32**	**229**	Pg		**Pn**	**18 11 49.5**	**-1.2**
SGRT	**San Giovanni R**	**1.33**	**262**	Pg		**Pn**	**18 11 50.6**	**-0.2**
	29nm,0.2s							
SGRT	**San Giovanni R**	**1.33**	**262**	Pg		**Pn**	**18 11 50.6**	**-0.2**
	29nm,0.2s							
MESG	**Mesagne**	**1.38**	**169**	Pg		**Pb**	**18 11 52.6**	**+0.3**
	52nm,0.4s							
MESG	**Mesagne**	**1.38**	**169**	Pg		**Pb**	**18 11 52.6**	**+0.3**
	52nm,0.4s							
PDG	**Podgorica**	**1.39**	**69**	*e*Pg		**Pg**	**18 11 54.1**	**+0.2**
PDG				*e*Sg		**Sg**	**18 12 11.3**	**-0.8**
PDG	**Podgorica**	**1.39**	**69**	*e*Pg		**Pg**	**18 11 54.1**	**+0.2**
PDG				*e*Sg		**Sg**	**18 12 11.3**	**-0.8**
MATE	**Matera**	**1.43**	**205**	Pg		**Pb**	**18 11 53.2**	**+0.1**
	60nm,0.4s							
MATE	**Matera**	**1.43**	**205**	Pg		**Pb**	**18 11 53.2**	**+0.1**
	60nm,0.4s							
TAR1	**Taranto**	**1.43**	**187**	*e*Pg		**Pb**	**18 11 53.8**	**+0.7**
TAR1				Sg		**Sg**	**18 12 14.0**	**+0.9**
LTRZ	**Laterza**	**1.43**	**201**	Pg		**Pb**	**18 11 53.6**	**+0.3**
	52nm,0.3s							
LTRZ	**Laterza**	**1.43**	**201**	Pg		**Pb**	**18 11 53.6**	**+0.3**
	52nm,0.3s							
SJES	**Sjenica**	**2.25**	**53**	*e*Pg		**Pg**	**18 12 09.6**	**-0.7**
SJES				*e*Sg		**Sb**	**18 12 35.8**	**+0.9**
BBLS	**Lazići**	**2.38**	**35**	*e*Pg		**Pb**	**18 12 10.4**	**+1.0**
BBLS				*e*Sg		**Sb**	**18 12 40.4**	**+1.9**
BBLS	**Lazići**	**2.38**	**35**	*e*Pg		**Pb**	**18 12 10.4**	**+1.0**
BBLS				*e*Sg		**Sb**	**18 12 40.4**	**+1.9**
IVAS	**Ivanjica**	**2.54**	**49**	*e*Sg		**Sb**	**18 12 45.5**	**+2.2**
IVAS	**Ivanjica**	**2.54**	**49**	*e*Sg		**Sb**	**18 12 45.5**	**+2.2**
BLY	**Banja Luka**	**2.81**	**355**	*e*Sg		**Sg**	**18 12 57.1**	**-0.5**
BLY	**Banja Luka**	**2.81**	**355**	*e*Sg		**Sg**	**18 12 57.1**	**-0.5**
NVLJ	**Novalja**	**3.25**	**325**	*e*Pn		**Pn**	**18 12 17.7**	**+0.5**
NVLJ				Sn		**Sn**	**18 12 55.3**	**-0.1**
NVLJ	**Novalja**	**3.25**	**325**	*e*Pn		**Pn**	**18 12 17.6**	**+0.5**
NVLJ				Sn		**Sn**	**18 12 55.2**	**-0.1**
KUBS	**Kucevo**	**3.92**	**50**	*e*Pn		**Pb**	**18 12 32.9**	**-2.9**

DHMR 09 18:12:34.5±0.5, 12°.02N×43°.95E, h14km±6km, ML3.8, Western Arabian Peninsula

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
ADEN	**Aden**	**1.26**	**53**	*i* P		Pn	18 12 57.4	-0.3
ADEN				*e*			18 12 57.6	
	baz=244,slow=1.7							
ADEN				*i* S		Sg	18 13 15.0	-0.1
ADEN				AML		AML	18 13 22.6	
	comp=N,2μm,0.9s							
ADEN	**Aden**	**1.26**	**53**	*i* P		Pn	18 12 57.4	-0.3
ADEN				*i* S		Sg	18 13 15.3	+0.2
ADEN				AML		AML	18 13 22.6	
	comp=N,2μm,0.9s							
BDHA	**Al Bayda'**	**2.50**	**39**	*i* P		Pn	18 13 14.5	-0.6
BDHA				*i* S		Sb	18 13 51.1	+0.9
BDHA	**Al Bayda'**	**2.50**	**39**	*i* P		Pb	18 13 17.3	-2.1
BDHA				*i* S		Sb	18 13 51.2	+1.0
BDHA				AML		AML	18 14 03.2	
	comp=N,485nm,0.8s							
DHBB	**Dhamar BB**	**2.57**	**9**	*i* P		Pb	18 13 18.9	-1.7
DHBB				*i* S		Sb	18 13 53.1	+0.8
DHBB				AML		AML	18 14 00.2	
	comp=N,1μm,0.5s							

*JMA **09** 18:15:18.8±0.1, 23°.34N×121°.99E, h46km, M2.4*
*TAP **09** 18:15:19.4, 23°.31N×122°.04E, h35km, ML2.8, C*

ISC 09 18:15:17.9±1.2, 23°.32N±0°.03×122°.02E±0°.03, h19km±3km, n34, σ0s46/60, 7C-2D, Taiwan region

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
CHKT	**Chengkung**	**0.64**	**250**	⇑*i*P		**Pg**	**18 15 31.1**	**+0.5**
	baz=244							
CHKT				S		**Sg**	**18 15 39.3**	**+0.2**
	baz=244							
TWF1	**Yuli**	**0.66**	**273**	P		**Pn**	**18 15 31.9**	**-0.3**
	baz=267							
TWF1				S		**Sn**	**18 15 42.1**	**+0.1**
	baz=267							
EHY	**Hungye**	**0.66**	**286**	⇑*i*P		**Pn**	**18 15 31.9**	**-0.3**
	baz=286							
EHY				S		**Sn**	**18 15 41.6**	**-0.5**
	baz=286							
ESL	**Shilin**	**0.72**	**313**	⇓P		**Pg**	**18 15 32.4**	**+0.3**
	baz=312							
ESL				*e*S		**Sg**	**18 15 41.9**	**+0.1**
	baz=312							
TWD	**Chiawan**	**0.84**	**333**	⇑*i*P		**Pg**	**18 15 34.4**	**0.0**
	baz=332							
TWD				*e*S		**Sb**	**18 15 45.3**	**+0.4**
	baz=332							
ELDTW	**Lidau**	**0.93**	**262**	⇑P		**Pb**	**18 15 35.5**	**+0.1**
	baz=262							
ELDTW				*e*S		**Sb**	**18 15 47.1**	**-0.3**
	baz=262							
YUS	**Yu-Shan**	**0.99**	**280**	*e*P		**Pg**	**18 15 37.7**	**+0.4**
	baz=279							
YUS				*e*S		**Sg**	**18 15 50.3**	**-0.2**
	baz=279							
TWG	**Pinlang**	**1.00**	**240**	P		**Pn**	**18 15 36.9**	**0.0**
	baz=234							
TWG				*e*S		**Sb**	**18 15 49.3**	**-0.1**
	baz=234							
WHF	**Hehuan Shan**	**1.07**	**320**	P		**Pb**	**18 15 38.1**	**+0.1**
	baz=319							
WHF				S		**Sb**	**18 15 51.9**	**+0.1**
	baz=319							
ALS	**Alishan**	**1.13**	**280**	*e*P		**Pg**	**18 15 40.1**	**+0.3**
	baz=279							
ALS				*e*S		**Sg**	**18 15 54.6**	**-0.1**
	baz=279							
ENA	**Nanau**	**1.13**	**347**	⇓P		**Pb**	**18 15 38.9**	**+0.1**
	baz=346							
ENA				*e*S		**Sb**	**18 15 53.2**	**+0.1**
	baz=346							
SMLT	**Sun Moon Lake**	**1.17**	**299**	P		**Pg**	**18 15 40.1**	**-0.4**
	baz=304							
SMLT				*e*S		**Sn**	**18 15 54.8**	**+0.1**
	baz=304							
STYT	**Tauyuan**	**1.17**	**262**	*e*P		**Pb**	**18 15 39.8**	**+0.3**
	baz=257							
STYT				*e*S		**Sb**	**18 15 54.3**	**0.0**
	baz=257							
TYC	**Yuchr**	**1.21**	**299**	*e*P		**Pg**	**18 15 40.9**	**-0.4**
	baz=299							
ECL	**Taimali**	**1.22**	**234**	⇑*i*P		**Pn**	**18 15 39.2**	**-0.6**
	baz=245							
CHN5	**Tsauling**	**1.26**	**283**	⇑P		**Pg**	**18 15 42.4**	**+0.2**
	baz=288							
CHN5				S		**Sg**	**18 15 58.8**	**0.0**
	baz=288							
NNS	**Nan Shan**	**1.26**	**332**	*e*P		**Pb**	**18 15 41.3**	**+0.3**
	baz=331							
NNS				*e*S		**Sb**	**18 15 56.6**	**-0.3**
	baz=331							
WTP	**Ta-pu**	**1.29**	**267**	*e*P		**Pg**	**18 15 42.6**	**-0.3**
	baz=261							
WTP				*e*S		**Sg**	**18 15 59.2**	**-0.5**
	baz=261							
CHN4	**Tsaushan**	**1.31**	**271**	*e*P		**Pg**	**18 15 43.5**	**+0.4**
	baz=266							
CHN4				*e*S		**Sg**	**18 16 00.7**	**+0.4**
	baz=266							
SGST	**Jiashian**	**1.34**	**260**	*e*S		**Sg**	**18 16 01.3**	**0.0**
	baz=256							
ENTT	**Nioudou**	**1.37**	**343**	⇑P		**Pb**	**18 15 43.0**	**+0.1**
	baz=341							
ENTT				S		**Sb**	**18 16 00.2**	**+0.1**
	baz=341							
CHN1	**Nanshi**	**1.37**	**265**	*e*P		**Pg**	**18 15 44.4**	**0.0**
	baz=260							
CHN1				*e*S		**Sg**	**18 16 02.0**	**-0.4**
	baz=260							
SSD	**Sandimen**	**1.40**	**246**	*e*P		**Pn**	**18 15 42.8**	**+0.5**
	baz=246							
TWK	**Hsinying**	**1.41**	**268**	*e*S		**Sg**	**18 16 03.3**	**-0.1**
	baz=268							
JYNG	**Yonagunijimaku**	**1.41**	**37**	P		**Pn**	**18 15 42.8**	**+0.3**
EAST	**Anshuo**	**1.43**	**229**	*e*P		**Pn**	**18 15 42.4**	**-0.3**
	baz=238							
TWE	**Neicheng**	**1.43**	**347**	*e*P		**Pb**	**18 15 44.0**	**+0.2**
	baz=338							
TWE				*e*S		**Sn**	**18 16 01.2**	**+0.2**
	baz=338							
NSK	**Sanguang**	**1.47**	**336**	*e*P		**Pn**	**18 15 43.4**	**-0.1**
	baz=335							
NSK				S		**Sn**	**18 16 02.0**	**-0.2**
	baz=335							
TWQ1	**Liyutan**	**1.53**	**312**	*e*P		**Pg**	**18 15 46.9**	**-0.4**
	baz=319							
TWQ1				*e*S		**Sg**	**18 16 06.8**	**-0.6**
	baz=319							
NSTT	**Nanjuang**	**1.60**	**325**	*e*P		**Pb**	**18 15 47.5**	**+0.7**
	baz=323							
NSTT				*e*S		**Sb**	**18 16 06.9**	**+0.3**
	baz=323							
IRIF	**Iriomote-Funau**	**1.86**	**57**	P		**Pn**	**18 15 49.2**	**+0.4**
IRIF				*e*S		**Sn**	**18 16 11.3**	**-0.5**
JKRS	**Kuro-shima**	**2.04**	**63**	P		**Pn**	**18 15 52.1**	**+0.9**
JKRS				S		**Sn**	**18 16 15.5**	**-0.6**
JIJ	**Ishigaki jima**	**2.21**	**62**	P		**Pn**	**18 15 54.3**	**+0.8**
JISG	**Ishigakijimahi**	**2.45**	**59**	P		**Pn**	**18 15 56.5**	**-0.3**
JISG				*e*S		**Sn**	**18 16 24.1**	**-2.1**

*NIED **09** 18:15:00, 36°.30N×143°.70E, h8km, Mw3.6 Best double couple: M0 2.60000×10^14 NP1:φs38.00000°, δ23.00000°, λ-98.00000°. NP2:φs227.00000°, δ68.00000°, λ-87.00000°.*

JMA 09 18:15:29.3±0.2, 36°.25N×143°.67E, h43km, M3.7, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**2.46**	**291**	P		Pn	18 16 08.3	+1.3
ONAJ				*e*S		Sn	18 16 37.5	+1.7
JFK	**Kawauchi**	**2.50**	**297**	P		Pn	18 16 08.9	+1.3
JFK				*e*S		Sn	18 16 38.2	+1.3
JHO	**Hitachi**	**2.53**	**279**	P		Pn	18 16 09.0	+1.2
JHO				*e*S		Sn	18 16 38.3	+0.9
JMM	**Marumori**	**2.81**	**306**	P		Pn	18 16 13.1	+1.4
JMM				*e*S		Sn	18 16 46.0	+1.7
JIO	**Ouri**	**2.87**	**321**	P		Pn	18 16 13.7	+1.1
JIO				S		Sn	18 16 47.3	+1.4
JFT	**Otama**	**2.96**	**296**	P		Pn	18 16 16.1	+2.4
JFT				*e*S		Sn	18 16 50.5	+2.5
JOU	**Okura**	**3.19**	**312**	P		Pn	18 16 19.6	+2.6
JOU				*e*S		Sn	18 16 56.8	+3.0
JMK	**Ichinoseki**	**3.33**	**325**	P		Pn	18 16 20.0	+1.2
JAG	**Ashikaga**	**3.41**	**274**	P		Pn	18 16 21.5	+1.6
JYK	**Kaneyama**	**3.74**	**316**	P		Pn	18 16 26.6	+2.1

*NIED **09** 18:22:00, 37°.60N×141°.70E, h11km, Mw3.5 Best double couple: M0 1.88000×10^14 NP1:φs106.00000°, δ62.00000°, λ11.00000°. NP2:φs11.00000°, δ80.00000°, λ151.00000°.*
*ISCJB **09** 18:22:50.8±1.4, 37°.57N±0°.04×141°.80E±0°.09, h17km±9km, mb3.5/6, Error ellipse: s-maj=12.0km s-min=5.9km az=16.1.*
*IDC **09** 18:22:50.3±1.8, 37°.69N×141°.72E, h0km, mb3.6/6, mb1 3.7/8, mb1mx3.4/42, mbtmp3.6/8, ML3.3/2, Error ellipse: s-maj=48.4km s-min=21.9km az=75.0*
*JMA **09** 18:22:52.5±0.1, 37°.58N×141°.70E, h27km±2km, M3.9*
JMA Felt I J1.

ISC 09 18:22:50.5±2.1, 37°.58N±0°.05×141°.74E±0°.07, h4km±12km, n23, σ1s30/25, mb3.5/6, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
JFK	**Kawauchi**	**0.72**	**253**	P		**Pb**	**18 23 05.6**	**-0.2**
JFK				S		**Sb**	**18 23 14.5**	**-1.6**
JMM	**Marumori**	**0.81**	**291**	P		**Pb**	**18 23 06.0**	**-0.3**
JMM				S		**Sb**	**18 23 16.9**	**-1.4**
ONAJ	**Iwakimizuishiy**	**0.89**	**238**	P		**Pg**	**18 23 08.1**	**+0.4**
ONAJ				*e*S		**Sg**	**18 23 19.0**	**-0.3**
JIO	**Ouri**	**0.92**	**340**	P		**Pb**	**18 23 08.8**	**-0.3**
JIO				S		**Sb**	**18 23 20.2**	**-1.6**
JFT	**Otama**	**1.12**	**267**	P		**Pb**	**18 23 12.4**	**-0.1**
JFT				S		**Sb**	**18 23 26.4**	**-1.0**
JOU	**Okura**	**1.16**	**313**	P		**Pn**	**18 23 13.0**	**-0.6**
JOU				S		**Sb**	**18 23 27.3**	**-1.2**
JMK	**Ichinoseki**	**1.43**	**343**	P		**Pn**	**18 23 16.7**	**-0.5**
MJAR	**Matsushiro Arr**	**3.01**	**251**	Pn		**Pn**	**18 23 40.0**	**+1.0**
	2.8nm,0.3s,baz=78,slow=16,SNR=42							
MAT	**Matsushiro**	**3.01**	**251**	P		**Pn**	**18 23 40.3**	**+1.2**
MAT				S		**Sn**	**18 24 17.9**	**+2.2**
JHJ	**Hachijo jima 2**	**4.73**	**200**	Pn		**Pn**	**18 24 03.2**	**+0.5**
	5.1nm,0.3s,baz=326,slow=23,SNR=7.9							
JHJ				Sn		**Sn**	**18 24 56.1**	**-1.9**
	7.7nm,0.3s,baz=75,slow=20,SNR=3.0							
USRK	**Ussuriysk Ar.**	**9.91**	**315**	Pn		**Pn**	**18 25 16.2**	**+2.6**
	0.1nm,0.3s,baz=137,slow=13,SNR=5.3							
SONM	**Songino Array**	**27.70**	**303**	P		**P**	**18 28 39.3**	**-0.6**
	0.5nm,0.6s,baz=99,slow=9.1,SNR=4.8							
H11N2	**WAKE ISLAND Hy**	**28.21**	**122**	T		T	18 58 12.2	
	baz=315,slow=75,SNR=60							
H11N1	**WAKE ISLAND Hy**	**28.22**	**122**	T		T	18 58 13.3	
	baz=315,slow=75,SNR=57							
H11N3	**WAKE ISLAND Hy**	**28.23**	**122**	T		T	18 58 13.3	
	baz=315,slow=75,SNR=42							
H11S1	**WAKE ISLAND Hy**	**28.94**	**124**	T		T	18 59 05.5	
	baz=316,slow=76,SNR=63							
H11S3	**WAKE ISLAND Hy**	**28.94**	**124**	T		T	18 59 03.6	
	baz=316,slow=76,SNR=39							
H11S2	**WAKE ISLAND Hy**	**28.96**	**124**	T		T	18 59 04.8	
	baz=316,slow=76,SNR=39							
ZALV	**Zalesovo Beam**	**41.74**	**312**	P		**P**	**18 30 39.6**	**-0.9**
	0.4nm,0.4s,baz=79,slow=7.9,SNR=4.1							
MKAR	**Makanchi Array**	**44.05**	**302**	P		**P**	**18 30 59.1**	**-0.4**
	0.7nm,0.8s,baz=89,slow=9.1,SNR=8.1							
WRA	**Warramunga Arr**	**57.64**	**188**	P		**P**	**18 32 41.9**	**0.0**
	0.3nm,0.8s,baz=5.6,slow=7.0,SNR=4.7							
ASAR	**Alice Springs**	**61.37**	**188**	P		**P**	**18 33 10.0**	**+2.4**
	0.4nm,0.9s,baz=25,slow=11,SNR=2.8							
FINES	**FINESS Array B**	**68.45**	**332**	P		**P**	**18 33 53.4**	**+0.1**
	2.1nm,1.1s,baz=19,slow=13,SNR=2.3							

JMA 09 18:45:21.8±0.4, 38°.87N×143°.89E, h0km, M3.9, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
JTH	**Tanohata**	**1.90**	**305**	P		Pn	18 45 56.3	+0.9
JTH				*e*S		Sn	18 46

0.9nm,0.3s,baz=42,slow=12,SNR=4.4
JHJ Hachijo jima 2 5.31 200 Pn **Pn 18 48 24.6 +0.4**
10nm,0.3s,baz=68,slow=19,SNR=2.8
JHJ Sn **Sn 18 49 22.6 -1.6**
16nm,0.3s,baz=53,slow=20,SNR=4.4
USRK Ussuriysk Ar. 9.65 312 Pn **Pn 18 49 24.2 +0.6**
0.2nm,0.3s,baz=120,slow=14,SNR=5.0
SONM Songino Array 27.55 302 P **P 18 52 49.0 -0.3**
0.1nm,0.4s,baz=101,slow=9.7,SNR=2.5
TIXI Tiksi 34.25 353 LR LR 19 08 46.9
comp=Z,37nm,18.2s,baz=170,slow=38
ZALV Zalesovo Beam 41.51 311 P **P 18 54 48.3 -0.8**
0.3nm,0.3s,baz=64,slow=6.9,SNR=2.2
CMAR Chiang Mai Arr 42.21 255 LR LR 19 14 51.2
comp=Z,17nm,18.8s,baz=195,slow=39
MKAR Makanchi Array 43.91 301 P **P 18 55 08.9 +0.1**
0.6nm,0.6s,baz=86,slow=10.0,SNR=8.4
KURBB Kurchatov Arra 45.68 307 P **P 18 55 22.7 0.0**
0.9nm,0.4s,baz=80,slow=8.0,SNR=10
ILAR Eielson Array 48.33 33 LR LR 19 16 43.3
comp=Z,38nm,18.3s,baz=214,slow=37
BVAR Borovoye Array 50.16 312 P **P 18 55 58.0 +0.7**
0.2nm,0.4s,baz=77,slow=6.5,SNR=2.5
WRA Warramunga Arr 58.21 188 P **P 18 56 56.0 -0.1**
0.7nm,0.6s,baz=5.9,slow=6.8,SNR=8.5
ASAR Alice Springs 61.94 188 P **P 18 57 21.9 +0.2**
0.4nm,0.8s,baz=350,slow=4.4,SNR=7.1

*IDC **09** 18:49:15.4±1.0,34°.83N×138°.13E,h0km,mb3.5/7, mb1 3.6/8,mb1mx3.4/61,mbtmp3.5/8,ML3.5/1,MS3.3/1, Ms1 3.3/1,ms1mx2.3/35,Error ellipse: s-maj=39.1km s-min=14.8km az=63.0*
*ISCJB **09** 18:49:16.3±0.6,35°.56N±0°.05×140°.09E±0°.07,h78km±4km, mb3.4/7,Error ellipse: s-maj=11.1km s-min=5.9km az=145.1*
*JMA **09** 18:49:16.4±0.2,35°.68N×140°.14E,h67km±2km,M3.2 Broadband fault plane solution: P waves. NP1: ϕs356.00000°,δ73.00000°,λ102.00000°. NP2: ϕs139.00000°,δ21.00000°,λ55.00000°. Principal axes: T Plg60.0000°, Azm283.0000°; N Plg12.0000°, Azm172.0000°; P Plg27.0000°, Azm76.0000°;*
JMA Felt I J1.
ISC 09 18:49:17.4±0.9,35°.57N±0°.06×140°.07E±0°.06,h72km±7km, n25,σ0°78/25,mb3.5/7,2C-3D,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JCN	**Nagara**	**0.18**	**144**	⇑P	**Pn**	**18 49 27.7**	**-0.5**
JCN				S	**Sn**	**18 49 36.6**	**+0.6**
TOK	**Tokyo**	**0.28**	**295**	P	**Pn**	**18 49 28.3**	**-0.3**
TOK				S	**Sn**	**18 49 37.4**	**+0.6**
BSO3	**Boso 3**	**0.85**	**155**	⇑P	**Pn**	**18 49 33.4**	**-0.5**
BSO3				S	**Sn**	**18 49 47.1**	**+1.0**
JOD2	**Odawara 2**	**0.86**	**250**	⇓P	**Pn**	**18 49 33.9**	**-0.4**
JOD2				S	**Sn**	**18 49 46.3**	**-0.5**
JAG	**Ashikaga**	**0.99**	**330**	⇓P	**Pn**	**18 49 34.3**	**-1.6**
JIM2	**Oshima 3**	**1.00**	**212**	P	**Pn**	**18 49 35.2**	**-0.8**
JIM2				eS	**Sn**	**18 49 49.7**	**-0.1**
JRY	**Ryogami san**	**1.05**	**296**	⇓P	**Pn**	**18 49 36.4**	**-0.3**
BSO1	**Boso 1**	**1.18**	**140**	P	**Pn**	**18 49 36.9**	**-0.8**
BSO1				S	**Sn**	**18 49 53.2**	**+0.2**
MJAR	**Matsushiro Arr**	**1.79**	**303**	Pn	**Pn**	**18 49 45.2**	**-1.2**
	25nm,0.3s,baz=248,slow=24,SNR=55						
MAT	**Matsushiro**	**1.79**	**303**	P	**Pn**	**18 49 46.1**	**-0.3**
MAT				S	**Sn**	**18 50 10.1**	**+1.7**
JHJ	**Hachijo jima 2**	**2.45**	**186**	Pn	**Pn**	**18 49 55.3**	**0.0**
	28nm,0.3s,baz=82,slow=15,SNR=8.4						
JHJ				Sn	**Sn**	**18 50 23.7**	**-0.5**
	72nm,0.3s,baz=260,slow=24,SNR=11						
JCJ	**Chichijima**	**8.54**	**167**	LR	LR	18 53 39.2	
	comp=Z,206nm,19.4s,baz=266,slow=31						
SONM	**Songino Array**	**27.74**	**307**	P	**P**	**18 54 59.0**	**-0.2**
	0.1nm,0.4s,baz=94,slow=12,SNR=3.0						
H11N2	**WAKE ISLAND Hy**	**28.40**	**117**	T	T	19 25 17.4	
	baz=317						
H11N1	**WAKE ISLAND Hy**	**28.41**	**117**	T	T	19 25 18.2	
	baz=317						
H11N3	**WAKE ISLAND Hy**	**28.42**	**117**	T	T	19 25 15.3	
	baz=317						
H11S3	**WAKE ISLAND Hy**	**29.04**	**119**	T	T	19 26 14.9	
	baz=318						
H11S1	**WAKE ISLAND Hy**	**29.04**	**119**	T	T	19 26 14.9	
	baz=318						
H11S2	**WAKE ISLAND Hy**	**29.06**	**119**	T	T	19 26 15.0	
	baz=318						
ZALV	**Zalesovo Beam**	**42.12**	**314**	P	**P**	**18 57 02.7**	**+0.5**
	0.4nm,0.5s,baz=102,slow=6.1,SNR=3.1						
MKAR	**Makanchi Array**	**43.99**	**303**	P	**P**	**18 57 17.8**	**+0.2**
	0.4nm,0.6s,baz=85,slow=10,SNR=6.2						
KURBB	**Kurchatov Arra**	**46.06**	**309**	P	**P**	**18 57 33.9**	**0.0**
	0.4nm,0.5s,baz=81,slow=7.7,SNR=7.5						
BVAR	**Borovoye Array**	**50.77**	**313**	P	P	18 58 13.9	+3.9
	0.2nm,0.5s,baz=98,slow=6.0,SNR=2.4						
WRA	**Warramunga Arr**	**55.47**	**187**	P	**P**	**18 58 44.5**	**-0.4**
	0.9nm,0.5s,baz=0.7,slow=7.4,SNR=18						
ASAR	**Alice Springs**	**59.20**	**187**	P	**P**	**18 59 11.8**	**+0.8**
	0.3nm,0.6s,baz=20,slow=12,SNR=5.9						

*IDC **09** 18:51:11.4±0.5,37°.68N×143°.58E,h0km,mb4.1/30, mb1 4.2/35,mb1mx4.1/60,mbtmp4.1/35,ML3.8/3,MS2.9/6, Ms1 2.9/6,ms1mx2.5/45,Error ellipse: s-maj=14.5km s-min=11.6km az=125.0*
*ISCJB **09** 18:51:14.2±1.5,37°.77N±0°.04×143°.46E±0°.04, h27km±11km,mb4.2/42,MS2.9/2,Error ellipse: s-maj=6.9km s-min=4.9km az=169.3*
*JMA **09** 18:51:14.4±0.2,37°.82N×143°.48E,h42km,M4.3*
*NEIC **09** 18:51:15.9±2.0,37°.70N×143°.57E,h28km±14km,mb4.6/17, Error ellipse: s-maj=7.7km s-min=5.1km az=140.0*
ISC 09 18:51:14.4±4.4,37°.80N±0°.06×143°.46E±0°.06,h15km±27km, n102,σ0°82/106,mb4.3/42,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**1.79**	**292**	P	**Pn**	**18 51 44.0**	**-0.6**
JIO				S	**Sn**	**18 52 05.3**	**-1.7**
JFK	**Kawauchi**	**2.10**	**259**	P	**Pn**	**18 51 47.8**	**-1.1**
JMK	**Ichinoseki**	**2.10**	**304**	P	**Pn**	**18 51 48.7**	**-0.3**
JMK				eS	**Sn**	**18 52 13.7**	**-1.1**
JMM	**Marumori**	**2.11**	**273**	P	**Pn**	**18 51 48.3**	**-0.8**
JMM				S	**Sn**	**18 52 12.7**	**-2.3**
JOU	**Okura**	**2.28**	**285**	P	**Pn**	**18 51 51.6**	**+0.2**
JOU				eS	**Sn**	**18 52 18.6**	**-0.6**
JOM	**Ohasama**	**2.38**	**315**	P	**Pn**	**18 51 52.5**	**-0.3**
JOM				S	**Sn**	**18 52 20.2**	**-1.6**
JFT	**Otama**	**2.49**	**265**	P	**Pn**	**18 51 54.6**	**+0.2**
JFT				eS	**Sn**	**18 52 23.4**	**-1.1**
JYK	**Kaneyama**	**2.68**	**296**	P	**Pn**	**18 51 57.2**	**+0.3**
JYK				eS	**Sn**	**18 52 28.6**	**-0.5**
JRG	**Rokugo**	**2.73**	**307**	P	**Pn**	**18 51 57.5**	**-0.1**
ERM	**Erimo**	**4.22**	**357**	ePn	**Pn**	**18 52 17.1**	**-1.0**
ERM				eSn	Sn	18 53 00.7	-6.3
MJAR	**Matsushiro Arr**	**4.38**	**255**	Pn	**Pn**	**18 52 21.0**	**+0.8**
	12nm,0.3s,baz=88,slow=15,SNR=15						
MJAR				Sn	**Sn**	**18 53 11.2**	**+0.2**
	1.9nm,0.3s,baz=72,slow=16,SNR=5.0						
MJAR				LR	LR	18 54 05.1	
	comp=Z,62nm,18.6s,baz=35,slow=39						
MAJO	**Matsushiro**	**4.38**	**255**	ePn	**Pn**	**18 52 21.7**	**+1.4**
MAT	**Matsushiro**	**4.38**	**255**	P	**Pn**	**18 52 21.9**	**+1.6**
MAT				S	**Sn**	**18 53 11.3**	**+0.3**
JHJ	**Hachijo jima 2**	**5.55**	**214**	Pn	**Pn**	**18 52 35.2**	**-1.1**
	23nm,0.3s,baz=76,slow=22,SNR=5.2						
JHJ				Sn	Sn	18 53 32.6	-7.2
	16nm,0.3s,baz=253,slow=19,SNR=3.6						
INU	**Inuyama**	**5.73**	**247**	ePn	**Pn**	**18 52 39.7**	**+0.8**
CBIJ	**Chichi jima**	**10.72**	**186**	ePn	Pn	18 53 42.6	-4.8
CBIJ				eSn	Sn	18 55 32.2	-15
JCJ	**Chichijima**	**10.72**	**186**	Pn	Pn	18 53 42.9	-4.5
	baz=301,slow=19						
JCJ				Sn	Sn	18 55 32.7	-14
	5.7nm,0.3s,baz=288,slow=19,SNR=5.1						
USRK	**Ussuriysk Ar.**	**10.77**	**310**	Pn	**Pn**	**18 53 49.2**	**+1.4**
	0.3nm,0.3s,baz=112,slow=14,SNR=3.8						
USRK				LR	LR	18 58 10.2	
	comp=Z,76nm,19.9s,baz=120,slow=38						
JNU	**Nakatsue**	**11.27**	**249**	Pn	**Pn**	**18 53 54.7**	**-0.1**
	0.2nm,0.3s,baz=50,slow=5.8,SNR=4.6						
JNU	**Nakatsue**	**11.27**	**249**	ePn	**Pn**	**18 53 53.4**	**-1.5**
KSRS	**Korea Array**	**12.32**	**273**	Pn	Pn	18 54 14.0	+4.8
	0.1nm,0.3s,baz=86,slow=14,SNR=3.9						
KSRS				LR	LR	18 58 45.6	
	comp=Z,26nm,18.3s,baz=46,slow=36						
KS15	**Wonju Array Si**	**12.36**	**273**	ePn	Pn	18 54 13.0	+3.3
KSAR	**Wonju Array Be**	**12.36**	**273**	Pn	Pn	18 54 14.0	+4.4
KLR	**Kul'dur**	**14.22**	**327**	Pn	**Pn**	**18 54 32.9**	**-2.2**
	0.3nm,0.3s,baz=145,slow=15,SNR=5.8						
KLR				LR	LR	18 59 39.3	
	comp=Z,44nm,19.2s,baz=212,slow=35						
MA2	**Magadan**	**22.30**	**10**	P	**P**	**18 56 11.4**	**+0.5**
	1.7nm,0.6s,baz=220,slow=16,SNR=3.2						
TPUB	**Ta-pu**	**24.31**	**240**	eP	**P**	**18 56 30.9**	**-0.5**
	136nm,2.0s						
YAK	**Yakutsk**	**25.72**	**345**	P	**P**	**18 56 43.9**	**+0.2**
	6.4nm,0.5s,baz=46,slow=0.5,SNR=6.5						
YAK	**Yakutsk**	**25.72**	**345**	eP	**P**	**18 56 43.6**	**-0.1**
	11nm,0.9s						
SEY	**Seymchan**	**25.75**	**9**	P	**P**	**18 56 45.2**	**+1.2**
	4.2nm,0.7s,baz=193,slow=6.4,SNR=20						
H11N2	**WAKE ISLAND Hy**	**27.19**	**125**	T	T	19 23 48.1	
	baz=316,slow=76,SNR=14						
H11N1	**WAKE ISLAND Hy**	**27.20**	**125**	T	T	19 23 48.1	
	baz=316,slow=76,SNR=25						
H11N3	**WAKE ISLAND Hy**	**27.21**	**125**	T	T	19 23 48.1	
	baz=316,slow=76,SNR=23						
H11S1	**WAKE ISLAND Hy**	**27.96**	**127**	T	T	19 24 45.4	
	baz=318,slow=76,SNR=31						
H11S3	**WAKE ISLAND Hy**	**27.96**	**127**	T	T	19 24 45.4	
	baz=318,slow=76,SNR=38						
H11S2	**WAKE ISLAND Hy**	**27.98**	**127**	T	T	19 24 45.4	
	baz=318,slow=76,SNR=14						
SONA1	**Songino Array**	**28.73**	**302**	eP	**P**	**18 57 12.2**	**+1.1**
SONA0	**Songino Array**	**28.73**	**302**	eP	**P**	**18 57 12.2**	**+1.1**
	9.9nm,1.9s						
SONA0				ePcP	**PcP**	**19 00 21.2**	**+0.1**
SONM	**Songino Array**	**28.73**	**302**	P	**P**	**18 57 12.2**	**+1.1**
	0.6nm,0.6s,baz=102,slow=8.3,SNR=6.8						
SONM				PcP	**PcP**	**19 00 21.2**	**+0.1**
	0.2nm,0.4s,baz=136,slow=4.5,SNR=3.4						
SONM				LR	LR	19 09 27.8	
	comp=Z,26nm,20.4s,baz=123,slow=38						
ENH	**Enshi**	**29.02**	**265**	eP	**P**	**18 57 14.7**	**+1.0**
	7.1nm,1.0s						
TLY	**Talaya**	**31.08**	**309**	LR	LR	19 09 51.5	
	comp=Z,35nm,18.6s,baz=114,slow=36						
DAV	**Davao City (W)**	**34.62**	**212**	eScP	ScP	19 04 14.5	-7.4
TIXI	**Tiksi**	**34.74**	**352**	P	**P**	**18 58 02.9**	**-0.6**
	0.4nm,0.5s,baz=111,slow=6.6,SNR=1.9						
ZAA1	**Zalesovo Array**	**42.61**	**312**	eP	**P**	**18 59 10.4**	**+0.7**
ZAA1				ePcP	**PcP**	**19 01 01.1**	**-0.5**
ZAA0	**Zalesovo Array**	**42.61**	**312**	eP	**P**	**18 59 09.6**	**-0.1**
ZALV	**Zalesovo Beam**	**42.61**	**312**	P	**P**	**18 59 10.4**	**+0.7**
	0.6nm,0.3s,baz=101,slow=7.7,SNR=6.2						
ZALV				PcP	**PcP**	**19 01 01.1**	**-0.5**
	1.6nm,0.5s,baz=80,slow=3.0,SNR=7.3						
CM31	**Chiang Mai Arr**	**43.26**	**256**	eP	**P**	**18 59 16.0**	**+0.6**
CMAR	**Chiang Mai Arr**	**43.26**	**256**	P	**P**	**18 59 16.0**	**+0.6**
	1.0nm,0.8s,baz=44,slow=6.8,SNR=9.9						
SVW2	**Sparrevohn**	**43.93**	**38**	eP	**P**	**18 59 21.0**	**+0.8**
	18nm,1.4s						
MK32	**Makanchi Array**	**45.10**	**302**	eP	**P**	**18 59 30.1**	**+0.3**
MKAR	**Makanchi Array**	**45.10**	**302**	P	**P**	**18 59 30.1**	**+0.3**
	1.1nm,0.6s,baz=88,slow=9.1,SNR=9.3						
RSO	**Redoubt South**	**45.29**	**39**	eP	**P**	**18 59 32.2**	**+0.8**
SPU	**Mount Spurr**	**45.64**	**38**	eP	**P**	**18 59 34.6**	**+0.7**
MLY	**Manley**	**46.34**	**32**	eP	**P**	**18 59 40.2**	**+0.9**
	11nm,1.6s						
KURK	**Kurchatov**	**46.75**	**308**	eP	**P**	**18 59 42.6**	**0.0**
	7.4nm,0.8s						
KURBB	**Kurchatov Arra**	**46.82**	**308**	P	**P**	**18 59 43.6**	**+0.3**
	4.7nm,0.6s,baz=82,slow=8.0,SNR=45						
MDM	**Murphy Dome**	**47.40**	**32**	eP	**P**	**18 59 48.4**	**+0.8**
	5.3nm,0.9s						
IL1	**Eielson Array**	**47.98**	**33**	eP	**P**	**18 59 51.4**	**-0.7**
ILAR	**Eielson Array**	**47.98**	**33**	P	**P**	**18 59 52.0**	**-0.1**
	2.0nm,0.7s,baz=264,slow=6.8,SNR=20						
ILB	**Eielson Array**	**47.98**	**33**	eP	**P**	**18 59 51.5**	**-0.6**
GUN	**Gumba**	**48.70**	**276**	eP	**P**	**18 59 59.8**	**+1.2**
KKN	**Kakani**	**49.22**	**276**	eP	**P**	**19 00 03.1**	**+0.6**
	9.9nm,0.7s						
DOT	**Dot Lake**	**49.27**	**34**	eP	**P**	**19 00 01.5**	**-0.5**
	70nm,1.9s						
GKN	**Gorkha**	**49.63**	**277**	eP	**P**	**19 00 05.8**	**+0.3**
	14nm,0.8s						
TKM2	**Tokmak 2**	**50.70**	**298**	eP	**P**	**19 00 14.4**	**+1.0**
	5.8nm,1.1s						
PYUN	**Piuthan**	**50.88**	**278**	eP	**P**	**19 00 15.4**	**+0.4**
BVAR	**Borovoye Array**	**51.26**	**312**	P	**P**	**19 00 17.6**	**+0.3**
	1.1nm,0.6s,baz=68,slow=8.3,SNR=9.0						
BVAR				PcP	**PcP**	**19 01 32.3**	**0.0**
	1.1nm,0.7s,baz=64,slow=3.4,SNR=5.2						
AAK	**Ala-Archa**	**51.56**	**298**	P	**P**	**19 00 20.6**	**+0.7**
	1.1nm,0.6s,baz=72,slow=9.6,SNR=3.9						
AAK	**Ala-Archa**	**51.56**	**298**	eP	**P**	**19 00 20.2**	**+0.3**
	8.3nm,1.6s						
EKS2	**Erkin-Say**	**52.05**	**299**	eP	**P**	**19 00 23.9**	**+0.4**
	2.0nm,0.9s						
ZRNK	**Zerenda**	**52.09**	**312**	eP	**P**	**19 00 23.4**	**-0.1**
	3.2nm,1.1s						
INK	**Inuvik**	**52.96**	**28**	P	**P**	**19 00 28.9**	**-0.7**
	1.0nm,0.6s,baz=296,slow=7.2,SNR=8.3						
INK	**Inuvik**	**52.96**	**28**	eP	**P**	**19 00 29.9**	**+0.3**
	18nm,1.9s						
ARU	**Arti**	**56.87**	**319**	P	**P**	**19 00 58.7**	**+0.6**
	1.5nm,0.5s,baz=288,slow=2.8,SNR=4.4						
ARU	**Arti**	**56.87**	**319**	eP	**P**	**19 00 58.2**	**+0.1**
	7.2nm,1.2s						
WR1	**Warramunga Arr**	**58.07**	**190**	eP	**P**	**19 01 05.2**	**-1.7**
	43nm,2.0s						
WR1				ePcP	**PcP**	**19 01 58.4**	**-0.2**
WRA	**Warramunga Arr**	**58.07**	**190**	P	**P**	**19 01 05.2**	**-1.7**
	4.3nm,0.8s,baz=11,slow=7.3,SNR=19						
WRA				PcP	**PcP**	**19 01 58.4**	**-0.2**
	1.1nm,0.9s,baz=6.0,slow=4.2,SNR=3.8						
ABKAR	**Akbulak array**	**58.69**	**310**	eP	**P**	**19 01 11.0**	**-0.1**
RES	**Resolute Bay**	**61.45**	**15**	P	**P**	**19 01 29.2**	**-0.3**
	2.7nm,0.8s,baz=318,slow=6.5,SNR=16						
RES	**Resolute Bay**	**61.45**	**15**	eP	**P**	**19 01 28.9**	**-0.6**
	9.8nm,1.5s						
AS01	**Alice Springs**	**61.78**	**190**	eP	**P**	**19 01 30.5**	**-1.9**
ASAR	**Alice Springs**	**61.79**	**190**	P	**P**	**19 01 31.1**	**-1.4**
	0.6nm,0.7s,baz=2.0,slow=6.3,SNR=11						
ASAR				PcP	**PcP**	**19 02 13.0**	**-0.5**
	0.4nm,0.8s,baz=0.2,slow=5.4,SNR=3.2						
YKA	**Yellowknife Ar**	**62.33**	**31**	P	**P**	**19 01 35.4**	**-0.2**
	0.7nm,0.7s,baz=303,slow=6.6,SNR=16						
ARCES	**ARCESS Array B**	**63.85**	**340**	P	P	**19 01 45.9**	**+0.2**
	5.1nm,1.1s,baz=27,slow=8.1,SNR=2.6						
GEYT	**Alibeck**	**64.88**	**299**	P	**P**	**19 01 53.5**	**+0.5**
	2.3nm,0.7s,baz=46,slow=4.3,SNR=6.0						
FIA0	**FINESS Array S**	**68.89**	**333**	eP	**P**	**19 02 18.1**	**0.0**
FINES	**FINESS Array B**	**68.89**	**333**	P	**P**	**19 02 18.1**	**0.0**
	2.7nm,0.6s,baz=38,slow=9.6,SNR=12						
KBZ	**Khabaz**	**71.63**	**311**	P	**P**	**19 02 36.1**	**+1.0**
	4.0nm,0.8s,baz=40,slow=1.2,SNR=7.5						
NV01	**Mina Array Sit**	**73.23**	**54**	eP	**P**	**19 02 45.0**	**0.0**
NVAR	**Mina Array Bea**	**73.23**	**54**	P	**P**	**19 02 45.4**	**+0.4**
	0.7nm,0.7s,baz=288,slow=7.6,SNR=5.3						
GCMT	**Greycliff**	**74.03**	**44**	eP	**P**	**19 02 49.3**	**-0.3**
NB2	**NORSAR Subarra**	**74.10**	**338**	P	**P**	**19 02 49.5**	**0.0**
	comp=Z,0.8nm,0.7s,baz=36,slow=5.6						
NB200	**NORSAR Array S**	**74.10**	**338**	eP	**P**	**19 02 49.6**	**0.0**
NOA	**NORSAR Array B**	**74.10**	**338**	P	**P**	**19 02 49.6**	**0.0**
	comp=Z,1.4nm,0.8s,baz=39,slow=5.8,SNR=5.1						
AKASG	**Malin Array Be**	**74.68**	**323**	P	**P**	**19 02 53.1**	**+0.1**
	comp=Z,1.0nm,0.6s,baz=46,slow=6.0,SNR=5.8						
PD31	**Pinedale Array**	**75.97**	**47**	eP	**P**	**19 03 00.3**	**-0.6**
PDAR	**Pinedale Array**	**75.97**	**47**	P	**P**	**19 03 00.8**	**-0.1**
	comp=Z,1.3nm,0.6s,baz=270,slow=1.6,SNR=17						
ULM	**Lac du Bonnet**	**77.96**	**34**	P	**P**	**19 03 11.8**	**+0.1**
	comp=Z,2.0nm,0.8s,baz=307,slow=4.1,SNR=3.0						
BR101	**Keskin Array S**	**79.55**	**312**	eP	**P**	**19 03 21.6**	**+0.8**
BRTR	**Keskin Array B**	**79.55**	**312**	P	**P**	**19 03 21.6**	**+0.8**
	comp=Z,0.8nm,0.8s,baz=46,slow=4.2,SNR=3.1						
GERES	**GERESS Array B**	**82.91**	**329**	P	**P**	**19 03 38.2**	**-0.2**
	comp=Z,0.4nm,0.7s,baz=49,slow=6.1,SNR=3.7						
LTX	**Lajitas**	**88.36**	**54**	eP	**P**	**19 04 05.6**	**-0.3**
TXAR	**Lajitas Array**	**88.36**	**54**	P	**P**	**19 04 05.6**	**-0.3**
	comp=Z,0.3nm,0.6s,baz=336,slow=2.7,SNR=4.1						

JMA 09 18:55:40.5,37°.74N×139°.97E,h9km±1km,M1.7,Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JFT	**Otama**	**0.37**	**127**	P	Pg	18 55 47.8	+0.1
JFT				S	Sg	18 55 52.4	-0.1
JFY	**Yanaizu**	**0.39**	**212**	P	Pg	18 55 48.3	+0.1
JFY				S	Sg	18 55 53.4	0.0
JYS	**Shirataka**	**0.49**	**9**	S	Sg	18 55 57.1	+0.7

IDC 09 18:55:50.4±1.8,37°.36N×142°.04E,h0km,mb3.6/5, mb1 3.7/7,mb1mx3.3/63,mbtmp3.6/7,ML3.4/2,Error ellipse: s-maj=38.7km s-min=21.1km az=88.0,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MJAR	**Matsushiro Arr**	**3.18**	**256**	Pn	Pn	18 56 40.7	-1.0
	4.2nm,0.3s,baz=78,slow=17,SNR=22						
MJAR				Sn	Sn	18 57 21.6	+1.3
	1.3nm,0.3s,baz=70,slow=18,SNR=3.3						
MAT	**Matsushiro**	**3.18**	**256**	P	Pn	18 56 41.1	-0.6
MAT				S	Sn	18 57 23.5	+3.1
JHJ	**Hachijo jima 2**	**4.62**	**204**	Pn	Pn	18 57 03.0	+1.5
	5.3nm,0.3s,baz=61,slow=19,SNR=5.7						
JHJ				Sn	Sn	18 57 57.9	+2.1
	6.0nm,0.3s,baz=253,slow=19,SNR=3.6						
H11N2	**WAKE ISLAND Hy**	**27.89**	**122**	T	T	19 31 11.9	
	baz=315,slow=75,SNR=32						
H11N1	**WAKE ISLAND Hy**	**27.90**	**122**	T	T	19 31 12.8	
	baz=315,slow=75,SNR=28						
H11N3	**WAKE ISLAND Hy**	**27.91**	**122**	T	T	19 31 13.5	
	baz=315,slow=75,SNR=32						
H11S1	**WAKE ISLAND Hy**	**28.62**	**124**	T	T	19 32 08.4	
	baz=316,slow=76,SNR=37						
H11S3	**WAKE ISLAND Hy**	**28.62**	**124**	T	T	19 32 08.5	
	baz=316,slow=76,SNR=37						
H11S2	**WAKE ISLAND Hy**	**28.64**	**124**	T	T	19 32 09.7	
	baz=316,slow=76,SNR=40						
ZALV	**Zalesovo Beam**	**42.07**	**312**	P	P	19 03 44.6	+0.9
	0.3nm,0.5s,baz=96,slow=8.8,SNR=2.5						
NRIK	**Noril'sk**	**43.18**	**335**	P	P	19 03 52.7	+0.2
	1.5nm,0.5s,baz=82,slow=7.1,SNR=4.3						
MKAR	**Makanchi Array**	**44.37**	**302**	P	P	19 04 00.3	-2.1
	0.3nm,0.7s,baz=96,slow=9.4,SNR=4.0						
KURBB	**Kurchatov Arra**	**46.20**	**308**	P	P	19 04 17.1	+0.3
	0.9nm,0.7s,baz=83,slow=8.2,SNR=7.5						
WRA	**Warramunga Arr**	**57.46**	**189**	P	P	19 05 40.6	-0.6
	0.3nm,0.6s,baz=4.4,slow=7.1,SNR=5.3						

*DDA **09** 19:12:30.4,38°.93N×27°.97E,h7km,Md2.7*
*ISK **09** 19:12:30.8,38°.89N×27°.97E,h5km,MD2.6*
*ISCJB **09** 19:12:31.0±0.5,38°.91N±0°.03×27°.95E±0°.03,h2km±5km, Error ellipse: s-maj=4.7km s-min=3.8km az=160.4*
*CSEM **09** 19:12:31.2±0.1,38°.91N×27°.96E,h2km,MD2.6,Error ellipse: s-maj=3.2km s-min=2.6km az=165.0*
ISC 09 19:12:30.6±1.0,38°.92N±0°.02×27°.96E±0°.02,h7km±8km, n32,σ0°52/50,Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
AKS	**Akhisar**	**0.12**	**250**	ePG	**Pg**	**19 12 33.0**	**-0.2**
AKS	**Akhisar**	**0.12**	**250**	ePg	**Pg**	**19 12 33.0**	**-0.2**
DEMI	**Demirci**	**0.61**	**78**	*i* P	**Pg**	**19 12 42.5**	**+0.2**
DEMI				*i* S	**Sb**	**19 12 51.0**	**-1.3**
DEMI	**Demirci**	**0.61**	**78**	P	**Pg**	**19 12 42.5**	**+0.2**
DEMI				S	**Sb**	**19 12 51.0**	**-1.3**
KULA	**Kula-Manisa**	**0.69**	**126**	ePG	**Pb**	**19 12 44.2**	**-0.6**
KULA				eSG	**Sg**	**19 12 53.3**	**+0.6**
KULA	**Kula-Manisa**	**0.69**	**126**	ePg	**Pb**	**19 12 44.3**	**-0.6**
KULA				eSg	**Sg**	**19 12 53.3**	**+0.6**
BALB	**Balikesir**	**0.72**	**355**	ePG	**Pb**	**19 12 45.7**	**+0.2**
BALB	**Balikesir**	**0.72**	**355**	ePg	**Pb**	**19 12 45.7**	**+0.2**
IZM	**Izmir**	**0.75**	**226**	ePG	**Pb**	**19 12 45.7**	**-0.3**
IZM				eSG	**Sb**	**19 12 56.5**	**0.0**
IZM	**Izmir**	**0.75**	**226**	ePg	**Pb**	**19 12 45.7**	**-0.3**
IZM				eSg	**Sb**	**19 12 56.5**	**0.0**
DURS	**Dursunbey**	**0.79**	**30**	*i* P	**Pb**	**19 12 47.1**	**+0.4**
DURS				*i* S	**Sn**	**19 13 00.4**	**0.0**
DURS	**Dursunbey**	**0.79**	**30**	P	**Pb**

IDC 09 19:24:45.5±2.3, 2°.63N×127°.85E, h0km, mb3.2/3, mb1 3.4/3, mb1mx3.2/38, mbtmp3.2/3, Error ellipse: s-maj=150.3km s-min=27.8km az=67.0, Northern Molucca Sea

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
WRA	**Warramunga Arr**	**23.32**	**164**	P	P	19 29 55.2	-0.1
	0.2nm,0.3s,baz=344,slow=10,SNR=10.0						
ASAR	**Alice Springs**	**26.79**	**168**	P	P	19 30 27.1	-0.3
	0.2nm,0.5s,baz=354,slow=8.0,SNR=11						
MKAR	**Makanchi Array**	**59.10**	**325**	P	P	19 34 48.2	+0.4
	0.1nm,0.4s,baz=140,slow=6.2,SNR=1.7						

*IDC **09** 19:32:11.8±3.1, 36°.02N×141°.77E, h0km, mb3.4/2, mb1 3.5/4, mb1mx3.2/43, mbtmp3.4/4, ML3.2/2, Error ellipse: s-maj=56.5km s-min=29.8km az=73.0*
*JMA **09** 19:32:13.5±0.1, 36°.32N×141°.55E, h62km±3km, M3.1*
ISC 09 19:32:13.0±2.1, 36°.30N±0°.05×141°.68E±0°.09, h28km±16km, n15, σ0°88/25, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CHOJ	**Chosi**	**0.89**	**229**	P	**Pb**	**19 32 29.8**	**0.0**
CHOJ				S	**Sn**	**19 32 42.5**	**+0.9**
JHO	**Hitachi**	**0.95**	**290**	P	**Pn**	**19 32 29.4**	**-1.1**
JHO				S	**Sn**	**19 32 41.7**	**-1.4**
ONAJ	**Iwakimizuishiy**	**1.07**	**319**	P	**Pn**	**19 32 31.4**	**-0.9**
ONAJ				S	**Sn**	**19 32 46.3**	**0.0**
JFK	**Kawauchi**	**1.25**	**329**	P	**Pn**	**19 32 34.0**	**-0.7**
JFT	**Otama**	**1.63**	**319**	P	**Pn**	**19 32 40.4**	**+0.5**
JFT				S	**Sn**	**19 32 59.6**	**-0.3**
JMM	**Marumori**	**1.72**	**336**	P	**Pn**	**19 32 41.5**	**+0.4**
JMM				S	**Sn**	**19 33 02.4**	**+0.2**
JAG	**Ashikaga**	**1.80**	**275**	P	**Pn**	**19 32 41.8**	**-0.4**
JAG				S	**Sn**	**19 33 03.3**	**-0.9**
JFY	**Yanaizu**	**1.93**	**306**	P	**Pn**	**19 32 44.8**	**+0.7**
JFY				eS	**Sn**	**19 33 07.3**	**-0.2**
JKT	**Katashina**	**2.01**	**284**	P	**Pn**	**19 32 45.6**	**+0.4**
JKT				S	**Sn**	**19 33 09.0**	**-0.5**
JRY	**Ryogami san**	**2.26**	**264**	P	**Pn**	**19 32 48.3**	**-0.3**
JRY				S	**Sn**	**19 33 14.5**	**-1.1**
MJAR	**Matsushiro Arr**	**2.81**	**276**	Pn	**Pn**	**19 32 57.3**	**+1.2**
	2.8nm,0.3s,baz=113,slow=9.2,SNR=57						
MJAR				Sn	**Sn**	**19 33 30.2**	**+1.1**
	1.7nm,0.3s,baz=58,slow=12,SNR=5.3						
MAT	**Matsushiro**	**2.81**	**276**	P	**Pn**	**19 32 57.1**	**+1.0**
MAT				S	**Sn**	**19 33 30.7**	**+1.6**
JHJ	**Hachijo jima 2**	**3.53**	**207**	Pn	Pn	19 33 07.0	+1.0
	9.2nm,0.3s,baz=334,slow=18,SNR=11						
JHJ				Sn	**Sn**	**19 33 45.9**	**-1.0**
	12nm,0.3s,baz=115,slow=18,SNR=1.5						
SONM	**Songino Array**	**28.38**	**305**	P	P	19 38 10.9	+5.9
	0.2nm,0.7s,baz=102,slow=10,SNR=3.1						
WRA	**Warramunga Arr**	**56.36**	**188**	P	**P**	**19 41 51.9**	**+0.1**
	0.7nm,1.1s,baz=6.2,slow=7.3,SNR=1.9						

*ISCJB **09** 19:39:01.6±0.7, 44°.22N±0°.02×78°.61E±0°.03, h7km±5km, Error ellipse: s-maj=4.0km s-min=3.5km az=37.5*
*NNC **09** 19:39:01.0±1.2, 44°.19N×78°.61E, h0km, mb2.8, mpv2.7, Error ellipse: s-maj=9.4km s-min=6.2km az=14.0*
*SOME **09** 19:39:01.5, 44°.22N×78°.57E, h10km*
ISC 09 19:39:00.5±1.3, 44°.23N±0°.03×78°.61E±0°.03, h5km±11km, n28, σ0°71/45, 15C-17D, Eastern Kazakhstan

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ARXS	**Arharly**	**0.56**	**269**	*eP*	**Pb**	**19 39 12.8**	**-0.1**
	4.7nm,0.2s						
ARXS				*eS*	**Sb**	**19 39 20.5**	**-0.8**
	311nm,0.3s						
KPKS	**Kokpek**	**0.77**	**176**	*eP*	**Pb**	**19 39 16.1**	**-0.2**
	84nm,0.2s						
KPKS				*eS*	**Sb**	**19 39 26.3**	**-0.8**
	83nm,0.3s						
TDK	**Taldyqorghan**	**0.79**	**349**	*eP*	**Pb**	**19 39 17.2**	**+0.5**
	180nm,0.1s						
TDK				*eS*	**Sb**	**19 39 28.1**	**+0.3**
	174nm,0.2s						
KURS	**Kuram**	**0.81**	**204**	⇓*eP*	**Pb**	**19 39 16.8**	**-0.3**
	42nm,0.2s						
KURS				⇑*eS*	**Sb**	**19 39 28.6**	**+0.3**
	35nm,0.1s						
ZHN	**Zhinishke**	**1.07**	**187**	*eP*	**Pg**	**19 39 21.1**	**+0.1**
	50nm,0.2s						
ZHN				*eS*	**Sg**	**19 39 34.7**	**-0.1**
	133nm,0.3s						
PDGK	**Podgornoye**	**1.10**	**145**	⇓*eP*	**Pg**	**19 39 21.8**	**+0.2**
	2.6nm,0.2s						
PDGK				⇑*S*	**Sb**	**19 39 36.4**	**-0.3**
	15nm,0.3s						
SATY	**Saty**	**1.18**	**187**	⇓*iP*	**Pg**	**19 39 23.2**	**+0.1**
	129nm,0.1s						
SATY				⇑*iS*	**Sb**	**19 39 39.3**	**+0.2**
	278nm,0.3s						
KAPS	**Kapalarasan**	**1.18**	**26**	⇓*iP*	**Pn**	**19 39 24.3**	**+0.5**
	9.0nm,0.4s						
KAPS				⇓*iS*	**Sn**	**19 39 40.5**	**+0.3**
	49nm,0.4s						
CHKK	**Chushkaly**	**1.22**	**253**	⇓*iP*	**Pg**	**19 39 23.4**	**-0.5**
	7.5nm,0.1s						
CHKK				⇑*iS*	**Sg**	**19 39 39.5**	**-0.1**
	107nm,0.2s						
SHLS	**Shalkode**	**1.41**	**139**	⇓*iP*	**Pn**	**19 39 27.1**	**0.0**
	14nm,0.1s						
SHLS				*eS*	**Sn**	**19 39 46.2**	**0.0**
	54nm,0.2s						
KTBS	**Karatobe**	**1.49**	**250**	*eP*	**Pn**	**19 39 27.7**	**-0.3**
KTBS				*eS*	**Sn**	**19 39 46.0**	**-1.7**
AAA	**Alma-Ata**	**1.54**	**232**	⇓*iP*	**Pg**	**19 39 30.3**	**+0.3**
	40nm,0.1s						
AAA				*eS*	**Sg**	**19 39 51.6**	**+1.6**
	157nm,0.1s						
MDOK	**Medeo**	**1.56**	**227**	⇓*iP*	**Pn**	**19 39 29.1**	**+0.1**
	13nm,0.3s						
MDOK				⇓*iS*	**Sb**	**19 39 49.7**	**-0.3**
	46nm,0.6s						
KNDC	**Almaty**	**1.56**	**230**	⇑Pn	**Pb**	**19 39 29.6**	**-0.3**
	4.4nm,0.2s						
KNDC				⇓Sn	**Sg**	**19 39 50.7**	**-0.1**
	17nm,0.2s						
KUU	**Kurty**	**1.67**	**259**	⇓*iP*	**Pn**	**19 39 30.9**	**+0.4**
	10.0nm,0.4s						
KUU				⇑*iS*	**Sn**	**19 39 51.5**	**-0.8**
	60nm,0.3s						
TNSS	**Tian-Shan**	**1.70**	**226**	⇑*iP*	**Pn**	**19 39 31.5**	**+0.4**
	7.3nm,0.3s						
TNSS				⇓*iS*	**Sb**	**19 39 53.9**	**-0.3**
	36nm,0.4s						
IZV	**Izvestkoviy**	**1.88**	**231**	*eP*	**Pb**	**19 39 35.1**	**-0.3**
IZV				*eS*	**Sb**	**19 39 58.7**	**-0.6**
	47nm,0.2s						
MTBS	**Maitube**	**1.93**	**236**	⇓*iP*	**Pn**	**19 39 34.9**	**+0.8**
	12nm,0.3s						
MTBS				*eS*	**Sn**	**19 39 58.4**	**-0.3**
	66nm,0.2s						
KST	**Kastek**	**2.26**	**239**	*eP*	**Pb**	**19 39 40.8**	**-1.1**
	3.7nm,0.2s						
KST				⇑*iS*	**Sb**	**19 40 09.9**	**-0.3**
	24nm,0.3s						
DGS	**Degeres**	**2.28**	**245**	*eP*	**Pn**	**19 39 40.4**	**+1.4**
	0.5nm,0.2s						
DGS				*eS*	**Sn**	**19 40 07.8**	**+0.3**
	36nm,0.6s						
BMNS	**Besmoynak**	**2.41**	**243**	*eP*	**Pb**	**19 39 44.3**	**-0.2**
	5.9nm,0.1s						
BMNS				*eS*	**Sb**	**19 40 14.7**	**+0.1**
	24nm,0.2s						
TKM2	**Tokmak 2**	**2.55**	**240**	⇑Pg	Pg	19 39 53.3	+3.8
	0.7nm,0.3s						
TKM2				⇑Lg	Lg	19 40 19.6	
	2.6nm,0.3s						
AAK	**Ala-Archa**	**3.40**	**243**	⇑Pg	**Pb**	**19 40 02.9**	**+1.6**
	0.7nm,0.3s						
AAK				⇑Lg	Lg	19 40 49.8	
	3.9nm,0.5s						
MK31	**Makanchi Array**	**3.64**	**44**	Pn	Pn	19 40 01.4	+3.9
	baz=219,slow=16,SNR=2.5						
MK31				⇓Pg	**Pg**	**19 40 08.5**	**-1.7**
	0.2nm,0.2s,baz=220,slow=14,SNR=10						
MK31				⇓Sn	**Sn**	**19 40 41.9**	**+1.0**
	0.3nm,0.3s,baz=222,slow=25,SNR=4.1						
MK31				⇑Lg	Lg	19 40 55.1	
	0.8nm,0.3s,baz=218,slow=25,SNR=9.2						
MNAS	**Manas**	**4.78**	**251**	⇑Lg	Lg	19 41 29.4	
	1.4nm,0.6s						
OTUK	**Ortayu**	**5.92**	**315**	⇓Lg	Lg	19 42 06.3	
	1.2nm,0.4s						
KK31	**Karatay Array**	**5.98**	**262**	Lg	Lg	19 42 10.0	
	0.2nm,0.3s,baz=74,slow=26,SNR=6.1						
KURK	**Kurchatov**	**6.49**	**0**	⇑Lg	Lg	19 42 26.4	
	3.7nm,0.6s						

*TAP **09** 19:43:17.4, 24°.51N×122°.48E, h23km±1km, ML2.6, C*
*ISCJB **09** 19:43:19.5±1.5, 24°.59N±0°.07×122°.39E±0°.02, h10km±12km, Error ellipse: s-maj=12.6km s-min=2.8km az=4.4*
*JMA **09** 19:43:20.4, 24°.48N×122°.36E, h28km±3km, M2.0*
ISC 09 19:43:19.4±1.1, 24°.56N±0°.07×122°.37E±0°.03, h13km±10km, n16, σ0°45/30, 1C, Taiwan region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
TWC	**Suao**	**0.48**	**276**	P	**Pg**	**19 43 28.5**	**-0.4**
	baz=280						
TWC				S	**Sb**	**19 43 36.6**	**-0.1**
	baz=280						
JYNG	**Yonagunijimaku**	**0.53**	**101**	P	**Pb**	**19 43 30.8**	**+0.2**
JYNG				S	**Sb**	**19 43 39.1**	**+0.9**
TWB1	**Santiao Chiao**	**0.57**	**322**	*eP*	**Pg**	**19 43 30.7**	**0.0**
	baz=319						
YOJ	**Yonaguni jima**	**0.59**	**99**	P	**Pb**	**19 43 32.0**	**+0.4**
YOJ				*eS*	**Sb**	**19 43 41.0**	**+1.2**
ENA	**Nanau**	**0.59**	**258**	*eP*	**Pg**	**19 43 30.7**	**-0.3**
	baz=270						
ENA				*eS*	**Sg**	**19 43 39.0**	**+0.2**
	baz=270						
TWE	**Neicheng**	**0.66**	**285**	*eP*	**Pg**	**19 43 32.2**	**-0.1**
	baz=282						
TWE				*eS*	**Sb**	**19 43 42.0**	**0.0**
	baz=282						
ENTT	**Nioudou**	**0.74**	**277**	*eP*	**Pb**	**19 43 34.5**	**+0.3**
	baz=279						
ENTT				*eS*	**Sb**	**19 43 44.7**	**+0.5**
	baz=279						
NWF	**Wu-fen Shan**	**0.74**	**314**	*eP*	**Pb**	**19 43 34.6**	**+0.3**
	baz=312						
NNS	**Nan Shan**	**0.92**	**263**	*eP*	**Pb**	**19 43 37.5**	**+0.2**
	baz=272						
NNS				*eS*	**Sg**	**19 43 49.3**	**0.0**
	baz=272						
NSK	**Sanguang**	**0.93**	**278**	⇑*eP*	**Pb**	**19 43 37.6**	**+0.1**
	baz=291						
NSK				*eS*	**Sg**	**19 43 49.7**	**0.0**
	baz=291						
WHF	**Hehuan Shan**	**1.09**	**248**	*eP*	**Pg**	**19 43 40.4**	**-0.2**
	baz=253						
WHF				*eS*	**Sn**	**19 43 56.2**	**+0.2**
	baz=253						
NSTT	**Nanjuang**	**1.25**	**274**	*eP*	**Pg**	**19 43 43.6**	**0.0**
	baz=287						
NSTT				*eS*	**Sg**	**19 43 59.7**	**-0.1**
	baz=287						
IRIF	**Iriomote-Funau**	**1.26**	**100**	P	**Pn**	**19 43 42.4**	**-0.3**
IRIF				*eS*	**Sb**	**19 43 58.9**	**-0.2**
JKRS	**Kuro-shima**	**1.52**	**102**	P	**Pn**	**19 43 46.8**	**+0.4**
JKRS				*eS*	**Sn**	**19 44 05.5**	**-0.6**
JIJ	**Ishigaki jima**	**1.62**	**96**	P	**Pn**	**19 43 47.5**	**-0.3**
JIJ				*eS*	**Sn**	**19 44 07.6**	**-0.9**
JISG	**Ishigakijimahi**	**1.77**	**89**	P	**Pn**	**19 43 49.7**	**0.0**
JISG				*eS*	**Sb**	**19 44 13.1**	**-0.6**

IDC 09 19:52:54.0±2.6, 5°.84S×130°.54E, h0km, mb3.5/1, mb1 3.7/4, mb1mx3.4/39, mbtmp3.5/4, ML3.5/3, MS1.9/1, Ms1 1.9/1, ms1mx1.8/30, Error ellipse: s-maj=120.3km s-min=28.7km az=77.0, Banda Sea

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JAY	**Jayapura**	**10.66**	**72**	LR	LR	20 00 57.9	
	comp=Z,6.7nm,21.2s,baz=280,slow=45						
FITZ	**Fitzroy Crossi**	**13.10**	**201**	Pn	Pn	19 56 01.2	-0.3
	0.1nm,0.3s,baz=15,slow=12,SNR=3.0						
FITZ				Sn	Sn	19 58 10.8	-17
	0.4nm,0.3s,baz=68,slow=20,SNR=6.1						
WRA	**Warramunga Arr**	**14.50**	**166**	Pn	Pn	19 56 20.6	0.0
	0.3nm,0.3s,baz=338,slow=12,SNR=14						
WRA				Sn	Sn	19 58 49.0	-13
	0.6nm,0.3s,baz=342,slow=22,SNR=12						
ASAR	**Alice Springs**	**18.02**	**170**	P	Pn	19 57 06.2	+0.1
	0.3nm,0.3s,baz=351,slow=12,SNR=30						
MKAR	**Makanchi Array**	**67.56**	**326**	P	P	20 03 52.4	0.0
	0.2nm,0.4s,baz=107,slow=8.2,SNR=5.2						

*IDC **09** 19:53:14.3±2.4, 36°.87N×140°.75E, h0km, mb3.4/3, mb1 3.6/4, mb1mx3.3/49, mbtmp3.4/4, ML3.4/1, MS2.2/2, Ms1 2.2/2, ms1mx2.0/28, Error ellipse: s-maj=40.4km s-min=28.0km az=64.0*
*ISCJB **09** 19:53:15.1±0.8, 36°.93N±0°.03×140°.78E±0°.06, h15km±5km, mb3.2/3, Error ellipse: s-maj=8.9km s-min=4.6km az=16.0*
*JMA **09** 19:53:15.8, 36°.95N×140°.67E, h6km±1km, M3.4*
Broadband fault plane solution: P waves. NP1: ϕs352.00000°, δ46.00000°, λ-92.00000°. NP2: ϕs176.00000°, δ44.00000°, λ-87.00000°. Principal axes: T Plg1.0000°, Azm84.0000°; N Plg2.0000°, Azm354.0000°; P Plg88.0000°, Azm201.0000°:
ISC 09 19:53:15.8±1.1, 36°.94N±0°.03×140°.71E±0°.04, h9km±8km, n20, σ0°60/23, mb3.1/3, 7C-1D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.18**	**24**	⇑P	**Pg**	**19 53 19.6**	**0.0**
ONAJ				S	**Sg**	**19 53 22.6**	**+0.4**
JHO	**Hitachi**	**0.35**	**199**	⇑P	**Pg**	**19 53 22.5**	**-0.2**
JHO				S	**Sg**	**19 53 27.4**	**+0.1**
JFK	**Kawauchi**	**0.45**	**17**	⇑P	**Pg**	**19 53 24.4**	**-0.2**
JFK				S	**Sg**	**19 53 30.8**	**+0.4**
JSB	**Shiboa**	**0.63**	**273**	⇑P	**Pg**	**19 53 28.2**	**+0.1**
JSB				S	**Sg**	**19 53 37.0**	**+0.7**
JFT	**Otama**	**0.65**	**333**	⇑P	**Pg**	**19 53 28.2**	**-0.2**
JFT				S	**Sg**	**19 53 36.8**	**-0.1**
JYT	**Yasato**	**0.82**	**210**	⇑P	**Pg**	**19 53 31.1**	**-0.6**
JYT				S	**Sg**	**19 53 42.1**	**-0.3**
JFY	**Yanaizu**	**0.93**	**300**	⇑P	**Pg**	**19 53 33.0**	**-0.7**
JFY				S	**Sg**	**19 53 44.8**	**-0.9**
JMM	**Marumori**	**0.93**	**4**	⇓P	**Pg**	**19 53 32.8**	**-0.9**
JMM				S	**Sg**	**19 53 45.2**	**-0.5**
MJAR	**Matsushiro Arr**	**2.05**	**260**	Pn	**Pn**	**19 53 50.9**	**+0.4**
	15nm,0.3s,baz=84,slow=15,SNR=76						
MJAR				Sn	**Sn**	**19 54 16.7**	**+0.7**
	23nm,0.3s,baz=79,slow=27,SNR=10						
MJAR				LR	LR	19 54 35.4	
	comp=Z,23nm,19.9s,baz=120,slow=40						
MAT	**Matsushiro**	**2.05**	**260**	P	**Pn**	**19 53 51.1**	**+0.6**
MAT				S	**Sb**	**19 54 18.4**	**-0.4**
JNU	**Nakatsue**	**8.91**	**248**	LR	LR	19 59 05.1	
	comp=Z,33nm,20.8s,baz=125,slow=39						
SONM	**Songino Array**	**27.37**	**304**	P	**P**	**19 59 00.5**	**-0.8**
	0.2nm,0.6s,baz=103,slow=11,SNR=2.4						
H11N2	**WAKE ISLAND Hy**	**28.59**	**120**	T	T	20 28 58.0	
	baz=313,slow=75,SNR=34						
H11N1	**WAKE ISLAND Hy**	**28.60**	**120**	T	T	20 28 59.2	
	baz=313,slow=75,SNR=25						
H11N3	**WAKE ISLAND Hy**	**28.61**	**120**	T	T	20 28 59.1	
	baz=313,slow=75,SNR=23						
H11S1	**WAKE ISLAND Hy**	**29.29**	**122**	T	T	20 29 51.6	
	baz=314,slow=75,SNR=28						
H11S3	**WAKE ISLAND Hy**	**29.29**	**122**	T	T	20 29 51.3	
	baz=314,slow=75,SNR=31						
H11S2	**WAKE ISLAND Hy**	**29.30**	**122**	T	T	20 29 52.4	
	baz=314,slow=75,SNR=23						
MKAR	**Makanchi Array**	**43.69**	**302**	P	**P**	**20 01 22.0**	**+1.1**
	0.2nm,0.8s,baz=95,slow=7.2,SNR=3.0						
WRA	**Warramunga Arr**	**56.90**	**187**	P	**P**	**20 03 00.5**	**-0.7**
	0.5nm,0.5s,baz=2.7,slow=7.6,SNR=3.1						

*ECX **09** 20:01:08.0±0.5, 31°.22N×115°.63W, h5km, MD2.2, ML2.4*
*MEX **09** 20:01:09.0±0.8, 31°.17N×115°.44W, h23km±13km, MD3.5*
ISC 09 20:01:06.0±1.2, 31°.24N±0°.03×115°.58W±0°.04, h11km±11km, n17, σ0°78/28, 3C-3D, Baja California

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SPIG	**San Pedro Mart**	**0.21**	**154**	*eP*	**Pb**	**20 01 12.2**	**+0.1**
SPIG				*eS*	**Sb**	**20 01 15.9**	**+2.1**
SPIG	**San Pedro Mart**	**0.21**	**154**	*i P*	**Pb**	**20 01 12.5**	**+0.4**
SPIG				*i S*	**Sb**	**20 01 15.9**	**+2.1**
SPX	**San Pedro Mart**	**0.21**	**153**	⇓*eP*	**Pb**	**20 01 12.5**	**+0.4**
SPX				*eS*	**Sb**	**20 01 15.9**	**+2.0**
SPX				⇑*e*		20 01 18.1	
SPX				AML	AML	20 01 18.1	
	comp=N,310nm,0.2s						
ECBX	**El Chinero**	**0.51**	**62**	⇑*eP*	**Pb**	**20 01 16.7**	**-0.2**
ECBX				*eS*	**Sb**	**20 01 24.0**	**-0.2**
ZAX	**El Zacaton**	**0.66**	**295**	*eP*	**Pg**	**20 01 18.6**	**-0.1**
ZAX				*eS*	**Sg**	**20 01 27.5**	**+0.1**
ZAX				AML	AML	20 01 30.9	
	comp=E,235nm,0.5s						
ZAX				⇓*e*		20 01 30.9	
ECNX	**Esteban Cantu**	**0.97**	**296**	*eP*	**Pb**	**20 01 24.5**	**-0.3**
CBX	**Cerro Bola**	**1.42**	**319**	*eP*	**Pb**	**20 01 32.5**	**0.0**
CBX				*eS*	**Sn**	**20 01 50.7**	**+0.1**
CBX				⇑*e*		20 01 54.7	
CBX				AML	AML	20 01 54.7	
	comp=N,104nm,0.4s						
CBX	**Cerro Bola**	**1.42**	**319**	*eP*	**Pb**	**20 01 32.6**	**0.0**
CBX				*i S*	**Sn**	**20 01 50.4**	**-0.2**
RMX	**La Rumorosa**	**1.43**	**343**	*eP*	**Pb**	**20 01 32.8**	**+0.1**
RMX				*eS*	**Sg**	**20 01 51.9**	**0.0**
RMX				⇓*e*		20 01 53.3	
RMX				AML	AML	20 01 53.3	
	comp=N,49nm,0.1s						
IBP	**Imperial Bould**	**1.49**	**343**	*eP*	**Pb**	**20 01 33.9**	**+0.3**
IBP	**Imperial Bould**	**1.49**	**343**	P	**Pg**	**20 01 34.4**	**-0.2**
	baz=164						
IBP				S	**Sb**	**20 01 52.9**	**+0.3**
	baz=164						
TJIG	**Tijuana**	**1.52**	**322**	*eP*	**Pb**	**20 01 34.2**	**+0.1**
TJIG				*eS*	**Sn**	**20 01 52.7**	**-0.1**
SWSC	**Sam W. Stewart**	**1.71**	**354**	P	**Pg**	**20 01 38.8**	**0.0**
	baz=176						
MONP2	**Monument Peak**	**1.80**	**337**	P	**Pb**	**20 01 39.6**	**+0.5**
	baz=157						
MONP2				Sb	**Sb**	**20 02 02.2**	**+0.6**
	baz=157						
GLA	**Glamis**	**1.92**	**19**	Sb	**Sg**	**20 02 07.7**	**0.0**
	baz=205						
109C	**Camp Elliot, M**	**2.10**	**322**	S	**Sb**	**20 02 09.4**	**-0.7**
	baz=140						
MURC	**Murrieta**	**2.73**	**330**	Sb	**Sb**	**20 02 28.5**	**+0.2**
	baz=149						

IDC 09 20:01:55.9±1.4, 9°.21S×123°.30E, h0km, mb3.6/2, mb1 3.7/5, mb1mx3.5/41, mbtmp3.6/5, ML3.5/3, Error ellipse: s-maj=113.2km s-min=24.2km az=64.0, Timor region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
FITZ	**Fitzroy Crossi**	**9.13**	**166**	Pn	Pn	20 04 10.2	+1.2
	0.5nm,0.3s,baz=352,slow=9.2,SNR=18						
FITZ				Sn	Sn	20 05 42.2	-10
WRA	**Warramunga Arr**	**15.09**	**136**	Pn	Pn	20 05 28.9	-1.7
	0.2nm,0.3s,baz=306,slow=14,SNR=14						
WRA				Sn	Sn	20 08 03.4	-15
	0.5nm,0.3s,baz=299,slow=21,SNR=5.6						
ASAR	**Alice Springs**	**17.60**	**146**	Pn	Pn	20 06 02.5	-0.2
	0.3nm,0.3s,baz=323,slow=13,SNR=19						
ASAR				Sn	Sn	20 09 06.2	-13
	0.3nm,0.3s,baz=309,slow=21,SNR=8.4						
SONM	**Songino Array**	**58.73**	**347**	P	P	20 11 56.0	+0.3
	0.3nm,0.5s,baz=163,slow=8.4,SNR=5.6						
MKAR	**Makanchi Array**	**66.65**	**331**	P	P	20 12 48.1	-0.3
	0.8nm,0.7s,baz=136,slow=7.8,SNR=12						

IDC 09 20:03:52.3±2.4, 17°.19S×173°.28W, h0km, mb3.6/3, mb1 4.0/4, mb1mx3.6/50, mbtmp3.8/4, ML4.5/1, MS2.6/2, Ms1 2.6/2, ms1mx2.5/31, Error ellipse: s-maj=111.0km s-min=25.6km az=142.0, Tonga Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
AFI	**Afiamalu**	**3.57**	**24**	Pn	Pn	20 04 48.9	-0.1
	42nm,0.3s,baz=199,slow=4.5,SNR=27						
AFI				Sn	Sn	20 05 21.3	-11
	45nm,0.3s,baz=350,slow=22,SNR=7.2						
AFI				LR	LR	20 05 49.5	
	comp=Z,32nm,20.2s,baz=92,slow=33						
WRA	**Warramunga Arr**	**49.57**	**258**	P	P	20 12 45.1	-0.5
	0.2nm,0.6s,baz=97,slow=7.1,SNR=2.7						
ASAR	**Alice Springs**	**49.69**	**253**	P	P	20 12 46.6	+0.2
	1.5nm,0.6s,baz=88,slow=8.4,SNR=22						
KSRS	**Korea Array**	**77.52**	**316**	LR	LR	20 49 33.6	
	comp=Z,9.6nm,18.9s,baz=126,slow=35						
PDAR	**Pinedale Array**	**83.52**	**42**	P	P	20 16 22.5	+0.1
	0.4nm,0.7s,baz=251,slow=2.8,SNR=3.2						

*ISCJB **09** 20:03:58.1±0.4, 24°.08N±0°.03×122°.29E±0°.02, h19km±5km, Error ellipse: s-maj=4.6km s-min=2.5km az=161.2*
*JMA **09** 20:03:58.4±0.1, 24°.08N×122°.29E, h29km±4km, M2.1*
*TAP **09** 20:03:58.5, 24°.12N×122°.26E, h24km, ML2.9, C*
ISC 09 20:03:57.6±1.1, 24°.11N±0°.03×122°.27E±0°.02, h19km±3km, n39, σ0°66/70, Taiwan region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ENA	**Nanau**	**0.58**	**304**	P	**Pn**	**20 04 10.2**	**-0.6**
	baz=311						
ENA				S	**Sb**	**20 04 17.9**	**+1.1**
	baz=311						
TWD	**Chiawan**	**0.61**	**268**	*eP*	**Pn**	**20 04 12.1**	**+0.8**
	baz=266						
TWC	**Suao**	**0.63**	**323**	P	**Pb**	**20 04 10.0**	**+0.1**
	baz=322						
TWC				S	**Sg**	**20 04 18.0**	**-0.6**
	baz=322						
JYNG	**Yonagunijimaku**	**0.71**	**61**	P	**Pg**	**20 04 11.5**	**-0.1**
JYNG				*eS*	**Sb**	**20 04 21.7**	**+1.1**
YOJ	**Yonaguni jima**	**0.77**	**62**	P	**Pn**	**20 04 12.8**	**-0.5**
YOJ				*eS*	**Sg**	**20 04 22.9**	**+0.1**
ILA	**Ilan**	**0.81**	**324**	*eP*	**Pn**	**20 04 14.0**	**0.0**
	baz=323						
ILA				S

NSTT				*e*S	**Sg**	**20 04 38.0**	**-0.8**
	baz=294							
SMLT	**Sun Moon Lake**	**1.27 260**		*e*P	**Pn**	**20 04 20.5**	**+0.1**
	baz=260							
SMLT				*e*S	**Sb**	**20 04 36.9**	**0.0**
	baz=260							
CHKT	**Chengkung**	**1.30 220**		*e*P	**Pb**	**20 04 21.8**	**+0.5**
	baz=209							
CHKT				*e*S	**Sn**	**20 04 34.8**	**-2.7**
	baz=209							
TYC	**Yuchr**	**1.30 261**		*e*P	**Pn**	**20 04 19.6**	**-1.2**
	baz=261							
YUS	**Yu-Shan**	**1.35 243**		*e*P	**Pn**	**20 04 22.2**	**+0.4**
	baz=244							
YUS				S	**Sn**	**20 04 39.0**	**-0.5**
	baz=244							
IRIF	**Iriomote-Funau**	**1.35 80**		P	**Pb**	**20 04 22.2**	**-0.1**
IRIF				*e*S	**Sb**	**20 04 39.7**	**+0.4**
TWQ1	**Liyutan**	**1.39 280**		*e*P	**Pn**	**20 04 22.3**	**+0.4**
	baz=280							
ALS	**Alishan**	**1.46 246**		*e*P	**Pn**	**20 04 23.4**	**+0.2**
	baz=247							
ALS				S	**Sn**	**20 04 42.4**	**+0.4**
	baz=247							
ELDTW	**Lidau**	**1.47 232**		*e*P	**Pn**	**20 04 22.5**	**-0.5**
	baz=220							
ELDTW				*e*S	**Sn**	**20 04 40.6**	**-1.2**
	baz=220							
CHN5	**Tsauling**	**1.54 251**		*e*P	**Pb**	**20 04 25.6**	**+0.1**
	baz=241							
CHN5				*e*S	**Sb**	**20 04 44.8**	**+0.1**
	baz=241							
JKRS	**Kuro-shima**	**1.60 85**		P	**Pb**	**20 04 26.2**	**-0.2**
JKRS				*e*S	**Sb**	**20 04 46.3**	**+0.1**
WGK	**Gukeng**	**1.62 255**		*e*P	**Pb**	**20 04 26.8**	**+0.1**
	baz=255							
WGK				*e*S	**Sb**	**20 04 46.6**	**-0.2**
	baz=255							
STYT	**Tauyuan**	**1.67 236**		*e*P	**Pb**	**20 04 27.4**	**-0.4**
	baz=237							
STYT				*e*S	**Sn**	**20 04 47.7**	**+0.9**
	baz=237							
CHN4	**Tsaushan**	**1.71 244**		*e*P	**Pb**	**20 04 28.4**	**+0.1**
	baz=235							
CHN4				*e*S	**Sb**	**20 04 50.0**	**+0.5**
	baz=235							
JIJ	**Ishigaki jima**	**1.73 81**		P	**Pn**	**20 04 26.8**	**+0.2**
JIJ				S	**Sn**	**20 04 48.4**	**+0.2**
WTP	**Ta-pu**	**1.74 241**		*e*P	**Pb**	**20 04 28.4**	**-0.6**
	baz=242							
WTP				*e*S	**Sb**	**20 04 50.2**	**-0.2**
	baz=242							
CHN1	**Nanshi**	**1.84 240**		*e*P	**Pb**	**20 04 30.6**	**0.0**
	baz=240							
CHN1				*e*S	**Sb**	**20 04 53.4**	**+0.2**
	baz=240							
SGST	**Jiashian**	**1.85 237**		*e*P	**Pn**	**20 04 29.1**	**+0.8**
	baz=238							
SGST				*e*S	**Sb**	**20 04 53.0**	**-0.5**
	baz=238							
JISG	**Ishigakijimahi**	**1.92 75**		P	**Pn**	**20 04 29.5**	**+0.2**
JISG				*e*S	**Sn**	**20 04 52.9**	**0.0**
ECL	**Taimali**	**1.93 219**		*e*P	**Pn**	**20 04 29.4**	**+0.1**
	baz=220							
SSD	**Sandimen**	**2.02 228**		*e*P	**Pn**	**20 04 31.9**	**+1.3**
	baz=223							
SSD				*e*S	**Sn**	**20 04 56.7**	**+1.3**
	baz=223							
EAST	**Anshuo**	**2.15 218**		*e*P	**Pn**	**20 04 32.4**	**-0.1**
	baz=218							

NIED ***09*** *20:06:00, 36.°20N×142.°50E, h8km, Mw3.5 Best double couple: M₀2.17000×10¹⁴ NP1:φs 199.00000°, δ41.00000°, λ90.00000°. NP2:φs 19.00000°, δ49.00000°, λ90.00000°.*
JMA ***09*** *20:06:11.9±0.3, 36.°16N×142.°50E, h26km, M3.6*
IDC ***09*** *20:06:11.2±1.1, 35.°99N×142.°34E, h0km, mb3.4/5, mb1 3.6/7, mb1mx3.4/50, mbtmp3.5/7, ML3.4/2, MS2.3/1, Ms1 2.3/1, ms1mx2.0/28, Error ellipse: s-maj=28.2km s-min=20.8km az=93.0*
ISCJB ***09*** *20:06:12.1±0.9, 36.°14N±0.°05×142.°43E±0.°08, h18km, mb3.5/5, Error ellipse: s-maj=9.4km s-min=6.5km az=149.9*

ISC 09 20:06:14.0±1.1, 36.°06N±0.°06×142.°32E±0.°09, h18km, n23, σ0s98/20, mb3.5/5, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CHOJ	**Chosi**	**1.23**	**254**	P	**Pb**	**20 06 36.8**	**0.0**
JHO	**Hitachi**	**1.52**	**292**	*e*S	**Sn**	**20 06 59.7**	**+0.2**
JFK	**Kawauchi**	**1.75**	**319**	*e*S	**Sn**	**20 07 03.3**	**-2.0**
BSO1	**Boso 1**	**1.78**	**218**	P	**Pn**	**20 06 44.4**	**+1.1**
BSO1				S	**Sg**	**20 07 09.9**	**-1.2**
BSO3	**Boso 3**	**1.93**	**230**	P	**Pn**	**20 06 47.1**	**+1.3**
JFT	**Otama**	**2.16**	**313**	S	**Sn**	**20 07 15.2**	**-0.2**
JAG	**Ashikaga**	**2.34**	**280**	P	**Pn**	**20 06 51.8**	**+0.1**
JAG				*e*S	**Sn**	**20 07 20.8**	**+0.8**
JOD2	**Odawara 2**	**2.75**	**254**	P	**Pn**	**20 06 57.8**	**+0.6**
MJAR	**Matsushiro Arr**	**3.35**	**280**	Pn	**Pn**	**20 07 06.1**	**+0.5**
	3.0nm,0.3s,baz=82,slow=7.8,SNR=28						
MAT	**Matsushiro**	**3.35**	**280**	P	**Pn**	**20 07 06.5**	**+0.9**
MAT				S	**Sn**	**20 07 45.9**	**+0.9**
JHJ	**Hachijo jima 2**	**3.60**	**216**	Pn	**Pn**	**20 07 09.6**	**+0.7**
	11nm,0.3s,baz=347,slow=20,SNR=8.6						
JHJ				Sn	**Sn**	**20 07 50.1**	**-0.9**
	27nm,0.3s,baz=51,slow=23,SNR=6.9						
KSRS	**Korea Array**	**11.63**	**281**	LR	LR	20 13 14.0	
	comp=Z,16nm,20.7s,baz=160,slow=36						
H11N2	**WAKE ISLAND Hy 27.02**	**120**		T	T	20 39 59.5	
	baz=313,slow=75,SNR=22						
H11N1	**WAKE ISLAND Hy 27.03**	**120**		T	T	20 40 01.8	
	baz=313,slow=75,SNR=19						
H11N3	**WAKE ISLAND Hy 27.04**	**120**		T	T	20 40 02.4	
	baz=313,slow=75,SNR=15						
H11S1	**WAKE ISLAND Hy 27.72**	**123**		T	T	20 40 54.2	
	baz=315,slow=76,SNR=12						
H11S3	**WAKE ISLAND Hy 27.72**	**123**		T	T	20 40 53.8	
	baz=315,slow=76,SNR=13						
H11S2	**WAKE ISLAND Hy 27.74**	**123**		T	T	20 40 55.9	
	baz=315,slow=76,SNR=8.0						
SONM	**Songino Array**	**28.94**	**305**	P	**P**	**20 12 12.6**	**+0.4**
	0.7nm,0.6s,baz=106,slow=9.2,SNR=7.9						
MKAR	**Makanchi Array**	**45.26**	**303**	P	**P**	**20 14 29.8**	**-0.6**
	0.5nm,0.6s,baz=89,slow=11,SNR=9.1						
ILAR	**Eielson Array**	**49.93**	**32**	P	**P**	**20 15 07.2**	**+0.9**
	0.4nm,1.0s,baz=266,slow=7.1,SNR=2.8						
WRA	**Warramunga Arr**	**56.20**	**189**	P	**P**	**20 15 51.5**	**-1.5**
	0.5nm,1.0s,baz=7.4,slow=7.0,SNR=3.8						
ASAR	**Alice Springs**	**59.93**	**189**	P	**P**	**20 16 19.1**	**0.0**
	0.3nm,0.9s,baz=359,slow=6.7,SNR=3.2						

CSEM ***09*** *20:10:27.7±0.4, 36.°37N×28.°77E, h2km, MD2.7, Error ellipse: s-maj=8.2km s-min=4.8km az=23.0*
ISCJB ***09*** *20:10:28.3±1.2, 36.°41N±0.°06×28.°78E±0.°07, h4km±10km, Error ellipse: s-maj=13.0km s-min=6.0km az=38.2*
DDA ***09*** *20:10:28.7, 36.°48N×28.°74E, h7km, Md2.6*
ISK ***09*** *20:10:28.8, 36.°48N×28.°82E, h7km, MD2.7*

ISC 09 20:10:27.7±1.6, 36.°40N±0.°07×28.°80E±0.°04, h10km±10km, n18, σ0s43/32, Dodecanese Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
FETY	**Fethiye**	**0.33**	**45**	*e*PG	**Pg**	**20 10 34.4**	**+0.2**
FETY				*e*SG	**Sg**	**20 10 38.5**	**-0.1**
FETY	**Fethiye**	**0.33**	**45**	*e*Pg	**Pg**	**20 10 34.4**	**+0.2**
FETY				*e*Sg	**Sg**	**20 10 38.5**	**-0.1**
DALY	**Dalyan (Mu¨la**	**0.43**	**344**	*e*PG	**Pg**	**20 10 36.2**	**+0.1**
DALY				*e*SG	**Sg**	**20 10 41.8**	**0.0**
DALY	**Dalyan (Mu¨la**	**0.43**	**344**	*e*Pg	**Pg**	**20 10 36.2**	**+0.1**
DALY				*e*Sg	**Sg**	**20 10 41.8**	**0.0**
TURN	**Turunc**	**0.49**	**342**	*i* P	**Pb**	**20 10 38.4**	**0.0**
TURN				*i* S	**Sb**	**20 10 46.9**	**+1.2**
TURN	**Turunc**	**0.49**	**342**	P	**Pb**	**20 10 38.4**	**0.0**
TURN				S	**Sb**	**20 10 46.9**	**+1.2**
AKAS	**Kas**	**0.67**	**104**	*i* P	**Pb**	**20 10 41.5**	**-0.1**
AKAS				*i* S	**Sn**	**20 10 54.1**	**+0.2**
AKAS	**Kas**	**0.67**	**104**	P	**Pb**	**20 10 41.5**	**-0.1**
AKAS				S	**Sn**	**20 10 54.1**	**+0.2**
YER	**Yerkesik**	**0.84**	**331**	*e*PG	**Pb**	**20 10 44.3**	**0.0**
YER				*e*SG	**Sb**	**20 10 55.5**	**-0.1**
YER	**Yerkesik**	**0.84**	**331**	*e*Pg	**Pb**	**20 10 44.3**	**0.0**
YER				*e*Sg	**Sb**	**20 10 55.6**	**-0.1**
BDRM	**Kayabasi**	**1.27**	**302**	*i* P	**Pn**	**20 10 50.9**	**-0.6**
BDRM				*i* S	**Sn**	**20 11 08.6**	**0.0**
BDRM	**Kayabasi**	**1.27**	**302**	P	**Pn**	**20 10 50.9**	**-0.6**
BDRM				S	**Sn**	**20 11 08.6**	**0.0**
BODT	**Bodrum**	**1.36**	**299**	*e*PN	**Pg**	**20 10 54.5**	**+0.6**
BODT	**Bodrum**	**1.36**	**299**	*e*Pn	**Pg**	**20 10 54.5**	**+0.6**
AYDN	**Tasoluk**	**1.46**	**330**	*i* P	**Pb**	**20 10 54.7**	**-0.2**
AYDN				*i* S	**Sg**	**20 11 14.0**	**-0.5**
AYDN	**Tasoluk**	**1.46**	**330**	P	**Pb**	**20 10 54.7**	**-0.2**
AYDN				S	**Sg**	**20 11 14.0**	**-0.5**
AYDB	**Zeytinkoy-Aydi**	**1.70**	**335**	*e*PN	**Pb**	**20 10 59.1**	**0.0**
AYDB	**Zeytinkoy-Aydi**	**1.70**	**335**	*e*Pn	**Pb**	**20 10 59.1**	**0.0**

ISK ***09*** *20:12:51.8, 36.°47N×28.°80E, h8km, MD2.6*
ISCJB ***09*** *20:12:52.1±1.3, 36.°43N±0.°09×28.°80E±0.°10, h5km±11km, Error ellipse: s-maj=18.0km s-min=7.0km az=40.9*
CSEM ***09*** *20:12:52.4±0.3, 36.°45N×28.°82E, h8km, MD2.6, Error ellipse: s-maj=8.8km s-min=3.8km az=21.0*
DDA ***09*** *20:12:52.5, 36.°45N×28.°74E, h7km, Md2.6*

ISC 09 20:12:51.5±1.6, 36.°41N±0.°07×28.°81E±0.°04, h5km±11km, n20, σ0s42/32, Dodecanese Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
FETY	**Fethiye**	**0.31**	**44**	*e*PG	**Pg**	**20 12 57.7**	**+0.1**
FETY	**Fethiye**	**0.31**	**44**	*e*Pg	**Pg**	**20 12 57.7**	**+0.1**
DALY	**Dalyan (Mu¨la**	**0.42**	**343**	*e*PG	**Pg**	**20 12 59.2**	**-0.5**
DALY				*e*SG	**Sg**	**20 13 05.3**	**0.0**
DALY	**Dalyan (Mu¨la**	**0.42**	**343**	*e*Pg	**Pg**	**20 12 59.2**	**-0.5**
DALY				*e*Sg	**Sg**	**20 13 05.3**	**0.0**
TURN	**Turunc**	**0.49**	**340**	*i* P	**Pb**	**20 13 02.4**	**-0.2**
TURN				*i* S	**Sb**	**20 13 11.1**	**+1.0**
TURN	**Turunc**	**0.49**	**340**	P	**Pb**	**20 13 02.4**	**-0.2**
TURN				S	**Sb**	**20 13 11.1**	**+1.0**
AKAS	**Kas**	**0.67**	**105**	*i* P	**Pb**	**20 13 05.8**	**+0.1**
AKAS				*i* S	**Sn**	**20 13 18.1**	**-0.5**
AKAS	**Kas**	**0.67**	**105**	P	**Pb**	**20 13 05.8**	**+0.1**
AKAS				S	**Sn**	**20 13 18.1**	**-0.5**
YER	**Yerkesik**	**0.84**	**330**	*e*PG	**Pg**	**20 13 08.1**	**+0.5**
YER	**Yerkesik**	**0.84**	**330**	*e*Pg	**Pg**	**20 13 08.1**	**+0.5**
ELL	**Elmali**	**0.94**	**69**	*e*PG	**Pb**	**20 13 10.5**	**+0.1**
ELL	**Elmali**	**0.94**	**69**	*e*Pg	**Pb**	**20 13 10.5**	**+0.1**
BDRM	**Kayabasi**	**1.28**	**301**	*i* P	**Pn**	**20 13 15.5**	**-0.5**
BDRM				*i* S	**Sn**	**20 13 33.2**	**-0.3**
BDRM	**Kayabasi**	**1.28**	**301**	P	**Pn**	**20 13 15.5**	**-0.5**
BDRM				S	**Sn**	**20 13 33.2**	**-0.3**
BODT	**Bodrum**	**1.37**	**299**	*e*PN	**Pg**	**20 13 18.1**	**+0.4**
BODT				*e*SN	**Sn**	**20 13 35.5**	**-0.2**
BODT	**Bodrum**	**1.37**	**299**	*e*Pn	**Pg**	**20 13 18.2**	**+0.4**
BODT				*e*Sn	**Sn**	**20 13 35.6**	**-0.2**
AYDN	**Tasoluk**	**1.45**	**329**	*i* P	**Pn**	**20 13 18.5**	**0.0**
AYDN				*i* S	**Sg**	**20 13 38.0**	**-0.3**
AYDN	**Tasoluk**	**1.45**	**329**	P	**Pn**	**20 13 18.5**	**0.0**
AYDN				S	**Sg**	**20 13 38.0**	**-0.3**
AYDB	**Zeytinkoy-Aydi**	**1.70**	**335**	*e*PN	**Pn**	**20 13 21.8**	**-0.1**
AYDB	**Zeytinkoy-Aydi**	**1.70**	**335**	*e*Pn	**Pn**	**20 13 21.8**	**-0.1**

ISCJB ***09*** *20:15:05.7±1.2, 38.°51N±0.°03×142.°16E±0.°07, h20km±7km, mb3.2/2, Error ellipse: s-maj=9.8km s-min=5.1km az=17.6*
JMA ***09*** *20:15:07.5±0.1, 38.°56N×142.°07E, h33km±2km, M3.4*
IDC ***09*** *20:15:08.6±3.4, 37.°70N×142.°38E, h0km, mb3.3/2, mb1 3.3/3, mb1mx3.1/51, mbtmp3.0/3, ML2.2/1, Error ellipse: s-maj=74.8km s-min=43.6km az=57.0*

ISC 09 20:15:05.1±2.0, 38.°53N±0.°04×142.°14E±0.°07, h15km±11km, n16, σ0s77/27, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**0.63**	**264**	P	**Pn**	**20 15 18.9**	**-0.6**
JIO				S	**Sb**	**20 15 26.3**	**-0.1**
JMK	**Ichinoseki**	**0.84**	**301**	P	**Pn**	**20 15 22.1**	**-0.3**
JMK				S	**Sg**	**20 15 32.3**	**-0.1**
MIYJ	**Miyakonagasawa**	**1.08**	**347**	P	**Pb**	**20 15 25.5**	**0.0**
MIYJ				S	**Sb**	**20 15 38.3**	**-1.2**
JOM	**Ohasama**	**1.16**	**325**	P	**Pb**	**20 15 27.1**	**+0.3**
JOM				S	**Sb**	**20 15 41.5**	**-0.1**
JOU	**Okura**	**1.17**	**263**	P	**Pg**	**20 15 27.7**	**0.0**
JOU				S	**Sb**	**20 15 41.7**	**-0.4**
JMM	**Marumori**	**1.25**	**239**	P	**Pn**	**20 15 28.0**	**-0.1**
JYK	**Kaneyama**	**1.45**	**286**	P	**Pb**	**20 15 31.6**	**-0.2**
JYK				*e*S	**Sn**	**20 15 49.5**	**-0.1**
JRG	**Rokugo**	**1.46**	**307**	P	**Pb**	**20 15 32.1**	**0.0**
JRG				S	**Sb**	**20 15 50.7**	**+0.2**
JFK	**Kawauchi**	**1.53**	**221**	P	**Pn**	**20 15 31.9**	**-0.1**
JFK				*e*S	**Sn**	**20 15 49.9**	**-1.8**
JKZ	**Kuzumaki**	**1.59**	**337**	P	**Pn**	**20 15 33.7**	**-0.5**
JKZ				S	**Sn**	**20 15 53.3**	**+1.0**
JYS	**Shirataka**	**1.66**	**260**	P	**Pb**	**20 15 35.9**	**+0.5**
JYS				S	**Sn**	**20 15 55.0**	**+0.2**
JFT	**Otama**	**1.75**	**235**	P	**Pb**	**20 15 36.4**	**-0.5**
JFT				*e*S	**Sn**	**20 15 56.8**	**-0.1**
JANG	**Nango**	**1.91**	**345**	P	**Pn**	**20 15 38.0**	**+0.8**
JANG				*e*S	**Sb**	**20 16 02.5**	**-0.8**
MJAR	**Matsushiro Arr**	**3.70**	**239**	Pn	**Pn**	**20 16 04.3**	**+2.5**
	0.2nm,0.3s,baz=58,slow=12,SNR=1.9						
MKAR	**Makanchi Array**	**43.83**	**301**	P	P	20 23 21.0	+10
	0.1nm,0.5s,baz=77,slow=6.2,SNR=2.1						
WRA	**Warramunga Arr**	**58.62**	**189**	P	**P**	**20 25 01.9**	**+0.3**
	0.4nm,0.6s,baz=7.0,slow=7.0,SNR=2.5						

IDC 09 20:23:12.2±4.2, 6.°24S×130.°87E, h118km±54km, mb3.6/2, mb1 3.4/5, mb1mx3.2/34, mbtmp3.8/5, Error ellipse: s-maj=137.8km s-min=24.0km az=80.0, Banda Sea

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SIJI	**Sorong**	**5.35**	**4**	P	Pn	20 24 30.2	+0.3
	11nm,0.3s,baz=92,slow=1.7,SNR=1.2						
SIJI				S	Sn	20 25 24.3	-6.2
	12nm,0.3s,baz=103,slow=23,SNR=1.2						
WRA	**Warramunga Arr**	**14.03**	**166**	P	Pn	20 26 23.9	-2.0
	0.2nm,0.3s,baz=350,slow=13,SNR=2.4						
WRA				S	Sn	20 28 51.6	-9.1
	0.9nm,0.3s,baz=340,slow=19,SNR=8.8						
ASAR	**Alice Springs**	**17.57**	**171**	P	Pn	20 27 10.6	+0.8
	0.1nm,0.3s,baz=348,slow=9.8,SNR=7.9						
ASAR				S		20 30 14.4	-12
	0.1nm,0.3s,baz=352,slow=26,SNR=2.7						
SONM	**Songino Array**	**58.01**	**341**	P	P	20 32 52.7	-0.1
	0.3nm,0.5s,baz=165,slow=7.3,SNR=3.5						
MKAR	**Makanchi Array**	**68.07**	**326**	P	P	20 33 59.1	-0.1
	1.6nm,0.4s,baz=114,slow=8.1,SNR=26						

IDC 09 20:25:39.5±7.2, 53.°93N×161.°31E, h0km, mb3.4/2, mb1 3.7/2, mb1mx3.1/39, mbtmp3.5/2, ML1.5/1, Error ellipse: s-maj=129.8km s-min=56.2km az=106.0, Off east coast of Kamchatka Peninsula

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PETK	**Petropavlovsk-**	**2.31**	**251**	Pn	Pn	20 26 18.7	-0.1
	0.6nm,0.3s,baz=108,slow=23,SNR=2.2						
MJAR	**Matsushiro Arr**	**23.63**	**232**	P	P	20 30 52.3	+0.1
	1.8nm,0.8s,baz=46,slow=10,SNR=5.9						
MKAR	**Makanchi Array**	**48.45**	**296**	P	P	20 34 23.2	-0.1
	0.3nm,0.8s,baz=52,slow=7.6,SNR=1.6						

NEIC ***09*** *20:33:29.8±1.2, 38.°37N×146.°52E, h10km, mb4.5/11, Error ellipse: s-maj=26.3km s-min=17.9km az=157.0*
IDC ***09*** *20:33:54.6±0.8, 39.°89N×142.°50E, h0km, mb3.7/13, mb1 3.8/13, mb1mx3.7/39, mbtmp3.7/13, MS3.1/4, Ms1 3.1/4, ms1mx2.6/49, Error ellipse: s-maj=23.6km s-min=18.2km az=113.0*
NIED ***09*** *20:34:00, 39.°90N×142.°40E, h74km, Mw4.2 Best double couple: M₀2.29000×10¹⁵ NP1:φs 341.00000°, δ63.00000°, λ8.00000°. NP2:φs 247.00000°, δ83.00000°, λ153.00000°.*
JMA ***09*** *20:34:00.3±0.1, 39.°93N×142.°42E, h37km±1km, M3.9*

ISC 09 20:33:54.6±1.6, 39.°92N±0.°04×142.°58E±0.°06, h2km±9km, n53, σ0s96/50, mb4.1/23, MS3.3/3, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JTH	**Tanohata**	**0.55**	**273**	P	**Pn**	**20 34 10.0**	**+0.5**
JTH				S	**Sb**	**20 34 16.8**	**+1.5**
MIYJ	**Miyakonagasawa**	**0.68**	**240**	P	**Pn**	**20 34 11.9**	**+0.7**
MIYJ				S	**Sb**	**20 34 19.9**	**+0.9**
JANG	**Nango**	**0.94**	**300**	P	**Pn**	**20 34 15.2**	**+0.4**
JKZ	**Kuzumaki**	**0.96**	**274**	P	**Pn**	**20 34 16.2**	**+1.0**
JKZ				S	**Sb**	**20 34 27.2**	**-0.1**
JOM	**Ohasama**	**1.09**	**246**	P	**Pn**	**20 34 17.9**	**+1.0**
JOM				S	**Sg**	**20 34 30.5**	**+0.9**
JMK	**Ichinoseki**	**1.43**	**228**	P	**Pg**	**20 34 23.1**	**+1.1**
JMK				*e*S	**Sb**	**20 34 40.8**	**+0.3**
JTM	**Tenmabayashi**	**1.45**	**307**	P	**Pg**	**20 34 23.1**	**+0.7**
JTM				S	**Sb**	**20 34 40.3**	**-0.8**
JAH	**Hinai**	**1.52**	**281**	P	**Pg**	**20 34 24.0**	**+0.3**
JRG	**Rokugo**	**1.59**	**252**	P	**Pg**	**20 34 25.5**	**+0.4**
JRG				S	**Sn**	**20 34 44.8**	**-0.1**
JIO	**Ouri**	**1.75**	**214**	P	**Pg**	**20 34 28.2**	**+0.1**
JIO				*e*S	**Sn**	**20 34 48.8**	**+0.1**
JOT	**Ohata**	**1.87**	**322**	P	**Pb**	**20 34 29.8**	**+0.3**
ERM	**Erimo**	**2.14**	**12**	*e*Pn	**Pg**	**20 34 35.9**	**+0.2**
JKB	**Kayabe**	**2.29**	**330**	P	**Pb**	**20 34 35.7**	**-1.0**
MAJO	**Matsushiro**	**4.82**	**227**	*e*Pn	Pn	20 35 12.1	+3.9
MAT	**Matsushiro**	**4.82**	**227**	P	Pn	20 35 12.6	+4.5
MAT				S	**Sg**	**20 36 25.9**	**-3.4**
MJAR	**Matsushiro Arr**	**4.82**	**227**	Pn	Pn	20 35 12.3	+4.2
	1.4nm,0.3s,baz=33,slow=14,SNR=50						
MJAR				LR	LR	20 36 34.1	
	comp=Z,12nm,21.7s,baz=45,slow=34						
USRK	**Ussuriysk Ar.**	**8.96**	**302**	Pn	Pn	20 36 09.8	+4.8
	0.5nm,0.3s,baz=120,slow=14,SNR=13						
KSRS	**Korea Array**	**11.72**	**263**	Pn	Pn	20 36 55.1	+12
	0.3nm,0.3s,baz=73,slow=13,SNR=9.0						
KSRS				LR	LR	20 40 58.2	
	comp=Z,25nm,19.1s,baz=84,slow=36						
SEY	**Seymchan**	**23.79**	**11**	P	**P**	**20 39 08.6**	**+0.3**
	0.5nm,0.3s,baz=171,slow=8.1,SNR=5.3						
SSLB	**Suanglung**	**24.32**	**235**	*e*P	P	20 39 02.5	-11
	14nm,0.6s						
SONA1	**Songino Array**	**27.06**	**299**	*e*P	**P**	**20 39 39.5**	**+1.1**
SONM	**Songino Array**	**27.06**	**299**	P	**P**	**20 39 39.2**	**+0.8**
	0.6nm,0.5s,baz=108,slow=8.8,SNR=6.6						
SONM				LR	LR	20 49 50.2	
	comp=Z,17nm,19.6s,baz=55,slow=35						
ENH	**Enshi**	**28.60**	**261**	*e*P	**P**	**20 39 50.7**	**-1.5**
	3.3nm,0.8s						
H11N2	**WAKE ISLAND Hy 28.99**	**127**		T	T	21 10 33.9	
	baz=319,slow=75,SNR=221						
H11N1	**WAKE ISLAND Hy 29.00**	**127**		T	T	21 10 37.0	
	baz=319,slow=75,SNR=234						
H11N3	**WAKE ISLAND Hy 29.01**	**127**		T	T	21 10 35.3	
	baz=319,slow=75,SNR=192						
H11S1	**WAKE ISLAND Hy 29.80**	**129**		T	T	21 11 46.1	
	baz=321,slow=76,SNR=42						
H11S3	**WAKE ISLAND Hy 29.80**	**129**		T	T	21 11 48.2	
	baz=321,slow=76,SNR=24						
H11S2	**WAKE ISLAND Hy 29.82**	**129**		T	T	21 11 46.2	
	baz=321,slow=76,SNR=28						
ZAA0	**Zalesovo Array**	**40.71**	**310**	*e*P	**P**	**20 41 36.1**	**-0.3**
ZALV	**Zalesovo Beam**	**40.71**	**310**	P	**P**	**20 41 36.3**	**0.0**
	1.4nm,0.4s,baz=95,slow=7.6,SNR=8.6						
ZALV				PcP	**PcP**	**20 43 37.6**	**-0.2**
	0.4nm,0.4s,baz=106,slow=2.1,SNR=2.6						
CMAR	**Chiang Mai Arr**	**43.16**	**253**	P	**P**	**20 41 57.4**	**+0.6**
	0.6nm,0.8s,baz=45,slow=6.6,SNR=5.0						
MKAR	**Makanchi Array**	**43.42**	**300**	P	**P**	**20 41 58.3**	**-0.4**
	0.7nm,0.5s,baz=86,slow=9.9,SNR=18						
KURK	**Kurchatov**	**44.93**	**306**	*e*P	**P**	**20 42 09.9**	**-0.7**
	3.8nm,1.0s						
ILAR	**Eielson Array**	**46.58**	**34**	P	**P**	**20 42 22.9**	**-0.7**
	0.4nm,0.7s,baz=262,slow=5.2,SNR=4.0						
TKM2	**Tokmak 2**	**49.11**	**297**	*e*P	**P**	**20 42 43.6**	**-0.1**
	2.7nm,0.8s						
BRVK	**Borovoye**	**49.40**	**311**	*e*P	**P**	**20 42 45.4**	**-0.2**
	2.4nm,1.0s						
AAK	**Ala-Archa**	**49.98**	**297**	*e*P	**P**	**20 42 49.4**	**-0.9**
	11nm,1.8s						
ZRNK	**Zerenda**	**50.18**	**311**	*e*P	**P**	**20 42 51.3**	**-0.1**
	2.6nm,0.9s						
EKS2	**Erkin-Say**	**50.46**	**297**	*e*P	**P**	**20 42 52.4**	**-1.4**
	11nm,1.8s						
INK	**Inuvik**	**51.41**	**28**	P	**P**	**20 43 02.5**	**+2.1**
	0.2nm,0.4s,baz=302,slow=9.5,SNR=2.8						
KKAR	**Karatay Array**	**52.51**	**299**	*e*P	**P**	**20 43 08.2**	**-0.9**
ARU	**Arti**	**54.83**	**317**	*e*P	**P**	**20 43 25.4**	**-0.4**
	4.4nm,0.8s						
ABKAR	**Akbulak array**	**56.81**	**309**	*e*P	**P**	**20 43 39.7**	**-0.4**
KBL	**Kabul**	**57.27**	**290**	*e*P	**P**	**20 43 42.2**	**-1.7**
	8.8nm,0.8s						
WRA	**Warramunga Arr**	**60.04**	**189**	P

0.4nm,0.8s,baz=83,slow=9.9,SNR=4.5
KURBB Kurchatov Arra 45.74 307 P P 20 55 07.3 -0.6
0.6nm,0.5s,baz=81,slow=7.9,SNR=3.9

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*ISCJB **09** 20:52:22.1±1.2,5.°80S±0.°09×146.°8E±0.°1,h78km,mb3.5/3, Error ellipse: s-maj=18.7km s-min=13.0km az=9.7*
*IDC **09** 20:52:23.2±6.1,5.°80S×146.°82E,h75km±57km,mb3.4/3, mb1 3.7/7,mb1mx3.3/41,mbtmp3.9/7,ML3.6/2,Error ellipse: s-maj=58.2km s-min=26.7km az=131.0*
ISC 09 20:52:23.5±1.2,5.°8S±0.°1×146.°8E±0.°2,h78km,n8,σ0$71/9, mb3.6/3,Eastern New Guinea region

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
PMG	**Port Moresby**	**3.61**	**174**	P		**Pn**	**20 53 16.2**	**-0.9**
	4.5nm,0.3s,baz=15,slow=12,SNR=17							
PMG				S		**Sn**	**20 53 58.2**	**-0.4**
	2.1nm,0.3s,baz=175,slow=21,SNR=1.6							
HNR	**Honiara**	**13.52**	**106**	P		**Pn**	**20 55 32.1**	**+0.1**
	17nm,0.3s,baz=229,slow=9.3,SNR=4.3							
CTA	**Charters Tower**	**14.22**	**182**	P		**Pn**	**20 55 42.2**	**+1.0**
	0.3nm,0.3s,baz=352,slow=14,SNR=1.9							
WRA	**Warramunga Arr**	**18.57**	**220**	P		**P**	**20 56 34.1**	**-0.2**
	0.2nm,0.3s,baz=40,slow=12,SNR=9.3							
ASAR	**Alice Springs**	**21.68**	**214**	P		**P**	**20 57 07.7**	**-0.4**
	0.5nm,0.6s,baz=49,slow=8.4,SNR=7.2							
STKA	**Stephens Creek**	**26.41**	**190**	P		**P**	**20 57 53.8**	**+1.0**
	3.1nm,0.7s,baz=1.6,slow=6.3,SNR=4.8							
ILAR	**Eielson Array**	**85.37**	**23**	P		**P**	**21 04 51.7**	**-0.1**
	0.4nm,0.6s,baz=238,slow=5.2,SNR=4.7							
TORD	**Torodi Ar. Bea**	**144.85**	**285**	PKP		**PKPab**	**21 11 51.6**	**-0.3**
	0.2nm,0.5s,baz=90,slow=3.1,SNR=2.0							

IDC 09 20:53:00.2±2.3,34.°03N×141.°74E,h0km,mb3.3/3, mb1 3.3/4,mb1mx3.1/58,mbtmp3.2/4,ML3.0/1,Error ellipse: s-maj=40.1km s-min=28.6km az=94.0,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
JHJ	**Hachijo jima 2**	**1.87**	**241**	Pn		Pn	20 53 34.1	+0.7
	27nm,0.3s,baz=339,slow=17,SNR=24							
JHJ				S		Sn	20 53 56.7	-1.0
	28nm,0.3s,baz=58,slow=23,SNR=8.2							
MJAR	**Matsushiro Arr**	**3.82**	**312**	Pn		Pn	20 54 00.4	0.0
	1.1nm,0.3s,baz=134,slow=14,SNR=14							
MKAR	**Makanchi Array**	**45.99**	**305**	P		P	21 01 25.4	+0.2
	0.2nm,0.4s,baz=80,slow=9.5,SNR=2.5							
KURBB	**Kurchatov Arra**	**48.13**	**310**	P		P	21 01 40.6	-0.9
	0.3nm,0.7s,baz=80,slow=7.7,SNR=3.1							
WRA	**Warramunga Arr**	**54.13**	**189**	P		P	21 02 26.9	-0.3
	0.2nm,0.6s,baz=5.0,slow=7.5,SNR=1.4							

IDC 09 21:06:53.7±2.4,6.°67S×129.°97E,h0km,mb3.2/1, mb1 3.5/3,mb1mx3.2/32,mbtmp3.3/3,ML3.4/2,Error ellipse: s-maj=145.0km s-min=32.5km az=69.0,Banda Sea

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
WRA	**Warramunga Arr**	**13.86**	**163**	Pn		Pn	21 10 09.9	-1.7
	0.2nm,0.3s,baz=344,slow=13,SNR=18							
WRA				Sn		Sn	21 12 37.5	-9.0
	0.5nm,0.3s,baz=350,slow=24,SNR=9.8							
ASAR	**Alice Springs**	**17.32**	**168**	P		P	21 10 58.5	-0.1
	0.1nm,0.3s,baz=355,slow=13,SNR=12							
ASAR				S		Sn	21 14 04.5	-6.1
	0.1nm,0.3s,baz=352,slow=26,SNR=4.8							
MKAR	**Makanchi Array**	**67.93**	**327**	P		P	21 17 54.4	0.0
	0.1nm,0.4s,baz=124,slow=7.9,SNR=4.0							

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*ISCJB **09** 21:13:21.7±0.5,69.°18N±0.°04×144.°37W±0.°09,h10km, Error ellipse: s-maj=6.5km s-min=4.5km az=166.7*
*NEIC **09** 21:13:24.1,69.°15N×144.°66W,h13km,ML2.8(AEIC),After AEIC.*
*PGC **09** 21:13:25.2±0.0,69.°10N×144.°66W,h13km,ML2.9/1, 191km Ese of Prudhoe Bay, Ak Northern Alaska*
ISC 09 21:13:23.5±1.1,69.°13N±0.°06×144.°54W±0.°04,h10km,n28, σ1$44/35,Northern Alaska

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
BM3	**Burnt Mountain**	**1.72**	**181**	P		**Pn**	**21 13 54.0**	**+0.5**
PS01	**TAPS Pump Stn**	**1.82**	**311**	P		**Pn**	**21 13 53.4**	**-1.3**
PS01				S		**Sn**	**21 14 18.1**	**+0.3**
FYU	**Fort Yukon**	**2.59**	**186**	P		**Pn**	**21 14 05.8**	**+0.5**
FYU				S		**Sn**	**21 14 39.9**	**+3.1**
COLD	**Coldfoot**	**2.85**	**231**	Pn		**Pn**	**21 14 08.3**	**-0.6**
COLD	**Coldfoot**	**2.85**	**231**	P		**Pn**	**21 14 09.5**	**+0.5**
COLD				S		**Sn**	**21 14 44.6**	**+1.4**
PS05	**TAPS Pump Stn5**	**3.28**	**228**	P		**Pn**	**21 14 15.7**	**+0.9**
PS05				S		**Sn**	**21 14 54.5**	**+0.7**
INK	**Inuvik**	**4.10**	**96**	Pn		**Pn**	**21 14 27.8**	**+1.6**
INK				Sn		**Sn**	**21 15 14.0**	**0.0**
INK	**Inuvik**	**4.10**	**96**	P		**Pn**	**21 14 27.8**	**+1.6**
INK				S		**Sn**	**21 15 16.6**	**+2.5**
MDM	**Murphy Dome**	**4.43**	**201**	P		**Pn**	**21 14 31.5**	**+0.8**
ILB	**Eielson Array**	**4.47**	**193**	P		**Pn**	**21 14 33.0**	**+1.8**
EGAK	**Eagle**	**4.57**	**161**	P		**Pn**	**21 14 34.0**	**+1.4**
CCB	**Clear Creek Bu**	**4.68**	**197**	P		**Pn**	**21 14 34.6**	**+0.5**
IM3	**Indian Mountai**	**4.73**	**233**	P		**Pn**	**21 14 35.6**	**+0.8**
MLY	**Manley**	**4.77**	**213**	P		**Pn**	**21 14 36.2**	**+0.8**
WRH	**Wood River Hil**	**4.88**	**198**	P		**Pn**	**21 14 37.5**	**+0.6**
DAWY	**Dawson**	**5.48**	**156**	Pn		**Pn**	**21 14 45.4**	**+0.2**
DAWY	**Dawson**	**5.48**	**156**	P		**Pn**	**21 14 46.7**	**+1.5**
DOT	**Dot Lake**	**5.51**	**178**	Pn		**Pn**	**21 14 45.3**	**-0.2**
DOT				S		**Sn**	**21 15 45.3**	**-3.5**
DOT	**Dot Lake**	**5.51**	**178**	P		Pn	21 14 50.1	+4.6
	11nm,0.6s							
BCA3	**Beaver Creek A**	**6.19**	**168**	P		**Pn**	**21 14 56.3**	**+1.4**
PAX	**Paxson**	**6.20**	**184**	Pn		**Pn**	**21 14 55.3**	**+0.3**
MENT	**Mentasta**	**6.23**	**177**	P		**Pn**	**21 14 57.3**	**+2.0**
SMPN	**Simpson Lake**	**6.59**	**90**	Pn		**Pn**	**21 15 01.9**	**+1.7**
SMPN				Sn		**Sn**	**21 16 13.6**	**-1.7**
YUK2	**White River**	**7.53**	**166**	Pn		**Pn**	**21 15 13.5**	**+0.2**
YUK3	**Moose Creek**	**7.58**	**165**	Pn		**Pn**	**21 15 13.2**	**-0.8**
KUN	**Kugluktuk,NWT**	**10.84**	**83**	Pn		**Pn**	**21 15 57.7**	**-0.8**
YKR1	**Yellowknife Ar**	**13.71**	**105**	Pn		**Pn**	**21 16 38.2**	**-1.4**
YKR3	**Yellowknife Ar**	**13.74**	**104**	Pn		**Pn**	**21 16 36.8**	**-1.2**

MAN 09 21:14:17.7±8.8N×124.°98E,h7km,mb4.2,ML3.0,MS2.7, 3C,Mindanao

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
BUKP	**Musuan**	**0.08**	**91**	*e*P		Pg	21 14 20.5	+1.5
BUKP				*e*S		Sg	21 14 23.8	+3.3
CGP	**Cagayan de Oro**	**0.64**	**334**	↑*i*P		Pg	21 14 29.2	-0.1
CGP				*i* S		Sg	21 14 37.7	+0.1
DMPH	**Davao City--Mi**	**0.95**	**147**	↑*e*P		Pb	21 14 36.3	+0.5
DMPH				*e*S		Sn	21 14 49.8	-0.8
BUTP	**Butuan**	**1.25**	**30**	*e*P		Pn	21 14 40.7	-0.3
BIPH	**Bislig**	**1.40**	**77**	↑*e*P		Pn	21 14 41.1	-1.9
BIPH				*e*S		Sb	21 15 00.5	-1.1
MATI	**Mati**	**1.57**	**126**	*e*P		Pn	21 14 45.0	-0.3
PAGZ	**Pagadian**	**1.58**	**269**	*e*P		Pn	21 14 45.8	+0.2

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*ISCJB **09** 21:14:56.7±0.6,29.°4N±0.°1×138.°6E±0.°2,h445km,mb3.3/8, Error ellipse: s-maj=23.4km s-min=9.9km az=149.3*
*IDC **09** 21:14:57.8±1.5,29.°45N×138.°86E,h444km±27km,mb3.0/9, mb1 3.1/11,mb1mx2.7/46,mbtmp3.8/11,Error ellipse: s-maj=58.8km s-min=13.9km az=77.0*
ISC 09 21:14:57.9±0.8,29.°4N±0.°1×138.°8E±0.°2,h445km,n11, σ0$89/12,mb3.4/8,Southeast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
JCJ	**Chichijima**	**3.76**	**128**	P		**P**	**21 16 11.3**	**+0.6**
JCJ				S		**S**	**21 17 08.8**	**-1.0**
	11nm,0.3s,baz=280,slow=21,SNR=2.1							
USRK	**Ussuriysk Ar.**	**15.71**	**342**	P		**P**	**21 18 18.1**	**+1.6**
	0.3nm,0.3s,baz=143,slow=9.9,SNR=4.5							
KLR	**Kul'dur**	**20.50**	**347**	P		**P**	**21 19 05.0**	**+1.1**
	1.1nm,0.4s,baz=192,slow=4.4,SNR=3.1							
TIXI	**Tiksi**	**42.62**	**355**	P		**P**	**21 22 12.5**	**-0.4**
	0.7nm,0.5s,baz=148,slow=6.0,SNR=2.2							
WRA	**Warramunga Arr**	**49.28**	**186**	P		**P**	**21 23 04.8**	**+0.1**
	0.5nm,0.3s,baz=2.4,slow=8.0,SNR=3.8							
KURBB	**Kurchatov Arra**	**49.30**	**313**	P		**P**	**21 23 03.6**	**-0.8**
	0.3nm,0.4s,baz=92,slow=6.7,SNR=4.7							
ASAR	**Alice Springs**	**53.01**	**186**	P		**P**	**21 23 32.2**	**+0.3**
	0.3nm,0.6s,baz=354,slow=5.3,SNR=3.0							
BVAR	**Borovoye Array**	**54.32**	**316**	P		**P**	**21 23 40.4**	**-0.5**
	0.3nm,0.4s,baz=85,slow=7.2,SNR=3.9							
STKA	**Stephens Creek**	**61.03**	**177**	P		**P**	**21 24 27.2**	**+0.2**
	1.3nm,0.5s,baz=339,slow=18,SNR=2.2							
ARCES	**ARCESS Array B**	**70.36**	**340**	P		**P**	**21 25 24.5**	**-0.7**
	2.1nm,0.9s,baz=51,slow=7.1,SNR=1.4							
FINES	**FINESS Array B**	**74.54**	**333**	P		**P**	**21 25 49.0**	**-0.5**
	1.6nm,0.9s,baz=51,slow=5.5,SNR=2.1							

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*IDC **09** 21:22:18.0±1.1,30.°09N×97.°03E,h0km,mb3.6/11, mb1 3.7/13,mb1mx3.5/46,mbtmp3.6/13,ML3.0/2,MS3.3/1, Ms1 3.3/1,ms1mx2.4/50,Error ellipse: s-maj=39.7km s-min=20.1km az=61.0*
*ISCJB **09** 21:22:20.7±0.7,29.°99N±0.°07×96.°80E±0.°09,h33km, mb3.7/11,MS3.3/1,Error ellipse: s-maj=12.1km s-min=9.3km az=40.8*
ISC 09 21:22:23.3±0.9,30.°1N±0.°1×96.°9E±0.°1,h35km,n23, σ1$12/21,mb3.7/11,Xizang

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
TAPN	**Taplejung**	**8.47**	**254**	*e*P		**Pn**	**21 24 23.9**	**+0.1**
	6.3nm,0.3s							
RAMN	**Ramite**	**9.53**	**254**	*e*P		**Pn**	**21 24 38.1**	**-0.3**
	17nm,0.5s							
GUN	**Gumba**	**9.84**	**260**	*e*P		**Pn**	**21 24 42.4**	**-0.3**
	9.4nm,0.3s							
PKIN	**Phulchoki**	**10.35**	**259**	*e*P		**Pn**	**21 24 49.4**	**-0.1**
	6.4nm,0.3s							
DMN	**Daman**	**10.58**	**260**	*e*P		**Pn**	**21 24 51.9**	**-0.9**
	12nm,0.6s							
GKN	**Gorkha**	**10.88**	**262**	*e*P		**Pn**	**21 24 55.9**	**-0.9**
	7.1nm,0.4s							
CMAR	**Chiang Mai Arr**	**11.70**	**170**	Pn		**Pn**	**21 25 08.4**	**+0.5**
	0.0nm,0.3s,baz=344,slow=13,SNR=3.1							
KOLN	**Koldanda**	**11.83**	**262**	*e*P		**Pn**	**21 25 06.6**	**-3.2**
	7.5nm,0.6s							
PYUN	**Piuthan**	**12.28**	**264**	*e*P		**Pn**	**21 25 14.2**	**-1.7**
SONM	**Songino Array**	**19.22**	**20**	P		**P**	**21 26 43.8**	**-0.6**
	0.1nm,0.3s,baz=198,slow=9.3,SNR=7.3							
MKAR	**Makanchi Array**	**20.18**	**330**	P		**P**	**21 26 55.0**	**+0.2**
	0.4nm,0.6s,baz=134,slow=12,SNR=4.9							
AAK	**Ala-Archa**	**21.87**	**311**	P		**P**	**21 27 14.7**	**+1.5**
	1.7nm,0.8s,baz=39,slow=3.9,SNR=7.0							
KURBB	**Kurchatov Arra**	**24.71**	**331**	P		**P**	**21 27 41.1**	**0.0**
	0.3nm,0.2s,baz=137,slow=12,SNR=7.5							
ZALV	**Zalesovo Beam**	**25.42**	**343**	P		**P**	**21 27 47.8**	**+0.3**
	1.8nm,0.6s,baz=158,slow=9.8,SNR=9.6							
BVAR	**Borovoye Array**	**30.01**	**327**	P		**P**	**21 28 29.0**	**+0.4**
	0.6nm,0.8s,baz=133,slow=11,SNR=3.9							
GEYT	**Alibeck**	**32.88**	**294**	P		**P**	**21 28 55.7**	**+1.6**
	1.4nm,0.6s,baz=145,slow=3.1,SNR=4.7							
KAPI	**Kappang**	**41.20**	**144**	LR		LR	21 50 14.4	
	comp=Z,40nm,19.4s,baz=75,slow=41							
AKASG	**Malin Array Be**	**53.53**	**313**	P		**P**	**21 31 39.8**	**-0.6**
	0.3nm,0.3s,baz=73,slow=6.5,SNR=4.2							
FINES	**FINESS Array B**	**54.96**	**326**	P		**P**	**21 31 50.8**	**+0.2**
	1.2nm,0.9s,baz=81,slow=8.6,SNR=2.5							
NOA	**NORSAR Array B**	**62.13**	**327**	P		**P**	**21 32 39.8**	**-0.9**
	1.0nm,0.8s,baz=78,slow=6.5,SNR=4.0							
GERES	**GERESS Array B**	**63.74**	**313**	P		**P**	**21 32 52.1**	**+0.5**
	0.4nm,0.6s,baz=74,slow=7.2,SNR=4.0							
ASAR	**Alice Springs**	**64.18**	**142**	P		**P**	**21 32 53.9**	**-0.7**
	0.5nm,0.8s,baz=329,slow=6.0,SNR=4.2							
TORD	**Torodi Ar. Bea**	**87.89**	**284**	P		P	21 35 14.4	+4.5
	0.3nm,0.8s,baz=76,slow=6.1,SNR=2.5							

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*NIED **09** 21:23:00,35.°80N×140.°10E,h68km,Mw4.6 Best double couple: M0 8.42000×10^15 NP1:φs162.00000°,δ30.00000°, λ63.00000°. NP2:φs13.00000°,δ64.00000°,λ105.00000°.*
*MOS **09** 21:23:01.1±0.9,35.°64N×140.°04E,h40km,mb4.9/33,Error ellipse: s-maj=9.2km s-min=5.4km az=102.4*
*BJI **09** 21:23:02.9,35.°69N×140.°18E,h66km,mb4.6/52,mB4.9/35, Ms4.3/29,Ms7 4.1/28*
*NEIC **09** 21:23:05.9±0.4,35.°66N×140.°04E,h68km±3km,mb4.9/55, Error ellipse: s-maj=3.4km s-min=2.7km az=111.0*
NEIC Felt at Narita. Recorded [2 JMA] in Chiba, Ibaraki, Kanagawa, Saitama, Tochigi and Tokyo.
*ISCJB **09** 21:23:05.1±0.3,35.°68N±0.°02×140.°09E±0.°03,h78km±2km, mb4.7/108,Error ellipse: s-maj=4.0km s-min=3.4km az=167.8*
*JMA **09** 21:23:06.0±0.2,35.°80N×140.°10E,h67km±2km,M4.4 Broadband fault plane solution: P waves. NP1: φs9.00000°,δ68.00000°,λ89.00000°. NP2:φs192.00000°, δ22.00000°,λ93.00000°. Principal axes: T Plg67.0000°, Azm277.0000°; N Plg1.0000°, Azm10.0000°; P Plg23.0000°, Azm100.0000°;*
JMA Felt II J1.
*IDC **09** 21:23:06.4±1.1,35.°65N×140.°09E,h72km±9km,mb4.0/31, mb1 4.1/35,mb1mx4.1/47,mbtmp4.3/35,MS3.4/18, Ms1 3.4/18,ms1mx3.2/44 Error ellipse: s-maj=12.1km s-min=6.1km az=71.0*
ISC 09 21:23:05.8±0.5,35.°70N±0.°03×140.°08E±0.°03,h66km±4km, n274,σ1$16/302,mb4.7/108,8C-12D,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
TOK	**Tokyo**	**0.27**	**267**	↓P		**Pn**	**21 23 18.0**	**+1.7**
JCN	**Nagara**	**0.30**	**161**	↑P		**Pn**	**21 23 18.2**	**+1.7**
JCN				S		**Sn**	**21 23 28.1**	**+3.8**
JAG	**Ashikaga**	**0.89**	**325**	↓P		**Pn**	**21 23 22.4**	**-0.3**
JAG				S		**Sn**	**21 23 35.2**	**0.0**
JOD2	**Odawara 2**	**0.92**	**242**	↓P		**Pn**	**21 23 23.7**	**+0.5**
JOD2				S		**Sn**	**21 23 36.6**	**+0.6**
BSO3	**Boso 3**	**0.96**	**159**	↑P		**Pn**	**21 23 24.2**	**+0.8**
JRY	**Ryogami san**	**1.01**	**289**	↓P		**Pn**	**21 23 25.1**	**+0.8**
JIM2	**Oshima 3**	**1.12**	**209**	P		**Pn**	**21 23 25.8**	**+0.2**
JIM2				S		**Sn**	**21 23 41.0**	**+0.6**
JKT	**Katashina**	**1.26**	**328**	↓P		**Pn**	**21 23 27.2**	**-0.4**
JKT				S		**Sn**	**21 23 43.9**	**0.0**
JYN	**Shimob**	**1.27**	**261**	↓P		**Pn**	**21 23 28.4**	**+0.7**
JYN				S		**Sn**	**21 23 45.2**	**+1.1**
BSO1	**Boso 1**	**1.27**	**145**	P		**Pn**	**21 23 27.9**	**+0.7**
JIZS	**Izushimoda**	**1.39**	**226**	↓P		**Pn**	**21 23 29.9**	**+0.7**
JIZS				S		**Sn**	**21 23 47.6**	**+0.8**
MJAR	**Matsushiro Arr**	**1.74**	**300**	P		**Pn**	**21 23 34.2**	**+0.4**
	71nm,0.3s,baz=98,slow=13,SNR=1508							
MJAR				S		**Sn**	**21 23 56.6**	**+1.6**
	79nm,0.3s,baz=105,slow=14,SNR=11							
MJAR				LR		LR	21 24 14.3	
	comp=Z,957nm,19.1s,baz=115,slow=39							
MAJO	**Matsushiro**	**1.74**	**300**	*e*P		**Pn**	**21 23 34.6**	**+0.8**
MAJO	**Matsushiro**	**1.74**	**300**	*e*Pn		**Pn**	**21 23 34.6**	**+0.8**
MAT	**Matsushiro**	**1.74**	**300**	P		**Pn**	**21 23 34.6**	**+0.7**
MAT				S		**Sn**	**21 23 57.4**	**+2.3**
INU	**Inuyama**	**2.53**	**263**	*e*Pn		**Pn**	**21 23 45.2**	**+0.7**
JHJ	**Hachijo jima 2**	**2.59**	**186**	P		**Pn**	**21 23 46.1**	**+0.8**
	333nm,0.3s,baz=331,slow=21,SNR=70							
JHJ				S		**Sn**	**21 24 15.1**	**-0.5**
	311nm,0.3s,baz=19,slow=23,SNR=12							
JHJ				LR		LR	21 24 19.0	
	comp=Z,49nm,21.8s,baz=278,slow=29							
JHJ2	**Mitsune**	**2.59**	**185**	*e*Pn		**Pn**	**21 23 45.8**	**+0.4**
ERM	**Erimo**	**6.75**	**20**	*e*P		**Pn**	**21 24 41.3**	**-0.9**
ERM				*e*			21 25 53.5	
ERM	**Erimo**	**6.75**	**20**	*e*Pn		**Pn**	**21 24 41.2**	**-0.9**
ERM				*e*Sn		**Sn**	**21 25 53.5**	**-4.0**
JNU	**Nakatsue**	**8.03**	**254**	P		**Pn**	**21 25 01.8**	**+2.0**
	0.7nm,0.3s,baz=139,slow=3.9,SNR=18							
JNU				LR		LR	21 28 30.4	
	comp=Z,414nm,19.9s,baz=120,slow=40							
JNU	**Nakatsue**	**8.03**	**254**	*e*Pn		**Pn**	**21 24 57.5**	**-2.3**
ASAJ	**Asahikawa**	**8.62**	**12**	*e*Pn		**Pn**	**21 25 08.3**	**+0.5**
CBIJ	**Chichi jima**	**8.76**	**168**	*e*Pn		**Pn**	**21 25 09.4**	**-0.4**
CBIJ				S		Sn	21 26 38.7	-8.4
JCJ	**Chichijima**	**8.76**	**168**	P		**Pn**	**21 25 07.2**	**-2.6**
	32nm,0.3s,baz=85,slow=19,SNR=19							
JCJ				S		Sn	21 26 38.7	-8.4
	11nm,0.3s,baz=262,slow=21,SNR=2.1							
YUK	**Yuzh-Kuril'sk**	**9.43**	**26**	*e*P		**Pn**	**21 25 17.9**	**-0.9**
YUK				pmax		pmax		
	comp=Z,78nm,0.8s							
YUK				pmax		pmax		
	comp=E,21nm,0.6s							
YUK				pmax		pmax		
	comp=N,55nm,0.4s							
SHO	**Shikotan**	**9.67**	**30**	P		Pn	21 25 17.7	-4.3
SHO				pmax		pmax		
	comp=Z,43nm,0.8s							
SHO				pmax		pmax		
	comp=E,44nm,0.5s							
SHO				pmax		pmax		
	comp=N,29nm,0.8s							
KSRS	**Korea Array**	**9.94**	**284**	P		Pn	21 25 29.3	+3.6
	comp=N,0.4nm,0.3s,baz=96,slow=14,SNR=22							
KSRS				LR		LR	21 29 10.7	
	comp=N,320nm,20.2s,baz=107,slow=36							
KS01	**Wonju Array Si**	**9.96**	**284**	*e*Pn		**Pn**	**21 25 26.0**	**-0.2**
KS15	**Wonju Array Si**	**9.97**	**284**	*e*Pn		**Pn**	**21 25 26.7**	**+0.5**
KSAR	**Wonju Array Be**	**9.97**	**284**	P		**Pn**	**21 25 29.3**	**+3.1**
KSAR	**Wonju Array Be**	**9.97**	**284**	P		**Pn**	**21 25 29.3**	**+3.1**
USRK	**Ussuriysk Ar.**	**10.52**	**326**	P		**Pn**	**21 25 35.3**	**+1.6**
	comp=N,0.2nm,0.3s,baz=139,slow=11,SNR=19							
KUR	**Kuril'sk**	**11.21**	**29**	*e*P		**Pn**	**21 25 44.1**	**+1.0**
YSS	**Yuzh-Sakhalins**	**11.42**	**9**	*e*P		**Pn**	**21 25 44.4**	**-1.6**
MDJ	**Mudanjiang**	**11.98**	**321**	P		**Pn**	**21 25 53.9**	**+0.3**
MDJ				S		**Sn**	**21 28 05.9**	**+0.5**
MDJ				pmax		pmax		
	comp=N,9.0nm,1.1s							
MDJ				pmax		pmax		
	comp=N,49nm,5.2s							
MDJ				LR		LR		
	comp=N,200nm,16.3s							
MDJ				LR		LR		
	comp=N,89nm,12.2s							
MDJ				LR		LR		
	comp=N,170nm,12.7s							
MDJ	**Mudanjiang**	**11.98**	**321**	*e*Pn		**Pn**	**21 25 54.2**	**+0.6**
	comp=N,28nm,1.2s							
CN2	**Changchun**	**13.85**	**310**	*e*P		**Pn**	**21 26 17.1**	**-1.8**
CN2				*e*S		**Sn**	**21 28 49.9**	**-1.1**
CN2				pmax		pmax		
	comp=N,10.0nm,1.0s							
CN2				pmax		pmax		
	comp=N,200nm,3.0s							
CN2				LR		LR		
	comp=N,200nm,14.0s							
CN2				LR		LR		
	comp=N,200nm,14.0s							
CN2				LR		LR		
	comp=N,200nm,15.0s							
KLR	**Kul'dur**	**14.84**	**338**	P		**Pn**	**21 26 31.9**	**+0.1**
	comp=N,0.1nm,0.3s,baz=127,slow=13,SNR=5.2							
KLR				LR		LR	21 31 59.8	
	comp=N,81nm,18.4s,baz=141,slow=36							
TYV	**Tymovskoe**	**15.27**	**6**	*e*P		**P**	**21 26 42.2**	**+1.4**
TYV				pmax		pmax		
	comp=Z,5.0nm,0.6s							
NJ2	**Nanjing**	**18.00**	**264**	*e*P		**P**	**21 27 10.9**	**-0.2**
NJ2				pmax		pmax		
	comp=Z,16nm,0.7s							
TIA	**Tai'an**	**18.59**	**278**	*e*P		**P**	**21 27 17.8**	**+0.2**
TIA				pmax		pmax		
	comp=Z,20nm,1.1s							
BJI	**Beijing**	**19.35**	**290**	P		**P**	**21 27 23.6**	**-2.2**
BJI				S		**S**	**21 30 59.6**	**-1.6**
BJI				pmax		pmax		
	comp=Z,13nm,2.5s							
BJI				LR		LR		
	comp=Z,190nm,5.3s							
BJI				LR		LR		
	comp=Z,73nm,5.0s							
BJI				LR		LR		
	comp=Z,180nm,32.3s							
SSLB	**Suanglung**	**20.38**	**240**	*e*P		**P**	**21 27 36.7**	**-0.5**
	comp=Z,41nm,1.5s							
TPUB	**Ta-pu**	**20.91**	**239**	*e*P		**P**	**21 27 41.7**	**-1.2**
	comp=Z,49nm,1.4s							
TWG	**Pinlang**	**20.92**	**237**	*e*P		**P**	**21 27 42.6**	**-0.5**
	comp=Z,197nm,1.5s							
PEA0	**Petropavlovsk-**	**21.38**	**30**	*e*P		**P**	**21 27 47.8**	**+0.1**
PETK	**Petropavlovsk-**	**21.38**	**30**	LR		LR	21 35 26.1	
	comp=Z,44nm,21.1s,baz=222,slow=34							
WHN	**Wuhan**	**22.13**	**264**	P		**P**	**21 27 56.6**	**+0.7**
WHN				pmax		pmax		
	comp=Z,42nm,1.0s							
HHC	**Hu-ho-hao-te**	**22.92**	**292**	*e*P		**P**	**21 28 03.1**	**-1.2**
HHC				S		**S**	**21 32 09.1**	**-0.1**
HHC				pmax		pmax		
	comp=Z,20nm,1.1s							
HHC				pmax		pmax		
	comp=Z,120nm,2.9s							
HHC				LR		LR		
	comp=Z,1μm,12.4s							
HHC				LR		LR		
	comp=Z,1μm,12.4s							
HHC				LR		LR		
	comp=Z,1μm,11.2s							
MA2	**Magadan**	**24.89**	**13**	P		**P**	**21 28 22.9**	**+0.8**
	comp=Z,12nm,0.6s,baz=225,slow=9.0,SNR=22					

GYA **Guiyang** 29.95 261 P **P** 21 29 07.8 -0.2
GYA pP pP 21 29 24.6 +0.7
GYA sP sP 21 29 33.0 +1.3
GYA PP **PnPn** **21 30 07.4 +0.5**
GYA PcP **PcP** **21 32 11.2 +2.1**
GYA S **S** **21 34 00.5 -0.5**
GYA sS sS 21 34 28.0 -0.3
GYA ScP **ScP** **21 35 46.2 +0.8**
GYA ScS **ScS** **21 39 40.8 -0.3**
GYA pmax pmax
comp=Z,20nm,1.0s
GYA pmax pmax
comp=Z,120nm,5.0s
GYA LR LR
comp=Z,540nm,16.3s
GYA LR LR
comp=Z,510nm,16.9s
GYA LR LR
comp=Z,530nm,16.7s
ZAK **Zakamensk** 30.29 310 *e*P **P** 21 29 09.2 -1.5
ZAK *e* 21 32 10.0
ZAK pmax pmax
comp=Z,2.0nm,1.1s
ZAK pmax pmax
comp=Z,2.0nm,1.0s
TLY **Talaya** 30.43 313 *e*P **P** 21 29 11.8 0.0
TLY pmax pmax
comp=Z,2.0nm,0.8s
TLY **Talaya** 30.43 313 *e*P **P** 21 29 11.8 0.0
comp=Z,4.9nm,1.4s
CD2 **Chengdu** 30.62 272 P **P** 21 29 12.0 -1.7
CD2 pP pP 21 29 27.7 -2.0
CD2 PcP **PcP** **21 32 09.3 -1.4**
CD2 S **S** **21 34 09.7 -1.6**
CD2 sS sS 21 34 37.2 -1.5
CD2 pmax pmax
comp=Z,20nm,0.5s
CD2 pmax pmax
comp=Z,80nm,5.3s
CD2 LR LR
comp=Z,160nm,17.8s
CD2 LR LR
comp=Z,220nm,16.7s
GTA **Gaotai** 31.95 289 *e*P **P** 21 29 27.0 +1.5
GTA pP pP 21 29 41.7 +0.2
GTA sP sP 21 29 48.2 -1.1
GTA PcP **PcP** **21 32 13.2 -1.1**
GTA S **S** **21 34 34.6 +2.4**
GTA sS sS 21 35 00.5 +0.9
GTA SS **SnSn** **21 36 31.7 +5.1**
GTA pmax pmax
comp=Z,6.0nm,1.0s
GTA pmax pmax
comp=Z,76nm,5.9s
GTA LR LR
comp=Z,110nm,12.8s
GTA LR LR
comp=Z,110nm,15.7s
GTA LR LR
comp=Z,100nm,13.8s
PATS **Pohnpei** 33.24 145 *e*P **P** 21 29 36.3 -0.4
comp=Z,224nm,1.8s
KMI **Kunming** 33.71 262 P **P** 21 29 43.0 +1.9
KMI pP pP 21 29 56.7 -0.5
KMI sP sP 21 30 04.2 -0.7
KMI pmax pmax
comp=Z,4.0nm,0.5s
KMI pmax pmax
comp=Z,110nm,4.7s
KMI LR LR
comp=Z,98nm,6.0s
KMI LR LR
comp=Z,58nm,6.0s
KMI LR LR
comp=Z,82nm,7.1s
BILL **Bilibino** 35.61 17⇓ *e*P **P** 21 29 56.2 -0.5
BILL *e* 21 30 05.6
BILL pmax pmax
comp=Z,5.0nm,1.1s
BILL MLR MLR
comp=Z,49nm,17.0s
BILL **Bilibino** 35.61 17 *e*P **P** 21 29 57.0 +0.4
comp=Z,3.3nm,0.9s
TIXI **Tiksi** 36.49 354 P **P** 21 30 03.3 -0.9
comp=Z,2.3nm,0.7s,baz=150,slow=4.5,SNR=10
TIXI **Tiksi** 36.49 354 *c*e**P** **P** 21 30 03.0 -1.2
TIXI pmax pmax
comp=Z,9.0nm,2.4s
TIXI **Tiksi** 36.49 354 *e*P **P** 21 30 03.5 -0.7
comp=Z,2.7nm,0.8s
MIDW **Midway** 36.64 90 *e*P **P** 21 30 05.8 -0.1
comp=Z,109nm,1.0s
KWAJ **Kwajalein Atol** 36.71 130 *e*P **P** 21 30 05.8 -0.8
KWAJ pmax pmax
comp=Z,227nm,1.3s
KWAJ **Kwajalein Atol** 36.71 130 *e*P **P** 21 30 05.8 -0.8
comp=Z,227nm,1.3s
TNTI **Ternate** 36.71 202 *e*P **P** 21 30 05.5 -1.1
comp=Z,53nm,1.2s
NONG **Nongkai** 37.07 252 P **P** 21 30 09.6 -0.1
comp=Z,109nm,0.7s,comp=Z,17µm
SIJI **Sorong** 37.30 195 LR LR 21 42 35.2
comp=Z,126nm,20.6s,baz=234,slow=31
LOEI **Loei** 38.84 253 P **P** 21 30 21.6 -3.1
comp=Z,43nm,1.1s
CHAI **Chaiyaphum** 39.24 250 P **P** 21 30 27.2 -0.7
comp=Z,7.5nm,1.0s,comp=Z,61nm
PBKT **Sadao Pong** 39.62 252 P **P** 21 30 31.1 0.0
comp=Z,9.8nm,1.2s
CHTO **Chiang Mai** 39.93 256 *e*P **P** 21 30 32.4 -1.3
CHTO pmax pmax
comp=Z,12nm,1.9s
CHTO **Chiang Mai** 39.93 256 *e*P **P** 21 30 32.4 -1.3
comp=Z,12nm,1.9s
CM31 **Chiang Mai Arr** 40.12 256 *e*P **P** 21 30 36.0 +0.7
CMAR **Chiang Mai Arr** 40.12 256 P **P** 21 30 35.2 -0.1
comp=Z,1.3nm,0.7s,baz=49,slow=7.7,SNR=12
CMAR PcP **PcP** **21 32 39.9 +1.2**
comp=Z,1.4nm,0.9s,baz=29,slow=2.6,SNR=6.2
CMAR LR LR 21 49 19.5
comp=Z,58nm,18.7s,baz=92,slow=39
CM01 **Chiang Mai Arr** 40.13 256 *e*P **P** 21 30 34.9 -0.5
SRAK **Srakaew** 40.36 247 P **P** 21 30 34.1 -3.2
comp=Z,36nm,0.8s
GAMB **Gambell** 40.41 31 *e*P **P** 21 30 37.0 -0.1
comp=Z,19nm,1.8s
WMQ **Urumqi** 40.50 298 P **P** 21 30 39.7 +1.5
WMQ pP pP 21 30 55.7 +1.0
WMQ sP sP 21 31 03.0 +0.7
WMQ PP **PnPn** **21 32 15.8 -1.0**
WMQ PcP **PcP** **21 32 41.0 +1.4**
WMQ S **S** **21 36 45.1 +2.7**
WMQ SS **SS** **21 39 39.1 -4.7**
WMQ pmax pmax
comp=Z,7.0nm,0.8s
WMQ pmax pmax
comp=Z,68nm,3.6s
WMQ LR LR
comp=Z,12nm,20.6s
WMQ LR LR
comp=Z,65nm,22.0s
WMQ LR LR
comp=Z,130nm,18.8s
LSA **Lhasa** 41.27 276 *e*P **P** 21 30 45.1 -0.1
LSA **Lhasa** 41.27 276 *e*P **P** 21 30 45.1 -0.1
ZAA0 **Zalesovo Array** 42.04 313 *e*P **P** 21 30 50.5 -0.1
ZALV **Zalesovo Beam** 42.04 313 P **P** 21 30 50.5 -0.1
comp=Z,15nm,1.0s,baz=100,slow=6.2,SNR=34
ZALV PcP **PcP** **21 32 44.3 -0.1**
comp=Z,3.8nm,0.7s,baz=96,slow=2.9,SNR=7.0
ZALV LR LR 21 48 31.4
comp=Z,23nm,18.1s,baz=68,slow=36
NVS **Novosibirsk** 43.00 315⇓ *i*P **P** 21 30 58.4 0.0
NVS pmax pmax
comp=N,6.0nm,1.3s
NVS pmax pmax
comp=E,14nm,1.3s
NVS pmax pmax
comp=Z,18nm,1.3s
MKAR **Makanchi Array** 43.93 303 P **P** 21 31 06.1 +0.1
comp=Z,7.3nm,0.9s,baz=89,slow=9.6,SNR=52
MKAR PcP **PcP** **21 32 51.7 +0.7**
comp=Z,1.7nm,0.8s,baz=86,slow=6.4,SNR=3.5
MKAR LR LR 21 50 13.9
comp=Z,39nm,21.0s,baz=42,slow=37
NRIK **Noril'sk** 44.04 336 P **P** 21 31 06.3 -0.2
comp=Z,6.5nm,0.8s,baz=116,slow=7.6,SNR=6.5
NRIK PcP **PcP** **21 32 51.6 +0.8**
comp=Z,1.1nm,0.5s,baz=123,slow=5.1,SNR=3.7
KAPI **Kappang** 44.77 209 *e*P **P** 21 31 11.7 -1.3
comp=Z,12nm,1.1s
TAPN **Taplejung** 44.97 275 *e*P **P** 21 31 14.9 0.0
comp=Z,9.5nm,0.6s
PMG **Port Moresby** 45.36 170 LR LR 21 48 46.7
comp=Z,45nm,20.6s,baz=352,slow=34
TARA **Tarawa** 45.79 131 *e*P **P** 21 31 20.1 -1.0
comp=Z,210nm,1.7s
KURK **Kurchatov** 45.92 309 P **P** 21 31 21.9 +0.2
KURK pmax pmax
comp=Z,20nm,1.0s
KURK **Kurchatov** 45.92 309 *e*P **P** 21 31 21.5 -0.2
comp=Z,31nm,1.0s
KURBB **Kurchatov Arra** 45.99 309 P **P** 21 31 21.9 -0.4
comp=Z,20nm,0.9s,baz=87,slow=9.3,SNR=49
RAMN **Ramite** 46.03 275 *e*P **P** 21 31 23.1 -0.2
comp=Z,49nm,0.8s
GUN **Gumba** 46.23 276 *e*P **P** 21 31 25.1 +0.2
PKIN **Phulchoki** 46.75 276 *e*P **P** 21 31 29.0 +0.1
comp=Z,7.1nm,0.8s
KKN **Kakani** 46.76 276 *e*P **P** 21 31 30.0 +1.1
DMN **Daman** 46.97 276 *e*P **P** 21 31 30.2 -0.4
comp=Z,21nm,1.3s
GKN **Gorkha** 47.19 277 *e*P **P** 21 31 32.1 -0.1
comp=Z,38nm,1.0s
MMRI **Maumere** 47.20 204 *e*P **P** 21 31 31.2 -0.9
comp=Z,56nm,1.3s
IPM **Ipoh** 47.53 238 *e*P **P** 21 31 33.3 -1.4
comp=Z,10nm,0.8s
SOEI **Soe** 47.61 201 *e*P **P** 21 31 34.8 -0.5
comp=Z,28nm,1.2s
KOLN **Koldanda** 48.13 277 *e*P **P** 21 31 39.6 +0.1
JOHN **Johnston Islan** 48.43 99 *e*P **P** 21 31 41.6 0.0
comp=Z,137nm,0.9s
PYUN **Piuthan** 48.48 278 *e*P **P** 21 31 42.6 +0.4
comp=Z,76nm,1.2s
HNR **Honiara** 48.64 153 LR LR 21 51 59.1
comp=Z,36nm,19.3s,baz=5.0,slow=36
KDAK **Kodiak Island** 48.81 41 *i* P **P** 21 31 45.2 +1.2
SPU **Mount Spurr** 48.94 37 *e*P **P** 21 31 45.7 +0.6
MTN **Manton Dam** 49.02 192 *e*P **P** 21 31 45.8 -0.2
comp=Z,22nm,0.8s
HOM **Homer** 49.20 39 *e*P **P** 21 31 46.7 -0.3
comp=Z,335nm,0.2s
TKM2 **Tokmak 2** 49.33 299 *e*P **P** 21 31 49.7 +1.2
TKM2 pmax pmax
comp=Z,16nm,1.1s
TKM2 **Tokmak 2** 49.33 299 *e*P **P** 21 31 49.7 +1.2
comp=Z,16nm,1.1s
MLY **Manley** 49.55 31 *e*P **P** 21 31 50.5 +0.9
comp=Z,18nm,1.7s
LHMI **Lhok Sumawe** 49.90 243 *e*P **P** 21 31 52.0 -0.9
comp=Z,52nm,1.2s
KSH **Kashi** 49.98 295 *e*P P 21 31 57.3 +3.9
KSH *e*pP pP 21 32 12.9 +2.6
KSH *e*sP sP 21 32 19.9 +2.0
KSH PcS **PcS** **21 37 11.9 +2.2**
KSH S **S** **21 39 03.1 +3.9**
KSH pmax pmax
comp=Z,81nm,3.6s
KSH LR LR
comp=Z,190nm,5.5s
KSH LR LR
comp=Z,110nm,5.1s
KSH LR LR
comp=Z,140nm,5.9s
FRU **Bishkek** 50.05 299 *e*P **P** 21 31 54.0 +0.2
RC01 **Rabbit Creek A** 50.07 37 *e*P **P** 21 31 54.0 +0.4
comp=Z,9.1nm,1.0s
AAK **Ala-Archa** 50.19 299 P **P** 21 31 55.1 +0.1
comp=Z,4.0nm,0.9s,baz=92,slow=2.7,SNR=10
AAK LR LR 21 54 33.5
comp=Z,55nm,18.9s,baz=63,slow=38
AAK **Ala-Archa** 50.19 299⇓ *i*P **P** 21 31 54.7 -0.3
AAK pmax pmax
comp=Z,21nm,1.2s
AAK **Ala-Archa** 50.19 299 *e*P **P** 21 31 54.8 -0.2
comp=Z,88nm,1.2s
PSI **Prapat** 50.19 239 P **P** 21 31 55.1 -0.1
comp=Z,3.6nm,0.4s,baz=48,slow=1.0,SNR=4.5
PSI **Prapat** 50.19 239 *e*P **P** 21 31 54.7 -0.5
PSI pmax pmax
comp=Z,12nm,1.3s
PSI **Prapat** 50.19 239 *e*P **P** 21 31 54.7 -0.5
comp=Z,12nm,1.3s
JAGI **Jajag, Banyuwa** 50.27 214 *e*P **P** 21 31 55.2 -0.4
comp=Z,55nm,1.5s
RND **Reindeer** 50.38 34 *e*P **P** 21 31 56.7 +0.7
RND pmax pmax
comp=Z,8.0nm,1.1s
RND **Reindeer** 50.38 34 *e*P **P** 21 31 56.7 +0.7
comp=Z,8.0nm,1.1s
BKNI **Bangkinang** 50.55 235 *e*P **P** 21 31 56.9 -0.9
comp=Z,26nm,0.4s
MDM **Muhy Dome** 50.61 32 *e*P **P** 21 31 58.2 +0.6
comp=Z,8.4nm,0.9s
BVAR **Borovoye Array** 50.68 313 P **P** 21 31 58.6 +0.2
comp=Z,3.2nm,0.8s,baz=79,slow=7.7,SNR=15
BVAR PcP **PcP** **21 33 15.1 +0.3**
comp=Z,1.8nm,0.8s,baz=48,slow=2.1,SNR=4.2
EKS2 **Erkin-Say** 50.69 299 *e*P **P** 21 31 58.4 -0.3
EKS2 pmax pmax
comp=Z,5.0nm,1.1s
EKS2 **Erkin-Say** 50.69 299 *e*P **P** 21 31 58.4 -0.3
comp=Z,5.1nm,1.1s
BRVK **Borovoye** 50.74 313 *c*e**P** **P** 21 31 59.9 +1.1
BRVK pmax pmax
comp=Z,9.0nm,1.2s
BRVK **Borovoye** 50.74 313 *e*P **P** 21 31 59.0 +0.3
comp=Z,8.3nm,1.0s
COLA **College** 50.78 32 *e*P **P** 21 31 58.9 0.0
COLA pmax pmax
comp=Z,8.0nm,0.6s
COLA **College** 50.78 32 *e*P **P** 21 31 58.9 0.0
comp=Z,7.8nm,0.6s
ILAR **Eielson Array** 51.19 32 P **P** 21 32 02.2 +0.2
comp=Z,1.1nm,0.8s,baz=278,slow=6.4,SNR=12
ILB **Eielson Array** 51.19 32 *e*P **P** 21 32 02.6 +0.6
IL1 **Eielson Array** 51.19 32 *e*P **P** 21 32 02.4 +0.4
ZRNK **Zerenda** 51.52 313 *e*P **P** 21 32 04.5 -0.1
ZRNK pmax pmax
comp=Z,17nm,1.3s
ZRNK **Zerenda** 51.52 313 *e*P **P** 21 32 04.5 -0.1
comp=Z,17nm,1.3s
LEM **Lembang** 52.17 222 LR LR 21 54 11.2
comp=Z,38nm,19.0s,baz=230,slow=36
KKAR **Karatay Array** 52.87 301 *e*P **P** 21 32 15.8 +0.9
KKAR **Karatay Array** 52.87 301 *e*P **P** 21 32 15.8 +0.9
FITZ **Fitzroy Crossi** 55.23 197 *e*P **P** 21 32 31.5 -0.6
SVE **Sverdlovsk** 55.44 319 *e*P **P** 21 32 33.5 +0.2
WRAB **Tennant Creek** 55.59 187 *c*e**P** **P** 21 32 34.5 -0.2
WRAB pmax pmax
comp=Z,20nm,0.8s
WRAB **Tennant Creek** 55.59 187 *e*P **P** 21 32 33.2 -1.5
comp=Z,6.7nm,0.8s
WB2 **Warramunga Arr** 55.60 187 *e*P **P** 21 32 33.7 -1.0
comp=Z,8.9nm,0.8s
WRA **Warramunga Arr** 55.60 187 P **P** 21 32 34.1 -0.6
comp=Z,7.1nm,0.6s,baz=0.9,slow=7.5,SNR=112
INK **Inuvik** 56.06 27 P **P** 21 32 37.2 -0.3
comp=Z,0.8nm,0.7s,baz=317,slow=7.3,SNR=5.9
INK **Inuvik** 56.06 27 *e*P **P** 21 32 37.6 +0.1
INK pmax pmax
comp=Z,20nm,1.9s
INK **Inuvik** 56.06 27 *e*P **P** 21 32 37.6 +0.1
comp=Z,20nm,1.9s
XMIS **Christmas Isla** 56.27 222 *e*P **P** 21 32 37.9 -1.8
comp=Z,188nm,1.8s
ARU **Arti** 56.65 319 *c* i**P** **P** 21 32 41.5 -0.4
ARU *PP **pP** **21 32 56.0 -3.1**
ARU 21 33 36.2
ARU 21 34 46.8
ARU S **S** **21 40 29.3 +0.3**
ARU SS **SS** **21 44 17.4 +0.5**
ARU pmax pmax
comp=Z,20nm,1.7s
ARU **Arti** 56.65 319 *e*P **P** 21 32 41.1 -0.8
comp=Z,9.0nm,0.7s
KBL **Kabul** 56.89 291 *e*P **P** 21 32 43.1 -1.1
KBL pmax pmax
comp=Z,6.0nm,1.0s
KBL **Kabul** 56.89 291 *e*P **P** 21 32 43.1 -1.1
comp=Z,5.8nm,1.0s
HYB **Hyderabad** 57.09 268 *i* P **P** 21 32 45.5 -0.1
FUNA **Funafuti** 57.38 132 *e*P **P** 21 32 47.6 +0.1
comp=Z,99nm,1.0s
SKAG **Skagway** 57.41 37 *e*P **P** 21 32 48.3 +1.2
KKH **Kailua Kona** 57.88 88 *e*P **P** 21 32 50.1 -0.9
KKH **Kailua Kona** 57.88 88 *e*P **P** 21 32 50.1 -0.9
ABKAR **Akbulak array** 57.98 310 *e*P **P** 21 32 51.5 +0.1
AS01 **Alice Springs** 59.33 187 *e*P **P** 21 33 00.6 -0.3
AS31 **Alice Springs** 59.33 187 *e*P **P** 21 33 02.5 +1.5
comp=Z,1.8nm,0.6s
ASAR **Alice Springs** 59.33 187 P **P** 21 33 00.8 -0.2
comp=Z,1.3nm,0.5s,baz=358,slow=6.0,SNR=24
MBWA **Marble Bar** 59.75 202 *e*P **P** 21 33 04.0 +0.2
comp=Z,38nm,1.4s
GEYT **Alibeck** 63.54 299 P **P** 21 33 29.6 +0.2
comp=Z,2.1nm,0.8s,baz=5.7,slow=3.0,SNR=6.1
GEYT LR LR 22 02 11.1
comp=Z,25nm,18.3s,baz=160,slow=37
RES **Resolute Bay** 64.16 14 *e*P **P** 21 33 33.2 +0.4
RES pmax pmax
comp=Z,3.0nm,0.8s
RES **Resolute Bay** 64.16 14 *e*P **P** 21 33 33.2 +0.4
comp=Z,2.8nm,0.8s
KLMR **Klimovskoe** 64.31 328 *e*P **P** 21 33 31.3 -2.7
KLMR pmax pmax
comp=Z,11nm,0.9s
ARCES **ARCESS Array B** 64.86 339 P **P** 21 33 37.2 -0.3
comp=Z,2.8nm,0.7s,baz=67,slow=9.3,SNR=6.4
YKA **Yellowknife Ar** 65.50 29 P **P** 21 33 41.6 0.0
comp=Z,0.7nm,0.8s,baz=303,slow=6.6,SNR=14
DAG **Danmarks Havn** 67.01 355 *i* P **P** 21 33 50.7 -0.4
comp=Z,5.3nm,0.9s
DAG **Danmarks Havn** 67.01 355 *i* P **P** 21 33 50.7 -0.4
DAG pmax pmax
comp=Z,5.0nm,0.9s
STKA **Stephens Creek** 67.24 179 P **P** 21 33 53.6 +0.5
comp=Z,1.5nm,0.6s,baz=357,slow=5.3,SNR=3.1
VRH **Novokhopyorsk** 67.85 318 *e*P **P** 21 33 55.3 -1.5
VRH *e*PP pP 21 34 08.6 -5.9
VRH pmax pmax
comp=Z,10.0nm,0.7s
OBN **Obninsk** 68.52 323⇓ *e*P **P** 21 33 59.7 -1.2
OBN pmax pmax
comp=Z,9.0nm,0.8s
OBN MLR MLR
comp=Z,29nm,9.0s
VSR **Storozhevoye** 69.22 319 *e*P **P** 21 34 04.3 -1.1
VSR *e*PP pP 21 34 16.0 -7.1
VSR pmax pmax
comp=Z,10.0nm,0.7s
FIA1 **FINESS Array S** 69.49 332 *e*P **P** 21 34 06.4 -0.4
FINES **FINESS Array B** 69.49 332 P **P** 21 34 06.7 -0.2
comp=Z,6.4nm,0.7s,baz=73,slow=6.6,SNR=22
FINES LR LR 22 07 52.4
comp=Z,33nm,18.9s,baz=34,slow=39
KBZ **Khabaz** 70.95 310 P **P** 21 34 16.7 +0.6
comp=Z,6.0nm,1.0s,baz=273,slow=2.5,SNR=8.3
KIV **Kislovodsk** 70.97 311⇓ *e*P **P** 21 34 16.7 +0.4
KIV *i* 21 34 23.9
KIV *e*S **SKSac** **21 44 11.2 -1.9**
KIV pmax pmax
comp=Z,23nm,1.2s
KIV MLR MLR
comp=Z,28nm,17.0s
KIV **Kislovodsk** 70.97 311 *e*P **P** 21 34 17.0 +0.7
comp=Z,23nm,1.2s
NWAO **Narrogin (SRO)** 71.55 200 P **P** 21 34 19.8 +0.2
comp=Z,7.8nm,0.8s,baz=230,slow=0.2,SNR=4.5
SUMG **Summit** 72.01 360 *i* P **P** 21 34 23.2 +0.7
comp=Z,8.3nm,0.8s
SUMG **Summit** 72.01 360 *e*P **P** 21 34 23.7 +1.2
SUMG pmax pmax
comp=Z,8.0nm,0.9s
SUMG **Summit** 72.01 360 *e*P **P** 21 34 23.7 +1.2
comp=Z,7.7nm,0.9s
ANN **Anapa** 73.68 314 *e*P P 21 34 27.0 -5.3
ANN pmax pmax
comp=Z,277nm,1.5s
AKASG **Malin Array Be** 74.69 322 P **P** 21 34 37.6 -0.5
comp=Z,4.0nm,0.6s,baz=46,slow=5.9,SNR=26
KIEV **Kiev** 74.70 322 *e*P **P** 21 34 37.7 -0.5
KIEV pmax pmax
comp=Z,9.0nm,0.9s
KIEV **Kiev** 74.70 322 *e*P **P** 21 34 37.6 -0.5
comp=Z,8.9nm,0.9s
AK11 **Malin Array Si** 74.73 322 *e*P **P** 21 34 38.1 -0.2
NC204 **NORSAR Array S** 74.96 337 *e*P **P** 21 34 40.0 +0.4
NB2 **NORSAR Subarra** 75.00 337 P **P** 21 34 39.4 -0.4
comp=Z,5.2nm,0.8s,baz=40,slow=6.2
NOA **NORSAR Array B** 75.00 337 P **P** 21 34 39.5 -0.2
comp=Z,3.9nm,0.8s,baz=40,slow=5.9,SNR=15
NOA LR LR 22 10 41.3
comp=Z,9.8nm,19.1s,baz=40,slow=38
BOZ **Bozeman (W)** 76.42 43 *e*P **P** 21 34 49.8 +1.5
BOZ pmax pmax
comp=Z,13nm,1.8s
BOZ **Bozeman (W)** 76.42 43 *e*P **P** 21 34 49.8 +1.5
comp=Z,13nm,1.8s
NVAR **Mina Array Bea** 76.65 52 P **P** 21 34 50.8 +0.9
comp=Z,0.6nm,0.4s,baz=321,slow=3.8,SNR=3.7
BUR08 **Bucovina Ar. S** 78.67 321 *e*P **P** 21 35 00.9 +0.1
BRTR **Keskin Array B** 78.92 311 P **P** 21 35 02.6 +0.2
comp=Z,1.1nm,1.0s,baz=57,slow=4.6,SNR=8.5
PD31 **Pinedale Array** 79.37 45 *e*P **P** 21 35 05.3 +0.4
PDAR **Pinedale Array** 79.37 45 P **P** 21 35 05.5 +0.7
comp=Z,0.8nm,0.6s,baz=246,slow=2.0,SNR=11
BR231 **Keskin MP Arra** 79.38 312 *e*P **P** 21 35 03.4 -1.4
OJC **Ojcow** 79.54 326 *e*P **P** 21 35 06.0 +0.7
OJC **Ojcow** 79.54 326 *e*P **P** 21 35 06.1 +0.7
OJC pmax pmax
comp=Z,17nm,1.2s
OJC **Ojcow** 79.54 326 *e*P **P** 21 35 06.1 +0.8
comp=Z,17nm,1.2s
RAYN **Ar Rayn** 80.16 292 *e*P **P** 21 35 09.6 +0.4
comp=Z,4.3nm,0.9s
LANS **Liptovska Anna** 80.44 325 *e*P **P** 21 35 11.6 +1.3
LANS **Liptovska Anna** 80.44 325 *e*P **P** 21 35 11.6 +1.3
OKC **Ostrava-Krasne** 80.56 326 *e*P **P** 21 35 11.0 +0.2
OKC **Ostrava-Krasne** 80.56 326 *e*P **P** 21 35 11.0 +0.2
KSP **Ksiaz** 80.66 328 *e*P **P** 21 35 12.0 +0.7
KSP **Ksiaz** 80.66 328 *e*P **P** 21 35 12.1 +0.7
MORC **Moravsky Berou** 80.88 326 *e*P **P** 21 35 13.3 +0.7
MORC pmax pmax
comp=Z,25nm,1.0s
MORC **Moravsky Berou** 80.88 326 *e*P **P** 21 35 13.3 +0.7
comp=Z,25nm,1.0s
KNB **Kanab** 80.98 51 *e*P **P** 21 35 16.2 +2.6
KNB pmax pmax
comp=Z,5.0nm,1.1s
KNB **Kanab** 80.98 51 *e*P **P** 21 35 16.2 +2.6
comp=Z,4.7nm,1.1s
KRLC **Kraliky** 81.01 327 *e*P **P** 21 35 13.0 -0.3
KRLC **Kraliky** 81.01 327 *e*P **P** 21 35 13.0 -0.3
DPC **Dobruska-Polom** 81.01 327 *e*P **P** 21 35 11.2 -2.1
DPC *e*PCP **PcP** **21 35 22.5 +2.9**
DPC *e*pP **pP** **21 35 31.6 +0.2**
DPC **Dobruska-Polom** 81.01 327 *e*P **P** 21 35 11.2 -2.1
DPC *e* 21 35 22.5
DPC *e* 21 35 31.6
VYHS **Vyhne** 81.20 325 *e*P **P** 21 35 15.0 +0.7
VYHS **Vyhne** 81.20 325 *e*P **P** 21 35 15.0 +0.7
BRG **Berggiesshubel** 81.64 329 *e*(P) **P** 21 35 16.6 0.0
comp=Z,4.4nm,0.9s
BRG **Berggiesshubel** 81.64 329 *e*P **P** 21 35 16.6 0.0
BRG pmax pmax
comp=Z,4.0nm,0.9s
CLL **Collm** 81.71 330⇑ *i*P **P** 21 35 16.7 -0.2
comp=Z,7.0nm,0.9s
CLL **Collm** 81.71 330⇑ *i*P **P** 21 35 16.7 -0.2
CLL pmax pmax
comp=Z,7.0nm,0.9s
GOPC **GO Pecny, Ondr** 82.00 328 *e*P **P** 21 35 19.1 +0.6
GOPC **GO Pecny, Ondr** 82.00 328 *e*P **P** 21 35 19.1 +0.6
PRU **Pruhonice** 82.05 328 *e*P **P** 21 35 18.7 0.0
PRU **Pruhonice** 82.05 328 *e*P **P** 21 35 18.7 0.0
VTS **Vitosha** 83.11 318 *e*P **P** 21 35 25.2 +0.6
VTS pmax pmax
comp=Z,4.0nm,0.9s
VTS **Vitosha** 83.11 318 *e*P **P** 21 35 25.1 +0.6
comp=Z,3.9nm,0.9s
KHC **Kasperske Hory** 83.11 328 *e*P **P** 21 35 23.7 -0.6
KHC **Kasperske Hory** 83.11 328 *e*P **P** 21 35 24.8 +0.5
KHC pmax pmax
comp=Z,1.0nm,1.0s
KHC **Kasperske Hory** 83.11 328 *e*P **P** 21 35 24.8 +0.5

comp=Z,1.4nm,1.0s
GERES GERESS Array B 83.27 328 P **P** **21 35 24.6 -0.6**
comp=Z,1.0nm,0.8s,baz=55,slow=5.1,SNR=9.0
GERES LR LR 22 13 58.5
comp=Z,22nm,18.2s,baz=60,slow=37
PMOR Pomariorio Ree 84.64 113 *e*T T 23 08 11.0
comp=Z,2.6nm,0.2s
PPT2 Papeete2 85.03 116 *e*LR LR 22 01 34.2
comp=Z,168nm,32.5s
BFO Black Forest 85.93 330 *i* P **P** **21 35 39.1 +0.6**
LPM Los Pinos Moun 86.58 50 *e*P **P** **21 35 42.3 0.0**
TXAR Lajitas Array 91.79 52 P **P** **21 36 07.8 +1.1**
comp=Z,0.6nm,0.7s,baz=300,slow=2.5,SNR=5.0
TXAR pP **pP** **21 36 25.4 +0.3**
comp=Z,1.4nm,0.8s,baz=290,slow=4.2,SNR=7.0
TXAR LR LR 22 14 28.1
comp=Z,11nm,19.9s,baz=0.0,slow=34
ALLY Alegheny Colle 94.65 29 *e*P **P** **21 36 18.1 -1.5**
comp=Z,32nm,0.3s
TORD Torodi Ar. Bea 117.48 313 PKP **PKPdf** **21 41 44.0 -0.6**
comp=Z,1.1nm,0.9s,baz=349,slow=0.7,SNR=11
DBIC Dimbokro 126.50 315 PKP **PKPdf** **21 42 01.5 -0.4**
comp=Z,2.3nm,0.7s,baz=300,slow=1.4,SNR=4.1
SDV Santo Domingo 127.03 39 PKP **PKPdf** **21 42 03.1 -0.1**
comp=Z,1.8nm,0.6s,baz=304,slow=6.9,SNR=3.8
LPAZ La Paz 148.29 60 PKPbc **PKPbc** **21 42 46.0 +0.3**
comp=Z,1.5nm,0.6s,baz=327,slow=1.6,SNR=4.4
SIV San Ignacio 152.76 49 PKPbc **PKPbc** **21 42 55.7 0.0**
comp=Z,2.4nm,0.7s,baz=286,slow=1.2,SNR=4.7

*ISCJB **09** 21:24:47.0±0.6, 60.6°S±0.1°×24.0°W±0.4, h10km, mb4.2/8, MS3.1/2, Error ellipse: s-maj=27.9km s-min=14.2km az=147.9*
*IDC **09** 21:24:46.8±1.1, 60.63°S×24.18°W, h0km, mb3.9/3, mb1 4.0/3, mb1mx3.8/26, mbtmp3.9/3, MS3.1/2, Ms1 3.1/2, ms1mx2.8/18, Error ellipse: s-maj=84.1km s-min=33.6km az=97.0*
*NEIC **09** 21:24:52.6±2.6, 60.67°S×23.90°W, h38km±24km, mb4.4/5, Error ellipse: s-maj=25.1km s-min=16.3km az=45.0*
ISC 09 21:24:48.5±0.7, 60.6°S±0.1°×23.9°W±0.2, h10km, n18, σ0°99/13, mb4.0/8, South Sandwich Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SNAA	**Sanae**	**13.87**	**152**	*e*Pn	**Pn**	**21 28 05.4**	**+0.5**
	264nm,0.6s						
PLCA	**Paso Flores**	**34.64**	**284**	LR	LR	21 45 06.5	
	comp=Z,43nm,18.1s,baz=179,slow=35						
CPUP	**Villa Florida**	**41.13**	**311**	LR	LR	21 49 34.6	
	comp=Z,15nm,18.4s,baz=180,slow=36						
VNDA	**Vanda**	**42.07**	**182**	P	**P**	**21 32 40.1**	**+0.4**
	0.9nm,0.7s,baz=218,slow=12,SNR=2.7						
H10S2	**ASCENSION HYDR**	**52.01**	**12**	T	T	22 30 28.3	
	baz=190						
H10S3	**ASCENSION HYDR**	**52.02**	**12**	T	T	22 30 27.9	
	baz=190						
H10S1	**ASCENSION HYDR**	**52.03**	**12**	T	T	22 30 28.1	
	baz=190						
SAML	**Samuel**	**59.23**	**313**	*e*P	**P**	**21 34 50.0**	**+0.2**
	0.7nm,0.5s						
NNA	**Nana**	**61.94**	**298**	*e*P	**P**	**21 35 08.5**	**+0.1**
	11nm,0.4s						
OTAV	**Otavalo**	**73.59**	**302**	*e*P	**P**	**21 36 22.4**	**+0.1**
	0.8nm,0.6s						
KMBO	**Kilima Mbogo**	**75.23**	**65**	*e*P	**P**	**21 36 31.6**	**0.0**
	0.5nm,0.3s						
TORD	**Torodi Ar. Bea**	**76.31**	**26**	P	**P**	**21 36 38.2**	**+0.9**
	1.6nm,0.8s,baz=196,slow=6.5,SNR=9.6						
SJG	**San Juan**	**85.50**	**320**	*e*P	**P**	**21 37 26.2**	**-0.1**
	3.9nm,0.2s						
COCO	**West Island**	**93.67**	**123**	*e*P	**P**	**21 38 04.7**	**-0.4**
ASAR	**Alice Springs**	**94.10**	**160**	P	**P**	**21 38 06.2**	**-1.0**
	0.3nm,0.6s,baz=187,slow=4.9,SNR=2.1						
SONM	**Songino Array**	**149.06**	**92**	PKPbc	**PKPbc**	**21 44 35.3**	**-0.6**
	0.2nm,0.5s,baz=252,slow=2.9,SNR=2.9						
INK	**Inuvik**	**150.36**	**315**	PKPbc	**PKPbc**	**21 44 35.9**	**-2.3**
	0.5nm,0.4s,baz=172,slow=1.9,SNR=3.2						
ILAR	**Eielson Array**	**154.30**	**304**	PKPbc	**PKPbc**	**21 44 48.5**	**+1.4**
	0.4nm,0.9s,baz=134,slow=2.6,SNR=2.8						

*IDC **09** 21:42:37.8±2.8, 36.76°N×142.49°E, h0km, mb3.3/4, mb1 3.5/6, mb1mx3.3/57, mbtmp3.4/6, ML3.3/2, MS3.3/2, Ms1 3.3/2, ms1mx2.5/26, Error ellipse: s-maj=60.5km s-min=29.9km az=72.0*
*JMA **09** 21:43:15.6, 36.72°N×140.60°E, h5km±1km, M2.9*
ISC 09 21:42:42.2±1.5, 36.68°N±0.10°×142.2°E±0.1, h19km, n11, σ1°25/9, mb3.3/4, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JHO	**Hitachi**	**1.28**	**268**	P	Pg	21 43 18.1	+11
JHO				S	**Sn**	**21 43 19.8**	**-1.8**
JRY	**Ryogami san**	**2.71**	**257**	P	Pg	21 43 43.0	+8.9
JRY				S	**Sb**	**21 44 02.8**	**0.0**
MJAR	**Matsushiro Arr**	**3.18**	**269**	Pn	**Pn**	**21 43 33.1**	**+1.9**
	3.8nm,0.3s,baz=97,slow=12,SNR=21						
MAT	**Matsushiro**	**3.18**	**269**	P	Pn	21 43 33.3	+2.1
JHJ	**Hachijo jima 2**	**4.05**	**209**	Pn	**Pn**	**21 43 44.0**	**+0.9**
	3.6nm,0.3s,baz=278,slow=20,SNR=1.6						
JHJ				Sn	**Sn**	**21 44 30.0**	**0.0**
	8.6nm,0.3s,baz=126,slow=23,SNR=1.9						
JCJ	**Chichijima**	**9.55**	**180**	LR	LR	21 48 19.0	
	comp=Z,47nm,21.8s,baz=184,slow=35						
JOW	**Kunigami**	**15.34**	**234**	LR	LR	21 51 33.1	
	comp=Z,398nm,21.7s,baz=5.5,slow=34						
SONM	**Songino Array**	**28.48**	**304**	P	**P**	**21 48 35.8**	**-0.3**
	0.3nm,0.7s,baz=100,slow=9.3,SNR=2.3						
MKAR	**Makanchi Array**	**44.81**	**303**	P	**P**	**21 50 54.1**	**-0.7**
	0.2nm,0.8s,baz=81,slow=9.3,SNR=2.2						
KURBB	**Kurchatov Arra**	**46.69**	**308**	P	**P**	**21 51 10.1**	**+0.6**
	0.2nm,0.5s,baz=82,slow=8.1,SNR=2.8						
WRA	**Warramunga Arr**	**56.80**	**189**	P	**P**	**21 52 24.3**	**-0.8**
	0.4nm,0.9s,baz=1.7,slow=7.4,SNR=1.2						

*ISCJB **09** 21:44:15.5±0.5, 32.09°N±0.03°×115.09°W±0.05, h29km±4km, Error ellipse: s-maj=6.8km s-min=4.3km az=178.4*
*MEX **09** 21:44:17.6±0.5, 32.09°N×115.06°W, h10km, MD3.4*
*ECX **09** 21:44:17.4±0.7, 32.06°N×115.19°W, h7km, MD2.6, ML2.8*
ISC 09 21:44:14.3±1.2, 32.11°N±0.03°×115.12°W±0.04, h17km±10km, n18, σ0°46/31, 3D, California-Baja California border region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MBIG	**Mexicali**	**0.30**	**347**	*e*P	**Pn**	**21 44 23.7**	**-0.1**
MBIG	**Mexicali**	**0.30**	**347**	*e*P	**Pn**	**21 44 23.6**	**-0.3**
MBIG				*e*S	**Sn**	**21 44 28.9**	**-0.9**
CPBX	**Cerro Prieto**	**0.34**	**332**	*e*P	**Pn**	**21 44 24.2**	**-0.2**
CPBX				*e*S	**Sn**	**21 44 29.7**	**-1.3**
CPBX				AML	AML	21 44 32.7	
	comp=N,3μm,0.2s						
CPBX				⇓*e*		21 44 32.7	
ECBX	**El Chinero**	**0.64**	**175**	*e*P	**Pg**	**21 44 26.8**	**-0.1**
ECBX				*e*S	**Sg**	**21 44 35.4**	**0.0**
RMX	**La Rumorosa**	**0.95**	**301**	*e*P	**Pn**	**21 44 33.6**	**+0.6**
RMX				*e*S	**Sn**	**21 44 46.2**	**0.0**
GLA	**Glamis**	**0.97**	**15**	P	**Pn**	**21 44 33.2**	**+0.2**
	baz=198						
GLA				S	**Sn**	**21 44 46.6**	**+0.2**
	baz=198						
SPIG	**San Pedro Mart**	**1.10**	**196**	*e*P	**Pn**	**21 44 35.3**	**+0.1**
SPIG				*e*S	**Sg**	**21 44 49.8**	**-0.4**
SPIG	**San Pedro Mart**	**1.10**	**196**	*e*P	**Pn**	**21 44 35.3**	**+0.1**
SPIG				*e*S	**Sg**	**21 44 50.0**	**-0.2**
SPX	**San Pedro Mart**	**1.10**	**196**	*e*P	**Pn**	**21 44 35.3**	**+0.1**
SPX				*e*S	**Sn**	**21 44 50.3**	**+0.1**
SPX				AML	AML	21 44 52.1	
	comp=N,197nm,0.2s						
ZAX	**El Zacaton**	**1.15**	**239**	*e*P	**Pb**	**21 44 35.7**	**0.0**
ZAX				*e*S	**Sn**	**21 44 50.8**	**-0.2**
ZAX				AML	AML	21 44 57.0	
	comp=E,201nm,0.5s						
ZAX				⇓*e*		21 44 57.0	
CBX	**Cerro Bola**	**1.33**	**279**	*e*P	**Pb**	**21 44 39.0**	**+0.3**
CBX				*e*S	**Sg**	**21 44 57.0**	**-0.2**
CBX				⇓*e*		21 44 58.7	
CBX				AML	AML	21 44 58.7	
	comp=E,261nm,0.2s						
CBX	**Cerro Bola**	**1.33**	**279**	*e*P	**Pb**	**21 44 38.9**	**+0.1**
CBX				*e*S	**Sb**	**21 44 56.2**	**+0.7**
ECNX	**Esteban Cantu**	**1.34**	**251**	*e*P	**Pb**	**21 44 38.9**	**0.0**
TJIG	**Tijuana**	**1.36**	**284**	*e*P	**Pb**	**21 44 39.1**	**-0.1**
TJIG				*e*S	**Sb**	**21 44 56.5**	**+0.3**
BC3	**Big Chuckawall**	**1.56**	**350**	P	**Pn**	**21 44 42.0**	**+0.6**
	baz=172						
BC3				S	**Sn**	**21 45 00.4**	**-0.8**
	baz=172						
Y12C	**Blythe**	**1.71**	**17**	Sb	**Sg**	**21 45 09.9**	**+0.6**
	baz=199						
214A	**Organ Pipe Nat**	**1.96**	**94**	P	**Pn**	**21 44 47.0**	**+0.2**
	baz=274						
IRM	**Iron Mountain**	**2.04**	**359**	Pb	**Pb**	**21 44 50.9**	**0.0**
	baz=182						

IDC 09 21:45:48.1±3.0, 2.27°S×134.27°E, h0km, mb3.4/2, mb1 3.7/3, mb1mx3.4/40, mbtmp3.5/3, ML3.4/1, Error ellipse: s-maj=132.9km s-min=30.6km az=77.0, Irian Jaya region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SIJI	**Sorong**	**3.31**	**295**	Sn	Sn	21 47 20.1	-1.2
	30nm,0.3s,baz=53,slow=2.5,SNR=2.0						
WRA	**Warramunga Arr**	**17.57**	**180**	P	Pn	21 49 55.0	+0.4
	0.1nm,0.3s,baz=359,slow=12,SNR=11						
ASAR	**Alice Springs**	**21.27**	**181**	P	P	21 50 36.1	-0.3
	1.8nm,0.9s,baz=4.2,slow=10,SNR=12						
MKAR	**Makanchi Array**	**66.78**	**324**	P	P	21 56 41.6	+0.1
	0.2nm,0.6s,baz=118,slow=8.3,SNR=2.6						

*ISCJB **09** 21:48:57.5±0.5, 36.83°N±0.03°×71.23°E±0.06, h88km, mb3.6/8, Error ellipse: s-maj=7.6km s-min=4.6km az=163.0*
*IDC **09** 21:48:57.5±3.3, 36.67°N×71.29°E, h78km±27km, mb3.4/8, mb1 3.6/15, mb1mx3.3/62, mbtmp3.9/15, Error ellipse: s-maj=27.5km s-min=18.6km az=169.0*
*NNC **09** 21:49:03.5±2.9, 37.19°N×71.06°E, h142km±49km, mb3.0, mpv3.8, Error ellipse: s-maj=29.1km s-min=23.6km az=59.0*
ISC 09 21:48:58.7±0.7, 36.82°N±0.06°×71.19°E±0.07, h88km, n31, σ1°32/37, mb3.7/8, 6C-5D, Afghanistan-Tajikistan border region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SFK	**Sufi-Kurgan**	**3.67**	**29**	⇓P	**Pn**	**21 49 55.9**	**+2.5**
	14nm,0.5s						
SFK				⇓S	**Sn**	**21 50 37.6**	**+1.8**
	75nm,0.7s						
THN	**Thein Dam**	**5.75**	**138**	*e*P	Pn	21 50 24.0	+2.5
THN				*e*S	**Sn**	**21 51 28.0**	**+1.9**
MNAS	**Manas**	**5.75**	**10**	⇑P	**Pn**	**21 50 22.4**	**+0.8**
	3.5nm,0.6s						
MNAS				⇑S	**Sn**	**21 51 25.0**	**-1.3**
	12nm,0.4s						
KK31	**Karatay Array**	**6.30**	**355**	P	**Pn**	**21 50 29.9**	**+0.9**
	2.7nm,0.4s,baz=179,slow=13,SNR=57						
KK31				⇓S	**Sn**	**21 51 37.2**	**-2.3**
	3.6nm,0.4s,baz=191,slow=24,SNR=4.4						
AAK	**Ala-Archa**	**6.34**	**23**	P	**Pn**	**21 50 31.1**	**+1.4**
	1.8nm,0.3s,baz=189,slow=7.0,SNR=56						
AAK				S	**Sn**	**21 51 39.1**	**-1.7**
	1.8nm,0.3s,baz=301,slow=21,SNR=8.5						
AAK	**Ala-Archa**	**6.34**	**23**	P	**Pn**	**21 50 30.9**	**+1.1**
	8.0nm,0.6s						
AAK				⇓S	**Sn**	**21 51 39.3**	**-1.4**
	14nm,0.6s						
TKM2	**Tokmak 2**	**6.97**	**28**	⇑P	**Pn**	**21 50 38.9**	**+0.5**
	3.9nm,0.5s						
TKM2				⇑S	**Sn**	**21 51 55.0**	**-1.2**
	14nm,1.1s						
PDGK	**Podgornoye**	**9.09**	**42**	⇑P	**Pn**	**21 51 07.9**	**+0.9**
	2.7nm,0.6s						
GEYT	**Alibeck**	**10.46**	**280**	P	**Pn**	**21 51 25.0**	**-0.7**
	5.0nm,0.3s,baz=96,slow=9.1,SNR=31						
GEYT				S	Sn	21 53 16.3	-4.8
	1.8nm,0.3s,baz=104,slow=12,SNR=7.5						
MKAR	**Makanchi Array**	**12.95**	**36**	P	**Pn**	**21 51 58.5**	**-0.7**
	0.1nm,0.3s,baz=224,slow=13,SNR=15						
PYUN	**Piuthan**	**13.21**	**128**	*e*P	**Pn**	**21 52 01.5**	**-1.5**
GKN	**Gorkha**	**14.35**	**124**	*e*P	**Pn**	**21 52 15.9**	**-1.9**
	18nm,0.7s						
KURBB	**Kurchatov Arra**	**14.78**	**19**	P	**P**	**21 52 25.6**	**-1.0**
	0.1nm,0.3s,baz=208,slow=10,SNR=14						
AB31	**Akbulak array**	**14.88**	**330**	P	**Pn**	**21 52 22.8**	**-1.5**
	0.6nm,0.4s,baz=142,slow=13,SNR=28						
AB31				⇑S	Sn	21 54 54.8	-13
	1.4nm,0.5s,baz=149,slow=23,SNR=7.4						
KKN	**Kakani**	**14.92**	**123**	*e*P	**Pn**	**21 52 23.7**	**-1.4**
	4.9nm,0.5s						
DMN	**Daman**	**14.92**	**124**	*e*P	**Pn**	**21 52 23.6**	**-1.6**
GUN	**Gumba**	**15.25**	**121**	*e*P	**Pn**	**21 52 28.6**	**-0.9**
	36nm,0.9s						
BVAR	**Borovoye Array**	**16.22**	**358**	P	**Pn**	**21 52 41.3**	**+0.3**
	0.3nm,0.3s,baz=156,slow=10,SNR=6.1						
RAMN	**Ramite**	**16.36**	**123**	*e*P	**Pn**	**21 52 42.5**	**-0.7**
	20nm,0.6s						
AKTO	**Aktyubinsk**	**16.58**	**329**	P	**Pn**	**21 52 46.9**	**+1.3**
	0.4nm,0.3s,baz=131,slow=9.7,SNR=4.0						
AKTO	**Aktyubinsk**	**16.58**	**329**	⇓P	**P**	**21 52 47.4**	**+0.7**
	2.0nm,0.5s						
ZALV	**Zalesovo Beam**	**19.57**	**25**	P	**P**	**21 53 18.8**	**-0.5**
	0.7nm,0.3s,baz=221,slow=11,SNR=13						
SONM	**Songino Array**	**28.03**	**56**	P	**P**	**21 54 42.1**	**+0.5**
	0.7nm,0.8s,baz=263,slow=8.5,SNR=6.9						
FINES	**FINESS Array B**	**37.30**	**326**	P	**P**	**21 56 03.8**	**+1.9**
	0.7nm,0.6s,baz=123,slow=10,SNR=6.7						
ARCES	**ARCESS Array B**	**40.91**	**337**	P	**P**	**21 56 33.3**	**+1.4**
	1.4nm,0.8s,baz=104,slow=8.9,SNR=4.5						
NB2	**NORSAR Subarra**	**44.22**	**323**	P	**P**	**21 56 59.8**	**+1.0**
	comp=Z,0.5nm,0.5s,baz=97,slow=7.9						
NOA	**NORSAR Array B**	**44.22**	**323**	P	**P**	**21 57 00.1**	**+1.3**
	comp=Z,0.6nm,0.6s,baz=96,slow=8.0,SNR=3.8						
TIXI	**Tiksi**	**45.42**	**22**	P	**P**	**21 57 08.2**	**0.0**
	comp=Z,1.7nm,0.4s,baz=273,slow=3.5,SNR=8.4						
TORD	**Torodi Ar. Bea**	**65.88**	**269**	P	**P**	**21 59 35.8**	**+0.5**
	comp=Z,0.3nm,0.6s,baz=47,slow=5.4,SNR=6.6						
YKA	**Yellowknife Ar**	**80.92**	**3**	P	**P**	**22 01 03.0**	**+0.1**
	comp=Z,0.3nm,0.5s,baz=346,slow=5.5,SNR=7.7						
ASAR	**Alice Springs**	**84.31**	**125**	P	**P**	**22 01 20.4**	**-0.7**
	comp=Z,0.6nm,0.6s,baz=311,slow=5.3,SNR=9.6						

TRN 09 21:51:21.0, 14.88°N×59.72°W, h3km, MD3.8, 1D, Windward Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MVM	**Montagne Vaucl**	**1.18**	**254**	*e*P	Pn	21 51 46.1	+1.7
LPMF	**Morne Lapointe**	**1.24**	**256**	*e*P	Pn	21 51 46.6	+1.3
ZAM	**Aeronautique**	**1.30**	**257**	*i*P	Pb	21 51 47.5	+1.3
TRMF	**Trois Ilets**	**1.33**	**256**	*e*P	Pb	21 51 48.0	+1.3
BAMF	**Morne Balai**	**1.38**	**268**	*e*P	Pb	21 51 49.0	+1.4
FDF	**Fort de France**	**1.39**	**264**	*e*P	Pg	21 51 49.2	+1.5
FDF				*e*S	Sn	21 52 10.0	+3.6
GBMF	**Grand Be**	**1.40**	**267**	*e*P	Pg	21 51 49.2	+1.3
PML	**Morne Lenard**	**1.42**	**266**	*e*P	Pg	21 51 49.7	+1.5
PCM	**Pelee Case Pet**	**1.44**	**268**	*e*P	Pg	21 51 49.7	+1.0
DLPL	**La Plaine**	**1.54**	**287**	*e*P	Pg	21 51 52.3	+1.7
DLPL				*e*S	Sg	21 52 13.0	+2.3
DBCT	**Belle View Cho**	**1.62**	**284**	*e*P	Pg	21 51 52.5	+0.4
DBCT				*e*S	Sg	21 52 15.8	+2.7
DSHT	**Scott's Head**	**1.63**	**282**	*e*P	Pg	21 51 53.2	+0.9
DSHT				*e*S	Sg	21 52 15.1	+1.5
DPMT	**Pointe Michel**	**1.65**	**284**	*e*P	Pg	21 51 53.1	+0.5
BBL	**Barber's Block**	**1.81**	**291**	*e*P	Pg	21 51 55.9	+0.1
BBL				*e*S	Sg	21 52 20.6	+1.4
MGG	**Marie-Galante**	**1.86**	**304**	*e*P	Pb	21 51 55.7	+0.1
MGG				*e*S	Sg	21 52 21.0	+0.3
DEG	**La Desirade**	**1.93**	**318**	*e*P	Pb	21 51 56.7	-0.2
TBG	**Guadaloupe-3**	**2.10**	**298**	*e*P	Pb	21 51 59.3	-0.4
TBG				*e*S	Sb	21 52 26.6	+0.5
DOG	**Dongo Capester**	**2.16**	**302**	*e*P	Pb	21 51 59.9	-1.0
PHG	**Guadaloupe-2**	**2.17**	**302**	*e*P	Pb	21 52 00.2	-0.9
HMG	**Houelmont**	**2.20**	**300**	*e*P	Pb	21 52 00.4	-1.2
CRG	**Carmichael**	**2.21**	**302**	*e*P	Pb	21 52 00.3	-1.4
SCG	**Saint Claude**	**2.21**	**302**	*e*P	Pb	21 52 00.9	-0.8
FNG	**Fond-Bernard**	**2.23**	**302**	*e*P	Pb	21 52 01.1	-1.0
MLG	**Mont-d'or**	**2.25**	**302**	*e*P	Pb	21 52 01.4	-1.0
ANWB	**Willy Bob**	**3.41**	**325**	*e*P	Pn	21 52 16.8	+1.6
ANWB				*e*S	Sn	21 52 57.8	+1.6

IDC 09 21:57:06.5±2.9, 2.20°S×134.25E, h0km, mb3.5/2, mb1 3.8/3, mb1mx3.5/29, mbtmp3.6/3, ML3.5/1, Error ellipse: s-maj=132.7km s-min=28.7km az=77.0, Irian Jaya region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SIJI	**Sorong**	**3.27**	**294**	Sn	Sn	21 58 37.7	-0.9
	16nm,0.3s,baz=343,slow=1.0,SNR=1.4						
WRA	**Warramunga Arr**	**17.63**	**180**	P	Pn	22 01 13.9	+0.1
	0.2nm,0.3s,baz=359,slow=12,SNR=16						
ASAR	**Alice Springs**	**21.34**	**181**	P	P	22 01 55.3	-0.1
	2.4nm,0.8s,baz=5.1,slow=12,SNR=23						
MKAR	**Makanchi Array**	**66.72**	**324**	P	P	22 07 59.6	+0.1
	0.3nm,0.6s,baz=113,slow=7.9,SNR=4.9						

MEX 09 22:00:07.0±0.5, 17.08°N×94.16W, h148km±16km, MD3.6, Chiapas

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
TGIG		**1.04**	**107**	*e*P	Pn	22 00 30.6	-1.4
TGIG				*e*S	Sn	22 00 49.1	-1.9
PCIG		**1.64**	**147**	*e*P	Pn	22 00 37.0	-1.0
PCIG				*e*S	Sn	22 00 59.4	-2.2
HUIG	**Huatulco**	**2.28**	**235**	*e*P	Pn	22 00 42.5	-3.0
HUIG				*e*S	Sn	22 01 13.3	-1.6

MEX 09 22:07:14.4±0.4, 32.04N×114.82W, h10km, MD3.5, Western Arizona-Sonora border region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SPIG	**San Pedro Mart**	**1.14**	**209**	*e*P	Pg	22 07 32.7	-3.5
SPIG				*e*S	Sg	22 07 47.5	-0.3
CBX	**Cerro Bola**	**1.58**	**280**	*e*P	Pn	22 07 39.3	-3.3
CBX				*e*S	Sn	22 07 57.7	-5.6

*MOS **09** 22:21:50.8±2.3, 50.26°N×157.13E, h45km, mb4.4/1, Error ellipse: s-maj=36.5km s-min=7.5km az=79.7*
KRSC 09 22:21:50.8±2.5, 50.26°N×157.13E, h45km±23km, ML4.3, Kuril Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SKR	**Severo-Kuril's**	**0.78**	**304**	*e*P	Pn	22 22 05.6	+0.2
SKR				*e*S	Sn	22 22 14.5	-1.4
SKR	**Severo-Kuril's**	**0.78**	**304**	*i* PN	Pn	22 22 02.8	-2.6
SKR				*e*S	Sn	22 22 15.0	-0.9
SKR				pmax	pmax		
	comp=N,410nm,0.4s						
SKR				pmax	pmax		
	comp=E,330nm,0.4s						
SKR				pmax	pmax		
	comp=Z,1μm,0.4s						
SKR				smax	smax		
	comp=N,12μm,0.2s						
SKR				smax	smax		
	comp=E,7μm,0.2s						
PAU	**Pauzhetka**	**1.23**	**351**	*e*P	Pn	22 22 13.3	+1.8
PAU				*e*S	Sn	22 22 27.8	+0.9
PAU	**Pauzhetka**	**1.23**	**351**	PN	Pn	22 22 13.3	+1.8
PAU				S	Sn	22 22 27.8	+0.9
ASAK	**Asacha**	**2.18**	**12**	*e*P	Pn	22 22 28.0	+3.3
ASAK				*e*S	Sn	22 22 53.1	+2.6
MTVR	**Mutnovka**	**2.33**	**16**	*e*P	Pn	22 22 29.9	+3.2
MTVR				*e*S	Sn	22 22 56.9	+2.8
RUS	**Russkaya**	**2.34**	**21**	*e*P	Pn	22 22 29.3	+2.5
RUS				*e*S	Sn	22 22 56.1	+1.7
RUS	**Russkaya**	**2.34**	**21**	PN	Pn	22 22 29.3	+2.5
RUS				S	Sn	22 22 56.1	+1.7
KRMR	**Karymshinskiy**	**2.65**	**13**	*e*P	Pn	22 22 34.8	+3.8
KRMR				*e*S	Sn	22 23 07.9	+6.0
APC	**Apacha**	**2.67**	**0**	*e*P	Pn	22 22 34.1	+2.8
APC				*e*S	Sn	22 23 06.0	+3.6
APC	**Apacha**	**2.67**	**0**	PN	Pn	22 22 34.1	+2.8
APC				S	Sn	22 23 06.0	+3.6
PET	**Petropavlovsk**	**2.93**	**18**	*e*P	Pn	22 22 38.7	+3.9
PET				*e*S	Sn	22 23 12.3	+3.6
PET	**Petropavlovsk**	**2.93**	**18**	*e*PN	Pn	22 22 38.0	+3.2
PET				*e*S	Sn	22 23 12.9	+4.2
PET				smax	smax		
	comp=N,168nm,0.5s						
PET				smax	smax		
	comp=E,74nm,0.3s						
DALK	**Dalny**	**2.96**	**19**	*e*P	Pn	22 22 38.7	+3.5
DALK				*e*S	Sn	22 23 13.0	+3.6
UGLR	**Uglovaya**	**3.14**	**19**	*e*P	Pn	22 22 41.9	+4.1
UGLR				*e*S	Sn	22 23 21.8	+7.7
AVH	**Avacha**	**3.17**	**18**	*e*P	Pn	22 22 43.0	+4.7
AVH				*e*S	Sn	22 23 20.5	+5.6
AVH	**Avacha**	**3.17**	**18**	PN	Pn	22 22 43.0	+4.7
AVH				S	Sn	22 23 20.5	+5.6
SMAR	**Somma**	**3.18**	**18**	*e*P	Pn	22 22 42.9	+4.4
SMAR	**Somma**	**3.18**	**18**	PN	Pn	22 22 42.9	+4.4
SDLR	**Sedlovina**	**3.22**	**19**	*e*P	Pn	22 22 42.3	+3.4
SDLR	**Sedlovina**	**3.22**	**19**	PN	Pn	22 22 42.3	+3.4
NLC	**Nalytchevo**	**3.23**	**24**	*e*P	Pn	22 22 41.0	+2.1
NLC				*e*S	Sn	22 23 16.7	+0.7
NLC	**Nalytchevo**	**3.23**	**24**	PN	Pn	22 22 41.0	+2.1
NLC				S	Sn	22 23 16.7	+0.7
KRX	**Arik**	**3.25**	**16**	*e*P	Pn	22 22 44.0	+4.7
SPN	**Mys Shipunski**	**3.37**	**31**	*e*P	Pn	22 22 44.6	+3.8
SPN				*e*S	Sn	22 23 23.2	+3.7
SPN	**Mys Shipunski**	**3.

GZT	**Gaziantep**	**0.38**	**174**	*i* P	**Pg**	**22 33 41.7**	**-0.3**
KMRS	**Kahramanmaras**	**0.54**	**245**	*e*PG	**Pg**	**22 33 44.6**	**-0.3**
KMRS				*e*SG	**Sg**	**22 33 52.2**	**+0.1**
KMRS	**Kahramanmaras**	**0.54**	**245**	*e*Pg	**Pg**	**22 33 44.6**	**-0.3**
KMRS				*e*Sg	**Sg**	**22 33 52.2**	**+0.1**
GAZ	**Gaziantep**	**0.61**	**203**	*e*PG	**Pg**	**22 33 46.8**	**+0.5**
GAZ				*e*SG	**Sb**	**22 33 55.8**	**0.0**
GAZ	**Gaziantep**	**0.61**	**203**	*e*Pg	**Pg**	**22 33 46.8**	**+0.5**
GAZ				*e*Sg	**Sb**	**22 33 55.8**	**0.0**
AKCD	**Akcadag**	**0.65**	**30**	*i* P	**Pn**	**22 33 49.1**	**-0.5**
AKCD				*i* S	**Sb**	**22 33 56.5**	**-0.3**
AKCD	**Akcadag**	**0.65**	**30**	P	**Pn**	**22 33 49.1**	**-0.5**
AKCD				S	**Sb**	**22 33 56.5**	**-0.3**
AYKD	**Aykdinkavak**	**0.65**	**241**	*i* P	**Pg**	**22 33 46.5**	**-0.5**
ATAB	**Bozova**	**0.67**	**113**	*i* P	**Pg**	**22 33 47.1**	**-0.3**
ATAB	**Bozova**	**0.67**	**113**	P	**Pg**	**22 33 47.1**	**-0.3**
DARE	**Darende-Malaty**	**0.83**	**358**	*e*PG	**Pn**	**22 33 51.7**	**-0.5**
DARE	**Darende-Malaty**	**0.83**	**358**	*e*Pg	**Pn**	**22 33 51.7**	**-0.5**
KAMA	**Osmaniye**	**0.87**	**231**	*i* P	**Pg**	**22 33 50.9**	**-0.3**
KUZU	**Kuzuini**	**1.02**	**200**	*i* P	**Pg**	**22 33 54.6**	**+0.5**
KUZU	**Kuzuini**	**1.02**	**200**	P	**Pg**	**22 33 54.6**	**+0.5**
SURC	**SANLIURFA_SURC**	**1.22**	**134**	*i* P	**Pn**	**22 33 57.4**	**0.0**
SURC	**SANLIURFA_SURC**	**1.22**	**134**	P	**Pn**	**22 33 57.4**	**0.0**
KOZT	**Kozan**	**1.37**	**260**	*e*PN	**Pb**	**22 34 00.4**	**+0.4**
KOZT	**Kozan**	**1.37**	**260**	*e*Pn	**Pb**	**22 34 00.4**	**+0.4**
ELZG	**Elazig**	**1.39**	**56**	*i* P	**Pg**	**22 34 01.5**	**+0.5**
ELZG	**Elazig**	**1.39**	**56**	P	**Pg**	**22 34 01.5**	**+0.5**
SVRC	**Sivrice-ELAZID**	**1.55**	**65**	*e*PN	**Pg**	**22 34 05.0**	**+0.8**
SVRC	**Sivrice-ELAZID**	**1.55**	**65**	*e*Pn	**Pg**	**22 34 05.0**	**+0.8**
BNN	**Bunyan**	**1.72**	**311**	*e*PN	**Pb**	**22 34 06.5**	**+0.4**
BNN	**Bunyan**	**1.72**	**311**	*e*Pn	**Pb**	**22 34 06.5**	**+0.4**
TAHT	**Tahtakopru-Hat**	**1.73**	**219**	*e*PN	**Pb**	**22 34 06.2**	**+0.1**
TAHT	**Tahtakopru-Hat**	**1.73**	**219**	*e*Pn	**Pb**	**22 34 06.2**	**+0.1**
MAZI	**Mazidag**	**2.34**	**96**	*e*PN	**Pb**	**22 34 16.4**	**-0.3**
MAZI	**Mazidag**	**2.34**	**96**	*e*Pn	**Pb**	**22 34 16.4**	**-0.3**

MEX 09 22:40:41.4±0.7, **17°.08N**×**94°.18W, h153**km±14km, **MD3.5, Chiapas**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TGIG		**1.05**	**106**	*e*P	Pn	22 41 05.8	-1.2
TGIG				*i* S	Sn	22 41 24.4	-2.1
PCIG		**1.65**	**146**	*e*P	Pn	22 41 11.9	-0.9
PCIG				*e*S	Sn	22 41 34.9	-2.0
HUIG	**Huatulco**	**2.27**	**235**	*e*P	Pn	22 41 17.3	-2.6
HUIG				*e*S	Sn	22 41 47.8	-1.7
VHO	**Vista Hermosa**	**2.45**	**270**	*e*P	Pn	22 41 21.3	-1.0
VHO				*e*S	Sn	22 41 52.7	-1.0

IDC ***09*** *22:40:46.8±2.0, 13°.36S×167°.71E, h0km, mb4.0/6, mb1 4.2/6, mb1mx3.8/41, mbtmp4.0/6, Error ellipse: s-maj=69.6km s-min=29.5km az=126.0*
NEIC ***09*** *22:40:49.0±0.6, 13°.29S×167°.60E, h10km, mb4.5/3, Error ellipse: s-maj=28.4km s-min=9.7km az=154.0*
ISCJB ***09*** *22:40:50.2±0.8, 13°.5S±0°.2×167°.7E±0°.2, h33km, mb4.1/9, Error ellipse: s-maj=39.0km s-min=13.3km az=153.2*
ISC 09 22:40:52.4±0.9, **13°.4S**±0°.3×**167°.7E**±0°.2, **h35km, n12,** σ0**°85**/13, **mb4.1/9, Vanuatu Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FUNA	**Funafuti**	**12.29**	**68**	*e*Pn	**Pn**	**22 43 44.7**	**-0.4**
STKA	**Stephens Creek**	**30.18**	**228**	P	**P**	**22 47 00.7**	**+1.2**
	4.7nm,0.5s,baz=48,slow=8.5,SNR=12						
WRA	**Warramunga Arr**	**32.56**	**254**	P	**P**	**22 47 19.6**	**-1.1**
	0.6nm,0.6s,baz=85,slow=8.9,SNR=8.3						
ASAR	**Alice Springs**	**33.54**	**247**	P	**P**	**22 47 28.1**	**-1.1**
	1.8nm,0.6s,baz=75,slow=9.2,SNR=46						
ASAR				PcP	**PcP**	**22 50 08.1**	**-1.4**
	0.5nm,0.5s,baz=67,slow=2.3,SNR=7.9						
MBWA	**Marble Bar**	**46.30**	**253**	*e*P	**P**	**22 49 15.2**	**+0.1**
	1.3nm,0.5s						
CMAR	**Chiang Mai Arr**	**74.78**	**294**	P	**P**	**22 52 30.1**	**+0.6**
	0.5nm,0.5s,baz=129,slow=3.7,SNR=5.2						
SONM	**Songino Array**	**81.66**	**323**	P	**P**	**22 53 07.4**	**+0.2**
	0.2nm,0.4s,baz=104,slow=6.1,SNR=2.9						
PMR	**Palmer**	**82.11**	**19**	*e*P	**P**	**22 53 09.2**	**+0.2**
	1.7nm,0.5s						
SDCO	**Great Sand Dun**	**95.59**	**53**	*e*P	**P**	**22 54 15.5**	**+0.7**
	9.5nm,0.8s						
MKAR	**Makanchi Array**	**96.51**	**316**	P	**P**	**22 54 18.3**	**-0.1**
	0.3nm,0.5s,baz=86,slow=5.3,SNR=6.0						
ARCES	**ARCESS Array B**	**119.06**	**346**	PKP	**PKPdf**	**22 59 36.5**	**-0.5**
	2.1nm,0.9s,baz=100,slow=3.8,SNR=3.1						
KEST	**Kesra**	**150.41**	**323**	PKPbc	**PKPbc**	**23 00 41.0**	**+0.2**
	2.0nm,0.7s,baz=142,slow=14,SNR=4.1						

NIED ***09*** *22:49:00, 40°.40N×142°.10E, h104km, Mw4.7 Best double couple: M0 1.13000×10^16 NP1:φ=327.00000°, δ44.00000°, λ26.00000°. NP2:φ=217.00000°, δ72.00000°, λ131.00000°.*
IDC ***09*** *22:49:36.2±1.7, 40°.51N×142°.63E, h0km, mb3.7/6, mb1 3.7/8, mb1mx3.5/65, mbtmp3.6/8, ML2.6/2, Error ellipse: s-maj=46.2km s-min=24.2km az=77.0*
ISCJB ***09*** *22:49:43.9±1.0, 40°.39N±0°.05×142°.1E±0°.1, h60km±6km, mb3.7/6, Error ellipse: s-maj=15.3km s-min=8.3km az=169.8*
JMA ***09*** *22:49:45.2±0.1, 40°.36N×142°.08E, h50km±1km, M3.8*
JMA Felt I J1.
ISC 09 22:49:44.4±1.6, **40°.40N**±0°.06×**142°.1E**±0°.1, **h51**km±11km, **n17,** σ0**°89**/24, **mb3.8/6, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JANG	**Nango**	**0.48**	**267**	P	**Pn**	**22 49 55.7**	**+0.3**
JANG				S	**Sn**	**22 50 02.9**	**-0.4**
JTH	**Tanohata**	**0.51**	**205**	P	**Pn**	**22 49 56.0**	**+0.2**
JTH				S	**Sn**	**22 50 03.4**	**-0.5**
JKZ	**Kuzumaki**	**0.75**	**236**	P	**Pn**	**22 49 59.0**	**+0.2**
JKZ				S	**Sn**	**22 50 08.7**	**-0.6**
JTM	**Tenmabayashi**	**0.90**	**296**	P	**Pn**	**22 50 01.0**	**+0.2**
JTM				*e*S	**Sn**	**22 50 12.5**	**-0.3**
JOM	**Ohasama**	**1.13**	**215**	P	**Pn**	**22 50 04.3**	**+0.4**
JOM				S	**Sn**	**22 50 17.5**	**-0.9**
JAH	**Hinai**	**1.17**	**260**	P	**Pn**	**22 50 04.7**	**+0.3**
JAH				S	**Sn**	**22 50 19.0**	**-0.2**
JOT	**Ohata**	**1.28**	**320**	P	**Pn**	**22 50 06.4**	**+0.5**
JRG	**Rokugo**	**1.53**	**230**	P	**Pn**	**22 50 10.0**	**+0.7**
JRG				*e*S	**Sn**	**22 50 27.8**	**-0.3**
MAT	**Matsushiro**	**4.94**	**220**	P	**Pn**	**22 51 58.1**	**+2.1**
MAT				S		22 51 34.6	-17
MJAR	**Matsushiro Arr**	**4.94**	**220**	Pn	**Pn**	**22 50 58.3**	**+2.3**
	0.5nm,0.3s,baz=30,slow=13,SNR=14						
USRK	**Ussuriysk Ar.**	**8.42**	**300**	Pn	**Pn**	**22 51 45.2**	**+1.4**
	0.3nm,0.3s,baz=110,slow=14,SNR=8.1						
SONM	**Songino Array**	**26.53**	**298**	P	**P**	**22 55 17.0**	**-0.3**
	0.2nm,0.3s,baz=89,slow=7.9,SNR=4.3						
ZALV	**Zalesovo Beam**	**40.14**	**309**	P	**P**	**22 57 14.6**	**-0.5**
	1.3nm,0.4s,baz=93,slow=8.0,SNR=7.4						
MKAR	**Makanchi Array**	**42.89**	**299**	P	**P**	**22 57 37.9**	**+0.1**
	0.6nm,0.6s,baz=85,slow=11,SNR=10						
WRA	**Warramunga Arr**	**60.47**	**188**	P	**P**	**22 59 48.5**	**-0.5**
	0.7nm,1.1s,baz=103,slow=6.1,SNR=3.5						
FINES	**FINESS Array B**	**66.11**	**332**	P	**P**	**23 00 25.8**	**0.0**
	1.8nm,1.0s,baz=45,slow=8.4,SNR=5.2						
NOA	**NORSAR Array B**	**71.30**	**337**	P	**P**	**23 00 58.5**	**+0.3**
	1.2nm,0.8s,baz=39,slow=5.8,SNR=4.0						

DJA 09 22:52:05.1±0.8, **10°S**±6°×**10°8E**±°, **h10km, M3.5/7, MLv3.5/7, South of Jawa**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CMJI	**Cimerak**	**2.43**	**21**	P	Pn	22 52 43.9	-0.9
CMJI				S	Sn	22 53 16.0	+1.4
CISI	**Cisompet, Garu**	**2.50**	**6**	P	Pn	22 52 45.7	-0.2
CISI				S	Sn	22 53 17.7	+1.1
CNJI	**Cibinong**	**2.77**	**351**	P	Pn	22 52 48.9	-0.6
CNJI				S	Pn	22 53 24.2	+1.2
KPJI	**Karang Pucung**	**3.03**	**27**	P	Pn	22 52 53.4	+0.3
KPJI				S	Sn	22 53 31.0	+1.5
SKJI	**Sukabumi**	**3.19**	**342**	P	Pn	22 52 55.6	+0.2
CGJI	**Cibinong**	**3.89**	**332**	P	Pn	22 53 05.2	+0.2

NIED ***09*** *22:52:00, 37°.40N×142°.50E, h8km, Mw4.0 Best double couple: Mo1.27000×10^15 NP1:φ=201.00000°, δ33.00000°, λ-121.00000°. NP2:φ=57.00000°, δ62.00000°, λ-71.00000°.*
IDC ***09*** *22:52:57.2±0.7, 37°.37N×142°.60E, h0km, mb4.0/18, mb1 4.2/21, mb1mx4.0/61, mbtmp4.0/21, ML3.4/3, MS3.1/5, Ms1 3.1/5, ms1mx2.8/43, Error ellipse: s-maj=19.0km s-min=14.6km az=108.0*
ISCJB ***09*** *22:52:58.7±0.4, 37°.41N±0°.04×142°.62E±0°.05, h21km, mb4.0/25, MS3.4/5, Error ellipse: s-maj=6.2km s-min=4.8km az=151.4*
JMA ***09*** *22:52:58.9±0.4, 37°.44N×142°.46E, h9km±4km, M4.2*
NEIC ***09*** *22:53:02.2±2.6, 37°.45N×142°.65E, h32km±18km, mb4.1/7, Error ellipse: s-maj=11.7km s-min=7.4km az=135.0*
ISC 09 22:53:00.3±0.6, **37°.39N**±0°.05×**142°.57E**±0°.07, **h21km, n59,** σ1**°02**/53, **mb4.0/25, MS3.4/5, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**1.35**	**270**	P	**Pn**	**22 53 22.3**	**-1.7**
JIO	**Ouri**	**1.44**	**318**	P	**Pn**	**22 53 23.6**	**-1.6**
JIO				*e*S	**Sn**	**22 53 41.5**	**-1.9**
ONAJ	**Iwakimizuishiy**	**1.45**	**259**	P	**Pn**	**22 53 23.7**	**-1.6**
JMM	**Marumori**	**1.49**	**289**	P	**Pn**	**22 53 24.1**	**-1.8**
JFT	**Otama**	**1.79**	**275**	P	**Pn**	**22 53 29.5**	**-0.4**
JFT				*e*S	**Sn**	**22 53 50.5**	**-1.5**
JOU	**Okura**	**1.80**	**304**	P	**Pn**	**22 53 29.4**	**-0.7**
JOU				*e*S	**Sn**	**22 53 51.7**	**-0.7**
JMK	**Ichinoseki**	**1.89**	**326**	P	**Pn**	**22 53 30.8**	**-0.6**
JYS	**Shirataka**	**2.15**	**294**	P	**Pn**	**22 53 34.9**	**-0.1**
JFY	**Yanaizu**	**2.29**	**271**	P	**Pn**	**22 53 36.8**	**0.0**
JOM	**Ohasama**	**2.31**	**335**	P	**Pn**	**22 53 37.0**	**-0.2**
JYK	**Kaneyama**	**2.32**	**312**	P	**Pn**	**22 53 36.9**	**-0.4**
JRG	**Rokugo**	**2.52**	**323**	P	**Pn**	**22 53 40.4**	**+0.4**
JAG	**Ashikaga**	**2.68**	**250**	P	**Pn**	**22 53 41.5**	**-0.7**
MJAR	**Matsushiro Arr**	**3.60**	**258**	Pn	**Pn**	**22 53 56.3**	**+1.5**
	2.5nm,0.3s,baz=86,slow=15,SNR=11						
MAJO	**Matsushiro**	**3.60**	**258**	*e*Pn	Pn	22 53 57.5	+2.7
MAT	**Matsushiro**	**3.60**	**258**	P	**Pn**	**22 53 56.3**	**+1.5**
MAT				*e*S	**Sn**	**22 54 38.1**	**+1.4**
ERM	**Erimo**	**4.65**	**5**	*e*Pn	**Pn**	**22 54 07.9**	**-1.3**
ERM				*e*Sn	**Sn**	**22 55 02.5**	**+0.1**
JHJ	**Hachijo jima 2**	**4.83**	**209**	Pn	**Pn**	**22 54 11.3**	**-0.5**
	14nm,0.3s,baz=302,slow=22,SNR=12						
JHJ				Sn	**Sn**	**22 55 03.6**	**-3.5**
	16nm,0.3s,baz=300,slow=22,SNR=4.4						
USRK	**Ussuriysk Ar.**	**10.52**	**314**	Pn	Pn	22 55 33.9	+4.1
	0.2nm,0.3s,baz=114,slow=15,SNR=3.6						
KSRS	**Korea Array**	**11.65**	**275**	Pn	Pn	22 55 49.4	+4.0
	0.2nm,0.3s,baz=80,slow=14,SNR=3.0						
KSRS				LR	LR	22 59 43.3	
	comp=Z,55nm,18.8s,baz=105,slow=35						
KSAR	**Wonju Array Be**	**11.68**	**275**	Pn	Pn	22 55 49.4	+3.6
MDJ	**Mudanjiang**	**12.17**	**310**	*e*Pn	**Pn**	**22 55 53.6**	**+1.3**
KLR	**Kul'dur**	**14.20**	**330**	Pn	**Pn**	**22 56 19.0**	**-1.1**
	0.1nm,0.3s,baz=117,slow=16,SNR=2.7						
MA2	**Magadan**	**22.83**	**11**	P	**P**	**22 58 01.4**	**-0.3**
	4.7nm,0.7s,baz=218,slow=8.9,SNR=7.3						
MA2	**Magadan**	**22.83**	**11**	*e*P	**P**	**22 58 01.6**	**-0.1**
GUMO	**Guam**	**23.79**	**174**	LR	LR	23 07 45.4	
	comp=Z,16nm,20.3s,baz=68,slow=37						
SEY	**Seymchan**	**26.27**	**10**	P	**P**	**22 58 35.2**	**+1.3**
	5.9nm,0.7s,baz=188,slow=8.3,SNR=22						
H11N2	**WAKE ISLAND Hy**	**27.55**	**123**	T	T	23 27 33.3	
	baz=315,slow=75,SNR=857						
H11N1	**WAKE ISLAND Hy**	**27.55**	**123**	T	T	23 27 33.6	
	baz=315,slow=75,SNR=343						
H11N3	**WAKE ISLAND Hy**	**27.56**	**123**	T	T	23 27 32.2	
	baz=315,slow=75,SNR=394						
ULN	**Ulaanbaatar**	**27.93**	**303**	*e*P	**P**	**22 58 49.7**	**+0.6**
	1.7nm,0.7s						
H11S1	**WAKE ISLAND Hy**	**28.29**	**125**	T	T	23 28 27.7	
	baz=317,slow=76,SNR=431						
H11S3	**WAKE ISLAND Hy**	**28.29**	**125**	T	T	23 28 28.3	
	baz=317,slow=76,SNR=369						
H11S2	**WAKE ISLAND Hy**	**28.30**	**125**	T	T	23 28 27.9	
	baz=317,slow=76,SNR=373						
SONM	**Songino Array**	**28.36**	**303**	P	**P**	**22 58 54.0**	**+1.0**
	2.7nm,0.7s,baz=97,slow=8.9,SNR=29						
ZALV	**Zalesovo Beam**	**42.36**	**312**	P	**P**	**23 00 53.3**	**+0.6**
	2.7nm,0.7s,baz=94,slow=7.5,SNR=16						
ZALV				PcP	**PcP**	**23 02 45.1**	**-0.6**
	0.3nm,0.3s,baz=45,slow=2.2,SNR=3.2						
NRIK	**Noril'sk**	**43.34**	**335**	P	**P**	**23 00 59.9**	**-0.5**
	0.8nm,0.3s,baz=116,slow=6.0,SNR=4.7						
MKAR	**Makanchi Array**	**44.72**	**302**	P	**P**	**23 01 12.2**	**+0.3**
	1.0nm,0.7s,baz=85,slow=9.6,SNR=10						
MKAR				LR	LR	23 21 33.2	
	comp=Z,23nm,18.3s,baz=130,slow=38						
KURK	**Kurchatov**	**46.45**	**308**	*e*P	**P**	**23 01 25.5**	**+0.1**
	9.8nm,0.6s						
COLA	**College**	**48.29**	**32**	*e*P	**P**	**23 01 39.8**	**+0.3**
	1.4nm,0.6s						
ILAR	**Eielson Array**	**48.70**	**33**	P	**P**	**23 01 43.4**	**+0.6**
	1.3nm,0.7s,baz=265,slow=6.7,SNR=14						
AAK	**Ala-Archa**	**51.14**	**298**	*e*P	**P**	**23 02 02.5**	**+0.7**
	0.6nm,0.5s						
EKS2	**Erkin-Say**	**51.63**	**299**	*e*P	**P**	**23 02 05.9**	**+0.5**
	0.8nm,0.4s						
INK	**Inuvik**	**53.65**	**27**	P	**P**	**23 02 20.6**	**+0.8**
	0.9nm,0.7s,baz=299,slow=5.6,SNR=5.3						
ARU	**Arti**	**56.71**	**319**	P	**P**	**23 02 42.5**	**+0.4**
	2.8nm,0.6s,baz=320,slow=9.0,SNR=7.7						
WRA	**Warramunga Arr**	**57.55**	**189**	P	**P**	**23 02 48.2**	**-0.1**
	3.7nm,0.8s,baz=9.4,slow=7.5,SNR=14						
ABKAR	**Akbulak array**	**58.42**	**310**	*e*P	**P**	**23 02 54.2**	**0.0**
	0.4nm,0.4s						
ASAR	**Alice Springs**	**61.27**	**189**	P	**P**	**23 03 14.3**	**+0.3**
	1.8nm,0.8s,baz=14,slow=5.9,SNR=13						
YKA	**Yellowknife Ar**	**63.04**	**31**	P	**P**	**23 03 26.0**	**+0.6**
	0.3nm,0.6s,baz=302,slow=6.6,SNR=8.5						
FINES	**FINESS Array B**	**68.93**	**333**	P	**P**	**23 04 03.4**	**+0.1**
	3.9nm,0.8s,baz=31,slow=7.8,SNR=9.9						
WVOR	**Wild Horse Val**	**71.56**	**50**	*e*P	**P**	**23 04 18.6**	**-1.3**
	4.3nm,0.6s						
WSAR	**Wadi Sarin**	**71.67**	**286**	LR	LR	23 38 55.6	
	comp=Z,18nm,18.0s,baz=207,slow=38						
NB2	**NORSAR Subarra**	**74.22**	**338**	P	**P**	**23 04 35.7**	**+0.4**
	comp=Z,1.0nm,0.7s,baz=40,slow=6.2						
NOA	**NORSAR Array B**	**74.22**	**338**	P	**P**	**23 04 35.3**	**0.0**
	comp=Z,1.4nm,0.7s,baz=40,slow=5.8,SNR=7.8						
NOA				LR	LR	23 44 15.7	
	comp=Z,17nm,18.2s,baz=265,slow=42						
AKASG	**Malin Array Be**	**74.58**	**323**	P	**P**	**23 04 37.6**	**+0.1**
	comp=Z,0.4nm,0.3s,baz=37,slow=5.3,SNR=5.4						
RAO	**Raoul Island**	**75.93**	**145**	LR	LR	23 34 10.2	
	comp=Z,296nm,20.2s,baz=135,slow=33						
PDAR	**Pinedale Array**	**76.76**	**46**	P	**P**	**23 04 50.4**	**0.0**
	comp=Z,0.5nm,0.6s,baz=267,slow=2.8,SNR=5.9						
GERES	**GERESS Array B**	**82.90**	**329**	P	**P**	**23 05 22.6**	**-0.8**
	comp=Z,0.6nm,0.8s,baz=35,slow=4.9,SNR=5.0						
TXAR	**Lajitas Array**	**89.17**	**53**	P	**P**	**23 05 55.1**	**+0.4**
	comp=Z,0.4nm,0.6s,baz=316,slow=3.5,SNR=3.5						

IDC ***09*** *23:02:17.1±3.0, 35°.80N×142°.40E, h0km, mb3.5/4, mb1 3.6/5, mb1mx3.4/39, mbtmp3.4/5, ML3.1/1, Error ellipse: s-maj=87.5km s-min=32.2km az=61.0*
ISCJB ***09*** *23:02:18.7±2.3, 36°.17N±0°.05×142°.46E±0°.10, h20km±22km, mb3.4/4, Error ellipse: s-maj=13.1km s-min=8.9km az=2.7*
JMA ***09*** *23:02:19.0±0.2, 36°.17N×142°.51E, h76km, M3.1*
ISC 09 23:02:19.6±2.2, **36°.12N**±0°.06×**142°.41E**±0°.09, **h19**km±5km, **n14,** σ1**°54**/21, **mb3.5**/4, **Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**1.33**	**252**	P	**Pb**	**23 02 43.6**	**-0.2**
CHOJ				*e*S	**Sg**	**23 03 02.1**	**-0.5**
JHO	**Hitachi**	**1.56**	**289**	P	**Pn**	**23 02 45.9**	**-0.4**
JHO				S	**Sn**	**23 03 06.1**	**+0.1**
JFK	**Kawauchi**	**1.75**	**316**	*e*S	**Sn**	**23 03 09.7**	**-1.0**
BSO1	**Boso 1**	**1.88**	**219**	P	**Pn**	**23 02 50.6**	**+0.5**
BSO1				*e*S	**Sb**	**23 03 15.7**	**0.0**
JFT	**Otama**	**2.17**	**311**	P	**Pn**	**23 02 55.2**	**+0.5**
JFT				S	**Sn**	**23 03 22.5**	**+1.5**
JAG	**Ashikaga**	**2.41**	**278**	P	**Pn**	**23 02 58.4**	**+0.5**
JAG				S	**Sn**	**23 03 27.2**	**+0.3**
JOD2	**Odawara 2**	**2.84**	**253**	P	**Pn**	**23 03 04.8**	**+1.0**
JOD2				*e*S	**Sn**	**23 03 39.6**	**+2.1**
JRY	**Ryogami san**	**2.84**	**269**	P	**Pn**	**23 03 04.4**	**+0.4**
JRY				*e*S	**Sn**	**23 03 38.3**	**+0.6**
MJAR	**Matsushiro Arr**	**3.42**	**278**	Pn	**Pn**	**23 03 12.9**	**+1.1**
	2.0nm,0.3s,baz=114,slow=8.0,SNR=11						
MAT	**Matsushiro**	**3.42**	**278**	P	**Pn**	**23 03 12.6**	**+0.8**
MAT				*e*S	**Sn**	**23 03 47.0**	**-4.9**
SONM	**Songino Array**	**28.96**	**305**	P	**P**	**23 08 19.1**	**+1.3**
	0.5nm,0.6s,baz=104,slow=9.3,SNR=5.0						
ZALV	**Zalesovo Beam**	**43.12**	**313**	P	P	23 10 22.0	+3.7
	0.3nm,0.5s,baz=98,slow=10,SNR=2.6						
MKAR	**Makanchi Array**	**45.28**	**303**	P	**P**	**23 10 36.0**	**+0.1**
	0.4nm,0.6s,baz=91,slow=8.4,SNR=4.0						
WRA	**Warramunga Arr**	**56.28**	**189**	P	**P**	**23 11 57.3**	**-1.6**
	0.5nm,0.9s,baz=6.6,slow=7.4,SNR=2.3						

IDC ***09*** *23:05:40.9±2.9, 36°.36N×142°.19E, h0km, mb3.2/3, mb1 3.3/5, mb1mx3.1/43, mbtmp3.2/5, ML3.1/2, Error ellipse: s-maj=62.8km s-min=31.5km az=70.0*
JMA ***09*** *23:05:44.7±0.3, 36°.36N×141°.84E, h82km, M2.7*
ISC 09 23:05:44.6±1.6, **36°.32N**±0°.08×**141°.9E**±0°.1, **h19**km, **n8,** σ1**°02**/11, **mb3.3/3, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**1.07**	**235**	P	**Pn**	**23 06 04.7**	**+0.1**
CHOJ				*e*S	**Sg**	**23 06 19.7**	**+0.2**
JHO	**Hitachi**	**1.15**	**285**	P	**Pn**	**23 06 04.6**	**-1.0**
MJAR	**Matsushiro Arr**	**3.02**	**275**	Pn	**Pn**	**23 06 31.8**	**+0.4**
	1.6nm,0.3s,baz=112,slow=9.3,SNR=11						
MAT	**Matsushiro**	**3.02**	**275**	P	**Pn**	**23 06 32.1**	**+0.7**
MAT				*e*S	**Sn**	**23 07 07.4**	**+0.3**
JHJ	**Hachijo jima 2**	**3.65**	**210**	Pn	**Pn**	**23 06 41.2**	**+1.1**
	5.1nm,0.3s,baz=192,slow=20,SNR=1.8						
JHJ				Sn	**Sn**	**23 07 20.7**	**-1.9**
	4.7nm,0.3s,baz=43,slow=24,SNR=2.1						
MKAR	**Makanchi Array**	**44.86**	**303**	P	**P**	**23 13 58.6**	**+1.0**
	0.2nm,0.8s,baz=91,slow=7.6,SNR=1.9						
KURBB	**Kurchatov Arra**	**46.78**	**309**	P	**P**	**23 14 12.3**	**-0.2**
	0.2nm,0.6s,baz=83,slow=7.7,SNR=3.4						
WRA	**Warramunga Arr**	**56.41**	**189**	P	**P**	**23 15 24.4**	**-0.5**
	0.3nm,1.0s,baz=4.7,slow=9.0,SNR=1.5						

IDC ***09*** *23:09:41.7±2.5, 36°.74N×141°.88E, h0km, mb3.5/4, mb1 3.5/5, mb1mx3.3/40, mbtmp3.4/5, ML2.9/1, MS3.1/2, Ms1 3.0/2, ms1mx2.2/40, Error ellipse: s-maj=68.1km s-min=28.9km az=61.0*
JMA ***09*** *23:09:42.0±0.5, 36°.30N×141°.84E, h77km, M2.7*
ISC 09 23:09:42.9±1.9, **36°.26N**±0°.08×**141°.9E**±0°.2, **h23**km, **n11,** σ1**°09**/11, **mb3.4/4, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.98**	**236**	P	**Pn**	**23 10 00.9**	**-0.3**
CHOJ				S	**Sn**	**23 10 15.7**	**+1.4**
JHO	**Hitachi**	**1.10**	**289**	P	**Pn**	**23 10 01.7**	**-1.1**
MJAR	**Matsushiro Arr**	**2.96**	**277**	Pn	**Pn**	**23 10 28.8**	**+0.4**
	1.7nm,0.3s,baz=114,slow=9.4,SNR=21						
MAT	**Matsushiro**	**2.96**	**277**	P	**Pn**	**23 10 29.1**	**+0.7**
MAT				*e*S	**Sn**	**23 11 02.2**	**-1.0**
JHJ	**Hachijo jima 2**	**3.56**	**209**	Pn	**Pn**	**23 10 36.9**	**+0.1**
	8.4nm,0.3s,baz=70,slow=23,SNR=2.4						
JHJ				Sn	**Sn**	**23 11 16.4**	**-1.8**
	18nm,0.3s,baz=245,slow=23,SNR=6.7						
YAK	**Yakutsk**	**26.91**	**347**	LR	LR	23 26 11.1	
	comp=Z,30nm,20.1s,baz=88,slow=37						
SONM	**Songino Array**	**28.52**	**305**	P	**P**	**23 15 37.3**	**+0.7**
	0.5nm,0.8s,baz=95,slow=6.8,SNR=5.5						
MKAR	**Makanchi Array**	**44.84**	**303**	P	**P**	**23 17 55.8**	**+0.7**

0.8nm,0.6s,baz=339,slow=2.9,SNR=4.5

*NEIC **09** 23:27:10.0, 35.48N×92.30W, h0km, MD2.6(CERI), After CERI.*

ISC 09 23:27:10.1±1.1, 35.48N±0.02×92.33W±0.03, h8km±10km, n25, σ0§66/46, Arkansas

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
W41B	**Gary Mavity, V** baz=353	**0.32**	**168**	P			**Pg**	**23 27 16.0**	**-0.3**
W41B	baz=353			S			**Sg**	**23 27 20.2**	**-0.2**
V40A	**Witts Springs** baz=127,SNR=64	**0.52**	**309**	P			**Pg**	**23 27 20.6**	**+0.6**
V40A	baz=127			S			**Sg**	**23 27 27.9**	**+1.1**
W40A	**Ferguson Farm,** baz=66,SNR=10	**0.67**	**245**	P			**Pb**	**23 27 24.0**	**0.0**
W40A	baz=66			S			**Sg**	**23 27 33.1**	**+1.3**
U40A	**Yellville** baz=153,SNR=38	**0.97**	**334**	P			**Pg**	**23 27 28.9**	**+0.1**
U40A	baz=153			S			**Sg**	**23 27 42.0**	**+0.6**
X40A	**Basin Creek Fa** baz=24	**1.08**	**203**	P			**Pg**	**23 27 30.5**	**-0.2**
V39A	**Pettigrew** baz=108,SNR=44	**1.13**	**289**	P			**Pb**	**23 27 31.8**	**-0.1**
V39A	baz=108			S			**Sb**	**23 27 47.1**	**+0.4**
W39A	**Magazine** baz=77	**1.22**	**257**	Pb			**Pb**	**23 27 33.8**	**+0.3**
W39A	baz=77			S			**Sn**	**23 27 50.3**	**+0.1**
U39A	**Green Forest** baz=133,SNR=113	**1.30**	**314**	Pb			**Pb**	**23 27 34.7**	**0.0**
U39A	baz=133			S			**Sb**	**23 27 51.8**	**+0.2**
MIAR	**Mount Ida** baz=48	**1.39**	**228**	Pb			**Pb**	**23 27 36.0**	**-0.2**
MIAR	baz=48			S			**Sg**	**23 27 55.2**	**+0.5**
MIAR	**Mount Ida**	**1.39**	**228**	*e*Pn			**Pb**	**23 27 36.0**	**-0.2**
MIAR				*e*Sg			**Sg**	**23 27 55.4**	**+0.8**
Y40A	**Okolona** baz=29	**1.66**	**208**	Pb			**Pb**	**23 27 40.9**	**0.0**
Y40A	baz=29			S			**Sb**	**23 28 02.7**	**+0.7**
T40A	**Mansfield** baz=174	**1.67**	**355**	Sb			**Sg**	**23 28 03.7**	**-0.1**
Y42A	**Garnett, Star** baz=346	**1.70**	**165**	Pb			**Pb**	**23 27 41.4**	**-0.2**
Y42A	baz=346			Sb			**Sg**	**23 28 04.2**	**-0.5**
V38A	**Canehill** baz=102,SNR=19	**1.73**	**283**	Pb			**Pb**	**23 27 42.3**	**+0.1**
V38A	baz=102			Sb			**Sb**	**23 28 05.5**	**+1.3**
T39A	**Clever** baz=150,SNR=13	**1.76**	**331**	Pb			**Pb**	**23 27 42.7**	**+0.1**
T39A	baz=150			Sb			**Sg**	**23 28 06.4**	**-0.1**
X39A	**Fountain Ranch** baz=56,SNR=14	**1.76**	**237**	Pb			**Pb**	**23 27 42.6**	**0.0**
X39A	baz=56			Sb			**Sg**	**23 28 06.7**	**+0.2**
W38A	**Poteau** baz=77	**1.84**	**258**	Pb			**Pb**	**23 27 44.1**	**+0.2**
W38A	baz=77			Sb			**Sg**	**23 28 09.1**	**-0.1**
U38A	**Gravette** baz=119	**1.92**	**300**	Sb			**Sg**	**23 28 11.5**	**-0.4**
S40A	**Lebanon** baz=176,SNR=15	**2.12**	**356**	Pb			**Pb**	**23 27 48.3**	**-0.4**
S40A	baz=176			Sb			**Sb**	**23 28 16.3**	**+1.1**
X38A	**Whitesboro** baz=68	**2.21**	**249**	Pb			**Pb**	**23 27 50.2**	**0.0**
X38A	baz=68			Sb			**Sg**	**23 28 20.4**	**-0.6**
V37A	**Hulbert** baz=99,SNR=14	**2.32**	**281**	P			**Pb**	**23 27 50.6**	**-1.6**
V37A	baz=99			S			**Sb**	**23 28 20.2**	**-0.9**
S39A	**Bolivar** baz=159,SNR=14	**2.34**	**340**	P			**Pb**	**23 27 51.2**	**-1.4**
OXF	**Oxford**	**2.58**	**111**	*e*Pn			**Pn**	**23 27 52.0**	**-0.2**
OXF				*e*Sn			**Sn**	**23 28 24.7**	**+0.9**
TUL1	**Leonard**	**2.85**	**280**	Pn			**Pn**	**23 27 55.4**	**-0.5**
TUL1				*e*Pg			**Pg**	**23 28 03.7**	**-1.0**
TUL1				*e*Sg			**Sg**	**23 28 40.8**	**-0.9**
LRAL	**Lakeview Retre**	**5.04**	**117**	*e*Pn			**Pn**	**23 28 26.0**	**-0.1**

*CSEM **09** 23:38:37.4±0.3, 67.81N×20.27E, h0km±1km, ML1.3, Error ellipse: s-maj=5.7km s-min=5.1km az=170.0, Mining explosion.*
*HEL **09** 23:38:38.5±0.1, 67.83N×20.20E, h0km, ML1.6, ML1.3(UPP), Explosion*

UPP 09 23:38:37.7, 67.82N×20.20E, h0km, ML1.3, Mining explosion., Sweden

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
NIKU	**Nikkaluokta**	**0.44**	**277**	*i* P			Pg	23 38 46.2	0.0
NIKU				*i* S			Sg	23 38 52.5	+0.6
NIKU	**Nikkaluokta**	**0.44**	**277**	P			Pg	23 38 46.2	0.0
NIKU				S			Sg	23 38 52.5	+0.6
LANU	**Lannavaara**	**0.71**	**70**	*e*P			Pg	23 38 48.5	-2.8
LANU				*e*S			Sg	23 39 01.9	+1.3
LANU	**Lannavaara**	**0.71**	**70**	Pg			Pg	23 38 48.5	-2.9
LANU	**Lannavaara**	**0.71**	**70**	P			Pg	23 38 51.2	-0.2
LANU				Sb			Sg	23 39 01.8	+1.2
DUNU	**Dundret**	**0.72**	**168**	*i* P			Pg	23 38 51.1	-0.2
DUNU				*i* S			Sg	23 39 01.0	+0.3
DUNU	**Dundret**	**0.72**	**168**	P			Pg	23 38 51.1	-0.3
DUNU				S			Sg	23 39 01.0	+0.4
MASU	**Masugnsbyn**	**0.78**	**117**	*i* P			Pg	23 38 52.5	-0.1
MASU				*i* S			Sg	23 39 03.3	+0.6
MASU	**Masugnsbyn**	**0.78**	**117**	P			Pg	23 38 52.5	-0.1
MASU				S			Sg	23 39 03.3	+0.6
SALU	**Saltoluokta**	**0.79**	**237**	*i* P			Pg	23 38 52.6	-0.1
SALU	**Saltoluokta**	**0.79**	**237**	P			Pg	23 38 52.6	-0.1
KIF	**Kilpisjarvi**	**1.21**	**10**	*e*P			Pg	23 39 00.9	0.0
KIF				*e*SB			Sb	23 39 17.6	+0.1
KIF	**Kilpisjarvi**	**1.21**	**10**	Pg			Pg	23 39 00.8	-0.1
KIF				Sg			Sb	23 39 17.6	0.0
PAJU	**Pajala**	**1.38**	**124**	*e*P			Pg	23 39 02.9	-1.2
PAJU				*e*S			Sg	23 39 21.1	-0.8
PAJU	**Pajala**	**1.38**	**124**	P			Pg	23 39 02.9	-1.2
PAJU				S			Sg	23 39 21.1	-0.9
HEF	**Hetta** baz=246	**1.43**	**64**	*e*P			Pn	23 39 03.9	-0.9
HEF				MSG				23 39 21.6	
	comp=Z,4.5nm,0.2s								
HEF				*e*SN			Sn	23 39 24.9	+0.7
HEF	**Hetta**	**1.43**	**64**	Pg			Pn	23 39 03.9	-0.9
HEF				Sn			Sn	23 39 24.9	+0.7
ERTU	**Ertsjaerv** baz=327	**1.49**	**148**	*e*P			Pn	23 39 05.0	-0.6
ERTU				*e*SN			Sn	23 39 26.2	+0.4
ERTU	**Ertsjaerv**	**1.49**	**148**	P			Pn	23 39 04.9	-0.8
ERTU				Sn			Sn	23 39 26.2	+0.4
HARU	**Harads**	**1.69**	**169**	*e*P			Pn	23 39 08.8	+0.4
HARU	**Harads**	**1.69**	**169**	P			Pn	23 39 08.8	+0.4
TOF	**Tornio**	**2.39**	**135**	*e*PB			Pb	23 39 19.9	-1.6
TOF				*e*SG			Sb	23 39 51.5	+0.1
TOF	**Tornio**	**2.39**	**135**	Pg			Pb	23 39 19.8	-1.6
TOF				Sg			Sb	23 39 51.4	+0.1
SGF	**Sodankyl**	**2.45**	**96**	*e*PG			Pb	23 39 22.6	+0.1
SGF				*e*SG			Sg	23 39 55.9	-0.4
SGF	**Sodankyl**	**2.45**	**96**	Pg			Pb	23 39 22.6	+0.1
SGF				Sg			Sg	23 39 55.9	-0.4
RNF	**Rovaniemi**	**2.57**	**116**	*e*PB			Pn	23 39 22.3	+1.8
RNF				*e*SB			Sb	23 39 56.0	-0.6
RNF	**Rovaniemi**	**2.57**	**116**	Pb			Pn	23 39 22.3	+1.8
RNF				Sg			Sb	23 39 56.0	-0.6
ARE0	**ARCESS Array S**	**2.59**	**46**	*e*SB			Sb	23 39 55.7	-1.7
ARE0	**ARCESS Array S**	**2.59**	**46**	Sb			Sb	23 39 55.7	-1.7
KEV	**Kevo**	**3.15**	**49**	*e*P			Pn	23 39 29.8	+1.4
KEV				MSG				23 40 11.1	
	comp=Z,1.9nm,0.2s								
KEV				*e*SG			Sb	23 40 14.6	+1.3
KEV	**Kevo**	**3.15**	**49**	Pn			Pn	23 39 29.8	+1.4
KEV				Sg			Sb	23 40 14.5	+1.3
OUFX	**Oulainen**	**3.92**	**150**	*e*PB			Pb	23 39 46.2	-1.4
OUFX	**Oulainen**	**3.92**	**150**	Pb			Pb	23 39 46.2	-1.4
UMAU	**Umeaa**	**3.96**	**177**	*e*SB			Sb	23 40 32.3	-4.3
UMAU	**Umeaa**	**3.96**	**177**	Sb			Sb	23 40 32.3	-4.3
KU6	**Riekki**	**4.22**	**111**	*e*PG			Pg	23 39 56.3	-2.1
KU6	**Riekki**	**4.22**	**111**	Pg			Pg	23 39 56.3	-2.1

*CSEM **09** 23:38:40.0±0.8, 67.75N×20.30E, h1km, ML1.6, Error ellipse: s-maj=21.3km s-min=12.4km az=8.0, Mining explosion.*

UPP 09 23:38:40.5±0.1, 67.84N×20.20E, h0km, ML1.6, Explosion, Sweden

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
NIKU	**Nikkaluokta**	**0.44**	**274**	P			Pg	23 38 49.0	0.0
NIKU				S			Sg	23 38 55.0	+0.3
NIKU	**Nikkaluokta**	**0.44**	**274**	P			Pg	23 38 49.0	0.0
NIKU				S			Sg	23 38 55.0	+0.3
LANU	**Lannavaara**	**0.71**	**72**	P			Pg	23 38 53.8	-0.2
LANU				S			Sg	23 39 04.3	+1.1
LANU	**Lannavaara**	**0.71**	**72**	P			Pg	23 38 53.8	-0.2
LANU				S			Sg	23 39 04.3	+1.1
MASU	**Masugnsbyn**	**0.79**	**118**	P			Pg	23 38 55.3	-0.3
MASU	**Masugnsbyn**	**0.79**	**118**	P			Pg	23 38 55.3	-0.2
SALU	**Saltoluokta**	**0.80**	**236**	P			Pg	23 38 55.5	-0.2
SALU	**Saltoluokta**	**0.80**	**236**	P			Pg	23 38 55.5	-0.2
PAJU	**Pajala**	**1.39**	**125**	P			Pg	23 39 05.8	-1.3
PAJU	**Pajala**	**1.39**	**125**	P			Pg	23 39 05.8	-1.3
ERTU	**Ertsjaerv**	**1.50**	**148**	P			Pn	23 39 08.3	-0.4
ERTU	**Ertsjaerv**	**1.50**	**148**	P			Pn	23 39 08.3	-0.4
HARU	**Harads**	**1.71**	**169**	P			Pn	23 39 11.4	-0.1
HARU	**Harads**	**1.71**	**169**	P			Pn	23 39 11.4	-0.1

IDC 09 23:38:42.9±3.5, 2.20S×134.49E, h0km, mb3.3/2, mb1 3.7/3, mb1mx3.4/34, mbtmp3.4/3, ML3.5/1, MS3.6/1, Ms1 3.6/1, ms1mx2.5/18, Error ellipse: s-maj=161.1km s-min=30.9km az=77.0, Irian Jaya region

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr** 0.2nm,0.3s,baz=359,slow=12,SNR=3.4	**17.64**	**180**	P			Pn	23 42 50.5	+0.2
ASAR	**Alice Springs** 1.7nm,0.8s,baz=6.2,slow=12,SNR=12	**21.35**	**181**	P			P	23 43 31.8	-0.1
LEM	**Lembang** comp=Z,135nm,19.7s,baz=222,slow=39	**27.17**	**259**	LR			LR	23 56 32.1	
MKAR	**Makanchi Array** 0.1nm,0.4s,baz=103,slow=7.7,SNR=2.4	**66.85**	**324**	P			P	23 49 36.9	+0.1

*ISCJB **09** 23:42:21.5±0.9, 36.30N±0.04×141.01E±0.07, h32km±5km, mb3.2/2, MS3.7/1, Error ellipse: s-maj=9.0km s-min=6.0km az=13.5*
*JMA **09** 23:42:22.2±0.1, 36.28N×140.92E, h46km±1km, M2.8*
*IDC **09** 23:42:25.0±2.6, 37.28N×140.43E, h0km, mb3.2/2, mb1 3.4/2, mb1mx3.0/48, mbtmp3.2/2, MS3.8/1, Ms1 3.8/1, ms1mx2.5/17, Error ellipse: s-maj=44.6km s-min=39.5km az=2.0*

ISC 09 23:42:20.6±1.5, 36.31N±0.04×140.86E±0.05, h15km±10km, n13, σ0§70/21, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
JHO	**Hitachi**	**0.38**	**322**	P			**Pn**	**23 42 32.1**	**+0.5**
JHO				*e*S			**Sn**	**23 42 38.9**	**+0.3**
JYT	**Yasato**	**0.54**	**261**	P			**Pn**	**23 42 34.4**	**+0.7**
JYT				S			**Sn**	**23 42 42.8**	**+0.3**
CHOJ	**Chosi**	**0.61**	**180**	P			**Pn**	**23 42 34.1**	**-0.5**
CHOJ				S			**Sb**	**23 42 42.1**	**+0.9**
ONAJ	**Iwakimizuishiy**	**0.79**	**357**	P			**Pn**	**23 42 37.0**	**-0.3**
ONAJ				S			**Sg**	**23 42 47.1**	**+0.6**
JFK	**Kawauchi**	**1.05**	**1**	P			**Pb**	**23 42 40.3**	**-0.3**
JFK				S			**Sb**	**23 42 53.1**	**-1.1**
JAG	**Ashikaga**	**1.14**	**276**	P			**Pg**	**23 42 43.0**	**+0.4**
JAG				S			**Sg**	**23 42 57.8**	**+0.3**
JFT	**Otama**	**1.28**	**341**	P			**Pg**	**23 42 45.4**	**+0.2**
JFT				S			**Sn**	**23 43 01.6**	**+0.9**
JKT	**Katashina**	**1.37**	**290**	P			**Pg**	**23 42 47.1**	**0.0**
JKT				S			**Sg**	**23 43 04.9**	**-0.1**
MJAR	**Matsushiro Arr** 2.1nm,0.3s,baz=114,slow=8.6,SNR=17	**2.15**	**277**	Pn			**Pb**	**23 42 58.0**	**-1.2**
MJAR	1.4nm,0.3s,baz=165,slow=36,SNR=2.7			Sn			**Sb**	**23 43 26.1**	**+0.4**
MAT	**Matsushiro**	**2.15**	**277**	P			**Pb**	**23 42 58.1**	**-1.1**
MAT				S			**Sb**	**23 43 24.9**	**-0.8**
SIJI	**Sorong** comp=Z,142nm,21.5s,baz=184,slow=33	**38.05**	**196**	LR			LR	00 03 52.6	
MKAR	**Makanchi Array** 0.3nm,0.7s,baz=88,slow=8.8,SNR=3.0	**44.13**	**303**	P			**P**	**23 50 28.5**	**+0.2**
WRA	**Warramunga Arr** 0.1nm,0.4s,baz=4.8,slow=7.4,SNR=2.5	**56.28**	**187**	P			P	23 52 14.0	+13

*KRSC **09** 23:44:08.5±1.4, 53.31N×160.72E, h41km±16km, ML3.9*
*ISCJB **09** 23:44:10.5±0.6, 53.31N±0.04×160.64E±0.07, h47km, mb3.5/3, Error ellipse: s-maj=7.9km s-min=2.6km az=39.4*
*IDC **09** 23:44:14.0±5.7, 53.50N×160.29E, h84km±36km, mb3.1/3, mb1 3.3/3, mb1mx2.9/49, mbtmp3.4/3, Error ellipse: s-maj=58.2km s-min=36.0km az=113.0*

ISC 09 23:44:10.9±1.1, 53.32N±0.05×160.65E±0.05, h47km, n37, σ1§47/50, mb3.4/3, Near east coast of Kamchatka Peninsula

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
SPN	**Mys Shipunski**	**0.44**	**240**	*e*P			**Pn**	**23 44 20.5**	**-0.7**
SPN				*e*S			**Sn**	**23 44 27.5**	**-1.0**
NLC	**Nalytchevo**	**0.80**	**260**	*e*P			**Pn**	**23 44 24.9**	**-0.9**
NLC				*e*S			**Sn**	**23 44 35.7**	**-1.0**
KII	**Karymskiy**	**1.02**	**316**	*e*P			**Pn**	**23 44 27.1**	**-1.7**
KII				*e*S			**Sn**	**23 44 39.3**	**-2.7**
SDLR	**Sedlovina**	**1.06**	**269**	*e*P			**Pn**	**23 44 28.6**	**-0.9**
UGLR	**Uglovaya**	**1.10**	**265**	*e*P			**Pn**	**23 44 29.5**	**-0.6**
SMAR	**Somma**	**1.11**	**268**	*e*P			**Pn**	**23 44 29.3**	**-1.0**
AVH	**Avacha**	**1.15**	**268**	*e*P			**Pn**	**23 44 30.1**	**-0.6**
DALK	**Dalny**	**1.18**	**257**	*e*P			**Pn**	**23 44 30.2**	**-0.7**
DALK				*e*S			**Sn**	**23 44 44.8**	**-1.0**
KRX	**Arik**	**1.20**	**273**	*e*P			**Pn**	**23 44 30.4**	**-1.0**
KRX				*e*S			**Sn**	**23 44 45.8**	**-0.9**
PET	**Petropavlovsk**	**1.24**	**257**	*e*P			**Pn**	**23 44 31.1**	**-0.7**
PET				*e*S			**Sn**	**23 44 46.3**	**-1.0**
MKZ	**Mys Kozlova**	**1.40**	**27**	*e*P			**Pn**	**23 44 32.5**	**-1.4**
MKZ				*e*S			**Sn**	**23 44 48.6**	**-2.5**
RUS	**Russkaya**	**1.57**	**237**	*e*P			**Pn**	**23 44 35.7**	**-0.6**
RUS				*e*S			**Sn**	**23 44 57.1**	**+1.7**
KRMR	**Karymshinskiy**	**1.60**	**253**	*e*P			**Pn**	**23 44 36.5**	**-0.2**
KRMR				*e*S			**Sn**	**23 44 56.4**	**+0.3**
GNL	**Ganaly**	**1.66**	**284**	*e*P			**Pn**	**23 44 37.4**	**-0.3**
GNL				*e*S			**Sn**	**23 45 00.9**	**+3.0**
MTVR	**Mutnovka**	**1.71**	**242**	*e*P			**Pn**	**23 44 38.4**	**0.0**
MTVR				*e*S			**Sn**	**23 44 59.9**	**+0.7**
PETK	**Petropavlovsk-** 22nm,0.3s,baz=75,slow=10,SNR=3.3	**1.79**	**264**	P			**Pn**	**23 44 39.2**	**-0.1**
PETK	12nm,0.3s,baz=106,slow=20,SNR=6.5			S			**Sn**	**23 45 01.4**	**+0.5**
KZV	**Kizimen**	**1.81**	**353**	*e*P			**Pn**	**23 44 39.5**	**-0.3**
KZV				*e*S			**Sn**	**23 45 00.3**	**-1.3**
ASAK	**Asacha**	**1.91**	**242**	*e*P			**Pn**	**23 44 41.7**	**+0.6**
ASAK				*e*S			**Sn**	**23 45 05.9**	**+1.9**
TUMR	**Tumrok**	**1.99**	**352**	*e*P			**Pn**	**23 44 42.2**	**0.0**
TUMR				*e*S			**Sn**	**23 45 05.9**	**-0.1**
APC	**Apacha**	**2.14**	**261**	*e*P			**Pn**	**23 44 44.9**	**+0.8**
APC				*e*S			**Sn**	**23 45 11.9**	**+2.4**
KMNR	**Kamenistaya**	**2.46**	**355**	*e*P			**Pn**	**23 44 49.6**	**+1.0**
BZMR	**Bezymyannaya**	**2.62**	**358**	*e*P			Pn	23 44 52.5	+1.6
KPT	**Kopyto**	**2.67**	**355**	*e*P			Pn	23 44 53.6	+2.2
ZLN	**Zelenaya**	**2.71**	**2**	*e*P			Pn	23 44 53.7	+1.7
ZLN				*e*S			**Sn**	**23 45 26.0**	**+2.5**
LGNR	**Loginova**	**2.77**	**0**	*e*P			Pn	23 44 55.4	+2.4
LGNR				*e*S			**Sn**	**23 45 29.2**	**+3.8**
CIRR	**Tsirk**	**2.81**	**1**	*e*P			**Pn**	**23 44 54.8**	**+1.4**
CIRR				*e*S			**Sn**	**23 45 28.8**	**+2.8**
ESO	**Esso**	**2.85**	**337**	*e*P			**Pn**	**23 44 53.6**	**-0.3**
KRSR	**Krestovskiy**	**2.91**	**359**	*e*P			Pn	23 44 56.8	+2.1
PAU	**Pauzhetka**	**3.00**	**233**	*e*P			**Pn**	**23 44 57.5**	**+1.7**
KLY	**Klyuchi**	**3.00**	**360**	*e*S			**Sn**	**23 45 31.0**	**+0.4**
KBTR	**Krutoberegovo**	**3.16**	**23**	*e*P			**Pn**	**23 44 58.4**	**+0.3**
KBTR				*e*S			**Sn**	**23 45 37.2**	**+2.8**
SMKR	**Semkarok**	**3.31**	**8**	*e*P			**Pn**	**23 45 01.1**	**+0.9**
SRKR	**Sorokina**	**3.36**	**5**	*e*P			Pn	23 45 02.6	+1.7
BKI	**Bering**	**3.65**	**57**	*e*S			**Sn**	**23 45 44.9**	**-1.6**
MJAR	**Matsushiro Arr** 1.0nm,0.6s,baz=26,slow=11,SNR=4.2	**22.95**	**232**	P			**P**	**23 49 11.0**	**0.0**
MKAR	**Makanchi Array** 0.1nm,0.4s,baz=56,slow=8.0,SNR=2.7	**48.36**	**296**	P			P	23 52 42.8	-4.9
FINES	**FINESS Array B** 1.0nm,0.9s,baz=24,slow=6.9,SNR=4.4	**60.05**	**337**	P			**P**	**23 54 11.4**	**-0.9**

*IDC **09** 23:54:01.2±3.1, 9.72S×108.13E, h0km, mb3.8/5, mb1 3.9/5, mb1mx3.6/48, mbtmp3.8/5, Error ellipse: s-maj=142.9km s-min=21.2km az=53.0*
*NEIC **09** 23:54:05.5±0.8, 9.98S×107.91E, h35km, mb4.2/2, Error ellipse: s-maj=20.7km s-min=9.9km az=57.0*
*DJA **09** 23:54:11.9±0.8, 10°S±5′×10°8E±°, h10km, M4.4/7, mb4.6/2, MLv4.3/7*

ISC 09 23:54:03.8±1.0, 9.90S±0.07×107.87E±0.10, h22km, n20, σ1§26/24, mb3.9/7, South of Jawa

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
CMJI	**Cimerak**	**2.18**	**15**	P			**Pb**	**23 54 41.9**	**-0.7**
CMJI				S			**Sn**	**23 55 05.7**	**+0.6**
CISI	**Cisompet, Garu**	**2.33**	**359**	P			**Pb**	**23 54 46.4**	**+1.2**
CISI				S			**Sb**	**23 55 13.3**	**-0.3**
CISI	**Cisompet, Garu**	**2.33**	**359**	Pn			**Pb**	**23 54 42.9**	**-2.3**
CNJI	**Cibinong**	**2.68**	**344**	P			**Pn**	**23 54 43.6**	**-2.0**
CNJI				S			**Sb**	**23 55 25.6**	**+2.1**
KPJI	**Karang Pucung**	**2.76**	**23**	P			**Pn**	**23 54 47.6**	**+0.9**
KPJI				S			**Sn**	**23 55 17.9**	**-1.5**
LEM	**Lembang** 8.1nm,0.3s,baz=182,slow=6.1,SNR=6.7	**3.06**	**355**	Pn			**Pb**	**23 54 56.4**	**-1.4**
LEM	7.1nm,0.3s,baz=179,slow=22,SNR=3.8			Sn			**Sb**	**23 55 34.2**	**-0.6**
LEM	**Lembang**	**3.06**	**355**	P			**Pb**	**23 54 57.3**	**-0.5**
DBJI	**Dramaga**	**3.50**	**342**	P			Pb	23 55 08.2	+3.0
PWJI	**Pagerwojo**	**4.32**	**65**	P			**Pn**	**23 55 07.7**	**-0.4**
JAGI	**Jajag, Banyuwa** 47nm,0.7s	**6.37**	**78**	P			**Pn**	**23 55 35.2**	**-1.2**
JAGI	**Jajag, Banyuwa** 27nm,0.6s	**6.37**	**78**	*e*Pn			**Pn**	**23 55 36.2**	**-0.1**
KSM	**Kuching**	**11.56**	**12**	*e*Pn			**Pn**	**23 56 49.9**	**+2.2**
WRA	**Warramunga Arr** 1.1nm,0.8s,baz=283,slow=11,SNR=5.6	**27.42**	**114**	P			**P**	**23 59 46.8**	**-1.4**
ASAR	**Alice Springs** 0.9nm,0.7s,baz=302,slow=9.7,SNR=9.7	**28.37**	**122**	P			**P**	**23 59 57.3**	**+0.6**
STKA	**Stephens Creek** 1.5nm,0.6s,baz=312,slow=3.9,SNR=4.4	**38.10**	**130**	P			**P**	**00 01 20.6**	**-0.7**
LSA	**Lhasa** 3.5nm,0.7s	**42.54**	**338**	*e*P			**P**	**00 01 59.7**	**+1.2**
SONM	**Songino Array** 0.9nm,0.8s,baz=165,slow=7.1,SNR=7.3	**57.49**	**359**	P			**P**	**00 03 50.9**	**-0.4**
ULN	**Ulaanbaatar** 1.1nm,0.6s	**57.51**	**359**	*e*P			**P**	**00 03 50.9**	**-0.6**
MKAR	**Makanchi Array** 0.3nm,0.6s,baz=122,slow=7.1,SNR=3.5	**60.89**	**340**	P			**P**	**00 04 15.0**	**+0.2**
TXAR	**Lajitas Array** 0.5nm,0.7s,baz=289,slow=3.8,SNR=5.4	**144.74**	**52**	PKP			**PKPdf**	**00 13 40.1**	**+0.4**

*ISK **09** 23:54:45.4, 37.90N×27.32E, h5km, MD3.2*
*ATH **09** 23:54:45.7, 37.86N×27.21E, h23km±1km, ML2.9/6, Error ellipse: s-maj=3.5km s-min=1.2km az=245.0*
*THE **09** 23:54:45.4, 37.86N×27.26E, h0km, ML2.9/10, Error ellipse: s-maj=0.8km s-min=0.4km az=90.0*
*DDA **09** 23:54:45.1, 37.85N×27.31E, h11km, Ml3.2*
*CSEM **09** 23:54:46.3±0.1, 37.86N×27.26E, h10km, ML3.2, Error ellipse: s-maj=4.1km s-min=3.3km az=79.0*

ISC 09 23:54:45.2±1.0, 37.88N±0.01×27.29E±0.01, h6km±9km, n140, σ1§01/187, Turkey

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
GCAM	**G?zelcaml?**	**0.18**	**194**	*i* P			**Pg**	**23 54 48.8**	**+0.1**
GCAM	**G?zelcaml?**	**0.18**	**194**	P			**Pg**	**23 54 48.8**	**+0.1**
SMG	**Samos**	**0.40**	**245**	P			**Pg**	**23 54 53.0**	**+0.2**
SMG				S			**Sg**	**23 54 59.3**	**+1.3**
SMG	**Samos**	**0.40**	**245**	P			**Pg**	**23 54 53.0**	**+0.2**
SMG				S			**Sg**	**23 54 57.6**	**-0.4**
SMG	**Samos**	**0.40**	**245**	P			**Pg**	**23 54 53.2**	**+0.4**
SMG				S			**Sg**	**23 54 57.6**	**-0.4**
SMG	comp=N,4172μm,0.2s			AML			AML	23 55 00.5	
SMG	comp=E,4263μm,0.3s			AML			AML	23 55 09.4	
AYDB	**Zeytinkoy-Aydi**	**0.48**	**81**	PG			**Pg**	**23 54 54.9**	**+0.4**
AYDB	**Zeytinkoy-Aydi**	**0.48**	**81**	*i* Pg			**Pg**	**23 54 54.9**	**+0.4**
AYDN	**Tasoluk**	**0.51**	**114**	*i* P			**Pg**	**23 54 55.5**	**+0.4**
AYDN				*i* S			**Sg**	**23 55 01.6**	**-0.2**
AYDN	**Tasoluk**	**0.51**	**114**	P			**Pg**	**23 54 55.5**	**+0.4**
AYDN				S			**Sg**	**23 55 01.6**	**-0.2**
IZMI	**Izmir**	**0.52**	**358**	*e*PG			**Pg**	**23 54 55.9**	**+0.6**
IZM	**Izmir**	**0.52**	**358**	*e*Pg			**Pg**	**23 54 55.9**	**+0.6**
BLCB	**Balcova**	**0.55**	**339**	*e*PG			**Pb**	**23 54 56.8**	**-0.3**
BLCB	**Balcova**	**0.55**	**339**	*e*Pg			**Pb**	**23 54 56.8**	**-0.3**
URLA	**Izmir**	**0.73**	**312**	*i* P			**Pg**	**23 54 59.7**	**+0.5**
URLA	**Izmir**	**

DENT	**Denizli**	**1.39**	**94**	*e*Pn	**Pg**	**23 55 13.3**	**+1.6**
TURN	**Turunc**	**1.45**	**133**	*i* P	**Pn**	**23 55 09.3**	**-2.5**
UZP	**Denizli**	**1.50**	**83**	*i* P	**Pn**	**23 55 12.5**	**-0.2**
AYVA	**Ayvalik**	**1.51**	**342**	*i* P	**Pg**	**23 55 14.3**	**+0.3**
AYVA	**Ayvalik**	**1.51**	**342**	P	**Pg**	**23 55 14.3**	**+0.3**
DALY	**Dalyan (Mu¨la**	**1.52**	**134**	*e*PN	**Pg**	**23 55 14.8**	**+0.6**
DALY	**Dalyan (Mu¨la**	**1.52**	**134**	*e*Pn	**Pg**	**23 55 14.8**	**+0.6**
PRK	**Paraskevi**	**1.58**	**330**	P	**Pn**	**23 55 13.5**	**-0.3**
PRK				S	**Sg**	**23 55 35.9**	**-0.2**
PRK	**Paraskevi**	**1.58**	**330**	P	**Pn**	**23 55 13.5**	**-0.3**
PRK				S	**Sn**	**23 55 33.9**	**-0.7**
PRK	**Paraskevi**	**1.58**	**330**	P	**Pg**	**23 55 15.3**	**-0.2**
PRK				S	**Sn**	**23 55 33.9**	**-0.7**
PRK				AML	AML	23 55 39.8	
	comp=E,966µm,0.4s						
PRK				AML	AML	23 55 43.2	
	comp=N,931µm,0.5s						
APE	**Apeiranthos**	**1.61**	**241**	*e*PN	**Pg**	**23 55 16.6**	**+0.5**
APE				*e*SN	**Sg**	**23 55 40.0**	**+3.0**
APE	**Apeiranthos**	**1.61**	**241**	P	**Pn**	**23 55 14.1**	**-0.1**
APE				S	**Sn**	**23 55 35.2**	**-0.2**
APE	**Apeiranthos**	**1.61**	**241**	P	**Pn**	**23 55 14.1**	**-0.1**
APE	**Apeiranthos**	**1.61**	**241**	*e*Pn	**Pg**	**23 55 16.6**	**+0.5**
APE				S	**Sn**	**23 55 35.2**	**-0.2**
APE				*e*Sn	**Sg**	**23 55 40.0**	**+3.0**
APE	**Apeiranthos**	**1.61**	**241**	P	**Pg**	**23 55 16.0**	**-0.1**
APE				S	**Sn**	**23 55 32.4**	**-3.0**
APE				AML	AML	23 55 47.0	
	comp=E,303µm,0.4s						
APE				AML	AML	23 55 47.4	
	comp=N,256µm,0.5s						
DEMI	**Demirci**	**1.62**	**43**	*i* P	**Pg**	**23 55 16.1**	**-0.1**
DEMI	**Demirci**	**1.62**	**43**	P	**Pg**	**23 55 16.1**	**-0.1**
SIGR	**SIGRI**	**1.75**	**320**	*e*PN	**Pg**	**23 55 18.5**	**-0.1**
SIGR	**SIGRI**	**1.75**	**320**	P	**Pn**	**23 55 15.5**	**-0.5**
SIGR				S	**Sb**	**23 55 39.1**	**-0.6**
SIGR	**SIGRI**	**1.75**	**320**	P	**Pn**	**23 55 15.5**	**-0.5**
SIGR	**SIGRI**	**1.75**	**320**	*e*Pn	**Pg**	**23 55 18.5**	**-0.1**
SIGR				S	**Sb**	**23 55 39.1**	**-0.6**
SIGR	**SIGRI**	**1.75**	**320**	P	**Pg**	**23 55 18.8**	**+0.2**
SIGR				S	**Sb**	**23 55 39.6**	**-0.1**
SIGR				AML	AML	23 55 45.7	
	comp=E,353µm,0.5s						
SIGR				AML	AML	23 55 50.6	
	comp=N,424µm,0.5s						
ARG	**Arkhangelos**	**1.79**	**158**	P	**Pn**	**23 55 16.6**	**+0.1**
ARG				S	**Sb**	**23 55 40.5**	**-0.4**
ARG	**Arkhangelos**	**1.79**	**158**	P	**Pn**	**23 55 16.6**	**+0.1**
ARG				S	**Sb**	**23 55 40.5**	**-0.4**
KHAL	**Karahalli**	**1.81**	**73**	*i* P	**Pn**	**23 55 17.6**	**+0.7**
KHAL	**Karahalli**	**1.81**	**73**	P	**Pn**	**23 55 17.6**	**+0.7**
KHL	**Karahalli**	**1.82**	**75**	*e*PN	**Pb**	**23 55 18.8**	**-0.1**
KHL	**Karahalli**	**1.82**	**75**	*e*Pn	**Pb**	**23 55 18.8**	**-0.1**
BALB	**Balikesir**	**1.82**	**15**	*e*PN	**Pg**	**23 55 19.6**	**-0.5**
BALB	**Balikesir**	**1.82**	**15**	*e*Pn	**Pg**	**23 55 19.6**	**-0.5**
BALY	**Balya**	**1.88**	**8**	*i* P	**Pn**	**23 55 18.4**	**+0.5**
BALY	**Balya**	**1.88**	**8**	P	**Pn**	**23 55 18.4**	**+0.5**
FETY	**Fethiye**	**1.89**	**130**	*e*PN	**Pb**	**23 55 20.1**	**0.0**
FETY	**Fethiye**	**1.89**	**130**	*e*Pn	**Pb**	**23 55 20.1**	**0.0**
DURS	**Dursunbey**	**1.96**	**28**	*i* P	**Pn**	**23 55 19.1**	**+0.1**
DURS				*i* S	**Sg**	**23 55 48.6**	**+0.5**
DURS	**Dursunbey**	**1.96**	**28**	P	**Pn**	**23 55 19.1**	**+0.1**
DST	**Dursunbey**	**2.02**	**31**	*e*PN	**Pb**	**23 55 21.4**	**-0.9**
DST	**Dursunbey**	**2.02**	**31**	*e*Pn	**Pb**	**23 55 21.4**	**-0.9**
CMBO	**Columbo, Santo**	**2.06**	**228**	P	**Pn**	**23 55 18.7**	**-1.5**
CMBO	**Columbo, Santo**	**2.06**	**228**	P	**Pn**	**23 55 18.7**	**-1.5**
EZN	**Ezine**	**2.09**	**339**	*e*PN	**Pb**	**23 55 23.0**	**-0.4**
EZN	**Ezine**	**2.09**	**339**	P	**Pn**	**23 55 20.6**	**-0.1**
EZN				S	**Sb**	**23 55 48.5**	**-1.1**
EZN	**Ezine**	**2.09**	**339**	P	**Pn**	**23 55 20.6**	**-0.1**
EZN	**Ezine**	**2.09**	**339**	*e*Pn	**Pb**	**23 55 23.0**	**-0.4**
EZN				S	**Sb**	**23 55 48.5**	**-1.1**
SANT	**Santorini**	**2.10**	**225**	P	**Pb**	**23 55 23.1**	**-0.5**
SANT	**Santorini**	**2.10**	**225**	P	**Pb**	**23 55 23.1**	**-0.5**
GDZ	**Gediz**	**2.10**	**54**	*i* P	**Pb**	**23 55 23.8**	**0.0**
GDZ	**Gediz**	**2.10**	**54**	P	**Pb**	**23 55 23.8**	**0.0**
BOZC	**Bozcaada**	**2.19**	**334**	*i* P	**Pb**	**23 55 26.1**	**+1.0**
TVSB	**Tavsanli**	**2.32**	**47**	*e*PN	**Pb**	**23 55 26.1**	**-1.3**
TVSB	**Tavsanli**	**2.32**	**47**	*e*Pn	**Pb**	**23 55 26.1**	**-1.3**
ELL	**Elmali**	**2.37**	**118**	*e*PN	**Pb**	**23 55 27.5**	**-0.8**
ELL	**Elmali**	**2.37**	**118**	*e*Pn	**Pb**	**23 55 27.5**	**-0.8**
ORLT	**Orhaneli**	**2.50**	**30**	*e*PN	**Pb**	**23 55 29.1**	**-1.5**
ORLT	**Orhaneli**	**2.50**	**30**	*e*Pn	**Pb**	**23 55 29.1**	**-1.5**
KSL	**Kastellorizon**	**2.52**	**132**	P	**Pb**	**23 55 29.5**	**-1.3**
GADA	**Gvkgeada**	**2.55**	**335**	P	**Pn**	**23 55 27.0**	**-0.1**
GADA				S	**Sn**	**23 55 59.2**	**+0.7**
GADA	**Gvkgeada**	**2.55**	**335**	P	**Pn**	**23 55 27.0**	**-0.1**
GADA				S	**Sn**	**23 55 59.2**	**+0.7**
MHLO	**Agia Marina, M**	**2.59**	**244**	P	**Pb**	**23 55 30.2**	**-1.8**
MHLO	**Agia Marina, M**	**2.59**	**244**	P	**Pb**	**23 55 30.2**	**-1.8**
LIA	**Limnos Island**	**2.60**	**322**	P	**Pn**	**23 55 27.8**	**0.0**
LIA				S	**Sn**	**23 56 01.7**	**+2.0**
LIA	**Limnos Island**	**2.60**	**322**	P	**Pn**	**23 55 27.8**	**0.0**
LIA				S	**Sn**	**23 56 01.7**	**+2.0**
SHUT	**Suhut-Afyon**	**2.66**	**74**	*e*PN	**Pb**	**23 55 30.9**	**-2.3**
SHUT	**Suhut-Afyon**	**2.66**	**74**	*e*Pn	**Pb**	**23 55 30.9**	**-2.3**
ULDT	**Uludag**	**2.68**	**32**	*i* P	**Pb**	**23 55 34.8**	**+1.1**
EREA	**Eretria**	**2.70**	**283**	P	**Pn**	**23 55 30.6**	**+1.4**
EREA	**Eretria**	**2.70**	**283**	P	**Pn**	**23 55 30.6**	**+1.4**
VLY	**Voula,Athens**	**2.77**	**271**	P	**Pn**	**23 55 30.1**	**+0.1**
VLY	**Voula,Athens**	**2.77**	**271**	P	**Pn**	**23 55 30.1**	**+0.1**
IGD	**Bursa**	**2.81**	**31**	*i* P	**Pb**	**23 55 36.9**	**+1.1**
ZKR	**Zakros**	**2.89**	**198**	P	**Pn**	**23 55 31.4**	**-0.3**
ZKR	**Zakros**	**2.89**	**198**	P	**Pn**	**23 55 32.2**	**+0.5**
ZKR	**Zakros**	**2.89**	**198**	P	**Pn**	**23 55 32.2**	**+0.5**
SMTH	**Samothraki Isl**	**2.93**	**333**	P	**Pn**	**23 55 32.2**	**-0.1**
SMTH				S	**Sn**	**23 56 08.4**	**+0.6**
SMTH	**Samothraki Isl**	**2.93**	**333**	P	**Pn**	**23 55 32.2**	**-0.1**
SMTH				S	**Sn**	**23 56 08.4**	**+0.6**
SMTH	**Samothraki Isl**	**2.93**	**333**	P	**Pn**	**23 55 31.6**	**-0.7**
NPS	**Neapolis**	**2.94**	**208**	P	**Pn**	**23 55 30.2**	**-2.2**
NPS	**Neapolis**	**2.94**	**208**	P	**Pn**	**23 55 30.2**	**-2.2**
KESN	**Edirne-Kesan**	**2.98**	**351**	*i* P	**Pn**	**23 55 33.6**	**+0.2**
KESN	**Edirne-Kesan**	**2.98**	**351**	P	**Pn**	**23 55 33.6**	**+0.2**
LAST	**Lasithi**	**3.08**	**209**	P	**Pn**	**23 55 32.6**	**-1.8**
LAST	**Lasithi**	**3.08**	**209**	P	**Pn**	**23 55 32.6**	**-1.8**
ALN	**Alexandroupoli**	**3.17**	**343**	P	**Pn**	**23 55 35.4**	**-0.1**
ALN				S	**Sn**	**23 56 14.2**	**+0.6**
ALN	**Alexandroupoli**	**3.17**	**343**	P	**Pn**	**23 55 35.4**	**-0.1**
ALN				S	**Sn**	**23 56 14.2**	**+0.6**
ALN	**Alexandroupoli**	**3.17**	**343**	P	**Pn**	**23 55 34.2**	**-1.3**
ALN				S	**Sn**	**23 56 14.2**	**+0.6**
BORA	**Eskisehir**	**3.18**	**50**	*i* P	**Pb**	**23 55 43.9**	**+1.8**
IDI	**Anoyia**	**3.22**	**218**	P	**Pn**	**23 55 39.0**	**+2.6**
IDI	**Anoyia**	**3.22**	**218**	P	**Pn**	**23 55 39.0**	**+2.6**
ESKT	**Eskisehir**	**3.23**	**58**	*i* P	**Pg**	**23 55 46.0**	**-1.1**
BUY	**Buyukada**	**3.29**	**25**	*i* P	**Pg**	**23 55 48.3**	**0.0**
KAVA	**Kavala**	**3.79**	**326**	P	**Pn**	**23 55 43.7**	**-0.4**
KAVA	**Kavala**	**3.79**	**326**	P	**Pn**	**23 55 43.7**	**-0.4**

NIED ***10*** *00:00:00,35˚50N×141˚80E,h20km,Mw4.3 Best double couple: M₀3.30000×10¹⁵ NP1:φ₁215.00000°,δ30.00000°, λ125.00000°. NP2:φ₂356.00000°,δ66.00000°,λ72.00000°.*
JMA ***10*** *00:00:50.6±0.3,35˚53N×141˚84E,h47km±3km,M3.9*
MOS ***10*** *00:00:51.4±1.0,35˚71N×141˚58E,h23km,mb4.6/17, Error ellipse: s-maj=9.3km s-min=6.5km az=113.1*
ISCJB ***10*** *00:00:52.1±0.2,35˚72N±0˚03×141˚59E±0˚03,h25km, mb4.5/69,MS3.8/14, Error ellipse: s-maj=4.7km s-min=3.4km az=145.1*
BJI ***10*** *00:00:53.6,35˚73N×141˚87E,h51km,mb4.5/37,mB4.9/25, Ms4.5/20,Ms7 4.3/19*
IDC ***10*** *00:00:53.9±3.0,35˚49N×141˚65E,h37km±25km,mb3.8/21, mb1 3.9/26,mb1mx3.8/60,mbtmp4.0/26,ML3.4/5,MS3.4/10, Ms1 3.4/10,ms1mx3.1/46, Error ellipse: s-maj=18.4km s-min=13.8km az=96.0*
NEIC ***10*** *00:00:56.8±0.5,35˚76N×141˚52E,h47km±5km,mb4.8/34, Error ellipse: s-maj=4.7km s-min=3.6km az=126.0*
ISC 10 00:00:54.1±0.4,35°71N±0°05×141°50E±0°04,h25km,n157, σ1♦47/163,**mb4.4**/69,**MS3.7**/14,**2C-2D,Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.52**	**270**	P	**Pn**	**00 01 05.8**	**-0.1**
BSO1	**Boso 1**	**1.14**	**202**	P	Pn	00 01 10.1	-3.8
BSO3	**Boso 3**	**1.22**	**222**	‖P	**Pn**	**00 01 13.3**	**-1.9**
JFK	**Kawauchi**	**1.73**	**343**	P	**Pn**	**00 01 22.0**	**-0.6**

JAG	**Ashikaga**	**1.81**	**294**	⇑P	**Pn**	**00 01 24.4**	**+0.8**
JIM2	**Oshima 3**	**1.96**	**240**	P	**Pn**	**00 01 23.8**	**-2.0**
JIM2				*e*S	**Sn**	**00 01 50.0**	**+0.4**
JOD2	**Odawara 2**	**2.02**	**258**	P	**Pn**	**00 01 26.2**	**-0.3**
JOD2				*e*S	**Sn**	**00 01 53.0**	**+2.0**
JKT	**Katashina**	**2.10**	**301**	P	**Pn**	**00 01 29.2**	**+1.4**
JRY	**Ryogami san**	**2.13**	**279**	P	**Pn**	**00 01 29.6**	**+1.5**
JMM	**Marumori**	**2.23**	**345**	P	**Pn**	**00 01 28.9**	**-0.5**
JYN	**Shimob**	**2.42**	**266**	P	**Pn**	**00 01 32.6**	**+0.5**
MJAR	**Matsushiro Arr**	**2.79**	**288**	Pn	**Pn**	**00 01 37.9**	**+0.8**
	8.4nm,0.3s,baz=344,slow=11,SNR=59						
MAJO	**Matsushiro**	**2.79**	**288**	*e*P	**Pn**	**00 01 39.0**	**+1.8**
MAJO	**Matsushiro**	**2.79**	**288**	*e*Pn	**Pn**	**00 01 39.0**	**+1.8**
MAT	**Matsushiro**	**2.79**	**288**	P	**Pn**	**00 01 37.8**	**+0.6**
MAT				S	Sb	00 02 26.3	+9.2
JHJ2	**Mitsune**	**2.94**	**209**	*e*Pn	**Pn**	**00 01 41.7**	**+2.6**
JHJ2				*e*Sn	**Sn**	**00 02 16.2**	**+2.5**
JHJ	**Hachijo jima 2**	**2.95**	**209**	Pn	Pn	00 01 34.9	-4.4
	38nm,0.3s,baz=249,slow=16,SNR=8.7						
JHJ				Sn	**Sn**	**00 02 08.9**	**-5.0**
	103nm,0.3s,baz=239,slow=23,SNR=12						
JHJ				LR	LR	00 02 37.8	
	comp=Z,119nm,21.8s,baz=8.5,slow=37						
INU	**Inuyama**	**3.67**	**266**	*e*Pn	**Pn**	**00 01 50.6**	**+1.3**
ERM	**Erimo**	**6.43**	**11**	*e*P	**Pn**	**00 02 28.3**	**+1.2**
ERM	**Erimo**	**6.43**	**11**	*e*Pn	**Pn**	**00 02 28.3**	**+1.2**
JNU	**Nakatsue**	**9.15**	**257**	Pn	**Pn**	**00 03 04.0**	**-0.4**
	0.3nm,0.3s,baz=84,slow=6.5,SNR=6.4						
JNU				LR	LR	00 06 38.8	
	comp=Z,144nm,18.7s,baz=340,slow=37						
JNU	**Nakatsue**	**9.15**	**257**	*e*Pn	**Pn**	**00 03 07.4**	**+2.9**
KUR	**Kuril'sk**	**10.67**	**25**	P	**Pn**	**00 03 26.8**	**+1.5**
KUR				S	Sn	00 05 15.6	-8.3
KUR				pmax	pmax		
	comp=E,10.0nm,0.8s						
KSRS	**Korea Array**	**11.06**	**283**	Pn	**Pn**	**00 03 32.2**	**+1.7**
	comp=Z,0.3nm,0.3s,baz=85,slow=2.2,SNR=1.7						
KSRS				LR	LR	00 08 04.7	
	comp=Z,238nm,19.0s,baz=54,slow=38						
KS15	**Wonju Array Si**	**11.09**	**283**	*e*Pn	**Pn**	**00 03 33.0**	**+2.1**
KSAR	**Wonju Array Be**	**11.09**	**283**	P	**Pn**	**00 03 32.2**	**+1.2**
KSAR	**Wonju Array Be**	**11.09**	**283**	Pn	**Pn**	**00 03 32.2**	**+1.2**
USRK	**Ussuriysk Ar.**	**11.18**	**322**	Pn	Pn	00 03 35.3	+3.1
	comp=Z,0.4nm,0.3s,baz=130,slow=14,SNR=9.1						
USRK				LR	LR	00 07 56.8	
	comp=Z,230nm,19.1s,baz=125,slow=37						
YSS	**Yuzh-Sakhalins**	**11.27**	**4**	*e*P	**Pn**	**00 03 32.5**	**-1.0**
YSS	**Yuzh-Sakhalins**	**11.27**	**4**	*e*Pn	**Pn**	**00 03 32.5**	**-1.0**
MDJ	**Mudanjiang**	**12.72**	**318**	*e*Pn	**Pn**	**00 03 54.6**	**+1.3**
JOW	**Kunigami**	**14.35**	**236**	*e*Pn	**Pn**	**00 04 18.0**	**+2.4**
CN2	**Changchun**	**14.74**	**308**	*e*P	**Pn**	**00 04 22.4**	**+1.6**
CN2				pmax	pmax		
	comp=Z,10.0nm,0.7s						
KLR	**Kul'dur**	**15.29**	**335**	*e*P	**Pn**	**00 04 23.5**	**-4.6**
NJ2	**Nanjing**	**19.15**	**266**	*e*P	**Pn**	**00 05 16.3**	**-0.1**
NJ2				pmax	pmax		
	comp=Z,11nm,0.6s						
PEA0	**Petropavlovsk-**	**20.81**	**28**	*e*P	**P**	**00 05 34.1**	**+0.7**
PET	**Petropavlovsk**	**21.12**	**30**	*e*P	**P**	**00 05 37.4**	**+0.7**
PET				pmax	pmax		
	comp=Z,183nm,1.5s						
PET	**Petropavlovsk**	**21.12**	**30**	*e*P	**P**	**00 05 37.4**	**+0.7**
	comp=Z,182nm,1.5s						
HHC	**Hu-ho-hao-te**	**23.99**	**291**	*e*P	**P**	**00 06 06.1**	**-0.6**
HHC				S	S	00 10 12.9	-9.3
HHC				pmax	pmax		
	comp=Z,12nm,1.0s						
HHC				pmax	pmax		
	comp=Z,66nm,4.5s						
HHC				LR	LR		
	comp=Z,1µm,13.5s						
HHC				LR	LR		
	comp=Z,1µm,13.5s						
HHC				LR	LR		
	comp=Z,1µm,12.0s						
MA2	**Magadan**	**24.63**	**11**	P	**P**	**00 06 12.3**	**0.0**
	comp=Z,5.8nm,0.9s,baz=206,slow=9.7,SNR=6.1						
YAK	**Yakutsk**	**27.38**	**348**	*e*P	**P**	**00 06 37.2**	**+0.2**
YAK				pmax	pmax		
	comp=Z,20nm,1.1s						
YAK	**Yakutsk**	**27.38**	**348**	*e*P	**P**	**00 06 37.2**	**+0.2**
	comp=Z,20nm,1.1s						
H11N2	**WAKE ISLAND Hy**	**27.43**	**119**	T	T	00 34 59.6	
	baz=311,slow=75,SNR=30						
H11N1	**WAKE ISLAND Hy**	**27.44**	**119**	T	T	00 34 58.1	
	baz=311,slow=75,SNR=22						
H11N3	**WAKE ISLAND Hy**	**27.45**	**119**	T	T	00 34 59.5	
	baz=311,slow=75,SNR=21						
SEY	**Seymchan**	**28.08**	**11**	P	**P**	**00 06 43.3**	**+0.1**
	comp=Z,6nm,0.3s,baz=196,slow=5.8,SNR=5.3						
SEY	**Seymchan**	**28.08**	**11**	*e*P	**P**	**00 06 42.8**	**-0.5**
H11S3	**WAKE ISLAND Hy**	**28.10**	**121**	T	T	00 35 52.0	
	baz=312,slow=76,SNR=38						
H11S1	**WAKE ISLAND Hy**	**28.10**	**121**	T	T	00 35 48.6	
	baz=312,slow=76,SNR=58						
H11S2	**WAKE ISLAND Hy**	**28.12**	**121**	T	T	00 35 53.1	
	baz=312,slow=76,SNR=35						
ULN	**Ulaanbaatar**	**28.18**	**306**	*i* P	**P**	**00 06 44.4**	**-0.1**
ULN				pmax	pmax		
	comp=Z,5.0nm,1.0s						
ULN	**Ulaanbaatar**	**28.18**	**306**	*e*P	**P**	**00 06 45.3**	**+0.7**
	comp=Z,3.3nm,0.7s						
SONA1	**Songino Array**	**28.60**	**306**	*e*P	**P**	**00 06 47.9**	**-0.4**
SONM	**Songino Array**	**28.60**	**306**	P	**P**	**00 06 49.4**	**+1.1**
	comp=Z,1.7nm,0.6s,baz=102,slow=8.8,SNR=14						
SONM				LR	LR	00 19 01.3	
	comp=Z,94nm,19.0s,baz=91,slow=38						
BOD	**Bodaibo**	**28.69**	**329**	*e*P	**P**	**00 06 48.4**	**-0.4**
BOD				pmax	pmax		
	comp=Z,8.0nm,1.0s						
LZH	**Lanzhou**	**30.38**	**282**	*e*P	**P**	**00 07 06.5**	**+2.2**
LZH				pP	sP	00 07 18.6	+3.8
LZH				sP	pP	00 07 24.0	+12
LZH				*e*PP	**PnPn**	**00 08 07.0**	**+4.1**
LZH				*e*S	**S**	**00 12 01.6**	**-1.9**
LZH				sS	sS	00 12 24.5	+8.7
LZH				*e*SS	**ScP**	**00 13 42.4**	**-2.1**
LZH				pmax	pmax		
	comp=Z,35nm,1.1s						
LZH				pmax	pmax		
	comp=Z,180nm,8.2s						
LZH				LR	LR		
	comp=Z,380nm,13.5s						
LZH				LR	LR		
	comp=Z,400nm,14.0s						
LZH				LR	LR		
	comp=Z,700nm,16.1s						
GYA	**Guiyang**	**31.09**	**263**	P	**P**	**00 07 10.6**	**0.0**
GYA				pP	sP	00 07 24.5	+3.4
GYA				PP	**PnPn**	**00 08 16.0**	**+3.8**
GYA				PcP	**PcP**	**00 10 08.4**	**+2.7**
GYA				S	**S**	**00 12 13.2**	**-1.5**
GYA				ScP	**ScP**	**00 13 44.8**	**-2.1**
GYA				SS	**SnSn**	**00 14 00.2**	**+3.4**
GYA				pmax	pmax		
	comp=Z,20nm,1.0s						
GYA				pmax	pmax		
	comp=Z,120nm,6.0s						
GYA				LR	LR		
	comp=Z,520nm,16.0s						
GYA				LR	LR		
	comp=Z,490nm,16.5s						
GYA				LR	LR		
	comp=Z,550nm,16.2s						
ZAK	**Zakamensk**	**31.16**	**310**	*e*P	**P**	**00 07 11.6**	**+0.7**
ZAK				pmax	pmax		
	comp=Z,2.0nm,1.2s						
TLY	**Talaya**	**31.26**	**313**	P	**P**	**00 07 12.5**	**+0.8**
	comp=Z,2.6nm,0.7s,baz=142,slow=2.2,SNR=5.6						
TLY	**Talaya**	**31.26**	**313**	*e*P	**P**	**00 07 13.3**	**+1.6**
TLY				pmax	pmax		
	comp=Z,6.0nm,1.3s						
TLY				MLR	MLR		
	comp=Z,124nm,14.0s						
TLY	**Talaya**	**31.26**	**313**	*e*P	**P**	**00 07 12.7**	**+1.0**
	comp=Z,6.5nm,1.0s						
CD2	**Chengdu**	**31.77**	**272**	P	**P**	**00 07 15.2**	**-1.2**
CD2				pP	sP	00 07 27.3	+0.4
CD2				PP	**PP**	**00 08 27.4**	**-0.9**
CD2				S	**S**	**00 12 22.3**	**-2.8**
CD2				sS	sS	00 12 43.3	+5.9
CD2				pmax	pmax		
	comp=Z,10.0nm,0.6s						
CD2				pmax	pmax		
	comp=Z,110nm,5.0s						
CD2				LR	LR		
	comp=Z,380nm,15.5s						
CD2				LR	LR		
	comp=Z,410nm,20.2s						
GTA	**Gaotai**	**33.04**	**289**	*e*P	**P**	**00 07 28.6**	**+1.0**
GTA				pP	sP	00 07 40.7	+2.6
GTA				sP	pP	00 07 45.7	+11
GTA				pmax	pmax		
	comp=Z,4.0nm,0.9s						
KMI	**Kunming**	**34.85**	**263**	P	**P**	**00 07 45.0**	**+1.5**
KMI				pP	sP	00 07 57.4	+3.3
KMI				sP	pP	00 08 03.0	+12
KMI				PP	**PP**	**00 09 02.3**	**-0.4**
KMI				S	**S**	**00 13 11.4**	**-1.9**
KMI				sS	sS	00 13 33.3	+7.6
KMI				pmax	pmax		
	comp=Z,11nm,0.6s						
KMI				pmax	pmax		
	comp=Z,97nm,5.7s						
KMI				LR	LR		
	comp=Z,190nm,11.2s						
KMI				LR	LR		
	comp=Z,180nm,10.3s						
KMI				LR	LR		
	comp=Z,220nm,14.6s						
BILL	**Bilibino**	**35.28**	**16**	P	**P**	**00 07 47.0**	**+0.6**
BILL				*e*		00 07 52.1	
BILL				*e*		00 07 55.5	
BILL						00 10 18.0	
BILL				pmax	pmax		
	comp=Z,4.0nm,1.4s						
BILL				MLR	MLR		
	comp=Z,65nm,17.0s						
BILL	**Bilibino**	**35.28**	**16**	*e*P	**P**	**00 07 47.5**	**+1.1**
	comp=Z,10nm,1.4s						
MIDW	**Midway**	**35.48**	**90**	*e*P	**P**	**00 07 49.3**	**+0.6**
	comp=Z,644nm,1.9s						
KWAJ	**Kwajalein Atol**	**35.84**	**132**	*e*P	**P**	**00 07 53.3**	**+1.5**
KWAJ				pmax	pmax		
	comp=Z,78nm,0.9s						
KWAJ	**Kwajalein Atol**	**35.84**	**132**	*e*P	**P**	**00 07 53.3**	**+1.5**
	comp=Z,78nm,0.9s						
TIXI	**Tiksi**	**36.61**	**353**	*i* P	**P**	**00 07 56.0**	**-1.8**
TIXI				pmax	pmax		
	comp=Z,3.0nm,1.2s						
TIXI	**Tiksi**	**36.61**	**353**	*e*P	**P**	**00 07 58.1**	**+0.4**
	comp=Z,2.7nm,0.7s						
NIKH	**Nikolski High**	**38.60**	**48**	*e*P	**P**	**00 08 14.9**	**0.0**
	comp=Z,272nm,1.4s						
LUWI	**Luwuk**	**40.52**	**210**	*e*P	**P**	**00 08 31.8**	**+0.6**
	comp=Z,36nm,1.1s						
CHTO	**Chiang Mai**	**41.05**	**257**	*e*P	**P**	**00 08 36.1**	**+0.5**
CHTO				pmax	pmax		
	comp=Z,2.0nm,0.9s						
CHTO	**Chiang Mai**	**41.05**	**257**	*e*P	**P**	**00 08 36.1**	**+0.5**
	comp=Z,1.9nm,0.9s						
CMAR	**Chiang Mai Arr**	**41.25**	**257**	LR	LR	00 29 12.1	
	comp=Z,83nm,18.1s,baz=200,slow=41						
WMQ	**Urumqi**	**41.51**	**298**	P	**P**	**00 08 41.7**	**+2.4**
WMQ				pP	sP	00 08 53.0	+3.1
WMQ				S	**S**	**00 14 49.1**	**-4.3**
WMQ				SS	**SS**	**00 17 53.2**	**-5.0**
WMQ				pmax	pmax		
	comp=Z,3.0nm,1.0s						
WMQ				pmax	pmax		
	comp=Z,30nm,4.0s						
WMQ				LR	LR		
	comp=Z,32nm,19.0s						
WMQ				LR	LR		
	comp=Z,100nm,23.4s						
ZAA0	**Zalesovo Array**	**42.87**	**313**	*e*P	**P**	**00 08 49.9**	**-0.1**
ZALV	**Zalesovo Beam**	**42.87**	**313**	P	**P**	**00 08 50.4**	**+0.4**
	comp=Z,3.5nm,0.7s,baz=102,slow=8.0,SNR=16						
ZALV				LR	LR	00 28 02.3	
	comp=Z,42nm,18.7s,baz=68,slow=38						
NVS	**Novosibirsk**	**43.81**	**315**	‖*i*P	**P**	**00 08 58.3**	**+0.7**
NVS				pmax	pmax		
	comp=Z,6.0nm,1.0s						
NVS				pmax	pmax		
	comp=E,6.0nm,1.3s						
KSM	**Kuching**	**44.70**	**227**	*e*P	**P**	**00 09 06.0**	**+0.8**
	comp=E,28nm,1.6s						
CHGN	**Chignik**	**44.87**	**43**	*e*P	**P**	**00 09 07.0**	**+0.9**
MKAR	**Makanchi Array**	**44.89**	**303**	P	**P**	**00 09 06.8**	**+0.4**
	comp=E,1.4nm,0.6s,baz=85,slow=9.1,SNR=18						
MKAR		

KKAR	**Karatay Array**	**53.86**	**301**	*eP*		**P**	00	**10**	**15.0**	**0.0**
KKAR	**Karatay Array**	**53.86**	**301**	*eP*		**P**	00	**10**	**15.0**	**0.0**
HON	**Honolulu**	**54.28**	**88**	*eP*		**P**	00	**10**	**18.8**	**+0.5**
HON	**Honolulu**	**54.28**	**88**	*eP*		**P**	00	**10**	**18.8**	**+0.5**
INK	**Inuvik**	**55.53**	**27**	P		**P**	00	**10**	**26.1**	**-0.6**
	comp=Z,0.7nm,0.6s,baz=301,slow=5.8,SNR=5.0									
WRAB	**Tennant Creek**	**55.75**	**188**	*eP*		**P**	00	**10**	**29.2**	**+0.4**
WRAB				pmax	pmax					
	comp=Z,9.0nm,0.6s									
WRAB	**Tennant Creek**	**55.75**	**188**	*eP*		**P**	00	**10**	**29.2**	**+0.4**
	comp=Z,9.4nm,0.6s									
WB2	**Warramunga Arr**	**55.76**	**188**	*eP*		**P**	00	**10**	**29.7**	**+0.8**
	comp=Z,20nm,1.5s									
WRA	**Warramunga Arr**	**55.76**	**188**	P		P	00	10	24.8	-4.1
	comp=Z,2.3nm,0.6s,baz=5.0,slow=7.6,SNR=16									
HLK	**Haleakala**	**55.99**	**88**	*eP*		**P**	00	**10**	**30.5**	**-0.4**
	comp=Z,258nm,1.3s									
ARU	**Arti**	**57.40**	**319**	*c iP*		**P**	00	**10**	**39.7**	**-0.5**
ARU				*PP		**sP**	00	**10**	**52.2**	**+1.2**
ARU							00	12	45.1	
ARU				S		**S**	00	**18**	**33.7**	**-1.6**
ARU				pmax	pmax					
	comp=Z,9.0nm,1.7s									
ARU	**Arti**	**57.40**	**319**	*eP*		**P**	00	**10**	**40.3**	**+0.2**
	comp=Z,4.6nm,1.0s									
UWE	**Uwekahuna**	**57.43**	**89**	*eP*		**P**	00	**10**	**41.1**	**+0.1**
	comp=Z,456nm,1.8s									
KBL	**Kabul**	**57.96**	**292**	*eP*		**P**	00	**10**	**44.7**	**-0.1**
KBL				pmax	pmax					
	comp=Z,2.0nm,0.6s									
KBL	**Kabul**	**57.96**	**292**	*eP*		**P**	00	**10**	**44.7**	**-0.1**
	comp=Z,2.1nm,0.6s									
ABKAR	**Akbulak array**	**58.85**	**311**	*eP*		**P**	00	**10**	**50.2**	**-0.3**
WRAK	**Wrangell Islan**	**59.11**	**40**	*eP*		**P**	00	**10**	**52.4**	**+0.4**
	comp=Z,92nm,1.7s									
AS01	**Alice Springs**	**59.48**	**188**	*eP*		**P**	00	**10**	**55.0**	**0.0**
AS31	**Alice Springs**	**59.49**	**188**	*eP*		**P**	00	**10**	**56.2**	**+1.2**
	comp=Z,3.0nm,1.5s									
ASAR	**Alice Springs**	**59.49**	**188**	P		**P**	00	**10**	**53.3**	**-1.8**
	comp=Z,1.1nm,0.7s,baz=15,slow=9.7,SNR=12									
DLBC	**Dease Lake**	**59.63**	**38**	*eP*		**P**	00	**10**	**55.3**	**-0.5**
	comp=Z,51nm,1.9s									
RES	**Resolute Bay**	**63.86**	**14**	P		**P**	00	**11**	**22.5**	**-1.4**
	comp=Z,0.7nm,0.7s,baz=303,slow=6.3,SNR=6.0									
GEYT	**Alibeck**	**64.54**	**300**	P		**P**	00	**11**	**27.7**	**-1.4**
	comp=Z,0.2nm,0.3s,baz=107,slow=5.1,SNR=2.2									
YKA	**Yellowknife Ar**	**64.92**	**30**	P		**P**	00	**11**	**29.6**	**-1.4**
	comp=Z,0.5nm,0.8s,baz=300,slow=6.8,SNR=9.0									
ARCES	**ARCESS Array B**	**65.26**	**340**	LR		LR	00	43	09.7	
	comp=Z,50nm,20.6s,baz=54,slow=39									
FINES	**FINESS Array B**	**70.02**	**332**	P		**P**	00	**12**	**02.6**	**-0.6**
	comp=Z,1.3nm,0.7s,baz=46,slow=8.2,SNR=6.9									
FINES				LR		LR	00	47	00.8	
	comp=Z,41nm,18.5s,baz=32,slow=39									
AKASG	**Malin Array Be**	**75.39**	**323**	P		**P**	00	**12**	**34.4**	**-0.9**
	comp=Z,0.7nm,0.5s,baz=54,slow=5.8,SNR=4.4									
NB2	**NORSAR Subarra**	**75.43**	**337**	P		**P**	00	**12**	**34.7**	**-0.8**
	comp=Z,0.4nm,0.5s,baz=39,slow=6.2									
NOA	**NORSAR Array B**	**75.43**	**337**	P		**P**	00	**12**	**35.0**	**-0.5**
	comp=Z,0.8nm,0.6s,baz=40,slow=5.7,SNR=3.9									
NOA	**NORSAR Array B**	**75.43**	**337**	P		**P**	00	**12**	**35.0**	**-0.5**
PDAR	**Pinedale Array**	**78.55**	**45**	P		**P**	00	**12**	**52.5**	**-1.1**
	comp=Z,0.3nm,0.6s,baz=226,slow=3.9,SNR=3.8									
BRTR	**Keskin Array B**	**79.78**	**312**	P		**P**	00	**12**	**59.0**	**-1.3**
	comp=Z,1.0nm,0.9s,baz=93,slow=4.9,SNR=5.0									
CLL	**Collm**	**82.28**	**330**	*eP*		P	00	13	09.0	-4.2
CLL				*e*			00	13	26.0	
CLL				*i* PP		**PP**	00	**16**	**20.5**	**-0.6**
CLL	**Collm**	**82.28**	**330**	*eP*		P	00	13	09.0	-4.2
GERES	**GERESS Array B**	**83.87**	**328**	P		**P**	00	**13**	**20.2**	**-1.4**
	comp=Z,0.3nm,0.5s,baz=44,slow=5.9,SNR=5.5									
TXAR	**Lajitas Array**	**90.87**	**52**	P		**P**	00	**13**	**55.0**	**-0.9**
	comp=Z,0.1nm,0.4s,baz=292,slow=4.8,SNR=2.6									
H06S1	**SOCORRO T**	**92.69**	**65**	T		T	01	55	39.9	
	SNR=3.2									
TORD	**Torodi Ar. Bea**	**118.31**	**314**	PKP		**PKPdf**	00	**19**	**37.5**	**-2.2**
	comp=Z,0.1nm,0.5s,baz=47,slow=3.2,SNR=3.4									

JMA 10 00:08:23.0,34.18N×135.12E,h6km±1km,M0.1,Near south coast of western Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
JWM	**Minabe**	**0.38**	**149**	*eS*		Sg	00 08 35.9	+0.4
JWY	**Kouya**	**0.39**	**84**	S		Sg	00 08 36.2	+0.3

NIED ***10*** *00:08:00, 37.70N×141.80E, h8km, Mw4.1 Best double couple: M0 1.45000×10 15 NP1:ϕs 119.00000°, δ45.00000°, λ-59.00000°. NP2:ϕs 258.00000°, δ52.00000°, λ-118.00000°.*

ISCJB ***10*** *00:08:31.9±0.9, 37.67N±0.03×141.89E±0.04, h1km±5km, mb4.1/31, MS3.0/1, Error ellipse: s-maj=5.7km s-min=4.2km az=41.1*

IDC ***10*** *00:08:33.1±0.6, 37.68N×141.77E, h0km, mb3.9/18, mb1 4.1/20, mb1mx4.0/42, mbtmp3.9/20, ML3.8/2, MS3.1/2, Ms1 3.1/2, ms1mx2.5/41, Error ellipse: s-maj=19.1km s-min=15.1km az=109.0*

JMA ***10*** *00:08:34.5±0.1, 37.70N×141.80E, h20km±2km, M4.2*

JMA Felt I J1

NEIC ***10*** *00:08:36.1±3.7, 37.62N×141.87E, h20km±23km, mb4.4/11, Error ellipse: s-maj=11.2km s-min=8.2km az=122.0*

ISC 10 00:08:34.4±1.0,37.68N±0.03×141.77E±0.05,h8km±5km, n64,σ1§16/67,mb4.2/31,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
JFK	**Kawauchi**	**0.78**	**246**	P		**Pb**	**00 08 49.8**	**-0.4**
JFK				*eS*		**Sg**	**00 09 00.3**	**+0.8**
JMM	**Marumori**	**0.79**	**284**	P		**Pg**	**00 08 49.7**	**0.0**
JMM				S		**Sg**	**00 09 00.2**	**+0.2**
JIO	**Ouri**	**0.84**	**337**	P		**Pg**	**00 08 50.2**	**-0.4**
JIO				S		**Sg**	**00 09 00.8**	**-0.7**
ONAJ	**Iwakimizuishiy**	**0.96**	**233**	P		**Pg**	**00 08 52.5**	**-0.5**
ONAJ				S		**Sb**	**00 09 06.2**	**-0.1**
JOU	**Okura**	**1.11**	**308**	P		**Pg**	**00 08 55.2**	**-0.5**
JOU				S		**Sg**	**00 09 09.7**	**-0.4**
JFT	**Otama**	**1.15**	**262**	P		**Pg**	**00 08 56.1**	**-0.4**
JFT				S		**Sb**	**00 09 12.0**	**+0.5**
JMK	**Ichinoseki**	**1.34**	**341**	P		**Pn**	**00 08 58.2**	**-1.2**
JMK				S		**Sb**	**00 09 14.4**	**-2.7**
JYS	**Shirataka**	**1.45**	**292**	P		**Pn**	**00 09 00.8**	**-0.1**
JYS				S		**Sn**	**00 09 20.4**	**+0.3**
JYK	**Kaneyama**	**1.66**	**319**	P		**Pn**	**00 09 03.1**	**-0.7**
JFY	**Yanaizu**	**1.66**	**261**	P		**Pn**	**00 09 04.3**	**+0.4**
JFY				S		**Sn**	**00 09 25.9**	**+0.5**
MJAR	**Matsushiro Arr**	**3.06**	**249**	Pn		**Pn**	**00 09 24.1**	**+0.9**
	5.4nm,0.3s,baz=54,slow=32,SNR=36							
MJAR				Sn		**Sb**	**00 10 04.2**	**-2.5**
	17nm,0.3s,baz=16,slow=10,SNR=6.1							
MAJO	**Matsushiro**	**3.06**	**249**	*e*Pn		**Pn**	**00 09 24.6**	**+1.4**
MAT	**Matsushiro**	**3.06**	**249**	P		**Pn**	**00 09 24.2**	**+1.1**
MAT				S		**Sb**	**00 10 04.8**	**-1.9**
ERM	**Erimo**	**4.46**	**13**	*e*Pn		**Pn**	**00 09 41.0**	**-1.2**
ERM				*e*Sn		**Sn**	**00 10 37.4**	**+3.1**
INU	**Inuyama**	**4.48**	**240**	*e*Pn		Pn	00 09 37.0	-5.6
JHJ2	**Mitsune**	**4.83**	**200**	*e*Pn		**Pn**	**00 09 46.2**	**-1.2**
JHJ2				*e*Sn		**Sn**	**00 10 39.9**	**-3.6**
JHJ	**Hachijo jima 2**	**4.83**	**200**	Pn		**Pn**	**00 09 47.6**	**+0.2**
	29nm,0.3s,baz=152,slow=22,SNR=16							
JHJ				Sn		**Sn**	**00 10 41.7**	**-1.8**
	58nm,0.3s,baz=255,slow=22,SNR=7.6							
JHJ				LR		LR	00 11 52.6	
	comp=Z,234nm,20.2s,baz=16,slow=41							
USRK	**Ussuriysk Ar.**	**9.85**	**314**	Pn		Pn	00 11 00.9	+4.7
	0.5nm,0.3s,baz=132,slow=13,SNR=10							
KSRS	**Korea Array**	**10.99**	**273**	Pn		Pn	00 11 16.4	+4.5
	0.1nm,0.3s,baz=304,slow=33,SNR=2.7							
KSAR	**Wonju Array Be**	**11.02**	**273**	Pn		Pn	00 11 16.4	+4.0
KLR	**Kul'dur**	**13.63**	**331**	Pn		**P**	**00 11 57.4**	**+0.5**
	0.2nm,0.3s,baz=136,slow=15,SNR=7.3							
MA2	**Magadan**	**22.66**	**12**	P		**P**	**00 13 36.6**	**+0.7**
	5.0nm,0.8s,baz=217,slow=12,SNR=5.3							
MA2				LR		LR	00 21 38.6	
	comp=Z,52nm,19.5s,baz=236,slow=35							
MA2	**Magadan**	**22.66**	**12**	*e*P		**P**	**00 13 36.6**	**+0.7**
	12nm,0.7s							
SEY	**Seymchan**	**26.10**	**11**	P		**P**	**00 14 10.8**	**+2.4**
	4.0nm,0.6s,baz=199,slow=8.2,SNR=11							
SONM	**Songino Array**	**27.66**	**303**	P		**P**	**00 14 23.6**	**+0.8**
	0.5nm,0.5s,baz=102,slow=8.5,SNR=5.7							
H11N2	**WAKE ISLAND Hy**	**28.25**	**122**	T		T	00 43 59.7	
	baz=315,slow=75,SNR=982							
H11N1	**WAKE ISLAND Hy**	**28.25**	**122**	T		T	00 44 06.5	
	baz=315,slow=75,SNR=645							
H11N3	**WAKE ISLAND Hy**	**28.26**	**122**	T		T	00 44 06.2	
	baz=315,slow=75,SNR=573							
H11S1	**WAKE ISLAND Hy**	**28.98**	**124**	T		T	00 44 55.0	
	baz=316,slow=76,SNR=578							
H11S3	**WAKE ISLAND Hy**	**28.98**	**124**	T		T	00 44 56.5	
	baz=316,slow=76,SNR=505							
H11S2	**WAKE ISLAND Hy**	**29.00**	**124**	T		T	00 44 56.2	
	baz=316,slow=76,SNR=348							
GTA	**Gaotai**	**32.65**	**286**	*e*P		P	00 15 12.4	+5.5
GTA				pP		sP	00 15 17.1	+6.6
GTA				sP		pP	00 15 19.5	+10
GTA				pmax	pmax			
	comp=Z,5.0nm,1.1s							
ZAA0	**Zalesovo Array**	**41.69**	**312**	*e*P		**P**	**00 16 25.4**	**+2.1**
ZALV	**Zalesovo Beam**	**41.69**	**312**	P		**P**	**00 16 22.9**	**-0.4**
	comp=Z,2.4nm,0.7s,baz=89,slow=6.8,SNR=8.1							
MKAR	**Makanchi Array**	**44.02**	**302**	P		**P**	**00 16 41.9**	**-0.5**
	comp=Z,0.3nm,0.4s,baz=83,slow=11,SNR=9.1							
KURK	**Kurchatov**	**45.76**	**308**	*e*P		**P**	**00 16 55.8**	**-0.3**
	comp=Z,8.2nm,0.7s							
SML	**Sawmill**	**48.30**	**37**	*e*P		**P**	**00 17 16.2**	**+0.3**
	comp=Z,2.1nm,0.7s							
COLA	**College**	**48.38**	**33**	*e*P		**P**	**00 17 17.0**	**+0.6**
	comp=Z,1.6nm,0.4s							
ILAR	**Eielson Array**	**48.80**	**33**	P		**P**	**00 17 19.4**	**-0.2**
	comp=Z,0.7nm,0.8s,baz=268,slow=5.6,SNR=5.8							
TKM2	**Tokmak 2**	**49.57**	**298**	*e*P		**P**	**00 17 26.2**	**0.0**
	comp=Z,2.1nm,0.5s							
BRVK	**Borovoye**	**50.40**	**312**	*e*P		**P**	**00 17 34.2**	**+2.2**
	comp=Z,3.9nm,1.0s							
AAK	**Ala-Archa**	**50.43**	**298**	*e*P		**P**	**00 17 32.6**	**0.0**
	comp=Z,1.1nm,0.5s							
ZRNK	**Zerenda**	**51.18**	**312**	*e*P		**P**	**00 17 39.9**	**+2.0**
	comp=Z,8.8nm,1.8s							
INK	**Inuvik**	**53.68**	**27**	P		**P**	**00 17 56.8**	**+0.6**
	comp=Z,0.5nm,0.4s,baz=321,slow=5.6,SNR=4.2							
ARU	**Arti**	**56.06**	**318**	*e*P		P	00 18 21.4	+7.8
	comp=Z,24nm,1.9s							
WRAB	**Tennant Creek**	**57.73**	**188**	*e*P		**P**	**00 18 25.1**	**-0.7**
	comp=Z,14nm,0.8s							
ABKAR	**Akbulak array**	**57.74**	**310**	*e*P		**P**	**00 18 24.5**	**-1.1**
	comp=Z,1.0nm,0.5s							
WRA	**Warramunga Arr**	**57.74**	**188**	P		**P**	**00 18 25.4**	**-0.4**
	comp=Z,1.7nm,0.6s,baz=7.9,slow=7.1,SNR=20							
ASAR	**Alice Springs**	**61.47**	**188**	P		**P**	**00 18 51.5**	**0.0**
	comp=Z,1.5nm,0.8s,baz=15,slow=5.9,SNR=12							
YKA	**Yellowknife Ar**	**63.11**	**30**	P		**P**	**00 19 01.8**	**-0.2**
	comp=Z,0.5nm,0.6s,baz=303,slow=6.7,SNR=18							
ARCES	**ARCESS Array B**	**63.49**	**339**	P		**P**	**00 19 05.9**	**+1.4**
	comp=Z,5.4nm,1.1s,baz=37,slow=6.2,SNR=5.5							
GEYT	**Alibeck**	**63.77**	**299**	P		**P**	**00 19 07.0**	**+0.1**
	comp=Z,0.3nm,0.3s,baz=296,slow=2.8,SNR=2.5							
FINES	**FINESS Array B**	**68.37**	**332**	P		**P**	**00 19 35.6**	**-0.4**
	comp=Z,1.2nm,0.6s,baz=45,slow=9.0,SNR=10.0							
KBZ	**Khabaz**	**70.69**	**311**	P		P	00 19 57.4	+6.7
	comp=Z,2.4nm,0.9s,baz=78,slow=6.9,SNR=3.7							
NB2	**NORSAR Subarra**	**73.70**	**337**	P		**P**	**00 20 08.4**	**0.0**
	comp=Z,5.8nm,1.2s,baz=38,slow=6.2							
NOA	**NORSAR Array B**	**73.70**	**337**	P		**P**	**00 20 08.5**	**0.0**
	comp=Z,1.1nm,0.8s,baz=73,slow=20,SNR=2.6							
AKASG	**Malin Array Be**	**73.96**	**322**	P		**P**	**00 20 09.2**	**-0.9**
	comp=Z,0.6nm,0.4s,baz=46,slow=6.0,SNR=6.6							
PDAR	**Pinedale Array**	**77.01**	**46**	P		**P**	**00 20 28.0**	**-0.1**
	comp=Z,0.5nm,0.6s,baz=240,slow=0.8,SNR=6.7							
BRTR	**Keskin Array B**	**78.63**	**312**	P		**P**	**00 20 37.1**	**+0.1**
	comp=Z,1.0nm,0.9s,baz=321,slow=30,SNR=3.2							
DPC	**Dobruska-Polom**	**80.06**	**328**	*e*P		**P**	**00 20 44.4**	**-0.1**
DPC				*e*pP		**sP**	**00 20 48.7**	**+0.5**
KHC	**Kasperske Hory**	**82.14**	**329**	*e*P		**P**	**00 20 55.8**	**+0.2**
KHC				*e*pP		**PcP**	**00 20 59.6**	**-1.4**
GERES	**GERESS Array B**	**82.31**	**328**	P		**P**	**00 20 56.1**	**-0.4**
	comp=Z,0.3nm,0.5s,baz=35,slow=4.9,SNR=2.7							
TXAR	**Lajitas Array**	**89.50**	**53**	P		**P**	**00 21 32.7**	**+0.1**
	comp=Z,0.6nm,0.6s,baz=275,slow=3.0,SNR=6.3							
LPAZ	**La Paz**	**146.12**	**59**	PKPbc		**PKPbc**	**00 28 16.1**	**-0.2**
	comp=Z,1.6nm,0.7s,baz=6.9,slow=4.4,SNR=6.5							

IDC 10 00:09:40.9±2.9,2.23S×134.22E,h0km,mb3.5/2, mb1 3.9/3,mb1mx3.4/32,mbtmp3.7/3,ML3.6/1,Error ellipse: s-maj=127.9km s-min=29.8km az=77.0,Irian Jaya region

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
WRA	**Warramunga Arr**	**17.61**	**180**	P		Pn	00 13 48.3	+0.3
	0.2nm,0.3s,baz=358,slow=12,SNR=13							
ASAR	**Alice Springs**	**21.32**	**181**	P		P	00 14 29.4	-0.2
	2.7nm,0.8s,baz=6.5,slow=12,SNR=16							
MKAR	**Makanchi Array**	**66.71**	**324**	P		P	00 20 34.0	+0.1
	0.3nm,0.5s,baz=111,slow=8.0,SNR=3.6							

IDC 10 00:15:23.9±11.0,7.05S×128.71E,h75km±129km,mb3.3/3, mb1 3.5/6,mb1mx3.3/34,mbtmp3.7/6,ML3.7/3,Error ellipse: s-maj=104.9km s-min=59.5km az=43.0,Banda Sea

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
FITZ	**Fitzroy Crossi**	**11.39**	**195**	P		Pn	00 18 02.9	-0.8
	0.4nm,0.3s,baz=356,slow=9.2,SNR=8.0							
FITZ				S		Sn	00 19 53.3	-16
	0.8nm,0.3s,baz=343,slow=10,SNR=3.1							
WRA	**Warramunga Arr**	**13.94**	**157**	P		Pn	00 18 38.8	+0.8
	0.4nm,0.3s,baz=344,slow=13,SNR=12							
WRA				S		Sn	00 21 00.6	-11
	1.7nm,0.3s,baz=333,slow=22,SNR=9.2							
ASAR	**Alice Springs**	**17.26**	**164**	P		P	00 19 20.6	0.0
	0.2nm,0.3s,baz=329,slow=9.3,SNR=11							
ASAR				S		Sn	00 22 22.4	-9.4
	0.4nm,0.3s,baz=325,slow=15,SNR=5.7							
SONM	**Songino Array**	**58.09**	**342**	P		P	00 25 11.2	+1.7
	0.4nm,0.8s,baz=170,slow=9.5,SNR=3.4							
MKAR	**Makanchi Array**	**67.57**	**327**	P		P	00 26 12.6	+0.1
	0.2nm,0.6s,baz=123,slow=7.5,SNR=4.0							
ZALV	**Zalesovo Beam**	**71.06**	**334**	P		P	00 26 32.1	-1.7
	0.5nm,0.4s,baz=180,slow=1.4,SNR=2.8							

JMA 10 00:21:19.1±0.6,34.82N×142.79E,h11km,M3.6,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
BSO1	**Boso 1**	**1.50**	**264**	P		Pn	00 21 45.8	+0.3
BSO3	**Boso 3**	**1.88**	**270**	P		Pb	00 21 52.4	-0.8
BSO4	**Boso 4**	**2.02**	**276**	P		Pb	00 21 54.9	-0.9
JOD2	**Odawara 2**	**3.07**	**279**	P		Pn	00 22 08.5	+0.9
JOD2				S		Sn	00 22 44.4	+0.1
JAG	**Ashikaga**	**3.15**	**301**	P		Pn	00 22 10.1	+1.4
JFT	**Otama**	**3.34**	**324**	P		Pn	00 22 12.9	+1.6
JFT				S		Sn	00 22 51.4	+0.3

ISCJB ***10*** *00:26:30.1±0.9, 56.3S±0.1×112.1E±0.4, h10km, mb3.7/6, Error ellipse: s-maj=36.5km s-min=16.8km az=20.8*

IDC ***10*** *00:26:30.2±1.0, 56.35S×112.09E, h0km, mb3.9/6, mb1 4.1/6, mb1mx4.0/26, mbtmp3.9/6, Error ellipse: s-maj=43.0km s-min=20.5km az=112.0*

ISC 10 00:26:31.8±1.0,56.4S±0.2×112.1E±0.3,h10km,n8, σ0§63/8,mb3.8/6,South Indian Ocean

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
MAW	**Mawson**	**24.96**	**223**	P		**P**	**00 31 54.4**	**-0.4**
	0.9nm,0.4s,baz=270,slow=13,SNR=4.0							
VNDA	**Vanda**	**27.22**	**159**	P		**P**	**00 32 15.8**	**+0.6**
	0.9nm,0.7s,baz=305,slow=7.6,SNR=3.7							
ASAR	**Alice Springs**	**36.35**	**35**	P		**P**	**00 33 35.4**	**-0.4**
	1.5nm,0.7s,baz=201,slow=7.6,SNR=19							
FITZ	**Fitzroy Crossi**	**39.54**	**20**	P		**P**	**00 34 03.3**	**+0.6**
	1.2nm,0.6s,baz=210,slow=17,SNR=2.5							
WRA	**Warramunga Arr**	**39.97**	**34**	P		**P**	**00 34 05.5**	**-0.8**
	0.7nm,0.5s,baz=198,slow=7.5,SNR=6.2							
CMAR	**Chiang Mai Arr**	**75.36**	**347**	P		**P**	**00 38 15.2**	**+0.1**
	0.8nm,0.6s,baz=204,slow=5.5,SNR=5.4							
PDAR	**Pinedale Array**	**150.24**	**99**	PKPbc		**PKPbc**	**00 46 22.3**	**-0.1**
	0.4nm,0.7s,baz=147,slow=3.5,SNR=4.9							
YKA	**Yellowknife Ar**	**155.92**	**56**	PKPab		**PKPab**	**00 46 51.2**	**-0.6**
	0.7nm,0.9s,baz=263,slow=4.3,SNR=10							

IDC 10 00:33:46.6±3.0,19.56S×171.81W,h0km,mb3.7/3, mb1 4.1/3,mb1mx3.7/36,mbtmp3.7/3,Error ellipse: s-maj=323.7km s-min=30.2km az=158.0,Tonga Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
ASAR	**Alice Springs**	**50.39**	**255**	P		P	00 42 45.3	-0.8
	0.8nm,0.4s,baz=93,slow=7.7,SNR=19							
WRA	**Warramunga Arr**	**50.49**	**260**	P		P	00 42 47.5	+0.7
	0.4nm,0.4s,baz=98,slow=7.7,SNR=8.8							
TXAR	**Lajitas Array**	**81.70**	**55**	P		P	00 46 07.4	0.0
	0.2nm,0.6s,baz=239,slow=7.0,SNR=4.5							

IDC ***10*** *00:39:47.4±2.5, 36.20N×140.82E, h0km, mb3.5/4, mb1 3.7/5, mb1mx3.4/39, mbtmp3.5/5, ML3.6/1, Error ellipse: s-maj=73.2km s-min=23.5km az=58.0*

ISCJB ***10*** *00:39:59.9±0.7, 35.87N±0.05×139.73E±0.08, h90km±5km, mb3.5/4, Error ellipse: s-maj=11.9km s-min=6.8km az=155.0*

JMA ***10*** *00:40:01.1±0.2, 35.92N×139.80E, h77km±2km, M3.2 Broadband fault plane solution: P waves. NP1: ϕs 2.00000°, δ60.00000°, λ90.00000°. NP2:ϕs 182.00000°, δ30.00000°, λ90.00000°. Principal axes: T Plg75.0000°, Azm272.0000°; N Plg0.0000°, Azm2.0000°; P Plg15.0000°, Azm92.0000°;*

ISC 10 00:40:00.9±1.0,35.88N±0.05×139.73E±0.07,h84km±8km, n21,σ0§60/21,mb3.7/4,3C-4D,Near south coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
TOK	**Tokyo**	**0.19**	**173**	↑P		**Pn**	**00 40 13.9**	**+0.9**
JAG	**Ashikaga**	**0.59**	**338**	↑P		**Pn**	**00 40 15.6**	**-0.2**
JAG				*e*S		**Sn**	**00 40 25.8**	**-1.0**
JRY	**Ryogami san**	**0.69**	**282**	↓P		**Pn**	**00 40 17.3**	**+0.6**
JOD2	**Odawara 2**	**0.81**	**221**	↓P		**Pn**	**00 40 17.6**	**-0.4**
JOD2				*e*S		**Sn**	**00 40 30.1**	**-0.6**
JKT	**Katashina**	**0.97**	**337**	↓P		**Pn**	**00 40 19.7**	**-0.2**
JYN	**Shimob**	**1.04**	**249**	↓P		**Pn**	**00 40 21.0**	**+0.4**
JYN				S		**Sn**	**00 40 35.9**	**+0.5**
JIM2	**Oshima 3**	**1.18**	**192**	↑P		**Pn**	**00 40 21.9**	**-0.5**
JIM2				S		**Sn**	**00 40 37.6**	**-0.9**
BSO3	**Boso 3**	**1.25**	**149**	P		**Pn**	**00 40 22.6**	**-0.3**
BSO3				S		**Sn**	**00 40 40.3**	**+0.8**
MJAR	**Matsushiro Arr**	**1.40**	**299**	Pn		**Pn**	**00 40 24.6**	**-0.4**
	18nm,0.3s,baz=88,slow=27,SNR=149							
MAT	**Matsushiro**	**1.40**	**299**	P		**Pn**	**00 40 25.1**	**+0.1**
MAT				S		**Sn**	**00 40 42.8**	**-0.5**
MAT	**Matsushiro**	**1.40**	**299**	P		**Pn**	**00 40 25.5**	**+0.5**
H11N2	**WAKE ISLAND Hy**	**28.79**	**117**	T		T	01 15 35.4	
	baz=318,slow=75,SNR=48							
H11N1	**WAKE ISLAND Hy**	**28.79**	**117**	T		T	01 15 36.1	
	baz=318,slow=75,SNR=45							
H11N3	**WAKE ISLAND Hy**	**28.80**	**117**	T		T	01 15 36.8	
	baz=318,slow=75,SNR=44							
H11S1	**WAKE ISLAND Hy**	**29.43**	**119**	T		T	01 16 34.0	
	baz=319,slow=76,SNR=22							
H11S3	**WAKE ISLAND Hy**	**29.43**	**119**	T		T	01 16 34.0	
	baz=319,slow=76,SNR=24							
H11S2	**WAKE ISLAND Hy**	**29.45**	**119**	T		T	01 16 35.3	
	baz=319,slow=76,SNR=23							
ZALV	**Zalesovo Beam**	**41.70**	**313**	P		**P**	**00 47 41.4**	**+0.3**
	0.8nm,0.4s,baz=95,slow=7.0,SNR=5.4							
MKAR	**Makanchi Array**	**43.59**	**303**	P		**P**	**00 47 57.0**	**+0.4**
	0.2nm,0.6s,baz=84,slow=10,SNR=3.5							
WRA	**Warramunga Arr**	**55.75**	**186**	P		**P**	**00 49 28.5**	**-0.5**
	0.4nm,0.5s,baz=0.5,slow=7.6,SNR=7.3							
ASAR	**Alice Springs**	**59.48**	**186**	P		**P**	**00 49 55.4**

JCJ Chichijima 9.57 172 P Pn 00 52 58.1 -3.4
comp=E,8.1nm,0.3s,baz=294,slow=22,SNR=6.1
JCJ S Sn 00 54 37.4 -10
JCJ LR LR 00 57 29.7
comp=E,242nm,18.6s,baz=227,slow=42
USRK Ussuriysk Ar. 10.08 321 P Pn 00 53 12.4 +4.0
comp=E,0.6nm,0.3s,baz=123,slow=11,SNR=9.7
USRK LR LR 00 56 58.2
comp=E,120nm,19.7s,baz=120,slow=36
KUR Kuril'sk 10.16 30⇓ *i*P **Pn 00 53 10.6 +1.1**
KUR *i* S **Sn 00 54 57.4 -4.6**
KUR pmax pmax
comp=Z,26nm,0.7s
KUR pmax pmax
comp=Z,185nm,2.9s
KUR smax smax
comp=E,24nm,0.8s
KUR smax smax
comp=N,22nm,0.9s
KSRS Korea Array 10.27 279 P Pn 00 53 14.9 +3.9
comp=N,0.5nm,0.3s,baz=96,slow=14,SNR=13
KSRS LR LR 00 57 09.0
comp=N,91nm,19.2s,baz=101,slow=37
KSAR Wonju Array Be 10.30 278 P Pn 00 53 14.9 +3.5
KSAR Wonju Array Be 10.30 278 P Pn 00 53 14.9 +3.5
YSS Yuzh-Sakhalins 10.44 8 P **Pn 00 53 16.1 +2.8**
YSS Yuzh-Sakhalins 10.44 8 *e*Pn **Pn 00 53 13.5 +0.2**
CN2 Changchun 13.69 306 *e*P **Pn 00 54 00.0 +2.3**
CN2 pmax pmax
comp=N,10.0nm,0.6s
KLR Kul'dur 14.20 335 P **Pn 00 54 06.2 +1.6**
comp=N,0.1nm,0.3s,baz=156,slow=9.8,SNR=2.5
JOW Kunigami 14.38 231 *e*Pn **Pn 00 54 09.1 +2.0**
NJ2 Nanjing 18.61 262 *e*P **P 00 54 58.8 -0.8**
NJ2 pmax pmax
comp=N,8.0nm,0.5s
BJI Beijing 19.54 288 P **P 00 55 10.0 +0.3**
BJI pmax pmax
comp=N,8.0nm,0.9s
PETK Petropavlovsk- 20.33 30 LR LR 01 03 23.4
comp=N,5.5nm,18.0s,baz=235,slow=37
SSLB Suanglung 21.28 239 *e*P **P 00 55 29.0 +0.2**
comp=N,29nm,1.4s
HHC Hu-ho-hao-te 23.08 289 *e*P **P 00 55 46.8 -1.0**
HHC S **S 00 59 54.0 -1.2**
HHC pmax pmax
comp=N,19nm,0.9s
HHC pmax pmax
comp=N,140nm,4.6s
HHC LR LR
comp=N,550nm,11.6s
HHC LR LR
comp=N,1µm,11.7s
HHC LR LR
comp=N,870nm,11.8s
MA2 Magadan 23.88 13 P **P 00 55 55.9 +0.8**
comp=N,2.9nm,0.5s,baz=207,slow=8.7,SNR=5.7
MA2 Magadan 23.88 13 *e*P **P 00 55 54.0 -1.1**
comp=N,22nm,0.9s
XAN Xi'an 26.01 274 P **P 00 56 13.9 -0.8**
XAN pmax pmax
comp=N,7.0nm,0.5s
XAN pmax pmax
comp=N,26nm,4.3s
YAK Yakutsk 26.36 348 P **P 00 56 19.1 +1.6**
comp=N,14nm,0.3s,baz=340,slow=0.7,SNR=3.7
ULN Ulaanbaatar 27.13 305 *i*P **P 00 56 24.3 -0.5**
ULN pmax pmax
comp=Z,4.0nm,1.2s
SEY Seymchan 27.31 12 P **P 00 56 27.0 +0.9**
comp=Z,6.6nm,0.9s,baz=206,slow=6.5,SNR=25
SEY Seymchan 27.31 12 *i*P **P 00 56 25.6 -0.5**
SONA1 Songino Array 27.56 305 *e*P **P 00 56 28.5 -0.1**
SONM Songino Array 27.56 305 P **P 00 56 28.6 0.0**
comp=Z,2.2nm,0.6s,baz=105,slow=9.5,SNR=14
SONM PcP **PcP 00 59 45.9 +0.5**
comp=Z,0.5nm,0.7s,baz=130,slow=2.3,SNR=3.5
SONM LR LR 01 07 10.1
comp=Z,32nm,20.5s,baz=70,slow=36
BOD Bodaibo 27.59 329 *e*P **P 00 56 27.8 -0.8**
BOD pmax pmax
comp=Z,8.0nm,0.8s
H11N2 WAKE ISLAND Hy 28.42 119 T T 01 26 38.2
baz=313,slow=75,SNR=23
H11N1 WAKE ISLAND Hy 28.43 119 T T 01 26 38.0
baz=313,slow=75,SNR=37
H11N3 WAKE ISLAND Hy 28.44 119 T T 01 26 39.5
baz=313,slow=75,SNR=23
H11S1 WAKE ISLAND Hy 29.11 121 T T 01 27 26.6
baz=314,slow=76,SNR=57
H11S3 WAKE ISLAND Hy 29.11 121 T T 01 27 29.3
baz=314,slow=76,SNR=67
H11S2 WAKE ISLAND Hy 29.12 121 T T 01 27 28.9
baz=314,slow=76,SNR=73
LZH Lanzhou 29.59 280 *e*P **P 00 56 48.4 +1.6**
LZH pP sP 00 57 04.5 -1.1
LZH sP pP 00 57 12.3 +13
LZH PP **PnPn 00 57 45.5 +2.3**
LZH pmax pmax
comp=Z,22nm,1.2s
LZH pmax pmax
comp=Z,70nm,5.4s
LZH LR LR
comp=Z,330nm,13.0s
LZH LR LR
comp=Z,340nm,13.5s
LZH LR LR
comp=Z,400nm,16.2s
ZAK Zakamensk 30.10 309 *e*P **P 00 56 51.3 +0.2**
ZAK pmax pmax
comp=Z,1.0nm,1.4s
TLY Talaya 30.19 312 *e*P **P 00 56 50.2 -1.6**
TLY pmax pmax
comp=Z,5.0nm,0.8s
TLY Talaya 30.19 312 *e*P **P 00 56 50.2 -1.6**
comp=Z,4.7nm,0.8s
GYA Guiyang 30.60 260 P **P 00 56 55.2 -0.6**
GYA pmax pmax
comp=Z,10.0nm,0.8s
CD2 Chengdu 31.12 270 P **P 00 56 58.6 -1.6**
CD2 pmax pmax
comp=Z,1.0nm,0.5s
DAV Davao City (W) 32.49 209 LR LR 01 09 16.7
comp=Z,30nm,19.0s,baz=16,slow=34
PATS Pohnpei 33.72 147 *e*P **P 00 57 24.0 +1.0**
comp=Z,363nm,2.0s
KMI Kunming 34.35 261 P **P 00 57 29.0 +0.3**
KMI pmax pmax
comp=Z,11nm,0.9s
KMI pmax pmax
comp=Z,91nm,8.3s
BILL Bilibino 34.59 17⇑ *e*P **P 00 57 32.1 +2.1**
BILL *e**PP **sP 00 57 46.9 -2.0**
BILL 00 58 47.0
BILL *e* 00 59 59.8
BILL pmax pmax
comp=Z,4.0nm,1.0s
BILL MLR MLR
comp=Z,52nm,15.0s
BILL Bilibino 34.59 17 *e*P **P 00 57 29.0 -1.1**
comp=Z,10nm,1.6s
ATKA Atka Island 35.15 49 *e*P **P 00 57 34.0 -1.1**
comp=Z,130nm,1.4s
TIXI Tiksi 35.64 354 P **P 00 57 39.2 +0.1**
comp=Z,2.7nm,0.5s,baz=141,slow=5.7,SNR=5.6
TIXI Tiksi 35.64 354 *i*P **P 00 57 37.9 -1.1**
TIXI pmax pmax
comp=Z,4.0nm,1.0s
TIXI Tiksi 35.64 354 *e*P **P 00 57 37.8 -1.3**
comp=Z,6.8nm,1.2s
TNTI Ternate 37.75 202 *e*P **P 00 57 59.5 +1.9**
comp=Z,61nm,0.9s
WMQ Urumqi 40.53 297 *e*P **P 00 58 21.2 +0.5**
WMQ pP pP 00 58 35.7 +1.8
WMQ sP sP 00 58 43.8 +4.1
WMQ S **S 01 04 23.8 -2.5**
WMQ SS SS 01 07 15.7 -11
WMQ pmax pmax
comp=Z,3.0nm,0.6s
WMQ pmax pmax
comp=Z,60nm,7.0s
WMQ LR LR
comp=Z,19nm,15.8s
WMQ LR LR
comp=Z,41nm,16.0s
CMAR Chiang Mai Arr 40.85 255 LR LR 01 16 50.9
comp=Z,42nm,18.6s,baz=45,slow=38
ZAA0 Zalesovo Array 41.79 313 *e*P **P 00 58 30.6 -0.1**
ZALV Zalesovo Beam 41.79 313 P **P 00 58 31.2 +0.5**
comp=Z,9.6nm,0.6s,baz=92,slow=6.7,SNR=57
ZALV PcP **PcP 01 00 25.9 -0.2**
comp=Z,0.8nm,0.6s,baz=109,slow=1.4,SNR=3.8
ZALV LR LR 01 16 34.4
comp=Z,22nm,18.9s,baz=72,slow=37
FALS False Pass 41.80 46 *e*P **P 00 58 32.0 +1.3**
comp=Z,464nm,1.6s
NVS Novosibirsk 42.73 314⇓ *i*P **P 00 58 39.1 +0.7**
NVS pmax pmax
comp=Z,9.0nm,1.2s
NVS pmax pmax
comp=N,4.0nm,1.0s
NVS pmax pmax
comp=E,6.0nm,1.0s
NRIK Noril'sk 43.42 336 P **P 00 58 43.9 +0.2**
comp=E,2.2nm,0.6s,baz=137,slow=3.5,SNR=5.1
NRIK PcP **PcP 01 00 32.0 +0.8**
comp=E,1.0nm,0.5s,baz=78,slow=5.2,SNR=3.6
NRIK Noril'sk 43.42 336 P **P 00 58 43.9 +0.2**
NRIK 01 00 32.0
NRIK pmax pmax
comp=Z,1.0nm,0.5s
NRIK pmax pmax
comp=Z,1.0nm,0.5s
MKAR Makanchi Array 43.87 302 P **P 00 58 48.5 +0.7**
comp=Z,2.0nm,0.6s,baz=86,slow=10.0,SNR=26
MKAR PcP **PcP 01 00 34.0 +0.8**
comp=Z,0.6nm,0.8s,baz=96,slow=5.8,SNR=3.3
MKAR LR LR 01 16 25.1
comp=Z,43nm,20.3s,baz=20,slow=35
MKAR Makanchi Array 43.87 302 *e*P **P 00 58 47.3 -0.5**
MKAR PcP **PcP 01 00 34.0 +0.8**
KSM Kuching 44.86 226 *e*P **P 00 58 57.7 +1.8**
comp=Z,11nm,1.0s
KURK Kurchatov 45.75 308 *e*P **P 00 59 01.2 -1.4**
KURK pmax pmax
comp=Z,5.0nm,0.6s
KURK Kurchatov 45.75 308 *e*P **P 00 59 01.2 -1.4**
comp=Z,5.2nm,0.6s
ODAN Odare 45.88 274 *e*P **P 00 59 04.4 +0.2**
comp=Z,5.8nm,0.5s
RAMN Ramite 46.48 274 *e*P **P 00 59 09.1 +0.2**
comp=Z,33nm,0.7s
GUN Gumba 46.64 276 *e*P **P 00 59 10.6 +0.3**
comp=Z,13nm,0.6s
GKN Gorkha 47.60 276 *e*P **P 00 59 17.7 +0.1**
comp=Z,27nm,0.9s
KDAK Kodiak Island 47.78 42 LR LR 01 20 00.7
comp=Z,44nm,19.7s,baz=180,slow=37
KDAK Kodiak Island 47.78 42 *i*P **P 00 59 19.6 +1.2**
SPU Mount Spurr 47.91 37 *e*P **P 00 59 18.5 -0.9**
MLY Manley 48.50 32 *e*P **P 00 59 23.3 -0.6**
comp=Z,3.7nm,0.8s
KOLN Koldanda 48.52 277 *e*P **P 00 59 24.3 -0.5**
comp=Z,6.0nm,0.5s
COLD Coldfoot 48.79 29 *e*P **P 00 59 25.0 -1.1**
comp=Z,7.7nm,1.4s
PYUN Piuthan 48.87 277 *e*P **P 00 59 27.3 -0.1**
comp=Z,15nm,0.6s
TKM2 Tokmak 2 49.34 299 *e*P **P 00 59 28.5 -2.4**
TKM2 pmax pmax
comp=Z,6.0nm,1.1s
TKM2 Tokmak 2 49.34 299 *e*P **P 00 59 28.5 -2.4**
comp=Z,6.2nm,1.1s
MDM Murphy Dome 49.57 32 *e*P **P 00 59 31.9 -0.1**
comp=Z,8.2nm,0.9s
WRH Wood River Hil 49.64 33 *e*P **P 00 59 32.1 -0.4**
comp=Z,23nm,1.8s
SML Sawmill 49.66 36 *e*P **P 00 59 32.5 -0.3**
SML pmax pmax
comp=Z,20nm,1.4s
SML Sawmill 49.66 36 *e*P **P 00 59 32.5 -0.3**
comp=Z,20nm,1.4s
COLA College 49.73 32 *e*P **P 00 59 34.5 +1.3**
COLA pmax pmax
comp=Z,3.0nm,0.9s
COLA College 49.73 32 *e*P **P 00 59 32.5 -0.7**
comp=Z,29nm,1.9s
HDA Harding Lake 50.14 33 *e*P **P 00 59 35.1 -1.2**
comp=Z,8.7nm,1.0s
IL1 Eielson Array 50.15 32 *e*P **P 00 59 35.4 -1.0**
ILAR Eielson Array 50.15 32 P **P 00 59 37.6 +1.3**
comp=Z,4.6nm,0.7s,baz=270,slow=6.4,SNR=48
ILB Eielson Array 50.15 32 *e*P **P 00 59 35.4 -1.0**
AAK Ala-Archa 50.20 298 *e*P **P 00 59 36.5 -0.8**
AAK pmax pmax
comp=Z,3.0nm,1.0s
AAK Ala-Archa 50.20 298 *e*P **P 00 59 35.4 -1.9**
comp=Z,9.9nm,2.0s
BRVK Borovoye 50.50 313 *i*P **P 00 59 38.8 -0.4**
BRVK pmax pmax
comp=Z,9.0nm,2.5s
BRVK Borovoye 50.50 313 *e*P **P 00 59 36.7 -2.5**
comp=Z,4.1nm,1.0s
EKS2 Erkin-Say 50.70 299 *e*P **P 00 59 39.0 -2.0**
EKS2 pmax pmax
comp=Z,2.0nm,0.6s
EKS2 Erkin-Say 50.70 299 *e*P **P 00 59 39.0 -2.0**
comp=Z,1.7nm,0.6s
LHMI Lhok Sumawe 50.77 243 *e*P **P 00 59 43.8 +2.1**
comp=Z,27nm,0.9s
PSI Prapat 51.10 239 LR LR 01 21 50.2
comp=Z,64nm,18.3s,baz=45,slow=36
ZRNK Zerenda 51.28 313 *e*P **P 00 59 44.1 -1.0**
ZRNK pmax pmax
comp=Z,7.0nm,1.0s
ZRNK Zerenda 51.28 313 *e*P **P 00 59 44.1 -1.0**
comp=Z,6.6nm,1.0s
DOT Dot Lake 51.46 33 *e*P **P 00 59 44.8 -1.6**
comp=Z,9.9nm,0.8s
MENT Mentasta 51.70 34 *e*P **P 00 59 47.4 -0.7**
comp=Z,4.4nm,0.8s
EGAK Eagle 52.59 32 *e*P **P 00 59 53.1 -1.6**
comp=Z,3.7nm,0.7s
KKAR Karatay Array 52.85 300 *e*P **P 00 59 54.8 -2.1**
KKAR Karatay Array 52.85 300 *e*P **P 00 59 54.8 -2.1**
HON Honolulu 54.89 88 *e*P **P 01 00 14.8 +2.8**
HON pmax pmax
comp=Z,169nm,0.9s
HON Honolulu 54.89 88 *e*P **P 01 00 14.8 +2.8**
comp=Z,168nm,0.9s
INK Inuvik 55.02 27 *e*P **P 01 00 11.5 -0.8**
INK pmax pmax
comp=Z,5.0nm,0.7s
INK Inuvik 55.02 27 *e*P **P 01 00 11.5 -0.8**
comp=Z,5.4nm,0.7s
FITZ Fitzroy Crossi 56.25 197 P **P 01 00 22.1 +0.4**
comp=Z,1.2nm,0.5s,baz=346,slow=12,SNR=3.6
ARU Arti 56.31 319*c* *i*P **P 01 00 21.9 +0.2**
ARU 01 02 27.7
ARU S **S 01 08 07.0 -1.0**
ARU SS **SS 01 11 48.4 -6.4**
ARU pmax pmax
comp=Z,16nm,0.8s
ARU Arti 56.31 319 *e*P **P 01 00 20.2 -1.5**
comp=Z,14nm,0.7s
WRA Warramunga Arr 56.57 187 P **P 01 00 23.0 -0.9**
comp=Z,3.2nm,0.8s,baz=4.4,slow=7.5,SNR=20
CTA Charters Tower 56.63 174 LR LR 01 24 08.3
comp=Z,181nm,21.5s,baz=258,slow=35
KBL Kabul 57.04 291 *e*P **P 01 00 25.7 -1.9**
KBL pmax pmax
comp=Z,12nm,1.6s
KBL Kabul 57.04 291 *e*P **P 01 00 25.7 -1.9**
comp=Z,12nm,1.6s
ABKAR Akbulak array 57.78 310 *e*P **P 01 00 31.4 -0.9**
AS01 Alice Springs 60.29 187 *e*P **P 01 00 49.0 -0.8**
ASAR Alice Springs 60.30 187 P **P 01 00 49.3 -0.6**
comp=Z,1.9nm,0.8s,baz=7.1,slow=6.4,SNR=14
ASAR LR LR 01 26 41.5
comp=Z,23nm,18.5s,baz=36,slow=36
BBB Bella Bella 62.75 44 LR LR 01 28 09.2
comp=Z,18nm,18.6s,baz=190,slow=36
RES Resolute Bay 63.15 14 *e*P **P 01 01 07.6 -0.9**
RES pmax pmax
comp=Z,9.0nm,1.9s
RES Resolute Bay 63.15 14 *e*P **P 01 01 07.6 -0.9**
comp=Z,9.3nm,1.9s
GEYT Alibeck 63.55 299 P **P 01 01 12.2 +0.4**
comp=Z,1.6nm,0.7s,baz=42,slow=2.4,SNR=6.1
KLMR Klimovskoe 63.81 328 *e*P **P 01 01 12.3 -0.7**
KLMR pmax pmax
comp=Z,9.0nm,0.7s
ARCES ARCESS Array B 64.19 339 P **P 01 01 16.5 +1.0**
comp=Z,5.7nm,1.0s,baz=352,slow=6.1,SNR=5.0
YKA Yellowknife Ar 64.45 30 P **P 01 01 18.0 +0.8**
comp=Z,1.0nm,0.7s,baz=303,slow=6.8,SNR=25
YKA Yellowknife Ar 64.45 30 P **P 01 01 18.0 +0.8**
VRH Novokhopyorsk 67.52 318 *e*P **P 01 01 36.5 -0.6**
VRH pmax pmax
comp=Z,10.0nm,0.7s
OBN Obninsk 68.10 323⇓ *e*P **P 01 01 41.0 +0.4**
OBN *i* *PP **sP 01 01 59.0 -1.3**
OBN *e* 01 02 03.5
OBN 01 04 11.0
OBN pmax pmax
comp=Z,13nm,1.2s
STKA Stephens Creek 68.14 179 P **P 01 01 40.1 -1.0**
comp=Z,3.4nm,0.9s,baz=308,slow=5.7,SNR=2.7
STKA LR LR 01 31 18.6
comp=Z,33nm,20.0s,baz=356,slow=36
LPSR Galich'ya Gora 68.27 320 *e*P **P 01 01 41.5 -0.3**
LPSR pmax pmax
comp=Z,10.0nm,0.8s
VSR Storozhevoye 68.88 319 *e*P **P 01 01 45.1 -0.5**
VSR pmax pmax
comp=Z,10.0nm,0.8s
FIA1 FINESS Array S 68.92 332 *e*P **P 01 01 44.8 -1.0**
comp=Z,19nm,1.1s
FINES FINESS Array B 68.92 332 P **P 01 01 46.2 +0.5**
comp=Z,11nm,0.8s,baz=46,slow=6.6,SNR=40
VSU Vasula 70.53 329 *i*P **P 01 01 55.7 +0.1**
VSU pmax pmax
comp=Z,81nm,2.5s
KBZ Khabaz 70.75 310 P **P 01 01 58.3 +1.1**
comp=Z,5.8nm,0.9s,baz=97,slow=1.3,SNR=9.3
KIV Kislovodsk 70.76 311 *e*P **P 01 01 58.3 +0.8**
KIV pmax pmax
comp=Z,13nm,1.1s
ANN Anapa 73.42 314 *e*P P 01 02 09.6 -3.6
ANN *e**PP pP 01 02 26.3 -1.1
ANN *e* 01 04 53.4
ANN *e*S S 01 11 31.0 -7.6
ANN pmax pmax
comp=Z,96nm,1.0s
NC405 NORSAR Array S 74.14 337 *e*P **P 01 02 18.1 +0.9**
AKASG Malin Array Be 74.29 322 P **P 01 02 18.2 0.0**
comp=Z,4.8nm,0.5s,baz=46,slow=5.9,SNR=35
KIEV Kiev 74.30 322 *e*P **P 01 02 18.3 +0.1**
KIEV pmax pmax
comp=Z,10.0nm,0.9s
KIEV Kiev 74.30 322 *e*P **P 01 02 18.3 +0.1**
comp=Z,9.7nm,0.9s
NC204 NORSAR Array S 74.32 337 *e*P **P 01 02 19.3 +1.0**
AK11 Malin Array Si 74.33 322 *e*P **P 01 02 17.8 -0.6**
NB2 NORSAR Subarra 74.36 337 P **P 01 02 18.9 +0.4**
comp=Z,7.0nm,0.6s,baz=40,slow=6.2
NOA NORSAR Array B 74.36 337 P **P 01 02 18.9 +0.4**
comp=Z,6.9nm,0.7s,baz=38,slow=5.8,SNR=34
NOA LR LR 01 37 53.7
comp=Z,21nm,19.4s,baz=5.0,slow=38
FFC Flin Flon 74.36 32 *e*P **P 01 02 18.1 -0.5**
FFC pmax pmax
comp=Z,5.0nm,0.9s
FFC Flin Flon 74.36 32 *e*P **P 01 02 18.1 -0.5**
comp=Z,5.3nm,0.9s
NBO02 NORSAR Array S 74.46 337 *e*P **P 01 02 19.6 +0.5**
LRM Limekiln Ridge 74.84 44 *e*P **P 01 02 22.6 +0.8**
EGMT Eagleton 74.95 41 *e*P **P 01 02 22.2 -0.1**
comp=Z,5.2nm,0.9s
BOZ Bozeman (W) 75.40 44 *e*P **P 01 02 24.7 -0.2**
BOZ pmax pmax
comp=Z,4.0nm,1.0s
BOZ Bozeman (W) 75.40 44 *e*P **P 01 02 24.7 -0.2**
comp=Z,4.3nm,1.0s
NV01 Mina Array Sit 75.69 53 *e*P **P 01 02 26.1 -0.7**
NVAR Mina Array Bea 75.69 53 P **P 01 02 28.2 +1.4**
comp=Z,1.4nm,0.6s,baz=292,slow=6.3,SNR=6.6
WOFM Oak Flat 77.10 55 *e*P **P 01 02 35.1 +0.4**
IAS Iasi 77.38 320⇓ P **P 01 02 37.2 +1.3**
LVV L'vov 77.39 324 *e*P **P 01 02 36.3 +0.4**
R11A Troy Canyon, C 77.46 51 *e*P **P 01 02 38.1 +1.3**
comp=Z,1.1nm,0.7s
TPNV Topopah Spring 77.87 53 *e*P **P 01 02 39.2 +0.1**
TPNV pmax pmax
comp=Z,4.0nm,1.0s
TPNV Topopah Spring 77.87 53 *e*P **P 01 02 39.2 +0.1**
comp=Z,3.8nm,1.0s
TLCR 78.02 318⇑ P **P 01 02 40.1 +0.6**
KWP Kalwaria Pacla 78.14 324 *e*P **P 01 02 41.7 +1.6**
BUR08 Bucovina Ar. S 78.28 321 *e*P **P 01 02 40.2 -0.9**
BURAR Bucovina Array 78.29 321⇑ P **P 01 02 41.4 +0.3**
TCUT Toone Canyon 78.32 47 *e*P **P 01 02 40.4 -1.2**
comp=Z,14nm,0.6s
BW06 Boulder Array 78.36 45 *e*P **P 01 02 42.3 +0.6**
PDAR Pinedale Array 78.36 45 P **P 01 02 42.5 +0.8**
comp=Z,0.8nm,0.6s,baz=248,slow=1.9,SNR=14
CFR Carcaliu 78.39 318⇑ P **P 01 02 42.3 +0.8**
VRI Vrincioaia 78.68 319⇓ P **P 01 02 43.8 +0.6**
BR131 Keskin Array S 78.71 311 *e*P **P 01 02 41.2 -2.4**
BRTR Keskin Array B 78.71 311 P **P 01 02 44.9 +1.2**
comp=Z,2.8nm,0.9s,baz=102,slow=3.5,SNR=12
STHS Stebnicka Huta 78.98 325 *e*P **P 01 02 46.2 +1.5**
STHS pmax pmax
comp=Z,3.0nm,0.8s
OJC Ojcow 79.08 326 *e*P **P 01 02 46.1 +0.9**
OJC Ojcow 79.08 326 *e*P **P 01 02 43.1 -2.1**
comp=Z,12nm,1.1s
BR231 Keskin MP Arra 79.16 312 *e*P **P 01 02 44.5 -1.6**
NIE Niedzica 79.42 325 *e*P **P 01 02 48.2 +1.1**
P18A Preston Nutter 79.95 48 *e*P **P 01 02 53.2 +2.7**
comp=Z,3.0nm,0.7s
LANS Liptovska Anna 79.99 325 *e*P **P 01 02 52.1 +1.8**
OKC Ostrava-Krasne 80.09 326 *e*P **P 01 02 51.2 +0.5**
OKC Ostrava-Krasne 80.09 326 *e*P **P 01 02 51.2 +0.5**
DRGR 80.10 322⇑ P **P 01 02 51.6 +0.6**
SRU San Rafael Swe 80.11 48 *e*P **P 01 02 51.2 -0.1**
SRU pmax pmax
comp=Z,5.0nm,0.7s
SRU San Rafael Swe 80.11 48 *e*P **P 01 02 51.2 -0.1**
comp=Z,5.2nm,0.7s
KSP Ksiaz 80.16 328 *e*P **P 01 02 52.4 +1.3**
RAYN Ar Rayn 80.30 292 *e*P **P 01 02 50.4 -2.0**
comp=Z,2.7nm,0.6s
MORC Moravsky Berou 80.40 327 *e*P **P 01 02 50.4 -2.1**
MORC pmax pmax
comp=Z,16nm,0.9s
MORC Moravsky Berou 80.40 327 *e*P **P 01 02 50.4 -2.1**
comp=Z,16nm,0.9s
DPC Dobruska-Polom 80.52 328 *e*P **P 01 02 54.2 +1.1**
DPC *e*PCP **PcP 01 02 57.5 -2.4**
DPC Dobruska-Polom 80.52 328 *e*P **P 01 02 54.2 +1.1**
UPC Upice 80.53 328 *e*P **P 01 02 54.1 +1.0**
UPC Upice 80.53 328 *e*P **P 01 02 54.1 +1.0**
VYHS Vyhne 80.75 325 *e*P **P 01 02 55.3 +1.0**
VYHS pmax pmax
comp=Z,3.0nm,1.3s
GZR Gura Zlata 81.04 321⇑ P **P 01 02 56.0 0.0**
BRG Berggiesshubel 81.13 329 *e*P **P 01 02 56.8 +0.5**
BRG pmax pmax
comp=Z,8.0nm,1.1s
VRAC Vranov 81.17 327⇓ P **P 01 02 57.5 +1.0**
CLL Collm 81.18 330⇑ P **P 01 02 56.7 +0.2**
CLL pmax pmax
comp=Z,11nm,0.8s
CLL Collm 81.18 330 *e*P **P 01 02 56.9 +0.4**
comp=Z,12nm,0.8s
SMOL Smolenice 81.38 326 *e*P **P 01 02 58.8 +1.1**
BZS Buzias 81.47 322⇓ P **P 01 02 58.4 +0.2**
GOPC GO Pecny, Ondr 81.50 328 *e*P **P 01 02 59.2 +0.9**
GOPC GO Pecny, Ondr 81.50 328 *e*P **P 01 02 59.2 +0.9**
PRA Prague 81.53 328 *e*P **P 01 02 59.4 +1.0**
PRA Prague 81.53 328 *e*P **P 01 02 59.4 +1.0**
PRU Pruhonice 81.55 328 *e*P **P 01 02 59.3 +0.8**
PRU Pruhonice 81.55 328 *e*P **P 01 02 59.3 +0.8**
TREC Trest 81.66 327 *e*P **P 01 03 00.0 +0.8**
TREC Trest 81.66 327 *e*P **P 01 03 00.0 +0.8**
NKC Novy Kostel 82.23 329 *e*P **P 01 03 02.6 +0.5**
NKC Novy Kostel 82.23 329 *e*P **P 01 03 02.6 +0.5**
KHC Kasperske Hory 82.61 328 *e*P **P 01 03 04.8 +0.7**
KHC Kasperske Hory 82.61 328 *e*P **P 01 03 04.8 +0.7**
KHC Kasperske Hory 82.61 328 *e*P **P 01 03 02.9 -1.3**
comp=Z,2.9nm,1.0s
VTS Vitosha 82.76 319⇓ P **P 01 03 06.1 +0.9**
GEC2 GERESS Array S 82.77 328 *e*P **P 01 03 05.7 +0.6**
GEC2 pmax pmax
comp=Z,6.0nm,1.2s
GEC2 GERESS Array S 82.77 328 *e*P **P 01 03 05.7 +0.6**

comp=Z,6.2nm,1.2s
GERES GERESS Array B 82.77 328 P **P** 01 03 05.4 **+0.3**
comp=Z,2.4nm,0.7s,baz=36,slow=5.7,SNR=20
GERES LR LR 01 44 00.8
comp=Z,19nm,20.3s,baz=52,slow=38
GRFO Grafenberg 83.15 330 *eP* **P** **01 03 04.9 -2.0**
GRFO pmax pmax
comp=Z,12nm,0.9s
GRFO Grafenberg 83.15 330 *eP* **P** **01 03 04.9 -2.0**
comp=Z,12nm,0.9s
ANMO Albuquerque 85.28 49 *i* P **P** **01 03 18.3 0.0**
ANMO pmax pmax
comp=Z,7.0nm,2.5s
ANMO Albuquerque 85.28 49 *eP* **P** **01 03 17.8 -0.4**
comp=Z,2.6nm,1.0s
BFO Black Forest 85.39 330 *i* P **P** **01 03 19.2 +0.9**
BFO Black Forest 85.39 330 *eP* **P** **01 03 16.9 -1.4**
comp=Z,10nm,1.0s
SCHQ Schefferville 85.89 16 P **P** **01 03 20.6 -0.1**
comp=Z,3.7nm,1.0s,baz=311,slow=18,SNR=3.1
FUORN Ofenpass-Fuorn 85.96 328 *eP* **P** **01 03 19.1 -2.4**
comp=Z,9.7nm,1.1s
TXAR Lajitas Array 90.82 52 P **P** **01 03 45.8 +1.1**
comp=Z,1.4nm,0.8s,baz=303,slow=3.2,SNR=13
H06S1 SOCORRO T 92.88 64 T T 02 47 52.0
SNR=8.6
VNDA Vanda 114.60 175 PKP PKPdf 01 09 18.8 -0.9
comp=Z,1.9nm,0.3s,baz=328,slow=1.0,SNR=24
TORD Torodi Ar. Bea 117.23 314 PKP **PKPdf** **01 09 25.1 -1.5**
comp=Z,0.8nm,1.1s,baz=358,slow=1.0,SNR=5.3
LPAZ La Paz 147.39 59 PKPbc **PKPbc** **01 10 25.8 0.0**
comp=Z,1.9nm,0.7s,baz=317,slow=1.1,SNR=6.3

WEL 10 01:02:00.3±0.6, 35°.93S×177°.70E, h212km±7km, ML3.8/9, 1C, Error ellipse: s-maj=9.6km s-min=7.5km az=90.0, Off east coast of North Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MXZ	**Matakaoa Point**	**1.70**	**164**	PN	Pn	01 02 36.7	-0.1
HAZ	**Te Kaha**	**1.82**	**178**	PN	Pn	01 02 38.0	+0.1
WMGZ	**Waiomatatini S**	**1.97**	**163**	PN	Pn	01 02 39.4	+0.1
PKGZ	**Pakihiroa**	**1.98**	**171**	PN	Pn	01 02 39.8	+0.3
PUZ	**Puketiti**	**2.18**	**168**	PN	Pn	01 02 41.2	-0.3
TWGZ	**Tauwhareparae**	**2.25**	**174**	PN	Pn	01 02 43.0	+0.7
TWGZ				SN	S	01 03 14.8	-0.1
URZ	**Urewera**	**2.37**	**191**	PN	Pn	01 02 44.1	+0.7
URZ				SN	S	01 03 16.8	-0.2
MWZ	**Matawai**	**2.40**	**183**	PN	Pn	01 02 44.3	+0.4
CNGZ	**Carnagh Statio**	**2.58**	**171**	PN	Pn	01 02 46.2	+0.4
RIGZ	**Rimuhau**	**2.77**	**179**	PN	Pn	01 02 47.9	0.0
SNGZ	**Shannon Statio**	**2.86**	**186**	PN	Pn	01 02 48.3	-0.7
RAHZ	**Arahi**	**3.02**	**189**	PN	Pn	01 02 51.2	+0.4
MRHZ	**Matea Rd**	**3.07**	**199**	PN	Pn	01 02 52.0	+0.6
KNZ	**Kokohu**	**3.09**	**180**	PN	Pn	01 02 51.1	-0.4
MHGZ	**Mahia Peninsul**	**3.22**	**177**	PN	Pn	01 02 53.0	-0.1
NMHZ	**Naumai**	**3.24**	**192**	PN	Pn	01 02 54.1	+0.7
BKZ	**Black Stump Fm**	**3.37**	**196**	PN	Pn	01 02 54.8	-0.1
ARHZ	**Aropaoanui**	**3.37**	**189**	PN	Pn	01 02 54.3	-0.6
MCHZ	**McNeill Hill**	**3.60**	**193**	PN	Pn	01 02 57.7	+0.2
WNVZ	**Wahianoa**	**3.78**	**206**	PN	Pn	01 03 00.5	+0.6
KRHZ	**Kereru**	**3.85**	**196**	PN	Pn	01 03 00.0	-0.7
KAHZ	**Kahuranaki**	**3.91**	**189**	PN	Pn	01 03 01.0	-0.4
PXZ	**Pawanui**	**4.15**	**189**	⇑PN	Pn	01 03 03.1	-1.1
PNHZ	**Pukenui**	**4.15**	**196**	PN	Pn	01 03 03.5	-0.8
TSZ	**Takapari Road**	**4.34**	**198**	PN	Pn	01 03 05.7	-1.1
PRHZ	**Porangahau**	**4.41**	**191**	PN	Pn	01 03 06.4	-1.1
ANWZ	**Angora Road**	**4.62**	**192**	PN	Pn	01 03 08.8	-1.4
MRZ	**Mangatainoka R**	**5.01**	**199**	PN	Pn	01 03 13.2	-1.8
HOWZ	**Holdsworth Sta**	**5.25**	**198**	PN	Pn	01 03 16.1	-2.0
OGWZ	**Otaki Gorge**	**5.27**	**201**	PN	Pn	01 03 16.4	-1.9
TMWZ	**Te Maipa**	**5.36**	**195**	PN	Pn	01 03 17.6	-1.9
KIW	**Kapiti Island**	**5.39**	**203**	PN	Pn	01 03 17.8	-2.0
MTW	**Mount Morrison**	**5.50**	**198**	PN	Pn	01 03 18.8	-2.4
CAW	**Cannon Point**	**5.57**	**201**	PN	Pn	01 03 19.8	-2.3

IDC 10 01:05:12.2±2.9, 1°.52N×126°.49E, h0km, mb3.7/4, mb1 3.9/4, mb1mx3.5/42, mbtmp3.7/4, Error ellipse: s-maj=351.4km s-min=21.1km az=66.0, Northern Molucca Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**22.67**	**161**	P	P	01 10 15.5	+0.1
	1.8nm,0.3s,baz=329,slow=12,SNR=9.7						
ASAR	**Alice Springs**	**26.05**	**164**	P	P	01 10 47.5	0.0
	0.6nm,0.4s,baz=349,slow=7.4,SNR=14						
MKAR	**Makanchi Array**	**59.24**	**326**	P	P	01 15 15.8	+0.3
	0.2nm,0.4s,baz=114,slow=9.2,SNR=4.8						
KURBB	**Kurchatov Arra**	**63.47**	**328**	P	P	01 15 43.6	-0.3
	0.3nm,0.4s,baz=128,slow=6.5,SNR=4.1						

*NIED **10** 01:07:00, 38°.00N×142°.70E, h23km, Mw3.6 Best double couple: M0 2.79000×10^14 NP1:φs295.00000°, δ33.00000°, λ178.00000°. NP2:φs26.00000°, δ89.00000°, λ57.00000°.*
*IDC **10** 01:07:15.9±6.8, 37°.55N×143°.86E, h0km, mb3.7/4, mb1 3.6/6, mb1mx3.4/46, mbtmp3.6/6, ML2.6/2, Error ellipse: s-maj=114.4km s-min=62.2km az=126.0*
*JMA **10** 01:07:25.9±0.3, 37°.98N×142°.67E, h22km, M3.8*
ISC 10 01:07:27.2±3.3, 38°.00N±0°.06×142°.6E±0°.1, h15km±16km, n24, σ1°.03/25, mb3.5/4, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**1.07**	**295**	P	**Pb**	**01 07 47.4**	**-0.1**
JIO				S	**Sg**	**01 08 01.7**	**-0.3**
JMM	**Marumori**	**1.42**	**265**	P	**Pn**	**01 07 51.5**	**-1.0**
JMM				eS	**Sn**	**01 08 10.8**	**-0.1**
JMK	**Ichinoseki**	**1.43**	**312**	P	**Pn**	**01 07 52.5**	**-0.1**
JMK				eS	**Sn**	**01 08 10.6**	**-0.6**
JFK	**Kawauchi**	**1.50**	**246**	P	**Pn**	**01 07 52.2**	**-1.3**
JFK				eS	**Sn**	**01 08 10.7**	**-2.1**
JOU	**Okura**	**1.56**	**284**	P	**Pn**	**01 07 55.0**	**+0.6**
JOU				eS	**Sb**	**01 08 15.6**	**+0.4**
JOM	**Ohasama**	**1.79**	**326**	P	**Pn**	**01 07 57.4**	**-0.1**
JOM				eS	**Sn**	**01 08 20.1**	**+0.2**
JFT	**Otama**	**1.84**	**256**	P	**Pn**	**01 07 58.5**	**+0.2**
JFT				eS	**Sn**	**01 08 21.3**	**-0.1**
JYK	**Kaneyama**	**1.97**	**298**	P	**Pn**	**01 08 00.2**	**+0.1**
JRG	**Rokugo**	**2.07**	**313**	P	**Pn**	**01 08 02.5**	**+1.1**
JANG	**Nango**	**2.51**	**341**	P	**Pn**	**01 08 08.1**	**+0.6**
JAW	**Awa shima**	**2.67**	**281**	P	**Pn**	**01 08 11.1**	**+1.5**
JAG	**Ashikaga**	**2.95**	**239**	P	**Pn**	**01 08 14.1**	**+0.6**
JAG				eS	**Sn**	**01 08 50.5**	**+1.8**
MJAR	**Matsushiro Arr**	**3.78**	**249**	Pn	**Pn**	**01 08 27.4**	**+2.5**
	1.1nm,0.3s,baz=78,slow=15,SNR=7.3						
USRK	**Ussuriysk Ar.**	**10.11**	**311**	Pn	Pn	01 09 56.9	+5.1
	0.1nm,0.3s,baz=129,slow=15,SNR=4.1						
H11N2	**WAKE ISLAND Hy**	**27.88**	**124**	T	T	01 41 11.8	
	baz=316,slow=76,SNR=6.3						
H11N1	**WAKE ISLAND Hy**	**27.89**	**124**	T	T	01 41 13.0	
	baz=316,slow=76,SNR=6.7						
H11N3	**WAKE ISLAND Hy**	**27.89**	**124**	T	T	01 41 13.3	
	baz=316,slow=76,SNR=6.8						
SONM	**Songino Array**	**28.04**	**302**	P	**P**	**01 13 17.5**	**-0.4**
	0.4nm,0.6s,baz=117,slow=9.1,SNR=3.7						
H11S1	**WAKE ISLAND Hy**	**28.64**	**126**	T	T	01 42 09.4	
	baz=318,slow=76,SNR=7.8						
H11S3	**WAKE ISLAND Hy**	**28.64**	**126**	T	T	01 42 08.6	
	baz=318,slow=76,SNR=7.8						
H11S2	**WAKE ISLAND Hy**	**28.65**	**126**	T	T	01 42 09.9	
	baz=318,slow=76,SNR=7.8						
ZALV	**Zalesovo Beam**	**41.96**	**312**	P	**P**	**01 15 17.3**	**+0.1**
	0.6nm,0.6s,baz=90,slow=8.4,SNR=4.2						
MKAR	**Makanchi Array**	**44.40**	**301**	P	**P**	**01 15 36.9**	**-0.2**
	0.5nm,0.6s,baz=86,slow=8.8,SNR=5.9						
KURBB	**Kurchatov Arra**	**46.15**	**307**	P	**P**	**01 15 50.4**	**-0.4**
	0.9nm,0.5s,baz=81,slow=8.1,SNR=8.7						

*NIED **10** 01:10:00, 37°.20N×142°.60E, h5km, Mw3.4 Best double couple: M0 1.41000×10^14 NP1:φs321.00000°, δ67.00000°, λ-172.00000°. NP2:φs227.00000°, δ82.00000°, λ-23.00000°.*
*ISCJB **10** 01:10:31.8±1.2, 37°.06N±0°.06×142°.5E±0°.1, h10km, mb3.5/5, Error ellipse: s-maj=13.8km s-min=8.2km az=162.4*
*IDC **10** 01:10:31.5±2.3, 37°.17N×142°.57E, h0km, mb3.5/5, mb1 3.6/7, mb1mx3.4/46, mbtmp3.6/7, ML3.5/2, Error ellipse: s-maj=56.1km s-min=24.4km az=74.0*
*JMA **10** 01:10:32.7±0.4, 37°.16N×142°.58E, h37km, M3.9*
ISC 10 01:10:35.1±1.4, 37°.08N±0°.07×142°.2E±0°.1, h10km, n20, σ1°.75/17, mb3.5/5, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**1.12**	**285**	P	**Pb**	**01 10 56.2**	**-0.4**
ONAJ	**Iwakimizuishiy**	**1.15**	**271**	P	**Pb**	**01 10 57.3**	**+0.3**
JMM	**Marumori**	**1.39**	**305**	P	**Pn**	**01 10 58.6**	**-1.9**
JMM				S	**Sb**	**01 11 18.7**	**-0.1**
JHO	**Hitachi**	**1.42**	**251**	P	**Pn**	**01 11 00.6**	**-0.3**
JFT	**Otama**	**1.57**	**287**	P	**Pn**	**01 11 02.0**	**-1.1**
MJAR	**Matsushiro Arr**	**3.27**	**262**	Pn	**Pn**	**01 11 28.0**	**+1.5**
	3.4nm,0.3s,baz=91,slow=15,SNR=17						
MAT	**Matsushiro**	**3.28**	**262**	P	**Pn**	**01 11 28.1**	**+1.6**
MAT				S	**Sn**	**01 12 03.2**	**-2.3**
JHJ	**Hachijo jima 2**	**4.44**	**208**	Pn	**Pn**	**01 11 42.8**	**+0.4**
	9.6nm,0.3s,baz=137,slow=23,SNR=5.9						
JHJ				Sn	**Sn**	**01 12 33.0**	**-1.2**
	17nm,0.3s,baz=121,slow=23,SNR=4.8						
USRK	**Ussuriysk Ar.**	**10.54**	**316**	Pn	**Pn**	**01 13 10.7**	**+4.6**
	0.1nm,0.3s,baz=130,slow=15,SNR=2.3						
H11N2	**WAKE ISLAND Hy**	**27.61**	**122**	T	T	01 45 05.9	
	baz=315,slow=75,SNR=23						
H11N1	**WAKE ISLAND Hy**	**27.62**	**122**	T	T	01 45 07.9	
	baz=315,slow=75,SNR=17						
H11N3	**WAKE ISLAND Hy**	**27.63**	**122**	T	T	01 45 10.6	
	baz=315,slow=75,SNR=22						
SONM	**Songino Array**	**28.30**	**304**	P	**P**	**01 16 28.1**	**-0.7**
	0.7nm,0.8s,baz=92,slow=7.6,SNR=4.6						
H11S1	**WAKE ISLAND Hy**	**28.34**	**124**	T	T	01 46 09.9	
	baz=316,slow=76,SNR=26						
H11S3	**WAKE ISLAND Hy**	**28.34**	**124**	T	T	01 46 09.6	
	baz=316,slow=76,SNR=24						
H11S2	**WAKE ISLAND Hy**	**28.36**	**124**	T	T	01 46 08.9	
	baz=316,slow=76,SNR=22						
ZALV	**Zalesovo Beam**	**42.37**	**312**	P	**P**	**01 18 29.2**	**0.0**
	0.3nm,0.3s,baz=93,slow=7.2,SNR=3.8						
MKAR	**Makanchi Array**	**44.65**	**302**	P	**P**	**01 18 46.6**	**-1.2**
	0.2nm,0.6s,baz=88,slow=7.4,SNR=3.6						
KURBB	**Kurchatov Arra**	**46.49**	**308**	P	**P**	**01 19 01.0**	**-1.2**
	0.7nm,0.4s,baz=82,slow=8.0,SNR=6.5						
WRA	**Warramunga Arr**	**57.21**	**189**	P	**P**	**01 20 21.3**	**-1.1**
	0.2nm,0.4s,baz=6.3,slow=6.9,SNR=2.5						

*ISCJB **10** 01:16:30.0±0.6, 38°.89N±0°.03×29°.17E±0°.06, h9km, Error ellipse: s-maj=7.2km s-min=4.7km az=13.2*
*ISK **10** 01:16:29.9, 38°.92N×29°.12E, h6km, MD2.6*
*DDA **10** 01:16:29.9, 38°.89N×29°.09E, h7km, Md2.6*
*CSEM **10** 01:16:30.1±0.1, 38°.89N×29°.16E, h5km, MD2.6, Error ellipse: s-maj=2.5km s-min=1.7km az=95.0*
ISC 10 01:16:30.4±1.1, 38°.89N±0°.03×29°.16E±0°.04, h9km, n14, σ0°.37/20, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KULA	**Kula-Manisa**	**0.54**	**226**	*e*PG	**Pg**	**01 16 40.8**	**-0.1**
KULA				*e*SG	**Sg**	**01 16 48.4**	**+0.4**
KULA	**Kula-Manisa**	**0.54**	**226**	*e*Pg	**Pg**	**01 16 40.8**	**-0.1**
KULA				*e*Sg	**Sg**	**01 16 48.4**	**+0.4**
KHAL	**Karahalli**	**0.58**	**153**	*i* P	**Pg**	**01 16 41.4**	**-0.3**
KHAL				*i* S	**Sg**	**01 16 48.7**	**-0.6**
KHAL	**Karahalli**	**0.58**	**153**	P	**Pg**	**01 16 41.4**	**-0.3**
KHAL				S	**Sg**	**01 16 48.7**	**-0.6**
TVSB	**Tavsanli**	**0.60**	**23**	*e*PG	**Pg**	**01 16 42.1**	**0.0**
TVSB				*e*SG	**Sg**	**01 16 50.2**	**+0.1**
TVSB	**Tavsanli**	**0.60**	**23**	*e*Pg	**Pg**	**01 16 42.1**	**0.0**
TVSB				*e*Sg	**Sg**	**01 16 50.2**	**+0.1**
DST	**Dursunbey**	**0.82**	**330**	*e*PG	**Pg**	**01 16 45.8**	**-0.5**
DST	**Dursunbey**	**0.82**	**330**	*e*Pg	**Pg**	**01 16 45.8**	**-0.5**
SHUT	**Suhut-Afyon**	**1.14**	**107**	*e*PN	**Pn**	**01 16 53.1**	**+0.5**
SHUT	**Suhut-Afyon**	**1.14**	**107**	*e*Pn	**Pn**	**01 16 53.1**	**+0.5**
AYDB	**Zeytinkoy-Aydi**	**1.37**	**227**	*e*PN	**Pn**	**01 16 56.0**	**+0.3**
AYDB	**Zeytinkoy-Aydi**	**1.37**	**227**	*e*Pn	**Pn**	**01 16 56.1**	**+0.3**
KCTX	**Karacabey (Bur**	**1.50**	**336**	*e*PN	**Pn**	**01 16 57.5**	**0.0**
KCTX	**Karacabey (Bur**	**1.50**	**336**	*e*Pn	**Pn**	**01 16 57.6**	**0.0**

*IDC **10** 01:16:56.9±1.9, 37°.68N×142°.14E, h0km, mb3.3/4, mb1 3.5/6, mb1mx3.3/44, mbtmp3.4/6, ML3.6/2, MS2.5/1, Ms1 2.5/1, ms1mx2.2/20, Error ellipse: s-maj=41.4km s-min=23.9km az=62.0*
*ISCJB **10** 01:16:59.5±1.2, 37°.60N±0°.03×141°.93E±0°.07, h25km±6km, mb3.3/4, Error ellipse: s-maj=9.9km s-min=5.7km az=0.5*
*NIED **10** 01:17:00, 37°.60N×141°.90E, h35km, Mw3.6 Best double couple: M0 3.14000×10^14 NP1:φs305.00000°, δ44.00000°, λ-134.00000°. NP2:φs178.00000°, δ60.00000°, λ-56.00000°.*
*JMA **10** 01:17:01.1±0.2, 37°.62N×141°.86E, h34km±3km, M3.5*
ISC 10 01:17:00.7±1.7, 37°.61N±0°.04×141°.80E±0°.07, h20km±5km, n22, σ0°.97/27, mb3.3/4, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**0.78**	**252**	P	**Pn**	**01 17 16.5**	**-0.1**
JFK				S	**Sn**	**01 17 27.0**	**-0.7**
JMM	**Marumori**	**0.84**	**288**	P	**Pn**	**01 17 17.2**	**-0.2**
JMM				S	**Sg**	**01 17 28.2**	**0.0**
JIO	**Ouri**	**0.91**	**337**	P	**Pb**	**01 17 17.4**	**-0.4**
JIO				S	**Sb**	**01 17 28.5**	**-1.1**
ONAJ	**Iwakimizuishiy**	**0.95**	**238**	P	**Pb**	**01 17 18.6**	**+0.1**
ONAJ				S	**Sg**	**01 17 30.9**	**-0.8**
JFT	**Otama**	**1.17**	**266**	P	**Pg**	**01 17 23.0**	**-0.3**
JFT				*e*S	**Sg**	**01 17 38.1**	**-0.6**
JOU	**Okura**	**1.17**	**310**	P	**Pb**	**01 17 22.3**	**0.0**
JOU				S	**Sb**	**01 17 37.2**	**+0.2**
JHO	**Hitachi**	**1.41**	**225**	P	**Pn**	**01 17 24.7**	**-0.5**
JHO				*e*S	**Sn**	**01 17 41.3**	**-1.8**
JMK	**Ichinoseki**	**1.41**	**341**	S	**Sn**	**01 17 42.2**	**-1.1**
JYS	**Shirataka**	**1.50**	**294**	P	**Pb**	**01 17 27.8**	**-0.1**
JYS				S	**Sb**	**01 17 47.5**	**+1.0**
MJAR	**Matsushiro Arr**	**3.07**	**251**	Pn	**Pn**	**01 17 50.4**	**+2.4**
	4.1nm,0.3s,baz=81,slow=16,SNR=20						
MJAR				Sn	**Sb**	**01 18 30.9**	**-0.7**
	1.1nm,0.3s,baz=93,slow=15,SNR=2.7						
MJAR				LR	LR	01 19 22.8	
	comp=Z,62nm,19.1s,baz=180,slow=44						
MAT	**Matsushiro**	**3.07**	**251**	P	**Pn**	**01 17 50.1**	**+2.0**
MAT				*e*S	**Sb**	**01 18 31.7**	**+0.1**
JHJ	**Hachijo jima 2**	**4.78**	**201**	Pn	**Pn**	**01 18 12.3**	**+0.7**
	11nm,0.3s,baz=135,slow=23,SNR=5.6						
JHJ				Sn	**Sn**	**01 19 05.6**	**-0.8**
	14nm,0.3s,baz=216,slow=23,SNR=3.4						
SONM	**Songino Array**	**27.72**	**303**	P	**P**	**01 22 48.5**	**+0.7**
	0.2nm,0.4s,baz=76,slow=7.6,SNR=2.5						
H11N2	**WAKE ISLAND Hy**	**28.19**	**122**	T	T	01 52 21.3	
	baz=315,slow=75,SNR=17						
H11N1	**WAKE ISLAND Hy**	**28.20**	**122**	T	T	01 52 21.9	
	baz=315,slow=75,SNR=20						
H11N3	**WAKE ISLAND Hy**	**28.20**	**122**	T	T	01 52 22.7	
	baz=315,slow=75,SNR=19						
H11S1	**WAKE ISLAND Hy**	**28.92**	**124**	T	T	01 53 14.5	
	baz=317,slow=76,SNR=49						
H11S3	**WAKE ISLAND Hy**	**28.92**	**124**	T	T	01 53 20.3	
	baz=317,slow=76,SNR=48						
H11S2	**WAKE ISLAND Hy**	**28.94**	**124**	T	T	01 53 21.7	
	baz=317,slow=76,SNR=27						
MKAR	**Makanchi Array**	**44.08**	**302**	P	**P**	**01 25 08.2**	**+0.9**
	0.2nm,0.5s,baz=88,slow=8.7,SNR=3.5						
WRA	**Warramunga Arr**	**57.68**	**188**	P	**P**	**01 26 49.3**	**-0.5**
	0.3nm,0.5s,baz=6.2,slow=7.4,SNR=3.5						
ASAR	**Alice Springs**	**61.41**	**188**	P	**P**	**01 27 15.8**	**+0.4**
	0.2nm,0.6s,baz=5.4,slow=4.9,SNR=3.6						

*ISCJB **10** 01:32:19.8±0.6, 20°.4S±0°.1×178°.6W±0°.1, h587km, mb3.6/13, Error ellipse: s-maj=19.9km s-min=10.7km az=144.4*
*IDC **10** 01:32:24.5±2.4, 20°.50S×178°.50W, h638km±31km, mb3.1/13, mb1 3.4/14, mb1mx3.2/26, mbtmp4.1/14, Error ellipse: s-maj=24.1km s-min=11.7km az=154.0*
ISC 10 01:32:20.5±0.7, 20°.4S±0°.1×178°.5W±0°.1, h587km, n23, σ1°.04/23, mb3.6/13, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AFI	**Afiamalu**	**9.12**	**46**	P	**P**	**01 34 30.9**	**+0.5**
	4.5nm,0.3s,baz=357,slow=7.1,SNR=5.0						
URZ	**Urewera**	**18.20**	**191**	P	**P**	**01 35 58.5**	**+0.2**
	4.9nm,0.3s,baz=275,slow=3.3,SNR=27						
STKA	**Stephens Creek**	**37.39**	**244**	P	**P**	**01 38 46.9**	**+2.1**
	4.1nm,0.9s,baz=91,slow=11,SNR=3.7						
ASAR	**Alice Springs**	**44.06**	**257**	P	**P**	**01 39 38.9**	**+1.2**
	1.1nm,0.5s,baz=91,slow=7.8,SNR=21						
ASAR				S	**S**	**01 45 26.9**	**-1.7**
	1.1nm,0.8s,baz=94,slow=17,SNR=6.7						
WRA	**Warramunga Arr**	**44.12**	**262**	P	**P**	**01 39 39.1**	**+0.9**
	0.4nm,0.3s,baz=97,slow=7.0,SNR=13						
WRA				S	**S**	**01 45 28.9**	**-0.6**
	0.3nm,0.3s,baz=80,slow=14,SNR=4.9						
MJAR	**Matsushiro Arr**	**69.83**	**324**	P	**P**	**01 42 33.1**	**0.0**
	0.9nm,0.5s,baz=146,slow=5.2,SNR=5.9						
PETK	**Petropavlovsk-**	**76.04**	**346**	P	**P**	**01 43 08.2**	**0.0**
	6.5nm,1.0s,baz=118,slow=8.3,SNR=2.8						
USRK	**Ussuriysk Ar.**	**78.59**	**326**	P	**P**	**01 43 22.9**	**+0.7**
	1.2nm,0.7s,baz=141,slow=4.2,SNR=3.2						
YBH	**Yreka Blue Hor**	**80.52**	**39**	P	**P**	**01 43 33.6**	**+1.1**
	0.8nm,0.6s,baz=150,slow=3.9,SNR=3.7						
NVAR	**Mina Array Bea**	**81.29**	**44**	P	**P**	**01 43 37.4**	**+0.7**
	0.3nm,0.3s,baz=216,slow=7.3,SNR=4.3						
MAW	**Mawson**	**81.50**	**200**	P	**P**	**01 43 35.5**	**-1.5**
	1.3nm,0.5s,baz=280,slow=9.8,SNR=4.5						
SEY	**Seymchan**	**86.16**	**347**	P	**P**	**01 43 59.3**	**-0.4**
	0.9nm,0.4s,baz=167,slow=6.7,SNR=8.4						
TXAR	**Lajitas Array**	**87.42**	**58**	P	**P**	**01 44 07.1**	**+0.4**
	0.6nm,0.8s,baz=216,slow=6.2,SNR=6.2						
ILAR	**Eielson Array**	**88.32**	**13**	P	**P**	**01 44 08.6**	**-1.4**
	0.7nm,0.5s,baz=217,slow=4.9,SNR=10						
PDAR	**Pinedale Array**	**89.23**	**43**	P	**P**	**01 44 15.1**	**+0.1**
	0.6nm,0.6s,baz=212,slow=3.3,SNR=6.8						
MKAR	**Makanchi Array**	**110.76**	**314**	PKiKP	**PKiKP**	**01 49 46.6**	**-0.8**
	0.1nm,0.4s,baz=43,slow=2.6,SNR=2.8						
ARCES	**ARCESS Array B**	**128.72**	**349**	PKP	**PKPdf**	**01 50 20.8**	**-0.4**
	5.3nm,0.9s,baz=7.6,slow=3.7,SNR=3.6						
FINES	**FINESS Array B**	**135.53**	**343**	PKP	**PKPdf**	**01 50 32.5**	**-1.6**
	1.0nm,0.8s,baz=338,slow=2.1,SNR=4.3						
HFS	**Hagfors**	**139.35**	**351**	PKhKP	PKPpre	01 50 34.6	
	0.8nm,0.4s,baz=73,slow=5.0,SNR=6.3						
AKASG	**Malin Array Be**	**142.68**	**331**	PKhKP	PKPpre	01 50 43.2	
	1.8nm,0.4s,baz=43,slow=4.1,SNR=16						
EKA	**Eskdalemuir Ar**	**144.94**	**5**	PKPbc	**PKPdf**	**01 50 50.7**	**-0.5**
	0.6nm,0.6s						
BRTR	**Keskin Array B**	**146.40**	**312**	PKPbc	**PKPbc**	**01 50 56.0**	**-0.8**
	0.4nm,0.4s,baz=100,slow=2.7,SNR=5.6						
GERES	**GERESS Array B**	**149.96**	**344**	PKPbc	**PKPbc**	**01 51 04.8**	**-0.6**
	0.6nm,0.6s,baz=46,slow=3.9,SNR=6.1						

IDC 10 01:50:06.8±1.4, 0°.37S×19°.26W, h0km, mb3.5/5, mb1 3.8/6, mb1mx3.5/43, mbtmp3.6/6, ML3.7/1, Error ellipse: s-maj=49.7km s-min=31.9km az=159.0, Central Mid-Atlantic Ridge

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
H10N2	**ASCENSION HYDR**	**8.81**	**147**	T	T	02 01 21.0	
	baz=326,slow=74,SNR=54						
H10N3	**ASCENSION HYDR**	**8.81**	**148**	T	T	02 01 21.5	
	baz=326,slow=74,SNR=60						
H10N1	**ASCENSION HYDR**	**8.83**	**147**	T	T	02 01 22.4	
	baz=326,slow=74,SNR=84						
H10S1	**ASCENSION HYDR**	**9.68**	**152**	T	T	02 02 26.5	
	baz=331,slow=74,SNR=16						
H10S3	**ASCENSION HYDR**	**9.68**	**152**	T	T	02 02 31.2	
	baz=331,slow=74,SNR=20						
H10S2	**ASCENSION HYDR**	**9.70**	**152**	T	T	02 02 25.9	
	baz=331,slow=74,SNR=16						
DBIC	**Dimbokro**	**15.98**	**64**	Pn	Pn	01 53 54.6	+1.4
	0.3nm,0.3s,baz=238,slow=13,SNR=7.2						
TORD	**Torodi Ar. Bea**	**24.74**	**56**	P	P	01 55 30.8	+0.6
	0.3nm,0.5s,baz=234,slow=10,SNR=6.3						
GERES	**GERESS Array B**	**56.67**	**25**	P	P	01 59 52.0	-0.1
	0.2nm,0.7s,baz=205,slow=5.9,SNR=3.8						
AKASG	**Malin Array Be**	**65.38**	**32**	P	P	02 00 50.3	-0.7
	0.1nm,0.2s,baz=234,slow=5.6,SNR=2.9						
TXAR	**Lajitas Array**	**85.29**	**299**	P	P	02 02 46.9	+0.6
	1.1nm,1.2s,baz=90,slow=7.2,SNR=2.9						
YKA	**Yellowknife Ar**	**92.80**	**332**	P	P	02 03 20.8	-0.2
	0.3nm,0.8s,baz=94,slow=4.8,SNR=3.8						
ASAR	**Alice Springs**	**144.65**	**134**	PKP	PKPbc	02 09 45.4	+0.2
	2.8nm,0.8s,baz=228,slow=2.6,SNR=24						
WRA	**Warramunga Arr**	**147.19**	**129**	PKPbc

0.2nm,0.3s,baz=186,slow=12,SNR=22
YKA Pg 01 56 03.0
0.1nm,0.3s,baz=184,slow=16,SNR=7.0
YKA Sn Sn 01 57 06.2 -6.3
0.2nm,0.3s,baz=182,slow=23,SNR=6.7
YKA Lg Lg 01 58 09.5
0.2nm,0.3s,baz=178,slow=29,SNR=7.2
YKW3 Yellowknife Ar 10.34 3 Pn **Pn 01 55 17.3 -1.3**
PDAR Pinedale Array 10.38 154 Pn Pn 01 55 21.7 +2.1
0.1nm,0.3s,baz=5.2,slow=14,SNR=3.5
TXAR Lajitas Array 24.61 154 P **P 01 58 11.9 +1.2**
0.2nm,0.7s,baz=337,slow=8.9,SNR=2.2

IDC 10 01:54:23.6±4.1, 9.39S×108.56E, h0km, mb3.5/6, mb1 3.7/6, mb1mx3.6/41, mbtmp3.5/6, Error ellipse: s-maj=182.8km s-min=20.2km az=50.0, South of Java

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
WRA	**Warramunga Arr**	**27.02 116**		P	P	02 00 05.9	-1.8
	0.4nm,0.8s,baz=286,slow=11,SNR=2.6						
ASAR	**Alice Springs**	**28.07 123**		P	P	02 00 18.9	+1.8
	0.3nm,0.8s,baz=300,slow=7.4,SNR=3.1						
CMAR	**Chiang Mai Arr**	**29.25 341**		P	P	02 00 28.2	+0.7
	0.6nm,0.4s,baz=174,slow=9.8,SNR=3.7						
SONM	**Songino Array**	**57.01 358**		P	P	02 04 11.7	+0.5
	0.4nm,0.5s,baz=192,slow=11,SNR=3.4						
MKAR	**Makanchi Array**	**60.65 340**		P	P	02 04 35.3	-1.2
	0.6nm,0.8s,baz=150,slow=8.2,SNR=5.4						
ZALV	**Zalesovo Beam**	**66.22 345**		P	P	02 05 13.2	0.0
	0.3nm,0.3s,baz=122,slow=14,SNR=2.6						

ISCJB ***10*** *02:01:28.4±0.6, 36.30N±0.03×141.09E±0.05, h40km±4km, mb4.1/32, MS3.0/2, Error ellipse: s-maj=6.9km s-min=4.7km az=177.6*
JMA ***10*** *02:01:28.8±0.1, 36.31N×141.04E, h46km±1km, M4.1*
JMA Felt II J1.
NEIC ***10*** *02:01:28.5±1.6, 36.29N×141.02E, h27km±11km, mb4.4/13, Error ellipse: s-maj=6.7km s-min=5.4km az=88.0*
IDC ***10*** *02:01:30.3±3.1, 36.23N×140.95E, h40km±28km, mb3.7/19, mb1 3.9/21, mb1mx3.8/55, mbtmp4.0/21, ML4.0/2, MS3.1/4, Ms1 3.2/4, ms1mx2.8/31, Error ellipse: s-maj=19.2km s-min=15.6km az=65.0*
ISC 10 02:01:27.8±0.6, 36.32N±0.04×141.03E±0.06, h21km±3km, n74, σ0.97/74, mb4.2/32, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JHO	**Hitachi**	**0.47 308**		P	**Pn**	**02 01 39.4**	**+0.1**
JHO				S	**Sn**	**02 01 47.0**	**0.0**
CHOJ	**Chosi**	**0.63 192**		P	**Pn**	**02 01 41.4**	**-0.2**
CHOJ				S	**Sn**	**02 01 50.3**	**-0.8**
JYT	**Yasato**	**0.68 262**		P	**Pn**	**02 01 42.4**	**+0.2**
JYT				S	**Sn**	**02 01 51.6**	**-0.6**
ONAJ	**Iwakimizuishiy**	**0.80 347**		P	**Pn**	**02 01 43.6**	**-0.3**
ONAJ				S	**Sb**	**02 01 53.8**	**+0.4**
JFK	**Kawauchi**	**1.05 353**		P	**Pb**	**02 01 46.9**	**-0.4**
JAG	**Ashikaga**	**1.27 275**		P	**Pb**	**02 01 50.9**	**-0.2**
JAG				S	**Sn**	**02 02 06.5**	**-0.4**
JFT	**Otama**	**1.31 335**		P	**Pb**	**02 01 52.3**	**+0.5**
JFT				S	**Sb**	**02 02 08.6**	**+0.4**
JKT	**Katashina**	**1.50 288**		P	**Pb**	**02 01 54.8**	**-0.2**
JKT				S	**Sb**	**02 02 13.3**	**-0.3**
JFY	**Yanaizu**	**1.51 316**		P	**Pb**	**02 01 54.9**	**-0.3**
MJAR	**Matsushiro Arr**	**2.28 276**		Pn	**Pn**	**02 02 04.3**	**0.0**
	14nm,0.3s,baz=107,slow=8.5,SNR=103						
MJAR				LR	**Sb**	**02 02 35.6**	**-0.5**
	23nm,0.3s,baz=66,slow=16,SNR=11						
MJAR				LR	LR	02 03 09.4	
	comp=Z,426nm,20.2s,baz=120,slow=45						
MAJO	**Matsushiro**	**2.28 276**	*e*Pn		**Pn**	**02 02 06.0**	**+1.6**
MAT	**Matsushiro**	**2.28 276**		P	**Pn**	**02 02 05.3**	**+1.0**
MAT				S	**Sn**	**02 02 32.3**	**+0.4**
JHJ2	**Mitsune**	**3.35 198**	*e*Pn		**Pn**	**02 02 18.5**	**-0.5**
JHJ	**Hachijo jima 2**	**3.36 198**		Pn	**Pn**	**02 02 21.1**	**+2.1**
	13nm,0.3s,baz=78,slow=22,SNR=12						
JHJ				Sn	**Sn**	**02 03 00.3**	**+2.0**
	36nm,0.3s,baz=232,slow=23,SNR=7.4						
ERM	**Erimo**	**5.92 16**	*e*Pn		**Pn**	**02 02 54.9**	**+0.7**
	51nm,0.7s						
JNU	**Nakatsue**	**8.94 252**	Pn		**Pn**	**02 03 38.0**	**+2.2**
	0.3nm,0.3s,baz=68,slow=9.6,SNR=5.1						
JNU				LR	LR	02 07 23.1	
	comp=Z,185nm,19.4s,baz=314,slow=40						
JNU	**Nakatsue**	**8.94 252**	*e*Pn		**Pn**	**02 03 36.4**	**+0.6**
CBIJ	**Chichi jima**	**9.25 174**	Pn		**Pn**	**02 03 39.1**	**-1.0**
JCJ	**Chichijima**	**9.25 174**	Pn		**Pn**	**02 03 39.1**	**-1.0**
	5.0nm,0.3s,baz=9.4,slow=21,SNR=8.7						
USRK	**Ussuriysk Ar.**	**10.46 322**	Pn		Pn	02 04 01.1	+4.5
	0.4nm,0.3s,baz=137,slow=13,SNR=11						
KSRS	**Korea Array**	**10.56 280**	Pn		Pn	02 04 04.0	+6.1
	0.2nm,0.3s,baz=94,slow=14,SNR=10						
KSAR	**Wonju Array Be**	**10.59 280**	Pn		Pn	02 04 04.0	+5.7
KLR	**Kul'dur**	**14.57 335**	Pn		**Pn**	**02 04 51.2**	**-1.4**
	0.1nm,0.3s,baz=176,slow=4.4,SNR=3.5						
PETK	**Petropavlovsk-**	**20.46 30**	LR		LR	02 15 01.5	
	comp=Z,27nm,19.9s,baz=220,slow=39						
ENH	**Enshi**	**26.97 266**	*e*P		**P**	**02 07 07.4**	**-0.7**
	8.3nm,0.3s						
ULN	**Ulaanbaatar**	**27.50 305**	*e*P		**P**	**02 07 12.6**	**-0.3**
	1.6nm,0.6s						
SEY	**Seymchan**	**27.55 11**	P		**P**	**02 07 13.4**	**+0.5**
	1.8nm,0.7s,baz=196,slow=3.2,SNR=2.9						
SONM	**Songino Array**	**27.93 305**	P		**P**	**02 07 16.5**	**-0.2**
	1.1nm,0.6s,baz=104,slow=8.8,SNR=12						
H11N2	**WAKE ISLAND Hy**	**28.06 119**	T		T	02 37 45.7	
	baz=317,slow=75,SNR=91						
H11N1	**WAKE ISLAND Hy**	**28.07 119**	T		T	02 37 41.3	
	baz=317,slow=99						
H11N3	**WAKE ISLAND Hy**	**28.08 119**	T		T	02 37 43.1	
	baz=317,slow=75,SNR=81						
H11S1	**WAKE ISLAND Hy**	**28.75 121**	T		T	02 38 37.4	
	baz=318,slow=76,SNR=3.6						
H11S3	**WAKE ISLAND Hy**	**28.75 121**	T		T	02 38 37.4	
	baz=318,slow=76,SNR=120						
H11S2	**WAKE ISLAND Hy**	**28.76 121**	T		T	02 38 38.6	
	baz=318,slow=76,SNR=3.1						
TLY	**Talaya**	**30.57 312**	P		**P**	**02 07 40.6**	**+0.7**
	2.2nm,0.6s,baz=230,slow=9.5,SNR=5.4						
ZALV	**Zalesovo Beam**	**42.17 313**	P		**P**	**02 09 18.9**	**+0.2**
	4.5nm,0.6s,baz=91,slow=7.2,SNR=19						
MKAR	**Makanchi Array**	**44.24 303**	P		**P**	**02 09 36.1**	**+0.5**
	2.1nm,0.7s,baz=88,slow=10.0,SNR=19						
TAPN	**Taplejung**	**45.68 274**	*e*P		**P**	**02 09 48.6**	**+0.9**
	10nm,0.3s						
KURK	**Kurchatov**	**46.13 309**	*e*P		**P**	**02 09 50.0**	**-0.5**
	25nm,0.7s						
RAMN	**Ramite**	**46.75 275**	*e*P		**P**	**02 09 56.1**	**+0.1**
	36nm,1.0s						
JIRN	**Jiri**	**46.77 276**	*e*P		**P**	**02 09 57.1**	**+0.8**
	0.1nm,0.2s						
GUN	**Gumba**	**46.92 276**	*e*P		**P**	**02 09 58.1**	**+0.7**
	12nm,0.6s						
GKN	**Gorkha**	**47.88 277**	*e*P		**P**	**02 10 05.0**	**+0.3**
	44nm,0.9s						
KOLN	**Koldanda**	**48.81 277**	*e*P		**P**	**02 10 12.3**	**+0.4**
	8.2nm,0.7s						
PYUN	**Piuthan**	**49.16 278**	*e*P		**P**	**02 10 15.2**	**+0.6**
	44nm,1.0s						
TKM2	**Tokmak 2**	**49.70 299**	*e*P		**P**	**02 10 18.9**	**+0.4**
	3.6nm,0.6s						
ILAR	**Eielson Array**	**50.26 32**	P		**P**	**02 10 22.9**	**+0.7**
	0.7nm,0.8s,baz=274,slow=6.7,SNR=6.6						
AAK	**Ala-Archa**	**50.56 299**	*e*P		**P**	**02 10 24.8**	**-0.2**
	1.6nm,0.7s						
BRVK	**Borovoye**	**50.88 313**	*e*P		**P**	**02 10 26.7**	**-0.3**
	3.0nm,0.6s						
EKS2	**Erkin-Say**	**51.05 299**	*e*P		**P**	**02 10 28.4**	**-0.4**
	1.1nm,0.4s						
KKAR	**Karatay Array**	**53.21 300**	*e*P		**P**	**02 10 44.6**	**0.0**
	3.8nm,0.9s						
INK	**Inuvik**	**55.16 27**	P		**P**	**02 10 59.3**	**+0.9**
	0.7nm,0.6s,baz=285,slow=4.6,SNR=4.6						
WRAB	**Tennant Creek**	**56.30 188**	*e*P		**P**	**02 11 06.8**	**-0.2**
	12nm,1.3s						
WRA	**Warramunga Arr**	**56.32 188**	P		**P**	**02 11 06.4**	**-0.8**
	1.3nm,0.6s,baz=4.2,slow=7.5,SNR=10						
ARU	**Arti**	**56.69 319**	P		**P**	**02 11 09.3**	**-0.2**
	5.4nm,0.6s,baz=52,slow=2.7,SNR=11						
ARU	**Arti**	**56.69 319**	*e*P		**P**	**02 11 09.0**	**-0.5**
	5.1nm,0.6s						
ABKAR	**Akbulak array**	**58.16 310**	*e*P		**P**	**02 11 19.2**	**-0.8**
	2.6nm,0.7s						
ASAR	**Alice Springs**	**60.04 188**	P		**P**	**02 11 32.8**	**-0.4**
	0.6nm,0.6s,baz=19,slow=7.7,SNR=7.7						
YKA	**Yellowknife Ar**	**64.58 30**	P		**P**	**02 12 03.4**	**+0.3**
	0.2nm,0.7s,baz=303,slow=6.8,SNR=5.7						
FINES	**FINESS Array B**	**69.30 332**	P		**P**	**02 12 34.3**	**+1.2**
	1.4nm,0.9s,baz=40,slow=5.9,SNR=6.2						
KBZ	**Khabaz**	**71.13 311**	P		**P**	**02 12 45.0**	**+0.3**
	2.0nm,0.9s,baz=50,slow=6.0,SNR=3.4						
SUMG	**Summit**	**71.39 360**	*e*P		**P**	**02 12 45.5**	**-0.8**
	7.2nm,1.1s						
AKASG	**Malin Array Be**	**74.67 322**	P		**P**	**02 13 04.9**	**-0.7**
	1.2nm,0.4s,baz=45,slow=6.0,SNR=12						
NB2	**NORSAR Subarra**	**74.72 337**	P		**P**	**02 13 05.6**	**-0.2**
	comp=Z,0.6nm,0.6s,baz=41,slow=5.9						
NOA	**NORSAR Array B**	**74.72 337**	P		**P**	**02 13 05.6**	**-0.2**
	comp=Z,1.3nm,0.8s,baz=39,slow=5.8,SNR=4.4						
NOA				LR	LR	02 49 15.9	
	comp=Z,21nm,19.5s,baz=315,slow=38						
NVAR	**Mina Array Bea**	**75.66 53**	P		**P**	**02 13 13.0**	**+1.1**
	comp=Z,0.3nm,0.3s,baz=290,slow=9.3,SNR=2.7						
PDAR	**Pinedale Array**	**78.39 45**	P		**P**	**02 13 27.7**	**+0.6**
	comp=Z,0.1nm,0.4s,baz=311,slow=5.9,SNR=3.4						
BRTR	**Keskin Array B**	**79.09 311**	P		**P**	**02 13 30.6**	**-0.3**
	comp=Z,1.8nm,1.1s,baz=184,slow=3.7,SNR=4.7						
RAYN	**Ar Rayn**	**80.64 292**	*e*P		**P**	**02 13 39.1**	**-0.3**
	comp=Z,2.9nm,0.8s						
PSZ	**Piszkesteto**	**81.05 324**	*e*P		**P**	**02 13 41.5**	**+0.3**
	comp=Z,3.0nm,0.8s						
KHC	**Kasperske Hory**	**82.98 328**	*e*P		**P**	**02 13 51.8**	**+0.4**
GERES	**GERESS Array B**	**83.15 328**	P		**P**	**02 13 52.0**	**-0.3**
	comp=Z,0.5nm,0.6s,baz=38,slow=6.8,SNR=6.3						
TORD	**Torodi Ar. Bea**	**117.61 314**	PKP		**PKPdf**	**02 20 11.3**	**-1.5**
	comp=Z,0.5nm,0.9s,baz=52,slow=0.2,SNR=3.7						
LPAZ	**La Paz**	**147.32 60**	PKPbc		**PKPbc**	**02 21 10.0**	**-1.1**
	comp=Z,0.3nm,0.5s,baz=193,slow=5.4,SNR=1.9						

ISCJB ***10*** *02:01:26.7±1.4, 38.66N±0.07×142.2E±0.1, h47km±10km, mb3.4/12, Error ellipse: s-maj=17.1km s-min=9.1km az=30.2*
JMA ***10*** *02:01:27.1±0.1, 38.67N×142.17E, h39km±2km, M3.8*
JMA Felt I J1.
IDC ***10*** *02:01:30.4±7.7, 38.42N×142.13E, h79km±52km, mb3.2/12, mb1 3.4/13, mb1mx3.3/53, mbtmp3.5/13, ML2.4/1, Error ellipse: s-maj=77.4km s-min=20.0km az=174.0*
ISC 10 02:01:27.3±0.9, 38.66N±0.10×142.2E±0.1, h39km±6km, n18, σ0.73/22, mb3.5/12, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**0.67 252**		P	**Pn**	**02 01 40.0**	**-0.3**
JIO				S	**Sn**	**02 01 48.9**	**-0.7**
JMK	**Ichinoseki**	**0.79 292**		P	**Pn**	**02 01 42.0**	**0.0**
JMK				S	**Sn**	**02 01 52.6**	**0.0**
MIYJ	**Miyakonagasawa**	**0.95 344**		P	**Pn**	**02 01 43.9**	**-0.3**
MIYJ				S	**Sn**	**02 01 55.8**	**-0.8**
JOM	**Ohasama**	**1.06 320**		P	**Pn**	**02 01 45.8**	**+0.2**
JOM				S	**Sn**	**02 01 59.5**	**+0.4**
JOU	**Okura**	**1.21 256**		P	**Pn**	**02 01 48.1**	**+0.3**
JOU				S	**Sn**	**02 02 03.8**	**+0.8**
USRK	**Ussuriysk Ar.**	**9.43 309**	P		Pn	02 03 45.1	+4.6
	0.4nm,0.3s,baz=119,slow=14,SNR=7.7						
SEY	**Seymchan**	**25.08 11**	P		**P**	**02 06 49.5**	**+1.7**
	0.8nm,0.4s,baz=181,slow=5.2,SNR=6.2						
SONM	**Songino Array**	**27.41 301**	P		**P**	**02 07 09.8**	**+0.6**
	0.2nm,0.4s,baz=341,slow=13,SNR=3.0						
ZALV	**Zalesovo Beam**	**41.28 311**	P		**P**	**02 09 08.2**	**-0.3**
	0.5nm,0.5s,baz=89,slow=6.2,SNR=3.5						
MKAR	**Makanchi Array**	**43.78 301**	P		**P**	**02 09 28.7**	**-0.3**
	0.4nm,0.6s,baz=82,slow=9.9,SNR=4.5						
ILAR	**Eielson Array**	**47.81 33**	P		**P**	**02 10 01.4**	**+1.0**
	0.2nm,0.5s,baz=254,slow=6.5,SNR=4.3						
YKA	**Yellowknife Ar**	**62.11 31**	P		**P**	**02 11 43.8**	**0.0**
	0.1nm,0.5s,baz=293,slow=7.9,SNR=2.5						
FINES	**FINESS Array B**	**67.66 332**	P		**P**	**02 12 19.2**	**-0.6**
	0.8nm,0.7s,baz=33,slow=4.5,SNR=3.8						
AKASG	**Malin Array Be**	**73.38 322**	P		**P**	**02 12 54.5**	**-0.4**
	0.4nm,0.5s,baz=45,slow=5.7,SNR=4.6						
NVAR	**Mina Array Bea**	**73.54 54**	P		**P**	**02 12 55.1**	**-1.3**
	0.2nm,0.3s,baz=252,slow=4.6,SNR=2.4						
PDAR	**Pinedale Array**	**76.11 46**	P		**P**	**02 13 11.9**	**+0.7**
	0.2nm,0.6s,baz=291,slow=2.8,SNR=2.9						
BRTR	**Keskin Array B**	**78.22 312**	P		**P**	**02 13 22.9**	**0.0**
	0.2nm,0.4s,baz=118,slow=3.2,SNR=5.0						
GERES	**GERESS Array B**	**81.64 328**	P		**P**	**02 13 40.9**	**-0.4**
	0.5nm,1.0s,baz=150,slow=24,SNR=2.8						

IDC 10 02:06:18.8±33.0, 20.37S×177.54W, h472km±301km, mb3.6/5, mb1 3.8/5, mb1mx3.1/37, mbtmp4.5/5, Error ellipse: s-maj=212.9km s-min=100.6km az=80.0, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
CTA	**Charters Tower**	**33.93 264**		P	P	02 12 21.8	+0.2
	0.4nm,0.4s,baz=88,slow=12,SNR=13						
STKA	**Stephens Creek**	**38.23 244**		P	P	02 12 57.7	+0.4
	2.4nm,0.8s,baz=100,slow=12,SNR=4.3						
ASAR	**Alice Springs**	**44.97 257**		P	P	02 13 50.5	-0.4
	5.7nm,0.5s,baz=97,slow=7.5,SNR=61						
WRA	**Warramunga Arr**	**45.04 262**		P	P	02 13 51.0	-0.6
	1.5nm,0.3s,baz=97,slow=7.5,SNR=24						
CMAR	**Chiang Mai Arr**	**90.47 289**		P	P	02 18 30.9	+1.0
	1.4nm,0.4s,baz=120,slow=2.7,SNR=4.6						
BRTR	**Keskin Array B**	**147.06 313**		PKPbc	PKPbc	02 25 07.2	-1.1
	0.8nm,0.9s,baz=64,slow=6.6,SNR=2.4						

ISCJB ***10*** *02:07:25.3±0.6, 31.29N±0.05×115.67W±0.05, h5km±10km, Error ellipse: s-maj=9.1km s-min=5.9km az=26.2*
ECX ***10*** *02:07:26.3±0.7, 31.24N×115.67W, h5km, MD2.8, ML3.0*
MEX ***10*** *02:07:27.1±0.7, 31.05N×115.71W, h15km±3km, MD3.6*
ISC 10 02:07:25.0±1.0, 31.30N±0.07×115.64W±0.05, h12km±16km, n11, σ0.22/17, 2C-3D, Baja California

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
SPIG	**San Pedro Mart**	**0.30 150**		*i* P	**Pg**	**02 07 31.4**	**+0.1**
SPIG				*i* S	**Sg**	**02 07 35.2**	**-0.2**
SPX	**San Pedro Mart**	**0.30 149**	⇓	*e*P	**Pg**	**02 07 31.4**	**+0.1**
SPX				*i* S	**Sg**	**02 07 35.3**	**-0.2**
SPX				AML	AML	02 07 36.1	
	comp=E,2μm,0.2s						
SPX			⇑	*e*		02 07 36.4	
SPX				AML	AML	02 07 36.4	
	comp=N,2μm,0.1s						
ECBX	**El Chinero**	**0.53 71**		*e*P	**Pb**	**02 07 36.5**	**+0.2**
ECBX				*e*S	**Sb**	**02 07 43.7**	**-0.2**
ECBX				AML	AML	02 07 46.5	
	comp=E,881nm,0.2s						
ZAX	**El Zacaton**	**0.58 291**		*e*P	**Pg**	**02 07 36.4**	**-0.1**
ZAX				*e*S	**Sg**	**02 07 44.5**	**+0.4**
ZAX				AML	AML	02 07 49.4	
	comp=N,454nm,0.7s						
ZAX			⇓	*e*		02 07 49.4	
ECNX	**Esteban Cantu**	**0.89 294**	⇓	*e*P	**Pg**	**02 07 42.3**	**0.0**
PBX	**Punta Banda**	**1.02 296**	⇓	*e*P	**Pb**	**02 07 44.4**	**-0.4**
CBX	**Cerro Bola**	**1.33 319**		*e*P	**Pb**	**02 07 50.3**	**+0.2**
CBX	**Cerro Bola**	**1.33 319**		*e*P	**Pb**	**02 07 50.3**	**+0.2**
CBX				*e*S	**Sg**	**02 08 07.8**	**-0.2**
RMX	**La Rumorosa**	**1.35 344**		*e*P	**Pg**	**02 07 50.9**	**-0.2**
TJIG	**Tijuana**	**1.43 322**		*e*P	**Pb**	**02 07 51.8**	**+0.1**
TJIG				*e*S	**Sb**	**02 08 10.0**	**+0.2**
SDRC	**San Diego Road**	**1.81 323**		*e*P	**Pb**	**02 07 58.0**	**0.0**

IDC 10 02:08:48.9±13.0, 6.41S×130.50E, h185km±126km, mb3.6/2, mb1 3.6/4, mb1mx3.1/32, mbtmp4.0/4, Error ellipse: s-maj=250.2km s-min=38.8km az=62.0, Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
WRA	**Warramunga Arr**	**13.96 165**		P	Pn	02 11 58.4	-0.6
	0.5nm,0.3s,baz=334,slow=13,SNR=14						
ASAR	**Alice Springs**	**17.47 170**		P	Pn	02 12 41.9	+0.3
	0.4nm,0.3s,baz=346,slow=9.4,SNR=14						
STKA	**Stephens Creek**	**27.38 159**		P	P	02 14 16.1	-0.9
	3.7nm,0.9s,baz=355,slow=8.1,SNR=3.1						
MKAR	**Makanchi Array**	**68.01 326**		P	P	02 19 28.2	+0.1
	0.6nm,0.4s,baz=115,slow=7.7,SNR=9.4						

TAP ***10*** *02:25:41.1, 24.90N×122.29E, h109km, ML3.2, C*
JMA ***10*** *02:25:41.8±0.4, 24.83N×122.29E, h104km±5km*
ISCJB ***10*** *02:25:42.2±1.0, 24.85N±0.06×122.31E±0.04, h101km±7km, Error ellipse: s-maj=10.0km s-min=6.1km az=166.3*
ISC 10 02:25:42.7±2.3, 24.85N±0.09×122.30E±0.04, h99km±14km, n19, σ0.60/38, Taiwan region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
TWB1	**Santiao Chiao**	**0.33 300**		*e*P	**Pn**	**02 25 57.1**	**-0.2**
	baz=291						
TWB1				*e*S	**Sn**	**02 26 08.3**	**+0.2**
	baz=291						
TWC	**Suao**	**0.47 240**		P	**Pn**	**02 25 57.8**	**-0.3**
	baz=231						
TWC				S	**Sn**	**02 26 09.9**	**+0.2**
	baz=231						
NWF	**Wu-fen Shan**	**0.52 295**		*e*P	**Pn**	**02 25 58.0**	**-0.5**
	baz=281						
NWF				*e*S	**Sn**	**02 26 11.1**	**+0.6**
	baz=281						
TWE	**Neicheng**	**0.59 258**		P	**Pn**	**02 25 58.5**	**-0.6**
	baz=258						
TWE				S	**Sn**	**02 26 10.9**	**-0.3**
	baz=258						
ENA	**Nanau**	**0.66 231**		P	**Pn**	**02 25 59.7**	**+0.1**
	baz=220						
ENA				S	**Sn**	**02 26 12.9**	**+0.6**
	baz=220						
JYNG	**Yonagunijimaku**	**0.71 124**		P	**Pn**	**02 25 59.6**	**-0.4**
JYNG				*e*S	**Sn**	**02 26 14.1**	**+1.1**
NSK	**Sanguang**	**0.87 259**		P	**Pn**	**02 26 01.7**	**0.0**
	baz=255						
NSK				S	**Sn**	**02 26 16.1**	**0.0**
	baz=255						
NNS	**Nan Shan**	**0.94 245**		*e*P	**Pn**	**02 26 02.5**	**0.0**
	baz=234						
NNS				*e*S	**Sn**	**02 26 17.8**	**+0.4**
	baz=234						
TWD	**Chiawan**	**1.00 220**		*e*P	**Pn**	**02 26 02.5**	**-0.4**
	baz=215						
TWD				*e*S	**Sn**	**02 26 18.5**	**+0.2**
	baz=215						
WHF	**Hehuan Shan**	**1.17 234**		*e*P	**Pn**	**02 26 05.0**	**-0.4**
	baz=229						
WHF				*e*S	**Sn**	**02 26 22.3**	**-0.2**
	baz=229						
TWT	**Tachien**	**1.18 240**		*e*P	**Pn**	**02 26 05.7**	**+0.4**
	baz=232						
TWT				S	**Sn**	**02 26 23.3**	**+1.0**
	baz=232						
NSTT	**Nanjuang**	**1.20 260**		*e*P	**Pn**	**02 26 04.7**	**-0.6**
	baz=250						
NSTT				*e*S	**Sn**	**02 26 22.1**	**-0.3**
	baz=250						
ESL	**Shilin**	**1.30 218**		*e*P	**Pn**	**02 26 07.1**	**+0.6**
	baz=223						
ESL				*e*S	**Sn**	**02 26 23.4**	**-1.0**
	baz=223						
WDT	**Danda**	**1.52 225**		*e*P	**Pn**	**02 26 09.5**	**0.0**
	baz=219						
WDT				*e*S	**Sn**	**02 26 28.8**	**-0.9**
	baz=219						
SMLT	**Sun Moon Lake**	**1.60 233**		*e*P	**Pn**	**02 26 10.9**	**+0.6**
	baz=229						
SMLT				*e*S	**Sn**	**02 26 31.9**	**+0.8**
	baz=229						
TYC	**Yuchr**	**1.62 235**		P	**Pn**	**02 26 10.4**	**+0.1**
	baz=240						
TYC				S	**Sn**	**02 26 32.2**	**+0.9**
	baz=240						
JKRS	**Kuro-shima**	**1.67 111**		P	**Pn**	**02 26 11.1**	**+0.1**
JKRS				*e*S	**Sn**	**02 26 32.3**	**-0.2**
TWF1	**Yuli**	**1.75 212**		*e*P	**Pn**	**02 26 11.8**	**-0.3**
	baz=218						
TWF1				*e*S	**Sn**	**02 26 32.8**	**-1.5**
	baz=218						
YUS	**Yu-Shan**	**1.83 223**		*e*P	**Pn**	**02 26 13.9**	**+0.4**
	baz=216						
YUS				*e*S	**Sn**	**02 26 37.1**	**+0.2**
	baz=216						

NIED ***10*** *02:29:00, 38.40N×141.80E, h56km, Mw4.4 Best double couple: M0 4.50000×10^15 NP1:φs 56.00000°, δ22.00000°, λ158.00000°. NP2:φs 166.00000°, δ82.00000°, λ69.00000°.*
ISCJB ***10*** *02:29:25.9±0.9, 38.39N±0.04×141.9E±0.1, h60km±8km, mb3.5/7, Error ellipse: s-maj=14.7km s-min=6.3km az=12.9*
JMA ***10*** *02:29:26.8±0.1, 38.40N×141.83E, h56km±1km, M3.8*
JMA Felt I J1.
IDC ***10*** *02:29:27.9±4.3, 38.34N×141.91E, h63km±41km, mb3.2/7, mb1 3.5/9, mb1mx3.3/34, mbtmp3.5/9, ML2.7/2, MS2.7/1, Ms1 2.7/1, ms1mx2.1/25, Error ellipse: s-maj=38.5km s-min=19.2km az=105.0*
ISC 10 02:29:25.9±1.9, 38.39N±0.06×142.0E±0.1, h43km±19km, n28, σ1.13/30, mb3.6/7, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**0.50 278**		P	**Pn**	**02 29 37.2**	**+0.4**
JIO				S	**Sn**	**02 29 44.4**	**-0.1**
JMK	**Ichinoseki**	**0.82 314**		P	**Pn**	**02 29 41.3**	**+0.2**
JMK				S	**Sn**	**02 29 51.7**	**-0.3**
JOU	**Okura**	**1.03 269**		P	**Pn**	**02 29 43.7**	**-0.3**
JOU				S	**Sn**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHPI	**Pichilemu**	**0.81**	**41**	*i* P	**Pg**	**02 30 08.2**	**-0.9**
CHPI				*i* S	**Sg**	**02 30 18.7**	**-1.0**
TALC	**Talca**	**0.91**	**115**	*i* P	**Pb**	**02 30 11.6**	**+0.2**
TALC				*i* S	**Sb**	**02 30 24.6**	**+1.0**
TALC				IAML		02 30 24.9	
	comp=N,10μm,0.1s						
NICH	**Los Niches**	**1.16**	**90**	*i* P	**Pn**	**02 30 15.1**	**-0.7**
NICH				*i* S	**Sb**	**02 30 31.0**	**+0.3**
NICH				IAML		02 30 37.6	
	comp=N,4μm,0.3s						
CLCH	**Cerro Calan**	**2.38**	**48**	*i* P	**Pn**	**02 30 33.3**	**+0.7**
CLCH				*i* S	**Sn**	**02 31 02.5**	**+0.7**
CLCH				IAML		02 31 15.2	
	comp=E,448nm,1.3s						
ROC1	**El Roble**	**2.44**	**34**	*e*P	**Pn**	**02 30 32.7**	**-0.9**
ROC1				⇓*e*S	**Sg**	**02 31 11.5**	**-0.3**
ROCH	**El Roble**	**2.44**	**34**	*e*P	**Pn**	**02 30 32.7**	**-1.0**
ROCH				*i* S	**Sn**	**02 31 04.4**	**+0.7**
PEL	**Peldehue**	**2.47**	**42**	*i* P	**Pn**	**02 30 34.4**	**+0.5**
PEL				*i* S	**Sn**	**02 31 05.2**	**+1.0**
PEL				IAML		02 31 13.4	
	comp=N,247nm,0.5s						
AAGR	**Agrelo**	**3.70**	**60**	*e*P	**Pb**	**02 30 56.8**	**-2.3**
ARCO	**CERRO ARCO**	**3.77**	**56**	*e*P	**Pb**	**02 30 58.6**	**-1.5**
ARCO				⇓*e*S	**Sg**	**02 31 52.1**	**-2.4**
ARCO				IAML		02 31 56.0	
	comp=Z,25nm,0.6s						
AUSP	**Uspallata**	**3.89**	**45**	*e*P	**Pn**	**02 30 55.6**	**+2.0**
AUSP				*e*S	**Sb**	**02 31 51.4**	**+1.9**
ASAL	**Salagasta**	**3.98**	**54**	*e*P	Pb	02 30 59.2	-4.7
ASAL				*e*S	**Sb**	**02 31 56.2**	**+4.0**
RTLS	**Leoncito**	**4.25**	**42**	*e*P	**Pn**	**02 30 59.9**	**+1.3**
RTLS				*e*S	**Sb**	**02 32 01.5**	**+1.4**
RTCV	**Cerro Valdivia**	**4.65**	**49**	*e*P	**Pn**	**02 31 05.7**	**+1.9**

IDC ***10*** *02:39:13.1±2.6,36°.88N×144°.01E,h0km,mb3.4/5, mb1 3.6/6,mb1mx3.4/47,mbtmp3.4/6,ML3.0/1, Error ellipse: s-maj=77.5km s-min=23.3km az=62.0*

ISC 10 02:39:19.4±1.6,36°.8N±0°.2×143°.7E±0°.1,h35km,n7, σ0s85/8,mb3.4/5,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MJAR	**Matsushiro Arr**	**4.43**	**269**	Pn	**Pn**	**02 40 25.0**	**+0.8**
	0.8nm,0.3s,baz=73,slow=12,SNR=4.3						
MAT	**Matsushiro**	**4.43**	**269**	P	**Pn**	**02 40 25.2**	**+1.0**
MAT				*e*S	**Sn**	**02 41 13.7**	**-0.8**
SONM	**Songino Array**	**29.46**	**304**	P	**P**	**02 45 19.7**	**-0.3**
	0.2nm,0.3s,baz=115,slow=9.7,SNR=2.5						
MKAR	**Makanchi Array**	**45.81**	**303**	P	**P**	**02 47 36.9**	**-0.8**
	0.1nm,0.3s,baz=90,slow=8.6,SNR=2.1						
KURBB	**Kurchatov Arra**	**47.61**	**308**	P	**P**	**02 47 52.3**	**+0.6**
	0.2nm,0.5s,baz=81,slow=7.9,SNR=4.3						
WRA	**Warramunga Arr**	**57.10**	**191**	P	**P**	**02 49 02.2**	**-0.1**
	0.7nm,0.6s,baz=11,slow=7.1,SNR=4.6						
ASAR	**Alice Springs**	**60.82**	**190**	P	**P**	**02 49 27.9**	**-0.2**
	0.2nm,0.5s,baz=16,slow=7.3,SNR=3.3						

NIED ***10*** *02:49:00,38°.30N×141°.80E,h65km,Mw4.0 Best double couple: M₀1.24000×10¹⁵ NP1:φs58.00000°,δ52.00000°, λ144.00000°. NP2:φs172.00000°,δ62.00000°,λ44.00000°.*

ISCJB ***10*** *02:49:18.6±0.7,38°.25N±0°.04×141°.82E±0°.09,h62km±6km, mb3.8/18, Error ellipse: s-maj=11.6km s-min=5.7km az=14.9*

JMA ***10*** *02:49:19.4±0.1,38°.27N×141°.79E,h56km±1km,M4.0*

JMA Felt II J1.

IDC ***10*** *02:49:20.4±2.7,38°.19N×141°.78E,h67km±25km,mb3.6/18, mb1 3.8/21,mb1mx3.7/49,mbtmp3.9/21,MS2.9/4, Ms1 2.9/4,ms1mx2.5/50,Error ellipse: s-maj=20.0km s-min=15.7km az=117.0*

ISC 10 02:49:18.9±1.4,38°.23N±0°.05×141°.87E±0°.10,h51km±12km, n40,σ0s77/43,mb3.9/18,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**0.47**	**299**	P	**Pn**	**02 49 30.1**	**+0.2**
JIO				S	**Sn**	**02 49 37.4**	**-0.3**
JMK	**Ichinoseki**	**0.88**	**325**	P	**Pn**	**02 49 35.1**	**0.0**
JMK				S	**Sn**	**02 49 46.2**	**-0.7**
JMM	**Marumori**	**0.93**	**247**	P	**Pn**	**02 49 35.6**	**-0.1**
JMM				S	**Sn**	**02 49 47.4**	**-0.6**
JOU	**Okura**	**0.96**	**278**	P	**Pn**	**02 49 36.1**	**0.0**
JOU				S	**Sn**	**02 49 48.3**	**-0.5**
JFK	**Kawauchi**	**1.17**	**223**	P	**Pn**	**02 49 39.3**	**+0.3**
JFK				S	**Sn**	**02 49 54.0**	**+0.1**
JOM	**Ohasama**	**1.32**	**340**	P	**Pn**	**02 49 41.2**	**+0.2**
JOM				S	**Sn**	**02 49 57.3**	**-0.2**
JYK	**Kaneyama**	**1.37**	**301**	P	**Pn**	**02 49 41.5**	**-0.2**
JYK				S	**Sn**	**02 49 59.0**	**+0.3**
JFT	**Otama**	**1.41**	**240**	P	**Pn**	**02 49 42.9**	**+0.7**
JFT				S	**Sn**	**02 50 00.0**	**+0.4**
JYS	**Shirataka**	**1.42**	**270**	P	**Pn**	**02 49 42.6**	**+0.2**
JYS				S	**Sn**	**02 50 00.0**	**0.0**
JRG	**Rokugo**	**1.51**	**321**	P	**Pn**	**02 49 43.8**	**+0.2**
JRG				S	**Sn**	**02 50 02.8**	**+0.6**
MJAR	**Matsushiro Arr**	**3.37**	**241**	P	**Pn**	**02 50 10.7**	**+1.6**
	8.4nm,0.3s,baz=41,slow=12,SNR=24						
MJAR				LR	LR	02 51 45.7	
	comp=Z,123nm,21.6s,baz=90,slow=44						
MAT	**Matsushiro**	**3.37**	**241**	P	**Pn**	**02 50 10.9**	**+1.8**
MAT				S	Sn	02 50 55.8	+8.0
USRK	**Ussuriysk Ar.**	**9.53**	**312**	P	**Pn**	**02 51 34.3**	**+0.8**
	1.4nm,0.3s,baz=125,slow=14,SNR=11						
JNU	**Nakatsue**	**10.29**	**244**	P	**Pn**	**02 51 44.1**	**+0.2**
	0.2nm,0.3s,baz=23,slow=5.5,SNR=3.8						
JNU				LR	LR	02 55 26.4	
	comp=Z,179nm,18.6s,baz=128,slow=36						
PETK	**Petropavlovsk-**	**18.47**	**31**	LR	LR	03 00 33.6	
	comp=Z,30nm,20.5s,baz=164,slow=36						
MA2	**Magadan**	**22.11**	**12**	P	**P**	**02 54 09.2**	**-0.5**
	3.6nm,0.6s,baz=205,slow=12,SNR=8.3						
MA2				LR	LR	03 04 37.3	
	comp=Z,20nm,18.6s,baz=118,slow=41						
SEY	**Seymchan**	**25.55**	**11**	P	**P**	**02 54 43.5**	**+1.0**
	1.4nm,0.7s,baz=209,slow=7.2,SNR=12						
SONM	**Songino Array**	**27.44**	**302**	P	**P**	**02 54 59.4**	**-0.5**
	0.6nm,0.5s,baz=102,slow=8.6,SNR=5.8						
H11N2	**WAKE ISLAND Hy**	**28.48**	**123**	T	T	03 25 02.4	
	baz=316,slow=75,SNR=129						
H11N1	**WAKE ISLAND Hy**	**28.48**	**123**	T	T	03 25 25.2	
	baz=316,slow=75,SNR=154						
H11N3	**WAKE ISLAND Hy**	**28.49**	**123**	T	T	03 25 28.0	
	baz=316,slow=75,SNR=199						
H11S1	**WAKE ISLAND Hy**	**29.23**	**125**	T	T	03 26 27.7	
	baz=317,slow=76,SNR=138						
H11S3	**WAKE ISLAND Hy**	**29.23**	**125**	T	T	03 26 20.8	
	baz=317,slow=76,SNR=104						
H11S2	**WAKE ISLAND Hy**	**29.25**	**125**	T	T	03 26 23.8	
	baz=317,slow=76,SNR=84						
ZALV	**Zalesovo Beam**	**41.38**	**311**	P	**P**	**02 56 59.0**	**-0.8**
	0.8nm,0.3s,baz=78,slow=6.8,SNR=6.8						
MKAR	**Makanchi Array**	**43.80**	**301**	P	**P**	**02 57 19.2**	**-0.4**
	1.4nm,0.7s,baz=86,slow=10,SNR=11						
ILAR	**Eielson Array**	**48.29**	**33**	P	**P**	**02 57 54.7**	**+0.1**
	0.9nm,0.7s,baz=261,slow=6.4,SNR=10						
INK	**Inuvik**	**53.16**	**28**	P	**P**	**02 58 31.6**	**+0.5**
	1.3nm,0.6s,baz=271,slow=3.4,SNR=4.8						
WRA	**Warramunga Arr**	**58.30**	**188**	P	**P**	**02 59 06.4**	**-2.1**
	0.5nm,0.4s,baz=4.9,slow=7.1,SNR=3.8						
ASAR	**Alice Springs**	**62.02**	**188**	P	**P**	**02 59 33.8**	**-0.2**
	0.1nm,0.4s,baz=217,slow=38,SNR=4.4						
YKA	**Yellowknife Ar**	**62.59**	**31**	P	**P**	**02 59 37.3**	**0.0**
	0.5nm,0.7s,baz=301,slow=6.5,SNR=8.7						
FINES	**FINESS Array B**	**67.92**	**332**	P	**P**	**03 00 12.2**	**+0.4**
	1.2nm,0.9s,baz=62,slow=4.5,SNR=2.7						
NOA	**NORSAR Array B**	**73.22**	**337**	P	**P**	**03 00 43.1**	**-1.1**
	0.9nm,0.8s,baz=257,slow=14,SNR=3.0						
AKASG	**Malin Array Be**	**73.57**	**322**	P	**P**	**03 00 47.7**	**+1.3**
	0.2nm,0.4s,baz=52,slow=6.5,SNR=3.2						
NVAR	**Mina Array Bea**	**73.98**	**54**	P	**P**	**03 00 51.0**	**+1.7**
	1.4nm,0.9s,baz=297,slow=6.5,SNR=5.1						
PDAR	**Pinedale Array**	**76.57**	**46**	P	**P**	**03 01 04.5**	**+0.4**
	1.0nm,0.6s,baz=240,slow=1.9,SNR=13						
ULM	**Lac du Bonnet**	**78.31**	**34**	P	**P**	**03 01 13.1**	**-0.3**
	0.8nm,0.4s,baz=12,slow=2.1,SNR=2.5						
GERES	**GERESS Array B**	**81.88**	**328**	P	**P**	**03 01 32.3**	**-0.5**
	0.2nm,0.5s,baz=43,slow=6.0,SNR=2.5						
TXAR	**Lajitas Array**	**89.11**	**53**	P	**P**	**03 02 08.6**	**-0.4**
	0.8nm,0.6s,baz=296,slow=3.0,SNR=6.9						
LPAZ	**La Paz**	**145.77**	**59**	PKPbc	**PKPbc**	**03 08 53.2**	**-0.2**
	1.7nm,0.6s,baz=344,slow=3.4,SNR=7.5						

NIED ***10*** *02:56:00,37°.80N×143°.60E,h5km,Mw3.8 Best double couple: M₀6.57000×10¹⁴ NP1:φs231.00000°,δ42.00000°, λ-96.00000°. NP2:φs60.00000°,δ48.00000°,λ-84.00000°.*

JMA ***10*** *02:56:12.9±0.2,37°.84N×143°.59E,h39km,M3.9*

IDC ***10*** *02:56:15.5±4.6,37°.70N×143°.61E,h45km±45km,mb3.3/7, mb1 3.5/8,mb1mx3.3/50,mbtmp3.5/8,ML3.3/1, Error ellipse: s-maj=31.5km s-min=23.0km az=110.0*

ISC 10 02:56:13.2±4.0,37°.81N±0°.07×143°.66E±0°.08,h25km±29km, n23,σ1s35/30,mb3.6/7,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**1.93**	**290**	P	**Pn**	**02 56 43.8**	**-0.7**
JIO				S	**Sn**	**02 57 05.4**	**-2.5**
JMK	**Ichinoseki**	**2.23**	**301**	S	**Sn**	**02 57 13.6**	**-1.7**
JMM	**Marumori**	**2.27**	**272**	P	**Pn**	**02 56 47.8**	**-1.3**
JMM				*e*S	**Sn**	**02 57 13.8**	**-2.5**
JOU	**Okura**	**2.43**	**284**	P	**Pn**	**02 56 51.2**	**-0.1**
JOU				*e*S	**Sn**	**02 57 18.9**	**-1.3**
JOM	**Ohasama**	**2.49**	**313**	P	**Pn**	**02 56 51.8**	**-0.3**
JOM				*e*S	**Sn**	**02 57 20.8**	**-0.9**
JTH	**Tanohata**	**2.55**	**327**	*e*S	**Sn**	**02 57 23.2**	**+0.1**
JFT	**Otama**	**2.65**	**265**	S	**Sn**	**02 57 24.0**	**-1.8**
JYK	**Kaneyama**	**2.82**	**294**	P	**Pn**	**02 56 56.7**	**0.0**
JYK				S	**Sn**	**02 57 29.3**	**-0.6**
JRG	**Rokugo**	**2.85**	**305**	P	**Pn**	**02 56 57.5**	**+0.4**
JRG				*e*S	**Sn**	**02 57 31.5**	**+0.9**
JANG	**Nango**	**3.06**	**328**	*e*S	**Sn**	**02 57 35.0**	**-0.7**
JRY	**Ryogami san**	**4.21**	**246**	P	**Pn**	**02 57 14.7**	**-1.2**
JRY				*e*S	Sn	02 57 59.1	-5.1
JNBK	**Urakawa-nobuka**	**4.52**	**351**	P	**Pn**	**02 57 19.3**	**-0.7**
JNBK				*e*S	**Sn**	**02 58 08.0**	**-3.7**
MJAR	**Matsushiro Arr**	**4.53**	**255**	P	**Pn**	**02 57 20.8**	**+0.5**
	1.6nm,0.3s,baz=88,slow=15,SNR=4.2						
MAT	**Matsushiro**	**4.54**	**255**	P	**Pn**	**02 57 21.4**	**+1.1**
MAT				*e*S	Sn	02 58 00.6	-12
JKB	**Kayabe**	**4.55**	**334**	P	**Pn**	**02 57 20.6**	**+0.2**
JCH	**Churui**	**4.80**	**357**	P	**Pn**	**02 57 22.6**	**-1.3**
JCH				*e*S	Sn	02 58 13.8	-4.9
SEY	**Seymchan**	**25.71**	**9**	P	**P**	**03 01 41.8**	**+0.7**
	0.6nm,0.2s,baz=161,slow=6.5,SNR=6.0						
SONM	**Songino Array**	**28.86**	**302**	P	**P**	**03 02 09.2**	**-0.6**
	0.2nm,0.5s,baz=72,slow=40,SNR=2.5						
MKAR	**Makanchi Array**	**45.23**	**302**	P	**P**	**03 04 28.9**	**+0.7**
	0.3nm,0.5s,baz=92,slow=7.6,SNR=4.2						
ILAR	**Eielson Array**	**47.88**	**33**	P	**P**	**03 04 49.5**	**+0.8**
	0.6nm,0.9s,baz=270,slow=6.4,SNR=4.7						
WRA	**Warramunga Arr**	**58.11**	**190**	P	**P**	**03 06 03.4**	**-1.1**
	0.4nm,0.3s,baz=11,slow=7.3,SNR=2.8						
YKA	**Yellowknife Ar**	**62.23**	**31**	P	**P**	**03 06 33.1**	**+0.7**
	0.1nm,0.8s,baz=291,slow=6.1,SNR=4.1						
FINES	**FINESS Array B**	**68.95**	**333**	P	**P**	**03 07 16.3**	**+0.6**
	1.2nm,0.6s,baz=44,slow=11,SNR=5.7						

ISCJB ***10*** *03:04:52.6±0.6,6°.78N±0°.04×73°.06W±0°.04,h153km±6km, Error ellipse: s-maj=8.9km s-min=4.6km az=42.0*

FUNV ***10*** *03:04:53.6,6°.81N×73°.12W,h166km,MW2.8*

RSNC ***10*** *03:04:55.2±0.6,6°.73N×73°.11W,h140km±4km,ML2.5*

ISC 10 03:04:52.2±1.4,6°.80N±0°.04×73°.07W±0°.05,h160km±8km, n22,σ1s23/34,1C,Northern Colombia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BTLC	**Betulia, Santa**	**0.23**	**302**	*e*P	**Pn**	**03 05 14.4**	**+0.4**
BARC	**Barichara**	**0.23**	**208**	*e*P	**Pn**	**03 05 13.8**	**-0.2**
BARC				*e*S	**Sn**	**03 05 28.8**	**-1.9**
BARC				*i*		03 05 30.1	
	comp=Z,90nm,0.2s						
GIRC	**Giron, Santand**	**0.30**	**337**	*e*P	**Pn**	**03 05 14.2**	**+0.2**
GIRC				*e*S	**Sn**	**03 05 29.9**	**-1.0**
PAMC	**Pamplona, Colo**	**0.65**	**34**	*e*P	**Pn**	**03 05 17.0**	**+1.0**
PAMC				*e*S	**Sn**	**03 05 33.8**	**-0.5**
BRRC	**Barranca, Sant**	**0.71**	**296**	⇓*i*P	**Pn**	**03 05 16.0**	**+0.3**
BRRC				*e*S	**Sn**	**03 05 32.5**	**-1.3**
GRMC	**Gramalote, San**	**0.95**	**16**	*i* P	Pn	03 05 21.0	+3.3
GRMC				*e*S	**Sn**	**03 05 40.1**	**+2.8**
GRMC				*i*		03 05 42.4	
	comp=Z,50nm,0.4s						
CAPV	**Capacho**	**1.30**	**35**	*e*P	**Pn**	**03 05 22.0**	**+1.2**
CAPV				*e*S	**Sn**	**03 05 43.3**	**+0.5**
OCAC	**Ocana**	**1.45**	**350**	*e*P	**Pn**	**03 05 23.4**	**+1.3**
OCAC				*i*		03 05 51.8	
	comp=Z,40nm,0.7s						
YOPC	**Yopal, Colombi**	**1.57**	**156**	*e*P	**Pn**	**03 05 24.2**	**+0.8**
YOPC				*e*S	**Sn**	**03 05 46.3**	**-1.2**
YOPC				*i*		03 05 52.2	
	comp=Z,19nm,0.3s						
NORC	**Norcasia**	**2.17**	**236**	*e*S	**Sn**	**03 05 58.3**	**-0.7**
CHIC	**Chingaza**	**2.25**	**197**	*e*P	**Pn**	**03 05 32.2**	**+1.0**
CHIC				*e*S	**Sn**	**03 06 01.3**	**-0.1**
CHIC				*i*		03 06 08.3	
	comp=Z,14nm,0.6s						
HELC	**Santa Helena**	**2.52**	**256**	*e*P	**Pn**	**03 05 35.8**	**+1.4**
HELC				*e*S	**Sn**	**03 06 06.6**	**-0.3**
HELC				*i*		03 06 13.9	
	comp=Z,13nm,0.2s						
VIGV	**El Vigia**	**2.64**	**40**	*e*P	**Pn**	**03 05 37.2**	**+1.6**
VIGV				*e*S	**Sn**	**03 06 08.6**	**-0.6**
SOCV	**Socops**	**2.65**	**56**	*e*P	**Pn**	**03 05 36.6**	**+1.0**
SOCV				*e*S	**Sn**	**03 06 07.9**	**-1.3**
DBBC	**Dabeiba**	**3.12**	**274**	*e*P	**Pn**	**03 05 42.5**	**+1.0**
TOLC	**Tolima**	**3.14**	**226**	*e*P	**Pn**	**03 05 42.9**	**+0.9**
PRAC	**Prado**	**3.56**	**211**	*e*P	**Pn**	**03 05 47.7**	**+0.6**
PRAC				*e*S	**Sn**	**03 06 28.4**	**-1.4**
ELOV	**Elorza**	**3.57**	**87**	*e*P	**Pn**	**03 05 48.1**	**+1.0**
VIRV	**Villa del Rosa**	**3.74**	**10**	*e*P	**Pn**	**03 05 48.8**	**-0.5**
VIRV				*e*S	**Sn**	**03 06 30.9**	**-3.0**
QARV	**Quebrada Arrib**	**4.22**	**36**	*e*P	**Pn**	**03 05 56.6**	**+1.0**
CURV	**Curarigua**	**4.44**	**44**	*e*P	**Pn**	**03 05 58.8**	**+0.3**
BAUV	**El Baul**	**5.42**	**67**	*e*P	**Pn**	**03 06 11.1**	**-0.2**

IDC ***10*** *03:11:19.4±2.9,38°.86N×141°.79E,h0km,mb3.4/3, mb1 3.5/4,mb1mx3.2/50,mbtmp3.3/4,ML3.0/1, Error ellipse: s-maj=69.8km s-min=34.1km az=74.0*

JMA ***10*** *03:11:23.9±0.1,38°.56N×141°.80E,h46km±1km,M3.7*

JMA Felt I J1.

ISC 10 03:11:22.6±1.9,38°.56N±0°.05×141°.75E±0°.10,h17km±13km, n20,σ1s28/21,mb3.5/3,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**0.33**	**252**	P	**Pn**	**03 11 33.3**	**+0.7**
JIO				S	**Sn**	**03 11 39.6**	**+0.6**
JMK	**Ichinoseki**	**0.57**	**314**	P	**Pn**	**03 11 36.3**	**+0.4**
JMK				S	**Sn**	**03 11 44.8**	**-0.2**
JOU	**Okura**	**0.88**	**258**	P	**Pn**	**03 11 40.4**	**+0.3**
JOU				S	**Sn**	**03 11 53.0**	**+0.5**
JOM	**Ohasama**	**0.98**	**339**	P	**Pg**	**03 11 41.5**	**-0.2**
JMM	**Marumori**	**1.02**	**228**	P	**Pb**	**03 11 41.9**	**+0.1**
JMM				S	**Sb**	**03 11 54.9**	**0.0**
JYK	**Kaneyama**	**1.15**	**289**	P	**Pb**	**03 11 44.3**	**+0.4**
JYK				S	**Sn**	**03 11 59.6**	**+0.4**
JRG	**Rokugo**	**1.21**	**314**	P	**Pb**	**03 11 45.1**	**+0.1**
JRG				*e*S	**Sb**	**03 12 00.9**	**+0.6**
JYS	**Shirataka**	**1.37**	**256**	P	**Pn**	**03 11 47.4**	**+0.5**
JFK	**Kawauchi**	**1.38**	**211**	P	**Pn**	**03 11 46.8**	**-0.2**
MAT	**Matsushiro**	**3.46**	**236**	P	**Pn**	**03 12 17.5**	**+1.8**
MAT				*e*S	**Sb**	**03 13 02.0**	**-3.2**
MJAR	**Matsushiro Arr**	**3.46**	**236**	Pn	**Pn**	**03 12 17.8**	**+2.2**
	1.1nm,0.3s,baz=35,slow=13,SNR=17						
H11N2	**WAKE ISLAND Hy**	**28.73**	**124**	T	T	03 47 44.8	
	baz=316,slow=75						
H11N1	**WAKE ISLAND Hy**	**28.74**	**124**	T	T	03 47 45.7	
	baz=316,slow=75						
H11N3	**WAKE ISLAND Hy**	**28.75**	**124**	T	T	03 47 42.3	
	baz=316,slow=75						
H11S1	**WAKE ISLAND Hy**	**29.49**	**126**	T	T	03 48 34.7	
	baz=318,slow=76						
H11S3	**WAKE ISLAND Hy**	**29.49**	**126**	T	T	03 48 35.7	
	baz=318,slow=76						
H11S2	**WAKE ISLAND Hy**	**29.51**	**126**	T	T	03 48 36.6	
	baz=318,slow=76						
MKAR	**Makanchi Array**	**43.55**	**301**	P	**P**	**03 19 24.0**	**-1.3**
	0.2nm,0.3s,baz=81,slow=8.9,SNR=2.8						
KURBB	**Kurchatov Arra**	**45.29**	**307**	P	**P**	**03 19 37.1**	**-2.0**
	0.6nm,0.4s,baz=81,slow=8.5,SNR=4.9						
WRA	**Warramunga Arr**	**58.60**	**188**	P	**P**	**03 21 19.8**	**+1.3**
	0.4nm,0.8s,baz=3.5,slow=6.8,SNR=3.3						

NIED ***10*** *03:13:00,37°.50N×141°.90E,h44km,Mw4.1 Best double couple: M₀1.60000×10¹⁵ NP1:φs132.00000°,δ5.00000°, λ-148.00000°. NP2:φs10.00000°,δ87.00000°, λ-86.00000°.*

IDC ***10*** *03:13:19.9±0.8,37°.60N×142°.46E,h0km,mb4.0/13, mb1 4.0/18,mb1mx3.9/54,mbtmp4.0/18,ML3.8/5,MS3.2/13, Ms1 3.2/13,ms1mx2.9/57,Error ellipse: s-maj=20.3km s-min=17.0km az=95.0*

NEIC ***10*** *03:13:25.9±0.9,37°.47N×142°.21E,h40km±8km,mb4.4/12, Error ellipse: s-maj=10.3km s-min=8.1km az=94.0*

JMA ***10*** *03:13:26.5±0.1,37°.46N×141°.94E,h36km±3km,M4.0*

JMA Felt II J1.

ISC 10 03:13:23.4±3.2,37°.45N±0°.04×142°.12E±0°.05,h18km±20km, n60,σ1s29/56,mb4.1/25,MS3.3/6,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**0.99**	**266**	P	**Pb**	**03 13 42.2**	**+0.1**
JFK				S	**Sb**	**03 13 53.4**	**-1.5**
ONAJ	**Iwakimizuishiy**	**1.11**	**252**	P	**Pn**	**03 13 44.0**	**-0.1**
ONAJ				S	**Sb**	**03 13 56.7**	**-1.5**
JMM	**Marumori**	**1.13**	**292**	P	**Pn**	**03 13 44.3**	**-0.1**
JMM				S	**Sb**	**03 13 57.2**	**-1.6**
JIO	**Ouri**	**1.17**	**329**	P	**Pb**	**03 13 45.5**	**+0.3**
JIO				S	**Sb**	**03 13 59.0**	**-1.1**
JFT	**Otama**	**1.42**	**273**	P	**Pb**	**03 13 49.1**	**-0.2**
JFT				S	**Sn**	**03 14 05.3**	**-1.3**
JOU	**Okura**	**1.47**	**309**	P	**Pb**	**03 13 50.1**	**-0.1**
JOU				S	**Sn**	**03 14 07.2**	**-0.7**
JMK	**Ichinoseki**	**1.66**	**335**	P	**Pb**	**03 13 53.2**	**-0.2**
JYS	**Shirataka**	**1.80**	**296**	P	**Pb**	**03 13 55.1**	**-0.7**
JYS				S	**Sn**	**03 14 16.6**	**+0.6**
JYK	**Yanaizu**	**1.92**	**270**	P	**Pn**	**03 13 56.3**	**+1.1**
JFY				S	**Sn**	**03 14 18.9**	**-0.1**
JYK	**Kaneyama**	**2.02**	**317**	P	**Pn**	**03 13 58.0**	**+1.4**
MJAR	**Matsushiro Arr**	**3.26**	**255**	Pn	**Pn**	**03 14 15.4**	**+1.7**
	7.3nm,0.3s,baz=79,slow=16,SNR=28						
MJAR				Sn	**Sb**	**03 14 57.4**	**-2.7**
	18nm,0.3s,baz=117,slow=6.9,SNR=7.2						
MJAR				LR	LR	03 15 53.7	
	comp=Z,341nm,18.0s,baz=80,slow=44						
MAJO	**Matsushiro**	**3.26**	**255**	*e*Pn	**Pn**	**03 14 15.4**	**+1.8**
MAT	**Matsushiro**	**3.26**	**255**	P	**Pn**	**03 14 15.6**	**+2.0**
MAT				S	**Sn**	**03 14 56.1**	**+4.1**
ERM	**Erimo**	**4.63**	**10**	*e*Pn	**Pn**	**03 14 32.1**	**-0.4**
JHJ	**Hachijo jima 2**	**4.72**	**205**	Pn	**Pn**	**03 14 35.6**	**+1.9**
	20nm,0.3s,baz=281,slow=23,SNR=6.8						
JHJ				Sn	**Sn**	**03 15 26.0**	**-2.0**
	47nm,0.3s,baz=100,slow=23,SNR=7.6						
JHJ				LR	LR	03 16 32.6	
	comp=Z,115nm,20.4s,baz=99,slow=39						
JNU	**Nakatsue**	**10.15**	**248**	Pn	Pn	03 15 51.4	+3.2
	0.3nm,0.3s,baz=257,slow=13,SNR=2.4						
JNU				LR	LR	03 20 18.2	
	comp=Z,88nm,20.2s,baz=122,slow=40						
JNU	**Nakatsue**	**10.15**	**248**	*e*Pn	**Pn**	**03 15 50.1**	**+1.9**
USRK	**Ussuriysk Ar.**	**10.21**	**314**	Pn	Pn	03 15 54.4	+5.3
	0.5nm,0.3s,baz=135,slow=15,SNR=12						
USRK				LR	LR	03 19 39.8	
	comp=Z,128nm,19.5s,baz=178,slow=37						
CBIJ	**Chichi jima**	**10.32**	**180**	*e*Pn	**Pn**	**03 15 50.6**	**0.0**
JCJ	**Chichijima**	**10.32**	**180**	Pn	**Pn**	**03 15 50.0**	**-0.6**
	6.0nm,0.3s,baz=290,slow=23,SNR=5.1						
KSRS	**Korea Array**	**11.29**	**274**	Pn	Pn	03 16 07.7	+4.0
	0.3nm,0.3s,baz=90,slow=14,SNR=11						
KSRS				LR	LR	03 19 55.0	
	comp=Z,105nm,20.8s,baz=85,slow=34						
KSAR	**Wonju Array Be**	**11.32**	**274**	Pn	Pn	03 16 07.7	+3.5
KLR	**Kul'dur**	**13.97**	**331**	LR	LR	03 21 44.2	
	comp=Z,67nm,20.8s,baz=319,slow=36						
PETK	**Petropavlovsk-**	**19.05**	**30**	LR	L

*IDC **10** 03:21:46.4±1.2,36°.34N×140°.34E,h0km,mb3.2/4, mb1 3.5/5,mb1mx3.3/48,mbtmp3.4/5,ML3.5/1,Error ellipse: s-maj=25.1km s-min=22.6km az=44.0*

*ISCJB **10** 03:21:52.7±0.6,36°.16N±0°.04×140°.09E±0°.06,h60km±5km, mb3.2/4,Error ellipse: s-maj=8.3km s-min=5.7km az=20.4*

*JMA **10** 03:21:54.0±0.1,36°.18N×140°.01E,h51km±1km,M3.5 Broadband fault plane solution: P waves. NP1: ϕs40.00000°,δ77.00000°,λ80.00000°. NP2:ϕs257.00000°, δ16.00000°,λ126.00000°. Principal axes: T Plg57.0000°, Azm297.0000°; N Plg10.0000°, Azm42.0000°; P Plg31.0000°, Azm138.0000°;*

JMA Felt I J1.

ISC 10 03:21:53.7±0.9,36°.18N±0°.04×140°.02E±0°.05,h54km±7km, n22,σ1s27/25,mb3.2/4,1C-5D,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
JYT	**Yasato**	**0.14**	**72**	⇑P		**Pn**		**03 22 02.3**	**+0.2**
JYT				S		**Sn**		**03 22 08.1**	**-0.1**
JAG	**Ashikaga**	**0.52**	**298**	⇓P		**Pn**		**03 22 05.6**	**+0.2**
JAG				*e*S		**Sn**		**03 22 13.6**	**-0.3**
JKT	**Katashina**	**0.85**	**313**	⇓P		**Pn**		**03 22 09.6**	**-0.1**
JRY	**Ryogami san**	**0.92**	**260**	⇓P		**Pn**		**03 22 10.8**	**+0.3**
JRY				S		**Sn**		**03 22 23.0**	**+0.1**
JOD2	**Odawara 2**	**1.19**	**220**	P		**Pn**		**03 22 15.0**	**+0.9**
JOD2				S		**Sn**		**03 22 29.7**	**+0.4**
JFY	**Yanaizu**	**1.25**	**348**	⇓P		**Pn**		**03 22 15.4**	**+0.5**
JFY				S		**Sn**		**03 22 31.4**	**+0.8**
JHK	**Hiroka**	**1.33**	**323**	P		**Pn**		**03 22 16.6**	**+0.6**
JFT	**Otama**	**1.35**	**11**	⇓P		**Pn**		**03 22 16.9**	**+0.6**
JFK	**Kawauchi**	**1.36**	**30**	P		**Pn**		**03 22 16.6**	**+0.2**
JFK				S		**Sn**		**03 22 33.1**	**-0.4**
MJAR	**Matsushiro Arr**	**1.51**	**284**	Pn		**Pn**		**03 22 18.5**	**+0.2**
	14nm,0.3s,baz=116,slow=8.3,SNR=165								
MJAR				Sn		**Sn**		**03 22 38.8**	**+1.8**
	7.2nm,0.3s,baz=106,slow=17,SNR=9.5								
MAT	**Matsushiro**	**1.51**	**284**	P		**Pn**		**03 22 19.1**	**+0.7**
MAT				S		**Sn**		**03 22 32.4**	**-4.6**
JHJ	**Hachijo jima 2**	**3.06**	**184**	Pn		**Pn**		**03 22 39.8**	**+0.2**
	15nm,0.3s,baz=311,slow=22,SNR=21								
JHJ				Sn		**Sn**		**03 23 14.0**	**-1.0**
	15nm,0.3s,baz=250,slow=20,SNR=3.4								
H11N2	**WAKE ISLAND Hy**	**28.71**	**118**	T		T		03 57 47.4	
H11N1	**WAKE ISLAND Hy**	**28.72**	**118**	T		T		03 57 47.4	
H11N3	**WAKE ISLAND Hy**	**28.73**	**118**	T		T		03 57 47.4	
H11S1	**WAKE ISLAND Hy**	**29.37**	**120**	T		T		03 58 45.4	
	baz=314,slow=76,SNR=4.5								
H11S3	**WAKE ISLAND Hy**	**29.37**	**120**	T		T		03 58 44.2	
	baz=314,slow=76,SNR=3.4								
H11S2	**WAKE ISLAND Hy**	**29.39**	**120**	T		T		03 58 46.4	
	baz=314,slow=76,SNR=3.5								
MKAR	**Makanchi Array**	**43.63**	**303**	P		**P**		**03 29 52.6**	**-0.1**
	0.2nm,0.7s,baz=88,slow=6.9,SNR=2.2								
KURBB	**Kurchatov Arra**	**45.65**	**308**	P		**P**		**03 30 10.2**	**+1.5**
	0.3nm,0.5s,baz=84,slow=7.8,SNR=6.4								
WRA	**Warramunga Arr**	**56.08**	**186**	P		**P**		**03 31 27.8**	**+0.5**
	0.2nm,0.5s,baz=1.0,slow=7.5,SNR=2.6								
YKA	**Yellowknife Ar**	**65.10**	**30**	P		**P**		**03 32 26.7**	**-1.6**
	0.1nm,0.5s,baz=307,slow=8.8,SNR=2.8								

JMA 10 03:23:41.5±0.1,38°.59N×142°.34E,h40km±2km,M3.6, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
JIO	**Ouri**	**0.79**	**260**	P		Pn		03 23 56.2	+0.1
JIO				S		Sn		03 24 06.5	-0.2
JMK	**Ichinoseki**	**0.95**	**293**	P		Pn		03 23 58.6	+0.3
JMK				S		Sn		03 24 11.1	+0.5
MIYJ	**Miyakonagasawa**	**1.06**	**338**	P		Pn		03 24 00.0	0.0
MIYJ				S		Sn		03 24 13.5	-0.1
JOM	**Ohasama**	**1.20**	**318**	P		Pn		03 24 02.5	+0.7
JOM				S		Sn		03 24 18.0	+1.1
JOU	**Okura**	**1.33**	**261**	P		Pn		03 24 04.3	+0.6
JOU				S		Sn		03 24 21.3	+1.1
JMM	**Marumori**	**1.42**	**240**	P		Pn		03 24 04.9	+0.1
JRG	**Rokugo**	**1.55**	**302**	P		Pn		03 24 07.7	+1.0
JYK	**Kaneyama**	**1.58**	**283**	P		Pn		03 24 07.8	+0.7
JKZ	**Kuzumaki**	**1.60**	**331**	P		Pn		03 24 08.3	+1.0

IDC 10 03:24:35.8±1.8,60°.81S×45°.90W,h0km,mb3.7/2, mb1 3.8/2,mb1mx3.6/18,mbtmp3.7/2,Error ellipse: s-maj=94.6km s-min=42.7km az=34.0,Scotia Sea

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
LPAZ	**La Paz**	**47.25**	**330**	P		P		03 33 11.4	+0.2
	1.0nm,0.7s,baz=161,slow=4.7,SNR=4.1								
TORD	**Torodi Ar. Bea**	**82.81**	**46**	P		P		03 37 01.2	-0.4
	0.4nm,0.9s,baz=189,slow=6.9,SNR=4.1								
YKA	**Yellowknife Ar**	**133.57**	**323**	PKP		PKPdf		03 43 49.6	-2.9
	0.1nm,0.5s,baz=133,slow=2.6,SNR=3.9								
BVAR	**Borovoye Array**	**145.66**	**74**	PKPbc		PKPdf		03 44 14.5	-0.2
	2.0nm,0.6s,baz=249,slow=4.0,SNR=16								
ILAR	**Eielson Array**	**145.84**	**311**	PKPbc		PKPbc		03 44 15.1	-0.2
	0.3nm,0.6s,baz=138,slow=2.8,SNR=4.7								
MKAR	**Makanchi Array**	**147.30**	**91**	PKPbc		PKPbc		03 44 19.3	-0.8
	0.5nm,0.6s,baz=228,slow=1.5,SNR=5.7								
KURBB	**Kurchatov Arra**	**148.04**	**83**	PKPbc		PKPbc		03 44 21.8	-0.2
	0.9nm,0.9s,baz=236,slow=3.8,SNR=8.8								

*JMA **10** 03:38:14.9±0.1,35°.73N×140°.90E,h9km±1km,M3.2*

ISC 10 03:38:14.3±2.3,35°.74N±0°.08×140°.9E±0°.2,h11km±7km,n9,σ0s33/12,1D,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.06**	**233**	⇓P		**Pg**		**03 38 16.6**	**0.0**
CHOJ				S		**Sg**		**03 38 18.1**	**-0.1**
JCN	**Nagara**	**0.67**	**241**	P		**Pb**		**03 38 28.3**	**+0.3**
JYT	**Yasato**	**0.76**	**310**	P		**Pg**		**03 38 29.2**	**+0.1**
JYT				*e*S		**Sg**		**03 38 39.3**	**+0.2**
BSO4	**Boso 4**	**0.89**	**213**	P		**Pb**		**03 38 32.1**	**+0.4**
TOK	**Tokyo**	**0.95**	**267**	P		**Pb**		**03 38 33.1**	**+0.3**
BSO3	**Boso 3**	**0.99**	**200**	P		**Pg**		**03 38 33.4**	**-0.1**
MJAR	**Matsushiro Arr**	**2.34**	**291**	Pn		**Pn**		**03 38 52.1**	**-0.6**
	1.7nm,0.3s,baz=91,slow=8.7,SNR=18								
MJAR				LR		LR		03 39 15.3	
	comp=Z,26nm,20.1s,baz=280,slow=28								
MAT	**Matsushiro**	**2.34**	**291**	P		**Pn**		**03 38 52.6**	**-0.2**
MAT				*e*S		**Sb**		**03 39 25.2**	**-0.2**
WRA	**Warramunga Arr**	**55.73**	**187**	P		**P**		**03 47 51.1**	**+0.1**
	0.2nm,0.3s,baz=4.4,slow=7.6,SNR=5.8								

*NIED **10** 03:38:00,35°.70N×140°.90E,h8km,Mw3.7 Best double couple: M₀3.92000×10¹⁴ NP1:ϕs4.00000°,δ39.00000°, λ-83.00000°. NP2:ϕs175.00000°,δ52.00000°, λ-96.00000°.*

*ISCJB **10** 03:38:19.1±1.8,35°.74N±0°.10×141°.0E±0°.1,h12km±7km, mb3.4/3,Error ellipse: s-maj=19.2km s-min=15.7km az=161.4*

*IDC **10** 03:38:19.6±3.3,34°.96N×139°.69E,h0km,mb3.3/4, mb1 3.5/4,mb1mx3.2/59,mbtmp3.3/4,Error ellipse: s-maj=137.0km s-min=25.2km az=68.0*

*JMA **10** 03:38:20.8±0.1,35°.74N×140°.89E,h9km±1km,M3.7*

JMA Felt II J1.

ISC 10 03:38:20.5±1.2,35°.77N±0°.07×140°.9E±0°.1,h9km±9km,n14,σ0s99/10,mb3.4/3,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.07**	**174**	P		**Pg**		**03 38 22.4**	**0.0**
CHOJ				S		**Sg**		**03 38 23.8**	**-0.1**
JCN	**Nagara**	**0.63**	**237**	P		**Pb**		**03 38 34.1**	**+0.4**
JYT	**Yasato**	**0.70**	**311**	P		**Pb**		**03 38 35.0**	**+0.1**
JYT				S		**Sb**		**03 38 45.0**	**+0.3**
JHO	**Hitachi**	**0.87**	**345**	P		**Pb**		**03 38 38.1**	**+0.3**
TOK	**Tokyo**	**0.89**	**265**	P		**Pb**		**03 38 39.1**	**-0.1**
H11N2	**WAKE ISLAND Hy**	**27.93**	**118**	T		T		04 13 10.5	
	baz=311,slow=75,SNR=41								
H11N1	**WAKE ISLAND Hy**	**27.93**	**118**	T		T		04 13 11.0	
	baz=311,slow=75,SNR=29								
H11N3	**WAKE ISLAND Hy**	**27.94**	**118**	T		T		04 13 08.4	
	baz=311,slow=75,SNR=34								
H11S1	**WAKE ISLAND Hy**	**28.59**	**120**	T		T		04 13 53.0	
	baz=312,slow=76,SNR=145								
H11S3	**WAKE ISLAND Hy**	**28.59**	**120**	T		T		04 13 53.0	
	baz=312,slow=76,SNR=138								
H11S2	**WAKE ISLAND Hy**	**28.60**	**120**	T		T		04 13 54.3	
	baz=312,slow=76,SNR=122								
MKAR	**Makanchi Array**	**44.42**	**303**	P		**P**		**03 46 30.0**	**-1.5**
	0.2nm,0.4s,baz=90,slow=10,SNR=2.8								
KURBB	**Kurchatov Arra**	**46.43**	**309**	P		**P**		**03 46 46.2**	**-1.2**
	0.3nm,0.5s,baz=85,slow=8.9,SNR=3.0								
AKASG	**Malin Array Be**	**75.02**	**322**	P		**P**		**03 50 03.5**	**+1.4**
	0.1nm,0.2s,baz=58,slow=6.0,SNR=2.8								

*NIED **10** 03:39:00,38°.60N×144°.20E,h8km,Mw3.6 Best double couple: M₀2.63000×10¹⁴ NP1:ϕs342.00000°,δ43.00000°, λ-84.00000°. NP2:ϕs155.00000°,δ47.00000°, λ-95.00000°.*

JMA 10 03:39:47.7±0.3,38°.57N×144°.16E,h35km,M3.9,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
JIO	**Ouri**	**2.21**	**268**	P		**Pn**		03 40 23.0	+1.2
JIO				S		Sn		03 40 48.8	+0.9
JTH	**Tanohata**	**2.25**	**308**	P		Pn		03 40 23.3	+0.9
JMK	**Ichinoseki**	**2.33**	**280**	P		Pn		03 40 25.3	+1.8
JMK				S		Sn		03 40 53.4	+2.5
JOM	**Ohasama**	**2.41**	**293**	P		Pn		03 40 26.3	+1.7
JOM				S		Sn		03 40 54.7	+1.8
JMM	**Marumori**	**2.74**	**256**	P		Pn		03 40 31.1	+1.9
JMM				S		Sn		03 41 02.0	+0.9
JOU	**Okura**	**2.75**	**267**	P		Pn		03 40 31.4	+2.1
JOU				S		Sn		03 41 03.3	+1.9
JFK	**Kawauchi**	**2.86**	**246**	P		Pn		03 40 31.5	+0.6
JFK				S		Sn		03 41 04.5	+0.4
JRG	**Rokugo**	**2.87**	**288**	P		Pn		03 40 33.5	+2.6
JRG				*e*S		Sn		03 41 07.3	+3.1
JYK	**Kaneyama**	**2.99**	**278**	P		Pn		03 40 35.0	+2.4
JYK				*e*S		Sn		03 41 10.9	+3.6
JFT	**Otama**	**3.20**	**252**	P		Pn		03 40 37.6	+2.2
JFT				S		Sn		03 41 14.6	+2.3
JTM	**Tenmabayashi**	**3.25**	**314**	S		Sn		03 41 14.2	+0.5
MAT	**Matsushiro**	**5.14**	**249**	P		Pn		03 41 04.9	+2.7
MAT				*e*S		Sn		03 42 03.7	+3.3

*ISCJB **10** 03:44:35.9±0.4,34°.77S±0°.03×71°.94W±0°.06,h50km±4km, mb4.1/15,MS3.5/2,Error ellipse: s-maj=8.0km s-min=4.7km az=19.5*

*GUC **10** 03:44:36.0±0.6,34°.75S×71°.90W,h40km±2km,ML4.5*

*NEIC **10** 03:44:36.0,34°.75S×71°.90W,h40km,mb4.2/6,After GUC.*

NEIC Felt [III] at Chepica, Chimbarongo, Curico, Iloca, Lolol, Molina, Paredones, Pichilemu, Rancagua, Rio Claro, Romeral, San Fernando, Santa Cruz and Talca; [II] at Cauquenes, Navidad, Pelluhue, Santiago and Yerbas Buenas.

*IDC **10** 03:44:36.5±0.6,34°.74S×71°.70W,h40km±3km,mb3.9/10, mb1 4.0/12,mb1mx3.9/31,mbtmp4.1/12,ML4.3/2,MS3.3/4, Ms1 3.2/4,ms1mx3.0/24,Error ellipse: s-maj=22.0km s-min=13.9km az=68.0*

ISC 10 03:44:36.1±0.5,34°.76S±0°.03×71°.97W±0°.05,h41km±4km, n49,σ1s39/63,mb4.1/15,3C-5D,Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
CHPI	**Pichilemu**	**0.37**	**356**	⇑*i*P		**Pn**		**03 44 45.0**	**-0.3**
CHPI				*i* S		**Sn**		**03 44 51.6**	**-0.1**
NICH	**Los Niches**	**0.65**	**112**	⇓*i*P		**Pn**		**03 44 48.3**	**-0.6**
NICH				*i* S		**Sn**		**03 44 57.0**	**-1.1**
TALC	**Talca**	**0.69**	**157**	⇓*i*P		**Pn**		**03 44 49.8**	**+0.3**
TALC				*i* S		**Sn**		**03 44 59.5**	**+0.5**
COCH	**Cobquecura**	**1.52**	**206**	⇓*i*P		**Pn**		**03 45 02.1**	**+1.3**
COCH				*i* S		**Sn**		**03 45 21.7**	**+2.3**
ANTU	**Antumapu**	**1.63**	**43**	⇓*i*P		**Pn**		**03 45 02.8**	**+0.5**
ANTU				*i* S		**Sn**		**03 45 22.6**	**+0.5**
ANTU				IAML				03 45 26.5	
	comp=E,13μm,0.5s								
CLCH	**Cerro Calan**	**1.81**	**41**	⇑*i*P		**Pn**		**03 45 05.2**	**+0.4**
CLCH				*e*S		**Sn**		**03 45 27.8**	**+1.1**
CLCH				IAML				03 45 32.5	
	comp=E,9μm,0.3s								
PEL	**Peldehue**	**1.94**	**34**	⇑*i*P		**Pn**		**03 45 07.0**	**+0.4**
PEL				*e*S		**Sn**		**03 45 31.0**	**+1.2**
PEL				IAML				03 45 40.7	
	comp=N,4μm,0.8s								
AAGR	**Agrelo**	**3.10**	**58**	*e*P		**Pn**		**03 45 24.8**	**+2.1**
ARCO	**CERRO ARCO**	**3.17**	**54**	*e*P		**Pn**		**03 45 26.0**	**+2.3**
ARCO				*e*S		Sn		03 46 10.9	+10
ARCO				IAML				03 46 16.8	
	comp=Z,246nm,0.6s								
CANA	**Caviahue**	**3.20**	**167**	*e*P		Pn		03 45 28.6	+4.5
CANA				*e*S		Sn		03 46 17.2	+16
AUSP	**Uspallata**	**3.33**	**41**	*e*P		**Pn**		**03 45 28.6**	**+2.6**
AUSP				*e*S		Sn		03 46 13.7	+9.3
ASAL	**Salagasta**	**3.39**	**51**	*e*P		**Pn**		**03 45 29.4**	**+2.7**
ASAL				*e*S		Sn		03 46 14.6	+8.8
RTLS	**Leoncito**	**3.71**	**38**	*e*P		**Pn**		**03 45 33.5**	**+2.3**
RTLS				⇓*e*S		Sn		03 46 25.2	+11
RTLL	**Cerro Villicun**	**4.51**	**42**	*e*P		**Pn**		**03 45 42.9**	**+0.9**
RTLL				*e*S		Sn		03 46 40.0	+6.8
AVFE	**Valle Fertil**	**5.59**	**44**	*e*P		**Pn**		**03 45 56.0**	**-0.8**
AVFE				*e*S		**Sn**		**03 47 05.2**	**+5.4**
LCO	**Las Campanas**	**5.84**	**11**	*e*Pn		**Pn**		**03 45 59.5**	**-0.9**
	comp=Z,36nm,0.6s								
LCO				*e*Sn		**Sn**		**03 47 04.1**	**-2.1**
LCO				*e*Lg		Lg		03 47 21.9	
PLCA	**Paso Flores**	**6.06**	**170**	Pn		**Pn**		**03 46 05.1**	**+1.8**
	comp=Z,2.2nm,0.3s,baz=7.4,slow=11,SNR=78								
PLCA				Lg		Lg		03 47 45.7	
	comp=Z,0.5nm,0.3s,baz=282,slow=22,SNR=3.4								
PLCA				LR		LR		03 48 52.8	
	comp=Z,86nm,20.7s,baz=356,slow=42								
APLL	**PUNTA DE LOS L**	**6.33**	**48**	*e*P		**Pn**		**03 46 06.2**	**-0.7**
VCA	**Vinchina**	**6.81**	**29**	*e*P		**Pn**		**03 46 12.3**	**-1.4**
VCA				IAML				03 47 51.4	
	comp=Z,1μm,1.1s								
ACLC	**CERRO LA CRUZ**	**6.81**	**40**	*e*P		**Pn**		**03 46 12.0**	**-1.8**
ACLC				IAML				03 48 00.8	
	comp=Z,68nm,0.7s								
TCA	**Tanti**	**7.07**	**63**	*e*P		**Pn**		**03 46 16.2**	**-0.9**
TCA				*e*S		**Sn**		**03 47 39.2**	**+2.9**
TCA	**Tanti**	**7.07**	**63**	IAML				04 17 12.5	
	comp=Z,38nm,0.7s								
TRQA	**Tornquist**	**8.70**	**115**	*e*Pn		**Pn**		**03 46 39.6**	**+0.2**
	comp=Z,18nm,0.9s								
CPUP	**Villa Florida**	**15.14**	**60**	LR		LR		03 54 18.3	
	comp=Z,120nm,21.5s,baz=237,slow=39								
LPAZ	**La Paz**	**18.72**	**12**	P		**Pn**		**03 48 53.5**	**+0.8**
	comp=Z,0.3nm,0.3s,baz=183,slow=8.8,SNR=12								
SIV	**San Ignacio**	**21.10**	**30**	P		**P**		**03 49 16.1**	**-1.2**
	comp=Z,7.1nm,0.9s,baz=216,slow=12,SNR=19								
BDFB	**Brasilia**	**28.72**	**54**	LR		LR		04 02 47.0	
	comp=Z,69nm,19.9s,baz=226,slow=38								
PTGA	**Pitinga**	**35.67**	**21**	P		**P**		**03 51 29.7**	**-0.8**
	comp=Z,7.5nm,0.8s,baz=201,slow=10,SNR=9.7								
RCBR	**Riachuelo**	**44.00**	**57**	LR		LR		04 11 35.8	
	comp=Z,86nm,18.9s,baz=212,slow=37								
VNA2	**Neumayer--Watz**	**49.29**	**157**	P		**P**		**03 53 21.0**	**+0.4**
	baz=278,slow=7.8								
TXAR	**Lajitas Array**	**70.43**	**331**	P		**P**		**03 55 47.5**	**+1.2**
	comp=Z,0.5nm,0.5s,baz=157,slow=8.3,SNR=12								
TXAR				pP		**pP**		**03 55 59.1**	**+0.8**
	comp=Z,0.9nm,0.5s,baz=156,slow=8.3,SNR=16								
TXAR				sP		**sP**		**03 56 04.2**	**+1.2**
	comp=Z,0.3nm,0.6s,baz=156,slow=10,SNR=5.2								
MAW	**Mawson**	**72.43**	**163**	P		**P**		**03 55 58.1**	**+0.4**
	comp=Z,1.2nm,0.6s,baz=273,slow=8.3,SNR=2.9								
MAW				pP		**pP**		**03 56 09.9**	**0.0**
	comp=Z,2.5nm,0.9s,baz=255,slow=8.3,SNR=3.0								
MAW				sP		**PcP**		**03 56 15.3**	**-0.1**
	comp=Z,1.4nm,0.7s,baz=247,slow=7.0,SNR=4.6								
MNTX	**Cornudas Mount**	**73.20**	**331**	*e*P		**P**		**03 56 02.8**	**0.0**
	comp=Z,1.5nm,0.6s								
DBIC	**Dimbokro**	**75.37**	**71**	P		**P**		**03 56 15.0**	**-0.8**
	comp=Z,2.1nm,0.8s,baz=183,slow=5.7,SNR=2.5								
DBIC				sP		**sP**		**03 56 31.3**	**-1.3**
	comp=Z,2.4nm,0.6s,baz=184,slow=5.9,SNR=6.3								
TSUM	**Tsumeb**	**78.95**	**106**	P		**P**		**03 56 35.5**	**-0.6**
	comp=Z,1.7nm,0.9s,baz=242,slow=19,SNR=3.4								
TSUM	**Tsumeb**	**78.95**	**106**	*e*P		**P**		**03 56 35.5**	**-0.6**
	comp=Z,2.7nm,1.0s								
BOSA	**Boshof**	**79.67**	**118**	P		**P**		**03 56 39.3**	**-0.6**
	comp=Z,5.1nm,0.8s,baz=258,slow=3.8,SNR=12								
BOSA				pP		**pP**		**03 56 51.6**	**-0.5**
	comp=Z,1.5nm,0.7s,baz=245,slow=5.9,SNR=4.8								
RSSD	**Black Hills**	**83.76**	**337**	*e*P		**P**		**03 57 00.1**	**-0.8**
	comp=Z,1.3nm,0.6s								
HWUT	**Hardware Ranch**	**84.25**	**331**	*e*P		**P**		**03 57 04.0**	**+0.6**
	comp=Z,1.4nm,0.6s								
TORD	**Torodi Ar. Bea**	**84.42**	**70**	P		**P**		**03 57 03.8**	**-0.9**
	comp=Z,1.7nm,0.9s,baz=247,slow=3.7,SNR=7.6								
TORD				pP		**pP**		**03 57 16.2**	**-0.8**
	comp=Z,2.0nm,0.8s,baz=267,slow=3.3,SNR=5.2								
TORD				sP		**sP**		**03 57 21.6**	**0.0**
	comp=Z,1.5nm,0.6s,baz=252,slow=3.7,SNR=8.8								
PDAR	**Pinedale Array**	**84.47**	**333**	P		**P**		**03 57 05.2**	**+0.6**
	comp=Z,0.4nm,0.7s,baz=147,slow=6.3,SNR=3.7								
PDAR				pP		**pP**		**03 57 17.9**	**+0.9**
	comp=Z,0.9nm,1.1s,baz=333,slow=1.7,SNR=3.9								
NVAR	**Mina Array Bea**	**84.54**	**325**	P		**P**		**03 57 06.8**	**+1.7**
	comp=Z,0.2nm,0.4s,baz=167,slow=5.7,SNR=3.6								
NVAR				pP		**pP**		**03 57 17.5**	**+0.1**
	comp=Z,0.2nm,0.4s,baz=322,slow=47,SNR=3.3								
LOHW	**Long Hollow**	**85.59**	**333**	*e*P		**P**		**03 57 10.2**	**0.0**
	comp=Z,0.9nm,0.7s								
HLID	**Hailey**	**87.03**	**331**	*e*P		**P**		**03 57 17.2**	**0.0**
	comp=Z,0.6nm,0.6s								
WRA	**Warramunga Arr**	**120.12**	**209**	PKP		**PKPdf**		**04 03 22.7**	**-0.5**
	comp=Z,0.3nm,0.8s,baz=138,slow=2.1,SNR=3.5								
BRTR	**Keskin Array B**	**122.15**	**61**	PKP		**PKPdf**		**04 03 26.2**	**-0.2**
	comp=Z,0.8nm,0.9s,baz=64,slow=2.9,SNR=3.3								
GEYT	**Alibeck**	**140.06**	**70**	PKhKP		PKPpre		04 03 50.6	
	comp=Z,1.8nm,0.3s,baz=242,slow=2.9,SNR=8.7								
AAK	**Ala-Archa**	**152.81**	**63**	*e*PKPbc		**PKPbc**		**04 04 27.6**	**-1.1**
MKAR	**Makanchi Array**	**157.21**	**50**	PKPab		**PKPab**		**04 04 58.3**	**-0.1**
	comp=Z,0.2nm,0.3s,baz=332,slow=1.6,SNR=3.2								

IDC 10 03:52:06.9±27.0,22°.88S×171°.87W,h0km,mb4.1/4, mb1 4.2/4,mb1mx3.8/35,mbtmp4.1/4,Error ellipse: s-maj=505.0km s-min=159.8km az=77.0,Tonga Islands region

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
CTA	**Charters Tower**	**38.98**	**266**	P		P		03 59 35.3	0.0
	2.6nm,0.4s,baz=92,slow=11,SNR=8.6								
STKA	**Stephens Creek**	**42.02**	**247**	P		P		03 59 59.6	-0.7
	1.9nm,0.5s,baz=73,slow=5.8,SNR=4.5								
ASAR	**Alice Springs**	**49.57**	**258**	P		P		04 01 00.1	0.0
	0.3nm,0.3s,baz=92,slow=6.6,SNR=8.7								
WRA	**Warramunga Arr**	**49.94**	**263**	P		P		04 01 03.1	+0.1
	1.2nm,0.3s,baz=102,slow=8.1,SNR=10								

*BJI **10** 03:59:35.4,30°.50S×68°.60W,h79km,mB5.0/3,Ms5.2/4, Ms7 5.0/4*

*IDC **10** 03:59:35.6±0.5,30°.55S×68°.83W,h78km±3km,mb4.4/16, mb1 4.4/20,mb1mx4.3/31,mbtmp4.6/20,MS3.1/4, Ms1 3.1/4,ms1mx2.8/28,Error ellipse: s-maj=17.2km s-min=12.6km az=60.0*

*NEIC **10** 03:59:35.6±0.6,30°.53S×68°.60W,h82km±4km,mb4.8/67, MD4.4(SJA),Error ellipse: s-maj=7.2km s-min=4.4km az=63.0*

NEIC Felt [III] at San Juan.

*ISCJB **10** 03:59:36.9±0.3,30°.39S±0°.03×68°.65W±0°.05,h102km±2km, mb4.6/82,Error ellipse: s-maj=7.8km s-min=3.8km az=152.1*

*GUC **10** 03:59:38.6±0.6,30°.26S×68°.83W,h21km±7km,ML4.5*

*SJA **10** 03:59:38.1±0.9,30°.55S×68°.89W,h101km±11km,ML4.6, MW4.3*

ISC 10 03:59:39.2±0.4,30°.54S±0°.03×68°.87W±0°.04,h115km±3km, h115km:pP-P,n550,σ0s97/586,mb4.6/81,3D,San Juan Province

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
RTLL	**Cerro Villicun**	**0.86**	**157**	⇓*e*P		**Pn**		**03 59 57.9**	**-1.6**
SJA	**San Juan**	**1.02**	**165**	*e*P		**Pn**		**04 00 00.2**	**-0.9**
SJA				*e*S		**Sn**		**04 00 14.8**	**-2.9**
AVFE	**Valle Fertil**	**1.22**	**96**	*e*P		**Pn**		**04 00 02.3**	**-0.9**
AVFE				⇓*e*S		**Sn**		**04 00 19.9**	**-1.5**
RTLS	**Leoncito**	**1.31**	**196**	*e*P		**Pn**		**04 00 03.5**	**-1.0**
RTCV	**Cerro Valdivia

VNA2 **Neumayer--Watz** 52.20 159 P P 04 08 37.8 +0.1
baz=291,slow=8.1
SNAA **Sanae** 53.81 159 *e*P P 04 08 49.0 -0.6
comp=Z,134nm,0.6s
TEIG **Tepich** 53.81 337 *e*P P 04 08 50.2 +0.1
comp=Z,24nm,0.6s
QSPA **South Pole Qui** 59.69 180 *e*P P 04 09 31.3 0.0
comp=Z,23nm,0.7s
035A **Encino** 63.62 331 P P 04 09 59.8 +1.9
baz=152
034A **Hebbronville** 63.98 330 P P 04 10 01.9 +1.6
baz=151
348A **Jackson** 64.21 342 P P 04 10 02.3 +0.7
baz=162
444A **Pine Grove** 64.37 339 P P 04 10 04.5 +1.8
baz=159
934A **Benavides** 64.38 331 P P 04 10 05.2 +2.4
baz=152
933A **Laredo** 64.71 330 P P 04 10 06.8 +1.8
baz=151
638A **Rosharon** 64.78 334 P P 04 10 07.1 +1.7
baz=155
834A **Tilden** 64.85 331 P P 04 10 07.2 +1.3
baz=152,SNR=5.4
736A **Circle Diamond** 64.98 333 P P 04 10 08.9 +2.2
baz=153
344A **Westbrook Farm** 65.05 339 P P 04 10 08.9 +1.8
baz=159
637A **Eagle Lake** 65.13 334 P P 04 10 09.5 +1.8
baz=154
735A **Kenedy** 65.19 332 P P 04 10 09.5 +1.4
baz=152
245A **Little AP, Sta** 65.34 340 P P 04 10 11.3 +2.3
baz=160
833A **Chaparral WMA,** 65.38 330 P P 04 10 10.4 +1.0
baz=151,SNR=12
440A **Kirbyville** 65.45 336 P P 04 10 11.3 +1.6
baz=156
636A **Smothers Creek** 65.45 333 P P 04 10 11.6 +1.8
baz=153
342A **Flagon Creek P** 65.48 338 P P 04 10 11.8 +2.0
baz=158
734A **La Parita Cree** 65.49 331 P P 04 10 11.7 +1.7
baz=152
538A **Harpers Horsep** 65.52 335 P P 04 10 12.2 +2.1
baz=155
244A **Avery, Jackson** 65.59 340 P P 04 10 11.5 +1.0
baz=159
832A **Faith Ranch, C** 65.59 330 P P 04 10 11.9 +1.2
baz=151,SNR=14
635A **Leesville** 65.65 332 P P 04 10 11.9 +0.8
baz=153
146A **Union** 65.68 341 P P 04 10 12.1 +0.9
baz=161
733A **Divot King Ran** 65.68 331 P P 04 10 12.0 +0.7
baz=151
537A **Green Hill Far** 65.70 334 P P 04 10 11.8 +0.5
baz=154
341A **Kurthwood** 65.72 337 P P 04 10 12.5 +1.1
baz=157
439A **Center Grove,** 65.77 336 P P 04 10 13.1 +1.3
baz=156
145A **Houston Renfro** 65.89 341 P P 04 10 13.8 +1.3
baz=160
536A **Bastrop** 65.98 333 P P 04 10 14.7 +1.6
baz=153
242A **Grayson** 66.06 338 P P 04 10 15.2 +1.6
baz=158
633A **Saathoff Ranch** 66.28 331 P P 04 10 16.4 +1.3
baz=152
KMSC **Kings Mountain** 66.38 349 P P 04 10 15.8 +0.3
baz=168
143A **Socs Landing,** 66.42 339 P P 04 10 16.6 +0.7
baz=159,SNR=5.9
534A **Blanco** 66.50 332 P P 04 10 17.3 +0.8
baz=152
337A **Centerville** 66.65 335 P P 04 10 18.5 +1.1
baz=155
533A **Kerrville** 66.76 332 P P 04 10 19.0 +0.8
baz=152,SNR=9.2
239A **Gary** 66.78 336 P P 04 10 19.5 +1.2
baz=156
141A **Papa Simpson,** 66.80 338 P P 04 10 20.0 +1.7
baz=157
238A **Jacksonville** 67.00 336 P P 04 10 21.4 +1.9
baz=155
434A **Burnet** 67.11 333 P P 04 10 20.8 +0.4
baz=152,SNR=6.1
HPIG 67.11 325 *e*P P 04 10 21.9 +1.2
comp=Z,4.9nm,0.6s
335A **Moody** 67.19 334 P P 04 10 21.3 +0.5
baz=153
237A **Washetta, Mont** 67.24 335 P P 04 10 22.5 +1.4
baz=155
CPCT **Cooper Cave** 67.27 346 *e*P P 04 10 21.1 -0.1
comp=Z,4.1nm,0.8s
SWET **Sewanee** 67.35 345 *e*P P 04 10 21.8 0.0
comp=Z,2.6nm,0.7s
433A **Art** 67.38 332 P P 04 10 22.5 +0.4
baz=152,SNR=14
JCT **Junction City** 67.43 331 P P 04 10 22.9 +0.4
baz=151,SNR=7.8
JCT **Junction City** 67.43 331 *e*P P 04 10 23.4 +1.0
comp=Z,41nm,1.5s
334A **Lometa** 67.56 333 P P 04 10 23.6 +0.4
baz=153,SNR=6.7
Z40A **Long Farm, Mag** 67.56 338 P P 04 10 24.4 +1.3
baz=157
138A **Matatall Enter** 67.58 336 P P 04 10 24.6 +1.4
baz=156
Y42A **Garnett, Star** 67.59 339 P P 04 10 24.8 +1.5
baz=159
137A **Heron Place, G** 67.76 336 P P 04 10 25.7 +1.4
baz=155
WHTX **Lake Whitney,** 67.84 334 P P 04 10 26.0 +1.1
baz=153
333A **Richland Sprin** 67.84 332 P P 04 10 25.8 +0.8
baz=152
136A **Ennis** 67.93 335 P P 04 10 26.4 +1.0
baz=154
Z38A **Mt. Pleasant** 68.08 337 P P 04 10 27.3 +0.9
baz=156
234A **Clairette** 68.11 333 P P 04 10 27.2 +0.6
baz=153,SNR=6.7
TX31 **Lajitas Ar. Si** 68.15 328 *e*P P 04 10 28.0 +0.9
TXAR **Lajitas Array** 68.15 328 P P 04 10 27.9 +0.9
comp=Z,2.9nm,0.7s,baz=154,slow=8.4,SNR=30
TXAR sP pP 04 10 57.0 +1.5
comp=Z,1.6nm,0.7s,baz=153,slow=7.2,SNR=7.5
Y40A **Okolona** 68.22 338 P P 04 10 28.3 +1.1
baz=157
233A **Rising Star** 68.42 333 P P 04 10 29.0 +0.4
baz=152,SNR=7.1
X40A **Basin Creek Fa** 68.51 339 P P 04 10 29.4 +0.4
baz=158
134A **White-Moore Ra** 68.59 334 P P 04 10 30.2 +0.6
baz=153
Z36A **Blue Ridge** 68.61 335 P P 04 10 30.1 +0.4
baz=154
WVT **Waverly** 68.67 344 *e*P P 04 10 29.4 -0.6
comp=Z,15nm,0.6s
MIAR **Mount Ida** 68.80 338 P P 04 10 31.5 +0.6
baz=157
MIAR **Mount Ida** 68.80 338 *e*P P 04 10 31.2 +0.4
comp=Z,5.4nm,0.9s
X39A **Fountain Ranch** 68.94 338 P P 04 10 32.4 +0.6
baz=157,SNR=6.0
133A **Hamilton Ranch** 68.95 333 P P 04 10 32.4 +0.6
baz=152
Z35A **Perchaven, San** 68.96 335 P P 04 10 32.9 +1.0
baz=154
Y37A **Hugo** 68.96 336 P P 04 10 32.5 +0.6
baz=155
W41A **Tony Mavity, V** 68.97 340 P P 04 10 32.0 +0.2
baz=158
W41B **Gary Mavity, V** 68.97 340 P P 04 10 32.1 +0.3
baz=158
Y36A **Durant** 69.12 336 P P 04 10 33.2 +0.4
baz=155
W40A **Ferguson Farm,** 69.24 339 P P 04 10 33.9 +0.4
baz=158
Z34A **Collier Ranch,** 69.24 334 P P 04 10 34.2 +0.6
baz=153
ABTX **Abilene, Hawle** 69.25 332 P P 04 10 34.4 +0.7
baz=152
X38A **Whitesboro** 69.32 337 P P 04 10 35.0 +0.9
baz=156
Y35A **Marietta** 69.40 335 P P 04 10 35.2 +0.6
baz=154
X37A **Clayton** 69.43 337 P P 04 10 35.6 +0.9
baz=156
W39A **Magazine** 69.47 338 P P 04 10 35.7 +0.8
baz=157,SNR=5.1
Z33A **Whitaker Ranch** 69.49 334 P P 04 10 35.8 +0.6
baz=153
W38A **Poteau** 69.59 338 P P 04 10 36.5 +0.8
baz=156
Y34A **Reagan Ranch,** 69.71 335 P P 04 10 36.7 +0.3
baz=154
V40A **Witts Springs** 69.73 339 P P 04 10 36.8 +0.2
baz=158
X36A **Centrahoma** 69.75 336 P P 04 10 36.6 -0.1
baz=155,SNR=7.2
X35A **Drake** 69.82 335 P P 04 10 37.6 +0.5
baz=154
PBMO **Poplar Bluff** 69.95 342 *e*P P 04 10 37.9 +0.1
comp=Z,18nm,0.8s
V39A **Pettigrew** 70.01 339 P P 04 10 38.7 +0.3
baz=157,SNR=5.6
Y33A **Hilltop Ranch,** 70.08 334 P P 04 10 39.0 +0.3
baz=153
W36A **Wetumka** 70.22 336 P P 04 10 39.4 -0.2
baz=155
U40A **Yellville** 70.25 340 P P 04 10 39.7 0.0
baz=158,SNR=7.0
V38A **Canehill** 70.28 338 P P 04 10 40.2 +0.3
baz=157
X34A **Smith Ranch, M** 70.31 335 P P 04 10 40.5 +0.4
baz=154
U39A **Green Forest** 70.46 339 P P 04 10 41.0 0.0
baz=157,SNR=6.6
SIUC **Southern Illin** 70.51 343 *e*P P 04 10 41.2 -0.1
comp=Z,12nm,0.6s
V37A **Hubert** 70.53 338 P P 04 10 41.5 0.0
baz=156
V36A **Jenks** 70.71 337 P P 04 10 42.5 -0.1
baz=155,SNR=6.0
TUL1 **Leonard** 70.78 337 P P 04 10 42.5 -0.5
baz=155,SNR=5.0
U38A **Gravette** 70.80 338 P P 04 10 43.3 +0.3
baz=157
W34A **Bridge Creek,** 70.86 335 P P 04 10 43.6 +0.1
baz=154
T40A **Mansfield** 70.89 340 P P 04 10 43.3 -0.2
baz=158
MNTX **Cornudas Mount** 70.93 328 P P 04 10 43.7 -0.3
baz=147,SNR=10
MNTX **Cornudas Mount** 70.93 328 *e*P P 04 10 43.8 -0.1
comp=Z,7.1nm,0.8s
MNTX *es*P pP 04 11 12.4 -0.3
V35A **Meyer Ranch, C** 71.00 336 P P 04 10 44.1 -0.2
baz=154
U37A **Salina** 71.00 338 P P 04 10 44.3 0.0
baz=156,SNR=5.3
O56A **Blue Knob Stat** 71.02 352 P P 04 10 44.3 0.0
baz=171
T39A **Clever** 71.02 339 P P 04 10 44.3 -0.1
baz=158,SNR=5.6
W33A **Caddo, Fort Co** 71.04 335 P P 04 10 45.5 +1.0
baz=153
LIC **Lamto** 71.11 71 *e*P P 04 10 45.3 -0.2
comp=Z,154nm,2.1s
S40A **Lebanon** 71.30 340 P P 04 10 46.2 +0.2
baz=158,SNR=9.0
W32A **Sentinel** 71.30 334 P P 04 10 46.4 +0.2
baz=152
V34A **Guthrie** 71.30 336 P P 04 10 46.3 +0.2
baz=154
T38A **Diamond** 71.32 339 P P 04 10 46.3 +0.2
baz=157,SNR=13
TIC **Toumodi** 71.36 70 *e*P P 04 10 46.8 -0.2
N59A **State Game Lan** 71.38 354 P P 04 10 47.0 +0.5
baz=174
KIC **Kosan Boka** 71.42 71 *e*P P 04 10 47.4 +0.1
comp=Z,40nm,0.8s
DBIC **Dimbokro** 71.50 70 P P 04 10 48.0 +0.2
comp=Z,17nm,0.5s,baz=210,slow=7.0,SNR=71
U35A **Pawnee** 71.51 337 P P 04 10 47.3 -0.1
baz=155
HSIG 71.53 322 *e*P P 04 10 48.6 +0.9
comp=Z,20nm,1.4s
V33A **Lossen Ranch,** 71.57 335 P P 04 10 47.7 0.0
baz=153
T37A **Cheneyville 18** 71.59 338 P P 04 10 47.9 +0.1
baz=156,SNR=9.0
ACSO **Alum Creek Sta** 71.62 349 *e*P P 04 10 47.7 -0.2
comp=Z,9.8nm,0.8s
S39A **Bolivar** 71.62 340 P P 04 10 48.2 +0.2
baz=158,SNR=13
MSTX **Muleshoe** 71.70 331 P P 04 10 48.8 +0.2
baz=149,SNR=11
MSTX **Muleshoe** 71.70 331 *e*P P 04 10 48.9 +0.2
comp=Z,19nm,0.9s
MSTX *es*P pP 04 11 18.1 +0.7
S38A **Stockton** 71.75 339 P P 04 10 48.8 +0.1
baz=157,SNR=13
T36A **Boggs Farm, Ca** 71.85 338 P P 04 10 49.3 -0.1
baz=156
U34A **Anderson Ranch** 71.85 336 P P 04 10 49.5 +0.2
baz=154
R40A **Maddies Statio** 71.87 341 P P 04 10 49.3 -0.2
baz=159,SNR=12
N54A **Moraine State** 71.88 351 P P 04 10 49.1 -0.3
baz=170
T35A **Sooner Cattle** 71.93 337 P P 04 10 50.1 +0.3
baz=155
AMTX **Amarillo** 72.04 332 P P 04 10 50.8 +0.2
baz=160
R39A **Chumby, Stover** 72.12 340 P P 04 10 50.8 -0.1
baz=158,SNR=10
S37A **Fort Scott** 72.15 339 P P 04 10 50.9 -0.2
baz=156,SNR=7.4
T34A **McClaskey Farm** 72.25 337 P P 04 10 52.1 +0.3
baz=154
R38A **Fenwick Farm,** 72.26 340 P P 04 10 51.8 +0.1
baz=157,SNR=8.6
U32A **Winter Ranch,** 72.32 335 P P 04 10 52.6 +0.4
baz=153
S36A **Lake Cedric, C** 72.36 338 P P 04 10 52.4 +0.1
baz=156
M54A **Oil Creek Stat** 72.38 352 P P 04 10 52.2 -0.2
baz=170
Q40A **Laux Farm, Aux** 72.47 341 P P 04 10 52.8 -0.2
baz=159
319A **Douglas** 72.55 324 *e*P P 04 10 55.5 +1.7
SFIN **Lafayette** 72.56 345 P P 04 10 52.3 -1.2
baz=163
S35A **Otter Creek Ra** 72.56 337 P P 04 10 53.6 +0.1
baz=155
R37A **Teagarden Farm** 72.66 339 P P 04 10 53.7 -0.4
baz=157
T33A **Patterson Ranc** 72.68 336 P P 04 10 54.5 +0.2
baz=154
121A **Cookes Peak, D** 72.75 326 P P 04 10 56.6 +1.5
baz=145,SNR=9.0
121A **Cookes Peak, D** 72.75 326 *e*P P 04 10 56.5 +1.5
comp=Z,16nm,1.1s
Q39A **Willow Grove F** 72.78 341 P P 04 10 54.9 +0.1
baz=158,SNR=9.1
S34A **Willow Spring** 72.84 337 P P 04 10 55.7 +0.4
baz=155
R36A **Gordon, Harris** 72.88 338 P P 04 10 55.8 +0.3
baz=156
Q38A **Cooks Store, C** 72.89 340 P P 04 10 55.8 +0.3
baz=158,SNR=14
P40A **Paris** 72.97 341 P P 04 10 56.1 +0.2
baz=159,SNR=10.0
T32A **Huddler Ranch,** 73.01 335 P P 04 10 56.5 +0.3
baz=153
Q37A **Longview Farm,** 73.06 339 P P 04 10 56.8 +0.3
baz=157
R35A **Emporia Munici** 73.10 338 P P 04 10 56.9 +0.2
baz=155
P39A **Salisbury** 73.12 341 P P 04 10 57.1 +0.2
baz=158,SNR=8.4
HDIL **Hopedale** 73.22 344 P P 04 10 57.1 -0.3
baz=162
HDIL **Hopedale** 73.22 344 *e*P P 04 10 57.3 -0.1
comp=Z,14nm,0.5s
R34A **Isabella, Hill** 73.43 337 P P 04 10 58.9 +0.2
baz=154
O40A **La Belle** 73.47 342 P P 04 10 58.6 -0.3
baz=159,SNR=6.6
P38A **Dawn** 73.47 340 P P 04 10 58.7 -0.2
baz=158
S32A **Newby Ranch, P** 73.48 336 P P 04 10 59.9 +0.9
baz=153
Q35A **Mercer Eighty,** 73.54 338 P P 04 10 59.4 +0.1
baz=156
Y22D **IRIS PASSCAL I** 73.62 328 P P 04 10 59.4 -0.7
baz=146
P37A **Lathrop** 73.68 340 P P 04 10 59.7 -0.4
baz=157
LPM **Los Pinos Moun** 73.69 328 *e*P P 04 11 02.2 +1.7
R33A **Olander Ranch,** 73.69 336 P P 04 11 00.6 +0.4
baz=154
O39A **Kirksville** 73.78 341 P P 04 11 00.6 -0.1
baz=159
Q34A **Chapman** 73.89 338 P P 04 11 01.4 +0.1
baz=155
O38A **Galt** 73.92 341 P P 04 11 01.7 +0.2
baz=158
P36A **Good Intent, A** 73.97 339 P P 04 11 01.5 -0.3
baz=156,SNR=5.8
LAZ **Ladron** 73.99 328 *e*P P 04 11 02.4 +0.1
R32A **Long Quarter,** 74.04 336 P P 04 11 02.8 +0.5
baz=153
TUC **Tucson** 74.05 324 P P 04 11 03.4 +0.8
baz=143
TUC **Tucson** 74.05 324 *e*P P 04 11 04.1 +1.5
comp=Z,4.4nm,1.1s
SUR **Sutherland** 74.12 118 P P 04 11 05.0 +1.6
comp=Z,0.5nm,0.6s,baz=223,slow=5.7,SNR=10
SUR sP pP 04 11 34.0 +1.7
comp=Z,0.4nm,1.1s,baz=127,slow=12,SNR=2.6
SUR **Sutherland** 74.12 118 *e*P P 04 11 04.0 +0.7
comp=Z,11nm,0.7s
SUR sP pP 04 11 34.0 +1.7
ANMO **Albuquerque** 74.14 329 LR LR 04 40 39.8
comp=Z,27nm,18.1s,baz=39,slow=33
ANMO **Albuquerque** 74.14 329 P P 04 11 04.5 +1.4
baz=147
ANMO **Albuquerque** 74.14 329 *e*P P 04 11 04.6 +1.4
comp=Z,19nm,1.6s
P35A **Duane Minner,** 74.14 338 P P 04 11 03.1 +0.3
baz=156
O37A **Wolven Farm, M** 74.15 340 P P 04 11 03.1 +0.2
baz=157
N39A **Derby Farms, D** 74.35 342 P P 04 11 03.8 -0.2
baz=159,SNR=6.6
O36A **Bolckow** 74.37 339 P P 04 11 03.9 -0.2
baz=157
P34A **Walnut Farm, R** 74.42 338 P P 04 11 05.0 +0.6
baz=155,SNR=5.1
N38A **Joes South For** 74.47 341 P P 04 11 04.9 +0.2
baz=158
Q32A **Meitler Ranch,** 74.50 336 P P 04 11 05.5 +0.5
baz=154
N37A **Lee Faris, Mou** 74.72 340 P P 04 11 06.6 +0.4
baz=157
CBKS **Cedar Bluff** 74.75 335 P P 04 11 06.8 +0.4
baz=153
CBKS **Cedar Bluff** 74.75 335 *e*P P 04 11 07.7 +1.2
comp=Z,15nm,0.8s
214A **Organ Pipe Nat** 74.82 322 P P 04 11 08.5 +1.5
baz=142,SNR=7.2
O34A **Beatrice** 74.95 338 P P 04 11 07.4 -0.1
baz=155,SNR=6.5
N36A **Muff Farm, Cla** 74.99 340 P P 04 11 07.7 0.0
baz=157
M38A **Pleasantville** 75.04 341 P P 04 11 07.9 0.0
baz=158,SNR=6.6
P32A **Huiting Farm,** 75.08 337 P P 04 11 08.8 +0.5
baz=154
T25A **Trinidad** 75.10 331 P P 04 11 10.0 +1.3
baz=149,SNR=11
O33A **Hebron** 75.14 338 P P 04 11 08.9 +0.3
baz=154
N35A **Tabor** 75.24 339 P P 04 11 08.8 -0.3
baz=156
M37A **Trindle Farm,** 75.27 341 P P 04 11 09.1 -0.2
baz=158
X18A **Snowflake** 75.42 326 *e*P P 04 11 12.5 +2.0
N34A **Lincoln** 75.48 339 P P 04 11 10.7 +0.2
baz=155,SNR=5.2
M36A **Felix, Anita** 75.53 340 P P 04 11 11.2 +0.4
baz=157
O32A **Brockman Farm,** 75.54 337 P P 04 11 11.3 +0.4
baz=154
JFWS **Jewell Farm** 75.69 344 *e*P P 04 11 11.8 +0.2
comp=Z,9.5nm,0.6s
N33A **J Bar K, Exete** 75.70 338 P P 04 11 12.6 +0.8
baz=155
W18A **Petrified Fore** 75.80 326 P P 04 11 13.9 +1.3
baz=144
O31A **Woolen Ranch,** 75.80 336 P P 04 11 13.0 +0.7
baz=153
M35A **Neola** 75.81 340 P P 04 11 13.3 +1.0
baz=156
N32A **Stulken Farm,** 76.00 337 P P 04 11 13.5 0.0
baz=154
KSCO **Kaye Shedlock'** 76.00 333 P P 04 11 14.9 +1.3
baz=150
X16A **Lo Mia Camp, P** 76.06 325 *e*P P 04 11 15.2 +1.0
X16A *es*P pP 04 11 45.3 +2.0
K38A **Parkersburg** 76.07 342 P P 04 11 13.6 -0.2
baz=159
SDCO **Great Sand Dun** 76.07 331 P P 04 11 15.7 +1.4
baz=148,SNR=5.5
SDCO **Great Sand Dun** 76.07 331 *e*P P 04 11 15.7 +1.4
comp=Z,4.9nm,0.7s
L36A **Harm Buss Farm** 76.09 341 P P 04 11 13.9 0.0
baz=157
L35A **Bielow Farm, R** 76.36 340 P P 04 11 15.5 +0.1
baz=156
M33A **Taylor Creek F** 76.37 339 P P 04 11 15.4 -0.2
baz=155
K37A **Belmond** 76.42 341 P P 04 11 16.0 +0.2
baz=158
L34A **Svendsen Farm,** 76.47 339 P P 04 11 16.2 +0.1
baz=156
Y14A **Wickenburg** 76.48 323 *e*P P 04 11 18.1 +1.7
K36A **Gilmore City** 76.52 341 P P 04 11 16.5 +0.1
baz=157
BGNE **Belgrade** 76.53 338 P P 04 11 16.6 +0.2
baz=154
S22A **4UR Ranch, Cre** 76.64 330 P P 04 11 18.9 +1.4
baz=147,SNR=6.6
GLA **Glamis** 76.74 322 P P 04 11 19.3 +1.4
baz=140
M31A **Lambtecht Ranc** 76.74 337 P P 04 11 19.0 +1.3
baz=154,SNR=6.1
N29A **Votaw Ranch, W** 76.84 336 P P 04 11 19.8 +1.5
baz=152
WUAZ **Wupatki** 76.91 326 P P 04 11 20.4 +1.5
baz=143,SNR=9.0
WUAZ **Wupatki** 76.91 326 *e*P P 04 11 20.7 +1.8
comp=Z,12nm,0.9s
MVCO **Mesa Verde** 76.93 328 P P 04 11 20.6 +1.5
baz=146,SNR=13
MVCO **Mesa Verde** 76.93 328 *e*P P 04 11 20.4 +1.3
comp=Z,13nm,0.9s
Q24A **Divide** 76.96 332 P P 04 11 20.7 +1.4
baz=148,SNR=6.3
K34A **Le Mars** 77.05 340 P P 04 11 19.5 +0.2
baz=156
Y12C **Blythe** 77.12 322 P P 04 11 21.5 +1.6
baz=141
M30A **Dale-Ortello V** 77.22 337 P P 04 11 21.6 +1.2
baz=153
I38A **Scanlan Farm,** 77.26 343 P P 04 11 20.5 +0.1
baz=159,SNR=11
L31A **Butterfield Fa** 77.44 338 P P 04 11 22.5 +0.9
baz=154,SNR=12
MONP2 **Monument Peak** 77.49 321 P P 04 11 23.5 +1.3
baz=139
I37A **Lemond, Waseca** 77.51 342 P P 04 11 22.0 +0.1
baz=158,SNR=8.5
TSUM **Tsumeb** 77.54 105 *e*P P 04 11 23.1 +0.2
comp=Z,7.4nm,0.8s
BC3 **Big Chuckawall** 77.54 322 P P 04 11 23.6 +1.2
baz=140
M28A **Bar X Bar Ranc** 77.62 336 P P 04 11 24.0 +1.3
baz=152
IRM **Iron Mountain** 77.76 322 P P 04 11 24.7 +1.1
baz=140
K31A **O'Neill** 77.82 338 P P 04 11 24.4 +0.8
baz=154,SNR=11
ISCO **Idaho Springs** 77.86 332 P P 04 11 25.5 +1.2
baz=148,SNR=10
ISCO **Idaho Springs** 77.86 332 *e*P P 04 11 25.6 +1.2
comp=Z,7.7nm,0.8s
J33A **Davis** 77.88 339 P P 04 11 24.0 +0.1
baz=155,SNR=7.7

SMCO Snowmass 77.90 331 eP P 04 11 26.3 +1.7
comp=Z,14nm,0.8s
H37A Dierke Farm, C 77.91 343 P P 04 11 24.3 +0.2
baz=159
PFO Pinyon Flats O 78.05 321 P P 04 11 26.7 +1.4
baz=139
BELC Belle Mtn. Jos 78.10 322 P P 04 11 27.3 +1.7
baz=140
K30A Basset 78.14 337 P P 04 11 26.7 +1.3
baz=153
ECSD EROS Data Cent 78.16 340 P P 04 11 25.7 +0.2
baz=156,SNR=21
ECSD EROS Data Cent 78.16 340 eP P 04 11 25.6 +0.2
comp=Z,19nm,0.9s
ECSD esP pP 04 11 54.9 +0.2
H36A Jessenland, He 78.17 342 P P 04 11 25.6 +0.1
baz=158,SNR=7.9
J32A Parkston 78.20 339 P P 04 11 25.9 +0.2
baz=155,SNR=8.5
J31A Geddes 78.41 338 P P 04 11 27.3 +0.4
baz=154
MURC Murrieta 78.44 320 P P 04 11 28.7 +1.4
baz=139
SPMN Marine on St. 78.48 343 P P 04 11 27.1 -0.2
baz=159
I33A Coleman 78.50 340 P P 04 11 27.5 +0.2
baz=156
GMRC Granite Mounta 78.52 322 P P 04 11 29.2 +1.4
baz=140,SNR=6.3
H35A Sunnyside Ranc 78.53 341 P P 04 11 27.6 +0.1
baz=157
VLDQ Val d'Or 78.67 354 eP P 04 11 28.6 +0.5
I32A Karley and Nic 78.68 339 P P 04 11 28.6 +0.3
baz=155
J30A Dallas 78.69 338 P P 04 11 29.0 +0.5
baz=153
H34A Spellman Lake, 78.77 341 P P 04 11 29.0 +0.2
baz=156
KNB Kanab 78.81 326 eP P 04 11 31.2 +1.8
comp=Z,34nm,1.4s
HEC Hector,Ludlow 78.91 322 P P 04 11 31.3 +1.4
baz=140
N23A Red Feather La 78.92 332 P P 04 11 31.6 +1.6
baz=148,SNR=6.3
LCMT Little Creek M 79.01 325 eP P 04 11 32.1 +1.7
comp=Z,4.8nm,1.0s
J29A Okreek 79.03 337 P P 04 11 31.0 +0.7
baz=153,SNR=17
H33A Prehn Over Nor 79.06 340 P P 04 11 30.7 +0.3
baz=156,SNR=7.5
PHWY Pilot Hill 79.07 333 eP P 04 11 31.4 +0.5
comp=Z,9.4nm,0.9s
H32A Carlson Farm, 79.10 340 P P 04 11 30.8 +0.2
baz=155,SNR=6.1
TUQ Turquoise Moun 79.15 323 P P 04 11 32.4 +1.1
baz=140
BFSC Mount Baldy Ra 79.18 321 P P 04 11 32.6 +1.1
baz=139
I30A Oacoma 79.19 338 P P 04 11 31.5 +0.3
baz=153,SNR=5.4
O20A White River Ci 79.24 330 P P 04 11 33.1 +1.4
baz=146,SNR=5.5
BOSA Boshof 79.26 117 P P 04 11 32.0 -0.2
comp=Z,6.7nm,0.9s,baz=266,slow=3.6,SNR=14
F36A Milaca 79.26 343 P P 04 11 31.2 -0.3
baz=158,SNR=7.6
J28A Allard Ranch, 79.36 337 P P 04 11 32.9 +0.7
baz=152,SNR=6.4
SRU San Rafael Swe 79.40 328 eP P 04 11 33.6 +1.0
comp=Z,11nm,0.7s
G33A Ortonville 79.44 341 P P 04 11 32.0 -0.4
baz=156
J27A Elkhorn Farm, 79.47 336 P P 04 11 34.2 +1.4
baz=151,SNR=6.9
SUSD Miller 79.52 339 P P 04 11 33.3 +0.4
baz=154
GSC Goldstone, Bar 79.52 322 P P 04 11 34.4 +1.2
baz=139
I29A Vivian Onida 79.57 338 P P 04 11 33.4 +0.2
baz=153,SNR=5.1
MSU Marysvale 79.69 327 eP P 04 11 35.7 +1.5
P18A Preston Nutter 79.70 329 eP P 04 11 35.8 +1.4
comp=Z,14nm,0.8s
P17A Butcher Ranch, 79.80 328 eP P 04 11 35.7 +0.9
comp=Z,9.8nm,1.0s
E36A McGregor 79.81 343 P P 04 11 34.6 +0.2
baz=159,SNR=5.1
EDW2 Edwards Air Fo 79.84 321 P P 04 11 35.9 +0.9
baz=138
I28A Midland 79.84 337 P P 04 11 35.6 +0.9
baz=152
TMUT Trail Mountain 79.86 328 eP P 04 11 36.8 +1.6
comp=Z,17nm,1.5s
J26A Sides Ranch, S 79.91 335 P P 04 11 36.6 +1.5
baz=150
F33A 5 Mile Ranch, 79.99 341 P P 04 11 35.1 -0.3
baz=156
G31A Conde 79.99 339 P P 04 11 35.4 -0.1
baz=154
OSI Osito Audit: C 80.04 320 P P 04 11 36.8 +0.8
baz=138
H29A Onida 80.08 338 P P 04 11 36.5 +0.5
baz=153
LRMC Laurel Mtn Rad 80.12 321 P P 04 11 36.9 +0.4
baz=139
D37A Cotton 80.20 344 P P 04 11 36.7 +0.2
baz=159
I27A Quinn 80.21 336 P P 04 11 37.5 +0.9
baz=151
J25A Sunshine Ranch 80.24 335 P P 04 11 38.0 +1.0
baz=150,SNR=6.6
C39A Grand Marais 80.30 346 P P 04 11 37.1 +0.1
baz=161,SNR=7.7
H28A Mission Ridge 80.39 337 P P 04 11 38.1 +0.5
baz=152
D36A Goodland 80.40 343 P P 04 11 38.1 +0.6
baz=159
FURC Furnace Creek, 80.43 323 P P 04 11 39.4 +1.5
baz=139
MPMC Manual Prospec 80.45 322 P P 04 11 39.0 +0.7
baz=139
I26A New Underwood 80.45 336 P P 04 11 39.0 +1.0
baz=151
C38A Sawbill Land. 80.46 345 P P 04 11 37.4 -0.5
baz=160
TORD Torodi Ar. Bea 80.48 69 P P 04 11 38.6 -0.1
comp=Z,12nm,0.6s,baz=279,slow=6.4,SNR=208
TORD sP pP 04 12 08.3 +0.2
comp=Z,5.0nm,1.0s,baz=277,slow=6.6,SNR=6.9
TPNV Topopah Spring 80.48 323 P P 04 11 40.5 +2.1
baz=140,SNR=7.8
TPNV Topopah Spring 80.48 323 eP P 04 11 40.1 +1.6
comp=Z,7.8nm,0.8s
E33A Westby DABS, E 80.52 341 P P 04 11 37.9 -0.3
baz=156
D35A Remer 80.53 343 P P 04 11 38.4 +0.2
baz=158,SNR=5.4
F31A Hecla 80.58 340 P P 04 11 38.7 +0.2
baz=154,SNR=6.1
MPU Maple Canyon 80.64 328 eP P 04 11 40.6 +1.4
K22A Casper 80.64 333 P P 04 11 40.6 +1.4
baz=148,SNR=11
K22A Casper 80.64 333 eP P 04 11 40.4 +1.2
comp=Z,20nm,1.0s
DAC Darwin (Calif) 80.67 322 eP P 04 11 41.2 +1.7
comp=Z,8.6nm,0.9s
C37A Embarrass 80.68 344 P P 04 11 39.0 -0.1
baz=160
ISA Isabella, Lake 80.69 321 P P 04 11 41.5 +2.0
baz=138,SNR=9.5
G28A Parade 80.71 338 P P 04 11 40.1 +0.8
baz=152,SNR=6.3
H27A Howes 80.71 337 P P 04 11 40.2 +0.9
baz=151,SNR=9.9
EYMN Ely 80.72 345 P P 04 11 39.3 0.0
baz=160
EYMN Ely 80.72 345 eP P 04 11 39.2 0.0
comp=Z,5.0nm,0.7s
EYMN esP pP 04 12 07.7 -1.0
I25A Rochford 80.76 335 P P 04 11 40.7 +0.9
baz=150,SNR=10
NLU North Lily Min 80.79 328 eP P 04 11 41.6 +1.5
comp=Z,12nm,1.5s
PKM Mcpherson Peak 80.85 320 P P 04 11 42.0 +1.5
baz=137
C36A Pine Crest Far 80.86 344 P P 04 11 39.8 -0.2
baz=159
H26A Fairpoint 80.94 336 P P 04 11 41.5 +1.0
baz=151
RSSD Black Hills 80.95 335 P P 04 11 41.9 +1.0
baz=150
RSSD Black Hills 80.95 335 eP P 04 11 41.8 +1.0
comp=Z,9.3nm,0.9s
RSSD esP pP 04 12 10.5 +0.2
JLU Jordanelle 81.03 329 eP P 04 11 42.6 +1.3
comp=Z,4.9nm,0.7s
F29A Eureka 81.03 339 P P 04 11 41.2 +0.2
baz=153,SNR=5.2
D33A AnnSam, Waubun 81.06 342 P P 04 11 41.2 +0.2
baz=156
C35A Jirik Farms, M 81.09 343 P P 04 11 41.0 -0.2
baz=158,SNR=5.4
GRAC Grapevine Rang 81.09 323 P P 04 11 42.9 +1.3
baz=139
E31A Nome 81.10 340 P P 04 11 41.7 +0.4
baz=155
R11A Troy Canyon, C 81.22 325 P P 04 11 43.8 +1.4
baz=140,SNR=14
H25A Fruitdale 81.23 336 P P 04 11 42.6 +0.5
baz=150
C34A RKJ Ranch, Bem 81.28 343 P P 04 11 42.4 +0.2
baz=157
G27A Dupree 81.32 337 P P 04 11 42.9 +0.4
baz=151,SNR=7.2
DUG Dugway, Tooele 81.33 327 P P 04 11 44.1 +1.3
baz=143,SNR=6.3
DUG Dugway, Tooele 81.33 327 eP P 04 11 43.6 +0.7
comp=Z,3.9nm,0.8s
E30A Jud 81.35 340 P P 04 11 43.3 +0.7
baz=154
F28A McLaughlin 81.36 338 P P 04 11 43.1 +0.4
baz=152
D32A Dogwood Acres, 81.37 341 P P 04 11 43.2 +0.5
baz=156
TCUT Toone Canyon 81.42 329 eP P 04 11 45.1 +1.6
comp=Z,9.6nm,0.7s
G26A Maurine 81.47 337 P P 04 11 43.7 +0.4
baz=151,SNR=9.7
D31A Mcclaflin, Tow 81.50 341 P P 04 11 43.8 +0.4
baz=155
C33A Trail 81.60 342 P P 04 11 44.0 +0.1
baz=157,SNR=5.3
E29A Napoleon 81.64 339 P P 04 11 44.6 +0.4
baz=153
B35A Bob, Littlefor 81.64 344 P P 04 11 44.0 -0.1
baz=158,SNR=8.4
G25A Newell 81.66 336 P P 04 11 45.2 +0.8
baz=150,SNR=8.3
F27A Lemmon 81.78 337 P P 04 11 45.3 +0.4
baz=151,SNR=7.6
D30A Buchanan 81.85 340 P P 04 11 45.9 +0.7
baz=154,SNR=11
HWUT Hardware Ranch 81.89 329 eP P 04 11 46.4 +0.6
comp=Z,9.7nm,0.8s
BW06 Boulder Array 81.97 331 P P 04 11 46.7 +0.5
baz=145,SNR=11
BW06 Boulder Array 81.97 331 eP P 04 11 46.5 +0.3
comp=Z,7.3nm,0.9s
PD31 Pinedale Array 81.97 331 eP P 04 11 46.9 +0.6
PDAR Pinedale Array 81.97 331 P P 04 11 46.5 +0.3
comp=Z,5.6nm,0.8s,baz=125,slow=6.9,SNR=37
PDAR sP pP 04 12 16.8 +1.1
comp=Z,0.6nm,0.6s,baz=74,slow=5.4,SNR=2.6
E28A Huff 81.97 338 P P 04 11 46.3 +0.4
baz=152
F26A Lodgepole 81.98 337 P P 04 11 46.5 +0.5
baz=151,SNR=5.2
B34A Aery, Baudette 81.98 343 P P 04 11 45.6 -0.3
baz=158
BGU Big Grassy Mou 82.00 328 eP P 04 11 47.9 +1.4
comp=Z,4.1nm,1.0s
B33A Robert and Kas 82.03 342 P P 04 11 46.4 +0.3
baz=157
D29A Pettibone, Tap 82.06 339 P P 04 11 46.8 +0.4
baz=153
E27A Carson 82.12 338 P P 04 11 47.0 +0.2
baz=152
AGMN Agassiz Nation 82.12 342 P P 04 11 46.6 -0.1
baz=157,SNR=6.6
AGMN Agassiz Nation 82.12 342 eP P 04 11 46.7 +0.1
comp=Z,1.1nm,0.7s
C31A Landman Farms, 82.17 341 P P 04 11 47.1 +0.2
baz=155
C30A Mose, Pekin 82.31 340 P P 04 11 48.2 +0.5
baz=154,SNR=10
F25A Bowman 82.31 336 P P 04 11 47.5 -0.3
baz=150
B32A Ashes, Strandq 82.39 342 P P 04 11 48.0 -0.1
baz=156,SNR=12
E26A Carlson Angus 82.45 337 P P 04 11 48.8 +0.4
baz=151
D28A Regan 82.48 339 P P 04 11 48.9 +0.4
baz=153
HVU Hansel Valley 82.57 328 eP P 04 11 50.1 +0.8
comp=Z,7.7nm,0.8s
NV11 Mina Array Sit 82.59 323 eP P 04 11 50.5 +1.0
A33A Warroad 82.59 343 P P 04 11 49.0 -0.1
baz=157,SNR=9.0
NV01 Mina Array Sit 82.66 323 eP P 04 11 51.0 +1.0
NVAR Mina Array Bea 82.66 323 P P 04 11 51.0 +1.1
comp=Z,3.8nm,0.8s,baz=162,slow=5.7,SNR=21
NVAR sP pP 04 12 20.6 +1.2
comp=Z,1.9nm,0.8s,baz=155,slow=4.7,SNR=6.9
MDND Maddock 82.77 340 P P 04 11 50.7 +0.7
baz=154
E25A Miller Ranch, 82.80 337 P P 04 11 50.6 +0.3
baz=150
C28A Hausauer Farms 82.89 339 P P 04 11 51.3 +0.6
baz=153
ELK Elko 82.90 326 eP P 04 11 52.2 +1.0
D26A Manning 82.93 338 P P 04 11 51.4 +0.5
baz=151,SNR=5.0
B30A Myrvik Farm, E 82.94 341 P P 04 11 51.0 +0.2
baz=154,SNR=13
REDW Red Top Meadow 83.00 331 eP P 04 11 52.2 +0.6
comp=Z,7.1nm,1.2s
SNOW Snow King Moun 83.04 331 eP P 04 11 52.9 +1.0
A31A Linda, St. Vin 83.06 342 P P 04 11 51.6 +0.2
baz=156
LOHW Long Hollow 83.10 331 eP P 04 11 52.8 +0.7
comp=Z,4.5nm,0.7s
C27A Sayler Ranch, 83.23 338 P P 04 11 53.2 +0.7
baz=152
B29A Wagenman Farm, 83.25 340 P P 04 11 53.0 +0.5
baz=154
MOOW Moose Ponds 83.27 331 eP P 04 11 53.7 +0.7
FXWY Fox Creek 83.30 331 eP P 04 11 53.7 +0.6
comp=Z,2.9nm,0.7s
D25A Fairfield 83.33 337 P P 04 11 54.0 +1.0
baz=150,SNR=7.2
A30A Hoffart Farm, 83.38 341 P P 04 11 53.4 +0.3
baz=155
C26A Wahner Farm, P 83.52 338 P P 04 11 54.8 +0.9
baz=151
FLWY Flagg Ranch 83.52 331 eP P 04 11 55.4 +1.1
B28A Dugan Ranch, T 83.53 340 P P 04 11 54.3 +0.4
baz=153,SNR=6.0
A29A Manning Farm, 83.62 340 P P 04 11 54.7 +0.3
baz=154
RLMT Red Lodge 83.79 333 P P 04 11 56.4 +0.8
baz=146,SNR=12
RLMT Red Lodge 83.79 333 eP P 04 11 56.3 +0.7
comp=Z,9.6nm,0.8s
RLMT esP pP 04 12 26.0 +0.8
A28A Rude Farm, Bot 83.92 340 P P 04 11 56.3 +0.4
baz=153
ULM Lac du Bonnet 83.92 343 P P 04 11 55.7 -0.1
comp=Z,6.1nm,0.7s,baz=159,slow=4.2,SNR=9.7
ULM sP pP 04 12 26.6 +1.2
comp=Z,1.8nm,0.5s,baz=117,slow=7.2,SNR=2.4
LAO LASA Array 83.95 335 P P 04 11 56.5 +0.3
baz=148,SNR=9.0
LAO LASA Array 83.95 335 eP P 04 11 56.6 +0.4
comp=Z,12nm,0.8s
LAO esP pP 04 12 25.7 -0.1
YMR Madison River 84.11 331 eP P 04 11 59.0 +1.7
A26A Wade Farm, Ken 84.45 339 P P 04 11 59.2 +0.6
baz=152
AFDM Forest Hills D 84.45 322 eP P 04 11 60.0 +1.1
GCMT Greycliff 84.50 333 eP P 04 11 59.9 +0.8
HLID Hailey 84.72 329 P P 04 12 01.5 +1.2
baz=142,SNR=19
HLID Hailey 84.72 329 eP P 04 12 01.5 +1.2
comp=Z,12nm,1.0s
HLID esP pP 04 12 30.4 +0.5
DGMT Dagmar 84.77 337 P P 04 12 01.1 +0.8
baz=150,SNR=11
DGMT Dagmar 84.77 337 eP P 04 12 00.2 0.0
DGMT esP pP 04 12 30.2 +0.3
A25A Svangstu Ranch 84.83 338 P P 04 12 01.3 +0.8
baz=151
MCMT McKenzie Canyo 85.03 330 eP P 04 12 03.5 +1.5
SCHQ Schefferville 85.04 1 P P 04 12 01.1 -0.2
comp=Z,6.5nm,1.0s,baz=185,slow=4.1,SNR=4.8
SCHQ sP pP 04 12 31.5 +0.5
comp=Z,4.1nm,0.9s,baz=152,slow=5.2,SNR=2.9
BOZ Bozeman (W) 85.18 331 P P 04 12 02.8 +0.3
baz=144,SNR=5.5
BOZ Bozeman (W) 85.18 331 eP P 04 12 02.8 +0.3
MFID Camas Ranch 85.25 328 eP P 04 12 03.7 +0.9
DLMT Dillon 85.35 331 eP P 04 12 04.3 +0.9
LRM Limekiln Ridge 85.66 331 eP P 04 12 06.2 +1.2
O03D Paynes Creek 85.87 322 P P 04 12 06.1 +0.1
baz=136
MOD Modoc Plateau 86.27 324 eP P 04 12 09.3 +1.3
comp=Z,5.9nm,0.7s
EGMT Eagleton 86.38 334 P P 04 12 08.5 +0.2
baz=145,SNR=8.5
EGMT Eagleton 86.38 334 eP P 04 12 08.7 +0.4
comp=Z,8.5nm,0.7s
WDC Whiskeytown Da 86.46 322 eP P 04 12 08.0 -0.8
comp=Z,4.1nm,0.6s
N02D Trinity Center 86.83 322 P P 04 12 10.9 +0.2
baz=136
M04C Macdoel 86.96 323 P P 04 12 11.6 +0.3
baz=136,SNR=5.6
MSO Missoula 87.09 331 P P 04 12 12.6 +0.8
baz=142
MSO Missoula 87.09 331 eP P 04 12 12.9 +1.1
K05A Summer Lake 87.17 324 eP P 04 12 14.1 +1.7
M02C Callahan 87.21 322 P P 04 12 13.3 +0.8
baz=136
YBH Yreka Blue Hor 87.38 323 eP P 04 12 13.5 +0.2
K04D Chiloquin, OR 87.53 324 P P 04 12 15.2 +1.1
baz=136
SWMT Swartz Lake 87.65 331 eP P 04 12 15.4 +1.0
J05D Fort Rock, OR 87.75 325 P P 04 12 15.9 +0.9
baz=137,SNR=8.3
F10A Beach Ranch, E 87.85 329 eP P 04 12 17.3 +1.9
JTMT Jette 87.95 331 eP P 04 12 17.0 +1.0
L02D Cave Junction, 88.15 323 P P 04 12 18.3 +1.5
baz=135
BSMT Bassoo Peak 88.25 331 eP P 04 12 18.3 +0.9
LSZ Lusaka 88.28 107 eP P 04 12 19.1 +0.8
comp=Z,7.3nm,1.1s
I05D Terrebonne, OR 88.57 325 P P 04 12 20.2 +1.4
baz=137,SNR=6.0
I04A Tendick Farm, 88.70 324 P P 04 12 20.2 +0.7
baz=136
WALA Waterton Lakes 88.84 332 eP P 04 12 20.9 +0.9
comp=Z,14nm,1.0s
WALA esP pP 04 12 50.6 +0.6
H04A Detroit Lake 89.23 325 eP P 04 12 22.6 +0.7
NEW Newport 89.56 330 P P 04 12 23.5 +0.2
baz=140
FFC Flin Flon 89.58 342 eP P 04 12 22.8 -0.4
FCC Fort Churchill 91.42 347 eP P 04 12 32.2 +0.7
B05A Bryant 91.78 328 P P 04 12 33.7 +0.1
baz=136
ESDC Sonseca Array 92.24 44 P P 04 12 36.9 +0.9
comp=Z,0.3nm,0.5s,baz=247,slow=4.0,SNR=6.1
YKA Yellowknife Ar 99.68 340 P Pdif 04 13 08.7 -0.4
comp=Z,0.6nm,0.7s,baz=143,slow=4.6,SNR=22
YKA sP pP 04 13 40.0 +0.8
comp=Z,0.6nm,0.8s,baz=139,slow=4.2,SNR=6.4
WLF Walferdange 103.85 40 eP Pdif 04 13 28.8 +0.8
comp=Z,3.9nm,0.9s
CSS Elathiatis 115.98 63 ePKPdf PKPdf 04 18 08.4 -0.2
BRTR Keskin Array B 117.77 58 PKP PKPdf 04 18 11.8 -0.2
comp=Z,0.9nm,0.7s,baz=186,slow=3.6,SNR=6.2
KIEV Kiev 117.85 45 ePKPdf PKPdf 04 18 10.7 -0.9
AKASG Malin Array Be 117.86 45 PKP PKPdf 04 18 09.8 -1.8
comp=Z,1.2nm,0.5s,baz=263,slow=2.5,SNR=11
FINES FINESS Array B 118.63 33 PKP PKPdf 04 18 10.7 -2.1
comp=Z,0.9nm,0.7s,baz=230,slow=17,SNR=3.2
ARCES ARCESS Array B 119.76 24 PKP PKPdf 04 18 15.9 +1.1
comp=Z,6.0nm,1.0s,baz=270,slow=3.5,SNR=4.3
ASAR Alice Springs 121.85 205 PKP PKPdf 04 18 19.4 -1.0
comp=Z,1.5nm,0.7s,baz=138,slow=1.8,SNR=18
ASAR PKKPbc PKKPbc 04 28 18.4 0.0
comp=Z,0.8nm,0.6s,baz=339,slow=3.0,SNR=9.8
WRA Warramunga Arr 125.07 207 PKP PKPdf 04 18 26.2 -0.4
comp=Z,4.1nm,0.6s,baz=161,slow=1.6,SNR=32
WRAB Tennant Creek 125.08 207 ePKPdf PKPdf 04 18 26.0 -0.6
GNI Garni 126.12 60 ePKPdf PKPdf 04 18 28.2 +0.1
BILL Bilibino 130.84 336 ePKPdf PKPdf 04 18 36.8 +0.8
ARU Arti 135.37 39 PKP PKPdf 04 18 45.8 +0.9
comp=Z,2.6nm,0.5s,baz=304,slow=3.8,SNR=7.0
ARU Arti 135.37 39 ePKPdf PKPdf 04 18 45.1 +0.3
AKTO Aktyubinsk 136.04 47 PKP PKPdf 04 18 47.6 +1.4
comp=Z,0.9nm,0.7s,baz=240,slow=5.8,SNR=4.9
ABKAR Akbulak array 137.41 49 ePKPdf PKPdf 04 18 49.3 +0.5
SEY Seymchan 138.27 333 PKP PKPdf 04 18 49.7 -0.3
comp=Z,3.5nm,0.6s,baz=126,slow=6.5,SNR=4.5
SEY sPKP 04 19 21.8
comp=Z,4.2nm,0.9s,baz=149,slow=5.4,SNR=3.8
BRVK Borovoye 142.84 41 ePKPdf PKPdf 04 18 55.8 -2.7
BVAR Borovoye Array 142.92 41 PKHKP PKPpre 04 18 56.1
comp=Z,1.9nm,0.6s,baz=313,slow=6.5,SNR=15
BVAR PKP PKPdf 04 18 59.6 +0.8
comp=Z,1.6nm,0.6s,baz=306,slow=3.5,SNR=8.9
KAPI Kappang 143.70 195 ePKPdf PKPdf 04 19 02.3 +1.0
KKAR Karatay Array 145.47 57 ePKPbc PKPdf 04 19 03.3 -0.2
YAK Yakutsk 146.25 344 PKPbc PKPbc 04 19 05.2 -0.2
comp=Z,34nm,0.5s,baz=176,slow=1.7,SNR=6.3
YAK Yakutsk 146.25 344 ePKPbc PKPbc 04 19 05.0 -0.5
YAK Yakutsk 146.25 344 e PKPbc 04 19 04.8 -0.7
EKS2 Erkin-Say 147.91 57 ePKPbc PKPbc 04 19 09.5 -1.4
AAK Ala-Archa 148.44 57 PKP PKPdf 04 19 10.5 +1.8
comp=Z,13nm,0.9s,baz=219,slow=3.7,SNR=31
AAK PKPbc PKiKP 04 19 13.4 -0.5
comp=Z,13nm,0.9s,baz=213,slow=3.0,SNR=30
AAK Ala-Archa 148.44 57 ePKPdf PKPdf 04 19 09.2 +0.5
AAK ePKPbc PKPbc 04 19 12.9 +0.6
KURBB Kurchatov Arra 148.51 41 PKP PKPdf 04 19 09.9 +1.6
comp=Z,12nm,0.6s,baz=305,slow=3.1,SNR=88
KURBB PKPbc PKPbc 04 19 12.5 +0.5
comp=Z,12nm,0.7s,baz=300,slow=3.2,SNR=63
KURBB sPKPbc pPKPbc 04 19 42.1 -0.9
comp=Z,2.7nm,0.6s,baz=302,slow=3.1,SNR=5.8
KURK Kurchatov 148.51 41 ePKPdf PKPdf 04 19 08.4 +0.1
KURK ePKPbc PKPbc 04 19 12.3 +0.3
KURK sPKPbc sPKPbc 04 19 42.1 -13
TKM2 Tokmak 2 149.18 56 ePKPbc PKPbc 04 19 14.8 +0.5
ZALV Zalesovo Beam 149.87 31 PKP PKPdf 04 19 11.3 +0.9
comp=Z,36nm,0.4s,baz=301,slow=3.5,SNR=154
ZALV PKPbc PKPbc 04 19 15.6 +0.3
comp=Z,36nm,0.4s,baz=300,slow=3.4,SNR=159
ZALV sPKPbc pPKPbc 04 19 46.0 -0.4
comp=Z,7.1nm,0.4s,baz=294,slow=4.1,SNR=8.5
KSH Kashi 150.00 63 ePKPbc PKPdf 04 19 12.5 +1.2
KSH PKPb PKSdf 04 22 45.9 -0.3
KSH AMB AMB
comp=Z,66nm,6.7s
KSH LR LR
comp=Z,130nm,5.5s
KSH LR LR
comp=Z,100nm,6.2s
YSS Yuzh-Sakhalins 150.64 313 ePKPbc PKPbc 04 19 17.3 0.0
IPM Ipoh 152.38 158 ePKPbc PKPbc 04 19 21.9 -0.6
MKAR Makanchi Array 152.45 46 PKP PKPdf 04 19 16.6 +2.0
comp=Z,3.4nm,0.5s,baz=38,slow=2.2,SNR=4.5
MKAR PKPbc PKPbc 04 19 21.7 +0.1
comp=Z,9.8nm,0.5s,baz=296,slow=1.8,SNR=89
MKAR PKPab PKPab 04 19 32.7 +0.4
comp=Z,4.8nm,0.6s,baz=294,slow=3.9,SNR=12
MKAR sPKPbc pPKPbc 04 19 52.0 -0.7
comp=Z,2.8nm,0.6s,baz=318,slow=1.6,SNR=6.4
WMQ Urumqi 157.19 48 ePKP PKPdf 04 19 21.2 -0.1
WMQ sPKP 04 19 51.2
SONM Songino Array 162.34 11 PKPab PKPab 04 20 15.5 +0.6
comp=Z,1.5nm,0.7s,baz=315,slow=3.2,SNR=7.0
GTA Gaotai 167.18 43 ePKP PKPdf 04 19 32.5 +1.0
GTA pPKP pPKPdf 04 19 59.3 -3.7
GTA PKPab PKPab 04 20 37.5 +0.9
HHC Hu-ho-hao-te 169.70 358 ePKP PKPdf 04 19 29.2 -3.9
KMI Kunming 170.82 124 PKP PKPdf 04 19 33.0 -1.4
LZH Lanzhou 171.76 46 ePKP PKPdf 04 19 30.5 -3.9
LZH sPKP 04 20 02.0
LZH PKPab PKPab 04 20 54.0 -3.1
LZH LR LR
comp=Z,140nm,18.2s

LZH LR LR
comp=Z,140nm,18.0s
LZH LR LR
comp=Z,170nm,20.1s
NJ2 Nanjing 173.22 285 *e*PKP **PKPdf 04 19 36.0 +1.1**
CD2 Chengdu 173.64 85 PKP **PKPdf 04 19 34.9 -0.3**
WHN Wuhan 177.22 271 PKP PKPdf 04 19 43.3 +7.2

IDC 10 04:04:04.4±4.0, 47°.41S×124°.82E, h0km, mb4.0/4, mb1 4.2/4, mb1mx3.8/35, mbtmp4.1/4, MS3.5/5, Ms1 3.5/5, ms1mx3.1/31, Error ellipse: s-maj=142.2km s-min=27.2km az=141.0, Western Indian-Antarctic Ridge

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
STKA	**Stephens Creek**	**20.12**	**46**	P		P	P	04 08 39.0	-0.7
	2.9nm,0.7s,baz=204,slow=10.0,SNR=3.4								
STKA				LR		LR	LR	04 15 15.1	
	comp=Z,147nm,20.9s,baz=207,slow=33								
ASAR	**Alice Springs**	**24.79**	**20**	P		P	P	04 09 28.4	+0.6
	2.3nm,0.6s,baz=194,slow=8.7,SNR=31								
ASAR				LR		LR	LR	04 19 11.9	
	comp=Z,61nm,18.3s,baz=196,slow=37								
WRA	**Warramunga Arr**	**28.48**	**19**	P		P	P	04 10 00.8	-0.3
	1.1nm,0.7s,baz=194,slow=8.2,SNR=5.3								
VNDA	**Vanda**	**33.45**	**166**	LR		LR	LR	04 21 42.0	
	comp=Z,85nm,19.2s,baz=301,slow=32								
DZM	**Mont Dzumac**	**41.83**	**67**	LR		LR	LR	04 26 46.7	
	comp=Z,100nm,19.1s,baz=82,slow=33								
PMG	**Port Moresby**	**42.35**	**34**	LR		LR	LR	04 28 37.7	
	comp=Z,48nm,20.6s,baz=250,slow=35								
OPO	**Ambohidratompo**	**68.27**	**266**	P		P	P	04 15 07.4	0.0
	4.9nm,0.3s,baz=153,slow=4.5,SNR=8.6								

NIED ***10*** *04:12:00,36°.30N×141°.20E,h32km,Mw4.3 Best double couple: M0 3.53000×10^15 NP1:φs 135.00000°,δ34.00000°, λ-29.00000°. NP2:φs 249.00000°,δ74.00000°, λ-121.00000°.*

MOS ***10*** *04:12:28.9±1.0,36°.28N×141°.33E,h35km,mb4.6/30, Error ellipse: s-maj=8.9km s-min=6.2km az=107.4*

ISCJB ***10*** *04:12:29.8±0.5,36°.26N±0°.03×141°.26E±0°.04,h38km±4km, mb4.3/67,MS3.4/18, Error ellipse: s-maj=6.1km s-min=4.3km az=17.9*

JMA ***10*** *04:12:30.6±0.1,36°.26N×141°.15E,h48km±2km,M4.2*

JMA Felt II J1.

NEIC ***10*** *04:12:31.4±0.6,36°.26N×141°.17E,h34km±4km,mb4.5/31, Error ellipse: s-maj=6.2km s-min=4.2km az=142.0*

IDC ***10*** *04:12:31.9±0.5,36°.19N×141°.12E,h40km±4km,mb3.8/22, mb1 4.0/26,mb1mx3.9/66,mbtmp4.1/26,ML4.2/3,MS3.4/20, Ms1 3.4/20,ms1mx3.2/55, Error ellipse: s-maj=13.4km s-min=8.3km az=104.0*

ISC 10 04:12:30.4±0.4, 36°.27N±0°.03×141°.28E±0°.05, h28km±2km, n171, σ1§46/169, mb4.3/67, MS3.5/18, 1C-5D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.67**	**211**	P		P	**Pb**	**04 12 43.0**	**-0.4**
CHOJ					*e*S		**Sb**	**04 12 51.8**	**-0.5**
JHO	**Hitachi**	**0.67**	**301**	P		P	**Pb**	**04 12 42.5**	**-1.0**
JHO					*e*S		**Sn**	**04 12 51.0**	**-2.4**
JYT	**Yasato**	**0.88**	**267**	P		P	**Pb**	**04 12 45.4**	**-1.6**
ONAJ	**Iwakimizuishiy**	**0.91**	**335**	P		P	**Pb**	**04 12 46.5**	**-1.1**
JFK	**Kawauchi**	**1.14**	**343**	P		P	**Pn**	**04 12 49.7**	**-0.8**
JFT	**Otama**	**1.46**	**329**	P		P	**Pb**	**04 12 55.3**	**-1.5**
JFT						S	**Sb**	**04 13 12.8**	**-2.1**
JAG	**Ashikaga**	**1.48**	**276**	P		P	**Pn**	**04 12 54.0**	**-1.2**
JAG						S	**Sn**	**04 13 11.3**	**-2.3**
BSO3	**Boso 3**	**1.60**	**203**	P		P	**Pn**	**04 12 57.4**	**+0.9**
JMM	**Marumori**	**1.64**	**346**	P		P	**Pn**	**04 12 57.4**	**+0.1**
JMM						S	**Sn**	**04 13 17.1**	**-0.3**
MJAR	**Matsushiro Arr**	**2.49**	**277**	P		P	**Pn**	**04 13 08.6**	**-0.5**
	39nm,0.3s,baz=106,slow=8.9,SNR=542								
MJAR				LR		LR	LR	04 14 15.5	
	comp=Z,596nm,20.0s,baz=135,slow=44								
MAJO	**Matsushiro**	**2.50**	**277**	*d*	*i*	P	**Pn**	**04 13 09.4**	**+0.3**
MAJO	**Matsushiro**	**2.50**	**277**	*e*		Pn	**Pn**	**04 13 09.3**	**+0.3**
MAT	**Matsushiro**	**2.50**	**277**			P	**Pn**	**04 13 08.8**	**-0.3**
MAT						S	**Sn**	**04 13 38.5**	**-0.1**
JHJ2	**Mitsune**	**3.38**	**201**	*e*		Pn	**Pn**	**04 13 21.0**	**-0.2**
JHJ	**Hachijo jima 2**	**3.38**	**202**			P	**Pn**	**04 13 21.8**	**+0.6**
	34nm,0.3s,baz=129,slow=24,SNR=26								
JHJ						S	**Sn**	**04 13 58.0**	**-2.4**
	177nm,0.3s,baz=54,slow=23,SNR=13								
JHJ				LR		LR	LR	04 14 27.5	
	comp=Z,190nm,21.8s,baz=61,slow=36								
INU	**Inuyama**	**3.59**	**256**	*e*		Pn	**Pn**	**04 13 25.4**	**+1.3**
ERM	**Erimo**	**5.92**	**14**	*e*		P	**Pn**	**04 13 55.7**	**-0.3**
ERM				*e*				04 15 01.3	
ERM	**Erimo**	**5.92**	**14**	*e*		Pn	**Pn**	**04 13 55.7**	**-0.3**
ERM				*e*		Sn	**Sn**	**04 15 01.3**	**-1.5**
YUK	**Yuzh-Kuril'sk**	**8.51**	**23**	*e*		P	**Pn**	**04 14 33.4**	**+1.8**
YUK				*e*		S	**Sn**	**04 16 03.5**	**-3.0**
YUK					pmax		pmax		
	comp=Z,98nm,0.9s								
YUK					pmax		pmax		
	comp=E,37nm,0.2s								
YUK					pmax		pmax		
	comp=N,60nm,0.4s								
SHO	**Shikotan**	**8.70**	**28**	*e*		P	**Pn**	**04 14 32.9**	**-1.3**
SHO				*e*		S	Sn	04 16 02.8	-8.4
SHO					pmax		pmax		
	comp=Z,70nm,0.9s								
JNU	**Nakatsue**	**9.12**	**253**	LR		LR	LR	04 18 55.0	
	comp=Z,186nm,19.1s,baz=299,slow=43								
JNU	**Nakatsue**	**9.12**	**253**	*e*		Pn	**Pn**	**04 14 38.9**	**-1.3**
CBIJ	**Chichi jima**	**9.18**	**175**	*e*		Pn	**Pn**	**04 14 37.2**	**-3.7**
CBIJ				*e*		Sn	Sn	04 16 14.0	-9.4
JCJ	**Chichijima**	**9.18**	**175**	P		P	**Pn**	**04 14 39.0**	**-1.9**
	comp=Z,6.7nm,0.3s,baz=358,slow=21,SNR=16								
JCJ						S	Sn	04 16 13.5	-10
	baz=285,slow=20								
KUR	**Kuril'sk**	**10.24**	**27**	*e*		P	**Pn**	**04 14 55.2**	**-0.2**
KUR				*e*		S	**Sn**	**04 16 43.3**	**-5.9**
KUR					pmax		pmax		
	comp=Z,13nm,1.5s								
KUR					smax		smax		
	comp=N,16nm,0.8s								
KUR					smax		smax		
	comp=E,11nm,0.8s								
USRK	**Ussuriysk Ar.**	**10.63**	**321**	P		P	**Pn**	**04 15 03.1**	**+2.4**
	comp=E,0.5nm,0.3s,baz=138,slow=12,SNR=11								
USRK				LR		LR	LR	04 19 01.6	
	comp=E,278nm,18.4s,baz=131,slow=37								
YSS	**Yuzh-Sakhalins**	**10.73**	**5**	*e*		P	**Pn**	**04 15 01.6**	**-0.4**
YSS					pmax		pmax		
	comp=Z,11nm,0.7s								
KSRS	**Korea Array**	**10.77**	**280**	P		P	**Pn**	**04 15 05.8**	**+3.1**
	comp=Z,0.2nm,0.3s,baz=95,slow=14,SNR=6.7								
KSRS				LR		LR	LR	04 19 01.9	
	comp=Z,203nm,21.0s,baz=80,slow=36								
KSAR	**Wonju Array Be**	**10.80**	**280**	P		P	**Pn**	**04 15 05.8**	**+2.7**
KSAR	**Wonju Array Be**	**10.80**	**280**	P		P	**Pn**	**04 15 05.8**	**+2.7**
CN2	**Changchun**	**14.26**	**307**	*e*		P	**Pn**	**04 15 51.4**	**+1.2**
CN2					pmax		pmax		
	comp=Z,10.0nm,0.5s								
TYV	**Tymovskoe**	**14.62**	**3**	*e*		P	Pn	04 15 44.5	-11
KLR	**Kul'dur**	**14.70**	**335**	P		P	**P**	**04 16 01.5**	**-0.6**
	comp=Z,0.1nm,0.3s,baz=133,slow=14,SNR=9.0								
KLR				LR		LR	LR	04 21 21.7	
	comp=Z,204nm,19.8s,baz=154,slow=36								
NJ2	**Nanjing**	**19.02**	**264**	*e*		P	**Pn**	**04 16 50.0**	**-0.9**
NJ2					pmax		pmax		
	comp=Z,13nm,0.6s								
YOJ	**Yonaguni jima**	**19.64**	**238**	*e*		P	**P**	**04 16 54.6**	**-2.2**
YOJ					pmax		pmax		
	comp=Z,38nm,1.2s								
YOJ	**Yonaguni jima**	**19.64**	**238**	*e*		P	**P**	**04 16 54.6**	**-2.2**
	comp=Z,38nm,1.2s								
BJI	**Beijing**	**20.08**	**288**	P		P	**Pn**	**04 17 03.8**	**+0.4**
BJI					pmax		pmax		
	comp=Z,3.0nm,0.8s								
BJI					pmax		pmax		
	comp=Z,23nm,4.7s								
BJI				LR		LR	LR		
	comp=Z,75nm,31.0s								
PETK	**Petropavlovsk-**	**20.40**	**29**	LR		LR	LR	04 24 42.9	
	comp=Z,48nm,21.8s,baz=219,slow=36								
YULB	**Yu-li**	**21.52**	**239**	*e*		P	**P**	**04 17 16.8**	**-0.4**
GUMO	**Guam**	**22.82**	**171**	LR		LR		04 28 56.9	
	comp=Z,36nm,18.1s,baz=56,slow=43								
HHC	**Hu-ho-hao-te**	**23.62**	**290**	*e*		P	**P**	**04 17 38.6**	**-0.5**
HHC					pmax		pmax		
	comp=Z,21nm,0.7s								
HHC					pmax		pmax		
	comp=Z,140nm,4.4s								
MA2	**Magadan**	**24.12**	**12**	P		P	**P**	**04 17 43.4**	**-0.1**
	comp=Z,5.2nm,0.7s,baz=209,slow=11,SNR=9.0								
MA2				LR		LR	LR	04 26 53.3	
	comp=Z,78nm,20.0s,baz=278,slow=36								
MA2	**Magadan**	**24.12**	**12**	*e*		P	**P**	**04 17 43.5**	**+0.1**
MA2					pmax		pmax		
	comp=Z,17nm,0.7s								
MA2	**Magadan**	**24.12**	**12**	*e*		P	**P**	**04 17 43.5**	**+0.1**
	comp=Z,17nm,0.7s								
YAK	**Yakutsk**	**26.79**	**348**	LR		LR	LR	04 28 57.1	
	comp=Z,123nm,18.9s,baz=153,slow=37								
YAK	**Yakutsk**	**26.79**	**348**	*e*		P	**P**	**04 18 07.1**	**-0.5**
YAK					pmax		pmax		
	comp=Z,19nm,0.9s								
YAK					pmax		pmax		
	comp=N,8.0nm,1.1s								
YAK					pmax		pmax		
	comp=Z,34nm,0.9s								
YAK					pmax		pmax		
	comp=N,5.0nm,1.0s								
SEY	**Seymchan**	**27.55**	**11**	P		P	**P**	**04 18 18.9**	**+4.4**
	comp=N,5.3nm,0.8s,baz=210,slow=6.5,SNR=13								
ULN	**Ulaanbaatar**	**27.70**	**305**	*e*		P	**P**	**04 18 15.8**	**-0.4**
ULN					pmax		pmax		
	comp=Z,3.0nm,0.8s								
ULN	**Ulaanbaatar**	**27.70**	**305**	*e*		P	**P**	**04 18 15.8**	**-0.4**
	comp=Z,3.5nm,0.8s								
H11N2	**WAKE ISLAND Hy**	**27.86**	**119**	T		T		04 47 30.2	
	baz=312,slow=75,SNR=42								
H11N1	**WAKE ISLAND Hy**	**27.87**	**119**	T		T		04 47 36.7	
	baz=312,slow=75,SNR=48								
H11N3	**WAKE ISLAND Hy**	**27.88**	**119**	T		T		04 47 31.8	
	baz=312,slow=75,SNR=38								
BOD	**Bodaibo**	**28.12**	**329**	*e*		P	**P**	**04 18 16.6**	**-3.0**
BOD					*e*			04 19 11.4	
BOD					pmax		pmax		
	comp=Z,3.0nm,1.3s								
SONA1	**Songino Array**	**28.12**	**305**	*e*		P	**P**	**04 18 19.2**	**-0.7**
SONM	**Songino Array**	**28.13**	**305**	P		P	**P**	**04 18 19.1**	**-0.9**
	comp=Z,2.4nm,0.8s,baz=104,slow=8.5,SNR=14								
SONM				LR		LR	LR	04 29 48.6	
	comp=Z,103nm,18.5s,baz=150,slow=37								
H11S1	**WAKE ISLAND Hy**	**28.55**	**122**	T		T		04 48 19.1	
	baz=313,slow=75,SNR=158								
H11S3	**WAKE ISLAND Hy**	**28.55**	**122**	T		T		04 48 19.1	
	baz=313,slow=75,SNR=110								
H11S2	**WAKE ISLAND Hy**	**28.56**	**122**	T		T		04 48 20.2	
	baz=313,slow=75,SNR=104								
LZH	**Lanzhou**	**30.10**	**281**	*e*		P	**P**	**04 18 38.7**	**+1.1**
LZH						pP	sP	04 18 48.5	-0.8
LZH						sP	pP	04 18 52.3	+6.4
LZH						ePP	**PnPn**	**04 19 36.5**	**+1.4**
LZH					pmax		pmax		
	comp=Z,18nm,1.0s								
LZH					pmax		pmax		
	comp=Z,45nm,5.2s								
LZH					LR		LR		
	comp=N,150nm,12.8s								
LZH					LR		LR		
	comp=E,170nm,13.0s								
LZH					LR		LR		
	comp=Z,220nm,15.7s								
ZAK	**Zakamensk**	**30.66**	**309**	*e*		P	**P**	**04 18 41.7**	**-0.7**
ZAK					pmax		pmax		
	comp=Z,2.0nm,1.1s								
TLY	**Talaya**	**30.75**	**312**	*e*		P	**P**	**04 18 43.5**	**+0.4**
TLY					pmax		pmax		
	comp=Z,3.0nm,0.9s								
TLY					MLR		MLR		
	comp=Z,69nm,14.0s								
TLY	**Talaya**	**30.75**	**312**	*e*		P	**P**	**04 18 42.8**	**-0.3**
	comp=Z,2.8nm,0.8s								
CD2	**Chengdu**	**31.58**	**271**	P		P	**P**	**04 18 49.1**	**-1.5**
CD2					pmax		pmax		
	comp=Z,1.0nm,0.5s								
DAV	**Davao City (W)**	**32.42**	**210**	LR		LR	LR	04 31 40.5	
	comp=Z,61nm,20.8s,baz=348,slow=36								
GTA	**Gaotai**	**32.69**	**288**	*e*		P	**P**	**04 19 04.8**	**+4.4**
GTA						pP	sP	04 19 10.2	-1.9
GTA						sP	pP	04 19 13.0	+4.3
GTA					pmax		pmax		
	comp=Z,3.0nm,1.0s								
KMI	**Kunming**	**34.75**	**262**	P		P	**P**	**04 19 19.6**	**+1.1**
KMI					pmax		pmax		
	comp=Z,8.0nm,0.9s								
KMI					pmax		pmax		
	comp=Z,120nm,4.4s								
TIXI	**Tiksi**	**36.03**	**353**	*e*		P	**P**	**04 19 27.3**	**-1.4**
TIXI					pmax		pmax		
	comp=Z,2.0nm,0.9s								
KKM	**Kota Kinabalu**	**37.85**	**223**	*e*		P	**P**	**04 19 45.0**	**+0.1**
	comp=Z,40nm,1.2s								
CHTO	**Chiang Mai**	**41.01**	**256**	*e*		P	**P**	**04 20 10.6**	**-0.6**
CHTO					pmax		pmax		
	comp=Z,2.0nm,0.3s								
CHTO	**Chiang Mai**	**41.01**	**256**	*e*		P	**P**	**04 20 10.6**	**-0.6**
	comp=Z,1.7nm,0.3s								
WMQ	**Urumqi**	**41.09**	**298**	*e*		P	**P**	**04 20 12.2**	**+0.5**
WMQ						pP	pP	04 20 20.7	+0.6
WMQ					pmax		pmax		
	comp=Z,2.0nm,0.6s								
WMQ					pmax		pmax		
	comp=Z,13nm,4.0s								
WMQ					LR		LR		
	comp=Z,24nm,26.0s								
CM01	**Chiang Mai Arr**	**41.21**	**256**	*e*		P	**P**	**04 20 15.1**	**+2.2**
ZALV	**Zalesovo Beam**	**42.35**	**313**	P		P	**P**	**04 20 20.9**	**-0.9**
	comp=Z,3.2nm,0.5s,baz=92,slow=6.1,SNR=4.4								
ZALV				LR		LR	LR	04 38 48.7	
	comp=Z,52nm,18.2s,baz=70,slow=37								
NRIK	**Noril'sk**	**43.91**	**336**	LR		LR	LR	04 40 31.9	
	comp=Z,84nm,18.3s,baz=130,slow=38								
MKAR	**Makanchi Array**	**44.44**	**303**	P		P	**P**	**04 20 38.6**	**-0.1**
	comp=Z,1.8nm,0.7s,baz=90,slow=8.5,SNR=4.7								
MKAR				LR		LR	LR	04 39 55.1	
	comp=Z,56nm,19.5s,baz=40,slow=37								
KURK	**Kurchatov**	**46.32**	**309**	*e*		P	**P**	**04 20 52.5**	**-1.0**
KURK					pmax		pmax		
	comp=Z,10.0nm,0.7s								
KURK	**Kurchatov**	**46.32**	**309**	*e*		P	**P**	**04 20 52.5**	**-1.0**
	comp=Z,10nm,0.7s								
KURBB	**Kurchatov Arra**	**46.39**	**309**	P		P	**P**	**04 20 53.6**	**-0.4**
	comp=Z,7.5nm,0.6s,baz=84,slow=7.8,SNR=24								
GUN	**Gumba**	**47.13**	**276**	*e*		P	**P**	**04 21 01.3**	**+0.7**
	comp=Z,32nm,0.9s								
GKN	**Gorkha**	**48.09**	**277**	*e*		P	**P**	**04 21 09.5**	**+1.7**
	comp=Z,70nm,1.0s								
IPM	**Ipoh**	**48.66**	**239**	*e*		P	**P**	**04 21 11.7**	**-0.5**
	comp=Z,13nm,1.1s								
KOLN	**Koldanda**	**49.02**	**277**	*e*		P	**P**	**04 21 17.6**	**+2.6**
	comp=Z,18nm,1.0s								
PYUN	**Piuthan**	**49.37**	**278**	*e*		P	**P**	**04 21 20.5**	**+2.8**
	comp=Z,94nm,1.1s								
MDM	**Murphy Dome**	**49.62**	**32**	*e*		P	**P**	**04 21 21.0**	**+2.1**
	comp=Z,11nm,1.1s								
TKM2	**Tokmak 2**	**49.90**	**299**	*e*		P	**P**	**04 21 21.5**	**-0.1**
TKM2					pmax		pmax		
	comp=Z,4.0nm,0.6s								
TKM2	**Tokmak 2**	**49.90**	**299**	*e*		P	**P**	**04 21 21.5**	**-0.1**
	comp=Z,4.0nm,0.6s								
IL1	**Eielson Array**	**50.19**	**32**	*e*		P	**P**	**04 21 24.1**	**+1.0**
ILAR	**Eielson Array**	**50.19**	**32**	P		P	**P**	**04 21 24.1**	**+0.9**
	comp=Z,1.0nm,0.7s,baz=265,slow=5.9,SNR=16								
ILB	**Eielson Array**	**50.19**	**32**	*e*		P	**P**	**04 21 24.1**	**+0.9**
VOSK	**Vostochnaya**	**50.71**	**312**	*e*		P	**P**	**04 21 26.9**	**-0.4**
VOSK					pmax		pmax		
	comp=Z,5.0nm,0.7s								
VOSK	**Vostochnaya**	**50.71**	**312**	*e*		P	**P**	**04 21 26.9**	**-0.4**
	comp=Z,4.7nm,0.7s								
AAK	**Ala-Archa**	**50.76**	**299**	*e*		P	**P**	**04 21 27.3**	**-0.7**
AAK					pmax		pmax		
	comp=Z,3.0nm,0.9s								
AAK	**Ala-Archa**	**50.76**	**299**	*e*		P	**P**	**04 21 27.3**	**-0.7**
	comp=Z,3.2nm,0.9s								
BVAR	**Borovoye Array**	**51.01**	**313**	P		P	**P**	**04 21 29.3**	**-0.2**
	comp=Z,1.0nm,0.5s,baz=77,slow=6.7,SNR=6.4								
BRVK	**Borovoye**	**51.06**	**313**	*ce*		P	**P**	**04 21 28.8**	**-1.1**
BRVK					pmax		pmax		
	comp=Z,7.0nm,2.5s								
BRVK	**Borovoye**	**51.06**	**313**	*e*		P	**P**	**04 21 29.6**	**-0.3**
	comp=Z,2.5nm,0.7s								
EKS2	**Erkin-Say**	**51.26**	**299**	*e*		P	**P**	**04 21 31.5**	**-0.2**
EKS2					pmax		pmax		
	comp=Z,2.0nm,0.6s								
EKS2	**Erkin-Say**	**51.26**	**299**	*e*		P	**P**	**04 21 31.5**	**-0.2**
	comp=Z,1.8nm,0.6s								
DOT	**Dot Lake**	**51.50**	**33**	*e*		P	**P**	**04 21 34.0**	**+0.9**
	comp=Z,4.9nm,0.6s								
ZRNK	**Zerenda**	**51.84**	**313**	*e*		P	**P**	**04 21 35.8**	**+0.1**
ZRNK					pmax		pmax		
	comp=Z,11nm,1.4s								
ZRNK	**Zerenda**	**51.84**	**313**	*e*		P	**P**	**04 21 35.8**	**+0.1**
	comp=Z,11nm,1.4s								
EGAK	**Eagle**	**52.64**	**32**	*e*		P	**P**	**04 21 42.7**	**+1.2**
	comp=Z,1.9nm,0.7s								
GSI	**Gunungsitoli**	**53.32**	**239**	*e*		P	**P**	**04 21 46.4**	**-0.7**
	comp=Z,47nm,0.9s								
KKAR	**Karatay Array**	**53.42**	**301**	*e*		P	**P**	**04 21 47.5**	**-0.1**
KKAR					pmax		pmax		
	comp=Z,3.0nm,0.8s								
KKAR	**Karatay Array**	**53.42**	**301**	*e*		P	**P**	**04 21 47.5**	**-0.1**
	comp=Z,2.9nm,0.8s								
INK	**Inuvik**	**55.11**	**27**	P		P	**P**	**04 22 01.0**	**+1.6**
	comp=Z,0.9nm,0.6s,baz=309,slow=6.7,SNR=9.1								
WRAB	**Tennant Creek**	**56.28**	**188**	*e*		P	**P**	**04 22 07.4**	**-1.0**
WRAB					pmax		pmax		
	comp=Z,3.0nm,0.7s								
WRAB	**Tennant Creek**	**56.28**	**188**	*e*		P	**P**	**04 22 07.4**	**-1.0**
	comp=Z,3.3nm,0.7s								
WRA	**Warramunga Arr**	**56.30**	**188**	P		P	**P**	**04 22 07.4**	**-1.1**
	comp=Z,1.9nm,0.6s,baz=3.9,slow=7.5,SNR=9.4								
ARU	**Arti**	**56.86**	**319**	P		P	**P**	**04 22 12.2**	**+0.1**
	comp=Z,1.6nm,0.3s,baz=56,slow=6.8,SNR=4.6								
ARU	**Arti**	**56.86**	**319**	*d*	*i*	P	**P**	**04 22 11.8**	**-0.4**
ARU								04 23 04.3	
ARU								04 24 19.4	
ARU						S	**S**	**04 30 08.0**	**+4.3**
ARU						SS	**SS**	**04 33 54.0**	**+2.5**
ARU					pmax		pmax		
	comp=Z,13nm,2.5s								
ARU	**Arti**	**56.86**	**319**	*e*		P	**P**	**04 22 12.0**	**-0.2**
	comp=Z,13nm,0.9s								
ABKAR	**Akbulak array**	**58.35**	**310**	*e*		P	**P**	**04 22 22.5**	**-0.3**
AKTO	**Aktyubinsk**	**59.10**	**312**	P		P	**P**	**04 22 28.4**	**+0.4**
	comp=Z,0.8nm,0.5s,baz=54,slow=8.7,SNR=4.2								
ASAR	**Alice Springs**	**60.02**	**188**	P		P	**P**	**04 22 34.0**	**-0.6**
	comp=Z,1.6nm,0.8s,baz=14,slow=7.4,SNR=12								
SPITS	**Spitsbergen Ar**	**61.25**	**349**	LR		LR	LR	04 50 04.7	
	comp=Z,36nm,20.8s,baz=335,slow=37								
RES	**Resolute Bay**	**63.36**	**14**	P		P	**P**	**04 22 56.8**	**+0.4**
	comp=Z,0.5nm,0.6s,baz=312,slow=7.4,SNR=6.3								
GEYT	**Alibeck**	**64.11**	**299**	pP		pP	pP	04 23 13.4	+2.5
	comp=Z,1.3nm,0.3s,baz=180,slow=5.9,SNR=2.2								
YKA	**Yellowknife Ar**	**64.52**	**30**	P		P	**P**	**04 23 04.7**	**+0.5**
	comp=Z,0.4nm,0.7s,baz=303,slow=6.6,SNR=10.0								
YKA						pP	**sP**	**04 23 17.2**	**+0.8**
	comp=Z,1.4nm,0.9s,baz=299,slow=6.6,SNR=15								
YKB5	**Yellowknife Ar**	**64.52**	**30**	*e*		P	**P**	**04 23 05.1**	**+0.9**
VRH	**Novokhopyorsk**	**68.07**	**318**	*e*		P	**P**	**04 23 25.4**	**-1.8**
VRH					pmax		pmax		
	comp=Z,3.0nm,0.7s								
OBN	**Obninsk**	**68.64**	**323**	↓	*e*	P	**pP**	**04 23 42.0**	**+2.5**
OBN					pmax		pmax		
	comp=Z,7.0nm,0.6s								
LPSR	**Galich'ya Gora**	**68.82**	**320**	*e*		P	**pP**	**04 23 40.3**	**-0.4**
LPSR					pmax		pmax		
	comp=Z,7.0nm,0.7s								
VSR	**Storozhevoye**	**69.43**	**319**	*e*		P	**P**	**04 23 34.9**	**-0.7**
VSR					pmax		pmax		
	comp=Z,8.0nm,1.6s								
FIA1	**FINESS Array S**	**69.44**	**332**	*e*		P	**P**	**04 23 35.0**	**-0.4**
FINES	**FINESS Array B**	**69.44**	**332**	P		P	**P**	**04 23 35.6**	**+0.1**
	comp=Z,1.4nm,0.8s,baz=54,slow=9.7,SNR=4.3								
FINES						pP	**sP**	**04 23 47.1**	**-0.5**
	comp=Z,6.7nm,1.0s,baz=46,slow=8.2,SNR=6.9								
FINES				LR		LR	LR	04 56 25.6	
	comp=Z,50nm,19.0s,baz=97,slow=38								
KBZ	**Khabaz**	**71.32**	**311**	P		P	**P**	**04 23 47.8**	**+0.6**
	comp=Z,1.0nm,0.7s,baz=12,slow=9.3,SNR=2.7								
KBZ						pP	**sP**	**04 23 59.3**	**-0.2**
	comp=Z,8.2nm,1.0s,baz=284,slow=1.4,SNR=9.3								
KIV	**Kislovodsk**	**71.32**	**311**	*e*		P	**P**	**04 23 45.6**	**-1.9**
KIV					pmax		pmax		
	comp=Z,7.0nm,1.0s								
KIV	**Kislovodsk**	**71.32**	**311**	*e*		P	**P**	**04 23 46.5**	**-1.0**
	comp=Z,25nm,1.0s								
SUMG	**Summit**	**71.44**	**360**	*e*		P	**P**	**04 23 47.6**	**-0.5**
SUMG					pmax		pmax		
	comp=Z,4.0nm,0.8s								
SUMG	**Summit**	**71.44**	**360**	*e*		P	**P**	**04 23 47.6**	**-0.5**

comp=Z,0.5nm,0.5s,baz=46,slow=3.9,SNR=5.6
GERES LR LR 05 07 06.7
comp=Z,31nm,19.6s,baz=32,slow=39
GRFO Grafenberg 83.67 330 *eP* **P 04 24 56.1 -0.2**
GRFO pmax pmax
comp=Z,11nm,1.2s
GRFO Grafenberg 83.67 330 *eP* **P 04 24 56.1 -0.2**
comp=Z,12nm,1.2s
ANMO Albuquerque 85.16 50 *eP* **P 04 25 01.4 -2.9**
ANMO pmax pmax
comp=Z,2.0nm,1.0s
TXAR Lajitas Array 90.67 52 P **P 04 25 31.5 +0.8**
comp=Z,0.5nm,0.7s,baz=276,slow=2.3,SNR=5.6
TXAR pP **sP 04 25 44.4 +1.3**
comp=Z,0.6nm,0.8s,baz=260,slow=3.6,SNR=5.5
LPAZ La Paz 147.16 60 PKPbc **PKPbc 04 32 11.9 -0.1**
comp=Z,0.9nm,0.5s,baz=273,slow=3.7,SNR=7.1
LPAZ pPKPbc **pPKPbc 04 32 25.1 +3.7**
comp=Z,1.4nm,0.8s,baz=187,slow=1.5,SNR=4.0

*ISCJB **10** 04:14:08.6±1.4, 9.99S×0.04×108.27E±0.04, h21km±11km, mb4.2/23, MS3.6/5, Error ellipse: s-maj=7.1km s-min=5.2km az=32.7*
*IDC **10** 04:14:08.9±1.1, 9.64S×108.57E, h0km, mb4.1/14, mb1 4.2/16, mb1mx4.0/61, mbtmp4.1/16, ML3.5/2, MS3.3/5, Ms1 3.3/5, ms1mx2.9/46, Error ellipse: s-maj=43.8km s-min=15.1km az=47.0*
*NEIC **10** 04:14:09.8±2.8, 9.89S×108.30E, h12km±17km, mb4.5/9, Error ellipse: s-maj=10.7km s-min=6.3km az=214.0*
*DJA **10** 04:14:10.2±0.4, 10°S±3'×10°E±', h10km, M4.8/21, mb5.0/8, mB5.2/3, MLv4.7/21, Mw(mB)4.6/3*
ISC 10 04:14:08.6±3.4, **9.98S**±0.06×**108.24E**±0.06, **h8**km±21km, **n62**, σ1°**02**/61, **mb4.3**/23, **MS3.6**/5, **South of Jawa**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CMJI	**Cimerak**	**2.19**	**6**	P	**Pn**	**04 14 44.4**	**-0.9**
CMJI				S	**Sn**	**04 15 11.9**	**-0.7**
CISI	**Cisompet, Garu**	**2.44**	**350**	P	**Pn**	**04 14 47.9**	**-0.9**
CISI				S	**Sn**	**04 15 19.1**	**+0.2**
CISI	**Cisompet, Garu**	**2.44**	**350**	*e*Pn	**Pn**	**04 14 47.0**	**-1.9**
XMIS	**Christmas Isla**	**2.59**	**259**	*e*Pn	**Pn**	**04 14 51.0**	**+0.1**
XMIS				*e*Sn	**Sn**	**04 15 20.3**	**-2.3**
KPJI	**Karang Pucung**	**2.71**	**15**	P	**Pn**	**04 14 52.1**	**-0.4**
KPJI				S	**Sn**	**04 15 25.2**	**-0.4**
CNJI	**Cibinong**	**2.87**	**337**	P	**Pn**	**04 14 54.7**	**+0.1**
CNJI				S	**Sn**	**04 15 29.7**	**+0.3**
UGM	**Wanagama**	**3.05**	**48**	P	**Pn**	**04 14 56.0**	**-1.2**
LEM	**Lembang**	**3.19**	**349**	Pn	**Pb**	**04 15 05.0**	**-0.6**
	17nm,0.3s,baz=144,slow=7.8,SNR=24						
LEM				LR	LR	04 15 52.4	
	comp=Z,336nm,18.9s,baz=201,slow=35						
LEM	**Lembang**	**3.19**	**349**	P	**Pn**	**04 14 59.1**	**-0.1**
SKJI	**Sukabumi**	**3.39**	**330**	P	**Pn**	**04 15 02.7**	**+0.9**
PCJI	**Pacitan**	**3.40**	**59**	P	**Pn**	**04 15 01.0**	**-1.0**
WOJI	**Wonogiri, Jawa**	**3.40**	**52**	P	**Pn**	**04 15 00.6**	**-1.4**
SMRI	**Semarang**	**3.63**	**37**	*e*Pn	**Pn**	**04 15 05.1**	**-0.1**
DBJI	**Dramaga**	**3.71**	**336**	P	**Pn**	**04 15 07.0**	**+0.8**
PWJI	**Pagerwojo**	**4.02**	**61**	P	**Pn**	**04 15 09.6**	**-0.9**
NGJI	**Ngawi**	**4.11**	**51**	P	**Pn**	**04 15 11.4**	**-0.3**
CGJI	**Cibinong**	**4.18**	**323**	P	**Pn**	**04 15 14.1**	**+1.4**
UWJI	**Ujung Watu**	**4.44**	**37**	P	**Pn**	**04 15 16.1**	**-0.1**
GMJI	**Gumukmas**	**5.41**	**72**	P	**Pn**	**04 15 30.5**	**+0.8**
	97nm,1.0s,2µm0.4nm						
JAGI	**Jajag, Banyuwa**	**6.03**	**76**	P	**Pn**	**04 15 38.7**	**+0.6**
	190nm,0.8s,3µm0.7nm						
JAGI	**Jajag, Banyuwa**	**6.03**	**76**	*e*Pn	**Pn**	**04 15 38.0**	**-0.1**
	120nm,0.6s						
JAGI				*e*Sn	Sn	04 16 35.8	-12
ABJI	**Asem Bagus**	**6.31**	**70**	P	**Pn**	**04 15 44.1**	**+2.1**
MDSI	**Maura Dua**	**6.78**	**323**	P	**Pn**	**04 15 51.1**	**+2.7**
SRBI	**Singaraja**	**7.14**	**75**	P	**Pn**	**04 15 53.9**	**+0.5**
	142nm,0.7s,2µm0.6nm						
MNAI	**Manna**	**7.65**	**316**	P	**Pn**	**04 16 00.9**	**+0.4**
MNAI	**Manna**	**7.65**	**316**	*e*Pn	**Pn**	**04 16 03.4**	**+2.9**
TWSI	**Taliwang, Sumb**	**8.62**	**83**	P	**Pn**	**04 16 14.7**	**+1.0**
	73nm,0.7s,0.2nm						
PLAI	**Plampang**	**9.48**	**84**	P	**Pn**	**04 16 25.6**	**0.0**
	151nm,0.8s						
KAPI	**Kappang**	**12.43**	**67**	Pn	Pn	04 17 00.8	-5.2
	0.2nm,0.3s,baz=106,slow=20,SNR=2.8						
KAPI	**Kappang**	**12.43**	**67**	*e*Pn	Pn	04 17 01.0	-5.0
SOEI	**Soe**	**15.80**	**91**	*e*Pn	**Pn**	**04 17 50.5**	**-1.1**
MRSI	**Marisa**	**17.14**	**53**	P	**P**	**04 18 10.9**	**+0.5**
FITZ	**Fitzroy Crossi**	**18.70**	**117**	P	**Pn**	**04 18 28.7**	**+0.7**
	0.1nm,0.3s,baz=298,slow=9.9,SNR=6.6						
WRA	**Warramunga Arr**	**27.05**	**114**	P	**P**	**04 19 51.9**	**+0.1**
	1.2nm,0.7s,baz=286,slow=11,SNR=4.6						
WRAB	**Tennant Creek**	**27.06**	**114**	*e*P	**P**	**04 19 53.1**	**+1.2**
	2.5nm,0.7s						
ASAR	**Alice Springs**	**28.02**	**122**	P	**P**	**04 20 01.9**	**+1.5**
	1.1nm,0.8s,baz=302,slow=9.4,SNR=10						
ASAR				LR	LR	04 31 07.6	
	comp=Z,30nm,20.5s,baz=242,slow=36						
CMAR	**Chiang Mai Arr**	**29.70**	**342**	P	**P**	**04 20 15.8**	**+0.5**
	4.7nm,1.0s,baz=175,slow=8.7,SNR=5.6						
CHTO	**Chiang Mai**	**30.04**	**342**	*e*P	**P**	**04 20 18.2**	**-0.1**
	6.1nm,0.8s						
STKA	**Stephens Creek**	**37.77**	**130**	P	**P**	**04 21 25.7**	**+0.3**
	3.7nm,0.7s,baz=280,slow=2.5,SNR=3.8						
ENH	**Enshi**	**40.03**	**2**	*e*P	**P**	**04 21 43.9**	**-0.4**
	8.8nm,0.7s						
JNU	**Nakatsue**	**47.98**	**26**	LR	LR	04 43 13.3	
	comp=Z,65nm,20.0s,baz=128,slow=37						
KSRS	**Korea Array**	**50.66**	**20**	LR	LR	04 46 10.2	
	comp=Z,25nm,18.8s,baz=138,slow=38						
SONM	**Songino Array**	**57.58**	**359**	P	**P**	**04 23 58.8**	**-0.2**
	1.0nm,0.6s,baz=177,slow=8.9,SNR=9.4						
ULN	**Ulaanbaatar**	**57.59**	**359**	*e*P	**P**	**04 23 58.2**	**-0.9**
	3.3nm,0.8s						
TKM2	**Tokmak 2**	**60.49**	**333**	*e*P	**P**	**04 24 19.3**	**-0.1**
	3.4nm,0.6s						
MKAR	**Makanchi Array**	**61.08**	**340**	P	**P**	**04 24 23.2**	**+0.1**
	2.7nm,0.6s,baz=141,slow=7.8,SNR=14						
EKS2	**Erkin-Say**	**61.12**	**332**	*e*P	**P**	**04 24 24.3**	**+0.7**
	2.3nm,0.6s						
TLY	**Talaya**	**61.53**	**357**	LR	LR	04 54 42.9	
	comp=Z,35nm,18.2s,baz=160,slow=40						
KLR	**Kul'dur**	**62.47**	**17**	P	**P**	**04 24 30.9**	**-1.4**
	3.0nm,0.8s,baz=151,slow=6.3,SNR=7.5						
KURBB	**Kurchatov Arra**	**65.65**	**340**	P	**P**	**04 24 53.6**	**+0.4**
	1.6nm,1.0s,baz=152,slow=5.6,SNR=6.3						
KURK	**Kurchatov**	**65.70**	**340**	*e*P	**P**	**04 24 53.5**	**0.0**
	6.7nm,0.8s						
ZALV	**Zalesovo Beam**	**66.70**	**345**	P	**P**	**04 25 00.5**	**+0.5**
	0.8nm,0.5s,baz=132,slow=6.2,SNR=4.4						
BVAR	**Borovoye Array**	**70.57**	**337**	P	**P**	**04 25 24.7**	**+0.6**
	1.2nm,0.7s,baz=160,slow=9.3,SNR=5.6						
BRVK	**Borovoye**	**70.64**	**337**	*e*P	**P**	**04 25 24.7**	**+0.2**
	2.5nm,0.8s						
ABKAR	**Akbulak array**	**72.58**	**329**	*e*P	**P**	**04 25 36.6**	**+0.3**
	5.6nm,0.7s						
ARU	**Arti**	**77.82**	**334**	P	**P**	**04 26 07.0**	**+0.7**
	1.7nm,0.7s,baz=101,slow=5.1,SNR=3.9						
AFI	**Afiamalu**	**78.03**	**102**	LR	LR	04 59 21.5	
	comp=Z,500nm,19.2s,baz=191,slow=35						
SEY	**Seymchan**	**80.19**	**19**	P	**P**	**04 26 17.4**	**-1.8**
	0.5nm,0.5s,baz=232,slow=8.4,SNR=3.5						
TIXI	**Tiksi**	**82.60**	**6**	P	**P**	**04 26 31.4**	**-0.4**
	1.3nm,0.3s,baz=70,slow=1.1,SNR=4.9						
BRTR	**Keskin Array B**	**84.71**	**312**	P	**P**	**04 26 44.7**	**+1.1**
	0.9nm,0.7s,baz=143,slow=6.1,SNR=4.3						
YKA	**Yellowknife Ar**	**119.20**	**21**	PKP	**PKPdf**	**04 32 58.5**	**+0.5**
	0.2nm,0.8s,baz=338,slow=1.4,SNR=3.3						
TXAR	**Lajitas Array**	**144.50**	**53**	PKP	**PKPdf**	**04 33 47.4**	**+0.9**
	0.2nm,0.6s,baz=259,slow=1.7,SNR=4.3						

*SJA **10** 04:14:13.5±1.7, 32°51S×72°34W, h33km, ML4.0, MW3.6*
*GUC **10** 04:14:16.8±0.5, 32°39S×71°90W, h20km±38km, ML3.6*
ISC 10 04:14:17.2±3.0, **32°38S**±0°05×**71°8W**±0°1, **h9**km±16km, **n20**, σ1°**85**/29, **3C-3D, Near coast of central Chile**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ROC1	**El Roble**	**0.91**	**131**	*e*P	**Pn**	**04 14 35.0**	**-1.4**
ROC1				⇓*e*S	**Sn**	**04 14 50.4**	**+0.6**
ROCH	**El Roble**	**0.91**	**131**	IAML		04 14 51.4	
	comp=N,3µm,0.4s						
PEL	**Peldehue**	**1.23**	**129**	⇑*i*P	**Pb**	**04 14 40.0**	**-0.6**
PEL				*i* S	**Sg**	**04 14 58.2**	**+1.3**
PEL				IAML		04 15 00.5	
	comp=N,2µm,0.4s						

TACH Talagante 1.48 150 ⇓*i*P **Pb 04 14 44.2 -0.6**
TACH *i* S **Sg 04 15 04.1 -0.7**
CLCH Cerro Calan 1.49 133 ⇑*i*P **Pb 04 14 44.4 -0.7**
CLCH *i* S **Sg 04 15 05.4 +0.3**
CLCH IAML 04 15 17.8
comp=N,1µm,1.2s
ANTU Antumapu 1.56 140 *e*P **Pb 04 14 45.5 -0.8**
ANTU *e*S **Sg 04 15 07.4 0.0**
ANTU IAML 04 15 15.3
comp=N,1µm,0.3s
CHCH Chadas Angostu 1.84 148 *e*P **Pb 04 14 49.6 -1.5**
AUSP Uspallata 2.07 86 *e*P **Pb 04 14 54.6 -0.5**
RTLS Leoncito 2.23 76 *e*P **Pb 04 14 57.2 -0.5**
RTLS *e*S **Sg 04 15 28.0 -0.8**
ARCO CERRO ARCO 2.49 102 *e*P **Pb 04 15 02.0 -0.2**
ARCO *e*S **Sg 04 15 36.0 -1.2**
ARCO IAML 04 15 47.3
comp=Z,255nm,0.5s
ASAL Salagasta 2.54 96 *e*P **Pb 04 15 02.2 -0.8**
ASAL *e*S **Sb 04 15 36.2 +1.9**
AAGR Agrelo 2.63 106 *e*P **Pb 04 15 03.4 -1.1**
RTCV Cerro Valdivia 2.84 80 *e*P **Pb 04 15 05.4 -2.6**
RTCV *e*S **Sb 04 15 45.8 +2.9**
RTLL Cerro Villicun 3.04 71 *e*P **Pn 04 15 07.4 +1.9**
RTLL ⇓*e*S **Sb 04 15 46.2 -2.5**
ACAN Cantantal 3.93 90 ⇓*e*P **Pn 04 15 20.6 +2.9**
AVFE Valle Fertil 4.11 67 *e*P **Pn 04 15 20.8 +0.5**
VCA Vinchina 4.79 42 *e*P Pn 04 15 33.6 +3.9
VCA IAML 04 16 47.7
comp=Z,139nm,0.5s
ACLC CERRO LA CRUZ 5.12 56 *e*P **Pn 04 15 37.2 +3.0**
ACLC IAML 04 16 47.2
comp=Z,50nm,0.5s
AHML Horco Molle 7.94 47 *e*P **Pn 04 16 14.1 +1.2**
AHML *e*S **Sn 04 17 38.8 -4.0**
FSA Cafayete 8.07 41 *e*P **Pn 04 16 17.6 +2.9**

*NIED **10** 04:18:00, 35°70N×140°90E, h8km, Mw3.8 Best double couple: M₀4.92000×10¹⁴ NP1:φs352.00000°, δ36.00000°, λ-103.00000°. NP2:φs188.00000°, δ55.00000°, λ-81.00000°.*
*IDC **10** 04:18:03.5±1.3, 35°46N×140°53E, h0km, mb3.5/4, mb1 3.7/5, mb1mx3.3/77, mbtmp3.4/5, ML2.7/1, Error ellipse: s-maj=31.7km s-min=29.9km az=84.0*
*ISCJB **10** 04:18:04.2±0.7, 35°75N±0°07×140°81E±0°08, h9km±5km, mb3.6/4, Error ellipse: s-maj=13.6km s-min=8.2km az=41.4*
*JMA **10** 04:18:04.0±0.2, 35°74N×140°89E, h9km±1km, M3.8*
JMA Felt II J1.
ISC 10 04:18:03.3±2.2, **35°75N**±0°10×**140°9E**±0°2, **h11**km±7km, **n10**, σ0°**53**/11, **mb3.6**/4, **2C-1D, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CHOJ	**Chosi**	**0.07**	**229**	⇓P	**Pg**	**04 18 05.7**	**0.0**
CHOJ				S	**Sg**	**04 18 07.3**	**-0.2**
JCN	**Nagara**	**0.68**	**241**	⇑P	**Pb**	**04 18 17.7**	**+0.6**
JYT	**Yasato**	**0.76**	**309**	⇑P	**Pg**	**04 18 18.0**	**0.0**
JYT				*e*S	**Sg**	**04 18 28.1**	**+0.1**
BSO4	**Boso 4**	**0.90**	**213**	P	**Pb**	**04 18 21.1**	**+0.3**
MJAR	**Matsushiro Arr**	**2.34**	**290**	Pn	**Pn**	**04 18 41.4**	**-0.3**
	2.6nm,0.3s,baz=104,slow=8.7,SNR=11						
MAT	**Matsushiro**	**2.34**	**290**	P	**Pn**	**04 18 40.8**	**-0.9**
MAT				S	**Sn**	**04 19 10.1**	**-0.3**
KURBB	**Kurchatov Arra**	**46.49**	**309**	P	**P**	**04 26 30.9**	**+0.7**
	0.5nm,0.7s,baz=84,slow=8.1,SNR=3.7						
ILAR	**Eielson Array**	**50.79**	**32**	P	P	04 27 08.6	+5.4
	0.4nm,0.8s,baz=270,slow=6.3,SNR=5.1						
INK	**Inuvik**	**55.70**	**27**	P	P	04 27 43.9	+4.7
	0.4nm,0.6s,baz=243,slow=11,SNR=4.2						
WRA	**Warramunga Arr**	**55.74**	**188**	P	**P**	**04 27 39.7**	**-0.3**
	0.6nm,0.7s,baz=6.2,slow=7.6,SNR=4.9						

*IDC **10** 04:29:16.4±5.8, 30°61S×71°06W, h0km, mb3.6/1, mb1 3.9/2, mb1mx3.5/34, mbtmp3.8/2, ML4.0/1, Error ellipse: s-maj=513.2km s-min=62.4km az=173.0*
*SJA **10** 04:29:25.3±2.8, 28°04S×71°04W, h210km±58km, ML3.7, MW3.3*
*GUC **10** 04:29:28.3±0.6, 28°27S×70°31W, h40km±6km, ML3.5*
ISC 10 04:29:26.9±1.5, **28°11S**±0°04×**70°99W**±0°07, **h13**km±9km, **n22**, σ1°**71**/33, **1C-5D, Central Chile**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
VACH	**Vallenar**	**0.51**	**156**	*i* P	**Pb**	**04 29 39.0**	**+1.3**
VACH				*i* S	**Sb**	**04 29 46.8**	**+1.8**
LCO	**Las Campanas**	**0.93**	**164**	*i* P	**Pg**	**04 29 44.3**	**-0.6**
LCO				*i* S	**Sg**	**04 29 55.8**	**-1.4**
LCO				IAML		04 29 57.6	
	comp=E,2µm,0.4s						
CPCH	**Copiapo**	**0.94**	**37**	⇑*i*P	**Pg**	**04 29 45.2**	**+0.1**
CPCH				*i* S	**Sg**	**04 29 57.4**	**0.0**
TLL	**Tololo Astrono**	**2.06**	**175**	*i* P	**Pn**	**04 30 01.3**	**-0.1**
TLL				*i* S	**Sn**	**04 30 26.0**	**-1.0**
TLL				IAML		04 30 38.8	
	comp=E,945nm,0.6s						
VCA	**Vinchina**	**2.53**	**105**	*e*P	**Pn**	**04 30 10.1**	**+2.2**
VCA				*e*S	**Sg**	**04 30 46.9**	**-1.4**
VCA				IAML		04 30 48.7	
	comp=Z,320nm,0.3s						
ACLC	**CERRO LA CRUZ**	**3.78**	**111**	*e*P	**Pn**	**04 30 25.3**	**+0.2**
ACLC				*e*S	**Sn**	**04 31 10.9**	**+1.3**
ACLC				IAML		04 31 16.0	
	comp=Z,120nm,0.3s						
RTLL	**Cerro Villicun**	**3.88**	**146**	*e*P	**Pn**	**04 30 28.1**	**+1.8**
RTLS	**Leoncito**	**3.96**	**159**	*e*P	**Pn**	**04 30 29.5**	**+1.9**
AVFE	**Valle Fertil**	**4.00**	**130**	⇓*e*P	**Pn**	**04 30 28.0**	**0.0**
AVFE				*e*S	**Sn**	**04 31 12.4**	**-2.3**
RTCV	**Cerro Valdivia**	**4.30**	**151**	⇓*e*P	**Pn**	**04 30 32.8**	**+0.7**
RTCV				*e*Pn	**Pg**	**04 30 49.9**	**+0.6**
RTCV				*e*S	**Sn**	**04 31 22.2**	**0.0**
AUSP	**Uspallata**	**4.33**	**162**	*e*P	**Pn**	**04 30 34.4**	**+1.7**
CYA	**Choya**	**4.59**	**95**	*e*P	**Pn**	**04 30 35.9**	**-0.2**
CYA				*e*S	**Sn**	**04 31 27.6**	**-1.8**
CYA				IAML		04 31 31.9	
	comp=Z,144nm,0.8s						
ASAL	**Salagasta**	**4.84**	**158**	⇓*e*P	**Pn**	**04 30 41.0**	**+1.5**
ROC1	**El Roble**	**4.85**	**180**	⇓*e*P	**Pn**	**04 30 39.1**	**-0.7**
FSA	**Cafayete**	**4.89**	**67**	⇓*e*P	**Pn**	**04 30 43.7**	**+3.3**
FSA				IAML		04 31 10.8	
	comp=Z,6.8nm,0.6s						
ARCO	**CERRO ARCO**	**5.04**	**160**	*e*P	**Pn**	**04 30 43.0**	**+0.7**
ARCO				*e*S	**Sn**	**04 31 44.1**	**+3.5**
ARCO				IAML		04 31 57.5	
	comp=Z,30nm,0.3s						
AHML	**Horco Molle**	**5.20**	**77**	*e*P	**Pn**	**04 30 45.6**	**+1.1**
MRA	**San Martin**	**6.26**	**135**	*e*P	**Pn**	**04 30 58.4**	**-0.7**
CPUP	**Villa Florida**	**12.29**	**85**	Pn	**Pn**	**04 32 19.8**	**-1.9**
	comp=Z,0.2nm,0.3s,baz=267,slow=7.5,SNR=5.5						
TORD	**Torodi Ar. Bea**	**81.37**	**70**	P	**P**	**04 41 40.2**	**-3.6**
	comp=Z,0.5nm,0.9s,baz=255,slow=4.3,SNR=3.9						
ZALV	**Zalesovo Beam**	**148.69**	**28**	PKPbc	**PKPdf**	**04 49 10.3**	**+0.6**
	comp=Z,0.9nm,0.5s,baz=306,slow=4.8,SNR=5.0						
MKAR	**Makanchi Array**	**151.97**	**41**	PKPbc	**PKPdf**	**04 49 17.3**	**+2.2**
	comp=Z,0.3nm,0.4s,baz=327,slow=3.2,SNR=5.4						

*NIED **10** 04:30:00, 36°90N×141°10E, h53km, Mw3.5 Best double couple: M₀1.86000×10¹⁴ NP1:φs278.00000°, δ25.00000°, λ174.00000°. NP2:φs14.00000°, δ88.00000°, λ66.00000°.*
*IDC **10** 04:30:06.4±2.6, 36°87N×141°56E, h0km, mb3.4/3, mb1 3.5/4, mb1mx3.2/62, mbtmp3.4/4, ML3.4/1, Error ellipse: s-maj=65.5km s-min=29.2km az=60.0*
*ISCJB **10** 04:30:12.5±1.3, 36°83N±0°08×141°2E±0°1, h47km±8km, mb3.3/3, Error ellipse: s-maj=17.8km s-min=8.6km az=36.3*
*JMA **10** 04:30:14.1±0.1, 36°88N×141°06E, h50km±1km, M3.6*
JMA Felt I J1.
ISC 10 04:30:12.8±1.7, **36°84N**±0°09×**141°2E**±0°2, **h37**km±3km, **n14**, σ0°**84**/20, **mb3.3**/3, **Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.44**	**307**	P	**Pn**	**04 30 23.1**	**+0.6**
ONAJ				*e*S	**Sn**	**04 30 29.3**	**-0.2**
JHO	**Hitachi**	**0.58**	**248**	P	**Pn**	**04 30 24.9**	**+0.2**
JHO				*e*S	**Sn**	**04 30 32.5**	**-0.4**
JFK	**Kawauchi**	**0.60**	**332**	P	**Pn**	**04 30 25.2**	**+0.1**
JFK				S	**Sn**	**04 30 32.8**	**-0.8**
JFT	**Otama**	**0.99**	**314**	P	**Pn**	**04 30 30.6**	**+0.4**
JSB	**Shiboa**	**1.06**	**278**	P	**Pn**	**04 30 31.2**	**0.0**
JMM	**Marumori**	**1.09**	**341**	P	**Pn**	**04 30 31.6**	**+0.1**
JFY	**Yanaizu**	**1.35**	**295**	P	**Pn**	**04 30 35.0**	**-0.1**
JAG	**Ashikaga**	**1.49**	**255**	P	**Pn**	**04 30 37.0**	**0.0**
JAG				S	**Sn**	**04 30 53.8**	**-1.4**
JKT	**Katashina**	**1.59**	**268**	P	**Pn**	**04 30 38.9**	**+0.4**
JKT				S	**Sn**	**04 30 56.9**	**-1.0**
MJAR	**Matsushiro Arr**	**2.45**	**264**	Pn	**Pn**	**04 30 51.0**	**+0.8**
	7.3nm,0.3s,baz=86,slow=14,SNR=68						
MAT	**Matsushiro**	**2.45**	**264**	P	**Pn**	**04 30 50.9**	**+0.7**
MAT				S	**Sn**	**04 31 19.9**	**+0.9**
SONM	**Songino Array**	**27.78**	**304**	P	**P**	**04 36 00.1**	**+1.9**
	0.3nm,0.4s,baz=98,slow=10,SNR=3.7						
MKAR	**Makanchi Array**	**44.10**	**302**	P	**P**	**04 38 16.4**	**-1.0**
	0.1nm,0.3s,baz=88,slow=9.4,SNR=1.9						
WRA	**Warramunga Arr**	**56.84**	**188**	P	**P**	**04 39 53.4**	**-0.3**
	0.6nm,0.9s,baz=5.7,slow=7.3,SNR=3.0						

*ISK **10** 04:30:17.6, 40°42N×26°11E, h18km, MD2.7*
*ATH **10** 04:30:17.5, 40°42N×26°06E, h28km±2km, ML2.1/3, Error ellipse: s-maj=3.0km s-min=1.0km az=296.0*
*CSEM **10** 04:30:18.0±0.1, 40°42N×26°09E, h15km, ML2.1, Error ellipse: s-maj=1.7km s-min=1.5km az=104.0*
*ISCJB **10** 04:30:18.3±0.3, 40°42N±0°02×26°08E±0°03, h19km±4km, Error ellipse: s-maj=3.8km s-min=3.3km az=10.0*
*DDA **10** 04:30:18.5, 40°36N×26°17E, h7km, Ml3.0*
*THE **10** 04:30:18.7, 40°41N×26°04E, h14km, ML2.1/8, Error ellipse: s-maj=0.5km s-min=0.3km az=76.0*
ISC 10 04:30:18.1±0.8, **40°42N**±0°01×**26°09E**±0°02, **h17**km±6km, **n67**, σ0°**28**/102, **Turkey**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
GADA	**Gvkgeada**	**0.27**	**212**	*e*PG	**Pg**	**04 30 24.1**	**+0.1**
GADA	**Gvkgeada**	**0.27**	**212**	P	**Pg**	**04 30 24.1**	**+0.1**
GADA				S	**Sg**	**04 30 27.9**	**-0.1**
GADA	**Gvkgeada**	**0.27**	**212**	P	**Pg**	**04 30 24.1**	**+0.1**
GADA				S	**Sg**	**04 30 27.9**	**-0.1**
GELI	**Tayfur-Gelibol**	**0.30**	**94**	*e*PG	**Pg**	**04 30 24.5**	**0.0**
GELI				*e*SG	**Sg**	**04 30 28.8**	**0.0**
GELI	**Tayfur-Gelibol**	**0.30**	**94**	*e*Pg	**Pg**	**04 30 24.5**	**0.0**
GELI				*e*Sg	**Sg**	**04 30 28.8**	**0.0**
ENEZ	**Enez**	**0.32**	**9**	*e*PG	**Pg**	**04 30 24.7**	**-0.2**
ENEZ				*e*SG	**Sb**	**04 30 30.2**	**-0.1**
ENEZ	**Enez**	**0.32**	**9**	P	**Pb**	**04 30 25.6**	**+0.2**
ENEZ				S	**Sb**	**04 30 30.6**	**+0.2**
ENEZ	**Enez**	**0.32**	**9**	*e*Pg	**Pg**	**04 30 24.7**	**-0.2**
ENEZ	**Enez**	**0.32**	**9**	P	**Pb**	**04 30 25.6**	**+0.2**
ENEZ				*e*Sg	**Sb**	**04 30 30.3**	**-0.1**
ERIK	**Erikli-Kesan**	**0.41**	**52**	*e*PG	**Pg**	**04 30 26.2**	**-0.3**
ERIK	**Erikli-Kesan**	**0.41**	**52**	*e*Pg	**Pg**	**04 30 26.2**	**-0.3**
SMTH	**Samothraki Isl**	**0.43**	**277**	P	**Pg**	**04 30 26.7**	**-0.1**
SMTH				S	**Sg**	**04 30 32.8**	**+0.2**
SMTH	**Samothraki Isl**	**0.43**	**277**	P	**Pg**	**04 30 27.0**	**+0.2**
SMTH				S	**Sg**	**04 30 32.8**	**+0.2**
SMTH	**Samothraki Isl**	**0.43**	**277**	P	**Pg**	**04 30 27.0**	**+0.2**
SMTH				S	**Sg**	**04 30 32.4**	**-0.2**
SMTH				AML	AML	04 30 33.3	
	comp=N,1115µm,0.2s						
SMTH				AML	AML	04 30 33.5	
	comp=E,793µm,0.3s						
ALN	**Alexandroupoli**	**0.48**	**356**	*e*PG	**Pg**	**04 30 27.8**	**+0.1**
ALN				*e*SG	**Sb**	**04 30 34.9**	**0.0**
ALN	**Alexandroupoli**	**0.48**	**356**	P	**Pb**	**04 30 28.1**	**0.0**
ALN				S	**Sb**	**04 30 35.1**	**+0.2**
ALN	**Alexandroupoli**	**0.48**	**356**	*e*Pg	**Pg**	**04 30 27.8**	**+0.1**
ALN	**Alexandroupoli**	**0.48**	**356**	P	**Pb**	**04 30 28.1**	**0.0**
ALN				S	**Sg**	**04 30 33.9**	**-0.3**
ALN				*e*Sg	**Sb**	**04 30 34.9**	**0.0**
ALN	**Alexandroupoli**	**0.48**	**356**	P	**Pb**	**04 30 28.6**	**+0.5**
ALN				S	**Sg**	**04 30 33.9**	**-0.3**
ALN				AML	AML	04 30 35.5	
	comp=E,277µm,0.4s						
ALN				AML	AML	04 30 35.9	
	comp=N,178µm,0.2s						
BOZC	**Bozcaada**	**0.58**	**183**	*i* P	**Pg**	**04 30 28.8**	**-0.7**
KESN	**Edirne-Kesan**	**0.61**	**48**	*i* P	**Pg**	**04 30 30.0**	**-0.2**
KESN	**Edirne-Kesan**	**0.61**	**48**	P	**Pg**	**04 30 30.0**	**-0.2**
EZN	**Ezine**	**0.62**	**163**	*e*PG	**Pb**	**04 30 30.5**	**0.0**
EZN	**Ezine**	**0.62**	**163**	P	**Pb**	**04 30 30.6**	**+0.1**
EZN				S	**Sb**	**04 30 39.6**	**+0.7**
EZN	**Ezine**	**0.62**	**163**	*e*Pg	**Pb**	**04 30 30.5**	**0.0**
EZN				S	**Sb**	**04 30 39.6**	**+0.7**
LIA

ISK ***10*** *04:36:29.3, 40°.45N × 25°.93E, h5km, MD2.4*

ISC 10 04:36:26.8±1.3, 40°.45N±0°.04 × 25°.87E±0°.07, h11km, n13, σ0.96/18, Aegean Sea

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
GADA	**Gvkgeada**	**0.26**	**176**	*e*PG	**Pb**	**04 36 35.0**	**+1.5**
GADA	**Gvkgeada**	**0.26**	**176**	*e*Pg	**Pb**	**04 36 35.0**	**+1.5**
ENEZ	**Enez**	**0.36**	**37**	*e*PG	**Pb**	**04 36 36.3**	**+1.2**
ENEZ	**Enez**	**0.36**	**37**	*e*Pg	**Pb**	**04 36 36.3**	**+1.2**
GELI	**Tayfur-Gelibol**	**0.46**	**96**	*e*PG	**Pb**	**04 36 38.0**	**+1.0**
GELI				*e*SG	**Sb**	**04 36 44.3**	**+0.5**
GELI	**Tayfur-Gelibol**	**0.46**	**96**	*e*Pg	**Pb**	**04 36 38.0**	**+1.0**
GELI				*e*Sg	**Sb**	**04 36 44.3**	**+0.5**
ALN	**Alexandroupoli**	**0.47**	**16**	*e*PG	**Pn**	**04 36 38.8**	**-0.6**
ALN	**Alexandroupoli**	**0.47**	**16**	*e*Pg	**Pn**	**04 36 38.8**	**-0.6**
ERIK	**Erikli-Kesan**	**0.54**	**66**	*e*PG	**Pn**	**04 36 39.5**	**-0.8**
ERIK	**Erikli-Kesan**	**0.54**	**66**	*e*Pg	**Pn**	**04 36 39.5**	**-0.8**
BOZC	**Bozcaada**	**0.62**	**167**	*i* P	**Pg**	**04 36 38.0**	**-0.9**
BOZC				*i* S	**Sg**	**04 36 46.1**	**-1.0**
KESN	**Edirne-Kesan**	**0.72**	**58**	*i* P	**Pn**	**04 36 43.2**	**-0.1**
KESN				*i* S	**Sn**	**04 36 54.4**	**-0.1**
KESN	**Edirne-Kesan**	**0.72**	**58**	P	**Pn**	**04 36 43.2**	**-0.1**
KESN				S	**Sn**	**04 36 54.4**	**-0.1**

IDC 10 04:40:19.8±4.2, 35°.84N × 141°.38E, h0km, mb3.6/2, mb1 3.5/3, mb1mx3.2/67, mbtmp3.3/3, ML2.7/1, Error ellipse: s-maj=116.1km s-min=31.0km az=53.0, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MJAR	**Matsushiro Arr**	**2.66**	**286**	Pn	Pn	04 41 02.3	-1.7
	1.5nm,0.3s,baz=96,slow=10,SNR=24						
MAT	**Matsushiro**	**2.66**	**286**	P	Pn	04 41 02.7	-1.3
MAT				*e*S	Sg	04 41 46.3	+0.9
SONM	**Songino Array**	**28.45**	**306**	P	P	04 46 16.8	+0.4
	0.8nm,0.9s,baz=104,slow=8.8,SNR=4.2						
WRA	**Warramunga Arr**	**55.88**	**188**	P	P	04 49 59.4	+0.1
	0.3nm,0.4s,baz=17,slow=8.8,SNR=5.8						

IDC ***10*** *04:45:16.7±0.5, 28°.68S × 176°.80W, h0km, mb4.7/20, mb1 4.9/20, mb1mx4.8/32, mbtmp4.7/20, MS4.4/29, Ms1 4.4/29, ms1mx4.3/39, Error ellipse: s-maj=18.5km s-min=13.4km az=141.0*

ISCJB ***10*** *04:45:19.8±0.1, 29°.06S±0°.03 × 176°.98W±0°.05, h31km, mb5.0/61, MS4.5/35, Error ellipse: s-maj=6.6km s-min=3.1km az=34.7*

BJI ***10*** *04:45:21.4, 28°.36S × 176°.63W, h35km, mb5.2/24, mB5.4/14, Ms5.1/12, Ms7 4.8/11*

MOS ***10*** *04:45:21.0±1.1, 28°.72S × 176°.92W, h33km, mb5.2/22, Error ellipse: s-maj=10.4km s-min=8.8km az=54.6*

GCMT ***10*** *04:45:24.4±0.2, 28°.73S × 176°.54W, h12km, MW5.2/89, Moment Tensor Solution. s62,c93; s89,c144; Duration: 0 Moment tensor: Scale 10^16 Nm; Mrr 5.96±.20; Mθθ 0.17±.18; Mϕϕ -6.13±.15; Mrθ -1.93±.45; Mϕr -3.77±.12; Mθr 0.44±.34; Best double couple: M0 7.32800 × 10^16 NP1: ϕs 225.00000°, δ51.00000°, λ119.00000°. NP2: ϕs 4.00000°, δ47.00000°, λ60.00000°. Principal axes: T 6.7510, Plg68.0000°, Azm201.0000°; N 1.1580, Plg22.0000°, Azm26.0000°; P -7.9050, Plg2.0000°, Azm295.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

NEIC ***10*** *04:45:24.4±0.9, 28°.77S × 176°.98W, h52km±8km, mb5.0/39 Error ellipse: s-maj=7.0km s-min=4.9km az=147.0*

ISC 10 04:45:21.9±0.3, 28°.95S±0°.05 × 176°.73W±0°.05, h35km, n363, σ1.9/70, mb5.1/61, MS4.6/36, 2C-3D, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
RAO	**Raoul Island**	**1.08**	**253**	Pn	**Pn**	**04 45 40.7**	**+0.2**
	1μm,0.3s,baz=86,slow=4.8,SNR=30						
RAO				Sn	**Sn**	**04 45 56.8**	**+2.6**
	5μm,0.3s,baz=270,slow=20,SNR=26						
MXZ	**Matakaoa Point**	**9.54**	**204**	*e*PN	**Pn**	**04 47 35.0**	**-1.7**
MXZ				*e*SN	**Sn**	**04 49 20.7**	**-1.9**
WMGZ	**Waiomatatini S**	**9.73**	**203**	*e*PN	**Pn**	**04 47 36.3**	**-3.0**
HAZ	**Te Kaha**	**9.91**	**206**	*e*PN	Pn	04 47 37.2	-4.6
HAZ				*e*SN	**Sn**	**04 49 30.9**	**-0.7**
OUZ	**Omahuta**	**10.31**	**230**	*e*Pn	**Pn**	**04 47 50.5**	**+3.3**
URZ	**Urewera**	**10.61**	**207**	Pn	Pn	04 47 45.9	-5.4
	0.8nm,0.3s,baz=3.8,slow=15,SNR=6.4						
URZ				Sn	**Sn**	**04 49 46.2**	**-2.7**
	6.0nm,0.3s,baz=14,slow=23,SNR=9.2						
URZ	**Urewera**	**10.61**	**207**	*e*Pn	Pn	04 47 47.3	-4.0
URZ				*e*Sn	**Sn**	**04 49 47.8**	**-1.1**
BKZ	**Black Stump Fm**	**11.63**	**207**	*e*Pn	Pn	04 48 13.9	+8.5
BKZ				*e*Sn	**Sn**	**04 50 13.0**	**-1.1**
MSVF	**Nonsavu**	**12.14**	**336**	*e*P	**Pn**	**04 48 11.6**	**-0.9**
MSVF	**Nonsavu**	**12.14**	**336**	*e*Pn	**Pn**	**04 48 11.6**	**-0.9**
BFZ	**Birch Farm**	**13.04**	**204**	PN	Pn	04 48 21.3	-3.3
BFZ				*e*SN	Sn	04 50 40.9	-7.5
CTZ	**Chatham Island**	**14.76**	**180**	PN	Pn	04 48 43.9	-4.0
CTZ				*e*SN	Sn	04 51 13.7	-17
THZ	**Tophouse**	**15.31**	**211**	*e*PN	**Pn**	**04 48 50.7**	**-4.7**
THZ				*e*SN	Sn	04 51 32.7	-11
THZ	**Tophouse**	**15.31**	**211**	*e*Pn	**Pn**	**04 48 56.3**	**+0.9**
	86nm,1.2s						
THZ				*e*Sn	**Sn**	**04 51 36.1**	**-7.7**
KHZ	**Kahutara**	**15.58**	**208**	*e*Pn	**Pn**	**04 48 55.9**	**-2.8**
	98nm,0.8s						
KHZ				*e*Sn	Sn	04 51 40.2	-10
AFI	**Afiamalu**	**15.65**	**18**	Pn	Pn	04 48 51.4	-8.6
	2.9nm,0.3s,baz=189,slow=19,SNR=3.3						
AFI				Sn	Sn	04 51 32.8	-20
	2.8nm,0.3s,baz=66,slow=20,SNR=4.3						
LTZ	**Lake Taylor**	**16.41**	**210**	*e*Pn	**P**	**04 49 12.8**	**+0.8**
	67nm,1.4s						
DZM	**Mont Dzumac**	**16.65**	**290**	LR	LR	04 54 19.7	
	comp=Z,2μm,20.2s,baz=118,slow=33						
INZ	**Inchbonnie**	**16.74**	**212**	*e*PN	**Pn**	**04 49 08.7**	**-4.8**
INZ				*e*SN	Sn	04 52 03.4	-15
OXZ	**Oxford**	**16.95**	**209**	*e*Pn	**Pn**	**04 49 11.4**	**-4.8**
	93nm,1.1s						
OXZ				*e*Sn	Sn	04 52 09.2	-14
MQZ	**McQueen's Vall**	**17.01**	**207**	PN	**Pn**	**04 49 12.6**	**-4.3**
MQZ				*e*SN	Sn	04 52 07.2	-18
RAR	**Rarotonga**	**17.17**	**67**	LR	LR	04 54 58.6	
	comp=Z,999nm,20.5s,baz=242,slow=34						
RAR	**Rarotonga**	**17.17**	**67**	*e*P	**Pn**	**04 49 18.5**	**-0.6**
RAR				pmax	pmax		
	comp=Z,57nm,0.9s						
RAR	**Rarotonga**	**17.17**	**67**	*e*Pn	**Pn**	**04 49 18.5**	**-0.6**
	comp=Z,57nm,0.9s						
RPZ	**Rata Peaks**	**17.69**	**210**	P	**Pn**	**04 49 21.1**	**-4.3**
	comp=Z,5.0nm,0.3s,baz=29,slow=2.4,SNR=14						
RPZ				S	Sn	04 52 25.1	-16
	comp=Z,1.2nm,0.3s,baz=342,slow=20,SNR=4.5						
RPZ				LR	LR	04 56 50.5	
	comp=Z,2μm,18.2s,baz=46,slow=39						
RPZ	**Rata Peaks**	**17.69**	**210**	*e*Pn	**Pn**	**04 49 22.8**	**-2.6**
	comp=Z,88nm,1.4s						
RPZ				S	Sn	04 52 25.1	-16
FOZ	**Fox Glacier**	**18.12**	**213**	PN	**Pn**	**04 49 27.3**	**-3.3**
ODZ	**Otahua Downs**	**18.93**	**209**	*e*P	**P**	**04 49 39.1**	**-0.5**
	comp=Z,48nm,1.0s						
JCZ	**Jackson Bay**	**19.02**	**214**	PN	**P**	**04 49 38.3**	**-2.5**
TBI	**Tubuai**	**25.08**	**84**	*e*LQ	LQ	04 55 30.2	
	comp=Z,4μm,27.8s						
TBI				*e*LR	LR	04 56 35.1	
	comp=Z,3μm,29.5s						
TBI	**Tubuai**	**25.08**	**84**	*e*T	T	05 16 12.9	
	comp=Z,12nm,0.3s						
PAE	**Paea**	**27.28**	**72**	*e*T	T	05 18 56.8	
	comp=Z,4.6nm,0.3s						
PPT2	**Papeete2**	**27.32**	**72**	*e*LQ	LQ	04 56 22.3	
	comp=Z,4μm,24.2s						
PPT2				*e*LR	LR	04 57 40.1	
	comp=Z,2μm,29.8s						
PPT2	**Papeete2**	**27.32**	**72**	*e*T	T	05 19 00.3	
	comp=Z,4.7nm,0.3s						
PPT	**Papeete**	**27.33**	**71**	LR	LR	04 59 30.8	
	comp=Z,465nm,21.2s,baz=249,slow=31						
ARMA	**Armidale**	**27.48**	**259**	*e*P	**P**	**04 51 06.9**	**+1.9**
	comp=Z,26nm,1.4s						
TVO	**Taravao**	**27.50**	**72**	*e*T	T	05 19 13.3	
	comp=Z,1.3nm,0.4s						
CAN	**Canberra**	**29.61**	**249**	*e*P	**P**	**04 51 25.3**	**+1.5**
CAN				pmax	pmax		
	comp=Z,30nm,1.1s						
CAN	**Canberra**	**29.61**	**249**	*e*P	**P**	**04 51 25.3**	**+1.5**
	comp=Z,30nm,1.1s						
CTA	**Charters Tower**	**34.70**	**276**	P	**P**	**04 52 08.2**	**-0.3**
	comp=Z,12nm,1.0s,baz=87,slow=12,SNR=6.0						
CTAO	**Charters Tower**	**34.70**	**276**	*e*P	**P**	**04 52 06.7**	**-1.8**
CTAO				pmax	pmax		
	comp=Z,33nm,1.3s						
CTAO	**Charters Tower**	**34.70**	**276**	*e*P	**P**	**04 52 06.7**	**-1.8**
	comp=Z,33nm,1.3s						
STKA	**Stephens Creek**	**35.90**	**255**	P	**P**	**04 52 19.3**	**+0.5**
	comp=Z,6.3nm,0.6s,baz=97,slow=14,SNR=9.9						
STKA				LR	LR	05 06 06.0	
	comp=Z,635nm,18.5s,baz=92,slow=35						
STKA	**Stephens Creek**	**35.90**	**255**	*e*P	**P**	**04 52 21.2**	**+2.4**
STKA				pmax	pmax		
	comp=Z,2.0nm,0.8s						
STKA	**Stephens Creek**	**35.90**	**255**	*e*P	**P**	**04 52 21.1**	**+2.4**
	comp=Z,2.3nm,0.8s						
RKT	**Rikitea**	**37.83**	**91**	*e*LQ	LQ	05 00 52.8	
	comp=Z,806nm,23.0s						
RKT				*e*LR	LR	05 02 27.0	
	comp=Z,2μm,29.0s,baz=257						
PMG	**Port Moresby**	**39.02**	**293**	*e*P	**P**	**04 52 44.6**	**-0.8**
PMG				pmax	pmax		
	comp=Z,29nm,1.1s						
PMG	**Port Moresby**	**39.02**	**293**	*e*P	**P**	**04 52 44.5**	**-0.8**
	comp=Z,29nm,1.1s						
TAOE	**Nuku Hiva Isla**	**39.73**	**67**	*e*S	**S**	**04 58 46.4**	**-6.6**
	comp=Z,327nm,24.2s						
TAOE				*e*LQ	LQ	05 01 49.4	
	comp=Z,2μm,28.3s						
TAOE				*e*LR	LR	05 03 24.7	
	comp=Z,522nm,22.5s						
COEN	**Coen**	**39.97**	**283**	*e*P	**P**	**04 52 52.4**	**-0.9**
	comp=Z,11nm,0.9s						
AS01	**Alice Springs**	**44.27**	**265**	*e*P	**P**	**04 53 25.4**	**-2.9**
AS31	**Alice Springs**	**44.31**	**265**	*e*P	**P**	**04 53 27.9**	**-0.7**
	comp=Z,7.1nm,1.2s						
ASAR	**Alice Springs**	**44.31**	**265**	P	**P**	**04 53 27.8**	**-0.9**
	comp=Z,11nm,1.0s,baz=122,slow=8.0,SNR=44						
ASAR				LR	LR	05 12 27.1	
	comp=Z,2μm,18.2s,baz=110,slow=37						
WB2	**Warramunga Arr**	**45.16**	**270**	*e*P	**P**	**04 53 34.4**	**-1.0**
	comp=Z,31nm,1.1s						
WRAB	**Tennant Creek**	**45.16**	**270**	*e*P	**P**	**04 53 33.9**	**-1.6**
WRAB				*e*		04 55 15.5	
WRAB				pmax	pmax		
	comp=Z,33nm,1.2s						
WRAB	**Tennant Creek**	**45.16**	**270**	*e*P	**P**	**04 53 33.9**	**-1.6**
	comp=Z,33nm,1.2s						
WRAB				*e*PcP	**PcP**	**04 55 15.5**	**0.0**
WRA	**Warramunga Arr**	**45.17**	**270**	P	**P**	**04 53 34.3**	**-1.2**
	comp=Z,16nm,1.0s,baz=107,slow=7.9,SNR=25						
WRA				PcP	**PcP**	**04 55 16.0**	**+0.5**
	comp=Z,12nm,1.2s,baz=102,slow=3.9,SNR=8.5						
WRA				LR	LR	05 10 04.9	
	comp=Z,541nm,20.3s,baz=110,slow=33						
SBA	**Scott Base**	**49.57**	**185**	*e*P	**P**	**04 54 12.8**	**+3.9**
SBA				pmax	pmax		
	comp=Z,41nm,1.2s						
SBA	**Scott Base**	**49.57**	**185**	*e*P	**P**	**04 54 12.8**	**+3.9**
	comp=Z,41nm,1.2s						
VNDA	**Vanda**	**49.65**	**186**	P	**P**	**04 54 11.4**	**+1.9**
	comp=Z,7.9nm,1.1s,baz=13,slow=6.9,SNR=9.5						
VNDA				LR	LR	05 11 34.2	
	comp=Z,272nm,20.5s,baz=26,slow=32						
VNDA	**Vanda**	**49.65**	**186**	*e*P	**P**	**04 54 13.3**	**+3.8**
	comp=Z,20nm,1.3s						
FITZ	**Fitzroy Crossi**	**53.48**	**268**	LR	LR	05 16 10.8	
	comp=Z,437nm,19.2s,slow=35						
FITZ	**Fitzroy Crossi**	**53.48**	**268**	*e*P	**P**	**04 54 38.0**	**-1.0**
	comp=Z,28nm,1.3s						
GUMO	**Guam**	**56.26**	**313**	LR	LR	05 16 12.0	
	comp=Z,282nm,21.9s,baz=122,slow=33						
CASY	**Casey**	**56.94**	**207**	*e*P	**P**	**04 55 03.8**	**+0.6**
	comp=Z,88nm,1.1s						
MBWA	**Marble Bar**	**57.50**	**262**	*e*P	**P**	**04 55 06.5**	**-1.4**
	comp=Z,19nm,0.9s						
SOEI	**Soe**	**58.26**	**277**	*e*P	**P**	**04 55 13.3**	**-0.1**
	comp=Z,51nm,1.3s						
MMRI	**Maumere**	**60.55**	**277**	*e*P	**P**	**04 55 28.1**	**-1.1**
LUWI	**Luwuk**	**63.88**	**284**	*e*P	**P**	**04 55 51.9**	**+0.5**
	comp=Z,31nm,0.6s						
MIR	**Mirnyy**	**63.91**	**206**	*i* P	**P**	**04 55 53.0**	**+2.2**
MIR				pmax	pmax		
	comp=Z,12nm,1.2s						
JCJ	**Chichijima**	**68.23**	**321**	LR	LR	05 20 00.1	
	comp=Z,220nm,21.7s,baz=172,slow=31						
PMSA	**Palmer Station**	**73.13**	**156**	LR	LR	05 23 20.6	
	comp=Z,378nm,18.7s,baz=289,slow=31						
MAW	**Mawson**	**74.05**	**200**	P	**P**	**04 56 55.7**	**+2.0**
	comp=Z,40nm,1.1s,baz=115,slow=7.1,SNR=30						
MAW				LR	LR	05 30 37.1	
	comp=Z,440nm,18.0s,baz=86,slow=37						
MAW	**Mawson**	**74.05**	**200**	*e*P	**P**	**04 56 56.2**	**+2.5**
MAW				pmax	pmax		
	comp=Z,15nm,1.2s						
MAW	**Mawson**	**74.05**	**200**	*e*P	**P**	**04 56 56.2**	**+2.5**
	comp=Z,15nm,1.2s						
MJAR	**Matsushiro Arr**	**77.69**	**324**	P	**P**	**04 57 13.8**	**-1.1**
	comp=Z,5.8nm,0.9s,baz=159,slow=6.1,SNR=15						
MJAR				LR	LR	05 27 09.0	
	comp=Z,160nm,20.6s,baz=120,slow=32						
MAJO	**Matsushiro**	**77.69**	**324**	*i* P	**P**	**04 57 13.0**	**-1.9**
MAJO				pmax	pmax		
	comp=Z,75nm,1.1s						
MAJO	**Matsushiro**	**77.69**	**324**	*e*P	**P**	**04 57 13.7**	**-1.2**
	comp=Z,37nm,0.5s						
MAT	**Matsushiro**	**77.69**	**324**	P	P	04 57 09.3	-5.6
SYO	**Syowa Base**	**78.77**	**193**	*e*P	**P**	**04 57 19.4**	**-1.0**
JNU	**Nakatsue**	**79.22**	**317**	P	**P**	**04 57 22.1**	**-1.3**
	comp=Z,22nm,1.2s,baz=82,slow=4.6,SNR=5.2						
JNU				LR	LR	05 30 49.2	
	comp=Z,72nm,18.1s,baz=117,slow=35						
JNU	**Nakatsue**	**79.22**	**317**	*e*P	**P**	**04 57 22.5**	**-0.9**
	comp=Z,38nm,1.4s						
SNAA	**Sanae**	**79.57**	**178**	P	**P**	**04 57 26.2**	**+1.3**
SNAA	**Sanae**	**79.57**	**178**	*e*P	**P**	**04 57 25.0**	**+0.1**
SNAA				pmax	pmax		
	comp=Z,906nm,1.0s						
SNAA	**Sanae**	**79.57**	**178**	*e*P	**P**	**04 57 25.5**	**+0.6**
	comp=Z,1μm,1.1s						
VNA3	**Neumayer Olymp**	**79.67**	**176**	P	**P**	**04 57 26.7**	**+1.3**
VNA2	**Neumayer--Watz**	**80.12**	**176**	P	**P**	**04 57 29.1**	**+1.3**
	baz=172,slow=5.4						
VNA1	**Neumayer--Stat**	**80.35**	**176**	P	**P**	**04 57 30.3**	**+1.3**
NVL	**N'lazarevskaya**	**80.38**	**183**	*e*P	**P**	**04 57 30.0**	**+0.8**
SCZ2	**Santa Cruz Isl**	**82.67**	**45**	P	**P**	**04 57 44.7**	**+2.9**
	baz=228						
PLCA	**Paso Flores**	**82.68**	**133**	P	**P**	**04 57 43.1**	**+1.0**
	comp=Z,8.2nm,1.0s,baz=247,slow=5.8,SNR=11						
PLCA				LR	LR	05 27 00.0	
	comp=Z,241nm,19.5s,baz=299,slow=30						
PLCA	**Paso Flores**	**82.68**	**133**	*e*P	**P**	**04 57 43.5**	**+1.4**
PLCA				*e**PP	**pP**	**04 57 52.4**	**-0.7**
PLCA	**Paso Flores**	**82.68**	**133**	*e*P	**P**	**04 57 43.5**	**+1.4**
PLCA				*e*pP	**pP**	**04 57 52.4**	**-0.7**
LPIG	**La Paz**	**82.83**	**58**	LR	LR	05 27 13.2	
	comp=Z,353nm,19.5s,baz=210,slow=30						
SMMC	**Simmler**	**83.34**	**44**	P	**P**	**04 57 47.9**	**+2.7**
	baz=228						
ARVC	**Arvin**	**83.92**	**44**	P	**P**	**04 57 49.1**	**+1.0**
	baz=228						
YSS	**Yuzh-Sakhalins**	**83.93**	**333**	*e*P	**P**	**04 57 48.3**	**+0.4**
YSS				*e*		04 57 58.5	
YSS				*e*		04 58 03.2	
YSS				pmax	pmax		
	comp=Z,30nm,0.9s						
YSS	**Yuzh-Sakhalins**	**83.93**	**333**	*e*P	**P**	**04 57 48.0**	**+0.1**
	comp=Z,24nm,0.8s						
MURC	**Murrieta**	**83.94**	**46**	P	**P**	**04 57 49.1**	**+0.7**
	baz=230						
KSRS	**Korea Array**	**83.97**	**319**	P	**P**	**04 57 46.9**	**-1.5**
	comp=Z,4.5nm,1.1s,baz=151,slow=6.0,SNR=7.2						
KSRS				LR	LR	05 31 10.5	
	comp=Z,152nm,20.0s,baz=122,slow=33						
KSRS	**Korea Array**	**83.97**	**319**	P	**P**	**04 57 46.9**	**-1.5**
KSRS				pmax	pmax		
	comp=Z,2.0nm,0.8s						
MONP2	**Monument Peak**	**83.97**	**47**	P	**P**	**04 57 49.4**	**+0.6**
	baz=230						
KSAR	**Wonju Array Be**	**83.98**	**319**	P	**P**	**04 57 46.9**	**-1.5**
KSAR	**Wonju Array Be**	**83.98**	**319**	P	**P**	**04 57 46.9**	**-1.5**
KS01	**Wonju Array Si**	**84.00**	**319**	*e*P	**P**	**04 57 48.3**	**-0.2**
BFSC	**Mount Baldy Ra**	**84.06**	**46**	P	**P**	**04 57 49.6**	**+0.5**
	baz=229						
EDW2	**Edwards Air Fo**	**84.27**	**45**	P	**P**	**04 57 50.5**	**+0.5**
	baz=229,SNR=5.0						
PET	**Petropavlovsk**	**84.40**	**345**	*e*P	**P**	**04 57 51.6**	**+1.5**
PET				*e*S	**S**	**05 08 15.3**	**+1.9**
PET				*e*SSS	SSS	05 17 14.9	
PET				pmax	pmax		
	comp=Z,100nm,11.7s						
SWSC	**Sam W. Stewart**	**84.41**	**48**	P	**P**	**04 57 51.5**	**+0.8**
	baz=230						
PFO	**Pinyon Flats O**	**84.41**	**47**	P	**P**	**04 57 51.8**	**+0.9**
	baz=230						
PFO	**Pinyon Flats O**	**84.41**	**47**	*e*P	**P**	**04 57 51.1**	**+0.2**
PFO				pmax	pmax		
	comp=Z,21nm,1.4s						
PFO	**Pinyon Flats O**	**84.41**	**47**	*e*P	**P**	**04 57 51.1**	**+0.2**
	comp=Z,21nm,1.4s						
ISA	**Isabella, Lake**	**84.49**	**44**	P	**P**	**04 57 52.2**	**+1.0**
	baz=229						
ISA	**Isabella, Lake**	**84.49**	**44**	*e*P	**P**	**04 57 52.3**	**+1.1**
ISA				pmax	pmax		
	comp=Z,10.0nm,0.8s						
ISA	**Isabella, Lake**	**84.49**	**44**	*e*P	**P**	**04 57 52.3**	**+1.1**
	comp=Z,10nm,0.8s						
PETK	**Petropavlovsk-**	**84.69**	**345**	P	**P**	**04 57 51.1**	**-0.5**
	comp=Z,9.1nm,0.9s,baz=132,slow=6.6,SNR=5.5						
PETK				LR	LR	05 31 25.0	
	comp=Z,308nm,19.8s,baz=167,slow=33						
LRMC	**Laurel Mtn Rad**	**84.86**	**45**	P	**P**	**04 57 53.7**	**+0.6**
	baz=229						
CMB	**Columbia Colle**	**84.95**	**41**	*e*P	**P**	**04 57 54.0**	**+0.6**
CMB	**Columbia Colle**	**84.95**	**41**	*e*P	**P**	**04 57 54.0**	**+0.6**
BELC	**Belle Mtn. Jos**	**84.95**	**47**	P	**P**	**04 57 54.4**	**+0.7**
	baz=230,SNR=9.1						
BC3	**Big Chuckawall**	**85.08**	**47**	P	**P**	**04 57 55.2**	**+1.0**
	baz=231,SNR=7.5						
GLA	**Glamis**	**85.11**	**48**	P	**P**	**04 57 55.4**	**+1.1**
	baz=231						
GLA	**Glamis**	**85.11**	**48**	*e*P	**P**	**04 57 56.4**	**+2.1**
GLA	**Glamis**	**85.11**	**48**	*e*P	**P**	**04 57 56.4**	**+2.1**
AFDM	**Forest Hills D**	**85.23**	**40**	*e*P	**P**	**04 57 55.2**	**+0.4**
HSIG		**85.27**	**53**	*e*P	**P**	**04 57 55.7**	**+0.5**
HEC	**Hector,Ludlow**	**85.27**	**46**	P	**P**	**04 57 55.6**	**+0.4**
	baz=230,SNR=5.6						
GSC	**Goldstone, Bar**	**85.28**	**45**	P	**P**	**04 57 56.0**	**+0.8**
	baz=230,SNR=7.0						
GSC	**Goldstone, Bar**	**85.28**	**45**	*e*P	**P**	**04 57 56.2**	**+1.0**
GSC				*e**PP	**pP**	**04 58 05.0**	**-1.3**
GSC	**Goldstone, Bar**	**85.28**	**45**	*e*P	**P**	**04 57 56.2**	**+1.0**
GSC				*e*pP	**pP**	**04 58 05.0**	**-1.3**
MPMC	**Manual Prospec**	**85.35**	**44**	P	**P**	**04 57 56.1**	**+0.4**
	baz=229,SNR=14						
IPM	**Ipoh**	**85.38**	**278**	*e*P	**P**	**04 57 55.7**	**-0.4**
	comp=Z,5.9nm,0.6s						
DAC	**Darwin (Calif)**	**85.43**	**44**	*e*P	**P**	**04 57 56.8**	**+0.7**
DAC	**Darwin (Calif)**	**85.43**	**44**	*e*P	**P**	**04 57 56.8**	**+0.7**
WDC	**Whiskeytown Da**	**85.49**	**38**	*e*P	**P**	**04 57 57.0**	**+1.0**
WDC	**Whiskeytown Da**	**85.49**	**38**	*e*P	**P**	**04 57 57.0**	**+1.0**
MLAC	**Mammoth, Mammo**	**85.58**	**42**	P	**P**	**04 57 57.3**	**+0.5**
	baz=228						
IRM	**Iron Mountain**	**85.60**	**47**	P	**P**	**04 57 57.4**	**+0.7**
	baz=231,SNR=8.8						
113A	**Mohawk Valley,**	**85.63**	**49**	*e*P	**P**	**04 57 58.0**	**+1.2**
GMRC	**Granite Mounta**	**85.67**	**46**	P	**P**	**04 57 57.3**	**+0.1**
	baz=230						
N02D	**Trinity Center**	**85.68**	**38**	P	**P**	**04 57 57.9**	**+0.9**
	baz=226,SNR=5.4						
O03D	**Paynes Creek**	**85.70**	**39**	P	**P**	**04 57 57.0**	**-0.1**
	baz=226,SNR=5.9						
Y12C	**Blythe**	**85.75**	**48**	P	**P**	**04 57 58.1**	**+0.8**
	baz=231						
214A	**Organ Pipe Nat**	**85.76**	**50**	P	**P**	**04 57 57.7**	**+0.2**
	baz=232						
WAKR	**Walker**	**85.81**	**41**	*e*P	**P**	**04 57 58.8**	**+0.9**
M02C	**Callahan**	**85.90**	**38**	P	**P**	**04 57 59.0**	**+0.9**
	baz=225,SNR=9.1						
TUQ	**Turquoise Moun**	**85.92**	**46**	P	**P**	**04 57 59.0**	**+0.6**
	baz=230						
SHOC	**Shoshone, Teco**	**86.00**	**45**	P	**P**	**04 57 58.7**	**0.0**
	baz=230,SNR=7.9						
FURC	**Furnace Creek,**	**86.00**	**44**	P	**P**	**04 57 59.0**	**+0.5**
	baz=230						
GRAC	**Grapevine Rang**	**86.04**	**44**	P	**P**	**04 57 59.5**	**+0.6**
	baz=229,SNR=5.6						
L02D	**Cave Junction,**	**86.04**	**37**	P	**P**	**04 57 59.7**	**+1.0**
	baz=225						
NJ2	**Nanjing**	**86.15**	**310**	*e*P	**P**	**04 57 58.4**	**-1.0**
NJ2				pmax	pm

TXAR	**Lajitas Array**	**90.67**	**57**	P		**P**	**04 58 21.9**	**+0.7**
	comp=Z,4.2nm,1.1s,baz=214,slow=6.0,SNR=22							
TXAR				LR		LR	05 32 00.3	
	comp=Z,196nm,19.4s,baz=0.0,slow=31							
MNTX	**Cornudas Mount**	**90.74**	**54**	P		**P**	**04 58 22.1**	**+0.8**
	baz=236							
MNTX	**Cornudas Mount**	**90.74**	**54**	*e*P		**P**	**04 58 22.0**	**+0.7**
DUG	**Dugway, Tooele**	**90.83**	**43**	P		**P**	**04 58 22.5**	**+0.8**
	baz=232							
LAZ	**Ladron**	**91.04**	**51**	*e*P		**P**	**04 58 24.2**	**+1.3**
B05A	**Bryant**	**91.11**	**33**	P		**P**	**04 58 23.7**	**+1.2**
	baz=226							
NLU	**North Lily Min**	**91.12**	**44**	*e*P		**P**	**04 58 24.2**	**+1.0**
A04D	**Lummi Island**	**91.14**	**32**	P		**P**	**04 58 24.0**	**+1.3**
	baz=225							
TMUT	**Trail Mountain**	**91.26**	**45**	*e*P		**P**	**04 58 25.4**	**+1.5**
MPU	**Maple Canyon**	**91.43**	**44**	*e*P		**P**	**04 58 25.9**	**+1.4**
SRU	**San Rafael Swe**	**91.57**	**45**	*e*P		**P**	**04 58 26.4**	**+1.2**
SRU	**San Rafael Swe**	**91.57**	**45**	*e*P		**P**	**04 58 26.4**	**+1.2**
P17A	**Butcher Ranch,**	**91.65**	**45**	*e*P		**P**	**04 58 27.1**	**+1.5**
ENH	**Enshi**	**91.70**	**304**	*e*P		**P**	**04 58 25.6**	**-0.2**
	comp=Z,28nm,1.2s							
MVCO	**Mesa Verde**	**91.75**	**48**	P		**P**	**04 58 26.5**	**+0.3**
	baz=235							
GYA	**Guiyang**	**91.79**	**299**	P		**P**	**04 58 27.0**	**+0.5**
GYA				pP		pP	04 58 37.4	-0.2
GYA				PP		**PP**	**05 02 08.2**	**+2.2**
GYA				SKS		**SKSac**	**05 08 55.4**	**-1.5**
GYA				S		**S**	**05 09 22.6**	**-2.7**
GYA				sS		sS	05 09 39.3	-4.5
GYA				SS		**SS**	**05 15 34.0**	**-0.1**
GYA				pmax		pmax		
	comp=Z,20nm,1.0s							
GYA				pmax		pmax		
	comp=Z,120nm,5.2s							
GYA				LR		LR		
	comp=Z,490nm,20.1s							
GYA				LR		LR		
	comp=Z,460nm,20.4s							
GYA				LR		LR		
	comp=Z,440nm,20.6s							
ANMO	**Albuquerque**	**91.81**	**51**	P		**P**	**04 58 27.0**	**+0.6**
	baz=236							
ANMO	**Albuquerque**	**91.81**	**51**	*i* P		**P**	**04 58 23.7**	**-2.7**
ANMO				pmax		pmax		
	comp=Z,5.0nm,1.1s							
ANMO	**Albuquerque**	**91.81**	**51**	*e*P		**P**	**04 58 27.2**	**+0.8**
HVU	**Hansel Valley**	**91.82**	**42**	*e*P		**P**	**04 58 27.1**	**+0.8**
HVU	**Hansel Valley**	**91.82**	**42**	*e*P		**P**	**04 58 27.1**	**+0.8**
HLID	**Hailey**	**91.99**	**40**	P		**P**	**04 58 27.8**	**+0.8**
	baz=231							
HLID	**Hailey**	**91.99**	**40**	*e*P		**P**	**04 58 27.9**	**+0.8**
F10A	**Beach Ranch, E**	**92.00**	**37**	*e*P		**P**	**04 58 26.8**	**-0.2**
MA2	**Magadan**	**92.19**	**344**	P		**P**	**04 58 24.9**	**-2.4**
	comp=Z,1.2nm,0.3s,baz=165,slow=17,SNR=2.9							
MA2				LR		LR	05 37 07.8	
	comp=Z,188nm,18.4s,baz=173,slow=34							
TCUT	**Toone Canyon**	**92.23**	**43**	*e*P		**P**	**04 58 29.6**	**+1.3**
BJI	**Beijing**	**92.67**	**315**	P		P	04 58 38.6	+8.6
BJI				PP		**PP**	**05 02 11.2**	**-1.3**
BJI	**Beijing**	**92.67**	**315**	SKS		**SKSac**	**05 09 05.5**	**+4.6**
BJI	**Beijing**	**92.67**	**315**	S		**S**	**05 09 35.1**	**+2.9**
BJI	**Beijing**	**92.67**	**315**	SS		SS	05 15 45.6	-0.3
BJI				pmax		pmax		
	comp=Z,11nm,0.9s							
BJI				pmax		pmax		
	comp=Z,130nm,5.0s							
BJI				LR		LR		
	comp=N,170nm,26.2s							
BJI				LR		LR		
	comp=E,120nm,25.5s							
BJI				LR		LR		
	comp=Z,280nm,49.8s							
RAGM	**Ragged Mountai**	**92.81**	**15**	*e*P		**P**	**04 58 32.1**	**+1.9**
832A	**Faith Ranch, C**	**92.86**	**59**	P		**P**	**04 58 32.0**	**+0.8**
	baz=239							
933A	**Laredo**	**93.05**	**60**	P		**P**	**04 58 32.9**	**+0.8**
	baz=239							
S22A	**4UR Ranch, Cre**	**93.14**	**48**	P		**P**	**04 58 33.3**	**+0.6**
	baz=236							
034A	**Hebbronville**	**93.22**	**61**	P		**P**	**04 58 34.3**	**+1.4**
	baz=239							
AHID	**Auburn Hatcher**	**93.41**	**42**	*e*P		**P**	**04 58 34.8**	**+1.1**
934A	**Benavides**	**93.61**	**61**	P		**P**	**04 58 35.5**	**+0.8**
	baz=239							
MCMT	**McKenzie Canyo**	**93.66**	**40**	*e*P		**P**	**04 58 35.7**	**+0.9**
MSTX	**Muleshoe**	**93.82**	**53**	P		**P**	**04 58 35.9**	**+0.3**
	baz=238							
MSTX	**Muleshoe**	**93.82**	**53**	*e*P		**P**	**04 58 35.7**	**+0.1**
	comp=Z,6.4nm,0.8s							
REDW	**Red Top Meadow**	**93.91**	**42**	*e*P		**P**	**04 58 36.4**	**+0.4**
CMAR	**Chiang Mai Arr**	**93.97**	**289**	P		**P**	**04 58 36.4**	**-0.2**
	comp=Z,0.4nm,0.4s,baz=123,slow=2.8,SNR=5.2							
CMAR				LR		LR	05 42 29.9	
	comp=Z,48nm,19.4s,baz=170,slow=37							
FXWY	**Fox Creek**	**93.97**	**42**	*e*P		**P**	**04 58 36.9**	**+0.7**
SNOW	**Snow King Moun**	**94.03**	**42**	*e*P		**P**	**04 58 37.3**	**+0.8**
	comp=Z,11nm,1.1s							
XAN	**Xi'an**	**94.12**	**307**	P		**P**	**04 58 37.5**	**+0.6**
XAN				pmax		pmax		
	comp=Z,7.0nm,1.3s							
XAN				pmax		pmax		
	comp=Z,32nm,8.1s							
DLMT	**Dillon**	**94.12**	**39**	*e*P		**P**	**04 58 37.7**	**+0.9**
KMI	**Kunming**	**94.16**	**296**	P		**P**	**04 58 38.3**	**+0.8**
KMI				pP		pP	04 58 48.4	-0.3
KMI				sP		sP	04 58 52.1	-0.6
KMI				PP		**PP**	**05 02 24.1**	**-0.6**
KMI				S		**S**	**05 09 41.8**	**-4.7**
KMI				sS		sS	05 09 59.4	-5.6
KMI				SS		**SS**	**05 16 07.7**	**-0.5**
KMI				pmax		pmax		
	comp=Z,9.0nm,0.9s							
KMI				pmax		pmax		
	comp=Z,140nm,6.9s							
KMI				LR		LR		
	comp=Z,200nm,16.0s							
KMI				LR		LR		
	comp=Z,220nm,15.5s							
KMI				LR		LR		
	comp=Z,140nm,15.2s							
MOOW	**Moose Ponds**	**94.20**	**42**	*e*P		**P**	**04 58 38.3**	**+1.0**
LOHW	**Long Hollow**	**94.21**	**42**	*e*P		**P**	**04 58 38.2**	**+0.9**
MSO	**Missoula**	**94.30**	**38**	P		**P**	**04 58 38.1**	**+0.6**
	baz=232							
BW06	**Boulder Array**	**94.32**	**43**	P		**P**	**04 58 38.3**	**+0.4**
	baz=234							
BW06	**Boulder Array**	**94.32**	**43**	*e*P		**P**	**04 58 38.3**	**+0.4**
PD31	**Pinedale Array**	**94.32**	**43**	*e*P		**P**	**04 58 38.7**	**+0.8**
PDAR	**Pinedale Array**	**94.32**	**43**	P		**P**	**04 58 37.6**	**-0.3**
	comp=Z,1.9nm,1.0s,baz=228,slow=3.8,SNR=8.3							
PDAR				PKKPbc		**PKKPdf**	**05 15 36.3**	**-2.7**
	comp=Z,0.6nm,0.9s,baz=49,slow=4.5,SNR=4.8							
PDAR				LR		LR	05 37 03.1	
	comp=Z,277nm,18.1s,baz=252,slow=33							
T25A	**Trinidad**	**94.40**	**50**	P		**P**	**04 58 38.8**	**+0.4**
	baz=237							
FLWY	**Flagg Ranch**	**94.43**	**41**	*e*P		**P**	**04 58 39.2**	**+0.9**
	comp=Z,10.0nm,1.2s							
QLMT	**Earthquake Lak**	**94.46**	**40**	*e*P		**P**	**04 58 40.2**	**+1.8**
835A	**Beeville**	**94.49**	**60**	P		**P**	**04 58 38.6**	**-0.1**
	baz=240							
YMR	**Madison River**	**94.63**	**41**	*e*P		**P**	**04 58 40.5**	**+1.2**
735A	**Kenedy**	**94.79**	**60**	P		**P**	**04 58 40.4**	**+0.4**
	baz=240							
433A	**Art**	**94.79**	**58**	P		**P**	**04 58 39.7**	**-0.4**
	baz=239							
SEY	**Seymchan**	**94.82**	**346**	P		**P**	**04 58 38.2**	**-1.1**
	comp=Z,1.4nm,0.2s,baz=160,slow=6.4,SNR=8.9							
SEY	**Seymchan**	**94.82**	**346**	*i* P		**P**	**04 58 37.0**	**-2.3**
BOZ	**Bozeman (W)**	**94.84**	**40**	P		**P**	**04 58 40.0**	**-0.1**
	baz=233							
BOZ	**Bozeman (W)**	**94.84**	**40**	*e*P		**P**	**04 58 40.4**	**+0.3**
BOZ	**Bozeman (W)**	**94.84**	**40**	*e*P		**P**	**04 58 40.4**	**+0.3**
534A	**Blanco**	**94.88**	**58**	P		**P**	**04 58 40.9**	**+0.4**
	baz=240							
MCK	**McKinley**	**94.95**	**12**	*e*P		**P**	**04 58 39.6**	**-0.3**
MCK				pmax		pmax		
	comp=Z,17nm,1.4s							
MCK	**McKinley**	**94.95**	**12**	*e*P		**P**	**04 58 39.6**	**-0.3**
	comp=Z,17nm,1.4s							
133A	**Hamilton Ranch**	**95.86**	**56**	P		**P**	**04 58 44.8**	**-0.1**
	baz=240							
HHC	**Hu-ho-hao-te**	**96.03**	**314**	*e*P		**P**	**04 58 46.2**	**+0.6**
HHC				PP		**PP**	**05 02 41.3**	**+2.5**
HHC				S		**S**	**05 09 54.5**	**-7.3**
HHC				pmax		pmax		
	comp=Z,22nm,1.3s							
HHC				pmax		pmax		
	comp=Z,100nm,7.5s							
HHC				LR		LR		
	comp=Z,250nm,17.5s							
HHC				LR		LR		
	comp=Z,300nm,17.3s							
HHC				LR		LR		
	comp=Z,250nm,18.1s							
K22A	**Casper**	**96.09**	**44**	P		**P**	**04 58 46.4**	**+0.5**
	baz=236							
CD2	**Chengdu**	**96.25**	**302**	P		**P**	**04 58 46.6**	**-0.2**
CD2				sP		sP	04 59 00.5	-1.4
CD2				PP		**PP**	**05 02 39.5**	**-1.2**
CD2				SKS		**SKSac**	**05 09 20.3**	**-0.5**
CD2				S		**S**	**05 10 03.4**	**-0.7**
CD2				sS		sS	05 10 20.7	-2.0
CD2				SS		**SS**	**05 16 36.9**	**-0.6**
CD2				pmax		pmax		
	comp=Z,30nm,0.5s							
CD2				pmax		pmax		
	comp=Z,80nm,5.9s							
CD2				LR		LR		
	comp=Z,140nm,7.7s							
CD2				LR		LR		
	comp=Z,320nm,13.1s							
ILAR	**Eielson Array**	**96.27**	**12**	P		**P**	**04 58 45.1**	**-0.8**
	comp=Z,0.5nm,0.8s,baz=226,slow=6.2,SNR=4.1							
ILAR				LR		LR	05 35 30.3	
	comp=Z,70nm,21.2s,baz=180,slow=31							
438A	**Sam Houston St**	**97.49**	**59**	P		Pdif	04 58 53.2	+0.9
	baz=241							
BILL	**Bilibino**	**97.52**	**354**	*e*P		**P**	**04 58 51.1**	**-0.4**
BILL				*e*			04 59 01.8	
BILL				pmax		pmax		
	comp=Z,3.0nm,1.5s							
BILL				MLR		MLR		
	comp=Z,183nm,19.0s							
LPAZ	**La Paz**	**97.72**	**113**	LR		LR	05 34 57.3	
	comp=Z,88nm,19.9s,baz=230,slow=30							
RSSD	**Black Hills**	**98.41**	**44**	Pdiff		**P**	**04 58 56.4**	**0.0**
	baz=238							
RSSD	**Black Hills**	**98.41**	**44**	*e*P		**P**	**04 58 57.0**	**+0.6**
RSSD	**Black Hills**	**98.41**	**44**	*e*P		**P**	**04 58 57.0**	**+0.6**
I25A	**Rochford**	**98.54**	**44**	Pdiff		**P**	**04 58 57.5**	**+0.5**
	baz=238							
LZH	**Lanzhou**	**98.74**	**306**	*e*P		**P**	**04 58 55.0**	**-3.0**
LZH				pP		pP	04 59 05.7	-3.5
LZH				sP		sP	04 59 09.6	-3.6
LZH				PP		**PP**	**05 02 59.1**	**-0.8**
LZH				pmax		pmax		
	comp=Z,17nm,1.6s							
LZH				pmax		pmax		
	comp=Z,75nm,9.3s							
LZH				LR		LR		
	comp=Z,250nm,16.7s							
LZH				LR		LR		
	comp=Z,260nm,17.2s							
LZH				LR		LR		
	comp=Z,300nm,19.8s							
N29A	**Votaw Ranch, W**	**98.85**	**48**	Pdiff		**P**	**04 58 58.8**	**+0.6**
	baz=240							
G27A	**Dupree**	**100.35**	**44**	Pdiff		**Pdif**	**04 59 05.8**	**+1.0**
	baz=240							
MIAR	**Mount Ida**	**100.70**	**57**	Pdiff		**Pdif**	**04 59 08.1**	**+1.5**
	baz=242							
243A	**Waterproof**	**101.03**	**60**	Pdiff		**Pdif**	**04 59 09.9**	**+1.9**
	baz=243							
GTA	**Gaotai**	**103.12**	**308**	*e*P		**Pdif**	**04 59 22.6**	**+5.2**
GTA				pP			04 59 33.3	
GTA				sP			04 59 37.3	
GTA				pmax		pmax		
	comp=Z,3.0nm,0.7s							
YKA	**Yellowknife Ar**	**103.66**	**25**	PKKPbc		PKKPbc	05 15 08.1	-4.7
	comp=Z,0.4nm,0.9s,baz=62,slow=2.6,SNR=3.3							
WMQ	**Urumqi**	**113.19**	**308**	*e*PKP		**PKiKP**	**05 03 54.5**	**-1.1**
WMQ				sPKP			05 04 08.6	
WMQ				PP		**PP**	**05 04 49.3**	**+3.0**
WMQ				SKS		**SKSdf**	**05 11 02.8**	**-2.2**
WMQ				SS		**SS**	**05 20 25.7**	**-3.5**
WMQ				LR		LR		
	comp=Z,36nm,21.4s							
WMQ				LR		LR		
	comp=Z,21nm,21.4s							
ZALV	**Zalesovo Beam**	**117.68**	**319**	PKP		**PKPdf**	**05 04 02.8**	**-0.9**
	comp=Z,0.4nm,0.3s,baz=202,slow=1.6,SNR=7.1							
MKAR	**Makanchi Array**	**117.68**	**310**	PKP		**PKPdf**	**05 04 03.2**	**-0.9**
	comp=Z,3.1nm,1.0s,baz=72,slow=4.0,SNR=16							
KSH	**Kashi**	**120.44**	**301**	*e*PKP		**PKPdf**	**05 04 10.8**	**+1.0**
KSH				*es*PKP			05 04 25.3	
KSH				*e*PP		**PP**	**05 05 43.8**	**+6.7**
KSH				PKS		**PKSdf**	**05 07 48.6**	**+2.1**
KSH				SKKS			05 12 32.0	
KSH				AMB		AMB		
	comp=Z,33nm,3.8s							
KSH				LR		LR		
	comp=Z,100nm,7.8s							
KSH				LR		LR		
	comp=Z,87nm,5.3s							
KSH				LR		LR		
	comp=Z,150nm,8.1s							
KURK	**Kurchatov**	**120.83**	**314**	*e*PKIKP		**PKPdf**	**05 04 08.5**	**-1.4**
KURK	**Kurchatov**	**120.83**	**314**	*e*PKPdf		**PKPdf**	**05 04 08.5**	**-1.4**
TKM2	**Tokmak 2**	**121.47**	**305**	*e*PKIKP		**PKPdf**	**05 04 10.8**	**-0.9**
TKM2	**Tokmak 2**	**121.47**	**305**	*e*PKPdf		**PKPdf**	**05 04 10.8**	**-0.9**
AAK	**Ala-Archa**	**122.21**	**304**	*i* PKIKP		**PKPdf**	**05 04 12.1**	**-1.0**
AAK	**Ala-Archa**	**122.21**	**304**	*e*PKPdf		**PKPdf**	**05 04 12.6**	**-0.5**
EKS2	**Erkin-Say**	**122.74**	**304**	*e*PKIKP		**PKPdf**	**05 04 13.8**	**-0.3**
EKS2	**Erkin-Say**	**122.74**	**304**	*e*PKPdf		**PKPdf**	**05 04 13.8**	**-0.3**
KKAR	**Karatay Array**	**125.18**	**304**	*e*PKIKP		**PKPdf**	**05 04 18.1**	**-0.5**
KKAR	**Karatay Array**	**125.18**	**304**	*e*PKPdf		**PKPdf**	**05 04 18.1**	**-0.5**
BVAR	**Borovoye Array**	**126.12**	**316**	PKP		**PKPdf**	**05 04 19.8**	**-0.3**
	comp=Z,3.4nm,0.8s,baz=124,slow=2.6,SNR=6.2							
BRVK	**Borovoye**	**126.19**	**316**	*i* PKIKP		**PKPdf**	**05 04 18.6**	**-1.6**
BRVK				pmax		pmax		
	comp=Z,12nm,1.7s							
BRVK	**Borovoye**	**126.19**	**316**	*e*PKPdf		**PKPdf**	**05 04 20.0**	**-0.2**
LSZ	**Lusaka**	**129.87**	**212**	*e*PKIKP		**PKPdf**	**05 04 29.1**	**+0.6**
LSZ	**Lusaka**	**129.87**	**212**	*e*PKPdf		**PKPdf**	**05 04 29.1**	**+0.6**
ARU	**Arti**	**132.65**	**322**	*i* PKIKP		**PKPdf**	**05 04 31.5**	**-0.8**
ARU							05 06 53.4	
ARU				MLR		MLR		
	comp=Z,278nm,22.0s							
ARU	**Arti**	**132.65**	**322**	*e*PKPdf		**PKPdf**	**05 04 32.3**	**0.0**
ABKAR	**Akbulak array**	**132.78**	**312**	*e*PKPdf		**PKPdf**	**05 04 32.8**	**0.0**
GEYT	**Alibeck**	**133.93**	**296**	PKP		**PKPdf**	**05 04 35.8**	**+0.3**
	comp=Z,1.0nm,0.4s,baz=176,slow=4.2,SNR=3.9							
KMBO	**Kilima Mbogo**	**135.82**	**233**	PKP		**PKPdf**	**05 04 41.9**	**+1.9**
	comp=Z,0.9nm,0.3s,baz=229,slow=15,SNR=4.0							
KMBO	**Kilima Mbogo**	**135.82**	**233**	*e*PKIKP		**PKPdf**	**05 04 41.7**	**+1.7**
KMBO	**Kilima Mbogo**	**135.82**	**233**	*e*PKPdf		**PKPdf**	**05 04 41.7**	**+1.7**
ARCES	**ARCESS Array B**	**137.40**	**349**	PKP		**PKPdf**	**05 04 41.7**	**+0.8**
	comp=Z,4.6nm,0.9s,baz=4.7,slow=1.6,SNR=5.3							
RAYN	**Ar Rayn**	**141.88**	**272**	*e*PKPpre		PKPpre	05 04 46.3	
VRH	**Novokhopyorsk**	**143.71**	**319**	*e*PKHKP		PKPpre	05 04 47.4	
VRH				pmax		pmax		
	comp=Z,3.0nm,0.5s							
DGRG	**David-gareji**	**143.74**	**302**	P		PKPpre	05 04 44.7	
DGRG	**David-gareji**	**143.74**	**302**	PKHKP		PKPpre	05 04 44.7	
FINES	**FINESS Array B**	**144.14**	**341**	PKP		**PKPab**	**05 04 50.5**	**-0.4**
	comp=Z,4.3nm,0.8s,baz=43,slow=2.8,SNR=10							
GNI	**Garni**	**144.35**	**299**	*i* PKIKP		**PKPab**	**05 04 51.8**	**-0.8**
GNI	**Garni**	**144.35**	**299**	*e*PKPdf		**PKPdf**	**05 04 55.0**	**+0.5**
OBN	**Obninsk**	**144.58**	**327**	*e*PKIKP		**PKPab**	**05 04 52.0**	**-0.7**
OBN				*i*			05 04 58.6	
OBN				*e*			05 05 05.7	
OBN				pmax		pmax		
	comp=Z,29nm,1.3s							
OBN				pmax		pmax		
	comp=Z,34nm,1.5s							
ZEI	**Tsey**	**144.64**	**304**	*i* PKIKP		**PKPab**	**05 04 53.3**	**-0.3**
ZEI				pmax		pmax		
	comp=Z,55nm,1.4s							
LPSR	**Galich'ya Gora**	**144.68**	**322**	*e*PKIKP		**PKPab**	**05 04 52.1**	**-1.0**
LPSR				pmax		pmax		
	comp=Z,10.0nm,1.3s							
ONI	**Oni**	**145.00**	**304**	P		**PKPdf**	**05 04 55.9**	**+0.4**
ONI	**Oni**	**145.00**	**304**	PKIKP		**PKPdf**	**05 04 55.8**	**+0.4**
AKH	**Akhalkalaki**	**145.15**	**302**	P		**PKPdf**	**05 04 56.6**	**+0.8**
AKH	**Akhalkalaki**	**145.15**	**302**	PKIKP		**PKPdf**	**05 04 56.6**	**+0.8**
VSR	**Storozhevoye**	**145.17**	**320**	*e*PKIKP		**PKPbc**	**05 04 53.6**	**-1.3**
VSR				pmax		pmax		
	comp=Z,20nm,1.1s							
KBZ	**Khabaz**	**145.18**	**306**	PKP		**PKPbc**	**05 04 54.7**	**-0.5**
	comp=Z,3.8nm,1.1s,baz=165,slow=8.3,SNR=4.4							
KIV	**Kislovodsk**	**145.29**	**306**	*i* PKP2		**PKPbc**	**05 04 54.4**	**-1.3**
KIV				pmax		pmax		
	comp=Z,13nm,1.1s							
KIV	**Kislovodsk**	**145.29**	**306**	*e*PKPdf		**PKPab**	**05 04 56.0**	**+0.2**
NEY	**Neytrino**	**145.41**	**305**	*i* PKIKP		**PKPbc**	**05 04 54.9**	**-1.3**
VSU	**Vasula**	**146.32**	**338**	*e*PKP2		**PKPdf**	**05 04 56.6**	**-0.4**
NB2	**NORSAR Subarra1**	**147.47**	**353**	PKP		**PKPdf**	**05 05 00.4**	**+1.4**
	comp=Z,19nm,1.4s,baz=18,slow=3.1							
NOA	**NORSAR Array B**	**147.47**	**353**	PKPbc		**PKPdf**	**05 05 00.6**	**+1.6**
	comp=Z,5.4nm,0.9s,baz=14,slow=4.3,SNR=9.9							
ANN	**Anapa**	**148.69**	**310**	*i* PKIKP		**PKPdf**	**05 05 03.4**	**+2.0**
ANN				*e*			05 05 14.1	
ANN				pmax		pmax		
	comp=Z,74nm,1.2s							
KONO	**Kongsberg**	**149.00**	**354**	*i* PKHKP		PKPpre	05 04 58.7	
AKASG	**Malin Array Be**	**150.78**	**325**	PKPbc		**PKPbc**	**05 05 09.7**	**-0.4**
	comp=Z,18nm,0.9s,baz=44,slow=2.6,SNR=57							
KIEV	**Kiev**	**150.79**	**325**	*e*PKIKP		**PKPbc**	**05 05 08.9**	**-1.2**
KIEV	**Kiev**	**150.79**	**325**	*e*PKPbc		**PKPbc**	**05 05 08.9**	**-1.2**
SIM	**Simferopol'**	**150.85**	**312**	*i* PKIKP		**PKPbc**	**05 05 10.6**	**+0.1**
SIM				*e*			05 05 25.0	
SIM				pmax		pmax		
	comp=Z,15nm,0.8s							
BRTR	**Keskin Array B**	**152.83**	**301**	PKPbc		**PKPbc**	**05 05 14.9**	**-0.5**
	comp=Z,5.2nm,1.1s,baz=108,slow=2.7,SNR=14							
ESK	**Eskdalemuir**	**153.24**	**8**	*e*PKIKP		**PKPbc**	**05 05 14.5**	**-1.1**
ESK	**Eskdalemuir**	**153.24**	**8**	*e*PKPbc		**PKPbc**	**05 05 14.5**	**-1.1**
STHS	**Stebnicka Huta**	**155.38**	**331**	*e*PKP2		**PKPab**	**05 05 37.7**	**+0.9**
STHS	**Stebnicka Huta**	**155.38**	**331**	*e*PKP		**PKPab**	**05 05 37.7**	**+0.9**
UZH	**Uzhgorod**	**155.50**	**329**	*e*PKIKP		PKPab	05 05 25.1	-12
UPC	**Upice**	**156.41**	**339**	*e*PKPAB		**PKPab**	**05 05 41.3**	**+0.2**
UPC				*ex*		x	05 05 49.7	
UPC	**Upice**	**156.41**	**339**	*e*PKP2		**PKPab**	**05 05 41.3**	**+0.2**
DPC	**Dobruska-Polom**	**156.44**	**339**	*e*PKPAB		**PKPab**	**05 05 41.8**	**+0.5**
DPC				*ex*		x	05 05 49.9	
DPC	**Dobruska-Polom**	**156.44**	**339**	*e*PKP2		**PKPab**	**05 05 41.8**	**+0.5**
CLL	**Collm**	**156.50**	**345**	*e*(PKPdf)		**PKPdf**	**05 05 17.0**	**+4.3**
CLL				*i* PKPab		**PKPab**	**05 05 39.6**	**-1.8**
	comp=Z,17nm,1.7s							
CLL				*e*			05 05 49.0	
CLL				*e*SSSS			05 39 12.0	
CLL				Lm		MLR	06 23 00.0	
	comp=N,100nm,18.6s							
CLL				Lm		MLR	06 23 00.0	
	comp=E,100nm,20.5s							
CLL				Lm		MLR	06 23 00.0	
	comp=Z,200nm,18.3s							
CLL	**Collm**	**156.50**	**345**	*i* PKP2		**PKPab**	**05 05 39.6**	**-1.8**
CLL				pmax		pmax		
	comp=Z,17nm,1.7s							
BRG	**Berggiesshubel**	**156.66**	**343**	*e*PKP		**PKPab**	**05 05 35.9**	**-6.3**
	comp=Z,4.1nm,1.0s							
BRG				*e*			05 05 41.1	
	comp=Z,7.9nm,1.1s							
BRG				*e*			05 05 50.5	
	comp=Z,6.6nm,1.0s							
BRG	**Berggiesshubel**	**156.66**	**343**	*e*PKP2		**PKPab**	**05 05 35.9**	**-6.3**
BRG				pmax		pmax		
	comp=Z,4.0nm,1.0s							
VYHS	**Vyhne**	**157.09**	**333**	*e*PKP2		**PKPab**	**05 05 43.4**	**-0.7**
VYHS	**Vyhne**	**157.09**	**333**	*e*PKP		**PKPab**	**05 05 43.4**	**-0.7**
PSZ	**Piszkesteto**	**157.10**	**330**	*e*PKP2		**PKPab**	**05 05 43.3**	**-1.0**
PSZ	**Piszkesteto**	**157.10**	**330**	*e*PKPab		**PKPab**	**05 05 43.3**	**-1.0**
NKC	**Novy Kostel**	**157.63**	**344**	*e*PKPAB		**PKPab**	**05 05 46.4**	**0.0**
NKC	**Novy Kostel**	**157.63**	**344**	*e*PKP2		**PKPab**	**05 05 46.4**	**0.0**
KHC	**Kasperske Hory**	**158.35**	**341**	*e*PKPAB		**PKPab**	**05 05 49.4**	**-0.1**
KHC	**Kasperske Hory**	**158.35**	**341**	*e*PKP2		**PKPab**	**05 05 49.4**	**-0.1**
GERES	**GERESS Array B**	**158.57**	**341**	PKPab		**PKPab**	**05 05 50.2**	**-0.4**
	comp=Z,0.9nm,0.9s,baz=49,slow=1.1,SNR=6.9							
TORD	**Torodi Ar. Bea**	**164.21**	**174**	PKP		**PKPdf**	**05 05 21.3**	**-1.0**
	comp=Z,2.0nm,1.0s,baz=254,slow=0.9,SNR=7.7							
TORD				PKPab		**PKPab**	**05 06 16.5**	**+0.7**
	comp=Z,6.5nm,1.0s,baz=192,slow=3.8,SNR=14							
TIP	**Timpagrande**	**164.88**	**316**	*e*PKPab		**PKPab**	**05 06 18.5**	**0.0**
ESDC	**Sonseca Array**	**167.75**	**27**	PKPab		**PKPab**	**05 06 30

CESX	**Cesi**	**0.48**	**278**	Pg	**Pb**	**04 49 29.8**	**-0.8**
CESX				Sg	**Sb**	**04 49 37.1**	**-0.6**
	186nm,0.4s						
VCEL	**Villa Celiera**	**0.48**	**108**	Pg	**Pg**	**04 49 29.8**	**+0.4**
VCEL				Sg	**Sb**	**04 49 37.8**	**-0.1**
	606nm,0.5s						
VCEL	**Villa Celiera**	**0.48**	**108**	Pg	**Pg**	**04 49 29.8**	**+0.4**
VCEL				Sg	**Sb**	**04 49 37.8**	**-0.1**
	606nm,0.5s						
FDMO	**Fiordimonte**	**0.50**	**349**	Pg	**Pg**	**04 49 29.9**	**+0.1**
FDMO				Sg	**Sb**	**04 49 38.1**	**-0.4**
	115nm,0.3s						
FDMO	**Fiordimonte**	**0.50**	**349**	Pg	**Pg**	**04 49 29.9**	**+0.1**
FDMO				Sg	**Sb**	**04 49 38.1**	**-0.4**
	115nm,0.3s						
CESI	**CESI - Serrava**	**0.52**	**333**	Pg	**Pg**	**04 49 30.3**	**+0.2**
CESI				Sg	**Sb**	**04 49 38.8**	**-0.1**
	63nm,0.4s						
CESI	**CESI - Serrava**	**0.52**	**333**	Pg	**Pg**	**04 49 30.3**	**+0.2**
CESI				Sg	**Sb**	**04 49 38.8**	**-0.1**
	63nm,0.4s						
OFFI	**Offida**	**0.52**	**41**	Pg	**Pb**	**04 49 31.2**	**-0.1**
	945nm,0.7s						
OFFI	**Offida**	**0.52**	**41**	Pg	**Pb**	**04 49 31.2**	**-0.1**
	945nm,0.7s						
PTQR	**Pietraquaria**	**0.54**	**166**	Pg	**Pg**	**04 49 30.3**	**-0.2**
PTQR	**Pietraquaria**	**0.54**	**166**	Pg	**Pg**	**04 49 30.3**	**-0.2**
TRTR	**Tortoreto Alta**	**0.57**	**62**	Pg	**Pb**	**04 49 32.4**	**+0.2**
TRTR	**Tortoreto Alta**	**0.57**	**62**	Pg	**Pb**	**04 49 32.4**	**+0.2**
CERT	**Cerreto**	**0.62**	**197**	Pg	**Pg**	**04 49 31.7**	**-0.3**
	105nm,0.6s						
CERT	**Cerreto**	**0.62**	**197**	Pg	**Pg**	**04 49 31.7**	**-0.3**
	105nm,0.6s						
MTCE	**Montecelio**	**0.63**	**215**	Pg	**Pg**	**04 49 31.2**	**-1.0**
	65nm,0.4s						
MTCE	**Montecelio**	**0.63**	**215**	Pg	**Pg**	**04 49 31.2**	**-1.0**
	65nm,0.4s						
INTR	**Introdacqua**	**0.73**	**136**	Pg	**Pg**	**04 49 33.7**	**-0.5**
	147nm,0.7s						
INTR	**Introdacqua**	**0.73**	**136**	Pg	**Pg**	**04 49 33.7**	**-0.5**
	147nm,0.7s						
VVLD	**Villa Vallelon**	**0.73**	**156**	Pg	**Pb**	**04 49 34.5**	**-0.5**
	58nm,0.5s						
VVLD	**Villa Vallelon**	**0.73**	**156**	Pg	**Pb**	**04 49 34.5**	**-0.5**
	58nm,0.5s						
GUMA	**Gualdo di Mace**	**0.74**	**45**	Pg	**Pg**	**04 49 30.9**	**-3.4**
GUMA				Sg	**Sg**	**04 49 39.7**	**-4.2**
	983nm,0.4s						
SNTG	**Esanatoglia**	**0.74**	**344**	Pg	**Pg**	**04 49 34.1**	**-0.2**
	45nm,0.3s						
SNTG	**Esanatoglia**	**0.74**	**344**	Pg	**Pg**	**04 49 34.1**	**-0.2**
	45nm,0.3s						
CING	**Cingoli**	**0.83**	**359**	Pg	**Pg**	**04 49 35.9**	**-0.2**
	71nm,0.3s						
CING	**Cingoli**	**0.83**	**359**	Pg	**Pg**	**04 49 35.9**	**-0.2**
	71nm,0.3s						
MURB	**Monte Urbino**	**0.88**	**325**	Pg	**Pg**	**04 49 37.0**	**0.0**
	159nm,0.3s						
MURB	**Monte Urbino**	**0.88**	**325**	Pg	**Pg**	**04 49 37.0**	**0.0**
	159nm,0.3s						
MGAB	**Montegabbione**	**0.90**	**295**	Pg	**Pb**	**04 49 37.5**	**-0.2**
	108nm,0.5s						
MGAB	**Montegabbione**	**0.90**	**295**	Pg	**Pb**	**04 49 37.5**	**-0.2**
	108nm,0.5s						
POFI	**Posta Fibreno**	**0.90**	**156**	Pg	**Pb**	**04 49 37.7**	**-0.1**
	44nm,0.8s						
POFI	**Posta Fibreno**	**0.90**	**156**	Pg	**Pb**	**04 49 37.7**	**-0.1**
	44nm,0.8s						
ATTE	**AVT- Monte Tez**	**0.91**	**316**	Pg	**Pb**	**04 49 37.8**	**-0.3**
	49nm,0.4s						
ATTE	**AVT- Monte Tez**	**0.91**	**316**	Pg	**Pb**	**04 49 37.8**	**-0.3**
	49nm,0.4s						
SSFR	**Montelago di S**	**0.95**	**340**	Pg	**Pg**	**04 49 38.0**	**-0.3**
	102nm,0.2s						
SSFR	**Montelago di S**	**0.95**	**340**	Pg	**Pg**	**04 49 38.0**	**-0.3**
	102nm,0.2s						
ARVD	**Arcevia**	**0.98**	**348**	Pg	**Pg**	**04 49 38.4**	**-0.4**
	55nm,0.7s						
ARVD	**Arcevia**	**0.98**	**348**	Pg	**Pg**	**04 49 38.4**	**-0.4**
	55nm,0.7s						
GIUL	**Giuliano Di Ro**	**0.98**	**179**	Pg	**Pb**	**04 49 39.2**	**0.0**
	41nm,0.6s						
GIUL	**Giuliano Di Ro**	**0.98**	**179**	Pg	**Pb**	**04 49 39.2**	**0.0**
	41nm,0.6s						
SACS	**San Casciano d**	**1.01**	**288**	Pg	**Pb**	**04 49 39.5**	**-0.3**
TOLF	**Tolfa**	**1.02**	**243**	Pg	**Pb**	**04 49 39.8**	**-0.1**
	21nm,0.5s						
TOLF	**Tolfa**	**1.02**	**243**	Pg	**Pb**	**04 49 39.8**	**-0.1**
	21nm,0.5s						
ATVO	**AVT- Monte Val**	**1.03**	**325**	Pg	**Pg**	**04 49 39.4**	**-0.4**
	53nm,0.7s						
ATVO	**AVT- Monte Val**	**1.03**	**325**	Pg	**Pg**	**04 49 39.4**	**-0.4**
	53nm,0.7s						
FRON	**Frontone**	**1.04**	**340**	Pg	**Pg**	**04 49 39.4**	**-0.6**
	46nm,0.5s						
FRON	**Frontone**	**1.04**	**340**	Pg	**Pg**	**04 49 39.4**	**-0.6**
	46nm,0.5s						
ATPC	**Poggio Castell**	**1.09**	**329**	Pg	**Pg**	**04 49 40.8**	**-0.2**
	55nm,0.5s						
ATPC	**Poggio Castell**	**1.09**	**329**	Pg	**Pg**	**04 49 40.8**	**-0.2**
	55nm,0.5s						
PIEI	**Pieia**	**1.11**	**333**	Pg	**Pg**	**04 49 40.8**	**-0.6**
	39nm,0.7s						
PIEI	**Pieia**	**1.11**	**333**	Pg	**Pg**	**04 49 40.8**	**-0.6**
	39nm,0.7s						
CERA	**Filignano**	**1.11**	**148**	Pg	**Pg**	**04 49 41.0**	**-0.4**
CERA	**Filignano**	**1.11**	**148**	Pg	**Pg**	**04 49 41.0**	**-0.4**
MIDA	**Miranda**	**1.18**	**139**	Pg	**Pb**	**04 49 41.4**	**-1.2**
	32nm,0.6s						
MIDA	**Miranda**	**1.18**	**139**	Pg	**Pb**	**04 49 41.4**	**-1.2**
	32nm,0.6s						
BADI	**Badiali**	**1.20**	**324**	Pg	**Pb**	**04 49 42.9**	**-0.1**
	78nm,0.7s						
BADI	**Badiali**	**1.20**	**324**	Pg	**Pb**	**04 49 42.9**	**-0.1**
	78nm,0.7s						
PARC	**Parchiule**	**1.32**	**327**	Pg	**Pb**	**04 49 44.9**	**0.0**
PARC	**Parchiule**	**1.32**	**327**	Pg	**Pb**	**04 49 44.9**	**0.0**
NVLJ	**Novalja**	**2.35**	**30**	*e*Pn	**Pn**	**04 49 58.6**	**-0.1**
NVLJ				Sn	**Sn**	**04 50 27.7**	**+0.1**
NVLJ	**Novalja**	**2.35**	**30**	*e*Pn	**Pn**	**04 49 58.6**	**-0.1**
NVLJ				Sn	**Sn**	**04 50 27.7**	**+0.1**
STON	**Ston**	**3.32**	**83**	*i* Pn	**Pn**	**04 50 13.2**	**+1.2**
STON				Sn	**Sn**	**04 50 52.3**	**+0.8**
STON	**Ston**	**3.32**	**83**	*i* Pn	**Pn**	**04 50 13.2**	**+1.2**
STON				Sn	**Sn**	**04 50 52.2**	**+0.8**

*IDC **10** 04:49:31.3±0.6,28.°65S×176.°72W,h0km,mb4.2/8, mb1 4.5/8,mb1mx4.2/31,mbtmp4.2/8,MS4.2/1,Ms1 4.2/1, ms1mx3.3/34,Error ellipse: s-maj=34.4km s-min=15.2km az=153.0*

*ISCJB **10** 04:49:35.5±0.4,28.°96S±0.°08×176.°93W±0.°09,h36km, mb4.6/20,MS4.2/1, Error ellipse: s-maj=13.5km s-min=8.8km az=42.1*

*NEIC **10** 04:49:36.6±1.9,28.°85S×176.°81W,h36km±16km,mb4.6/10, Error ellipse: s-maj=14.5km s-min=13.6km az=180.0*

ISC 10 04:49:36.7±0.5,28.°98S±0.°08×176.°69W±0.°08,h36km,n48, σ1℘42/49,mb4.5/20,1C-1D,Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
RAO	**Raoul Island**	**1.11**	**255**	Pn	**Pn**	**04 49 56.5**	**+0.8**
	224nm,0.3s,baz=288,slow=20,SNR=9.9						
RAO				Sn	**Sn**	**04 50 13.3**	**+3.6**
	740nm,0.3s,baz=216,slow=22,SNR=5.7						
OUZ	**Omahuta**	**10.32**	**230**	*e*Pn	**Pn**	**04 52 02.4**	**+0.2**
URZ	**Urewera**	**10.60**	**208**	Sn	**Sn**	**04 54 00.6**	**-2.8**
	1.2nm,0.3s,baz=238,slow=20,SNR=4.0						
URZ	**Urewera**	**10.60**	**208**	*e*Pn	**Pn**	**04 52 05.2**	**-0.8**
URZ				Sn	**Sn**	**04 54 00.6**	**-2.8**
KHZ	**Kahutara**	**15.57**	**208**	*e*Pn	**Pn**	**04 53 11.5**	**-1.8**
RPZ	**Rata Peaks**	**17.69**	**210**	*e*Pn	**P**	**04 53 41.1**	**+0.4**
ODZ	**Otahua Downs**	**18.92**	**209**	*e*P	**P**	**04 53 52.9**	**-1.4**
	14nm,0.7s						
ARMA	**Armidale**	**27.52**	**259**	*e*P	**P**	**04 55 18.8**	**-1.2**
	7.1nm,0.8s						
CTAO	**Charters Tower**	**34.74**	**276**	*e*P	**P**	**04 56 22.4**	**-1.2**
	19nm,1.2s						
STKA	**Stephens Creek**	**35.93**	**255**	P	**P**	**04 56 32.5**	**-1.3**
	1.7nm,0.5s,baz=92,slow=14,SNR=2.9						
PMG	**Port Moresby**	**39.07**	**293**	LR	LR	05 09 04.7	
	comp=Z,344nm,18.6s,baz=44,slow=30						
PMG	**Port Moresby**	**39.07**	**293**	*e*P	**P**	**04 57 00.3**	**-0.2**
	28nm,1.1s						
ASAR	**Alice Springs**	**44.35**	**265**	P	**P**	**04 57 43.0**	**-0.7**
	2.0nm,0.7s,baz=97,slow=6.9,SNR=10						
WRAB	**Tennant Creek**	**45.20**	**270**	*e*P	**P**	**04 57 47.9**	**-2.6**
	7.6nm,0.9s						
WRA	**Warramunga Arr**	**45.21**	**270**	P	**P**	**04 57 50.0**	**-0.5**
	5.6nm,1.0s,baz=107,slow=7.9,SNR=5.7						
WRA				PcP	**PcP**	**04 59 31.3**	**+1.0**
	3.2nm,1.0s,baz=110,slow=4.1,SNR=4.3						
CASY	**Casey**	**56.93**	**207**	*e*P	**P**	**04 59 19.2**	**+1.4**
	3.4nm,0.9s						
QSPA	**South Pole Qui**	**61.13**	**180**	*e*P	**P**	**04 59 49.5**	**+2.4**
	81nm,1.2s						
MAW	**Mawson**	**74.04**	**200**	P	**P**	**05 01 11.2**	**+2.8**
	5.3nm,0.8s,baz=140,slow=8.7,SNR=6.6						
SYO	**Syowa Base**	**78.75**	**193**	*e*P	**P**	**05 01 35.0**	**0.0**
SYO	**Syowa Base**	**78.75**	**193**	*e*PcP	**PcP**	**05 01 43.4**	**-0.4**
SNAA	**Sanae**	**79.54**	**178**	*e*P	**P**	**05 01 40.0**	**+0.6**
	262nm,1.0s						
VNA3	**Neumayer Olymp**	**79.64**	**176**	P	**P**	**05 01 41.4**	**+1.5**
VNA2	**Neumayer--Watz**	**80.09**	**176**	P	**P**	**05 01 44.1**	**+1.7**
	baz=168,slow=5.8						
PLCA	**Paso Flores**	**82.63**	**133**	P	**P**	**05 01 56.8**	**+0.3**
	2.0nm,1.0s,baz=229,slow=13,SNR=2.9						
LPIG	**La Paz**	**82.81**	**58**	P	**P**	**05 01 55.6**	**-1.8**
	29nm,1.0s,baz=180,slow=9.1,SNR=2.3						
NVAR	**Mina Array Bea**	**86.42**	**42**	P	**P**	**05 02 16.6**	**+1.0**
	1.4nm,0.9s,baz=224,slow=9.0,SNR=7.4						
TUC	**Tucson**	**87.33**	**51**	*e*P	**P**	**05 02 20.7**	**+0.7**
	5.5nm,1.4s						
WVOR	**Wild Horse Val**	**88.90**	**39**	*e*P	**P**	**05 02 26.9**	**-0.4**
	2.2nm,0.9s						
TXAR	**Lajitas Array**	**90.66**	**57**	P	**P**	**05 02 36.6**	**+0.8**
	1.0nm,1.0s,baz=224,slow=3.5,SNR=5.5						
SNOW	**Snow King Moun**	**94.02**	**42**	*e*P	**P**	**05 02 52.2**	**+0.9**
	2.4nm,0.7s						
PDAR	**Pinedale Array**	**94.32**	**43**	P	**P**	**05 02 49.9**	**-2.7**
	0.6nm,0.9s,baz=190,slow=4.6,SNR=3.7						
FLWY	**Flagg Ranch**	**94.43**	**41**	*e*P	**P**	**05 02 53.7**	**+0.7**
	2.5nm,0.8s						
MKAR	**Makanchi Array**	**117.73**	**310**	PKP	**PKPdf**	**05 08 18.6**	**-0.3**
	0.7nm,0.9s,baz=50,slow=4.5,SNR=4.2						
KURK	**Kurchatov**	**120.88**	**314**	*e*PKPdf	**PKPdf**	**05 08 22.9**	**-1.8**
KKAR	**Karatay Array**	**125.23**	**304**	*e*PKPdf	**PKPdf**	**05 08 33.5**	**+0.2**
BVAR	**Borovoye Array**	**126.17**	**316**	PKP	**PKPdf**	**05 08 34.9**	**0.0**
	0.6nm,0.6s,baz=93,slow=5.2,SNR=4.0						
BRVK	**Borovoye**	**126.24**	**316**	*e*PKPdf	**PKPdf**	**05 08 35.1**	**+0.2**
LSZ	**Lusaka**	**129.87**	**212**	*e*PKPdf	**PKPdf**	**05 08 41.9**	**-1.4**
ARU	**Arti**	**132.70**	**322**	*e*PKPdf	**PKPdf**	**05 08 46.0**	**-1.1**
AKTO	**Aktyubinsk**	**133.97**	**311**	PKP	**PKPdf**	**05 08 50.5**	**+0.8**
	0.8nm,0.5s,baz=31,slow=5.9,SNR=2.3						
FINES	**FINESS Array B**	**144.18**	**341**	PKP	**PKPab**	**05 09 05.3**	**-0.5**
	1.6nm,0.7s,baz=44,slow=4.2,SNR=4.2						
GNI	**Garni**	**144.40**	**299**	*e*PKPdf	PKPbc	05 09 08.4	+0.6
NB2	**NORSAR Subarra**	**147.50**	**353**	PKP	**PKPbc**	**05 09 15.8**	**-0.5**
	comp=Z,6.5nm,1.2s,baz=10,slow=3.2						
NOA	**NORSAR Array B**	**147.50**	**353**	PKPbc	**PKPbc**	**05 09 15.8**	**-0.5**
	comp=Z,1.2nm,0.8s,baz=18,slow=4.2,SNR=4.2						
AKASG	**Malin Array Be**	**150.82**	**325**	PKPbc	**PKPbc**	**05 09 24.9**	**0.0**
	comp=Z,3.5nm,0.8s,baz=47,slow=2.3,SNR=9.9						
KIEV	**Kiev**	**150.83**	**325**	*e*PKPbc	**PKPbc**	**05 09 24.6**	**-0.3**
BRTR	**Keskin Array B**	**152.88**	**301**	PKPbc	**PKPbc**	**05 09 29.8**	**-0.4**
	comp=Z,1.1nm,0.8s,baz=157,slow=3.5,SNR=4.3						
TORD	**Torodi Ar. Bea**	**164.18**	**174**	PKPab	**PKPab**	**05 10 31.7**	**+1.3**
	comp=Z,1.1nm,0.9s,baz=196,slow=5.4,SNR=3.5						

*JMA **10** 04:57:27.4±0.3,39.°28N×143.°14E,h12km±3km,M4.0*

*ISCJB **10** 04:57:29.4±2.0,39.°26N±0.°05×143.°15E±0.°05, h33km±15km,mb3.7/17,MS4.4/1, Error ellipse: s-maj=8.5km s-min=6.7km az=4.3*

*IDC **10** 04:57:33.0±2.8,39.°26N×143.°09E,h47km±27km,mb3.6/18, mb1 3.7/20,mb1mx3.7/51,mbtmp3.8/20,ML2.9/2,MS3.4/2, Ms1 3.5/2,ms1mx2.7/48,Error ellipse: s-maj=18.3km s-min=15.4km az=115.0*

ISC 10 04:57:28.6±2.8,39.°27N±0.°06×143.°07E±0.°07,h14km±16km, n37,σ1℘06/37,mb3.9/17,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
MIYJ	**Miyakonagasawa**	**1.01**	**288**	P	**Pb**	**04 57 47.5**	**-0.4**
MIYJ				S	**Sg**	**04 58 01.3**	**-0.1**
JTH	**Tanohata**	**1.15**	**306**	*e*S	**Sb**	**04 58 04.6**	**-0.4**
JOM	**Ohasama**	**1.39**	**279**	P	**Pn**	**04 57 53.6**	**0.0**
JOM				S	**Sb**	**04 58 12.1**	**+0.1**
JMK	**Ichinoseki**	**1.47**	**258**	P	**Pn**	**04 57 54.7**	**0.0**
JMK				S	**Sb**	**04 58 14.6**	**+0.3**
JKZ	**Kuzumaki**	**1.52**	**299**	P	**Pn**	**04 57 55.5**	**0.0**
JKZ				S	**Sb**	**04 58 16.6**	**+0.8**
JIO	**Ouri**	**1.57**	**239**	P	**Pn**	**04 57 55.6**	**-0.4**
JIO				S	**Sn**	**04 58 14.8**	**-1.3**
JANG	**Nango**	**1.63**	**313**	P	**Pn**	**04 57 56.0**	**-0.9**
JANG				*e*S	**Sn**	**04 58 17.1**	**-0.6**
JAH	**Hinai**	**2.09**	**297**	P	**Pn**	**04 58 04.3**	**+1.1**
JAH				S	**Sb**	**04 58 32.3**	**+0.2**
JYK	**Kaneyama**	**2.13**	**261**	P	**Pb**	**04 58 05.6**	**-1.5**
MJAR	**Matsushiro Arr**	**4.71**	**236**	P	**Pn**	**04 58 42.2**	**+3.0**
	2.8nm,0.3s,baz=34,slow=14,SNR=20						
MJAR				LR	LR	05 00 55.7	
	comp=Z,59nm,19.6s,baz=45,slow=43						
MAT	**Matsushiro**	**4.71**	**236**	P	**Pn**	**04 58 41.9**	**+2.6**
MAT				*e*S	Sn	04 59 39.9	+6.2
USRK	**Ussuriysk Ar.**	**9.63**	**304**	P	**Pn**	**04 59 49.1**	**+2.4**
	0.2nm,0.3s,baz=100,slow=15,SNR=2.5						
MA2	**Magadan**	**20.91**	**11**	P	**P**	**05 02 10.0**	**-0.4**
	4.9nm,0.7s,baz=223,slow=9.2,SNR=8.0						
SEY	**Seymchan**	**24.36**	**10**	P	**P**	**05 02 45.6**	**-0.3**
	8.1nm,0.9s,baz=189,slow=6.8,SNR=24						
SONM	**Songino Array**	**27.71**	**300**	P	**P**	**05 03 16.9**	**+0.4**
	1.1nm,0.8s,baz=86,slow=7.4,SNR=5.8						
H11N2	**WAKE ISLAND Hy**	**28.30**	**127**	T	T	05 32 48.9	
	baz=319,slow=74,SNR=88						
H11N1	**WAKE ISLAND Hy**	**28.31**	**127**	T	T	05 32 48.8	
	baz=319,slow=74,SNR=94						
H11N3	**WAKE ISLAND Hy**	**28.32**	**127**	T	T	05 32 51.5	
	baz=319,slow=74,SNR=52						
H11S1	**WAKE ISLAND Hy**	**29.10**	**129**	T	T	05 33 57.0	
	baz=321,slow=76,SNR=26						
H11S3	**WAKE ISLAND Hy**	**29.11**	**129**	T	T	05 33 56.0	
	baz=321,slow=76,SNR=15						
H11S2	**WAKE ISLAND Hy**	**29.12**	**129**	T	T	05 33 57.7	
	baz=321,slow=76,SNR=21						
ZALV	**Zalesovo Beam**	**41.41**	**311**	P	**P**	**05 05 14.3**	**0.0**
	1.6nm,0.5s,baz=98,slow=8.0,SNR=6.8						
MKAR	**Makanchi Array**	**44.07**	**300**	P	**P**	**05 05 36.4**	**+0.3**
	1.2nm,0.6s,baz=93,slow=11,SNR=8.3						
ILAR	**Eielson Array**	**46.91**	**33**	P	**P**	**05 05 58.2**	**-0.1**
	0.7nm,0.6s,baz=259,slow=6.0,SNR=11						
BVAR	**Borovoye Array**	**50.06**	**311**	P	**P**	**05 06 22.9**	**+0.2**
	1.7nm,0.5s,baz=72,slow=7.9,SNR=8.7						
INK	**Inuvik**	**51.81**	**28**	P	**P**	**05 06 36.0**	**+0.4**
	0.6nm,0.4s,baz=281,slow=7.6,SNR=6.8						
AKTO	**Aktyubinsk**	**58.16**	**311**	P	**P**	**05 07 23.8**	**+1.9**
	0.9nm,0.6s,baz=32,slow=9.5,SNR=4.1						
WRA	**Warramunga Arr**	**59.46**	**190**	P	**P**	**05 07 30.0**	**-1.1**
	0.5nm,0.4s,baz=7.2,slow=7.0,SNR=6.3						
YKA	**Yellowknife Ar**	**61.23**	**31**	P	**P**	**05 07 42.4**	**-0.3**
	0.1nm,0.2s,baz=300,slow=6.1,SNR=4.1						
ASAR	**Alice Springs**	**63.19**	**189**	P	**P**	**05 07 56.2**	**-0.1**
	0.2nm,0.4s,baz=8.7,slow=5.0,SNR=3.4						
FINES	**FINESS Array B**	**67.44**	**332**	P	**P**	**05 08 23.1**	**-0.4**
	1.0nm,0.7s,baz=110,slow=10,SNR=3.4						
NVAR	**Mina Array Bea**	**72.62**	**54**	P	**P**	**05 08 57.0**	**+1.1**
	0.2nm,0.6s,baz=316,slow=3.8,SNR=2.5						
NOA	**NORSAR Array B**	**72.62**	**338**	P	**P**	**05 08 55.2**	**-0.2**
	1.0nm,1.0s,baz=21,slow=3.8,SNR=3.5						
AKASG	**Malin Array Be**	**73.32**	**323**	P	**P**	**05 08 59.2**	**-0.4**
	0.7nm,0.6s,baz=52,slow=5.8,SNR=4.4						
PDAR	**Pinedale Array**	**75.18**	**47**	P	**P**	**05 09 10.6**	**-0.3**
	0.2nm,0.6s,baz=257,slow=3.6,SNR=2.8						
GERES	**GERESS Array B**	**81.49**	**329**	P	**P**	**05 09 44.6**	**-0.8**
	0.2nm,0.6s,baz=36,slow=7.2,SNR=3.3						
SCHQ	**Schefferville**	**82.83**	**17**	LR	LR	05 51 19.7	
	comp=Z,153nm,19.9s,baz=276,slow=39						

IDC 10 05:08:27.3±2.3,2.°72N×126.°37E,h0km,mb3.3/3, mb1 3.5/3,mb1mx3.3/41,mbtmp3.4/3,Error ellipse: s-maj=199.1km s-min=27.5km az=66.0,Northern Molucca Sea

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
WRA	**Warramunga Arr**	**23.84**	**161**	P	P	05 13 40.9	-1.5
	0.4nm,0.4s,baz=340,slow=10,SNR=5.0						
ASAR	**Alice Springs**	**27.23**	**165**	P	P	05 14 14.4	+1.2
	0.3nm,0.7s,baz=345,slow=11,SNR=4.2						
MKAR	**Makanchi Array**	**58.18**	**326**	P	P	05 18 23.0	-0.2
	0.2nm,0.4s,baz=121,slow=7.1,SNR=3.6						

*IDC **10** 05:09:47.1±1.2,28.°55S×176.°89W,h0km,mb4.1/4, mb1 4.4/4,mb1mx3.9/37,mbtmp4.1/4,MS3.0/1,Ms1 3.0/1, ms1mx2.6/41,Error ellipse: s-maj=51.6km s-min=19.6km az=141.0*

*ISCJB **10** 05:09:51.3±0.8,28.°8S±0.°1×176.°9W±0.°1,h36km,mb4.5/8, Error ellipse: s-maj=20.2km s-min=15.0km az=137.6*

*NEIC **10** 05:09:52.4±0.6,28.°66S×176.°91W,h35km,mb4.8/2,Error ellipse: s-maj=16.2km s-min=11.3km az=110.0*

ISC 10 05:09:52.5±0.8,28.°9S±0.°1×176.°8W±0.°1,h36km,n23, σ1℘58/18,mb4.5/8,1D,Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
RAO	**Raoul Island**	**1.09**	**250**	Pn	**Pn**	**05 10 10.6**	**-0.6**
	327nm,0.3s,baz=200,slow=23,SNR=15						
RAO				Sn	**Sn**	**05 10 27.7**	**+2.8**
	884nm,0.3s,baz=90,slow=20,SNR=14						
URZ	**Urewera**	**10.65**	**207**	Sn	**Sn**	**05 14 16.9**	**-3.6**
	0.9nm,0.3s,baz=346,slow=23,SNR=6.4						
MSVF	**Nonsavu**	**12.09**	**336**	*e*Pn	Pn	05 12 37.3	-5.0
SNZO	**South Karori**	**14.22**	**207**	*e*Pn	**Pn**	**05 13 12.1**	**+0.9**
DZM	**Mont Dzumac**	**16.62**	**290**	LR	LR	05 18 07.0	
	comp=Z,54nm,21.7s,baz=75,slow=30						
TBI	**Tubual**	**25.08**	**84**	*e*LR	LR	05 21 11.0	
	161nm,28.8s						
PPT2	**Papeete2**	**27.31**	**72**	*e*LR	LR	05 22 14.4	
	83nm,24.5s						
RKT	**Rikitea**	**37.84**	**91**	*e*LR	LR	05 27 04.9	
	100nm,30.0s						
COEN	**Coen**	**39.95**	**283**	P	**P**	**05 17 22.6**	**-1.0**
ASAR	**Alice Springs**	**44.31**	**265**	P	**P**	**05 17 58.2**	**-0.9**
	1.2nm,0.6s,baz=95,slow=7.0,SNR=13						
WRAB	**Tennant Creek**	**45.16**	**270**	*e*P	**P**	**05 18 05.0**	**-0.9**
	22nm,1.9s						
WRA	**Warramunga Arr**	**45.16**	**270**	P	**P**	**05 18 05.1**	**-0.8**
	0.5nm,0.5s,baz=110,slow=7.4,SNR=6.1						
QSPA	**South Pole Qui**	**61.22**	**180**	*e*P	**P**	**05 20 05.2**	**+1.6**
	30nm,1.0s						
MAW	**Mawson**	**74.10**	**200**	P	**P**	**05 21 26.3**	**+1.8**
	2.4nm,0.8s,baz=135,slow=4.3,SNR=3.7						
SYO	**Syowa Base**	**78.83**	**193**	*e*pP	pP	05 22 02.0	-0.5
NACB	**Ninganchiao**	**79.37**	**305**	*e*P	**P**	**05 21 56.0**	**+1.1**
	34nm,0.3s						
PFO	**Pinyon Flats O**	**84.38**	**47**	*e*P	**P**	**05 22 20.2**	**-1.0**
	12nm,1.4s						
NVAR	**Mina Array Bea**	**86.39**	**42**	P	**P**	**05 22 32.0**	**+0.8**
	0.8nm,0.9s,baz=222,slow=7.8,SNR=5.7						
KURK	**Kurchatov**	**120.79**	**314**	PKP	**PKPdf**	**05 28 39.6**	**-0.8**
KURBB	**Kurchatov Arra**	**120.83**	**314**	PKP	**PKPdf**	**05 28 39.6**	**-0.8**
	0.2nm,0.4s,baz=73,slow=1.6,SNR=4.3						
BVAR	**Borovoye Array**	**126.08**	**316**	PKP	**PKPdf**	**05 28 49.0**	**-1.4**
	0.8nm,0.8s,baz=65,slow=7.0,SNR=3.9						
FINES	**FINESS Array B**	**144.08**	**341**	PKP	**PKPab**	**05 29 20.7**	**-0.4**
	0.7nm,0.6s,baz=3.8,slow=4.2,SNR=3.0						
AKASG	**Malin Array Be**	**150.72**	**325**	PKPbc	**PKPbc**	**05 29 39.8**	**-0.7**
	0.6nm,0.3s,baz=45,slow=2.7,SNR=8.2						

*IDC **10** 05:11:51.3±2.5,37.°17N×143.°64E,h0km,mb3.6/5, mb1 3.7/6,mb1mx3.4/44,mbtmp3.5/6,ML3.2/1,Error ellipse: s-maj=67.8km s-min=29.4km az=67.0*

*JMA **10** 05:11:52.5±0.3,37.°56N×143.°34E,h22km,M3.3*

**ISC 10 05:11:57.0

1um,0.3s,baz=72,slow=20,SNR=16
OUZ Omahuta 10.24 230 *e*Pn **Pn** 05 22 14.7 -0.8
32nm,0.9s
URZ Urewera 10.53 207 Pn Pn 05 22 16.5 -2.9
0.5nm,0.3s,baz=150,slow=8.1,SNR=5.2
URZ Sn **Sn** **05 24 13.5 -2.5**
1.4nm,0.3s,baz=207,slow=19,SNR=5.6
KHZ Kahutara 15.49 208 *e*Pn Pn 05 23 22.4 -4.4
69nm,0.5s
DZM Mont Dzumac 16.65 291 LR LR 05 28 25.7
comp=Z,652nm,20.9s,baz=103,slow=31
RAR Rarotonga 17.23 67 LR LR 05 29 30.7
comp=Z,152nm,19.9s,baz=276,slow=34
RPZ Rata Peaks 17.61 210 P **Pn** **05 23 52.8 -0.8**
2.0nm,0.3s,baz=15,slow=3.3,SNR=9.3
RPZ Rata Peaks 17.61 210 *e*P **Pn** **05 23 52.9 -0.7**
TBI Tubuai 25.12 83 *e*LR LR 05 31 11.0
303nm,29.5s
PPT2 Papeete2 27.37 71 *e*LQ LQ 05 30 50.3
449nm,23.2s
PPT2 *e*LR LR 05 32 09.3
209nm,28.2s
ARMA Armidale 27.44 259 *e*P **P** **05 25 34.7 +0.9**
5.6nm,0.7s
CTA Charters Tower 34.67 276 P **P** **05 26 38.6 +1.2**
3.2nm,0.7s,baz=108,slow=3.2,SNR=3.6
STKA Stephens Creek 35.85 255 P **P** **05 26 45.9 -1.6**
5.0nm,0.8s,baz=100,slow=12,SNR=5.1
RKT Rikitea 37.85 91 *e*LR LR 05 36 55.4
142nm,28.2s
PMG Port Moresby 39.03 293 LR LR 05 41 08.8
comp=Z,178nm,19.8s,baz=86,slow=33
ASAR Alice Springs 44.28 265 P **P** **05 27 56.8 -0.8**
2.8nm,0.5s,baz=99,slow=6.9,SNR=56
ASAR PcP **PP** **05 29 41.8 +0.7**
0.6nm,0.5s,baz=118,slow=3.9,SNR=4.9
ASAR LR LR 05 45 20.2
comp=Z,228nm,18.2s,baz=101,slow=35
WRAB Tennant Creek 45.14 270 *e*P **P** **05 28 03.2 -1.1**
9.2nm,1.0s
WRA Warramunga Arr 45.14 270 P **P** **05 28 03.2 -1.2**
5.2nm,1.0s,baz=109,slow=7.7,SNR=11
WRA LR LR 05 44 52.0
comp=Z,131nm,19.4s,baz=100,slow=33
VNDA Vanda 49.57 186 P **P** **05 28 38.9 +0.8**
1.6nm,0.9s,baz=54,slow=8.7,SNR=2.4
GUMO Guam 56.29 313 LR LR 05 50 51.7
comp=Z,42nm,21.0s,baz=96,slow=33
QSPA South Pole Qui 61.08 180 P **P** **05 30 02.6 +1.3**
96nm,1.0s
MAW Mawson 73.97 200 P **P** **05 31 23.2 +0.8**
8.4nm,1.0s,baz=103,slow=5.9,SNR=8.7
MJAR Matsushiro Arr 77.74 324 P **P** **05 31 42.9 -1.4**
0.5nm,0.4s,baz=154,slow=4.8,SNR=3.9
SYO Syowa Base 78.69 193‖ *e*P **P** **05 31 49.0 -0.1**
SNAA Sanae 79.50 178 P **P** **05 31 53.5 -0.1**
VNA3 Neumayer Olymp 79.60 176 P **P** **05 31 54.9 +0.8**
VNA2 Neumayer--Watz 80.05 176 P **P** **05 31 57.9 +1.4**
baz=163,slow=5.4
PLCA Paso Flores 82.65 133 LR LR 05 59 28.0
comp=Z,45nm,20.4s,baz=198,slow=29
PETK Petropavlovsk- 84.76 345 P **P** **05 32 20.9 -0.2**
2.6nm,0.8s,baz=115,slow=10,SNR=3.4
PETK LR LR 06 05 42.8
comp=Z,42nm,19.9s,baz=162,slow=33
NVAR Mina Array Bea 86.50 42 P **P** **05 32 30.8 +0.4**
1.2nm,0.9s,baz=202,slow=3.2,SNR=7.0
USRK Ussuriysk Ar. 86.62 326 P **P** **05 32 30.7 +0.2**
0.6nm,0.5s,baz=90,slow=10,SNR=2.6
KLR Kul'dur 90.40 329 P **P** **05 32 48.0 -0.3**
0.4nm,0.4s,baz=180,slow=4.0,SNR=2.4
TXAR Lajitas Array 90.74 57 P P 05 32 48.2 -2.4
0.4nm,0.9s,baz=232,slow=5.3,SNR=3.2
PDAR Pinedale Array 94.40 43 P **P** **05 33 06.5 -0.9**
0.1nm,0.5s,baz=206,slow=10.0,SNR=2.8
LPAZ La Paz 97.71 113 LR LR 06 09 16.7
comp=Z,21nm,19.1s,baz=184,slow=30
MKAR Makanchi Array 117.71 310 PKP **PKPdf** **05 38 32.4 -0.8**
0.2nm,0.2s,baz=64,slow=3.4,SNR=3.6
KURK Kurchatov 120.87 314 PKP **PKPdf** **05 38 38.4 -0.7**
KURBB Kurchatov Arra 120.91 314 PKP **PKPdf** **05 38 38.4 -0.8**
0.5nm,0.6s,baz=102,slow=1.8,SNR=8.2
KKAR Karatay Array 125.25 304 *e*PKPdf **PKPdf** **05 38 47.3 -0.5**
BVAR Borovoye Array 126.16 316 PKP **PKPdf** **05 38 49.0 -0.2**
0.7nm,0.6s,baz=1.9,slow=4.3,SNR=5.6
FINES FINESS Array B 144.21 341 PKP **PKPab** **05 39 19.6 -0.6**
1.3nm,0.6s,baz=37,slow=4.8,SNR=5.3
NB2 NORSAR Subarra147.54 353 PKP **PKPdf** **05 39 29.8 +1.6**
comp=Z,1.5nm,0.7s,baz=16,slow=3.2
NOA NORSAR Array B147.54 353 PKPbc **PKPdf** **05 39 29.8 +1.6**
comp=Z,1.1nm,1.0s,baz=15,slow=3.7,SNR=3.6
AKASG Malin Array Be 150.82 325 PKPbc **PKPbc** **05 39 38.8 -0.6**
comp=Z,2.3nm,0.7s,baz=42,slow=2.6,SNR=16
ASF Jabal al Asfar 150.92 285 PKPbc **PKPbc** **05 39 40.9 +0.6**
comp=Z,3.7nm,0.9s,baz=220,slow=1.6,SNR=3.5
MMAI Mount Meron Ar 152.21 286 PKPbc **PKPbc** **05 39 43.6 +0.4**
comp=Z,1.6nm,0.4s,baz=94,slow=7.9,SNR=5.3
BRTR Keskin Array B 152.85 301 PKPbc **PKPbc** **05 39 43.8 -0.7**
comp=Z,0.4nm,0.6s,baz=81,slow=3.1,SNR=4.5
UPC Upice 156.47 339 *e*pPKP PKPab 05 40 19.8 +9.3
DPC Dobruska-Polom 156.51 339 *e*pPKP PKPab 05 40 19.9 +9.2
KHC Kasperske Hory 158.41 341 *e*PKPAB **PKPab** **05 40 18.7 -0.2**
TORD Torodi Ar. Bea 164.14 175 PKPab **PKPab** **05 40 45.3 +0.6**
comp=Z,1.4nm,1.0s,baz=192,slow=3.1,SNR=4.4

MDD ***10*** *05:22:22.0±1.0, 36°.75N×12°.34W, h0km, mb4.7/32, Error ellipse: s-maj=9.8km s-min=7.2km az=94.0, PRXIMO*
ISCJB ***10*** *05:22:23.4±0.6, 36°.93N±0°.03×12°.09W±0°.04, h10km, Error ellipse: s-maj=4.6km s-min=4.1km az=139.8*
IGIL ***10*** *05:22:23.6, 36°.83N×12°.33W, h1km, ML3.4*
LDG ***10*** *05:22:24.3±1.1, 36°.79N×12°.25W, h30km, Ml3.6/5, Error ellipse: s-maj=21.0km s-min=16.9km az=46.0*
INMG ***10*** *05:22:25.0±1.7, 36°.67N×12°.57W, h0km, MD3.3, ML3.4, Error ellipse: s-maj=4.8km s-min=3.8km az=85.0*
CNRM ***10*** *05:22:26.7, 36°.34N×12°.42W, h30km, MD3.8*
CSEM ***10*** *05:22:26.6±0.3, 36°.89N×12°.17W, h30km, ML4.2/9, Error ellipse: s-maj=5.2km s-min=3.8km az=70.0*

ISC 10 05:22:20.9±2.2, 36°.82N±0°.06×12°.3W±0°.1, h10km, n196, σ2s 45/352, 17C, Azores-Cape St. Vincent Ridge

Code	Station Name	Δ°	AZ°	Phase	ID	Time h m s	Res ISC
PFVI	**Vila Bisbo**	**2.77**	**83**	⇑*i*Pn	**Pn**	**05 23 07.8**	**+2.5**
PFVI				*e*Sn	**Sn**	**05 23 39.4**	**+0.5**
PFVI				A	A	05 23 42.8	
74nm,0.6s							
PFVI	**Vila Bisbo**	**2.77**	**83**	⇑P	**Pn**	**05 23 07.8**	**+2.5**
104nm,0.1s,SNR=18							
PFVI				S	**Sn**	**05 23 39.4**	**+0.5**
125nm,0.1s,SNR=7.9							
PFVI	**Vila Bisbo**	**2.77**	**83**	P	**Pn**	**05 23 07.8**	**+2.5**
104nm,0.1s,SNR=18							
PFVI				S	**Sn**	**05 23 39.4**	**+0.5**
125nm,0.1s,SNR=7.9							
PTEO	**Sao Teotonio**	**2.92**	**75**	⇑*i*Pn	**Pn**	**05 23 10.1**	**+2.7**
PTEO				*e*Sn	**Sn**	**05 23 43.5**	**+1.0**
PTEO				A	A	05 23 50.5	
63nm,0.3s							
PTEO	**Sao Teotonio**	**2.92**	**75**	⇑*i*Pn	**Pn**	**05 23 10.1**	**+2.7**
PTEO				*e*Sn	**Sn**	**05 23 43.5**	**+1.0**
63nm,0.3s							
MORF	**Marmelete**	**2.94**	**79**	*e*P	**Pn**	**05 23 10.1**	**+2.5**
MORF				*e*S	**Sn**	**05 23 44.0**	**+1.1**
MORF				AML	AML	05 23 45.7	
comp=E,68nm,0.2s							
MORF	**Marmelete**	**2.94**	**79**	*e*Pn	**Pn**	**05 23 10.1**	**+2.5**
MORF				*e*Sn	**Sn**	**05 23 43.9**	**+1.0**
MORF				A	A	05 23 47.3	
comp=E,64nm,0.4s							
MORF	**Marmelete**	**2.94**	**79**	P	**Pn**	**05 23 10.1**	**+2.5**
MORF				S	**Sn**	**05 23 44.0**	**+1.1**
comp=E,68nm,0.2s							
MORF	**Marmelete**	**2.94**	**79**	P	**Pn**	**05 23 10.1**	**+2.5**
MORF				*e*Sn	**Sn**	**05 23 43.9**	**+1.0**
comp=E,64nm,0.4s							
PMST	**Lisbon--Monsan**	**3.10**	**51**	*e*Pn	**Pn**	**05 23 12.8**	**+2.9**
PMST				*e*Sn	**Sn**	**05 23 48.8**	**+1.8**
PMST				A	A	05 23 51.5	
comp=E,119nm,0.2s							
PMST	**Lisbon--Monsan**	**3.10**	**51**	*e*Pn	**Pn**	**05 23 12.8**	**+2.9**
PMST				*e*Sn	**Sn**	**05 23 48.8**	**+1.8**
comp=E,119nm,0.2s							
LIS	**Lisbon**	**3.11**	**52**	*e*S	**Sn**	**05 23 48.4**	**+1.2**
LIS				AML	AML	05 23 49.9	
comp=E,235nm,0.3s							
LIS	**Lisbon**	**3.11**	**52**	*e*Sn	**Sn**	**05 23 49.5**	**+2.3**
LIS				A	A	05 23 50.2	
comp=E,159nm,0.3s							
LIS	**Lisbon**	**3.11**	**52**	S	**Sn**	**05 23 48.4**	**+1.2**
comp=E,235nm,0.3s							
LIS	**Lisbon**	**3.11**	**52**	*e*Sn	**Sn**	**05 23 49.5**	**+2.3**
comp=E,159nm,0.3s							
PMAFR	**Mafra**	**3.18**	**47**	⇑*i*Pn	**Pn**	**05 23 13.9**	**+3.0**
PMAFR				*e*Sn	**Sn**	**05 23 50.7**	**+1.8**
PMAFR				A	A	05 23 51.7	
comp=E,456nm,0.2s							
PMAFR	**Mafra**	**3.18**	**47**	⇑P	**Pn**	**05 23 13.9**	**+3.0**
comp=E,37nm,0.2s,SNR=18							
PMAFR				S	**Sn**	**05 23 50.9**	**+2.0**
comp=E,586nm,0.2s,SNR=65							
PMAFR	**Mafra**	**3.18**	**47**	P	**Pn**	**05 23 13.9**	**+3.0**
comp=E,37nm,0.2s,SNR=18							
PMAFR				S	**Sn**	**05 23 50.9**	**+2.0**
comp=E,586nm,0.2s,SNR=65							
PNCL	**Nicolau / Gran**	**3.24**	**65**	⇑*e*Pn	**Pn**	**05 23 14.4**	**+2.6**
PNCL				*e*Sn	**Sn**	**05 23 52.2**	**+1.8**
PNCL				A	A	05 23 55.3	
comp=E,65nm,0.2s							
PNCL	**Nicolau / Gran**	**3.24**	**65**	⇑*e*Pn	**Pn**	**05 23 14.4**	**+2.6**
PNCL				*e*Sn	**Sn**	**05 23 52.2**	**+1.8**
comp=E,65nm,0.2s							
PACT	**Alcochete**	**3.34**	**53**	⇑*i*Pn	**Pn**	**05 23 16.6**	**+3.4**
PACT				*e*Sn	**Sn**	**05 23 56.0**	**+3.1**
PACT				A	A	05 23 57.7	
comp=E,74nm,0.2s							
PACT	**Alcochete**	**3.34**	**53**	⇑*i*Pn	**Pn**	**05 23 16.6**	**+3.4**
MESJ	**Messejana**	**3.38**	**71**	*e*P	**Pn**	**05 23 16.3**	**+2.6**
MESJ				*e*S	**Sn**	**05 23 54.5**	**+0.6**
MESJ				AML	AML	05 23 56.7	
comp=N,61nm,0.2s							
MESJ	**Messejana**	**3.38**	**71**	P	**Pn**	**05 23 16.3**	**+2.6**
MESJ				S	**Sn**	**05 23 54.5**	**+0.6**
comp=N,61nm,0.2s							
MESJ	**Messejana**	**3.38**	**71**	P	**Pn**	**05 23 16.3**	**+2.6**
MESJ				S	**Sn**	**05 23 54.5**	**+0.6**
comp=N,61nm,0.2s							
PCVE	**Castro Verde**	**3.47**	**75**	⇑*e*Pn	**Pn**	**05 23 17.6**	**+2.7**
PCVE				*e*Sn	**Sn**	**05 23 56.3**	**+0.2**
PCVE				A	A	05 24 00.7	
comp=N,32nm,0.2s							
PCVE	**Castro Verde**	**3.47**	**75**	P	**Pn**	**05 23 17.6**	**+2.7**
PCVE				S	**Sn**	**05 23 56.3**	**+0.2**
comp=N,32nm,0.2s							
PCVE	**Castro Verde**	**3.47**	**75**	P	**Pn**	**05 23 17.6**	**+2.7**
PCVE				S	**Sn**	**05 23 56.3**	**+0.2**
comp=N,32nm,0.2s							
PBDV	**Barranco-do-Ve**	**3.50**	**82**	*e*Pn	**Pn**	**05 23 18.1**	**+2.8**
PBDV				*e*Sn	**Sn**	**05 23 57.8**	**+1.0**
PBDV				A	A	05 24 03.1	
comp=N,33nm,0.2s							
PBDV	**Barranco-do-Ve**	**3.50**	**82**	P	**Pn**	**05 23 18.1**	**+2.8**
PBDV				S	**Sn**	**05 23 57.8**	**+1.0**
comp=N,33nm,0.2s							
PBDV	**Barranco-do-Ve**	**3.50**	**82**	P	**Pn**	**05 23 18.1**	**+2.8**
PBDV				S	**Sn**	**05 23 57.8**	**+1.0**
comp=N,33nm,0.2s							
MOE	**Montemor**	**3.54**	**60**	*e*Pn	**Pn**	**05 23 17.8**	**+1.9**
MOE				*e*Sn	**Sn**	**05 23 57.8**	**-0.1**
MOE	**Montemor**	**3.54**	**60**	P	**Pn**	**05 23 17.8**	**+1.9**
MOE				S	**Sn**	**05 23 57.8**	**-0.1**
MOE	**Montemor**	**3.54**	**60**	P	**Pn**	**05 23 17.8**	**+1.9**
MOE				S	**Sn**	**05 23 57.8**	**-0.1**
PVAQ	**Vaqueiros**	**3.69**	**80**	⇑*e*Pn	**Pn**	**05 23 20.7**	**+2.8**
PVAQ				*e*Sn	**Sn**	**05 24 02.3**	**+0.9**
PVAQ				A	A	05 24 06.6	
comp=N,34nm,0.1s							
PVAQ	**Vaqueiros**	**3.69**	**80**	P	**Pn**	**05 23 20.7**	**+2.8**
PVAQ				S	**Sn**	**05 24 02.3**	**+0.9**
comp=N,34nm,0.1s							
PVAQ	**Vaqueiros**	**3.69**	**80**	P	**Pn**	**05 23 20.7**	**+2.8**
PVAQ				S	**Sn**	**05 24 02.3**	**+0.9**
comp=N,34nm,0.1s							
PBEJ	**Beja**	**3.71**	**70**	*e*Pn	**Pn**	**05 23 20.5**	**+2.3**
PBEJ				*e*Sn	**Sn**	**05 24 02.8**	**+0.9**
PBEJ				A	A	05 24 06.1	
comp=N,36nm,0.3s							
PBEJ	**Beja**	**3.71**	**70**	P	**Pn**	**05 23 20.5**	**+2.3**
PBEJ				S	**Sn**	**05 24 02.8**	**+0.9**
comp=N,18nm,0.3s							
PBEJ	**Beja**	**3.71**	**70**	P	**Pn**	**05 23 20.5**	**+2.3**
PBEJ				S	**Sn**	**05 24 02.8**	**+0.9**
comp=N,18nm,0.3s							
ALMR	**Almeirim**	**3.73**	**50**	*e*P	**Pn**	**05 23 21.2**	**+2.7**
ALMR				*e*S	**Sn**	**05 24 03.1**	**+0.6**
ALMR				AML	AML	05 24 05.5	
comp=N,177nm,0.3s							
ALMR	**Almeirim**	**3.73**	**50**	*e*P	**Pn**	**05 23 21.2**	**+2.7**
ALMR				*e*S	**Sn**	**05 24 03.1**	**+0.6**
ALMR	**Almeirim**	**3.73**	**50**	P	**Pn**	**05 23 21.2**	**+2.7**
ALMR				P	**Pn**	**05 23 21.2**	**+2.7**
ALMR				S	**Sn**	**05 24 03.1**	**+0.6**
ALMR				S	**Sn**	**05 24 03.1**	**+0.6**
comp=N,89nm,0.3s							
ALMR	**Almeirim**	**3.73**	**50**	P	**Pn**	**05 23 21.2**	**+2.7**
ALMR				S	**Sn**	**05 24 03.1**	**+0.6**
comp=N,89nm,0.3s							
EVO	**Evora**	**3.78**	**62**	*e*Pn	**Pn**	**05 23 21.8**	**+2.6**
EVO				*e*Sn	**Sn**	**05 24 04.8**	**+1.0**
EVO				A	A	05 24 08.4	
comp=N,48nm,0.2s							
EVO	**Evora**	**3.78**	**62**	P	**Pn**	**05 23 21.8**	**+2.6**
EVO				S	**Sn**	**05 24 04.8**	**+1.0**
comp=N,48nm,0.2s							
EVO	**Evora**	**3.78**	**62**	P	**Pn**	**05 23 21.8**	**+2.6**
EVO				S	**Sn**	**05 24 04.8**	**+1.0**
comp=N,48nm,0.2s							
EGRO	**El Granado**	**3.89**	**78**	P	**Pn**	**05 23 23.2**	**+2.5**
comp=N,5.7nm,0.1s,SNR=28							
EGRO				S	**Sn**	**05 24 07.4**	**+1.0**
comp=N,41nm,0.2s,SNR=6.5							
EGRO	**El Granado**	**3.89**	**78**	P	**Pn**	**05 23 23.2**	**+2.5**
comp=N,5.7nm,0.1s,SNR=28							
EGRO				S	**Sn**	**05 24 07.4**	**+1.0**
comp=N,41nm,0.2s,SNR=6.5							
PMTG	**Montargil**	**3.91**	**54**	⇑*e*Pn	**Pn**	**05 23 23.4**	**+2.5**
PMTG				*e*Sn	**Sn**	**05 24 07.6**	**+0.8**
PMTG				A	A	05 24 12.6	
comp=N,22nm,0.1s							
PMTG	**Montargil**	**3.91**	**54**	⇑*e*Pn	**Pn**	**05 23 23.4**	**+2.5**
PMTG				*e*Sn	**Sn**	**05 24 07.6**	**+0.8**
comp=N,22nm,0.1s							
PTOM	**Tomar**	**4.13**	**46**	*e*Pn	**Pn**	**05 23 27.0**	**+3.1**
PTOM				*e*Sn	**Sn**	**05 24 13.4**	**+1.2**
PTOM				A	A	05 24 17.9	
comp=N,66nm,0.2s							
PTOM	**Tomar**	**4.13**	**46**	P	**Pn**	**05 23 27.0**	**+3.1**
PTOM				S	**Sn**	**05 24 13.4**	**+1.2**
comp=N,33nm,0.2s							
PTOM	**Tomar**	**4.13**	**46**	P	**Pn**	**05 23 27.0**	**+3.1**
PTOM				S	**Sn**	**05 24 13.4**	**+1.2**
comp=N,33nm,0.2s							
PESTR	**Estremoz**	**4.23**	**60**	⇑*e*Pn	**Pn**	**05 23 27.6**	**+2.2**
PESTR				*e*Sn	**Sn**	**05 24 14.8**	**0.0**
PESTR				A	A	05 24 22.7	
comp=N,19nm,0.2s							
PESTR	**Estremoz**	**4.23**	**60**	P	**Pn**	**05 23 27.6**	**+2.2**
PESTR				S	**Sn**	**05 24 14.8**	**0.0**
comp=N,9.5nm,0.2s							
PESTR	**Estremoz**	**4.23**	**60**	P	**Pn**	**05 23 27.6**	**+2.2**
PESTR				S	**Sn**	**05 24 14.8**	**0.0**
comp=N,9.5nm,0.2s							
PBAR	**Barrancos**	**4.37**	**70**	*e*Pn	**Pn**	**05 23 29.8**	**+2.5**
PBAR				*e*Sn	**Sn**	**05 24 18.3**	**0.0**
PBAR				A	A	05 24 21.2	
comp=N,44nm,0.3s							
PBAR	**Barrancos**	**4.37**	**70**	P	**Pn**	**05 23 29.8**	**+2.5**
PBAR				S	**Sn**	**05 24 18.3**	**0.0**
comp=N,44nm,0.3s							
PBAR	**Barrancos**	**4.37**	**70**	P	**Pn**	**05 23 29.8**	**+2.5**
PBAR				S	**Sn**	**05 24 18.3**	**0.0**
comp=N,44nm,0.3s							
PCAS	**Casmilo, Conde**	**4.38**	**41**	*e*Pn	**Pn**	**05 23 30.2**	**+2.8**
PCAS				*e*Sn	**Sn**	**05 24 18.8**	**+0.3**
PCAS				A	A	05 24 27.7	
comp=N,24nm,0.2s							
PCAS	**Casmilo, Conde**	**4.38**	**41**	*e*Pn	**Pn**	**05 23 30.2**	**+2.8**
PCAS				*e*Sn	**Sn**	**05 24 18.8**	**+0.3**
comp=N,24nm,0.2s							
EMIN	**Mina Concepcio**	**4.56**	**76**	⇑P	**Pn**	**05 23 32.3**	**+2.4**
EMIN				S	**Sn**	**05 24 22.3**	**-0.7**
comp=N,15nm,0.2s,SNR=18							
EMIN	**Mina Concepcio**	**4.56**	**76**	P	**Pn**	**05 23 32.3**	**+2.4**
comp=N,17nm,0.2s,SNR=12							
EMIN	**Mina Concepcio**	**4.56**	**76**	P	**Pn**	**05 23 32.3**	**+2.4**
comp=N,15nm,0.2s,SNR=18							
EMIN				S	**Sn**	**05 24 22.3**	**-0.7**
comp=N,17nm,0.2s,SNR=12							
EBAD	**Badajoz**	**4.59**	**64**	P	**Pn**	**05 23 32.6**	**+2.3**
comp=N,16nm,0.1s,SNR=82							
EBAD				S	**Sn**	**05 24 24.0**	**+0.4**
comp=N,41nm,0.2s,SNR=9.3							
EBAD	**Badajoz**	**4.59**	**64**	P	**Pn**	**05 23 32.6**	**+2.3**
comp=N,16nm,0.1s,SNR=82							
EBAD				S	**Sn**	**05 24 24.0**	**+0.4**
comp=N,41nm,0.2s,SNR=9.3							
PMRV	**Marv??o**	**4.64**	**54**	*e*Pn	**Pn**	**05 23 33.4**	**+2.3**
PMRV				*e*Sn	**Sn**	**05 24 25.3**	**+0.3**
PMRV				A	A	05 24 27.3	
comp=N,37nm,0.2s							
PMRV	**Marv??o**	**4.64**	**54**	P	**Pn**	**05 23 33.4**	**+2.3**
PMRV				S	**Sn**	**05 24 25.3**	**+0.3**
comp=N,37nm,0.2s							
PMRV	**Marv??o**	**4.64**	**54**	P	**Pn**	**05 23 33.4**	**+2.3**
PMRV				S	**Sn**	**05 24 25.3**	**+0.3**
comp=N,37nm,0.2s							
PCBR	**Castelo Branco**	**4.82**	**50**	*e*Pn	**Pn**	**05 23 36.2**	**+2.7**
PCBR				*e*Sn	**Sn**	**05 24 29.1**	**-0.3**
PCBR				A	A	05 24 35.3	
comp=N,13nm,0.2s							
PCBR	**Castelo Branco**	**4.82**	**50**	P	**Pn**	**05 23 36.2**	**+2.7**
PCBR				S	**Sn**	**05 24 29.1**	**-0.3**
comp=N,6.3nm,0.2s							
PCBR	**Castelo Branco**	**4.82**	**50**	P	**Pn**	**05 23 36.2**	**+2.7**
PCBR				S	**Sn**	**05 24 29.1**	**-0.3**
comp=N,6.3nm,0.2s							
MTE	**Manteigas**	**5.14**	**45**	*e*Pn	**Pn**	**05 23 40.6**	**+2.6**
MTE				*e*Sn	**Sn**	**05 24 37.3**	**-0.1**
MTE				A	A	05 24 40.5	
comp=N,24nm,0.4s							
MTE	**Manteigas**	**5.14**	**45**	P	**Pn**	**05 23 40.6**	**+2.6**
MTE				S	**Sn**	**05 24 37.3**	**-0.1**
comp=N,12nm,0.4s							
MTE	**Manteigas**	**5.14**	**45**	P	**Pn**	**05 23 40.6**	**+2.6**
MTE				S	**Sn**	**05 24 37.3**	**-0.1**
comp=N,12nm,0.4s							
ESPR	**Espera**	**5.14**	**88**	P	**Pn**	**05 23 40.6**	**+2.7**
comp=N,19nm,0.2s,SNR=8.2							
ESPR				S	**Sn**	**05 24 38.6**	**+1.3**
comp=N,117nm,0.3s							
ESPR	**Espera**	**5.14**	**88**	P	**Pn**	**05 23 40.6**	**+2.7**
comp=N,19nm,0.2s,SNR=8.2							
ESPR				S	**Sn**	**05 24 38.6**	**+1.3**
comp=N,117nm,0.3s							
PTO	**Porto**	**5.17**	**32**	*e*Pn	**Pn**	**05 23 40.9**	**+2.6**
PTO				*e*Sn	**Sn**	**05 24 37.5**	**-0.5**
PTO				A	A	05 24 39.2	
comp=N,58nm,0.3s							
PTO	**Porto**	**5.17**	**32**	P	**Pn**	**05 23 40.9**	**+2.6**
PTO				S	**Sn**	**05 24 37.5**	**-0.5**
comp=N,29nm,0.3s							
PTO	**Porto**	**5.17**	**32**	P	**Pn**	**05 23 40.9**	**+2.6**
PTO				S	**Sn**	**05 24 37.5**	**-0.5**
comp=N,29nm,0.3s							
PVIS	**Viseu**	**5.18**	**40**	*e*Pn	**Pn**	**05 23 40.9**	**+2.5**
PVIS				*e*Sn	**Sn**	**05 24 37.4**	**-0.8**
PVIS				A	A	05 24 41.4	
comp=N,32nm,0.1s							
PVIS	**Viseu**	**5.18**	**40**	P	**Pn**	**05 23 40.9**	**+2.5**
PVIS				S	**Sn**	**05 24 37.4**	**-0.8**
comp=N,16nm,0.1s							
PVIS	**Viseu**	**5.18**	**40**	P	**Pn**	**05 23 40.9**	**+2.5**
PVIS				S	**Sn**	**05 24 37.4**	**-0.8**
comp=N,16nm,0.1s							
RTC	**Rabat Centre**	**5.25**	**121**	P	**Pn**	**05 23 40.0**	**+0.7**
RTC	**Rabat Centre**	**5.25**	**121**	*i*P	**Pn**	**05 23 40.0**	**+0.7**
EJIF	**Jimena Fronter**	**5.48**	**92**	P	**Pn**	**05 23 45.8**	**+3.2**
comp=N,5.9nm,0.2s,SNR=7.9							
EJIF				S	**Sn**	**05 24 44.8**	**-0.9**
comp=N,1.5nm,0.2s,SNR=7.9							
EJIF	**Jimena Fronter**	**5.48**	**92**	P	**Pn**	**05 23 45.8**	**+3.2**
comp=N,5.9nm,0.2s,SNR=7.9							
EJIF				S	**Sn**	**05 24 44.8**	**-0.9**
comp=N,1.5nm,0.2s,SNR=7.9							
ECAB	**El Cabril**	**5.59**	**75**	⇑P	**Pn**	**05 23 46.4**	**+2.3**
comp=N,17nm,0.2s,SNR=18							
ECAB				S	**Sn**	**05 24 47.8**	**-0.7**
comp=N,4.6nm,0.1s,SNR=6.6							
ECAB	**El Cabril**	**5.59**	**75**	P	**Pn**	**05 23 46.4**	**+2.3**
comp=N,17nm,0.2s,SNR=18							
ECAB				S	**Sn**	**05 24 47.8**	**-0.7**
comp=N,4.6nm,0.1s,SNR=6.6							
ECEU	**Ceuta**	**5.64**	**97**	P	**Pn**	**05 23 48.4**	**+3.6**
comp=N,6.7nm,0.2s,SNR=6.0							
ECEU	**Ceuta**	**5.64**	**97**	P	**Pn**	**05 23 48.4**	**+3.6**
comp=N,6.7nm,0.2s,SNR=6.0							
PMOZ	**Porto Moniz, M**	**5.69**	**227**	P	Pn	05 23 38.5	-7.0
SNR=7.9							
PMOZ				S	Sn	05 24 34.3	-17
SNR=7.9							
PMOZ	**Porto Moniz, M**	**5.69**	**227**	P	Pn	05 23 38.5	-7.0
SNR=7.9							
PMOZ				S	Sn	05 24 34.3	-17
SNR=7.9							
PVRL	**Vila Real**	**5.69**	**37**	*e*Pn	**Pn**	**05 23 47.2**	**+1.8**
PVRL				*e*Sn	**Sn**	**05 24 49.3**	**-1.5**
PVRL				A	A	05 24 53.0	
comp=N,27nm,0.2s							
PVRL	**Vila Real**	**5.69**	**37**	P	**Pn**	**05 23 47.2**	**+1.8**
PVRL				S	**Sn**	**05 24 49.3**	**-1.5**
comp=N,14nm,0.2s							
PVRL	**Vila Real**	**5.69**	**37**	P	**Pn**	**05 23 47.2**	**+1.8**
PVRL				S	**Sn**	**05 24 49.3**	**-1.5**
comp=N,14nm,0.2s							
POLO	**Lamas de

comp=N,12nm,0.1s,SNR=11
EMIJ Mijas 6.03 90 P **Pn** **05 23 52.5 +2.4**
comp=N,3.2nm,0.2s,SNR=17
EMIJ S **Sn** **05 25 00.0 +0.8**
comp=N,3.4nm,0.2s,SNR=7.9
EMIJ Mijas 6.03 90 P **Pn** **05 23 52.5 +2.4**
comp=N,3.2nm,0.2s,SNR=17
EMIJ S **Sn** **05 25 00.0 +0.8**
comp=N,3.4nm,0.2s,SNR=7.9
EADA Adamuz 6.26 75 P **Pn** **05 23 55.9 +2.6**
comp=N,17nm,0.2s,SNR=48
EADA S **Sn** **05 25 03.3 -1.6**
comp=N,4.1nm,0.2s,SNR=7.9
EADA Adamuz 6.26 75 P **Pn** **05 23 55.9 +2.6**
comp=N,17nm,0.2s,SNR=48
EADA S **Sn** **05 25 03.3 -1.6**
comp=N,4.1nm,0.2s,SNR=7.9
EGOR Sierra Gorda, 6.54 85 P **Pn** **05 23 59.8 +2.5**
comp=N,1.1nm,0.3s,SNR=7.9
EGOR S **Sn** **05 25 12.5 +0.5**
comp=N,5.6nm,0.3s,SNR=7.9
EGOR Sierra Gorda, 6.54 85 P **Pn** **05 23 59.8 +2.5**
comp=N,1.1nm,0.3s,SNR=7.9
EGOR S **Sn** **05 25 12.5 +0.5**
comp=N,5.6nm,0.3s,SNR=7.9
PBRG Braganca 6.57 39 *e*Pn **Pn** **05 23 59.8 +2.3**
PBRG *e*Sn **Sn** **05 25 09.9 -2.5**
PBRG A A 05 25 12.3
comp=N,12nm,0.2s
PBRG Braganca 6.57 39 P **Pn** **05 23 59.8 +2.3**
PBRG S **Sn** **05 25 09.9 -2.5**
comp=N,5.8nm,0.2s
PBRG Braganca 6.57 39 P **Pn** **05 23 59.8 +2.3**
PBRG S **Sn** **05 25 09.9 -2.5**
comp=N,5.8nm,0.2s
EMAZ Mazaricos 6.62 21 P **Pn** **05 23 59.7 +1.5**
comp=N,4.0nm,0.1s,SNR=7.9
EMAZ S **Sn** **05 25 08.6 -5.1**
comp=N,26nm,0.2s,SNR=7.9
EMAZ Mazaricos 6.62 21 P **Pn** **05 23 59.7 +1.5**
comp=N,4.0nm,0.1s,SNR=7.9
EMAZ S **Sn** **05 25 08.6 -5.1**
comp=N,26nm,0.2s,SNR=7.9
KIB El Ksiba 6.65 128 P **Pn** **05 23 59.0 +0.2**
KIB S **Sn** **05 25 08.0 -6.7**
KIB El Ksiba 6.65 128 P **Pn** **05 23 59.0 +0.2**
KIB S **Sn** **05 25 08.0 -6.7**
ECAL Calabor 6.67 38 P **Pn** **05 24 01.4 +2.5**
comp=N,6.5nm,0.2s,SNR=22
ECAL S **Sn** **05 25 12.8 -2.2**
comp=N,7.1nm,0.2s,SNR=6.4
ECAL Calabor 6.67 38 P **Pn** **05 24 01.4 +2.5**
comp=N,6.5nm,0.2s,SNR=22
ECAL S **Sn** **05 25 12.8 -2.2**
comp=N,7.1nm,0.2s,SNR=6.4
TZC Tazercounte 6.67 133 P **Pn** **05 24 01.0 +1.9**
TZC S Sn 05 25 08.0 -7.3
TZC Tazercounte 6.67 133 P **Pn** **05 24 01.0 +1.9**
TZC S Sn 05 25 08.0 -7.3
OUK Oukaimeden 6.69 146 P **Pn** **05 23 58.0 -1.4**
OUK Oukaimeden 6.69 146 P **Pn** **05 23 58.0 -1.4**
EAGO Agolada(Pontev 6.78 27 P **Pn** **05 24 02.5 +2.0**
comp=N,3.6nm,0.1s,SNR=7.9
EAGO S **Sn** **05 25 13.1 -4.7**
comp=N,6.5nm,0.1s,SNR=7.9
EAGO Agolada(Pontev 6.78 27 P **Pn** **05 24 02.5 +2.0**
comp=N,3.6nm,0.1s,SNR=7.9
EAGO S **Sn** **05 25 13.1 -4.7**
comp=N,6.5nm,0.1s,SNR=7.9
SELV Sierra Elvira 6.85 84 P **Pn** **05 24 03.9 +2.5**
comp=N,3.1nm,0.5s,SNR=4.0
SELV S **Sn** **05 25 20.0 +0.6**
comp=N,0.8nm,0.2s,SNR=7.9
SELV Sierra Elvira 6.85 84 P **Pn** **05 24 03.9 +2.5**
comp=N,3.1nm,0.5s,SNR=4.0
SELV S **Sn** **05 25 20.0 +0.6**
comp=N,0.8nm,0.2s,SNR=7.9
ECOG Cogollos-Vega 6.98 84 P **Pn** **05 24 06.3 +3.1**
comp=N,2.2nm,0.3s,SNR=7.9
ECOG S **Sn** **05 25 23.1 +0.5**
comp=N,1.1nm,0.2s,SNR=7.9
ECOG Cogollos-Vega 6.98 84 P **Pn** **05 24 06.3 +3.1**
comp=N,2.2nm,0.3s,SNR=7.9
ECOG S **Sn** **05 25 23.1 +0.5**
comp=N,1.1nm,0.2s,SNR=7.9
CZD Col de Zad 7.04 120 S **Sn** **05 25 19.0 -5.4**
CZD Col de Zad 7.04 120 S **Sn** **05 25 19.0 -5.4**
ESDC Sonseca Array 7.13 64 P **Pn** **05 24 07.2 +1.9**
comp=N,1.8nm,0.2s,baz=248,slow=13,SNR=61
ESDC S **Sn** **05 25 25.2 -1.1**
comp=N,5.0nm,0.2s,baz=249,slow=23,SNR=4.1
ESDC Sonseca Array 7.13 64 P **Pn** **05 24 07.2 +1.9**
comp=N,1.8nm,0.2s,SNR=61
ESDC S **Sn** **05 25 25.2 -1.1**
comp=N,5.0nm,0.2s,SNR=4.1
TZK Tazeka 7.14 110 P **Pn** **05 24 09.0 +3.4**
TZK S **Sn** **05 25 23.0 -3.9**
TZK Tazeka 7.14 110 P **Pn** **05 24 09.0 +3.4**
TZK S **Sn** **05 25 23.0 -3.9**
YBT Youssef Ben Ta 7.33 161 P Pn 05 24 05.0 -3.0
YBT S Sn 05 25 20.0 -11
YBT Youssef Ben Ta 7.33 161 P Pn 05 24 05.0 -3.0
YBT S Sn 05 25 20.0 -11
EQES Quesada 7.40 80 P **Pn** **05 24 11.0 +2.0**
comp=N,3.3nm,0.2s,SNR=14
EQES S **Sn** **05 25 32.9 -0.1**
comp=N,2.8nm,0.2s,SNR=7.9
EQES Quesada 7.40 80 P **Pn** **05 24 11.0 +2.0**
comp=N,3.3nm,0.2s,SNR=14
EQES S **Sn** **05 25 32.9 -0.1**
comp=N,2.8nm,0.2s,SNR=7.9
GUD Guadarrama 7.40 57 P **Pn** **05 24 11.5 +2.5**
comp=N,3.2nm,0.2s,SNR=22
GUD S **Sn** **05 25 31.1 -2.0**
comp=N,1.8nm,0.2s,SNR=7.9
GUD Guadarrama 7.40 57 P **Pn** **05 24 11.5 +2.5**
comp=N,3.2nm,0.2s,SNR=22
GUD S **Sn** **05 25 31.1 -2.0**
comp=N,1.8nm,0.2s,SNR=7.9
EPON Pontenova 7.59 30 P **Pn** **05 24 13.8 +2.3**
comp=N,3.9nm,0.2s,SNR=19
EPON S **Sn** **05 25 33.1 -4.4**
comp=N,4.7nm,0.2s,SNR=4.5
EPON Pontenova 7.59 30 P **Pn** **05 24 13.8 +2.3**
comp=N,3.9nm,0.2s,SNR=19
EPON S **Sn** **05 25 33.1 -4.4**
comp=N,4.7nm,0.2s,SNR=4.5
SESP Santiago Espad 7.84 78 P **Pn** **05 24 17.2 +2.1**
comp=N,2.1nm,0.2s,SNR=7.9
SESP S **Sn** **05 25 41.9 -2.1**
comp=N,1.6nm,0.2s,SNR=7.9
SESP Santiago Espad 7.84 78 P **Pn** **05 24 17.2 +2.1**
comp=N,2.1nm,0.2s,SNR=7.9
SESP S **Sn** **05 25 41.9 -2.1**
comp=N,1.6nm,0.2s,SNR=7.9
CFUE Fuerteventura 8.27 190 S Sn 05 25 34.2 -20
SNR=7.9
CFUE Fuerteventura 8.27 190 S Sn 05 25 34.2 -20
SNR=7.9
EARI Arriondas 8.43 38 P **Pn** **05 24 26.5 +3.4**
comp=N,1.2nm,0.2s,SNR=14
EARI S **Sn** **05 25 55.9 -2.5**
comp=N,0.8nm,0.2s,SNR=5.9
EARI Arriondas 8.43 38 P **Pn** **05 24 26.5 +3.4**
comp=N,1.2nm,0.2s,SNR=14
EARI S **Sn** **05 25 55.9 -2.5**
comp=N,0.8nm,0.2s,SNR=5.9
ETOB Tobarra 8.69 75 P **Pn** **05 24 27.9 +1.3**
comp=N,3.3nm,0.2s,SNR=25
ETOB S **Sn** **05 26 01.3 -3.4**
comp=N,2.2nm,0.3s,SNR=5.9
ETOB Tobarra 8.69 75 P **Pn** **05 24 27.9 +1.3**
comp=N,3.3nm,0.2s,SNR=25
ETOB S **Sn** **05 26 01.3 -3.4**
comp=N,2.2nm,0.3s,SNR=5.9
ETOR Torete 8.91 60 P **Pn** **05 24 32.1 +2.3**
comp=N,50nm,0.2s,SNR=83
ETOR S **Sn** **05 26 06.6 -3.7**
comp=N,13nm,0.2s,SNR=6.8
ETOR Torete 8.91 60 P **Pn** **05 24 32.1 +2.3**
comp=N,50nm,0.2s,SNR=83
ETOR S **Sn** **05 26 06.6 -3.7**
comp=N,13nm,0.2s,SNR=6.8
ELAN Lanestosa 9.32 44 P **Pn** **05 24 37.7 +2.5**
comp=N,1.6nm,0.2s,SNR=11
ELAN S **Sn** **05 26 17.3 -2.8**
comp=N,0.9nm,0.3s,SNR=5.6
ELAN Lanestosa 9.32 44 P **Pn** **05 24 37.7 +2.5**
comp=N,1.6nm,0.2s,SNR=11
ELAN S **Sn** **05 26 17.3 -2.8**
comp=N,0.9nm,0.3s,SNR=5.6
EMOS Mosqueruela 9.89 65 P **Pn** **05 24 46.6 +3.4**
comp=N,1.5nm,0.3s,SNR=6.6
EMOS S **Sn** **05 26 31.5 -2.8**
comp=N,0.3nm,0.2s,SNR=7.9
EMOS Mosqueruela 9.89 65 P **Pn** **05 24 46.6 +3.4**
comp=N,1.5nm,0.3s,SNR=6.6
EMOS S **Sn** **05 26 31.5 -2.8**
comp=N,0.3nm,0.2s,SNR=7.9
ELIZ Elizondo 10.39 49 P **Pn** **05 24 52.4 +2.5**
comp=N,3.4nm,0.2s,SNR=7.9
ELIZ Elizondo 10.39 49 P **Pn** **05 24 52.4 +2.5**
comp=N,3.4nm,0.2s,SNR=7.9
IELO Elcoad 10.39 51 P **Pn** **05 24 52.6 +2.6**
comp=N,5.4nm,0.2s,SNR=7.9
IELO S **Sn** **05 26 42.7 -3.9**
comp=N,0.4nm,0.1s,SNR=7.9
IELO Elcoad 10.39 51 P **Pn** **05 24 52.6 +2.6**
comp=N,5.4nm,0.2s,SNR=7.9
IELO S **Sn** **05 26 42.7 -3.9**
comp=N,0.4nm,0.1s,SNR=7.9
EALK Alkurruntz 10.43 49 P **Pn** **05 24 53.7 +3.1**
comp=N,1.0nm,0.2s,SNR=8.5
EALK S **Sn** **05 26 44.4 -3.1**
comp=N,1.4nm,0.2s,SNR=7.9
EALK Alkurruntz 10.43 49 P **Pn** **05 24 53.7 +3.1**
comp=N,1.0nm,0.2s,SNR=8.5
EALK S **Sn** **05 26 44.4 -3.1**
comp=N,1.4nm,0.2s,SNR=7.9
SJPF Ste Jean 10.55 50 *e*Pn **Pn** **05 24 54.6 +2.6**
SJPF *e*Sn **Sn** **05 26 47.3 -2.9**
comp=N,1.9nm,0.2s
SJPF Ste Jean 10.55 50 P **Pn** **05 24 54.6 +2.6**
SJPF S **Sn** **05 26 47.3 -2.9**
comp=N,0.9nm,0.2s
SJPF Ste Jean 10.55 50 P **Pn** **05 24 54.6 +2.6**
SJPF S **Sn** **05 26 47.3 -2.9**
comp=N,0.9nm,0.2s
ATE Arette 10.86 51 P **Pn** **05 24 59.1 +2.8**
comp=N,1.8nm,0.2s,SNR=7.9
ATE S **Sn** **05 26 54.0 -3.8**
comp=N,0.8nm,0.2s,SNR=7.9
ATE Arette 10.86 51 P **Pn** **05 24 59.1 +2.8**
comp=N,1.8nm,0.2s,SNR=7.9
ATE S **Sn** **05 26 54.0 -3.8**
comp=N,0.8nm,0.2s,SNR=7.9
EPOB Poblet 11.31 62 P **Pn** **05 25 04.2 +1.6**
comp=N,1.8nm,0.3s,SNR=7.9
EPOB Poblet 11.31 62 P **Pn** **05 25 04.2 +1.6**
comp=N,1.8nm,0.3s,SNR=7.9
EPF Esparros 11.49 53 *e*Pn **Pn** **05 25 07.7 +2.7**
EPF *e*Sn **Sn** **05 27 09.7 -3.7**
comp=N,1.8nm,0.4s
EPF Esparros 11.49 53 P **Pn** **05 25 07.7 +2.7**
EPF S **Sn** **05 27 09.7 -3.7**
comp=N,0.9nm,0.4s
EPF Esparros 11.49 53 P **Pn** **05 25 07.7 +2.7**
EPF S **Sn** **05 27 09.7 -3.7**
comp=N,0.9nm,0.4s
CSOR Sort 11.73 58 P **Pn** **05 25 10.9 +2.6**
comp=N,0.6nm,0.2s,SNR=4.0
CSOR Sort 11.73 58 P **Pn** **05 25 10.9 +2.6**
comp=N,0.6nm,0.2s,SNR=4.0
EMIR Miracle 11.82 60 P **Pn** **05 25 12.1 +2.5**
comp=N,1.8nm,0.3s,SNR=7.9
EMIR Miracle 11.82 60 P **Pn** **05 25 12.1 +2.5**
comp=N,1.8nm,0.3s,SNR=7.9
CFON Fontmartina 12.41 62 P **Pn** **05 25 19.7 +2.1**
comp=N,1.4nm,0.2s,SNR=5.8
CFON Fontmartina 12.41 62 P **Pn** **05 25 19.7 +2.1**
comp=N,1.4nm,0.2s,SNR=5.8
LFF La Frestale 12.74 46 *e*Pn **Pn** **05 25 23.4 +1.4**
LFF *e*Sn **Sn** **05 27 36.8 -7.1**
comp=N,2.1nm,0.3s
LFF La Frestale 12.74 46 P **Pn** **05 25 23.4 +1.4**
LFF S **Sn** **05 27 36.8 -7.1**
comp=N,1.1nm,0.3s
LFF La Frestale 12.74 46 P **Pn** **05 25 23.4 +1.4**
LFF S **Sn** **05 27 36.8 -7.1**
comp=N,1.1nm,0.3s
RJF Les Rejaudoux 13.40 47 *e*Pn **Pn** **05 25 31.5 +0.5**
RJF *e*Sn **Sn** **05 27 54.2 -5.8**
comp=N,1.4nm,0.2s
RJF Les Rejaudoux 13.40 47 P **Pn** **05 25 31.5 +0.5**
RJF S **Sn** **05 27 54.2 -5.8**
comp=N,0.7nm,0.2s
RJF Les Rejaudoux 13.40 47 *e*Pn **Pn** **05 25 31.5 +0.5**
RJF S **Sn** **05 27 54.2 -5.8**
comp=N,0.7nm,0.2s
CAF Calviac 13.52 49 *e*Pn **Pn** **05 25 32.4 -0.3**
CAF *e*Sn Sn 05 27 54.3 -8.7
comp=N,0.8nm,0.4s
CAF Calviac 13.52 49 P **Pn** **05 25 32.4 -0.3**
CAF S Sn 05 27 54.3 -8.7
comp=N,0.4nm,0.4s
CAF Calviac 13.52 49 *e*Pn **Pn** **05 25 32.4 -0.3**
CAF S Sn 05 27 54.3 -8.7
comp=N,0.4nm,0.4s

NIED ***10*** *05:23:00,37.˝10N×143.˝30E,h11km,Mw4.3 Best double couple: M₀2.98000×10¹⁵ NP1:φs181.00000°,δ37.00000°, λ-124.00000°. NP2:φs41.00000°,δ60.00000°, λ-67.00000°.*
IDC ***10*** *05:23:25.0±0.5,36.˚99N×143.˚47E,h0km,mb4.4/34, mb1 4.5/40,mb1mx4.5/58,mbtmp4.4/40,ML3.7/6,MS4.1/2, Ms1 4.1/2,ms1mx3.0/48,Error ellipse: s-maj=13.4km s-min=11.6km az=140.0*
BJI ***10*** *05:23:26.3,37.˚09N×143.˚84E,h40km,mb4.6/37,mB4.8/25, Ms4.3/19,Ms7 4.2/18*
ISCJB ***10*** *05:23:27.5±1.0,37.˚05N±0.˚03×143.˚33E±0.˚02,h25km±7km, mb4.5/113,MS4.1/8,Error ellipse: s-maj=5.1km s-min=3.2km az=171.4*
NEIC ***10*** *05:23:28.4±1.5,36.˚93N×143.˚43E,h21km±11km,mb4.7/60, Error ellipse: s-maj=5.2km s-min=4.3km az=142.0*
MOS ***10*** *05:23:28.8±0.8,37.˚27N×143.˚33E,h26km,mb4.9/31,Error ellipse: s-maj=8.4km s-min=5.8km az=99.0*
JMA ***10*** *05:23:29.1±0.2,37.˚06N×143.˚29E,h57km,M4.3*
JMA Felt I J1.

ISC 10 05:23:29.3±0.7,37.˚07N±0.˚04×143.˚45E±0.˚04,h28km±4km, n408,σ1°37/437,mb4.6/113,MS4.1/8,9C-2D,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JFK	**Kawauchi**	**2.08**	**279**	P	**Pn**	**05 24 00.5**	**-1.8**
JFK				S	**Sn**	**05 24 23.8**	**-3.4**
ONAJ	**Iwakimizuishiy**	**2.12**	**272**	P	**Pn**	**05 24 01.1**	**-1.8**
ONAJ				S	**Sn**	**05 24 24.5**	**-3.8**
JIO	**Ouri**	**2.17**	**310**	P	**Pn**	**05 24 02.2**	**-1.2**
JIO				S	**Sn**	**05 24 26.6**	**-2.7**
JMM	**Marumori**	**2.26**	**291**	P	**Pn**	**05 24 03.4**	**-1.3**
JMM				S	**Sn**	**05 24 28.4**	**-3.2**
JFT	**Otama**	**2.52**	**281**	P	**Pn**	**05 24 07.6**	**-0.8**
JFT				S	**Sn**	**05 24 35.8**	**-2.4**
JMK	**Ichinoseki**	**2.58**	**318**	P	**Pn**	**05 24 08.0**	**-1.1**
JMK				S	**Sn**	**05 24 36.8**	**-2.7**
JOM	**Ohasama**	**2.94**	**325**	P	**Pn**	**05 24 13.2**	**-0.9**
JYK	**Kaneyama**	**3.06**	**308**	P	**Pn**	**05 24 15.1**	**-0.7**
JYK				S	**Sn**	**05 24 49.6**	**-1.9**
BSO1	**Boso 1**	**3.14**	**221**	P	**Pn**	**05 24 15.2**	**-1.1**
BSO1				*e*S	**Sn**	**05 24 51.4**	**-1.2**
JAG	**Ashikaga**	**3.27**	**260**	P	**Pn**	**05 24 17.4**	**-1.3**
JAW	**Awa shima**	**3.61**	**294**	P	**Pn**	**05 24 23.0**	**-0.3**
JRY	**Ryogami san**	**3.81**	**255**	P	**Pn**	**05 24 24.7**	**-1.4**
JOD2	**Odawara 2**	**3.96**	**244**	P	**Pn**	**05 24 26.7**	**-1.5**
MJAR	**Matsushiro Arr**	**4.24**	**264**	Pn	**Pn**	**05 24 31.9**	**-0.1**
	44nm,0.3s,baz=92,slow=15,SNR=224						
MAJO	**Matsushiro**	**4.24**	**264**	*c*	*i* **P**	**05 24 32.2**	**+0.2**
MAJO	**Matsushiro**	**4.24**	**264**	*e*Pn	**Pn**	**05 24 32.4**	**+0.4**
MAJO				*e*Sn	**Sn**	**05 25 21.1**	**+0.5**
MAT	**Matsushiro**	**4.24**	**264**	P	**Pn**	**05 24 32.2**	**+0.2**
MAT				S	**Sn**	**05 25 15.8**	**-4.8**
MAT	**Matsushiro**	**4.24**	**264**	P	**Pn**	**05 24 32.3**	**+0.2**
MJB9	**Matsu-Tunnel**	**4.24**	**265**	*e*Pn	**Pn**	**05 24 31.6**	**-0.4**
MJB9				*e*Sn	**Sn**	**05 25 17.3**	**-3.3**
ERM	**Erimo**	**4.95**	**357**	*ce*	**P**	**05 24 39.9**	**-1.7**
ERM				pmax	pmax		
	comp=Z,36nm,0.7s						

ERM	**Erimo**	**4.95**	**357**	*e*Pn	**Pn**	**05 24 42.0**	**+0.3**
ERM				*e*Sn	**Sn**	**05 25 32.9**	**-5.0**
JHJ2	**Mitsune**	**4.95**	**218**	*e*Pn	**Pn**	**05 24 39.4**	**-2.3**
JHJ	**Hachijo jima 2**	**4.96**	**218**	Pn	**Pn**	**05 24 39.6**	**-2.2**
	comp=Z,18nm,0.3s,baz=154,slow=23,SNR=19						
JHJ				Sn	**Sn**	**05 25 30.9**	**-7.2**
	comp=Z,122nm,0.3s,baz=91,slow=22,SNR=8.1						
INU	**Inuyama**	**5.48**	**254**	*e*Pn	**Pn**	**05 24 49.0**	**0.0**
INU				*e*Sn	**Sn**	**05 25 51.0**	**0.0**
YUK	**Yuzh-Kuril'sk**	**7.20**	**14**	*e*P	**Pn**	**05 25 10.0**	**-2.5**
YUK				*e*S	**Sn**	**05 26 25.2**	**-8.1**
YUK				pmax	pmax		
	comp=Z,121nm,0.3s						
YUK				pmax	pmax		
	comp=N,53nm,0.2s						
YUK				pmax	pmax		
	comp=E,51nm,0.2s						
SHO	**Shikotan**	**7.26**	**20**	*e*P	**Pn**	**05 25 09.8**	**-3.7**
SHO				*e*S	Sn	05 26 25.7	-9.3
SHO				pmax	pmax		
	comp=Z,53nm,0.6s						
SHO				pmax	pmax		
	comp=N,37nm,0.7s						
KUR	**Kuril'sk**	**8.81**	**21**	*e*P	**Pn**	**05 25 33.8**	**-0.9**
KUR				*e*S	Sn	05 27 03.4	-10
KUR				pmax	pmax		
	comp=Z,55nm,0.5s						
YSS	**Yuzh-Sakhalins**	**9.89**	**357**	P	Pn	05 25 39.1	-10
CBIJ	**Chichi jima**	**10.00**	**187**	Pn	Pn	05 25 46.1	-5.0
CBIJ				Sn	Sn	05 27 29.8	-13
JCJ	**Chichijima**	**10.00**	**187**	Pn	Pn	05 25 46.1	-5.0
	baz=270,slow=20						
JCJ				Sn	Sn	05 27 29.8	-13
	baz=270,slow=20						
JNU	**Nakatsue**	**11.02**	**253**	Pn	**Pn**	**05 26 05.1**	**-0.1**
	comp=Z,0.8nm,0.3s,baz=56,slow=10,SNR=12						
JNU	**Nakatsue**	**11.02**	**253**	*e*Pn	**Pn**	**05 26 04.9**	**-0.3**
USRK	**Ussuriysk Ar.**	**11.24**	**313**	Pn	**Pn**	**05 26 08.1**	**+0.1**
	comp=Z,0.7nm,0.3s,baz=130,slow=14,SNR=9.9						
KSRS	**Korea Array**	**12.38**	**276**	Pn	**Pn**	**05 26 25.2**	**+1.7**
	comp=Z,0.5nm,0.3s,baz=92,slow=14,SNR=21						
KSAR	**Wonju Array Be**	**12.41**	**276**	P	**Pn**	**05 26 25.3**	**+1.3**
KSAR	**Wonju Array Be**	**12.41**	**276**	Pn	**Pn**	**05 26 25.2**	**+1.3**
TYV	**Tymovskoe**	**13.80**	**358**	*e*P	**Pn**	**05 26 44.0**	**+1.1**
TYV				*e*		05 29 19.0	
TYV				pmax	pmax		
	comp=Z,15nm,0.8s						
TYV				MLR	MLR		
	comp=Z,500nm,16.0s						
KLR	**Kul'dur**	**14.83**	**329**	Pn	**Pn**	**05 26 54.7**	**-2.3**
	comp=Z,0.6nm,0.3s,baz=134,slow=12,SNR=22						
CN2	**Changchun**	**15.25**	**302**	*e*P	**P**	**05 27 04.8**	**-2.4**
CN2				pmax	pmax		
	comp=Z,10.0nm,0.6s						
PETK	**Petropavlovsk-**	**18.87**	**27**	P	**Pn**	**05 27 48.3**	**+0.4**
	comp=Z,0.2nm,0.3s,baz=207,slow=9.5,SNR=4.2						
NJ2	**Nanjing**	**20.84**	**263**	*e*P	**P**	**05 28 07.6**	**-1.2**
NJ2				pmax	pmax		
	comp=Z,9.0nm,0.5s						
BJI	**Beijing**	**21.50**	**286**	P	**P**	**05 28 15.8**	**0.0**
BJI				pmax	pmax		
	comp=Z,5.0nm,0.8s						
MA2	**Magadan**	**23.01**	**10**	P	**P**	**05 28 31.6**	**-0.1**
	comp=Z,5.9nm,0.5s,baz=194,slow=8.1,SNR=14						
WHN	**Wuhan**	**24.98**	**263**	P	**P**	**05 28 48.0**	**-2.5**
HHC	**Hu-ho-hao-te**	**25.00**	**289**	*e*P	**P**	**05 28 51.5**	**+0.7**
HHC				S	**S**	**05 33 07.5**	**-5.6**
HHC				SS	**SnSn**	**05 34 08.0**	**+5.3**
HHC				pmax	pmax		
	comp=Z,35nm,0.7s						
HHC				pmax	pmax		
	comp=Z,110nm,8.1s						
HHC				LR	LR		
	comp=Z,1μm,13.6s						
HHC				LR	LR		
	comp=Z,2μm,14.8s						
HHC				LR	LR		
	comp=Z,1μm,14.8s						
YAK	**Yakutsk**	**26.42**	**345**	P	**P**	**05 29 03.1**	**-0.1**
	comp=Z,17nm,0.4s,baz=220,slow=1.4,SNR=4.6						
YAK	**Yakutsk**	**26.42**	**345**	*e*P	**P**	**05 29 03.0**	**-0.2**
YAK				*e**PP	**sP**	**05 29 17.5**	**+2.6**
YAK				*e*		05 29 52.4	
YAK				*e*SS		05 34 53.6	
YAK				pmax	pmax		
	comp=Z,17nm,0.8s						
YAK				pmax	pmax		
	comp=N,11nm,1.1s						
YAK				pmax	pmax		
	comp=Z,134nm,4.2s						
YAK				pmax	pmax		
	comp=N,59nm,4.3s						
YAK				pmax	pmax		
	comp=E,61nm,3.5s						
SEY	**Seymchan**	**26.47**	**9**	P	**P**	**05 29 05.0**	**+1.4**
	comp=E,6.7nm,0.5s,baz=187,slow=7.1,SNR=39						
SEY	**Seymchan**	**26.47**	**9**	*ce*	**P**	**05 29 04.6**	**+0.9**
H11N2	**WAKE ISLAND Hy**	**26.79**	**124**	T	T	05 55 59.5	
	baz=317,slow=76,SNR=24						
H11N1	**WAKE ISLAND Hy**	**26.80**	**124**	T	T	05 56 07.1	
	baz=317,slow=76,SNR=13						
H11N3	**WAKE ISLAND Hy**	**26.81**	**124**	T	T	05 56 04.2	
	baz=317,slow=76,SNR=18						
H11S1	**WAKE ISLAND Hy**	**27.53**	**126**	T	T	05 56 56.5	
	baz=318,slow=76,SNR=7.4						
H11S3	**WAKE ISLAND Hy**	**27.54**	**126**	T	T	05 56 56.7	
	baz=318,slow=76,SNR=9.5						
H11S2	**WAKE ISLAND Hy**	**27.55**	**126**	T	T	05 56 58.7	
	baz=318,slow=76,SNR=8.6						
XAN	**Xi'an**	**28.16**	**274**	P	**P**	**05 29 20.6**	**+1.4**
XAN				pmax	pmax		
	comp=E,4.0nm,1.4s						
XAN				pmax	pmax		
	comp=E,53nm,6.1s						
BOD	**Bodaibo**	**28.39**	**326**	*e*P	**P**	**05 29 20.5**	**-0.4**
BOD				pmax	pmax		
	comp=Z,10.0nm,1.2s						
ULN	**Ulaanbaatar**	**28.69**	**304**	*i* P	**P**	**05 29 26.9**	**+3.0**
ULN	**Ulaanbaatar**	**28.69**	**304**	*e*P	**P**	**05 29 27.2**	**+3.3**
	comp=Z,6.0nm,0.8s						
SONA1	**Songino Array**	**29.12**	**303**	*e*P	**P**	**05 29 31.2**	**+3.5**
SONM	**Songino Array**	**29.12**	**303**	P	**P**	**05 29 28.6**	**+0.9**
	comp=Z,6.0nm,0.9s,baz=98,slow=7.8,SNR=25						
ZAK	**Zakamensk**	**31.53**	**308**	*e*P	**P**	**05 29 47.8**	**-1.1**
ZAK				pmax	pmax		
	comp=Z,7.0nm,1.2s						
TLY	**Talaya**	**31.54**	**310**	P	**P**	**05 29 50.1**	**+1.2**
	comp=Z,1.6nm,0.4s,baz=20,slow=7.8,SNR=3.2						
LZH	**Lanzhou**	**31.66**	**280**	*e*P	**P**	**05 29 48.0**	**-2.4**
LZH				pP	pP	05 29 59.2	+0.5
LZH				sP	sP	05 30 04.0	+1.8
LZH				PP	**PnPn**	**05 30 53.1**	**-1.4**
LZH				pmax	pmax		
	comp=Z,21nm,1.1s						
LZH				pmax	pmax		
	comp=Z,66nm,5.0s						
LZH				LR	LR		
	comp=Z,290nm,12.9s						
LZH				LR	LR		
	comp=Z,310nm,13.3s						
LZH				LR	LR		
	comp=Z,390nm,15.8s						
GYA	**Guiyang**	**32.84**	**262**	P	**P**	**05 30 00.6**	**-0.1**
GYA				pmax	pmax		
	comp=Z,10.0nm,0.8s						
CD2	**Chengdu**	**33.30**	**271**	P	**P**	**05 30 03.2**	**-1.4**
CD2				pmax	pmax		
	comp=Z,1.0nm,0.5s						
BILL	**Bilibino**	**33.55**	**15↑**	*e*P	**P**	**05 30 06.7**	**+0.4**
BILL						05 32 48.0	
BILL				*e*		05 37 30.4	
BILL				pmax	pmax		
	comp=Z,7.0nm,1.4s						
BILL				MLR	MLR		
	comp=Z,165nm,17.0s						
GTA	**Gaotai**	**34.11**	**288**	*e*P	**P**	**05 30 12.5**	**+0.9**
GTA				pP	sP	05 30 24.4	+0.9
GTA				sP	pP	05 30 28.2	+8.2
GTA				PcP	**PcP**	**05 32 49.4**	**+0.8**
GTA				S	**S**	**05 35 35.4**	**-0.5**
GTA				sS	sS	05 35 54.6	+4.9
GTA				SS	**SnSn**	**05 37 46.0**	**+1.6**
GTA				pmax	pmax		
	comp=Z,6.0nm,1.0s						
GTA				pmax	pmax		

GTA LR LR
comp=Z,590nm,5.0s
GTA LR LR
comp=Z,190nm,18.5s
GTA LR LR
comp=Z,290nm,19.0s
GTA LR LR
comp=Z,230nm,20.9s
TIXI Tiksi 35.46 352 P **P 05 30 22.4 -0.4**
comp=Z,1.1nm,0.4s,baz=98,slow=8.0,SNR=3.0
TIXI Tiksi 35.46 352 *ce*P **P 05 30 22.1 -0.7**
TIXI pmax pmax
comp=Z,6.0nm,2.5s
KMI Kunming 36.58 263 P **P 05 30 33.5 +0.4**
KMI pmax pmax
comp=Z,13nm,0.8s
KMI pmax pmax
comp=Z,71nm,4.4s
WMQ Urumqi 42.27 297 *e*P **P 05 31 21.4 +1.1**
WMQ sP sP 05 31 36.9 +4.7
WMQ S **S 05 37 38.0 -1.1**
WMQ pmax pmax
comp=Z,4.0nm,0.6s
WMQ pmax pmax
comp=Z,67nm,5.0s
WMQ LR LR
comp=Z,120nm,20.6s
WMQ LR LR
comp=Z,35nm,22.2s
WMQ LR LR
comp=Z,91nm,25.4s
CMAR Chiang Mai Arr 43.09 257 P **P 05 31 27.4 +0.4**
comp=Z,0.6nm,0.4s,baz=47,slow=6.1,SNR=5.9
ZAA0 Zalesovo Array 43.09 312 *e*P **P 05 31 27.1 +0.5**
ZAA0 *e*PcP **PcP 05 33 16.0 -0.2**
ZALV Zalesovo Beam 43.09 312 P **P 05 31 27.1 +0.5**
comp=Z,4.5nm,0.7s,baz=88,slow=6.7,SNR=24
ZALV PcP **PcP 05 33 16.4 +0.2**
comp=Z,3.3nm,0.5s,baz=99,slow=3.3,SNR=7.6
ZALV LR LR 05 50 09.8
comp=Z,151nm,19.2s,baz=70,slow=37
NVS Novosibirsk 43.99 314⇑ *i*P **P 05 31 34.4 +0.5**
NVS pmax pmax
comp=N,6.0nm,1.7s
NVS pmax pmax
comp=Z,13nm,1.7s
MKAR Makanchi Array 45.48 302 P **P 05 31 46.3 +0.4**
comp=Z,1.8nm,0.6s,baz=86,slow=9.1,SNR=11
MKAR PcP **PcP 05 33 24.1 -0.3**
comp=Z,1.7nm,0.7s,baz=67,slow=3.2,SNR=3.9
KDAK Kodiak Island 45.98 42 *i*P **P 05 31 51.7 +2.1**
CAST Castle Rocks 46.28 34 *e*P **P 05 31 53.3 +1.3**
comp=Z,5.5nm,1.0s
KTH Kantishna Hill 46.81 34 *e*P **P 05 31 57.4 +1.2**
comp=Z,33nm,1.8s
MLY Manley 46.96 32 *e*P **P 05 31 59.1 +1.8**
comp=Z,10nm,0.9s
KURK Kurchatov 47.19 308 *e*P **P 05 31 59.3 +0.1**
KURK pmax pmax
comp=Z,26nm,0.6s
KURK Kurchatov 47.19 308 *e*P **P 05 31 59.3 +0.1**
comp=Z,26nm,0.6s
KURBB Kurchatov Arra 47.26 308 P **P 05 32 00.0 +0.2**
comp=Z,8.2nm,0.7s,baz=82,slow=7.9,SNR=69
TAPN Taplejung 47.56 275 *e*P **P 05 32 03.6 +0.8**
comp=Z,8.0nm,0.4s
RND Reindeer 47.73 34 *e*P **P 05 32 04.3 +0.9**
RND pmax pmax
comp=Z,7.0nm,0.9s
RND Reindeer 47.73 34 *e*P **P 05 32 04.3 +0.9**
comp=Z,7.4nm,0.9s
MDM Murphy Dome 48.02 32 *e*P **P 05 32 07.1 +1.6**
comp=Z,14nm,0.8s
WRH Wood River Hil 48.07 33 *e*P **P 05 32 07.0 +1.1**
WRH *e*PcP **PcP 05 33 33.7 +0.4**
COLA College 48.18 32⇑ *i*P **P 05 32 08.4 +1.7**
COLA pmax pmax
comp=Z,21nm,2.2s
ILAR Eielson Array 48.59 32 P **P 05 32 10.6 +0.7**
comp=Z,7.1nm,0.8s,baz=264,slow=6.4,SNR=66
ILB Eielson Array 48.59 32 *e*P **P 05 32 10.6 +0.7**
IL1 Eielson Array 48.59 32 *e*P **P 05 32 10.4 +0.5**
RAMN Ramite 48.62 275 *e*P P 05 32 01.8 -9.2
comp=Z,37nm,0.5s
GUN Gumba 48.77 277 *e*P **P 05 32 13.9 +1.7**
comp=Z,25nm,0.6s
GKN Gorkha 49.72 277 *e*P **P 05 32 18.7 -0.5**
comp=Z,25nm,0.6s
DOT Dot Lake 49.87 34 *e*P **P 05 32 20.3 +0.5**
comp=Z,9.3nm,0.7s
RAGM Ragged Mountai 49.87 38 *e*P **P 05 32 21.9 +2.1**
comp=Z,133nm,1.2s
MENT Mentasta 50.08 35 *e*P **P 05 32 22.6 +1.3**
comp=Z,6.1nm,1.0s
KOLN Koldanda 50.64 278 *e*P P 05 32 19.7 -6.6
comp=Z,3.9nm,0.4s
PYUN Piuthan 50.98 278 *e*P **P 05 32 25.2 -3.6**
comp=Z,16nm,0.7s
TKM2 Tokmak 2 51.04 299 *e*P **P 05 32 29.8 +0.7**
TKM2 pmax pmax
comp=Z,12nm,1.1s
TKM2 Tokmak 2 51.04 299 *e*P **P 05 32 29.8 +0.7**
comp=Z,12nm,1.1s
BVAR Borovoye Array 51.75 313 P **P 05 32 34.2 +0.2**
comp=Z,1.9nm,0.5s,baz=69,slow=8.1,SNR=12
BVAR PcP **PcP 05 33 46.3 -0.6**
comp=Z,2.4nm,0.7s,baz=50,slow=2.3,SNR=4.6
BRVK Borovoye 51.80 313 *ce*P **P 05 32 34.3 -0.1**
BRVK pmax pmax
comp=Z,7.0nm,1.7s
KSH Kashi 51.88 295 *e*P **P 05 32 39.8 +4.5**
KSH *ep*P sP 05 32 52.2 +4.9
KSH *es*P pP 05 32 57.7 +14
KSH *e*PP **PP 05 34 38.8 +5.7**
KSH S **S 05 40 00.0 +3.8**
KSH SS **SS 05 43 37.8 +5.0**
KSH pmax pmax
comp=Z,51nm,5.4s
KSH LR LR
comp=Z,120nm,7.8s
KSH LR LR
comp=Z,89nm,6.9s
KSH LR LR
comp=Z,150nm,8.1s
AAK Ala-Archa 51.90 299 P **P 05 32 36.5 +1.0**
comp=Z,0.7nm,0.4s,baz=149,slow=5.9,SNR=2.9
AAK Ala-Archa 51.90 299 *i*P **P 05 32 37.1 +1.6**
AAK pmax pmax
comp=Z,11nm,1.5s
EKS2 Erkin-Say 52.40 299 *e*P **P 05 32 39.4 +0.3**
EKS2 *e* 05 33 50.4
EKS2 Erkin-Say 52.40 299 *e*P **P 05 32 39.4 +0.3**
EKS2 *e*PcP **PcP 05 33 50.4 +0.6**
INK Inuvik 53.61 27 P **P 05 32 48.7 +1.2**
comp=Z,7.3nm,0.6s,baz=302,slow=9.6,SNR=10
INK Inuvik 53.61 27 *e*P **P 05 32 48.1 +0.6**
INK pmax pmax
comp=Z,8.0nm,0.8s
INK Inuvik 53.61 27 *e*P **P 05 32 48.1 +0.6**
comp=Z,7.7nm,0.8s
SVE Sverdlovsk 56.20 319 *e*P **P 05 33 06.9 +0.5**
SVE pmax pmax
comp=Z,19nm,1.1s
WB2 Warramunga Arr 57.35 190 *e*P **P 05 33 11.9 -3.0**
comp=Z,14nm,0.8s
WRA Warramunga Arr 57.35 190 P **P 05 33 13.9 -1.0**
comp=Z,14nm,0.7s,baz=10,slow=7.3,SNR=34
ARU Arti 57.41 319 P **P 05 33 15.3 +0.3**
comp=Z,4.6nm,0.5s,baz=71,slow=6.3,SNR=9.2
ARU Arti 57.41 319 *di*P **P 05 33 15.1 +0.1**
ARU 05 34 05.7
ARU 05 35 21.9
ARU S **S 05 41 12.7 +2.9**
ARU SS **SS 05 44 58.5 -0.5**
ARU pmax pmax
comp=Z,18nm,1.7s
ARU Arti 57.41 319 *e*P **P 05 33 15.0 +0.1**
comp=Z,7.9nm,0.7s
AKTO Aktyubinsk 59.86 313 P **P 05 33 32.1 0.0**
comp=Z,4.7nm,0.8s,baz=70,slow=11,SNR=13
AKTO PcP **PcP 05 34 18.2 -0.2**
comp=Z,2.5nm,0.7s,baz=18,slow=3.2,SNR=4.9
SPITS Spitsbergen Ar 60.80 349 P **P 05 33 39.0 +0.9**
comp=Z,2.2nm,0.7s,baz=109,slow=8.1,SNR=5.5
AS01 Alice Springs 61.07 190 *e*P **P 05 33 39.6 -1.0**
AS31 Alice Springs 61.07 190 *e*P **P 05 33 40.0 -0.7**
comp=Z,2.1nm,0.8s
ASAR Alice Springs 61.08 190 P **P 05 33 40.0 -0.7**
comp=Z,4.1nm,0.5s,baz=4.8,slow=7.0,SNR=73
RES Resolute Bay 62.16 15 *e*P **P 05 33 47.7 +0.4**
RES pmax pmax
comp=Z,11nm,1.0s
RES Resolute Bay 62.16 15 *e*P **P 05 33 47.7 +0.4**
comp=Z,11nm,1.0s
YKW3 Yellowknife Ar 62.92 31 *e*P **P 05 33 53.2 +0.7**
comp=Z,18nm,1.7s
YKA Yellowknife Ar 62.95 31 P **P 05 33 53.1 +0.3**
comp=Z,2.9nm,0.7s,baz=302,slow=6.7,SNR=56
YKB5 Yellowknife Ar 62.95 31 *e*P **P 05 33 52.6 -0.2**
ARCES ARCESS Array B 64.53 340 P **P 05 34 03.6 +0.5**
comp=Z,1.7nm,0.6s,baz=47,slow=6.6,SNR=5.1
GEYT Alibeck 65.24 300 P **P 05 34 08.7 +0.4**
comp=Z,3.1nm,0.6s,baz=22,slow=5.3,SNR=4.0
STKA Stephens Creek 68.61 182 P **P 05 34 29.2 -0.3**
comp=Z,3.5nm,0.8s,baz=5.0,slow=4.6,SNR=3.2
NEW Newport 68.96 45 P **P 05 34 32.4 +0.6**
baz=302
OBN Obninsk 69.03 324⇓ *e*P **P 05 34 31.3 -0.7**
OBN *PP **sP 05 34 43.0 -1.3**
OBN 05 34 56.0
OBN *e*S **S 05 43 34.3 -0.6**
OBN *e*SS **SS 05 47 55.4 -4.7**
OBN pmax pmax
comp=Z,6.0nm,0.5s
OBN MLR MLR
comp=Z,151nm,19.0s
FINES FINESS Array B 69.53 333 P **P 05 34 35.4 +0.3**
comp=Z,5.7nm,0.6s,baz=39,slow=9.3,SNR=26
K05A Summer Lake 69.66 51 *e*P **P 05 34 37.4 +1.0**
comp=Z,8.4nm,1.0s
SUMG Summit 70.64 1 *i*P **P 05 34 43.2 +1.1**
comp=Z,7.1nm,0.6s
SUMG Summit 70.64 1 *i*P **P 05 34 43.2 +1.1**
SUMG pmax pmax
comp=Z,7.0nm,0.6s
SUMG Summit 70.64 1 *e*P **P 05 34 42.8 +0.6**
comp=Z,7.6nm,0.6s
MSO Missoula 71.55 45 P **P 05 34 48.0 +0.3**
baz=305
KIV Kislovodsk 72.11 312 *e*P **P 05 34 52.2 +1.1**
KIV pmax pmax
comp=Z,14nm,1.1s
KBZ Khabaz 72.11 312 P **P 05 34 52.1 +1.2**
comp=Z,4.6nm,0.8s,baz=13,slow=2.7,SNR=9.5
FFC Flin Flon 72.79 34 *e*P **P 05 34 55.4 +0.6**
FFC pmax pmax
comp=Z,9.0nm,0.8s
FFC Flin Flon 72.79 34 *e*P **P 05 34 55.4 +0.6**
comp=Z,8.7nm,0.8s
LRM Limekiln Ridge 72.97 45 *e*P **P 05 34 57.8 +1.4**
HLID Hailey 73.15 48 P **P 05 34 58.3 +0.9**
baz=305
EGMT Eagleton 73.16 42 P **P 05 34 57.7 +0.4**
baz=307
DLMT Dillon 73.16 46 *e*P **P 05 34 58.6 +1.2**
comp=Z,5.5nm,0.7s
FCC Fort Churchill 73.23 27 *e*P **P 05 34 57.7 +0.4**
FCC pmax pmax
comp=Z,20nm,1.4s
FCC Fort Churchill 73.23 27 *e*P **P 05 34 57.7 +0.4**
comp=Z,20nm,1.4s
BOZ Bozeman (W) 73.54 45 P **P 05 35 00.6 +0.9**
baz=306,SNR=11
BOZ Bozeman (W) 73.54 45 *e*P **P 05 35 00.8 +1.1**
BOZ pmax pmax
comp=Z,7.0nm,0.8s
BOZ Bozeman (W) 73.54 45 *e*P **P 05 35 00.8 +1.1**
comp=Z,6.6nm,0.8s
NV01 Mina Array Sit 73.66 54 *e*P **P 05 35 01.1 +0.6**
NVAR Mina Array Bea 73.66 54 P **P 05 35 02.1 +1.6**
comp=Z,2.7nm,0.7s,baz=290,slow=6.0,SNR=20
YMR Madison River 74.50 45 *e*P **P 05 35 06.4 +0.9**
comp=Z,4.9nm,0.7s
ANN Anapa 74.67 315 *e*P **P 05 35 03.9 -2.1**
ANN *e*PP **pP 05 35 13.6 -1.4**
ANN *e* 05 35 16.5
ANN *e* 05 37 51.2
ANN *e*PPP PPP 05 39 35.7
ANN *e*S **S 05 44 38.4 -1.7**
ANN *e*SS **SS 05 49 24.0 -2.8**
ANN pmax pmax
comp=Z,116nm,1.4s
YFT Old Faithful 74.71 46 *e*P **P 05 35 09.0 +2.4**
comp=Z,5.3nm,0.8s
NC204 NORSAR Array S 74.72 338 *e*P **P 05 35 06.6 +0.5**
NB2 NORSAR Subarra 74.77 338 P **P 05 35 06.3 -0.1**
comp=Z,2.4nm,0.9s,baz=38,slow=6.2
NOA NORSAR Array B 74.77 338 P **P 05 35 06.7 +0.2**
comp=Z,3.7nm,0.8s,baz=38,slow=5.9,SNR=12
H17A Grant Village 74.89 46 P **P 05 35 10.1 +2.4**
baz=307
FLWY Flagg Ranch 75.01 46 *e*P **P 05 35 10.7 +2.4**
comp=Z,14nm,1.4s
GRAC Grapevine Rang 75.08 55 P **P 05 35 09.6 +0.9**
baz=305
FXWY Fox Creek 75.09 46 *e*P **P 05 35 10.3 +1.4**
comp=Z,5.1nm,1.0s
HVU Hansel Valley 75.17 49 *e*P **P 05 35 10.2 +1.0**
HVU pmax pmax
comp=Z,4.0nm,0.8s
HVU Hansel Valley 75.17 49 *e*P **P 05 35 10.2 +1.0**
comp=Z,3.7nm,0.8s
MOOW Moose Ponds 75.19 46 *e*P **P 05 35 10.2 +0.8**
comp=Z,3.2nm,0.9s
RLMT Red Lodge 75.19 44 P **P 05 35 10.0 +0.7**
baz=308
RLMT Red Lodge 75.19 44 *e*P **P 05 35 10.2 +0.8**
comp=Z,26nm,1.7s
AKASG Malin Array Be 75.26 323 P **P 05 35 08.8 -0.5**
comp=Z,1.5nm,0.5s,baz=45,slow=5.8,SNR=7.9
LOHW Long Hollow 75.35 46 *e*P **P 05 35 10.6 +0.3**
comp=Z,1.9nm,0.9s
SNOW Snow King Moun 75.35 46 *e*P **P 05 35 10.4 +0.1**
comp=Z,5.7nm,0.9s
REDW Red Top Meadow 75.36 47 *e*P **P 05 35 10.1 -0.3**
comp=Z,4.6nm,1.0s
R11A Troy Canyon, C 75.45 53 P **P 05 35 11.8 +0.9**
baz=306,SNR=5.4
MPMC Manual Prospec 75.54 56 P **P 05 35 12.2 +0.6**
baz=305
FURC Furnace Creek, 75.72 55 P **P 05 35 13.3 +1.1**
baz=306
DGMT Dagmar 75.79 39 P **P 05 35 12.9 +0.4**
baz=310
TPNV Topopah Spring 75.84 54 P **P 05 35 13.8 +0.6**
baz=306
TPNV Topopah Spring 75.84 54 *e*P **P 05 35 13.7 +0.6**
TPNV pmax pmax
comp=Z,7.0nm,1.2s
TPNV Topopah Spring 75.84 54 *e*P **P 05 35 13.7 +0.6**
comp=Z,7.4nm,1.2s
LAO LASA Array 75.87 42 P **P 05 35 14.2 +1.1**
baz=309
LAO LASA Array 75.87 42 *e*P **P 05 35 13.7 +0.6**
comp=Z,11nm,1.0s
EDW2 Edwards Air Fo 75.89 57 P **P 05 35 14.6 +1.3**
baz=305
HWUT Hardware Ranch 76.00 48 *e*P **P 05 35 14.8 +0.8**
comp=Z,5.2nm,1.1s
DUG Dugway, Tooele 76.09 50 P **P 05 35 15.4 +0.9**
baz=307,SNR=6.0
DUG Dugway, Tooele 76.09 50 *e*P **P 05 35 16.0 +1.4**
DUG pmax pmax
comp=Z,4.0nm,0.8s
DUG Dugway, Tooele 76.09 50 *e*P **P 05 35 15.9 +1.4**
comp=Z,4.3nm,0.8s
BW06 Boulder Array 76.47 46 P **P 05 35 17.8 +1.0**
baz=308
BW06 Boulder Array 76.47 46 *e*P **P 05 35 17.4 +0.6**
PD31 Pinedale Array 76.47 46 *e*P **P 05 35 17.3 +0.5**
PDAR Pinedale Array 76.47 46 P **P 05 35 17.5 +0.7**
comp=Z,1.6nm,0.7s,baz=263,slow=2.7,SNR=17
A26A Wade Farm, Ken 76.59 38 P **P 05 35 17.3 +0.3**
baz=312
JLU Jordanelle 76.68 49 *e*P **P 05 35 20.0 +2.0**
comp=Z,2.6nm,0.8s
NLU North Lily Min 76.69 50 *e*P **P 05 35 19.5 +1.5**
comp=Z,3.0nm,0.9s
MPU Maple Canyon 76.92 50 *e*P **P 05 35 20.9 +1.6**
comp=Z,4.4nm,0.9s
A28A Rude Farm, Bot 77.45 37 P **P 05 35 22.8 +1.0**
baz=313
E25A Miller Ranch, 77.48 41 P **P 05 35 22.7 +0.6**
baz=311
GMRC Granite Mounta 77.50 56 P **P 05 35 23.1 +0.6**
baz=306
MSU Marysvale 77.50 51 *e*P **P 05 35 24.6 +2.0**
MSU Marysvale 77.50 51 *e*P **P 05 35 24.6 +2.0**
D26A Manning 77.63 40 P **P 05 35 23.6 +0.7**
baz=312
C27A Sayler Ranch, 77.64 39 P **P 05 35 23.2 +0.2**
baz=312
B28A Dugan Ranch, T 77.71 38 P **P 05 35 23.8 +0.5**
baz=313
LCMT Little Creek M 77.74 53 *e*P **P 05 35 25.6 +1.7**
comp=Z,6.3nm,0.9s
F25A Bowman 77.83 41 P **P 05 35 25.0 +0.9**
baz=311
A29A Manning Farm, 77.94 37 P **P 05 35 25.2 +0.6**
baz=313
E26A Carlson Angus 77.99 40 P **P 05 35 25.4 +0.4**
baz=312
KNB Kanab 78.00 53 *e*P **P 05 35 25.2 -0.2**
KNB pmax pmax
comp=Z,9.0nm,1.1s
KNB Kanab 78.00 53 *e*P **P 05 35 25.2 -0.2**
comp=Z,8.6nm,1.1s
P18A Preston Nutter 78.00 49 *e*P **P 05 35 26.7 +1.2**
comp=Z,9.5nm,1.4s
D27A Center 78.04 39 P **P 05 35 26.0 +0.8**
baz=312
SRU San Rafael Swe 78.15 50 *e*P **P 05 35 27.3 +1.1**
SRU pmax pmax
comp=Z,10.0nm,0.8s
SRU San Rafael Swe 78.15 50 *e*P **P 05 35 27.3 +1.1**
comp=Z,9.5nm,0.8s
B29A Wagenman Farm, 78.19 37 P **P 05 35 26.6 +0.6**
baz=313
IRM Iron Mountain 78.21 56 P **P 05 35 27.0 +0.6**
baz=307
K22A Casper 78.28 45 P **P 05 35 26.9 +0.1**
baz=310
F26A Lodgepole 78.29 41 P **P 05 35 27.1 +0.4**
baz=312
BC3 Big Chuckawall 78.31 57 P **P 05 35 27.7 +0.7**
baz=307
G25A Newell 78.33 42 P **P 05 35 27.1 +0.2**
baz=311
A30A Hoffart Farm, 78.37 36 P **P 05 35 27.4 +0.5**
baz=314
E27A Carson 78.48 40 P **P 05 35 28.3 +0.7**
baz=312
ULM Lac du Bonnet 78.57 34 P **P 05 35 27.3 -0.7**
comp=Z,1.2nm,0.5s,baz=349,slow=5.2,SNR=3.3
F27A Lemmon 78.61 40 P **P 05 35 29.1 +0.7**
baz=312
H25A Fruitdale 78.61 42 P **P 05 35 28.8 +0.3**
baz=311
B30A Myrvik Farm, E 78.69 37 P **P 05 35 29.1 +0.3**
baz=314
G26A Maurine 78.70 41 P **P 05 35 29.3 +0.4**
baz=312,SNR=6.1
RSSD Black Hills 78.71 43 P **P 05 35 29.4 +0.2**
baz=311
PDMCI Parker Dam,Lak 78.79 56 P **P 05 35 30.1 +0.6**
baz=307
O20A White River Ci 78.89 48 P **P 05 35 30.8 +0.5**
baz=309
I25A Rochford 78.94 43 P **P 05 35 30.3 -0.1**
baz=311
G27A Dupree 78.99 41 P **P 05 35 30.7 +0.2**
baz=312
B31A Greenbush Farm 79.04 36 P **P 05 35 30.7 +0.1**
baz=314
H26A Fairpoint 79.06 42 P **P 05 35 31.2 +0.3**
baz=312
GLA Glamis 79.09 57 P **P 05 35 31.7 +0.4**
baz=307
C30A Mose, Pekin 79.14 37 P **P 05 35 31.6 +0.3**
baz=314
A32A Rocking H Ranc 79.23 36 P **P 05 35 31.8 +0.1**
baz=315
F28A McLaughlin 79.26 40 P **P 05 35 33.0 +1.1**
baz=313
BUR08 Bucovina Ar. S 79.27 323 *e*P **P 05 35 33.0 +0.9**
E29A Napoleon 79.36 39 P **P 05 35 32.8 +0.3**
baz=314
I26A New Underwood 79.40 42 P **P 05 35 33.2 +0.4**
baz=312
H27A Howes 79.42 41 P **P 05 35 33.0 +0.2**
baz=312
B32A Ashes, Strandq 79.58 36 P **P 05 35 34.2 +0.6**
baz=315
G28A Parade 79.73 40 P **P 05 35 34.9 +0.4**
baz=313
A33A Warroad 79.73 35 P **P 05 35 34.8 +0.5**
baz=316
N23A Red Feather La 79.75 46 P **P 05 35 36.0 +1.0**
baz=310,SNR=5.6
Y14A Wickenburg 79.76 55 *e*P **P 05 35 35.4 +0.5**
comp=Z,13nm,1.0s
J26A Sides Ranch, S 79.77 43 P **P 05 35 35.4 +0.6**
baz=312
E30A Jud 79.77 38 P **P 05 35 35.2 +0.6**
baz=314
I27A Quinn 79.81 42 P **P 05 35 35.8 +0.8**
baz=312
WUAZ Wupatki 79.84 53 P **P 05 35 36.6 +1.1**
baz=308
WUAZ Wupatki 79.84 53 *e*P **P 05 35 36.6 +1.1**
comp=Z,4.7nm,0.9s
OJC Ojcow 79.91 327 *e*P **P 05 35 35.9 +0.6**
OJC pmax pmax
comp=Z,8.0nm,1.0s
OJC Ojcow 79.91 327 *e*P **P 05 35 35.9 +0.6**
comp=Z,8.1nm,1.0s
H28A Mission Ridge 79.94 41 P **P 05 35 36.0 +0.3**
baz=313,SNR=7.5
AGMN Agassiz Nation 79.97 36 P **P 05 35 35.4 -0.3**
baz=316
BRTR Keskin Array B 80.04 313 P **P 05 35 36.8 +0.4**
comp=Z,0.9nm,0.6s,baz=103,slow=3.9,SNR=5.5
B33A Robert and Kas 80.11 36 P **P 05 35 36.3 -0.2**
baz=316
E31A Nome 80.23 38 P **P 05 35 37.0 -0.2**
baz=315
SMCO Snowmass 80.25 48 *e*P **P 05 35 39.0 +1.1**
comp=Z,3.6nm,1.0s
I28A Midland 80.33 41 P **P 05 35 37.9 +0.2**
baz=313,SNR=5.2
B34A Aery, Baudette 80.39 35 P **P 05 35 37.4 -0.5**
baz=316
C33A Trail 80.40 36 P **P 05 35 37.8 -0.2**
baz=316
BR231 Keskin MP Arra 80.47 313 *e*P **P 05 35 37.9 -0.8**
X16A Lo Mia Camp, P 80.48 54 *e*P **P 05 35 40.1 +1.1**
comp=Z,3.2nm,0.8s
F31A Hecla 80.54 39 P **P 05 35 38.8 0.0**
baz=314
MVCO Mesa Verde 80.59 50 P **P 05 35 39.8 +0.2**
baz=310
MVCO Mesa Verde 80.59 50 *e*P **P 05 35 40.9 +1.3**
comp=Z,6.7nm,1.1s
G30A Faulkton 80.60 40 P **P 05 35 39.0 -0.2**
baz=314,SNR=8.3
ISCO Idaho Springs 80.65 47 P **P 05 35 40.0 +0.1**
baz=311
ISCO Idaho Springs 80.65 47 *e*P **P 05 35 41.0 +1.1**
ISCO pmax pmax
comp=Z,3.0nm,1.1s
ISCO Idaho Springs 80.65 47 *e*P **P 05 35 41.0 +1.1**
comp=Z,2.8nm,1.1s
J28A Allard Ranch, 80.68 42 P **P 05 35 40.0 +0.3**
baz=313
I29A Vivian Onida 80.77 41 P **P 05 35 40.2 +0.1**
baz=313,SNR=5.1
D33A AnnSam, Waubun 80.81 36 P **P 05 35 39.1 -1.2**
baz=316
C34A RKJ Ranch, Bem 80.88 36 P **P 05 35 40.0 -0.6**
baz=316
B35A Bob, Littlefor 80.91 35 P **P 05 35 39.7 -1.1**
baz=317
F32A Veblen 81.09 38 P **P 05 35 41.8 +0.1**
baz=315
214A Organ Pipe Nat 81.10 57 P **P 05 35 43.2 +1.0**
baz=308
D34A Park Rapids 81.15 36 P **P 05 35 41.8 -0.3**
baz=316
SUSD Miller 81.17 40 P **P 05 35 42.1 -0.2**
baz=314
J29A Okreek 81.18 41 P **P 05 35 42.7 +0.4**
baz=314

E33A	Westby DABS, E baz=316	81.19	37	P		P	05 35 42.2	-0.1	
S22A	4UR Ranch, Cre baz=310	81.26	49	P		P	05 35 44.2	+1.0	
C35A	Jirik Farms, M baz=317	81.28	35	P		P	05 35 42.0	-0.7	
DPC	Dobruska-Polom	81.28	329	*e*P		P	05 35 43.8	+1.0	
DPC	Dobruska-Polom	81.28	329	*e*P		P	05 35 43.8	+1.0	
I30A	Oacoma baz=314,SNR=8.6	81.30	41	P		P	05 35 43.2	+0.3	
G32A	Webster baz=315,SNR=7.9	81.34	39	P		P	05 35 43.3	+0.2	
F33A	5 Mile Ranch, baz=316	81.52	38	P		P	05 35 44.1	+0.1	
E34A	Wadena baz=316	81.58	37	P		P	05 35 44.3	-0.1	
J30A	Dallas baz=314	81.67	41	P		P	05 35 45.3	+0.4	
C36A	Pine Crest Far baz=318	81.75	35	P		P	05 35 45.2	-0.1	
BRG	Berggiesshubel comp=Z,2.2nm,0.7s	81.84	330	*e*(P)		P	05 35 46.3	+0.7	
BRG	Berggiesshubel comp=Z,2.0nm,0.7s	81.84	330	*e*P pmax		P pmax	05 35 46.3	+0.7	
CLL	Collm	81.86	331	*e*P		P	05 35 44.0	-1.7	
CLL	comp=Z,8.0nm,0.9s			*i*			05 35 46.1		
CLL				*i*			05 35 51.1		
CLL	Collm	81.86	331	*e*P		P	05 35 44.0	-1.7	
CLL				*i*			05 35 51.1		
CLL	Collm comp=Z,10.0nm,0.9s	81.86	331	*e*P		P	05 35 46.3	+0.6	
G33A	Ortonville baz=316	81.91	38	P		P	05 35 46.3	+0.2	
F34A	Alexandria baz=316	82.06	37	P		P	05 35 46.8	-0.1	
SDCO	Great Sand Dun baz=311	82.06	48	P		P	05 35 48.3	+0.9	
SDCO	Great Sand Dun comp=Z,8.6nm,1.3s	82.06	48	*e*P		P	05 35 48.6	+1.1	
K30A	Basset baz=314	82.06	42	P		P	05 35 48.1	+1.1	
H33A	Prehn Over Nor baz=316,SNR=8.4	82.13	39	P		P	05 35 47.3	0.0	
RAYN	Ar Rayn comp=Z,7.4nm,1.2s	82.14	293	*e*P		P	05 35 48.3	+0.5	
EYMN	Ely baz=319	82.22	34	P		P	05 35 47.8	+0.1	
TUC	Tucson baz=309	82.23	55	P		P	05 35 48.7	+0.6	
G34A	Benson baz=316	82.27	38	P		P	05 35 48.1	0.0	
PRU	Pruhonice	82.29	330	*e*P		P	05 35 48.5	+0.5	
PRU	Pruhonice	82.29	330	*e*P		P	05 35 48.5	+0.5	
C38A	Sawbill Land. baz=319	82.49	34	P		P	05 35 48.9	-0.3	
K31A	O'Neill baz=314,SNR=5.1	82.55	41	P		P	05 35 49.4	-0.1	
L31A	Butterfield Fa baz=314	82.82	42	P		P	05 35 51.0	0.0	
F36A	Milaca baz=318	82.84	36	P		P	05 35 51.2	+0.3	
G35A	Watkins baz=317	82.85	37	P		P	05 35 51.2	+0.1	
ECSD	EROS Data Cent baz=316	82.87	39	P		P	05 35 50.8	-0.4	
ECSD	EROS Data Cent comp=Z,4.1nm,0.9s	82.87	39	*e*P		P	05 35 51.5	+0.3	
C39A	Grand Marais baz=320	82.92	33	P		P	05 35 50.8	-0.5	
H35A	Sunnyside Ranc baz=317	83.06	38	P		P	05 35 52.4	+0.3	
T25A	Trinidad baz=312	83.11	48	P		P	05 35 53.2	+0.4	
ANMO	Albuquerque baz=311	83.31	51	P		P	05 35 54.7	+0.8	
ANMO	Albuquerque comp=Z,6.0nm,1.2s	83.31	51	*ce*P pmax		P pmax	05 35 54.1	+0.3	
ANMO	Albuquerque comp=Z,5.0nm,1.0s	83.31	51	*e*P		P	05 35 54.9	+1.1	
KHC	Kasperske Hory	83.35	330	*e*P		P	05 35 54.1	+0.5	
KHC				*ep*P		PcP	05 35 58.7	+0.7	
KHC	Kasperske Hory	83.35	330	*e*P		P	05 35 54.1	+0.5	
KHC				*e*			05 35 58.7		
KHC	Kasperske Hory comp=Z,2.1nm,0.9s	83.35	330	*e*P		P	05 35 53.0	-0.6	
GERES	GERESS Array B comp=Z,1.4nm,0.6s,baz=37,slow=6.1,SNR=16	83.53	329	P		P	05 35 54.9	+0.3	
H36A	Jessenland, He baz=317	83.59	37	P		P	05 35 55.2	+0.4	
SPMN	Marine on St. baz=318	83.65	36	P		P	05 35 56.0	+0.9	
319A	Douglas comp=Z,6.2nm,0.8s	83.81	55	*e*P		P	05 35 57.5	+1.1	
121A	Cookes Peak, D baz=310	84.04	54	P		P	05 35 58.7	+1.1	
H37A	Dierke Farm, C baz=318	84.07	37	P		P	05 35 57.8	+0.5	
M33A	Taylor Creek F baz=316	84.11	41	P		P	05 35 58.1	+0.5	
I38A	Scanlan Farm, baz=318	84.76	37	P		P	05 36 00.8	0.0	
SCHQ	Schefferville comp=Z,3.3nm,0.7s,baz=320,slow=5.4,SNR=3.9	84.84	17	P		P	05 36 01.2	+0.2	
Q32A	Meitler Ranch, baz=315	85.21	44	P		P	05 36 03.2	0.0	
J38A	Wedel Dairy, R baz=318	85.23	37	P		P	05 36 03.1	0.0	
STU	Stuttgart comp=Z,11nm,0.8s	85.36	332	*e*P pmax		P pmax	05 36 04.0	+0.3	
STU	Stuttgart comp=Z,11nm,0.8s	85.36	332	*e*P		P	05 36 04.0	+0.3	
O34A	Beatrice baz=316	85.37	42	P		P	05 36 04.0	0.0	
M36A	Felix, Anita baz=317	85.44	40	P		P	05 36 05.0	+0.7	
P34A	Walnut Farm, R baz=316	85.76	42	P		P	05 36 06.3	+0.3	
S32A	Newby Ranch, P baz=315	85.91	45	P		P	05 36 07.2	+0.5	
BFO	Black Forest comp=Z,8.0nm,1.0s	86.06	332	*e*P pmax		P pmax	05 36 07.7	+0.5	
BFO	Black Forest comp=Z,7.7nm,1.0s	86.06	332	*e*P		P	05 36 07.7	+0.5	
MNTX	Cornudas Mount baz=312	86.12	53	P		P	05 36 08.3	+0.4	
Q34A	Chapman baz=316	86.14	43	P		P	05 36 08.0	+0.2	
KSU1	Kansas State U baz=316	86.19	43	P		P	05 36 08.0	0.0	
T32A	Huddler Ranch, baz=315	86.28	45	P		P	05 36 08.6	+0.1	
M38A	Pleasantville baz=318	86.28	39	P		P	05 36 08.4	0.0	
O36A	Bolckow baz=317	86.32	41	P		P	05 36 08.8	+0.1	
P36A	Good Intent, A baz=317	86.57	41	P		P	05 36 10.0	+0.1	
Q35A	Mercer Eighty, baz=316	86.68	42	P		P	05 36 10.7	+0.2	
R36A	Gordon, Harris baz=317	87.35	42	P		P	05 36 13.8	+0.1	
S35A	Otter Creek Ra baz=316	87.37	43	P		P	05 36 14.1	+0.2	
P38A	Dawn baz=318	87.44	40	P		P	05 36 14.5	+0.3	
U34A	Anderson Ranch baz=316	87.59	45	P		P	05 36 15.4	+0.5	
S36A	Lake Cedric, C baz=317	87.74	43	P		P	05 36 15.6	0.0	
T35A	Sooner Cattle baz=316	87.82	44	P		P	05 36 16.0	-0.1	
Q38A	Cooks Store, C baz=318	87.89	41	P		P	05 36 16.2	0.0	
O40A	La Belle baz=319	87.92	39	P		P	05 36 16.6	+0.2	
P39A	Salisbury baz=318	87.94	40	P		P	05 36 16.7	+0.2	
T36A	Boggs Farm, Ca baz=316	88.06	44	P		P	05 36 17.2	+0.1	
S37A	Fort Scott baz=317	88.13	42	P		P	05 36 17.5	+0.1	
Q39A	Willow Grove F baz=318	88.16	40	P		P	05 36 18.1	+0.6	
P40A	Paris baz=319	88.28	40	P		P	05 36 18.5	+0.4	
R38A	Fenwick Farm, baz=318	88.31	42	P		P	05 36 18.2	-0.1	
Q40A	Laux Farm, Aux baz=319	88.66	40	P		P	05 36 20.0	0.0	
R39A	Chumby, Stover baz=318	88.67	41	P		P	05 36 19.4	-0.6	
S38A	Stockton baz=318	88.72	42	P		P	05 36 19.9	-0.3	
TX31	Lajitas Ar. Si	88.80	54	*e*P		P	05 36 21.6	+0.8	
TXAR	Lajitas Array comp=Z,2.3nm,0.7s,baz=299,slow=3.5,SNR=27	88.80	54	P		P	05 36 21.6	+0.7	
T38A	Diamond baz=318	88.95	43	P		P	05 36 21.3	-0.1	
U37A	Salina baz=317	88.96	44	P		P	05 36 21.3	-0.1	
S39A	Bolivar baz=318	88.98	42	P		P	05 36 21.7	+0.2	
R40A	Maddies Statio baz=319	89.09	41	P		P	05 36 22.1	+0.2	
V37A	Hulbert baz=317	89.33	44	P		P	05 36 23.2	+0.1	
U38A	Gravette baz=317	89.34	43	P		P	05 36 23.5	+0.3	
X35A	Drake baz=316	89.36	46	P		P	05 36 23.9	+0.6	
S40A	Lebanon baz=318	89.49	41	P		P	05 36 23.5	-0.3	
X36A	Centrahoma baz=316	89.60	45	P		P	05 36 24.5	+0.1	
V38A	Canehill baz=317	89.75	43	P		P	05 36 25.1	0.0	
U39A	Green Forest baz=318,SNR=5.4	89.87	43	P		P	05 36 25.2	-0.5	
SFIN	Lafayette baz=322	90.06	36	P		P	05 36 26.6	+0.1	
X37A	Clayton baz=317	90.14	45	P		P	05 36 27.1	+0.2	
V39A	Pettigrew baz=318	90.18	43	P		P	05 36 27.4	+0.2	
U40A	Yellville baz=318,SNR=7.2	90.23	42	P		P	05 36 27.6	+0.3	
333A	Richland Sprin baz=315	90.36	49	P		P	05 36 28.0	-0.1	
JCT	Junction City baz=314	90.45	50	P		P	05 36 28.6	0.0	
V40A	Witts Springs baz=318	90.66	43	P		P	05 36 28.5	-0.9	
H06S1	SOCORRO T SNR=19	90.69	66	T		T	07 16 39.3		
334A	Lometa baz=315	90.81	49	P		P	05 36 30.6	+0.4	
X39A	Fountain Ranch baz=318	90.90	44	P		P	05 36 30.8	+0.3	
W40A	Ferguson Farm, baz=318	90.98	43	P		P	05 36 31.1	+0.3	
434A	Burnet baz=315	91.15	49	P		P	05 36 32.1	+0.3	
MIAR	Mount Ida baz=318	91.18	44	P		P	05 36 32.3	+0.6	
MIAR	Mount Ida comp=Z,14nm,1.5s	91.18	44	*e*P pmax		P pmax	05 36 32.4	+0.6	
MIAR	Mount Ida comp=Z,14nm,1.5s	91.18	44	*e*P		P	05 36 32.4	+0.6	
Y39A	Lockesburg baz=318	91.34	45	P		P	05 36 32.6	+0.1	
W41B	Gary Mavity, V baz=319	91.44	43	P		P	05 36 32.7	-0.2	
W41A	Tony Mavity, V baz=319	91.44	43	P		P	05 36 32.9	-0.1	
534A	Blanco baz=315	91.58	50	P		P	05 36 34.1	+0.3	
336A	Riesel baz=316	91.60	48	P		P	05 36 34.0	+0.2	
X40A	Basin Creek Fa baz=318	91.63	43	P		P	05 36 34.1	+0.3	
KEST	Kesra comp=Z,167nm,21.7s,baz=194,slow=38	95.97	324	LR		LR	06 23 26.5		
TORD	Torodi Ar. Bea comp=Z,0.5nm,0.8s,baz=38,slow=2.6,SNR=2.5	118.44	317	PKP		PKPdf	05 42 13.9	-0.9	
VNA2	Neumayer~Watz baz=129,slow=3.0	142.79	195	PKP		PKPdf	05 42 54.5	-4.3	
LPAZ	La Paz comp=Z,3.0nm,0.5s,baz=17,slow=8.8,SNR=5.9	145.25	62	PKPbc		PKPbc	05 43 05.1	-0.1	

IDC 10 05:24:33.9±9.0, 16°44S×176°38W, h0km, mb3.6/3, mb1 3.9/3, mb1mx3.6/38, mbtmp3.6/3, Error ellipse: s-maj=403.4km s-min=35.6km az=141.0, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	Warramunga Arr 0.4nm,0.8s,baz=93,slow=6.5,SNR=2.7	46.82	258	P	P	05 33 05.5	-0.4
ASAR	Alice Springs 0.6nm,0.4s,baz=87,slow=8.1,SNR=9.3	47.07	253	P	P	05 33 08.5	+0.7
ILAR	Eielson Array 0.5nm,0.7s,baz=224,slow=5.6,SNR=5.9	84.04	12	P	P	05 37 07.2	+1.2
BRTR	Keskin Array B 0.9nm,0.8s,baz=137,slow=6.2,SNR=3.9	145.07	318	PKPbc	PKPbc	05 44 09.8	-3.3

IDC 10 05:24:51.2±2.5, 54°13N×86°47E, h0km, mb1 3.8/2, mb1mx3.2/47, mbtmp3.8/2, ML3.6/2, 3C-1D, Error ellipse: s-maj=20.5km s-min=14.0km az=42.0, Southwestern Siberia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
I46RU	ZALESOVO INFRA baz=80,slow=321,SNR=5.2	0.99	260	*i*		05 32 25.0	
ZALV	Zalesovo Beam 5.8nm,0.3s,baz=78,slow=16,SNR=56	0.99	260	Pg	Pg	05 25 08.4	-1.8
ZALV	7.9nm,0.3s,baz=86,slow=28,SNR=25			Lg	Lg	05 25 23.9	
KURK	Kurchatov 0.5nm,0.3s	5.90	238	⇑Pn	Pn	05 26 21.8	+2.1
KURK	15nm,1.0s			⇑Lg	Lg	05 28 01.0	
KURBB	Kurchatov Arra 0.8nm,0.3s,baz=54,slow=13,SNR=77	6.00	237	Pn	Pn	05 26 22.6	+1.5
KURBB	baz=55,slow=23,SNR=3.1			Sn	Sn	05 27 29.7	-0.7
KURBB	0.1nm,0.3s,baz=63,slow=32,SNR=6.4			Lg	Lg	05 28 03.7	
MK31	Makanchi Array 0.9nm,0.5s,baz=27,slow=14,SNR=56	7.82	202	Pn	Pn	05 26 47.0	+0.9
MK31	0.7nm,0.6s,baz=0.0,slow=0.1,SNR=7.3			⇑Sn	Sn	05 28 14.7	-0.6
MK31	2.4nm,0.8s,baz=25,slow=29,SNR=4.5			⇓Lg	Lg	05 28 59.2	
MKAR	Makanchi Array 1.5nm,0.3s,baz=24,slow=14,SNR=46	7.82	202	Pn	Pn	05 26 46.8	+0.7
MKAR	0.2nm,0.3s,baz=34,slow=26,SNR=8.1			Lg	Lg	05 28 59.4	

*ISCJB **10** 05:45:46.5±0.7, 34°42S±0°03×71°93W±0°08, h6km±6km, mb3.7/4, Error ellipse: s-maj=11.2km s-min=5.6km az=178.9*
*GUC **10** 05:45:46.0±0.6, 34°39S×71°96W, h15km±5km, ML4.3*
*NEIC **10** 05:45:46.0, 34°39S×71°96W, h15km, ML4.3(GUC), After GUC.*
*IDC **10** 05:45:46.9±1.3, 34°39S×71°86W, h0km, mb3.8/5, mb1 4.0/7, mb1mx3.8/24, mbtmp3.8/7, ML3.6/2, MS3.1/2, Ms1 3.1/2, ms1mx2.8/20, Error ellipse: s-maj=38.3km s-min=29.8km az=95.0*

ISC 10 05:45:46.2±1.1, 34°38S±0°03×71°92W±0°04, h2km±9km, n28, σ1°39/35, mb3.9/4, 4D, Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHPI	Pichilemu	0.07	264	*i* P	Pg	05 45 48.2	+0.5
CHPI				*i* S	Sg	05 45 49.2	+0.6
NICH	Los Niches	0.84	138	*i* P	Pg	05 46 02.3	0.0
NICH				*i* S	Sb	05 46 14.3	-0.9
NICH	comp=N,21μm,0.4s			IAML		05 46 15.3	
TALC	Talca	1.04	167	*i* P	Pg	05 46 05.2	-1.0
TALC				*i* S	Sg	05 46 19.3	-0.4
TALC	comp=N,17μm,0.1s			IAML		05 46 20.0	
ROC1	El Roble	1.59	28	*e*P	Pn	05 46 15.1	-0.5
ROC1				⇓*e*S	Sb	05 46 36.4	-0.7
YECH	El Yeso	1.68	65	*i* P	Pn	05 46 16.6	-0.3
YECH				*i* S	Sb	05 46 39.5	-0.3
AAGR	Agrelo	2.88	64	*e*P	Pb	05 46 38.6	+0.2
ARCO	CERRO ARCO	2.92	59	*e*P	Pb	05 46 39.3	+0.1
ARCO				⇓*e*S	Sg	05 47 21.9	+1.6
ARCO	comp=Z,149nm,0.5s			IAML		05 47 28.4	
AUSP	Uspallata	3.02	45	*e*P	Pb	05 46 39.6	-1.3
AUSP				*e*S	Sg	05 47 23.1	-0.2
ASAL	Salagasta	3.13	56	*e*P	Pb	05 46 42.7	-0.1
RTLS	Leoncito	3.39	41	*e*P	Pb	05 46 45.2	-2.0
RTLS				*e*S	Sb	05 47 31.2	+2.3
CANA	Caviahue	3.56	169	*e*P	Pb	05 46 48.4	-1.8
CANA				⇓*e*S	Sg	05 47 41.8	+1.0
RTCV	Cerro Valdivia	3.79	49	*e*P	Pn	05 46 47.7	+2.0
RTCV				*e*S	Sg	05 47 46.2	-1.7
RTLL	Cerro Villicun	4.20	45	*e*P	Pn	05 46 54.6	+3.2
AVFE	Valle Fertil	5.29	47	⇓*e*P	Pn	05 47 04.5	-1.8
LCO	Las Campanas	5.45	11	*e*Pn	Pn	05 47 06.4	-2.4
LCO				*e*Sn	Sn	05 48 09.0	-3.2
PLCA	Paso Flores comp=Z,0.3nm,0.3s,baz=8.7,slow=10,SNR=15	6.43	171	Pn	Pn	05 47 23.9	+1.8
PLCA	comp=Z,0.2nm,0.3s,baz=284,slow=21,SNR=4.3			Lg	Lg	05 49 04.8	
VCA	Vinchina	6.46	30	*e*P	Pn	05 47 22.0	-0.5
VCA	comp=Z,42nm,0.7s			IAML		05 49 19.7	
ACLC	CERRO LA CRUZ	6.50	42	*e*P	Pn	05 47 22.1	-1.0
ACLC	comp=Z,27nm,0.8s			IAML		05 49 13.0	
TCA	Tanti	6.87	66	*e*P	Pn	05 47 30.7	+2.6
TCA	comp=Z,20nm,0.6s			IAML		05 49 30.0	
CPUP	Villa Florida comp=Z,85nm,18.2s,baz=241,slow=41	14.92	61	LR	LR	05 55 56.7	
LPAZ	La Paz comp=Z,0.1nm,0.3s,baz=163,slow=5.2,SNR=10	18.34	12	P	P	05 50 04.7	+2.1
LPAZ	comp=Z,41nm,20.4s,baz=74,slow=36			LR	LR	05 56 40.1	
SIV	San Ignacio comp=Z,1.7nm,0.5s,baz=214,slow=6.9,SNR=5.6	20.75	31	P	P	05 50 28.3	0.0
BDFB	Brasilia comp=Z,1.5nm,0.7s,baz=276,slow=9.2,SNR=3.1	28.47	55	P	P	05 51 44.6	+1.7
PDAR	Pinedale Array comp=Z,0.4nm,0.7s,baz=145,slow=5.4,SNR=3.8	84.15	333	P	P	05 58 19.5	+0.6
TORD	Torodi Ar. Bea comp=Z,0.6nm,0.7s,baz=243,slow=4.1,SNR=5.3	84.25	70	P	P	05 58 20.0	+0.3
NVAR	Mina Array Bea comp=Z,0.4nm,0.7s,baz=108,slow=5.8,SNR=3.4	84.25	325	P	P	05 58 21.7	+2.2
YKA	Yellowknife Ar comp=Z,0.1nm,0.6s,baz=134,slow=4.6,SNR=4.2	102.45	341	P	Pdif	05 59 42.8	-0.2
ZALV	Zalesovo Beam comp=Z,0.7nm,0.6s,baz=336,slow=3.3,SNR=3.7	154.49	33	PKPbc	PKPbc	06 05 47.9	0.0

*NIED **10** 05:52:00, 38°80N×144°10E, h5km, Mw3.9 Best double couple: M0 8.22000×10^14 NP1:φs 180.00000°, δ44.00000°, λ-100.00000°. NP2:φs 14.00000°, δ47.00000°, λ-81.00000°.*
*IDC **10** 05:52:34.5±0.7, 38°65N×144°33E, h0km, mb3.8/17, mb1 4.0/22, mb1mx3.9/42, mbtmp3.9/22, ML3.5/5, MS3.5/7, Ms1 3.5/7, ms1mx3.0/54, Error ellipse: s-maj=18.5km s-min=14.0km az=127.0*
*NEIC **10** 05:52:36.1±0.4, 38°70N×144°30E, h10km, mb4.2/7, Error ellipse: s-maj=8.8km s-min=5.9km az=125.0*
*ISCJB **10** 05:52:37.1±1.4, 38°70N±0°04×144°19E±0°04, h30km±10km, mb3.9/22, MS4.0/3, Error ellipse: s-maj=6.7km s-min=4.7km az=136.7*
*JMA **10** 05:52:38.6±0.3, 38°84N×144°14E, h44km, M4.5*

ISC 10 05:52:39.0±3.9, 38°81N±0°04×144°21E±0°07, h27km±27km, n62, σ1°65/70, mb3.9/22, MS4.0/3, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MIYJ	Miyakonagasawa	2.01	293	P	Pn	05 53 09.9	-1.2
MIYJ				*e*S	Sn	05 53 33.5	-1.9
JIO	Ouri	2.27	262	P	Pn	05 53 13.5	-1.2
JIO				S	Sn	05 53 39.3	-2.5
JMK	Ichinoseki	2.34	274	P	Pn	05 53 15.1	-0.5
JMK				S	Sn	05 53 41.9	-1.6
JOM	Ohasama	2.36	287	P	Pn	05 53 15.5	-0.5
JOM				S	Sn	05 53 42.2	-2.0
JANG	Nango	2.60	308	P	Pn	05 53 18.0	-1.3
JYK	Kaneyama	3.01	273	P	Pn	05 53 24.6	-0.3
JYK				*e*S	Sn	05 53 59.2	-0.8
ERM	Erimo	3.30	346	*e*Pn	Pn	05 53 28.1	-0.8
ERM				*e*Sn	Sn	05 54 03.0	-4.3
JFT	Otama	3.31	248	P	Pn	05 53 29.0	-0.1
JFT				S	Sn	05 54 06.0	-1.6
JOT	Ohata	3.54	318	P	Pn	05 53 31.8	-0.3
JOT				*e*S	Sn	05 54 09.3	-3.7
JNBK	Urakawa-nobuka	3.64	343	P	Pn	05 53 32.7	-0.9
JNBK				*e*S	Sn	05 54 12.9	-2.7
JAW	Awa shima	3.90	266	P	Pn	05 53 37.8	+0.7
JKB	Kayabe	3.92	323	P	Pn	05 53 37.6	+0.2
JKB				*e*S	Sn	05 54 18.7	-3.8
JAG	Ashikaga	4.46	239	P	Pn	05 53 43.6	-1.3
JAG				S	Sn	05 54 33.3	-2.6
JSD	Sado	4.74	263	P	Pn	05 53 48.0	-0.6
BSO1	Boso 1	4.89	213	P	Pn	05 53 47.8	-2.5
BSO1				S	Sn	05 54 42.3	-3.4
JRY	Ryogami san	5.06	238	P	Pn	05 53 52.1	-1.0
JRY				S	Sn	05 54 47.1	-3.6
MJAR	Matsushiro Arr 6.7nm,0.3s,baz=16,slow=14,SNR=75	5.27	246	Pn	Pn	05 53 55.4	-0.6
MJAR	3.2nm,0.3s,baz=161,slow=20,SNR=4.7			Sn	Sn	05 54 57.6	+1.7
MJAR	comp=Z,193nm,18.2s,baz=75,slow=42			LR	LR	05 56 15.9	
MAJO	Matsushiro 34nm,0.4s	5.27	246	*e*Pn	Pn	05 53 56.0	0.0
MAT	Matsushiro	5.27	246	P	Pn	05 53 56.6	+0.6
MAT				S	Sn	05 54 55.9	0.0
MAT	Matsushiro	5.27	246	P	Pn	05 53 56.7	+0.7
JOD2	Odawara 2	5.41	231	S	Sn	05 54 54.4	-5.0
JYN	Shimob	5.60	236	P	Pn	05 54 00.7	+0.1
JHJ2	Mitsune	6.71	213	*e*Pn	Pn	05 54 12.9	-2.8
JHJ2				*e*Sn	Sn	05 55 23.1	-8.1
JHJ	Hachijo jima 2 34nm,0.3s,baz=75,slow=22,SNR=9.5	6.71	214	Pn	Pn	05 54 12.8	-3.0
JHJ	28nm,0.3s,baz=84,slow=19,SNR=5.5			Sn	Sn	05 55 22.1	-9.3
JHJ	comp=Z,86nm,18.4s,baz=136,slow=41			LR	LR	05 57 08.3	
USRK	Ussuriysk Ar. 0.4nm,0.3s,baz=100,slow=14,SNR=7.3	10.63	304	Pn	Pn	05 55 11.6	+2.1
USRK	comp=Z,100nm,20.3s,baz=136,slow=36			LR	LR	05 59 03.2	
JNU	Nakatsue comp=Z,111nm,20.9s,baz=120,slow=39	12.20	246	LR	LR	06 00 26.1	
KSRS	Korea Array 0.4nm,0.3s,baz=88,slow=13,SNR=3.7	12.90	269	Pn	Pn	05 55 42.7	+2.2
KSAR	Wonju Array Be	12.93	269	Pn	Pn	05 55 42.7	+1.8
KLR	Kul'dur 0.1nm,0.3s,baz=114,slow=13,SNR=3.8	13.72	323	Pn	Pn	05 55 51.3	-0.4
JOW	Kunigami 6.5nm,0.9s	17.91	233	*e*P	Pn	05 56 45.9	-0.3
HIA	Hailar 5.8nm,1.0s	20.38	309	*e*P	P	05 57 13.7	+0.2
MA2	Magadan 1.0nm,0.3s,baz=192,slow=13,SNR=3.0	21.20	9	P	P	05 57 23.5	+1.3
SEY	Seymchan 1.4nm,0.5s,baz=180,slow=7.0,SNR=9.7	24.66	9	P	P	05 57 59.0	+1.8
H11N2	WAKE ISLAND Hy baz=320,slow=75,SNR=4.7	27.31	128	T	T	06 26 45.4	
H11N1	WAKE ISLAND Hy baz=320,slow=75,SNR=5.1	27.32	128	T	T	06 26 49.9	
H11N3	WAKE ISLAND Hy baz=320,slow=75,SNR=4.7	27.33	128	T	T	06 26 47.0	
SONM	Songino Array 0.4nm,0.4s,baz=77,slow=9.0,SNR=3.1	28.71	301	P	P	05 58 36.0	+2.1
ENH	Enshi 4.7nm,0.4s	29.70	264	P	P	05 58 42.0	-0.8
ZALV	Zalesovo Beam 0.6nm,0.4s,baz=99,slow=9.2,SNR=4.4	42.39	311	P	P	06 00 31.3	+0.5
ZALV	0.9nm,0.6s,baz=121,slow=5.5,SNR=4.1			PcP	PcP	06 02 24.0	+0.4
MKAR	Makanchi Array 0.4nm,0.4s,baz=81,slow=9.2,SNR=7.7	45.08	301	P	P	06 00 53.0	+0.4
KURK	Kurchatov 6.9nm,0.9s	46.60	307	*e*P	P	06 01 04.9	+0.4

ILAR	**Eielson Array**	**46.81**	**33**	P	**P**	**06 01 06.3**	**+0.4**
	0.8nm,0.8s,baz=254,slow=5.8,SNR=6.2						
TKM2	**Tokmak 2**	**50.74**	**298**	*e*P	**P**	**06 01 37.8**	**+1.0**
	1.6nm,0.8s						
INK	**Inuvik**	**51.80**	**28**	P	**P**	**06 01 44.4**	**+0.5**
	0.7nm,0.4s,baz=297,slow=6.7,SNR=8.3						
ARU	**Arti**	**56.50**	**318**	*e*P	**P**	**06 02 18.9**	**+0.5**
	4.0nm,0.7s						
ABKAR	**Akbulak array**	**58.49**	**310**	*e*P	**P**	**06 02 33.0**	**+0.4**
	0.7nm,0.6s						
WRAB	**Tennant Creek**	**59.16**	**191**	*e*P	**P**	**06 02 36.3**	**-1.1**
WRA	**Warramunga Arr**	**59.17**	**191**	P	**P**	**06 02 36.0**	**-1.5**
	2.5nm,0.7s,baz=11,slow=7.3,SNR=16						
RES	**Resolute Bay**	**60.32**	**15**	P	**P**	**06 02 45.0**	**+0.2**
	1.0nm,0.9s,baz=344,slow=5.9,SNR=4.2						
YKA	**Yellowknife Ar**	**61.16**	**31**	P	**P**	**06 02 50.6**	**0.0**
	0.2nm,0.8s,baz=303,slow=6.5,SNR=3.4						
ASAR	**Alice Springs**	**62.89**	**191**	P	**P**	**06 03 01.6**	**-1.1**
	0.9nm,0.8s,baz=13,slow=6.6,SNR=6.9						
ARCES	**ARCESS Array B**	**63.11**	**340**	LR	LR	06 34 10.3	
	comp=Z,93nm,19.0s,baz=177,slow=39						
FINES	**FINESS Array B**	**68.26**	**333**	P	**P**	**06 03 36.0**	**-1.0**
	2.3nm,0.9s,baz=34,slow=7.1,SNR=6.5						
FINES				LR	LR	06 38 24.7	
	comp=Z,113nm,18.1s,baz=110,slow=40						
KBZ	**Khabaz**	**71.41**	**311**	P	**P**	**06 03 58.2**	**+1.6**
	1.7nm,0.8s,baz=59,slow=6.5,SNR=3.7						
KBZ				LR	LR	06 40 12.4	
	comp=Z,78nm,18.9s,baz=286,slow=40						
NVAR	**Mina Array Bea**	**72.16**	**55**	P	**P**	**06 04 01.7**	**+0.2**
	0.6nm,0.8s,baz=272,slow=10,SNR=4.4						
NB2	**NORSAR Subarra**	**73.39**	**338**	P	**P**	**06 04 08.3**	**+0.1**
	comp=Z,0.6nm,0.6s,baz=39,slow=5.6						
NOA	**NORSAR Array B**	**73.39**	**338**	P	**P**	**06 04 08.4**	**+0.2**
	comp=Z,1.1nm,0.7s,baz=41,slow=5.6,SNR=4.9						
AKASG	**Malin Array Be**	**74.23**	**323**	P	**P**	**06 04 13.3**	**+0.1**
	comp=Z,0.6nm,0.3s,baz=45,slow=6.3,SNR=8.1						
PDAR	**Pinedale Array**	**74.84**	**47**	P	**P**	**06 04 17.8**	**+0.5**
	comp=Z,0.4nm,0.7s,baz=297,slow=0.3,SNR=4.2						
TORD	**Torodi Ar. Bea**	**117.57**	**318**	PKP	**PKPdf**	**06 11 22.3**	**-0.7**
	comp=Z,0.2nm,0.5s,baz=7.1,slow=1.8,SNR=3.3						
VNA2	**Neumayer--Watz**	**144.63**	**196**	PKP	**PKPab**	**06 12 10.3**	**-0.3**
	baz=104,slow=1.9						
VNA3	**Neumayer Olymp**	**144.84**	**194**	P	**PKPab**	**06 12 10.6**	**-0.7**

*IDC **10** 05:55:52.5±0.8, 36°.37N×143°.23E, h0km, mb3.7/10, mb1 3.8/11, mb1mx3.6/37, mbtmp3.6/11, ML3.2/1, Error ellipse: s-maj=24.3km s-min=19.9km az=104.0*
*ISCJB **10** 05:55:55.2±0.6, 36°.46N±0°.05×143°.06E±0°.05, h29km, mb3.7/10, Error ellipse: s-maj=6.5km s-min=5.4km az=172.1*
*JMA **10** 05:55:56.7±0.2, 36°.48N×143°.00E, h70km, M3.3*
ISC 10 05:55:57.2±0.8, 36°.47N±0°.06×143°.07E±0°.07, h29km, n23, σ1s09°33, mb3.6/10, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**1.93**	**290**	P	**Pn**	**05 56 26.9**	**-1.2**
ONAJ				*e*S	**Sn**	**05 56 50.5**	**-0.9**
JFK	**Kawauchi**	**1.97**	**298**	P	**Pn**	**05 56 27.8**	**-0.9**
JFK				*e*S	**Sn**	**05 56 51.8**	**-0.7**
JHO	**Hitachi**	**2.02**	**275**	P	Pn	05 56 25.7	-3.6
JHO				*e*S	**Sn**	**05 56 51.8**	**-1.8**
JFT	**Otama**	**2.42**	**296**	P	**Pn**	**05 56 34.7**	**-0.2**
JFT				S	**Sn**	**05 57 04.0**	**+0.4**
JMK	**Ichinoseki**	**2.88**	**330**	P	**Pn**	**05 56 40.0**	**-1.1**
JMK				S	**Sn**	**05 57 13.2**	**-1.5**
JAG	**Ashikaga**	**2.92**	**270**	P	**Pn**	**05 56 41.3**	**-0.3**
JAG				S	**Sn**	**05 57 14.1**	**-1.6**
JYK	**Kaneyama**	**3.25**	**319**	P	**Pn**	**05 56 45.8**	**-0.5**
JYK				S	**Sn**	**05 57 23.7**	**-0.3**
JOM	**Ohasama**	**3.31**	**335**	P	**Pn**	**05 56 46.2**	**-0.8**
JOM				*e*S	**Sn**	**05 57 23.8**	**-1.6**
JRY	**Ryogami san**	**3.40**	**264**	P	**Pn**	**05 56 47.6**	**-0.7**
JRY				*e*S	**Sn**	**05 57 26.2**	**-1.5**
JOD2	**Odawara 2**	**3.45**	**251**	P	**Pn**	**05 56 48.3**	**-0.7**
JOD2				*e*S	**Sn**	**05 57 27.2**	**-1.8**
MJAR	**Matsushiro Arr**	**3.92**	**272**	Pn	**Pn**	**05 56 55.9**	**+0.5**
	1.4nm,0.3s,baz=85,slow=14,SNR=5.8						
MAT	**Matsushiro**	**3.92**	**272**	P	**Pn**	**05 56 55.8**	**+0.4**
MAT				S	**Sn**	**05 57 42.7**	**+2.2**
SONM	**Songino Array**	**29.20**	**304**	P	**P**	**06 01 57.7**	**+1.5**
	1.1nm,0.8s,baz=104,slow=9.2,SNR=5.0						
ZALV	**Zalesovo Beam**	**43.27**	**313**	P	**P**	**06 03 56.8**	**+0.9**
	0.8nm,0.6s,baz=104,slow=8.9,SNR=3.6						
MKAR	**Makanchi Array**	**45.54**	**303**	P	**P**	**06 04 15.1**	**+0.8**
	0.3nm,0.4s,baz=89,slow=9.2,SNR=3.6						
ILAR	**Eielson Array**	**49.26**	**32**	P	**P**	**06 04 42.5**	**-0.3**
	0.4nm,0.7s,baz=262,slow=6.3,SNR=4.1						
INK	**Inuvik**	**54.28**	**27**	P	**P**	**06 05 20.4**	**+0.2**
	0.9nm,1.0s,baz=218,slow=3.9,SNR=2.6						
WRA	**Warramunga Arr**	**56.71**	**190**	P	**P**	**06 05 37.2**	**-1.1**
	1.0nm,0.9s,baz=12,slow=7.7,SNR=4.0						
ASAR	**Alice Springs**	**60.44**	**190**	P	**P**	**06 06 03.2**	**-0.9**
	0.4nm,0.7s,baz=9.8,slow=6.0,SNR=3.6						
RES	**Resolute Bay**	**62.81**	**15**	P	**P**	**06 06 19.1**	**-0.4**
	0.7nm,0.9s,baz=321,slow=6.0,SNR=3.4						
NB2	**NORSAR Subarra**	**75.21**	**338**	P	**P**	**06 07 37.7**	**+0.9**
	comp=Z,0.6nm,0.7s,baz=39,slow=5.9						
NOA	**NORSAR Array B**	**75.21**	**338**	P	**P**	**06 07 37.2**	**+0.4**
	comp=Z,1.5nm,0.9s,baz=38,slow=5.7,SNR=3.9						
TXAR	**Lajitas Array**	**89.40**	**53**	P	**P**	**06 08 52.1**	**+0.6**
	comp=Z,0.2nm,0.6s,baz=305,slow=3.2,SNR=2.5						

IDC 10 06:00:45.6±1.6, 37°.48N×144°.56E, h0km, mb3.7/2, mb1 3.9/3, mb1mx3.9/3/46, mbtmp3.5/3, ML3.1/1, MS2.9/1, Ms1 2.9/1, ms1mx2.4/47, Error ellipse: s-maj=56.1km s-min=31.4km az=127.0, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MJAR	**Matsushiro Arr**	**5.17**	**261**	Pn	Pn	06 02 03.9	-0.3
	0.6nm,0.3s,baz=92,slow=15,SNR=5.9						
KLR	**Kul'dur**	**14.97**	**326**	LR	LR	06 09 22.9	
	comp=Z,52nm,21.2s,baz=254,slow=34						
ILAR	**Eielson Array**	**47.77**	**33**	P	P	06 09 24.1	-0.1
	0.5nm,0.9s,baz=259,slow=8.7,SNR=4.3						
WRA	**Warramunga Arr**	**57.92**	**191**	P	P	06 10 39.5	-0.1
	1.4nm,0.7s,baz=13,slow=7.7,SNR=7.8						

MEX 10 06:08:09.0±0.7, 17°.10N×94°.24W, h140km±19km, MD3.6, Chiapas

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
TGIG		**1.12**	**107**	*e*P	Pn	06 08 32.6	-1.4
TGIG				*e*S	Sn	06 08 51.1	-1.9
PCIG		**1.70**	**145**	*e*P	Pn	06 08 39.2	-0.9
PCIG				*i* S	Sn	06 09 02.1	-1.8
HUIG	**Huatulco**	**2.23**	**234**	*e*P	Pn	06 08 44.1	-2.3
HUIG				*e*S	Sn	06 09 14.2	-0.8
VHO	**Vista Hermosa**	**2.38**	**270**	*e*P	Pn	06 08 48.9	+0.4
VHO				*e*S	Sn	06 09 17.6	-1.1

IDC 10 06:23:36.1±11.0, 36°.69N×141°.97E, h0km, mb3.3/3, mb1 3.2/4, mb1mx3.1/29, mbtmp3.2/4, ML2.5/1, Error ellipse: s-maj=208.2km s-min=69.0km az=140.0, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MJAR	**Matsushiro Arr**	**3.03**	**268**	Pn	Pn	06 24 24.9	-0.5
	0.7nm,0.3s,baz=90,slow=10.0,SNR=7.0						
SONM	**Songino Array**	**28.34**	**304**	P	P	06 29 31.2	-0.5
	0.4nm,0.6s,baz=108,slow=9.3,SNR=2.7						
MKAR	**Makanchi Array**	**44.68**	**302**	P	P	06 31 52.3	+1.7
	0.3nm,0.6s,baz=85,slow=10,SNR=3.6						
KURBB	**Kurchatov Arra**	**46.56**	**308**	P	P	06 32 04.4	-1.0
	0.1nm,0.3s,baz=94,slow=7.7,SNR=3.3						

*NIED **10** 06:30:00, 36°.00N×141°.0OE, h29km, Mw3.6 Best double couple: M0 2.89000×10^14 NP1:φs257.00000°, δ13.00000°, λ-15.00000°. NP2:φs2.00000°, δ87.00000°, λ-103.00000°.*
*IDC **10** 06:30:19.4±1.2, 35°.87N×141°.09E, h0km, mb3.7/5, mb1 3.8/7, mb1mx3.5/51, mbtmp3.8/7, ML3.9/2, Error ellipse: s-maj=34.3km s-min=22.6km az=67.0*
*ISCJB **10** 06:30:22.8±1.0, 35°.99N±0°.06×141°.01E±0°.08, h32km±5km, mb3.7/5, Error ellipse: s-maj=12.8km s-min=8.2km az=144.9*
*JMA **10** 06:30:23.1±0.1, 35°.97N×141°.01E, h34km±1km, M3.6*
JMA Felt I J1.
ISC 10 06:30:23.6±1.4, 36°.01N±0°.06×140°.98E±0°.09, h24km±9km, n12, σ0s66°/16, mb3.7/5, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CHOJ	**Chosi**	**0.32**	**197**	P	**Pb**	**06 30 30.6**	**-0.2**
CHOJ				S	**Sb**	**06 30 35.9**	**+0.2**
JYT	**Yasato**	**0.67**	**289**	P	**Pb**	**06 30 36.6**	**0.0**
JYT				S	**Sb**	**06 30 45.8**	**+0.3**
JHO	**Hitachi**	**0.69**	**331**	P	**Pb**	**06 30 36.4**	**-0.5**
JHO				S	**Sb**	**06 30 45.9**	**0.0**
JAG	**Ashikaga**	**1.30**	**289**	P	**Pn**	**06 30 45.9**	**-0.3**
JAG				S	**Sn**	**06 31 01.7**	**-1.1**
MJAR	**Matsushiro Arr**	**2.30**	**284**	Pn	**Pn**	**06 31 00.7**	**+0.7**
	5.9nm,0.3s,baz=109,slow=8.4,SNR=20						
MAT	**Matsushiro**	**2.30**	**284**	P	**Pn**	**06 31 00.8**	**+0.8**
MAT				S	**Sn**	**06 31 26.9**	**-0.6**
JCJ	**Chichijima**	**8.95**	**173**	Pn	Pn	06 32 26.9	-4.3
	6.2nm,0.3s,baz=77,slow=16,SNR=4.6						
ZALV	**Zalesovo Beam**	**42.35**	**313**	P	**P**	**06 38 16.0**	**+0.6**
	0.8nm,0.5s,baz=94,slow=8.6,SNR=4.8						
MKAR	**Makanchi Array**	**44.37**	**303**	P	**P**	**06 38 32.6**	**+0.7**
	1.2nm,0.6s,baz=93,slow=9.7,SNR=15						
ILAR	**Eielson Array**	**50.55**	**32**	P	**P**	**06 39 19.9**	**+0.2**
	0.2nm,0.7s,baz=271,slow=5.0,SNR=4.2						
WRA	**Warramunga Arr**	**56.00**	**188**	P	**P**	**06 39 59.2**	**-1.0**
	0.4nm,0.8s,baz=4.4,slow=7.5,SNR=2.7						
ARU	**Arti**	**56.90**	**319**	P	**P**	**06 40 06.6**	**+0.3**
	1.9nm,0.5s,baz=115,slow=19,SNR=4.0						

*IDC **10** 06:36:25.1±0.8, 38°.48N×144°.96E, h0km, mb3.5/9, mb1 3.8/11, mb1mx3.6/53, mbtmp3.6/11, ML2.9/2, Error ellipse: s-maj=24.2km s-min=19.0km az=126.0*
*ISCJB **10** 06:36:29.1±0.7, 38°.5N±0°.1×144°.8E±0°.1, h43km, mb3.5/9, Error ellipse: s-maj=17.3km s-min=13.4km az=149.3*
ISC 10 06:36:31.0±0.9, 38°.5N±0°.1×144°.8E±0°.1, h43km, n11, σ0s77°/11, mb3.5/9, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MJAR	**Matsushiro Arr**	**5.59**	**252**	Pn	**Pn**	**06 37 50.9**	**-0.7**
	2.0nm,0.3s,baz=60,slow=10,SNR=23						
USRK	**Ussuriysk Ar.**	**11.19**	**305**	Pn	**Pn**	**06 39 08.3**	**0.0**
	0.1nm,0.3s,baz=110,slow=14,SNR=5.3						
SEY	**Seymchan**	**24.91**	**8**	P	**P**	**06 41 50.7**	**+1.1**
	1.3nm,0.6s,baz=178,slow=8.9,SNR=6.2						
MKAR	**Makanchi Array**	**45.64**	**302**	P	**P**	**06 44 47.9**	**+0.7**
	0.2nm,0.6s,baz=90,slow=7.2,SNR=5.7						
ILAR	**Eielson Array**	**46.82**	**33**	P	**P**	**06 44 56.3**	**+0.1**
	0.3nm,0.7s,baz=260,slow=7.3,SNR=5.7						
KURBB	**Kurchatov Arra**	**47.24**	**307**	P	**P**	**06 44 59.5**	**-0.1**
	0.3nm,0.5s,baz=80,slow=8.3,SNR=3.6						
WRA	**Warramunga Arr**	**58.95**	**192**	P	**P**	**06 46 26.2**	**+0.2**
	1.0nm,0.7s,baz=16,slow=7.4,SNR=4.2						
YKA	**Yellowknife Ar**	**61.19**	**31**	P	**P**	**06 46 40.3**	**-0.6**
	0.2nm,0.8s,baz=302,slow=6.9,SNR=4.7						
ASAR	**Alice Springs**	**62.67**	**191**	P	**P**	**06 46 52.3**	**+1.1**
	1.4nm,1.1s,baz=17,slow=9.7,SNR=4.6						
NVAR	**Mina Array Bea**	**71.96**	**55**	P	**P**	**06 47 49.6**	**-0.7**
	0.6nm,0.8s,baz=274,slow=5.8,SNR=4.2						
PDAR	**Pinedale Array**	**74.72**	**47**	P	**P**	**06 48 06.0**	**-0.6**
	0.3nm,0.6s,baz=326,slow=3.1,SNR=3.6						

*IDC **10** 06:36:44.3±0.7, 38°.47N×144°.84E, h0km, mb3.8/15, mb1 4.1/20, mb1mx3.9/56, mbtmp4.0/20, ML3.9/4, MS2.9/1, Ms1 2.9/1, ms1mx2.3/43, Error ellipse: s-maj=18.5km s-min=14.4km az=130.0*
*ISCJB **10** 06:36:47.2±0.5, 38°.37N±0°.05×144°.68E±0°.08, h35km, mb3.9/18, Error ellipse: s-maj=10.0km s-min=5.6km az=33.5*
*NEIC **10** 06:36:49.4±2.1, 38°.48N×144°.74E, h34km±15km, mb4.3/4, Error ellipse: s-maj=9.4km s-min=5.4km az=118.0*
ISC 10 06:36:49.1±0.7, 38°.40N±0°.07×144°.64E±0°.08, h35km, n32, σ1s45°/35, mb3.9/18, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ERM	**Erimo**	**3.78**	**343**	Pn	**Pn**	**06 37 44.5**	**-0.4**
MJAR	**Matsushiro Arr**	**5.44**	**252**	Pn	**Pn**	**06 38 09.7**	**+2.0**
	9.7nm,0.3s,baz=52,slow=10,SNR=26						
MAJO	**Matsushiro**	**5.44**	**252**	*e*Pn	**Pn**	**06 38 09.9**	**+2.2**
	84nm,0.6s						
MAT	**Matsushiro**	**5.44**	**252**	P	**Pn**	**06 38 10.2**	**+2.5**
MAT				*e*S	**Sn**	**06 39 04.8**	**-4.3**
JHJ2	**Mitsune**	**6.57**	**218**	*e*Pn	**Pn**	**06 38 25.4**	**+2.2**
JHJ2				*e*Sn	**Sn**	**06 39 36.5**	**-0.4**
JHJ	**Hachijo jima 2**	**6.58**	**218**	Pn	**Pn**	**06 38 23.8**	**+0.4**
	22nm,0.3s,baz=77,slow=22,SNR=5.8						
JHJ				Sn	**Sn**	**06 39 35.6**	**-1.6**
	37nm,0.3s,baz=90,slow=20,SNR=3.1						
JHJ				LR	LR	06 41 08.8	
	comp=Z,99nm,22.0s,baz=201,slow=39						
USRK	**Ussuriysk Ar.**	**11.13**	**305**	Pn	**Pn**	**06 39 26.9**	**+1.2**
	0.4nm,0.3s,baz=107,slow=14,SNR=10.0						
JNU	**Nakatsue**	**12.35**	**249**	Pn	**Pn**	**06 39 42.7**	**+0.2**
	0.3nm,0.3s,baz=8.2,slow=7.7,SNR=3.6						
JNU	**Nakatsue**	**12.35**	**249**	*e*Pn	**Pn**	**06 39 43.0**	**+0.5**
MDJ	**Mudanjiang**	**12.87**	**304**	*e*Pn	**Pn**	**06 39 49.8**	**+0.4**
KLR	**Kul'dur**	**14.25**	**324**	Pn	**Pn**	**06 40 08.4**	**+0.1**
	0.3nm,0.3s,baz=110,slow=10,SNR=3.8						
PETK	**Petropavlovsk-**	**17.26**	**27**	P	**Pn**	**06 40 47.4**	**+0.2**
	0.2nm,0.3s,baz=215,slow=7.0,SNR=6.2						
JOW	**Kuguisu**	**17.94**	**235**	*e*P	**Pn**	**06 40 53.1**	**-2.7**
	14nm,1.1s						
MA2	**Magadan**	**21.55**	**9**	P	**P**	**06 41 33.7**	**-1.5**
	1.6nm,0.2s,baz=163,slow=19,SNR=2.1						
SEY	**Seymchan**	**25.01**	**8**	P	**P**	**06 42 09.6**	**+0.2**
	3.9nm,0.7s,baz=191,slow=6.4,SNR=13						
SONM	**Songino Array**	**29.20**	**301**	P	**P**	**06 42 47.5**	**+0.1**
	0.3nm,0.6s,baz=92,slow=10,SNR=2.3						
ENH	**Enshi**	**30.00**	**265**	*e*P	**P**	**06 42 54.8**	**+0.4**
	10.0nm,1.3s						
ZALV	**Zalesovo Beam**	**42.91**	**311**	P	**P**	**06 44 45.1**	**+1.1**
	1.0nm,0.4s,baz=101,slow=7.5,SNR=3.6						
MKAR	**Makanchi Array**	**45.57**	**302**	P	**P**	**06 45 06.5**	**+1.0**
	0.3nm,0.4s,baz=90,slow=5.8,SNR=7.5						
ILAR	**Eielson Array**	**46.96**	**33**	P	**P**	**06 45 15.2**	**-1.0**
	1.2nm,0.8s,baz=258,slow=6.2,SNR=14						
KURK	**Kurchatov**	**47.12**	**308**	P	**P**	**06 45 19.1**	**+1.5**
KURBB	**Kurchatov Arra**	**47.19**	**307**	P	**P**	**06 45 19.1**	**+1.0**
	0.7nm,0.6s,baz=82,slow=8.4,SNR=5.8						
TKM2	**Tokmak 2**	**51.23**	**298**	*e*P	**P**	**06 45 50.3**	**+0.9**
	1.2nm,0.4s						
INK	**Inuvik**	**52.00**	**28**	P	**P**	**06 45 54.0**	**-0.5**
	0.7nm,0.5s,baz=293,slow=5.3,SNR=7.1						
WRAB	**Tennant Creek**	**58.82**	**191**	*e*P	**P**	**06 46 44.7**	**+0.6**
	2.2nm,0.7s						
WRA	**Warramunga Arr**	**58.83**	**191**	P	**P**	**06 46 45.3**	**+1.1**
	2.1nm,0.7s,baz=13,slow=7.3,SNR=11						
YKA	**Yellowknife Ar**	**61.33**	**31**	P	**P**	**06 46 59.6**	**-1.2**
	0.5nm,0.7s,baz=301,slow=6.6,SNR=10						
ASAR	**Alice Springs**	**62.56**	**191**	P	**P**	**06 47 11.0**	**+1.5**
	0.9nm,0.7s,baz=16,slow=5.8,SNR=8.2						
FINES	**FINESS Array B**	**68.78**	**333**	P	**P**	**06 47 49.8**	**+0.6**
	1.0nm,0.7s,baz=96,slow=3.8,SNR=5.7						
NVAR	**Mina Array Bea**	**72.12**	**55**	P	**P**	**06 48 10.6**	**+0.3**
	1.1nm,0.8s,baz=290,slow=6.2,SNR=6.1						
PDAR	**Pinedale Array**	**74.88**	**47**	P	**P**	**06 48 25.6**	**-0.8**
	0.5nm,0.6s,baz=294,slow=2.3,SNR=6.5						
TXAR	**Lajitas Array**	**87.25**	**54**	P	**P**	**06 49 32.0**	**-0.4**
	0.5nm,0.7s,baz=302,slow=4.1,SNR=4.6						

*IDC **10** 06:37:25.1±0.7, 37°.93N×142°.21E, h0km, mb4.0/15, mb1 4.2/17, mb1mx3.9/53, mbtmp4.0/17, ML4.0/2, MS2.8/1, Ms1 2.8/1, ms1mx2.3/43, Error ellipse: s-maj=20.3km s-min=15.5km az=121.0*
*JMA **10** 06:37:29.3±0.3, 37°.96N×142°.25E, h31km±5km, M4.1*
JMA Felt I J1.
ISC 10 06:37:27.0±1.9, 37°.92N±0°.05×142°.27E±0°.06, h13km±11km, n28, σ0s97°/34, mb3.9/15, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**0.90**	**307**	P	**Pn**	**06 37 45.4**	**+0.1**
JIO				S	**Sn**	**06 37 56.6**	**-1.6**
JMM	**Marumori**	**1.17**	**268**	P	**Pg**	**06 37 49.6**	**+0.1**
JMM				S	**Sn**	**06 38 04.4**	**-0.4**
JFK	**Kawauchi**	**1.23**	**244**	P	**Pb**	**06 37 50.6**	**+0.4**
JFK				S	**Sb**	**06 38 05.8**	**-0.2**
JMK	**Ichinoseki**	**1.32**	**322**	P	**Pg**	**06 37 52.0**	**-0.5**
JMK				*e*S	**Sn**	**06 38 07.7**	**-0.9**
JOU	**Okura**	**1.34**	**290**	P	**Pg**	**06 37 52.7**	**-0.1**
JFT	**Otama**	**1.58**	**256**	P	**Pb**	**06 37 56.9**	**+0.8**
JFT				S	**Sb**	**06 38 16.6**	**+0.6**
MIYJ	**Miyakonagasawa**	**1.70**	**348**	P	**Pn**	**06 37 56.6**	**+0.3**
MIYJ				*e*S	**Sn**	**06 38 16.9**	**-0.9**
JOM	**Ohasama**	**1.73**	**334**	P	**Pb**	**06 37 58.3**	**-0.4**
JYK	**Kaneyama**	**1.80**	**304**	P	**Pb**	**06 37 59.1**	**-0.8**
MJAR	**Matsushiro Arr**	**3.52**	**248**	Pn	**Pn**	**06 38 19.2**	**-2.2**
	7.5nm,0.3s,baz=53,slow=9.7,SNR=11						
JHJ	**Hachijo jima 2**	**5.20**	**204**	Pn	**Pn**	**06 38 42.4**	**-2.0**
	26nm,0.3s,baz=244,slow=23,SNR=5.0						
USRK	**Ussuriysk Ar.**	**9.98**	**312**	Pn	**Pn**	**06 39 52.4**	**+2.4**
	0.6nm,0.3s,baz=120,slow=14,SNR=6.7						
MA2	**Magadan**	**22.35**	**11**	P	**P**	**06 42 24.2**	**-0.2**
	5.2nm,0.8s,baz=200,slow=7.9,SNR=5.5						
MA2				LR	LR	06 50 27.3	
	comp=Z,22nm,19.2s,baz=47,slow=35						
SEY	**Seymchan**	**25.80**	**11**	P	**P**	**06 42 58.4**	**+1.1**
	8.9nm,1.0s,baz=200,slow=4.3,SNR=7.0						
SONM	**Songino Array**	**27.87**	**302**	P	**P**	**06 43 16.6**	**+0.2**
	1.2nm,0.7s,baz=106,slow=11,SNR=3.7						
ZALV	**Zalesovo Beam**	**41.83**	**312**	P	**P**	**06 45 15.1**	**-1.1**
	2.1nm,0.6s,baz=79,slow=7.5,SNR=5.1						
MKAR	**Makanchi Array**	**44.23**	**301**	P	**P**	**06 45 37.0**	**+1.1**
	0.7nm,0.7s,baz=82,slow=9.9,SNR=3.6						
KURBB	**Kurchatov Arra**	**46.00**	**307**	P	**P**	**06 45 49.9**	**+0.1**
	3.9nm,0.6s,baz=81,slow=8.2,SNR=8.2						
ILAR	**Eielson Array**	**48.39**	**33**	P	**P**	**06 46 08.3**	**+0.1**
	1.4nm,0.7s,baz=268,slow=6.4,SNR=9.6						
INK	**Inuvik**	**53.29**	**27**	P	**P**	**06 46 45.5**	**+0.5**
	0.9nm,0.6s,baz=287,slow=8.2,SNR=4.6						
WRA	**Warramunga Arr**	**58.03**	**189**	P	**P**	**06 47 19.6**	**+0.1**
	1.5nm,0.5s,baz=6.4,slow=7.1,SNR=6.1						
ASAR	**Alice Springs**	**61.76**	**189**	P	**P**	**06 47 46.4**	**+1.2**
	0.4nm,0.6s,baz=14,slow=8.6,SNR=3.5						
YKA	**Yellowknife Ar**	**62.70**	**31**	P	**P**	**06 47 51.0**	**-0.1**
	0.4nm,0.5s,baz=296,slow=5.5,SNR=9.2						
NVAR	**Mina Array Bea**	**73.92**	**54**	P	**P**	**06 49 02.4**	**+0.3**
	0.5nm,0.8s,baz=301,slow=5.9,SNR=3.2						
AKASG	**Malin Array Be**	**74.02**	**323**	P	**P**	**06 49 00.8**	**-1.3**
	1.4nm,0.6s,baz=45,slow=5.5,SNR=5.6						
PDAR	**Pinedale Array**	**76.56**	**46**	P	**P**	**06 49 17.4**	**+0.1**
	0.7nm,0.6s,baz=236,slow=2.0,SNR=5.7						
GERES	**GERESS Array B**	**82.32**	**329**	P	**P**	**06 49 48.5**	**+0.1**
	0.4nm,0.4s,baz=27,slow=6.1,SNR=4.0						
LPAZ	**La Paz**	**145.66**	**59**	PKPbc	**PKPdf**	**06 57 06.3**	**0.0**
	1.7nm,0.7s,baz=0.0,slow=4.0,SNR=9.3						

*ISK **10** 06:51:49.6, 34°.37N×25°.58E, h40km, ML4.0*
*ISCJB **10** 06:51:53.1±0.5, 34°.77N±0°.02×25°.82E±0°.02, h8km±3km, mb3.8/14, MS2.9/3, Error ellipse: s-maj=3.8km s-min=2.5km az=13.5*
*IDC **10** 06:51:53.0±0.9, 34°.91N×25°.84E, h0km, mb3.9/14, mb1 4.0/21, mb1mx3.8/50, mbtmp3.9/21, ML3.5/6, MS3.0/7, Ms1 3.0/7, ms1mx2.7/62, Error ellipse: s-maj=20.7km s-min=8.2km az=11.0*
*CSEM **10** 06:51:54.4±0.2, 34°.83N×25°.82E, h2km, ML4.1, Error ellipse: s-maj=4.1km s-min=2.5km az=8.0*
*ATH **10** 06:51:54.7, 34°.89N×25°.81E, h16km, ML3.8/16, Error ellipse: s-maj=1.1km s-min=0.5km az=350.0*
*THE **10** 06:51:55.8, 34°.92N×25°.76E, h1km±1km, ML4.1/11, Error ellipse: s-maj=2.3km s-min=0.8km az=176.0*
*HLW **10** 06:51:59.6, 34°.63N×26°.08E, h33km±15km, Ml3.1*
**ISC 10 06:51:54.4±1.1, 34°.84N±0°.03×25°.81E±0°.02, h8km±7km, n250, σ1s19°/296, m

SANT	Santorini	1.56	349	P	Pn	06 52 22.6	+0.1
SANT				S	Sn	06 52 41.7	-1.2
SANT	Santorini	1.56	349	P	Pn	06 52 22.2	-0.3
SANT				S	Sn	06 52 41.7	-1.2
SANT				AML	AML	06 52 43.8	
	comp=E,8177μm,0.7s						
SANT				AML	AML	06 52 53.5	
	comp=N,4490μm,0.8s						
THT1	Athinios (Pele	1.58	349	P	Pn	06 52 22.6	-0.1
THT1	Athinios (Pele	1.58	349	P	Pn	06 52 22.6	-0.1
THR3	Thira Island,	1.61	348	P	Pn	06 52 22.9	-0.1
THR3	Thira Island,	1.61	348	P	Pn	06 52 22.9	-0.1
THR5	Thira Island,	1.62	347	P	Pn	06 52 22.9	-0.4
THR5	Thira Island,	1.62	347	P	Pn	06 52 22.9	-0.4
IMMV	Iera Moni Meta	1.62	293	P	Pn	06 52 23.5	+0.2
IMMV	Iera Moni Meta	1.62	293	P	Pn	06 52 23.5	+0.2
IMMV				S	Sg	06 52 47.2	+0.5
IMMV	Iera Moni Meta	1.62	293	P	Pg	06 52 26.7	+1.1
IMMV				S	Sg	06 52 47.2	+0.5
IMMV				AML	AML	06 52 57.8	
	comp=N,4005μm,1.0s						
IMMV				AML	AML	06 52 58.1	
	comp=E,4458μm,1.0s						
THR2	Thira island,	1.64	349	P	Pn	06 52 23.5	0.0
THR2	Thira island,	1.64	349	P	Pn	06 52 23.5	0.0
CMBO	Columbo, Santo	1.67	349	P	Pn	06 52 24.2	+0.3
CMBO				S	Sn	06 52 45.2	-0.2
CMBO	Columbo, Santo	1.67	349	P	Pn	06 52 24.2	+0.3
CMBO				S	Sn	06 52 45.3	-0.2
CMBO	Columbo, Santo	1.67	349	P	Pg	06 52 26.1	-0.3
CMBO				S	Sn	06 52 45.3	-0.2
CMBO				AML	AML	06 52 50.0	
	comp=E,12257μm,0.6s						
CMBO				AML	AML	06 52 53.6	
	comp=N,11548μm,0.6s						
NISR	Nisiros	2.07	31	P	Pn	06 52 30.9	+1.5
NISR				S	Sn	06 52 55.6	+0.2
NISR	Nisiros	2.07	31	P	Pn	06 52 30.9	+1.5
NISR				S	Sn	06 52 55.6	+0.2
NISR	Nisiros	2.07	31	P	Pb	06 52 31.7	-0.5
NISR				S	Sn	06 52 54.7	-0.7
NISR				AML	AML	06 53 05.3	
	comp=N,4452μm,0.6s						
NISR				AML	AML	06 53 05.8	
	comp=E,4824μm,0.8s						
NIS1	Nisyros Isl.	2.08	32	*e*PN	Pn	06 52 29.9	+0.2
NIS1	Nisyros Isl.	2.08	32	P	Pn	06 52 30.6	+0.9
NIS1	Nisyros Isl.	2.08	32	*e*Pn	Pn	06 52 29.9	+0.2
NIS1	Nisyros Isl.	2.08	32	P	Pn	06 52 30.6	+0.9
NIS1				S	Sn	06 52 57.7	+1.9
NIS1	Nisyros Isl.	2.08	32	P	Pb	06 52 32.2	-0.3
NIS1				S	Sn	06 52 57.7	+1.9
NIS1				AML	AML	06 53 05.4	
	comp=E,4760μm,0.7s						
NIS1				AML	AML	06 53 08.9	
	comp=N,4681μm,0.6s						
MHLO	Agia Marina, M	2.18	329	P	Pn	06 52 30.4	-0.5
MHLO	Agia Marina, M	2.18	329	P	Pn	06 52 31.3	+0.4
MHLO				S	Sn	06 52 57.7	-0.3
MHLO	Agia Marina, M	2.18	329	P	Pn	06 52 31.3	+0.4
MHLO				S	Sn	06 52 57.7	-0.3
MHLO				AML	AML	06 53 12.2	
	comp=N,5145μm,1.0s						
MHLO				AML	AML	06 53 13.0	
	comp=E,5244μm,0.6s						
APE	Apeiranthos	2.24	354	*e*PN	Pn	06 52 32.6	+0.8
APE	Apeiranthos	2.24	354	P	Pn	06 52 31.2	-0.6
APE				S	Sn	06 52 59.4	-0.3
APE	Apeiranthos	2.24	354	P	Pn	06 52 31.2	-0.6
APE	Apeiranthos	2.24	354	*e*Pn	Pn	06 52 32.6	+0.8
APE				S	Sn	06 53 01.8	+2.1
APE	Apeiranthos	2.24	354	P	Pn	06 52 30.2	-1.6
APE				S	Sn	06 53 01.8	+2.1
APE				AML	AML	06 53 06.4	
	comp=E,1310μm,0.4s						
APE				AML	AML	06 53 11.8	
	comp=N,939μm,0.4s						
ANKY	Antikythira Is	2.30	297	P	Pn	06 52 32.2	-0.3
ANKY	Antikythira Is	2.30	297	P	Pn	06 52 32.2	-0.3
ANKY				S	Sn	06 53 02.5	+1.6
ANKY	Antikythira Is	2.30	297	P	Pb	06 52 35.4	-0.7
ANKY				S	Sn	06 53 02.5	+1.6
ANKY				AML	AML	06 53 21.3	
	comp=N,1130μm,1.1s						
ANKY				AML	AML	06 53 37.4	
	comp=E,1511μm,1.0s						
ARG	Arkhangelos	2.34	53	P	Pn	06 52 34.5	+1.4
ARG				S	Sn	06 53 03.7	+1.7
ARG	Arkhangelos	2.34	53	P	Pn	06 52 34.5	+1.4
ARG				S	Sn	06 53 03.7	+1.7
BODT	Bodrum	2.53	28	*e*PN	Pn	06 52 36.9	+1.1
BODT	Bodrum	2.53	28	P	Pn	06 52 37.0	+1.1
BODT	Bodrum	2.53	28	*e*Pn	Pn	06 52 36.9	+1.1
BDRM	Kayabasi	2.59	30	*i* P	Pn	06 52 36.5	-0.1
BDRM				*i* S	Sn	06 53 07.6	-0.7
BDRM	Kayabasi	2.59	30	P	Pn	06 52 36.5	-0.1
BDRM				S	Sn	06 53 07.6	-0.7
KYTH	Kithira	2.68	303	P	Pn	06 52 38.7	+0.8
KYTH	Kithira	2.68	303	P	Pn	06 52 38.7	+0.8
KYTH				S	Sn	06 53 12.1	+1.5
KYTH	Kithira	2.68	303	P	Pn	06 52 39.2	+1.3
SMG	Samos	2.99	16	P	Pn	06 52 42.3	+0.3
SMG	Samos	2.99	16	P	Pn	06 52 42.3	+0.3
SMG				S	Sn	06 53 19.7	+1.7
SMG	Samos	2.99	16	P	Pn	06 52 42.1	0.0
SMG				S	Sn	06 53 19.7	+1.7
VLI	Veliai	3.00	310	P	Pn	06 52 42.9	+0.7
VLI	Veliai	3.00	310	P	Pn	06 52 42.9	+0.7
VLI				S	Sn	06 53 19.6	+1.3
VLI	Veliai	3.00	310	P	Pn	06 52 42.5	+0.3
VLI				S	Sn	06 53 19.6	+1.3
VLI				AML	AML	06 53 22.3	
	comp=N,672μm,0.7s						
VLI				AML	AML	06 53 23.0	
	comp=E,569μm,0.7s						
DALY	Dalyan (Mu˘la	3.04	49	*e*PN	Pn	06 52 43.4	+0.7
DALY	Dalyan (Mu˘la	3.04	49	*e*Pn	Pn	06 52 43.4	+0.7
TURN	Turunc	3.05	47	*i* P	Pn	06 52 40.2	-2.6
TURN				*i* S	Sn	06 53 15.9	-3.6
TURN	Turunc	3.05	47	P	Pn	06 52 40.2	-2.6
YER	Yerkesik	3.05	40	*e*PN	Pn	06 52 43.2	+0.3
YER	Yerkesik	3.05	40	P	Pn	06 52 44.0	+1.1
YER	Yerkesik	3.05	40	*e*Pn	Pn	06 52 43.2	+0.3
YER	Yerkesik	3.05	40	P	Pn	06 52 44.0	+1.1
FETY	Fethiye	3.21	55	*e*PN	Pn	06 52 45.5	+0.4
FETY	Fethiye	3.21	55	P	Pn	06 52 46.1	+0.9
FETY	Fethiye	3.21	55	*e*Pn	Pn	06 52 45.5	+0.4
FETY	Fethiye	3.21	55	P	Pn	06 52 46.1	+0.9
AYDN	Tasoluk	3.28	30	*i* P	Pn	06 52 47.0	+0.9
AYDN				*i* S	Sb	06 53 34.7	+1.7
AYDN	Tasoluk	3.28	30	P	Pn	06 52 47.0	+0.9
KRND	KRANIDI	3.33	320	P	Pn	06 52 48.3	+1.5
KRND	KRANIDI	3.33	320	P	Pn	06 52 48.3	+1.5
KSL	Kastellorizon	3.35	66	P	Pn	06 52 48.5	+1.5
DID	Didima	3.38	323	P	Pn	06 52 48.6	+1.1
DID				S	Sn	06 53 28.2	+0.3
DID	Didima	3.38	323	P	Pn	06 52 48.6	+1.1
DID				S	Sn	06 53 28.2	+0.3
AKAS	Kas	3.39	65	*i* P	Pn	06 52 48.5	+0.7
AKAS				*i* S	Sn	06 53 32.0	+3.8
AKAS	Kas	3.39	65	P	Pn	06 52 48.5	+0.7
AKAS				S	Sn	06 53 32.0	+3.8
VLY	Voula,Athens	3.42	332	P	Pn	06 52 49.1	+1.1
VLY	Voula,Athens	3.42	332	P	Pn	06 52 49.1	+1.1
ATHU	Athens Univers	3.53	333	P	Pn	06 52 49.4	-0.1
ATHU	Athens Univers	3.53	333	P	Pn	06 52 49.4	-0.1
AYDB	Zeytinkoy-Aydi	3.53	28	*e*PN	Pn	06 52 50.8	+1.2
AYDB	Zeytinkoy-Aydi	3.53	28	*e*Pn	Pn	06 52 50.8	+1.2
CHOS	Chios island	3.55	3	P	Pn	06 52 49.3	-0.5
CHOS	Chios island	3.55	3	P	Pn	06 52 49.3	-0.5
ATH	Athens Observa	3.56	332	P	Pn	06 52 49.6	-0.3
PTL	Penteli	3.57	334	P	Pn	06 52 50.6	+0.5
PTL	Penteli	3.57	334	P	Pn	06 52 50.6	+0.5
BLCB	Balcova	3.68	15	*e*PN	Pn	06 52 52.9	+1.3
BLCB	Balcova	3.68	15	*e*Pn	Pn	06 52 52.9	+1.3
IZM	Izmir	3.74	18	*e*PN	Pn	06 52 53.3	+0.8
IZM	Izmir	3.74	18	*e*Pn	Pn	06 52 53.3	+0.8
VLX	Vlachokerasia	3.76	313	P	Pn	06 52 55.9	+3.1
VLX	Vlachokerasia	3.76	313	P	Pn	06 52 55.9	+3.1
ELL	Elmali	3.84	59	*e*PN	Pn	06 52 54.4	+0.5
ELL	Elmali	3.84	59	*e*Pn	Pn	06 52 54.4	+0.5
HMAT	Matruh	3.88	163	P	Pn	06 52 56.2	+1.8
	baz=166						
HMAT				AMP		06 53 00.0	
	comp=E,60μm,1.2s,logA/T=4.7,baz=166						
HMAT				S	Sn	06 53 33.5	-6.7
	baz=166						
HMAT	Matruh	3.88	163	P	Pn	06 52 56.2	+1.8
EREA	Eretria	3.88	338	P	Pn	06 52 55.8	+1.4
EREA	Eretria	3.88	338	P	Pn	06 52 55.8	+1.4
VILL	Villia	3.88	330	P	Pn	06 52 55.0	+0.6
PYL	PYLOS	3.89	303	P	Pn	06 52 55.1	+0.6
PYL	PYLOS	3.89	303	P	Pn	06 52 55.1	+0.6
DENT	Denizli	3.91	41	*e*PN	Pn	06 52 55.8	+1.1
DENT	Denizli	3.91	41	*e*Pn	Pn	06 52 55.8	+1.1
LTK	Loutraki	3.92	325	P	Pn	06 52 56.5	+1.6
LTK	Loutraki	3.92	325	P	Pn	06 52 56.5	+1.6
ITM	Ithomi	3.92	308	P	Pn	06 52 55.5	+0.6
ITM	Ithomi	3.92	308	P	Pn	06 52 55.5	+0.6
VIL2	Platees	3.94	329	P	Pn	06 52 55.0	-0.2
THAL	Thalero	4.08	322	P	Pn	06 53 01.1	+4.0
THAL	Thalero	4.08	322	P	Pn	06 53 01.1	+4.0
PROD	Prodromos	4.14	326	P	Pn	06 52 58.7	+0.8
PROD	Prodromos	4.14	326	P	Pn	06 52 58.7	+0.8
GUR	Goura	4.17	319	P	Pn	06 52 58.4	-0.1
GUR	Goura	4.17	319	P	Pn	06 52 58.4	-0.1
AMT	Artemida-Makis	4.27	310	P	Pn	06 53 03.4	+3.6
AMT	Artemida-Makis	4.27	310	P	Pn	06 53 03.4	+3.6
KULA	Kula-Manisa	4.33	31	*e*PN	Pn	06 53 02.7	+2.2
KULA	Kula-Manisa	4.33	31	*e*Pn	Pn	06 53 02.7	+2.2
AKS	Akhisar	4.34	21	*e*PN	Pn	06 53 02.3	+1.6
AKS	Akhisar	4.34	21	*e*Pn	Pn	06 53 02.3	+1.6
KLV	Kalavryta, Ach	4.36	318	P	Pn	06 53 02.6	+1.7
KLV	Kalavryta, Ach	4.36	318	P	Pn	06 53 02.6	+1.7
SIGR	SIGRI	4.37	0	P	Pn	06 52 59.3	-1.7
SIGR	SIGRI	4.37	0	P	Pn	06 52 59.3	-1.7
PRK	Paraskevi	4.42	5	P	Pn	06 53 01.3	-0.4
PRK	Paraskevi	4.42	5	P	Pn	06 53 01.3	-0.4
LKR	Lokris	4.43	330	P	Pn	06 53 03.6	+1.8
LKR	Lokris	4.43	330	P	Pn	06 53 03.6	+1.8
ANTB	Antalya	4.44	61	*e*PN	Pn	06 53 02.7	+0.7
ANTB	Antalya	4.44	61	*e*Pn	Pn	06 53 02.7	+0.7
DSF	Desfina	4.44	324	P	Pn	06 53 02.7	+0.6
DSF	Desfina	4.44	324	P	Pn	06 53 02.7	+0.6
DRO	Drossia	4.54	314	P	Pn	06 53 06.5	+3.1
DRO	Drossia	4.54	314	P	Pn	06 53 06.5	+3.1
SMIA	Simia	4.54	333	P	Pn	06 53 07.4	+3.9
SMIA	Simia	4.54	333	P	Pn	06 53 07.5	+4.0
LAKA	Lakka	4.59	319	P	Pn	06 53 04.8	+0.7
LAKA	Lakka	4.59	319	P	Pn	06 53 04.8	+0.7
KALE	Kalithea	4.62	321	P	Pn	06 53 06.8	+2.3
KALE	Kalithea	4.62	321	P	Pn	06 53 06.8	+2.3
BCK	Bucak	4.67	54	*e*PN	Pn	06 53 06.5	+1.3
BCK	Bucak	4.67	54	*e*Pn	Pn	06 53 06.5	+1.3
SKIA	Skiathos	4.71	337	P	Pn	06 53 05.8	0.0
SKIA	Skiathos	4.71	337	P	Pn	06 53 05.8	0.0
RLS	Riolos of Patr	4.75	314	P	Pn	06 53 07.8	+1.5
EFP	Efpalio	4.77	320	P	Pn	06 53 07.3	+0.8
EFP	Efpalio	4.77	320	P	Pn	06 53 07.3	+0.8
ISP	Isparta	4.83	51	*e*PN	Pn	06 53 08.7	+1.2
ISP	Isparta	4.83	51	*e*Pn	Pn	06 53 08.7	+1.2
AXS	Araxos	4.90	314	P	Pn	06 53 10.6	+2.3
AXS	Araxos	4.90	314	P	Pn	06 53 10.6	+2.3
XOR	Xorichti	4.98	336	P	Pn	06 53 10.6	+1.1
XOR	Xorichti	4.98	336	P	Pn	06 53 10.6	+1.1
LIA	Limnos Island	5.08	355	P	Pn	06 53 13.1	+2.3
EVR	Evrytania	5.18	323	P	Pn	06 53 12.8	+0.4
EVR	Evrytania	5.18	323	P	Pn	06 53 12.8	+0.4
KFL	Anninata	5.20	310	P	Pn	06 53 15.6	+3.1
KFL	Anninata	5.20	310	P	Pn	06 53 15.6	+3.1
PDO	Prodromos	5.28	317	P	Pn	06 53 17.2	+3.6
PDO	Prodromos	5.28	317	P	Pn	06 53 17.2	+3.6
SHUT	Suhut-Afyon	5.32	44	*e*PN	Pn	06 53 15.8	+1.6
SHUT	Suhut-Afyon	5.32	44	*e*Pn	Pn	06 53 15.8	+1.6
PAIG	Paliouri	5.36	342	P	Pn	06 53 15.3	+0.7
PAIG	Paliouri	5.36	342	P	Pn	06 53 15.3	+0.7
VLS	Valsamata	5.37	310	P	Pn	06 53 18.9	+4.1
SWA2		5.58	183	P	Pn	06 53 18.4	+0.7
	baz=186						
SWA2		5.58	183	P	Pn	06 53 18.4	+0.7
SMTH	Samothraki Isl	5.63	358	P	Pn	06 53 22.8	+4.4
OUR	Ouranopolis	5.68	346	P	Pn	06 53 19.2	+0.2
OUR	Ouranopolis	5.68	346	P	Pn	06 53 19.2	+0.2
DSL	Palaion Diasel	5.71	320	P	Pn	06 53 19.7	+0.2
DSL	Palaion Diasel	5.71	320	P	Pn	06 53 19.7	+0.2
LKD2	Lefkada island	5.71	315	P	Pn	06 53 19.9	+0.4
LKD2	Lefkada island	5.71	315	P	Pn	06 53 19.9	+0.4
PLG	Polygyros	5.84	342	P	Pn	06 53 22.5	+1.2
PLG	Polygyros	5.84	342	P	Pn	06 53 22.5	+1.2
LIT	Litokhoron	5.88	334	P	Pn	06 53 26.4	+4.6
ALN	Alexandroupoli	6.05	2	P	Pn	06 53 24.9	+0.7
ALN	Alexandroupoli	6.05	2	P	Pn	06 53 24.9	+0.7
KIZT	Kizilcal	6.32	49	*e*PN	Pn	06 53 29.2	+1.2
KIZT	Kizilcal	6.32	49	*e*Pn	Pn	06 53 29.2	+1.2
HNAT	Natroun	6.59	141	P	Pn	06 53 31.1	-0.5
	baz=141						
HNAT	Natroun	6.59	141	P	Pn	06 53 31.1	-0.5
GLL	Jalalah	7.24	135	P	Pn	06 53 40.0	-0.5
	baz=135						
GLL	Jalalah	7.24	135	P	Pn	06 53 40.0	-0.5
SUZ	Suez	7.75	128	P	Pn	06 53 47.3	-0.2
	baz=128						
SUZ	Suez	7.75	128	P	Pn	06 53 47.3	-0.2
BRTR	Keskin Array B	7.92	50	Pn	Pn	06 53 50.4	+0.4
	comp=E,0.3nm,0.3s,baz=219,slow=14,SNR=15						
MMAI	Mount Meron Ar	8.18	100	Pn	Pn	06 53 52.5	-0.9
	comp=E,3.4nm,0.3s,baz=269,slow=11,SNR=5.8						
EIL	Elat	9.29	121	Pn	Pn	06 54 08.6	-0.1
	comp=E,1.0nm,0.3s,baz=342,slow=6.5,SNR=7.1						
EIL				Sn	Sn	06 55 53.0	-0.4
	comp=E,0.8nm,0.3s,baz=101,slow=16,SNR=4.4						
VAE	Valguarnera	9.59	289	Pn	Pn	06 54 13.1	+0.3
	comp=E,0.7nm,0.3s,baz=0.0,slow=2.0,SNR=3.2						
ASF	Jabal al Asfar	9.63	103	Pn	Pn	06 54 17.1	+3.7
	comp=E,0.4nm,0.3s,baz=233,slow=3.6,SNR=7.2						
HDHB	Dhahab	9.66	127	P	Pn	06 54 13.6	0.0
	baz=126						
HDHB	Dhahab	9.66	127	P	Pn	06 54 13.6	0.0
KEST	Kesra	13.48	279	LR	LR	07 02 04.6	
	comp=E,71nm,18.4s,baz=295,slow=45						
KBZ	Khabaz	15.91	51	Pn	P	06 55 42.2	0.0
	comp=E,0.2nm,0.3s,baz=260,slow=5.1,SNR=13						
GNI	Garni	15.93	65	LR	LR	07 03 13.0	
	comp=E,95nm,20.4s,baz=248,slow=43						
AKASG	Malin Array Be	16.05	8	Pn	Pn	06 55 40.8	+0.5
	comp=E,1.1nm,0.3s,baz=197,slow=11,SNR=9.5						
GERES	GERESS Array B	16.62	331	Pn	Pn	06 55 48.8	+1.0
	baz=142,slow=13,SNR=8.3						
GERES				LR	LR	07 03 50.2	
	comp=E,72nm,18.8s,baz=160,slow=43						
DAVOX	Davos/Dischmat	16.93	320	Pn	Pn	06 55 52.0	+0.3
	comp=E,0.2nm,0.3s,baz=101,slow=10,SNR=2.8						
DAVOX				LR	LR	07 04 30.6	
	comp=E,32nm,20.5s,baz=126,slow=45						
DPC	Dobruska-Polom	16.98	339	*e*P	Pn	06 55 52.5	+0.3
DPC				*ex*	x	06 56 03.9	
CLL	Collm	18.89	335	*e*P	P	06 56 15.0	-0.1
CLL				*i*		06 56 16.8	
CLL				*e*PP	PnPn	06 56 32.0	+4.1
WLF	Walferdange	20.68	322	P	P	06 56 34.8	+0.2
MEM	Membach	21.35	324	P	P	06 56 42.1	+0.2
DOU	Dourbes	21.74	321	P	P	06 56 45.0	-1.1
ESDC	Sonseca Array	24.13	290	P	P	06 57 10.4	-0.3
	comp=E,1.6nm,0.8s,baz=81,slow=9.6,SNR=9.8						
MDT	Midelt	25.31	274	LR	LR	07 09 57.3	
	comp=E,54nm,19.0s,baz=100,slow=43						
GEYT	Ailbeck	26.12	74	P	P	06 57 29.6	+0.7
	comp=E,1.8nm,0.4s,baz=289,slow=14,SNR=6.7						
FINES	FINESS Array B	26.63	0	P	P	06 57 31.1	-1.9
	comp=E,1.9nm,1.0s,baz=180,slow=11,SNR=3.0						
NOA	NORSAR Array B	27.85	345	LR	LR	07 11 02.3	
	comp=E,17nm,21.9s,baz=335,slow=41						
AKTO	Aktyubinsk	28.08	46	P	P	06 57 45.0	-1.3
	comp=E,1.0nm,0.6s,baz=233,slow=9.7,SNR=3.7						
EKA	Eskdalemuir Ar	28.61	325	P	P	06 57 49.4	-1.6
	comp=E,0.9nm,0.8s,baz=132,slow=11,SNR=4.8						
TORD	Tordi Ar. Bea	30.70	231	P	P	06 58 10.2	+0.4
	comp=E,2.5nm,0.7s,baz=34,slow=8.3,SNR=15						
TORD				LR	LR	07 11 47.1	
	comp=E,33nm,18.8s,baz=190,slow=39						
ARCES	ARCESS Array B	34.76	360	P	P	06 58 43.1	-1.7
	comp=E,3.4nm,1.1s,baz=173,slow=8.2,SNR=3.2						
BVAR	Borovoye Array	36.19	46	P	P	06 58 55.1	-2.1
	comp=E,1.2nm,0.8s,baz=221,slow=13,SNR=6.3						
AAK	Ala-Archa	38.32	63	P	P	06 59 15.8	+0.1
	comp=E,0.8nm,0.4s,baz=244,slow=8.6,SNR=3.5						
KURBB	Kurchatov Arra	40.91	51	P	P	06 59 37.1	+0.1
	comp=E,2.6nm,0.7s,baz=280,slow=8.7,SNR=21						
MKAR	Makanchi Array	43.51	56	P	P	06 59 58.5	+0.2
	comp=E,2.9nm,0.7s,baz=288,slow=5.8,SNR=25						
ZALV	Zalesovo Beam	44.84	46	P	P	07 00 08.1	-0.7
	comp=E,1.3nm,0.4s,baz=263,slow=9.2,SNR=6.3						
SONM	Songino Array	59.28	51	P	P	07 01 56.0	-0.5
	comp=E,0.7nm,0.9s,baz=243,slow=6.5,SNR=4.0						
YKA	Yellowknife Ar	77.92	342	P	P	07 03 51.2	-1.3
	comp=E,0.1nm,0.5s,baz=43,slow=5.8,SNR=3.9						

ISCJB ***10*** *06:56:36.1±0.7,35°.17N±0°.08×91°.13E±0°.07,h10km, mb3.7/10,MS3.5/11,Error ellipse: s-maj=12.3km s-min=7.9km az=179.8*

IDC ***10*** *06:56:36.3±0.8,35°.17N×91°.18E,h0km, mb3.7/10, mb1 3.8/15,mb1mx3.6/60,mbtmp3.7/15,ML3.2/3,MS3.4/14, Ms1 3.4/14,ms1mx3.2/49,Error ellipse: s-maj=29.6km s-min=16.5km az=49.0*

BJI ***10*** *06:56:37.8,35°.26N×91°.26E,h10km,mb3.9/5,Ms3.8/4, Ms7 3.5/3*

ISC 10 06:56:38.1±0.9,35°.2N±0°.1×91°.09E±0°.08,h10km,n30, σ1s14/19,mb3.8/10,MS3.4/11,Qinghai

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
GTA	Gaotai	8.13	56	*e*P	Pn	06 58 36.5	+0.3
GTA				pP	pP	06 58 40.1	
GTA				sP	sP	06 58 42.7	
GTA				S	Sn	07 00 10.2	+2.0
GTA				sS	sS	07 00 15.4	
GTA				pmax	pmax		
	comp=Z,5.0nm,0.9s						
GTA				LR	LR		
	comp=N,890nm,14.3s						
GTA				LR	LR		
	comp=Z,400nm,13.3s						
WMQ	Urumqi	9.01	344	*e*P	Pn	06 58 50.2	+2.0
WMQ				LR	LR		
	comp=N,330nm,19.6s						
WMQ				LR	LR		
	comp=E,350nm,19.7s						
LZH	Lanzhou	10.42	81	*e*P	Pn	06 59 08.0	+0.3
LZH				pP		06 59 10.2	
LZH				sP		06 59 12.1	
LZH				PP	PnPn	06 59 16.5	+1.2
LZH				LR	LR		
	comp=E,340nm,10.3s						
LZH				LR	LR		
	comp=Z,370nm,11.5s						
MKAR	Makanchi Array	13.35	333	Pn	Pn	06 59 46.5	-1.0
	0.2nm,0.3s,baz=146,slow=14,SNR=12						
AAK	Ala-Archa	14.89	305	Pn	Pn	07 00 09.4	+0.7
	0.0nm,0.3s,baz=137,slow=10,SNR=3.8						
SONM	Songino Array	17.02	37	Pn	P	07 00 35.3	-2.8
	0.1nm,0.3s,baz=225,slow=14,SNR=13						
SONM				LR	LR	07 08 15.4	
	comp=Z,78nm,21.7s,baz=214,slow=41						
KURBB	Kurchatov Arra	17.91	333	P	Pn	07 00 46.1	-1.1
	baz=143,slow=12,SNR=4.1						
CMAR	Chiang Mai Arr	18.07	155	LR	LR	07 09 00.7	
	comp=Z,44nm,21.1s,baz=215,slow=41						
ZALV	Zalesovo Beam	19.26	349	P	Pn	07 01 04.2	+0.7
	baz=169,slow=9.7,SNR=5.8						
ZALV				LR	LR	07 08 53.0	
	comp=Z,67nm,18.1s,baz=236,slow=38						
BVAR	Borovoye Array	23.07	327	P	P	07 01 44.8	+1.3
	1.0nm,0.6s,baz=127,slow=9.5,SNR=6.6						
USRK	Ussuriysk Ar.	32.45	61	LR	LR	07 17 45.5	
	comp=Z,88nm,18.1s,baz=114,slow=39						
YAK	Yakutsk	36.12	30	LR	LR	07 19 23.4	
	comp=Z,125nm,20.8s,baz=96,slow=38						
GNI	Garni	36.69	292	LR	LR	07 22 01.4	
	comp=Z,45nm,18.8s,baz=101,slow=42						
KBZ	Khabaz	37.72	298	LR	LR	07 22 57.4	
	comp=Z,55nm,19.3s,baz=86,slow=42						
MJAR	Matsushiro Arr	37.91	74	LR	LR	07 19 43.4	
	comp=Z,41nm,19.4s,baz=55,slow=37						
BRTR	Keskin Array B	45.16	294	P	P	07 04 56.1	+1.0
	0.4nm,0.5s,baz=64,slow=3.4,SNR=3.0					

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
ESO				eS	Sn	07 10 37.8	+3.8
BKI	Bering	2.15	102	eP	Pn	07 10 13.9	+2.8
BKI				eS	Sn	07 10 40.5	+4.0
KII	Karymskiy	2.34	226	eP	Pn	07 10 18.4	+4.6
KII				eS	Sn	07 10 47.5	+6.0
SPN	Mys Shipunski	2.93	208	eP	Pn	07 10 23.4	+1.6
SPN				eS	Sn	07 10 56.4	+0.7
NLC	Nalytchevo	3.07	215	eP	Pn	07 10 26.0	+2.4
NLC				eS	Sn	07 11 01.4	+2.4
SDLR	Sedlovina	3.14	221	eP	Pn	07 10 27.5	+2.7
SMAR	Somma	3.18	221	eP	Pn	07 10 28.4	+3.0
AVH	Avacha	3.21	222	eP	Pn	07 10 29.0	+3.4
UGLR	Uglovaya	3.22	220	eP	Pn	07 10 28.9	+3.1
GNL	Ganaly	3.23	233	eP	Pn	07 10 29.1	+3.1
DALK	Dalny	3.39	219	eP	Pn	07 10 31.2	+3.2
DALK				eS	Sn	07 11 00.1	-6.8
PET	Petropavlovsk	3.43	220	eP	Pn	07 10 31.7	+3.1
OSSR	Ossora	3.58	6	eP	Pn	07 10 35.0	+4.4
KRMR	Karymshinskiy	3.78	222	eP	Pn	07 10 38.3	+5.0
RUS	Russkaya	3.96	216	eP	Pn	07 10 38.2	+2.3
ASAK	Asacha	4.22	220	eP	Pn	07 10 44.1	+4.6

*NIED **10** 07:12:00, 37°30N×142°30E, h8km, Mw3.6 Best double couple: M0 3.31000×10^14 NP1:φs97.00000°, δ42.00000°, λ-76.00000°. NP2:φs258.00000°, δ50.00000°, λ-103.00000°.*
*IDC **10** 07:12:29.8±1.6, 37°26N×142°56E, h0km, mb3.7/7, mb1 3.7/8, mb1mx3.5/42, mbtmp3.6/8, ML3.2/1, Error ellipse: s-maj=50.2km s-min=21.7km az=69.0*
*JMA **10** 07:12:30.1±0.2, 37°31N×142°31E, h8km±3km, M3.8*
*ISCJB **10** 07:12:31.8±0.9, 37°33N±0°06×142°36E±0°08, h24km, mb3.6/7, Error ellipse: s-maj=10.2km s-min=7.8km az=142.5*
ISC 10 07:12:34.8±1.2, **37°30N**±0°07×**142°10E**±0°09, **h24km, n18,** σ1s**43**/19, **mb3.6**/7, **Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
JFK	Kawauchi	0.98	274	P	Pb	07 12 51.7	-1.3
ONAJ	Iwakimizuishiy	1.05	260	P	Pn	07 12 52.9	-1.2
JMM	Marumori	1.18	299	P	Pn	07 12 54.6	-1.1
JMM				S	Sb	07 13 12.0	+0.7
JIO	Ouri	1.30	333	P	Pn	07 12 55.2	-2.1
JIO				S	Sn	07 13 13.6	-0.3
JFT	Otama	1.42	279	P	Pn	07 12 59.1	+0.1
JOU	Okura	1.56	314	S	Sn	07 13 21.3	+0.9
JMK	Ichinoseki	1.79	338	P	Pn	07 13 02.5	-1.6
JYS	Shirataka	1.85	300	S	Sb	07 13 30.2	-0.5
JFY	Yanaizu	1.91	274	P	Pn	07 13 06.1	+0.3
MJAR	Matsushiro Arr	3.21	258	Pn	Pn	07 13 25.7	+2.1
	2.3nm,0.3s,baz=89,slow=14,SNR=20						
MAT	Matsushiro	3.21	258	P	Pb	07 13 28.1	-2.9
MAT				eS	Sb	07 14 06.6	-3.0
SONM	Songino Array	28.09	303	P	P	07 18 26.6	+2.0
	0.6nm,0.6s,baz=80,slow=8.9,SNR=3.6						
ZALV	Zalesovo Beam	42.14	312	P	P	07 20 25.5	+0.5
	0.5nm,0.4s,baz=91,slow=6.3,SNR=3.3						
MKAR	Makanchi Array	44.44	302	P	P	07 20 45.0	+1.3
	0.4nm,0.7s,baz=97,slow=7.8,SNR=4.4						
KURBB	Kurchatov Arra	46.27	308	P	P	07 20 59.4	+1.3
	0.9nm,0.5s,baz=82,slow=7.9,SNR=13						
WRA	Warramunga Arr	57.40	189	P	P	07 22 20.0	-1.3
	0.3nm,0.4s,baz=6.2,slow=7.3,SNR=4.0						
ASAR	Alice Springs	61.13	189	P	P	07 22 46.2	-0.8
	0.2nm,0.8s,baz=358,slow=5.4,SNR=4.4						
FINES	FINESS Array B	68.83	332	P	P	07 23 36.8	+0.1
	0.9nm,0.8s,baz=79,slow=10,SNR=2.4						

IDC 10 07:15:56.9±2.1, **1°90N**×**125°14E, h0km, mb3.4**/3, **mb1 3.7**/3, **mb1mx3.4**/38, **mbtmp3.5**/3, **Error ellipse: s-maj=207.6km s-min=26.3km az=64.0, Northern Molucca Sea**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
WRA	Warramunga Arr	23.51	158	P	P	07 21 08.2	-0.5
	1.3nm,0.6s,baz=336,slow=11,SNR=10						
ASAR	Alice Springs	26.80	162	P	P	07 21 39.5	+0.6
	0.2nm,0.5s,baz=351,slow=6.3,SNR=4.9						
MKAR	Makanchi Array	58.17	327	P	P	07 25 52.5	-0.2
	0.3nm,0.5s,baz=119,slow=8.9,SNR=4.9						

*NIED **10** 07:19:00, 38°70N×142°20E, h62km, Mw3.8 Best double couple: M0 6.26000×10^14 NP1:φs330.00000°, δ35.00000°, λ-3.00000°. NP2:φs63.00000°, δ88.00000°, λ-125.00000°.*
*IDC **10** 07:19:53.1±0.9, 38°91N×142°16E, h0km, mb3.5/8, mb1 3.7/9, mb1mx3.5/49, mbtmp3.4/9, ML3.1/1, Error ellipse: s-maj=35.5km s-min=20.3km az=126.0*
*ISCJB **10** 07:19:56.8±0.6, 38°75N±0°06×142°16E±0°07, h41km, mb3.5/8, Error ellipse: s-maj=9.0km s-min=6.9km az=156.2*
*JMA **10** 07:19:56.8±0.1, 38°73N×142°18E, h37km±2km, M3.8*
JMA Felt I J1.
ISC 10 07:19:58.0±0.8, **38°70N**±0°06×**142°12E**±0°08, **h41km, n22,** σ1s**42**/19, **mb3.6**/8, **Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
JIO	Ouri	0.65	248	P	Pn	07 20 10.0	-0.8
JIO				S	Sn	07 20 19.0	-0.9
JMK	Ichinoseki	0.75	290	P	Pn	07 20 11.5	-0.6
JMK				S	Sn	07 20 21.8	-0.4
JOM	Ohasama	1.01	321	P	Pn	07 20 14.9	-0.8
JOM				S	Sn	07 20 27.9	-0.7
JOU	Okura	1.19	254	P	Pn	07 20 18.1	0.0
MAT	Matsushiro	3.78	236	P	Pn	07 20 55.0	+1.3
MJAR	Matsushiro Arr	3.78	236	Pn	Pn	07 20 55.4	+1.7
	1.3nm,0.3s,baz=57,slow=9.9,SNR=8.7						
JHJ	Hachijo jima 2	5.88	199	Sn	Sn	07 22 25.2	-3.5
	6.4nm,0.3s,baz=70,slow=18,SNR=2.8						
USRK	Ussuriysk Ar.	9.38	309	Pn	Pn	07 22 11.7	+1.2
	0.3nm,0.3s,baz=124,slow=14,SNR=4.9						
SEY	Seymchan	25.05	11	P	P	07 25 18.6	+0.5
	0.4nm,0.2s,baz=223,slow=5.8,SNR=4.2						
H11N2	WAKE ISLAND Hy	28.57	124	T	T	07 56 16.2	
	baz=317,slow=75,SNR=48						
H11N1	WAKE ISLAND Hy	28.58	124	T	T	07 56 15.8	
	baz=317,slow=75,SNR=9.3						
H11N3	WAKE ISLAND Hy	28.59	124	T	T	07 56 12.4	
	baz=317,slow=75,SNR=45						
H11S1	WAKE ISLAND Hy	29.34	126	T	T	07 57 14.2	
	baz=318,slow=76,SNR=18						
H11S3	WAKE ISLAND Hy	29.35	126	T	T	07 57 24.8	
	baz=318,slow=76,SNR=17						
H11S2	WAKE ISLAND Hy	29.36	126	T	T	07 57 25.7	
	baz=318,slow=76,SNR=15						
MKAR	Makanchi Array	43.73	301	P	P	07 27 58.4	-0.8
	0.2nm,0.4s,baz=84,slow=8.8,SNR=3.6						
ILAR	Eielson Array	47.80	33	P	P	07 28 30.6	-0.3
	0.5nm,0.6s,baz=264,slow=6.1,SNR=9.1						
INK	Inuvik	52.66	28	P	P	07 29 08.0	+0.4
	0.3nm,0.4s,baz=289,slow=2.8,SNR=5.8						
WRA	Warramunga Arr	58.78	189	P	P	07 29 54.8	+2.8
	1.3nm,1.0s,baz=6.3,slow=7.0,SNR=2.5						
YKA	Yellowknife Ar	62.09	31	P	P	07 30 12.8	-1.4
	0.1nm,0.7s,baz=298,slow=6.1,SNR=3.3						
PDAR	Pinedale Array	76.11	46	P	P	07 31 41.8	+0.1
	0.3nm,0.5s,baz=289,slow=2.8,SNR=3.5						
TXAR	Lajitas Array	88.67	53	P	P	07 32 47.0	-0.3
	0.2nm,0.6s,baz=317,slow=3.7,SNR=2.7						

*ISCJB **10** 07:28:09.6±1.9, 13°51N±0°09×120°0E±0°2, h16km, mb3.9/4, Error ellipse: s-maj=25.1km s-min=8.1km az=23.9*
*MAN **10** 07:28:11, 13°36N×120°08E, h7km, mb4.1, ML2.9, MS2.6*
*IDC **10** 07:28:11.6±1.2, 13°11N×120°72E, h0km, mb3.8/4, mb1 4.1/4, mb1mx3.5/52, mbtmp3.8/4, MS3.0/1, Ms1 3.0/1, ms1mx2.4/44, Error ellipse: s-maj=155.0km s-min=19.8km az=67.0*
ISC 10 07:28:10.4±1.6, **13°48N**±0°07×**120°1E**±0°1, **h16km, n13,** σ0s**91**/11, **mb3.8**/4, **1C, Mindoro**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
TGY	Tagaytay City	1.01	52	eP	Pg	07 28 30.5	+0.6
SJMP	San Jose	1.41	136	eP	Pb	07 28 36.5	+0.3
BUSP	Coron	1.47	177	eP	Pn	07 28 36.9	+0.7
BUSP				eS	Sn	07 28 55.3	+0.2
LQP	Lukban	1.52	65⇑	eP	Pb	07 28 37.7	-0.5
BOAC	Boac	1.68	91	eP	Pb	07 28 41.5	+0.6
OTRP	Odiongan	2.16	121	eP	Pg	07 28 51.6	-0.3
ENPP	El Nido	2.36	197	eP	Pn	07 28 49.2	+0.8
CUYO	Cuyo Island	2.76	161	eP	Pn	07 28 54.8	+0.8
DAV	Davao City (W)	8.33	139	LR	LR	07 34 02.9	
	comp=Z,102nm,19.1s,baz=227,slow=46						
WRA	Warramunga Arr	36.04	157	P	P	07 35 09.3	-1.9
	3.3nm,0.6s,baz=336,slow=9.6,SNR=32						
SONM	Songino Array	36.11	344	P	P	07 35 19.9	+8.2
	0.5nm,0.5s,baz=166,slow=11,SNR=2.4						
ASAR	Alice Springs	39.30	160	P	P	07 35 38.5	-0.4
	1.5nm,0.5s,baz=340,slow=6.8,SNR=39						
MKAR	Makanchi Array	45.87	324	P	P	07 36 40.5	+8.4
	0.4nm,0.9s,baz=138,slow=8.8,SNR=2.8						

*IDC **10** 07:55:58.9±0.6, 36°33N×142°56E, h0km, mb3.9/17, mb1 4.1/20, mb1mx4.0/57, mbtmp3.9/20, ML3.8/3, MS3.4/10, Ms1 3.4/10, ms1mx3.0/50, Error ellipse: s-maj=17.8km s-min=13.3km az=122.0*
*ISCJB **10** 07:55:59.2±0.4, 36°33N±0°04×142°58E±0°05, h15km, mb4.0/30, MS3.5/7, Error ellipse: s-maj=6.1km s-min=5.0km az=29.7*
*NIED **10** 07:56:00, 36°30N×142°50E, h8km, Mw4.2 Best double couple: M0 2.04000×10^15 NP1:φs191.00000°, δ34.00000°, λ82.00000°. NP2:φs20.00000°, δ56.00000°, λ95.00000°.*
*JMA **10** 07:56:01.6±0.3, 36°34N×142°53E, h79km, M3.8*
*NEIC **10** 07:56:03.5±0.5, 36°30N×142°57E, h35km, mb4.4/10, Error ellipse: s-maj=10.1km s-min=8.1km az=120.0*
ISC 10 07:56:00.6±0.6, **36°31N**±0°05×**142°62E**±0°07, **h15km, n60,** σ1s**47**/58, **mb4.0**/30, **MS3.3**/7, **Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
CHOJ	Chosi	1.55	248	eS	Sn	07 56 45.5	-1.9
JHO	Hitachi	1.68	281	eS	Sn	07 56 48.6	-2.1
BSO1	Boso 1	2.12	220	P	Pn	07 56 35.5	+0.5
JFT	Otama	2.19	304	eS	Sn	07 57 01.9	-1.5
JMK	Ichinoseki	2.87	338	P	Pn	07 56 44.9	-0.8
JMK				S	Sn	07 57 17.9	-2.0
JOD2	Odawara 2	3.05	251	P	Pn	07 56 48.5	+0.2
JYK	Kaneyama	3.17	326	P	Pn	07 56 48.6	-1.2
JOM	Ohasama	3.33	342	P	Pn	07 56 50.3	-1.8
JAW	Awa shima	3.44	310	P	Pn	07 56 53.1	-0.5
MJAR	Matsushiro Arr	3.56	275	Pn	Pn	07 56 54.6	-0.8
	11nm,0.3s,baz=97,slow=7.8,SNR=25						
MJAR				LR	LR	07 58 36.1	
	comp=Z,295nm,20.3s,baz=110,slow=45						
MAJO	Matsushiro	3.56	275	ePn	Pn	07 56 55.1	-0.3
JHJ2	Mitsune	3.93	217	ePn	Pn	07 56 59.8	-0.6
JHJ	Hachijo jima 2	3.94	217	Pn	Pn	07 56 59.7	-0.8
	21nm,0.3s,baz=271,slow=21,SNR=9.7						
JHJ				Sn	Sn	07 57 42.9	-3.6
	57nm,0.3s,baz=49,slow=23,SNR=7.6						
ERM	Erimo	5.72	4	ePn	Pn	07 57 22.0	-2.9
	50nm,0.5s						
ERM				eSn	Sn	07 58 25.9	-4.3
CBIJ	Chichi jima	9.19	182	Pn	Pn	07 58 10.2	-2.4
CBIJ				Sn	Sn	07 59 45.7	-10
JCJ	Chichijima	9.19	182	Pn	Pn	07 58 10.2	-2.4
	7.7nm,0.3s,baz=276,slow=23,SNR=6.2						
JCJ				Sn	Sn	07 59 45.7	-10
	6.5nm,0.3s,baz=217,slow=20,SNR=4.0						
JNU	Nakatsue	10.17	255	Pn	Pn	07 58 26.7	+0.7
	0.5nm,0.3s,baz=282,slow=1.9,SNR=5.3						
JNU				LR	LR	08 02 14.4	
	comp=Z,185nm,22.0s,baz=101,slow=37						
JNU	Nakatsue	10.17	255	ePn	Pn	07 58 25.9	-0.1
YSS	Yuzh-Sakhalins	10.64	1	ePn	Pn	07 58 31.2	-1.2
	36nm,0.7s						
USRK	Ussuriysk Ar.	11.31	317	Pn	Pn	07 58 43.7	+2.1
	0.6nm,0.3s,baz=142,slow=15,SNR=7.7						
KSRS	Korea Array	11.82	280	Pn	Pn	07 58 51.0	+2.4
	0.3nm,0.3s,baz=90,slow=13,SNR=9.5						
KSRS				LR	LR	08 03 45.5	
	comp=Z,44nm,18.4s,baz=90,slow=40						
KSAR	Wonju Array Be	11.86	280	Pn	Pn	07 58 51.0	+1.9
MDJ	Mudanjiang	12.92	314	ePn	Pn	07 59 05.0	+1.4
KLR	Kul'dur	15.16	332	Pn	Pn	07 59 31.4	-2.6
	0.1nm,0.3s,baz=141,slow=17,SNR=3.6						
BJT	Baijiatuau	21.10	288	eP	P	08 00 42.9	-1.5
	11nm,1.3s						
HIA	Hailar	21.10	315	eP	P	08 00 44.9	+0.5
	6.8nm,0.4s						
MA2	Magadan	23.88	10	P	P	08 01 13.1	-0.2
	4.1nm,0.8s,baz=206,slow=13,SNR=6.2						
MA2				LR	LR	08 11 04.2	
	comp=Z,99nm,18.9s,baz=222,slow=38						
MA2	Magadan	23.88	10	P	P	08 01 13.1	-0.2
	2.9nm,0.8s						
YAK	Yakutsk	27.00	347	P	P	08 01 42.1	+0.6
	7.3nm,0.3s,baz=17,slow=0.6,SNR=4.1						
YAK	Yakutsk	27.00	347	P	P	08 01 42.2	+0.7
SEY	Seymchan	27.33	10	P	P	08 01 45.3	+0.7
	1.7nm,0.8s,baz=212,slow=10,SNR=9.7						
ENH	Enshi	28.25	267	eP	P	08 01 53.6	+0.4
	7.9nm,0.5s						
ULN	Ulaanbaatar	28.56	305	eP	P	08 01 57.1	+1.1
	5.5nm,0.9s						
SONM	Songino Array	28.99	305	P	P	08 02 00.4	+0.6
	2.1nm,0.5s,baz=104,slow=8.1,SNR=22						
CMAR	Chiang Mai Arr	42.26	257	P	P	08 03 53.6	+0.1
	0.6nm,0.4s,baz=51,slow=7.1,SNR=2.6						
CMAR				LR	LR	08 22 42.1	
	comp=Z,40nm,18.0s,baz=195,slow=38						
ZALV	Zalesovo Beam	43.12	313	P	P	08 04 00.4	+0.3
	2.4nm,0.6s,baz=94,slow=7.4,SNR=9.8						
ZALV				LR	LR	08 21 44.9	
	comp=Z,31nm,19.7s,baz=68,slow=36						
NRIK	Noril'sk	44.33	335	LR	LR	08 24 32.1	
	comp=Z,146nm,18.3s,baz=133,slow=39						
MKAR	Makanchi Array	45.33	303	P	P	08 04 18.1	+0.2
	3.7nm,0.8s,baz=86,slow=9.2,SNR=17						
KURK	Kurchatov	47.14	309	eP	P	08 04 31.9	-0.2
	8.9nm,0.8s						
ILAR	Eielson Array	49.59	32	P	P	08 04 51.0	+0.2
	0.9nm,0.9s,baz=264,slow=7.0,SNR=7.9						
TKM2	Tokmak 2	50.83	299	eP	P	08 05 01.7	+0.9
	3.7nm,0.6s						
AAK	Ala-Archa	51.69	299	eP	P	08 05 07.4	+0.3
	1.7nm,0.9s						
KKAR	Karatay Array	54.33	301	eP	P	08 05 26.9	+0.5
	4.1nm,0.9s						
INK	Inuvik	54.60	27	P	P	08 05 28.7	+0.8
	0.7nm,0.5s,baz=308,slow=4.9,SNR=9.7						
FITZ	Fitzroy Crossi	56.44	199	P	P	08 05 43.8	+2.0
	1.1nm,0.8s,baz=0.0,slow=13,SNR=3.1						
WRA	Warramunga Arr	56.49	189	P	P	08 05 42.1	+0.1
	1.4nm,0.9s,baz=7.4,slow=7.4,SNR=10.0						
ABKAR	Akbulak array	59.15	311	eP	P	08 06 00.3	-0.2
	1.8nm,0.6s						
ASAR	Alice Springs	60.21	189	P	P	08 06 08.0	0.0
	0.5nm,0.8s,baz=3.6,slow=7.8,SNR=6.0						
YKA	Yellowknife Ar	63.95	30	P	P	08 06 33.3	+0.6
	0.9nm,0.9s,baz=301,slow=6.7,SNR=13						
ARCES	ARCESS Array B	65.02	340	LR	LR	08 37 51.3	
	comp=Z,34nm,19.4s,baz=46,slow=39						
FINES	FINESS Array B	69.91	333	P	P	08 07 08.9	-1.7
	3.5nm,1.0s,baz=84,slow=5.9,SNR=6.3						
KBZ	Khabaz	72.11	311	P	P	08 07 23.7	-0.5
	2.4nm,1.0s,baz=22,slow=11,SNR=3.3						
NVAR	Mina Array Bea	74.65	54	P	P	08 07 41.1	+1.5
	0.7nm,0.8s,baz=305,slow=5.2,SNR=5.8						
NB2	NORSAR Subarra	75.23	338	P	P	08 07 51.7	+9.3
	comp=Z,2.0nm,0.9s,baz=38,slow=5.9						
NOA	NORSAR Array B	75.23	338	LR	LR	08 44 59.0	
	comp=Z,58nm,19.1s,baz=10.0,slow=39						
PDAR	Pinedale Array	77.48	46	P	P	08 08 00.7	+4.9
	comp=Z,0.3nm,0.7s,baz=229,slow=4.2,SNR=3.0						
PDAR				LR	LR	08 43 32.4	
	comp=Z,14nm,18.1s,baz=313,slow=37						
BRTR	Keskin Array B	80.06	312	P	P	08 08 10.8	+0.9
	comp=Z,0.6nm,0.8s,baz=42,slow=9.1,SNR=3.2						
GERES	GERESS Array B	83.84	329	P	P	08 08 29.9	+0.4
	comp=Z,0.2nm,0.3s,baz=46,slow=5.8,SNR=3.6						
TXAR	Lajitas Array	89.79	53	P	P	08 09 00.4	+1.5
	comp=Z,0.2nm,0.5s,baz=319,slow=2.6,SNR=3.6						
LPAZ	La Paz	146.20	62	PKPbc	PKPab	08 15 42.0	-0.2
	comp=Z,0.9nm,0.7s,baz=40,slow=5.4,SNR=3.7						

*NIED **10** 08:31:00, 39°20N×142°40E, h35km, Mw3.7 Best double couple: M0 4.10000×10^14 NP1:φs259.00000°, δ29.00000°, λ167.00000°. NP2:φs0.00000°, δ84.00000°, λ61.00000°.*
*IDC **10** 08:31:42.7±1.3, 39°39N×143°28E, h0km, mb3.5/4, mb1 3.7/5, mb1mx3.3/59, mbtmp3.5/5, ML3.4/1, MS2.7/4, Ms1 2.7/4, ms1mx2.4/49, Error ellipse: s-maj=34.4km s-min=26.0km az=106.0*
*ISCJB **10** 08:31:50.2±1.4, 39°21N±0°04×142°4E±0°1, h40km±12km, mb3.5/4, Error ellipse: s-maj=16.5km s-min=6.4km az=6.4*
*JMA **10** 08:31:50.2±0.1, 39°21N×142°38E, h34km±1km, M3.8*
ISC 10 08:31:49.9±2.5, **39°23N**±0°04×**142°4E**±0°1, **h26km**±14km, **n26,** σ1s**37**/25, **mb3.6**/4, **Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
MIYJ	Miyakonagasawa	0.58	306	P	Pb	08 32 01.4	-0.2
MIYJ				S	Sb	08 32 09.3	-0.2
JOM	Ohasama	0.91	286	P	Pn	08 32 06.5	-0.5
JOM				S	Sb	08 32 18.3	-0.6
JMK	Ichinoseki	0.98	254	P	Pn	08 32 07.2	-0.8
JMK				S	Sb	08 32 19.7	-1.1
JKZ	Kuzumaki	1.13	312	P	Pn	08 32 10.2	+0.1
JKZ				S	Sn	08 32 24.8	0.0
JIO	Ouri	1.15	228	P	Pn	08 32 09.0	-1.3
JIO				S	Sn	08 32 22.5	-2.6
JANG	Nango	1.34	329	P	Pn	08 32 12.9	0.0
JANG				S	Sn	08 32 30.3	+0.4
JRG	Rokugo	1.40	277	P	Pn	08 32 14.3	+0.5
JOU	Okura	1.63	238	P	Pn	08 32 17.4	+0.5
JOU				S	Sn	08 32 37.5	+0.5
JYK	Kaneyama	1.64	260	P	Pn	08 32 17.1	0.0
JMM	Marumori	1.87	224	P	Pn	08 32 19.6	-0.6
JMM				S	Sn	08 32 41.7	-1.3
JYS	Shirataka	2.11	242	P	Pn	08 32 24.1	+0.6
MAT	Matsushiro	4.29	232	P	Pn	08 32 56.6	+3.1
MAT				S	Sb	08 33 58.8	+2.9
MJAR	Matsushiro Arr	4.29	232	Pn	Pn	08 32 55.7	+2.2
	1.5nm,0.3s,baz=40,slow=11,SNR=38						
MJAR				LR	LR	08 34 23.4	
	comp=Z,41nm,20.3s,baz=85,slow=33						
JHJ	Hachijo jima 2	6.47	200	LR	LR	08 36 16.1	
	comp=Z,81nm,18.3s,baz=268,slow=40						
USRK	Ussuriysk Ar.	9.25	306	LR	LR	08 37 08.0	
	comp=Z,51nm,21.8s,baz=130,slow=34						
JNU	Nakatsue	11.15	240	LR	LR	08 39 40.6	
	comp=Z,30nm,19.5s,baz=104,slow=40						
H11N2	WAKE ISLAND Hy	28.68	126	T	T	09 08 08.6	
	baz=318,slow=75,SNR=156						
H11N1	WAKE ISLAND Hy	28.69	126	T	T	09 08 11.6	
	baz=318,slow=75,SNR=112						
H11N3	WAKE ISLAND Hy	28.70	126	T	T	09 08 17.9	
	baz=318,slow=75,SNR=123						
H11S1	WAKE ISLAND Hy	29.47	128	T	T	09 09 14.5	
	baz=319,slow=76,SNR=17						
H11S3	WAKE ISLAND Hy	29.47	128	T	T	09 09 15.2	
	baz=319,slow=76,SNR=21						
H11S2	WAKE ISLAND Hy	29.49	128	T	T	09 09 16.0	
	baz=319,slow=76,SNR=16						
ZALV	Zalesovo Beam	41.06	311	P	P	08 39 31.4	+0.4
	0.5nm,0.5s,baz=93,slow=10,SNR=3.0						
MKAR	Makanchi Array	43.66	300	P	P	08 39 52.9	+0.6
	0.2nm,0.3s,baz=83,slow=9.9,SNR=3.7						
ILAR	Eielson Array	47.22	33	P	P	08 40 12.3	-7.8
	0.7nm,1.1s,baz=231,slow=5.7,SNR=2.6						
WRA	Warramunga Arr	59.35	189	P	P	08 41 48.8	-1.0
	0.3nm,0.4s,baz=6.4,slow=7.1,SNR=12						

*ISCJB **10** 08:39:53.2±0.5, 10°81N±0°04×62°26W±0°03, h116km±6km, Error ellipse: s-maj=6.7km s-min=4.3km az=139.5*
*FUNV **10** 08:39:55.4, 10°84N×62°16W, h101km, MW3.2*
*TRN **10** 08:39:56.8, 10°85N×62°09W, h106km, MD3.4*
ISC 10 08:39:52.9±1.4, **10°79N**±0°04×**62°23W**±0°04, **h125km**±10km, **n26,** σ1s**47**/44, **6C-2D, Near coast of Venezuela**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
TCE	Chacachacare	0.48	102	eP	Pn	08 40 12.4	+1.1
TCE				eS	Sn	08 40 24.0	-1.2
TRN	Trinidad (W)	0.83	100⇑	iP	Pn	08 40 15.2	+1.5
TRN			⇑	iS	Sn	08 40 27.7	-1.8
GUNV	Guanoco	0.94	228⇑	eP	Pn	08 40 16.3	+1.4
GUNV				eS	Sn	08 40 31.3	-0.1
CRUV	Carupano	1.00	263⇓	eP	Pn	08 40 15.7	+0.4
CRUV				eS	Sn	08 40 30.4	-1.9
TBH	Brigand Hill	1.18	105	eP	Pn	08 40 19.5	+2.3
TBH				eS	Sn	08 40 34.1	-1.6
GRW	Mount Saint Ca	1.47	22	eP	Pn	08 40 22.0	+1.6
GRW				eS	Sn	08 40 40.3	-1.1
BOT	Bacolet	1.53	76	eP	Pn	08 40 22.4	+1.4
BOT				eS	Sn	08 40 41.1	-1.3
GRHS	Sauteurs	1.53	22	eP	Pn	08 40 22.4	+1.3
GRHS				eS	Sn	08 40 41.6	-0.9
GRSS	Sisters	1.61	22	eP	Pn	08 40 23.6	+1.6
GRSS				eS	Sn	08 40 43.8	-0.4
TOSP	Speyside	1.74	73	eP	Pn	08 40 23.9	+0.5
TOSP				eS	Sn	08 40 44.6	-2.1
ORIV	Oritupano	2.07	214⇑	iP	Pn	08 40 29.6	+2.1
ORIV				eS	Sn	08 40 54.0	0.0
SVB	Belmont	2.64	21	eP	Pn	08 40 36.3	+1.5
SVB				eS	Sn	08 41 06.4	-0.6
GURV	El Guri	3.13	196⇑	eP	Pn	08 40 43.1	+1.9
GURV				eS	Sn	08 41 17.5	-0.8
CUPV	Cœpira	3.58	259⇑	eP	Pn	08 40 48.6	+1.6
CUPV				eS	Sn	08 41 29.3	+0.5
BIRV	Birongo	3.98	266	eP	Pn	08 40 54.2	+1.8
BIRV				eS	Sn	08 41 36.9	-1.6
MERV	Las Mercedes	4.29	249	eP	Pn	08 40 57.5	+1.0
MERV				eS	Sn	08 41 45.4	-0.4
LUEV	Luepa	4.98	171	eP	Pn	08 41 07.1	+1.2
LUEV				eS	Sn	08 41 59.5	-3.1
TURV	Turiamo	5.53	267	eP	Pn	08 41 14.2	+1.2
BAUV	El Baul	6.01	253	eP	Pn	08 41 20.1	+0.5
BAUV				eS	Sn	08 42 23.9	-3.4
MAPV	Macapo	6.20	262⇓	iP	Pn	08 41 23.0	+0.8
TEPV	Terepaima	6.90	264	eP	Pn	08 41 32.1	+0.5
SANV	Sanarito	7.31	261	eP	Pn	08 41 38.0	+0.8
CURV	Curarigua	7.64	265	eP	Pn	08 41 42.6	+0.9
MONV	Montecano	7.68	279	eP	Pn	08 41 42.9	+0.8
ELOV	Elorza	8.10	243	eP	Pn	08 41 47.6	-0.1
SOCV	Socops	8.87	254	eP	Pn	08 41 57.9	-0.3

IDC 10 08:42:22.0±556.0, **47°66N**×**49°14E, h0km, Error ellipse: s-maj=211.0km s-min=126.8km az=51.0, Western Kazakhstan**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
I31KZ	AKTYUBINSK INF	6.46	62	i		09 26 50.0	
	baz=249,slow=318,SNR=0.5						
I43RU	DUBNA INFRASON	11.64	326	i		09 56 20.0	
	baz=137,slow=328,SNR=1.2						
I46RU	ZALESOVO INFRA	23.22	61	i		11 02 10.0	
	baz=268,slow=322,SNR=1.5						
I34MN	SONGINO INFRAS	37.75	68	i		12 32 40.0	
	baz=294,slow=323,SNR=0.3						

*IDC **10** 08:48:11.5±0.7, 35°43N×142°91E, h0km, mb3.6/10, mb1 3.9/13, mb1mx3.7/59, mbtmp3.7/13, ML3.5/3, Error ellipse: s-maj=22.8km s-min=16.2km az=113.0*
*JMA **10** 08:48:15.5±0.3, 35°54N×142°68E, h82km, M3.0*
*ISCJB **10** 08:48:16.7±0.6, 35°46N±0°05×142°63E±0°05, h56km, mb3.6/10, Error ellipse: s-maj=6.8km s-min=5.5km az=164.6*
ISC 10 08:48:18.5±0.7, **35°53N**±0°05×**142°68E**±0°07, **h56km, n25,** σ1s**89**/30, **mb3.6**/10, **Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
CHOJ	Chosi	1.49	277	S	Sn	08 49 01.1	-0.3
BSO1	Boso 1	1.64	238	P	Pn	08 48 42.7	-1.8
JFT	Otama	2.74	317	P	Pn	08 48 58.1	-1.9
JFT				S	Sn	08 49 29.8	-2.1
JAG	Ashikaga	2.76	290	P	Pn	08 48 58.4	-1.9
JAG				S	Sn	08 49 30.5	-2.0
JOD2	Odawara 2	2.94	266	P	Pn	08 49 01.3	-1.5
JOD2				S	Sn	08 49 35.9	-1.0
JRY	Ryogami san	3.11	280	P	Pn	08 49 04.0	-1.1

JYN	**Shimob**	**3.37 271**	P		**Pn**	**08 49 08.6**	**-0.1**
JYN			*e*S		**Sn**	**08 49 45.9**	**-1.6**
JHJ2	**Mitsune**	**3.38 225**	*e*S		**Sn**	**08 49 44.7**	**-2.9**
JHJ	**Hachijo jima 2**	**3.39 226**	Pn		**Pn**	**08 49 07.2**	**-1.8**
	6.3nm,0.3s,baz=110,slow=17,SNR=4.2						
JHJ			Sn		**Sn**	**08 49 44.8**	**-3.2**
	21nm,0.3s,baz=56,slow=23,SNR=8.4						
MJAR	**Matsushiro Arr**	**3.76 287**	Pn		**Pn**	**08 49 14.4**	**+0.4**
	1.0nm,0.3s,baz=85,slow=12,SNR=13						
MAT	**Matsushiro**	**3.76 287**	P		**Pn**	**08 49 14.7**	**+0.7**
MAT			S		**Sn**	**08 49 57.9**	**+0.9**
JYK	**Kaneyama**	**3.86 332**	P		Pn	08 49 11.8	-3.5
JYK			S		**Sn**	**08 49 55.0**	**-4.3**
JOM	**Ohasama**	**4.09 345**	S		**Sn**	**08 50 00.8**	**-4.2**
JCJ	**Chichijima**	**8.42 183**	Pn		Pn	08 50 11.5	-6.3
	4.9nm,0.3s,baz=104,slow=23,SNR=6.4						
JCJ			Sn		Sn	08 51 40.8	-11
	3.5nm,0.3s,baz=299,slow=19,SNR=2.1						
SONM	**Songino Array**	**29.48 306**	P		**P**	**08 54 19.7**	**+2.4**
	0.3nm,0.4s,baz=96,slow=7.4,SNR=2.6						
TIXI	**Tiksi**	**36.91 353**	P		**P**	**08 55 21.1**	**-0.3**
	0.8nm,0.3s,baz=68,slow=5.4,SNR=3.1						
MKAR	**Makanchi Array**	**45.79 304**	P		**P**	**08 56 35.9**	**+1.4**
	0.2nm,0.2s,baz=95,slow=9.4,SNR=3.6						
ILAR	**Eielson Array**	**50.23 32**	P		**P**	**08 57 08.5**	**0.0**
	0.7nm,0.8s,baz=271,slow=6.9,SNR=7.4						
INK	**Inuvik**	**55.27 27**	P		**P**	**08 57 46.5**	**+0.9**
	0.8nm,0.6s,baz=304,slow=7.0,SNR=6.9						
WRA	**Warramunga Arr**	**55.73 190**	P		**P**	**08 57 49.3**	**-0.2**
	0.8nm,0.7s,baz=9.5,slow=7.3,SNR=6.6						
ASAR	**Alice Springs**	**59.46 189**	P		**P**	**08 58 15.6**	**-0.1**
	0.5nm,0.8s,baz=17,slow=11,SNR=7.9						
YKA	**Yellowknife Ar**	**64.59 30**	P		**P**	**08 58 49.8**	**+0.2**
	0.4nm,0.9s,baz=304,slow=6.4,SNR=7.4						
NVAR	**Mina Array Bea**	**75.07 53**	P		**P**	**08 59 56.2**	**+1.6**
	0.2nm,0.5s,baz=305,slow=5.2,SNR=4.0						
PDAR	**Pinedale Array**	**77.99 46**	P		**P**	**09 00 11.2**	**+0.1**
	0.3nm,0.7s,baz=308,slow=3.0,SNR=4.2						
LPAZ	**La Paz**	**146.52 63**	PKPbc		**PKPab**	**09 07 55.6**	**-0.2**
	0.5nm,0.5s,baz=23,slow=7.7,SNR=3.3						

NIED ***10*** *08:52:00,37.˚10N×140.˚80E,h5km,Mw3.6 Best double couple: M₀2.84000×10¹⁴ NP1:φs86.00000˚,δ42.00000˚, λ-63.00000˚. NP2:φs231.00000˚,δ53.00000˚, λ-112.00000˚.*

ISCJB ***10*** *08:52:29.0±0.7,37.˚08N±0.˚03×140.˚88E±0.˚05,h13km±3km, mb3.6/11,Error ellipse: s-maj=7.0km s-min=4.8km az=14.6*

IDC ***10*** *08:52:28.8±0.8,37.˚11N×140.˚78E,h0km,mb3.7/11, mb1 3.8/13,mb1mx3.6/59,mbtmp3.7/13,ML3.4/2,MS2.8/1, Ms1 2.8/1,ms1mx2.2/49,Error ellipse: s-maj=20.2km s-min=14.9km az=104.0*

JMA ***10*** *08:52:30.1,37.˚09N×140.˚78E,h8km±1km,M3.8 Broadband fault plane solution: P waves. NP1: φs191.00000˚,δ72.00000˚,λ-86.00000˚. NP2: φs359.00000˚,δ18.00000˚,λ-102.00000˚. Principal axes: T Plg27.0000˚, Azm278.0000˚; N Plg4.0000˚, Azm10.0000˚; P Plg63.0000˚, Azm107.0000˚;*

JMA Felt III J1.

ISC 10 08:52:29.8±0.9,37.˚10N±0.˚03×140.˚73E±0.˚05,h6km±6km, n29,σ0.˚68/32,mb3.7/11,6C-1D,Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.06**	**87**	⇓P		**Pg**	**08 52 31.4**	**-0.1**
ONAJ				S		**Sg**	**08 52 32.4**	**-0.2**
JFK	**Kawauchi**	**0.29**	**24**	⇑P		**Pg**	**08 52 35.8**	**+0.2**
JFK				S		**Sg**	**08 52 40.1**	**+0.6**
JHO	**Hitachi**	**0.50**	**195**	⇑P		**Pg**	**08 52 39.7**	**+0.2**
JHO				S		**Sg**	**08 52 46.6**	**+0.5**
JFT	**Otama**	**0.52**	**324**	⇑P		**Pb**	**08 52 41.2**	**-0.2**
JFT				S		**Sb**	**08 52 48.8**	**-0.4**
JSB	**Shiboa**	**0.66**	**259**	⇑P		**Pb**	**08 52 44.3**	**+0.6**
JSB				S		**Sb**	**08 52 54.2**	**+1.1**
JMM	**Marumori**	**0.77**	**4**	⇑P		**Pg**	**08 52 44.6**	**0.0**
JMM				S		**Sg**	**08 52 55.0**	**+0.4**
JFY	**Yanaizu**	**0.87**	**291**	⇑P		**Pb**	**08 52 47.7**	**+0.3**
JFY				S		**Sb**	**08 52 59.6**	**+0.3**
MJAR	**Matsushiro Arr**	**2.09**	**255**	Pn		**Pb**	**08 53 06.9**	**-1.3**
	16nm,0.3s,baz=77,slow=15,SNR=58							
MJAR				Sn		**Sb**	**08 53 34.0**	**-0.5**
	16nm,0.3s,baz=82,slow=30,SNR=6.4							
MAT	**Matsushiro**	**2.10**	**255**	P		**Pb**	**08 53 07.9**	**-0.4**
MAT				S		**Sg**	**08 53 37.0**	**-0.2**
JHJ	**Hachijo jima 2**	**4.04**	**191**	Pn		**Pn**	**08 53 32.5**	**+0.2**
	6.1nm,0.3s,baz=43,slow=14,SNR=3.0							
JHJ				Sn		**Sn**	**08 54 19.5**	**-0.5**
	9.6nm,0.3s,baz=253,slow=19,SNR=3.9							
KLR	**Kul'dur**	**13.77**	**335**	LR		LR	08 59 57.7	
	comp=Z,36nm,18.6s,baz=286,slow=33							
SEY	**Seymchan**	**26.84**	**12**	P		**P**	**08 58 11.8**	**+1.1**
	0.7nm,0.5s,baz=117,slow=9.0,SNR=2.3							
SONM	**Songino Array**	**27.29**	**304**	P		**P**	**08 58 15.9**	**+0.7**
	0.4nm,0.5s,baz=113,slow=11,SNR=3.2							
H11N2	**WAKE ISLAND Hy**	**28.66**	**120**	T		T	09 28 11.4	
	baz=313,slow=75,SNR=163							
H11N1	**WAKE ISLAND Hy**	**28.66**	**120**	T		T	09 28 12.0	
	baz=313,slow=75,SNR=160							
H11N3	**WAKE ISLAND Hy**	**28.67**	**120**	T		T	09 28 13.0	
	baz=313,slow=75,SNR=120							
H11S1	**WAKE ISLAND Hy**	**29.36**	**122**	T		T	09 29 04.4	
	baz=314,slow=75,SNR=93							
H11S3	**WAKE ISLAND Hy**	**29.36**	**122**	T		T	09 29 04.2	
	baz=314,slow=75,SNR=71							
H11S2	**WAKE ISLAND Hy**	**29.37**	**122**	T		T	09 29 05.0	
	baz=314,slow=75,SNR=55							
TIXI	**Tiksi**	**35.16**	**354**	P		**P**	**08 59 22.9**	**-1.0**
	0.4nm,0.3s,baz=124,slow=6.5,SNR=1.8							
ZALV	**Zalesovo Beam**	**41.46**	**312**	P		**P**	**09 00 17.2**	**0.0**
	0.6nm,0.4s,baz=106,slow=9.3,SNR=3.3							
MKAR	**Makanchi Array**	**43.62**	**302**	P		**P**	**09 00 34.6**	**-0.2**
	0.3nm,0.4s,baz=82,slow=12,SNR=3.5							
KURBB	**Kurchatov Arra**	**45.53**	**308**	P		**P**	**09 00 49.4**	**-0.6**
	0.8nm,0.4s,baz=83,slow=8.3,SNR=8.7							
ILAR	**Eielson Array**	**49.73**	**32**	P		**P**	**09 01 22.4**	**-0.1**
	0.5nm,0.8s,baz=274,slow=6.7,SNR=5.5							
WRA	**Warramunga Arr**	**57.05**	**187**	P		**P**	**09 02 15.8**	**-0.9**
	0.8nm,0.5s,baz=3.8,slow=7.3,SNR=24							
ASAR	**Alice Springs**	**60.78**	**187**	P		**P**	**09 02 44.1**	**+1.5**
	0.2nm,0.6s,baz=17,slow=13,SNR=5.6							
YKA	**Yellowknife Ar**	**64.03**	**30**	P		**P**	**09 03 03.9**	**0.0**
	0.2nm,0.9s,baz=302,slow=6.8,SNR=3.6							
FINES	**FINESS Array B**	**68.50**	**332**	P		**P**	**09 03 31.8**	**-0.8**
	2.1nm,1.0s,baz=64,slow=6.3,SNR=3.1							
LPAZ	**La Paz**	**147.13**	**59**	PKPbc		**PKPdf**	**09 12 13.7**	**+0.8**
	0.5nm,0.6s,baz=338,slow=1.3,SNR=4.2							

MEX 10 08:56:35.6±0.5,16.˚16N×94.˚11W,h3km±5km,MD3.7, Oaxaca

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
PCIG		**0.97**	**118**	*i* P		Pg	08 56 51.9	-2.2
PCIG				*i* S		Sg	08 57 05.2	-1.4
TGIG		**1.12**	**57**	*i* P		Pg	08 56 54.6	-2.6
TGIG				*i* S		Sg	08 57 08.8	-3.0
HUIG	**Huatulco**	**1.97**	**259**	*e*P		Pn	08 57 06.3	-3.6
HUIG				*i* S		Sn	08 57 30.5	-4.6
VHO	**Vista Hermosa**	**2.68**	**290**	*e*P		Pn	08 57 16.8	-3.0
VHO				*e*S		Sn	08 57 49.3	-3.6

IDC ***10*** *09:02:41.0±0.4,31.˚27N×100.˚71E,h0km,mb4.6/45, mb1 4.7/45,mb1mx4.7/52,mbtmp4.6/45,ML4.5/1,MS4.9/37, Ms1 4.9/37,ms1mx4.7/47,Error ellipse: s-maj=11.1km s-min=9.1km az=26.0*

ISCJB ***10*** *09:02:41.8±0.8,31.˚37N±0.˚02×100.˚71E±0.˚02,h12km±5km, mb5.0/180,MS5.0/68,Error ellipse: s-maj=3.1km s-min=2.7km az=172.6*

BJI ***10*** *09:02:42.4,31.˚28N×100.˚80E,h10km,mb5.1/47,mB5.2/43, ML5.3/26,Ms5.4/76,Ms7 5.2/74*

MOS ***10*** *09:02:44.2±1.1,31.˚32N×100.˚74E,h33km,mb5.2/68, MS5.2/21,Error ellipse: s-maj=6.9km s-min=4.3km az=107.9*

NEIC ***10*** *09:02:47.4±0.7,31.˚37N×100.˚76E,h43km±6km,mb5.1/67, Error ellipse: s-maj=4.4km s-min=3.9km az=45.0*

NEIC Minor damage to some houses and electricity disrupted in Luhuo. Felt at Dewu, Garze, Kanding, Xinlong and Yajiang.

GCMT ***10*** *09:02:47.4±0.1,31.˚26N×100.˚87E,h25km,MW5.4/125, Moment Tensor Solution. s93,c143; s125,c237; Duration: 1±2 Moment tensor: Scale 10¹⁷Nm; Mrr-0.03±.02; Mθθ1.50±.02; Mφφ-1.48±.02; Mrθ-0.14±.04; Mθφ0.05±.02; Mφr-0.43±.04; Best double couple: M₀1.55600×10¹⁷ NP1:φs45.00000˚,δ83.00000˚, λ-165.00000˚. NP2:φs313.00000˚,δ75.00000˚, λ-7.00000˚. Principal axes: T 1.5150, Plg6.0000˚, Azm178.0000˚; N 0.0750, Plg74.0000˚, Azm69.0000˚; P -1.5970, Plg15.0000˚, Azm270.0000˚; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

ISC 10 09:02:44.9±0.5,31.˚33N±0.˚03×100.˚77E±0.˚03,h18km±2km, h18km:pP-P,n466,σ2s09/498,mb5.0/182,MS5.1/72, 22C-25D,Sichuan

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
CD2	**Chengdu**	**2.59**	**99**	⇓Pn		**Pn**	**09 03 27.4**	**+1.4**
CD2				Pg		**Pb**	**09 03 30.9**	**0.0**
CD2				Sn		**Sb**	**09 04 03.9**	**+1.4**
CD2				Sg		**Sg**	**09 04 06.3**	**-2.1**
CD2				smax		smax		
	comp=N,16μm,1.2s							
CD2				smax		smax		
	comp=E,23μm,1.1s							
LZH	**Lanzhou**	**5.39**	**28**	Pn		**Pn**	**09 04 06.3**	**+1.8**
LZH				Pg		**Pb**	**09 04 22.8**	**+4.2**
LZH				Sn		**Sn**	**09 05 09.0**	**+2.8**
LZH				Sg		**Sg**	**09 05 33.0**	**-4.9**
LZH				smax		smax		
	comp=N,7μm,1.2s							
LZH				smax		smax		
	comp=E,4μm,1.1s							
LZH				LR		LR		
	comp=N,50μm,5.7s							
LZH				LR		LR		
	comp=Z,24μm,6.3s							
KMI	**Kunming**	**6.43**	**164**	Pn		**Pn**	**09 04 19.0**	**+0.1**
KMI				smax		smax		
	comp=N,610nm,1.6s							
KMI				smax		smax		
	comp=E,370nm,1.9s							
KMI				LR		LR		
	comp=E,25μm,7.3s							
KMI				LR		LR		
	comp=Z,20μm,8.9s							
GYA	**Guiyang**	**7.09**	**132**	Pn		**Pn**	**09 04 26.2**	**-1.7**
GYA				Sn		**Sn**	**09 05 46.8**	**-1.3**
GYA				Sg		**Sb**	**09 06 20.3**	**+8.4**
GYA				smax		smax		
	comp=N,860nm,0.9s							
GYA				smax		smax		
	comp=E,1μm,0.8s							
GYA				LR		LR		
	comp=N,30μm,13.2s							
GYA				LR		LR		
	comp=E,28μm,14.0s							
GYA				LR		LR		
	comp=Z,11μm,8.4s							
XAN	**Xi'an**	**7.38**	**66**	Pn		**Pn**	**09 04 30.1**	**-1.7**
XAN				Sn		**Sn**	**09 05 57.1**	**+2.0**
XAN				Sg		**Sg**	**09 06 37.0**	**-4.7**
XAN				smax		smax		
	comp=N,1μm,1.3s							
XAN				smax		smax		
	comp=E,2μm,1.1s							
XAN				LR		LR		
	comp=E,15μm,11.2s							
XAN				LR		LR		
	comp=Z,13μm,10.0s							
ENH	**Enshi**	**7.57**	**96**	*e*Pn		**Pn**	**09 04 34.7**	**+0.3**
GTA	**Gaotai**	**8.10**	**355**	⇑P		**Pn**	**09 04 45.4**	**+3.7**
GTA				pP		pP	09 04 50.2	
GTA				sP		sP	09 04 52.5	
GTA				S		Sn	09 06 22.3	+9.5
GTA				sS		sS	09 06 26.6	
GTA				pmax		pmax		
	comp=Z,13nm,1.1s							
GTA				pmax		pmax		
	comp=Z,420nm,6.7s							
GTA				LR		LR		
	comp=N,16μm,9.0s							
GTA				LR		LR		
	comp=E,13μm,7.6s							
GTA				LR		LR		
	comp=Z,20μm,10.5s							
LSA	**Lhasa**	**8.46**	**261**	P		**Pn**	**09 04 47.0**	**0.0**
LSA				pP		pP	09 04 51.0	
LSA				S		Sn	09 06 32.0	+10
LSA				pmax		pmax		
	comp=Z,26nm,0.7s							
LSA				pmax		pmax		
	comp=Z,180nm,5.1s							
LSA				LR		LR		
	comp=N,4μm,8.7s							
LSA				LR		LR		
	comp=E,9μm,7.1s							
LSA				LR		LR		
	comp=Z,14μm,7.9s							
LSA	**Lhasa**	**8.46**	**261**	*e*P		**Pn**	**09 04 47.3**	**+0.3**
LSA	**Lhasa**	**8.46**	**261**	*e*Pn		**Pn**	**09 04 47.3**	**+0.3**
SHL	**Shillong**	**9.70**	**236**	*e*P		**Pn**	**09 05 01.4**	**-2.4**
CRAI	**Chiangrai**	**11.06**	**182**	P		**Pn**	**09 05 23.4**	**+1.1**
	26nm,1.7s,3μm							
CMAI	**Chiengmai2**	**11.46**	**188**	P		**Pn**	**09 05 30.1**	**+2.2**
	96nm,1.5s,2μm							
TIY	**Taiyuan**	**11.53**	**53**	*e*P		**Pn**	**09 05 30.1**	**+1.5**
TIY				S		**Sn**	**09 07 40.4**	**+3.5**
TIY				LR		LR		
	comp=E,4μm,4.3s							
TIY				LR		LR		
	comp=Z,3μm,7.0s							
WHN	**Wuhan**	**11.69**	**90**	⇓*i*P		**Pn**	**09 05 30.5**	**-0.2**
WHN				sP		sP	09 05 34.9	
WHN				S		**Sn**	**09 07 39.7**	**-1.0**
WHN				LR		LR		
	comp=N,38μm,11.5s							
WHN				LR		LR		
	comp=E,10μm,7.0s							
WHN				LR		LR		
	comp=Z,18μm,9.3s							
TAPN	**Taplejung**	**12.07**	**254**	*e*P		**Pn**	**09 05 34.7**	**-1.6**
	61nm,0.3s							
ODAN	**Odare**	**12.52**	**253**	*e*P		**Pn**	**09 05 40.0**	**-2.4**
	545nm,0.9s							
CMMT	**Chiang Mai**	**12.58**	**188**	P		**Pn**	**09 05 45.0**	**+2.0**
	65nm,2.0s,2μm							
LAMP	**Lampang**	**12.80**	**185**	P		**Pn**	**09 05 48.8**	**+2.8**
	21nm,1.1s,361nm							
HHC	**Hu-ho-hao-te**	**12.89**	**40**	*e*P		**Pn**	**09 05 49.8**	**+2.6**
HHC				pP		pP	09 05 53.6	
HHC				sP		sP	09 05 55.5	
HHC				PP		**P**	**09 05 58.7**	**+0.8**
HHC				S		**Sn**	**09 08 14.2**	**+4.0**
HHC				pmax		pmax		
	comp=Z,27nm,0.7s							
HHC				pmax		pmax		
	comp=Z,200nm,3.5s							
HHC				LR		LR		
	comp=N,17μm,8.1s							
HHC				LR		LR		
	comp=E,19μm,9.0s							
HHC				LR		LR		
	comp=Z,12μm,7.6s							
CM31	**Chiang Mai Arr**	**12.93**	**188**	*e*Pn		**Pn**	**09 05 50.1**	**+2.3**
CMAR	**Chiang Mai Arr**	**12.93**	**188**	Pn		**Pn**	**09 05 49.3**	**+1.5**
	0.3nm,0.3s,baz=360,slow=11,SNR=175							
CMAR				Pg		Pg	09 06 39.5	
	0.2nm,0.3s,baz=356,slow=12,SNR=2.5							
CMAR				Lg		Lg	09 09 38.3	
	baz=3.9,slow=28,SNR=2.5							
CM01	**Chiang Mai Arr**	**12.96**	**188**	*e*Pn		**Pn**	**09 05 49.3**	**+1.0**
RAMN	**Ramite**	**13.13**	**254**	*e*P		**Pn**	**09 05 47.5**	**-3.3**
	209nm,0.5s							
JIRN	**Jiri**	**13.22**	**258**	*e*P		**Pn**	**09 05 49.9**	**-2.2**
NONG	**Nongkai**	**13.39**	**170**	P		**Pn**	**09 05 54.4**	**+0.3**
	65nm,1.1s,9μm							
GUN	**Gumba**	**13.40**	**259**	*e*P		**Pn**	**09 05 51.4**	**-3.1**
	212nm,0.5s							
UTTA	**Uttaradit**	**13.53**	**181**	P		**Pn**	**09 05 57.5**	**+1.5**
	24nm,1.0s,198nm							
SUKH	**Sukhothai**	**13.83**	**185**	P		**Pn**	**09 06 01.7**	**+1.6**
	12nm,1.4s,142nm							
GZH	**Guangzhou**	**13.87**	**123**	P		**Pn**	**09 05 54.6**	**-6.0**
GZH				S		Sn	09 08 23.9	-10
PKIN	**Phulchoki**	**13.91**	**258**	*e*P		**Pn**	**09 05 57.7**	**-3.7**
	106nm,0.4s							
KKN	**Kakani**	**13.94**	**259**	*e*P		**Pn**	**09 05 57.8**	**-4.0**
	149nm,0.5s							
PHIT	**Phitsanulok**	**14.09**	**181**	P		**Pn**	**09 06 05.9**	**+2.3**
	54nm,1.0s							
DMN	**Daman**	**14.14**	**259**	*e*P		**Pn**	**09 06 01.3**	**-3.3**
	432nm,1.1s							
GKN	**Gorkha**	**14.41**	**261**	*e*P		Pn	09 06 03.0	-5.2
	230nm,0.6s							
TIA	**Tai'an**	**14.44**	**66**	⇑P		**Pn**	**09 06 07.8**	**-0.6**
TIA				S		**S**	**09 08 58.9**	**-8.8**
TIA				pmax		pmax		
	comp=Z,20nm,1.1s							
TIA				pmax		pmax		
	comp=Z,830nm,4.0s							
TIA				LR		LR		
	comp=N,11μm,16.0s							
TIA				LR		LR		
	comp=E,5μm,16.8s							
TIA				LR		LR		
	comp=Z,6μm,10.1s							
PANO	**Nakornpanom**	**14.55**	**165**	P		**Pn**	**09 06 10.6**	**+0.6**
	68nm,1.5s							
SKNT	**Sakolnakorn**	**14.59**	**168**	P		**Pn**	**09 06 10.7**	**+0.2**
	65nm,0.9s,8μm							
MCO	**Taipa Grande**	**14.64**	**126**	P		**Pn**	**09 06 13.0**	**+1.8**
PBKT	**Sadao Pong**	**14.70**	**179**	P		**Pn**	**09 06 11.9**	**-0.1**
	76nm,0.8s							
HKC	**Hong Kong Obse**	**14.96**	**124**	P		**Pn**	**09 06 17.0**	**+1.5**
KHON	**Khomkaen**	**15.04**	**172**	P		**Pn**	**09 06 17.0**	**+0.3**
	56nm,0.9s							
BOK	**Bokaro**	**15.18**	**244**	*e*P		**Pn**	**09 06 14.1**	**-4.3**
BOK				IAmb		IAmb	09 06 14.9	
	comp=Z,79nm,1.0s							
BJT	**Baijiatuan**	**15.20**	**51**	*e*P		**Pn**	**09 06 18.7**	**0.0**
BJT				pmax		pmax		
	comp=Z,96nm,1.6s							
BJT	**Baijiatuan**	**15.20**	**51**	*e*Pn		**Pn**	**09 06 18.7**	**0.0**
	comp=Z,96nm,1.6s							
BJI	**Beijing**	**15.22**	**51**	P		**Pn**	**09 06 18.1**	**-0.7**
BJI				S		**Sn**	**09 09 06.2**	**-0.7**
BJI				pmax		pmax		
	comp=Z,390nm,4.7s							
BJI				LR		LR		
	comp=Z,32μm,16.1s							
BJI				LR		LR		
	comp=Z,21μm,14.2s							
BJI				LR		LR		
	comp=Z,3μm,19.2s							
KOLN	**Koldanda**	**15.36**	**261**	*e*P		**Pn**	**09 06 15.5**	**-5.5**
	comp=Z,238nm,0.7s							
CHAI	**Chaiyaphum**	**15.40**	**176**	P		**Pn**	**09 06 22.6**	**+1.2**
	comp=Z,30nm,1.2s							
NJ2	**Nanjing**	**15.41**	**83**	*e*P		**Pn**	**09 06 19.6**	**-1.8**
NJ2				pP		**P**	**09 06 23.9**	**-2.0**
NJ2				S		**Sn**	**09 09 12.3**	**+0.6**
NJ2				SS		**S**	**09 09 30.6**	**+3.0**
NJ2				pmax		pmax		
	comp=Z,33nm,1.4s							
NJ2				pmax		pmax		
	comp=Z,740nm,3.8s							
NJ2				LR		LR		
	comp=Z,6μm,8.7s							
NJ2				LR		LR		
	comp=Z,6μm,9.2s							
NJ2				LR		LR		
	comp=Z,7μm,13.6s							
PYUN	**Piuthan**	**15.78**	**263**	*e*P		**Pn**	**09 06 20.8**	**-5.7**
	comp=Z,589nm,0.9s							
WMQ	**Urumqi**	**16.19**	**324**	P		**Pn**	**09 06 30.4**	**-1.0**
WMQ				PP		**sP**	**09 06 44.5**	**+2.4**
WMQ				S		**Sn**	**09 09 29.3**	**-1.2**
WMQ				sS		S	09 09 35.7	-7.8
WMQ				PcP		**PcP**	**09 11 30.1**	**+4.2**
WMQ				pmax		pmax		
	comp=Z,50nm,1.4s							
WMQ				pmax		pmax		
	comp=Z,160nm,4.0s							
WMQ				LR		LR		
	comp=Z,7μm,13.0s							
WMQ				LR		LR		
	comp=Z,5μm,11.6s							
WMQ				LR		LR		
	comp=Z,2μm,20.8s							
KHLT	**Khaolaem Dam**	**16.58**	**187**	P		**Pn**	**09 06 37.3**	**+0.8**
	comp=Z,50nm,1.2s,comp=Z,626nm							
QZH	**Quanzhou**	**16.95**	**108**	⇑*i*P		**Pn**	**09 06 36.7**	**-4.4**
QZH				S		**Sn**	**09 09 42.3**	**-6.8**
QZH				pmax		pmax		
	comp=Z,180nm,0.7s							
QZH				pmax		pmax		
	comp=Z,1μm,3.0s							
QZH				LR		LR		
	comp=Z,22μm,10.2s							
QZH				LR		LR		
	comp=Z,13μm,10.9s							
QZH				LR		LR		
	comp=Z,20μm,11.0s							
SRDT	**SRDT**	**16.97**	**185**	P		**Pn**	**09 06 41.5**	**0.0**
	comp=Z,292nm,1.6s,comp=Z,16μm							
SONM	**Songino Array**	**17.03**	**13**	Pn		**Pn**	**09 06 41.5**	**-0.7**
	comp=Z,1.6nm,0.3s,baz=196,slow=11,SNR=184							
SONM				Lg		Lg	09 11 44.2	
	baz=216,slow=28,SNR=1.7							
SONM				LR		LR	09 14 29.3	
	comp=Z,2μm,19.9s,baz=194,slow=41							
SONA1	**Songino Array**	**17.05**	**13**	*e*Pn		**P**	**09 06 43.0**	**-1.0**
ULN	**Ulaanbaatar**	**17.19**	**14**	*c i*P		**Pn**	**09 06 42.8**	**-1.5**
ULN				pmax		pmax		
	comp=Z,88nm,1.2s							
ULN	**Ulaanbaatar**	**17.19**	**14**	*e*Pn		**Pn**	**09 06 42.9**	**-1.3**
	comp=Z,176nm,1.1s							
SRAK	**Srakaew**	**17.28**	**176**	P		**Pn**	**09 06 45.1**	**-0.2**
	comp=Z,376nm,0.7s,comp=Z,3μm							
SSE	**Sheshan**	**17.47**	**85**	P		**Pn**	**09 06 44.6**	**-3.0**
SSE				S		**Sn**	**09 09 58.0**	**-3.6**
SSE				pmax		pmax		
	comp=Z,67nm,0.9s							
SSE				pmax		pmax		
	comp=Z,430nm,7.2s							
SSE				LR		LR		
	comp=Z,10μm,14.5s							
SSE				LR		LR		
	comp=Z,3μm,14.5s							
SSE				LR		LR		
	comp=Z,5μm,9.8s							
PATY	**Pattaya**	**18.32**	**180**	P		**Pn**	**09 06 59.9**	**+1.7**
	comp=Z,16nm,0.9s,comp=Z,2μm							
PHET	**Kaeng Krachan**	**18.37**	**184**	P		**Pn**	**09 06 59.4**	**+0.7**
	comp=Z,27nm,0.9s,comp=Z,320nm							
CHBT	**CHBT**	**18.55**	**175**	P		**Pn**	**09 07 01.6**	**+0.7**
	comp=Z,209nm,1.0s							
DL2	**Dalian**	**18.64**	**60**	P		**Pn**	**09 07 01.7**	**-0.2**
DL2				S		**Sn**	**09 10 26.6**	**-3.2**
DL2				pmax		pmax		
	comp=Z,35nm,0.9s							
DL2				pmax		pmax		
	comp=Z,880nm,5.1s

ZSN	**Zaisan**	**20.41**	**327**	⇓	*i*	P		**P**	**09 07 20.7 -0.1**
	comp=Z,162nm,1.6s								
ZSN					*i*	S		**S**	**09 11 08.9 +0.3**
ZSN						LR		LR	09 15 06.1
	comp=Z,4μm,10.7s								
TLY	**Talaya**	**20.44**	**5**			P		Pn	09 07 21.9 -1.4
	comp=Z,18nm,0.9s,baz=180,slow=8.2,SNR=20								
TLY						Lg		Lg	09 13 27.3
	comp=Z,1.3nm,0.4s,baz=30,slow=20,SNR=1.6								
TLY	**Talaya**	**20.44**	**5**	*c*	*i*	P		**P**	**09 07 20.8 -0.4**
TLY					*e*				09 07 52.1
TLY						eS		Sn	09 11 12.6 -0.6
TLY						eSS		**SnSn**	**09 11 29.6 +1.7**
TLY					*e*				09 11 37.2
TLY						pmax		pmax	
	comp=Z,81nm,1.8s								
TLY						MLR		MLR	
	comp=Z,3μm,15.0s								
NDI	**New Delhi**	**20.56**	**269**		*ex*			**P**	**09 07 18.0 -4.7**
NDI					*ex*			Sn	09 11 16.0 -0.4
AYAN	**Aya Nagar**	**20.69**	**268**		*eP*			**P**	**09 07 21.9 -2.0**
AYAN						IAmb		IAmb	09 07 23.9
	comp=Z,68nm,0.6s								
SONA	**Sohna**	**20.78**	**268**		*eP*			**P**	**09 07 22.4 -2.6**
SONA						IAmb		IAmb	09 07 26.3
	comp=Z,240nm,1.4s								
BHGR	**Bahadurgarh**	**20.80**	**269**		*eP*			**P**	**09 07 23.8 -1.4**
DHRM	**DHARAMSHALA**	**20.82**	**279**		*eP*			**P**	**09 07 23.6 -2.1**
VIS	**Vishakhapatnam**	**20.83**	**233**		*eP*			**P**	**09 07 24.4 -1.2**
UZB	**Uzynbulak**	**20.88**	**310**	⇓	*i*	P		**P**	**09 07 25.5 -0.7**
	comp=Z,325nm,1.5s								
UZB						eS		**S**	**09 11 17.3 -1.1**
UZB						LRM		MLR	09 16 52.9
	comp=Z,859nm,7.8s								
MK31	**Makanchi Array**	**21.00**	**323**		*eP*			**P**	**09 07 26.6 -0.7**
MK31						pmax		pmax	
	comp=Z,63nm,0.9s								
MKAR	**Makanchi Array**	**21.00**	**323**		P			**P**	**09 07 27.1 -0.2**
	comp=Z,16nm,0.7s,baz=137,slow=14,SNR=39								
MKAR						ScP		**ScP**	**09 15 09.2 -0.8**
	comp=Z,0.9nm,0.8s,baz=156,slow=4.3,SNR=3.4								
MKAR						LR		LR	09 16 13.3
	comp=Z,3μm,18.4s,baz=128,slow=39								
SNY	**Shenyang**	**21.04**	**54**	⇑		P		**P**	**09 07 30.2 +2.5**
SNY						PP		**PnPn**	**09 07 54.6 +7.9**
SNY						S		**S**	**09 11 23.4 +2.2**
SNY						pmax		pmax	
	comp=Z,97nm,1.0s								
SNY						LR		LR	
	comp=Z,8μm,19.2s								
SNY						LR		LR	
	comp=Z,4μm,25.0s								
SNY						LR		LR	
	comp=Z,5μm,10.3s								
IRK	**Irkutsk**	**21.05**	**6**		*eP*			**P**	**09 07 28.1 +0.3**
IRK						eS		Sn	09 11 29.1 +1.3
IRK						pmax		pmax	
	comp=Z,308nm,2.2s								
MAKZ	**Makanchi**	**21.17**	**322**		*eP*			**P**	**09 07 29.1 0.0**
MAKZ						pmax		pmax	
	comp=Z,281nm,1.6s								
MAKZ	**Makanchi**	**21.17**	**322**		*eP*			**P**	**09 07 29.1 0.0**
	comp=Z,281nm,1.6s								
SATY	**Saty**	**21.25**	**310**	⇑	*i*	P		**P**	**09 07 30.2 +0.1**
	comp=Z,822nm,1.1s								
SATY						eS		**S**	**09 11 27.4 +1.8**
SATY						LRM		MLR	09 17 11.6
	comp=Z,1μm,10.3s								
THN	**Thein Dam**	**21.30**	**280**		*eP*			**P**	**09 07 28.0 -2.5**
THN						eS		**S**	**09 11 26.0 -0.4**
KUDL	**Kundal**	**21.31**	**268**		*eP*			**P**	**09 07 27.3 -3.5**
KUDL						IAmb		IAmb	09 07 29.4
	comp=Z,51nm,1.0s								
KSH	**Kashi**	**21.75**	**299**			P		**P**	**09 07 37.7 +2.2**
KSH						S		**S**	**09 11 30.6 -4.9**
KSH						SS		**SnSn**	**09 12 11.6 +11**
KSH						eScP		**ScP**	**09 15 08.6 -3.5**
KSH						pmax		pmax	
	comp=Z,110nm,1.1s								
KSH						LR		LR	
	comp=Z,5μm,15.3s								
KSH						LR		LR	
	comp=Z,3μm,9.8s								
KSH						LR		LR	
	comp=Z,6μm,12.8s								
KHET	**Khetri**	**21.91**	**268**		*eP*			**P**	**09 07 33.7 -3.6**
KHET					*eP*			**P**	**09 07 33.7 -3.6**
KHET						IAmb		IAmb	09 07 39.2
	comp=Z,71nm,0.9s								
MDOK	**Medeo**	**22.19**	**309**	⇑	*i*	P		**P**	**09 07 40.4 +0.1**
	comp=Z,850nm,1.6s								
MDOK						eS		**S**	**09 11 44.0 0.0**
MDOK						LRM		MLR	09 17 36.1
	comp=Z,1μm,12.5s								
BHPL	**Bhopal**	**22.23**	**254**		*eP*			**P**	**09 07 38.5 -2.2**
AAA	**Alma-Ata**	**22.30**	**309**		*eP*			**P**	**09 07 42.1 +0.7**
AAA						eS		**S**	**09 11 44.5 -1.4**
AAA						pmax		pmax	
	comp=Z,2μm,4.0s								
AAA						smax		smax	
	comp=E,2μm,5.7s								
AAA						MLR		MLR	
	comp=Z,4μm,11.0s								
AAA	**Alma-Ata**	**22.30**	**309**		*eP*			**P**	**09 07 41.8 +0.4**
	comp=Z,1μm,1.4s								
AAA						eS		**S**	**09 11 46.8 +0.9**
AAA						LR		LR	09 16 20.8
	comp=Z,2μm,11.5s								
CHKK	**Chushkaly**	**22.52**	**310**		*i*	P		**P**	**09 07 42.5 -1.1**
	comp=Z,391nm,1.4s								
CIT	**Chita**	**22.70**	**21**		*eP*			**P**	**09 07 46.9 +1.4**
CIT					*e*				09 08 15.0
CIT						pmax		pmax	
	comp=Z,113nm,2.7s								
HIA	**Hailar**	**22.92**	**33**		*eP*			**P**	**09 07 46.9 -0.9**
HIA						pmax		pmax	
	comp=Z,58nm,1.1s								
HIA	**Hailar**	**22.92**	**33**		*eP*			**P**	**09 07 46.9 -0.9**
	comp=Z,58nm,1.1s								
KUU	**Kurty**	**22.96**	**310**		*i*	P		**P**	**09 07 47.2 -1.1**
	comp=Z,288nm,1.4s								
KUU						eS		**S**	**09 11 56.8 -0.9**
KUU					*i*	LRM		MLR	09 17 50.0
	comp=Z,2μm,11.4s								
KRAB	**Krabi**	**23.04**	**184**			P		**P**	**09 07 49.6 +0.3**
	comp=Z,55nm,1.2s,comp=Z,1μm								
CN2	**Changchun**	**23.09**	**50**	⇑		P		**P**	**09 07 49.4 -0.1**
CN2						epP		pP	09 07 54.5 -0.3
CN2						eS		**S**	**09 11 54.4 -5.3**
CN2						pmax		pmax	
	comp=Z,10.0nm,0.7s								
CN2						pmax		pmax	
	comp=Z,400nm,6.0s								
CN2						LR		LR	
	comp=Z,13μm,16.0s								
CN2						LR		LR	
	comp=Z,5μm,16.0s								
CN2						LR		LR	
	comp=Z,5μm,11.0s								
KS15	**Wonju Array Si**	**23.15**	**67**		*eP*			**P**	**09 07 49.7 -0.5**
KSAR	**Wonju Array Be**	**23.15**	**67**		P			**P**	**09 07 49.5 -0.7**
KSAR	**Wonju Array Be**	**23.15**	**67**		P			**P**	**09 07 49.5 -0.7**
KS01	**Wonju Array Si**	**23.16**	**67**		*eP*			**P**	**09 07 49.4 -0.9**
KSRS	**Korea Array**	**23.18**	**67**		P			**P**	**09 07 49.5 -1.0**
	comp=Z,96nm,1.1s,baz=255,slow=9.3,SNR=36								
KSRS						LR		LR	09 16 33.9
	comp=Z,2μm,21.2s,baz=260,slow=36								
TRTT	**Trang**	**23.40**	**183**			P		**P**	**09 07 51.8 -1.1**
	comp=Z,68nm,1.2s,comp=Z,2μm								
PKDT	**Phuket**	**23.43**	**186**			P		**P**	**09 07 53.0 -0.2**
	comp=Z,96nm,1.1s,comp=Z,5μm								
FRU	**Bishkek**	**23.72**	**306**	⇓	*eP*			**P**	**09 07 55.0 -0.9**
FRU						eS		**S**	**09 12 03.0 -7.1**
FRU					*e*				09 12 18.0
FRU						pmax		pmax	
	comp=Z,310nm,2.2s								
FRU						pmax		pmax	
	comp=E,2μm,7.0s								
FRU						MLR		MLR	
	comp=E,4μm,9.0s								
AAK	**Ala-Archa**	**23.73**	**306**			P		**P**	**09 07 56.3 +0.1**
	comp=E,16nm,1.0s,baz=95,slow=9.4,SNR=54								
AAK						LR		LR	09 18 23.0
	comp=E,5μm,18.7s,baz=98,slow=40								
SEM	**Semipalatinsk**	**24.43**	**327**		*i*	P		**P**	**09 08 02.6 +0.2**
	comp=E,90nm,1.3s								
SEM						eS		**S**	**09 12 21.3 0.0**
SEM						LR		LR	09 17 20.8
	comp=E,3μm,13.5s								
HYB	**Hyderabad**	**24.46**	**241**		*i*	P		**P**	**09 08 02.0 -1.0**
	comp=E,100nm,1.0s								
HYB						eS		**S**	**09 12 20.0 -2.4**
HYB	**Hyderabad**	**24.46**	**241**		*eP*			**P**	**09 08 01.5 -1.5**
CMBY	**CAMPBELL BAY**	**25.03**	**196**		*eP*			**P**	**09 08 07.3 -0.7**
MNAS	**Manas**	**25.08**	**304**			P		**P**	**09 08 07.9 -0.6**
MNAS						pmax		pmax	
	comp=Z,93nm,1.3s								
KRAR	**Krasnoyarsk**	**25.29**	**350**	⇑	*eP*			**P**	**09 08 11.2 +1.2**
KRAR						pmax		pmax	
	comp=Z,56nm,0.6s								
ZAA0	**Zalesovo Array**	**25.35**	**338**		*eP*			**P**	**09 08 09.6 -1.0**
ZALV	**Zalesovo Beam**	**25.35**	**338**		P			**P**	**09 08 09.6 -1.1**
	comp=Z,14nm,0.5s,baz=146,slow=9.4,SNR=50								
ZALV						LR		LR	09 18 42.7
	comp=Z,4μm,21.6s,baz=159,slow=38								
KURBB	**Kurchatov Arra**	**25.39**	**326**			P		**P**	**09 08 10.2 -0.9**
	comp=Z,25nm,1.0s,baz=133,slow=9.4,SNR=45								
KURK	**Kurchatov**	**25.41**	**326**			P		**P**	**09 08 09.5 -1.7**
KURK						pmax		pmax	
	comp=Z,218nm,1.1s								
KURK	**Kurchatov**	**25.41**	**326**			P		**P**	**09 08 10.2 -1.0**
JNU	**Nakatsue**	**25.49**	**78**			P		**P**	**09 08 11.5 -0.7**
	comp=Z,31nm,1.1s,baz=325,slow=8.1,SNR=5.2								
JNU						LR		LR	09 19 28.0
	comp=Z,1μm,18.9s,baz=258,slow=39								
MDJ	**Mudanjiang**	**26.15**	**51**			P		**P**	**09 08 22.6 +4.6**
MDJ						ScS		ScS	09 19 17.3 +3.8
MDJ						pmax		pmax	
	comp=Z,14nm,0.9s								
MDJ						pmax		pmax	
	comp=Z,110nm,7.1s								
MDJ						LR		LR	
	comp=Z,7μm,18.9s								
MDJ						LR		LR	
	comp=Z,3μm,15.1s								
MDJ						LR		LR	
	comp=Z,3μm,9.4s								
MDJ	**Mudanjiang**	**26.15**	**51**		*eP*			**P**	**09 08 16.5 -1.5**
	comp=Z,20nm,0.8s								
MDRS	**Chennai**	**26.21**	**231**		*eP*			**P**	**09 08 18.5 -0.3**
JASL	**Jaisalmer**	**26.42**	**268**		*eP*			**P**	**09 08 19.7 -0.9**
NVS	**Novosibirsk**	**26.61**	**337**	⇑	*i*	P		**P**	**09 08 22.0 0.0**
NVS						eS		**S**	**09 12 56.2 +0.4**
NVS						pmax		pmax	
	comp=Z,124nm,2.2s								
NVS						pmax		pmax	
	comp=N,91nm,2.4s								
NVS						pmax		pmax	
	comp=E,33nm,1.7s								
NVS						smax		smax	
	comp=N,52nm,2.1s								
NVS						smax		smax	
	comp=E,31nm,2.1s								
KK31	**Karatay Array**	**26.66**	**305**		*i*	P		**P**	**09 08 22.0 -0.7**
KK31						pmax		pmax	
	comp=Z,51nm,1.3s								
IUG	**Iuzhnay**	**26.76**	**302**		*i*	P		**P**	**09 08 23.5 -0.2**
	comp=Z,292nm,1.3s								
IUG						LRM		MLR	09 19 56.0
	comp=Z,654nm,11.4s								
KBL	**Kabul**	**26.76**	**285**		*eP*			**P**	**09 08 24.1 +0.2**
KBL						pmax		pmax	
	comp=Z,128nm,1.0s								
KBL	**Kabul**	**26.76**	**285**		*eP*			**P**	**09 08 24.1 +0.2**
	comp=Z,128nm,1.0s								
VLA	**Vladivostok**	**27.27**	**56**	⇑	*eP*			**P**	**09 08 30.7 +2.6**
VLA						pmax		pmax	
	comp=Z,48nm,1.1s								
POO	**Poona**	**27.46**	**249**		*eP*			**P**	**09 08 28.0 -2.1**
	comp=Z,109nm,1.2s								
USRK	**Ussuriysk Ar.**	**27.64**	**53**		P			**P**	**09 08 31.9 +0.4**
	comp=Z,8.7nm,0.8s,baz=250,slow=8.4,SNR=20								
USRK						PcP		**PcP**	**09 11 50.4 +1.9**
	comp=Z,2.4nm,0.6s,baz=272,slow=1.2,SNR=6.2								
USRK						LR		LR	09 20 32.2
	comp=Z,2μm,21.2s,baz=243,slow=39								
TSI	**Tuntungan**	**27.76**	**185**			P		**P**	**09 08 36.6 +3.9**
	comp=Z,127nm,1.2s								
KCSI	**Kotacane, Aceh**	**27.81**	**186**			P		**P**	**09 08 36.4 +3.2**
BOD	**Bodaibo**	**28.00**	**15**		*eP*			**P**	**09 08 32.9 -1.6**
BOD						pmax		pmax	
	comp=Z,10.0nm,1.0s								
BRZS	**Berezniki**	**28.05**	**320**		*eP*			**P**	**09 08 34.6 -0.4**
	comp=Z,28nm,1.4s								
PSI	**Prapat**	**28.43**	**184**			P		**P**	**09 08 38.8 -0.1**
	comp=Z,2.1nm,0.4s,baz=318,slow=16,SNR=4.5								
PSI						LR		LR	09 21 48.9
	comp=Z,883nm,20.4s,baz=318,slow=40								
BHJ	**Bhuj**	**28.73**	**261**		*eP*			**P**	**09 08 40.1 -1.2**
BHJ						IAmb		IAmb	09 08 44.6
	comp=Z,52nm,0.8s								
KLR	**Kul'dur**	**29.34**	**44**			P		**P**	**09 08 47.4 +0.9**
	comp=Z,3.8nm,0.7s,baz=264,slow=12,SNR=8.4								
KLR						PcP		**PcP**	**09 11 55.4 +2.8**
	comp=Z,4.6nm,0.8s,baz=282,slow=4.2,SNR=5.8								
KLR						LR		LR	09 21 36.7
	comp=Z,3μm,18.0s,baz=244,slow=39								
GSI	**Gunungsitoli**	**30.02**	**186**			P		P	09 09 02.1 +9.3
BKNI	**Bangkinang**	**30.84**	**179**		*eP*			**P**	**09 08 59.2 -0.8**
	comp=Z,90nm,0.5s								
BVA0	**Borovoye Array**	**30.88**	**323**		*i*	P		**P**	**09 08 58.9 -1.2**
BVA0						pmax		pmax	
	comp=Z,9.0nm,1.0s								
BVAR	**Borovoye Array**	**30.88**	**323**			P		**P**	**09 08 58.8 -1.3**
	comp=Z,1.2nm,0.4s,baz=120,slow=9.9,SNR=9.7								
BVAR						LR		LR	09 22 47.3
	comp=Z,3μm,18.6s,baz=122,slow=39								
BRVK	**Borovoye**	**30.95**	**323**	*c*	*i*	P		**P**	**09 09 00.4 -0.3**
BRVK						pmax		pmax	
	comp=Z,10.0nm,1.2s								
BRVK	**Borovoye**	**30.95**	**323**			P		**P**	**09 09 01.3 +0.7**
	SNR=7.4								
BRVK	**Borovoye**	**30.95**	**323**			P		**P**	**09 09 01.3 +0.7**
	SNR=7.4								
HABR	**Khabarovsk**	**31.04**	**47**		*eP*			**P**	**09 08 59.1 -2.4**
HABR					*e*	SP		**pP**	**09 09 07.7 +0.6**
HABR					*e*				09 10 00.4
HABR									09 11 54.4
HABR						eS		**S**	**09 14 03.9 -1.8**
HABR					*e*				09 19 33.2
HABR						pmax		pmax	
	comp=N,20nm,2.3s								
HABR						pmax		pmax	
	comp=E,24nm,2.3s								
HABR						pmax		pmax	
	comp=Z,30nm,2.3s								
HABR						MLR		MLR	
	comp=Z,1μm,16.0s								
CHKZ	**Chkalovo**	**31.12**	**325**		*i*	P		**P**	**09 09 00.3 -1.8**
CHKZ						pmax		pmax	
	comp=Z,6.0nm,0.6s								
MAT	**Matsushiro**	**31.36**	**70**			P		**P**	**09 09 05.4 +0.9**
MJAR	**Matsushiro Arr**	**31.36**	**70**			P		**P**	**09 09 06.0 +1.5**
	comp=Z,9.6nm,0.9s,baz=275,slow=9.4,SNR=9.2								
MJAR						PcP		**PcP**	**09 11 59.0 +0.9**
	comp=Z,2.7nm,0.8s,baz=258,slow=1.5,SNR=6.5								
MJAR						LR		LR	09 21 32.6
	comp=Z,476nm,20.4s,baz=270,slow=36								
STKI	**Sintang**	**32.71**	**160**			P		P	09 09 21.9 +5.4
PPBI	**Pangkal Pinang**	**33.70**	**170**			P		**P**	**09 09 27.1 +2.0**
	comp=Z,52nm,0.7s,comp=Z,13μm								
AB31	**Akbulak array**	**35.40**	**312**		*i*	P		**P**	**09 09 38.4 -1.1**
AB31						pmax		pmax	
	comp=Z,15nm,1.0s								
GEYT	**Alibeck**	**35.47**	**293**			P		**P**	**09 09 40.0 -0.4**
	comp=Z,12nm,0.7s,baz=90,slow=6.2,SNR=18								
GEYT						LR		LR	09 26 12.1
	comp=Z,2μm,18.6s,baz=70,slow=40								
YSS	**Yuzh-Sakhalins**	**35.64**	**52**	⇓	*eP*			**P**	**09 09 38.0 -3.6**
YSS						pmax		pmax	
	comp=Z,20nm,2.2s								
YSS						MLR		MLR	
	comp=Z,2μm,13.0s								
YSS						MLR		MLR	
	comp=N,2μm,11.0s								
YSS						MLR		MLR	
	comp=E,4μm,13.0s								
MDSI	**Maura Dua**	**35.77**	**174**			P		**P**	**09 09 45.5 +2.5**
	comp=E,19nm,1.2s								
YAK	**Yakutsk**	**35.95**	**23**			LR		LR	09 25 07.5
	comp=E,857nm,18.6s,baz=232,slow=37								
YAK	**Yakutsk**	**35.95**	**23**		*eP*			**P**	**09 09 43.4 -0.7**
YAK					*e*				09 12 15.3
YAK						pmax		pmax	
	comp=N,6.0nm,1.1s								
YAK						pmax		pmax	
	comp=Z,11nm,0.8s								
YAK						pmax		pmax	
	comp=Z,13nm,0.9s								
YAK						MLR		MLR	
	comp=Z,2μm,10.0s								
YAK						MLR		MLR	
	comp=N,925nm,9.0s								
YAK						MLR		MLR	
	comp=E,1μm,9.0s								
NKL	**Nikolayevsk**	**36.06**	**41**		*eP*			**P**	**09 09 45.0 -0.1**
NKL						pmax		pmax	
	comp=Z,22nm,1.0s								
KLI	**Kotabumi**	**36.20**	**173**			P		**P**	**09 09 50.9 +4.2**
	comp=Z,94nm,1.0s								
TYV	**Tymovskoe**	**36.48**	**45**		*eP*			P	09 09 54.5 +5.7
TYV						pmax		pmax	
	comp=Z,9.0nm,0.8s								
TYV						MLR		MLR	
	comp=N,4μm,9.0s								
TYV						MLR		MLR	
	comp=Z,4μm,11.0s								
BLSI	**Bandar Lampung**	**36.74**	**173**			P		**P**	**09 09 55.4 +4.1**
AKTO	**Aktyubinsk**	**36.91**	**314**			P		**P**	**09 09 51.8 -0.7**
	comp=Z,3.1nm,0.8s,baz=87,slow=7.8,SNR=8.0								
AKTO						LR		LR	09 26 16.5
	comp=Z,4μm,19.5s,baz=109,slow=38								
AKTO	**Aktyubinsk**	**36.91**	**314**			P		**P**	**09 09 50.2 -2.2**
AKTO						pmax		pmax	
	comp=Z,23nm,0.9s								
YUK	**Yuzh-Kuril'sk**	**37.42**	**57**		*eP*			**P**	**09 10 00.5 +3.6**
YUK						eS		**S**	**09 15 42.3 -2.0**
YUK						MLR		MLR	
	comp=Z,1μm,21.0s								
SVE	**Sverdlovsk**	**37.64**	**325**		*eP*			**P**	**09 09 57.8 -0.7**
SVE						pmax		pmax	
	comp=Z,57nm,1.5s								
SVE						MLR		MLR	
	comp=Z,3μm,14.0s								
WBK	**Wadi Bani Khal**	**38.07**	**267**			P		**P**	**09 10 02.5 -0.1**
	SNR=5.4								
WBK	**Wadi Bani Khal**	**38.07**	**267**			P		**P**	**09 10 02.5 -0.1**
	SNR=5.4								
WSAR	**Wadi Sarin**	**38.13**	**268**			P		**P**	**09 10 02.3 -0.8**
	comp=Z,15nm,1.0s,baz=90,slow=6.6,SNR=13								
ARU	**Arti**	**38.52**	**323**			P		**P**	**09 10 04.9 -1.1**
	comp=Z,8.3nm,0.7s,baz=106,slow=5.2,SNR=12								
ARU						LR		LR	09 26 54.4
	comp=Z,3μm,18.9s,baz=104,slow=38								
ARU	**Arti**	**38.52**	**323**	*d*	*i*	P		**P**	**09 10 04.9 -1.1**
ARU						S		**S**	**09 16 00.9 +0.2**
ARU						pmax		pmax	
	comp=Z,26nm,1.7s								
ARU						MLR		MLR	
	comp=Z,3μm,19.0s								
SMDO	**Samad**	**38.69**	**268**			P		**P**	**09 10 08.2 +0.3**
	SNR=18								
SMDO	**Samad**	**38.69**	**268**			P		**P**	**09 10 08.2 +0.3**
	SNR=18								
TTSI	**Tana Toraja**	**38.70**	**149**			P		**P**	**09 10 10.5 +2.6**
	comp=Z,39nm,0.8s								
NRIK	**Noril'sk**	**38.79**	**353**			P		**P**	**09 10 07.5 -0.6**
	comp=Z,19nm,0.7s,baz=149,slow=6.9,SNR=28								
NRIK						LR		LR	09 27 37.9
	comp=Z,810nm,18.2s,baz=162,slow=38								
KPJI	**Karang Pucung**	**39.23**	**167**			P		**P**	**09 10 13.2 +0.9**
	comp=Z,89nm,1.0s								
SPSI	**Sidrap Palu**	**39.50**	**149**			P		**P**	**09 10 18.7 +4.1**
	comp=Z,38nm,1.3s								
BSY	**Bisya**	**39.53**	**268**			P		**P**	**09 10 14.9 -0.1**
	SNR=45								
BSY	**Bisya**	**39.53**	**268**			P		**P**	**09 10 14.9 -0.1**
	SNR=45								
HATD	**Hatta, Dubai**	**39.71**	**272**			P		**P**	**09 10 17.6 +1.2**
ASHO	**Ashiyiah**	**39.82**	**272**		*i*	P		**P**	**09 10 18.1 +0.8**
	SNR=26								
ASHO	**Ashiyiah**	**39.82**	**272**			P		**P**	**09 10 17.6 +0.3**
	SNR=24								
ASHO						P		**P**	**09 10 17.6 +0.3**
	SNR=24								
ASHO	**Ashiyiah**	**39.82**	**272**			P		**P**	**09 10 17.6 +0.3**
	SNR=24								
ARQ	**Araqi**	**39.90**	**270**			P		**P**	**09 10 18.7 +0.7**
	SNR=13								
ARQ	**Araqi**	**39.90**	**270**			P		**P**	**09 10 18.7 +0.7**
	SNR=13								
NAZ	**Nazwa, Dubai**	**40.05**	**272**			P		**P**	**09 10 20.7 +1.4**
FAQ	**Al Faqa, Dubai**	**40.20**	**272**			P		**P**	**09 10 20.5 +0.1**
KAPI	**Kappang**	**40.43**	**150**			P		**P**	**09 10 22.7 +0.4**
	comp=Z,7.9nm,0.6s,baz=176,slow=3.6,SNR=4.8								
ASUD	**Al Ashush, Dub**	**40.46**	**272**		*i*	P		**P**	**09 10 23.3 +0.7**
	SNR=14								
ASUD	**Al Ashush, Dub**	**40.46**	**272**			P		**P**	**09 10 22.7 +0.2**
	SNR=13								
ASUD						P		**P**	**09 10 22.7 +0.2**
	SNR=13								
ASUD	**Al Ashush, Dub**	**40.46**	**272**			P		**P**	**09 10 22.7 +0.2**
	SNR=13								
SOKR	**Solikamsk**	**40.65**	**327**	⇑	*i*	P		**P**	**09 10 27.6 +4.0**
SOKR						pmax		pmax	
	comp=Z,54nm,1.1s								
SOKR						MLR		MLR	
	comp=Z,3μm,24.0s								
LBMI	**Labuha**	**40.67**	**136**			P		P	09 10 36.7 +12
TIXI	**Tiksi**	**43.12**	**13**			P		**P**	**09 10 42.6 -1.1**
	comp=Z,4.7nm,0.4s,baz=229,slow=5.0,SNR=6.8								
TIXI						LR		LR	09 30 38.5
	comp=Z,947nm,18.2s,baz=214,slow=39								
TIXI	**Tiksi**	**43.12**	**13**	⇓	*eP*			**P**	**09 10 42.2 -1.5**
TIXI						pmax		pmax	
	comp=Z,23nm,2.5s								
MA2	**Magadan**	**43.50**	**34**			P		**P**	**09 10 45.4 -1.5**
	comp=Z,11nm,0.7s,baz=228,slow=6.3,SNR=6.2								
MA2						PcP		**PcP**	**09 12 33.6 -1.0**
	comp

KIV P P 09 11 15.5 +2.0
SNR=10
KIV Kislovodsk 46.79 303 P P 09 11 15.5 +2.0
SNR=10
NEY Neytrino 46.83 302 *ce*P P 09 11 14.5 +0.6
VRH Novokhopyorsk 47.23 313 *e*P P 09 11 13.8 -2.8
VRH *e**PP pP 09 11 20.9 -1.4
VRH pmax pmax
comp=Z,10.0nm,0.7s
VRH MLR MLR
comp=Z,780nm,12.0s
CHVG Ch'k'valeri 47.35 301 P P 09 11 26.4 +8.7
VSR Storozhevoye 48.84 313 *e*P P 09 11 25.1 -3.9
VSR *e**PP pP 09 11 32.8 -2.0
VSR pmax pmax
comp=Z,10.0nm,0.7s
VSR MLR MLR
comp=Z,1μm,15.0s
LPSR Galich'ya Gora 48.98 315 *e*P P 09 11 29.0 -1.1
LPSR *e**PP pP 09 11 35.3 -0.6
LPSR pmax pmax
comp=Z,6.0nm,0.6s
LPSR MLR MLR
comp=Z,1μm,13.0s
KLMR Klimovskoe 49.26 325 *e*P P 09 11 28.4 -3.7
KLMR pmax pmax
comp=Z,28nm,0.7s
MOS Moscow 49.81 319 *e*P P 09 11 34.3 -2.1
MOS *e* 09 13 29.8
MOS *e*S S 09 18 45.4 +0.5
MOS pmax pmax
comp=Z,23nm,0.8s
MOS MLR MLR
comp=Z,3μm,20.0s
MOS MLR MLR
comp=E,3μm,19.0s
OBN Obninsk 50.40 318 LR LR 09 34 09.0
comp=E,2μm,18.8s,baz=84,slow=38
OBN Obninsk 50.40 318⇑ *e*P P 09 11 39.7 -1.1
OBN *i* *SP pP 09 11 46.3 -0.3
OBN *e* 09 11 54.8
OBN *e* 09 13 39.8
OBN *e*S S 09 18 51.2 -1.9
OBN pmax pmax
comp=Z,23nm,1.4s
OBN MLR MLR
comp=Z,2μm,19.0s
BILL Bilibino 52.20 26⇑ *i*P P 09 11 52.8 -1.4
BILL *e* 09 12 02.7
BILL *e* 09 12 07.8
BILL *e*S S 09 19 20.3 +2.6
BILL *e*SSS SSS 09 24 29.3
BILL pmax pmax
comp=Z,15nm,1.0s
BILL MLR MLR
comp=Z,2μm,17.0s
LVZ Lovozero 52.41 334 P P 09 11 54.0 -1.8
LVZ pmax pmax
comp=Z,42nm,2.1s
SIM Simferopol' 52.76 305 *e*P P 09 12 01.5 +2.7
SIM pmax pmax
comp=Z,34nm,0.8s
SIM MLR MLR
comp=N,2μm,23.7s
APA Apatity 52.83 334⇑ *i*P P 09 12 05.0 +6.1
APA MLR MLR
comp=Z,2μm,12.0s
DAMY Dhamar 53.98 265 *e*P P 09 12 07.9 -0.5
comp=Z,54nm,1.2s
BR131 Keskin Array S 54.14 299 *e*P P 09 12 08.7 -0.4
BRTR Keskin Array B 54.14 299 P P 09 12 06.3 -2.8
comp=Z,1.5nm,0.9s,baz=102,slow=7.3,SNR=7.4
BRTR LR LR 09 39 26.7
comp=Z,632nm,18.6s,baz=80,slow=41
FITZ Fitzroy Crossi 54.65 151 *e*P P 09 12 14.3 +1.5
comp=Z,14nm,1.1s
ANTO Ankara 54.74 299 *e*P P 09 12 13.2 -0.2
ANTO pmax pmax
comp=Z,68nm,1.3s
ANTO Ankara 54.74 299 *e*P P 09 12 13.2 -0.2
comp=Z,68nm,1.3s
BR231 Keskin MP Arra 54.76 299 *e*P P 09 12 13.5 -0.1
AKASG Malin Array Be 55.14 313 P P 09 12 13.9 -2.1
comp=Z,7.8nm,0.6s,baz=71,slow=6.6,SNR=14
AKASG LR LR 09 37 37.1
comp=Z,916nm,19.1s,baz=95,slow=38
AKBB Malin Array Si 55.14 313 *e*P P 09 12 15.2 -0.8
AKBB pmax pmax
comp=Z,28nm,1.3s
AKBB Malin Array Si 55.14 313 *e*P P 09 12 15.2 -0.8
comp=Z,28nm,1.3s
KIEV Kiev 55.15 313 *e*P P 09 12 15.5 -0.6
KIEV pmax pmax
comp=Z,27nm,1.3s
KIEV Kiev 55.15 313 *e*P P 09 12 15.5 -0.6
comp=Z,27nm,1.3s
AK11 Malin Array Si 55.18 313 *e*P P 09 12 18.0 +1.8
MBWA Marble Bar 55.27 158 *e*P P 09 12 17.4 +0.2
comp=Z,50nm,1.5s
MICGM Minsk 55.45 317 *e* P 09 12 27.0 +8.8
MICGM *e*LQ LQ 09 30 40.0
MICGM LQM 09 33 06.0
comp=E,2.8nm,20.0s
MICGM LQM 09 33 16.0
comp=N,4.2nm,16.0s
MICGM *e*LR LR 09 35 26.0
MICGM LRM MLR 09 37 02.0
comp=Z,3.2nm,18.0s
MNK Minsk 55.45 317 *e*P P 09 12 27.0 +8.8
MNK MLR MLR
comp=Z,3μm,18.0s
VSU Vasula 55.67 322 P P 09 12 22.0 +2.3
VSU pmax pmax
comp=Z,54nm,0.8s
FIA1 FINESS Array S 55.78 326 *e*P P 09 12 18.6 -1.8
comp=Z,94nm,1.8s
FINES FINESS Array B 55.78 326 P P 09 12 18.5 -1.9
comp=Z,3.7nm,0.6s,baz=92,slow=6.8,SNR=43
FINES LR LR 09 36 33.7
comp=Z,2μm,21.0s,baz=84,slow=36
ARA0 ARCESS Array S 55.88 336 *e*P P 09 12 19.2 -1.9
ARCES ARCESS Array B 55.88 336 P P 09 12 18.9 -2.1
comp=Z,2.4nm,0.6s,baz=89,slow=7.1,SNR=17
ARCES LR LR 09 39 07.0
comp=Z,2μm,18.4s,baz=98,slow=39
ARE0 ARCESS Array S 55.88 336 *e*P P 09 12 19.4 -1.6
comp=Z,128nm,1.8s
EIL Elat 55.95 287 P P 09 12 20.3 -1.9
comp=Z,5.1nm,0.7s,baz=39,slow=6.5,SNR=2.7
NACGM Naroch 56.03 318 *e* P 09 12 25.0 +2.7
NACGM *e*LQ LQ 09 31 41.0
NACGM *e*LR LR 09 35 26.0
NACGM LRM MLR 09 37 20.0
comp=Z,4.1nm,19.0s
ATD Arta Tunnel 56.76 263 P P 09 12 28.0 -0.2
comp=Z,17nm,1.2s,baz=73,slow=19,SNR=3.1
TIRR Tirgusor 56.85 305‖ *i*P P 09 12 28.6 +0.3
TIRR Tirgusor 56.85 305 *e*P P 09 12 26.5 -1.8
TIRR pmax pmax
comp=Z,15nm,1.0s
TIRR Tirgusor 56.85 305 *e*P P 09 12 26.5 -1.8
comp=Z,15nm,1.0s
CFR Carcaliu 56.88 306‖ *i*P P 09 12 28.3 -0.2
ISP Isparta 56.98 297 *e*P P 09 12 28.3 -1.3
ISP pmax pmax
comp=Z,34nm,0.9s
ISP Isparta 56.98 297 *e*P P 09 12 28.2 -1.3
comp=Z,34nm,0.9s
HARR Harsova 57.13 306‖ *i*P P 09 12 29.2 -1.1
MSAB Monastry St. A 57.34 305‖ *i*P P 09 12 31.2 -0.6
VRI Vrincioaia 57.69 307‖ *i*P P 09 12 34.7 +0.4
PLOR Plostina 57.74 307⇑ *i*P P 09 12 33.9 -0.8
ISR Istrita 57.99 307‖ *i*P P 09 12 37.3 +0.8
BURAR Bucovina Array 58.30 310⇑ *i*P P 09 12 37.8 -0.9
BUR08 Bucovina Ar. S 58.30 310 *e*P P 09 12 38.6 -0.1
MLR Muntele Rosu 58.31 307‖ *i*P P 09 12 38.5 -0.3
MLR Muntele Rosu 58.31 307 *e*P P 09 12 38.0 -0.8
MLR pmax pmax
comp=Z,30nm,1.2s
MLR Muntele Rosu 58.31 307 *e*P P 09 12 38.0 -0.8
comp=Z,30nm,1.2s
SPA0 Spitsbergen Ar 58.43 346 *e*P P 09 12 38.9 -0.2
DOPR Dopca 58.57 308‖ *i*P P 09 12 40.1 -0.4
LVV L'vov 58.58 312 *e*P P 09 12 46.2 +5.8
LVV *e*S S 09 20 54.4 +11
LVV MLR MLR
comp=N,900nm,18.0s
LVV MLR MLR
comp=E,400nm,18.0s
LVV MLR MLR
comp=E,500nm,17.0s
ARR Arges 59.23 307⇑ *i*P P 09 12 43.9 -1.3
KBS Kingsbay 59.26 347 *e*P P 09 12 46.6 +1.8
KBS pmax pmax
comp=Z,21nm,1.3s
KBS Kingsbay 59.26 347 *e*P P 09 12 46.6 +1.8
comp=Z,21nm,1.3s
CJR Cluj-Napoca 59.59 309‖ *i*P P 09 12 47.9 +0.3
KOLS Kolonicke sedl 59.90 312 *e*P P 09 12 55.0 +5.4
KOLS pmax pmax
comp=Z,10.0nm,1.1s
KOLS Kolonicke sedl 59.90 312 *e*P P 09 12 55.0 +5.4
UZH Uzhgorod 59.96 311 *e*P P 09 12 51.3 +1.3
UZH *i* 09 12 57.3
UZH *e* 09 13 04.7
UZH *e* 09 13 38.3
UZH *e*S S 09 20 58.5 -2.9
UZH *e*SS SS 09 24 59.3 +1.8
UZH MLR MLR
comp=N,500nm,13.0s
UZH MLR MLR
comp=E,1μm,13.0s
UZH MLR MLR
comp=Z,700nm,13.0s
PMG Port Moresby 60.11 125 *e*P P 09 12 52.3 +0.9
PMG pmax pmax
comp=Z,36nm,0.9s
PMG Port Moresby 60.11 125 *e*P P 09 12 52.2 +0.9
comp=Z,36nm,0.9s
DRGR 60.16 309‖ *i*P P 09 12 51.2 -0.3
KARP Karpathos 60.24 296 *e*P P 09 12 51.5 -0.7
comp=Z,27nm,1.0s
WRAB Tennant Creek 60.31 143 *de*P P 09 12 50.8 -1.9
WRAB pmax pmax
comp=Z,124nm,0.8s
WRA Warramunga Arr 60.31 143 P P 09 12 50.3 -2.4
comp=Z,27nm,0.7s,baz=337,slow=7.1,SNR=70
WB2 Warramunga Arr 60.32 143 *e*P P 09 12 50.8 -2.0
comp=Z,43nm,0.8s
RABL Rabaul 60.33 116 *e*P P 09 12 54.4 +1.4
comp=Z,341nm,1.4s
CRVS Cervenica-Dubn 60.42 312 *e*P P 09 12 57.0 +3.8
CRVS Cervenica-Dubn 60.42 312 *e*P P 09 12 57.0 +3.8
STHS Stebnicka Huta 60.43 312 *e*P P 09 12 57.8 +4.5
STHS pmax pmax
comp=Z,5.0nm,0.8s
STHS Stebnicka Huta 60.43 312 *e*P P 09 12 57.8 +4.5
COEN Coen 60.70 131 *e*P P 09 12 53.7 -1.7
comp=Z,32nm,0.9s
VTS Vitosha 60.99 304‖ *i*P P 09 12 56.9 -0.4
VTS Vitosha 60.99 304 *e*P P 09 12 57.0 -0.4
VTS pmax pmax
comp=Z,14nm,1.1s
VTS Vitosha 60.99 304 *e*P P 09 12 57.0 -0.4
comp=Z,14nm,1.1s
OJC Ojcow 61.13 314 *e*P P 09 12 56.3 -1.7
OJC pmax pmax
comp=Z,13nm,0.7s
OJC Ojcow 61.13 314 *e*P P 09 12 56.3 -1.7
comp=Z,13nm,0.7s
KECS Kecovo 61.16 312 *e*P P 09 13 01.8 +3.6
KECS pmax pmax
comp=Z,3.0nm,0.7s
KECS Kecovo 61.16 312 *e*P P 09 13 01.8 +3.6
MDVR Moldovita 61.38 307‖ *i*P P 09 12 58.4 -1.5
LAST Lasithi 61.66 296 *e*P P 09 13 00.1 -1.9
comp=Z,52nm,1.2s
PSZ Piszkesteto 61.70 311 *e*P P 09 13 01.1 -0.8
PSZ pmax pmax
comp=Z,10.0nm,1.0s
PSZ Piszkesteto 61.70 311 *e*P P 09 13 01.1 -0.8
comp=Z,9.9nm,1.0s
IDI Anoyia 62.07 296 *e*P P 09 13 03.3 -1.4
comp=Z,100nm,1.6s
VYHS Vyhne 62.21 312 *e*P P 09 13 08.7 +3.4
VYHS pmax pmax
comp=Z,5.0nm,0.9s
VYHS Vyhne 62.21 312 *e*P P 09 13 08.7 +3.4
VYHS *e*L L 09 43 35.9
OKC Ostrava-Krasne 62.26 313 AMS AMS 09 42 00.0
comp=Z,1μm,15.3s
OKC Ostrava-Krasne 62.26 313 *e*P P 09 13 09.9 +4.3
OKC MLR MLR
comp=Z,1μm,15.3s
MORC Moravsky Berou 62.65 314 *e*P P 09 13 07.9 -0.4
MORC pmax pmax
comp=Z,47nm,0.9s
MORC Moravsky Berou 62.65 314 *e*P P 09 13 07.8 -0.4
comp=Z,47nm,0.9s
NC405 NORSAR Array S 62.66 327 *e*P P 09 13 05.8 -2.3
NC305 NORSAR Array S 62.80 327 *e*P P 09 13 07.1 -1.9
NC602 NORSAR Array S 62.85 326 *e*P P 09 13 07.0 -2.3
NB201 NORSAR Array S 62.88 327 *e*P P 09 13 07.8 -1.8
NB2 NORSAR Subarra 62.92 327 P P 09 13 06.8 -3.1
comp=Z,2.5nm,0.6s,baz=73,slow=6.9
NOA NORSAR Array B 62.92 327 P P 09 13 07.4 -2.4
comp=Z,3.6nm,0.6s,baz=74,slow=6.8,SNR=16
NOA LR LR 09 40 55.6
comp=Z,1μm,18.1s,baz=70,slow=36
NC204 NORSAR Array S 63.06 327 *e*P P 09 13 08.4 -2.4
NBO02 NORSAR Array S 63.08 327 *e*P P 09 13 10.2 -0.7
AS31 Alice Springs 63.23 146 *e*P P 09 13 11.5 -0.8
comp=Z,2.6nm,0.8s
ASAR Alice Springs 63.23 146 P P 09 13 09.9 -2.4
comp=Z,6.6nm,0.6s,baz=328,slow=6.4,SNR=57
DPC Dobruska-Polom 63.23 314 *e*P P 09 13 10.8 -1.4
DPC *ex* x 09 13 15.8
DPC AMS AMS 09 41 50.0
comp=Z,1μm,13.5s
DPC Dobruska-Polom 63.23 314 *e*P P 09 13 10.8 -1.4
DPC *e* 09 13 18.3
DPC MLR MLR
comp=Z,1μm,13.5s
AS01 Alice Springs 63.25 146 *e*P P 09 13 10.8 -1.7
UPC Upice 63.38 315 *e*P P 09 13 16.5 +3.5
UPC AMS AMS 09 41 10.0
comp=Z,1μm,18.3s
UPC Upice 63.38 315 *e*P P 09 13 16.5 +3.5
UPC MLR MLR
comp=Z,1μm,18.3s
VRAC Vranov 63.38 313‖ *i*P P 09 13 13.4 +0.3
TREC Trest 64.07 313 AMS AMS 09 43 00.0
comp=Z,2μm,18.2s
KONO Kongsberg 64.09 326 *e*P P 09 13 15.6 -2.0
KONO pmax pmax
comp=Z,62nm,1.8s
KONO Kongsberg 64.09 326 *e*P P 09 13 15.6 -2.0
comp=Z,62nm,1.8s
CONA Conrad Observa 64.28 312 *e*P P 09 13 18.8 -0.3
comp=Z,17nm,1.0s
GOPC GO Pecny, Ondr 64.31 314 AMS AMS 09 42 20.0
comp=Z,1μm,11.9s
GOPC GO Pecny, Ondr 64.31 314 *e*P P 09 13 25.1 +5.9
GOPC MLR MLR
comp=Z,1μm,11.9s
PRU Pruhonice 64.43 314 *e*P P 09 13 23.7 +3.7
PRU *ep*P *sP* 09 13 29.3 +1.2
PRU AMS AMS 09 43 00.0
comp=Z,2μm,15.6s
PRU Pruhonice 64.43 314 *e*P P 09 13 23.7 +3.7
PRU *e* 09 13 29.3
PRU MLR MLR
comp=Z,2μm,15.6s
PRA Prague 64.47 315 AMS AMS 09 43 10.0
comp=Z,2μm,14.1s
BRG Berggiesshubel 64.51 316 *e*P P 09 13 19.1 -1.4
comp=Z,16nm,1.8s
BRG *i* 09 13 26.2
comp=Z,14nm,0.8s
BRG Berggiesshubel 64.51 316 *e*P P 09 13 19.1 -1.4
BRG *i* 09 13 26.2
BRG pmax pmax
comp=Z,16nm,1.8s
CLL Collm 64.93 316 *e*P P 09 13 22.0 -1.2
comp=Z,5.0nm,1.0s
CLL *i* 09 13 28.3
comp=Z,10.0nm,0.9s
CLL *e*L L 09 47.0
CLL *e*S S 09 22 03.0 -0.8
CLL *e*SS SS 09 26 18.0 +3.0
CLL *e*SSS SSS 09 29 12.0
CLL LmV 09 44 00.0
comp=Z,1μm,18.7s
CLL Collm 64.93 316 *e*P P 09 13 22.0 -1.2
CLL *i* 09 13 28.3
CLL *e*S S 09 22 03.0 -0.8
CLL pmax pmax
comp=Z,5.0nm,1.0s
CLL MLR MLR
comp=Z,1μm,18.7s
CLL Collm 64.93 316 *e*P P 09 13 21.7 -1.5
comp=Z,11nm,0.8s
PERS Pernice 65.19 311 *i* P P 09 13 27.2 +2.2
SOKA Soboth 65.23 311 P P 09 13 24.6 -0.7
comp=Z,15nm,0.8s
KHC Kasperske Hory 65.31 314 *e*P P 09 13 24.7 -1.1
KHC *ex* x 09 13 29.3
KHC AMS AMS 09 42 40.0
comp=Z,2μm,15.0s
KHC Kasperske Hory 65.31 314 *e*P P 09 13 24.7 -1.1
KHC MLR MLR
comp=Z,2μm,15.0s
KHC Kasperske Hory 65.31 314 *e*P P 09 13 24.4 -1.3
comp=Z,1.7nm,0.8s
MOA Molln 65.32 312 *e*P P 09 13 25.2 -0.6
comp=Z,12nm,1.3s
GEC2 GERESS Array S 65.33 313 *e*P P 09 13 25.5 -0.5
GEC2 pmax pmax
comp=Z,9.0nm,0.9s
GEC2 GERESS Array S 65.33 313 *e*P P 09 13 25.4 -0.5
comp=Z,8.6nm,0.9s
GERES GERESS Array B 65.33 313 P P 09 13 24.7 -1.3
comp=Z,2.4nm,0.8s,baz=78,slow=4.7,SNR=13
GERES LR LR 09 44 16.1
comp=Z,1μm,19.5s,baz=66,slow=38
BOJS Bojanci 65.49 310 *i* P P 09 13 32.5 +5.6
NKC Novy Kostel 65.62 315 *ex* P P 09 13 32.3 +4.5
NKC *ep*P sP 09 13 36.7 +0.8
NKC AMS AMS 09 43 50.0
comp=Z,2μm,15.3s
NKC Novy Kostel 65.62 315 *e*P P 09 13 32.3 +4.5
NKC MLR MLR
comp=Z,2μm,15.3s
NWAO Narrogin (SRO) 65.78 165 *e*P P 09 13 29.2 +0.4
NWAO pmax pmax
comp=Z,53nm,1.3s
NWAO Narrogin (SRO) 65.78 165 *e*P P 09 13 29.2 +0.4
comp=Z,53nm,1.3s
DAG Danmarks Havn 66.00 347 *i* P P 09 13 32.2 +2.5
comp=Z,6.2nm,0.8s
DAG Danmarks Havn 66.00 347 *i* P P 09 13 32.2 +2.5
DAG pmax pmax
comp=Z,5.0nm,0.8s
KBA Koelnbreinsper 66.17 312 *e*P P 09 13 29.4 -2.1
comp=Z,6.8nm,0.8s
GRFO Grafenberg 66.56 315 *e*P P 09 13 33.0 -0.7
GRFO pmax pmax
comp=Z,16nm,0.8s
GRFO Grafenberg 66.56 315 *e*P P 09 13 33.0 -0.7
comp=Z,16nm,0.8s
TIP Timpagrande 66.74 303 *e*P P 09 13 34.9 -0.3
comp=Z,15nm,1.2s
ABTA Abfaltersbach 66.82 312 *e*P P 09 13 33.8 -1.8
comp=Z,11nm,0.7s
CUC Castrocucco 67.10 304 *e*P P 09 13 36.4 -1.0
comp=Z,6.6nm,0.8s
CTA Charters Tower 67.22 133 P P 09 13 36.6 -1.6
comp=Z,12nm,0.7s,baz=334,slow=6.4,SNR=6.4
CTAO Charters Tower 67.22 133 *e*P P 09 13 37.0 -1.2
CTAO pmax pmax
comp=Z,17nm,0.8s
CTAO Charters Tower 67.22 133 *e*P P 09 13 37.0 -1.2
comp=Z,17nm,0.8s
RETA Reutte 67.66 313 *e*P P 09 13 39.6 -1.2
comp=Z,11nm,1.2s
STU Stuttgart 68.13 315 *e*P P 09 13 43.8 +0.1
STU pmax pmax
comp=Z,18nm,0.8s
STU Stuttgart 68.13 315 *e*P P 09 13 43.8 +0.1
comp=Z,18nm,0.8s
KMBO Kilima Mbogo 68.20 255 P P 09 13 44.1 -0.9
comp=Z,4.8nm,0.6s,baz=47,slow=9.5,SNR=16
KMBO LR LR 09 44 02.2
comp=Z,372nm,20.8s,baz=88,slow=36
TTA Tatalina 68.25 29 *e*P P 09 13 42.8 -1.5
TTA Tatalina 68.25 29 *e*P P 09 13 42.8 -1.5
TT01 Tatalina 68.25 29 *e*P P 09 13 42.9 -1.3
BFO Black Forest 68.83 314 *i* P P 09 13 47.2 -1.0
TUE Stuetta 68.94 312 *e*P P 09 13 47.4 -1.7
comp=Z,12nm,0.9s
SVW2 Sparrevohn 69.25 30 *e*P P 09 13 48.9 -1.6
comp=Z,12nm,0.9s
WLF Walferdange 69.60 316 *e*P P 09 13 51.9 -0.9
WLF pmax pmax
comp=Z,29nm,0.9s
WLF Walferdange 69.60 316 *e*P P 09 13 51.9 -0.9
comp=Z,29nm,0.9s
CHGN Chignik 70.11 36 *e*P P 09 13 55.0 -0.8
SCO Scoresbysund 70.61 343 *i* P P 09 14 01.6 +2.9
comp=Z,5.5nm,0.8s
SCO Scoresbysund 70.61 343 *i* P P 09 14 01.6 +2.9
SCO pmax pmax
comp=Z,6.0nm,0.8s
ILAR Eielson Array 70.84 25 P P 09 13 58.4 -1.8
comp=Z,4.9nm,0.9s,baz=284,slow=5.1,SNR=20
ILB Eielson Array 70.84 25 *e*P P 09 13 58.1 -2.1
IL1 Eielson Array 70.84 25 *e*P P 09 13 57.9 -2.3
PMR Palmer 71.71 28 *e*P P 09 14 04.0 -1.4
PMR pmax pmax
comp=Z,20nm,0.7s
PMR Palmer 71.71 28 *e*P P 09 14 04.0 -1.4
comp=Z,20nm,0.7s
VSL Vilasalto 71.84 306 *e*P P 09 14 05.8 -0.9
comp=Z,12nm,1.2s
BBOO Buckleboo 71.99 149 *e*P P 09 14 08.6 +1.1
comp=Z,133nm,1.9s
OHAK Old Harbor 72.16 33 *e*P P 09 14 08.4 +0.2
comp=Z,196nm,1.9s
KDAK Kodiak Island 72.20 33 P P 09 14 21.5 +13
comp=Z,18nm,0.7s,baz=320,slow=5.8,SNR=9.3
KDAK Kodiak Island 72.20 33 *i* P P 09 14 07.1 -1.4
SUMG Summit 72.65 348 *i* P P 09 14 15.3 +3.9
comp=Z,10nm,0.9s
SUMG Summit 72.65 348 *e*P P 09 14 09.1 -2.3
SUMG pmax pmax
comp=Z,41nm,1.6s
SUMG Summit 72.65 348 *e*P P 09 14 09.1 -2.3
comp=Z,41nm,1.6s
EGAK Eagle 72.84 23 *e*P P 09 14 10.1 -2.1
comp=Z,8.9nm,1.0s
INK Inuvik 72.86 18 P P 09 14 11.0 -1.2
comp=Z,11nm,0.7s,baz=327,slow=7.5,SNR=22
INK LR LR 09 51 00.5
comp=Z,337nm,18.6s,baz=289,slow=40
INK Inuvik 72.86 18 *e*P P 09 14 10.8 -1.4
INK pmax pmax
comp=Z,23nm,0.9s
INK Inuvik 72.86 18 *e*P P 09 14 10.8 -1.4
comp=Z,22nm,0.9s
MENT Mentasta 73.05 26 *e*P P 09 14 12.0 -1.4
comp=Z,9.8nm,1.0s
KEST Kesra 73.53 302 P P 09 14 17.4 +0.5
comp=Z,3.9nm,0.8s,baz=90,slow=10,SNR=3.0
KEST LR LR 09 53 17.9
comp=Z,367nm,18.1s,baz=6.5,slow=41
KEST Kesra 73.53 302 *e*P P 09 14 15.7 -1.2
comp=Z,20nm,1.4s
RES Resolute Bay 73.75 4 P P 09 14 16.2 -1.1
comp=Z,14nm,0.9s,baz=17,slow=11,SNR=13
RES Resolute Bay 73.75 4 *e*P P 09 14 16.3 -1.1
RES pmax pmax
comp=Z,17nm,0.9s
RES Resolute Bay 73.75 4 *e*P P 09 14 16.3 -1.1
comp=Z,17nm,0.9s
STKA Stephens Creek 73.80 145 P P 09 14 16.4 -1.8
comp=Z,9.7nm,0.7s,baz=320,slow=6.4,SNR=11
STKA Stephens Creek 73.80 145 *e*P P 09 14 18.3 +0.1
comp=Z,9.5nm,1.5s
EIDS Eidsvold 74.10 134 *e*P P 09 14 18.2 -1.9
comp=Z,19nm,0.8s
DSB Dublin 74.81 323 *e*P P 09 14 23.4 -0.6
comp=Z,45nm,1.9s
ARMA Armidale 78.12 137 *e*P P 09 14 42.4 -0.6
comp=Z,17nm,0.9s
SKAG Skagway 78.39 26 *e*P P 09 14 44.0 0.0
comp=Z,28nm,1.0s

SFJD	**Kangerlussuaq**	**79.60**	**349**	*i* P		**P**		**09 14 54.1**	**+3.6**
	comp=Z,21nm,0.8s								
SFJD	**Kangerlussuaq**	**79.60**	**349**	*i* P		**P**		**09 14 54.1**	**+3.6**
SFJD				pmax		pmax			
	comp=Z,21nm,0.8s								
ES19	**SONSECA Array**	**80.67**	**311**	*e*P		**P**		**09 14 57.5**	**+0.6**
ESDC	**Sonseca Array**	**80.73**	**311**	P		**P**		**09 14 56.6**	**-0.7**
	comp=Z,0.1nm,0.3s,baz=60,slow=5.1,SNR=2.6								
ESDC				LR		LR		09 56 47.8	
	comp=Z,270nm,18.1s,baz=60,slow=40								
DLBC	**Dease Lake**	**81.05**	**24**	P		**P**		**09 14 59.1**	**+0.5**
	comp=Z,6.2nm,1.1s,baz=280,slow=9.5,SNR=5.2								
YKW3	**Yellowknife Ar**	**82.22**	**16**	*e*P		**P**		**09 15 03.8**	**-0.8**
	comp=Z,13nm,1.0s								
YKA	**Yellowknife Ar**	**82.28**	**16**	P		**P**		**09 15 03.4**	**-1.5**
	comp=Z,2.4nm,0.8s,baz=330,slow=5.1,SNR=35								
YKA				PKKPbc		**PKKPbc**		**09 33 32.0**	**-1.0**
	comp=Z,0.3nm,0.6s,baz=157,slow=2.2,SNR=17								
YKB5	**Yellowknife Ar**	**82.28**	**16**	*e*P		**P**		**09 15 03.7**	**-1.2**
BBB	**Bella Bella**	**86.48**	**28**	LR		LR		09 56 33.6	
	comp=Z,466nm,18.7s,baz=34,slow=37								
FCC	**Fort Churchill**	**89.39**	**8**	*e*P		**P**		**09 15 39.8**	**-0.4**
FCC				pmax		pmax			
	comp=Z,8.0nm,0.9s								
FCC	**Fort Churchill**	**89.39**	**8**	*e*P		**P**		**09 15 39.8**	**-0.4**
	comp=Z,7.8nm,0.9s								
TOA0	**Torodi Ar. Sit**	**90.83**	**286**	*e*P		**P**		**09 15 46.4**	**-1.3**
	comp=Z,9.5nm,0.9s								
TORD	**Torodi Ar. Bea**	**90.83**	**286**	P		**P**		**09 15 45.6**	**-2.1**
	comp=Z,2.6nm,0.9s,baz=69,slow=3.8,SNR=7.5								
TORD				PP		PP		09 19 32.7	+9.3
	comp=Z,2.4nm,0.9s,baz=62,slow=7.1,SNR=5.3								
TORD				LR		LR		10 01 04.3	
	comp=Z,524nm,18.0s,baz=40,slow=39								
PGC	**Sidney**	**91.11**	**28**	*e*P		**P**		**09 15 48.2**	**-0.1**
	comp=Z,84nm,1.8s								
B08A	**Colville Reser**	**92.92**	**25**	*e*P		**P**		**09 15 56.0**	**-0.8**
	comp=Z,7.7nm,1.0s								
LON	**Longmire**	**93.30**	**28**	*e*P		**P**		**09 15 58.6**	**-0.1**
LON				pmax		pmax			
	comp=Z,6.0nm,1.0s								
LON	**Longmire**	**93.30**	**28**	*e*P		**P**		**09 15 58.6**	**-0.1**
	comp=Z,6.0nm,1.0s								
LTY	**Liberty**	**93.33**	**27**	*e*P		**P**		**09 15 58.1**	**-0.7**
	comp=Z,7.8nm,0.8s								
BOSA	**Boshof**	**93.35**	**239**	P		**P**		**09 16 01.3**	**+2.2**
	comp=Z,5.7nm,1.1s,baz=104,slow=6.6,SNR=4.9								
BOSA				LR		LR		09 56 22.2	
	comp=Z,404nm,19.8s,baz=56,slow=34								
SCHQ	**Schefferville**	**93.52**	**353**	P		**P**		**09 16 02.4**	**+2.9**
	comp=Z,5.8nm,0.9s,baz=354,slow=2.2,SNR=7.2								
SCHQ				LR		LR		10 01 54.6	
	comp=Z,440nm,20.4s,baz=42,slow=38								
NEW	**Newport**	**93.80**	**24**	P		**P**		**09 16 01.4**	**+0.5**
	comp=Z,2.0nm,0.7s,baz=0.0,slow=2.0,SNR=2.5								
NEW				LR		LR		10 00 22.8	
	comp=Z,1µm,18.8s,baz=331,slow=37								
NEW	**Newport**	**93.80**	**24**	*e*P		**P**		**09 15 59.7**	**-1.2**
NEW				pmax		pmax			
	comp=Z,4.0nm,0.8s								
NEW	**Newport**	**93.80**	**24**	*e*P		**P**		**09 15 59.7**	**-1.2**
	comp=Z,4.1nm,0.8s								
ULM	**Lac du Bonnet**	**97.44**	**11**	P		Pdif		09 16 17.9	+0.5
	comp=Z,0.9nm,0.5s,baz=0.0,slow=5.1,SNR=2.2								
ULM	**Lac du Bonnet**	**97.44**	**11**	P		Pdif		09 16 18.0	+0.5
DBIC	**Dimbokro**	**99.75**	**284**	LR		LR		10 06 32.7	
	comp=Z,606nm,19.7s,baz=31,slow=38								
PDAR	**Pinedale Array**	**101.17**	**22**	P		**Pdif**		**09 16 35.5**	**+1.0**
	comp=Z,0.1nm,0.5s,baz=343,slow=2.8,SNR=2.8								
PDAR				PP		PP		**09 20 48.1**	**+5.8**
	comp=Z,0.2nm,0.6s,baz=324,slow=4.5,SNR=2.3								
NVAR	**Mina Array Bea**	**101.62**	**30**	PP		PP		09 20 52.4	+6.5
	comp=Z,0.5nm,0.8s,baz=302,slow=6.8,SNR=4.1								
TXAR	**Lajitas Array**	**115.34**	**24**	PKP		**PKPdf**		**09 21 23.4**	**-2.6**
	comp=Z,0.2nm,0.5s,baz=151,slow=2.1,SNR=3.1								
TXAR				PKKPab		**PKKPbc**		**09 32 02.1**	**+2.2**
	comp=Z,0.5nm,0.7s,baz=157,slow=6.8,SNR=4.4								
PPT2	**Papeete2**	**115.46**	**96**	*e*PS		PS		09 32 06.7	-1.9
	comp=Z,128nm,25.8s								
PPT2				*e*SS		SS		09 38 26.9	+0.1
	comp=Z,190nm,26.2s								
PPT2	**Papeete2**	**115.46**	**96**	*e*LR		LR		09 56 21.2	
	comp=Z,495nm,25.5s								
JCT	**Junction City**	**115.50**	**20**	*e*PKIKP		**PKPdf**		**09 21 24.7**	**-1.5**
JCT	**Junction City**	**115.50**	**20**	*e*PKPdf		**PKPdf**		**09 21 24.7**	**-1.5**
TBI	**Tubuai**	**118.03**	**102**	*e*SP		SP		09 32 25.6	-3.9
	comp=Z,64nm,23.8s								
TBI				*e*SS		**SS**		**09 38 55.4**	**-4.6**
	comp=Z,739nm,38.2s								
TBI	**Tubuai**	**118.03**	**102**	*e*LR		LR		09 57 32.5	
	comp=Z,424nm,24.2s								
TAOE	**Nuku Hiva Isla**	**119.35**	**82**	*e*LR		LR		09 58 07.1	
	comp=Z,317nm,24.0s								
SNAA	**Sanae**	**123.68**	**202**	*e*PKIKP		**PKPdf**		**09 21 41.7**	**+1.2**
SNAA	**Sanae**	**123.68**	**202**	*e*PKPdf		**PKPdf**		**09 21 41.7**	**+1.2**
VNA2	**Neumayer--Watz**	**125.20**	**202**	PKP		**PKPdf**		**09 21 45.2**	**+1.8**
	baz=86,slow=2.2								
VNA3	**Neumayer Olymp**	**125.90**	**202**	PKP		**PKPdf**		**09 21 46.6**	**+1.8**
RKT	**Rikitea**	**130.20**	**95**	*e*SS		SS		09 41 30.4	-3.5
	comp=Z,539nm,29.5s								
RKT	**Rikitea**	**130.20**	**95**	*e*LR		LR		10 03 00.7	
	comp=Z,421nm,37.5s								
ROSC	**El Rosal**	**143.73**	**352**	PKP		PKPbc		09 22 17.4	-0.1
	comp=Z,9.0nm,0.7s,baz=135,slow=20,SNR=16								
CHIC	**Chingaza**	**143.86**	**351**	*e*P		PKPbc		09 22 18.7	+0.7
VILC	**Villavicencio,**	**144.36**	**350**	*e*P		**PKPdf**		**09 22 22.2**	**+1.3**
CRUC	**La Cruz**	**147.21**	**356**	*e*P		**PKPdf**		**09 22 26.5**	**+0.4**
BDFB	**Brasilia**	**147.53**	**292**	PKPbc		**PKPbc**		**09 22 28.0**	**-0.7**
	comp=Z,6.5nm,1.0s,baz=180,slow=1.0,SNR=3.4								
CMBC	**Cumbal**	**147.88**	**357**	*e*P		**PKPdf**		**09 22 26.6**	**-0.6**
OTAV	**Otavalo**	**148.59**	**359**	*e*PKPbc		**PKPbc**		**09 22 29.9**	**-2.1**
OTAV	**Otavalo**	**148.59**	**359**	*e*P		**PKPdf**		**09 22 28.9**	**+0.4**
LPAZ	**La Paz**	**161.93**	**323**	PKP		**PKPdf**		**09 22 45.5**	**-1.0**
	comp=Z,5.0nm,1.1s,baz=334,slow=2.4,SNR=6.2								
LPAZ	**La Paz**	**161.93**	**323**	*e*PKIKP		**PKPdf**		**09 22 45.0**	**-1.4**
LPAZ	**La Paz**	**161.93**	**323**	*e*PKPdf		**PKPdf**		**09 22 45.0**	**-1.4**

IDC ***10*** *09:17:17.7±1.9, 38°.36N×144°.27E, h0km, mb3.6/4, mb1 3.7/5, mb1mx3.3/56, mbtmp3.6/5, ML3.4/1, MS4.5/1, Ms1 4.5/1, ms1mx3.3/38, Error ellipse: s-maj=49.2km s-min=27.8km az=83.0*

ISCJB ***10*** *09:17:20.2±1.0, 38°.39N±0°.06×143°.93E±0°.07, h14km, mb3.7/4, MS4.5/1, Error ellipse: s-maj=9.0km s-min=8.0km az=167.3*

JMA ***10*** *09:17:22.6±0.2, 38°.44N×143°.89E, h34km, M3.9*

ISC 10 09:17:20.7±1.4, 38°.39N±0°.07×144°.0E±0°.1, h14km, n17, σ0s91/25, mb3.7/4, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**2.06**	**273**	P	**Pn**	**09 17 55.2**	**+0.3**
JIO				S	**Sn**	**09 18 18.2**	**-2.2**
JMK	**Ichinoseki**	**2.23**	**285**	P	**Pn**	**09 17 57.6**	**+0.4**
JMK				S	**Sn**	**09 18 23.8**	**-0.7**
JTH	**Tanohata**	**2.25**	**314**	P	**Pn**	**09 17 57.8**	**+0.2**
JTH				*e*S	**Sn**	**09 18 24.3**	**-0.9**
JOM	**Ohasama**	**2.35**	**298**	P	**Pn**	**09 17 59.6**	**+0.7**
JOM				S	**Sn**	**09 18 27.2**	**-0.4**
JMM	**Marumori**	**2.56**	**259**	P	**Pn**	**09 18 01.9**	**+0.1**
JMM				S	**Sn**	**09 18 31.6**	**-1.1**
JOU	**Okura**	**2.60**	**270**	P	**Pn**	**09 18 03.3**	**+0.9**
JOU				*e*S	**Sn**	**09 18 33.3**	**-0.4**
JFK	**Kawauchi**	**2.65**	**248**	P	**Pn**	**09 18 02.9**	**-0.2**
JANG	**Nango**	**2.75**	**317**	P	**Pn**	**09 18 04.6**	**+0.2**
JRG	**Rokugo**	**2.79**	**292**	P	**Pn**	**09 18 06.0**	**+1.0**
JRG				*e*S	**Sn**	**09 18 38.2**	**-0.2**
JYK	**Kaneyama**	**2.88**	**282**	P	**Pn**	**09 18 07.2**	**+1.1**
JYK				*e*S	**Sn**	**09 18 40.8**	**+0.2**
JFT	**Otama**	**3.00**	**254**	P	**Pn**	**09 18 09.1**	**+1.2**
JFT				S	**Sn**	**09 18 42.9**	**-0.8**
MJAR	**Matsushiro Arr**	**4.94**	**250**	Pn	**Pn**	**09 18 36.3**	**+1.8**
	1.3nm,0.3s,baz=58,slow=12,SNR=15						
TIXI	**Tiksi**	**34.22**	**352**	P	**P**	**09 24 05.2**	**-0.2**
	0.9nm,0.3s,baz=107,slow=1.0,SNR=3.8						
MKAR	**Makanchi Array**	**45.13**	**301**	P	**P**	**09 25 37.1**	**+0.5**
	0.2nm,0.3s,baz=90,slow=8.6,SNR=2.5						
KURBB	**Kurchatov Arra**	**46.78**	**307**	P	**P**	**09 25 50.2**	**+0.7**
	0.2nm,0.4s,baz=82,slow=8.1,SNR=3.7						
DLBC	**Dease Lake**	**56.30**	**39**	LR	LR	09 50 27.6	
	comp=Z,464nm,21.8s,baz=264,slow=35						
WRA	**Warramunga Arr**	**58.72**	**191**	P	**P**	**09 27 17.3**	**-0.8**
	0.7nm,1.0s,baz=13,slow=7.5,SNR=3.6						

IDC 10 09:18:18.5±3.0, 54°.61N×86°.69E, h0km, mb1 3.3/2, mb1mx3.0/55, mbtmp3.3/2, ML2.8/2, Error ellipse: s-maj=23.7km s-min=17.6km az=54.0, Southwestern Siberia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
I46RU	**ZALESOVO INFRA**	**1.28**	**240**	*i*		09 27 10.0	
	baz=62,slow=325,SNR=2.7						
ZALV	**Zalesovo Beam**	**1.28**	**240**	Pg	Pg	09 18 41.2	-1.9
	2.4nm,0.3s,baz=59,slow=16,SNR=24						
ZALV				Lg	Lg	09 18 58.7	
	2.4nm,0.3s,baz=54,slow=26,SNR=7.5						
KURBB	**Kurchatov Arra**	**6.38**	**235**	Pn	Pn	09 19 54.5	+0.9
	0.1nm,0.3s,baz=52,slow=14,SNR=11						
KURBB				Sn	Sn	09 21 07.0	0.0
	baz=49,slow=25,SNR=2.1						
KURBB				Lg	Lg	09 21 40.7	
	0.0nm,0.3s,baz=55,slow=34,SNR=5.1						
MKAR	**Makanchi Array**	**8.31**	**201**	Pn	Pn	09 20 21.0	+0.8
	0.2nm,0.3s,baz=23,slow=13,SNR=5.2						
MKAR				Sn	Sn	09 21 54.9	+0.2
	0.1nm,0.3s,baz=28,slow=25,SNR=7.2						
MKAR				Lg	Lg	09 22 44.6	
	baz=39,slow=30,SNR=2.8						

ISCJB ***10*** *09:19:16.9±0.5, 37°.23N±0°.04×28°.17E±0°.04, h0km, Error ellipse: s-maj=6.7km s-min=3.5km az=40.8*

CSEM ***10*** *09:19:16.9±0.3, 37°.19N×28°.14E, h2km, MD2.8, Error ellipse: s-maj=7.6km s-min=4.4km az=38.0, Suspected Mining explosion.*

ISK ***10*** *09:19:16.1, 37°.17N×28°.13E, h5km, MD2.8*

DDA ***10*** *09:19:16.4, 37°.22N×28°.15E, h7km, Ml2.6, Suspected Mining explosion.*

ISC 10 09:19:15.7±0.9, 37°.16N±0°.03×28°.09E±0°.03, h0km, n18, σ0s73/28, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
YER	**Yerkesik**	**0.15**	**98**	*e*Pg	**Pg**	**09 19 18.9**	**+0.3**
YER				*e*Sg	**Sg**	**09 19 22.0**	**+1.4**
YER	**Yerkesik**	**0.15**	**98**	*e*Pg	**Pg**	**09 19 18.9**	**+0.3**
YER				*e*Sg	**Sg**	**09 19 22.0**	**+1.4**
TURN	**Turunc**	**0.50**	**124**	*i* P	**Pg**	**09 19 24.7**	**-0.5**
TURN				*i* S	**Sg**	**09 19 32.5**	**+0.9**
TURN	**Turunc**	**0.50**	**124**	P	**Pg**	**09 19 24.7**	**-0.5**
TURN				S	**Sg**	**09 19 32.5**	**+0.9**
BDRM	**Kayabasi**	**0.52**	**260**	*i* P	**Pb**	**09 19 28.2**	**+0.5**
BDRM				*i* S	**Sn**	**09 19 38.5**	**-1.5**
BDRM	**Kayabasi**	**0.52**	**260**	P	**Pb**	**09 19 28.2**	**+0.5**
BDRM				S	**Sn**	**09 19 38.5**	**-1.5**
AYDN	**Tasoluk**	**0.53**	**342**	*i* P	**Pg**	**09 19 25.9**	**0.0**
AYDN				*i* S	**Sg**	**09 19 33.4**	**+0.7**
AYDN	**Tasoluk**	**0.53**	**342**	P	**Pg**	**09 19 25.9**	**0.0**
AYDN				S	**Sg**	**09 19 33.4**	**+0.7**
DALY	**Dalyan (Mu¨la**	**0.56**	**127**	*e*PG	**Pb**	**09 19 28.1**	**-0.3**
DALY				*e*SG	**Sb**	**09 19 36.8**	**-0.2**
DALY	**Dalyan (Mu¨la**	**0.56**	**127**	*e*Pg	**Pb**	**09 19 28.1**	**-0.3**
DALY				*e*Sg	**Sb**	**09 19 36.8**	**-0.2**
BODT	**Bodrum**	**0.63**	**262**	*e*PG	**Pb**	**09 19 30.3**	**+0.7**
BODT	**Bodrum**	**0.63**	**262**	*e*Pg	**Pb**	**09 19 30.3**	**+0.7**
AYDB	**Zeytinkoy-Aydi**	**0.81**	**349**	*e*PG	**Pb**	**09 19 32.6**	**0.0**
AYDB	**Zeytinkoy-Aydi**	**0.81**	**349**	*e*Pg	**Pb**	**09 19 32.6**	**0.0**
FETY	**Fethiye**	**0.95**	**123**	*e*PG	**Pb**	**09 19 35.2**	**+0.3**
FETY	**Fethiye**	**0.95**	**123**	*e*Pg	**Pb**	**09 19 35.3**	**+0.3**
DENT	**Denizli**	**0.96**	**51**	*e*PG	**Pb**	**09 19 35.0**	**-0.1**
DENT	**Denizli**	**0.96**	**51**	*e*Pg	**Pb**	**09 19 35.1**	**-0.1**

MEX ***10*** *09:25:25.6±0.6, 16°.20N×99°.43W, h17km±33km, MD4.2*

NEIC ***10*** *09:25:25.6, 16°.20N×99°.43W, h17km, MD4.2(MEX), After MEX.*

IDC ***10*** *09:25:25.4±6.3, 16°.53N×99°.11W, h0km, mb3.9/6, mb1 4.1/8, mb1mx3.8/44, mbtmp3.8/8, ML3.0/2, MS3.3/1, Ms1 3.3/1, ms1mx2.7/42, Error ellipse: s-maj=117.9km s-min=37.5km az=5.0*

ISC 10 09:25:21.6±1.7, 16°.28N±0°.07×99°.40W±0°.03, h1km±10km, n37, σ1s46/54, mb3.9/7, Near coast of Guerrero

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ACX	**Acapulco**	**0.74**	**323**	*e*P	**Pg**	**09 25 36.1**	**+0.3**
ACX				*i* S	**Sg**	**09 25 45.8**	**+0.4**
ACX	**Acapulco**	**0.74**	**323**	*e*P	**Pg**	**09 25 36.1**	**+0.3**
ACX				*i* S	**Sg**	**09 25 45.8**	**+0.4**
ACP2	**Acapulco**	**0.76**	**322**	*e*P	**Pn**	**09 25 38.4**	**-1.2**
ACP2				*i* S	**Sb**	**09 25 47.8**	**-0.7**
CAIG	**El Cayaco**	**1.13**	**313**	*i* P	**Pg**	**09 25 43.9**	**+0.5**
CAIG				*i* S	**Sb**	**09 25 57.5**	**-1.9**
CAIG	**El Cayaco**	**1.13**	**313**	*i* P	**Pg**	**09 25 43.9**	**+0.5**
CAIG				*i* S	**Sb**	**09 25 57.5**	**-1.9**
PNIG	**Pinotepa**	**1.22**	**85**	*e*P	**Pn**	**09 25 45.0**	**-1.0**
PNIG				*e*S	**Sb**	**09 26 00.4**	**-1.6**
PNIG	**Pinotepa**	**1.22**	**85**	*e*P	**Pn**	**09 25 45.0**	**-1.0**
PNIG				*e*S	**Sb**	**09 26 00.4**	**-1.6**
TLIG	**Tlapa**	**1.50**	**32**	*e*P	**Pb**	**09 25 49.5**	**-0.9**
TLIG				*e*S	**Sn**	**09 26 08.5**	**-1.7**
MEIG	**Mezcala**	**1.65**	**353**	*e*P	**Pb**	**09 25 52.1**	**-0.8**
MEIG				*e*S	**Sn**	**09 26 12.2**	**-1.6**
MEIG	**Mezcala**	**1.65**	**353**	*e*P	**Pb**	**09 25 52.1**	**-0.8**
MEIG				*e*S	**Sn**	**09 26 12.2**	**-1.6**
HMTT	**Tlapaneco**	**1.71**	**28**	*e*P	**Pn**	**09 25 52.5**	**-0.3**
HMTT				*e*S	**Sb**	**09 26 14.4**	**-1.6**
PLIG	**Platanillo**	**2.10**	**357**	*e*P	**Pb**	**09 25 58.8**	**-1.9**
PLIG				*e*S	**Sn**	**09 26 23.7**	**-1.3**
PLIG	**Platanillo**	**2.10**	**357**	*e*P	**Pb**	**09 25 58.8**	**-1.9**
PLIG				*e*S	**Sn**	**09 26 23.7**	**-1.3**
ARIG	**Puente Sto Nin**	**2.19**	**336**	*e*P	**Pb**	**09 26 00.7**	**-1.4**
ARIG				*e*S	**Sn**	**09 26 25.1**	**-1.9**
ZIIG	**Zihuatanejo**	**2.38**	**304**	*e*P	**Pn**	**09 26 01.9**	**0.0**
ZIIG				*e*S	**Sn**	**09 26 29.0**	**-2.8**
ZIIG	**Zihuatanejo**	**2.38**	**304**	*e*P	**Pn**	**09 26 01.9**	**0.0**
ZIIG				*e*S	**Sn**	**09 26 29.0**	**-2.8**
YAIG	**Yautepec**	**2.59**	**7**	*e*P	**Pn**	**09 26 05.7**	**+0.9**
YAIG				*e*S	**Sn**	**09 26 36.5**	**-0.6**
YAIG	**Yautepec**	**2.59**	**7**	*e*P	**Pn**	**09 26 05.7**	**+0.9**
YAIG				*e*S	**Sn**	**09 26 36.5**	**-0.6**
VHO	**Vista Hermosa**	**2.67**	**72**	*e*P	**Pn**	**09 26 06.4**	**+0.3**
VHO				*e*S	**Sn**	**09 26 36.8**	**-2.3**
VHO	**Vista Hermosa**	**2.67**	**72**	*e*P	**Pn**	**09 26 06.4**	**+0.3**
VHO				*e*S	**Sn**	**09 26 36.8**	**-2.3**
PPM	**Popocatepetl**	**2.87**	**15**	*e*P	Pn	09 26 03.1	-5.9
PPM				*i* S	**Sn**	**09 26 43.4**	**-1.1**
PPM	**Popocatepetl**	**2.87**	**15**	*e*P	Pn	09 26 03.1	-5.9
PPM				*i* S	**Sn**	**09 26 43.4**	**-1.1**
TPIG	**Tehuac#an**	**2.88**	**42**	*e*P	**Pn**	**09 26 09.5**	**+0.6**
TPIG				*e*S	**Sn**	**09 26 43.7**	**-0.7**
TPIG	**Tehuac#an**	**2.88**	**42**	*e*P	**Pn**	**09 26 09.5**	**+0.6**
TPIG				*e*S	**Sn**	**09 26 43.7**	**-0.7**
MMIG	**Aquila**	**4.27**	**298**	*e*P	Pb	09 26 32.4	-5.2
MMIG				*e*S	Sg	09 27 48.1	+9.2
MMIG	**Aquila**	**4.27**	**298**	*e*P	Pb	09 26 32.4	-5.2
MMIG				*e*S	Sg	09 27 48.1	+9.2
TEIG	**Tepich**	**11.27**	**68**	Pn	**Pn**	**09 28 04.5**	**+0.5**
	0.1nm,0.3s,baz=90,slow=20,SNR=1.8						
TEIG				Sn	Sn	09 30 01.7	-9.0
	0.1nm,0.3s,baz=90,slow=20,SNR=2.2						
TXAR	**Lajitas Array**	**13.57**	**344**	Pn	**P**	**09 28 42.1**	**-2.7**
	0.0nm,0.3s,baz=104,slow=7.5,SNR=2.0						
ANMO	**Albuquerque**	**19.64**	**343**	P	**Pn**	**09 29 54.9**	**+1.6**
	0.0nm,0.3s,baz=164,slow=12,SNR=4.0						
TKL	**Tuckaleechee C**	**23.81**	**33**	P	**P**	**09 30 36.1**	**0.0**
	3.1nm,0.9s,baz=183,slow=7.6,SNR=4.9						
NVAR	**Mina Array Bea**	**27.62**	**327**	P	P	09 31 19.5	+8.5
	1.9nm,1.0s,baz=141,slow=9.8,SNR=9.1						
PDAR	**Pinedale Array**	**27.80**	**344**	P	**P**	**09 31 15.7**	**+3.1**
	1.8nm,1.0s,baz=140,slow=9.4,SNR=6.8						
SADO	**Sadowa**	**33.14**	**27**	LR	LR	09 46 42.0	
	comp=Z,48nm,20.8s,baz=224,slow=39						
ULM	**Lac du Bonnet**	**34.00**	**4**	P	**P**	**09 32 08.1**	**+1.1**
	4.0nm,1.1s,baz=195,slow=10,SNR=3.4						
YKA	**Yellowknife Ar**	**47.39**	**350**	P	**P**	**09 33 58.8**	**+1.6**
	1.3nm,1.0s,baz=158,slow=7.4,SNR=11						
INK	**Inuvik**	**56.34**	**345**	P	**P**	**09 35 06.0**	**+2.0**
	1.5nm,0.9s,baz=127,slow=11,SNR=5.8						
ILAR	**Eielson Array**	**58.01**	**338**	P	P	09 35 18.9	+3.1
	1.0nm,1.0s,baz=151,slow=4.9,SNR=7.6						

IDC 10 09:27:26.5±3.3, 36°.69S×98°.22W, h0km, mb4.0/6, mb1 4.3/6, mb1mx3.9/40, mbtmp4.0/6, MS3.7/8, Ms1 3.7/8, ms1mx3.6/22, Error ellipse: s-maj=96.1km s-min=30.3km az=31.0, Southeast of Easter Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PLCA	**Paso Flores**	**21.92**	**109**	P	P	09 32 21.5	0.0
	3.5nm,1.1s,baz=352,slow=7.1,SNR=2.3						
PLCA				LR	LR	09 38 52.6	
	comp=Z,217nm,19.7s,baz=308,slow=31						
LPAZ	**La Paz**	**33.52**	**61**	P	P	09 34 07.9	-0.7
	3.1nm,1.0s,baz=189,slow=7.4,SNR=8.2						
LPAZ				LR	LR	09 43 22.8	
	comp=Z,27nm,21.2s,baz=261,slow=28						
ATAH	**Atahualpa**	**34.54**	**36**	LR	LR	09 43 56.1	
	comp=Z,211nm,21.1s,baz=238,slow=29						
CPUP	**Villa Florida**	**36.12**	**85**	LR	LR	09 46 56.4	
	comp=Z,108nm,19.7s,baz=243,slow=32						
ROSC	**El Rosal**	**46.97**	**34**	LR	LR	09 52 41.8	
	comp=Z,66nm,18.4s,baz=235,slow=32						
BDFB	**Brasilia**	**49.08**	**78**	LR	LR	09 55 34.2	
	comp=Z,140nm,18.4s,baz=240,slow=34						
PTGA	**Pitinga**	**50.31**	**54**	LR	LR	09 55 00.4	
	comp=Z,77nm,20.2s,baz=224,slow=33						
RAR	**Rarotonga**	**55.16**	**268**	LR	LR	09 54 06.3	
	comp=Z,112nm,21.6s,baz=276,slow=29						
TXAR	**Lajitas Array**	**65.88**	**355**	P	P	09 38 15.1	+1.0
	0.5nm,0.9s,baz=168,slow=6.4,SNR=3.6						
NVAR	**Mina Array Bea**	**77.02**	**344**	P	P	09 39 19.7	-1.6
	0.6nm,0.9s,baz=170,slow=4.0,SNR=4.6						
PDAR	**Pinedale Array**	**79.76**	**352**	P	P	09 39 36.1	-0.2
	0.8nm,0.8s,baz=165,slow=6.2,SNR=3.7						
SCHQ	**Schefferville**	**95.06**	**18**	P	P	09 40 52.5	+1.8
	2.3nm,0.6s,baz=234,slow=8.9,SNR=5.3						

MEX 10 09:29:26.8±0.8, 16°.26N×99°.42W, h16km±20km, MD3.7, Near coast of Guerrero

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ACX	**Acapulco**	**0.73**	**325**	*e*P	Pg	09 29 36.8	-4.4
ACX				*e*S	Sg	09 29 46.0	-5.0
ACP2	**Acapulco**	**0.76**	**324**	*e*P	Pg	09 29 39.3	-2.3
ACP2				*e*S	Sg	09 29 48.4	-3.2
CAIG	**El Cayaco**	**1.13**	**314**	*i* P	Pb	09 29 44.4	-3.6
CAIG				*e*S	Sb	09 29 57.3	-5.1
PNIG	**Pinotepa**	**1.25**	**84**	*e*P	Pn	09 29 45.3	-4.3
PNIG				*e*S	Sb	09 30 00.8	-5.0
TLIG	**Tlapa**	**1.53**	**32**	*e*P	Pn	09 29 49.9	-3.7
TLIG				*e*S	Sn	09 30 07.8	-5.4
MEIG	**Mezcala**	**1.66**	**353**	*e*P	Pn	09 29 52.9	-2.5
MEIG				*e*S	Sn	09 30 10.9	-5.6
PLIG	**Platanillo**	**2.12**	**358**	*e*P	Pn	09 29 59.3	-2.4
PLIG				*e*S	Sn	09 30 22.8	-4.9
ARIG	**Puente Sto Nin**	**2.19**	**336**	*e*P	Pn	09 29 59.8	-2.8
ARIG				*e*S	Sn	09 30 24.6	-4.8

IDC 10 09:32:51.7±3.1, 36°.38N×142°.51E, h0km, mb3.5/3, mb1 3.5/4, mb1mx3.3/44, mbtmp3.3/4, ML2.7/1, Error ellipse: s-maj=85.1km s-min=30.2km az=58.0, Off east coast of Honshu

| Code | Station Name | Δ° | AZ° | Phase ID Op | ISC | Time h m s | Res ISC |

YKA **Yellowknife Ar 22.63 351** P **P** **09 38 42.9 -0.1**
0.8nm,0.8s,baz=157,slow=12,SNR=8.6

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*IDC **10** 09:34:41.8±0.9, 37°23.23'N × 144°11.49'E, h0km, mb3.6/7, mb1 3.7/10, mb1mx3.5/48, mbtmp3.6/10, ML3.4/3, Error ellipse: s-maj=27.3km s-min=17.7km az=109.0*
*ISCJB **10** 09:34:44.4±0.7, 37°35.05'N±0°04.05'× 143°51.91'E±0°06.53'km, mb3.6/7, Error ellipse: s-maj=6.6km s-min=6.1km az=43.4*
*JMA **10** 09:34:45.2±0.4, 37°29.14'N × 143°53.83'E, h52km, M3.6*
ISC 10 09:34:46.4±1.0, 37°37.57'N±0°06.03'× 143°38.49'E±0°09.03', h35km, n32, σ1§97/32, mb3.7/7, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**2.25**	**300**	P	**Pn**	**09 35 21.4**	**+0.3**
JIO				S	**Sn**	**09 35 48.1**	**+0.5**
JFK	**Kawauchi**	**2.36**	**271**	P	**Pn**	**09 35 22.6**	**-0.1**
JFK				*e*S	**Sn**	**09 35 50.9**	**+0.4**
ONAJ	**Iwakimizuishiy**	**2.44**	**265**	P	**Pn**	**09 35 23.6**	**-0.2**
ONAJ				S	**Sn**	**09 35 51.6**	**-0.9**
JMK	**Ichinoseki**	**2.60**	**308**	P	**Pn**	**09 35 27.0**	**+1.1**
JFT	**Otama**	**2.79**	**274**	P	**Pn**	**09 35 29.6**	**+1.0**
JOM	**Ohasama**	**2.90**	**317**	P	**Pn**	**09 35 30.6**	**+0.5**
JOM				S	**Sn**	**09 36 04.7**	**+1.0**
JYK	**Kaneyama**	**3.15**	**300**	P	**Pn**	**09 35 34.6**	**+1.1**
JYK				*e*S	**Sn**	**09 36 11.6**	**+1.7**
JANG	**Nango**	**3.50**	**330**	P	**Pn**	**09 35 38.9**	**+0.5**
JANG				S	**Sn**	**09 36 17.4**	**-1.2**
JRY	**Ryogami san**	**4.19**	**253**	P	**Pn**	**09 35 47.2**	**-0.7**
MJAR	**Matsushiro Arr**	**4.58**	**261**	P	**Pn**	**09 35 54.3**	**+1.0**
	2.0nm,0.3s,baz=87,slow=15,SNR=12						
MAT	**Matsushiro**	**4.58**	**261**	P	**Pn**	**09 35 54.7**	**+1.4**
MAT				S	**Sn**	**09 36 48.1**	**+2.8**
JCH	**Churui**	**5.25**	**356**	*e*S	**Sn**	**09 36 58.0**	**-3.6**
JHJ2	**Mitsune**	**5.37**	**219**	*e*S	**Sn**	**09 37 00.9**	**-3.9**
JHJ	**Hachijo jima 2**	**5.38**	**219**	Pn	**Pn**	**09 36 02.5**	**-1.7**
	7.4nm,0.3s,baz=74,slow=20,SNR=6.6						
JHJ				Sn	Sn	09 36 58.3	-6.8
	11nm,0.3s,baz=234,slow=19,SNR=4.8						
NEM2	**Nemuro 2**	**6.16**	**13**	P	Pn	09 36 11.6	-3.3
JIE	**Ise**	**6.51**	**245**	S	**Sn**	**09 37 28.2**	**-4.5**
JHR	**Hokuryu**	**6.56**	**346**	S	**Sn**	**09 37 35.1**	**+1.1**
JTKR	**Abashiri--Toko**	**6.59**	**0**	P	**Pn**	**09 36 19.1**	**-1.7**
JTKR				S	**Sn**	**09 37 29.5**	**-5.2**
KLR	**Kul'dur**	**14.74**	**327**	Pn	**P**	**09 38 15.9**	**-2.0**
	0.1nm,0.3s,baz=119,slow=19,SNR=2.3						
SEY	**Seymchan**	**26.12**	**9**	P	**P**	**09 40 18.5**	**+1.7**
	1.8nm,0.7s,baz=193,slow=8.0,SNR=7.9						
H11N2	**WAKE ISLAND Hy**	**26.70**	**125**	T	T	10 06 23.2	
	baz=316,slow=75,SNR=25						
H11N1	**WAKE ISLAND Hy**	**26.71**	**125**	T	T	10 06 21.4	
	baz=316,slow=75,SNR=36						
H11N3	**WAKE ISLAND Hy**	**26.72**	**125**	T	T	10 06 22.1	
	baz=316,slow=75,SNR=31						
H11S1	**WAKE ISLAND Hy**	**27.46**	**127**	T	T	10 07 16.7	
	baz=318,slow=76,SNR=33						
H11S3	**WAKE ISLAND Hy**	**27.46**	**127**	T	T	10 07 15.7	
	baz=318,slow=76,SNR=34						
H11S2	**WAKE ISLAND Hy**	**27.48**	**127**	T	T	10 07 17.7	
	baz=318,slow=76,SNR=39						
MKAR	**Makanchi Array**	**45.58**	**302**	P	**P**	**09 43 04.3**	**+1.4**
	0.3nm,0.6s,baz=89,slow=11,SNR=3.0						
KURBB	**Kurchatov Arra**	**47.32**	**308**	P	P	09 43 20.0	+3.6
	0.3nm,0.6s,baz=84,slow=8.2,SNR=2.9						
ILAR	**Eielson Array**	**48.17**	**33**	P	**P**	**09 43 22.6**	**-0.3**
	0.7nm,0.9s,baz=258,slow=6.1,SNR=5.7						
INK	**Inuvik**	**53.20**	**27**	P	**P**	**09 44 01.1**	**+0.4**
	0.7nm,0.6s,baz=312,slow=7.3,SNR=8.6						
WRA	**Warramunga Arr**	**57.70**	**191**	P	**P**	**09 44 33.9**	**+0.2**
	0.5nm,0.5s,baz=11,slow=7.1,SNR=8.2						
ASAR	**Alice Springs**	**61.43**	**190**	P	**P**	**09 44 59.5**	**+0.3**
	0.3nm,0.7s,baz=17,slow=10,SNR=3.7						

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*ISCJB **10** 09:36:29.2±0.7, 5°23.01'N±0°05.03'× 82°68.06'W±0°06.03', h15km, mb3.5/4, Error ellipse: s-maj=9.3km s-min=4.9km az=141.0*
*IDC **10** 09:36:29.4±1.5, 5°10.96'N × 82°64.06'W, h0km, mb3.5/4, mb1 4.0/6, mb1mx3.6/35, mbtmp3.7/6, ML3.5/2, MS3.0/1, Ms1 3.0/1, ms1mx2.5/26, Error ellipse: s-maj=56.3km s-min=23.5km az=53.0*
*CASC **10** 09:36:35.7±5.0, 5°60.46'N × 82°68.08'W, h20km±130km, MD4.3*
ISC 10 09:36:31.5±1.2, 5°25.10'N±0°09.03'× 82°73.04'W±0°09.01', h15km, n29, σ1§64/29, mb3.6/4, 5D, South of Panama

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
AZU	**Azuero**	**3.51**	**44**	‖*iP*	**Pn**	**09 37 22.8**	**-2.8**
AZU				*i* S	Sn	09 37 60.0	-6.9
BRU2	**Volcan**	**3.52**	**1**	‖*iP*	**Pn**	**09 37 25.4**	**-0.5**
BRU2				*i* S	**Sn**	**09 38 05.0**	**-2.4**
TBS2		**3.52**	**1**	*i* P	**Pn**	**09 37 26.5**	**+0.6**
TBS2				*i* S	**Sn**	**09 38 04.2**	**-3.2**
QCR	**Quepos**	**4.38**	**341**	‖*iP*	**Pn**	**09 37 37.0**	**-0.7**
QCR				*e*S	Sn	09 38 21.5	-6.9
BUS	**Buena Vista**	**4.39**	**347**	‖*eP*	**Pn**	**09 37 38.2**	**0.0**
BUS				*e*S	**Sn**	**09 38 29.5**	**+0.1**
ZANG	**Zanguenga, Cho**	**4.65**	**37**	*eP*	**Pn**	**09 37 41.1**	**-0.1**
URSC	**Urasca**	**4.67**	**347**	*eP*	**Pn**	**09 37 42.3**	**+0.5**
URSC				*e*S	Sn	09 38 26.6	-9.2
BCIP	**Isla Barro Col**	**4.83**	**36**	*iP*	**Pn**	**09 37 44.1**	**+0.3**
BCIP				*i* S	**Sn**	**09 38 39.2**	**-0.3**
GRGC	**Isla de Gorgon**	**5.07**	**116**	*eP*	Pn	09 37 41.2	-5.8
JCR	**Jicaral**	**5.14**	**333**	‖*eP*	**Pn**	**09 37 47.9**	**-0.2**
JCR				*e*S	**Sn**	**09 38 43.0**	**-4.2**
SOLC	**Bahia Solano**	**5.38**	**79**	*eP*	Pn	09 37 47.7	-3.7
JTS	**JuntasAbangare**	**5.47**	**336**	Pn	**Pn**	**09 37 52.6**	**0.0**
	9.5nm,0.3s,baz=94,slow=9.9,SNR=80						
JTS				LR	LR	09 39 42.1	
	comp=Z,161nm,22.0s,baz=146,slow=34						
JTS	**JuntasAbangare**	**5.47**	**336**	*i* P	**Pn**	**09 37 52.6**	**0.0**
JTS				*i* S	**Sn**	**09 38 53.7**	**-1.7**
MALC	**Bahia Malaga**	**5.51**	**103**	*eP*	Pn	09 37 48.2	-5.0
VCR	**Vista de Mar**	**5.63**	**329**	*eP*	**Pn**	**09 37 54.6**	**-0.3**
UPD2	**Meteti**	**5.71**	**55**	*eP*	**Pn**	**09 37 57.0**	**+1.1**
CMBC	**Cumbal**	**6.50**	**131**	*eP*	Pn	09 38 03.3	-3.9
OTAV	**Otavalo**	**6.56**	**139**	*eP*	Pn	09 38 02.0	-6.0
POPC	**Popayan, Colom**	**6.61**	**114**	*eP*	Pn	09 38 04.5	-4.0
DBBC	**Dabeiba**	**6.71**	**75**	*eP*	**Pn**	**09 38 09.7**	**0.0**
CRUC	**La Cruz**	**6.83**	**122**	*eP*	**Pn**	**09 38 09.0**	**-2.6**
GUYC	**Guyana, Colomb**	**7.31**	**90**	*eP*	**Pn**	**09 38 18.3**	**0.0**
MOTC	**Monteria, Cord**	**7.84**	**63**	*eP*	**Pn**	**09 38 26.3**	**+1.2**
CHIC	**Chingaza**	**8.98**	**94**	*eP*	**Pn**	**09 38 41.4**	**+0.1**
SDV	**Santo Domingo**	**12.53**	**73**	Pn	**Pn**	**09 39 30.1**	**+0.5**
	0.3nm,0.3s,baz=277,slow=11,SNR=9.1						
LPAZ	**La Paz**	**25.82**	**146**	P	**P**	**09 42 01.3**	**-1.8**
	1.2nm,0.7s,baz=346,slow=6.2,SNR=4.9						
PDAR	**Pinedale Array**	**44.28**	**332**	P	**P**	**09 44 42.9**	**+1.9**
	0.6nm,1.0s,baz=125,slow=7.8,SNR=3.1						
NVAR	**Mina Array Bea**	**46.18**	**321**	P	**P**	**09 44 58.8**	**+2.7**
	0.8nm,0.9s,baz=141,slow=9.2,SNR=5.2						
YKA	**Yellowknife Ar**	**61.76**	**344**	P	**P**	**09 46 49.9**	**+0.7**
	0.3nm,0.8s,baz=140,slow=6.4,SNR=6.5						

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*ISCJB **10** 09:48:54.6±0.5, 38°80.10'N±0°03.05'× 122°72.10'W±0°06.06', h8km, Error ellipse: s-maj=7.0km s-min=4.4km az=160.0*
*IDC **10** 09:48:54.9±3.1, 38°86.10'N × 122°77.10'W, h0km, mb1 3.4/4, mb1mx3.1/48, mbtmp2.9/4, ML3.3/4, Error ellipse: s-maj=42.3km s-min=12.4km az=39.0*
*NEIC **10** 09:48:54.4, 38°76.10'N × 122°74.10'W, h2km, ML3.3(NCEDC), After NCEDC.*
ISC 10 09:48:55.3±0.9, 38°78.10'N±0°04.06'× 122°73.10'W±0°06.06', h8km, n20, σ1§45/23, Northern California

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
HOPS	**Hopland Field**	**0.34**	**309**	*e*Pg	**Pg**	**09 49 01.9**	**-0.2**
MCCM	**Marconi Confer**	**0.64**	**191**	*e*Pg	**Pg**	**09 49 07.1**	**-0.5**
MCCM				*e*Sg	**Sb**	**09 49 17.7**	**-0.1**
O03D	**Paynes Creek**	**1.68**	**25**	P	**Pn**	**09 49 23.0**	**-2.0**
	baz=206						
WDC	**Whiskeytown Da**	**1.81**	**5**	*e*Pn	**Pn**	**09 49 25.3**	**-1.5**
CMB	**Columbia Colle**	**1.98**	**111**	*e*Pn	**Pn**	**09 49 27.9**	**-1.3**
CMB				*e*Sn	**Sn**	**09 49 53.2**	**-1.0**
SAO	**San Andreas Ge**	**2.25**	**153**	*e*Pn	**Pn**	**09 49 30.4**	**-2.4**
M02C	**Callahan**	**2.62**	**358**	Pb	**Pb**	**09 49 41.2**	**-1.3**
	baz=178						
YBH	**Yreka Blue Hor**	**2.95**	**0**	Pn	**Pn**	**09 49 43.2**	**+0.6**
	0.6nm,0.3s,baz=172,slow=6.1,SNR=12						
YBH	**Yreka Blue Hor**	**2.95**	**0**	*e*Pn	**Pn**	**09 49 43.6**	**+1.0**
MLAC	**Mammoth, Mammo**	**3.27**	**109**	P	**Pn**	**09 49 48.1**	**+1.0**
	baz=291						
NVAR	**Mina Array Bea**	**3.48**	**94**	Pn	**Pn**	**09 49 50.0**	**0.0**
	0.9nm,0.3s,baz=269,slow=15,SNR=15						
NVAR				Pg	**Pb**	**09 49 56.7**	**-0.6**
	3.8nm,0.3s,baz=261,slow=18,SNR=37						
NVAR				Lg	Lg	09 50 44.5	
	3.2nm,0.3s,baz=246,slow=32,SNR=5.6						
MOD	**Modoc Plateau**	**3.63**	**30**	*e*Pn	**Pn**	**09 49 51.6**	**-0.4**
HUMO	**Hull Mountain**	**3.83**	**357**	*e*Pn	**Pn**	**09 49 56.8**	**+2.2**
HUMO				*e*Pg	**Pg**	**09 50 08.3**	**-0.4**
GRAC	**Grapevine Rang**	**4.59**	**111**	Pb	**Pb**	**09 50 14.9**	**-1.2**
	baz=294						
ISA	**Isabella, Lake**	**4.60**	**131**	P	Pn	**09 50 05.4**	**+0.2**
	baz=314						
DAC	**Darwin (Calif)**	**4.78**	**120**	*e*Pn	**Pn**	**09 50 09.1**	**+1.3**
ARVC	**Arvin**	**4.80**	**138**	P	**Pn**	**09 50 09.8**	**+2.0**
	baz=320						
MPMC	**Manual Prospec**	**4.97**	**121**	Sb	**Sb**	**09 51 23.4**	**+0.6**
	baz=304						
PDAR	**Pinedale Array**	**10.76**	**64**	Pn	Pn	09 51 34.2	+4.5
	0.0nm,0.3s,baz=252,slow=15,SNR=3.6						
TXAR	**Lajitas Array**	**18.36**	**115**	P	**P**	**09 53 13.6**	**+3.1**
	0.0nm,0.3s,baz=306,slow=11,SNR=3.8						

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*IDC **10** 09:49:26.7±0.9, 37°84.04'N × 144°01.00'E, h0km, mb3.7/7, mb1 3.8/9, mb1mx3.5/47, mbtmp3.7/9, ML3.5/2, MS3.8/1, Ms1 3.8/1, ms1mx2.6/51, Error ellipse: s-maj=29.9km s-min=18.1km az=101.0*
*ISCJB **10** 09:49:30.1±0.7, 37°95.04'N±0°04.05'× 143°84.05'E±0°05.04'km, mb3.6/7, MS3.8/1, Error ellipse: s-maj=6.2km s-min=6.0km az=40.8*
*JMA **10** 09:49:30.2±0.3, 37°98.04'N × 143°82.82'E, h38km, M3.9*
ISC 10 09:49:32.4±1.0, 37°97.06'N±0°06.03'× 143°82.82'E±0°08.04', h35km, n31, σ0§94/33, mb3.8/7, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**2.00**	**285**	P	**Pn**	**09 50 02.7**	**-1.0**
JIO				S	**Sn**	**09 50 26.6**	**-0.9**
JMK	**Ichinoseki**	**2.26**	**297**	P	**Pn**	**09 50 06.3**	**-0.9**
JMK				S	**Sn**	**09 50 33.9**	**0.0**
JMM	**Marumori**	**2.39**	**268**	P	**Pn**	**09 50 08.1**	**-0.9**
JMM				S	**Sn**	**09 50 36.1**	**-1.0**
JFK	**Kawauchi**	**2.41**	**256**	P	**Pn**	**09 50 08.0**	**-1.3**
JOM	**Ohasama**	**2.48**	**308**	P	**Pn**	**09 50 10.1**	**-0.2**
JOM				*e*S	**Sn**	**09 50 39.0**	**-0.3**
JTH	**Tanohata**	**2.49**	**323**	P	**Pn**	**09 50 09.8**	**-0.6**
JOU	**Okura**	**2.52**	**280**	P	**Pn**	**09 50 10.9**	**+0.1**
JFT	**Otama**	**2.79**	**262**	P	**Pn**	**09 50 14.8**	**+0.2**
JFT				*e*S	**Sn**	**09 50 46.7**	**-0.4**
JRG	**Rokugo**	**2.87**	**301**	P	**Pn**	**09 50 15.7**	**+0.1**
JRG				*e*S	**Sn**	**09 50 48.0**	**-0.9**
JYK	**Kaneyama**	**2.88**	**290**	P	**Pn**	**09 50 15.8**	**+0.1**
JYK				S	**Sn**	**09 50 49.6**	**+0.6**
JANG	**Nango**	**3.00**	**324**	P	**Pn**	**09 50 17.1**	**-0.2**
JANG				S	**Sn**	**09 50 50.6**	**-1.4**
JTM	**Tenmabayashi**	**3.53**	**324**	S	**Sn**	**09 51 03.2**	**-2.0**
JNBK	**Urakawa-nobuka**	**4.38**	**350**	P	**Pn**	**09 50 35.3**	**-1.1**
JRY	**Ryogami san**	**4.39**	**245**	P	**Pn**	**09 50 35.6**	**-0.9**
MJAR	**Matsushiro Arr**	**4.69**	**254**	Pn	**Pn**	**09 50 41.4**	**+0.7**
	1.6nm,0.3s,baz=77,slow=14,SNR=30						
MAT	**Matsushiro**	**4.70**	**254**	P	**Pn**	**09 50 41.7**	**+1.0**
MAT				*e*S	**Sn**	**09 51 34.4**	**+0.4**
JHJ	**Hachijo jima 2**	**5.85**	**215**	Pn	**Pn**	**09 50 55.0**	**-1.5**
	5.2nm,0.3s,baz=49,slow=20,SNR=4.5						
SEY	**Seymchan**	**25.54**	**9**	P	**P**	**09 54 57.9**	**+0.5**
	0.2nm,0.3s,baz=68,slow=19,SNR=2.3						
H11N2	**WAKE ISLAND Hy**	**27.06**	**126**	T	T	10 23 34.4	
	baz=316,slow=76,SNR=5.4						
H11N1	**WAKE ISLAND Hy**	**27.07**	**126**	T	T	10 23 42.5	
	baz=316,slow=76,SNR=8.9						
H11N3	**WAKE ISLAND Hy**	**27.08**	**126**	T	T	10 23 35.1	
	baz=316,slow=76,SNR=7.8						
H11S1	**WAKE ISLAND Hy**	**27.84**	**128**	T	T	10 24 32.4	
	baz=318,slow=76,SNR=9.9						
H11S3	**WAKE ISLAND Hy**	**27.84**	**128**	T	T	10 24 30.4	
	baz=318,slow=76,SNR=8.1						
H11S2	**WAKE ISLAND Hy**	**27.86**	**128**	T	T	10 24 33.6	
	baz=318,slow=76,SNR=9.6						
SONM	**Songino Array**	**28.88**	**302**	P	**P**	**09 55 29.4**	**+1.6**
	0.6nm,0.8s,baz=81,slow=9.2,SNR=3.8						
KURBB	**Kurchatov Arra**	**46.94**	**308**	P	**P**	**09 57 59.8**	**+0.4**
	0.7nm,0.5s,baz=82,slow=8.0,SNR=7.2						
ARU	**Arti**	**56.92**	**319**	LR	LR	10 25 47.3	
	comp=Z,74nm,18.8s,baz=124,slow=38						
WRA	**Warramunga Arr**	**58.29**	**190**	P	**P**	**09 59 22.5**	**-1.1**
	2.6nm,0.7s,baz=11,slow=7.2,SNR=22						
ASAR	**Alice Springs**	**62.01**	**190**	P	**P**	**09 59 47.8**	**-1.3**
	0.6nm,0.8s,baz=14,slow=8.7,SNR=7.1						
YKA	**Yellowknife Ar**	**62.03**	**31**	P	**P**	**09 59 49.2**	**+0.4**
	0.1nm,0.7s,baz=298,slow=6.9,SNR=3.3						
FINES	**FINESS Array B**	**68.87**	**333**	P	**P**	**10 00 33.4**	**+0.4**
	0.9nm,0.7s,baz=38,slow=7.0,SNR=3.4						

MEX 10 09:49:55.6±0.7, 18°30.30'N × 102°73.10'W, h20km±87km, MD3.9, Michoacan

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
MMIG	**Aquila**	**0.59**	**269**	*i* P	Pb	09 50 05.1	-2.2
MMIG				*e*S	Sb	09 50 12.8	-2.4
URUA	**Uruapan**	**1.28**	**29**	*e*P	Pn	09 50 14.5	-4.0
URUA				*i* S	Sn	09 50 30.0	-5.2
ZIIG	**Zihuatanejo**	**1.38**	**120**	*e*P	Pn	09 50 17.1	-2.7
ZIIG				*e*S	Sn	09 50 33.8	-3.7
EZ5V		**1.44**	**325**	*i* P	Pn	09 50 17.5	-3.3
EZ5V				*i* S	Sn	09 50 35.5	-3.7
R15V		**1.47**	**306**	*i* P	Pn	09 50 17.8	-3.3
R15V				*i* S	Sn	09 50 36.0	-3.8
ARIG	**Puente Sto Nin**	**2.26**	**90**	*e*P	Pn	09 50 28.9	-3.0
ARIG				*e*S	Sn	09 50 55.9	-3.3

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*IDC **10** 09:50:28.8±0.8, 37°83.04'N × 144°01.00'E, h0km, mb3.8/11, mb1 4.0/16, mb1mx3.8/49, mbtmp3.9/16, ML3.8/4, MS3.2/1, Ms1 3.4/1, ms1mx2.5/54, Error ellipse: s-maj=22.3km s-min=15.4km az=104.0*
*ISCJB **10** 09:50:32.5±0.6, 37°96.06'N±0°05.04'× 143°86.05'E±0°05.03'km, mb3.8/11, MS3.2/1, Error ellipse: s-maj=6.5km s-min=5.3km az=6.2*
*JMA **10** 09:50:32.9±0.3, 37°98.04'N × 143°81.81'E, h41km, M4.1*
ISC 10 09:50:34.6±0.8, 37°97.06'N±0°06.03'× 143°87.05'E±0°07.04', h35km, n32, σ1§41/38, mb3.8/11, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**2.04**	**285**	P	**Pn**	**09 51 05.4**	**-1.0**
JIO				S	**Sn**	**09 51 28.3**	**-2.3**
JMK	**Ichinoseki**	**2.30**	**296**	S	**Sn**	**09 51 36.0**	**-1.0**
JMM	**Marumori**	**2.43**	**269**	P	**Pn**	**09 51 10.7**	**-1.1**
JMM				S	**Sn**	**09 51 38.4**	**-1.9**
JFK	**Kawauchi**	**2.45**	**257**	P	**Pn**	**09 51 10.4**	**-1.7**
JTH	**Tanohata**	**2.51**	**322**	*e*S	**Sn**	**09 51 40.7**	**-1.6**
JOM	**Ohasama**	**2.51**	**308**	P	**Pn**	**09 51 12.6**	**-0.3**
JOM				*e*S	**Sn**	**09 51 41.0**	**-1.3**
JOU	**Okura**	**2.56**	**280**	P	**Pn**	**09 51 13.4**	**-0.1**
JOU				S	**Sn**	**09 51 42.9**	**-0.5**
JFT	**Otama**	**2.83**	**262**	P	**Pn**	**09 51 16.7**	**-0.6**
JFT				*e*S	**Sn**	**09 51 49.0**	**-1.3**
JRG	**Rokugo**	**2.90**	**300**	P	**Pn**	**09 51 19.2**	**+0.9**
JRG				*e*S	**Sn**	**09 51 51.9**	**0.0**
JYK	**Kaneyama**	**2.91**	**290**	P	**Pn**	**09 51 18.3**	**-0.1**
JYK				S	**Sn**	**09 51 52.1**	**-0.1**
JANG	**Nango**	**3.02**	**323**	*e*S	**Sn**	**09 51 52.5**	**-2.3**
JTM	**Tenmabayashi**	**3.55**	**323**	S	**Sn**	**09 52 05.6**	**-2.3**
JNBK	**Urakawa-nobuka**	**4.39**	**349**	S	**Sn**	**09 52 26.1**	**-2.5**
JRY	**Ryogami san**	**4.43**	**245**	P	**Pn**	**09 51 38.2**	**-1.0**
JRY				S	**Sn**	**09 52 26.0**	**-3.6**
MJAR	**Matsushiro Arr**	**4.73**	**254**	Pn	**Pn**	**09 51 43.6**	**+0.1**
	5.5nm,0.3s,baz=88,slow=16,SNR=11						
MAT	**Matsushiro**	**4.73**	**254**	P	**Pn**	**09 51 44.2**	**+0.7**
MAT				S	**Sn**	**09 52 39.0**	**+1.9**
JHJ	**Hachijo jima 2**	**5.87**	**216**	Pn	Pn	09 51 55.2	-3.9
	8.0nm,0.3s,baz=246,slow=20,SNR=3.7						
JHJ				Sn	Sn	09 52 57.0	-8.1
	13nm,0.3s,baz=53,slow=20,SNR=3.6						
USRK	**Ussuriysk Ar.**	**10.91**	**309**	Pn	**Pn**	**09 53 09.4**	**+1.3**
	0.3nm,0.3s,baz=139,slow=15,SNR=4.0						
JCJ	**Chichijima**	**10.94**	**188**	Pn	Pn	09 53 02.9	-5.7
	1.6nm,0.3s,baz=280,slow=21,SNR=5.4						
JCJ				Sn	Sn	09 54 55.8	-14
	4.3nm,0.3s,baz=294,slow=20,SNR=4.9						
KSRS	**Korea Array**	**12.64**	**273**	Pn	**Pn**	**09 53 33.8**	**+2.1**
	0.1nm,0.3s,baz=84,slow=14,SNR=3.2						
SEY	**Seymchan**	**25.53**	**9**	P	**P**	**09 56 00.8**	**+1.3**
	1.3nm,0.9s,baz=172,slow=3.8,SNR=4.2						
SONM	**Songino Array**	**28.91**	**302**	P	**P**	**09 56 31.8**	**+1.5**
	0.6nm,0.6s,baz=84,slow=8.5,SNR=3.9						
CMAR	**Chiang Mai Arr**	**43.62**	**256**	LR	LR	10 17 25.7	
	comp=Z,29nm,21.0s,baz=190,slow=37						
MKAR	**Makanchi Array**	**45.28**	**302**	P	**P**	**09 58 48.9**	**+0.2**
	0.9nm,0.7s,baz=86,slow=8.1,SNR=4.9						
KURBB	**Kurchatov Arra**	**46.97**	**308**	P	**P**	**09 59 02.3**	**+0.5**
	1.4nm,0.5s,baz=81,slow=8.2,SNR=6.4						
ILAR	**Eielson Array**	**47.66**	**33**	P	**P**	**09 59 07.1**	**+0.1**
	0.5nm,0.7s,baz=268,slow=6.2,SNR=5.7						
WRA	**Warramunga Arr**	**58.30**	**191**	P	**P**	**10 00 24.8**	**-1.1**
	3.9nm,0.7s,baz=10.0,slow=7.2,SNR=16						
RES	**Resolute Bay**	**61.20**	**15**	P	**P**	**10 00 45.6**	**+0.4**
	0.8nm,1.0s,baz=323,slow=5.7,SNR=3.4						
YKA	**Yellowknife Ar**	**62.01**	**31**	P	**P**	**10 00 50.8**	**-0.1**
	0.2nm,0.7s,baz=301,slow=6.6,SNR=5.6						
ASAR	**Alice Springs**	**62.02**	**190**	P	**P**	**10 00 50.8**	**-0.6**
	1.1nm,0.8s,baz=12,slow=8.2,SNR=9.9						
FINES	**FINESS Array B**	**68.88**	**333**	P	**P**	**10 01 35.4**	**+0.2**
	3.5nm,1.1s,baz=315,slow=1.0,SNR=3.6						
AKASG	**Malin Array Be**	**74.73**	**323**	P	**P**	**10 02 09.6**	**-1.0**
	0.3nm,0.4s,baz=41,slow=5.6,SNR=4.0						

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*NIED **10** 10:00:00, 38°30.00'N × 143°40.00'E, h29km, Mw3.9 Best double couple: M0 6.75000×10^14 NP1:φs 55.00000°, δ 67.00000°, λ 14.00000°. NP2:φs 319.00000°, δ 77.00000°, λ 156.00000°.*
*IDC **10** 10:00:42.1±0.8, 38°23.23'N × 143°59.59'E, h0km, mb3.6/11, mb1 3.8/15, mb1mx3.7/40, mbtmp3.7/15, ML3.2/4, MS3.3/1, Ms1 3.3/1, ms1mx2.6/56, Error ellipse: s-maj=21.0km s-min=15.6km az=121.0*
*ISCJB **10** 10:00:43.2±0.6, 38°23.23'N±0°07.04'× 143°47.40'E±0°07.04'km, mb3.6/11, Error ellipse: s-maj=10.0km s-min=7.9km az=157.4*
*JMA **10** 10:00:45.3±0.3, 38°34.00'N × 143°38.40'E, h43km, M3.8*
ISC 10 10:00:45.0±0.8, 38°24.00'N±0°07.04'× 143°40.00'E±0°08.04', h19km, n28, σ1§44/26, mb3.7/11, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**1.63**	**278**	P	**Pn**	**10 01 12.0**	**-0.6**
JIO				*e*S	**Sn**	**10 01 29.8**	**-3.3**
JMK	**Ichinoseki**	**1.85**	**293**	P	**Pn**	**10 01 15.0**	**-0.7**
JOM	**Ohasama**	**2.06**	**307**	P	**Pn**	**10 01 17.6**	**-0.9**
JMM	**Marumori**	**2.09**	**260**	P	**Pn**	**10 01 18.8**	**-0.2**
JOU	**Okura**	**2.16**	**274**	P	**Pn**	**10 01 20.2**	**+0.2**
JFK	**Kawauchi**	**2.19**	**247**	P	**Pn**	**10 01 20.2**	**-0.1**
JKZ	**Kuzumaki**	**2.37**	**318**	P	**Pn**	**10 01 21.8**	**-1.1**
JRG	**Rokugo**	**2.45**	**299**	P	**Pn**	**10 01 23.4**	**-0.5**
MJAR	**Matsushiro Arr**	**4.47**	**249**	Pn	**Pn**	**10 01 53.6**	**+1.8**
	4.2nm,0.3s,baz=58,slow=12,SNR=61						
JHJ	**Hachijo jima 2**	**5.90**	**211**	Pn	**Pn**	**10 02 11.1**	**-0.3**
	6.0nm,0.3s,baz=133,slow=23,SNR=6.1						
JHJ				Sn	**Sn**	**10 03 14.9**	**-3.6**
	19nm,0.3s,baz=72,slow=22,SNR=5.5						
USRK

UUDB max
233nm,1.8s
UUDB Smax
541nm,1.2s
KAB Kabansk 1.91 220 *e*Sg **Sg 10 28 28.8 -0.8**
KAB Smax
873nm,1.1s
YLYR Ulyunkhan 2.01 47 ⇓*i*Pn **Pb 10 28 05.1 +0.2**
YLYR *e*Pg **Pg 10 28 07.1 +0.3**
YLYR *i*Sg **Sg 10 28 34.5 +1.7**
YLYR *e* 10 28 40.1
YLYR Pmax
118nm,1.8s
YLYR Smax
744nm,1.0s
HRMR Khuramsha 2.16 209 *e*Pn **Pb 10 28 06.3 -1.3**
HRMR *e*Pg **Pg 10 28 09.0 -0.8**
HRMR *e* 10 28 17.1
HRMR *e*Sg **Sg 10 28 37.3 -0.5**
HRMR max
127nm,0.8s
HRMR Smax
889nm,0.5s
NIZ Nizh Angarsk 2.31 13 *e*Pn **Pn 10 28 07.1 +0.7**
NIZ Pg **Pb 10 28 09.7 -0.4**
NIZ *e*Sg **Sg 10 28 40.4 -2.1**
NIZ Pmax
26nm,0.7s
NIZ Smax
181nm,1.1s
KMO Kumora 2.79 31 *e*Pn **Pb 10 28 15.8 -2.5**
KMO *e*Pg **Pg 10 28 20.8 -1.0**
KMO *e*Sg **Sg 10 28 58.2 +0.2**
KMO *e* 10 29 11.5
KMO Pmax
84nm,1.3s
KMO Smax
504nm,1.6s
LSTR Listvyanka 2.85 236 *e*Pn **Pn 10 28 14.9 +1.1**
LSTR Pg **Pb 10 28 19.9 +0.6**
LSTR *e*Sg **Sg 10 28 57.0 -2.8**
LSTR Pmax
19nm,1.1s
LSTR Smax
210nm,1.4s
IRK Irkutsk 2.94 246 *e* Pg 10 28 42.1 +17
IRK *e*Sg **Sb 10 28 58.2 +1.4**
IRK Smax
543nm,0.8s
YOA Uoyan 3.16 33 *e*Pg **Pg 10 28 27.2 -1.7**
YOA *e*Sg **Sg 10 29 10.0 +0.2**
YOA Pmax
196nm,1.4s
YOA Smax
1µm,1.2s
CIT Chita 3.35 115 *e* **Pg 10 28 30.7 -1.7**
CIT *e* 10 28 41.0
CIT *e*Sg **Sg 10 29 16.8 +1.0**
CIT max
171nm,0.1s
CIT Smax
713nm,0.7s
UKT Uakit 3.51 54 *e*Pn **Pn 10 28 24.8 +1.8**
UKT *e*Pg **Pg 10 28 34.7 -0.8**
UKT *e* 10 28 42.4
UKT *e*Sg **Sg 10 29 21.4 +0.4**
UKT max
59nm,1.2s
UKT Smax
173nm,2.1s
TLY Talaya 3.56 241 Pn **Pg 10 28 35.1 -1.4**
0.0nm,0.3s,baz=35,slow=13,SNR=6.8
TLY Sn **Sg 10 29 19.5 -3.1**
0.1nm,0.3s,baz=69,slow=16,SNR=18
TLY Talaya 3.56 241 *e*Pg **Pb 10 28 32.8 +1.4**
TLY *e* 10 28 42.2
TLY *e*Sg **Sg 10 29 18.0 -4.6**
TLY max
19nm,0.8s
TLY Smax
186nm,1.9s
SVKR Severomuysk 3.85 46 Pg **Pg 10 28 40.3 -1.8**
SVKR *e*Sg **Sg 10 29 32.1 +0.2**
SVKR Pmax
25nm,0.2s
SVKR Smax
692nm,1.1s
ARS Arshan 4.11 249 Pg **Pb 10 28 41.3 +0.6**
ARS *e*Sg **Sb 10 29 33.8 +3.5**
ARS *e* 10 29 36.1
ARS Pmax
22nm,0.8s
ARS max
672nm,1.0s
KPC Khapcheranga 4.49 147 *e* **Pn 10 28 37.5 +1.1**
KPC Pg **Pg 10 28 52.2 -2.0**
KPC *e*Sg **Sg 10 29 51.3 -1.0**
KPC Pmax
34nm,1.4s
KPC Smax
249nm,1.8s
ZAK Zakamensk 4.57 229 *e* **Pb 10 28 48.2 -0.4**
ZAK *e* 10 28 54.8
ZAK *e*Sg **Sg 10 29 51.7 -3.3**
ZAK max
11nm,1.3s
ZAK Smax
86nm,1.4s
MOY Mondy 5.02 251 *e* **Pb 10 28 56.0 -0.2**
MOY *e* 10 29 43.2
MOY *e*Sg **Sb 10 30 01.7 +5.1**
MOY *e* 10 30 12.6
MOY max
35nm,1.3s
MOY max
595nm,1.4s
BOD Bodaibo 5.26 33 *e* Sn 10 29 53.4 +5.8
BOD *e*Sg **Sg 10 30 14.9 -2.2**
BOD *e* 10 30 28.3
BOD max
110nm,1.5s
ORL Orlik 5.42 263 *e*Pn **Pn 10 28 51.5 +2.3**
ORL *e* 10 28 59.1
ORL Pg Pb 10 29 06.2 +3.2
ORL *e* 10 29 53.2
ORL *e*Sg Sg 10 30 15.9 -6.2
ORL Pmax
45nm,1.6s
ORL Smax
164nm,1.1s
ULN Ulaanbaatar 5.76 191 Pg Pg 10 29 15.2 -3.4
ULN *e* 10 29 20.5
ULN *e* 10 29 37.5
ULN *e*Sg **Sg 10 30 30.8 -2.4**
ULN *e* 10 30 43.6
SONM Songino Array 5.88 195 Pn Pn 10 28 58.1 +2.6
0.3nm,0.3s,baz=13,slow=13,SNR=7.2
SONM Pg **Pg 10 29 18.0 -2.9**
0.3nm,0.3s,baz=14,slow=17,SNR=3.6
SONM Lg Lg 10 30 35.0
2.0nm,0.3s,baz=14,slow=29,SNR=17
CRS Chara 6.46 55 *e*Sg **Sg 10 30 53.5 -2.2**
CRS *e* 10 31 08.4
CRS Smax
294nm,1.8s
KLR Kul'dur 15.04 97 LR LR 10 36 27.2
comp=Z,27nm,19.0s,baz=306,slow=38
TIXI Tiksi 20.22 18 P Pn 10 32 05.0 +0.1
2.6nm,0.8s,baz=215,slow=5.0,SNR=7.7
BVAR Borovoye Array 22.70 284 P P 10 32 42.4 +13
0.7nm,0.6s,baz=70,slow=9.6,SNR=5.4
MA2 Magadan 23.67 58 LR LR 10 41 32.8
comp=Z,19nm,18.4s,baz=16,slow=37
YKA Yellowknife Ar 59.43 22 P **P 10 37 31.4 +0.9**
0.2nm,0.9s,baz=333,slow=6.8,SNR=4.4
LEM Lembang 60.13 181 LR LR 11 04 56.0
comp=Z,76nm,18.2s,baz=214,slow=38
WRA Warramunga Arr 76.47 155 P **P 10 39 18.0 -0.1**
0.8nm,0.9s,baz=353,slow=4.8,SNR=3.3

*IDC **10** 10:29:41.8±0.8,38.4ˆS×144.9ˆE,h0km,mb3.6/10, mb1 3.9/12,mb1mx3.6/58,mbtmp3.6/12,ML3.1/2,Error ellipse: s-maj=23.4km s-min=18.2km az=112.0*

*ISCJB **10** 10:29:45.9±0.7,38.4ˆN±0.1ˆ×144.7ˆE±0.1ˆ,h43km,mb3.6/10, Error ellipse: s-maj=16.7km s-min=11.6km az=148.5*

ISC 10 10:29:47.7±0.9,38.4ˆN±0.1ˆ×144.8ˆE±0.1ˆ,h43km,n13, σ0.72/13,mb3.6/10,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
MJAR	**Matsushiro Arr**	**5.55**	**252**	Pn		**Pn**		**10 31 07.3**	**-0.6**
	2.4nm,0.3s,baz=58,slow=10.0,SNR=34								
MAT	**Matsushiro**	**5.56**	**252**	P		**Pn**		**10 31 07.4**	**-0.5**
USRK	**Ussuriysk Ar.**	**11.20**	**305**	Pn		**Pn**		**10 32 25.1**	**0.0**
	0.3nm,0.3s,baz=110,slow=13,SNR=10								
SEY	**Seymchan**	**24.95**	**8**	P		**P**		**10 35 07.3**	**+0.5**
	1.3nm,0.6s,baz=124,slow=10,SNR=8.1								
MKAR	**Makanchi Array**	**45.64**	**302**	P		**P**		**10 38 04.1**	**+0.2**
	0.2nm,0.2s,baz=87,slow=7.4,SNR=3.7								
ILAR	**Eielson Array**	**46.87**	**33**	P		**P**		**10 38 12.4**	**-0.9**
	0.4nm,0.9s,baz=264,slow=6.0,SNR=4.3								
KURBB	**Kurchatov Arra**	**47.25**	**307**	P		**P**		**10 38 16.4**	**0.0**
	0.5nm,0.6s,baz=80,slow=8.0,SNR=5.7								
WRA	**Warramunga Arr**	**58.90**	**191**	P		**P**		**10 39 42.4**	**0.0**
	1.3nm,0.7s,baz=12,slow=7.2,SNR=13								
YKA	**Yellowknife Ar**	**61.24**	**31**	P		**P**		**10 39 56.6**	**-1.3**
	0.2nm,0.7s,baz=296,slow=5.7,SNR=4.7								
ASAR	**Alice Springs**	**62.62**	**191**	P		**P**		**10 40 08.2**	**+0.5**
	0.6nm,0.7s,baz=12,slow=7.2,SNR=9.2								
FINES	**FINESS Array B**	**68.79**	**333**	P		**P**		**10 40 48.1**	**+1.1**
	0.8nm,0.6s,baz=10,slow=8.5,SNR=3.1								
NVAR	**Mina Array Bea**	**72.00**	**55**	P		**P**		**10 41 07.7**	**+0.4**
	0.4nm,0.7s,baz=266,slow=6.7,SNR=3.9								
TXAR	**Lajitas Array**	**87.14**	**54**	P		**P**		**10 42 30.0**	**+0.5**
	0.3nm,0.8s,baz=335,slow=4.1,SNR=2.7								

*NIED **10** 10:30:00,36.50Nˆ×142.30Eˆ,h8km,Mw3.8 Best double couple: M0 6.26000×10^14 NP1:ϕs145.00000°,δ42.00000°, λ48.00000°. NP2:ϕs15.00000°,δ60.00000°,λ121.00000°.*

*IDC **10** 10:30:27.9±0.6,36.37Nˆ×142.46Eˆ,h0km,mb3.9/23, mb1 4.0/27,mb1mx3.9/58,mbtmp3.9/27,ML3.3/4,MS2.8/1, Ms1 2.8/1,ms1mx2.2/3/66,Error ellipse: s-maj=14.7km s-min=14.3km az=146.0*

*ISCJB **10** 10:30:28.3±0.4,36.31Nˆ±0.05ˆ×142.45Eˆ±0.06ˆ,h15km, mb3.9/25,Error ellipse: s-maj=8.0km s-min=6.0km az=147.7*

*JMA **10** 10:30:30.9±0.2,36.48Nˆ×142.31Eˆ,h26km,M3.6*

*NEIC **10** 10:30:33.4±1.4,36.36Nˆ×142.46Eˆ,h37km±12km,mb4.2/1, Error ellipse: s-maj=11.5km s-min=9.8km az=117.0*

ISC 10 10:30:30.1±0.5,36.36Nˆ±0.07ˆ×142.39Eˆ±0.07ˆ,h15km,n46, σ1.04/40,mb4.0/25,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**1.40**	**243**	P		**Pb**		**10 30 55.6**	**-0.4**
ONAJ	**Iwakimizuishiy**	**1.48**	**301**	P		**Pn**		**10 30 54.8**	**-1.4**
JHO	**Hitachi**	**1.49**	**280**	P		**Pn**		**10 30 55.2**	**-1.1**
JHO				*e*S		**Sn**		**10 31 13.7**	**-1.8**
MJAR	**Matsushiro Arr**	**3.37**	**274**	Pn		**Pn**		**10 31 23.0**	**+0.8**
	6.1nm,0.3s,baz=94,slow=11,SNR=31								
MAJO	**Matsushiro**	**3.38**	**274**	*e*Pn		**Pn**		**10 31 23.2**	**+0.9**
JHJ	**Hachijo jima 2**	**3.88**	**214**	Pn		**Pn**		**10 31 28.8**	**-0.3**
	27nm,0.3s,baz=120,slow=22,SNR=13								
JHJ				Sn		**Sn**		**10 32 12.9**	**-1.5**
	46nm,0.3s,baz=104,slow=22,SNR=7.1								
JCJ	**Chichijima**	**9.23**	**181**	LR				10 37 13.3	
	comp=Z,57nm,20.9s,baz=117,slow=44								
JNU	**Nakatsue**	**10.01**	**255**	Pn				10 32 57.8	+4.5
	0.1nm,0.3s,baz=216,slow=8.7,SNR=3.0								
KSRS	**Korea Array**	**11.63**	**280**	Pn		**Pn**		**10 33 17.8**	**+2.2**
	0.2nm,0.3s,baz=100,slow=13,SNR=4.8								
KSAR	**Wonju Array Be**	**11.66**	**280**	Pn		**Pn**		**10 33 17.8**	**+1.8**
KLR	**Kul'dur**	**15.03**	**332**	Pn		**P**		**10 34 05.1**	**-2.1**
	0.1nm,0.3s,baz=175,slow=9.5,SNR=4.2								
PETK	**Petropavlovsk-**	**19.90**	**28**	P		**P**		**10 35 00.2**	**-0.7**
	0.1nm,0.3s,baz=262,slow=9.9,SNR=2.7								
MA2	**Magadan**	**23.86**	**11**	P		**P**		**10 35 42.6**	**0.0**
	1.7nm,0.5s,baz=233,slow=8.3,SNR=4.6								
H11N2	**WAKE ISLAND Hy**	**27.13**	**121**	T		T		11 04 40.9	
	baz=313,slow=75,SNR=8.3								
H11N1	**WAKE ISLAND Hy**	**27.14**	**121**	T		T		11 04 46.7	
	baz=313,slow=75,SNR=10								
H11N3	**WAKE ISLAND Hy**	**27.15**	**121**	T		T		11 04 47.8	
	baz=313,slow=75,SNR=6.4								
SEY	**Seychan**	**27.31**	**10**	P		**P**		**10 36 14.1**	**+0.2**
	1.2nm,0.5s,baz=200,slow=8.7,SNR=6.5								
H11S1	**WAKE ISLAND Hy**	**27.83**	**123**	T		T		11 05 35.2	
	baz=315,slow=76,SNR=5.9								
H11S3	**WAKE ISLAND Hy**	**27.84**	**123**	T		T		11 05 39.1	
	baz=315,slow=76,SNR=5.5								
H11S2	**WAKE ISLAND Hy**	**27.85**	**123**	T		T		11 05 37.1	
	baz=315,slow=76,SNR=5.1								
SONM	**Songino Array**	**28.81**	**305**	P		**P**		**10 36 28.7**	**+1.0**
	4.8nm,0.7s,baz=106,slow=9.2,SNR=20								
ZALV	**Zalesovo Beam**	**42.95**	**313**	P		**P**		**10 38 28.8**	**+0.6**
	1.9nm,0.6s,baz=98,slow=5.5,SNR=6.8								
MKAR	**Makanchi Array**	**45.14**	**303**	P		**P**		**10 38 46.4**	**+0.4**
	3.1nm,0.6s,baz=92,slow=9.7,SNR=20								
KURK	**Kurchatov**	**46.97**	**309**	P		**P**		**10 39 00.8**	**+0.6**
KURBB	**Kurchatov Arra**	**47.03**	**309**	P		**P**		**10 39 00.8**	**+0.1**
	3.2nm,0.7s,baz=84,slow=7.9,SNR=16								
HNR	**Honiara**	**48.45**	**157**	P		**P**		**10 39 10.5**	**-1.5**
	68nm,0.5s,baz=215,slow=2.2,SNR=4.2								
ILAR	**Eielson Array**	**49.65**	**32**	P		**P**		**10 39 20.9**	**+0.2**
	0.3nm,0.7s,baz=245,slow=6.5,SNR=3.7								
AAK	**Ala-Archa**	**51.50**	**299**	P		**P**		**10 39 36.8**	**+1.5**
	2.0nm,0.8s,baz=158,slow=11,SNR=5.5								
BVAR	**Borovoye Array**	**51.61**	**313**	P		**P**		**10 39 35.6**	**-0.1**
	0.7nm,0.6s,baz=79,slow=7.5,SNR=3.1								
INK	**Inuvik**	**54.63**	**27**	P		**P**		**10 39 58.2**	**+0.5**
	0.3nm,0.6s,baz=304,slow=6.0,SNR=3.7								
WRA	**Warramunga Arr**	**56.51**	**189**	P		**P**		**10 40 12.4**	**+0.7**
	0.7nm,0.7s,baz=6.9,slow=7.3,SNR=12								
ARU	**Arti**	**57.38**	**319**	P		**P**		**10 40 16.2**	**-1.4**
	1.8nm,0.5s,baz=90,slow=6.1,SNR=3.4								
AKTO	**Aktyubinsk**	**59.71**	**313**	P		**P**		**10 40 34.1**	**+0.2**
	0.6nm,0.5s,baz=68,slow=12,SNR=3.8								
ASAR	**Alice Springs**	**60.23**	**189**	P		**P**		**10 40 38.4**	**+0.7**
	0.3nm,0.4s,baz=3.0,slow=6.8,SNR=5.9								
YKA	**Yellowknife Ar**	**64.00**	**30**	P		**P**		**10 41 02.3**	**-0.3**
	0.3nm,0.7s,baz=303,slow=6.8,SNR=7.0								
FINES	**FINESS Array B**	**69.78**	**333**	P		**P**		**10 41 39.4**	**+0.1**
	2.0nm,0.8s,baz=39,slow=9.8,SNR=5.4								
KBZ	**Khabaz**	**71.94**	**311**	P		**P**		**10 41 53.7**	**+1.0**
	1.6nm,0.8s,baz=78,slow=4.2,SNR=4.1								
FCC	**Fort Churchill**	**74.25**	**27**	*e*P		**P**		**10 42 06.9**	**+0.7**
	3.8nm,1.3s								
NVAR	**Mina Array Bea**	**74.76**	**53**	P		**P**		**10 42 10.2**	**+0.3**
	0.1nm,0.3s,baz=317,slow=7.8,SNR=2.2								
NB2	**NORSAR Subarra**	**75.11**	**338**	P		**P**		**10 42 11.8**	**+0.6**
	comp=Z,1.4nm,0.7s,baz=38,slow=5.9								
NOA	**NORSAR Array B**	**75.11**	**338**	P		**P**		**10 42 11.8**	**+0.6**
	comp=Z,1.1nm,0.7s,baz=38,slow=5.7,SNR=6.0								
AKASG	**Malin Array Be**	**75.31**	**323**	P		**P**		**10 42 12.8**	**+0.3**
	comp=Z,1.0nm,0.5s,baz=46,slow=5.8,SNR=6.7								
PDAR	**Pinedale Array**	**77.58**	**46**	P		**P**		**10 42 27.0**	**+1.2**
	comp=Z,0.3nm,0.7s,baz=351,slow=2.9,SNR=3.4								
GERES	**GERESS Array B**	**83.70**	**329**	P		**P**		**10 42 57.8**	**-0.6**
	comp=Z,0.3nm,0.6s,baz=60,slow=5.8,SNR=4.9								
TXAR	**Lajitas Array**	**89.91**	**53**	P		**P**		**10 43 27.3**	**-1.7**
	comp=Z,0.2nm,0.6s,baz=346,slow=2.9,SNR=2.8								
LPAZ	**La Paz**	**146.34**	**62**	PKPbc		**PKPab**		**10 50 12.2**	**-0.1**
	comp=Z,0.6nm,0.5s,baz=50,slow=7.9,SNR=3.3								

*NSSC **10** 10:31:30.3±0.4,33.40Nˆ×35.91Eˆ,h7km±4km,MD1.4,ML1.5*

*ISCJB **10** 10:31:31.4±0.9,33.40Nˆ±0.04ˆ×35.87Eˆ±0.08,h36km±11km, Error ellipse: s-maj=11.0km s-min=6.5km az=160.2*

*CSEM **10** 10:31:31.6±0.3,33.40Nˆ×36.04Eˆ,h10km,ML2.8,Error ellipse: s-maj=9.6km s-min=6.0km az=60.0*

*GRAL **10** 10:31:35.0±0.3,33.60Nˆ×35.99Eˆ,h13km±1km,MD2.8*

ISC 10 10:31:31.7±1.0,33.39Nˆ±0.03ˆ×35.96Eˆ±0.04ˆ,h28km±9km, n16,σ0.79/28,Jordan-Syria region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
RCY	**Rachaya**	**0.15**	**314**	*e*P		**Pn**		**10 31 38.7**	**+0.5**
RCY				*e*S		**Sb**		**10 31 41.6**	**+0.5**
RCY	**Rachaya**	**0.15**	**314**	*e*P		**Pn**		**10 31 38.7**	**+0.5**
RCY				*e*S		**Sb**		**10 31 41.6**	**+0.5**
DQRL	**Deir Qamar**	**0.45**	**314**	*e*P		**Pb**		**10 31 41.9**	**+0.6**
DQRL				*e*S		**Sb**		**10 31 47.0**	**-0.8**
DQRL	**Deir Qamar**	**0.45**	**314**	*e*P		**Pb**		**10 31 41.9**	**+0.6**
DQRL				*e*S		**Sb**		**10 31 47.0**	**-0.8**
BHL	**Bhannes**	**0.57**	**333**	*e*P		**Pb**		**10 31 42.8**	**-0.4**
BHL	**Bhannes**	**0.57**	**333**	*e*P		**Pb**		**10 31 42.8**	**-0.4**
TCHB	**Talchebab**	**0.72**	**179**	*e*P		**Pb**		**10 31 44.5**	**-1.3**
TCHB				*e*S		**Sb**		**10 31 54.6**	**-0.7**
TCHB				AML		AML		10 32 00.5	
	comp=E,31nm,0.3s								
TCHB				AML		AML		10 32 05.2	
	comp=N,18nm,0.3s								
TCHB	**Talchebab**	**0.72**	**179**	*e*P		**Pb**		**10 31 44.5**	**-1.3**
TCHB				*e*S		**Sb**		**10 31 54.6**	**-0.7**
	comp=N,18nm,0.3s								
MARH	**Ras Al Marh**	**0.77**	**34**	*e*P		**Pb**		**10 31 45.7**	**-0.9**
MARH				*e*S		**Sb**		**10 31 56.5**	**-0.3**
MARH				AML		AML		10 32 01.5	
	comp=E,40nm,0.4s								
MARH				AML		AML		10 32 02.2	
	comp=N,55nm,0.4s								
MARH	**Ras Al Marh**	**0.77**	**34**	*e*P		**Pb**		**10 31 45.7**	**-0.9**
MARH				*e*S		**Sb**		**10 31 56.5**	**-0.3**
	comp=N,55nm,0.4s								
HWQ	**Hawqa**	**0.88**	**359**	*e*P		**Pb**		**10 31 47.1**	**-1.3**
HWQ	**Hawqa**	**0.88**	**359**	*e*P		**Pb**		**10 31 47.1**	**-1.3**
SALA	**Sala**	**0.94**	**136**	*e*P		**Pb**		**10 31 49.2**	**-0.3**
SALA				*e*S		**Sn**		**10 32 02.6**	**+0.8**
SALA				AML		AML		10 32 11.4	
	comp=E,3.2nm,0.3s								
SALA				AML		AML		10 32 11.9	
	comp=N,25nm,0.3s								
SALA	**Sala**	**0.94**	**136**	*e*P		**Pb**		**10 31 49.2**	**-0.3**
SALA				*e*S		**Sn**		**10 32 02.6**	**+0.8**
	comp=N,25nm,0.3s								
ZALF	**Zalf**	**1.25**	**112**	*e*P		**Pb**		**10 31 54.4**	**-0.1**
ZALF				*e*S		**Sb**		**10 32 10.7**	**+0.5**
ZALF				AML		AML		10 32 15.7	
	comp=E,26nm,0.3s								
ZALF				AML		AML		10 32 17.3	
	comp=N,9.5nm,0.6s								
ZALF	**Zalf**	**1.25**	**112**	*e*P		**Pb**		**10 31 54.4**	**-0.1**
ZALF				*e*S		**Sb**		**10 32 10.7**	**+0.5**
	comp=N,10.0nm,0.6s								

IDC 10 10:32:30.0±1.6,34.67Nˆ×36.59Wˆ,h0km,mb3.4/3, mb1 3.7/3,mb1mx3.2/51,mbtmp3.4/3,Error ellipse: s-maj=95.7km s-min=27.9km az=29.0,Northern Mid-Atlantic Ridge

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
TORD	**Torodi Ar. Bea**	**40.69**	**112**	P		P		10 40 12.3	-0.1
	0.5nm,0.7s,baz=310,slow=8.2,SNR=3.2								
H10N2	**ASCENSION HYDR**	**47.15**	**149**	T		T		11 31 14.4	
	baz=335,slow=75,SNR=15								
H10N3	**ASCENSION HYDR**	**47.16**	**149**	T		T		11 31 14.8	
	baz=335,slow=75,SNR=15								
H10N1	**ASCENSION HYDR**	**47.17**	**149**	T		T		11 31 16.8	
	baz=335,slow=75,SNR=12								
H10S1	**ASCENSION HYDR**	**48.09**	**150**	T		T		11 32 35.8	
	baz=335,slow=75,SNR=15								
H10S3	**ASCENSION HYDR**	**48.09**	**150**	T		T		11 32 22.7	
	baz=335,slow=75,SNR=14								
H10S2	**ASCENSION HYDR**	**48.11**	**150**	T		T		11 32 28.3	
	baz=335,slow=75,SNR=15								
YKA	**Yellowknife Ar**	**54.48**	**326**	P		P		10 41 59.0	0.0
	0.4nm,1.0s,baz=77,slow=7.6,SNR=4.7								
TXAR	**Lajitas Array**	**56.20**	**285**	P		P		10 42 12.0	-0.1
	0.2nm,0.6s,baz=82,slow=6.5,SNR=3.7								

*ISCJB **10** 10:33:32.8±0.3,15.26Sˆ±0.05ˆ×173.81Wˆ±0.06,h94km, mb4.3/25,Error ellipse: s-maj=9.4km s-min=5.9km az=37.7*

*IDC **10** 10:33:32.7±1.7,15.26Sˆ×173.83W,h80km±16km,mb3.8/16, mb1 4.1/17,mb1mx3.9/33,mbtmp4.2/17,MS3.3/3, Ms1 3.2/3,ms1mx2.8/35,Error ellipse: s-maj=17.8km s-min=10.7km az=117.0*

*NEIC **10** 10:33:34.0±1.0,15.34Sˆ×173.80W,h94km±9km,mb4.9/7, Error ellipse: s-maj=9.7km s-min=6.5km az=126.0*

ISC 10 10:33:34.1±0.4,15.28Sˆ±0.08ˆ×173.78Wˆ±0.08,h94km,n57, σ1.14/59,mb4.5/25,1D,Tonga Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
AFI	**Afiamalu**	**2.37**	**55**	P		**Pn**		**10 34 11.8**	**+0.5**
	2µm,0.3s,baz=168,slow=1.6,SNR=2374								
AFI				S		**Sn**		**10 34 38.7**	**-1.1**
	640nm,0.3s,baz=218,slow=18,SNR=6.0								
AFI				LR		LR		10 34 58.9	
	comp=Z,549nm,19.5s,baz=165,slow=36								
RAR	**Rarotonga**	**14.55**	**116**	P		**Pn**		**10 36 55.1**	**-0.2**
	3.4nm,0.3s,baz=220,slow=5.1,SNR=6.1								
DZM	**Mont Dzumac**	**19.91**	**247**	P		**Pn**		**10 38 01.7**	**+0.8**
	1.9nm,0.3s,baz=104,slow=18,SNR=17								
WMGZ	**Waiomatatini S**	**23.50**	**196**	PN		**P**		**10 38 35.8**	**+0.3**
HAZ	**Te Kaha**	**23.61**	**197**	PN		**P**		**10 38 36.4**	**0.0**
PKGZ	**Pakihiroa**	**23.65**	**196**	PN		**P**		**10 38 38.0**	**+1.0**
PUZ	**Puketiti**	**23.77**	**196**	PN		**P**		**10 38 38.4**	**+0.3**
PUZ				SN		**S**		**10 42 43.9**	**-2.7**
MKAZ	**Moumakai**	**23.86**	**202**	PN		**P**		**10 38 39.2**	**+0.5**
MWZ	**Matawai**	**24.22**	**197**	PN		**P**		**10 38 42.4**	**+0.4**
MWZ				SN		**S**		**10 42 58.2**	**+4.4**
URZ	**Urewera**	**24.27**	**198**	P		**P**		**10 38 42.5**	**+0.1**
	45nm,0.4s,baz=57,slow=3.3,SNR=45								
URZ				S		**S**		**10 42 56.9**	**+2.4**
	4.6nm,0.7s,baz=150,slow=20,SNR=5.7								
URZ	**Urewera**	**24.27**	**198**	*e*PN		**P**		**10 38 41.3**	**-1.1**
URZ	**Urewera**	**24.27**	**198**	*e*P		**P**		**10 38 41.0**	**-1.4**
	46nm,0.5s								
URZ				S		**S**		**10 42 56.9**	**+2.4**
RIGZ	**Rimuhau**	**24.50**	**196**	PN		**P**		**10 38 45.2**	**+0.6**
SNGZ	**Shannon Statio**	**24.69**	**197**	PN		**P**		**10 38 47.5**	**+1.2**
HIZ	**Hauiti**	**25.22**	**201**	PN		**P**		**10 38 52.3**	**+1.2**
KHZ	**Kahutara**	**29.17**	**199**	*e*P		**P**		**10 39 26.3**	**0.0**
	67nm,0.9s								
RPZ	**Rata Peaks**	**31.16**	**202**	P		**P**		**10 39 43.3**	**-0.7**
	8.2nm,0.5s,baz=350,slow=7.1,SNR=6.5								
ARMA	**Armidale**	**35.09**	**239**	*e*P		**P**		**10 40 17.8**	**-0.8**
	4.1nm,0.4s								
CTAO	**Charters Tower**	**38.31**	**257**	*e*P		**P**		**10 40 45.0**	**-1.0**
	21nm,1.4s								
H11S2	**WAKE ISLAND Hy**	**38.67**	**330**	T		T		11 21 27.5	
	baz=147,slow=76,SNR=8.3								
H11S3	**WAKE ISLAND Hy**	**38.68**	**329**	T		T		11 21 33.7	
	baz=147,slow=76,SNR=6.7								
H11S1	**WAKE ISLAND Hy**	**38.69**	**330**	T		T		11 21 33.4	
	baz=147,slow=76,SNR=18								
COEN	**Coen**	**41.63**	**266**	*e*P		**P**		**10 41 14.0**	**+0.6**
	24nm,0.8s								
STKA	**Stephens Creek**	**43.78**	**240**	P		**P**		**10 41 30.3**	**-0.3**
	9.3nm,0.7s,baz=80,slow=10,SNR=20								
STKA				PcP		**PcP**		**10 43 16.3**	**+0.5**
	3.5nm,0.6s,baz=32,slow=3.4,SNR=3.9								
STKA				LR		LR		10 59 10.5	
	comp=Z,33nm,19.5s,baz=0.2,slow=35								
WRA	**Warramunga Arr**	**49.52**	**257**	P		**P**		**10 42 14.5**	**-1.1**
	4.8nm,0.4s,baz=90,slow=7.0,SNR=159								
WRA				PcP		**PcP**		**10 43 35.9**	**-0.4**
	3.5nm,0.6s,baz=90,slow=3.7,SNR=11								
ASAR	**Alice Springs**	**49.80**	**252**	P		**P**		**10 42 16.9**	**-0.9**
	46nm,0.9s,baz=84,slow=8.6,SNR=242								
MBWA	**Marble Bar**	**63.05**	**254**	*e*P		**P**		**10 43 50.8**	**-1.0**
	10nm,1.0s								
VNDA	**Vanda**	**63.46**	**186**	P		**P**		**10 43 54.5**	**+1.0**
	14nm,0.9s,baz=11,

15nm,0.8s,baz=140,slow=5.6,SNR=38
YKA Yellowknife Ar 90.13 23 P P 10 46 23.4 +0.1
0.3nm,0.8s,baz=240,slow=4.6,SNR=7.7
CMAR Chiang Mai Arr 92.23 288 P P 10 46 34.5 +0.5
0.7nm,0.5s,baz=64,slow=2.1,SNR=6.7
SYO Syowa Base 92.65 191 eP P 10 46 33.0 -2.0
VNA3 Neumayer Olymp 93.01 175 P P 10 46 35.7 -1.0
SNAA Sanae 93.05 177 P P 10 46 33.9 -3.0
VNA2 Neumayer--Watz 93.50 176 P P 10 46 39.2 +0.3
baz=192,slow=2.9
SONM Songino Array 94.51 318 P P 10 46 44.0 -0.1
0.3nm,0.6s,baz=123,slow=5.3,SNR=2.5
MKAR Makanchi Array 110.48 315 PKiKP PKiKP 10 51 54.1 -1.5
0.2nm,0.3s,baz=98,slow=2.9,SNR=3.3
BVAR Borovoye Array 117.56 322 PKP PKPdf 10 52 08.0 -0.9
0.7nm,0.5s,baz=54,slow=2.6,SNR=6.8
ARCES ARCESS Array B 124.44 352 PKP PKPdf 10 52 20.6 -1.1
2.9nm,0.7s,baz=298,slow=2.6,SNR=7.7
FINES FINESS Array B 131.74 347 PKP PKPdf 10 52 34.7 -1.0
2.0nm,0.9s,baz=3.8,slow=5.7,SNR=5.2
AKASG Malin Array Be 140.09 337 PKP PKPdf 10 52 51.8 +0.2
0.3nm,0.3s,baz=12,slow=1.8,SNR=4.5
DPC Dobruska-Polom 144.07 349 ePKP PKPbc 10 52 57.5 +0.5
KMBO Kilima Mbogo 145.26 245 PKPbc PKPbc 10 53 02.5 +0.5
4.0nm,0.5s,baz=52,slow=2.7,SNR=13
KHC Kasperske Hory 145.70 351 ePKP PKPdf 10 53 02.1 +0.5
BRTR Keskin Array B 145.83 321 PKPbc PKPdf 10 53 03.0 +0.7
4.9nm,0.7s,baz=98,slow=1.3,SNR=23
GERES GERESS Array B 145.97 351 PKPbc PKPdf 10 53 02.8 +0.6
1.3nm,0.6s,baz=27,slow=3.3,SNR=12

GUC 10 10:38:08.3±0.8, 22°.93S×68°.78W, h115km±9km, ML3.7, 5C-1D, Northern Chile

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PB06	**IPOC Station P**	**0.76**	**286**	↑*i*P	Pn	10 38 28.6	+0.7
PB06				*i* S	Sn	10 38 43.5	+0.8
PB06				IAML		10 38 43.9	
	comp=E,2μm,0.4s						
PB04	**IPOC Station P**	**1.40**	**295**	↑*i*P	Pn	10 38 35.2	+0.8
PB04				*i* S	Sn	10 38 56.0	+1.8
PB04				IAML		10 39 00.1	
	comp=N,881nm,0.3s						
PB07	**IPOC Station P**	**1.57**	**319**	↑*i*P	Pn	10 38 37.5	+1.0
PB07				*i* S	Sn	10 38 58.8	+0.9
PB07				IAML		10 38 59.9	
	comp=N,2μm,0.3s						
ANCH	**Antofagasta**	**1.68**	**243**	↓*i*P	Pn	10 38 38.4	+0.9
ANCH				*i* S	Sn	10 39 00.3	+0.5
PB10	**IPOC Station P**	**1.73**	**250**	↑*i*P	Pn	10 38 38.6	+0.4
PB10				*i* S	Sn	10 39 00.8	-0.2
PB10				IAML		10 39 06.8	
	comp=N,522nm,0.3s						
PB01	**IPOC Station P**	**1.98**	**341**	↑*i*P	Pn	10 38 42.0	+0.5
PB01				*i* S	Sn	10 39 08.1	+1.3
PB01				IAML		10 39 09.1	
	comp=E,727nm,0.2s						
PB14	**IPOC Station P**	**2.25**	**221**	IAML		10 39 15.7	
	comp=E,333nm,0.4s						
HMBC	**Humberstone**	**2.83**	**338**	IAML		10 39 34.7	
	comp=E,213nm,0.3s						

*NIED **10** 10:48:00,38°.50N×142°.30E,h68km,Mw4.6 Best double couple: M₀9.56000×10¹⁵ NP1:φ₀74.00000°,δ25.00000°, λ-167.00000°. NP2:φ₀332.00000°,δ84.00000°, λ-66.00000°*

*IDC **10** 10:48:13.0±2.5,38°.55N×142°.86E,h0km,mb3.5/3, mb1 3.6/4,mb1mx3.2/62,mbtmp3.4/4,ML2.8/1,MS2.5/1, Ms1 2.5/1,ms1mx2.1/43,Error ellipse: s-maj=66.9km s-min=31.8km az=64.0*

*ISCJB **10** 10:48:18.0±1.5,38°.41N±0°.04×142°.32E±0°.08,h33km±9km, mb3.6/3,Error ellipse: s-maj=11.2km s-min=7.1km az=11.4*

*JMA **10** 10:48:18.9±0.2,38°.47N×142°.27E,h30km±3km,M3.6*

ISC 10 10:48:17.3±1.4, 38°.43N±0°.06×142°.3E±0°.1, h21km±6km, n16, σ0s75/19, mb3.6/3, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**0.76**	**272**	P	**Pn**	**10 48 32.5**	**-0.2**
JIO				S	**Sb**	**10 48 41.6**	**0.0**
JMK	**Ichinoseki**	**1.00**	**302**	P	**Pn**	**10 48 36.4**	**+0.3**
JMK				S	**Sb**	**10 48 48.6**	**+0.1**
MIYJ	**Miyakonagasawa**	**1.20**	**342**	P	**Pn**	**10 48 38.9**	**0.0**
MIYJ				S	**Sn**	**10 48 53.2**	**-1.4**
JOU	**Okura**	**1.29**	**267**	P	**Pb**	**10 48 41.5**	**+0.5**
JOU				S	**Sb**	**10 48 57.4**	**+0.3**
JOM	**Ohasama**	**1.31**	**323**	P	**Pb**	**10 48 41.3**	**+0.2**
JOM				S	**Sb**	**10 48 57.8**	**+0.4**
JMM	**Marumori**	**1.32**	**245**	P	**Pb**	**10 48 41.3**	**-0.1**
JMM				S	**Sn**	**10 48 56.7**	**-0.9**
JFK	**Kawauchi**	**1.56**	**227**	P	**Pn**	**10 48 43.9**	**+0.1**
JFK				S	**Sn**	**10 49 01.7**	**-1.7**
JYK	**Kaneyama**	**1.60**	**288**	P	**Pb**	**10 48 46.0**	**-0.2**
JKZ	**Kuzumaki**	**1.73**	**334**	P	**Pb**	**10 48 47.8**	**-0.5**
MJAR	**Matsushiro Arr**	**3.77**	**241**	Pn	Pn	10 49 18.3	+4.0
	0.5nm,0.3s,baz=62,slow=11,SNR=6.1						
MJAR				LR	LR	10 50 55.1	
	comp=Z,58nm,20.2s,baz=35,slow=39						
H11N2	**WAKE ISLAND Hy 28.33**	**124**		T	T	11 23 58.3	
	baz=317,slow=75,SNR=7.7						
H11N1	**WAKE ISLAND Hy 28.31**	**124**		T	T	11 24 00.0	
	baz=317,slow=75,SNR=6.8						
H11N3	**WAKE ISLAND Hy 28.32**	**124**		T	T	11 23 58.1	
	baz=317,slow=75,SNR=11						
KURBB	**Kurchatov Arra**	**45.71**	**307**	P	**P**	**10 56 37.5**	**+0.9**
	0.5nm,0.6s,baz=81,slow=8.1						
WRA	**Warramunga Arr**	**58.55**	**189**	P	**P**	**10 58 11.8**	**-0.5**
	0.6nm,0.7s,baz=6.1,slow=7.4,SNR=5.0						
ASAR	**Alice Springs**	**62.27**	**189**	P	**P**	**10 58 38.5**	**+0.7**
	0.3nm,0.8s,baz=21,slow=6.2,SNR=3.7						

IDC 10 10:52:14.7±3.8, 5°.01S×69°.01E, h0km, mb3.5/4, mb1 3.7/4, mb1mx3.3/72, mbtmp3.5/4, MS3.5/4, Ms1 3.6/4, ms1mx2.9/53, Error ellipse: s-maj=126.3km s-min=33.1km az=64.0, Chagos Archipelago region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
H08N2	**Diego Garcia H**	**2.37**	**123**	T	T	10 55 59.2	
	baz=297,slow=75,SNR=54						
H08N3	**Diego Garcia H**	**2.38**	**124**	T	T	10 55 57.6	
	baz=297,slow=75,SNR=106						
H08N1	**Diego Garcia H**	**2.39**	**124**	T	T	10 56 01.3	
	baz=297,slow=75,SNR=131						
H08S3	**Diego Garcia H**	**4.32**	**127**	T	T	10 58 00.5	
	baz=312,slow=74,SNR=7.2						
H08S1	**Diego Garcia H**	**4.33**	**127**	T	T	10 58 11.6	
	baz=312,slow=74,SNR=9.6						
H08S2	**Diego Garcia H**	**4.34**	**127**	T	T	10 58 12.7	
	baz=312,slow=74,SNR=7.9						
OPO	**Ambohidratompo**	**25.21**	**236**	LR	LR	11 05 39.0	
	comp=Z,129nm,19.6s,baz=170,slow=32						
PSI	**Prapat**	**30.88**	**76**	LR	LR	11 09 53.1	
	comp=Z,84nm,20.2s,baz=266,slow=34						
KMBO	**Kilima Mbogo**	**31.94**	**276**	LR	LR	11 08 56.0	
	comp=Z,75nm,20.1s,baz=94,slow=31						
CMAR	**Chiang Mai Arr**	**37.61**	**51**	LR	LR	11 13 55.1	
	comp=Z,75nm,18.5s,baz=145,slow=35						
MKAR	**Makanchi Array**	**52.91**	**11**	P	P	11 01 30.9	-1.7
	0.1nm,0.2s,baz=181,slow=7.2,SNR=2.2						
SONM	**Songino Array**	**62.02**	**28**	P	P	11 02 38.4	+1.4
	0.3nm,0.4s,baz=221,slow=5.7,SNR=4.8						
ASAR	**Alice Springs**	**65.03**	**114**	P	P	11 02 56.7	-0.6
	0.3nm,0.9s,baz=285,slow=5.7,SNR=4.1						
WRA	**Warramunga Arr**	**65.13**	**110**	P	P	11 02 58.1	+0.2
	0.5nm,0.7s,baz=281,slow=6.3,SNR=4.5						
NVAR	**Mina Array Bea**	**146.08**	**10**	PKPbc	PKPbc	11 11 57.3	-0.2
	0.2nm,0.6s,baz=318,slow=2.6,SNR=3.0						

*IDC **10** 11:01:43.0±0.9,45°.78N×154°.05E,h0km,mb3.7/14, mb1 3.9/16,mb1mx3.6/66,mbtmp3.7/16,ML2.9/2,Error ellipse: s-maj=24.6km s-min=20.3km az=110.0*

*ISCJB **10** 11:01:44.4±0.7,45°.82N±0°.08×153°.83E±0°.09,h20km, mb3.7/14,Error ellipse: s-maj=13.4km s-min=6.3km az=149.2*

*MOS **10** 11:01:46.7±1.4,45°.80N×153°.89E,h41km,mb4.1/8,Error ellipse: s-maj=14.5km s-min=11.9km az=90.0*

*SKHL **10** 11:01:48.0±0.2,45°.98N×153°.77E,h45km±5km,mb4.6/2*

ISC 10 11:01:46.2±0.9, 45°.82N±0°.10×153°.93E±0°.08, h20km, n29, σ1s45/34, mb3.8/14, 2C, East of Kuril Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
KUR	**Kuril'sk**	**4.30**	**264**	*eP*	**Pn**	**11 02 50.7**	**+0.3**
KUR				AMB	AMB	11 02 53.7	
	10.0nm,0.4s						
KUR				AMB	AMB	11 02 53.7	
	30nm,0.4s						
KUR				*i* S	**Sn**	**11 03 37.6**	**-2.3**
KUR				A	A	11 03 41.1	
	90nm,0.3s						
KUR				A	A	11 03 41.1	
	80nm,0.3s						
KUR	**Kuril'sk**	**4.30**	**264**	*c iP*N	**Pn**	**11 02 51.2**	**+0.8**
KUR				*i* S	**Sn**	**11 03 39.4**	**-0.5**
KUR				pmax	pmax		
	comp=Z,28nm,0.5s						
KUR				pmax	pmax		
	comp=N,14nm,0.2s						
KUR				pmax	pmax		
	comp=E,5.0nm,0.2s						
KUR				smax	smax		
	comp=N,92nm,0.2s						
KUR				smax	smax		
	comp=E,76nm,0.3s						
SKR	**Severo-Kuril's**	**5.08**	**16**	*eP*	**Pn**	**11 03 00.8**	**-0.3**
SKR				AMB	AMB	11 03 01.3	
	comp=E,110nm,1.0s						
SKR				*e*S	**Sn**	**11 03 55.3**	**-3.8**
SHO	**Shikotan**	**5.41**	**251**	*eP*	**Pn**	**11 03 04.8**	**-0.9**
SHO				*i* S	**Sn**	**11 04 02.6**	**-4.7**
SHO				A	A	11 04 06.6	
	comp=E,80nm,0.2s						
SHO	**Shikotan**	**5.41**	**251**	*c iP*N	**Pn**	**11 03 04.2**	**-1.5**
YUK	**Yuzh-Kuril'sk**	**6.00**	**256**	*eP*	**Pn**	**11 03 13.6**	**-0.2**
YUK				*i* S	**Sn**	**11 04 20.0**	**-1.8**
YUK				A	A	11 04 21.6	
	comp=E,90nm,0.3s						
YUK				A	A	11 04 21.6	
	comp=E,20nm,0.3s						
YUK	**Yuzh-Kuril'sk**	**6.00**	**256**	PN	**Pn**	**11 03 12.6**	**-1.2**
PETK	**Petropavlovsk-**	**7.69**	**17**	Pn	**Pn**	**11 03 36.8**	**-0.2**
	comp=E,0.4nm,0.3s,baz=190,slow=13,SNR=4.2						
YSS	**Yuzh-Sakhalins**	**7.81**	**282**	*eP*	**Pn**	**11 03 38.6**	**0.0**
TYV	**Tymovskoe**	**9.04**	**308**	*eP*	**Pn**	**11 03 54.4**	**-1.0**
MA2	**Magadan**	**13.90**	**353**	Pn	**Pn**	**11 05 02.6**	**+0.7**
	comp=E,3nm,0.3s,baz=342,slow=20,SNR=2.9						
KLR	**Kul'dur**	**15.35**	**291**	Pn	**Pn**	**11 05 23.5**	**+1.9**
	comp=E,0.1nm,0.3s,baz=97,slow=8.1,SNR=4.1						
MKAR	**Makanchi Array**	**47.87**	**298**	P	**P**	**11 10 23.7**	**+1.1**
	comp=E,0.3nm,0.4s,baz=75,slow=5.4,SNR=3.5						
KURK	**Kurchatov**	**48.35**	**305**	P	**P**	**11 10 27.2**	**+1.1**
KURBB	**Kurchatov Arra**	**48.44**	**305**	P	**P**	**11 10 27.2**	**+0.3**
	comp=E,0.4nm,0.5s,baz=71,slow=8.7,SNR=5.8						
YKA	**Yellowknife Ar**	**51.33**	**36**	P	**P**	**11 10 48.9**	**+0.3**
	comp=E,0.2nm,0.6s,baz=295,slow=7.0,SNR=9.4						
BVAR	**Borovoye Array**	**51.88**	**310**	P	**P**	**11 10 53.0**	**+0.1**
	comp=E,0.2nm,0.4s,baz=284,slow=35,SNR=2.8						
CMAR	**Chiang Mai Arr**	**52.71**	**258**	P	**P**	**11 11 00.1**	**+0.6**
	comp=E,0.3nm,0.5s,baz=46,slow=7.7,SNR=3.8						
ARU	**Arti**	**56.08**	**318**	P	**P**	**11 11 24.4**	**+0.9**
	comp=E,1.0nm,0.3s,baz=285,slow=20,SNR=2.3						
FINES	**FINESS Array B**	**65.12**	**335**	P	**P**	**11 12 25.1**	**+0.1**
	comp=E,1.6nm,0.9s,baz=52,slow=2.3,SNR=3.9						
WRA	**Warramunga Arr**	**67.83**	**200**	P	**P**	**11 12 41.7**	**-1.0**
	comp=E,0.9nm,1.0s,baz=19,slow=7.0,SNR=3.8						
NOA	**NORSAR Array B**	**69.28**	**342**	P	**P**	**11 12 51.8**	**+0.3**
	comp=E,0.9nm,0.9s,baz=17,slow=2.8,SNR=2.8						
HFS	**Hagfors**	**69.52**	**340**	P	**P**	**11 12 53.1**	**+0.2**
	comp=E,0.6nm,0.5s,baz=93,slow=6.4,SNR=5.7						
ASAR	**Alice Springs**	**71.52**	**199**	P	**P**	**11 13 06.0**	**+0.6**
	comp=E,0.6nm,0.7s,baz=9.8,slow=5.8,SNR=6.9						
KBZ	**Khabaz**	**71.91**	**315**	P	**P**	**11 13 09.5**	**+1.7**
	comp=E,2.0nm,0.9s,baz=76,slow=8.3,SNR=3.4						
AKASG	**Malin Array Be**	**72.63**	**327**	P	**P**	**11 13 11.6**	**-0.3**
	comp=E,0.5nm,0.4s,baz=33,slow=6.4,SNR=4.2						
TXAR	**Lajitas Array**	**77.45**	**61**	P	**P**	**11 13 40.0**	**-0.3**
	comp=E,0.2nm,0.6s,baz=304,slow=4.6,SNR=4.7						
TXAR	**Lajitas Array**	**77.45**	**61**	*eP*	**P**	**11 13 40.0**	**-0.3**
TXAR	**Lajitas Array**	**77.45**	**61**	P	**P**	**11 13 40.0**	**-0.3**

*ISCJB **10** 11:02:47.4±0.5,10°.99S±0°.07×166°.2E±0°.1,h61km, mb4.0/13,Error ellipse: s-maj=17.3km s-min=9.6km az=5.3*

*IDC **10** 11:02:57.4±7.0,11°.01S×166°.06E,h139km±66km, mb3.7/13,mb1 4.0/14,mb1mx3.7/42,mbtmp4.1/14,Error ellipse: s-maj=34.0km s-min=20.1km az=178.0*

ISC 10 11:02:48.8±0.7, 10°.91S±0°.10×166°.2E±0°.2, h61km, n21, σ0s98/15, mb4.0/13, Santa Cruz Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
DZM	**Mont Dzumac**	**11.10**	**179**	P	Pn	11 05 30.7	+5.8
	0.7nm,0.3s,baz=188,slow=23,SNR=8.6						
DZM				S	**Sn**	**11 07 26.4**	**-1.1**
	0.4nm,0.3s,baz=151,slow=19,SNR=4.6						
CTA	**Charters Tower**	**21.25**	**242**	P	**P**	**11 07 31.4**	**+1.3**
	4.9nm,0.8s,baz=71,slow=11,SNR=5.4						
URZ	**Urewera**	**28.39**	**162**	P	**P**	**11 08 43.5**	**+1.2**
	5.2nm,0.8s,baz=222,slow=14,SNR=4.9						
H11S2	**WAKE ISLAND Hy 29.22**	**1**		T	T	11 39 33.0	
	baz=181,slow=76,SNR=22						
H11S3	**WAKE ISLAND Hy 29.23**	**1**		T	T	11 39 33.2	
	baz=181,slow=76,SNR=5.1						
H11S1	**WAKE ISLAND Hy 29.24**	**1**		T	T	11 39 36.2	
	baz=181,slow=76,SNR=11						
H11N1	**WAKE ISLAND Hy 30.44**	**1**		T	T	11 41 04.7	
	baz=182,slow=76,SNR=5.4						
H11N3	**WAKE ISLAND Hy 30.45**	**1**		T	T	11 41 05.1	
	baz=182,slow=76,SNR=5.5						
H11N2	**WAKE ISLAND Hy 30.46**	**1**		T	T	11 41 06.4	
	baz=182,slow=76,SNR=3.4						
WRA	**Warramunga Arr**	**31.94**	**250**	P	**P**	**11 09 08.9**	**-0.1**
	8.0nm,0.8s,baz=82,slow=9.0,SNR=62						
ASAR	**Alice Springs**	**33.24**	**243**	P	**P**	**11 09 19.9**	**-0.6**
	3.4nm,0.7s,baz=69,slow=10.0,SNR=51						
SEY	**Seymchan**	**74.39**	**353**	P	**P**	**11 14 20.1**	**+0.3**
	0.3nm,0.3s,baz=198,slow=9.0,SNR=3.5						
SONM	**Songino Array**	**78.82**	**324**	P	**P**	**11 14 45.7**	**+0.3**
	0.5nm,0.6s,baz=117,slow=5.3,SNR=3.7						
ILAR	**Eielson Array**	**83.25**	**18**	P	**P**	**11 15 08.8**	**+0.4**
	1.0nm,0.6s,baz=235,slow=5.2,SNR=22						
NVAR	**Mina Array Bea**	**85.61**	**50**	P	**P**	**11 15 21.8**	**+0.6**
	1.3nm,0.9s,baz=235,slow=8.3,SNR=8.6						
PDAR	**Pinedale Array**	**93.14**	**47**	P	**P**	**11 15 57.4**	**+0.6**
	0.3nm,0.7s,baz=207,slow=1.7,SNR=3.5						
ZALV	**Zalesovo Beam**	**93.70**	**324**	P	**P**	**11 15 58.3**	**-0.4**
	0.4nm,0.4s,baz=86,slow=6.2,SNR=2.6						
MKAR	**Makanchi Array**	**93.72**	**317**	P	**P**	**11 15 58.5**	**-0.5**
	1.0nm,0.7s,baz=87,slow=6.8,SNR=8.2						
YKA	**Yellowknife Ar**	**94.66**	**27**	P	**P**	**11 16 01.6**	**-1.3**
	0.3nm,0.6s,baz=258,slow=4.6,SNR=17						
TXAR	**Lajitas Array**	**95.39**	**61**	P	**P**	**11 16 07.1**	**0.0**
	0.1nm,0.5s,baz=238,slow=5.2,SNR=3.7						
ARCES	**ARCESS Array B**	**116.32**	**346**	PKP	**PKPdf**	**11 21 23.1**	**-1.9**
	3.2nm,1.0s,baz=74,slow=1.8,SNR=4.9						

JMA 10 11:03:48.3±0.3, 37°.93N×144°.38E, h43km, M3.8, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**2.44**	**283**	P	Pn	11 04 27.0	+1.3
JIO				S	Sn	11 04 55.5	+1.2
JMK	**Ichinoseki**	**2.68**	**293**	P	Pn	11 04 30.6	+1.7
JTH	**Tanohata**	**2.81**	**316**	*e*S	Sn	11 05 03.4	+0.2
JMM	**Marumori**	**2.84**	**270**	P	Pn	11 04 32.5	+1.4
JMM				S	Sn	11 05 04.7	+0.7
JFK	**Kawauchi**	**2.84**	**260**	P	Pn	11 04 32.3	+1.2
JFK				S	Sn	11 05 04.6	+0.5
JOM	**Ohasama**	**2.87**	**303**	P	Pn	11 04 33.1	+1.6
JOU	**Okura**	**2.96**	**280**	P	Pn	11 04 35.0	+2.2
JOU				S	Sn	11 05 09.3	+2.2
JFT	**Otama**	**3.23**	**264**	S	Sn	11 05 15.3	+1.5
JRG	**Rokugo**	**3.28**	**298**	P	Pn	11 04 39.5	+2.4
JANG	**Nango**	**3.30**	**319**	P	Pn	11 04 38.7	+1.2
JANG				S	Sn	11 05 16.4	+0.9
JYK	**Kaneyama**	**3.31**	**289**	P	Pn	11 04 39.6	+2.0
JYK				*e*S	Sn	11 05 18.1	+2.5
JTM	**Tenmabayashi**	**3.84**	**319**	P	Pn	11 04 46.2	+1.4
JTM				S	Sn	11 05 28.3	-0.3

*ISCJB **10** 11:09:06.7±0.8,29°.6N±0°.1×81°.32E±0°.07,h17km,mb3.2/5, Error ellipse: s-maj=18.4km s-min=8.7km az=178.7*

*IDC **10** 11:09:06.7±3.3,29°.55N×81°.41E,h0km,mb3.2/5, mb1 3.5/6,mb1mx3.2/63,mbtmp3.3/6,ML3.8/1,Error ellipse: s-maj=135.1km s-min=23.3km az=66.0*

ISC 10 11:09:08.6±1.0, 29.5N±0°.2×81°.13E±0°.09, h17km, n7, σ1s40/8, mb3.3/5, Nepal

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
LGTI	**Lohaghat**	**0.77**	**270**	*e*PG	**Pn**	**11 09 24.2**	**-0.4**
LGTI				*e*SG	**Sn**	**11 09 36.2**	**+0.4**
CMAR	**Chiang Mai Arr**	**19.59**	**120**	P	**P**	**11 13 36.0**	**-0.1**
	0.1nm,0.3s,baz=323,slow=10,SNR=4.6						
KURBB	**Kurchatov Arra**	**21.23**	**355**	P	**P**	**11 13 51.8**	**-1.8**
	0.5nm,0.8s,baz=180,slow=10,SNR=8.9						
ZALV	**Zalesovo Beam**	**24.62**	**5**	P	**P**	**11 14 27.2**	**-0.7**
	0.5nm,0.4s,baz=181,slow=10,SNR=4.6						
WRA	**Warramunga Arr**	**71.00**	**127**	P	**P**	**11 20 25.4**	**-0.3**
	0.4nm,0.8s,baz=312,slow=7.7,SNR=3.2						
ASAR	**Alice Springs**	**73.23**	**130**	P	**P**	**11 20 38.2**	**-0.8**
	0.1nm,0.3s,baz=318,slow=6.2,SNR=5.5						
YKA	**Yellowknife Ar**	**87.50**	**7**	P	**P**	**11 21 57.4**	**+2.3**
	0.1nm,0.7s,baz=347,slow=5.1,SNR=2.9						

*IDC **10** 11:11:48.1±0.6,36°.41N×28°.84E,h0km,mb3.9/22, mb1 4.0/28,mb1mx3.9/50,mbtmp3.9/28,ML4.0/6,MS2.8/8, Ms1 2.9/8,ms1mx2.7/62,Error ellipse: s-maj=15.2km s-min=11.6km az=171.0*

*ISK **10** 11:11:49.7,36°.45N×28°.82E,h6km,ML4.0*

*ATH **10** 11:11:50.4,36°.47N×28°.76E,h16km,ML4.0/4,Error ellipse: s-maj=1.2km s-min=0.6km az=185.0*

*MOS **10** 11:11:50.2±1.3,36°.23N×28°.95E,h27km,mb4.4/1,Error ellipse: s-maj=10.7km s-min=5.0km az=102.1*

*NEIC **10** 11:11:50.3,36°.47N×28°.76E,h16km,ML4.0(ISK), ML4.0(ATH),ML4.1(THE),After ATH.*

*ISCJB **10** 11:11:50.1±0.4,36°.32N±0°.01×28°.90E±0°.02,h23km±3km, mb3.7/22,MS2.9/2,Error ellipse: s-maj=2.6km s-min=1.8km az=29.5*

*CSEM **10** 11:11:50.5±0.1,36°.37N×28°.88E,h10km,ML4.0,Error ellipse: s-maj=2.7km s-min=2.0km az=25.0*

*DDA **10** 11:11:50.5,36°.44N×28°.74E,h27km,Ml3.9*

*HLW **10** 11:11:51.6,36°.15N×28°.95E,h9km±5km,Ml3.6*

*THE **10** 11:11:51.0,36°.44N×28°.82E,h2km±1km,ML4.1/9,Error ellipse: s-maj=1.8km s-min=0.9km az=141.0*

*GII **10** 11:11:54.5±0.0,35°.92N×29°.04E,h1km,MD3.7/4*

*NSSC **10** 11:11:54.5±1.0,36°.10N×29°.13E,h37km±167km,ML3.2*

ISC 10 11:11:50.0±0.6, 36°.38N±0°.02×28°.83E±0°.02, h10km±3km, n445, σ1s45/485, mb3.8/22, 14C-3D, Dodecanese Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
FETY	**Fethiye**	**0.33**	**38**	*e*PG	**Pg**	**11 11 55.6**	**-0.9**
FETY				*e*SG	**Sg**	**11 12 00.7**	**-0.3**
FETY	**Fethiye**	**0.33**	**38**	P	**Pg**	**11 11 55.9**	**-0.7**
FETY				S	**Sg**	**11 12 01.8**	**+0.8**
FETY	**Fethiye**	**0.33**	**38**	*e*Pg	**Pg**	**11 11 55.6**	**-0.9**
FETY	**Fethiye**	**0.33**	**38**	P	**Pg**	**11 11 55.9**	**-0.7**
FETY				*e*Sg	**Sg**	**11 12 00.7**	**-0.3**
FETY				S	**Sg**	**11 12 01.8**	**+0.8**
DALY	**Dalyan (Mu¨la**	**0.46**	**342**	*e*PG	**Pg**	**11 11 57.4**	**-1.6**
DALY				*e*SG	**Sg**	**11 12 04.0**	**-1.1**
DALY	**Dalyan (Mu¨la**	**0.46**	**342**	*e*Pg	**Pg**	**11 11 57.4**	**-1.6**
DALY				*e*Sg	**Sg**	**11 12 04.0**	**-1.1**
TURN	**Turunc**	**0.53**	**340**	*i* P	**Pg**	**11 12 00.7**	**+0.5**
TURN				*i* S	**Sb**	**11 12 09.2**	**+0.2**
TURN	**Turunc**	**0.53**	**340**	P	**Pg**	**11 12 00.7**	**+0.5**
TURN				S	**Sb**	**11 12 09.2**	**+0.2**
ARG	**Arkhangelos**	**0.59**	**254**	P	**Pg**	**11 12 01.7**	**+0.3**
ARG				S	**Sb**	**11 12 12.0**	**+1.2**
ARG	**Arkhangelos**	**0.59**	**254**	P	**Pg**	**11 12 01.7**	**+0.3**
ARG				S	**Sg**	**11 12 08.7**	**-0.5**
AKAS	**Kas**	**0.64**	**103**	*i* P	**Pb**	**11 12 03.7**	**+0.4**
AKAS				*i* S	**Sn**	**11 12 17.4**	**+1.9**
AKAS	**Kas**	**0.64**	**103**	P	**Pb**	**11 12 03.7**	**+0.4**
KSL	**Kastellorizon**	**0.65**	**110**	P	**Pb**	**11 12 04.1**	**+0.7**
KSL				S	**Sn**	**11 12 15.5**	**0.0**
KSL	**Kastellorizon**	**0.65**	**110**	P	**Pb**	**11 12 04.4**	**+1.0**
KSL				S	**Sn**	**11 12 15.6**	**+0.1**
KSL				AML	AML	11 12 21.8	
	comp=E,17910μm,0.4s						
KSL				AML	AML	11 12 24.1	
	comp=N,10608μm,0.7s						
YER	**Yerkesik**	**0.88**	**330**	*e*PG	**Pg**	**11 12 05.3**	**-1.5**
YER				*e*SG	**Sg**	**11 12 17.4**	**-0.9**
YER	**Yerkesik**	**0.88**	**330**	P	**Pg**	**11 12 05.8**	**-1.0**
YER				S	**Sb**	**11 12 19.4**	**+0.4**
YER	**Yerkesik**	**0.88**	**330**	*e*Pg	**Pg**	**11 12 05.3**	**-1.5**
YER	**Yerkesik**	**0.88**	**330**	P	**Pg**	**11 12 05.8**	**-1.0**
YER				*e*Sg	**Sg**	**11 12 17.4**	**-0.9**
YER				S	**Sb**	**11 12 19.4**	**+0.4**
ELL	**Elmali**	**0.94**	**67**	*e*PG	**Pg**	**11 12 07.8**	**-

ISP S Sn 11 12 48.8 +0.3
ISP Isparta 1.98 43 *e*Pn Pb 11 12 25.0 -1.1
KHAL Karahalli 2.06 15 *i* P Pn 11 12 24.6 -0.1
KHAL *i* S Sb 11 12 51.8 -1.4
KHAL Karahalli 2.06 15 P Pn 11 12 24.6 -0.1
KHAL S Sb 11 12 51.8 -1.4
SMG Samos 2.08 310 P Pn 11 12 24.4 -0.4
SMG S Sn 11 12 50.9 +0.2
SMG Samos 2.08 310 P Pn 11 12 24.4 -0.4
SMG S Sn 11 12 51.9 +1.2
SMG Samos 2.08 310 P Pn 11 12 24.1 -0.8
SMG S Sn 11 12 51.9 +1.2
SMG AML AML 11 12 56.0
comp=N,8868µm,0.5s
SMG AML AML 11 12 57.5
comp=E,6694µm,0.3s
KULA Kula-Manisa 2.14 356 *e*PN Pn 11 12 26.0 +0.2
KULA Kula-Manisa 2.14 356 P Pn 11 12 25.4 -0.4
KULA S Sn 11 12 51.6 -0.8
KULA Kula-Manisa 2.14 356 P Pn 11 12 25.4 -0.4
KULA Kula-Manisa 2.14 356 *e*Pn Pn 11 12 26.0 +0.2
KULA S Sn 11 12 51.6 -0.8
IZM Izmir 2.37 329 *e*PN Pn 11 12 29.2 +0.2
IZM Izmir 2.37 329 *e*Pn Pn 11 12 29.2 +0.2
BLCB Balcova 2.46 325 *e*PN Pn 11 12 30.2 +0.1
BLCB Balcova 2.46 325 *e*Pn Pn 11 12 30.2 +0.1
ZKR Zakros 2.47 240 P Pn 11 12 32.5 +2.3
ZKR S Sn 11 13 01.4 +0.9
ZKR Zakros 2.47 240 P Pn 11 12 32.5 +2.3
ZKR S Sn 11 13 01.4 +0.9
ZKR Zakros 2.47 240 P Pb 11 12 33.6 -0.8
SHUT Suhut-Afyon 2.57 32 *e*PN Pn 11 12 32.3 +0.6
SHUT Suhut-Afyon 2.57 32 *e*Pn Pn 11 12 32.3 +0.6
AKHS Akhisar 2.62 342 *i* P Pn 11 12 32.7 +0.3
AKHS Akhisar 2.62 342 P Pn 11 12 32.7 +0.3
AKS Akhisar 2.62 342 *e*PN Pn 11 12 32.4 0.0
AKS Akhisar 2.62 342 *e*Pn Pn 11 12 32.4 0.0
ZEY ˙zmir 2.63 316 *i* P Pn 11 12 32.1 -0.3
ZEY *i* S Sn 11 13 05.6 +1.3
URLA Izmir 2.66 319 *i* P Pn 11 12 33.9 +1.0
URLA *i* S Sn 11 13 05.9 +0.7
URLA Izmir 2.66 319 P Pn 11 12 33.9 +1.0
URLA S Sn 11 13 05.9 +0.7
DEMI Demirci 2.66 358 *i* P Pn 11 12 32.7 -0.3
DEMI *i* S Sn 11 13 05.6 +0.2
DEMI Demirci 2.66 358 P Pn 11 12 32.7 -0.3
DEMI S Sn 11 13 05.6 +0.2
SANT Santorini 2.72 271 *e*Pn Pn 11 12 34.7 +1.0
SANT *e*Sg Sg 11 13 17.4 +0.1
SANT Santorini 2.72 271 *e*Pn Pn 11 12 34.7 +1.0
SANT *e*Sg Sg 11 13 17.4 +0.1
APE Apeiranthos 2.74 286 *e*PN Pn 11 12 35.5 +1.5
APE Apeiranthos 2.74 286 *de*P Pn 11 12 35.2 +1.2
APE Apeiranthos 2.74 286 P Pn 11 12 35.2 +1.2
APE Apeiranthos 2.74 286 *e*Pn Pn 11 12 35.5 +1.5
APE Apeiranthos 2.74 286 P Pn 11 12 35.2 +1.2
CMBO Columbo, Santo 2.76 273 P Pn 11 12 34.7 +0.5
CMBO Columbo, Santo 2.76 273 P Pn 11 12 34.7 +0.5
CMBO Columbo, Santo 2.76 273 P Pn 11 12 36.7 +2.5
THR3 Thira Island, 2.77 272 P Pn 11 12 35.4 +1.1
THR3 Thira Island, 2.77 272 P Pn 11 12 35.4 +1.1
THR6 Thira Island, 2.77 271 P Pn 11 12 34.4 +0.1
THR6 Thira Island, 2.77 271 P Pn 11 12 34.4 +0.1
THR5 Thira Island, 2.81 272 *e*PN Pn 11 12 35.8 +1.9
THR5 Thira Island, 2.81 272 P Pn 11 12 35.8 +0.9
THR5 Thira Island, 2.81 272 P Pn 11 12 35.8 +0.9
THR5 Thira Island, 2.81 272 *e*Pn Pn 11 12 36.6 +1.7
NPS Neapolis 2.84 248 P Pn 11 12 37.5 +2.1
NPS Neapolis 2.84 248 P Pn 11 12 37.5 +2.1
LAST Lasithi 2.98 247 P Pn 11 12 38.4 +1.0
LAST Lasithi 2.98 247 P Pn 11 12 38.4 +1.0
LAST Lasithi 2.98 247 P Pn 11 12 39.0 +1.6
CHOS Chios island 2.98 313 *e*PN Pn 11 12 38.2 +0.8
CHOS Chios island 2.98 313 P Pn 11 12 37.5 +0.1
CHOS S Sn 11 13 13.3 0.0
CHOS Chios island 2.98 313 P Pn 11 12 37.5 +0.1
CHOS Chios island 2.98 313 *e*Pn Pn 11 12 38.2 +0.8
CHOS S Sn 11 13 13.3 0.0
CHOS Chios island 2.98 313 P Pn 11 12 36.9 -0.5
DKL Dikili 3.09 331 *e*PN Pn 11 12 39.5 +0.7
DKL Dikili 3.09 331 *e*Pn Pn 11 12 39.5 +0.7
TVSB Tavsanli 3.11 9 *e*PN Pn 11 12 39.5 +0.4
TVSB Tavsanli 3.11 9 *e*Pn Pn 11 12 39.5 +0.4
DST Dursunbey 3.23 357 *e*PN Pn 11 12 41.0 +0.3
DST Dursunbey 3.23 357 *e*Pn Pn 11 12 41.0 +0.3
KONT Konya--Tatoy 3.23 60 *e*PN Pn 11 12 42.1 +1.4
KONT Konya--Tatoy 3.23 60 *e*Pn Pn 11 12 42.1 +1.4
IACM Heraklion 3.23 252 P Pn 11 12 43.3 +2.6
IACM Heraklion 3.23 252 P Pn 11 12 43.3 +2.6
BALB Balikesir 3.34 347 *e*PN Pn 11 12 43.9 +1.7
BALB Balikesir 3.34 347 *e*Pn Pn 11 12 43.9 +1.7
LADK Ladik-KONYA 3.36 56 *e*PN Pn 11 12 44.3 +1.8
LADK Ladik-KONYA 3.36 56 *e*Pn Pn 11 12 44.3 +1.8
IDI Anoyia 3.38 252 Pn Pn 11 12 44.5 +1.7
comp=E,34nm,0.3s,baz=54,slow=18,SNR=216
IDI Sn Sn 11 13 26.2 +3.2
comp=E,60nm,0.3s,baz=322,slow=13,SNR=11
IDI LR LR 11 14 17.5
comp=E,81nm,18.2s,baz=92,slow=44
IDI Anoyia 3.38 252 P Pn 11 12 44.7 +1.9
IDI S Sn 11 13 24.5 +1.5
IDI Anoyia 3.38 252 P Pn 11 12 43.6 +0.8
IDI Anoyia 3.38 252 *e*Pn Pn 11 12 44.1 +1.3
IDI S Sn 11 13 24.5 +1.5
IDI Anoyia 3.38 252 P Pn 11 12 43.6 +0.8
IDI Anoyia 3.38 252 *e*Pn Pn 11 12 44.1 +1.3
IDI *e*Sg Sn 11 13 27.7 +4.7
KIZT Kizilcal 3.48 43 *e*PN Pn 11 12 45.4 +1.2
KIZT Kizilcal 3.48 43 *e*Pn Pn 11 12 45.4 +1.2
PRK Paraskevi 3.51 326 P Pn 11 12 44.8 +0.3
PRK S Sn 11 13 25.8 -0.2
PRK Paraskevi 3.51 326 P Pn 11 12 45.2 +0.7
PRK S Sn 11 13 25.8 -0.2
PRK Paraskevi 3.51 326 P Pn 11 12 45.2 +0.7
AKDN Akdeniz- K˙–br 3.53 107 *e*PN Pn 11 12 47.1 +2.3
LEF Lefka 3.53 110 *e*PN Pn 11 12 46.8 +1.9
LEF Lefka 3.53 110 *e*Pn Pn 11 12 46.8 +1.9
SIVA Sivas 3.54 249 P Pn 11 12 48.9 +3.9
SIVA Sivas 3.54 249 P Pn 11 12 48.9 +4.0
MHLO Agia Marina, M 3.58 276 P Pb 11 12 51.6 -1.8
ORLT Orhaneli 3.66 1 *e*PN Pn 11 12 47.4 +0.7
ORLT Orhaneli 3.66 1 *e*Pn Pn 11 12 47.4 +0.7
SIGR SIGRI 3.68 321 *e*PN Pn 11 12 48.4 +1.5
SIGR SIGRI 3.68 321 P Pn 11 12 46.9 0.0
SIGR S Sn 11 13 30.4 +0.1
SIGR SIGRI 3.68 321 P Pn 11 12 46.9 0.0
SIGR SIGRI 3.68 321 *e*Pn Pn 11 12 48.4 +1.5
SIGR S Sn 11 13 30.4 +0.1
SIGR SIGRI 3.68 321 P Pn 11 12 45.9 -1.0
SVRH Sivrihisar-ESK 3.73 34 *e*PN Pn 11 12 48.3 +0.6
SVRH Sivrihisar-ESK 3.73 34 *e*Pn Pn 11 12 48.3 +0.6
GONE Gonen-Balikesi 3.77 347 *e*PN Pn 11 12 49.1 +0.9
GONE Gonen-Balikesi 3.77 347 *e*Pn Pn 11 12 49.1 +0.9
VAM Vamos 3.88 257 P Pn 11 12 52.4 +2.8
KCTX Karacabey (Bur 3.90 355 *e*PN Pn 11 12 50.7 +0.8
KCTX Karacabey (Bur 3.90 355 *e*Pn Pn 11 12 50.7 +0.8
CAVI Cavuskoy 3.90 11 *e*PN Pn 11 12 50.6 +0.6
CAVI Cavuskoy 3.90 11 *e*Pn Pn 11 12 50.6 +0.6
CHBY Cihanbeyli 3.91 55 *e*PN Pn 11 12 51.8 +1.7
CHBY Cihanbeyli 3.91 55 *e*Pn Pn 11 12 51.8 +1.7
IKL Isikli 3.92 91 *e*PN Pn 11 12 52.7 +2.5
CSS Mathiatis 3.93 110 *e*PN Pn 11 12 52.8 +2.5
CSS Mathiatis 3.93 110 P Pn 11 12 50.9 +0.6
CSS Mathiatis 3.93 110 P Pn 11 12 50.9 +0.6
CSS Mathiatis 3.93 110 *e*Pn Pn 11 12 51.4 +1.1
CSS Mathiatis 3.93 110 *e*Pn Pn 11 12 51.4 +1.1
EZN Ezine 3.97 331 *e*PN Pn 11 12 51.4 +0.6
EZN Ezine 3.97 331 *e*Pn Pn 11 12 51.4 +0.6
IZI Iznik 3.99 7 *e*PN Pn 11 12 52.0 +0.9
IZI Iznik 3.99 7 *e*Pn Pn 11 12 52.0 +0.9
EDC Edincik 4.04 349 *e*PN Pn 11 12 53.7 +1.9
EDC Edincik 4.04 349 *e*Pn Pn 11 12 53.7 +1.9
IMMV Iera Moni Meta 4.04 258 P Pn 11 12 54.0 +2.2
IMMV Iera Moni Meta 4.04 258 P Pn 11 12 54.0 +2.2
ADVT Abdulvahap 4.11 10 *e*PN Pn 11 12 54.7 +1.9
ADVT Abdulvahap 4.11 10 *e*Pn Pn 11 12 54.7 +1.9
SULT Sultanhani-AKS 4.16 63 *e*PN Pn 11 12 55.7 +2.2
SULT Sultanhani-AKS 4.16 63 *e*Pn Pn 11 12 55.7 +2.2
GVD Gavdhos 4.16 250 P Pn 11 12 56.4 +3.0
GVD Gavdhos 4.16 250 P Pn 11 12 56.4 +3.0

ARMT Armutlu 4.18 0 *e*PN Pn 11 12 55.0 +1.2
ARMT Armutlu 4.18 0 *e*Pn Pn 11 12 55.0 +1.2
GULT Gulveren 4.26 18 *e*PN Pn 11 12 56.0 +1.1
GULT Gulveren 4.26 18 *e*Pn Pn 11 12 56.0 +1.1
VLY Voula,Athens 4.29 292 P Pn 11 12 57.0 +1.8
VLY Voula,Athens 4.29 292 P Pn 11 12 57.0 +1.8
PTL Penteli 4.30 294 P Pn 11 12 57.0 +1.6
PTL Penteli 4.30 294 P Pn 11 12 57.0 +1.6
ATHU Athens Univers 4.33 293 P Pn 11 12 57.4 +1.6
ATHU Athens Univers 4.33 293 P Pn 11 12 57.4 +1.6
EREA Eretria 4.40 299 P Pn 11 12 58.2 +1.4
EREA Eretria 4.40 299 P Pn 11 12 58.2 +1.4
EREN Erenkoy 4.41 99 *e*PN Pn 11 12 59.6 +2.6
GELI Tayfur-Gelibol 4.42 336 *e*PN Pn 11 12 58.6 +1.6
GELI Tayfur-Gelibol 4.42 336 *e*Pn Pn 11 12 58.6 +1.6
GADA Gvkgeada 4.45 330 *e*PN Pn 11 12 58.3 +0.8
GADA Gvkgeada 4.45 330 *e*Pn Pn 11 12 58.3 +0.8
MDUB Mudurnu 4.49 24 *e*PN Pn 11 12 59.3 +1.2
MDUB Mudurnu 4.49 24 *e*Pn Pn 11 12 59.3 +1.2
RKY Sarkoy-Tekirda 4.50 344 *e*PN Pn 11 12 59.3 +1.2
RKY Sarkoy-Tekirda 4.50 344 *e*Pn Pn 11 12 59.3 +1.2
ANKY Antikythira Is 4.50 265 P Pn 11 12 58.0 -0.2
ANKY Antikythira Is 4.50 265 P Pn 11 12 58.0 -0.2
LIA Limnos Island 4.54 322 P Pn 11 12 59.3 +0.6
AFSR Af˙ar-Bala (A 4.54 46 *e*PN Pn 11 12 60.0 +1.2
AFSR Af˙ar-Bala (A 4.54 46 *e*Pn Pn 11 13 00.0 +1.2
SERE Sereflikochisa 4.55 54 *e*PN Pn 11 13 00.8 +1.9
SERE Sereflikochisa 4.55 54 *e*Pn Pn 11 13 00.8 +1.9
MERS Mersin 4.61 82 *e*PN Pn 11 13 02.3 +2.6
DID Didima 4.62 286 P Pn 11 13 01.8 +2.0
DID Didima 4.62 286 P Pn 11 13 01.8 +2.0
ERIK Erikli-Kesan 4.66 338 *e*PN Pn 11 13 01.6 +1.3
ERIK Erikli-Kesan 4.66 338 *e*Pn Pn 11 13 01.6 +1.3
KYTH Kithira 4.68 271 P Pn 11 13 04.5 +3.9
KYTH Kithira 4.68 271 P Pn 11 13 04.5 +3.8
VILL Villia 4.75 294 P Pn 11 13 04.1 +2.5
VLI Veliai 4.76 276 P Pn 11 13 04.4 +2.8
VLI Veliai 4.76 276 P Pn 11 13 04.4 +2.8
VIL2 Platees 4.80 294 P Pn 11 13 04.1 +1.8
AOS Alonnisos 4.81 307 P Pn 11 13 05.5 +3.1
AOS Alonnisos 4.81 307 P Pn 11 13 05.5 +3.1
ENEZ Enez 4.83 335 *e*PN Pn 11 13 04.9 +2.2
ENEZ Enez 4.83 335 *e*Pn Pn 11 13 04.9 +2.2
SMTH Samothraki Isl 4.84 329 P Pn 11 13 03.3 +0.5
SMTH Samothraki Isl 4.84 329 P Pn 11 13 03.3 +0.5
KLYT Kilyos 4.87 2 *e*PN Pn 11 13 04.6 +1.4
KLYT Kilyos 4.87 2 *e*Pn Pn 11 13 04.6 +1.4
LTK Loutraki 4.96 291 P Pn 11 13 06.8 +2.3
LTK Loutraki 4.96 291 P Pn 11 13 06.8 +2.3
ALN Alexandroupoli 5.01 335 *e*PN Pn 11 13 06.1 +0.9
ALN Alexandroupoli 5.01 335 P Pn 11 13 04.7 -0.4
ALN Alexandroupoli 5.01 335 *e*Pn Pn 11 13 06.1 +0.9
ALN Alexandroupoli 5.01 335 P Pn 11 13 04.7 -0.4
BRTR Keskin Array B 5.06 47 Pn Pn 11 13 07.5 +1.6
comp=E,2.0nm,0.3s,baz=220,slow=14,SNR=38
BRTR Sn Sn 11 14 03.9 -0.6
comp=E,0.6nm,0.3s,baz=214,slow=17,SNR=3.0
KARA Karaisali 5.07 78 *e*PN Pn 11 13 08.5 +2.5
SKIA Skiathos 5.08 305 P Pn 11 13 06.9 +0.8
SKIA Skiathos 5.08 305 P Pn 11 13 06.9 +0.8
CTYL Yalikoy Yolu 5.11 355 *e*PN Pn 11 13 08.2 +1.7
CTYL Yalikoy Yolu 5.11 355 *e*Pn Pn 11 13 08.2 +1.7
KDZE Karadeniz Ereo 5.33 22 *e*PN Pn 11 13 11.8 +2.2
KDZE Karadeniz Ereo 5.33 22 *e*Pn Pn 11 13 11.8 +2.2
XOR Xorichti 5.37 305 P Pn 11 13 11.4 +1.3
XOR Xorichti 5.37 305 P Pn 11 13 11.3 +1.3
PAIG Paliouri 5.39 313 P Pn 11 13 10.9 +0.6
PAIG Paliouri 5.39 313 P Pn 11 13 10.9 +0.6
GUR Goura 5.41 289 P Pn 11 13 14.3 +3.6
DSF Desfina 5.41 294 P Pn 11 13 14.1 +3.4
KLV Kalavryta, Ach 5.58 289 P Pn 11 13 16.4 +3.3
KLV Kalavryta, Ach 5.58 289 P Pn 11 13 16.4 +3.3
KALE Kalithea 5.69 293 P Pn 11 13 18.8 +4.2
EDRB Edirne 5.70 344 *e*PN Pn 11 13 16.5 +1.9
EDRB Edirne 5.70 344 *e*Pn Pn 11 13 16.5 +1.9
KOZT Kozan 5.71 77 *e*PN Pn 11 13 17.8 +3.0
KAVA Kavala 5.72 325 P Pn 11 13 14.8 0.0
KAVA Kavala 5.72 325 P Pn 11 13 14.8 0.0
PYL PYLOS 5.72 277 P Pn 11 13 19.2 +4.3
SLUM Salum 5.72 213 P Pn 11 13 15.5 +0.5
SLUM baz=215 S Sn 11 14 16.8 -3.9
baz=215
SLUM Salum 5.72 213 P Pn 11 13 15.5 +0.5
LAKA Lakka 5.77 291 P Pn 11 13 18.5 +2.9
LAKA Lakka 5.77 291 P Pn 11 13 18.5 +2.9
ARNB Al Arnab 5.80 93 *e*P Pn 11 13 15.7 -0.4
ARNB *e*S Sn 11 14 14.4 -8.4
ARNB AML AML 11 14 30.0
comp=N,62nm,0.5s
ARNB AML AML 11 14 36.5
comp=E,54nm,0.5s
ARNB Al Arnab 5.80 93 *e*P Pn 11 13 15.7 -0.4
EFP Efpalio 5.88 292 P Pn 11 13 22.7 +5.6
KDZ Kurdzhali 5.90 334 P Pn 11 13 18.6 +1.2
CORM Corum 5.94 48 *e*PN Pn 11 13 20.4 +2.4
CORM Corum 5.94 48 *e*Pn Pn 11 13 20.4 +2.4
TAHT Tahtakopru-Hat 5.94 88 *e*PN Pn 11 13 20.8 +2.9
EVR Evrytania 6.12 297 P Pn 11 13 23.1 +2.6
EVR Evrytania 6.12 297 P Pn 11 13 23.1 +2.6
HNTI Hanita 6.17 120 Sn Sn 11 14 30.6 -1.1
HNTI Hanita 6.17 120 Sn Sn 11 14 30.6 -1.1
BTCH Batrach 6.18 91 *e*P Pn 11 13 20.4 -0.9
BTCH *e*S Sn 11 14 23.2 -8.8
BTCH AML AML 11 14 39.3
comp=N,62nm,0.5s
BTCH AML AML 11 14 43.6
comp=E,87nm,0.5s
BTCH Batrach 6.18 91 *e*P Pn 11 13 20.4 -0.9
HWQ Hawqa 6.18 108 *e*P Pn 11 13 22.1 +0.6
HWQ Hawqa 6.18 108 *e*P Pn 11 13 22.0 +0.6
RZN Rozhen 6.19 330 P Pn 11 13 23.0 +1.4
RZN Pg Pb 11 13 24.9 -13
LIT Litokhoron 6.22 309 P Pn 11 13 22.8 +1.0
LIT Litokhoron 6.22 309 P Pn 11 13 22.8 +1.0
BIDA Albida 6.25 100 *e*P Pn 11 13 20.3 -1.9
BIDA *e*S Sn 11 14 23.4 -10
BIDA AML AML 11 14 32.8
comp=E,198nm,0.4s
BIDA AML AML 11 14 33.9
comp=N,192nm,0.5s
BIDA Albida 6.25 100 *e*P Pn 11 13 20.3 -1.9
SRS Serrai 6.26 321 P Pn 11 13 23.8 +1.5
SRS Serrai 6.26 321 P Pn 11 13 23.8 +1.5
OFRI ‘Ofer 6.31 125 Pn Pn 11 13 23.3 +0.2
OFRI ‘Ofer 6.31 125 Pn Pn 11 13 23.3 +0.2
MMAI Mount Meron Ar 6.37 120 Pn Pn 11 13 23.6 -0.3
comp=N,9.5nm,0.3s,baz=296,slow=12,SNR=19
MMAI Sn Sn 11 14 34.4 -2.3
comp=N,16nm,0.3s,baz=312,slow=25,SNR=8.1
MMAI LR LR 11 16 41.5
comp=N,82nm,18.7s,baz=40,slow=46
MMA1 Mount Meron ar 6.37 120 Pn Pn 11 13 24.0 +0.1
MMA1 Sn Sn 11 14 34.7 -2.0
MMA1 Mount Meron ar 6.37 120 Pn Pn 11 13 24.0 +0.1
MMA1 Sn Sn 11 14 34.7 -2.0
RCY Rachaya 6.43 114 *e*P Pn 11 13 24.9 0.0
RCY Rachaya 6.43 114 *e*P Pn 11 13 24.9 0.0
HAWK Haweek 6.46 104 *e*P Pn 11 13 23.7 -1.4
HAWK *e*S Sn 11 14 28.3 -11
HAWK AML AML 11 14 39.4
comp=N,57nm,0.3s
HAWK AML AML 11 14 40.3
comp=E,42nm,0.6s
HAWK Haweek 6.46 104 *e*P Pn 11 13 23.7 -1.4
PDO Prodromos 6.47 292 P Pn 11 13 25.9 +0.7
PDO Prodromos 6.47 292 P Pn 11 13 25.9 +0.7
MMB Musomiste 6.55 324 P Pn 11 13 28.1 +1.8
BRBR Barbar 6.56 115 *e*P Pn 11 13 24.5 -2.1
BRBR *e*S Sn 11 14 30.6 -11
BRBR AML AML 11 14 40.9
comp=N,20nm,0.4s
BRBR AML AML 11 14 46.8
comp=E,35nm,0.7s
BRBR Barbar 6.56 115 *e*P Pn 11 13 24.5 -2.1
KNT Kendrikon 6.66 318 P Pn 11 13 29.8 +2.0
KNT Kendrikon 6.66 318 P Pn 11 13 29.8 +2.0
KSHT Keshet 6.67 118 Pn Pn 11 13 28.8 +0.7
KSHT Keshet 6.67 118 Pn Pn 11 13 28.8 +0.7
MARH Ras Al Marh 6.69 108 *e*P Pn 11 13 27.5 -1.0
MARH *e*S Sn 11 14 34.3 -11

MARH AML AML 11 14 47.2
comp=N,24nm,0.4s
MARH AML AML 11 14 52.3
comp=E,21nm,0.4s
MARH Ras Al Marh 6.69 108 *e*P Pn 11 13 27.5 -1.0
MMLI Mount Malkishu 6.72 124 Pn Pn 11 13 29.2 +0.6
MMLI Mount Malkishu 6.72 124 Pn Pn 11 13 29.2 +0.6
KPRO Kipourio 6.88 304 P Pn 11 13 33.6 +2.7
KPRO Kipourio 6.88 304 P Pn 11 13 33.6 +2.7
HNAT Natroun 6.89 167 P Pn 11 13 30.2 -0.8
baz=167
HNAT Natroun 6.89 167 P Pn 11 13 30.2 -0.8
HMDT Nahal Hemdat 6.90 125 Pn Pn 11 13 30.9 -0.2
HMDT Sn Sn 11 14 48.4 -1.3
HMDT Nahal Hemdat 6.90 125 Pn Pn 11 13 30.9 -0.2
HMDT Sn Sn 11 14 48.4 -1.3
KOT Kottamia 6.91 158 P Pn 11 13 30.5 -0.8
baz=157
KOT Kottamia 6.91 158 P Pn 11 13 30.5 -0.8
LKD2 Lefkada island 6.92 293 P Pn 11 13 38.3 +6.9
TCHB Talchebab 6.96 120 *e*P Pn 11 13 30.7 -1.3
TCHB *e*S Sn 11 14 38.9 -12
TCHB AML AML 11 15 02.4
comp=E,66nm,0.4s
TCHB AML AML 11 15 10.6
comp=N,32nm,0.5s
HHAG Hagoal 6.97 156 AMP 11 14 00.0
comp=N,80µm,0.2s,logA/T=5.5,baz=156
GLL Jalalah 7.20 160 P Pn 11 13 34.4 -0.9
baz=159
GLL Jalalah 7.20 160 P Pn 11 13 34.4 -0.9
DSI Dead Sea 7.25 130 Pn Pn 11 13 36.0 +0.1
DSI Dead Sea 7.25 130 Pn Pn 11 13 36.0 +0.1
ROOS tl_alroos 7.26 105 *e*P Pn 11 13 36.2 +0.1
ROOS *e*S Sn 11 14 48.0 -11
ROOS AML AML 11 15 05.6
comp=N,49nm,0.5s
ROOS AML AML 11 15 07.0
comp=E,44nm,0.5s
NEST Nestorio 7.32 306 P Pn 11 13 40.1 +3.1
NEST Nestorio 7.32 306 P Pn 11 13 40.1 +3.1
MZDA Masada 7.42 131 Pn Pn 11 13 38.7 +0.5
MZDA Masada 7.42 131 Pn Pn 11 13 38.7 +0.5
VTS Vitosha 7.58 327 ⇑*i*P Pn 11 13 41.4 +0.9
VTS Vitosha 7.58 327 ⇑P Pn 11 13 41.4 +0.9
VTS Vitosha 7.58 327 P Pn 11 13 41.4 +0.9
VTS Vitosha 7.58 327 P Pn 11 13 45.4 +4.9
HNKL Nakhl 7.74 145 P Pn 11 13 42.1 -0.6
baz=144
HNKL AMP 11 15 00.0
comp=N,30µm,0.5s,logA/T=4.8,baz=144
HNKL S Sn 11 15 02.9 -7.6
baz=144
HNKL Nakhl 7.74 145 P Pn 11 13 42.1 -0.6
ZALF Zalf 7.81 114 *e*P Pn 11 13 42.5 -1.1
ZALF *e*S Sn 11 14 60.0 -12
ZALF AML AML 11 15 16.4
comp=N,5.8nm,0.3s
ZALF AML AML 11 15 20.1
comp=E,10nm,0.5s
ZALF Zalf 7.81 114 *e*P Pn 11 13 42.5 -1.1
ZFRI Zfri 7.86 136 Sn Sn 11 15 09.6 -3.8
ASF Jabal al Asfar 7.88 120 Pn Pn 11 13 44.3 -0.4
comp=E,0.7nm,0.3s,baz=267,slow=1.9,SNR=3.0
ASF Sn Sn 11 15 19.5 +5.4
comp=E,0.7nm,0.3s,baz=90,slow=19,SNR=1.9
PRNI Paran 7.92 138 Pn Pn 11 13 44.7 -0.5
PRNI Paran 7.92 138 Pn Pn 11 13 44.7 -0.5
KRMI Paran Flat 7.96 140 Sn Sn 11 15 12.5 -3.3
TIRR Tirgusor 8.08 358 ⇓*i*P Pn 11 13 50.4 +3.2
TIRR Tirgusor 8.08 358 ⇓P Pn 11 13 50.4 +3.2
MBRI Mt Berech 8.31 140 Pn Pn 11 13 50.5 -0.1
MBRI Sn Sn 11 15 20.7 -3.9
MBRI Mt Berech 8.31 140 Pn Pn 11 13 50.5 -0.1
BARS Barje 8.40 322 *e*Pn Pn 11 13 53.6 +1.9
EIL Elat 8.43 141 Pn Pn 11 13 51.7 -0.5
comp=E,2.5nm,0.3s,baz=323,slow=4.2,SNR=11
EIL Sn Sn 11 15 24.9 -2.5
comp=E,6.2nm,0.3s,baz=359,slow=9.2,SNR=7.5
EIL LR LR 11 19 09.8
comp=E,40nm,19.8s,baz=258,slow=52
EIL Elat 8.43 141 Pn Pn 11 13 51.8 -0.4
EIL Sn Sn 11 15 22.9 -4.5
HBST Basata 8.70 144 P Pn 11 13 55.6 -0.2
baz=143
HBST Basata 8.70 144 P Pn 11 13 55.6 -0.2
CFR Carcaliu 8.81 357 ⇓*i*P Pn 11 14 00.4 +3.2
CFR Carcaliu 8.81 357 ⇓P Pn 11 14 00.4 +3.2
HKAT Jabal Katrina 8.96 149 P Pn 11 13 59.0 -0.6
baz=149
HKAT Jabal Katrina 8.96 149 P Pn 11 13 59.0 -0.6
BOVS Bovan 9.07 325 *e*Pn Pn 11 14 03.2 +2.3
BOLS Boljevac 9.12 327 *e*Pn Pn 11 14 03.2 +1.7
MLR Muntele Rosu 9.36 347 Pn Pn 11 14 08.0 +3.0
comp=E,0.2nm,0.3s,baz=243,slow=12,SNR=9.2
MLR Muntele Rosu 9.36 347 ⇑*i*P Pn 11 14 09.3 +4.3
MLR Muntele Rosu 9.36 347 P Pn 11 14 08.0 +3.0
MLR Muntele Rosu 9.36 347 P Pn 11 14 08.0 +3.0
VRI Vrincioaia 9.61 351 ⇑*i*P Pn 11 14 12.6 +4.3
VRI Vrincioaia 9.61 351 ⇑P Pn 11 14 12.6 +4.3
IVAS Ivanjica 9.79 320 *e*Pn Pn 11 14 10.7 -0.2
TIP Timpagrande 9.96 290 *e*Pn Pn 11 14 15.0 +1.9
comp=E,21nm,0.8s
TIP Timpagrande 9.96 290 *e*Pn Pn 11 14 15.0 +1.9
comp=E,21nm,0.8s
GZR Gura Zlata 10.10 335 ⇑*i*P Pn 11 14 16.3 +1.2
GZR Gura Zlata 10.10 335 ⇑P Pn 11 14 16.3 +1.2
GZR Gura Zlata 10.10 335 P Pn 11 14 16.3 +1.2
CUC Castrocucco 10.86 293 *e*Pn Pn 11 14 26.2 +0.8
comp=E,19nm,0.6s
CUC Castrocucco 10.86 293 *e*Pn Pn 11 14 26.2 +0.8
comp=E,19nm,0.6s
DRGR 11.37 338 ⇑*i*P Pn 11 14 35.0 +2.7
DRGR 11.37 338 ⇑P Pn 11 14 35.0 +2.7
DRGR 11.37 338 P Pn 11 14 35.0 +2.7
BURAR Bucovina Array 11.54 348 ⇑*i*P Pn 11 14 38.8 +4.0
BURAR Bucovina Array 11.54 348 ⇑P Pn 11 14 38.8 +4.0
KVAR Kislovodsk Ar 13.02 50 LR LR 11 20 46.5
comp=E,47nm,18.8s,baz=215,slow=41
KBZ Khabaz 13.03 51 Pn P 11 15 06.6 +1.1
comp=E,0.1nm,0.3s,baz=167,slow=2.7,SNR=5.0
KOLS Kolonicke sedl 13.44 341 *eP* P 11 15 12.7 +2.7
KOLS Kolonicke sedl 13.44 341 *e* P 11 15 12.7 +2.7
BOJS Bojanci 13.71 316 *i* Pn P 11 15 12.1 -1.0
VISS Visnje 14.12 316 *i* Pn P 11 15 15.8 -1.9
VYHS Vyhne 14.16 332 *eP* Pn 11 15 14.5 +4.0
VYHS Vyhne 14.16 332 *eP* Pn 11 15 14.5 +4.0
VYHS Vyhne 14.16 332 *e* Pn 11 15 14.5 +4.0
AKASG Malin Array Be 14.30 1 Pn Pn 11 15 16.1 +3.4
baz=185,slow=14,SNR=2.9
PERS Pernice 14.49 319 *i* Pn P 11 15 23.5 +1.7
JAVS Javornik 14.61 315 *i* Pn P 11 15 23.7 +0.5
VRAC Vranov 15.71 329 Pn P 11 15 36.0 +0.8
baz=164,slow=6.6,SNR=4.3
VRAC LR LR 11 22 14.6
comp=E,42nm,19.3s,baz=246,slow=40
KEST Kesra 15.78 273 Pn P 11 15 37.8 +1.6
comp=E,0.3nm,0.3s,baz=224,slow=7.2,SNR=8.8
DPC Dobruska-Polom 16.63 331 *eP* P 11 15 46.0 +0.5
DPC *ep*P sP 11 15 49.1 -0.6
DPC Dobruska-Polom 16.63 331 *eP* P 11 15 46.0 +0.5
DPC Dobruska-Polom 16.63 331 *eP* P 11 15 46.0 +0.5
GERES GERESS Array B 16.67 323 Pn P 11 15 45.7 -0.3
comp=E,0.3nm,0.3s,baz=135,slow=12,SNR=15
GERES LR LR 11 23 34.3
comp=E,38nm,18.5s,baz=98,slow=42
WTTA Wattenberg 16.77 316 *eP* P 11 15 50.0 +2.8
comp=E,11nm,1.3s
WTTA Wattenberg 16.77 316 P P 11 15 50.0 +2.8
comp=E,11nm,1.3s
WATA Walderalm 16.84 316 *eP* P 11 15 51.1 +3.1
WATA Walderalm 16.84 316 P P 11 15 51.1 +3.1
KHC Kasperske Hory 16.93 324 *eP* P 11 15 51.0 +2.2
KHC *ep*P sP 11 15 53.5 +0.5
KHC Kasperske Hory 16.93 324 *eP* P 11 15 51.0 +2.2
KHC Kasperske Hory 16.93 324 *eP* P 11 15 51.0 +2.2
PRU Pruhonice 17.09 327 *eP* P 11 15 52.4 +1.8
PRU *ep*P sP 11 15 55.5 +0.7
PRU Pruhonice 17.09 327 *eP* P 11 15 52.4 +1.8
PRU Pruhonice 17.09 327 *eP* P 11 15 52.4 +1.8
MOTA Moosalm 17.12 315 *eP* P 11 15 53.4 +2.4
MOTA Moosalm 17.12 315 P P 11 15 53.4 +2.4
FETA Feichten 17.16 314 *eP* P 11 15 53.0 +1.5

	comp=E,10nm,1.0s							
FETA	**Feichten**	**17.16**	**314**	P		**P**	**11 15 53.0**	**+1.5**
	comp=E,10nm,1.0s							
DAVOX	**Davos/Dischmat**	**17.54**	**312**	P		**P**	**11 15 58.2**	**+2.5**
	comp=E,0.1nm,0.3s,baz=115,slow=12,SNR=5.1							
BRG	**Berggiesshubel**	**18.01**	**328**	*e*P		**P**	**11 16 01.8**	**+1.1**
	comp=E,12nm,1.7s							
BRG	**Berggiesshubel**	**18.01**	**328**	*e*P		**P**	**11 16 01.8**	**+1.1**
BRG				pmax	pmax			
	comp=Z,12nm,1.7s							
BRG	**Berggiesshubel**	**18.01**	**328**	*e*P		**P**	**11 16 01.8**	**+1.1**
	comp=Z,12nm,1.7s							
CLL	**Collm**	**18.73**	**328**	*e*(P)		**Pn**	**11 16 13.0**	**+4.0**
CLL				*i*			11 16 14.1	
	comp=Z,14nm,1.4s							
CLL	**Collm**	**18.73**	**328**	*e*P		**Pn**	**11 16 13.0**	**+4.0**
BFO	**Black Forest**	**19.22**	**315**	*i* P		Pn	11 16 20.7	+5.7
OBN	**Obninsk**	**19.48**	**13**‖	*e*P		Pn	11 16 23.0	+5.0
OBN				pmax	pmax			
	comp=Z,12nm,0.9s							
OBN				MLR	MLR			
	comp=Z,35nm,16.0s							
GEYT	**Alibeck**	**23.36**	**77**	P		**P**	**11 16 58.8**	**+0.2**
	comp=Z,1.0nm,0.4s,baz=230,slow=38,SNR=3.2							
FINES	**FINESS Array B**	**25.15**	**357**	P		**P**	**11 17 15.0**	**+0.1**
	comp=Z,7.5nm,0.5s,baz=160,slow=11,SNR=52							
FINES	**FINESS Array B**	**25.15**	**357**	P		**P**	**11 17 15.0**	**+0.1**
FINES	**FINESS Array B**	**25.15**	**357**	P		**P**	**11 17 15.0**	**+0.1**
KLMR	**Klimovskoe**	**25.43**	**12**	*e*P		**P**	**11 17 15.3**	**-2.2**
HFS	**Hagfors**	**25.69**	**342**	P		**P**	**11 17 18.8**	**-1.1**
	comp=Z,1.2nm,0.5s,baz=162,slow=11,SNR=13							
ESDC	**Sonseca Array**	**25.96**	**287**	P		**P**	**11 17 22.7**	**+0.1**
	comp=Z,0.5nm,0.4s,baz=83,slow=9.6,SNR=7.0							
NOA	**NORSAR Array B**	**27.10**	**341**	P		**P**	**11 17 32.5**	**-0.2**
	comp=Z,1.0nm,0.8s,baz=146,slow=9.6,SNR=2.7							
NOA				LR	LR		11 29 16.3	
	comp=Z,24nm,19.5s,baz=155,slow=39							
WSAR	**Wadi Sarin**	**28.86**	**109**	LR	LR		11 31 46.7	
	comp=Z,44nm,19.5s,baz=358,slow=22							
EKA	**Eskdalemuir Ar**	**28.87**	**321**	P		**P**	**11 17 46.1**	**-2.3**
	comp=Z,0.2nm,0.4s,baz=119,slow=9.7,SNR=3.1							
ARCES	**ARCESS Array B**	**33.27**	**358**	P		**P**	**11 18 26.7**	**-0.3**
	comp=Z,1.2nm,0.7s,baz=174,slow=9.0,SNR=5.0							
TORD	**Torodi Ar. Bea**	**33.58**	**233**	P		**P**	**11 18 30.4**	**0.0**
	comp=Z,1.2nm,0.4s,baz=36,slow=8.6,SNR=20							
KURBB	**Kurchatov Arra**	**38.03**	**52**	P		**P**	**11 19 07.3**	**-0.8**
	comp=Z,1.3nm,0.6s,baz=275,slow=8.8,SNR=16							
KURK	**Kurchatov**	**38.09**	**52**	P		**P**	**11 19 07.3**	**-1.4**
KURK	**Kurchatov**	**38.09**	**52**	P		**P**	**11 19 07.3**	**-1.4**
KURK	**Kurchatov**	**38.09**	**52**	P		**P**	**11 19 07.3**	**-1.4**
MKAR	**Makanchi Array**	**40.61**	**58**	P		**P**	**11 19 29.4**	**-0.4**
	comp=Z,1.1nm,0.5s,baz=278,slow=7.1,SNR=18							
ZALV	**Zalesovo Beam**	**42.00**	**47**	P		**P**	**11 19 40.1**	**-1.0**
	comp=Z,0.4nm,0.4s,baz=266,slow=4.3,SNR=3.2							
SPITS	**Spitsbergen Ar**	**42.24**	**356**	P		**P**	**11 19 42.3**	**-0.5**
	comp=Z,1.5nm,0.7s,baz=72,slow=4.7,SNR=5.5							
DBIC	**Dimbokro**	**42.68**	**234**	P		**P**	**11 19 46.1**	**-0.9**
	comp=Z,3.9nm,0.8s,baz=37,slow=7.6,SNR=7.4							
SONM	**Songino Array**	**56.40**	**52**	P		**P**	**11 21 31.4**	**-0.1**
	comp=Z,0.3nm,0.6s,baz=275,slow=6.6,SNR=3.8							
CMAR	**Chiang Mai Arr**	**63.49**	**86**	P		**P**	**11 22 19.3**	**-1.2**
	comp=Z,0.5nm,0.6s,baz=306,slow=7.7,SNR=4.4							
KLR	**Kul'dur**	**70.88**	**43**	P		**P**	**11 23 06.7**	**-0.2**
	comp=Z,0.4nm,0.4s,baz=311,slow=6.9,SNR=4.6							
SEY	**Seymchan**	**71.27**	**24**	P		**P**	**11 23 09.4**	**+0.4**
	comp=Z,0.3nm,0.5s,baz=297,slow=8.3,SNR=5.3							
MA2	**Magadan**	**73.08**	**27**	P		**P**	**11 23 20.0**	**+0.1**
	comp=Z,1.2nm,0.4s,baz=358,slow=10,SNR=3.8							
USRK	**Ussuriysk Ar.**	**73.85**	**47**	P		**P**	**11 23 24.3**	**-0.4**
	comp=Z,2.3nm,0.8s,baz=249,slow=7.3,SNR=3.1							
KSAR	**Wonju Array Be**	**75.14**	**54**	P		**P**	**11 23 33.0**	**+0.6**
KSAR	**Wonju Array Be**	**75.14**	**54**	P		**P**	**11 23 33.0**	**+0.6**
KSAR	**Wonju Array Be**	**75.14**	**54**	P		**P**	**11 23 33.0**	**+0.6**
KSRS	**Korea Array**	**75.16**	**54**	P		**P**	**11 23 33.0**	**+0.5**
	comp=Z,2.2nm,0.9s,baz=309,slow=4.5,SNR=4.3							
YKA	**Yellowknife Ar**	**77.17**	**344**	P		**P**	**11 23 41.7**	**-1.7**
	comp=Z,0.1nm,0.4s,baz=31,slow=5.1,SNR=8.8							
ILAR	**Eielson Array**	**79.13**	**358**	P		**P**	**11 23 54.5**	**+0.2**
	comp=Z,0.4nm,0.9s,baz=352,slow=3.6,SNR=3.7							

NIED ***10*** *11:22:00,37.°10N×140.°80E,h5km,Mw3.8 Best double couple: M0 5.95000×10^14 NP1:φ=1.00000°, δ35.00000°, λ-78.00000°. NP2:φ=166.00000°, δ56.00000°, λ-99.00000°.*

IDC ***10*** *11:22:14.8±0.6,37.°15N×140.°66E,h0km,mb3.8/17, mb1 4.0/19,mb1mx3.8/61,mbtmp3.8/19,ML3.7/2,MS3.1/6, Ms1 3.1/6,ms1mx2.7/51,Error ellipse: s-maj=19.1km s-min=13.9km az=109.0*

JMA ***10*** *11:22:15.8,37.°08N×140.°77E,h7km±1km,M3.8*

JMA Felt IV J1.

NEIC ***10*** *11:22:20.0±0.2,37.°11N×140.°63E,h35km,mb4.7/9,Error ellipse: s-maj=6.2km s-min=5.4km az=141.0*

NEIC Recorded [4 JMA] in Fukushima.

ISC 10 11:22:15.2±1.1,37.°15N±0.°04×140.°72E±0.°04,h3km±7km, n72,σ0°67/66,mb4.0/26,2C-2D,Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.07**	**126**	‖P	**Pg**	**11 22 17.1**	**+0.3**
ONAJ				S	**Sg**	**11 22 18.1**	**+0.2**
JFK	**Kawauchi**	**0.25**	**29**	P	**Pb**	**11 22 21.7**	**-0.7**
JFK				S	**Sb**	**11 22 25.9**	**-1.3**
JFT	**Otama**	**0.48**	**320**	‖P	**Pb**	**11 22 26.9**	**+0.5**
JFT				S	**Sb**	**11 22 34.4**	**+0.6**
JHO	**Hitachi**	**0.55**	**193**	‖P	**Pg**	**11 22 25.4**	**-0.3**
JHO				*e*S	**Sg**	**11 22 32.4**	**-0.5**
JSB	**Shiboa**	**0.67**	**255**	P	**Pb**	**11 22 29.7**	**+0.2**
JSB				S	**Sb**	**11 22 39.5**	**+0.4**
JMM	**Marumori**	**0.72**	**4**	‖P	**Pb**	**11 22 30.4**	**0.0**
JMM				S	**Sb**	**11 22 41.0**	**+0.3**
MJAR	**Matsushiro Arr**	**2.10**	**254**	P	**Pn**	**11 22 52.2**	**+0.9**
	33nm,0.3s,baz=74,slow=15,SNR=214						
MJAR				Sn	**Sb**	**11 23 20.7**	**+0.2**
	18nm,0.3s,baz=87,slow=25,SNR=12						
MJAR				LR	LR	11 23 57.7	
	comp=Z,288nm,19.5s,baz=75,slow=51						
MAT	**Matsushiro**	**2.11**	**254**	P	**Pb**	**11 22 52.7**	**-1.3**
MAT				S	**Sg**	**11 23 22.3**	**-0.6**
JHJ	**Hachijo jima 2**	**4.09**	**191**	Pn	**Pn**	**11 23 19.2**	**+0.6**
	10nm,0.3s,baz=107,slow=23,SNR=5.3						
JHJ				Sn	**Sn**	**11 24 08.0**	**+1.0**
	14nm,0.3s,baz=60,slow=20,SNR=2.5						
JNU	**Nakatsue**	**9.01**	**246**	LR	LR	11 28 10.7	
	comp=Z,100nm,18.0s,baz=122,slow=40						
USRK	**Ussuriysk Ar.**	**9.67**	**319**	Pn	Pn	11 24 41.8	+6.6
	0.1nm,0.3s,baz=139,slow=13,SNR=8.3						
YSS	**Yuzh-Sakhalins**	**9.92**	**8**	*e*Pn	Pn	11 24 42.6	+4.1
KSRS	**Korea Array**	**10.20**	**276**	Pn	Pn	11 24 50.1	+7.7
	0.1nm,0.3s,baz=91,slow=13,SNR=10						
KSRS				LR	LR	11 28 22.3	
	comp=Z,65nm,20.3s,baz=75,slow=36						
KS15	**Wonju Array Si**	**10.23**	**276**	*e*Pn	Pn	11 24 50.1	+7.2
KSAR	**Wonju Array Be**	**10.23**	**276**	Pn	Pn	11 24 50.1	+7.2
KLR	**Kul'dur**	**13.72**	**334**	Pn	**P**	**11 25 38.9**	**-0.5**
	0.1nm,0.3s,baz=81,slow=17,SNR=3.9						
PETK	**Petropavlovsk-**	**19.87**	**31**	LR	LR	11 33 53.8	
	comp=Z,29nm,18.2s,baz=160,slow=35						
MA2	**Magadan**	**23.36**	**13**	P	**P**	**11 27 24.7**	**+0.1**
	3.5nm,0.7s,baz=214,slow=6.8,SNR=8.1						
SEY	**Seymchan**	**26.79**	**12**	P	**P**	**11 27 56.8**	**+0.7**
	1.7nm,0.7s,baz=199,slow=7.0,SNR=10						
SONA1	**Songino Array**	**27.26**	**304**	*e*P	**P**	**11 28 01.6**	**+0.9**
SONA0	**Songino Array**	**27.26**	**304**	*e*P	**P**	**11 28 00.9**	**+0.2**
	3.5nm,1.3s						
SONM	**Songino Array**	**27.26**	**304**	P	**P**	**11 28 00.9**	**+0.2**
	1.4nm,0.7s,baz=103,slow=8.9,SNR=8.6						
H11N2	**WAKE ISLAND Hy**	**28.68**	**120**	T	T	11 57 59.1	
	baz=313,slow=75,SNR=94						
H11N1	**WAKE ISLAND Hy**	**28.69**	**120**	T	T	11 57 59.8	
	baz=313,slow=75,SNR=93						
H11N3	**WAKE ISLAND Hy**	**28.70**	**120**	T	T	11 58 00.4	
	baz=313,slow=75,SNR=81						
H11S1	**WAKE ISLAND Hy**	**29.39**	**122**	T	T	11 58 54.2	
	baz=314,slow=75,SNR=57						
H11S3	**WAKE ISLAND Hy**	**29.39**	**122**	T	T	11 58 54.0	
	baz=314,slow=75,SNR=41						
H11S2	**WAKE ISLAND Hy**	**29.40**	**122**	T	T	11 58 50.2	
	baz=314,slow=75,SNR=33						
CMAR	**Chiang Mai Arr**	**40.99**	**255**	LR	LR	11 49 25.5	
	comp=Z,12nm,18.3s,baz=195,slow=40						
ZAA0	**Zalesovo Array**	**41.43**	**312**	*e*P	**P**	**11 30 02.3**	**-0.5**
ZAA1	**Zalesovo Array**	**41.43**	**312**	*e*P	**P**	**11 30 02.2**	**-0.5**
ZALV	**Zalesovo Beam**	**41.43**	**312**	P	**P**	**11 30 02.3**	**-0.5**
	0.8nm,0.5s,baz=81,slow=5.1,SNR=5.0						
MK01	**Makanchi Array**	**43.59**	**302**	*e*P	**P**	**11 30 20.8**	**+0.3**
MK31	**Makanchi Array**	**43.59**	**302**	*e*P	**P**	**11 30 20.6**	**+0.1**
MK32	**Makanchi Array**	**43.59**	**302**	*e*P	**P**	**11 30 20.5**	**0.0**
MKAR	**Makanchi Array**	**43.59**	**302**	P	**P**	**11 30 20.5**	**0.0**
	0.3nm,0.3s,baz=91,slow=8.7,SNR=5.8						
SVW2	**Sparrevohn**	**45.77**	**37**	*e*P	**P**	**11 30 38.6**	**+0.9**
	46nm,1.9s						
IL1	**Eielson Array**	**49.70**	**32**	*e*P	**P**	**11 31 08.8**	**+0.7**
ILAR	**Eielson Array**	**49.70**	**32**	P	**P**	**11 31 08.2**	**+0.2**
	0.9nm,0.7s,baz=264,slow=5.9,SNR=9.9						
ILB	**Eielson Array**	**49.70**	**32**	*e*P	**P**	**11 31 08.2**	**+0.2**
VOSK	**Vostochnaya**	**49.79**	**312**	*e*P	**P**	**11 31 08.8**	**-0.2**
INK	**Inuvik**	**54.54**	**27**	P	**P**	**11 31 44.0**	**+0.1**
	0.4nm,0.5s,baz=287,slow=5.8,SNR=5.8						
INK	**Inuvik**	**54.54**	**27**	*e*P	**P**	**11 31 44.0**	**+0.1**
	11nm,1.9s						
HON	**Honolulu**	**54.87**	**89**	*e*P	**P**	**11 31 47.0**	**-0.1**
	444nm,1.3s						
WB2	**Warramunga Arr**	**57.10**	**187**	*e*P	**P**	**11 32 03.3**	**+0.4**
	19nm,1.7s						
WR1	**Warramunga Arr**	**57.10**	**187**	*e*P	**P**	**11 32 01.5**	**-1.3**
	16nm,1.5s						
WRA	**Warramunga Arr**	**57.10**	**187**	P	**P**	**11 32 01.5**	**-1.3**
	1.5nm,0.5s,baz=3.4,slow=7.3,SNR=31						
AS31	**Alice Springs**	**60.83**	**187**	*e*P	**P**	**11 32 29.2**	**+0.5**
	1.2nm,1.0s						
ASAR	**Alice Springs**	**60.83**	**187**	P	**P**	**11 32 29.2**	**+0.5**
	0.5nm,0.5s,baz=19,slow=13,SNR=13						
MBWA	**Marble Bar**	**61.28**	**202**	*e*P	**P**	**11 32 31.0**	**-0.8**
	33nm,1.6s						
RES	**Resolute Bay**	**62.63**	**14**	*e*P	**P**	**11 32 40.3**	**0.0**
	5.7nm,1.4s						
YKA	**Yellowknife Ar**	**63.99**	**30**	P	**P**	**11 32 49.6**	**+0.2**
	0.2nm,0.7s,baz=304,slow=6.4,SNR=5.5						
YKB5	**Yellowknife Ar**	**63.99**	**30**	*e*P	**P**	**11 32 49.6**	**+0.2**
FIA1	**FINESS Array S**	**68.45**	**332**	*e*P	**P**	**11 33 17.0**	**-1.1**
FIA0	**FINESS Array S**	**68.46**	**332**	*e*P	**P**	**11 33 17.4**	**-0.8**
FINES	**FINESS Array B**	**68.46**	**332**	P	**P**	**11 33 17.4**	**-0.8**
	2.1nm,0.8s,baz=51,slow=6.1,SNR=4.5						
HFS	**Hagfors**	**73.76**	**335**	P	**P**	**11 33 50.3**	**0.0**
	0.7nm,0.6s,baz=61,slow=6.8,SNR=3.4						
NB200	**NORSAR Array S**	**73.87**	**337**	*e*P	**P**	**11 33 50.1**	**-0.9**
NOA	**NORSAR Array B**	**73.87**	**337**	P	**P**	**11 33 50.1**	**-0.9**
	1.1nm,0.8s,baz=39,slow=5.8,SNR=3.4						
AKASG	**Malin Array Be**	**73.87**	**322**	P	**P**	**11 33 49.6**	**-1.5**
	1.0nm,0.7s,baz=46,slow=5.9,SNR=4.3						
FCC	**Fort Churchill**	**74.15**	**26**	*e*P	**P**	**11 33 52.3**	**-0.2**
	15nm,1.8s						
NVAR	**Mina Array Bea**	**75.36**	**53**	P	**P**	**11 34 01.6**	**+1.2**
	0.3nm,0.7s,baz=289,slow=4.5,SNR=5.1						
NV01	**Mina Array Sit**	**75.36**	**53**	*e*P	**P**	**11 34 01.6**	**+1.2**
BW06	**Boulder Array**	**77.98**	**45**	*e*P	**P**	**11 34 15.5**	**+0.4**
PD31	**Pinedale Array**	**77.98**	**45**	*e*P	**P**	**11 34 15.3**	**+0.2**
PDAR	**Pinedale Array**	**77.98**	**45**	P	**P**	**11 34 15.3**	**+0.2**
	0.5nm,0.6s,baz=233,slow=1.5,SNR=5.4						
PFO	**Pinyon Flats O**	**79.44**	**56**	LR	LR	12 01 51.4	
	comp=Z,83nm,20.1s,baz=202,slow=30						
TX31	**Lajitas Ar. Si**	**90.49**	**52**	*e*P	**P**	**11 35 18.8**	**+0.1**
LTX	**Lajitas**	**90.49**	**52**	*e*P	**P**	**11 35 19.5**	**+0.8**
TXAR	**Lajitas Array**	**90.49**	**52**	P	**P**	**11 35 19.5**	**+0.8**
	0.3nm,0.6s,baz=307,slow=2.6,SNR=5.7						
LPAZ	**La Paz**	**147.11**	**59**	PKPbc	**PKPbc**	**11 42 00.8**	**0.0**
	1.0nm,0.7s,baz=67,slow=5.5,SNR=4.4						
LPAZ	**La Paz**	**147.11**	**59**	*e*PKPbc	**PKPbc**	**11 42 01.0**	**+0.2**

SKHL 10 11:25:02.2±0.3,44.°26N×149.°20E,h59km±5km,mb4.3/3, Kuril Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KUR	**Kuril'sk**	**1.36**	**316**	*e*P	Pn	11 25 24.1	-0.8
KUR				AMB	AMB	11 25 24.8	
	50nm,0.3s						
KUR				*i* S	Sn	11 25 40.6	-1.4
KUR				A	A	11 25 44.3	
	50nm,0.3s						
KUR				A	A	11 25 44.3	
	160nm,0.3s						
SHO	**Shikotan**	**1.75**	**258**	*e*P	Pn	11 25 31.6	+1.4
SHO				AMB	AMB	11 25 32.0	
	130nm,0.3s						
SHO				*e*S	Sn	11 25 53.4	+1.9
SHO				A	A	11 25 53.9	
	270nm,0.4s						
SHO				A	A	11 25 53.9	
	240nm,0.4s						
YUK	**Yuzh-Kuril'sk**	**2.41**	**266**	*e*P	Pn	11 25 36.5	-2.7
YUK				AMB	AMB	11 25 37.6	
	50nm,0.3s						
YUK				AMB	AMB	11 25 37.6	
	30nm,0.3s						
YUK				AMB	AMB	11 25 37.6	
	70nm,0.3s						
YUK				*i* S	Sn	11 26 02.3	-5.3
YUK				A	A	11 26 02.9	
	230nm,0.6s						
YUK				A	A	11 26 02.9	
	100nm,0.6s						
YSS	**Yuzh-Sakhalins**	**5.26**	**303**	*e*P	Pn	11 26 19.8	+1.6

CSEM ***10*** *11:29:20.6,44.°64N×21.°74E,h0km,ML1.6,Mining explosion.*

BEO 10 11:29:20.6±0.3,44.°64N×21.°74E,h0km,M1.6/8,4C, Mining explosion.,Northwestern Balkan Peninsula

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MDVR	**Moldovita**	**0.14**	**352**	‖*i*P	Pg	11 29 23.2	-0.1
MDVR				S	Sg	11 29 25.7	+0.5
KUBS	**Kucevo**	**0.23**	**192**	*i* Pg	Pg	11 29 23.8	-1.2
KUBS				*e*Sg	Sg	11 29 26.9	-1.1
KUBS	**Kucevo**	**0.23**	**192**	*i* Pg	Pg	11 29 23.8	-1.2
KUBS				*e*Sg	Sg	11 29 26.9	-1.1
BZS	**Buzias**	**0.98**	**355**	‖*i*P	Pg	11 29 39.7	+0.3
BZS				S	Sb	11 29 53.9	-0.1
BZS	**Buzias**	**0.98**	**355**	*e*Pg	Pg	11 29 38.3	-1.1
BZS				*e*Sg	Sg	11 29 50.4	-1.7
BZS	**Buzias**	**0.98**	**355**	*e*Pg	Pg	11 29 38.3	-1.1
BZS				*e*Sg	Sg	11 29 50.4	-1.7
BOVS	**Bovan**	**1.00**	**181**	*e*Pg	Pg	11 29 38.1	-1.7
BOVS	**Bovan**	**1.00**	**181**	*e*Pg	Pg	11 29 38.1	-1.7
TRUS	**Trudelj**	**1.04**	**247**	*e*Pg	Pg	11 29 39.9	-0.7
TRUS				*e*Sg	Sg	11 29 54.1	0.0
TRUS	**Trudelj**	**1.04**	**247**	*e*Pg	Pg	11 29 39.9	-0.7
TRUS				*e*Sg	Sg	11 29 54.1	0.0
GRUS	**Gruza**	**1.05**	**225**	*e*Pg	Pb	11 29 41.3	-0.4
GRUS	**Gruza**	**1.05**	**225**	*e*Pg	Pb	11 29 41.3	-0.4
GZR	**Gura Zlata**	**1.05**	**44**	‖*i*P	Pg	11 29 39.7	-1.1
GZR	**Gura Zlata**	**1.05**	**44**	S	Sb	11 29 56.1	0.0
GZR	**Gura Zlata**	**1.05**	**44**	*e*Pg	Pg	11 29 40.3	-0.5
GZR				*e*Sg	Sg	11 29 53.9	-0.5
GZR	**Gura Zlata**	**1.05**	**44**	*e*Pg	Pg	11 29 40.3	-0.5
GZR				*e*Sg	Sg	11 29 53.9	-0.5
DIVS	**Divibare**	**1.37**	**247**	*e*Pg	Pg	11 29 46.2	-0.6
DIVS				*e*Sg	Sg	11 30 04.4	-0.1
DIVS	**Divibare**	**1.37**	**247**	*e*Pg	Pg	11 29 46.2	-0.6
DIVS				*e*Sg	Sg	11 30 04.4	-0.1
SELS	**Selova**	**1.49**	**198**	*e*Pg	Pn	11 29 46.7	-1.9
SELS				*e*Sg	Sg	11 30 07.3	-1.1
ZAPS	**Zavoj**	**1.51**	**154**	*e*Pg	Pn	11 29 48.8	-0.1
ZAPS				*e*Sg	Sn	11 30 10.0	+0.7
BARS	**Barje**	**1.82**	**178**	*e*Pg	Pn	11 29 52.5	-0.7
BARS				*e*Sg	Sb	11 30 17.7	-0.5
BARS	**Barje**	**1.82**	**178**	*e*Pg	Pn	11 29 52.5	-0.7
BARS				*e*Sg	Sb	11 30 17.7	-0.5
DRGR		**2.26**	**17**	‖*i*P	Pn	11 29 57.8	-1.5
DRGR				S	Sn	11 30 29.0	+1.2

IDC ***10*** *11:31:06.1±1.1,36.°32N×28.°96E,h0km,mb3.6/3, mb1 3.8/9,mb1mx3.5/50,mbtmp3.6/9,ML3.5/6,MS2.8/5, Ms1 2.8/5,ms1mx2.4/64,Error ellipse: s-maj=18.4km s-min=17.3km az=173.0*

ATH ***10*** *11:31:08.0,36.°51N×28.°77E,h19km±1km,ML3.0/2,Error ellipse: s-maj=2.2km s-min=1.0km az=187.0*

DDA ***10*** *11:31:07.8,36.°45N×28.°75E,h23km,Ml3.5*

CSEM ***10*** *11:31:08.3±0.1,36.°45N×28.°77E,h2km,ML3.3,Error ellipse: s-maj=3.2km s-min=2.2km az=1.0*

ISK ***10*** *11:31:08.2,36.°49N×28.°80E,h7km,ML3.4*

THE ***10*** *11:31:08.2,36.°48N×28.°83E,h2km±2km,ML3.3/5,Error ellipse: s-maj=2.5km s-min=1.1km az=146.0*

ISCJB ***10*** *11:31:08.5±0.5,36.°44N±0.°02×28.°78E±0.°02,h10km±3km, mb3.4/3,MS3.1/1,Error ellipse: s-maj=3.8km s-min=2.7km az=174.3*

ISC 10 11:31:08.0±1.0,36.°44N±0.°02×28.°78E±0.°01,h8km±7km, n155,σ1°27/193,mb3.4/3,Dodecanese Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FETY	**Fethiye**	**0.31**	**51**	*e*PG	**Pg**	**11 31 13.9**	**-0.4**
FETY				*e*SG	**Sg**	**11 31 18.4**	**0.0**
FETY	**Fethiye**	**0.31**	**51**	P	**Pg**	**11 31 13.4**	**-0.9**
FETY				S	**Sg**	**11 31 17.7**	**-0.7**
FETY	**Fethiye**	**0.31**	**51**	P	**Pg**	**11 31 13.4**	**-0.9**
FETY	**Fethiye**	**0.31**	**51**	*e*Pg	**Pg**	**11 31 13.9**	**-0.4**
FETY				*S*	**Sg**	**11 31 17.7**	**-0.7**
FETY				*e*Sg	**Sg**	**11 31 18.4**	**0.0**
DALY	**Dalyan (Mu˘la**	**0.39**	**345**	*e*PG	**Pg**	**11 31 15.2**	**-0.5**
DALY	**Dalyan (Mu˘la**	**0.39**	**345**	*e*Pg	**Pg**	**11 31 15.2**	**-0.5**
TURN	**Turunc**	**0.46**	**342**	*i* P	**Pb**	**11 31 17.6**	**-0.7**
TURN				*i* S	**Sb**	**11 31 26.2**	**+1.0**
TURN	**Turunc**	**0.46**	**342**	P	**Pb**	**11 31 17.6**	**-0.7**
TURN				S	**Sb**	**11 31 26.2**	**+1.0**
ARG	**Arkhangelos**	**0.57**	**247**	P	**Pg**	**11 31 19.3**	**+0.2**
ARG				S	**Sb**	**11 31 30.2**	**+1.6**
ARG	**Arkhangelos**	**0.57**	**247**	P	**Pg**	**11 31 19.3**	**+0.2**
ARG				S	**Sb**	**11 31 28.3**	**-0.3**
AKAS	**Kas**	**0.70**	**107**	*i* P	**Pg**	**11 31 21.3**	**-0.2**
AKAS				*i* S	**Sb**	**11 31 33.6**	**+1.3**
AKAS	**Kas**	**0.70**	**107**	P	**Pg**	**11 31 21.3**	**-0.2**
AKAS				S	**Sb**	**11 31 33.6**	**+1.3**
KSL	**Kastellorizon**	**0.71**	**114**	P	**Pg**	**11 31 20.7**	**-1.0**
KSL				S	**Sb**	**11 31 33.3**	**+0.8**
KSL	**Kastellorizon**	**0.71**	**114**	P	**Pg**	**11 31 21.6**	**-0.1**
KSL				S	**Sb**	**11 31 34.1**	**+1.6**
KSL	**Kastellorizon**	**0.71**	**114**	P	**Pg**	**11 31 21.6**	**-0.1**
KSL				S	**Sb**	**11 31 34.1**	**+1.6**
KSL				AML	AML	11 31 38.5	
	comp=E,3340μm,0.5s						
KSL				AML	AML	11 31 41.6	
	comp=N,2848μm,0.6s						
YER	**Yerkesik**	**0.80**	**330**	*e*PG	**Pb**	**11 31 24.2**	**0.0**
YER	**Yerkesik**	**0.80**	**330**	P	**Pg**	**11 31 23.3**	**-0.2**
YER				S	**Sb**	**11 31 35.7**	**+0.5**
YER	**Yerkesik**	**0.80**	**330**	P	**Pg**	**11 31 23.3**	**-0.2**
YER	**Yerkesik**	**0.80**	**330**	*e*Pg	**Pb**	**11 31 24.2**	**0.0**
ELL	**Elmali**	**0.96**	**71**	*e*PG	**Pg**	**11 31 26.6**	**+0.1**
ELL	**Elmali**	**0.96**	**71**	*e*Pg	**Pg**	**11 31 26.6**	**+0.1**
BDRM	**Kayabasi**	**1.24**	**301**	*i* P	**Pg**	**11 31 30.8**	**-1.1**
BDRM				*i* S	**Sn**	**11 31 49.2**	**+0.6**
BDRM	**Kayabasi**	**1.24**	**301**	P	**Pg**	**11 31 30.8**	**-1.1**
BDRM				S	**Sn**	**11 31 49.2**	**+0.6**
NIS1	**Nisyros Isl.**	**1.30**	**278**	*e*PN	**Pg**	**11 31 33.1**	**+0.1**
NIS1	**Nisyros Isl.**	**1.30**	**278**	P	**Pn**	**11 31 32.4**	**-0.1**
NIS1				S	**Sn**	**11 31 50.8**	**+0.7**
NIS1	**Nisyros Isl.**	**1.30**	**278**	P	**Pn**	**11 31 32.4**	**-0.1**
NIS1				S	**Sn**	**11 31 50.7**	**+0.7**
NIS1	**Nisyros Isl.**	**1.30**	**278**	P	**Pg**	**11 31 33.4**	**+0.4**
NIS1				S	**Sn**	**11 31 50.7**	**+0.7**
DENT	**Denizli**	**1.33**	**9**	*e*PN	**Pn**	**11 31 32.1**	**-0.8**
DENT	**Denizli**	**1.33**

IDI			Sn	Sn	11 32 42.2	+1.3	
	comp=N,4.7nm,0.3s,baz=270,slow=19,SNR=4.6						
IDI			LR	LR	11 33 25.5		
	comp=N,45nm,19.4s,baz=14,slow=40						
IDI	**Anoyia**	**3.36 251**	P	**Pn**	**11 32 01.0**	**+0.2**	
IDI	**Anoyia**	**3.36 251**	P	**Pn**	**11 32 01.0**	**+0.2**	
PRK	**Paraskevi**	**3.43 325**	P	**Pn**	**11 32 01.6**	**-0.2**	
PRK	**Paraskevi**	**3.43 325**	P	**Pn**	**11 32 01.6**	**-0.2**	
KIZT	**Kizilcal**	**3.46 44**	*e*PN	**Pn**	**11 32 04.1**	**+1.8**	
KIZT	**Kizilcal**	**3.46 44**	*e*Pn	**Pn**	**11 32 04.1**	**+1.8**	
LEF	**Lefka**	**3.59 110**	*e*PN	**Pn**	**11 32 05.9**	**+2.0**	
LEF	**Lefka**	**3.59 110**	*e*Pn	**Pn**	**11 32 05.9**	**+2.0**	
SIGR	**SIGRI**	**3.61 321**	*e*PN	**Pn**	**11 32 05.6**	**+1.4**	
SIGR	**SIGRI**	**3.61 321**	*e*Pn	**Pn**	**11 32 05.6**	**+1.4**	
SIGR	**SIGRI**	**3.61 321**	P	**Pn**	**11 32 05.7**	**+1.6**	
EZN	**Ezine**	**3.90 331**	*e*PN	**Pn**	**11 32 09.9**	**+1.8**	
EZN	**Ezine**	**3.90 331**	*e*Pn	**Pn**	**11 32 09.9**	**+1.8**	
IKL	**Isikli**	**3.96 91**	*e*PN	**Pn**	**11 32 10.7**	**+1.6**	
IKL	**Isikli**	**3.96 91**	*e*Pn	**Pn**	**11 32 10.7**	**+1.6**	
EDC	**Edincik**	**3.97 350**	*e*PN	**Pn**	**11 32 10.5**	**+1.4**	
EDC	**Edincik**	**3.97 350**	*e*Pn	**Pn**	**11 32 10.5**	**+1.4**	
CSS	**Mathiatis**	**3.99 110**	*e*PN	**Pn**	**11 32 11.6**	**+2.2**	
CSS	**Mathiatis**	**3.99 110**	*e*Pn	**Pn**	**11 32 11.6**	**+2.2**	
ARMT	**Armutlu**	**4.12 1**	*e*PN	**Pn**	**11 32 13.4**	**+2.2**	
ARMT	**Armutlu**	**4.12 1**	*e*Pn	**Pn**	**11 32 13.4**	**+2.2**	
SULT	**Sultanhani-AKS**	**4.16 64**	*e*PN	**Pn**	**11 32 13.9**	**+2.0**	
SULT	**Sultanhani-AKS**	**4.16 64**	*e*Pn	**Pn**	**11 32 13.9**	**+2.0**	
GULT	**Gulveren**	**4.21 18**	*e*PN	**Pn**	**11 32 14.3**	**+1.7**	
GULT	**Gulveren**	**4.21 18**	*e*Pn	**Pn**	**11 32 14.3**	**+1.7**	
GELI	**Tayfur-Gelibol**	**4.35 336**	*e*PN	**Pn**	**11 32 16.0**	**+1.7**	
GELI	**Tayfur-Gelibol**	**4.35 336**	*e*Pn	**Pn**	**11 32 16.0**	**+1.7**	
GADA	**Gvkgeada**	**4.38 330**	*e*PN	**Pn**	**11 32 16.6**	**+1.9**	
GADA	**Gvkgeada**	**4.38 330**	*e*Pn	**Pn**	**11 32 16.6**	**+1.9**	
RKY	**Sarkoy-Tekirda**	**4.42 344**	*e*PN	**Pn**	**11 32 17.4**	**+2.0**	
RKY	**Sarkoy-Tekirda**	**4.42 344**	*e*Pn	**Pn**	**11 32 17.4**	**+2.0**	
ERIK	**Erikli-Kesan**	**4.58 338**	*e*PN	**Pn**	**11 32 19.5**	**+2.0**	
ERIK	**Erikli-Kesan**	**4.58 338**	*e*Pn	**Pn**	**11 32 19.5**	**+2.0**	
SMTH	**Samothraki Isl**	**4.76 329**	P	**Pn**	**11 32 21.5**	**+1.4**	
SMTH	**Samothraki Isl**	**4.76 329**	P	**Pn**	**11 32 21.5**	**+1.4**	
CTKS	**Kestanelik-??a**	**4.79 358**	*e*PN	**Pn**	**11 32 22.4**	**+2.0**	
CTKS	**Kestanelik-??a**	**4.79 358**	*e*Pn	**Pn**	**11 32 22.4**	**+2.0**	
BRTR	**Keskin Array B**	**5.04 48**	Pn	**Pn**	**11 32 25.4**	**+1.4**	
	comp=N,0.5nm,0.3s,baz=224,slow=15,SNR=14						
BRTR			Sn	**Sn**	**11 33 22.7**	**+0.1**	
	comp=N,0.8nm,0.3s,baz=217,slow=24,SNR=8.2						
MMAI	**Mount Meron Ar**	**6.43 120**	Pn	**Pn**	**11 32 39.8**	**-3.3**	
	comp=N,1.9nm,0.3s,baz=304,slow=16,SNR=3.3						
MMAI			Sn	**Sn**	**11 33 51.7**	**-5.0**	
	comp=N,2.3nm,0.3s,baz=308,slow=22,SNR=2.9						
EIL	**Elat**	**8.51 141**	Pn	**Pn**	**11 33 09.4**	**-2.1**	
	comp=N,0.4nm,0.3s,baz=0.0,slow=9.1,SNR=4.7						
EIL			Sn	**Sn**	**11 34 43.6**	**-4.1**	
	comp=N,0.7nm,0.3s,baz=137,slow=19,SNR=2.5						
MLR	**Muntele Rosu**	**9.29 348**	Pn	**Pn**	**11 33 25.0**	**+2.7**	
	comp=N,0.2nm,0.3s,baz=185,slow=9.4,SNR=5.9						
GNI	**Garni**	**13.07 69**	LR	LR	11 40 01.8		
	comp=N,46nm,18.9s,baz=238,slow=41						
DPC	**Dobruska-Polom**	**16.56 331**	*e*P	**P**	**11 35 03.1**	**+0.1**	
GERES	**GERESS Array B**	**16.60 323**	Pn	**P**	**11 35 04.6**	**+1.0**	
	comp=N,0.1nm,0.3s,baz=128,slow=13,SNR=10						
KHC	**Kasperske Hory**	**16.85 324**	*e*P	**P**	**11 35 08.1**	**+1.8**	
KHC			*ex*	x	11 35 11.0		
DAVOX	**Davos/Dischmat**	**17.46 312**	LR	LR	11 43 34.6		
	comp=N,21nm,18.0s,baz=246,slow=42						
OBN	**Obninsk**	**19.43 14**	LR	LR	11 44 09.7		
	comp=N,25nm,18.5s,baz=276,slow=40						
FINES	**FINESS Array B**	**25.08 357**	P	**P**	**11 36 32.5**	**-0.2**	
	comp=N,2.3nm,0.6s,baz=156,slow=7.3,SNR=8.2						
TORD	**Torodi Ar. Bea**	**33.59 233**	P	**P**	**11 37 48.4**	**-0.4**	
	comp=N,0.3nm,0.7s,baz=46,slow=8.0,SNR=3.4						
JMIC	**Jan Mayen**	**39.73 342**	LR	LR	11 56 25.6		
	comp=N,29nm,20.4s,baz=120,slow=38						
MKAR	**Makanchi Array**	**40.61 58**	P	**P**	**11 38 46.4**	**-1.8**	
	comp=N,0.2nm,0.4s,baz=268,slow=6.8,SNR=4.8						

JMA 10 11:37:45.0±0.3, 38°55N×144°59E, h32km, M3.8, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JTH	**Tanohata**	**2.53**	**304**	P	Pn	11 38 25.2	+1.4
JTH				S	Sn	11 38 55.1	+1.5
JIO	**Ouri**	**2.54**	**269**	S	Sn	11 38 54.7	+0.8
JMK	**Ichinoseki**	**2.67**	**280**	P	Pn	11 38 27.4	+1.7
JOM	**Ohasama**	**2.73**	**291**	P	Pn	11 38 28.4	+1.8
JOM				*e*S	Sn	11 39 01.1	+2.6
JANG	**Nango**	**3.00**	**308**	P	Pn	11 38 31.3	+1.0
JMM	**Marumori**	**3.07**	**258**	P	Pn	11 38 32.6	+1.4
JMM				S	Sn	11 39 08.3	+1.5
JOU	**Okura**	**3.09**	**268**	P	Pn	11 38 34.0	+2.5
JOU				*e*S	Sn	11 39 09.5	+2.1
JRG	**Rokugo**	**3.20**	**287**	P	Pn	11 38 35.5	+2.5
JRG				S	Sn	11 39 13.8	+3.8
JYK	**Kaneyama**	**3.33**	**278**	P	Pn	11 38 37.2	+2.4
JYK				*e*S	Sn	11 39 16.5	+3.2
JTM	**Tenmabayashi**	**3.52**	**311**	S	Sn	11 39 19.6	+1.7

*IDC **10** 11:52:59.5±1.0, 36°.00N×143°.81E, h0km, mb3.4/5, mb1 3.6/7, mb1mx3.4/50, mbtmp3.4/7, ML3.4/2, Error ellipse: s-maj=30.1km s-min=23.0km az=119.0*
*NIED **10** 11:53:00, 36°.20N×143°.50E, h17km, Mw3.5 Best double couple: M₀2.30000×10¹⁴ NP1:φs43.00000°, δ46.00000°, λ-12.00000°. NP2:φs141.00000°, δ81.00000°, λ-135.00000°.*
*ISCJB **10** 11:53:02.7±0.8, 36°.06N±0°.05×143°.54E±0°.07, h33km, mb3.5/5, Error ellipse: s-maj=8.5km s-min=6.5km az=142.9*
*JMA **10** 11:53:04.4±0.2, 36°.24N×143°.52E, h38km, M3.6*
ISC 10 11:53:04.5±1.0, 36°.09N±0°.06×143°.58E±0°.09, h35km, n21, σ1s14/19, mb3.5/5, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**2.46**	**295**	P	**Pn**	**11 53 42.0**	**-0.1**
JHO	**Hitachi**	**2.49**	**283**	S	**Sn**	**11 54 10.6**	**-1.0**
JMM	**Marumori**	**2.85**	**309**	P	**Pn**	**11 53 47.1**	**-0.4**
JMM				*e*S	**Sn**	**11 54 19.3**	**-1.3**
JIO	**Ouri**	**2.96**	**324**	S	**Sn**	**11 54 20.5**	**-2.6**
JFT	**Otama**	**2.97**	**300**	P	**Pn**	**11 53 50.1**	**+1.0**
JFT				S	**Sn**	**11 54 23.0**	**-0.5**
JOU	**Okura**	**3.25**	**315**	*e*S	**Sn**	**11 54 30.0**	**-0.5**
JAG	**Ashikaga**	**3.35**	**277**	P	**Pn**	**11 53 54.8**	**+0.4**
JAG				S	**Sn**	**11 54 32.5**	**-0.5**
JMK	**Ichinoseki**	**3.42**	**327**	P	**Pn**	**11 53 54.5**	**-0.8**
JHJ	**Hachijo jima 2**	**4.32**	**228**	Pn	**Pn**	**11 54 07.1**	**-0.6**
	7.3nm,0.3s,baz=80,slow=23,SNR=5.3						
JHJ				Sn	**Sn**	**11 54 54.8**	**-1.9**
	8.5nm,0.3s,baz=47,slow=18,SNR=4.3						
MJAR	**Matsushiro Arr**	**4.36**	**277**	Pn	**Pn**	**11 54 09.5**	**+1.2**
	1.2nm,0.3s,baz=110,slow=8.8,SNR=14						
H11N2	**WAKE ISLAND Hy**	**26.17**	**122**	T	T	12 25 50.7	
	baz=189,slow=75						
H11N1	**WAKE ISLAND Hy**	**26.18**	**122**	T	T	12 25 48.3	
	baz=189,slow=75						
H11N3	**WAKE ISLAND Hy**	**26.19**	**122**	T	T	12 25 48.1	
	baz=189,slow=75						
H11S1	**WAKE ISLAND Hy**	**26.89**	**125**	T	T	12 26 44.6	
	baz=321						
H11S3	**WAKE ISLAND Hy**	**26.89**	**125**	T	T	12 26 43.6	
	baz=321						
H11S2	**WAKE ISLAND Hy**	**26.90**	**125**	T	T	12 26 44.5	
	baz=321						
KURBB	**Kurchatov Arra**	**47.95**	**309**	P	**P**	**12 01 41.2**	**+1.7**
	1.1nm,0.7s,baz=83,slow=7.7,SNR=12						
WRA	**Warramunga Arr**	**56.41**	**190**	P	**P**	**12 02 42.4**	**-0.2**
	0.4nm,0.7s,baz=11,slow=7.4,SNR=6.4						
ASAR	**Alice Springs**	**60.14**	**190**	P	**P**	**12 03 08.3**	**-0.2**
	0.4nm,0.9s,baz=6.7,slow=7.8,SNR=4.6						
YKA	**Yellowknife Ar**	**63.74**	**30**	P	**P**	**12 03 32.6**	**+0.3**
	0.2nm,0.8s,baz=300,slow=6.3,SNR=3.6						
TXAR	**Lajitas Array**	**89.29**	**54**	P	**P**	**12 05 57.4**	**-0.1**
	0.1nm,0.7s,baz=316,slow=5.0,SNR=3.0						

*NEIC **10** 11:53:26.0, 51°.85N×166°.48W, h29km, ML3.0(AEIC), After AEIC.*
*IDC **10** 11:53:28.6±18.0, 52°.01N×165°.27W, h0km, mb3.3/3, mb1 3.7/4, mb1mx3.2/56, mbtmp3.3/4, ML3.3/1, Error ellipse: s-maj=336.0km s-min=40.4km az=79.0*
ISC 10 11:53:21.4±3.5, 51°.8N±0°.1×166°.68W±0°.08, h1km±24km, n25, σ0s80/31, mb3.3/3, South of Aleutian Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
NIKH	**Nikolski High**	**1.80**	**313**	P	**Pb**	**11 53 55.0**	**-0.2**
NIKH				S	**Sb**	**11 54 17.9**	**-0.3**
OKFG	**Magazine Ridge**	**1.81**	**336**	P	**Pb**	**11 53 55.0**	**-0.3**
OKFG				S	**Sn**	**11 54 17.8**	**+0.4**
OKTU	**Okmok Mt. Tuli**	**1.82**	**333**	P	**Pb**	**11 53 55.8**	**+0.3**
OKTU				S	**Sb**	**11 54 18.9**	**0.0**
OKER	**Okmok East Rim**	**1.89**	**334**	P	**Pb**	**11 53 57.0**	**+0.2**
OKWE	**Okmok W'ng Wal**	**1.96**	**331**	P	**Pb**	**11 53 58.2**	**+0.3**
OKRE	**Okmok R'deer P**	**1.98**	**333**	P	**Pb**	**11 53 58.0**	**-0.2**
MGOD	**Makushin Gods**	**2.04**	**357**	P	**Pn**	**11 53 57.5**	**+0.7**
MSOM	**Makushin Julie**	**2.06**	**356**	P	**Pn**	**11 53 58.1**	**+1.0**
MSOM				S	**Sn**	**11 54 23.1**	**-0.4**
OKAK	**Okmok**	**2.08**	**331**	P	**Pn**	**11 53 57.6**	**+0.1**
UNV	**Unalaska Valle**	**2.09**	**3**	P	**Pn**	**11 53 57.7**	**+0.2**
UNV				S	**Sn**	**11 54 24.2**	**+0.1**
MSW	**Makushin Switc**	**2.15**	**358**	P	**Pn**	**11 53 59.4**	**+0.9**
MSW				S	**Sn**	**11 54 26.0**	**+0.2**
MTBL	**Makushin Table**	**2.21**	**360**	P	**Pn**	**11 54 00.5**	**+1.2**
AKRB	**Akutan Reef Bi**	**2.40**	**9**	P	**Pn**	**11 54 02.5**	**+0.7**
AHB	**Akutan Harbor**	**2.41**	**12**	P	**Pn**	**11 54 02.3**	**+0.3**
WESP	**Westdahl Peak**	**2.97**	**23**	P	**Pn**	**11 54 11.0**	**+1.2**
WESP				S	**Sn**	**11 54 45.5**	**-0.7**
WESN	**West Dahl Nort**	**3.08**	**23**	P	**Pn**	**11 54 12.9**	**+1.7**
SSLW	**Shishaldin Wes**	**3.38**	**26**	P	**Pn**	**11 54 16.0**	**+0.7**
ISLZ	**Isanotski Laza**	**3.46**	**30**	P	**Pn**	**11 54 16.6**	**+0.2**
FALS	**False Pass**	**3.66**	**31**	P	**Pn**	**11 54 19.6**	**+0.4**
DT1	**Dutton Round H**	**4.25**	**36**	P	**Pn**	**11 54 27.9**	**+0.6**
KDAK	**Kodiak Island**	**10.12**	**48**	Pn	Pn	11 56 01.9	+14
	0.2nm,0.3s,baz=278,slow=14,SNR=4.8						
ILAR	**Eielson Array**	**16.57**	**31**	Pn	**Pn**	**11 57 12.4**	**-2.3**
	0.0nm,0.3s,baz=221,slow=9.5,SNR=3.6						
INK	**Inuvik**	**22.97**	**31**	P	**P**	**11 58 27.5**	**+0.6**
	1.5nm,0.7s,baz=245,slow=8.8,SNR=14						
PDAR	**Pinedale Array**	**38.88**	**80**	P	**P**	**12 00 48.4**	**-0.1**
	0.2nm,0.6s,baz=306,slow=3.2,SNR=2.5						
TXAR	**Lajitas Array**	**51.09**	**91**	P	**P**	**12 02 26.0**	**+0.4**
	0.2nm,0.5s,baz=302,slow=4.5,SNR=5.6						

IDC 10 11:56:32.9±2.1, 10°.24S×107°.00E, h0km, mb3.2/3, mb1 3.5/4, mb1mx3.3/46, mbtmp3.3/4, ML3.7/1, Error ellipse: s-maj=60.5km s-min=22.9km az=61.0, South of Jawa

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LEM	**Lembang**	**3.44**	**10**	Pn	Pn	11 57 30.1	+2.1
	6.9nm,0.3s,baz=121,slow=18,SNR=8.5						
LEM				Sn	Sn	11 58 10.5	+0.9
	24nm,0.3s,baz=163,slow=23,SNR=13						
WRA	**Warramunga Arr**	**28.06**	**113**	P	P	12 02 25.5	-0.9
	0.2nm,0.8s,baz=287,slow=11,SNR=2.8						
ASAR	**Alice Springs**	**28.92**	**121**	P	P	12 02 34.9	+0.9
	0.2nm,0.8s,baz=296,slow=9.2,SNR=2.9						
MKAR	**Makanchi Array**	**60.92**	**341**	P	P	12 06 47.1	-0.5
	0.2nm,0.4s,baz=140,slow=6.0,SNR=3.2						

*ISK **10** 11:59:07.6, 41°.50N×36°.00E, h6km, MD2.5*
*DDA **10** 11:59:08.9, 41°.40N×35°.81E, h7km, Ml2.8*
*ISCJB **10** 11:59:09.7±0.7, 41°.40N±0°.04×35°.82E±0°.04, h4km±6km, Error ellipse: s-maj=7.4km s-min=4.7km az=24.9*
*CSEM **10** 11:59:09.7±0.3, 41°.37N×35°.83E, h5km, ML2.8, Error ellipse: s-maj=8.9km s-min=5.0km az=28.0*
ISC 10 11:59:09.2±1.2, 41°.40N±0°.04×35°.84E±0°.03, h7km±9km, n24, σ0s73/36, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SAMS	**Samsun-Alacam**	**0.26**	**97**	*i* P	**Pg**	**11 59 14.9**	**+0.5**
SAMS				*i* S	**Sb**	**11 59 20.2**	**-0.7**
SAMS	**Samsun-Alacam**	**0.26**	**97**	P	**Pg**	**11 59 14.9**	**+0.5**
SAMS				S	**Sb**	**11 59 20.2**	**-0.7**
HAVZ	**Havza**	**0.33**	**196**	*i* P	**Pg**	**11 59 15.4**	**-0.3**
HAVZ				*i* S	**Sg**	**11 59 21.0**	**+0.9**
HAVZ	**Havza**	**0.33**	**196**	P	**Pg**	**11 59 15.4**	**-0.3**
HAVZ				S	**Sg**	**11 59 21.0**	**+0.9**
KVT	**Kavak**	**0.35**	**153**	*e*PG	**Pg**	**11 59 15.8**	**-0.3**
KVT				*e*SG	**Sb**	**11 59 23.0**	**-0.5**
KVT	**Kavak**	**0.35**	**153**	*e*Pg	**Pg**	**11 59 15.8**	**-0.3**
KVT				*e*Sg	**Sb**	**11 59 23.0**	**-0.5**
DIKM	**Dikmen**	**0.51**	**300**	*e*PG	**Pb**	**11 59 19.4**	**-1.0**
DIKM				*e*SG	**Sb**	**11 59 27.8**	**-0.2**
DIKM	**Dikmen**	**0.51**	**300**	*e*Pg	**Pb**	**11 59 19.4**	**-1.0**
DIKM				*e*Sg	**Sb**	**11 59 27.8**	**-0.2**
BOYT	**Boyabat**	**0.70**	**272**	*i* P	**Pg**	**11 59 22.5**	**-0.2**
BOYT				*i* S	**Sn**	**11 59 37.8**	**+1.1**
BOYT	**Boyabat**	**0.70**	**272**	P	**Pg**	**11 59 22.5**	**-0.2**
BYBT	**Boyabat**	**0.81**	**276**	*e*PG	**Pb**	**11 59 25.8**	**+0.2**
BYBT	**Boyabat**	**0.81**	**276**	*e*Pg	**Pb**	**11 59 25.8**	**+0.2**
ERBA	**Erbaa**	**0.99**	**136**	*i* P	**Pg**	**11 59 27.8**	**-0.4**
ERBA				*i* S	**Sn**	**11 59 45.1**	**+1.3**
ERBA	**Erbaa**	**0.99**	**136**	P	**Pg**	**11 59 27.8**	**-0.4**
TOKT	**Tokat**	**1.20**	**153**	*e*PN	**Pn**	**11 59 32.4**	**0.0**
TOKT	**Tokat**	**1.20**	**153**	*e*Pn	**Pn**	**11 59 32.4**	**0.0**
COAL	**Corum-Alaca**	**1.31**	**210**	*i* P	**Pn**	**11 59 33.0**	**-1.0**
COAL				*i* S	**Sn**	**11 59 53.1**	**+1.5**
COAL	**Corum-Alaca**	**1.31**	**210**	P	**Pn**	**11 59 33.0**	**-1.0**
COAL				S	**Sn**	**11 59 53.2**	**+1.5**
CORM	**Corum**	**1.52**	**217**	*e*PN	**Pg**	**11 59 38.1**	**-0.3**
CORM	**Corum**	**1.52**	**217**	*e*Pn	**Pg**	**11 59 38.1**	**-0.3**
SVSK	**Karacayir**	**1.72**	**149**	*e*PN	**Pn**	**11 59 39.6**	**+0.1**
SVSK	**Karacayir**	**1.72**	**149**	*e*Pn	**Pn**	**11 59 39.6**	**+0.1**
SUSE	**Susehri**	**2.15**	**123**	*i* P	**Pb**	**11 59 47.7**	**-0.8**
SUSE	**Susehri**	**2.15**	**123**	P	**Pb**	**11 59 47.7**	**-0.8**

*MEX **10** 12:00:30.5±0.5, 32°.27N×115°.11W, h23km±9km, MD3.6*
*NEIC **10** 12:00:31.1, 32°.23N×115°.32W, h6km, ML2.4(PAS), ML2.8(ECX), After ECX.*
*ECX **10** 12:00:31.1±0.5, 32°.23N×115°.32W, h6km, MD2.6, ML2.8*
ISC 10 12:00:28.1±1.1, 32°.26N±0°.05×115°.21W±0°.06, h29km±8km, n16, σ0s34/25, 2C-3D, California-Baja California border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MBIG	**Mexicali**	**0.15**	**2**	*e*P	**Pn**	**12 00 34.5**	**+0.1**
MBIG				*e*S	**Sb**	**12 00 37.7**	**+0.2**
CPBX	**Cerro Prieto**	**0.18**	**332**	⇓*e*P	**Pn**	**12 00 34.5**	**-0.3**
CPBX				*e*S	**Sb**	**12 00 37.7**	**-0.4**
CPBX				⇓*e*		12 00 40.1	
CPBX				AML	AML	12 00 40.1	
	comp=E,6μm,0.3s						
CPBX	**Cerro Prieto**	**0.18**	**332**	*e*P	**Pb**	**12 00 34.3**	**+0.3**
CPBX				*i* S	**Sb**	**12 00 37.5**	**-0.5**
ECBX	**El Chinero**	**0.80**	**171**	⇓*e*P	**Pn**	**12 00 43.2**	**-0.1**
ECBX				*e*S	**Sn**	**12 00 53.8**	**-0.3**
ECBX				⇓*e*		12 00 54.8	
ECBX				AML	AML	12 00 54.8	
	comp=E,391nm,0.5s						
RMX	**La Rumorosa**	**0.81**	**295**	*e*P	**Pn**	**12 00 43.8**	**+0.1**
RMX				*e*S	**Sb**	**12 00 54.4**	**-0.1**
ZAX	**El Zacaton**	**1.18**	**231**	*e*P	**Pb**	**12 00 49.9**	**+0.1**
SPIG	**San Pedro Mart**	**1.23**	**190**	*e*P	**Pn**	**12 00 50.0**	**+0.4**
SPIG				*e*S	**Sn**	**12 01 05.2**	**-0.2**
SPIG	**San Pedro Mart**	**1.23**	**190**	*e*P	**Pn**	**12 00 50.0**	**+0.4**
SPIG				*e*S	**Sn**	**12 01 05.2**	**-0.2**
SPX	**San Pedro Mart**	**1.23**	**190**	⇓*e*P	**Pn**	**12 00 49.4**	**-0.2**
SPX				*i* S	**Sn**	**12 01 05.3**	**-0.1**
CBX	**Cerro Bola**	**1.24**	**273**	*e*P	**Pb**	**12 00 50.8**	**-0.1**
CBX	**Cerro Bola**	**1.24**	**273**	*e*P	**Pb**	**12 00 51.4**	**+0.5**
CBX				*e*S	**Sb**	**12 01 06.4**	**-0.2**
CBX	**Cerro Bola**	**1.24**	**273**	*e*P	**Pb**	**12 00 51.4**	**+0.5**
CBX				*e*S	**Sb**	**12 01 06.4**	**-0.2**
TJIG	**Tijuana**	**1.26**	**278**	*e*P	**Pb**	**12 00 51.5**	**+0.3**
TJIG				*e*S	**Sb**	**12 01 06.5**	**-0.5**
BAR	**Barrett**	**1.31**	**289**	*e*P	**Pb**	**12 00 52.6**	**+0.6**
TUC	**Tucson**	**3.74**	**88**	*e*Pg	Pb	12 01 43.7	+10
DAC	**Darwin (Calif)**	**4.47**	**334**	*e*Pg	Pb	12 01 59.3	+13
DAC				*e*Sg	Sb	12 02 59.0	+20

*IDC **10** 12:01:48.3±0.6, 36°.74N×142°.01E, h0km, mb4.0/15, mb1 4.2/20, mb1mx4.0/66, mbtmp4.1/20, ML3.8/5, Error ellipse: s-maj=16.7km s-min=14.9km az=119.0*
*ISCJB **10** 12:01:49.3±1.2, 36°.60N±0°.03×141°.87E±0°.05, h15km±8km, mb4.4/35, Error ellipse: s-maj=7.3km s-min=5.7km az=2.9*
*JMA **10** 12:01:53.1±0.2, 36°.69N×141°.61E, h44km±3km, M4.1*
*NEIC **10** 12:01:54.7±1.2, 36°.62N×141°.87E, h44km±11km, mb4.7/23, Error ellipse: s-maj=9.5km s-min=8.0km az=53.0*
ISC 10 12:01:48.7±2.1, 36°.71N±0°.05×141°.81E±0°.07, h1km±12km, n74, σ1s24/69, mb4.6/35, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.90**	**296**	P	**Pb**	**12 02 07.4**	**+0.2**
JFK	**Kawauchi**	**1.00**	**312**	P	**Pb**	**12 02 09.0**	**+0.2**
JHO	**Hitachi**	**1.00**	**265**	P	**Pg**	**12 02 08.3**	**+0.4**
JHO				S	**Sg**	**12 02 20.0**	**-0.9**
JMM	**Marumori**	**1.41**	**325**	P	**Pn**	**12 02 15.5**	**0.0**
JFT	**Otama**	**1.43**	**305**	P	**Pb**	**12 02 16.4**	**+0.3**
JFT				*e*S	**Sb**	**12 02 31.2**	**-3.6**
JIO	**Ouri**	**1.78**	**348**	P	**Pn**	**12 02 21.2**	**+0.6**
JIO				*e*S	**Sn**	**12 02 41.8**	**-2.0**
JOU	**Okura**	**1.89**	**332**	P	**Pb**	**12 02 23.6**	**-0.4**
JOU				S	**Sn**	**12 02 46.2**	**-0.4**
MJAR	**Matsushiro Arr**	**2.90**	**268**	Pn	**Pn**	**12 02 36.9**	**+0.9**
	42nm,0.3s,baz=98,slow=9.4,SNR=578						
MJAR				Sn	**Sn**	**12 03 12.2**	**+0.6**
	13nm,0.3s,baz=60,slow=27,SNR=7.9						
MAT	**Matsushiro**	**2.90**	**268**	P	**Pn**	**12 02 37.3**	**+1.2**
MAT				*e*S	**Sb**	**12 03 16.0**	**-1.3**
JHJ	**Hachijo jima 2**	**3.95**	**206**	Pn	**Pn**	**12 02 51.1**	**+0.7**
	30nm,0.3s,baz=98,slow=15,SNR=20						
JHJ				Sn	**Sn**	**12 03 33.8**	**-3.6**
	53nm,0.3s,baz=299,slow=22,SNR=6.8						
CBIJ	**Chichi jima**	**9.59**	**178**	*e*Pn	**Pn**	**12 04 07.3**	**-0.5**
CBIJ				*e*Sn	Sn	12 05 46.2	-10
JCJ	**Chichijima**	**9.59**	**178**	Pn	**Pn**	**12 04 07.3**	**-0.5**
	3.9nm,0.3s,baz=342,slow=20,SNR=5.1						
JCJ				Sn	Sn	12 05 46.2	-10
	5.1nm,0.3s,baz=287,slow=19,SNR=3.4						
JNU	**Nakatsue**	**9.66**	**251**	Pn	**Pn**	**12 04 11.7**	**+2.8**
	0.3nm,0.3s,baz=30,slow=8.6,SNR=3.8						
USRK	**Ussuriysk Ar.**	**10.58**	**318**	Pn	Pn	12 04 26.6	+5.2
	0.1nm,0.3s,baz=142,slow=12,SNR=4.3						
KSRS	**Korea Array**	**11.12**	**278**	Pn	Pn	12 04 33.2	+4.5
	0.1nm,0.3s,baz=89,slow=14,SNR=5.9						
KS01	**Wonju Array Si**	**11.14**	**278**	*e*Pn	Pn	12 04 34.7	+5.5
KS15	**Wonju Array Si**	**11.15**	**278**	*e*Pn	Pn	12 04 33.2	+4.0
KSAR	**Wonju Array Be**	**11.15**	**278**	Pn	Pn	12 04 33.2	+4.0
INCN	**Inchon**	**12.15**	**278**	*e*Pn	Pn	12 04 46.4	+3.5
ENH	**Enshi**	**27.62**	**266**	*e*P	**P**	**12 07 37.8**	**0.0**
	12nm,0.8s						
H11N2	**WAKE ISLAND Hy**	**27.71**	**121**	T	T	12 36 56.9	
	baz=315,slow=75						
H11N1	**WAKE ISLAND Hy**	**27.72**	**121**	T	T	12 37 07.2	
	baz=315,slow=75						
H11N3	**WAKE ISLAND Hy**	**27.73**	**121**	T	T	12 37 01.2	
	baz=315,slow=75						
SONA1	**Songino Array**	**28.23**	**304**	*e*P	**P**	**12 07 44.4**	**+1.2**
SONA0	**Songino Array**	**28.23**	**304**	*e*P	**P**	**12 07 43.4**	**+0.2**
	2.2nm,0.8s						
SONM	**Songino Array**	**28.23**	**304**	P	**P**	**12 07 43.4**	**+0.2**
	2.0nm,0.7s,baz=108,sl

mb4.6/127,MS4.0/31,Error ellipse: s-maj=5.2km s-min=2.5km az=163.9
*NEIC **10** 12:03:00.1±0.7,46°.41N×152°.97E,h38km±6km,mb4.8/66, Error ellipse: s-maj=6.1km s-min=3.2km az=160.0*
ISC 10 12:02:59.4±0.4,**46°26N**±0'.05×**153°07E**±0'.04,**h40**km,**n328,** σ1§**29**/336,**mb4.7**/127,**MS4.1**/31,**11C-14D,Kuril Islands**

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
KUR	**Kuril'sk**	**3.79**	**256**	*e*P		**Pn**	**12 03 55.6**	**+0.5**
KUR					AMB	AMB	12 03 56.4	
	490nm,3.0s							
KUR					AMB	AMB	12 03 56.4	
	380nm,0.4s							
KUR				*i* S		**Sn**	**12 04 40.0**	**+1.6**
KUR					A	A	12 04 46.4	
	980nm,4.0s							
KUR					A	A	12 04 46.4	
	780nm,4.0s							
KUR					A	A	12 04 49.5	
	450nm,0.5s							
KUR					A	A	12 04 49.5	
	140nm,0.5s							
KUR	**Kuril'sk**	**3.79**	**256**	*c i* PN		**Pn**	**12 03 55.8**	**+0.7**
KUR				*i* S		**Sn**	**12 04 40.6**	**+2.2**
KUR					pmax	pmax		
	comp=N,57nm,0.5s							
KUR					pmax	pmax		
	comp=E,17nm,0.5s							
KUR					pmax	pmax		
	comp=Z,191nm,0.5s							
KUR					pmax	pmax		
	comp=Z,494nm,2.8s							
KUR					smax	smax		
	comp=N,85nm,0.9s							
KUR					smax	smax		
	comp=E,224nm,0.9s							
KUR					smax	smax		
	comp=E,784nm,3.8s							
KUR					smax	smax		
	comp=N,975nm,3.8s							
SKR	**Severo-Kuril's**	**4.87**	**23**	*e*P		**Pn**	**12 04 08.7**	**-1.3**
SKR					AMB	AMB	12 04 09.7	
	comp=N,450nm,2.0s							
SKR					AMB	AMB	12 04 11.3	
	comp=N,190nm,0.6s							
SKR				*e*S		**Sn**	**12 05 02.0**	**-3.0**
SKR					A	A	12 05 04.6	
	comp=N,980nm,3.0s							
SKR					A	A	12 05 13.5	
	comp=N,560nm,1.0s							
SKR					A	A	12 05 13.5	
	comp=N,780nm,1.0s							
SKR					AMS	AMS	12 07 26.0	
	comp=N,3μm,10.0s							
SKR					AMS	AMS	12 07 26.0	
	comp=N,4μm,10.0s							
SKR	**Severo-Kuril's**	**4.87**	**23**	*e*PN		Pn	12 04 06.5	-3.5
SKR					pmax	pmax		
	comp=Z,190nm,0.6s							
SKR					pmax	pmax		
	comp=N,220nm,1.0s							
SKR					pmax	pmax		
	comp=E,340nm,1.0s							
SKR					MLR	MLR		
	comp=E,3μm,10.0s							
SKR					MLR	MLR		
	comp=Z,3μm,10.0s							
SHO	**Shikotan**	**5.03**	**244**	*i* P		**Pn**	**12 04 09.9**	**-2.3**
SHO					AMB	AMB	12 04 11.6	
	comp=Z,550nm,0.5s							
SHO					AMB	AMB	12 04 12.1	
	comp=Z,690nm,3.0s							
SHO				*i* S		**Sn**	**12 05 06.5**	**-2.5**
SHO					A	A	12 05 10.4	
	comp=Z,130nm,0.5s							
SHO					A	A	12 05 10.4	
	comp=Z,180nm,0.5s							
SHO					A	A	12 05 12.5	
	comp=Z,1μm,4.6s							
SHO					AMS	AMS	12 07 01.4	
	comp=Z,980nm,12.0s							
SHO					AMS	AMS	12 07 01.4	
	comp=Z,1μm,12.0s							
SHO	**Shikotan**	**5.03**	**244**	*d i* PN		**Pn**	**12 04 09.8**	**-2.4**
SHO					pmax	pmax		
	comp=E,100nm,0.6s							
SHO					pmax	pmax		
	comp=Z,158nm,0.6s							
SHO					pmax	pmax		
	comp=N,83nm,0.5s							
YUK	**Yuzh-Kuril'sk**	**5.56**	**249**	*i* P		**Pn**	**12 04 20.0**	**+0.4**
YUK					AMB	AMB	12 04 29.0	
	comp=N,40nm,0.3s							
YUK					AMB	AMB	12 04 29.0	
	comp=N,110nm,0.3s							
YUK					AMB	AMB	12 04 29.0	
	comp=N,170nm,0.3s							
YUK				*i* S		**Sn**	**12 05 22.1**	**-0.1**
YUK					A	A	12 05 32.2	
	comp=N,200nm,0.6s							
YUK					A	A	12 05 32.2	
	comp=N,360nm,0.6s							
YUK	**Yuzh-Kuril'sk**	**5.56**	**249**	*d i* PN		**Pn**	**12 04 19.4**	**-0.2**
YUK					pmax	pmax		
	comp=Z,173nm,0.4s							
YUK					pmax	pmax		
	comp=N,44nm,0.2s							
YUK					pmax	pmax		
	comp=E,107nm,0.4s							
NEM2	**Nemuro 2**	**5.96**	**244**	P		Pn	12 04 22.4	-2.6
NEM2				*e*S		**Sn**	**12 05 28.7**	**-3.3**
JRA	**Rausu**	**6.09**	**250**	P		**Pn**	**12 04 26.8**	**+0.1**
JNK	**Nakash**	**6.50**	**249**	P		**Pn**	**12 04 31.5**	**-1.0**
JNK				*e*S		**Sn**	**12 05 44.5**	**-0.9**
JAK	**Akkeshi**	**6.81**	**244**	P		**Pn**	**12 04 34.2**	**-2.4**
JAK				*e*S		**Sn**	**12 05 48.1**	**-4.7**
JTKR	**Abashiri--Toko**	**6.88**	**254**	P		**Pn**	**12 04 37.9**	**+0.3**
YSS	**Yuzh-Sakhalins**	**7.14**	**279**	*e*P		**Pn**	**12 04 44.0**	**+2.8**
YSS					AMB	AMB	12 04 47.3	
	comp=E,30nm,1.0s							
YSS				*e*S		**Sn**	**12 06 02.8**	**+1.8**
YSS					AMS	AMS	12 07 15.0	
	comp=E,400nm,15.0s							
YSS					AMS	AMS	12 07 15.0	
	comp=E,1μm,15.0s							
YSS					AMS	AMS	12 07 15.0	
	comp=E,1μm,15.0s							
YSS	**Yuzh-Sakhalins**	**7.14**	**279**	⇑*e*PN		Pn	12 04 45.1	+3.9
YSS					pmax	pmax		
	comp=Z,30nm,1.4s							
YSS					MLR	MLR		
	comp=Z,1μm,16.0s							
YSS					MLR	MLR		
	comp=N,400nm,12.0s							
YSS					MLR	MLR		
	comp=E,1μm,17.0s							
JMP	**Maruseppu**	**7.23**	**255**	P		**Pn**	**12 04 43.4**	**+0.9**
JAR	**Ashorobuto**	**7.25**	**249**	P		**Pn**	**12 04 41.4**	**-1.3**
JAR				*e*S		**Sn**	**12 06 02.6**	**-1.1**
PEA0	**Petropavlovsk-**	**7.48**	**22**	*e*Pn		**Pn**	**12 04 45.0**	**-0.8**
PEA0B	**Petropavlovsk-**	**7.48**	**22**	*e*Pn		**Pn**	**12 04 45.1**	**-0.8**
PETK	**Petropavlovsk-**	**7.48**	**22**	Pn		**Pn**	**12 04 44.8**	**-1.1**
	comp=E,2.6nm,0.3s,baz=185,slow=15,SNR=30							
PETK					Sn		**Sn**	**12 06 05.7**	**-3.7**
	baz=176,slow=22,SNR=1.8							
PETK					LR	LR	12 07 27.9	
	comp=E,134nm,20.4s,baz=222,slow=37							
PET	**Petropavlovsk**	**7.68**	**26**	*e*P		**Pn**	**12 04 47.9**	**-0.6**
PET					AMB	AMB	12 04 50.2	
	comp=E,870nm,6.0s							
PET					AMB	AMB	12 04 58.7	
	comp=E,340nm,0.7s							
PET				*e*S		**Sn**	**12 06 09.6**	**-4.5**
PET					A	A	12 06 12.8	
	comp=E,810nm,4.8s							
PET					AMS	AMS	12 08 53.2	
	comp=E,1μm,12.0s							
PET	**Petropavlovsk**	**7.68**	**26**	*e*PN		Pn	12 04 45.0	-3.5
PET					MLR	MLR		
	comp=Z,1μm,12.0s							
PET					MLR	MLR		
	comp=Z,700nm,13.0s							
JKK2	**Kamakawa 2**	**7.69**	**256**	P		**Pn**	**12 04 49.3**	**+0.6**
JCH	**Churui**	**7.84**	**246**	*e*S		**Sn**	**12 06 13.7**	**-4.6**
UGL	**Uglegorsk**	**7.94**	**295**	*e*P		**Pn**	**12 04 55.0**	**+2.8**
UGL					AMB	AMB	12 05 03.0	
	comp=Z,90nm,0.8s							
UGL				*e*S		**Sn**	**12 06 22.6**	**+1.9**
UGL					A	A	12 06 33.0	
	comp=Z,120nm,0.8s							
UGL					A	A	12 06 33.0	
	comp=Z,100nm,0.8s							
UGL					AMS	AMS	12 08 20.0	
	comp=Z,200nm,15.0s							
UGL					AMS	AMS	12 08 20.0	
	comp=Z,1μm,15.0s							
MYR	**Moyori**	**8.06**	**244**	*e*S		Sn	12 06 18.3	-5.4
ERM	**Erimo**	**8.29**	**243**	*e*P		**Pn**	**12 04 57.1**	**0.0**
ERM	**Erimo**	**8.29**	**243**	PN		**Pn**	**12 04 57.0**	**0.0**
ERM					pmax	pmax		
	comp=E,26nm,0.8s							
TYV	**Tymovskoe**	**8.30**	**307**	*e*P		**Pn**	**12 05 00.0**	**+2.9**
TYV					AMB	AMB	12 05 12.0	
	comp=Z,20nm,0.8s							
TYV				*e*S		**Sn**	**12 06 31.3**	**+1.9**
TYV	**Tymovskoe**	**8.30**	**307**	*e*PN		Pn	12 05 00.5	+3.4
TYV					pmax	pmax		
	comp=Z,22nm,0.8s							
TYV					MLR	MLR		
	comp=E,2μm,16.0s							
TYV					MLR	MLR		
	comp=Z,2μm,17.0s							
NKL	**Nikolayevsk**	**10.57**	**315**	*e*P		**Pn**	**12 05 30.0**	**+1.9**
NKL					AMB	AMB	12 05 34.5	
	comp=Z,20nm,1.0s							
NKL					AMB	AMB	12 05 34.5	
	comp=Z,30nm,1.0s							
NKL					AMB	AMB	12 05 34.5	
	comp=Z,60nm,1.0s							
NKL					AMS	AMS	12 10 30.0	
	comp=Z,1μm,15.0s							
NKL					AMS	AMS	12 10 30.0	
	comp=Z,800nm,15.0s							
NKL					AMS	AMS	12 10 30.0	
	comp=Z,3μm,15.0s							
NKL	**Nikolayevsk**	**10.57**	**315**	*e*PN		**Pn**	**12 05 30.0**	**+1.9**
NKL					pmax	pmax		
	comp=N,17nm,1.1s							
NKL					pmax	pmax		
	comp=E,25nm,1.1s							
NKL					pmax	pmax		
	comp=Z,55nm,1.1s							
NKL					MLR	MLR		
	comp=N,1μm,15.0s							
NKL					MLR	MLR		
	comp=E,800nm,15.0s							
NKL					MLR	MLR		
	comp=Z,3μm,15.0s							
GRNR	**Gornyy**	**11.92**	**298**	*e*P		**Pn**	**12 05 48.1**	**+1.5**
GRNR					AMB	AMB	12 05 52.2	
	comp=Z,30nm,1.0s							
HABR	**Khabarovsk**	**12.42**	**287**	*e*PN		Pn	12 05 50.1	-3.3
HABR				*e*SS		Sn	12 08 20.2	+10
HABR					pmax	pmax		
	comp=Z,32nm,2.0s							
MA2	**Magadan**	**13.41**	**355**	Pn		**Pn**	**12 06 07.7**	**+0.8**
	comp=Z,1.2nm,0.3s,baz=204,slow=9.0,SNR=9.4							
MA2					LR	LR	12 11 34.9	
	comp=Z,397nm,18.5s,baz=196,slow=39							
KLR	**Kul'dur**	**14.64**	**289**	Pn		**Pn**	**12 06 24.9**	**+1.3**
	comp=Z,0.1nm,0.3s,baz=94,slow=13,SNR=8.2							
KLR					LR	LR	12 12 15.3	
	comp=Z,526nm,19.1s,baz=110,slow=38							
EKMR	**Ekimchan**	**14.67**	**305**	*e*P		**Pn**	**12 06 24.7**	**+0.6**
EKMR					AMB	AMB	12 06 30.3	
	comp=Z,10.0nm,0.9s							
MJAR	**Matsushiro Arr**	**14.77**	**234**	Pn		**Pn**	**12 06 24.4**	**-1.0**
	comp=Z,0.2nm,0.3s,baz=35,slow=15,SNR=5.8							
MJAR					LR	LR	12 12 38.5	
	comp=Z,155nm,20.6s,baz=90,slow=40							
USRK	**Ussuriysk Ar.**	**14.99**	**270**	Pn		**Pn**	**12 06 28.3**	**-0.1**
	comp=Z,0.5nm,0.3s,baz=83,slow=12,SNR=8.4							
USRK					LR	LR	12 12 18.9	
	comp=Z,323nm,18.7s,baz=60,slow=38							
MDJ	**Mudanjiang**	**16.55**	**273**	P		**Pn**	**12 06 49.1**	**+0.7**
MDJ				pP		pP	12 07 00.1	-0.2
MDJ				sP		sP	12 07 03.8	-1.6
MDJ				S		**Sn**	**12 09 53.3**	**+2.4**
MDJ				PcP		**PcP**	**12 11 38.6**	**+1.3**
MDJ					pmax	pmax		
	comp=Z,17nm,1.1s							
MDJ					pmax	pmax		
	comp=Z,110nm,6.4s							
MDJ					LR	LR		
	comp=Z,220nm,20.4s							
MDJ					LR	LR		
	comp=Z,220nm,22.3s							
MDJ					LR	LR		
	comp=Z,440nm,16.5s							
MDJ	**Mudanjiang**	**16.55**	**273**	*e*Pn		**Pn**	**12 06 48.6**	**+0.3**
	comp=Z,26nm,1.1s							
JHJ	**Hachijo jima 2**	**16.61**	**222**	LR		LR	12 16 32.3	
	comp=Z,19nm,18.6s,baz=334,slow=49							
SEY	**Seymchan**	**16.71**	**359**	Pn		**Pn**	**12 06 49.1**	**-1.1**
	comp=Z,0.1nm,0.3s,baz=165,slow=10,SNR=7.4							
SEY	**Seymchan**	**16.71**	**359**	*e*P		**Pn**	**12 06 49.3**	**-0.9**
SEY	**Seymchan**	**16.71**	**359**	‖*e*P		**Pn**	**12 06 49.3**	**-0.9**
BMKR	**Bomnak**	**17.51**	**308**	*e*P		**Pn**	**12 07 00.5**	**+0.2**
BMKR					AMB	AMB	12 07 08.0	
	comp=Z,7.0nm,0.7s							
ZEA	**Zeya**	**18.13**	**304**	*e*P		**Pn**	**12 07 09.1**	**+1.2**
ZEA					AMB	AMB	12 07 13.4	
	comp=Z,40nm,1.0s							
ZEA					AMB	AMB	12 07 14.0	
	comp=Z,300nm,5.0s							
KROS	**Kirovskiy**	**18.47**	**306**	*e*P		**Pn**	**12 07 13.6**	**+1.6**
KROS					AMB	AMB	12 07 18.4	
	comp=Z,9.0nm,0.6s							
CN2	**Changchun**	**19.64**	**273**	⇑P		**P**	**12 07 25.1**	**+0.6**
CN2				*e*sP		sP	12 07 39.0	-0.5
CN2				*e*S		S	12 10 56.0	-7.8
CN2					pmax	pmax		
	comp=Z,10.0nm,0.7s							
CN2					pmax	pmax		
	comp=Z,200nm,4.0s							
CN2					LR	LR		
	comp=Z,1μm,13.0s							
CN2					LR	LR		
	comp=Z,800nm,13.0s							
CN2					LR	LR		
	comp=Z,1μm,12.0s							
KSRS	**Korea Array**	**20.63**	**254**	P		**P**	**12 07 35.9**	**+0.6**
	comp=Z,3.4nm,0.7s,baz=55,slow=11,SNR=9.8							
KSRS					LR	LR	12 14 33.7	
	comp=Z,216nm,21.0s,baz=62,slow=34							
KS01	**Wonju Array Si**	**20.63**	**254**	*e*P		**P**	**12 07 36.1**	**+0.8**
KSAR	**Wonju Array Be**	**20.66**	**254**	P		**P**	**12 07 35.9**	**+0.3**
KSAR	**Wonju Array Be**	**20.66**	**254**	P		**P**	**12 07 35.9**	**+0.3**
YAK	**Yakutsk**	**20.72**	**328**	P		**P**	**12 07 35.7**	**-0.3**
	comp=Z,15nm,0.3s,baz=123,slow=0.9,SNR=4.5							
YAK					LR	LR	12 16 11.6	
	comp=Z,307nm,18.0s,baz=130,slow=39							
YAK	**Yakutsk**	**20.72**	**328**	*e*P		Pn	12 07 43.3	+4.8
YAK				*e*			12 08 01.5	
YAK				*e*SS		Sn	12 11 52.7	+22
YAK				*e*SSS		SSS	12 12 06.4	
YAK					pmax	pmax		
	comp=Z,38nm,0.9s							
YAK					pmax	pmax		
	comp=N,10.0nm,1.0s							
YAK					pmax	pmax		
	comp=E,9.0nm,1.0s							
YAK					pmax	pmax		
	comp=Z,76nm,2.5s							
YAK					pmax	pmax		
	comp=E,47nm,2.3s							
YAK					MLR	MLR		
	comp=Z,377nm,17.0s							
YAK					MLR	MLR		
	comp=N,259nm,15.0s							
YAK					MLR	MLR		
	comp=E,249nm,15.0s							
JCJ	**Chichijima**	**20.99**	**208**	LR		LR	12 17 32.0	
	comp=E,136nm,18.5s,baz=354,slow=42							
JNU	**Nakatsue**	**21.45**	**240**	P		**P**	**12 07 45.8**	**+1.6**
	comp=E,6.8nm,1.0s,baz=44,slow=12,SNR=3.5							
BILL	**Bilibino**	**22.88**	**13**	*e*P		**P**	**12 07 58.7**	**-0.3**
BILL	**Bilibino**	**22.88**	**13**	⇓*i*P		**P**	**12 07 58.7**	**-0.3**
BILL				*e**PP		**pP**	**12 08 05.8**	**-3.3**
BILL				*e**SP		**sP**	**12 08 12.5**	**-1.7**
BILL					PPP	PPP	12 08 30.0	
BILL					*e*S	**S**	**12 12 06.1**	**+0.6**
BILL					pmax	pmax		
	comp=Z,29nm,2.5s							
BILL					MLR	MLR		
	comp=Z,250nm,16.0s							
BJI	**Beijing**	**27.45**	**270**	P		**P**	**12 08 42.7**	**+1.4**
BJI					S	**S**	**12 13 24.4**	**+5.4**
BJI					pmax	pmax		
	comp=Z,10.0nm,1.8s							
BJI					LR	LR		
	comp=Z,150nm,14.7s							
BJI					LR	LR		
	comp=Z,400nm,17.0s							
BJT	**Baijiatuau**	**27.46**	**270**	*e*P		**P**	**12 08 40.3**	**-1.2**
BJT					pmax	pmax		
	comp=Z,10.0nm,0.6s							
BJT	**Baijiatuau**	**27.46**	**270**	*e*P		**P**	**12 08 40.3**	**-1.2**
	comp=Z,10nm,0.6s							
TIXI	**Tiksi**	**27.93**	**344**	P		**P**	**12 08 43.1**	**-2.2**
	comp=Z,1.1nm,0.7s,baz=140,slow=11,SNR=3.9							
TIXI	**Tiksi**	**27.93**	**344**	‖*e*P		**P**	**12 08 43.6**	**-1.7**
TIXI					pmax	pmax		
	comp=Z,6.0nm,1.7s							
TIXI					MLR	MLR		
	comp=Z,375nm,16.0s							
H11N2	**WAKE ISLAND Hy**	**28.80**	**152**	T		T	12 40 31.1	
	baz=340,slow=76,SNR=18							
H11N1	**WAKE ISLAND Hy**	**28.82**	**152**	T		T	12 40 33.9	
	baz=340,slow=76,SNR=12							
H11N3	**WAKE ISLAND Hy**	**28.82**	**152**	T		T	12 40 33.9	
	baz=340,slow=76,SNR=6.7							
NJ2	**Nanjing**	**29.83**	**254**	*e*P		**P**	**12 09 05.1**	**+2.5**
NJ2					pmax	pmax		
	comp=Z,11nm,0.5s							
H11S1	**WAKE ISLAND Hy**	**29.88**	**153**	T		T	12 41 55.1	
	baz=340,slow=76,SNR=35							
H11S3	**WAKE ISLAND Hy**	**29.89**	**153**	T		T	12 41 55.4	
	baz=340,slow=76,SNR=32							
H11S2	**WAKE ISLAND Hy**	**29.90**	**153**	T		T	12 41 55.9	
	baz=340,slow=76,SNR=39							
HHC	**Hu-ho-hao-te**	**30.30**	**275**	*e*P		**P**	**12 09 08.1**	**+1.2**
HHC					S	**S**	**12 14 05.6**	**+1.5**
HHC					sS	sS	12 14 23.6	+1.1
HHC					pmax	pmax		
	comp=Z,36nm,0.9s							
HHC					pmax	pmax		
	comp=Z,100nm,4.5s							
HHC					LR	LR		
	comp=Z,680nm,13.4s							
HHC					LR	LR		
	comp=Z,690nm,12.6s							
HHC					LR	LR		
	comp=Z,820nm,12.1s							
ULN	**Ulaanbaatar**	**31.03**	**290**	*e*P		**P**	**12 09 12.4**	**-0.9**
ULN	**Ulaanbaatar**	**31.03**	**290**	P		**P**	**12 09 12.0**	**-1.3**
ULN					pmax	pmax		
	comp=Z,3.0nm,1.0s							
ULN	**Ulaanbaatar**	**31.03**	**290**	*e*P		**P**	**12 09 13.0**	**-0.3**
	comp=Z,9.9nm,1.5s							
SONA1	**Songino Array**	**31.46**	**290**	*e*P		**P**	**12 09 15.9**	**-1.2**
SONM	**Songino Array**	**31.47**	**290**	P		**P**	**12 09 16.4**	**-0.7**
	comp=Z,0.5nm,0.5s,baz=71,slow=8.7,SNR=3.7							
SONM					LR	LR	12 23 00.3	
	comp=Z,300nm,18.0s,baz=77,slow=38							
TLY	**Talaya**	**32.38**	**298**	LR		LR	12 23 30.9	
	comp=Z,472nm,18.1s,baz=78,slow=38							
TLY	**Talaya**	**32.38**	**298**	*e*P		**P**	**12 09 24.6**	**-0.3**
TLY					pmax	pmax		
	comp=Z,6.0nm,1.2s							
TLY					MLR	MLR		
	comp=Z,470nm,15.0s							
TT01	**Tatalina**	**32.80**	**41**	*e*P		**P**	**12 09 29.3**	**+0.8**
TTA	**Tatalina**	**32.81**	**41**	*e*P		**P**	**12 09 29.1**	**+0.5**
TTA					pmax	pmax		
	comp=Z,18nm,1.5s							
TTA	**Tatalina**	**32.81**	**41**	*e*P		**P**	**12 09 29.1**	**+0.5**
	comp=Z,18nm,1.5s							
ZAK	**Zakamensk**	**32.86**	**296**	*e*P		**P**	**12 09 27.9**	**-1.3**
ZAK					pmax	pmax		
	comp=Z,5.0nm,1.2s							
GUMO	**Guam**	**33.30**	**195**	LR		LR	12 22 35.4	
	comp=Z,88nm,19.3s,baz=78,slow=35							
KDAK	**Kodiak Island**	**34.44**	**50**	LR		LR	12 24 21.9	
	comp=Z,100nm,20.3s,baz=255,slow=38							
XAN	**Xi'an**	**35.45**	**266**	P		**P**	**12 09 51.9**	**+0.1**
XAN					pmax	pmax		
	comp=Z,5.0nm,0.9s							
XAN					pmax	pmax		
	comp=Z,78nm,6.6s							
PMR	**Palmer**	**35.97**	**44**	*e*P		**P**	**12 09 56.4**	**+0.5**
PMR					pmax	pmax		
	comp=Z,22nm,1.4s							
PMR	**Palmer**	**35.97**	**44**	*e*P		**P**	**12 09 56.4**	**+0.5**
	comp=Z,22nm,1.4s							
COLA	**College**	**36.54**	**38**	*e*P		**P**	**12 10 01.1**	**+0.5**
COLA	**College**	**36.54**	**38**	*e*P		**P**	**12 10 01.1**	**+0.5**
COLA					pmax	pmax		
	comp=Z,18nm,1.1s							
COLA	**College**	**36.54**	**38**	*e*P		**P**	**12 10 01.1**	**+0.5**
	comp=Z,18nm,1.1s							
IL1	**Eielson Array**	**36.95**	**38**	*e*P		**P**	**12 10 03.6**	**-0.5**
ILAR	**Eielson Array**	**36.95**	**38**	P		**P**	**12 10 04.0**	**-0.2**
	comp=Z,5.2nm,1.1s,baz=258,slow=6.7,SNR=19							
ILAR					LR	LR	12 25 37.7	
	comp=Z,72nm,20.9s,baz=314,slow=37							
ILAR	**Eielson Array**	**36.95**	**38**	P		**P**	**12 10 04.0**	**-0.2**
ILB	**Eielson Array**	**36.95**	**38**	*e*P		**P**	**12 10 04.2**	**0.0**
ENH	**Enshi**	**37.25**	**260**	*e*P		**P**	**12 10 07.3**	**+0.2**
	comp=Z,18nm,1.4s							
KRAR	**Krasnoyarsk**	**37.86**	**307**	‖*e*P		**P**	**12 10 11.8**	**-0.1**
KRAR					pmax	pmax		
	comp=Z,10.0nm,0.7s							
LZH	**Lanzhou**	**37.88**	**272**	*e*P		**P**	**12 10 13.6**	**+1.0**
LZH					pP	pP	12 10 24.5	+0.8
LZH					sP	sP	12 10 29.0	+0.5
LZH					*e*PP	**PnPn**	**12 11 42.5**	**+1.6**
LZH					*e*S	**S**	**12 16 00.0**	**-1.2**
LZH					sS	sS	12 16 19.3	-0.5
LZH					pmax	pmax		
	comp=Z,62nm,1.4s							
LZH					pmax	pmax		
	comp=Z,150nm,5.2s							
LZH					LR	LR		
	comp=Z,400nm,13.6s							
LZH					LR	LR		
	comp=Z,330nm,13.4s							
LZH					LR	LR		
	comp=Z,480nm,17.3s							
GTA	**Gaotai**	**39.02**	**280**	*e*P		**P**	**12 10 23.2**	**+1.1**
GTA					pP	pP	12 10 29.0	-4.3
GTA					sP	sP	12 10 32.0	-6.0
GTA					PcP	**PcP**	**12 12 33.4**	**+1.8**
GTA					S	**S**	**12 16 19.1**	**+0.7**
GTA					SS	SS	12 19 00.6	-11
GTA					pmax	pmax		
	comp=Z,15nm,1.3s							
GTA					pmax	pmax		
	comp=Z,110nm,4.5s							
GTA					LR	LR		
	comp=Z,210nm,16.2s							
GTA					LR	LR		
	comp=Z,160nm,15.7s							
GTA					LR	LR		
	comp=Z,190nm,16.2s							
NRIK	**Noril'sk**	**39.16**	**329**	P		**P**	**12 10 20.6**	**-2.2**
	comp=Z,2.2nm,0.7s,baz=95,slow=8.5,SNR=5.0							
NRIK					LR	LR	12 27 13.4	
	comp=Z,57nm,18.3s,baz=108,slow=37							
EGAK	**Eagle**	**39.40**	**38**	*e*P		**P**	**12 10 24.8**	**0.0**
	comp=Z,12nm,1.0s							
CD2	**Chengdu**	**40.81**	**266**	P		**P**	**12 10 37.7**	**+0.8**
CD2					sP	sP	12 10 52.4	-0.5
CD2					PP	**PP**	**12 12 11.8**	**+0.4**
CD2					PcP	**PcP**	**12 12 39.0**	**+1.6**
CD2					S	**S**	**12 16 45.3**	**+0.1**
CD2					sS	sS	12 17 04.0	+0.2
CD2					SS	**SS**	**12 19 45.8**	**-1.2**
CD2					pmax	pmax		
	comp=Z,30nm,0.5s							
CD2					pmax	pmax		
	comp=Z,140nm,6.7s							
CD2

GYA pmax pmax
comp=Z,10.0nm,1.0s
INK Inuvik 42.08 32 P **P 12 10 47.2 +0.4**
comp=Z,5.4nm,1.0s,baz=274,slow=8.0,SNR=6.0
ZAA0 Zalesovo Array 42.87 306 *eP* **P 12 10 51.4 -2.1**
ZALV Zalesovo Beam 42.87 306 P **P 12 10 51.6 -1.9**
comp=Z,2.7nm,0.8s,baz=59,slow=6.2,SNR=6.1
ZALV PcP **PcP 12 12 42.8 -0.9**
comp=Z,0.4nm,0.3s,baz=54,slow=3.5,SNR=4.2
WMQ Urumqi 45.08 292 *eP* **P 12 11 12.1 +0.8**
WMQ pP pP 12 11 22.4 -0.3
WMQ S **S 12 17 47.5 0.0**
WMQ pmax pmax
comp=Z,3.0nm,0.6s
WMQ pmax pmax
comp=Z,47nm,5.4s
WMQ LR LR
comp=Z,72nm,19.4s
WMQ LR LR
comp=Z,49nm,17.6s
WMQ LR LR
comp=Z,83nm,17.6s
KMI Kunming 45.12 260 P **P 12 11 14.2 +2.1**
KMI pmax pmax
comp=Z,8.0nm,0.7s
KMI pmax pmax
comp=Z,120nm,6.0s
MKAR Makanchi Array 47.14 298 P **P 12 11 26.6 -0.8**
comp=Z,6.3nm,0.8s,baz=67,slow=9.3,SNR=25
MKAR LR LR 12 32 26.6
comp=Z,406nm,18.4s,baz=70,slow=38
KURK Kurchatov 47.61 304 *eP* **P 12 11 29.7 -1.3**
LSA Lhasa 50.27 274 *eP* **P 12 11 53.5 +1.2**
LSA pmax pmax
comp=Z,6.0nm,0.8s
LSA Lhasa 50.27 274 *eP* **P 12 11 53.5 +1.2**
comp=Z,5.5nm,0.8s
VOSK Vostochnaya 50.97 309 *eP* **P 12 11 55.4 -1.3**
VOSK Vostochnaya 50.97 309 *eP* **P 12 11 55.4 -1.3**
BRVK Borovoye 51.19 310*c iP* **P 12 11 57.2 -1.1**
BRVK pmax pmax
comp=Z,15nm,1.7s
YKW3 Yellowknife Ar 51.30 36 *eP* **P 12 11 59.0 0.0**
comp=Z,8.3nm,1.0s
YKA Yellowknife Ar 51.33 36 P **P 12 11 59.4 +0.2**
comp=Z,1.5nm,0.8s,baz=297,slow=7.3,SNR=17
YKB5 Yellowknife Ar 51.33 36 *eP* **P 12 11 58.8 -0.4**
CM31 Chiang Mai Arr 52.23 257 *eP* **P 12 12 07.2 +0.7**
CMAR Chiang Mai Arr 52.23 257 P **P 12 12 07.5 +1.0**
comp=Z,1.6nm,0.8s,baz=35,slow=7.6,SNR=13
CM01 Chiang Mai Arr 52.24 257 *eP* **P 12 12 07.5 +1.0**
SHL Shillong 52.33 269 *eP* **P 12 12 09.0 +1.6**
KBS Kingsbay 52.98 351 *eP* **P 12 12 10.6 -0.6**
KBS pmax pmax
comp=Z,29nm,1.3s
KBS Kingsbay 52.98 351 *eP* **P 12 12 10.6 -0.6**
comp=Z,29nm,1.3s
AAK Ala-Archa 54.03 297 LR LR 12 36 38.4
comp=Z,269nm,18.1s,baz=43,slow=38
AAK Ala-Archa 54.03 297*c iP* **P 12 12 19.9 +0.2**
AAK pmax pmax
comp=Z,17nm,0.9s
LUWI Luwuk 54.13 218 *eP* **P 12 12 23.3 +2.9**
comp=Z,22nm,0.9s
KSH Kashi 54.81 293 *eP* P 12 12 30.3 +4.9
KSH *epP* sP 12 12 40.5 -1.1
KSH S **S 12 20 06.7 +3.2**
KSH ScS **ScS 12 22 12.4 +1.1**
KSH SS **SS 12 23 49.5 +3.0**
KSH pmax pmax
comp=Z,76nm,2.4s
KSH LR LR
comp=Z,110nm,6.6s
KSH LR LR
comp=Z,320nm,15.5s
KSH LR LR
comp=Z,340nm,14.1s
RAMN Ramite 55.12 274 *eP* **P 12 12 28.7 +0.8**
comp=Z,11nm,0.4s
ARU Arti 55.35 318*c iP* **P 12 12 27.6 -1.2**
ARU 12 14 29.0
ARU S **S 12 20 09.7 -0.2**
ARU SS **SS 12 23 47.8 -6.2**
ARU pmax pmax
comp=Z,13nm,1.2s
ARU MLR MLR
comp=Z,263nm,19.0s
KKN Kakani 55.50 276 *eP* **P 12 12 32.1 +1.5**
comp=Z,5.0nm,0.3s
DMN Daman 55.74 276 *eP* **P 12 12 33.6 +1.3**
GKN Gorkha 55.81 276 *eP* **P 12 12 33.5 +0.7**
KOLN Koldanda 56.67 277 *eP* **P 12 12 40.5 +1.5**
comp=Z,23nm,0.7s
PYUN Piuthan 56.89 277 *eP* **P 12 12 41.7 +1.2**
DAG Danmarks Havn 57.13 358 *i P* **P 12 12 41.2 0.0**
DAG Danmarks Havn 57.13 358 *eP* **P 12 12 41.2 0.0**
NEW Newport 57.49 52 P **P 12 12 44.0 -0.3**
comp=Z,1.5nm,0.7s,baz=356,slow=5.8,SNR=4.1
NEW Newport 57.49 52 *eP* **P 12 12 44.5 +0.2**
NEW Newport 57.49 52 *eP* **P 12 12 44.5 +0.2**
NEW pmax pmax
comp=Z,6.0nm,1.0s
NEW Newport 57.49 52 *eP* **P 12 12 44.5 +0.2**
comp=Z,5.8nm,1.0s
YBH Yreka Blue Hor 58.00 61 P **P 12 12 48.9 +1.0**
comp=Z,1.4nm,0.8s,baz=333,slow=2.3,SNR=2.8
ARCES ARCESS Array B 58.30 341 P **P 12 12 49.2 -0.4**
comp=Z,1.1nm,0.4s,baz=32,slow=7.1,SNR=8.4
ARCES ARCESS Array B 58.30 341 *eP* **P 12 12 49.5 -0.1**
K05A Summer Lake 58.52 60 *eP* **P 12 12 51.8 0.0**
comp=Z,46nm,1.8s
MOD Modoc Plateau 59.36 60 *eP* **P 12 12 56.8 -0.7**
comp=Z,5.8nm,0.9s
BMO Blue Mountains 59.37 56 *eP* **P 12 12 57.8 +0.3**
BMO pmax pmax
comp=Z,7.0nm,1.1s
BMO Blue Mountains 59.37 56 *eP* **P 12 12 57.8 +0.3**
comp=Z,6.9nm,1.1s
ORV Oroville 60.03 63 *eP* **P 12 13 01.8 -0.2**
ORV pmax pmax
comp=Z,5.0nm,1.0s
ORV Oroville 60.03 63 *eP* **P 12 13 01.8 -0.2**
comp=Z,5.3nm,1.0s
WVOR Wild Horse Val 60.04 59 *eP* **P 12 13 02.5 +0.4**
WVOR pmax pmax
comp=Z,6.0nm,0.9s
WVOR Wild Horse Val 60.04 59 *eP* **P 12 13 02.5 +0.4**
comp=Z,6.2nm,0.9s
MSO Missoula 60.08 52 *eP* **P 12 13 03.5 +1.1**
comp=Z,15nm,1.1s
KLMR Klimovskoe 60.51 329 *eP* **P 12 13 03.1 -1.8**
KLMR pmax pmax
comp=Z,12nm,1.0s
AFDM Forest Hills D 60.73 63 *eP* **P 12 13 07.3 +0.6**
comp=Z,6.2nm,1.1s
MFID Camas Ranch 61.09 56 *eP* **P 12 13 10.0 +0.7**
comp=Z,4.8nm,1.0s
SUMG Summit 61.19 4 *i P* **P 12 13 10.1 +0.3**
comp=Z,21nm,0.9s
SUMG Summit 61.19 4 *eP* **P 12 13 10.1 +0.3**
SUMG pmax pmax
comp=Z,22nm,0.9s
SUMG Summit 61.19 4 *eP* **P 12 13 10.1 +0.3**
comp=Z,22nm,0.9s
EGMT Eagleton 61.60 49 *eP* **P 12 13 13.2 +0.6**
comp=Z,14nm,1.1s
CMB Columbia Colle 61.65 64 *eP* **P 12 13 13.6 +0.6**
CMB pmax pmax
comp=Z,13nm,1.4s
CMB Columbia Colle 61.65 64 *eP* **P 12 13 13.6 +0.6**
comp=Z,13nm,1.4s
HLID Hailey 61.81 55 *eP* **P 12 13 15.0 +0.8**
comp=Z,4.9nm,1.0s
WAKR Walker 61.94 63 *eP* **P 12 13 16.0 +0.8**
BOZ Bozeman (W) 62.08 52 *eP* **P 12 13 16.8 +0.9**
BOZ pmax pmax
comp=Z,7.0nm,0.8s
BOZ Bozeman (W) 62.08 52 *eP* **P 12 13 16.9 +0.9**
BOZ Bozeman (W) 62.08 52 *eP* **P 12 13 16.8 +0.9**
comp=Z,6.6nm,0.8s
BMN Battle Mountai 62.10 60 *eP* **P 12 13 16.5 +0.3**
BMN pmax pmax
comp=Z,6.0nm,0.7s
BMN Battle Mountai 62.10 60 *eP* **P 12 13 16.5 +0.3**
comp=Z,5.8nm,0.7s
KBL Kabul 62.22 292 *eP* **P 12 13 17.2 +0.1**
KBL pmax pmax
comp=Z,14nm,0.9s
KBL Kabul 62.22 292 *eP* **P 12 13 17.2 +0.1**
comp=Z,14nm,0.9s
NV01 Mina Array Sit 62.69 62 *eP* **P 12 13 20.6 +0.4**
NVAR Mina Array Bea 62.69 62 P **P 12 13 20.6 +0.3**
comp=Z,2.7nm,0.7s,baz=296,slow=5.9,SNR=12
NVAR LR LR 12 38 06.7
comp=Z,42nm,19.9s,baz=324,slow=34
NV11 Mina Array Sit 62.78 62 *eP* **P 12 13 21.4 +0.7**
comp=Z,7.4nm,1.2s
YMR Madison River 63.06 53 *eP* **P 12 13 24.2 +1.6**
comp=Z,19nm,1.5s
YFT Old Faithful 63.27 53 *eP* **P 12 13 26.3 +2.3**
comp=Z,6.9nm,0.9s
SCO Scoresbysund 63.51 358 *i P* **P 12 13 25.9 +1.1**
comp=Z,10nm,1.0s
SCO Scoresbysund 63.51 358 *i P* **P 12 13 25.9 +1.1**
SCO pmax pmax
comp=Z,10.0nm,1.0s
FLWY Flagg Ranch 63.58 53 *eP* **P 12 13 28.5 +2.5**
comp=Z,8.5nm,1.4s
RLMT Red Lodge 63.70 52 *eP* **P 12 13 27.9 +1.2**
MOOW Moose Ponds 63.76 53 *eP* **P 12 13 28.5 +1.2**
HVU Hansel Valley 63.87 56 *eP* **P 12 13 28.5 +0.6**
HVU pmax pmax
comp=Z,8.0nm,1.1s
HVU Hansel Valley 63.87 56 *eP* **P 12 13 28.5 +0.6**
comp=Z,8.2nm,1.1s
LOHW Long Hollow 63.93 53 *eP* **P 12 13 30.1 +1.8**
comp=Z,18nm,1.4s
SNOW Snow King Moun 63.94 54 *eP* **P 12 13 30.0 +1.6**
comp=Z,18nm,1.3s
REDW Red Top Meadow 63.95 54 *eP* **P 12 13 29.9 +1.3**
comp=Z,23nm,1.2s
DGMT Dagmar 64.17 46 *eP* **P 12 13 30.2 +0.6**
comp=Z,14nm,1.2s
BGU Big Grassy Mou 64.27 57 *eP* **P 12 13 31.7 +1.2**
comp=Z,6.6nm,1.1s
LAO LASA Array 64.30 49 *eP* **P 12 13 31.9 +1.3**
comp=Z,12nm,1.1s
FIA1 FINESS Array S 64.47 335 *eP* **P 12 13 31.1 -0.2**
comp=Z,13nm,0.9s
FINES FINESS Array B 64.47 335 P **P 12 13 30.9 -0.4**
comp=Z,5.8nm,0.6s,baz=41,slow=6.8,SNR=16
DUG Dugway, Tooele 64.86 58 *eP* **P 12 13 35.7 +1.3**
DUG pmax pmax
comp=Z,13nm,1.0s
DUG Dugway, Tooele 64.86 58 *eP* **P 12 13 35.7 +1.3**
comp=Z,13nm,1.0s
TPNV Topopah Spring 64.89 62 *eP* **P 12 13 35.7 +1.1**
TPNV Topopah Spring 64.89 62 *eP* **P 12 13 35.7 +1.1**
BW06 Boulder Array 65.06 54 *eP* **P 12 13 36.6 +0.9**
comp=Z,8.4nm,1.0s
PD31 Pinedale Array 65.06 54 *eP* **P 12 13 36.7 +0.9**
PDAR Pinedale Array 65.06 54 P **P 12 13 36.2 +0.5**
comp=Z,2.0nm,0.8s,baz=302,slow=2.8,SNR=8.9
PDAR LR LR 12 40 07.4
comp=Z,23nm,20.6s,baz=340,slow=34
CTU Camp Tracy 65.16 57 *eP* **P 12 13 36.5 +0.2**
comp=Z,11nm,1.3s
NLU North Lily Min 65.45 57 *eP* **P 12 13 39.5 +1.2**
comp=Z,9.8nm,1.1s
MPU Maple Canyon 65.67 57 *eP* **P 12 13 40.1 +0.4**
comp=Z,9.3nm,1.0s
SHPR Sheep Range 65.84 62 *eP* **P 12 13 41.4 +0.6**
CTA Charters Tower 66.32 187 LR LR 12 38 49.0
comp=Z,140nm,20.6s,baz=74,slow=32
MSU Marysvale 66.33 59 *eP* **P 12 13 44.3 +0.3**
MSU Marysvale 66.33 59 *eP* **P 12 13 44.3 +0.3**
TMUT Trail Mountain 66.38 57 *eP* **P 12 13 45.0 +0.6**
comp=Z,6.6nm,1.1s
P17A Butcher Ranch, 66.54 57 *eP* **P 12 13 47.0 +1.7**
comp=Z,14nm,1.2s
LCMT Little Creek M 66.67 60 *eP* **P 12 13 47.3 +1.2**
comp=Z,8.9nm,1.0s
GEYT Alibeck 66.83 301 P **P 12 13 47.6 +0.6**
comp=Z,8.6nm,0.6s,baz=29,slow=3.4,SNR=7.6
SRU San Rafael Swe 66.91 57 *eP* **P 12 13 48.6 +0.9**
SRU pmax pmax
comp=Z,17nm,1.0s
SRU San Rafael Swe 66.91 57 *eP* **P 12 13 48.5 +0.9**
comp=Z,17nm,1.0s
WRA Warramunga Arr 68.04 199 P **P 12 13 55.0 +0.4**
comp=Z,0.6nm,0.8s,baz=16,slow=6.4,SNR=4.6
NC405 NORSAR Array S 68.50 341 *eP* **P 12 13 56.2 -0.8**
NC204 NORSAR Array S 68.57 342 *eP* **P 12 13 58.0 +0.5**
NB201 NORSAR Array S 68.65 341 *eP* **P 12 13 58.4 +0.3**
NB2 NORSAR Subarra 68.68 341 P **P 12 13 58.0 -0.2**
comp=Z,13nm,1.0s,baz=26,slow=6.5
NOA NORSAR Array B 68.68 341 P **P 12 13 57.7 -0.6**
comp=Z,3.4nm,0.8s,baz=28,slow=6.5,SNR=13
NBO02 NORSAR Array S 68.75 341 *eP* **P 12 13 59.8 +1.2**
HFS Hagfors 68.90 340 P **P 12 13 59.2 -0.4**
comp=Z,4.5nm,0.6s,baz=56,slow=5.6,SNR=16
MVCO Mesa Verde 69.36 58 *eP* **P 12 14 03.4 +0.2**
comp=Z,12nm,1.1s
GOF Gofitskoye 70.14 315*ceP* **P 12 14 07.0 -0.5**
KIV Kislovodsk 71.12 314 *eP* **P 12 14 14.8 +1.2**
KIV pmax pmax
comp=Z,14nm,1.0s
KIV MLR MLR
comp=Z,255nm,18.0s
KBZ Khabaz 71.18 314 P **P 12 14 14.7 +0.9**
comp=Z,9.9nm,0.9s,baz=48,slow=4.2,SNR=15
ECSD EROS Data Cent 71.25 46 *eP* **P 12 14 14.4 +0.1**
comp=Z,7.1nm,1.0s
TUC Tucson 71.33 63 *eP* **P 12 14 15.0 0.0**
TUC pmax pmax
comp=Z,5.0nm,1.0s
TUC Tucson 71.33 63 *eP* **P 12 14 15.0 0.0**
comp=Z,4.7nm,1.0s
AS01 Alice Springs 71.72 198 *eP* **P 12 14 20.1 +2.9**
ASAR Alice Springs 71.74 198 P **P 12 14 19.0 +1.7**
comp=Z,0.7nm,0.7s,baz=14,slow=5.5,SNR=6.5
ASAR LR LR 12 44 49.2
comp=Z,33nm,20.1s,baz=12,slow=35
AKASG Malin Array Be 71.94 326 P **P 12 14 17.9 -0.3**
comp=Z,10nm,0.6s,baz=33,slow=6.2,SNR=31
AKBB Malin Array Si 71.94 326 *eP* **P 12 14 18.3 +0.1**
AKBB pmax pmax
comp=Z,14nm,0.8s
AKBB Malin Array Si 71.94 326 *eP* **P 12 14 18.3 +0.1**
comp=Z,14nm,0.8s
KIEV Kiev 71.95 326*c iP* **P 12 14 17.8 -0.5**
KIEV pmax pmax
comp=Z,15nm,0.8s
KIEV Kiev 71.95 326 *eP* **P 12 14 18.0 -0.3**
comp=Z,14nm,0.8s
AK11 Malin Array Si 71.98 326 *eP* **P 12 14 18.2 -0.2**
LAZ Ladron 72.09 59 *eP* **P 12 14 21.6 +1.9**
ANMO Albuquerque 72.12 58 P **P 12 14 21.7 +1.8**
comp=Z,1.0nm,0.6s,baz=317,slow=8.9,SNR=5.9
ANMO Albuquerque 72.12 58 *eP* **P 12 14 21.3 +1.4**
ANMO pmax pmax
comp=Z,3.0nm,0.8s
ANMO Albuquerque 72.12 58 *eP* **P 12 14 21.3 +1.4**
comp=Z,2.9nm,0.8s
AKH Akhalkalaki 72.56 312 *i P* **P 12 14 24.4 +2.0**
LVV L'vov 74.59 329 *eP* **P 12 14 35.0 +1.1**
MNTX Cormudas Mount 75.04 60 *eP* **P 12 14 37.6 +0.8**
comp=Z,5.6nm,1.0s
KWP Kalwaria Pacla 75.23 329 *eP* **P 12 14 38.8 +1.2**
KWP Kalwaria Pacla 75.23 329 *eP* **P 12 14 38.9 +1.3**
OJC Ojcow 75.73 331 *eP* **P 12 14 41.1 +0.7**
OJC Ojcow 75.73 331 *eP* **P 12 14 41.2 +0.7**
OJC pmax pmax
comp=Z,45nm,1.9s
OJC Ojcow 75.73 331 *eP* **P 12 14 41.2 +0.7**
comp=Z,45nm,1.9s
BUR08 Bucovina Ar. S 75.96 327 *eP* **P 12 14 42.8 +0.8**
KOLS Kolonicke sedl 75.97 329 *eP* **P 12 14 41.9 0.0**
KOLS pmax pmax
comp=Z,7.0nm,1.2s
KOLS Kolonicke sedl 75.97 329 *eP* **P 12 14 41.9 0.0**
BURAR Bucovina Array 75.98 327 *i P* **P 12 14 42.5 +0.4**
UZH Uzhgorod 76.22 329 *eP* **P 12 14 43.5 +0.3**
UZH *e* 12 14 57.7
CRVS Cervenica-Dubn 76.28 329 *eP* **P 12 14 43.9 +0.2**
CRVS Cervenica-Dubn 76.28 329 *eP* **P 12 14 43.9 +0.2**
TESR Tescani 76.33 325 *i P* **P 12 14 44.6 +0.7**
WMOK Wichita Mounta 76.67 54 *eP* **P 12 14 46.4 +0.3**
WMOK pmax pmax
comp=Z,6.0nm,1.0s
WMOK Wichita Mounta 76.67 54 *eP* **P 12 14 46.4 +0.3**
comp=Z,6.1nm,1.0s
DPC Dobruska-Polom 76.75 333 *eP* **P 12 14 46.8 +0.5**
DPC *epP* **pP 12 14 58.3 -0.1**
DPC Dobruska-Polom 76.75 333 *eP* **P 12 14 46.8 +0.5**
DPC *e* 12 14 58.3
EKA Eskdalemuir Ar 76.81 346 P **P 12 14 46.4 -0.1**
comp=Z,0.6nm,0.4s,baz=359,slow=5.7,SNR=8.2
VRI Vrincioaia 76.83 325 *i P* **P 12 14 48.5 +1.7**
MORC Moravsky Berou 76.86 332 *eP* **P 12 14 47.9 +1.0**
MORC pmax pmax
comp=Z,32nm,1.0s
MORC Moravsky Berou 76.86 332 *eP* **P 12 14 47.9 +1.0**
comp=Z,32nm,1.0s
CLL Collm 76.90 336 *eP* **P 12 14 47.3 +0.3**
CLL Collm 76.90 336 *i P* **P 12 14 46.6 -0.4**
comp=Z,7.0nm,0.9s
CLL *i* 12 14 58.9
CLL LmV 12 51 00.0
comp=Z,100nm,19.7s
CLL Collm 76.90 336 *i P* **P 12 14 46.6 -0.4**
CLL pmax pmax
comp=Z,7.0nm,0.9s
CLL Collm 76.90 336 *eP* **P 12 14 47.4 +0.3**
comp=Z,7.4nm,0.9s
KECS Kecovo 76.98 330 *eP* **P 12 14 48.0 +0.4**
KECS pmax pmax
comp=Z,2.0nm,0.9s
KECS Kecovo 76.98 330 *eP* **P 12 14 48.0 +0.4**
MLR Muntele Rosu 77.45 325 P **P 12 14 51.3 +0.8**
comp=Z,0.9nm,0.5s,baz=75,slow=20,SNR=3.2
MLR Muntele Rosu 77.45 325 *i P* **P 12 14 51.9 +1.5**
MLR Muntele Rosu 77.45 325 *eP* **P 12 14 50.9 +0.5**
MLR pmax pmax
comp=Z,8.0nm,0.8s
MLR Muntele Rosu 77.45 325 *eP* **P 12 14 50.9 +0.5**
comp=Z,8.0nm,0.8s
VYHS Vyhne 77.54 331 *eP* **P 12 14 51.6 +0.9**
VYHS pmax pmax
comp=Z,5.0nm,1.3s
VYHS Vyhne 77.54 331 *eP* **P 12 14 51.6 +0.9**
VRAC Vranov 77.57 333 P **P 12 14 51.8 +0.9**
comp=Z,1.5nm,0.4s,baz=23,slow=4.7,SNR=4.5
VRAC Vranov 77.57 333 *i P* **P 12 14 52.0 +1.1**
GOPC GO Pecny, Ondr 77.60 334 AMS AMS 12 52 30.0
comp=Z,300nm,17.3s
DRGR 77.61 328 *i P* **P 12 14 51.5 +0.3**
PRU Pruhonice 77.61 334 *eP* **P 12 14 51.5 +0.4**
PRU AMS AMS 12 52 40.0
comp=Z,200nm,16.0s
PRU Pruhonice 77.61 334 *eP* **P 12 14 51.5 +0.4**
PRU MLR MLR
comp=Z,200nm,16.0s
TX31 Lajitas Ar. Si 77.76 60 *eP* **P 12 14 52.6 +0.2**
TXAR Lajitas Array 77.76 60 P **P 12 14 52.2 -0.1**
comp=Z,2.6nm,0.7s,baz=303,slow=4.6,SNR=24
VOIR 77.85 325 *i P* **P 12 14 53.5 +0.9**
TREC Trest 77.93 333 AMS AMS 12 53 40.0
comp=Z,200nm,17.2s
NKC Novy Kostel 78.02 335 *eP* **P 12 14 53.8 +0.4**
NKC Novy Kostel 78.02 335 *eP* **P 12 14 53.8 +0.4**
STKA Stephens Creek 78.47 190 LR LR 12 49 23.3
comp=Z,48nm,20.3s,baz=25,slow=36
KHC Kasperske Hory 78.67 334 *eP* **P 12 14 57.7 +0.7**
KHC *epP* **pP 12 15 09.1 0.0**
KHC AMS AMS 12 53 30.0
comp=Z,300nm,19.4s
KHC Kasperske Hory 78.67 334 *eP* **P 12 14 57.5 +0.5**
KHC Kasperske Hory 78.67 334 *eP* **P 12 14 57.7 +0.7**
KHC *e* 12 15 09.1
KHC MLR MLR
comp=Z,300nm,19.4s
KHC Kasperske Hory 78.67 334 *eP* **P 12 14 57.5 +0.5**
comp=Z,2.6nm,0.9s
BR131 Keskin Array S 78.72 317 *eP* **P 12 14 58.5 +0.9**
BRTR Keskin Array B 78.72 317 P **P 12 14 58.2 +0.6**
comp=Z,3.8nm,1.1s,baz=45,slow=1.9,SNR=10
GZR Gura Zlata 78.76 327 *i P* **P 12 14 58.1 +0.5**
GRFO Grafenberg 78.85 336 *eP* **P 12 14 59.2 +1.2**
GRFO pmax pmax
comp=Z,10.0nm,0.9s
GRFO Grafenberg 78.85 336 *eP* **P 12 14 59.1 +1.2**
comp=Z,9.8nm,0.9s
GERES GERESS Array B 78.88 334 P **P 12 14 58.2 0.0**
comp=Z,1.4nm,0.7s,baz=22,slow=4.6,SNR=9.8
BZS Buzias 79.01 328 *i P* **P 12 14 59.3 +0.4**
CONA Conrad Observa 79.01 332 *eP* **P 12 14 59.9 +1.0**
comp=Z,5.8nm,1.0s
BR231 Keskin MP Arra 79.04 317 *eP* **P 12 14 58.9 -0.4**
JCT Junction City 79.22 57 *eP* **P 12 15 01.0 +0.6**
JCT pmax pmax
comp=Z,10.0nm,1.1s
JCT Junction City 79.22 57 *eP* **P 12 15 01.0 +0.6**
comp=Z,9.8nm,1.1s
MEM Membach 79.39 339 P **P 12 15 02.0 +1.2**
comp=Z,8.8nm,1.1s
ARSA Arzberg 79.72 332 *eP* **P 12 15 03.7 +1.0**
comp=Z,8.1nm,1.6s
BCLA Clavier 79.74 340 P **P 12 15 03.1 +0.3**
comp=Z,8.6nm,1.4s
SOKA Soboth 80.38 332 *i P* **P 12 15 06.9 +0.5**
comp=Z,14nm,1.1s,SNR=7.1
KBA Koelnbreinsper 80.56 333 *eP* **P 12 15 08.0 +0.5**
comp=Z,18nm,0.8s,SNR=11
OBKA Obir 80.69 332 *eP* **P 12 15 08.0 -0.1**
comp=Z,5.3nm,1.1s
TAOE Nuku Hiva Isla 80.78 113 *e*LR LR 12 40 05.4
comp=Z,139nm,30.2s
PMOR Pomariorio Ree 80.81 123 *e*T T 13 44 13.2
comp=Z,3.2nm,0.2s
WATA Walderalm 80.87 335 *i P* **P 12 15 10.3 +1.2**
BFO Black Forest 80.89 337 *i P* **P 12 15 09.8 +0.7**
WTTA Wattenberg 80.92 335 *i P* **P 12 15 10.3 +0.9**
comp=Z,8.1nm,0.5s
VTS Vitosha 80.95 325 *i P* **P 12 15 10.3 +0.7**
VTS Vitosha 80.95 325 *eP* **P 12 15 09.3 -0.4**
VTS pmax pmax
comp=Z,58nm,2.0s
VTS Vitosha 80.95 325 *eP* **P 12 15 09.2 -0.4**
comp=Z,58nm,2.0s
RETA Reutte 80.97 335 *i P* **P 12 15 10.7 +1.1**
comp=Z,6.9nm,0.9s
MOTA Moosalm 81.00 335 *i* PcP **P 12 15 11.7 +1.9**
SNR=10
DAVA Damuels 81.41 336 *i P* **P 12 15 13.0 +1.0**
comp=Z,5.7nm,0.9s
DAVOX Davos/Dischmat 81.87 335 P **P 12 15 15.1 +0.7**
comp=Z,3.8nm,0.7s,baz=10,slow=16,SNR=7.7
PPT2 Papeete2 81.91 126 *e*LR LR 12 41 00.6
comp=Z,155nm,24.5s
TUE Stuetta 82.30 336 *eP* **P 12 15 16.9 +0.2**
comp=Z,8.8nm,0.9s
TBI Tubuai 86.61 129 *e*LR LR 12 42 45.0
comp=Z,86nm,29.2s
TBI Tubuai 86.61 129 *e*T T 13 51 28.7
comp=Z,2.8nm,0.3s
PLCA Paso Flores 148.19 96 PKPbc **PKPbc 12 22 40.0 -0.5**
comp=Z,2.0nm,1.0s,baz=17,slow=2.0,SNR=2.7
PLCA Paso Flores 148.19 96 *e*PKPbc **PKPab 12 22 44.5 +0.9**
CPUP Villa Florida 148.73 61 *e*PKP2 **PKPbc 12 22 41.6 -0.7**
CPUP Villa Florida 148.73 61 *e*PKPdf **PKPbc 12 22 41.6 -0.7**

*IDC **10** 12:04:57.3±0.8,53.°12N×166.°73W,h0km,mb3.8/23, mb1 4.0/24,mb1mx3.8/75,mbtmp3.8/24,ML2.9/1,MS3.4/4, Ms1 3.4/4,ms1mx2.9/47,Error ellipse: s-maj=22.3km s-min=12.6km az=173.0*
*NEIC **10** 12:04:58.7,52.°84N×166.°77W,h2km,ML3.6(AEIC),After AEIC.*
*ISCJB **10** 12:05:00.6±0.8,52.°75N±0.°06×166.°74W±0.°07,h47km±6km, mb3.8/23,MS3.3/4,Error ellipse: s-maj=11.4km s-min=5.7km az=157.7*

ISC 10 12:05:02.8±1.5,52.°87N±0.°09×166.°81W±0.°05, h47km±12km,n59,σ1°35/55,mb3.7/23,MS3.3/4,Fox Islands

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
OKTU	**Okmok Mt. Tuli**	**0.91**	**305**	P		**Pn**	**12 05 18.2**	**-1.0**
MGOD	**Makushin Gods**	**0.93**	**358**	P		**Pn**	**12 05 18.1**	**-1.5**
MGOD				S		**Sn**	**12 05 33.9**	**+2.0**
OKER	**Okmok East Rim**	**0.95**	**309**	P		**Pn**	**12 05 19.1**	**-0.8**
MSOM	**Makushin Julie**	**0.95**	**355**	P		**Pn**	**12 05 18.7**	**-1.2**
UNV	**Unalaska Valle**	**1.00**	**11**	P		**Pn**	**12 05 18.5**	**-1.9**
UNV				S		**Sn**	**12 05 34.5**	**+1.2**
MSW	**Makushin Switc**	**1.05**	**1**	P		**Pn**	**12 05 20.0**	**-1.2**

MSW				S	**Sn**	**12 05 37.0**	**+2.3**
MTBL	**Makushin Table**	**1.11**	**4**	P	**Pn**	**12 05 20.9**	**-1.1**
OKAK	**Okmok**	**1.17**	**308**	P	**Pn**	**12 05 20.4**	**-2.3**
NIKH	**Nikolski High**	**1.24**	**276**	P	**Pn**	**12 05 22.5**	**-1.2**
NIKH				S	**Sn**	**12 05 41.1**	**+1.8**
ZRO	**Akutan Zero**	**1.32**	**22**	P	**Pn**	**12 05 24.5**	**-0.4**
AKRB	**Akutan Reef Bi**	**1.34**	**19**	P	**Pn**	**12 05 24.5**	**-0.6**
AKRB				S	**Sn**	**12 05 44.2**	**+2.5**
AHB	**Akutan Harbor**	**1.38**	**25**	P	**Pn**	**12 05 24.7**	**-1.0**
AKUT	**Akutan**	**1.41**	**26**	P	**Pn**	**12 05 24.8**	**-1.3**
AKUT				S	**Sn**	**12 05 47.4**	**+3.9**
AKGG	**Akutan Green G**	**1.42**	**20**	P	**Pn**	**12 05 26.1**	**-0.1**
WEBT	**Westdahl Beart**	**2.12**	**34**	P	**Pn**	**12 05 35.6**	**-0.1**
SSLW	**Shishaldin Wes**	**2.48**	**39**	P	**Pn**	**12 05 40.5**	**-0.3**
SSLN	**Shishaldin Nor**	**2.56**	**39**	P	**Pn**	**12 05 42.5**	**+0.7**
ISLZ	**Isanotski Laza**	**2.62**	**43**	P	**Pn**	**12 05 42.9**	**+0.3**
FALS	**False Pass**	**2.83**	**44**	P	**Pn**	**12 05 45.6**	**+0.2**
SDPT	**Sand Point**	**4.48**	**54**	P	**Pn**	**12 06 07.7**	**-0.4**
KOFP	**Korovin Flat P**	**4.49**	**265**	P	**Pn**	**12 06 09.6**	**+1.3**
ATKA	**Atka Island**	**4.56**	**265**	P	**Pn**	**12 06 09.3**	**+0.1**
SPIA	**Saint Paul Isl**	**4.75**	**337**	P	**Pn**	**12 06 13.1**	**+1.3**
KDAK	**Kodiak Island**	**9.48**	**53**	Pn	Pn	12 07 28.5	+12
KDAK	0.1nm,0.3s,baz=291,slow=8.6,SNR=2.3			Sn	Sn	12 09 10.9	+9.4
ILAR	**Eielson Array**	**15.67**	**33**	Pn	Pn	12 08 35.1	-5.1
PETK	0.0nm,0.3s,baz=224,slow=10,SNR=3.1 **Petropavlovsk-**	**21.24**	**285**	P	**P**	**12 09 44.7**	**+0.1**
DLBC	3.9nm,0.4s,baz=87,slow=12,SNR=16 **Dease Lake**	**21.29**	**60**	P	**P**	**12 09 41.4**	**-3.7**
DLBC	0.7nm,0.4s,baz=236,slow=16,SNR=6.3			LR	LR	12 17 36.5	
INK	comp=Z,113nm,18.8s,baz=339,slow=36 **Inuvik**	**22.08**	**33**	P	**P**	**12 09 50.2**	**-3.1**
INK	1.1nm,0.6s,baz=243,slow=8.4,SNR=3.3			PcP	**PcP**	**12 13 50.3**	**+1.1**
SEY	0.8nm,0.7s,baz=162,slow=2.0,SNR=3.9 **Seymchan**	**23.49**	**311**	P	**P**	**12 10 07.8**	**-0.3**
MA2	1.0nm,0.7s,baz=139,slow=20,SNR=2.7 **Magadan**	**24.17**	**303**	P	**P**	**12 10 14.2**	**-0.1**
YKA	3.4nm,0.6s,baz=120,slow=15,SNR=5.0 **Yellowknife Ar**	**28.73**	**50**	P	**P**	**12 10 54.6**	**-0.8**
YKA	0.2nm,0.5s,baz=277,slow=7.7,SNR=7.3			PcP	**PcP**	**12 14 05.2**	**+0.9**
NEW	0.5nm,0.7s,baz=282,slow=2.9,SNR=6.7 **Newport**	**31.38**	**78**	LR	LR	12 21 31.8	
YBH	comp=Z,43nm,18.9s,baz=272,slow=32 **Yreka Blue Hor**	**31.43**	**93**	LR	LR	12 21 34.6	
NVAR	comp=Z,61nm,19.5s,baz=276,slow=32 **Mina Array Bea**	**36.12**	**94**	P	**P**	**12 12 00.6**	**+0.1**
KLR	0.4nm,0.6s,baz=303,slow=8.8,SNR=5.4 **Kul'dur**	**37.76**	**290**	LR	LR	12 28 33.3	
PDAR	comp=Z,60nm,18.6s,baz=106,slow=38 **Pinedale Array**	**38.78**	**81**	P	**P**	**12 12 23.0**	**+0.1**
H11N2	0.6nm,0.8s,baz=259,slow=3.0,SNR=4.7 **WAKE ISLAND Hy 38.84**		**222**	T	T	12 53 57.6	
H11N3	baz=25,slow=76,SNR=22 **WAKE ISLAND Hy 38.85**		**222**	T	T	12 53 58.1	
H11N1	baz=25,slow=76,SNR=18 **WAKE ISLAND Hy 38.86**		**222**	T	T	12 53 59.3	
H11S1	baz=25,slow=76,SNR=25 **WAKE ISLAND Hy 40.02**		**221**	T	T	12 55 29.6	
H11S2	baz=24,slow=76,SNR=18 **WAKE ISLAND Hy 40.04**		**221**	T	T	12 55 22.9	
H11S3	baz=24,slow=76,SNR=20 **WAKE ISLAND Hy 40.04**		**221**	T	T	12 55 30.6	
MJAR	baz=24,slow=76,SNR=19 **Matsushiro Arr**	**41.27**	**269**	P	**P**	**12 12 43.6**	**+0.3**
KSRS	2.0nm,0.9s,baz=57,slow=7.2,SNR=6.2 **Korea Array**	**46.89**	**278**	P	**P**	**12 13 29.0**	**+0.8**
KSAR	1.5nm,0.9s,baz=50,slow=7.0,SNR=3.7 **Wonju Array Be**	**46.92**	**278**	P	**P**	**12 13 29.0**	**+0.5**
TXAR	**Lajitas Array**	**51.19**	**91**	P	**P**	**12 14 01.3**	**-0.1**
SONM	0.5nm,0.7s,baz=297,slow=4.8,SNR=6.4 **Songino Array**	**52.37**	**302**	P	**P**	**12 14 09.9**	**-0.1**
ARCES	0.3nm,0.5s,baz=48,slow=5.6,SNR=3.8 **ARCESS Array B**	**57.58**	**355**	P	**P**	**12 14 46.2**	**-0.9**
MKAR	2.1nm,0.9s,baz=0.6,slow=8.5,SNR=3.1 **Makanchi Array**	**64.58**	**315**	P	**P**	**12 15 34.0**	**-0.9**
FINES	0.2nm,0.2s,baz=50,slow=7.2,SNR=4.4 **FINESS Array B**	**65.58**	**353**	P	**P**	**12 15 40.3**	**-0.7**
NOA	1.7nm,0.6s,baz=38,slow=9.6,SNR=3.5 **NORSAR Array B**	**66.43**		P	**P**	**12 15 46.3**	**-0.4**
HFS	0.4nm,0.5s,baz=358,slow=6.2,SNR=2.4 **Hagfors**	**67.35**	**360**	P	**P**	**12 15 52.2**	**-0.2**
EKA	2.1nm,0.4s,baz=64,slow=3.9,SNR=7.2 **Eskdalemuir Ar**	**71.32**	**10**	P	**P**	**12 16 17.8**	**+0.8**
AKASG	0.6nm,0.7s,baz=359,slow=5.8,SNR=3.6 **Malin Array Be**	**75.92**	**350**	P	**P**	**12 16 43.6**	**-0.5**
CMAR	1.6nm,0.5s,baz=14,slow=6.0,SNR=6.2 **Chiang Mai Arr**	**78.02**	**285**	P	**P**	**12 16 57.0**	**+0.6**
GERES	0.2nm,0.5s,baz=37,slow=9.1,SNR=3.7 **GERESS Array B**	**78.66**	**360**	P	**P**	**12 16 60.0**	**+0.3**
BRTR	0.5nm,0.6s,baz=350,slow=5.0,SNR=3.8 **Keskin Array B**	**86.09**	**344**	P	**P**	**12 17 39.5**	**+0.9**
WRA	1.8nm,0.9s,baz=28,slow=6.5,SNR=5.0 **Warramunga Arr**	**88.55**	**234**	P	P	12 17 54.1	+3.7
MATP	0.6nm,1.0s,baz=32,slow=5.5,SNR=3.3 **Matopo**	**145.52**	**334**	PKPbc	**PKPdf**	**12 24 36.0**	**+0.2**
	1.7nm,0.6s,baz=22,slow=5.4,SNR=3.7						

*IDC **10** 12:14:38.5±2.6, 35°.71N×141°.21E, h0km, mb3.2/3, mb1 3.3/5, mb1mx3.1/61, mbtmp3.2/5, ML3.2/2, Error ellipse: s-maj=69.1km s-min=24.8km az=62.0*
*ISCJB **10** 12:14:41.2±1.0, 35°.72N±0°.05×141°.2E±0°.1, h33km, mb3.2/3, Error ellipse: s-maj=16.6km s-min=6.3km az=174.3*
*JMA **10** 12:14:41.6±0.2, 35°.68N×141°.06E, h24km±1km, M3.3*
ISC 10 12:14:43.4±1.1, 35°.72N±0°.04×141°.04E±0°.05, h33km, n19, σ1°45/17, mb3.2/3, 1C-1D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.15**	**262**	⇑P	**Pn**	**12 14 46.6**	**-1.9**
CHOJ				S	**Sn**	**12 14 49.7**	**-0.3**
JCN	**Nagara**	**0.75**	**246**	P	**Pn**	**12 14 56.5**	**-1.1**
BSO4	**Boso 4**	**0.93**	**218**	P	**Pn**	**12 14 58.9**	**-1.2**
JHO	**Hitachi**	**0.96**	**337**	⇓P	**Pn**	**12 14 59.7**	**-0.9**
JHO				S	**Sn**	**12 15 12.3**	**-0.9**
BSO3	**Boso 3**	**1.02**	**205**	P	**Pn**	**12 14 59.3**	**-1.8**
BSO1	**Boso 1**	**1.07**	**183**	P	**Pn**	**12 14 59.2**	**-2.4**
ONAJ	**Iwakimizuishiy**	**1.39**	**352**	P	**Pn**	**12 15 05.2**	**-1.3**
MJAR	**Matsushiro Arr**	**2.43**	**290**	Pn	**Pn**	**12 15 20.4**	**-0.5**
	5.6nm,0.3s,baz=98,slow=8.8,SNR=40						
MAT	**Matsushiro**	**2.44**	**290**	P	**Pn**	**12 15 21.5**	**+0.6**
MAT				*e*S	**Sb**	**12 15 56.8**	**+0.6**
JHJ	**Hachijo jima 2**	**2.80**	**202**	Pn	**Pn**	**12 15 25.5**	**-0.4**
	8.8nm,0.3s,baz=233,slow=14,SNR=3.6						
JHJ				Sn	**Sn**	**12 16 01.2**	**+2.8**
	5.8nm,0.3s,baz=90,slow=20,SNR=2.1						
H11N2	**WAKE ISLAND Hy 27.77**		**118**	T	T	12 49 26.7	
H11N1	baz=311,slow=75,SNR=198 **WAKE ISLAND Hy 27.77**		**118**	T	T	12 49 25.8	
H11N3	baz=311,slow=75,SNR=180 **WAKE ISLAND Hy 27.78**		**118**	T	T	12 49 26.8	
H11S1	baz=311,slow=75,SNR=176 **WAKE ISLAND Hy 28.43**		**120**	T	T	12 50 16.6	
H11S3	baz=312,slow=75,SNR=212 **WAKE ISLAND Hy 28.43**		**120**	T	T	12 50 12.8	
H11S2	baz=312,slow=75,SNR=252 **WAKE ISLAND Hy 28.45**		**120**	T	T	12 50 16.8	
KURBB	baz=312,slow=75,SNR=217 **Kurchatov Arra**	**46.58**	**309**	P	**P**	**12 23 08.9**	**+0.9**
WRA	0.2nm,0.5s,baz=83,slow=8.0,SNR=4.2 **Warramunga Arr**	**55.72**	**188**	P	**P**	**12 24 16.1**	**-0.7**
ASAR	0.1nm,0.4s,baz=7.4,slow=7.9,SNR=3.9 **Alice Springs**	**59.45**	**188**	P	**P**	**12 24 43.7**	**+0.7**
	0.2nm,0.9s,baz=7.8,slow=7.5,SNR=3.3						

IDC 10 12:17:50.1±3.1, 54°.20N×87°.26E, h0km, mb1 2.9/2, mb1mx2.8/62, mbtmp2.9/2, ML2.6/2, Error ellipse: s-maj=27.9km s-min=19.5km az=51.0, Southwestern Siberia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
I46RU	**ZALESOVO INFRA**	**1.46**	**261**	*i*		12 27 50.0	
	baz=81,slow=330,SNR=3.0						
ZALV	**Zalesovo Beam**	**1.46**	**261**	Pg	Pn	12 18 16.7	-1.1
	3.2nm,0.3s,baz=80,slow=16,SNR=44						
ZALV				Lg	Lg	12 18 36.5	
	1.3nm,0.3s,baz=75,slow=25,SNR=7.3						

KURBB	**Kurchatov Arra**	**6.43**	**240**	Pn	Pn	12 19 26.6	+0.6
	0.1nm,0.3s,baz=54,slow=14,SNR=7.8						
KURBB				Lg	Lg	12 21 14.6	
	0.0nm,0.3s,baz=54,slow=35,SNR=2.8						
MKAR	**Makanchi Array**	**8.06**	**205**	Pn	Pn	12 19 49.7	+1.2
	0.1nm,0.3s,baz=27,slow=13,SNR=3.4						

*ISCJB **10** 12:20:28.6±0.3, 0°.33N±0°.04×122°.15E±0°.04, h202km, mb4.0/26, Error ellipse: s-maj=5.7km s-min=5.2km az=148.4*
*DJA **10** 12:20:31.9±0.3, 0°N±4°×12°.2E±°, h171km±5km, M4.4/19, mb4.4/14, mB4.9/3, MLv4.4/19, Mw(mB)4.2/3*
*IDC **10** 12:20:31.2±1.6, 0°.25N×122°.15E, h220km±15km, mb3.7/22, mb1 3.8/24, mb1mx3.7/46, mbtmp4.3/24, Error ellipse: s-maj=15.7km s-min=7.7km az=77.0*
ISC 10 12:20:29.9±0.5, 0°.24N±0°.07×122°.12E±0°.08, h202km, n58, σ1°37/55, mb4.1/26, Minahassa Peninsula, Sulawesi

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MRSI	**Marisa**	**0.30**	**323**	P	Pn	12 20 55.3	-1.4
MRSI				S	**S**	**12 21 14.3**	**-3.3**
APSI	**Ampana**	**1.24**	**202**	P	**Pn**	**12 21 01.7**	**+0.1**
LUWI	**Luwuk**	**1.43**	**153**	P	**Pn**	**12 21 03.3**	**+0.1**
PCI	**Palu**	**2.55**	**244**	P	**Pn**	**12 21 14.6**	**+0.1**
TTSI	**Tana Toraja**	**3.99**	**215**	P	**Pn**	**12 21 32.7**	**+1.0**
SANI	**Sanana**	**4.49**	**120**	P	**Pn**	**12 21 38.8**	**+0.9**
SPSI	**Sidrap Palu**	**4.79**	**209**	P	**Pn**	**12 21 42.1**	**+0.3**
SGSI	**Sangihe**	**4.83**	**45**	P	Pn	12 21 42.1	-1.0
TNTI	**Ternate**	**5.27**	**84**	P	**Pn**	**12 21 47.9**	**0.0**
	76nm,0.3s,0.7nm						
BKB	**Balikpapan**	**5.43**	**254**	P	**Pn**	**12 21 49.8**	**-0.1**
	80nm,0.6s,0.4nm						
LBMI	**Labuha**	**5.45**	**99**	P	Pn	12 21 48.7	-1.5
KAPI	**Kappang**	**5.73**	**204**	P	**Pn**	**12 21 54.5**	**+0.8**
	4.4nm,0.3s,baz=348,slow=7.0,SNR=10						
NLAI	**Namlea**	**6.06**	**125**	P	**Pn**	**12 21 58.6**	**+0.6**
	47nm,1.2s,0.4nm						
BSSI	**Bau Bau, Buton**	**6.54**	**194**	P	**Pn**	**12 22 05.2**	**+0.9**
	45nm,0.9s,1µm0.2nm						
KBKI	**Kotabaru**	**6.91**	**239**	P	Pn	12 22 07.6	-1.5
MTKI	**Muara Teweh, K**	**7.32**	**261**	P	**Pn**	**12 22 15.8**	**+1.4**
	48nm,0.7s,7µm0.6nm						
MSAI	**Masohi**	**7.68**	**118**	P	**Pn**	**12 22 21.1**	**+2.0**
	6.5nm,0.9s,445nm0.1nm						
BBKI	**Banjar Baru**	**8.15**	**243**	P	**Pn**	**12 22 26.2**	**+1.0**
	21nm,2.2s						
BNDI	**Bandanaira**	**9.10**	**121**	P	**Pn**	**12 22 39.6**	**+2.0**
	158nm,1.5s						
SWI	**Sorong**	**9.20**	**97**	P	**Pn**	**12 22 41.1**	**+2.2**
FITZ	**Fitzroy Crossi**	**18.55**	**169**	P	**P**	**12 24 31.7**	**0.0**
	3.2nm,0.3s,baz=7.6,slow=7.5,SNR=72						
WRA	**Warramunga Arr**	**23.36**	**150**	P	**P**	**12 25 20.1**	**-0.3**
	8.2nm,0.7s,baz=324,slow=11,SNR=168						
WRA				pP	**pP**	**12 25 59.8**	**+2.2**
	2.0nm,0.8s,baz=336,slow=9.9,SNR=2.1						
WRA				PcP	**PcP**	**12 29 00.7**	**-0.8**
	0.4nm,0.4s,baz=319,slow=2.4,SNR=5.0						
WRA				ScP	**ScP**	**12 32 18.1**	**-2.4**
	0.6nm,0.8s,baz=339,slow=2.7,SNR=4.6						
KHON	**Khomkaen**	**24.86**	**311**	P	**P**	**12 25 37.2**	**+3.0**
	10.0nm,0.7s,792nm						
NONG	**Nongkai**	**25.72**	**315**	P	**P**	**12 25 44.4**	**+2.5**
	27nm,0.8s						
ASAR	**Alice Springs**	**26.38**	**155**	P	**P**	**12 25 47.9**	**+0.1**
	3.2nm,0.5s,baz=343,slow=14,SNR=99						
ASAR				PcP	**PcP**	**12 29 07.5**	**-0.6**
	0.9nm,0.3s,baz=347,slow=2.3,SNR=13						
ASAR				S	**S**	**12 30 03.6**	**-2.4**
	1.9nm,0.9s,baz=338,slow=20,SNR=10						
ASAR				ScP	**ScP**	**12 32 25.9**	**-3.1**
	0.5nm,0.7s,baz=340,slow=2.9,SNR=5.4						
CMAR	**Chiang Mai Arr**	**29.09**	**310**	P	**P**	**12 26 12.8**	**+0.9**
	0.9nm,0.6s,baz=135,slow=7.3,SNR=9.0						
CMMT	**Chiang Mai**	**29.29**	**310**	P	**P**	**12 26 16.4**	**+2.7**
	6.0nm,1.5s						
JCJ	**Chichijima**	**32.94**	**34**	P	P	12 26 44.2	-1.4
	73nm,0.4s,baz=201,slow=2.4,SNR=19						
NWAO	**Narrogin (SRO)**	**33.31**	**187**	P	P	12 26 47.7	-1.0
	6.4nm,0.8s,baz=30,slow=0.1,SNR=3.1						
STKA	**Stephens Creek**	**36.88**	**152**	P	**P**	**12 27 19.6**	**+0.4**
	2.9nm,0.4s,baz=326,slow=11,SNR=14						
KSRS	**Korea Array**	**37.42**	**8**	P	**P**	**12 27 23.6**	**0.0**
	1.0nm,0.7s,baz=184,slow=9.1,SNR=3.9						
MJAR	**Matsushiro Arr**	**39.08**	**21**	P	P	12 27 35.9	-1.6
	4.0nm,0.9s,baz=192,slow=9.0,SNR=16						
TAPN	**Taplejung**	**42.63**	**312**	*e*P	**P**	**12 28 07.7**	**+0.6**
	17nm,0.4s						
RAMN	**Ramite**	**43.25**	**311**	*e*P	**P**	**12 28 12.8**	**+0.9**
	62nm,0.8s						
PKIN	**Phulchoki**	**44.49**	**311**	*e*P	**P**	**12 28 21.8**	**0.0**
USRK	**Ussuriysk Ar.**	**44.65**	**10**	P	**P**	**12 28 21.9**	**-0.5**
	1.4nm,0.4s,baz=198,slow=8.4,SNR=6.5						
KKN	**Kakani**	**44.69**	**311**	*e*P	**P**	**12 28 23.8**	**+0.5**
DMN	**Daman**	**44.73**	**311**	*e*P	**P**	**12 28 23.8**	**+0.1**
	27nm,0.6s						
GKN	**Gorkha**	**45.28**	**311**	*e*P	**P**	**12 28 28.1**	**+0.1**
	46nm,0.5s						
KOLN	**Koldanda**	**45.96**	**310**	*e*P	**P**	**12 28 33.6**	**+0.3**
	61nm,0.5s						
PYUN	**Piuthan**	**46.59**	**310**	*e*P	**P**	**12 28 38.7**	**+0.5**
	110nm,0.5s						
SONM	**Songino Array**	**49.34**	**346**	P	**P**	**12 28 59.1**	**+0.2**
	7.0nm,0.6s,baz=164,slow=9.0,SNR=60						
SONM				PcP	**PcP**	**12 30 17.1**	**-1.2**
	1.0nm,0.7s,baz=161,slow=4.4,SNR=4.5						
KLR	**Kul'dur**	**49.50**	**8**	P	**P**	**12 28 59.7**	**-0.2**
	0.8nm,0.5s,baz=245,slow=7.9,SNR=6.1						
TLY	**Talaya**	**53.58**	**346**	P	**P**	**12 29 30.4**	**+0.3**
	1.9nm,0.5s,baz=316,slow=1.4,SNR=4.9						
MKAR	**Makanchi Array**	**57.95**	**329**	P	**P**	**12 30 01.0**	**-0.2**
	6.3nm,0.4s,baz=124,slow=8.9,SNR=91						
MKAR				PcP	**pP**	**12 30 49.1**	**+2.0**
	1.1nm,0.6s,baz=144,slow=4.8,SNR=5.3						
AAK	**Ala-Archa**	**59.99**	**321**	P	**P**	**12 30 15.8**	**+0.3**
	1.5nm,0.4s,baz=125,slow=7.0,SNR=9.6						
PETK	**Petropavlovsk-**	**60.42**	**24**	P	**P**	**12 30 18.3**	**+0.3**
	3.5nm,0.6s,baz=197,slow=4.6,SNR=13						
PETK				PcP	**PcP**	**12 31 00.0**	**-0.7**
	1.7nm,0.8s,baz=219,slow=5.5,SNR=6.8						
ZALV	**Zalesovo Beam**	**61.74**	**336**	P	P	12 30 25.2	-1.5
	1.2nm,0.3s,baz=123,slow=5.5,SNR=6.6						
KURBB	**Kurchatov Arra**	**62.32**	**330**	P	P	12 30 29.7	-1.0
	2.0nm,0.4s,baz=115,slow=5.9,SNR=40						
KURBB				PcP	**PcP**	**12 31 07.0**	**-1.5**
	0.7nm,0.7s,baz=135,slow=3.8,SNR=5.6						
BVAR	**Borovoye Array**	**67.83**	**329**	P	**P**	**12 31 05.5**	**-0.6**
	0.8nm,0.5s,baz=124,slow=7.9,SNR=4.2						
TIXI	**Tiksi**	**71.43**	**2**	P	P	12 31 25.7	-2.1
	4.3nm,0.6s,baz=150,slow=4.5,SNR=4.7						
BRTR	**Keskin Array B**	**88.68**	**310**	P	P	12 32 58.4	-2.5
	0.7nm,0.8s,baz=95,slow=6.2,SNR=3.7						
ILAR	**Eielson Array**	**90.21**	**25**	P	P	12 33 04.5	-2.8
	0.4nm,0.6s,baz=245,slow=5.5,SNR=6.6						
ARCES	**ARCESS Array B**	**92.10**	**340**	P	P	12 33 14.0	-1.9
	1.2nm,0.7s,baz=88,slow=4.9,SNR=4.2						
INK	**Inuvik**	**95.07**	**21**	P	P	12 33 28.0	-1.4
	0.8nm,0.8s,baz=323,slow=3.2,SNR=3.8						
YKA	**Yellowknife Ar**	**104.54**	**24**	Pdiff	**Pdif**	**12 34 12.3**	**+0.3**
	0.1nm,0.7s,baz=293,slow=4.4,SNR=3.7						
TORD	**Torodi Ar. Bea**	**119.50**	**285**	PKP	**PKPdf**	**12 38 54.1**	**-2.4**
	0.2nm,0.4s,baz=65,slow=1.0,SNR=3.7						
TXAR	**Lajitas Array**	**127.36**	**52**	PKP	**PKPdf**	**12 39 11.0**	**-0.4**
	0.2nm,0.7s,baz=256,slow=3.3,SNR=3.8						

*CSEM **10** 12:37:36.7±0.3, 37°.21N×37°.47E, h8km, MD2.2, Error ellipse: s-maj=6.8km s-min=2.9km az=78.0*
*ISK **10** 12:37:36.9, 37°.22N×37°.42E, h10km, MD2.2*
*DDA **10** 12:37:39.5, 37°.17N×37°.12E, h7km, Ml2.6*
*ISCJB **10** 12:37:40.0±0.9, 37°.15N±0°.04×37°.13E±0°.07, h9km±8km, Error ellipse: s-maj=9.4km s-min=5.7km az=153.9*
ISC 10 12:37:39.9±1.0, 37°.18N±0°.04×37°.13E±0°.06, h7km±10km, n12, σ0°70/20, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GAZ	**Gaziantep**	**0.07**	**93**	*e*PG	**Pg**	**12 37 40.9**	**-0.9**
GAZ				*e*SG	**Sg**	**12 37 44.2**	**+1.1**
GAZ	**Gaziantep**	**0.07**	**93**	*e*Pg	**Pg**	**12 37 40.9**	**-0.9**
GAZ				*e*Sg	**Sg**	**12 37 44.2**	**+1.1**
AYKD	**Aykdinkavak**	**0.35**	**313**	*i* P	**Pg**	**12 37 46.1**	**-0.7**
AYKD				*i* S	**Sb**	**12 37 53.4**	**-0.9**
KAMA	**Osmaniye**	**0.37**	**272**	*i* P	**Pg**	**12 37 46.6**	**-0.5**
KAMA				*i* S	**Sg**	**12 37 52.1**	**+0.2**
KMRS	**Kahramanmaras**	**0.38**	**331**	*e*PG	**Pg**	**12 37 47.4**	**+0.2**
KMRS				*e*SG	**Sb**	**12 37 54.8**	**-0.2**
KMRS	**Kahramanmaras**	**0.38**	**331**	*e*Pg	**Pg**	**12 37 47.4**	**+0.2**
KMRS				*e*Sg	**Sb**	**12 37 54.8**	**-0.2**
KUZU	**Kuzuini**	**0.40**	**186**	*i* P	**Pg**	**12 37 47.3**	**-0.5**
KUZU				*i* S	**Sg**	**12 37 54.1**	**+1.0**
KUZU	**Kuzuini**	**0.40**	**186**	P	**Pg**	**12 37 47.3**	**-0.5**
KUZU				S	**Sg**	**12 37 54.1**	**+1.0**
KOZT	**Kozan**	**1.08**	**287**	*e*PN	**Pn**	**12 38 01.4**	**0.0**
KOZT	**Kozan**	**1.08**	**287**	*e*Pn	**Pn**	**12 38 01.5**	**0.0**
TAHT	**Tahtakopru-Hat**	**1.10**	**224**	*e*PN	**Pn**	**12 38 01.8**	**+0.1**
TAHT	**Tahtakopru-Hat**	**1.10**	**224**	*e*Pn	**Pn**	**12 38 01.8**	**+0.1**

*IDC **10** 12:38:17.8±1.0, 52°.97N×166°.82W, h0km, mb3.6/16, mb1 3.7/17, mb1mx3.6/54, mbtmp3.5/17, ML2.9/1, Error ellipse: s-maj=27.7km s-min=14.7km az=0.0*
*ISCJB **10** 12:38:22.0±0.8, 52°.80N±0°.07×166°.79W±0°.06, h48km±6km, mb3.5/17, Error ellipse: s-maj=11.8km s-min=5.0km az=159.5*
*NEIC **10** 12:38:21.7, 52°.85N×166°.80W, h15km, ML3.4(AEIC), After AEIC.*
ISC 10 12:38:23.8±1.5, 52°.89N±0°.09×166°.84W±0°.05, h45km±13km, n51, σ1°01/51, mb3.5/17, Fox Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OKFG	**Magazine Ridge**	**0.83**	**309**	P	**Pn**	**12 38 37.9**	**-1.3**
OKFG				S	**Sn**	**12 38 51.1**	**+0.8**
OKTU	**Okmok Mt. Tuli**	**0.88**	**305**	P	**Pn**	**12 38 39.2**	**-0.6**
MGOD	**Makushin Gods**	**0.91**	**359**	P	**Pn**	**12 38 39.4**	**-0.8**
MGOD				S	**Sn**	**12 38 53.6**	**+1.5**
OKER	**Okmok East Rim**	**0.92**	**308**	P	**Pn**	**12 38 40.0**	**-0.4**
MSOM	**Makushin Julie**	**0.93**	**356**	P	**Pn**	**12 38 39.7**	**-0.8**
UNV	**Unalaska Valle**	**0.98**	**12**	P	**Pn**	**12 38 40.1**	**-0.9**
UNV				S	**Sn**	**12 38 55.1**	**+2.0**
MSW	**Makushin Switc**	**1.02**	**2**	P	**Pn**	**12 38 41.2**	**-0.6**
MTBL	**Makushin Table**	**1.08**	**5**	P	**Pn**	**12 38 41.8**	**-0.8**
OKAK	**Okmok**	**1.15**	**308**	P	**Pn**	**12 38 41.5**	**-1.9**
NIKH	**Nikolski High**	**1.22**	**275**	P	**Pn**	**12 38 43.7**	**-0.8**
NIKH				S	**Sn**	**12 39 00.3**	**+0.5**
ZRO	**Akutan Zero**	**1.31**	**23**	P	**Pn**	**12 38 45.6**	**0.0**
AKRB	**Akutan Reef Bi**	**1.32**	**20**	P	**Pn**	**12 38 45.6**	**-0.3**
AKRB				S	**Sn**	**12 39 04.8**	**+2.5**
AKUT	**Akutan**	**1.40**	**27**	P	**Pn**	**12 38 46.2**	**-0.6**
AKGG	**Akutan Green G**	**1.40**	**21**	P	**Pn**	**12 38 46.6**	**-0.4**
AKSA	**Akutan Strait**	**1.42**	**28**	P	**Pn**	**12 38 45.8**	**-1.4**
AKSA				S	**Sn**	**12 39 05.4**	**+0.8**
WESP	**Westdahl Peak**	**2.04**	**37**	P	**Pn**	**12 38 55.6**	**-0.1**
WECS	**Westdahl Cape**	**2.05**	**36**	P	**Pn**	**12 38 55.8**	**0.0**
WEBT	**Westdahl Beart**	**2.10**	**35**	P	**Pn**	**12 38 56.5**	**0.0**
SSLW	**Shishaldin Wes**	**2.48**	**39**	P	**Pn**	**12 39 02.1**	**+0.4**
FALS	**False Pass**	**2.82**	**44**	P	**Pn**	**12 39 05.8**	**-0.6**
DT1	**Dutton Round H**	**3.49**	**49**	P	**Pn**	**12 39 15.0**	**-0.4**
KOSE	**Korovin Southe**	**4.43**	**266**	P	**Pn**	**12 39 28.6**	**+0.1**
KOFP	**Korovin Flat P**	**4.47**	**265**	P	**Pn**	**12 39 30.7**	**+1.6**
SDPT	**Sand Point**	**4.48**	**54**	P	**Pn**	**12 39 29.0**	**-0.1**
ATKA	**Atka Island**	**4.54**	**264**	P	**Pn**	**12 39 30.5**	**+0.5**
SPIA	**Saint Paul Isl**	**4.72**	**337**	P	**Pn**	**12 39 33.9**	**+1.5**
KDAK	**Kodiak Island**	**9.48**	**53**	Pn	Pn	12 40 49.6	+12
	0.1nm,0.3s,

0.2nm,0.6s,baz=60,slow=3.1,SNR=4.2
TORD Torodi Ar. Bea 171.37 186 PKPab **PKPab 13 03 54.9 +0.6**
0.4nm,0.7s,baz=219,slow=0.8,SNR=2.5

MEX 10 13:05:26.6±0.8, 16.11N×97.18W, h27km±22km, MD3.7, Oaxaca

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PANG	**Puerto Angel**	**0.81**	**123**	*eP*	Pb	13 05 39.6	-2.5
PNIG	**Pinotepa**	**0.95**	**287**	*i* P	Pn	13 05 41.2	-3.0
PNIG				*i* S	Sb	13 05 54.1	-2.7
VHO	**Vista Hermosa**	**1.05**	**24**	*eP*	Pn	13 05 42.9	-2.8
VHO				*i* S	Sn	13 05 56.3	-3.3
HUIG	**Huatulco**	**1.08**	**108**	*eP*	Pn	13 05 43.3	-2.7
HUIG				*i* S	Sn	13 05 57.1	-3.0
TLIG	**Tlapa**	**1.97**	**318**	*eP*	Pn	13 05 57.0	-1.2
TLIG				*eS*	Sn	13 06 18.8	-3.3

NIED ***10*** *13:06:00, 37.40N×141.30E, h47km, Mw3.7 Best double couple: M0=4.19000×10^14 NP1:φs=337.00000°, δ=12.00000°, λ=-160.00000°. NP2:φs=227.00000°, δ=86.00000°, λ=-78.00000°.*
ISCJB ***10*** *13:06:21.0±1.1, 37.37N±0.04×141.49E±0.07, h20km±6km, mb3.5/9, Error ellipse: s-maj=9.8km s-min=5.2km az=24.2*
JMA ***10*** *13:06:24.0±0.1, 37.42N×141.25E, h28km±1km, M3.8*
JMA Felt II J1.
IDC ***10*** *13:06:27.0±2.5, 37.15N×141.47E, h74km±23km, mb3.4/9, mb1 3.5/12, mb1mx3.3/47, mbtmp3.7/12, Error ellipse: s-maj=21.5km s-min=14.0km az=71.0*
ISC 10 13:06:19.6±2.0, 37.40N±0.04×141.52E±0.08, h2km±12km, n26, σ0.81/27, mb3.6/9, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**0.51**	**267**	P	**Pb**	**13 06 31.2**	**-0.1**
JFK				S	**Sg**	**13 06 36.1**	**0.0**
ONAJ	**Iwakimizuishiy**	**0.64**	**243**	P	**Pb**	**13 06 33.7**	**+0.1**
ONAJ				S	**Sg**	**13 06 40.6**	**+0.3**
JMM	**Marumori**	**0.74**	**309**	P	**Pb**	**13 06 35.2**	**0.0**
JMM				S	**Sg**	**13 06 43.2**	**-0.2**
JFT	**Otama**	**0.94**	**278**	P	**Pb**	**13 06 38.5**	**-0.2**
JFT				S	**Sg**	**13 06 48.5**	**-1.5**
JIO	**Ouri**	**1.06**	**353**	P	**Pn**	**13 06 42.0**	**+0.5**
JIO				S	**Sb**	**13 06 55.1**	**+0.1**
JHO	**Hitachi**	**1.09**	**224**	P	**Pg**	**13 06 40.6**	**+0.1**
JOU	**Okura**	**1.18**	**325**	P	**Pn**	**13 06 43.2**	**+0.1**
JOU				S	**Sg**	**13 06 57.2**	**-0.2**
MJAR	**Matsushiro Arr**	**2.78**	**253**	P	**Pn**	**13 07 05.8**	**+0.6**
	2.1nm,0.3s,baz=76,slow=15,SNR=25						
MJAR				S	**Sn**	**13 07 39.7**	**+0.4**
	2.7nm,0.3s,baz=80,slow=30,SNR=6.4						
MAT	**Matsushiro**	**2.78**	**253**	P	**Pn**	**13 07 06.4**	**+1.2**
MAT				S	**Sn**	**13 07 40.1**	**+0.8**
JHJ	**Hachijo jima 2**	**4.50**	**199**	P	**Pn**	**13 07 29.3**	**+0.6**
	6.9nm,0.3s,baz=108,slow=22,SNR=9.3						
JHJ				S	**Sn**	**13 08 19.9**	**-1.7**
	9.8nm,0.3s,baz=90,slow=20,SNR=2.9						
USRK	**Ussuriysk Ar.**	**9.91**	**316**	P	Pn	13 08 47.4	+4.4
	0.1nm,0.3s,baz=126,slow=14,SNR=5.6						
SEY	**Seymchan**	**26.42**	**11**	P	**P**	**13 11 59.5**	**+2.2**
	0.2nm,0.3s,baz=205,slow=6.4,SNR=5.2						
SONM	**Songino Array**	**27.65**	**303**	P	**P**	**13 12 08.2**	**-0.5**
	0.4nm,0.5s,baz=109,slow=7.5,SNR=4.5						
H11N2	**WAKE ISLAND Hy**	**28.27**	**122**	T	T	13 42 19.3	
	baz=314,slow=75,SNR=64						
H11N1	**WAKE ISLAND Hy**	**28.27**	**122**	T	T	13 42 18.9	
	baz=314,slow=75,SNR=92						
H11N3	**WAKE ISLAND Hy**	**28.29**	**122**	T	T	13 42 20.7	
	baz=314,slow=75,SNR=68						
H11S1	**WAKE ISLAND Hy**	**28.99**	**124**	T	T	13 43 08.5	
	baz=316,slow=76,SNR=36						
H11S3	**WAKE ISLAND Hy**	**28.99**	**124**	T	T	13 43 23.0	
	baz=316,slow=76,SNR=38						
H11S2	**WAKE ISLAND Hy**	**29.01**	**124**	T	T	13 43 12.5	
	baz=316,slow=76,SNR=36						
ZALV	**Zalesovo Beam**	**41.73**	**312**	P	**P**	**13 14 08.9**	**-0.8**
	0.7nm,0.4s,baz=73,slow=6.1,SNR=5.3						
MKAR	**Makanchi Array**	**43.99**	**302**	P	**P**	**13 14 27.7**	**-0.6**
	0.9nm,0.7s,baz=86,slow=9.8,SNR=13						
ILAR	**Eielson Array**	**49.14**	**33**	P	**P**	**13 15 08.1**	**-0.2**
	0.2nm,0.6s,baz=261,slow=6.1,SNR=3.0						
WRA	**Warramunga Arr**	**57.43**	**188**	P	P	13 16 04.7	-5.1
	0.8nm,1.1s,baz=4.1,slow=7.2,SNR=4.1						
FINES	**FINES Array B**	**68.53**	**332**	P	**P**	**13 17 23.2**	**+0.1**
	1.2nm,0.9s,baz=64,slow=9.4,SNR=3.5						
NOA	**NORSAR Array B**	**73.88**	**337**	P	**P**	**13 17 55.4**	**-0.2**
	0.7nm,0.8s,baz=43,slow=5.5,SNR=2.9						
AKASG	**Malin Array Be**	**74.06**	**322**	P	**P**	**13 17 56.5**	**-0.3**
	0.1nm,0.3s,baz=56,slow=5.7,SNR=3.7						

WEL 10 13:11:01.1±0.2, 37.76S×177.36E, h99km±1km, ML3.5/8, 13C-7D, Error ellipse: s-maj=1.3km s-min=0.9km az=0.0, Off east coast of North Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HAZ	**Te Kaha**	**0.33**	**90**	⇓P	Pn	13 11 15.1	-0.5
HAZ				S	Sn	13 11 25.7	-0.9
URZ	**Urewera**	**0.54**	**201**	⇑P	Pn	13 11 16.8	-0.3
URZ				S	Sn	13 11 28.6	-0.4
URZ				AML	AML	13 11 28.8	
PKGZ	**Pakihiroa**	**0.58**	**103**	⇑P	Pn	13 11 17.5	+0.1
PKGZ				S	Sn	13 11 29.7	0.0
MWZ	**Matawai**	**0.59**	**167**	P	Pn	13 11 17.3	-0.2
MWZ				S	Sn	13 11 30.0	+0.2
MWZ				AML	AML	13 11 31.3	
MWZ				AML	AML	13 11 31.5	
MWZ				AML	AML	13 11 31.9	
EDRZ	**Edgecumbe**	**0.60**	**234**	P	Pn	13 11 17.8	+0.2
OPRZ	**Ohinepanea**	**0.65**	**262**	⇓P	Pn	13 11 17.7	-0.1
OPRZ				S	Sn	13 11 30.3	-0.2
TWGZ	**Tauwhareparae**	**0.65**	**131**	⇑P	Pn	13 11 18.1	+0.1
RAGZ	**Rawiri**	**0.74**	**177**	P	Pn	13 11 18.9	0.0
MXZ	**Matakaoa Point**	**0.77**	**76**	⇑P	Pn	13 11 19.4	+0.3
MXZ				S	Sn	13 11 33.1	+0.6
MXZ				AML	AML	13 11 33.9	
MXZ				AML	AML	13 11 33.9	
PUZ	**Puketiti**	**0.78**	**114**	⇑P	Pn	13 11 18.8	-0.3
PUZ				S	Sn	13 11 32.2	-0.5
PUZ				AML	AML	13 11 32.3	
TKGZ	**Te Karaka**	**0.78**	**151**	⇑P	Pn	13 11 18.9	-0.3
TARZ	**Mount Tarawera**	**0.83**	**234**	PN	Pn	13 11 20.1	+0.4
WMGZ	**Waiomatatini S**	**0.84**	**95**	⇑P	Pn	13 11 19.8	+0.1
WMGZ				S	Sn	13 11 33.8	+0.1
TGRZ	**Tauranga**	**0.87**	**271**	⇓P	Pn	13 11 20.1	0.0
RRRZ	**Republican Roa**	**0.89**	**229**	PN	Pn	13 11 20.4	+0.1
CNGZ	**Carnagh Statio**	**0.99**	**138**	PN	Pn	13 11 21.4	+0.1
RIGZ	**Rimuhau**	**1.00**	**162**	PN	Pn	13 11 21.2	-0.3
RIGZ				S	Sn	13 11 37.3	+0.5
SNGZ	**Shannon Statio**	**1.02**	**181**	⇑P	Pn	13 11 21.5	-0.2
SNGZ				S	Sn	13 11 37.3	+0.1
HRRZ	**Handcock Road**	**1.06**	**233**	PN	Pn	13 11 22.3	+0.1
PRRZ	**Plateau Road**	**1.06**	**226**	⇓PN	Pn	13 11 22.2	+0.1
ALRZ	**Allen Road**	**1.14**	**225**	⇓PN	Pn	13 11 23.1	+0.1
RAHZ	**Arahi**	**1.18**	**191**	PN	Pn	13 11 23.6	+0.1
RAHZ				S	Sn	13 11 40.8	+0.5
PRGZ	**Paritu Road**	**1.24**	**161**	PN	Pn	13 11 23.7	-0.4
KNZ	**Kokohu**	**1.29**	**169**	PN	Pn	13 11 24.1	-0.6
KNZ				AML	AML	13 11 43.6	
MRHZ	**Matea Rd**	**1.31**	**214**	⇓PN	Pn	13 11 24.8	-0.2
NMHZ	**Naumai**	**1.41**	**198**	PN	Pn	13 11 26.9	+0.6
KUTZ	**Kaahu Road**	**1.42**	**238**	⇓PN	Pn	13 11 26.8	+0.6
MHGZ	**Mahia Peninsul**	**1.46**	**163**	PN	Pn	13 11 26.4	-0.3
TOZ	**Tahuroa Road**	**1.47**	**270**	PN	Pn	13 11 27.3	+0.4
ARHZ	**Aropaoanui**	**1.53**	**191**	PN	Pn	13 11 27.4	-0.2
ARHZ				S	Sn	13 11 48.4	+0.5
TLZ	**Tolley Road**	**1.55**	**248**	⇑PN	Pn	13 11 28.3	+0.4
BKZ	**Black Stump Fm**	**1.56**	**206**	PN	Pn	13 11 27.6	-0.6
BKZ				S	Sn	13 11 48.3	-0.4
BKZ				AML	AML	13 11 50.0	
RITZ	**Rihia Road**	**1.70**	**224**	PN	Pn	13 11 30.3	+0.5
MCHZ	**McNeill Hill**	**1.77**	**197**	PN	Pn	13 11 30.4	-0.2
KWHZ	**Kaweka Forest**	**1.82**	**204**	PN	Pn	13 11 30.7	-0.7
KRVZ	**Karewarewa**	**1.90**	**225**	⇑PN	Pn	13 11 32.8	+0.4
CKHZ	**Cape Kidnapper**	**1.91**	**187**	PN	Pn	13 11 31.5	-1.0
WTVZ	**West Tongariro**	**1.94**	**225**	PN	Pn	13 11 33.3	+0.3
BHHZ	**Black Hill Sta**	**2.01**	**210**	PN	Pn	13 11 33.1	-0.7
KRHZ	**Kereru**	**2.04**	**202**	PN	Pn	13 11 32.9	-1.3
KAHZ	**Kahuranaki**	**2.07**	**190**	PN	Pn	13 11 33.8	-0.8
MOVZ	**Moawhango**	**2.08**	**217**	⇑PN	Pn	13 11 33.9	-0.8
WNVZ	**Wahianoa**	**2.09**	**221**	⇑PN	Pn	13 11 34.6	-0.4
PXZ	**Pawanui**	**2.31**	**190**	PN	Pn	13 11 35.9	-1.7
PXZ				AML	AML	13 12 04.4	
PXZ				AML	AML	13 12 05.8	
PNHZ	**Pukenui**	**2.34**	**202**	PN	Pn	13 11 36.2	-1.9
TSZ	**Takapari Road**	**2.55**	**205**	⇑PN	Pn	13 11 38.7	-2.1
PRHZ	**Porangahau**	**2.57**	**192**	PN	Pn	13 11 39.1	-2.0
DVHZ	**Dannevirke**	**2.71**	**200**	PN	Pn	13 11 40.6	-2.3
WAZ	**Wanganui**	**2.73**	**222**	PN	Pn	13 11 42.8	-0.3
ANWZ	**Angora Road**	**2.79**	**194**	PN	Pn	13 11 42.0	-1.9
MRZ	**Mangatainoka R**	**3.21**	**205**	PN	Pn	13 11 47.0	-2.6
MRZ				AML	AML	13 12 24.0	
HOWZ	**Holdsworth Sta**	**3.45**	**204**	PN	Pn	13 11 49.6	-3.2
OGWZ	**Otaki Gorge**	**3.50**	**208**	PN	Pn	13 11 50.5	-3.0
KIW	**Kapiti Island**	**3.64**	**211**	PN	Pn	13 11 52.3	-3.0
MTW	**Mount Morrison**	**3.69**	**202**	PN	Pn	13 11 52.4	-3.7

IDC ***10*** *13:16:15.0±5.1, 23.76S×179.26E, h541km±44km, mb3.2/3, mb1 3.4/5, mb1mx3.0/30, mbtmp4.2/5, Error ellipse: s-maj=59.9km s-min=33.4km az=38.0*
ISC 10 13:16:13.8±2.2, 23.8S±0.2×179.4E±0.3, h537km, n7, σ1.9±24/7, mb3.8/3, South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**12.10**	**276**	P	**P**	**13 18 54.6**	**+1.0**
	0.7nm,0.3s,baz=102,slow=14,SNR=7.4						
URZ	**Urewera**	**14.52**	**187**	P	**P**	**13 19 18.0**	**-0.2**
	0.5nm,0.3s,baz=4.4,slow=13,SNR=4.5						
URZ				S	S	13 21 42.3	-8.1
	0.2nm,0.3s,baz=109,slow=18,SNR=3.8						
STKA	**Stephens Creek**	**34.27**	**248**	P	**P**	**13 22 14.6**	**-0.7**
	2.2nm,0.6s,baz=92,slow=16,SNR=3.9						
ASAR	**Alice Springs**	**41.54**	**261**	P	**P**	**13 23 14.4**	**-0.2**
	1.5nm,0.6s,baz=91,slow=7.9,SNR=37						
WRA	**Warramunga Arr**	**41.90**	**266**	P	**P**	**13 23 16.7**	**-0.8**
	1.1nm,0.3s,baz=104,slow=8.4,SNR=78						
HFS	**Hagfors**	**142.38**	**348**	PKP	**PKPdf**	**13 34 44.0**	**-0.8**
	2.5nm,0.9s,baz=37,slow=3.6,SNR=8.8						
TORD	**Torodi Ar. Bea**	**169.16**	**192**	PKPab	**PKPab**	**13 36 37.4**	**+1.8**
	0.7nm,1.0s,baz=173,slow=3.6,SNR=2.8						

ISCJB ***10*** *13:22:49.0±0.5, 23.97N±0.03×122.30E±0.02, h17km±6km, Error ellipse: s-maj=5.7km s-min=2.9km az=160.3*
TAP ***10*** *13:22:48.1, 24.00N×122.37E, h21km±1km, ML2.7, D*
JMA ***10*** *13:22:49.1±0.2, 23.98N×122.28E, h25km±5km, M1.8*
ISC 10 13:22:48.8±1.4, 23.98N±0.04×122.29E±0.02, h21km±4km, n27, σ0.67/48, Taiwan region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TWD	**Chiawan**	**0.65**	**279**	*eP*	**Pn**	**13 23 02.1**	**-0.6**
	baz=261						
ENA	**Nanau**	**0.67**	**311**	*eP*	**Pb**	**13 23 02.3**	**+0.4**
	baz=317						
ENA				*eS*	**Sb**	**13 23 11.6**	**+0.8**
	baz=317						
TWC	**Suao**	**0.74**	**327**	P	**Pb**	**13 23 02.4**	**-0.7**
	baz=322						
TWC				*eS*	**Sb**	**13 23 11.2**	**-1.6**
	baz=322						
JYNG	**Yonagunijimaku**	**0.76**	**52**	P	**Pb**	**13 23 03.4**	**+0.2**
JYNG				S	**Sb**	**13 23 12.8**	**-0.3**
YOJ	**Yonaguni jima**	**0.81**	**54**	P	**Pb**	**13 23 04.3**	**+0.1**
YOJ				S	**Sb**	**13 23 14.3**	**-0.4**
TWE	**Neicheng**	**0.93**	**322**	*eP*	**Pn**	**13 23 06.5**	**-0.2**
	baz=318						
TWE				*eS*	**Sn**	**13 23 19.7**	**+0.3**
	baz=318						
ENTT	**Nioudou**	**0.93**	**315**	P	**Pn**	**13 23 06.6**	**-0.1**
	baz=318						
ENTT				*eS*	**Sb**	**13 23 18.0**	**-0.2**
	baz=318						
WHF	**Hehuan Shan**	**0.95**	**280**	*eP*	**Pb**	**13 23 06.8**	**-0.1**
	baz=278						
WHF				*eS*	**Sb**	**13 23 19.0**	**-0.2**
	baz=278						
NNS	**Nan Shan**	**0.96**	**299**	*eP*	**Pn**	**13 23 07.0**	**-0.1**
	baz=281						
NNS				*eS*	**Sb**	**13 23 18.6**	**-0.4**
	baz=281						
TWB1	**Santiao Chiao**	**1.06**	**345**	*eP*	**Pb**	**13 23 09.3**	**+0.9**
	baz=340						
WDT	**Danda**	**1.09**	**258**	*eP*	**Pn**	**13 23 08.8**	**-0.3**
	baz=258						
WDT				*eS*	**Sn**	**13 23 23.6**	**-0.1**
	baz=258						
NSK	**Sanguang**	**1.10**	**309**	*eP*	**Pn**	**13 23 08.9**	**-0.1**
	baz=305						
NSK				*eS*	**Sb**	**13 23 23.4**	**+0.3**
	baz=305						
TWF1	**Yuli**	**1.11**	**236**	P	**Pn**	**13 23 08.5**	**-0.6**
	baz=237						
TWF1				*eS*	**Sb**	**13 23 23.0**	**-0.3**
	baz=237						
SMLT	**Sun Moon Lake**	**1.28**	**266**	*eP*	**Pb**	**13 23 13.5**	**+1.3**
	baz=254						
TYC	**Yuchr**	**1.32**	**267**	*eP*	**Pb**	**13 23 14.7**	**+1.9**
	baz=266						
YUS	**Yu-Shan**	**1.32**	**248**	*eP*	**Pb**	**13 23 13.1**	**-0.2**
	baz=248						
YUS				*eS*	**Sn**	**13 23 28.9**	**-0.9**
	baz=248						
NSTT	**Nanjuang**	**1.34**	**299**	*eP*	**Pb**	**13 23 13.4**	**+0.1**
	baz=282						
NSTT				*eS*	**Sb**	**13 23 30.4**	**+0.3**
	baz=282						
IRIF	**Iriomote-Funau**	**1.36**	**75**	P	**Pb**	**13 23 13.4**	**-0.1**
IRIF				*eS*	**Sb**	**13 23 31.9**	**+1.5**
ELDTW	**Lidau**	**1.41**	**236**	*eP*	**Pn**	**13 23 13.2**	**-0.2**
	baz=237						
ELDTW				*eS*	**Sn**	**13 23 30.3**	**-1.2**
	baz=237						
TWQ1	**Liyutan**	**1.44**	**285**	*eP*	**Pn**	**13 23 13.3**	**-0.3**
	baz=283						
TWQ1				*eS*	**Sb**	**13 23 33.2**	**+0.5**
	baz=283						
ALS	**Alishan**	**1.44**	**251**	*eP*	**Pb**	**13 23 15.4**	**+0.2**
	baz=252						
ALS				*eS*	**Sn**	**13 23 32.6**	**+0.1**
	baz=252						
CHN5	**Tsauling**	**1.53**	**256**	*eP*	**Pb**	**13 23 17.2**	**+0.7**
	baz=243						
CHN5				*eS*	**Sb**	**13 23 35.6**	**+0.1**
	baz=243						
JKRS	**Kuro-shima**	**1.59**	**80**	P	**Pb**	**13 23 17.5**	**+0.1**
STYT	**Tauyuan**	**1.63**	**240**	*eP*	**Pn**	**13 23 16.4**	**0.0**
	baz=230						
STYT				*eS*	**Sn**	**13 23 36.4**	**-0.3**
	baz=230						
JIJ	**Ishigaki jima**	**1.73**	**77**	P	**Pb**	**13 23 19.0**	**-0.9**
JIJ				S	**Sb**	**13 23 40.6**	**-0.6**
CHN1	**Nanshi**	**1.81**	**244**	*eP*	**Pn**	**13 23 19.7**	**+1.0**
	baz=244						
JISG	**Ishigakijimahi**	**1.94**	**72**	P	**Pn**	**13 23 21.2**	**+0.7**
JISG				*eS*	**Sn**	**13 23 44.7**	**+0.5**

NIED ***10*** *13:33:00, 39.80N×143.20E, h23km, Mw3.7 Best double couple: M0=3.75000×10^14 NP1:φs=154.00000°, δ=26.00000°, λ=50.00000°. NP2:φs=16.00000°, δ=71.00000°, λ=107.00000°.*
IDC ***10*** *13:33:11.6±1.3, 39.64N×143.28E, h0km, mb3.7/8, mb1 3.7/9, mb1mx3.5/59, mbtmp3.6/9, ML3.3/1, MS2.6/4, Ms1 2.6/4, ms1mx2.4/43, Error ellipse: s-maj=35.9km s-min=20.6km az=83.0*
ISCJB ***10*** *13:33:13.0±0.8, 39.65N±0.07×143.27E±0.09, h18km, mb3.6/8, Error ellipse: s-maj=10.3km s-min=9.3km az=158.4*
JMA ***10*** *13:33:15.1±0.7, 39.77N×143.16E, h29km, M3.8*
ISC 10 13:33:15.5±1.1, 39.71N±0.07×143.02E±0.08, h18km, n20, σ0.90/19, mb3.6/8, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JTH	**Tanohata**	**0.92**	**285**	P	**Pg**	**13 33 33.4**	**0.0**
MIYJ	**Miyakonagasawa**	**0.94**	**262**	P	**Pg**	**13 33 34.0**	**+0.3**
JKZ	**Kuzumaki**	**1.33**	**282**	P	**Pn**	**13 33 38.7**	**-0.5**
JANG	**Nango**	**1.33**	**300**	P	**Pn**	**13 33 39.1**	**-0.1**
JANG				*eS*	**Sg**	**13 33 58.3**	**-0.4**
JOM	**Ohasama**	**1.36**	**261**	P	**Pb**	**13 33 40.5**	**+0.1**
JMK	**Ichinoseki**	**1.59**	**242**	P	**Pb**	**13 33 43.4**	**-0.9**
JMK				S	**Sb**	**13 34 03.9**	**-0.1**
JTM	**Tenmabayashi**	**1.84**	**306**	P	**Pn**	**13 33 47.4**	**+1.2**
JAH	**Hinai**	**1.90**	**285**	P	**Pb**	**13 33 49.0**	**-0.5**
MJAR	**Matsushiro Arr**	**4.94**	**232**	Pn	**Pn**	**13 34 30.6**	**+1.8**
	1.2nm,0.3s,baz=38,slow=12,SNR=17						
MJAR				LR	LR	13 36 49.0	
	comp=Z,28nm,20.2s,baz=90,slow=43						
JHJ	**Hachijo jima 2**	**7.08**	**203**	LR	LR	13 37 42.4	
	comp=Z,68nm,19.6s,baz=250,slow=38						
JNU	**Nakatsue**	**11.78**	**240**	LR	LR	13 41 35.0	
	comp=Z,41nm,18.2s,baz=224,slow=42						
KSRS	**Korea Array**	**12.03**	**264**	Pn	Pn	13 36 10.7	+4.7
	0.2nm,0.3s,baz=84,slow=14,SNR=3.0						
KSRS				LR	LR	13 39 57.7	
	comp=Z,18nm,19.6s,baz=60,slow=33						
SEY	**Seymchan**	**23.93**	**11**	P	**P**	**13 38 28.1**	**0.0**
	0.7nm,0.6s,baz=177,slow=12,SNR=4.1						
SONM	**Songino Array**	**27.46**	**299**	P	**P**	**13 39 01.1**	**+0.7**
	0.5nm,0.6s,baz=95,slow=8.6,SNR=3.7						
ZALV	**Zalesovo Beam**	**41.10**	**310**	P	**P**	**13 40 59.7**	**+1.7**
	0.5nm,0.4s,baz=98,slow=11,SNR=3.3						
MKAR	**Makanchi Array**	**43.82**	**300**	P	**P**	**13 41 20.4**	**+0.1**
	0.9nm,0.8s,baz=82,slow=8.9,SNR=7.8						
KURBB	**Kurchatov Arra**	**45.40**	**306**	P	**P**	**13 41 32.6**	**-0.1**
	1.0nm,0.6s,baz=80,slow=8.5,SNR=9.4						
WRA	**Warramunga Arr**	**59.89**	**189**	P	**P**	**13 43 18.6**	**-1.6**
	0.2nm,0.4s,baz=7.9,slow=6.8,SNR=5.2						
ASAR	**Alice Springs**	**63.62**	**189**	P	**P**	**13 43 44.4**	**-0.9**
	0.3nm,0.7s,baz=3.4,slow=6.6,SNR=4.7						
HFS	**Hagfors**	**72.17**	**336**	P	**P**	**13 44 38.7**	**0.0**
	3.0nm,1.0s,baz=24,slow=4.9,SNR=4.1						

NIED ***10*** *13:34:00, 37.70N×141.70E, h26km, Mw3.4 Best double couple: M0=1.64000×10^14 NP1:φs=234.00000°, δ=63.00000°, λ=166.00000°. NP2:φs=331.00000°, δ=78.00000°, λ=28.00000°.*
IDC ***10*** *13:34:15.3±2.0, 37.87N×142.48E, h0km, mb3.6/6, mb1 3.7/8, mb1mx3.4/57, mbtmp3.6/8, ML3.7/2, Error ellipse: s-maj=54.5km s-min=20.2km az=69.0*
ISCJB ***10*** *13:34:20.3±1.6, 37.66N±0.05×141.95E±0.09, h29km±9km, mb3.5/6, Error ellipse: s-maj=11.7km s-min=7.5km az=3.9*
JMA ***10*** *13:34:24.6±0.1, 37.70N×141.68E, h43km±3km, M3.8*
ISC 10 13:34:21.9±2.2, 37.65N±0.05×141.76E±0.09, h25km±14km, n21, σ1.9±23/23, mb3.6/6, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**0.76**	**249**	P	**Pn**	**13 34 38.4**	**+1.4**
JFK				S	**Sn**	**13 34 48.0**	**+0.3**
JMM	**Marumori**	**0.80**	**286**	P	**Pn**	**13 34 38.5**	**+1.0**
JMM				S	**Sb**	**13 34 47.8**	**+0.3**
JIO	**Ouri**	**0.87**	**338**	P	**Pn**	**13 34 39.5**	**+0.9**
JIO				S	**Sn**	**13 34 49.6**	**-0.8**
ONAJ	**Iwakimizuishiy**	**0.94**	**235**	P	**Pn**	**13 34 41.0**	**+1.4**
JOU	**Okura**	**1.12**	**310**	P	**Pb**	**13 34 43.2**	**+0.5**
JOU				S	**Sn**	**13 34 56.6**	**-0.2**
JFT	**Otama**	**1.14**	**264**	P	**Pb**	**13 34 44.3**	**+1.4**
JFT				S	**Sn**	**13 34 58.3**	**+1.2**
MJAR	**Matsushiro Arr**	**3.04**	**250**	Pn	**Pb**	**13 35 13.0**	**-2.5**
	3.2nm,0.3s,baz=68,slow=13,SNR=13						
MJAR				Sn	**Sb**	**13 35 50.1**	**-2.0**
	3.2nm,0.3s,baz=92,slow=29,SNR=5.6						
MAT	**Matsushiro**	**3.05**	**250**	P	**Pb**	**13 35 13.8**	**-1.7**
MAT				*eS*	**Sb**	**13 35 51.9**	**-0.3**
JHJ	**Hachijo jima 2**	**4.80**	**200**	Pn	**Pn**	**13 35 34.4**	**+1.9**
	14nm,0.3s,baz=36,slow=16,SNR=6.6						
JHJ				Sn	**Sn**	**13 36 27.6**	**+0.4**
	15nm,0.3s,baz=116,slow=22,SNR=6.7						
SONM	**Songino Array**	**27.68**	**303**	P	**P**	**13 40 08.2**	**+0.3**
	0.2nm,0.4s,baz=100,slow=6.1,SNR=1.8						
H11N2	**WAKE ISLAND Hy**	**28.23**	**122**	T	T	14 09 52.2	
	baz=316,slow=74						
H11N1	**WAKE ISLAND Hy**	**28.24**	**122**	T	T	14 09 52.2	
	baz=316,slow=74						
H11N3	**WAKE ISLAND Hy**	**28.25**	**122**	T	T	14 09 52.2	
	baz=316						
H11S1	**WAKE ISLAND Hy**	**28.97**	**124**	T	T	14 10 49.6	
	baz=320,slow=74						
H11S3	**WAKE ISLAND Hy**	**28.97**	**124**	T	T	14 10 49.6	
	baz=320,slow=74						
H11S2	**WAKE ISLAND Hy**	**28.98**	**124**	T	T	14 10 49.6	
	baz=320						
ZALV	**Zalesovo Beam**	**41.71**	**312**	P	**P**	**13 42 07.9**	**-0.5**
	0.4nm,0.3s,baz=99,slow=9.3,SNR=2.4						
MKAR	**Makanchi Array**	**44.03**	**302**	P	**P**	**13 42 27.6**	**+0.2**
	0.4nm,0.6s,baz=86,slow=6.6,SNR=3.0						
KURBB	**Kurchatov Arra**	**45.84**	**308**	P	**P**	**13 42 41.0**	**-0.7**
	0.9nm,0.5s,baz=81,slow=8.8,SNR=5.0						
WRA	**Warramunga Arr**	**57.70**	**188**	P	**P**	**13 44 10.0**	**-0.4**
	0.5nm,0.5s,baz=5.

ERBA	**Erbaa**	**0.30**	**288**	*i* P	**Pb**	**13 57 38.9**	**+0.1**
ERBA				*i* S	**Sb**	**13 57 44.4**	**+0.4**
ERBA	**Erbaa**	**0.30**	**288**	P	**Pb**	**13 57 38.9**	**+0.1**
ERBA				S	**Sb**	**13 57 44.4**	**+0.4**
SVSK	**Karacayir**	**0.68**	**188**	*e*PG	**Pg**	**13 57 44.0**	**+0.1**
SVSK	**Karacayir**	**0.68**	**188**	*e*Pg	**Pg**	**13 57 44.1**	**+0.1**
ORDU	**Ordu-Boztepe**	**0.68**	**54**	*i* P	**Pb**	**13 57 45.4**	**0.0**
ORDU				*i* S	**Sb**	**13 57 54.6**	**-0.4**
ORDU	**Ordu-Boztepe**	**0.68**	**54**	P	**Pb**	**13 57 45.3**	**0.0**
ORDU				S	**Sb**	**13 57 54.7**	**-0.4**
CUZAR	**Zara_SIVAS**	**0.86**	**145**	*i* P	**Pg**	**13 57 47.2**	**-0.2**
CUZAR				*i* S	**Sg**	**13 57 58.5**	**-0.1**
CUZAR	**Zara_SIVAS**	**0.86**	**145**	P	**Pg**	**13 57 47.2**	**-0.2**
CUZAR				S	**Sg**	**13 57 58.5**	**-0.1**
SUSE	**Susehri**	**0.91**	**115**	*i* P	**Pg**	**13 57 48.3**	**0.0**
SUSE				*i* S	**Sg**	**13 58 00.6**	**+0.5**
SUSE	**Susehri**	**0.91**	**115**	P	**Pg**	**13 57 48.3**	**0.0**
SUSE				S	**Sg**	**13 58 00.6**	**+0.5**
GRSN	**GIRESUNGRSN**	**0.93**	**69**	*i* P	**Pg**	**13 57 49.0**	**+0.2**
GRSN				*i* S	**Sg**	**13 58 00.5**	**-0.3**
GRSN	**GIRESUNGRSN**	**0.93**	**69**	P	**Pg**	**13 57 49.0**	**+0.2**
GRSN				S	**Sg**	**13 58 00.5**	**-0.3**
KVT	**Kavak**	**0.95**	**301**	*e*PG	**Pb**	**13 57 49.9**	**-0.1**
KVT				*e*SG	**Sn**	**13 58 04.5**	**-0.5**
KVT	**Kavak**	**0.95**	**301**	*e*Pg	**Pb**	**13 57 49.9**	**-0.1**
KVT				*e*Sg	**Sn**	**13 58 04.5**	**-0.5**
ESPY	**Espiye-Giresun**	**1.26**	**75**	*e*PN	**Pg**	**13 57 54.9**	**-0.2**
ESPY	**Espiye-Giresun**	**1.26**	**75**	*e*Pn	**Pg**	**13 57 54.9**	**-0.2**
CUKAN	**kangal_SIVAS**	**1.30**	**168**	*i* P	**Pg**	**13 57 55.2**	**-0.7**
CUKAN				*i* S	**Sn**	**13 58 13.6**	**0.0**
CUKAN	**kangal_SIVAS**	**1.30**	**168**	P	**Pg**	**13 57 55.2**	**-0.7**
CUKAN				S	**Sn**	**13 58 13.6**	**0.0**
KELT	**Kelkit**	**1.69**	**105**	*i* P	**Pn**	**13 58 01.5**	**+0.3**
KELT				*i* S	**Sn**	**13 58 23.3**	**+0.1**
KELT	**Kelkit**	**1.69**	**105**	P	**Pn**	**13 58 01.5**	**+0.3**
KELT				S	**Sn**	**13 58 23.3**	**+0.1**

MAN 10 14:01:50,9.69N×125.27E,h12km,mb5.2,ML4.1,MS4.3, Mindanao

*ISCJB **10** 14:02:31.6±0.7,37.08N±0.03×140.81E±0.06,h7km±3km, mb3.1/2, Error ellipse: s-maj=8.3km s-min=4.4km az=15.2*
*JMA **10** 14:02:32.0,37.08N×140.77E,h6km±1km,M3.3 Broadband fault plane solution: P waves. NP1: ϕs159.00000°,δ58.00000°,λ-113.00000°. NP2: ϕs17.00000°,δ39.00000°,λ-58.00000°. Principal axes: T Plg10.0000°, Azm265.0000°; N Plg19.0000°, Azm171.0000°; P Plg68.0000°, Azm21.0000°;*
JMA Felt II J1.
*IDC **10** 14:02:32.1±2.3,36.80N×140.82E,h0km,mb3.2/2, mb1 3.4/3,mb1mx3.1/42,mbtmp3.2/3,ML3.2/1,MS1.6/1, Ms1 1.6/1,ms1mx1.5/17 Error ellipse: s-maj=44.2km s-min=29.5km az=46.0*

ISC 10 14:02:32.1±1.0,37.07N±0.03×140.77E±0.05,h4km±7km, n18,σ0 85/22,5C-3D,Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.04**	**39**	⇓P	**Pg**	**14 02 33.2**	**0.0**
ONAJ				S	**Sg**	**14 02 34.1**	**+0.1**
JFK	**Kawauchi**	**0.30**	**16**	⇓P	**Pg**	**14 02 37.8**	**-0.3**
JFK				*e*S	**Sg**	**14 02 42.9**	**+0.8**
JHO	**Hitachi**	**0.49**	**199**	⇑P	**Pg**	**14 02 41.5**	**0.0**
JHO				S	**Sg**	**14 02 48.5**	**+0.6**
JFT	**Otama**	**0.56**	**322**	⇑P	**Pg**	**14 02 42.9**	**-0.1**
JFT				S	**Sg**	**14 02 50.6**	**+0.3**
JSB	**Shiboa**	**0.69**	**262**	⇑P	**Pb**	**14 02 45.9**	**-0.8**
JSB				S	**Sb**	**14 02 55.6**	**-1.0**
JMM	**Marumori**	**0.79**	**1**	⇓P	**Pg**	**14 02 46.6**	**-0.8**
JMM				S	**Sg**	**14 02 57.1**	**-0.6**
JFY	**Yanaizu**	**0.91**	**292**	⇑P	**Pg**	**14 02 49.4**	**-0.3**
JFY				S	**Sg**	**14 03 01.3**	**-0.2**
JYT	**Yasato**	**0.96**	**209**	⇑P	**Pg**	**14 02 49.9**	**-0.7**
JYT				S	**Sg**	**14 03 03.3**	**+0.2**
MJAR	**Matsushiro Arr**	**2.12**	**256**	Pn	**Pn**	**14 03 08.7**	**+0.3**
	7.9nm,0.3s,baz=79,slow=16,SNR=48						
MJAR				Sn	**Sn**	**14 03 35.8**	**+0.5**
	2.3nm,0.3s,baz=78,slow=16,SNR=5.0						
MJAR				LR	LR	14 03 40.0	
	comp=Z,15nm,20.7s,baz=100,slow=32						
MAT	**Matsushiro**	**2.12**	**256**	P	**Pn**	**14 03 09.4**	**+0.9**
MAT				S	**Sb**	**14 03 38.3**	**+0.4**
H11N2	**WAKE ISLAND Hy**	**28.61**	**120**	T	T	14 38 14.8	
	baz=313,slow=75,SNR=15						
H11N1	**WAKE ISLAND Hy**	**28.62**	**120**	T	T	14 38 15.7	
	baz=313,slow=75,SNR=15						
H11N3	**WAKE ISLAND Hy**	**28.63**	**120**	T	T	14 38 16.4	
	baz=313,slow=75,SNR=14						
H11S1	**WAKE ISLAND Hy**	**29.32**	**122**	T	T	14 39 05.5	
	baz=314,slow=76,SNR=11						
H11S3	**WAKE ISLAND Hy**	**29.32**	**122**	T	T	14 39 05.2	
	baz=314,slow=76,SNR=8.8						
H11S2	**WAKE ISLAND Hy**	**29.33**	**122**	T	T	14 39 07.1	
	baz=314,slow=76,SNR=8.8						
MKAR	**Makanchi Array**	**43.66**	**302**	P	**P**	**14 10 39.9**	**+2.0**
	0.1nm,0.5s,baz=86,slow=7.8,SNR=2.1						
WRA	**Warramunga Arr**	**57.03**	**187**	P	**P**	**14 12 17.5**	**-1.7**
	0.2nm,0.5s,baz=2.2,slow=7.5,SNR=7.1						

IDC 10 14:09:17.6±3.0,32.90S×178.38W,h0km,mb3.6/2, mb1 3.8/3,mb1mx3.6/35,mbtmp3.6/3,ML3.1/1,MS3.2/1, Ms1 3.2/1,ms1mx2.5/24,Error ellipse: s-maj=70.1km s-min=36.1km az=117.0,South of Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
URZ	**Urewera**	**6.49**	**213**	Pn	Pn	14 10 54.3	-0.1
	0.4nm,0.3s,baz=23,slow=10,SNR=5.5						
URZ				Sn	Sn	14 12 08.8	-0.3
	1.6nm,0.3s,baz=90,slow=20,SNR=7.0						
RPZ	**Rata Peaks**	**13.61**	**214**	LR	LR	14 18 25.1	
	comp=Z,104nm,19.6s,baz=247,slow=40						
ASAR	**Alice Springs**	**42.72**	**270**	P	P	14 17 16.9	+0.3
	0.2nm,0.3s,baz=111,slow=7.1,SNR=7.1						
WRA	**Warramunga Arr**	**43.93**	**275**	P	P	14 17 26.2	-0.3
	0.5nm,0.5s,baz=115,slow=7.9,SNR=15						
FINES	**FINESS Array B**	**147.36**	**338**	PKPbc	PKPbc	14 29 01.6	-0.9
	0.8nm,0.7s,baz=22,slow=1.5,SNR=7.4						

*IDC **10** 14:12:54.2±4.0,9.45N×125.66E,h0km,mb3.3/3, mb1 3.5/3,mb1mx3.2/53,mbtmp3.3/3,Error ellipse: s-maj=361.6km s-min=26.0km az=65.0*
*ISCJB **10** 14:12:56.7±1.0,9.74N±0.05×126.60E±0.07,h35km, mb3.3/3,Error ellipse: s-maj=10.8km s-min=7.1km az=165.1*
*MAN **10** 14:12:59,9.74N×126.29E,h13km,mb4.7,ML3.5,MS3.5*

ISC 10 14:12:59.3±1.3,9.75N±0.06×126.4E±0.1,h35km,n17, σ1 9 55/15,mb3.3/3,C,Mindanao

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
BUTP	**Butuan**	**1.12**	**226**	*e*P	**Pn**	**14 13 17.4**	**-1.1**
BUTP				*e*S	**Sn**	**14 13 34.2**	**+1.5**
PLP	**Palo**	**2.01**	**315**	⇑*e*P	**Pn**	**14 13 30.9**	**0.0**
PLP				*i* S	**Sn**	**14 13 57.9**	**+3.0**
OCLP	**Ormoc**	**2.22**	**306**	*e*P	**Pn**	**14 13 34.4**	**+0.7**
BUKP	**Musuan**	**2.30**	**216**	*e*P	**Pn**	**14 13 36.0**	**+1.1**
BUKP				*e*S	**Sn**	**14 14 02.2**	**+0.2**
LLP	**Lapu-Lapu**	**2.50**	**283**	*e*P	**Pn**	**14 13 37.9**	**+0.3**
LLP				*e*S	**Sn**	**14 14 07.6**	**+0.7**
TBP	**Tagbilaran**	**2.54**	**269**	⇑*e*P	**Pn**	**14 13 38.3**	**+0.2**
MATI	**Mati**	**2.79**	**184**	*e*P	**Pn**	**14 13 44.1**	**+2.6**
RCP	**Roxas**	**4.05**	**297**	⇑*e*P	**Pn**	**14 14 00.4**	**+1.4**
WRA	**Warramunga Arr**	**30.51**	**165**	P	**P**	**14 19 08.0**	**-1.4**
	0.3nm,0.7s,baz=342,slow=8.8,SNR=3.6						
ASAR	**Alice Springs**	**34.00**	**168**	P	**P**	**14 19 39.5**	**-0.5**
	0.3nm,0.5s,baz=349,slow=7.2,SNR=8.5						
H11S3	**WAKE ISLAND Hy**	**39.91**	**73**	T	T	15 03 22.4	
	baz=262,slow=75,SNR=14						
H11S1	**WAKE ISLAND Hy**	**39.92**	**73**	T	T	15 03 23.1	
	baz=262,slow=75,SNR=11						
H11S2	**WAKE ISLAND Hy**	**39.93**	**73**	T	T	15 03 26.6	
	baz=262,slow=75,SNR=8.2						
H11N1	**WAKE ISLAND Hy**	**40.26**	**71**	T	T	15 03 50.1	
	baz=263,slow=74,SNR=16						
H11N2	**WAKE ISLAND Hy**	**40.27**	**71**	T	T	15 03 47.0	
	baz=263,slow=74,SNR=14						
H11N3	**WAKE ISLAND Hy**	**40.28**	**71**	T	T	15 04 00.3	
	baz=263,slow=74,SNR=15						
MKAR	**Makanchi Array**	**52.54**	**323**	P	**P**	**14 22 07.7**	**-1.6**
	0.3nm,0.8s,baz=117,slow=8.9,SNR=3.4						

*IDC **10** 14:23:01.8±1.2,34.60N×26.56E,h0km,mb3.6/9, mb1 3.7/13,mb1mx3.5/54,mbtmp3.6/13,ML3.6/4,Error ellipse: s-maj=23.3km s-min=17.4km az=1.0*
*ISCJB **10** 14:23:03.5±1.5,34.46N±0.07×26.73E±0.05,h23km±10km, mb3.5/9,Error ellipse: s-maj=12.6km s-min=6.6km az=5.6*
*ATH **10** 14:23:03.1,34.46N×26.61E,h12km±2km,ML3.2/3,Error ellipse: s-maj=3.7km s-min=1.8km az=3.0*
*CSEM **10** 14:23:04.3±0.6,34.53N×26.60E,h2km,ML3.3,Error ellipse: s-maj=10.6km s-min=6.3km az=151.0*
*THE **10** 14:23:06.1,34.63N×26.56E,h0km±2km,ML3.3/5,Error ellipse: s-maj=4.8km s-min=1.8km az=152.0*

ISC 10 14:23:03.2±1.7,34.51N±0.06×26.64E±0.04,h10km±10km, n48,σ1 9 20/64,mb3.5/9,Crete

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
ZKR	**Zakros**	**0.70**	**330**	P	**Pg**	**14 23 16.6**	**-0.1**
ZKR				S	**Sb**	**14 23 26.8**	**-0.3**
ZKR	**Zakros**	**0.70**	**330**	P	**Pg**	**14 23 16.6**	**-0.1**
ZKR				S	**Sb**	**14 23 26.8**	**-0.3**
ZKR	**Zakros**	**0.70**	**330**	P	**Pg**	**14 23 16.1**	**-0.5**
ZKR				S	**Sb**	**14 23 27.3**	**+0.2**
ZKR				AML	AML	14 23 37.9	
	comp=E,3701μm,0.7s						
ZKR				AML	AML	14 23 39.2	
	comp=N,4298μm,0.7s						
KARP	**Karpathos**	**1.12**	**22**	P	**Pn**	**14 23 26.9**	**+2.0**
KARP				S	**Sn**	**14 23 42.0**	**+1.6**
KARP	**Karpathos**	**1.12**	**22**	P	**Pn**	**14 23 25.9**	**+0.9**
KARP				S	**Sn**	**14 23 42.0**	**+1.6**
KARP	**Karpathos**	**1.12**	**22**	P	**Pn**	**14 23 25.9**	**+0.9**
NPS	**Neapolis**	**1.13**	**312**	P	**Pg**	**14 23 24.7**	**-0.2**
NPS				S	**Sn**	**14 23 41.3**	**+0.6**
NPS	**Neapolis**	**1.13**	**312**	P	**Pg**	**14 23 25.0**	**+0.1**
NPS				S	**Sb**	**14 23 39.6**	**0.0**
NPS	**Neapolis**	**1.13**	**312**	P	**Pg**	**14 23 25.0**	**+0.1**
NPS				S	**Sb**	**14 23 39.6**	**0.0**
NPS				AML	AML	14 23 45.3	
	comp=E,2488μm,0.4s						
NPS				AML	AML	14 23 48.4	
	comp=N,2262μm,0.4s						
LAST	**Lasithi**	**1.16**	**304**	P	**Pg**	**14 23 24.6**	**-0.8**
LAST				S	**Sn**	**14 23 41.8**	**+0.4**
LAST	**Lasithi**	**1.16**	**304**	P	**Pg**	**14 23 24.6**	**-0.8**
LAST				S	**Sn**	**14 23 41.8**	**+0.4**
LAST	**Lasithi**	**1.16**	**304**	P	**Pg**	**14 23 24.0**	**-1.4**
SIVA	**Sivas**	**1.59**	**289**	P	**Pn**	**14 23 32.0**	**+0.6**
SIVA	**Sivas**	**1.59**	**289**	P	**Pn**	**14 23 32.5**	**+1.1**
SIVA	**Sivas**	**1.59**	**289**	P	**Pn**	**14 23 32.5**	**+1.1**
IDI	**Anoyia**	**1.64**	**299**	Pn	**Pn**	**14 23 32.5**	**+0.5**
	comp=N,3.3nm,0.3s,baz=120,slow=19,SNR=22						
IDI				Sn	**Sg**	**14 23 55.5**	**-0.3**
	comp=N,23nm,0.3s,baz=237,slow=22,SNR=9.7						
IDI	**Anoyia**	**1.64**	**299**	P	**Pb**	**14 23 34.4**	**+1.0**
IDI				S	**Sn**	**14 23 54.2**	**+1.0**
IDI	**Anoyia**	**1.64**	**299**	P	**Pb**	**14 23 34.4**	**+1.0**
IDI				S	**Sn**	**14 23 54.2**	**+1.0**
IDI	**Anoyia**	**1.64**	**299**	P	**Pb**	**14 23 34.4**	**+1.0**
IDI				S	**Sg**	**14 23 56.5**	**+0.7**
IDI				AML	AML	14 24 06.1	
	comp=E,516μm,0.7s						
IDI				AML	AML	14 24 14.3	
	comp=N,570μm,0.5s						
SANT	**Santorini**	**2.09**	**333**	P	**Pn**	**14 23 40.1**	**+1.8**
SANT	**Santorini**	**2.09**	**333**	P	**Pn**	**14 23 40.1**	**+1.8**
THR6	**Thira Island,**	**2.10**	**331**	P	**Pn**	**14 23 39.5**	**+1.1**
THR6	**Thira Island,**	**2.10**	**331**	P	**Pn**	**14 23 39.5**	**+1.1**
GVD	**Gavdhos**	**2.13**	**280**	P	**Pn**	**14 23 40.8**	**+2.0**
GVD				S	**Sb**	**14 24 08.4**	**0.0**
GVD	**Gavdhos**	**2.13**	**280**	P	**Pn**	**14 23 40.8**	**+2.0**
GVD				S	**Sb**	**14 24 08.4**	**0.0**
GVD	**Gavdhos**	**2.13**	**280**	P	**Pn**	**14 23 41.2**	**+2.4**
THR3	**Thira Island,**	**2.15**	**332**	P	**Pn**	**14 23 39.8**	**+0.8**
THR3	**Thira Island,**	**2.15**	**332**	P	**Pn**	**14 23 39.8**	**+0.8**
VAM	**Vamos**	**2.20**	**295**	P	**Pn**	**14 23 42.4**	**+2.7**
APE	**Apeiranthos**	**2.71**	**341**	P	**Pn**	**14 23 48.4**	**+1.6**
APE	**Apeiranthos**	**2.71**	**341**	P	**Pn**	**14 23 48.4**	**+1.6**
MHLO	**Agia Marina, M**	**2.84**	**321**	P	**Pn**	**14 23 50.2**	**+1.6**
MHLO	**Agia Marina, M**	**2.84**	**321**	P	**Pn**	**14 23 50.2**	**+1.6**
ANKY	**Antikythira Is**	**3.05**	**297**	P	**Pn**	**14 23 52.6**	**+1.1**
ANKY	**Antikythira Is**	**3.05**	**297**	P	**Pn**	**14 23 52.6**	**+1.1**
EIL	**Elat**	**8.54**	**122**	Pn	**Pn**	**14 25 07.1**	**+0.2**
	comp=N,0.6nm,0.3s,baz=324,slow=11,SNR=4.8						
EIL				Sn	Sn	14 26 37.1	-6.2
	comp=N,0.8nm,0.3s,baz=41,slow=20,SNR=3.4						
KBZ	**Khabaz**	**15.59**	**49**	Pn	**Pn**	**14 26 46.8**	**-0.4**
	comp=N,0.1nm,0.3s,baz=214,slow=18,SNR=2.6						
AKASG	**Malin Array Be**	**16.29**	**6**	Pn	**Pn**	**14 26 50.5**	**-1.4**
	comp=N,0.3nm,0.3s,baz=193,slow=11,SNR=2.6						
GERES	**GERESS Array B**	**17.24**	**330**	Pn	**Pn**	**14 27 02.1**	**-2.0**
	comp=N,0.2nm,0.3s,baz=126,slow=13,SNR=2.9						
FINES	**FINESS Array B**	**26.95**	**359**	P	**P**	**14 28 42.5**	**-2.0**
	comp=N,1.0nm,0.7s,baz=170,slow=9.3,SNR=3.3						
HFS	**Hagfors**	**27.00**	**346**	P	**P**	**14 28 43.6**	**-1.4**
	comp=N,0.8nm,0.7s,baz=146,slow=8.7,SNR=3.3						
EKA	**Eskdalemuir Ar**	**29.27**	**324**	P	**P**	**14 29 05.2**	**-0.1**
	comp=N,0.1nm,0.4s,baz=119,slow=9.9,SNR=2.4						
TORD	**Torodi Ar. Bea**	**31.04**	**233**	P	**P**	**14 29 20.8**	**-0.4**
	comp=N,0.3nm,0.4s,baz=29,slow=8.9,SNR=7.7						
ARCES	**ARCESS Array B**	**35.08**	**359**	P	**P**	**14 29 54.5**	**-1.6**
	comp=N,2.0nm,0.7s,baz=178,slow=9.6,SNR=7.9						
KURBB	**Kurchatov Arra**	**40.59**	**50**	P	**P**	**14 30 43.5**	**+0.7**
	comp=N,0.4nm,0.6s,baz=290,slow=10,SNR=4.7						
MKAR	**Makanchi Array**	**43.12**	**56**	P	**P**	**14 31 05.5**	**+1.9**
	comp=N,0.4nm,0.6s,baz=280,slow=6.4,SNR=6.3						
ZALV	**Zalesovo Beam**	**44.58**	**46**	P	**P**	**14 31 14.6**	**-0.6**
	comp=N,0.3nm,0.3s,baz=269,slow=8.5,SNR=2.7						
SONM	**Songino Array**	**58.95**	**51**	P	**P**	**14 33 03.1**	**+0.4**
	comp=N,0.4nm,0.6s,baz=282,slow=7.2,SNR=3.5						

JMA 10 14:25:02.0±0.3,37.91N×143.86E,h34km,M3.5,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**2.05**	**286**	P	Pn	14 25 35.2	+1.1
JIO				S	Sn	14 26 00.2	+1.7
MIYJ	**Miyakonagasawa**	**2.31**	**317**	P	Pn	14 25 38.8	+1.2
MIYJ				S	Sn	14 26 05.7	+0.9
JMK	**Ichinoseki**	**2.32**	**297**	P	Pn	14 25 39.8	+2.0
JMK				S	Sn	14 26 07.5	+2.4
JOM	**Ohasama**	**2.54**	**309**	P	Pn	14 25 43.2	+2.3
JOM				*e*S	Sn	14 26 12.8	+2.2
ONAJ	**Iwakimizuishiy**	**2.56**	**253**	P	Pn	14 25 42.3	+1.1
OMAJ	**Kaneyama**	**2.93**	**291**	P	Pn	14 25 49.9	+2.8
JYK				*e*S	Sn	14 26 22.8	+2.7
JRG	**Rokugo**	**2.93**	**301**	P	Pn	14 25 49.3	+3.1
JRG				*e*S	Sn	14 26 23.1	+3.0
JANG	**Nango**	**3.06**	**324**	P	Pn	14 25 50.4	+2.4
JANG				S	Sn	14 26 23.8	+0.4
JAG	**Ashikaga**	**3.82**	**249**	P	Pn	14 26 00.4	+2.0
JOT	**Ohata**	**4.09**	**329**	*e*S	Sn	14 26 47.9	-0.8
JHU	**Hanno**	**4.21**	**242**	P	Pn	14 26 04.0	+0.3
JOD2	**Odawara 2**	**4.66**	**237**	*e*S	Sn	14 27 03.3	+0.4
JCH	**Churui**	**4.71**	**356**	P	Pn	14 26 10.7	0.0
JCH				S	Sn	14 27 02.4	-1.7
JTKR	**Abashiri--Toko**	**6.05**	**0**	P	Pn	14 26 28.9	-0.2
JTKR				S	Sn	14 27 33.7	-3.4

WEL 10 14:25:52.6±0.4,37.10S×177.21E,h149km±3km,ML3.6/11, 3C-5D,Error ellipse: s-maj=4.5km s-min=3.2km az=90.0, Off east coast of North Island

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
HAZ	**Te Kaha**	**0.80**	**146**	PN	Pn	14 26 15.6	0.0
HAZ				SN	Sn	14 26 33.0	-0.2
MXZ	**Matakaoa Point**	**0.99**	**118**	⇑PN	Pn	14 26 17.0	-0.2
MXZ				SN	Sn	14 26 35.6	-0.3
MXZ				AML	AML	14 26 36.3	
PKGZ	**Pakihiroa**	**1.04**	**139**	PN	Pn	14 26 18.0	+0.2
URZ	**Urewera**	**1.16**	**184**	⇓PN	Pn	14 26 18.9	+0.2
URZ				SN	Sn	14 26 39.1	+0.4
URZ				AML	AML	14 26 39.8	

WMGZ	**Waiomatatini S**	**1.20**	**127**	⇑PN	Pn	14 26 19.0	-0.1
TWGZ	**Tauwhareparae**	**1.24**	**151**	PN	Pn	14 26 20.0	+0.5
MWZ	**Matawai**	**1.26**	**169**	⇓PN	Pn	14 26 19.7	0.0
MWZ				SN	Sn	14 26 40.6	+0.1
MWZ				AML	AML	14 26 41.9	
MWZ				AML	AML	14 26 42.1	
PUZ	**Puketiti**	**1.28**	**140**	PN	Pn	14 26 19.7	-0.2
PUZ				SN	Sn	14 26 39.8	-0.9
PUZ				AML	AML	14 26 40.0	
TKGZ	**Te Karaka**	**1.43**	**160**	⇓PN	Pn	14 26 21.2	-0.1
CNGZ	**Carnagh Statio**	**1.59**	**151**	PN	Pn	14 26 23.2	+0.1
RIGZ	**Rimuhau**	**1.66**	**165**	PN	Pn	14 26 23.6	-0.2
SNGZ	**Shannon Statio**	**1.68**	**177**	PN	Pn	14 26 23.9	-0.2
RAHZ	**Arahi**	**1.82**	**183**	PN	Pn	14 26 25.8	+0.2
MRHZ	**Matea Rd**	**1.84**	**200**	PN	Pn	14 26 25.8	-0.1
PRGZ	**Paritu Road**	**1.90**	**164**	PN	Pn	14 26 26.1	-0.4
KNZ	**Kokohu**	**1.95**	**169**	⇓PN	Pn	14 26 26.5	-0.6
WHHZ	**Waihua**	**1.98**	**180**	PN	Pn	14 26 27.1	-0.3
NMHZ	**Naumai**	**2.02**	**189**	PN	Pn	14 26 28.5	+0.5
MHGZ	**Mahia Peninsul**	**2.12**	**165**	PN	Pn	14 26 28.5	-0.7
BKZ	**Black Stump Fm**	**2.14**	**195**	AML	AML	14 27 10.2	
ARHZ	**Aropaoanui**	**2.17**	**184**	PN	Pn	14 26 29.3	-0.3
MCHZ	**McNeill Hill**	**2.38**	**190**	PN	Pn	14 26 31.7	-0.4
KWHZ	**Kaweka Forest**	**2.40**	**195**	PN	Pn	14 26 31.8	-0.7
FWVZ	**Far West T-bar**	**2.52**	**211**	PN	Pn	14 26 34.0	-0.2
BHHZ	**Black Hill Sta**	**2.55**	**200**	PN	Pn	14 26 33.3	-1.1
CKHZ	**Cape Kidnapper**	**2.56**	**182**	PN	Pn	14 26 33.3	-1.1
WNVZ	**Wahianoa**	**2.56**	**209**	PN	Pn	14 26 34.1	-0.5
KRHZ	**Kereru**	**2.62**	**194**	PN	Pn	14 26 33.9	-1.3
KAHZ	**Kahuranaki**	**2.70**	**185**	PN	Pn	14 26 35.1	-1.1
PNHZ	**Pukenui**	**2.92**	**195**	PN	Pn	14 26 37.2	-1.7
PXZ	**Pawanui**	**2.94**	**185**	⇑PN	Pn	14 26 37.2	-1.9
WPHZ	**Waipukurau**	**3.02**	**191**	PN	Pn	14 26 38.5	-1.7
TSZ	**Takapari Road**	**3.11**	**198**	⇓PN	Pn	14 26 39.3	-2.1
PRHZ	**Porangahau**	**3.19**	**188**	PN	Pn	14 26 40.3	-2.1
DVHZ	**Dannevirke**	**3.30**	**194**	PN	Pn	14 26 41.4	-2.4
PRWZ	**Pori Road**	**3.58**	**195**	PN	Pn	14 26 45.1	-2.3
OGWZ	**Otaki Gorge**	**4.04**	**203**	PN	Pn	14 26 50.3	-3.0
KIW	**Kapiti Island**	**4.16**	**205**	PN	Pn	14 26 51.8	-3.1
MTW	**Mount Morrison**	**4.27**	**198**	PN	Pn	14 26 52.5	-3.8
CAW	**Cannon Point**	**4.34**	**202**	PN	Pn	14 26 53.6	-3.6
TUWZ	**Tuamarina**	**5.01**	**209**	PN	Pn	14 27 02.3	-3.9
THZ	**Tophouse**	**5.73**	**214**	PN	Pn	14 27 13.0	-2.7

MAN 10 14:28:31,17.73N×119.77E,h10km,mb4.6,ML3.4,MS3.4, 1D,Philippine Islands region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
SIPP	**Brgy, Tapao**	**0.69**	**74**	⇓*e*P	Pb	14 28 44.8	-0.3
SIPP				*e*S	Sn	14 28 58.4	+0.8
ABRA	**Dolores**	**0.91**	**95**	*e*P	Pg	14 28 48.6	+0.2
ABRA				*e*S	Sn	14 29 03.2	+0.3
BOLP	**Bolinao**	**1.35**	**174**	*e*P	Pn	14 28 54.8	-1.1
BOLP				*e*S	Sg	14 29 20.5	+6.1
APYP	**Conner**	**1.41**	**84**	*e*P	Pn	14 28 56.2	-0.6
CAUP	**Cauayan**	**2.11**	**111**	*e*P	Pb	14 29 08.9	-0.5
BALP	**Baler**	**2.63**	**138**	*e*P	Pn	14 29 15.8	+2.3

IDC 10 14:34:14.6±2.5,13.35N×143.67E,h231km±85km,mb2.7/3, mb1 3.0/3,mb1mx2.6/51,mbtmp3.3/3,MS3.6/1,Ms1 3.6/1, ms1mx2.5/9,Error ellipse: s-maj=221.8km s-min=20.0km az=83.0,South of Mariana Islands

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
GUMO	**Guam**	**1.19**	**78**	P	Pn	14 34 49.8	+1.1
	4.6nm,0.3s,baz=252,slow=6.4,SNR=10						
GUMO				S	S	14 35 15.6	+0.1
	32nm,0.3s,baz=183,slow=22,SNR=18						
JCJ	**Chichijima**	**13.75**	**354**	LR	LR	14 41 18.9	
	comp=Z,231nm,20.5s,baz=312,slow=31						
**WR

Ms1 2.6/5,ms1mx2.4/48, Error ellipse: s-maj=19.5km s-min=12.1km az=165.0

JMA ***10*** *14:55:18.9,36.71N×140.63E,h6km±1km, M3.5 Broadband fault plane solution: P waves. NP1: ϕs308.00000°,δ53.00000°,λ-105.00000°. NP2: ϕs153.00000°,δ39.00000°,λ-71.00000°. Principal axes: T Plg7.0000°, Azm49.0000°; N Plg12.0000°, Azm318.0000°; P Plg76.0000°, Azm169.0000°;*

JMA Felt II J1.

ISC 10 14:55:18.7±1.2,36°73'N±0'.04×140°51'E±0'.05,h6km±7km, n39,σ0s47/34,mb3.7/17,4C-1D,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
JHO	**Hitachi**	**0.13**	**157**	↑↑P			**Pg**	**14 55 21.4**	**+0.1**
ONAJ	**Iwakimizuishiy**	**0.44**	**32**	↑↑P			**Pg**	**14 55 27.0**	**-0.2**
JFK	**Kawauchi**	**0.70**	**25**	↑↑P			**Pg**	**14 55 31.8**	**-0.3**
JFK				S			Sg	14 55 41.4	+0.1
JFT	**Otama**	**0.80**	**350**	P			**Pb**	**14 55 35.0**	**0.0**
JFT				S			Sb	14 55 46.6	+0.5
JFY	**Yanaizu**	**0.93**	**317**	P			**Pn**	**14 55 38.7**	**+0.3**
JMM	**Marumori**	**1.16**	**11**	↑↑P			**Pg**	**14 55 40.2**	**-0.7**
JMM				S			**Sg**	**14 55 55.7**	**-0.2**
JYS	**Shirataka**	**1.53**	**347**	P			**Pg**	**14 55 47.9**	**-0.1**
JOU	**Okura**	**1.64**	**4**	↓↓P			**Pb**	**14 55 49.2**	**-0.1**
JOU				S			**Sg**	**14 56 11.4**	**+0.1**
JIO	**Ouri**	**1.85**	**21**	P			**Pn**	**14 55 51.1**	**+0.2**
JIO				S			**Sn**	**14 56 14.8**	**+0.2**
MJAR	**Matsushiro Arr**	**1.86**	**265**	Pg			**Pb**	**14 55 52.2**	**-0.8**
	44nm,0.3s,baz=84,slow=14,SNR=178								
MJAR				Lg			Lg	14 56 17.9	
	40nm,0.3s,baz=87,slow=28,SNR=17								
MJAR				LR			LR	14 56 43.3	
	comp=Z,80nm,18.4s,baz=100,slow=46								
MAT	**Matsushiro**	**1.86**	**265**	P			**Pb**	**14 55 53.2**	**+0.1**
MAT				S			**Sg**	**14 56 18.9**	**+0.5**
JHJ	**Hachijo jima 2**	**3.65**	**190**	LR			LR	14 57 19.9	
	comp=Z,67nm,19.1s,baz=224,slow=34								
JNU	**Nakatsue**	**8.69**	**248**	LR			LR	15 01 02.3	
	comp=Z,44nm,20.8s,baz=119,slow=40								
KSRS	**Korea Array**	**10.08**	**278**	LR			LR	15 01 43.8	
	comp=Z,14nm,20.7s,baz=110,slow=38								
KLR	**Kul'dur**	**14.03**	**336**	LR			LR	15 02 56.9	
	comp=Z,22nm,19.6s,baz=194,slow=32								
PETK	**Petropavlovsk-**	**20.32**	**31**	LR			LR	15 07 41.0	
	comp=Z,29nm,18.4s,baz=258,slow=36								
MA2	**Magadan**	**23.81**	**13**	P			**P**	**15 00 32.7**	**+0.7**
	1.9nm,0.7s,baz=218,slow=11,SNR=3.9								
SEY	**Seymchan**	**27.23**	**12**	P			**P**	**15 01 03.8**	**+0.6**
	0.2nm,0.3s,baz=222,slow=11,SNR=3.8								
SONM	**Songino Array**	**27.36**	**305**	P			**P**	**15 01 04.8**	**+0.2**
	1.2nm,0.7s,baz=109,slow=8.6,SNR=10								
H11N2	**WAKE ISLAND Hy**	**28.63**	**119**	T			T	15 30 57.1	
	baz=312,slow=75,SNR=52								
H11N1	**WAKE ISLAND Hy**	**28.63**	**119**	T			T	15 30 57.8	
	baz=312,slow=75,SNR=83								
H11N3	**WAKE ISLAND Hy**	**28.64**	**119**	T			T	15 30 59.3	
	baz=312,slow=75,SNR=74								
H11S1	**WAKE ISLAND Hy**	**29.32**	**121**	T			T	15 31 50.8	
	baz=314								
H11S3	**WAKE ISLAND Hy**	**29.32**	**121**	T			T	15 31 49.8	
	baz=314								
H11S2	**WAKE ISLAND Hy**	**29.33**	**121**	T			T	15 31 52.0	
	baz=314								
ZALV	**Zalesovo Beam**	**41.58**	**313**	P			**P**	**15 03 06.9**	**-0.2**
	1.5nm,0.5s,baz=98,slow=6.0,SNR=8.5								
MKAR	**Makanchi Array**	**43.66**	**302**	P			**P**	**15 03 24.5**	**+0.3**
	0.6nm,0.8s,baz=89,slow=9.0,SNR=6.5								
ILAR	**Eielson Array**	**50.14**	**32**	P			**P**	**15 04 14.6**	**+0.1**
	0.4nm,0.7s,baz=276,slow=6.1,SNR=3.9								
INK	**Inuvik**	**54.99**	**27**	P			**P**	**15 04 50.2**	**-0.1**
	0.6nm,0.8s,baz=290,slow=3.0,SNR=4.2								
WRA	**Warramunga Arr**	**56.66**	**187**	P			**P**	**15 05 01.3**	**-1.6**
	0.8nm,0.7s,baz=3.6,slow=7.3,SNR=6.3								
ASAR	**Alice Springs**	**60.39**	**187**	P			**P**	**15 05 28.7**	**-0.2**
	0.4nm,0.7s,baz=20,slow=6.4,SNR=5.5								
YKA	**Yellowknife Ar**	**64.44**	**30**	P			**P**	**15 05 55.9**	**+0.4**
	0.1nm,0.6s,baz=309,slow=6.9,SNR=4.7								
FINES	**FINESS Array B**	**68.74**	**332**	P			**P**	**15 06 22.7**	**-0.2**
	1.2nm,0.8s,baz=57,slow=5.1,SNR=3.5								
AKASG	**Malin Array Be**	**74.09**	**322**	P			**P**	**15 06 55.0**	**-0.5**
	0.1nm,0.3s,baz=47,slow=6.2,SNR=4.8								
NOA	**NORSAR Array B**	**74.18**	**337**	P			**P**	**15 06 55.5**	**-0.4**
	1.1nm,0.8s,baz=40,slow=5.8,SNR=3.0								
NVAR	**Mina Array Bea**	**75.75**	**53**	P			**P**	**15 07 06.0**	**+0.3**
	0.4nm,0.7s,baz=280,slow=6.7,SNR=3.8								
PDAR	**Pinedale Array**	**78.40**	**45**	P			**P**	**15 07 20.6**	**+0.1**
	0.1nm,0.4s,baz=270,slow=1.8,SNR=3.2								
GERES	**GERESS Array B**	**82.58**	**328**	P			**P**	**15 07 42.8**	**+0.1**
	0.3nm,0.4s,baz=36,slow=5.1,SNR=3.3								
TXAR	**Lajitas Array**	**90.88**	**52**	P			**P**	**15 08 23.9**	**+0.2**
	0.2nm,0.5s,baz=303,slow=3.3,SNR=4.2								

IDC ***10*** *15:06:22.9±2.4,2.32S×134.18E,h0km, mb3.8/3, mb1 4.2/5,mb1mx3.7/38,mbtmp3.9/5,ML4.0/2,MS3.1/1, Ms1 3.1/1,ms1mx2.4/38,Error ellipse: s-maj=77.9km s-min=23.8km az=76.0*

ISCJB ***10*** *15:06:25.7±0.6,2.37S±0'.05×134.01E±0'.06,h27km, mb3.8/3,Error ellipse: s-maj=9.1km s-min=6.4km az=21.1*

DJA ***10*** *15:06:26.2±0.4,2.5S×13.4E±, h10km,M4.2/12,mB5.2/1, mb4.3/8,MLv4.2/12,Mw(mB)4.6/1*

ISC 10 15:06:27.0±0.9,2.32S±0'.07×134.05E±0'.09,h27km,n16, σ0s82/16,mb4.0/3,Irian Jaya region

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
RKPI	**Ransiki, Papua**	**0.81**	**9**	P			**Pb**	**15 06 41.4**	**-1.2**
RKPI				S			**Sn**	**15 06 54.0**	**+0.1**
KMPI	**Kaimana, Papua**	**1.38**	**195**	P			**Pn**	**15 06 50.0**	**-0.5**
FAKI	**Fak Fak**	**1.90**	**252**	P			**Pn**	**15 06 57.5**	**-0.1**
SWI	**Sorong**	**3.14**	**297**	P			**Pn**	**15 07 15.2**	**+0.4**
BNDI	**Bandanaira**	**4.68**	**242**	P			**Pn**	**15 07 36.4**	**+0.4**
MSAI	**Masohi**	**5.22**	**259**	P			**Pn**	**15 07 43.6**	**+0.3**
	28nm,0.7s,2μm0.2nm								
GENI	**Genyem**	**6.12**	**93**	P			**Pn**	**15 07 57.2**	**+1.5**
	34nm,0.8s,0.4nm								
LBMI	**Labuha**	**6.76**	**284**	P			**Pn**	**15 08 04.9**	**+0.4**
	28nm,1.5s,0.2nm								
NLAI	**Namlea**	**7.00**	**262**	P			**Pn**	**15 08 07.6**	**-0.3**
	29nm,0.9s,0.1nm								
SANI	**Sanana**	**8.06**	**272**	P			**Pn**	**15 08 22.6**	**+0.2**
	15nm,1.4s								
PMG	**Port Moresby**	**14.81**	**119**	LR			LR	15 17 38.6	
	comp=Z,68nm,20.4s,baz=299,slow=46								
WRA	**Warramunga Arr**	**17.52**	**179**	P			**Pn**	**15 10 29.6**	**+0.1**
	0.7nm,0.3s,baz=359,slow=12,SNR=54								
FITZ	**Fitzroy Crossi**	**17.72**	**207**	P			**Pn**	**15 10 30.3**	**-1.7**
	0.2nm,0.3s,baz=44,slow=14,SNR=6.4								
ASAR	**Alice Springs**	**21.22**	**180**	P			**P**	**15 11 10.8**	**-0.2**
	11nm,0.9s,baz=4.8,slow=12,SNR=86								
CMAR	**Chiang Mai Arr**	**40.25**	**302**	P			**P**	**15 14 02.9**	**+1.0**
	0.5nm,0.8s,baz=126,slow=9.1,SNR=4.4								
MKAR	**Makanchi Array**	**66.69**	**324**	P			**P**	**15 17 16.2**	**+0.6**
	0.6nm,0.5s,baz=119,slow=7.6,SNR=4.9								

IDC ***10*** *15:06:57.3±0.5,38.28N×141.87E,h0km,mb4.4/29, mb1 4.6/32,mb1mx4.4/55,mbtmp4.5/32,ML3.5/2,MS3.2/17, Ms1 3.2/17,ms1mx3.0/51,Error ellipse: s-maj=14.2km s-min=11.6km az=99.0*

NIED ***10*** *15:07:00,38.30N×141.90E,h65km,Mw4.4 Best double couple: M03.98000×10^15 NP1:ϕs52.00000°,δ40.00000°, λ114.00000° NP2:ϕs202.00000°,δ54.00000°,λ72.00000°.*

MOS ***10*** *15:07:01.2±0.9,38.31N×141.85E,h38km,mb4.7/34,Error ellipse: s-maj=8.8km s-min=5.0km az=96.9*

ISCJB ***10*** *15:07:04.5±0.4,38.31N±0'.03×141.91E±0'.04,h68km±3km, mb4.4/78,Error ellipse: s-maj=5.5km s-min=4.1km az=33.7*

JMA ***10*** *15:07:05.8±0.1,38.33N×141.87E,h64km±1km,M4.5*

JMA Felt III J1.

NEIC ***10*** *15:07:06.1±0.6,38.34N×141.84E,h67km±5km,mb4.6/36, Error ellipse: s-maj=5.2km s-min=4.0km az=128.0*

NEIC Recorded [3 JMA] in Iwate and Miyagi.

ISC 10 15:07:04.8±0.7,38°29'N±0'.04×141°97'E±0'.05,h58km±5km, n208,σ1s24/219,mb4.5/78,MS3.4/10,6C-7D,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
JIO	**Ouri**	**0.51**	**289**	P			**Pn**	**15 07 17.4**	**+0.7**
JIO				S			**Sn**	**15 07 25.5**	**+0.1**
JMK	**Ichinoseki**	**0.88**	**319**	P			**Pn**	**15 07 21.8**	**+0.6**
JMK				S			**Sn**	**15 07 33.2**	**-0.1**
JMM	**Marumori**	**1.02**	**246**	P			**Pn**	**15 07 23.3**	**+0.4**
JMM				S			**Sn**	**15 07 36.2**	**-0.2**
JOU	**Okura**	**1.03**	**275**	P			**Pn**	**15 07 23.5**	**+0.4**
JOU				S			**Sn**	**15 07 36.6**	**-0.1**
JFK	**Kawauchi**	**1.26**	**224**	P			**Pn**	**15 07 27.1**	**+0.9**
JFK				S			**Sn**	**15 07 42.7**	**+0.4**
JOM	**Ohasama**	**1.29**	**336**	P			**Pn**	**15 07 27.1**	**+0.5**
JOM				S			**Sn**	**15 07 43.0**	**0.0**
JYK	**Kaneyama**	**1.41**	**297**	P			**Pn**	**15 07 28.5**	**+0.4**
JYK				S			**Sn**	**15 07 45.6**	**-0.1**
JYS	**Shirataka**	**1.50**	**268**	P			**Pn**	**15 07 30.1**	**+0.7**
JYS				S			**Sn**	**15 07 48.4**	**+0.5**
JFT	**Otama**	**1.50**	**240**	P			**Pn**	**15 07 30.6**	**+1.2**
JFT				S			**Sn**	**15 07 48.9**	**+1.0**
JRG	**Rokugo**	**1.52**	**317**	P			**Pn**	**15 07 30.0**	**+0.4**
MJAR	**Matsushiro Arr**	**3.46**	**241**	Pn			**Pn**	**15 07 58.2**	**+2.1**
	19nm,0.3s,baz=51,slow=11,SNR=89								
MJAR				LR			LR	15 09 34.9	
	comp=Z,298nm,21.2s,baz=55,slow=47								
MAJO	**Matsushiro**	**3.46**	**241**	*e*P			Pn	15 07 49.3	-6.9
MAJO	**Matsushiro**	**3.46**	**241**	*e*Pn			Pn	15 07 49.3	-6.9
ERM	**Erimo**	**3.83**	**13**	*de*P			**Pn**	**15 08 01.7**	**+0.5**
JHJ2	**Mitsune**	**5.45**	**199**	*e*Pn			**Pn**	**15 08 24.1**	**+0.6**
JHJ2				*e*Sn			**Sn**	**15 09 21.8**	**-3.0**
JHJ	**Hachijo jima 2**	**5.45**	**200**	Pn			**Pn**	**15 08 24.0**	**+0.5**
	33nm,0.3s,baz=137,slow=23,SNR=15								
JHJ				Sn			**Sn**	**15 09 20.9**	**-3.9**
	152nm,0.3s,baz=61,slow=24,SNR=14								
JHJ				LR			LR	15 10 22.9	
	comp=Z,191nm,18.1s,baz=53,slow=38								
YUK	**Yuzh-Kuril'sk**	**6.45**	**26**	*e*P			**Pn**	**15 08 35.6**	**-1.4**
YUK				*e*S			Sn	15 09 42.6	-6.6
YUK				pmax			pmax		
	comp=Z,148nm,0.8s								
YUK				pmax			pmax		
	comp=N,61nm,0.4s								
YUK				pmax			pmax		
	comp=E,93nm,0.5s								
SHO	**Shikotan**	**6.68**	**32**	*e*P			Pn	15 08 37.5	-2.6
SHO				*e*S			Sn	15 09 46.8	-8.0
SHO				pmax			pmax		
	comp=Z,66nm,0.6s								
SHO				pmax			pmax		
	comp=E,37nm,0.5s								
SHO				pmax			pmax		
	comp=N,38nm,0.6s								
KUR	**Kuril'sk**	**8.22**	**31**	*e*P			**Pn**	**15 09 00.1**	**-1.1**
KUR				*i* S			Sn	15 10 27.3	-5.3
KUR				pmax			pmax		
	comp=Z,22nm,0.7s								
KUR				pmax			pmax		
	comp=N,7.0nm,0.5s								
KUR				smax			smax		
	comp=E,97nm,0.5s								
KUR				smax			smax		
	comp=N,72nm,0.6s								
YSS	**Yuzh-Sakhalins**	**8.68**	**4**	↑*e*P			**Pn**	**15 09 06.9**	**-0.6**
YSS				*e*S			**Sn**	**15 10 41.3**	**-2.6**
YSS				pmax			pmax		
	comp=Z,40nm,0.6s								
YSS	**Yuzh-Sakhalins**	**8.68**	**4**	*e*Pn			**Pn**	**15 09 06.4**	**-1.1**
VLA	**Vladivostok**	**9.05**	**305**	↓*e*P			**Pn**	**15 09 15.1**	**+2.5**
VLA				pmax			pmax		
	comp=Z,56nm,0.8s								
USRK	**Ussuriysk Ar.**	**9.55**	**311**	Pn			**Pn**	**15 09 20.4**	**+0.9**
	comp=Z,7.6nm,0.3s,baz=124,slow=14,SNR=98								
USRK				LR			LR	15 12 43.3	
	comp=Z,192nm,20.9s,baz=125,slow=36								
JNU	**Nakatsue**	**10.38**	**244**	Pn			**Pn**	**15 09 32.5**	**+1.6**
	comp=Z,0.3nm,0.3s,baz=84,slow=12,SNR=6.2								
JNU				LR			LR	15 13 45.9	
	comp=Z,156nm,21.2s,baz=90,slow=40								
KSRS	**Korea Array**	**11.13**	**270**	Pn			**Pn**	**15 09 43.6**	**+2.5**
	comp=Z,1.4nm,0.3s,baz=76,slow=14,SNR=13								
KSRS				LR			LR	15 13 31.6	
	comp=Z,109nm,22.0s,baz=82,slow=36								
CBIJ	**Chichi jima**	**11.16**	**179**	*e*Pn			**Pn**	**15 09 39.5**	**-2.0**
CBIJ				*e*Sn			Sn	15 11 33.2	-12
JCJ	**Chichijima**	**11.16**	**179**	Pn			**Pn**	**15 09 39.6**	**-1.9**
JCJ				Sn			Sn	15 11 33.5	-11
	comp=Z,20nm,0.3s,baz=285,slow=21,SNR=6.9								
KS15	**Wonju Array Si**	**11.16**	**270**	*e*Pn			**Pn**	**15 09 44.3**	**+2.7**
KSAR	**Wonju Array Be**	**11.16**	**270**	P			**Pn**	**15 09 43.6**	**+2.1**
KSAR	**Wonju Array Be**	**11.16**	**270**	Pn			**Pn**	**15 09 43.6**	**+2.1**
MDJ	**Mudanjiang**	**11.23**	**308**	P			**Pn**	**15 09 44.8**	**+2.4**
HABR	**Khabarovsk**	**11.35**	**336**	*e*P			Pn	15 09 39.9	-4.1
HABR				*e*S			**Sn**	**15 11 46.3**	**-2.8**
HABR				pmax			pmax		
	comp=N,11nm,1.6s								
HABR				pmax			pmax		
	comp=E,11nm,1.6s								
HABR				pmax			pmax		
	comp=Z,12nm,1.6s								
HABR				MLR			MLR		
	comp=Z,93nm,14.0s								
TYV	**Tymovskoe**	**12.58**	**2**	*e*P			**Pn**	**15 10 00.5**	**-0.3**
KLR	**Kul'dur**	**13.18**	**329**	Pn			**Pn**	**15 10 07.3**	**-1.7**
	comp=Z,0.6nm,0.3s,baz=146,slow=12,SNR=17								
KLR				LR			LR	15 14 52.6	
	comp=Z,118nm,22.0s,baz=151,slow=36								
CN2	**Changchun**	**13.62**	**299**	*e*P			**Pn**	**15 10 14.0**	**-1.0**
NKL	**Nikolayevsk**	**14.89**	**357**	*e*P			Pn	15 10 28.0	-3.6
NKL				pmax			pmax		
	comp=Z,13nm,1.0s								
PEA0	**Petropavlovsk-**	**18.39**	**31**	*e*P			**P**	**15 11 15.8**	**+1.0**
PETK	**Petropavlovsk-**	**18.39**	**31**	P			**P**	**15 11 15.0**	**+0.2**
	comp=Z,0.3nm,0.3s,baz=212,slow=8.2,SNR=6.4								
PETK				LR			LR	15 17 53.1	
	comp=Z,20nm,20.9s,baz=211,slow=36								
PETK	**Petropavlovsk-**	**18.39**	**31**	P			**P**	**15 11 15.0**	**+0.2**
NJ2	**Nanjing**	**19.87**	**259**	*e*P			**P**	**15 11 31.2**	**+0.1**
TIA	**Tai'an**	**19.87**	**272**	*e*P			**P**	**15 11 29.9**	**-1.2**
BJI	**Beijing**	**20.06**	**283**	P			**P**	**15 11 30.5**	**-2.5**
BJI				pP			**Pn**	**15 11 37.9**	**+2.6**
BJI				S			**S**	**15 15 11.1**	**-4.1**
MA2	**Magadan**	**22.04**	**12**	P			**P**	**15 11 54.8**	**+0.6**
	comp=Z,8.5nm,0.8s,baz=216,slow=8.9,SNR=16								
HHC	**Hu-ho-hao-te**	**23.52**	**286**	*e*P			**P**	**15 12 07.2**	**-2.5**
HHC				S			**S**	**15 16 17.7**	**-1.5**
WHN	**Wuhan**	**24.00**	**260**	↓P			**P**	**15 12 13.6**	**-0.3**
CIT	**Chita**	**24.10**	**314**	*e*P			**P**	**15 12 14.6**	**-0.2**
CIT				*e*				15 12 46.8	
CIT				*e*				15 15 59.9	
CIT				*e*				15 16 24.6	
CIT				pmax			pmax		
	comp=Z,98nm,1.2s								
YAK	**Yakutsk**	**24.95**	**346**	P			**P**	**15 12 21.3**	**-0.9**
	comp=Z,20nm,0.3s,baz=142,slow=4.0,SNR=7.1								
YAK	**Yakutsk**	**24.95**	**346**	*e*P			**P**	**15 12 21.6**	**-0.7**
YAK				*e*PP			**pP**	**15 12 38.8**	**+2.2**
YAK				*e*S			**S**	**15 16 38.3**	**-3.2**
YAK				pmax			pmax		
	comp=Z,15nm,1.0s								
YAK				pmax			pmax		
	comp=N,10.0nm,1.0s								
YAK				smax			smax		
	comp=N,48nm,1.5s								
YAK				smax			smax		
	comp=E,48nm,1.8s								
YAK	**Yakutsk**	**24.95**	**346**	*e*P			**P**	**15 12 21.2**	**-1.1**
	comp=E,27nm,0.6s								
SEY	**Seymchan**	**25.48**	**11**	P			**P**	**15 12 28.5**	**+1.4**
	comp=E,7.4nm,0.9s,baz=195,slow=5.9,SNR=32								
SEY	**Seymchan**	**25.48**	**11**	↓*i*P			**P**	**15 12 27.7**	**+0.6**
BOD	**Bodaibo**	**26.72**	**326**	*e*P			**P**	**15 12 37.4**	**-1.0**
BOD				pmax			pmax		
	comp=Z,11nm,1.0s								
XAN	**Xi'an**	**26.93**	**271**	P			**P**	**15 12 39.2**	**-1.4**
ULN	**Ulaanbaatar**	**27.04**	**302**	*d*P			**P**	**15 12 41.6**	**+0.1**
ULN				pmax			pmax		
	comp=Z,13nm,1.0s								
ULN	**Ulaanbaatar**	**27.04**	**302**	*e*P			**P**	**15 12 40.8**	**-0.8**
	comp=Z,16nm,1.2s								
SONA1	**Songino Array**	**27.47**	**302**	*e*P			**P**	**15 12 44.3**	**-1.1**
SONM	**Songino Array**	**27.47**	**302**	P			**P**	**15 12 44.5**	**-0.9**
	comp=Z,6.1nm,0.5s,baz=114,slow=8.7,SNR=58								
SONM				LR			LR	15 23 49.3	
	comp=Z,52nm,18.4s,baz=104,slow=37								
H11N2	**WAKE ISLAND Hy**	**28.44**	**124**	T			T	15 43 25.0	
	baz=316,slow=76,SNR=16								
H11N1	**WAKE ISLAND Hy**	**28.45**	**124**	T			T	15 43 16.8	
	baz=316,slow=76,SNR=1268								
H11N3	**WAKE ISLAND Hy**	**28.46**	**124**	T			T	15 43 25.4	
	baz=316,slow=76,SNR=14								
H11S1	**WAKE ISLAND Hy**	**29.20**	**126**	T			T	15 44 08.7	
	baz=318,slow=76,SNR=847								
H11S3	**WAKE ISLAND Hy**	**29.20**	**126**	T			T	15 44 10.1	
	baz=318,slow=76,SNR=1480								
H11S2	**WAKE ISLAND Hy**	**29.22**	**126**	T			T	15 44 14.4	
	baz=318,slow=76,SNR=759								
ZAK	**Zakamensk**	**29.86**	**307**	*e*P			**P**	**15 13 05.2**	**-1.3**
ZAK				pmax			pmax		
	comp=Z,8.0nm,0.9s								
TLY	**Talaya**	**29.86**	**309**	P			**P**	**15 13 05.8**	**-0.7**
	comp=Z,9.1nm,0.7s,baz=88,slow=3.4,SNR=11								
TLY	**Talaya**	**29.86**	**309**	*e*P			**P**	**15 13 06.8**	**+0.4**
TLY				pmax			pmax		
	comp=Z,10.0nm,0.7s								
TLY	**Talaya**	**29.86**	**309**	*e*P			**P**	**15 13 05.2**	**-1.3**
	comp=Z,12nm,0.8s								
LZH	**Lanzhou**	**30.31**	**278**	*e*P			**P**	**15 13 09.8**	**-1.0**
LZH				pP			pP	15 13 20.5	-4.8
LZH				sP			sP	15 13 24.3	-7.8
LZH				PP			**PnPn**	**15 14 08.0**	**-2.7**
MOY	**Mondy**	**31.48**	**309**	*e*P			**P**	**15 13 20.8**	**-0.1**
CD2	**Chengdu**	**32.13**	**268**	P			**P**	**15 13 24.1**	**-2.6**
GTA	**Gaotai**	**32.63**	**285**	*e*P			**P**	**15 13 31.4**	**+0.3**
GTA				pP			pP	15 13 40.9	-4.8
GTA				sP			sP	15 13 45.1	-7.4
GTA				S			**S**	**15 18 43.8**	**+0.8**
GTA				sS			sS	15 18 59.7	-8.0
GTA				SS			**SnSn**	**15 20 41.8**	**-0.4**
BILL	**Bilibino**	**32.70**	**17**	↓*e*P			**P**	**15 13 31.2**	**0.0**
BILL				*e**SP			**pP**	**15 13 44.0**	**-1.8**
BILL								15 16 17.0	
BILL				pmax			pmax		
	comp=Z,4.0nm,1.0s								
BILL	**Bilibino**	**32.70**	**17**	*e*P			**P**	**15 13 31.3**	**0.0**
	comp=Z,13nm,1.5s								
TIXI	**Tiksi**	**34.10**	**353**	P			**P**	**15 13 42.9**	**-0.4**
	comp=Z,1.2nm,0.4s,baz=134,slow=10,SNR=7.0								
TIXI	**Tiksi**	**34.10**	**353**	↑*e*P			**P**	**15 13 43.2**	**-0.1**
TIXI				pmax			pmax		
	comp=Z,3.0nm,1.4s								
KMI	**Kunming**	**35.60**	**260**	P			**P**	**15 13 57.3**	**+0.3**
KRAR	**Krasnoyarsk**	**36.88**	**315**	↑*e*P			**P**	**15 14 07.3**	**0.0**
KRAR				pmax			pmax		
	comp=Z,16nm,0.4s								
WMQ	**Urumqi**	**40.68**	**296**	P			**P**	**15 14 40.4**	**+1.0**
WMQ				pP			pP	15 14 50.3	-4.0
WMQ				S			**S**	**15 20 47.4**	**+2.1**
ZAA0	**Zalesovo Array**	**41.41**	**311**	*e*P			**P**	**15 14 44.8**	**-0.3**
ZALV	**Zalesovo Beam**	**41.41**	**311**	P			**P**	**15 14 44.6**	**-0.5**
	comp=Z,18nm,0.5s,baz=85,slow=7.8,SNR=94								
ZALV				PcP			**PcP**	**15 16 41.1**	**-1.0**
	comp=Z,1.4nm,0.4s,baz=90,slow=2.5,SNR=3.6								
ZALV				LR			LR	15 32 33.4	
	comp=Z,34nm,19.2s,baz=70,slow=37								
CHTO	**Chiang Mai**	**42.03**	**255**	*e*P			**P**	**15 14 50.2**	**-0.5**
CHTO				pmax			pmax		
	comp=Z,3.0nm,0.7s								
CHTO	**Chiang Mai**	**42.03**	**255**	*e*P			**P**	**15 14 50.2**	**-0.5**
	comp=Z,2.7nm,0.7s								
CMAR	**Chiang Mai Arr**	**42.25**	**254**	P			**P**	**15 14 53.2**	**+0.8**
	comp=Z,0.8nm,0.7s,baz=44,slow=8.2,SNR=6.9								
CM01	**Chiang Mai Arr**	**42.26**	**254**	*e*P			**P**	**15 14 52.4**	**0.0**
NVS	**Novosibirsk**	**42.30**	**313**	*e*P			**P**	**15 14 51.6**	**-0.8**
NRIK	**Noril'sk**	**42.32**	**335**	P			**P**	**15 14 52.5**	**+0.1**
	comp=Z,1.5nm,0.3s,baz=129,slow=4.5,SNR=3.8								
NRIK				LR			LR	15 33 19.2	
	comp=Z,50nm,18.1s,baz=90,slow=37								
MK31	**Makanchi Array**	**43.84**	**301**	*e*P			**P**	**15 15 05.4**	**+0.4**
MK31				pmax			pmax		
	comp=Z,9.0nm,0.6s								
MKAR	**Makanchi Array**	**43.84**	**301**	P			**P**	**15 15 04.6**	**-0.4**
	comp=Z,9.5nm,0.6s,baz

KBL	**Kabul**	**57.38**	**290**	*e*P		**P**	**15 16 46.4**	**-1.0**
	comp=Z,6.4nm,0.9s								
AB31	**Akbulak array**	**57.47**	**310**	*i* P		**P**	**15 16 46.7**	**-0.8**
AB31				pmax	pmax				
	comp=Z,2.0nm,0.4s								
ABKAR	**Akbulak array**	**57.47**	**310**	*e*P		**P**	**15 16 46.9**	**-0.7**
FITZ	**Fitzroy Crossi**	**58.15**	**198**	P		**P**	**15 16 52.5**	**0.0**
	comp=Z,1.4nm,0.5s,baz=358,slow=8.4,SNR=5.1								
AKTO	**Aktyubinsk**	**58.17**	**312**	P		**P**	**15 16 52.9**	**+0.5**
AKTO				pmax	pmax				
	comp=Z,5.0nm,0.9s								
WRAB	**Tennant Creek**	**58.35**	**188**	*c*e P		**P**	**15 16 53.8**	**-0.1**
WRAB				pmax	pmax				
	comp=Z,33nm,0.9s								
WB2	**Warramunga Arr**	**58.36**	**188**	*e*P		**P**	**15 16 53.7**	**-0.3**
	comp=Z,9.3nm,0.8s								
WRA	**Warramunga Arr**	**58.36**	**188**	P		**P**	**15 16 54.0**	**0.0**
	comp=Z,7.2nm,0.4s,baz=6.2,slow=6.9,SNR=81								
AS01	**Alice Springs**	**62.08**	**188**	*e*P		**P**	**15 17 19.4**	**0.0**
AS31	**Alice Springs**	**62.09**	**188**	*e*P		**P**	**15 17 19.5**	**0.0**
	comp=Z,1.5nm,0.8s								
ASAR	**Alice Springs**	**62.09**	**188**	P		**P**	**15 17 19.9**	**+0.4**
	comp=Z,4.4nm,0.7s,baz=8.0,slow=4.9,SNR=55								
YKA	**Yellowknife Ar**	**62.51**	**31**	P		**P**	**15 17 22.2**	**+0.4**
	comp=Z,1.9nm,0.8s,baz=302,slow=6.5,SNR=35								
YKB5	**Yellowknife Ar**	**62.51**	**31**	*e*P		**P**	**15 17 21.3**	**-0.5**
MBWA	**Marble Bar**	**62.71**	**203**	*e*P		**P**	**15 17 23.3**	**-0.2**
ARCES	**ARCESS Array B**	**62.98**	**339**	P		**P**	**15 17 24.7**	**-0.2**
	comp=Z,1.6nm,0.7s,baz=53,slow=8.0,SNR=9.5								
GEYT	**Alibeck**	**63.62**	**299**	P		**P**	**15 17 30.6**	**+1.0**
	comp=Z,0.9nm,0.4s,baz=113,slow=3.7,SNR=3.9								
GEYT				LR		LR	15 47 06.6		
	comp=Z,33nm,18.5s,baz=175,slow=38								
DAG	**Danmarks Havn**	**64.56**	**355**	*i* P		**P**	**15 17 34.9**	**-0.3**
	comp=Z,4.3nm,0.8s								
DAG	**Danmarks Havn**	**64.56**	**355**	*i* P		**P**	**15 17 34.9**	**-0.3**
DAG				pmax	pmax				
	comp=Z,3.0nm,0.8s								
FINES	**FINESS Array B**	**67.91**	**332**	P		**P**	**15 17 56.2**	**-0.6**
	comp=Z,1.9nm,0.7s,baz=34,slow=7.8,SNR=9.9								
FINES				LR		LR	15 48 35.9		
	comp=Z,30nm,20.9s,baz=216,slow=37								
SUMG	**Summit**	**69.43**	**0**	*i* P		**P**	**15 18 07.1**	**+0.4**
	comp=Z,7.1nm,0.8s								
SUMG	**Summit**	**69.43**	**0**	*e*P		**P**	**15 18 07.0**	**+0.4**
SUMG				pmax	pmax				
	comp=Z,28nm,1.6s								
SUMG	**Summit**	**69.43**	**0**	*e*P		**P**	**15 18 07.0**	**+0.4**
	comp=Z,28nm,1.6s								
STKA	**Stephens Creek**	**69.81**	**180**	P		**P**	**15 18 09.0**	**+0.2**
	comp=Z,2.1nm,0.8s,baz=352,slow=4.9,SNR=3.9								
STKA	**Stephens Creek**	**69.81**	**180**	P		**P**	**15 18 09.0**	**+0.2**
KIV	**Kislovodsk**	**70.42**	**311**	*e*P		**P**	**15 18 13.4**	**+0.6**
KIV				pmax	pmax				
	comp=Z,5.0nm,0.9s								
KBZ	**Khabaz**	**70.42**	**311**	LR		LR	15 52 26.1		
	comp=Z,25nm,18.8s,baz=143,slow=39								
FFC	**Flin Flon**	**72.42**	**33**	*e*P		**P**	**15 18 24.8**	**+0.3**
FFC				pmax	pmax				
	comp=Z,6.0nm,0.9s								
FFC	**Flin Flon**	**72.42**	**33**	*e*P		**P**	**15 18 24.8**	**+0.3**
	comp=Z,5.8nm,0.9s								
FCC	**Fort Churchill**	**72.69**	**27**	*e*P		**P**	**15 18 26.0**	**0.0**
FCC				pmax	pmax				
	comp=Z,4.0nm,0.9s								
FCC	**Fort Churchill**	**72.69**	**27**	*e*P		**P**	**15 18 26.0**	**0.0**
	comp=Z,3.7nm,0.9s								
CMB	**Columbia Colle**	**72.79**	**55**	*e*P		**P**	**15 18 28.1**	**+1.0**
CMB				pmax	pmax				
	comp=Z,13nm,1.8s								
CMB	**Columbia Colle**	**72.79**	**55**	*e*P		**P**	**15 18 28.1**	**+1.0**
	comp=Z,13nm,1.8s								
LRM	**Limekiln Ridge**	**72.95**	**45**	*e*P		**P**	**15 18 28.4**	**+0.2**
EGMT	**Eagleton**	**73.04**	**42**	*e*P		**P**	**15 18 29.0**	**+0.6**
	comp=Z,7.7nm,0.8s								
NB2	**NORSAR Subarra**	**73.20**	**337**	P		**P**	**15 18 28.8**	**-0.3**
	comp=Z,1.3nm,0.5s,baz=36,slow=6.2								
NOA	**NORSAR Array B**	**73.20**	**337**	P		**P**	**15 18 28.9**	**-0.1**
	comp=Z,2.3nm,0.7s,baz=38,slow=5.9,SNR=11								
NOA				LR		LR	15 53 09.0		
	comp=Z,30nm,21.5s,baz=35,slow=38								
NOA	**NORSAR Array B**	**73.20**	**337**	P		**P**	**15 18 29.0**	**-0.1**
BOZ	**Bozeman (W)**	**73.51**	**45**	*e*P		**P**	**15 18 32.5**	**+1.2**
BOZ				pmax	pmax				
	comp=Z,3.0nm,0.6s								
BOZ	**Bozeman (W)**	**73.51**	**45**	*e*P		**P**	**15 18 32.5**	**+1.2**
	comp=Z,3.4nm,0.6s								
AKASG	**Malin Array Be**	**73.58**	**322**	P		**P**	**15 18 30.9**	**-0.4**
	comp=Z,1.0nm,0.3s,baz=45,slow=6.3,SNR=7.1								
AKASG	**Malin Array Be**	**73.58**	**322**	P		**P**	**15 18 31.0**	**-0.4**
NV01	**Mina Array Sit**	**73.89**	**54**	*e*P		**P**	**15 18 34.8**	**+1.0**
NVAR	**Mina Array Bea**	**73.89**	**54**	P		**P**	**15 18 35.6**	**+1.8**
	comp=Z,2.2nm,0.8s,baz=280,slow=6.6,SNR=17								
TPNV	**Topopah Spring**	**76.08**	**54**	*e*P		**P**	**15 18 47.6**	**+1.3**
TPNV				pmax	pmax				
	comp=Z,4.0nm,0.8s								
TPNV	**Topopah Spring**	**76.08**	**54**	*e*P		**P**	**15 18 47.6**	**+1.3**
	comp=Z,3.9nm,0.8s								
DUG	**Dugway, Tooele**	**76.21**	**50**	*e*P		**P**	**15 18 48.0**	**+1.0**
DUG				pmax	pmax				
	comp=Z,7.0nm,1.1s								
DUG	**Dugway, Tooele**	**76.21**	**50**	*e*P		**P**	**15 18 48.0**	**+1.0**
	comp=Z,7.0nm,1.1s								
BW06	**Boulder Array**	**76.48**	**46**	*e*P		**P**	**15 18 49.2**	**+0.6**
	comp=Z,3.8nm,0.6s								
PD31	**Pinedale Array**	**76.48**	**46**	*e*P		**P**	**15 18 49.2**	**+0.6**
PDAR	**Pinedale Array**	**76.48**	**46**	P		**P**	**15 18 49.5**	**+0.9**
	comp=Z,3.3nm,0.5s,baz=265,slow=1.5,SNR=53								
P17A	**Butcher Ranch,**	**77.90**	**49**	*e*P		**P**	**15 18 57.5**	**+0.9**
	comp=Z,5.8nm,0.8s								
LCMT	**Little Creek M**	**77.93**	**52**	*e*P		**P**	**15 18 58.2**	**+1.5**
	comp=Z,3.7nm,1.0s								
P18A	**Preston Nutter**	**78.09**	**49**	*e*P		**P**	**15 19 00.1**	**+2.3**
	comp=Z,13nm,1.5s								
KNB	**Kanab**	**78.19**	**52**	*e*P		**P**	**15 18 59.9**	**+1.7**
KNB				pmax	pmax				
	comp=Z,4.0nm,1.0s								
KNB	**Kanab**	**78.19**	**52**	*e*P		**P**	**15 18 59.9**	**+1.7**
	comp=Z,4.3nm,1.0s								
ULM	**Lac du Bonnet**	**78.22**	**34**	P		**P**	**15 18 57.6**	**-0.3**
	comp=Z,2.7nm,0.7s,baz=0.3,slow=7.6,SNR=4.1								
SRU	**San Rafael Swe**	**78.26**	**49**	*e*P		**P**	**15 18 59.7**	**+1.1**
SRU				pmax	pmax				
	comp=Z,6.0nm,0.7s								
SRU	**San Rafael Swe**	**78.26**	**49**	*e*P		**P**	**15 18 59.7**	**+1.1**
	comp=Z,6.0nm,0.7s								
MLR	**Muntele Rosu**	**78.71**	**320**	LR		LR	15 55 51.8		
	comp=Z,16nm,18.1s,baz=276,slow=37								
DPC	**Dobruska-Polom**	**79.63**	**328**	*e*P		**P**	**15 19 06.6**	**+0.9**
DPC	**Dobruska-Polom**	**79.63**	**328**	*e*P		**P**	**15 19 06.6**	**+0.9**
Y14A	**Wickenburg**	**80.02**	**55**	*e*P		**P**	**15 19 08.0**	**-0.1**
	comp=Z,15nm,0.8s								
BRG	**Berggiesshubel**	**80.20**	**330**	*e*P		**P**	**15 19 08.7**	**+0.1**
	comp=Z,2.5nm,0.6s								
BRG	**Berggiesshubel**	**80.20**	**330**	*e*P		**P**	**15 19 08.7**	**+0.1**
BRG				pmax	pmax				
	comp=Z,3.0nm,0.6s								
CLL	**Collm**	**80.23**	**330**	*e*P		**P**	**15 19 08.0**	**-0.8**
	comp=Z,3.0nm,0.8s								
CLL	**Collm**	**80.23**	**330**	*e*P		**P**	**15 19 08.0**	**-0.8**
CLL				pmax	pmax				
	comp=Z,3.0nm,0.8s								
X16A	**Lo Mia Camp, P**	**80.71**	**53**	*e*P		**P**	**15 19 12.8**	**+0.8**
	comp=Z,2.3nm,0.8s								
S22A	**4UR Ranch, Cre**	**81.34**	**48**	*e*P		**P**	**15 19 16.8**	**+1.3**
	comp=Z,3.0nm,1.0s								
KHC	**Kasperske Hory**	**81.70**	**329**	*e*P		**P**	**15 19 16.8**	**0.0**
KHC				*e*PCP		**PcP**	**15 19 21.9**	**-0.5**
KHC	**Kasperske Hory**	**81.70**	**329**	*e*P		**P**	**15 19 16.8**	**0.0**
GERES	**GERESS Array B**	**81.88**	**328**	P		**P**	**15 19 17.6**	**-0.2**
	comp=Z,0.4nm,0.3s,baz=35,slow=6.1,SNR=5.7								
ANMO	**Albuquerque**	**83.45**	**50**	*i* P		**P**	**15 19 28.3**	**+2.0**
ANMO				pmax	pmax				
	comp=Z,6.0nm,1.3s								
ANMO	**Albuquerque**	**83.45**	**50**	*e*P		**P**	**15 19 27.7**	**+1.4**
	comp=Z,5.6nm,1.1s								
319A	**Douglas**	**84.07**	**55**	*e*P		**P**	**15 19 30.9**	**+1.5**
	comp=Z,11nm,1.0s								
FUORN	**Ofenpass-Fuorn**	**85.05**	**329**	*e*P		**P**	**15 19 34.4**	**+0.1**
	comp=Z,5.4nm,0.8s								
TX31	**Lajitas Ar. Si**	**89.01**	**53**	*e*P		**P**	**15 19 54.1**	**+0.5**
TXAR	**Lajitas Array**	**89.01**	**53**	P		**P**	**15 19 54.1**	**+0.5**
	comp=Z,2.4nm,0.6s,baz=296,slow=3.0,SNR=35								
TKL	**Tuckaleechee C**	**95.11**	**36**	P		**P**	**15 20 20.9**	**-0.8**
	comp=Z,1.8nm,0.8s,baz=234,slow=1.5,SNR=4.4								
VNA2	**Neumayer--Watz**	**143.64**	**196**	PKP		PKPbc	15 26 29.6	+0.2
	baz=127,slow=1.8								
LPAZ	**La Paz**	**145.68**	**59**	PKPbc		**PKPbc**	**15 26 38.5**	**+0.4**
	comp=Z,5.1nm,0.6s,baz=321,slow=2.4,SNR=25								

*IDC **10** 15:18:56.6±2.4, 16.°69N×85.°50W, h0km, mb3.4/5, mb1 3.9/6, mb1mx3.6/37, mbtmp3.6/6, ML3.0/1, MS2.9/5, Ms1 2.9/5, ms1mx2.7/26, Error ellipse: s-maj=97.2km s-min=32.5km az=39.0*

ISC 10 15:19:01.5±1.4, 16.°8N±0.°3×85.°6W±0.°4, h35km, n14, σ1§82/9, mb3.3/4, North of Honduras

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
TEIG	**Tepich**	**4.25**	**324**	Pn		**Pn**	**15 20 03.4**	**-0.4**
	88nm,0.3s,baz=88,slow=23,SNR=443							
TEIG				Sn		**Sn**	**15 20 49.5**	**-2.8**
	46nm,0.3s,baz=358,slow=23,SNR=11							
JTS	**JuntasAbangare**	**6.49**	**174**	LR		LR	15 23 13.0	
	comp=Z,79nm,21.0s,baz=2.0,slow=40							
ROSC	**El Rosal**	**16.23**	**136**	LR		LR	15 29 12.1	
	comp=Z,26nm,20.2s,baz=145,slow=38							
SDV	**Santo Domingo**	**16.57**	**116**	Pn		**Pn**	**15 22 49.9**	**-1.6**
	0.6nm,0.3s,baz=299,slow=8.0,SNR=5.3							
SJG	**San Juan**	**18.61**	**83**	LR		LR	15 30 03.4	
	comp=Z,19nm,19.8s,baz=182,slow=36							
TXAR	**Lajitas Array**	**20.75**	**310**	P		Pn	15 23 42.1	+0.2
	1.3nm,0.7s,baz=124,slow=12,SNR=14							
ANMO	**Albuquerque**	**25.96**	**318**	P		**P**	**15 24 32.4**	**+1.3**
	0.7nm,0.7s,baz=96,slow=9.2,SNR=3.6							
SADO	**Sadowa**	**28.42**	**10**	LR		LR	15 35 02.2	
	comp=Z,34nm,20.1s,baz=234,slow=34							
PDAR	**Pinedale Array**	**32.98**	**327**	P		**P**	**15 25 34.1**	**+0.9**
	0.3nm,0.7s,baz=128,slow=9.7,SNR=4.3							
YKA	**Yellowknife Ar**	**49.96**	**343**	P		**P**	**15 27 53.2**	**+1.4**
	0.1nm,0.4s,baz=136,slow=7.3,SNR=4.2							
ILAR	**Eielson Array**	**62.83**	**335**	P		**P**	**15 29 24.7**	**+1.3**
	1.0nm,0.9s,baz=134,slow=4.4,SNR=9.0							
JMIC	**Jan Mayen**	**70.04**	**20**	LR		LR	16 00 18.1	
	comp=Z,18nm,20.3s,baz=256,slow=35							
WRA	**Warramunga Arr**	**142.02**	**259**	PKP		**PKPdf**	**15 38 30.5**	**-0.2**
	0.8nm,1.2s,baz=267,slow=27,SNR=3.6							
ASAR	**Alice Springs**	**142.39**	**253**	PKP		**PKPdf**	**15 38 29.4**	**-1.9**
	0.2nm,0.6s,baz=105,slow=3.3,SNR=8.2							

*IDC **10** 15:19:03.2±1.5, 22.°84N×12.°34W, h0km, mb3.5/4, mb1 3.6/5, mb1mx3.3/47, mbtmp3.5/5, ML3.8/1, Error ellipse: s-maj=52.8km s-min=32.2km az=78.0*

*ISCJB **10** 15:19:04.9±1.5, 22.°8N±0.°1×11.°7W±0.°2, h10km, mb3.3/4, Error ellipse: s-maj=32.5km s-min=12.0km az=149.0*

ISC 10 15:19:07.1±1.8, 22.°8N±0.°2×11.°6W±0.°3, h10km, n9, σ0§69/8, mb3.3/4, Mauritania

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
TORD	**Torodi Ar. Bea**	**15.89**	**125**	Pn		**Pn**	**15 22 52.0**	**+1.0**
	0.1nm,0.3s,baz=315,slow=12,SNR=4.8							
TORD				Sn		**Sn**	**15 25 46.5**	**-0.8**
	0.1nm,0.3s,baz=305,slow=23,SNR=4.2							
DBIC	**Dimbokro**	**17.33**	**157**	P		**Pn**	**15 23 09.4**	**+0.1**
	0.3nm,0.3s,baz=329,slow=9.5,SNR=5.9							
I48TN	**KESRA INFRASON**	**22.31**	**50**	*i*			17 37 40.0	
	baz=239,slow=323,SNR=1.5							
GERES	**GERESS Array B**	**32.80**	**31**	P		**P**	**15 25 40.7**	**+0.1**
	0.2nm,0.4s,baz=253,slow=13,SNR=4.1							
FINES	**FINESS Array B**	**46.44**	**24**	P		**P**	**15 27 33.8**	**-0.1**
	0.6nm,0.4s,baz=202,slow=9.7,SNR=6.9							
YKA	**Yellowknife Ar**	**75.80**	**332**	P		P	15 30 48.7	-4.4
	0.1nm,0.7s,baz=68,slow=7.1,SNR=2.6							
MKAR	**Makanchi Array**	**76.28**	**45**	P		**P**	**15 30 56.4**	**+0.2**
	0.1nm,0.5s,baz=292,slow=5.1,SNR=5.9							
WRA	**Warramunga Arr**	**148.20**	**91**	PKPbc		**PKPbc**	**15 38 53.7**	**-0.4**
	0.8nm,1.8s,baz=292,slow=4.8,SNR=4.8							
ASAR	**Alice Springs**	**148.35**	**98**	PKPbc		**PKPbc**	**15 38 53.8**	**-0.7**
	0.3nm,0.7s,baz=276,slow=1.9,SNR=6.1							

*NIED **10** 15:33:00, 39.°90N×143.°60E, h14km, Mw3.9 Best double couple: M0 8.00000×10^14 NP1:φ±195.00000°, δ34.00000°, λ84.00000°. NP2:φ±23.00000°, δ56.00000°, λ94.00000°.*

*ISCJB **10** 15:33:19.4±0.6, 39.°85N±0.°06×143.°67E±0.°07, h6km, mb3.7/12, MS3.0/1, Error ellipse: s-maj=8.6km s-min=6.8km az=147.2*

*IDC **10** 15:33:20.1±0.8, 39.°85N×143.°47E, h0km, mb3.7/13, mb1 3.9/15, mb1mx3.7/36, mbtmp3.7/15, ML2.9/2, MS3.0/5, Ms1 3.0/5, ms1mx2.7/44, Error ellipse: s-maj=20.5km s-min=15.8km az=112.0*

*JMA **10** 15:33:21.8±0.7, 39.°87N×143.°56E, h16km, M3.5*

ISC 10 15:33:21.1±0.8, 39.°86N±0.°07×143.°51E±0.°07, h6km, n32, σ0§88/25, mb3.7/12, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
JTH	**Tanohata**	**1.27**	**274**	P		**Pn**	**15 33 45.4**	**0.0**
MIYJ	**Miyakonagasawa**	**1.34**	**258**	P		**Pn**	**15 33 46.7**	**+0.4**
JANG	**Nango**	**1.61**	**289**	P		**Pn**	**15 33 50.1**	**0.0**
JANG				S		**Sb**	**15 34 12.3**	**+0.3**
JOM	**Ohasama**	**1.76**	**258**	P		**Pb**	**15 33 53.3**	**-0.4**
JTM	**Tenmabayashi**	**2.08**	**297**	P		**Pn**	**15 33 57.2**	**+0.6**
JAH	**Hinai**	**2.23**	**279**	P		**Pn**	**15 34 00.0**	**+1.4**
JRG	**Rokugo**	**2.27**	**259**	P		**Pn**	**15 34 00.7**	**+1.6**
JNBK	**Urakawa-nobuka**	**2.48**	**347**	P		**Pn**	**15 34 02.6**	**+0.5**
JNBK				S		**Sn**	**15 34 32.9**	**+0.2**
MJAR	**Matsushiro Arr**	**5.33**	**233**	Pn		**Pn**	**15 34 42.5**	**+1.3**
	1.5nm,0.3s,baz=44,slow=11,SNR=21							
USRK	**Ussuriysk Ar.**	**9.61**	**301**	Pn		**Pn**	**15 35 41.4**	**+1.5**
	0.3nm,0.3s,baz=109,slow=13,SNR=8.7							
USRK				LR		LR	15 39 25.0	
	comp=Z,44nm,18.1s,baz=75,slow=38							
JNU	**Nakatsue**	**12.18**	**240**	LR		LR	15 41 07.1	
	comp=Z,66nm,20.5s,baz=128,slow=38							
KSRS	**Korea Array**	**12.42**	**264**	Pn		Pn	15 36 23.4	+5.0
	0.1nm,0.3s,baz=360,slow=17,SNR=2.6							
KSRS				LR		LR	15 40 49.7	
	comp=Z,65nm,18.2s,baz=95,slow=36							
KLR	**Kul'dur**	**12.56**	**322**	Pn		Pn	15 36 26.1	+5.8
	0.1nm,0.3s,baz=161,slow=4.4,SNR=3.9							
KLR				LR		LR	15 41 22.9	
	comp=Z,60nm,19.4s,baz=116,slow=38							
MA2	**Magadan**	**20.26**	**11**	P		**P**	**15 37 57.5**	**+0.5**
	2.6nm,0.6s,baz=212,slow=11,SNR=5.7							
SEY	**Seymchan**	**23.71**	**10**	P		**P**	**15 38 32.7**	**-0.8**
	2.3nm,0.8s,baz=191,slow=7.6,SNR=9.7							
YAK	**Yakutsk**	**23.75**	**344**	P		**P**	**15 38 32.5**	**-1.3**
	17nm,0.9s,baz=24,slow=3.3,SNR=5.9							
SONM	**Songino Array**	**27.72**	**299**	P		**P**	**15 39 08.8**	**-1.4**
	1.2nm,0.7s,baz=80,slow=8.6,SNR=8.2							
SONM				LR		LR	15 50 52.2	
	comp=Z,38nm,18.8s,baz=132,slow=38							
H11N2	**WAKE ISLAND Hy**	**28.39**	**128**	T		T	16 08 48.2	
	baz=321,slow=74,SNR=6.3							
H11N1	**WAKE ISLAND Hy**	**28.40**	**128**	T		T	16 08 53.2	
	baz=321,slow=74,SNR=4.8							
H11N3	**WAKE ISLAND Hy**	**28.40**	**128**	T		T	16 08 51.3	
	baz=321,slow=74,SNR=5.2							
H11S1	**WAKE ISLAND Hy**	**29.21**	**130**	T		T	16 09 55.2	
H11S3	**WAKE ISLAND Hy**	**29.21**	**130**	T		T	16 09 54.3	
H11S2	**WAKE ISLAND Hy**	**29.23**	**130**	T		T	16 09 58.2	
ZALV	**Zalesovo Beam**	**41.29**	**310**	P		**P**	**15 41 07.7**	**+0.6**
	0.8nm,0.5s,baz=91,slow=7.7,SNR=5.1							
MKAR	**Makanchi Array**	**44.07**	**300**	P		**P**	**15 41 29.7**	**-0.1**
	0.9nm,0.8s,baz=83,slow=8.9,SNR=10							
ILAR	**Eielson Array**	**46.23**	**34**	P		**P**	**15 41 47.4**	**+0.8**
	0.5nm,1.1s,baz=256,slow=7.3,SNR=2.7							
INK	**Inuvik**	**51.12**	**28**	P		**P**	**15 42 24.7**	**+0.5**
	0.3nm,0.5s,baz=351,slow=4.6,SNR=4.9							
WRA	**Warramunga Arr**	**60.10**	**190**	P		**P**	**15 43 28.1**	**-1.1**
	0.8nm,0.6s,baz=8.0,slow=6.8,SNR=10							
YKA	**Yellowknife Ar**	**60.54**	**31**	P		**P**	**15 43 31.6**	**-0.2**
	0.1nm,0.6s,baz=303,slow=6.2,SNR=3.6							
ASAR	**Alice Springs**	**63.83**	**190**	P		**P**	**15 43 54.2**	**0.0**
	0.5nm,0.7s,baz=10,slow=5.6,SNR=10							
FINES	**FINESS Array B**	**67.08**	**332**	P		**P**	**15 44 14.5**	**-0.4**
	1.1nm,0.7s,baz=111,slow=4.3,SNR=6.4							
NVAR	**Mina Array Bea**	**72.00**	**55**	P		**P**	**15 44 46.7**	**+0.7**
	0.4nm,0.6s,baz=256,slow=7.3,SNR=3.4							

MEX 10 15:53:03.0±0.4, 32.°38N×115.°05W, h26km±5km, MD3.7, California-Baja California border region

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
MBIG	**Mexicali**	**0.13**	**282**	*e*P		Pb	15 53 06.7	-1.2
CBX	**Cerro Bola**	**1.36**	**268**	*e*P		Pn	15 53 23.8	-2.7
CBX				*i* S		Sn	15 53 40.6	-3.2
TJIG	**Tijuana**	**1.37**	**273**	*e*P		Pn	15 53 24.0	-2.5
TJIG				*e*S		Sn	15 53 40.3	-3.5
SPIG	**San Pedro Mart**	**1.38**	**195**	*e*P		Pn	15 53 23.9	-2.9
SPIG				*e*S		Sn	15 53 40.9	-3.4

*BJI **10** 16:11:46.4, 46.°87N×153.°56E, h50km, mb4.3/6, mB4.9/2*

*ISCJB **10** 16:11:47.8±0.6, 46.°40N±0.°08×153.°02E±0.°10, h40km, mb3.7/18, MS3.1/2, Error ellipse: s-maj=13.8km s-min=5.2km az=139.3*

*SKHL **10** 16:11:49.0±0.7, 46.°24N×153.°11E, h64km±5km, mb4.7/3*

*MOS **10** 16:11:49.3±1.4, 46.°55N×152.°86E, h52km, mb4.3/9, Error ellipse: s-maj=14.2km s-min=9.3km az=71.9*

*IDC **10** 16:11:51.7±3.3, 46.°49N×152.°94E, h56km±29km, mb3.4/14, mb1 3.6/17, mb1mx3.5/52, mbtmp3.7/17, ML5.0/1, MS2.9/3, Ms1 2.9/3, ms1mx2.4/37, Error ellipse: s-maj=24.0km s-min=14.4km az=150.0*

ISC 10 16:11:48.8±0.7, 46.°29N±0.°09×153.°14E±0.°08, h40km, n48, σ1§65/44, mb3.7/18, 3C-1D, Kuril Islands

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
KUR	**Kuril'sk**	**3.84**	**256**	*i* P		**Pn**	**16 12 45.3**	**0.0**
KUR				AMB		AMB	16 12 46.4	
	130nm,0.5s							
KUR				*e*S		**Sn**	**16 13 28.0**	**-1.2**
KUR				A		A	16 13 38.0	
	170nm,0.7s							
KUR	**Kuril'sk**	**3.84**	**256**	*c i* PN		**Pn**	**16 12 45.3**	**0.0**
KUR				*i* S		**Sn**	**16 13 30.6**	**+1.4**
KUR				pmax	pmax			
	comp=Z,95nm,0.5s							
KUR				pmax	pmax			
	comp=E,22nm,0.3s							
KUR				pmax	pmax			
	comp=N,29nm,0.4s							
KUR				smax	smax			
	comp=N,44nm,0.4s							
KUR				smax	smax			
	comp=E,71nm,0.5s							
SKR	**Severo-Kuril's**	**4.82**	**23**	*e*P		**Pn**	**16 12 59.7**	**+1.0**
SKR				AMB	AMB		16 13 14.5	
	comp=E,90nm,1.0s							
SKR				*e*S		**Sn**	**16 13 52.7**	**-0.5**
SKR				A	A		16 14 05.2	
	comp=E,200nm,0.9s							
SKR	**Severo-Kuril's**	**4.82**	**23**	*e*PN		**Pn**	**16 12 55.5**	**-3.2**
SKR				*e*S		**Sn**	**16 13 49.0**	**-4.2**
SKR				pmax	pmax			
	comp=Z,30nm,0.5s							
SKR				smax	smax			
	comp=N,20nm,0.2s							
SKR				smax	smax			
	comp=E,70nm,0.2s							
SHO	**Shikotan**	**5.08**	**244**	*e*P		**Pn**	**16 13 00.1**	**-2.3**
SHO				*e*S		**Sn**	**16 13 55.5**	**-4.3**
SHO				A	A		16 14 06.5	
	comp=E,50nm,0.4s							
SHO				A	A		16 14 06.5	
	comp=E,70nm,0.4s							
SHO	**Shikotan**	**5.08**	**244**	*e*PN		**Pn**	**16 12 58.9**	**-3.5**
PAU	**Pauzhetka**	**5.72**	**24**	*e*P		**Pn**	**16 13 12.5**	**+1.5**
PAU				AMB	AMB		16 13 15.8	
	comp=E,120nm,1.0s							
PAU				*e*S		**Sn**	**16 14 14.6**	**-0.7**
PAU				A	A		16 14 18.7	
	comp=E,190nm,0.8s							
PAU				A	A		16 14 18.7	
	comp=E,220nm,0.8s							
PETK	**Petropavlovsk-**	**7.43**	**22**	P		**Pn**	**16 13 34.3**	**-0.3**
	comp=E,0.4nm,0.3s,baz=177,slow=14,SNR=13							
TYV	**Tymovskoe**	**8.32**	**307**	*e*P		**Pn**	**16 13 48.9**	**+2.1**
ERM	**Erimo**	**8.35**	**243**	*e*P		**Pn**	**16 13 47.0**	**-0.3**
ERM	**Erimo**	**8.35**	**243**	PN		**Pn**	**16 13 47.0**	**-0.3**
NKL	**Nikolayevsk**	**10.59**	**315**	*e*P		Pn	16 14 22.0	+4.3
NKL	**Nikolayevsk**	**10.59**	**315**	*e*PN		Pn	16 14 22

*ISCJB **10** 16:18:18.0±0.5,23.65S±0.03×179.83E±0.02,h521km±5km, mb4.8/195, Error ellipse: s-maj=4.6km s-min=3.2km az=164.0*

*BJI **10** 16:18:18.4,23.60S×179.80E,h523km, mb4.8/45, mB4.9/26*

*GCMT **10** 16:18:18.5±0.6,23.57S×179.91E,h534km±3km, MW5.3/50,Moment Tensor Solution. s50,c69; Duration: 1s0 Moment tensor: Scale 10^{17}Nm; M_r0.10±.04; $M_{\theta\theta}$-0.16±.07; $M_{\phi\phi}$0.06±.07; $M_{r\theta}$-0.18±.06; $M_{\theta\phi}$-0.70±.05; $M_{r\phi}$-0.69±.06; Best double couple: $M_0$0.99600×10^{17} NP1:ϕ_s188.00000°,δ87.00000°,λ46.00000°. NP2: ϕ_s96.00000°,δ44.00000°,λ176.00000°. Principal axes: T 0.9210, Plg33.0000°, Azm62.0000°; N 0.1500, Plg44.0000°, Azm191.0000°; P -1.0710, Plg28.0000°, Azm312.0000°; nsta1 refers to body waves, cutoff=40s.*

*IDC **10** 16:18:18.8±0.6,23.61S×179.85E,h521km±6km,mb4.4/30, mb1 4.4/33,mb1mx4.3/43,mbtmp5.2/33 Error ellipse: s-maj=9.9km s-min=7.4km az=175.0*

*NEIC **10** 16:18:18.4±0.1,23.60S×179.84E,mb5.0/143,Error ellipse: s-maj=4.1km s-min=3.0km az=149.0*

ISC 10 16:18:18.9±0.4,**23.63S**±0.04×**179.95E**±0.04,**h528**km±3km, **h529**km;**pP-P,n707,σ1s39/755,mb4.8**/195,**9C-45D,South of Fiji Islands**

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**5.92**	**162**	P		**P**		**16 19 56.0**	**+0.4**
	445nm,0.3s,baz=40,slow=3.4,SNR=20								
RAO				S		**S**		**16 21 14.2**	**-0.6**
	104nm,0.3s,baz=219,slow=23,SNR=2.4								
MSVF	**Nonsavu**	**6.13**	**343**	*eP*		**P**		**16 19 57.9**	**-0.1**
MSVF	**Nonsavu**	**6.13**	**343**	*eP*		**P**		**16 19 57.9**	**-0.1**
NIUE	**Niue**	**10.46**	**66**	P		**P**		**16 20 41.0**	**-0.5**
	baz=10								
AFI	**Afiamalu**	**12.44**	**40**	P		**P**		**16 20 58.4**	**-3.8**
	11nm,0.3s,baz=30,slow=2.6,SNR=16								
AFI				S		**S**		**16 23 10.5**	**-6.2**
	8.1nm,0.3s,baz=67,slow=18,SNR=4.6								
DZM	**Mont Dzumac**	**12.55**	**274**	P		**P**		**16 21 04.7**	**+1.3**
	2.2nm,0.3s,baz=76,slow=5.5,SNR=20								
DZM				S		**S**		**16 23 22.4**	**+3.5**
	0.2nm,0.3s,baz=187,slow=23,SNR=1.8								
OUZ	**Omahuta**	**12.80**	**204**	PN		**P**		**16 21 07.5**	**+1.9**
OUZ	**Omahuta**	**12.80**	**204**	*eP*		**P**		**16 21 07.2**	**+1.5**
MXZ	**Matakaoa Point**	**13.96**	**185**	*eP*		**P**		**16 21 17.4**	**-0.3**
MKAZ	**Moumakai**	**14.05**	**196**	PN		**P**		**16 21 19.0**	**+0.4**
AWAZ	**Awhitu Peninsu**	**14.15**	**198**	PN		**P**		**16 21 20.8**	**+1.1**
HAZ	**Te Kaha**	**14.20**	**187**	PN		**P**		**16 21 19.1**	**-1.1**
HAZ				*e*SN		**S**		**16 23 44.7**	**-5.0**
WMGZ	**Waiomatatini S**	**14.21**	**185**	PN		**P**		**16 21 19.8**	**-0.5**
WMGZ				*e*SN		**S**		**16 23 45.2**	**-4.6**
PKGZ	**Pakihiroa**	**14.30**	**186**	PN		**P**		**16 21 20.4**	**-1.0**
PUZ	**Puketiti**	**14.47**	**185**	PN		**P**		**16 21 21.9**	**-1.2**
PUZ				*e*SN		**S**		**16 23 47.7**	**-7.2**
TOZ	**Tahuroa Road**	**14.56**	**194**	PN		**P**		**16 21 25.3**	**+1.3**
URZ	**Urewera**	**14.78**	**189**	P		**P**		**16 21 25.1**	**-1.2**
	13nm,0.3s,baz=264,slow=4.2,SNR=62								
URZ				S		**S**		**16 23 55.3**	**-5.5**
	4.9nm,0.3s,baz=62,slow=22,SNR=14								
URZ	**Urewera**	**14.78**	**189**	PN		**P**		**16 21 23.3**	**-3.0**
URZ				*e*SN		**S**		**16 23 56.0**	**-4.8**
URZ	**Urewera**	**14.78**	**189**	*eP*		**P**		**16 21 23.3**	**-3.0**
URZ				S		**S**		**16 23 55.3**	**-5.5**
MWZ	**Matawai**	**14.80**	**187**	PN		**P**		**16 21 24.7**	**-1.8**
MWZ				*e*SN		**S**		**16 23 56.3**	**-5.0**
FUNA	**Funafuti**	**15.04**	**357**	*eP*		**P**		**16 21 27.2**	**-2.1**
TLZ	**Tolley Road**	**15.13**	**193**	PN		**P**		**16 21 29.8**	**-0.2**
SNGZ	**Shannon Statio**	**15.27**	**188**	PN		**P**		**16 21 29.1**	**-2.2**
HIZ	**Hauiti**	**15.46**	**195**	*eP*		**P**		**16 21 34.7**	**+1.4**
	48nm,0.5s								
BKZ	**Black Stump Fm**	**15.76**	**190**	PN		**P**		**16 21 34.9**	**-1.7**
BKZ				*e*SN		**S**		**16 24 12.0**	**-6.8**
BKZ	**Black Stump Fm**	**15.76**	**190**	*eP*		**P**		**16 21 34.9**	**-1.7**
	42nm,0.7s								
BHHZ	**Black Hill Sta**	**16.15**	**191**	PN		**P**		**16 21 37.6**	**-2.9**
TSZ	**Takapari Road**	**16.72**	**191**	PN		**P**		**16 21 43.7**	**-2.3**
BFZ	**Birch Farm**	**17.29**	**190**	*eP*		**P**		**16 21 52.0**	**+0.8**
	237nm,1.6s								
QRZ	**Quartz Range**	**18.25**	**198**	PN		**P**		**16 22 00.1**	**+0.2**
NNZ	**Nelson**	**18.38**	**196**	PN		**P**		**16 22 00.1**	**-1.1**
RAR	**Rarotonga**	**18.90**	**87**	P		**P**		**16 22 05.6**	**-0.6**
	2.3nm,0.3s,baz=251,slow=6.1,SNR=7.2								
RAR	**Rarotonga**	**18.90**	**87**	*eP*		**P**		**16 22 04.5**	**-1.7**
RAR					pmax	pmax			
	comp=Z,52nm,0.8s								
RAR	**Rarotonga**	**18.90**	**87**	*eP*		**P**		**16 22 04.5**	**-1.7**
	comp=Z,52nm,0.8s								
THZ	**Tophouse**	**19.02**	**196**	PN		**P**		**16 22 06.1**	**-0.9**
THZ				*e*SN		**S**		**16 25 07.0**	**-5.5**
THZ	**Tophouse**	**19.02**	**196**	*eP*		**P**		**16 22 06.1**	**-0.9**
	comp=Z,39nm,0.6s								
DSZ	**Denniston Nort**	**19.30**	**199**	PN		**P**		**16 22 09.6**	**0.0**
KHZ	**Kahutara**	**19.48**	**194**	PN		**P**		**16 22 09.3**	**-1.8**
KHZ	**Kahutara**	**19.48**	**194**	*eP*		**P**		**16 22 10.7**	**-0.5**
	comp=Z,205nm,1.8s								
LTZ	**Lake Taylor**	**20.14**	**197**	PN		**P**		**16 22 15.9**	**-1.2**
LTZ	**Lake Taylor**	**20.14**	**197**	*eP*		**P**		**16 22 15.7**	**-1.5**
	comp=Z,102nm,0.6s								
LTZ				*e*S		**S**		**16 25 33.8**	**+3.3**
INZ	**Inchbonnie**	**20.31**	**198**	PN		**P**		**16 22 17.5**	**-1.2**
OXZ	**Oxford**	**20.70**	**197**	*eP*		**P**		**16 22 22.1**	**-0.2**
	comp=Z,128nm,0.6s								
WVZ	**Waitaha Valley**	**20.84**	**199**	PN		**P**		**16 22 22.6**	**-0.8**
MQZ	**McQueen's Vall**	**20.91**	**195**	*e*PN		**P**		**16 22 23.3**	**-0.8**
MQZ	**McQueen's Vall**	**20.91**	**195**	*eP*		**P**		**16 22 25.8**	**+1.7**
	comp=Z,36nm,0.8s								
RPZ	**Rata Peaks**	**21.33**	**198**	P		**P**		**16 22 28.1**	**+0.1**
	comp=Z,50nm,0.6s,baz=333,slow=2.1,SNR=28								
RPZ	**Rata Peaks**	**21.33**	**198**	*eP*		**P**		**16 22 28.3**	**+0.3**
	comp=Z,58nm,0.6s								
FOZ	**Fox Glacier**	**21.54**	**200**	PN		**P**		**16 22 29.0**	**-0.8**
FOZ	**Fox Glacier**	**21.54**	**200**	*eP*		**P**		**16 22 29.5**	**-0.2**
	comp=Z,53nm,0.7s								
MLZ	**Mavora Lakes**	**23.73**	**201**	*eP*		**P**		**16 22 49.6**	**+0.2**
	comp=Z,40nm,0.7s								
HNR	**Honiara**	**23.77**	**303**	P		**P**		**16 22 48.5**	**-1.6**
	comp=Z,213nm,0.7s,baz=187,slow=3.2,SNR=17								
HNR	**Honiara**	**23.77**	**303**	*eP*		**P**		**16 22 48.0**	**-2.1**
HNR	**Honiara**	**23.77**	**303**	*eP*		**P**		**16 22 48.8**	**-1.3**
HNR					pmax	pmax			
	comp=Z,211nm,0.8s								
HNR	**Honiara**	**23.77**	**303**	*eP*		**P**		**16 22 48.8**	**-1.3**
	comp=Z,211nm,0.8s								
WHZ	**Wether Hill Ro**	**24.25**	**201**	*eP*		**P**		**16 22 54.8**	**+0.8**
	comp=Z,67nm,0.9s								
TARA	**Tarawa**	**25.76**	**344**	*eP*		**P**		**16 23 07.3**	**-0.4**
	comp=Z,249nm,0.9s								
ARMA	**Armidale**	**26.08**	**249**	P		**P**		**16 23 12.1**	**+1.6**
	baz=26,SNR=25								
EIDS	**Eidsvold**	**26.31**	**260**	P		**P**		**16 23 13.0**	**+0.4**
	baz=26,SNR=52								
EIDS	**Eidsvold**	**26.31**	**260**	*eP*		**P**		**16 23 12.9**	**+0.4**
	comp=Z,52nm,0.6s								
MGCD	**Mangrove Creek**	**27.03**	**243**	P		**P**		**16 23 20.2**	**+1.5**
	baz=27,SNR=14								
TBI	**Tubuai**	**28.03**	**96**	*eP*		**P**		**16 23 28.4**	**+0.8**
	comp=Z,55nm,0.7s								
RMQ	**Roma**	**28.37**	**258**	P		**P**		**16 23 32.1**	**+1.6**
	baz=28,SNR=82								
CNB	**Canberra Magne**	**28.95**	**239**	P		**P**		**16 23 36.9**	**+1.4**
	baz=29,SNR=6.2								
PAE	**Paea**	**29.09**	**84**	*eP*		**P**		**16 23 37.2**	**+0.3**
	comp=Z,17nm,0.9s								
PPT2	**Papeete2**	**29.11**	**84**	*eP*		**P**		**16 23 37.5**	**+0.3**
	comp=Z,93nm,1.2s								
PPT	**Papeete**	**29.12**	**84**	P		**P**		**16 23 37.4**	**+0.2**
	comp=Z,70nm,0.7s,baz=249,slow=4.1,SNR=9.1								
CAN	**Canberra**	**29.24**	**239**	P		**P**		**16 23 39.0**	**+1.0**
	baz=29								
TVO	**Taravao**	**29.35**	**84**	*eP*		**P**		**16 23 39.5**	**+0.2**
	comp=Z,33nm,0.8s								
YNG	**Young**	**29.48**	**242**	P		**P**		**16 23 41.1**	**+1.0**
	baz=30								
CMSA	**Cobar Meteorol**	**31.28**	**248**	P		**P**		**16 23 56.1**	**+0.5**
	baz=31,SNR=50								
CTA	**Charters Tower**	**31.43**	**270**	P		**P**		**16 23 57.6**	**+0.6**
	comp=Z,216nm,0.5s,baz=95,slow=11,SNR=389								
CTA	**Charters Tower**	**31.43**	**270**	P		**P**		**16 23 57.9**	**+0.8**
	baz=31								
CTAO	**Charters Tower**	**31.43**	**270**	*eP*		**P**		**16 23 57.7**	**+0.6**
CTAO					pmax	pmax			
	comp=Z,234nm,0.5s								
CTAO	**Charters Tower**	**31.43**	**270**	*eP*		**P**		**16 23 57.7**	**+0.6**
	comp=Z,234nm,0.5s								
PMOR	**Pomariorio Ree**	**31.47**	**80**	*eP*		**P**		**16 23 57.8**	**+0.3**
	comp=Z,149nm,1.1s								
PMOR				*e*ScP		**ScP**		**16 29 29.3**	**+1.6**
	comp=Z,69nm,1.3s								
VAH	**Vaihoa**	**31.63**	**81**	*eP*		**P**		**16 23 58.8**	**0.0**
	comp=Z,101nm,1.1s								
TOO	**Toolangi**	**32.56**	**237**	P		**P**		**16 24 07.2**	**+0.7**
	baz=33,SNR=8.5								
RABL	**Rabaul**	**33.05**	**302**	*eP*		**P**		**16 24 10.0**	**-1.0**
	comp=Z,103nm,0.4s								
MTSU	**Mount Surprise**	**33.68**	**273**	P		**P**		**16 24 16.8**	**+0.6**
	baz=34,SNR=136								
PMG	**Port Moresby**	**34.37**	**289**	P		**P**		**16 24 22.2**	**+0.2**
	comp=Z,239nm,0.8s,baz=88,slow=5.3,SNR=94								
PMG	**Port Moresby**	**34.37**	**289**	*dif*		**P**		**16 24 21.9**	**-0.1**
PMG					pmax	pmax			
	comp=Z,1μm,0.8s								
PMG	**Port Moresby**	**34.37**	**289**	*eP*		**P**		**16 24 22.0**	**-0.1**
	comp=Z,254nm,0.8s								
STKA	**Stephens Creek**	**34.78**	**248**	P		**P**		**16 24 25.3**	**0.0**
	comp=Z,16nm,0.8s,baz=91,slow=9.5,SNR=28								
STKA	**Stephens Creek**	**34.78**	**248**	P		**P**		**16 24 25.9**	**+0.6**
	baz=35,SNR=25								
STKA	**Stephens Creek**	**34.78**	**248**	*eP*		**P**		**16 24 25.6**	**+0.3**
STKA					pmax	pmax			
	comp=Z,4.0nm,0.9s								
STKA	**Stephens Creek**	**34.78**	**248**	*eP*		**P**		**16 24 25.6**	**+0.3**
	comp=Z,3.7nm,0.9s								
ARPS	**Mount Arapiles**	**35.22**	**239**	P		**P**		**16 24 29.3**	**+0.4**
	baz=35								
COEN	**Coen**	**36.03**	**279**	P		**P**		**16 24 36.3**	**+0.4**
	baz=36,SNR=25								
COEN	**Coen**	**36.03**	**279**	*eP*		**P**		**16 24 35.8**	**-0.1**
	comp=Z,42nm,0.8s								
PATS	**Pohnpei**	**36.93**	**322**	P		**P**		**16 24 43.4**	**+0.2**
	baz=37,SNR=7.6								
PATS	**Pohnpei**	**36.93**	**322**	*eP*		**P**		**16 24 43.2**	**0.0**
	comp=Z,355nm,1.9s								
HTT	**Hallett**	**37.14**	**245**	P		**P**		**16 24 45.2**	**+0.3**
	baz=37,SNR=9.8								
QIS	**Mount Isa**	**37.43**	**267**	P		**P**		**16 24 47.0**	**-0.3**
	baz=37,SNR=13								
MANU	**Manus Island**	**38.15**	**299**	*eP*		**P**		**16 24 52.8**	**-0.5**
	comp=Z,129nm,1.4s								
BBOO	**Buckleboo**	**39.51**	**247**	P		**P**		**16 25 03.6**	**-0.5**
	baz=40,SNR=25								
TAOE	**Nuku Hiva Isla**	**40.86**	**76**	*eP*		**P**		**16 25 15.8**	**+0.6**
	comp=Z,414nm,1.0s								
TAOE	**Nuku Hiva Isla**	**40.86**	**76**	*eP*		**P**		**16 25 15.9**	**+0.7**
	comp=Z,168nm,0.8s								
AS01	**Alice Springs**	**41.99**	**260**	*eP*		**P**		**16 25 23.7**	**-0.4**
AS31	**Alice Springs**	**42.03**	**260**	*eP*		**P**		**16 25 24.1**	**-0.2**
	comp=Z,21nm,0.6s								
ASAR	**Alice Springs**	**42.04**	**260**	P		**P**		**16 25 24.2**	**-0.1**
	comp=Z,66nm,0.7s,baz=100,slow=7.2,SNR=633								
ASAR					pP	**pP**		**16 26 58.4**	**-1.0**
	comp=Z,10nm,1.0s,baz=91,slow=8.5,SNR=5.4								
ASAR					ScP	**ScP**		**16 30 09.9**	**+2.6**
	comp=Z,17nm,0.7s,baz=108,slow=4.0,SNR=31								
ASAR					S	**S**		**16 31 03.5**	**-1.8**
	comp=Z,3.9nm,0.9s,baz=101,slow=16,SNR=8.1								
WR8	**Warramunga Arr**	**42.23**	**266**	P		**P**		**16 25 25.3**	**-0.6**
	baz=42								
WB2	**Warramunga Arr**	**42.37**	**266**	*eP*		**P**		**16 25 26.3**	**-0.7**
	comp=Z,100nm,0.8s								
WRAB	**Tennant Creek**	**42.37**	**266**	*dif*		**P**		**16 25 26.3**	**-0.7**
WRAB					pmax	pmax			
	comp=Z,245nm,0.9s								
WRAB	**Tennant Creek**	**42.37**	**266**	*eP*		**P**		**16 25 26.2**	**-0.8**
	comp=Z,81nm,0.7s								
WRA	**Warramunga Arr**	**42.38**	**266**	P		**P**		**16 25 25.9**	**-1.1**
	comp=Z,97nm,0.7s,baz=103,slow=8.2,SNR=624								
WRA					pP	**pP**		**16 27 00.9**	**-1.4**
	comp=Z,2.9nm,0.7s,baz=103,slow=7.8,SNR=5.1								
WRA					ScP	**ScP**		**16 30 11.6**	**+2.9**
	comp=Z,14nm,0.9s,baz=100,slow=4.1,SNR=18								
WRA					S	**S**		**16 31 06.5**	**-3.9**
	comp=Z,5.0nm,0.8s,baz=100,slow=13,SNR=9.4								
JAY	**Jayapura**	**43.37**	**293**	P		**P**		**16 25 34.1**	**-0.8**
	comp=Z,9.7nm,0.6s,baz=148,slow=18,SNR=22								
JAY	**Jayapura**	**43.37**	**293**	P		**P**		**16 25 34.5**	**-0.4**
GENI	**Genyem**	**43.78**	**292**	P		**P**		**16 25 37.6**	**-0.5**
KDU	**Kadu**	**46.22**	**275**	P		**P**		**16 25 56.2**	**-0.5**
	baz=46,SNR=12								
WRKA	**Warakurna**	**46.85**	**257**	P		**P**		**16 26 01.2**	**-0.3**
	baz=47,SNR=153								
MTN	**Manton Dam**	**47.39**	**274**	P		**P**		**16 26 04.8**	**-0.8**
	baz=47,SNR=16								
MTN	**Manton Dam**	**47.39**	**274**	*eP*		**P**		**16 26 04.6**	**-1.0**
	comp=Z,47nm,0.6s								
KNRA	**Kununurra**	**48.65**	**270**	P		**P**		**16 26 14.9**	**0.0**
	baz=49								
SAUI	**Saumlaki**	**49.08**	**280**	P		**P**		**16 26 18.5**	**+0.3**
SAUI	**Saumlaki**	**49.08**	**280**	*eP*		**P**		**16 26 18.2**	**0.0**
	comp=Z,209nm,0.9s								
HPAH	**Hawaii Prepara**	**49.47**	**31**	*eP*		**P**		**16 26 21.1**	**+0.1**
	comp=Z,147nm,0.7s								
GUMO	**Guam**	**50.45**	**314**	P		**P**		**16 26 28.1**	**-0.1**
	comp=Z,195nm,0.6s,baz=155,slow=11,SNR=10								
FAKI	**Fak Fak**	**50.46**	**287**	P		**P**		**16 26 27.7**	**-0.7**
FAKI	**Fak Fak**	**50.46**	**287**	*eP*		**P**		**16 26 27.6**	**-0.7**
	comp=Z,93nm,1.1s								
FITZ	**Fitzroy Crossi**	**50.81**	**265**	pP		**pP**		**16 28 11.1**	**0.0**
	comp=Z,8.9nm,1.0s,baz=106,slow=8.6,SNR=3.5								
FITZ					S	**S**		**16 33 06.9**	**-0.6**
	comp=Z,2.9nm,0.9s,baz=286,slow=19,SNR=6.2								
FITZ	**Fitzroy Crossi**	**50.81**	**265**	P		**P**		**16 26 30.9**	**0.0**
	baz=51,SNR=63								
FITZ	**Fitzroy Crossi**	**50.81**	**265**	*eP*		**P**		**16 26 30.8**	**0.0**
	comp=Z,53nm,0.8s								
FITZ					pP	**pP**		**16 28 11.1**	**0.0**
FITZ					S	**S**		**16 33 06.9**	**-0.6**
SWI	**Sorong**	**52.32**	**288**	P		**P**		**16 26 41.6**	**-0.2**
MSAI	**Masohi**	**53.20**	**284**	P		**P**		**16 26 47.4**	**-0.7**
PALU	**Palau**	**54.04**	**299**	P		**P**		**16 26 53.9**	**-0.1**
	baz=54,SNR=17								
SBA	**Scott Base**	**54.64**	**183**	*eP*		**P**		**16 27 00.5**	**+3.2**
SBA					pmax	pmax			
	comp=Z,24nm,1.5s								
SBA	**Scott Base**	**54.64**	**183**	*eP*		**P**		**16 27 00.5**	**+3.2**
	comp=Z,24nm,1.5s								
SOEI	**Soe**	**54.78**	**275**	P		**P**		**16 27 00.8**	**+1.3**
SOEI	**Soe**	**54.78**	**275**	*eP*		**P**		**16 27 00.7**	**+1.3**
	comp=Z,194nm,0.9s								
NLAI	**Namlea**	**54.88**	**283**	P		**P**		**16 27 00.0**	**0.0**
MBWA	**Marble Bar**	**55.38**	**260**	*eP*		**P**		**16 27 02.8**	**-0.6**
	comp=Z,46nm,0.6s								
LBMI	**Labuha**	**55.72**	**286**	P		**P**		**16 27 05.7**	**-0.1**
SANI	**Sanana**	**56.40**	**284**	P		**P**		**16 27 11.9**	**+1.3**
TNTI	**Ternate**	**56.51**	**288**	P		**P**		**16 27 11.1**	**-0.2**
TNTI	**Ternate**	**56.51**	**288**	*eP*		**P**		**16 27 10.8**	**-0.5**
	comp=Z,228nm,1.0s								
MMRI	**Maumere**	**57.05**	**275**	P		**P**		**16 27 14.5**	**-0.6**
MMRI	**Maumere**	**57.05**	**275**	*eP*		**P**		**16 27 14.4**	**-0.6**
	comp=Z,104nm,0.9s								
WSI	**Waingapu**	**58.44**	**273**	P		**P**		**16 27 24.4**	**-0.1**
LUWI	**Luwuk**	**59.72**	**283**	P		**P**		**16 27 32.9**	**-0.2**
LUWI	**Luwuk**	**59.72**	**283**	*eP*		**P**		**16 27 32.9**	**-0.2**
	comp=Z,134nm,1.1s								
APSI	**Ampana**	**60.78**	**283**	P		**P**		**16 27 40.4**	**+0.3**
PLAI	**Plampang**	**61.06**	**273**	P		**P**		**16 27 41.4**	**-0.5**
MRSI	**Marisa**	**61.15**	**284**	P		**P**		**16 27 41.5**	**-1.0**
SPSI	**Sidrap Palu**	**61.16**	**279**	P		**P**		**16 27 41.0**	**-1.6**
TTSI	**Tana Toraja**	**61.50**	**280**	P		**P**		**16 27 50.1**	**+5.3**
TWSI	**Taliwang, Sumb**	**61.92**	**273**	P		**P**		**16 27 47.1**	**-0.4**
PCI	**Palu**	**62.41**	**282**	P		**P**		**16 27 51.5**	**+0.8**
	comp=Z,97nm,1.2s,comp=Z,1μm								
JAGI	**Jajag, Banyuwa**	**64.52**	**272**	*eP*		**P**		**16 28 01.5**	**-2.8**
	comp=Z,82nm,1.3s								
BBKI	**Banjar Baru**	**65.85**	**277**	P		**P**		**16 28 12.8**	**+0.2**
MYLDM	**Lahad Datu**	**66.37**	**287**	*eP*		**P**		**16 28 14.2**	**-1.6**
	comp=Z,47nm,1.1s								
PWJI	**Pagerwojo**	**66.84**	**271**	P		**P**		**16 28 18.2**	**-0.5**
PCJI	**Pacitan**	**67.35**	**271**	P		**P**		**16 28 21.8**	**-0.1**
WOJI	**Wonogiri, Jawa**	**67.72**	**271**	P		**P**		**16 28 24.2**	**+0.1**
KKM	**Kota Kinabalu**	**68.78**	**287**	*eP*		**P**		**16 28 29.6**	**-1.1**
	comp=Z,43nm,0.6s								
PBKI	**Pangkalan Bun**	**69.04**	**276**	P		**P**		**16 28 33.0**	**+0.8**
KPJI	**Karang Pucung**	**69.73**	**271**	P		**P**		**16 28 36.1**	**-0.2**
STKI	**Sintang**	**70.36**	**279**	P		**P**		**16 28 40.8**	**+0.7**
CISI	**Cisompet, Garu**	**70.67**	**270**	*eP*		**P**		**16 28 40.5**	**-1.5**
	comp=Z,158nm,1.4s								
SBUM	**Sibu**	**70.71**	**282**	*eP*		**P**		**16 28 41.8**	**-0.4**
	comp=Z,31nm,1.5s								
JOW	**Kunigami**	**70.78**	**312**	*eP*		**P**		**16 28 42.4**	**+0.2**
	comp=Z,124nm,0.8s								
LEM	**Lembang**	**71.13**	**271**	P		**P**		**16 28 50.3**	**+5.5**
MJAR	**Matsushiro Arr**	**71.65**	**326**	P		**P**		**16 28 46.9**	**-0.2**
	comp=Z,26nm,0.8s,baz=161,slow=5.7,SNR=14								
CBJI	**Citeko**	**71.99**	**271**	P		**P**		**16 28 48.4**	**-1.2**
	comp=Z,278nm,1.7s								
KSM	**Kuching**	**72.02**	**280**	*eP*		**P**		**16 28 49.6**	**-0.2**
	comp=Z,68nm,0.7s								
DBJI	**Dramaga**	**72.03**	**271**	P		**P**		**16 28 49.6**	**-0.3**
CGJI	**Cibinong**	**72.98**	**270**	P		**P**		**16 28 54.2**	**-1.1**
YOJ	**Yonaguni jima**	**73.04**	**307**	*eP*		**P**		**16 28 55.0**	**-0.4**
YOJ					pmax	pmax			
	comp=Z,132nm,1.1s								
YOJ	**Yonaguni jima**	**73.04**	**307**	*eP*		**P**		**16 28 55.0**	**-0.4**
	comp=Z,132nm,1.1s								
JNU	**Nakatsue**	**73.30**	**319**	P		**P**		**16 28 56.6**	**0.0**
	comp=Z,32nm,0.9s,baz=77,slow=3.3,SNR=16								
JNU	**Nakatsue**	**73.30**	**319**	*eP*		**P**		**16 28 56.8**	**0.0**
	comp=Z,54nm,1.0s								
TWG	**Pinlang**	**73.52**	**305**	*eP*		**P**		**16 28 56.0**	**-2.2**
	comp=Z,100nm,0.6s								
YULB	**Yu-li**	**73.68**	**305**	*eP*		**P**		**16 28 57.1**	**-2.0**
	comp=Z,10nm,0.8s								
NACB	**Ninganchiao**	**73.91**	**306**	*eP*		**P**		**16 28 58.4**	**-2.0**
	comp=Z,65nm,0.8s								
TPUB	**Ta-pu**	**74.13**	**305**	*eP*		**P**		**16 28 59.4**	**-2.3**
	comp=Z,50nm,0.8s								
SSLB	**Suanglung**	**74.17**	**305**	*eP*		**P**		**16 29 00.3**	**-1.6**
	comp=Z,50nm,0.9s								
YHNB	**Yeheng**	**74.36**	**306**	*eP*		**P**		**16 29 02.4**	**-0.6**
	comp=Z,51nm,0.8s								
TATO	**Taipei**	**74.46**	**307**	*eP*		**P**		**16 29 03.1**	**-0.3**
	comp=Z,136nm,0.8s								
KASI	**Kota Agung**	**74.49**	**271**	P		**P**		**16 29 02.5**	**-1.4**
LWLI	**Liwa**	**75.09**	**271**	P		**P**		**16 29 07.0**	**-0.4**
MDSI	**Maura Dua**	**75.19**	**272**	P		**P**		**16 29 06.2**	**-1.6**
LHSI	**Lahat**	**76.05**	**272**	P		**P**		**16 29 12.2**	**-0.4**
	comp=Z,34nm,1.0s								
MASI	**Maura Aman, Be**	**77.49**	**272**	P		**P**		**16 29 20.0**	**-0.6**
YSS	**Yuzh-Sakhalins**	**77.87**	**335**	*eP*		**P**		**16 29 22.7**	**+1.0**
YSS					pmax	pmax			
	comp=Z,40nm,0.7s								
YSS	**Yuzh-Sakhalins**	**77.87**	**335**	*eP*		**P**		**16 29 22.9**	**+1.2**
	comp=Z,33nm,0.8s								
MAW	**Mawson**	**77.99**	**200**	P		**P**		**16 29 23.3**	**+1.2**
	comp=Z,2.2nm,0.7s,baz=76,slow=6.8,SNR=3.7								
MYKOM	**Kota Tinggi**	**78.01**	**277**	*eP*		**P**		**16 29 23.4**	**+0.1**
	comp=Z,33nm,0.8s								
KSRS	**Korea Array**	**78.01**	**320**	P		**P**		**16 29 23.8**	**+1.0**
	comp=Z,12nm,0.7s,

AFDM Forest Hills D 83.22 42 *e*P P 16 29 50.4 +0.6
comp=Z,21nm,1.0s
ORV Oroville 83.27 42 *e*P P 16 29 51.0 +1.0
ORV pmax pmax
comp=Z,21nm,0.9s
ORV Oroville 83.27 42 *e*P P 16 29 51.0 +1.0
comp=Z,20nm,0.9s
WDC Whiskeytown Da 83.28 40 *e*P P 16 29 51.3 +1.2
WDC pmax pmax
comp=Z,24nm,1.1s
WDC Whiskeytown Da 83.28 40 *e*P P 16 29 51.2 +1.2
comp=Z,24nm,1.1s
LRMC Laurel Mtn Rad 83.29 47 P P 16 29 51.5 +1.1
baz=235,SNR=11
RRX Edison Barstow 83.40 48 P P 16 29 51.8 +1.0
baz=235
N02D Trinity Center 83.43 40 P P 16 29 52.4 +1.5
baz=231,SNR=7.1
GSI Gunungsitoli 83.53 274 P P 16 29 52.6 +0.6
GSI Gunungsitoli 83.53 274 *e*P P 16 29 52.5 +0.6
comp=Z,42nm,0.7s
O03D Paynes Creek 83.55 41 P P 16 29 52.1 +0.6
baz=232,SNR=12
BELC Belle Mtn. Jos 83.59 49 P P 16 29 53.1 +1.1
baz=236,SNR=17
M02C Callahan 83.61 40 P P 16 29 53.6 +1.9
baz=231,SNR=13
CN2 Changchun 83.65 324 ⇓P P 16 29 52.4 +0.6
CN2 esP sP 16 32 37.4 -2.9
CN2 *e*S **S** 16 39 30.2 **0.0**
CN2 pmax pmax
comp=Z,20nm,1.2s
CN2 pmax pmax
comp=Z,400nm,6.0s
L02D Cave Junction, 83.66 39 P P 16 29 53.6 +1.7
baz=230
NKL Nikolayevsk 83.72 337 *e*P P 16 29 52.0 +0.2
NKL pmax pmax
comp=Z,20nm,0.9s
MPMC Manual Prospec 83.75 46 P P 16 29 53.6 +0.9
baz=235,SNR=12
GSC Goldstone, Bar 83.77 47 P P 16 29 53.9 +1.2
baz=235,SNR=13
GSC Goldstone, Bar 83.77 47 *e*P P 16 29 53.9 +1.2
GSC pmax pmax
comp=Z,20nm,0.8s
GSC Goldstone, Bar 83.77 47 *e*P P 16 29 53.9 +1.2
comp=Z,20nm,0.8s
BC3 Big Chuckawall 83.78 49 P P 16 29 54.2 +1.4
baz=236,SNR=9.7
MLAC Mammoth, Mammo 83.78 44 P P 16 29 54.2 +1.3
baz=234
DAC Darwin (Calif) 83.80 46 *e*P P 16 29 53.9 +0.9
DAC pmax pmax
comp=Z,8.0nm,0.9s
DAC Darwin (Calif) 83.80 46 *e*P P 16 29 53.9 +0.9
comp=Z,8.3nm,0.9s
HEC Hector Ludlow 83.83 48 P P 16 29 54.0 +1.0
baz=236,SNR=21
TIN Tinemaha, Big 83.84 45 P P 16 29 53.8 +0.8
baz=234
GLA Glamis 83.89 50 P P 16 29 54.9 +1.6
baz=237,SNR=12
GLA Glamis 83.89 50 *e*P P 16 29 54.9 +1.6
GLA pmax pmax
comp=Z,41nm,0.8s
GLA Glamis 83.89 50 *e*P P 16 29 54.9 +1.6
comp=Z,41nm,0.8s
YBH Yreka Blue Hor 83.91 39 P P 16 29 54.5 +1.3
comp=Z,9.3nm,0.8s,baz=195,slow=1.6,SNR=22
YBH Yreka Blue Hor 83.91 39 *e*P P 16 29 54.2 +1.0
YBH pmax pmax
comp=Z,16nm,1.1s
YBH Yreka Blue Hor 83.91 39 *e*P P 16 29 54.2 +1.0
comp=Z,16nm,1.1s
WAKR Walker 83.92 43 *e*P P 16 29 54.4 +0.9
CHBT CHBT 84.01 287 P P 16 29 55.5 +1.3
comp=Z,30nm,1.1s
TIA Tai'an 84.02 314 ⇓P P 16 29 54.9 +1.1
TIA pmax pmax
comp=Z,80nm,0.9s
GMRC Granite Mounta 84.26 48 P P 16 29 56.2 +1.0
baz=236,SNR=9.5
IRM Iron Mountain 84.27 49 P P 16 29 56.4 +1.3
baz=237,SNR=20
KLR Kul'dur 84.28 331 P P 16 29 55.8 +1.1
comp=Z,3.2nm,0.5s,baz=176,slow=4.0,SNR=18
TRTT Trang 84.28 281 P P 16 29 56.7 +1.1
comp=Z,50nm,0.9s
KDAK Kodiak Island 84.30 14 *i*P P 16 29 56.0 +1.4
HUMO Hull Mountain 84.32 39 *e*P P 16 29 56.5 +1.4
comp=Z,33nm,1.3s
GRAC Grapevine Rang 84.37 46 P P 16 29 56.9 +1.3
baz=235
FURC Furnace Creek, 84.40 46 P P 16 29 56.7 +1.1
baz=235
TUQ Turquoise Moun 84.44 48 P P 16 29 56.9 +0.8
baz=236,SNR=7.4
M04C Macdoel 84.45 40 P P 16 29 57.2 +1.3
baz=232
SHOC Shoshone, Teco 84.47 47 P P 16 29 57.1 +1.1
baz=236
Y12C Blythe 84.48 50 P P 16 29 57.4 +1.3
baz=237,SNR=7.5
Y12C Blythe 84.48 50 *e*P P 16 29 57.5 +1.3
comp=Z,22nm,0.8s
113A Mohawk Valley, 84.48 51 *e*P P 16 29 57.4 +1.2
comp=Z,18nm,1.0s
NV01 Mina Array Sit 84.59 44 *e*P P 16 29 57.4 +0.5
NVAR Mina Array Bea 84.59 44 P P 16 29 57.8 +0.9
comp=Z,7.8nm,0.8s,baz=223,slow=7.7,SNR=40
HSIG 84.59 55 *e*P P 16 29 57.6 +0.8
comp=Z,38nm,0.8s
NV11 Mina Array Sit 84.69 44 *e*P P 16 29 57.7 +0.5
comp=Z,14nm,1.0s
214A Organ Pipe Nat 84.74 52 P P 16 29 58.8 +1.3
baz=238
214A Organ Pipe Nat 84.74 52 *e*P P 16 29 58.5 +1.1
comp=Z,56nm,1.0s
I03D Drain, OR 84.79 37 P P 16 29 59.0 +1.7
baz=230
LDFC Landfair 84.80 48 *e*P P 16 29 58.8 +1.0
comp=Z,55nm,0.6s
SRAK Srakaew 84.81 288 P P 16 29 57.2 **-0.9**
comp=Z,35nm,1.2s
SNAA Sanae 84.94 179 ⇑*i*P P 16 29 57.1 **-0.7**
SNAA pmax pmax
comp=Z,94nm,0.6s
PDMCI Parker Dam,Lak 85.05 49 P P 16 30 00.0 +1.2
baz=237,SNR=13
TPNV Topopah Spring 85.08 46 P P 16 30 00.3 +1.2
baz=236
TPNV Topopah Spring 85.08 46 *e*P P 16 30 00.1 +0.9
TPNV pmax pmax
comp=Z,11nm,0.6s
TPNV Topopah Spring 85.08 46 *e*P P 16 30 00.1 +0.9
comp=Z,11nm,0.6s
KHON Khomkaen 85.14 290 P P 16 30 01.5 +1.8
comp=Z,12nm,1.0s
PATY Pattaya 85.37 286 P P 16 30 03.5 +2.7
comp=Z,7.9nm,0.8s
I04A Tendick Farm, 85.38 38 P P 16 30 01.5 +1.2
baz=231
MOD Modoc Plateau 85.42 40 *e*P P 16 30 01.7 +1.0
comp=Z,22nm,1.3s
SURT Suratani 85.55 282 P P 16 30 03.6 +1.9
comp=Z,9.8nm,1.1s
K05A Summer Lake 85.58 39 *e*P P 16 30 03.0 +1.5
comp=Z,28nm,1.0s
Y14A Wickenburg 85.65 50 *e*P P 16 30 02.4 +0.5
comp=Z,47nm,0.9s
W13A Hualapai Mount 85.65 49 *e*P P 16 30 03.2 +1.2
comp=Z,8.8nm,0.7s
J05D Fort Rock, OR 85.73 39 P P 16 30 03.5 +1.4
baz=232
H04A Detroit Lake 86.06 37 *e*P P 16 30 04.3 +0.8
comp=Z,75nm,2.0s
ENH Enshi 86.25 305 *e*P P 16 30 05.6 +0.8
comp=Z,41nm,0.9s
R11A Troy Canyon, C 86.30 45 P P 16 30 06.0 +1.0
baz=236,SNR=7.4
R11A Troy Canyon, C 86.30 45 *e*P P 16 30 05.9 +0.9
MA2 Magadan 86.31 346 P P 16 30 04.3 **0.0**
comp=Z,12nm,0.8s,baz=162,slow=5.5,SNR=19
MA2 Magadan 86.31 346 *e*P P 16 30 04.1 **-0.2**
MA2 pmax pmax
comp=Z,49nm,0.8s
MA2 Magadan 86.31 346 *e*P P 16 30 04.1 **-0.2**
comp=Z,49nm,0.8s
I05D Terrebonne, OR 86.32 38 P P 16 30 06.1 +1.2
baz=232
TUC Tucson 86.39 53 P P 16 30 07.5 +2.0
baz=239
TUC Tucson 86.39 53 *e*P P 16 30 07.4 +2.0
TUC pmax pmax
comp=Z,29nm,0.9s
TUC Tucson 86.39 53 *e*P P 16 30 07.4 +2.0
comp=Z,29nm,0.9s
BMN Battle Mountai 86.43 43 *e*P P 16 30 06.5 +0.9
BMN pmax pmax
comp=Z,12nm,0.8s
BMN Battle Mountai 86.43 43 *e*P P 16 30 06.5 +0.9
comp=Z,12nm,0.8s
PHET Kaeng Krachan 86.45 286 P P 16 30 07.8 +1.8
comp=Z,22nm,0.9s
GYA Guiyang 86.57 301 P P 16 30 07.0 +0.5
GYA pP pP 16 32 02.8 +0.5
GYA sP sP 16 32 55.0 -0.9
GYA PP **PP** **16 33 40.6 +2.2**
GYA SKS **SKSac** **16 39 41.2 -1.8**
GYA S **S** **16 39 58.4 -0.9**
GYA sS sS 16 43 23.0 -2.7
GYA pmax pmax
comp=Z,20nm,1.0s
GYA pmax pmax
comp=Z,130nm,6.2s
WVOR Wild Horse Val 86.73 41 *e*P P 16 30 07.9 +1.0
WVOR pmax pmax
comp=Z,21nm,1.1s
WVOR Wild Horse Val 86.73 41 *e*P P 16 30 07.9 +1.0
comp=Z,21nm,1.1s
BJI Beijing 86.81 316 P P 16 30 08.4 +1.3
BJI pP **pP** **16 32 03.7 +0.7**
BJI S **S** **16 40 00.0 -0.6**
BJI pmax pmax
comp=Z,14nm,0.6s
LVP Lakeview Peak 86.81 36 P P 16 30 08.6 +1.4
PBKT Sadao Pong 86.84 289 P P 16 30 09.1 +1.3
comp=Z,23nm,1.0s
G05D Wamic, OR 86.89 37 P P 16 30 09.0 +1.5
baz=232
X16A Lo Mia Camp, P 87.00 50 *e*P P 16 30 09.4 +1.0
comp=Z,12nm,0.8s
319A Douglas 87.02 54 *e*P P 16 30 10.4 +1.9
comp=Z,57nm,1.1s
LCMT Little Creek M 87.12 47 *e*P P 16 30 09.8 +0.9
comp=Z,13nm,0.9s
VTHM Trough 87.27 38 P P 16 30 10.7 +1.4
KNB Kanab 87.41 48 *e*P P 16 30 11.8 +1.5
KNB pmax pmax
comp=Z,15nm,0.9s
KNB Kanab 87.41 48 *e*P P 16 30 11.8 +1.5
comp=Z,15nm,0.9s
SRDT SRDT 87.51 287 P P 16 30 12.6 +1.6
comp=Z,96nm,0.9s
WUAZ Wupatki 87.62 50 P P 16 30 12.5 +1.2
baz=239
WUAZ Wupatki 87.62 50 *e*P P 16 30 12.4 +1.1
comp=Z,12nm,1.0s
UTTA Uttaradit 87.70 290 P P 16 30 13.5 +1.7
comp=Z,4.4nm,1.1s
D05A Enumclaw 87.74 35 *e*P P 16 30 13.4 +2.0
comp=Z,42nm,1.0s
FMW Mount Fremont 87.75 36 P P 16 30 13.1 +1.4
ELK Elko 87.85 43 *e*P P 16 30 13.0 +0.7
ELK pmax pmax
comp=Z,14nm,1.3s
ELK Elko 87.85 43 *e*P P 16 30 13.0 +0.7
comp=Z,14nm,1.3s
TRW Toppenish Ridg 87.96 37 P P 16 30 14.0 +1.6
PKCU Pink Cliffs 87.98 47 *e*P P 16 30 14.8 +1.7
comp=Z,12nm,0.8s
NANT Nan 88.03 291 P P 16 30 14.8 +1.4
comp=Z,7.5nm,1.0s
BBB Bella Bella 88.05 29 P P 16 30 13.8 +1.2
comp=Z,11nm,0.7s,baz=248,slow=3.3,SNR=8.5
NAC Naches 88.08 36 P P 16 30 14.4 +1.4
X18A Snowflake 88.12 51 *e*P P 16 30 14.7 +1.0
comp=Z,11nm,0.7s
KHLT Khaolaem Dam 88.16 287 P P 16 30 15.8 +1.8
comp=Z,8.7nm,1.0s
ZAIG Zacatecas 88.27 64 *e*P P 16 30 15.8 +1.0
comp=Z,27nm,1.2s
B05A Bryant 88.36 35 P P 16 30 15.8 +1.7
baz=231
MTPU Mount Pierson 88.38 47 *e*P P 16 30 15.8 +0.7
comp=Z,17nm,0.8s
PLCA Paso Flores 88.48 134 P P 16 30 16.9 +1.6
comp=Z,3.0nm,0.9s,baz=268,slow=4.5,SNR=10
XAN Xi'an 88.54 308 P P 16 30 16.6 +1.1
XAN pmax pmax
comp=Z,23nm,0.7s
XAN pmax pmax
comp=Z,72nm,8.1s
SNIWA Snively Ranch 88.55 37 P P 16 30 16.9 +1.8
HAWA Hanford 88.58 37 *e*P P 16 30 15.8 +0.5
comp=Z,15nm,0.8s
H2OWA Water 88.64 37 P P 16 30 17.1 +1.6
121A Cookes Peak, D 88.70 54 P P 16 30 17.9 +1.5
baz=241
121A Cookes Peak, D 88.70 54 *e*P P 16 30 18.1 +1.6
comp=Z,15nm,1.0s
RPW Rockport 88.78 35 P P 16 30 16.9 +0.7
LAMP Lampang 88.83 291 P P 16 30 19.0 +1.9
ETW Entiat 88.88 36 P P 16 30 17.7 +0.9
MFID Camas Ranch 88.99 41 *e*P P 16 30 18.3 +0.9
comp=Z,21nm,0.9s
SEY Seymchan 89.00 348 P P 16 30 17.0 +0.2
comp=Z,2.1nm,0.5s,baz=148,slow=5.1,SNR=26
SEY Seymchan 89.00 348 ⇓*e*P P 16 30 17.4 +0.6
KMI Kunming 89.10 298 P P 16 30 19.1 +0.6
KMI pmax pmax
comp=Z,14nm,1.2s
KMI pmax pmax
comp=Z,68nm,6.6s
DUG Dugway, Tooele 89.11 45 P P 16 30 19.2 +1.1
baz=238
DUG Dugway, Tooele 89.11 45 *e*P P 16 30 18.5 +0.4
DUG pmax pmax
comp=Z,10.0nm,1.2s
DUG Dugway, Tooele 89.11 45 *e*P P 16 30 18.5 +0.4
comp=Z,9.7nm,1.2s
D08A Wollman Farm, 89.32 37 *e*P P 16 30 19.6 +0.9
comp=Z,13nm,0.9s
BGU Big Grassy Mou 89.36 44 *e*P P 16 30 19.5 +0.2
comp=Z,11nm,1.2s
CM01 Chiang Mai Arr 89.36 290 *e*P P 16 30 20.4 +0.8
CMAR Chiang Mai Arr 89.39 290 P P 16 30 21.2 +1.5
comp=Z,13nm,0.9s,baz=136,slow=3.5,SNR=72
CMAR PP **PP** 16 34 00.2 **-0.4**
comp=Z,2.0nm,1.0s,baz=120,slow=6.4,SNR=6.7
TLIG Tlapa 89.42 71 *e*P P 16 30 21.3 +1.3
comp=Z,19nm,0.9s
NLU North Lily Min 89.46 45 *e*P P 16 30 20.8 +1.0
comp=Z,9.0nm,1.0s
CHTO Chiang Mai 89.54 291 *e*P P 16 30 21.1 +0.7
CHTO pmax pmax
comp=Z,25nm,1.0s
CHTO Chiang Mai 89.54 291 *e*P P 16 30 21.1 +0.7
comp=Z,25nm,1.0s
F10A Beach Ranch, E 89.63 38 *e*P P 16 30 20.4 +0.2
comp=Z,11nm,0.8s
TMUT Trail Mountain 89.69 46 *e*P P 16 30 22.3 +1.3
comp=Z,40nm,0.7s
MPU Maple Canyon 89.78 46 *e*P P 16 30 22.0 +0.7
comp=Z,16nm,0.9s
B08A Colville Reser 89.87 36 *e*P P 16 30 21.0 **-0.3**
comp=Z,9.5nm,1.2s
HLID Hailey 89.92 41 P P 16 30 22.8 +0.9
baz=237
HLID Hailey 89.92 41 *e*P P 16 30 22.9 +1.1
comp=Z,7.7nm,0.9s
HVU Hansel Valley 89.97 44 *e*P P 16 30 22.9 +0.8
HVU pmax pmax
comp=Z,18nm,0.7s
HVU Hansel Valley 89.97 44 *e*P P 16 30 22.9 +0.8
comp=Z,18nm,0.7s
GMU Granite Mounta 89.99 45 *e*P P 16 30 23.2 +1.0
SRU San Rafael Swe 90.05 47 *e*P P 16 30 23.3 +0.8
SRU pmax pmax
comp=Z,29nm,0.8s
SRU San Rafael Swe 90.05 47 *e*P P 16 30 23.3 +0.8
comp=Z,29nm,0.8s
CTU Camp Tracy 90.06 45 *e*P P 16 30 23.2 +0.7
comp=Z,18nm,0.8s
P17A Butcher Ranch, 90.09 46 *e*P P 16 30 23.1 +0.4
comp=Z,30nm,1.3s
MNTX Cornudas Mount 90.10 55 P P 16 30 23.7 +1.0
baz=242
MNTX Cornudas Mount 90.10 55 *e*P P 16 30 23.7 +1.0
comp=Z,12nm,0.9s
HHC Hu-ho-hao-te 90.20 315 *e*P P 16 30 24.2 +1.1
HHC S **S** **16 40 30.2 -1.8**
HHC pmax pmax
comp=Z,31nm,1.3s
HHC pmax pmax
comp=Z,75nm,7.0s
JLU Jordanelle 90.20 45 *e*P P 16 30 23.9 +0.7
comp=Z,9.3nm,0.9s
BNM Barren Site 90.33 53 *e*P P 16 30 24.8 +0.8
TX31 Lajitas Ar. Si 90.33 58 *e*P P 16 30 24.9 +0.9
TXAR Lajitas Array 90.33 58 P P 16 30 25.3 +1.4
comp=Z,11nm,0.7s,baz=214,slow=6.7,SNR=99
LPM Los Pinos Moun 90.40 52 *e*P P 16 30 25.2 +1.0
MVCO Mesa Verde 90.47 49 P P 16 30 25.1 +0.5
baz=240
P18A Preston Nutter 90.50 46 *e*P P 16 30 25.5 +0.8
comp=Z,12nm,0.9s
TCUT Toone Canyon 90.50 45 *e*P P 16 30 25.6 +0.9
comp=Z,43nm,0.9s
HWUT Hardware Ranch 90.65 44 *e*P P 16 30 25.4 +0.1
comp=Z,12nm,0.6s
ANMO Albuquerque 90.83 52 P P 16 30 27.1 +0.9
comp=Z,6.9nm,0.9s,baz=233,slow=3.5,SNR=22
ANMO Albuquerque 90.83 52 P P 16 30 27.0 +0.7
baz=242
ANMO Albuquerque 90.83 52*c i*P P 16 30 27.0 +0.7
ANMO pmax pmax
comp=Z,14nm,1.2s
ANMO Albuquerque 90.83 52 *e*P P 16 30 26.7 +0.5
comp=Z,11nm,1.0s
CD2 Chengdu 90.90 303 P P 16 30 25.8 **-0.7**
CD2 pmax pmax
comp=Z,2.0nm,0.6s
AHID Auburn Hatcher 91.55 43 *e*P P 16 30 30.7 +1.3
comp=Z,13nm,0.9s
MCMT McKenzie Canyo 91.55 41 *e*P P 16 30 29.9 +0.5
ILAR Eielson Array 91.78 14 P P 16 30 29.0 **-0.7**
comp=Z,0.6nm,0.8s,baz=235,slow=5.9,SNR=7.9
S22A 4UR Ranch, Cre 91.89 49 P P 16 30 32.1 +0.9
baz=242
S22A 4UR Ranch, Cre 91.89 49 *e*P P 16 30 31.8 +0.6
comp=Z,13nm,1.0s
BILL Bilibino 91.96 355 ⇓*e*P P 16 30 30.7 +0.3
BILL pmax pmax
comp=Z,4.0nm,0.9s
BILL Bilibino 91.96 355 *e*P P 16 30 30.4 **0.0**
comp=Z,14nm,1.7s
MSO Missoula 91.99 39 P P 16 30 32.0 +0.8
baz=237
REDW Red Top Meadow 92.01 43 *e*P P 16 30 32.1 +0.6
comp=Z,18nm,1.4s
FXWY Fox Creek 92.05 43 *e*P P 16 30 33.2 +1.5
comp=Z,4.3nm,1.1s
O20A White River Ci 92.08 47 P P 16 30 32.6 +0.7
baz=241
O20A White River Ci 92.08 47 *e*P P 16 30 32.9 +1.0
SNOW Snow King Moun 92.12 43 *e*P P 16 30 32.6 +0.5
comp=Z,14nm,1.3s
MOOW Moose Ponds 92.28 43 *e*P P 16 30 33.1 +0.4
comp=Z,13nm,1.9s
LOHW Long Hollow 92.30 43 *e*P P 16 30 33.1 +0.3
comp=Z,3.2nm,0.8s
SMCO Snowmass 92.48 48 *e*P P 16 30 34.5 +0.5
comp=Z,7.1nm,0.8s
BW06 Boulder Array 92.53 44 P P 16 30 34.9 +1.0
baz=240
BW06 Boulder Array 92.53 44 *e*P P 16 30 34.4 +0.5
BW06 *e*PP **PP** **16 34 22.4 -2.5**
PD31 Pinedale Array 92.53 44 *e*P P 16 30 33.9 **0.0**
PDAR Pinedale Array 92.53 44 P P 16 30 34.3 +0.4
comp=Z,4.4nm,0.7s,baz=210,slow=3.5,SNR=36
PDAR PP **PP** **16 34 20.6 -4.3**
comp=Z,1.9nm,1.0s,baz=232,slow=7.0,SNR=7.4
H17A Grant Village 92.71 42 P P 16 30 36.4 +1.6
baz=239
BOZ Bozeman (W) 92.72 41 P P 16 30 35.6 +0.9
baz=239
BOZ Bozeman (W) 92.72 41 *e*P P 16 30 34.8 +0.2
BOZ pmax pmax
comp=Z,5.0nm,0.8s
BOZ Bozeman (W) 92.72 41 *e*P P 16 30 34.8 +0.2
comp=Z,5.2nm,0.8s
832A Faith Ranch, C 92.78 60 P P 16 30 35.8 +0.7
baz=245
SDCO Great Sand Dun 92.82 50 P P 16 30 36.2 +0.7
baz=242
SDCO Great Sand Dun 92.82 50 *e*P P 16 30 35.7 +0.2
comp=Z,8.0nm,0.9s
933A Laredo 93.05 61 P P 16 30 37.8 +1.4
baz=245
LZH Lanzhou 93.17 308 ⇑P P 16 30 36.3 **-0.7**
LZH pP pP 16 32 33.0 -1.0
LZH sP sP 16 33 24.5 -2.6
LZH PP **PP** **16 34 31.4 +1.5**
LZH pmax pmax
comp=Z,23nm,1.5s
LZH pmax pmax
comp=Z,76nm,9.3s
833A Chaparral WMA, 93.26 61 P P 16 30 38.5 +1.1
baz=245
034A Hebbronville 93.30 62 P P 16 30 39.4 +1.8
baz=245
T25A Trinidad 93.31 51 P P 16 30 38.6 +0.9
baz=243
T25A Trinidad 93.31 51 *e*P P 16 30 38.1 +0.4
comp=Z,6.6nm,0.9s
Q24A Divide 93.63 49 P P 16 30 40.3 +1.1
baz=242
Q24A Divide 93.63 49 *e*P P 16 30 40.0 +0.8
comp=Z,7.1nm,0.8s
934A Benavides 93.66 62 P P 16 30 40.0 +0.9
baz=245
ISCO Idaho Springs 93.70 48 P P 16 30 40.1 +0.6
baz=242
JCT Junction City 93.84 59 P P 16 30 40.5 +0.5
baz=245
JCT Junction City 93.84 59 *e*P P 16 30 40.3 +0.3
JCT pmax pmax
comp=Z,6.0nm,0.7s
JCT Junction City 93.84 59 *e*P P 16 30 40.2 +0.3
comp=Z,6.0nm,0.7s
RLMT Red Lodge 93.88 42 P P 16 30 40.8 +0.8
baz=240
RLMT Red Lodge 93.88 42 *e*P P 16 30 40.4 +0.3
comp=Z,15nm,1.9s
633A Saathoff Ranch 93.91 60 P P 16 30 40.4 +0.1
baz=245
N23A Red Feather La 93.98 47 P P 16 30 41.6 +0.9
baz=242
533A Kerrville 94.27 59 P P 16 30 42.7 +0.7
baz=245
YAK Yakutsk 94.31 339 P P 16 30 41.0 **-0.2**
YAK pmax pmax
comp=Z,11nm,1.4s
433A Art 94.51 59 P P 16 30 43.5 +0.5
baz=245
534A Blanco 94.70 59 P P 16 30 44.7 +0.8
baz=246
333A Richland Sprin 94.83 58 P P 16 30 45.1 +0.6
baz=245
ABTX Abilene, Hawle 94.87 57 P P 16 30 45.1 +0.5
baz=245
EGMT Eagleton 95.04 39 P P 16 30 45.8 +0.7
baz=240
434A Burnet 95.18 59 P P 16 30 46.7 +0.6
baz=246
KSCO Kaye Shedlock' 95.41 50 P P 16 30 47.7 +0.7
baz=244
133A Hamilton Ranch 95.42 57 P P 16 30 47.1 **0.0**
baz=246
334A Lometa 95.42 58 P P 16 30 48.0 +0.9
baz=246
X32A Elmer 95.89 55 P P 16 30 49.7 +0.6
baz=246
W32A Sentinel 96.21 54 P P 16 30 51.1 +0.6
baz=246
Y33A Hilltop Ranch, 96.22 56 P P 16 30 51.0 +0.4
baz=246
WHTX Lake Whitney, 96.30 58 Pdiff P 16 30 51.9 +0.9

baz=246
436A Wall Ranch, Ga 96.32 59 Pdiff P 16 30 51.7 +0.6
baz=246
738A Farr-Stevens R 96.47 61 Pdiff P 16 30 52.5 +0.6
baz=247
ULN Ulaanbaatar 96.49 320⇓ *e*P P 16 30 51.6 -0.1
ULN pmax pmax
comp=Z,7.0nm,1.8s
ULN Ulaanbaatar 96.49 320 *e*P P 16 30 51.4 -0.3
comp=Z,12nm,1.7s
ULN *e*PP PP 16 34 59.3 +4.3
Z34A Collier Ranch, 96.50 57 Pdiff P 16 30 52.5 +0.6
baz=246
LAO LASA Array 96.50 42 Pdiff P 16 30 52.9 +1.2
baz=242
336A Riesel 96.53 59 Pdiff P 16 30 53.0 +1.0
baz=246
J25A Sunshine Ranch 96.54 45 Pdiff P 16 30 53.2 +1.2
baz=244
135A Vickery Place, 96.56 57 Pdiff P 16 30 53.4 +1.2
baz=246
V32A Arapaho 96.60 54 Pdiff P 16 30 53.4 +1.0
baz=246
OGNE Ogallala 96.66 48 Pdiff P 16 30 52.9 +0.4
baz=245
RSSD Black Hills 96.71 45 Pdiff P 16 30 53.5 +0.7
baz=244
W33A Caddo, Fort Co 96.80 55 Pdiff P 16 30 53.8 +0.5
baz=246
Y34A Reagan Ranch, 96.85 56 Pdiff P 16 30 54.2 +0.8
baz=246
638A Rosharon 96.86 61 Pdiff P 16 30 53.8 +0.3
baz=247
437A Phantom Ranch, 96.86 59 Pdiff P 16 30 54.6 +1.1
baz=247
SONM Songino Array 96.87 319 P P 16 30 53.4 +0.1
comp=Z,0.6nm,0.5s,baz=129,slow=4.3,SNR=6.3
SONM PP PP 16 34 53.3 -4.5
comp=Z,2.4nm,1.0s,baz=135,slow=7.0,SNR=7.8
SONA1 Songino Array 96.87 319 *e*P P 16 30 52.6 -0.7
SONA1 *e*PP PP 16 34 53.2 -4.7
GTA Gaotai 97.49 310 *e*P P 16 30 57.2 +0.8
GTA pP pP 16 32 55.0 +1.3
GTA sP sP 16 33 46.1 -0.7
GTA pmax pmax
comp=Z,5.0nm,1.1s
237A Washetta, Mont 97.58 59 Pdiff P 16 30 57.5 +0.7
baz=247
V34A Guthrie 97.78 54 Pdiff P 16 30 58.4 +0.8
baz=247
R32A Long Quarter, 97.94 52 Pdiff P 16 30 58.6 +0.3
baz=246
W35A Tecumseh 98.00 55 Pdiff P 16 30 59.3 +0.7
baz=247
239A Gary 98.64 59 Pdiff P 16 31 02.7 +1.2
baz=248
J29A Okreek 98.84 47 Pdiff P 16 31 03.5 +1.2
baz=246
M31A Lambtecht Ranc 98.92 49 Pdiff P 16 31 03.6 +0.9
baz=246
T35A Sooner Cattle 98.95 54 Pdiff P 16 31 03.6 +0.7
baz=247
D26A Manning 98.98 43 Pdiff Pdif 16 31 03.9 +1.2
baz=245
W37B Quinton 99.08 56 Pdiff Pdif 16 31 04.2 +0.9
baz=248
N32A Stulken Farm, 99.17 50 Pdiff Pdif 16 31 04.8 +1.1
baz=247
X38A Whitesboro 99.36 56 Pdiff Pdif 16 31 05.6 +1.0
baz=248
O33A Hebron 99.40 50 Pdiff Pdif 16 31 05.8 +1.1
baz=247
Q34A Chapman 99.41 52 Pdiff Pdif 16 31 06.0 +1.2
baz=247
C26A Wahner Farm, P 99.53 42 Pdiff Pdif 16 31 05.5 +0.5
baz=246
140A Cam and Jess, 99.58 59 Pdiff Pdif 16 31 05.4 -0.2
baz=248
V37A Hulbert 99.58 55 Pdiff Pdif 16 31 05.3 -0.2
baz=248
I30A Oacoma 99.64 46 Pdiff Pdif 16 31 06.3 +0.6
baz=247
P34A Walnut Farm, R 99.73 51 Pdiff Pdif 16 31 07.0 +0.9
baz=248
141A Papa Simpson, 100.09 59 Pdiff Pdif 16 31 08.3 +0.4
baz=248
YKA Yellowknife Ar 100.14 25 P Pdif 16 31 07.4 +0.1
comp=Z,0.2nm,0.6s,baz=240,slow=4.8,SNR=7.5
YKA PP PP 16 35 18.8 -3.0
comp=Z,0.5nm,0.8s,baz=243,slow=7.3,SNR=6.5
D28A Regan 100.21 43 Pdiff Pdif 16 31 09.5 +1.4
baz=246
M33A Taylor Creek F 100.25 49 Pdiff Pdif 16 31 09.2 +0.8
baz=248
H32A Carlson Farm, 101.19 46 Pdiff Pdif 16 31 13.9 +1.3
baz=248
TIXI Tiksi 101.28 345 P Pdif 16 31 10.0 -2.2
ECSD EROS Data Cent 101.45 47 Pdiff Pdif 16 31 15.2 +1.4
baz=248
A29A Manning Farm, 101.71 42 Pdiff Pdif 16 31 16.2 +1.5
baz=248
J34A George 101.73 48 Pdiff Pdif 16 31 16.9 +1.9
baz=249
T40A Mansfield 102.01 55 Pdiff Pdif 16 31 16.8 +0.5
baz=250
AGMN Agassiz Nation 103.57 43 Pdiff Pdif 16 31 24.0 +1.0
baz=250
F36A Milaca 104.25 46 Pdiff Pdif 16 31 27.3 +1.2
baz=251
B35A Bob, Littlefor 104.94 44 Pdiff PKiKP 16 35 41.0 +0.4
baz=251
HDIL Hopedale 105.51 52 *e*Pdif Pdif 16 31 31.3 -0.5
ZALV Zalesovo Beam 111.72 321 PKiKP PKiKP 16 35 52.1 -1.0
comp=Z,0.6nm,0.4s,baz=184,slow=1.5,SNR=4.3
ZALV PP PP 16 36 41.4 -4.6
comp=Z,0.6nm,0.5s,baz=104,slow=5.3,SNR=4.2
ZALV SKiKP SKiKP 16 38 38.4 -0.1
comp=Z,1.3nm,0.7s,baz=232,slow=0.9,SNR=4.9
MKAR Makanchi Array 111.94 313 PKiKP PKiKP 16 35 53.0 -0.8
comp=Z,0.8nm,0.7s,baz=100,slow=0.8,SNR=9.0
MKAR PP PP 16 36 44.2 -3.6
comp=Z,1.3nm,0.8s,baz=89,slow=7.9,SNR=3.7
MKAR SKiKP SKiKP 16 38 39.5 +0.3
comp=Z,1.1nm,0.7s,baz=106,slow=1.1,SNR=5.9
KURK Kurchatov 114.98 317 PKIKP PKPdf 16 35 58.7 -0.8
KURK 16 37 06.3
KURK *e* 16 38 44.8
KURK Kurchatov 114.98 317 PKP PKPdf 16 35 58.6 -0.9
KURK PP PP 16 37 06.2 -2.6
KURK *e* 16 38 44.8
KURBB Kurchatov Arra 115.02 316 PKP PKPdf 16 35 58.6 -0.9
comp=Z,2.0nm,0.8s,baz=94,slow=1.9,SNR=16
KURBB PP PP 16 37 06.2 -2.9
comp=Z,1.8nm,0.9s,baz=96,slow=7.0,SNR=6.2
KURBB SKiKP SKiKP 16 38 44.8 -0.3
comp=Z,1.2nm,0.8s,baz=93,slow=2.0,SNR=5.2
KSH Kashi 115.09 304 *e*PKP PKPdf 16 36 00.4 +0.1
KSH *es*PKP 16 38 58.7
KSH PKS PKSdf 16 39 37.2 +0.1
KSH SKS SKSdf 16 42 22.1 -0.3
KSH SKKS SKKSac 16 43 17.3 +1.2
KSH AMB AMB
comp=Z,97nm,4.8s
BDFB Brasilia 119.00 125 PKP PKPdf 16 36 07.6 -0.9
comp=Z,1.2nm,0.6s,baz=28,slow=9.4,SNR=3.8
KKAR Karatay Array 119.67 307 *e*PKIKP PKPdf 16 36 08.3 -0.6
KKAR Karatay Array 119.67 307 *e*PKPdf PKPdf 16 36 08.2 -0.6
BVAR Borovoye Array 120.21 319 PKP PKPdf 16 36 08.9 -0.7
comp=Z,1.9nm,0.4s,baz=114,slow=2.1,SNR=12
BVAR PP PP 16 37 40.4 -4.2
comp=Z,1.7nm,0.8s,baz=79,slow=7.7,SNR=4.7
BVAR SKiKP SKiKP 16 38 55.5 +0.3
comp=Z,1.4nm,0.7s,baz=223,slow=32,SNR=4.9
ZRNK Zerenda 121.05 319 *e*PKIKP PKPdf 16 36 10.3 -0.9
ZRNK Zerenda 121.05 319 *e*PKPdf PKPdf 16 36 10.3 -0.9
ARU Arti 126.64 324 *e*PKIKP PKPdf 16 36 21.6 -0.2
ARU Arti 126.64 324 *e*PKPdf PKPdf 16 36 21.6 -0.2
ABKAR Akbulak array 126.99 315 *e*PKPdf PKPdf 16 36 22.5 -0.1
GEYT Alibeck 128.79 300 PKP PKPdf 16 36 26.7 +0.2
comp=Z,3.8nm,0.8s,baz=180,slow=1.3,SNR=6.6
GEYT PP PP 16 38 40.5 -1.3
comp=Z,1.1nm,0.6s,baz=28,slow=3.4,SNR=3.6
GEYT SKPbc SKPbc 16 38 58.0
comp=Z,4.7nm,0.7s,baz=90,slow=0.4,SNR=8.0
ARCES ARCESS Array B 131.62 348 PKhKP PKPpre 16 36 20.8
comp=Z,4.1nm,1.0s,baz=337,slow=2.8,SNR=5.1
ARCES PKP PKPdf 16 36 30.3 -0.6
comp=Z,2.5nm,0.9s,baz=65,slow=0.9,SNR=8.8
ARCES SKPbc SKPbc 16 39 07.5 +0.4
comp=Z,6.1nm,0.7s,baz=23,slow=4.0,SNR=14
KMBO Kilima Mbogo 136.19 241 SKPbc SKPbc 16 39 24.9 +1.0
comp=Z,3.4nm,0.9s,baz=66,slow=4.0,SNR=8.9
KMBO Kilima Mbogo 136.19 241 *e*SKPdf SKPdf 16 39 26.2 -0.1
FIA1 FINESS Array S 138.18 342 *e*PKPdf PKPdf 16 36 43.4 +0.2
FINES FINESS Array B 138.18 342 PKhKP PKPpre 16 36 31.8
comp=Z,1.0nm,0.5s,baz=48,slow=2.8,SNR=7.0
FINES PKP PKPdf 16 36 43.9 +0.6
comp=Z,2.5nm,0.5s,baz=102,slow=4.4,SNR=17
FINES SKPbc SKPbc 16 39 28.1 +0.3
comp=Z,14nm,0.8s,baz=64,slow=4.4,SNR=23
NC303 NORSAR Array S 141.61 351 *e*PKPpre PKPpre 16 36 44.3
NB2 NORSAR Subarra 141.81 351 PKP PKPpre 16 36 45.7
comp=Z,1.4nm,0.6s,baz=16,slow=3.2
NOA NORSAR Array B 141.81 351 PKhKP PKPpre 16 36 45.5
comp=Z,2.8nm,0.6s,baz=16,slow=4.7,SNR=13
NOA SKPbc SKPbc 16 39 37.8 +0.3
comp=Z,3.7nm,0.7s,baz=12,slow=4.2,SNR=14
NC602 NORSAR Array S 142.05 351 *e*P PKPpre 16 36 45.8
KBSD Kabsdagh 142.79 301 *e*P PKPpre 16 36 45.9
KBSD Kabsdagh 142.79 301 *e*P PKPpre 16 36 48.4
MZRK Al-Mazaregh 142.88 299 *e*P PKPpre 16 36 46.9
MZRK Al-Mazaregh 142.88 299 *e*P PKPpre 16 36 48.6
DIYA Diyarbakir 142.96 302 *i*P **PKPdf** **16 36 50.8 -1.9**
KELT Kelkit 143.13 306 *i*P PKPbc 16 36 51.8 +0.6
SFNV Sufian 143.22 300 *e*P PKPab 16 36 50.1 -1.0
SFNV Sufian 143.22 300 *e*P PKPab 16 36 50.4 -0.7
KONO Kongsberg 143.37 352 *e*PKIKP PKPab 16 36 50.7 -0.1
KONO Kongsberg 143.37 352 *e*PKPpre PKPab 16 36 50.7 -0.1
GRSN GIRESUNGRSN 143.65 308 *i*P PKPab 16 36 52.2 -0.4
ELZG Elazig 143.72 303 *i*P **PKPdf** **16 36 54.5 +0.3**
SUSE Susehri 143.89 306 *i*P **PKPdf** **16 36 54.8 +0.4**
KEMA Kemaliye 143.91 305 *i*P **PKPdf** **16 36 54.5 +0.1**
MNKR ALMNKUR 143.97 299 *e*P PKPbc 16 36 48.2 -5.5
MNKR ALMNKUR 143.97 299 *e*P PKPbc 16 36 49.6 -4.2
KSRV Kasrt alli 144.20 299 *e*P PKPbc 16 36 51.4 -3.1
KSRV Kasrt alli 144.20 299 *e*P PKPbc 16 36 51.5 -2.9
SURC SANLIURFA_SURC 144.33 301 *i*P **PKPab** **16 36 55.2 -0.1**
AKCD Akcadag 144.58 303 *i*P **PKPab** **16 36 56.9 +0.6**
CUKAN kangal_SIVAS 144.67 305 *i*P **PKPab** **16 36 57.1 +0.5**
AKASG Malin Array Be 144.72 327 PKP **PKPdf** **16 36 54.9 -0.3**
comp=Z,16nm,0.6s,baz=44,slow=4.1,SNR=58
AKASG pPKP **pPKPdf** **16 39 00.1 +0.3**
comp=Z,0.9nm,0.5s,baz=43,slow=3.8,SNR=8.1
AKASG SKPbc **SKiKP** **16 39 45.3 +0.1**
comp=Z,11nm,0.8s,baz=48,slow=2.4,SNR=25
AKBB Malin Array Si 144.72 327 *e*PKIKP **PKPdf** **16 36 55.0 -0.3**
AKBB *e* 16 39 45.7
AKBB Malin Array Si 144.72 327 *e*PKPdf **PKPdf** **16 36 55.0 -0.3**
AKBB *e*SKPbc **SKiKP** **16 39 45.7 +0.5**
KIEV Kiev 144.73 327 *d*iPKIKP **PKPdf** **16 36 54.8 -0.5**
KIEV Kiev 144.73 327 *e*PKPdf **PKPdf** **16 36 55.0 -0.3**
AK11 Malin Array Si 144.76 327 *e*PKPdf **PKPdf** **16 36 55.0 -0.3**
ERBA Erbaa 144.81 308 *i*P **PKPab** **16 36 57.3 +0.3**
HOMB Homborsund 144.85 352 *e*P **PKPab** **16 36 56.3 -0.1**
SUW Suwalki 145.00 336 *e*PKP **PKPab** **16 36 57.6 +0.4**
SUW Suwalki 145.00 336 *e*PKIKP **PKPab** **16 36 57.6 +0.4**
SIM Simferopol' 145.04 316 *d*iPKIKP **PKPdf** **16 36 55.4 -0.6**
SIM pmax pmax
comp=Z,50nm,0.8s
GZT Gaziantep 145.06 302 *i*P **PKPab** **16 36 58.1 -0.1**
KUZU Kuzuini 145.56 301 *i*P **PKPab** **16 36 59.5 -0.5**
AYKD Aykdinkavak 145.63 302 *i*P **PKPab** **16 36 59.5 -0.8**
KAMA Osmaniye 145.79 302 *i*P **PKPbc** **16 36 59.9 +0.6**
BOYT Boyabat 145.90 310 *i*P **PKPab** **16 37 00.4 -0.9**
DRWC Darouich 145.91 301 *e*P **PKPdf** **16 36 54.8 -3.0**
COAL Corum-Alaca 146.23 308 *i*P **PKPbc** **16 37 01.0 +0.5**
WRDH Warideh 146.33 299 *e*P PKPpre 16 36 55.1
WRDH Warideh 146.33 299 *e*P PKPpre 16 36 53.9
BIDA Albida 146.50 298 *e*P PKPpre 16 36 54.3
BIDA Albida 146.50 298 *e*P PKPpre 16 36 55.5
HAWK Haweek 146.51 297 *e*P **PKPdf** **16 36 57.1 -1.8**
BSD Bornholm Skovb 146.65 344 *i*PKP2 **PKPbc** **16 37 00.8 -0.1**
SORM Soroca 146.76 324 ⇓*i*P **PKPbc** **16 37 01.3 -0.2**
SORM Soroca 146.76 324 ⇓PKP2 **PKPbc** **16 37 01.3 -0.2**
BR131 Keskin Array S 147.38 307 *e*PKPbc **PKPbc** **16 37 03.2 -0.4**
BRTR Keskin Array B 147.38 307 PKPbc **PKPbc** **16 37 03.2 -0.4**
comp=Z,12nm,0.6s,baz=146,slow=4.7,SNR=26
BRTR SKPbc SKPbc 16 39 52.0 +0.9
comp=Z,2.4nm,1.0s,baz=52,slow=2.4,SNR=3.6
BEL Belsk 147.61 336 *e*PKP **PKPbc** **16 37 04.3 +0.7**
BEL Belsk 147.61 336 *e*PKP2 **PKPbc** **16 37 04.3 +0.7**
AKSY AKSARAY - Alti 147.63 306 *i*P **PKPbc** **16 37 04.4 +0.2**
LVV L'vov 147.78 330 *e*PKIKP **PKPbc** **16 37 03.6 -0.5**
ANTO Ankara 147.94 308 *e*PKP2 **PKPbc** **16 37 04.9 -0.1**
ANTO Ankara 147.94 308 *e*PKPbc **PKPbc** **16 37 04.9 -0.1**
BR231 Keskin MP Arra 147.97 308 *e*PKPbc **PKPbc** **16 37 05.2 +0.1**
KWP Kalwaria Pacla 148.51 331 *e*PKP **PKPbc** **16 37 06.4 +0.5**
KWP Kalwaria Pacla 148.51 331 *e*PKP2 **PKPbc** **16 37 06.5 +0.5**
CFR Carcaliu 148.60 320 ⇓*i*P **PKPbc** **16 37 06.5 +0.2**
CFR Carcaliu 148.60 320 ⇓PKP2 **PKPbc** **16 37 06.5 +0.2**
TESR Tescani 148.66 323 ⇓*i*P **PKPbc** **16 37 06.6 +0.1**
BUR08 Bucovina Ar. S 148.71 326 *e*PKPbc **PKPbc** **16 37 07.9 +1.2**
BURAR Bucovina Array 148.72 326 ⇓*i*P **PKPbc** **16 37 07.8 +1.1**
BURAR Bucovina Array 148.72 326 ⇓PKP2 **PKPbc** **16 37 07.8 +1.1**
ODBI Odobesti 148.89 322 ⇓*i*P **PKPab** **16 37 18.2 +5.1**
KDHN Kadinhani 148.90 306 *i*P **PKPbc** **16 37 07.4 0.0**
HARR Harsova 148.99 319 ⇓*i*P **PKPbc** **16 37 07.9 +0.6**
HARR Harsova 148.99 319 ⇓PKP2 **PKPbc** **16 37 07.9 +0.6**
VRI Vrincioaia 149.01 322 ⇓*i*P **PKPbc** **16 37 07.4 +0.1**
PLOR Plostina 149.06 322 ⇓*i*P **PKPbc** **16 37 07.9 +0.4**
KOLS Kolonicke sedl 149.22 331 *e*PKP2 **PKPbc** **16 37 08.9 +1.2**
KOLS Kolonicke sedl 149.22 331 *e*PKP **PKPbc** **16 37 08.9 +1.2**
OJC Ojcow 149.28 335 *e*PKP **PKPbc** **16 37 08.0 +0.2**
OJC Ojcow 149.28 335 *e*PKPbc **PKPbc** **16 37 08.0 +0.2**
STHS Stebnicka Huta 149.31 332 *e*PKP2 **PKPbc** **16 37 08.9 +1.0**
STHS Stebnicka Huta 149.31 332 *e*PKP **PKPbc** **16 37 08.8 +0.9**
MSAB Monastry St. A 149.38 319 ⇓*i*P **PKPbc** **16 37 08.7 +0.5**
UZH Uzhgorod 149.43 330 ⇓*i*PKHKP PKPpre 16 37 08.3
UZH *e* 16 37 12.5
ARCR ARCALIA 149.51 326 ⇓*i*P **PKPbc** **16 37 09.1 +0.6**
CRVS Cervenica-Dubn 149.60 331 *e*PKHKP **PKPbc** **16 37 09.6 +1.0**
CRVS Cervenica-Dubn 149.60 331 *e*PKP **PKPbc** **16 37 09.6 +1.0**
MLR Muntele Rosu 149.68 322 ⇓PKHKP **PKPbc** **16 37 08.9 -0.2**
MLR Muntele Rosu 149.68 322 *e*PKPbc **PKPbc** **16 37 08.6 -0.5**
DOPR Dopca 149.69 324 ⇓*i*P **PKPbc** **16 37 09.8 +0.8**
NIE Niedzica 149.70 333 *e*PKP **PKPbc** **16 37 09.9 +1.0**
NIE Niedzica 149.70 333 *e*PKHKP **PKPbc** **16 37 09.9 +1.0**
KSP Ksiaz 150.02 339 *e*PKP **PKPbc** **16 37 10.4 +0.9**
KSP Ksiaz 150.02 339 *e*PKHKP **PKPbc** **16 37 10.5 +0.9**
CJR Cluj-Napoca 150.15 326 ⇓*i*P **PKPbc** **16 37 10.6 +0.5**
CJR Cluj-Napoca 150.15 326 ⇓PKIKP **PKPbc** **16 37 10.6 +0.5**
VOIR 150.21 323 ⇓*i*P **PKPbc** **16 37 10.7 +0.4**
VOIR 150.21 323 ⇓PKIKP **PKPbc** **16 37 10.7 +0.4**
OKC Ostrava-Krasne 150.21 335 *e*PKPAB **PKPab** **16 37 11.9 +0.4**
LANS Liptovska Anna 150.25 334 *e*PKIKP **PKPbc** **16 37 11.7 +1.5**
LANS Liptovska Anna 150.25 334 *e*PKP **PKPbc** **16 37 11.7 +1.5**
ISP Isparta 150.31 306 *e*PKIKP **PKPbc** **16 37 09.6 -1.2**
ISP Isparta 150.31 306 *e*PKPbc **PKPbc** **16 37 09.6 -1.2**
KECS Kecovo 150.34 332 *e*PKP **PKPab** **16 37 19.6 +0.5**
UPC Upice 150.40 339⇑ *e*PKP **PKPbc** **16 37 11.1 +0.6**
UPC *e*PKPAB **PKPab** **16 37 20.2 +0.9**
UPC Upice 150.40 339 *e*PKIKP **PKPbc** **16 37 11.1 +0.6**
UPC *e* 16 37 20.2
ULDT Uludag 150.43 311 *i*P **PKPbc** **16 37 11.7 +0.6**
DPC Dobruska-Polom 150.43 339⇑ *e*PKP **PKPbc** **16 37 11.4 +0.8**
DPC *ex* x 16 37 18.3
DPC *e*pPKP **pPKPdf** **16 39 12.1 +2.6**
DPC Dobruska-Polom 150.43 339 *e*PKIKP **PKPbc** **16 37 11.4 +0.8**
DPC *e* 16 37 18.3
DPC *e* 16 39 12.1
ARR Arges 150.48 323 ⇓*i*P **PKPbc** **16 37 12.2 +1.3**
MORC Moravsky Berou 150.49 337 *e*PKIKP **PKPbc** **16 37 10.6 -0.1**
MORC *e* 16 37 20.0
MORC Moravsky Berou 150.49 337 *e*PKPbc **PKPbc** **16 37 10.6 -0.1**
MORC *e*PKPab **PKPab** **16 37 20.0 +0.3**
DRGR 150.54 327 ⇓*i*P **PKPbc** **16 37 11.1 +0.1**
DRGR 150.54 327 ⇓PKIKP **PKPbc** **16 37 11.1 +0.1**
CLL Collm 150.59 343 ⇓*i*PKPbc **PKPbc** **16 37 11.2 +0.4**
comp=Z,14nm,0.8s
CLL *i* PKPab **PKPab** **16 37 19.9 -0.1**
comp=Z,10.0nm,0.6s
CLL *e*pPKPbc **pPKPbc** **16 39 20.0 +5.7**
CLL *i* pPKPab **pPKPab** **16 39 23.8 +5.0**
CLL Collm 150.59 343 ⇓*i*PKIKP **PKPbc** **16 37 11.2 +0.4**
CLL *i* 16 37 19.9
CLL pmax pmax
comp=Z,14nm,0.8s
CLL pmax pmax
comp=Z,10.0nm,0.6s
CLL Collm 150.59 343 *e*PKPbc **PKPbc** **16 37 10.9 +0.1**
KORT Korkueli 150.71 304 *i*P **PKPbc** **16 37 12.2 +0.4**
BRG Berggiesshubel 150.72 342 *i*PKP **PKPbc** **16 37 11.6 +0.4**
comp=Z,12nm,0.6s
BRG *i* 16 37 21.0
comp=Z,8.9nm,0.8s
BRG *e*pPKP **pPKPdf** **16 39 20.2 +10**
comp=Z,4.7nm,0.9s
BRG Berggiesshubel 150.72 342 *i*PKIKP **PKPbc** **16 37 11.6 +0.4**
BRG *i* 16 37 21.0
BRG pmax pmax
comp=Z,12nm,0.6s
BRG pmax pmax
comp=Z,5.0nm,0.9s
VYHS Vyhne 151.03 334 *e*PKP **PKPab** **16 37 22.8 +0.8**
DURS Dursunbey 151.12 310 *i*P **PKPbc** **16 37 11.6 -1.0**
VRAC Vranov 151.22 337 ⇓*i*P **PKPab** **16 37 23.5 +0.8**
GOPC GO Pecny, Ondr 151.31 340⇑ *e*PKP **PKPab** **16 37 13.2 +0.6**
GOPC *e*PKPAB **PKPab** **16 37 23.8 +0.7**
GOPC GO Pecny, Ondr 151.31 340 *e*PKIKP **PKPbc** **16 37 13.2 +0.6**
GOPC *e* 16 37 23.8
PRU Pruhonice 151.32 340⇑ *e*PKP **PKPbc** **16 37 12.8 +0.2**
PRU *e*PKPAB **PKPbc** **16 37 23.8 +0.7**
PRU Pruhonice 151.32 340 *e*PKIKP **PKPbc** **16 37 12.8 +0.2**
PRU *e* 16 37 23.8
SIRR Siria 151.43 328 ⇓*i*P **PKPbc** **16 37 13.4 +0.5**
GZR Gura Zlata 151.46 325 ⇓*i*P **PKPbc** **16 37 12.8 -0.3**
GZR Gura Zlata 151.46 325 ⇓PKIKP **PKPbc** **16 37 12.8 -0.3**
BALY Balya 151.66 311 *i*P **PKPbc** **16 37 13.0 -0.7**
NKC Novy Kostel 151.71 343⇑ *e*PKP **PKPbc** **16 37 14.2 +0.7**
NKC *e*PKPAB **PKPab** **16 37 25.4 +0.6**
NKC Novy Kostel 151.71 343 *e*PKIKP **PKPbc** **16 37 14.2 +0.7**
NKC *e* 16 37 25.4
BZS Buzias 151.90 327 ⇓*i*P **PKPbc** **16 37 14.0 0.0**
BZS Buzias 151.90 327 ⇓PKIKP **PKPbc** **16 37 14.0 0.0**
KHC Kasperske Hory 152.38 341 *e*PKPDF **PKPdf** **16 37 07.6 0.0**
KHC ⇑*e*PKP **PKiKP** **16 37 15.4 +0.3**
KHC *e*PKPAB **PKPab** **16 37 28.4 +0.7**
KHC Kasperske Hory 152.38 341 *e*PKIKP **PKPdf** **16 37 07.6 0.0**
KHC *e* 16 37 28.4
MDVR Moldovita 152.43 325 ⇓*i*P **PKPbc** **16 37 15.0 -0.3**
GERES GERESS Array B 152.59 340 PKPbc **PKPbc** **16 37 15.7 +0.1**
comp=Z,1.5nm,0.7s,baz=11,slow=2.7,SNR=12
GERES PKPab **PKPab** **16 37 27.6 -1.1**
comp=Z,1.3nm,0.6s,baz=20,slow=6.0,SNR=7.9
CONA Conrad Observa 152.64 336 *i*PKPab **PKPab** **16 37 30.0 +1.1**
comp=Z,13nm,0.8s
VTS Vitosha 153.00 320 ⇓*i*P **PKPab** **16 37 31.6 +0.9**
VTS Vitosha 153.00 320 ⇓PKP2 **PKPab** **16 37 31.6 +0.9**
VTS Vitosha 153.00 320 *e*PKPab **PKPab** **16 37 31.7 +1.0**
MOA Molln 153.27 338 *i*PKPab **PKPab** **16 37 32.3 +0.8**
comp=Z,5.1nm,0.9s
ARSA Arzberg 153.34 336 *i*PKPab **PKPab** **16 37 32.2 +0.4**
comp=Z,7.4nm,1.0s
SOKA Soboth 154.00 336 *i*PKPab **PKPab** **16 37 35.0 +0.3**
comp=Z,5.6nm,0.7s
PERS Pernice 154.00 336 *i*PKPbc **PKPab** **16 37 34.8 +0.1**
OBKA Obir 154.32 336 *i*PKPab **PKPab** **16 37 36.0 -0.1**
comp=Z,6.5nm,0.7s
MYKA Terra Mystica 154.54 338 *i*PKPab **PKPab** **16 37 36.8 -0.2**
comp=Z,6.2nm,0.7s
WATA Walderalm 154.58 341 *i*PKPab **PKPab** **16 37 37.7 +0.4**
WTTA Wattenberg 154.63 341 *i*PKPab **PKPab** **16 37 38.2 +0.6**
comp=Z,4.7nm,0.5s
RETA Reutte 154.67 343 *i*PKPab **PKPab** **16 37 38.1 +0.6**
comp=Z,5.3nm,0.7s
VISS Visnje 154.80 335 *i*PKPbc **PKPab** **16 37 37.9 -0.2**
ABTA Abfaltersbach 154.82 339 *i*PKPab **PKPab** **16 37 38.0 -0.2**
comp=Z,4.2nm,0.7s
BOJS Bojanci 154.89 334 *i*PKPbc **PKPab** **16 37 38.5 +0.1**
JAVS Javornik 155.02 336 *i*PKPbc **PKPab** **16 37 38.5 -0.6**
DAVA Damuels 155.09 344 *e*PKPab **PKPab** **16 37 39.8 +0.4**
comp=Z,10nm,0.8s
FUORN Ofenpass-Fuorn 155.60 343 *e*PKPab **PKPab** **16 37 42.8 +1.0**
TUE Stuetta 155.98 344 *e*PKPab **PKPab** **16 37 43.6 +0.2**
DBIC Dimbokro 162.51 164 PKP **PKPdf** **16 37 20.8 -0.2**
comp=Z,3.2nm,1.0s,baz=170,slow=6.1,SNR=3.5
DBIC PKPab **PKPab** **16 38 13.2 +0.9**
comp=Z,2.0nm,0.7s,baz=240,slow=3.4,SNR=2.7
KEST Kesra 165.45 328 PKPab **PKPab** **16 38 25.0 0.0**
comp=Z,5.1nm,0.8s,baz=353,slow=7.1,SNR=6.9
KEST Kesra 165.45 328 *e*PKPab **PKPab** **16 38 26.1 +1.0**
TOA0 Torodi Ar. Sit 169.44 189 *e*PKPab **PKPab** **16 38 43.2 +0.3**
TORD Torodi Ar. Bea 169.44 189 PKPab **PKPab** **16 38 43.2 +0.3**
comp=Z,1.6nm,0.8s,baz=167,slow=4.2,SNR=7.6
TAM Tamanrasset 174.81 262 *e*PKP2 **PKPab** **16 39 08.1 +0.9**
TAM Tamanrasset 174.81 262 *e*PKPab **PKPab** **16 39 08.1 +0.9**
comp=Z,10.0nm,0.6s
CLL Collm 150.59 343 *e*PKPbc **PKPbc** **16 37 10.9 +0.1**
KORT Korkueli 150.71 304 *i*P **PKPbc** **16 37 12.2 +0.4**
BRG Berggiesshubel 150.72 342 *i*PKP **PKPbc** **16 37 11.6 +0.4**
comp=Z,12nm,0.6s
BRG *i* 16 37 21.0
comp=Z,8.9nm,0.8s
BRG *e*pPKP **pPKPdf** **16 39 20.2 +10**
comp=Z,4.7nm,0.9s
BRG Berggiesshubel 150.72 342 *i*PKIKP **PKPbc** **16 37 11.6 +0.4**
BRG *i* 16 37 21.0
BRG pmax pmax
comp=Z,12nm,0.6s
BRG pmax pmax
comp=Z,5.0nm,0.9s
VYHS Vyhne 151.03 334 *e*PKP **PKPab** **16 37 22.8 +0.8**
DURS Dursunbey 151.12 310 *i*P **PKPbc** **16 37 11.6 -1.0**
VRAC Vranov 151.22 337 ⇓*i*P **PKPab** **16 37 23.5 +0.8**
GOPC GO Pecny, Ondr 151.31 340⇑ *e*PKP **PKPab** **16 37 13.2 +0.6**
GOPC *e*PKPAB **PKPab** **16 37 23.8 +0.7**
GOPC GO Pecny, Ondr 151.31 340 *e*PKIKP **PKPbc** **16 37 13.2 +0.6**
GOPC *e* 16 37 23.8
PRU Pruhonice 151.32 340⇑ *e*PKP **PKPbc** **16 37 12.8 +0.2**
PRU *e*PKPAB **PKPbc** **16 37 23.8 +0.7**
PRU Pruhonice 151.32 340 *e*PKIKP **PKPbc** **16 37 12.8 +0.2**
PRU *e* 16 37 23.8
SIRR Siria 151.43 328 ⇓*i*P **PKPbc** **16 37 13.4 +0.5**
GZR Gura Zlata 151.46 325 ⇓*i*P **PKPbc** **16 37 12.8 -0.3**
GZR Gura Zlata 151.46 325 ⇓PKIKP **PKPbc** **16 37 12.8 -0.3**
BALY Balya 151.66 311 *i*P **PKPbc** **16 37 13.0 -0.7**
NKC Novy Kostel 151.71 343⇑ *e*PKP **PKPbc** **16 37 14.2 +0.7**
NKC *e*PKPAB **PKPab** **16 37 25.4 +0.6**
NKC Novy Kostel 151.71 343 *e*PKIKP **PKPbc** **16 37 14.2 +0.7**
NKC *e* 16 37 25.4
BZS Buzias 151.90 327 ⇓*i*P **PKPbc** **16 37 14.0 0.0**
BZS Buzias 151.90 327 ⇓PKIKP **PKPbc** **16 37 14.0 0.0**
KHC Kasperske Hory 152.38 341 *e*PKPDF **PKPdf** **16 37 07.6 0.0**
KHC ⇑*e*PKP **PKiKP** **16 37 15.4 +0.3**
KHC *e*PKPAB **PKPab** **16 37 28.4 +0.7**
KHC Kasperske Hory 152.38 341 *e*PKIKP **PKPdf** **16 37 07.6 0.0**
KHC *e* 16 37 28.4
MDVR Moldovita 152.43 325 ⇓*i*P **PKPbc** **16 37 15.0 -0.3**
GERES GERESS Array B 152.59 340 PKPbc **PKPbc** **16 37 15.7 +0.1**
comp=Z,1.5nm,0.7s,baz=11,slow=2.7,SNR=12
GERES PKPab **PKPab** **16 37 27.6 -1.1**
comp=Z,1.3nm,0.6s,baz=20,slow=6.0,SNR=7.9
CONA Conrad Observa 152.64 336 *i*PKPab **PKPab** **16 37 30.0 +1.1**
comp=Z,13nm,0.8s
VTS Vitosha 153.00 320 ⇓*i*P **PKPab** **16 37 31.6 +0.9**
VTS Vitosha 153.00 320 ⇓PKP2 **PKPab** **16 37 31.6 +0.9**
VTS Vitosha 153.00

CN2	**Changchun**	**13.59**	**299**	*e*P		**Pn**	**16 24 49.0**	**+1.1**
PETK	**Petropavlovsk-**	**18.46**	**31**	P		**Pn**	**16 25 50.6**	**+0.8**
	0.2nm,0.3s,baz=215,slow=7.2,SNR=4.2							
NJ2	**Nanjing**	**19.79**	**259**	*e*P		**Pn**	**16 26 05.0**	**-0.8**
NJ2				pmax	pmax			
	comp=Z,16nm,0.7s							
MA2	**Magadan**	**22.10**	**12**	P		**P**	**16 26 28.4**	**-0.1**
	8.7nm,0.7s,baz=216,slow=8.6,SNR=13							
MA2				LR	LR		16 34 31.9	
	comp=Z,27nm,20.0s,baz=126,slow=35							
MA2	**Magadan**	**22.10**	**12**	*e*P		**P**	**16 26 28.1**	**-0.3**
	32nm,0.8s							
HHC	**Hu-ho-hao-te**	**23.47**	**286**	*e*P		**P**	**16 26 41.5**	**-1.3**
HHC				pmax	pmax			
	comp=Z,18nm,0.7s							
HHC				pmax	pmax			
	comp=Z,49nm,4.6s							
SEY	**Seymchan**	**25.54**	**11**	P		**P**	**16 27 02.9**	**+1.6**
	4.9nm,0.9s,baz=207,slow=8.5,SNR=21							
SONM	**Songino Array**	**27.44**	**302**	P		**P**	**16 27 18.4**	**-0.4**
	1.1nm,0.7s,baz=98,slow=8.9,SNR=7.4							
ENH	**Enshi**	**27.82**	**263**	*e*P		**P**	**16 27 20.8**	**-1.5**
	14nm,0.7s							
H11N2	**WAKE ISLAND Hy**	**28.47**	**123**	T		T	16 57 44.6	
	baz=316,slow=76,SNR=979							
H11N1	**WAKE ISLAND Hy**	**28.48**	**123**	T		T	16 57 49.6	
	baz=316,slow=76,SNR=1334							
H11N3	**WAKE ISLAND Hy**	**28.49**	**123**	T		T	16 57 50.3	
	baz=316,slow=76,SNR=849							
H11S1	**WAKE ISLAND Hy**	**29.23**	**125**	T		T	16 58 44.9	
	baz=318,slow=76,SNR=638							
H11S3	**WAKE ISLAND Hy**	**29.23**	**125**	T		T	16 58 44.6	
	baz=318,slow=76,SNR=657							
H11S2	**WAKE ISLAND Hy**	**29.25**	**125**	T		T	16 58 45.9	
	baz=318,slow=76,SNR=416							
LZH	**Lanzhou**	**30.25**	**278**	*e*P		**P**	**16 27 43.1**	**-0.8**
LZH				pP		pP	16 27 57.0	-0.7
LZH				sP		sP	16 28 04.5	+0.3
LZH				*e*PP		**PnPn**	**16 28 43.0**	**-0.4**
LZH				pmax	pmax			
	comp=Z,19nm,1.2s							
LZH				pmax	pmax			
	comp=Z,46nm,5.4s							
LZH				LR	LR			
	comp=N,200nm,13.0s							
LZH				LR	LR			
	comp=E,210nm,12.9s							
LZH				LR	LR			
	comp=Z,260nm,16.7s							
CD2	**Chengdu**	**32.06**	**268**	P		**P**	**16 27 58.3**	**-1.5**
CD2				pmax	pmax			
	comp=Z,1.0nm,0.5s							
GTA	**Gaotai**	**32.58**	**285**	*e*P		**P**	**16 28 04.3**	**0.0**
GTA				pP		pP	16 28 19.2	+1.0
GTA				sP		sP	16 28 26.2	+1.5
GTA				pmax	pmax			
	comp=Z,3.0nm,0.8s							
BILL	**Bilibino**	**32.77**	**17**	*e*P		**P**	**16 28 04.1**	**-1.3**
	1.4nm,0.4s							
WMQ	**Urumqi**	**40.64**	**296**	P		**P**	**16 29 13.4**	**+0.6**
WMQ				pP		pP	16 29 27.1	+0.2
WMQ				S		**S**	**16 35 17.5**	**-1.2**
WMQ				pmax	pmax			
	comp=Z,6.0nm,0.6s							
WMQ				pmax	pmax			
	comp=Z,35nm,5.0s							
WMQ				LR	LR			
	comp=N,8.0nm,18.4s							
WMQ				LR	LR			
	comp=E,10.0nm,18.4s							
ZAA0	**Zalesovo Array**	**41.39**	**311**	*e*P		**P**	**16 29 18.1**	**-0.6**
ZALV	**Zalesovo Beam**	**41.39**	**311**	P		**P**	**16 29 18.3**	**-0.4**
	2.2nm,0.5s,baz=85,slow=9.1,SNR=11							
CMAR	**Chiang Mai Arr**	**42.17**	**254**	P		**P**	**16 29 25.2**	**-0.3**
	0.3nm,0.5s,baz=43,slow=9.3,SNR=4.7							
LSA	**Lhasa**	**42.48**	**274**	*e*P		**P**	**16 29 28.8**	**+0.3**
	3.4nm,0.6s							
MKAR	**Makanchi Array**	**43.80**	**301**	P		**P**	**16 29 38.0**	**-0.5**
	2.3nm,0.7s,baz=84,slow=10.0,SNR=28							
MKAR	**Makanchi Array**	**43.80**	**301**	*e*P		**P**	**16 29 37.7**	**-0.7**
KURK	**Kurchatov**	**45.49**	**307**	*e*P		**P**	**16 29 51.0**	**-0.7**
	6.0nm,0.7s							
TRF	**Thorofare Moun**	**46.83**	**35**	*e*P		**P**	**16 30 04.1**	**+1.8**
RAMN	**Ramite**	**47.30**	**273**	*e*P		**P**	**16 30 06.1**	**-0.4**
	16nm,0.7s							
KKN	**Kakani**	**47.94**	**275**	*e*P		**P**	**16 30 11.4**	**-0.1**
	8.5nm,0.6s							
PKIN	**Phulchoki**	**47.95**	**275**	*e*P		**P**	**16 30 10.4**	**-1.2**
	4.5nm,0.6s							
ILAR	**Eielson Array**	**48.28**	**33**	P		**P**	**16 30 13.9**	**+0.6**
	1.4nm,0.7s,baz=266,slow=6.5,SNR=18							
ILB	**Eielson Array**	**48.28**	**33**	*e*P		**P**	**16 30 13.7**	**+0.4**
GKN	**Gorkha**	**48.35**	**276**	*e*P		**P**	**16 30 14.4**	**-0.1**
	9.5nm,0.4s							
KOLN	**Koldanda**	**49.27**	**276**	*e*P		**P**	**16 30 21.4**	**-0.3**
	5.1nm,0.4s							
TKM2	**Tokmak 2**	**49.39**	**298**	*e*P		**P**	**16 30 22.5**	**+0.1**
	2.8nm,0.6s							
PYUN	**Piuthan**	**49.59**	**277**	*e*P		**P**	**16 30 23.9**	**-0.2**
DOT	**Dot Lake**	**49.60**	**34**	*e*P		**P**	**16 30 23.7**	**+0.2**
ZRNK	**Zerenda**	**50.87**	**312**	*e*P		**P**	**16 30 32.9**	**-0.4**
	2.1nm,0.9s							
INK	**Inuvik**	**53.15**	**28**	P		**P**	**16 30 49.5**	**-0.3**
	0.4nm,0.4s,baz=62,slow=27,SNR=4.2							
INK	**Inuvik**	**53.15**	**28**	*e*P		**P**	**16 30 50.8**	**+0.9**
	5.1nm,1.1s							
ABKAR	**Akbulak array**	**57.45**	**310**	*e*P		**P**	**16 31 20.2**	**-0.9**
DLBC	**Dease Lake**	**57.45**	**39**	P		**P**	**16 31 22.8**	**+1.7**
	2.1nm,0.8s,baz=317,slow=5.5,SNR=3.4							
WRA	**Warramunga Arr**	**58.31**	**188**	P		**P**	**16 31 26.9**	**-0.4**
	1.2nm,0.5s,baz=6.6,slow=7.4,SNR=7.4							
RES	**Resolute Bay**	**61.34**	**15**	P		**P**	**16 31 47.3**	**-0.2**
	2.3nm,0.5s,baz=312,slow=6.1,SNR=23							
RES	**Resolute Bay**	**61.34**	**15**	*e*P		**P**	**16 31 47.2**	**-0.4**
	3.0nm,0.8s							
ASAR	**Alice Springs**	**62.03**	**188**	P		**P**	**16 31 52.5**	**-0.3**
	1.3nm,0.8s,baz=28,slow=8.0,SNR=3.7							
YKA	**Yellowknife Ar**	**62.58**	**31**	P		**P**	**16 31 56.3**	**+0.3**
	0.9nm,0.8s,baz=302,slow=7.0,SNR=12							
ARCES	**ARCESS Array B**	**63.00**	**339**	P		**P**	**16 31 59.7**	**+1.0**
	3.7nm,0.9s,baz=40,slow=7.2,SNR=3.2							
FINES	**FINESS Array B**	**67.92**	**332**	P		**P**	**16 32 29.9**	**-0.7**
	2.0nm,0.7s,baz=354,slow=1.9,SNR=5.5							
NB2	**NORSAR Subarra**	**73.22**	**337**	P		**P**	**16 33 03.3**	**+0.4**
	comp=Z,0.7nm,0.6s,baz=40,slow=6.2							
NOA	**NORSAR Array B**	**73.22**	**337**	P		**P**	**16 33 02.4**	**-0.6**
	comp=Z,1.3nm,0.8s,baz=40,slow=5.8,SNR=4.6							
NVAR	**Mina Array Bea**	**73.97**	**54**	P		**P**	**16 33 08.8**	**+0.8**
	comp=Z,1.1nm,0.8s,baz=282,slow=6.4,SNR=5.1							
BW06	**Boulder Array**	**76.56**	**46**	*e*P		**P**	**16 33 23.3**	**+0.5**
PDAR	**Pinedale Array**	**76.56**	**46**	P		**P**	**16 33 23.5**	**+0.7**
	comp=Z,1.5nm,0.6s,baz=251,slow=1.7,SNR=12							
TXAR	**Lajitas Array**	**89.09**	**53**	P		**P**	**16 34 28.6**	**+0.9**
	comp=Z,1.3nm,0.6s,baz=297,slow=3.4,SNR=10							
KEST	**Kesra**	**94.29**	**323**	LR		LR	17 20 11.1	
	comp=Z,44nm,18.2s,baz=302,slow=37							
LPAZ	**La Paz**	**145.76**	**59**	PKPbc		**PKPbc**	**16 41 12.3**	**+0.1**
	comp=Z,2.7nm,0.6s,baz=17,slow=4.0,SNR=13							

*IDC **10** 16:21:52.8±2.9, 40.°54N×125.°69W, h0km, mb3.3/2, mb1 3.7/4, mb1mx3.3/56, mbtmp3.6/4, ML4.3/2, MS2.7/2, Ms1 2.7/2, ms1mx2.5/19, Error ellipse: s-maj=32.1km s-min=23.3km az=82.0*
*NEIC **10** 16:21:53.4, 40.°46N×125.°90W, h21km, MW3.9(BRK), After NCEDC.*
ISC 10 16:21:53.0±3.3, 40.°54N±0.°06×125.°66W±0.°08, h1km±19km, n51, σ1°19/60, Off coast of northern California

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JCC	**Jacoby Creek,**	**1.27**	**77**	*e*Pn	**Pn**	**16 22 16.3**	**-1.5**
JCC				*e*Sn	**Sb**	**16 22 34.4**	**-0.2**
KHMM	**Horse Mountain**	**1.50**	**76**	*e*Pn	**Pn**	**16 22 20.0**	**-1.3**
KHMM				*e*Sn	**Sn**	**16 22 40.8**	**-0.8**
KMRM	**Mail Ridge**	**1.52**	**101**	*e*Pn	**Pn**	**16 22 20.6**	**-0.8**
KMRM				*e*Sn	**Sg**	**16 22 41.7**	**-0.3**
KIPM	**Iron Peak**	**1.82**	**113**	*e*Pn	**Pn**	**16 22 24.4**	**-1.2**
L02D	**Cave Junction,**	**2.24**	**43**	P	**Pn**	**16 22 30.8**	**-0.5**
	baz=226,SNR=629						
L02D				S	**Sn**	**16 22 57.5**	**-2.0**
	baz=226						
N02D	**Trinity Center**	**2.29**	**78**	P	**Pn**	**16 22 31.0**	**-1.0**
	baz=259,SNR=61						
N02D				S	**Sn**	**16 23 00.0**	**-0.7**
	baz=259						
M02C	**Callahan**	**2.29**	**67**	P	**Pn**	**16 22 31.3**	**-0.7**
	baz=249,SNR=303						
M02C				S	**Sn**	**16 23 01.0**	**+0.2**
	baz=249						
WDC	**Whiskeytown Da**	**2.38**	**88**	*e*Pn	**Pn**	**16 22 32.4**	**-0.7**
GASB	**Alder Springs**	**2.42**	**110**	*e*Pn	**Pn**	**16 22 32.8**	**-1.1**
HOPS	**Hopland Field**	**2.52**	**127**	*e*Pn	**Pn**	**16 22 32.4**	**-2.7**
YBH	**Yreka Blue Hor**	**2.53**	**61**	Pn	**Pn**	**16 22 35.5**	**+0.2**
	21nm,0.3s,baz=287,slow=8.6,SNR=376						
YBH				LR	LR	16 22 49.8	
	comp=Z,96nm,21.7s,baz=305,slow=22						
YBH				Sn	**Sn**	**16 23 07.3**	**+0.6**
	7.3nm,0.3s,baz=137,slow=14,SNR=5.3						
YBH	**Yreka Blue Hor**	**2.53**	**61**	*e*Pn	**Pn**	**16 22 34.7**	**-0.6**
YBH				Sn	**Sn**	**16 23 07.3**	**+0.6**
HUMO	**Hull Mountain**	**2.90**	**44**	*e*Pn	**Pn**	**16 22 40.2**	**-0.1**
O03D	**Paynes Creek**	**2.96**	**93**	P	**Pn**	**16 22 40.3**	**-0.8**
	baz=274,SNR=118						
O03D				S	**Sn**	**16 23 15.8**	**-1.4**
	baz=274						
M04C	**Macdoel**	**3.14**	**65**	P	**Pn**	**16 22 44.9**	**+1.2**
	baz=248,SNR=18						
DBO	**Dodson Butte**	**3.15**	**34**	P	**Pn**	**16 22 44.3**	**+0.5**
MCCM	**Marconi Confer**	**3.22**	**137**	*e*Pn	**Pn**	**16 22 41.6**	**-3.0**
ORV	**Oroville**	**3.34**	**106**	*e*Pn	**Pn**	**16 22 44.9**	**-1.4**
HOG	**Hogback Mounta**	**3.43**	**59**	P	**Pn**	**16 22 49.0**	**+1.3**
I03D	**Drain, OR**	**3.60**	**28**	P	**Pn**	**16 22 49.8**	**-0.1**
	baz=211,SNR=161						
I03D				S	**Sn**	**16 23 31.9**	**-1.0**
	baz=211						
K04D	**Chiloquin, OR**	**3.60**	**53**	P	**Pn**	**16 22 51.0**	**+1.0**
	baz=236,SNR=17						
AFDM	**Forest Hills D**	**3.95**	**112**	*e*Pn	**Pn**	**16 22 53.5**	**-1.2**
I04A	**Tendick Farm,**	**4.05**	**36**	P	**Pn**	**16 22 57.2**	**+1.0**
	baz=219,SNR=38						
K05A	**Summer Lake**	**4.19**	**57**	*e*Pn	**Pn**	**16 22 59.2**	**+1.0**
MOD	**Modoc Plateau**	**4.26**	**70**	*e*Pn	**Pn**	**16 22 59.2**	**0.0**
J05D	**Fort Rock, OR**	**4.29**	**49**	P	**Pn**	**16 23 00.7**	**+1.0**
	baz=232,SNR=32						
COR	**Corvallis**	**4.41**	**22**	*e*Pn	**Pn**	**16 23 01.1**	**+0.1**
CMB	**Columbia Colle**	**4.79**	**120**	*e*Pn	**Pn**	**16 23 07.3**	**+0.9**
H04A	**Detroit Lake**	**4.87**	**31**	*e*Pn	**Pn**	**16 23 07.8**	**+0.4**
I05D	**Terrebonne, OR**	**4.96**	**39**	P	**Pn**	**16 23 08.9**	**+0.1**
	baz22						
SAO	**San Andreas Ge**	**5.01**	**137**	*e*Pn	Pn	16 23 06.0	-3.3
SAO				*e*Sn	**Sn**	**16 24 09.2**	**+1.5**
F03A	**Seaside**	**5.61**	**15**	*e*Pn	**Pn**	**16 23 19.1**	**+1.6**
WVOR	**Wild Horse Val**	**5.61**	**68**	*e*Pn	**Pn**	**16 23 17.7**	**+0.1**
G05D	**Wamic, OR**	**5.68**	**33**	P	**Pn**	**16 23 19.1**	**+0.5**
	baz=217						
G06A	**Carlson Farm,**	**5.97**	**37**	*e*Pn	**Pn**	**16 23 24.0**	**+1.4**
NVAR	**Mina Array Bea**	**6.07**	**108**	Pn	**Pn**	**16 23 24.8**	**+0.7**
	3.0nm,0.3s,baz=283,slow=15,SNR=56						
NV01	**Mina Array Sit**	**6.07**	**108**	*e*Pn	**Pn**	**16 23 24.5**	**+0.5**
E03A	**Lebam**	**6.20**	**14**	*e*Pn	**Pn**	**16 23 25.7**	**+0.2**
LON	**Longmire**	**6.81**	**23**	*e*Pn	**Pn**	**16 23 34.3**	**+0.2**
HAWA	**Hanford**	**7.36**	**35**	*e*Pn	**Pn**	**16 23 41.8**	**+0.3**
ISA	**Isabella, Lake**	**7.47**	**128**	*e*Pn	**Pn**	**16 23 42.1**	**-1.0**
BMO	**Blue Mountains**	**7.51**	**52**	*e*Pn	**Pn**	**16 23 45.6**	**+1.9**
LTY	**Liberty**	**7.62**	**27**	*e*Pn	**Pn**	**16 23 46.2**	**+1.0**
MFID	**Camas Ranch**	**7.87**	**65**	*e*Pn	**Pn**	**16 23 49.0**	**+0.3**
HLID	**Hailey**	**8.90**	**66**	*e*Pn	**Pn**	**16 24 05.2**	**+2.4**
NEW	**Newport**	**9.84**	**35**	LR	LR	16 28 19.8	
	comp=Z,64nm,19.2s,baz=258,slow=39						
MCMT	**McKenzie Canyo**	**10.36**	**61**	*e*Pn	**Pn**	**16 24 20.7**	**-2.2**
MSO	**Missoula**	**10.56**	**50**	*e*Pn	**Pn**	**16 24 27.9**	**+2.4**
SWMT	**Swartz Lake**	**10.90**	**46**	*e*Pn	**Pn**	**16 24 29.6**	**-0.7**
ULM	**Lac du Bonnet**	**22.92**	**55**	P	**P**	**16 26 59.2**	**+0.9**
	3.6nm,0.8s,baz=261,slow=9.6,SNR=5.0						
YKA	**Yellowknife Ar**	**22.97**	**13**	P	**P**	**16 26 58.3**	**-0.3**
	0.2nm,0.8s,baz=198,slow=9.2,SNR=3.8						

*IDC **10** 16:26:09.7±2.3, 35.°83N×141.°03E, h0km, mb3.5/5, mb1 3.5/7, mb1mx3.3/59, mbtmp3.5/7, ML3.5/2, Error ellipse: s-maj=64.6km s-min=20.5km az=66.0*
*ISCJB **10** 16:26:19.6±0.8, 35.°57N±0.°05×140.°16E±0.°09, h75km±4km, mb3.4/5, Error ellipse: s-maj=13.3km s-min=7.4km az=157.1*
*JMA **10** 16:26:19.4±0.2, 35.°64N×140.°19E, h67km±2km, M2.5*
ISC 10 16:26:20.8±1.1, 35.°57N±0.°06×140.°13E±0.°08, h68km±7km, n15, σ0°91/20, mb3.4/5, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JCN	**Nagara**	**0.16**	**159**	P	**Pn**	**16 26 30.5**	**-0.5**
JCN				*e*S	**Sn**	**16 26 39.2**	**+0.8**
TOK	**Tokyo**	**0.33**	**291**	*e*S	**Sn**	**16 26 41.0**	**+1.1**
BSO3	**Boso 3**	**0.83**	**158**	P	**Pn**	**16 26 36.0**	**-0.8**
BSO3				X		16 26 48.6	
JOD2	**Odawara 2**	**0.91**	**250**	P	**Pn**	**16 26 37.6**	**-0.4**
JOD2				S	**Sn**	**16 26 50.6**	**-0.2**
JAG	**Ashikaga**	**1.01**	**327**	P	**Pn**	**16 26 38.1**	**-1.3**
JIM2	**Oshima 3**	**1.03**	**214**	P	**Pn**	**16 26 38.6**	**-1.0**
JIM2				S	**Sn**	**16 26 53.0**	**-0.5**
JRY	**Ryogami san**	**1.09**	**294**	P	**Pn**	**16 26 40.3**	**-0.1**
MJAR	**Matsushiro Arr**	**1.83**	**302**	Pn	**Pn**	**16 26 49.4**	**-0.8**
	7.6nm,0.3s,baz=59,slow=24,SNR=38						
MAT	**Matsushiro**	**1.84**	**302**	P	**Pn**	**16 26 50.3**	**+0.1**
MAT				S	**Sn**	**16 27 13.4**	**+0.9**
JHJ	**Hachijo jima 2**	**2.46**	**187**	Pn	**Pn**	**16 26 59.1**	**+0.4**
	27nm,0.3s,baz=157,slow=22,SNR=9.2						
JHJ				Sn	**Sn**	**16 27 28.9**	**+1.2**
	44nm,0.3s,baz=237,slow=23,SNR=6.9						
ZALV	**Zalesovo Beam**	**42.15**	**314**	P	**P**	**16 34 07.9**	**+1.6**
	0.2nm,0.3s,baz=102,slow=6.1,SNR=2.1						
MKAR	**Makanchi Array**	**44.03**	**303**	P	**P**	**16 34 21.9**	**+0.2**
	0.5nm,0.9s,baz=96,slow=7.4,SNR=4.4						
KURBB	**Kurchatov Arra**	**46.10**	**309**	P	**P**	**16 34 37.6**	**-0.4**
	0.7nm,0.7s,baz=83,slow=7.9,SNR=4.4						
WRA	**Warramunga Arr**	**55.48**	**187**	P	**P**	**16 35 47.5**	**-1.3**
	0.2nm,0.5s,baz=1.5,slow=7.7,SNR=4.8						
ASAR	**Alice Springs**	**59.21**	**187**	P	**P**	**16 36 15.2**	**+0.2**
	0.4nm,1.0s,baz=25,slow=7.1,SNR=3.9						

IDC 10 16:27:40.1±6.3, 17.°52S×174.°52W, h0km, mb3.8/3, mb1 4.1/4, mb1mx3.6/46, mbtmp3.9/4, ML3.2/1, Error ellipse: s-maj=265.0km s-min=23.6km az=139.0, Tonga Islands

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
AFI	**Afiamalu**	**4.46**	**37**	Pn	Pn	16 28 48.9	-0.1
	1.1nm,0.3s,baz=218,slow=19,SNR=3.3						
AFI				Sn	Sn	16 29 40.7	-0.9
	7.7nm,0.3s,baz=139,slow=15,SNR=8.1						
WRA	**Warramunga Arr**	**48.35**	**259**	P	P	16 36 23.8	-0.1
	0.9nm,0.5s,baz=95,slow=8.1,SNR=19						
ASAR	**Alice Springs**	**48.46**	**254**	P	P	16 36 24.4	-0.4
	1.3nm,0.6s,baz=91,slow=7.6,SNR=25						
ILAR	**Eielson Array**	**84.72**	**12**	P	P	16 40 16.1	+0.5
	0.3nm,0.7s,baz=225,slow=6.2,SNR=4.2						

*NIED **10** 16:28:00, 38.°50N×142.°20E, h14km, Mw3.7 Best double couple: M0 3.35000×10^14 NP1:φs12.00000°, δ15.00000°, λ-134.00000°. NP2:φs237.00000°, δ79.00000°, λ-79.00000°.*
*ISCJB **10** 16:28:52.8±1.7, 38.°36N±0.°05×142.°28E±0.°10, h26km±10km, mb4.2/2, Error ellipse: s-maj=13.2km s-min=8.8km az=169.9*
*IDC **10** 16:28:53.9±3.7, 37.°89N×143.°03E, h0km, mb4.1/2, mb1 4.1/4, mb1mx3.5/58, mbtmp4.0/4, ML3.4/2, Error ellipse: s-maj=71.9km s-min=37.7km az=170.0*
*JMA **10** 16:28:54.7±0.1, 38.°45N×142.°21E, h30km±2km, M4.2*
JMA Felt I J1.
ISC 10 16:28:53.6±2.9, 38.°38N±0.°05×142.°17E±0.°10, h17km±15km, n9, σ1°09/16, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**0.65**	**277**	P	**Pn**	**16 29 07.6**	**-0.4**
JIO				S	**Sg**	**16 29 16.2**	**+1.3**
JMK	**Ichinoseki**	**0.94**	**308**	P	**Pb**	**16 29 11.5**	**+0.1**
JMK				S	**Sb**	**16 29 23.6**	**+0.1**
JOU	**Okura**	**1.18**	**270**	P	**Pb**	**16 29 16.4**	**+0.8**
JOU				S	**Sn**	**16 29 31.8**	**+0.7**
JMM	**Marumori**	**1.20**	**245**	P	**Pn**	**16 29 15.9**	**+0.3**
JMM				*e*S	**Sb**	**16 29 31.6**	**+0.6**
JOM	**Ohasama**	**1.29**	**328**	P	**Pn**	**16 29 16.5**	**-0.3**
JOM				S	**Sn**	**16 29 32.5**	**-1.2**
MJAR	**Matsushiro Arr**	**3.64**	**241**	Pn	**Pb**	**16 29 56.9**	**-0.7**
	1.1nm,0.3s,baz=86,slow=16,SNR=4.7						
MJAR				Sn	**Sg**	**16 30 47.9**	**-2.7**
	1.5nm,0.3s,baz=26,slow=19,SNR=4.1						
JHJ	**Hachijo jima 2**	**5.59**	**201**	Pn	**Pn**	**16 30 16.8**	**+0.8**
	7.2nm,0.3s,baz=120,slow=23,SNR=2.9						
JHJ				Sn	**Sn**	**16 31 19.1**	**-0.8**
	5.2nm,0.3s,baz=146,slow=24,SNR=3.1						
WRA	**Warramunga Arr**	**58.48**	**189**	P	**P**	**16 38 48.8**	**0.0**
	2.0nm,0.7s,baz=5.5,slow=7.1,SNR=19						
ASAR	**Alice Springs**	**62.20**	**189**	P	**P**	**16 39 14.8**	**+0.7**
	1.3nm,0.7s,baz=7.8,slow=5.3,SNR=21						

*IDC **10** 16:33:56.6±0.6, 36.°33N×141.°14E, h0km, mb4.0/20, mb1 4.2/23, mb1mx4.1/54, mbtmp4.1/23, ML3.5/2, MS3.1/11, Ms1 3.2/11, ms1mx2.9/55, Error ellipse: s-maj=15.8km s-min=12.5km az=110.0*
*NIED **10** 16:34:00, 36.°40N×141.°10E, h47km, Mw4.2 Best double couple: M0 2.54000×10^15 NP1:φs210.00000°, δ23.00000°, λ16.00000°. NP2:φs106.00000°, δ84.00000°, λ112.00000°.*
*JMA **10** 16:34:01.6±0.1, 36.°37N×141.°11E, h48km±1km, M4.2*
JMA Felt II J1.
*NEIC **10** 16:34:03.0±0.7, 36.°42N×141.°07E, h43km±7km, mb4.5/14, Error ellipse: s-maj=8.3km s-min=5.4km az=125.0*
ISC 10 16:34:00.4±0.7, 36.°42N±0.°04×141.°18E±0.°05, h22km±5km, n85, σ1°10/78, mb4.3/36, MS3.4/10, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JHO	**Hitachi**	**0.53**	**291**	P	**Pn**	**16 34 12.4**	**-0.2**
JHO				S	**Sn**	**16 34 20.1**	**-0.7**
ONAJ	**Iwakimizuishiy**	**0.74**	**336**	P	**Pn**	**16 34 15.9**	**+0.3**
CHOJ	**Chosi**	**0.76**	**200**	P	**Pb**	**16 34 15.1**	**+0.2**
CHOJ				*e*S	**Sb**	**16 34 24.9**	**+0.1**
JYT	**Yasato**	**0.82**	**257**	P	**Pb**	**16 34 15.9**	**+0.1**
JYT				S	**Sb**	**16 34 26.1**	**-0.3**
JFK	**Kawauchi**	**0.97**	**346**	P	**Pn**	**16 34 19.1**	**+0.3**
JFT	**Otama**	**1.29**	**329**	P	**Pb**	**16 34 24.7**	**+0.8**
JFT				S	**Sb**	**16 34 40.8**	**+0.8**
JAG	**Ashikaga**	**1.39**	**271**	P	**Pn**	**16 34 24.3**	**-0.1**
JAG				S	**Sn**	**16 34 41.1**	**-1.0**
MJAR	**Matsushiro Arr**	**2.39**	**274**	Pn	**Pn**	**16 34 38.6**	**+0.3**
	28nm,0.3s,baz=112,slow=8.9,SNR=365						
MJAR				Sn	**Sn**	**16 35 08.7**	**+1.7**
	24nm,0.3s,baz=90,slow=15,SNR=8.7						
MJAR				LR	LR	16 35 52.8	
	comp=Z,204nm,19.4s,baz=90,slow=50						
MAJO	**Matsushiro**	**2.40**	**274**	*e*Pn	**Pn**	**16 34 39.7**	**+1.4**
MAT	**Matsushiro**	**2.40**	**274**	P	**Pn**	**16 34 39.5**	**+1.2**
MAT				S	**Sn**	**16 35 06.2**	**-0.8**
JHJ2	**Mitsune**	**3.48**	**199**	*e*Pn	**Pn**	**16 34 54.6**	**+1.3**
JHJ	**Hachijo jima 2**	**3.49**	**200**	Pn	**Pn**	**16 34 54.5**	**+1.2**
	42nm,0.3s,baz=329,slow=19,SNR=27						
JHJ				Sn	**Sn**	**16 35 36.4**	**+2.5**
	98nm,0.3s,baz=96,slow=20,SNR=5.7						
INU	**Inuyama**	**3.54**	**254**	*e*Pn	**Pn**	**16 34 56.2**	**+2.1**
ERM	**Erimo**	**5.79**	**15**	*e*Pn	**Pn**	**16 35 24.9**	**0.0**
ERM				*e*Sn	Sn	16 36 39.2	+8.5
JNU	**Nakatsue**	**9.09**	**252**	LR	LR	16 40 15.4	
	comp=Z,69nm,18.8s,baz=123,slow=42						
CBIJ	**Chichi jima**	**9.34**	**174**	*e*Pn	Pn	16 36 09.6	-4.1
JCJ	**Chichijima**	**9.34**	**174**	Pn	**Pn**	**16 36 11.1**	**-2.5**
	18nm,0.3s,baz=114,slow=23,SNR=24						
USRK	**Ussuriysk Ar.**	**10.46**	**321**	Pn	Pn	16 36 32.1	+3.1
	0.2nm,0.3s,baz=215,slow=38,SNR=3.3						
YSS	**Yuzh-Sakhalins**	**10.59**	**6**	*e*Pn	**Pn**	**16 36 30.6**	**-0.1**
KSRS	**Korea Array**	**10.66**	**280**	Pn	Pn	16 36 36.9	+5.1
	0.2nm,0.3s,baz=92,slow=14,SNR=5.8						
KSRS				LR	LR	16 40 57.4	
	comp=Z,38nm,18.2s,baz=100,slow=39						
KSAR	**Wonju Array Be**	**10.69**	**279**	Pn	Pn

WMQ	**Urumqi**	**40.95**	**297**	ScS	ScS		16 51 47.0	+2.1
WMQ				pmax	pmax			
	comp=Z,4.0nm,0.6s							
WMQ				pmax	pmax			
	comp=Z,99nm,4.0s							
WMQ				LR	LR			
	comp=N,13nm,18.2s							
WMQ				LR	LR			
	comp=E,6.0nm,19.8s							
WMQ				LR	LR			
	comp=Z,11nm,18.2s							
CMAR	**Chiang Mai Arr**	**41.16**	**256**	P	P		**16 41 42.4**	**-0.8**
	comp=Z,0.4nm,0.6s,baz=107,slow=13,SNR=4.5							
CMAR				LR	LR		17 00 55.8	
	comp=Z,22nm,18.9s,baz=220,slow=39							
ZAA0	**Zalesovo Array**	**42.19**	**313**	*e*P	P		**16 41 50.4**	**-0.9**
ZALV	**Zalesovo Beam**	**42.19**	**313**	P	P		**16 41 51.3**	**+0.1**
	comp=Z,1.9nm,0.6s,baz=94,slow=6.8,SNR=8.5							
NRIK	**Noril'sk**	**43.74**	**336**	LR	LR		17 01 21.4	
	comp=Z,48nm,18.3s,baz=105,slow=38							
MKAR	**Makanchi Array**	**44.28**	**303**	P	P		**16 42 08.8**	**+0.4**
	comp=Z,0.4nm,0.6s,baz=89,slow=9.2,SNR=4.6							
KURK	**Kurchatov**	**46.16**	**309**	*e*P	P		**16 42 22.4**	**-0.7**
	comp=Z,5.6nm,0.8s							
CAST	**Castle Rocks**	**47.84**	**34**	*e*P	P		**16 42 37.9**	**+1.8**
	comp=Z,3.9nm,0.8s							
MLY	**Manley**	**48.47**	**32**	*e*P	P		**16 42 42.8**	**+1.8**
	comp=Z,5.1nm,0.9s							
MDM	**Murphy Dome**	**49.54**	**32**	*e*P	P		**16 42 50.6**	**+1.5**
	comp=Z,11nm,0.8s							
HDA	**Harding Lake**	**50.10**	**33**	*e*P	P		**16 42 53.9**	**+0.6**
	comp=Z,39nm,2.0s							
IL1	**Eielson Array**	**50.11**	**32**	*e*P	P		**16 42 53.8**	**+0.3**
ILAR	**Eielson Array**	**50.11**	**32**	P	P		**16 42 54.4**	**+0.9**
	comp=Z,4.9nm,0.8s,baz=268,slow=6.4,SNR=57							
ILB	**Eielson Array**	**50.11**	**32**	*e*P	P		**16 42 54.1**	**+0.6**
BVAR	**Borovoye Array**	**50.84**	**313**	P	P		**16 42 59.0**	**-0.2**
	comp=Z,0.7nm,0.6s,baz=92,slow=10,SNR=3.8							
DOT	**Dot Lake**	**51.42**	**33**	*e*P	P		**16 43 03.9**	**+0.5**
	comp=Z,10nm,0.8s							
ZRNK	**Zerenda**	**51.68**	**313**	*e*P	P		**16 43 05.4**	**0.0**
	comp=Z,4.9nm,1.4s							
INK	**Inuvik**	**55.02**	**27**	P	P		**16 43 31.0**	**+1.3**
	comp=Z,4.5nm,0.9s,baz=298,slow=6.6,SNR=23							
INK	**Inuvik**	**55.02**	**27**	*e*P	P		**16 43 30.5**	**+0.9**
	comp=Z,4.3nm,0.8s							
FITZ	**Fitzroy Crossi**	**56.18**	**198**	P	P		**16 43 38.0**	**-0.6**
	comp=Z,1.1nm,0.5s,baz=32,slow=7.0,SNR=6.5							
WRA	**Warramunga Arr**	**56.43**	**188**	P	P		**16 43 39.0**	**-1.4**
	comp=Z,3.6nm,0.7s,baz=4.7,slow=7.3,SNR=38							
ABKAR	**Akbulak array**	**58.19**	**310**	*e*P	P		**16 43 51.7**	**-0.8**
AS01	**Alice Springs**	**60.15**	**188**	*e*P	P		**16 44 04.9**	**-1.4**
ASAR	**Alice Springs**	**60.16**	**188**	P	P		**16 44 05.2**	**-1.2**
	comp=Z,2.0nm,0.7s,baz=359,slow=5.1,SNR=33							
SPITS	**Spitsbergen Ar**	**61.09**	**349**	LR	LR		17 12 24.2	
	comp=Z,24nm,18.6s,baz=65,slow=38							
RES	**Resolute Bay**	**63.24**	**14**	*e*P	P		**16 44 26.6**	**+0.1**
	comp=Z,3.3nm,1.0s							
YKA	**Yellowknife Ar**	**64.43**	**30**	P	P		**16 44 34.9**	**+0.4**
	comp=Z,0.9nm,0.7s,baz=301,slow=6.6,SNR=21							
OBN	**Obninsk**	**68.47**	**323**	LR	LR		17 15 18.5	
	comp=Z,26nm,19.0s,baz=36,slow=36							
FINES	**FINESS Array B**	**69.27**	**332**	P	P		**16 45 05.3**	**-0.1**
	comp=Z,1.2nm,0.6s,baz=169,slow=1.9,SNR=4.4							
FCC	**Fort Churchill**	**74.63**	**26**	*e*P	P		**16 45 37.1**	**-0.4**
	comp=Z,8.1nm,1.3s							
NB2	**NORSAR Subarra**	**74.68**	**337**	P	P		**16 45 37.8**	**-0.1**
	comp=Z,1.7nm,0.7s,baz=40,slow=6.2							
NOA	**NORSAR Array B**	**74.68**	**337**	LR	LR		17 21 39.8	
	comp=Z,35nm,19.7s,baz=350,slow=38							
NV01	**Mina Array Sit**	**75.51**	**53**	*e*P	P		**16 45 43.9**	**+0.6**
NVAR	**Mina Array Bea**	**75.51**	**53**	P	P		**16 45 44.3**	**+1.0**
	comp=Z,1.2nm,0.7s,baz=293,slow=5.3,SNR=9.9							
PDAR	**Pinedale Array**	**78.23**	**45**	P	P		**16 45 58.5**	**-0.1**
	comp=Z,0.6nm,0.6s,baz=276,slow=2.4,SNR=8.8							
GERES	**GERESS Array B**	**83.13**	**328**	P	P		**16 46 24.1**	**-0.4**
	comp=Z,0.3nm,0.6s,baz=12,slow=7.1,SNR=2.5							
LPAZ	**La Paz**	**147.16**	**60**	PKPbc	**PKPdf**		**16 53 41.7**	**+0.9**
	comp=Z,0.6nm,0.5s,baz=14,slow=7.7,SNR=4.6							

ISCJB ***10*** *16:34:53.2±0.3,23.83N±0.02×122.17E±0.01,h21km±3km, Error ellipse: s-maj=3.4km s-min=1.8km az=157.4*
JMA ***10*** *16:34:53.6±0.1,23.83N×122.11E,h30km±4km,M2.8*
TAP ***10*** *16:34:54.5,23.87N×122.12E,h36km,ML3.4,C*
ISC 10 16:34:51.9±1.1,23.79N±0.02×122.14E±0.02,h15km±9km, n66,σ0s56/126,18C-1D,Taiwan region

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
HWA	**Hwalien**	**0.52**	**291**	P		**Pn**	**16 35 04.6**	**-0.1**
	baz=277							
HWA				*e*S		**Sb**	**16 35 10.4**	**+0.4**
	baz=277							
TEGC	**Jichi Village**	**0.55**	**261**	*e*P		**Pn**	**16 35 06.1**	**+0.9**
	baz=253							
TEGC				*e*S		**Sn**	**16 35 14.6**	**+0.4**
	baz=253							
TWD	**Chiawan**	**0.57**	**300**	⇑*i*P		**Pn**	**16 35 04.9**	**-0.5**
	baz=287							
TWD				*i* S		**Sb**	**16 35 12.7**	**+1.1**
	baz=287							
ESF	**Shoufeng Towns**	**0.58**	**278**	*e*P		**Pn**	**16 35 06.0**	**+0.4**
	baz=270							
ESL	**Shilin**	**0.65**	**272**	⇑*i*P		**Pn**	**16 35 06.2**	**-0.3**
	baz=258							
ESL				*e*S		**Sb**	**16 35 14.7**	**+1.0**
	baz=258							
ENA	**Nanau**	**0.73**	**330**	⇑*i*P		**Pn**	**16 35 07.3**	**-0.4**
	baz=316							
ENA				*e*S		**Sb**	**16 35 16.4**	**+0.4**
	baz=316							
EHY	**Hungye**	**0.80**	**249**	⇑*i*P		**Pn**	**16 35 09.1**	**+0.4**
	baz=257							
EHY				*e*S		**Sn**	**16 35 20.1**	**-0.2**
	baz=257							
TWC	**Suao**	**0.85**	**342**	*e*P		**Pn**	**16 35 09.2**	**-0.1**
	baz=352							
TWC				S		**Sg**	**16 35 19.5**	**-0.2**
	baz=352							
WHF	**Hehuan Shan**	**0.87**	**294**	⇑*i*P		**Pn**	**16 35 09.7**	**-0.3**
	baz=289							
TWF1	**Yuli**	**0.89**	**240**	⇑P		**Pn**	**16 35 10.7**	**+0.9**
	baz=227							
TWF1				*e*S		**Sn**	**16 35 22.4**	**0.0**
	baz=227							
WDT	**Danda**	**0.92**	**268**	⇑*i*P		**Pn**	**16 35 11.0**	**+0.4**
	baz=262							
WDT				S		**Sb**	**16 35 22.6**	**+0.8**
	baz=262							
NNS	**Nan Shan**	**0.95**	**313**	*e*P		**Pb**	**16 35 10.5**	**+0.4**
	baz=310							
NNS				*e*S		**Sg**	**16 35 22.3**	**-0.5**
	baz=310							
JYNG	**Yonagunijimaku**	**0.99**	**48**	P		**Pn**	**16 35 11.7**	**+0.5**
JYNG				S		**Sg**	**16 35 24.2**	**+0.3**
CHKT	**Chengkung**	**0.99**	**226**	*e*P		**Pn**	**16 35 11.4**	**+0.2**
	baz=213							
CHKT				*e*S		**Sb**	**16 35 23.7**	**+0.2**
	baz=213							
ENTT	**Nioudou**	**0.99**	**328**	P		**Pn**	**16 35 11.4**	**+0.1**
	baz=327							
ENTT				*e*S		**Sb**	**16 35 23.4**	**-0.2**
	baz=327							
TWT	**Tachien**	**0.99**	**298**	⇑P		**Pn**	**16 35 11.9**	**+0.5**
	baz=294							
TWT				*e*S		**Sb**	**16 35 24.1**	**+0.3**
	baz=294							
TWE	**Neicheng**	**1.02**	**335**	P		**Pn**	**16 35 11.8**	**+0.2**
	baz=335							
TWE				*e*S		**Sb**	**16 35 24.2**	**-0.2**
	baz=335							
ILA	**Ilan**	**1.03**	**340**	*e*P		**Pb**	**16 35 11.3**	**-0.1**
	baz=340							
ILA				*e*S		**Sg**	**16 35 25.4**	**+0.1**
	baz=340							
YOJ	**Yonaguni jima**	**1.04**	**50**	P		**Pn**	**16 35 12.4**	**+0.5**
YOJ				*e*S		**Sg**	**16 35 25.5**	**-0.1**
YUS	**Yu-Shan**	**1.13**	**255**	⇑*i*P		**Pn**	**16 35 14.8**	**+1.2**
	baz=250							
YUS				S		**Sg**	**16 35 28.5**	**-0.1**
	baz=250							
NSK	**Sanguang**	**1.13**	**321**	⇑P		**Pb**	**16 35 13.3**	**+0.2**
	baz=308							
NSK				S		**Sb**	**16 35 26.5**	**-1.2**
	baz=308							
SMLT	**Sun Moon Lake**	**1.14**	**275**	⇑*i*P		**Pg**	**16 35 14.3**	**+0.5**
	baz=270							
SMLT				S		**Sb**	**16 35 28.0**	**+0.1**
	baz=270							
TYC	**Yuchr**	**1.18**	**276**	*e*P		**Pg**	**16 35 14.6**	**0.0**
	baz=272							
TYC				*e*S		**Sb**	**16 35 29.2**	**+0.3**
	baz=272							
ELDTW	**Lidau**	**1.19**	**240**	⇑P		**Pg**	**16 35 14.6**	**-0.3**
	baz=236							
ELDTW				*e*S		**Sb**	**16 35 28.3**	**-1.2**
	baz=236							
TWB1	**Santiao Chiao**	**1.22**	**354**	*e*P		**Pb**	**16 35 14.9**	**+0.3**
	baz=354							
ALS	**Alishan**	**1.25**	**257**	⇑*i*P		**Pg**	**16 35 16.8**	**+0.7**
	baz=253							
ALS				S		**Sb**	**16 35 31.8**	**+0.4**
	baz=253							
NWF	**Wu-fen Shan**	**1.31**	**346**	*e*P		**Pg**	**16 35 17.0**	**-0.2**
	baz=1.0							
NWF				*e*S		**Sb**	**16 35 32.1**	**-0.9**
	baz=1.0							
NSTT	**Nanjuang**	**1.33**	**309**	⇑P		**Pg**	**16 35 17.3**	**-0.2**
	baz=307							
NSTT				*e*S		**Sb**	**16 35 32.8**	**-0.6**
	baz=307							
WNT	**Mingjian**	**1.33**	**274**	P		**Pg**	**16 35 18.0**	**+0.5**
	baz=270							
WNT				S		**Sg**	**16 35 35.2**	**+0.3**
	baz=270							
CHN5	**Tsauling**	**1.35**	**262**	⇑P		**Pg**	**16 35 18.3**	**+0.4**
	baz=249							
CHN5				*e*S		**Sg**	**16 35 35.6**	**+0.1**
	baz=249							
TWQ1	**Liyutan**	**1.36**	**294**	⇑*i*P		**Pg**	**16 35 18.2**	**+0.1**
	baz=292							
TWQ1				S		**Sb**	**16 35 34.9**	**+0.5**
	baz=292							
TWG	**Pinlang**	**1.38**	**226**	*e*P		**Pn**	**16 35 16.9**	**+0.3**
	baz=232							
TWG				*e*S		**Sn**	**16 35 33.5**	**-1.0**
	baz=232							
TCU	**Taichung**	**1.38**	**285**	⇑*e*P		**Pg**	**16 35 18.8**	**+0.3**
	baz=282							
TCU				*e*S		**Sg**	**16 35 36.3**	**-0.2**
	baz=282							
NSY	**Sanyi**	**1.40**	**297**	*e*P		**Pg**	**16 35 18.5**	**-0.3**
	baz=294							
NSY				*e*S		**Sb**	**16 35 35.6**	**+0.2**
	baz=294							
STYT	**Tauyuan**	**1.41**	**244**	*e*P		**Pb**	**16 35 18.8**	**-0.3**
	baz=232							
STYT				*e*S		**Sb**	**16 35 36.4**	**+0.5**
	baz=232							
WGK	**Gukeng**	**1.45**	**266**	*e*P		**Pg**	**16 35 19.7**	**0.0**
	baz=262							
WGK				*e*S		**Sg**	**16 35 38.3**	**-0.2**
	baz=262							
TWS1	**Kuangyinshan**	**1.46**	**333**	*e*P		**Pb**	**16 35 18.5**	**-0.2**
	baz=333							
TWS1				*e*S		**Sn**	**16 35 36.1**	**-0.4**
	baz=333							
CHN4	**Tsaushan**	**1.48**	**253**	*e*P		**Pg**	**16 35 20.8**	**+0.4**
	baz=249							
CHN4				*e*S		**Sg**	**16 35 39.6**	**-0.1**
	baz=249							
WTP	**Ta-pu**	**1.50**	**249**	⇑P		**Pg**	**16 35 20.5**	**-0.2**
	baz=245							
WTP				*e*S		**Sg**	**16 35 40.0**	**-0.3**
	baz=245							
CHN2	**Minshiung**	**1.54**	**261**	*e*P		**Pg**	**16 35 21.4**	**-0.2**
	baz=257							
CHN2				*e*S		**Sg**	**16 35 41.5**	**-0.2**
	baz=257							
HATJ	**Hateruma jima**	**1.55**	**80**	P		**Pn**	**16 35 19.5**	**+0.6**
HATJ				*e*S		**Sn**	**16 35 38.6**	**-0.2**
IRIF	**Iriomote-Funau**	**1.55**	**69**	P		**Pn**	**16 35 19.7**	**+0.7**
IRIF				*e*S		**Sn**	**16 35 38.4**	**-0.5**
SGST	**Jiashian**	**1.59**	**244**	*e*P		**Pg**	**16 35 22.4**	**-0.1**
	baz=230							
SGST				*e*S		**Sg**	**16 35 42.9**	**-0.3**
	baz=230							
CHN1	**Nanshi**	**1.60**	**248**	*e*P		**Pg**	**16 35 22.0**	**-0.5**
	baz=244							
CHN1				*e*S		**Sg**	**16 35 42.4**	**-1.0**
	baz=244							
CHY	**Chiayi**	**1.60**	**260**	*e*P		**Pg**	**16 35 22.3**	**-0.3**
	baz=256							
CHY				*e*S		**Sg**	**16 35 42.5**	**-0.9**
	baz=256							
TWK	**Hsinying**	**1.60**	**251**	*e*P		**Pg**	**16 35 22.2**	**-0.5**
	baz=247							
TWK				*e*S		**Sg**	**16 35 42.4**	**-1.1**
	baz=247							
ECL	**Taimali**	**1.61**	**223**	*e*P		**Pn**	**16 35 20.1**	**+0.3**
	baz=220							
ECL				*e*S		**Sn**	**16 35 38.8**	**-1.5**
	baz=220							
WTCT	**Ta-ch'eng**	**1.70**	**273**	⇓*e*P		**Pb**	**16 35 23.2**	**+0.3**
	baz=269							
WTCT				*e*S		**Sb**	**16 35 44.7**	**+0.7**
	baz=269							
SSD	**Sandimen**	**1.73**	**233**	*e*P		**Pb**	**16 35 23.7**	**+0.3**
	baz=226							
SSD				*e*S		**Sb**	**16 35 45.2**	**+0.2**
	baz=226							
WSF	**Szhu**	**1.76**	**265**	*e*P		**Pb**	**16 35 24.0**	**+0.1**
	baz=262							
WSF				*e*S		**Sb**	**16 35 45.9**	**+0.1**
	baz=262							
JKRS	**Kuro-shima**	**1.77**	**75**	P		**Pn**	**16 35 23.0**	**+1.1**
JKRS				*e*S		**Sn**	**16 35 44.5**	**+0.3**
CHN3	**Shinhua**	**1.78**	**247**	*e*P		**Pb**	**16 35 24.2**	**+0.1**
	baz=243							
CHN3				*e*S		**Sg**	**16 35 49.0**	**-0.1**
	baz=243							
CHN8	**Yiju**	**1.82**	**256**	*e*P		**Pb**	**16 35 24.8**	**-0.1**
	baz=253							
CHN8				*e*S		**Sb**	**16 35 46.9**	**-0.7**
	baz=253							
LAY	**Lan-yu**	**1.83**	**197**	*e*P		**Pb**	**16 35 24.7**	**-0.3**
	baz=187							
EAST	**Anshuo**	**1.84**	**220**	*e*P		**Pb**	**16 35 25.0**	**-0.3**
	baz=219							
TWM1	**Shoushan**	**1.85**	**239**	*e*P		**Pg**	**16 35 26.7**	**-0.7**
	baz=236							
JIJ	**Ishigaki jima**	**1.92**	**72**	P		**Pn**	**16 35 24.4**	**+0.4**
JIJ				*e*S		**Sn**	**16 35 46.7**	**-1.2**
SCZT	**Fangliau**	**1.99**	**225**	*e*P		**Pb**	**16 35 27.9**	**+0.1**
	baz=219							
SCZT				*e*S		**Sb**	**16 35 51.9**	**-0.4**
	baz=219							
JISG	**Ishigakijimahi**	**2.14**	**68**	P		**Pn**	**16 35 27.2**	**+0.2**
JISG				*e*S		**Sn**	**16 35 52.4**	**-0.9**
WDGT	**Dungji**	**2.33**	**257**	*e*P		**Pn**	**16 35 31.0**	**+1.3**
	baz=254							
WDGT				*e*S		**Sn**	**16 35 57.8**	**-0.4**
	baz=254							
PNG	**Penghu**	**2.38**	**265**	*e*P		**Pn**	**16 35 31.8**	**+1.5**
	baz=261							
PNG				*e*S		**Sn**	**16 35 58.8**	**-0.4**
	baz=261							
JTJ	**Tarama**	**2.49**	**70**	P		**Pn**	**16 35 32.5**	**+0.6**
JTJ				*e*S		**Sn**	**16 36 01.3**	**-0.7**
JIRB	**Irabujima**	**2.96**	**69**	P		**Pn**	**16 35 38.7**	**+0.4**
JIRB				*e*S		**Sn**	**16 36 13.2**	**-0.3**
JIKM	**Ikemajima**	**3.05**	**68**	P		**Pn**	**16 35 40.5**	**+0.9**
JIKM				*e*S		**Sn**	**16 36 15.2**	**-0.7**
JMJ	**Miyako jima 2**	**3.06**	**70**	P		**Pn**	**16 35 40.5**	**+0.9**
JMJ				*e*S		**Sn**	**16 36 15.8**	**-0.1**
JOGS	**Gusukube**	**3.13**	**71**	P		**Pn**	**16 35 41.6**	**+0.9**
JOGS				*e*S		**Sn**	**16 36 18.2**	**+0.3**

IDC 10 17:04:51.1±2.5,39.23N×143.11E,h0km,mb3.6/3, mb1 3.8/4,mb1mx3.2/51,mbtmpg3.6/4,ML3.1/1,MS3.6/1, Ms1 3.6/1,ms1mx2.4/43,Error ellipse: s-maj=66.3km s-min=32.4km az=66.0,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
MJAR	**Matsushiro Arr**	**4.72**	**237**	Pn		Pn	17 06 03.5	-0.1
	0.8nm,0.3s,baz=40,slow=11,SNR=24							
H11N2	**WAKE ISLAND Hy**	**28.25**	**127**	T		T	17 41 19.1	
	baz=318,slow=76,SNR=7.7							
H11N1	**WAKE ISLAND Hy**	**28.26**	**127**	T		T	17 41 30.5	
	baz=318,slow=76,SNR=9.1							
H11N3	**WAKE ISLAND Hy**	**28.27**	**127**	T		T	17 41 26.8	
	baz=318,slow=76,SNR=6.7							
KURBB	**Kurchatov Arra**	**45.74**	**307**	P		P	17 13 13.8	-0.1
	0.4nm,0.2s,baz=78,slow=8.2,SNR=3.3							
INK	**Inuvik**	**51.82**	**28**	LR		LR	17 37 50.0	
	comp=Z,63nm,20.5s,baz=58,slow=38							
WRA	**Warramunga Arr**	**59.44**	**190**	P		P	17 14 55.7	0.0
	0.4nm,0.5s,baz=6.5,slow=7.0,SNR=7.8							
ASAR	**Alice Springs**	**63.16**	**189**	P		P	17 15 20.6	-0.2
	0.4nm,0.9s,baz=2.7,slow=5.4,SNR=4.4							

NNC 10 17:09:51.0±2.4,37.48N×71.12E,h0km,mb3.6,mpv3.2, 4C-4D,Error ellipse: s-maj=18.3km s-min=16.7km az=152.0,Afghanistan-Tajikistan border region

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
SFK	**Sufi-Kurgan**	**3.14**	**36**	⇓P		Pn	17 10 42.1	+0.2
	2.9nm,0.3s							
SFK				⇓S		Sn	17 11 21.8	+1.5
	5.2nm,0.2s							
MNAS	**Manas**	**5.11**	**12**	⇑P		Pn	17 11 09.6	+0.6
	1.5nm,0.4s							
MNAS				⇑S		Sn	17 12 09.7	+0.9
	5.6nm,0.6s							
KK31	**Karatay Array**	**5.64**	**355**	⇑P		Pn	17 11 17.5	+1.4
	0.5nm,0.2s,baz=184,slow=14,SNR=55							
KK31				S		Sn	17 12 22.4	+0.9
	0.4nm,0.2s,baz=169,slow=19,SNR=8.9							
AAK	**Ala-Archa**	**5.76**	**26**	⇓P		Pn	17 11 16.9	-1.0
	1.5nm,0.4s							
AAK				⇓S		Sn	17 12 25.8	+1.1
	1.4nm,0.5s							
TKM2	**Tokmak 2**	**6.42**	**31**	⇑P		Pn	17 11 25.2	-1.8
	1.0nm,0.5s							

IASPEI ***10*** *17:13:10.4±0.8,46.48N±0.02×13.11E±0.01,h14km±4km, Error ellipse: s-maj=2.3km s-min=1.9km az=12.9,GT5 selection from ISC bulletin GT5 identified by Bond˙ji and McLaughlin (2009) selection criteria Bond˙ji and McLaughlin, A new ground truth data set for seismic studies, Seism. Res. Let., 80, 465-472, 2009*
ROM ***10*** *17:13:10.8±0.2,46.46N×13.10E,h5km,Md2.4/8,Ml2.1/8, Error ellipse: s-maj=2.6km s-min=1.2km az=163.0*
VIE ***10*** *17:13:10.7±0.2,46.49N×13.09E,h13km±3km,mb1.7/10, ml2.3/14,Error ellipse: s-maj=1.5km s-min=0.8km az=18.0*
CSEM ***10*** *17:13:11.0±0.1,46.49N×13.10E,h10km,ML2.6/18,Error ellipse: s-maj=1.5km s-min=1.1km az=19.0*
PRU ***10*** *17:13:13.1,46.51N×13.10E,h0km*
ISC 10 17:13:10.4±0.8,46.48N±0.01×13.11E±0.01,h13km±3km, n91,σ0s63/166,7C-11D,Austria

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
PLRO	**Paularo**	**0.07**	**22**	*i* Pg		**Pg**	**17 13 13.8**	**+0.4**
PLRO				*i* Sg		**Sg**	**17 13 15.6**	**+0.2**
PLRO	**Paularo**	**0.07**	**22**	⇑*i*Pg		**Pg**	**17 13 13.8**	**+0.4**
PLRO				*i* Sg		**Sg**	**17 13 15.6**	**+0.2**
FUSE	**Fusea**	**0.10**	**228**	*i* Pg		**Pg**	**17 13 13.6**	**+0.1**
FUSE				*i* Sg		**Sg**	**17 13 15.4**	**-0.2**
FUSE	**Fusea**	**0.10**	**228**	⇑*i*Pg		**Pg**	**17 13 13.6**	**+0.1**
FUSE				*i* Sg		**Sg**	**17 13 15.4**	**-0.2**
ZOU	**Zoufplan**	**0.12**	**309**	*e*Pg		**Pb**	**17 13 14.4**	**-0.3**
ZOU				*i* Sg		**Sg**	**17 13 16.8**	**+0.4**
ZOU	**Zoufplan**	**0.12**	**309**	⇓*e*Pg		**Pb**	**17 13 14.4**	**-0.3**
ZOU				*e*Sg		**Sg**	**17 13 16.8**	**+0.4**
ZOU	**Zoufplan**	**0.12**	**309**	⇓*i*Pg		**Pg**	**17 13 14.4**	**-0.3**
ZOU				*i* Sg		**Sg**	**17 13 16.8**	**+0.4**
CLUD	**Cludinico**	**0.16**	**261**	*i* Pg		**Pg**	**17 13 14.6**	**+0.3**
CLUD				*i* Sg		**Sg**	**17 13 17.3**	**+0.3**
CLUD	**Cludinico**	**0.16**	**261**	⇓*i*Pg		**Pg**	**17 13 14.6**	**+0.3**
CLUD				*i* Sg		**Sg**	**17 13 17.3**	**+0.3**
BOO	**Bordano**	**0.16**	**182**	*e*Pg		**Pg**	**17 13 14.6**	**+0.3**
BOO				*e*Sg		**Sg**	**17 13 17.3**	**+0.3**
BOO	**Bordano**	**0.16**	**182**	⇑*e*Pg		**Pg**	**17 13 14.6**	**+0.3**
BOO				*e*Sg		**Sg**	**17 13 17.3**	**+0.3**
PTCC	**Patocco-Chiusa**	**0.18**	**114**	Pg		**Pg**	**17 13 15.1**	**+0.4**
PTCC				Sg		**Sg**	**17 13 18.3**	**+0.7**
	294nm,0.2s							
PTCC	**Patocco-Chiusa**	**0.18**	**114**	Pg		**Pg**	**17 13 15.1**	**+0.4**
PTCC				Sg		**Sg**	**17 13 18.3**	**+0.7**
	294nm,0.2s							
MPRI	**Monte Prat**	**0.25**	**199**	*e*Pg		**Pg**	**17 13 16.5**	**+0.7**
MPRI				*e*Sg		**Sg**	**17 13 20.5**	**+1.0**
MPRI	**Monte Prat**	**0.25**	**199**	⇑*e*Pg		**Pg**	**17 13 16.5**	**+0.7**
MPRI				*e*Sg		**Sg**	**17 13 20.5**	**+1.0**
VINO	**Villanova**	**0.25**	**152**	*i* Pg		**Pg**	**17 13 16.2**	**+0.4**
VINO				*i* Sg		**Sg**	**17 13 20.2**	**+0.7**
VINO	**Villanova**	**0.25**	**152**	⇓*i*Pg		**Pg**	**17 13 16.2**	**+0.4**
VINO				*i* Sg		**Sg**	**17 13 20.2**	**+0.7**
BAD	**Bernadia**	**0.26**	**159**	*i* Pg		**Pg**	**17 13 16.3**	**+0.3**
BAD				*i* Sg		**Sg**	**17 13 20.4**	**+0.7**
BAD	**Bernadia**	**0.26**	**159**	⇓*i*Pg		**Pg**	**17 13 16.3**	**+0.3**
BAD				*i* Sg		**Sg**	**17 13 20.4**	**+0.7**
BUA	**Buia**	**0.26**	**178**	*e*Pg		**Pg**	**17 13 16.6**	**+0.6**
BUA				*e*Sg		**Sg**	**17 13 20.6**	**+0.9**
BUA	**Buia**	**0.26**	**178**	⇑*e*Pg		**Pg**	**17 13 16.6**	**+0.6**
BUA				*e*Sg		**Sg**	**17 13 20.6**	**+0.9**
ACOM	**Acomizza, Ital**	**0.29**	**76**	Pg		**Pg**	**17 13 17.5**	**0.0**
ACOM				Sg		**Sb**	**17 13 22.3**	**0.0**
	327nm,0.2s							
**

SABO	**M.te Sabotino**	**0.61**	**146**		Pg		**Pg**	**17 13 22.5**	**+0.2**
SABO					Sg		**Sn**	**17 13 33.2**	**-1.1**
	comp=Z,130nm,0.5s								
SABO	**M.te Sabotino**	**0.61**	**146**		Pg		**Pg**	**17 13 22.5**	**+0.2**
SABO					Sg		**Sn**	**17 13 33.2**	**-1.1**
	comp=Z,130nm,0.5s								
SABO	**M.te Sabotino**	**0.61**	**146**	ǁ	*e*Pg		**Pg**	**17 13 22.5**	**+0.2**
KBA	**Koelnbreinsper**	**0.62**	**15**		*e*Pg		**Pb**	**17 13 23.7**	**+0.5**
	comp=Z,1.1nm,0.1s,SNR=11								
KBA					*e*Sg		**Sb**	**17 13 31.9**	**+0.1**
	comp=Z,14nm,0.1s								
KBA	**Koelnbreinsper**	**0.62**	**15**		Pg		**Pb**	**17 13 23.7**	**+0.5**
	comp=Z,1.1nm,0.1s,SNR=11								
KBA					Sg		**Sb**	**17 13 31.9**	**+0.1**
	comp=Z,14nm,0.1s								
GORS	**Gorjuse**	**0.64**	**105**		*i* Pg		**Pg**	**17 13 23.0**	**+0.2**
GORS					*i* Sg		**Sn**	**17 13 33.9**	**-1.3**
	comp=Z,12nm,0.1s								
GORS	**Gorjuse**	**0.64**	**105**		*i* Pg		**Pg**	**17 13 23.0**	**+0.2**
GORS					*i* Sg		**Sn**	**17 13 33.9**	**-1.3**
	comp=Z,12nm,0.1s								
VOJS	**Vojsko**	**0.70**	**130**		*i* Pg		**Pg**	**17 13 23.9**	**-0.1**
VOJS					*i* Sg		**Sn**	**17 13 35.9**	**-0.9**
	comp=Z,14nm,0.2s								
VOJS	**Vojsko**	**0.70**	**130**		*i* Pg		**Pg**	**17 13 24.0**	**-0.1**
VOJS					*i* Sg		**Sn**	**17 13 35.9**	**-0.9**
	comp=Z,14nm,0.2s								
AGOR	**Agordo**	**0.76**	**255**		Pg		**Pb**	**17 13 25.9**	**+0.4**
AGOR					Sg		**Sn**	**17 13 37.8**	**-0.4**
	comp=Z,36nm,0.4s								
VARN	**Col Varnada, M**	**0.85**	**235**		*e*Pg		**Pn**	**17 13 27.9**	**-0.2**
VARN	**Col Varnada, M**	**0.85**	**235**		*e*Pg		**Pn**	**17 13 27.9**	**-0.2**
OBKA	**Obir**	**0.99**	**88**		*e*Pg		**Pn**	**17 13 30.0**	**-0.1**
	comp=Z,1.1nm,0.1s								
OBKA					*e*Sg		**Sn**	**17 13 44.3**	**+0.2**
	comp=Z,17nm,0.4s								
OBKA	**Obir**	**0.99**	**88**		Pg		**Pn**	**17 13 30.0**	**-0.1**
	comp=Z,1.1nm,0.1s								
OBKA					Sg		**Sn**	**17 13 44.3**	**+0.2**
	comp=Z,17nm,0.4s								
WTTA	**Wattenberg**	**1.28**	**308**		Pg		**Pg**	**17 13 35.2**	**+0.2**
	comp=Z,9.0nm,0.4s								
WTTA	**Wattenberg**	**1.28**	**308**		*e*Pg		**Pg**	**17 13 35.3**	**+0.2**
	comp=Z,3.4nm,0.2s,SNR=6.1								
WTTA					*e*Sg		**Sg**	**17 13 52.1**	**+0.4**
	comp=Z,8.1nm,0.4s								
WTTA	**Wattenberg**	**1.28**	**308**		Pg		**Pg**	**17 13 35.3**	**+0.2**
	comp=Z,3.4nm,0.2s,SNR=6.1								
WTTA					Sg		**Sg**	**17 13 52.1**	**+0.4**
	comp=Z,8.1nm,0.4s								
APPI	**Appiano**	**1.30**	**271**		Pg		**Pg**	**17 13 35.9**	**+0.5**
APPI	**Appiano**	**1.30**	**271**		Pg		**Pg**	**17 13 35.9**	**+0.5**
SOKA	**Soboth**	**1.34**	**81**		*e*Pg		**Pg**	**17 13 36.0**	**-0.2**
	comp=Z,1.5nm,0.2s,SNR=9.4								
SOKA					*e*Sg		**Sg**	**17 13 54.8**	**+1.1**
	comp=Z,3.0nm,0.3s								
SOKA	**Soboth**	**1.34**	**81**		Pg		**Pg**	**17 13 36.0**	**-0.2**
	comp=Z,1.5nm,0.2s,SNR=9.4								
SOKA					Sg		**Sg**	**17 13 54.8**	**+1.1**
	comp=Z,3.0nm,0.3s								
WATA	**Walderalm**	**1.35**	**310**		*e*Pg		**Pg**	**17 13 36.6**	**+0.1**
	SNR=7.3								
WATA					*i* Sg		**Sg**	**17 13 55.4**	**+1.3**
WATA	**Walderalm**	**1.35**	**310**		Pg		**Pg**	**17 13 36.6**	**+0.1**
	SNR=7.3								
WATA					Sg		**Sg**	**17 13 55.4**	**+1.3**
TEOL	**Teolo**	**1.50**	**222**		Pg		**Pg**	**17 13 39.3**	**0.0**
	comp=Z,65nm,0.7s								
TEOL	**Teolo**	**1.50**	**222**		Pg		**Pg**	**17 13 39.3**	**0.0**
	comp=Z,65nm,0.7s								
MOA	**Molln**	**1.58**	**30**		*e*Pg		**Pg**	**17 13 41.6**	**+0.8**
	comp=Z,0.8nm,0.1s								
MOA					*e*Sg		**Sg**	**17 14 02.5**	**+1.2**
	comp=Z,2.8nm,0.2s								
MOA	**Molln**	**1.58**	**30**		Pg		**Pg**	**17 13 41.6**	**+0.8**
	comp=Z,0.8nm,0.1s								
MOA					Sg		**Sg**	**17 14 02.5**	**+1.2**
	comp=Z,2.8nm,0.2s								
MOTA	**Moosalm**	**1.62**	**303**		*e*Pg		**Pg**	**17 13 42.2**	**+0.6**
MOTA					*e*Sg		**Sg**	**17 14 04.1**	**+1.4**
MOTA	**Moosalm**	**1.62**	**303**		Pg		**Pg**	**17 13 42.2**	**+0.6**
MOTA					Sg		**Sg**	**17 14 04.1**	**+1.4**
FETA	**Feichten**	**1.72**	**289**		*i* Pg		**Pg**	**17 13 42.8**	**-0.7**
	comp=Z,0.3nm,0.1s								
FETA					*e*Sg		**Sg**	**17 14 06.9**	**+1.0**
	comp=Z,2.4nm,0.3s								
FETA	**Feichten**	**1.72**	**289**		Pg		**Pg**	**17 13 42.8**	**-0.7**
	comp=Z,0.3nm,0.1s								
FETA					Sg		**Sg**	**17 14 06.9**	**+1.0**
	comp=Z,2.4nm,0.3s								
RETA	**Reutte**	**1.90**	**303**		*e*Pg		**Pg**	**17 13 47.6**	**+0.8**
	comp=Z,2.1nm,0.2s								
RETA					*e*Sg		**Sg**	**17 14 12.6**	**+1.2**
	comp=Z,6.0nm,0.3s								
RETA	**Reutte**	**1.90**	**303**		Pg		**Pg**	**17 13 47.6**	**+0.8**
	comp=Z,2.1nm,0.2s								
RETA					Sg		**Sg**	**17 14 12.6**	**+1.2**
	comp=Z,6.0nm,0.3s								
NVLJ	**Novalja**	**2.28**	**147**		*e*Pn		**Pn**	**17 13 48.4**	**+0.7**
NVLJ					Sn		**Sb**	**17 14 18.6**	**-0.9**
NVLJ	**Novalja**	**2.28**	**147**		*e*Pn		**Pn**	**17 13 48.4**	**+0.7**
NVLJ					Sn		**Sb**	**17 14 18.6**	**-0.9**
DAVA	**Damuels**	**2.36**	**291**		*e*Pg		**Pg**	**17 13 55.4**	**-0.2**
	comp=Z,2.3nm,0.3s								
DAVA					Sg		**Sg**	**17 14 28.0**	**+1.9**
	comp=Z,9.7nm,0.4s								
DAVA	**Damuels**	**2.36**	**291**		Pg		**Pg**	**17 13 55.4**	**-0.2**
	comp=Z,2.3nm,0.3s								
DAVA					Sg		**Sg**	**17 14 28.0**	**+1.9**
	comp=Z,9.7nm,0.4s								
KHC	**Kasperske Hory**	**2.67**	**7**		*e*PN		**Pb**	**17 13 57.0**	**-1.1**
KHC					*ex*		x	17 14 06.1	
KHC					*ex*		x	17 14 10.4	
KHC					*e*SG		**Sg**	**17 14 35.4**	**-0.8**
KHC	**Kasperske Hory**	**2.67**	**7**		Pn		**Pb**	**17 13 57.0**	**-1.1**
KHC					Sg		**Sg**	**17 14 35.4**	**-0.8**
GOPC	**GO Pecny, Ondr**	**3.61**	**17**		*e*SG		**Sg**	**17 15 07.2**	**+0.8**
GOPC	**GO Pecny, Ondr**	**3.61**	**17**		Sg		**Sg**	**17 15 07.2**	**+0.8**
PRU	**Pruhonice**	**3.64**	**15**		*e*SG		**Sg**	**17 15 07.1**	**-0.1**
PRU	**Pruhonice**	**3.64**	**15**		Sg		**Sg**	**17 15 07.1**	**-0.1**
DPC	**Dobruska-Polom**	**4.42**	**28**		*e*SG		**Sg**	**17 15 32.6**	**+0.2**
DPC	**Dobruska-Polom**	**4.42**	**28**		Sg		**Sg**	**17 15 32.6**	**+0.2**

*JMA **10** 17:16:43.8±0.1,23°.32N×122°.60E,h60km,M3.2*
*ISCJB **10** 17:16:44.2±0.3,23°.32N±0°.03×122°.65E±0°.02,*
h38km±23km,Error ellipse: s-maj=4.8km s-min=2.3km
az=158.1
*TAP **10** 17:16:45.0,23°.38N×122°.61E,h56km±1km,ML3.2,C*
ISC 10 17:16:42.2±1.3**,23°.32N**±0°.03×**122°.61E**±0°.02**,h19**km±3km**,**
n54,σ0**°69**/91**,6C,Taiwan region**

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
HWA	**Hwalien**	**1.13**	**305**	*e*P		**Pg**	**17 17 03.9**	**-0.3**
	baz=296							
JYNG	**Yonagunijimaku**	**1.16**	**15**	P		**Pg**	**17 17 04.4**	**-0.4**
JYNG				*e*S		**Sg**	**17 17 20.3**	**+0.3**
CHKT	**Chengkung**	**1.17**	**259**	*e*P		**Pn**	**17 17 02.7**	**-0.8**
	baz=251							
CHKT				*e*S		**Sb**	**17 17 17.2**	**-1.3**
	baz=251							
ESL	**Shilin**	**1.19**	**295**	*e*P		**Pn**	**17 17 03.9**	**+0.1**
	baz=285							
ESL				*e*S		**Sn**	**17 17 19.5**	**+0.1**
	baz=285							
YOJ	**Yonaguni jima**	**1.19**	**18**	P		**Pg**	**17 17 05.1**	**-0.2**
YOJ				*e*S		**Sg**	**17 17 20.9**	**0.0**
TWD	**Chiawan**	**1.20**	**309**	⇑ *i*P		**Pb**	**17 17 04.5**	**+0.2**
	baz=308							
TWD				*e*S		**Sb**	**17 17 18.1**	**-1.3**
	baz=308							
EHY	**Hungye**	**1.20**	**279**	⇑ *i*P		**Pg**	**17 17 04.9**	**-0.5**
	baz=283							
EHY				S		**Sb**	**17 17 19.4**	**-0.1**
	baz=283							
TWF1	**Yuli**	**1.21**	**272**	⇑ *i*P		**Pb**	**17 17 05.0**	**+0.5**
	baz=265							
TWF1				S		**Sb**	**17 17 20.1**	**+0.3**
	baz=265							
HATJ	**Hateruma jima**	**1.32**	**56**	P		**Pb**	**17 17 06.6**	**+0.3**
HATJ				S		**Sn**	**17 17 22.4**	**-0.2**
ENA	**Nanau**	**1.36**	**324**	*e*P		**Pg**	**17 17 07.9**	**-0.6**
	baz=323							
ENA				*e*S		**Sb**	**17 17 24.4**	**+0.3**
	baz=323							
IRIF	**Iriomote-Funau**	**1.44**	**45**	P		**Pb**	**17 17 08.3**	**-0.1**
IRIF				*e*S		**Sb**	**17 17 26.0**	**-0.3**
TWC	**Suao**	**1.46**	**332**	*e*P		**Pb**	**17 17 08.6**	**-0.1**
	baz=339							
TWC				*e*S		**Sb**	**17 17 26.9**	**0.0**
	baz=339							
ELDTW	**Lidau**	**1.47**	**265**	⇑ *i*P		**Pb**	**17 17 08.8**	**-0.3**
	baz=257							
ELDTW				*e*S		**Sn**	**17 17 25.8**	**-0.9**
	baz=257							
WHF	**Hehuan Shan**	**1.48**	**304**	*e*P		**Pb**	**17 17 09.1**	**-0.3**
	baz=294							
WHF				S		**Sn**	**17 17 26.7**	**-0.6**
	baz=294							
TWG	**Pinlang**	**1.50**	**251**	P		**Pb**	**17 17 09.2**	**-0.3**
	baz=253							
TWG				S		**Sn**	**17 17 27.1**	**-0.1**
	baz=253							
YUS	**Yu-Shan**	**1.53**	**276**	P		**Pb**	**17 17 10.5**	**+0.2**
	baz=283							
YUS				*e*S		**Sn**	**17 17 28.7**	**0.0**
	baz=283							
JKRS	**Kuro-shima**	**1.57**	**54**	P		**Pb**	**17 17 10.3**	**-0.4**
JKRS				*e*S		**Sn**	**17 17 29.2**	**+0.3**
NNS	**Nan Shan**	**1.59**	**315**	P		**Pb**	**17 17 11.1**	**0.0**
	baz=314							
NNS				*e*S		**Sn**	**17 17 29.9**	**+0.3**
	baz=314							
TWT	**Tachien**	**1.61**	**305**	*e*P		**Pb**	**17 17 11.7**	**+0.3**
	baz=304							
TWT				*e*S		**Sn**	**17 17 30.4**	**+0.3**
	baz=304							
LAY	**Lan-yu**	**1.61**	**218**	*e*P		**Pn**	**17 17 09.9**	**+0.2**
	baz=224							
ENTT	**Nioudou**	**1.62**	**324**	*e*P		**Pb**	**17 17 11.2**	**-0.3**
	baz=323							
TWE	**Neicheng**	**1.64**	**328**	*e*P		**Pb**	**17 17 11.8**	**0.0**
	baz=335							
TWE				*e*S		**Sn**	**17 17 30.8**	**+0.3**
	baz=335							
SMLT	**Sun Moon Lake**	**1.67**	**290**	*e*P		**Pb**	**17 17 11.9**	**-0.5**
	baz=284							
ALS	**Alishan**	**1.67**	**277**	P		**Pb**	**17 17 12.9**	**+0.4**
	baz=282							
ALS				*e*S		**Sn**	**17 17 31.8**	**0.0**
	baz=282							
ECL	**Taimali**	**1.69**	**245**	*e*P		**Pn**	**17 17 11.6**	**+0.9**
	baz=253							
ECL				*e*S		**Sn**	**17 17 30.6**	**-1.3**
	baz=253							
TYC	**Yuchr**	**1.71**	**290**	*e*P		**Pb**	**17 17 12.8**	**-0.2**
	baz=284							
STYT	**Tauyuan**	**1.71**	**265**	*e*P		**Pb**	**17 17 12.8**	**-0.3**
	baz=259							
JIJ	**Ishigaki jima**	**1.74**	**53**	P		**Pn**	**17 17 12.2**	**+0.7**
JIJ				*e*S		**Sn**	**17 17 32.4**	**-0.8**
NSK	**Sanguang**	**1.77**	**320**	P		**Pb**	**17 17 14.0**	**-0.1**
	baz=309							
NSK				S		**Sn**	**17 17 34.1**	**+0.1**
	baz=309							
CHN5	**Tsauling**	**1.79**	**279**	P		**Pb**	**17 17 15.2**	**+0.6**
	baz=278							
WTP	**Ta-pu**	**1.84**	**268**	⇑ *i*P		**Pb**	**17 17 15.8**	**+0.5**
	baz=264							
WTP				*e*S		**Sb**	**17 17 39.2**	**+1.3**
	baz=264							
CHN4	**Tsaushan**	**1.85**	**271**	*e*P		**Pb**	**17 17 15.7**	**+0.1**
	baz=270							
EAST	**Anshuo**	**1.88**	**240**	P		**Pn**	**17 17 14.5**	**+1.2**
	baz=239							
SGST	**Jiashian**	**1.88**	**263**	*e*P		**Pb**	**17 17 16.0**	**0.0**
	baz=257							
NWF	**Wu-fen Shan**	**1.90**	**337**	*e*P		**Pb**	**17 17 15.8**	**-0.5**
	baz=347							
TWA	**Mucha**	**1.90**	**331**	*e*P		**Pb**	**17 17 16.3**	**0.0**
	baz=330							
SSD	**Sandimen**	**1.91**	**253**	*e*P		**Pb**	**17 17 16.3**	**-0.2**
	baz=252							
WGK	**Gukeng**	**1.92**	**281**	*e*P		**Pb**	**17 17 16.5**	**0.0**
	baz=280							
CHN1	**Nanshi**	**1.92**	**266**	⇑ P		**Pb**	**17 17 17.0**	**+0.4**
	baz=260							
CHN1				*e*S		**Sb**	**17 17 41.2**	**+1.0**
	baz=260							
TWK	**Hsinying**	**1.95**	**269**	*e*P		**Pb**	**17 17 16.9**	**-0.4**
	baz=274							
TWK				*e*S		**Sb**	**17 17 40.2**	**-1.0**
	baz=274							
TCU	**Taichung**	**1.95**	**295**	*e*P		**Pb**	**17 17 17.9**	**+0.6**
	baz=294							
NSTT	**Nanjuang**	**1.96**	**312**	*e*P		**Pb**	**17 17 17.6**	**+0.2**
	baz=311							
NSTT				*e*S		**Sn**	**17 17 39.6**	**+1.0**
	baz=311							
TWQ1	**Liyutan**	**1.97**	**302**	*e*P		**Pb**	**17 17 17.0**	**-0.4**
	baz=301							
TWQ1				*e*S		**Sb**	**17 17 41.0**	**-0.6**
	baz=301							
JISG	**Ishigakijimahi**	**2.00**	**51**	P		**Pn**	**17 17 16.1**	**+1.1**
JISG				*e*S		**Sn**	**17 17 39.9**	**+0.4**
NSY	**Sanyi**	**2.01**	**303**	*e*P		**Pb**	**17 17 18.6**	**+0.4**
	baz=302							
TWS1	**Kuangyinshan**	**2.08**	**329**	*e*P		**Pb**	**17 17 18.3**	**-1.0**
	baz=328							
TSEB	**Hengchuen, Pin**	**2.12**	**228**	*e*P		**Pb**	**17 17 19.4**	**-0.7**
	baz=229							
TSEB				*e*S		**Sn**	**17 17 44.3**	**+1.7**
	baz=229							
TWK1	**Hengchun**	**2.16**	**231**	*e*P		**Pb**	**17 17 20.7**	**0.0**
	baz=222							
TWK1				*e*S		**Sn**	**17 17 43.1**	**-0.4**
	baz=222							
JTJ	**Tarama**	**2.32**	**55**	P		**Pn**	**17 17 20.8**	**+1.4**
JTJ				*e*S		**Sn**	**17 17 47.7**	**+0.3**
JIRB	**Irabujima**	**2.78**	**57**	P		**Pn**	**17 17 26.1**	**+0.4**
JIRB				*e*S		**Sn**	**17 17 58.3**	**-0.5**
JMJ	**Miyako jima 2**	**2.87**	**58**	P		**Pn**	**17 17 28.2**	**+1.3**
JMJ				*e*S		**Sn**	**17 18 01.1**	**+0.2**
JIKM	**Ikemajima**	**2.89**	**56**	P		**Pn**	**17 17 27.9**	**+0.7**
JIKM				*e*S		**Sn**	**17 17 59.3**	**-2.2**
JOGS	**Gusukube**	**2.93**	**60**	P		**Pn**	**17 17 29.2**	**+1.4**
JOGS				*e*S		**Sn**	**17 18 01.7**	**-0.8**
JKE	**Kume jima 2**	**4.83**	**51**	P		**Pn**	**17 17 54.3**	**+0.4**
JKE				*e*S		**Sn**	**17 18 47.6**	**-1.8**

*IDC **10** 17:17:58.5±0.8,39°.06N×142°.52E,h0km,mb3.7/9,*
mb1 3.9/10,mb1mx3.7/36,mbtmpb3.8/10,ML3.6/1,MS2.8/2,
Ms1 2.8/2,ms1mx2.4/55,Error ellipse: s-maj=29.1km
s-min=16.6km az=104.0
*ISCJB **10** 17:18:00.6±0.7,39°.04N±0°.05×142°.55E±0°.06,h27km,*
mb3.7/9,Error ellipse: s-maj=8.0km s-min=6.4km
az=148.2
*NIED **10** 17:18:00,39°.10N×142°.40E,h35km,Mw3.8 Best double*
couple: M0=6.60000×10^14 NP1:φs=275.00000°,δ36.00000°,
λ=148.00000°. NP2:φs=158.00000°,δ72.00000°,
λ=59.00000°.
*JMA **10** 17:18:02.9±0.2,39°.10N×142°.43E,h36km±2km,M3.7*
ISC 10 17:18:02.5±0.9**,39°.07N**±0°.06×**142°.44E**±0°.08**,h27**km**,n22,**
σ0°67/19**,mb3.8**/9**,Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
JMK	**Ichinoseki**	**0.96**	**263**	P		**Pn**	**17 18 20.3**	**+0.1**
JMK				S		**Sb**	**17 18 32.6**	**-0.2**
JOM	**Ohasama**	**0.98**	**295**	P		**Pn**	**17 18 20.5**	**0.0**
JOM				S		**Sb**	**17 18 33.2**	**-0.2**
JIO	**Ouri**	**1.05**	**235**	P		**Pn**	**17 18 21.3**	**-0.2**
JIO				*e*S		**Sn**	**17 18 34.6**	**-0.7**
JANG	**Nango**	**1.48**	**332**	P		**Pn**	**17 18 27.4**	**-0.1**
JANG				S		**Sn**	**17 18 46.6**	**+0.6**
JYK	**Kaneyama**	**1.63**	**265**	P		**Pn**	**17 18 29.9**	**+0.4**
MJAR	**Matsushiro Arr**	**4.20**	**234**	Pn		**Pn**	**17 19 05.9**	**+1.1**
	3.2nm,0.3s,baz=41,slow=11,SNR=90							
MJAR				LR		LR	17 20 58.4	
	comp=Z,124nm,18.6s,baz=65,slow=43							
KLR	**Kul'dur**	**12.72**	**326**	LR		LR	17 25 56.2	
	comp=Z,33nm,19.4s,baz=158,slow=37							
MA2	**Magadan**	**21.20**	**12**	P		**P**	**17 22 44.5**	**-1.2**
	2.8nm,0.6s,baz=208,slow=11,SNR=5.9							
SEY	**Seymchan**	**24.64**	**11**	P		**P**	**17 23 21.1**	**+0.5**
	1.2nm,0.7s,baz=203,slow=9.4,SNR=9.1							
H11N2	**WAKE ISLAND Hy**	**28.58**	**125**	T		T	17 54 20.9	
	baz=317,slow=75,SNR=105							
H11N1	**WAKE ISLAND Hy**	**28.59**	**125**	T		T	17 54 24.7	
	baz=317,slow=75,SNR=84							
H11N3	**WAKE ISLAND Hy**	**28.60**	**125**	T		T	17 54 25.3	
	baz=317,slow=75,SNR=94							
H11S1	**WAKE ISLAND Hy**	**29.36**	**127**	T		T	17 55 22.4	
	baz=318,slow=76,SNR=19							
H11S3	**WAKE ISLAND Hy**	**29.37**	**127**	T		T	17 55 23.9	
	baz=318,slow=76,SNR=29							
H11S2	**WAKE ISLAND Hy**	**29.38**	**127**	T		T	17 55 23.5	
	baz=318,slow=76,SNR=22							
ZALV	**Zalesovo Beam**	**41.17**	**311**	P		**P**	**17 25 45.7**	**+1.3**
	0.4nm,0.4s,baz=135,slow=23,SNR=2.3							
MKAR	**Makanchi Array**	**43.76**	**300**	P		**P**	**17 26 05.1**	**-0.5**
	0.3nm,0.7s,baz=88,slow=9.2,SNR=4.6							
ILAR	**Eielson Array**	**47.34**	**33**	P		**P**	**17 26 33.2**	**-0.4**
	0.6nm,0.7s,baz=262,slow=6.1,SNR=7.6							
INK	**Inuvik**	**52.21**	**28**	P		**P**	**17 27 11.2**	**+0.6**
	0.6nm,0.7s,baz=328,slow=4.2,SNR=3.9							
WRA	**Warramunga Arr**	**59.19**	**189**	P		**P**	**17 28 00.8**	**-0.4**
	2.4nm,0.7s,baz=6.6,slow=7.0,SNR=33							
ASAR	**Alice Springs**	**62.92**	**189**	P		**P**	**17 28 26.7**	**+0.3**
	1.0nm,0.7s,baz=5.9,slow=5.6,SNR=21							
AKASG	**Malin Array Be**	**73.18**	**322**	P		**P**	**17 29 30.1**	**-0.5**
	0.8nm,0.5s,baz=45,slow=6.4,SNR=3.2							

*ISCJB **10** 17:19:51.7±1.0,42°.99N±0°.07×145°.31E±0°.06,h81km±8km,*
Error ellipse: s-maj=12.7km s-min=5.3km az=153.9
*JMA **10** 17:19:51.8±0.1,42°.99N×145°.30E,h85km±1km,M3.1*
*SKHL **10** 17:19:52.8±0.1,42°.87N×145°.39E,h61km±1km,mb4.3/1*
ISC 10 17:19:52.3±1.8**,42°.95N**±0°.09×**145°.33E**±0°.05**,h76**km±12km**,**
n12,σ0**°90**/23**,Hokkaido region**

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
JAK	**Akkeshi**	**0.47**	**276**	P		**Pn**	**17 20 05.7**	**+0.4**
JAK				*e*S		**Sn**	**17 20 16.1**	**+1.2**
NEM2	**Nemuro 2**	**0.52**	**36**	P		**Pn**	**17 20 06.0**	**+0.2**
NEM2				*e*S		**Sn**	**17 20 16.3**	**+0.6**
JNK	**Nakash**	**0.78**	**325**	P		**Pn**	**17 20 07.9**	**-0.6**
JNK				*e*S		**Sn**	**17 20 19.7**	**-0.8**
JRA	**Rausu**	**1.00**	**352**	P		**Pn**	**17 20 10.8**	**-0.3**
JRA				*e*S		**Sn**	**17 20 24.7**	**-0.4**
JOB	**Onbets**	**1.10**	**268**	P		**Pn**	**17 20 12.2**	**-0.1**
JOB				*e*S		**Sn**	**17 20 27.4**	**+0.2**
YUK	**Yuzh-Kuril'sk**	**1.15**	**20**	*i* P		**Pn**	**17 20 13.0**	**0.0**
YUK				AMB		AMB	17 20 14.7	
	30nm,0.2s							
YUK				AMB		AMB	17 20 14.7	
	60nm,0.2s							
YUK				*i* S		**Sn**	**17 20 28.2**	**-0.3**
YUK				A		A	17 20 29.4	
	650nm,0.5s							
YUK				A		A	17 20 29.4	
	440nm,0.5s							
JAR	**Ashorobuto**	**1.19**	**288**	P		**Pn**	**17 20 13.1**	**-0.4**
JAR				*e*S		**Sn**	**17 20 28.8**	**-0.6**
SHO	**Shikotan**	**1.43**	**49**	*e*P		**Pn**	**17 20 16.1**	**-0.5**
SHO				*i* S		**Sn**	**17 20 33.5**	**-1.3**
SHO				A		A	17 20 35.0	
	100nm,0.2s							
SHO				A		A	17 20 35.0	
	230nm,0.2s							
JCH	**Churui**	**1.48**	**258**	P		**Pn**	**17 20 17.1**	**-0.1**
JCH				*e*S		**Sn**	**17 20 35.5**	**-0.6**
JMP	**Maruseppu**	**1.78**	**307**	P		**Pn**	**17 20 20.6**	**-0.6**
JMP				*e*S		**Sn**	**17 20 42.1**	**-1.0**
KUR	**Kuril'sk**	**2.93**	**38**	*e*P		**Pn**	**17 20 37.4**	**+0.8**
KUR				*e*S		**Sn**	**17 21 09.9**	**-0.7**
KUR				A		A	17 21 14.3	
	160nm,0.4s							
KUR				A		A	17 21 14.3	
	30nm,0.4s							
YSS	**Yuzh-Sakhalins**	**4.40**	**336**	*e*P		**Pn**	**17 20 59.2**	**+2.6**

IDC 10 17:24:34.3±8.5**,36°.57N**×**141°.52E,h0**km**,mb3.3**/2**,**
mb1 3.5/3**,mb1mx3.1**/44**,mbtmpb3.2**/3**,ML3.5/1,Error**
ellipse: s-maj=184.6km s-min=40.5km az=30.0,Near
east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
MJAR	**Matsushiro Arr**	**2.67**	**270**	Pn		Pn	17 25 18.4	-0.1
	9.5nm,0.3s,baz=85,slow=10.0,SNR=73							
WRA	**Warramunga Arr**	**56.62**	**188**	P		P	17 34 18.6	-0.5
	0.1nm,0.4s,baz=3.6,slow=7.3,SNR=3.5							
ASAR	**Alice Springs**	**60.34**	**188**	P		P	17 34 45.3	+0.3
	0.3nm,0.8s,baz=359,slow=4.8,SNR=4.7							

*IDC **10** 17:35:22.9±0.8,10°.51N×124°.69E,h0km,mb3.7/10,*
mb1 3.8/11,mb1mx3.6/51,mbtmpb3.8/11,ML4.4/1,Error
ellipse: s-maj=56.5km s-min=12.6km az=72.0
*MAN **10** 17:35:23,10°.95N×125°.05E,h31km,mb4.9,ML3.9,MS3.9*
MAN INTENSITY III - DULAG & ABUYOG LEYTE; INTENSITY

σ1§55/12, **mb3.2**/3, **Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**1.25**	**270**	P	**Pn**	**17 40 16.2**	**-2.3**
ONAJ	**Iwakimizuishiy**	**1.35**	**258**	P	**Pn**	**17 40 17.8**	**-2.0**
JIO	**Ouri**	**1.38**	**321**	P	**Pn**	**17 40 18.6**	**-1.6**
JIO				S	**Sn**	**17 40 38.7**	**+0.9**
JMM	**Marumori**	**1.40**	**291**	P	**Pn**	**17 40 18.7**	**-1.8**
JFT	**Otama**	**1.69**	**275**	P	**Pn**	**17 40 23.6**	**-0.9**
JHO	**Hitachi**	**1.69**	**243**	P	**Pn**	**17 40 23.5**	**-1.0**
JOU	**Okura**	**1.72**	**305**	P	**Pn**	**17 40 24.3**	**-0.6**
MJAR	**Matsushiro Arr**	**3.50**	**257**	Pn	**Pn**	**17 40 50.7**	**+1.3**
	0.9nm,0.3s,baz=86,slow=15,SNR=7.2						
SONM	**Songino Array**	**28.28**	**303**	P	**P**	**17 45 49.3**	**+1.1**
	0.4nm,0.8s,baz=111,slow=8.8,SNR=4.3						
KURBB	**Kurchatov Arra**	**46.44**	**308**	P	**P**	**17 48 21.6**	**+0.3**
	0.4nm,0.6s,baz=82,slow=7.9,SNR=5.0						
WRA	**Warramunga Arr**	**57.53**	**189**	P	**P**	**17 49 43.7**	**-0.4**
	0.1nm,0.5s,baz=7.3,slow=7.1,SNR=2.6						

NIED ***10*** *17:44:00.37˝30N×141˝40E,h35km,Mw4.3 Best double couple: M₀3.21000×10¹⁵ NP1:φ₈7.00000°,δ29.00000°, λ-93.00000°. NP2:φ₈190.00000°,δ61.00000°, λ-88.00000°.*

IDC ***10*** *17:44:51.1±0.5,37˝26N×141˝47E,h0km,mb4.3/31, mb1 4.4/35,mb1mx4.3/57,mbtmp4.3/35,ML4.7/3,MS3.3/11, Ms1 3.3/11,ms1mx3.0/44,Error ellipse: s-maj=13.0km s-min=10.5km az=108.0*

ISCJB ***10*** *17:44:52.8±0.6,37˝25N±0˝02×141˝59E±0˝03,h28km±4km, mb4.3/73,MS3.6/9,Error ellipse: s-maj=4.6km s-min=3.8km az=34.1*

MOS ***10*** *17:44:54.3±1.2,37˝30N×141˝56E,h36km,mb4.6/20,Error ellipse: s-maj=9.6km s-min=6.2km az=89.7*

JMA ***10*** *17:44:55.3±0.1,37˝30N×141˝44E,h36km±1km,M4.5*

JMA Felt III J1.

NEIC ***10*** *17:44:56.6±0.9,37˝21N×141˝49E,h46km±8km,mb4.5/32, Error ellipse: s-maj=8.2km s-min=6.5km az=125.0*

NEIC Recorded [3 JMA] in Fukushima.

ISC 10 17:44:54.2±0.9, 37˚28N±0˚04×141˚57E±0˚04, h24km±6km, n170, σ1§50/180, mb4.4/73, MS3.6/9, 3C-7D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**0.56**	**279**	P	**Pb**	**17 45 05.1**	**-0.3**
JFK				S	**Sb**	**17 45 11.9**	**-1.2**
ONAJ	**Iwakimizuishiy**	**0.64**	**254**	P	**Pb**	**17 45 06.3**	**-0.5**
ONAJ				S	**Sb**	**17 45 14.0**	**-1.4**
JMM	**Marumori**	**0.85**	**314**	P	**Pb**	**17 45 09.4**	**-0.9**
JMM				*e*S	**Sb**	**17 45 19.5**	**-1.8**
JFT	**Otama**	**1.01**	**284**	P	**Pb**	**17 45 12.5**	**-0.5**
JFT				S	**Sb**	**17 45 24.4**	**-1.5**
JIO	**Ouri**	**1.19**	**352**	P	**Pn**	**17 45 14.8**	**-0.4**
JIO				*e*S	**Sn**	**17 45 28.6**	**-2.0**
JOU	**Okura**	**1.30**	**327**	P	**Pn**	**17 45 16.7**	**-0.1**
JOU				S	**Sn**	**17 45 32.5**	**-1.0**
JFY	**Yanaizu**	**1.49**	**275**	P	**Pn**	**17 45 19.3**	**-0.2**
JFY				*e*S	**Sb**	**17 45 37.9**	**-1.8**
JYS	**Shirataka**	**1.52**	**309**	P	**Pn**	**17 45 19.8**	**0.0**
JYS				S	**Sb**	**17 45 39.0**	**-1.5**
MJAR	**Matsushiro Arr**	**2.79**	**256**	Pn	**Pn**	**17 45 37.8**	**+0.5**
	69nm,0.3s,baz=80,slow=16,SNR=250						
MJAR				LR	LR	17 46 07.9	
	comp=Z,95nm,21.3s,baz=70,slow=29						
MJAR				Sn	**Sn**	**17 46 10.4**	**+0.2**
	63nm,0.3s,baz=51,slow=24,SNR=5.6						
MAJO	**Matsushiro**	**2.79**	**256**	*e*P	**Pn**	**17 45 38.3**	**+1.0**
MAJO				*e*		17 46 10.5	
MAJO	**Matsushiro**	**2.79**	**256**	*e*Pn	**Pn**	**17 45 38.3**	**+1.0**
MAJO				*e*Sn	**Sn**	**17 46 10.5**	**+0.2**
MAT	**Matsushiro**	**2.79**	**256**	P	**Pn**	**17 45 38.4**	**+1.0**
MAT				S	**Sb**	**17 46 13.9**	**-3.3**
INU	**Inuyama**	**4.15**	**244**	*e*Pn	**Pn**	**17 45 57.4**	**+1.4**
JHJ2	**Mitsune**	**4.40**	**200**	*e*Pn	**Pn**	**17 46 00.3**	**+0.9**
JHJ2				*e*Sn	**Sn**	**17 46 47.9**	**-2.0**
JHJ	**Hachijo jima 2**	**4.40**	**200**	Pn	**Pn**	**17 46 00.2**	**+0.8**
	80nm,0.3s,baz=140,slow=22,SNR=47						
JHJ				Sn	**Sn**	**17 46 50.8**	**+0.9**
	111nm,0.3s,baz=228,slow=23,SNR=10						
JHJ				LR	LR	17 47 58.3	
	comp=Z,289nm,21.7s,baz=65,slow=43						
ERM	**Erimo**	**4.89**	**14**	*d* i P	**Pn**	**17 46 06.5**	**+0.4**
ERM	**Erimo**	**4.89**	**14**	*e*Pn	**Pn**	**17 46 06.8**	**+0.7**
YUK	**Yuzh-Kuril'sk**	**7.49**	**24**	*e*P	**Pn**	**17 46 41.8**	**-0.1**
YUK				*e*S	**Sn**	**17 48 01.1**	**-4.9**
YUK				pmax	pmax		
	comp=Z,117nm,0.6s						
YUK				pmax	pmax		
	comp=N,40nm,0.4s						
YUK				pmax	pmax		
	comp=E,122nm,0.4s						
SHO	**Shikotan**	**7.70**	**30**	*e*P	Pn	17 46 41.8	-2.9
SHO				pmax	pmax		
	comp=Z,37nm,0.7s						
SHO				pmax	pmax		
	comp=E,23nm,0.4s						
KUR	**Kuril'sk**	**9.25**	**29**	*e*P	**Pn**	**17 47 05.1**	**-0.8**
KUR				*i* S	Sn	17 48 42.9	-6.3
KUR				pmax	pmax		
	comp=N,4.0nm,0.5s						
KUR				pmax	pmax		
	comp=E,5.0nm,0.5s						
KUR				pmax	pmax		
	comp=Z,12nm,0.5s						
KUR				smax	smax		
	comp=N,28nm,0.5s						
KUR				smax	smax		
	comp=E,15nm,0.5s						
JNU	**Nakatsue**	**9.68**	**248**	Pn	**Pn**	**17 47 14.3**	**+2.4**
	comp=E,0.5nm,0.3s,baz=159,slow=2.1,SNR=7.5						
JNU				LR	LR	17 51 14.6	
	comp=E,241nm,20.2s,baz=118,slow=40						
JNU	**Nakatsue**	**9.68**	**248**	*e*Pn	**Pn**	**17 47 11.1**	**-0.9**
JNU				*e*Sn	**Sn**	**17 48 59.1**	**-0.8**
YSS	**Yuzh-Sakhalins**	**9.71**	**5**	*e*P	**Pn**	**17 47 13.6**	**+1.4**
YSS				*e*S	**Sn**	**17 49 00.7**	**+0.3**
YSS				pmax	pmax		
	comp=Z,10.0nm,0.9s						
USRK	**Ussuriysk Ar.**	**10.03**	**317**	Pn	Pn	17 47 21.7	+5.1
	comp=Z,0.7nm,0.3s,baz=131,slow=14,SNR=17						
USRK				LR	LR	17 50 57.4	
	comp=Z,198nm,18.1s,baz=143,slow=37						
CBIJ	**Chichi jima**	**10.17**	**177**	Pn	**Pn**	**17 47 16.9**	**-1.7**
CBIJ				Sn	Sn	17 49 03.4	-8.5
JCJ	**Chichijima**	**10.17**	**177**	Pn	**Pn**	**17 47 16.9**	**-1.7**
	comp=Z,14nm,0.3s,baz=83,slow=22,SNR=10.0						
JCJ				Sn	Sn	17 49 03.4	-8.5
	comp=Z,9.8nm,0.3s,baz=260,slow=22,SNR=5.6						
KSRS	**Korea Array**	**10.87**	**275**	Pn	Pn	17 47 33.9	+5.8
	comp=Z,0.3nm,0.3s,baz=89,slow=13,SNR=11						
KSRS				LR	LR	17 51 26.4	
	comp=Z,179nm,19.4s,baz=102,slow=36						
KS15	**Wonju Array Si**	**10.90**	**275**	*e*Pn	Pn	17 47 31.7	+3.1
MDJ	**Mudanjiang**	**11.64**	**313**	P	Pn	17 47 43.9	+5.2
MDJ				pmax	pmax		
	comp=Z,9.0nm,0.7s						
MDJ				pmax	pmax		
	comp=Z,70nm,5.9s						
KLR	**Kul'dur**	**13.91**	**332**	Pn	P	17 48 13.8	-3.7
	comp=Z,0.2nm,0.3s,baz=154,slow=11,SNR=5.8						
KLR				LR	LR	17 53 22.6	
	comp=Z,116nm,19.2s,baz=151,slow=37						
NJ2	**Nanjing**	**19.38**	**261**	*e*P	**P**	**17 49 15.9**	**-2.3**
NJ2				pmax	pmax		
	comp=Z,9.0nm,0.5s						
PEA0	**Petropavlovsk-**	**19.41**	**30**	*e*P	**P**	**17 49 19.0**	**+0.6**
PETK	**Petropavlovsk-**	**19.41**	**30**	P	**Pn**	**17 49 19.7**	**+0.1**
	comp=Z,0.2nm,0.3s,baz=227,slow=7.9,SNR=4.2						
BJI	**Beijing**	**20.00**	**286**	P	**P**	**17 49 24.6**	**-0.3**
BJI				pmax	pmax		
	comp=Z,8.0nm,0.5s						
YHNB	**Yeheng**	**21.34**	**240**	*e*P	**P**	**17 49 37.7**	**-2.0**
	comp=Z,48nm,1.8s						
MA2	**Magadan**	**23.09**	**12**	P	**P**	**17 49 58.1**	**+0.3**
	comp=Z,4.9nm,0.8s,baz=214,slow=7.6,SNR=6.1						
MA2	**Magadan**	**23.09**	**12**	P	**P**	**17 49 58.1**	**+0.3**
	comp=Z,5.8nm,0.8s						
HHC	**Hu-ho-hao-te**	**23.51**	**288**	*e*P	**P**	**17 49 59.7**	**-2.7**
HHC				S	**S**	**17 54 10.6**	**-4.2**
HHC				pmax	pmax		
	comp=Z,26nm,0.8s						
HHC				pmax	pmax		
	comp=Z,79nm,4.8s						
HHC				LR	LR		
	comp=N,1μm,11.3s						
HHC				LR	LR		
	comp=E,1μm,12.7s						
HHC				LR	LR		
	comp=Z,1μm,12.7s						
YAK	**Yakutsk**	**25.86**	**347**	P	**P**	**17 50 23.5**	**0.0**
	comp=Z,4.6nm,0.4s,baz=281,slow=1.7,SNR=7.8						
YAK				LR	LR	18 00 52.8	
	comp=Z,76nm,19.4s,baz=147,slow=37						
YAK	**Yakutsk**	**25.86**	**347**	*e*P	**P**	**17 50 23.2**	**-0.3**
YAK				*e**PP	**pP**	**17 50 32.3**	**+1.5**
YAK				*e*		17 51 09.2	
YAK				*e*S	**S**	**17 54 47.9**	**-3.7**
YAK				pmax	pmax		
	comp=Z,10.0nm,0.9s						
YAK				pmax	pmax		
	comp=Z,76nm,3.6s						
YAK				pmax	pmax		
	comp=N,48nm,3.5s						
YAK				pmax	pmax		
	comp=E,62nm,4.4s						
YAK				smax	smax		
	comp=N,46nm,1.8s						
YAK				smax	smax		
	comp=E,46nm,2.3s						
YAK	**Yakutsk**	**25.86**	**347**	*e*P	**P**	**17 50 21.5**	**-2.0**
	comp=E,15nm,0.7s						
SEY	**Seymchan**	**26.53**	**11**	P	**P**	**17 50 31.9**	**+2.3**
	comp=E,3.6nm,0.7s,baz=200,slow=7.9,SNR=16						
SEY	**Seymchan**	**26.53**	**11**	*e*P	**P**	**17 50 31.6**	**+2.0**
XAN	**Xi'an**	**26.65**	**273**	P	**P**	**17 50 30.1**	**-1.0**
XAN				pmax	pmax		
	comp=Z,7.0nm,0.5s						
XAN				pmax	pmax		
	comp=Z,65nm,4.7s						
ULN	**Ulaanbaatar**	**27.32**	**304**	*e*P	**P**	**17 50 37.1**	**0.0**
ULN				pmax	pmax		
	comp=Z,11nm,2.5s						
ULN	**Ulaanbaatar**	**27.32**	**304**	*e*P	**P**	**17 50 36.0**	**-1.1**
	comp=Z,2.3nm,0.6s						
BOD	**Bodaibo**	**27.39**	**327**	*e*P	**P**	**17 50 36.5**	**-0.9**
BOD				pmax	pmax		
	comp=Z,3.0nm,0.8s						
ENH	**Enshi**	**27.48**	**265**	*e*P	**P**	**17 50 35.3**	**-3.3**
	comp=Z,9.8nm,0.6s						
SONA1	**Songino Array**	**27.75**	**304**	*e*P	**P**	**17 50 39.5**	**-1.4**
SONM	**Songino Array**	**27.75**	**304**	P	**P**	**17 50 40.2**	**-0.7**
	comp=Z,2.5nm,0.6s,baz=100,slow=8.7,SNR=22						
SONM				LR	LR	18 00 52.7	
	comp=Z,56nm,18.9s,baz=108,slow=35						
H11N2	**WAKE ISLAND Hy**	**28.17**	**121**	T	T	18 20 21.0	
	baz=315,slow=75,SNR=606						
H11N1	**WAKE ISLAND Hy**	**28.18**	**121**	T	T	18 20 57.3	
	SNR=84						
H11N3	**WAKE ISLAND Hy**	**28.18**	**121**	T	T	18 20 15.8	
	baz=319,slow=75,SNR=76						
H11S1	**WAKE ISLAND Hy**	**28.89**	**123**	T	T	18 21 52.0	
	baz=130,slow=74,SNR=571						
H11S3	**WAKE ISLAND Hy**	**28.89**	**124**	T	T	18 21 47.5	
	baz=316,slow=74,SNR=439						
H11S2	**WAKE ISLAND Hy**	**28.91**	**123**	T	T	18 21 14.0	
	SNR=395						
LZH	**Lanzhou**	**30.15**	**279**	*e*P	**P**	**17 51 01.9**	**-0.5**
LZH				pP	pP	17 51 08.3	-1.4
LZH				sP	sP	17 51 12.7	0.0
LZH				PP	**PnPn**	**17 52 00.2**	**+0.2**
LZH				pmax	pmax		
	comp=Z,23nm,1.1s						
LZH				pmax	pmax		
	comp=Z,72nm,6.0s						
LZH				LR	LR		
	comp=N,320nm,13.2s						
LZH				LR	LR		
	comp=E,340nm,13.5s						
LZH				LR	LR		
	comp=Z,360nm,16.3s						
ZAK	**Zakamensk**	**30.22**	**308**	*e*P	P	17 50 58.9	-3.9
ZAK				pmax	pmax		
	comp=Z,2.0nm,1.0s						
TLY	**Talaya**	**30.27**	**311**	P	**P**	**17 51 04.4**	**+1.3**
TLY				pmax	pmax		
	comp=Z,2.0nm,0.6s						
CD2	**Chengdu**	**31.80**	**270**	P	P	17 51 13.1	-3.7
CD2				pmax	pmax		
	comp=Z,1.0nm,0.5s						
GTA	**Gaotai**	**32.61**	**287**	*e*P	**P**	**17 51 23.5**	**-0.5**
GTA				pP	sP	17 51 33.3	-1.0
GTA				sP	pP	17 51 37.0	+5.7
GTA				S	**S**	**17 56 36.7**	**-1.7**
GTA				sS	sS	17 56 52.8	+2.3
GTA				SS	**SnSn**	**17 58 38.3**	**+4.8**
GTA				pmax	pmax		
	comp=Z,4.0nm,0.9s						
GTA				pmax	pmax		
	comp=Z,76nm,5.7s						
GTA				LR	LR		
	comp=N,100nm,18.1s						
GTA				LR	LR		
	comp=E,120nm,18.5s						
GTA				LR	LR		
	comp=Z,71nm,17.6s						
BILL	**Bilibino**	**33.76**	**16**	*i* P	**P**	**17 51 35.0**	**+1.5**
BILL				pmax	pmax		
	comp=Z,3.0nm,1.0s						
TIXI	**Tiksi**	**35.06**	**353**	*e*P	**P**	**17 51 45.3**	**+0.6**
TIXI				pmax	pmax		
	comp=Z,3.0nm,1.7s						
KMI	**Kunming**	**35.12**	**261**	P	**P**	**17 51 45.0**	**-1.0**
KMI				pmax	pmax		
	comp=Z,9.0nm,0.8s						
KMI				pmax	pmax		
	comp=Z,84nm,4.9s						
WMQ	**Urumqi**	**40.84**	**297**	*e*P	**P**	**17 52 33.0**	**-0.9**
WMQ				pP	pP	17 52 39.5	-1.8
WMQ				sP	sP	17 52 44.0	-0.3
WMQ				PP	**PnPn**	**17 54 10.9**	**-1.5**
WMQ				S	**S**	**17 58 43.3**	**-0.3**
WMQ				pmax	pmax		
	comp=Z,3.0nm,0.8s						
WMQ				pmax	pmax		
	comp=Z,36nm,4.0s						
WMQ				LR	LR		
	comp=N,33nm,22.4s						
WMQ				LR	LR		
	comp=E,19nm,26.0s						
WMQ				LR	LR		
	comp=Z,20nm,22.4s						
CMAR	**Chiang Mai Arr**	**41.68**	**255**	P	**P**	**17 52 41.3**	**+0.3**
	comp=Z,0.6nm,0.5s,baz=49,slow=7.1,SNR=11						
ZAA0	**Zalesovo Array**	**41.84**	**312**	*e*P	**P**	**17 52 42.0**	**+0.1**
ZALV	**Zalesovo Beam**	**41.84**	**312**	P	**P**	**17 52 42.5**	**+0.6**
	comp=Z,5.2nm,0.7s,baz=88,slow=6.9,SNR=28						
LSA	**Lhasa**	**42.31**	**275**	*e*P	**P**	**17 52 44.9**	**-1.7**
LSA				pmax	pmax		
	comp=Z,7.0nm,1.0s						
LSA	**Lhasa**	**42.31**	**275**	*e*P	**P**	**17 52 44.9**	**-1.7**
	comp=Z,7.5nm,1.0s						
NVS	**Novosibirsk**	**42.76**	**314**	*e*P	**P**	**17 52 49.3**	**0.0**
MKAR	**Makanchi Array**	**44.09**	**302**	P	**P**	**17 53 00.6**	**+0.3**
	comp=Z,3.8nm,0.6s,baz=87,slow=9.8,SNR=64						
MKAR				LR	LR	18 11 11.2	
	comp=Z,44nm,20.1s,baz=98,slow=36						
MKAR	**Makanchi Array**	**44.09**	**302**	*e*P	**P**	**17 52 59.0**	**-1.3**
MKAR	**Makanchi Array**	**44.09**	**302**	*e*P	**S**	**17 52 59.0**	**-1.3**
MAKZ	**Makanchi**	**44.30**	**302**	*e*P	**P**	**17 53 02.4**	**+0.5**
MAKZ				pmax	pmax		
	comp=Z,4.0nm,0.7s						
MAKZ	**Makanchi**	**44.30**	**302**	*e*P	**P**	**17 53 02.4**	**+0.5**
	comp=Z,4.3nm,0.7s						
KURK	**Kurchatov**	**45.88**	**308**	*e*P	P	17 53 11.0	-3.4
KURK				pmax	pmax		
	comp=Z,20nm,1.1s						
KURK	**Kurchatov**	**45.88**	**308**	*e*P	P	17 53 11.0	-3.4
	comp=Z,20nm,1.1s						
KURBB	**Kurchatov Arra**	**45.95**	**308**	P	**P**	**17 53 15.0**	**+0.1**
	comp=Z,7.5nm,0.6s,baz=84,slow=8.5,SNR=81						
KDAK	**Kodiak Island**	**46.83**	**42**	*i* P	**P**	**17 53 22.7**	**+1.0**
MLY	**Manley**	**47.58**	**32**	*e*P	**P**	**17 53 26.1**	**-1.5**
	comp=Z,5.7nm,1.2s						
MDM	**Murphy Dome**	**48.64**	**32**	*e*P	**P**	**17 53 34.8**	**-0.9**
	comp=Z,8.4nm,1.0s						
HDA	**Harding Lake**	**49.21**	**33**	*e*P	**P**	**17 53 40.5**	**+0.5**
	comp=Z,3.3nm,0.9s						
IL1	**Eielson Array**	**49.22**	**32**	*e*P	**P**	**17 53 40.2**	**+0.1**
ILAR	**Eielson Array**	**49.22**	**32**	P	**P**	**17 53 41.2**	**+1.1**
	comp=Z,3.1nm,0.8s,baz=269,slow=6.3,SNR=39						
ILB	**Eielson Array**	**49.22**	**32**	*e*P	**P**	**17 53 41.1**	**+1.0**
TKM2	**Tokmak 2**	**49.62**	**298**	*e*P	**P**	**17 53 42.1**	**-1.7**
TKM2	**Tokmak 2**	**49.62**	**298**	*e*P	**P**	**17 53 42.1**	**-1.7**
AAK	**Ala-Archa**	**50.48**	**298**	P	**P**	**17 53 50.4**	**+0.1**
	comp=Z,1.1nm,0.5s,baz=94,slow=5.3,SNR=7.5						
AAK	**Ala-Archa**	**50.48**	**298**	*e*P	**P**	**17 53 51.1**	**+0.8**
AAK				pmax	pmax		
	comp=Z,3.0nm,0.7s						
AAK	**Ala-Archa**	**50.48**	**298**	*e*P	**P**	**17 53 49.1**	**-1.1**
	comp=Z,2.1nm,0.8s						
BVAR	**Borovoye Array**	**50.50**	**312**	P	**P**	**17 53 50.3**	**+0.3**
	comp=Z,1.7nm,0.6s,baz=63,slow=9.5,SNR=9.5						
ZRNK	**Zerenda**	**51.33**	**312**	*e*P	**P**	**17 53 55.9**	**-0.4**
ZRNK	**Zerenda**	**51.33**	**312**	*e*P	**P**	**17 53 55.9**	**-0.4**
KKAR	**Karatay Array**	**53.11**	**300**	*e*P	**P**	**17 54 08.1**	**-1.6**
KKAR	**Karatay Array**	**53.11**	**300**	*e*P	**P**	**17 54 08.1**	**-1.6**
INK	**Inuvik**	**54.11**	**27**	P	**P**	**17 54 18.4**	**+1.9**
	comp=Z,2.3nm,0.6s,baz=307,slow=5.7,SNR=12						
INK	**Inuvik**	**54.11**	**27**	*e*P	**P**	**17 54 13.9**	**-2.7**
INK				pmax	pmax		
	comp=Z,7.0nm,1.1s						
INK	**Inuvik**	**54.11**	**27**	*e*P	**P**	**17 54 13.9**	**-2.7**
	comp=Z,7.4nm,1.1s						
ARU	**Arti**	**56.26**	**318**	P	**P**	**17 54 32.4**	**+0.2**
	comp=Z,1.7nm,0.4s,baz=108,slow=9.4,SNR=4.4						
ARU	**Arti**	**56.26**	**318**	*c i* P	**P**	**17 54 32.5**	**+0.2**
ARU				S	**S**	**18 02 22.8**	**+2.4**
ARU				SS	**SS**	**18 06 12.8**	**+6.1**
ARU				pmax	pmax		
	comp=Z,5.0nm,1.2s						
ARU	**Arti**	**56.26**	**318**	*e*P	**P**	**17 54 32.1**	**-0.1**
	comp=Z,4.3nm,0.7s						
FITZ	**Fitzroy Crossi**	**57.09**	**198**	P	**P**	**17 54 39.5**	**+1.0**
	comp=Z,3.1nm,0.6s,baz=22,slow=6.0,SNR=14						
WRAB	**Tennant Creek**	**57.31**	**188**	*d i* P	**P**	**17 54 39.5**	**-0.5**
WRAB				pmax	pmax		
	comp=Z,28nm,1.7s						
WRAB	**Tennant Creek**	**57.31**	**188**	*e*P	**P**	**17 54 38.9**	**-1.2**
	comp=Z,6.1nm,0.6s						
WB2	**Warramunga Arr**	**57.32**	**188**	*e*P	**P**	**17 54 38.6**	**-1.5**
	comp=Z,8.7nm,0.6s						
WRA	**Warramunga Arr**	**57.32**	**188**	P	**P**	**17 54 40.3**	**+0.2**
	comp=Z,7.9nm,0.6s,baz=5.4,slow=7.4,SNR=100						
AKTO	**Aktyubinsk**	**58.60**	**312**	P	**P**	**17 54 49.3**	**+0.4**
	comp=Z,1.3nm,0.5s,baz=104,slow=4.2,SNR=2.3						
AS01	**Alice Springs**	**61.04**	**188**	*e*P	**P**	**17 55 02.9**	**-2.9**
AS31	**Alice Springs**	**61.05**	**188**	*e*P	**P**	**17 55 04.2**	**-1.7**
	comp=Z,1.6nm,0.9s						
ASAR	**Alice Springs**	**61.05**	**188**	P	**P**	**17 55 06.2**	**+0.3**
	comp=Z,2.0nm,0.5s,baz=14,slow=11,SNR=71						
RES	**Resolute Bay**	**62.33**	**14**	*e*P	**P**	**17 55 14.1**	**+0.2**
RES				pmax	pmax		
	comp=Z,3.0nm,0.8s						
RES	**Resolute Bay**	**62.33**	**14**	*e*P	**P**	**17 55 14.1**	**+0.2**
	comp=Z,3.1nm,0.8s						
YKA	**Yellowknife Ar**	**63.53**	**30**	P	**P**	**17 55 23.1**	**+1.0**
	comp=Z,1.5nm,0.7s,baz=304,slow=6.8,SNR=37						
ARCES	**ARCESS Array B**	**63.81**	**339**	P	**P**	**17 55 24.6**	**+0.8**
	comp=Z,3.3nm,0.9s,baz=66,slow=7.2,SNR=8.6						
GEYT	**Alibeck**	**63.83**	**299**	P	**P**	**17 55 24.9**	**+0.3**
	comp=Z,1.9nm,0.7s,baz=11,slow=3.2,SNR=4.2						
FINES	**FINESS Array B**	**68.66**	**332**	P	**P**	**17 55 54.7**	**-0.3**
	comp=Z,3.2nm,0.8s,baz=44,slow=7.3,SNR=11						
STKA	**Stephens Creek**	**68.80**	**180**	P	**P**	**17 55 56.1**	**0.0**
	comp=Z,5.5nm,0.8s,baz=330,slow=5.9,SNR=8.8						
KBZ	**Khabaz**	**70.84**	**311**	P	**P**	**17 56 09.8**	**+1.1**
	comp=Z,2.9nm,0.9s,baz=165,slow=5.0,SNR=5.0						
KIV	**Kislovodsk**	**70.84**	**311**	*e*P	**P**	**17 56 09.5**	**+0.6**
KIV				pmax	pmax		
	comp=Z,13nm,1.0s						
FFC	**Flin Flon**	**73.43**	**33**	*e*P	**P**	**17 56 25.3**	**+1.2**
FFC				pmax	pmax		
	comp=Z,4.0nm,0.8s						
FFC	**Flin Flon**	**73.43**	**33**	*e*P	**P**	**17 56 25.3**	**+1.2**
	comp=Z,4.0nm,0.8s						
CMB	**Columbia Colle**	**73.62**	**55**	*e*P	**P**	**17 56 26.4**	**+0.8**
CMB				pmax	pmax		
	comp=Z,4.0nm,1.0s						
CMB	**Columbia Colle**	**73.62**	**55**	*e*P	**P**	**17 56 26.4**	**+0.8**
	comp=Z,3.8nm,1.0s						
FCC	**Fort Churchill**	**73.73**	**27**	*e*P	**P**	**17 56 24.8**	**-0.9**
FCC				pmax	pmax		
	comp=Z,8.0nm,1.1s						
FCC	**Fort Churchill**	**73.73**	**27**	*e*P	**P**	**17 56 24.8**	**-0.9**
	comp=Z,8.2nm,1.1s						
LRM	**Limekiln Ridge**	**73.88**	**44**	*e*P	**P**	**17 56 25.7**	**-1.5**
NB2	**NORSAR Subarra**	**74.01**	**337**	P	**P**	**17 56 27.2**	**-0.2**
	comp=Z,3.5nm,0.7s,baz=40,slow=6.2						
NOA	**NRSAR Array B**	**74.01**	**337**	P	**P**	**17 56 27.5**	**+0.1**
	comp=Z,1.5nm,0.8s,baz=39,slow=5.9,SNR=4.7						
NOA				LR	LR	18 32 24.6	
	comp=Z,35nm,20.0s,baz=15,slow=39						
AKASG	**Malin Array Be**	**74.18**	**322**	P	**P**	**17 56 28.1**	**-0.4**
	comp=Z,0.9nm,0.4s,baz=45,slow=6.2,SNR=12						
AKASG				LR	LR	18 30 42.7	
	comp=Z,40nm,18.8s,baz=75,slow=37						
KIEV	**Kiev**	**74.19**	**322**	P	**P**	**17 56 31.0**	**+2.4**
KIEV				pmax	pmax		
	comp=Z,5.0nm,1.0s						
BOZ	**Bozeman (W)**	**74.45**	**44**	*e*P	**P**	**17 56 29.3**	**-1.1**
BOZ				pmax	pmax		
	comp=Z,4.0nm,0.8s						
BOZ	**Bozeman (W)**	**74.45**	**44**	*e*P	**P**	**17 56 29.3**	**-1.1**
	comp=Z,3.9nm,0.8s						
NV01	**Mina Array Sit**	**74.74**	**53**	*e*P	**P**	**17 56 34.1**	**+1.8**
NVAR	**Mina Array Bea**	**74.74**	**53**	P	**P**	**17 56 34.4**	**+2.1**

comp=Z,1.3nm,0.5s,baz=282,slow=3.5,SNR=12
TORD Torodi Ar. Bea 117.25 315 PKP **PKPdf 18 03 37.4 -0.5**
comp=Z,0.2nm,0.4s,baz=17,slow=3.4,SNR=3.9
DBIC Dimbokro 126.20 317 PKP **PKPdf 18 03 55.0 -0.1**
comp=Z,3.4nm,1.0s,baz=311,slow=2.8,SNR=3.6
DBIC Dimbokro 126.20 317 PKIKP **PKPdf 18 03 55.0 -0.1**
LPAZ La Paz 146.46 59 PKPbc **PKPbc 18 04 35.0 +0.6**
comp=Z,3.1nm,0.5s,baz=334,slow=2.0,SNR=26

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*JMA **10** 17:54:06.6±0.3, 37.28N×142.31E, h0km, M4.4*
*ISCJB **10** 17:54:07.8±0.4, 37.13N±0.04×142.38E±0.04, h19km, mb4.1/29, MS3.2/5, Error ellipse: s-maj=5.7km s-min=4.5km az=139.9*
*IDC **10** 17:54:07.1±0.5, 37.15N×142.34E, h0km, mb4.1/22, mb1 4.2/26, mb1mx4.1/50, mbtmp4.1/26, ML3.3/4, MS3.2/7, Ms1 3.2/7, ms1mx2.9/44, Error ellipse: s-maj=15.9km s-min=12.0km az=113.0*
*NEIC **10** 17:54:09.5±3.1, 37.19N×142.29E, h16km±19km, mb4.6/7, Error ellipse: s-maj=9.8km s-min=5.8km az=127.0*
ISC 10 17:54:10.0±0.5, 37.16N±0.05×142.18E±0.05, h19km, n67, σ1≋21/63, mb4.1/29, MS3.2/5, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**1.11**	**268**	S		**Sg**	**17 54 47.4**	**+1.4**
JMM	**Marumori**	**1.31**	**303**	P		**Pn**	**17 54 32.6**	**-0.7**
JHO	**Hitachi**	**1.40**	**248**	P		**Pb**	**17 54 35.4**	**-0.2**
JIO	**Ouri**	**1.45**	**333**	P		**Pn**	**17 54 33.1**	**-2.1**
JFT	**Otama**	**1.52**	**284**	P		**Pn**	**17 54 36.2**	**+0.1**
JFT				S		**Sb**	**17 54 56.8**	**+0.5**
JOU	**Okura**	**1.71**	**316**	P		**Pn**	**17 54 38.0**	**-0.7**
JOU				S		**Sn**	**17 55 00.1**	**+0.1**
MJAR	**Matsushiro Arr**	**3.25**	**260**	Pn		**Pn**	**17 55 00.9**	**+1.0**
	0.7nm,0.3s,baz=82,slow=8.6,SNR=4.3							
MJAR				Sn		**Sb**	**17 55 43.5**	**-2.6**
	10nm,0.3s,baz=77,slow=12,SNR=4.6							
MAJO	**Matsushiro**	**3.25**	**260**	*e*Pn		**Pn**	**17 55 01.8**	**+1.9**
MAJO				*e*Sn		**Sn**	**17 55 36.8**	**-1.2**
MAT	**Matsushiro**	**3.25**	**260**	P		**Pn**	**17 55 01.7**	**+1.8**
MAT				S		**Sb**	**17 55 44.7**	**-1.5**
JHJ	**Hachijo jima 2**	**4.48**	**207**	Pn		**Pn**	**17 55 16.3**	**-0.5**
	32nm,0.3s,baz=333,slow=20,SNR=26							
JHJ				Sn		**Sn**	**17 56 07.7**	**-0.8**
	83nm,0.3s,baz=222,slow=22,SNR=8.2							
JHJ				LR		LR	17 56 45.8	
	comp=Z,198nm,20.6s,baz=82,slow=35							
ERM	**Erimo**	**4.91**	**9**	*e*Pn		**Pn**	**17 55 22.6**	**-0.2**
ERM				*e*Sn		**Sn**	**17 56 22.9**	**+3.9**
YSS	**Yuzh-Sakhalins**	**9.80**	**2**	*e*Pn		**Pn**	**17 56 26.9**	**-2.9**
	23nm,1.0s							
YSS				*e*Sn		**Sn**	**17 58 20.1**	**+0.8**
JNU	**Nakatsue**	**10.09**	**250**	Pn		**Pn**	**17 56 36.3**	**+2.4**
	0.4nm,0.3s,baz=60,slow=7.2,SNR=13							
USRK	**Ussuriysk Ar.**	**10.46**	**315**	Pn		Pn	17 56 42.6	+3.9
	0.2nm,0.3s,baz=143,slow=14,SNR=6.6							
KSRS	**Korea Array**	**11.36**	**276**	Pn		Pn	17 56 56.5	+5.3
	0.2nm,0.3s,baz=91,slow=14,SNR=14							
KSAR	**Wonju Array Be**	**11.39**	**276**	Pn		Pn	17 56 56.5	+4.8
KLR	**Kul'dur**	**14.25**	**331**	Pn		**P**	**17 57 35.5**	**-2.3**
	0.1nm,0.3s,baz=130,slow=12,SNR=4.6							
KLR				LR		LR	18 02 30.9	
	comp=Z,80nm,21.2s,baz=142,slow=35							
PETK	**Petropavlovsk-**	**19.28**	**29**	P		**P**	**17 58 32.8**	**-0.6**
	0.1nm,0.3s,baz=198,slow=14,SNR=3.3							
MA2	**Magadan**	**22.11**	**1**	P		**P**	**17 59 14.1**	**-0.4**
	3.8nm,0.7s,baz=214,slow=10,SNR=6.1							
MA2				LR		LR	18 07 38.6	
	comp=Z,46nm,21.4s,baz=234,slow=35							
YAK	**Yakutsk**	**26.09**	**347**	P		**P**	**17 59 42.5**	**+0.4**
	9.3nm,0.4s,baz=326,slow=2.6,SNR=8.3							
SEY	**Seymchan**	**26.55**	**10**	P		**P**	**17 59 46.7**	**+0.3**
	3.9nm,0.7s,baz=185,slow=7.3,SNR=18							
H11N2	**WAKE ISLAND Hy**	**27.69**	**122**	T		T	18 28 46.5	
	baz=314,slow=75,SNR=182							
H11N1	**WAKE ISLAND Hy**	**27.70**	**122**	T		T	18 28 52.4	
	baz=314,slow=75,SNR=109							
H11N3	**WAKE ISLAND Hy**	**27.70**	**122**	T		T	18 28 47.9	
	baz=314,slow=75,SNR=138							
ULN	**Ulaanbaatar**	**27.80**	**304**	*e*P		**P**	**17 59 58.4**	**+0.5**
ENH	**Enshi**	**27.95**	**265**	*e*P		**P**	**17 59 58.2**	**-1.1**
	11nm,0.8s							
SONM	**Songino Array**	**28.23**	**304**	P		**P**	**18 00 03.0**	**+1.2**
	1.3nm,0.7s,baz=100,slow=8.5,SNR=17							
H11S1	**WAKE ISLAND Hy**	**28.41**	**124**	T		T	18 29 44.0	
	baz=316,slow=76,SNR=110							
H11S3	**WAKE ISLAND Hy**	**28.41**	**124**	T		T	18 29 42.6	
	baz=316,slow=76,SNR=84							
H11S2	**WAKE ISLAND Hy**	**28.43**	**124**	T		T	18 29 42.3	
	baz=316,slow=76,SNR=75							
LAMP	**Lampang**	**41.55**	**255**	P		P	18 02 01.3	+4.8
CMMT	**Chiang Mai**	**41.91**	**256**	P		**P**	**18 01 59.9**	**+0.4**
CHTO	**Chiang Mai**	**41.92**	**256**	*e*P		**P**	**18 01 59.8**	**+0.4**
	10nm,0.6s							
CHTO	**Chiang Mai**	**41.92**	**256**	P		**P**	**18 02 00.0**	**+0.5**
CMAR	**Chiang Mai Arr**	**42.12**	**256**	LR		LR	18 20 29.7	
	comp=Z,32nm,19.4s,baz=205,slow=38							
ZALV	**Zalesovo Beam**	**42.29**	**312**	P		**P**	**18 02 03.5**	**+1.5**
	1.0nm,0.6s,baz=71,slow=8.1,SNR=13							
MKAR	**Makanchi Array**	**44.58**	**302**	P		**P**	**18 02 21.0**	**+0.3**
	1.0nm,0.8s,baz=87,slow=9.2,SNR=16							
KURK	**Kurchatov**	**46.34**	**308**	*e*P		**P**	**18 02 33.8**	**-0.7**
	19nm,0.8s							
TAPN	**Taplejung**	**46.55**	**274**	*e*P		**P**	**18 02 36.9**	**+0.1**
	3.0nm,0.4s							
RAMN	**Ramite**	**47.61**	**274**	*e*P		**P**	**18 02 45.8**	**+0.7**
	9.2nm,0.8s							
GUN	**Gumba**	**47.76**	**276**	*e*P		**P**	**18 02 47.7**	**+1.4**
	13nm,0.7s							
KKN	**Kakani**	**48.28**	**276**	*e*P		**P**	**18 02 51.3**	**+1.0**
	5.4nm,0.6s							
GKN	**Gorkha**	**48.70**	**277**	*e*P		**P**	**18 02 54.0**	**+0.6**
	20nm,1.0s							
ILAR	**Eielson Array**	**49.06**	**32**	P		**P**	**18 02 54.6**	**-0.8**
	1.3nm,0.8s,baz=267,slow=6.3,SNR=14							
KOLN	**Koldanda**	**49.63**	**277**	*e*P		**P**	**18 03 01.8**	**+1.2**
PYUN	**Piuthan**	**49.96**	**278**	*e*P		**P**	**18 03 05.0**	**+1.9**
TKM2	**Tokmak 2**	**50.11**	**299**	*e*P		**P**	**18 03 04.7**	**+0.6**
	3.3nm,0.8s							
KKAR	**Karatay Array**	**53.59**	**300**	*e*P		**P**	**18 03 29.4**	**-0.4**
	0.7nm,0.5s							
INK	**Inuvik**	**54.00**	**27**	P		**P**	**18 03 32.4**	**+0.1**
	1.3nm,0.7s,baz=282,slow=8.2,SNR=5.1							
FITZ	**Fitzroy Crossi**	**57.13**	**199**	P		**P**	**18 03 56.1**	**+0.7**
	1.6nm,0.7s,baz=45,slow=6.3,SNR=5.1							
WRAB	**Tennant Creek**	**57.26**	**189**	*e*P		**P**	**18 03 55.4**	**-0.9**
	8.0nm,0.6s							
WRA	**Warramunga Arr**	**57.27**	**189**	P		**P**	**18 03 55.9**	**-0.4**
	6.3nm,0.6s,baz=6.6,slow=7.3,SNR=100							
ABKAR	**Akbulak array**	**58.33**	**310**	*e*P		**P**	**18 04 03.2**	**-0.4**
	0.9nm,0.4s							
ASAR	**Alice Springs**	**61.00**	**189**	P		**P**	**18 04 22.1**	**-0.1**
	3.3nm,0.8s,baz=9.0,slow=8.9,SNR=53							
YKA	**Yellowknife Ar**	**63.39**	**30**	P		**P**	**18 04 36.8**	**-1.0**
	0.5nm,0.7s,baz=300,slow=6.8,SNR=9.2							
ARCES	**ARCESS Array B**	**64.10**	**340**	LR		LR	18 39 00.0	
	comp=Z,32nm,18.0s,baz=56,slow=42							
STKA	**Stephens Creek**	**68.68**	**181**	P		**P**	**18 05 12.6**	**+0.6**
	4.0nm,1.1s,baz=281,slow=4.7,SNR=3.9							
STKA				LR		LR	18 39 27.2	
	comp=Z,6.7nm,18.8s,baz=204,slow=40							
FINES	**FINESS Array B**	**68.99**	**332**	P		**P**	**18 05 14.1**	**+0.5**
	2.3nm,0.7s,baz=60,slow=4.6,SNR=9.6							
FINES				LR		LR	18 37 50.6	
	comp=Z,44nm,19.3s,baz=32,slow=38							
KBZ	**Khabaz**	**71.29**	**311**	P		**P**	**18 05 29.6**	**+1.5**
	0.9nm,0.8s,baz=8.1,slow=7.1,SNR=2.5							
NOA	**NORSAR Array B**	**74.31**	**338**	P		**P**	**18 05 45.8**	**0.0**
	1.5nm,0.9s,baz=39,slow=5.7,SNR=3.3							
NVAR	**Mina Array Bea**	**74.42**	**54**	P		**P**	**18 05 47.6**	**+0.5**
	1.1nm,0.8s,baz=274,slow=7.6,SNR=8.3							
AKASG	**Malin Array Be**	**74.58**	**323**	P		**P**	**18 05 46.9**	**-0.5**
	1.4nm,0.5s,baz=45,slow=6.2,SNR=12							
PDAR	**Pinedale Array**	**77.14**	**46**	P		**P**	**18 06 01.6**	**-1.0**
	0.3nm,0.6s,baz=260,slow=5.1,SNR=3.9							
BRTR	**Keskin Array B**	**79.23**	**312**	P		**P**	**18 06 14.4**	**+0.4**
	0.8nm,0.9s,baz=49,slow=13,SNR=3.9							
GERES	**GERESS Array B**	**82.93**	**329**	P		**P**	**18 06 33.6**	**+0.1**
	0.3nm,0.5s,baz=44,slow=4.1,SNR=4.8							
TXAR	**Lajitas Array**	**89.56**	**53**	P		**P**	**18 07 07.1**	**+0.6**
	0.2nm,0.5s,baz=318,slow=1.2,SNR=3.5							
LPAZ	**La Paz**	**146.10**	**60**	PKPbc		**PKPab**	**18 13 50.3**	**-0.3**
	2.4nm,0.8s,baz=339,slow=4.1,SNR=11							

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*ISCJB **10** 17:55:27.0±1.6, 27.11N±0.2×143.50E±0.10, h10km, mb3.7/9, MS3.3/2, Error ellipse: s-maj=35.1km s-min=10.0km az=167.6*
*IDC **10** 17:55:27.3±1.7, 27.11N×143.50E, h0km, mb3.7/8, mb1 3.9/9, mb1mx3.7/45, mbtmp3.7/9, MS3.3/2, Ms1 3.3/2, ms1mx2.6/48, Error ellipse: s-maj=43.0km s-min=19.5km az=176.0*
ISC 10 17:55:27.4±1.8, 26.9N±0.3×143.49E±0.08, h10km, n14, σ1≋05/12, mb3.7/9, Bonin Islands region

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
JCJ	**Chichijima**	**1.18**	**279**	Pn		**Pg**	**17 55 50.3**	**+0.2**
	48nm,0.3s,baz=77,slow=23,SNR=60							
JCJ				Sn		**Sb**	**17 56 04.9**	**-0.4**
	75nm,0.3s,baz=284,slow=22,SNR=16							
USRK	**Ussuriysk Ar.**	**19.58**	**335**	P		**Pn**	**17 59 56.0**	**-0.9**
	baz=160,slow=13,SNR=4.5							
KLR	**Kul'dur**	**24.06**	**341**	P		**P**	**18 00 43.4**	**+0.6**
	1.4nm,0.7s,baz=183,slow=5.1,SNR=4.3							
SONM	**Songino Array**	**35.65**	**316**	P		**P**	**18 02 25.2**	**-0.5**
	0.8nm,1.0s,baz=94,slow=4.6,SNR=3.8							
PMG	**Port Moresby**	**36.29**	**174**	LR		LR	18 15 52.7	
	comp=Z,31nm,18.4s,baz=353,slow=34							
ZALV	**Zalesovo Beam**	**50.38**	**319**	P		**P**	**18 04 25.8**	**+1.1**
	1.3nm,0.8s,baz=93,slow=7.4,SNR=3.7							
MKAR	**Makanchi Array**	**51.48**	**310**	P		**P**	**18 04 33.9**	**+0.8**
	0.7nm,0.8s,baz=94,slow=6.2,SNR=3.1							
ILAR	**Eielson Array**	**57.31**	**29**	P		**P**	**18 05 14.6**	**-0.6**
	0.8nm,0.8s,baz=272,slow=6.7,SNR=4.9							
INK	**Inuvik**	**62.70**	**25**	P		**P**	**18 05 52.0**	**-0.1**
	0.6nm,0.4s,baz=283,slow=7.8,SNR=3.3							
YKA	**Yellowknife Ar**	**71.74**	**29**	P		**P**	**18 06 49.3**	**-0.2**
	0.6nm,0.8s,baz=293,slow=5.8,SNR=6.8							
FINES	**FINESS Array B**	**78.61**	**334**	P		P	18 07 34.5	+5.4
	0.5nm,0.3s,baz=80,slow=4.8,SNR=9.3							
NVAR	**Mina Array Bea**	**79.70**	**52**	P		**P**	**18 07 37.3**	**+1.4**
	0.4nm,0.6s,baz=286,slow=7.4,SNR=3.3							
IDI	**Anoyia**	**95.20**	**314**	LR		LR	18 55 48.1	
	comp=Z,16nm,18.8s,baz=34,slow=38							
LPAZ	**La Paz**	**148.83**	**77**	PKPbc		**PKPab**	**18 15 18.6**	**-2.0**
	0.7nm,0.6s,baz=354,slow=4.5,SNR=3.5							

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*ISCJB **10** 17:56:19.1±1.1, 36.43N±0.05×28.80E±0.04, h3km±7km, Error ellipse: s-maj=9.5km s-min=5.5km az=17.8*
*CSEM **10** 17:56:19.3±0.3, 36.42N×28.79E, h2km, MD2.7, Error ellipse: s-maj=5.8km s-min=3.0km az=14.0*
*DDA **10** 17:56:20.4, 36.52N×28.75E, h7km, Md2.7*
*ISK **10** 17:56:20.2, 36.52N×28.82E, h9km, MD2.7*
ISC 10 17:56:19.8±1.2, 36.48N±0.05×28.81E±0.03, h14km±7km, n22, σ0≋43/40, Dodecanese Islands

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
FETY	**Fethiye**	**0.27**	**54**	*e*PG		**Pg**	**17 56 25.5**	**0.0**
FETY				*e*SG		**Sg**	**17 56 29.5**	**+0.1**
FETY	**Fethiye**	**0.27**	**54**	*e*Pg		**Pg**	**17 56 25.5**	**0.0**
FETY				*e*Sg		**Sg**	**17 56 29.5**	**+0.1**
DALY	**Dalyan (Mu˘la**	**0.36**	**339**	*e*PG		**Pg**	**17 56 27.0**	**-0.2**
DALY				*e*SG		**Sg**	**17 56 32.0**	**-0.1**
DALY	**Dalyan (Mu˘la**	**0.36**	**339**	*e*Pg		**Pg**	**17 56 27.0**	**-0.2**
DALY				*e*Sg		**Sg**	**17 56 32.1**	**-0.1**
TURN	**Turunc**	**0.43**	**337**	*i* P		**Pb**	**17 56 29.4**	**+0.3**
TURN				*i* S		**Sn**	**17 56 38.0**	**-1.1**
TURN	**Turunc**	**0.43**	**337**	P		**Pb**	**17 56 29.4**	**+0.3**
TURN				S		**Sn**	**17 56 38.0**	**-1.1**
AKAS	**Kas**	**0.69**	**111**	*i* P		**Pg**	**17 56 32.6**	**-0.5**
AKAS				*i* S		**Sn**	**17 56 46.0**	**+0.3**
AKAS	**Kas**	**0.69**	**111**	P		**Pg**	**17 56 32.7**	**-0.5**
AKAS				S		**Sn**	**17 56 46.0**	**+0.3**
YER	**Yerkesik**	**0.78**	**327**	*e*PG		**Pb**	**17 56 35.4**	**+0.2**
YER				*e*SG		**Sb**	**17 56 45.9**	**+0.3**
YER	**Yerkesik**	**0.78**	**327**	*e*Pg		**Pb**	**17 56 35.4**	**+0.2**
YER				*e*Sg		**Sb**	**17 56 45.9**	**+0.3**
ELL	**Elmali**	**0.92**	**73**	*e*PG		**Pn**	**17 56 38.6**	**+0.2**
ELL	**Elmali**	**0.92**	**73**	*e*Pg		**Pn**	**17 56 38.6**	**+0.2**
GOLH	**Golhisar**	**0.97**	**38**	*i* P		**Pb**	**17 56 37.9**	**-0.5**
GOLH				*i* S		**Sn**	**17 56 53.0**	**+0.4**
GOLH	**Golhisar**	**0.97**	**38**	P		**Pb**	**17 56 37.9**	**-0.5**
GOLH				S		**Sn**	**17 56 53.0**	**+0.4**
BDRM	**Kayabasi**	**1.25**	**299**	*i* P		**Pn**	**17 56 42.8**	**0.0**
BDRM				*i* S		**Sg**	**17 56 59.8**	**-0.2**
BDRM	**Kayabasi**	**1.25**	**299**	P		**Pn**	**17 56 42.8**	**0.0**
BDRM				S		**Sg**	**17 56 59.8**	**-0.2**
BODT	**Bodrum**	**1.34**	**296**	*e*PN		**Pg**	**17 56 45.1**	**-0.4**
BODT				*e*SN		**Sg**	**17 57 03.8**	**+0.8**
BODT	**Bodrum**	**1.34**	**296**	*e*Pn		**Pg**	**17 56 45.1**	**-0.4**
BODT				*e*Sn		**Sg**	**17 57 03.8**	**+0.8**
AYDN	**Tasoluk**	**1.40**	**328**	*i* P		**Pb**	**17 56 45.7**	**0.0**
AYDN				*i* S		**Sg**	**17 57 05.2**	**+0.3**
AYDN	**Tasoluk**	**1.40**	**328**	P		**Pb**	**17 56 45.7**	**0.0**
AYDN				S		**Sg**	**17 57 05.2**	**+0.3**
AYDB	**Zeytinkoy-Aydi**	**1.64**	**334**	*e*PN		**Pb**	**17 56 49.8**	**0.0**
AYDB	**Zeytinkoy-Aydi**	**1.64**	**334**	*e*Pn		**Pb**	**17 56 49.8**	**0.0**

IDC 10 18:02:55.4±3.5, 15.14S×167.00E, h139km±27km, mb3.2/5, mb1 3.4/7, mb1mx3.3/36, mbtmp3.8/7, Error ellipse: s-maj=45.6km s-min=22.8km az=79.0, Vanuatu Islands

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**6.91**	**184**	P		Pn	18 04 34.7	+0.4
	6.2nm,0.3s,baz=36,slow=8.7,SNR=50							
DZM				S		Sn	18 05 51.5	-0.2
	0.2nm,0.3s,baz=323,slow=20,SNR=2.8							
HNR	**Honiara**	**8.93**	**309**	P		Pn	18 05 01.2	-0.1
	1.7nm,0.3s,baz=101,slow=11,SNR=3.7							
STKA	**Stephens Creek**	**28.53**	**230**	P		P	18 08 38.2	+0.2
	2.8nm,0.8s,baz=50,slow=8.6,SNR=4.5							
WRA	**Warramunga Arr**	**31.48**	**257**	P		P	18 09 04.2	+0.1
	0.2nm,0.6s,baz=84,slow=8.8,SNR=2.6							
ASAR	**Alice Springs**	**32.29**	**250**	P		P	18 09 11.2	-0.1
	0.2nm,0.4s,baz=78,slow=9.3,SNR=10							
ASAR				PcP		PcP	18 11 55.5	-0.8
	0.2nm,0.8s,baz=86,slow=2.8,SNR=3.6							
SONM	**Songino Array**	**82.68**	**324**	P		P	18 15 04.0	+0.5
	0.1nm,0.4s,baz=138,slow=6.7,SNR=2.9							
MKAR	**Makanchi Array**	**97.33**	**316**	P		P	18 16 12.4	-0.4
	0.3nm,0.7s,baz=96,slow=5.8,SNR=3.4							

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*IDC **10** 18:05:34.7±0.9, 12.48N×144.08E, h0km, mb3.3/8, mb1 3.6/8, mb1mx3.5/34, mbtmp3.3/8, MS2.6/1, Ms1 2.6/1, ms1mx2.3/22, Error ellipse: s-maj=28.2km s-min=16.2km az=121.0*
*ISCJB **10** 18:05:37.3±0.7, 12.5N±0.1×144.0E±0.1, h27km, mb3.3/8, MS2.5/1, Error ellipse: s-maj=23.0km s-min=9.4km az=38.0*
ISC 10 18:05:38.8±0.9, 12.5N±0.1×144.1E±0.2, h27km, n13, σ0≋96/10, mb3.4/8, South of Mariana Islands

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
GUMO	**Guam**	**1.36**	**35**	Pn		**Pn**	**18 06 01.9**	**-0.2**
	38nm,0.3s,baz=249,slow=4.0,SNR=15							
GUMO				Sn		**Sn**	**18 06 19.7**	**+0.4**
	115nm,0.3s,baz=23,slow=21,SNR=23							
GUMO				LR		LR	18 06 45.3	
	comp=Z,151nm,19.2s,baz=138,slow=53							
H11N1	**WAKE ISLAND Hy**	**23.07**	**69**	T		T	18 34 36.1	
	baz=255,slow=75,SNR=9.4							
H11N2	**WAKE ISLAND Hy**	**23.08**	**69**	T		T	18 34 36.5	
	baz=255,slow=75,SNR=8.2							
H11N3	**WAKE ISLAND Hy**	**23.09**	**69**	T		T	18 34 37.3	
	baz=255,slow=75,SNR=8.8							
KSRS	**Korea Array**	**28.77**	**333**	LR		LR	18 22 57.5	
	comp=Z,11nm,18.4s,baz=270,slow=36							
WRA	**Warramunga Arr**	**33.60**	**197**	P		**P**	**18 12 16.8**	**-0.3**
	0.3nm,0.7s,baz=23,slow=9.7,SNR=8.4							
ASAR	**Alice Springs**	**37.27**	**195**	P		**P**	**18 12 49.0**	**+0.5**
	0.4nm,0.9s,baz=22,slow=11,SNR=6.2							
CMAR	**Chiang Mai Arr**	**43.80**	**284**	P		**P**	**18 13 42.1**	**-0.6**
	0.3nm,0.6s,baz=91,slow=6.3,SNR=4.0							
SONM	**Songino Array**	**47.20**	**326**	P		**P**	**18 14 09.6**	**+0.3**
	0.2nm,0.6s,baz=133,slow=8.1,SNR=2.7							
MKAR	**Makanchi Array**	**61.75**	**317**	P		**P**	**18 15 55.9**	**+0.9**
	0.1nm,0.5s,baz=91,slow=8.9,SNR=3.9							
ILAR	**Eielson Array**	**99.91**	**25**	P		**P**	**18 16 45.3**	**-1.9**
	0.2nm,0.6s,baz=243,slow=6.0,SNR=3.5							
YKA	**Yellowknife Ar**	**84.21**	**27**	P		**P**	**18 18 07.9**	**+0.3**
	0.1nm,0.3s,baz=286,slow=5.2,SNR=5.5							
NVAR	**Mina Array Bea**	**88.23**	**51**	P		**P**	**18 18 29.2**	**+0.9**
	0.2nm,0.5s,baz=255,slow=6.3,SNR=2.5							

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*ISCJB **10** 18:06:11.8±0.4, 32.26N±0.03×115.24W±0.03, h22km±4km, Error ellipse: s-maj=4.7km s-min=3.8km az=39.0*
*MEX **10** 18:06:13.4±0.4, 32.35N×115.10W, h16km±3km, MD3.7*
*ECX **10** 18:06:13.0±0.6, 32.24N×115.27W, h6km, MD3.0, ML3.2*
ISC 10 18:06:11.7±1.0, 32.26N±0.03×115.23W±0.03, h19km±2km, n30, σ0≋67/44, 7C-5D, California-Baja California border region

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
MBIG	**Mexicali**	**0.15**	**11**	*e*P		**Pg**	**18 06 16.3**	**+0.1**
MBIG				*i* S		**Sg**	**18 06 21.1**	**+1.9**
MBIG	**Mexicali**	**0.15**	**11**	*e*P		**Pg**	**18 06 16.1**	**-0.1**
MBIG				*e*S		**Sg**	**18 06 18.4**	**-0.8**
CPBX	**Cerro Prieto**	**0.17**	**339**	*e*P		**Pg**	**18 06 16.3**	**-0.1**
CPBX				*e*S		**Sg**	**18 06 19.5**	**0.0**
CPBX				⇑*e*			18 06 21.9	
CPBX				AML	AML		18 06 21.9	
	comp=N,14μm,0.3s							
SGL	**Mount Signal**	**0.57**	**313**	⇓*i*P		**Pb**	**18 06 22.9**	**-0.1**
COA	**Coachella**	**0.61**	**9**	⇑*i*P		**Pg**	**18 06 24.4**	**+0.5**
WESC	**Westside Schoo**	**0.65**	**320**	⇓*e*P		**Pg**	**18 06 24.9**	**+0.2**
YMD	**Yuma Desert**	**0.65**	**63**	⇑*i*P		**Pn**	**18 06 25.1**	**-0.8**
YUH	**Yuha Desert**	**0.70**	**304**	⇑*i*P		**Pb**	**18 06 24.8**	**-0.5**
RMX	**La Rumorosa**	**0.79**	**296**	*e*P		**Pb**	**18 06 25.9**	**-1.1**
RMX				*e*S		**Sb**	**18 06 36.1**	**-1.4**
ECBX	**El Chinero**	**0.80**	**169**	⇓*e*P		**Pb**	**18 06 26.8**	**-0.2**
ECBX				*e*S		**Sg**	**18 06 37.5**	**-0.5**
IBP	**Imperial Bould**	**0.83**	**299**	⇑*e*P		**Pb**	**18 06 27.2**	**-0.4**
IBP	**Imperial Bould**	**0.83**	**299**	P		**Pb**	**18 06 27.2**	**-0.4**
	baz=123,SNR=90							
IBP				S		**Sb**	**18 06 38.0**	**-0.4**
	baz=123							
SWSC	**Sam W. Stewart**	**0.83**	**325**	P		**Pb**	**18 06 26.6**	**-0.9**
	baz=149,SNR=16							
SWSC				S		**Sb**	**18 06 38.2**	**-0.2**
	baz=149							
GLA	**Glamis**	**0.86**	**23**	P		**Pb**	**18 06 27.8**	**-0.4**
	baz=204,SNR=79							
GLA				S		**Sg**	**18 06 39.6**	**-0.5**
	baz=204							
ZAX	**El Zacaton**	**1.16**	**230**	*e*P		**Pn**	**18 06 32.4**	**-0.5**
MONP2	**Monument Peak**	**1.18**	**302**	P		**Pn**	**18 06 33.2**	**-0.3**
	baz=125,SNR=24							
MONP2				S		**Sb**	**18 06 48.6**	**-0.2**
	baz=125							
CBX	**Cerro Bola**	**1.21**	**273**	⇑*e*P		**Pn**	**18 06 33.9**	**+0.1**
CBX	**Cerro Bola**	**1.21**	**273**	*i* P		**Pb**	**18 06 34.1**	**0.0**
CBX				*i* S		**Sb**	**18 06 49.4**	**-0.1**
SPIG	**San Pedro Mart**	**1.23**	**189**	*e*P		**Pn**	**18 06 33.8**	**-0.4**
SPIG				*e*S		**Sn**	**18 06 50.3**	**0.0**
SPX	**San Pedro Mart**	**1.23**	**189**	*e*P		**Pn**	**18 06 33.9**	**-0.2**
SPX				AML	AML		18 06 52.7	
	comp=E,317nm,0.4s							
SPX				⇓*e*			18 06 52.7	
TJIG	**Tijuana**	**1.23**	**279**	⇓*e*P		**Pn**	**18 06 33.9**	**0.0**
TJIG	**Tijuana**	**1.23**	**279**	*e*P		**Pn**	**18 06 33.7**	**-0.2**
TJIG				*i* S		**Sb**	**18 06 49.4**	**-0.6**
BAR	**Barrett**	**1.29**	**289**	⇑*e*P		**Pn**	**18 06 35.0**	**+0.3**
ECNX

MKAR PKPab **PKPab** **18 34 14.7 +0.4**
comp=Z,0.3nm,0.9s,baz=270,slow=1.4,SNR=2.7

*IDC **10** 18:20:54.2±2.3,36°.97N×140°.90E,h0km,mb3.5/2, mb1 3.5/4,mb1mx3.2/48,mbtmp3.5/4,ML3.0/2,Error ellipse: s-maj=40.3km s-min=28.6km az=56.0*
*ISCJB **10** 18:20:57.7±0.7,36°.69N±0°.03×140°.70E±0°.06,h7km±4km, mb3.3/2,Error ellipse: s-maj=7.8km s-min=4.1km az=20.2*
*JMA **10** 18:20:58.3,36°.70N×140°.67E,h4km±1km,M3.0*
JMA Felt II J1.
ISC 10 18:20:58.3±1.0,**36°.72N**±0°.04×**140°.63E**±0°.06,**h10**km±7km, **n18,**σ1°**06**/22,**Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JHO	**Hitachi**	**0.12**	**203**	P	**Pg**	**18 21 00.8**	**-0.4**
JHO				S	**Sg**	**18 21 02.6**	**-0.6**
ONAJ	**Iwakimizuishiy**	**0.41**	**20**	P	**Pg**	**18 21 06.5**	**+0.1**
ONAJ				S	**Sg**	**18 21 12.2**	**+0.4**
JYT	**Yasato**	**0.60**	**215**	P	**Pg**	**18 21 09.9**	**-0.1**
JYT				*eS*	**Sg**	**18 21 18.1**	**+0.2**
JSB	**Shiboa**	**0.62**	**294**	P	**Pb**	**18 21 11.6**	**+0.4**
JSB				*eS*	**Sb**	**18 21 20.1**	**+0.1**
JFK	**Kawauchi**	**0.68**	**17**	P	**Pg**	**18 21 11.4**	**-0.1**
JFK				S	**Sg**	**18 21 20.9**	**+0.6**
JFT	**Otama**	**0.83**	**344**	P	**Pb**	**18 21 14.8**	**-0.1**
JFT				S	**Sb**	**18 21 26.5**	**+0.4**
JFY	**Yanaizu**	**1.01**	**313**	P	**Pb**	**18 21 18.3**	**+0.4**
JFY				*eS*	**Sb**	**18 21 31.9**	**+0.7**
MJAR	**Matsushiro Arr**	**1.95**	**266**	Pn	**Pn**	**18 21 32.5**	**+1.0**
	4.2nm,0.3s,baz=80,slow=15,SNR=27						
MJAR				Sn	**Sb**	**18 21 58.4**	**+0.1**
	7.5nm,0.3s,baz=91,slow=27,SNR=5.9						
MAT	**Matsushiro**	**1.95**	**266**	P	**Pn**	**18 21 33.0**	**+1.5**
MAT				S	**Sb**	**18 21 59.3**	**+0.9**
JHJ	**Hachijo jima 2**	**3.66**	**191**	Pn	**Pn**	**18 21 57.2**	**+2.2**
	2.6nm,0.3s,baz=30,slow=20,SNR=2.0						
JHJ				Sn	**Sn**	**18 22 38.9**	**+0.8**
	5.2nm,0.3s,baz=73,slow=20,SNR=4.0						
H11N2	**WAKE ISLAND Hy**	**28.54**	**119**	T	T	18 56 36.9	
	baz=312,slow=75,SNR=181						
H11N1	**WAKE ISLAND Hy**	**28.55**	**119**	T	T	18 56 36.9	
	baz=312,slow=75,SNR=170						
H11N3	**WAKE ISLAND Hy**	**28.56**	**119**	T	T	18 56 38.3	
	baz=312,slow=75,SNR=177						
H11S1	**WAKE ISLAND Hy**	**29.23**	**121**	T	T	18 57 28.3	
	baz=314,slow=75,SNR=407						
H11S3	**WAKE ISLAND Hy**	**29.23**	**121**	T	T	18 57 28.3	
	baz=314,slow=75,SNR=233						
H11S2	**WAKE ISLAND Hy**	**29.24**	**121**	T	T	18 57 27.7	
	baz=314,slow=75,SNR=177						
ZALV	**Zalesovo Beam**	**41.66**	**313**	P	**P**	**18 28 43.9**	**-2.8**
	0.5nm,0.5s,baz=89,slow=6.4,SNR=3.6						
WRA	**Warramunga Arr**	**56.67**	**187**	P	**P**	**18 30 41.0**	**-0.9**
	0.1nm,0.5s,baz=6.0,slow=7.7,SNR=3.6						

IDC 10 18:25:17.7±7.2,**20°.05S**×**176°.02W**,**h0**km,**mb4.1**/4, **mb1 4.2**/5,**mb1mx3.7**/45,**mbtmp4.1**/5,**ML3.6**/1,**Error ellipse: s-maj=131.3km s-min=17.7km az=86.0,Fiji Islands region**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
URZ	**Urewera**	**19.11**	**197**	P	P	18 29 42.4	+0.3
	0.2nm,0.3s,baz=1.7,slow=0.4,SNR=3.3						
URZ				S	Sn	18 33 18.4	+0.9
	0.3nm,0.3s,baz=61,slow=19,SNR=3.9						
CTA	**Charters Tower**	**35.39**	**263**	P	P	18 32 16.9	+1.4
	5.0nm,1.1s,baz=96,slow=10,SNR=3.5						
STKA	**Stephens Creek**	**39.66**	**244**	P	P	18 32 52.2	+0.6
	1.6nm,0.5s,baz=94,slow=9.8,SNR=4.4						
ASAR	**Alice Springs**	**46.44**	**256**	P	P	18 33 45.9	-0.8
	2.2nm,0.7s,baz=89,slow=8.5,SNR=59						
WRA	**Warramunga Arr**	**46.51**	**261**	P	P	18 33 46.2	-1.1
	0.3nm,0.3s,baz=97,slow=7.6,SNR=24						

*NIED **10** 18:29:00,36°.30N×140°.80E,h32km,Mw3.4 Best double couple: M0 1.28000×10^14 NP1:φs145.00000°,δ53.00000°, λ-14.00000°. NP2:φs243.00000°,δ79.00000°, λ-142.00000°.*
*IDC **10** 18:29:03.8±1.1,36°.25N×140°.93E,h0km,mb3.3/6, mb1 3.5/7,mb1mx3.3/49,mbtmp3.3/7,ML3.0/1,Error ellipse: s-maj=28.1km s-min=20.9km az=54.0*
*ISCJB **10** 18:29:06.6±1.1,36°.24N±0°.06×140°.93E±0°.07,h31km±5km, mb3.2/6,Error ellipse: s-maj=9.6km s-min=8.7km az=156.0*
*JMA **10** 18:29:08.1±0.1,36°.29N×140°.85E,h38km±1km,M3.6*
JMA Felt II J1.
ISC 10 18:29:07.7±1.9,**36°.32N**±0°.07×**140°.89E**±0°.08,**h26**km±11km, **n20,**σ0°**77**/21,**mb3.3**/6,**Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JHO	**Hitachi**	**0.39**	**319**	P	**Pn**	**18 29 17.0**	**-0.8**
JHO				S	**Sb**	**18 29 22.9**	**+0.8**
JYT	**Yasato**	**0.57**	**261**	P	**Pb**	**18 29 19.1**	**0.0**
JYT				S	**Sb**	**18 29 26.5**	**-0.4**
ONAJ	**Iwakimizuishiy**	**0.79**	**355**	P	**Pb**	**18 29 22.8**	**-0.1**
JSB	**Shiboa**	**1.02**	**310**	P	**Pb**	**18 29 26.5**	**-0.2**
JSB				*eS*	**Sb**	**18 29 39.6**	**-0.1**
JAG	**Ashikaga**	**1.17**	**276**	P	**Pn**	**18 29 27.9**	**-0.5**
JAG				S	**Sn**	**18 29 41.7**	**-1.8**
JFT	**Otama**	**1.28**	**340**	P	**Pb**	**18 29 30.9**	**-0.3**
JFT				S	**Sb**	**18 29 46.9**	**-0.3**
MJAR	**Matsushiro Arr**	**2.18**	**277**	Pn	**Pn**	**18 29 42.2**	**-0.1**
	4.7nm,0.3s,baz=87,slow=9.8,SNR=34						
MJAR				Sn	**Sn**	**18 30 09.7**	**+1.3**
	9.1nm,0.3s,baz=87,slow=26,SNR=8.9						
MAT	**Matsushiro**	**2.18**	**277**	P	**Pn**	**18 29 43.1**	**+0.8**
MAT				S	**Sn**	**18 30 08.9**	**+0.5**
SONM	**Songino Array**	**27.85**	**305**	P	**P**	**18 34 54.8**	**-0.3**
	0.2nm,0.7s,baz=101,slow=7.5,SNR=2.7						
H11N2	**WAKE ISLAND Hy**	**28.15**	**119**	T	T	19 04 18.7	
	baz=311						
H11N1	**WAKE ISLAND Hy**	**28.16**	**119**	T	T	19 04 18.2	
	baz=311						
H11N3	**WAKE ISLAND Hy**	**28.17**	**119**	T	T	19 04 18.8	
	baz=311						
H11S1	**WAKE ISLAND Hy**	**28.84**	**121**	T	T	19 05 04.3	
	baz=314,slow=76,SNR=13						
H11S3	**WAKE ISLAND Hy**	**28.84**	**121**	T	T	19 05 05.4	
	baz=314,slow=76,SNR=7.4						
H11S2	**WAKE ISLAND Hy**	**28.85**	**121**	T	T	19 05 05.4	
	baz=314,slow=76,SNR=6.6						
ZALV	**Zalesovo Beam**	**42.09**	**313**	P	**P**	**18 36 57.7**	**+0.4**
	0.3nm,0.4s,baz=85,slow=8.3,SNR=2.8						
MKAR	**Makanchi Array**	**44.15**	**303**	P	**P**	**18 37 14.9**	**+0.9**
	0.3nm,0.7s,baz=89,slow=9.8,SNR=4.5						
ILAR	**Eielson Array**	**50.32**	**32**	P	**P**	**18 38 02.3**	**+0.4**
	0.7nm,0.9s,baz=265,slow=5.9,SNR=5.5						
WRA	**Warramunga Arr**	**56.29**	**187**	P	**P**	**18 38 45.1**	**-1.1**
	0.3nm,0.9s,baz=14,slow=8.8,SNR=2.6						
ASAR	**Alice Springs**	**60.02**	**187**	P	**P**	**18 39 12.4**	**+0.2**
	0.2nm,0.9s,baz=1.6,slow=6.5,SNR=3.1						

*IDC **10** 18:29:39.7±2.7,46°.24N×153°.07E,h0km,mb3.6/7, mb1 3.8/8,mb1mx3.5/52,mbtmp3.6/8,ML2.6/1,MS2.5/1, Ms1 2.5/1,ms1mx2.1/44,Error ellipse: s-maj=71.5km s-min=27.2km az=144.0*
*ISCJB **10** 18:29:42.5±2.4,46°.3N±0°.3×153°.1E±0°.4,h31km,mb3.5/7, Error ellipse: s-maj=60.5km s-min=19.1km az=140.1*
ISC 10 18:29:44.4±2.6,**46°.3N**±0°.4×**153°.1E**±0°.3,**h31**km,**n9,** σ0°**65**/8,**mb3.7**/7,**Kuril Islands**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
PETK	**Petropavlovsk-**	**7.47**	**22**	P	**Pn**	**18 31 30.9**	**-0.2**
	0.5nm,0.3s,baz=182,slow=14,SNR=8.7						
KLR	**Kul'dur**	**14.65**	**289**	LR	LR	18 38 50.1	
	comp=Z,20nm,19.8s,baz=106,slow=38						
MKAR	**Makanchi Array**	**47.15**	**298**	P	**P**	**18 38 13.0**	**-0.7**
	0.6nm,0.7s,baz=64,slow=7.9,SNR=6.4						
YKA	**Yellowknife Ar**	**51.32**	**36**	P	**P**	**18 38 44.9**	**-0.3**
	0.1nm,0.7s,baz=298,slow=7.0,SNR=3.2						
CMAR	**Chiang Mai Arr**	**52.24**	**257**	P	**P**	**18 38 52.6**	**-0.1**
	0.3nm,0.9s,baz=34,slow=6.6,SNR=2.5						
FINES	**FINESS Array B**	**64.47**	**335**	P	**P**	**18 40 17.5**	**+0.1**
	0.9nm,0.6s,baz=29,slow=8.7,SNR=6.7						
NOA	**NORSAR Array B**	**68.68**	**341**	P	**P**	**18 40 44.2**	**-0.1**
	0.5nm,0.6s,baz=42,slow=5.4,SNR=3.4						
AKASG	**Malin Array Be**	**71.94**	**326**	P	**P**	**18 41 04.5**	**+0.1**
	0.9nm,0.4s,baz=33,slow=6.3,SNR=7.4						
GERES	**GERESS Array B**	**78.88**	**334**	P	**P**	**18 41 45.6**	**+1.2**
	0.2nm,0.3s,baz=349,slow=7.5,SNR=3.2						

*NIED **10** 18:38:00,35°.60N×144°.20E,h8km,Mw4.0 Best double couple: M0 1.31000×10^15 NP1:φs26.00000°,δ25.00000°, λ-89.00000°. NP2:φs205.00000°,δ65.00000°, λ-90.00000°.*
*IDC **10** 18:38:50.9±0.7,35°.38N×144°.47E,h0km,mb3.8/20, mb1 4.0/24,mb1mx3.9/72,mbtmp3.9/24,ML3.8/4,MS3.2/8, Ms1 3.2/8,ms1mx2.9/40,Error ellipse: s-maj=17.3km s-min=13.8km az=125.0*
*NEIC **10** 18:38:52.2±0.4,35°.33N×144°.43E,h10km,mb4.0/1,Error ellipse: s-maj=8.5km s-min=6.9km az=115.0*
*ISCJB **10** 18:38:55.0±0.4,35°.52N±0°.04×144°.18E±0°.04,h33km, mb3.9/22,MS3.4/6,Error ellipse: s-maj=5.9km s-min=4.1km az=170.5*
*JMA **10** 18:38:56.4±0.4,35°.63N×144°.16E,h52km,M4.2*
ISC 10 18:38:56.8±0.6,**35°.53N**±0°.05×**144°.26E**±0°.07,**h35**km,**n62,** σ1°**57**/66,**mb3.9**/22,**MS3.2**/6,**Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
CHOJ	**Chosi**	**2.78**	**274**	P	**Pn**	**18 39 38.8**	**0.0**
CHOJ				*eS*	**Sn**	**18 40 08.1**	**-3.0**
BSO1	**Boso 1**	**2.83**	**253**	P	**Pn**	**18 39 38.2**	**-0.8**
BSO1				S	**Sn**	**18 40 10.4**	**-1.2**
BSO2	**Boso 2**	**2.98**	**256**	S	**Sn**	**18 40 18.1**	**+2.5**
BSO3	**Boso 3**	**3.16**	**258**	P	**Pn**	**18 39 43.6**	**-0.2**
JHO	**Hitachi**	**3.18**	**291**	P	**Pn**	**18 39 43.9**	**-0.4**
JHO				S	**Sn**	**18 40 18.5**	**-2.5**
ONAJ	**Iwakimizuishiy**	**3.21**	**300**	P	**Pn**	**18 39 43.9**	**-0.8**
ONAJ				*eS*	**Sn**	**18 40 19.1**	**-2.6**
BSO4	**Boso 4**	**3.26**	**262**	P	**Pn**	**18 39 46.3**	**+1.0**
JFK	**Kawauchi**	**3.29**	**305**	P	**Pn**	**18 39 44.7**	**-1.1**
JYT	**Yasato**	**3.38**	**283**	P	**Pn**	**18 39 46.3**	**-0.7**
JYT				S	**Sn**	**18 40 23.6**	**-2.2**
TATJ	**Tateyama 2**	**3.61**	**263**	P	**Pn**	**18 39 50.8**	**+0.6**
TATJ				*eS*	**Sn**	**18 40 30.9**	**-0.7**
JMM	**Marumori**	**3.63**	**311**	P	**Pn**	**18 39 49.8**	**-0.7**
JMM				*eS*	**Sn**	**18 40 29.9**	**-2.2**
JFT	**Otama**	**3.73**	**303**	P	**Pn**	**18 39 51.9**	**0.0**
JFT				*eS*	**Sn**	**18 40 32.8**	**-1.8**
JIO	**Ouri**	**3.73**	**322**	P	**Pn**	**18 39 51.5**	**-0.4**
JIO				*eS*	**Sn**	**18 40 32.1**	**-2.5**
JAG	**Ashikaga**	**4.00**	**284**	P	**Pn**	**18 39 55.4**	**-0.2**
JHU	**Hanno**	**4.07**	**276**	P	**Pn**	**18 39 56.6**	**+0.1**
JHU				S	**Sn**	**18 40 43.2**	**+0.3**
JMK	**Ichinoseki**	**4.19**	**325**	P	**Pn**	**18 39 57.1**	**-1.0**
JMK				S	**Sn**	**18 40 43.7**	**-2.1**
JOD2	**Odawara 2**	**4.24**	**268**	P	**Pn**	**18 39 58.3**	**-0.5**
JOD2				S	**Sn**	**18 40 45.0**	**-2.1**
JRY	**Ryogami san**	**4.38**	**278**	P	**Pn**	**18 40 01.1**	**+0.2**
JRY				S	**Sn**	**18 40 51.1**	**+0.3**
JHJ2	**Mitsune**	**4.40**	**238**	P	**Pn**	**18 39 59.2**	**-1.9**
JHJ2				*eS*	**Sn**	**18 40 47.1**	**-4.0**
JHJ2	**Mitsune**	**4.40**	**238**	*ePn*	**Pn**	**18 39 59.2**	**-1.9**
JHJ2				*eSn*	**Sn**	**18 40 53.5**	**+2.4**
JHJ	**Hachijo jima 2**	**4.42**	**238**	Pn	**Pn**	**18 39 59.3**	**-2.0**
	40nm,0.3s,baz=347,slow=19,SNR=29						
JHJ				Sn	**Sn**	**18 40 46.3**	**-5.3**
	38nm,0.3s,baz=73,slow=19,SNR=7.5						
MJAR	**Matsushiro Arr**	**5.01**	**283**	Pn	**Pn**	**18 40 10.2**	**+0.8**
	2.8nm,0.3s,baz=86,slow=12,SNR=29						
MAJO	**Matsushiro**	**5.01**	**283**	*ePn*	**Pn**	**18 40 08.6**	**-0.8**
	20nm,0.6s						
MAJO				*eSn*	Sn	18 41 12.3	+6.1
MAT	**Matsushiro**	**5.01**	**283**	P	**Pn**	**18 40 09.6**	**+0.1**
MAT				S	**Sn**	**18 41 03.6**	**-2.5**
CBIJ	**Chichi jima**	**8.60**	**192**	Pn	Pn	18 40 53.1	-5.6
JCJ	**Chichijima**	**8.60**	**192**	Pn	Pn	18 40 53.1	-5.6
	1.8nm,0.3s,baz=5.3,slow=20,SNR=6.4						
JNU	**Nakatsue**	**11.32**	**262**	LR	LR	18 46 54.4	
	comp=Z,35nm,19.3s,baz=124,slow=42						
KLR	**Kul'dur**	**16.48**	**330**	Pn	**P**	**18 42 47.0**	**-0.6**
	0.1nm,0.3s,baz=139,slow=12,SNR=3.2						
KLR				LR	LR	18 48 43.4	
	comp=Z,50nm,21.9s,baz=98,slow=36						
MA2	**Magadan**	**24.43**	**8**	P	**P**	**18 44 11.6**	**-0.3**
	0.8nm,0.3s,baz=179,slow=8.3,SNR=3.2						
H11N2	**WAKE ISLAND Hy**	**25.40**	**122**	T	T	19 10 53.7	
	baz=314,slow=75,SNR=24						
H11N1	**WAKE ISLAND Hy**	**25.41**	**122**	T	T	19 10 54.2	
	baz=314,slow=75,SNR=19						
H11N3	**WAKE ISLAND Hy**	**25.42**	**122**	T	T	19 10 54.2	
	baz=314,slow=75,SNR=22						
H11S1	**WAKE ISLAND Hy**	**26.11**	**125**	T	T	19 11 35.6	
	baz=316,slow=76,SNR=14						
H11S3	**WAKE ISLAND Hy**	**26.11**	**125**	T	T	19 11 35.6	
	baz=316,slow=76,SNR=12						
H11S2	**WAKE ISLAND Hy**	**26.13**	**125**	T	T	19 11 35.6	
	baz=316,slow=76,SNR=17						
SEY	**Seymchan**	**27.89**	**8**	P	**P**	**18 44 42.1**	**-0.9**
	0.3nm,0.3s,baz=186,slow=18,SNR=3.3						
YAK	**Yakutsk**	**28.07**	**345**	P	**P**	**18 44 45.1**	**+0.5**
	11nm,0.5s,baz=195,slow=0.5,SNR=4.8						
ENH	**Enshi**	**29.55**	**270**	*eP*	P	18 44 51.1	-7.3
ULN	**Ulaanbaatar**	**30.10**	**306**	*eP*	**P**	**18 45 02.8**	**-0.2**
SONM	**Songino Array**	**30.53**	**306**	P	**P**	**18 45 09.3**	**+2.5**
	0.7nm,0.8s,baz=107,slow=8.2,SNR=6.8						
SONM				LR	LR	18 57 20.3	
	comp=Z,42nm,18.4s,baz=136,slow=36						
TLY	**Talaya**	**33.05**	**312**	LR	LR	18 59 50.7	
	comp=Z,37nm,18.0s,baz=146,slow=38						
CMAR	**Chiang Mai Arr**	**43.41**	**259**	P	**P**	**18 46 57.2**	**+1.0**
	0.7nm,0.7s,baz=45,slow=7.0,SNR=8.2						
ZALV	**Zalesovo Beam**	**44.62**	**314**	P	**P**	**18 47 06.8**	**+1.3**
	1.3nm,0.6s,baz=101,slow=8.4,SNR=8.0						
ZALV				PcP	**PcP**	**18 48 47.7**	**-0.1**
	0.5nm,0.5s,baz=90,slow=1.9,SNR=3.3						
ZALV				LR	LR	19 06 34.6	
	comp=Z,19nm,18.3s,baz=215,slow=37						
MKAR	**Makanchi Array**	**46.87**	**304**	P	**P**	**18 47 24.3**	**+0.9**
	0.9nm,0.9s,baz=88,slow=8.6,SNR=6.9						
MKAR				LR	LR	19 06 40.6	
	comp=Z,30nm,20.0s,baz=148,slow=36						
KURK	**Kurchatov**	**48.66**	**310**	P	**P**	**18 47 38.7**	**+1.4**
KURBB	**Kurchatov Arra**	**48.73**	**309**	P	**P**	**18 47 38.7**	**+0.9**
	1.5nm,0.7s,baz=83,slow=7.8,SNR=22						
ILAR	**Eielson Array**	**49.54**	**32**	P	**P**	**18 47 43.6**	**-0.2**
	1.4nm,0.7s,baz=262,slow=6.4,SNR=17						
BVAR	**Borovoye Array**	**53.28**	**314**	P	**P**	**18 48 12.6**	**+0.8**
	0.4nm,0.5s,baz=92,slow=10,SNR=6.1						
INK	**Inuvik**	**54.68**	**27**	P	**P**	**18 48 21.8**	**0.0**
	0.8nm,0.8s,baz=292,slow=3.5,SNR=3.8						
CTA	**Charters Tower**	**55.35**	**178**	LR	LR	19 10 01.7	
	comp=Z,189nm,22.0s,baz=164,slow=34						
WRAB	**Tennant Creek**	**55.96**	**191**	*eP*	P	18 48 28.5	-3.1
	1.2nm,0.8s						
WRA	**Warramunga Arr**	**55.97**	**191**	P	**P**	**18 48 30.2**	**-1.5**
	1.9nm,0.8s,baz=12,slow=7.3,SNR=11						
ASAR	**Alice Springs**	**59.69**	**191**	P	**P**	**18 48 56.5**	**-1.3**
	0.8nm,0.8s,baz=6.2,slow=7.5,SNR=8.5						
RES	**Resolute Bay**	**63.47**	**15**	P	**P**	**18 49 22.6**	**-0.1**
	1.0nm,0.8s,baz=338,slow=6.5,SNR=5.5						
YKA	**Yellowknife Ar**	**63.94**	**30**	P	**P**	**18 49 25.6**	**-0.3**
	0.4nm,0.9s,baz=297,slow=6.7,SNR=6.3						
GEYT	**Alibeck**	**66.58**	**301**	P	**P**	**18 49 44.4**	**+0.9**
	0.7nm,0.4s,baz=0.0,slow=3.3,SNR=2.6						
FINES	**FINESS Array B**	**71.20**	**333**	LR	LR	19 23 30.2	
	comp=Z,28nm,19.2s,baz=268,slow=38						
KBZ	**Khabaz**	**73.62**	**312**	P	**P**	**18 50 27.0**	**+0.5**
	2.4nm,0.8s,baz=60,slow=5.8,SNR=6.5						
NVAR	**Mina Array Bea**	**74.02**	**54**	P	**P**	**18 50 29.6**	**+0.3**
	0.7nm,0.7s,baz=292,slow=5.5,SNR=7.2						
AKASG	**Malin Array Be**	**76.88**	**324**	P	**P**	**18 50 45.4**	**+0.3**
	1.3nm,0.7s,baz=44,slow=6.1,SNR=11						
PDAR	**Pinedale Array**	**77.05**	**47**	P	**P**	**18 50 46.5**	**-0.1**
	0.4nm,0.6s,baz=220,slow=1.2,SNR=5.2						
BRTR	**Keskin Array B**	**81.56**	**313**	P	**P**	**18 51 12.2**	**+1.1**
	1.3nm,0.8s,baz=105,slow=4.2,SNR=7.4						

*IDC **10** 18:43:48.5±2.6,29°.43N×80°.34E,h0km,mb3.3/6, mb1 3.5/7,mb1mx3.2/73,mbtmp3.3/7,ML3.0/1,Error ellipse: s-maj=99.6km s-min=20.0km az=66.0*
*ISCJB **10** 18:43:52.2±0.6,29°.88N±0°.08×81°.23E±0°.05,h17km, mb3.2/4,Error ellipse: s-maj=10.9km s-min=6.0km az=7.5*

*NDI **10** 18:43:54.6±2.2,29°.76N×81°.03E,h10km,ML3.2*
ISC 10 18:43:53.1±0.8,**29°.73N**±0°.08×**81°.17E**±0°.06,**h17**km,**n13,** σ1°**95**/18,**mb3.5**/4,**Nepal**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
LGTI	**Lohaghat**	**0.85**	**251**	*eP*	**Pn**	**18 44 11.8**	**+1.5**
LGTI				*eS*	**Sn**	**18 44 22.5**	**+0.1**
DDI	**Dehra Dun**	**2.77**	**283**	*eP*	**Pn**	**18 44 38.7**	**+1.9**
DDI				*eS*	**Sn**	**18 45 09.3**	**-0.4**
DDI				IAML		18 45 17.5	
	comp=E,309nm,0.5s						
DDI				IAML		18 45 20.9	
	comp=N,224nm,0.5s						
SMLA	**Simla**	**3.73**	**293**	*eP*	**Pn**	**18 44 49.9**	**0.0**
SMLA				*eS*	**Sn**	**18 45 33.1**	**-0.4**
DHRM	**DHARAMSHALA**	**4.88**	**302**	*eP*	**Pn**	**18 45 06.4**	**+0.5**
DHRM				*eS*	**Sn**	**18 45 58.5**	**-3.7**
DHRM				IAML		18 46 24.5	
	comp=N,58nm,0.8s						
DHRM				IAML		18 46 26.2	
	comp=E,42nm,0.3s						
BHPL	**Bhopal**	**7.28**	**208**	*eS*	**Sn**	**18 46 58.6**	**-2.5**
BHPL				IAML		18 47 04.0	
	comp=N,10nm,0.2s						
BHPL				IAML		18 47 05.3	
	comp=E,11nm,0.3s						
SHL	**Shillong**	**10.36**	**111**	*eP*	**Pn**	**18 46 22.7**	**+1.5**
SHL				*eS*	**Sn**	**18 48 13.4**	**-3.7**
SHL				IAML		18 48 21.9	
	comp=N,3.6nm,0.2s						
SHL				IAML		18 48 22.0	
	comp=E,4.0nm,0.3s						
MKAR	**Makanchi Array**	**17.06**	**3**	P	**P**	**18 47 53.4**	**+0.9**
	comp=E,0.1nm,0.3s,baz=170,slow=12,SNR=3.9						
CMAR	**Chiang Mai Arr**	**19.70**	**121**	P	**Pn**	**18 48 24.5**	**+1.3**
	comp=E,0.6nm,0.8s,baz=314,slow=9.5,SNR=6.7						
KURBB	**Kurchatov Arra**	**20.96**	**355**	P	**P**	**18 48 35.3**	**+0.1**
	comp=E,1.5nm,0.8s,baz=180,slow=11,SNR=13						
ZALV	**Zalesovo Beam**	**24.35**	**5**	P	**P**	**18 49 12.3**	**+2.3**
	comp=E,0.6nm,0.5s,baz=193,slow=7.8,SNR=3.5						
BVAR	**Borovoye Array**	**24.59**	**344**	P	**P**	**18 49 09.8**	**-2.4**
	comp=E,0.1nm,0.4s,baz=154,slow=7.9,SNR=2.5						
WRA	**Warramunga Arr**	**71.14**	**127**	P	**P**	**18 55 12.1**	**+1.1**
	comp=E,0.5nm,0.9s,baz=323,slow=6.1,SNR=6.2						
ASAR	**Alice Springs**	**73.38**	**130**	P	**P**	**18 55 24.1**	**-0.3**
	comp=E,0.2nm,0.4s,baz=314,slow=5.8,SNR=6.0						

IDC 10 18:44:35.0±5.8,**36°.25N**×**143°.13E**,**h0**km,**mb3.3**/3, **mb1 3.4**/5,**mb1mx3.1**/64,**mbtmp3.4**/5,**ML3.3**/2,**Error ellipse: s-maj=99.6km s-min=33.4km az=109.0,Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
MJAR	**Matsushiro Arr**	**3.98**	**276**	Pn	Pn	18 45 36.7	-0.6
	2.3nm,0.3s,baz=96,slow=12,SNR=26						
MAT	**Matsushiro**	**3.98**	**276**	P	Pn	18 45 36.9	-0.4
MAT				S	Sn	18 46 16.7	-8.1
JHJ	**Hachijo jima 2**	**4.16**	**222**	Pn	Pn	18 45 39.1	-0.7
	4.3nm,0.3s,baz=64,slow=16,SNR=5.0						
JHJ				Sn	Sn	18 46 31.1	+1.9
	6.9nm,0.3s,baz=70,slow=18,SNR=2.5						
SONM	**Songino Array**	**29.37**	**305**	P	P	18 50 38.8	-1.0
	0.4nm,0.7s,baz=96,slow=10,SNR=4.1						
MKAR	**Makanchi Array**	**45.70**	**303**	P	P	18 52 59.1	+1.4
	0.1nm,0.5s,baz=72,slow=8.4,SNR=2.6						
KURBB	**Kurchatov Arra**	**47.57**	**309**	P	P	18 53 11.2	-1.0
	0.2nm,0.6s,baz=82,slow=7.8,SNR=4.4						

WEL 10 19:04:37.9±0.3,**37°.93N**×**176°.59E**,**h134**km±2km,**ML3.7**/9, **10C-14D,Error ellipse: s-maj=1.4km s-min=1.2km az=0.0,North Island**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
OPRZ	**Ohinepanea**	**0.09**	**342**	⇑P	Pn	19 04 55.6	-0.4
OPRZ				SN	Sn	19 05 09.5	-0.1
TARZ	**Mount Tarawera**	**0.31**	**192**	PN	Pn	19 04 56.6	0.0
RRRZ	**Republican Roa**	**0.41**	**188**	PN	Pn	19 04 57.0	0.0
KMRZ	**Kaimai**	**0.52**	**279**	⇑P	Pn	19 04 57.5	0.0
URZ	**Urewera**	**0.53**	**129**	PN	Pn	19 04 57.1	-0.4
URZ				AML	AML	19 05 12.2	
URZ				AML	AML	19 05 13.1	
**PRRZ

MRZ				AML	AML	19 05 57.3		
TIWZ	**Tintock**	**2.90**	**191**	PN	Pn	19 05 21.2	-2.0	
TIWZ				AML	AML	19 05 57.2		
TIWZ				AML	AML	19 05 58.7		
HOWZ	**Holdsworth Sta**	**3.08**	**195**	PN	Pn	19 05 22.9	-2.7	
OGWZ	**Otaki Gorge**	**3.09**	**200**	PN	Pn	19 05 23.2	-2.5	
KIW	**Kapiti Island**	**3.20**	**203**	PN	Pn	19 05 24.4	-2.8	
TMWZ	**Te Maipa**	**3.22**	**189**	PN	Pn	19 05 24.8	-2.6	
MTW	**Mount Morrison**	**3.33**	**194**	⇓PN	Pn	19 05 25.8	-3.1	
CAW	**Cannon Point**	**3.38**	**200**	PN	Pn	19 05 26.5	-3.1	
TRWZ	**Traveller**	**3.53**	**191**	PN	Pn	19 05 28.5	-3.0	
PAWZ	**Paruwai Farm**	**3.56**	**194**	PN	Pn	19 05 28.6	-3.4	
BHW	**Baring Head**	**3.72**	**200**	PN	Pn	19 05 30.3	-3.6	
PLWZ	**Palliser**	**3.78**	**195**	PN	Pn	19 05 31.1	-3.7	
TUWZ	**Tuamarina**	**4.05**	**209**	PN	Pn	19 05 34.7	-3.6	
NNZ	**Nelson**	**4.12**	**216**	PN	Pn	19 05 35.7	-3.5	
QRZ	**Quartz Range**	**4.27**	**226**	PN	Pn	19 05 38.2	-3.1	
BSWZ	**Blackbirch Sta**	**4.32**	**208**	PN	Pn	19 05 37.6	-4.3	
THZ	**Tophouse**	**4.76**	**215**	⇓PN	Pn	19 05 44.1	-3.7	
KHZ	**Kahutara**	**5.05**	**207**	PN	Pn	19 05 47.1	-4.5	
LTZ	**Lake Taylor**	**5.86**	**213**	PN	Pn	19 05 57.1	-5.4	
INZ	**Inchbonnie**	**6.20**	**218**	PN	Pn	19 06 02.7	-4.3	
MQZ	**McQueen's Vall**	**6.50**	**206**	PN	Pn	19 06 04.6	-6.4	
FOZ	**Fox Glacier**	**7.60**	**220**	PN	Pn	19 06 21.5	-4.3	
LBZ	**Lake Benmore**	**8.06**	**215**	*e*PN	Pn	19 06 26.8	-5.2	
ODZ	**Otahua Downs**	**8.39**	**210**	⇑PN	Pn	19 06 30.8	-5.6	
JCZ	**Jackson Bay**	**8.51**	**221**	PN	Pn	19 06 33.6	-4.5	

ISCJB ***10*** *19:07:04.0±0.6,36°.31N±0°.06×141°.99E±0°.08,h19km, mb3.4/13, Error ellipse: s-maj=10.6km s-min=7.7km az=43.0*

IDC ***10*** *19:07:03.5±0.8,36°.50N×142°.10E,h0km,mb3.5/13, mb1 3.7/14,mb1mx3.6/33,mbtmp3.5/14,ML3.2/1,MS3.0/3, Ms1 3.0/3,ms1mx2.5/39, Error ellipse: s-maj=22.5km s-min=18.2km az=145.0*

ISC 10 19:07:05.8±0.7,36°.31N±0°.08×142°.03E±0°.08,h19km,n25, σ1$45/19,mb3.4/13,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MJAR	**Matsushiro Arr**	**3.09**	**275**	Pn	**Pn**	**19 07 54.2**	**+0.7**
	2.6nm,0.3s,baz=104,slow=9.3,SNR=46						
MJAR				LR	LR	19 09 21.6	
	comp=Z,239nm,19.3s,baz=100,slow=44						
MAT	**Matsushiro**	**3.09**	**275**	P	**Pn**	**19 07 54.7**	**+1.1**
MAT				S	**Sn**	**19 08 27.0**	**-3.0**
JHJ	**Hachijo jima 2**	**3.68**	**211**	Pn	**Pn**	**19 07 59.9**	**-1.7**
	5.9nm,0.3s,baz=65,slon=22,SNR=5.8						
JHJ				Sn	**Sn**	**19 08 43.6**	**-0.9**
	40nm,0.3s,baz=77,slow=22,SNR=8.0						
KSRS	**Korea Array**	**11.36**	**280**	LR	LR	19 13 55.2	
	comp=Z,52nm,20.1s,baz=12,slow=36						
KLR	**Kul'dur**	**14.94**	**333**	LR	LR	19 16 14.1	
	comp=Z,87nm,18.2s,baz=124,slow=37						
H11N2	**WAKE ISLAND Hy**	**27.35**	**120**	T	T	19 41 30.2	
	baz=313,slow=75,SNR=8.7						
H11N1	**WAKE ISLAND Hy**	**27.36**	**120**	T	T	19 41 30.0	
	baz=313,slow=75,SNR=6.7						
H11N3	**WAKE ISLAND Hy**	**27.37**	**120**	T	T	19 41 30.6	
	baz=313,slow=75,SNR=6.0						
SEY	**Seymchan**	**27.41**	**10**	P	**P**	**19 12 49.1**	**-0.8**
	0.5nm,0.6s,baz=149,slow=19,SNR=3.8						
H11S1	**WAKE ISLAND Hy**	**28.05**	**123**	T	T	19 42 26.3	
	baz=313,slow=74,SNR=11						
H11S3	**WAKE ISLAND Hy**	**28.05**	**123**	T	T	19 42 25.1	
	baz=313						
H11S2	**WAKE ISLAND Hy**	**28.07**	**123**	T	T	19 42 25.6	
	baz=313,slow=74,SNR=3.8						
SONM	**Songino Array**	**28.60**	**305**	P	**P**	**19 13 01.0**	**+0.1**
	0.9nm,1.0s,baz=100,slow=8.9,SNR=5.9						
CMAR	**Chiang Mai Arr**	**41.80**	**257**	P	**P**	**19 14 57.0**	**+2.7**
	0.1nm,0.6s,baz=50,slow=5.3,SNR=2.9						
ZALV	**Zalesovo Beam**	**42.77**	**313**	P	**P**	**19 15 01.4**	**-0.4**
	0.7nm,0.8s,baz=80,slow=10,SNR=2.8						
MKAR	**Makanchi Array**	**44.92**	**303**	P	**P**	**19 15 18.8**	**-0.5**
	0.1nm,0.3s,baz=89,slow=7.9,SNR=2.3						
ILAR	**Eielson Array**	**49.84**	**32**	P	**P**	**19 15 57.1**	**-0.1**
	0.3nm,0.8s,baz=264,slow=7.2,SNR=4.4						
WRA	**Warramunga Arr**	**56.41**	**189**	P	**P**	**19 16 46.8**	**+0.8**
	0.9nm,0.8s,baz=2.2,slow=7.3,SNR=4.6						
ASAR	**Alice Springs**	**60.14**	**189**	P	**P**	**19 17 15.0**	**+2.9**
	0.2nm,0.6s,baz=358,slow=4.6,SNR=3.4						
YKA	**Yellowknife Ar**	**64.19**	**30**	P	**P**	**19 17 38.7**	**-0.1**
	0.5nm,0.7s,baz=302,slow=6.6,SNR=12						
NVAR	**Mina Array Bea**	**75.03**	**53**	P	**P**	**19 18 46.5**	**+0.1**
	0.8nm,0.8s,baz=296,slow=5.5,SNR=6.9						
NOA	**NORSAR Array B**	**75.05**	**338**	P	**P**	**19 18 45.3**	**-0.5**
	0.7nm,0.7s,baz=41,slow=5.9,SNR=3.0						
AKASG	**Malin Array Be**	**75.17**	**323**	P	**P**	**19 18 45.8**	**-0.9**
	0.1nm,0.3s,baz=40,slow=6.2,SNR=4.2						
TXAR	**Lajitas Array**	**90.17**	**53**	P	**P**	**19 20 04.4**	**-0.8**
	0.3nm,0.6s,baz=304,slow=4.2,SNR=2.5						
LPAZ	**La Paz**	**146.62**	**61**	PKPbc	**PKPbc**	**19 26 47.4**	**0.0**
	0.5nm,0.5s,baz=328,slow=1.9,SNR=5.3						

NIED ***10*** *19:23:00,39°.80N×142°.40E,h41km,Mw4.5 Best double couple: M0 5.86000×10^15 NP1:φs184.00000°,δ20.00000°, λ71.00000°. NP2:φs24.00000°,δ71.00000°,λ97.00000°.*

BJI ***10*** *19:23:51.1,39°.56N×142°.61E,h51km,mb4.7/37,mB4.9/19, Ms4.0/16,Ms7 3.9/13*

ISCJB ***10*** *19:23:53.6±0.5,39°.76N±0°.03×142°.41E±0°.05,h47km±3km, mb4.6/79,MS3.6/12, Error ellipse: s-maj=6.4km s-min=3.9km az=25.2*

MOS ***10*** *19:23:53.4±1.0,39°.83N×142°.35E,h42km,mb4.9/25,Error ellipse: s-maj=8.2km s-min=5.4km az=99.4*

JMA ***10*** *19:23:54.7±0.1,39°.76N×142°.36E,h41km±1km,M4.4*

JMA Felt II J1.

IDC ***10*** *19:23:56.7±1.9,39°.74N×142°.33E,h60km±17km,mb4.2/32, mb1 4.3/38,mb1mx4.2/53,mbtmp4.4/38,MS3.6/13, Ms1 3.6/13,ms1mx3.3/44,Error ellipse: s-maj=13.2km s-min=11.2km az=117.0*

NEIC ***10*** *19:23:56.4±0.7,39°.79N×142°.34E,h60km±5km,mb4.7/14, Error ellipse: s-maj=8.0km s-min=5.1km az=117.0*

ISC 10 19:23:53.3±0.7,39°.73N±0°.04×142°.57E±0°.05,h35km±2km, n210,σ1$45/222,mb4.7/79,MS3.8/12,18C-14D,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JTH	**Tanohata**	**0.58**	**291**	P	**Pn**	**19 24 04.6**	**-0.4**
JTH				S	**Sn**	**19 24 11.5**	**-1.8**
MIYJ	**Miyakonagasawa**	**0.60**	**255**	P	**Pn**	**19 24 04.8**	**-0.4**
MIYJ				S	**Sn**	**19 24 12.0**	**-1.7**
JKZ	**Kuzumaki**	**0.98**	**285**	P	**Pn**	**19 24 10.2**	**-0.5**
JKZ				S	**Sn**	**19 24 21.2**	**-2.2**
JOM	**Ohasama**	**1.02**	**256**	P	**Pn**	**19 24 10.8**	**-0.3**
JOM				S	**Sn**	**19 24 21.6**	**-2.5**
JANG	**Nango**	**1.03**	**309**	P	**Pn**	**19 24 10.6**	**-0.7**
JMK	**Ichinoseki**	**1.30**	**234**	P	**Pn**	**19 24 15.3**	**+0.3**
JMK				S	**Sn**	**19 24 30.4**	**-0.7**
JRG	**Rokugo**	**1.53**	**258**	P	**Pn**	**19 24 17.9**	**-0.2**
JAH	**Hinai**	**1.55**	**288**	P	**Pn**	**19 24 18.4**	**0.0**
JAH				S	**Sn**	**19 24 36.6**	**-0.8**
JTM	**Tenmabayashi**	**1.56**	**313**	P	**Pn**	**19 24 18.5**	**0.0**
JTM				*e*S	**Sn**	**19 24 36.7**	**-0.8**
ERM	**Erimo**	**2.33**	**11**	*e*P	**Pn**	**19 24 31.5**	**+2.4**
ERM				*e*		19 25 00.8	
ERM	**Erimo**	**2.33**	**11**	*e*Pn	**Pn**	**19 24 31.5**	**+2.4**
ERM				*e*Sn	**Sb**	**19 25 00.8**	**-2.1**
MAJO	**Matsushiro**	**4.68**	**229**	*e*P	**Pn**	**19 25 03.7**	**+2.2**
MAJO	**Matsushiro**	**4.68**	**229**	*e*Pn	**Pn**	**19 25 03.7**	**+2.2**
MAT	**Matsushiro**	**4.68**	**229**	P	**Pn**	**19 25 04.6**	**+3.1**
MAT				S	Sn	19 26 01.8	+7.2
MJAR	**Matsushiro Arr**	**4.68**	**229**	P	**Pn**	**19 25 04.3**	**+2.9**
	11nm,0.3s,baz=30,slow=13,SNR=113						
MJAR				LR	LR	19 27 07.1	
	comp=Z,496nm,20.6s,baz=45,slow=42						
YUK	**Yuzh-Kuril'sk**	**4.96**	**29**	*e*P	**Pn**	**19 25 07.4**	**+2.2**
YUK				*e*S	**Sn**	**19 26 00.4**	**-0.8**
YUK				pmax	pmax		
	comp=N,151nm,0.5s						
YUK				pmax	pmax		
	comp=Z,238nm,0.5s						
YUK				pmax	pmax		
	comp=E,86nm,0.4s						
SHO	**Shikotan**	**5.22**	**36**	*e*P	**Pn**	**19 25 09.3**	**+0.5**
SHO				*e*S	**Sn**	**19 26 04.0**	**-3.8**
SHO				pmax	pmax		
	comp=Z,113nm,0.7s						
SHO				pmax	pmax		
	comp=N,58nm,0.5s						
SHO				pmax	pmax		
	comp=E,119nm,0.5s						
KUR	**Kuril'sk**	**6.75**	**34**	*e*P	**Pn**	**19 25 31.5**	**+1.7**
KUR				*e*S	**Sn**	**19 26 44.4**	**-1.1**
KUR				pmax	pmax		
	comp=N,12nm,0.6s						
KUR				pmax	pmax		
	comp=E,12nm,0.6s						
KUR				pmax	pmax		
	comp=Z,36nm,0.6s						
KUR				smax	smax		
	comp=N,59nm,0.5s						
KUR				smax	smax		
	comp=E,53nm,0.5s						
JHJ2	**Mitsune**	**6.96**	**199**	*e*Pn	**Pn**	**19 25 35.2**	**+2.4**
JHJ2				*e*Sn	**Sn**	**19 26 53.5**	**+2.7**
JHJ	**Hachijo jima 2**	**6.97**	**200**	P	**Pn**	**19 25 33.9**	**+1.0**
	comp=E,16nm,0.3s,baz=308,slow=21,SNR=10						
JHJ				S	**Sn**	**19 26 45.8**	**-5.1**
	comp=E,9.8nm,0.3s,baz=90,slow=20,SNR=3.5						
YSS	**Yuzh-Sakhalins**	**7.22**	**1**	⇓*e*P	**Pn**	**19 25 38.3**	**+2.0**
YSS				*e*S	**Sn**	**19 27 02.8**	**+5.7**
YSS				pmax	pmax		
	comp=Z,40nm,0.9s						
YSS	**Yuzh-Sakhalins**	**7.22**	**1**	*e*Pn	**Pn**	**19 25 37.6**	**+1.3**
	comp=Z,39nm,0.9s						
USRK	**Ussuriysk Ar.**	**9.05**	**303**	P	**Pn**	**19 26 03.9**	**+2.4**
	comp=Z,2.2nm,0.3s,baz=109,slow=13,SNR=30						
USRK				LR	LR	19 29 22.5	
	comp=Z,436nm,18.7s,baz=125,slow=37						
HABR	**Khabarovsk**	**10.27**	**331**	*c*eP	**Pn**	**19 26 15.9**	**-2.2**
HABR				eSn	**Sn**	**19 28 09.8**	**-2.1**
HABR				pmax	pmax		
	comp=N,22nm,1.8s						
HABR				pmax	pmax		
	comp=E,35nm,1.8s						
HABR				pmax	pmax		
	comp=Z,24nm,1.8s						
MDJ	**Mudanjiang**	**10.79**	**301**	*e*Pn	**Pn**	**19 26 25.7**	**+0.4**
	comp=Z,46nm,1.0s						
TYV	**Tymovskoe**	**11.13**	**0**	*e*P	**Pn**	**19 26 28.5**	**-1.4**
JNU	**Nakatsue**	**11.49**	**239**	P	**Pn**	**19 26 35.6**	**+0.7**
	comp=Z,0.6nm,0.3s,baz=73,slow=20,SNR=6.6						
JNU				LR	LR	19 31 50.3	
	comp=Z,122nm,18.2s,baz=12,slow=42						
KSRS	**Korea Array**	**11.68**	**263**	P	**Pn**	**19 26 40.4**	**+2.9**
	comp=Z,1.7nm,0.3s,baz=72,slow=14,SNR=19						
KSRS				LR	LR	19 30 50.2	
	comp=Z,225nm,18.2s,baz=81,slow=36						
KSAR	**Wonju Array Be**	**11.72**	**263**	P	**Pn**	**19 26 40.4**	**+2.5**
KSAR	**Wonju Array Be**	**11.72**	**263**	P	**Pn**	**19 26 40.4**	**+2.5**
KLR	**Kul'dur**	**12.23**	**324**	P	**Pn**	**19 26 45.7**	**+0.8**
	comp=Z,0.4nm,0.3s,baz=128,slow=9.3,SNR=6.2						
KLR				LR	LR	19 31 27.2	
	comp=Z,328nm,19.5s,baz=138,slow=37						
CBIJ	**Chichi jima**	**12.60**	**182**	P	**Pn**	**19 26 48.3**	**-1.8**
CBIJ				S	Sn	19 29 01.5	-7.7
JCJ	**Chichijima**	**12.60**	**182**	P	**Pn**	**19 26 48.3**	**-1.8**
	comp=Z,5.0nm,0.3s,baz=73,slow=19,SNR=4.1						
JCJ				S	Sn	19 29 01.5	-7.7
	comp=Z,2.9nm,0.3s,baz=37,slow=18,SNR=2.6						
NKL	**Nikolayevsk**	**13.49**	**355**	*e*P	**Pn**	**19 27 02.5**	**+0.5**
NKL				pmax	pmax		
	comp=Z,15nm,1.0s						
TIA	**Tai'an**	**20.34**	**268**	⇑P	**P**	**19 28 25.2**	**-1.3**
TIA				pmax	pmax		
	comp=Z,30nm,0.9s						
TIA				LR	LR		
	comp=Z,130nm,17.7s						
TIA				LR	LR		
	comp=Z,370nm,18.5s						
TIA				LR	LR		
	comp=Z,320nm,15.6s						
MA2	**Magadan**	**20.53**	**12**	P	**P**	**19 28 29.3**	**+0.9**
	comp=Z,8.9nm,0.8s,baz=212,slow=10,SNR=11						
MA2				LR	LR	19 37 43.9	
	comp=Z,44nm,18.9s,baz=233,slow=40						
MA2	**Magadan**	**20.53**	**12**	*e*P	**P**	**19 28 28.8**	**+0.4**
MA2				pmax	pmax		
	comp=Z,31nm,0.8s						
MA2	**Magadan**	**20.53**	**12**	*e*P	**P**	**19 28 28.8**	**+0.4**
	comp=Z,31nm,0.8s						
YAK	**Yakutsk**	**23.67**	**345**	P	**P**	**19 28 59.6**	**-1.7**
	comp=Z,18nm,0.5s,baz=158,slow=4.9,SNR=20						
YAK				LR	LR	19 38 47.8	
	comp=Z,94nm,19.4s,baz=162,slow=38						
YAK	**Yakutsk**	**23.67**	**345**	*e*P	**P**	**19 28 59.2**	**-2.1**
	comp=Z,46nm,0.8s						
SEY	**Seymchan**	**23.98**	**11**	P	**P**	**19 29 05.0**	**+0.8**
	comp=Z,23nm,1.0s,baz=198,slow=7.1,SNR=56						
SEY	**Seymchan**	**23.98**	**11**	⇓*e*P	**P**	**19 29 05.5**	**+1.3**
YULB	**Yu-li**	**24.27**	**234**	P	**P**	**19 29 05.3**	**-2.0**
	comp=Z,4.9nm,0.6s						
ULN	**Ulaanbaatar**	**26.70**	**299**	⇑*e*P	**P**	**19 29 27.8**	**-1.5**
ULN				pmax	pmax		
	comp=Z,5.0nm,0.6s						
ULN	**Ulaanbaatar**	**26.70**	**299**	*e*P	**P**	**19 29 27.6**	**-1.7**
SONM	**Songino Array**	**27.14**	**299**	P	**P**	**19 29 32.6**	**-0.7**
	comp=Z,5.8nm,0.7s,baz=86,slow=8.8,SNR=50						
SONM				LR	LR	19 40 46.3	
	comp=Z,213nm,18.8s,baz=90,slow=37						
ENH	**Enshi**	**28.56**	**261**	*e*P	**P**	**19 29 44.1**	**-1.8**
	comp=Z,16nm,0.7s						
H11N2	**WAKE ISLAND Hy**	**28.89**	**127**	T	T	20 00 23.7	
	baz=319,slow=75,SNR=591						
H11N1	**WAKE ISLAND Hy**	**28.89**	**127**	T	T	20 00 24.3	
	baz=319,slow=75,SNR=522						
H11N3	**WAKE ISLAND Hy**	**28.90**	**127**	T	T	20 00 23.2	
	baz=319,slow=75,SNR=318						
TLY	**Talaya**	**29.34**	**307**	P	**P**	**19 29 51.8**	**-0.8**
	comp=Z,1.7nm,0.5s,baz=116,slow=10,SNR=4.5						
TLY				LR	LR	19 42 18.1	
	comp=Z,150nm,18.0s,baz=108,slow=38						
TLY	**Talaya**	**29.34**	**307**	*e*P	**P**	**19 29 52.3**	**-0.3**
TLY				pmax	pmax		
	comp=Z,9.0nm,1.3s						
TLY				MLR	MLR		
	comp=Z,112nm,15.0s						
ZAK	**Zakamensk**	**29.40**	**304**	*e*P	**P**	**19 29 51.6**	**-1.7**
ZAK				pmax	pmax		
	comp=Z,11nm,1.1s						
H11S1	**WAKE ISLAND Hy**	**29.69**	**128**	T	T	20 01 23.7	
	baz=320,slow=76,SNR=163						
H11S3	**WAKE ISLAND Hy**	**29.70**	**128**	T	T	20 01 24.3	
	baz=320,slow=76,SNR=91						
H11S2	**WAKE ISLAND Hy**	**29.71**	**128**	T	T	20 01 24.9	
	baz=320,slow=76,SNR=119						
MOY	**Mondy**	**30.98**	**307**	*e*P	**P**	**19 30 06.6**	**-0.6**
BILL	**Bilibino**	**31.19**	**17**	⇓*e*P	**P**	**19 30 10.3**	**+1.6**
BILL				*e*		19 30 25.4	
BILL				*e*		19 33 04.8	
BILL				*e*		19 36 59.3	
BILL				pmax	pmax		
	comp=Z,3.0nm,0.8s						
BILL				MLR	MLR		
	comp=Z,56nm,16.0s						
GYA	**Guiyang**	**32.64**	**257**	⇑*i*P	**P**	**19 30 20.0**	**-2.0**
GYA				pmax	pmax		
	comp=Z,20nm,0.8s						
GTA	**Gaotai**	**32.73**	**283**	*e*P	**P**	**19 30 22.9**	**+0.2**
GTA				pP	sP	19 30 35.2	-1.7
GTA				sP	pP	19 30 40.0	+7.3
GTA				pmax	pmax		
	comp=Z,7.0nm,1.1s						
GTA				pmax	pmax		
	comp=Z,71nm,5.7s						
GTA				LR	LR		
	comp=Z,150nm,16.2s						
GTA				LR	LR		
	comp=Z,220nm,17.6s						
GTA				LR	LR		
	comp=Z,290nm,18.5s						
TIXI	**Tiksi**	**32.74**	**352**	P	**P**	**19 30 21.6**	**-0.7**
	comp=Z,3.7nm,0.6s,baz=146,slow=6.2,SNR=7.1						
TIXI	**Tiksi**	**32.74**	**352**	⇓*e*P	**P**	**19 30 22.3**	**+0.1**
TIXI				pmax	pmax		
	comp=Z,5.0nm,0.8s						
KRAR	**Krasnoyarsk**	**36.21**	**314**	⇑*i*P	**P**	**19 30 53.2**	**+0.8**
KRAR				pmax	pmax		
	comp=Z,21nm,0.9s						
NONG	**Nongkai**	**40.27**	**249**	P	**P**	**19 31 27.1**	**0.0**
	comp=Z,15nm,0.7s						
SKNT	**Sakolnakorn**	**40.39**	**247**	P	**P**	**19 31 28.8**	**+0.7**
	comp=Z,22nm,2.2s						
ZALV	**Zalesovo Beam**	**40.82**	**310**	P	**P**	**19 31 30.9**	**-0.3**
	comp=Z,9.7nm,0.5s,baz=94,slow=8.1,SNR=63						
ZALV				PcP	**PcP**	**19 33 31.1**	**-0.5**
	comp=Z,2.1nm,0.6s,baz=90,slow=1.8,SNR=4.6						
ZALV				LR	LR	19 49 10.9	
	comp=Z,124nm,18.6s,baz=70,slow=37						
CRAI	**Chiangrai**	**40.94**	**254**	P	**P**	**19 31 31.7**	**-0.9**
	comp=Z,52nm,0.8s						
TNTI	**Ternate**	**41.18**	**203**	P	P	19 31 38.8	+4.3
NRIK	**Noril'sk**	**41.23**	**334**	LR	LR	19 49 29.3	
	comp=Z,182nm,20.2s,baz=108,slow=37						
NVS	**Novosibirsk**	**41.68**	**312**	*e*P	**P**	**19 31 37.2**	**-1.0**
SWI	**Sorong**	**41.70**	**197**	P	P	19 31 44.9	+6.1
RKPI	**Ransiki, Papua**	**41.76**	**193**	P	P	19 31 46.1	+6.9
LOEI	**Loei**	**41.99**	**250**	P	**P**	**19 31 38.5**	**-2.7**
	comp=Z,93nm,1.8s						
JAY	**Jayapura**	**42.07**	**183**	P	P	19 31 46.6	+4.8
UTTA	**Uttaradit**	**42.36**	**251**	P	**P**	**19 31 44.6**	**+0.4**
	comp=Z,3.2nm,1.0s						
LBMI	**Labuha**	**42.47**	**203**	P	P	19 31 51.2	+6.1
	comp=Z,53nm,0.8s						
CHAI	**Chaiyaphum**	**42.53**	**248**	P	**P**	**19 31 45.2**	**-0.4**
	comp=Z,4.2nm,0.9s,comp=Z,61nm						
PBKT	**Sadao Pong**	**42.82**	**250**	P	**P**	**19 31 48.4**	**+0.5**
	comp=Z,6.6nm,1.2s						
CMMT	**Chiang Mai**	**42.87**	**254**	P	**P**	**19 31 48.2**	**-0.2**
	comp=Z,8.3nm,0.9s						
CHTO	**Chiang Mai**	**42.87**	**254**	P	**P**	**19 31 48.2**	**-0.2**
	comp=Z,37nm,0.9s						
CHTO	**Chiang Mai**	**42.87**	**254**	*e*P	**P**	**19 31 45.4**	**-3.0**
CHTO	**Chiang Mai**	**42.87**	**254**	*e*P	**P**	**19 31 45.4**	**-3.0**
LSA	**Lhasa**	**42.92**	**273**	*e*P	**P**	**19 31 47.5**	**-1.7**
LSA				pmax	pmax		
	comp=Z,8.0nm,0.6s						
LSA	**Lhasa**	**42.92**	**273**	*e*P	**P**	**19 31 47.5**	**-1.7**
	comp=Z,7.7nm,0.6s						
CMAR	**Chiang Mai Arr**	**43.09**	**253**	P	**P**	**19 31 50.0**	**-0.2**
	comp=Z,2.3nm,0.8s,baz=47,slow=6.2,SNR=29						
CMAR				PcP	**PcP**	**19 33 40.0**	**+0.3**
	comp=Z,0.9nm,0.9s,baz=26,slow=2.8,SNR=4.2						
CMAR				LR	LR	19 49 29.1	
	comp=Z,31nm,18.6s,baz=50,slow=36						
CMAR	**Chiang Mai Arr**	**43.09**	**253**	P	**P**	**19 31 50.0**	**-0.2**
CMAR						19 33 40.0	
SUKH	**Sukhothai**	**43.20**	**252**	P	**P**	**19 31 51.1**	**+0.1**
	comp=Z,4.1nm,0.9s,comp=Z,46nm						
MRSI	**Marisa**	**43.37**	**211**	P	**P**	**19 31 53.7**	**+1.4**
FAKI	**Fak Fak**	**43.49**	**195**	P	**P**	19 32 02.1	+8.8
MKAR	**Makanchi Array**	**43.51**	**300**	P	**P**	**19 31 52.7**	**-0.5**
	comp=Z,6.4nm,0.6s,baz=86,slow=10,SNR=134						
MKAR				LR	LR	19 50 34.5	
	comp=Z,113nm,20.5s,baz=68,slow=37						
SRAK	**Srakaew**	**43.77**	**246**	P	**P**	**19 31 52.8**	**-2.8**
	comp=Z,44nm,1.1s,comp=Z,408nm						
NAYO	**Nakonayok**	**44.07**	**247**	P	**P**	**19 31 59.1**	**+1.1**
	comp=Z,63nm,0.9s						
SANI	**Sanana**	**44.27**	**204**	P	**P**	**19 32 01.2**	**+1.6**
CHBT	**CHBT**	**44.44**	**244**	P	**P**	**19 32 02.0**	**+1.0**
	comp=Z,20nm,1.1s						
APSI	**Ampana**	**44.75**	**210**	P	**P**	**19 32 03.8**	**+0.4**
KURK	**Kurchatov**	**45.03**	**306**	P	**P**	**19 32 05.3**	**0.0**
KURK						19 33 45.8	
KURK	**Kurchatov**	**45.03**	**306**	P	**P**	**19 32 05.2**	**0.0**
KURK				PcP	**PcP**	**19 33 45.8**	**0.0**
NLAI	**Namlea**	**45.06**	**202**	P	P	19 32 09.2	+3.3
KURBB	**Borovoye Array**	**45.10**	**306**	P	**P**	**19 32 05.2**	**-0.6**
	comp=Z,14nm,0.5s,baz=81,slow=8.4,SNR=125						
KURBB				PcP	**PcP**	**19 33 45.8**	**-0.2**
	comp=Z,1.6nm,0.9s,baz=78,slow=3.5,SNR=2.4						
COLD	**Coldfoot**	**45.37**	**30**	P	**P**	**19 32 06.6**	**-1.2**
TAPN	**Taplejung**	**46.70**	**272**	*e*P	**P**	**19 32 19.0**	**-0.2**
	comp=Z,35nm,1.0s						
ILAR	**Eielson Array**	**46.74**	**34**	P	**P**	**19 32 20.6**	**+2.0**
	comp=Z,1.8nm,0.7s,baz=268,slow=6.2,SNR=28						
ODAN	**Odare**	**47.20**	**272**	*e*P	**P**	**19 32 23.0**	**0.0**
RAMN	**Ramite**	**47.76**	**272**	*e*P	**P**	**19 32 27.0**	**-0.3**
	comp=Z,64nm,0.8s						
GUN	**Gumba**	**47.84**	**274**	*e*P	**P**	**19 32 27.7**	**-0.4**
	comp=Z,77nm,0.7s						
KKN	**Kakani**	**48.36**	**274**	*e*P	**P**	**19 32 31.6**	**-0.3**
	comp=Z,44nm,0.5s						
PKIN	**Phulchoki**	**48.37**	**274**	*e*P	**P**	**19 32 31.4**	**-0.7**
PKIN	**Phulchoki**	**48.37**	**274**	*e*P	**P**	**19 32 31.4**	**-0.7**
	comp=Z,11nm,0.5s						
DMN	**Daman**	**48.58**	**274**	*e*P	**P**	**19 32 33.2**	**-0.5**
	comp=Z,23nm,0.8s						
GKN	**Gorkha**	**48.74**	**275**	*e*P	**P**	**19 32 34.4**	**-0.5**
	comp=Z,28nm,0.5s						
TKM2	**Tokmak 2**	**49.19**	**297**	*e*P	**P**	**19 32 38.0**	**-0.1**
TKM2				pmax	pmax		
	comp=

OBN				*i*			19 35 04.0	
OBN				SSS	SSS		19 50 44.0	
OBN				pmax	pmax			
	comp=Z,23nm,1.7s							
OBN				MLR	MLR			
	comp=Z,76nm,16.0s							
FINES	**FINESS Array B**	**66.86**	**332**	P	**P**		**19 34 41.1**	**-0.2**
	comp=Z,4.9nm,0.6s,baz=44,slow=8.8,SNR=33							
VSR	**Storozhevoye**	**67.51**	**319**	*eP*	**P**		**19 34 44.5**	**-1.1**
VSR				pmax	pmax			
	comp=Z,10.0nm,1.2s							
GUDG	**Gudauri**	**69.64**	**309**	P	**P**		**19 35 00.6**	**+1.3**
ZEI	**Tsey**	**69.80**	**309**	*eP*	**P**		**19 34 58.9**	**-1.4**
ZEI				pmax	pmax			
	comp=Z,10.0nm,0.8s							
KIV	**Kislovodsk**	**69.83**	**311**	*eP*	**P**		**19 35 00.6**	**+0.3**
KIV				pmax	pmax			
	comp=Z,31nm,0.9s							
KIV	**Kislovodsk**	**69.83**	**311**	*eP*	**P**		**19 34 58.4**	**-2.0**
	comp=Z,30nm,1.0s							
KBZ	**Khabaz**	**69.84**	**310**	P	**P**		**19 35 00.6**	**+0.4**
	comp=Z,8.4nm,0.7s,baz=37,slow=5.2,SNR=20							
ONI	**Oni**	**70.18**	**309**	P	**P**		**19 35 03.5**	**+1.0**
ONI	**Oni**	**70.18**	**309**	P	**P**		**19 35 03.5**	**+1.0**
NEY	**Neytrino**	**70.23**	**310**	P	**P**		**19 35 05.0**	**+2.1**
NEY				pmax	pmax			
	comp=Z,4.0nm,1.4s							
AKH	**Akhalkalaki**	**70.85**	**308**	⇓ *i* P	**P**		**19 35 07.1**	**+0.4**
NB2	**NORSAR Subarra**	**72.05**	**337**	P	**P**		**19 35 13.0**	**-0.4**
	comp=Z,4.9nm,0.8s,baz=39,slow=6.2							
NOA	**NORSAR Array B**	**72.05**	**337**	P	**P**		**19 35 13.4**	**0.0**
	comp=Z,4.6nm,0.8s,baz=39,slow=6.0,SNR=19							
ANN	**Anapa**	**72.32**	**314**	*eP*	**P**		**19 35 13.6**	**-1.6**
ANN				*e**PP	**pP**		**19 35 24.1**	**-1.9**
ANN				*e*			19 37 55.2	
ANN				*e*S	**S**		**19 44 34.0**	**-1.9**
ANN				pmax	pmax			
	comp=Z,82nm,1.5s							
NVAR	**Mina Array Bea**	**72.67**	**54**	P	**P**		**19 35 19.5**	**+1.7**
	comp=Z,0.4nm,0.6s,baz=280,slow=3.7,SNR=5.0							
AKASG	**Malin Array Be**	**72.72**	**322**	P	**P**		**19 35 17.2**	**-0.3**
	comp=Z,7.7nm,0.5s,baz=45,slow=6.2,SNR=62							
KIEV	**Kiev**	**72.73**	**322**	*c i* P	**P**		**19 35 17.1**	**-0.5**
KIEV				pmax	pmax			
	comp=Z,6.0nm,0.6s							
KIEV	**Kiev**	**72.73**	**322**	*eP*	**P**		**19 35 16.4**	**-1.2**
	comp=Z,6.5nm,0.9s							
PDAR	**Pinedale Array**	**75.14**	**46**	P	**P**		**19 35 34.1**	**+2.0**
	comp=Z,0.7nm,0.6s,baz=256,slow=3.3,SNR=7.7							
BURAR	**Bucovina Array**	**76.76**	**322**	⇓ *i* P	**P**		**19 35 41.9**	**+0.8**
TESR	**Tescani**	**76.84**	**320**	⇓ *i* P	**P**		**19 35 41.3**	**-0.2**
CFR	**Carcaliu**	**77.03**	**319**	⇑ *i* P	**P**		**19 35 42.8**	**+0.3**
KOLS	**Kolonicke sedl**	**77.17**	**324**	*eP*	**P**		**19 35 44.2**	**+0.9**
KOLS	**Kolonicke sedl**	**77.17**	**324**	*eP*	**P**		**19 35 44.2**	**+0.9**
VRI	**Vrincioaia**	**77.26**	**320**	⇓ *i* P	**P**		**19 35 45.3**	**+1.9**
STHS	**Stebnicka Huta**	**77.27**	**325**	*eP*	**P**		**19 35 45.3**	**+1.4**
STHS	**Stebnicka Huta**	**77.27**	**325**	*eP*	**P**		**19 35 45.3**	**+1.4**
BRTR	**Keskin Array B**	**77.74**	**312**	P	**P**		**19 35 46.8**	**-0.1**
	comp=Z,1.4nm,0.6s,baz=122,slow=3.3,SNR=8.9							
MLR	**Muntele Rosu**	**77.91**	**320**	⇑ *i* P	**P**		**19 35 49.5**	**+1.9**
MSAB	**Monastry St. A**	**77.94**	**318**	⇓ *i* P	**P**		**19 35 48.7**	**+1.0**
VOIR		**78.39**	**320**	⇓ *i* P	**P**		**19 35 51.5**	**+1.3**
DRGR		**78.53**	**323**	⇑ *i* P	**P**		**19 35 51.1**	**+0.1**
ARR	**Arges**	**78.65**	**321**	⇓ *i* P	**P**		**19 35 53.2**	**+1.6**
DPC	**Dobruska-Polom**	**78.65**	**328**	*eP*	**P**		**19 35 52.5**	**+0.9**
DPC				*e*pP	**sP**		**19 36 05.1**	**-1.3**
DPC	**Dobruska-Polom**	**78.65**	**328**	*eP*	**P**		**19 35 52.5**	**+0.9**
DPC				*e*			19 36 05.1	
UPC	**Upice**	**78.66**	**328**	*eP*	**P**		**19 35 52.3**	**+0.8**
UPC	**Upice**	**78.66**	**328**	*eP*	**P**		**19 35 52.3**	**+0.8**
LOT	**Lotru**	**79.01**	**321**	⇑ *i* P	**P**		**19 35 55.8**	**+2.1**
VYHS	**Vyhne**	**79.02**	**326**	*eP*	**P**		**19 35 54.2**	**+0.6**
VYHS	**Vyhne**	**79.02**	**326**	*eP*	**P**		**19 35 54.2**	**+0.6**
BRG	**Berggiesshubel**	**79.19**	**330**	*eP*	**P**		**19 35 54.5**	**+0.1**
	comp=Z,6.5nm,1.1s							
BRG	**Berggiesshubel**	**79.19**	**330**	*eP*	**P**		**19 35 54.5**	**+0.1**
BRG				pmax	pmax			
	comp=Z,7.0nm,1.1s							
CLL	**Collm**	**79.21**	**330**	⇑ *i* P	**P**		**19 35 54.4**	**-0.1**
	comp=Z,6.0nm,0.8s							
CLL				*i*			19 36 06.9	
CLL	**Collm**	**79.21**	**330**	⇑ *i* P	**P**		**19 35 54.4**	**-0.1**
CLL				*i*			19 36 06.9	
CLL				pmax	pmax			
	comp=Z,6.0nm,0.8s							
VRAC	**Vranov**	**79.35**	**327**	⇑ *i* P	**P**		**19 35 56.6**	**+1.3**
PRU	**Pruhonice**	**79.65**	**329**	*eP*	**P**		**19 35 57.6**	**+0.6**
PRU				*e*pP	**pP**		**19 36 10.0**	**+2.2**
PRU	**Pruhonice**	**79.65**	**329**	*eP*	**P**		**19 35 57.6**	**+0.6**
PRU				*e*			19 36 10.0	
NKC	**Novy Kostel**	**80.28**	**330**	*eP*	**P**		**19 36 00.6**	**+0.2**
NKC	**Novy Kostel**	**80.28**	**330**	*eP*	**P**		**19 36 00.6**	**+0.2**
KHC	**Kasperske Hory**	**80.72**	**329**	*eP*	**P**		**19 36 03.4**	**+0.6**
KHC				*e*pP	**pP**		**19 36 15.7**	**+2.1**
KHC	**Kasperske Hory**	**80.72**	**329**	*eP*	**P**		**19 36 03.4**	**+0.6**
KHC				*e*			19 36 15.7	
CONA	**Conrad Observa**	**80.73**	**327**	*eP*	**P**		**19 36 03.8**	**+0.9**
	comp=Z,3.1nm,0.8s							
GERES	**GERESS Array B**	**80.89**	**329**	P	**P**		**19 36 03.8**	**0.0**
	comp=Z,1.7nm,0.8s,baz=43,slow=6.0,SNR=14							
VTS	**Vitosha**	**81.37**	**319**	⇑ *i* P	**P**		**19 36 07.1**	**+0.6**
ARSA	**Arzberg**	**81.40**	**327**	*eP*	**P**		**19 36 07.3**	**+0.9**
	comp=Z,2.4nm,0.8s							
SOKA	**Soboth**	**82.06**	**327**	*eP*	**P**		**19 36 10.3**	**+0.3**
	comp=Z,7.3nm,1.0s							
ANMO	**Albuquerque**	**82.17**	**51**	⇑ *eP*	**P**		**19 36 13.1**	**+2.2**
ANMO				pmax	pmax			
	comp=Z,4.0nm,1.5s							
KBA	**Koelnbreinsper**	**82.45**	**328**	*i* P	**P**		**19 36 13.5**	**+1.3**
	comp=Z,5.0nm,0.8s							
MOTA	**Moosalm**	**83.14**	**329**	*i* P	**P**		**19 36 17.5**	**+1.8**
RETA	**Reutte**	**83.16**	**329**	*eP*	**P**		**19 36 16.4**	**+0.7**
	comp=Z,5.0nm,1.0s							
BFO	**Black Forest**	**83.39**	**331**	*ceP*	**P**		**19 36 19.6**	**+2.8**
DAVA	**Damuels**	**83.66**	**330**	*eP*	**P**		**19 36 18.9**	**+0.5**
	comp=Z,5.7nm,0.8s							
TXAR	**Lajitas Array**	**87.77**	**53**	P	**P**		**19 36 40.9**	**+1.9**
	comp=Z,0.4nm,0.6s,baz=265,slow=6.0,SNR=3.4							
ESDC	**Sonseca Array**	**95.26**	**335**	P	**P**		**19 37 13.2**	**-0.3**
	comp=Z,0.6nm,0.7s,baz=19,slow=4.5,SNR=3.6							
TORD	**Torodi Ar. Bea**	**116.03**	**317**	PP	PP		19 43 34.2	-2.6
	comp=Z,1.4nm,0.9s,baz=39,slow=6.3,SNR=6.1							
LPAZ	**La Paz**	**144.52**	**58**	PKP	**PKPdf**		**19 43 27.4**	**+0.3**
	comp=Z,0.6nm,0.6s,baz=8.7,slow=1.1,SNR=3.3							

IDC ***10*** *19:26:54.0±1.3, 42.°99N×145.°80E, h0km, mb3.6/11, mb1 3.8/11, mb1mx3.5/46, mbtmp3.6/11, Error ellipse: s-maj=32.9km s-min=23.6km az=157.0*

MOS ***10*** *19:27:03.7±0.9, 42.°99N×145.°74E, h97km, mb3.8/7, Error ellipse: s-maj=24.3km s-min=12.6km az=79.5*

ISCJB ***10*** *19:27:04.4±0.6, 43.°09N±0.°06×145.°78E±0.°05, h95km±3km, mb3.6/11, Error ellipse: s-maj=11.2km s-min=5.1km az=154.5*

JMA ***10*** *19:27:06.3±0.1, 43.°12N×145.°72E, h84km±1km, M3.6*

JMA Felt I J1.

SKHL ***10*** *19:27:06.4±0.2, 43.°21N×145.°79E, h100km±1km, mb4.9/3, msh5.4/3*

ISC 10 19:27:05.1±0.9**, 43.°07N**±0.°07×**145.°77E**±0.°04**, h87**km±6km**, n37**, σ0**°78**/47**, mb3.6**/11**, 1C-2D, Hokkaido region**

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
NEM2	**Nemuro 2**	**0.30**	**357**	P		**Pn**	**19 27 18.9**	**+0.8**
NEM2				*e*S		**Sn**	**19 27 28.0**	**+0.2**
JAK	**Akkeshi**	**0.79**	**265**	P		**Pn**	**19 27 22.9**	**+0.7**
JAK				*e*S		**Sn**	**19 27 35.4**	**+0.4**
JNK	**Nakash**	**0.92**	**304**	P		**Pn**	**19 27 23.7**	**0.0**
JNK				*e*S		**Sn**	**19 27 36.8**	**-0.8**
YUK	**Yuzh-Kuril'sk**	**0.97**	**4**	*i* P		**Pn**	**19 27 24.4**	**+0.2**
YUK				AMB		AMB	19 27 25.5	
	160nm,0.2s							
YUK				AMB		AMB	19 27 25.5	
	330nm,0.2s							
YUK				AMB		AMB	19 27 25.5	
	630nm,0.2s							
YUK				*i* S		**Sn**	**19 27 37.8**	**-0.6**
YUK				A		A	19 27 39.6	
	2μm,0.4s							
YUK				A		A	19 27 39.6	
	3μm,0.4s							
YUK	**Yuzh-Kuril'sk**	**0.97**	**4**	*d* iPN		**Pn**	**19 27 24.3**	**+0.1**
YUK				*i* S		**Sn**	**19 27 37.8**	**-0.6**
YUK				pmax		pmax		
	comp=N,161nm,0.1s							
YUK				pmax		pmax		
	comp=E,334nm,0.1s							
YUK				pmax		pmax		
	comp=Z,631nm,0.1s							
YUK				smax		smax		
	comp=N,2μm,0.3s							
YUK				smax		smax		
	comp=E,3μm,0.6s							
JRA	**Rausu**	**0.99**	**332**	P		**Pn**	**19 27 24.9**	**+0.5**
JRA				*e*S		**Sn**	**19 27 38.7**	**-0.1**
SHO	**Shikotan**	**1.11**	**44**	*eP*		**Pn**	**19 27 26.2**	**+0.3**
SHO				AMB		AMB	19 27 27.2	
	comp=E,370nm,0.2s							
SHO				AMB		AMB	19 27 27.2	
	comp=E,330nm,0.2s							
SHO				*i* S		**Sn**	**19 27 41.1**	**-0.4**
SHO				A		A	19 27 41.9	
	comp=E,980nm,0.5s							
SHO				A		A	19 27 41.9	
	comp=E,1μm,0.5s							
SHO	**Shikotan**	**1.11**	**44**	*d* iPN		**Pn**	**19 27 26.4**	**+0.5**
SHO				*i* S		**Sn**	**19 27 41.1**	**-0.4**
SHO				pmax		pmax		
	comp=N,37nm,0.2s							
SHO				pmax		pmax		
	comp=Z,33nm,0.2s							
SHO				pmax		pmax		
	comp=E,96nm,0.6s							
SHO				smax		smax		
	comp=N,981nm,0.5s							
SHO				smax		smax		
	comp=E,1μm,0.4s							
JOB	**Onbets**	**1.43**	**264**	P		**Pn**	**19 27 30.6**	**+0.8**
JOB				*e*S		**Sn**	**19 27 48.7**	**+0.3**
JAR	**Ashorobuto**	**1.48**	**280**	P		**Pn**	**19 27 31.1**	**+0.7**
JAR				*e*S		**Sn**	**19 27 49.8**	**+0.2**
JTKR	**Abashiri--Toko**	**1.62**	**304**	P		**Pn**	**19 27 32.9**	**+0.6**
JTKR				*e*S		**Sn**	**19 27 52.8**	**-0.1**
JCH	**Churui**	**1.83**	**256**	P		**Pn**	**19 27 35.6**	**+0.7**
JCH				*e*S		**Sn**	**19 27 57.4**	**-0.2**
HRK	**Horoka**	**1.97**	**283**	*eP*		**Pn**	**19 27 37.8**	**+1.0**
HRK				*e*S		**Sn**	**19 28 01.4**	**+0.4**
JMP	**Maruseppu**	**1.99**	**299**	P		**Pn**	**19 27 37.8**	**+0.8**
JMP				*e*S		**Sn**	**19 28 01.5**	**+0.2**
KUR	**Kuril'sk**	**2.64**	**34**	*eP*		**Pn**	**19 27 47.3**	**+1.6**
KUR				AMB		AMB	19 27 47.7	
	comp=E,60nm,0.3s							
KUR				*e*S		**Sn**	**19 28 16.5**	**-0.3**
KUR				A		A	19 28 20.4	
	comp=E,110nm,0.2s							
KUR				A		A	19 28 20.4	
	comp=E,30nm,0.2s							
KUR	**Kuril'sk**	**2.64**	**34**	*c i* PN		**Pn**	**19 27 47.3**	**+1.6**
KUR				*i* S		**Sn**	**19 28 18.1**	**+1.3**
KUR				pmax		pmax		
	comp=Z,55nm,0.3s							
KUR				pmax		pmax		
	comp=E,11nm,0.1s							
KUR				pmax		pmax		
	comp=N,12nm,0.2s							
KUR				smax		smax		
	comp=E,34nm,0.1s							
KUR				smax		smax		
	comp=N,105nm,0.2s							
YSS	**Yuzh-Sakhalins**	**4.43**	**332**	*eP*		**Pn**	**19 28 11.0**	**+1.1**
SONM	**Songino Array**	**27.81**	**294**	P		**P**	**19 32 46.5**	**+0.4**
	comp=N,0.9nm,0.6s,baz=76,slow=8.7,SNR=5.7							
H11N2	**WAKE ISLAND Hy**	**29.28**	**136**	T		T	20 04 03.6	
	baz=328,slow=76,SNR=19							
H11N1	**WAKE ISLAND Hy**	**29.29**	**136**	T		T	20 04 03.5	
	baz=328,slow=76,SNR=15							
H11N3	**WAKE ISLAND Hy**	**29.30**	**136**	T		T	20 04 03.8	
	baz=328,slow=76,SNR=19							
H11S1	**WAKE ISLAND Hy**	**30.21**	**138**	T		T	20 05 15.1	
	baz=329,slow=76,SNR=17							
H11S3	**WAKE ISLAND Hy**	**30.22**	**138**	T		T	20 05 15.1	
	baz=329,slow=76,SNR=17							
H11S2	**WAKE ISLAND Hy**	**30.23**	**138**	T		T	20 05 16.4	
	baz=329,slow=76,SNR=16							
ZALV	**Zalesovo Beam**	**40.61**	**307**	P		**P**	**19 34 37.2**	**+1.2**
	comp=N,0.5nm,0.4s,baz=99,slow=9.2,SNR=2.3							
ILAR	**Eielson Array**	**42.63**	**36**	P		**P**	**19 34 52.7**	**+0.3**
	comp=N,0.2nm,0.5s,baz=262,slow=6.3,SNR=3.1							
MKAR	**Makanchi Array**	**44.01**	**298**	P		**P**	**19 35 03.7**	**-0.1**
	comp=N,0.4nm,0.6s,baz=79,slow=8.7,SNR=5.1							
KURK	**Kurchatov**	**45.08**	**304**	*eP*		**P**	**19 35 11.0**	**-1.2**
KURK	**Kurchatov**	**45.08**	**304**	P		**P**	**19 35 11.0**	**-1.2**
KURBB	**Kurchatov Arra**	**45.16**	**304**	P		**P**	**19 35 11.0**	**-1.9**
	comp=N,0.4nm,0.4s,baz=72,slow=8.9,SNR=4.6							
INK	**Inuvik**	**47.50**	**30**	P		**P**	**19 35 31.2**	**+0.3**
	comp=N,0.5nm,0.7s,baz=225,slow=4.3,SNR=2.8							
RES	**Resolute Bay**	**55.91**	**16**	P		**P**	**19 36 33.1**	**-0.2**
	comp=N,1.5nm,0.6s,baz=315,slow=7.8,SNR=5.9							
YKA	**Yellowknife Ar**	**56.92**	**33**	P		**P**	**19 36 40.5**	**-0.2**
	comp=N,0.2nm,0.6s,baz=299,slow=7.1,SNR=3.6							
WRA	**Warramunga Arr**	**63.58**	**192**	P		**P**	**19 37 25.8**	**-0.7**
	comp=N,1.5nm,1.1s,baz=12,slow=6.9,SNR=2.5							
WRA	**Warramunga Arr**	**63.58**	**192**	P		**P**	**19 37 25.8**	**-0.7**
WRA				pmax		pmax		
	comp=Z,1.0nm,1.1s							
FINES	**FINESS Array B**	**65.02**	**333**	P		**P**	**19 37 34.8**	**-0.7**
	comp=Z,0.8nm,0.4s,baz=39,slow=7.9,SNR=6.5							
NOA	**NORSAR Array B**	**69.87**	**338**	P		**P**	**19 38 06.5**	**+0.4**
	comp=Z,0.9nm,0.7s,baz=33,slow=6.4,SNR=4.1							

JMA 10 19:36:39.6±0.1**, 40.°30N×139.°16E, h14**km±1km**, M2.2, Near west coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
JOG2	**Oga 2**	**0.62**	**128**	P		Pg	19 36 51.5	-0.2
JOG2				*e*S		Sg	19 36 59.9	+0.1
JIW	**Iwasaki**	**0.71**	**65**	P		Pg	19 36 53.3	-0.1
JAH	**Hinai**	**1.14**	**95**	P		Pb	19 37 00.4	-0.6
JAH				*e*S		Sb	19 37 15.3	-0.3
JRG	**Rokugo**	**1.45**	**128**	P		Pn	19 37 05.8	+0.4
JRG				*e*S		Sn	19 37 24.3	+0.1
JTM	**Tenmabayashi**	**1.53**	**71**	P		Pn	19 37 07.0	+0.5
JTM				*e*S		Sb	19 37 27.1	0.0
JSR	**Shiriuchi**	**1.56**	**37**	P		Pn	19 37 06.7	-0.1
JSR				*e*S		Sn	19 37 26.8	0.0
JYK	**Kaneyama**	**1.66**	**146**	*e*S		Sb	19 37 30.4	-0.4

IDC ***10*** *19:48:05.2±2.0, 8.°80S×106.°01E, h0km, mb3.3/4, mb1 3.4/4, mb1mx3.3/42, mbtmp3.3/4, ML4.5/1, MS2.9/1, Ms1 2.9/1, ms1mx2.5/24, Error ellipse: s-maj=54.0km s-min=25.4km az=54.0*

DJA ***10*** *19:48:13.1±0.4, 8.°S±3.°×10.°7E±.°, h10km, M3.6/2, MLv3.6/2*

ISC 10 19:48:11.8±1.2**, 8.°32S**±0.°08×**106.°49E**±0.°07**, h30**km**, n26,** σ1°**81/27, mb3.1/4, South of Jawa**

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
CNJI	**Cibinong**	**1.19**	**32**	P		**Pn**	**19 48 32.0**	**-0.4**
CNJI				S		**Sn**	**19 48 42.3**	**-5.2**
SKJI	**Sukabumi**	**1.31**	**3**	P		**Pb**	**19 48 37.2**	**+1.4**
CISI	**Cisompet, Garu**	**1.51**	**60**	P		**Pn**	**19 48 34.7**	**-2.3**
CISI				S		**Sn**	**19 48 55.2**	**-0.5**
DBJI	**Dramaga**	**1.77**	**8**	P		**Pb**	**19 48 43.9**	**+0.2**
LEM	**Lembang**	**1.85**	**37**	Pn		**Pb**	**19 48 48.3**	**+3.0**
LEM	87nm,0.3s,baz=240,slow=8.1,SNR=34					**Sn**	**19 49 10.4**	**+2.3**
	99nm,0.3s,baz=297,slow=20,SNR=13			LR		LR	19 49 39.4	
LEM	comp=Z,248nm,19.6s,baz=236,slow=37							
LEM	**Lembang**	**1.85**	**37**	P		**Pb**	**19 48 48.2**	**+3.0**
CGJI	**Cibinong**	**1.87**	**335**	P		**Pb**	**19 48 48.0**	**+2.6**
CMJI	**Cimerak**	**2.01**	**75**	P		**Pn**	**19 48 41.3**	**-2.4**
CMJI				S		**Sn**	**19 49 07.1**	**-0.7**
TNG	**Tangerang**	**2.14**	**4**	P		**Pb**	**19 48 49.6**	**-0.4**
TNG				P		**Pb**	**19 48 49.5**	**-0.4**
SBJI	**Serang**	**2.21**	**351**	P		**Pb**	**19 48 51.9**	**+0.7**
KPJI	**Karang Pucung**	**2.61**	**68**	P		**Pn**	**19 48 51.6**	**-0.4**
KASI	**Kota Agung**	**3.41**	**324**	P		Pb	19 49 09.0	-2.6
UGM	**Wanagama**	**4.01**	**85**	P		**Pn**	**19 49 10.4**	**-0.9**
MDSI	**Maura Dua**	**4.45**	**329**	P		Pn	19 49 23.6	+6.3
PCJI	**Pacitan**	**4.64**	**89**	P		**Pn**	**19 49 18.6**	**-1.3**
UWJI	**Ujung Watu**	**4.80**	**67**	P		**Pn**	**19 49 22.4**	**+0.2**
NGJI	**Ngawi**	**5.01**	**79**	P		**Pn**	**19 49 24.8**	**-0.3**
PWJI	**Pagerwojo**	**5.27**	**87**	P		**Pn**	**19 49 27.6**	**-0.9**
LHSI	**Lahat**	**5.35**	**326**	P		Pn	19 49 36.0	+6.3
PPBI	**Pangkal Pinang**	**6.13**	**357**	P		Pn	19 49 44.8	+4.4
GMJI	**Gumukmas**	**6.88**	**90**	P		**Pn**	**19 49 50.2**	**-0.5**
JAGI	**Jajag, Banyuwa**	**7.58**	**92**	P		**Pn**	**19 50 00.1**	**-0.3**
WRA	**Warramunga Arr**	**29.32**	**116**	P		**P**	**19 54 11.4**	**-0.7**
	comp=Z,2nm,0.6s,baz=289,slow=10,SNR=4.6							
ASAR	**Alice Springs**	**30.36**	**123**	P		**P**	**19 54 20.6**	**-0.8**
	comp=N,0.1nm,0.4s,baz=300,slow=7.4,SNR=3.0							
SONM	**Songino Array**	**55.91**	**360**	P		**P**	**19 57 47.8**	**+0.7**
	comp=N,0.1nm,0.4s,baz=177,slow=12,SNR=2.7							
MKAR	**Makanchi Array**	**58.95**	**341**	P		**P**	**19 58 08.8**	**+0.4**
	comp=N,0.2nm,0.4s,baz=150,slow=6.8,SNR=6.8							

NIED ***10*** *19:57:00, 35.°50N×142.°90E, h5km, Mw4.2 Best double couple: M0 2.23000×10^15 NP1:φ0 12.00000°, δ29.00000°, λ=-111.00000°. NP2:φ0 215.00000°, δ64.00000°, λ=-79.00000°.*

IDC ***10*** *19:57:10.0±0.6, 35.°40N×143.°01E, h0km, mb4.1/26, mb1 4.3/32, mb1mx4.2/55, mbtmp4.1/32, ML3.4/6, MS3.5/8, Ms1 3.5/8, ms1mx3.0/54, Error ellipse: s-maj=14.5km s-min=12.8km az=122.0*

ISCJB ***10*** *19:57:13.6±1.6, 35.°47N±0.°04×142.°84E±0.°04, h33km±11km, mb4.2/42, MS3.9/4, Error ellipse: s-maj=6.5km s-min=5.4km az=148.4*

JMA ***10*** *19:57:13.3±0.3, 35.°51N×142.°87E, h84km, M3.8*

NEIC ***10*** *19:57:15.7±1.0, 35.°38N×142.°87E, h40km±8km, mb4.5/8, Error ellipse: s-maj=8.4km s-min=6.3km az=105.0*

ISC 10 19:57:13.9±1.1**, 35.°48N**±0.°04×**142.°89E**±0.°06**, h24**km±6km**, n85**, σ1°**26/87, mb4.2/42, MS4.2/4, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
CHOJ	**Chosi**	**1.67**	**278**	P		**Pn**	**19 57 41.4**	**-0.4**
CHOJ				S		**Sn**	**19 58 03.0**	**+0.5**
BSO1	**Boso 1**	**1.77**	**243**	P		**Pn**	**19 57 41.9**	**-0.8**
BSO1				S		**Sn**	**19 58 04.3**	**+0.1**
BSO2	**Boso 2**	**1.90**	**248**	*eS*		**Sn**	**19 58 06.6**	**-1.0**
BSO3	**Boso 3**	**2.07**	**252**	P		**Pn**	**19 57 46.9**	**0.0**
JHO	**Hitachi**	**2.19**	**302**	P		**Pn**	**19 57 47.4**	**-1.6**
JHO				S		**Sn**	**19 58 13.0**	**-2.4**
JFT	**Otama**	**2.89**	**315**	P		**Pn**	**19 57 57.8**	**-0.8**
JFT				*e*S		**Sn**	**19 58 30.7**	**-1.9**
JAG	**Ashikaga**	**2.94**	**290**	P		**Pn**	**19 57 58.5**	**-0.8**
JAG				*e*S		**Sn**	**19 58 31.2**	**-2.7**
JOD2	**Odawara 2**	**3.12**	**267**	P		**Pn**	**19 58 01.2**	**-0.5**
JOD2				S		**Sn**	**19 58 37.2**	**-1.0**
JRY	**Ryogami san**	**3.29**	**280**	P		**Pn**	**19 58 04.1**	**+0.1**
JRY				*e*S		**Sn**	**19 58 41.2**	**-1.3**
JHJ2	**Mitsune**	**3.48**	**228**	P		**Pn**	**19 58 05.6**	**-1.0**
JHJ2				*e*S		**Sn**	**19 58 44.9**	**-2.0**
JHJ2	**Mitsune**	**3.48**	**228**	*e*Pn		**Pn**	**19 58 05.5**	**-1.0**
JHJ2				*e*Sn		**Sn**	**19 58 45.8**	**-1.2**
JHJ	**Hachijo jima 2**	**3.49**	**228**	Pn		**Pn**	**19 58 05.1**	**-1.6**
	25nm,0.3s,baz=343,slow=20,SNR=11							
JHJ				LR		LR	20 00 00.1	
	98nm,0.3s,baz=72,slow=19,SNR=11			Sn		**Sn**	**19 58 43.2**	**-4.1**
JYN	**Shimob**	**3.55**	**272**	P		**Pn**	**19 58 07.5**	**-0.1**
JMK	**Ichinoseki**	**3.71**	**339**	S		**Sn**	**19 58 49.5**	**-3.3**
MJAR	**Matsushiro Arr**	**3.94**	**287**	Pn		**Pn**	**19 58 13.2**	**+0.2**
	9.3nm,0.3s,baz=92,slow=10,SNR=88							
MJAR				LR		LR	20 00 00.1	
	comp=Z,220nm,21.9s,baz=105,slow=42							
MAJO	**Matsushiro**	**3.94**	**287**	*e*Pn		**Pn**	**19 58 13.8**	**+0.8**
MAT	**Matsushiro**	**3.94**	**287**	P		**Pn**	**19 58 13.1**	**+0.1**
MAT				S		**Sn**	**19 58 57.5**	**-1.1**
MAT	**Matsushiro**	**3.94**	**287**	P		**Pn**	**19 58 13.4**	**+0.4**
JYK	**Kaneyama**	**3.98**	**330**	*eS*		**Sn**	**19 58 55.9**	**-3.5**
JNU	**Nakatsue**	**10.21**	**260**	Pn		**Pn**	**19 59 38.9**	**-0.2**
	0.2nm,0.3s,baz=89,slow=9.0,SNR=5.0							
USRK	**Ussuriysk Ar.**	**12.07**	**319**	Pn		**Pn**	**20 00 06.4**	**+2.0**

RES	Resolute Bay	63.80	15	eP		P	20 07 43.5	-0.1
	4.0nm,0.8s							
YKA	Yellowknife Ar	64.55	30	P		P	20 07 48.6	-0.1
	1.1nm,0.8s,baz=299,slow=6.5,SNR=11							
GEYT	Alibeck	65.64	300	P		P	20 07 57.3	+1.0
	1.7nm,0.9s,baz=98,slow=3.0,SNR=5.8							
FINES	FINESS Array B	70.74	333	P		P	20 08 28.0	+0.3
	3.1nm,0.7s,baz=66,slow=6.9,SNR=10							
KBZ	Khabaz	72.82	312	P		P	20 08 40.5	-0.1
	3.9nm,0.9s,baz=294,slow=13,SNR=6.9							
NVAR	Mina Array Bea	74.95	53	P		P	20 08 53.1	-0.4
	0.4nm,0.7s,baz=306,slow=5.0,SNR=4.2							
NB2	NORSAR Subarra	76.07	338	P		P	20 08 59.2	0.0
	comp=Z,1.3nm,0.6s,baz=39,slow=5.9							
NOA	NORSAR Array B	76.07	338	P		P	20 08 59.5	+0.3
	comp=Z,2.3nm,0.7s,baz=39,slow=5.7,SNR=11							
AKASG	Malin Array Be	76.25	323	P		P	20 09 00.5	+0.1
	comp=Z,1.9nm,0.5s,baz=46,slow=6.1,SNR=16							
PDAR	Pinedale Array	77.89	46	P		P	20 09 10.2	+0.1
	comp=Z,0.6nm,0.5s,baz=285,slow=1.5,SNR=8.7							
URZ	Urewera	79.92	153	LR		LR	20 40 35.6	
	comp=Z,131nm,21.7s,baz=299,slow=33							
BRTR	Keskin Array B	80.78	312	P		P	20 09 26.1	+0.3
	comp=Z,1.0nm,0.7s,baz=99,slow=3.9,SNR=5.8							
DPC	Dobruska-Polom	82.40	329	eP		P	20 09 35.2	+1.2
KHC	Kasperske Hory	84.49	329	eP		P	20 09 45.3	+0.6
KHC				epP		sP	20 09 55.1	-0.2
GERES	GERESS Array B	84.66	329	P		P	20 09 45.5	-0.2
	comp=Z,0.8nm,0.6s,baz=32,slow=5.2,SNR=7.7							
IDI	Anoyia	88.92	314	LR		LR	20 56 00.7	
	comp=Z,91nm,18.1s,baz=66,slow=40							
TXAR	Lajitas Array	90.10	53	P		P	20 10 12.7	+0.3
	comp=Z,0.5nm,0.5s,baz=314,slow=2.9,SNR=3.5							
ATD	Arta Tunnel	91.42	285	LR		LR	20 54 44.4	
	comp=Z,70nm,20.4s,baz=66,slow=38							
TORD	Torodi Ar. Bea	119.27	316	PKP		PKPdf	20 16 01.2	-0.6
	comp=Z,0.3nm,0.8s,baz=48,slow=2.1,SNR=2.3							
LPAZ	La Paz	146.38	63	PKPbc		PKPdf	20 16 52.6	-0.2
	comp=Z,1.4nm,0.8s,baz=356,slow=6.3,SNR=7.9							

IDC ***10*** *20:02:05.9±1.6,36.71N×141.25E,h0km,mb3.5/9, mb1 3.5/11,mb1mx3.5/51,mbtmp3.5/11,ML3.3/2,Error ellipse: s-maj=34.4km s-min=22.1km az=154.0*

ISCJB ***10*** *20:02:06.3±1.4,36.62N±0.04×141.32E±0.08,h17km±8km, mb3.4/9,Error ellipse: s-maj=11.3km s-min=6.4km az=25.0*

JMA ***10*** *20:02:08.2±0.1,36.63N×141.16E,h34km±1km,M3.9*

JMA Felt I J1.

ISC 10 20:02:05.8±2.0,36.66N±0.05×141.27E±0.07,h2km±11km, n25,σ0.970/26,mb3.5/9,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
JHO	Hitachi	0.56	265	P			Pb	20 02 18.0	-0.5
JHO				S			Sg	20 02 25.1	+1.2
ONAJ	Iwakimizuishiy	0.58	320	P			Pb	20 02 19.1	+0.3
ONAJ				S			Sb	20 02 27.2	-0.3
JFK	Kawauchi	0.77	336	P			Pb	20 02 22.2	+0.1
JFK				S			Sb	20 02 32.7	-0.3
JYT	Yasato	0.97	244	P			Pg	20 02 24.4	+0.1
JYT				S			Sg	20 02 35.6	-1.3
JSB	Shiboa	1.12	286	P			Pb	20 02 28.1	+0.1
JSB				S			Sb	20 02 42.6	-0.5
JFT	Otama	1.14	319	P			Pb	20 02 28.2	0.0
JFT				S			Sb	20 02 43.3	-0.2
JMM	Marumori	1.26	343	S			Sg	20 02 45.9	-0.5
MJAR	Matsushiro Arr	2.46	268	Pn			Pn	20 02 47.4	+0.4
	4.8nm,0.3s,baz=114,slow=9.7,SNR=11								
MAT	Matsushiro	2.47	268	P			Pn	20 02 48.1	+1.0
MAT				S			Sn	20 03 18.5	+0.7
JHJ	Hachijo jima 2	3.74	199	Pn			Pn	20 03 05.2	+0.7
	9.7nm,0.3s,baz=157,slow=7.7,SNR=3.5								
SONM	Songino Array	27.90	305	P			P	20 07 57.6	+0.3
	0.2nm,0.5s,baz=127,slow=9.2,SNR=3.0								
H11N2	WAKE ISLAND Hy	28.06	120	T			T	20 37 25.1	
	baz=313,slow=75,SNR=3.8								
H11N1	WAKE ISLAND Hy	28.07	120	T			T	20 37 30.1	
	baz=313,slow=75,SNR=6.6								
H11N3	WAKE ISLAND Hy	28.08	120	T			T	20 37 24.3	
	baz=313,slow=75,SNR=4.0								
H11S1	WAKE ISLAND Hy	28.76	122	T			T	20 38 19.5	
	baz=314,slow=76,SNR=28								
H11S3	WAKE ISLAND Hy	28.76	122	T			T	20 38 22.7	
	baz=314,slow=76,SNR=27								
H11S2	WAKE ISLAND Hy	28.77	122	T			T	20 38 22.1	
	baz=314,slow=76,SNR=20								
TIXI	Tiksi	35.65	353	P			P	20 09 04.4	-0.4
	0.2nm,0.3s,baz=104,slow=5.9,SNR=2.0								
ZALV	Zalesovo Beam	42.08	313	P			P	20 09 58.7	-0.2
	0.4nm,0.4s,baz=70,slow=8.3,SNR=3.0								
MKAR	Makanchi Array	44.22	302	P			P	20 10 16.2	-0.2
	0.2nm,0.7s,baz=88,slow=11,SNR=3.1								
KURBB	Kurchatov Arra	46.14	308	P			P	20 10 30.9	-0.6
	0.6nm,0.7s,baz=83,slow=7.5,SNR=6.0								
ILAR	Eielson Array	49.87	32	P			P	20 11 00.5	+0.3
	0.3nm,0.8s,baz=267,slow=7.1,SNR=4.3								
BVAR	Borovoye Array	50.74	313	P			P	20 11 08.2	+1.3
	0.6nm,0.3s,baz=96,slow=8.9,SNR=6.6								
YKA	Yellowknife Ar	64.19	30	P			P	20 12 42.1	+0.5
	0.1nm,0.6s,baz=296,slow=6.1,SNR=3.2								
AKASG	Malin Array Be	74.52	322	P			P	20 13 44.4	-1.4
	0.8nm,0.6s,baz=47,slow=5.5,SNR=6.5								

NIED ***10*** *20:02:00,28.10N×140.30E,h360km,Mw4.9 Best double couple: M0=2.40000×10^16 NP1:φs=134.00000°, δ=28.00000°,λ=-115.00000°. NP2:φs=342.00000°, δ=65.00000°,λ=-77.00000°.*

ISCJB ***10*** *20:02:55.9±0.3,28.11N±0.02×139.93E±0.03, h377km±2km,mb4.5/151,Error ellipse: s-maj=3.9km s-min=3.4km az=151.4*

IDC ***10*** *20:02:56.1±0.4,28.09N×140.03E,h373km±4km,mb4.2/34, mb1 4.3/39,mb1mx4.2/50,mbtmp4.9/39,Error ellipse: s-maj=9.4km s-min=7.3km az=62.0*

BJI ***10*** *20:02:56.4,28.11N×139.81E,h379km,mb4.7/67, mB4.5/39*

JMA ***10*** *20:02:57.1±0.1,28.11N×140.25E,h380km,M4.7*

NEIC ***10*** *20:02:57.2±0.6,28.11N×139.86E,h380km±6km,mb4.5/89, Error ellipse: s-maj=6.7km s-min=5.1km az=158.0*

ISC 10 20:02:56.7±0.4,28.14N±0.04×140.03E±0.04,h377km±3km, h377km:pP-P,n426,σ1.919/491,mb4.6/164,9C-19D,Bonin Islands region

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
CBIJ	Chichi jima	2.17	118	P			Pn	20 03 51.3	-0.5
CBIJ				eS			S	20 04 33.9	-2.2
CBIJ	Chichi jima	2.17	118	ePn			Pn	20 03 51.1	-0.7
CBIJ				eS			S	20 04 34.6	-1.6
JCJ	Chichijima	2.18	118	P			Pn	20 03 51.3	-0.5
	baz=281,slow=6.5								
JCJ				S			S	20 04 34.0	-2.1
	377nm,0.3s,baz=319,slow=22,SNR=18								
JHCJ	Hachijojimakas	4.92	358	P			Pn	20 04 17.9	+1.2
JHCJ				eS			S	20 05 19.0	-2.6
JHJ2	Mitsune	4.96	358	P			Pn	20 04 18.7	+1.6
JHJ2				eS			S	20 05 19.5	-2.7
JHJ2	Mitsune	4.96	358	ePn			Pn	20 04 18.2	+1.1
JHJ2				eS			S	20 05 19.6	-2.7
JHJ	Hachijo jima 2	4.97	358	P			Pn	20 04 17.7	+0.5
	76nm,0.3s,baz=15,slow=16,SNR=12								
JHJ				S			S	20 05 19.6	-2.9
	167nm,0.3s,baz=75,slow=17,SNR=8.5								
JWZ	Kozaga	6.53	326	P			P	20 04 37.1	+1.8
JWZ				eS			S	20 05 57.0	+3.1
BSO1	Boso 1	6.54	7	eS			S	20 05 52.5	-0.7
JIE	Ise	6.85	336	P			P	20 04 40.6	+1.7
JIE				eS			S	20 06 00.6	+0.1
JOD2	Odawara 2	7.15	354	P			P	20 04 42.1	-0.2
JOD2				eS			S	20 06 03.7	-3.1
JTO	Tosashimizu	7.81	309	P			P	20 04 52.4	+2.5
JRY	Ryogami san	7.91	353	P			Pn	20 04 50.3	+0.1
JRY				eS			S	20 06 17.7	-5.3
JMZ	Minamidaito 2	8.19	256	P			P	20 04 54.9	0.0
MJAR	Matsushiro Arr	8.52	350	P			Pn	20 04 56.8	-0.4
	3.2nm,0.3s,baz=164,slow=10,SNR=5.8								
MAJO	Matsushiro	8.52	350	ePn			Pn	20 04 54.9	-2.3
MAJO				eS			S	20 06 35.4	-0.6
MAT	Matsushiro	8.52	350	P			Pn	20 04 57.3	+0.1
MAT				S			S	20 06 34.6	-1.4
JHS	Saijyo	9.03	321	P			P	20 05 06.6	+2.5
JNU	Nakatsue	9.32	304	P			P	20 05 08.0	+0.6
	8.0nm,0.3s,baz=110,slow=5.3,SNR=98								
JNU	Nakatsue	9.32	304	ePn			P	20 05 10.3	+3.0
JAMN	Amaminishikomi	9.58	273	P			P	20 05 12.0	+1.7
JSJ	Shimokoshiki	9.62	294	P			P	20 05 12.5	+1.7
JSJ				eS			S	20 07 01.2	+1.5
JOW	Kunigami	10.52	266	ePn			Pn	20 05 21.6	+0.7
KSRS	Korea Array	13.77	315	P			Pn	20 05 58.5	-0.2
	0.5nm,0.3s,baz=124,slow=9.8,SNR=11								
KSRS				ScP			ScP	20 13 46.4	-1.6
	0.1nm,0.3s,baz=132,slow=3.5,SNR=4.2								
KSAR	Wonju Array Be	13.79	315	P			Pn	20 05 58.5	-0.4
KSAR				ScP			ScP	20 13 46.4	-1.6
YOJ	Yonaguni jima	15.70	260	ePn			P	20 06 15.3	-2.4
	175nm,1.2s								
NACB	Ninganchiao	17.02	261	Pn			P	20 06 31.4	-0.5
YHNB	Yeheng	17.07	263	ePn			P	20 06 28.2	-4.3
	56nm,1.1s								
USRK	Ussuriysk Ar.	17.27	340	P			P	20 06 35.5	+1.1
	3.0nm,0.3s,baz=146,slow=11,SNR=43								
YULB	Yu-li	17.52	259	ePn			P	20 06 36.2	-1.1
	32nm,0.6s								
SSLB	Suanglung	17.69	260	ePn			P	20 06 39.3	+0.2
	128nm,0.9s								
TWG	Pinlang	17.91	257	ePn			P	20 06 38.0	-3.4
	191nm,0.7s								
TPUB	Ta-pu	18.13	259	eP			P	20 06 42.3	-1.5
	30nm,0.9s								
MDJ	Mudanjiang	18.44	336	P			P	20 06 47.5	+0.7
MDJ				sP			sP	20 08 28.0	-0.9
MDJ				S			S	20 09 57.3	+0.2
MDJ				ScS			ScS	20 17 38.3	+0.1
MDJ				pmax			pmax		
	comp=Z,13nm,1.0s								
MDJ				LR			LR		
	comp=N,69nm,12.3s								
MDJ				LR			LR		
	comp=E,100nm,11.3s								
MDJ				LR			LR		
	comp=Z,130nm,11.3s								
NJ2	Nanjing	18.73	287	eP			P	20 06 49.3	-0.7
NJ2				pmax			pmax		
	comp=Z,24nm,0.7s								
QZH	Quanzhou	19.44	266	P			P	20 06 55.3	-2.1
QZH				S			S	20 10 03.3	-12
TIA	Tai'an	20.96	298	⇓P			P	20 07 11.1	-0.3
TIA				pmax			pmax		
	comp=Z,200nm,0.8s								
POLP	Polilio Island	21.45	235	eP			P	20 07 09.9	-6.1
KLR	Kul'dur	22.00	345	P			P	20 07 22.2	+1.5
	16nm,0.5s,baz=154,slow=6.9,SNR=75								
WHN	Wuhan	22.50	282	⇑iP			P	20 07 26.2	+0.7
WHN				sP			sP	20 09 14.6	+1.1
WHN				S			S	20 11 03.1	-1.1
BJI	Beijing	22.97	307	P			P	20 07 28.6	-1.0
BJI				S			S	20 11 07.9	-3.5
BJI				pmax			pmax		
	comp=Z,13nm,1.3s								
BJI				pmax			pmax		
	comp=Z,120nm,5.0s								
BJI				LR			LR		
	comp=Z,80nm,21.9s								
HHC	Hu-ho-hao-te	26.54	306	eP			P	20 08 00.9	-0.8
HHC				S			S	20 12 07.4	-0.5
HHC				pmax			pmax		
	comp=Z,24nm,0.9s								
HHC				pmax			pmax		
	comp=Z,78nm,4.7s								
ENH	Enshi	26.71	282	eP			P	20 08 02.2	-1.0
	53nm,0.6s								
ENH				eS			S	20 12 05.7	-5.0
XAN	Xi'an	27.22	290	P			P	20 08 06.9	-0.8
XAN				S			S	20 12 15.6	-3.0
XAN				pmax			pmax		
	comp=Z,56nm,0.8s								
XAN				pmax			pmax		
	comp=Z,57nm,3.6s								
XAN				LR			LR		
	comp=N,180nm,13.2s								
XAN				LR			LR		
	comp=E,180nm,18.0s								
XAN				LR			LR		
	comp=Z,270nm,15.6s								
GYA	Guiyang	29.65	275	⇓iP			P	20 08 28.9	-0.4
GYA				pP			pP	20 09 38.0	0.8
GYA				sP			sP	20 10 22.0	-0.8
GYA				PcP			PcP	20 11 23.4	+0.4
GYA				S			S	20 12 53.1	-3.8
GYA				ScP			ScP	20 14 28.0	-0.4
GYA				PcS			PcS	20 15 06.2	-0.7
GYA				ScS			ScS	20 18 22.6	-1.8
GYA				pmax			pmax		
	comp=Z,90nm,0.8s								
GYA				pmax			pmax		
	comp=Z,120nm,5.0s								
SWI	Sorong	30.04	198	P			P	20 08 31.9	-0.8
	38nm,0.8s								
JAY	Jayapura	30.49	179	P			P	20 08 37.4	+0.8
	38nm,1.0s								
GENI	Genyem	30.56	180	P			P	20 08 39.1	+2.0
	124nm,1.0s								
LBMI	Labuha	31.04	205	P			P	20 08 42.6	+1.3
	150nm,1.3s								
LZH	Lanzhou	31.52	294	⇑P			P	20 08 45.5	0.0
LZH				pP			pP	20 09 57.0	+1.5
LZH				PP			PnPn	20 10 08.7	+0.2
LZH				sP			sP	20 10 40.2	+0.8
LZH				pmax			pmax		
	comp=Z,25nm,1.3s								
LZH				pmax			pmax		
	comp=Z,73nm,4.9s								
CD2	Chengdu	31.60	284	P			P	20 08 45.9	-0.2
CD2				pP			pP	20 09 56.1	-0.1
CD2				PP			PP	20 10 06.5	-0.6
CD2				sP			sP	20 10 40.4	+0.4
CD2				PcP			PcP	20 11 28.6	+0.6
CD2				S			S	20 13 25.5	-1.4
CD2				sS			sS	20 15 35.2	-0.1
CD2				pmax			pmax		
	comp=Z,240nm,0.6s								
CD2				pmax			pmax		
	comp=Z,160nm,7.3s								
FAKI	Fak Fak	31.78	195	P			P	20 08 47.9	+0.2
	59nm,1.2s								
ULN	Ulaanbaatar	32.25	317	eP			P	20 08 51.8	+0.1
	22nm,0.8s								
ULN	Ulaanbaatar	32.25	317	P			P	20 08 52.3	+0.6
	SNR=18								
ULN	Ulaanbaatar	32.25	317	P			P	20 08 52.3	+0.6
	SNR=18								
MA2	Magadan	32.28	10	P			P	20 08 52.2	+0.6
	12nm,0.9s,baz=212,slow=5.3,SNR=10								
MA2	Magadan	32.28	10	P			P	20 08 52.2	+0.6
	2.5nm,0.9s								
MRSI	Marisa	32.51	215	P			P	20 08 55.1	+1.0
	106nm,1.0s,1μm								
SONA1	Songino Array	32.64	316	eP			P	20 08 54.5	-0.5
SONA1				ePcP			PcP	20 11 31.2	+0.5
SONM	Songino Array	32.64	316	P			P	20 08 55.4	+0.5
	8.5nm,0.5s,baz=125,slow=8.4,SNR=79								
SONM				PcP			PcP	20 11 31.1	+0.4
	3.0nm,0.4s,baz=134,slow=2.7,SNR=14								
SANI	Sanana	32.91	207	P			P	20 08 57.6	+0.1
	141nm,0.8s,1μm								
MSAI	Masohi	33.08	201	P			P	20 09 00.6	+1.7
	33nm,1.0s,880nm								
KMI	Kunming	33.39	274	P			P	20 09 00.6	-1.2
KMI				pmax			pmax		
	comp=Z,87nm,1.0s								
KMI				pmax			pmax		
	comp=Z,150nm,6.8s								
NLAI	Namlea	33.59	204	P			P	20 09 04.1	+0.8
	39nm,1.0s								
APSI	Ampana	33.85	214	P			P	20 09 05.1	-0.4
PANO	Nakornpanom	34.35	259	P			P	20 09 10.7	+0.9
	111nm,1.2s,10μm								
YAK	Yakutsk	34.58	351	P			P	20 09 11.1	0.0
	15nm,0.7s,baz=217,slow=1.5,SNR=10								
SKNT	Sakolnakorn	34.98	259	P			P	20 09 15.4	+0.3
	52nm,0.8s								
GTA	Gaotai	35.01	299	⇓P			P	20 09 14.8	-0.5
GTA				pP			pP	20 10 23.3	-3.0
GTA				sP			sP	20 11 06.8	-3.2
GTA				S			S	20 14 19.4	+0.4
GTA				ScP			ScP	20 14 47.0	+0.3
GTA				SS			SS	20 17 06.6	-3.7
GTA				pmax			pmax		
	comp=Z,22nm,1.3s								
GTA				pmax			pmax		
	comp=Z,150nm,7.1s								
GTA				LR			LR		
	comp=N,140nm,20.4s								
GTA				LR			LR		
	comp=E,170nm,19.5s								
GTA				LR			LR		
	comp=Z,250nm,19.0s								
NONG	Nongkai	35.26	262	P			P	20 09 18.0	+0.5
	94nm,0.7s								
SEY	Seymchan	35.72	10	P			P	20 09 21.2	+0.4
	4.5nm,0.8s,baz=195,slow=8.0,SNR=14								
TLY	Talaya	35.93	321	P			P	20 09 23.1	+0.4
	6.4nm,0.6s,baz=144,slow=8.1,SNR=7.2								
TLY				PcP			PcP	20 11 40.3	+0.2
	7.7nm,0.7s,baz=313,slow=8.5,SNR=4.2								
TLY	Talaya	35.93	321	P			P	20 09 23.4	+0.8
	SNR=9.5								
TLY	Talaya	35.93	321	P			P	20 09 23.4	+0.8
	SNR=9.5								
KHON	Khomkaen	36.25	259	P			P	20 09 26.2	+0.4
	20nm,0.8s								
LOEI	Loei	37.12	262	P			P	20 09 29.8	-3.3
	68nm,0.7s,5μm								
CHAI	Chaiyaphum	37.16	259	P			P	20 09 33.3	-0.1
	40nm,0.9s,375nm								
SPSI	Sidrap Palu	37.41	215	P			P	20 09 35.5	0.0
UTTA	Uttaradit	37.65	263	P			P	20 09 37.3	-0.2
	20nm,0.8s,152nm								
PBKT	Sadao Pong	37.76	261	P			P	20 09 38.6	+0.2
	54nm,1.0s,630nm								
LAMP	Lampang	38.16	264	P			P	20 09 42.0	+0.3
	7.6nm,1.3s								
SUKH	Sukhothai	38.56	263	P			P	20 09 45.2	+0.2
	9.4nm,0.7s,86nm								
CMMT	Chiang Mai	38.66	265	P			P	20 09 45.4	-0.4
	40nm,0.9s,467nm								
CHTO	Chiang Mai	38.66	265	P			P	20 09 45.5	-0.3
	175nm,1.0s,1μm								
CHTO	Chiang Mai	38.66	265	eP			P	20 09 45.6	-0.3
	32nm,0.8s								
CHTO	Chiang Mai	38.66	265	P			P	20 09 45.6	-0.3
	SNR=12								
CM01	Chiang Mai Arr	38.79	265	eP			P	20 09 46.0	-0.9
CM31	Chiang Mai Arr	38.79	265	eP			P	20 09 47.2	+0.3
CMAR	Chiang Mai Arr	38.79	265	P			P	20 09 46.8	-0.1
	8.3nm,0.8s,baz=60,slow=6.9,SNR=90								
SRDT	SRDT	40.33	259	P			P	20 09 59.6	+0.2
	99nm,1.3s								
PHET	Kaeng Krachan	40.55	256	P			P	20 10 00.2	-1.0
	17nm,0.9s,147nm								
LSA	Lhasa	42.56	284	P			P	20 10 18.9	+1.1
LSA	Lhasa	42.56	284	eP			P	20 10 15.7	-2.1
	7.5nm,0.6s								
SHL	Shillong	42.81	278	eP			P	20 10 21.0	+1.5
BILL	Bilibino	42.89	14	eP			P	20 10 20.3	+1.1
	26nm,1.2s								
TRTT	Trang	43.08	250	P			P	20 10 22.1	+0.7
	52nm,0.8s								
SURT	Suratani	43.23	252	P			P	20 10 23.4	+0.8
	18nm,0.9s								
TIXI	Tiksi	43.99	355	P			P	20 10 27.6	-0.2
	4.1nm,0.4s,baz=149,slow=7.9,SNR=26								
TIXI				PcP			PcP	20 12 06.2	+0.5
	2.1nm,0.4s,baz=147,slow=4.0,SNR=6.2								
JAGI	Jajag, Banyuwa	44.17	218	eP			P	20 10 28.5	-1.5
	86nm,0.9s								
PKDT	Phuket	44.17	251	P			P	20 10 30.7	+0.6
	157nm,0.7s,1μm								
WMQ	Urumqi	44.41	305	P			P	20 10 32.2	+0.5
WMQ				pP			pP	20 11 46.2	-0.1
WMQ				pmax			pmax		
	comp=Z,11nm,1.0s								
WMQ				pmax			pmax		
	comp=Z,26nm,4.0s								
TAPN	Taplejung	46.01	282	eP			P	20 10 44.8	+0.2
	24nm,0.4s								
ODAN	Odare	46.41	281	eP			P	20 10 47.7	+0.1
	54nm,0.5s								
PSI	Prapat	46.58	245	P			P	20 10 47.2	-1.7
	39nm,0.6s,baz=44,slow=3.0,SNR=3.7								
PSI				PcP			PcP	20 12 15.8	-0.2
	5.7nm,0.8s,baz=261,slow=3.3,SNR=3.7								
PSI				ScP			ScP	20 15 31.1	-1.7
	3.4nm,0.5s,baz=335,slow=2.4,SNR=4.8								
LEM	Lembang	46.77	227	P			P	20 10 53.7	+3.4
	186nm,0.7s,baz=17,slow=6.0,SNR=14								
RAMN	Ramite	47.07	282	eP			P	20 10 52.7	0.0
	114nm,0.9s								
ZAAO	Zalesovo Array	47.45	319	eP			P	20 10 54.4	-0.4
ZALV	Zalesovo Beam	47.45	319	P			P	20 10 54.5	-0.4
	1.8nm,0.3s,baz=98,slow=7.6,SNR=14								
ZALV				PcP			PcP	20 12 17.5	-0.8
	16nm,0.5s,baz=118,slow=3.3,SNR=39								
ZALV				ScP			ScP	20 15 33.9	-1.7
	6.2nm,0.8s,baz=126,slow=4.5,SNR=4.6								
GUN	Gumba	47.46	283	eP			P	20 10 56.0	+0.3
	123nm,0.7s								
PKIN	Phulchoki	47.95	283	eP			P	20 10 59.1	-0.3
	12nm,0.5s								
KKN	Kakani	48.00	283	eP			P	20 10 59.8	+0.1
	70nm,0.9s								
FITZ	Fitzroy Crossi	48.04	199	P			P	20 10 59.8	+0.1
	16nm,0.7s,baz=19,slow=7.7,SNR=5.8								
WRA	Warramunga Arr	48.12	187	P			P	20 10 59.5	-0.8
	13nm,0.6s,baz=4.6,slow=7.8,SNR=16								
WRA				PcP			PcP	20 12 21.5	+0.3
	8.8nm,0.5s,baz=359,slow=3.6,SNR=9.8								
WRA				ScP			ScP	20 15 38.0	-0.8
	2.2nm,0.7s,baz=5.4,slow=4.6,SNR=6.0								
WRA				S			S	20 17 27.4	-2.4
	4.1nm,0.8s,baz=9.2,sl

EKS2 **Erkin-Say** 54.61 304 *e*P P 20 11 48.5 +0.7
7.9nm,0.8s
BVAR **Borovoye Array** 55.98 317 P P 20 11 57.3 +0.1
12nm,0.5s,baz=92,slow=7.7,SNR=73
BVAR PcP PcP 20 12 50.3 -0.2
7.3nm,0.6s,baz=88,slow=4.6,SNR=7.9
BRVK **Borovoye** 56.04 317 *e*P P 20 11 57.3 -0.2
33nm,1.0s
BRVK **Borovoye** 56.04 317 P P 20 11 57.4 -0.2
SNR=15
BRVK **Borovoye** 56.04 317 P P 20 11 57.4 -0.2
SNR=15
MLY **Manley** 56.10 29 *e*P P 20 11 58.6 +0.8
7.3nm,1.3s
COLD **Coldfoot** 56.56 26 *e*P P 20 12 02.1 +1.2
3.2nm,0.8s
MCK **McKinley** 56.78 30 *e*P P 20 12 03.7 +1.1
9.2nm,1.0s
ZRNK **Zerenda** 56.82 317 *e*P P 20 12 02.8 -0.2
22nm,1.0s
MDM **Murphy Dome** 57.16 29 *e*P P 20 12 07.3 +2.1
12nm,1.3s
HYB **Hyderabad** 57.17 273 *i* P P 20 12 06.5 +0.5
CCB **Clear Creek Bu** 57.32 29 *e*P P 20 12 08.4 +2.1
18nm,1.9s
IL1 **Eielson Array** 57.72 29 *e*P P 20 12 07.7 -1.3
ILAR **Eielson Array** 57.72 29 P P 20 12 08.6 -0.4
3.1nm,0.9s,baz=267,slow=5.7,SNR=17
ILAR pP pP 20 13 27.5 -0.9
1.1nm,0.9s,baz=257,slow=5.5,SNR=3.1
ILB **Eielson Array** 57.72 29 *e*P P 20 12 09.6 +0.5
PAX **Paxson** 58.32 31 *e*P P 20 12 15.0 +1.7
18nm,1.6s
BMRM **Bremner River** 58.77 33 *e*P P 20 12 17.9 +1.5
16nm,0.7s
DOT **Dot Lake** 58.95 30 *e*P P 20 12 18.1 +0.6
40nm,1.3s
STKA **Stephens Creek** 59.70 178 *e*P P 20 12 23.0 +0.1
5.8nm,1.0s
KBL **Kabul** 59.85 296 *e*P P 20 12 24.6 +0.3
19nm,1.0s
ARU **Arti** 62.43 322 P P 20 12 40.4 -0.4
22nm,0.5s,baz=94,slow=4.0,SNR=58
ARU PcP PcP 20 13 15.8 -0.4
12nm,0.5s,baz=75,slow=3.2,SNR=8.8
ARU **Arti** 62.43 322 *e*P P 20 12 40.4 -0.4
35nm,0.6s
ARU PcP PcP 20 13 15.8 -0.4
INK **Inuvik** 62.88 25 P P 20 12 43.8 +0.3
2.8nm,0.7s,baz=271,slow=7.1,SNR=9.0
INK **Inuvik** 62.88 25 *e*P P 20 12 43.9 +0.4
4.1nm,0.9s
ABKAR **Akbulak array** 63.00 314 *e*P P 20 12 44.1 -0.5
CAN **Canberra** 63.69 172 *e*P P 20 12 47.7 -1.5
AKTO **Aktyubinsk** 63.95 315 P P 20 12 49.8 -1.0
6.3nm,0.7s,baz=89,slow=6.5,SNR=18
GEYT **Ailbeck** 67.33 302 P P 20 13 12.9 +0.5
8.3nm,0.9s,baz=45,slow=2.5,SNR=22
SPA0 **Spitsbergen Ar** 69.01 349 *e*P P 20 13 23.6 +1.5
KEV **Kevo** 71.36 340 *e*P P 20 13 36.8 +0.6
RES **Resolute Bay** 71.49 13 *e*P P 20 13 37.5 +0.7
5.6nm,0.9s
ARCES **ARCESS Array B** 71.92 340 P P 20 13 39.9 +0.3
17nm,0.6s,baz=69,slow=8.5,SNR=80
ARE0 **ARCESS Array S** 71.92 340 *e*P P 20 13 40.3 +0.7
ARE0 IAmb IAmb 20 13 41.5
comp=Z,19nm,0.7s
ARE0 *e* 20 16 49.7
YKW3 **Yellowknife Ar** 72.09 28 *e*P P 20 13 40.9 +0.3
comp=Z,5.7nm,0.9s
YKA **Yellowknife Ar** 72.13 28 P P 20 13 40.8 0.0
comp=Z,3.4nm,0.6s,baz=295,slow=5.9,SNR=56
YKA pP pP 20 15 03.2 -1.2
comp=Z,0.4nm,0.8s,baz=298,slow=5.5,SNR=1.3
YKB5 **Yellowknife Ar** 72.13 28 *e*P P 20 13 39.7 -1.1
WSAR **Wadi Sarin** 72.21 287 P P 20 13 41.9 -0.2
comp=Z,14nm,1.1s,baz=212,slow=4.7,SNR=5.5
KTK1 **Kautokeino** 72.89 340 *e*P P 20 13 45.8 +0.6
HEF **Hetta** 73.10 340 *e*P P 20 13 47.1 +0.7
KIF **Kilpisjarvi** 73.61 341 *e*P P 20 13 49.6 +0.4
TRO **Tromso** 73.75 342 *e*P P 20 13 50.6 +0.5
B05A **Bryant** 74.44 43 P P 20 13 55.8 +1.3
baz=295
OBN **Obninsk** 74.58 325 *e*P P 20 13 55.5 +0.4
comp=Z,37nm,0.8s
BKZ **Black Stump Fm** 75.11 151 *e*P P 20 13 58.8 +0.5
comp=Z,23nm,0.7s
DGRG **David-gareji** 75.20 309 P P 20 13 59.4 +0.4
GUDG **Gudauri** 75.38 310 P P 20 14 02.2 +1.9
I03D **Drain, OR** 75.57 48 P P 20 14 03.0 +2.1
baz=295
STEI **Steigen** 75.88 341 *e*P P 20 14 02.9 +0.7
KBZ **Khabaz** 75.90 312 P P 20 14 03.0 +0.2
comp=Z,28nm,0.9s,baz=92,slow=6.2,SNR=47
KIV **Kislovodsk** 75.94 312 *e*P P 20 14 03.2 0.0
comp=Z,30nm,0.9s
KIV **Kislovodsk** 75.94 312 P P 20 14 03.1 -0.1
SNR=8.3
L02D **Cave Junction,** 76.06 50 P P 20 14 05.4 +1.6
baz=295
B08A **Colville Reser** 76.06 42 *e*P P 20 14 04.8 +1.1
comp=Z,8.9nm,0.9s
I04A **Tendick Farm,** 76.14 48 P P 20 14 05.7 +1.4
baz=296
FIA1 **FINESS Array S** 76.16 333 *e*P P 20 14 03.5 -0.4
FINES **FINESS Array B** 76.16 333 P P 20 14 03.5 -0.4
comp=Z,24nm,0.3s,baz=70,slow=5.0,SNR=408
AKH **Akhalkalaki** 76.50 310 ⇓*i*P P 20 14 08.0 +1.6
M02C **Callahan** 76.89 50 P P 20 14 10.2 +1.7
baz=296
D08A **Wollman Farm,** 76.90 44 *e*P P 20 14 10.2 +1.8
comp=Z,9.5nm,0.9s
RPZ **Rata Peaks** 76.96 157 *e*P P 20 14 09.2 +0.7
comp=Z,28nm,0.9s
J05D **Fort Rock, OR** 77.14 48 P P 20 14 11.2 +1.3
baz=297
N02D **Trinity Center** 77.18 50 P P 20 14 11.2 +1.2
baz=296
M04C **Macdoel** 77.40 49 P P 20 14 12.7 +1.3
baz=297
NEW **Newport** 77.42 42 P P 20 14 12.3 +1.1
baz=298
NEW **Newport** 77.42 42 *e*P P 20 14 12.2 +1.1
comp=Z,5.8nm,0.8s
O03D **Paynes Creek** 78.09 51 P P 20 14 16.4 +1.3
baz=297
ORV **Oroville** 78.64 51 *e*P P 20 14 19.1 +1.2
comp=Z,7.1nm,0.9s
WALA **Waterton Lakes** 78.89 40 *e*P P 20 14 21.6 +2.3
comp=Z,6.6nm,0.6s
BMO **Blue Mountains** 78.92 45 *e*P P 20 14 21.4 +1.9
comp=Z,7.8nm,1.1s
NSS **Namsos** 79.19 340 *e*P P 20 14 20.8 +0.4
WVOR **Wild Horse Val** 79.22 48 *e*P P 20 14 23.1 +1.8
comp=Z,2.6nm,0.8s
IZAR **Zarasai** 79.30 328 *e*P P 20 14 21.6 +0.4
IZAR IAmb IAmb 20 14 22.5
comp=Z,15nm,0.6s
IDID **Didziasalis** 79.32 328 *e*P P 20 14 21.6 +0.3
IDID IAmb IAmb 20 14 22.5
comp=Z,13nm,0.7s
ISAL **Salakas** 79.46 328 *e*P P 20 14 22.4 +0.4
ISAL IAmb IAmb 20 14 23.4
comp=Z,16nm,0.7s
NACGM **Naroch** 79.53 327 *e* P 20 14 22.0 -0.4
IIGN **Ignalina** 79.54 328 *e*P P 20 14 22.8 +0.3
IIGN IAmb IAmb 20 14 23.7
comp=Z,16nm,0.6s
MSO **Missoula** 80.00 42 P P 20 14 26.2 +1.0
baz=301
CMB **Columbia Colle** 80.11 52 *e*P P 20 14 26.9 +0.9
comp=Z,9.1nm,1.0s
WAKR **Walker** 80.55 51 *e*P P 20 14 29.6 +1.2
MFID **Camas Ranch** 80.55 46 *e*P P 20 14 30.3 +2.1
comp=Z,7.1nm,0.8s
AKASG **Malin Array Be** 80.64 323 P P 20 14 27.5 -0.8
comp=Z,13nm,0.5s,baz=52,slow=5.6,SNR=80
AKBB **Malin Array Si** 80.64 323 *e*P P 20 14 27.9 -0.5
comp=Z,25nm,0.6s
KIEV **Kiev** 80.65 323 *e*P P 20 14 27.4 -1.0
comp=Z,25nm,0.6s
AK11 **Malin Array Si** 80.68 323 *e*P P 20 14 27.9 -0.7
NV01 **Mina Array Sit** 81.36 51 *e*P P 20 14 33.4 +0.7
NVAR **Mina Array Bea** 81.36 51 P P 20 14 33.5 +0.8
comp=Z,5.1nm,0.7s,baz=294,slow=5.5,SNR=42
HLID **Hailey** 81.37 45 P P 20 14 34.1 +1.5
baz=301
HLID **Hailey** 81.37 45 *e*P P 20 14 34.6 +2.0
comp=Z,2.0nm,0.6s
MLAC **Mammoth, Mammo** 81.38 52 P P 20 14 33.8 +1.0
baz=299
LRM **Limekiln Ridge** 81.40 42 *e*P P 20 14 33.9 +1.1
NV11 **Mina Array Sit** 81.46 51 *e*P P 20 14 34.2 +1.0
comp=Z,10nm,1.5s
NC405 **NORSAR Array S** 81.70 337 *e*P P 20 14 33.2 -0.5
NC303 **NORSAR Array S** 81.74 338 *e*P P 20 14 33.8 -0.1
SUW **Suwalki** 81.76 328 *e*P P 20 14 34.1 0.0
EGMT **Eagleton** 81.78 40 P P 20 14 34.8 +0.3
baz=303
FFC **Flin Flon** 81.85 31 *e*P P 20 14 35.0 +0.4
comp=Z,5.2nm,1.1s
NB201 **NORSAR Array S** 81.89 337 *e*P P 20 14 34.0 -0.7
NC204 **NORSAR Array S** 81.91 338 *e*P P 20 14 34.8 -0.1
NB2 **NORSAR Subarra** 81.93 337 P P 20 14 34.6 -0.3
comp=Z,17nm,0.6s,baz=47,slow=5.1
NB2 **NORSAR Subarra** 81.93 337 P P 20 14 34.6 -0.3
baz=47,slow=5.1
NOA **NORSAR Array B** 81.93 337 P P 20 14 34.1 -0.8
comp=Z,17nm,0.6s,baz=46,slow=5.0,SNR=74
BOZ **Bozeman (W)** 81.98 42 *e*P P 20 14 36.8 +1.1
comp=Z,4.9nm,0.8s
PKM **Mcpherson Peak** 82.00 55 P P 20 14 37.3 +1.3
baz=299
NC602 **NORSAR Array S** 82.03 337 *e*P P 20 14 35.1 -0.4
NBO02 **NORSAR Array S** 82.04 338 *e*P P 20 14 35.6 +0.1
NBO00 **NORSAR Array S** 82.08 338 *e*P P 20 14 35.8 +0.1
NAO01 **NORSAR Array S** 82.18 337 *e*P P 20 14 35.8 -0.4
ELK **Elko** 82.27 48 *e*P P 20 14 38.6 +1.2
comp=Z,6.5nm,1.1s
FCC **Fort Churchill** 82.49 25 *e*P P 20 14 37.5 -0.3
comp=Z,27nm,1.9s
SORM **Soroca** 82.54 321 ⇓*i*P P 20 14 37.3 -1.0
RAYN **Ar Rayn** 82.98 293 *e*P P 20 14 41.0 0.0
comp=Z,39nm,1.0s
MPMC **Manual Prospec** 83.09 53 P P 20 14 42.5 +1.0
baz=300,SNR=5.6
LRMC **Laurel Mtn Rad** 83.24 53 P P 20 14 42.3 +0.1
baz=300
R11A **Troy Canyon, C** 83.26 50 P P 20 14 42.8 +0.5
baz=301,SNR=10.0
R11A **Troy Canyon, C** 83.26 50 *e*P P 20 14 43.3 +0.9
comp=Z,6.3nm,1.0s
H17A **Grant Village** 83.28 43 *e*P P 20 14 44.3 +1.8
comp=Z,10nm,1.1s
EDW2 **Edwards Air Fo** 83.31 54 P P 20 14 43.1 +0.6
baz=300
FURC **Furnace Creek,** 83.32 52 P P 20 14 43.3 +0.8
baz=300
HVU **Hansel Valley** 83.33 46 *e*P P 20 14 44.2 +1.6
comp=Z,7.1nm,0.7s
FXWY **Fox Creek** 83.42 44 *e*P P 20 14 44.7 +1.6
comp=Z,7.4nm,1.3s
TPNV **Topopah Spring** 83.51 52 P P 20 14 44.2 +0.5
baz=300
TPNV **Topopah Spring** 83.51 52 *e*P P 20 14 44.5 +0.9
comp=Z,10nm,1.0s
LEOM **Leova** 83.53 320 ⇓*i*P P 20 14 44.2 +0.9
MOOW **Moose Ponds** 83.53 44 *e*P P 20 14 45.2 +1.5
comp=Z,7.6nm,1.4s
RLMT **Red Lodge** 83.66 42 P P 20 14 44.8 +0.5
baz=304
RLMT **Red Lodge** 83.66 42 *e*P P 20 14 45.8 +1.5
comp=Z,22nm,1.0s
LOHW **Long Hollow** 83.69 44 *e*P P 20 14 46.0 +1.5
comp=Z,5.8nm,0.8s
BFSC **Mount Baldy Ra** 83.87 54 P P 20 14 45.4 0.0
baz=300
BR131 **Keskin Array S** 83.89 312 *e*P P 20 14 45.0 -0.5
BRTR **Keskin Array B** 83.89 312 P P 20 14 44.9 -0.5
comp=Z,9.6nm,0.6s,baz=96,slow=3.3,SNR=45
GSC **Goldstone, Bar** 83.95 53 P P 20 14 46.3 +0.5
baz=300
GSC **Goldstone, Bar** 83.95 53 *e*P P 20 14 46.7 +0.9
comp=Z,9.1nm,1.0s
SHOC **Shoshone, Teco** 84.02 52 P P 20 14 46.7 +0.7
baz=301
DUG **Dugway, Tooele** 84.14 47 P P 20 14 47.7 +1.0
baz=302
DUG **Dugway, Tooele** 84.14 47 *e*P P 20 14 47.9 +1.1
comp=Z,8.2nm,0.9s
PRAR **RASCA** 84.16 321 ⇓*i*P P 20 14 47.5 +1.0
HWUT **Hardware Ranch** 84.19 46 *e*P P 20 14 48.3 +1.3
comp=Z,13nm,1.0s
BEL **Belsk** 84.25 327 *e*P P 20 14 46.8 0.0
CFR **Carcaliu** 84.33 319 ⇓*i*P P 20 14 47.0 -0.3
ANTO **Ankara** 84.37 312 *e*P P 20 14 47.5 -0.2
comp=Z,8.9nm,0.6s
BR231 **Keskin MP Arra** 84.39 312 *e*P P 20 14 45.5 -2.4
TESR **Tescani** 84.42 320 ⇓*i*P P 20 14 47.6 -0.2
TUQ **Turquoise Moun** 84.50 53 P P 20 14 48.7 +0.1
baz=301,SNR=5.6
HEC **Hector,Ludlow** 84.52 53 P P 20 14 49.1 +0.5
baz=301
BUR08 **Bucovina Ar. S** 84.56 322 *e*P P 20 14 48.3 -0.3
CTU **Camp Tracy** 84.56 47 *e*P P 20 14 51.0 +2.1
comp=Z,6.0nm,1.1s
BURAR **Bucovina Array** 84.56 322 ⇑*i*P P 20 14 48.5 -0.1
DGMT **Dagmar** 84.57 37 P P 20 14 48.7 +0.2
baz=307
ODBI **Odobesti** 84.62 320 ⇓*i*P P 20 14 50.6 +1.8
KWP **Kalwaria Pacla** 84.67 325 *e*P P 20 14 49.4 +0.4
BSD **Bornholm Skovb** 84.71 332 *i* P P 20 14 48.5 -0.5
comp=Z,31nm,0.7s
NLU **North Lily Min** 84.75 47 *e*P P 20 14 51.3 +1.4
comp=Z,3.4nm,1.0s
VRI **Vrincioaia** 84.75 320 ⇓*i*P P 20 14 50.1 +0.7
BW06 **Boulder Array** 84.80 44 *e*P P 20 14 51.1 +1.1
PD31 **Pinedale Array** 84.80 44 *e*P P 20 14 50.7 +0.6
PDAR **Pinedale Array** 84.80 44 P P 20 14 50.8 +0.7
comp=Z,2.1nm,0.8s,baz=270,slow=3.0,SNR=15
JLU **Jordanelle** 84.80 46 *e*P P 20 14 51.8 +1.7
comp=Z,20nm,1.7s
PLOR **Plostina** 84.80 320 ⇑*i*P P 20 14 49.7 0.0
GMRC **Granite Mounta** 85.02 53 P P 20 14 51.9 +0.7
baz=301,SNR=5.1
PFO **Pinyon Flats O** 85.05 55 P P 20 14 51.8 +0.5
baz=301,SNR=5.4
PFO **Pinyon Flats O** 85.05 55 *e*P P 20 14 52.0 +0.7
comp=Z,9.9nm,0.9s
MSAB **Monastry St. A** 85.13 318 ⇓*i*P P 20 14 50.6 -0.7
PGOR **Pogoanele** 85.16 319 ⇑*i*P P 20 14 52.4 +1.0
BELC **Belle Mtn. Jos** 85.18 54 P P 20 14 52.3 +0.3
baz=301
COP **Copenhagen** 85.32 333 *i* P P 20 14 52.0 0.0
KOLS **Kolonicke sedl** 85.33 324 *e*P P 20 14 52.2 0.0
MLR **Muntele Rosu** 85.41 320 ⇑*i*P P 20 14 53.3 +0.4
MONP2 **Monument Peak** 85.44 55 P P 20 14 53.4 +0.1
baz=301
SGU **Sterling** 85.44 48 *e*P P 20 14 51.5 -1.8
DOPR **Dopca** 85.45 321 ⇓*i*P P 20 14 52.7 -0.2
MSU **Marysvale** 85.45 49 *e*P P 20 14 53.7 +0.3
LCMT **Little Creek M** 85.54 50 *e*P P 20 14 55.4 +1.7
comp=Z,8.6nm,1.3s
STHS **Stebnicka Huta** 85.55 325 *e*P P 20 14 53.5 +0.2
IRM **Iron Mountain** 85.71 54 P P 20 14 54.7 +0.3
baz=301
BC3 **Big Chuckawall** 85.74 54 P P 20 14 54.6 -0.1
baz=301,SNR=5.2
OJC **Ojcow** 85.76 326 *e*P P 20 14 54.2 -0.1
OJC **Ojcow** 85.76 326 *e*P P 20 14 53.4 -0.9
comp=Z,23nm,1.4s
CRVS **Cenica-Dubn** 85.76 324 *e*P P 20 14 54.8 +0.4
IBP **Imperial Bould** 85.79 55 P P 20 14 55.0 +0.1
baz=301
KNB **Kanab** 85.82 50 *e*P P 20 14 56.9 +1.8
comp=Z,14nm,1.3s
P17A **Butcher Ranch,** 85.87 47 *e*P P 20 14 57.4 +2.1
comp=Z,7.1nm,1.0s
VOIR 85.95 320 ⇓*i*P P 20 14 55.6 +0.2
ARR **Arges** 86.23 320 ⇑*i*P P 20 14 56.6 -0.1
A28A **Rude Farm, Bot** 86.34 35 P P 20 14 57.5 +0.3
baz=310
DRGR 86.42 322 ⇓*i*P P 20 14 57.4 -0.2
GLA **Glamis** 86.50 54 P P 20 14 58.7 +0.4
baz=302
KECS **Kecovo** 86.53 325 *e*P P 20 14 57.9 -0.1
B28A **Dugan Ranch, T** 86.58 35 P P 20 14 58.5 +0.3
baz=310
LANS **Liptovska Anna** 86.61 326 *e*P P 20 14 59.0 +0.5
ZIMR 86.83 319 ⇑*i*P P 20 14 59.8 +0.3
A29A **Manning Farm,** 86.85 35 P P 20 14 59.5 0.0
baz=311
DEV **Deva** 86.88 321 ⇓*i*P P 20 15 00.1 +0.4
F26A **Lodgepole** 86.99 38 P P 20 15 00.4 +0.1
baz=308
KSP **Ksiaz** 87.03 328 *e*P P 20 15 00.5 +0.2
O20A **White River Ci** 87.10 45 P P 20 15 00.9 -0.3
baz=305
MORC **Moravsky Berou** 87.15 327 *e*P P 20 15 01.0 0.0
comp=Z,20nm,0.7s
PSZ **Piszkesteto** 87.20 324 *e*P P 20 15 00.7 -0.6
comp=Z,14nm,1.2s
E27A **Carson** 87.23 38 P P 20 15 00.9 -0.5
baz=309
GZR **Gura Zlata** 87.25 321 ⇓*i*P P 20 15 01.5 -0.1
RSSD **Black Hills** 87.28 40 P P 20 15 01.6 -0.4
baz=308
A30A **Hoffart Farm,** 87.30 34 P P 20 15 01.8 +0.1
baz=311
F27A **Lemmon** 87.33 38 P P 20 15 01.2 -0.8
baz=309
DPC **Dobruska-Polom** 87.35 328 *e*P P 20 15 01.5 -0.4
MDND **Maddock** 87.36 36 P P 20 15 01.5 -0.5
baz=310
VYHS **Vyhne** 87.36 325 *e*P P 20 15 01.8 -0.2
G26A **Maurine** 87.38 39 P P 20 15 01.3 -0.9
baz=308
UPC **Upice** 87.39 328 *e*P P 20 15 01.4 -0.7
I25A **Rochford** 87.52 40 P P 20 15 02.0 -1.1
baz=308
B30A **Myrvik Farm, E** 87.61 35 P P 20 15 03.3 +0.1
baz=311
WUAZ **Wupatki** 87.61 51 P P 20 15 03.4 -0.2
baz=303
G27A **Dupree** 87.69 39 P P 20 15 03.7 +0.1
baz=309
VRAC **Vranov** 87.92 327 ⇓*i*P P 20 15 04.3 -0.3
B31A **Greenbush Farm** 87.97 34 P P 20 15 04.9 +0.1
baz=312
SMOL **Smolenice** 88.05 326 *e*P P 20 15 05.1 -0.1
BRG **Berggiesshubel** 88.08 329 *i* P P 20 15 04.9 -0.4
comp=Z,8.4nm,0.7s
BRG *e* 20 15 17.1
comp=Z,2.5nm,0.7s
CLL **Collm** 88.20 330 ⇑*i*P P 20 15 05.2 -0.6
comp=Z,10.0nm,0.6s
CLL **Collm** 88.20 330 *e*P P 20 15 05.0 -0.8
comp=Z,11nm,0.6s
D30A **Buchanan** 88.28 36 P P 20 15 06.6 +0.3
baz=311
C31A **Landman Farms,** 88.34 35 P P 20 15 06.7 +0.1
baz=312
GOPC **GO Pecny, Ondr** 88.37 328 *e*P P 20 15 06.6 -0.1
PRU **Pruhonice** 88.43 328 *e*P P 20 15 06.8 -0.1
PRU *ex* x 20 15 12.2
I27A **Quinn** 88.44 40 P P 20 15 07.5 +0.3
baz=309
214A **Organ Pipe Nat** 88.53 54 P P 20 15 07.7 -0.2
baz=303
B32A **Ashes, Strandq** 88.54 34 P P 20 15 07.6 +0.1
baz=313
VTS **Vitosha** 88.73 319 ⇓*i*P P 20 15 09.4 +0.7
VTS **Vitosha** 88.73 319 *e*P P 20 15 07.7 -1.0
comp=Z,9.6nm,0.9s
AGMN **Agassiz Nation** 88.93 34 P P 20 15 10.0 +0.7
baz=313
J27A **Elkhorn Farm,** 88.98 40 P P 20 15 09.7 -0.1
baz=309
NKC **Novy Kostel** 89.21 329 *e*P P 20 15 09.8 -0.8
CONA **Conrad Observa** 89.22 326 *i* PcP P 20 15 11.2 +0.4
comp=Z,5.6nm,0.6s,SNR=9.5
CONA **Conrad Observa** 89.22 326 *i* PcP P 20 15 11.2 +0.4
comp=Z,5.6nm,0.6s,SNR=9.5
S22A **4UR Ranch, Cre** 89.37 47 P P 20 15 12.0 0.0
baz=306
KHC **Kasperske Hory** 89.48 328 *e*P P 20 15 11.1 -0.8
KHC **Kasperske Hory** 89.48 328 *e*P P 20 15 11.1 -0.8
comp=Z,4.4nm,0.7s
GEC2 **GERESS Array S** 89.62 328 *e*P P 20 15 12.1 -0.6
comp=Z,6.9nm,0.7s
GERES **GERESS Array B** 89.62 328 P P 20 15 12.0 -0.7
comp=Z,5.4nm,0.6s,baz=40,slow=5.3,SNR=55
ARSA **Arzberg** 89.85 326 *i* PcP P 20 15 13.6 -0.1
comp=Z,12nm,1.3s
ARSA **Arzberg** 89.85 326 *i* PcP P 20 15 13.6 -0.1
comp=Z,12nm,1.3s
B35A **Bob, Littlefor** 89.92 33 P P 20 15 14.6 +0.6
baz=315
I30A **Oacoma** 90.00 38 P P 20 15 15.0 +0.5
baz=311
MOA **Molln** 90.05 327 *i* PcP P 20 15 14.6 0.0
comp=Z,11nm,1.2s,SNR=8.8
MOA **Molln** 90.05 327 *i* PcP P 20 15 14.6 0.0
comp=Z,11nm,1.2s,SNR=8.8
GRFO **Grafenberg** 90.15 330 *e*P P 20 15 14.6 -0.4
comp=Z,11nm,0.9s
G32A **Webster** 90.16 37 P P 20 15 15.4 +0.3
baz=312
SDCO **Great Sand Dun** 90.22 46 P P 20 15 16.1 +0.1
baz=307
SDCO **Great Sand Dun** 90.22 46 *e*P P 20 15 17.0 +1.1
comp=Z,3.0nm,1.1s
SOKA **Soboth** 90.49 326 *i* PcP P 20 15 16.3 -0.4
comp=Z,16nm,1.2s,SNR=11
SOKA **Soboth** 90.49 326 *i* PcP P 20 15 16.3 -0.4
comp=Z,16nm,1.2s,SNR=11
C36A **Pine Crest Far** 90.77 33 P P 20 15 17.0 -0.9
baz=315
H33A **Prehn Over Nor** 90.94 37 P P 20 15 18.9 +0.1
baz=313
KBA **Koelnbreinsper** 91.04 327 *i* PcP P 20 15 18.6 -0.7
comp=Z,6.1nm,0.6s
KBA **Koelnbreinsper** 91.04 327 *i* PcP P 20 15 18.6 -0.7
comp=Z,6.1nm,0.6s
MYKA **Terra Mystica** 91.21 326 *i* PcP P 20 15 18.5 -1.5
comp=Z,7.3nm,0.6s
MYKA **Terra Mystica** 91.21 326 *i* P P 20 15 18.5 -1.5
comp=Z,7.3nm,0.6s
ANMO **Albuquerque** 91.25 49 P P 20 15 20.9 +0.3
baz=306
ANMO **Albuquerque** 91.25 49 *e*P P 20 15 21.4 +0.7
comp=Z,4.0nm,0.8s
T25A **Trinidad** 91.28 46 P P 20 15 21.0 +0.2
baz=307
C38A **Sawbill Land.** 91.53 32 P P 20 15 22.1 +0.7
baz=317
ABTA **Abfaltersbach** 91.67 327 *i* PcP P 20 15 21.0 -1.2
comp=Z,8.6nm,0.6s,SNR=7.2
ABTA **Abfaltersbach** 91.67 327 *i* PcP P 20 15 21.0 -1.2
comp=Z,8.6nm,0.6s,SNR=7.2
121A **Cookes Peak, D** 91.75 51 P P 20 15 23.5 +0.5
baz=305
MOTA **Moosalm** 91.91 328 *i* PcP P 20 15 23.2 -0.2
SNR=5.0
MOTA **Moosalm** 91.91 328 *i* PcP P 20 15 23.2 -0.2
SNR=5.0
RETA **Reutte** 91.97 328 *i* PcP P 20 15 23.1 -0.4
comp=Z,5.7nm,0.7s,SNR=5.2
RETA **Reutte** 91.97 328 *i* PcP P 20 15 23.1 -0.4
comp=Z,5.7nm,0.7s,SNR=5.2
BFO **Black Forest** 92.44 330 *e*P P 20 15 24.7 -0.9
comp=Z,16nm,1.0s
DAVA **Damuels** 92.52 329 *i* PcP P 20 15 25.9 -0.2
comp=Z,8.4nm,0.6s,SNR=5.9
DAVA **Damuels** 92.52 329 *i* PcP P 20 15 25.9 -0.2
comp=Z,8.4nm,0.6s,SNR=5.9
FUORN **Ofenpass-Fuorn** 92.83 328 *e*P P 20 15 27.1 -0.6
comp=Z,18nm,0.8s
TUE **Stuetta** 93.37 328 *e*P P 20 15 29.8 -0.3
comp=Z,35nm,2.0s
TIP **Timpagrande** 94.67 319 *e*P P 20 15 36.3 +0.2
comp=Z,16nm,1.4s
TXAR **Lajitas Array** 96.49 52 P P 20 15 45.2 +0.7
comp=Z,0.7nm,0.7s,baz=331,slow=4.7,SNR=4.0
TXAR pP pP 20 17 12.7 +0.2
comp=Z,1.3nm,1.0s,baz=243,slow=4.0,SNR=2.3
334A **Lometa** 98.90 47 P Pdif 20 15 54.3 -0.8
baz=311
W41A **Tony Mavity, V** 99.99 41 P Pdif 20 16 00.3 +0.4
baz=315
WCI **Wyandotte Cave** 101.02 35 *e*Pdif Pdif 20 16 03.5 -1.0
034A **Hebbronville** 101.34 51 P Pdif 20 16 05.5 -0.5
baz=310
M54A **Oil Creek Stat** 101.57 29 P Pdif 20 16 06.7 -0.1
baz=325
340A **Bronson** 101.61 45 P Pdif 20 16 07.3 +0.1
baz=314
ESDC **Sonseca Array** 104.66 332 PP PP 20 20 40.6 -3.5
comp=Z,0.2nm,0.4s,baz=18,slow=6.2,SNR=4.3
LBTB **Lobatse** 121.92 257 *e*PKPdf PKPdf 20 21 07.7 +0.4
TOA0 **Torodi Ar. Sit** 122.45 310 *e*PKPpre PKPdf 20 21 07.3 -1.2

TORD	**Torodi Ar. Bea**	**122.45**	**310**	PKP	**PKPdf**	**20**	**21**	**07.5**	**-1.0**
	comp=Z,5.0nm,0.5s,baz=67,slow=0.9,SNR=105								
TORD				PKKPbc	**PKKPab**	**20**	**31**	**06.8**	**-0.2**
	comp=Z,0.5nm,0.5s,baz=218,slow=3.7,SNR=7.3								
BOSA	**Boshof**	**123.29**	**253**	PKP	**PKPdf**	**20**	**21**	**10.1**	**+0.3**
	comp=Z,1.6nm,0.4s,baz=77,slow=1.4,SNR=9.8								
DBIC	**Dimbokro**	**131.56**	**310**	PKP	**PKPdf**	**20**	**21**	**26.1**	**+0.2**
	comp=Z,3.9nm,0.5s,baz=25,slow=2.1,SNR=18								
DBIC				SKPbc	**SKPbc**	**20**	**24**	**13.6**	**-1.7**
	comp=Z,4.4nm,0.6s,baz=2.1,slow=5.5,SNR=9.1								
TIC	**Toumodi**	**131.69**	**310**	*e*PKP2	**PKPdf**	**20**	**21**	**25.7**	**-0.5**
KIC	**Kosan Boka**	**131.71**	**310**	*e*PKP2	**PKPdf**	**20**	**21**	**26.8**	**+0.6**
	comp=Z,31nm,1.0s								
LIC	**Lamto**	**132.00**	**310**	*e*PKP2	**PKPdf**	**20**	**21**	**27.2**	**+0.5**
	comp=Z,46nm,1.4s								
SDV	**Santo Domingo**	**132.74**	**43**	PKP	**PKPdf**	**20**	**21**	**29.6**	**+1.2**
	comp=Z,3.5nm,0.7s,baz=310,slow=6.3,SNR=4.6								
SDV				SKPbc	**SKPbc**	**20**	**24**	**18.8**	**-0.8**
	comp=Z,9.0nm,0.7s,baz=291,slow=4.3,SNR=12								
VNA2	**Neumayer--Watz**	**133.45**	**194**	PKP	**PKPdf**	**20**	**21**	**28.1**	**+0.4**
	baz=81,slow=0.9								
VNA3	**Neumayer Olymp**	**133.68**	**193**	PKP	**PKPdf**	**20**	**21**	**29.5**	**+1.3**
USHA	**Ushuaia**	**146.29**	**150**	PKPbc	**PKPbc**	**20**	**21**	**53.8**	**+0.7**
	comp=Z,67nm,0.8s,baz=319,slow=10,SNR=3.5								
PTGA	**Pitinga**	**146.69**	**39**	PKPbc	**PKPbc**	**20**	**21**	**54.9**	**-0.6**
	comp=Z,4.6nm,0.6s,baz=350,slow=2.9,SNR=7.2								
SAML	**Samuel**	**150.97**	**53**	*e*PKPdf	**PKPbc**	**20**	**22**	**05.9**	**-0.3**
LPAZ	**La Paz**	**151.46**	**72**	PKPbc	**PKPbc**	**20**	**22**	**07.0**	**-0.9**
	comp=Z,4.1nm,0.8s,baz=321,slow=2.8,SNR=13								
LPAZ				pPKPbc	**pPKPbc**	**20**	**23**	**39.3**	**-0.9**
	comp=Z,0.8nm,0.6s,baz=358,slow=4.3,SNR=1.8								
LPAZ	**La Paz**	**151.46**	**72**	*e*PKPdf	**PKPbc**	**20**	**22**	**08.6**	**+0.6**
LPAZ				pPKPbc	**pPKPbc**	**20**	**23**	**39.3**	**-0.9**
PLCA	**Paso Flores**	**151.97**	**125**	PKPbc	**PKPbc**	**20**	**22**	**07.4**	**-0.4**
	comp=Z,5.3nm,0.5s,baz=257,slow=2.5,SNR=37								

BJI **10** *20:04:17.8, 9.°71N×126.°25E, h39km, mb4.9/54, mB4.9/35, Ms4.4/34, MS7 4.2/32*

MOS **10** *20:04:18.5±1.3, 9.°87N×126.°02E, h32km, mb5.3/40, Error ellipse: s-maj=11.3km s-min=5.9km az=105.2*

DJA **10** *20:04:20.2±0.3, 10.°N±3.°×12.°6E±.°, h10km, M4.8/30, mb4.9/30, mB5.4/7, Mw(mB)4.8/7*

MAN **10** *20:04:21, 9.°87N×126.°21E, h23km, mb5.5, ML4.5, MS4.8*

MAN INTENSITY III - MAINIT SURIGAO DEL NORTE; GUIUAN E. SAMAR; INTENSITY II - SURIGAO CITY; LIBAGUN SOUTHERN LEYTE.

ISCJB **10** *20:04:22.1±0.4, 9.°87N±0.°02×126.°24E±0.°03, h66km±4km, mb4.8/139, Error ellipse: s-maj=5.1km s-min=3.0km az=162.9*

IDC **10** *20:04:22.6±1.5, 9.°87N×126.°03E, h54km±13km, mb4.5/40, mb1 4.6/43, mb1mx4.6/48, mbtmp4.8/43, MS3.8/20, Ms1 3.8/20, ms1mx3.7/45, Error ellipse: s-maj=13.4km s-min=8.4km az=83.0*

GCMT **10** *20:04:23.7±0.3, 9.°93N×126.°09E, h37km, MW5.0/59, Moment Tensor Solution. s26,c32; s59,c97; Duration: 0 Moment tensor: Scale 10^16Nm; Mrr2.33±.23; Mθθ-1.60±.13; Mφφ-0.72±.15; Mrθ0.93±.10; Mrφ-1.79±.06; Mθφ-1.84±.15; Best double couple: M◎3.37400×10^16 NP1:φs202.00000°, δ59.00000°, λ50.00000°. NP2: φs80.00000°, δ49.00000°, λ137.00000°. Principal axes: T 3.7060, Plg56.0000°, Azm57.0000°; N -0.6560, Plg33.0000°, Azm225.0000°; P -3.0430, Plg5.0000°, Azm319.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

NEIC **10** *20:04:23.7±0.8, 9.°90N×126.°18E, h66km±7km, mb5.0/75 Error ellipse: s-maj=6.7km s-min=4.7km az=83.0*

NEIC Felt [III PIVS] at Mainit and [II PIVS] at Surigao. Also felt [III PIVS] at Guiuan, Samar and [II PIVS] at Libagon, Leyte.

KLM **10** *20:04:27.6, 9.°79N×126.°32E, h77km, mb4.9, MS6.0*

ISC 10 20:04:22.5±0.5, 9.°88N±0.°03×126.°25E±0.°05, h54km±4km**, n321, σ1§80**/350**, mb5.0**/139**, MS3.8**/27**, 16C-18D, Mindanao**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
BUTP	**Butuan**	**1.10**	**215**	*e*P	**Pn**	**20 04 41.0**	**-0.7**
BUTP				*e*S	**Sn**	**20 04 56.6**	**+0.7**
PLP	**Palo**	**1.79**	**316**	⇓*e*P	**Pn**	**20 04 51.4**	**+0.4**
PLP				*i* S	**Sn**	**20 05 14.7**	**+2.1**
OCLP	**Ormoc**	**1.99**	**306**	*e*P	**Pn**	**20 04 55.1**	**+1.4**
OCLP				*e*S	**Sn**	**20 05 17.3**	**-0.3**
LLP	**Lapu-Lapu**	**2.29**	**281**	⇓*i*P	**Pn**	**20 04 58.9**	**+1.0**
LLP				*i* S	**Sn**	**20 05 26.6**	**+1.7**
BUKP	**Musuan**	**2.31**	**211**	*e*P	**Pn**	**20 04 59.5**	**+1.3**
TBP	**Tagbilaran**	**2.36**	**266**	⇑*e*P	**Pn**	**20 04 59.9**	**+1.0**
TBP				*e*S	**Sn**	**20 05 27.5**	**+0.8**
DAV	**Davao City (W)**	**2.87**	**193**	P	**Pn**	**20 05 06.4**	**+0.5**
	1μm,0.3s,baz=288,slow=2.7,SNR=46						
DAV				LR	LR	20 06 35.4	
	comp=Z,4μm,18.7s,baz=94,slow=47						
DAV	**Davao City (W)**	**2.87**	**193**	*e*Pn	**Pn**	**20 05 07.5**	**+1.6**
MATI	**Mati**	**2.92**	**180**	*e*P	**Pn**	**20 05 06.5**	**0.0**
MATI				*e*S	**Sn**	**20 05 40.4**	**0.0**
MMPH	**Masbate**	**3.40**	**313**	*e*S	Sn	20 05 01.3	-55
PAGZ	**Pagadian**	**3.48**	**235**	*e*P	**Pn**	**20 05 14.9**	**+0.7**
GUIM	**Jordan**	**3.68**	**282**	*e*P	**Pn**	**20 05 17.8**	**+0.8**
RCP	**Roxas**	**3.83**	**296**	⇓*e*P	**Pn**	**20 05 20.5**	**+1.5**
OTRP	**Odiongan**	**4.83**	**301**	*e*P	**Pn**	**20 05 34.3**	**+1.6**
AUQP	**San Andres**	**4.90**	**315**	*e*P	**Pn**	**20 05 36.0**	**+2.3**
CUYO	**Cuyo Island**	**5.24**	**281**	*e*P	**Pn**	**20 05 39.9**	**+1.5**
GQP	**Guinayangan**	**5.46**	**317**	⇓*e*P	**Pn**	**20 05 42.0**	**+0.6**
GQP				*e*S	**Sn**	**20 06 43.2**	**+0.2**
SJMP	**San Jose**	**5.65**	**297**	*e*P	**Pn**	**20 05 45.8**	**+1.8**
LQP	**Lukban**	**6.24**	**313**	⇓*e*P	**Pn**	**20 05 53.9**	**+1.7**
BUSP	**Coron**	**6.31**	**290**	*e*P	**Pn**	**20 05 54.3**	**+1.4**
ENPP	**El Nido**	**6.84**	**282**	*e*P	**Pn**	**20 06 01.5**	**+1.2**
BALP	**Baler**	**7.40**	**322**	*e*P	**Pn**	**20 06 06.1**	**-1.8**
PPR	**Puerto Princes**	**7.41**	**270**	⇓*i*P	**Pn**	**20 06 09.7**	**+1.6**
BCPH	**Baguio City Da**	**8.50**	**320**	⇓*e*P	**Pn**	**20 06 23.6**	**+0.4**
I39PW	**PALAU INFRASON**	**8.52**	**105**	*i*		21 02 00.0	
	baz=282,slow=312,SNR=0.5						
MYLDM	**Lahad Datu**	**8.99**	**239**	⇑P	Pn	20 06 35.8	+6.0
MYLDM	**Lahad Datu**	**8.99**	**239**	*e*Pn	**Pn**	**20 06 33.1**	**+3.3**
TNTI	**Ternate**	**9.12**	**173**	P	**Pn**	**20 06 33.5**	**+2.0**
TNTI	**Ternate**	**9.12**	**173**	*e*Pn	**Pn**	**20 06 31.0**	**-0.5**
TNTI				*e*Sn	**Sn**	**20 08 11.8**	**-1.0**
APYP	**Conner**	**9.30**	**329**	*e*P	**Pn**	**20 06 32.6**	**-1.4**
ABRA	**Dolores**	**9.41**	**326**	*e*P	**Pn**	**20 06 35.1**	**-0.4**
KDM	**Kudat**	**9.77**	**253**	⇑P	Pn	20 06 45.9	+5.4
SDKM	**Sandakan**	**9.91**	**246**	⇑P	Pn	20 06 48.9	+6.4
MRSI	**Marisa**	**10.28**	**205**	P	**Pn**	**20 06 48.6**	**+1.2**
LBMI	**Labuha**	**10.52**	**173**	P	Pn	20 06 56.2	+5.4
KKM	**Kota Kinabalu**	**10.65**	**250**	⇑P	**Pn**	**20 06 55.9**	**+3.4**
KKM	**Kota Kinabalu**	**10.65**	**250**	*e*Pn	**Pn**	**20 06 54.2**	**+1.7**
LUWI	**Luwuk**	**11.39**	**198**	P	**Pn**	**20 07 07.1**	**+4.5**
LUWI	**Luwuk**	**11.39**	**198**	*e*Pn	**Pn**	**20 07 03.9**	**+1.3**
LUWI				*e*Sn	**Sn**	**20 09 10.1**	**+1.6**
APSI	**Ampana**	**11.66**	**203**	P	Pn	20 07 11.3	+5.0
SWI	**Sorong**	**11.78**	**155**	P	**Pn**	**20 07 07.5**	**-0.4**
SANI	**Sanana**	**11.86**	**181**	P	**Pn**	**20 07 07.8**	**-1.2**
PCI	**Palu**	**12.47**	**211**	P	**P**	**20 07 23.0**	**-4.7**
	54nm,1.1s						
NLAI	**Namlea**	**13.06**	**176**	P	**Pn**	**20 07 24.7**	**-0.7**
MSAI	**Masohi**	**13.41**	**168**	P	**P**	**20 07 34.6**	**-3.4**
RKPI	**Ransiki, Papua**	**13.80**	**145**	P	**P**	**20 07 40.5**	**-1.8**
FAKI	**Fak Fak**	**14.05**	**155**	P	**Pn**	**20 07 39.5**	**+0.6**
FAKI	**Fak Fak**	**14.05**	**155**	*e*Pn	**Pn**	**20 07 39.1**	**+0.3**
YULB	**Yu-li**	**14.25**	**341**	P	**Pn**	**20 07 40.3**	**-1.1**
TTSI	**Tana Toraja**	**14.35**	**207**	P	**P**	**20 07 47.8**	**-0.7**
TPUB	**Ta-pu**	**14.39**	**339**	*e*P	**Pn**	**20 07 43.9**	**+0.6**
SSLB	**Suanglung**	**14.72**	**341**	*e*Pn	**Pn**	**20 07 47.2**	**-0.5**
SPSI	**Sidrap Palu**	**15.20**	**205**	P	**P**	**20 07 58.4**	**+0.5**
YHNB	**Yeheng**	**15.42**	**343**	Pn	**Pn**	**20 07 54.7**	**-2.2**
	182nm,1.7s						
SBUM	**Sibu**	**15.78**	**243**	⇓P	**P**	**20 08 04.8**	**+0.4**
SBUM	**Sibu**	**15.78**	**243**	*e*Pn	**Pn**	**20 08 02.4**	**+1.0**
	89nm,0.9s						
KAPI	**Kappang**	**16.15**	**204**	P	**Pn**	**20 08 06.2**	**+0.1**
	0.8nm,0.3s,baz=60,slow=4.7,SNR=8.1						
KAPI				LR	LR	20 15 47.5	
	comp=Z,307nm,18.8s,baz=22,slow=43						
KAPI	**Kappang**	**16.15**	**204**	*e*Pn	**P**	**20 08 07.5**	**-1.0**
KBKI	**Kotabaru**	**16.50**	**218**	P	**P**	**20 08 13.4**	**+1.0**
QZH	**Quanzhou**	**16.66**	**335**	⇑*i*P	**Pn**	**20 08 12.6**	**+0.2**
QZH				S	**Sn**	**20 11 14.8**	**-1.7**
QZH				LR	LR		
	comp=Z,690nm,19.6s						
BBKI	**Banjar Baru**	**17.46**	**221**	P	**P**	**20 08 24.8**	**+1.8**
STKI	**Sintang**	**17.64**	**237**	P	**P**	**20 08 28.0**	**+3.0**
KSM	**Kuching**	**17.92**	**243**	⇓P	**P**	**20 08 31.3**	**+3.3**
KSM	**Kuching**	**17.92**	**243**	*e*Pn	**P**	**20 08 30.5**	**+2.4**
	37nm,1.1s						
SAUI	**Saumlaki**	**18.45**	**164**	*e*P	**Pn**	**20 08 35.0**	**+0.5**
	212nm,0.6s						
GENI	**Genyem**	**18.59**	**131**	P	**Pn**	**20 08 40.9**	**+4.7**
	124nm,1.0s						
GUMO	**Guam**	**18.59**	**77**	LR	LR	20 14 18.5	
	comp=Z,203nm,20.6s,baz=268,slow=32						
MMRI	**Maumere**	**18.82**	**192**	P	Pn	20 08 48.1	+9.1
JAY	**Jayapura**	**18.94**	**130**	P	**Pn**	**20 08 40.6**	**+0.1**
	0.2nm,0.3s,baz=274,slow=23,SNR=4.3						
SOEI	**Soe**	**19.61**	**186**	P	**Pn**	**20 08 53.7**	**+5.2**
	80nm,1.4s						
SOEI	**Soe**	**19.61**	**186**	*e*P	**P**	**20 08 47.3**	**+0.6**
	158nm,1.0s						
TWSI	**Taliwang, Sumb**	**20.72**	**207**	P	Pn	20 09 05.9	+4.4
	32nm,1.0s,1μm						
JCJ	**Chichijima**	**22.79**	**39**	P	**P**	**20 09 20.9**	**+0.1**
	261nm,0.6s,baz=242,slow=2.1,SNR=11						
CBIJ	**Chichi jima**	**22.79**	**39**	*e*P	**P**	**20 09 20.0**	**-0.8**
	228nm,0.7s						
NJ2	**Nanjing**	**23.10**	**344**	*e*P	**P**		
NJ2				pmax	pmax	**20 09 22.8**	**-1.0**
	comp=Z,13nm,0.5s						
WHN	**Wuhan**	**23.36**	**333**	⇓P	**P**	**20 09 27.3**	**+1.0**
WHN				pmax	pmax		
	comp=Z,140nm,1.1s						
WHN				LR	LR		
	comp=N,2μm,22.7s						
WHN				LR	LR		
	comp=E,870nm,18.6s						
WHN				LR	LR		
	comp=Z,810nm,18.1s						
JNU	**Nakatsue**	**23.52**	**10**	P	**P**	**20 09 28.4**	**+0.5**
	14nm,0.9s,baz=134,slow=11,SNR=3.9						
MYKOM	**Kota Tinggi**	**23.67**	**252**	*e*P	**P**	**20 09 29.8**	**+0.4**
	50nm,0.9s						
KPJI	**Karang Pucung**	**24.29**	**226**	P	P	20 09 43.2	+8.1
NAYO	**Nakonayok**	**24.77**	**283**	P	**P**	**20 09 39.6**	**+0.2**
	112nm,0.9s						
LEM	**Lembang**	**24.90**	**229**	P	**P**	**20 09 46.2**	**+5.4**
	27nm,0.7s,baz=49,slow=8.4,SNR=8.5						
LEM				LR	LR	20 20 37.6	
	comp=Z,219nm,19.7s,baz=41,slow=39						
LEM	**Lembang**	**24.90**	**229**	P	P	20 09 48.5	+7.7
PATY	**Pattaya**	**25.06**	**279**	P	**P**	**20 09 45.9**	**+3.8**
	10nm,0.9s						
CBJI	**Citeko**	**25.22**	**231**	P	**P**	**20 09 46.9**	**+3.4**
	268nm,0.8s						
IPM	**Ipoh**	**25.59**	**260**	*e*P	**P**	**20 09 47.0**	**0.0**
	36nm,0.8s						
KULM	**Kulim**	**25.78**	**262**	*e*P	**P**	**20 09 47.8**	**-0.9**
	48nm,0.7s						
PHIT	**Phitsanulok**	**26.13**	**289**	P	**P**	**20 09 53.7**	**+1.9**
MDSI	**Maura Dua**	**26.22**	**238**	P	**P**	**20 09 54.3**	**+1.7**
	19nm,0.9s,2μm						
KMI	**Kunming**	**27.00**	**307**	P	**P**	**20 10 00.8**	**+1.0**
KMI				pmax	pmax		
	comp=Z,10.0nm,1.1s						
KMI				pmax	pmax		
	comp=Z,61nm,5.3s						
KHLT	**Khaolaem Dam**	**27.45**	**283**	P	**P**	**20 10 02.1**	**-1.6**
	17nm,1.1s,207nm						
KSAR	**Wonju Array Be**	**27.48**	**3**	P	**P**	**20 10 04.9**	**+1.2**
KSAR	**Wonju Array Be**	**27.48**	**3**	P	**P**	**20 10 04.8**	**+1.2**
KSAR				ScP	**ScP**	**20 16 56.5**	**-0.7**
TIA	**Tai'an**	**27.49**	**344**	⇓P	**P**	**20 10 03.5**	**-0.3**
TIA				pmax	pmax		
	comp=Z,20nm,1.0s						
KSRS	**Korea Array**	**27.49**	**3**	P	**P**	**20 10 04.8**	**+1.1**
	4.1nm,0.5s,baz=182,slow=11,SNR=9.2						
KSRS				ScP	**ScP**	**20 16 56.5**	**-0.8**
	3.1nm,1.0s,baz=187,slow=4.3,SNR=4.3						
PPI	**Padang Panjang**	**27.71**	**250**	P	**P**	**20 10 08.8**	**+2.8**
	35nm,1.2s						
CMAR	**Chiang Mai Arr**	**27.79**	**291**	P	**P**	**20 10 05.3**	**-1.3**
	4.9nm,0.6s,baz=98,slow=7.8,SNR=9.9						
CMAR				ScP	**ScP**	**20 16 58.9**	**+0.3**
	0.4nm,0.7s,baz=88,slow=1.8,SNR=5.1						
CMAR				LR	LR	20 21 35.2	
	comp=Z,180nm,18.2s,baz=101,slow=37						
FITZ	**Fitzroy Crossi**	**27.81**	**181**	P	**P**	**20 10 06.8**	**0.0**
	9.8nm,0.6s,baz=5.4,slow=6.7,SNR=26						
FITZ	**Fitzroy Crossi**	**27.81**	**181**	*e*P	**P**	**20 10 06.2**	**-0.6**
	23nm,0.9s						
MNSI	**Mandailing Nat**	**28.02**	**253**	P	**P**	**20 10 10.8**	**+2.0**
	48nm,1.1s,937nm						
PSI	**Prapat**	**28.04**	**257**	P	**P**	**20 10 08.4**	**-0.7**
	11nm,0.8s,baz=75,slow=4.0,SNR=9.7						
PSI				LR	LR	20 23 34.3	
	comp=Z,88nm,18.1s,baz=94,slow=41						
PSI	**Prapat**	**28.04**	**257**	*e*P	**P**	**20 10 09.8**	**+0.7**
PSI				pmax	pmax		
	comp=Z,46nm,0.7s						
PSI	**Prapat**	**28.04**	**257**	*e*P	**P**	**20 10 09.8**	**+0.7**
	comp=Z,46nm,0.7s						
PMG	**Port Moresby**	**28.29**	**132**	P	**P**	**20 10 13.3**	**+2.2**
	comp=Z,23nm,0.6s,baz=353,slow=5.8,SNR=14						
PMG	**Port Moresby**	**28.29**	**132**	P	**P**	**20 10 14.0**	**+2.9**
PMG				pmax	pmax		
	comp=Z,164nm,0.9s						
PMG	**Port Moresby**	**28.29**	**132**	*e*P	**P**	**20 10 13.2**	**+2.1**
	comp=Z,33nm,0.8s						
MJAR	**Matsushiro Arr**	**28.67**	**20**	P	**P**	**20 10 13.7**	**-0.6**
	comp=Z,3.9nm,0.9s,baz=198,slow=9.4,SNR=4.3						
MAT	**Matsushiro**	**28.67**	**20**	P	**P**	**20 10 14.4**	**0.0**
XAN	**Xi'an**	**28.83**	**329**	P	**P**	**20 10 14.1**	**-1.7**
XAN				pmax	pmax		
	comp=Z,23nm,1.1s						
XAN				pmax	pmax		
	comp=Z,33nm,4.5s						
DL2	**Dalian**	**29.20**	**353**	P	**P**	**20 10 20.3**	**+1.3**
DL2				pmax	pmax		
	comp=Z,54nm,0.9s						
CD2	**Chengdu**	**29.59**	**318**	P	**P**	**20 10 22.1**	**-0.5**
CD2				sP	pP	20 10 37.8	+1.6
CD2				S	**S**	**20 15 15.2**	**+1.0**
CD2				sS	sS	20 15 33.7	-3.5
CD2				pmax	pmax		
	comp=Z,10.0nm,0.7s						
CD2				pmax	pmax		
	comp=Z,70nm,4.3s						
CD2				LR	LR		
	comp=Z,480nm,19.0s						
CD2				LR	LR		
	comp=Z,350nm,23.8s						
GSI	**Gunungsitoli**	**29.76**	**255**	*e*P	**P**	**20 10 24.6**	**+0.3**
	comp=Z,96nm,0.7s						
WRAB	**Tennant Creek**	**30.68**	**165**	⇓*e*P	**P**	**20 10 30.7**	**-1.6**
WRAB				pmax	pmax		
	comp=Z,11nm,0.8s						
WRA	**Warramunga Arr**	**30.69**	**165**	P	**P**	**20 10 31.2**	**-1.2**
	comp=Z,3.8nm,0.5s,baz=340,slow=8.9,SNR=32						
WRA				LR	LR	20 25 17.5	
	comp=Z,106nm,20.5s,baz=30,slow=41						
WB2	**Warramunga Arr**	**30.69**	**165**	*e*P	**P**	**20 10 30.3**	**-2.1**
	comp=Z,39nm,1.1s						
BJI	**Beijing**	**31.34**	**345**	P	**P**	**20 10 38.3**	**+0.4**
BJI				S	**S**	**20 15 38.8**	**-2.5**
BJI				pmax	pmax		
	comp=Z,28nm,0.9s						
BJI				LR	LR		
	comp=Z,120nm,18.9s						
BJI				LR	LR		
	comp=Z,150nm,25.3s						
MBWA	**Marble Bar**	**31.51**	**192**	*e*P	**P**	**20 10 38.5**	**-1.0**
	comp=Z,17nm,0.8s						
LZH	**Lanzhou**	**33.09**	**326**	*e*P	**P**	**20 10 55.5**	**+2.0**
LZH				pP	pP	20 11 06.5	-0.7
LZH				sP	sP	20 11 10.0	-3.5
LZH				PP	**PnPn**	**20 12 06.6**	**+2.0**
LZH				*e*S	**S**	**20 16 10.0**	**+1.0**
LZH				sS	sS	20 16 28.3	-3.8
LZH				*e*SS	**SnSn**	**20 18 11.5**	**-0.3**
LZH				pmax	pmax		
	comp=Z,43nm,1.5s						
LZH				pmax	pmax		
	comp=Z,170nm,6.0s						
LZH				LR	LR		
	comp=Z,380nm,12.6s						
LZH				LR	LR		
	comp=Z,340nm,12.9s						
LZH				LR	LR		
	comp=Z,500nm,16.0s						
HHC	**Hu-ho-hao-te**	**33.47**	**340**	*e*P	**P**	**20 10 57.4**	**+0.7**
HHC				PP	**PnPn**	**20 12 10.9**	**+1.5**
HHC				S	**S**	**20 16 18.9**	**+4.2**
HHC				pmax	pmax		
	comp=Z,44nm,0.9s						
HHC				pmax	pmax		
	comp=Z,130nm,4.6s						
HHC				LR	LR		
	comp=Z,1μm,12.6s						
HHC				LR	LR		
	comp=Z,1μm,12.8s						
HHC				LR	LR		
	comp=Z,1μm,12.4s						
CN2	**Changchun**	**33.80**	**359**	⇑P	**P**	**20 10 59.9**	**+0.5**
CN2				pmax	pmax		
	comp=Z,10.0nm,0.8s						
AS31	**Alice Springs**	**34.17**	**167**	*e*P	**P**	**20 11 01.8**	**-1.0**
	comp=Z,5.6nm,0.5s						
ASAR	**Alice Springs**	**34.17**	**167**	P	**P**	**20 11 02.0**	**-0.8**
	comp=Z,8.2nm,0.5s,baz=350,slow=6.8,SNR=107						
ASAR				S	**S**	**20 16 21.1**	**-4.6**
	comp=Z,2.0nm,0.7s,baz=356,slow=21,SNR=5.5						
AS01	**Alice Springs**	**34.18**	**167**	*e*P	**P**	**20 11 01.8**	**-1.2**
USRK	**Ussuriysk Ar.**	**34.55**	**7**	P	**P**	**20 11 07.5**	**+1.6**
	comp=Z,14nm,0.6s,baz=188,slow=8.0,SNR=26						
USRK				LR	LR	20 26 01.3	
	comp=Z,137nm,19.6s,baz=174,slow=38						
MDJ	**Mudanjiang**	**34.73**	**4**	P	**P**	**20 11 09.8**	**+2.4**
MDJ				pP	pP	20 11 18.2	-3.0
MDJ				sP	sP	20 11 22.1	-5.4
MDJ				S	**S**	**20 16 35.2**	**+1.4**
MDJ				ScS	**ScS**	**20 21 28.0**	**+3.6**
MDJ				pmax	pmax		
	comp=Z,19nm,0.9s						
MDJ				pmax	pmax		
	comp=Z,91nm,6.9s						
MDJ				LR	LR		
	comp=Z,30nm,23.4s						
MDJ				LR	LR		
	comp=Z,190nm,27.3s						
MDJ				LR	LR		
	comp=Z,170nm,27.3s						
MDJ	**Mudanjiang**	**34.73**	**4**	P	**P**	**20 11 06.8**	**-0.6**
	comp=Z,16nm,0.9s						
GTA	**Gaotai**	**37.69**	**326**	*e*P	**P**	**20 11 31.9**	**-1.1**
GTA				pP	pP	20 11 42.5	-4.3
GTA				sP	sP	20 11 46.5	-6.6
GTA				PcP	**PcP**	**20 13 49.1**	**-0.3**
GTA				S	**S**	**20 17 17.7**	**-1.8**
GTA				ScP	**ScP**	**20 17 32.7**	**+0.2**
GTA				pmax	pmax		
	comp=Z,9.0nm,1.0s						
GTA				pmax	pmax		
	comp=Z,50nm,5.9s						
GTA				LR	LR		
	comp=Z,150nm,19.0s						
GTA				LR	LR		
	comp=Z,200nm,21.9s						
GTA				LR	LR		
	comp=Z,220nm,23.3s						
LSA	**Lhasa**	**38.24**	**306**	*e*P	**P**	**20 11 37.2**	**-0.9**
LSA				pmax	pmax		
	comp=Z,10.0nm,0.8s						
LSA	**Lhasa**	**38.24**	**306**	*e*P	**P**	**20 11 37.2**	**-0.9**
	comp=Z,10nm,0.8s						
KLR	**Kul'dur**	**39.49**	**6**	P	**P**	**20 11 48.9**	**+1.2**
	comp=Z,7.9nm,0.5s,baz=196,slow=6.0,SNR=24						
KLR				LR	LR	20 28 41.1	
	comp=Z,138nm,20.5s,baz=180,slow=37						
YSS	**Yuzh-Sakhalins**	**39.52**	**18**	⇑*e*P	**P**	**20 11 49.7**	**+1.7**
YSS				pmax	pmax		
	comp=Z,20nm,0.4s						
TAPN	**Taplejung**	**40.23**	**301**	*e*P	**P**	**20 11 53.8**	**-0.8**
	comp=Z,88nm,1.0s						
ODAN	**Odare**	**40.36**	**300**	*e*P	**P**	**20 11 54.6**	**-1.0**
	comp=Z,113nm,0.8s						
H11N1	**WAKE ISLAND Hy**	**40.39**	**71**	T	T	20 55 17.9	
	baz=265,slow=74,SNR=434						
H11N2	**WAKE ISLAND Hy**	**40.40**	**71**	T	T	20 55 14.9	
	baz=265,slow=74,SNR=193						
H11N3	**WAKE ISLAND Hy**	**40.41**	**71**	T	T	20 55 23.1	
	baz=265,slow=74,SNR=466						
RAMN	**Ramite**	**41.06**	**300**	*e*P	**P**	**20 12 00.6**	**-0.8**
	comp=Z,52nm,0.8s						
ULN	**Ulaanbaatar**	**41.18**	**340**	*d i*P	**P**	**20 12 02.0**	**+0.1**
ULN				pmax	pmax		
	comp=Z,18nm,1.1s						
ULN	**Ulaanbaatar**	**41.18**	**340**	*e*P	**P**	**20 12 02.1**	**+0.1**
	comp=Z,4nm,1.0s						
SONM	**Songino Array**	**41.38**	**340**	P	**P**	**20 12 02.1**	**-1.4**
	comp=Z,5.9nm,0.8s,baz=157,slow=10.0,SNR=10						
SONM				ScP	**ScP**	**20 17 46.1**	**-0.5**
	comp=Z,3.0nm,0.9s,ba

comp=Z,6.6nm,1.0s,baz=110,slow=6.3,SNR=4.4
RC01 Rabbit Creek A 78.52 30 *e*P **P** **20 16 18.2 +0.3**
comp=Z,39nm,1.4s
KIV Kislovodsk 78.60 313 *e*P **P** **20 16 18.1 -0.7**
KIV pmax pmax
comp=Z,22nm,1.1s
KIV Kislovodsk 78.60 313 *e*P **P** **20 16 16.4 -2.4**
comp=Z,15nm,0.8s
NEY Neytrino 78.61 312⇑*e*P **P** **20 16 15.9 -3.1**
NEY pmax pmax
comp=Z,2.0nm,1.5s
SEW Seward 78.66 31 *e*P **P** **20 16 16.9 -1.8**
comp=Z,18nm,0.9s
PMR Palmer 78.82 29 *e*P **P** **20 16 19.6 +0.1**
PMR pmax pmax
comp=Z,15nm,0.8s
PMR Palmer 78.82 29 *e*P **P** **20 16 19.6 +0.1**
comp=Z,16nm,0.8s
MCK McKinley 78.91 27 *e*P **P** **20 16 18.2 -1.8**
MCK pmax pmax
comp=Z,30nm,0.7s
MCK McKinley 78.91 27 *e*P **P** **20 16 18.2 -1.8**
comp=Z,30nm,0.7s
RND Reindeer 78.95 27 *e*P **P** **20 16 16.4 -3.9**
RND pmax pmax
comp=Z,36nm,1.5s
RND Reindeer 78.95 27 *e*P **P** **20 16 16.4 -3.9**
comp=Z,36nm,1.5s
CHVG Ch'k'valeri 79.10 312 P **P** **20 16 21.4 -0.1**
SML Sawmill 79.19 29 *e*P **P** **20 16 17.9 -3.8**
SML pmax pmax
comp=Z,30nm,1.1s
SML Sawmill 79.19 29 *e*P **P** **20 16 17.9 -3.8**
comp=Z,30nm,1.1s
MDM Murphy Dome 79.22 26 *e*P **P** **20 16 20.8 -0.9**
comp=Z,8.8nm,0.9s
WRH Wood River Hil 79.28 26 *e*P **P** **20 16 21.8 -0.2**
comp=Z,6.8nm,0.8s
COLA College 79.38 26*c i*P **P** **20 16 22.9 +0.4**
COLA pmax pmax
comp=Z,8.0nm,0.8s
CCB Clear Creek Bu 79.40 26 *e*P **P** **20 16 21.0 -1.6**
comp=Z,4.4nm,0.7s
DHY Denali Highway 79.62 28 *e*P **P** **20 16 23.7 -0.4**
comp=Z,9.3nm,0.5s
SCM Sheep Creek Mo 79.67 29 *e*P **P** **20 16 25.2 +0.9**
SCM pmax pmax
comp=Z,48nm,1.5s
SCM Sheep Creek Mo 79.67 29 *e*P **P** **20 16 25.2 +0.9**
comp=Z,48nm,1.5s
HDA Harding Lake 79.78 26 *e*P **P** **20 16 24.3 -0.4**
comp=Z,11nm,0.7s
IL1 Eielson Array 79.80 26 *e*P **P** **20 16 24.1 -0.7**
ILAR Eielson Array 79.80 26 P **P** **20 16 24.7 -0.1**
comp=Z,3.9nm,0.7s,baz=243,slow=4.7,SNR=36
ILB Eielson Array 79.80 26 *e*P **P** **20 16 24.1 -0.7**
KLMR Klimovskoe 79.85 330 *e*P **P** **20 16 22.3 -2.9**
KLMR pmax pmax
comp=Z,20nm,1.1s
KLU Klutina 80.36 29 *e*P **P** **20 16 29.2 +1.3**
comp=Z,9.5nm,0.6s
FYU Fort Yukon 80.42 24 *e*P **P** **20 16 30.6 +2.6**
comp=Z,22nm,1.3s
DIV Divide 80.45 29 *e*P **P** **20 16 29.3 +0.8**
comp=Z,14nm,0.7s
LPSR Galich'ya Gora 80.61 322 *e*P **P** **20 16 27.8 -1.6**
LPSR pmax pmax
comp=Z,10.0nm,0.8s
DOT Dot Lake 81.08 27 *e*P **P** **20 16 32.6 +0.8**
comp=Z,24nm,1.1s
MENT Mentasta 81.29 28 *e*P **P** **20 16 34.5 +1.5**
comp=Z,9.4nm,0.6s
OBN Obninsk 81.80 325⇑*i*P **P** **20 16 34.6 -1.0**
OBN *e* 20 16 48.0
OBN *e*SS SS 20 32 01.4 -1.7
OBN SSS SSS 20 35 23.0
OBN pmax pmax
comp=Z,25nm,1.7s
EGAK Eagle 82.24 26 *e*P **P** **20 16 38.8 +1.0**
comp=Z,6.4nm,0.8s
ANN Anapa 82.29 314 *e*P **P** **20 16 33.9 -4.5**
ANN *e**PP **PcP** **20 16 46.4 +2.8**
ANN *e*PPP PPP 20 21 33.1
ANN *e*S **S** **20 26 44.0 -6.1**
ANN pmax pmax
comp=Z,77nm,1.2s
ARCES ARCESS Array B 84.55 340 P **P** **20 16 49.6 0.0**
comp=Z,4.1nm,0.5s,baz=81,slow=6.0,SNR=29
INK Inuvik 84.65 22 P **P** **20 16 50.9 +0.8**
comp=Z,3.6nm,0.7s,baz=273,slow=5.7,SNR=13
INK Inuvik 84.65 22 *e*P **P** **20 16 49.5 -0.6**
INK pmax pmax
comp=Z,10.0nm,1.0s
INK Inuvik 84.65 22 *e*P **P** **20 16 49.5 -0.6**
comp=Z,9.8nm,1.0s
BR131 Keskin Array S 85.76 309 *e*P **P** **20 16 54.9 -1.6**
BRTR Keskin Array B 85.76 309 P **P** **20 16 55.4 -1.1**
comp=Z,3.9nm,0.8s,baz=104,slow=5.0,SNR=7.6
BRTR LR LR 21 00 10.8
comp=Z,42nm,19.1s,baz=112,slow=39
FIA1 FINESS Array S 86.22 332 *e*P **P** **20 16 57.0 -1.0**
comp=Z,32nm,1.3s
FINES FINESS Array B 86.22 332 P **P** **20 16 57.2 -0.8**
comp=Z,8.4nm,0.5s,baz=81,slow=4.4,SNR=24
BR231 Keskin MP Arra 86.40 310 *e*P **P** **20 16 55.6 -3.9**
VSU Vasula 86.59 329⇑*i*P **P** **20 17 00.1 +0.2**
VSU pmax pmax
comp=Z,75nm,1.4s
CSS Mathiatis 86.79 305 *e*P **P** **20 16 57.1 -4.4**
comp=Z,4.6nm,0.7s
AKASG Malin Array Be 86.85 321 P **P** **20 17 00.2 -1.1**
comp=Z,2.3nm,0.5s,baz=65,slow=4.0,SNR=13
KIEV Kiev 86.86 321⇑*i*P **P** **20 17 00.0 -1.4**
KIEV pmax pmax
comp=Z,15nm,1.3s
KIEV Kiev 86.86 321 *e*P **P** **20 16 59.4 -2.0**
comp=Z,19nm,1.3s
AK11 Malin Array Si 86.89 321 *e*P **P** **20 16 59.6 -2.0**
AK11 *e*pP **pP** **20 17 13.9 -3.1**
KMBO Kilima Mbogo 89.21 269 P **P** **20 17 12.8 -0.8**
comp=Z,2.6nm,0.9s,baz=37,slow=5.9,SNR=9.0
KMBO Kilima Mbogo 89.21 269 *e*P **P** **20 17 13.9 +0.2**
KMBO pmax pmax
comp=Z,4.0nm,1.0s
KMBO Kilima Mbogo 89.21 269 *e*P **P** **20 17 13.9 +0.2**
comp=Z,4.3nm,1.0s
MAW Mawson 89.33 200 P **P** **20 17 12.7 +0.1**
comp=Z,3.2nm,0.6s,baz=81,slow=4.1,SNR=10
MAW Mawson 89.33 200 *e*P **P** **20 17 14.2 +1.6**
MAW pmax pmax
comp=Z,5.0nm,1.6s
MAW Mawson 89.33 200 *e*P **P** **20 17 14.2 +1.6**
comp=Z,5.0nm,1.6s
VNDA Vanda 89.55 173 P **P** **20 17 13.6 0.0**
comp=Z,3.6nm,0.7s,baz=324,slow=5.6,SNR=16
VNDA LR LR 21 00 11.4
comp=Z,300nm,18.1s,baz=127,slow=37
BUR08 Bucovina Ar. S 90.12 318 *e*P **P** **20 17 16.8 -0.3**
KOLS Kolonicke sedl 91.65 320 *e*P **P** **20 17 26.4 +2.3**
KOLS pmax pmax
comp=Z,9.0nm,1.5s
KOLS Kolonicke sedl 91.65 320 *e*P **P** **20 17 26.3 +2.2**
UZH Uzhgorod 91.72 320⇑*i*P **P** **20 17 24.1 -0.3**
UZH *i* 20 17 34.3
UZH *i* *PP **pP** **20 17 36.9 -3.0**
UZH *e*S **S** **20 28 17.1 -3.8**
UZH *e*SP **SPn** **20 29 37.1 +6.4**
RES Resolute Bay 91.88 10 *e*P **P** **20 17 25.7 +1.1**
RES pmax pmax
comp=Z,4.0nm,0.7s
RES Resolute Bay 91.88 10 *e*P **P** **20 17 25.6 +1.1**
comp=Z,4.2nm,0.7s
STHS Stebnicka Huta 92.15 321 *e*P **P** **20 17 27.2 +0.8**
STHS pmax pmax
comp=Z,3.0nm,0.7s
STHS Stebnicka Huta 92.15 321 *e*P **P** **20 17 27.2 +0.8**
CRVS Cervenica-Dubn 92.17 320 *e*P **P** **20 17 26.5 0.0**
CRVS Cervenica-Dubn 92.17 320 *e*P **P** **20 17 26.5 0.0**
NB2 NORSAR Subarra 93.10 334 P **P** **20 17 28.5 -2.0**
comp=Z,2.6nm,0.7s,baz=67,slow=4.4
NB2 NORSAR Subarra 93.10 334 P **P** **20 17 28.5 -2.0**
baz=67,slow=4.4
NOA NORSAR Array B 93.10 334 P **P** **20 17 28.9 -1.7**
comp=Z,2.1nm,0.6s,baz=65,slow=4.6,SNR=8.4
YKW3 Yellowknife Ar 94.08 24 *e*P **P** **20 17 36.0 +1.1**
comp=Z,4.4nm,0.8s
YKA Yellowknife Ar 94.12 24 P **P** **20 17 35.8 +0.8**
comp=Z,3.6nm,0.7s,baz=300,slow=4.6,SNR=30
YKA PKKPbc **PKKPdf** 20 34 34.7 **-2.4**
comp=Z,0.3nm,0.6s,baz=122,slow=2.9,SNR=6.8
YKB5 Yellowknife Ar 94.12 24 *e*P **P** **20 17 35.2 +0.1**
GEC2 GERESS Array S 96.99 322 *e*P **P** **20 17 49.5 +0.9**
GEC2 GERESS Array S 96.99 322 *e*P **P** **20 17 49.5 +0.9**
GERES GERESS Array B 96.99 322 P **P** **20 17 47.5 -1.1**
comp=Z,2.9nm,1.0s,baz=49,slow=4.1,SNR=8.7
SYO Syowa Base 97.95 201⇑eX **P** **20 17 49.8 -2.4**
NVAR Mina Array Bea 103.12 47 Pdiff **Pdif** **20 18 17.4 +1.0**
comp=Z,0.5nm,0.6s,baz=273,slow=7.9,SNR=4.6
TORD Torodi Ar. Bea 120.39 292 PKhKP PKPpre 20 23 04.8
comp=Z,1.0nm,0.6s,baz=72,slow=1.6,SNR=9.6
PLCA Paso Flores 145.86 157 PKPbc **PKPab** **20 23 57.2 +0.4**
comp=Z,8.2nm,1.0s,baz=216,slow=5.0,SNR=7.2
SJG San Juan 149.61 24 PKPbc **PKPbc** **20 24 07.6 +0.5**
comp=Z,4.7nm,0.4s,baz=278,slow=7.1,SNR=4.2
MOTC Monteria, Cord 151.37 50 *e*P **PKPdf** **20 24 05.3 -0.1**
MOTC *e*P **PKiKP** **20 24 12.4 +0.5**
GUYC Guyana, Colomb 153.73 56 *i* Pg **PKPbc** **20 24 16.9 -0.3**
BRRC Barranca, Sant 153.92 50 *e*P **PKPbc** **20 24 17.4 +0.3**
NORC Norcasia 153.96 55 *e*P **PKPab** **20 24 31.4 +0.8**
POPC Popayan, Colom 154.04 63 *e*P **PKPab** **20 24 24.5 -6.7**
BARC Barichara 154.65 51 *e*P **PKPbc** **20 24 17.8 -1.1**
SDV Santo Domingo 154.90 43 PKPab **PKPab** **20 24 35.5 +0.8**
comp=Z,5.8nm,0.6s,baz=13,slow=2.8,SNR=5.6
CHIC Chingaza 155.42 55 *e*P **PKPdf** **20 24 19.3 +7.6**
PTGA Pitinga 169.00 35 PKPab **PKPab** **20 25 36.0 +0.1**
comp=Z,3.6nm,0.8s,baz=353,slow=21,SNR=5.2

JMA 10 20:06:57.2, 37.05N×140.76E, h9km±1km, M2.8, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.06**	**31**	P	Pg	20 06 59.1	-0.1
ONAJ				S	Sg	20 07 00.5	-0.2
JFK	**Kawauchi**	**0.33**	**16**	P	Pg	20 07 03.7	-0.1
JHO	**Hitachi**	**0.46**	**199**	P	Pg	20 07 06.2	0.0
JHO				S	Sg	20 07 12.4	+0.1
JFT	**Otama**	**0.58**	**324**	P	Pg	20 07 08.6	+0.2
JFT				S	Sg	20 07 16.3	+0.3
JMM	**Marumori**	**0.81**	**2**	P	Pg	20 07 12.5	-0.4
JMM				S	Sg	20 07 23.2	-0.3
JFY	**Yanaizu**	**0.91**	**293**	P	Pg	20 07 14.6	-0.2
JFY				S	Sg	20 07 26.4	-0.3
MAT	**Matsushiro**	**2.11**	**257**	P	Pg	20 07 36.9	-0.8
MAT				S	Sb	20 08 02.3	+0.3

NNC 10 20:09:26.2±4.2, 37.13N×71.43E, h228km±51km, mb2.8, mpv3.8, 3C-7D, Error ellipse: s-maj=49.5km s-min=37.1km az=73.0, Afghanistan-Tajikistan border region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SFK	**Sufi-Kurgan**	**3.31**	**29**	⇓P	Pn	20 10 19.9	-1.1
	6.6nm,0.3s						
SFK				⇓S	S	20 11 05.2	+1.1
	30nm,0.3s						
MNAS	**Manas**	**5.42**	**8**	⇓P	Pn	20 10 46.4	-0.2
	2.6nm,0.4s						
MNAS				⇓S	S	20 11 51.7	+1.3
	9.8nm,0.5s						
AAK	**Ala-Archa**	**5.98**	**22**	⇓P	Pn	20 10 55.7	+1.9
	3.9nm,0.3s						
AAK				⇑S	S	20 12 05.5	+2.1
	14nm,1.1s						
KK31	**Karatay Array**	**6.01**	**354**	P	Pn	20 10 53.3	-0.6
	6.8nm,0.5s,baz=183,slow=13,SNR=137						
KK31				⇑S	S	20 12 04.1	+0.3
	11nm,0.5s,baz=74,slow=8.6,SNR=38						
TKM2	**Tokmak 2**	**6.61**	**28**	⇑P	Pn	20 11 04.2	+2.4
	9.7nm,0.5s						
TKM2				⇓S	S	20 12 14.7	-3.2
	3.3nm,0.7s						
AB31	**Akbulak array**	**14.71**	**329**	⇓P	Pn	20 12 43.2	-0.4
	8.5nm,0.4s,baz=83,slow=7.2,SNR=98						

JMA 10 20:11:23.0±0.1, 38.28N×141.82E, h49km±1km, M3.5, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**0.41**	**295**	P	Pn	20 11 33.2	+0.1
JIO				S	Sn	20 11 40.0	-0.4
JMK	**Ichinoseki**	**0.82**	**325**	P	Pn	20 11 38.5	+0.2
JMK				S	Sn	20 11 49.2	-0.2
JMM	**Marumori**	**0.91**	**243**	P	Pn	20 11 39.2	-0.3
JMM				S	Sn	20 11 50.6	-0.9
JOU	**Okura**	**0.91**	**276**	P	Pn	20 11 40.0	+0.5
JOU				S	Sn	20 11 52.0	+0.3
JFK	**Kawauchi**	**1.18**	**220**	P	Pn	20 11 42.9	-0.3
JFK				S	Sn	20 11 57.2	-0.9
JOM	**Ohasama**	**1.26**	**341**	P	Pn	20 11 44.8	+0.6
JOM				S	Sn	20 12 00.3	+0.2
MIYJ	**Miyakonagasawa**	**1.29**	**360**	P	Pn	20 11 44.6	-0.1
JYK	**Kaneyama**	**1.31**	**300**	P	Pn	20 11 45.4	+0.5
JYK				S	Sn	20 12 02.0	+0.7
JYS	**Shirataka**	**1.38**	**268**	P	Pn	20 11 46.5	+0.6
JYS				S	Sn	20 12 03.8	+0.8
JFT	**Otama**	**1.40**	**238**	P	Pn	20 11 46.7	+0.6
JFT				S	Sn	20 12 03.8	+0.4
JRG	**Rokugo**	**1.45**	**321**	P	Pn	20 11 47.7	+0.9

*ISCJB **10** 20:15:19.2±0.8, 14.7N±0.1×45.2W±0.2, h12km, mb3.9/7, MS3.1/4, Error ellipse: s-maj=33.9km s-min=17.2km az=20.7*
*IDC **10** 20:15:19.2±1.0, 14.69N×45.23W, h0km, mb3.9/7, mb1 4.2/7, mb1mx3.7/48, mbtmp4.0/7, MS3.3/4, Ms1 3.3/4, ms1mx3.0/41, Error ellipse: s-maj=38.6km s-min=22.3km az=106.0*
ISC 10 20:15:21.2±0.9, 14.7N±0.2×45.2W±0.3, h12km, n17, σ0°68/8, mb4.0/7, MS3.1/4, Northern Mid-Atlantic Ridge

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SJG	**San Juan**	**20.37**	**283**	LR	LR	20 26 32.6	
	comp=Z,114nm,21.4s,baz=104,slow=33						
PTGA	**Pitinga**	**21.15**	**225**	P	**P**	**20 20 07.2**	**+0.9**
	1.4nm,0.5s,baz=38,slow=14,SNR=3.6						
PTGA				LR	LR	20 27 42.9	
	comp=Z,62nm,19.9s,baz=64,slow=35						
SDV	**Santo Domingo**	**25.53**	**260**	LR	LR	20 31 08.8	
	comp=Z,38nm,21.3s,baz=87,slow=37						
BDFB	**Brasilia**	**30.24**	**185**	P	**P**	**20 21 31.7**	**-0.5**
	5.7nm,0.7s,baz=351,slow=11,SNR=9.8						
H10N3	**ASCENSION HYDR**	**37.79**	**124**	T	T	21 02 22.8	
	baz=306,slow=75,SNR=201						
H10N2	**ASCENSION HYDR**	**37.79**	**124**	T	T	21 02 31.0	
	baz=306,slow=75,SNR=207						
H10N1	**ASCENSION HYDR**	**37.81**	**124**	T	T	21 02 24.3	
	baz=306,slow=75,SNR=191						
H10S3	**ASCENSION HYDR**	**38.32**	**126**	T	T	21 02 59.9	
	baz=307,slow=75,SNR=234						
H10S1	**ASCENSION HYDR**	**38.33**	**126**	T	T	21 02 59.8	
	baz=307,slow=75,SNR=201						
H10S2	**ASCENSION HYDR**	**38.34**	**126**	T	T	21 03 01.3	
	baz=307,slow=75,SNR=169						
DBIC	**Dimbokro**	**40.40**	**97**	LR	LR	20 38 37.7	
	comp=Z,55nm,18.0s,baz=284,slow=35						
NB2	**NORSAR Subarra**	**61.30**	**28**	P	**P**	**20 25 37.1**	**+0.7**
	comp=Z,2.5nm,0.9s,baz=247,slow=6.9						
NOA	**NORSAR Array B**	**61.30**	**28**	P	**P**	**20 25 37.0**	**+0.7**
	comp=Z,0.8nm,0.7s,baz=246,slow=6.4,SNR=5.0						
YKA	**Yellowknife Ar**	**67.60**	**332**	P	**P**	**20 26 17.2**	**-0.3**
	comp=Z,0.4nm,0.8s,baz=100,slow=7.2,SNR=8.3						
BRTR	**Keskin Array B**	**72.27**	**53**	P	**P**	**20 26 46.9**	**-0.1**
	comp=Z,1.2nm,0.8s,baz=269,slow=7.8,SNR=5.9						
INK	**Inuvik**	**75.86**	**337**	P	**P**	**20 27 06.7**	**-0.4**
	comp=Z,1.3nm,0.8s,baz=114,slow=6.6,SNR=4.8						
ILAR	**Eielson Array**	**81.75**	**335**	P	**P**	**20 27 39.3**	**-0.3**
	comp=Z,1.3nm,0.8s,baz=73,slow=4.7,SNR=15						

*IDC **10** 20:15:25.8±1.6, 35.32N×143.09E, h0km, mb3.5/2, mb1 3.7/4, mb1mx3.3/45, mbtmp3.5/4, ML3.3/2, MS3.4/2, Ms1 3.4/2, ms1mx2.7/38, Error ellipse: s-maj=42.2km s-min=28.5km az=125.0*

10d 20h

YAK Yakutsk 52.12 2 *e*P **P** **20 13 28.8 +1.8**
YAK pmax pmax
comp=Z,31nm,0.6s
YAK Yakutsk 52.12 2 *e*P **P** **20 13 28.8 +1.8**
comp=Z,31nm,0.6s
MKAR Makanchi Array 52.32 323 P **P** **20 13 27.9 -1.0**
comp=Z,12nm,0.6s,baz=125,slow=7.5,SNR=26
MKAR ScP **ScP** **20 18 30.4 -1.9**
comp=Z,1.3nm,0.8s,baz=109,slow=5.0,SNR=3.7
MKAR LR LR 20 37 03.7
comp=Z,119nm,21.9s,baz=120,slow=38
MA2 Magadan 52.91 15 P **P** **20 13 34.0 +1.0**
comp=Z,14nm,0.6s,baz=222,slow=7.0,SNR=18
MA2 Magadan 52.91 15 P **P** **20 13 34.0 +1.0**
KSH Kashi 53.48 312 *e*P **P** **20 13 39.8 +2.1**
KSH *es*P pP 20 13 53.9 +1.7
KSH *e*PcP **PcP** **20 14 46.5 +2.4**
KSH PcS **PcS** **20 18 46.0 +2.7**
KSH S **S** **20 21 08.0 +1.3**
KSH ScS **ScS** **20 23 23.9 +1.1**
KSH pmax pmax
comp=Z,110nm,5.2s
KSH LR LR
comp=Z,130nm,5.9s
KSH LR LR
comp=Z,63nm,4.8s
KSH LR LR
comp=Z,180nm,6.1s
ZAA0 Zalesovo Array 54.96 331 *e*P **P** **20 13 46.7 -1.3**
ZALV Zalesovo Beam 54.96 331 P **P** **20 13 46.3 -1.7**
comp=Z,5.8nm,0.4s,baz=124,slow=6.6,SNR=11
ZALV LR LR 20 39 40.3
comp=Z,77nm,19.1s,baz=72,slow=39
EKS2 Erkin-Say 56.09 315 *e*P **P** **20 13 57.5 +0.9**
EKS2 pmax pmax
comp=Z,7.0nm,1.0s
EKS2 Erkin-Say 56.09 315 *e*P **P** **20 13 57.5 +0.9**
comp=Z,6.9nm,1.0s
SEY Seymchan 56.20 14 P **P** **20 13 57.9 +1.1**
comp=Z,7.1nm,0.6s,baz=206,slow=5.4,SNR=32
SEY Seymchan 56.20 14⇓*i*P **P** **20 13 58.8 +2.1**
NVS Novosibirsk 56.23 332 *e*P **P** **20 13 55.3 -1.8**
KURK Kurchatov 56.38 326 *e*P **P** **20 13 57.2 -1.1**
KURK pmax pmax
comp=Z,17nm,0.7s
KURK Kurchatov 56.38 326 *e*P **P** **20 13 57.1 -1.1**
comp=Z,17nm,0.7s
KURBB Kurchatov Arra 56.38 326 P **P** **20 13 57.1 -1.2**
comp=Z,8.2nm,0.4s,baz=125,slow=6.9,SNR=32
KBL Kabul 57.54 305 *e*P **P** **20 14 05.9 -1.1**
KBL pmax pmax
comp=Z,11nm,0.6s
KBL Kabul 57.54 305 *e*P **P** **20 14 05.9 -1.1**
comp=Z,11nm,0.6s
TIXI Tiksi 61.74 1 P **P** **20 14 34.8 -0.2**
comp=Z,23nm,0.8s,baz=168,slow=6.3,SNR=54
TIXI Tiksi 61.74 1⇓*i*P **P** **20 14 35.4 +0.4**
TIXI pmax pmax
comp=Z,18nm,0.7s
TIXI Tiksi 61.74 1 *e*P **P** **20 14 35.3 +0.3**
comp=Z,20nm,0.8s
BVAR Borovoye Array 61.97 326 P **P** **20 14 35.9 -1.0**
comp=Z,2.9nm,0.6s,baz=111,slow=8.1,SNR=6.3
BRVK Borovoye 62.05 326*d i*P **P** **20 14 35.9 -1.5**
BRVK pmax pmax
comp=Z,12nm,0.9s
BRVK Borovoye 62.05 326 *e*P **P** **20 14 36.6 -0.8**
comp=Z,9.4nm,0.8s
ZRNK Zerenda 62.72 325 *e*P **P** **20 14 40.6 -1.3**
ZRNK pmax pmax
comp=Z,17nm,1.3s
ZRNK Zerenda 62.72 325 *e*P **P** **20 14 40.6 -1.3**
comp=Z,17nm,1.3s
BILL Bilibino 63.78 16*c i*P **P** **20 14 49.8 +1.2**
BILL *SP **pP** **20 15 01.0 -2.5**
BILL *e* 20 15 30.0
BILL pmax pmax
comp=Z,14nm,0.6s
BILL MLR MLR
comp=Z,57nm,16.0s
BILL Bilibino 63.78 16 *e*P **P** **20 14 49.4 +0.7**
comp=Z,16nm,0.6s
ATKA Atka Island 63.79 36 *e*P **P** **20 14 48.3 -0.6**
comp=Z,112nm,0.7s
NRIK Noril'sk 64.38 346 P **P** **20 14 52.6 0.0**
comp=Z,3.3nm,0.4s,baz=141,slow=7.1,SNR=4.9
NRIK LR LR 20 44 03.5
comp=Z,89nm,21.1s,baz=126,slow=37
WSAR Wadi Sarin 65.67 291 LR LR 20 47 43.0
comp=Z,75nm,18.2s,slow=40
GEYT Alibeck 66.76 307 P **P** **20 15 08.0 -0.6**
comp=Z,6.8nm,0.8s,baz=116,slow=3.4,SNR=12
GEYT LR LR 20 47 46.9
comp=Z,115nm,18.2s,baz=70,slow=39
THZ Tophouse 66.87 144 *e*P **P** **20 15 07.4 -1.7**
comp=Z,18nm,0.7s
ABKAR Akbulak array 67.16 319 *e*P **P** **20 15 08.6 -2.2**
BKZ Black Stump Fm 67.50 140 *e*P **P** **20 15 14.1 +0.9**
comp=Z,23nm,0.7s
SVE Sverdlovsk 68.53 327⇓*e*P **P** **20 15 18.5 -0.8**
SVE pmax pmax
comp=Z,24nm,1.1s
AKTO Aktyubinsk 68.61 320 P **P** **20 15 18.6 -1.4**
comp=Z,2.9nm,0.6s,baz=104,slow=8.4,SNR=4.9
AKTO LR LR 20 47 11.7
comp=Z,132nm,20.1s,slow=38
UNV Unalaska Valle 68.70 36 *e*P **P** **20 15 21.8 +1.4**
comp=Z,65nm,0.8s
GAMB Gambell 69.03 25 *e*P **P** **20 15 23.1 +0.9**
comp=Z,32nm,1.3s
ARU Arti 69.54 327 P **P** **20 15 23.9 -1.7**
comp=Z,21nm,0.4s,baz=88,slow=5.3,SNR=27
ARU Arti 69.54 327*d i*P **P** **20 15 23.7 -1.9**
ARU 20 15 46.2
ARU 20 17 56.1
ARU S **S** **20 24 28.9 -0.4**
ARU SS **SS** **20 28 53.0 -4.6**
ARU pmax pmax
comp=Z,11nm,0.5s
ARU Arti 69.54 327 *e*P **P** **20 15 23.2 -2.3**
comp=Z,21nm,0.5s
CHGN Chignik 73.70 34 *e*P **P** **20 15 51.1 +0.6**
TT01 Tatalina 75.67 28 *e*P **P** **20 16 03.7 +1.8**
TTA Tatalina 75.68 27 *e*P **P** **20 16 03.6 +1.6**
TTA pmax pmax
comp=Z,14nm,1.2s
TTA Tatalina 75.68 27 *e*P **P** **20 16 03.6 +1.6**
comp=Z,14nm,1.2s
SVW2 Sparrevohn 75.69 29 *e*P **P** **20 16 04.2 +2.1**
comp=Z,29nm,1.4s
OHAK Old Harbor 76.59 33 *e*P **P** **20 16 09.0 +1.8**
comp=Z,23nm,0.9s
DGRG David-gareji 76.71 310 P **P** **20 16 08.1 -0.2**
DGRG David-gareji 76.71 310 P **P** **20 16 08.1 -0.2**
KDAK Kodiak Island 76.99 33 *e*P **P** **20 16 11.4 +2.0**
KDAK pmax pmax
comp=Z,28nm,0.6s
KDAK Kodiak Island 76.99 33 *e*P **P** **20 16 11.4 +2.0**
comp=Z,28nm,0.6s
RSO Redoubt South 77.02 30 *e*P **P** **20 16 09.6 -0.2**
GUDG Gudauri 77.35 311 P **P** **20 16 12.6 +0.5**
SPU Mount Spurr 77.40 29 *e*P **P** **20 16 12.7 +0.9**
PPLA Purkeypile 77.42 28 *e*P **P** **20 16 13.7 +1.8**
comp=Z,15nm,1.0s
CAST Castle Rocks 77.50 27 *e*P **P** **20 16 11.4 -0.8**
comp=Z,16nm,0.8s
RAYN Ar Rayn 77.70 292 *e*P **P** **20 16 11.5 -2.7**
comp=Z,9.7nm,0.9s
ZEI Tsey 77.76 312 *e*P **P** **20 16 12.9 -1.5**
ZEI pmax pmax
comp=Z,18nm,0.6s
BRLK Bradley Lake 77.94 31 *e*P **P** **20 16 15.0 +0.3**
comp=Z,142nm,2.0s
BPAW Bear Paw Mtn. 78.01 26 *e*P **P** **20 16 15.0 -0.1**
comp=Z,21nm,0.8s
KTH Kantishna Hill 78.02 27 *e*P **P** **20 16 16.9 +1.7**
comp=Z,7.9nm,0.7s
ONI Oni 78.10 312 P **P** **20 16 15.8 -0.3**
ONI Oni 78.10 312 P **P** **20 16 15.8 -0.3**
MLY Manley 78.15 25 *e*P **P** **20 16 16.7 +0.8**
comp=Z,15nm,0.7s
TRF Thorofare Moun 78.30 27 *e*P **P** **20 16 16.3 -0.6**
comp=Z,73nm,1.9s
COLD Coldfoot 78.45 23 *e*P **P** **20 16 14.8 -2.7**
comp=Z,12nm,0.7s
KBZ Khabaz 78.46 313 P **P** **20 16 16.4 -1.5**

ISCJB ***10*** *20:15:30.5±1.1, 35.˚34N±0.˙08×142.˚77E±0.˙09, h59km, mb3.6/2, MS3.4/2, Error ellipse: s-maj=11.0km s-min=9.8km az=21.6*

JMA ***10*** *20:15:30.1±0.5, 35.˚52N×142.˚70E, h20km, M3.5*

ISC 10 20:15:32.7±1.4, 35.˚34N±0.˙09×142.˚7E±0.˙1, h59km, n12, σ1$48/14, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
CHOJ	**Chosi**	**1.57**	**284**	P	**Pn**	**20 15 56.4**	**-1.8**
JAG	**Ashikaga**	**2.87**	**293**	P	**Pn**	**20 16 14.3**	**-1.7**
JAG				S	**Sn**	**20 16 47.7**	**-1.6**
JOD2	**Odawara 2**	**2.98**	**270**	P	**Pn**	**20 16 15.9**	**-1.6**
JOD2				S	**Sn**	**20 16 52.7**	**+0.7**
JRY	**Ryogami san**	**3.19**	**283**	P	**Pn**	**20 16 19.4**	**-1.0**
JHJ	**Hachijo jima 2**	**3.30**	**229**	Pn	**Pn**	**20 16 21.1**	**-0.7**
	8.5nm,0.3s,baz=90,slow=20,SNR=3.8						
JHJ				Sn	**Sn**	**20 16 59.4**	**-0.4**
	31nm,0.3s,baz=9.9,slow=23,SNR=7.4						
JYN	**Shimob**	**3.42**	**274**	P	**Pn**	**20 16 23.7**	**+0.1**
MJAR	**Matsushiro Arr**	**3.86**	**289**	Pn	**Pn**	**20 16 30.0**	**+0.5**
	1.3nm,0.3s,baz=108,slow=11,SNR=8.7						
MAT	**Matsushiro**	**3.86**	**289**	P	**Pn**	**20 16 30.8**	**+1.3**
MAT				S	**Sn**	**20 17 16.3**	**+2.7**
JAY	**Jayapura**	**37.71**	**183**	LR	LR	20 37 58.3	
	comp=Z,18nm,18.9s,baz=236,slow=36						
ILAR	**Eielson Array**	**50.36**	**32**	P	**P**	**20 24 23.0**	**-0.4**
	0.4nm,0.7s,baz=256,slow=6.1,SNR=4.4						
WRA	**Warramunga Arr**	**55.55**	**190**	P	**P**	**20 25 03.2**	**+1.2**
	0.8nm,1.1s,baz=9.0,slow=7.8,SNR=3.1						
FINES	**FINESS Array B**	**70.80**	**333**	LR	LR	20 59 21.4	
	comp=Z,64nm,19.8s,baz=84,slow=37						

NIED ***10*** *20:19:00, 36.˚40N×141.˚10E, h32km, Mw4.2 Best double couple: M0 2.02000×10 15 NP1:ϕs 318.00000°, δ5.00000°, λ-165.00000°. NP2:ϕs 214.00000°, δ89.00000°, λ-85.00000°.*

ISCJB ***10*** *20:19:54.1±0.7, 36.˚39N±0.˙03×141.˚17E±0.˙06, h40km±5km, mb4.2/30, MS3.6/3, Error ellipse: s-maj=7.5km s-min=5.2km az=9.3*

JMA ***10*** *20:19:55.4±0.1, 36.˚43N×141.˚08E, h46km±2km, M4.3*

JMA Felt III J1.

IDC ***10*** *20:19:56.6±0.7, 36.˚40N×141.˚04E, h39km±5km, mb3.9/20, mb1 4.0/25, mb1mx3.9/45, mbtmp4.1/25, ML3.8/4, MS3.6/3, Ms1 3.6/3, ms1mx3.0/43, Error ellipse: s-maj=14.2km s-min=11.8km az=112.0*

NEIC ***10*** *20:19:57.2±1.1, 36.˚31N×141.˚01E, h53km±10km, mb4.4/10, Error ellipse: s-maj=11.0km s-min=8.2km az=70.0*

NEIC Recorded [3 JMA] in Ibaraki.

ISC 10 20:19:54.7±0.6, 36.˚43N±0.˙04×141.˚08E±0.˙05, h28km±3km, n63, σ1$08/75, mb4.3/30, MS3.8/3, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JHO	**Hitachi**	**0.45**	**294**	P	**Pn**	**20 20 05.6**	**+0.3**
JHO				S	**Sn**	**20 20 12.7**	**+0.2**
ONAJ	**Iwakimizuishiy**	**0.71**	**341**	P	**Pb**	**20 20 08.7**	**+0.2**
ONAJ				S	**Sb**	**20 20 17.9**	**0.0**
JYT	**Yasato**	**0.74**	**255**	P	**Pn**	**20 20 09.6**	**+0.3**
JYT				S	**Sn**	**20 20 19.7**	**0.0**
JFK	**Kawauchi**	**0.95**	**350**	P	**Pn**	**20 20 11.8**	**-0.4**
JFK				S	**Sb**	**20 20 23.5**	**-1.3**
JFT	**Otama**	**1.24**	**331**	P	**Pb**	**20 20 17.4**	**-0.1**
JFT				S	**Sb**	**20 20 32.8**	**-0.2**
JAG	**Ashikaga**	**1.31**	**270**	P	**Pn**	**20 20 17.8**	**+0.6**
JAG				S	**Sb**	**20 20 34.7**	**-0.4**
MJAR	**Matsushiro Arr**	**2.32**	**274**	Pn	**Pn**	**20 20 32.2**	**+1.2**
	91nm,0.3s,baz=105,slow=8.9,SNR=449						
MJAR				Sn	**Sn**	**20 21 00.0**	**+1.4**
	44nm,0.3s,baz=83,slow=20,SNR=12						
MAJO	**Matsushiro**	**2.32**	**274**	*e*Pn	**Pn**	**20 20 33.1**	**+2.1**
MAJO				*e*Sn	**Sb**	**20 21 03.4**	**-0.7**
MAT	**Matsushiro**	**2.32**	**274**	P	**Pn**	**20 20 32.9**	**+1.9**
MAT				S	**Sb**	**20 21 02.4**	**-1.7**
JHJ2	**Mitsune**	**3.47**	**198**	*e*Pn	**Pn**	**20 20 45.9**	**-0.9**
JHJ	**Hachijo jima 2**	**3.47**	**198**	Pn	**Pn**	**20 20 48.5**	**+1.6**
	58nm,0.3s,baz=339,slow=16,SNR=25						
JHJ				Sn	**Sn**	**20 21 28.4**	**+1.4**
	168nm,0.3s,baz=92,slow=23,SNR=11						
JNU	**Nakatsue**	**9.02**	**252**	Pn	**Pn**	**20 22 04.9**	**+1.9**
	0.6nm,0.3s,baz=327,slow=1.3,SNR=5.7						
CBIJ	**Chichi jima**	**9.35**	**174**	Pn	**Pn**	**20 22 05.7**	**-1.9**
CBIJ				Sn	Sn	20 23 43.1	-8.7
JCJ	**Chichijima**	**9.35**	**174**	Pn	**Pn**	**20 22 05.7**	**-2.0**
	8.7nm,0.3s,baz=66,slow=17,SNR=15						
JCJ				Sn	Sn	20 23 43.1	-8.8
	14nm,0.3s,baz=276,slow=23,SNR=7.1						
USRK	**Ussuriysk Ar.**	**10.41**	**321**	Pn	**Pn**	**20 22 23.0**	**+1.0**
	0.1nm,0.3s,baz=106,slow=17,SNR=3.2						
KSRS	**Korea Array**	**10.58**	**279**	Pn	**Pn**	**20 22 26.2**	**+1.8**
	0.2nm,0.3s,baz=94,slow=14,SNR=3.8						
KSAR	**Wonju Array Be**	**10.61**	**279**	Pn	**Pn**	**20 22 26.2**	**+1.4**
KLR	**Kul'dur**	**14.49**	**335**	Pn	**P**	**20 23 22.2**	**-1.9**
	0.2nm,0.3s,baz=138,slow=14,SNR=12						
MA2	**Magadan**	**24.00**	**12**	*e*P	**P**	**20 25 07.2**	**+0.5**
	45nm,1.1s						
YAK	**Yakutsk**	**26.60**	**348**	P	**P**	**20 25 30.8**	**+0.6**
	5.4nm,0.3s,baz=224,slow=1.3,SNR=4.8						
ENH	**Enshi**	**27.02**	**266**	*e*P	**P**	**20 25 33.9**	**-0.5**
	5.9nm,0.7s						
SEY	**Seymchan**	**27.43**	**11**	P	**P**	**20 25 38.5**	**+0.7**
	2.0nm,0.8s,baz=195,slow=11,SNR=8.2						
ULN	**Ulaanbaatar**	**27.48**	**305**	*e*P	**P**	**20 25 38.5**	**0.0**
	7.5nm,0.9s						
SONM	**Songino Array**	**27.91**	**305**	P	**P**	**20 25 42.5**	**+0.1**
	5.3nm,0.8s,baz=110,slow=8.4,SNR=26						
CMAR	**Chiang Mai Arr**	**41.09**	**256**	P	**P**	**20 27 36.5**	**+0.4**
	0.3nm,0.6s,baz=40,slow=7.8,SNR=4.6						
CMAR				LR	LR	20 47 04.9	
	comp=Z,30nm,18.8s,baz=80,slow=40						
LSA	**Lhasa**	**42.00**	**276**	*e*P	**P**	**20 27 44.6**	**+0.6**
	8.5nm,1.4s						
ZALV	**Zalesovo Beam**	**42.13**	**313**	P	**P**	**20 27 44.6**	**+0.4**
	3.9nm,0.6s,baz=95,slow=7.1,SNR=18						
NRIK	**Noril'sk**	**43.70**	**336**	P	**P**	**20 27 57.4**	**+0.6**
	5.9nm,0.6s,baz=118,slow=4.1,SNR=8.3						
MKAR	**Makanchi Array**	**44.22**	**303**	P	**P**	**20 28 01.8**	**+0.5**
	0.5nm,0.5s,baz=87,slow=10,SNR=5.9						
TAPN	**Taplejung**	**45.72**	**274**	*e*P	**P**	**20 28 14.2**	**+0.4**
	4.2nm,0.4s						
KURK	**Kurchatov**	**46.10**	**309**	*e*P	**P**	**20 28 13.1**	**-3.0**
	14nm,0.7s						
ODAN	**Odare**	**46.19**	**274**	*e*P	**P**	**20 28 17.8**	**+0.4**
RAMN	**Ramite**	**46.78**	**274**	*e*P	**P**	**20 28 22.6**	**+0.5**
	14nm,0.6s						
GUN	**Gumba**	**46.95**	**276**	*e*P	**P**	**20 28 23.5**	**0.0**
PKIN	**Phulchoki**	**47.48**	**276**	*e*P	**P**	**20 28 27.8**	**+0.2**
	4.4nm,0.6s						
KKN	**Kakani**	**47.48**	**276**	*e*P	**P**	**20 28 28.1**	**+0.6**
	14nm,0.8s						
GKN	**Gorkha**	**47.91**	**277**	*e*P	**P**	**20 28 31.3**	**+0.5**
	15nm,0.7s						
KOLN	**Koldanda**	**48.84**	**277**	*e*P	**P**	**20 28 38.0**	**0.0**
	2.4nm,0.3s						
PYUN	**Piuthan**	**49.19**	**278**	*e*P	**P**	**20 28 41.7**	**+1.1**
TKM2	**Tokmak 2**	**49.68**	**299**	*e*P	**P**	**20 28 44.1**	**-0.2**
	5.1nm,0.6s						
ILAR	**Eielson Array**	**50.15**	**32**	P	**P**	**20 28 48.1**	**+0.9**
	2.0nm,0.7s,baz=270,slow=6.2,SNR=23						
AAK	**Ala-Archa**	**50.54**	**299**	LR	LR	20 51 45.1	
	comp=Z,103nm,18.8s,baz=49,slow=38						
AAK	**Ala-Archa**	**50.54**	**299**	*e*P	**P**	**20 28 50.5**	**-0.2**
	2.6nm,0.8s						
EKS2	**Erkin-Say**	**51.04**	**299**	*e*P	**P**	**20 28 53.2**	**-1.2**
KKAR	**Karatay Array**	**53.20**	**300**	*e*P	**P**	**20 29 07.6**	**-2.7**
	4.0nm,1.0s						
INK	**Inuvik**	**55.05**	**27**	P	**P**	**20 29 24.8**	**+1.5**
	1.5nm,0.6s,baz=295,slow=7.7,SNR=11						
WRAB	**Tennant Creek**	**56.42**	**188**	*e*P	**P**	**20 29 33.0**	**-0.8**
WRA	**Warramunga Arr**	**56.43**	**188**	P	**P**	**20 29 33.5**	**-0.3**
	4.2nm,0.6s,baz=5.7,slow=7.4,SNR=62						
ARU	**Arti**	**56.64**	**319**	*e*P	**P**	**20 29 32.6**	**-2.3**
	2.6nm,0.6s						
ABKAR	**Akbulak array**	**58.12**	**310**	*e*P	**P**	**20 29 43.7**	**-1.8**
	1.2nm,0.4s						
ASAR	**Alice Springs**	**60.16**	**188**	P	**P**	**20 29 59.8**	**0.0**
	2.1nm,0.7s,baz=11,slow=5.1,SNR=24						
SPITS	**Spitsbergen Ar**	**61.06**	**349**	LR	LR	20 57 35.7	
	comp=Z,64nm,20.0s,baz=40,slow=37						
GEYT	**Alibeck**	**63.89**	**299**	P	**P**	**20 30 25.6**	**+0.7**
	0.4nm,0.4s,baz=135,slow=55,SNR=2.6						
YKA	**Yellowknife Ar**	**64.46**	**30**	P	**P**	**20 30 28.8**	**+0.6**
	0.6nm,0.7s,baz=302,slow=6.9,SNR=12						
STKA	**Stephens Creek**	**67.95**	**180**	P	**P**	**20 30 50.5**	**-0.3**
	3.3nm,0.9s,baz=3.8,slow=12,SNR=3.5						
FINES	**FINESS Array B**	**69.22**	**332**	P	**P**	**20 30 58.4**	**-0.2**
	1.1nm,0.7s,baz=40,slow=3.2,SNR=7.0						
FINES				pP	**sP**	**20 31 10.8**	**+0.2**
	1.4nm,0.6s,baz=81,slow=6.0,SNR=3.4						
AKASG	**Malin Array Be**	**74.61**	**322**	P	**P**	**20 31 30.9**	**-0.1**
	0.4nm,0.4s,baz=44,slow=6.1,SNR=8.6						
AKASG				pP	**sP**	**20 31 43.2**	**0.0**
	0.5nm,0.3s,baz=48,slow=5.9,SNR=5.5						
NB2	**NORSAR Subarra**	**74.64**	**337**	P	**P**	**20 31 31.2**	**+0.1**
	comp=Z,0.8nm,0.6s,baz=39,slow=6.2						
NOA	**NORSAR Array B**	**74.64**	**337**	P	**P**	**20 31 31.2**	**+0.2**
	comp=Z,1.0nm,0.7s,baz=38,slow=5.8,SNR=6.4						
NOA				pP	**sP**	**20 31 43.3**	**0.0**
	comp=Z,1.4nm,0.7s,baz=39,slow=5.7,SNR=4.8						
NVAR	**Mina Array Bea**	**75.56**	**53**	P	**P**	**20 31 38.0**	**+1.0**
	comp=Z,1.0nm,0.6s,baz=280,slow=6.5,SNR=11						
PDAR	**Pinedale Array**	**78.28**	**45**	P	**P**	**20 31 53.1**	**+0.8**
	comp=Z,0.8nm,0.6s,baz=255,slow=2.0,SNR=12						
GERES	**GERESS Array B**	**83.08**	**328**	P	**P**	**20 32 17.5**	**-0.2**
	comp=Z,0.4nm,0.6s,baz=22,slow=8.6,SNR=4.6						
GERES				pP	**sP**	**20 32 30.1**	**+0.2**
	comp=Z,0.3nm,0.4s,baz=41,slow=7.1,SNR=3.6						
LPAZ	**La Paz**	**147.23**	**60**	PKPbc	**PKPbc**	**20 39 36.7**	**+0.2**
	comp=Z,1.6nm,0.7s,baz=31,slow=3.1,SNR=6.8						

NIED ***10*** *20:20:00, 38.˚40N×141.˚80E, h32km, Mw4.3 Best double couple: M0 3.15000×10 15 NP1:ϕs 216.00000°, δ53.00000°, λ-27.00000°. NP2:ϕs 323.00000°, δ69.00000°, λ-140.00000°.*

JMA 10 20:20:25.4±0.1, 38.˚37N×141.˚76E, h57km±1km, M4.0, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**0.33**	**285**	P	Pn	20 20 35.5	0.0
JIO				S	Sn	20 20 42.6	-0.1
JMK	**Ichinoseki**	**0.72**	**324**	P	Pn	20 20 39.9	+0.2
JMK				S	Sn	20 20 50.2	+0.1
JOU	**Okura**	**0.86**	**270**	P	Pn	20 20 41.8	+0.3
JOU				S	Sn	20 20 53.6	+0.2
JMM	**Marumori**	**0.91**	**237**	P	Pn	20 20 41.5	-0.7
JMM				*e*S	Sn	20 20 53.9	-0.6
JOM	**Ohasama**	**1.16**	**342**	P	Pn	20 20 45.7	+0.2
JOM				S	Sn	20 21 01.0	+0.6
JFK	**Kawauchi**	**1.22**	**215**	S	Sn	20 21 01.6	-0.3
JYK	**Kaneyama**	**1.23**	**297**	P	Pn	20 20 46.6	+0.3
JYK				S	Sn	20 21 02.3	+0.4

NIED ***10*** *20:23:00, 37.˚30N×141.˚90E, h47km, Mw3.6 Best double couple: M0 3.32000×10 14 NP1:ϕs 153.00000°, δ47.00000°, λ158.00000°. NP2:ϕs 258.00000°, δ74.00000°, λ45.00000°.*

JMA 10 20:23:08.2±0.2, 37.˚35N×141.˚92E, h38km±3km, M3.9, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JFK	**Kawauchi**	**0.83**	**271**	P	Pn	20 23 23.7	+0.3
JFK				S	Sn	20 23 34.7	+0.1
ONAJ	**Iwakimizuishiy**	**0.93**	**255**	P	Pn	20 23 24.9	+0.1
ONAJ				S	Sn	20 23 37.1	+0.2
JMM	**Marumori**	**1.03**	**300**	P	Pn	20 23 26.5	+0.4
JMM				S	Sn	20 23 39.9	+0.6
JIO	**Ouri**	**1.19**	**338**	P	Pn	20 23 28.6	+0.3
JIO				S	Sn	20 23 43.0	-0.2
JFT	**Otama**	**1.27**	**278**	P	Pn	20 23 30.8	+1.4
JFT				S	Sn	20 23 47.0	+1.7
JOU	**Okura**	**1.42**	**316**	P	Pn	20 23 32.4	+0.9
JOU				*e*S	Sn	20 23 50.7	+1.8
JMK	**Ichinoseki**	**1.69**	**341**	P	Pn	20 23 36.1	+0.9
JMK				S	Sn	20 23 57.0	+1.4
JYS	**Shirataka**	**1.71**	**301**	P	Pn	20 23 37.3	+1.9
JYS				*e*S	Sn	20 23 58.9	+2.9
JFY	**Yanaizu**	**1.77**	**273**	P	Pn	20 23 37.7	+1.5
JFY				*e*S	Sn	20 24 00.2	+2.8
MAT	**Matsushiro**	**3.08**	**256**	P	Pn	20 23 57.1	+2.8
MAT				S	Sn	20 24 35.2	+5.3

IDC ***10*** *20:24:21.1±0.5, 36.˚09S×73.˚43W, h0km, mb4.7/16, mb1 4.9/18, mb1mx4.7/29, mbtmp4.8/18, ML4.8/2, MS4.7/10, Ms1 4.7/10, ms1mx4.5/15, Error ellipse: s-maj=20.8km s-min=12.2km az=79.0*

GCMT ***10*** *20:24:22.0±0.2, 36.˚17S×73.˚96W, h18km±1km, MW5.2/68, Moment Tensor Solution. s48,c65; s68,c102; Duration: 1s0 Moment tensor: Scale 10 17Nm; Mrr 0.45±.02; Mθθ 0.01±.01; Mϕϕ -0.45±.02; Mrθ -0.06±.03; Mθϕ -0.01±.01; Mϕr -0.77±.06; Best double couple: M0 8.89500×10 17 NP1:ϕs 184.00000°, δ75.00000°, λ92.00000°. NP2: ϕs 357.00000°, δ15.00000°, λ83.00000°. Principal axes: T 0.8930, Plg60.0000°, Azm97.0000°; N 0.0050, Plg2.0000°, Azm4.0000°; P -0.8970, Plg30.0000°, Azm273.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

GUC ***10*** *20:24:22.2±0.4, 36.˚20S×73.˚77W, h24km±5km, ML5.0*

NEIC ***10*** *20:24:22.0, 36.˚19S×73.˚77W, h24km, mb5.2/87, ML5.0(GUC), After GUC.*

NEIC Felt [IV] at Cobquecura, Coronel, Penco and Quirihue; [III] at Cabrero, Cauquenes, Chiguayante, Concepcion, Hualpen, La Laja, Longavi, Pelluhue, San Pedro de la Paz, San Rosendo and Talcahuano; [II] at Angol, Arauco, Chanco, San Clemente and Talca. Also felt at Bulnes.

ISCJB ***10*** *20:24:23.1±1.1, 36.˚09S±0.˙03×73.˚44W±0.˚06, h19km±8km, mb5.1/96, MS4.8/19, Error ellipse: s-maj=8.4km s-min=5.1km az=5.7*

BJI ***10*** *20:24:24.2, 35.˚77S×73.˚58W, h27km, mB5.2/12, Ms5.3/11, Ms7 5.1/11*

MOS ***10*** *20:24:25.6±1.2, 36.˚05S×73.˚10W, h33km, mb5.4/29, Error ellipse: s-maj=18.4km s-min=8.0km az=100.9*

ISC 10 20:24:24.8±1.2, 36.˚12S±0.˙04×73.˚49W±0.˚06, h25km±8km, n553, σ1$39/538, mb5.2/96, MS4.9/20, 7C-10D, Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
COCH	**Cobquecura**	**0.56**	**92**	*i* P	**Pb**	**20 24 36.1**	**0.0**
COCH				*i* S	**Sb**	**20 24 46.5**	**+2.7**
COCH				IAML		20 24 48.9	
	comp=N,121μm,0.7s						
CCSP	**San Pedro de C**	**0.79**	**157**	*i* P	**Pb**	**20 24 36.7**	**-3.2**
CCSP				*i* S	**Sb**	**20 24 47.7**	**-2.4**
CCSP				IAML		20 24 54.0	
	comp=N,84μm,0.4s						
CCHI	**Chillan**	**1.24**	**113**	*i* P	**Pn**	**20 24 46.0**	**-0.4**
CCHI				*i* S	**Sn**	**20 25 03.9**	**+1.6**
CCHI				IAML		20 25 14.6	
	comp=E,61μm,1.0s						
TALC	**Talca**	**1.67**	**65**	*i* P	**Pn**	**20 24 53.3**	**+0.9**
TALC				*i* S	**Sn**	**20 25 17.6**	**+4.6**
CANA	**Caviahue**	**2.62**	**133**	ǁ*e*P	**Pb**	**20 25 11.6**	**+0.3**
CANA				*e*S	**Sb**	**20 25 47.1**	**+4.0**
AAGR	**Agrelo**	**4.89**	**53**	ǁ*e*P	**Pn**	**20 25 39.1**	**+2.3**
ARCO	**CERRO ARCO**	**4.98**	**50**	*e*P	**Pn**	**20 25 40.3**	**+2.1**
ARCO				IAML		20 27 15.1	
	comp=Z,390nm,0.8s						
PLCA	**Paso Flores**	**5.15**	**154**	*e*P	**Pn**	**20 25 39.9**	**-0.5**
PLCA				IAML		20 27 19.6	
	comp=Z,309nm,0.6s						
PLCA	**Paso Flores**	**5.15**	**154**	Pn	**Pn**	**20 25 40.5**	**+0.2**
	comp=Z,3.6nm,0.3s,baz=356,slow=12,SNR=51						
PLCA				Lg	Lg	20 27 05.1	
	comp=Z,10nm,0.3s,baz=81,slow=19,SNR=2.7						
PLCA	**Paso Flores**	**5.15**	**154**	*e*P	**Pn**	**20 25 40.0**	**-0.3**
PLCA	**Paso Flores**	**5.15**	**154**	*e*Pn	**Pn**	**20 25 40.1**	**-0.3**
PLCA				Lg	Lg	20 27 05.1	
AUSP	**Uspallata**	**5.16**	**42**	*e*P	**Pn**	**20 25 42.4**	**+1.7**
ASAL	**Salagasta**	**5.21**	**49**	*e*P	**Pn**	**20 25 43.2**	**+2.0**
RTLS	**Leoncito**	**5.54**	**40**	*e*P	**Pn**	**20 25 47.5**	**+1.6**
RTCV	**Cerro Valdivia**	**5.91**	**45**	*e*P	**Pn**	**20 25 51.8**	**+1.1**
RTLL	**Cerro Villicun**	**6.34**	**43**	ǁ*e*P	**Pn**	**20 25 57.0**	**+0.3**
RTLL				ǁ*e*S	**Sn**	**20 27 06.2**	**-2.2**
ACAN	**Cantantal**	**6.47**	**56**	ǁ*e*P	**Pn**	**20 25 59.6**	**+1.1**
AMOG	**MOGNA**	**6.64**	**40**	ǁ*e*P	**Pn**	**20 26 01.0**	**+0.2**
LCO	**Las Campanas**	**7.46**	**19**	*e*Pn	Pn	20 26 07.3	-5.0
LCO				*e*Sn	**Sn**	**20 27 33.7**	**-2.6**
SUCO	**SUCO**	**7.60**	**71**	IAML		20 28 38.7	
	comp=Z,54nm,0.7s						
AGUA	**GUANDACOL**	**7.83**	**34**	ǁ*e*P	**Pn**	**20 26 17.3**	**0.0**
VCA	**Vinchina**	**8.61**	**33**	*e*P	**Pn**	**20 26 27.6**	**-0.3**
VCA				IAML		20 28 54.0	
	comp=Z,145nm,0.6s						
ACLC	**CERRO LA CRUZ**	**8.65**	**41**	ǁ*e*P	**Pn**	**20 26 26.6**	**-1.9**
ACLC				*e*Pg		20 26 46.3	
ACLC				IAML		20 28 56.6	
	comp=Z,112nm,0.8s						
TCA	**Tanti**	**8.80**	**60**	ǁ*e*P	**Pn**	**20 26 29.9**	**-0.6**
TCA				IAML		20 29 19.4	
	comp=Z,90nm,0.8s						
LPA	**La Plata**	**12.73**	**89**	*ce*P	**Pn**	**20 27 24.0**	**-0.2**
LPA				PP	**PbPb**	**20 28 04.0**	**-2.5**
LPA				PP(2)		20 29 32.0	
LPA				SS		20 30 54.0	
PB04	**IPOC Station P**	**14.04**	**13**	*e*Pn	**Pn**	**20 27 43.0**	**+0.7**
PB01	**IPOC Station P**	**15.42**	**14**	*e*Pn	**Pn**	**20 27 56.4**	**-4.4**
	comp=Z,108nm,1.0s						
CPUP	**Villa Florida**	**16.89**	**59**	Pn	**Pn**	**20 28 15.1**	**-4.4**
	comp=Z,0.4nm,0.3s,baz=246,slow=9.2,SNR=6.0						
CPUP				LR	LR	20 35 30.3	
	comp=Z,5μm,19.0s,baz=237,slow=40						
CPUP	**Villa Florida**	**16.89**	**59**	*e*P	**Pn**	**20 28 15.5**	**-4.0**
CPUP	**Villa Florida**	**16.89**	**59**	*e*Pn	**Pn**	**20 28 15.5**	**-4.0**
USHA	**Ushuaia**	**19.04**	**171**	P	**Pn**	**20 28 46.6**	**+1.0**
	comp=Z,14nm,0.3s,baz=355,slow=16,SNR=4.4						
EFI	**East Falkland**	**19.05**	**150**	ǁ*e*P	**Pn**	**20 28 45.4**	**-0.4**
LPAZ	**La Paz**	**20.32**	**15**	P	Pn	20 29 00.8	-0.9
	comp=Z,50nm,1.0s,baz=182,slow=8.1,SNR=27						
LPAZ	**La Paz**	**20.32**	**15**	*e*P	Pn	20 29 01.9	+0.2
LPAZ				pmax	pmax		
	comp=Z,90nm,0.9s						
LPAZ	**La Paz**	**20.32**	**15**	*e*P	Pn	20 29 01.9	+0.1
	comp=Z,90nm,0.9s						
SIV	**San Ignacio**	**22.89**	**32**	P	**P**	**20 29 26.7**	**-0.1**
	comp=Z,90nm,1.0s,baz=232,slow=13,SNR=94						
NNA	**Nana**	**24.21**	**352**	*e*P	**P**	**20 29 38.7**	**-0.9**
NNA				pmax	pmax		
	comp=Z,121nm,1.1s						
NNA	**Nana**	**24.21**	**352**	*e*P	**P**	**20 29 38.6**	**-0.9**
	comp=Z,121nm,1.1s						
SPB	**Sao Paulo**	**25.73**	**68**	*e*P	**P**	**20 29 52.8**	**-0.4**
	comp=Z,82nm,1.0s						
ATAH	**Atahualpa**	**29.19**	**350**	P	**P**	**20 30 26.2**	**+1.4**
	comp=Z,4.5nm,0.7s,baz=82,slow=12,SNR=3.3						
BDFB	**Brasilia**	**30.52**	**55**	P	**P**	**20 30 34.9**	**-1.3**
	comp=Z,36nm,1.0s,baz=222,slow=6.4,SNR=28						
BDFB	**Brasilia**	**30.52**	**55**	*e*P	**P**	**20 30 34.4**	**-1.8**
BDFB				pmax	pmax		
	comp=Z,78nm,1.1s						
BDFB	**Brasilia**	**30.52**	**55**	*e*P	**P**	**20 30 34.4**	**-1.8**
	comp=Z,78nm,1.1s						
OTAV	**Otavalo**	**36.46**	**352**	*e*P	**P**	**20 31 25.8**	**-2.6**
	comp=Z,56nm,1.5s						
PTGA	**Pitinga**	**37.38**	**23**	P	**P**	**20 31 34.9**	**-0.7**
	comp=Z,28nm,0.9s,baz=202,slow=9.1,SNR=26						
PTGA				LR	LR	20 48 48.8	
	comp=Z,1μm,19.9s,baz=188,slow=39						
PTGA	**Pitinga**	**37.38**	**23**	*e*P	**P**	**20 31 35.1**	**-0.5**
	comp=Z,30nm,0.9s						
PRAC	**Prado**	**39.65**	**358**	*e*P	P	20 31 49.4	-5.2
CHIC	**Chingaza**	**40.53**	**360**	*e*P	P	20 32 06.5	+4.0
NORC	**Norcasia**	**41.48**	**358**	*e*P	**P**	**20 32 10.5**	**+0.6**
HELC	**Santa Helena**	**42.13**	**357**	*e*P	**P**	**20 32 16.0**	**+0.5**
DBBC	**Dabeiba**	**42.98**	**356**	*e*P	**P**	**20 32 22.5**	**+0.4**
SDV	**Santo Domingo**	**44.84**	**4**	P	**P**	**20 32 37.1**	**-0.1**
	comp=Z,8.0nm,0.9s,baz=181,slow=7.1,SNR=9.2						
SDV	**Santo Domingo**	**44.84**	**4**	*e*P	**P**	**20 32 35.4**	**-1.7**
	comp=Z,23nm,1.0s						
RCBR	**Riachuelo**	**45.77**	**58**	P	**P**	**20 32 44.8**	**+0.4**
	comp=Z,21nm,1.1s,baz=203,slow=15,SNR=2.8						
VNA3	**Neumayer Olymp**	**47.87**	**157**	P	**P**	**20 33 01.6**	**+1.5**
VNA1	**Neumayer--Stat**	**48.21**	**156**	P	**P**	**20 33 04.8**	**+2.0**
VNA2	**Neumayer--Watz**	**48.54**	**156**	P	**P**	**20 33 06.8**	**+1.4**
	baz=294,slow=8.5						
GRGR	**Grenville**	**49.27**	**15**	*e*P	**P**	**20 33 09.9**	**-1.6**
SNAA	**Sanae**	**50.09**	**157**	P	**P

JCT pmax pmax
comp=Z,43nm,1.4s
JCT Junction City 70.71 336 *eP* **P 20 35 39.2 +0.7**
comp=Z,43nm,1.4s
335A Moody 70.71 338 P **P 20 35 39.0 +0.6**
baz=160
433A Art 70.73 337 P **P 20 35 38.7 +0.1**
baz=159,SNR=8.1
141A Papa Simpson, 70.74 343 P **P 20 35 39.1 +0.5**
baz=164
140A Cam and Jess, 70.94 342 P **P 20 35 40.3 +0.5**
baz=163
334A Lometa 71.00 338 P **P 20 35 40.4 +0.2**
baz=159,SNR=8.6
TXAR Lajitas Array 71.03 332 P **P 20 35 41.0 +0.5**
comp=Z,2.5nm,0.6s,baz=151,slow=8.9,SNR=12
TXAR LR LR 21 02 20.9
comp=Z,546nm,18.3s,baz=0.0,slow=32
TX31 Lajitas Ar. Si 71.03 332 *eP* **P 20 35 40.9 +0.3**
TX31 *eP* **P 20 35 41.3 +0.8**
236A Katherine and 71.12 339 P **P 20 35 41.4 +0.5**
baz=161
139A Bunkhouse Ranc 71.18 341 P **P 20 35 41.9 +0.7**
baz=163
333A Richland Sprin 71.23 337 P **P 20 35 41.9 +0.3**
baz=159,SNR=8.0
KMSC Kings Mountain 71.27 353 P **P 20 35 42.6 +0.8**
baz=174
KMSC Kings Mountain 71.27 353 *eP* **P 20 35 42.4 +0.7**
comp=Z,48nm,1.4s
Z41A Richland Creek 71.34 343 P **P 20 35 43.2 +1.0**
baz=164
138A Matatall Enter 71.35 341 P **P 20 35 43.1 +0.9**
baz=162
WHTX Lake Whitney, 71.38 339 P **P 20 35 43.2 +0.8**
baz=160
137A Heron Place, G 71.47 340 P **P 20 35 43.6 +0.6**
baz=161
Z40A Long Farm, Mag 71.49 342 P **P 20 35 43.7 +0.7**
baz=163
MAW Mawson 71.49 164 P **P 20 35 43.2 +0.5**
comp=Z,5.9nm,0.9s,baz=229,slow=8.9,SNR=6.9
MAW LR LR 21 07 26.3
comp=Z,1μm,18.5s,baz=232,slow=36
MAW Mawson 71.49 164 *eP* **P 20 35 43.4 +0.6**
comp=Z,2.8nm,0.9s
136A Ennis 71.57 340 P **P 20 35 44.0 +0.4**
baz=161
234A Clairette 71.60 338 P **P 20 35 43.9 +0.1**
baz=160
233A Rising Star 71.84 337 P **P 20 35 46.1 +0.8**
baz=159
Z38A Mt. Pleasant 71.88 341 P **P 20 35 46.4 +1.0**
baz=162
SWET Sewanee 71.91 349 *eP* **P 20 35 46.7 +1.1**
134A White-Moore Ra 72.11 338 P **P 20 35 47.8 +1.0**
baz=160
Y40A Okolona 72.18 343 P **P 20 35 48.1 +0.9**
baz=164
Z36A Blue Ridge 72.29 340 P **P 20 35 48.7 +0.8**
baz=161
Y39A Lockesburg 72.30 342 P **P 20 35 48.5 +0.5**
baz=163
133A Hamilton Ranch 72.40 338 P **P 20 35 48.2 -0.4**
baz=159,SNR=6.5
Y38A Idabel 72.46 342 P **P 20 35 49.4 +0.5**
baz=162
X40A Basin Creek Fa 72.53 343 P **P 20 35 49.9 +0.7**
baz=164
Z35A Perchaven, San 72.58 339 P **P 20 35 50.4 +0.8**
baz=160
ABTX Abilene, Hawle 72.64 337 P **P 20 35 50.2 +0.2**
baz=158,SNR=9.3
ABTX Abilene, Hawle 72.64 337 *eP* **P 20 35 50.5 +0.5**
comp=Z,43nm,1.3s
MIAR Mount Ida 72.76 343 P **P 20 35 51.2 +0.5**
baz=163
MIAR Mount Ida 72.76 343 *eP* **P 20 35 51.8 +1.1**
MIAR pmax pmax
comp=Z,30nm,1.6s
MIAR Mount Ida 72.76 343 *eP* **P 20 35 51.8 +1.1**
comp=Z,30nm,1.6s
Z34A Collier Ranch, 72.81 339 P **P 20 35 51.0 0.0**
baz=160
Y36A Durant 72.84 340 P **P 20 35 51.3 +0.2**
baz=161
X39A Fountain Ranch 72.85 342 P **P 20 35 51.5 +0.3**
baz=163
Z33A Whitaker Ranch 72.98 338 P **P 20 35 52.4 +0.4**
baz=159,SNR=7.9
W41A Tony Mavity, V 73.05 344 P **P 20 35 53.4 +1.1**
baz=164,SNR=7.1
W41B Gary Mavity, V 73.05 344 P **P 20 35 52.8 +0.4**
baz=164
Y35A Marietta 73.05 340 P **P 20 35 52.8 +0.4**
baz=161
WVT Waverly 73.11 348 *eP* **P 20 35 52.9 +0.2**
WVT pmax pmax
comp=Z,77nm,1.3s
WVT Waverly 73.11 348 *eP* **P 20 35 52.9 +0.2**
comp=Z,77nm,1.3s
WHAR Wooly Hollow 73.17 344 *eP* **P 20 35 53.5 +0.5**
X38A Whitesboro 73.18 342 P **P 20 35 53.8 +0.7**
baz=162,SNR=8.3
X37A Clayton 73.25 341 P **P 20 35 54.1 +0.5**
baz=162
W40A Ferguson Farm, 73.25 343 P **P 20 35 54.1 +0.6**
baz=164
Y34A Reagan Ranch, 73.31 339 P **P 20 35 54.3 +0.4**
baz=160
W39A Magazine 73.43 343 P **P 20 35 54.6 0.0**
baz=163,SNR=10
W38A Poteau 73.49 342 P **P 20 35 55.1 +0.2**
baz=163
X36A Centrahoma 73.49 340 P **P 20 35 54.6 -0.3**
baz=161,SNR=8.3
X35A Drake 73.50 340 P **P 20 35 55.2 +0.1**
baz=161
Y33A Hilltop Ranch, 73.61 338 P **P 20 35 55.7 0.0**
baz=159,SNR=6.0
W37B Quinton 73.78 341 P **P 20 35 56.1 -0.6**
baz=162
V40A Witts Springs 73.78 344 P **P 20 35 56.5 -0.3**
baz=164
MNTX Cornudas Mount 73.79 332 P **P 20 35 56.2 -0.7**
baz=154
MNTX Cornudas Mount 73.79 332 *eP* **P 20 35 56.4 -0.5**
comp=Z,13nm,1.2s
X34A Smith Ranch, M 73.93 339 P **P 20 35 57.6 0.0**
baz=160
V39A Pettigrew 74.01 343 P **P 20 35 58.2 +0.1**
baz=163
X33A Lawton 74.07 339 P **P 20 35 58.4 0.0**
baz=160
W35A Tecumseh 74.18 340 P **P 20 35 59.1 0.0**
baz=161
X32A Elmer 74.19 338 P **P 20 35 59.1 0.0**
baz=159
V38A Canehill 74.21 342 P **P 20 35 59.4 +0.1**
baz=163
U40A Yellville 74.32 344 P **P 20 36 00.1 +0.3**
baz=164
WMOK Wichita Mounta 74.33 339 *eP* **P 20 35 59.5 -0.5**
WMOK pmax pmax
comp=Z,20nm,1.4s
WMOK Wichita Mounta 74.33 339 *eP* **P 20 35 59.5 -0.5**
comp=Z,20nm,1.4s
V37A Hulbert 74.42 342 P **P 20 35 59.8 -0.6**
baz=162,SNR=7.4
U39A Green Forest 74.49 343 P **P 20 36 01.1 +0.3**
baz=164
W34A Bridge Creek, 74.51 340 P **P 20 36 01.2 +0.2**
baz=160
W34A Bridge Creek, 74.51 340 *eP* **P 20 36 02.6 +1.7**
comp=Z,51nm,1.4s
V36A Jenks 74.53 341 P **P 20 36 01.2 +0.2**
baz=162
TUL1 Leonard 74.61 341 P **P 20 36 01.4 -0.1**
baz=162,SNR=6.9
TUL1 Leonard 74.61 341 *eP* **P 20 36 01.7 +0.2**
comp=Z,48nm,1.3s
W33A Caddo, Fort Co 74.63 339 P **P 20 36 01.8 +0.1**
baz=160
V35A Meyer Ranch, C 74.74 340 P **P 20 36 01.9 -0.3**
baz=161
U38A Gravette 74.76 343 P **P 20 36 01.9 -0.5**
baz=163
W32A Sentinel 74.83 338 P **P 20 36 02.5 -0.4**
baz=159,SNR=14
SUR Sutherland 74.84 119 P **P 20 36 04.3 +0.8**
comp=Z,0.6nm,0.8s,baz=244,slow=7.6,SNR=6.1
SUR Sutherland 74.84 119 *eP* **P 20 36 05.1 +1.6**
comp=Z,141nm,1.9s
MSTX Muleshoe 74.90 335 P **P 20 36 02.7 -0.7**
baz=156
U37A Salina 74.91 342 P **P 20 36 02.7 -0.5**
baz=162
V34A Guthrie 75.00 340 P **P 20 36 03.4 -0.4**
baz=160
V34A Guthrie 75.00 340 *eP* **P 20 36 05.4 +1.6**
comp=Z,112nm,1.8s
T40A Mansfield 75.01 344 P **P 20 36 04.1 +0.3**
baz=164
U36A Oologah 75.05 342 P **P 20 36 04.3 +0.3**
baz=162
319A Douglas 75.07 329 *eP* **P 20 36 06.0 +1.6**
comp=Z,20nm,1.1s
T39A Clever 75.08 344 P **P 20 36 04.4 +0.2**
baz=164
V33A Lossen Ranch, 75.20 339 P **P 20 36 05.2 +0.3**
baz=160
U35A Pawnee 75.29 341 P **P 20 36 05.7 +0.3**
baz=161
T38A Diamond 75.30 343 P **P 20 36 05.3 -0.2**
baz=163,SNR=6.3
V32A Arapaho 75.33 339 P **P 20 36 05.7 0.0**
baz=159
S40A Lebanon 75.44 344 P **P 20 36 05.6 -0.6**
baz=164,SNR=12
121A Cookes Peak, D 75.47 331 P **P 20 36 06.3 -0.4**
baz=152
T37A Cheneyville 18 75.54 342 P **P 20 36 06.5 -0.3**
baz=162
U34A Anderson Ranch 75.57 340 P **P 20 36 07.8 +0.8**
baz=160,SNR=5.4
U34A Anderson Ranch 75.57 340 *eP* **P 20 36 08.0 +0.9**
comp=Z,25nm,1.1s
S39A Bolivar 75.70 344 P **P 20 36 07.3 -0.5**
baz=164
T36A Boggs Farm, Ca 75.72 342 P **P 20 36 07.5 -0.3**
baz=162
U33A Lingo Farm, Me 75.72 340 P **P 20 36 07.3 -0.6**
baz=160
T35A Sooner Cattle 75.74 341 P **P 20 36 07.9 -0.1**
baz=161,SNR=8.6
S38A Stockton 75.78 343 P **P 20 36 07.9 -0.3**
baz=163,SNR=12
U32A Winter Ranch, 75.93 339 P **P 20 36 08.7 -0.4**
baz=159
T34A McClaskey Farm 76.02 341 P **P 20 36 09.6 0.0**
baz=161,SNR=7.8
R40A Middies Statio 76.05 345 P **P 20 36 09.8 +0.1**
baz=165,SNR=7.9
S37A Fort Scott 76.12 343 P **P 20 36 10.9 +0.8**
baz=163
O56A Blue Knob Stat 76.16 356 P **P 20 36 11.2 +0.9**
baz=176
R39A Chumby, Stover 76.24 344 P **P 20 36 11.6 +0.8**
baz=164
S36A Lake Cedric, C 76.27 342 P **P 20 36 12.1 +1.0**
baz=162
R38A Fenwick Farm, 76.31 344 P **P 20 36 12.3 +1.1**
baz=163
T33A Patterson Ranc 76.37 340 P **P 20 36 12.6 +1.0**
baz=160
S35A Otter Creek Ra 76.42 342 P **P 20 36 13.1 +1.3**
baz=162
BNM Barren Site 76.45 332 *eP* **P 20 36 14.5 +2.1**
ACSO Alum Creek Sta 76.48 353 *eP* **P 20 36 13.5 +1.4**
comp=Z,38nm,1.0s
SSPA Standing Stone 76.49 357 *eP* **P 20 36 13.5 +1.3**
comp=Z,15nm,1.1s
TUC Tucson 76.51 328 P **P 20 36 13.4 +0.8**
baz=150
TUC Tucson 76.51 328 *eP* **P 20 36 14.0 +1.4**
TUC pmax pmax
comp=Z,17nm,1.3s
TUC Tucson 76.51 328 *eP* **P 20 36 14.0 +1.4**
comp=Z,17nm,1.3s
LIC Lamto 76.56 72 *eP* **P 20 36 13.5 +0.2**
comp=Z,45nm,1.3s
LPM Los Pinos Moun 76.59 332 *eP* **P 20 36 12.3 -0.9**
S34A Willow Spring 76.64 341 P **P 20 36 13.9 +0.8**
baz=161
T32A Huddler Ranch, 76.65 339 P **P 20 36 14.2 +1.0**
baz=159
Q40A Laux Farm, Aux 76.69 345 P **P 20 36 13.0 -0.3**
baz=165,SNR=8.6
N59A State Game Lan 76.69 358 P **P 20 36 13.8 +0.5**
baz=179
S33A Kaszmaul Farm, 76.78 340 P **P 20 36 14.7 +0.8**
baz=160
TIC Toumodi 76.83 72 *eP* **P 20 36 15.0 +0.2**
KIC Kosan Boka 76.87 72 *eP* **P 20 36 15.3 +0.3**
comp=Z,65nm,1.0s
N54A Moraine State 76.94 355 P **P 20 36 15.0 +0.3**
baz=175
DBIC Dimbokro 76.98 72 P **P 20 36 15.2 -0.4**
comp=Z,19nm,0.9s,baz=209,slow=5.6,SNR=22
DBIC LR LR 21 06 31.8
comp=Z,410nm,20.2s,baz=220,slow=33
DBIC Dimbokro 76.98 72 *eP* **P 20 36 15.9 +0.4**
DBIC pmax pmax
comp=Z,21nm,0.8s
DBIC Dimbokro 76.98 72 *eP* **P 20 36 15.9 +0.4**
comp=Z,21nm,0.8s
Q38A Cooks Store, C 76.99 344 P **P 20 36 15.8 +0.8**
baz=164
R35A Empria Munici 76.99 342 P **P 20 36 16.1 +1.0**
baz=162
ANMO Albuquerque 77.09 333 P **P 20 36 16.8 +0.9**
baz=154
ANMO Albuquerque 77.09 333 *eP* **P 20 36 17.3 +1.3**
ANMO pmax pmax
comp=Z,11nm,1.2s
ANMO Albuquerque 77.09 333 *eP* **P 20 36 16.9 +0.9**
comp=Z,24nm,1.3s
Q37A Longview Farm, 77.09 343 P **P 20 36 16.4 +0.8**
baz=163
214A Organ Pipe Nat 77.10 326 P **P 20 36 16.9 +1.1**
baz=149
S32A Newby Ranch, P 77.14 340 P **P 20 36 16.6 +0.6**
baz=159
SFIN Lafayette 77.15 349 P **P 20 36 16.8 +0.9**
baz=169
P40A Paris 77.20 345 P **P 20 36 16.1 -0.1**
baz=165,SNR=14
R34A Idabella, Hill 77.24 341 P **P 20 36 16.9 +0.4**
baz=161
P39A Salisbury 77.30 345 P **P 20 36 17.2 +0.4**
baz=164
R33A Olander Ranch, 77.45 340 P **P 20 36 18.5 +0.9**
baz=160
M54A Oil Creek Stat 77.46 355 P **P 20 36 18.6 +0.9**
baz=175
P38A Dawn 77.60 344 P **P 20 36 19.4 +0.9**
baz=164
O40A La Belle 77.73 346 P **P 20 36 20.3 +1.2**
baz=165
Q34A Chapman 77.75 341 P **P 20 36 20.4 +1.1**
baz=161
R32A Long Quarter, 77.75 340 P **P 20 36 20.3 +1.0**
baz=160
P36A Good Intent, A 77.98 343 P **P 20 36 21.3 +0.8**
baz=162
O39A Kirksville 78.00 345 P **P 20 36 21.9 +1.3**
baz=165
P35A Duane Minner, 78.09 342 P **P 20 36 22.6 +1.4**
baz=162
Q32A Meitler Ranch, 78.24 340 P **P 20 36 23.3 +1.2**
baz=160
P34A Walnut Farm, R 78.31 342 P **P 20 36 23.5 +1.1**
baz=161
T25A Trinidad 78.33 335 P **P 20 36 23.8 +0.9**
baz=155
T25A Trinidad 78.33 335 *eP* **P 20 36 24.4 +1.5**
comp=Z,68nm,1.5s
O36A Bolckow 78.41 343 P **P 20 36 24.3 +1.4**
baz=163
W18A Petrified Fore 78.51 330 P **P 20 36 24.6 +0.8**
baz=151
N39A Derby Farms, D 78.59 345 P **P 20 36 24.7 +0.8**
baz=165
X16A Lo Mia Camp, P 78.60 329 *eP* P 20 36 26.6 +2.2
comp=Z,15nm,1.4s
N38A Joes South For 78.66 345 P **P 20 36 25.2 +0.9**
baz=164
P32A Huiting Farm, 78.84 340 P **P 20 36 25.6 +0.2**
baz=160
O34A Beatrice 78.88 342 P **P 20 36 26.0 +0.5**
baz=161
GLA Glamis 78.93 326 P **P 20 36 26.3 +0.3**
baz=147
O33A Hebron 79.00 341 P **P 20 36 27.1 +0.9**
baz=161
ACCN Adirondack Com 79.13 360 *eP* **P 20 36 28.6 +1.9**
comp=Z,23nm,1.3s
M38A Pleasantville 79.25 345 P **P 20 36 29.0 +1.5**
baz=164
SDCO Great Sand Dun 79.25 335 P **P 20 36 29.1 +1.1**
baz=154
M37A Trindle Farm, 79.42 344 P **P 20 36 30.0 +1.5**
baz=164
N34A Lincoln 79.45 342 P **P 20 36 30.2 +1.6**
baz=162
KSCO Kaye Shedlock' 79.45 337 P **P 20 36 30.3 +1.4**
baz=157
WUAZ Wupatki 79.52 329 P **P 20 36 30.6 +1.3**
baz=150
WUAZ Wupatki 79.52 329 *eP* **P 20 36 31.1 +1.7**
comp=Z,37nm,1.6s
PDMCI Parker Dam,Lak 79.67 327 P **P 20 36 31.7 +1.7**
baz=148
S22A 4UR Ranch, Cre 79.72 334 P **P 20 36 32.2 +1.7**
baz=153
BC3 Big Chuckawall 79.72 325 P **P 20 36 32.2 +1.8**
baz=147
MDV Middlebury 79.74 0 *eP* **P 20 36 32.3 +2.2**
MVCO Mesa Verde 79.86 332 P **P 20 36 33.1 +1.9**
baz=152
MVCO Mesa Verde 79.86 332 *eP* **P 20 36 32.6 +1.4**
comp=Z,17nm,1.1s
LBNH Lisbon 79.99 1 *eP* **P 20 36 33.7 +2.2**
LBNH pmax pmax
comp=Z,16nm,1.0s
LBNH Lisbon 79.99 1 *eP* **P 20 36 33.6 +2.2**
comp=Z,16nm,1.0s
IRM Iron Mountain 80.00 326 P **P 20 36 33.5 +1.6**
baz=147
JFWS Jewell Farm 80.13 348 *eP* **P 20 36 33.8 +1.5**
JFWS pmax pmax
comp=Z,46nm,1.4s
JFWS Jewell Farm 80.13 348 *eP* **P 20 36 33.8 +1.5**
comp=Z,46nm,1.4s
BOSA Boshof 80.13 118 P **P 20 36 33.9 +0.8**
comp=Z,14nm,0.9s,baz=233,slow=5.2,SNR=15
BOSA LR LR 21 09 57.8
comp=Z,378nm,18.4s,baz=226,slow=34
BOSA Boshof 80.13 118 *eP* **P 20 36 34.0 +1.0**
BOSA pmax pmax
comp=Z,26nm,0.9s
BOSA Boshof 80.13 118 *eP* **P 20 36 34.0 +1.0**
comp=Z,26nm,0.9s
PFO Pinyon Flats O 80.15 325 P **P 20 36 34.2 +1.4**
baz=146
Q24A Divide 80.23 335 P **P 20 36 34.5 +1.2**
baz=155
Q24A Divide 80.23 335 *eP* **P 20 36 34.6 +1.3**
comp=Z,28nm,1.4s
BELC Belle Mtn. Jos 80.26 325 P **P 20 36 34.6 +1.2**
baz=147
LONY Lake Ozonia 80.37 359 *eP* **P 20 36 35.6 +2.1**
comp=Z,47nm,1.5s
MURC Murrieta 80.49 324 P **P 20 36 36.0 +1.5**
baz=146
FRNY Flat Rock 80.58 360 *eP* **P 20 36 36.3 +1.8**
comp=Z,15nm,1.1s
SCI2 San Clemente I 80.63 323 P P 20 36 37.5 +2.3
baz=145
GMRC Granite Mounta 80.76 326 P **P 20 36 37.8 +1.8**
baz=147
L32A Elgin 80.92 342 P **P 20 36 38.4 +1.8**
baz=160
SMCO Snowmass 81.05 334 *eP* **P 20 36 39.4 +1.6**
comp=Z,39nm,1.4s
K34A Le Mars 81.10 343 P **P 20 36 39.5 +2.0**
baz=162
ISCO Idaho Springs 81.14 336 P **P 20 36 39.7 +1.5**
baz=154
ISCO Idaho Springs 81.14 336 *eP* P 20 36 40.6 +2.5
ISCO pmax pmax
comp=Z,30nm,1.6s
ISCO Idaho Springs 81.14 336 *eP* P 20 36 40.6 +2.5
comp=Z,30nm,1.6s
J37A Redenius Farm, 81.14 345 P **P 20 36 39.4 +1.7**
baz=164
M28A Bar X Bar Ranc 81.27 339 P **P 20 36 39.9 +1.4**
baz=158
L31A Buttefield Fa 81.30 341 P **P 20 36 39.9 +1.3**
baz=160
J36A Seneca 1, Swea 81.32 345 P **P 20 36 40.0 +1.4**
baz=163
KNB Kanab 81.41 329 *eP* **P 20 36 41.3 +1.8**
KNB pmax pmax
comp=Z,38nm,1.3s
KNB Kanab 81.41 329 *eP* **P 20 36 41.2 +1.8**
comp=Z,38nm,1.3s
TUQ Turquoise Moun 81.42 326 P **P 20 36 40.5 +1.0**
baz=147
LCMT Little Creek M 81.58 329 *eP* **P 20 36 42.5 +2.1**
comp=Z,14nm,1.2s
I38A Scanlan Farm, 81.60 346 P **P 20 36 41.7 +1.6**
baz=165
J34A George 81.64 344 P **P 20 36 41.8 +1.5**
baz=162
K31A O'Neill 81.69 341 P **P 20 36 42.2 +1.6**
baz=160
GSC Goldstone, Bar 81.71 325 P **P 20 36 41.9 +0.9**
baz=146
I37A Lemond, Waseca 81.78 346 P **P 20 36 42.4 +1.4**
baz=164
EDW2 Edwards Air Fo 81.92 324 P **P 20 36 43.0 +0.9**
baz=145
I35A Creekview Farm 81.96 344 P **P 20 36 43.1 +1.1**
baz=163
K30A Basset 81.97 341 P **P 20 36 43.3 +1.2**
baz=159
ECSD EROS Data Cent 82.21 343 P **P 20 36 44.7 +1.3**
baz=162
ECSD EROS Data Cent 82.21 343 *eP* **P 20 36 43.7 +0.4**
comp=Z,36nm,1.1s
N23A Red Feather La 82.23 336 P **P 20 36 45.2 +1.3**
baz=154
N23A Red Feather La 82.23 336 *eP* P 20 36 46.4 +2.6
comp=Z,16nm,1.2s
H37A Dierke Farm, C 82.23 346 P **P 20 36 44.9 +1.5**
baz=164
LRMC Laurel Mtn Rad 82.26 325 P **P 20 36 45.5 +1.6**
baz=146
SRU San Rafael Swe 82.29 332 *eP* **P 20 36 45.6 +1.5**
SRU pmax pmax
comp=Z,22nm,1.4s
SRU San Rafael Swe 82.29 332 *eP* **P 20 36 45.6 +1.5**
comp=Z,22nm,1.4s
O20A White River Ci 82.34 334 P **P 20 36 45.4 +1.0**
baz=153
O20A White River Ci 82.34 334 *eP* **P 20 36 46.0 +1.7**
comp=Z,18nm,1.3s
SBC Santa Barbara 82.38 323 P **P 20 36 45.7 +1.3**
baz=144
MSU Marysvale 82.42 330 *eP* **P 20 36 46.4 +1.5**
MSU Marysvale 82.42 330 *eP* **P 20 36 46.4 +1.5**
H36A Jessenland, He 82.43 345 P **P 20 36 45.5 +1.1**
baz=164
ARVC Arvin 82.51 324 P **P 20 36 46.1 +1.0**
baz=145
J30A Dallas 82.54 341 P **P 20 36 45.8 +0.7**
baz=159
P18A Preston Nutter 82.64 332 *eP* **P 20 36 47.4 +1.4**
comp=Z,47nm,1.4s
MPMC Manual Prospec 82.64 325 P **P 20 36 46.8 +0.8**
baz=146
I32A Karley and Nic 82.69 343 P **P 20 36 47.0 +1.2**
baz=161
FURC Furnace Creek, 82.70 326 P **P 20 36 47.2 +1.2**
baz=146
TMUT Trail Mountain 82.72 331 *eP* **P 20 36 48.2 +1.8**
comp=Z,20nm,1.3s
H35A Sunnyside Ranc 82.73 345 P **P 20 36 47.2 +1.2**
baz=163
PKM Mcpherson Peak 82.79 323 P **P 20 36 47.8 +1.0**
baz=144
TPNV Topopah Spring 82.82 327 P **P 20 36 47.7 +0.8**
baz=147

SPMN	**Marine on St.**	**82.83**	**346**	P		**P**		**20 36 47.4**	**+0.9**
	baz=165								
J29A	**Okreek**	**82.84**	**341**	P		**P**		**20 36 47.9**	**+1.3**
	baz=159								
H34A	**Spellman Lake,**	**82.91**	**344**	P		**P**		**20 36 47.9**	**+1.0**
	baz=162								
G36A	**St. Michael**	**83.03**	**346**	P		**P**		**20 36 48.7**	**+1.2**
	baz=164								
J28A	**Allard Ranch,**	**83.10**	**340**	P		**P**		**20 36 49.4**	**+1.4**
	baz=158								
H32A	**Carlson Farm,**	**83.14**	**343**	P		**P**		**20 36 49.4**	**+1.3**
	baz=161								
H33A	**Prehn Over Nor**	**83.14**	**344**	P		**P**		**20 36 49.6**	**+1.4**
	baz=162								
J27A	**Elkhorn Farm,**	**83.16**	**339**	P		**P**		**20 36 49.6**	**+1.2**
	baz=157								
LMQ	**La Malbaie**	**83.34**	**2**	*e*P		**P**		**20 36 50.2**	**+1.2**
	comp=Z,21nm,1.4s								
I29A	**Vivian Onida**	**83.40**	**341**	P		**P**		**20 36 50.8**	**+1.3**
	baz=159								
G34A	**Benson**	**83.43**	**344**	P		**P**		**20 36 50.9**	**+1.4**
	baz=162								
SUSD	**Miller**	**83.45**	**342**	P		**P**		**20 36 51.0**	**+1.3**
	baz=160								
MPU	**Maple Canyon**	**83.50**	**331**	*e*P		**P**		**20 36 51.6**	**+1.2**
	comp=Z,25nm,1.2s								
J26A	**Sides Ranch, S**	**83.52**	**339**	P		**P**		**20 36 51.7**	**+1.5**
	baz=157								
G33A	**Ortonville**	**83.56**	**344**	P		**P**		**20 36 51.2**	**+1.0**
	baz=162								
F36A	**Milaca**	**83.58**	**346**	P		**P**		**20 36 51.6**	**+1.2**
	baz=164								
I28A	**Midland**	**83.61**	**340**	P		**P**		**20 36 52.0**	**+1.4**
	baz=158								
NLU	**North Lily Min**	**83.62**	**331**	*e*P		**P**		**20 36 52.6**	**+1.7**
	comp=Z,24nm,1.4s								
R11A	**Troy Canyon, C**	**83.70**	**328**	P		**P**		**20 36 52.8**	**+1.4**
	baz=147								
R11A	**Troy Canyon, C**	**83.70**	**328**	*e*P		**P**		**20 36 53.1**	**+1.7**
	comp=Z,17nm,1.4s								
F35A	**Swanville**	**83.79**	**345**	P		**P**		**20 36 52.8**	**+1.3**
	baz=163								
TIN	**Tinemaha, Big**	**83.80**	**325**	P		**P**		**20 36 53.1**	**+1.2**
	baz=145								
J25A	**Sunshine Ranch**	**83.81**	**338**	P		**P**		**20 36 53.3**	**+1.5**
	baz=156								
G32A	**Webster**	**83.86**	**343**	P		**P**		**20 36 53.1**	**+1.3**
	baz=161								
F34A	**Alexandria**	**83.87**	**345**	P		**P**		**20 36 53.2**	**+1.3**
	baz=163								
I27A	**Quinn**	**83.92**	**340**	P		**P**		**20 36 53.5**	**+1.2**
	baz=157								
VLDQ	**Val d'Or**	**83.93**	**357**	*e*P		**P**		**20 36 53.6**	**+1.6**
	comp=Z,14nm,1.1s								
JLU	**Jordanelle**	**83.94**	**332**	*e*P		**P**		**20 36 54.2**	**+1.6**
	comp=Z,17nm,1.3s								
H29A	**Onida**	**83.94**	**341**	P		**P**		**20 36 53.5**	**+1.3**
	baz=159								
K22A	**Casper**	**84.00**	**336**	P		**P**		**20 36 54.2**	**+1.4**
	baz=154								
K22A	**Casper**	**84.00**	**336**	*e*P		**P**		**20 36 53.8**	**+1.0**
	comp=Z,26nm,1.1s								
E37A	**Wrenshall**	**84.05**	**347**	P		**P**		**20 36 54.4**	**+1.7**
	baz=165								
DUG	**Dugway, Tooele**	**84.12**	**331**	P		**P**		**20 36 54.8**	**+1.4**
	baz=149								
DUG	**Dugway, Tooele**	**84.12**	**331**	*e*P		**P**		**20 36 54.8**	**+1.4**
DUG					pmax	pmax			
	comp=Z,25nm,1.3s								
DUG	**Dugway, Tooele**	**84.12**	**331**	*e*P		**P**		**20 36 54.8**	**+1.4**
	comp=Z,25nm,1.3s								
I26A	**New Underwood**	**84.12**	**339**	P		**P**		**20 36 54.8**	**+1.6**
	baz=157								
F33A	**5 Mile Ranch,**	**84.14**	**344**	P		**P**		**20 36 54.4**	**+1.2**
	baz=162								
G30A	**Faulkton**	**84.14**	**342**	P		**P**		**20 36 54.4**	**+1.2**
	baz=160								
E36A	**McGregor**	**84.16**	**346**	P		**P**		**20 36 54.4**	**+1.1**
	baz=164								
H28A	**Mission Ridge**	**84.20**	**341**	P		**P**		**20 36 54.9**	**+1.3**
	baz=158								
I25A	**Rochford**	**84.36**	**339**	P		**P**		**20 36 55.4**	**+0.8**
	baz=156								
H27A	**Howes**	**84.45**	**340**	P		**P**		**20 36 55.6**	**+0.7**
	baz=157								
RSSD	**Black Hills**	**84.55**	**338**	P		**P**		**20 36 57.0**	**+1.4**
	baz=156								
RSSD	**Black Hills**	**84.55**	**338**	*e*P		**P**		**20 36 57.5**	**+1.9**
RSSD					pmax	pmax			
	comp=Z,15nm,1.3s								
RSSD	**Black Hills**	**84.55**	**338**	*e*P		**P**		**20 36 57.5**	**+1.9**
	comp=Z,15nm,1.3s								
E33A	**Westby DABS, E**	**84.70**	**345**	P		**P**		**20 36 57.4**	**+1.3**
	baz=162								
BGU	**Big Grassy Mou**	**84.83**	**331**	*e*P		**P**		**20 36 57.9**	**+0.8**
	comp=Z,28nm,1.8s								
HWUT	**Hardware Ranch**	**84.85**	**332**	*e*P		**P**		**20 36 58.0**	**+0.8**
	comp=Z,34nm,1.1s								
D35A	**Remer**	**84.86**	**346**	P		**P**		**20 36 57.5**	**+0.7**
	baz=164								
C39A	**Grand Marais**	**84.88**	**349**	P		**P**		**20 36 57.8**	**+0.9**
	baz=167								
SPUT	**South Promonto**	**84.93**	**332**	*e*P		**P**		**20 36 57.2**	**-0.4**
	comp=Z,37nm,1.3s								
NV01	**Mina Array Sit**	**84.96**	**326**	*e*P		**P**		**20 36 58.6**	**+0.8**
NVAR	**Mina Array Bea**	**84.96**	**326**	P		**P**		**20 36 57.8**	**-0.1**
	comp=Z,1.6nm,0.8s,baz=151,slow=5.8,SNR=9.4								
NVAR					LR	LR		21 11 29.5	
	comp=Z,222nm,18.6s,baz=146,slow=33								
C38A	**Sawbill Land.**	**84.97**	**348**	P		**P**		**20 36 58.0**	**+0.7**
	baz=166								
F29A	**Eureka**	**84.97**	**342**	P		**P**		**20 36 58.1**	**+0.7**
	baz=159								
D34A	**Park Rapids**	**85.09**	**345**	P		**P**		**20 36 58.8**	**+0.8**
	baz=163								
BW06	**Boulder Array**	**85.13**	**334**	*e*P		**P**		**20 36 58.5**	**-0.1**
PD31	**Pinedale Array**	**85.13**	**334**	*e*P		**P**		**20 37 00.1**	**+1.5**
PDAR	**Pinedale Array**	**85.13**	**334**	P		**P**		**20 36 59.4**	**+0.8**
	comp=Z,2.4nm,0.9s,baz=162,slow=6.2,SNR=14								
C37A	**Embarrass**	**85.13**	**347**	P		**P**		**20 36 59.2**	**+1.0**
	baz=165								
E31A	**Nome**	**85.18**	**343**	P		**P**		**20 36 59.9**	**+1.4**
	baz=161								
D33A	**AnnSam, Waubun**	**85.28**	**345**	P		**P**		**20 36 60.0**	**+1.0**
	baz=162								
C35A	**Jirik Farms, M**	**85.44**	**346**	P		**P**		**20 37 00.5**	**+0.8**
	baz=164								
HVU	**Hansel Valley**	**85.46**	**332**	*e*P		**P**		**20 37 00.7**	**+0.6**
HVU					pmax	pmax			
	comp=Z,42nm,1.6s								
HVU	**Hansel Valley**	**85.46**	**332**	*e*P		**P**		**20 37 00.7**	**+0.6**
	comp=Z,42nm,1.6s								
WAKR	**Walker**	**85.54**	**326**	*e*P		P		20 37 02.8	+2.1
ELK	**Elko**	**85.56**	**330**	*e*P		**P**		**20 37 02.4**	**+1.6**
ELK					pmax	pmax			
	comp=Z,32nm,1.7s								
ELK	**Elko**	**85.56**	**330**	*e*P		**P**		**20 37 02.4**	**+1.6**
	comp=Z,32nm,1.7s								
F27A	**Lemmon**	**85.58**	**340**	P		**P**		**20 37 01.0**	**+0.5**
	baz=158								
CMB	**Columbia Colle**	**85.60**	**325**	*e*P		P		20 37 03.3	+2.5
CMB					pmax	pmax			
	comp=Z,19nm,1.6s								
CMB	**Columbia Colle**	**85.60**	**325**	*e*P		P		20 37 03.3	+2.5
	comp=Z,19nm,1.6s								
AHID	**Auburn Hatcher**	**85.68**	**333**	*e*P		**P**		**20 37 03.4**	**+2.1**
	comp=Z,81nm,1.9s								
F26A	**Lodgepole**	**85.73**	**340**	P		**P**		**20 37 02.0**	**+0.7**
	baz=157								
C33A	**Trail**	**85.85**	**345**	P		**P**		**20 37 02.8**	**+1.1**
	baz=162								
E28A	**Huff**	**85.88**	**342**	P		**P**		**20 37 03.0**	**+1.0**
	baz=158								
D30A	**Buchanan**	**85.90**	**343**	P		**P**		**20 37 02.9**	**+0.9**
	baz=160								
B35A	**Bob, Littlefor**	**86.02**	**347**	P		**P**		**20 37 03.5**	**+0.9**
	baz=164								
F25A	**Bowman**	**86.02**	**340**	P		**P**		**20 37 03.7**	**+0.9**
	baz=156								
TOA0	**Torodi Ar. Sit**	**86.04**	**71**	*e*P		**P**		**20 37 03.2**	**-0.3**
TORD	**Torodi Ar. Bea**	**86.04**	**71**	P		**P**		**20 37 02.6**	**-0.8**
	comp=Z,9.6nm,1.1s,baz=239,slow=4.0,SNR=28								
TORD					LR	LR		21 12 18.3	
	comp=Z,422nm,20.6s,baz=245,slow=34								
D29A	**Pettibone, Tap**	**86.06**	**342**	P		**P**		**20 37 03.9**	**+1.1**
	baz=159								
REDW	**Red Top Meadow**	**86.11**	**334**	*e*P		**P**		**20 37 04.5**	**+1.0**
	comp=Z,19nm,1.3s								
SNOW	**Snow King Moun**	**86.16**	**334**	*e*P		P		20 37 06.1	+2.3
	comp=Z,15nm,1.1s								
LOHW	**Long Hollow**	**86.24**	**334**	*e*P		**P**		**20 37 04.7**	**+0.7**
	comp=Z,16nm,1.3s								
E26A	**Carlson Angus**	**86.25**	**340**	P		**P**		**20 37 04.9**	**+1.1**
	baz=157								
B33A	**Robert and Kas**	**86.30**	**345**	P		**P**		**20 37 05.1**	**+1.2**
	baz=162								
C31A	**Landman Farms,**	**86.31**	**344**	P		**P**		**20 37 04.9**	**+0.9**
	baz=161								
AGMN	**Agassiz Nation**	**86.38**	**345**	*e*P		**P**		**20 37 04.5**	**+0.1**
	comp=Z,11nm,1.1s								
MOOW	**Moose Ponds**	**86.41**	**334**	*e*P		**P**		**20 37 06.8**	**+1.9**
	comp=Z,5.7nm,1.3s								
FXWY	**Fox Creek**	**86.41**	**334**	*e*P		**P**		**20 37 05.6**	**+0.6**
	comp=Z,20nm,1.5s								
D28A	**Regan**	**86.42**	**342**	P		**P**		**20 37 05.6**	**+1.0**
	baz=159								
E25A	**Miller Ranch,**	**86.53**	**340**	P		**P**		**20 37 06.2**	**+0.9**
	baz=156								
AFDM	**Forest Hills D**	**86.60**	**325**	*e*P		**P**		**20 37 07.5**	**+1.7**
	comp=Z,20nm,1.6s								
IMW	**Indian Meadow**	**86.61**	**334**	*e*P		**P**		**20 37 06.8**	**+0.9**
	comp=Z,24nm,1.3s								
B32A	**Ashes, Strandq**	**86.61**	**345**	P		**P**		**20 37 06.3**	**+0.8**
	baz=162								
D26A	**Manning**	**86.75**	**341**	P		**P**		**20 37 07.1**	**+0.8**
	baz=157								
MDND	**Maddock**	**86.79**	**343**	P		**P**		**20 37 07.5**	**+1.1**
	baz=159								
MDND	**Maddock**	**86.79**	**343**	*e*P		**P**		**20 37 08.4**	**+2.0**
	comp=Z,81nm,1.4s								
A33A	**Warroad**	**86.89**	**346**	P		**P**		**20 37 07.8**	**+0.9**
	baz=163								
B30A	**Myrvik Farm, E**	**87.06**	**344**	P		**P**		**20 37 08.8**	**+1.1**
	baz=160								
RLMT	**Red Lodge**	**87.10**	**336**	P		**P**		**20 37 09.2**	**+0.9**
	baz=152								
RLMT	**Red Lodge**	**87.10**	**336**	*e*P		**P**		**20 37 08.9**	**+0.6**
	comp=Z,15nm,1.4s								
D25A	**Fairfield**	**87.11**	**340**	P		**P**		**20 37 09.2**	**+1.2**
	baz=156								
C27A	**Sayler Ranch,**	**87.14**	**341**	P		**P**		**20 37 09.3**	**+1.2**
	baz=158								
YMR	**Madison River**	**87.29**	**334**	*e*P		P		20 37 11.9	+2.8
	comp=Z,38nm,1.3s								
B29A	**Wagenman Farm,**	**87.31**	**343**	P		**P**		**20 37 10.1**	**+1.2**
	baz=160								
ORV	**Oroville**	**87.33**	**325**	*e*P		**P**		**20 37 11.1**	**+1.9**
ORV					pmax	pmax			
	comp=Z,34nm,1.5s								
ORV	**Oroville**	**87.33**	**325**	*e*P		**P**		**20 37 11.1**	**+1.9**
	comp=Z,34nm,1.5s								
A30A	**Hoffart Farm,**	**87.52**	**344**	P		**P**		**20 37 10.8**	**+1.0**
	baz=160								
B28A	**Dugan Ranch, T**	**87.54**	**342**	P		**P**		**20 37 11.7**	**+1.7**
	baz=159								
QLMT	**Earthquake Lak**	**87.59**	**334**	*e*P		P		20 37 13.5	+2.9
C25A	**Freed Ranch, W**	**87.60**	**340**	P		**P**		**20 37 11.8**	**+1.4**
	baz=157								
HLID	**Hailey**	**87.61**	**332**	P		**P**		**20 37 11.6**	**+0.9**
	baz=148								
HLID	**Hailey**	**87.61**	**332**	*e*P		**P**		**20 37 11.6**	**+0.9**
	comp=Z,12nm,1.3s								
A29A	**Manning Farm,**	**87.71**	**343**	P		**P**		**20 37 11.7**	**+0.8**
	baz=160								
A28A	**Rude Farm, Bot**	**87.94**	**343**	P		**P**		**20 37 13.9**	**+1.9**
	baz=159								
MFID	**Camas Ranch**	**88.04**	**331**	*e*P		**P**		**20 37 14.4**	**+1.7**
	comp=Z,35nm,1.6s								
O03D	**Paynes Creek**	**88.06**	**325**	P		**P**		**20 37 14.5**	**+1.7**
	baz=143								
MCMT	**McKenzie Canyo**	**88.10**	**333**	*e*P		**P**		**20 37 14.6**	**+1.5**
ULM	**Lac du Bonnet**	**88.24**	**346**	P		**P**		**20 37 13.0**	**-0.2**
	comp=Z,5.9nm,0.7s,baz=137,slow=2.7,SNR=9.3								
ULM	**Lac du Bonnet**	**88.24**	**346**	*e*P		**P**		**20 37 14.2**	**+0.9**
ULM					pmax	pmax			
	comp=Z,68nm,1.7s								
ULM	**Lac du Bonnet**	**88.24**	**346**	*e*P		**P**		**20 37 14.2**	**+0.9**
	comp=Z,68nm,1.7s								
BOZ	**Bozeman (W)**	**88.37**	**334**	P		**P**		**20 37 15.4**	**+1.2**
	baz=150								
WVOR	**Wild Horse Val**	**88.38**	**328**	*e*P		**P**		**20 37 16.3**	**+2.0**
WVOR					pmax	pmax			
	comp=Z,19nm,1.3s								
WVOR	**Wild Horse Val**	**88.38**	**328**	*e*P		**P**		**20 37 16.3**	**+2.0**
	comp=Z,19nm,1.3s								
DGMT	**Dagmar**	**88.55**	**340**	P		**P**		**20 37 16.4**	**+1.5**
	baz=156								
MOD	**Modoc Plateau**	**88.67**	**327**	*e*P		P		20 37 18.4	+2.6
	comp=Z,13nm,1.0s								
M04C	**Macdoel**	**89.26**	**326**	P		**P**		**20 37 19.2**	**+0.7**
	baz=143								
SCHQ	**Schefferville**	**90.77**	**4**	LR		LR		21 19 50.5	
	comp=Z,92nm,19.7s,baz=138,slow=37								
TAM	**Tamanrasset**	**94.80**	**65**	*e*P		**P**		**20 37 45.4**	**+0.8**
TAM					pmax	pmax			
	comp=Z,11nm,1.5s								
TAM	**Tamanrasset**	**94.80**	**65**	*e*P		**P**		**20 37 45.4**	**+0.8**
	comp=Z,11nm,1.5s								
YKA	**Yellowknife Ar**	**103.68**	**342**	Pdiff		**Pdif**		**20 38 23.7**	**+0.4**
	comp=Z,0.1nm,0.7s,baz=146,slow=4.1,SNR=3.6								
YKA				PP		**PKiKP**		**20 42 44.7**	**+3.4**
	comp=Z,0.9nm,1.1s,baz=141,slow=8.2,SNR=5.4								
YKA				PKKPbc		**PKKPdf**		**20 54 20.8**	**-5.2**
	comp=Z,0.1nm,0.6s,baz=329,slow=3.5,SNR=4.7								
GERES	**GERESS Array B**	**114.48**	**46**	PKP		PKPdf		20 43 02.8	+0.7
	comp=Z,0.3nm,0.6s,baz=90,slow=2.7,SNR=3.7								
KHC	**Kasperske Hory**	**114.54**	**46**	AMS		AMS		21 33 50.0	
	comp=Z,400nm,18.7s								
ASAR	**Alice Springs**	**115.15**	**208**	PKKPbc		PKKPbc		20 53 40.0	+1.3
	comp=Z,0.7nm,0.8s,baz=318,slow=1.2,SNR=7.5								
CLL	**Collm**	**115.20**	**44**	*e*Pdif		**Pdif**		**20 39 09.0**	**-5.8**
CLL				*e*PP		PP		20 43 42.0	-22
CLL				*e*SKKSac		SKKSac		20 51 12.0	+8.9
CLL				*e*Sdif		Sdif		20 53 00.0	+73
CLL				*e*PS		**PS**		**20 53 43.0**	**-0.8**
CLL				*e*PPS		PPS		20 55 11.0	
CLL				*e*SS		**SS**		**21 00 00.0**	**-0.1**
CLL				*e*SSS		SSS		21 04 18.0	
CLL				*e*				21 05 36.0	
CLL				*e*SSSS				21 07 54.0	
CLL				Lm		MLR		21 31 00.0	
	comp=N,200nm,20.1s								
CLL				Lm		MLR		21 31 00.0	
	comp=E,300nm,20.0s								
CLL				Lm		MLR		21 31 00.0	
	comp=Z,400nm,19.3s								
PRU	**Pruhonice**	**115.48**	**46**	AMS		AMS		21 31 10.0	
	comp=Z,300nm,19.5s								
GOPC	**GO Pecny, Ondr**	**115.59**	**46**	AMS		AMS		21 31 20.0	
	comp=Z,300nm,19.0s								
TREC	**Trest**	**115.73**	**47**	AMS		AMS		21 34 50.0	
	comp=Z,300nm,16.5s								
UPC	**Upice**	**116.56**	**46**	AMS		AMS		21 35 40.0	
	comp=Z,300nm,18.6s								
DPC	**Dobruska-Polom**	**116.67**	**46**	AMS		AMS		21 39 00.0	
	comp=Z,300nm,20.4s								
OKC	**Ostrava-Krasne**	**117.53**	**47**	AMS		AMS		21 36 30.0	
	comp=Z,400nm,18.9s								
WRA	**Warramunga Arr**	**118.34**	**210**	PKP		**PKPdf**		**20 43 10.3**	**-0.1**
	comp=Z,0.7nm,0.9s,baz=164,slow=1.3,SNR=4.2								
BRTR	**Keskin Array B**	**123.88**	**63**	PKP		**PKPdf**		**20 43 20.1**	**-0.4**
	comp=Z,1.0nm,0.8s,baz=164,slow=6.0,SNR=5.5								
AKASG	**Malin Array Be**	**124.49**	**49**	PKP		**PKPdf**		**20 43 20.1**	**-1.1**
	comp=Z,0.1nm,0.2s,baz=254,slow=2.5,SNR=4.4								
AKASG				PP		**PP**		**20 45 05.0**	**-3.2**
	comp=Z,0.1nm,0.3s,baz=251,slow=6.6,SNR=5.5								
H11S2	**WAKE ISLAND Hyl**	**124.54**	**268**	T		T		23 00 36.5	
	baz=118,slow=74,SNR=14								
H11S1	**WAKE ISLAND Hyl**	**124.55**	**269**	T		T		23 00 37.7	
	baz=118,slow=74,SNR=16								
H11S3	**WAKE ISLAND Hyl**	**124.56**	**268**	T		T		23 00 35.9	
	baz=118,slow=74,SNR=8.2								
H11N3	**WAKE ISLAND Hyl**	**125.00**	**270**	T		T		23 00 47.7	
H11N1	**WAKE ISLAND Hyl**	**125.02**	**270**	T		T		23 00 41.4	
	baz=278,slow=74,SNR=4.3								
H11N2	**WAKE ISLAND Hyl**	**125.02**	**270**	T		T		23 00 51.7	
	baz=116,slow=74,SNR=3.7								
KIV	**Kislovodsk**	**131.59**	**60**	*i* PKIKP		**PKPdf**		**20 43 38.1**	**+3.0**
KIV					pmax	pmax			
	comp=Z,7.0nm,1.1s								
KIV				MLR		MLR			
	comp=Z,127nm,21.0s								
KLMR	**Klimovskoe**	**131.81**	**37**	*e*PKIKP		**PKPdf**		**20 43 35.6**	**+0.8**
KLMR				*e*				20 43 50.2	
KLMR					pmax	pmax			
	comp=Z,21nm,1.6s								
BILL	**Bilibino**	**134.20**	**333**	*e*PKIKP		**PKPdf**		**20 43 41.3**	**+2.2**
BILL				*e*				20 43 47.3	
BILL					pmax	pmax			
	comp=Z,5.0nm,1.7s								
BILL					MLR	MLR			
	comp=Z,116nm,17.0s								
SEY	**Seymchan**	**141.24**	**328**	PKhKP		PKPpre		20 43 49.5	
	comp=Z,0.6nm,0.4s,baz=128,slow=5.6,SNR=6.4								
SEY	**Seymchan**	**141.24**	**328**	*e*PKIKP		**PKPdf**		**20 43 53.2**	**+1.0**
GEYT	**Alibeck**	**141.66**	**72**	PKhKP		PKPpre		20 43 48.2	
	comp=Z,1.9nm,0.9s,baz=241,slow=6.1,SNR=5.3								
ARU	**Arti**	**142.11**	**42**	PKhKP		PKPpre		20 43 49.3	
	comp=Z,0.9nm,0.4s,baz=290,slow=4.3,SNR=4.3								
TIXI	**Tiksi**	**142.54**	**349**	PKIKP		**PKPdf**		**20 43 55.0**	**+0.7**
TIXI	**Tiksi**	**142.54**	**349**	*e*P		**PKPdf**		**20 43 51.1**	**-3.2**
AKTO	**Aktyubinsk**	**142.59**	**52**	PKhKP		PKPpre		20 43 51.2	
	comp=Z,0.6nm,0.5s,baz=41,slow=3.3,SNR=5.8								
GSI	**Gununguitoli**	**144.38**	**165**	*e*P		**PKPdf**		**20 43 58.5**	**-0.9**
NRIK	**Noril'sk**	**145.13**	**12**	PKPbc		**PKPdf**		**20 43 57.6**	**-1.3**
	comp=Z,10nm,0.9s,baz=52,slow=1.4,SNR=7.3								
HYB	**Hyderabad**	**149.02**	**120**	*i* PKP		**PKPbc**		**20 44 11.0**	**-0.1**
HYB				*e*				20 44 18.0	
BRVK	**Borovoye**	**149.56**	**45**	*e*PKHKP		PKPpre		20 44 07.7	
BVAR	**Borovoye Array**	**149.63**	**45**	PKPbc		**PKPbc**		**20 44 11.6**	**+0.1**
	comp=Z,4.1nm,0.7s,baz=294,slow=2.8,SNR=30								
YAK	**Yakutsk**	**150.28**	**338**	PKPbc		**PKPbc**		**20 44 12.2**	**-0.6**
	comp=Z,42nm,0.7s,baz=158,slow=0.1,SNR=17								
YAK	**Yakutsk**	**150.28**	**338**	*e*PKIKP		**PKPbc**		**20 44 13.1**	**+0.4**
YAK				*e*				20 44 19.2	
YAK					pmax	pmax			
	comp=Z,46nm,0.9s								
YAK					pmax	pmax			
	comp=Z,47nm,0.7s								
YAK					pmax	pmax			
	comp=E,9.0nm,1.0s								
NKL	**Nikolayevsk**	**150.69**	**316**	*e*PKIKP		**PKPbc**		**20 44 11.0**	**-3.0**
NKL					pmax	pmax			
	comp=Z,180nm,1.8s								
YSS	**Yuzh-Sakhalins**	**151.03**	**303**	*e*PKIKP		**PKPab**		**20 44 19.3**	**-3.4**
YSS					pmax	pmax			
	comp=Z,30nm,1.0s								
AAK	**Ala-Archa**	**154.51**	**65**	PKPbc		**PKPbc**		**20 44 21.2**	**-1.9**
	comp=Z,2.2nm,0.8s,baz=214,slow=6.2,SNR=6.2								
AAK	**Ala-Archa**	**154.51**	**65**	PKIKP		**PKPdf**		**20 44 16.0**	**+1.3**
FRU	**Bishkek**	**154.58**	**65**	*e*PKIKP		**PKPbc**		**20 44 22.0**	**-1.1**
FRU				*i*				20 44 32.0	
KURBB	**Kurchatov Arra**	**155.21**	**45**	PKP		**PKPdf**		**20 44 14.7**	**-0.4**
	comp=Z,0.9nm,0.2s,baz=286,slow=2.1,SNR=4.8								
KURK	**Kurchatov**	**155.22**	**45**	PKIKP		**PKPdf**		**20 44 14.7**	**-0.5**
KURK	**Kurchatov**	**155.22**	**45**	PKP		**PKPdf**		**20 44 14.7**	**-0.5**
NVS	**Novosibirsk**	**155.36**	**33**	*e*PKIKP		**PKPdf**		**20 44 14.0**	**-1.2**
KSH	**Kashi**	**155.69**	**73**	*e*PKIKP		**PKPdf**		**20 44 16.7**	**+0.3**
KSH				*e*pPKP		pPKPdf		20 44 27.4	+2.5
KSH				SS		SS		21 08 01.2	-5.1
KSH				AMB		AMB			
	comp=Z,120nm,3.4s								
KSH				LR		LR			
	comp=Z,170nm,8.2s								
KSH				LR		LR			
	comp=Z,270nm,10.3s								
KSH				LR		LR			
	comp=Z,170nm,14.6s								
ZALV	**Zalesovo Beam**	**156.65**	**33**	PKP		**PKPdf**		**20 44 16.9**	**0.0**
	comp=Z,2.5nm,0.8s,baz=298,slow=3.2,SNR=14								
ZALV				PKPab		**PKPab**		**20 44 47.6**	**+1.4**
	comp=Z,9.5nm,0.8s,baz=296,slow=5.0,SNR=14								
ZALV	**Zalesovo Beam**	**156.65**	**33**	PKIKP		**PKPdf**		**20 44 17.0**	**0.0**
BOD	**Bodaibo**	**157.72**	**349**	*e*PKIKP		PKPpre		20 44 05.3	
BOD					pmax	pmax			
	comp=Z,7.0nm,1.5s								
PYUN	**Piuthan**	**158.57**	**105**	*e*P		**PKPab**		**20 44 55.5**	**-0.2**
KOLN	**Koldanda**	**158.88**	**107**	*e*P		**PKPab**		**20 44 56.7**	**-0.3**
	comp=Z,24nm,0.8s								
MKAR	**Makanchi Array**	**159.03**	**52**	PKP		**PKPdf**		**20 44 19.4**	**-0.8**
	comp=Z,1.7nm,0.8s,baz=297,slow=1.1,SNR=15								
MKAR				PKPab		**PKPab**		**20 44 57.4**	**+0.6**
	comp=Z,2.2nm,0.8s,baz=290,slow=4.6,SNR=6.6								
MKAR				PP		**PP**		**20 48 38.5**	**+0.4**
	comp=Z,0.8nm,0.9s,baz=297,slow=5.3,SNR=3.9								
GKN	**Gorkha**	**159.80**	**107**	*e*P		**PKPab**		**20 45 00.6**	**-0.3**
	comp=Z,48nm,0.9s								
DMN	**Daman**	**159.97**	**109**	*e*P		**PKPab**		**20 45 01.7**	**-0.1**

*IDC **10** 20:30:10.2±2.9, 37.°84N×142.°28E, h0km, mb3.2/2, mb1 3.5/4, mb1mx3.2/47, mbtmp3.4/4, ML3.1/2, Error ellipse: s-maj=61.2km s-min=33.2km az=71.0*
*ISCJB **10** 20:30:16.1±1.5, 37.°70N±0.°05×141.°8E±0.°1, h25km±8km, mb3.1/2, Error ellipse: s-maj=14.2km s-min=7.4km az=13.1*
*JMA **10** 20:30:17.4±0.1, 37.°69N×141.°72E, h33km±3km, M3.6*
ISC 10 20:30:16.3±1.9, 37.°70N±0.°05×141.°77E±0.°09, h26km±12km, n11, σ1§02/18, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JFK	**Kawauchi**	**0.79**	**245**	P	**Pb**	**20 30 31.5**	**+0.1**
JFK				S	**Sb**	**20 30 41.4**	**-0.3**
JMM	**Marumori**	**0.79**	**282**	P	**Pb**	**20 30 31.7**	**+0.3**
JMM				S	**Sb**	**20 30 41.3**	**-0.5**
JIO	**Ouri**	**0.82**	**336**	P	**Pb**	**20 30 32.1**	**+0.2**
JIO				S	**Sb**	**20 30 42.1**	**-0.5**
ONAJ	**Iwakimizuishiy**	**0.98**	**233**	P	**Pn**	**20 30 34.2**	**-0.2**
ONAJ				S	**Sb**	**20 30 45.9**	**-1.3**
JOU	**Okura**	**1.10**	**307**	P	**Pn**	**20 30 36.7**	**+0.7**
JOU				S	**Sn**	**20 30 50.0**	**-0.4**
JFT	**Otama**	**1.16**	**261**	P	**Pn**	**20 30 37.7**	**+0.9**
JFT				S	**Sn**	**20 30 52.0**	**+0.2**
MJAR	**Matsushiro Arr**	**3.07**	**249**	Pn	**Pn**	**20 31 04.9**	**+1.7**
	1.1nm,0.3s,baz=62,slow=9.6,SNR=14						
MAT	**Matsushiro**	**3.08**	**249**	P	**Pn**	**20 31 05.0**	**+1.8**
MAT				S	**Sb**	**20 31 46.6**	**-0.8**
JHJ	**Hachijo jima 2**	**4.85**	**200**	Pn	**Pn**	**20 31 29.3**	**+1.7**
	3.6nm,0.3s,baz=270,slow=13,SNR=4.7						
MKAR	**Makanchi Array**	**44.01**	**302**	P	**P**	**20 38 21.7**	**+0.1**
	0.1nm,0.5s,baz=86,slow=11,SNR=3.5						
WRA	**Warramunga Arr**	**57.76**	**188**	P	**P**	**20 40 03.9**	**-1.3**
	0.2nm,0.6s,baz=5.3,slow=6.9,SNR=4.7						

*ISCJB **10** 20:33:51.5±0.5, 38.°59N±0.°03×31.°16E±0.°04, h1km±6km, Error ellipse: s-maj=5.4km s-min=4.1km az=43.3*
*DDA **10** 20:33:51.4, 38.°62N×31.°15E, h7km, Md2.6*
*CSEM **10** 20:33:51.5±0.2, 38.°57N×31.°15E, h2km, MD2.6, Error ellipse: s-maj=4.7km s-min=3.8km az=23.0*
*ISK **10** 20:33:51.5, 38.°57N×31.°13E, h6km, MD2.7*
ISC 10 20:33:50.7±1.2, 38.°53N±0.°03×31.°11E±0.°02, h4km±11km, n26, σ0§55/42, Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
BOLV	**Bolvadin**	**0.23**	**327**	*i* P	**Pg**	**20 33 55.2**	**0.0**
BOLV				*i* S	**Sg**	**20 33 58.5**	**+0.3**
BOLV	**Bolvadin**	**0.23**	**327**	P	**Pg**	**20 33 55.2**	**0.0**
BOLV				S	**Sg**	**20 33 58.5**	**+0.3**
SHUT	**Suhut-Afyon**	**0.44**	**274**	*e*PG	**Pb**	**20 34 01.1**	**0.0**
SHUT				*e*SG	**Sb**	**20 34 07.3**	**-0.8**
SHUT	**Suhut-Afyon**	**0.44**	**274**	*e*Pg	**Pb**	**20 34 01.1**	**0.0**
SHUT				*e*Sg	**Sb**	**20 34 07.3**	**-0.8**
BAGO	**Egridir - ISPA**	**0.59**	**205**	*i* P	**Pb**	**20 34 04.4**	**+0.7**
BAGO				*i* S	**Sn**	**20 34 15.3**	**-0.9**
KIZT	**Kizilcal**	**0.70**	**59**	*e*PG	**Pb**	**20 34 04.9**	**-0.7**
KIZT	**Kizilcal**	**0.70**	**59**	*e*Pg	**Pb**	**20 34 04.9**	**-0.7**
KDHN	**Kadinhani**	**0.79**	**90**	*i* P	**Pg**	**20 34 05.8**	**0.0**
KDHN				*i* S	**Sb**	**20 34 17.7**	**-0.5**
KDHN	**Kadinhani**	**0.79**	**90**	P	**Pg**	**20 34 05.8**	**0.0**
KDHN				S	**Sb**	**20 34 17.7**	**-0.5**
ISP	**Isparta**	**0.84**	**214**	*e*PG	**Pn**	**20 34 09.3**	**-0.2**
ISP	**Isparta**	**0.84**	**214**	*e*Pg	**Pn**	**20 34 09.3**	**-0.2**
AUKIR	**K¨–rka- Seyitg**	**0.88**	**329**	*i* P	**Pg**	**20 34 07.4**	**-0.1**
AUKIR				*i* S	**Sg**	**20 34 19.1**	**+0.2**
AUKIR	**K¨–rka- Seyitg**	**0.88**	**329**	P	**Pg**	**20 34 07.4**	**-0.1**
AUKIR				S	**Sg**	**20 34 19.1**	**+0.2**
SVRH	**Sivrihisar-ESK**	**0.97**	**19**	*e*PG	**Pg**	**20 34 09.2**	**-0.2**
SVRH	**Sivrihisar-ESK**	**0.97**	**19**	*e*Pg	**Pg**	**20 34 09.2**	**-0.2**
ESKT	**Eskisehir**	**1.01**	**349**	*i* P	**Pg**	**20 34 09.1**	**-1.1**
ESKT				*i* S	**Sb**	**20 34 24.6**	**-0.1**
SEYT	**Eskypehyr**	**1.01**	**349**	P	**Pg**	**20 34 09.1**	**-1.1**
SEYT				S	**Sb**	**20 34 24.6**	**0.0**
KONT	**Konya--Tatoy**	**1.14**	**120**	*e*PN	**Pn**	**20 34 14.0**	**+0.5**
KONT				*e*SN	**Sn**	**20 34 29.9**	**+0.2**
KONT	**Konya--Tatoy**	**1.14**	**120**	*e*Pn	**Pn**	**20 34 14.0**	**+0.5**
KONT				*e*Sn	**Sn**	**20 34 29.9**	**+0.2**
AUMIH	**MIHALICIK**	**1.37**	**12**	*i* P	**Pg**	**20 34 17.4**	**+0.4**
AUMIH				*i* S	**Sn**	**20 34 37.5**	**+2.0**
AUMIH	**MIHALICIK**	**1.37**	**12**	P	**Pg**	**20 34 17.4**	**+0.4**
BORA	**Eskisehir**	**1.45**	**340**	*i* P	**Pn**	**20 34 17.6**	**-0.1**
BORA				*i* S	**Sg**	**20 34 37.4**	**+0.2**
BORA	**Eskisehir**	**1.45**	**340**	P	**Pn**	**20 34 17.6**	**-0.1**
BORA				S	**Sg**	**20 34 37.4**	**+0.2**
TVSB	**Tavsanli**	**1.58**	**306**	*e*PN	**Pg**	**20 34 21.3**	**+0.2**
TVSB	**Tavsanli**	**1.58**	**306**	*e*Pn	**Pg**	**20 34 21.3**	**+0.2**
ULDT	**Uludag**	**2.23**	**317**	*i* P	**Pg**	**20 34 33.5**	**+0.2**

TAP 10 20:44:17.4, 23.°59N×120.°71E, h16km, ML3.2, 8C-10D, A, Taiwan

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CHN5	**Tsauling**	**0.03**	**285**	⇑*i* P	Pg	20 44 20.4	+0.1
	baz=284						
CHN5				*i* S	Sg	20 44 22.6	+0.4
	baz=284						
ALS	**Alishan**	**0.12**	**131**	⇑*i* P	Pb	20 44 21.8	+0.3
	baz=129						
ALS				*e*S	Sb	20 44 24.9	+0.6
	baz=129						
WGK	**Gukeng**	**0.16**	**306**	⇑*i* P	Pb	20 44 22.1	0.0
	baz=306						
CHN2	**Minshiung**	**0.22**	**255**	⇓*i* P	Pb	20 44 23.2	+0.1
	baz=254						
YUS	**Yu-Shan**	**0.25**	**114**	⇑*i* P	Pb	20 44 24.1	+0.2
	baz=113						
CHN4	**Tsaushan**	**0.26**	**204**	⇓*i* P	Pb	20 44 23.7	0.0
	baz=203						
CHY	**Chiayi**	**0.28**	**251**	⇓*i* P	Pb	20 44 24.0	0.0
	baz=249						
CHY				*e*S	Sb	20 44 28.9	+0.5
	baz=249						
WNT	**Mingjian**	**0.29**	**356**	⇑*i* P	Pb	20 44 24.3	0.0
	baz=357						
WNT				*e*S	Sb	20 44 29.1	+0.3
	baz=357						
SMLT	**Sun Moon Lake**	**0.34**	**31**	⇓*i* P	Pb	20 44 25.1	-0.1
	baz=32						
TYC	**Yuchr**	**0.34**	**24**	⇓*i* P	Pb	20 44 25.1	0.0
	baz=25						
WTP	**Ta-pu**	**0.35**	**194**	⇓*i* P	Pb	20 44 25.2	-0.2
	baz=192						
TWK	**Hsinying**	**0.38**	**212**	⇓*i* P	Pb	20 44 25.8	-0.1
	baz=209						
STYT	**Tauyuan**	**0.43**	**174**	⇑*i* P	Pb	20 44 26.6	0.0
	baz=172						
CHN1	**Nanshi**	**0.43**	**202**	⇓*i* P	Pb	20 44 26.6	-0.2
	baz=201						
WSF	**Szhu**	**0.45**	**276**	⇓P	Pg	20 44 26.6	+0.3
	baz=275						
WSF				S	Sb	20 44 33.9	+0.5
	baz=275						
WTCT	**Ta-ch'eng**	**0.48**	**305**	*e*P	Pg	20 44 27.1	+0.2
	baz=305						
WTCT				*e*S	Sb	20 44 34.4	+0.2
	baz=305						
ELDTW	**Lidau**	**0.49**	**144**	⇑*i* P	Pb	20 44 27.7	0.0
	baz=143						
CHN8	**Yiju**	**0.52**	**242**	P	Pb	20 44 27.9	-0.2
	baz=241						
SGST	**Jiashian**	**0.52**	**193**	⇓*i* P	Pb	20 44 28.3	+0.2
	baz=191						
TCU	**Taichung**	**0.56**	**357**	*e*P	Pb	20 44 29.0	+0.2
	baz=357						
EHY	**Hungye**	**0.57**	**98**	P	Pb	20 44 29.4	+0.4
	baz=98						
TWF1	**Yuli**	**0.59**	**113**	⇑*i* P	Pb	20 44 29.7	+0.3
	baz=113						
SCLT	**Jiali**	**0.63**	**229**	P	Pb	20 44 30.2	+0.2
	baz=228						
TAI1	**Yung-k'ang**	**0.70**	**219**	*e*P	Pb	20 44 31.6	+0.3
	baz=218						
ESL	**Shilin**	**0.70**	**71**	P	Pb	20 44 31.5	+0.2
	baz=71						
TWQ1	**Liyutan**	**0.76**	**5**	*e*P	Pb	20 44 32.5	+0.3
	baz=5.0						
CHKT	**Chengkung**	**0.78**	**129**	*e*P	Pn	20 44 33.8	0.0
	baz=128						
TWT	**Tachien**	**0.79**	**33**	*e*P	Pg	20 44 32.1	-0.7
	baz=32						
TWM1	**Shoushan**	**0.81**	**199**	*e*P	Pn	20 44 35.0	+0.8
	baz=198						
TWG	**Pinlang**	**0.84**	**156**	*e*P	Pg	20 44 33.9	+0.2
	baz=155						
SSD	**Sandimen**	**0.84**	**185**	P	Pg	20 44 33.9	+0.2
	baz=184						
HWA	**Hwalien**	**0.91**	**65**	*e*P	Pn	20 44 35.7	+0.1
	baz=65						
TWD	**Chiawan**	**0.95**	**59**	*e*P	Pb	20 44 35.4	-0.1
	baz=59						
ECL	**Taimali**	**1.01**	**167**	*e*P	Pn	20 44 36.9	-0.2
	baz=166						
WDGT	**Dungji**	**1.01**	**251**	*e*P	Pb	20 44 35.1	-1.5
	baz=250						
NNS	**Nan Shan**	**1.04**	**36**	*e*P	Pb	20 44 36.9	-0.3
	baz=36						
PNG	**Penghu**	**1.06**	**269**	*e*P	Pb	20 44 36.8	-0.6
	baz=268						
NSTT	**Nanjuang**	**1.07**	**15**	*e*P	Pb	20 44 37.5	-0.1
	baz=14						
EAST	**Anshuo**	**1.21**	**174**	*e*P	Pg	20 44 40.6	-0.2
	baz=173						
SCZT	**Fangliau**	**1.22**	**184**	*e*P	Pb	20 44 40.3	+0.2
	baz=183						
NSK	**Sanguang**	**1.23**	**29**	*e*P	Pb	20 44 40.4	0.0
	baz=29						
ENA	**Nanau**	**1.26**	**48**	*e*P	Pn	20 44 40.4	0.0
	baz=48						
ENTT	**Nioudou**	**1.31**	**37**	*e*P	Pn	20 44 41.3	+0.2
	baz=37						
QZH	**Quanzhou**	**2.35**	**305**	Pn	Pn	20 44 52.2	-3.2
QZH				Sn	Sn	20 45 24.1	+0.1
QZH				*smax*	*smax*		
	comp=N,230nm,1.0s						
QZH				*smax*	*smax*		
	comp=E,260nm,0.5s						

*IASPEI **10** 20:44:21.5±0.8, 23.°61N±0.°02×120.°70E±0.°02, h16km±5km, Error ellipse: s-maj=2.6km s-min=2.3km az=111.8, GT5 selection from ISC bulletin GT5 identified by Bond¨ji and McLaughlin (2009) selection criteria Bond¨ji and McLaughlin, A new ground truth data set for seismic studies, Seism. Res. Let., 80, 465-472, 2009*
*TAP **10** 20:44:21.3, 23.°60N×120.°70E, h15km, ML3.7, B*
*JMA **10** 20:44:21.5±0.2, 23.°61N×120.°70E, h11km±4km, M3.1*
*ISCJB **10** 20:44:22.3±0.2, 23.°60N±0.°01×120.°71E±0.°02, h17km±3km, Error ellipse: s-maj=2.8km s-min=2.1km az=25.7*
ISC 10 20:44:21.6±0.8, 23.°60N±0.°02×120.°70E±0.°02, h15km±5km, n66, σ0§52/101, 1C-3D, Taiwan

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CHN5	**Tsauling**	**0.02**	**253**	*e*P	**Pg**	**20 44 24.3**	**-0.1**
	baz=271						
CHN5				S	**Sg**	**20 44 26.4**	**+0.2**
	baz=271						
ALS	**Alishan**	**0.13**	**134**	⇑*i* P	**Pb**	**20 44 25.8**	**-0.2**
	baz=132						
ALS				*e*S	**Sb**	**20 44 28.8**	**0.0**
	baz=132						
WGK	**Gukeng**	**0.15**	**303**	P	**Pb**	**20 44 26.1**	**0.0**
	baz=305						
WGK				S	**Sb**	**20 44 29.9**	**+0.7**
	baz=305						
WGK	**Gukeng**	**0.15**	**303**	*e*S	**Pb**	**20 44 25.9**	**-0.2**
	baz=306						
CHN2	**Minshiung**	**0.22**	**251**	P	**Pb**	**20 44 27.1**	**-0.2**
	baz=254						
CHN2				S	**Sb**	**20 44 31.5**	**+0.5**
	baz=254						
YUS	**Yu-Shan**	**0.26**	**116**	P	**Pb**	**20 44 28.0**	**-0.2**
	baz=115						
YUS				S	**Sb**	**20 44 32.7**	**+0.1**
	baz=115						
YUS	**Yu-Shan**	**0.26**	**116**	*e*S	**Pb**	**20 44 28.2**	**0.0**
	baz=113						
CHN4	**Tsaushan**	**0.27**	**202**	*e*P	**Pb**	**20 44 28.0**	**-0.2**
	baz=203						
CHN4				S	**Sb**	**20 44 32.9**	**+0.3**
	baz=203						
WNT	**Mingjian**	**0.27**	**357**	P	**Pb**	**20 44 28.2**	**0.0**
	baz=357						
WNT				S	**Sb**	**20 44 33.0**	**+0.3**
	baz=357						
CHY	**Chiayi**	**0.28**	**248**	P	**Pb**	**20 44 27.9**	**-0.3**
	baz=248						
CHY				S	**Sb**	**20 44 32.9**	**+0.2**
	baz=248						
TYC	**Yuchr**	**0.33**	**25**	*e*P	**Pb**	**20 44 29.1**	**-0.1**
	baz=26						
TYC				S	**Sb**	**20 44 34.9**	**+0.6**
	baz=26						
SMLT	**Sun Moon Lake**	**0.33**	**33**	⇓*i* P	**Pb**	**20 44 29.1**	**-0.2**
	baz=33						
SMLT				S	**Sb**	**20 44 34.6**	**+0.2**
	baz=33						
WTP	**Ta-pu**	**0.36**	**193**	*e*P	**Pg**	**20 44 28.8**	**-0.2**
	baz=192						
TWK	**Hsinying**	**0.39**	**210**	⇓P	**Pg**	**20 44 29.6**	**+0.1**
	baz=209						
TWK				S	**Sb**	**20 44 35.9**	**-0.1**
	baz=209						
WSF	**Szhu**	**0.44**	**275**	*e*P	**Pg**	**20 44 30.4**	**0.0**
	baz=276						
WSF				S	**Sb**	**20 44 37.9**	**+0.4**
	baz=276						
STYT	**Tauyuan**	**0.44**	**173**	*e*P	**Pg**	**20 44 30.6**	**+0.1**
	baz=166						
CHN1	**Nanshi**	**0.45**	**201**	*e*P	**Pg**	**20 44 30.7**	**+0.2**
	baz=202						
CHN1				S	**Sb**	**20 44 37.5**	**-0.1**
	baz=202						
WTCT	**Ta-ch'eng**	**0.46**	**304**	*e*P	**Pg**	**20 44 30.8**	**-0.1**
	baz=305						
WTCT				*e*S	**Sb**	**20 44 38.6**	**+0.5**
	baz=305						
ELDTW	**Lidau**	**0.50**	**145**	*e*P	**Pg**	**20 44 31.6**	**0.0**
	baz=145						
ELDTW				*e*S	**Sg**	**20 44 38.0**	**-0.4**
	baz=145						
CHN8	**Yiju**	**0.52**	**240**	*e*P	**Pg**	**20 44 31.8**	**0.0**
	baz=241						
SGST	**Jiashian**	**0.53**	**192**	P	**Pb**	**20 44 32.4**	**-0.1**
	baz=192						
SGST				S	**Sb**	**20 44 40.0**	**-0.1**
	baz=192						
TCU	**Taichung**	**0.54**	**358**	*e*P	**Pb**	**20 44 32.9**	**+0.1**
	baz=358						
EHY	**Hungye**	**0.58**	**100**	*e*P	**Pb**	**20 44 33.4**	**0.0**
	baz=99						
EHY				*e*S	**Sb**	**20 44 41.5**	**+0.1**
	baz=99						
TWF1	**Yuli**	**0.60**	**115**	*e*P	**Pb**	**20 44 33.7**	**-0.1**
	baz=114						
TWF1				*e*S	**Sb**	**20 44 41.8**	**-0.3**
	baz=114						
CHN3	**Shinhua**	**0.61**	**211**	⇓P	**Pb**	**20 44 34.5**	**+0.6**
	baz=223						
CHN3				*e*S	**Sn**	**20 44 44.7**	**-0.5**
	baz=223						
SCLT	**Jiali**	**0.63**	**228**	*e*P	**Pb**	**20 44 34.2**	**-0.1**
	baz=228						
SCLT				*e*S	**Sn**	**20 44 44.8**	**-0.9**
	baz=228						
ESL	**Shilin**	**0.70**	**73**	*e*P	**Pb**	**20 44 35.5**	**0.0**
	baz=72						
ESL				*e*S	**Sb**	**20 44 44.8**	**-0.2**
	baz=72						
TAI1	**Yung-k'ang**	**0.71**	**218**	*e*P	**Pb**	**20 44 36.0**	**+0.3**
	baz=218						
TWQ1	**Liyutan**	**0.74**	**5**	*e*P	**Pb**	**20 44 36.6**	**+0.4**
	baz=5.0						
TWQ1				*e*S	**Sb**	**20 44 47.3**	**+1.1**
	baz=5.0						
TWT	**Tachien**	**0.78**	**34**	*e*P	**Pg**	**20 44 36.0**	**-0.7**
	baz=42						
CHKT	**Chengkung**	**0.79**	**129**	*e*P	**Pn**	**20 44 37.7**	**-0.5**
	baz=135						
CHKT				*e*S	**Sn**	**20 44 49.1**	**-0.5**
	baz=135						
NSY	**Sanyi**	**0.81**	**4**	*e*P	**Pn**	**20 44 38.0**	**-0.4**
	baz=4.0						
NSY				*e*S	**Sn**	**20 44 49.2**	**-1.0**
	baz=4.0						
TWM1	**Shoushan**	**0.82**	**198**	*e*P	**Pn**	**20 44 39.0**	**+0.5**
	baz=186						
TWG	**Pinlang**	**0.85**	**156**	*e*P	**Pb**	**20 44 37.7**	**-0.4**
	baz=156						
TWG				*e*S	**Sg**	**20 44 49.8**	**+0.5**
	baz=156						
SSD	**Sandimen**	**0.86**	**184**	*e*P	**Pb**	**20 44 38.0**	**-0.1**
	baz=184						
SGLT	**Jiouru**	**0.90**	**193**	*e*P	**Pn**	**20 44 40.6**	**+1.0**
	baz=193						
HWA	**Hwalien**	**0.91**	**66**	*e*P	**Pg**	**20 44 39.3**	**+0.1**
	baz=77						
TWD	**Chiawan**	**0.95**	**60**	*e*P	**Pb**	**20 44 39.4**	**-0.3**
	baz=59						
TWD				*e*S	**Sb**	**20 44 51.7**	**-0.3**
	baz=59						
WDGT	**Dungji**	**1.02**	**251**	*e*P	**Pb**	**20 44 39.5**	**-1.4**
	baz=251						
ECL	**Taimali**	**1.03**	**167**	*e*P	**Pb**	**20 44 41.2**	**+0.1**
	baz=158						
ECL				*e*S	**Sg**	**20 44 55.0**	**+0.1**
	baz=158						
NNS	**Nan Shan**	**1.03**	**36**	*e*P	**Pb**	**20 44 40.7**	**-0.5**
	baz=43						
PNG	**Penghu**	**1.05**	**268**	*e*P	**Pb**	**20 44 40.9**	**-0.6**
	baz=269						
NSTT	**Nanjuang**	**1.06**	**15**	*e*P	**Pn**	**20 44 41.7**	**-0.1**
	baz=15						
EAST	**Anshuo**	**1.22**	**174**	*e*P	**Pb**	**20 44 44.3**	**-0.1**
	baz=174						
EAST				*e*S	**Sn**	**20 45 00.7**	**+0.3**
	baz=174						
NSK	**Sanguang**	**1.22**	**29**	*e*P	**Pb**	**20 44 44.5**	**+0.1**
	baz=19						
NSK				*e*S	**Sb**	**20 44 59.7**	**-0.4**
	baz=19						
SCZT	**Fangliau**	**1.23**	**184**	*e*P	**Pn**	**20 44 44.3**	**+0.1**
	baz=184						
TAW	**Tawu**	**1.25**	**172**	*e*P	**Pb**	**20 44 45.4**	**-0.4**
	baz=164						
ENA	**Nanau**	**1.25**	**49**	*e*P	**Pn**	**20 44 44.7**	**+0.2**
	baz=49						
TWP	**Hsiaoliuchiu**	**1.29**	**194**	*e*P	**Pg**	**20 44 46.9**	**+0.5**
	baz=195						
ENTT	**Nioudou**	**1.30**	**37**	*e*P	**Pn**	**20 44 45.3**	**+0.1**
	baz=37						
TWE	**Neicheng**	**1.42**	**38**	*e*P	**Pb**	**20 44 48.1**	**+0.3**
	baz=38						
TWC	**Suao**	**1.45**	**46**	*e*P	**Pb**	**20 44 48.2**	**-0.1**
	baz=46						
TWC				*e*S	**Sg**	**20 45 08.0**	**-0.3**
	baz=46						
ILA	**Ilan**	**1.50**	**39**	*e*P	**Pb**	**20 44 48.9**	**-0.3**
	baz=23						
HEN	**Hengchun**	**1.59**	**179**	*e*P	**Pg**	**20 44 52.1**	**0.0**
	baz=179						
TWS1	**Kuangyinshan**	**1.63**	**24**	*e*P	**Pb**	**20 44 52.3**	**-0.6**
	baz=6.0						
TWK1	**Hengchun**	**1.66**	**177**	*e*P	**Pb**	**20 44 51.3**	**-0.5**
	baz=177						
LAY	**Lan-yu**	**1.74**	**153**	*e*P	**Pn**	**20 44 50.6**	**-0.7**
	baz=153						
NWF	**Wu-fen Shan**	**1.76**	**34**	*e*P	**Pb**	**20 44 54.0**	**+0.4**
	baz=33						
TWB1	**Santiao Chiao**	**1.83**	**40**	*e*P	**Pb**	**20 44 54.3**	**-0.4**
	baz=22						
JYNG	**Yonagunijimaku**	**2.22**	**67**	P	**Pn**	**20 44 58.2**	**+0.4**
JYNG				S	**Sn**	**20 45 26.3**	**+1.4**
YOJ	**Yonaguni jima**	**2.28**	**68**	P	**Pn**	**20 44 59.3**	**+0.7**
YOJ				S	**Sn**	**20 45 28.1**	**+1.7**
YOJ	**Yonaguni jima**	**2.28**	**68**	*e*P	**Pn**	**20 44 59.3**	**+0.7**
	baz=67						
IRIF	**Iriomote-Funau**	**2.86**	**75**	P	**Pn**	**20 45 07.2**	**+0.5**
IRIF				S	**Sn**	**20 45 42.8**	**+1.9**
JKRS	**Kuro-shima**	**3.09**	**78**	S	**Sn**	**20 45 46.1**	**0.0**
JIJ	**Ishigaki jima**	**3.24**	**76**	P	**Pn**	**20 45 11.8**	**0.0**
JIJ				S	**Sn**	**20 45 50.2**	**+0.1**
JISG	**Ishigakijimahi**	**3.44**	**73**	P	**Pn**	**20 45 13.2**	**-1.4**
JISG				*e*S	**Sn**	**20 45 55.1**	**0.0**

*IDC **10** 20:46:45.5±11.0, 39.°26N×141.°26E, h0km, mb3.6/3, mb1 3.5/4, mb1mx3.2/52, mbtmp3.5/4, ML2.7/1, Error ellipse: s-maj=220.0km s-min=42.1km az=99.0*
*ISCJB **10** 20:46:46.3±1.3, 38.°71N±0.°06×141.°8E±0.°2, h57km±7km, mb3.5/3, Error ellipse: s-maj=20.6km s-min=6.8km az=19.0*
*JMA **10** 20:46:47.0±0.1, 38.°71N×141.°78E, h54km±1km, M3.2*
ISC 10 20:46:46.4±1.7, 38.°69N±0.°06×141.°8E±0.°1, h52km±11km, n13, σ0§30/18, mb3.4/3, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**0.45**	**239**	P	**Pn**	**20 46 57.5**	**+0.3**
JIO				*i* S	**Sn**	**20 47 04.7**	**-0.2**
JMK	**Ichinoseki**	**0.55**	**299**	P	**Pn**	**20 46 58.6**	**+0.2**
JMK				*i* S	**Sn**	**20 47 06.9**	**-0.1**
MIYJ	**Miyakonagasawa**	**0.89**	**359**	P	**Pn**	**20 47 02.9**	**+0.2**
MIYJ				S	**Sn**	**20 47 14.0**	**-0.7**
JOM	**Ohasama**	**0.90**	**332**	P	**Pn**	**20 47 03.0**	**+0.2**
JOM				S	**Sn**	**20 47 14.5**	**-0.3**
JOU	**Okura**	**0.98**	**251**	P	**Pn**	**20 47 04.0**	**+0.1**
JOU				S	**Sn**	**20 47 16.7**	**-0.1**
JMM	**Marumori**	**1.16**	**226**	P	**Pn**	**20 47 06.4**	**+0.1**
JMM				S	**Sn**	**20 47 20.7**	**-0.4**
JRG	**Rokugo**	**1.18**	**307**	P	**Pn**	**20 47 06.7**	**+0.1**
JYK	**Kaneyama**	**1.18**	**282**	P	**Pn**	**20 47 06.7**	**+0.1**
JKZ	**Kuzumaki**	**1.36**	**343**	P	**Pn**	**20 47 09.4**	**+0.4**
MJAR	**Matsushiro Arr**	**3.59**	**235**	Pn	**Pn**	20 47 43.0	+3.4
	0.6nm,0.3s,baz=41,slow=12,SNR=7.1						
ZALV	**Zalesovo Beam**	**41.07**	**311**	P	**P**	**20 54 24.9**	**+0.2**
	0.3nm,0.3s,baz=89,slow=12,SNR=3.4						
MKAR	**Makanchi Array**	**43.55**	**301**	P	**P**	**20 54 45.0**	**0.0**
	0.3nm,0.5s,baz=87,slow=8.9,SNR=5.5						
KURBB	**Kurchatov Arra**	**45.27**	**307**	P	**P**	**20 54 58.5**	**-0.1**
	1.3nm,0.6s,baz=83,slow=8.4,SNR=13						

*NIED **10** 20:54:00, 39.°20N×144.°50E, h5km, Mw3.7 Best double couple: M0 3.98000×10^14 NP1:φs344.00000°, δ16.00000°, λ-117.00000°. NP2:φs192.00000°, δ76.00000°, λ-83.00000°.*
*ISCJB **10** 20:54:30.2±0.8, 38.°99N±0.°09×144.°70E±0.°08, h19km, mb3.5/7, MS3.4/2, Error ellipse: s-maj=13.3km s-min=7.7km az=160.6*
*JMA **10** 20:54:33.6±0.3, 39.°20N×144.°53E, h38km, M3.9*
*IDC **10** 20:54:34.6±4.2, 38.°88N×144.°80E, h42km±39km, mb3.2/7, mb1 3.5/9, mb1mx3.3/39, mbtmp3.5/9, ML3.0/2, MS3.4/2, Ms1 3.4/2, ms1mx2.6/24, Error ellipse: s-maj=30.2km s-min=20.1km az=101.0

0.6nm,0.3s,baz=15,slow=7.6,SNR=29
YKA Yellowknife Ar 60.73 32 P **P** **21 04 42.3 +0.1**
0.1nm,0.7s,baz=301,slow=7.2,SNR=3.3
ASAR Alice Springs 63.24 191 P **P** **21 04 58.2 -1.3**
0.7nm,0.9s,baz=8.3,slow=7.0,SNR=4.5
FINES FINESS Array B 68.16 333 P **P** **21 05 30.1 -0.7**
0.9nm,0.7s,baz=42,slow=4.3,SNR=4.7

NEIC ***10*** *21:02:42.5, 36°.53N× 116°.97W, h13km, ML2.6(REN), ML2.9(PAS), After REN.*
ISC 10 21:02:42.4±0.9, 36°.52N±0°.02× 116°.98W±0°.02, h13km±6km, n40, σ0s85/60, California-Nevada border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FURC	**Furnace Creek,**	**0.11**	**121**	P	**Pg**	**21 02 45.3**	**-0.1**
	baz=298,SNR=1000						
FURC				S	**Sg**	**21 02 47.7**	**+0.1**
	baz=298						
DAC	**Darwin (Calif)**	**0.55**	**244**	*e*Pg	**Pg**	**21 02 52.9**	**-0.4**
DAC				*e*S	**Sg**	**21 02 59.8**	**-0.8**
GRAC	**Grapevine Rang**	**0.56**	**327**	P	**Pg**	**21 02 53.6**	**+0.2**
	baz=148,SNR=32						
GRAC				S	**Sb**	**21 03 01.8**	**-0.3**
	baz=148						
MPMC	**Manuel Prospec**	**0.62**	**222**	P	**Pg**	**21 02 54.0**	**-0.5**
	baz=40,SNR=176						
MPMC				S	**Sg**	**21 03 02.1**	**-0.7**
	baz=40						
TPNV	**Topopah Spring**	**0.72**	**54**	P	**Pg**	**21 02 56.4**	**-0.1**
	baz=235						
TPNV				S	**Sb**	**21 03 07.9**	**+1.1**
	baz=235						
SHOC	**Shoshone, Teco**	**0.84**	**137**	P	**Pg**	**21 02 58.6**	**-0.1**
	baz=317,SNR=16						
SHOC				S	**Sb**	**21 03 10.5**	**+0.4**
	baz=317						
TIN	**Tinemaha, Big**	**1.14**	**298**	S	**Sg**	**21 03 19.5**	**+0.4**
	baz=118						
LRMC	**Laurel Mtn Rad**	**1.19**	**209**	P	**Pn**	**21 03 04.5**	**-0.3**
	baz=28,SNR=110						
LRMC				S	**Sb**	**21 03 20.5**	**+0.4**
	baz=28						
GSC	**Goldstone, Bar**	**1.23**	**173**	P	**Pn**	**21 03 05.6**	**+0.3**
	baz=353,SNR=151						
GSC				S	**Sg**	**21 03 22.3**	**+0.3**
	baz=353						
TUQ	**Turquoise Moun**	**1.38**	**141**	P	**Pn**	**21 03 07.8**	**+0.4**
	baz=322,SNR=23						
TUQ				S	**Sg**	**21 03 27.1**	**+0.2**
	baz=322						
ISA	**Isabella, Lake**	**1.48**	**235**	Pg	**Pb**	**21 03 10.1**	**+0.3**
	baz=54						
ISA				S	**Sn**	**21 03 28.4**	**+0.3**
	baz=54						
ISA	**Isabella, Lake**	**1.48**	**235**	*e*Pn	**Pg**	**21 03 10.7**	**-0.2**
RRX	**Edison Barstow**	**1.64**	**180**	Sb	**Sg**	**21 03 35.0**	**-0.2**
HEC	**Hector,Ludlow**	**1.77**	**163**	P	**Pn**	**21 03 13.4**	**+0.7**
	baz=343,SNR=11						
HEC				Sb	**Sg**	**21 03 39.0**	**-0.3**
	baz=343						
EDW2	**Edwards Air Fo**	**1.83**	**207**	Pb	**Pb**	**21 03 16.4**	**+0.7**
	baz=26,SNR=32						
EDW2				S	**Sn**	**21 03 36.6**	**-0.1**
	baz=26						
MLAC	**Mammoth, Mammo**	**1.85**	**307**	Pb	**Pb**	**21 03 16.8**	**+0.6**
	baz=126						
GMRC	**Granite Mounta**	**2.04**	**148**	P	**Pn**	**21 03 16.9**	**+0.4**
	baz=328,SNR=15						
GMRC				Sb	**Sg**	**21 03 47.2**	**-0.8**
	baz=328						
LDFC	**Landfair**	**2.10**	**133**	*e*Pn	**Pg**	**21 03 22.3**	**-0.3**
NV11	**Mina Array Sit**	**2.12**	**334**	*e*Pn	**Pb**	**21 03 21.6**	**+0.8**
R11A	**Troy Canyon, C**	**2.13**	**31**	P	**Pn**	**21 03 18.9**	**+1.0**
	baz=212						
R11A				Sb	**Sg**	**21 03 50.4**	**-0.6**
	baz=212						
BBRC	**Big Bear Solar**	**2.26**	**179**	Pg	**Pg**	**21 03 25.5**	**-0.1**
	baz=358						
BFSC	**Mount Baldy Ra**	**2.35**	**194**	Pg	**Pg**	**21 03 27.1**	**-0.2**
	baz=13						
OSI	**Osito Audit: C**	**2.38**	**217**	Pg	**Pg**	**21 03 27.3**	**-0.7**
	baz=36						
OSI	**Osito Audit: C**	**2.38**	**217**	*e*Pn	**Pg**	**21 03 27.1**	**-0.8**
MWC	**Mount Wilson**	**2.46**	**201**	*e*Pn	**Pg**	**21 03 29.2**	**-0.3**
DECC	**Green Verdugo**	**2.52**	**206**	Pg	**Pg**	**21 03 30.6**	**-0.1**
	baz=25						
NEE2	**Needles Airpor**	**2.60**	**132**	Sb	**Sg**	**21 04 04.9**	**-1.1**
	baz=313						
BELC	**Belle Mtn. Jos**	**2.64**	**162**	Sb	**Sg**	**21 04 05.8**	**-1.5**
	baz=342						
WAKR	**Walker**	**2.78**	**316**	*e*Pn	**Pg**	**21 03 34.7**	**-0.9**
IRM	**Iron Mountain**	**2.80**	**147**	Sb	**Sg**	**21 04 10.6**	**-1.6**
	baz=328						
W13A	**Hualapai Mount**	**2.89**	**119**	*e*Pn	**Pg**	**21 03 36.8**	**-1.0**
PFO	**Pinyon Flats O**	**2.94**	**171**	Sb	**Sg**	**21 04 14.5**	**-2.2**
	baz=352						
PFO	**Pinyon Flats O**	**2.94**	**171**	*e*Pn	**Pn**	**21 03 29.2**	**+0.4**
PFO				*e*Sn	**Sn**	**21 04 05.1**	**+1.1**
CMB	**Columbia Colle**	**3.11**	**300**	*e*Pn	**Pn**	**21 03 30.9**	**-0.2**
CMB				*e*Sn	**Sn**	**21 04 09.1**	**+1.0**
BC3	**Big Chuckawall**	**3.12**	**156**	Sb	**Sg**	**21 04 20.8**	**-1.9**
	baz=337						
KNB	**Kanab**	**3.37**	**80**	*e*Pn	**Pb**	**21 03 42.7**	**+0.6**
BMN	**Battle Mountai**	**3.91**	**357**	Pn	**Pn**	**21 03 41.1**	**-1.1**
BMN				*e*Pg	**Pg**	**21 03 55.9**	**-1.3**
ELK	**Elko**	**4.43**	**17**	*e*Pg	**Pg**	**21 04 06.2**	**-1.0**
ELK				*e*Sn	**Sn**	**21 04 41.3**	**+0.3**
WUAZ	**Wupatki**	**4.65**	**101**	*e*Pn	**Pn**	**21 03 52.1**	**-0.4**
WUAZ				*e*Pg	**Pg**	**21 04 10.2**	**-1.3**
DUG	**Dugway, Tooele**	**4.92**	**41**	*e*Pn	**Pn**	**21 03 57.6**	**+1.6**
DUG				*e*Pg	**Pg**	**21 04 14.6**	**-1.8**

ISCJB ***10*** *21:02:51.1±1.9, 39°.8N±0°.2× 143°.7E±0°.3, h6km, mb3.4/5, Error ellipse: s-maj=38.3km s-min=21.6km az=6.8*
IDC ***10*** *21:02:52.4±2.0, 39°.85N× 143°.65E, h0km, mb3.5/5, mb1 3.6/6, mb1mx3.4/42, mbtmp3.5/6, ML3.1/1, Error ellipse: s-maj=53.9km s-min=26.4km az=78.0*
ISC 10 21:02:53.4±2.0, 39°.9N±0°.2× 143°.6E±0°.3, h6km, n6, σ0s31/6, mb3.5/5, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MJAR	**Matsushiro Arr**	**5.40**	**234**	Pn	**Pn**	**21 04 14.6**	**+0.1**
	0.7nm,0.3s,baz=44,slow=12,SNR=12						
SONM	**Songino Array**	**27.81**	**299**	P	**P**	**21 08 42.8**	**-0.4**
	0.5nm,0.6s,baz=90,slow=8.5,SNR=6.3						
ZALV	**Zalesovo Beam**	**41.38**	**310**	P	**P**	**21 10 40.0**	**0.0**
	0.3nm,0.5s,baz=99,slow=6.3,SNR=2.6						
MKAR	**Makanchi Array**	**44.16**	**300**	P	**P**	**21 11 02.9**	**+0.1**
	0.4nm,0.8s,baz=93,slow=7.3,SNR=3.9						
WRA	**Warramunga Arr**	**60.11**	**190**	P	**P**	**21 13 01.4**	**-0.1**
	0.4nm,0.8s,baz=8.4,slow=7.0,SNR=3.7						
FINES	**FINESS Array B**	**67.13**	**332**	P	**P**	**21 13 47.7**	**+0.2**
	0.9nm,0.8s,baz=46,slow=8.3,SNR=3.2						

IDC ***10*** *21:04:50.6±0.7, 27°.19N× 143°.60E, h0km, mb3.7/13, mb1 3.9/15, mb1mx3.8/44, mbtmp3.7/15, ML2.9/2, MS4.1/2, Ms1 4.1/2, ms1mx2.7/48, Error ellipse: s-maj=19.3km s-min=16.7km az=118.0*
ISCJB ***10*** *21:04:53.8±0.6, 27°.19N±0°.08× 143°.49E±0°.06, h33km, mb3.8/16, MS4.1/2, Error ellipse: s-maj=12.4km s-min=7.4km az=162.9*
NEIC ***10*** *21:04:55.8±0.5, 27°.21N× 143°.49E, h35km, mb4.4/3, Error ellipse: s-maj=13.6km s-min=11.3km az=92.0*
ISC 10 21:04:55.9±0.8, 27°.2N±0°.1× 143°.43E±0°.09, h35km, n23, σ1s07/23, mb3.7/16, Bonin Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CBIJ	**Chichi jima**	**1.11**	**264**	*e*P	**Pn**	**21 05 14.1**	**-1.0**
CBIJ				*e*S	**Sn**	**21 05 29.2**	**0.0**
JCJ	**Chichijima**	**1.11**	**264**	Pn	**Pn**	**21 05 14.2**	**-0.8**
	68nm,0.3s,baz=284,slow=22,SNR=134						
JCJ				Sn	**Sn**	**21 05 28.0**	**-1.2**
	134nm,0.3s,baz=284,slow=22,SNR=23						
MJAR	**Matsushiro Arr**	**10.29**	**336**	Pn	**Pn**	**21 07 19.6**	**-1.4**
	0.8nm,0.3s,baz=154,slow=11,SNR=8.0						
USRK	**Ussuriysk Ar.**	**19.28**	**334**	P	**Pn**	**21 09 17.9**	**-0.9**
	0.0nm,0.3s,baz=107,slow=6.6,SNR=5.6						
KLR	**Kul'dur**	**23.75**	**341**	P	**P**	**21 10 04.8**	**-0.1**
	0.7nm,0.4s,baz=134,slow=11,SNR=4.2						

SONM	**Songino Array**	**35.39**	**316**	P	**P**	**21 11 50.0**	**+1.5**
	0.4nm,0.6s,baz=117,slow=9.5,SNR=4.5						
PMG	**Port Moresby**	**36.59**	**174**	LR	LR	21 23 51.2	
	comp=Z,217nm,21.3s,baz=132,slow=31						
CMAR	**Chiang Mai Arr**	**41.73**	**268**	P	**P**	**21 12 43.4**	**+1.4**
	0.5nm,0.4s,baz=82,slow=6.5,SNR=3.8						
WRAB	**Tennant Creek**	**47.70**	**192**	*e*P	**P**	**21 13 28.6**	**-0.6**
	2.8nm,0.5s						
WRA	**Warramunga Arr**	**47.71**	**192**	P	**P**	**21 13 29.4**	**+0.1**
	2.4nm,0.6s,baz=13,slow=8.4,SNR=21						
ZALV	**Zalesovo Beam**	**50.12**	**319**	P	**P**	**21 13 49.4**	**+1.9**
	0.6nm,0.6s,baz=92,slow=8.9,SNR=3.5						
MKAR	**Makanchi Array**	**51.24**	**310**	P	**P**	**21 13 58.0**	**+1.8**
	0.6nm,0.9s,baz=92,slow=8.5,SNR=5.1						
ASAR	**Alice Springs**	**51.42**	**191**	P	**P**	**21 13 57.2**	**-0.4**
	0.5nm,0.6s,baz=10,slow=9.0,SNR=7.4						
KURK	**Kurchatov**	**53.68**	**314**	*e*P	**P**	**21 14 14.1**	**0.0**
	4.4nm,0.7s						
ILAR	**Eielson Array**	**57.07**	**29**	P	**P**	**21 14 37.2**	**-1.0**
	0.7nm,0.8s,baz=264,slow=6.6,SNR=6.6						
INK	**Inuvik**	**62.45**	**25**	P	**P**	**21 15 15.4**	**+0.3**
	0.9nm,0.7s,baz=280,slow=6.0,SNR=5.5						
ARU	**Arti**	**65.00**	**322**	LR	LR	21 45 58.7	
	comp=Z,220nm,20.5s,baz=277,slow=38						
ABKAR	**Akbulak array**	**65.80**	**314**	*e*P	**P**	**21 15 38.2**	**+0.7**
	0.8nm,0.6s						
YKA	**Yellowknife Ar**	**71.50**	**29**	P	**P**	**21 16 12.5**	**-0.3**
	0.5nm,0.7s,baz=293,slow=6.1,SNR=10						
FINES	**FINESS Array B**	**78.31**	**334**	P	**P**	**21 16 52.5**	**+0.4**
	1.4nm,0.9s,baz=46,slow=5.5,SNR=5.5						
NVAR	**Mina Array Bea**	**79.57**	**52**	P	**P**	**21 17 00.3**	**+0.5**
	0.2nm,0.4s,baz=282,slow=6.1,SNR=4.3						
AKASG	**Malin Array Be**	**83.16**	**324**	P	**P**	**21 17 18.0**	**-0.3**
	0.1nm,0.3s,baz=46,slow=5.6,SNR=5.3						
LPAZ	**La Paz**	**148.82**	**76**	PKPbc	**PKPbc**	**21 24 39.5**	**-1.8**
	0.9nm,0.6s,baz=356,slow=4.7,SNR=4.9						

GUC 10 21:14:33.7±0.6, 20°.48S× 69°.04W, h101km±3km, ML3.6, 5C-2D, Northern Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PB08	**IPOC Station P**	**0.35**	**343**	⇑*i*P	Pn	21 14 49.7	+0.5
PB08				*i* S	Sn	21 15 01.7	+0.9
PB08				IAML		21 15 02.5	
	comp=N,2μm,0.3s						
PB01	**IPOC Station P**	**0.70**	**217**	⇑*i*P	Pn	21 14 51.7	+0.3
PB01				*i* S	Sn	21 15 05.5	+0.9
PB01				IAML		21 15 06.2	
	comp=E,2μm,0.2s						
HMBC	**Humberstone**	**0.82**	**284**	⇑*i*P	Pn	21 14 52.8	+0.3
HMBC				*i* S	Sn	21 15 07.6	+1.0
HMBC				IAML		21 15 08.4	
	comp=N,2μm,0.6s						
PB11	**IPOC Station P**	**0.92**	**321**	⇑*i*P	Pn	21 14 54.0	+0.4
PB11				*i* S	Sn	21 15 09.3	+0.9
PB09	**IPOC Station P**	**1.32**	**188**	⇓*i*P	Pn	21 14 58.6	+0.6
PB09				*i* S	Sn	21 15 17.5	+1.0
PB09				IAML		21 15 18.5	
	comp=N,2μm,0.4s						
PSGC	**Pisagua**	**1.34**	**311**	⇑*i*P	Pn	21 14 58.4	+0.2
PSGC				*i* S	Sn	21 15 17.6	+0.8
MNMC	**Minye Minye**	**1.44**	**339**	⇓*i*P	Pn	21 15 00.4	+0.8
MNMC				*i* S	Sn	21 15 20.4	+1.2
MNMC				IAML		21 15 22.4	
	comp=N,2μm,0.7s						

ISCJB ***10*** *21:14:47.2±0.7, 5°.31N±0°.04× 73°.70W±0°.05, h140km±7km, mb3.3/2, Error ellipse: s-maj=8.6km s-min=6.1km az=36.9*
IDC ***10*** *21:14:47.5±0.8, 5°.75N× 74°.09W, h131km±10km, mb3.3/2, mb1 3.5/3, mb1mx3.0/35, mbtmp3.8/3, Error ellipse: s-maj=34.7km s-min=13.3km az=133.0*
RSNC ***10*** *21:14:47.6±1.2, 5°.28N× 73°.73W, h143km±9km, ML3.4*
ISC 10 21:14:46.1±1.3, 5°.25N±0°.05× 73°.71W±0°.05, h153km±9km, n22, σ0s96/28, 1C, Colombia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHIC	**Chingaza**	**0.62**	**182**	⇑*i*P	**Pn**	**21 15 09.3**	**+0.3**
CHIC				*e*S	**Sn**	**21 15 25.9**	**-0.6**
CHIC				*i*		21 15 29.5	
	comp=Z,546nm,0.3s						
ROSC	**El Rosal**	**0.73**	**236**	P	**Pn**	**21 15 11.0**	**+1.4**
	comp=Z,77nm,0.3s,baz=97,slow=5.3,SNR=162						
ROSC				S	**Sn**	**21 15 28.0**	**+0.6**
	comp=Z,37nm,0.3s,baz=263,slow=21,SNR=7.3						
ROSC	**El Rosal**	**0.73**	**236**	*e*S	**Sn**	**21 15 26.7**	**-0.8**
ROSC				*i*		21 15 33.1	
	comp=Z,397nm,0.4s						
TOLC	**Tolima**	**0.89**	**45**	*e*P	Pn	21 15 19.0	+8.1
VILC	**Villavicencio,**	**1.14**	**179**	*i* P	**Pn**	**21 15 12.7**	**+0.2**
VILC				*e*S	**Sn**	**21 15 32.3**	**-0.5**
VILC				*i*		21 15 34.8	
	comp=Z,404nm,0.5s						
NORC	**Norcasia**	**1.19**	**285**	*e*P	**Pn**	**21 15 12.9**	**0.0**
NORC				*e*S	**Sn**	**21 15 33.1**	**-0.3**
YOPC	**Yopal, Colombi**	**1.29**	**86**	*i* P	**Pn**	**21 15 14.9**	**+1.0**
YOPC				*e*S	**Sn**	**21 15 34.3**	**-0.9**
YOPC				*i*		21 15 40.1	
	comp=Z,260nm,0.3s						
BARC	**Barichara**	**1.43**	**22**	*e*P	**Pn**	**21 15 15.3**	**-0.2**
BARC				*e*S	**Sn**	**21 15 36.6**	**-1.4**
BARC				*i*		21 15 42.8	
	comp=Z,411nm,0.7s						
GUYC	**Guyana, Colomb**	**1.67**	**269**	*e*P	**Pn**	**21 15 17.3**	**-0.9**
GUYC				*i*		21 15 45.8	
	comp=Z,118nm,0.2s						
BTLC	**Betulia, Santa**	**1.71**	**15**	*i* P	**Pn**	**21 15 19.0**	**+0.6**
BRRC	**Barranca, Sant**	**1.84**	**0**	*e*P	**Pn**	**21 15 19.8**	**+0.2**
BRRC				*i*		21 15 20.7	
	comp=Z,652nm,0.1s						
GIRC	**Giron, Santand**	**1.89**	**16**	*e*P	**Pn**	**21 15 19.5**	**-0.8**
PRAC	**Prado**	**1.93**	**217**	*i* P	**Pn**	**21 15 21.1**	**+0.5**
HELC	**Santa Helena**	**2.03**	**297**	*e*P	**Pn**	**21 15 22.3**	**+0.2**
HELC				*i*		21 15 51.1	
	comp=Z,92nm,0.4s						
PAMC	**Pamplona, Colo**	**2.30**	**26**	*e*P	**Pn**	**21 15 25.9**	**+0.4**
GRMC	**Gramalote, San**	**2.61**	**20**	*e*S	**Sn**	**21 16 05.1**	**+3.1**
GRMC				*i*		21 16 12.2	
	comp=Z,168nm,0.3s						
GUEC	**Guerrero, Nort**	**2.68**	**17**	*e*P	**Pn**	**21 15 30.0**	**+0.1**
OCAC	**Ocana**	**2.99**	**8**	*e*P	**Pn**	**21 15 33.9**	**+0.2**
OCAC				*e*S	**Sn**	**21 16 10.5**	**0.0**
OCAC				*i*		21 16 20.4	
	comp=Z,182nm,0.5s						
DBBC	**Dabeiba**	**3.04**	**305**	*e*P	**Pn**	**21 15 34.9**	**+0.8**
SDV	**Santo Domingo**	**4.73**	**40**	P	**Pn**	**21 15 56.4**	**+0.2**
	comp=Z,5.3nm,0.3s,baz=228,slow=12,SNR=43						
SDV				S	**Sn**	**21 16 49.4**	**-1.4**
	comp=Z,6.6nm,0.3s,baz=242,slow=23,SNR=18						
YKA	**Yellowknife Ar**	**64.53**	**340**	P	**P**	**21 25 06.2**	**-0.2**
	comp=Z,0.4nm,0.5s,baz=136,slow=6.3,SNR=16						
TORD	**Torodi Ar. Bea**	**74.64**	**78**	P	P	21 26 14.7	+5.5
	comp=Z,0.2nm,0.4s,baz=253,slow=5.8,SNR=9.1						

ISCJB ***10*** *21:16:37.4±2.4, 23°.1S±0°.5× 177°.2W±0°.4, h167km, mb4.3/7, Error ellipse: s-maj=77.2km s-min=27.5km az=145.6*
IDC ***10*** *21:16:40.3±16.0, 23°.15S× 177°.17W, h185km±135km, mb4.0/7, mb1 4.2/7, mb1mx3.6/39, mbtmp4.5/7, Error ellipse: s-maj=91.0km s-min=41.6km az=126.0*
ISC 10 21:16:38.1±1.6, 23°.1S±0°.4× 177°.1W±0°.3, h167km, n15, σ0s71/16, mb4.4/7, 1C-1D, South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CTA	**Charters Tower**	**34.15**	**268**	P	**P**	**21 23 07.8**	**+0.4**
	8.7nm,0.4s,baz=99,slow=10,SNR=14						
PMG	**Port Moresby**	**36.80**	**286**	P	**P**	**21 23 30.2**	**+0.2**
	20nm,0.9s,baz=104,slow=6.9,SNR=4.8						
STKA	**Stephens Creek**	**37.48**	**247**	P	**P**	**21 23 36.1**	**+0.5**
	1.8nm,0.5s,baz=80,slow=7.3,SNR=3.5						
ASAR	**Alice Springs**	**44.79**	**259**	P	**P**	**21 24 35.4**	**-0.1**
	4.2nm,0.4s,baz=97,slow=7.4,SNR=66						
ASAR				PcP	**PcP**	**21 26 14.4**	**-0.3**
	0.5nm,0.5s,baz=111,slow=3.9,SNR=5.6						
WRA	**Warramunga Arr**	**45.12**	**264**	P	**P**	**21 24 36.8**	**-1.3**
	6.4nm,0.6s,baz=90,slow=8.2,SNR=115						
ILAR	**Eielson Array**	**90.67**	**12**	P	**P**	**21 29 21.6**	**+0.5**
	0.6nm,0.5s,baz=219,slow=5.2,SNR=12						
CMAR	**Chiang Mai Arr**	**91.77**	**289**	P	**P**	**21 29 27.6**	**+0.2**
	0.7nm,0.8s,baz=144,slow=3.5,SNR=7.2						
ARCES	**ARCESS Array B**	**131.63**	**350**	PKP	**PKPdf**	**21 35 29.4**	**-0.8**
	2.7nm,0.8s,baz=337,slow=2.8,SNR=5.8						
FINES	**FINESS Array B**	**138.51**	**343**	PKhKP	PKPpre	21 35 34.9	
	1.8nm,0.9s,baz=48,slow=2.1,SNR=4.5						
AKASG	**Malin Array Be**	**145.69**	**330**	PKPbc	**PKPdf**	**21 35 55.9**	**-0.4**
	2.2nm,0.4s,baz=42,slow=4.0,SNR=36						
BRTR	**Keskin Array B**	**149.18**	**310**	PKPbc	**PKPbc**	**21 36 06.6**	**-0.5**
	1.2nm,0.5s,baz=137,slow=5.6,SNR=9.1						
CLL	**Collm**	**150.79**	**347**	⇓*i*PKPbc	**PKPbc**	**21 36 10.8**	**+0.4**
	comp=Z,5.0nm,0.7s						
CLL				⇑*i*PKPab	**PKPab**	**21 36 17.4**	**-0.7**
	comp=Z,3.0nm,0.7s						
DPC	**Dobruska-Polom**	**150.86**	**342**	*e*P	**PKPbc**	**21 36 11.5**	**+0.8**
BRG	**Berggiesshubel**	**150.99**	**346**	*i* PKP	**PKPbc**	**21 36 11.6**	**+0.7**
	comp=Z,5.4nm,0.8s						
KHC	**Kasperske Hory**	**152.70**	**345**	*e*P	**PKPbc**	**21 36 15.9**	**+1.0**

ISCJB ***10*** *21:17:09.0±0.7, 37°.48N±0°.08× 143°.7E±0°.1, h33km, mb3.6/11, Error ellipse: s-maj=15.0km s-min=7.3km az=136.4*
IDC ***10*** *21:17:11.8±5.5, 37°.62N× 143°.66E, h35km±46km, mb3.5/11, mb1 3.6/13, mb1mx3.5/44, mbtmp3.7/13, ML3.3/2, Error ellipse: s-maj=25.6km s-min=20.8km az=132.0*
ISC 10 21:17:11.4±0.9, 37°.54N±0°.10× 143°.7E±0°.1, h35km, n17, σ0s70/16, mb3.6/11, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MJAR	**Matsushiro Arr**	**4.51**	**259**	Pn	**Pn**	**21 18 17.0**	**-0.3**
	2.2nm,0.3s,baz=85,slow=15,SNR=9.7						
MAT	**Matsushiro**	**4.52**	**259**	P	**Pn**	**21 18 18.1**	**+0.8**
MAT				S	**Sn**	**21 19 09.2**	**+0.6**
JHJ	**Hachijo jima 2**	**5.46**	**217**	Pn	**Pn**	**21 18 30.6**	**+0.4**
	2.3nm,0.3s,baz=345,slow=20,SNR=3.5						
JHJ				Sn	**Sn**	**21 19 30.1**	**-1.6**
	8.8nm,0.3s,baz=246,slow=20,SNR=4.1						
SEY	**Seymchan**	**25.97**	**9**	P	**P**	**21 22 41.0**	**+0.5**
	1.1nm,0.7s,baz=180,slow=9.0,SNR=6.9						
H11N2	**WAKE ISLAND Hy**	**26.88**	**125**	T	T	21 51 07.6	
	baz=317,slow=75,SNR=9.1						
H11N1	**WAKE ISLAND Hy**	**26.89**	**125**	T	T	21 51 06.1	
	baz=317,slow=75,SNR=6.3						
H11N3	**WAKE ISLAND Hy**	**26.90**	**125**	T	T	21 51 05.0	
	baz=317,slow=75,SNR=8.0						
SONM	**Songino Array**	**29.04**	**303**	P	**P**	**21 23 08.2**	**0.0**
	0.2nm,0.4s,baz=99,slow=8.9,SNR=4.1						
ZALV	**Zalesovo Beam**	**42.94**	**312**	P	**P**	**21 25 05.8**	**-0.8**
	0.3nm,0.4s,baz=78,slow=7.9,SNR=3.9						
MKAR	**Makanchi Array**	**45.41**	**302**	P	**P**	**21 25 26.4**	**-0.1**
	0.6nm,0.7s,baz=87,slow=8.4,SNR=9.4						
ILAR	**Eielson Array**	**48.08**	**33**	P	**P**	**21 25 47.2**	**0.0**
	0.6nm,0.6s,baz=257,slow=6.4,SNR=6.8						
INK	**Inuvik**	**53.10**	**27**	P	**P**	**21 26 24.5**	**-0.4**
	0.3nm,0.4s,baz=315,slow=7.3,SNR=6.2						
WRA	**Warramunga Arr**	**57.85**	**190**	P	**P**	**21 27 00.7**	**+1.1**
	0.9nm,0.6s,baz=9.2,slow=7.2,SNR=6.6						
YKA	**Yellowknife Ar**	**62.44**	**31**	P	**P**	**21 27 30.4**	**-0.2**
	0.3nm,0.8s,baz=302,slow=6.5,SNR=4.6						
GEYT	**Alibeck**	**65.19**	**300**	P	**P**	**21 27 49.3**	**+0.1**
	0.9nm,0.6s,baz=14,slow=1.8,SNR=3.5						
FINES	**FINESS Array B**	**69.21**	**333**	P	**P**	**21 28 14.1**	**-0.1**
	1.0nm,0.6s,baz=46,slow=11,SNR=5.5						
AKASG	**Malin Array Be**	**75.01**	**323**	P	**P**	**21 28 48.6**	**-0.5**
	0.4nm,0.5s,baz=43,slow=6.0,SNR=4.6						

ISCJB ***10*** *21:19:34.3±0.6, 32°.27N±0°.04× 115°.35W±0°.05, h15km±16km, Error ellipse: s-maj=7.6km s-min=5.4km az=139.7*
ECX ***10*** *21:19:35.3±0.5, 32°.25N× 115°.35W, h7km, MD2.4, ML2.6*
MEX ***10*** *21:19:36.6±0.9, 32°.29N× 115°.34W, h8km±204km, MD3.5*
ISC 10 21:19:34.0±1.1, 32°.26N±0°.03× 115°.36W±0°.03, h18km±2km, n16, σ0s33/21, 4C-6D, California-Baja California border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CPBX	**Cerro Prieto**	**0.16**	**17**	*e*P	**Pg**	**21 19 38.9**	**+0.4**
CPBX				*e*S	**Sg**	**21 19 41.3**	**-0.3**
CPBX				⇑*e*		21 19 43.0	
CPBX				AML	AML	21 19 43.0	
	comp=E,6μm,0.2s						
MBIG	**Mexicali**	**0.20**	**43**	*e*P	**Pb**	**21 19 39.0**	**+0.4**
MBIG				*e*S	**Sb**	**21 19 41.2**	**-0.4**
SGL	**Mount Signal**	**0.50**	**322**	⇓*i*P	**Pg**	**21 19 44.3**	**+0.2**
EMSC	**East Mesa**	**0.57**	**33**	⇑*i*P	**Pb**	**21 19 45.3**	**-0.1**
WESC	**Westside Schoo**	**0.59**	**328**	⇑*e*P	**Pb**	**21 19 46.2**	**+0.5**
YUH	**Yuha Desert**	**0.61**	**309**	⇓*i*P	**Pb**	**21 19 46.2**	**0.0**
COA	**Coachella**	**0.63**	**18**	*i* P	**

ZANG eS Sn 21 35 41.6 +0.7
SOLC Bahia Solano 5.77 67 eP Pn 21 34 33.8 -2.0
BCIP Isla Barro Col 5.93 29 ⇓iP Pn 21 34 38.3 +0.4
BCIP Isla Barro Col 5.93 29 ePn Pn 21 34 38.5 +0.6
comp=Z,366nm,0.5s
BCIP Isla Barro Col 5.93 29 ⇓iP Pn 21 34 38.3 +0.4
BCIP i 21 34 39.2
comp=Z,367nm,0.5s
URSC Urasca 5.94 350 ⇓eP Pn 21 34 36.6 -1.6
POPC Popayan, Colom 6.21 103 eP Pn 21 34 40.2 -1.8
POPC eS Sn 21 35 44.6 -8.5
POPC i 21 35 57.2
comp=Z,74nm,0.2s
CRUC La Cruz 6.25 112 eP Pn 21 34 42.6 0.0
JCR Jicaral 6.32 338 eP Pn 21 34 42.2 -1.1
UPD2 Meteti 6.55 46 ⇓iP Pn 21 34 47.2 +0.7
JTS JuntasAbangare 6.67 341 Pn Pn 21 34 47.1 -1.1
comp=Z,16nm,0.3s,baz=92,slow=11,SNR=148
JTS Sn Sn 21 36 01.6 -2.5
comp=Z,5.2nm,0.3s,baz=91,slow=23,SNR=5.4
VCR Vista de Mar 6.78 335 eP Pn 21 34 48.8 -0.9
VCR eS Sn 21 36 03.0 -3.7
ROSC El Rosal 8.44 84 Pn Pn 21 35 13.9 +1.1
comp=Z,8.8nm,0.3s,baz=120,slow=15,SNR=9.2
ROSC LR LR 21 38 23.1
comp=Z,715nm,21.4s,baz=296,slow=37
PAYG Puerto Ayora 8.83 239 ePn Pn 21 35 18.5 +0.7
comp=Z,359nm,1.4s
ATAH Atahualpa 11.83 158 Pn Pn 21 36 01.4 +2.2
comp=Z,1.1nm,0.3s,baz=356,slow=8.1,SNR=7.0
ATAH LR LR 21 40 20.1
comp=Z,4μm,19.3s,baz=336,slow=36
SDV Santo Domingo 12.99 67 Pn Pn 21 36 15.4 +0.4
comp=Z,1.9nm,0.3s,baz=251,slow=11,SNR=21
SDV LR LR 21 40 58.8
comp=Z,1μm,21.5s,baz=242,slow=36
NNA Nana 16.88 160 ePn Pn 21 37 06.8 +0.3
comp=Z,266nm,1.2s
TEIG Tepich 17.06 342 LR LR 21 42 53.5
comp=Z,324nm,21.1s,baz=198,slow=34
SDDR Presa de Saban 18.67 36 eP P 21 37 27.6 -0.6
comp=Z,63nm,1.1s
SJG San Juan 21.49 48 P P 21 37 59.0 +0.1
comp=Z,37nm,0.9s,baz=240,slow=7.0,SNR=5.6
SJG LR LR 21 46 15.6
comp=Z,222nm,21.9s,baz=260,slow=37
SJG San Juan 21.49 48 eP P 21 37 57.5 -1.4
ARE Arequipa 23.13 152 eP P 21 38 20.0 +3.3
PTGA Pitinga 23.23 101 P P 21 38 18.8 +1.3
comp=Z,10nm,0.9s,baz=284,slow=12,SNR=9.7
PTGA LR LR 21 47 30.8
comp=Z,722nm,18.9s,baz=284,slow=37
SAML Samuel 23.33 123 eP P 21 38 17.1 -1.3
comp=Z,74nm,1.4s
LPAZ La Paz 24.76 145 P P 21 38 34.6 +2.1
comp=Z,87nm,1.2s,baz=337,slow=12,SNR=28
LPAZ LR LR 21 49 41.0
comp=Z,618nm,20.8s,baz=299,slow=40
SIV San Ignacio 29.19 133 LR LR 21 51 15.5
comp=Z,1μm,18.3s,baz=340,slow=37
MIAR Mount Ida 32.07 343 eP P 21 39 36.8 -0.2
comp=Z,14nm,1.2s
TXAR Lajitas Array 32.11 324 P P 21 39 38.2 +0.6
comp=Z,0.5nm,0.6s,baz=134,slow=10,SNR=4.2
TXAR LR LR 21 51 32.4
comp=Z,140nm,21.1s,baz=0.0,slow=34
LPIG La Paz 33.28 310 LR LR 21 50 22.1
comp=Z,186nm,21.2s,baz=178,slow=31
TUL1 Leonard 34.01 341 eP P 21 39 54.6 +0.6
comp=Z,16nm,1.1s
MNTX Cornudas Mount 34.85 325 eP P 21 40 02.5 +1.1
comp=Z,22nm,1.4s
121A Cookes Peak, D 36.86 323 eP P 21 40 19.9 +1.1
comp=Z,22nm,1.4s
ANMO Albuquerque 37.88 327 LR LR 21 56 20.1
comp=Z,176nm,21.2s,baz=133,slow=37
ANMO Albuquerque 37.88 327 eP P 21 40 28.4 +1.0
comp=Z,13nm,1.0s
CPUP Villa Florida 38.87 142 P P 21 40 36.3 +0.7
comp=Z,3.2nm,0.9s,baz=342,slow=9.4,SNR=4.2
CPUP LR LR 21 59 49.5
comp=Z,358nm,19.0s,baz=326,slow=41
BDFB Brasilia 39.50 120 LR LR 21 57 39.1
comp=Z,517nm,19.1s,baz=281,slow=37
SDCO Great Sand Dun 39.56 331 eP P 21 40 43.2 +1.6
comp=Z,22nm,1.3s
MVCO Mesa Verde 40.67 328 eP P 21 40 53.3 +2.6
comp=Z,22nm,1.3s
WUAZ Wupatki 41.07 323 eP P 21 40 54.7 +0.7
comp=Z,12nm,0.9s
ISCO Idaho Springs 41.26 333 eP P 21 40 54.0 -1.6
comp=Z,34nm,1.9s
SMCO Snowmass 41.40 331 eP P 21 40 57.9 +0.9
comp=Z,31nm,1.7s
ECSD EROS Data Cent 41.48 345 eP P 21 40 57.4 +0.4
comp=Z,14nm,1.5s
RSSD Black Hills 44.20 338 eP P 21 41 18.8 -0.6
comp=Z,6.0nm,0.7s
PDAR Pinedale Array 45.42 332 P P 21 41 29.1 0.0
comp=Z,1.3nm,1.0s,baz=116,slow=10,SNR=6.1
PDAR PcP PcP 21 43 08.7 +0.4
comp=Z,0.1nm,0.5s,baz=127,slow=3.9,SNR=2.2
PDAR LR LR 22 02 17.9
comp=Z,261nm,18.7s,baz=152,slow=39
HWUT Hardware Ranch 45.52 330 eP P 21 41 31.5 +1.7
comp=Z,12nm,1.1s
HWUT ePcP PcP 21 43 09.6 +1.0
PLCA Paso Flores 45.84 167 P P 21 41 32.7 +0.4
comp=Z,8.8nm,1.1s,baz=6.8,slow=7.3,SNR=9.3
REDW Red Top Meadow 46.48 332 eP P 21 41 38.4 +0.9
comp=Z,21nm,1.4s
NVAR Mina Array Bea 47.18 321 P P 21 41 44.8 +1.8
comp=Z,2.6nm,0.7s,baz=135,slow=7.1,SNR=27
NVAR LR LR 22 01 26.9
comp=Z,372nm,18.8s,baz=144,slow=36
ULM Lac du Bonnet 47.46 349 P P 21 41 44.3 -0.4
comp=Z,2.0nm,0.5s,baz=160,slow=7.9,SNR=4.1
RCBR Riachuelo 47.77 101 LR LR 22 01 39.7
comp=Z,309nm,19.4s,baz=276,slow=36
DGMT Dagmar 48.01 341 eP P 21 41 50.7 +1.6
comp=Z,18nm,1.0s
BOZ Bozeman (W) 48.59 333 eP P 21 41 54.8 +1.1
comp=Z,9.7nm,1.3s
WVOR Wild Horse Val 49.89 325 eP P 21 42 04.4 +0.7
comp=Z,16nm,1.2s
YBH Yreka Blue Hor 51.86 322 P P 21 42 18.3 -0.2
comp=Z,3.7nm,1.0s,baz=141,slow=4.9,SNR=4.6
FCC Fort Churchill 55.38 353 eP P 21 42 43.0 -0.8
comp=Z,7.7nm,1.1s
YKA Yellowknife Ar 63.00 344 P P 21 43 37.4 +0.8
comp=Z,2.0nm,0.7s,baz=141,slow=6.3,SNR=46
INK Inuvik 72.66 342 P P 21 44 37.4 +0.1
comp=Z,2.1nm,1.0s,baz=112,slow=9.7,SNR=5.7
EGAK Eagle 73.40 338 eP P 21 44 45.6 +3.8
comp=Z,30nm,1.4s
SUMG Summit 73.72 13 eP P 21 44 43.8 -0.3
comp=Z,14nm,1.0s
ESDC Sonseca Array 78.85 50 P P 21 45 13.1 -0.5
comp=Z,1.9nm,0.7s,baz=266,slow=5.7,SNR=9.5
TORD Torodi Ar. Bea 83.70 77 P P 21 45 39.4 -0.3
comp=Z,1.7nm,1.0s,baz=272,slow=4.0,SNR=6.1
GERES GERESS Array B 91.30 41 P P 21 46 16.2 +0.3
comp=Z,0.4nm,0.9s,baz=338,slow=7.4,SNR=2.6
ZALV Zalesovo Beam 121.38 9 PKP PKPdf 21 52 04.3 +1.0
comp=Z,0.3nm,0.5s,baz=248,slow=2.0,SNR=2.4
KURK Kurchatov 123.24 14 PKP PKPdf 21 52 07.3 +0.3
KURBB Kurchatov Arra 123.31 14 PKP PKPdf 21 52 07.3 +0.2
comp=Z,0.3nm,0.5s,baz=335,slow=1.9,SNR=4.1
MKAR Makanchi Array 127.77 13 PKP PKPdf 21 52 15.2 -0.6
comp=Z,0.9nm,1.0s,baz=42,slow=2.3,SNR=3.5
SONM Songino Array 127.82 352 PKP PKPdf 21 52 15.9 -0.2
comp=Z,0.5nm,0.8s,baz=334,slow=3.4,SNR=4.3
ASAR Alice Springs 139.57 238 PKP PKPdf 21 52 37.0 -1.6
comp=Z,0.5nm,0.6s,baz=128,slow=3.7,SNR=4.4
WRA Warramunga Arr 140.53 243 PKP PKPdf 21 52 39.1 -1.3
comp=Z,0.6nm,0.7s,baz=122,slow=2.6,SNR=7.4
PYUN Piuthan 145.30 22 eP PKPbc 21 52 48.8 +0.2
comp=Z,32nm,0.7s
KOLN Koldanda 145.83 22 eP PKPbc 21 52 50.3 0.0
comp=Z,16nm,0.8s
GKN Gorkha 145.99 20 eP PKPab 21 52 51.4 +0.2
comp=Z,62nm,1.1s
KKN Kakani 146.40 19 eP PKPbc 21 52 52.5 +0.4
comp=Z,11nm,0.7s
GUN Gumba 146.48 18 eP PKPbc 21 52 52.7 +0.2
PKIN Phulchoki 146.63 19 eP PKPbc 21 52 52.7 -0.1
comp=Z,6.1nm,0.7s

TAPN Taplejung 147.55 16 eP PKPbc 21 52 55.2 -0.2
comp=Z,20nm,0.9s
RAMN Ramite 147.60 18 eP PKPbc 21 52 54.8 -0.7
comp=Z,31nm,1.0s
ODAN Odare 147.92 17 eP PKPbc 21 52 55.4 -1.0
comp=Z,13nm,0.8s
CMAR Chiang Mai Arr 157.68 356 PKP PKPdf 21 53 07.7 +0.1
comp=Z,0.1nm,0.3s,baz=193,slow=3.7,SNR=2.7

NIED ***10*** *21:35:00,36.70N×141.20E,h56km,Mw5.1 Best double couple: M₀4.69000×10¹⁶ NP1:φs10.00000°,δ38.00000°, λ97.00000°. NP2:φs181.00000°,δ53.00000°,λ85.00000°.*
BJI ***10*** *21:35:51.8,36.62N×141.09E,h55km,mb4.8/76,mB5.0/50, Ms4.4/78,Ms7 4.3/72*
MOS ***10*** *21:35:52.1±0.8,37.00N×141.01E,h35km,mb5.3/94, MS4.2/16,Error ellipse: s-maj=6.4km s-min=4.3km az=99.4*
NEIC ***10*** *21:35:52.6±0.1,36.77N×140.99E,h35km,mb5.2/216, Error ellipse: s-maj=3.8km s-min=2.6km az=150.0*
NEIC Felt at Atsugi, Chiba and Narita. Recorded [4 JMA] in Fukushima and Ibaraki.
GCMT ***10*** *21:35:52.6±0.3,36.75N×141.23E,h49km,MW5.1/85, Moment Tensor Solution. s59,c78; s85,c136; Duration: 0 Moment tensor: Scale 10¹⁶Nm; Mrr4.38±.18; Mθθ1.02±.13; Mϕϕ-5.40±.12; Mrθ-0.02±.11; Mrϕ-0.14±.10; Mθϕ-1.49±.10; Best double couple: Ms5.11300×10¹⁶ NP1:φs181.00000°,δ53.00000°,λ90.00000°. NP2: φs1.00000°,δ37.00000°,λ90.00000°. Principal axes: T 4.6020, Plg82.0000°, Azm90.0000°; N 1.0230, Plg0.0000°, Azm181.0000°; P -5.6250, Plg8.0000°, Azm271.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
JMA ***10*** *21:35:53.9±0.1,36.74N×141.15E,h53km±1km,M5.1 Broadband fault plane solution: P waves. NP1: φs159.00000°,δ67.00000°,λ74.00000°. NP2:φs16.00000°, δ27.00000°,λ124.00000°. Principal axes: T Plg64.0000°, Azm42.0000°; N Plg15.0000°, Azm165.0000°; P Plg21.0000°, Azm261.0000°;*
JMA Felt IV J1.
ISCJB ***10*** *21:35:54.0±0.3,36.78N±0.02×141.04E±0.02,h60km±2km, mb5.1/310 Error ellipse: s-maj=3.2km s-min=2.3km az=152.8*
IDC ***10*** *21:35:55.2±1.7,36.75N×141.06E,h61km±15km,mb4.6/41, mb1 4.7/48,mb1mx4.7/55,mbtmp4.9/48,MS4.2/34, Ms1 4.2/34,ms1mx4.1/41,Error ellipse: s-maj=10.4km s-min=9.5km az=109.0*

ISC 10 21:35:54.4±0.3,36.79N±0.03×141.10E±0.03,h55km±2km, h54km:pP-P,n1082,σ1§22/1163,mb5.1/315,MS4.3/51, 37C-40D,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
ONAJ	Iwakimizuishiy	0.40	322	⇑P			Pn	21 36 04.6	-0.4
ONAJ				S			Sn	21 36 12.3	-0.2
JHO	Hitachi	0.46	248	⇑P			Pn	21 36 05.1	-0.5
JHO				S			Sn	21 36 13.2	-0.4
JFK	Kawauchi	0.60	343	⇑P			Pn	21 36 07.2	-0.1
JFK				S			Sn	21 36 16.5	-0.1
JYT	Yasato	0.92	233	⇓P			Pn	21 36 10.7	-0.5
JYT				S			Sn	21 36 23.3	-0.3
JFT	Otama	0.95	320	⇓P			Pn	21 36 12.8	+1.2
JFT				eS			Sn	21 36 25.8	+1.5
JMM	Marumori	1.10	347	P			Pn	21 36 13.7	+0.1
JMM				S			Sn	21 36 28.6	+0.7
JFY	Yanaizu	1.28	299	⇓P			Pn	21 36 16.7	+0.7
JFY				eS			Sn	21 36 35.0	+2.9
JAG	Ashikaga	1.38	255	⇓P			Pn	21 36 17.5	+0.2
JAG				eS			Sn	21 36 34.8	+0.3
JKT	Katashina	1.49	270	⇓P			Pn	21 36 19.7	+0.8
I30JP	ISUMI INFRASON	1.61	204	P			Pn	21 36 20.3	-0.2
	baz=19,slow=16,SNR=0.7								
MJAR	Matsushiro Arr	2.34	265	P			Pn	21 36 31.4	+1.0
	822nm,0.3s,baz=89,slow=15,SNR=2498								
MJAR				S			Sn	21 37 02.4	+4.4
	456nm,0.3s,baz=77,slow=18,SNR=8.8								
MJAR				LR			LR	21 37 30.2	
	comp=Z,6μm,20.3s,baz=95,slow=42								
MAJO	Matsushiro	2.34	265	eP			Pn	21 36 32.0	+1.5
MAJO	Matsushiro	2.34	265	ePn			Pn	21 36 32.0	+1.5
MAT	Matsushiro	2.34	265	P			Pn	21 36 31.9	+1.4
MAT				S			Sn	21 37 03.0	+4.9
INU	Inuyama	3.61	248	ePn			Pn	21 36 49.7	+1.9
JHJ	Hachijo jima 2	3.82	197	P			Pn	21 36 50.4	-0.4
	230nm,0.3s,baz=334,slow=18,SNR=97								
JHJ				S			Sn	21 37 33.5	-0.8
	538nm,0.3s,baz=60,slow=22,SNR=11								
JHJ				LR			LR	21 38 26.1	
	comp=Z,2μm,21.6s,baz=30,slow=40								
JHJ2	Mitsune	3.82	196	ePn			Pn	21 36 50.3	-0.4
ERM	Erimo	5.46	16	deP			Pn	21 37 12.3	-0.8
ERM	Erimo	5.46	16	ePn			Pn	21 37 12.2	-0.9
YUK	Yuzh-Kuril'sk	8.10	25	eP			Pn	21 37 45.7	-3.5
YUK				eS			Sn	21 39 12.1	-7.2
YUK				pmax	pmax				
	comp=Z,277nm,0.4s								
YUK				pmax	pmax				
	comp=N,110nm,0.3s								
YUK				pmax	pmax				
	comp=E,64nm,0.3s								
YUK				MLR	MLR				
	comp=Z,1μm,21.0s								
SHO	Shikotan	8.31	30	eP			Pn	21 37 48.3	-3.9
SHO				eS			Sn	21 39 14.7	-10
SHO				pmax	pmax				
	comp=Z,151nm,0.5s								
SHO				pmax	pmax				
	comp=N,24nm,0.2s								
SHO				pmax	pmax				
	comp=E,82nm,0.3s								
JNU	Nakatsue	9.15	249	P			Pn	21 38 04.1	+0.2
	comp=E,2.0nm,0.3s,baz=50,slow=7.8,SNR=40								
JNU				LR			LR	21 41 58.3	
	comp=E,1μm,19.3s,baz=98,slow=40								
JNU	Nakatsue	9.15	249	ePn			Pn	21 38 06.2	+2.4
VLA	Vladivostok	9.48	315	c iP			Pn	21 38 13.2	+4.9
VLA				pmax	pmax				
	comp=Z,235nm,1.3s								
CBIJ	Chichi jima	9.71	174	ePn			Pn	21 38 07.4	-4.0
CBIJ				eSn			Sn	21 39 47.6	-11
JCJ	Chichijima	9.71	174	P			Pn	21 38 07.5	-3.9
	comp=Z,31nm,0.3s,baz=269,slow=22,SNR=36								
JCJ				S			Sn	21 39 47.6	-11
	comp=Z,75nm,0.3s,baz=292,slow=24,SNR=7.6								
KUR	Kuril'sk	9.86	29	ceP			Pn	21 38 12.2	-1.2
KUR				i S			Sn	21 39 56.1	-6.4
KUR				pmax	pmax				
	comp=N,21nm,0.4s								
KUR				pmax	pmax				
	comp=E,17nm,0.4s								
KUR				pmax	pmax				
	comp=Z,44nm,0.4s								
KUR				smax	smax				
	comp=N,148nm,0.6s								
KUR				smax	smax				
	comp=E,71nm,0.6s								
KUR				smax	smax				
	comp=N,412nm,4.3s								
KUR				smax	smax				
	comp=E,501nm,4.3s								
USRK	Ussuriysk Ar.	10.14	320	P			Pn	21 38 19.8	+2.6
	comp=E,1.5nm,0.3s,baz=136,slow=10,SNR=37								
USRK				LR			LR	21 42 05.6	
	comp=E,2μm,18.8s,baz=124,slow=36								
YSS	Yuzh-Sakhalins	10.23	6	⇓eP			Pn	21 38 17.3	-1.1
YSS				eS			Sn	21 40 07.7	-3.9
YSS				pmax	pmax				
	comp=Z,60nm,1.0s								
YSS				MLR	MLR				
	comp=Z,70μm,18.0s								
KSRS	Korea Array	10.55	278	P			Pn	21 38 24.1	+1.3
	comp=Z,2.2nm,0.3s,baz=91,slow=12,SNR=40								
KSRS				LR			LR	21 42 22.5	
	comp=Z,2μm,20.2s,baz=96,slow=37								
KS01	Wonju Array Si	10.57	278	ePn			Pn	21 38 25.3	+2.2
KSAR	Wonju Array Be	10.58	277	P			Pn	21 38 24.1	+0.9
KSAR	Wonju Array Be	10.58	277	P			Pn	21 38 24.1	+0.9
MDJ	Mudanjiang	11.71	315	P			Pn	21 38 43.3	+4.6
MDJ				S			Sn	21 40 54.3	+6.4
MDJ				pmax	pmax				
	comp=Z,66nm,1.2s								
MDJ				pmax	pmax				
	comp=Z,220nm,7.2s								
MDJ				LR	LR				
	comp=Z,770nm,25.0s								
MDJ				LR	LR				
	comp=Z,1μm,19.0s								
MDJ				LR	LR				
	comp=Z,2μm,25.0s								
MDJ	Mudanjiang	11.71	315	ePn			Pn	21 38 44.1	+5.4
CN2	Changchun	13.84	305	⇓P			Pn	21 39 09.9	+2.2
CN2				esP			sP	21 39 28.9	
CN2				eS			Sn	21 41 42.1	+2.5
CN2				pmax	pmax				
	comp=Z,10.0nm,0.7s								
CN2				pmax	pmax				
	comp=Z,200nm,4.0s								
CN2				LR	LR				
	comp=Z,800nm,15.0s								
CN2				LR	LR				
	comp=Z,1μm,15.0s								
CN2				LR	LR				
	comp=Z,1μm,14.0s								
TYV	Tymovskoe	14.11	4	eP			Pn	21 39 08.5	-2.8
TYV				pmax	pmax				
	comp=Z,24nm,0.8s								
TYV				MLR	MLR				
	comp=E,1μm,16.0s								
TYV				MLR	MLR				
	comp=Z,1μm,16.0s								
KLR	Kul'dur	14.18	334	P			Pn	21 39 13.3	+1.1
	comp=Z,0.5nm,0.3s,baz=160,slow=15,SNR=6.1								
KLR				LR	LR			21 44 42.9	
	comp=Z,956nm,18.5s,baz=148,slow=37								
SNY	Shenyang	14.46	296	⇑P			Pn	21 39 16.5	+0.5
SNY				pP			P	21 39 23.3	+2.0
SNY				sP				21 39 28.7	
SNY				S			Sn	21 41 58.7	+3.8
SNY				pmax	pmax				
	comp=Z,44nm,1.6s								
SNY				pmax	pmax				
	comp=Z,340nm,3.0s								
SNY				LR	LR				
	comp=Z,1μm,16.3s								
SNY				LR	LR				
	comp=Z,1μm,19.6s								
SNY				LR	LR				
	comp=Z,2μm,23.0s								
JOW	Kunigami	14.73	231	P			Pn	21 39 20.6	+1.0
	comp=Z,1.9nm,0.3s,baz=104,slow=8.2,SNR=4.2								
DL2	Dalian	15.53	284	P			Pn	21 39 30.1	+0.3
DL2				S			Sn	21 42 20.7	-0.1
DL2				pmax	pmax				
	comp=Z,51nm,1.4s								
DL2				pmax	pmax				
	comp=Z,250nm,3.9s								
DL2				LR	LR				
	comp=Z,680nm,12.7s								
DL2				LR	LR				
	comp=Z,1μm,19.7s								
DL2				LR	LR				
	comp=Z,2μm,20.4s								
NKL	Nikolayevsk	16.36	359	eP			Pn	21 39 34.5	-5.7
NKL				pmax	pmax				
	comp=Z,22nm,1.0s								
NKL				MLR	MLR				
	comp=N,400nm,16.0s								
NKL				MLR	MLR				
	comp=Z,700nm,16.0s								
SSE	Sheshan	17.46	257	P			Pn	21 39 52.0	-2.1
SSE				S			Sn	21 43 07.2	-0.5
SSE				pmax	pmax				
	comp=Z,49nm,1.0s								
SSE				pmax	pmax				
	comp=Z,300nm,11.0s								
SSE				LR	LR				
	comp=Z,540nm,21.1s								
SSE				LR	LR				
	comp=Z,830nm,21.1s								
SSE				LR	LR				
	comp=Z,1μm,20.5s								
NJ2	Nanjing	18.94	262	eP			P	21 40 09.9	-1.0
NJ2				pP			pP	21 40 23.8	+0.8
NJ2				sP			sP	21 40 32.4	+2.5
NJ2				S			S	21 43 36.5	-6.7
NJ2				pmax	pmax				
	comp=Z,29nm,0.9s								
NJ2				pmax	pmax				
	comp=Z,120nm,4.9s								
NJ2				LR	LR				
	comp=Z,640nm,15.2s								
NJ2				LR	LR				
	comp=Z,1μm,19.0s								
NJ2				LR	LR				
	comp=Z,1μm,20.6s								
TIA	Tai'an	19.28	275	⇑P			P	21 40 13.3	-1.3
TIA				pP			sP	21 40 30.7	-3.0
TIA				pmax	pmax				
	comp=Z,30nm,1.8s								
TIA				LR	LR				
	comp=Z,440nm,16.0s								
TIA				LR	LR				
	comp=Z,910nm,16.8s								
TIA				LR	LR				
	comp=Z,950nm,21.4s								
BJI	Beijing	19.78	287	P			P	21 40 19.2	-0.8
BJI				pP			pP	21 40 31.4	-0.8
BJI				sP			sP	21 40 40.9	+1.8
BJI				S			S	21 43 52.8	-7.1
BJI				pmax	pmax				
	comp=Z,45nm,1.6s								
BJI				LR	LR				
	comp=Z,480nm,21.8s								
BJI				LR	LR				
	comp=Z,900nm,29.6s								
BJT	Baijiatuau	19.79	287	eP			P	21 40 19.7	-0.4
BJT				pmax	pmax				
	comp=Z,177nm,1.6s								
BJT	Baijiatuau	19.79	287	eP			P	21 40 19.7	-0.4
	comp=Z,177nm,1.6s								
HIA	Hailar	19.90	316	eP			Pn	21 40 26.8	+3.5
HIA				pmax	pmax				
	comp=Z,25nm,1.3s								
HIA	Hailar	19.90	316	eP			Pn	21 40 26.8	+3.5
	comp=Z,25nm,1.3s								
PEA0	Petropavlovsk-	20.02	30	eP			P	21 40 18.6	-4.0
PETK	Petropavlovsk-	20.02	30	P			P	21 40 21.8	-0.7
	comp=Z,18nm,1.0s,baz=210,slow=8.6,SNR=8.1								
PETK				LR			LR	21 47 47.9	
	comp=Z,505nm,21.8s,baz=220,slow=36								
PEA1	Petropavlovsk-	20.03	30	eP			P	21 40 21.8	-0.8
PET	Petropavlovsk	20.36	32	eP			P	21 40 26.7	+0.6
PET				eS			S	21 44 09.1	-1.9
PET				pmax	pmax				
	comp=Z,87nm,1.3s								
PET				MLR	MLR				
	comp=Z,1μm,19.0s								
PET				MLR	MLR				
	comp=Z,900nm,20.0s								
PET	Petropavlovsk	20.36	32	eP			P	21 40 27.0	+0.9
	comp=Z,107nm,1.2s								
YHNB	Yeheng	20.77	240	eP			P	21 40 30.6	-0.4
	comp=Z,54nm,1.5s								
SSLB	Suanglung	21.64	239	eP			P	21 40 37.3	-2.9
	comp=Z,19nm,1.1s								
TPUB	Ta-pu	22.18	238	eP			P	21 40 42.7	-3.4
	comp=Z,37nm,1.0s								
QZH	Quanzhou	22.58	245	P			P	21 40 46.4	-3.9
QZH				S			S	21 44 44.1	-10
QZH				LR	LR				
	comp=Z,880nm,15.0s								
CLNS	Chul'man	22.81	337	eP			P	21 40 50.8	-1.6
CLNS				e*PP			pP	21 40 58.1	-6.7
CLNS				e				21 41 15.1	
CLNS				e				21 44 42.1	
CLNS				eS			S	21 44 58.3	+0.9
CLNS				eSS			SnSn	21 45 30.6	-1.7
CLNS				e				21 51 56.2	
CLNS				pmax	pmax				
	comp=E,4.0nm,1.0s								
CLNS				pmax	pmax				
	comp=Z,20nm,1.2s								
CLNS				pmax	pmax				
	comp=N,17nm,1.3s								
CLNS				pmax	pmax				

comp=Z,9.0nm,1.0s
CLNS pmax pmax
comp=E,5.0nm,0.9s
CLNS pmax pmax
comp=N,9.0nm,1.4s
CLNS smax smax
comp=E,309nm,11.5s
CLNS smax smax
comp=N,447nm,12.2s
CLNS MLR MLR
comp=N,378nm,16.0s
CLNS MLR MLR
comp=E,534nm,17.0s
CLNS MLR MLR
comp=E,137nm,14.0s
WHN Wuhan 23.08 262⇑ *i*P **P 21 40 53.6 -1.7**
WHN S S 21 44 54.4 -7.8
WHN pmax pmax
comp=E,78nm,0.9s
WHN LR LR
comp=E,910nm,15.7s
WHN LR LR
comp=E,2µm,19.3s
WHN LR LR
comp=E,3µm,23.9s
HHC Hu-ho-hao-te 23.31 289 *e*P **P 21 40 55.8 -1.9**
HHC PP **PnPn 21 41 28.3 +2.7**
HHC S **S 21 45 05.0 -1.2**
HHC SS **SnSn 21 45 53.0 +8.0**
HHC pmax pmax
comp=E,20nm,0.9s
HHC pmax pmax
comp=E,73nm,4.3s
HHC LR LR
comp=E,2µm,12.8s
HHC LR LR
comp=E,3µm,12.9s
HHC LR LR
comp=E,3µm,13.9s
MA2 Magadan 23.64 12 P **P 21 40 59.2 -1.3**
comp=E,15nm,0.5s,baz=216,slow=10,SNR=17
MA2 LR LR 21 50 07.1
comp=E,428nm,21.6s,baz=218,slow=36
YAK Yakutsk 26.25 348 P **P 21 41 23.3 -0.8**
comp=E,13nm,0.3s,baz=183,slow=0.3,SNR=14
YAK LR LR 21 51 58.7
comp=E,465nm,20.6s,baz=121,slow=37
YAK Yakutsk 26.25 348 *e*P **P 21 41 23.7 -0.4**
YAK *e**PP **pP 21 41 35.8 -2.0**
YAK *e* 21 42 03.3
YAK *e* 21 44 48.5
YAK *e*S **S 21 45 51.6 -0.8**
YAK *e*SS **SnSn 21 46 57.2 +0.9**
YAK *e* 21 52 13.7
YAK pmax pmax
comp=Z,56nm,0.9s
YAK pmax pmax
comp=N,26nm,1.1s
YAK pmax pmax
comp=E,11nm,1.1s
YAK pmax pmax
comp=Z,99nm,2.4s
YAK pmax pmax
comp=N,90nm,3.2s
YAK pmax pmax
comp=E,75nm,3.3s
YAK smax smax
comp=N,187nm,2.7s
YAK smax smax
comp=E,58nm,3.4s
YAK Yakutsk 26.25 348 *e*P **P 21 41 23.3 -0.8**
comp=E,61nm,0.9s
XAN Xi'an 26.30 274 P **P 21 41 25.2 +0.2**
XAN pP pP 21 41 39.6 +1.0
XAN sP sP 21 41 47.0 +1.9
XAN PP **PnPn 21 42 06.5 0.0**
XAN S S 21 45 45.4 -8.5
XAN sS sS 21 46 10.2 -7.1
XAN pmax pmax
comp=E,9.0nm,1.0s
XAN pmax pmax
comp=E,53nm,5.4s
XAN LR LR
comp=E,410nm,17.3s
XAN LR LR
comp=E,360nm,18.9s
XAN LR LR
comp=E,360nm,17.3s
ENH Enshi 27.06 265 *e*P **P 21 41 31.1 -0.7**
comp=E,47nm,0.6s
ENH *e*S **S 21 46 08.6 +2.7**
SEY Seymchan 27.08 11 P **P 21 41 31.5 0.0**
comp=E,28nm,0.9s,baz=194,slow=7.5,SNR=35
SEY Seymchan 27.08 11‖ *i*P **P 21 41 32.7 +1.2**
ULN Ulaanbaatar 27.29 305*c i*P **P 21 41 33.3 -0.5**
ULN pmax pmax
comp=Z,23nm,1.2s
ULN Ulaanbaatar 27.29 305 *e*P **P 21 41 33.0 -0.8**
comp=Z,13nm,0.8s
ULN Ulaanbaatar 27.29 305 P **P 21 41 33.4 -0.4**
SNR=14
ULN Ulaanbaatar 27.29 305 P **P 21 41 33.4 -0.4**
SNR=14
BOD Bodaibo 27.60 328 *e*P **P 21 41 35.3 -1.0**
BOD pmax pmax
comp=Z,14nm,1.1s
SONA1 Songino Array 27.71 304 *e*P **P 21 41 36.6 -1.0**
SONA0 Songino Array 27.72 304 *e*P **P 21 41 36.6 -1.0**
comp=Z,22nm,0.7s
SONM Songino Array 27.72 304 P **P 21 41 36.6 -1.0**
comp=Z,21nm,0.8s,baz=107,slow=6.0,SNR=90
SONM LR LR 21 52 52.5
comp=Z,494nm,19.6s,baz=92,slow=37
H11N2 WAKE ISLAND Hy 28.24 120 T T 22 11 49.0
baz=313,slow=75,SNR=183
H11N1 WAKE ISLAND Hy 28.25 120 T T 22 11 49.8
baz=313,slow=75,SNR=397
H11N3 WAKE ISLAND Hy 28.26 120 T T 22 11 50.6
baz=313,slow=75,SNR=216
H11S1 WAKE ISLAND Hy 28.94 122 T T 22 12 37.1
baz=314,slow=76,SNR=109
H11S3 WAKE ISLAND Hy 28.94 122 T T 22 12 42.1
baz=314,slow=76,SNR=1865
H11S2 WAKE ISLAND Hy 28.95 122 T T 22 12 38.3
baz=314,slow=76,SNR=106
LZH Lanzhou 29.86 280 *e*P **P 21 41 57.3 +0.5**
LZH pP pP 21 42 12.0 +1.4
LZH sP sP 21 42 19.5 +2.4
LZH PP **PnPn 21 42 56.0 +1.3**
LZH S **S 21 46 48.3 -1.8**
LZH sS sS 21 47 14.5 +1.0
LZH SS **SnSn 21 48 28.3 +3.4**
LZH pmax pmax
comp=Z,49nm,1.2s
LZH pmax pmax
comp=Z,170nm,4.1s
LZH LR LR
comp=Z,730nm,13.0s
LZH LR LR
comp=Z,1µm,12.7s
LZH LR LR
comp=Z,2µm,16.0s
ZAK Zakamensk 30.23 309 *e*P **P 21 41 58.3 -1.5**
ZAK pmax pmax
comp=Z,6.0nm,1.1s
TLY Talaya 30.30 311 *e*P **P 21 42 01.3 +0.9**
TLY *e*S **S 21 46 58.3 +1.9**
TLY *e*SS **SS 21 48 57.9 -9.2**
TLY pmax pmax
comp=Z,5.0nm,0.6s
TLY MLR MLR
comp=Z,399nm,17.0s
GYA Guiyang 30.93 260⇑ *i*P **P 21 42 05.6 -0.7**
GYA pP pP 21 42 22.8 +2.7
GYA PP **PnPn 21 43 11.2 +2.5**
GYA PcP **PcP 21 45 04.5 +2.8**
GYA S **S 21 47 04.6 -2.4**
GYA sS sS 21 47 33.0 +2.6
GYA ScP **ScP 21 48 40.2 +0.4**
GYA SS **SnSn 21 48 52.8 +1.7**
GYA ScS **ScS 21 52 35.6 -1.4**
GYA pmax pmax
comp=Z,30nm,0.9s
GYA pmax pmax
comp=Z,140nm,5.0s
GYA LR LR
comp=Z,620nm,17.2s
GYA LR LR
comp=Z,560nm,16.9s
GYA LR LR
comp=Z,580nm,17.6s
CD2 Chengdu 31.42 270 P **P 21 42 09.3 -1.2**
CD2 pP pP 21 42 24.5 +0.1
CD2 sP sP 21 42 32.1 +1.3
CD2 S **S 21 47 12.6 -1.8**
CD2 sS sS 21 47 39.2 +1.3
CD2 pmax pmax
comp=Z,20nm,0.7s
CD2 pmax pmax
comp=Z,80nm,5.9s
CD2 LR LR
comp=Z,490nm,8.3s
CD2 LR LR
comp=Z,770nm,16.7s
GTA Gaotai 32.40 287 *e*P **P 21 42 16.4 -2.7**
GTA pP pP 21 42 30.9 -2.0
GTA sP sP 21 42 38.6 -0.8
GTA PP **PnPn 21 43 24.5 -2.9**
GTA PcP **PcP 21 45 06.6 +1.1**
GTA S **S 21 47 23.7 -5.9**
GTA sS sS 21 47 49.6 -3.5
GTA SS **SnSn 21 49 21.0 -5.4**
GTA ScS **ScS 21 52 43.3 -0.6**
GTA pmax pmax
comp=Z,2.0nm,0.7s
GTA pmax pmax
comp=Z,140nm,5.7s
GTA LR LR
comp=Z,290nm,19.0s
GTA LR LR
comp=Z,290nm,20.0s
GTA LR LR
comp=Z,440nm,23.3s
BILL Bilibino 34.33 16*c i*P **P 21 42 34.8 -0.6**
BILL *i* 21 42 41.7
BILL *e**PP **pP 21 42 48.3 -1.0**
BILL *e* 21 43 52.0
BILL *e* 21 50 28.9
BILL pmax pmax
comp=Z,31nm,1.7s
BILL MLR MLR
comp=Z,226nm,19.0s
BILL Bilibino 34.33 16 *e*P **P 21 42 34.9 -0.5**
comp=Z,22nm,1.2s
KMI Kunming 34.68 261 P **P 21 42 38.9 -0.2**
KMI pP pP 21 42 55.5 +2.4
KMI sP sP 21 43 02.0 +2.5
KMI PP **PnPn 21 43 56.6 +0.3**
KMI S **S 21 48 01.6 -3.7**
KMI sS sS 21 48 28.7 -0.2
KMI SS **SnSn 21 50 16.9 -5.2**
KMI pmax pmax
comp=Z,20nm,1.3s
KMI pmax pmax
comp=Z,98nm,4.0s
KMI LR LR
comp=Z,440nm,20.8s
KMI LR LR
comp=Z,550nm,22.5s
KMI LR LR
comp=Z,890nm,20.6s
TIXI Tiksi 35.50 353 P **P 21 42 44.0 -1.4**
comp=Z,3.8nm,0.5s,baz=149,slow=7.5,SNR=13
TIXI LR LR 21 58 57.6
comp=Z,277nm,18.4s,baz=162,slow=39
TIXI Tiksi 35.50 353*c i*P **P 21 42 44.8 -0.6**
TIXI pmax pmax
comp=Z,22nm,1.7s
TIXI Tiksi 35.50 353 *e*P **P 21 42 44.9 -0.5**
KRAR Krasnoyarsk 37.47 316‖ *e*P **P 21 43 02.4 +0.1**
KRAR pmax pmax
comp=Z,9.0nm,0.3s
TNTI Ternate 38.03 203 P **P 21 43 08.6 +1.1**
TNTI Ternate 38.03 203 *e*P **P 21 43 08.0 +0.6**
comp=Z,51nm,0.6s
NONG Nongkai 38.19 251 P **P 21 43 09.5 +0.6**
comp=Z,36nm,0.8s,comp=Z,7µm
SKNT Sakolnakorn 38.23 249 P **P 21 43 10.7 +1.5**
comp=Z,22nm,1.1s
SWI Sorong 38.56 196 P P 21 43 26.0 +14
JAY Jayapura 39.10 181 P **P 21 43 17.4 +0.9**
GENI Genyem 39.19 181 P **P 21 43 18.7 +1.5**
comp=Z,136nm,1.0s
LBMI Labuha 39.32 202 P P 21 43 19.3 +1.0
KHON Khomkaen 39.49 249 P **P 21 43 21.0 +1.3**
comp=Z,16nm,0.7s
MRSI Marisa 40.25 211 P **P 21 43 27.0 +1.0**
FAKI Fak Fak 40.36 194 P **P 21 43 27.5 +0.6**
UTTA Uttaradit 40.36 253 P **P 21 43 27.8 +0.8**
comp=Z,3.6nm,1.1s,comp=Z,61nm
CHAI Chaiyaphum 40.39 250 P **P 21 43 27.3 +0.1**
comp=Z,12nm,1.1s,comp=Z,106nm
LAMP Lampang 40.62 255 P P 21 43 32.6 +3.5
comp=Z,6.3nm,1.1s
WMQ Urumqi 40.73 297 P **P 21 43 31.0 +1.2**
WMQ pP pP 21 43 46.9 +2.9
WMQ PP **PnPn 21 45 09.6 +0.8**
WMQ PcP **PcP 21 45 31.5 +1.1**
WMQ S **S 21 49 37.3 +0.9**
WMQ SS **SS 21 52 35.3 -3.1**
WMQ ScS **ScS 21 53 25.8 -4.2**
WMQ pmax pmax
comp=Z,32nm,0.8s
WMQ pmax pmax
comp=Z,110nm,4.0s
WMQ LR LR
comp=Z,170nm,17.8s
WMQ LR LR
comp=Z,150nm,20.4s
WMQ LR LR
comp=Z,270nm,26.0s
PBKT Sadao Pong 40.75 251 P **P 21 43 30.6 +0.5**
comp=Z,24nm,0.8s,comp=Z,2µm
KMPI Kaimana, Papua 40.83 191 P **P 21 43 33.0 +2.2**
CMMT Chiang Mai 40.99 256 P **P 21 43 32.8 +0.6**
comp=Z,12nm,2.0s,comp=Z,429nm
CHTO Chiang Mai 40.99 256 P **P 21 43 32.8 +0.6**
comp=Z,54nm,1.9s
CHTO Chiang Mai 40.99 256 *e*P **P 21 43 31.8 -0.4**
CHTO pmax pmax
comp=Z,18nm,1.4s
CHTO Chiang Mai 40.99 256 *e*P **P 21 43 31.8 -0.4**
comp=Z,18nm,1.4s
CHTO Chiang Mai 40.99 256 P **P 21 43 33.2 +1.0**
SNR=6.8
CHTO Chiang Mai 40.99 256 P **P 21 43 33.2 +1.0**
SNR=6.8
SANI Sanana 41.12 203 P **P 21 43 33.0 -0.2**
CM31 Chiang Mai Arr 41.19 255 *e*P **P 21 43 34.0 +0.2**
CM31 *e*PcP **PcP 21 45 32.3 +0.1**
CMAR Chiang Mai Arr 41.19 255 P **P 21 43 34.0 +0.2**
comp=Z,4.2nm,0.9s,baz=47,slow=7.2,SNR=25
CMAR PcP **PcP 21 45 32.3 +0.1**
comp=Z,2.8nm,0.9s,baz=23,slow=2.0,SNR=6.6
CMAR LR LR 22 02 57.6
comp=Z,398nm,18.5s,baz=78,slow=39
CM01 Chiang Mai Arr 41.20 255 *e*P P 21 43 29.7 -4.2
SUKH Sukhothai 41.23 254 P **P 21 43 35.3 +1.2**
comp=Z,5.2nm,1.0s,comp=Z,56nm
LUWI Luwuk 41.31 208 P **P 21 43 35.4 +0.7**
MSAI Masohi 41.51 199 P **P 21 43 36.6 +0.2**
SRAK Srakaew 41.54 247 P **P 21 43 34.6 -2.1**
comp=Z,77nm,0.8s,comp=Z,718nm
APSI Ampana 41.63 210 P **P 21 43 37.1 -0.3**
comp=Z,92nm,1.2s,comp=Z,1µm
NAYO Nakonayok 41.88 248 P **P 21 43 41.0 +1.5**
comp=Z,160nm,1.2s
ZAA0 Zalesovo Array 41.90 313 *e*P **P 21 43 38.9 -0.2**
ZAA1 Zalesovo Array 41.90 313 *e*P **P 21 43 39.5 +0.4**
ZAA1 *e*PcP **PcP 21 45 33.9 0.0**
ZALV Zalesovo Beam 41.90 313 P **P 21 43 39.5 +0.4**
comp=Z,13nm,0.5s,baz=95,slow=6.7,SNR=59
ZALV PcP **PcP 21 45 33.9 0.0**
comp=Z,10.0nm,0.9s,baz=95,slow=3.3,SNR=6.0
ZALV LR LR 22 01 55.2
comp=Z,365nm,19.3s,baz=72,slow=37
NLAI Namlea 41.91 201 P **P 21 43 41.8 +2.2**
LSA Lhasa 41.98 275 P **P 21 43 42.3 +1.5**
LSA pmax pmax
comp=Z,15nm,1.3s
LSA Lhasa 41.98 275 *e*P **P 21 43 42.3 +1.5**
LSA pmax pmax
comp=Z,27nm,1.3s
LSA Lhasa 41.98 275 *e*P P **21 43 42.3 +1.5**
comp=Z,27nm,1.3s
CHBT CHBT 42.15 246 P **P 21 43 43.4 +1.8**
comp=Z,41nm,0.8s
PCI Palu 42.38 213 P **P 21 43 43.8 +0.3**
comp=Z,67nm,1.1s,comp=Z,688nm
BNDI Bandanaira 42.41 197 P **P 21 43 46.1 +2.4**
NVS Novosibirsk 42.83 314⇑ *i*P **P 21 43 46.8 +0.1**
NVS *e* 21 45 31.7
NVS *e*S **S 21 50 01.3 -5.6**
NVS pmax pmax
comp=Z,22nm,1.1s
NVS pmax pmax
comp=E,22nm,1.3s
NVS pmax pmax
comp=Z,20nm,1.8s
NVS smax smax
comp=E,69nm,3.1s
SHL Shillong 43.15 269 *e*P P 21 43 55.0 +5.0
SHL *e*S **S 21 50 15.0 +2.3**
SBUM Sibu 43.31 225 *e*P **P 21 43 51.3 +0.2**
comp=E,15nm,1.0s
NRIK Noril'sk 43.38 335 P **P 21 43 51.1 +0.1**
comp=E,6.8nm,0.8s,baz=130,slow=5.6,SNR=12
NRIK PcP **PcP 21 45 38.8 +0.2**
comp=E,10nm,0.9s,baz=123,slow=7.1,SNR=6.0
NRIK LR LR 22 02 59.1
comp=E,383nm,18.6s,baz=109,slow=37
SRDT SRDT 43.51 250 P **P 21 43 53.9 +1.2**
comp=E,50nm,1.4s
KHLT Khaolaem Dam 43.64 251 P **P 21 43 55.7 +2.0**
comp=E,7.3nm,1.8s
BKB Balikpapan 44.03 216 P **P 21 43 57.7 +0.9**
MK32 Makanchi Array 44.04 302 *e*P **P 21 43 56.9 +0.2**
MK32 *e*S **S 21 50 24.2 -0.7**
MKAR Makanchi Array 44.04 302 P **P 21 43 56.9 +0.2**
comp=E,16nm,1.0s,baz=88,slow=9.1,SNR=95
MKAR S **S 21 50 24.3 -0.7**
comp=E,2.0nm,1.1s,baz=86,slow=19,SNR=7.8
MKAR LR LR 22 02 50.3
comp=E,334nm,20.6s,baz=62,slow=37
PHET Kaeng Krachan 44.04 248 P **P 21 43 58.7 +1.8**
comp=E,15nm,0.7s,comp=E,136nm
KDI Kendari 44.05 207 P **P 21 43 58.7 +1.7**
comp=E,9.1nm,0.7s
MAKZ Makanchi 44.25 302 *e*P **P 21 43 58.8 +0.5**
MAKZ pmax pmax
comp=Z,32nm,1.3s
MAKZ Makanchi 44.25 302 *e*P **P 21 43 58.8 +0.5**
comp=Z,32nm,1.3s
MTKI Muara Teweh, K 44.73 219 P **P 21 44 03.9 +1.5**
SPSI Sidrap Palu 45.17 211 P **P 21 44 05.2 -0.6**
KSM Kuching 45.20 226 *e*P **P 21 44 06.7 +0.5**
comp=Z,38nm,0.7s
SAUI Saumlaki 45.48 194 P **P 21 44 05.3 -3.0**
STKI Sintang 45.69 224 P **P 21 44 11.6 +1.5**
comp=Z,40nm,0.6s,comp=Z,19µm
TAPN Taplejung 45.71 274 *e*P **P 21 44 11.2 +0.7**
comp=Z,48nm,0.8s
TT01 Tatalina 45.76 35 *e*P **P 21 44 08.5 -1.6**
TTA Tatalina 45.76 35 *e*P **P 21 44 10.0 -0.2**
TTA pmax pmax
comp=Z,15nm,1.1s
TTA Tatalina 45.76 35 *e*P **P 21 44 10.0 -0.2**
comp=Z,15nm,1.1s
SVW2 Sparrevohn 45.87 37 *e*P **P 21 44 09.2 -1.8**
comp=Z,40nm,1.1s
KURK Kurchatov 45.89 308 P **P 21 44 11.6 +0.4**
KURK S **S 21 50 49.8 -1.6**
KURK pmax pmax
comp=Z,35nm,0.9s
KURK smax smax
comp=N,1.0nm,1.1s
KURK Kurchatov 45.89 308 *e*P **P 21 44 11.0 -0.2**
comp=N,58nm,0.9s
KURK Kurchatov 45.89 308 P **P 21 44 11.1 -0.1**
SNR=26
KURK Kurchatov 45.89 308 P **P 21 44 11.1 -0.1**
SNR=26
KURBB Kurchatov Arra 45.95 308 P **P 21 44 11.6 -0.1**
comp=N,34nm,0.8s,baz=85,slow=7.9,SNR=271
KURBB S **S 21 50 49.8 -2.6**
comp=N,1.0nm,1.1s,baz=82,slow=11,SNR=6.3
KAPI Kappang 46.12 210 *e*P **P 21 44 13.3 -0.1**
comp=N,80nm,1.2s
KBKI Kotabaru 46.16 216 P **P 21 44 15.5 +1.8**
ODAN Odare 46.18 274 *e*P **P 21 44 14.8 +0.7**
comp=N,39nm,0.7s
RAMN Ramite 46.77 274 *e*P **P 21 44 19.4 +0.6**
comp=N,132nm,0.8s
BSSI Bau Bau, Buton 46.86 209 P **P 21 44 21.2 +2.0**
GUN Gumba 46.93 276 *e*P **P 21 44 21.3 +1.2**
BBKI Banjar Baru 46.93 217 P **P 21 44 20.1 +0.3**
RSO Redoubt South 47.25 38 *e*P **P 21 44 20.5 -1.5**
SURT Suratani 47.25 245 P **P 21 44 24.6 +2.3**
comp=N,9.4nm,1.0s,comp=N,188nm
KDAK Kodiak Island 47.45 42 *i*P **P 21 44 23.6 +0.3**
PKIN Phulchoki 47.46 276 *e*P **P 21 44 24.4 +0.2**
comp=N,45nm,1.0s
KKN Kakani 47.46 276 *e*P **P 21 44 25.0 +0.9**
comp=N,79nm,0.8s
PPLA Purkeypile 47.51 35 *e*P **P 21 44 24.3 +0.4**
comp=N,46nm,1.3s
CAST Castle Rocks 47.57 34 *e*P **P 21 44 24.6 +0.4**
comp=N,49nm,1.6s
SPU Mount Spurr 47.58 37 *e*P **P 21 44 23.5 -0.9**
GKN Gorkha 47.88 276 *e*P **P 21 44 28.0 +0.7**
comp=N,151nm,0.9s
PBKI Pangkalan Bun 47.90 221 P **P 21 44 29.4 +2.1**
BPAW Bear Paw Mtn. 48.07 33 *e*P **P 21 44 26.5 -1.6**
comp=N,33nm,1.5s
KTH Kantishna Hill 48.09 34 *e*P **P 21 44 29.9 +1.5**
comp=N,49nm,1.2s
MLY Manley 48.19 32 *e*P **P 21 44 29.7 +0.7**
comp=N,27nm,1.1s
PKDT Phuket 48.30 244 P **P 21 44 32.7 +2.2**
comp=N,36nm,1.1s
TRF Thorofare Moun 48.38 34 *e*P **P 21 44 30.4 -0.2**
comp=N,36nm,1.5s
COLD Coldfoot 48.49 29 *e*P **P 21 44 32.1 +0.9**
comp=N,22nm,1.6s
MMRI Maumere 48.53 205 P **P 21 44 32.9 +0.8**
MMRI Maumere 48.53 205 *e*P **P 21 44 31.9 -0.2**
comp=N,58nm,0.9s
RC01 Rabbit Creek A 48.71 37 *e*P **P 21 44 34.2 +1.2**
comp=N,41nm,1.2s
IPM Ipoh 48.80 239 *e*P **P 21 44 33.6 -0.7**
comp=N,18nm,1.1s
KOLN Koldanda 48.81 277 *e*P **P 21 44 35.3 +0.8**
SEW Seward 48.91 38 *e*P **P 21 44 35.2 +0.7**
comp=N,55nm,1.3s
SOEI Soe 48.93 202 *e*P P 21 44 31.8 -3.5
comp=N,137nm,0.9s
MCK McKinley 48.98 34 *e*P **P 21 44 34.8 -0.3**
MCK pmax pmax
comp=Z,27nm,1.2s
MCK McKinley 48.98 34 *e*P **P 21 44 34.8 -0.3**
comp=Z,27nm,1.2s
RND Reindeer 49.02 34 *e*P **P 21 44 35.8 +0.3**
RND pmax pmax
comp=Z,45nm,1.2s
RND Reindeer 49.02 34 *e*P **P 21 44 35.8 +0.3**
comp=Z,45nm,1.2s
PYUN Piuthan 49.15 277 *e*P **P 21 44 37.9 +0.8**
comp=Z,248nm,1.0s
MDM Murphy Dome 49.26 32 *e*P **P 21 44 38.1 +1.0**
comp=Z,70nm,1.2s
HNR Honiara 49.27 155 LR LR 22 03 44.1
comp=Z,162nm,21.2s,baz=327,slow=34
WRH Wood River Hil 49.33 33 *e*P **P 21 44 38.5 +0.9**
comp=Z,23nm,1.0s
SML Sawmill 49.34 36 *e*P **P 21 44 38.4 +0.5**
SML pmax pmax
comp=Z,20nm,0.9s
SML Sawmill 49.34 36 *e*P **P 21 44 38.4 +0.5**
comp=Z,20nm,0.9s
COLA College 49.42 32⇑ *i*P **P 21 44 38.9 +0.6**
CCB Clear Creek Bu 49.44 32 *e*P **P 21 44 38.1 -0.4**
comp=Z,20nm,1.3s
TKM2 Tokmak 2 49.53 299 *e*P **P 21 44 41.0 +1.2**
TKM2 pmax pmax
comp=Z,27nm,0.7s
TKM2 Tokmak 2 49.53 299 *e*P **P 21 44 41.0 +1.2**
comp=Z,27nm,0.7s
DHY Denali Highway 49.70 34 *e*P **P 21 44 39.3 -1.5**

comp=Z,35nm,1.5s
SCM Sheep Creek Mo 49.81 36 *e*P **P 21 44 41.3 -0.2**
SCM pmax pmax
comp=Z,28nm,1.0s
SCM Sheep Creek Mo 49.81 36 *e*P **P 21 44 41.3 -0.2**
comp=Z,28nm,1.0s
HDA Harding Lake 49.82 33 *e*P **P 21 44 40.0 -1.5**
comp=Z,41nm,1.2s
ILAR Eielson Array 49.83 32 P **P 21 44 41.8 +0.2**
comp=Z,13nm,0.9s,baz=270,slow=6.1,SNR=100
ILB Eielson Array 49.83 32 *e*P **P 21 44 41.8 +0.2**
IL1 Eielson Array 49.84 32 *e*P **P 21 44 41.6 +0.1**
FRU Bishkek 50.24 299 *i* P **P 21 44 45.0 0.0**
FRU *i* 21 45 02.0
FRU *e*S **S 21 51 54.0 +0.7**
FRU pmax pmax
comp=Z,40nm,1.8s
FRU smax smax
comp=N,60nm,2.2s
FRU MLR MLR
comp=E,500nm,19.0s
MTN Manton Dam 50.25 193 *e*P **P 21 44 44.7 -0.5**
comp=E,86nm,1.1s
KSH Kashi 50.28 294 P P 21 44 50.1 +4.7
KSH *e*pP sP 21 45 05.7 -0.6
KSH *e*ScP **ScP 21 49 56.5 +1.6**
KSH S **S 21 51 59.1 +5.0**
KSH ScS **ScS 21 54 34.4 +2.6**
KSH pmax pmax
comp=E,12nm,0.8s
KSH pmax pmax
comp=E,200nm,4.3s
KSH LR LR
comp=E,460nm,15.7s
KSH LR LR
comp=E,93nm,7.0s
KSH LR LR
comp=E,380nm,13.5s
AAK Ala-Archa 50.39 298 P **P 21 44 47.2 +0.9**
comp=E,8.2nm,0.7s,baz=102,slow=5.3,SNR=66
AAK Ala-Archa 50.39 298*c i*P **P 21 44 46.5 +0.2**
AAK pmax pmax
comp=Z,26nm,0.7s
AAK Ala-Archa 50.39 298 *e*P **P 21 44 47.2 +0.9**
comp=Z,10nm,0.8s
AAK Ala-Archa 50.39 298 P **P 21 44 45.3 -1.0**
SNR=6.9
AAK Ala-Archa 50.39 298 P **P 21 44 45.3 -1.0**
SNR=6.9
AAK P **P 21 44 45.3 -1.0**
SNR=6.9
FYU Fort Yukon 50.45 30 *e*P **P 21 44 48.2 +2.1**
comp=Z,74nm,1.4s
COEN Coen 50.51 177 *e*P **P 21 44 47.1 -0.1**
comp=Z,40nm,1.0s
KLU Klutina 50.51 36 *e*P **P 21 44 45.5 -1.3**
comp=Z,37nm,1.2s
KLU *e*pP **pP 21 45 03.5 +2.1**
BVAR Borovoye Array 50.55 312 P **P 21 44 47.5 +0.4**
comp=Z,24nm,1.0s,baz=79,slow=7.7,SNR=64
BVAR PcP **PcP 21 46 04.7 +0.5**
comp=Z,8.9nm,0.9s,baz=98,slow=3.0,SNR=6.7
PAX Paxson 50.58 35 *e*P **P 21 44 48.3 +1.0**
PAX pmax pmax
comp=Z,18nm,1.1s
PAX Paxson 50.58 35 *e*P **P 21 44 48.3 +1.0**
comp=Z,18nm,1.1s
BRVK Borovoye 50.61 312*c i*P **P 21 44 47.6 0.0**
BRVK pmax pmax
comp=Z,25nm,1.0s
BRVK Borovoye 50.61 312 *e*P **P 21 44 47.4 -0.2**
comp=Z,22nm,1.0s
BRVK Borovoye 50.61 312 P **P 21 44 48.0 +0.4**
SNR=9.2
BRVK Borovoye 50.61 312 P **P 21 44 48.0 +0.4**
SNR=9.2
BRVK P **P 21 44 48.0 +0.4**
SNR=9.2
DIV Divide 50.62 37 *e*P **P 21 44 49.1 +1.4**
comp=Z,44nm,1.1s
EYAK Cordova Ski Ar 50.70 38 *e*P **P 21 44 49.8 +1.7**
comp=Z,34nm,1.1s
EKS2 Erkin-Say 50.88 299 *e*P **P 21 44 50.8 +0.8**
EKS2 pmax pmax
comp=Z,10.0nm,0.8s
EKS2 Erkin-Say 50.88 299 *e*P **P 21 44 50.8 +0.8**
comp=Z,10nm,0.8s
BMRM Bremner River 51.20 37 *e*P **P 21 44 53.6 +1.6**
comp=Z,32nm,1.1s
ZRNK Zerenda 51.39 313 *e*P **P 21 44 53.5 +0.1**
ZRNK pmax pmax
comp=Z,32nm,1.0s
ZRNK Zerenda 51.39 313 *e*P **P 21 44 53.5 +0.1**
comp=Z,32nm,1.0s
PSI Prapat 51.45 239 *e*P **P 21 44 54.1 -0.4**
PSI pmax pmax
comp=Z,45nm,1.7s
PSI Prapat 51.45 239 *e*P **P 21 44 54.1 -0.4**
comp=Z,45nm,1.7s
BALM Baldy 52.28 37 *e*P **P 21 45 01.6 +1.5**
BALM pmax pmax
comp=Z,32nm,1.3s
BALM Baldy 52.28 37 *e*P **P 21 45 01.6 +1.5**
comp=Z,32nm,1.3s
MNSI Mandailing Nat 52.47 237 P P 21 45 07.7 +5.8
SDSI Sungai Dareh 52.54 234 P **P 21 45 04.4 +2.0**
KKAR Karatay Array 53.03 300 *e*P **P 21 45 06.3 +0.5**
KKAR Karatay Array 53.03 300 *e*P **P 21 45 06.2 +0.5**
KPJI Karang Pucung 53.24 221 P **P 21 45 07.8 +0.3**
GSI Gunungsitoli 53.46 239 P **P 21 45 09.9 +0.7**
GSI Gunungsitoli 53.46 239 *e*P **P 21 45 09.2 0.0**
comp=Z,119nm,1.2s
LHSI Lahat 53.47 229 P **P 21 45 10.2 +1.0**
LEM Lembang 53.53 223 P P 21 45 15.9 +6.1
MDSI Maura Dua 53.59 228 P **P 21 45 10.1 -0.1**
INK Inuvik 54.72 27 P **P 21 45 18.7 +1.1**
comp=Z,15nm,0.9s,baz=292,slow=5.9,SNR=18
INK Inuvik 54.72 27 *e*P **P 21 45 18.7 +1.1**
INK pmax pmax
comp=Z,27nm,1.1s
INK Inuvik 54.72 27 *e*P **P 21 45 18.7 +1.1**
comp=Z,27nm,1.1s
SVE Sverdlovsk 55.17 319*de*P **P 21 45 21.5 +0.4**
SVE pmax pmax
comp=Z,51nm,1.0s
SVE MLR MLR
comp=Z,407nm,17.0s
SKAG Skagway 56.04 38 *e*P **P 21 45 29.2 +2.0**
comp=Z,43nm,1.2s
SOKR Solikamsk 56.37 323*c i*P **P 21 45 27.6 -2.0**
SOKR pmax pmax
comp=Z,25nm,1.1s
ARU Arti 56.38 319 P **P 21 45 29.8 +0.1**
comp=Z,10nm,0.3s,baz=76,slow=4.0,SNR=45
ARU Arti 56.38 319*c i*P **P 21 45 29.6 -0.2**
ARU *PP **pP 21 45 42.8 -1.7**
ARU 21 46 25.6
ARU 21 47 34.5
ARU S **S 21 53 18.3 +2.2**
ARU SS **SS 21 57 06.4 +3.3**
ARU pmax pmax
comp=Z,69nm,1.2s
ARU Arti 56.38 319 *e*P **P 21 45 29.8 +0.1**
comp=Z,48nm,1.0s
FITZ Fitzroy Crossi 56.51 198 *e*P **P 21 45 31.3 +0.2**
comp=Z,40nm,1.3s
WRAB Tennant Creek 56.77 188*c i*P **P 21 45 31.9 -1.0**
WRAB pmax pmax
comp=Z,208nm,1.7s
WB2 Warramunga Arr 56.78 188 *e*P **P 21 45 32.0 -1.0**
comp=Z,40nm,0.8s
WR1 Warramunga Arr 56.78 188 *e*P **P 21 45 32.0 -1.0**
comp=Z,39nm,0.7s
WR1 *e*PcP **PcP 21 46 29.0 +0.7**
WRA Warramunga Arr 56.78 188 P **P 21 45 32.0 -1.0**
comp=Z,26nm,0.6s,baz=5.4,slow=7.4,SNR=280
WRA PcP **PcP 21 46 29.0 +0.7**
comp=Z,8.3nm,0.8s,baz=3.7,slow=3.9,SNR=5.7
WRA LR LR 22 09 14.1
comp=Z,59nm,21.9s,baz=260,slow=35
KBL Kabul 57.27 291 *e*P **P 21 45 36.8 +0.1**
KBL pmax pmax
comp=Z,27nm,1.0s
KBL Kabul 57.27 291 *e*P **P 21 45 36.8 +0.1**
comp=Z,27nm,1.0s
ABKAR Akbulak array 57.91 310 *e*P **P 21 45 40.5 -0.2**

HYB Hyderabad 57.95 268 *i* P **P 21 45 42.0 +0.6**
HYB *e* 21 45 56.0
AKTO Aktyubinsk 58.65 312 P **P 21 45 45.7 -0.2**
comp=Z,14nm,0.8s,baz=72,slow=5.6,SNR=28
DLBC Dease Lake 58.97 38 *e*P **P 21 45 50.7 +2.6**
comp=Z,34nm,1.1s
AS01 Alice Springs 60.51 188 *e*P **P 21 45 57.6 -1.2**
AS31 Alice Springs 60.51 188 *e*P **P 21 45 58.2 -0.7**
comp=Z,5.7nm,0.8s
AS31 *e*PKKSdf PKKSdf 22 10 25.6 -13
ASAR Alice Springs 60.51 188 P **P 21 45 58.2 -0.7**
comp=Z,21nm,0.9s,baz=9.7,slow=5.9,SNR=141
ASAR LR LR 22 10 25.6
comp=Z,135nm,21.9s,baz=12,slow=34
SPITS Spitsbergen Ar 60.71 349 P **P 21 46 00.6 +0.9**
comp=Z,5.2nm,0.6s,baz=77,slow=8.6,SNR=10
SPITS Spitsbergen Ar 60.71 349 P **P 21 46 00.6 +0.9**
MBWA Marble Bar 61.07 203 *e*P **P 21 46 02.5 -0.1**
comp=Z,22nm,0.8s
EIDS Eidsvold 62.54 170 *e*P **P 21 46 12.8 +0.4**
EIDS *e*pP **pP 21 46 28.7 +1.3**
APA Apatity 62.81 336↓ *i*P **P 21 46 14.4 +0.6**
APA MLR MLR
comp=Z,700nm,11.0s
TMCR Tamitsa 62.84 331 *e*P **P 21 46 14.5 +0.5**
TMCR pmax pmax
comp=Z,31nm,1.3s
RES Resolute Bay 62.90 14 *e*P **P 21 46 14.5 +0.2**
RES pmax pmax
comp=Z,20nm,0.9s
RES Resolute Bay 62.90 14 *e*P **P 21 46 14.5 +0.2**
comp=Z,20nm,0.9s
GEYT Alibeck 63.73 299 P **P 21 46 21.0 +0.5**
comp=Z,10nm,0.9s,baz=47,slow=2.8,SNR=30
GEYT LR LR 22 16 02.2
comp=Z,293nm,18.9s,baz=230,slow=38
KLMR Klimovskoe 63.83 328 *e*P **P 21 46 18.0 -2.7**
KLMR *e* 21 46 53.2
KLMR *e* 21 48 38.9
KLMR pmax pmax
comp=Z,28nm,1.3s
YKW3 Yellowknife Ar 64.11 30 *e*P **P 21 46 22.7 +0.3**
comp=Z,30nm,1.5s
ARA0 ARCESS Array S 64.14 339 *e*P **P 21 46 24.5 +1.9**
ARCES ARCESS Array B 64.14 339 P **P 21 46 24.5 +1.9**
comp=Z,1.9nm,0.6s,baz=57,slow=7.9,SNR=11
ARCES LR LR 22 17 03.7
comp=Z,163nm,20.5s,baz=34,slow=38
ARCES ARCESS Array B 64.14 339 P **P 21 46 24.5 +1.9**
YKA Yellowknife Ar 64.14 30 P **P 21 46 22.8 +0.1**
comp=Z,4.7nm,0.8s,baz=298,slow=6.6,SNR=44
YKB5 Yellowknife Ar 64.14 30 *e*P **P 21 46 22.8 +0.1**
DAG Danmarks Havn 66.00 355 *i* P **P 21 46 34.6 +0.1**
comp=Z,16nm,1.0s
DAG Danmarks Havn 66.00 355 *i* P **P 21 46 34.6 +0.1**
DAG pmax pmax
comp=Z,16nm,1.0s
NLWA Neilton Lookou 67.06 47 *e*P **P 21 46 44.2 +2.4**
comp=Z,60nm,1.2s
A04D Lummi Island 67.08 46 P **P 21 46 42.9 +1.0**
baz=300
AFI Afiamalu 67.17 129 LR LR 22 11 00.9
comp=Z,200nm,21.9s,baz=349,slow=31
MOS Moscow 67.30 323 *e*P **P 21 46 41.0 -2.1**
MOS *e* 21 47 08.6
MOS pmax pmax
comp=Z,68nm,1.2s
VRH Novokhopyorsk 67.59 318 *e*P **P 21 46 44.1 -1.0**
VRH pmax pmax
comp=Z,30nm,0.9s
B05A Bryant 67.66 46 P **P 21 46 47.0 +1.5**
baz=301
B06A Marblemount 67.88 45 *e*P **P 21 46 48.3 +1.4**
comp=Z,20nm,1.0s
OBN Obninsk 68.14 323 P **P 21 46 47.2 -1.2**
comp=Z,16nm,0.8s,baz=52,slow=0.6,SNR=6.8
OBN Obninsk 68.14 323*ce*P **P 21 46 48.3 -0.1**
OBN *e**PP **pP 21 47 01.3 -2.3**
OBN *i* 21 47 15.1
OBN pmax pmax
comp=Z,52nm,1.7s
OBN MLR MLR
comp=Z,191nm,17.0s
OBN Obninsk 68.14 323 *e*P **P 21 46 47.2 -1.2**
comp=Z,33nm,1.1s
STKA Stephens Creek 68.31 180 P **P 21 46 48.5 -1.2**
comp=Z,16nm,0.8s,baz=347,slow=6.4,SNR=17
STKA Stephens Creek 68.31 180 *e*P **P 21 46 48.5 -1.2**
STKA pmax pmax
comp=Z,3.0nm,0.7s
STKA Stephens Creek 68.31 180 *e*P **P 21 46 48.5 -1.2**
comp=Z,3.1nm,0.7s
LPSR Galich'ya Gora 68.33 320 *e*P **P 21 46 49.3 -0.4**
LPSR pmax pmax
comp=Z,30nm,1.2s
C06D Leavenworth 68.53 46 P **P 21 46 52.3 +1.3**
baz=302
F04A Amboy 68.66 48 *e*P **P 21 46 53.6 +1.7**
comp=Z,29nm,0.9s
FIA1 FINESS Array S 68.91 332 *e*P **P 21 46 53.4 +0.2**
FIA0 FINESS Array S 68.91 332 *e*P **P 21 46 53.3 +0.1**
FIA0 FINESS Array S 68.91 332 *e*P **P 21 46 53.2 +0.1**
FINES FINESS Array B 68.91 332 P **P 21 46 53.2 +0.1**
comp=Z,15nm,0.9s,baz=62,slow=8.9,SNR=32
FINES LR LR 22 19 27.4
comp=Z,262nm,18.9s,baz=16,slow=38
VSR Storozhevoye 68.95 319 *e*P **P 21 46 52.8 -0.8**
VSR pmax pmax
comp=Z,30nm,0.9s
B08A Colville Reser 69.19 45 *e*P **P 21 46 56.4 +1.2**
comp=Z,18nm,1.1s
I03D Drain, OR 69.26 51 P **P 21 46 57.2 +1.6**
baz=301
H04A Detroit Lake 69.45 49 *e*P **P 21 46 58.4 +1.5**
comp=Z,40nm,1.1s
G05D Wamic, OR 69.69 48 P **P 21 46 59.7 +1.4**
baz=302
I04A Tendick Farm, 69.78 50 P **P 21 46 59.7 +0.8**
baz=302,SNR=5.5
L02D Cave Junction, 69.90 52 P **P 21 47 00.9 +1.2**
baz=302
GOF Gofitskoye 70.07 312↑ *i*P **P 21 47 00.6 0.0**
GOF pmax pmax
comp=Z,34nm,1.0s
C09A Chrisman Ranch 70.09 45 *e*P **P 21 47 01.6 +1.0**
comp=Z,86nm,0.2s
G06A Carlson Farm, 70.10 48 *e*P **P 21 47 02.5 +1.6**
comp=Z,27nm,1.2s
D08A Wollman Farm, 70.12 46 *e*P **P 21 47 01.9 +1.0**
comp=Z,15nm,0.9s
HAWA Hanford 70.13 47 *e*P **P 21 47 02.5 +1.5**
comp=Z,34nm,1.4s
I05D Terrebonne, OR 70.15 49 P **P 21 47 02.3 +1.1**
baz=302
NEW Newport 70.48 44 P **P 21 47 04.0 +0.8**
comp=Z,12nm,0.9s,baz=298,slow=5.0,SNR=17
NEW Newport 70.48 44 P **P 21 47 03.8 +0.7**
baz=304,SNR=13
NEW Newport 70.48 44 *e*P **P 21 47 03.8 +0.7**
NEW pmax pmax
comp=Z,23nm,1.1s
NEW Newport 70.48 44 *e*P **P 21 47 03.8 +0.7**
comp=Z,23nm,1.1s
VSU Vasula 70.54 329↑ *i*P **P 21 47 02.3 -0.9**
VSU pmax pmax
comp=Z,118nm,1.7s
DGRG David-gareji 70.55 308 P **P 21 47 00.8 -2.8**
DGRG David-gareji 70.55 308 P **P 21 47 00.8 -2.8**
YBH Yreka Blue Hor 70.69 52 P **P 21 47 05.5 +0.9**
comp=Z,12nm,1.1s,baz=285,slow=1.6,SNR=9.1
YBH Yreka Blue Hor 70.69 52 *e*P **P 21 47 05.5 +0.9**
YBH pmax pmax
comp=Z,21nm,1.2s
YBH Yreka Blue Hor 70.69 52 *e*P **P 21 47 05.5 +0.9**
comp=Z,21nm,1.2s
ZEI Tsey 70.76 309 *e*P **P 21 47 04.8 -0.3**
ZEI pmax pmax
comp=Z,28nm,1.0s
J05D Fort Rock, OR 70.78 50 P **P 21 47 06.4 +1.3**
baz=303,SNR=6.7
M02C Callahan 70.78 52 P **P 21 47 06.5 +1.4**
baz=302
K04D Chiloquin, OR 70.81 51 P **P 21 47 06.9 +1.6**
baz=303
KBZ Khabaz 70.87 311 P **P 21 47 06.2 +0.8**
comp=Z,17nm,0.9s,baz=66,slow=5.7,SNR=33

KBZ LR LR 22 20 19.6
comp=Z,183nm,20.8s,baz=54,slow=38
KIV Kislovodsk 70.88 311 *e*P **P 21 47 05.9 +0.2**
KIV pmax pmax
comp=Z,58nm,1.1s
KIV MLR MLR
comp=Z,158nm,18.0s
KIV Kislovodsk 70.88 311 *e*P **P 21 47 06.3 +0.7**
comp=Z,52nm,1.0s
KIV Kislovodsk 70.88 311 P **P 21 47 06.2 +0.5**
SNR=11
KIV Kislovodsk 70.88 311 P **P 21 47 06.2 +0.5**
SNR=11
SUMG Summit 70.93 360 *i* P **P 21 47 06.4 +0.6**
comp=Z,24nm,1.1s
SUMG Summit 70.93 360 *e*P **P 21 47 06.7 +0.9**
SUMG pmax pmax
comp=Z,25nm,1.0s
SUMG Summit 70.93 360 *e*P **P 21 47 06.7 +0.9**
comp=Z,25nm,1.0s
N02D Trinity Center 71.10 53 P **P 21 47 08.7 +1.6**
baz=303
ONI Oni 71.15 309 P **P 21 47 07.7 +0.4**
ONI Oni 71.15 309 P **P 21 47 07.7 +0.4**
M04C Macdoel 71.21 52 P **P 21 47 08.7 +0.9**
baz=303,SNR=9.3
NEY Neytrino 71.24 310 P **P 21 47 09.0 +1.0**
NEY pmax pmax
comp=Z,1.0nm,0.8s
K05A Summer Lake 71.29 50 *e*P **P 21 47 10.1 +1.7**
comp=Z,53nm,1.2s
WDC Whiskeytown Da 71.42 53 *e*P **P 21 47 10.4 +1.6**
WDC pmax pmax
comp=Z,22nm,1.2s
WDC Whiskeytown Da 71.42 53 *e*P **P 21 47 10.4 +1.6**
comp=Z,22nm,1.2s
GNI Garni 71.65 307 *e*P **P 21 47 12.3 +1.8**
GNI pmax pmax
comp=Z,28nm,1.2s
GNI Garni 71.65 307 *e*P **P 21 47 12.3 +1.8**
comp=Z,28nm,1.2s
F10A Beach Ranch, E 71.69 46 *e*P **P 21 47 11.8 +1.3**
comp=Z,10.0nm,1.1s
AKH Akhalkalaki 71.76 308↓ *i*P **P 21 47 12.3 +1.1**
BSMT Bassoo Peak 72.00 43 *e*P **P 21 47 14.1 +1.5**
O03D Paynes Creek 72.05 53 P **P 21 47 13.4 +0.6**
baz=303,SNR=11
MOD Modoc Plateau 72.11 51 *e*P **P 21 47 14.7 +1.5**
comp=Z,26nm,1.4s
BLMT Blacktail Moun 72.15 43 *e*P **P 21 47 15.0 +1.6**
BMO Blue Mountains 72.28 47 *e*P **P 21 47 15.5 +1.4**
BMO pmax pmax
comp=Z,21nm,1.0s
BMO Blue Mountains 72.28 47 *e*P **P 21 47 15.5 +1.4**
comp=Z,21nm,1.0s
JTMT Jette 72.34 43 *e*P **P 21 47 15.8 +1.3**
YBMT Yellow Bay 72.42 43 *e*P **P 21 47 16.4 +1.4**
IZAR Zarasai 72.48 327 *e*P **P 21 47 15.4 +0.5**
IZAR lAmb lAmb 21 47 16.8
comp=Z,12nm,0.9s
IDID Didziasalis 72.55 327 *e*P **P 21 47 15.7 +0.4**
IDID lAmb lAmb 21 47 17.2
comp=Z,15nm,1.0s
SWMT Swartz Lake 72.64 43 *e*P **P 21 47 17.3 +1.1**
ORV Oroville 72.64 53 *e*P **P 21 47 16.9 +0.7**
ORV pmax pmax
comp=Z,36nm,1.4s
ORV Oroville 72.64 53 *e*P **P 21 47 16.9 +0.7**
comp=Z,36nm,1.4s
ISAL Salakas 72.65 327 *e*P **P 21 47 16.3 +0.4**
ISAL lAmb lAmb 21 47 17.9
comp=Z,25nm,1.0s
IIGN Ignalina 72.75 327 *e*P **P 21 47 16.9 +0.4**
IIGN lAmb lAmb 21 47 18.5
comp=Z,13nm,1.0s
NACGM Naroch 72.79 327 *e* **P 21 47 17.0 +0.2**
WVOR Wild Horse Val 72.84 50 *e*P **P 21 47 18.7 +1.1**
WVOR pmax pmax
comp=Z,41nm,1.6s
WVOR Wild Horse Val 72.84 50 *e*P **P 21 47 18.6 +1.1**
comp=Z,41nm,1.6s
MSO Missoula 73.07 44 P **P 21 47 19.1 +0.4**
baz=306,SNR=12
MSO Missoula 73.07 44 *e*P **P 21 47 19.3 +0.5**
comp=Z,21nm,1.1s
AFDM Forest Hills D 73.32 54 *e*P **P 21 47 21.1 +0.8**
comp=Z,24nm,1.3s
AFDM *e*pP **PcP 21 47 37.4 +0.9**
CHMT Chamberlain Mo 73.40 44 *e*P **P 21 47 21.2 +0.4**
ANN Anapa 73.52 314 *e*P **P 21 47 18.3 -3.0**
ANN *e**PP **pP 21 47 32.5 -4.1**
ANN *e* 21 50 03.2
ANN *e*S **SKiKP 21 56 42.6 -4.0**
ANN pmax pmax
comp=Z,45nm,1.2s
MFID Camas Ranch 73.97 48 *e*P **P 21 47 25.2 +1.1**
comp=Z,58nm,1.7s
FFC Flin Flon 74.05 33 *e*P **P 21 47 24.6 +0.4**
FFC pmax pmax
comp=Z,38nm,1.0s
FFC Flin Flon 74.05 33 *e*P **P 21 47 24.6 +0.4**
comp=Z,38nm,1.0s
NC405 NORSAR Array S 74.10 337 *e*P **P 21 47 24.9 +0.5**
NC303 NORSAR Array S 74.12 337 *e*P **P 21 47 25.0 +0.5**
CMB Columbia Colle 74.21 54 *e*P **P 21 47 26.5 +0.9**
CMB pmax pmax
comp=Z,35nm,1.1s
CMB Columbia Colle 74.21 54 *e*P **P 21 47 26.5 +0.9**
comp=Z,35nm,1.1s
NC204 NORSAR Array S 74.27 338 *e*P **P 21 47 26.1 +0.6**
NB201 NORSAR Array S 74.28 337 *e*P **P 21 47 26.0 +0.5**
NB2 NORSAR Subarra 74.31 337 P **P 21 47 25.6 -0.1**
comp=Z,21nm,0.9s,baz=39,slow=6.2
NB2 NORSAR Subarra 74.31 337 P **P 21 47 25.6 -0.1**
baz=39,slow=6.2
NB200 NORSAR Array S 74.31 337 *e*P **P 21 47 25.7 -0.1**
NOA NORSAR Array B 74.31 337 P **P 21 47 25.7 -0.1**
comp=Z,13nm,0.9s,baz=39,slow=5.8,SNR=35
FCC Fort Churchill 74.33 26 *e*P **P 21 47 25.9 +0.2**
FCC pmax pmax
comp=Z,39nm,1.1s
FCC Fort Churchill 74.33 26 *e*P **P 21 47 25.9 +0.2**
comp=Z,38nm,1.1s
AKASG Malin Array Be 74.34 322 P **P 21 47 25.6 -0.3**
comp=Z,2.8nm,0.3s,baz=46,slow=5.9,SNR=81
AKASG LR LR 22 22 35.7
comp=Z,293nm,20.9s,baz=40,slow=38
AKBB Malin Array Si 74.34 322 *e*P **P 21 47 25.6 -0.3**
AKBB pmax pmax
comp=Z,21nm,0.9s
AKBB Malin Array Si 74.34 322 *e*P **P 21 47 25.6 -0.3**
comp=Z,21nm,0.9s
KIEV Kiev 74.35 322*c i*P **P 21 47 25.4 -0.6**
KIEV pmax pmax
comp=Z,25nm,0.9s
KIEV Kiev 74.35 322 *e*P **P 21 47 25.6 -0.4**
comp=Z,22nm,0.9s
AK11 Malin Array Si 74.38 322 *e*P **P 21 47 25.8 -0.4**
NBO02 NORSAR Array S 74.42 337 *e*P **P 21 47 26.3 0.0**
NBO00 NORSAR Array S 74.46 337 *e*P **P 21 47 26.6 +0.1**
LRM Limekiln Ridge 74.50 44 *e*P **P 21 47 28.3 +1.0**
WAKR Walker 74.56 53 *e*P **P 21 47 29.1 +1.3**
NAO01 NORSAR Array S 74.57 337 *e*P **P 21 47 27.2 +0.1**
EGMT Eagleton 74.62 41 P **P 21 47 28.2 +0.4**
baz=308,SNR=5.9
DLMT Dillon 74.69 45 *e*P **P 21 47 29.8 +1.5**
comp=Z,48nm,1.0s
HLID Hailey 74.72 47 P **P 21 47 29.6 +1.1**
baz=306,SNR=17
HLID Hailey 74.72 47 *e*P **P 21 47 29.6 +1.1**
comp=Z,15nm,1.1s
BMN Battle Mountai 74.86 51 *e*P **P 21 47 31.3 +1.9**
BMN pmax pmax
comp=Z,27nm,1.1s
BMN Battle Mountai 74.86 51 *e*P **P 21 47 31.3 +1.9**
comp=Z,28nm,1.1s
MCMT McKenzie Canyo 74.87 45 *e*P **P 21 47 30.4 +0.9**
MCMT *e*pP **pP 21 47 47.3 +2.4**
SUW Suwalki 74.96 327 *e*P **P 21 47 29.6 +0.1**
SUW Suwalki 74.96 327 *e*P **P 21 47 29.7 +0.2**
BOZ Bozeman (W) 75.06 44 P **P 21 47 31.3 +0.8**
baz=308,SNR=37
BOZ Bozeman (W) 75.06 44 *e*P **P 21 47 31.6 +1.2**
BOZ pmax pmax
comp=Z,30nm,1.0s
BOZ Bozeman (W) 75.06 44 *e*P **P 21 47 31.6 +1.2**

comp=Z,30nm,1.0s
SIM Simferopol' 75.33 315 *d* iP P 21 47 30.2 -1.6
SIM pmax pmax
comp=Z,21nm,0.9s
SIM MLR MLR
comp=Z,70nm,16.7s
NV01 Mina Array Sit 75.33 53 *e*P P 21 47 33.4 +1.2
NVAR Mina Array Bea 75.33 53 P P 21 47 33.4 +1.2
comp=Z,16nm,0.9s,baz=284,slow=6.1,SNR=86
NVAR LR LR 22 13 33.0
comp=Z,154nm,21.9s,baz=288,slow=30
NV11 Mina Array Sit 75.43 53 *e*P P 21 47 33.9 +1.2
comp=Z,33nm,1.4s
MLAC Mammoth, Mammo 75.45 54 P P 21 47 34.3 +1.3
baz=305,SNR=5.8
QLMT Earthquake Lak 75.67 44 *e*P P 21 47 35.7 +1.6
ELK Elko 75.90 50 *e*P P 21 47 37.0 +1.5
ELK pmax pmax
comp=Z,12nm,1.1s
ELK Elko 75.90 50 *e*P P 21 47 37.0 +1.5
comp=Z,12nm,1.1s
RCTC Rector, Farmer 75.95 55 P P 21 47 37.0 +1.5
baz=306
SMMC Simmler 76.02 56 P P 21 47 37.1 +1.1
baz=305
YMR Madison River 76.03 44 *e*P P 21 47 38.1 +2.0
comp=Z,26nm,1.1s
YNR Norris Junctio 76.16 44 *e*P P 21 47 39.4 +2.5
comp=Z,25nm,1.2s
TIN Tinemaha, Big 76.18 54 P P 21 47 38.5 +1.6
baz=306
YFT Old Faithful 76.24 45 *e*P P 21 47 40.5 +3.2
PKM Mcpherson Peak 76.39 57 P P 21 47 39.6 +1.3
baz=306,SNR=6.0
H17A Grant Village 76.42 44 P P 21 47 40.8 +2.4
baz=308
H17A Grant Village 76.42 44 *e*P P 21 47 41.3 +2.9
comp=Z,26nm,1.0s
IMW Indian Meadow 76.52 45 *e*P P 21 47 40.6 +1.6
comp=Z,30nm,1.0s
FLWY Flagg Ranch 76.54 45 *e*P P 21 47 41.0 +2.0
comp=Z,37nm,1.1s
FXWY Fox Creek 76.63 45 *e*P P 21 47 41.1 +1.6
comp=Z,24nm,1.1s
RLMT Red Lodge 76.69 43 P P 21 47 41.1 +1.2
baz=309,SNR=17
RLMT Red Lodge 76.69 43 *e*P P 21 47 41.1 +1.2
comp=Z,31nm,1.3s
SBC Santa Barbara 76.72 57 P P 21 47 41.0 +1.2
baz=306
MOOW Moose Ponds 76.72 45 *e*P P 21 47 41.7 +1.6
comp=Z,24nm,1.2s
HVU Hansel Valley 76.76 48 *e*P P 21 47 41.7 +1.5
HVU pmax pmax
comp=Z,16nm,1.0s
HVU Hansel Valley 76.76 48 *e*P P 21 47 41.6 +1.5
comp=Z,16nm,1.0s
GRAC Grapevine Rang 76.77 54 P P 21 47 41.3 +1.0
baz=306,SNR=6.1
ISA Isabella, Lake 76.83 55 P P 21 47 40.7 0.0
baz=306
LOHW Long Hollow 76.89 45 *e*P P 21 47 42.4 +1.4
comp=Z,16nm,1.2s
SNOW Snow King Moun 76.90 45 *e*P P 21 47 43.0 +1.9
comp=Z,20nm,0.9s
REDW Red Top Meadow 76.90 45 *e*P P 21 47 42.9 +1.8
comp=Z,30nm,1.1s
ARVC Arvin 76.91 56 P P 21 47 41.5 +0.5
baz=306
SCZ2 Santa Cruz Isl 77.03 57 P P 21 47 41.3 -0.4
baz=306
DAC Darwin (Calif) 77.05 54 *e*P P 21 47 43.1 +1.1
DAC pmax pmax
comp=Z,37nm,1.6s
DAC Darwin (Calif) 77.05 54 *e*P P 21 47 43.0 +1.1
comp=Z,37nm,1.6s
R11A Troy Canyon, C 77.11 52 P P 21 47 43.2 +1.0
baz=307,SNR=43
R11A Troy Canyon, C 77.11 52 *e*P P 21 47 43.3 +1.1
comp=Z,32nm,1.1s
BGU Big Grassy Mou 77.13 48 *e*P P 21 47 43.7 +1.4
comp=Z,14nm,1.1s
AHID Auburn Hatcher 77.13 46 *e*P P 21 47 43.5 +1.2
comp=Z,17nm,1.1s
DGMT Dagmar 77.19 38 P P 21 47 42.9 +0.5
baz=312,SNR=7.0
DGMT Dagmar 77.19 38 *e*P P 21 47 43.2 +0.9
comp=Z,43nm,1.1s
MPMC Manual Prospec 77.25 55 P P 21 47 43.8 +0.7
baz=306,SNR=17
OSI Osito Audit: C 77.28 56 P P 21 47 44.2 +1.1
baz=306
LAO LASA Array 77.32 41 P P 21 47 44.0 +0.9
baz=311
LAO LASA Array 77.32 41 *e*P P 21 47 44.8 +1.6
comp=Z,47nm,1.0s
BLG Laguna Peak, P 77.34 57 P P 21 47 44.1 +0.6
baz=306
A25A Svangstu Ranch 77.41 37 P P 21 47 44.4 +0.9
baz=312
FURC Furnace Creek, 77.41 54 P P 21 47 44.4 +0.7
baz=307,SNR=6.9
LVV L'vov 77.43 324 ⇓ *i*P P 21 47 43.0 -0.6
LRMC Laurel Mtn Rad 77.46 55 P P 21 47 44.7 +0.5
baz=306,SNR=9.4
BEL Belsk 77.51 327 *e*P P 21 47 45.0 +1.0
BEL Belsk 77.51 327 *e*P P 21 47 45.0 +1.0
TPNV Topopah Spring 77.52 53 P P 21 47 45.6 +1.0
baz=307,SNR=39
TPNV Topopah Spring 77.52 53 *e*P P 21 47 45.5 +1.0
TPNV pmax pmax
comp=Z,30nm,1.0s
TPNV Topopah Spring 77.52 53 *e*P P 21 47 45.5 +0.9
comp=Z,30nm,1.0s
BSD Bornholm Skovb 77.54 332 *i* P P 21 47 43.8 -0.3
comp=Z,36nm,1.0s
BSD Bornholm Skovb 77.54 332 *i* P P 21 47 43.8 -0.3
BSD pmax pmax
comp=Z,36nm,1.0s
LEOM Leova 77.56 319 ⇓ *i*P P 21 47 44.6 +0.3
HWUT Hardware Ranch 77.58 47 *e*P P 21 47 46.2 +1.3
comp=Z,43nm,1.2s
HWUT *e*pP pP 21 48 02.4 +2.1
EDW2 Edwards Air Fo 77.61 56 P P 21 47 45.5 +0.6
baz=306,SNR=12
DUG Dugway, Tooele 77.70 49 P P 21 47 46.4 +0.9
baz=308,SNR=24
DUG Dugway, Tooele 77.70 49 *e*P P 21 47 46.7 +1.2
DUG pmax pmax
comp=Z,29nm,1.0s
DUG Dugway, Tooele 77.70 49 *e*P P 21 47 46.7 +1.2
comp=Z,29nm,1.0s
DECC Green Verdugo 77.75 56 P P 21 47 46.5 +0.7
baz=306
B25A Knox Farm, Ray 77.83 38 P P 21 47 46.8 +0.9
baz=312
MWC Mount Wilson 77.95 56 *e*P P 21 47 48.6 +1.5
MWC pmax pmax
comp=Z,23nm,1.1s
MWC Mount Wilson 77.95 56 *e*P P 21 47 48.6 +1.5
comp=Z,23nm,1.1s
A26A Wade Farm, Ken 77.96 37 P P 21 47 47.0 +0.4
baz=313
TCUT Toone Canyon 77.97 47 *e*P P 21 47 48.5 +1.4
comp=Z,56nm,1.2s
PRAR RASCA 78.01 321 ⇓ *i*P P 21 47 46.8 -0.1
BW06 Boulder Array 78.02 45 P P 21 47 47.6 +0.3
baz=309,SNR=7.9
BW06 Boulder Array 78.02 45 *e*P P 21 47 48.0 +0.6
PD31 Pinedale Array 78.02 45 *e*P P 21 47 47.8 +0.4
PDAR Pinedale Array 78.02 45 P P 21 47 47.8 +0.4
comp=Z,7.1nm,0.9s,baz=268,slow=2.8,SNR=45
CTU Camp Tracy 78.04 48 *e*P P 21 47 48.9 +1.5
comp=Z,21nm,1.1s
SHOC Shoshone, Teco 78.13 54 P P 21 47 49.0 +1.2
baz=307
GSC Goldstone, Bar 78.14 55 P P 21 47 48.5 +0.5
baz=307,SNR=7.3
GSC Goldstone, Bar 78.14 55 *e*P P 21 47 48.8 +0.9
GSC pmax pmax
comp=Z,16nm,1.1s
GSC Goldstone, Bar 78.14 55 *e*P P 21 47 48.8 +0.9
comp=Z,16nm,1.1s
KWP Kalwaria Pacla 78.18 324 *e*P P 21 47 49.0 +1.2
KWP Kalwaria Pacla 78.18 324 *e*P P 21 47 49.0 +1.2
CIS Catalina Islan 78.20 57 P P 21 47 49.2 +1.0
baz=306

BFSC Mount Baldy Ra 78.21 56 P P 21 47 49.4 +1.0
baz=307
RRX Edison Barstow 78.27 55 P P 21 47 49.9 +1.3
baz=307
JLU Jordanelle 78.27 48 *e*P P 21 47 50.3 +1.5
comp=Z,22nm,1.1s
NLU North Lily Min 78.30 49 *e*P P 21 47 50.1 +1.2
comp=Z,17nm,1.0s
A27A Ledux Ranch, 78.30 37 P P 21 47 49.7 +1.2
baz=314
BUR08 Bucovina Ar. S 78.34 322 *e*P P 21 47 49.1 +0.2
BURAR Bucovina Sat 78.35 322 ⇓ *i*P P 21 47 49.4 +0.5
SCI2 San Clemente I 78.36 58 P P 21 47 50.5 +1.4
baz=306
TESR Tescani 78.36 320 ⇓ *i*P P 21 47 48.5 -0.4
CFR Carcaliu 78.46 318 ⇓ *i*P P 21 47 49.7 +0.3
D25A Fairfield 78.51 39 P P 21 47 50.7 +1.0
baz=312
MPU Maple Canyon 78.53 48 *e*P P 21 47 51.8 +1.6
comp=Z,34nm,1.1s
PETR Petresti 78.58 319 ⇓ *i*P P 21 47 51.9 +1.9
TUQ Turquoise Moun 78.64 54 P P 21 47 51.6 +0.8
baz=307,SNR=13
ODBI Odobesti 78.65 319 ⇓ *i*P P 21 47 52.3 +1.9
C26A Wahner Farm, P 78.66 38 P P 21 47 51.3 +0.8
baz=313
B27A Peters Farms, 78.67 37 P P 21 47 51.4 +0.9
baz=314
HEC Hector Ludlow 78.73 55 P P 21 47 52.0 +0.8
baz=307,SNR=16
VRI Vrincioaia 78.75 320 ⇓ *i*P P 21 47 52.7 +1.7
TIRR Tirgusor 78.79 318 ⇓ *i*P P 21 47 51.8 +0.6
A28A Rude Farm, Bot 78.80 36 P P 21 47 51.9 +0.6
baz=314,SNR=8.2
PLOR Plostina 78.80 320 ⇓ *i*P P 21 47 52.1 +0.8
BR101 Keskin Array S 78.83 311 *e*P P 21 47 51.4 -0.4
BR131 Keskin Array S 78.83 311 *e*P P 21 47 52.1 +0.4
BRTR Keskin Array B 78.83 311 P P 21 47 51.4 -0.4
comp=Z,8.4nm,1.0s,baz=101,slow=3.9,SNR=28
BRTR LR LR 22 27 14.8
comp=Z,84nm,19.2s,baz=56,slow=39
KOLS Kolonicke sedl 78.87 324 *e*P P 21 47 52.2 +0.6
KOLS pmax pmax
comp=Z,13nm,1.1s
KOLS Kolonicke sedl 78.87 324 *e*P P 21 47 52.2 +0.6
MURC Murrieta 78.90 56 P P 21 47 52.4 +0.3
baz=307,SNR=5.5
E25A Miller Ranch, 78.90 39 P P 21 47 52.4 +0.5
baz=313
STHS Stebnicka Huta 79.01 325 *e*P P 21 47 53.9 +1.5
STHS pmax pmax
comp=Z,13nm,1.1s
STHS Stebnicka Huta 79.01 325 *e*P P 21 47 53.9 +1.5
C27A Sayler Ranch, 79.03 38 P P 21 47 52.7 +0.1
baz=314
D26A Manning 79.03 39 P P 21 47 52.6 0.0
baz=313
B28A Dugan Ranch, T 79.07 37 P P 21 47 52.8 0.0
baz=314,SNR=6.0
UZH Uzhgorod 79.07 324 *i* P P 21 47 53.2 +0.5
UZH *e* 21 47 58.8
UZH *e* 21 48 03.4
UZH *e* 21 48 12.8
UZH *e*PPP PPP 21 52 46.4
UZH *e*S S 21 57 45.0 -2.6
UZH *e*PS PnS 21 58 32.0 -4.0
UZH *e*SP SPn 21 58 52.4 +24
UZH *e*SS SS 22 02 56.2 +3.1
OJC Ojcow 79.10 326 *e*P P 21 47 53.3 +0.4
OJC Ojcow 79.10 326 *e*P P 21 47 53.4 +0.5
OJC Ojcow 79.10 326 *e*P P 21 47 53.3 +0.4
comp=Z,41nm,1.0s
MSU Marysvale 79.13 50 *e*P P 21 47 55.2 +1.7
MSU Marysvale 79.13 50 *e*P P 21 47 55.2 +1.7
ARCR ARCALIA 79.14 322 ⇓ *i*P P 21 47 54.7 +1.6
BMR Baia Mare 79.16 322 ⇓ *i*P P 21 47 54.8 +1.6
GMRC Granite Mounta 79.20 55 P P 21 47 54.4 +0.6
baz=307,SNR=12
TMUT Trail Mountain 79.23 49 *e*P P 21 47 55.7 +1.5
comp=Z,28nm,1.3s
ANTO Ankara 79.24 312 *e*P P 21 47 54.7 +0.8
ANTO pmax pmax
comp=Z,22nm,1.0s
ANTO Ankara 79.24 312 *e*P P 21 47 54.7 +0.8
comp=Z,22nm,1.0s
F25A Bowman 79.26 40 P P 21 47 54.6 +0.7
baz=313
BR231 Keskin MP Arra 79.27 312 *e*P P 21 47 52.8 -1.3
A29A Manning Farm, 79.27 36 P P 21 47 54.5 +0.7
baz=315,SNR=22
CRVS Cervenica-Dubn 79.28 324 *e*P P 21 47 55.1 +1.2
CRVS Cervenica-Dubn 79.28 324 *e*P P 21 47 55.0 +1.2
TRPA Tarpa 79.31 323 ⇑ *e*P P 21 47 54.8 +0.8
MSAB Monastry St. A 79.35 318 ⇓ *i*P P 21 47 55.2 +0.9
ISR Istrita 79.35 319 ⇓ *i*P P 21 47 55.7 +1.4
PFO Pinyon Flats O 79.38 56 P P 21 47 56.0 +1.1
comp=Z,15nm,1.0s,baz=312,slow=4.5,SNR=12
PFO Pinyon Flats O 79.38 56 P P 21 47 55.6 +0.7
baz=307,SNR=9.5
PFO Pinyon Flats O 79.38 56 *e*P P 21 47 56.0 +1.1
PFO *e**PP pP 21 48 09.5 -0.8
PFO pmax pmax
comp=Z,29nm,1.2s
PFO Pinyon Flats O 79.38 56 *e*P P 21 47 56.0 +1.1
comp=Z,29nm,1.2s
PFO *e*pP pP 21 48 09.5 -0.8
109C Camp Elliot, M 79.39 57 P P 21 47 55.3 +0.7
baz=307
LDFC Landfair 79.39 54 *e*P P 21 47 56.1 +1.2
comp=Z,42nm,1.1s
LCMT Little Creek M 79.40 52 *e*P P 21 47 56.3 +1.4
comp=Z,32nm,1.1s
E26A Carlson Angus 79.40 39 P P 21 47 54.7 +0.1
baz=313,SNR=5.5
P17A Butcher Ranch, 79.40 48 *e*P P 21 47 56.7 +1.7
comp=Z,50nm,1.1s
MLR Muntele Rosu 79.41 320 ⇓ *i*P P 21 47 55.6 +0.8
MLR Muntele Rosu 79.41 320 *e*P P 21 47 55.3 +0.5
MLR pmax pmax
comp=Z,18nm,1.3s
MLR Muntele Rosu 79.41 320 *e*P P 21 47 55.3 +0.5
comp=Z,18nm,1.3s
D27A Center 79.43 38 P P 21 47 55.1 +0.4
baz=314
NIE Niedzica 79.45 325 *e*P P 21 47 56.0 +1.3
NIE Niedzica 79.45 325 *e*P P 21 47 56.1 +1.3
BELC Belle Mtn. Jos 79.45 55 P P 21 47 55.2 -0.1
baz=307,SNR=6.8
B29A Wagenman Farm, 79.54 36 P P 21 47 55.7 +0.4
baz=315
C28A Hausauer Farms 79.57 37 P P 21 47 56.0 +0.5
baz=314
P18A Preston Nutter 79.60 48 *e*P P 21 47 57.7 +1.6
comp=Z,38nm,1.2s
SECR 79.65 319 ⇓ *i*P P 21 47 57.2 +1.2
KNB Kanab 79.66 51 *e*P P 21 47 58.0 +1.7
KNB pmax pmax
comp=Z,56nm,1.2s
KNB Kanab 79.66 51 *e*P P 21 47 58.0 +1.7
comp=Z,56nm,1.2s
A30A Hoffart Farm, 79.69 35 P P 21 47 56.4 +0.3
baz=316,SNR=11
F26A Lodgepole 79.72 40 P P 21 47 57.0 +0.6
baz=313
SRU San Rafael Swe 79.76 49 *e*P P 21 47 58.0 +1.1
SRU pmax pmax
comp=Z,38nm,1.0s
SRU San Rafael Swe 79.76 49 *e*P P 21 47 58.0 +1.1
comp=Z,38nm,1.0s
CJR Cluj-Napoca 79.77 322 ⇓ *i*P P 21 47 58.0 +1.4
G25A Newell 79.78 40 P P 21 47 57.2 +0.5
baz=313
SULR 79.79 319 ⇓ *i*P P 21 47 57.7 +1.0
K22A Casper 79.80 44 P P 21 47 57.5 +0.5
baz=311,SNR=8.7
K22A Casper 79.80 44 *e*P P 21 47 57.9 +0.8
comp=Z,18nm,1.0s
BAR Barrett 79.80 57 *e*P P 21 47 58.1 +1.1
comp=Z,18nm,0.9s
MONP2 Monument Peak 79.84 57 P P 21 47 57.9 +0.5
baz=307
ULM Lac du Bonnet 79.84 33 P P 21 47 57.1 +0.2
comp=Z,13nm,0.9s,baz=305,slow=6.4,SNR=15
ULM LR LR 22 24 34.7
comp=Z,36nm,20.6s,baz=310,slow=36
ULM Lac du Bonnet 79.84 33 *e*P P 21 47 56.7 -0.2

ULM *e**PP pP 21 48 12.9 +0.5
ULM pmax pmax
comp=Z,39nm,1.3s
ULM Lac du Bonnet 79.84 33 *e*P P 21 47 56.7 -0.2
comp=Z,39nm,1.3s
ULM *e*pP pP 21 48 12.9 +0.5
D28A Regan 79.84 38 P P 21 47 57.4 +0.4
baz=314
MDND Maddock 79.86 37 P P 21 47 57.4 +0.4
baz=315
MDND Maddock 79.86 37 *e*P P 21 47 57.9 +0.9
comp=Z,77nm,1.3s
E27A Carson 79.88 39 P P 21 47 57.6 +0.4
baz=314,SNR=6.4
NEE2 Needles Airpor 79.89 54 P P 21 47 57.9 +0.5
baz=308
VOIR 79.91 320 ⇓ *i*P P 21 47 58.2 +0.8
IRM Iron Mountain 79.92 55 P P 21 47 58.1 +0.4
baz=308,SNR=9.7
LANS Liptovska Anna 80.02 325 *e*P P 21 47 59.6 +1.7
LANS Liptovska Anna 80.02 325 *e*P P 21 47 59.6 +1.7
BC3 Big Chuckawall 80.02 55 P P 21 47 58.6 +0.3
baz=308,SNR=11
KECS Kecovo 80.03 324 *e*P P 21 47 59.5 +1.6
KECS pmax pmax
comp=Z,5.0nm,1.0s
KECS Kecovo 80.03 324 *e*P P 21 47 59.5 +1.6
B30A Myrvik Farm, E 80.03 36 P P 21 47 58.2 +0.3
baz=316,SNR=10
F27A Lemmon 80.03 39 P P 21 47 58.4 +0.4
baz=314,SNR=5.5
H25A Fruitdale 80.07 41 P P 21 47 58.7 +0.3
baz=313,SNR=6.9
OKC Ostrava-Krasne 80.11 327 *e*P P 21 47 58.8 +0.5
OKC Ostrava-Krasne 80.11 327 *e*P P 21 47 58.8 +0.5
G26A Maurine 80.14 40 P P 21 47 59.2 +0.6
baz=313
DRGR 80.16 322 ⇓ *i*P P 21 47 58.8 +0.1
W13A Hualapai Mount 80.17 53 *e*P P 21 47 60.0 +0.8
comp=Z,12nm,1.0s
W13A *e*pP pP 21 48 16.3 +1.6
ARR Arges 80.17 320 ⇓ *i*P P 21 48 00.4 +1.6
KSP Ksiaz 80.18 328 *e*P P 21 47 59.3 +0.6
KSP Ksiaz 80.18 328 *e*P P 21 47 59.4 +0.7
RSSD Black Hills 80.18 42 P P 21 47 59.5 +0.4
baz=312
RSSD Black Hills 80.18 42 *e*P P 21 47 59.7 +0.6
RSSD pmax pmax
comp=Z,13nm,0.8s
RSSD Black Hills 80.18 42 *e*P P 21 47 59.7 +0.6
comp=Z,13nm,0.8s
IBP Imperial Bould 80.20 57 P P 21 47 59.9 +0.6
baz=308,SNR=8.7
E28A Huff 80.22 38 P P 21 47 59.2 +0.3
baz=314
SWSC Sam W. Stewart 80.22 56 P P 21 47 59.4 +0.1
baz=308,SNR=5.2
U15A North Rim 80.36 52 *e*P P 21 48 01.7 +1.4
comp=Z,32nm,1.2s
U15A *e*pP pP 21 48 17.5 +1.7
B31A Greenbush Farm 80.37 35 P P 21 47 59.6 -0.1
baz=316,SNR=5.6
I25A Rochford 80.41 41 P P 21 48 00.1 -0.2
baz=313,SNR=9.9
D29A Pettibone, Tap 80.41 37 P P 21 48 00.4 +0.4
baz=315
G27A Dupree 80.42 40 P P 21 47 59.6 -0.5
baz=314
MORC Moravsky Berou 80.43 327 *e*P P 21 48 00.7 +0.6
MORC pmax pmax
comp=Z,102nm,1.1s
MORC Moravsky Berou 80.43 327 *e*P P 21 48 00.7 +0.6
comp=Z,102nm,1.1s
O20A White River Ci 80.46 47 P P 21 48 00.9 +0.2
baz=311,SNR=10
O20A White River Ci 80.46 47 *e*P P 21 48 01.2 +0.6
comp=Z,25nm,0.9s
PDMCI Parker Dam,Lak 80.49 54 P P 21 48 01.2 +0.6
baz=308,SNR=7.1
C30A Mose, Pekin 80.49 36 P P 21 48 00.6 +0.1
baz=316,SNR=5.6
H26A Fairpoint 80.51 41 P P 21 48 00.7 +0.1
baz=313
RAYN Ar Rayn 80.52 292 *e*P P 21 48 01.3 +0.3
comp=Z,15nm,1.0s
DPC Dobruska-Polom 80.53 328 *e*P P 21 48 01.4 +0.8
DPC *e*PCP PcP 21 48 05.4 -2.0
DPC *e*PP PP 21 51 01.0 -2.9
DPC Dobruska-Polom 80.53 328 *e*P P 21 48 01.4 +0.8
DPC *e* 21 51 01.0
A32A Rocking H Ranc 80.54 34 P P 21 48 00.5 -0.1
baz=317,SNR=5.4
UPC Upice 80.55 328 *e*P P 21 48 01.2 +0.5
UPC AMS AMS 22 28 10.0
UPC Upice 80.55 328 *e*P P 21 48 01.2 +0.5
Y12C Blythe 80.58 55 P P 21 48 01.7 +0.6
baz=308,SNR=6.4
Y12C Blythe 80.58 55 *e*P P 21 48 02.2 +1.1
comp=Z,36nm,1.2s
F28A McLaughlin 80.67 39 P P 21 48 01.6 +0.1
baz=314
DEV Deva 80.69 321 ⇑ *i*P P 21 48 02.5 +1.0
PSZ Piszkesteto 80.71 324 ⇑ *e*P P 21 48 02.4 +0.7
PSZ Piszkesteto 80.71 324 *e*P P 21 48 02.0 +0.3
PSZ pmax pmax
comp=Z,35nm,1.1s
PSZ Piszkesteto 80.71 324 *e*P P 21 48 02.0 +0.3
comp=Z,35nm,1.1s
E29A Napoleon 80.74 38 P P 21 48 02.0 +0.2
baz=315
C31A Landman Farms, 80.78 36 P P 21 48 02.0 0.0
baz=316
D30A Buchanan 80.78 37 P P 21 48 02.1 +0.1
baz=316
VYHS Vyhne 80.78 325 *e*P P 21 48 02.7 +0.7
VYHS pmax pmax
comp=Z,13nm,1.3s
VYHS Vyhne 80.78 325 *e*P P 21 48 02.7 +0.7
J25A Sunshine Ranch 80.80 42 P P 21 48 02.7 +0.4
baz=313
GLA Glamis 80.81 56 P P 21 48 02.9 +0.4
baz=308,SNR=6.5
GLA Glamis 80.81 56 *e*P P 21 48 03.7 +1.3
GLA pmax pmax
comp=Z,32nm,1.1s
GLA Glamis 80.81 56 *e*P P 21 48 03.7 +1.3
comp=Z,32nm,1.1s
H27A Howes 80.86 40 P P 21 48 02.7 +0.2
baz=314,SNR=7.9
I26A New Underwood 80.86 41 P P 21 48 03.0 +0.5
baz=313
B32A Ashes, Strandq 80.90 35 P P 21 48 02.2 -0.4
baz=317,SNR=16
A33A Warroad 81.02 34 P P 21 48 03.0 -0.2
baz=318,SNR=17
GZR Gura Zlata 81.10 321 ⇓ *i*P P 21 48 03.9 +0.1
BRG Berggiesshubel 81.14 329 *e*P P 21 48 03.8 0.0
comp=Z,22nm,1.1s
BRG Berggiesshubel 81.14 329 *e*P P 21 48 03.8 0.0
BRG pmax pmax
comp=Z,22nm,1.1s
BRG MLR MLR
comp=N,202nm,20.3s
BRG MLR MLR
comp=E,121nm,17.6s
BRG MLR MLR
comp=Z,325nm,20.7s
E30A Jud 81.14 37 P P 21 48 04.4 +0.5
baz=315
G28A Parade 81.15 39 P P 21 48 04.5 +0.5
baz=314
F29A Eureka 81.16 38 P P 21 48 04.3 +0.2
baz=315
CLL Collm 81.18 330 ⇑ *i*P P 21 48 03.9 -0.1
comp=Z,37nm,1.0s
CLL *i* 21 48 07.6
CLL *e* 21 48 19.0
CLL *e* 21 48 27.0
CLL *e*PP PP 21 51 10.0 +0.9
CLL *e*S S 21 58 11.0 +1.4
CLL *e*SS SS 22 03 19.0 -5.4
CLL Lm MLR 22 30 00.0
comp=Z,200nm,18.3s
CLL Collm 81.18 330 ⇑ *i*P P 21 48 03.9 -0.1
CLL *e* 21 48 19.0
CLL *e*S S 21 58 11.0 +1.4

CLL pmax pmax
comp=Z,37nm,1.0s
CLL MLR MLR
comp=Z,200nm,18.3s
CLL Collm 81.18 330 *eP* **P 21 48 02.6 -1.4**
comp=Z,39nm,1.0s
VRAC Vranov 81.19 327 *j iP* **P 21 48 05.2 +1.1**
J26A Sides Ranch, S 81.24 42 P **P 21 48 04.8 +0.2**
baz=313,SNR=9.2
I27A Quinn 81.26 41 P **P 21 48 05.3 +0.6**
baz=314
AGMN Agassiz Nation 81.28 34 P **P 21 48 04.0 -0.6**
baz=317,SNR=9.8
AGMN Agassiz Nation 81.28 34 *eP* **P 21 48 04.2 -0.4**
comp=Z,27nm,1.1s
AGMN *epP* **pP 21 48 19.2 -0.9**
N23A Red Feather La 81.28 45 P **P 21 48 06.0 +0.9**
baz=312,SNR=16
N23A Red Feather La 81.28 45 *eP* **P 21 48 06.3 +1.2**
comp=Z,50nm,1.1s
H28A Mission Ridge 81.37 40 P **P 21 48 05.7 +0.5**
baz=314,SNR=6.8
B33A Robert and Kas 81.42 34 P **P 21 48 05.5 +0.1**
baz=317
Y14A Wickenburg 81.45 54 *eP* **P 21 48 06.9 +1.0**
comp=Z,78nm,1.0s
Y14A *epP* **pP 21 48 21.4 0.0**
WUAZ Wupatki 81.51 52 P **P 21 48 07.3 +1.1**
baz=310,SNR=13
WUAZ Wupatki 81.51 52 *eP* **P 21 48 08.0 +1.7**
comp=Z,32nm,1.0s
GOPC GO Pecny, Ondr 81.51 328 *eP* **P 21 48 06.4 +0.6**
GOPC *ePCP* **PcP 21 48 10.3 -1.4**
GOPC GO Pecny, Ondr 81.51 328 *eP* **P 21 48 06.4 +0.6**
BZS Buzias 81.52 322 *j iP* **P 21 48 06.3 +0.4**
F30A Leola 81.56 38 P **P 21 48 06.3 +0.1**
baz=315
PRU Pruhonice 81.56 328 *eP* **P 21 48 06.6 +0.6**
PRU *ePCP* **PcP 21 48 10.6 -1.3**
PRU Pruhonice 81.56 328 *eP* **P 21 48 06.6 +0.6**
G29A Hoven 81.57 39 P **P 21 48 06.7 +0.5**
baz=315
E31A Nome 81.59 37 P **P 21 48 06.3 0.0**
baz=316,SNR=5.2
113A Mohawk Valley, 81.68 55 *eP* **P 21 48 07.6 +0.6**
comp=Z,14nm,1.0s
B34A Aery, Baudette 81.69 34 P **P 21 48 06.5 -0.2**
baz=318,SNR=6.5
C33A Trail 81.72 35 P **P 21 48 06.5 -0.4**
baz=317,SNR=5.1
URZ Urewera 81.75 152 LR LR 22 20 07.4
comp=Z,116nm,19.5s,baz=342,slow=32
I28A Midland 81.77 40 P **P 21 48 07.4 +0.1**
baz=314,SNR=13
PKSG 81.79 325 *j eP* **P 21 48 07.6 +0.3**
H29A Onida 81.82 39 P **P 21 48 07.4 -0.1**
baz=315,SNR=7.4
SMCO Snowmass 81.83 47 *eP* **P 21 48 09.2 +1.0**
comp=Z,18nm,1.0s
J27A Elkhorn Farm, 81.85 41 P **P 21 48 08.4 +0.6**
baz=314,SNR=6.2
ISP Isparta 81.91 312 *eP* **P 21 48 08.8 +0.5**
ISP pmax pmax
comp=Z,17nm,1.1s
ISP Isparta 81.91 312 *eP* **P 21 48 08.8 +0.5**
comp=Z,17nm,1.1s
F31A Hecla 81.92 37 P **P 21 48 08.3 +0.3**
baz=316
G30A Faulkton 82.00 38 P **P 21 48 08.7 +0.3**
baz=315,SNR=11
MPEP Malo Peshtene 82.02 319 P **P 21 48 09.3 +0.7**
MDVR Moldovita 82.06 321 *j iP* **P 21 48 09.4 +0.5**
J28A Allard Ranch, 82.13 41 P **P 21 48 09.7 +0.5**
baz=314,SNR=5.8
D33A AnnSam, Waubun 82.14 35 P **P 21 48 08.9 -0.3**
baz=317
X16A Lo Mia Camp, P 82.16 53 *eP* **P 21 48 11.5 +1.7**
comp=Z,18nm,1.0s
C34A RKJ Ranch, Bem 82.19 34 P **P 21 48 09.0 -0.4**
baz=318
B35A Bob, Littlefor 82.19 33 P **P 21 48 09.1 -0.3**
baz=319,SNR=6.9
I29A Vivian Onida 82.20 40 P **P 21 48 09.6 0.0**
baz=315,SNR=7.4
ISCO Idaho Springs 82.20 46 P **P 21 48 10.8 +0.8**
baz=312,SNR=8.0
ISCO Idaho Springs 82.20 46 *eP* **P 21 48 11.2 +1.2**
ISCO pmax pmax
comp=Z,44nm,1.8s
ISCO Idaho Springs 82.20 46 *eP* **P 21 48 11.2 +1.2**
comp=Z,44nm,1.8s
MVCO Mesa Verde 82.20 49 P **P 21 48 10.8 +0.8**
baz=311,SNR=11
MVCO Mesa Verde 82.20 49 *eP* **P 21 48 11.2 +1.2**
comp=Z,26nm,1.1s
MVCO *epP* **pP 21 48 27.5 +2.0**
NKC Novy Kostel 82.24 330 *eP* **P 21 48 09.9 +0.3**
NKC Novy Kostel 82.24 330 *eP* **P 21 48 09.9 +0.3**
G31A Conde 82.40 38 P **P 21 48 11.1 +0.5**
baz=316
SOP Sopron 82.42 326 *j eP* **P 21 48 11.2 +0.6**
PKS9 Tamasi 82.43 324 *j eP* **P 21 48 10.6 -0.1**
D34A Park Rapids 82.48 35 P **P 21 48 10.5 -0.4**
baz=318,SNR=7.0
E33A Westby DABS, E 82.53 36 P **P 21 48 11.3 +0.1**
baz=317
CONA Conrad Observa 82.54 326 *i P* **P 21 48 12.1 +0.8**
comp=Z,26nm,1.3s,SNR=15
C35A Jirik Farms, M 82.57 34 P **P 21 48 11.4 0.0**
baz=319
SUSD Miller 82.58 39 P **P 21 48 11.6 0.0**
baz=316
J29A Okreek 82.62 40 P **P 21 48 11.9 +0.1**
baz=315,SNR=6.0
KHC Kasperske Hory 82.62 328 *eP* **P 21 48 12.0 +0.3**
KHC Kasperske Hory 82.62 328 *eP* **P 21 48 12.0 +0.3**
KHC pmax pmax
comp=Z,10.0nm,1.0s
KHC Kasperske Hory 82.62 328 *eP* **P 21 48 12.0 +0.3**
comp=Z,9.8nm,1.0s
RZN Rozhen 82.65 317 *i P* **P 21 48 12.2 0.0**
G32A Webster 82.72 37 P **P 21 48 12.1 -0.1**
baz=316,SNR=10
I30A Oacoma 82.72 39 P **P 21 48 12.3 0.0**
baz=315,SNR=5.8
GEC2 GERESS Array S 82.79 328 *eP* **P 21 48 12.6 0.0**
GEC2 pmax pmax
comp=Z,11nm,1.0s
GEC2 GERESS Array S 82.79 328 *eP* **P 21 48 12.6 0.0**
comp=Z,11nm,1.0s
GERES GERESS Array B 82.79 328 P **P 21 48 11.9 -0.7**
comp=Z,7.7nm,0.9s,baz=36,slow=5.0,SNR=39
GERES PP **PP 21 51 24.6 +2.0**
comp=Z,0.8nm,0.9s,baz=45,slow=5.8,SNR=3.8
GERES PKKPbc **PKKPbc 22 06 36.2 +0.8**
comp=Z,0.1nm,0.3s,baz=204,slow=2.9,SNR=4.4
GERES LR LR 22 29 09.7
comp=Z,179nm,18.1s,baz=40,slow=39
GEA0 GERESS Array S 82.79 328 *eP* **P 21 48 12.1 -0.5**
H31A Wolsey 82.80 38 P **P 21 48 13.0 +0.4**
baz=316
214A Organ Pipe Nat 82.82 55 P **P 21 48 13.4 +0.4**
baz=309
VTS Vitosha 82.83 319 *j iP* **P 21 48 13.9 +0.8**
VTS Vitosha 82.83 319 *eP* **P 21 48 13.9 +0.8**
VTS pmax pmax
comp=Z,13nm,1.0s
VTS Vitosha 82.83 319 *i P* **P 21 48 13.5 +0.4**
VTS Vitosha 82.83 319 *eP* **P 21 48 13.9 +0.8**
comp=Z,13nm,1.0s
S22A 4UR Ranch, Cre 82.85 48 P **P 21 48 14.3 +0.8**
baz=312,SNR=20
S22A 4UR Ranch, Cre 82.85 48 *eP* **P 21 48 14.9 +1.5**
comp=Z,30nm,1.1s
F33A 5 Mile Ranch, 82.88 36 P **P 21 48 12.9 -0.1**
baz=317,SNR=11
E34A Wadena 82.91 35 P **P 21 48 13.6 +0.4**
baz=318
D35A Remer 83.00 34 P **P 21 48 13.3 -0.4**
baz=319
Q24A Divide 83.03 46 P **P 21 48 14.4 +0.1**
baz=312,SNR=6.2
Q24A Divide 83.03 46 *eP* **P 21 48 15.5 +1.2**
comp=Z,14nm,0.9s
C36A Pine Crest Far 83.03 33 P **P 21 48 14.0 +0.2**
baz=319
X18A Snowflake 83.04 52 *eP* **P 21 48 15.7 +1.4**
comp=Z,25nm,1.3s
J30A Dallas 83.11 40 P **P 21 48 14.7 +0.4**
baz=315
GRFO Grafenberg 83.16 330 *eP* **P 21 48 15.1 +0.7**
GRFO pmax pmax
comp=Z,45nm,1.1s
GRFO Grafenberg 83.16 330 *eP* **P 21 48 15.1 +0.7**
comp=Z,45nm,1.1s
ARSA Arzberg 83.20 326 *i* P **P 21 48 14.9 +0.2**
comp=Z,12nm,1.1s,SNR=7.7
E35A Pequot Lakes 83.23 35 P **P 21 48 15.1 +0.2**
baz=318
MMB Musomiste 83.26 318 *i* P **P 21 48 15.6 +0.5**
G33A Ortonville 83.28 37 P **P 21 48 15.1 0.0**
baz=317,SNR=5.2
H32A Carlson Farm, 83.30 38 P **P 21 48 16.2 +1.0**
baz=317
MOA Molln 83.31 327 *i* P **P 21 48 15.3 +0.1**
comp=Z,18nm,1.3s,SNR=9.4
D36A Goodland 83.33 34 P **P 21 48 15.1 -0.3**
baz=319
C37A Embarrass 83.34 33 P **P 21 48 15.0 -0.4**
baz=320,SNR=6.7
F34A Alexandria 83.40 36 P **P 21 48 15.6 -0.1**
baz=318
THZ Tophouse 83.41 157 *eP* **P 21 48 15.8 +0.2**
comp=Z,36nm,1.1s
OGNE Ogallala 83.43 43 P **P 21 48 16.6 +0.6**
baz=314
M28A Bar X Bar Ranc 83.47 42 P **P 21 48 16.2 -0.1**
baz=314
EYMN Ely 83.48 33 P **P 21 48 15.9 -0.2**
baz=320,SNR=5.7
K30A Basset 83.50 40 P **P 21 48 16.5 +0.1**
baz=315,SNR=5.6
H33A Prehn Over Nor 83.51 37 P **P 21 48 16.2 -0.2**
baz=317,SNR=16
I32A Karley and Nic 83.63 38 P **P 21 48 16.8 -0.1**
baz=317
G34A Benson 83.63 36 P **P 21 48 17.0 +0.1**
baz=318,SNR=5.1
SDCO Great Sand Dun 83.64 47 P **P 21 48 17.7 +0.2**
baz=312,SNR=20
SDCO Great Sand Dun 83.64 47 *eP* **P 21 48 17.5 0.0**
comp=Z,23nm,1.1s
D37A Cotton 83.67 34 P **P 21 48 17.1 0.0**
baz=320
F35A Swanville 83.67 35 P **P 21 48 17.2 +0.1**
baz=318
C38A Sawbill Land. 83.75 33 P **P 21 48 16.9 -0.6**
baz=320,SNR=9.4
E36A McGregor 83.79 34 P **P 21 48 17.4 -0.3**
baz=319,SNR=6.1
PERS Pernice 83.85 326 *i* P **P 21 48 18.7 +0.6**
SOKA Soboth 83.86 326 *i* P **P 21 48 18.2 0.0**
comp=Z,34nm,1.1s,SNR=28
J32A Parkston 83.91 39 P **P 21 48 18.5 +0.1**
baz=316
TUC Tucson 83.92 54 P **P 21 48 19.6 +0.8**
baz=310
TUC Tucson 83.92 54 *eP* **P 21 48 19.6 +0.8**
TUC pmax pmax
comp=Z,20nm,1.2s
TUC Tucson 83.92 54 *eP* **P 21 48 19.6 +0.8**
comp=Z,20nm,1.2s
I33A Coleman 83.94 38 P **P 21 48 19.3 +0.7**
baz=317
K31A O'Neill 83.99 40 P **P 21 48 19.5 +0.7**
baz=316
H34A Spellman Lake, 83.99 37 P **P 21 48 19.4 +0.6**
baz=318
VAY Valandovo 84.06 318 *i* P **P 21 48 19.3 +0.1**
F36A Milaca 84.16 35 P **P 21 48 19.6 0.0**
baz=319
C39A Grand Marais 84.16 32 P **P 21 48 19.5 0.0**
baz=321
SKO Skopje 84.20 319 *i* P **P 21 48 20.6 +0.8**
L31A Butterfield Fa 84.26 40 P **P 21 48 20.3 +0.1**
baz=316,SNR=8.9
ECSD EROS Data Cent 84.26 38 P **P 21 48 20.3 +0.1**
baz=317,SNR=17
ECSD EROS Data Cent 84.26 38 *eP* **P 21 48 20.2 0.0**
comp=Z,25nm,1.0s
ECSD *epP* **pP 21 48 36.0 +0.2**
N29A Votaw Ranch, W 84.28 42 P **P 21 48 20.5 +0.1**
baz=315
KBA Koelnbreinsper 84.30 327 *i* PcP **P 21 48 21.1 +0.6**
comp=Z,12nm,1.2s,SNR=7.2
PMOR Pomariorio Ree 84.31 113 *e*T T 23 21 14.7
comp=Z,26nm,0.2s
BEBN Eben Emael 84.38 333 P **P 21 48 20.9 +0.4**
J33A Davis 84.39 38 P **P 21 48 20.9 +0.1**
baz=317
MEM Membach 84.42 333 P **P 21 48 20.4 -0.4**
comp=Z,8.6nm,1.2s
H35A Sunnyside Ranc 84.42 36 P **P 21 48 21.2 +0.2**
baz=318,SNR=18
G36A St. Michael 84.53 35 P **P 21 48 21.8 +0.4**
baz=319
VISS Visnje 84.61 325 *i* P **P 21 48 21.4 -0.5**
BOJS Bojanci 84.65 325 *i* P **P 21 48 22.4 +0.3**
T25A Trinidad 84.69 47 P **P 21 48 23.4 +0.7**
baz=313,SNR=28
T25A Trinidad 84.69 47 *eP* **P 21 48 23.6 +0.9**
comp=Z,46nm,1.0s
STU Stuttgart 84.70 330 *eP* **P 21 48 22.8 +0.6**
STU pmax pmax
comp=Z,39nm,1.1s
STU Stuttgart 84.70 330 *eP* **P 21 48 22.8 +0.6**
comp=Z,39nm,1.1s
PPT Papeete 84.75 116 LR LR 22 19 20.7
comp=Z,168nm,20.5s,baz=342,slow=31
PPT2 Papeete2 84.76 116 *e*LR LR 22 14 41.7
comp=Z,52nm,27.2s
PPT2 Papeete2 84.76 116 *e*T T 23 21 48.3
comp=Z,3.1nm,0.3s
M31A Lambtecht Ranc 84.78 41 P **P 21 48 23.1 +0.2**
baz=316
L32A Elgin 84.81 40 P **P 21 48 23.2 +0.2**
baz=316
BCLA Clavier 84.83 333 P **P 21 48 22.5 -0.4**
LAZ Ladron 84.88 50 *eP* **P 21 48 25.2 +1.5**
JAVS Javornik 84.89 326 *i* P **P 21 48 22.6 -0.9**
K33A Hardington 84.89 39 P **P 21 48 23.7 +0.3**
baz=317
ABTA Abfaltersbach 84.92 327 *i* P **P 21 48 22.5 -1.1**
comp=Z,10nm,1.1s,SNR=5.6
J34A George 84.92 38 P **P 21 48 24.0 +0.5**
baz=318
ANMO Albuquerque 84.94 50 P **P 21 48 25.0 +1.0**
comp=Z,14nm,1.0s,baz=309,slow=5.4,SNR=28
ANMO Albuquerque 84.94 50 *ceP* **P 21 48 25.2 +1.2**
baz=312
ANMO Albuquerque 84.94 50 *ceP* **P 21 48 25.1 +1.1**
ANMO pmax pmax
comp=Z,28nm,1.2s
ANMO Albuquerque 84.94 50 *eP* **P 21 48 25.0 +1.0**
comp=Z,26nm,1.1s
H36A Jessenland, He 84.94 36 P **P 21 48 24.0 +0.5**
baz=319
SPMN Marine on St. 84.97 35 P **P 21 48 24.2 +0.5**
baz=320
CWF Charnwood Fore 85.03 338 *eP* **P 21 48 24.2 +0.4**
comp=Z,51nm,1.5s
MOTA Moosalm 85.05 328 *i* PcP **P 21 48 24.9 +0.7**
SNR=7.6
LANF Langenberg 85.07 331 *j eP* **P 21 48 24.1 -0.1**
L33A Hoskins 85.08 39 P **P 21 48 24.8 +0.5**
baz=317
RETA Reutte 85.08 329 *i* P **P 21 48 24.4 +0.1**
comp=Z,27nm,1.1s,SNR=15
SNF Seneffe 85.11 334 P **P 21 48 24.5 +0.2**
WLF Walferdange 85.14 333 P **P 21 48 25.0 +0.6**
comp=Z,18nm,1.9s
WLF Walferdange 85.14 333 *eP* **P 21 48 25.1 +0.6**
WLF pmax pmax
comp=Z,53nm,1.8s
WLF Walferdange 85.14 333 *eP* **P 21 48 25.1 +0.7**
comp=Z,53nm,1.8s
OHR Ohrid 85.15 319 *i* P **P 21 48 24.4 -0.4**
TRI Trieste 85.17 326 *eP* **P 21 48 23.1 -1.5**
TRI pmax pmax
comp=Z,15nm,1.1s
TRI Trieste 85.17 326 *eP* **P 21 48 23.1 -1.5**
comp=Z,15nm,1.1s
BGNE Belgrade 85.17 40 P **P 21 48 25.2 +0.4**
baz=316
BGNE Belgrade 85.17 40 *eP* **P 21 48 25.2 +0.4**
comp=Z,101nm,1.2s
LPM Los Pinos Moun 85.25 50 *eP* **P 21 48 26.9 +1.3**
K34A Le Mars 85.29 38 P **P 21 48 25.5 +0.1**
baz=318
I36A Fitzsimmons Fa 85.31 36 P **P 21 48 25.5 +0.1**
baz=319
DOU Dourbes 85.35 334 P **P 21 48 25.3 -0.1**
BNM Barren Site 85.36 50 *eP* **P 21 48 27.1 +0.9**
BFO Black Forest 85.39 331 *i* P **P 21 48 25.9 +0.1**
BFO Black Forest 85.39 331 *eP* **P 21 48 25.6 -0.2**
comp=Z,30nm,1.0s
H37A Dierke Farm, C 85.41 35 P **P 21 48 26.2 +0.3**
baz=320
O31A Woolen Ranch, 85.45 42 P **P 21 48 26.1 -0.2**
baz=316
FETA Feichten 85.46 328 *i* P **P 21 48 26.0 -0.3**
comp=Z,9.7nm,1.0s,SNR=5.7
319A Douglas 85.50 54 *eP* **P 21 48 27.4 +0.6**
comp=Z,26nm,1.0s
N32A Stulken Farm, 85.56 41 P **P 21 48 26.6 -0.2**
baz=316
DAVA Damuels 85.61 329 *i* P **P 21 48 26.9 -0.2**
comp=Z,25nm,1.0s,SNR=10
I37A Lemond, Waseca 85.61 36 P **P 21 48 27.1 +0.2**
baz=319,SNR=5.7
SCHQ Schefferville 85.64 16 P **P 21 48 27.1 +0.3**
comp=Z,9.9nm,0.8s,baz=332,slow=4.1,SNR=8.7
SCHQ LR LR 22 28 03.5
comp=Z,121nm,21.8s,baz=320,slow=36
SCHQ Schefferville 85.64 16 *eP* **P 21 48 27.1 +0.3**
comp=Z,16nm,1.0s
J36A Seneca 1, Swea 85.67 37 P **P 21 48 27.2 0.0**
baz=319
L34A Svendsen Farm, 85.68 39 P **P 21 48 27.7 +0.3**
baz=317
121A Cookes Peak, D 85.71 52 P **P 21 48 28.6 +0.8**
baz=312,SNR=9.9
HSIG 85.92 57 *eP* **P 21 48 28.5 -0.3**
comp=Z,20nm,1.3s
COWI Conover 85.93 32 *eP* **P 21 48 28.9 +0.4**
comp=Z,20nm,1.1s
O32A Brockman Farm, 85.93 41 P **P 21 48 28.5 -0.2**
baz=316
ECH Echery 85.94 331 *j eP* **P 21 48 28.2 -0.3**
FUORN Ofenpass-Fuorn 85.97 328 *eP* **P 21 48 29.1 +0.1**
comp=Z,26nm,1.0s
J37A Redenius Farm, 86.07 37 P **P 21 48 29.4 +0.2**
baz=319
I38A Scanlan Farm, 86.09 35 P **P 21 48 29.3 -0.1**
baz=320,SNR=7.0
K36A Gilmore City 86.14 38 P **P 21 48 29.4 -0.2**
baz=319
CBKS Cedar Bluff 86.18 43 P **P 21 48 30.0 +0.1**
baz=316
P32A Hulting Farm, 86.22 42 P **P 21 48 29.3 -0.8**
baz=316,SNR=6.0
MOF Molkenrain 86.25 331 *j eP* **P 21 48 29.7 -0.4**
TAOE Nuku Hiva Isla 86.36 104 *e*LR LR 22 15 50.3
comp=Z,496nm,22.6s
THEF They Montfort 86.39 332 *j eP* **P 21 48 30.4 -0.3**
M35A Neola 86.39 39 P **P 21 48 31.3 +0.5**
baz=318
K37A Belmond 86.44 37 P **P 21 48 31.6 +0.6**
baz=319
N34A Lincoln 86.44 40 P **P 21 48 31.1 0.0**
baz=317
TUE Stuetta 86.48 329 *eP* **P 21 48 31.6 +0.2**
comp=Z,14nm,1.2s
J38A Wedel Dairy, R 86.57 36 P **P 21 48 32.0 +0.3**
baz=320
Q32A Meitler Ranch, 86.69 42 P **P 21 48 31.9 -0.5**
baz=316
LAST Lasithi 86.71 312 *eP* **P 21 48 32.3 -0.3**
comp=Z,40nm,1.2s
O34A Beatrice 86.82 40 P **P 21 48 32.7 -0.3**
baz=317
P33A Williams Farm, 86.84 42 P **P 21 48 33.2 +0.1**
baz=317
N35A Tabor 86.86 39 P **P 21 48 33.5 +0.3**
baz=318
K38A Parkersburg 86.94 37 P **P 21 48 33.8 +0.3**
baz=320
R32A Long Quarter, 87.02 43 P **P 21 48 33.7 -0.3**
baz=316
Q33A Connelly Farm, 87.08 42 P **P 21 48 34.1 -0.1**
baz=317,SNR=8.3
O35A Humboldt 87.17 40 P **P 21 48 34.6 0.0**
baz=318
P34A Walnut Farm, R 87.22 41 P **P 21 48 34.4 -0.5**
baz=317,SNR=10
N36A Muff Farm, Cla 87.24 39 P **P 21 48 35.3 +0.3**
baz=318
M37A Trindle Farm, 87.26 38 P **P 21 48 34.9 -0.2**
baz=319
S32A Newby Ranch, P 87.42 43 P **P 21 48 36.2 +0.2**
baz=316
R33A Olander Ranch, 87.50 42 P **P 21 48 36.2 -0.1**
baz=317
Q34A Chapman 87.61 41 P **P 21 48 36.9 +0.1**
baz=317
P35A Duane Minner, 87.65 41 P **P 21 48 37.3 +0.3**
baz=318
KSU1 Kansas State U 87.66 41 P **P 21 48 37.0 0.0**
baz=317
KSU1 Kansas State U 87.66 41 *eP* **P 21 48 37.5 +0.4**
comp=Z,34nm,0.8s
N37A Lee Faris, Mou 87.67 39 P **P 21 48 37.4 +0.3**
baz=319
M38A Pleasantville 87.67 38 P **P 21 48 36.9 -0.2**
baz=319
O36A Bolckow 87.75 40 P **P 21 48 37.7 +0.2**
baz=318
MNTX Cornudas Mount 87.78 51 P **P 21 48 38.1 +0.3**
baz=313,SNR=7.1
MNTX Cornudas Mount 87.78 51 *eP* **P 21 48 38.2 +0.5**
comp=Z,29nm,1.8s
T32A Huddler Ranch, 87.79 44 P **P 21 48 37.9 +0.1**
baz=316,SNR=5.9
MSTX Muleshoe 87.83 48 P **P 21 48 38.3 +0.2**
baz=314
AMTX Amarillo 87.84 47 P **P 21 48 38.7 +0.6**
baz=315
R34A Isabella, Hill 87.90 42 P **P 21 48 38.9 +0.7**
baz=317
JFWS Jewell Farm 87.92 35 *eP* **P 21 48 38.3 +0.1**
JFWS pmax pmax
comp=Z,12nm,0.9s
JFWS Jewell Farm 87.92 35 *eP* **P 21 48 38.3 +0.1**
comp=Z,12nm,0.9s
S33A Kaszmaul Farm, 88.01 43 P **P 21 48 39.2 +0.5**
baz=317
P36A Good Intent, A 88.01 40 P **P 21 48 38.6 0.0**
baz=318,SNR=6.4
N38A Joes South For 88.12 38 P **P 21 48 39.7 +0.5**
baz=319
O37A Wolven Farm, M 88.14 39 P **P 21 48 39.9 +0.6**
baz=319
T33A Patterson Ranc 88.24 43 P **P 21 48 40.1 +0.2**
baz=316
U32A Winter Ranch, 88.33 44 P **P 21 48 40.5 +0.2**
baz=316
Q36A Arnold C. Orve 88.36 41 P **P 21 48 40.6 +0.2**
baz=318
S34A Willow Spring 88.41 42 P **P 21 48 40.5 -0.1**
baz=317,SNR=5.5
N39A Derby Farms, D 88.42 38 P **P 21 48 40.8 +0.2**
baz=320
R35A Emporia Munici 88.45 41 P **P 21 48 41.0 +0.2**
baz=318,SNR=7.3
P37A Lathrop 88.47 40 P **P 21 48 41.2 +0.3**
baz=319
O38A Galt 88.51 39 P **P 21 48 41.4 +0.3**
baz=319
TBI Tubuai 88.62 121 *e*LR LR 22 16 35.4
comp=Z,493nm,26.8s
TBI Tubuai 88.62 121 *eT* T 23 26 35.6
comp=Z,22nm,0.3s
TIP Timpagrande 88.67 320 *eP* P 21 48 46.1 +4.2
comp=Z,8.5nm,1.1s
VLDQ Val d'Or 88.75 25 *eP* **P 21 48 41.4 -0.6**
comp=Z,37nm,1.1s
V32A Arapaho 88.77 45 P **P 21 48 42.8 +0.3**
baz=316,SNR=8.0
U33A Lingo Farm, Me 88.78 44 P **P 21 48 42.9 +0.5**
baz=317
R36A Gordon, Harris 88.81 41 P **P 21 48 42.6 +0.1**
baz=318,SNR=5.8

S35A	**Otter Creek Ra**	**88.85**	**42**	P		**P**	**21 48 43.2**	**+0.5**
	baz=318,SNR=5.7							
P38A	**Dawn**	**88.86**	**39**	P		**P**	**21 48 42.9**	**+0.2**
	baz=319,SNR=5.2							
T34A	**McClaskey Farm**	**88.87**	**43**	P		**P**	**21 48 43.1**	**+0.4**
	baz=317							
O39A	**Kirksville**	**88.88**	**38**	P		**P**	**21 48 43.5**	**+0.7**
	baz=320							
W32A	**Sentinel**	**89.08**	**45**	P		**P**	**21 48 44.5**	**+0.6**
	baz=316,SNR=6.9							
U34A	**Anderson Ranch**	**89.10**	**44**	P		**P**	**21 48 44.3**	**+0.4**
	baz=317,SNR=6.0							
U34A	**Anderson Ranch**	**89.10**	**44**	*e*P		**P**	**21 48 45.0**	**+1.1**
	comp=Z,46nm,1.1s							
V33A	**Lossen Ranch,**	**89.13**	**44**	P		**P**	**21 48 44.0**	**0.0**
	baz=316							
S36A	**Lake Cedric, C**	**89.21**	**42**	P		**P**	**21 48 44.4**	**0.0**
	baz=318							
O40A	**La Belle**	**89.31**	**38**	P		**P**	**21 48 45.0**	**+0.2**
	baz=320,SNR=5.1							
T35A	**Sooner Cattle**	**89.31**	**43**	P		**P**	**21 48 45.0**	**+0.1**
	baz=318,SNR=7.4							
Q38A	**Cooks Store, C**	**89.32**	**40**	P		**P**	**21 48 44.4**	**-0.4**
	baz=319							
P39A	**Salisbury**	**89.35**	**39**	P		**P**	**21 48 45.3**	**+0.3**
	baz=320							
W33A	**Caddo, Fort Co**	**89.51**	**45**	P		**P**	**21 48 46.2**	**+0.4**
	baz=316,SNR=5.6							
T36A	**Boggs Farm, Ca**	**89.55**	**42**	P		**P**	**21 48 46.1**	**+0.1**
	baz=318,SNR=6.3							
V34A	**Guthrie**	**89.55**	**44**	P		**P**	**21 48 46.4**	**+0.4**
	baz=317,SNR=9.5							
V34A	**Guthrie**	**89.55**	**44**	*e*P		**P**	**21 48 46.8**	**+0.8**
	comp=Z,34nm,0.9s							
X32A	**Elmer**	**89.56**	**46**	P		**P**	**21 48 46.0**	**-0.1**
	baz=316,SNR=7.2							
Q39A	**Willow Grove F**	**89.58**	**39**	P		**P**	**21 48 46.0**	**-0.1**
	baz=320,SNR=7.9							
S37A	**Fort Scott**	**89.59**	**41**	P		**P**	**21 48 46.1**	**0.0**
	baz=318,SNR=9.1							
U35A	**Pawnee**	**89.59**	**43**	P		**P**	**21 48 46.3**	**+0.1**
	baz=317							
P40A	**Paris**	**89.67**	**38**	P		**P**	**21 48 46.3**	**-0.2**
	baz=320,SNR=7.5							
R38A	**Fenwick Farm,**	**89.75**	**40**	P		**P**	**21 48 45.7**	**-1.2**
	baz=319							
W34A	**Bridge Creek,**	**89.84**	**44**	P		**P**	**21 48 48.1**	**+0.7**
	baz=317							
W34A	**Bridge Creek,**	**89.84**	**44**	*e*P		**P**	**21 48 48.7**	**+1.3**
	comp=Z,40nm,1.3s							
X33A	**Lawton**	**89.93**	**45**	P		**P**	**21 48 48.3**	**+0.5**
	baz=316							
V35A	**Meyer Ranch, C**	**89.98**	**44**	P		**P**	**21 48 48.4**	**+0.4**
	baz=317							
T37A	**Cheneyville 18**	**90.02**	**42**	P		**P**	**21 48 48.0**	**-0.2**
	baz=316,SNR=5.9							
R39A	**Chumby, Stover**	**90.10**	**40**	P		**P**	**21 48 48.1**	**-0.4**
	baz=320,SNR=6.8							
U36A	**Oologah**	**90.12**	**42**	P		**P**	**21 48 48.8**	**+0.1**
	baz=318							
S38A	**Stockton**	**90.17**	**41**	P		**P**	**21 48 48.1**	**-0.8**
	baz=319							
HDIL	**Hopedale**	**90.21**	**36**	P		**P**	**21 48 49.3**	**+0.3**
	baz=322							
Y33A	**Hilltop Ranch,**	**90.24**	**46**	P		**P**	**21 48 49.9**	**+0.6**
	baz=316							
X34A	**Smith Ranch, M**	**90.27**	**45**	P		**P**	**21 48 49.9**	**+0.5**
	baz=317,SNR=7.3							
W35A	**Tecumseh**	**90.40**	**44**	P		**P**	**21 48 50.1**	**+0.1**
	baz=317,SNR=5.8							
T38A	**Diamond**	**90.41**	**41**	P		**P**	**21 48 49.8**	**-0.2**
	baz=319,SNR=18							
S39A	**Bolivar**	**90.43**	**40**	P		**P**	**21 48 49.5**	**-0.6**
	baz=319,SNR=8.2							
U37A	**Salina**	**90.44**	**42**	P		**P**	**21 48 50.2**	**+0.1**
	baz=318,SNR=7.8							
TUL1	**Leonard**	**90.44**	**43**	P		**P**	**21 48 50.4**	**+0.2**
	baz=318,SNR=5.8							
TUL1	**Leonard**	**90.44**	**43**	*e*P		**P**	**21 48 51.0**	**+0.8**
	comp=Z,27nm,1.1s							
V36A	**Jenks**	**90.45**	**43**	P		**P**	**21 48 50.3**	**+0.1**
	baz=318,SNR=8.9							
TX31	**Lajitas Ar. Si**	**90.47**	**52**	*e*P		**P**	**21 48 51.5**	**+1.0**
LTX	**Lajitas**	**90.47**	**52**	*e*P		**P**	**21 48 50.7**	**+0.2**
LTX	**Lajitas**	**90.47**	**52**	*e*P		**P**	**21 48 50.7**	**+0.2**
TXAR	**Lajitas Array**	**90.47**	**52**	P		**P**	**21 48 50.7**	**+0.1**
	comp=Z,8.8nm,0.9s,baz=297,slow=3.9,SNR=30							
TXAR				LR		LR	22 23 34.3	
	comp=Z,100nm,21.9s,baz=0.0,slow=32							
R40A	**Maddies Statio**	**90.51**	**39**	P		**P**	**21 48 50.4**	**-0.1**
	baz=320,SNR=7.7							
ABTX	**Abilene, Hawle**	**90.64**	**47**	P		**P**	**21 48 51.4**	**+0.2**
	baz=316,SNR=12							
ABTX	**Abilene, Hawle**	**90.64**	**47**	*e*P		**P**	**21 48 51.8**	**+0.6**
	comp=Z,32nm,1.1s							
Z33A	**Whitaker Ranch**	**90.68**	**46**	P		**P**	**21 48 51.3**	**0.0**
	baz=316,SNR=6.2							
W36A	**Wetumka**	**90.77**	**44**	P		**P**	**21 48 52.1**	**+0.4**
	baz=318,SNR=6.3							
Y34A	**Reagan Ranch,**	**90.78**	**45**	P		**P**	**21 48 51.6**	**-0.1**
	baz=317							
U38A	**Gravette**	**90.81**	**42**	P		**P**	**21 48 51.8**	**-0.1**
	baz=319,SNR=12							
V37A	**Hulbert**	**90.82**	**42**	P		**P**	**21 48 52.0**	**+0.1**
	baz=318,SNR=16							
X35A	**Drake**	**90.90**	**45**	P		**P**	**21 48 52.2**	**-0.1**
	baz=317,SNR=14							
T39A	**Clever**	**90.90**	**41**	P		**P**	**21 48 52.1**	**-0.2**
	baz=319,SNR=6.1							
S40A	**Lebanon**	**90.92**	**40**	P		**P**	**21 48 51.9**	**-0.5**
	baz=320,SNR=8.2							
133A	**Hamilton Ranch**	**91.08**	**47**	P		**P**	**21 48 53.3**	**+0.1**
	baz=316							
Z34A	**Collier Ranch,**	**91.11**	**46**	P		**P**	**21 48 53.3**	**0.0**
	baz=317,SNR=8.4							
X36A	**Centrahoma**	**91.12**	**44**	P		**P**	**21 48 53.7**	**+0.4**
	baz=318,SNR=16							
HHAR	**Hobbs**	**91.17**	**41**	*e*P		**P**	**21 48 53.7**	**+0.1**
	comp=Z,13nm,1.0s							
W37B	**Quinton**	**91.21**	**43**	P		**P**	**21 48 53.1**	**-0.7**
	baz=318							
Y35A	**Marietta**	**91.22**	**45**	P		**P**	**21 48 53.8**	**0.0**
	baz=317							
V38A	**Canehill**	**91.23**	**42**	P		**P**	**21 48 53.6**	**-0.2**
	baz=319,SNR=16							
T40A	**Mansfield**	**91.25**	**40**	P		**P**	**21 48 53.6**	**-0.3**
	baz=320,SNR=12							
U39A	**Green Forest**	**91.33**	**41**	P		**P**	**21 48 54.0**	**-0.3**
	baz=319,SNR=20							
SFIN	**Lafayette**	**91.37**	**35**	P		**P**	**21 48 54.3**	**-0.1**
	baz=323							
LMQ	**La Malbaie**	**91.46**	**21**	*e*P		**P**	**21 48 55.4**	**+0.7**
	comp=Z,31nm,1.1s							
LMQ				*e*pP		**pP**	**21 49 11.3**	**+0.9**
233A	**Rising Star**	**91.51**	**47**	P		**P**	**21 48 55.7**	**+0.5**
	baz=316,SNR=7.2							
Z35A	**Perchaven, San**	**91.52**	**45**	P		**P**	**21 48 55.3**	**+0.1**
	baz=317							
134A	**White-Moore Ra**	**91.59**	**47**	P		**P**	**21 48 55.9**	**+0.4**
	baz=317,SNR=7.0							
Y36A	**Durant**	**91.65**	**44**	P		**P**	**21 48 55.7**	**-0.1**
	baz=318,SNR=8.6							
X37A	**Clayton**	**91.65**	**43**	P		**P**	**21 48 55.9**	**+0.1**
	baz=318,SNR=5.4							
V39A	**Pettigrew**	**91.66**	**42**	P		**P**	**21 48 55.5**	**-0.4**
	baz=319,SNR=13							
U40A	**Yellville**	**91.68**	**41**	P		**P**	**21 48 55.8**	**-0.1**
	baz=320,SNR=22							
W38A	**Poteau**	**91.76**	**43**	P		**P**	**21 48 56.5**	**+0.2**
	baz=319,SNR=7.9							
X38A	**Whitesboro**	**91.89**	**43**	P		**P**	**21 48 57.1**	**+0.2**
	baz=318,SNR=11							
333A	**Richland Sprin**	**91.95**	**48**	P		**P**	**21 48 57.5**	**+0.2**
	baz=316,SNR=13							
Y37A	**Hugo**	**91.97**	**44**	P		**P**	**21 48 57.7**	**+0.5**
	baz=318							
234A	**Clairette**	**91.97**	**47**	P		**P**	**21 48 57.4**	**+0.1**
	baz=316,SNR=9.8							
135A	**Vickery Place,**	**91.99**	**46**	P		**P**	**21 48 58.0**	**+0.6**
	baz=317							
Z36A	**Blue Ridge**	**92.03**	**45**	P		**P**	**21 48 57.5**	**0.0**
	baz=318,SNR=6.0							
W39A	**Magazine**	**92.06**	**42**	P		**P**	**21 48 57.6**	**0.0**
	baz=319							
JCT	**Junction City**	**92.07**	**49**	P		**P**	**21 48 57.8**	**0.0**
	baz=316,SNR=5.1							
JCT	**Junction City**	**92.07**	**49**	*e*P		**P**	**21 48 58.4**	**+0.6**
JCT				pmax		pmax		
	comp=Z,52nm,1.8s							
JCT	**Junction City**	**92.07**	**49**	*e*P		**P**	**21 48 58.4**	**+0.6**
	comp=Z,52nm,1.8s							
V40A	**Witts Springs**	**92.12**	**41**	P		**P**	**21 48 57.5**	**-0.5**
	baz=320							
433A	**Art**	**92.30**	**48**	P		**P**	**21 48 58.8**	**-0.1**
	baz=316,SNR=6.2							
WHTX	**Lake Whitney,**	**92.38**	**47**	P		**P**	**21 48 59.4**	**+0.2**
	baz=317							
WHTX	**Lake Whitney,**	**92.38**	**47**	*e*P		**P**	**21 49 00.2**	**+1.0**
	comp=Z,33nm,1.0s							
334A	**Lometa**	**92.39**	**47**	P		**P**	**21 48 59.4**	**+0.1**
	baz=316,SNR=7.5							
X39A	**Fountain Ranch**	**92.40**	**43**	P		**P**	**21 48 59.5**	**+0.2**
	baz=319,SNR=17							
W40A	**Ferguson Farm,**	**92.45**	**42**	P		**P**	**21 48 59.5**	**+0.1**
	baz=320,SNR=7.2							
SIUC	**Southern Illin**	**92.48**	**38**	*e*P		**P**	**21 48 59.8**	**+0.3**
	comp=Z,22nm,1.1s							
Y38A	**Idabel**	**92.50**	**44**	P		**P**	**21 48 59.9**	**+0.2**
	baz=318							
136A	**Ennis**	**92.56**	**46**	P		**P**	**21 49 00.1**	**+0.1**
	baz=317							
MIAR	**Mount Ida**	**92.67**	**42**	P		**P**	**21 49 00.7**	**+0.2**
	baz=319,SNR=15							
MIAR	**Mount Ida**	**92.67**	**42**	*e*P		**P**	**21 49 00.8**	**+0.3**
MIAR				pmax		pmax		
	comp=Z,30nm,1.1s							
MIAR	**Mount Ida**	**92.67**	**42**	*e*P		**P**	**21 49 00.8**	**+0.3**
	comp=Z,30nm,1.1s							
X201	**Greenbrier Sit**	**92.75**	**41**	*e*P		**P**	**21 49 01.1**	**+0.3**
	comp=Z,24nm,1.1s							
X301	**Greenbrier Sit**	**92.77**	**41**	*e*P		**P**	**21 49 01.2**	**+0.3**
	comp=Z,17nm,1.2s							
WHAR	**Wooly Hollow**	**92.79**	**41**	*e*P		**P**	**21 49 01.4**	**+0.4**
	comp=Z,26nm,1.1s							
533A	**Kerrville**	**92.82**	**49**	P		**P**	**21 49 01.7**	**+0.3**
	baz=316							
Y39A	**Lockesburg**	**92.84**	**43**	P		**P**	**21 49 01.1**	**-0.2**
	baz=319,SNR=5.7							
W41A	**Tony Mavity, V**	**92.90**	**41**	P		**P**	**21 49 01.7**	**+0.2**
	baz=320							
W41B	**Gary Mavity, V**	**92.90**	**41**	P		**P**	**21 49 01.2**	**-0.3**
	baz=320							
335A	**Moody**	**92.91**	**47**	P		**P**	**21 49 01.6**	**0.0**
	baz=317							
X40A	**Basin Creek Fa**	**93.11**	**42**	P		**P**	**21 49 02.6**	**+0.1**
	baz=320,SNR=6.4							
336A	**Riesel**	**93.17**	**47**	P		**P**	**21 49 02.6**	**-0.3**
	baz=317							
633A	**Saathoff Ranch**	**93.17**	**49**	P		**P**	**21 49 03.5**	**+0.6**
	baz=316							
435B	**Jarrell**	**93.18**	**47**	P		**P**	**21 49 03.3**	**+0.4**
	baz=317							
534A	**Blanco**	**93.19**	**49**	P		**P**	**21 49 03.2**	**+0.2**
	baz=316,SNR=8.9							
Y40A	**Okolona**	**93.23**	**43**	P		**P**	**21 49 03.3**	**+0.2**
	baz=319							
832A	**Faith Ranch, C**	**93.52**	**51**	P		**P**	**21 49 05.4**	**+0.9**
	baz=315							
436A	**Wall Ranch, Ga**	**93.65**	**47**	P		**P**	**21 49 05.8**	**+0.7**
	baz=317							
833A	**Chaparral WMA,**	**93.85**	**50**	P		**P**	**21 49 06.3**	**+0.3**
	baz=316							
N54A	**Moraine State**	**93.94**	**30**	P		**P**	**21 49 06.4**	**+0.1**
	baz=328							
933A	**Laredo**	**94.43**	**51**	P		**P**	**21 49 10.0**	**+1.2**
	baz=316,SNR=9.5							
636A	**Smothers Creek**	**94.43**	**48**	P		**P**	**21 49 09.5**	**+0.9**
	baz=317							
LMN	**Caledonia Moun**	**94.49**	**18**	*e*P		**P**	**21 49 09.4**	**+0.8**
	comp=Z,17nm,1.2s							
934A	**Benavides**	**94.90**	**50**	P		**P**	**21 49 12.0**	**+1.1**
	baz=316							
KEST	**Kesra**	**95.06**	**322**	LR		LR	22 35 50.9	
	comp=Z,126nm,19.4s,baz=320,slow=38							
O56A	**Blue Knob Stat**	**95.10**	**29**	P		**P**	**21 49 12.4**	**+0.8**
	baz=329							
034A	**Hebbronville**	**95.19**	**51**	P		**P**	**21 49 13.5**	**+1.4**
	baz=316							
N59A	**State Game Lan**	**95.60**	**27**	P		**P**	**21 49 14.1**	**+0.3**
	baz=331							
ZAIG	**Zacatecas**	**95.69**	**56**	*e*P		**P**	**21 49 16.1**	**+1.1**
	comp=Z,7.7nm,1.0s							
ES19	**SONSECA Array**	**97.35**	**334**	*e*P		**P**	**21 49 21.6**	**-0.2**
ESDC	**Sonseca Array**	**97.40**	**334**	P		**P**	**21 49 21.1**	**-1.0**
	comp=Z,0.3nm,0.4s,baz=0.4,slow=4.4,SNR=5.2							
ESDC				LR		LR	22 37 39.4	
	comp=Z,115nm,20.0s,baz=60,slow=38							
KMSC	**Kings Mountain**	**98.27**	**34**	P		**P**	**21 49 25.3**	**-0.7**
	baz=327							
RKT	**Rikitea**	**98.89**	**112**	*e*LR		LR	22 21 21.3	
	comp=Z,423nm,25.5s,baz=313							
TOA1	**Torodi Ar. Sit**	**117.32**	**314**	*e*PKPdf		**PKPdf**	**21 54 32.9**	**-1.4**
TOA1				*e*PP		PP	21 55 37.9	-7.1
TOA1				*e*PKKPbc		**PKKPbc**	**22 04 58.5**	**+2.0**
TOA0	**Torodi Ar. Sit**	**117.33**	**314**	*e*PKPdf		**PKPdf**	**21 54 33.6**	**-0.7**
TORD	**Torodi Ar. Bea**	**117.33**	**314**	PKP		**PKPdf**	**21 54 32.9**	**-1.4**
	comp=Z,1.4nm,1.0s,baz=220,slow=0.5,SNR=5.5							
TORD				PP		PP	21 55 37.9	-7.1
	comp=Z,1.6nm,1.1s,baz=39,slow=6.9,SNR=4.6							
TORD				PKKPbc		**PKKPbc**	**22 04 58.5**	**+2.0**
	comp=Z,1.0nm,0.9s,baz=181,slow=2.8,SNR=5.5							
LBTB	**Lobatse**	**124.36**	**263**	*e*PKIKP		**PKPdf**	**21 54 47.8**	**+0.2**
LBTB	**Lobatse**	**124.36**	**263**	*e*PKPdf		**PKPdf**	**21 54 47.8**	**+0.2**
SDV	**Santo Domingo**	**125.67**	**40**	PKP		**PKPdf**	**21 54 50.0**	**-0.5**
	comp=Z,13nm,1.0s,baz=26,slow=2.1,SNR=14							
SDV	**Santo Domingo**	**125.67**	**40**	*e*PKPdf		**PKPdf**	**21 54 50.6**	**+0.1**
BOSA	**Boshof**	**126.28**	**259**	PKP		**PKPdf**	**21 54 49.3**	**-1.9**
	comp=Z,4.3nm,0.9s,baz=15,slow=0.9,SNR=7.7							
DBIC	**Dimbokro**	**126.30**	**316**	PKP		**PKPdf**	**21 54 50.3**	**-1.2**
	comp=Z,7.1nm,1.0s,baz=49,slow=4.9,SNR=4.1							
ATAH	**Atahualpa**	**133.50**	**60**	PKP		**PKPdf**	**21 55 06.7**	**+1.0**
	comp=Z,6.9nm,0.7s,baz=6.2,slow=1.5,SNR=5.0							
VNA2	**Neumayer--Watz**	**142.01**	**196**	PKP		**PKPdf**	**21 55 16.2**	**-2.9**
	baz=96,slow=2.4							
VNA3	**Neumayer Olymp**	**142.26**	**195**	PKP		PKPpre	21 55 12.4	
SAML	**Samuel**	**144.60**	**45**	*e*PKPdf		**PKPab**	**21 55 23.6**	**-0.4**
LPAZ	**La Paz**	**147.03**	**60**	PKPbc		**PKPbc**	**21 55 31.2**	**-1.0**
	comp=Z,18nm,0.8s,baz=332,slow=3.1,SNR=77							
PB11	**IPOC Station P**	**148.23**	**66**	*e*PKPbc		**PKPbc**	**21 55 35.7**	**+0.8**
RCBR	**Riachuelo**	**149.06**	**354**	PKPbc		**PKPbc**	**21 55 35.6**	**-1.5**
	comp=Z,13nm,1.0s,baz=2.3,slow=8.3,SNR=4.6							
PB01	**IPOC Station P**	**149.14**	**68**	*e*PKPbc		**PKPbc**	**21 55 37.5**	**+0.4**
SIV	**San Ignacio**	**151.43**	**49**	PKP		**PKPdf**	**21 55 36.8**	**+0.3**
	comp=Z,2.7nm,0.8s,baz=26,slow=2.0,SNR=4.4							
SIV				PKPbc		**PKPbc**	**21 55 42.7**	**0.0**
	comp=Z,20nm,0.9s,baz=255,slow=1.4,SNR=21							
LCO	**Las Campanas**	**152.29**	**83**	*e*PKPbc		**PKPbc**	**21 55 45.0**	**+0.4**
ROC1	**El Roble**	**153.45**	**91**	*e*PKPbc		**PKPbc**	**21 55 47.4**	**+0.4**
PLCA	**Paso Flores**	**155.08**	**109**	PKPab		**PKPab**	**21 56 05.9**	**-0.1**
	comp=Z,5.8nm,1.0s,baz=280,slow=4.1,SNR=6.8							
BDFB	**Brasilia**	**157.43**	**23**	PKPab		**PKPab**	**21 56 16.4**	**-0.1**
	comp=Z,7.4nm,1.0s,baz=295,slow=4.3,SNR=7.0							
BDFB	**Brasilia**	**157.43**	**23**	*e*PKP2		**PKPab**	**21 56 17.8**	**+1.3**
BDFB	**Brasilia**	**157.43**	**23**	*e*PKPab		**PKPab**	**21 56 17.8**	**+1.3**

*ISCJB **10** 21:51:56.6±0.4, 37.70N±0.04×144.59E±0.04, h33km, mb3.9/19, Error ellipse: s-maj=5.8km s-min=4.6km az=159.2*

*IDC **10** 21:51:58.8±0.8, 37.66N×144.72E, h35km±6km, mb3.6/16, mb1 3.9/19, mb1mx3.7/47, mbtmp3.9/19, ML4.0/2, MS3.1/2, Ms1 3.1/2, ms1mx2.7/45, Error ellipse: s-maj=16.5km s-min=14.0km az=119.0*

*JMA **10** 21:51:58.1±0.3, 37.82N×144.53E, h51km, M4.6*

*NEIC **10** 21:51:58.8±0.4, 37.71N×144.66E, h35km, mb4.1/3, Error ellipse: s-maj=10.5km s-min=7.1km az=128.0*

ISC 10 21:51:58.9±0.7, 37.78N±0.05×144.60E±0.07, h35km, n45, σ1s89/59, mb3.9/19, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**2.65**	**286**	P	**Pn**	**21 52 38.9**	**-0.2**
JIO				S	**Sn**	**21 53 08.6**	**-1.4**
JMK	**Ichinoseki**	**2.90**	**295**	P	**Pn**	**21 52 42.8**	**+0.3**
JMK				S	**Sn**	**21 53 15.3**	**-0.9**
JOM	**Ohasama**	**3.10**	**304**	P	**Pn**	**21 52 45.1**	**-0.1**
JOM				S	**Sn**	**21 53 20.8**	**-0.1**
JFT	**Otama**	**3.39**	**267**	P	**Pn**	**21 52 49.8**	**+0.5**
JFT				S	**Sn**	**21 53 27.8**	**-0.5**
JYK	**Kaneyama**	**3.52**	**290**	P	**Pn**	**21 52 51.7**	**+0.6**
JYK				S	**Sn**	**21 53 31.8**	**+0.3**
BSO1	**Boso 1**	**4.28**	**224**	P	**Pn**	**21 52 59.9**	**-1.0**
ERM	**Erimo**	**4.38**	**346**	*e*Pn	**Pn**	**21 53 01.6**	**-1.2**
ERM				*e*Sn	**Sn**	**21 53 47.8**	**-4.7**
JOT	**Ohata**	**4.53**	**324**	P	**Pn**	**21 53 05.2**	**+0.4**
JOT				*e*S	**Sn**	**21 53 53.6**	**-2.6**
JRY	**Ryogami san**	**4.89**	**251**	P	**Pn**	**21 53 09.4**	**-0.5**
JRY				*e*S	**Sn**	**21 54 02.4**	**-3.0**
JCH	**Churui**	**4.92**	**349**	*e*S	**Sn**	**21 54 01.1**	**-4.9**
JKB	**Kayabe**	**4.94**	**327**	S	**Sn**	**21 54 02.6**	**-3.8**
JOD2	**Odawara 2**	**5.10**	**242**	P	**Pn**	**21 53 11.8**	**-1.0**
JOD2				*e*S	**Sn**	**21 54 07.9**	**-2.5**
MJAR	**Matsushiro Arr**	**5.25**	**258**	Pn	**Pn**	**21 53 15.2**	**+0.3**
	3.8nm,0.3s,baz=84,slow=15,SNR=32						
MJAR				LR	LR	21 55 58.6	
	comp=Z,106nm,18.3s,baz=45,slow=45						
MAJO	**Matsushiro**	**5.25**	**258**	*e*Pn	**Pn**	**21 53 15.4**	**+0.5**
	16nm,0.4s						
MAJO				*e*Sn	**Sn**	**21 54 15.0**	**+0.8**
MAT	**Matsushiro**	**5.25**	**258**	P	**Pn**	**21 53 16.3**	**+1.4**
MAT				S	**Sn**	**21 54 16.1**	**+1.9**
NEM2	**Nemuro 2**	**5.65**	**9**	P	Pn	21 53 16.0	-4.3
NEM2				*e*S	Sn	21 54 16.7	-7.2
JOSM	**Okushiri--Mats**	**5.83**	**319**	P	**Pn**	**21 53 22.0**	**-0.8**
JHJ2	**Mitsune**	**6.07**	**221**	P	**Pn**	**21 53 24.2**	**-1.9**
JHJ2	**Mitsune**	**6.07**	**221**	*e*Pn	**Pn**	**21 53 24.8**	**-1.4**
JHJ2				*e*Sn	**Sn**	**21 54 30.2**	**-4.2**
JHJ	**Hachijo jima 2**	**6.09**	**222**	Pn	**Pn**	**21 53 23.7**	**-2.6**
	16nm,0.3s,baz=341,slow=21,SNR=9.2						
JHJ				Sn	**Sn**	**21 54 28.9**	**-5.8**
	44nm,0.3s,baz=77,slow=20,SNR=10						
JTKR	**Abashiri--Toko**	**6.21**	**355**	P	**Pn**	**21 53 26.0**	**-1.9**
JTKR				*e*S	Sn	21 54 31.4	-6.3
JHR	**Hokuryu**	**6.35**	**341**	P	**Pn**	**21 53 30.6**	**+0.8**
JHR				*e*S	**Sn**	**21 54 38.4**	**-2.7**
USRK	**Ussuriysk Ar.**	**11.48**	**308**	Pn	**Pn**	**21 54 42.0**	**+1.8**
	0.3nm,0.3s,baz=82,slow=14,SNR=4.6						
USRK				LR	LR	21 59 40.5	
	comp=Z,115nm,18.2s,baz=58,slow=40						
SEY	**Seymchan**	**25.63**	**8**	P		**P**	**21 57 25.0**	**+0.2**
	2.2nm,0.7s,baz=193,slow=5.9,SNR=9.4							
H11N2	**WAKE ISLAND Hy**	**26.45**	**127**	T	T	22 25 07.9		
	baz=320,slow=74,SNR=8.7							
H11N3	**WAKE ISLAND Hy**	**26.46**	**127**	T	T	22 25 20.2		
	baz=314,slow=74,SNR=2.7							
SONM	**Songino Array**	**29.51**	**302**	P		**P**	**21 58 00.8**	**+1.0**
	0.4nm,0.7s,baz=92,slow=9.5,SNR=3.8							
ZALV	**Zalesovo Beam**	**43.30**	**312**	P		**P**	**21 59 57.6**	**+0.7**
	0.6nm,0.4s,baz=92,slow=7.5,SNR=4.3							
CMAR	**Chiang Mai Arr**	**44.14**	**257**	P		**P**	**22 00 05.3**	**+1.2**
	0.8nm,0.3s,baz=46,slow=7.8,SNR=7.6							
MKAR	**Makanchi Array**	**45.88**	**302**	P		**P**	**22 00 19.4**	**+1.7**
	0.9nm,0.8s,baz=82,slow=9.3,SNR=11							
MKAR				pP		**sP**	**22 00 29.4**	**-2.8**
	0.7nm,0.7s,baz=81,slow=8.3,SNR=5.7							
ILAR	**Eielson Array**	**47.50**	**33**	P		**P**	**22 00 30.1**	**0.0**
	1.0nm,0.8s,baz=260,slow=6.4,SNR=12							
TKM2	**Tokmak 2**	**51.50**	**299**	*e*P		**P**	**22 01 02.1**	**+0.9**
	1.9nm,0.9s							
INK	**Inuvik**	**52.56**	**28**	P		**P**	**22 01 07.6**	**-0.7**
	0.7nm,0.5s,baz=344,slow=6.0,SNR=5.4							
WRAB	**Tennant Creek**	**58.21**	**191**	*e*P		**P**	**22 01 48.9**	**-0.6**
	2.0nm,0.6s							
WRA	**Warramunga Arr**	**58.22**	**191**	P		**P**	**22 01 48.9**	**-0.7**
	1.0nm,0.4s,baz=10,slow=7.1,SNR=20							
WRA				pP		**pP**	**22 01 59.0**	**-1.3**
	2.7nm,0.6s,baz=12,slow=7.4,SNR=12							
ABKAR	**Akbulak array**	**59.39**	**311**	*e*P		**P**	**22 01 58.0**	**+0.5**
	0.5nm,0.5s							
YKA	**Yellowknife Ar**	**61.88**	**31**	P		**P**	**22 02 14.3**	**+0.1**
	0.6nm,0.7s,baz=301,slow=6.6,SNR=13							
ASAR	**Alice Springs**	**61.94**	**191**	P		**P**	**22 02 13.9**	**-1.1**
	0.3nm,0.6s,baz=14,slow=12,SNR=

0.4nm,0.6s,baz=342,slow=10,SNR=4.9
ASAR Alice Springs 27.43 166 P P 22 15 05.7 +1.5
0.2nm,0.6s,baz=348,slow=12,SNR=3.3
MKAR Makanchi Array 58.29 325 P P 22 19 12.9 -0.2
0.2nm,0.5s,baz=120,slow=7.6,SNR=9.9

NNC 10 22:35:17.4±3.8, 36°.85N×70°.44E, h0km±86km, mb3.9, mpv3.7, 4C-4D, Error ellipse: s-maj=91.1km s-min=18.6km az=12.0, Hindu Kush region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SFK	**Sufi-Kurgan**	**3.97**	**36**	⇑P	Pn	22 36 19.8	0.0
	14nm,0.3s						
SFK				⇑S	Sn	22 37 08.8	+1.8
	4.0nm,0.2s						
MNAS	**Manas**	**5.85**	**15**	⇓P	Pn	22 36 45.9	+0.4
	1.1nm,0.3s						
MNAS				⇑S	Sn	22 37 53.4	+0.1
	2.3nm,0.4s						
KK31	**Karatay Array**	**6.24**	**0**	P	Pn	22 36 51.9	+1.1
	1.4nm,0.3s,baz=180,slow=11,SNR=17						
KK31				⇓S	Sn	22 38 05.0	+2.1
	1.6nm,0.5s						
AAK	**Ala-Archa**	**6.56**	**27**	⇑P	Pn	22 36 54.6	-0.7
	2.9nm,0.4s						
AAK				⇓S	Sn	22 38 11.5	+0.6
	2.1nm,0.6s						
AB31	**Akbulak array**	**14.56**	**332**	P	Pn	22 38 42.9	-1.7
	0.2nm,0.2s,baz=158,slow=10,SNR=20						
AKTO	**Aktyubinsk**	**16.25**	**331**	⇓P	Pn	22 39 07.3	+0.4
	2.2nm,0.8s						

DDA ***10*** *22:39:23.1, 37°.68N×37°.15E, h7km, Md2.8*
ISK ***10*** *22:39:23.5, 37°.73N×37°.11E, h5km, MD2.8*
CSEM ***10*** *22:39:23.6±0.3, 37°.70N×37°.15E, h2km, MD2.8, Error ellipse: s-maj=7.2km s-min=5.4km az=104.0*
ISC 10 22:39:23.7±1.1, 37°.70N±0°.02×37°.13E±0°.03, h8km±10km, n24, σ0s97/38, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KMRS	**Kahramanmaras**	**0.26**	**223**	*e*P	**Pg**	**22 39 29.4**	**+0.4**
KMRS	**Kahramanmaras**	**0.26**	**223**	*e*Pg	**Pg**	**22 39 29.4**	**+0.4**
AYKD	**Aykdinkavak**	**0.38**	**222**	*i* P	**Pg**	**22 39 30.4**	**-0.8**
AYKD				*i* S	**Sg**	**22 39 36.2**	**0.0**
GZT	**Gaziantep**	**0.49**	**134**	*i* P	**Pg**	**22 39 32.4**	**-0.8**
GZT				*i* S	**Sb**	**22 39 46.1**	**+3.9**
GAZ	**Gaziantep**	**0.53**	**173**	*e*PG	**Pb**	**22 39 34.8**	**-0.6**
GAZ	**Gaziantep**	**0.53**	**173**	*e*Pg	**Pb**	**22 39 34.8**	**-0.6**
ANDN	**Andirin**	**0.63**	**259**	*i* P	**Pg**	**22 39 35.1**	**-0.8**
ANDN				*i* S	**Sb**	**22 39 46.4**	**+0.2**
ANDN	**Andirin**	**0.63**	**259**	P	**Pg**	**22 39 35.1**	**-0.8**
ANDN				S	**Sb**	**22 39 46.4**	**+0.2**
AKCD	**Akcadag**	**0.87**	**46**	*i* P	**Pg**	**22 39 39.6**	**-0.8**
AKCD				*i* S	**Sn**	**22 39 55.8**	**+0.4**
AKCD	**Akcadag**	**0.87**	**46**	P	**Pg**	**22 39 39.6**	**-0.8**
AKCD				S	**Sn**	**22 39 55.8**	**+0.4**
DARE	**Darende-Malaty**	**0.92**	**18**	*e*PG	**Pg**	**22 39 41.1**	**-0.2**
DARE				*e*SG	**Sb**	**22 39 53.8**	**-0.6**
DARE	**Darende-Malaty**	**0.92**	**18**	*e*Pg	**Pg**	**22 39 41.1**	**-0.2**
DARE				*e*Sg	**Sb**	**22 39 53.8**	**-0.6**
KUZU	**Kuzuini**	**0.93**	**182**	*i* P	**Pb**	**22 39 41.7**	**-0.4**
KUZU				*i* S	**Sn**	**22 39 56.3**	**-0.3**
KUZU	**Kuzuini**	**0.93**	**182**	P	**Pb**	**22 39 41.7**	**-0.4**
KUZU				S	**Sn**	**22 39 56.3**	**-0.3**
KOZT	**Kozan**	**1.05**	**258**	*e*PG	**Pb**	**22 39 44.0**	**-0.2**
KOZT	**Kozan**	**1.05**	**258**	*e*Pg	**Pb**	**22 39 44.0**	**-0.2**
SURC	**SANLIURFA_SURC**	**1.44**	**124**	*i* P	**Pb**	**22 39 50.4**	**-0.5**
SURC				*i* S	**Sg**	**22 40 09.8**	**-0.3**
SURC	**SANLIURFA_SURC**	**1.44**	**124**	P	**Pb**	**22 39 50.4**	**-0.5**
SURC				S	**Sg**	**22 40 09.8**	**-0.3**
TAHT	**Tahtakopru-Hat**	**1.52**	**210**	*e*PN	**Pg**	**22 39 52.3**	**-0.6**
TAHT	**Tahtakopru-Hat**	**1.52**	**210**	*e*Pn	**Pg**	**22 39 52.3**	**-0.6**
BNN	**Bunyan**	**1.53**	**319**	*e*PN	**Pb**	**22 39 51.8**	**-0.6**
BNN	**Bunyan**	**1.53**	**319**	*e*Pn	**Pb**	**22 39 51.8**	**-0.6**
CUALT	**Altinyayla-SIV**	**1.60**	**350**	*i* P	**Pg**	**22 39 53.9**	**-0.5**
CUALT				*i* S	**Sg**	**22 40 16.9**	**+1.9**
CUALT	**Altinyayla-SIV**	**1.60**	**350**	P	**Pg**	**22 39 53.9**	**-0.5**
CUALT				S	**Sg**	**22 40 17.0**	**+1.9**

IDC 10 22:46:33.1±2.7, 37°.22N×144°.56E, h0km, mb3.5/2, mb1 3.6/3, mb1mx3.3/40, mbtmp3.4/3, ML3.4/1, MS2.6/1, Ms1 2.6/1, ms1mx2.2/26, Error ellipse: s-maj=58.2km s-min=34.8km az=44.0, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MJAR	**Matsushiro Arr**	**5.14**	**264**	Pn	Pn	22 47 52.3	+1.1
	1.4nm,0.3s,baz=86,slow=16,SNR=6.6						
MJAR				Sn	Sn	22 48 49.8	-1.5
	0.6nm,0.3s,baz=95,slow=26,SNR=6.3						
MJAR				LR	LR	22 49 46.6	
	comp=Z,56nm,19.4s,baz=350,slow=38						
MKAR	**Makanchi Array**	**46.15**	**303**	P	P	22 54 58.8	-0.4
	0.3nm,0.7s,baz=90,slow=7.3,SNR=4.4						
WRA	**Warramunga Arr**	**57.67**	**191**	P	P	22 56 25.2	-0.1
	0.5nm,0.4s,baz=12,slow=7.3,SNR=2.2						

ATH ***10*** *22:52:07.7, 40°.33N×25°.84E, h28km, ML1.7/6, Error ellipse: s-maj=1.4km s-min=0.8km az=62.0*
ISCJB ***10*** *22:52:08.0±0.4, 40°.33N±0°.02×25°.84E±0°.03, h8km±3km, Error ellipse: s-maj=3.5km s-min=3.0km az=148.5*
CSEM ***10*** *22:52:08.1±0.1, 40°.32N×25°.85E, h10km, MD2.8, Error ellipse: s-maj=2.4km s-min=2.1km az=86.0*
ISK ***10*** *22:52:08.4, 40°.32N×25°.95E, h8km, MD2.8*
DDA ***10*** *22:52:08.6, 40°.30N×25°.92E, h7km, Md2.7*
ISC 10 22:52:08.1±0.8, 40°.33N±0°.02×25°.88E±0°.02, h15km±6km, n50, σ0s47/77, Aegean Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GADA	**Gvkgeada**	**0.14**	**175**	*e*PG	**Pg**	**22 52 11.6**	**-0.2**
GADA	**Gvkgeada**	**0.14**	**175**	*e*Pg	**Pg**	**22 52 11.6**	**-0.2**
SMTH	**Samothraki Isl**	**0.30**	**298**	P	**Pg**	**22 52 14.6**	**+0.1**
SMTH				S	**Sg**	**22 52 18.9**	**0.0**
SMTH	**Samothraki Isl**	**0.30**	**298**	P	**Pg**	**22 52 14.6**	**+0.1**
SMTH				S	**Sg**	**22 52 18.9**	**0.0**
SMTH				AML	AML	22 52 19.3	
	comp=E,357μm,0.1s						
SMTH				AML	AML	22 52 19.6	
	comp=N,376μm,0.2s						
GELI	**Tayfur-Gelibol**	**0.46**	**81**	*e*PG	**Pg**	**22 52 17.0**	**-0.2**
GELI	**Tayfur-Gelibol**	**0.46**	**81**	*e*Pg	**Pg**	**22 52 17.0**	**-0.2**
ENEZ	**Enez**	**0.46**	**27**	*e*PG	**Pg**	**22 52 17.2**	**0.0**
ENEZ				*e*SG	**Sb**	**22 52 24.6**	**+0.1**
ENEZ	**Enez**	**0.46**	**27**	*e*Pg	**Pg**	**22 52 17.2**	**0.0**
ENEZ				*e*Sg	**Sb**	**22 52 24.6**	**+0.1**
BOZC	**Bozcaada**	**0.50**	**165**	*i* P	**Pg**	**22 52 18.1**	**+0.1**
BOZC				*i* S	**Sb**	**22 52 25.4**	**-0.3**
ALN	**Alexandroupoli**	**0.58**	**12**	*e*PG	**Pb**	**22 52 20.0**	**0.0**
ALN	**Alexandroupoli**	**0.58**	**12**	P	**Pg**	**22 52 19.6**	**+0.1**
ALN	**Alexandroupoli**	**0.58**	**12**	*e*Pg	**Pb**	**22 52 20.0**	**0.0**
ALN				S	**Sb**	**22 52 28.0**	**0.0**
ALN	**Alexandroupoli**	**0.58**	**12**	P	**Pg**	**22 52 19.6**	**+0.1**
ALN				S	**Sb**	**22 52 28.0**	**0.0**
ALN				AML	AML	22 52 29.4	
	comp=E,51μm,0.2s						
ALN				AML	AML	22 52 31.6	
	comp=N,64μm,0.3s						
ERIK	**Erikli-Kesan**	**0.59**	**54**	*e*PG	**Pb**	**22 52 19.9**	**-0.2**
ERIK	**Erikli-Kesan**	**0.59**	**54**	*e*Pg	**Pb**	**22 52 19.9**	**-0.2**
EZN	**Ezine**	**0.60**	**146**	*e*PG	**Pb**	**22 52 20.2**	**-0.1**
EZN				*e*SG	**Sg**	**22 52 28.2**	**+0.2**
EZN	**Ezine**	**0.60**	**146**	*e*Pg	**Pb**	**22 52 20.2**	**-0.1**
EZN				*e*Sg	**Sg**	**22 52 28.2**	**+0.2**
LIA	**Limnos Island**	**0.69**	**232**	P	**Pb**	**22 52 21.7**	**0.0**
LIA				S	**Sb**	**22 52 31.1**	**+0.1**
KESN	**Edirne-Kesan**	**0.79**	**50**	*i* P	**Pn**	**22 52 24.2**	**-0.7**
KESN				*i* S	**Sn**	**22 52 35.8**	**-0.8**
KESN	**Edirne-Kesan**	**0.79**	**50**	P	**Pn**	**22 52 24.2**	**-0.7**
KESN				S	**Sn**	**22 52 35.8**	**-0.8**
RKY	**Sarkoy-Tekirda**	**1.05**	**70**	*e*PG	**Pn**	**22 52 28.2**	**-0.1**
RKY	**Sarkoy-Tekirda**	**1.05**	**70**	*e*Pg	**Pn**	**22 52 28.2**	**-0.1**
SIGR	**SIGRI**	**1.11**	**181**	*e*PN	**Pg**	**22 52 30.2**	**+0.7**
SIGR	**SIGRI**	**1.11**	**181**	P	**Pb**	**22 52 28.4**	**-0.6**
SIGR	**SIGRI**	**1.11**	**181**	*e*Pn	**Pg**	**22 52 30.3**	**+0.7**
SIGR				S	**Sg**	**22 52 44.7**	**+0.6**
SIGR	**SIGRI**	**1.11**	**181**	P	**Pb**	**22 52 28.4**	**-0.6**
SIGR				S	**Sg**	**22 52 44.7**	**+0.6**
SIGR				AML	AML	22 52 46.3	
	comp=N,211μm,0.5s						
SIGR				AML	AML	22 52 47.9	
	comp=E,146μm,0.5s						
PRK	**Paraskevi**	**1.12**	**164**	P	**Pn**	**22 52 29.2**	**0.0**
PRK				S	**Sn**	**22 52 44.2**	**-0.1**
PRK	**Paraskevi**	**1.12**	**164**	P	**Pn**	**22 52 29.2**	**0.0**
PRK				S	**Sn**	**22 52 44.2**	**-0.1**
PRK				AML	AML	22 52 46.1	
	comp=E,201μm,0.3s						
PRK				AML	AML	22 52 46.2	
	comp=N,166μm,0.3s						
AYVA	**Ayvalik**	**1.19**	**148**	*i* P	**Pg**	**22 52 31.1**	**+0.1**
AYVA				*i* S	**Sg**	**22 52 47.3**	**+0.7**
AYVA	**Ayvalik**	**1.19**	**148**	P	**Pg**	**22 52 31.1**	**+0.1**
AYVA				S	**Sg**	**22 52 47.3**	**+0.7**
KAVA	**Kavala**	**1.24**	**303**	P	**Pn**	**22 52 30.5**	**-0.3**
KAVA				S	**Sn**	**22 52 47.0**	**-0.2**
KAVA	**Kavala**	**1.24**	**303**	P	**Pn**	**22 52 30.5**	**-0.3**
KNL	**Bal˘–kesir**	**1.26**	**92**	*i* P	**Pn**	**22 52 30.9**	**-0.2**
KNL				*i* S	**Sg**	**22 52 49.7**	**+1.0**
OUR	**Ouranopolis**	**1.45**	**271**	P	**Pn**	**22 52 33.3**	**-0.4**
OUR				S	**Sn**	**22 52 51.9**	**-0.6**
OUR	**Ouranopolis**	**1.45**	**271**	P	**Pn**	**22 52 33.3**	**-0.4**
OUR				S	**Sn**	**22 52 51.9**	**-0.6**
OUR				AML	AML	22 52 57.5	
	comp=N,35μm,0.3s						
OUR				AML	AML	22 52 58.0	
	comp=E,29μm,0.3s						
BALY	**Balya**	**1.46**	**113**	*i* P	**Pb**	**22 52 34.8**	**-0.1**
BALY				*i* S	**Sg**	**22 52 55.4**	**+0.4**
BALY	**Balya**	**1.46**	**113**	P	**Pb**	**22 52 34.8**	**-0.1**
BALY				S	**Sg**	**22 52 55.4**	**+0.4**
EDC	**Edincik**	**1.51**	**89**	*e*PN	**Pb**	**22 52 35.5**	**-0.4**
EDC	**Edincik**	**1.51**	**89**	*e*Pn	**Pb**	**22 52 35.5**	**-0.4**
EDRB	**Edirne**	**1.65**	**23**	*e*PN	**Pb**	**22 52 38.8**	**+0.6**
EDRB	**Edirne**	**1.65**	**23**	*e*Pn	**Pb**	**22 52 38.8**	**+0.6**
BALB	**Balikesir**	**1.68**	**113**	*e*PN	**Pb**	**22 52 38.1**	**-0.5**
BALB	**Balikesir**	**1.68**	**113**	*e*Pn	**Pb**	**22 52 38.1**	**-0.5**
NVR	**Nevrokopi**	**1.84**	**304**	P	**Pn**	**22 52 38.8**	**-0.4**
NVR				S	**Sn**	**22 53 02.2**	**0.0**
SRS	**Serrai**	**1.91**	**295**	P	**Pn**	**22 52 41.0**	**+0.9**
SRS	**Serrai**	**1.91**	**295**	P	**Pn**	**22 52 41.0**	**+0.9**
CHOS	**Chios island**	**1.94**	**176**	P	**Pn**	**22 52 40.5**	**-0.1**
CHOS				S	**Sb**	**22 53 06.6**	**-0.6**
CHOS	**Chios island**	**1.94**	**176**	P	**Pn**	**22 52 40.5**	**-0.1**
CHOS				S	**Sb**	**22 53 06.6**	**-0.6**
CHOS				AML	AML	22 53 14.6	
	comp=N,38μm,0.4s						
CHOS				AML	AML	22 53 14.9	
	comp=E,117μm,1.1s						
DST	**Dursunbey**	**2.22**	**108**	*e*PN	**Pn**	**22 52 45.6**	**+1.2**
DST	**Dursunbey**	**2.22**	**108**	*e*Pn	**Pn**	**22 52 45.6**	**+1.2**

ATH ***10*** *22:53:31.9, 40°.32N×25°.84E, h26km, ML1.9/4, Error ellipse: s-maj=1.3km s-min=0.8km az=83.0*
ISK ***10*** *22:53:32.4, 40°.31N×25°.95E, h3km, MD2.8*
CSEM ***10*** *22:53:32.4±0.1, 40°.31N×25°.85E, h8km, MD2.8, Error ellipse: s-maj=2.2km s-min=2.1km az=136.0*
ISCJB ***10*** *22:53:32.3±0.3, 40°.33N±0°.02×25°.86E±0°.02, h8km±3km, Error ellipse: s-maj=3.0km s-min=3.0km az=179.2*
THE ***10*** *22:53:32.5, 40°.32N×25°.88E, h12km, ML1.9/6, Error ellipse: s-maj=0.9km s-min=0.5km az=52.0*
DDA ***10*** *22:53:33.5, 40°.28N×26°.04E, h7km, Md2.8*
ISC 10 22:53:32.1±0.8, 40°.35N±0°.02×25°.86E±0°.02, h13km±6km, n84, σ0s52/118, Aegean Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GADA	**Gvkgeada**	**0.16**	**169**	*e*PG	**Pg**	**22 53 35.7**	**-0.2**
GADA	**Gvkgeada**	**0.16**	**169**	P	**Pg**	**22 53 35.6**	**-0.2**
GADA				S	**Sg**	**22 53 37.8**	**-0.6**
GADA	**Gvkgeada**	**0.16**	**169**	P	**Pg**	**22 53 35.6**	**-0.2**
GADA				S	**Sg**	**22 53 37.8**	**-0.6**
SMTH	**Samothraki Isl**	**0.28**	**297**	P	**Pb**	**22 53 38.8**	**-0.3**
SMTH				S	**Sb**	**22 53 43.3**	**-0.5**
SMTH	**Samothraki Isl**	**0.28**	**297**	P	**Pb**	**22 53 38.9**	**-0.2**
SMTH				S	**Sb**	**22 53 43.3**	**-0.5**
SMTH	**Samothraki Isl**	**0.28**	**297**	P	**Pb**	**22 53 38.9**	**-0.2**
SMTH				S	**Sb**	**22 53 43.0**	**-0.8**
SMTH				AML	AML	22 53 43.6	
	comp=N,668μm,0.1s						
SMTH				AML	AML	22 53 43.6	
	comp=E,646μm,0.1s						
ENEZ	**Enez**	**0.45**	**30**	*e*PG	**Pb**	**22 53 41.7**	**-0.2**
ENEZ				*e*SG	**Sb**	**22 53 48.9**	**+0.3**
ENEZ	**Enez**	**0.45**	**30**	P	**Pb**	**22 53 41.5**	**-0.4**
ENEZ				S	**Sb**	**22 53 48.5**	**-0.1**
ENEZ	**Enez**	**0.45**	**30**	*e*Pg	**Pb**	**22 53 41.7**	**-0.2**
ENEZ				*e*Sg	**Sb**	**22 53 48.5**	**-0.1**
GELI	**Tayfur-Gelibol**	**0.47**	**83**	*e*PG	**Pg**	**22 53 41.2**	**-0.2**
GELI				*e*SG	**Sg**	**22 53 47.3**	**-0.4**
GELI	**Tayfur-Gelibol**	**0.47**	**83**	*e*Pg	**Pg**	**22 53 41.2**	**-0.2**
GELI				*e*Sg	**Sg**	**22 53 47.3**	**-0.4**
BOZC	**Bozcaada**	**0.52**	**164**	*i* P	**Pg**	**22 53 42.2**	**-0.1**
BOZC				*i* S	**Sb**	**22 53 51.6**	**+0.9**
ALN	**Alexandroupoli**	**0.57**	**14**	*e*PG	**Pb**	**22 53 44.4**	**+0.4**
ALN	**Alexandroupoli**	**0.57**	**14**	P	**Pb**	**22 53 43.7**	**-0.3**
ALN				S	**Sb**	**22 53 51.9**	**-0.1**
ALN	**Alexandroupoli**	**0.57**	**14**	P	**Pb**	**22 53 43.7**	**-0.3**
ALN	**Alexandroupoli**	**0.57**	**14**	*e*Pg	**Pb**	**22 53 44.4**	**+0.4**
ALN				S	**Sb**	**22 53 51.9**	**-0.1**
ALN	**Alexandroupoli**	**0.57**	**14**	P	**Pb**	**22 53 43.7**	**-0.3**
ALN				AML	AML	22 53 52.8	
	comp=N,122μm,0.4s						
ALN				S	**S**	**22 53 52.8**	**+2.0**
ALN				AML	AML	22 53 55.2	
	comp=E,84μm,0.3s						
ERIK	**Erikli-Kesan**	**0.59**	**57**	*e*PG	**Pb**	**22 53 44.3**	**-0.1**
ERIK				*e*SG	**Sb**	**22 53 52.6**	**-0.1**
ERIK	**Erikli-Kesan**	**0.59**	**57**	*e*Pg	**Pb**	**22 53 44.3**	**-0.1**
ERIK				*e*Sg	**Sb**	**22 53 52.6**	**-0.1**
EZN	**Ezine**	**0.63**	**145**	*e*PG	**Pg**	**22 53 44.1**	**-0.2**
EZN	**Ezine**	**0.63**	**145**	P	**Pg**	**22 53 43.7**	**-0.7**
EZN	**Ezine**	**0.63**	**145**	P	**Pg**	**22 53 43.7**	**-0.7**
EZN	**Ezine**	**0.63**	**145**	*e*Pg	**Pg**	**22 53 44.1**	**-0.2**
LIA	**Limnos Island**	**0.69**	**230**	P	**Pb**	**22 53 45.7**	**-0.2**
LIA				S	**Sb**	**22 53 55.5**	**+0.2**
LIA	**Limnos Island**	**0.69**	**230**	P	**Pb**	**22 53 45.7**	**-0.2**
LIA				S	**Sg**	**22 53 54.7**	**+0.3**
KESN	**Edirne-Kesan**	**0.79**	**52**	*i* P	**Pb**	**22 53 47.8**	**-0.1**
KESN				*i* S	**Sn**	**22 54 00.5**	**-0.7**
KESN	**Edirne-Kesan**	**0.79**	**52**	P	**Pb**	**22 53 47.8**	**-0.1**
KESN				S	**Sn**	**22 54 00.5**	**-0.7**
RKY	**Sarkoy-Tekirda**	**1.06**	**71**	*e*PG	**Pn**	**22 53 52.6**	**-0.2**
RKY	**Sarkoy-Tekirda**	**1.06**	**71**	*e*Pg	**Pn**	**22 53 52.6**	**-0.2**
KRBG	**Karabiga-Canak**	**1.10**	**87**	*e*PG	**Pb**	**22 53 52.3**	**-0.7**
KRBG	**Karabiga-Canak**	**1.10**	**87**	*e*Pg	**Pb**	**22 53 52.3**	**-0.7**
SIGR	**SIGRI**	**1.13**	**180**	*e*PN	**Pg**	**22 53 54.2**	**+0.4**
SIGR	**SIGRI**	**1.13**	**180**	P	**Pb**	**22 53 52.9**	**-0.6**
SIGR				S	**Sg**	**22 54 08.7**	**0.0**
SIGR	**SIGRI**	**1.13**	**180**	P	**Pb**	**22 53 52.9**	**-0.6**
SIGR	**SIGRI**	**1.13**	**180**	*e*Pn	**Pg**	**22 53 54.3**	**+0.4**
SIGR				S	**Sg**	**22 54 08.6**	**0.0**
SIGR	**SIGRI**	**1.13**	**180**	P	**Pb**	**22 53 52.7**	**-0.9**
SIGR				S	**Sg**	**22 54 08.7**	**0.0**
SIGR				AML	AML	22 54 09.5	
	comp=N,321μm,0.6s						
SIGR				AML	AML	22 54 12.1	
	comp=E,205μm,0.5s						
PRK	**Paraskevi**	**1.14**	**164**	P	**Pb**	**22 53 53.4**	**-0.3**
PRK				S	**Sb**	**22 54 08.4**	**-0.1**
PRK	**Paraskevi**	**1.14**	**164**	P	**Pb**	**22 53 53.6**	**-0.1**
PRK				S	**Sb**	**22 54 08.4**	**-0.1**
PRK	**Paraskevi**	**1.14**	**164**	P	**Pb**	**22 53 53.6**	**-0.1**
PRK				S	**Sg**	**22 54 08.8**	**-0.2**
PRK				AML	AML	22 54 10.3	
	comp=E,197μm,0.2s						
PRK				AML	AML	22 54 10.9	
	comp=N,230μm,0.4s						
KAVA	**Kavala**	**1.21**	**303**	P	**Pg**	**22 53 55.4**	**-0.1**
KAVA				S	**Sn**	**22 54 11.2**	**+0.1**
KAVA	**Kavala**	**1.21**	**303**	P	**Pg**	**22 53 55.4**	**-0.1**
KAVA				S	**Sn**	**22 54 12.0**	**+0.9**
KAVA	**Kavala**	**1.21**	**303**	P	**Pn**	**22 53 54.5**	**-0.3**
AYVA	**Ayvalik**	**1.22**	**148**	*i* P	**Pn**	**22 53 54.8**	**0.0**
AYVA				*i* S	**Sg**	**22 54 11.0**	**-0.3**
AYVA	**Ayvalik**	**1.22**	**148**	P	**Pn**	**22 53 54.8**	**0.0**
AYVA				S	**Sg**	**22 54 11.0**	**-0.3**
KNL	**Bal˘–kesir**	**1.28**	**93**	*i* P	**Pb**	**22 53 55.7**	**-0.3**
KNL				*i* S	**Sn**	**22 54 12.7**	**+0.1**
MRMT	**Marmara Adasi**	**1.35**	**78**	*e*PN	**Pb**	**22 53 57.4**	**+0.1**
MRMT	**Marmara Adasi**	**1.35**	**78**	*e*Pn	**Pb**	**22 53 57.4**	**+0.1**
TKR	**Tekirdag**	**1.43**	**63**	*e*PN	**Pg**	**22 53 59.5**	**0.0**
TKR	**Tekirdag**	**1.43**	**63**	*e*Pn	**Pg**	**22 53 59.5**	**0.0**
GONE	**Gonen-Balikesi**	**1.43**	**101**	*e*PN	**Pg**	**22 53 59.3**	**-0.3**
GONE	**Gonen-Balikesi**	**1.43**	**101**	*e*Pn	**Pg**	**22 53 59.3**	**-0.3**
OUR	**Ouranopolis**	**1.44**	**270**	P	**Pn**	**22 53 57.2**	**-0.6**
OUR	**Ouranopolis**	**1.44**	**270**	P	**Pn**	**22 53 57.2**	**-0.6**
BALY	**Balya**	**1.48**	**114**	*i* P	**Pb**	**22 53 59.0**	**-0.5**
BALY				*i* S	**Sn**	**22 54 17.0**	**-0.8**
BALY	**Balya**	**1.48**	**114**	P	**Pb**	**22 53 59.0**	**-0.5**
BALY				S	**Sn**	**22 54 17.0**	**-0.8**
DKL	**Dikili**	**1.51**	**147**	*e*PN	**Pb**	**22 54 00.1**	**+0.2**
DKL	**Dikili**	**1.51**	**147**	*e*Pn	**Pb**	**22 54 00.1**	**+0.2**
EDC	**Edincik**	**1.53**	**89**	*e*PN	**Pb**	**22 54 00.4**	**0.0**
EDC	**Edincik**	**1.53**	**89**	*e*Pn	**Pb**	**22 54 00.4**	**0.0**
CRLT	**Corlu**	**1.63**	**61**	*e*PN	**Pb**	**22 54 02.2**	**+0.2**
CRLT	**Corlu**	**1.63**	**61**	*e*Pn	**Pb**	**22 54 02.2**	**+0.2**
EDRB	**Edirne**	**1.64**	**24**	*e*PN	**Pg**	**22 54 03.0**	**-0.6**
EDRB	**Edirne**	**1.64**	**24**	*e*Pn	**Pg**	**22 54 03.0**	**-0.6**
BALB	**Balikesir**	**1.70**	**114**	*e*PN	**Pb**	**22 54 03.2**	**0.0**
BALB	**Balikesir**	**1.70**	**114**	*e*Pn	**Pb**	**22 54 03.3**	**0.0**
NVR	**Nevrokopi**	**1.82**	**304**	P	**Pn**	**22 54 03.6**	**+0.4**
NVR				S	**Sb**	**22 54 28.0**	**0.0**
PLG	**Polygyros**	**1.84**	**272**	P	**Pn**	**22 54 03.5**	**0.0**
PLG	**Polygyros**	**1.84**	**272**	P	**Pn**	**22 54 03.5**	**0.0**
SRS	**Serrai**	**1.89**	**295**	P	**Pb**	**22 54 05.8**	**-0.7**
SRS	**Serrai**	**1.89**	**295**	P	**Pb**	**22 54 05.8**	**-0.7**
KCTX	**Karacabey (Bur**	**1.91**	**92**	*e*PN	**Pn**	**22 54 05.4**	**+1.0**
KCTX	**Karacabey (Bur**	**1.91**	**92**	*e*Pn	**Pn**	**22 54 05.4**	**+1.0**
AOS	**Alonnisos**	**1.93**	**233**	P	**Pn**	**22 54 05.2**	**+0.6**
AOS	**Alonnisos**	**1.93**	**233**	P	**Pn**	**22 54 05.2**	**+0.6**
CHOS	**Chios island**	**1.96**	**176**	P	**Pn**	**22 54 05.2**	**0.0**
CHOS	**Chios island**	**1.96**	**176**	P	**Pn**	**22 54 05.2**	**0.0**
SOH	**Sokhos**	**1.97**	**285**	P	**Pn**	**22 54 05.9**	**+0.7**
SOH	**Sokhos**	**1.97**	**285**	P	**Pn**	**22 54 05.9**	**+0.7**
DST	**Dursunbey**	**2.25**	**108**	*e*PN	**Pn**	**22 54 10.3**	**+1.3**
DST	**Dursunbey**	**2.25**	**108**	*e*Pn	**Pn**	**22 54 10.3**	**+1.3**
ARMT	**Armutlu**	**2.30**	**84**	*e*PN	**Pb**	**22 54 12.0**	**-1.5**
ARMT	**Armutlu**	**2.30**	**84**	*e*Pn	**Pb**	**22 54 12.0**	**-1.5**
SMG	**Samos**	**2.74**	**164**	P	**Pn**	**22 54 16.1**	**+0.3**
SMG	**Samos**	**2.74**	**164**	P	**Pn**	**22 54 16.1**	**+0.3**

ISCJB ***10*** *23:07:14.4±1.1, 8°.40N±0°.04×72°.01W±0°.03, h6km±8km, Error ellipse: s-maj=6.6km s-min=4.5km az=147.2*
FUNV ***10*** *23:07:15.4, 8°.39N×72°.12W, h5km, MW3.1*
RSNC ***10*** *23:07:17.9±1.0, 8°.32N×72°.09W, h8km±12km, ML2.9*
ISC 10 23:07:14.3±1.7, 8°.42N±0°.05×72°.03W±0°.05, h1km±16km, n18, σ0s71/30, Venezuela

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CAPV	**Capacho**	**0.62**	**207**	*e*P	**Pg**	**23 07 26.6**	**+0.4**
CAPV				*e*S	**Sg**	**23 07 34.5**	**+0.3**
GRMC	**Gramalote, San**	**1.03**	**228**	*e*P	**Pg**	**23 07 33.2**	**-1.0**
GRMC				*i*		23 07 51.9	
	comp=Z,248nm,0.3s						
GUEC	**Guerrero, Nort**	**1.06**	**237**	*e*P	**Pg**	**23 07 34.8**	**0.0**
PAMC	**Pamplona, Colo**	**1.26**	**212**	*e*P	**Pg**	**23 07 38.4**	**-0.2**
PAMC				*e*S	**Sg**

	baz=33							
MNAS	**Manas**	**2.14**	**8**	⇓*e*P	**Pn**	**23 31 45.0**	**+0.7**
	baz=8.0							
MNAS				⇓*e*S	**Sb**	**23 32 13.7**	**-0.3**
	baz=8.0							
MNAS	**Manas**	**2.14**	**8**	⇓Pn	**Pn**	**23 31 44.8**	**+0.6**
	1.7nm,0.5s							
MNAS				⇑Lg	Lg	23 32 12.4		
	15nm,0.4s							
ARLS	**Aral**	**2.25**	**48**	⇑*e*P	**Pn**	**23 31 46.8**	**+1.0**
	baz=48							
ARLS				⇑*e*S	**Sb**	**23 32 16.0**	**-1.2**
	baz=48							
IUG	**luzhnay**	**2.36**	**320**	*e*P	**Pb**	**23 31 50.8**	**+0.1**
	11nm,0.2s							
IUG				*e*S	**Sb**	**23 32 21.5**	**+1.1**
	32nm,0.3s							
MRKS	**Merke**	**2.52**	**19**	*e*P	**Pb**	**23 31 52.9**	**-0.6**
	1.7nm,0.1s							
MRKS				*e*S	**Sb**	**23 32 24.6**	**-0.5**
	18nm,0.5s							
UCH	**Uchtor**	**2.60**	**44**	⇑*i*P	**Pn**	**23 31 50.6**	**-0.3**
	baz=44							
UCH				⇑*i*S	**Sb**	**23 32 27.2**	**-0.5**
	baz=44							
EKS2	**Erkin-Say**	**2.62**	**28**	⇑*i*P	**Pn**	**23 31 50.9**	**+0.1**
	baz=28							
EKS2				⇑*i*S	**Sb**	**23 32 27.6**	**-0.1**
	baz=28							
AAK	**Ala-Archa**	**2.90**	**38**	⇑*i*P	**Pn**	**23 31 54.9**	**+0.3**
	baz=38							
AAK				⇑*i*S	**Sb**	**23 32 36.2**	**+0.5**
	baz=38							
AAK	**Ala-Archa**	**2.90**	**38**	⇓Pg	**Pb**	**23 31 58.5**	**-1.3**
	2.1nm,0.7s							
AAK				⇑Lg	Lg	23 32 36.7		
	9.1nm,0.7s							
KZA	**Kyzart**	**2.93**	**53**	⇑*i*P	**Pn**	**23 31 55.1**	**-0.3**
	baz=53							
KZA				⇑*i*S	**Sb**	**23 32 38.7**	**+1.7**
	baz=53							
KK31	**Karatay Array**	**2.98**	**337**	⇑Pg	**Pb**	**23 32 02.0**	**+0.8**
	1.1nm,0.4s,baz=158,slow=16,SNR=9.9							
KK31				Lg	Lg	23 32 39.7		
	3.2nm,0.3s,baz=156,slow=27,SNR=12							
BRLS	**Borolday**	**3.02**	**324**	*e*P	**Pb**	**23 32 02.5**	**+0.6**
	1.0nm,0.3s							
BRLS				*e*S	**Sb**	**23 32 41.1**	**+1.9**
	2.5nm,0.5s							
TKM2	**Tokmak 2**	**3.66**	**45**	⇓Pg	**Pb**	**23 32 14.0**	**+1.1**
	0.8nm,0.5s							
TKM2				⇑Lg	Lg	23 33 01.1		
	2.5nm,0.5s							
BMNS	**Besmoynak**	**3.83**	**43**	*e*P	**Pb**	**23 32 17.4**	**+1.6**
	4.3nm,0.3s							
BMNS				*e*S	**Sb**	**23 33 06.4**	**+3.8**
	10nm,0.6s							
KST	**Kastek**	**3.94**	**46**	*e*P	**Pb**	**23 32 19.4**	**+1.8**
	1.8nm,0.1s							
KST				*e*S	**Sg**	**23 33 10.2**	**-3.7**
	4.5nm,0.3s							
DGS	**Degeres**	**3.98**	**43**	*e*P	**Pb**	**23 32 20.6**	**+2.4**
	0.9nm,0.5s							
DGS				*e*S	**Sg**	**23 33 12.4**	**-2.6**
	6.0nm,0.5s							
KTBS	**Karatobe**	**4.78**	**44**	*e*P	**Pb**	**23 32 33.9**	**+2.1**
	0.5nm,0.2s							
KTBS				*e*S	**Sb**	**23 33 34.8**	**+5.0**
CHKK	**Chushkaly**	**5.06**	**45**	*e*P	**Pb**	**23 32 39.3**	**+2.8**
	0.9nm,0.4s							
CHKK				*e*S	Sg	23 33 44.2	-5.5
	3.5nm,0.2s							

MEX 10 23:34:11.6±0.5, 17°13N×100°97W, h12km±9km, MD3.6, Guerrero

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ZIIG	**Zihuatanejo**	**0.67**	**315**	*i* P	Pg	23 34 22.8	-1.8
ZIIG				*e*S	Sg	23 34 31.8	-1.6
CAIG	**El Cayaco**	**0.68**	**97**	*e*P	Pg	23 34 22.8	-2.0
CAIG				*e*S	Sg	23 34 31.8	-1.9
ARIG	**Puente Sto Nin**	**1.29**	**27**	*e*P	Pn	23 34 31.8	-3.8
ARIG				*e*S	Sb	23 34 47.4	-5.0
MEIG	**Mezcala**	**1.51**	**58**	*i* P	Pn	23 34 34.6	-4.0
MEIG				*i* S	Sn	23 34 53.5	-4.9
PLIG	**Platanillo**	**1.88**	**48**	*e*P	Pn	23 34 41.2	-2.5
PLIG				*e*S	Sn	23 35 02.7	-4.7
TLIG	**Tlapa**	**2.34**	**79**	*e*P	Pn	23 34 48.3	-1.8
TLIG				*i* S	Sn	23 35 15.2	-3.6
YAIG	**Yautepec**	**2.50**	**46**	*e*P	Pn	23 34 50.0	-2.3
YAIG				*i* S	Sn	23 35 18.6	-4.3

*ISCJB **10** 23:44:04.3±0.2, 15°39N±0°01×59°93W±0°02, h33km, mb4.6/124, MS3.5/6, Error ellipse: s-maj=3.1km s-min=2.1km az=12.3*
*BJI **10** 23:44:04.6, 15°30N×59°90W, h23km*
*TRN **10** 23:44:05.5, 15°36N×60°11W, h29km, MD4.2*
TRN Felt in Dominica, MMI II.
*NEIC **10** 23:44:06.1, 15°36N×60°12W, h33km, mb4.6/114, MD4.2(TRN), After TRN.*
NEIC Felt on Barbados.
*IDC **10** 23:44:07.3±2.0, 15°38N×60°08W, h43km±19km, mb3.9/15, mb1 4.2/18, mb1mx3.9/52, mbtmp4.2/18, ML3.7/3, MS3.3/7, Ms1 3.3/7, ms1mx2.9/48, Error ellipse: s-maj=18.8km s-min=12.6km az=76.0*

ISC 10 23:44:02.5±1.4, 15°36N±0°02×59°97W±0°04, h10km±8km, n391, σ0°98/419, mb4.6/124, MS3.3/6, 10C-2D, Leeward Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MVM	**Montagne Vaucl**	**1.20**	**228**	*e*P	**Pg**	**23 44 25.9**	**+0.3**
DLPL	**La Plaine**	**1.23**	**269**	⇑*e*P	**Pg**	**23 44 26.3**	**+0.1**
DLPL				*e*S	**Sg**	**23 44 42.0**	**-0.1**
DLPL	**La Plaine**	**1.23**	**269**	⇑*e*Pn	**Pg**	**23 44 26.3**	**+0.1**
LPMF	**Morne Lapointe**	**1.24**	**231**	*e*P	**Pb**	**23 44 26.0**	**+0.1**
H05S1	**Guadeloupe/Mar**	**1.25**	**222**	P	**Pg**	**23 44 27.0**	**+0.4**
H05S1				S	**Sb**	**23 44 41.8**	**-0.6**
BAMF	**Morne Balai**	**1.26**	**245**	*e*P	**Pg**	**23 44 26.8**	**+0.1**
SVN	**Savane Anatole**	**1.27**	**246**	*e*P	**Pg**	**23 44 26.9**	**+0.1**
CXM	**Morne La Croix**	**1.28**	**245**	*e*P	**Pg**	**23 44 27.1**	**0.0**
CXM				*e*S	**Sn**	**23 44 44.1**	**+0.3**
GBMF	**Grand Be**	**1.28**	**244**	*e*P	**Pg**	**23 44 27.0**	**-0.1**
ZAM	**Aeronautique**	**1.29**	**233**	*e*P	**Pb**	**23 44 26.8**	**0.0**
DSTT	**Stowe**	**1.29**	**265**	*e*P	**Pg**	**23 44 27.5**	**+0.2**
DSTT				*e*S	**Sb**	**23 44 43.5**	**+0.1**
DSTT	**Stowe**	**1.29**	**265**	*e*P	**Pg**	**23 44 27.5**	**+0.2**
DSTT				*e*S	**Sb**	**23 44 43.5**	**+0.1**
FDF	**Fort de France**	**1.30**	**241**	⇑*i*P	**Pb**	**23 44 26.9**	**-0.1**
FDF				*e*S	**Sb**	**23 44 42.8**	**-1.0**
FDF	**Fort de France**	**1.30**	**241**	*e*Pn	**Pb**	**23 44 27.2**	**+0.2**
FDF				*e*Sn	**Sb**	**23 44 43.2**	**-0.6**
PML	**Morne Lenard**	**1.30**	**244**	*e*P	**Pg**	**23 44 27.4**	**-0.2**
PCM	**Pelee Case Pet**	**1.31**	**246**	*e*P	**Pn**	**23 44 26.8**	**-0.1**
PCM	**Pelee Case Pet**	**1.31**	**246**	*e*P	**Pb**	**23 44 27.5**	**+0.2**
TRMF	**Trois Ilets**	**1.33**	**232**	*e*P	**Pb**	**23 44 27.6**	**+0.1**
DBCT	**Belle View Cho**	**1.33**	**266**	*e*P	**Pg**	**23 44 28.0**	**-0.1**
DBCT				*e*S	**Sb**	**23 44 44.2**	**-0.4**
DBCT	**Belle View Cho**	**1.33**	**266**	*e*P	**Pg**	**23 44 28.0**	**-0.1**
DBCT				*e*S	**Sb**	**23 44 44.2**	**-0.4**
DPMT	**Pointe Michel**	**1.36**	**266**	*e*P	**Pg**	**23 44 28.7**	**+0.1**
DPMT	**Pointe Michel**	**1.36**	**266**	*e*P	**Pg**	**23 44 28.7**	**+0.1**
DSHT	**Scott's Head**	**1.36**	**264**	*e*P	**Pg**	**23 44 28.4**	**-0.2**
DSHT				*e*S	**Sb**	**23 44 45.0**	**-0.5**
DSHT	**Scott's Head**	**1.36**	**264**	*e*P	**Pg**	**23 44 28.4**	**-0.2**
DSHT				*e*		23 44 45.0	
MDN	**Morne-Daniel**	**1.37**	**268**	*e*P	**Pg**	**23 44 28.7**	**-0.1**
MDN				*e*S	**Sb**	**23 44 45.2**	**-0.6**
MDN	**Morne-Daniel**	**1.37**	**268**	*e*P	**Pg**	**23 44 28.7**	**-0.1**
MGG	**Marie-Galante**	**1.41**	**293**	*e*P	**Pb**	**23 44 29.2**	**+0.3**
MGG	**Marie-Galante**	**1.41**	**293**	⇑*i*P	**Pg**	**23 44 29.3**	**-0.2**
MGG				*e*S	**Sn**	**23 44 46.0**	**-0.8**
MGG	**Marie-Galante**	**1.41**	**293**	*e*P	**Pb**	**23 44 29.2**	**+0.3**
MGG				*e*S	**Sn**	**23 44 46.0**	**-0.8**
DEG	**La Desirade**	**1.41**	**312**	⇓*i*P	**Pb**	**23 44 29.1**	**+0.2**
DEG	**La Desirade**	**1.41**	**312**	⇓*i*Pn	**Pb**	**23 44 29.1**	**+0.2**
H05N1	**Guadeloupe/Mar**	**1.41**	**312**	P	**Pb**	**23 44 29.0**	**+0.1**
H05N1				S	**Sn**	**23 44 45.5**	**-1.4**
BBL	**Barber's Block**	**1.45**	**277**	*e*P	**Pb**	**23 44 29.3**	**-0.4**
BBL	**Barber's Block**	**1.45**	**277**	*e*P	**Pb**	**23 44 29.3**	**-0.4**
SFG	**Saint Francois**	**1.48**	**307**	⇑*i*P	**Pb**	**23 44 30.2**	**+0.2**
TBG	**Guadaloupe-3**	**1.69**	**287**	*e*P	**Pn**	**23 44 32.8**	**+0.8**
TBG				*e*S	**Sn**	**23 44 53.2**	**-0.4**
DOG	**Dongo Capester**	**1.72**	**293**	⇑*i*P	**Pb**	**23 44 34.1**	**-0.1**
PHG	**Guadaloupe-2**	**1.73**	**292**	⇑*i*P	**Pb**	**23 44 34.4**	**-0.1**
LKG	**Breislack**	**1.76**	**293**	⇑*i*P	**Pb**	**23 44 34.8**	**-0.2**
LKG				*e*S	**Sn**	**23 44 55.5**	**-0.3**
HMG	**Houelmont**	**1.77**	**291**	⇑*i*P	**Pb**	**23 44 34.9**	**-0.3**
SCG	**Saint Claude**	**1.77**	**292**	⇑*i*P	**Pb**	**23 44 34.9**	**-0.3**
MCLT	**Moule a Chique**	**1.89**	**210**	*e*P	**Pb**	**23 44 36.7**	**-0.4**
MCLT				*e*S	**Sn**	**23 44 59.7**	**+1.0**
GDHS	**Morne Mazeau,**	**1.95**	**298**	*e*Pn	**Pb**	**23 44 37.8**	**-0.4**
GDHS				*e*Sn	**Sb**	**23 45 01.8**	**-0.8**
BBGH	**Gun Hill**	**2.24**	**170**	*e*P	**Pb**	**23 44 42.4**	**-0.6**
BBGH	**Gun Hill**	**2.24**	**170**	*e*Pn	**Pn**	**23 44 39.3**	**-0.4**
BBSP	**Saint Philip**	**2.30**	**167**	*e*P	**Pb**	**23 44 44.2**	**+0.2**
BBSP				*e*S	**Sb**	**23 45 12.3**	**-0.3**
SVV	**Soufriere Volc**	**2.36**	**211**	*e*P	**Pb**	**23 44 43.8**	**-1.4**
SVV				*e*S	**Sn**	**23 45 10.7**	**+0.3**
SVV	**Soufriere Volc**	**2.36**	**211**	*e*P	**Pb**	**23 44 44.0**	**-1.1**
SVV				*e*S	**Sn**	**23 45 11.1**	**+0.7**
SVB	**Belmont**	**2.42**	**211**	*e*P	**Pn**	**23 44 43.4**	**+1.3**
SVB				*e*S	**Sn**	**23 45 11.1**	**-0.7**
SVB				*e*S	**Sb**	**23 45 12.5**	**-3.5**
SVB	**Belmont**	**2.42**	**211**	*e*Pn	**Pn**	**23 44 43.0**	**+0.8**
SVB				*e*Sn	**Sn**	**23 45 12.7**	**+0.9**
BPA	**Boggy Peak**	**2.47**	**313**	*e*P	**Pn**	**23 44 44.5**	**+1.7**
BPA				*e*S	**Sn**	**23 45 13.3**	**+0.4**
BPA	**Boggy Peak**	**2.47**	**313**	*e*P	**Pn**	**23 44 44.5**	**+1.7**
BPA				*e*S	**Sn**	**23 45 12.1**	**-0.9**
FCV	**Fort Charlotte**	**2.52**	**210**	*e*P	**Pb**	**23 44 46.1**	**-1.7**
FCV				*e*S	**Sn**	**23 45 13.9**	**-0.2**
FCV	**Fort Charlotte**	**2.52**	**210**	*e*P	**Pb**	**23 44 46.1**	**-1.7**
MLYT	**Lee's Yard**	**2.53**	**303**	*e*P	**Pb**	**23 44 45.9**	**-2.0**
MLYT				*e*S	**Sn**	**23 45 13.3**	**-1.1**
ANWB	**Willy Bob**	**2.88**	**323**	*e*P	**Pn**	**23 44 49.5**	**+1.0**
ANWB				*e*S	**Sn**	**23 45 22.8**	**-0.4**
ANWB	**Willy Bob**	**2.88**	**323**	*e*Pn	**Pn**	**23 44 49.5**	**+1.0**
GRSS	**Sisters**	**3.44**	**208**	*e*P	**Pn**	**23 44 58.7**	**+2.6**
GRSS				*e*S	**Sn**	**23 45 37.6**	**+0.7**
GRSS	**Sisters**	**3.44**	**208**	*e*P	**Pn**	**23 44 58.7**	**+2.6**
GRSS				*e*S	**Sn**	**23 45 37.7**	**+0.9**
GRHS	**Sauteurs**	**3.52**	**208**	*e*P	**Pn**	**23 45 00.1**	**+2.9**
GRHS				*e*S	**Sn**	**23 45 38.6**	**-0.2**
GRHS	**Sauteurs**	**3.52**	**208**	*e*P	**Pn**	**23 45 00.1**	**+2.9**
GRHS				*e*S	**Sn**	**23 45 39.1**	**+0.2**
SEUS	**St. Eustatius**	**3.58**	**307**	*e*Pn	**Pn**	**23 44 59.2**	**+1.1**
GRGR	**Grenville**	**3.60**	**207**	*e*P	**Pn**	**23 45 00.2**	**+1.8**
GRGR	**Grenville**	**3.60**	**207**	*e*Pn	**Pn**	**23 44 59.6**	**+1.3**
SAAA	**Saba**	**3.86**	**306**	*e*Pn	**Pn**	**23 45 04.1**	**+2.2**
SMRT	**St. Maarten**	**4.00**	**312**	*e*Pn	**Pn**	**23 45 04.7**	**+0.8**
TOSP	**Speyside**	**4.08**	**188**	*e*P	**Pn**	**23 45 07.1**	**+2.2**
TOSP	**Speyside**	**4.08**	**188**	*e*S	**Sn**	**23 45 53.3**	**+0.6**
TOSP	**Speyside**	**4.08**	**188**	*e*P	**Pn**	**23 45 07.1**	**+2.2**
TOSP				*e*S	**Sn**	**23 45 53.3**	**+0.6**
CDVI	**St. Croix**	**5.17**	**298**	*e*Pn	**Pn**	**23 45 21.6**	**+1.6**
STVI	**Saint Thomas**	**5.62**	**303**	*e*Pn	**Pn**	**23 45 27.7**	**+1.6**
CBYP	**Canovanas**	**6.33**	**298**	*e*Pn	**Pn**	**23 45 38.7**	**+2.7**
SJG	**San Juan**	**6.52**	**296**	P	**Pn**	**23 45 40.8**	**+2.3**
	8.2nm,0.3s,baz=147,slow=23,SNR=16						
SJG				LR	LR	23 48 27.0	
	comp=Z,273nm,18.8s,baz=98,slow=40						
SJG	**San Juan**	**6.52**	**296**	*e*Pn	**Pn**	**23 45 40.5**	**+2.0**
CELP	**Cerrillos**	**6.88**	**294**	*e*Pn	**Pn**	**23 45 45.6**	**+2.1**
LRS	**Lares**	**7.20**	**295**	*e*Pn	**Pn**	**23 45 50.6**	**+2.7**
SDD	**Santo Domingo**	**10.00**	**289**	*e*Pn	**Pn**	**23 46 28.4**	**+2.1**
SDDR	**Presa de Saban**	**11.40**	**290**	*e*Pn	**Pn**	**23 46 47.0**	**+1.5**
SDDR				*e*Sn	**Sn**	**23 48 52.3**	**-0.7**
PAPH	**Port-au-Prince**	**12.21**	**287**	*e*Pn	**Pn**	**23 46 59.1**	**+2.6**
GRTK	**Grand Turk**	**12.23**	**302**	*e*Pn	**Pn**	**23 46 59.0**	**+2.2**
SDV	**Santo Domingo**	**12.25**	**240**	P	**Pn**	**23 46 57.8**	**+0.6**
	1.9nm,0.3s,baz=64,slow=6.6,SNR=16						
SDV				LR	LR	23 53 10.2	
	comp=Z,137nm,18.4s,baz=64,slow=45						
SDV	**Santo Domingo**	**12.25**	**240**	*e*Pn	**Pn**	**23 46 58.7**	**+1.4**
SDV	**Santo Domingo**	**12.25**	**240**	*e*P	**Pn**	**23 46 56.5**	**-0.7**
GRMC	**Gramalote, San**	**14.68**	**240**	*e*P	**P**	**23 47 35.1**	**-1.7**
PAMC	**Pamplona, Colo**	**14.80**	**239**	*e*P	**P**	**23 47 35.9**	**-2.6**
OCAC	**Ocana**	**14.85**	**243**	*e*P	**P**	**23 47 38.9**	**+0.1**
GTBY	**Guantanamo Bay**	**15.12**	**290**	*e*Pn	**Pn**	**23 47 38.6**	**+2.3**
	60nm,1.1s						
BARC	**Barichara**	**15.62**	**238**	*e*P	**Pn**	**23 47 43.3**	**+0.3**
BRRC	**Barranca, Sant**	**15.77**	**240**	*e*P	**P**	**23 47 47.8**	**-1.0**
PTGA	**Pitinga**	**15.99**	**180**	P	**Pn**	**23 47 43.9**	**-3.7**
	3.8nm,0.3s,baz=6.2,slow=15,SNR=16						
PTGA	**Pitinga**	**15.99**	**180**	*e*Pn	**Pn**	**23 47 44.5**	**-3.2**
	27nm,0.5s						
MOTC	**Monteria, Cord**	**16.68**	**249**	*e*P	**Pn**	**23 47 54.8**	**-1.6**
CHIC	**Chingaza**	**17.23**	**233**	*e*P	**P**	**23 48 05.9**	**+0.6**
BBSR	**BB Station**	**17.47**	**347**	*e*Pn	**Pn**	**23 48 04.3**	**-1.9**
	202nm,1.9s						
ROSC	**El Rosal**	**17.56**	**235**	P	**P**	**23 48 10.0**	**+1.1**
	3.8nm,0.3s,baz=89,slow=8.8,SNR=25						
ROSC	**El Rosal**	**17.56**	**235**	*e*Pn	**P**	**23 48 11.0**	**+2.0**
	28nm,0.6s						
ROSC				*e*Sn	**S**	**23 51 32.5**	**+0.7**
NORC	**Norcasia**	**17.57**	**238**	*e*P	**Pn**	**23 48 07.0**	**-0.7**
HELC	**Santa Helena**	**17.78**	**241**	*e*P	**Pn**	**23 48 08.2**	**-2.4**
DBBC	**Dabeiba**	**17.95**	**244**	*e*P	**P**	**23 48 13.0**	**0.0**
GUYC	**Guyana, Colomb**	**18.19**	**238**	*e*P	**Pn**	**23 48 15.2**	**-0.6**
TOLC	**Tolima**	**18.51**	**236**	*e*P	**P**	**23 48 18.6**	**-0.8**
PRAC	**Prado**	**18.70**	**233**	*e*P	**P**	**23 48 19.7**	**-1.5**
GRGC	**Isla de Gorgon**	**21.73**	**237**	*e*P	**P**	**23 48 50.8**	**-3.5**
CMBC	**Cumbal**	**22.71**	**233**	*e*P	**P**	**23 49 02.7**	**-2.4**
OTAV	**Otavalo**	**23.64**	**232**	*e*P	**P**	**23 49 13.6**	**-1.1**
	8.9nm,0.7s						
OTAV	**Otavalo**	**23.64**	**232**	*e*P	**P**	**23 49 12.7**	**-1.9**
SAML	**Samuel**	**24.36**	**188**	*e*P	**P**	**23 49 21.2**	**+0.3**
	4.6nm,0.6s						
JTS	**JuntasAbangare**	**24.86**	**261**	P	**P**	**23 49 25.2**	**-0.3**
	9.5nm,0.9s,baz=268,slow=22,SNR=3.6						
JTS	**JuntasAbangare**	**24.86**	**261**	*e*P	**P**	**23 49 26.7**	**+1.2**
	17nm,1.1s						
RGRS	**Roger Stewart**	**25.33**	**317**	*e*P	**P**	**23 49 30.3**	**+0.8**
CNNC	**Cliffs of the**	**25.50**	**324**	*e*P	**P**	**23 49 31.7**	**+0.7**
	61nm,1.8s						
TGUH	**Tegucigalpa,Un**	**26.43**	**271**	*e*P	**P**	**23 49 40.8**	**+1.1**
	36nm,1.4s						
TIGA	**Tifton**	**26.85**	**311**	*e*P	**P**	**23 49 44.3**	**+0.9**
	11nm,0.9s						
URVA	**University of**	**27.05**	**328**	*e*P	**P**	**23 49 46.0**	**+1.1**
TEIG	**Tepich**	**27.36**	**284**	*e*P	**P**	**23 49 49.3**	**+1.3**
	42nm,1.7s						
GOGA	**Godfrey**	**27.83**	**314**	*e*P	**P**	**23 49 53.0**	**+0.9**
	18nm,1.8s						
CPNY	**Central Park**	**28.11**	**337**	*e*P	**P**	**23 49 55.0**	**+0.5**
	8.4nm,0.7s						
VWCC	**Virginia Weste**	**28.11**	**325**	*e*P	**P**	**23 49 55.1**	**+0.5**
SDMD	**Soldier's Deli**	**28.15**	**332**	*e*P	**P**	**23 49 55.3**	**+0.4**
	10nm,1.5s						
BRNJ	**Basking Ridge**	**28.24**	**336**	*e*P	**P**	**23 49 56.2**	**+0.5**
	36nm,1.6s						
LUPA	**Lehigh Univers**	**28.50**	**335**	*e*P	**P**	**23 49 59.2**	**+1.3**
	47nm,1.9s						
HRV	**Adam Dziewonsk**	**28.83**	**342**	*e*P	**P**	**23 50 01.7**	**+0.8**
	11nm,1.0s						
BRAL	**Brewton**	**29.32**	**307**	*e*P	**P**	**23 50 06.2**	**+0.8**
	102nm,1.8s						
TKL	**Tuckaleechee C**	**29.36**	**318**	P	**P**	**23 50 05.2**	**-0.5**
	1.5nm,0.6s,baz=149,slow=12,SNR=3.9						
TKL				LR	LR	00 01 07.3	
	comp=Z,41nm,21.3s,baz=136,slow=35						
SSPA	**Standing Stone**	**29.62**	**332**	*e*P	**P**	**23 50 08.7**	**+0.8**
	24nm,1.7s						
CPCT	**Cooper Cave**	**29.72**	**317**	*e*P	**P**	**23 50 10.3**	**+1.4**
	4.3nm,1.1s						
MCWV	**Mont Chateau**	**29.80**	**328**	*e*P	**P**	**23 50 10.8**	**+1.2**
	6.6nm,1.4s						
MIV	**Mineville/With**	**30.86**	**341**	*e*P	**P**	**23 50 18.9**	**0.0**
CCIG	**Comitan**	**30.94**	**276**	*e*P	**P**	**23 50 20.8**	**+0.6**
	18nm,1.1s						
ACSO	**Alum Creek Sta**	**31.88**	**325**	*e*P	**P**	**23 50 28.3**	**+0.4**
	6.0nm,0.8s						
PLAL	**Pickwick Lake**	**31.89**	**313**	*e*P	**P**	**23 50 28.7**	**+0.6**
	8.6nm,0.6s						
WVT	**Waverly**	**32.32**	**315**	*e*P	**P**	**23 50 32.8**	**+0.9**
	3.7nm,0.8s						
VBMS	**Vicksburg**	**32.44**	**307**	*e*P	**P**	**23 50 34.3**	**+1.4**
	18nm,0.6s						
LPAZ	**La Paz**	**32.46**	**195**	P	**P**	**23 50 35.0**	**+1.0**
	4.8nm,0.8s,baz=358,slow=12,SNR=20						
LPAZ				LR	LR	00 04 50.1	
	comp=Z,34nm,18.3s,baz=354,slow=38						
LPAZ	**La Paz**	**32.46**	**195**	*e*P	**P**	**23 50 34.9**	**+1.0**
	6.9nm,0.8s						
WCI	**Wyandotte Cave**	**32.52**	**319**	*e*P	**P**	**23 50 34.4**	**+0.8**
	9.4nm,1.2s						
UTMT	**University of**	**33.15**	**314**	*e*P	**P**	**23 50 39.2**	**+0.2**
	39nm,0.6s						
BLO	**Bloomington**	**33.23**	**321**	*e*P	**P**	**23 50 40.6**	**+0.9**
	6.0nm,0.8s						
USIN	**University of**	**33.23**	**318**	*e*P	**P**	**23 50 41.1**	**+1.3**
	9.3nm,0.8s						
AAM	**Ann Arbor**	**33.70**	**328**	*e*P	**P**	**23 50 44.5**	**+0.7**
	47nm,1.7s						
CCAR	**Cane Creek**	**34.10**	**309**	*e*P	**P**	**23 50 48.7**	**+1.3**
	24nm,0.5s						
SIUC	**Southern Illin**	**34.12**	**316**	*e*P	**P**	**23 50 48.3**	**+0.8**
	12nm,0.6s						
SFIN	**Lafayette**	**34.33**	**322**	*e*P	**P**	**23 50 50.1**	**+0.8**
	5.4nm,0.9s						
PBMO	**Poplar Bluff**	**34.45**	**314**	*e*P	**P**	**23 50 50.9**	**+0.5**
	18nm,1.0s						
UALR	**University of**	**34.89**	**310**	*e*P	**P**	**23 50 55.1**	**+0.9**
	30nm,1.8s						
W41A	**Tony Mavity, V**	**35.00**	**310**	P	**P**	**23 50 55.2**	**+0.1**
	baz=116						
W41B	**Gary Mavity, V**	**35.00**	**310**	P	**P**	**23 50 55.7**	**+0.6**
	baz=116						
WLAR	**White Oak Lake**	**35.03**	**307**	*e*P	**P**	**23 50 56.1**	**+0.7**
	14nm,1.0s						
X40A	**Basin Creek Fa**	**35.14**	**309**	P	**P**	**23 50 57.0**	**+0.6**
	baz=115						
Y40A	**Okolona**	**35.28**	**308**	P	**P**	**23 50 58.5**	**+0.9**
	baz=114						
339A	**Huntington**	**35.33**	**303**	P	**P**	**23 50 58.5**	**+0.5**
	baz=109						
NATX	**Nacogdoches**	**35.55**	**304**	*e*P	**P**	**23 51 01.2**	**+1.3**
	17nm,0.8s						
MIAR	**Mount Ida**	**35.72**	**309**	P	**P**	**23 51 02.0**	**+0.6**
	baz=114						
MIAR	**Mount Ida**	**35.72**	**309**	*e*P	**P**	**23 51 01.9**	**+0.5**
	4.6nm,1.1s						
U40A	**Yellville**	**35.96**	**312**	P	**P**	**23 51 03.5**	**0.0**
	baz=117						
HKT	**Hockley**	**35.97**	**300**	*e*P	**P**	**23 51 04.4**	**+0.9**
	23nm,1.7s						
T40A	**Mansfield**	**36.09**	**313**	P	**P**	**23 51 04.9**	**+0.3**
	baz=118						
X39A	**Fountain Ranch**	**36.12**	**308**	P	**P**	**23 51 04.7**	**-0.1**
	baz=114						
W39A	**Magazine**	**36.14**	**309**	P	**P**	**23 51 05.4**	**+0.4**
	baz=115						
737A	**Port Lavaca**	**36.18**	**298**	P	**P**	**23 51 05.6**	**+0.3**
	baz=104						
S40A	**Lebanon**	**36.29**	**314**	P	**P**	**23 51 06.0**	**-0.3**
	baz=119						
V39A	**Pettigrew**	**36.31**	**310**	P	**P**	**23 51 06.7**	**+0.2**
	baz=116,SNR=9.9						
U39A	**Green Forest**	**36.43**	**311**	P	**P**	**23 51 07.0**	**-0.5**
	baz=116,SNR=7.2						
R40A	**Maddies Statio**	**36.47**	**315**	P	**P**	**23 51 07.6**	**-0.1**
	baz=120						
T39A	**Clever**	**36.64**	**312**	P	**P**	**23 51 09.2**	**-0.1**
	baz=117						
Q40A	**Laux Farm, Aux**	**36.70**	**316**	P	**P**	**23 51 10.1**	**+0.4**
	baz=121						
HHAR	**Hobbs**	**36.72**	**311**	*e*P	**P**	**23 51 10.4**	**+0.5**
	5.0nm,0.8s						
X38A	**Whitesboro**	**36.72**	**308

U34A	Anderson Ranch	39.43	309	eP		P	23 51 33.6	+0.8	
	12nm,0.6s								
X33A	Lawton	39.50	306	P		P	23 51 33.1	-0.3	
	baz=109								
SCHQ	Schefferville	39.75	354	P		P	23 51 34.5	-0.7	
	2.9nm,0.9s,baz=174,slow=10,SNR=3.6								
WMOK	Wichita Mounta	39.79	306	eP		P	23 51 34.7	-1.1	
	1.8nm,0.4s								
ABTX	Abilene, Hawle	39.84	303	P		P	23 51 35.7	-0.6	
	baz=106								
ABTX	Abilene, Hawle	39.84	303	eP		P	23 51 35.6	-0.6	
	7.6nm,0.6s								
KSU1	Kansas State U	39.85	314	eP		P	23 51 36.3	0.0	
	12nm,0.4s								
W32A	Sentinel	40.27	307	P		P	23 51 39.5	-0.4	
	baz=109								
V32A	Arapaho	40.32	308	P		P	23 51 40.1	-0.1	
	baz=110								
R33A	Olander Ranch,	40.49	312	P		P	23 51 41.4	-0.3	
	baz=114								
U32A	Winter Ranch,	40.51	309	P		P	23 51 42.1	+0.3	
	baz=111								
ZAIG	Zacatecas	40.82	287	eP		P	23 51 45.1	+0.3	
	3.6nm,0.9s								
C39A	Grand Marais	40.83	329	P		P	23 51 45.8	+1.5	
	baz=132								
R32A	Long Quarter,	41.06	312	P		P	23 51 47.1	+0.7	
	baz=114								
Q32A	Meitler Ranch,	41.18	312	P		P	23 51 47.9	+0.6	
	baz=114								
CPUP	Villa Florida	41.52	176	P		P	23 51 49.9	-0.1	
	4.3nm,0.9s,baz=5.3,slow=9.0,SNR=4.5								
CPUP	Villa Florida	41.52	176	eP		P	23 51 49.6	-0.5	
BGNE	Belgrade	41.93	316	P		P	23 51 53.9	+0.4	
	baz=117								
BGNE	Belgrade	41.93	316	eP		P	23 51 54.0	+0.6	
	36nm,1.0s								
CBKS	Cedar Bluff	41.95	312	P		P	23 51 54.4	+0.7	
	baz=113								
ECSD	EROS Data Cent	42.06	320	P		P	23 51 54.8	+0.4	
	baz=121								
ECSD	EROS Data Cent	42.06	320	eP		P	23 51 55.0	+0.5	
	4.6nm,0.8s								
AMTX	Amarillo	42.10	305	eP		P	23 51 56.1	+1.1	
	10nm,0.6s								
M31A	Lambtecht Ranc	42.46	315	P		P	23 51 58.3	+0.5	
	baz=116								
TX31	Lajitas Ar. Si	42.49	297	eP		P	23 51 58.8	+0.5	
TXAR	Lajitas Array	42.49	297	P		P	23 51 56.9	-1.3	
	1.1nm,0.6s,baz=107,slow=8.0,SNR=8.4								
MSTX	Muleshoe	42.72	304	P		P	23 51 59.8	-0.2	
	baz=105								
MSTX	Muleshoe	42.72	304	eP		P	23 51 59.6	-0.5	
	8.2nm,0.8s								
L31A	Butterfield Fa	42.74	317	P		P	23 52 00.7	+0.7	
	baz=117								
CLNB	Carlsbad	43.22	301	eP		P	23 52 02.3	-1.8	
N29A	Votaw Ranch, W	43.37	314	P		P	23 52 06.0	+0.8	
	baz=114								
G32A	Webster	43.38	321	P		P	23 52 06.2	+1.0	
	baz=121								
K30A	Basset	43.48	317	P		P	23 52 06.4	+0.4	
	baz=117								
J30A	Dallas	43.69	318	P		P	23 52 08.2	+0.5	
	baz=118								
I30A	Oacoma	43.92	319	P		P	23 52 10.6	+1.1	
	baz=118								
HPIG		43.93	293	eP		P	23 52 09.3	-0.8	
	46nm,1.1s								
M28A	Bar X Bar Ranc	44.12	314	P		P	23 52 11.6	+0.4	
	baz=114								
KSCO	Kaye Shedlock'	44.13	311	eP		P	23 52 12.0	+0.6	
	19nm,1.0s								
A33A	Warroad	44.25	327	P		P	23 52 12.8	+0.8	
	baz=127								
J29A	Okreek	44.27	317	P		P	23 52 12.6	+0.3	
	baz=117,SNR=9.0								
MNTX	Cornudas Mount	44.36	300	P		P	23 52 12.4	-0.9	
	baz=101,SNR=9.0								
MNTX	Cornudas Mount	44.36	300	eP		P	23 52 13.0	-0.2	
	9.1nm,1.0s								
I29A	Vivian Onida	44.53	318	P		P	23 52 15.5	+1.0	
	baz=117								
H29A	Onida	44.75	319	P		P	23 52 16.6	+0.4	
	baz=118								
T25A	Trinidad	44.87	308	P		P	23 52 17.4	-0.1	
	baz=107								
T25A	Trinidad	44.87	308	eP		P	23 52 18.1	+0.7	
	2.7nm,0.7s								
J28A	Allard Ranch,	44.87	317	P		P	23 52 17.8	+0.6	
	baz=116								
I28A	Midland	45.08	318	P		P	23 52 19.3	+0.5	
	baz=116								
J27A	Elkhorn Farm,	45.31	317	P		P	23 52 21.1	+0.4	
	baz=115								
LCO	Las Campanas	45.31	193	eP		P	23 52 20.9	-0.1	
	14nm,0.8s								
B30A	Myrvik Farm, E	45.57	325	P		P	23 52 22.9	+0.3	
	baz=123								
I27A	Quinn	45.69	318	P		P	23 52 23.5	-0.2	
	baz=116								
SDCO	Great Sand Dun	45.88	308	P		P	23 52 25.3	-0.2	
	baz=107								
SDCO	Great Sand Dun	45.88	308	eP		P	23 52 25.5	0.0	
	3.9nm,1.2s								
ANMO	Albuquerque	45.91	304	P		P	23 52 25.7	0.0	
	baz=103								
ANMO	Albuquerque	45.91	304	eP		P	23 52 26.1	+0.4	
	4.4nm,1.3s								
MDND	Maddock	45.97	323	eP		P	23 52 27.3	+1.5	
	22nm,0.7s								
Q24A	Divide	45.97	310	eP		P	23 52 27.5	+1.2	
	3.3nm,0.6s								
J26A	Sides Ranch, S	46.05	316	P		P	23 52 27.7	+1.1	
	baz=114								
Y22D	IRIS PASSCAL I	46.09	303	P		P	23 52 27.8	+0.6	
	baz=102								
Y22D	IRIS PASSCAL I	46.09	303	eP		P	23 52 27.4	+0.3	
	18nm,0.6s								
I26A	New Underwood	46.20	317	P		P	23 52 28.4	+0.7	
	baz=115								
H26A	Fairpoint	46.39	318	P		P	23 52 30.0	+0.8	
	baz=115								
121A	Cookes Peak, D	46.52	300	P		P	23 52 30.9	+0.4	
	baz=100								
J25A	Sunshine Ranch	46.56	316	P		P	23 52 31.2	+0.6	
	baz=113								
G26A	Maurine	46.57	319	P		P	23 52 30.6	+0.1	
	baz=116,SNR=6.0								
ISCO	Idaho Springs	46.57	311	P		P	23 52 30.8	-0.2	
	baz=108								
I25A	Rochford	46.77	317	P		P	23 52 32.4	+0.1	
	baz=114								
H25A	Fruitdale	46.92	318	P		P	23 52 34.2	+0.8	
	baz=114								
PHWY	Pilot Hill	46.95	313	eP		P	23 52 34.0	+0.1	
	12nm,0.5s								
RSSD	Black Hills	47.01	317	P		P	23 52 34.8	+0.6	
	baz=114								
RSSD	Black Hills	47.01	317	eP		P	23 52 34.2	0.0	
	3.0nm,0.6s								
319A	Douglas	47.59	299	eP		P	23 52 39.7	+0.8	
	7.1nm,0.9s								
A26A	Wade Farm, Ken	47.90	323	P		P	23 52 41.7	+0.8	
	baz=120,SNR=7.8								
K22A	Casper	48.15	314	P		P	23 52 43.1	0.0	
	baz=110								
K22A	Casper	48.15	314	eP		P	23 52 43.8	+0.7	
	13nm,1.1s								
X18A	Snowflake	48.64	303	eP		P	23 52 47.9	+0.8	
	3.9nm,0.9s								
DGMT	Dagmar	48.96	322	eP		P	23 52 50.3	+1.3	
	7.4nm,0.9s								
TUC	Tucson	48.99	300	P		P	23 52 49.9	+0.4	
	baz=98								
TUC	Tucson	48.99	300	eP		P	23 52 50.0	+0.4	
	4.9nm,0.9s								
LAO	LASA Array	49.44	319	eP		P	23 52 53.3	+0.5	
	8.0nm,0.8s								
SRIG	Santa Rosalia	49.80	293	eP		P	23 52 57.1	+1.4	
	49nm,0.8s								
X16A	Lo Mia Camp, P	49.84	302	eP		P	23 52 56.7	+0.5	
	2.8nm,1.0s								
P18A	Preston Nutter	49.95	309	eP		P	23 52 57.7	+0.6	
	16nm,2.0s								
WUAZ	Wupatki	49.97	304	P		P	23 52 57.0	-0.1	
	baz=100								
WUAZ	Wupatki	49.97	304	eP		P	23 52 57.9	+0.8	
	4.4nm,0.8s								
SRU	San Rafael Swe	50.04	308	eP		P	23 52 58.4	+0.7	
	10nm,1.6s								
FCC	Fort Churchill	50.14	338	eP		P	23 52 58.1	+0.3	
	9.7nm,1.4s								
P17A	Butcher Ranch,	50.29	309	eP		P	23 53 00.2	+0.8	
	5.3nm,1.0s								
BW06	Boulder Array	50.31	313	P		P	23 52 59.7	0.0	
	baz=108								
BW06	Boulder Array	50.31	313	eP		P	23 52 58.8	-0.9	
	6.7nm,0.9s								
PD31	Pinedale Array	50.31	313	eP		P	23 52 59.8	+0.2	
PDAR	Pinedale Array	50.31	313	P		P	23 52 59.7	0.0	
	3.5nm,0.6s,baz=112,slow=9.1,SNR=33								
H10N3	ASCENSION HYDR	50.61	114	T		T	00 48 30.4		
	baz=297								
H10N2	ASCENSION HYDR	50.62	114	T		T	00 48 31.0		
	baz=297								
H10N1	ASCENSION HYDR	50.63	114	T		T	00 48 32.0		
	baz=297								
RLMT	Red Lodge	50.85	316	P		P	23 53 04.1	+0.3	
	baz=110,SNR=8.9								
RLMT	Red Lodge	50.85	316	eP		P	23 53 04.6	+0.9	
	8.8nm,1.1s								
H10S3	ASCENSION HYDR	50.98	115	T		T	00 48 57.3		
	baz=299								
H10S1	ASCENSION HYDR	50.99	115	T		T	00 48 57.9		
	baz=299								
H10S2	ASCENSION HYDR	51.00	115	T		T	00 48 58.8		
	baz=299								
Y14A	Wickenburg	51.05	301	eP		P	23 53 06.1	+0.9	
	11nm,0.9s								
MPU	Maple Canyon	51.08	309	eP		P	23 53 05.5	-0.1	
	4.1nm,1.2s								
JLU	Jordanelle	51.09	310	eP		P	23 53 06.5	+0.9	
	3.0nm,0.8s								
MSU	Marysvale	51.17	307	eP		P	23 53 06.5	+0.3	
TCUT	Toone Canyon	51.18	311	eP		P	23 53 07.0	+0.6	
	14nm,0.6s								
LOHW	Long Hollow	51.29	314	eP		P	23 53 07.4	+0.4	
	2.6nm,0.8s								
CTU	Camp Tracy	51.33	310	eP		P	23 53 08.4	+1.0	
	4.9nm,0.8s								
SNOW	Snow King Moun	51.35	314	eP		P	23 53 08.3	+0.7	
	8.3nm,1.3s								
REDW	Red Top Meadow	51.39	314	eP		P	23 53 08.2	+0.4	
	9.8nm,1.4s								
AHID	Auburn Hatcher	51.39	313	eP		P	23 53 08.1	+0.3	
	9.3nm,1.1s								
NLU	North Lily Min	51.40	309	eP		P	23 53 07.8	-0.1	
	4.1nm,1.2s								
HWUT	Hardware Ranch	51.42	311	eP		P	23 53 08.4	+0.4	
	13nm,1.6s								
MOOW	Moose Ponds	51.43	314	eP		P	23 53 08.5	+0.4	
	6.0nm,1.5s								
H17A	Grant Village	51.50	315	P		P	23 53 08.8	+0.1	
	baz=108								
FXWY	Fox Creek	51.59	314	eP		P	23 53 09.2	-0.2	
	2.2nm,0.9s								
IMW	Indian Meadow	51.60	314	eP		P	23 53 09.8	+0.3	
	1.9nm,0.6s								
LCMT	Little Creek M	51.71	305	eP		P	23 53 10.6	+0.4	
	1.8nm,0.9s								
YMR	Madison River	51.85	315	eP		P	23 53 12.1	+0.9	
	4.8nm,0.8s								
W13A	Hualapai Mount	51.93	303	eP		P	23 53 12.1	+0.1	
	1.5nm,0.8s								
DUG	Dugway, Tooele	52.01	309	P		P	23 53 12.2	-0.1	
	baz=103								
DUG	Dugway, Tooele	52.01	309	eP		P	23 53 13.0	+0.7	
	5.2nm,1.2s								
PDMCI	Parker Dam,Lak	52.03	302	P		P	23 53 12.5	+0.1	
	baz=97								
EGMT	Eagleton	52.17	320	P		P	23 53 14.6	+1.2	
	baz=111								
EGMT	Eagleton	52.17	320	eP		P	23 53 15.1	+1.7	
	16nm,1.1s								
QLMT	Earthquake Lak	52.22	315	eP		P	23 53 15.9	+2.0	
BGU	Big Grassy Mou	52.33	310	eP		P	23 53 15.3	+0.6	
	7.4nm,1.1s								
HVU	Hansel Valley	52.34	311	eP		P	23 53 15.1	+0.2	
	2.6nm,0.6s								
GLA	Glamis	52.46	300	eP		P	23 53 16.2	+0.5	
	4.4nm,0.8s								
BOZ	Bozeman (W)	52.59	316	P		P	23 53 16.8	+0.1	
	baz=108,SNR=6.7								
BOZ	Bozeman (W)	52.59	316	eP		P	23 53 17.4	+0.8	
	6.9nm,1.2s								
IRM	Iron Mountain	52.84	301	P		P	23 53 18.9	+0.3	
	baz=97								
LDFC	Landfair	52.92	302	eP		P	23 53 20.5	+1.3	
	13nm,0.6s								
BC3	Big Chuckawall	53.04	301	P		P	23 53 20.1	0.0	
	baz=96								
DLMT	Dillon	53.16	316	eP		P	23 53 20.4	-0.4	
	26nm,1.9s								
IBP	Imperial Bould	53.49	299	P		P	23 53 23.4	0.0	
	baz=95								
MONP2	Monument Peak	53.78	300	P		P	23 53 25.8	+0.1	
	baz=95								
HLID	Hailey	53.94	313	P		P	23 53 27.3	+0.6	
	baz=104								
HLID	Hailey	53.94	313	eP		P	23 53 27.4	+0.7	
	8.1nm,1.5s								
TPNV	Topopah Spring	54.08	305	P		P	23 53 27.7	0.0	
	baz=98								
DBIC	Dimbokro	54.66	93	P		P	23 53 33.4	+1.3	
	3.0nm,0.8s,baz=213,slow=6.7,SNR=5.1								
SWMT	Swartz Lake	54.71	318	eP		P	23 53 33.2	+1.1	
YBMT	Yellow Bay	54.82	318	eP		P	23 53 34.5	+1.6	
MPMC	Manual Prospec	54.96	303	P		P	23 53 34.2	0.0	
	baz=96								
EDW2	Edwards Air Fo	55.26	302	P		P	23 53 36.3	+0.1	
	baz=95								
NV01	Mina Array Sit	55.89	306	eP		P	23 53 41.4	+0.5	
BLG	Laguna Peak, P	56.08	301	P		P	23 53 42.7	+0.7	
	baz=94								
PLCA	Paso Flores	56.66	190	P		P	23 53 46.4	+0.3	
	5.9nm,0.7s,baz=26,slow=8.3,SNR=11								
PLCA	Paso Flores	56.66	190	eP		P	23 53 47.1	+1.1	
	6.6nm,0.8s								
NEW	Newport	56.94	318	LR		LR	00 18 05.6		
	comp=Z,29nm,21.7s,baz=147,slow=36								
NEW	Newport	56.94	318	P		P	23 53 47.7	-0.3	
	baz=105,SNR=8.5								
NEW	Newport	56.94	318	eP		P	23 53 48.1	+0.1	
	9.4nm,0.9s								
K05A	Summer Lake	58.44	311	eP		P	23 53 59.6	+0.8	
	84nm,1.9s								
J05D	Glass Rock, OR	58.76	312	P		P	23 54 00.3	-0.7	
	baz=98								
M04C	Macdoel	59.01	310	P		P	23 54 02.9	+0.1	
	baz=97								
TOA0	Torodi Ar. Sit	59.63	84	eP		P	23 54 08.4	+1.1	
TORD	Torodi Ar. Bea	59.63	84	P		P	23 54 07.9	+0.6	
	0.5nm,0.6s,baz=274,slow=6.4,SNR=7.3								
TORD				LR		LR	00 15 54.4		
	comp=Z,22nm,21.5s,baz=90,slow=32								
YKA	Yellowknife Ar	60.50	334	P		P	23 54 12.2	-0.2	
	1.0nm,0.5s,baz=108,slow=7.6,SNR=17								
YKB5	Yellowknife Ar	60.50	334	eP		P	23 54 11.1	-1.3	
GERES	GERESS Array B	67.86	43	P		P	23 55 02.1	+1.0	
	0.3nm,0.5s,baz=261,slow=5.3,SNR=4.7								
INK	Inuvik	69.76	338	P		P	23 55 12.7	+0.2	
	3.1nm,0.9s,baz=93,slow=6.3,SNR=11								
INK	Inuvik	69.76	338	eP		P	23 55 13.3	+0.9	
MENT	Mentasta	73.61	332	eP		P	23 55 37.0	+1.1	
	5.3nm,0.8s								
FINES	FINESS Array B	74.76	30	P		P	23 55 43.3	+0.8	
	2.0nm,0.9s,baz=232,slow=2.2,SNR=3.9								
FINES				LR		LR	00 25 46.7		
	comp=Z,18nm,18.0s,baz=285,slow=33								
ILAR	Eielson Array	74.92	334	P		P	23 55 43.2	-0.2	
	0.8nm,0.8s,baz=107,slow=4.4,SNR=9.8								
MDM	Murphy Dome	75.48	334	eP		P	23 55 46.9	+0.2	
	22nm,1.9s								
TRF	Thorofare Moun	76.54	332	eP		P	23 55 53.7	+0.8	
	54nm,2.0s								
CAST	Castle Rocks	77.34	333	eP		P	23 55 55.4	-1.9	
	3.8nm,0.4s								
WMQ	Urumqi	114.10	25	ePKP		PKPdf	00 02 41.8	-0.6	
HHC	Hu-ho-hao-te	123.53	8	ePKP		PKPdf	00 02 58.5	-2.2	
LZH	Lanzhou	126.59	16	ePKP		PKPdf	00 03 03.6	-3.1	
LZH				pPKP		pPKPdf	00 03 11.2	+0.9	
LZH				sPKP			00 03 13.7		
LZH				LR		LR			
	comp=N,140nm,18.0s								
LZH				LR		LR			
	comp=E,140nm,17.8s								
LZH				LR		LR			
	comp=Z,170nm,20.0s								
CD2	Chengdu	131.41	19	PKP		PKPdf	00 03 13.6	-2.3	
CD2	Chengdu	131.41	19	PKP		PKPdf	00 03 13.6	-2.3	

NIED ***10*** *23:47:00.35˚.80N×140˚.10E,h68km,Mw4.1 Best double couple: M₀1.58000×10¹⁵ NP1:ϕs162.00000°,δ30.00000°, λ76.00000°. NP2:ϕs359.00000°,δ61.00000°,λ98.00000°.*
IDC ***10*** *23:47:15.9±2.0,35˚.80N×140˚.28E,h63km±17km,mb3.7/16, mb1 3.8/19,mb1mx3.6/56,mbtmp4.0/19,MS3.1/5, Ms1 3.1/5,ms1mx2.7/55,Error ellipse: s-maj=26.3km s-min=9.8km az=73.0*
ISCJB ***10*** *23:47:16.5±0.5,35˚.72N±0˚.04×140˚.06E±0˚.07,h85km±3km, mb3.9/16,Error ellipse: s-maj=9.9km s-min=6.0km az=150.2*
JMA ***10*** *23:47:17.6±0.2,35˚.81N×140˚.07E,h67km±2km,M3.6 Broadband fault plane solution: P waves. NP1: ϕs354.00000°,δ58.00000°,λ83.00000°. NP2: ϕs187.00000°,δ33.00000°,λ101.00000°. Principal axes: T Plg76.0000°, Azm244.0000°; N Plg6.0000°, Azm358.0000°; P Plg13.0000°, Azm89.0000°;*
JMA Felt I J1.

ISC 10 23:47:17.7±0.7,35˚.71N±0˚.05×140˚.06E±0˚.07,h81km±6km, n36,σ1°12/45,mb4.0/16,2C-6D,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time	Res
TOK	Tokyo	0.25	264			⇓P	Pn	23 47 29.4	-0.3
TOK						S	Sn	23 47 39.0	+0.5
JCN	Nagara	0.32	159			⇑P	Pn	23 47 29.8	-0.3
JCN						S	Sn	23 47 39.7	+0.4
JAG	Ashikaga	0.86	325			⇓P	Pn	23 47 33.8	-1.4
JOD2	Odawara 2	0.91	241			⇓P	Pn	23 47 35.1	-0.6
JOD2						S	Sn	23 47 47.8	-1.4
BSO3	Boso 3	0.98	158			⇑P	Pn	23 47 35.8	-0.5
BSO3						S	Sn	23 47 50.8	+0.6
JRY	Ryogami san	0.99	288			⇓P	Pn	23 47 36.4	-0.2
JIM2	Oshima 3	1.12	208			P	Pn	23 47 37.2	-1.0
JIM2						S	Sn	23 47 52.2	-1.4
JKT	Katashina	1.24	328			⇓P	Pn	23 47 38.5	-1.3
JYN	Shimob	1.25	261			⇓P	Pn	23 47 39.7	-0.2
JYN						S	Sn	23 47 56.0	-0.7
MJAR	Matsushiro Arr	1.71	299			P	Pn	23 47 45.4	-0.3
	46nm,0.3s,baz=100,slow=13,SNR=315								
MJAR						LR	LR	23 48 49.6	
	comp=Z,141nm,21.4s,baz=165,slow=52								
MAT	Matsushiro	1.71	299			P	Pn	23 47 45.7	-0.1
MAT						S	Sn	23 48 07.3	+0.2
JHJ	Hachijo jima 2	2.60	185			P	Pn	23 47 57.1	-0.5
	46nm,0.3s,baz=331,slow=22,SNR=15								
JHJ						S	Sn	23 48 28.8	+0.5
	154nm,0.3s,baz=63,slow=23,SNR=10								
JNU	Nakatsue	8.02	254			LR	LR	23 52 41.4	
	comp=Z,85nm,20.4s,baz=110,slow=40								
JCJ	Chichijima	8.78	167			S	Sn	23 50 54.6	-4.6
	baz=287,slow=19								
KSRS	Korea Array	9.91	284			P	Pn	23 49 39.4	+2.1
	0.5nm,0.3s,baz=95,slow=14,SNR=6.1								
KSRS						LR	LR	23 53 31.9	
	comp=Z,48nm,19.8s,baz=96,slow=37								
USRK	Ussuriysk Ar.	10.49	326			P	Pn	23 49 44.9	-0.1
	0.1nm,0.3s,baz=149,slow=17,SNR=3.5								
SONM	Songino Array	27.65	306			P	P	23 52 56.7	-1.2
	0.6nm,0.5s,baz=109,slow=9.6,SNR=7.8								
SONM						PcP	PcP	23 56 13.9	+0.8
	0.2nm,0.5s,baz=151,slow=2.1,SNR=4.1								
TLY	Talaya	30.40	313			LR	LR	00 07 35.4	
	comp=Z,25nm,18.2s,baz=103,slow=40								
ZALV	Zalesovo Beam	42.01	313			P	P	23 55 00.6	-0.2
	1.0nm,0.4s,baz=95,slow=7.9,SNR=11								
ZALV						PcP	PcP	23 56 55.4	+1.0
	1.2nm,0.6s,baz=92,slow=4.5,SNR=5.3								
MKAR	Makanchi Array	43.91	303			P	P	23 55 17.5	+1.3
	2.7nm,0.9s,baz=89,slow=10,SNR=26								
MKAR						PcP	PcP	23 57 01.9	+0.9
	0.6nm,0.8s,baz=90,slow=2.8,SNR=3.6								
NRIK	Noril'sk	44.02	336			P	P	23 55 16.0	-0.8
	1.0nm,0.4s,baz=108,slow=11,SNR=6.8								
KURBB	Kurchatov Arra	45.96	309			P	P	23 55 33.1	+0.6
	2.1nm,0.4s,baz=83,slow=7.6,SNR=39								
KURBB						PcP	PcP	23 57 08.4	+0.5
	0.2nm,0.8s,baz=85,slow=3.3,SNR=4.1								
WRA	Warramunga Arr	55.62	187			P	P	23 56 45.7	+0.5
	2.8nm,0.6s,baz=3.2,slow=7.6,SNR=15								
ARU	Arti	56.63	319			P	P	23 56 51.6	-0.4
	2.4nm,0.6s,baz=71,slow=3.1,SNR=8.0								
ASAR	Alice Springs	59.34	187			P	P	23 57 12.7	+1.3
	0.9nm,0.7s,baz=14,slow=14,SNR=11								
ARCES	ARCESS Array B	64.84	339			P	P	23 57 47.0	-0.6
	3.7nm,0.9s,baz=74,slow=6.4,SNR=4.9								
YKA	Yellowknife Ar	65.49	29			P	P	23 57 50.5	-1.3
	0.2nm,0.7s,baz=302,slow=7.0,SNR=4.5								
FINES	FINESS Array B	69.47	322			P	P	23 58 17.6	+0.7
	2.9nm,0.7s,baz=89,slow=6.9,SNR=16								
AKASG	Malin Array Be	74.67	322			P	P	23 58 48.6	+0.4
	1.2nm,0.4s,baz=48,slow=6.0,SNR=9.4								
HFS	Hagfors	74.83	335			P	P	23 58 49.5	+0.5
	0.5nm,0.4s,baz=97,slow=4.9,SNR=6.6								
NB2	NORSAR Subarra	74.97	337			P	P	23 58 50.7	+0.8
	comp=Z,0.9nm,0.6s,baz=41,slow=5.9								
NOA	NORSAR Array B	74.97	337			P	P	23 58 50.4	+0.5
	comp=Z,1.7nm,0.8s,baz=41,slow=5.8,SNR=7.8								
PDAR	Pinedale Array	79.37	45	P		P	P	23 59 14.8	-0.3
	comp=Z,0.3nm,0.6s,baz=306,slow=3.3,SNR=3.8								
ULM	Lac du Bonnet	81.20	33			LR	LR	00 38 48.6	
	comp=Z,26nm,18.4s,baz=162,slow=38							

ROSA	**Rosais**	**2.01**	**293**	*e*S	Sn	23 50 37.1	-7.5
ROSA				A	A	23 50 38.5	
	9.9nm,0.2s						
PICO	**Pico**	**2.08**	**286**	*e*P	Pn	23 50 15.9	-4.5
PICO				*e*S	Sn	23 50 38.4	-8.0
PICO	**Pico**	**2.08**	**286**	*e*P	Pn	23 50 15.9	-4.5
PICO				*e*S	Sn	23 50 38.4	-8.0
PICO				A	A	23 50 39.4	
	16nm,0.3s						

JMA 10 23:54:30.4±0.3, 38°43N×144°41E, h26km, M3.6, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**2.40**	**272**	S	Sn	23 55 37.6	+1.0
JTH	**Tanohata**	**2.49**	**308**	*e*S	Sn	23 55 39.0	+0.3
JOM	**Ohasama**	**2.64**	**294**	P	Pn	23 55 12.8	+1.4
JOM				*e*S	Sn	23 55 44.7	+2.1
JMM	**Marumori**	**2.91**	**260**	P	Pn	23 55 16.4	+1.4
JMM				*e*S	Sn	23 55 50.2	+1.2
JOU	**Okura**	**2.94**	**270**	P	Pn	23 55 17.3	+1.8
JOU				S	Sn	23 55 52.7	+2.7
JFK	**Kawauchi**	**2.99**	**250**	P	Pn	23 55 16.8	+0.6
JRG	**Rokugo**	**3.10**	**289**	P	Pn	23 55 19.9	+2.3
JRG				*e*S	Sn	23 55 57.1	+3.3
JYK	**Kaneyama**	**3.21**	**280**	P	Pn	23 55 20.8	+1.7
JYK				*e*S	Sn	23 55 58.9	+2.4
JFT	**Otama**	**3.34**	**255**	P	Pn	23 55 23.1	+2.1
JFT				S	Sn	23 56 01.1	+1.2

NIED ***11*** *00:00:00, 36.80N×140.60E, h5km, Mw3.7 Best double couple: M₀3.85000×10¹⁴ NP1:φs232.00000°, δ43.00000°, λ-87.00000°. NP2:φs47.00000°, δ47.00000°, λ-93.00000°.*
ISCJB ***11*** *00:00:11.2±0.5, 36.80N±0.04×140.58E±0.05, h21km±3km, mb3.7/18, Error ellipse: s-maj=8.1km s-min=5.5km az=36.6*
JMA ***11*** *00:00:11.7, 36.83N×140.50E, h5km±2km, M4.0*
JMA Felt II J1.
IDC ***11*** *00:00:15.3±4.3, 36.85N×140.27E, h33km±32km, mb3.6/18, mb1 3.7/18, mb1mx3.5/64, mbtmp3.8/18, Error ellipse: s-maj=21.3km s-min=18.6km az=90.0*

ISC 11 00:00:11.0±1.1, 36°83N±0.04×140°42E±0.04, h6km±7km, n26, σ1°83/31, mb3.8/18, 5C, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHO	**Hitachi**	**0.25**	**152**	↑↑P	**Pg**	**00 00 16.2**	**+0.3**
JHO				S	**Sg**	**00 00 19.3**	**+0.2**
ONAJ	**Iwakimizuishiy**	**0.41**	**48**	↑↑P	**Pg**	**00 00 18.8**	**-0.1**
ONAJ				S	**Sg**	**00 00 23.7**	**-0.6**
JSB	**Shioba**	**0.43**	**289**	↑↑P	**Pb**	**00 00 21.9**	**+0.9**
JSB				S	**Sb**	**00 00 29.0**	**+1.3**
JYT	**Yasato**	**0.63**	**197**	↑↑P	**Pb**	**00 00 23.9**	**-0.5**
JFK	**Kawauchi**	**0.65**	**34**	↑↑P	**Pg**	**00 00 23.3**	**-0.2**
JFK				S	**Sg**	**00 00 31.8**	**-0.1**
MJAR	**Matsushiro Arr**	**1.80**	**262**	Pn	**Pb**	**00 00 43.9**	**-0.6**
	24nm,0.3s,baz=86,slow=16,SNR=74						
MJAR				Lg	Lg	00 01 08.3	
	98nm,0.3s,baz=79,slow=31,SNR=35						
MAT	**Matsushiro**	**1.81**	**262**	P	**Pg**	**00 00 45.2**	**-0.4**
MAT				S	**Sg**	**00 01 09.6**	**+0.6**
USRK	**Ussuriysk Ar.**	**9.77**	**322**	Pn	Pn	00 02 37.1	+5.2
	0.1nm,0.3s,baz=121,slow=13,SNR=5.3						
SEY	**Seymchan**	**27.15**	**12**	P	**P**	**00 05 56.9**	**+2.2**
	0.8nm,0.3s,baz=79,slow=23,SNR=4.7						
SONM	**Songino Array**	**27.25**	**305**	P	**P**	**00 05 54.7**	**-1.2**
	1.2nm,0.8s,baz=106,slow=7.7,SNR=11						
ZALV	**Zalesovo Beam**	**41.47**	**313**	P	**P**	**00 07 57.8**	**-0.6**
	1.4nm,0.6s,baz=93,slow=7.4,SNR=6.3						
ZALV				PcP	**PcP**	**00 09 55.1**	**-0.9**
	0.4nm,0.4s,baz=100,slow=2.9,SNR=3.5						
MKAR	**Makanchi Array**	**43.56**	**302**	P	**P**	**00 08 15.2**	**-0.4**
	0.4nm,0.6s,baz=89,slow=9.4,SNR=8.3						
KURBB	**Kurchatov Array**	**45.50**	**308**	P	**P**	**00 08 30.6**	**-0.4**
	0.9nm,0.4s,baz=84,slow=7.8,SNR=15						
ILAR	**Eielson Array**	**50.09**	**32**	P	**P**	**00 09 06.1**	**-0.3**
	0.5nm,0.9s,baz=246,slow=6.7,SNR=3.5						
BVAR	**Borovoye Array**	**50.12**	**312**	P	**P**	**00 09 06.6**	**-0.2**
	0.7nm,0.7s,baz=98,slow=7.6,SNR=5.6						
INK	**Inuvik**	**54.93**	**27**	P	**P**	**00 09 42.1**	**0.0**
	0.9nm,0.8s,baz=280,slow=5.0,SNR=2.8						
ARU	**Arti**	**55.99**	**318**	P	**P**	**00 09 49.3**	**-0.7**
	1.3nm,0.5s,baz=80,slow=6.1,SNR=4.4						
WRA	**Warramunga Arr**	**56.76**	**187**	P	**P**	**00 09 55.9**	**+0.1**
	1.0nm,0.7s,baz=5.1,slow=7.2,SNR=5.8						
ASAR	**Alice Springs**	**60.48**	**187**	P	**P**	**00 10 21.6**	**-0.1**
	0.4nm,0.8s,baz=13,slow=8.6,SNR=5.0						
RES	**Resolute Bay**	**62.99**	**14**	P	**P**	**00 10 37.1**	**-0.9**
	0.7nm,0.8s,baz=343,slow=7.6,SNR=3.2						
YKA	**Yellowknife Ar**	**64.38**	**30**	P	**P**	**00 10 48.0**	**+0.6**
	0.1nm,0.6s,baz=305,slow=7.2,SNR=3.4						
FINES	**FINESS Array B**	**68.62**	**332**	P	**P**	**00 11 13.9**	**-0.7**
	1.2nm,0.8s,baz=91,slow=9.5,SNR=3.5						
HFS	**Hagfors**	**73.95**	**335**	P	**P**	**00 11 46.7**	**-0.1**
	0.6nm,0.5s,baz=82,slow=11,SNR=5.8						
AKASG	**Malin Array Be**	**73.97**	**322**	P	**P**	**00 11 46.2**	**-0.8**
	0.2nm,0.4s,baz=46,slow=6.3,SNR=4.6						
NVAR	**Mina Array Bea**	**75.74**	**53**	P	**P**	**00 11 59.5**	**+1.7**
	0.7nm,0.7s,baz=286,slow=6.5,SNR=1.9						
TXAR	**Lajitas Array**	**90.87**	**52**	P	**P**	**00 13 16.9**	**+1.0**
	0.3nm,0.5s,baz=310,slow=3.1,SNR=2.3						

IDC 11 00:06:59.5±7.0, 7°33N×94°14E, h0km, mb3.9/6, mb1 3.9/6, mb1mx3.4/66, mbtmp3.9/6, Error ellipse: s-maj=154.6km s-min=83.8km az=132.0, Nicobar Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
H08S3	**Diego Garcia H**	**26.21**	**236**	T	T	00 39 22.9	
	baz=55,slow=76						
H08S2	**Diego Garcia H**	**26.21**	**236**	T	T	00 39 24.5	
	baz=55,slow=76						
H08S1	**Diego Carcia H**	**26.23**	**236**	T	T	00 39 23.3	
	baz=55,slow=76						
MKAR	**Makanchi Array**	**40.62**	**347**	P	P	00 14 40.7	-0.5
	1.2nm,0.6s,baz=170,slow=8.0,SNR=14						
GEYT	**Alibeck**	**44.60**	**319**	P	P	00 15 13.6	-0.2
	1.2nm,0.6s,baz=114,slow=6.5,SNR=5.9						
KURBB	**Kurchatov Array**	**45.07**	**346**	P	P	00 15 17.3	+0.1
	1.3nm,0.6s,baz=168,slow=7.0,SNR=12						
ZALV	**Zalesovo Beam**	**47.09**	**352**	P	P	00 15 33.3	+0.2
	0.4nm,0.3s,baz=179,slow=7.4,SNR=3.8						
ZALV				pP		00 15 39.5	
	baz=171,slow=8.4,SNR=6.3						
FINES	**FINESS Array B**	**73.19**	**332**	P	P	00 18 32.4	+0.3
	0.5nm,0.5s,baz=98,slow=10.0,SNR=5.5						
HFS	**Hagfors**	**78.92**	**330**	P	P	00 19 04.6	-0.2
	1.2nm,0.7s,baz=104,slow=9.1,SNR=4.9						

ISCJB ***11*** *00:08:46.6±0.5, 34.55N±0.04×50.84E±0.04, h7km, Error ellipse: s-maj=5.2km s-min=4.1km az=11.5*
CSEM ***11*** *00:08:46.4±0.2, 34.52N×50.85E, h2km, ML3.9, Error ellipse: s-maj=5.5km s-min=4.6km az=53.0*
THR ***11*** *00:08:46.8±0.5, 34.50N×50.83E, h14km±4km, ML3.7*
TEH ***11*** *00:08:47.0, 34.49N×50.82E, h4km, ML4.0*

ISC 11 00:08:46.0±0.8, 34°49N±0.03×50°92E±0.04, h7km, n29, σ0°81/34, Northern and central Iran

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GHVR	**GHOM**	**0.31**	**92**	*e*Pg	**Pb**	**00 08 54.0**	**+0.1**
GHVR				*e*Sg	**Sb**	**00 08 59.4**	**+0.2**
GHVR				AML	AML	00 09 00.9	
	comp=N,11μm,0.1s						
GHVR				AML	AML	00 09 01.1	
	comp=E,12μm,0.4s						
GHVR	**GHOM**	**0.31**	**92**	*e*Pg	**Pb**	**00 08 54.0**	**+0.1**
GHVR				*e*Sg	**Sb**	**00 08 59.4**	**+0.2**
ASAO	**Ashtian**	**0.74**	**275**	*e*Pg	**Pg**	**00 08 59.9**	**-0.5**
ASAO				*e*Sg	**Sg**	**00 09 09.4**	**-0.6**
ASAO				AML	AML	00 09 11.8	
	comp=N,1μm,0.4s						
ASAO	**Ashtian**	**0.74**	**275**	*e*P	**Pg**	**00 08 59.9**	**-0.5**
ASAO				*e*Sg	**Sg**	**00 09 09.4**	**-0.6**
IVRN	**Varamin**	**0.83**	**53**	*e*Sg	**Sn**	**00 09 16.2**	**-0.6**
IVRN				*e*Pg	**Pb**	**00 09 03.4**	**+0.5**
IVRN				*e*AMB	AMB	00 09 16.5	
	comp=Z,60μm,0.1s						
QAM	**Ghamsar**	**0.85**	**149**	*e*AMB	AMB	00 09 15.5	
	comp=Z,76μm,0.1s						
QAM				*e*Pg	**Pb**	**00 09 02.8**	**-0.4**
IMHD	**Mahdasht**	**1.21**	**350**	*e*AMB	AMB	00 09 26.1	
	comp=Z,21μm,0.1s						
IMHD				*e*Pg	**Pg**	**00 09 08.4**	**-0.8**
IRAZ	**Razeghan**	**1.22**	**318**	*e*AMB	AMB	00 09 31.8	
	comp=Z,11μm,0.1s						
IRAZ				*e*Pg	**Pg**	**00 09 08.6**	**-0.9**
IKLH	**Kolahrood**	**1.29**	**155**	*e*Pg	**Pn**	**00 09 10.4**	**-0.3**
IKLH				*e*AMB	AMB	00 09 28.6	
	comp=Z,46μm,0.1s						
IKLH	**Kolahrood**	**1.29**	**155**	*e*Pg	**Pn**	**00 09 10.4**	**-0.3**
IDMV	**Damavand**	**1.42**	**40**	*e*Pg	**Pb**	**00 09 12.9**	**0.0**
IDMV				*e*AMB	AMB	00 09 34.1	
	comp=Z,22μm,0.1s						
IDMV				*e*AMB	AMB	00 09 36.0	
	comp=N,64μm,0.1s						
IDMV	**Damavand**	**1.42**	**40**	*e*Pg	**Pb**	**00 09 12.9**	**0.0**
THKV	**Tehran--Karaj**	**1.42**	**359**	*e*Pg	**Pb**	**00 09 12.8**	**-0.2**
THKV	**Tehran--Karaj**	**1.42**	**359**	*e*P	**Pb**	**00 09 12.9**	**-0.1**
IAFJ	**Afjeh**	**1.51**	**25**	*e*Pn	**Pb**	**00 09 14.5**	**0.0**
IAFJ				*e*AMB	AMB	00 09 38.9	
	comp=Z,83μm,0.2s						
IAFJ	**Afjeh**	**1.51**	**25**	*e*Pn	**Pb**	**00 09 14.5**	**0.0**
IPIR	**Pirpir**	**1.80**	**181**	*e*Pn	**Pb**	**00 09 19.7**	**+0.1**
IPIR				*e*AMB	AMB	00 09 45.8	
	comp=Z,18μm,0.1s						
IPIR	**Pirpir**	**1.80**	**181**	*e*Pn	**Pb**	**00 09 19.7**	**+0.1**
IFIR	**Firoozkooh**	**1.89**	**52**	*e*Pn	**Pb**	**00 09 20.9**	**-0.1**
IFIR				*e*AMB	AMB	00 09 52.6	
	comp=Z,28μm,0.1s						
IFIR	**Firoozkooh**	**1.89**	**52**	*e*Pn	**Pb**	**00 09 20.9**	**-0.1**
IZEF	**Zefreh**	**1.98**	**143**	*e*Pn	**Pb**	**00 09 22.1**	**-0.4**
IZEF				*e*AMB	AMB	00 09 52.1	
	comp=Z,6μm,0.1s						
IZEF	**Zefreh**	**1.98**	**143**	*e*Pn	**Pb**	**00 09 22.1**	**-0.4**
IGAR	**Gharneh**	**2.28**	**155**	*e*Pn	**Pb**	**00 09 28.4**	**+0.7**
IGAR				*e*AMB	AMB	00 10 01.3	
	comp=Z,3μm,0.2s						
NASN	**Na'in**	**2.31**	**136**	*e*Pn	**Pb**	**00 09 27.3**	**-0.9**
NASN	**Na'in**	**2.31**	**136**	*e*P	**Pb**	**00 09 27.3**	**-0.9**
ZNJK	**Zanjan**	**2.84**	**321**	*e*Pn	**Pn**	**00 09 33.4**	**+1.3**
ZNJK	**Zanjan**	**2.84**	**321**	*e*P	**Pn**	**00 09 33.3**	**+1.3**
IRAM	**Ramesheh**	**2.94**	**155**	*e*Pn	**Pn**	**00 09 35.7**	**+2.3**
IRAM				*e*AMB	AMB	00 10 24.0	
	comp=Z,1μm,0.2s						
IRAM	**Ramesheh**	**2.94**	**155**	*e*Pn	**Pn**	**00 09 35.7**	**+2.3**

JMA 11 00:09:43.7±0.1, 39°24N×142°55E, h28km±1km, M3.5, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MIYJ	**Miyakonagasawa**	**0.66**	**301**	P	Pb	00 09 56.2	-0.5
MIYJ				S	Sb	00 10 05.3	-0.2
JOM	**Ohasama**	**1.00**	**284**	P	Pn	00 10 01.9	0.0
JOM				S	Sn	00 10 14.9	-0.2
JMK	**Ichinoseki**	**1.07**	**255**	P	Pn	00 10 02.9	0.0
JMK				S	Sn	00 10 16.6	-0.2
JKZ	**Kuzumaki**	**1.20**	**309**	P	Pn	00 10 05.2	+0.5
JKZ				S	Sb	00 10 20.6	-0.4
JIO	**Ouri**	**1.22**	**230**	P	Pn	00 10 04.6	-0.3
JANG	**Nango**	**1.39**	**325**	P	Pn	00 10 07.2	0.0
JANG				*e*S	Sb	00 10 25.6	-0.6
JOU	**Okura**	**1.71**	**240**	P	Pn	00 10 12.7	+1.0

NIED ***11*** *00:11:00, 37.20N×142.80E, h23km, Mw3.6 Best double couple: M₀2.76000×10¹⁴ NP1:φs219.00000°, δ44.00000°, λ90.00000°. NP2:φs39.00000°, δ46.00000°, λ90.00000°.*
IDC ***11*** *00:11:01.1±0.9, 37.08N×142.94E, h0km, mb3.6/10, mb1 3.7/11, mb1mx3.6/53, mbtmp3.6/11, ML3.1/1, MS2.6/2, Ms1 2.6/2, ms1mx2.2/46, Error ellipse: s-maj=24.4km s-min=20.8km az=97.0*
JMA ***11*** *00:11:03.8±0.3, 37.20N×142.84E, h45km, M3.7*

ISC 11 00:11:05.0±0.9, 37°22N±0.05×142°80E±0.08, h24km±5km, n34, σ1°03/35, mb3.5/10, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**1.54**	**276**	P	**Pn**	**00 11 30.2**	**-0.8**
JFK				*e*S	**Sn**	**00 11 48.7**	**-1.6**
ONAJ	**Iwakimizuishiy**	**1.60**	**267**	P	**Pn**	**00 11 31.1**	**-0.8**
ONAJ				*e*S	**Sn**	**00 11 50.7**	**-1.1**
JIO	**Ouri**	**1.69**	**318**	P	**Pn**	**00 11 31.9**	**-1.1**
JIO				*e*S	**Sn**	**00 11 51.9**	**-1.9**
JMM	**Marumori**	**1.72**	**293**	P	**Pn**	**00 11 32.6**	**-0.9**
JMM				*e*S	**Sn**	**00 11 53.4**	**-1.3**
JHO	**Hitachi**	**1.89**	**252**	P	**Pn**	**00 11 34.7**	**-1.0**
JFT	**Otama**	**1.98**	**280**	P	**Pn**	**00 11 37.4**	**+0.3**
JOU	**Okura**	**2.04**	**305**	P	**Pn**	**00 11 38.4**	**+0.5**
JMK	**Ichinoseki**	**2.13**	**325**	P	**Pn**	**00 11 39.0**	**-0.1**
JMK				*e*S	**Sn**	**00 12 03.1**	**-1.8**
CHOJ	**Chosi**	**2.17**	**227**	P	**Pn**	**00 11 38.8**	**-0.9**
JYK	**Kaneyama**	**2.57**	**312**	P	**Pn**	**00 11 44.8**	**-0.3**
JAG	**Ashikaga**	**2.80**	**255**	P	**Pn**	**00 11 47.9**	**-0.4**
BSO1	**Boso 1**	**2.95**	**211**	P	**Pn**	**00 11 49.0**	**-0.9**
BSO1				*e*S	**Sn**	**00 12 24.1**	**-0.2**
JRY	**Ryogami san**	**3.35**	**250**	P	**Pn**	**00 11 55.5**	**-0.5**
JOD2	**Odawara 2**	**3.58**	**238**	P	**Pn**	**00 11 58.4**	**-0.6**
MJAR	**Matsushiro Arr**	**3.74**	**261**	Pn	**Pn**	**00 12 01.6**	**+0.3**
	1.3nm,0.3s,baz=89,slow=15,SNR=3.5						
MAT	**Matsushiro**	**3.74**	**261**	P	**Pn**	**00 12 02.8**	**+1.5**
MAT				S	**Sn**	**00 12 46.3**	**+1.7**
KLR	**Kul'dur**	**14.44**	**330**	LR	LR	00 19 16.8	
	comp=Z,23nm,20.5s,baz=322,slow=34						
MA2	**Magadan**	**22.96**	**10**	LR	LR	00 25 44.2	
	comp=Z,17nm,18.1s,baz=164,slow=38						
H11N2	**WAKE ISLAND Hy**	**27.30**	**123**	T	T	00 45 42.7	
	baz=318,slow=75,SNR=33						
H11N1	**WAKE ISLAND Hy**	**27.31**	**123**	T	T	00 46 11.7	
	baz=318,slow=75,SNR=30						
H11N3	**WAKE ISLAND Hy**	**27.32**	**123**	T	T	00 45 50.6	
	baz=318,slow=75,SNR=26						
H11S1	**WAKE ISLAND Hy**	**28.04**	**125**	T	T	00 46 53.0	
	baz=319,slow=76,SNR=15						
H11S3	**WAKE ISLAND Hy**	**28.05**	**125**	T	T	00 46 41.2	
	baz=319,slow=76,SNR=16						
H11S2	**WAKE ISLAND Hy**	**28.06**	**125**	T	T	00 47 02.2	
	baz=319,slow=76,SNR=11						
SONM	**Songino Array**	**28.60**	**303**	P	**P**	**00 16 59.9**	**+0.4**
	0.9nm,0.9s,baz=90,slow=7.3,SNR=6.7						
ZALV	**Zalesovo Beam**	**42.61**	**312**	P	**P**	**00 19 00.1**	**+1.0**
	0.3nm,0.3s,baz=131,slow=7.9,SNR=2.6						
MKAR	**Makanchi Array**	**44.96**	**302**	P	**P**	**00 19 19.1**	**+1.0**
	0.3nm,0.6s,baz=92,slow=8.7,SNR=3.7						
KURBB	**Kurchatov Arra**	**46.76**	**308**	P	**P**	**00 19 34.1**	**+1.9**
	1.1nm,0.4s,baz=83,slow=8.0,SNR=11						
ILAR	**Eielson Array**	**48.75**	**32**	P	**P**	**00 19 47.5**	**0.0**
	0.5nm,0.8s,baz=254,slow=6.5,SNR=6.0						
ILAR				pP	**sP**	**00 19 57.9**	**+0.1**
	0.5nm,0.7s,baz=265,slow=5.9,SNR=4.1						
INK	**Inuvik**	**53.72**	**27**	P	**P**	**00 20 25.0**	**+0.4**
	0.3nm,0.5s,baz=337,slow=6.2,SNR=3.6						
WRA	**Warramunga Arr**	**57.41**	**189**	P	**P**	**00 20 50.4**	**-1.3**
	1.5nm,0.8s,baz=7.5,slow=7.1,SNR=7.3						
ASAR	**Alice Springs**	**61.13**	**189**	P	**P**	**00 21 16.6**	**-0.7**
	0.7nm,0.8s,baz=18,slow=5.4,SNR=6.7						
ASAR				pP	**sP**	**00 21 27.9**	**0.0**
	0.8nm,0.8s,baz=358,slow=6.0,SNR=4.6						
YKA	**Yellowknife Ar**	**63.09**	**31**	P	**P**	**00 21 30.4**	**+0.3**
	0.1nm,0.7s,baz=301,slow=5.2,SNR=2.9						
AKASG	**Malin Array Be**	**74.83**	**323**	P	**P**	**00 22 43.2**	**0.0**
	0.2nm,0.4s,baz=46,slow=6.4,SNR=3.6						

NEIC ***11*** *00:13:11.8, 38.34N×118.75W, h11km, ML3.3(REN), After REN.*
IDC ***11*** *00:13:12.9±1.3, 38.37N×118.78W, h0km, mb1 3.4/3, mb1mx3.1/40, mbtmp3.0/3, ML3.5/3, Error ellipse: s-maj=9.7km s-min=7.3km az=28.0*

ISC 11 00:13:11.9±1.2, 38°36N±0.02×118°78W±0.02, h0km±11km, n26, σ1°59/48, California-Nevada border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
NVAR	**Mina Array Bea**	**0.38**	**79**	Pg	**Pg**	**00 13 18.8**	**-0.4**
	191nm,0.3s,baz=257,slow=21,SNR=1013						
NVAR				Lg	Lg	00 13 24.6	
	baz=257,slow=30,SNR=74						
MLAC	**Mammoth, Mammo**	**0.73**	**184**	P	**Pg**	**00 13 26.4**	**+0.6**
	baz=5.7						
MLAC				S	**Sg**	**00 13 35.7**	**+0.4**
	baz=5.7						
CMB	**Columbia Colle**	**1.31**	**256**	*e*Pg	**Pg**	**00 13 36.7**	**-0.3**
CMB				*e*Sn	**Sg**	**00 13 53.0**	**-0.9**
TIN	**Tinemaha, Big**	**1.37**	**161**	P	**Pg**	**00 13 38.2**	**0.0**
	baz=342						
GRAC	**Grapevine Rang**	**1.75**	**140**	Pb	**Pn**	**00 13 43.6**	**0.0**
	baz=321						
RCTC	**Rector, Farmer**	**2.08**	**190**	Pb	**Pb**	**00 13 49.6**	**-0.8**
	baz=11						
DAC	**Darwin (Calif)**	**2.28**	**155**	*e*Pn	**Pn**	**00 13 50.9**	**-0.1**
DAC				*e*Pb	**Pg**	**00 13 55.4**	**-0.3**
DAC				Sg	**Sg**	**00 14 24.5**	**-0.7**
BMN	**Battle Mountai**	**2.40**	**30**	*e*Pn	**Pn**	**00 13 51.4**	**-1.2**
BMN				*e*Pb	**Pb**	**00 13 56.0**	**-0.1**
BMN				*e*Pg	**Pg**	**00 13 58.9**	**+1.0**
BMN				*e*Sn	**Sn**	**00 14 21.6**	**-1.2**
BMN				*e*Sg	**Sg**	**00 14 28.2**	**-0.8**
TPNV	**Topopah Spring**	**2.45**	**124**	P	**Pn**	**00 13 53.0**	**-0.3**
	baz=306						
TPNV				Sg	**Sg**	**00 14 31.7**	**+1.0**
	baz=306						
R11A	**Troy Canyon, C**	**2.51**	**89**	Pb	**Pb**	**00 13 57.1**	**-0.9**
	baz=271						
R11A				Sb	**Sb**	**00 14 30.2**	**+0.8**
	baz=271						
R11A	**Troy Canyon, C**	**2.51**	**89**	*e*Pn	**Pn**	**00 13 53.0**	**-1.2**
R11A				*e*Pg	**Pb**	**00 13 57.4**	**-0.6**
SAO	**San Andreas Ge**	**2.65**	**234**	*e*Pn	**Pb**	**00 13 58.2**	**-2.1**
SAO				*e*Sn	**Sn**	**00 14 28.6**	**-0.2**
SAO				*e*Sg	**Sg**	**00 14 35.8**	**-1.3**
ISA	**Isabella, Lake**	**2.70**	**175**	Sb	**Sb**	**00 14 36.3**	**+1.5**
	baz=355						
LRMC	**Laurel Mtn Rad**	**3.00**	**163**	Sg	**Sg**	**00 14 49.6**	**+1.2**
	baz=344						
O03D	**Paynes Creek**	**3.04**	**310**	P	**Pn**	**00 14 02.5**	**+1.2**
	baz=129						
ELK	**Elko**	**3.63**	**48**	*e*Pn	**Pn**	**00 14 08.4**	**-1.2**
ELK				Pg	**Pb**	**00 14 18.4**	**+1.3**
ELK				*e*Sn	**Sn**	**00 14 48.5**	**-4.8**
ELK				*e*Sg	**Sb**	**00 15 04.5**	**+2.8**
WDC	**Whiskeytown Da**	**3.66**	**309**	*e*Pn	**Pb**	**00 14 14.4**	**-3.1**
WDC				*e*Sn	**Sn**	**00 14 54.2**	**+0.6**
WDC				*e*Sg	**Sg**	**00 15 09.1**	**-0.5**
MOD	**Modoc Plateau**	**3.73**	**342**	*e*Pn	**Pb**	**00 14 18.7**	**0.0**
MOD				*e*Sb	**Sg**	**00 15 10.7**	**-1.0**
WVOR	**Wild Horse Val**	**4.08**	**1**	*e*Pn	**Pb**	**00 14 25.9**	**+1.2**
WVOR				*e*Sn	**Sb**	**00 15 15.0**	**+0.6**
WVOR				Sb	**Sg**	**00 15 24.3**	**+1.4**
PASC	**Pasadena Art C**	**4.20**	**173**	*e*Pn	**Pb**	**00 14 27.3**	**+0.6**
PASC				*e*Sn	**Sb**	**00 15 18.2**	**+0.1**
PASC				*e*Sb	**Sg**	**00 15 27.8**	**+0.8**
YBH	**Yreka Blue Hor**	**4.52**	**319**	Pn	**Pn**	**00 14 24.3**	**+2.5**
	0.3nm,0.3s,baz=136,slow=10,SNR=7.1						
DUG	**Dugway, Tooele**	**4.98**	**67**	*e*Pn	**Pb**	**00 14 42.7**	**+2.6**
DUG				*e*Sn	**Sg**	**00 15 47.1**	**-4.8**
MFID	**Camas Ranch**	**5.53**	**23**	*e*Pn	**Pb**	**00 14 49.1**	**-0.2**
HLID	**Hailey**	**6.16**	**31**	*e*Pn	Pb	00 14 54.0	-6.2
PDAR	**Pinedale Array**	**8.29**	**55**	Pn	Pn	00 15 17.9	+4.4
	0.1nm,0.3s,baz=233,slow=12,SNR=2.6						
TXAR	**Lajitas Array**	**15.43**	**121**	Pn	**P**	**00 16 57.1**	**+1.4**
	0.1nm,0.3s,baz=305,slow=14,SNR=3.3						

NEIC ***11*** *00:20:16.9, 38.37N×118.74W, h15km, ML3.6(REN), After REN.*
ISCJB ***11*** *00:20:17.1±0.4, 38.36N±0.03×118.72W±0.05, h9km, Error ellipse: s-maj=5.4km s-min=3.9km az=166.1*

ISC 11 00:20:17.2±0.8, 38°30N±0.03×118°71W±0.03, h9km, n24, σ1°85/32, California-Nevada border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MLAC	**Mammoth, Mammo**	**0.67**	**188**	P	**Pb**	**00 20 31.3**	**+0.1**
	baz=5.8						
MLAC				S	**Sb**	**00 20 41.3**	**+0.6**
	baz=5.8						
CMB	**Columbia Colle**	**1.34**	**259**	*e*Pn	**Pb**	**00 20 41.6**	**-0.9**
CMB				*e*S	**Sb**	**00 20 59.2**	**-0.7**
GRAC	**Grapevine Rang**	**1.68**	**140**	Pg	**Pg**	**00 20 50.1**	**+0.8**
	baz=322						
DAC	**Darwin (Calif)**	**2.20**	**156**	*e*Pn	**Pn**	**00 20 55.8**	**+1.7**
TPNV	**Topopah Spring**	**2.37**	**124**	P	**Pb**	**00 20 58.4**	**-1.8**
	baz=306						
BMN	**Battle Mountai**	**2.43**	**28**	*e*Pn	**Pn**	**00 20 56.0**	**-1.1**
R11A	**Troy Canyon, C**	**2.46**	**88**	P	**Pn**	**00 20 57.7**	**+0.1**
	baz=271

baz=322
AFDM Forest Hills D 1.90 293 *e*Pn **Pb 00 21 50.9 -1.0**
RCTC Rector, Farmer 1.96 192 P **Pg 00 21 53.8 -1.1**
baz=11
RCTC Sb **Sg 00 22 23.1 +2.8**
baz=11
DAC Darwin (Calif) 2.15 155 *e*Pn **Pb 00 21 54.4 -2.0**
FURC Furnace Creek, 2.31 139 P **Pg 00 22 00.4 -1.0**
baz=322
TPNV Topopah Spring 2.35 122 Sb **Sg 00 22 36.8 +4.1**
baz=306
TPNV Topopah Spring 2.35 122 *e*Pn **Pg 00 22 01.5 -0.8**
MPMC Manual Prospec 2.39 155 Sb **Sg 00 22 38.4 +4.5**
baz=337
R11A Troy Canyon, C 2.48 86 P **Pb 00 22 02.2 +0.3**
baz=272
R11A S **Sg 00 22 35.5 -1.4**
baz=272
R11A Troy Canyon, C 2.48 86 *e*Pn **Pg 00 22 03.1 -1.6**
BMN Battle Mountai 2.49 28 Pn **Pn 00 21 56.6 -1.3**
BMN *e*Pg **Pb 00 22 01.7 -0.5**
ORV Oroville 2.53 302 *e*Pn **Pb 00 22 00.3 -2.4**
ISA Isabella, Lake 2.57 175 Sb **Sg 00 22 41.7 +1.8**
baz=356
ISA Isabella, Lake 2.57 175 *e*Pn **Pg 00 22 04.2 -2.3**
ARVC Arvin 3.10 181 P **Pb 00 22 10.3 -2.1**
baz=1.2
MCCM Marconi Confer 3.27 270 *e*Pn **Pn 00 22 09.3 +0.8**
GSC Goldstone, Bar 3.31 152 Pb **Pg 00 22 20.5 -0.1**
baz=334
GSC Goldstone, Bar 3.31 152 *e*Pn **Pb 00 22 13.2 -2.8**
HOPS Hopland Field 3.48 284 *e*Pn **Pn 00 22 08.6 -2.8**
OSI Osito Audit: C 3.61 180 Pb **Pg 00 22 25.0 -1.3**
baz=360
OSI Osito Audit: C 3.61 180 *e*Pg **Pg 00 22 23.4 -2.9**
RRX Edison Barstow 3.63 157 Pb **Pg 00 22 26.6 -0.2**
baz=339
ELK Elko 3.69 46 Pn **Pn 00 22 11.1 -3.4**
19nm,0.3s,baz=219,slow=0.1,SNR=4.1
PSUT Pine Spring 3.84 84 *e*Pn **Pn 00 22 18.6 +2.0**
PSUT *e*Sg **Sg 00 23 19.4 -1.3**
HEC Hector,Ludlow 3.91 150 Pb **Pg 00 22 30.9 -1.1**
baz=332
PASC Pasadena Art C 4.08 174 *e*Pn Pb 00 22 22.9 -6.2
N02D Trinity Center 4.11 313 Pb **Pb 00 22 30.9 +1.2**
baz=129
GMRC Granite Mounta 4.24 143 Pb **Pg 00 22 36.7 -1.7**
baz=326
M04C Macdoel 4.28 327 P **Pn 00 22 24.3 +1.9**
baz=144,SNR=7.4
M02C Callahan 4.48 316 P **Pn 00 22 27.0 +1.9**
baz=132
YBH Yreka Blue Hor 4.64 320 Pn **Pn 00 22 28.6 +1.2**
0.8nm,0.3s,baz=138,slow=7.8,SNR=9.5
YBH LR LR 00 24 28.4
comp=Z,486nm,18.4s,baz=149,slow=41
BELC Belle Mtn. Jos 4.77 152 P **Pn 00 22 32.1 +2.9**
baz=334
K05A Summer Lake 4.78 341 *e*Pn **Pn 00 22 32.0 +2.6**
K04D Chiloquin, OR 4.96 333 P **Pn 00 22 33.7 +1.9**
baz=151
PFO Pinyon Flats O 4.96 158 Pn Pn 00 22 35.3 +3.4
0.3nm,0.3s,baz=355,slow=12,SNR=2.4
PFO Pinyon Flats O 4.96 158 Pb **Pg 00 22 49.1 -3.2**
baz=339
PFO Pinyon Flats O 4.96 158 Pn Pn 00 22 35.3 +3.4
PFO *e*Pg **Pg 00 22 52.0 -0.3**
IRM Iron Mountain 4.99 143 Pb **Pg 00 22 50.3 -2.6**
baz=326
DUG Dugway, Tooele 5.00 65 Pb **Pg 00 22 50.3 -2.6**
baz=250
J05D Fort Rock, OR 5.39 340 P **Pn 00 22 40.5 +2.7**
baz=158,SNR=7.2
J05D Sb **Sb 00 24 03.2 +6.7**
baz=158
L02D Cave Junction, 5.41 318 P **Pn 00 22 41.2 +3.3**
baz=134,SNR=7.3
HUMO Hull Mountain 5.43 325 *e*Pn **Pn 00 22 37.5 -0.7**
146nm,1.0s
U15A North Rim 5.44 107 *e*Pg **Pg 00 22 59.1 -2.3**
Y12C Blythe 5.62 141 *e*Pg **Pg 00 23 05.5 +0.6**
BAR Barrett 5.79 162 *e*Pg **Pg 00 23 08.5 +0.5**
MPU Maple Canyon 5.80 70 *e*Pg **Pg 00 23 07.2 -1.0**
GLA Glamis 6.07 147 *e*Pg **Pg 00 23 16.1 +2.7**
I04A Tendick Farm, 6.21 335 P **Pn 00 22 52.0 +3.0**
baz=152,SNR=7.7
Y14A Wickenburg 6.31 131 *e*Pg **Pg 00 23 16.2 -1.9**
TCUT Toone Canyon 6.34 61 *e*Pn **Pn 00 22 54.7 +3.7**
P17A Butcher Ranch, 6.36 76 *e*Pg **Pg 00 23 17.9 -1.1**
I05D Terrebonne, OR 6.41 343 P **Pn 00 22 54.8 +3.1**
baz=161,SNR=6.3
I03D Drain, OR 6.48 329 P **Pn 00 22 56.5 +3.9**
baz=145,SNR=7.5
WUAZ Wupatki 6.49 112 *e*Pg **Pg 00 23 19.8 -1.7**
BROR Big Rock Looko 6.65 336 P **Pn 00 22 58.9 +3.9**
H04A Detroit Lake 6.95 339 *e*Pn Pn 00 23 03.5 +4.5
X16A Lo Mia Camp, P 7.01 121 *e*Pg **Pg 00 23 30.9 -0.4**
VTHM Trough 7.08 349 P Pn 00 23 05.8 +4.9
AHID Auburn Hatcher 7.37 50 *e*Pb **Pb 00 23 24.6 -0.7**
F10A Beach Ranch, E 7.82 8 *e*Pn Pn 00 23 15.9 +4.9
MCMT McKenzie Canyo 7.93 32 *e*Pn Pn 00 23 17.3 +4.5
H2OWA Water 8.18 357 P Pn 00 23 21.1 +5.2
BW06 Boulder Array 8.33 54 *e*Pn Pn 00 23 26.4 +8.2
PD31 Pinedale Array 8.33 54 *e*Pn **Pn 00 23 21.5 +3.3**
PDAR Pinedale Array 8.33 54 Pn **Pn 00 23 20.4 +2.2**
0.2nm,0.3s,baz=234,slow=12,SNR=5.5
O20A White River Ci 8.37 74 Pn **Pn 00 23 18.8 +0.1**
GBB Gable Butte 8.40 356 P Pn 00 23 24.0 +5.1
MDW Midway 8.41 355 P Pn 00 23 24.2 +5.1
LON Longmire 8.81 346 *e*Pn Pn 00 23 30.6 +6.0
D08A Wollman Farm, 8.82 359 *e*Pn Pn 00 23 29.3 +4.6
SMCO Snowmass 9.24 80 *e*Pn **Pn 00 23 31.1 +0.2**
D05A Enumclaw 9.27 346 *e*Pn Pn 00 23 37.8 +7.0
MSO Missoula 9.29 21 *e*Pn **Pn 00 23 34.6 +3.4**
NEW Newport 10.10 6 Pn **Pn 00 23 45.4 +3.2**
0.1nm,0.3s,baz=170,slow=11,SNR=4.3
319A Douglas 10.35 129 *e*Pn Pn 00 23 52.0 +6.2
TXAR Lajitas Array 15.34 121 Pn **P 00 24 58.3 -0.3**
0.1nm,0.3s,baz=305,slow=14,SNR=4.1
ULM Lac du Bonnet 20.22 46 P **P 00 25 52.5 +0.3**
3.5nm,1.0s,baz=239,slow=11,SNR=2.9
DLBC Dease Lake 21.51 344 LR LR 00 36 01.9
comp=Z,136nm,18.0s,baz=140,slow=41
YKA Yellowknife Ar 24.42 5 P **P 00 26 36.2 +0.6**
0.4nm,0.7s,baz=183,slow=10,SNR=10
TKL Tuckaleechee C 27.96 84 LR LR 00 39 37.0
comp=Z,137nm,18.1s,baz=312,slow=39
SADO Sadowa 30.14 65 LR LR 00 39 40.9
comp=Z,42nm,20.4s,baz=320,slow=37
ILAR Eielson Array 31.31 337 P **P 00 27 40.0 +2.8**
0.7nm,0.9s,baz=153,slow=7.3,SNR=7.9
ILAR LR LR 00 41 43.4
comp=Z,53nm,20.6s,baz=128,slow=39
TEIG Tepich 31.86 116 LR LR 00 42 48.3
comp=Z,20nm,19.3s,baz=350,slow=41
SCHQ Schefferville 38.39 47 LR LR 00 46 01.4
comp=Z,98nm,18.4s,baz=88,slow=39
PPT Papeete 62.60 213 LR LR 00 53 12.9
comp=Z,165nm,18.9s,baz=191,slow=31
SONM Songino Array 85.35 331 P **P 00 33 55.3 +0.6**
0.2nm,0.6s,baz=21,slow=5.6,SNR=4.4
HHC Hu-ho-hao-te 88.86 324 *e*P **P 00 34 10.2 -1.6**
HHC sP sP 00 34 17.7 +1.4
HHC Hu-ho-hao-te 88.86 324 S **S 00 44 52.4 -7.1**
HHC Hu-ho-hao-te 88.86 324 SS SS 00 50 46.5 -3.7
HHC pmax pmax
comp=Z,15nm,0.7s
HHC pmax pmax
comp=Z,120nm,7.8s
HHC LR LR
comp=N,31nm,13.6s
HHC LR LR
comp=E,41nm,13.3s
HHC LR LR
comp=Z,31nm,13.3s
WMQ Urumqi 94.89 341 *e*P **P 00 34 38.2 -1.4**
LZH Lanzhou 96.22 327 *e*P **P 00 34 43.1 -2.8**
LZH pP pP 00 34 48.0 -1.3
LZH sP sP 00 34 50.2 -0.3
LZH *e*PP **PP 00 38 39.0 +0.9**
LZH pmax pmax
comp=Z,14nm,1.5s
LZH pmax pmax
comp=Z,39nm,9.4s
CD2 Chengdu 100.61 324 P **Pdif 00 35 01.1 -4.5**

ISCJB ***11*** *00:22:21.9±0.4,38°.34N±0°.03×118°.70W±0°.04,h9km, mb3.7/4, Error ellipse: s-maj=5.3km s-min=3.8km az=148.8*

NEIC ***11*** *00:22:21.1,38°.38N×118°.74W,h14km,MW3.9, ML4.2(REN),Moment Tensor Solution. s9 Moment tensor: Scale 10¹⁴Nm; Mrr=5.02; Mθθ=3.26; Mϕϕ=8.29; Mrθ=4.08; Mθϕ=0.43; Mϕr=0.24; Best double couple: M=8.30000×10¹⁴ NP1:ϕs=30.00000°, δ55.00000°, λ=-40.00000°. NP2:ϕs=146.00000°, δ58.00000°, λ=-138.00000°. Principal axes: T 8.3200, Plg2.0000°, Azm267.0000°; N 0.0000, Plg39.0000°, Azm176.0000°; P -8.3100, Plg51.0000°, Azm360.0000°; After REN.*

NEIC Felt [III] at Hawthorne. Also felt at Yerington.

IDC ***11*** *00:22:22.0±1.1,38°.31N×118°.75W,h0km,mb3.5/5, mb1 3.8/8,mb1mx3.6/43,mbtmp3.6/8,ML3.5/2 Error ellipse: s-maj=14.9km s-min=7.0km az=174.0*

ISC 11 00:22:21.5±0.7,38°.42N±0°.03×118°.73W±0°.03,h9km,n35, σ1ş38/31,mb3.5/4,California-Nevada border region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
NV01	**Mina Array Sit**	**0.34**	**89**	*e*P	**Pg**	**00 22 27.6**	**-0.6**
NVAR	**Mina Array Bea**	**0.34**	**89**	Pg	**Pg**	**00 22 28.2**	**+0.1**
	baz=259,slow=21,SNR=12						
NVAR				Lg	Lg	00 22 33.4	
	2µm,0.3s,baz=52,slow=42,SNR=12						
NV11	**Mina Array Sit**	**0.45**	**89**	*e*P	**Pg**	**00 22 30.4**	**+0.1**
WAKR	**Walker**	**0.56**	**279**	*e*P	**Pg**	**00 22 32.0**	**-0.4**
MLAC	**Mammoth, Mammo**	**0.80**	**186**	P	**Pg**	**00 22 35.4**	**-1.4**
	baz=5.8						
MLAC				S	**Sg**	**00 22 46.2**	**-1.0**
	baz=5.8						
CMB	**Columbia Colle**	**1.36**	**254**	*e*Pn	**Pn**	**00 22 46.0**	**-0.7**
GRAC	**Grapevine Rang**	**1.79**	**142**	Pg	**Pb**	**00 22 54.3**	**-0.2**
	baz=322						
GRAC				Sg	**Sg**	**00 23 19.1**	**+0.2**
	baz=322						
AFDM	**Forest Hills D**	**1.83**	**287**	*e*Pn	**Pb**	**00 22 54.5**	**-0.7**
RCTC	**Rector, Farmer**	**2.15**	**191**	Pb	**Pb**	**00 22 59.6**	**-1.0**
	baz=11						
ORV	**Oroville**	**2.44**	**299**	*e*Pn	**Pb**	**00 23 05.2**	**-0.3**
TPNV	**Topopah Spring**	**2.46**	**126**	Sg	**Sg**	**00 23 41.4**	**+1.0**
	baz=307						
R11A	**Troy Canyon, C**	**2.47**	**91**	Sb	**Sg**	**00 23 39.7**	**-1.2**
	baz=272						
MPMC	**Manual Prospec**	**2.56**	**157**	Pg	**Pg**	**00 23 09.9**	**-0.6**
	baz=337						
ISA	**Isabella, Lake**	**2.76**	**176**	Pb	**Pb**	**00 23 11.1**	**0.0**
	baz=356						
ISA				Sb	**Sb**	**00 23 45.9**	**+0.9**
	baz=356						
ELK	**Elko**	**3.56**	**48**	Pn	Pn	00 23 11.1	-6.0
	39nm,0.3s,baz=183,slow=0.0,SNR=6.4						
YBH	**Yreka Blue Hor**	**4.50**	**319**	Pn	Pn	00 23 33.4	+3.5
	0.9nm,0.3s,baz=130,slow=10,SNR=3.6						
K04D	**Chiloquin, OR**	**4.79**	**332**	P	**Pg**	**00 23 52.9**	**-0.3**
	baz=151						
DUG	**Duguay, Tooele**	**4.92**	**67**	P	**Pg**	**00 23 52.6**	**-3.1**
	baz=250						
NEE2	**Needles Airpor**	**4.92**	**137**	P	**Pg**	**00 23 54.0**	**-1.8**
	baz=319						
BELC	**Belle Mtn. Jos**	**4.93**	**153**	P	Pg	00 23 53.0	-3.0
	baz=334						
PFO	**Pinyon Flats O**	**5.14**	**158**	Pn	**Pn**	**00 23 39.7**	**+1.0**
	baz=347,slow=17,SNR=2.6						
HUMO	**Hull Mountain**	**5.28**	**324**	*e*Pn	**Pn**	**00 23 40.6**	**+0.1**
JLU	**Jordanelle**	**6.04**	**67**	*e*Pg	**Pg**	**00 24 16.5**	**-0.5**
JLU				*e*Sg	**Sg**	**00 25 33.5**	**-1.7**
D08A	**Wollman Farm,**	**8.63**	**359**	*e*Pn	Pn	00 24 33.5	+7.0
C09A	**Chrisman Ranch**	**9.38**	**2**	*e*Pn	Pn	00 24 43.7	+6.9
TX31	**Lajitas Ar. Si**	**15.43**	**121**	*e*Pn	**Pn**	**00 26 00.7**	**+1.3**
TXAR	**Lajitas Array**	**15.43**	**121**	Pn	**P**	**00 26 03.5**	**-0.6**
	0.0nm,0.3s,baz=309,slow=15,SNR=1.9						
FFC	**Flin Flon**	**19.88**	**29**	*e*P	**P**	**00 26 52.2**	**-0.6**
ULM	**Lac du Bonnet**	**20.08**	**47**	P	Pn	00 26 56.9	0.0
	1.3nm,0.4s,baz=243,slow=4.8,SNR=2.3						
DLBC	**Dease Lake**	**21.33**	**344**	P	**P**	**00 27 12.3**	**+3.7**
	0.6nm,0.5s,baz=173,slow=16,SNR=2.2						
YKA	**Yellowknife Ar**	**24.23**	**5**	P	**P**	**00 27 39.7**	**+1.4**
	0.9nm,0.8s,baz=184,slow=9.9,SNR=7.8						
ILAR	**Eielson Array**	**31.13**	**337**	P	P	00 28 43.9	+3.8
	0.0nm,100.0s,baz=155,slow=7.7,SNR=11						
RES	**Resolute Bay**	**38.04**	**10**	P	P	00 29 44.0	+4.4
	1.1nm,0.9s,baz=214,slow=6.7,SNR=3.7						
WMQ	**Urumqi**	**94.71**	**341**	*e*P	**P**	**00 35 42.8**	**-0.4**
WMQ				sP	sP	00 35 50.1	+2.8
WMQ				pmax	pmax		
	comp=Z,1.0nm,0.6s						
WMQ				pmax	pmax		
	comp=Z,73nm,3.6s						
WMQ				pmax	pmax		
	comp=Z,2.0nm,0.5s						
WMQ				pmax	pmax		
	comp=Z,45nm,3.8s						
CD2	**Chengdu**	**100.46**	**324**	P	**Pdif**	**00 36 06.3**	**-3.0**
CD2				pmax	pmax		
	comp=Z,1.0nm,0.5s						
CD2				pmax	pmax		
	comp=Z,1.0nm,0.5s						

ISCJB ***11*** *00:33:58.7±0.2,40°.30S±0°.02×176°.45E±0°.03,h44km±2km, mb4.5/11, Error ellipse: s-maj=4.4km s-min=2.7km az=28.7*

WEL ***11*** *00:33:59.7±0.1,40°.32S×176°.49E,h41km±1km,ML5.2/21, Error ellipse: s-maj=1.1km s-min=0.5km az=90.0, reported intensity MM 6.*

WEL Felt from Auckland to Wellington, and from Taranaki to Gisborne, maximum.

IDC ***11*** *00:33:59.4±0.7,40°.08S×176°.29E,h31km±3km, mb4.2/8, mb1 4.4/8,mb1mx4.2/20,mbtmp4.4/8, Error ellipse: s-maj=20.3km s-min=16.9km az=61.0*

NEIC ***11*** *00:33:59.9,40°.28S×176°.38E,h34km,mb5.1/4, ML5.1(WEL),After WEL.*

NEIC Felt widely in the southern part of the North Island.

ISC 11 00:33:58.9±0.5,40°.28S±0°.02×176°.33E±0°.02,h31km±3km, h31km:pP-P,n272,σ1ş04/293,mb4.5/11,32C-25D,North Island

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
DVHZ	**Dannevirke**	**0.12**	**260**	↓P*	**Pn**	**00 34 05.5**	**+0.8**
DVHZ				S*	**Sb**	**00 34 09.8**	**+1.3**
DVHZ	**Dannevirke**	**0.12**	**260**	P*	**Pn**	**00 34 05.5**	**+0.8**
DVHZ				S*	**Sb**	**00 34 09.8**	**+1.3**
ANWZ	**Angora Road**	**0.21**	**148**	↑P*	**Pn**	**00 34 06.8**	**+0.9**
ANWZ				S*	**Sn**	**00 34 12.5**	**+2.1**
WPHZ	**Waipukurau**	**0.23**	**22**	↑P*	**Pn**	**00 34 05.9**	**-0.3**
WPHZ				S*	**Sn**	**00 34 10.8**	**0.0**
WPHZ	**Waipukurau**	**0.23**	**22**	P*	**Pn**	**00 34 05.9**	**-0.3**
WPHZ				S*	**Sn**	**00 34 10.8**	**0.0**
PRHZ	**Porangahau**	**0.24**	**87**	↑P*	**Pn**	**00 34 06.4**	**+0.1**
PRHZ				S*	**Sn**	**00 34 11.6**	**+0.6**
PRHZ	**Porangahau**	**0.24**	**87**	P*	**Pn**	**00 34 06.4**	**+0.1**
PRHZ				S*	**Sn**	**00 34 11.6**	**+0.6**
TSZ	**Takapari Road**	**0.35**	**308**	P*	**Pn**	**00 34 07.9**	**0.0**
TSZ				S*	**Sn**	**00 34 14.1**	**+0.2**
TSZ				AML	AML	00 34 14.6	
TSZ				AML	AML	00 34 14.6	
TSZ	**Takapari Road**	**0.35**	**308**	P*	**Pn**	**00 34 07.9**	**0.0**
TSZ				S*	**Sn**	**00 34 14.1**	**+0.2**
PNHZ	**Pukenui**	**0.38**	**345**	↑P*	**Pn**	**00 34 08.0**	**-0.2**
PNHZ	**Pukenui**	**0.38**	**345**	P*	**Pn**	**00 34 08.0**	**-0.2**
PRWZ	**Pori Road**	**0.39**	**224**	↑P*	**Pn**	**00 34 09.8**	**+1.4**
PRWZ	**Pori Road**	**0.39**	**224**	P*	**Pn**	**00 34 09.8**	**+1.4**
BFZ	**Birch Farm**	**0.41**	**189**	↓P*	**Pn**	**00 34 09.6**	**+1.0**
BFZ				AML	AML	00 34 18.1	
BFZ				AML	AML	00 34 18.2	
BFZ				AML	AML	00 34 20.0	
BFZ				AML	AML	00 34 20.0	
POWZ	**Post Office Ro**	**0.44**	**255**	P*	**Pn**	**00 34 10.1**	**+1.1**
POWZ	**Post Office Ro**	**0.44**	**255**	P*	**Pn**	**00 34 10.2**	**+1.1**
PXZ	**Pawanui**	**0.48**	**59**	↑P*	**Pn**	**00 34 09.6**	**0.0**
PXZ				S*	**Sn**	**00 34 17.8**	**+0.9**
PXZ				AML	AML	00 34 18.5	
PXZ				AML	AML	00 34 18.7	
PXZ	**Pawanui**	**0.48**	**59**	P*	**Pb**	**00 34 09.0**	**-0.1**
PXZ				S*	**Sn**	**00 34 17.8**	**+0.9**
TIWZ	**Tintock**	**0.60**	**214**	↑P*	**Pn**	**00 34 12.8**	**+1.5**
TIWZ				AML	AML	00 34 27.6	
TIWZ				AML	AML	00 34 33.3	
TIWZ	**Tintock**	**0.60**	**214**	P*	**Pn**	**00 34 12.8**	**+1.5**
KRHZ	**Kereru**	**0.64**	**3**	↑PN	**Pn**	**00 34 11.7**	**0.0**
CPWZ	**Castlepoint**	**0.64**	**188**	P*	**Pn**	**00 34 13.5**	**+1.8**
CPWZ	**Castlepoint**	**0.64**	**188**	P*	**Pn**	**00 34 13.6**	**+1.8**
KAHZ	**Kahuranaki**	**0.64**	**41**	↓PN	**Pn**	**00 34 12.3**	**+0.5**
KAHZ	**Kahuranaki**	**0.64**	**41**	Pn	**Pn**	**00 34 12.3**	**+0.5**
MRZ	**Mangatainoka R**	**0.69**	**236**	↓P*	**Pn**	**00 34 13.8**	**+1.4**
MRZ				AML	AML	00 34 25.6	
MRZ				AML	AML	00 34 25.6	
MRZ				AML	AML	00 34 25.7	
MRZ				AML	AML	00 34 25.7	
MRZ	**Mangatainoka R**	**0.69**	**236**	P*	**Pn**	**00 34 13.2**	**+0.8**
BHHZ	**Black Hill Sta**	**0.81**	**346**	↑PN	**Pb**	**00 34 14.8**	**+0.2**
BHHZ	**Black Hill Sta**	**0.81**	**346**	Pn	**Pb**	**00 34 14.8**	**+0.2**
CKHZ	**Cape Kidnapper**	**0.85**	**43**	↓PN	**Pn**	**00 34 14.5**	**-0.1**
CKHZ	**Cape Kidnapper**	**0.85**	**43**	Pn	**Pn**	**00 34 14.5**	**-0.1**
KWHZ	**Kaweka Forest**	**0.86**	**5**	↑PN	**Pb**	**00 34 15.3**	**0.0**
HOWZ	**Holdsworth Sta**	**0.87**	**225**	↓PN	**Pb**	**00 34 16.3**	**+0.7**
HOWZ	**Holdsworth Sta**	**0.87**	**225**	P*	**Pb**	**00 34 16.3**	**+0.7**
MCHZ	**McNeill Hill**	**0.88**	**19**	PN	**Pb**	**00 34 15.8**	**+0.1**
MCHZ	**McNeill Hill**	**0.88**	**19**	Pn	**Pb**	**00 34 15.8**	**+0.1**
TMWZ	**Te Maipa**	**0.89**	**202**	P*	**Pb**	**00 34 16.2**	**+0.4**
TMWZ	**Te Maipa**	**0.89**	**202**	P*	**Pb**	**00 34 16.2**	**+0.4**
MOVZ	**Moawhango**	**0.98**	**333**	↑PN	**Pb**	**00 34 17.7**	**+0.4**
MOVZ	**Moawhango**	**0.98**	**333**	Pn	**Pb**	**00 34 17.8**	**+0.4**
OGWZ	**Otaki Gorge**	**1.03**	**238**	↓PN	**Pb**	**00 34 18.6**	**+0.4**
OGWZ	**Otaki Gorge**	**1.03**	**238**	Pn	**Pb**	**00 34 18.6**	**+0.4**
MTW	**Mount Morrison**	**1.08**	**215**	↑PN	**Pb**	**00 34 18.4**	**-0.6**
MTW				AML	AML	00 34 49.6	
MTW				AML	AML	00 34 50.4	
MTW	**Mount Morrison**	**1.08**	**215**	Pn	**Pb**	**00 34 18.4**	**-0.6**
WNVZ	**Wahianoa**	**1.10**	**329**	↑PN	**Pb**	**00 34 20.0**	**+0.5**
WNVZ	**Wahianoa**	**1.10**	**329**	Pn	**Pb**	**00 34 20.0**	**+0.5**
MTVZ	**Mangateitei**	**1.11**	**323**	↑PN	**Pb**	**00 34 20.2**	**+0.7**
MTVZ	**Mangateitei**	**1.11**	**323**	Pn	**Pb**	**00 34 20.2**	**+0.7**
BKZ	**Black Stump Fm**	**1.12**	**7**	PN	**Pn**	**00 34 18.8**	**+0.4**
BKZ				AML	AML	00 34 35.0	
BKZ				AML	AML	00 34 35.2	
BKZ	**Black Stump Fm**	**1.12**	**7**	Pn	**Pn**	**00 34 18.8**	**+0.4**
TUVZ	**Tukino**	**1.13**	**333**	↑PN	**Pb**	**00 34 20.5**	**+0.5**
TUVZ	**Tukino**	**1.13**	**333**	Pn	**Pb**	**00 34 20.5**	**+0.5**
ARHZ	**Aropaoanui**	**1.14**	**27**	↓PN	**Pn**	**00 34 19.0**	**+0.4**
ARHZ	**Aropaoanui**	**1.14**	**27**	Pn	**Pn**	**00 34 19.0**	**+0.4**
WHVZ	**Whangaehu Hut**	**1.15**	**330**	PN	**Pb**	**00 34 20.5**	**+0.3**
WHVZ	**Whangaehu Hut**	**1.15**	**330**	Pn	**Pb**	**00 34 20.1**	**-0.1**
TRVZ	**Turoa**	**1.15**	**328**	PN	**Pb**	**00 34 20.7**	**+0.4**
TRVZ	**Turoa**	**1.15**	**328**	Pn	**Pb**	**00 34 20.2**	**-0.1**
WAZ	**Wanganui**	**1.15**	**296**	PN	**Pb**	**00 34 21.2**	**+1.0**
WAZ	**Wanganui**	**1.15**	**296**	Pn	**Pb**	**00 34 21.2**	**+1.0**
DRZ	**Dome Shelter**	**1.16**	**329**	PN	**Pb**	**00 34 20.9**	**+0.3**
DRZ	**Dome Shelter**	**1.16**	**329**	Pn	**Pb**	**00 34 20.9**	**+0.3**
FWVZ	**Far West T-bar**	**1.18**	**330**	PN	**Pb**	**00 34 21.1**	**+0.2**
FWVZ	**Far West T-bar**	**1.18**	**330**	Pn	**Pb**	**00 34 20.6**	**-0.3**
TRWZ	**Traveller**	**1.22**	**203**	PN	**Pn**	**00 34 20.3**	**+0.5**
TRWZ				AML	AML	00 34 37.1	
TRWZ				AML	AML	00 35 04.8	
TRWZ	**Traveller**	**1.22**	**203**	Pn	**Pn**	**00 34 20.3**	**+0.5**
OTVZ	**Oturere**	**1.23**	**335**	↑PN	**Pb**	**00 34 21.6**	**0.0**
OTVZ	**Oturere**	**1.23**	**335**	Pn	**Pb**	**00 34 21.6**	**0.0**
KIW	**Kapiti Island**	**1.23**	**241**	↓PN	**Pb**	**00 34 21.3**	**-0.1**
KIW				AML	AML	00 34 40.8	
KIW				AML	AML	00 34 53.5	
KIW	**Kapiti Island**	**1.23**	**241**	Pn	**Pb**	**00 34 21.3**	**-0.1**
NGZ	**Ngauruhoe**	**1.23**	**333**	↑PN	**Pb**	**00 34 21.7**	**0.0**
NGZ	**Ngauruhoe**	**1.23**	**333**	Pn	**Pb**	**00 34 21.7**	**0.0**
NMHZ	**Naumai**	**1.24**	**18**	↓PN	**Pn**	**00 34 20.6**	**+0.5**
NMHZ	**Naumai**	**1.24**	**18**	Pn	**Pn**	**00 34 20.6**	**+0.5**
PKVZ	**Pokaka**	**1.24**	**322**	↑PN	**Pb**	**00 34 22.0**	**+0.2**
PKVZ	**Pokaka**	**1.24**	**322**	Pn	**Pb**	**00 34 22.0**	**+0.2**
CAW	**Cannon Point**	**1.27**	**229**	↓PN	**Pb**	**00 34 21.3**	**-0.8**
CAW				AML	AML	00 34 42.5	
CAW				AML	AML	00 34 53.6	
CAW	**Cannon Point**	**1.27**	**229**	Pn	**Pb**	**00 34 21.4**	**-0.8**
WTVZ	**West Tongariro**	**1.29**	**334**	↑PN	**Pb**	**00 34 22.4**	**-0.3**
WTVZ	**West Tongariro**	**1.29**	**334**	Pn	**Pb**	**00 34 22.4**	**-0.3**
KRVZ	**Karewarewa**	**1.29**	**336**	PN	**Pb**	**00 34 22.4**	**-0.3**
KRVZ	**Karewarewa**	**1.29**	**336**	Pn	**Pb**	**00 34 22.4**	**-0.3**
PAWZ	**Paruwai Farm**	**1.30**	**211**	↓PN	**Pn**	**00 34 21.2**	**+0.4**
PAWZ				AML	AML	00 34 53.7	
PAWZ				AML	AML	00 35 08.8	
PAWZ	**Paruwai Farm**	**1.30**	**211**	Pn	**Pn**	**00 34 21.2**	**+0.4**
TWVZ	**Taurewa**	**1.39**	**330**	PN	**Pb**	**00 34 23.5**	**-0.8**
TWVZ	**Taurewa**	**1.39**	**330**	Pn	**Pb**	**00 34 23.5**	**-0.8**
KATZ	**Kakaramea**	**1.39**	**339**	PN	**Pb**	**00 34 24.2**	**-0.1**
KATZ	**Kakaramea**	**1.39**	**339**	Pn	**Pb**	**00 34 24.2**	**-0.1**
WHHZ	**Waihua**	**1.39**	**31**	↓PN	**Pn**	**00 34 22.1**	**0.0**
HATZ	**Hinemaiaia**	**1.40**	**352**	PN	**Pn**	**00 34 23.2**	**+1.0**
HATZ	**Hinemaiaia**	**1.40**	**352**	Pn	**Pn**	**00 34 23.2**	**+1.0**
MSWZ	**Moikau Station**	**1.40**	**215**	↓PN	**Pn**	**00 34 22.4**	**+0.1**
MSWZ				AML	AML	00 34 54.3	
MSWZ				AML	AML	00 34 56.7	
MSWZ	**Moikau Station**	**1.40**	**215**	Pn	**Pn**	**00 34 22.4**	**+0.1**
MRHZ	**Matea Rd**	**1.44**	**3**	PN	**Pn**	**00 34 23.8**	**+0.9**
RAHZ	**Arahi**	**1.48**	**24**	↓PN	**Pn**	**00 34 23.3**	**0.0**
RAHZ	**Arahi**	**1.48**	**24**	Pn	**Pn**	**00 34 23.3**	**0.0**
PLWZ	**Palliser**	**1.52**	**212**	↓PN	**Pn**	**00 34 23.9**	**-0.1**
PLWZ	**Palliser**	**1.52**	**212**	Pn	**Pn**	**00 34 23.9**	**-0.1**
WELZ	**Wellington**	**1.55**	**229**	PN	**Pn**	**00 34 25.0**	**+0.6**
WELZ	**Wellington**	**1.55**	**229**	Pn	**Pn**	**00 34 25.0**	**+0.6**
BHW	**Baring Head**	**1.58**	**224**	PN	**Pn**	**00 34 24.9**	**+0.3**
BHW				AML	AML

UTU	**Utuhina**	**2.10**	**357**	PN	**Pn**	**00 34 32.6**	**+0.7**
UTU	**Utuhina**	**2.10**	**357**	Pn	**Pn**	**00 34 32.6**	**+0.7**
PKE	**Pukeiti**	**2.10**	**300**	PN	**Pb**	**00 34 34.9**	**-1.5**
PKE	**Pukeiti**	**2.10**	**300**	Pn	**Pb**	**00 34 34.9**	**-1.5**
URZ	**Urewera**	**2.11**	**17**	Pn	**Pn**	**00 34 31.1**	**-0.8**
	107nm,0.3s,baz=230,slow=5.3,SNR=405						
URZ				Sn	**Sn**	**00 34 56.5**	**-0.5**
	251nm,0.3s,baz=36,slow=19,SNR=15						
URZ	**Urewera**	**2.11**	**17**	⇑PN	**Pn**	**00 34 31.1**	**-0.8**
URZ				AML	AML	00 35 22.6	
URZ				AML	AML	00 35 25.9	
TUWZ	**Tuamarina**	**2.14**	**237**	⇑PN	**Pn**	**00 34 32.6**	**+0.1**
TUWZ				AML	AML	00 35 00.0	
TUWZ				AML	AML	00 35 17.2	
TUWZ	**Tuamarina**	**2.14**	**237**	Pn	**Pn**	**00 34 32.6**	**+0.1**
NWEZ	**Newall Road**	**2.14**	**297**	PN	**Pb**	**00 34 35.5**	**-1.5**
NWEZ	**Newall Road**	**2.14**	**297**	Pn	**Pb**	**00 34 35.5**	**-1.5**
MWZ	**Matawai**	**2.15**	**26**	PN	**Pn**	**00 34 31.5**	**-1.2**
MWZ				AML	AML	00 35 24.1	
MWZ				AML	AML	00 35 34.0	
MWZ	**Matawai**	**2.15**	**26**	Pn	**Pn**	**00 34 31.5**	**-1.2**
OMRZ	**Omania**	**2.17**	**1**	PN	**Pn**	**00 34 33.0**	**+0.2**
OMRZ	**Omania**	**2.17**	**1**	Pn	**Pn**	**00 34 33.0**	**+0.2**
CMWZ	**Cape Campbell**	**2.17**	**227**	AML	AML	00 35 25.3	
CMWZ				AML	AML	00 35 31.3	
TKGZ	**Te Karaka**	**2.18**	**33**	PN	**Pn**	**00 34 32.0**	**-1.0**
TKGZ	**Te Karaka**	**2.18**	**33**	Pn	**Pn**	**00 34 32.0**	**-1.0**
MARZ	**Manawahe**	**2.31**	**7**	Pn	Pb	00 34 43.5	+3.7
CNGZ	**Carnagh Statio**	**2.31**	**40**	PN	**Pn**	**00 34 33.6**	**-1.2**
CNGZ	**Carnagh Statio**	**2.31**	**40**	Pn	**Pn**	**00 34 33.6**	**-1.2**
BSWZ	**Blackbirch Sta**	**2.34**	**231**	⇓PN	**Pn**	**00 34 35.2**	**0.0**
BSWZ				AML	AML	00 35 26.2	
BSWZ				AML	AML	00 35 32.8	
BSWZ	**Blackbirch Sta**	**2.34**	**231**	Pn	**Pn**	**00 34 35.2**	**0.0**
NNZ	**Nelson**	**2.43**	**246**	PN	**Pn**	**00 34 37.0**	**+0.7**
NNZ	**Nelson**	**2.43**	**246**	Pn	**Pn**	**00 34 37.0**	**+0.7**
OPRZ	**Ohinepanea**	**2.44**	**4**	PN	**Pn**	**00 34 36.0**	**-0.4**
OPRZ	**Ohinepanea**	**2.44**	**4**	Pn	**Pn**	**00 34 36.0**	**-0.4**
TWGZ	**Tauwhareparae**	**2.46**	**32**	PN	**Pn**	**00 34 36.0**	**-0.9**
TWGZ	**Tauwhareparae**	**2.46**	**32**	Pn	**Pn**	**00 34 36.0**	**-0.9**
TOZ	**Tahuroa Road**	**2.62**	**346**	⇑PN	**Pn**	**00 34 39.7**	**+0.6**
TOZ	**Tahuroa Road**	**2.62**	**346**	Pn	**Pn**	**00 34 39.7**	**+0.6**
PUZ	**Puketiti**	**2.67**	**35**	PN	**Pn**	**00 34 37.9**	**-1.7**
PUZ				AML	AML	00 35 11.8	
PUZ				AML	AML	00 36 04.3	
PUZ	**Puketiti**	**2.67**	**35**	Pn	**Pn**	**00 34 37.9**	**-1.7**
PKGZ	**Pakihiroa**	**2.75**	**30**	PN	**Pn**	**00 34 39.8**	**-1.1**
HAZ	**Te Kaha**	**2.76**	**25**	PN	**Pn**	**00 34 39.4**	**-1.5**
QRZ	**Quartz Range**	**2.94**	**258**	PN	**Pn**	**00 34 43.8**	**+0.4**
QRZ	**Quartz Range**	**2.94**	**258**	Pn	**Pn**	**00 34 43.8**	**+0.4**
WMGZ	**Waiomatatini S**	**2.94**	**34**	PN	**Pn**	**00 34 41.9**	**-1.5**
WMGZ	**Waiomatatini S**	**2.94**	**34**	Pn	**Pn**	**00 34 41.9**	**-1.5**
THZ	**Tophouse**	**2.98**	**239**	PN	**Pn**	**00 34 43.7**	**-0.4**
THZ	**Tophouse**	**2.98**	**239**	Pn	**Pn**	**00 34 43.7**	**-0.4**
KHZ	**Kahutara**	**2.99**	**224**	*e*Pn	**Pn**	**00 34 43.3**	**-0.9**
MXZ	**Matakaoa Point**	**3.12**	**30**	PN	**Pn**	**00 34 45.0**	**-0.8**
MXZ				AML	AML	00 35 25.8	
MXZ				AML	AML	00 36 10.2	
MXZ	**Matakaoa Point**	**3.12**	**30**	Pn	**Pn**	**00 34 45.0**	**-0.8**
MKAZ	**Moumakai**	**3.30**	**344**	PN	**Pn**	**00 34 49.1**	**+0.8**
MKAZ	**Moumakai**	**3.30**	**344**	Pn	**Pn**	**00 34 49.1**	**+0.8**
AWAZ	**Awhitu Peninsu**	**3.47**	**337**	⇑PN	**Pn**	**00 34 52.3**	**+1.6**
WIAZ	**Waiheke Island**	**3.60**	**345**	⇑PN	**Pn**	**00 34 53.6**	**+1.1**
WTAZ	**Waiatarua**	**3.61**	**337**	PN	**Pn**	**00 34 54.4**	**+1.8**
WTAZ	**Waiatarua**	**3.61**	**337**	Pn	**Pn**	**00 34 54.5**	**+1.8**
DSZ	**Denniston Nort**	**3.72**	**245**	⇑PN	**Pn**	**00 34 54.3**	**+0.1**
DSZ	**Denniston Nort**	**3.72**	**245**	Pn	**Pn**	**00 34 54.3**	**+0.1**
LTZ	**Lake Taylor**	**3.94**	**229**	PN	**Pn**	**00 34 55.8**	**-1.4**
LTZ	**Lake Taylor**	**3.94**	**229**	Pn	**Pn**	**00 34 55.8**	**-1.4**
GRZ	**Great Barrier**	**4.08**	**350**	PN	**Pn**	**00 34 59.5**	**+0.4**
MQZ	**McQueen's Vall**	**4.38**	**217**	PN	**Pn**	**00 35 00.8**	**-2.4**
MQZ	**McQueen's Vall**	**4.38**	**217**	Pn	**Pn**	**00 35 00.8**	**-2.4**
INZ	**Inchbonnie**	**4.41**	**235**	⇑PN	**Pn**	**00 35 02.5**	**-1.1**
OXZ	**Oxford**	**4.42**	**225**	PN	**Pn**	**00 35 01.6**	**-2.2**
OXZ	**Oxford**	**4.42**	**225**	Pn	**Pn**	**00 35 01.6**	**-2.2**
WVZ	**Waitaha Valley**	**5.03**	**234**	PN	**Pn**	**00 35 10.5**	**-1.6**
WVZ	**Waitaha Valley**	**5.03**	**234**	Pn	**Pn**	**00 35 10.6**	**-1.6**
RPZ	**Rata Peaks**	**5.22**	**227**	Pn	**Pn**	**00 35 13.6**	**-1.1**
	2.2nm,0.3s,baz=199,slow=3.8,SNR=23						
RPZ				Sn	**Sn**	**00 36 10.2**	**-3.5**
	64nm,0.3s,baz=138,slow=19,SNR=33						
RPZ	**Rata Peaks**	**5.22**	**227**	PN	**Pn**	**00 35 13.2**	**-1.5**
RPZ	**Rata Peaks**	**5.22**	**227**	Pn	**Pn**	**00 35 13.2**	**-1.5**
RPZ				Sn	**Sn**	**00 36 10.2**	**-3.5**
OUZ	**Omahuta**	**5.49**	**336**	*e*Pn	**Pn**	**00 35 19.8**	**+1.3**
FOZ	**Fox Glacier**	**5.84**	**234**	PN	**Pn**	**00 35 21.2**	**-2.1**
FOZ	**Fox Glacier**	**5.84**	**234**	Pn	**Pn**	**00 35 21.2**	**-2.1**
LBZ	**Lake Benmore**	**6.13**	**226**	PN	**Pn**	**00 35 25.5**	**-1.7**
LBZ	**Lake Benmore**	**6.13**	**226**	Pn	**Pn**	**00 35 25.5**	**-1.7**
CTZ	**Chatham Island**	**6.29**	**126**	PN	**Pn**	**00 35 29.2**	**-0.2**
CTZ	**Chatham Island**	**6.29**	**126**	Pn	**Pn**	**00 35 29.2**	**-0.2**
ODZ	**Otahua Downs**	**6.34**	**219**	PN	**Pn**	**00 35 27.9**	**-2.2**
ODZ	**Otahua Downs**	**6.34**	**219**	Pn	**Pn**	**00 35 27.9**	**-2.2**
JCZ	**Jackson Bay**	**6.76**	**233**	PN	**Pn**	**00 35 33.1**	**-2.9**
JCZ	**Jackson Bay**	**6.76**	**233**	Pn	**Pn**	**00 35 33.1**	**-2.9**
EAZ	**Earnscleugh**	**7.15**	**224**	PN	**Pn**	**00 35 39.7**	**-1.5**
EAZ	**Earnscleugh**	**7.15**	**224**	Pn	**Pn**	**00 35 39.7**	**-1.5**
TUZ	**Tuapeka**	**7.49**	**219**	PN	**Pn**	**00 35 44.0**	**-1.9**
TUZ	**Tuapeka**	**7.49**	**219**	Pn	**Pn**	**00 35 44.0**	**-1.9**
WHZ	**Wether Hill Ro**	**8.31**	**225**	*e*Pn	**Pn**	**00 35 57.4**	**+0.3**
DZM	**Mont Dzumac**	**20.00**	**332**	P	Pn	00 38 30.1	-0.7
	0.2nm,0.3s,baz=144,slow=17,SNR=2.6						
STKA	**Stephens Creek**	**29.15**	**276**	P	**P**	**00 39 57.8**	**+0.7**
	6.9nm,0.7s,baz=100,slow=8.9,SNR=10						
TBI	**Tubuai**	**33.36**	**70**	*e*LR	LR	00 48 58.0	
	418nm,25.2s						
PPT2	**Papeete2**	**37.09**	**62**	*e*LR	LR	00 50 38.3	
	314nm,23.5s						
VNDA	**Vanda**	**37.84**	**185**	P	P	00 41 15.3	+3.2
	0.6nm,0.9s,baz=336,slow=11,SNR=5.2						
ASAR	**Alice Springs**	**39.21**	**282**	P	**P**	**00 41 23.9**	**-0.3**
	6.1nm,0.7s,baz=126,slow=7.8,SNR=61						
ASAR				pP	**pP**	**00 41 32.9**	**-0.6**
	13nm,0.9s,baz=132,slow=8.9,SNR=14						
ASAR				PcP	**PcP**	**00 43 32.3**	**-0.7**
	0.4nm,0.5s,baz=120,slow=4.1,SNR=2.3						
ASAR				S	**S**	**00 47 19.7**	**-2.9**
	0.5nm,0.8s,baz=134,slow=15,SNR=5.1						
WRAB	**Tennant Creek**	**41.12**	**287**	*e*P	**P**	**00 41 40.5**	**+0.4**
	20nm,0.6s						
WRA	**Warramunga Arr**	**41.12**	**287**	P	**P**	**00 41 40.4**	**+0.2**
	2.3nm,15.2s,baz=125,slow=8.2,SNR=28						
WRA				pP	**pP**	**00 41 49.0**	**-0.4**
	13nm,0.6s,baz=125,slow=8.2,SNR=12						
WRA				S	**S**	**00 47 48.8**	**-2.4**
	0.4nm,0.3s,baz=134,slow=15,SNR=3.2						
RKT	**Rikitea**	**44.25**	**82**	*e*LR	LR	00 54 07.6	
	242nm,22.8s						
FITZ	**Fitzroy Crossi**	**48.71**	**282**	*e*P	**P**	**00 42 40.6**	**+0.1**
	5.4nm,0.7s						
TAOE	**Nuku Hiva Isla**	**49.71**	**63**	*e*LR	LR	00 56 28.4	
	234nm,23.2s						
QSPA	**South Pole Qui**	**49.85**	**180**	*e*P	**P**	**00 42 47.5**	**-1.3**
	29nm,0.9s						
MAW	**Mawson**	**61.44**	**204**	P	**P**	**00 44 13.5**	**+1.9**
	1.7nm,0.8s,baz=203,slow=11,SNR=2.9						
MAW				pP	**sP**	**00 44 23.5**	**-1.6**
	8.3nm,0.9s,baz=116,slow=5.1,SNR=7.3						
SYO	**Syowa Base**	**66.42**	**196**	⇓*e*X	P	00 44 40.6	-3.8
SYO	**Syowa Base**	**66.42**	**196**	⇓*e*pP	pP	00 44 53.4	-0.8
SNAA	**Sanae**	**68.36**	**180**	P	**P**	**00 44 58.4**	**+1.7**
VNA3	**Neumayer Olymp**	**68.70**	**178**	P	**P**	**00 45 00.5**	**+1.7**
VNA2	**Neumayer--Watz**	**69.07**	**179**	P	**P**	**00 45 02.1**	**+0.9**
	baz=178,slow=5.7						
VNA1	**Neumayer--Stat**	**69.33**	**178**	P	**P**	**00 45 04.7**	**+2.0**
PLCA	**Paso Flores**	**79.03**	**135**	P	**P**	**00 46 02.1**	**+2.2**
	1.9nm,1.0s,baz=213,slow=1.5,SNR=5.5						
GSI	**Gunungsitoli**	**82.26**	**278**	*e*P	**P**	**00 46 18.0**	**+0.6**
	58nm,0.9s						
GSI				*e*pP	**pP**	**00 46 27.8**	**+0.3**
MJAR	**Matsushiro Arr**	**84.09**	**330**	pP	pP	00 46 34.9	-1.4
	1.8nm,0.6s,baz=164,slow=7.5,SNR=3.2						
KSRS	**Korea Array**	**89.18**	**323**	P	**P**	**00 46 52.2**	**+1.1**
	1.3nm,0.7s,baz=147,slow=5.4,SNR=2.9						
KSRS				pP	**pP**	**00 47 01.6**	**+0.5**
	3.0nm,0.8s,baz=142,slow=5.7,SNR=5.1						
KSAR	**Wonju Array Be**	**89.19**	**323**	P	**P**	**00 46 52.2**	**+1.1**
KSAR				pP	**pP**	**00 47 01.6**	**+0.4**
CMAR	**Chiang Mai Arr**	**92.52**	**292**	P	**P**	**00 47 08.0**	**+0.8**
	0.6nm,0.4s,baz=155,slow=3.4,SNR=5.1						
CMAR				pP	**pP**	**00 47 16.9**	**-0.3**
	2.1nm,0.7s,baz=148,slow=3.6,SNR=3.6						
YKA	**Yellowknife Ar**	**116.32**	**29**	PKP	**PKPdf**	**00 52 37.9**	**-0.1**
	0.6nm,0.6s,baz=257,slow=1.5,SNR=19						
YKA				pPKP	pPKPdf	00 52 47.9	-0.5
	baz=251,slow=1.6,SNR=6.5						
MKAR	**Makanchi Array**	**120.32**	**307**	PKP	**PKPdf**	**00 52 45.2**	**-1.1**
	0.4nm,0.5s,baz=58,slow=3.0,SNR=6.4						
MKAR				pPKP	**pPKPdf**	**00 52 54.9**	**-1.8**
	0.3nm,0.5s,baz=202,slow=2.2,SNR=5.7						
KKAR	**Karatay Array**	**126.24**	**299**	*e*PKPdf	**PKPdf**	**00 52 57.7**	**-0.1**
KKAR				*ep*PKPdf	**pPKPdf**	**00 53 07.4**	**-0.8**
KBZ	**Khabaz**	**145.57**	**291**	PKPbc	**PKPbc**	**00 53 33.6**	**0.0**
	2.2nm,0.9s,baz=188,slow=2.8,SNR=4.4						
LIC	**Lamto**	**146.07**	**178**	*e*P	**PKPdf**	**00 53 35.3**	**+0.1**
	21nm,1.0s						
KIC	**Kosan Boka**	**146.22**	**178**	*e*P	**PKPab**	**00 53 37.6**	**+0.4**
	32nm,1.0s						
TIC	**Toumodi**	**146.49**	**178**	*e*P	**PKPbc**	**00 53 37.6**	**+0.3**
DBIC	**Dimbokro**	**146.52**	**178**	PKPbc	**PKPab**	**00 53 38.2**	**-0.1**
	4.5nm,0.7s,baz=212,slow=2.5,SNR=8.9						
ARCES	**ARCESS Array B**	**146.90**	**342**	PKPbc	**PKPbc**	**00 53 36.8**	**-0.1**
	2.5nm,0.6s,baz=38,slow=3.5,SNR=16						
ARCES				pPKPbc	pPKPbc	00 53 46.3	-0.9
	5.5nm,0.7s,baz=50,slow=3.1,SNR=3.6						
BRTR	**Keskin Array B**	**151.54**	**281**	PKPbc	**PKPbc**	**00 53 49.5**	**-0.1**
	1.1nm,0.8s,baz=151,slow=5.9,SNR=7.0						
BRTR				PKPab	**PKPab**	**00 53 57.5**	**-0.8**
	4.6nm,0.9s,baz=132,slow=2.8,SNR=15						
BRTR				pPKPab	**pPKPab**	**00 54 07.2**	**-1.2**
	4.6nm,0.9s,baz=130,slow=4.7,SNR=8.4						
FINES	**FINESS Array B**	**152.12**	**329**	PKPbc	**PKPbc**	**00 53 49.5**	**-0.6**
	1.7nm,0.6s,baz=27,slow=4.3,SNR=15						
FINES				PKPab	**PKPab**	**00 53 58.4**	**-1.4**
	1.8nm,0.5s,baz=45,slow=4.3,SNR=10						
TORD	**Torodi Ar. Bea**	**152.56**	**191**	PKPbc	**PKPbc**	**00 53 52.6**	**+0.2**
	2.4nm,0.6s,baz=160,slow=3.6,SNR=37						
TORD				PKPab	**PKPab**	**00 54 02.5**	**-0.3**
	2.0nm,0.5s,baz=174,slow=3.1,SNR=20						
TORD				pPKPab	**pPKPab**	**00 54 14.8**	**+1.8**
	4.6nm,0.8s,baz=149,slow=3.0,SNR=8.4						
AKASG	**Malin Array Be**	**154.89**	**306**	PKPbc	**PKPbc**	**00 53 55.4**	**-1.1**
	0.1nm,0.3s,baz=88,slow=2.2,SNR=4.1						
GERES	**GERESS Array B**	**164.97**	**310**	PKPab	**PKPab**	**00 54 55.9**	**0.0**
	0.1nm,0.3s,baz=1.6,slow=3.4,SNR=3.3						

*ISCJB **11** 01:05:00.6±0.4,38.42N±0.03×118.80W±0.05,h10km, Error ellipse: s-maj=5.5km s-min=3.9km az=20.6*
*NEIC **11** 01:05:00.1,38.38N×118.74W,h6km,ML3.3(REN), After REN.*

ISC 11 01:04:59.9±0.8,38.40N±0.02×118.74W±0.03,h10km,n17, σ1s73/31,California-Nevada border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MLAC	**Mammoth, Mammo**	**0.77**	**186**	P	**Pg**	**01 05 14.8**	**0.0**
	baz=4.6						
MLAC				S	**Sb**	**01 05 25.2**	**-0.9**
	baz=4.6						
CMB	**Columbia Colle**	**1.35**	**255**	*e*Pn	**Pn**	**01 05 24.9**	**+0.1**
CMB				*e*S	**Sn**	**01 05 42.9**	**0.0**
TIN	**Tinemaha, Big**	**1.40**	**163**	P	**Pg**	**01 05 26.9**	**+0.1**
	baz=342						
GRAC	**Grapevine Rang**	**1.77**	**142**	Pb	**Pg**	**01 05 33.6**	**-0.2**
	baz=322						
DAC	**Darwin (Calif)**	**2.30**	**156**	*e*Pn	**Pn**	**01 05 38.9**	**+0.8**
DAC				*e*S	**Sg**	**01 06 13.1**	**-0.8**
BMN	**Battle Mountai**	**2.35**	**30**	*e*Pn	**Pn**	**01 05 39.1**	**+0.4**
BMN				*e*S	**Sb**	**01 06 10.4**	**-1.1**
R11A	**Troy Canyon, C**	**2.48**	**90**	Sb	**Sg**	**01 06 19.0**	**-0.5**
	baz=271						
MPMC	**Manual Prospec**	**2.54**	**156**	Pb	**Pg**	**01 05 47.3**	**-1.2**
	baz=337						
SAO	**San Andreas Ge**	**2.70**	**234**	*e*Pn	**Pn**	**01 05 43.8**	**+0.4**
SAO				*e*S	**Sb**	**01 06 21.4**	**-0.1**
ISA	**Isabella, Lake**	**2.73**	**175**	Pb	**Pb**	**01 05 49.7**	**+0.7**
	baz=355						
ISA				Sb	**Sg**	**01 06 25.3**	**-2.5**
	baz=355						
ELK	**Elko**	**3.58**	**48**	*e*Pn	Pn	01 05 47.9	-7.8
ELK				*e*S	**Sn**	**01 06 40.6**	**+2.4**
WDC	**Whiskeytown Da**	**3.66**	**308**	*e*Pn	**Pn**	**01 05 57.3**	**+0.7**
WDC				*e*Pg	**Pb**	**01 06 07.1**	**+2.3**
WDC				*e*S	**Sb**	**01 06 46.0**	**-3.2**
MOD	**Modoc Plateau**	**3.70**	**342**	*e*Pn	**Pn**	**01 05 59.9**	**+2.6**
MOD				*e*S	**Sg**	**01 06 59.4**	**+0.5**
WVOR	**Wild Horse Val**	**4.04**	**1**	*e*Pn	**Pn**	**01 06 03.4**	**+1.5**
WVOR				*e*Pg	**Pg**	**01 06 15.7**	**-1.5**
WVOR				*e*S	**Sg**	**01 07 07.2**	**-2.3**
DUG	**Dugway, Tooele**	**4.94**	**67**	*e*Pn	**Pn**	**01 06 15.8**	**+1.5**
DUG				*e*Pg	**Pg**	**01 06 33.2**	**-1.2**
DUG				*e*S	**Sg**	**01 07 35.6**	**-2.7**
MFID	**Camas Ranch**	**5.48**	**23**	Pn	**Pn**	**01 06 23.0**	**+1.3**
	1.8nm,0.6s						
MFID				*e*S	**Sg**	**01 07 52.3**	**-3.4**
HLID	**Hailey**	**6.11**	**31**	Pn	**Pn**	**01 06 33.1**	**+2.7**
	1.6nm,0.5s						
HLID				*e*Pg	Pg	01 06 53.6	-3.3
HLID				*e*S	Sg	01 08 10.4	-5.6

*NIED **11** 01:24:00,35.80N×140.90E,h14km,Mw3.4 Best double couple: M0 1.59000×10^14 NP1:φs33.00000°,δ53.00000°, λ-11.00000°. NP2:φs129.00000°,δ81.00000°, λ-143.00000°.*

JMA 11 01:24:46.9±0.1,35.83N×140.88E,h11km±1km,M3.6,1C, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.13**	**188**	⇑P	Pg	01 24 50.0	0.0
CHOJ				S	Sg	01 24 52.2	0.0
JYT	**Yasato**	**0.68**	**306**	P	Pg	01 25 00.0	-0.1
JYT				*e*S	Sg	01 25 09.1	0.0
JCN	**Nagara**	**0.69**	**234**	P	Pb	01 25 01.4	+0.5
JCN				S	Sn	01 25 12.2	-1.0
JHO	**Hitachi**	**0.82**	**342**	*e*S	Sb	01 25 14.0	-0.2
TOK	**Tokyo**	**0.92**	**261**	P	Pb	01 25 05.0	+0.1
TOK				*e*S	Sb	01 25 17.7	+0.6
BSO4	**Boso 4**	**0.95**	**208**	P	Pb	01 25 05.4	+0.1
MAT	**Matsushiro**	**2.28**	**289**	P	Pn	01 25 23.9	-0.6
MAT				S	Sn	01 25 51.0	-1.5

*IDC **11** 01:25:53.4±9.2,36.81N×142.42E,h0km,mb3.5/5, mb1 3.6/6,mb1mx3.3/47,mbtmp3.5/6,ML3.5/1,MS2.9/3, Ms1 2.9/3,ms1mx2.6/36,Error ellipse: s-maj=164.8km s-min=64.4km az=136.0*
*NIED **11** 01:26:00,37.30N×141.20E,h26km,Mw3.8 Best double couple: M0 5.97000×10^14 NP1:φs103.00000°,δ41.00000°, λ-38.00000°. NP2:φs224.00000°,δ66.00000°, λ-125.00000°.*
*ISCJB **11** 01:26:05.3±1.1,37.29N±0.04×141.26E±0.08,h26km±5km, mb3.4/5,Error ellipse: s-maj=10.6km s-min=6.1km az=21.3*
*JMA **11** 01:26:07.3±0.1,37.31N×141.10E,h29km±1km,M3.9*
JMA Felt II J1.

ISC 11 01:26:04.7±1.7,37.30N±0.04×141.26E±0.07,h13km±9km, n19,σ0s94/28,mb3.4/5,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**0.31**	**282**	P	**Pb**	**01 26 13.1**	**+1.0**
JFK				S	**Sb**	**01 26 17.2**	**0.0**
ONAJ	**Iwakimizuishiy**	**0.42**	**242**	P	**Pb**	**01 26 14.6**	**+0.7**
ONAJ				*e*S	**Sb**	**01 26 19.7**	**-0.5**
JMM	**Marumori**	**0.68**	**327**	P	**Pb**	**01 26 18.8**	**+0.5**
JMM				S	**Sb**	**01 26 27.5**	**0.0**
JFT	**Otama**	**0.77**	**287**	P	**Pb**	**01 26 20.2**	**+0.4**
JFT				S	**Sg**	**01 26 29.0**	**-0.6**
JHO	**Hitachi**	**0.88**	**219**	P	**Pg**	**01 26 21.4**	**-0.3**
JSB	**Shiboa**	**1.12**	**253**	P	**Pg**	**01 26 26.3**	**0.0**
JSB				S	**Sb**	**01 26 39.6**	**-0.8**
JIO	**Ouri**	**1.15**	**4**	P	**Pg**	**01 26 27.1**	**+0.2**
JIO				S	**Sg**	**01 26 41.8**	**-0.1**
JOU	**Okura**	**1.16**	**336**	P	**Pg**	**01 26 27.3**	**+0.2**
JOU				S	**Sg**	**01 26 42.2**	**0.0**
JFY	**Yanaizu**	**1.24**	**275**	P	**Pn**	**01 26 27.5**	**-0.2**
JFY				S	**Sb**	**01 26 42.2**	**-1.7**
JYS	**Shirataka**	**1.32**	**315**	P	**Pb**	**01 26 29.2**	**-0.1**
JYS				S	**Sb**	**01 26 46.1**	**0.0**
MJAR	**Matsushiro Arr**	**2.56**	**254**	Pn	**Pn**	**01 26 47.5**	**+1.7**
	4.8nm,0.3s,baz=86,slow=16,SNR=4.4						
MJAR				Sn	**Sb**	**01 27 20.8**	**-1.0**
	baz=45,slow=26,SNR=7.6						
MJAR				LR	LR	01 28 12.5	
	comp=Z,163nm,19.3s,baz=75,slow=41						
MAT	**Matsushiro**	**2.56**	**254**	P	**Pn**	**01 26 47.4**	**+1.6**
MAT				S	**Sn**	**01 27 18.8**	**+1.9**
KSRS	**Korea Array**	**10.62**	**275**	LR	LR	01 32 26.7	
	comp=Z,50nm,20.2s,baz=105,slow=34						
KLR	**Kul'dur**	**13.78**	**333**	LR	LR	01 34 39.0	
	comp=Z,50nm,19.4s,slow=36						
SONM	**Songino Array**	**27.53**	**304**	P	**P**	**01 31 50.5**	**-0.6**
	0.3nm,0.6s,baz=101,slow=7.6,SNR=2.5						
ZALV	**Zalesovo Beam**	**41.64**	**312**	P	**P**	**01 33 51.2**	**-1.2**
	0.5nm,0.4s,baz=99,slow=6.6,SNR=2.8						
MKAR	**Makanchi Array**	**43.87**	**302**	P	**P**	**01 34 10.2**	**-0.4**
	0.3nm,0.6s,baz=88,slow=13,SNR=2.9						
KURBB	**Kurchatov Arra**	**45.74**	**308**	P	**P**	**01 34 24.0**	**-1.4**
	0.7nm,0.5s,baz=81,slow=7.8,SNR=8.1						
BVAR	**Borovoye Array**	**50.30**	**312**	P	**P**	**01 34 59.6**	**-1.1**
	0.2nm,0.5s,baz=36,slow=5.4,SNR=2.6						

MEX 11 01:28:27.0±0.6,16.03N×94.21W,h73km±15km,MD3.8, Oaxaca

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PCIG		**1.01**	**109**	*e*P	Pn	01 28 44.5	-1.2
PCIG				*e*S	Sn	01 28 57.9	-1.8
TGIG		**1.28**	**54**	*i* P	Pn	01 28 48.3	-1.0
TGIG				*e*S	Sn	01 29 03.8	-2.2
HUIG	**Huatulco**	**1.84**	**262**	*e*P	Pn	01 28 55.2	-1.5
HUIG				*e*S	Sn	01 29 17.5	-1.7
CCIG	**Comitan**	**2.01**	**83**	*i* P	Pn	01 28 57.4	-1.5
CCIG				*i* S	Sn	01 29 21.4	-2.0

*IDC **11** 01:31:25.2±1.1,57.97N×32.59W,h0km,mb3.7/12, mb1 3.8/12,mb1mx3.6/47,mbtmp3.7/12,MS3.6/16, Ms1 3.6/16,ms1mx3.2/49,Error ellipse: s-maj=28.9km s-min=19.6km az=22.0*
*ISCJB **11** 01:31:26.1±0.9,58.0N±0.2×32.7W±0.2,h18km,mb3.7/12, MS3.4/12,Error ellipse: s-maj=22.7km s-min=14.1km az=18.8*

ISC 11 01:31:28.0±1.0,58.0N±0.2×32.6W±0.1,h18km,n31, σ0s55/13,mb3.8/12,MS3.5/12,Reykjanes Ridge

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BORG	**Borgarnes**	**8.66**	**34**	LR	LR	01 36 02.2	
	comp=Z,599nm,19.7s,baz=236,slow=32						
SFJD	**Kangerlussuaq**	**12.25**	**325**	LR	LR	01 38 23.1	
	comp=Z,328nm,19.2s,baz=124,slow=34						
EKA	**Eskdalemuir Ar**	**16.32**	**87**	Pn	**P**	**01 35 18.8**	**-0.1**
	baz=295,slow=10.0,SNR=6.3						
FRB	**Frobisher Bay**	**18.25**	**303**	LR	LR	01 41 49.6	
	comp=Z,243nm,18.7s,baz=89,slow=34						
SCHQ	**Schefferville**	**19.09**	**275**	LR	LR	01 42 04.6	
	comp=Z,242nm,18.1s,baz=56,slow=34						
NOA	**NORSAR Array B**	**22.11**	**63**	P	**P**	**01 36 21.9**	**-0.1**
	1.2nm,0.9s,baz=281,slow=10,SNR=3.6						
NOA				LR	LR	01

NIED ***11*** *02:00:00.36˝.70N×140˝.70E, h5km, Mw3.6 Best double couple: M₀2.97000×10¹⁴ NP1:φ₀352.00000°, δ26.00000°, λ-81.00000°. NP2:φ₀163.00000°, δ65.00000°, λ-94.00000°.*

IDC ***11*** *02:00:33.4±1.1, 36˝.77N×140˝.63E, h0km, mb3.7/9, mb1 3.9/10, mb1mx3.7/42, mbtmp3.8/10, ML3.9/1, MS3.2/3, Ms1 3.2/3, ms1mx2.6/67, Error ellipse: s-maj=26.5km s-min=15.0km az=164.0*

ISCJB ***11*** *02:00:34.3±2.0, 36˝.68N±0˝.04×140˝.72E±0˝.06, h15km±13km, mb3.6/9, MS3.6/1, Error ellipse: s-maj=9.0km s-min=4.7km az=28.8*

JMA ***11*** *02:00:34.9, 36˝.70N×140˝.66E, h4km±1km, M4.0 Broadband fault plane solution: P waves. NP1: φs355.00000°, δ50.00000°, λ-79.00000°. NP2: φs158.00000°, δ42.00000°, λ-102.00000°. Principal axes: T Plg4.0000°, Azm77.0000°; N Plg8.0000°, Azm168.0000°; P Plg81.0000°, Azm321.0000°;*

JMA Felt III J1.

ISC 11 02:00:34.6±1.0, 36˝.74N±0˝.03×140˝.52E±0˝.05, h7km±7km, n21, σ0°52/25, mb3.8/9, 5C, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
JHO	**Hitachi**	**0.13**	**161**	⇑P			**Pg**	**02 00 37.4**	**0.0**
JHO				S			**Sg**	**02 00 39.2**	**-0.2**
ONAJ	**Iwakimizuishiy**	**0.43**	**32**	⇑P			**Pg**	**02 00 43.1**	**+0.1**
ONAJ				eS			**Sg**	**02 00 48.9**	**+0.2**
JSB	**Shiboa**	**0.53**	**296**	⇑P			**Pn**	**02 00 48.1**	**-0.5**
JSB				S			**Sn**	**02 00 57.2**	**-0.6**
JYT	**Yasato**	**0.57**	**207**	⇑P			**Pb**	**02 00 46.5**	**-0.3**
JYT				eS			**Sb**	**02 00 54.4**	**-0.7**
JFK	**Kawauchi**	**0.69**	**24**	⇑P			**Pg**	**02 00 47.9**	**-0.1**
JFK				S			**Sg**	**02 00 57.2**	**+0.2**
MJAR	**Matsushiro Arr** 18nm,0.3s,baz=85,slow=9.9,SNR=84	**1.86**	**265**	Pn			**Pb**	**02 01 08.7**	**-0.3**
MJAR	44nm,0.3s,baz=94,slow=28,SNR=23			Lg			Lg	02 01 34.6	
MJAR	comp=Z,70nm,20.3s,baz=75,slow=44			LR			LR	02 01 59.0	
MAT	**Matsushiro**	**1.87**	**265**	P			**Pb**	**02 01 09.5**	**+0.5**
MAT				S			**Sg**	**02 01 35.3**	**+0.7**
JHJ	**Hachijo jima 2** 27nm,0.3s,baz=60,slow=23,SNR=4.5	**3.66**	**190**	Pn			**Pn**	**02 01 31.8**	**+0.2**
JHJ	14nm,0.3s,baz=240,slow=23,SNR=3.4			Sn			**Sn**	**02 02 15.6**	**+0.7**
JCJ	**Chichijima** comp=Z,247nm,21.5s,baz=298,slow=34	**9.71**	**171**	LR			LR	02 06 08.3	
KSRS	**Korea Array** comp=Z,28nm,19.6s,baz=112,slow=36	**10.09**	**278**	LR			LR	02 06 42.1	
SONM	**Songino Array** 0.8nm,0.6s,baz=108,slow=9.3,SNR=9.2	**27.36**	**305**	P			**P**	**02 06 20.6**	**+0.3**
ZALV	**Zalesovo Beam** 2.0nm,0.5s,baz=99,slow=6.3,SNR=8.4	**41.59**	**313**	P			**P**	**02 08 23.1**	**+0.4**
MKAR	**Makanchi Array** 0.3nm,0.7s,baz=91,slow=10,SNR=3.3	**43.67**	**302**	P			**P**	**02 08 41.1**	**+1.2**
SPITS	**Spitsbergen Ar** comp=Z,42nm,18.0s,baz=220,slow=39	**60.67**	**349**	LR			LR	02 40 05.9	
FINES	**FINESS Array B** 0.7nm,0.6s,baz=72,slow=6.2,SNR=3.6	**68.74**	**332**	P			**P**	**02 11 38.7**	**+0.1**
AKASG	**Malin Array Be** 0.6nm,0.5s,baz=46,slow=6.1,SNR=5.8	**74.09**	**322**	P			**P**	**02 12 10.8**	**-0.4**
NB2	**NORSAR Subarra** comp=Z,0.7nm,0.6s,baz=41,slow=6.2	**74.18**	**337**	P			**P**	**02 12 11.5**	**-0.1**
NOA	**NORSAR Array B** comp=Z,0.5nm,0.6s,baz=38,slow=5.8,SNR=4.3	**74.18**	**337**	P			**P**	**02 12 11.0**	**-0.5**
NVAR	**Mina Array Bea** comp=Z,0.3nm,0.6s,baz=312,slow=5.7,SNR=2.9	**75.74**	**53**	P			**P**	**02 12 21.4**	**+0.1**
PDAR	**Pinedale Array** comp=Z,0.2nm,0.7s,baz=279,slow=2.4,SNR=3.7	**78.39**	**45**	P			**P**	**02 12 36.4**	**+0.3**
GERES	**GERESS Array B** comp=Z,0.3nm,0.4s,baz=33,slow=5.1,SNR=5.0	**82.58**	**328**	P			**P**	**02 12 57.6**	**-0.7**

ISCJB ***11*** *02:01:16.1±0.6, 17˝.80S±0˝.03×178˝.50W±0˝.04, h504km±7km, mb4.9/161, Error ellipse: s-maj=5.5km s-min=4.3km az=32.0*

IDC ***11*** *02:01:18.8±0.5, 17˝.81S×178˝.47W, h525km±5km, mb4.0/28, mb1 4.2/30, mb1mx4.1/43, mbtmp4.9/30, Error ellipse: s-maj=10.0km s-min=8.4km az=127.0*

GCMT ***11*** *02:01:19.3±0.3, 17˝.93S×178˝.42W, h539km±2km, MW5.4/67, Moment Tensor Solution. s67,c87; Duration: 1s2 Moment tensor: Scale 10¹⁷Nm; Mrr0.26±.04; Mθθ0.94±.07; Mϕϕ-1.20±.06; Mrθ-0.47±.07; Mθϕ0.45±.05; Mϕr-0.61±.06; Best double couple: M₀1.40700×10¹⁷ NP1:φ₀210.00000°, δ82.00000°, λ145.00000°. NP2: φs306.00000°, δ56.00000°, λ9.00000°. Principal axes: T 1.3610, Plg30.0000°, Azm162.0000°; N 0.0860, Plg54.0000°, Azm19.0000°; P -1.4520, Plg18.0000°, Azm263.0000°; nsta1 refers to body waves, cutoff=40s.*

BJI ***11*** *02:01:19.0, 17˝.67S×178˝.57W, h529km, mb4.8/42, mB4.7/23*

NEIC ***11*** *02:01:19.3±0.2, 17˝.80S×178˝.50W, mb5.2/73, Error ellipse: s-maj=5.8km s-min=4.3km az=114.0*

MOS ***11*** *02:01:20.8±1.6, 17˝.69S×178˝.64W, h544km, mb4.6/11, Error ellipse: s-maj=10.1km s-min=9.3km az=21.0*

ISC 11 02:01:19.5±0.3, 17˝.76S±0˝.05×178˝.39W±0˝.05, h538km±3km, h537km; pP-P, n380, σ1s44/437, mb5.0/161, 36C-8D, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
MSVF	**Nonsavu**	**3.39**	**270**	eP			**P**	**02 02 37.4**	**+1.2**
MSVF				eS			**S**	**02 03 44.2**	**+5.6**
MSVF	**Nonsavu**	**3.39**	**270**	eP			**P**	**02 02 37.4**	**+1.2**
MSVF				eS			**S**	**02 03 44.2**	**+5.6**
AFI	**Afiamalu** 80nm,0.3s,baz=81,slow=2.7,SNR=39	**7.43**	**60**	P			**P**	**02 03 08.2**	**-3.2**
AFI	7.6nm,0.3s,baz=75,slow=20,SNR=2.3			S			**S**	**02 04 38.2**	**-4.8**
FUNA	**Funafuti** 2µm,0.8s	**9.47**	**345**	eP			**P**	**02 03 30.0**	**-1.9**
RAO	**Raoul Island** 101nm,0.3s,baz=90,slow=20,SNR=3.7	**11.45**	**178**	S			**S**	**02 05 57.7**	**-0.1**
DZM	**Mont Dzumac** 2.7nm,0.3s,baz=77,slow=17,SNR=30	**14.89**	**251**	P			**P**	**02 04 26.4**	**-1.8**
RAR	**Rarotonga** 3.6nm,0.3s,baz=224,slow=15,SNR=3.6	**17.89**	**104**	P			**P**	**02 04 57.7**	**+0.7**
OUZ	**Omahuta**	**18.80**	**201**	PN			**P**	**02 05 07.5**	**+2.5**
OUZ	**Omahuta** 387nm,1.0s	**18.80**	**201**	eP			**P**	**02 05 07.6**	**+2.5**
WCZ	**Waipu Caves**	**19.22**	**198**	PN			**P**	**02 05 11.3**	**+2.4**
MXZ	**Matakaoa Point** 63nm,0.9s	**19.94**	**188**	eP			**P**	**02 05 14.1**	**-1.4**
MKAZ	**Moumakai**	**20.09**	**195**	PN			**P**	**02 05 18.2**	**+1.3**
TOZ	**Tahuroa Road**	**20.61**	**194**	PN			**P**	**02 05 22.6**	**+1.0**
URZ	**Urewera** 174nm,0.8s,baz=10,slow=4.9,SNR=90	**20.80**	**190**	P			**P**	**02 05 21.1**	**-2.2**
URZ	10.0nm,0.7s,baz=0.0,slow=20,SNR=4.4			S			**S**	**02 08 37.1**	**-3.5**
URZ	**Urewera**	**20.80**	**190**	PN			**P**	**02 05 20.8**	**-2.4**
URZ	**Urewera** 187nm,0.8s	**20.80**	**190**	eP			**P**	**02 05 21.0**	**-2.3**
URZ				eS			**S**	**02 08 37.0**	**-3.7**
MWZ	**Matawai**	**20.81**	**189**	PN			**P**	**02 05 20.9**	**-2.5**
TARA	**Tarawa** 451nm,1.4s	**20.83**	**335**	eP			**P**	**02 05 22.8**	**-1.1**
CNGZ	**Carnagh Statio**	**20.86**	**188**	PN			**P**	**02 05 24.9**	**+1.0**
HIZ	**Hauiti** 266nm,1.3s	**21.50**	**195**	eP			**P**	**02 05 30.8**	**+1.2**
BKZ	**Black Stump Fm** 36nm,0.8s	**21.79**	**191**	eP			**P**	**02 05 30.5**	**-1.8**
BKZ				eS			**S**	**02 08 57.5**	**+1.2**
BFZ	**Birch Farm** 53nm,0.8s	**23.31**	**190**	eP			**P**	**02 05 44.4**	**-1.4**
DUWZ	**D'Urville Isla**	**23.90**	**195**	PN			**P**	**02 05 49.3**	**-1.8**
SNZO	**South Karori** 129nm,0.8s	**24.21**	**193**	eP			**P**	**02 05 52.1**	**-1.6**
THZ	**Tophouse** 43nm,0.8s	**25.06**	**195**	eP			**P**	**02 06 00.2**	**-1.1**
THZ				eS			**S**	**02 09 46.5**	**-1.2**
DSZ	**Denniston Nort**	**25.34**	**197**	PN			**P**	**02 06 03.2**	**-0.6**
KHZ	**Kahutara**	**25.52**	**194**	PN			**P**	**02 06 03.5**	**-1.8**
KHZ	**Kahutara** 84nm,0.9s	**25.52**	**194**	eP			**P**	**02 06 03.3**	**-2.0**
KHZ				eS			**S**	**02 09 53.6**	**-1.3**
LTZ	**Lake Taylor**	**26.18**	**196**	ePN			**P**	**02 06 09.1**	**-2.1**
LTZ	**Lake Taylor** 82nm,0.7s	**26.18**	**196**	eP			**P**	**02 06 09.6**	**-1.6**
LTZ				eS			**S**	**02 10 08.5**	**+3.2**
INZ	**Inchbonnie**	**26.35**	**197**	ePN			**P**	**02 06 11.2**	**-1.4**
OXZ	**Oxford**	**26.75**	**196**	ePN			**P**	**02 06 14.3**	**-1.9**
OXZ	**Oxford** 195nm,0.9s	**26.75**	**196**	eP			**P**	**02 06 14.6**	**-1.6**
CRLZ	**Canterbury Las** 128nm,1.3s	**26.84**	**195**	eP			**P**	**02 06 16.3**	**-0.6**
MQZ	**McQueen's Vall** 76nm,1.2s	**26.95**	**194**	eP			**P**	**02 06 16.6**	**-1.3**
RPZ	**Rata Peaks** 18nm,0.7s,baz=314,slow=1.9,SNR=16	**27.37**	**197**	P			**P**	**02 06 19.4**	**-2.2**
RPZ	**Rata Peaks** 178nm,2.0s	**27.37**	**197**	eP			**P**	**02 06 20.6**	**-1.0**
PAE	**Paea** 11nm,1.0s	**27.44**	**94**	eP			**P**	**02 06 23.6**	**+1.1**
PPT2	**Papeete2** 105nm,1.5s	**27.45**	**94**	eP			**P**	**02 06 23.8**	**+1.1**
PPT	**Papeete** 48nm,0.6s,baz=77,slow=5.3,SNR=5.4	**27.45**	**94**	P			**P**	**02 06 24.0**	**+1.3**
FOZ	**Fox Glacier**	**27.56**	**199**	PN			**P**	**02 06 22.1**	**-1.1**
FOZ	**Fox Glacier** 224nm,0.9s	**27.56**	**199**	eP			**P**	**02 06 22.3**	**-0.9**
TVO	**Taravao** 21nm,0.9s	**27.74**	**95**	eP			**P**	**02 06 26.4**	**+1.1**
LBZ	**Lake Benmore**	**28.23**	**197**	PN			**P**	**02 06 27.0**	**-2.1**
JCZ	**Jackson Bay**	**28.37**	**200**	PN			**P**	**02 06 29.7**	**-0.8**
ODZ	**Otahua Downs** 36nm,0.9s	**28.71**	**196**	eP			**P**	**02 06 32.2**	**-1.1**
WKZ	**Wanaka**	**28.98**	**199**	PN			**P**	**02 06 34.4**	**-1.3**
WKZ	**Wanaka** 18nm,1.0s	**28.98**	**199**	eP			**P**	**02 06 34.5**	**-1.1**
EIDS	**Eidsvold** 115nm,0.8s	**29.33**	**250**	eP			**P**	**02 06 38.3**	**-0.7**
PMOR	**Pomariorio Ree** 157nm,1.2s	**29.37**	**89**	eP			**P**	**02 06 39.5**	**+0.1**
VAH	**Vaihoa** 58nm,1.2s	**29.59**	**90**	eP			**P**	**02 06 41.5**	**+0.2**
MLZ	**Mavora Lakes**	**29.74**	**199**	PN			**P**	**02 06 42.2**	**-0.1**
MLZ	**Mavora Lakes** 257nm,1.0s	**29.74**	**199**	eP			**P**	**02 06 42.6**	**+0.3**
TUZ	**Tuapeka**	**29.83**	**197**	PN			**P**	**02 06 42.7**	**-0.2**
ARMA	**Armidale** 118nm,0.7s	**30.03**	**240**	eP			**P**	**02 06 45.0**	**-0.1**
DCZ	**Deep Cove** 98nm,1.0s	**30.14**	**200**	eP			**P**	**02 06 46.5**	**+0.8**
WHZ	**Wether Hill Ro**	**30.27**	**199**	PN			**P**	**02 06 46.5**	**-0.3**
WHZ	**Wether Hill Ro** 168nm,1.0s	**30.27**	**199**	eP			**P**	**02 06 46.4**	**-0.3**
CTA	**Charters Tower** 92nm,0.8s,baz=87,slow=11,SNR=100	**33.48**	**260**	P			**P**	**02 07 13.9**	**-0.7**
CTAO	**Charters Tower**	**33.48**	**260**	eP			**P**	**02 07 13.2**	**-1.4**
CTAO	comp=Z,111nm,0.8s			pmax			pmax		
CTAO	**Charters Tower** comp=Z,111nm,0.8s	**33.48**	**260**	eP			**P**	**02 07 13.2**	**-1.4**
PATS	**Pohnpei** comp=Z,129nm,1.2s	**33.56**	**315**	eP			**P**	**02 07 15.6**	**+0.4**
CAN	**Canberra**	**33.81**	**232**	eP			**P**	**02 07 17.2**	**+0.1**
CAN	comp=Z,62nm,0.9s			pmax			pmax		
CAN	**Canberra** comp=Z,62nm,0.9s	**33.81**	**232**	eP			**P**	**02 07 17.2**	**+0.1**
PMG	**Port Moresby**	**34.45**	**279**	*d* iP			**P**	**02 07 22.9**	**+0.2**
PMG	comp=Z,749nm,1.0s			pmax			pmax		
PMG	**Port Moresby** comp=Z,161nm,0.9s	**34.45**	**279**	eP			**P**	**02 07 22.8**	**0.0**
MANU	**Manus Island** comp=Z,274nm,1.1s	**37.06**	**291**	eP			**P**	**02 07 45.0**	**+0.6**
COEN	**Coen** comp=Z,109nm,0.9s	**37.12**	**270**	eP			**P**	**02 07 43.9**	**-1.0**
STKA	**Stephens Creek** comp=Z,123nm,0.9s,baz=88,slow=8.9,SNR=90	**38.71**	**241**	P			**P**	**02 07 58.1**	**+0.5**
STKA	**Stephens Creek**	**38.71**	**241**	eP			**P**	**02 07 57.9**	**+0.3**
STKA	**Stephens Creek** comp=Z,33nm,1.0s	**38.71**	**241**	eP			**P**	**02 07 57.9**	**+0.3**
JAY	**Jayapura** comp=Z,13nm,0.8s,baz=127,slow=20,SNR=8.9	**42.88**	**286**	P			**P**	**02 08 30.6**	**-0.4**
JAY	**Jayapura** comp=Z,176nm,1.2s,comp=Z,2µm	**42.88**	**286**	P			**P**	**02 08 32.4**	**+1.4**
GENI	**Genyem** comp=Z,372nm,1.3s,comp=Z,5µm	**43.34**	**286**	P			**P**	**02 08 35.4**	**+0.8**
BBOO	**Buckleboo** comp=Z,149nm,0.8s	**43.49**	**241**	eP			**P**	**02 08 35.0**	**-0.6**
WB2	**Warramunga Arr** comp=Z,75nm,0.8s	**44.66**	**259**	eP			**P**	**02 08 43.5**	**-1.3**
WRAB	**Tennant Creek**	**44.66**	**259**	*d* iP			**P**	**02 08 43.3**	**-1.5**
WRAB	comp=Z,182nm,0.9s			pmax			pmax		
WRAB	**Tennant Creek** comp=Z,64nm,0.8s	**44.66**	**259**	eP			**P**	**02 08 42.7**	**-2.1**
WRA	**Warramunga Arr** comp=Z,46nm,0.8s,baz=94,slow=7.2,SNR=293	**44.67**	**259**	P			**P**	**02 08 43.4**	**-1.5**
WRA	comp=Z,5.1nm,0.8s,baz=86,slow=3.0,SNR=4.8			PcP			**PcP**	**02 10 15.3**	**-0.7**
WRA	comp=Z,6.3nm,1.2s,baz=82,slow=4.6,SNR=8.5			ScP			**ScP**	**02 13 19.4**	**+2.3**
WRA	comp=Z,1.1nm,0.8s,baz=98,slow=14,SNR=4.4			S			**S**	**02 14 38.7**	**-3.8**
AS01	**Alice Springs**	**44.80**	**254**	eP			**P**	**02 08 44.0**	**-1.9**
AS31	**Alice Springs** comp=Z,93nm,0.6s	**44.84**	**254**	eP			**P**	**02 08 45.1**	**-1.1**
ASAR	**Alice Springs** comp=Z,342nm,0.7s,baz=86,slow=8.4,SNR=1620	**44.84**	**254**	P			**P**	**02 08 45.1**	**-1.1**
ASAR	comp=Z,2.4nm,0.8s,baz=90,slow=4.4,SNR=5.0			ScP			**ScP**	**02 13 20.2**	**+2.4**
ASAR	comp=Z,5.2nm,0.9s,baz=88,slow=15,SNR=12			S			**S**	**02 14 41.8**	**-3.1**
GUMO	**Guam** comp=Z,293nm,0.8s,baz=61,slow=21,SNR=8.2	**47.79**	**308**	P			**P**	**02 09 09.1**	**+0.6**
MTN	**Manton Dam** comp=Z,84nm,0.9s	**48.82**	**268**	eP			**P**	**02 09 15.5**	**-0.7**
FAKI	**Fak Fak** comp=Z,54nm,1.4s	**50.56**	**281**	P			**P**	**02 09 27.6**	**-1.5**
FAKI	**Fak Fak** comp=Z,159nm,1.6s	**50.56**	**281**	eP			**P**	**02 09 27.5**	**-1.5**
SWI	**Sorong** comp=Z,382nm,0.9s,comp=Z,3µm	**52.22**	**283**	P			**P**	**02 09 39.8**	**-1.3**
FITZ	**Fitzroy Crossi** comp=Z,15nm,0.7s,baz=126,slow=3.9,SNR=30	**53.07**	**260**	P			**P**	**02 09 46.8**	**-0.2**
FITZ	**Fitzroy Crossi** comp=Z,130nm,1.7s	**53.07**	**260**	eP			**P**	**02 09 46.4**	**-0.6**
MSAI	**Masohi** comp=Z,20nm,0.6s,comp=Z,4µm	**53.53**	**279**	P			**P**	**02 09 49.6**	**-0.8**
LBMI	**Labuha** comp=Z,137nm,1.0s,comp=Z,1µm	**55.80**	**282**	P			**P**	**02 10 06.4**	**+0.1**
SOEI	**Soe** comp=Z,198nm,0.9s	**56.08**	**270**	eP			**P**	**02 10 09.0**	**+0.6**
TNTI	**Ternate** comp=Z,256nm,1.0s	**56.44**	**283**	P			**P**	**02 10 10.8**	**+0.1**
TNTI	**Ternate** comp=Z,191nm,0.8s	**56.44**	**283**	eP			**P**	**02 10 11.0**	**+0.3**
BATI	**Baumata** comp=Z,17nm,0.8s	**56.55**	**269**	P			**P**	**02 10 11.0**	**-0.5**
SANI	**Sanana** comp=Z,136nm,0.9s,comp=Z,1µm	**56.73**	**279**	P			**P**	**02 10 11.8**	**-0.9**
MBWA	**Marble Bar** comp=Z,117nm,1.5s	**58.12**	**256**	eP			**P**	**02 10 21.5**	**-0.7**
MMRI	**Maumere** comp=Z,94nm,0.9s	**58.31**	**271**	P			**P**	**02 10 22.6**	**-0.9**
MMRI	**Maumere** comp=Z,67nm,0.9s	**58.31**	**271**	eP			**P**	**02 10 23.0**	**-0.5**
NWAO	**Narrogin (SRO)** comp=Z,9.1nm,0.8s,baz=97,slow=0.5,SNR=6.4	**59.29**	**242**	P			**P**	**02 10 29.2**	**-0.6**
LUWI	**Luwuk** comp=Z,164nm,1.3s,comp=Z,2µm	**60.09**	**279**	P			**P**	**02 10 35.6**	**+0.2**
LUWI	**Luwuk** comp=Z,180nm,1.1s	**60.09**	**279**	eP			**P**	**02 10 35.6**	**+0.2**
SBA	**Scott Base**	**60.57**	**184**	eP			**P**	**02 10 40.1**	**+2.6**
SBA	comp=Z,55nm,1.1s			pmax			pmax		
SBA	**Scott Base** comp=Z,55nm,1.1s	**60.57**	**184**	eP			**P**	**02 10 40.1**	**+2.6**
VNDA	**Vanda** comp=Z,18nm,1.1s,baz=359,slow=7.2,SNR=35	**60.59**	**185**	P			**P**	**02 10 38.7**	**+1.0**
APSI	**Ampana** comp=Z,211nm,1.1s,comp=Z,2µm	**61.20**	**279**	P			**P**	**02 10 42.5**	**-0.2**
MRSI	**Marisa** comp=Z,51nm,0.9s,comp=Z,2µm	**61.40**	**281**	P			**P**	**02 10 44.1**	**+0.1**
KAPI	**Kappang** comp=Z,75nm,1.5s	**61.70**	**274**	eP			**P**	**02 10 46.0**	**+0.1**
SPSI	**Sidrap Palu** comp=Z,20nm,0.9s	**62.00**	**275**	P			**P**	**02 10 47.1**	**-0.8**
TTSI	**Tana Toraja** comp=Z,30nm,0.9s,comp=Z,2µm	**62.23**	**276**	P			**P**	**02 10 49.1**	**-0.4**
PLAI	**Plampang** comp=Z,137nm,1.0s,comp=Z,1µm	**62.51**	**269**	P			**P**	**02 10 51.1**	**-0.2**
TWSI	**Taliwang, Sumb** comp=Z,120nm,0.9s,comp=Z,1µm	**63.39**	**269**	P			**P**	**02 10 57.5**	**+0.6**
DNP	**Denpasar** comp=Z,253nm,0.6s	**65.00**	**269**	P			**P**	**02 11 06.5**	**-0.6**
KBKI	**Kotabaru** comp=Z,46nm,1.2s,comp=Z,3µm	**65.62**	**274**	P			**P**	**02 11 10.5**	**-0.5**
JAGI	**Jajag, Banyuwa** comp=Z,87nm,0.8s	**66.06**	**268**	eP			**P**	**02 11 12.2**	**-1.6**
ABJI	**Asem Bagus** comp=Z,74nm,1.1s	**66.16**	**269**	P			**P**	**02 11 14.1**	**-0.3**
CASY	**Casey** comp=Z,32nm,1.0s	**66.28**	**205**	eP			**P**	**02 11 14.5**	**+0.4**
MYLDM	**Lahad Datu** comp=Z,80nm,1.2s	**66.29**	**284**	eP			**P**	**02 11 18.0**	**+2.8**
GMJI	**Gumukmas** comp=Z,61nm,0.8s	**66.78**	**268**	P			**P**	**02 11 17.5**	**-0.8**
BBKI	**Banjar Baru**	**66.83**	**274**	P			**P**	**02 11 21.5**	**+2.9**
MJAR	**Matsushiro Arr** comp=Z,15nm,0.7s,baz=158,slow=6.1,SNR=37	**67.80**	**323**	P			**P**	**02 11 23.9**	**-0.1**
MAJO	**Matsushiro**	**67.80**	**323**	eP			**P**	**02 11 24.1**	**+0.1**
MAJO	**Matsushiro** comp=Z,119nm,0.4s	**67.80**	**323**	eP			**P**	**02 11 24.1**	**+0.1**
PWJI	**Pagerwojo** comp=Z,49nm,0.8s	**68.42**	**268**	P			**P**	**02 11 28.9**	**+0.7**
TBJI	**Tambak Boyo** comp=Z,5µm,1.0s	**68.71**	**269**	P			**P**	**02 11 29.4**	**-0.6**
KKM	**Kota Kinabalu** comp=Z,19nm,0.7s	**68.72**	**284**	eP			**P**	**02 11 30.5**	**+0.3**
PCJI	**Pacitan** comp=Z,205nm,0.8s	**68.97**	**268**	P			**P**	**02 11 31.3**	**-0.3**
YOJ	**Yonaguni jima**	**70.87**	**305**	eP			**P**	**02 11 42.2**	**-0.4**
YOJ	comp=Z,71nm,0.8s			pmax			pmax		
YOJ	**Yonaguni jima** comp=Z,71nm,0.8s	**70.87**	**305**	eP			**P**	**02 11 42.2**	**-0.4**
STKI	**Sintang** comp=Z,71nm,1.0s	**71.12**	**276**	P			**P**	**02 11 45.2**	**+0.8**
SBUM	**Sibu** comp=Z,21nm,1.0s	**71.20**	**279**	eP			**P**	**02 11 45.1**	**+0.2**
KPJI	**Karang Pucung** comp=Z,84nm,0.8s	**71.34**	**268**	P			**P**	**02 11 44.5**	**-1.2**
NACB	**Ninganchiao** comp=Z,66nm,1.0s	**71.84**	**304**	eP			**P**	**02 11 47.8**	**-0.5**
SSLB	**Suanglung** comp=Z,20nm,0.9s	**72.17**	**303**	eP			**P**	**02 11 49.6**	**-0.7**
TPUB	**Ta-pu** comp=Z,67nm,0.9s	**72.19**	**302**	eP			**P**	**02 11 48.7**	**-1.7**
YHNB	**Yeheng** comp=Z,37nm,1.0s	**72.26**	**304**	eP			**P**	**02 11 50.9**	**0.0**
QSPA	**South Pole Qui** comp=Z,293nm,0.9s	**72.30**	**180**	eP			**P**	**02 11 51.4**	**+1.0**
CISI	**Cisompet, Garu** comp=Z,89nm,0.8s,comp=Z,3µm	**72.34**	**268**	P			**P**	**02 11 50.2**	**-1.3**
CISI	**Cisompet, Garu** comp=Z,53nm,0.7s	**72.34**	**268**	eP			**P**	**02 11 50.3**	**-1.3**
KSM	**Kuching** comp=Z,95nm,0.9s	**72.68**	**277**	eP			**P**	**02 11 53.5**	**+0.1**
LEM	**Lembang**	**72.73**	**268**	P			P	02 11 59.7	+5.7
PETK	**Petropavlovsk-** comp=Z,8.7nm,0.8s,baz=134,slow=8.5,SNR=6.9	**73.54**	**345**	P			**P**	**02 11 57.3**	**-0.1**
CBJI	**Citeko** comp=Z,341nm,1.0s,comp=Z,28µm	**73.58**	**268**	P			**P**	**02 11 57.4**	**-1.2**
KSRS	**Korea Array** comp=Z,3.2nm,0.7s,baz=129,slow=6.6,SNR=9.6	**74.60**	**318**	P			**P**	**02 12 04.8**	**+1.0**
QZH	**Quanzhou**	**74.61**	**303**	⇑*i*P			**P**	**02 12 02.4**	**-1.7**
QZH				S			**S**	**02 20 55.0**	**-1.8**
QZH	comp=Z,80nm,0.8s			pmax			pmax		
KSAR	**Wonju Array Be**	**74.62**	**318**	P			**P**	**02 12 04.8**	**+0.9**
KSAR	**Wonju Array Be**	**74.62**	**318**	P			**P**	**02 12 04.8**	**+0.9**
CGJI	**Cibinong** comp=Z,149nm,0.8s	**74.63**	**268**	P			**P**	**02 12 03.5**	**-1.0**
KS01	**Wonju Array Si**	**74.63**	**318**	eP			**P**	**02 12 04.7**	**+0.7**
KASI	**Kota Agung** comp=Z,134nm,0.9s	**76.08**	**269**	P			**P**	**02 12 11.7**	**-0.9**
TYV	**Tymovskoe** comp=Z,26nm,1.0s	**76.40**	**336**	eP			**P**	**02 12 14.8**	**+1.3**
TYV				pmax			pmax		
USRK	**Ussuriysk Ar.** comp=Z,5.8nm,0.9s,baz=96,slow=5.7,SNR=9.0	**76.50**	**326**	P			**P**	**02 12 15.6**	**+1.4**
MDSI	**Maura Dua** comp=Z,33nm,1.1s,comp=Z,805nm	**76.68**	**270**	P			**P**	**02 12 14.4**	**-1.5**
NJ2	**Nanjing**	**77.85**	**309**	eP			**P**	**02 12 22.6**	**+0.7**
NJ2	comp=Z,24nm,0.8s			pmax			pmax		
MDJ	**Mudanjiang**	**78.07**	**325**	P			**P**	**02 12 24.4**	**+1.7**
MDJ	comp=Z,28nm,1.0s			pmax			pmax		
MDJ	**Mudanjiang** comp=Z,39nm,0.9s	**78.07**	**325**	eP			**P**	**02 12 24.6**	**+1.8**
KDAK	**Kodiak Island**	**78.25**	**14**	*i* P			**P**	**02 12 24.2**	**+0.8**
NKL	**Nikolayevsk**	**78.95**	**336**	eP			**P**	**02 12 27.0**	**-0.2**
NKL	comp=Z,17nm,0.9s			pmax			pmax		
NV01	**Mina Array Sit**	**79.31**	**44**	eP			**P**	**02 12 31.2**	**+1.5**
NVAR	**Mina Array Bea** comp=Z,2.7nm,1.1s,baz=229,slow=8.3,SNR=7.6	**79.31**	**44**	P			**P**	**02 12 31.0**	**+1.2**
NVAR	comp=Z,1.2nm,0.9s,baz=232,slow=9.8,SNR=3.6			pP			**pP**	**02 14 23.7**	**-1.0**
LDFC	**Landfair** comp=Z,11nm,1.2s	**79.75**	**48**	eP			**P**	**02 12 35.0**	**+2.9**
CN2	**Changchun** comp=Z,20nm,0.9s	**79.91**	**322**	eP			**P**	**02 12 33.8**	**+1.3**
CN2				pmax			pmax		
KLR	**Kul'dur** comp=Z,3.4nm,0.9s,baz=95,slow=3.5,SNR=11	**79.99**	**329**	P			**P**	**02 12 33.4**	**+0.5**
MA2	**Magadan** comp=Z,3.1nm,0.4s,baz=191,slow=9.4,SNR=4.2	**81.06**	**345**	P			**P**	**02 12 37.4**	**-0.7**
GAMB	**Gambell** comp=Z,8.8nm,0.7s	**81.44**	**3**	eP			**P**	**02 12 40.8**	**+0.9**
SPU	**Mount Sp

DHY	Denali Highway	84.15	14	*e*P		P	02 12 53.8	-0.1
ENH	Enshi	84.20	304	*e*P		P	02 12 55.5	+0.8
	comp=Z,89nm,1.3s							
MCK	McKinley	84.39	13	*e*P		P	02 12 54.2	-0.6
MCK				pmax	pmax			
	comp=Z,4.0nm,0.6s							
MCK	McKinley	84.39	13	*e*P		P	02 12 54.2	-0.6
	comp=Z,4.0nm,0.6s							
SRAK	Srakaew	84.57	286	P		P	02 12 55.5	-1.3
	comp=Z,49nm,1.2s,comp=Z,963nm							
KHON	Khomkaen	84.65	289	P		P	02 13 00.8	+3.7
	comp=Z,11nm,0.8s							
GSI	Gunungsitoli	84.71	273	P		P	02 12 57.6	+0.1
	comp=Z,74nm,1.0s							
GSI	Gunungsitoli	84.71	273	*e*P		P	02 12 58.0	+0.5
	comp=Z,61nm,1.0s							
TRTT	Trang	84.74	280	P		P	02 12 59.1	+1.5
	comp=Z,60nm,1.1s,comp=Z,790nm							
P17A	Butcher Ranch,	84.92	46	*e*P		P	02 13 01.9	+3.7
	comp=Z,17nm,1.6s							
NONG	Nongkai	84.95	291	P		P	02 12 59.3	+0.7
	comp=Z,25nm,0.9s							
GYA	Guiyang	84.97	300	P		P	02 12 59.0	+0.3
GYA				pP	pP		02 14 56.8	+1.2
GYA				sP	sP		02 15 50.2	+0.1
GYA				PP	PP		02 16 27.0	+1.3
GYA				SKS	SKSac		02 22 29.6	-2.7
GYA				S	S		02 22 42.4	-0.9
GYA				sS	sS		02 26 10.5	-1.2
GYA				pmax	pmax			
	comp=Z,40nm,1.0s							
GYA				pmax	pmax			
	comp=Z,150nm,5.2s							
WRH	Wood River Hil	85.22	13	*e*P		P	02 12 58.5	-0.3
CHAI	Chaiyaphum	85.26	288	P		P	02 13 01.1	+1.0
	comp=Z,4.7nm,1.0s							
PATY	Pattaya	85.29	285	P		P	02 13 02.6	+2.3
	comp=Z,11nm,0.9s							
NAYO	Nakonayok	85.33	287	P		P	02 13 02.1	+1.6
	comp=Z,26nm,1.0s,comp=Z,1µm							
HDA	Harding Lake	85.41	13	*e*P		P	02 12 59.6	-0.2
DOT	Dot Lake	85.42	15	*e*P		P	02 12 59.3	-0.5
DOT				*ep*P		pP	02 14 57.2	+0.2
CCB	Clear Creek Bu	85.43	13	*e*P		P	02 12 59.0	-0.8
MDM	Murphy Dome	85.62	12	*e*P		P	02 13 00.6	-0.1
MDM				*e*PcP		PcP	02 13 05.3	+2.6
COLA	College	85.62	13	*e*P		P	02 13 00.1	-0.6
COLA				*e**PP		pP	02 14 57.0	-0.9
COLA				pmax	pmax			
	comp=Z,6.0nm,1.0s							
COLA	College	85.62	13	*e*P		P	02 13 00.1	-0.6
	comp=Z,5.9nm,1.0s							
COLA				*ep*P		pP	02 14 57.0	-0.9
ILAR	Eielson Array	85.74	13	P		P	02 13 00.5	-0.9
	comp=Z,1.1nm,0.4s,baz=225,slow=5.3,SNR=26							
ILAR				pP		pP	02 14 57.5	-1.1
	comp=Z,6.9nm,1.1s,baz=230,slow=4.6,SNR=14							
ILB	Eielson Array	85.74	13	*e*P		P	02 13 00.7	-0.6
TX31	Lajitas Ar. Si	85.90	58	*e*P		P	02 13 06.0	+2.9
TXAR	Lajitas Array	85.90	58	P		P	02 13 05.1	+2.0
	comp=Z,1.8nm,0.9s,baz=205,slow=5.5,SNR=6.0							
SURT	Suratani	85.93	281	P		P	02 13 05.5	+2.1
	comp=Z,9.2nm,1.3s							
ANMO	Albuquerque	85.99	52	*e*P		P	02 13 05.7	+2.2
ANMO				pmax	pmax			
	comp=Z,3.0nm,1.3s							
ANMO	Albuquerque	85.99	52	*e*P		P	02 13 06.4	+2.9
XAN	Xi'an	86.18	307	P		P	02 13 05.3	+1.1
XAN				S		S	02 23 00.2	+5.8
XAN				pmax	pmax			
	comp=Z,38nm,1.2s							
XAN				pmax	pmax			
	comp=Z,74nm,4.5s							
BILL	Bilibino	86.28	354	*ce*P		P	02 13 04.0	+0.2
BILL				*e**PP		pP	02 15 01.3	+0.1
BILL				*e*			02 16 34.0	
BILL				pmax	pmax			
	comp=Z,6.0nm,0.8s							
BILL	Bilibino	86.28	354	*e*P		P	02 13 04.1	+0.3
	comp=Z,5.0nm,0.7s							
PHET	Kaeng Krachan	86.42	285	P		P	02 13 07.6	+1.9
	comp=Z,19nm,0.9s,comp=Z,147nm							
REDW	Red Top Meadow	86.67	42	*e*P		P	02 13 08.3	+1.8
IMW	Indian Meadow	86.86	42	*e*P		P	02 13 09.5	+2.0
	comp=Z,5.5nm,1.1s							
UTTA	Uttaradit	87.17	290	P		P	02 13 10.8	+1.7
	comp=Z,3.8nm,0.9s							
HHC	Hu-ho-hao-te	87.18	314	*e*P		P	02 13 09.7	+0.9
HHC				pP		pP	02 15 08.9	+2.4
HHC				S		S	02 23 04.0	+0.4
HHC				sS		sS	02 26 34.4	+1.0
HHC				pmax	pmax			
	comp=Z,26nm,0.9s							
HHC				pmax	pmax			
	comp=Z,87nm,6.9s							
BW06	Boulder Array	87.23	43	*e*P		P	02 13 09.6	+0.4
PDAR	Pinedale Array	87.23	43	P		P	02 13 09.4	+0.2
	comp=Z,0.5nm,0.4s,baz=188,slow=2.7,SNR=11							
PDAR				pP		pP	02 15 06.5	-0.4
	baz=191,slow=3.8,SNR=7.1							
COLD	Coldfoot	87.26	11	*e*P		P	02 13 08.3	-0.2
	comp=Z,2.0nm,0.6s							
NANT	Nan	87.39	291	P		P	02 13 11.6	+1.4
	comp=Z,3.1nm,1.0s							
KMI	Kunming	87.78	297	P		P	02 13 12.3	+0.2
KMI				pmax	pmax			
	comp=Z,26nm,0.8s							
KMI				pmax	pmax			
	comp=Z,100nm,6.1s							
SUKH	Sukhothai	87.91	289	P		P	02 13 14.4	+1.8
	comp=Z,3.7nm,0.8s							
KHLT	Khaolaem Dam	87.99	286	P		P	02 13 14.9	+1.9
	comp=Z,6.5nm,1.2s							
CRAI	Chiangrai	88.15	292	P		P	02 13 15.0	+1.3
	comp=Z,15nm,0.4s							
LAMP	Lampang	88.25	290	P		P	02 13 15.8	+1.6
	comp=Z,74nm,0.9s,comp=Z,213nm							
CM01	Chiang Mai Arr	88.82	290	*e*P		P	02 13 17.8	+1.0
CMAR	Chiang Mai Arr	88.85	290	P		P	02 13 18.1	+1.1
	comp=Z,11nm,0.9s,baz=110,slow=3.0,SNR=59							
CMMT	Chiang Mai	88.96	290	P		P	02 13 18.5	+1.0
	comp=Z,19nm,0.9s,comp=Z,866nm							
CHTO	Chiang Mai	88.96	290	P		P	02 13 18.5	+1.0
	comp=Z,83nm,1.1s							
CHTO	Chiang Mai	88.96	290	*e*P		P	02 13 18.0	+0.5
CHTO				pmax	pmax			
	comp=Z,16nm,0.9s							
CHTO	Chiang Mai	88.96	290	*e*P		P	02 13 18.0	+0.5
	comp=Z,16nm,0.9s							
CD2	Chengdu	89.00	303	P		P	02 13 17.5	0.0
CD2				pP		pP	02 15 15.8	+0.1
CD2				sP		sP	02 16 10.4	+0.5
CD2				PP		PP	02 16 56.8	-0.6
CD2				SKS		SKSac	02 22 54.9	-1.2
CD2				S		S	02 23 20.3	-0.4
CD2				sS		sS	02 26 52.3	+0.7
CD2				SS		SS	02 29 30.8	+0.3
CD2				pmax	pmax			
	comp=Z,10.0nm,0.6s							
CD2				pmax	pmax			
	comp=Z,70nm,5.9s							
SYO	Syowa Base	89.31	193	*e*P		P	02 13 15.0	-3.1
YAK	Yakutsk	89.44	338	*e*P		P	02 13 19.1	+0.4
YAK				pmax	pmax			
	comp=Z,15nm,0.6s							
SNAA	Sanae	90.75	179	P		P	02 13 24.5	-0.3
SNAA	Sanae	90.75	179	*e*P		P	02 13 24.6	-0.3
SNAA	Sanae	90.75	179	*e*P		P	02 13 24.6	-0.3
LZH	Lanzhou	90.81	308	P		P	02 13 23.0	-2.9
LZH				pP		pP	02 15 21.5	-2.9
LZH				sP		sP	02 16 16.2	-2.3
LZH				PP		PP	02 17 12.0	+0.4
LZH				SKS		SKSac	02 23 04.0	-2.5
LZH				*e*S		S	02 23 34.0	-3.0
LZH				sS		sS	02 27 05.2	-3.8
LZH				SS		SS	02 29 55.4	-1.0
LZH				pmax	pmax			
	comp=Z,31nm,1.5s							
LZH				pmax	pmax			
	comp=Z,150nm,8.0s							
VNA3	Neumayer Olymp	90.89	176	P		P	02 13 25.4	-0.1
VNA2	Neumayer--Watz	91.33	177	P		P	02 13 28.2	+0.7
	baz=164,slow=3.5							
PLCA	Paso Flores	91.42	134	P		P	02 13 29.6	+1.0
	comp=Z,11nm,1.0s,baz=256,slow=5.0,SNR=15							
VNA1	Neumayer--Stat	91.56	177	P		P	02 13 29.5	+1.0
INK	Inuvik	91.74	15	P		P	02 13 28.3	-0.8
	comp=Z,2.1nm,0.9s,baz=206,slow=5.2,SNR=9.3							
ULN	Ulaanbaatar	93.05	319	⇑*i*P		P	02 13 36.4	+0.5
ULN				pmax	pmax			
	comp=Z,7.0nm,1.0s							
ULN	Ulaanbaatar	93.05	319	*e*P		P	02 13 35.6	-0.3
	comp=Z,5.8nm,1.0s							
SONA1	Songino Array	93.45	319	*e*P		P	02 13 37.5	-0.2
SONM	Songino Array	93.45	319	P		P	02 13 37.8	+0.1
	comp=Z,1.6nm,0.8s,baz=131,slow=4.2,SNR=12							
YKA	Yellowknife Ar	94.19	25	P		P	02 13 40.5	0.0
	comp=Z,1.0nm,0.8s,baz=243,slow=4.4,SNR=22							
YKA				pP		pP	02 15 38.8	-0.5
	comp=Z,0.5nm,0.9s,baz=238,slow=5.1,SNR=1.9							
YKB5	Yellowknife Ar	94.19	25	*e*P		P	02 13 39.3	-1.2
GTA	Gaotai	94.95	310	*e*P		P	02 13 45.6	+0.9
GTA				pP		pP	02 15 45.6	+2.0
GTA				sP		sP	02 16 38.5	+0.9
GTA				pmax	pmax			
	comp=Z,6.0nm,0.9s							
TIXI	Tiksi	96.01	345	P		P	02 13 48.2	-0.4
	comp=Z,0.8nm,0.2s,baz=97,slow=4.2,SNR=4.8							
TIXI	Tiksi	96.01	345	⇑*e*P		P	02 13 48.2	-0.4
TIXI				pmax	pmax			
	comp=Z,2.0nm,0.7s							
MKAR	Makanchi Array	109.04	314	Pdiff		Pdiff	02 14 46.0	-1.2
	comp=Z,0.1nm,0.2s,baz=92,slow=4.3,SNR=2.8							
MKAR				PKiKP		PKiKP	02 18 47.3	-0.8
	comp=Z,0.2nm,0.3s,baz=180,slow=0.6,SNR=3.6							
MKAR				PKKPbc		PKKPbc	02 29 58.1	+0.2
	comp=Z,1.7nm,0.9s,baz=284,slow=4.9,SNR=9.4							
MKAR	Makanchi Array	109.04	314	P		Pdif	02 14 46.0	-1.2
KURK	Kurchatov	111.72	318	PKiKP		PKiKP	02 18 52.5	-0.5
KURBB	Kurchatov Arra	111.78	318	PKiKP		PKiKP	02 18 52.5	-0.6
	comp=Z,0.6nm,0.8s,baz=100,slow=1.8,SNR=8.1							
KSH	Kashi	113.00	306	*e*PKP		PKiKP	02 18 55.7	-0.3
KSH				*ePP*		PP	02 20 01.4	+5.9
KSH				*es*PKP			02 21 54.5	
KSH				AMB	AMB			
	comp=Z,91nm,5.2s							
BVAR	Borovoye Array	116.74	321	PKP		PKPdf	02 19 02.3	-0.3
	comp=Z,1.0nm,0.5s,baz=80,slow=3.7,SNR=4.2							
BDFB	Brasilia	120.90	121	PKP		PKPdf	02 19 11.5	-0.4
	comp=Z,2.0nm,0.7s,baz=186,slow=11,SNR=3.2							
AKTO	Aktyubinsk	124.76	320	PKP		PKPdf	02 19 19.1	+1.0
	comp=Z,0.9nm,0.6s,baz=335,slow=3.9,SNR=4.3							
GEYT	Alibeck	126.97	304	PKP		PKPdf	02 19 22.4	-0.4
	comp=Z,2.0nm,0.7s,baz=174,slow=3.0,SNR=3.9							
GEYT				pPKP		pPKPdf	02 21 26.2	-2.7
	comp=Z,3.0nm,0.9s,baz=66,slow=8.6,SNR=3.6							
FINES	FINESS Array B	133.05	344	SKPbc		SKPab	02 22 13.2	-0.6
	comp=Z,3.5nm,0.9s,baz=49,slow=2.2,SNR=6.7							
OBN	Obninsk	134.17	333	*e*PKiKP		PKPdf	02 19 38.3	+2.5
OBN				*e*			02 21 44.0	
OBN				*e*			02 22 14.5	
OBN				pmax	pmax			
	comp=Z,3.0nm,0.9s							
KMBO	Kilima Mbogo	140.20	246	PKhKP		PKPpre	02 19 44.6	
	comp=Z,0.3nm,0.2s,baz=66,slow=5.0,SNR=2.5							
AKASG	Malin Array Be	140.43	332	PKhKP		PKPpre	02 19 40.6	
	comp=Z,0.3nm,0.4s,baz=48,slow=3.7,SNR=4.9							
AKASG				SKPbc		SKiKP	02 22 35.5	+0.1
	comp=Z,0.6nm,0.4s,baz=34,slow=3.0,SNR=12							
DRWC	Darouich	143.86	308	*e*P		PKPbc	02 19 52.9	-0.3
LEOM	Leova	143.88	328	⇑*i*P		PKPdf	02 19 54.0	+0.3
LEOM	Leova	143.88	328	⇑PKiKP		PKPdf	02 19 54.0	+0.3
KWP	Kalwaria Pacla	143.94	337	*e*PKP		PKPdf	02 19 53.7	0.0
KWP	Kalwaria Pacla	143.94	337	*e*PKiKP		PKPdf	02 19 53.7	0.0
ROOS	tl_alroos	144.22	304	*e*P		PKPbc	02 19 45.8	-8.7
PRAR	RASCA	144.22	331	⇑*i*P		PKPdf	02 19 54.7	+0.4
BTCH	Batrach	144.23	308	*e*P		PKPbc	02 19 52.8	-1.7
BURAR	Bucovina Array	144.49	332	||*i*P		PKPab	02 19 56.4	+1.0
BURAR	Bucovina Array	144.49	332	||PKiKP		PKPab	02 19 56.4	+1.0
TESR	Tescani	144.64	330	⇑*i*P		PKPab	02 19 56.5	+0.7
STHS	Stebnicka Huta	144.66	338	*e*PKiKP		PKPab	02 19 56.9	+1.1
STHS	Stebnicka Huta	144.66	338	*e*PKP		PKPab	02 19 56.9	+1.1
KOLS	Kolonicke sedl	144.67	336	*e*PKiKP		PKPab	02 19 56.6	+0.7
KOLS	Kolonicke sedl	144.67	336	*e*PKP		PKPab	02 19 56.6	+0.7
BRTR	Keskin Array B	144.69	315	PKP		PKPdf	02 19 55.1	-0.4
	comp=Z,13nm,0.9s,baz=137,slow=3.5,SNR=47							
BRTR				SKPbc		SKiKP	02 22 45.8	+1.0
	comp=Z,1.5nm,0.9s,baz=146,slow=2.4,SNR=4.3							
CFR	Carcaliu	144.82	327	⇑*i*P		PKPab	02 19 58.3	+1.8
CFR	Carcaliu	144.82	327	⇑PKiKP		PKPab	02 19 58.3	+1.8
UZH	Uzhgorod	144.91	336	*d*PKiKP		PKPab	02 19 57.0	+0.2
UZH				*e*			02 21 59.0	
KSP	Ksiaz	144.97	344	*e*PKP		PKPab	02 19 57.3	+0.3
KSP	Ksiaz	144.97	344	*e*PKiKP		PKPab	02 19 57.4	+0.4
NIE	Niedzica	144.99	339	*e*PKP		PKPab	02 19 57.4	+0.3
NIE	Niedzica	144.99	339	*e*PKiKP		PKPab	02 19 57.5	+0.3
CRVS	Cervenica-Dubn	145.00	337	*e*PKiKP		PKPab	02 19 57.6	+0.4
CRVS	Cervenica-Dubn	145.00	337	*e*PKP		PKPab	02 19 57.6	+0.4
VRI	Vrincioaia	145.06	329	||*i*P		PKPab	02 19 57.6	+0.1
VRI	Vrincioaia	145.06	329	||PKiKP		PKPab	02 19 57.6	+0.1
ASF	Jabal al Asfar	145.11	301	PKPbc		PKPab	02 19 57.8	-0.5
	comp=Z,15nm,1.0s,baz=78,slow=2.4,SNR=12							
TOTH	TOTAH	145.15	303	*e*P		PKPdf	02 19 53.1	-3.2
TIRR	Tirgusor	145.15	326	⇑*i*P		PKPab	02 19 58.4	+0.6
TIRR	Tirgusor	145.15	326	⇑PKiKP		PKPab	02 19 58.4	+0.6
BMR	Baia Mare	145.19	334	⇑*i*P		PKPab	02 19 58.1	+0.2
BMR	Baia Mare	145.19	334	⇑PKP2		PKPab	02 19 58.1	+0.2
ARCR	ARCALIA	145.27	332	⇑*i*P		PKPab	02 19 58.7	+0.4
CLL	Collm	145.32	347	⇑*i*PKPbc		PKPbc	02 19 57.5	+0.4
	comp=Z,10.0nm,0.7s							
CLL				*i*			02 20 01.1	
CLL				*ep*PKPbc	pPKPbc		02 22 01.0	-0.3
CLL	Collm	145.32	347	*e*(P)	PKPab		02 20 13.0	+15
CLL				*i*			02 20 20.8	
	comp=Z,7.0nm,0.8s							
CLL	Collm	145.32	347	⇑*i*PKiKP		PKPbc	02 19 57.5	+0.4
CLL				pmax	pmax			
	comp=Z,10.0nm,0.7s							
UPC	Upice	145.35	344	*e*PKP		PKPab	02 19 58.7	+0.2
UPC	Upice	145.35	344	*e*PKP2		PKPab	02 19 58.7	+0.2
DPC	Dobruska-Polom	145.41	343	*e*PKP		PKPab	02 19 58.3	-0.4
DPC				*ep*PKP		pPKPdf	02 22 02.8	0.0
DPC	Dobruska-Polom	145.41	343	*e*PKP2		PKPab	02 19 58.3	-0.4
LANS	Liptovska Anna	145.50	339	*e*PKP2		PKPab	02 19 59.7	+0.5
LANS	Liptovska Anna	145.50	339	*e*PKP		PKPab	02 19 59.7	+0.5
BRG	Berggiesshubel	145.52	346	*i* PKP		PKPbc	02 19 58.1	+0.4
	comp=Z,12nm,1.0s							
BRG				*e*			02 22 02.7	
	comp=Z,16nm,1.7s							
BRG	Berggiesshubel	145.52	346	*i* PKiKP		PKPbc	02 19 58.1	+0.4
BRG				*e*			02 22 02.7	
BRG				pmax	pmax			
	comp=Z,12nm,1.0s							
BRG				pmax	pmax			
	comp=Z,16nm,1.7s							
KRLC	Kraliky	145.53	343	*e*PKP		PKPab	02 19 58.8	-0.4
KRLC				*ep*PKP		pPKPdf	02 22 02.5	-0.5
KRLC	Kraliky	145.53	343	*e*PKP2		PKPab	02 19 58.8	-0.4
DOPR	Dopca	145.63	330	⇑*i*P		PKPab	02 20 00.1	+0.3
ISR	Istrita	145.68	328	⇑*i*P		PKPab	02 20 00.3	+0.3
ISR	Istrita	145.68	328	⇑PKP2		PKPab	02 20 00.3	+0.3
MLR	Muntele Rosu	145.71	329	PKPbc		PKPab	02 19 59.9	-0.3
	comp=Z,0.9nm,0.8s,baz=230,slow=5.4,SNR=5.0							
MLR	Muntele Rosu	145.71	329	⇑*i*P		PKPab	02 20 00.6	+0.4
KECS	Kecovo	145.71	338	*e*PKP2		PKPab	02 19 59.6	-0.3
KECS	Kecovo	145.71	338	*e*PKP		PKPab	02 19 59.6	-0.3
KECS				*e*			02 21 59.9	
SECR		145.97	328	⇑*i*P		PKPbc	02 19 59.9	+0.7
MMAI	Mount Meron Ar	146.07	303	PKPbc		PKPbc	02 20 00.5	+0.5
	comp=Z,14nm,0.7s,baz=76,slow=4.7,SNR=12							
VOIR		146.18	330	⇑*i*P		PKPab	02 20 02.1	+0.1
VOIR		146.18	330	⇑PKP2		PKPab	02 20 02.1	+0.1
PRU	Pruhonice	146.20	345	*e*PKP		PKPbc	02 20 00.5	+0.8
PRU				*ex*		x	02 20 02.2	
PRU				*ep*PKP		pPKPdf	02 22 04.8	+0.7
PRU	Pruhonice	146.20	345	*e*PKP2		PKPbc	02 20 00.5	+0.8
DRGR		146.21	334	⇑*i*P		PKPab	02 20 01.1	-1.0
DRGR		146.21	334	⇑PKP2		PKPab	02 20 01.1	-1.0
GOPC	GO Pecny, Ondr	146.21	345	*e*PKP		PKPab	02 20 01.2	-0.7
GOPC				*ep*PKP		pPKPdf	02 22 05.4	+1.3
GOPC	GO Pecny, Ondr	146.21	345	*e*PKP2		PKPab	02 20 01.2	-0.7
VRAC	Vranov	146.27	342	⇑*i*P		PKPab	02 20 03.5	+1.4
VRAC	Vranov	146.27	342	⇑PKP2		PKPab	02 20 03.5	+1.4
VYHS	Vyhne	146.28	339	*e*PKiKP		PKPbc	02 20 00.2	+0.2
VYHS	Vyhne	146.28	339	*e*PKP		PKPbc	02 20 00.2	+0.2
VYHS				*e*			02 20 01.5	
VYHS				*e*			02 22 05.2	
ARR	Arges	146.43	330	⇑*i*P		PKPab	02 20 02.8	-0.2
NKC	Novy Kostel	146.45	347	*e*PKP		PKPbc	02 20 00.5	+0.1
NKC				*ep*PKP		pPKPdf	02 22 05.2	+0.7
NKC	Novy Kostel	146.45	347	*e*PKiKP		PKPbc	02 20 00.5	+0.1
NKC				*e*			02 22 05.2	
TREC	Trest	146.59	343	*e*PKP		PKPbc	02 20 02.0	+1.2
TREC	Trest	146.59	343	*e*PKP2		PKPbc	02 20 02.0	+1.2
LOT	Lotru	146.78	331	⇑*i*P		PKPbc	02 20 02.4	+0.8
MEM	Membach	147.04	355	PKPab		PKPab	02 20 07.5	+2.4
MEM				APKP		pPKPdf	02 22 08.4	+3.0
KHC	Kasperske Hory	147.23	345	*e*PKP		PKPbc	02 20 03.1	+0.5
KHC				*ex*		x	02 20 06.5	
KHC				*ep*PKP		pPKPdf	02 22 08.7	+2.8
KHC	Kasperske Hory	147.23	345	*e*PKP2		PKPbc	02 20 03.1	+0.5
KHC	Kasperske Hory	147.23	345	*e*PKPdf		PKPbc	02 20 01.1	-1.4
SNF	Seneffe	147.26	357	PKPbc		PKPbc	02 20 03.7	+1.2
SNF				PKPab		PKPab	02 20 06.7	+0.7
GZR	Gura Zlata	147.27	332	⇑*i*P		PKPbc	02 20 03.5	+0.7
GZR	Gura Zlata	147.27	332	⇑PKHKP		PKPbc	02 20 03.5	+0.7
BCLA	Clavier	147.28	356	APKP		pPKPdf	02 22 08.6	+2.7
EIL	Elat	147.37	297	PKPbc		PKPbc	02 20 03.5	0.0
	comp=Z,10nm,0.9s,baz=347,slow=3.4,SNR=6.8							
GERES	GERESS Array B	147.47	345	PKPbc		PKPbc	02 20 03.6	+0.4
	comp=Z,3.0nm,0.7s,baz=28,slow=3.2,SNR=30							
GERES				pPKPbc		pPKPbc	02 22 04.1	-3.7
	comp=Z,0.1nm,0.4s,baz=337,slow=44,SNR=2.4							
DOU	Dourbes	147.65	356	PKPbc		PKPbc	02 20 04.4	+0.8
DOU				PKPab		PKPab	02 20 08.2	+0.5
DOU				APKP		pPKPdf	02 22 10.7	+4.2
CONA	Conrad Observa	147.72	342	*i* PKiKP		PKiKP	02 20 04.8	-0.6
	comp=Z,11nm,0.9s							
WLF	Walferdange	147.96	354	*e*PKPdf		PKPdf	02 20 02.1	+1.6
WLF				*e*PKPbc		PKiKP	02 20 05.3	-0.4
MOA	Molln	148.25	344	*e*PKPab		PKPab	02 20 09.7	-0.5
	comp=Z,11nm,1.3s							
ARSA	Arzberg	148.44	342	*i* PKiKP		PKiKP	02 20 07.5	+0.7
	comp=Z,4.4nm,1.1s							
BFO	Black Forest	149.02	351	*e*PKPbc		PKPbc	02 20 07.4	+0.3
BFO				*e*PKPab		PKPab	02 20 13.2	-0.2
SOKA	Soboth	149.10	342	*e*PKPbc		PKPbc	02 20 07.2	-0.2
	comp=Z,7.5nm,1.1s							
VTS	Vitosha	149.17	328	⇑*i*P		PKPbc	02 20 08.7	+0.9
VTS	Vitosha	149.17	328	⇑PKHKP		PKPbc	02 20 08.7	+0.9
WTTA	Wattenberg	149.44	347	*i* PKiKP		PKiKP	02 20 09.3	+0.2
	comp=Z,6.9nm,0.7s							
MOTA	Moosalm	149.47	347	*i* PKiKP		PKiKP	02 20 09.3	+0.2
MYKA	Terra Mystica	149.53	344	*i* PKPbc		PKPbc	02 20 07.7	-0.7
	comp=Z,2.3nm,0.4s							
ABTA	Abfaltersbach	149.72	345	*i* PKPbc		PKPbc	02 20 08.6	-0.3
	comp=Z,5.2nm,0.8s							
FETA	Feichten	149.86	348	*e*PKiKP		PKiKP	02 20 09.9	-0.1
	comp=Z,3.8nm,0.8s							
DAVOX	Davos/Dischmat	150.26	348	PKPbc		PKPbc	02 20 10.2	0.0
	comp=Z,3.5nm,0.3s,baz=41,slow=1.4,SNR=18							
MDT	Midelt	163.99	19	PKP		PKPdf	02 20 21.3	-0.5
	comp=Z,1.8nm,0.9s,baz=38,slow=3.2,SNR=3.6							
TORD	Torodi Ar. Bea	175.42	181	PKP		PKPdf	02 20 27.6	-1.1
	comp=Z,3.6nm,1.1s,baz=275,slow=0.3,SNR=14							
TORD				PKPab		PKPab	02 22 10.1	+0.9
	comp=Z,1.7nm,1.0s,baz=186,slow=5.0,SNR=5.6							

THR **11** *02:12:50.6±0.7, 28°.20N×58°.92E, h14km±11km, ML3.7*
TEH **11**

CHOJ				*e*S	**Sb**	**02 22 26.0**	**0.0**
JFK	**Kawauchi**	**1.17**	**323**	P	**Pn**	**02 22 14.8**	**-0.1**
JFT	**Otama**	**1.57**	**314**	P	**Pb**	**02 22 21.5**	**-0.5**
JFT				S	**Sn**	**02 22 40.9**	**+0.7**
JMM	**Marumori**	**1.63**	**332**	P	**Pn**	**02 22 21.5**	**+0.4**
JMM				*e*S	**Sn**	**02 22 41.9**	**+0.5**
JAG	**Ashikaga**	**1.87**	**270**	P	**Pn**	**02 22 24.7**	**+0.3**
JAG				S	**Sn**	**02 22 46.5**	**-0.8**
BSO1	**Boso 1**	**1.89**	**200**	S	**Sn**	**02 22 47.4**	**+0.2**
BSO3	**Boso 3**	**1.92**	**213**	P	**Pn**	**02 22 25.2**	**+0.3**
BSO3				S	**Sn**	**02 22 49.2**	**+0.8**
JKT	**Katashina**	**2.05**	**280**	P	**Pn**	**02 22 27.7**	**+0.7**
JKT				*e*S	**Sn**	**02 22 52.9**	**+0.8**
JRY	**Ryogami san**	**2.35**	**261**	P	**Pn**	**02 22 31.3**	**+0.2**
JRY				S	**Sn**	**02 22 58.1**	**-1.3**
MJAR	**Matsushiro Arr**	**2.87**	**273**	Pn	**Pn**	**02 22 39.2**	**+1.0**
	8.9nm,0.3s,baz=93,slow=9.4,SNR=20						
USRK	**Ussuriysk Ar.**	**10.76**	**319**	Pn	Pn	02 24 34.5	+8.1
	0.2nm,0.3s,baz=123,slow=13,SNR=4.6						
H11N2	**WAKE ISLAND Hy**	**27.60**	**120**	T	T	02 55 03.6	
	baz=314						
H11N1	**WAKE ISLAND Hy**	**27.61**	**120**	T	T	02 55 07.9	
	baz=314						
H11N3	**WAKE ISLAND Hy**	**27.62**	**120**	T	T	02 55 06.6	
	baz=314						
H11S1	**WAKE ISLAND Hy**	**28.30**	**122**	T	T	02 56 02.8	
	baz=312						
H11S3	**WAKE ISLAND Hy**	**28.30**	**122**	T	T	02 56 01.0	
	baz=312						
H11S2	**WAKE ISLAND Hy**	**28.31**	**122**	T	T	02 56 03.1	
	baz=312						
SONM	**Songino Array**	**28.36**	**305**	P	**P**	**02 27 48.0**	**+1.7**
	0.7nm,0.7s,baz=106,slow=8.8,SNR=4.9						
ZALV	**Zalesovo Beam**	**42.53**	**313**	P	**P**	**02 29 47.6**	**+0.2**
	0.0nm,100.0s,baz=90,slow=7.2,SNR=2.7						
MKAR	**Makanchi Array**	**44.68**	**303**	P	**P**	**02 30 05.1**	**+0.2**
	0.1nm,0.3s,baz=91,slow=12,SNR=2.9						
KURBB	**Kurchatov Arra**	**46.59**	**308**	P	**P**	**02 30 19.6**	**-0.4**
	1.1nm,0.6s,baz=83,slow=7.7,SNR=11						
ILAR	**Eielson Array**	**49.85**	**32**	P	**P**	**02 30 45.4**	**+0.5**
	0.4nm,0.8s,baz=281,slow=6.3,SNR=4.2						
INK	**Inuvik**	**54.79**	**27**	P	**P**	**02 31 21.9**	**+0.4**
	0.7nm,0.7s,baz=308,slow=7.3,SNR=4.4						
RES	**Resolute Bay**	**63.11**	**14**	P	**P**	**02 32 19.4**	**+0.3**
	0.8nm,0.8s,baz=332,slow=8.0						
YKA	**Yellowknife Ar**	**64.18**	**30**	P	**P**	**02 32 26.1**	**-0.3**
	0.4nm,0.7s,baz=302,slow=6.9,SNR=8.3						
FINES	**FINESS Array B**	**69.47**	**332**	P	**P**	**02 32 58.9**	**-1.2**
	0.8nm,0.7s,baz=28,slow=6.3,SNR=4.4						
NB2	**NORSAR Subarra**	**74.85**	**337**	P	**P**	**02 33 32.1**	**-0.2**
	comp=Z,0.5nm,0.7s,baz=39,slow=5.9						
NOA	**NORSAR Array B**	**74.85**	**337**	P	**P**	**02 33 32.1**	**-0.2**
	comp=Z,1.2nm,0.9s,baz=40,slow=5.8,SNR=4.4						
AKASG	**Malin Array Be**	**74.94**	**323**	P	**P**	**02 33 31.4**	**-1.6**
	comp=Z,0.3nm,0.4s,baz=52,slow=6.5,SNR=3.1						
BRTR	**Keskin Array B**	**79.46**	**312**	P	**P**	**02 33 59.3**	**+0.5**
	comp=Z,0.6nm,0.9s,baz=60,slow=8.5,SNR=2.5						
GERES	**GERESS Array B**	**83.37**	**328**	P	**P**	**02 34 18.4**	**-0.9**
	comp=Z,0.4nm,0.7s,baz=2.9,slow=2.7,SNR=3.7						

JMA ***11*** *02:25:35.7±0.1,23.76N×121.51E,h19km±3km*
ISCJB ***11*** *02:25:36.6±0.3,23.79N±0.02×121.47E±0.02,h24km±3km, Error ellipse: s-maj=4.1km s-min=2.0km az=31.7*
TAP ***11*** *02:25:37.6,23.81N×121.40E,h21km,ML3.2,B*

ISC 11 02:25:36.4±0.9,23.79N±0.02×121.46E±0.03,h26km±5km, n44,σ0°60/81,Taiwan

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ESL	**Shilin**	**0.03**	**316**	*e*P	**Pb**	**02 25 40.9**	**+0.1**
	baz=91						
ESL				*e*S	**Sb**	**02 25 43.8**	**0.0**
	baz=91						
HWA	**Hwalien**	**0.23**	**36**	*e*P	**Pb**	**02 25 43.0**	**+0.4**
	baz=50						
HWA				*e*S	**Sb**	**02 25 48.0**	**+1.3**
	baz=50						
WDT	**Danda**	**0.30**	**264**	*e*P	**Pb**	**02 25 43.4**	**-0.3**
	baz=256						
WDT				*e*S	**Sb**	**02 25 47.6**	**-1.1**
	baz=256						
EHY	**Hungye**	**0.31**	**204**	*e*P	**Pb**	**02 25 43.1**	**-0.5**
	baz=192						
EHY				*e*S	**Sb**	**02 25 48.6**	**0.0**
	baz=192						
TWD	**Chiawan**	**0.32**	**23**	*e*P	**Pb**	**02 25 43.7**	**0.0**
	baz=34						
TWD				*e*S	**Sb**	**02 25 48.9**	**+0.2**
	baz=34						
WHF	**Hehuan Shan**	**0.40**	**333**	*e*P	**Pb**	**02 25 45.1**	**-0.2**
	baz=340						
WHF				*e*S	**Sb**	**02 25 50.5**	**-0.8**
	baz=340						
TWF1	**Yuli**	**0.46**	**199**	*e*P	**Pb**	**02 25 46.0**	**-0.1**
	baz=190						
TWF1				*e*S	**Sb**	**02 25 53.3**	**+0.8**
	baz=190						
SMLT	**Sun Moon Lake**	**0.52**	**280**	*e*P	**Pb**	**02 25 46.6**	**-0.5**
	baz=278						
SMLT				*e*S	**Sb**	**02 25 53.4**	**-1.0**
	baz=278						
TWT	**Tachien**	**0.53**	**331**	*e*P	**Pb**	**02 25 47.4**	**+0.1**
	baz=333						
TWT				*e*S	**Sb**	**02 25 53.9**	**-0.8**
	baz=333						
YUS	**Yu-Shan**	**0.55**	**237**	*e*P	**Pb**	**02 25 47.9**	**0.0**
	baz=231						
YUS				*e*S	**Sb**	**02 25 55.0**	**-0.6**
	baz=231						
TYC	**Yuchr**	**0.56**	**282**	*e*P	**Pb**	**02 25 47.1**	**-0.6**
	baz=280						
TYC				*e*S	**Sb**	**02 25 54.5**	**-0.9**
	baz=280						
NNS	**Nan Shan**	**0.65**	**353**	*e*P	**Pb**	**02 25 49.4**	**0.0**
	baz=358						
NNS				*e*S	**Sb**	**02 25 57.8**	**-0.3**
	baz=358						
ALS	**Alishan**	**0.66**	**245**	*e*P	**Pb**	**02 25 49.4**	**-0.1**
	baz=240						
ALS				*e*S	**Sb**	**02 25 58.0**	**-0.5**
	baz=240						
ENA	**Nanau**	**0.69**	**22**	*e*P	**Pb**	**02 25 49.0**	**-0.8**
	baz=27						
ENA				*e*S	**Sb**	**02 25 58.5**	**-0.5**
	baz=27						
WNT	**Mingjian**	**0.71**	**277**	*e*P	**Pb**	**02 25 50.4**	**+0.1**
	baz=275						
ELDTW	**Lidau**	**0.72**	**214**	*e*P	**Pb**	**02 25 49.8**	**-0.7**
	baz=208						
ELDTW				*e*S	**Sb**	**02 25 58.8**	**-1.3**
	baz=208						
CHN5	**Tsauling**	**0.74**	**255**	*e*P	**Pb**	**02 25 50.9**	**+0.2**
	baz=252						
CHN5				*e*S	**Sb**	**02 26 00.8**	**+0.3**
	baz=252						
TCU	**Taichung**	**0.80**	**297**	*e*P	**Pb**	**02 25 51.9**	**+0.2**
	baz=296						
TWQ1	**Liyutan**	**0.84**	**312**	*e*P	**Pn**	**02 25 52.8**	**+0.2**
	baz=313						
TWQ1				*e*S	**Sn**	**02 26 04.0**	**-0.1**
	baz=313						
ENTT	**Nioudou**	**0.85**	**7**	*e*P	**Pb**	**02 25 52.2**	**-0.5**
	baz=10.0						
ENTT				*e*S	**Sn**	**02 26 04.4**	**-0.1**
	baz=10.0						
NSK	**Sanguang**	**0.89**	**354**	*e*P	**Pb**	**02 25 53.4**	**+0.1**
	baz=357						
NSK				*e*S	**Sb**	**02 26 04.4**	**-0.3**
	baz=357						
TWC	**Suao**	**0.89**	**24**	*e*P	**Pb**	**02 25 52.3**	**-0.9**
	baz=27						
TWC				*e*S	**Sn**	**02 26 05.6**	**+0.2**
	baz=27						
STYT	**Tauyuan**	**0.90**	**226**	*e*P	**Pn**	**02 25 53.5**	**+0.1**
	baz=221						
STYT				*e*S	**Sb**	**02 26 04.9**	**-0.1**
	baz=221						
CHN4	**Tsaushan**	**0.91**	**241**	*e*P	**Pn**	**02 25 54.0**	**+0.4**
	baz=238						
CHN4				*e*S	**Sn**	**02 26 06.1**	**+0.3**
	baz=238						
NSTT	**Nanjuang**	**0.94**	**334**	*e*P	**Pb**	**02 25 54.3**	**+0.3**
	baz=336						
NSTT				*e*S	**Sb**	**02 26 05.8**	**-0.3**
	baz=336						
WTP	**Ta-pu**	**0.94**	**235**	*e*P	**Pb**	**02 25 54.4**	**+0.1**
	baz=231						
WTP				*e*S	**Sb**	**02 26 06.6**	**+0.2**
	baz=231						
TWE	**Neicheng**	**0.95**	**12**	*e*P	**Pb**	**02 25 55.1**	**+0.9**
	baz=15						
TWE				*e*S	**Sn**	**02 26 07.0**	**+0.2**
	baz=15						
CHY	**Chiayi**	**0.99**	**253**	*e*S	**Sn**	**02 26 07.9**	**0.0**
	baz=250						
TWG	**Pinlang**	**1.03**	**200**	*e*P	**Pb**	**02 25 55.8**	**+0.2**
	baz=196						
TWG				*e*S	**Sn**	**02 26 10.0**	**+1.2**
	baz=196						
TWK	**Hsinying**	**1.03**	**240**	*e*P	**Pb**	**02 25 55.8**	**+0.1**
	baz=236						
TWK				*e*S	**Sn**	**02 26 09.7**	**+0.7**
	baz=236						
CHN1	**Nanshi**	**1.04**	**235**	*e*P	**Pb**	**02 25 56.1**	**+0.2**
	baz=232						
CHN1				*e*S	**Sn**	**02 26 09.8**	**+0.6**
	baz=232						
SGST	**Jiashian**	**1.07**	**229**	*e*P	**Pb**	**02 25 56.5**	**+0.2**
	baz=225						
SGST				*e*S	**Sb**	**02 26 11.2**	**+1.4**
	baz=225						
EGS		**1.14**	**22**	*e*P	**Pb**	**02 25 57.5**	**+0.1**
	baz=25						
TWA	**Mucha**	**1.19**	**5**	*e*P	**Pb**	**02 25 59.0**	**+0.6**
	baz=8.0						
TWA				*e*S	**Sb**	**02 26 13.5**	**+0.1**
	baz=8.0						
SSD	**Sandimen**	**1.29**	**216**	*e*P	**Pb**	**02 25 59.8**	**-0.2**
	baz=213						
SSD				*e*S	**Sb**	**02 26 16.3**	**+0.2**
	baz=213						
TWB1	**Santiao Chiao**	**1.31**	**22**	*e*P	**Pb**	**02 26 00.1**	**-0.2**
	baz=24						
TWB1				*e*S	**Sb**	**02 26 18.0**	**+1.4**
	baz=24						
NWF	**Wu-fen Shan**	**1.31**	**13**	*e*P	**Pn**	**02 25 59.6**	**+0.4**
	baz=15						
NWF				*e*S	**Sb**	**02 26 18.3**	**+1.4**
	baz=15						
EAST	**Anshuo**	**1.51**	**202**	*e*P	**Pb**	**02 26 03.2**	**-0.6**
	baz=199						
EAST				*e*S	**Sb**	**02 26 23.2**	**+0.7**
	baz=199						
YOJ	**Yonaguni jima**	**1.57**	**64**	P	**Pn**	**02 26 01.7**	**-0.9**
SCZT	**Fangliau**	**1.61**	**209**	*e*P	**Pb**	**02 26 05.0**	**-0.5**
	baz=206						
SCZT				*e*S	**Sb**	**02 26 25.0**	**-0.3**
	baz=206						
PNG	**Penghu**	**1.76**	**263**	*e*P	**Pn**	**02 26 05.3**	**+0.1**
	baz=261						
PNG				*e*S	**Sn**	**02 26 26.8**	**-0.1**
	baz=261						
JKRS	**Kuro-shima**	**2.38**	**79**	S	**Sn**	**02 26 41.0**	**-1.0**
JlJ	**Ishigaki jima**	**2.52**	**76**	P	**Pn**	**02 26 16.1**	**+0.4**
JlJ				S	**Sn**	**02 26 45.0**	**-0.6**
JISG	**Ishigakijimahi**	**2.72**	**72**	S	**Sn**	**02 26 49.6**	**-1.0**

JMA 11 02:26:02.4,37.72N×139.98E,h9km±1km,M2.3,Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JFT	**Otama**	**0.35**	**125**	P	Pg	02 26 09.3	0.0
JFT				S	Sg	02 26 13.9	0.0
JFY	**Yanaizu**	**0.38**	**215**	P	Pg	02 26 09.7	-0.2
JFY				S	Sg	02 26 14.8	-0.1
JYS	**Shirataka**	**0.51**	**8**	P	Pg	02 26 12.5	+0.3
JYS				S	Sg	02 26 19.6	+0.7
JNS	**Sasagawa**	**0.53**	**281**	P	Pg	02 26 12.6	-0.2
JNS				*e*S	Sg	02 26 19.6	-0.2
JMM	**Marumori**	**0.66**	**77**	P	Pg	02 26 15.1	-0.1
JOU	**Okura**	**0.84**	**40**	P	Pg	02 26 18.6	0.0
JOU				S	Sg	02 26 29.6	0.0
JYA	**Atsumi**	**0.90**	**347**	*e*S	Sb	02 26 32.1	-0.1
JHK	**Hiroka**	**0.90**	**239**	P	Pg	02 26 19.1	-0.6
JAW	**Awa shima**	**0.93**	**322**	P	Pg	02 26 20.5	+0.1
JAW				*e*S	Sb	02 26 33.5	+0.2
MAT	**Matsushiro**	**1.84**	**231**	P	Pb	02 26 36.0	-0.2
MAT				S	Sb	02 26 59.0	-0.4

NIED ***11*** *02:26:00,37.30N×142.60E,h5km,Mw4.3 Best double couple: M₀3.67000×10¹⁵ NP1:φs151.00000°,δ35.00000°, λ-151.00000°. NP2:φs36.00000°,δ74.00000°, λ-58.00000°.*
JMA Felt I J1.
ISCJB ***11*** *02:26:29.5±1.1,37.50N±0.05×142.56E±0.04,h4km±6km, mb4.3/67,MS3.7/15,Error ellipse: s-maj=8.4km s-min=3.9km az=153.4*
BJI ***11*** *02:26:31.1,37.69N×142.65E,h19km,mb4.5/37,mB4.7/20, Ms4.1/17,Ms7 4.0/13*
NEIC ***11*** *02:26:33.2±2.1,37.39N×142.55E,h22km±13km,mb4.4/13, Error ellipse: s-maj=9.9km s-min=6.4km az=133.0*
NEIC Recorded [1 JMA] in Fukushima.
MOS ***11*** *02:26:34.9±1.0,37.69N×142.38E,h31km,mb4.5/43,Error ellipse: s-maj=8.9km s-min=6.0km az=104.1*
IDC ***11*** *02:26:35.4±2.6,37.27N×142.53E,h41km±22km,mb4.0/31, mb1 4.1/35,mb1mx3.9/90,mbtmp4.2/35,ML3.4/4,MS3.5/14, Ms1 3.5/14,ms1mx3.2/52,Error ellipse: s-maj=16.3km s-min=13.6km az=126.0*

ISC 11 02:26:32.7±1.0,37.49N±0.05×142.49E±0.04,h15km±5km, n165,σ1s29/173,mb4.4/67,MS3.7/16,3C-4D,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JFK	**Kawauchi**	**1.29**	**265**	P	**Pn**	**02 26 53.4**	**-2.9**
JFK				*e*S	**Sb**	**02 27 12.9**	**-0.2**
JIO	**Ouri**	**1.32**	**317**	P	**Pn**	**02 26 56.0**	**-0.6**
JIO				*e*S	**Sg**	**02 27 16.4**	**+1.2**
JMM	**Marumori**	**1.40**	**286**	P	**Pn**	**02 26 55.9**	**-1.8**
ONAJ	**Iwakimizuishiy**	**1.40**	**254**	P	**Pn**	**02 26 54.8**	**-3.0**
ONAJ				*e*S	**Sn**	**02 27 15.4**	**-0.7**
JOU	**Okura**	**1.69**	**302**	P	**Pn**	**02 27 01.4**	**-0.3**
JOU				*e*S	**Sg**	**02 27 25.9**	**-1.1**
JFT	**Otama**	**1.71**	**271**	P	**Pn**	**02 27 00.8**	**-1.2**
JFT				*e*S	**Sb**	**02 27 25.1**	**-0.1**
JMK	**Ichinoseki**	**1.77**	**326**	P	**Pn**	**02 27 03.6**	**+0.8**
JYS	**Shirataka**	**2.05**	**291**	P	**Pn**	**02 27 07.3**	**+0.6**
JYK	**Kaneyama**	**2.20**	**311**	P	**Pn**	**02 27 09.7**	**+1.0**
JFY	**Yanaizu**	**2.22**	**269**	P	**Pn**	**02 27 09.2**	**+0.2**
JFY				*e*S	**Sn**	**02 27 37.0**	**+0.8**
MJAR	**Matsushiro Arr**	**3.55**	**256**	P	**Pn**	**02 27 27.2**	**-0.2**
	9.3nm,0.3s,baz=88,slow=15,SNR=18						
MJAR				LR	LR	02 29 04.7	
	comp=Z,764nm,18.4s,baz=80,slow=42						
MAJO	**Matsushiro**	**3.56**	**256**	*e*P	**Pn**	**02 27 28.3**	**+0.9**
MAJO				*e*S	**Sn**	**02 28 08.5**	**-0.7**
MAJO	**Matsushiro**	**3.56**	**256**	*e*Pn	**Pn**	**02 27 28.3**	**+0.9**
MAJO				*e*S	**Sn**	**02 28 08.4**	**-0.7**
MAT	**Matsushiro**	**3.56**	**256**	P	**Pn**	**02 27 28.5**	**+1.1**
MAT				S	**Sn**	**02 28 13.2**	**+4.0**
ERM	**Erimo**	**4.55**	**6**	*e*P	**Pn**	**02 27 41.0**	**0.0**
ERM				*e*S	**Sn**	**02 28 33.1**	**-0.4**
ERM	**Erimo**	**4.55**	**6**	*e*Pn	**Pn**	**02 27 41.0**	**0.0**
ERM				*e*S	**Sn**	**02 28 33.1**	**-0.4**
JHJ	**Hachijo jima 2**	**4.89**	**208**	LR	LR	02 29 47.4	
	comp=Z,240nm,18.6s,baz=340,slow=41						
INU	**Inuyama**	**4.90**	**246**	*e*Pn	**Pn**	**02 27 46.2**	**+0.3**
YUK	**Yuzh-Kuril'sk**	**7.02**	**20**	P	**Pn**	**02 28 14.8**	**-0.1**
YUK				S	**Sn**	**02 29 32.0**	**-2.4**
YUK				pmax	pmax		
	comp=Z,107nm,0.7s						
YUK				pmax	pmax		
	comp=N,64nm,0.5s						
YUK				pmax	pmax		
	comp=E,80nm,0.5s						
YUK				MLR	MLR		
	comp=Z,762nm,15.0s						
SHO	**Shikotan**	**7.17**	**26**	*e*P	**Pn**	**02 28 15.3**	**-1.7**
SHO				*e*S	**Sn**	**02 29 33.0**	**-5.2**
SHO				pmax	pmax		
	comp=Z,26nm,0.7s						
SHO				pmax	pmax		
	comp=N,34nm,0.5s						
SHO				pmax	pmax		
	comp=E,21nm,0.4s						
KUR	**Kuril'sk**	**8.72**	**26**	P	**Pn**	**02 28 38.7**	**+0.4**
KUR				*i* S	**Sn**	**02 30 12.9**	**-3.5**
KUR				smax	smax		
	comp=N,32nm,0.6s						
KUR				smax	smax		
	comp=E,18nm,0.6s						
USRK	**Ussuriysk Ar.**	**10.39**	**313**	P	Pn	02 29 05.1	+3.9
	comp=E,1.2nm,0.3s,baz=120,slow=14,SNR=19						
USRK				LR	LR	02 32 42.2	
	comp=E,328nm,18.9s,baz=122,slow=35						
JNU	**Nakatsue**	**10.44**	**249**	P	**Pn**	**02 29 03.2**	**+1.3**
	comp=E,0.2nm,0.3s,baz=0.0,slow=8.1,SNR=2.5						
JNU				LR	LR	02 33 41.4	
	comp=E,152nm,20.6s,baz=112,slow=41						
KSRS	**Korea Array**	**11.58**	**274**	P	**Pn**	**02 29 19.4**	**+2.1**
	comp=E,0.4nm,0.3s,baz=86,slow=14,SNR=4.9						
KSRS				LR	LR	02 33 25.6	
	comp=E,287nm,18.2s,baz=106,slow=35						
KSAR	**Wonju Array Be**	**11.61**	**274**	P	**Pn**	**02 29 19.5**	**+1.6**
KSAR	**Wonju Array Be**	**11.61**	**274**	P	**Pn**	**02 29 19.4**	**+1.6**
MDJ	**Mudanjiang**	**12.05**	**310**	P	**Pn**	**02 29 23.5**	**-0.3**
MDJ				S	**Sn**	**02 31 34.5**	**-3.4**
MDJ				pmax	pmax		
	comp=E,3.0nm,0.4s						
MDJ				pmax	pmax		
	comp=E,14nm,2.8s						
MDJ				LR	LR		
	comp=E,320nm,13.7s						
MDJ				LR	LR		
	comp=E,320nm,16.7s						
KLR	**Kul'dur**	**14.07**	**330**	P	**Pn**	**02 29 50.8**	**-0.7**
	comp=E,0.1nm,0.3s,baz=138,slow=15,SNR=3.3						
KLR				LR	LR	02 35 09.4	
	comp=E,146nm,19.6s,baz=226,slow=36						
CN2	**Changchun**	**14.38**	**301**	*e*P	**Pn**	**02 29 55.5**	**-0.2**
CN2				*e*S	**Sn**	**02 32 34.3**	**-0.5**
CN2				pmax	pmax		
	comp=E,10.0nm,0.3s						
CN2				pmax	pmax		
	comp=E,200nm,5.0s						
CN2				LR	LR		
	comp=E,300nm,12.0s						
CN2				LR	LR		
	comp=E,300nm,12.0s						
NKL	**Nikolayevsk**	**15.71**	**356**	*e*P	**Pn**	**02 30 10.0**	**-3.3**
NKL				MLR	MLR		
	comp=Z,400nm,14.0s						
NJ2	**Nanjing**	**20.14**	**261**	*e*P	Pn	02 31 08.3	+0.2
NJ2				pmax	pmax		
	comp=Z,11nm,0.8s						
BJI	**Beijing**	**20.65**	**285**	P	Pn	02 31 13.6	-0.5
BJI				S	**S**	**02 35 02.0**	**0.0**
BJI				pmax	pmax		
	comp=Z,8.0nm,1.8s						
BJI				LR	LR		
	comp=Z,270nm,11.6s						
BJI				LR	LR		
	comp=Z,74nm,10.1s						
MA2	**Magadan**	**22.73**	**11**	P	**P**	**02 31 34.4**	**+0.4**
	comp=Z,7.5nm,0.6s,baz=249,slow=8.6,SNR=5.0						
HHC	**Hu-ho-hao-te**	**24.14**	**288**	*e*P	**P**	**02 31 48.6**	**+0.3**
HHC				sP	sP	02 31 57.2	+2.7
HHC				S	**S**	**02 36 01.9**	**-3.8**
HHC				pmax	pmax		
	comp=Z,15nm,0.9s						
HHC				pmax	pmax		
	comp=Z,110nm,7.8s						
HHC				LR	LR		
	comp=Z,320nm,12.3s						
HHC				LR	LR		
	comp=Z,380nm,13.6s						
HHC				LR	LR		
	comp=Z,360nm,13.6s						
YAK	**Yakutsk**	**25.82**	**346**	*e*P	**P**	**02 32 04.0**	**+0.9**
YAK				pmax	pmax		
	comp=Z,15nm,0.8s						
SEY	**Seymchan**	**26.18**	**10**	P	**P**	**02 32 07.8**	**+1.4**
	comp=Z,8.1nm,0.6s,baz=189,slow=7.5,SNR=31						
SEY	**Seymchan**	**26.18**	**10**	*e*P	**P**	**02 32 07.9**	**+1.6**
XAN	**Xi'an**	**27.37**	**273**	P	**P**	**02 32 14.2**	**-3.3**
XAN				pP	pP	02 32 21.6	-0.3
XAN				pmax	pmax		
	comp=Z,5.0nm,0.6s						
XAN				pmax	pmax		
	comp=Z,89nm,6.8s						
XAN				LR	LR		
	comp=Z,140nm,17.8s						
BOD	**Bodaibo**	**27.61**	**327**	*e*P	**P**	**02 32 16.7**	**-2.6**
BOD				pmax	pmax		
	comp=Z,6.0nm,1.3s						
H11N2	**WAKE ISLAND Hy**	**27.66**	**123**	T	T	03 01 06.6	
	baz=315,slow=75,SNR=457						
H11N1	**WAKE ISLAND Hy**	**27.67**	**123**	T	T	03 01 01.3	
	baz=315,slow=75,SNR=370						
H11N3	**WAKE ISLAND Hy**	**27.68**	**123**	T	T	03 01 05.5	
	baz=315,slow=75,SNR=413						
ULN	**Ulaanbaatar**	**27.81**	**303**	*d i* P	**P**	**02 32 21.8**	**+0.4**
ULN				pmax	pmax		
	comp=Z,10.0nm,1.7s						
ULN	**Ulaanbaatar**	**27.81**	**303**	*e*P	**P**	**02 32 21.8**	**+0.4**
	comp=Z,4.3nm,0.8s						
SONA1	**Songino Array**	**28.24**	**303**	*e*P	**P**	**02 32 25.1**	**-0.1**
SONM	**Songino Array**	**28.25**	**303**	P	**P**	**02 32 25.3**	**+0.1**
	comp=Z,6.3nm,0.8s,baz=100,slow=8.9,SNR=47						
SONM				LR	LR	02 43 55.7	
	comp=Z,84nm,18.8s,baz=70,slow=37						
H11S1	**WAKE ISLAND Hy**	**28.41**	**125**	T	T	03 01 57.0	
	baz=317,slow=76,SNR=471						
H11S3	**WAKE ISLAND Hy**	**28.41**	**125**	T	T	03 01 57.5	
	baz=317,slow=76,SNR=487						
H11S2	**WAKE ISLAND Hy**	**28.42**	**125**	T	T	03 01 57.6	
	baz=317,slow=76,SNR=453						
ZAK	**Zakamensk**	**30.66**	**307**	*e*P	**P**	**02 32 46.7**	**+0.1**
ZAK				pmax	pmax		
	comp=Z,4.0nm,1.5s						
TLY	**Talaya**	**30.68**	**310**	LR	LR	02 45 44.8	
	comp=Z,158nm,18.1s,baz=98,slow=37						
TLY	**Talaya**	**30.68**	**310**	*e*P	P	02 32 40.1	-6.6
TLY				pmax	pmax		
	comp=Z,4.0nm,1.3s						
LZH	**Lanzhou**	**30.84**	**279**	*e*P	**P**	**02 32 49.8**	**+1.4**
LZH				pP	sP	02 32 55.9	+1.2
LZH				sP	pP	02 32 58.7	+5.9
LZH				PP	**PnPn**	**02 33 46.0**	**-2.6**
LZH				pmax	pmax		
	comp=Z,21nm,1.2s						
LZH				pmax	pmax		
	comp=Z,65nm,5.4s						
LZH				LR	LR		
	comp=Z,330nm,13.2s						
LZH				LR	LR		
	comp=Z,350nm,12.9s						
LZH				LR	LR		
	comp=Z,400nm,16.7s						
GYA	**Guiyang**	**32.14**	**260**	*e*P	**P**	**02 33 02.0**	**+2.1**
GYA				pmax	pmax		
	comp=Z,10.0nm,0.8s						
CD2	**Chengdu**	**32.53**	**270**	P	**P**	**02 33 03.1**	**-0.1**
CD2				pmax	pmax		
	comp=Z,1.0nm,0.5s						
GTA	**Gaotai**	**33.25**	**287**	*e*P	**P**	**02 33 10.0**	**+0.5**
GTA				pP	sP	02 33 15.1	-0.7
GTA				sP	pP

comp=Z,16nm,0.6s
KMI pmax pmax
comp=Z,68nm,5.8s
WMQ Urumqi 41.40 297 P **P** **02 34 19.4 +0.9**
WMQ sP sP 02 34 29.0 +4.2
WMQ pmax pmax
comp=Z,2.0nm,0.6s
WMQ pmax pmax
comp=Z,66nm,4.0s
WMQ LR LR
comp=Z,76nm,18.2s
WMQ LR LR
comp=Z,23nm,22.2s
ZAA0 Zalesovo Array 42.24 312 *e*P **P** **02 34 25.0 -0.1**
ZALV Zalesovo Beam 42.24 312 P **P** **02 34 24.9 -0.2**
comp=Z,2.2nm,0.5s,baz=89,slow=7.6,SNR=10
ZALV PcP **PcP** **02 36 17.8 -1.0**
comp=Z,1.0nm,0.5s,baz=147,slow=4.7,SNR=3.7
ZALV LR LR 02 51 33.1
comp=Z,28nm,18.1s,baz=72,slow=35
CMAR Chiang Mai Arr 42.44 256 P **P** **02 34 26.0 -1.2**
comp=Z,0.5nm,0.4s,baz=50,slow=6.0,SNR=3.9
CMAR LR LR 02 52 40.7
comp=Z,40nm,18.1s,baz=65,slow=37
CMAR Chiang Mai Arr 42.44 256 P **P** **02 34 26.0 -1.2**
CMAR pmax pmax
comp=Z,1.0nm,0.4s
CMAR MLR MLR
comp=Z,40nm,18.1s
NRIK Noril'sk 43.21 335 LR LR 02 53 42.5
comp=Z,93nm,18.4s,baz=108,slow=38
MKAR Makanchi Array 44.60 302 P **P** **02 34 44.4 0.0**
comp=Z,1.9nm,0.7s,baz=87,slow=9.2,SNR=19
MKAR LR LR 02 52 57.2
comp=Z,23nm,21.3s,baz=110,slow=35
MKAR Makanchi Array 44.60 302 *e*P **P** **02 34 44.6 +0.3**
MAKZ Makanchi 44.81 302 *e*P **P** **02 34 46.3 +0.4**
MAKZ pmax pmax
comp=Z,6.0nm,1.1s
MAKZ Makanchi 44.81 302 *e*P **P** **02 34 46.3 +0.4**
comp=Z,6.0nm,1.1s
KURK Kurchatov 46.33 308 P **P** **02 34 58.2 +0.4**
KURK pmax pmax
comp=Z,7.0nm,0.5s
KURK Kurchatov 46.33 308 *e*P **P** **02 34 57.4 -0.4**
comp=Z,7.6nm,0.6s
KURBB Kurchatov Arra 46.40 308 P **P** **02 34 58.1 -0.2**
comp=Z,6.8nm,0.5s,baz=81,slow=8.0,SNR=46
TAPN Taplejung 46.76 274 *e*P **P** **02 35 04.3 +2.4**
comp=Z,7.3nm,0.3s
RAMN Ramite 47.83 274 *e*P **P** **02 35 09.4 -0.8**
comp=Z,11nm,0.6s
GUN Gumba 47.96 276 *e*P **P** **02 35 13.7 +2.4**
comp=Z,8.3nm,0.4s
ILAR Eielson Array 48.65 33 P **P** **02 35 15.9 +0.2**
comp=Z,0.5nm,0.6s,baz=257,slow=5.9,SNR=9.2
PYUN Piuthan 50.16 278 *e*P **P** **02 35 27.9 -0.1**
comp=Z,8.5nm,0.4s
TKM2 Tokmak 2 50.17 298 *e*P **P** **02 35 27.9 0.0**
TKM2 pmax pmax
comp=Z,6.0nm,0.8s
TKM2 Tokmak 2 50.17 298 *e*P **P** **02 35 27.9 0.0**
comp=Z,5.8nm,0.8s
BVAR Borovoye Array 50.90 312 P **P** **02 35 32.8 -0.2**
comp=Z,0.2nm,100.0s,baz=85,slow=8.8,SNR=4.1
BVAR Borovoye Array 50.90 312 P **P** **02 35 32.8 -0.2**
BVAR pmax pmax
comp=Z,1.0nm,0.4s
BRVK Borovoye 50.95 312⇓ *e*P **P** **02 35 34.1 +0.7**
BRVK pmax pmax
comp=Z,8.0nm,1.6s
AAK Ala-Archa 51.03 298 P **P** **02 35 36.2 +1.9**
comp=Z,1.9nm,0.6s,baz=118,slow=4.8,SNR=8.5
AAK Ala-Archa 51.03 298 P **P** **02 35 36.6 +2.3**
AAK pmax pmax
comp=Z,5.0nm,0.7s
AAK Ala-Archa 51.03 298 *e*P **P** **02 35 35.3 +1.0**
comp=Z,4.4nm,1.1s
ZRNK Zerenda 51.73 312 *e*P **P** **02 35 39.4 +0.2**
ZRNK pmax pmax
comp=Z,4.0nm,1.0s
ZRNK Zerenda 51.73 312 *e*P **P** **02 35 39.4 +0.2**
comp=Z,3.7nm,1.0s
INK Inuvik 53.59 27 P **P** **02 35 53.5 +0.8**
comp=Z,0.5nm,0.5s,baz=276,slow=9.2,SNR=6.3
KKAR Karatay Array 53.64 300 *e*P **P** **02 35 53.4 -0.1**
KKAR Karatay Array 53.64 300 *e*P **P** **02 35 53.4 -0.1**
comp=Z,0.4nm,0.2s
LEM Lembang 54.80 224 LR LR 03 00 32.1
comp=Z,29nm,18.9s,baz=7.0,slow=37
ARU Arti 56.58 319 P **P** **02 36 14.8 +0.2**
comp=Z,1.6nm,0.3s,baz=50,slow=3.8,SNR=5.7
ARU Arti 56.58 319*d* *i*P **P** **02 36 14.7 +0.2**
ARU 02 37 08.7
ARU 02 38 17.7
ARU S **S** **02 44 07.0 +1.3**
ARU pmax pmax
comp=Z,13nm,1.7s
ARU Arti 56.58 319 *e*P **P** **02 36 15.1 +0.6**
WRAB Tennant Creek 57.63 189 P **P** **02 36 21.0 -1.3**
WRAB pmax pmax
comp=Z,17nm,1.3s
WRA Warramunga Arr 57.64 189 P **P** **02 36 19.9 -2.5**
comp=Z,1.2nm,0.5s,baz=6.7,slow=7.3,SNR=19
WRA Warramunga Arr 57.64 189 P **P** **02 36 19.9 -2.5**
WRA pmax pmax
comp=Z,3.0nm,0.9s
ABKAR Akbulak array 58.30 310 *e*P **P** **02 36 26.6 -0.2**
comp=Z,1.3nm,0.6s
AKTO Aktyubinsk 59.01 312 P **P** **02 36 29.7 -2.0**
comp=Z,1.1nm,0.6s,baz=64,slow=9.7,SNR=4.8
ASAR Alice Springs 61.37 189 P P 02 36 44.5 -3.6
comp=Z,0.7nm,0.5s,baz=3.3,slow=6.5,SNR=8.0
RES Resolute Bay 61.94 15 P **P** **02 36 51.6 +0.3**
comp=Z,2.2nm,0.6s,baz=306,slow=6.9,SNR=18
RES Resolute Bay 61.94 15 *e*P **P** **02 36 51.5 +0.2**
RES pmax pmax
comp=Z,9.0nm,1.4s
RES Resolute Bay 61.94 15 *e*P **P** **02 36 51.5 +0.2**
comp=Z,9.3nm,1.4s
YKA Yellowknife Ar 62.98 31 P **P** **02 36 58.2 -0.2**
comp=Z,0.2nm,0.6s,baz=300,slow=6.5,SNR=3.4
ARCES ARCESS Array B 63.87 340 P **P** **02 37 04.5 +0.3**
comp=Z,7.6nm,1.0s,baz=37,slow=6.1,SNR=3.7
OBN Obninsk 68.24 323⇓ *e*P **P** **02 37 32.9 +0.4**
OBN *e* 02 38 03.8
OBN *e* 02 39 59.8
OBN pmax pmax
comp=Z,23nm,1.7s
FINES FINESS Array B 68.81 333 P **P** **02 37 36.1 +0.2**
comp=Z,3.8nm,0.6s,baz=56,slow=7.4,SNR=14
FINES LR LR 03 09 16.1
comp=Z,54nm,19.4s,baz=40,slow=37
KVAR Kislovodsk Arr 71.25 311 P **P** **02 37 52.1 +0.7**
comp=Z,5.2nm,0.8s,baz=34,slow=3.6,SNR=4.8
KBZ Khabaz 71.25 311 P **P** **02 37 51.4 +0.2**
comp=Z,3.7nm,0.9s,baz=96,slow=2.0,SNR=5.5
KIV Kislovodsk 71.25 311 *e*P **P** **02 37 52.5 +1.1**
KIV pmax pmax
comp=Z,11nm,0.9s
NEY Neytrino 71.63 311 P **P** **02 37 55.6 +1.8**
NEY pmax pmax
comp=Z,4.0nm,1.6s
FFC Flin Flon 72.85 33 *i* P **P** **02 38 02.1 +1.4**
HFS Hagfors 74.02 336 P **P** **02 38 07.3 -0.2**
comp=Z,3.3nm,0.9s,baz=338,slow=7.0,SNR=5.3
NVAR Mina Array Bea 74.03 54 P **P** **02 38 08.7 +0.5**
comp=Z,0.3nm,0.6s,baz=298,slow=6.0,SNR=3.7
NB2 NORSAR Subarra 74.09 338 P **P** **02 38 08.0 +0.1**
comp=Z,4.1nm,0.9s,baz=40,slow=6.2
NOA NORSAR Array B 74.09 338 P **P** **02 38 08.2 +0.2**
comp=Z,2.3nm,0.8s,baz=38,slow=5.8,SNR=9.8
AKASG Malin Array Be 74.46 323 P **P** **02 38 10.1 -0.1**
comp=Z,3.8nm,0.6s,baz=45,slow=5.9,SNR=19
KIEV Kiev 74.47 323⇓ *i*P **P** **02 38 09.8 -0.4**
KIEV pmax pmax
comp=Z,9.0nm,1.2s
KIEV Kiev 74.47 323 *e*P **P** **02 38 10.1 -0.1**
comp=Z,6.0nm,0.9s
AK11 Malin Array Si 74.50 323 *e*P **P** **02 38 10.5 +0.1**
SUW Suwalki 74.96 328 *e*P **P** **02 38 13.8 +0.8**
SUW Suwalki 74.96 328 *e*P **P** **02 38 13.9 +0.9**
SFJD Kangerlussuaq 75.35 5 LR LR 03 12 35.9
comp=Z,315nm,19.9s,baz=336,slow=36
FRB Frobisher Bay 76.13 14 P **P** **02 38 18.8 -0.7**
comp=Z,6.0nm,0.8s,baz=329,slow=5.4,SNR=12
PDAR Pinedale Array 76.73 46 P **P** **02 38 23.5 -0.2**
comp=Z,0.3nm,0.5s,baz=349,slow=0.9,SNR=5.0
KWP Kalwaria Pacla 78.25 325 *e*P **P** **02 38 33.1 +1.3**
KWP Kalwaria Pacla 78.25 325 *e*P **P** **02 38 33.2 +1.4**
BUR08 Bucovina Ar. S 78.47 322 *e*P **P** **02 38 33.6 +0.5**
KOLS Kolonicke sedl 78.95 325 *e*P **P** **02 38 36.4 +0.8**
KOLS pmax pmax
comp=Z,4.0nm,1.2s
KOLS Kolonicke sedl 78.95 325 *e*P **P** **02 38 36.4 +0.8**
STHS Stebnicka Huta 79.07 325 *e*P **P** **02 38 37.7 +1.4**
STHS pmax pmax
comp=Z,2.0nm,0.6s
STHS Stebnicka Huta 79.07 325 *e*P **P** **02 38 37.7 +1.4**
OJC Ojcow 79.13 327 *e*P **P** **02 38 36.9 +0.3**
OJC Ojcow 79.13 327 *e*P **P** **02 38 37.6 +1.0**
OJC pmax pmax
comp=Z,16nm,1.3s
OJC Ojcow 79.13 327 *e*P **P** **02 38 37.5 +1.0**
comp=Z,16nm,1.3s
BRTR Keskin Array B 79.19 312 P **P** **02 38 36.4 -0.9**
comp=Z,0.7nm,0.9s,baz=46,slow=10,SNR=3.6
CRVS Cervenica-Dubn 79.34 325 *e*P **P** **02 38 36.9 -0.9**
CRVS Cervenica-Dubn 79.34 325 *e*P **P** **02 38 36.9 -0.9**
LANS Liptovska Anna 80.06 326 *e*P **P** **02 38 43.2 +1.5**
LANS Liptovska Anna 80.06 326 *e*P **P** **02 38 43.2 +1.5**
DPC Dobruska-Polom 80.52 328 *e*P **P** **02 38 45.1 +0.9**
DPC *e*pP **sP** **02 38 50.2 -0.6**
DPC Dobruska-Polom 80.52 328 *e*P **P** **02 38 45.1 +0.9**
DPC *e* 02 38 50.2
KRLC Kraliky 80.54 328 *e*P **P** **02 38 44.2 -0.1**
KRLC Kraliky 80.54 328 *e*P **P** **02 38 44.2 -0.1**
VYHS Vyhne 80.83 326 *e*P **P** **02 38 46.5 +0.7**
VYHS pmax pmax
comp=Z,2.0nm,0.8s
VYHS Vyhne 80.83 326 *e*P **P** **02 38 46.5 +0.7**
BRG Berggiesshubel 81.09 330 *e*P **P** **02 38 47.8 +0.6**
comp=Z,5.1nm,1.2s
BRG Berggiesshubel 81.09 330 *e*P **P** **02 38 47.8 +0.6**
BRG pmax pmax
comp=Z,5.0nm,1.2s
CLL Collm 81.12 331 *i* P **P** **02 38 47.4 +0.1**
comp=Z,4.0nm,0.8s
CLL Lm MLR 03 34 00.0
comp=Z,100nm,20.5s
CLL Collm 81.12 331 *i* P **P** **02 38 47.4 +0.1**
CLL pmax pmax
comp=Z,4.0nm,0.8s
VRAC Vranov 81.20 328 P **P** **02 38 48.3 +0.5**
comp=Z,2.2nm,0.6s,baz=348,slow=8.8,SNR=4.1
KHC Kasperske Hory 82.60 329 *e*P **P** **02 38 55.5 +0.3**
KHC *e*pP **PcP** **02 39 00.2 0.0**
KHC Kasperske Hory 82.60 329 *e*P **P** **02 38 55.1 -0.1**
KHC pmax pmax
comp=Z,1.0nm,0.6s
KHC Kasperske Hory 82.60 329 *e*P **P** **02 38 55.1 -0.1**
comp=Z,0.9nm,0.6s
GERES GERESS Array B 82.77 329 P **P** **02 38 56.0 -0.2**
comp=Z,0.5nm,100.0s,baz=38,slow=6.3,SNR=12
GERES GERESS Array B 82.77 329 P **P** **02 38 56.0 -0.2**
GERES pmax pmax
comp=Z,1.0nm,0.5s
EKA Eskdalemuir Ar 82.98 341 P **P** **02 38 57.9 +0.9**
comp=Z,1.1nm,0.5s,baz=33,slow=4.8,SNR=11
VTS Vitosha 83.03 320 *e*P **P** **02 38 58.7 +1.0**
VTS pmax pmax
comp=Z,5.0nm,1.0s
VTS Vitosha 83.03 320 *e*P **P** **02 38 58.7 +1.0**
comp=Z,4.7nm,1.0s
BFO Black Forest 85.32 331 *i* P **P** **02 39 10.4 +1.3**
DAVOX Davos/Dischmat 85.97 330 P **P** **02 39 13.5 +0.9**
comp=Z,1.6nm,0.9s,baz=133,slow=19,SNR=3.3
IDI Anoyia 87.30 313 P **P** **02 39 20.0 +0.9**
comp=Z,6.5nm,1.2s,baz=339,slow=14,SNR=3.6
HDIL Hopedale 88.99 37 *e*P **P** **02 39 28.1 +1.1**
comp=Z,35nm,0.6s
TORD Torodi Ar. Bea 117.61 316 PKP **PKPdf** **02 45 16.9 -1.8**
comp=Z,0.1nm,0.5s,baz=34,slow=2.4,SNR=4.7
LPAZ La Paz 145.72 60 PKPbc **PKPdf** **02 46 11.7 -0.2**
comp=Z,1.2nm,0.5s,baz=34,slow=2.7,SNR=11
comp=Z,0.5nm,0.5s,baz=287,slow=20,SNR=1.8
BATI Lg Lg 02 57 29.6
baz=287,slow=20,SNR=1.6
FITZ Fitzroy Crossi 9.35 138 Pn **Pn** **02 57 43.8 +1.7**
0.1nm,0.3s,baz=328,slow=13,SNR=3.7
FITZ Sn **Sn** **02 59 22.3 -3.8**
0.7nm,0.3s,baz=2.7,slow=23,SNR=7.5
WRA Warramunga Arr 17.06 123 Pn **Pn** **02 59 24.5 -1.2**
0.1nm,0.3s,baz=297,slow=13,SNR=3.6
ASAR Alice Springs 18.79 133 P **Pn** **02 59 49.5 +2.5**
0.1nm,0.3s,baz=312,slow=11,SNR=9.0
SONM Songino Array 59.81 350 P **P** **03 05 29.4 -2.2**
0.2nm,0.4s,baz=159,slow=6.9,SNR=2.6
MKAR Makanchi Array 66.42 333 P **P** **03 06 15.8 +0.5**
0.3nm,0.5s,baz=146,slow=7.5,SNR=3.1
ZALV Zalesovo Beam 71.09 339 P **P** **03 06 44.8 +0.5**
0.4nm,0.5s,baz=140,slow=6.3,SNR=2.5

*NEIC **11** 02:42:30.9, 14.°67N×94.°36W, h18km, MD4.1(MEX), After MEX.*
MEX 11 02:42:31.4±0.4, 14.°73N×94.°35W, h17km±11km, MD4.1, Off coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PCIG		**1.46**	**48**	*e*P	Pn	02 42 53.7	-3.3
PCIG				*e*S	Sn	02 43 10.7	-5.1
PCIG		**1.46**	**48**	*e*P	Pn	02 42 53.7	-3.3
PCIG				*e*S	Sn	02 43 10.7	-5.1
HUIG	**Huatulco**	**1.98**	**302**	*e*P	Pn	02 43 01.1	-3.1
HUIG				*e*S	Sn	02 43 23.9	-4.8
HUIG	**Huatulco**	**1.98**	**302**	*e*P	Pn	02 43 01.1	-3.1
HUIG				*e*S	Sn	02 43 23.9	-4.8
TGIG		**2.36**	**30**	*e*P	Pn	02 43 07.7	-1.7
TGIG				*e*S	Sn	02 43 35.6	-2.4
TGIG		**2.36**	**30**	*e*P	Pn	02 43 07.5	-1.9
TGIG				*i* S	Sn	02 43 34.3	-3.7
CCIG	**Comitan**	**2.64**	**54**	*e*P	Pn	02 43 12.1	-1.2
CCIG				*e*S	Sn	02 43 40.8	-4.2
CCIG	**Comitan**	**2.64**	**54**	*e*P	Pn	02 43 10.9	-2.5
CCIG				*e*S	Sn	02 43 40.8	-4.2
TEIG	**Tepich**	**7.97**	**46**	*e*Pn	Pn	02 44 23.3	-3.2
TEIG				*e*S	Sn	02 45 51.3	-5.0

JMA 11 02:46:17.6±0.1, 36.°31N×141.°06E, h46km±2km, M2.8, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JHO	**Hitachi**	**0.50**	**307**	P	Pn	02 46 28.3	-0.3
CHOJ	**Chosi**	**0.63**	**195**	P	Pn	02 46 30.2	0.0
CHOJ				S	Sn	02 46 38.5	-0.8
ONAJ	**Iwakimizuishiy**	**0.82**	**345**	P	Pn	02 46 32.4	-0.4
ONAJ				S	Sn	02 46 42.7	-1.2
MAT	**Matsushiro**	**2.31**	**277**	P	Pn	02 46 54.8	+1.6
MAT				S	Sn	02 47 22.3	+1.8

JMA 11 02:47:16.9±0.2, 37.°52N×143.°66E, h51km, M3.7, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**2.05**	**298**	P	Pn	02 47 49.9	+1.0
JIO				*e*S	Sn	02 48 14.1	+0.8
JFK	**Kawauchi**	**2.22**	**267**	P	Pn	02 47 52.3	+1.0
JFK				*e*S	Sn	02 48 18.4	+0.8
JMM	**Marumori**	**2.30**	**280**	P	Pn	02 47 53.2	+0.9
JMM				*e*S	Sn	02 48 21.7	+2.3
ONAJ	**Iwakimizuishiy**	**2.32**	**260**	P	Pn	02 47 53.9	+1.2
ONAJ				*e*S	Sn	02 48 20.5	+0.5
JMK	**Ichinoseki**	**2.40**	**307**	P	Pn	02 47 54.5	+0.9
JMK				S	Sn	02 48 22.6	+0.8
JFT	**Otama**	**2.64**	**271**	P	Pn	02 47 59.2	+2.1
JFT				*e*S	Sn	02 48 29.8	+1.9
JOM	**Ohasama**	**2.69**	**317**	P	Pn	02 47 58.8	+1.1
JOM				S	Sn	02 48 29.4	+0.3
JYK	**Kaneyama**	**2.95**	**299**	P	Pn	02 48 03.2	+1.9
JYK				*e*S	Sn	02 48 37.2	+1.8
JANG	**Nango**	**3.30**	**330**	P	Pn	02 48 07.5	+1.4
JANG				*e*S	Sn	02 48 43.7	-0.4
JAG	**Ashikaga**	**3.54**	**253**	P	Pn	02 48 10.9	+1.5
JAG				S	Sn	02 48 50.8	+0.8
JRY	**Ryogami san**	**4.10**	**250**	P	Pn	02 48 18.4	+1.3
JRY				S	Sn	02 49 04.0	+0.1
MAT	**Matsushiro**	**4.47**	**259**	P	Pn	02 48 25.8	+3.7
MAT				S	Sn	02 49 17.3	+4.4

*IDC **11** 02:55:26.8±1.5, 10.°49S×119.°73E, h0km, mb3.5/3, mb1 3.6/6, mb1mx3.4/27, mbtmp3.5/6, ML3.1/3, Error ellipse: s-maj=37.0km s-min=18.8km az=30.0*
*ISCJB **11** 02:55:27.4±1.2, 11.°2S±0.°2×119.°0E±0.°2, h33km, mb3.6/3, Error ellipse: s-maj=29.9km s-min=13.6km az=136.8*
ISC 11 02:55:29.7±1.3, 11.°2S±0.°1×119.°1E±0.°2, h35km, n7, σ2.°62/8, mb3.7/3, South of Sumba

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
BATI	**Baumata**	**4.58**	**78**	Pg	**Pn**	**02 56 38.6**	**+2.1**

*CSEM **11** 02:58:12.5±0.3, 37.°86N×27.°35E, h2km, MD2.7, Error ellipse: s-maj=8.5km s-min=5.8km az=82.0*
*DDA **11** 02:58:12.2, 37.°83N×27.°32E, h7km, MD2.7*
*ISK **11** 02:58:12.0, 37.°89N×27.°38E, h12km, MD2.7*
ISC 11 02:58:11.8±0.9, 37.°83N±0.°03×27.°32E±0.°03, h13km±7km, n21, σ0.°42/33, Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
GCAM	**G?zelcaml?**	**0.14**	**207**	*i* P	**Pg**	**02 58 15.1**	**-0.2**
GCAM				*i* S	**Sg**	**02 58 18.2**	**+0.4**
GCAM	**G?zelcaml?**	**0.14**	**207**	P	**Pg**	**02 58 15.1**	**-0.2**
GCAM				S	**Sg**	**02 58 18.2**	**+0.4**
AYDB	**Zeytinkoy-Aydi**	**0.47**	**75**	*e*PG	**Pg**	**02 58 20.7**	**-0.4**
AYDB				*e*SG	**Sg**	**02 58 27.0**	**-0.4**
AYDB	**Zeytinkoy-Aydi**	**0.47**	**75**	*e*Pg	**Pg**	**02 58 20.7**	**-0.4**
AYDB				*e*Sg	**Sg**	**02 58 27.0**	**-0.4**
AYDN	**Tasoluk**	**0.48**	**111**	*i* P	**Pg**	**02 58 21.2**	**0.0**
AYDN				*i* S	**Sg**	**02 58 28.0**	**+0.4**
AYDN	**Tasoluk**	**0.48**	**111**	P	**Pg**	**02 58 21.2**	**0.0**
AYDN				S	**Sg**	**02 58 28.0**	**+0.4**
IZM	**Izmir**	**0.57**	**356**	*e*PG	**Pg**	**02 58 22.5**	**-0.4**
IZM				*e*SG	**Sg**	**02 58 30.5**	**0.0**
IZM	**Izmir**	**0.57**	**356**	*e*Pg	**Pg**	**02 58 22.5**	**-0.4**
IZM				*e*Sg	**Sg**	**02 58 30.5**	**0.0**
BLCB	**Balcova**	**0.60**	**339**	*e*PG	**Pg**	**02 58 23.5**	**+0.1**
BLCB	**Balcova**	**0.60**	**339**	*e*Pg	**Pg**	**02 58 23.5**	**+0.1**
ZEY	**˙zmir**	**0.76**	**303**	*i* P	**Pg**	**02 58 26.6**	**+0.1**
BODT	**Bodrum**	**0.77**	**180**	*e*PG	**Pn**	**02 58 28.5**	**+0.2**
BODT	**Bodrum**	**0.77**	**180**	*e*Pg	**Pn**	**02 58 28.5**	**+0.2**
BDRM	**Kayabasi**	**0.77**	**172**	*i* P	**Pn**	**02 58 28.6**	**+0.3**
BDRM				*i* S	**Sn**	**02 58 39.0**	**-0.7**
BDRM	**Kayabasi**	**0.77**	**172**	P	**Pn**	**02 58 28.6**	**+0.3**
BDRM				S	**Sn**	**02 58 39.0**	**-0.7**
YER	**Yerkesik**	**1.03**	**132**	*e*PG	**Pb**	**02 58 31.6**	**+0.1**
YER	**Yerkesik**	**1.03**	**132**	*e*Pg	**Pb**	**02 58 31.6**	**+0.1**
KULA	**Kula-Manisa**	**1.26**	**57**	*e*PN	**Pn**	**02 58 35.1**	**0.0**
KULA	**Kula-Manisa**	**1.26**	**57**	*e*Pn	**Pn**	**02 58 35.1**	**0.0**
DEMI	**Demirci**	**1.64**	**42**	*i* P	**Pg**	**02 58 44.2**	**+1.0**
DEMI				*i* S	**Sg**	**02 59 04.4**	**0.0**
DEMI	**Demirci**	**1.64**	**42**	P	**Pg**	**02 58 44.2**	**+1.0**
DEMI				S	**Sg**	**02 59 04.4**	**0.0**

*DDA **11** 03:02:08.9, 38.°44N×39.°22E, h7km, Md2.6*
*CSEM **11** 03:02:09.2±0.1, 38.°47N×39.°41E, h2km, MD2.6, Error ellipse: s-maj=4.6km s-min=2.9km az=66.0*
*ISK **11** 03:02:09.8, 38.°50N×39.°42E, h11km, MD2.8*
ISC 11 03:02:09.2±1.1, 38.°47N±0.°03×39.°34E±0.°03, h7km±10km, n21, σ1.°30/31, Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ELZG	**Elazig**	**0.28**	**275**	*i* P	Pg	03 02 12.9	-1.8
ELZG				*i* S	**Sg**	**03 02 17.1**	**-1.4**
PTK	**Pertek**	**0.42**	**6**	*e*PG	**Pg**	**03 02 17.8**	**+0.4**
PTK				*e*SG	**Sb**	**03 02 24.3**	**-1.4**
PTK	**Pertek**	**0.42**	**6**	*e*Pg	**Pg**	**03 02 17.8**	**+0.4**
TNCL	**Tunceli-Merkez**	**0.66**	**14**	*i* P	**Pg**	**03 02 22.0**	**+0.1**
TNCL				*i* S	**Sn**	**03 02 33.8**	**-2.0**
TNCL	**Tunceli-Merkez**	**0.66**	**14**	P	**Pg**	**03 02 22.0**	**+0.1**
DYBB	**Diyarbakir**	**0.82**	**129**	*e*PG	**Pb**	**03 02 25.7**	**0.0**
DIY	**Diyarbakir**	**0.91**	**129**	*e*Pg	**Pg**	**03 02 25.7**	**-0.9**
AKCD	**Akcadag**	**1.13**	**261**	*i* P	Pb	03 02 27.4	-0.6
AKCD				*i* S	**Sb**	**03 02 42.5**	**-3.4**
MAZI	**Mazidag**	**1.34**	**139**	*e*PN	**Pn**	**03 02 34.4**	**0.0**
MAZI				*e*SN	**Sg**	**03 02 52.9**	**+0.7**
MAZI	**Mazidag**	**1.34**	**139**	*e*Pn	**Pn**	**03 02 34.4**	**0.0**
MAZI				*e*Sn	**Sg**	**03 02 52.9**	**+0.7**
DARE	**Darende-Malaty**	**1.46**	**274**	*e*PN	**Pb**	**03 02 37.6**	**+0.9**
DARE	**Darende-Malaty**	**1.46**	**274**	*e*Pn	**Pb**	**03 02 37.6**	**+0.9**
MARD	**Mardin**	**1.62**	**135**	*i* P	**Pn**	**03 02 38.2**	**-0.1**
MARD				*i* S	**Sg**	**03 03 02.6**	**+1.2**
CUKAN	**kangal_SIVAS**	**1.69**	**301**	*i* P	**Pn**	**03 02 39.9**	**+0.7**
CUKAN				*i* S	**Sn**	**03 03 00.5**	**-0.6**
CUKAN	**kangal_SIVAS**	**1.69**	**301**	P	**Pn**	**03 02 39.9**	**+0.7**
SURC	**SANLIURFA_SURC**	**1.69**	**200**	*i* P	**Pn**	**03 02 40.2**	**+1.0**
SURC				*i* S	**Sn**	**03 03 02.4**	**+1.3**
SURC	**SANLIURFA_SURC**	**1.69**	**200**	P	**Pn**	**03 02 40.2**	**+1.0**
SURC				S	**Sn**	**03 03 02.4**	**+1.3**
GZT	**Gaziantep**	**1.79**	**232**	*i* P	**Pn**	**03 02 38.8**	**-1.8**
GZT				*i* S	**Sn**	**03 03 05.5**	**+1.8**
AYKD	**Aykdinkavak**	**2.26**	**243**	*i* P	**Pb**	**03 02 50.2**	**-0.1**
AYKD				*i* S	**Sn**	**03 03 16.0**	**+0.8**
SVSK	**Karacayir**	**2.32**	**309**	*e*PN	**Pn**	**03 02 49.6**	**+1.8**
SVSK	**Karacayir**	**2.32**	**309**	*e*Pn	**Pn**	**03 02 49.6**	**+1.8**

*TAP **11** 03:07:51.4, 24.°81N×121.°98E, h92km, ML3.5, C*
*JMA **11** 03:07:51.6±0.2, 24.°74N×121.°95E, h89km±2km, M2.6*
*ISCJB **11** 03:07:52.0±0.6, 24.°79N±0.°04×122.°00E±0.°02, h88km±5km, Error ellipse: s-maj=6.5km s-min=3.4km az=164.3*
ISC 11 03:07:52.5±1.5, 24.°79N±0.°05×121.°99E±0.°03, h86km±8km, n38, σ0.°46/70, 4D, Taiwan

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
EGS		**0.08**	**318**	*i* P	**Pn**	**03 08 04.3**	**-0.3**
EGS	baz=313			*e*S	**Sn**	**03 08 13.6**	**-0.1**
TWC	**Suao** baz=313	**0.22**	**217**	P	**Pn**	**03 08 05.2**	**+0.1**
TWC	baz=212			S	**Sn**	**03 08 14.6**	**+0.2**
ILA	**Ilan** baz=212	**0.22**	**265**	*e*P	**Pn**	**03 08 05.4**	**+0.4**
TWB1	**Santiao Chiao** baz=259	**0.22**	**359**	P	**Pn**	**03 08 04.6**	**-0.6**
TWB1	baz=2.0			*i* S	**Sn**	**03 08 14.0**	**-0.4**
TWE	**Neicheng** baz=2.0	**0.30**	**258**	*e*P	**Pn**	**03 08 05.7**	**+0.3**
TWE	baz=253			*e*S	**Sn**	**03 08 15.5**	**+0.4**
NWF	**Wu-fen Shan** baz=253	**0.34**	**326**	P	**Pn**	**03 08 05.6**	**-0.3**
NWF	baz=320			*e*S	**Sn**	**03 08 15.1**	**-0.6**
ENTT	**Nioudou** baz=320	**0.41**	**250**⇓	*i*P	**Pn**	**03 08 06.7**	**+0.5**
ENTT	baz=247			*e*S	**Sn**	**03 08 17.1**	**+0.7**
ENA	**Nanau** baz=247	**0.42**	**213**⇓	*i*P	**Pn**	**03 08 06.5**	**+0.3**
ENA	baz=204			*e*S	**Sn**	**03 08 17.2**	**+0.8**
TAP1	**Taipei** baz=204	**0.49**	**301**	*e*P	**Pn**	**03 08 06.6**	**-0.2**
TAP1	baz=303			*e*S	**Sn**	**03 08 17.9**	**+0.5**
NSK	**Sanguang** baz=303	**0.59**	**260**⇓	*i*P	**Pn**	**03 08 07.5**	**-0.2**
NSK	baz=257			*i* S	**Sn**	**03 08 18.5**	**-0.5**
TWY	**Chenhua** baz=257	**0.60**	**324**	*e*P	**Pn**	**03 08 07.5**	**-0.2**
TWY	baz=322			*e*S	**Sn**	**03 08 18.8**	**-0.3**
TWS1	**Kuangyinshan** baz=322	**0.61**	**301**	*e*P	**Pn**	**03 08 07.8**	**+0.1**
TWS1	baz=301			*e*S	**Sn**	**03 08 19.4**	**+0.3**
NNS	**Nan Shan** baz=301	**0.66**	**239**	*e*P	**Pn**	**03 08 08.7**	**+0.2**

baz=243
NNS eS Sn 03 08 20.3 0.0
baz=243
NCU National Centr 0.75 284 eP Pn 03 08 09.4 +0.2
baz=282
NCU eS Sn 03 08 22.3 +0.7
baz=282
TWD Chiawan 0.79 207 P Pn 03 08 08.9 -0.7
TWD eS Sn 03 08 21.8 -0.5
baz=217
HWA Hwalien 0.88 204 eP Pn 03 08 10.7 +0.2
baz=192
TWT Tachien 0.91 235 P Pn 03 08 11.5 +0.4
baz=228
TWT eS Sn 03 08 25.8 +0.7
baz=228
NSTT Nanjuang 0.91 261 P Pn 03 08 10.6 -0.4
baz=259
NSTT eS Sn 03 08 23.9 -0.9
baz=259
WHF Hehuan Shan 0.92 226⇓*i* P Pn 03 08 11.3 -0.1
baz=220
WHF S Sn 03 08 25.8 +0.2
baz=220
JYNG Yonagunijimaku 0.93 111 P Pn 03 08 10.9 -0.2
JYNG S Sn 03 08 25.0 0.0
YOJ Yonaguni jima 0.98 109 P Pn 03 08 11.6 -0.1
YOJ S Sn 03 08 25.9 -0.2
ESL Shilin 1.09 208 eP Pn 03 08 13.5 +0.5
baz=212
NSY Sanyi 1.18 252 eP Pn 03 08 13.8 -0.2
baz=251
NSY eS Sn 03 08 30.1 -0.2
baz=251
TWQ1 Liyutan 1.19 249 eP Pn 03 08 14.1 -0.1
baz=248
TWQ1 eS Sn 03 08 29.9 -0.6
baz=248
WDT Danda 1.29 218 P Pn 03 08 15.5 -0.3
baz=212
WDT eS Sn 03 08 32.7 -0.5
baz=212
SMLT Sun Moon Lake 1.34 228 P Pn 03 08 16.3 +0.1
baz=236
SMLT eS Sn 03 08 34.5 +0.5
baz=236
TYC Yuchr 1.36 230 P Pn 03 08 16.3 +0.1
baz=236
TYC S Sn 03 08 34.0 -0.2
baz=236
TWF1 Yuli 1.56 204 eP Pn 03 08 17.8 -1.1
baz=196
IRIF Iriomote-Funau 1.65 105 P Pn 03 08 19.5 -0.4
IRIF S Sn 03 08 40.4 -0.3
ALS Alishan 1.67 221 eP Pn 03 08 20.8 +0.3
baz=229
ALS eS Sn 03 08 42.8 +1.0
baz=229
CHN5 Tsauling 1.68 226 eP Pn 03 08 20.2 -0.3
baz=226
CHN5 eS Sn 03 08 41.9 +0.1
baz=226
CHN4 Tsaushan 1.92 222 eP Pn 03 08 23.7 +0.2
baz=223
CHN4 eS Sn 03 08 47.1 0.0
baz=223
JKRS Kuro-shima 1.92 106 P Pn 03 08 23.7 +0.2
JKRS S Sn 03 08 47.0 0.0
JIJ Ishigaki jima 2.00 102 P Pn 03 08 24.5 -0.1
JIJ S Sn 03 08 48.3 -0.8
CHN1 Nanshi 2.08 220 eP Pn 03 08 25.7 +0.1
baz=222
CHN1 eS Sn 03 08 51.0 +0.1
baz=222
JISG Ishigakijimahi 2.12 95 P Pn 03 08 26.5 +0.4
TWG Pinlang 2.13 203 eP Pn 03 08 25.4 -0.9
baz=196
JTJ Tarama 2.47 93 P Pn 03 08 31.6 +0.8
JTJ S Sn 03 09 01.2 +1.0

*IDC **11** 03:17:00.5±0.9,57.°95N×32.°37W,h0km,mb3.7/15,*
mb1 3.9/16,mb1mx3.8/43,mbtmp3.7/16,ML3.5/1,MS3.6/24,
Ms1 3.6/24,ms1mx3.3/57,Error ellipse: s-maj=27.0km
s-min=15.3km az=17.0
*ISCJB **11** 03:17:01.4±0.7,57.°9N±0.°1×32.°4W±0.°2,h18km,mb3.7/13,*
MS3.5/21,Error ellipse: s-maj=21.0km s-min=10.8km
az=14.7

ISC 11 03:17:03.2±1.0,57.°9N±0.°2×32.°4W±0.°1,h18km,n29,
σ0s96/16,mb3.9/13,MS3.5/21,Reykjanes Ridge

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SFJD	**Kangerlussuaq**	**12.35**	**325**	LR	LR	03 23 58.2	
	comp=Z,372nm,18.3s,baz=126,slow=34						
EKA	**Eskdalemuir Ar**	**16.23**	**87**	Pn	**Pn**	**03 20 51.0**	**+1.0**
	baz=307,slow=9.4,SNR=2.8						
FRB	**Frobisher Bay**	**18.36**	**304**	LR	LR	03 27 15.5	
	comp=Z,270nm,19.9s,baz=135,slow=34						
SCHQ	**Schefferville**	**19.19**	**276**	LR	LR	03 27 39.6	
	comp=Z,268nm,18.1s,baz=70,slow=33						
NOA	**NORSAR Array B**	**22.05**	**63**	P	**P**	**03 21 54.3**	**-2.3**
	0.4nm,0.8s,baz=265,slow=12,SNR=3.2						
NOA				LR	LR	03 28 59.0	
	comp=Z,66nm,21.1s,baz=270,slow=33						
HFS	**Hagfors**	**23.45**	**65**	P	**P**	**03 22 11.2**	**+0.1**
	1.7nm,0.8s,baz=297,slow=19,SNR=2.4						
HFS				LR	LR	03 29 27.9	
	comp=Z,77nm,21.8s,baz=264,slow=32						
ESDC	**Sonseca Array**	**25.85**	**123**	P	**P**	**03 22 34.1**	**+0.7**
	1.1nm,0.8s,baz=319,slow=9.0,SNR=7.3						
ESDC				LR	LR	03 30 42.8	
	comp=Z,87nm,20.6s,baz=355,slow=32						
ARCES	**ARCESS Array B**	**26.95**	**41**	LR	LR	03 31 03.0	
	comp=Z,39nm,18.6s,baz=292,slow=31						
DAVOX	**Davos/Dischmat**	**27.66**	**95**	LR	LR	03 32 42.9	
	comp=Z,137nm,21.6s,baz=282,slow=34						
GERES	**GERESS Array B**	**28.43**	**88**	LR	LR	03 33 52.9	
	comp=Z,113nm,19.1s,baz=302,slow=36						
FINES	**FINESS Array B**	**28.87**	**58**	P	**P**	**03 22 59.7**	**-0.5**
	2.6nm,1.0s,baz=291,slow=12,SNR=3.4						
FINES				LR	LR	03 33 25.7	
	comp=Z,59nm,18.5s,baz=295,slow=34						
VRAC	**Vranov**	**29.70**	**85**	LR	LR	03 34 58.3	
	comp=Z,122nm,18.9s,baz=307,slow=36						
KEST	**Kesra**	**35.34**	**111**	LR	LR	03 37 05.0	
	comp=Z,88nm,19.4s,baz=308,slow=34						
AKASG	**Malin Array Be**	**35.51**	**74**	P	**P**	**03 23 57.8**	**-0.7**
	2.4nm,0.9s,baz=304,slow=8.3,SNR=8.6						
AKASG				LR	LR	03 37 55.5	
	comp=Z,68nm,18.1s,baz=295,slow=35						
ULM	**Lac du Bonnet**	**36.74**	**286**	LR	LR	03 37 30.3	
	comp=Z,81nm,18.6s,baz=42,slow=34						
YKA	**Yellowknife Ar**	**38.50**	**312**	P	**P**	**03 24 23.3**	**-0.4**
	0.5nm,0.8s,baz=59,slow=9.2,SNR=7.7						
BRTR	**Keskin Array B**	**45.13**	**84**	P	**P**	**03 25 17.7**	**-0.7**
	0.6nm,100.0s,baz=335,slow=2.8,SNR=3.8						
BRTR				LR	LR	03 43 41.9	
	comp=Z,41nm,21.6s,baz=296,slow=36						
DLBC	**Dease Lake**	**47.00**	**315**	LR	LR	03 45 17.7	
	comp=Z,159nm,18.4s,baz=356,slow=36						
KBZ	**Khabaz**	**47.10**	**73**	P	**P**	**03 25 35.1**	**+1.4**
	3.2nm,1.0s,baz=300,slow=4.7,SNR=3.8						
KBZ				LR	LR	03 45 39.2	
	comp=Z,22nm,19.2s,baz=306,slow=36						
ILAR	**Eielson Array**	**47.99**	**328**	P	**P**	**03 25 40.7**	**+0.4**
	0.5nm,0.9s,baz=38,slow=5.8,SNR=5.4						
ILAR				LR	LR	03 44 32.9	
	comp=Z,53nm,20.3s,baz=25,slow=34						
PDAR	**Pinedale Array**	**48.74**	**287**	P	**P**	**03 25 46.2**	**-0.5**
	0.2nm,100.0s,baz=46,slow=8.5,SNR=4.1						
PDAR				LR	LR	03 45 07.9	
	comp=Z,116nm,18.3s,baz=45,slow=35						
TIXI	**Tiksi**	**50.06**	**8**	P	**P**	**03 25 57.0**	**+1.0**
	0.8nm,0.3s,baz=34,slow=1.0,SNR=4.5						
TORD	**Torodi Ar. Bea**	**51.56**	**136**	P	**P**	**03 26 07.8**	**-0.2**
	1.6nm,0.8s,baz=336,slow=6.8,SNR=7.9						
TORD				LR	LR	03 44 46.6	
	comp=Z,48nm,22.0s,baz=315,slow=32						
DBIC	**Dimbokro**	**55.41**	**146**	LR	LR	03 47 15.1	
	comp=Z,62nm,19.7s,baz=342,slow=33						
TXAR	**Lajitas Array**	**55.82**	**272**	LR	LR	03 49 52.0	
	comp=Z,51nm,18.7s,baz=0.0,slow=35						
YBH	**Yreka Blue Hor**	**56.04**	**296**	LR	LR	03 49 03.2	
	comp=Z,80nm,19.1s,baz=18,slow=34						
NVAR	**Mina Array Bea**	**56.40**	**290**	P	**P**	**03 26 43.6**	**+0.2**
	0.3nm,0.6s,baz=67,slow=8.1,SNR=3.5						
NVAR				LR	LR	03 49 53.4	
	comp=Z,120nm,18.1s,baz=21,slow=35						
MKAR	**Makanchi Array**	**62.53**	**45**	P	**P**	**03 27 25.2**	**-0.1**
	0.7nm,0.6s,baz=340,slow=6.0,SNR=9.3						
SONM	**Songino Array**	**69.24**	**28**	P	**P**	**03 28 08.5**	**-0.2**
	1.7nm,1.1s,baz=330,slow=6.2,SNR=8.7						

*ISCJB **11** 03:45:30.3±0.3,51.°55N±0.°07×177.°01W±0.°07,h48km,*
mb4.2/18,MS3.1/1,Error ellipse: s-maj=9.9km
s-min=6.2km az=171.2
*NEIC **11** 03:45:30.9,51.°43N×176.°91W,h27km,mb4.2/12,*
ML3.9(AEIC),After AEIC.
*IDC **11** 03:45:32.4±2.7,51.°62N×176.°95W,h43km±22km,mb3.6/12,*
mb1 3.9/13,mb1mx3.6/59,mbtmp3.8/13,ML3.6/1,MS2.9/2,
Ms1 2.9/2,ms1mx2.5/49,Error ellipse: s-maj=26.7km
s-min=15.3km az=164.0

ISC 11 03:45:32.5±0.6,51.°6N±0.°1×177.°04W±0.°07,h48km,n190,
σ0s79/185,mb4.1/18,Andreanof Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SMY	**Shemya**	**5.58**	**286**	*e*Pn	**Pn**	**03 46 52.6**	**-0.3**
UNV	**Unalaska Valle**	**6.80**	**66**	*e*Pn	**Pn**	**03 47 10.9**	**+1.3**
UNV				*e*S	**Sn**	**03 48 29.1**	**+3.5**
AKUT	**Akutan**	**7.30**	**65**	*e*Pn	**Pn**	**03 47 17.4**	**+1.0**
CHGN	**Chignik**	**11.95**	**59**	*e*Pn	**Pn**	**03 48 18.9**	**-1.1**
OHAK	**Old Harbor**	**14.91**	**58**	*e*Pn	Pn	03 48 56.7	-3.3
KDAK	**Kodiak Island**	**15.41**	**57**	P	P	03 49 18.5	+8.2
	1.1nm,0.3s,baz=268,slow=5.0,SNR=19						
KDAK				S	S	03 52 13.0	+3.1
	0.2nm,0.3s,baz=70,slow=23,SNR=6.1						
PETK	**Petropavlovsk-**	**15.50**	**286**	LR	LR	03 55 49.7	
	comp=Z,31nm,18.4s,baz=47,slow=40						
PPLA	**Purkeypile**	**17.47**	**40**	*e*Pn	**P**	**03 49 34.0**	**+0.8**
	6.9nm,0.6s						
SEW	**Seward**	**17.59**	**50**	*e*Pn	**Pn**	**03 49 31.7**	**-2.1**
KTH	**Kantishna Hill**	**18.29**	**39**	*e*Pn	**Pn**	**03 49 42.7**	**+0.2**
	9.5nm,0.7s						
TRF	**Thorofare Moun**	**18.49**	**40**	*e*Pn	**P**	**03 49 44.6**	**+0.1**
	12nm,1.1s						
BPAW	**Bear Paw Mtn.**	**18.54**	**37**	*e*Pn	**Pn**	**03 49 46.1**	**+0.7**
	1.3nm,0.8s						
MCK	**McKinley**	**19.16**	**40**	*e*P	**P**	**03 49 50.9**	**-0.7**
	5.1nm,0.6s						
SEY	**Seymchan**	**19.86**	**317**	P	**P**	**03 50 00.1**	**+0.8**
	0.2nm,0.3s,baz=108,slow=11,SNR=12						
COLA	**College**	**20.10**	**37**	*e*P	Pn	03 50 03.4	-0.6
	2.6nm,0.5s						
BMRM	**Bremer River**	**20.12**	**49**	*e*P	Pn	03 50 03.7	-0.7
PAX	**Paxson**	**20.30**	**44**	*e*P	**P**	**03 50 04.9**	**+0.8**
	4.5nm,0.6s						
ILAR	**Eielson Array**	**20.42**	**38**	P	**P**	**03 50 04.7**	**-0.6**
	0.5nm,0.4s,baz=235,slow=9.4,SNR=12						
ILAR				PcP	**PcP**	**03 54 14.8**	**-0.9**
	0.3nm,0.4s,baz=274,slow=3.1,SNR=4.7						
DOT	**Dot Lake**	**21.13**	**42**	*e*P	**P**	**03 50 12.7**	**-0.2**
	17nm,0.6s						
EGAK	**Eagle**	**22.70**	**41**	*e*P	**P**	**03 50 29.0**	**-0.7**
	2.8nm,0.6s						
INK	**Inuvik**	**26.69**	**35**	P	**P**	**03 51 05.2**	**-1.4**
	0.4nm,0.3s,baz=237,slow=6.4,SNR=6.6						
INK				PcP	**PcP**	**03 54 29.1**	**+0.4**
	1.0nm,0.6s,baz=300,slow=3.7,SNR=8.3						
H11N2	**WAKE ISLAND Hy**	**34.17**	**208**	T	T	04 28 25.7	
	baz=18,slow=76,SNR=1488						
H11N3	**WAKE ISLAND Hy**	**34.18**	**208**	T	T	04 28 38.2	
	baz=18,slow=76,SNR=1154						
H11N1	**WAKE ISLAND Hy**	**34.19**	**208**	T	T	04 28 39.3	
	baz=18,slow=76,SNR=1309						
YKA	**Yellowknife Ar**	**34.31**	**47**	P	**P**	**03 52 12.9**	**-1.0**
	0.7nm,0.7s,baz=281,slow=8.0,SNR=12						
YKA				PcP	**PcP**	**03 54 49.6**	**+0.7**
	1.0nm,0.7s,baz=287,slow=3.2,SNR=22						
YKA				ScP	**ScP**	**03 58 30.3**	**+0.6**
	0.4nm,0.7s,baz=295,slow=3.2,SNR=8.2						
USRK	**Ussuriysk Ar.**	**34.36**	**278**	P	**P**	**03 52 14.5**	**-0.1**
	1.6nm,0.6s,baz=84,slow=5.9,SNR=3.6						
H11S1	**WAKE ISLAND Hy**	**35.39**	**207**	T	T	04 29 60.0	
	baz=18,slow=76,SNR=1334						
H11S2	**WAKE ISLAND Hy**	**35.40**	**207**	T	T	04 30 06.8	
	baz=18,slow=76,SNR=664						
H11S3	**WAKE ISLAND Hy**	**35.41**	**207**	T	T	04 30 04.9	
	baz=18,slow=76,SNR=550						
YBH	**Yreka Blue Hor**	**37.77**	**83**	LR	LR	04 04 27.1	
	comp=Z,26nm,19.2s,baz=321,slow=30						
NEW	**Newport**	**37.79**	**71**	P	**P**	**03 52 43.9**	**0.0**
	baz=298,SNR=7.5						
NEW	**Newport**	**37.79**	**71**	*e*P	**P**	**03 52 44.3**	**+0.5**
	8.9nm,0.8s						
MSO	**Missoula**	**40.37**	**71**	P	**P**	**03 53 04.4**	**-1.1**
	baz=301						
HLID	**Hailey**	**41.83**	**75**	P	**P**	**03 53 16.2**	**-1.5**
	baz=304						
EGMT	**Eagleton**	**42.20**	**67**	P	**P**	**03 53 18.9**	**-1.5**
	baz=301						
BOZ	**Bozeman (W)**	**42.36**	**71**	P	**P**	**03 53 21.4**	**-0.4**
	baz=302						
H17A	**Grant Village**	**43.67**	**72**	P	**P**	**03 53 33.3**	**+0.7**
	baz=304						
RLMT	**Red Lodge**	**44.04**	**71**	P	**P**	**03 53 35.4**	**-0.1**
	baz=304,SNR=8.1						
RLMT	**Red Lodge**	**44.04**	**71**	*e*P	**P**	**03 53 36.1**	**+0.6**
	7.1nm,0.8s						
R11A	**Troy Canyon, C**	**44.17**	**82**	P	**P**	**03 53 36.6**	**0.0**
	baz=308						
MPMC	**Manual Prospec**	**44.43**	**86**	P	**P**	**03 53 39.3**	**+0.6**
	baz=310						
FURC	**Furnace Creek,**	**44.55**	**85**	P	**P**	**03 53 39.6**	**+0.1**
	baz=309						
TPNV	**Topopah Spring**	**44.63**	**84**	P	**P**	**03 53 40.5**	**+0.2**
	baz=309,SNR=6.5						
BLG	**Laguna Peak, P**	**44.70**	**90**	P	**P**	**03 53 41.3**	**+0.6**
	baz=311						
DUG	**Dugway, Tooele**	**44.76**	**78**	P	**P**	**03 53 41.4**	**+0.2**
	baz=307						
LAO	**LASA Array**	**44.94**	**67**	P	**P**	**03 53 42.5**	**0.0**
	baz=303						
BW06	**Boulder Array**	**45.20**	**73**	P	**P**	**03 53 45.3**	**+0.4**
	baz=306,SNR=10						
BW06	**Boulder Array**	**45.20**	**73**	*e*P	**P**	**03 53 44.9**	**0.0**
	3.1nm,0.6s						
PDAR	**Pinda Array**	**45.20**	**73**	P	**P**	**03 53 45.2**	**+0.3**
	2.6nm,0.5s,baz=300,slow=3.8,SNR=56						
PDAR				PcP	**PcP**	**03 55 24.1**	**-0.1**
	0.3nm,0.5s,baz=261,slow=1.7,SNR=4.2						
GSC	**Goldstone, Bar**	**45.34**	**87**	P	**P**	**03 53 45.9**	**+0.1**
	baz=310						
BFSC	**Mount Baldy Ra**	**45.50**	**88**	P	**P**	**03 53 47.1**	**-0.1**
	baz=311						
TUQ	**Turquoise Moun**	**45.80**	**86**	P	**P**	**03 53 50.1**	**+0.5**
	baz=310						
MURC	**Murrieta**	**46.21**	**89**	P	**P**	**03 53 52.9**	**+0.3**
	baz=312						
GMRC	**Granite Mounta**	**46.39**	**86**	P	**P**	**03 53 53.5**	**-0.7**
	baz=311						
C26A	**Wahner Farm, P**	**46.65**	**63**	P	**P**	**03 53 55.5**	**-0.4**
	baz=304						
E25A	**Miller Ranch,**	**46.66**	**66**	P	**P**	**03 53 56.1**	**0.0**
	baz=304						
BELC	**Belle Mtn. Jos**	**46.69**	**87**	P	**P**	**03 53 55.6**	**-0.9**
	baz=311						
K22A	**Casper**	**47.08**	**72**	P	**P**	**03 53 58.5**	**-1.1**
	baz=306						
IRM	**Iron Mountain**	**47.12**	**87**	P	**P**	**03 53 58.8**	**-0.9**
	baz=311						
E26A	**Carlson Angus**	**47.21**	**65**	P	**P**	**03 53 59.6**	**-0.7**
	baz=305						
G25A	**Newell**	**47.40**	**67**	P	**P**	**03 54 02.1**	**+0.2**
	baz=305						
SONM	**Songino Array**	**47.55**	**297**	P	**P**	**03 54 04.2**	**+1.2**
	0.5nm,0.7s,baz=50,slow=9.2,SNR=4.4						
SONM				ScP	**ScP**	**03 59 22.5**	**+0.3**
	0.6nm,0.9s,baz=54,slow=2.6,SNR=4.1						
O20A	**White River Ci**	**47.57**	**76**	P	**P**	**03 54 03.0**	**-0.4**
	baz=308,SNR=5.4						
O20A	**White River Ci**	**47.57**	**76**	*e*P	**P**	**03 54 03.3**	**-0.1**
	2.8nm,0.4s						
H25A	**Fruitdale**	**47.63**	**68**	P	**P**	**03 54 03.7**	**0.0**
	baz=306						
PDMCI	**Parker Dam,Lak**	**47.65**	**86**	P	**P**	**03 54 03.6**	**-0.2**
	baz=311						
RSSD	**Black Hills**	**47.67**	**69**	P	**P**	**03 54 03.9**	**-0.3**
	baz=306						
G26A	**Maurine**	**47.81**	**67**	P	**P**	**03 54 04.5**	**-0.6**
	baz=306						
I25A	**Rochford**	**47.91**	**69**	P	**P**	**03 54 05.5**	**-0.5**
	baz=306						
H26A	**Fairpoint**	**48.11**	**67**	P	**P**	**03 54 07.0**	**-0.4**
	baz=306						
G27A	**Dupree**	**48.15**	**66**	P	**P**	**03 54 06.6**	**-1.0**
	baz=306						
I26A	**New Underwood**	**48.41**	**68**	P	**P**	**03 54 09.6**	**-0.1**
	baz=306						
H27A	**Howes**	**48.50**	**67**	P	**P**	**03 54 09.9**	**-0.5**
	baz=306						
F28A	**McLaughlin**	**48.51**	**65**	P	**P**	**03 54 10.1**	**-0.3**
	baz=306						
WUAZ	**Wupatki**	**48.57**	**82**	P	**P**	**03 54 11.7**	**+0.5**
	baz=311						
PV01	**Paradox Valley**	**48.62**	**78**	*e*P	**P**	**03 54 11.9**	**+0.3**
	210nm,0.7s						
J26A	**Sides Ranch, S**	**48.71**	**69**	P	**P**	**03 54 12.1**	**+0.1**
	baz=307						
I27A	**Quinn**	**48.85**	**68**	P	**P**	**03 54 12.8**	**-0.3**
	baz=307						
H28A	**Mission Ridge**	**49.08**	**66**	P	**P**	**03 54 14.3**	**-0.5**
	baz=307						
J27A	**Elkhorn Farm,**	**49.37**	**68**	P	**P**	**03 54 16.4**	**-0.7**
	baz=307						
I28A	**Midland**	**49.40**	**67**	P	**P**	**03 54 17.2**	**-0.1**
	baz=307,SNR=5.0						
J28A	**Allard Ranch,**	**49.71**	**68**	P	**P**	**03 54 19.9**	**+0.3**
	baz=307						
I29A	**Vivian Onida**	**49.89**	**67**	P	**P**	**03 54 20.5**	**-0.4**
	baz=307						
J29A	**Okreek**	**50.25**	**67**	P	**P**	**03 54 23.1**	**-0.6**
	baz=308,SNR=5.9						
C34A	**RKJ Ranch, Bem**	**50.70**	**60**	P	**P**	**03 54 26.7**	**-0.3**
	baz=307						
SDCO	**Great Sand Dun**	**50.73**	**76**	P	**P**	**03 54 27.3**	**-0.4**
	baz=310						
J30A	**Dallas**	**50.78**	**67**	P	**P**	**03 54 27.2**	**-0.4**
	baz=308						
TUC	**Tucson**	**51.07**	**85**	P	**P**	**03 54 30.1**	**+0.1**
	baz=313						
K30A	**Basset**	**51.11**	**68**	P	**P**	**03 54 30.1**	**-0.1**
	baz=308						
H32A	**Carlson Farm,**	**51.22**	**65**	P	**P**	**03 54 31.0**	**+0.1**
	baz=308						
K31A	**O'Neill**	**51.64**	**67**	P	**P**	**03 54 32.4**	**-1.7**
	baz=309						
T25A	**Trinidad**	**51.79**	**76**	P	**P**	**03 54 35.7**	**+0.2**
	baz=311						
ANMO	**Albuquerque**	**51.98**	**80**	P	**P**	**03 54 36.5**	**-0.4**
	baz=312						
H34A	**Spellman Lake,**	**52.05**	**63**	P	**P**	**03 54 35.6**	**-1.5**
	baz=308						
BGNE	**Belgrade**	**52.76**	**68**	P	**P**	**03 54 42.0**	**-0.4**
	baz=310						
O31A	**Woolen Ranch,**	**52.88**	**70**	P	**P**	**03 54 43.0**	**-0.3**
	baz=310						
P32A	**Huiting Farm,**	**53.64**	**70**	P	**P**	**03 54 48.7**	**-0.2**
	baz=310						
O33A	**Hebron**	**53.94**	**69**	P	**P**	**03 54 50.4**	**-0.7**
	baz=310						
Q32A	**Meitler Ranch,**	**54.08**	**71**	P	**P**	**03 54 52.0**	**-0.1**
	baz=311						
R32A	**Long Quarter,**	**54.36**	**71**	P	**P**	**03 54 53.2**	**-1.0**
	baz=311						
O34A	**Beatrice**	**54.39**	**68**	P	**P**	**03 54 54.4**	**0.0**
	baz=311						
K37A	**Belmond**	**54.46**	**64**	P	**P**	**03 54 54.1**	**-0.8**
	baz=310						
Q33A	**Connelly Farm,**	**54.50**	**70**	P	**P**	**03 54 54.6**	**-0.6**
	baz=311						
N35A	**Tabor**	**54.55**	**67**	P	**P**	**03 54 54.9**	**-0.6**
	baz=311						
MNTX	**Cornudas Mount**	**54.83**	**82**	P	**P**	**03 54 57.5**	**-0.3**
	baz=314						
MSTX	**Muleshoe**	**54.89**	**78**	P	**P**	**03 54 57.2**	**-1.0**
	baz=313						
T32A	**Huddler Ranch,**	**55.06**	**72**	P	**P**	**03 54 58.6**	**-0.7**
	baz=312						
Q34A	**Chapman**	**55.08**	**70**	P	**P**	**03 54 58.8**	**-0.5**
	baz=311						
KSU1	**Kansas State U**	**55.15**	**69**	P	**P**	**03 54 58.7**	**-1.1**
	baz=311						
P35A	**Duane Minner,**	**55.21**	**68**	P	**P**	**03 54 59.9**	**-0.5**
	baz=311						
S34A	**Willow Spring**	**55.78**	**71**	P	**P**	**03 55 03.5**	**-1.0**
	baz=312						
P37A	**Lathrop**	**56.14**	**67**	P	**P**	**03 55 06.1**	**-0.8**
	baz=312						
T34A	**McClaskey Farm**	**56.19**	**71**	P	**P**	**03 55 06.5**	**-0.9**
	baz=312						
S35A	**Otter Creek Ra**	**56.26**	**70**	P	**P**	**03 55 07.0**	**-0.8**
	baz=312						
R36A	**Gordon, Harris**	**56.31**	**69**	P	**P**	**03 55 07.4**	**-0.8**
	baz=312,SNR=8.5						
N39A	**Derby Farms, D**	**56.34**	**65**	P	**P**	**03 55 07.6**	**-0.7**
	baz=312						
P38A	**Dawn**	**56.58**	**67**	P	**P**	**03 55 09.2**	**-0.9**
	baz=312						
S36A	**Lake Cedric, C**	**56.66**	**70**	P	**P**	**03 55 09.8**	**-0.9**
	baz=312						
X32A	**Elmer**	**56.70**	**75**	P	**P**	**03 55 10.8**	**-0.2**
	baz=313						
R37A	**Teagarden Farm**	**56.71**	**69**	P	**P**	**03 55 09.6**	**-1.5**
	baz=312						
T36A	**Boggs Farm, Ca**	**56.94**	**71**	P	**P**	**03 55 11.9**	**-0.8**
	baz=313						
Q38A	**Cooks Store, C**	**56.98**	**67**	P	**P**	**03 55 11.4**	**-1.5**
	baz=312						
S37A	**Fort Scott**	**57.09**	**69**	P	**P**	**03 55 12.6**	**-1.1**
	baz=312,SNR=5.0						
P39A	**Salisbury**	**57.12**	**66**	P	**P**	**03 55 13.1**	**-0.9**
	baz=312						
O40A	**La Belle**	**57.20**	**65**	P	**P**	**03 55 14.1**	**-0.3**
	baz=312						
Q39A	**Willow Grove F**	**57.29**	**67**	P	**P**	**03 55 13.8**	**-1.3**
	baz=312,SNR=7.2						
R38A	**Fenwick Farm,**	**57.33**	**68**	P	**P**	**03 55 14.2**	**-1.3**
	baz=312						
Y33A	**Hilltop Ranch,**	**57.38**	**75**	P	**P**	**03 55 15.8**	**-0.1**
	baz=313						
X34A	**Smith Ranch, M**	**57.45**	**74**	P	**P**	**03 55 16.1**	**-0.2**
	baz=313						
T37A	**Cheneyville 18**	**57.46**	**70**	P	**P**	**03 55 15.7**	**-0.7**
	baz=313						
P40A	**Paris**	**57.50**	**66**	P	**P**	**03 55 15.7**	**-0.9**
	baz=312,SNR=7.2						
TXAR	**Lajitas Array**	**57.54**	**83**	P	**P**	**03 55 17.3**	**+0.1**
	1.2nm,0.6s,baz=306,slow=4.9,SNR=5.6						
W35A	**Tecumseh**	**57.65**	**73**	P	**P**	**03 55 18.0**	**+0.3**
	baz=313						
S38A	**Stockton**	**57.71**	**69**	P	**P**	**03 55 16.4**	**-1.7**
	baz=313,SNR=8.5						
V36A	**Jenks**	**57.77**	**72**	P	**P**	**03 55 18.0**	**-0.5**
	baz=313						
Z33A	**Whitaker Ranch**	**57.79**	**76**	P	**P**	**03 55 19.0**	**+0.3**
	baz=314						
U37A	**Salina**	**57.84**	**71**	P	**P**	**03 55 18.2**	**-0.8**
	baz=313						
T38A	**Diamond**	**57.89**	**70**	P	**P**	**03 55 18.3**	**-1.0**
	baz=313						
Y34A	**Reagan Ranch,**	**57.94**	**75**	P	**P**	**03 55 20.0**	**+0.2**
	baz=314						
S39A	**Bolivar**	**58.01**	**68**	P	**P**	**03 55 18.6**	**-1.6**
	baz=313						
W36A	**Wetumka**	**58.04**	**72**	P	**P**	**03 55 20.4**	**0.0**
	baz=313						
X35A	**Drake**	**58.10

U39A	**Green Forest**	**58.81**	**70**	P	**P**	03 55 24.6	-1.3
	baz=314							
T40A	**Mansfield**	**58.84**	**68**	P	**P**	03 55 24.5	-1.5
	baz=313,SNR=7.0							
X37A	**Clayton**	**58.93**	**72**	P	**P**	03 55 26.9	+0.3
	baz=314							
234A	**Clairette**	**59.06**	**76**	P	**P**	03 55 27.7	0.0
	baz=314							
V39A	**Pettigrew**	**59.09**	**70**	P	**P**	03 55 27.2	-0.6
	baz=314							
W38A	**Poteau**	**59.10**	**71**	P	**P**	03 55 27.7	-0.2
	baz=314							
U40A	**Yellville**	**59.20**	**69**	P	**P**	03 55 27.2	-1.3
	baz=314,SNR=6.4							
X38A	**Whitesboro**	**59.20**	**72**	P	**P**	03 55 28.5	0.0
	baz=314							
Z36A	**Blue Ridge**	**59.21**	**74**	P	**P**	03 55 28.4	-0.2
	baz=314							
W39A	**Magazine**	**59.45**	**71**	P	**P**	03 55 29.8	-0.5
	baz=314							
334A	**Lometa**	**59.47**	**77**	P	**P**	03 55 30.6	+0.1
	baz=315							
V40A	**Witts Springs**	**59.59**	**70**	P	**P**	03 55 30.3	-1.0
	baz=314,SNR=7.5							
X39A	**Fountain Ranch**	**59.73**	**72**	P	**P**	03 55 32.1	-0.1
	baz=314							
434A	**Burnet**	**59.82**	**77**	P	**P**	03 55 32.7	-0.1
	baz=315							
W40A	**Ferguson Farm,**	**59.88**	**70**	P	**P**	03 55 32.7	-0.4
	baz=314							
MIAR	**Mount Ida**	**60.03**	**71**	P	**P**	03 55 33.4	-0.8
	baz=314							
137A	**Heron Place, G**	**60.09**	**74**	P	**P**	03 55 34.3	-0.4
	baz=315							
Y39A	**Lockesburg**	**60.14**	**72**	P	**P**	03 55 34.6	-0.4
	baz=314							
138A	**Matatall Enter**	**60.44**	**74**	P	**P**	03 55 37.1	0.0
	baz=315							
X40A	**Basin Creek Fa**	**60.50**	**71**	P	**P**	03 55 37.4	-0.1
	baz=314							
832A	**Faith Ranch, C**	**60.56**	**81**	P	**P**	03 55 38.3	+0.4
	baz=316							
733A	**Divot King Ran**	**60.67**	**80**	P	**P**	03 55 38.5	-0.2
	baz=316							
735A	**Kenedy**	**61.49**	**79**	P	**P**	03 55 43.0	-1.2
	baz=316							
N54A	**Moraine State**	**63.12**	**57**	P	**P**	03 55 53.3	-1.7
	baz=316							
244A	**Avery, Jackson**	**63.50**	**71**	P	**P**	03 55 57.5	-0.1
	baz=316							
146A	**Union**	**64.03**	**70**	P	**P**	03 56 01.2	+0.1
	baz=316							
248A	**Dixon Mills**	**65.20**	**69**	P	**P**	03 56 08.3	-0.4
	baz=316							
347A	**Saraland**	**65.23**	**70**	P	**P**	03 56 08.9	0.0
	baz=317							
N59A	**State Game Lan**	**65.34**	**55**	P	**P**	03 56 09.3	-0.3
	baz=318							
KMSC	**Kings Mountain**	**66.63**	**63**	P	**P**	03 56 17.6	-0.2
	baz=317							
NOA	**NORSAR Array B**	**67.56**	**356**	P	**P**	03 56 23.3	-0.2
	0.4nm,0.8s,baz=13,slow=15,SNR=2.5							
CMAR	**Chiang Mai Arr**	**72.09**	**277**	P	**P**	03 56 53.6	+1.9
	1.0nm,0.3s,baz=45,slow=6.1,SNR=4.2							
WRA	**Warramunga Arr**	**82.91**	**225**	P	**P**	03 57 51.7	-0.3
	0.6nm,0.6s,baz=32,slow=6.0,SNR=5.0							
BRTR	**Keskin Array B**	**85.23**	**337**	P	**P**	03 58 03.2	-0.7
	1.1nm,1.0s,baz=6.1,slow=5.7,SNR=2.7							
ASAR	**Alice Springs**	**86.37**	**224**	P	**P**	03 58 09.9	+0.5
	0.5nm,0.8s,baz=33,slow=6.5,SNR=7.7							
TORD	**Torodi Ar. Bea**	**115.56**	**1**	PKP	**PKPdf**	04 04 07.8	-1.6
	0.4nm,0.4s,baz=356,slow=2.3,SNR=18							
MAW	**Mawson**	**147.29**	**218**	PKPbc	**PKPbc**	04 05 09.9	+0.8
	1.4nm,0.5s,baz=304,slow=7.3,SNR=6.1							
BOSA	**Boshof**	**151.65**	**315**	PKPbc	**PKPbc**	04 05 21.6	+0.1
	2.4nm,0.5s,baz=128,slow=12,SNR=15							

SOME ***11*** *03:53:42.8, 43.77N×82.13E, h15km*
NNC ***11*** *03:53:47.7±4.7, 43.32N×81.83E, h0km, mb2.9, mpv2.6, Error ellipse: s-maj=58.8km s-min=17.1km az=124.0*

ISC 11 03:53:48.0±3.7,**43.3N**±0.1×**81.8E**±0.1,**h4**km±23km,**n10, σ1§61/19, 4C-2D, Northern Xinjiang**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SHLS	**Shalkode**	**1.43**	**264**	*e*P	**Pn**	**03 54 14.1**	**-0.8**
	15nm,0.2s						
SHLS				*e*S	**Sg**	03 54 36.5	+2.8
	54nm,0.4s						
PDGK	**Podgornoye**	**1.70**	**271**	⇑Pn	**Pb**	03 54 19.0	-0.9
	12nm,0.4s						
UZB	**Uzynbulak**	**2.05**	**266**	*e*P	**Pb**	03 54 25.6	-0.4
	9.3nm,0.2s						
UZB				*e*S	**Sg**	03 54 56.1	+2.2
	17nm,0.4s						
KPKS	**Kokpek**	**2.29**	**275**	*e*P	**Pb**	03 54 28.1	-1.8
	14nm,0.3s						
KPKS				*e*S	**Sg**	03 55 00.8	-0.7
	31nm,0.4s						
SATY	**Saty**	**2.51**	**265**	*e*P	**Pb**	03 54 33.0	-0.8
	9.1nm,0.2s						
SATY				*e*S	**Sg**	03 55 09.2	+0.6
	23nm,0.3s						
KAPS	**Kapalarasan**	**2.64**	**319**	*e*P	**Pn**	03 54 32.6	+1.2
	2.7nm,0.3s						
KAPS				*e*S	**Sb**	03 55 08.2	-0.5
	7.4nm,0.3s						
KURS	**Kuram**	**2.66**	**275**	*e*P	**Pb**	03 54 35.8	-0.6
	3.3nm,0.5s						
KURS				*e*S	**Sg**	03 55 13.9	+0.3
	4.9nm,0.6s						
ARXS	**Arharly**	**3.02**	**288**	*e*P	**Pb**	03 54 39.2	-3.3
	3.5nm,0.3s						
ARXS				*e*S	**Sb**	03 55 19.9	0.0
	10nm,0.4s						
MAKZ	**Makanchi**	**3.48**	**2**	⇓Pn	**Pn**	03 54 42.5	-0.6
	0.2nm,0.2s						
MAKZ				⇓Sn	**Sn**	03 55 24.9	+0.2
	0.9nm,0.7s						
MK31	**Makanchi Array**	**3.48**	**5**	⇑Pn	**Pn**	03 54 43.3	+0.2
	0.2nm,0.2s,baz=176,slow=12,SNR=2.8						
MK31				⇑Sn	**Sn**	03 55 27.3	+2.5
	0.9nm,0.4s						
MK31				⇑Lg	Lg	03 55 41.4	
	2.4nm,0.6s,baz=188,slow=26						

IDC ***11*** *03:59:44.6±1.0, 42.14N×47.56E, h0km, mb3.4/6, mb1 3.5/12, mb1mx3.3/66, mbtmp3.4/12, ML3.2/4, MS2.5/2, Ms1 2.5/2, ms1mx2.2/39, Error ellipse: s-maj=14.9km s-min=9.9km az=165.0*
AZER ***11*** *03:59:45.6±0.1, 42.05N×47.47E, h8km, Error ellipse: s-maj=1.6km s-min=1.0km az=4.0*
TIF ***11*** *03:59:46.1, 42.36N×47.70E, h21km±2km*
MOS ***11*** *03:59:46.1±1.3, 42.13N×47.73E, h10km, mb3.8/1, Error ellipse: s-maj=8.5km s-min=5.1km az=35.6*
ISCJB ***11*** *03:59:47.5±0.4, 42.24N±0.02×47.72E±0.03, h16km±3km, mb3.2/6, Error ellipse: s-maj=4.5km s-min=2.6km az=44.7*
CSEM ***11*** *03:59:47.7±0.2, 42.26N×47.72E, h10km, mb3.8, Error ellipse: s-maj=5.1km s-min=3.7km az=40.0*

ISC 11 03:59:48.2±0.7,**42.18N**±0.02×**47.64E**±0.02,**h18**km±4km, **n110, σ1§95/174, mb3.4/6, 22C-16D, Eastern Caucasus**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
URKR	**Urkarakh**	**0.01**	**208**	*i* PG	**Pg**	**03 59 51.0**	**-0.6**
URKR				*i* S	**Sg**	**03 59 53.8**	**0.0**
URKR	**Urkarakh**	**0.01**	**208**	*i* Pg	**Pg**	03 59 51.0	-0.6
URKR				*i* Sg	**Sg**	**03 59 53.8**	**0.0**
KMKR	**Kumukh**	**0.41**	**264**	⇑*i*PG	**Pg**	**03 59 54.2**	**-2.5**
KMKR				pmax	pmax		
	comp=Z,705nm,0.2s						
DRN	**Derbent**	**0.53**	**106**	*i* PG	**Pb**	03 59 59.3	+0.4
DRN				*e*S	**Sn**	04 00 08.7	-0.7
DRN	**Derbent**	**0.53**	**106**	*i* Pg	**Pb**	03 59 59.3	+0.4
GNBR	**Gunib**	**0.55**	**293**	⇓*i*PG	**Pg**	03 59 57.7	-1.5
GNBR				*i* S	**Sg**	04 00 05.4	-1.1
GNBR	**Gunib**	**0.55**	**293**	*i* Pg	**Pg**	03 59 57.7	-1.5
KSMR	**Kasumkent**	**0.68**	**148**	*e*PG	**Pg**	03 59 59.0	-2.6
KSMR				*e*S	**Sg**	04 00 09.0	-1.7
AKT	**Akhty**	**0.70**	**175**	⇓*i*PG	Pg	03 59 59.0	-3.0
AKT				*i* S	**Sg**	04 00 07.6	-3.7
UNCR	**Uncukul**	**0.82**	**311**	*e*PG	**Pg**	04 00 03.5	-0.8
UNCR				*e*S	**Sb**	04 00 16.2	+1.4
UNCR	**Uncukul**	**0.82**	**311**	*e*Pg	**Pg**	04 00 03.5	-0.8
UNCR				*e*Sg	**Sb**	04 00 16.2	+1.4
ZKTA	**Zakatala**	**0.93**	**235**	⇑P	Pg	04 00 02.3	-4.0
	SNR=32						
ZKTA				⇑S	Sg	04 00 14.5	-4.2
SEKA	**Sheki**	**1.02**	**199**	⇑P	Pb	04 00 04.1	-3.3
	SNR=59						
SEKA				⇑S	**Sg**	04 00 17.9	-3.6
DBC	**Dubki**	**1.03**	**325**	*e*PG	**Pn**	04 00 10.1	+2.2
DBC				*e*S	**Sn**	04 00 25.3	+3.4
QUBA	**Quba, Azerbaij**	**1.04**	**142**	⇓P	**Pg**	04 00 07.3	-1.1
	SNR=4.8						
QUBA				⇓S	**Sg**	04 00 21.8	-0.2
QUBA	**Quba, Azerbaij**	**1.04**	**142**	P	**Pg**	04 00 07.3	-1.1
	SNR=4.8						
QUBA				S	**Sg**	04 00 21.8	-0.2
XNQ	**Khinaliq**	**1.07**	**159**	⇓P	**Pg**	04 00 06.6	-2.4
	SNR=27						
XNQ				⇑S	**Sg**	04 00 20.3	-2.8
XNQ	**Khinaliq**	**1.07**	**159**	P	**Pg**	04 00 06.6	-2.4
	SNR=27						
XNQ				S	**Sg**	04 00 20.3	-2.8
BTLR	**Botlikh**	**1.16**	**295**	*e*PG	**Pb**	04 00 07.7	-2.0
BTLR				*e*S	**Sb**	04 00 23.1	-1.3
DLMR	**Dylym**	**1.16**	**320**	*e*PG	**Pn**	04 00 10.0	+0.4
DLMR				*e*S	**Sn**	04 00 27.5	+2.5
DLMR	**Dylym**	**1.16**	**320**	*e*Pg	**Pn**	04 00 10.0	+0.4
IML	**Ismayilli**	**1.44**	**163**	⇓P	**Pn**	04 00 14.9	+1.5
	SNR=5.3						
IML				⇑S	**Sg**	04 00 36.1	+1.3
IML	**Ismayilli**	**1.44**	**163**	P	**Pn**	04 00 14.9	+1.5
	SNR=5.3						
IML				S	**Sg**	04 00 36.1	+1.3
SIZA	**Siyzn**	**1.45**	**139**	⇑P	**Pb**	04 00 15.5	+0.8
	SNR=3.6						
SIZA				⇓S	**Sg**	04 00 36.2	+1.1
SIZA	**Siyzn**	**1.45**	**139**	P	**Pb**	04 00 15.5	+0.8
	SNR=3.6						
SIZA				S	**Sg**	04 00 36.2	+1.1
MNGR	**Mingechevir, A**	**1.46**	**197**	⇑P	**Pn**	04 00 14.6	+0.9
	SNR=3.9						
MNGR				⇓S	**Sn**	04 00 35.5	+3.2
MNGR	**Mingechevir, A**	**1.46**	**197**	P	**Pn**	04 00 14.6	+0.9
	SNR=3.9						
MNGR				S	**Sn**	04 00 35.5	+3.2
PQL	**Pirkuli**	**1.56**	**152**	⇓P	**Pn**	04 00 16.8	+1.6
	SNR=4.7						
PQL				⇑S	**Sb**	04 00 37.9	+1.8
PQL	**Pirkuli**	**1.56**	**152**	P	**Pn**	04 00 16.8	+1.6
	SNR=4.7						
PQL				S	**Sb**	04 00 37.9	+1.8
ATGJ	**Altiaghaj**	**1.64**	**143**	⇑P	**Pn**	04 00 16.9	+0.7
ATGJ				⇑S	**Sb**	04 00 40.5	+2.3
ATGJ	**Altiaghaj**	**1.64**	**143**	P	**Pn**	04 00 16.9	+0.7
ATGJ				S	**Sb**	04 00 40.5	+2.3
GROC	**Groznyy**	**1.70**	**308**	*e*PN	**Pg**	04 00 20.6	-0.4
GROC				*e*S	**Sg**	04 00 43.9	+0.8
GROC	**Groznyy**	**1.70**	**308**	*e*Sg	**Sg**	04 00 43.9	+0.8
GANJ	**Ganja**	**1.82**	**213**	⇑P	**Pn**	04 00 17.8	-0.9
	SNR=18						
GANJ				⇑S	**Sn**	04 00 41.3	0.0
GANJ	**Ganja**	**1.82**	**213**	P	**Pn**	04 00 17.8	-0.9
	SNR=18						
GANJ				S	**Sn**	04 00 41.3	0.0
DGRG	**David-gareji**	**1.84**	**248**	P	**Pn**	04 00 19.5	+0.5
DGRG				S	**Sn**	04 00 45.3	+3.5
DGRG	**David-gareji**	**1.84**	**248**	*e*PN	**Pn**	04 00 19.4	+0.5
DGRG				*e*S	**Sn**	04 00 45.3	+3.5
DGRG	**David-gareji**	**1.84**	**248**	P	**Pn**	04 00 19.5	+0.5
DGRG				S	**Sn**	04 00 45.3	+3.5
ZRD	**Zardab**	**1.90**	**179**	⇑Pn	**Pn**	04 00 21.9	+2.3
	SNR=3.6						
ZRD				⇓Sn	**Sb**	04 00 48.1	+2.6
ZRD	**Zardab**	**1.90**	**179**	Pn	**Pn**	04 00 21.9	+2.3
	SNR=3.6						
ZRD				Sn	**Sb**	04 00 48.1	+2.6
BRDA	**Brd**	**1.94**	**190**	⇓Pn	**Pn**	04 00 21.3	+1.0
	SNR=4.6						
BRDA				⇓Sn	**Sb**	04 00 49.2	+2.3
BRDA	**Brd**	**1.94**	**190**	Pn	**Pn**	04 00 21.3	+1.0
	SNR=4.6						
BRDA				Sn	**Sb**	04 00 49.2	+2.3
GDB	**GEDABAY**	**2.03**	**225**	⇑Pg	**Pn**	04 00 20.6	-1.1
	SNR=29						
GDB				⇓Sg	**Sn**	04 00 46.7	+0.1
QZX	**Qazax, Azerbai**	**2.04**	**237**	⇓Pn	**Pn**	04 00 21.1	-0.5
	SNR=13						
QZX				⇑Sn	**Sn**	04 00 47.4	+0.9
QZX	**Qazax, Azerbai**	**2.04**	**237**	Pn	**Pn**	04 00 21.1	-0.5
	SNR=13						
QZX				Sn	**Sn**	04 00 47.4	+0.9
SEAG	**Tbilisi Sea**	**2.16**	**260**	P	**Sb**	04 00 53.2	+0.1
DUS	**Dusheti**	**2.19**	**269**	P	**Pn**	04 00 25.6	+1.8
DUS	**Dusheti**	**2.19**	**269**	*e*PN	**Pn**	04 00 25.5	+1.8
DUS	**Dusheti**	**2.19**	**269**	*e*Pn	**Pn**	04 00 25.5	+1.8
TBLG	**Delisi**	**2.21**	**259**	P	**Pn**	04 00 25.9	+1.9
TBLG				S	**Sn**	04 00 53.9	+3.1
TBLG	**Delisi**	**2.21**	**259**	*e*PN	**Pn**	04 00 25.9	+1.9
TBLG				*e*S	**Sn**	04 00 53.9	+3.1
TBLG	**Delisi**	**2.21**	**259**	P	**Pn**	04 00 25.9	+1.9
TBLG				S	**Sn**	04 00 53.9	+3.1
KMGR	**Komgaron**	**2.23**	**294**	*e*PN	**Pb**	04 00 28.0	0.0
KMGR				*e*S	**Sb**	04 00 56.9	+1.7
VLKR	**Vladikavkaz**	**2.35**	**293**	PN	**Pb**	04 00 29.9	-0.2
VLKR				S	**Sg**	04 01 02.3	-1.6
VLKR	**Vladikavkaz**	**2.35**	**293**	Sb	**Sg**	04 01 02.3	-1.6
GUDG	**Gudauri**	**2.36**	**278**	P	**Pb**	04 00 29.5	-0.9
GUDG	**Gudauri**	**2.36**	**278**	P	**Pb**	04 00 29.5	-0.9
LACR	**Lac**	**2.56**	**286**	⇓*i*PN	**Pn**	04 00 30.6	+1.8
LACR				*e*S	**Sn**	04 01 02.7	+3.2
LACR	**Lac**	**2.56**	**286**	*i* Pn	**Pn**	04 00 30.6	+1.8
LACR				*e*Sn	**Sn**	04 01 02.7	+3.2
BTKR	**Batakoyurt**	**2.58**	**299**	PN	**Pg**	04 00 26.4	-1.2
BTKR				S	**Sg**	04 01 10.2	-0.8
BTKR	**Batakoyurt**	**2.58**	**299**	Sb	**Sg**	04 01 10.2	-0.8
ARNR	**Ardon**	**2.67**	**293**	*e*PN	Pn	04 00 33.5	+3.2
ARNR				*e*S	**Sb**	04 01 07.5	-0.4
ARNR	**Ardon**	**2.67**	**293**	*e*Pn	Pn	04 00 33.5	+3.2
KORR	**Kora**	**2.79**	**290**	PN	**Pb**	04 00 38.0	+0.5
KORR				S	**Sg**	04 01 15.6	-2.2
ZEI	**Tsey**	**2.83**	**284**	*e*PN	**Pn**	04 00 35.0	+2.3
ZEI				*e*S	**Sn**	04 01 10.3	+3.8
ZEI	**Tsey**	**2.83**	**284**	*e*Pn	**Pn**	04 00 35.0	+2.3
ZEI				*e*Sn	**Sn**	04 01 10.3	+3.8
GNI	**Garni**	**2.98**	**228**	Pn	**Pn**	04 00 36.4	+1.7
	comp=Z,1.7nm,0.3s,baz=24,slow=3.3,SNR=6.2						
GNI				Lg	Lg	04 01 22.1	
	comp=Z,2.9nm,0.3s,baz=28,slow=16,SNR=3.3						
GNI				LR	LR	04 02 01.5	
	comp=Z,58nm,18.6s,baz=26,slow=47						
GLBA	**Clilabad**	**2.99**	**169**	⇑Sn	**Sn**	04 01 13.3	+3.3
GLBA	**Clilabad**	**2.99**	**169**	Sn	**Sn**	04 01 13.3	+3.3
LSNR	**Lesken**	**3.02**	**293**	*e*PN	**Pn**	04 00 36.8	+1.7
LSNR				*e*S	**Sn**	04 01 14.8	+4.0
LSNR	**Lesken**	**3.02**	**293**	*e*Pn	**Pn**	04 00 36.8	+1.7
LSNR				*e*Sn	**Sn**	04 01 14.8	+4.0
ONI	**Oni**	**3.13**	**279**	P	**Pn**	04 00 39.0	+2.3
ONI				S	**Sb**	04 01 25.4	+4.2
ONI	**Oni**	**3.13**	**279**	*e*PN	**Pn**	04 00 38.9	+2.3
ONI				*e*S	**Sb**	04 01 25.4	+4.2
ONI	**Oni**	**3.13**	**279**	*e*Pn	**Pn**	04 00 38.9	+2.3
NEY	**Neytrino**	**3.78**	**288**	*e*PN	**Pn**	04 00 46.7	+1.0
NEY				*e*S	**Sn**	04 01 32.2	+2.4
NEY	**Neytrino**	**3.78**	**288**	*e*Pn	**Pn**	04 00 46.7	+1.0
NEY				*e*Sn	**Sn**	04 01 32.2	+2.4
KBZ	**Khabaz**	**3.81**	**296**	Pn	**Pn**	04 00 46.2	+0.3
	comp=Z,0.6nm,0.3s,baz=98,slow=3.6,SNR=16						
KBZ				Sn	**Sn**	04 01 33.1	+2.9
	comp=Z,1.1nm,0.3s,baz=103,slow=18,SNR=3.4						
KBZ				Lg	Lg	04 01 43.9	
	comp=Z,1.4nm,0.3s,baz=341,slow=23,SNR=4.4						
SHA1	**Shidzhatmaz**	**3.98**	**295**	⇓*e*PN	**Pn**	04 00 48.0	-0.5
SHA1				*e*S	**Sn**	04 01 34.7	0.0
SHA1	**Shidzhatmaz**	**3.98**	**295**	*e*Pn	**Pn**	04 00 48.0	-0.5
SHA1				*e*Sn	**Sn**	04 01 34.7	0.0
BEYR	**Belyy Ugol+**	**3.98**	**299**	⇑*e*PN	**Pn**	04 00 48.3	0.0
BEYR				*e*S	**Sn**	04 01 35.2	+0.7
BEYR	**Belyy Ugol+**	**3.98**	**299**	*e*Pn	**Pn**	04 00 48.3	0.0
BEYR				*e*Sn	**Sn**	04 01 35.2	+0.7
KVAR	**Kislovodsk Arr**	**4.04**	**298**	Pn	**Pn**	04 00 49.5	+0.4
	baz=105,slow=9.4,SNR=5.8						
KVAR				Sn	**Sn**	04 01 37.1	+1.1
	baz=127,slow=20,SNR=4.5						
KIV	**Kislovodsk**	**4.04**	**298**	*i* PN	**Pn**	04 00 50.2	+1.0
KIV	**Kislovodsk**	**4.04**	**298**	*i* Pn	**Pn**	04 00 50.2	+1.0
GOF	**Gofitskoye**	**4.41**	**312**	⇑PN	**Pb**	04 01 03.3	-1.8
GOF				*e*S	**Sn**	04 01 45.3	+0.3
GOF				pmax	pmax		
	comp=Z,10.0nm,0.8s						
GOF	**Gofitskoye**	**4.41**	**312**	*e*Sn	**Sn**	04 01 45.3	+0.3
DOMR	**Dombai**	**4.57**	**286**	*e*PN	**Pn**	04 00 56.9	+0.4
DOMR				*e*S	**Sn**	04 01 52.0	+2.8
DOMR	**Dombai**	**4.57**	**286**	*e*Pn	**Pn**	04 00 56.9	+0.4
DOMR				*e*Sn	**Sn**	04 01 52.0	+2.8
AKTK	**Aktyubinsk**	**10.93**	**37**	P	**Pn**	04 02 22.9	-0.7
AKTK				S	**Sn**	04 04 21.4	-3.9
AKTO	**Aktyubinsk**	**10.93**	**37**	Pn	**Pn**	04 02 22.9	-0.7
	comp=Z,0.3nm,0.3s,baz=212,slow=14,SNR=4.7						
AKTO				Sn	**Sn**	04 04 21.4	-3.9
	comp=Z,0.3nm,0.3s,baz=233,slow=20,SNR=5.3						
AKTO	**Aktyubinsk**	**10.93**	**37**	Pn	**Pn**	04 02 22.9	-0.7
	comp=Z,1.3nm,0.5s						
AKTO				⇑Sn	**Sn**	04 04 22.0	-3.4
	comp=Z,3.3nm,0.8s						
AKTO	**Aktyubinsk**	**10.93**	**37**	Pn	**Pn**	04 02 22.9	-0.7
	comp=Z,1.3nm,0.5s						
AKTO				Sn	**Sn**	04 04 22.0	-3.4
	comp=Z,3.3nm,0.8s						
AB31	**Akbulak array**	**11.13**	**46**	Pn	**Pn**	04 02 26.0	-0.3
	comp=Z,0.3nm,0.3s,baz=235,slow=13,SNR=15						
AB31				⇑Sn	**Sn**	04 04 26.2	-3.9
	comp=Z,0.8nm,0.4s,baz=229,slow=24,SNR=5.2						
AB31	**Akbulak array**	**11.13**	**46**	Pn	**Pn**	04 02 26.0	-0.3
	comp=Z,0.3nm,0.3s,SNR=15						
OBN	**Obninsk**	**14.84**	**334**	*e*P	**P**	04 03 25.1	+2.4
OBN				pmax	pmax		
	comp=Z,4.0nm,0.9s						
OBN	**Obninsk**	**14.84**	**334**	*e*P	**P**	04 03 25.1	+2.4
	comp=Z,4.0nm,0.9s						
KIEV	**Kiev**	**15.27**	**310**	*i* P	**Pn**	04 03 24.9	+2.3
KIEV				pmax	pmax		
	comp=Z,3.0nm,1.2s						
EIL	**Elat**	**16.14**	**223**	LR	LR	04 10 29.8	
	comp=Z,26nm,19.6s,baz=74,slow=40						
BRVK	**Borovoye**	**18.66**	**47**	*i* P	**Pn**	04 04 06.0	+0.7
BRVK				pmax	pmax		
	comp=Z,2.0nm,0.9s						
BRVK	**Borovoye**	**18.66**	**47**	*i* P	**Pn**	04 04 06.0	+0.7
	comp=Z,2.0nm,0.9s						
BVAR	**Borovoye Array**	**18.70**	**47**	P	**Pn**	04 04 05.8	-0.1
	comp=Z,0.2nm,0.3s,baz=233,slow=12,SNR=3.9						
IDI	**Anoyia**	**19.01**	**256**	P	**P**	04 04 07.6	-1.4
	comp=Z,0.5nm,0.3s,baz=18,slow=13,SNR=5.3						
FINES	**FINESS Array B**	**23.25**	**333**	P	**P**	04 04 53.0	-1.2
	comp=Z,0.7nm,0.6s,baz=150,slow=13,SNR=7.1						
FINES	**FINESS Array B**	**23.25**	**333**	P	**P**	04 04 53.0	-1.2
FINES	**FINESS Array B**	**23.25**	**333**	P	**P**	04 04 53.0	-1.2
MKAR	**Makanchi Array**	**25.02**	**67**	P	**P**	04 05 10.5	-0.4
	comp=Z,0.1nm,0.3s,baz=276,slow=8.6,SNR=2.8						
HFS	**Hagfors**	**27.41**	**323**	P	**P**	04 05 30.8	-1.6
	comp=Z,0.4nm,0.4s,baz=120,slow=8.8,SNR=4.5						
NOA	**NORSAR Array B**	**28.90**	**323**	P	**P**	04 05 43.6	-2.1
	comp=Z,0.7nm,0.8s,baz=115,slow=8.4,SNR=2.6						
TORD	**Torodi Ar. Bea**	**49.11**	**248**	P	P	04 08 31.9	-2.8
	comp=Z,0.3nm,0.6s,baz=38,slow=7.2,SNR=5.9						
YKA	**Yellowknife Ar**	**74.70**	**352**	P	**P**	04 11 25.3	-0.9
	comp=Z,0.1nm,0.5s,baz=5.6,slow=5.5,SNR=3.9						

ISCJB ***11*** *04:00:55.2±0.5, 32.19N±0.02×115.16W±0.02, h15km±3km, Error ellipse: s-maj=3.4km s-min=2.9km az=28.5*
MEX ***11*** *04:00:57.5±0.6, 32.32N×115.10W, h27km±6km, MD4.1*
NEIC ***11*** *04:00:57.2, 32.19N×115.27W, h7km, ML3.7(ECX), ML3.8(PAS), After ECX.*
ECX ***11*** *04:00:57.2±0.4, 32.19N×115.27W, h7km, MD3.7, ML3.9*

ISC 11 04:00:55.3±0.9,**32.18N**±0.02×**115.27W**±0.02,**h12**km±6km, **n68, σ1§44/98, 11C-7D, California-Baja California border region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MBIG	**Mexicali**	**0.24**	**15**	⇓*e*P	**Pb**	**04 01 01.5**	**-0.1**
MBIG	**Mexicali**	**0.24**	**15**	*i* P	**Pb**	**04 01 01.8**	**+0.1**
MBIG				*i* S	**Sg**	**04 01 03.9**	**+0.2**
CPBX	**Cerro Prieto**	**0.24**

SCI2	**San Clemente I** baz=105	**2.88**	**287**	Sb	**Sg**	**04 02 25.3**	**-2.6**
CIS	**Catalina Islan** baz=114	**2.91**	**296**	P	**Pn**	**04 01 41.7**	**+0.1**
CIS	baz=114			Sb	**Sb**	**04 02 25.5**	**+2.8**
FMP	**Fort Macarthur** baz=120	**2.97**	**302**	Sb	**Sb**	**04 02 26.8**	**+2.3**
PASC	**Pasadena Art C**	**3.15**	**310**	*e*Pn	Pb	04 01 48.1	-3.3
PASC				*e*S	**Sb**	**04 02 31.7**	**+2.0**
DECC	**Green Verdugo** baz=128	**3.29**	**310**	Sb	**Sb**	**04 02 37.2**	**+3.4**
EDW2	**Edwards Air Fo** baz=139	**3.52**	**321**	Sb	**Sb**	**04 02 44.1**	**+3.6**
BLG	**Laguna Peak, P** baz=120	**3.72**	**302**	Sb	**Sb**	**04 02 49.8**	**+3.7**
OSI	**Osito Audit: C** baz=129	**3.77**	**311**	Sb	**Sb**	**04 02 50.4**	**+2.7**
TUC	**Tucson** baz=269	**3.80**	**87**	P	**Pn**	**04 01 52.0**	**-1.9**
TUC	**Tucson**	**3.80**	**87**	*e*Pn	**Pn**	**04 01 52.2**	**-1.7**
TUC				*e*Pg	**Pg**	**04 02 08.8**	**+0.6**
TUC				*e*S	**Sg**	**04 02 54.1**	**-3.4**
DAC	**Darwin (Calif)**	**4.52**	**335**	*e*Pn	Pb	04 02 10.2	-4.6
WUAZ	**Wupatki** baz=225,SNR=19	**4.65**	**43**	P	**Pn**	**04 02 06.6**	**+1.0**
WUAZ	**Wupatki**	**4.65**	**43**	*e*Pn	**Pn**	**04 02 06.9**	**+1.3**
WUAZ				*e*S	**Sb**	**04 03 16.6**	**+3.6**
HSIG		**4.88**	**129**	*e*P	**Pn**	**04 02 07.6**	**-1.0**
HSIG		**4.88**	**129**	*e*P	**Pn**	**04 02 07.6**	**-1.0**
W18A	**Petrified Fore** baz=239	**5.47**	**56**	P	**Pn**	**04 02 17.7**	**+0.8**
W18A	baz=239			S	**Sn**	**04 03 18.5**	**-1.3**
W18A	**Petrified Fore** comp=E,21nm,0.6s	**5.47**	**56**	*e*Pn	**Pn**	**04 02 17.9**	**+1.1**
W18A				*e*S	**Sg**	**04 03 55.8**	**+4.9**
R11A	**Troy Canyon, C** comp=E,4.4nm,0.6s	**6.16**	**358**	*e*Pn	**Pn**	**04 02 27.4**	**+1.0**
R11A				*e*Pg	**Pg**	**04 02 53.1**	**-0.3**
R11A				*e*S	**Sg**	**04 04 11.7**	**-1.4**
121A	**Cookes Peak, D** baz=269,SNR=8.7	**6.34**	**85**	P	**Pn**	**04 02 28.4**	**-0.5**
121A	**Cookes Peak, D** comp=E,16nm,0.6s	**6.34**	**85**	*e*Pn	**Pn**	**04 02 27.7**	**-1.2**
MVCO	**Mesa Verde** baz=230	**7.50**	**46**	P	**Pn**	**04 02 47.2**	**+2.3**
MVCO	**Mesa Verde** comp=E,7.4nm,0.5s	**7.50**	**46**	*e*Pn	**Pn**	**04 02 47.2**	**+2.3**
MVCO				*e*S	Sg	04 04 50.6	-5.5
ANMO	**Albuquerque** baz=252	**7.86**	**67**	P	**Pn**	**04 02 49.8**	**+0.1**
ANMO	**Albuquerque** comp=E,2.3nm,0.7s	**7.86**	**67**	*e*Pn	**Pn**	**04 02 48.3**	**-1.4**
PV01	**Paradox Valley** comp=E,566nm,0.8s	**8.09**	**41**	*e*Pn	Pn	04 02 55.9	+3.1
PV01				*e*S	Sg	04 05 05.1	-10
PV04	**Paradox Valley**	**8.09**	**38**	*e*Pn	**Pn**	**04 02 55.3**	**+2.4**
MNTX	**Cornudas Mount** baz=276	**8.42**	**91**	P	**Pn**	**04 02 57.2**	**0.0**
MNTX	**Cornudas Mount** comp=E,1.4nm,0.4s	**8.42**	**91**	*e*Pn	**Pn**	**04 02 57.0**	**-0.2**

*MAN **11** 04:01:49.9°.76N×125°.51E,h32km,mb5.3,ML4.3,MS4.5*
MAN INTENSITY IV - SURIGAO CITY; INTENSITY III - ST. BERNARD HINUNANGAN SOGOD S. LEYTE; ABUYOG LEYTE; INTENSITY II - MAINIT SURIGAO DEL NORTE; TACLOBAN CITY.
*NEIC **11** 04:01:56.0±0.9, 10°.11N×125°.30E,h67km±8km,mb4.5/12, Error ellipse: s-maj=10.7km s-min=5.8km az=82.0*
NEIC Felt [IV PIVS] at Surigao and [II PIVS] at Mainit, Mindanao. Felt [III PIVS] at Abuyog, Hinunangan, Saint Bernard and Sogod and [II PIVS] at Tacloban, Leyte.
*IDC **11** 04:01:56.0±2.9, 10°.14N×125°.28E,h66km±27km,mb4.0/27, mb1 4.0/28,mb1mx3.9/56,mbtmp4.2/28,ML4.6/1,MS4.1/25, Ms1 4.1/25,ms1mx3.8/47,Error ellipse: s-maj=18.9km s-min=13.0km az=81.0*
*GCMT **11** 04:01:56.0±0.3,9°.89N×125°.43E,h21km±1km,MW5.0/86, Moment Tensor Solution. s23,c30; s86,c121; Duration: 0 Moment tensor: Scale 10^{16}Nm; M_{rr}-0.01±.15; $M_{\theta\theta}$2.44±.12; $M_{\phi\phi}$-2.42±.14; $M_{r\theta}$-0.97±.21; $M_{r\phi}$-1.84±.09; $M_{\theta\phi}$-1.25±.26; Best double couple: M_w3.40700×10^{16} NP1:ϕ_s65.00000°,δ82.00000°,λ-156.00000°. NP2: ϕ_s331.00000°,δ66.00000°,λ-9.00000°. Principal axes: T 3.1570, Plg11.0000°, Azm196.0000°; N 0.5100, Plg65.0000°, Azm82.0000°; P -3.6580, Plg23.0000°, Azm290.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

ISC 11 04:01:48.0±0.8, 9.76N±0.03×125.50E±0.06, h18km±4km, n103, σ1§48/92, mb4.4/48, MS4.1/24, 3C-3D, Mindanao

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SCPH	**Surigao**	**0.02**	**333**	⇓*i*P	**Pg**	**04 01 51.2**	**+0.1**
SCPH				*i* S	**Sg**	**04 01 53.5**	**+0.4**
BUTP	**Butuan**	**0.80**	**171**	*e*P	**Pn**	**04 02 04.8**	**+0.4**
BUTP				*e*S	**Sn**	**04 02 18.8**	**+2.9**
PLP	**Palo**	**1.48**	**340**	⇑*e*P	**Pn**	**04 02 12.4**	**-1.5**
PLP				*i* S	**Sb**	**04 02 33.7**	**+0.1**
CGP	**Cagayan de Oro**	**1.52**	**212**	⇓*e*P	**Pn**	**04 02 14.2**	**-0.2**
CGP				*e*S	**Sn**	**04 02 34.2**	**+0.4**
OCLP	**Ormoc**	**1.55**	**326**	*e*P	**Pn**	**04 02 15.2**	**+0.3**
LLP	**Lapu-Lapu**	**1.61**	**290**	⇓*i*P	**Pn**	**04 02 13.9**	**-1.6**
LLP				*e*S	**Sn**	**04 02 36.3**	**+0.4**
TBP	**Tagbilaran**	**1.62**	**268**	*e*P	**Pn**	**04 02 14.8**	**-0.8**
TBP				*e*S	**Sn**	**04 02 34.6**	**-1.5**
BUKP	**Musuan**	**1.92**	**193**	*e*P	**Pn**	**04 02 21.0**	**+1.1**
BUKP				*e*S	**Sn**	**04 02 42.8**	**-0.9**
DMPH	**Davao City--Mi**	**2.66**	**180**	⇑*e*P	**Pg**	**04 02 38.3**	**-0.8**
DMPH				*e*S	**Sg**	**04 03 12.8**	**-0.9**
DAV	**Davao City (W)** 82nm,0.3s,baz=49,slow=3.9,SNR=10	**2.68**	**178**	P	**Pg**	**04 02 40.6**	**+1.2**
DAV	10nm,0.3s,baz=131,slow=19,SNR=4.4			S	Sg	04 03 21.6	+7.5
DAV	**Davao City (W)**	**2.68**	**178**	*e*Pn	**Pg**	**04 02 39.7**	**+0.3**
DAV				*e*S	**Sg**	**04 03 11.8**	**-2.3**
PAGZ	**Pagadian**	**2.83**	**228**	*e*P	**Pn**	**04 02 33.3**	**+0.9**
MATI	**Mati**	**2.90**	**165**	*e*P	**Pb**	**04 02 38.0**	**-1.2**
GUIM	**Jordan**	**2.99**	**287**	*e*P	**Pn**	**04 02 35.4**	**+0.8**
GUIM				*e*S	Sn	04 03 03.7	-6.3
RCP	**Roxas**	**3.24**	**304**	⇑*e*P	**Pn**	**04 02 38.8**	**+0.7**
RCP				*e*S	**Sn**	**04 03 17.6**	**+1.3**
OTRP	**Odiongan**	**4.28**	**307**	*e*P	**Pn**	**04 02 54.5**	**+2.1**
LQP	**Lukban**	**5.80**	**319**	*e*P	**Pn**	**04 03 15.7**	**+2.2**
ENPP	**El Nido**	**6.14**	**284**	*e*P	**Pn**	**04 03 18.8**	**+0.9**
YULB	**Yu-li**	**14.14**	**344**	*e*Pn	**Pn**	**04 05 06.3**	**-1.2**
TPUB	**Ta-pu** 35nm,1.0s	**14.24**	**342**	*e*Pn	**P**	**04 05 13.9**	**-2.4**
SSLB	**Suanglung** 32nm,1.1s	**14.61**	**343**	*e*Pn	**Pn**	**04 05 16.0**	**+2.0**
YHNB	**Yeheng** 25nm,1.1s	**15.34**	**346**	*e*P	**Pn**	**04 05 24.5**	**+0.7**
KAPI	**Kappang** comp=Z,463nm,19.1s,baz=44,slow=43	**15.76**	**202**	LR	LR	04 13 20.5	
SOEI	**Soe** 33nm,0.8s	**19.43**	**184**	*e*P	Pn	04 06 22.6	+7.6
BATI	**Baumata** 6.6nm,0.4s,baz=263,slow=24,SNR=3.7	**19.92**	**185**	P	Pn	04 06 26.6	+5.8
PANO	**Nakornpanom**	**21.59**	**292**	P	P	04 06 44.3	+7.3
CHBT	**CHBT** 31nm,1.0s,4μm	**22.91**	**280**	P	**P**	**04 06 54.0**	**+2.7**
NONG	**Nongkai** 41nm,0.9s,12μm	**23.19**	**293**	P	**P**	**04 06 57.0**	**+2.9**
SRAK	**Srakaew** 22nm,0.9s	**23.33**	**283**	P	**P**	**04 06 56.7**	**+1.2**
CHAI	**Chaiyaphum** 4.5nm,0.9s	**23.71**	**287**	P	**P**	**04 07 02.4**	**+3.1**
NAYO	**Nakonayok** 26nm,1.0s,876nm	**24.07**	**283**	P	**P**	**04 07 04.1**	**+1.5**
LEM	**Lembang** comp=Z,361nm,20.0s,baz=44,slow=38	**24.27**	**228**	LR	LR	04 17 34.8	
PBKT	**Sadao Pong** 12nm,0.9s,2μm	**24.81**	**288**	P	**P**	**04 07 10.7**	**+1.3**
IPM	**Ipoh** 15nm,0.7s	**24.84**	**260**	*e*P	**P**	**04 07 10.2**	**+0.5**
ENH	**Enshi** 18nm,0.8s	**25.29**	**326**	*e*P	**P**	**04 07 13.4**	**-0.2**
NANT	**Nan** 3.8nm,0.7s,780nm	**25.63**	**293**	P	**P**	**04 07 20.8**	**+4.0**
CRAI	**Chiangrai** 25nm,1.1s	**26.37**	**296**	P	**P**	**04 07 24.5**	**+1.0**
LAMP	**Lampang** 3.9nm,0.8s	**26.52**	**292**	P	**P**	**04 07 29.1**	**+4.2**
KHLT	**Khaolaem Dam** 3.8nm,0.9s	**26.75**	**283**	P	**P**	**04 07 31.8**	**+4.8**
CMAR	**Chiang Mai Arr** 4.2nm,0.8s,baz=108,slow=7.5,SNR=22	**27.14**	**292**	P	**P**	**04 07 30.6**	**+0.2**
CMAR	comp=Z,372nm,18.1s,baz=121,slow=39			LR	LR	04 19 32.1	
CMMT	**Chiang Mai** 8.6nm,1.5s,387nm	**27.22**	**292**	P	**P**	**04 07 34.3**	**+3.0**
CHTO	**Chiang Mai** 40nm,1.2s	**27.23**	**292**	P	**P**	**04 07 34.3**	**+3.0**
CHTO	**Chiang Mai** 10.0nm,1.3s	**27.23**	**292**	*e*P	**P**	**04 07 31.3**	**0.0**
PSI	**Prapat** 8.2nm,0.9s,baz=53,slow=4.7,SNR=8.2	**27.29**	**257**	P	**P**	**04 07 33.4**	**+1.4**
KSAR	**Wonju Array Be**	**27.64**	**4**	P	**P**	**04 07 34.5**	**-0.3**
KSRS	**Korea Array** 1.8nm,0.5s,baz=180,slow=9.1,SNR=5.5	**27.66**	**4**	P	**P**	**04 07 34.5**	**-0.4**
KSRS	comp=Z,267nm,21.4s,baz=198,slow=35			LR	LR	04 17 54.4	
MJAR	**Matsushiro Arr** comp=Z,381nm,21.6s,baz=210,slow=33	**29.05**	**21**	LR	LR	04 17 41.0	
WRA	**Warramunga Ar** comp=Z,170nm,18.6s,baz=350,slow=39	**30.77**	**164**	LR	LR	04 22 16.7	
ASAR	**Alice Springs** 1.9nm,0.6s,baz=351,slow=6.9,SNR=5.0	**34.23**	**166**	P	P	04 08 40.2	+7.2
USRK	**Ussuriysk Ar.** 8.1nm,0.8s,baz=191,slow=7.7,SNR=14	**34.77**	**8**	P	**P**	**04 08 37.5**	**0.0**
USRK	comp=Z,270nm,21.6s,baz=177,slow=34			LR	LR	04 21 13.6	
SHL	**Shillong**	**35.54**	**301**	*e*P	P	04 08 48.0	+3.4
TAPN	**Taplejung**	**39.66**	**301**	*e*P	**P**	**04 09 20.6**	**+1.0**
ODAN	**Odare** 91nm,0.8s	**39.77**	**300**	*e*P	**P**	**04 09 21.4**	**+0.9**
RAMN	**Ramite** 81nm,1.0s	**40.47**	**300**	*e*P	**P**	**04 09 27.2**	**+0.9**
H11S3	**WAKE ISLAND Hy** baz=261,slow=74,SNR=37	**40.79**	**73**	T	T	04 52 29.5	
H11S1	**WAKE ISLAND Hy** baz=261,slow=74,SNR=19	**40.81**	**73**	T	T	04 52 30.5	
H11S2	**WAKE ISLAND Hy** baz=261,slow=74,SNR=13	**40.81**	**73**	T	T	04 52 32.0	
ULN	**Ulaanbaatar** 6.3nm,0.9s	**41.05**	**341**	*e*P	**P**	**04 09 30.4**	**-0.2**
H11N1	**WAKE ISLAND Hy** baz=264,slow=74,SNR=92	**41.13**	**71**	T	T	04 52 54.5	
H11N2	**WAKE ISLAND Hy** baz=264,slow=74,SNR=69	**41.14**	**71**	T	T	04 52 55.1	
H11N3	**WAKE ISLAND Hy** baz=264,slow=74,SNR=65	**41.15**	**71**	T	T	04 52 55.9	
SONM	**Songino Array** 2.2nm,0.8s,baz=158,slow=8.2,SNR=14	**41.23**	**340**	P	**P**	**04 09 31.2**	**-0.9**
SONM	comp=Z,328nm,19.4s,baz=152,slow=40			LR	LR	04 29 17.9	
GUN	**Gumba** 102nm,0.9s	**41.38**	**301**	*e*P	**P**	**04 09 34.7**	**+0.8**
DMN	**Daman** 32nm,0.7s	**41.94**	**301**	*e*P	**P**	**04 09 39.2**	**+0.8**
GKN	**Gorkha** 12nm,0.4s	**42.45**	**301**	*e*P	**P**	**04 09 42.7**	**+0.3**
KOLN	**Koldanda** 44nm,0.9s	**43.26**	**300**	*e*P	**P**	**04 09 49.7**	**+0.6**
PYUN	**Piuthan** 102nm,0.9s	**43.87**	**301**	*e*P	**P**	**04 09 54.7**	**+0.7**
STKA	**Stephens Creek** 3.7nm,0.5s,baz=336,slow=9.7,SNR=7.0	**44.18**	**160**	P	P	04 10 02.0	+6.0
STKA	comp=Z,126nm,18.2s,baz=2.2,slow=39			LR	LR	04 31 06.1	
TLY	**Talaya** 3.1nm,0.4s,baz=199,slow=8.0,SNR=5.6	**45.46**	**341**	P	**P**	**04 10 05.6**	**-0.5**
TLY	comp=Z,232nm,18.0s,baz=144,slow=40			LR	LR	04 32 15.4	
PETK	**Petropavlovsk-** 2.1nm,0.6s,baz=190,slow=7.3,SNR=3.3	**50.41**	**25**	P	**P**	**04 10 45.2**	**+0.9**
PETK	comp=Z,199nm,21.1s,baz=226,slow=34			LR	LR	04 30 13.2	
MKAR	**Makanchi Array** 3.7nm,0.6s,baz=119,slow=8.8,SNR=20	**51.97**	**323**	P	**P**	**04 10 56.1**	**-0.2**
ZALV	**Zalesovo Beam** 0.5nm,0.3s,baz=107,slow=5.0,SNR=4.0	**54.71**	**332**	P	**P**	**04 11 15.0**	**-1.1**
ZALV	comp=Z,166nm,19.6s,baz=76,slow=38			LR	LR	04 35 49.8	
KURK	**Kurchatov**	**56.06**	**326**	*e*P	**P**	**04 11 25.1**	**-0.8**
KURBB	**Kurchatov Arra** 4.5nm,0.7s,baz=128,slow=7.0,SNR=9.2	**56.06**	**326**	P	**P**	**04 11 24.1**	**-1.8**
SEY	**Seymchan** 2.8nm,0.8s,baz=214,slow=6.6,SNR=8.0	**56.50**	**14**	P	**P**	**04 11 29.6**	**+0.8**
KKAR	**Karatay Array** 3.1nm,0.8s	**58.07**	**315**	*e*P	**P**	**04 11 40.1**	**-0.2**
BVAR	**Borovoye Array** 0.4nm,0.3s,baz=102,slow=6.2,SNR=3.9	**61.65**	**326**	P	**P**	**04 12 04.0**	**-0.8**
TIXI	**Tiksi** 4.1nm,0.7s,baz=152,slow=6.4,SNR=6.0	**61.87**	**1**	P	**P**	**04 12 04.9**	**-1.0**
TIXI	**Tiksi**	**61.87**	**1**	*e*P	**P**	**04 12 05.1**	**-0.8**
BILL	**Bilibino** 4.9nm,0.9s	**64.09**	**16**	*e*P	**P**	**04 12 21.2**	**+0.4**
NRIK	**Noril'sk** 3.1nm,0.6s,baz=174,slow=8.3,SNR=3.6	**64.32**	**346**	P	**P**	**04 12 21.9**	**-0.3**
NRIK	comp=Z,199nm,18.1s,baz=122,slow=40			LR	LR	04 44 06.4	
GEYT	**Ailbeck** 1.2nm,0.4s,baz=124,slow=7.4,SNR=3.2	**66.24**	**307**	P	**P**	**04 12 35.4**	**+0.1**
ABKAR	**Akbulak array** 6.6nm,1.2s	**66.76**	**320**	*e*P	**P**	**04 12 37.7**	**-0.7**
RAYN	**Ar Rayn** 8.2nm,0.9s	**77.05**	**292**	*e*P	**P**	**04 13 40.8**	**0.0**
KVAR	**Kislovodsk Ar** comp=Z,144nm,18.3s,baz=110,slow=40	**78.13**	**313**	LR	LR	04 53 32.3	
BPAW	**Bear Paw Mtn.** 1.4nm,0.8s	**78.45**	**26**	*e*P	**P**	**04 13 48.2**	**+0.5**
MCK	**McKinley** 12nm,1.1s	**79.35**	**27**	*e*P	**P**	**04 13 53.0**	**+0.3**
ILAR	**Eielson Array** 0.6nm,0.7s,baz=248,slow=4.8,SNR=11	**80.22**	**26**	P	**P**	**04 13 56.5**	**-0.9**
ILAR	comp=Z,51nm,21.9s,baz=284,slow=34			LR	LR	04 47 48.6	
ARCES	**ARCESS Array B** 6.4nm,1.0s,baz=86,slow=6.2,SNR=6.3	**84.40**	**340**	P	**P**	**04 14 18.1**	**-1.0**
ARCES	comp=Z,114nm,19.1s,baz=78,slow=39			LR	LR	04 56 17.7	
INK	**Inuvik** 8.8nm,1.1s	**85.03**	**21**	*e*P	**P**	**04 14 22.1**	**-0.2**
BRTR	**Keskin Array B** 1.1nm,0.8s,baz=92,slow=4.1,SNR=5.2	**85.26**	**309**	P	**P**	**04 14 24.4**	**+0.2**
FINES	**FINESS Array B** 1.1nm,0.5s,baz=57,slow=7.0,SNR=9.2	**85.97**	**332**	P	**P**	**04 14 26.1**	**-1.0**
FINES	comp=Z,144nm,19.8s,baz=85,slow=37			LR	LR	04 55 03.0	
AKASG	**Malin Array Be** 0.5nm,0.4s,baz=69,slow=4.3,SNR=5.5	**86.47**	**321**	P	**P**	**04 14 28.2**	**-1.6**
AKASG	comp=Z,64nm,19.6s,baz=70,slow=36			LR	LR	04 53 31.4	
PPT	**Papeete** comp=Z,32nm,18.3s,baz=28,slow=35	**88.13**	**108**	LR	LR	04 52 56.4	
KMBO	**Kilima Mbogo** comp=Z,40nm,21.6s,baz=89,slow=34	**88.46**	**269**	LR	LR	04 51 19.1	
VNDA	**Vanda** comp=Z,57nm,19.8s,baz=296,slow=36	**89.53**	**173**	LR	LR	04 55 54.7	
HFS	**Hagfors** 0.9nm,0.6s,baz=144,slow=5.3,SNR=5.0	**92.14**	**332**	P	**P**	**04 14 56.8**	**+0.4**
HFS	comp=Z,185nm,19.8s,slow=37			LR	LR	04 58 11.4	
NOA	**NORSAR Array B** 0.4nm,0.7s,baz=68,slow=4.7,SNR=3.3	**92.87**	**334**	P	**P**	**04 15 00.1**	**+0.3**
NOA	comp=Z,170nm,20.7s,baz=65,slow=38			LR	LR	04 59 39.5	
YKA	**Yellowknife Ar** 0.6nm,0.7s,baz=300,slow=4.7,SNR=11	**94.53**	**24**	P	**P**	**04 15 07.4**	**+0.1**
VRAC	**Vranov** comp=Z,131nm,18.8s,baz=104,slow=38	**94.69**	**322**	LR	LR	05 01 19.8	
GERES	**GERESS Array B** 0.2nm,0.4s,baz=90,slow=6.9,SNR=3.6	**96.62**	**322**	P	**P**	**04 15 17.2**	**0.0**
GERES	comp=Z,107nm,20.3s,baz=74,slow=37			LR	LR	05 00 57.1	
TORD	**Torodi Ar. Bea** 0.6nm,0.7s,baz=57,slow=2.0,SNR=5.1	**119.75**	**291**	PKP	**PKPdf**	**04 20 37.1**	**-1.1**
PLCA	**Paso Flores** 3.3nm,0.7s,baz=222,slow=2.5,SNR=12	**146.03**	**158**	PKPbc	**PKPab**	**04 21 30.3**	**+2.4**

DJA 11 04:05:37.7±1.2, 1°.1N±0.9×126°.6E±°, h10km, M3.5/5, MLv3.5/5, Northern Molucca Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TNTI	**Ternate**	**1.22**	**96**	P	Pn	04 05 58.4	-2.5
TNTI				S	Sb	04 06 16.7	-0.1
LBMI	**Labuha**	**2.05**	**139**	P	Pn	04 06 12.1	-0.1
LBMI				S	Sn	04 06 38.2	+0.3
SANI	**Sanana**	**2.94**	**183**	P	Pn	04 06 25.0	+0.4
NLAI	**Namlea**	**4.23**	**167**	P	Pn	04 06 41.6	-0.7

*NIED **11** 04:05:00,36°.80N×140°.50E,h5km,Mw3.7 Best double couple: M_o4.20000×10^{14} NP1:ϕ_s49.00000°,δ41.00000°, λ-91.00000°. NP2:ϕ_s230.00000°,δ49.00000°, λ-90.00000°.*
*IDC **11** 04:05:36.4±1.3,36°.87N×140°.55E,h0km,mb3.7/5, mb1 3.8/5,mb1mx3.5/50,mbtmp3.7/5,MS4.1/2,Ms1 4.1/2, ms1mx2.8/51,Error ellipse: s-maj=20.7km s-min=17.4km az=19.0*
*ISCJB **11** 04:05:37.5±0.6,36°.82N±0°.04×140°.55E±0°.05,h10km, mb3.7/5,MS4.2/2,Error ellipse: s-maj=6.1km s-min=4.6km az=31.5*
*JMA **11** 04:05:38.2,36°.83N×140°.52E,h6km±1km,M3.6 Broadband fault plane solution: P waves. NP1: ϕ_s271.00000°,δ57.00000°,λ-66.00000°. NP2:ϕ_s52.00000°, δ40.00000°,λ-122.00000°. Principal axes: T Plg9.0000°, Azm344.0000°; N Plg20.0000°, Azm77.0000°; P Plg68.0000°, Azm231.0000°;*
JMA Felt II J1.

ISC 11 04:05:38.3±0.9, 36°.83N±0°.04×140°.54E±0°.04, h10km, n13, σ0§51/16, mb3.7/5, 4C, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHO	**Hitachi**	**0.22**	**173**	⇑P	**Pg**	**04 05 42.8**	**0.0**
JHO				S	**Sg**	**04 05 46.1**	**+0.3**
ONAJ	**Iwakimizuishiy**	**0.35**	**37**	⇑P	**Pg**	**04 05 45.3**	**+0.1**
ONAJ				S	**Sg**	**04 05 50.4**	**+0.6**
JSB	**Shiboa**	**0.51**	**286**	⇑P	**Pg**	**04 05 48.5**	**+0.2**
JSB				S	**Sg**	**04 05 55.4**	**+0.3**
JFK	**Kawauchi**	**0.60**	**27**	S	**Sg**	**04 05 58.3**	**+0.3**
JFT	**Otama**	**0.71**	**347**	⇑P	**Pg**	**04 05 51.8**	**-0.2**
MJAR	**Matsushiro Arr** 21nm,0.3s,baz=76,slow=16,SNR=11.2	**1.89**	**262**	Pg	**Pn**	**04 06 11.4**	**+0.7**
MJAR	45nm,0.3s,baz=77,slow=30,SNR=29			Lg	Lg	04 06 35.9	
MAT	**Matsushiro**	**1.89**	**262**	P	**Pn**	**04 06 11.1**	**+0.4**
MAT				S	**Sb**	**04 06 36.5**	**-0.2**
ZALV	**Zalesovo Beam** 0.5nm,0.4s,baz=114,slow=7.0,SNR=2.7	**41.54**	**313**	P	**P**	**04 13 25.7**	**0.0**
MKAR	**Makanchi Array** 0.6nm,0.6s,baz=100,slow=7.3,SNR=2.3	**43.63**	**302**	P	**P**	**04 13 42.5**	**-0.3**
MKAR	comp=Z,195nm,19.1s,baz=100,slow=37			LR	LR	04 32 11.0	
KURBB	**Kurchatov Arra** 0.8nm,0.7s,baz=84,slow=7.9,SNR=4.2	**45.58**	**308**	P	**P**	**04 13 57.0**	**-1.2**
WRA	**Warramunga Ar** 1.0nm,0.9s,baz=1.9,slow=7.4,SNR=5.9	**56.76**	**187**	P	**P**	**04 15 21.8**	**-0.7**
ASAR	**Alice Springs** 0.3nm,0.4s,baz=18,slow=9.3,SNR=3.6	**60.49**	**187**	P	**P**	**04 15 48.6**	**+0.2**
KEST	**Kesra** comp=Z,96nm,18.2s,baz=231,slow=38	**94.76**	**322**	LR	LR	05 04 53.7	

*NIED **11** 04:27:00,36°.90N×141°.50E,h5km,Mw3.5 Best double couple: M_o2.19000×10^{14} NP1:ϕ_s166.00000°,δ44.00000°, λ-143.00000°. NP2:ϕ_s48.00000°,δ65.00000°, λ-52.00000°.*
*IDC **11** 04:27:30.1±4.0,36°.70N×141°.58E,h0km,mb3.5/4, mb1 3.6/5,mb1mx3.4/46,mbtmp3.4/5,ML2.9/1,Error ellipse: s-maj=91.8km s-min=30.6km az=163.0*
*JMA **11** 04:27:32.8±0.1,36°.93N×141°.54E,h44km±2km,M3.6*

ISC 11 04:27:33.8±2.0, 37°.05N±0°.07×141°.39E±0°.09, h13km±10km, n19, σ1§06/19, mb3.5/4, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.47**	**276**	P	**Pn**	**04 27 45.1**	**-1.3**
ONAJ				S	**Sn**	**04 27 53.9**	**-0.7**
JFK	**Kawauchi**	**0.52**	**308**	P	**Pn**	**04 27 45.9**	**-1.1**
JFK				*e*S	**Sn**	**04 27 55.5**	**-0.2**
JHO	**Hitachi**	**0.79**	**236**	P	**Pb**	**04 27 48.3**	**-1.1**
JHO				S	**Sg**	**04 27 59.8**	**+0.3**
JMM	**Marumori**	**0.94**	**330**	P	**Pg**	**04 27 52.3**	**+0.3**
JFT	**Otama**	**0.96**	**299**	P	**Pn**	**04 27 53.2**	**+0.2**
JIO	**Ouri**	**1.40**	**359**	P	**Pn**	**04 27 58.3**	**-0.8**
JIO				S	**Sn**	**04 28 16.8**	**-0.6**
JAG	**Ashikaga**	**1.67**	**249**	P	**Pn**	**04 28 02.3**	**-0.6**
JAG				S	**Sn**	**04 28 23.5**	**-0.7**
MJAR	**Matsushiro Arr** 2.0nm,0.3s,baz=90,slow=15,SNR=8.9	**2.60**	**260**	Pn	**Pn**	**04 28 15.2**	**-0.5**
MAT	**Matsushiro**	**2.60**	**260**	P	**Pn**	**04 28 16.9**	**+1.3**
MAT				S	**Sb**	**04 28 52.4**	**+0.2**
SONM	**Songino Array** 0.2nm,0.4s,baz=106,slow=5.1,SNR=2.2	**27.76**	**304**	P	**P**	**04 33 21.7**	**-0.6**
H11N2	**WAKE ISLAND Hy** baz=314,slow=75	**28.18**	**121**	T	T	05 02 34.6	
H11N1	**WAKE ISLAND Hy** baz=314,slow=75	**28.18**	**121**	T	T	05 02 35.3	
H11N3	**WAKE ISLAND Hy** baz=314,slow=75	**28.19**	**121**	T	T	05 02 36.0	
H11S1	**WAKE ISLAND Hy** baz=315,slow=76	**28.89**	**123**	T	T	05 03 38.0	
H11S3	**WAKE ISLAND Hy** baz=315,slow=76	**28.89**	**123**	T	T	05 03 30.0	
H11S2	**WAKE ISLAND Hy** baz=315,slow=76	**28.90**	**123**	T	T	05 03 31.3	
ZALV	**Zalesovo Beam** 0.4nm,0.3s,baz=108,slow=9.5,SNR=3.6	**41.89**	**312**	P	**P**	**04 35 24.5**	**+0.8**
MKAR	**Makanchi Array** 0.3nm,0.5s,baz=100,slow=7.9,SNR=3.6	**44.09**	**302**	P	**P**	**04 35 44.3**	**+2.7**
ILAR	**Eielson Array** 0.6nm,0.7s,baz=255,slow=6.2,SNR=6.3	**49.49**	**32**	P	**P**	**04 36 23.4**	**-0.1**

*IDC **11** 04:28:50.0±1.3,40°.15N×143°.52E,h0km,mb4.0/16, mb1 4.2/21,mb1mx4.0/49,mbtmp4.0/21,ML3.5/3,MS3.1/2, Ms1 3.1/2,ms1mx2.6/49,Error ellipse: s-maj=32.7km s-min=16.1km az=167.0*
*MOS **11** 04:28:52.4±0.9,40°.13N×143°.56E,h31km,mb4.4/19,Error ellipse: s-maj=11.0km s-min=7.2km az=85.0*
*ISCJB **11** 04:28:54.0±0.6,40°.29N±0°.06×143°.54E±0°.08,h35km, mb4.0/27,Error ellipse: s-maj=10.7km s-min=4.7km az=44.7*
*NEIC **11** 04:28:53.6±2.2,40°.16N×143°.51E,h23km±15km,mb4.4/1, Error ellipse: s-maj=11.3km s-min=6.8km az=

KLR	**Kul'dur**	**12.28 321**	Pn	**Pn**	**04 31 48.0**	**+0.5**
	comp=N,0.1nm,0.3s,baz=122,slow=6.4,SNR=4.3						
KLR			LR	LR	04 36 51.7		
	comp=N,78nm,19.4s,baz=154,slow=39						
JNU	**Nakatsue**	**12.44 239**	LR	LR	04 36 43.9		
	comp=N,110nm,18.8s,baz=299,slow=38						
KSRS	**Korea Array**	**12.53 262**	Pn	**Pn**	**04 31 51.2**	**+0.1**
	comp=N,0.5nm,0.3s,baz=75,slow=15,SNR=3.6						
KSAR	**Wonju Array Be**	**12.57 262**	P	**Pn**	**04 31 51.2**	**-0.3**
KSAR	**Wonju Array Be**	**12.57 262**	Pn	**Pn**	**04 31 51.2**	**-0.3**
MA2	**Magadan**	**19.85 11**	P	**Pn**	**04 33 23.9**	**-0.8**
	comp=N,0.7nm,0.3s,baz=202,slow=12,SNR=5.8						
SEY	**Seymchan**	**23.30 10**	P	**P**	**04 33 59.8**	**+0.1**
	comp=N,8.8nm,0.8s,baz=194,slow=7.7,SNR=18						
YAK	**Yakutsk**	**23.37 343**	P	**P**	**04 34 01.8**	**+1.4**
YAK			pmax	pmax			
	comp=Z,9.0nm,0.5s						
BOD	**Bodaibo**	**25.84 323**	*e*P	**P**	**04 34 19.9**	**-3.3**
BOD			pmax	pmax			
	comp=Z,3.0nm,0.9s						
ULN	**Ulaanbaatar**	**27.13 298**⇑	*i*P	**P**	**04 34 35.1**	**0.0**
ULN			pmax	pmax			
	comp=Z,3.0nm,0.8s						
SONM	**Songino Array**	**27.57 298**	P	**P**	**04 34 38.3**	**-0.7**
	comp=Z,1.6nm,0.8s,baz=102,slow=9.2,SNR=8.6						
H11N2	**WAKE ISLAND Hy**	**28.59 129**	T	T	05 04 35.3		
	baz=321,slow=75,SNR=22						
H11N1	**WAKE ISLAND Hy**	**28.60 129**	T	T	05 04 35.1		
	baz=321,slow=75,SNR=20						
H11N3	**WAKE ISLAND Hy**	**28.61 129**	T	T	05 04 37.0		
	baz=321,slow=75,SNR=23						
H11S1	**WAKE ISLAND Hy**	**29.43 131**	T	T	05 05 42.0		
	baz=322,slow=76,SNR=7.7						
H11S3	**WAKE ISLAND Hy**	**29.43 131**	T	T	05 05 42.6		
	baz=322,slow=76,SNR=7.1						
H11S2	**WAKE ISLAND Hy**	**29.45 131**	T	T	05 05 42.4		
	baz=322,slow=76,SNR=6.9						
BILL	**Bilibino**	**30.44 17**⇑	*i*P	P	04 35 05.6	+1.5	
BILL			pmax	pmax			
	comp=Z,3.0nm,0.9s						
TIXI	**Tiksi**	**32.31 351**⇑	*e*P	P	04 35 23.5	+3.0	
TIXI			pmax	pmax			
	comp=Z,1.0nm,0.8s						
ZALV	**Zalesovo Beam**	**41.08 310**	P	**P**	**04 36 35.3**	**0.0**
	comp=Z,2.0nm,0.5s,baz=95,slow=8.5,SNR=8.0						
MKAR	**Makanchi Array**	**43.92 300**	P	**P**	**04 36 58.1**	**-0.5**
	comp=Z,1.3nm,0.7s,baz=81,slow=9.5,SNR=9.8						
KURK	**Kurchatov**	**45.35 306**	*e*P	**P**	**04 37 09.4**	**-0.4**
KURK			pmax	pmax			
	comp=Z,11nm,0.6s						
KURK	**Kurchatov**	**45.35 306**	*e*P	**P**	**04 37 09.4**	**-0.4**
	comp=Z,11nm,0.6s						
ILAR	**Eielson Array**	**45.86 34**	P	P	04 37 15.1	+1.5	
	comp=Z,1.6nm,0.7s,baz=262,slow=6.3,SNR=16						
TKM2	**Tokmak 2**	**49.65 297**	*e*P	**P**	**04 37 43.7**	**+0.1**
TKM2			pmax	pmax			
	comp=Z,3.0nm,0.7s						
TKM2	**Tokmak 2**	**49.65 297**	*e*P	**P**	**04 37 43.7**	**+0.1**
	comp=Z,2.7nm,0.7s						
BRVK	**Borovoye**	**49.76 311**	P	P	04 37 45.3	+1.3	
BRVK			pmax	pmax			
	comp=Z,2.0nm,0.7s						
AAK	**Ala-Archa**	**50.51 297**	P	**P**	**04 37 50.5**	**+0.4**
AAK			pmax	pmax			
	comp=Z,6.0nm,1.5s						
INK	**Inuvik**	**50.73 28**	P	P	04 37 53.0	+1.9	
	comp=Z,1.8nm,0.4s,baz=276,slow=6.2,SNR=25						
ARU	**Arti**	**55.10 318**	*e*P	**P**	**04 38 22.9**	**-0.6**
ARU			pmax	pmax			
	comp=Z,4.0nm,1.0s						
YKA	**Yellowknife Ar**	**60.16 32**	P	**P**	**04 38 59.9**	**+1.0**
	comp=Z,0.3nm,0.6s,baz=301,slow=6.5,SNR=7.1						
YKA	**Yellowknife Ar**	**60.16 32**	P	**P**	**04 39 00.0**	**+1.0**
ARCES	**ARCESS Array B**	**61.57 339**	P	**P**	**04 39 09.3**	**+0.8**
	comp=Z,1.0nm,0.6s,baz=37,slow=9.1,SNR=3.7						
ARCES	**ARCESS Array B**	**61.57 339**	P	**P**	**04 39 09.3**	**+0.8**
ARCES			pmax	pmax			
	comp=Z,5.0nm,1.2s						
OBN	**Obninsk**	**66.53 323**	*e*P	**P**	**04 39 36.5**	**-4.7**
OBN			pmax	pmax			
	comp=Z,3.0nm,0.9s						
FINES	**FINESS Array B**	**66.74 332**	P	**P**	**04 39 42.9**	**+0.4**
	comp=Z,2.4nm,0.7s,baz=66,slow=6.3,SNR=12						
KBZ	**Khabaz**	**70.09 311**	P	**P**	**04 40 04.6**	**+0.9**
	comp=Z,2.5nm,0.9s,baz=154,slow=8.6,SNR=4.1						
NVAR	**Mina Array Bea**	**71.71 55**	P	P	04 40 15.7	+1.7	
	comp=Z,0.6nm,0.6s,baz=291,slow=5.1,SNR=3.7						
NB2	**NORSAR Subarra**	**71.85 338**	P	**P**	**04 40 14.6**	**+0.4**
	comp=Z,3.8nm,1.0s,baz=35,slow=6.2						
NOA	**NORSAR Array B**	**71.85 338**	P	**P**	**04 40 14.8**	**+0.6**
	comp=Z,1.9nm,0.8s,baz=38,slow=6.0,SNR=8.1						
AKASG	**Malin Array Be**	**72.77 323**	P	**P**	**04 40 19.6**	**-0.1**
	comp=Z,0.2nm,0.3s,baz=44,slow=6.3,SNR=3.7						
PDAR	**Pinedale Array**	**74.20 47**	P	**P**	**04 40 28.9**	**+0.2**
	comp=Z,0.4nm,0.6s,baz=18,slow=0.5,SNR=5.0						
GERES	**GERESS Array B**	**80.84 329**	P	**P**	**04 41 05.8**	**+0.4**
	comp=Z,0.4nm,0.5s,baz=32,slow=5.3,SNR=4.2						
TXAR	**Lajitas Array**	**86.81 54**	P	**P**	**04 41 36.3**	**-0.1**
	comp=Z,0.3nm,0.8s,baz=251,slow=3.8,SNR=3.6						

IDC 11 04:29:49.8±5.9, 14°90S×174°16W, h0km, mb4.7/3, mb1 4.9/3, mb1mx4.0/36, mbtmp4.7/3, MS4.0/2, Ms1 4.0/2, ms1mx3.1/28, Error ellipse: s-maj=220.6km s-min=60.5km az=133.0, Samoa Islands region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
HNR	**Honiara**	**25.88**	**279**	LR	LR	04 43 35.0	
	comp=Z,66nm,19.0s,baz=272,slow=32						
STKA	**Stephens Creek**	**43.66**	**239**	P	P	04 37 56.3	-0.2
	1.3nm,0.5s,baz=72,slow=9.6,SNR=3.5						
WRA	**Warramunga Arr**	**49.25**	**256**	P	P	04 38 40.6	0.0
	4.8nm,0.5s,baz=92,slow=7.4,SNR=15						
ASAR	**Alice Springs**	**49.57**	**252**	P	P	04 38 42.9	-0.2
	43nm,0.7s,baz=86,slow=8.3,SNR=128						
JCJ	**Chichijima**	**59.48**	**314**	LR	LR	04 59 11.7	
	comp=Z,35nm,21.9s,baz=311,slow=30						
BRTR	**Keskin Array B**	**145.31**	**321**	PKPbc	PKPbc	04 49 28.9	-0.9
	0.3nm,0.5s,baz=51,slow=4.0,SNR=3.6						

JMA 11 04:30:36.5, 37°79N×139°99E, h9km±1km, M1.8, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JFT	**Otama**	**0.39**	**134**	P	Pg	04 30 43.9	-0.2
JFT				*e*S	Sg	04 30 49.1	-0.1
JFY	**Yanaizu**	**0.45**	**211**	S	Sg	04 30 51.1	+0.1
JNS	**Sasagawa**	**0.53**	**273**	P	Pg	04 30 46.9	0.0
JHK	**Hiroka**	**0.94**	**235**	P	Pg	04 30 54.1	-0.5
JHK				S	Sg	04 31 06.2	-0.7

*ISCJB **11** 04:31:37.0±0.6, 9.°85N±0.°04×125.°47E±0.°06, h21km±5km, mb3.7/8, MS3.1/1, Error ellipse: s-maj=9.6km s-min=6.6km az=175.5*
*IDC **11** 04:31:37.6±1.5, 10.°25N×125.°39E, h0km, mb3.8/6, mb1 3.9/7, mb1mx3.7/43, mbtmp3.8/7, ML4.6/1, MS3.2/1, Ms1 3.4/1, ms1mx2.5/64, Error ellipse: s-maj=43.5km s-min=29.9km az=85.0*
*MAN **11** 04:31:38, 9.°78N×125.°40E, h22km, mb4.8, ML3.7, MS3.7*
MAN INTENSITY III - SURIGAO CITY; INTENSITY I - MAINIT SURIGAO DEL NORTE.
*NEIC **11** 04:31:41.3±0.8, 10.°08N×125.°50E, h35km, mb3.8/2, Error ellipse: s-maj=30.1km s-min=12.3km az=78.0*
NEIC Felt [III PIVS] at Surigao and [I PIVS] at Mainit, Mindanao.
ISC 11 04:31:37.3±0.8, 9.°79N±0.°03×125.°38E±0.°05, h16km±6km, n25, σ1°90/32, mb3.8/8, 1C-4D, Mindanao

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
SCPH	**Surigao**	**0.10**	**92**	⇓*i*P	**Pg**	**04 31 40.4**	**-0.4**
SCPH				*e*S	**Sg**	**04 31 42.8**	**-0.3**
BUTP	**Butuan**	**0.84**	**164**	*e*P	**Pn**	**04 31 54.2**	**-0.4**
BUTP				*e*S	**Sn**	**04 32 07.2**	**+0.5**
PLP	**Palo**	**1.43**	**344**⇑	*e*P	**Pn**	**04 32 01.6**	**-1.1**
PLP				*e*S	**Sb**	**04 32 22.1**	**+0.5**
OCLP	**Ormoc**	**1.47**	**329**	*e*P	**Pb**	**04 32 04.4**	**0.0**
OCLP				*e*S	**Sg**	**04 32 26.9**	**+2.1**
CGP	**Cagayan de Oro**	**1.49**	**207**	⇓*e*P	**Pn**	**04 32 03.4**	**-0.1**
CGP				*e*S	**Sg**	**04 32 24.9**	**-0.4**
LLP	**Lapu-Lapu**	**1.49**	**291**	⇓*e*P	**Pn**	**04 32 03.3**	**-0.3**
LLP				*e*S	**Sg**	**04 32 24.7**	**-0.8**
TBP	**Tagbilaran**	**1.50**	**267**	*e*P	**Pb**	**04 32 04.3**	**-0.6**
TBP				*e*S	**Sb**	**04 32 23.8**	**0.0**
BUKP	**Musuan**	**1.92**	**190**	*e*P	**Pn**	**04 32 10.3**	**+0.8**
DMPH	**Davao City--Mi**	**2.69**	**177**	*e*P	**Sn**	**04 32 47.0**	**-5.2**
DMPH				*e*S	**Sg**	**04 33 02.1**	**-1.7**
DAV	**Davao City (W)**	**2.71**	**176**	Pn	**Pg**	**04 32 29.4**	**+0.1**
	73nm,0.3s,baz=329,slow=5.9,SNR=4.8						
DAV				Sn	**Sg**	**04 33 11.5**	**+7.1**
	53nm,0.3s,baz=307,slow=20,SNR=3.4						
DAV	**Davao City (W)**	**2.71**	**176**	*e*Pn	**Pb**	**04 32 26.2**	**+0.7**
DAV				*e*S	**Sg**	**04 33 03.3**	**-1.1**
PAGZ	**Pagadian**	**2.76**	**226**	*e*P	**Pn**	**04 32 21.4**	**+0.4**
GUIM	**Jordan**	**2.87**	**287**	*e*P	**Pn**	**04 32 22.7**	**+0.1**
RCP	**Roxas**	**3.13**	**304**	⇓*e*P	**Pn**	**04 32 28.1**	**+2.0**
CMAR	**Chiang Mai Arr**	**27.02**	**292**	P	**P**	**04 37 20.7**	**+1.7**
	0.8nm,0.3s,baz=108,slow=7.7,SNR=5.0						
CMAR				LR	LR	04 48 00.8	
	comp=Z,46nm,18.2s,baz=195,slow=37						
USRK	**Ussuriysk Ar.**	**34.76**	**8**	P	**P**	**04 38 27.4**	**+0.4**
	1.5nm,0.7s,baz=194,slow=11,SNR=4.1						
SONM	**Songino Array**	**41.17**	**341**	P	**P**	**04 39 19.9**	**-1.4**
	0.2nm,0.5s,baz=165,slow=5.8,SNR=2.6						
H11N1	**WAKE ISLAND Hy**	**41.24**	**71**	T	T	05 22 45.0	
	baz=262						
H11N2	**WAKE ISLAND Hy**	**41.24**	**71**	T	T	05 22 45.4	
	baz=262						
H11N3	**WAKE ISLAND Hy**	**41.26**	**71**	T	T	05 22 46.3	
	baz=262						
MKAR	**Makanchi Array**	**51.89**	**323**	P	**P**	**04 40 45.6**	**+0.3**
	0.6nm,0.6s,baz=123,slow=8.0,SNR=4.4						
KURK	**Kurchatov**	**55.97**	**326**	P	**P**	**04 41 14.3**	**-0.7**
	1.8nm,0.7s						
ABKAR	**Akbulak array**	**66.67**	**320**	*e*P	**P**	**04 42 28.2**	**+0.7**
	0.1nm,0.4s						
FINES	**FINESS Array B**	**85.90**	**332**	P	**P**	**04 44 16.2**	**-0.2**
	2.9nm,1.1s,baz=69,slow=7.7,SNR=3.9						
YKA	**Yellowknife Ar**	**94.55**	**24**	P	**P**	**04 44 57.2**	**+0.1**
	0.2nm,0.7s,baz=306,slow=4.5,SNR=3.8						

*IDC **11** 04:32:00.2±1.3, 3.°55S×138.°36E, h0km, mb4.0/2, mb1 4.2/6, mb1mx3.9/30, mbtmp4.1/6, ML4.0/3, Error ellipse: s-maj=29.5km s-min=24.4km az=113.0*
ISC 11 04:32:01.9±1.2, 3.°8S±0.°2×138.°8E±0.°2, h24km, n6, σ2°43/6, Irian Jaya

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JAY	**Jayapura**	**2.32**	**56**	Pn	**Pb**	**04 32 43.9**	**+0.8**
	4.7nm,0.3s,baz=191,slow=21,SNR=50						
JAY				Sn	**Sb**	**04 33 10.7**	**-0.7**
	5.4nm,0.3s,baz=236,slow=24,SNR=8.8						
PMG	**Port Moresby**	**10.01**	**124**	Pn	Pn	04 34 31.8	+7.3
	1.6nm,0.3s,baz=300,slow=16,SNR=7.0						
WRA	**Warramunga Arr**	**16.61**	**195**	Pn	**Pn**	**04 35 55.1**	**+1.8**
	0.7nm,0.3s,baz=17,slow=13,SNR=23						
WRA				Sn	Sn	04 38 48.6	-8.5
	0.9nm,0.3s,baz=16,slow=22,SNR=6.6						
FITZ	**Fitzroy Crossi**	**19.16**	**221**	P	**Pn**	**04 36 26.6**	**+1.8**
	0.6nm,0.3s,baz=39,slow=9.2,SNR=12						
FITZ				S	Sn	04 39 46.8	-12
	0.7nm,0.3s,baz=79,slow=10,SNR=6.0						
ASAR	**Alice Springs**	**20.29**	**193**	P	Pn	04 36 38.9	+0.6
	1.5nm,0.3s,baz=17,slow=10,SNR=28						
ASAR				S	**S**	**04 40 19.8**	**-3.0**
	2.4nm,0.8s,baz=14,slow=27,SNR=5.7						
MKAR	**Makanchi Array**	**70.69**	**323**	P	**P**	**04 43 14.9**	**-1.0**
	1.7nm,0.7s,baz=110,slow=7.9,SNR=11						

*ISCJB **11** 04:34:08.9±0.6, 39.°01N±0.°03×26.°09E±0.°05, h6km±5km, Error ellipse: s-maj=6.4km s-min=4.0km az=153.2*
*ATH **11** 04:34:08.6, 38.°99N×26.°09E, h18km±3km, ML1.6/2, Error ellipse: s-maj=3.7km s-min=1.5km az=51.0*
*CSEM **11** 04:34:08.4±0.2, 38.°97N×26.°08E, h8km, MD2.7, Error ellipse: s-maj=5.5km s-min=4.0km az=61.0*
*ISK **11** 04:34:08.6, 39.°05N×26.°13E, h6km, MD2.7*
*DDA **11** 04:34:09.1, 39.°03N×26.°08E, h7km, Md2.6*
ISC 11 04:34:07.6±1.2, 38.°99N±0.°02×26.°07E±0.°03, h11km±10km, n28, σ0°66/42, Aegean Sea

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
SIGR	**SIGRI**	**0.28**	**322**	*e*PG	**Pb**	**04 34 14.7**	**0.0**
SIGR				*e*SG	**Sb**	**04 34 18.6**	**-0.7**
SIGR	**SIGRI**	**0.28**	**322**	P	**Pb**	**04 34 14.5**	**-0.1**
SIGR				S	**Sb**	**04 34 18.5**	**-0.9**
SIGR	**SIGRI**	**0.28**	**322**	P	**Pb**	**04 34 14.5**	**-0.1**
SIGR				S	**Sb**	**04 34 18.5**	**-0.9**
SIGR				AML	AML	04 34 19.6	
	comp=E,383μm,0.2s						
SIGR				AML	AML	04 34 19.6	
	comp=N,756μm,0.2s						
PRK	**Paraskevi**	**0.30**	**31**	P	**Pb**	**04 34 14.9**	**-0.1**
PRK				S	**Sb**	**04 34 19.6**	**-0.3**
PRK	**Paraskevi**	**0.30**	**31**	P	**Pb**	**04 34 14.9**	**-0.1**
PRK				S	**Sb**	**04 34 19.6**	**-0.3**
PRK				AML	AML	04 34 21.5	
	comp=E,286μm,0.3s						
PRK				AML	AML	04 34 23.6	
	comp=N,329μm,0.4s						
AYVA	**Ayvalik**	**0.57**	**56**	*i* P	**Pb**	**04 34 19.9**	**+0.2**
AYVA				*i* S	**Sb**	**04 34 28.2**	**+0.3**
AYVA	**Ayvalik**	**0.57**	**56**	P	**Pb**	**04 34 19.9**	**+0.2**
AYVA				S	**Sb**	**04 34 28.2**	**+0.3**
CHOS	**Chios island**	**0.60**	**181**	P	**Pb**	**04 34 20.5**	**+0.3**
CHOS	**Chios island**	**0.60**	**181**	P	**Pb**	**04 34 20.5**	**+0.3**
DKL	**Dikili**	**0.65**	**83**	*e*PG	**Pb**	**04 34 21.0**	**0.0**
DKL				*e*SG	**Sg**	**04 34 29.4**	**+0.6**
DKL	**Dikili**	**0.65**	**83**	*e*Pg	**Pb**	**04 34 21.0**	**0.0**
DKL				*e*Sg	**Sg**	**04 34 29.4**	**+0.6**
URLA	**Izmir**	**0.75**	**147**	*i* P	**Pg**	**04 34 21.3**	**-0.8**
URLA				*i* S	**Sn**	**04 34 35.9**	**+0.3**
URLA	**Izmir**	**0.75**	**147**	P	**Pg**	**04 34 21.3**	**-0.8**
URLA				S	**Sn**	**04 34 35.9**	**+0.3**
ZEY	**¨zmir**	**0.82**	**156**	*i* P	**Pn**	**04 34 24.9**	**-0.2**
ZEY				*i* S	**Sn**	**04 34 38.2**	**+0.8**
BOZC	**Bozcaada**	**0.85**	**359**	*i* P	**Pn**	**04 34 24.8**	**-0.7**
BOZC				*i* S	**Sn**	**04 34 36.8**	**-1.2**
EZN	**Ezine**	**0.85**	**13**	*e*PG	**Pb**	**04 34 24.2**	**-0.3**
EZN	**Ezine**	**0.85**	**13**	*e*Pg	**Pb**	**04 34 24.2**	**-0.3**
LIA	**Limnos Island**	**1.14**	**323**	P	**Pg**	**04 34 30.2**	**+0.8**
LIA				S	**Sn**	**04 34 47.8**	**+2.7**
GADA	**Gvkgeada**	**1.21**	**354**	*e*PN	**Pg**	**04 34 31.2**	**+0.4**
GADA	**Gvkgeada**	**1.21**	**354**	*e*Pn	**Pg**	**04 34 31.2**	**+0.4**
GELI	**Tayfur-Gelibol**	**1.44**	**12**	*e*PN	**Pg**	**04 34 35.1**	**-0.1**
GELI	**Tayfur-Gelibol**	**1.44**	**12**	*e*Pn	**Pg**	**04 34 35.1**	**-0.1**
SMTH	**Samothraki Isl**	**1.54**	**344**	P	**Pg**	**04 34 36.7**	**-0.4**
SMTH	**Samothraki Isl**	**1.54**	**344**	P	**Pg**	**04 34 36.7**	**-0.4**
ERIK	**Erikli-Kesan**	**1.71**	**11**	*e*PN	**Pb**	**04 34 38.9**	**-0.2**
ERIK	**Erikli-Kesan**	**1.71**	**11**	*e*Pn	**Pb**	**04 34 38.9**	**-0.2**
AYDB	**Zeytinkoy-Aydi**	**1.77**	**126**	*e*PN	**Pb**	**04 34 40.3**	**+0.2**
AYDB	**Zeytinkoy-Aydi**	**1.77**	**126**	*e*Pn	**Pb**	**04 34 40.3**	**+0.2**

JMA 11 04:39:53.5±0.1, 38.°29N×141.°66E, h54km±1km, M3.6, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**0.29**	**304**	P	Pn	04 40 03.0	+0.1
JIO				S	Sn	04 40 09.4	-0.3
JMK	**Ichinoseki**	**0.74**	**333**	P	Pn	04 40 08.3	+0.3
JMK				S	Sn	04 40 18.6	0.0
JOU	**Okura**	**0.79**	**276**	P	Pn	04 40 08.7	+0.1
JOU				S	Sn	04 40 19.8	+0.2
OFUJ	**Ofunato**	**0.79**	**1**	P	Pn	04 40 08.4	-0.2
OFUJ				S	Sn	04 40 18.9	-0.7
JMM	**Marumori**	**0.81**	**239**	P	Pn	04 40 08.4	-0.3
JMM				S	Sn	04 40 19.1	-0.8
JFK	**Kawauchi**	**1.11**	**214**	P	Pn	04 40 12.6	-0.3
JFK				S	Sn	04 40 26.6	-0.6
JYK	**Kaneyama**	**1.20**	**302**	P	Pn	04 40 14.4	+0.4
JYK				S	Sn	04 40 29.9	+0.7
JOM	**Ohasama**	**1.22**	**346**	P	Pn	04 40 14.5	+0.3
JOM				*e*S	Sn	04 40 30.6	+0.9
JYS	**Shirataka**	**1.26**	**267**	P	Pn	04 40 15.2	+0.4
JYS				S	Sn	04 40 31.5	+0.8
JFT	**Otama**	**1.30**	**234**	P	Pn	04 40 15.7	+0.3
JFT				S	Sn	04 40 31.6	-0.1
JRG	**Rokugo**	**1.36**	**324**	P	Pn	04 40 16.9	+0.7
JRG				S	Sn	04 40 34.8	+1.5

*IDC **11** 04:49:49.2±0.9, 42.°06N×48.°18E, h0km, mb3.5/5, mb1 3.5/11, mb1mx3.4/50, mbtmp3.5/11, ML3.1/4, Error ellipse: s-maj=13.9km s-min=8.8km az=162.0*
*AZER **11** 04:49:49.3±8.0, 42.°09N×48.°34E, h32km, Error ellipse: s-maj=6.4km s-min=3.8km az=40.0*
*ISCJB **11** 04:49:50.6±0.5, 42.°11N±0.°02×48.°43E±0.°03, h7km±3km, mb3.4/5, Error ellipse: s-maj=3.7km s-min=2.9km az=149.6*
*MOS **11** 04:49:50.0±0.8, 42.°02N×48.°48E, h8km, mb4.1/1, Error ellipse: s-maj=8.5km s-min=5.8km az=25.0*
MOS Felt (II - III) at Derbent.
*CSEM **11** 04:49:51.5±0.2, 42.°06N×48.°49E, h10km, mb4.1, Error ellipse: s-maj=4.3km s-min=4.0km az=76.0*
ISC 11 04:49:51.1±0.8, 42.°06N±0.°02×48.°42E±0.°03, h8km±5km, n100, σ1°58/145, mb3.6/5, 16C-15D, Caspian Sea

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
DRN	**Derbent**	**0.07**	**248**	*e*PG	**Pg**	**04 49 54.2**	**+1.2**
DRN				*e*S	**Sg**	**04 49 57.2**	**+2.9**
DRN	**Derbent**	**0.07**	**248**	*e*Pg	**Pg**	**04 49 54.2**	**+1.2**
DRN				*e*Sg	**Sg**	**04 49 57.2**	**+2.9**
KSMR	**Kasumkent**	**0.50**	**205**	*e*PG	**Pb**	**04 50 02.0**	**-0.2**
KSMR				*e*S	Sn	04 50 14.0	+0.5
KSMR	**Kasumkent**	**0.50**	**205**	*e*Pg	**Pb**	**04 50 02.0**	**-0.2**
QUBA	**Quba, Azerbaij**	**0.70**	**175**	⇓P	**Pb**	**04 50 05.8**	**+0.2**
	SNR=24						
QUBA				⇓S	**Sb**	**04 50 16.4**	**+0.9**
QUBA	**Quba, Azerbaij**	**0.70**	**175**	P	**Pb**	**04 50 05.8**	**+0.2**
	SNR=24						
QUBA				S	**Sb**	**04 50 16.4**	**+0.9**
AKT	**Akhty**	**0.77**	**222**⇑	*i*PG	**Pg**	**04 50 04.4**	**-1.5**
AKT				*e*S	**Sg**	**04 50 12.8**	**-3.2**
XNQ	**Khinaliq**	**0.91**	**193**	⇑P	**Pg**	**04 50 08.3**	**-0.3**
	SNR=113						
XNQ				⇑S	**Sb**	**04 50 23.2**	**+1.7**
XNQ	**Khinaliq**	**0.91**	**193**	P	**Pg**	**04 50 08.3**	**-0.3**
	SNR=113						
XNQ				S	**Sb**	**04 50 23.2**	**+1.7**
SIZA	**Siyzn**	**1.04**	**159**	⇑P	**Pn**	**04 50 11.9**	**-0.2**
	SNR=8.6						
SIZA				⇓S	**Sn**	**04 50 28.7**	**+1.7**
SIZA	**Siyzn**	**1.04**	**159**	P	**Pn**	**04 50 11.9**	**-0.2**
	SNR=8.6						
SIZA				S	**Sn**	**04 50 28.7**	**+1.7**
GNBR	**Gunib**	**1.13**	**288**⇑	*i*PG	Pg	04 50 10.4	-2.4
GNBR				*e*S	**Sg**	**04 50 24.9**	**-2.5**
SEKA	**Sheki**	**1.24**	**228**	⇑P	Pg	04 50 11.9	-3.1
	SNR=68						
SEKA				⇓S	**Sg**	**04 50 31.1**	**0.0**
SEKA	**Sheki**	**1.24**	**228**	P	Pg	04 50 11.9	-3.1
	SNR=68						
SEKA				S	**Sg**	**04 50 31.1**	**0.0**
PQL	**Pirkuli**	**1.27**	**174**	⇓P	**Pn**	**04 50 16.0**	**+0.6**
	SNR=26						
PQL				⇑S	**Sn**	**04 50 33.4**	**+0.7**
PQL	**Pirkuli**	**1.27**	**174**	P	**Pn**	**04 50 16.0**	**+0.6**
	SNR=26						
PQL				S	**Sn**	**04 50 33.4**	**+0.7**
IML	**Ismayilli**	**1.27**	**188**	⇓P	**Pg**	**04 50 14.5**	**-1.0**
	SNR=7.7						
IML				⇓S	**Sb**	**04 50 32.9**	**+0.9**
IML	**Ismayilli**	**1.27**	**188**	P	**Pg**	**04 50 14.5**	**-1.0**
	SNR=7.7						
IML				S	**Sb**	**04 50 32.9**	**+0.9**
UNCR	**Uncukul**	**1.37**	**299**	*e*PG	**Pn**	**04 50 15.3**	**-1.3**
UNCR				*e*S	**Sg**	**04 50 33.8**	**-1.3**
ZKTA	**Zakatala**	**1.40**	**253**	⇑P	Pn	04 50 14.2	-2.9
	SNR=56						
ZKTA				⇓S	**Sg**	**04 50 34.2**	**-2.0**
DBC	**Dubki**	**1.52**	**310**	*e*PG	**Pg**	**04 50 20.7**	**+0.5**
DBC				*e*S	**Sn**	**04 50 40.0**	**+1.3**
DBC	**Dubki**	**1.52**	**310**	*e*Pg	**Pg**	**04 50 20.7**	**+0.5**
DBC				*e*Sg	**Sn**	**04 50 40.0**	**+1.3**
MNGR	**Mingechevir, A**	**1.63**	**218**	⇓Pg	**Pn**	**04 50 18.1**	**-1.9**
BTLR	**Botlikh**	**1.73**	**291**⇑	*i*PN	**Pn**	**04 50 21.0**	**-0.7**
BTLR	**Botlikh**	**1.73**	**291**	*i* Pn	**Pn**	**04 50 21.0**	**-0.7**
ZRD	**Zardab**	**1.86**	**198**	⇓Pn	**Pn**	**04 50 23.7**	**+0.4**
	SNR=4.5						
ZRD				⇑Sn	**Sb**	**04 50 49.9**	**+1.2**
ZRD	**Zardab**	**1.86**	**198**	Pn	**Pn**	**04 50 23.7**	**+0.4**
	SNR=4.5						
ZRD				Sn	**Sb**	**04 50 49.9**	**+1.2**
**GOBA

	comp=E,0.5nm,0.3s,baz=131,slow=7.3,SNR=8.5								
KBZ					Sn	**Sn**	**04 51 48.5**	**-0.7**	
	comp=E,0.8nm,0.3s,baz=146,slow=17,SNR=3.3								
KVAR	**Kislovodsk Arr**	**4.60**	**296**		Pn	**Pn**	**04 50 58.7**	**-2.4**	
	baz=30,slow=20,SNR=2.0								
KVAR					Sn	**Sn**	**04 51 51.5**	**-3.4**	
	baz=163,slow=11,SNR=2.7								
KIV	**Kislovodsk**	**4.61**	**296**	*e*PN		**Pn**	**04 51 02.3**	**+1.1**	
KIV				*e*S		**Sn**	**04 51 56.0**	**+1.0**	
KIV					pmax	pmax			
	comp=Z,9.0nm,1.0s								
KIV	**Kislovodsk**	**4.61**	**296**	*e*Pn		**Pn**	**04 51 02.3**	**+1.1**	
	comp=Z,9.0nm,1.0s								
KIV				*e*Sn		**Sn**	**04 51 56.0**	**+1.0**	
GOF	**Gofitskoye**	**4.92**	**309**	*ce*PN		Pn	04 51 11.5	+6.1	
GOF				*e*S		**Sn**	**04 52 03.3**	**+0.8**	
GOF	**Gofitskoye**	**4.92**	**309**	*e*Sn		**Sn**	**04 52 03.3**	**+0.8**	
LABN	**Labinsk**	**6.17**	**297**	*i* P		**Pn**	**04 51 22.8**	**+0.2**	
LABN	**Labinsk**	**6.17**	**297**	*i* P		**Pn**	**04 51 22.8**	**+0.2**	
GEYT	**Alibeck**	**8.51**	**116**	Pn		**Pn**	**04 51 57.3**	**+2.6**	
	comp=Z,2.2nm,0.3s,baz=213,slow=5.0,SNR=4.1								
AKTK	**Aktyubinsk**	**10.69**	**35**	P		**Pn**	**04 52 23.2**	**-1.3**	
AKTK				S		**Sn**	**04 54 21.0**	**-3.3**	
AKTO	**Aktyubinsk**	**10.69**	**35**	Pn		**Pn**	**04 52 23.2**	**-1.3**	
	comp=Z,0.2nm,0.3s,baz=201,slow=11,SNR=4.7								
AKTO					Sn	**Sn**	**04 54 21.0**	**-3.2**	
	comp=Z,0.4nm,0.3s,baz=41,slow=23,SNR=3.8								
AKTO	**Aktyubinsk**	**10.69**	**35**	⇑Pn		**Pn**	**04 52 23.1**	**-1.3**	
	comp=Z,1.4nm,0.6s								
AKTO				⇑Sn		**Sn**	**04 54 20.2**	**-4.1**	
	comp=Z,3.2nm,0.6s								
AKTO	**Aktyubinsk**	**10.69**	**35**	Pn		**Pn**	**04 52 23.1**	**-1.3**	
	comp=Z,1.4nm,0.6s								
AB31	**Akbulak array**	**10.81**	**44**	Pn		**Pn**	**04 52 27.2**	**+1.2**	
	comp=Z,0.3nm,0.3s,baz=226,slow=12,SNR=23								
AB31				⇑Sn		**Sn**	**04 54 25.2**	**-1.9**	
	comp=Z,0.4nm,0.3s,baz=239,slow=25,SNR=2.8								
AB31	**Akbulak array**	**10.81**	**44**	Pn		**Pn**	**04 52 27.2**	**+1.2**	
	comp=Z,0.3nm,0.3s,SNR=23								
AB31				Sn		**Sn**	**04 54 25.2**	**-1.9**	
	comp=Z,0.4nm,0.3s,SNR=2.8								
OBN	**Obninsk**	**15.21**	**333**	*e*P		**Pn**	**04 53 26.9**	**+0.9**	
OBN					pmax	pmax			
	comp=Z,3.0nm,0.9s								
KIEV	**Kiev**	**15.79**	**310**	*i* P		**Pn**	**04 53 30.2**	**-3.4**	
KIEV					pmax	pmax			
	comp=Z,8.0nm,2.2s								
ARU	**Arti**	**15.81**	**21**	P		**Pn**	**04 53 35.6**	**+1.7**	
ARU				S		**Sn**	**04 56 30.8**	**+1.6**	
ARU	**Arti**	**15.81**	**21**	P		**Pn**	**04 53 35.6**	**+1.7**	
BRVK	**Borovoye**	**18.33**	**46**	*e*P		**Pn**	**04 54 05.3**	**-0.3**	
BRVK					pmax	pmax			
	comp=Z,4.0nm,2.0s								
BRVK	**Borovoye**	**18.33**	**46**	*e*P		**Pn**	**04 54 05.3**	**-0.3**	
	comp=Z,4.0nm,2.0s								
BVAR	**Borovoye Array**	**18.37**	**46**	P		**P**	**04 54 06.1**	**0.0**	
	comp=Z,0.1nm,0.3s,baz=246,slow=14,SNR=2.8								
AAK	**Ala-Archa**	**19.27**	**79**	*e*P		**Pn**	**04 54 17.5**	**+0.3**	
AAK					pmax	pmax			
	comp=Z,6.0nm,1.6s								
AAK	**Ala-Archa**	**19.27**	**79**	*e*P		**Pn**	**04 54 17.5**	**+0.3**	
	comp=Z,6.0nm,1.6s								
KURBB	**Kurchatov Arra**	**22.36**	**57**	P		**P**	**04 54 50.3**	**+0.8**	
	comp=Z,0.3nm,0.6s,baz=264,slow=10,SNR=4.2								
KURK	**Kurchatov**	**22.43**	**57**	P		**P**	**04 54 50.3**	**+0.1**	
KURK	**Kurchatov**	**22.43**	**57**	P		**P**	**04 54 50.3**	**+0.1**	
FINES	**FINESS Array B**	**23.61**	**333**	P		**P**	**04 55 01.6**	**-0.7**	
	comp=Z,1.0nm,0.5s,baz=134,slow=11,SNR=6.1								
MKAR	**Makanchi Array**	**24.53**	**67**	P		**P**	**04 55 12.0**	**+0.9**	
	comp=Z,0.4nm,0.6s,baz=257,slow=10,SNR=3.3								
HFS	**Hagfors**	**27.86**	**322**	P		**P**	**04 55 37.8**	**-3.0**	
	comp=Z,1.4nm,0.8s,baz=141,slow=9.3,SNR=3.8								
TORD	**Torodi Ar. Bea**	**49.59**	**249**	P		P	04 58 39.8	-3.2	
	comp=Z,0.4nm,0.6s,baz=35,slow=7.1,SNR=8.3								

NIED ***11*** *04:51:00,37.˚50N×141.˚30E,h32km,Mw4.8 Best double couple: M₀1.66000×10¹⁶ NP1:φ₀170.00000°,δ51.00000°, λ-22.00000°. NP2:φ₀274.00000°,δ73.00000°, λ-139.00000°.*

IDC ***11*** *04:51:40.7±0.5,37.˚48N×141.˚28E,h0km,mb4.8/39, mb1 4.9/44,mb1mx4.8/51,mbtmp4.8/44,ML4.2/4,MS4.2/39, Ms1 4.2/39,ms1mx4.0/54,Error ellipse: s-maj=12.5km s-min=10.8km az=107.0*

BJI ***11*** *04:51:41.5,37.˚41N×141.˚36E,h21km,mb4.7/59,mB4.9/44, Ms4.5/58,Ms7 4.4/53*

ISCJB ***11*** *04:51:44.9±0.4,37.˚48N±0.˚02×141.˚22E±0.˚03,h36km±3km, mb4.9/217,MS4.4/60,Error ellipse: s-maj=3.9km s-min=3.2km az=151.4*

JMA ***11*** *04:51:44.8±0.1,37.˚47N×141.˚32E,h29km±1km,M5.0 JMA Felt IV J1.*

MOS ***11*** *04:51:45.0±0.9,37.˚80N×141.˚15E,h27km,mb5.2/96, MS4.5/24,Error ellipse: s-maj=6.5km s-min=4.3km az=99.7*

NEIC ***11*** *04:51:46.9±0.5,37.˚50N×141.˚22E,h40km±4km,mb5.0/141, Error ellipse: s-maj=4.3km s-min=3.0km az=145.0*

NEIC Recorded [4 JMA] in Fukushima.

GCMT ***11*** *04:51:46.9±0.4,37.˚54N×141.˚24E,h30km±1km,MW4.9/82, Moment Tensor Solution. s24,c27; s82,c107; Duration: 0 Moment tensor: Scale 10¹⁶Nm; Mrr-1.32±.19; Mθθ-0.24±.12; Mφφ1.56±.14; Mrθ1.99±.19; Mθφ-1.77±.09; Mφr1.12±.16; Best double couple: M₀3.12700×10¹⁶ NP1:φ₀293.00000°,δ62.00000°,λ-143.00000°. NP2: φ₀183.00000°,δ58.00000°,λ-34.00000°. Principal axes: T 2.6490, Plg2.0000°, Azm57.0000°; N 0.9580, Plg45.0000°, Azm326.0000°; P -3.6040, Plg45.0000°, Azm149.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

ISC 11 04:51:44.3±0.5,37.˚47N±0.˚03×141.˚38E±0.˚03,h26km±2km, h26km:pP-P,n583,σ1§69/620,mb5.0/223,MS4.4/61, 37C-11D,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**0.41**	**256**	⇑P	**Pb**	**04 51 53.1**	**0.0**
JFK				S	**Sb**	**04 51 58.7**	**-0.5**
ONAJ	**Iwakimizuishiy**	**0.59**	**232**	⇑P	**Pb**	**04 51 55.7**	**-0.3**
ONAJ				S	**Sb**	**04 52 02.8**	**-1.2**
JMM	**Marumori**	**0.61**	**311**	⇓P	**Pb**	**04 51 56.0**	**-0.4**
JMM				S	**Sb**	**04 52 03.9**	**-0.7**
JFT	**Otama**	**0.83**	**274**	⇓P	**Pb**	**04 51 59.9**	**-0.2**
JFT				S	**Sn**	**04 52 10.5**	**-1.1**
JIO	**Ouri**	**0.99**	**359**	⇑P	**Pn**	**04 52 01.8**	**-0.6**
JIO				S	**Sn**	**04 52 14.2**	**-1.2**
JOU	**Okura**	**1.06**	**328**	⇑P	**Pn**	**04 52 03.6**	**+0.2**
JOU				S	**Sb**	**04 52 17.3**	**-0.1**
JYS	**Shirataka**	**1.28**	**306**	⇑P	**Pb**	**04 52 07.1**	**-0.6**
JYS				S	**Sb**	**04 52 24.0**	**+0.2**
JFY	**Yanaizu**	**1.33**	**268**	⇑P	**Pn**	**04 52 07.6**	**+0.4**
JFY				S	**Sb**	**04 52 24.8**	**-0.5**
MJAR	**Matsushiro Arr**	**2.70**	**251**	Pn	**Pn**	**04 52 26.2**	**+0.3**
	146nm,0.3s,baz=300,slow=10,SNR=229						
MAJO	**Matsushiro**	**2.70**	**251**	*e*P	**Pn**	**04 52 27.7**	**+1.8**
MAJO				*e*		04 52 49.6	
MAJO	**Matsushiro**	**2.70**	**251**	*e*Pn	**Pn**	**04 52 27.7**	**+1.8**
MAJO				*e*Sn	**Sn**	**04 52 49.6**	**-8.2**
MAT	**Matsushiro**	**2.70**	**251**	P	**Pn**	**04 52 27.6**	**+1.6**
MAT				S	**Sn**	**04 53 00.0**	**+2.2**
INU	**Inuyama**	**4.10**	**240**	*e*Pn	**Pn**	**04 52 47.2**	**+1.9**
INU				*e*Sn	**Sn**	**04 53 23.8**	**-8.6**
JHJ	**Hachijo jima 2**	**4.53**	**197**	Pn	**Pn**	**04 52 51.5**	**+0.4**
	145nm,0.3s,baz=323,slow=20,SNR=11						
JHJ				Sn	**Sn**	**04 53 41.0**	**-1.9**
	184nm,0.3s,baz=270,slow=21,SNR=9.1						
JHJ				LR	LR	04 54 55.9	
	comp=Z,2μm,19.7s,baz=42,slow=43						
JHJ2	**Mitsune**	**4.53**	**197**	*e*Pn	**Pn**	**04 52 52.0**	**+0.9**
JHJ2				*e*Sn	**Sn**	**04 53 42.2**	**-0.7**
ERM	**Erimo**	**4.75**	**16**	*e*P	**Pn**	**04 52 54.3**	**+0.3**
ERM				*e*		04 53 47.2	
ERM	**Erimo**	**4.75**	**16**	*e*Pn	**Pn**	**04 52 54.2**	**+0.3**
ERM				*e*Sn	**Sn**	**04 53 47.2**	**-0.9**
YUK	**Yuzh-Kuril'sk**	**7.39**	**26**	*e*P	**Pn**	**04 53 28.6**	**-1.7**
YUK				*e*S	**Sn**	**04 54 47.5**	**-5.8**
YUK					pmax	pmax	
	comp=Z,404nm,0.3s						
YUK					pmax	pmax	
	comp=N,121nm,0.2s						
YUK					pmax	pmax	
	comp=E,306nm,0.3s						
YUK					MLR	MLR	
	comp=Z,1μm,18.0s						
YUK					MLR	MLR	
	comp=N,2μm,13.0s						
SHO	**Shikotan**	**7.62**	**31**	*e*P	**Pn**	**04 53 30.9**	**-2.6**
SHO				*e*S	**Sn**	**04 54 51.3**	**-7.6**
SHO					pmax	pmax	
	comp=Z,196nm,0.5s						
SHO					pmax	pmax	
	comp=E,166nm,0.6s						
SHO					pmax	pmax	
	comp=N,126nm,0.5s						
KUR	**Kuril'sk**	**9.16**	**30**	⇑*i*P	**Pn**	**04 53 54.0**	**-0.6**
KUR				*i* S	**Sn**	**04 55 32.3**	**-4.5**
KUR					pmax	pmax	
	comp=Z,76nm,0.5s						
KUR					smax	smax	
	comp=N,46nm,0.6s						
KUR					smax	smax	
	comp=E,77nm,0.6s						
VLA	**Vladivostok**	**9.19**	**311**	*de*P	Pn	04 54 00.3	+5.3
YSS	**Yuzh-Sakhalins**	**9.54**	**6**	*e*P	**Pn**	**04 54 01.4**	**+1.7**
YSS				*e*S	**Sn**	**04 55 44.2**	**-1.8**
YSS					pmax	pmax	
	comp=Z,60nm,0.6s						
YSS					MLR	MLR	
	comp=N,1μm,13.0s						
YSS					MLR	MLR	
	comp=Z,1μm,13.0s						
YSS	**Yuzh-Sakhalins**	**9.54**	**6**	*e*Pn	**Pn**	**04 54 00.3**	**+0.5**
YSS				*e*Sn	**Sn**	**04 55 38.6**	**-7.4**
JNU	**Nakatsue**	**9.61**	**246**	Pn	**Pn**	**04 54 03.1**	**+2.2**
	comp=Z,0.5nm,0.3s,baz=48,slow=4.5,SNR=3.2						
JNU				LR	LR	04 57 48.4	
	comp=Z,486nm,20.1s,baz=35,slow=38						
JNU	**Nakatsue**	**9.61**	**246**	*e*Pn	**Pn**	**04 54 01.6**	**+0.7**
USRK	**Ussuriysk Ar.**	**9.79**	**316**	Pn	**Pn**	**04 54 03.0**	**-0.2**
	comp=Z,0.5nm,0.3s,baz=117,slow=12,SNR=4.7						
CBIJ	**Chichi jima**	**10.36**	**176**	*e*Pn	**Pn**	**04 54 08.9**	**-2.3**
CBIJ				*e*Sn	Sn	04 55 57.5	-9.0
JCJ	**Chichijima**	**10.36**	**176**	Pn	**Pn**	**04 54 09.0**	**-2.2**
	comp=Z,35nm,0.3s,baz=291,slow=22,SNR=16						
KSRS	**Korea Array**	**10.70**	**274**	Pn	**Pn**	**04 54 16.0**	**+0.3**
	comp=Z,0.4nm,0.3s,baz=86,slow=14,SNR=4.0						
KSRS				LR	LR	04 58 17.5	
	comp=Z,1μm,18.0s,baz=85,slow=37						
KS01	**Wonju Array Si**	**10.72**	**274**	*e*Pn	**Pn**	**04 54 18.9**	**+2.9**
KS15	**Wonju Array Si**	**10.73**	**274**	*e*Pn	**Pn**	**04 54 18.4**	**+2.2**
KSAR	**Wonju Array Be**	**10.73**	**274**	P	**Pn**	**04 54 16.0**	**-0.1**
KSAR	**Wonju Array Be**	**10.73**	**274**	Pn	**Pn**	**04 54 16.0**	**-0.1**
MDJ	**Mudanjiang**	**11.40**	**312**	P	**Pn**	**04 54 27.9**	**+2.6**
MDJ				S	**Sn**	**04 56 33.4**	**+1.6**
MDJ				PcP	**PcP**	**05 00 17.7**	**+0.2**
MDJ				ScP	**ScP**	**05 03 52.8**	**+4.4**
MDJ				ScS	**ScS**	**05 07 25.1**	**+1.4**
MDJ					pmax	pmax	
	comp=Z,19nm,0.9s						
MDJ					pmax	pmax	
	comp=Z,200nm,4.4s						
MDJ					LR	LR	
	comp=Z,660nm,17.6s						
MDJ					LR	LR	
	comp=Z,830nm,17.8s						
MDJ					LR	LR	
	comp=Z,2μm,17.6s						
MDJ	**Mudanjiang**	**11.40**	**312**	*e*Pn	**Pn**	**04 54 29.4**	**+4.1**
HABR	**Khabarovsk**	**11.93**	**339**	*e*P	**Pn**	**04 54 30.6**	**-1.9**
HABR				*e*S	**Sn**	**04 56 41.8**	**-2.8**
HABR					pmax	pmax	
	comp=Z,9.0nm,1.4s						
HABR					pmax	pmax	
	comp=Z,26nm,1.5s						
HABR					pmax	pmax	
	comp=N,35nm,1.5s						
HABR					MLR	MLR	
	comp=Z,734nm,11.0s						
TYV	**Tymovskoe**	**13.42**	**3**	*e*P	**Pn**	**04 54 51.0**	**-1.9**
TYV					pmax	pmax	
	comp=Z,14nm,0.6s						
TYV					MLR	MLR	
	comp=N,2μm,18.0s						
TYV					MLR	MLR	
	comp=Z,2μm,16.0s						
CN2	**Changchun**	**13.64**	**303**	*e*P	**Pn**	**04 54 56.2**	**+0.3**
CN2				*es*P	P	04 55 05.0	+0.5
CN2				*e*S	**Sn**	**04 57 25.4**	**-1.1**
CN2					pmax	pmax	
	comp=Z,10.0nm,0.3s						
CN2					pmax	pmax	
	comp=Z,200nm,5.0s						
CN2					LR	LR	
	comp=Z,900nm,15.0s						
CN2					LR	LR	
	comp=Z,1μm,15.0s						
CN2					LR	LR	
	comp=Z,2μm,16.0s						
KLR	**Kul'dur**	**13.67**	**332**	Pn	**Pn**	**04 54 56.0**	**-0.3**
	comp=Z,0.4nm,0.3s,baz=144,slow=9.6,SNR=13						
KLR	**Kul'dur**	**13.67**	**332**	P	**Pn**	**04 54 56.0**	**-0.3**
SNY	**Shenyang**	**14.38**	**293**	⇓P	P	04 55 23.7	+11
SNY				S	**S**	**04 57 56.4**	**-7.8**
SNY					pmax	pmax	
	comp=Z,12nm,0.7s						
SNY					pmax	pmax	
	comp=Z,220nm,5.7s						
SNY					LR	LR	
	comp=N,1μm,18.2s						
SNY					LR	LR	
	comp=E,2μm,18.3s						
SNY					LR	LR	
	comp=Z,3μm,16.1s						
DL2	**Dalian**	**15.60**	**281**	P	**Pn**	**04 55 19.6**	**-2.6**
DL2				S	**Sn**	**04 58 04.7**	**-9.5**
DL2					pmax	pmax	
	comp=Z,22nm,1.3s						
DL2					pmax	pmax	
	comp=Z,350nm,9.6s						
DL2					LR	LR	
	comp=Z,760nm,14.8s						
DL2					LR	LR	
	comp=Z,1μm,17.6s						
DL2					LR	LR	
	comp=Z,1μm,17.9s						
NKL	**Nikolayevsk**	**15.69**	**358**	*e*P	**Pn**	**04 55 19.0**	**-4.3**
NKL					pmax	pmax	
	comp=Z,13nm,0.8s						
NKL					MLR	MLR	
	comp=N,1μm,14.0s						
NKL					MLR	MLR	
	comp=Z,2μm,14.0s						
NJ2	**Nanjing**	**19.26**	**260**	*e*P	**Pn**	**04 56 07.6**	**-0.2**
NJ2					pmax	pmax	
	comp=Z,11nm,0.7s						
NJ2					LR	LR	
	comp=Z,870nm,13.0s						
PEA0	**Petropavlovsk-**	**19.33**	**31**	*e*P	**P**	**04 56 06.7**	**-0.6**
PETK	**Petropavlovsk-**	**19.33**	**31**	P	**P**	**04 56 04.3**	**-3.0**
	comp=Z,0.5nm,0.3s,baz=212,slow=8.2,SNR=6.5						
TIA	**Tai'an**	**19.44**	**274**	⇓P	**P**	**04 56 07.9**	**-0.8**
TIA				S	**Sn**	**04 59 49.5**	**+2.1**
TIA					pmax	pmax	
	comp=Z,20nm,1.3s						
TIA					LR	LR	
	comp=Z,560nm,12.6s						
TIA					LR	LR	
	comp=Z,1μm,13.7s						
TIA					LR	LR	
	comp=Z,1μm,14.6s						
PET	**Petropavlovsk**	**19.66**	**32**	*e*P	**Pn**	**04 56 13.4**	**+0.9**
PET				*e*S	**S**	**04 59 47.2**	**-4.0**
PET					pmax	pmax	
	comp=Z,33nm,0.6s						
PET					pmax	pmax	
	comp=Z,100nm,14.9s						
PET					MLR	MLR	
	comp=Z,300nm,16.0s						
BJI	**Beijing**	**19.80**	**285**	P	**P**	**04 56 12.3**	**-0.3**
BJI				S	**Sn**	**04 59 55.0**	**-1.0**
BJI					pmax	pmax	
	comp=Z,14nm,0.7s						
BJI					pmax	pmax	
	comp=Z,190nm,8.3s						
BJI					LR	LR	
	comp=Z,560nm,13.1s						
BJI					LR	LR	
	comp=Z,270nm,17.8s						
MA2	**Magadan**	**22.94**	**12**	P	**P**	**04 56 45.6**	**-0.5**
	comp=Z,36nm,0.6s,baz=218,slow=8.8,SNR=36						
HHC	**Hu-ho-hao-te**	**23.31**	**288**	*e*P	**P**	**04 56 51.0**	**+0.8**
HHC				sP	sP	04 57 04.6	+3.6
HHC				S	**S**	**05 00 56.4**	**-4.8**
HHC				SS	**SnSn**	**05 01 43.3**	**+6.9**
HHC				pmax	pmax		
	comp=Z,17nm,0.9s						
HHC				pmax	pmax		
	comp=Z,100nm,8.4s						
HHC				LR	LR		
	comp=Z,470nm,12.3s						
HHC				LR	LR		
	comp=Z,290nm,14.8s						
HHC				LR	LR		
	comp=Z,360nm,14.8s						
GUMO	**Guam**	**23.98**	**172**	LR	LR	05 08 17.5	
	comp=Z,134nm,19.8s,baz=12,slow=42						
YAK	**Yakutsk**	**25.64**	**347**	P	**P**	**04 57 10.7**	**-0.7**
	comp=Z,26nm,0.5s,baz=181,slow=0.7,SNR=4.5						
YAK	**Yakutsk**	**25.64**	**347**	*e*P	**P**	**04 57 10.3**	**-1.1**
YAK				*e**PP	**pP**	**04 57 19.3**	**+0.2**
YAK				*e*		04 57 49.0	
YAK				*e*PPP	PPP	04 58 01.9	
YAK				*e*		05 00 37.5	
YAK				*e*S	**S**	**05 01 35.3**	**-2.5**
YAK				*e**SS	**sS**	**05 01 49.2**	**-1.4**
YAK				*e*SS	**SnSn**	**05 02 37.1**	**+4.2**
YAK				pmax	pmax		
	comp=Z,26nm,1.2s						
YAK				pmax	pmax		
	comp=N,18nm,1.5s						
YAK				pmax	pmax		
	comp=E,7.0nm,1.1s						
YAK				pmax	pmax		
	comp=Z,15nm,0.5s						
YAK				pmax	pmax		
	comp=N,10.0nm,0.6s						
YAK				pmax	pmax		
	comp=E,9.0nm,0.6s						
YAK				smax	smax		
	comp=N,7.0nm,0.8s						
YAK				smax	smax		
	comp=E,6.0nm,0.7s						
YAK				MLR	MLR		
	comp=N,1μm,17.0s						
YAK				MLR	MLR		
	comp=Z,1μm,17.0s						
SEY	**Seymchan**	**26.37**	**11**	P	**P**	**04 57 19.4**	**+1.4**
	comp=Z,42nm,1.0s,baz=205,slow=8.1,SNR=73						
XAN	**Xi'an**	**26.49**	**272**	P	**P**	**04 57 18.9**	**-0.5**
XAN				pP	pP	04 57 24.3	-2.9
XAN				S	**S**	**05 01 48.1**	**-3.8**
XAN				pmax	pmax		
	comp=Z,11nm,0.6s						
XAN				pmax	pmax		
	comp=Z,78nm,5.1s						
XAN				LR	LR		
	comp=Z,470nm,14.4s						
XAN				LR	LR		
	comp=Z,330nm,15.3s						
ULN	**Ulaanbaatar**	**27.09**	**304**	*e*P	**P**	**04 57 24.5**	**-0.3**
ULN					pmax	pmax	
	comp=Z,6.0nm,0.6s						
ULN	**Ulaanbaatar**	**27.09**	**304**	*e*P	**P**	**04 57 24.5**	**-0.3**
	comp=Z,5.8nm,0.6s						
BOD	**Bodaibo**	**27.15**	**327**	⇓*i*P	**P**	**04 57 24.0**	**-1.0**
BOD					pmax	pmax	
	comp=Z,16nm,0.7s						
ENH	**Enshi**	**27.34**	**264**	*e*P	**P**	**04 57 26.9**	**-0.2**
	comp=Z,18nm,0.6s						
SONA1	**Songino Array**	**27.52**	**303**	*e*P	**P**	**04 57 27.7**	**-0.9**
SONM	**Songino Array**	**27.52**	**303**	P	**P**	**04 57 27.7**	**-0.9**
	comp=Z,6.5nm,0.7s,baz=100,slow=8.8,SNR=38						
SONM				PcP	**PcP**	**05 00 46.9**	**+0.7**
	comp=Z,0.8nm,0.5s,baz=124,slow=2.0,SNR=5.3						
SONM				LR	LR	05 08 48.3	
	comp=Z,513nm,18.4s,baz=100,slow=37						
H11N2	**WAKE ISLAND Hy**	**28.40**	**121**	T	T	05 27 47.6	
	baz=314,slow=75,SNR=1375						
H11N1	**WAKE ISLAND Hy**	**28.40**	**121**	T	T	05 27 44.3	
	baz=314,slow=75,SNR=1133						
H11N3	**WAKE ISLAND Hy**	**28.41**	**121**	T	T	05 27 45.0	
	baz=314,slow=75,SNR=1536						
H11S1	**WAKE ISLAND Hy**	**29.12**	**123**	T	T	05 28 41.7	
	baz=316,slow=76,SNR=694						
H11S3	**WAKE ISLAND Hy**	**29.12**	**124**	T	T	05 28 32.7	
	baz=316,slow=76,SNR=496						
H11S2	**WAKE ISLAND Hy**	**29.14**	**124**	T	T	05 28 41.7	
	baz=316,slow=76,SNR=671						
LZH	**Lanzhou**	**29.97**	**279**	*e*P	**P**	**04 57 50.0**	**-0.6**
LZH				pP	pP	04 57 59.0	+0.6
LZH				sP	sP	04 58 03.1	+1.4
LZH				PP	**PnPn**	**04 58 49.5**	**+2.1**
LZH				*e*S	**S**	**05 02 45.0**	**-1.9**
LZH				sS	sS	05 03 00.2	+0.4
LZH				*e*SS	**SnSn**	**05 04 23.0**	**+3.8**
LZH				pmax	pmax		
	comp=Z,43nm,1.5s						
LZH				pmax	pmax		
	comp=Z,160nm,7.0s						
LZH				LR	LR		
	comp=Z,680nm,14.0s						
LZH				LR	LR		
	comp=Z,760nm,14.0s						
LZH				LR	LR		
	comp=Z,880nm,17.0s						
ZAK	**Zakamensk**	**29.98**	**308**	*e*P	**P**	**04 57 49.0**	**-1.5**
ZAK					pmax	pmax	
	comp=Z,5.0nm,1.6s						
TLY	**Talaya**	**30.03**	**310**	P	**P**	**04 57 51.0**	**+0.3**
	comp=Z,4.1nm,0.7s,baz=258,slow=3.3,SNR=4.5						
TLY				LR	LR	05 10 21.2	
	comp=Z,646nm,19.3s,baz=102,slow=37						
TLY	**Talaya**	**30.03**	**310**	*e*P	**P**	**04 57 51.5**	**+0.8**
TLY					pmax	pmax	
	comp=Z,4.0nm,0.8s						
TLY					MLR	MLR	
	comp=Z,632nm,17.0s						
TLY	**Talaya**	**30.03**	**310**	*e*P	**P**	**04 57 51.5**	**+0.8**
	comp=Z,4.0nm,0.7s						
GYA	**Guiyang**	**31.27**	**260**	⇑*i*P	**P**	**04 58 00.6**	**-1.5**
GYA				pP	sP	04 58 12.4	-0.8
GYA				PP	**PnPn**	**04 59 06.2**	**+1.7**
GYA				PcP	**PcP**	**05 00 58.8**	**+2.7**
GYA				ScP	**ScP**	**05 04 38.5**	**+1.2**
GYA				SS	**SnSn**	**05 04 52.6**	**+1.7**
GYA				pmax	pmax		
	comp=Z,20nm,1.0s						
GYA				pmax	pmax		
	comp=Z,130nm,4.8s						
GYA				LR	LR		
	comp=Z,620nm,17.4s						
GYA				LR	LR		
	comp=Z,520nm,16.8s						
GYA				LR	LR		
	comp=Z,580nm,17.0s						
CD2	**Chengdu**	**31.65**	**269**	P	**P**	**04 58 04.8**	**-0.5**
CD2				pP	pP	04 58 13.3	+0.2
CD2				PcP	**PcP**	**05 00 57.3**	**+0.3**
CD2				S	**S**	**05 03 11.6**	**-1.4**
CD2				sS	sS	05 03 26.3	+0.4
CD2				pmax	pmax		
	comp=Z,10.0nm,0.5s						
CD2				pmax	pmax		
	comp=Z,130nm

QIZ LR LR
comp=Z,200nm,21.4s
QIZ LR LR
comp=Z,210nm,23.1s
BILL Bilibino 33.62 17 *d i*P **P 04 58 22.5 +0.4**
BILL *e* 04 58 31.4
BILL *e* 04 59 33.1
BILL *e*PPP PPP 04 59 45.5
BILL pmax pmax
comp=Z,17nm,1.7s
BILL MLR MLR
comp=Z,213nm,16.0s
BILL Bilibino 33.62 17 *e*P **P 04 58 22.5 +0.4**
comp=Z,8.9nm,0.7s
TIXI Tiksi 34.86 353 *c i*P **P 04 58 32.0 -0.7**
TIXI pmax pmax
comp=Z,15nm,1.7s
TIXI Tiksi 34.86 353 *e*P **P 04 58 31.6 -1.2**
comp=Z,28nm,1.7s
KMI Kunming 35.00 261 P **P 04 58 35.3 +0.5**
KMI pmax pmax
comp=Z,14nm,0.9s
KMI pmax pmax
comp=Z,82nm,5.1s
KRAR Krasnoyarsk 37.13 316 P **P 04 58 54.7 +2.3**
KRAR pmax pmax
comp=Z,51nm,0.5s
GAMB Gambell 38.36 32 *e*P **P 04 59 03.8 +1.1**
comp=Z,33nm,2.0s
WMQ Urumqi 40.62 296 P **P 04 59 23.6 +1.7**
WMQ pP sP 04 59 32.3 -0.8
WMQ sP pP 04 59 36.6 +6.7
WMQ PP **PnPn 05 01 00.9 +1.3**
WMQ pmax pmax
comp=Z,9.0nm,0.6s
WMQ pmax pmax
comp=Z,61nm,4.0s
WMQ LR LR
comp=Z,320nm,23.2s
WMQ LR LR
comp=Z,82nm,23.4s
WMQ LR LR
comp=Z,110nm,24.6s
MRSI Marisa 40.95 211 P P 04 59 33.1 +8.4
CMAR Chiang Mai Arr 41.58 255 P **P 04 59 31.2 +1.2**
comp=Z,1.1nm,0.6s,baz=42,slow=8.2,SNR=7.9
CMAR PcP **PcP 05 01 28.2 +1.3**
comp=Z,1.3nm,0.5s,baz=7.8,slow=1.6,SNR=5.5
CMAR LR LR 05 17 44.1
comp=Z,166nm,19.6s,baz=60,slow=38
ZAA0 Zalesovo Array 41.60 312 *e*P **P 04 59 29.0 -0.7**
ZALV Zalesovo Beam 41.60 312 P **P 04 59 29.7 0.0**
comp=Z,16nm,0.5s,baz=92,slow=6.7,SNR=48
ZALV PcP **PcP 05 01 26.7 +0.3**
comp=Z,2.8nm,0.6s,baz=75,slow=3.9,SNR=4.1
ZALV LR LR 05 17 28.1
comp=Z,578nm,18.8s,baz=71,slow=37
SANI Sanana 41.83 203 P **P 04 59 33.3 +1.4**
comp=Z,36nm,1.1s
MSAI Masohi 42.22 199 P P 04 59 41.2 +6.1
comp=Z,13nm,1.4s
NVS Novosibirsk 42.52 313 *e*P **P 04 59 36.3 -0.9**
NVS pmax pmax
comp=Z,33nm,1.6s
NVS pmax pmax
comp=E,24nm,1.4s
MK31 Makanchi Array 43.87 302 *i*P **P 04 59 48.1 -0.1**
MK31 pmax pmax
comp=Z,18nm,0.7s
MKAR Makanchi Array 43.87 302 P **P 04 59 48.2 0.0**
comp=Z,16nm,0.6s,baz=88,slow=9.7,SNR=142
MKAR LR LR 05 19 19.4
comp=Z,219nm,18.3s,baz=84,slow=38
MKAR Makanchi Array 43.87 302 *e*P **P 04 59 48.0 -0.2**
MAKZ Makanchi 44.08 302 *e*P **P 04 59 49.9 0.0**
MAKZ pmax pmax
comp=Z,14nm,0.7s
MAKZ Makanchi 44.08 302 *e*P **P 04 59 49.9 0.0**
comp=Z,14nm,0.7s
TTA Tatalina 45.08 35 *e*P **P 04 59 59.1 +1.3**
TTA pmax pmax
comp=Z,30nm,1.9s
TTA Tatalina 45.08 35 *e*P **P 04 59 59.0 +1.3**
comp=Z,30nm,1.9s
SVW2 Sparrevohn 45.20 38 *e*P **P 05 00 00.2 +1.6**
comp=Z,32nm,1.3s
KURK Kurchatov 45.64 308 P **P 05 00 02.2 -0.1**
KURK pmax pmax
comp=Z,78nm,0.7s
KURK Kurchatov 45.64 308 *e*P **P 05 00 02.0 -0.3**
comp=Z,54nm,0.9s
KURBB Kurchatov Arra 45.71 308 P **P 05 00 02.5 -0.3**
comp=Z,24nm,0.6s,baz=83,slow=8.3,SNR=224
PDGK Podgornoye 46.55 298 P **P 05 00 09.0 -0.5**
PDGK pmax pmax
comp=Z,26nm,1.3s
RSO Redoubt South 46.58 39 *e*P **P 05 00 10.9 +1.1**
RSO *e*PcP **PcP 05 01 44.3 +0.8**
KDAK Kodiak Island 46.80 42 *e*P **P 05 00 14.6 +3.4**
KDAK pmax pmax
comp=Z,40nm,0.8s
KDAK Kodiak Island 46.80 42 *e*P **P 05 00 14.6 +3.4**
comp=Z,40nm,0.8s
PPLA Purkeypile 46.83 35 *e*P **P 05 00 13.8 +2.1**
comp=Z,48nm,1.4s
CAST Castle Rocks 46.88 34 *e*P **P 05 00 12.8 +0.9**
comp=Z,15nm,1.1s
SPU Mount Spurr 46.91 38 *e*P **P 05 00 13.8 +1.7**
RAMN Ramite 46.95 274 *e*P **P 05 00 13.0 -0.2**
comp=Z,120nm,0.9s
GUN Gumba 47.09 275 *e*P **P 05 00 15.7 +1.3**
comp=Z,47nm,0.6s
BPAW Bear Paw Mtn. 47.38 34 *e*P **P 05 00 17.8 +2.1**
comp=Z,22nm,1.3s
KTH Kantishna Hill 47.41 34 *e*P **P 05 00 17.1 +1.0**
comp=Z,23nm,1.0s
MLY Manley 47.50 32 *e*P **P 05 00 18.2 +1.5**
comp=Z,14nm,0.8s
PKIN Phulchoki 47.62 275 *e*P **P 05 00 19.4 +1.0**
TRF Thorofare Moun 47.69 34 *e*P **P 05 00 19.1 +0.7**
comp=Z,12nm,0.9s
COLD Coldfoot 47.79 29 *e*P **P 05 00 19.2 +0.3**
comp=Z,25nm,1.6s
GKN Gorkha 48.03 276 *e*P **P 05 00 22.3 +0.8**
comp=Z,57nm,0.7s
RC01 Rabbit Creek A 48.03 38 *e*P **P 05 00 22.1 +1.2**
comp=Z,20nm,0.8s
SEW Seward 48.24 39 *e*P **P 05 00 24.2 +1.8**
comp=Z,86nm,1.8s
MCK McKinley 48.29 34 *e*P **P 05 00 23.3 +0.5**
MCK pmax pmax
comp=Z,14nm,1.0s
MCK McKinley 48.29 34 *e*P **P 05 00 23.3 +0.5**
comp=Z,14nm,1.0s
PMR Palmer 48.30 37 *e*P **P 05 00 23.8 +1.0**
PMR pmax pmax
comp=Z,33nm,1.2s
PMR Palmer 48.30 37 *e*P **P 05 00 23.8 +1.0**
comp=Z,33nm,1.2s
RND Reindeer 48.34 34 *e*P **P 05 00 24.1 +0.8**
RND pmax pmax
comp=Z,20nm,0.9s
RND Reindeer 48.34 34 *e*P **P 05 00 24.1 +0.8**
comp=Z,20nm,0.9s
MDM Murphy Dome 48.56 32 *e*P **P 05 00 26.8 +1.9**
comp=Z,33nm,1.0s
WRH Wood River Hil 48.64 33 *e*P **P 05 00 27.1 +1.7**
comp=Z,6.9nm,0.7s
SML Sawmill 48.66 37 *e*P **P 05 00 26.5 +0.7**
SML pmax pmax
comp=Z,24nm,0.8s
SML Sawmill 48.66 37 *e*P **P 05 00 26.4 +0.7**
comp=Z,24nm,0.8s
COLA College 48.73 32 *c e*P **P 05 00 28.4 +2.3**
COLA pmax pmax
comp=Z,22nm,1.6s
COLA College 48.73 32 *e*P **P 05 00 27.8 +1.7**
comp=Z,10.0nm,0.6s
CCB Clear Creek Bu 48.76 33 *e*P **P 05 00 27.9 +1.6**
comp=Z,19nm,1.5s
KOLN Koldanda 48.95 276 *e*P **P 05 00 29.0 +0.4**
comp=Z,15nm,0.6s
DHY Denali Highway 49.02 35 *e*P **P 05 00 29.4 +0.8**
comp=Z,24nm,1.4s
HDA Harding Lake 49.14 33 *e*P **P 05 00 29.1 -0.2**
comp=Z,22nm,1.0s
SCM Sheep Creek Mo 49.14 36 *e*P **P 05 00 29.3 -0.1**
SCM pmax pmax
comp=Z,30nm,0.8s
SCM Sheep Creek Mo 49.14 36 *e*P **P 05 00 29.3 -0.1**
comp=Z,30nm,0.8s
IL1 Eielson Array 49.15 33 *e*P **P 05 00 29.9 +0.6**
ILAR Eielson Array 49.15 33 P **P 05 00 30.3 +0.9**
comp=Z,6.2nm,0.5s,baz=263,slow=5.9,SNR=131
ILB Eielson Array 49.15 33 *e*P **P 05 00 29.9 +0.6**
PYUN Piuthan 49.29 277 *e*P **P 05 00 31.9 +0.7**
comp=Z,105nm,0.7s
TKM2 Tokmak 2 49.40 298 P **P 05 00 32.2 +0.3**
TKM2 pmax pmax
comp=Z,30nm,1.4s
TKM2 Tokmak 2 49.40 298 *e*P **P 05 00 32.5 +0.6**
comp=Z,16nm,0.6s
SOEI Soe 49.64 202 *e*P **P 05 00 34.2 +0.5**
comp=Z,44nm,0.9s
KLU Klutina 49.84 37 *e*P **P 05 00 35.4 +0.7**
comp=Z,17nm,0.6s
PAX Paxson 49.90 35 *e*P **P 05 00 36.5 +1.3**
PAX pmax pmax
comp=Z,42nm,1.8s
PAX Paxson 49.90 35 *e*P **P 05 00 36.5 +1.3**
comp=Z,42nm,1.8s
CHKZ Chkalovo 50.00 313 P **P 05 00 35.4 -0.5**
CHKZ pmax pmax
comp=Z,12nm,0.6s
EYAK Cordova Ski Ar 50.03 38 *e*P **P 05 00 37.9 +1.8**
comp=Z,17nm,0.7s
FRU Bishkek 50.11 298 *e*P **P 05 00 37.0 -0.1**
OTUK Ortayu 50.15 306 P **P 05 00 36.7 -0.6**
OTUK pmax pmax
comp=Z,18nm,1.1s
KSH Kashi 50.20 294 *e*P P 05 00 42.8 +4.9
KSH *e*pP sP 05 00 52.9 +3.7
KSH *e*sP pP 05 00 56.4 +10
KSH *e*PP **PP 05 02 38.8 +5.7**
KSH *e*ScP **ScP 05 05 53.2 +2.3**
KSH S **S 05 07 52.2 +3.7**
KSH SS **SS 05 11 24.8 +3.1**
KSH pmax pmax
comp=Z,140nm,4.5s
KSH LR LR
comp=Z,300nm,10.1s
KSH LR LR
comp=Z,210nm,9.2s
KSH LR LR
comp=Z,180nm,6.0s
AAK Ala-Archa 50.26 298 P **P 05 00 38.5 +0.1**
comp=Z,3.4nm,0.6s,baz=114,slow=7.3,SNR=17
AAK Ala-Archa 50.26 298 *e*P **P 05 00 37.9 -0.5**
AAK pmax pmax
comp=Z,13nm,1.3s
AAK Ala-Archa 50.26 298 *e*P **P 05 00 37.9 -0.5**
comp=Z,13nm,1.3s
BVAR Borovoye Array 50.26 312 P **P 05 00 37.8 -0.2**
comp=Z,4.3nm,0.5s,baz=71,slow=7.4,SNR=18
BVAR PcP **PcP 05 01 57.2 +0.5**
comp=Z,8.7nm,0.6s,baz=83,slow=2.4,SNR=12
BRVK Borovoye 50.32 312 *c e*P **P 05 00 38.3 -0.1**
BRVK pmax pmax
comp=Z,10.0nm,1.7s
DOT Dot Lake 50.46 34 *e*P **P 05 00 39.7 +0.3**
comp=Z,24nm,0.8s
BMRM Bremner River 50.53 37 *e*P **P 05 00 41.5 +1.5**
comp=Z,23nm,0.9s
RAGM Ragged Mountai 50.58 38 *e*P **P 05 00 41.9 +1.5**
comp=Z,29nm,0.9s
MENT Mentasta 50.70 35 *e*P **P 05 00 43.6 +2.4**
comp=Z,16nm,0.9s
EKS2 Erkin-Say 50.75 298 *e*P **P 05 00 41.2 -0.9**
EKS2 pmax pmax
comp=Z,6.0nm,0.7s
EKS2 Erkin-Say 50.75 298 *e*P **P 05 00 41.2 -0.9**
comp=Z,6.1nm,0.7s
ZRNK Zerenda 51.09 312 P **P 05 00 43.8 -0.5**
ZRNK pmax pmax
comp=Z,35nm,1.7s
ZRNK Zerenda 51.09 312 *e*P **P 05 00 44.1 -0.1**
comp=Z,15nm,1.0s
COEN Coen 51.18 178 *e*P **P 05 00 45.5 +0.3**
comp=Z,27nm,0.9s
EGAK Eagle 51.59 32 *e*P **P 05 00 47.4 -0.4**
comp=Z,17nm,1.4s
MNAS Manas 51.70 298 P **P 05 00 49.5 +0.3**
MNAS pmax pmax
comp=Z,12nm,0.8s
SFK Sufi-Kurgan 51.82 295 P **P 05 00 50.6 +0.4**
SFK pmax pmax
comp=Z,13nm,0.7s
PSI Prapat 51.99 239 P **P 05 00 51.6 0.0**
comp=Z,3.4nm,0.5s,baz=309,slow=13,SNR=9.8
KK31 Karatay Array 52.88 300 *e*P **P 05 00 57.5 -0.3**
KK31 pmax pmax
comp=Z,7.0nm,0.8s
PWJI Pagerwojo 53.03 218 P **P 05 00 58.6 -0.5**
comp=Z,39nm,0.8s
KPJI Karang Pucung 53.90 221 P **P 05 01 05.8 +0.4**
comp=Z,28nm,0.9s
GSI Gunungsitoli 54.00 239 P **P 05 01 07.6 +1.4**
comp=Z,24nm,1.1s
GSI Gunungsitoli 54.00 239 *e*P **P 05 01 07.1 +0.9**
comp=Z,73nm,1.3s
INK Inuvik 54.02 27 P **P 05 01 07.1 +1.4**
comp=Z,8.0nm,0.5s,baz=294,slow=7.0,SNR=117
INK LR LR 05 26 29.5
comp=Z,196nm,20.2s,baz=276,slow=39
INK Inuvik 54.02 27 *e*P **P 05 01 07.3 +1.6**
INK pmax pmax
comp=Z,41nm,1.4s
INK Inuvik 54.02 27 *e*P **P 05 01 07.3 +1.6**
comp=Z,41nm,1.4s
SOKR Solikamsk 55.97 322 *e*P P 05 01 26.3 +6.5
SOKR pmax pmax
comp=Z,8.0nm,0.6s
SOKR MLR MLR
comp=Z,426nm,18.0s
ARU Arti 56.02 318 P **P 05 01 20.0 -0.3**
comp=Z,6.5nm,0.3s,baz=88,slow=5.2,SNR=18
ARU Arti 56.02 318 *c i*P **P 05 01 20.2 -0.1**
ARU PCP **PcP 05 02 17.4 -1.0**
ARU S **S 05 09 08.3 +1.5**
ARU SS **SS 05 12 47.5 -5.0**
ARU pmax pmax
comp=Z,12nm,0.6s
ARU Arti 56.02 318 *e*P **P 05 01 20.1 -0.1**
comp=Z,42nm,1.3s
FITZ Fitzroy Crossi 57.23 198 *e*P **P 05 01 29.2 0.0**
comp=Z,21nm,1.3s
KBL Kabul 57.23 291 *e*P **P 05 01 29.4 -0.2**
KBL pmax pmax
comp=Z,19nm,1.3s
KBL Kabul 57.23 291 *e*P **P 05 01 29.4 -0.2**
comp=Z,18nm,1.3s
WRAB Tennant Creek 57.47 188 *i*P **P 05 01 30.7 -0.3**
WRAB pmax pmax
comp=Z,46nm,1.2s
WRAB Tennant Creek 57.47 188 *e*P **P 05 01 31.3 +0.3**
comp=Z,10nm,0.7s
WB2 Warramunga Arr 57.48 188 *e*P **P 05 01 30.9 -0.1**
comp=Z,38nm,1.4s
WRA Warramunga Arr 57.48 188 P **P 05 01 30.9 -0.1**
comp=Z,7.7nm,0.5s,baz=5.4,slow=7.4,SNR=141
WRA LR LR 05 25 12.6
comp=Z,62nm,21.5s,baz=350,slow=35
WRA Warramunga Arr 57.48 188 P **P 05 01 31.0 -0.1**
WRA pmax pmax
comp=Z,7.0nm,0.5s
ABKAR Akbulak array 57.64 310 *e*P **P 05 01 31.6 -0.4**
HYB Hyderabad 58.19 268 *i*P P 05 01 45.0 +8.7
DLBC Dease Lake 58.30 38 LR LR 05 28 56.6
comp=Z,30nm,18.2s,baz=318,slow=38
DLBC Dease Lake 58.30 38 *e*P **P 05 01 39.7 +3.2**
comp=Z,27nm,1.4s
AKTO Aktyubinsk 58.37 312 P **P 05 01 37.3 +0.3**
baz=72,slow=11
AS01 Alice Springs 61.21 188 *e*P **P 05 01 56.9 +0.1**
AS31 Alice Springs 61.21 188 *e*P **P 05 01 55.6 -1.2**
comp=Z,3.3nm,1.0s
ASAR Alice Springs 61.21 188 P **P 05 01 57.1 +0.3**
comp=Z,6.8nm,0.8s,baz=12,slow=6.3,SNR=53
ASAR LR LR 05 29 50.3
comp=Z,37nm,18.3s,baz=4.0,slow=37
LVZ Lovozero 61.70 336 *e*P **P 05 02 00.4 +0.7**
LVZ pmax pmax
comp=Z,17nm,1.3s
BBB Bella Bella 61.77 44 LR LR 05 34 17.0
comp=Z,36nm,18.3s,baz=298,slow=41
MBWA Marble Bar 61.77 203 *e*P **P 05 02 01.2 +0.6**
comp=Z,13nm,0.9s
RES Resolute Bay 62.19 14 P **P 05 02 03.2 +0.4**
KEV Kevo 63.03 339 *e*P **P 05 02 09.3 +0.9**
EIDS Eidsvold 63.16 170 *e*P **P 05 02 10.0 +0.2**
comp=Z,9.7nm,0.8s
EIDS *e*PP **PP 05 04 24.1 -5.1**
KLMR Klimovskoe 63.38 328 *e*P **P 05 02 08.2 -2.7**
KLMR *e**SP **sP 05 02 24.2 +1.9**
KLMR pmax pmax
comp=Z,20nm,1.1s
YKW3 Yellowknife Ar 63.41 30 *e*P **P 05 02 11.1 0.0**
comp=Z,9.8nm,1.1s
YKA Yellowknife Ar 63.45 30 P **P 05 02 12.1 +0.8**
comp=Z,2.3nm,0.5s,baz=303,slow=6.5,SNR=77
YKB5 Yellowknife Ar 63.45 30 *e*P **P 05 02 11.3 0.0**
ARCES ARCESS Array B 63.58 339 P **P 05 02 12.3 +0.1**
comp=Z,4.0nm,0.6s,baz=58,slow=7.4,SNR=35
ARCES LR LR 05 35 58.9
comp=Z,165nm,19.0s,baz=32,slow=42
GEYT Alibeck 63.60 299 P **P 05 02 12.2 -0.6**
comp=Z,6.4nm,0.7s,baz=26,slow=4.1,SNR=8.8
GEYT LR LR 05 30 14.4
comp=Z,107nm,19.9s,baz=60,slow=36
HEF Hetta 64.80 339 *e*P **P 05 02 20.6 +0.5**
KIF Kilpisjarvi 65.22 340 *e*P **P 05 02 22.9 +0.2**
DAG Danmarks Havn 65.34 355 *i*P **P 05 02 23.4 -0.1**
comp=Z,9.4nm,0.7s
DAG pmax pmax **P 05 02 23.4 -0.1**
comp=Z,6.0nm,0.7s
MOS Moscow 66.89 323 *e*P **P 05 02 34.4 +0.7**
VRH Novokhopyorsk 67.24 318 *e*P **P 05 02 35.2 -0.8**
VRH *e**PP **pP 05 02 43.9 -0.5**
VRH pmax pmax
comp=Z,20nm,0.5s
VRH MLR MLR
comp=Z,520nm,15.0s
AFI Afiamalu 67.43 130 LR LR 05 24 19.6
comp=Z,176nm,21.8s,baz=32,slow=29
OBN Obninsk 67.73 323 P **P 05 02 38.6 -0.5**
comp=Z,27nm,0.5s,baz=312,slow=21,SNR=4.1
OBN LR LR 05 34 29.8
comp=Z,173nm,18.5s,baz=66,slow=38
OBN Obninsk 67.73 323⇓ *e*P **P 05 02 39.3 +0.2**
OBN *e* 05 02 45.9
OBN *e* 05 03 05.1
OBN pmax pmax
comp=Z,17nm,0.5s
OBN MLR MLR
comp=Z,247nm,16.0s
LPSR Galich'ya Gora 67.95 320 *e*P **P 05 02 40.2 -0.3**
LPSR *e**PP **pP 05 02 48.6 -0.3**
LPSR pmax pmax
comp=Z,10.0nm,0.6s
LPSR MLR MLR
comp=Z,630nm,17.0s
FIA1 FINESS Array S 68.42 332 *e*P **P 05 02 43.6 +0.3**
FINES FINESS Array B 68.42 332 P **P 05 02 43.4 +0.1**
comp=Z,12nm,0.6s,baz=41,slow=8.8,SNR=54
FINES LR LR 05 34 48.4
comp=Z,424nm,18.8s,baz=32,slow=38
VSR Storozhevoye 68.59 319 *e*P **P 05 02 44.2 -0.3**
VSR *e**PP **pP 05 02 52.7 -0.2**
VSR pmax pmax
comp=Z,20nm,0.6s
VSR MLR MLR
comp=Z,870nm,17.0s
STKA Stephens Creek 68.99 180 P **P 05 02 47.9 +0.8**
comp=Z,6.7nm,0.7s,baz=341,slow=6.1,SNR=8.7
STKA LR LR 05 33 33.2
comp=Z,82nm,19.9s,baz=26,slow=36
STKA Stephens Creek 68.99 180 *e*P **P 05 02 47.5 +0.4**
comp=Z,3.8nm,1.3s
C09A Chrisman Ranch 69.45 45 *e*P **P 05 02 50.3 +0.3**
comp=Z,17nm,0.3s
GOF Gofitskoye 69.78 312⇑ *e*P **P 05 02 52.0 -0.1**
GOF pmax pmax
comp=Z,37nm,0.9s
NEW Newport 69.84 44 P **P 05 02 54.3 +1.8**
baz=304
NEW Newport 69.84 44 *e*P **P 05 02 54.3 +1.8**
NEW pmax pmax
comp=Z,10.0nm,0.9s
NEW Newport 69.84 44 *e*P **P 05 02 54.2 +1.8**
comp=Z,10nm,0.9s
VSU Vasula 70.07 329 *c i*P **P 05 02 54.1 +0.6**
VSU pmax pmax
comp=Z,39nm,1.2s
J05D Fort Rock, OR 70.18 50 P **P 05 02 57.3 +2.5**
baz=303
SUMG Summit 70.25 360 *i*P **P 05 02 56.3 +1.3**
SUMG Summit 70.25 360 *e*P **P 05 02 55.7 +0.7**
SUMG pmax pmax
comp=Z,28nm,1.1s
SUMG Summit 70.25 360 *e*P **P 05 02 55.7 +0.7**
comp=Z,28nm,1.1s
DGRG David-gareji 70.31 307 P **P 05 02 56.5 +1.1**
DGRG David-gareji 70.31 307 *e*P **P 05 02 56.5 +1.1**
GUDG Gudauri 70.32 309 P **P 05 02 56.9 +1.1**
ZEI Tsey 70.50 309 *e*P **P 05 02 56.4 -0.4**
ZEI pmax pmax
comp=Z,10.0nm,0.6s
N02D Trinity Center 70.52 53 P **P 05 02 59.3 +2.6**
baz=303
KVAR Kislovodsk Arr 70.60 311 LR LR 05 36 39.8
comp=Z,188nm,18.3s,slow=38
KBZ Khabaz 70.60 311 P **P 05 02 57.5 +0.5**
comp=Z,6.8nm,0.7s,baz=96,slow=1.8,SNR=19
KBZ LR LR 05 36 38.9
comp=Z,188nm,18.8s,baz=54,slow=38
KIV Kislovodsk 70.60 311 *e*P **P 05 02 58.3 +1.1**
KIV pmax pmax
comp=Z,56nm,1.1s
KIV Kislovodsk 70.60 311 *e*P **P 05 02 57.4 +0.2**
comp=Z,58nm,1.1s
M04C Macdoel 70.62 52 P **P 05 02 59.1 +1.7**
baz=303
ONI Oni 70.89 309 P **P 05 02 59.5 +0.5**
ONI Oni 70.89 309 *e*P **P 05 02 59.4 +0.5**
NEY Neytrino 70.97 310⇑ *e*P **P 05 02 59.9 +0.3**
NEY pmax pmax
comp=Z,2.0nm,0.7s
WALA Waterton Lakes 71.14 42 *e*P **P 05 03 01.1 +0.7**
comp=Z,13nm,0.7s
GNI Garni 71.42 307 LR LR 05 36 44.2
comp=Z,130nm,19.4s,baz=82,slow=38
O03D Paynes Creek 71.46 53 P **P 05 03 03.6 +1.1**
baz=304
AKH Akhalkalaki 71.52 308⇑ *i*P **P 05 03 03.7 +0.8**
JTMT Jette 71.70 44 *e*P **P 05 03 04.0 +0.1**
SWMT Swartz Lake 72.00 44 *e*P **P 05 03 06.3 +0.7**
IZAR Zarasai 72.03 327 *e*P **P 05 03 06.1 +0.7**
IZAR IAmb IAmb 05 03 07.4
comp=Z,24nm,0.5s
ORV Oroville 72.07 54 *e*P **P 05 03 06.7 +0.6**
ORV pmax pmax
comp=Z,10.0nm,1.1s
ORV Oroville 72.07 54 *e*P **P 05 03 06.7 +0.6**
comp=Z,10nm,1.1s
IDID Didziasalis 72.10 327 *e*P **P 05 03 06.5 +0.6**
IDID IAmb IAmb 05 03 08.1
comp=Z,16nm,0.6s
ISAL Salakas 72.20 327 *e*P **P 05 03 07.2 +0.7**
ISAL IAmb IAmb 05 03 08.2
comp=Z,19nm,0.6s
WVOR Wild Horse Val 72.24 50 *e*P **P 05 03 08.8 +1.6**
WVOR pmax pmax
comp=Z,25nm,1.5s
WVOR Wild Horse Val 72.24 50 *e*P **P 05 03 08.8 +1.6**
comp=Z,25nm,1.5s
IIGN Ignalina 72.30 327 *e*P **P 05 03 07.7 +0.6**
IIGN IAmb IAmb 05 03 09.3
comp=Z,16nm,0.6s
NACGM Naroch 72.35 327 *e* **P 05 03 07.0 -0.4**
MSO Missoula 72.43 44 P **P 05 03 09.1 +0.9**
baz=306
MSO Missoula 72.43 44 *e*P **P 05 03 08.1 -0.1**
comp=Z,11nm,1.1s
MFID Camas Ranch 73.36 48 *e*P **P 05 03 15.7 +1.8**
comp=Z,8.7nm,0.8s
FFC Flin Flon 73.36 33 *e*P **P 05 03 14.7 +1.3**
FFC pmax pmax
comp=Z,23nm,1.0s

FFC Flin Flon 73.36 33 *e*P P 05 03 14.7 +1.3
comp=Z,23nm,1.0s
NC405 NORSAR Array S 73.56 337 *e*P P 05 03 15.0 +0.4
NC405 *e*PP PP 05 05 53.9 -4.1
NC303 NORSAR Array S 73.58 337 *e*P P 05 03 14.7 0.0
FCC Fort Churchill 73.63 27 *e*P P 05 03 15.6 +0.7
FCC pmax pmax
comp=Z,29nm,1.1s
FCC Fort Churchill 73.63 27 *e*P P 05 03 15.6 +0.7
comp=Z,29nm,1.1s
CMB Columbia Colle 73.64 55 *e*P P 05 03 17.4 +1.9
CMB pmax pmax
comp=Z,18nm,1.5s
CMB Columbia Colle 73.64 55 *e*P P 05 03 17.4 +1.9
comp=Z,18nm,1.5s
HFS Hagfors 73.68 336 P P 05 03 15.5 +0.3
comp=Z,8.3nm,0.5s,baz=72,slow=4.8,SNR=69
HFS LR LR 05 39 35.6
comp=Z,227nm,19.0s,baz=28,slow=39
NC204 NORSAR Array S 73.73 338 *e*P P 05 03 16.2 +0.6
NB201 NORSAR Array S 73.74 337 *e*P P 05 03 16.1 +0.4
NB2 NORSAR Subarra 73.78 337 P P 05 03 16.0 +0.2
comp=Z,16nm,0.6s,baz=40,slow=6.2
NB2 NORSAR Subarra 73.78 337 P P 05 03 16.0 +0.2
baz=40,slow=6.2
NOA NORSAR Array B 73.78 337 P P 05 03 16.0 +0.2
comp=Z,13nm,0.6s,baz=40,slow=5.9,SNR=97
NOA LR LR 05 39 03.1
comp=Z,365nm,19.3s,baz=35,slow=38
NOA NORSAR Array B 73.78 337 P P 05 03 16.0 +0.2
NOA pmax pmax
comp=Z,14nm,0.6s
NOA MLR MLR
comp=Z,365nm,19.3s
LRM Limekiln Ridge 73.86 44 *e*P P 05 03 18.8 +2.0
NBO02 NORSAR Array S 73.88 337 *e*P P 05 03 16.6 +0.2
NBO00 NORSAR Array S 73.92 337 *e*P P 05 03 16.4 -0.2
AKASG Malin Array Be 73.94 322 P P 05 03 16.6 -0.3
comp=Z,27nm,0.5s,baz=46,slow=6.1,SNR=134
AKASG LR LR 05 38 40.1
comp=Z,345nm,18.0s,baz=65,slow=38
AKASG Malin Array Be 73.94 322 P P 05 03 16.6 -0.3
AKASG pmax pmax
comp=Z,26nm,0.5s
AKASG MLR MLR
comp=Z,345nm,18.0s
AKBB Malin Array Si 73.94 322 *e*P P 05 03 17.1 +0.2
AKBB pmax pmax
comp=Z,29nm,0.6s
AKBB Malin Array Si 73.94 322 *e*P P 05 03 17.1 +0.2
comp=Z,29nm,0.6s
KIEV Kiev 73.95 322 *e*P P 05 03 16.2 -0.7
KIEV pmax pmax
comp=Z,31nm,0.5s
KIEV Kiev 73.95 322 *e*P P 05 03 16.2 -0.7
comp=Z,31nm,0.5s
EGMT Eagleton 73.97 41 P P 05 03 18.9 +1.7
baz=309
EGMT Eagleton 73.97 41 *e*P P 05 03 17.9 +0.7
comp=Z,38nm,1.2s
AK11 Malin Array Si 73.98 322 *e*P P 05 03 17.1 -0.1
NAO01 NORSAR Array S 74.03 337 *e*P P 05 03 17.6 +0.3
HLID Hailey 74.10 47 P P 05 03 20.2 +1.9
baz=307
BMN Battle Mountai 74.26 51 *e*P P 05 03 20.6 +1.4
BMN pmax pmax
comp=Z,9.0nm,0.9s
BMN Battle Mountai 74.26 51 *e*P P 05 03 20.6 +1.4
comp=Z,8.8nm,0.9s
BOZ Bozeman (W) 74.42 44 P P 05 03 21.8 +1.8
baz=308
BOZ Bozeman (W) 74.42 44 *e*P P 05 03 21.9 +1.8
BOZ pmax pmax
comp=Z,13nm,0.9s
BOZ Bozeman (W) 74.42 44 *e*P P 05 03 21.9 +1.8
comp=Z,13nm,0.9s
BOZ *e*PP PP 05 06 01.2 -4.7
SUW Suwalki 74.51 327 *e*P P 05 03 20.2 +0.1
SUW *e* 05 03 29.0
SUW Suwalki 74.51 327 *e*P P 05 03 20.3 +0.1
SUW *e* 05 03 29.1
NV01 Mina Array Sit 74.75 53 *e*P P 05 03 23.9 +1.8
NVAR Mina Array Bea 74.75 53 P P 05 03 24.4 +2.2
comp=Z,17nm,0.6s,baz=300,slow=5.5,SNR=9.3
QLMT Earthquake Lak 75.03 45 *e*P P 05 03 26.3 +2.6
HYA Hoyanger 75.16 339 *e*P P 05 03 24.7 +0.9
ELK Elko 75.29 50 *e*P P 05 03 25.2 -0.1
ELK pmax pmax
comp=Z,6.0nm,1.2s
ELK Elko 75.29 50 *e*P P 05 03 25.2 -0.1
comp=Z,5.6nm,1.2s
KONO Kongsberg 75.37 337 *e*P P 05 03 25.6 +0.6
KONO Kongsberg 75.37 337 *e*P P 05 03 25.6 +0.6
KONO pmax pmax
comp=Z,9.0nm,0.6s
KONO Kongsberg 75.37 337 *e*P P 05 03 25.6 +0.6
comp=Z,9.1nm,0.6s
YFT Old Faithful 75.60 45 *e*P P 05 03 30.2 +3.2
comp=Z,8.3nm,0.8s
H17A Grant Village 75.78 45 P P 05 03 31.3 +3.2
baz=309
H17A Grant Village 75.78 45 *e*P P 05 03 31.5 +3.5
comp=Z,20nm,0.8s
IMW Indian Meadow 75.89 45 *e*P P 05 03 31.2 +2.5
comp=Z,14nm,0.8s
FLWY Flagg Ranch 75.91 45 *e*P P 05 03 30.4 +1.7
comp=Z,25nm,1.4s
ASK Askoy 76.00 339 *e*P P 05 03 29.8 +1.2
FXWY Fox Creek 76.00 45 *e*P P 05 03 30.4 +1.1
comp=Z,8.7nm,0.9s
BER Bergen 76.04 339 *e*P P 05 03 29.9 +1.1
BER IAmb IAmb 05 03 30.8
comp=Z,18nm,0.6s
RLMT Red Lodge 76.05 43 P P 05 03 31.3 +1.8
baz=310
RLMT Red Lodge 76.05 43 *e*P P 05 03 31.4 +1.8
comp=Z,34nm,1.6s
MOOW Moose Ponds 76.09 45 *e*P P 05 03 31.9 +2.1
comp=Z,7.4nm,0.9s
GRAC Grapevine Rang 76.20 54 P P 05 03 32.3 +2.0
baz=307
LOHW Long Hollow 76.26 45 *e*P P 05 03 32.5 +1.8
comp=Z,4.4nm,0.9s
SNOW Snow King Moun 76.27 46 *e*P P 05 03 30.8 0.0
comp=Z,8.4nm,0.8s
REDW Red Top Meadow 76.27 46 *e*P P 05 03 32.2 +1.4
comp=Z,10nm,1.1s
DGMT Dagmar 76.52 39 P P 05 03 33.3 +1.5
baz=312
DGMT Dagmar 76.52 39 *e*P P 05 03 33.3 +1.5
comp=Z,22nm,0.9s
R11A Troy Canyon, C 76.52 52 P P 05 03 34.1 +1.9
baz=307
R11A Troy Canyon, C 76.52 52 *e*P P 05 03 33.5 +1.2
comp=Z,8.1nm,1.0s
KIS Kishinev 76.55 319 *e*P P 05 03 40.0 +8.0
KIS LRM MLR 05 40 08.0
comp=Z,1μm,16.0s
KIS Kishinev 76.55 319 *e*P P 05 03 40.0 +8.0
KIS MLR MLR
comp=Z,1μm,16.0s
KIS MLR MLR
comp=N,500nm,17.0s
LAO LASA Array 76.67 41 *e*P P 05 03 34.6 +1.8
comp=N,23nm,1.0s
MPMC Manual Prospec 76.67 55 P P 05 03 34.9 +1.7
baz=307
HOMB Homborsund 76.81 337 *e*P P 05 03 32.1 -1.1
FURC Furnace Creek, 76.84 54 P P 05 03 35.6 +1.8
baz=307
TPNV Topopah Spring 76.94 53 P P 05 03 36.2 +1.6
baz=307
TPNV Topopah Spring 76.94 53 *e*P P 05 03 35.5 +0.9
TPNV pmax pmax
comp=Z,14nm,1.1s
TPNV Topopah Spring 76.94 53 *e*P P 05 03 35.5 +0.9
comp=Z,14nm,1.1s
HWUT Hardware Ranch 76.96 47 *e*P P 05 03 36.3 +1.6
comp=Z,18nm,1.1s
LVV L'vov 77.01 324 *e*P P 05 03 38.5 +3.9
BSD Bornholm Skovb 77.05 332 *i* P P 05 03 34.1 -0.5
comp=Z,11nm,0.8s
BSD Bornholm Skovb 77.05 332 *i* P P 05 03 34.1 -0.5
BSD pmax pmax
comp=Z,11nm,0.8s
BEL Belsk 77.07 327 *e*P P 05 03 36.1 +1.3
BEL *e* 05 03 44.6
BEL Belsk 77.07 327 *e*P P 05 03 36.1 +1.3
BEL *e* 05 03 44.7
DUG Dugway, Tooele 77.09 49 P P 05 03 37.3 +1.9
baz=308
DUG Dugway, Tooele 77.09 49 *e*P P 05 03 35.3 -0.1
DUG pmax pmax
comp=Z,15nm,1.2s
DUG Dugway, Tooele 77.09 49 *e*P P 05 03 35.3 -0.1
comp=Z,15nm,1.2s
TCUT Tonne Canyon 77.36 48 *e*P P 05 03 38.5 +1.5
comp=Z,21nm,1.1s
TCUT *e*PP PP 05 06 21.1 -10
BW06 Boulder Array 77.38 45 P P 05 03 38.4 +1.3
baz=310
BW06 Boulder Array 77.38 45 *e*P P 05 03 38.4 +1.3
comp=Z,7.3nm,0.9s
PD31 Pinedale Array 77.38 45 *e*P P 05 03 38.6 +1.5
PDAR Pinedale Array 77.38 45 P P 05 03 38.2 +1.1
comp=Z,24nm,0.5s,baz=279,slow=1.1,SNR=43
JLU Jordanelle 77.66 48 *e*P P 05 03 39.8 +1.2
comp=Z,7.7nm,1.1s
NLU North Lily Min 77.69 49 *e*P P 05 03 41.0 +2.2
comp=Z,6.9nm,1.0s
KWP Kalwaria Pacla 77.76 324 *e*P P 05 03 40.1 +1.3
KWP *e* 05 03 45.7
KWP Kalwaria Pacla 77.76 324 *e*P P 05 03 40.1 +1.3
KWP *e* 05 03 45.8
MPU Maple Canyon 77.91 49 *e*P P 05 03 42.3 +2.2
comp=Z,12nm,1.1s
BUR08 Bucovina Ar. S 77.94 322 *e*P P 05 03 40.5 +0.5
BURAR Bucovina Array 77.95 322 ⇑*i*P P 05 03 40.4 +0.4
TESR Tescani 77.98 320 ⇑*i*P P 05 03 40.0 -0.1
CFR Carcaliu 78.10 318 ⇑*i*P P 05 03 40.7 0.0
A28A Rude Farm, Bot 78.12 36 P P 05 03 42.2 +1.4
baz=315
VRI Vrincioaia 78.38 320 ⇑*i*P P 05 03 43.2 +0.9
B28A Dugan Ranch, T 78.40 37 P P 05 03 43.9 +1.5
baz=315
KOLS Kolonicke sedl 78.45 324 *e*P P 05 03 44.5 +1.8
KOLS pmax pmax
comp=Z,12nm,1.4s
KOLS Kolonicke sedl 78.45 324 *e*P P 05 03 44.4 +1.8
MSU Marysvale 78.53 50 *e*P P 05 03 45.9 +2.4
MSU Marysvale 78.53 50 *e*P P 05 03 45.9 +2.4
BR131 Keskin Array S 78.54 311 *e*P P 05 03 43.9 +0.4
BRTR Keskin Array B 78.54 311 P P 05 03 43.9 +0.4
comp=Z,1.6nm,0.5s,baz=130,slow=3.9,SNR=11
BRTR LR LR 05 42 56.9
comp=Z,82nm,18.6s,baz=41,slow=39
STHS Stebnicka Huta 78.59 325 *e*P P 05 03 45.1 +1.7
STHS pmax pmax
comp=Z,11nm,1.2s
STHS Stebnicka Huta 78.59 325 *e*P P 05 03 45.1 +1.7
A29A Manning Farm, 78.60 36 P P 05 03 44.8 +1.3
baz=315
TMUT Trail Mountain 78.62 49 *e*P P 05 03 46.5 +2.4
comp=Z,9.9nm,1.4s
GMRC Granite Mounta 78.63 55 P P 05 03 45.7 +1.7
baz=308
OJC Ojcow 78.66 326 *e*P P 05 03 44.3 +0.5
OJC *e* 05 03 53.4
OJC Ojcow 78.66 326 *e*P P 05 03 44.5 +0.7
OJC pmax pmax
comp=Z,22nm,0.9s
OJC Ojcow 78.66 326 *e*P P 05 03 44.5 +0.7
comp=Z,22nm,0.9s
E26A Carlson Angus 78.74 39 P P 05 03 45.4 +1.1
baz=314
ARCR ARCALIA 78.74 322 ⇑*i*P P 05 03 43.8 -0.5
P17A Butcher Ranch, 78.79 49 *e*P P 05 03 46.3 +1.4
comp=Z,17nm,1.1s
LCMT Little Creek M 78.80 52 *e*P P 05 03 47.4 +2.4
comp=Z,8.4nm,1.1s
CRVS Cervenica-Dubn 78.86 324 *e*P P 05 03 45.7 +0.8
CRVS Cervenica-Dubn 78.86 324 *e*P P 05 03 45.7 +0.8
BR231 Keskin MP Arra 78.98 312 *e*P P 05 03 44.5 -1.4
P18A Preston Nutter 78.99 48 *e*P P 05 03 48.6 +2.4
comp=Z,12nm,1.1s
MSAB Monastry St. A 78.99 318 ⇓*i*P P 05 03 46.3 +0.6
DOPR Dopca 79.00 320 ⇑*i*P P 05 03 47.0 +1.3
NIE Niedzica 79.02 325 *e*P P 05 03 46.8 +1.0
NIE *e* 05 03 55.5
NIE Niedzica 79.02 325 *e*P P 05 03 46.9 +1.1
NIE *e* 05 03 55.5
MLR Muntele Rosu 79.04 320 P P 05 03 46.6 +0.6
comp=Z,1.0nm,0.5s,baz=341,slow=15,SNR=6.8
MLR LR LR 05 41 56.7
comp=Z,128nm,18.2s,baz=56,slow=38
MLR Muntele Rosu 79.04 320 ⇑*i*P P 05 03 46.0 -0.1
MLR Muntele Rosu 79.04 320 *e*P P 05 03 46.3 +0.2
MLR pmax pmax
comp=Z,41nm,1.8s
MLR Muntele Rosu 79.04 320 *e*P P 05 03 46.3 +0.2
comp=Z,41nm,1.8s
F26A Lodgepole 79.06 40 P P 05 03 47.1 +1.0
baz=314
KNB Kanab 79.06 52 *e*P P 05 03 49.4 +2.9
KNB pmax pmax
comp=Z,26nm,1.4s
KNB Kanab 79.06 52 *e*P P 05 03 49.4 +2.9
comp=Z,26nm,1.4s
SRU San Rafael Swe 79.15 49 *e*P P 05 03 48.9 +2.0
SRU pmax pmax
comp=Z,14nm,1.0s
SRU San Rafael Swe 79.15 49 *e*P P 05 03 48.9 +2.0
comp=Z,14nm,1.0s
ULM Lac du Bonnet 79.16 33 P P 05 03 46.4 -0.1
comp=Z,2.0nm,0.6s,baz=319,slow=5.0,SNR=3.9
ULM Lac du Bonnet 79.16 33 *e*P P 05 03 47.7 +1.2
ULM pmax pmax
comp=Z,17nm,1.2s
ULM Lac du Bonnet 79.16 33 *e*P P 05 03 47.6 +1.2
comp=Z,17nm,1.2s
K22A Casper 79.16 44 *e*P P 05 03 48.3 +1.4
comp=Z,12nm,1.1s
MMU Miners Mountai 79.26 50 *e*P P 05 03 49.9 +2.2
BC3 Big Chuckawall 79.46 56 P P 05 03 49.7 +1.2
baz=308
G26A Maurine 79.47 40 P P 05 03 49.5 +1.1
baz=314
RSSD Black Hills 79.53 42 P P 05 03 49.9 +1.0
baz=313
RSSD Black Hills 79.53 42 *e*P P 05 03 50.0 +1.1
RSSD pmax pmax
comp=Z,11nm,1.2s
RSSD Black Hills 79.53 42 *e*P P 05 03 50.0 +1.1
comp=Z,11nm,1.2s
LANS Liptovska Anna 79.59 325 *e*P P 05 03 50.5 +1.6
LANS Liptovska Anna 79.59 325 *e*P P 05 03 50.5 +1.6
OKC Ostrava-Krasne 79.67 327 ⇑AMS AMS 05 41 50.0
comp=Z,500nm,18.1s
KSP Ksiaz 79.72 328 *e*P P 05 03 50.2 +0.7
KSP *e* 05 03 58.7
KSP Ksiaz 79.72 328 *e*P P 05 03 50.3 +0.7
KSP *e* 05 03 58.7
DRGR 79.75 322 ⇑*i*P P 05 03 49.6 -0.3
G27A Dupree 79.76 40 P P 05 03 51.1 +1.2
baz=314
U15A North Rim 79.77 52 *e*P P 05 03 51.9 +1.4
comp=Z,8.7nm,0.9s
ARR Arges 79.79 320 ⇓*i*P P 05 03 51.2 +1.1
PDMCI Parker Dam,Lak 79.92 54 P P 05 03 52.5 +1.6
baz=309
MORC Moravsky Berou 79.98 327 *e*P P 05 03 52.1 +1.1
MORC pmax pmax
comp=Z,44nm,0.9s
MORC Moravsky Berou 79.98 327 *e*P P 05 03 52.1 +1.1
comp=Z,44nm,0.9s
DPC Dobruska-Polom 80.08 328 *e*P P 05 03 52.5 +1.0
DPC *e*pP pP 05 04 01.5 +1.5
DPC AMS AMS 05 42 10.0
comp=Z,400nm,18.8s
DPC Dobruska-Polom 80.08 328 *e*P P 05 03 52.5 +1.0
DPC *e* 05 04 01.5
DPC MLR MLR
comp=Z,400nm,18.8s
KRLC Kraliky 80.09 327 *e*P P 05 03 52.1 +0.5
KRLC Kraliky 80.09 327 *e*P P 05 03 52.1 +0.5
UPC Upice 80.09 328 ⇑AMS AMS 05 42 20.0
comp=Z,500nm,16.4s
D30A Buchanan 80.11 37 P P 05 03 52.7 +1.0
baz=316
H27A Howes 80.20 40 P P 05 03 53.7 +1.4
baz=314
I26A New Underwood 80.21 41 P P 05 03 53.9 +1.5
baz=314
B32A Ashes, Strandq 80.22 35 P P 05 03 52.5 +0.3
baz=317
PSZ Piszkesteto 80.29 324 *e*P P 05 03 53.9 +1.1
PSZ pmax pmax
comp=Z,22nm,1.1s
PSZ Piszkesteto 80.29 324 *e*P P 05 03 53.9 +1.1
comp=Z,22nm,1.1s
A33A Warroad 80.34 34 P P 05 03 53.3 +0.4
baz=318
VYHS Vyhne 80.35 325 *e*P P 05 03 53.8 +0.8
VYHS *e* 05 03 58.4
VYHS pmax pmax
comp=Z,4.0nm,0.9s
VYHS Vyhne 80.35 325 *e*P P 05 03 53.8 +0.8
VYHS *e*PCP PcP 05 03 58.4 -1.7
PV09 Paradox Valley 80.37 49 *e*P P 05 03 55.1 +1.4
RAYN Ar Rayn 80.47 292 *e*P P 05 03 54.3 +0.2
comp=Z,17nm,1.3s
J26A Sides Ranch, S 80.59 42 P P 05 03 55.2 +0.8
baz=314
AGMN Agassiz Nation 80.60 35 P P 05 03 54.6 +0.3
baz=318
I27A Quinn 80.60 41 P P 05 03 56.1 +1.6
baz=314
N23A Red Feather La 80.65 45 *e*P P 05 03 58.2 +3.1
comp=Z,14nm,1.0s
BRG Berggiesshubel 80.67 329 *i* P P 05 03 55.4 +0.8
comp=Z,8.4nm,0.6s
comp=N,402nm,14.9s
comp=E,174nm,11.4s
comp=Z,533nm,13.1s
BRG Berggiesshubel 80.67 329 *i* P P 05 03 55.4 +0.8
BRG pmax pmax
comp=Z,8.0nm,0.6s
BRG MLR MLR
comp=N,402nm,14.9s
BRG MLR MLR
comp=E,174nm,11.4s
BRG MLR MLR
comp=Z,533nm,13.1s
PV05 Paradox Valley 80.67 49 *e*P P 05 03 57.4 +2.2
CLL Collm 80.71 330 ⇑*i*P P 05 03 55.0 +0.2
comp=Z,14nm,0.7s
CLL *i* 05 04 04.0
CLL *e* 05 04 07.0
CLL *e*S S 05 14 04.0 +3.4
CLL *e*SS SS 05 19 48.0 +35
CLL *e*SSS SSS 05 22 54.0
CLL LmH 05 41 00.0
comp=N,100nm,19.0s
CLL LmH 05 41 00.0
comp=E,300nm,19.2s
CLL LmV 05 43 00.0
comp=Z,300nm,18.1s
CLL Collm 80.71 330 ⇑*i*P P 05 03 55.0 +0.2
CLL *i* 05 04 04.0
CLL *e* 05 04 07.0
CLL *e*S S 05 14 04.0 +3.4
CLL pmax pmax
comp=Z,14nm,0.7s
CLL MLR MLR
comp=Z,300nm,18.1s
CLL Collm 80.71 330 *e*P P 05 03 55.3 +0.5
comp=Z,16nm,0.7s
GZR Gura Zlata 80.71 321 ⇑*i*P P 05 03 55.3 +0.3
H28A Mission Ridge 80.71 40 P P 05 03 56.4 +1.4
baz=315
VRAC Vranov 80.74 327 P P 05 03 56.0 +1.0
comp=Z,7.0nm,0.6s,baz=65,slow=1.8,SNR=6.7
VRAC LR LR 05 42 34.6
comp=Z,224nm,18.6s,baz=359,slow=38
VRAC Vranov 80.74 327 ⇑*i*P P 05 03 55.9 +0.8
Y14A Wickenburg 80.88 54 *e*P P 05 03 57.5 +1.3
comp=Z,23nm,0.9s
PV01 Paradox Valley 80.95 49 *e*P P 05 03 58.6 +1.9
B34A Aery, Baudette 81.00 34 P P 05 03 56.8 +0.4
baz=318
GOPC GO Pecny, Ondr 81.05 328 *e*P P 05 03 57.6 +0.9
GOPC *e*pP pP 05 04 06.5 +1.3
GOPC AMS AMS 05 42 40.0
comp=Z,400nm,17.4s
GOPC GO Pecny, Ondr 81.05 328 *e*P P 05 03 57.6 +0.9
GOPC *e* 05 04 06.5
GOPC MLR MLR
comp=Z,400nm,17.4s
PRU Pruhonice 81.10 328 ⇑*e*P P 05 03 57.9 +1.0
PRU *e*pP pP 05 04 06.6 +1.2
PRU AMS AMS 05 42 40.0
comp=Z,400nm,16.8s
PRU Pruhonice 81.10 328 *e*P P 05 03 57.9 +1.0
PRU *e* 05 04 06.6
PRU MLR MLR
comp=Z,400nm,16.8s
I28A Midland 81.11 40 P P 05 03 58.4 +1.2
baz=315
BZS Buzias 81.12 322 ⇑*i*P P 05 03 57.3 +0.1
H29A Onida 81.16 39 P P 05 03 58.4 +1.0
baz=315
J27A Elkhorn Farm, 81.19 41 P P 05 03 59.4 +1.7
baz=314
SMCO Snowmass 81.20 47 *e*P P 05 03 59.0 +0.7
comp=Z,8.0nm,1.3s
TREC Trest 81.23 328 ⇑*e*P P 05 03 58.6 +0.9
TREC *e*pP pP 05 04 07.3 +1.1
TREC Trest 81.23 328 *e*P P 05 03 58.6 +0.9
TREC *e* 05 04 07.3
G30A Faulkton 81.33 39 P P 05 03 59.5 +1.2
baz=316
J28A Allard Ranch, 81.48 41 P P 05 04 00.4 +1.3
baz=315
ISCO Idaho Springs 81.57 46 *e*P P 05 04 02.1 +2.1
ISCO pmax pmax
comp=Z,20nm,1.9s
ISCO Idaho Springs 81.57 46 *e*P P 05 04 02.1 +2.1
comp=Z,20nm,1.9s
X16A Lo Mia Camp, P 81.58 53 *e*P P 05 04 00.4 +0.4
comp=Z,7.2nm,0.9s
MVCO Mesa Verde 81.59 49 *e*P P 05 04 01.0 +0.9
comp=Z,9.4nm,1.0s
MDVR Moldovita 81.67 321 ⇑*i*P P 05 04 00.1 -0.1
MMAI Mount Meron Ar 81.69 305 LR LR 05 43 46.8
comp=Z,171nm,18.9s,baz=40,slow=38
NKC Novy Kostel 81.77 330 ⇑AMS AMS 05 43 40.0
comp=Z,500nm,16.8s
I30A Oacoma 82.06 40 P P 05 04 03.3 +1.1
baz=316
CONA Conrad Observa 82.10 326 *i* P P 05 04 03.5 +1.1
comp=Z,6.8nm,0.6s,SNR=7.1
KHC Kasperske Hory 82.16 328 *e*P P 05 04 03.1 +0.5
KHC *e*pP pP 05 04 11.6 +0.5
KHC AMS AMS 05 43 30.0
comp=Z,400nm,13.9s
KHC Kasperske Hory 82.16 328 *e*P P 05 04 03.2 +0.6
KHC pmax pmax
comp=Z,6.0nm,0.6s
KHC Kasperske Hory 82.16 328 *e*P P 05 04 03.2 +0.6
comp=Z,5.5nm,0.6s
S22A 4UR Ranch, Cre 82.24 48 *e*P P 05 04 03.8 +0.2
comp=Z,7.1nm,1.0s
URZ Urewera 82.25 152 LR LR 05 36 09.5
comp=Z,160nm,20.8s,baz=326,slow=32
GEC2 GERESS Array S 82.33 328 *e*P P 05 04 03.6 0.0
GEC2 pmax pmax
comp=Z,8.0nm,0.5s
GEC2 GERESS Array S 82.33 328 *e*P P 05 04 03.6 0.0
comp=Z,8.2nm,0.5s
GERES GERESS Array B 82.33 328 P P 05 04 03.6 0.0
comp=Z,7.6nm,0.5s,baz=37,slow=6.1,SNR=74
GERES LR LR 05 43 49.7
comp=Z,234nm,18.0s,baz=16,slow=38
GEA0 GERESS Array S 82.33 328 *e*P P 05 04 03.6 0.0
J30A Dallas 82.45 40 P P 05 04 05.2 +1.0
baz=316
X18A Snowflake 82.45 52 *e*P P 05 04 04.9 +0.3
comp=Z,12nm,1.4s
VTS Vitosha 82.47 319 ⇑*i*P P 05 04 05.2 +0.8
VTS Vitosha 82.47 319 *e*P P 05 04 05.3 +0.8
VTS pmax pmax
comp=Z,14nm,1.0s
VTS Vitosha 82.47 319 *e*P P 05 04 05.3 +0.8
comp=Z,14nm,1.0s
G33A Ortonville 82.61 37 P P 05 04 06.0 +1.0
baz=318
GRFO Grafenberg 82.68 330 *e*P P 05 04 06.6 +1.3

GRFO pmax pmax
comp=Z,15nm,0.9s
GRFO Grafenberg 82.68 330 *e*P **P** **05 04 06.5 +1.3**
comp=Z,15nm,0.9s
H33A Prehn Over Nor 82.84 38 P **P** **05 04 07.5 +1.2**
baz=317
SDCO Great Sand Dun 83.02 47 *e*P **P** **05 04 09.5 +1.8**
comp=Z,6.6nm,1.3s
TUC Tucson 83.35 54 *e*P **P** **05 04 10.2 +1.0**
TUC pmax pmax
comp=Z,4.0nm,0.9s
TUC Tucson 83.35 54 *e*P **P** **05 04 10.2 +1.0**
comp=Z,3.8nm,0.9s
PERS Pernice 83.41 326 *i* P **P** **05 04 09.5 +0.3**
PERS *i* 05 04 17.7
SOKA Soboth 83.42 326 *i* P **P** **05 04 09.6 +0.3**
comp=Z,6.9nm,0.6s,SNR=6.7
ECSD EROS Data Cent 83.59 38 P **P** **05 04 11.0 +0.9**
baz=318
ECSD EROS Data Cent 83.59 38 *e*P **P** **05 04 11.0 +0.9**
comp=Z,12nm,0.9s
L31A Butterfield Fa 83.60 40 P **P** **05 04 11.2 +1.0**
baz=316
H35A Sunnyside Ranc 83.74 37 P **P** **05 04 12.2 +1.3**
baz=319
LEGS Legarje 83.85 325 *i* P **P** **05 04 11.3 -0.1**
KBA Koelnbreinsper 83.85 327 *i* P **P** **05 04 12.2 +0.6**
comp=Z,11nm,0.7s,SNR=12
MEM Membach 83.91 333 P **P** **05 04 12.1 +0.6**
T25A Trinidad 84.07 47 P **P** **05 04 14.6 +1.7**
baz=313
T25A Trinidad 84.07 47 *e*P **P** **05 04 14.8 +1.9**
comp=Z,11nm,0.9s
MYKA Terra Mystica 84.07 327 *i* P **P** **05 04 12.7 +0.1**
comp=Z,12nm,0.7s,SNR=8.0
EIL Elat 84.12 303 P **P** **05 04 12.8 -0.2**
baz=35,slow=9.6
EIL LR LR 05 45 06.3
comp=Z,118nm,20.3s,baz=46,slow=38
BCLA Clavier 84.32 334 P **P** **05 04 13.8 +0.2**
ANMO Albuquerque 84.33 50 P **P** **05 04 15.9 +1.6**
baz=312
ANMO Albuquerque 84.33 50 *e*P **P** **05 04 15.9 +1.6**
ANMO pmax pmax
comp=Z,11nm,1.1s
ANMO Albuquerque 84.33 50 *e*P **P** **05 04 15.9 +1.6**
comp=Z,11nm,1.1s
PMOR Pomariorio Ree 84.38 114 *e*T T 06 37 28.0
comp=Z,26nm,0.2s
JAVS Javornik 84.45 326 *i* P **P** **05 04 13.8 -0.8**
JAVS *i* 05 04 22.2
RETA Reutte 84.62 329 *i* P **P** **05 04 15.8 +0.4**
comp=Z,12nm,0.6s,SNR=8.4
BNM Barren Site 84.76 51 *e*P **P** **05 04 18.5 +2.0**
PPT Papeete 84.85 117 LR LR 05 33 22.1
comp=Z,66nm,21.3s,baz=308,slow=29
PPT2 Papeete2 84.87 117 *e*LR LR 05 30 59.8
comp=Z,180nm,25.8s
PPT2 Papeete2 84.87 117 *e*T T 06 38 04.9
comp=Z,5.2nm,0.3s
BFO Black Forest 84.91 331 *e*P **P** **05 04 16.9 +0.2**
BFO pmax pmax
comp=Z,19nm,1.0s
BFO Black Forest 84.91 331 *e*P **P** **05 04 16.9 +0.2**
comp=Z,19nm,1.0s
SCHQ Schefferville 84.93 16 P **P** **05 04 17.8 +1.1**
comp=Z,3.1nm,0.7s,baz=32,slow=9.1,SNR=6.1
SCHQ LR LR 05 42 43.8
comp=Z,101nm,21.8s,baz=320,slow=36
FETA Feichten 85.00 329 *i* P **P** **05 04 17.6 +0.2**
comp=Z,6.1nm,0.6s
TIAR Tiarei 85.01 116 *e*T T 06 38 14.8
comp=Z,5.2nm,0.3s
121A Cookes Peak, D 85.12 52 P **P** **05 04 20.4 +2.2**
baz=312
DAVA Damuels 85.14 329 *i* PcP **P** **05 04 18.6 +0.5**
comp=Z,8.9nm,0.6s,SNR=5.6
RPZ Rata Peaks 85.17 159 LR LR 05 35 28.0
comp=Z,186nm,21.9s,baz=335,slow=31
FUORN Ofenpass-Fuorn 85.51 329 *e*P **P** **05 04 20.8 +0.7**
comp=Z,26nm,0.9s
DAVOX Davos/Dischmat 85.54 329 P **P** **05 04 20.6 +0.4**
comp=Z,5.0nm,0.7s,baz=64,slow=3.1,SNR=8.1
DAVOX LR LR 05 46 01.3
comp=Z,398nm,18.8s,baz=0.5,slow=38
P32A Huiting Farm, 85.57 42 P **P** **05 04 20.5 +0.3**
baz=317
TUE Stuetta 86.01 329 *e*P **P** **05 04 22.0 -0.5**
comp=Z,6.2nm,0.8s
MEH Mehetia 86.13 116 *e*T T 06 39 39.2
comp=Z,40nm,0.3s
TAOE Nuku Hiva Isla 86.30 104 *e*S **S** **05 14 53.4 -4.9**
comp=Z,90nm,24.7s
TAOE Nuku Hiva Isla 86.30 104 *e*LR LR 05 31 47.0
comp=Z,192nm,23.7s
TAOE Nuku Hiva Isla 86.30 104 *e*T T 06 39 53.6
comp=Z,119nm,0.3s
LAST Lasithi 86.42 312 *e*P **P** **05 04 24.9 +0.3**
comp=Z,175nm,2.0s
IDI Anoyia 86.67 313 P **P** **05 04 25.1 -0.7**
comp=Z,9.2nm,0.5s,baz=37,slow=11,SNR=14
IDI Anoyia 86.67 313 *e*P **P** **05 04 26.3 +0.5**
comp=Z,19nm,0.9s
KSU1 Kansas State U 87.00 41 P **P** **05 04 28.1 +0.8**
baz=318
MNTX Cornudas Mount 87.19 52 P **P** **05 04 29.3 +1.1**
baz=313
MNTX Cornudas Mount 87.19 52 *e*P **P** **05 04 29.4 +1.1**
comp=Z,11nm,1.8s
Q35A Mercer Eighty, 87.48 41 P **P** **05 04 30.3 +0.7**
baz=318
VLDQ Val d'Or 88.04 25 *e*P **P** **05 04 32.9 +0.9**
comp=Z,18nm,1.0s
TBI Tubuai 88.77 121 *e*LR LR 05 32 57.1
comp=Z,339nm,27.5s
TBI Tubuai 88.77 121 *e*T T 06 42 55.8
comp=Z,77nm,0.3s
T36A Boggs Farm, Ca 88.90 42 P **P** **05 04 37.5 +1.2**
baz=318
R38A Fenwick Farm, 89.09 40 P **P** **05 04 38.2 +1.0**
baz=319
Y33A Hilltop Ranch, 89.61 46 P **P** **05 04 40.9 +1.2**
baz=317
T38A Diamond 89.76 41 P **P** **05 04 41.0 +0.7**
baz=319
W35A Tecumseh 89.77 44 P **P** **05 04 41.5 +1.1**
baz=318
S39A Bolivar 89.77 40 P **P** **05 04 41.0 +0.7**
baz=320
U37A Salina 89.79 42 P **P** **05 04 41.3 +0.8**
baz=319
TUL1 Leonard 89.80 43 P **P** **05 04 41.2 +0.7**
baz=318
TX31 Lajitas Ar. Si 89.88 52 *e*P **P** **05 04 42.2 +1.1**
TXAR Lajitas Array 89.88 52 P **P** **05 04 42.6 +1.4**
comp=Z,3.5nm,0.5s,baz=298,slow=3.0,SNR=68
TXAR Lajitas Array 89.88 52 P **P** **05 04 42.6 +1.4**
TXAR pmax pmax
comp=Z,3.0nm,0.5s
Z33A Whitaker Ranch 90.05 47 P **P** **05 04 42.9 +1.1**
baz=317
Z34A Collier Ranch, 90.48 46 P **P** **05 04 44.7 +0.9**
baz=317
U39A Green Forest 90.68 41 P **P** **05 04 45.2 +0.5**
baz=320
LMQ La Malbaie 90.75 21 *e*P **P** **05 04 46.8 +2.1**
comp=Z,20nm,1.1s
U40A Yellville 91.03 41 P **P** **05 04 47.0 +0.7**
baz=320
334A Lometa 91.77 48 P **P** **05 04 51.0 +1.1**
baz=317
W40A Fergusson Farm, 91.80 42 P **P** **05 04 51.0 +1.2**
baz=320
MIAR Mount Ida 92.02 43 P **P** **05 04 52.0 +1.1**
baz=320
MIAR Mount Ida 92.02 43 *e*P **P** **05 04 52.0 +1.1**
MIAR pmax pmax
comp=Z,10.0nm,1.0s
MIAR Mount Ida 92.02 43 *e*P **P** **05 04 52.0 +1.1**
comp=Z,10nm,1.0s
WHAR Wooly Hollow 92.14 41 *e*P **P** **05 04 53.0 +1.6**
comp=Z,10nm,1.1s
KEST Kesra 94.66 323 P **P** **05 05 02.2 -0.9**
comp=Z,0.9nm,0.4s,baz=109,slow=0.6,SNR=4.1
KEST LR LR 05 52 42.4
comp=Z,126nm,18.5s,baz=329,slow=39
ESDC Sonseca Array 96.89 334 LR LR 05 53 08.7
comp=Z,233nm,21.4s,baz=30,slow=38

RKT Rikitea 98.94 112 *e*LR LR 05 37 45.2
comp=Z,181nm,26.8s
BANI BANI 116.91 34 *e*PKPdf **PKPdf** **05 10 25.6 -1.5**
TORD Torodi Ar. Bea 117.00 315 PKP **PKPdf** **05 10 26.4 -0.8**
comp=Z,0.5nm,0.5s,baz=20,slow=1.6,SNR=20
DBIC Dimbokro 125.95 317 PKP **PKPdf** **05 10 44.4 0.0**
comp=Z,2.3nm,0.6s,baz=9.9,slow=3.2,SNR=8.0
DBIC Dimbokro 125.95 317 PKIKP **PKPdf** **05 10 44.4 0.0**
DBIC pmax pmax
comp=Z,3.0nm,0.8s
QSPA South Pole Qui 127.21 180 *e*PKPdf **PKPdf** **05 10 45.8 +0.6**
LPAZ La Paz 146.50 59 *e*PKP2 **PKPab** **05 11 25.2 0.0**
LPAZ La Paz 146.50 59 *e*PKPdf **PKPab** **05 11 25.2 0.0**
PB11 IPOC Station P 147.75 65 *e*PKPbc **PKPab** **05 11 28.7 -0.8**

JMA 11 05:00:12.4±0.1, 36.64N×140.62E, h48km±1km, M2.6, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHO	**Hitachi**	**0.05**	**235**	P	Pn	05 00 19.8	-0.1
JHO				S	Sn	05 00 24.7	-0.4
ONAJ	**Iwakimizuishiy**	**0.48**	**17**	P	Pn	05 00 22.8	-0.6
ONAJ				S	Sn	05 00 30.3	-0.9
CHOJ	**Chosi**	**0.95**	**168**	P	Pn	05 00 29.2	-0.3
CHOJ				S	Sn	05 00 41.1	-0.9
MAT	**Matsushiro**	**1.94**	**268**	P	Pn	05 00 44.4	+1.4
MAT				S	Sn	05 01 07.0	+0.8

NIED ***11*** *05:08:00, 37.30N×141.90E, h35km, Mw3.9 Best double couple: M₀8.91000×10¹⁴ NP1:φ₁208.00000°, δ47.00000°, λ-131.00000°. NP2:φ₂80.00000°, δ56.00000°, λ-55.00000°.*
IDC ***11*** *05:08:33.4±0.7, 37.25N×142.00E, h0km, mb3.8/17, mb1 4.0/18, mb1mx3.9/56, mbtmp3.8/18, ML2.1/1, MS3.0/1, Ms1 3.0/1, ms1mx2.3/48, Error ellipse: s-maj=19.3km s-min=17.2km az=113.0*
NEIC ***11*** *05:08:38.4±0.6, 37.24N×141.81E, h35km, mb4.2/5, Error ellipse: s-maj=15.0km s-min=10.9km az=149.0*
JMA ***11*** *05:08:38.1±0.2, 37.35N×141.90E, h28km±4km, M4.1*
ISC 11 05:08:35.0±2.0, 37.26N±0.06×141.96E±0.06, h11km±12km, n44, σ0.90/45, mb3.9/22, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**0.87**	**278**	P	**Pn**	**05 08 53.3**	**+0.1**
JFK				S	**Sb**	**05 09 04.5**	**+0.7**
ONAJ	**Iwakimizuishiy**	**0.94**	**261**	P	**Pn**	**05 08 54.7**	**+0.5**
ONAJ				*e*S	**Sb**	**05 09 06.5**	**+0.7**
JMM	**Marumori**	**1.11**	**304**	P	**Pg**	**05 08 56.4**	**+0.1**
JMM				*e*S	**Sb**	**05 09 08.4**	**-2.2**
JIO	**Ouri**	**1.29**	**338**	P	**Pn**	**05 08 58.3**	**-0.6**
JFT	**Otama**	**1.32**	**282**	P	**Pg**	**05 09 00.6**	**+0.3**
JFT				S	**Sn**	**05 09 17.2**	**+0.3**
JOU	**Okura**	**1.51**	**318**	P	**Pb**	**05 09 02.8**	**-0.2**
JOU				*e*S	**Sn**	**05 09 21.3**	**-0.3**
JYS	**Shirataka**	**1.78**	**303**	P	**Pb**	**05 09 08.2**	**+0.5**
JYS				S	**Sb**	**05 09 30.4**	**+0.4**
JMK	**Ichinoseki**	**1.79**	**341**	P	**Pn**	**05 09 05.8**	**0.0**
JFY	**Yanaizu**	**1.80**	**275**	P	**Pb**	**05 09 08.0**	**0.0**
JFY				S	**Sb**	**05 09 30.5**	**-0.1**
MJAR	**Matsushiro Arr**	**3.09**	**258**	LR	LR	05 10 57.5	
	comp=Z,232nm,18.1s,baz=40,slow=47						
MAJO	**Matsushiro**	**3.09**	**258**	*e*Pn	Pn	05 09 19.5	-4.2
MAT	**Matsushiro**	**3.09**	**258**	P	**Pb**	**05 09 27.8**	**-2.2**
MAT				S	**Sb**	**05 10 05.3**	**-2.4**
ERM	**Erimo**	**4.84**	**11**	*e*Pn	**Pn**	**05 09 47.4**	**-0.3**
ERM				*e*Sn	**Sn**	**05 10 42.5**	**-1.3**
USRK	**Ussuriysk Ar.**	**10.26**	**316**	Pn	**Pn**	**05 11 02.6**	**+0.5**
	0.1nm,0.3s,baz=126,slow=13,SNR=2.3						
SEY	**Seymchan**	**26.49**	**11**	P	**P**	**05 14 13.4**	**+1.4**
	1.7nm,0.5s,baz=199,slow=6.4,SNR=7.1						
H11N2	**WAKE ISLAND Hy**	**27.89**	**122**	T	T	05 43 58.5	
	baz=315,slow=75,SNR=34						
H11N1	**WAKE ISLAND Hy**	**27.90**	**122**	T	T	05 43 56.3	
	baz=315,slow=75,SNR=44						
H11N3	**WAKE ISLAND Hy**	**27.91**	**122**	T	T	05 43 54.0	
	baz=315,slow=75,SNR=40						
SONM	**Songino Array**	**28.02**	**303**	P	**P**	**05 14 27.0**	**+0.9**
	1.0nm,0.5s,baz=105,slow=9.3,SNR=10						
H11S1	**WAKE ISLAND Hy**	**28.62**	**124**	T	T	05 44 49.9	
	baz=316,slow=76,SNR=37						
H11S3	**WAKE ISLAND Hy**	**28.62**	**124**	T	T	05 44 52.8	
	baz=316,slow=76,SNR=46						
H11S2	**WAKE ISLAND Hy**	**28.64**	**124**	T	T	05 44 50.4	
	baz=316,slow=76,SNR=40						
ZALV	**Zalesovo Beam**	**42.09**	**312**	P	**P**	**05 16 27.2**	**+0.6**
	0.9nm,0.3s,baz=85,slow=8.9,SNR=4.0						
MKAR	**Makanchi Array**	**44.37**	**302**	P	**P**	**05 16 45.9**	**+0.6**
	0.9nm,0.6s,baz=84,slow=9.5,SNR=9.4						
KURK	**Kurchatov**	**46.14**	**308**	*e*P	**P**	**05 16 59.1**	**-0.1**
	9.2nm,0.8s						
ILAR	**Eielson Array**	**49.07**	**32**	P	**P**	**05 17 22.0**	**+0.2**
	1.6nm,0.7s,baz=267,slow=6.4,SNR=21						
TKM2	**Tokmak 2**	**49.91**	**298**	*e*P	**P**	**05 17 28.0**	**-0.8**
	1.5nm,0.5s						
INK	**Inuvik**	**53.99**	**27**	P	**P**	**05 17 58.7**	**+0.2**
	1.4nm,0.6s,baz=319,slow=6.5,SNR=9.6						
WRA	**Warramunga Arr**	**57.34**	**189**	P	**P**	**05 18 23.0**	**-0.1**
	0.4nm,0.5s,baz=7.9,slow=6.9,SNR=12						
ABKAR	**Akbulak array**	**58.13**	**310**	*e*P	**P**	**05 18 28.6**	**+0.2**
	0.5nm,0.5s						
DLBC	**Dease Lake**	**58.18**	**38**	P	**P**	**05 18 30.4**	**+1.7**
	0.7nm,0.6s,baz=285,slow=5.0,SNR=5.1						
ASAR	**Alice Springs**	**61.07**	**188**	P	**P**	**05 18 49.8**	**+0.9**
	0.2nm,0.6s,baz=16,slow=7.4,SNR=3.3						
RES	**Resolute Bay**	**62.28**	**15**	P	**P**	**05 18 55.4**	**-1.1**
	0.5nm,0.8s,baz=110,slow=17,SNR=4.1						
YKA	**Yellowknife Ar**	**63.40**	**30**	P	**P**	**05 19 03.2**	**-0.8**
	0.4nm,0.7s,baz=302,slow=6.7,SNR=12						
FINES	**FINESS Array B**	**68.82**	**332**	P	**P**	**05 19 39.1**	**+0.3**
	0.8nm,0.7s,baz=46,slow=8.3,SNR=3.3						
FFC	**Flin Flon**	**73.28**	**33**	*e*P	**P**	**05 20 06.2**	**0.0**
	1.7nm,0.7s						
HFS	**Hagfors**	**74.06**	**336**	P	**P**	**05 20 10.9**	**+0.3**
	2.2nm,1.0s,baz=59,slow=8.9,SNR=3.0						
NVAR	**Mina Array Bea**	**74.51**	**53**	P	**P**	**05 20 13.7**	**-0.2**
	0.8nm,0.7s,baz=290,slow=5.1,SNR=6.2						
DUG	**Dugway, Tooele**	**76.88**	**49**	*e*P	**P**	**05 20 28.4**	**+1.0**
	0.9nm,0.5s						
PDAR	**Pinedale Array**	**77.20**	**46**	P	**P**	**05 20 29.4**	**+0.2**
	0.5nm,0.6s,baz=244,slow=2.8,SNR=7.4						
GERES	**GERESS Array B**	**82.75**	**328**	P	**P**	**05 20 57.5**	**-1.4**
	0.5nm,0.5s,baz=28,slow=6.0,SNR=4.2						
TXAR	**Lajitas Array**	**89.64**	**53**	P	**P**	**05 21 33.2**	**0.0**
	0.1nm,0.3s,baz=318,slow=5.0,SNR=4.2						
TORD	**Torodi Ar. Bea**	**117.48**	**315**	PKP	**PKPdf**	**05 27 20.7**	**-0.7**
	0.6nm,1.1s,baz=18,slow=2.6,SNR=4.0						
LPAZ	**La Paz**	**146.21**	**60**	PKPbc	**PKPbc**	**05 28 16.2**	**-0.4**
	0.7nm,0.5s,baz=270,slow=2.9,SNR=7.1						

JMA 11 05:11:27.2, 40.06N×141.95E, h24km±1km, M3.8, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JTH	**Tanohata**	**0.14**	**209**	P	Pb	05 11 32.2	+0.1
JTH				S	Sb	05 11 35.3	0.0
JANG	**Nango**	**0.46**	**313**	P	Pb	05 11 36.4	-0.3
JANG				S	Sb	05 11 42.7	-0.4
JKZ	**Kuzumaki**	**0.48**	**261**	P	Pb	05 11 37.1	0.0
JKZ				S	Sb	05 11 43.8	0.0
JOM	**Ohasama**	**0.78**	**221**	P	Pb	05 11 41.5	-0.5
JOM				S	Sb	05 11 51.2	-0.9
JTM	**Tenmabayashi**	**0.99**	**317**	P	Pn	05 11 45.1	-0.5
JTM				S	Sb	05 11 58.0	-0.3
JAH	**Hinai**	**1.02**	**278**	P	Pn	05 11 45.9	0.0
JAH				S	Sb	05 11 58.8	-0.2

IDC 11 05:24:31.2±4.2, 19.59S×168.00E, h0km, mb4.2/3, mb1 4.4/4, mb1mx3.9/36, mbtmp4.1/4, ML3.7/1, MS3.4/2, Ms1 3.4/2, ms1mx2.8/39, Error ellipse: s-maj=92.7km s-min=40.2km az=110.0, Vanuatu Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**2.87**	**210**	Pn	Pn	05 25 16.5	-1.8
	12nm,0.3s,baz=62,slow=17,SNR=11						
DZM				Sn	Sn	05 25 48.4	-5.2
	30nm,0.3s,baz=153,slow=21,SNR=13						
WRA	**Warramunga Arr**	**31.65**	**264**	P	P	05 30 56.4	0.0
	1.3nm,0.5s,baz=89,slow=8.5,SNR=15						
WRA				LR	LR	05 43 20.0	
	comp=Z,96nm,18.5s,baz=60,slow=36						
ASAR	**Alice Springs**	**31.91**	**257**	P	P	05 30 59.1	+0.4
	4.9nm,0.6s,baz=84,slow=9.0,SNR=45						
ASAR				LR	LR	05 42 12.0	
	comp=Z,48nm,20.7s,baz=80,slow=33						
SONM	**Songino Array**	**86.80**	**324**	P	P	05 37 17.7	+0.2
	0.7nm,0.9s,baz=130,slow=4.5,SNR=4.1						

IDC 11 05:29:39.7±9.1, 20.24S×177.83W, h455km±99km, mb3.1/7, mb1 3.4/7, mb1mx3.1/33, mbtmp3.9/7, Error ellipse: s-maj=87.6km s-min=31.3km az=154.0, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
STKA	**Stephens Creek**	**38.05**	**244**	P	P	05 36 17.9	+0.1
	1.2nm,0.5s,baz=92,slow=12,SNR=3.0						
ASAR	**Alice Springs**	**44.73**	**256**	P	P	05 37 11.3	0.0
	2.8nm,0.5s,baz=98,slow=7.6,SNR=30						
ASAR				PcP	PcP	05 38 43.6	-0.8
	0.3nm,0.5s,baz=100,slow=4.5,SNR=4.2						
WRA	**Warramunga Arr**	**44.80**	**262**	P	P	05 37 11.4	-0.4
	1.1nm,0.6s,baz=97,slow=7.8,SNR=18						
TXAR	**Lajitas Array**	**86.78**	**57**	P	P	05 41 35.1	+0.1
	0.2nm,0.6s,baz=226,slow=6.7,SNR=4.2						
ILAR	**Eielson Array**	**88.03**	**13**	P	P	05 41 39.3	-0.6
	0.3nm,0.6s,baz=216,slow=5.7,SNR=4.7						
PDAR	**Pinedale Array**	**88.66**	**43**	P	P	05 41 43.8	+0.1
	0.2nm,0.6s,baz=190,slow=4.6,SNR=3.2						
CMAR	**Chiang Mai Arr**	**90.18**	**290**	P	P	05 41 52.0	+0.9
	0.4nm,0.3s,baz=124,slow=3.4,SNR=4.2						
AKASG	**Malin Array Be**	**142.86**	**331**	PKhKP	PKPpre	05 48 16.3	
	1.0nm,0.5s,baz=39,slow=3.9,SNR=7.0						

ISCJB ***11*** *05:34:16.6±0.7, 20.9S×179.4W±0.1, h600km, mb3.7/15, Error ellipse: s-maj=24.9km s-min=12.0km az=147.7*
IDC ***11*** *05:34:19.2±2.1, 20.85S×179.32W, h620km±26km, mb3.3/15, mb1 3.6/17, mb1mx3.4/39, mbtmp4.3/17, Error ellipse: s-maj=23.0km s-min=13.0km az=148.0*
ISC 11 05:34:17.7±0.8, 20.8S±0.2×179.3W±0.1, h600km, n23, σ0.84/21, mb3.8/14, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AFI	**Afiamalu**	**9.93**	**47**	P	**P**	**05 36 36.9**	**+0.9**
	5.5nm,0.3s,baz=248,slow=15,SNR=5.0						
DZM	**Mont Dzumac**	**13.35**	**262**	P	**P**	**05 37 11.7**	**+1.4**
	1.4nm,0.3s,baz=88,slow=13,SNR=12						
STKA	**Stephens Creek**	**36.57**	**244**	P	**P**	**05 40 34.9**	**+0.4**
	5.7nm,0.5s,baz=88,slow=8.6,SNR=12						
ASAR	**Alice Springs**	**43.28**	**257**	P	**P**	**05 41 28.2**	**+0.1**
	8.4nm,0.5s,baz=97,slow=7.7,SNR=100						
WRA	**Warramunga Arr**	**43.37**	**263**	P	**P**	**05 41 28.4**	**-0.4**
	3.0nm,0.3s,baz=97,slow=7.5,SNR=87						
FITZ	**Fitzroy Crossi**	**51.80**	**263**	P	**P**	**05 42 31.7**	**+0.1**
	1.1nm,0.4s,baz=110,slow=6.4,SNR=7.0						
VNDA	**Vanda**	**57.47**	**185**	P	**P**	**05 43 09.8**	**-0.4**
	0.5nm,0.6s,baz=17,slow=4.7,SNR=5.7						
MJAR	**Matsushiro Arr**	**69.78**	**325**	P	**P**	**05 44 29.0**	**0.0**
	1.9nm,0.5s,baz=162,slow=6.4,SNR=6.3						
PETK	**Petropavlovsk-**	**76.30**	**346**	P	**P**	**05 45 05.4**	**-0.3**
	1.8nm,0.5s,baz=115,slow=6.7,SNR=4.4						
USRK	**Ussuriysk Ar.**	**78.58**	**327**	P	**P**	**05 45 18.6**	**+0.4**
	1.0nm,0.6s,baz=113,slow=4.4,SNR=4.7						
YBH	**Yreka Blue Hor**	**81.30**	**39**	P	**P**	**05 45 33.5**	**+0.8**
	2.3nm,0.6s,baz=169,slow=1.1,SNR=7.6						
NVAR	**Mina Array Bea**	**82.09**	**44**	P	**P**	**05 45 37.3**	**+0.4**
	0.9nm,0.5s,baz=224,slow=8.0,SNR=6.6						
TXAR	**Lajitas Array**	**88.25**	**58**	P	**P**	**05 46 07.4**	**+0.8**
	1.1nm,0.8s,baz=228,slow=4.8,SNR=9.3						
ILAR	**Eielson Array**	**88.91**	**13**	P	**P**	**05 46 07.7**	**-1.0**
	0.9nm,0.5s,baz=220,slow=5.4,SNR=12						
CMAR	**Chiang Mai Arr**	**89.11**	**290**	P	**P**	**05 46 09.2**	**-1.4**
	0.6nm,0.3s,baz=151,slow=2.8,SNR=4.6						
PDAR	**Pinedale Array**	**90.03**	**44**	P	**P**	**05 46 14.4**	**-0.3**
	0.3nm,0.5s,baz=183,slow=3.5,SNR=5.8						
YKA	**Yellowknife Ar**	**97.32**	**25**	P	Pdif	05 46 46.5	-0.6
	0.4nm,1.1s,baz=239,slow=4.3,SNR=3.6						
ARCES	**ARCESS Array B**	**129.03**	**349**	PKP	**PKPdf**	**05 52 15.9**	**-1.7**
	2.9nm,0.7s,baz=0.0,slow=1.2,SNR=9.5						
FINES	**FINESS Array B**	**135.75**	**343**	PKP	**PKPdf**	**05 52 30.6**	**+0.1**
	0.6nm,0.4s,baz=349,slow=1.9,SNR=4.8						
AKASG	**Malin Array Be**	**142.72**	**330**	PKhKP	PKPpre	05 52 39.5	
	4.2nm,0.4s,baz=43,slow=4.3,SNR=35						
BRTR	**Keskin Array B**	**146.17**	**311**	PKPbc	**PKPdf**	**05 52 50.5**	**+0.6**
	1.2nm,0.6s,baz=138,slow=3.7,SNR=6.2						
CLL	**Collm**	**148.10**	**345**	*e*(P)	**PKPbc**	**05 52 56.0**	**-0.6**
GERES	**GERESS Array B**	**150.19**	**343**	PKPbc	**PKPbc**	**05 53 01.1**	**-0.8**
	0.9nm,0.4s,baz=48,slow=2.0,SNR=9.7						

IDC ***11*** *05:38:08.7±1.1, 37.14S×177.59E, h304km±10km, mb4.0/3, mb1 4.1/4, mb1mx3.4/40, mbtmp4.6/4, Error ellipse: s-maj=38.5km s-min=26.0km az=153.0*
ISCJB ***11*** *05:38:09.9±0.7, 36.87S±0.06×177.18E±0.10, h297km±6km, mb4.2/3, Error ellipse: s-maj=13.1km s-min=9.4km az=21.4*
NEIC ***11*** *05:38:10.8, 36.58S×177.28E, h268km, MG4.8(WEL), After WEL.*
WEL ***11*** *05:38:11.2±0.5, 36.62S×177.26E, h267km±4km, ML4.8/20, Error ellipse: s-maj=5.0km s-min=3.6km az=0.0*
ISC 11 05:38:09.7±0.9, 36.83S±0.08×177.15E±0.08, h293km±7km, n184, σ1.20/192, mb4.3/3, 22C-4D, Off east coast of North Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HAZ	**Te Kaha**	**1.05**	**151**	PN	**Pn**	**05 38 48.8**	**-0.6**
HAZ				SN	**S**	**05 39 18.2**	**-2.8**
OPRZ	**Ohinepanea**	**1.11**	**205**	PN	**Pn**	**05 38 50.1**	**+0.3**
OPRZ	**Ohinepanea**	**1.11**	**205**	Pn	**Pn**	**05 38 50.1**	**+0.3**
KUZ	**Kuaotunu**	**1.15**	**274**	PN	**Pn**	**05 38 49.4**	**-0.6**
KUZ	**Kuaotunu**	**1.15**	**274**	Pn	**Pn**	**05 38 49.2**	**-0.9**
MXZ	**Matakaoa Point**	**1.18**	**129**	⇑PN	**Pn**	**05 38 49.4**	**-0.7**
MXZ				SN	**S**	**05 39 19.7**	**-2.6**
MXZ				AML	AML	05 39 32.1	
MXZ	**Matakaoa Point**	**1.18**	**129**	Pn	**Pn**	**05 38 49.4**	**-0.7**
MXZ				Sn	**S**	**05 39 19.7**	**-2.6**
MARZ	**Manawahe**	**1.21**	**198**	PN	**Pn**	**05 38 51.0**	**+0.6**
PKGZ	**Pakihiroa**	**1.29**	**145**	PN	**Pn**	**05 38 51.0**	**+0.2**
EDRZ	**Edgecumbe**	**1.31**	**194**	PN	**Pn**	**05 38 51.8**	**+0.9**
EDRZ	**Edgecumbe**	**1.31**	**194**	Pn	**Pn**	**05 38 51.8**	**+0.9**
WMGZ	**Waiomatatini S**	**1.41**	**135**	⇑PN	**Pn**	**05 38 51.5**	**0.0**
WMGZ				SN	**S**	**05 39 23.8**	**-1.0**
WMGZ	**Waiomatatini S**	**1.41**	**135**	Pn	**Pn**	**05 38 51.5**	**0.0**
WMGZ				Sn	**S**	**05 39 23.8**	**-1.0**
URZ	**Urewera**	**1.42**	**181**	P	**Pn**	**05 38 51.7**	**+0.2**
	87nm,0.3s,baz=261,slow=3.8,SNR=442						
URZ				S	**S**	**05 39 23.3**	**-1.5**
	74nm,0.3s,baz=66,slow=23,SNR=15						
URZ	**Urewera**	**1.42**	**181**	⇑PN	**Pn**	**05 38 51.7**	**+0.2**
URZ				SN	**S**	**05 39 23.3**	**-1.5**
URZ	

HRRZ	Handcock Road	1.70 204	PN	Pn	05 38 54.9	+1.4
HRRZ	Handcock Road	1.70 204	Pn	Pn	05 38 54.9	+1.4
PRRZ	Plateau Road	1.77 200	PN	Pn	05 38 55.1	+1.1
PRRZ	Plateau Road	1.77 200	Pn	Pn	05 38 55.1	+1.1
ALRZ	Allen Road	1.84 200 ⇓	PN	Pn	05 38 55.8	+1.4
ALRZ	Allen Road	1.84 200	Pn	Pn	05 38 55.9	+1.4
CNGZ	Carnagh Statio	1.85 153	PN	Pn	05 38 55.6	+1.1
CNGZ	Carnagh Statio	1.85 153	Pn	Pn	05 38 55.6	+1.1
RIGZ	Rimuhau	1.93 166 ⇑	PN	Pn	05 38 56.3	+1.1
SNGZ	Shannon Statio	1.95 176	PN	Pn	05 38 56.5	+1.1
TLZ	Tolley Road	1.97 220 ⇑	PN	Pn	05 38 57.6	+2.1
TLZ	Tolley Road	1.97 220	Pn	Pn	05 38 57.6	+2.1
MRHZ	Matea Rd	2.08 196	PN	Pn	05 38 57.3	+0.9
RAHZ	Arahi	2.08 181 ⇑	PN	Pn	05 38 57.7	+1.3
RAHZ	Arahi	2.08 181	Pn	Pn	05 38 57.7	+1.3
PRGZ	Paritu Road	2.16 165	PN	Pn	05 38 58.0	+0.9
PRGZ	Paritu Road	2.16 165	Pn	Pn	05 38 58.0	+0.9
KNZ	Kokohu	2.22 169 ⇑	PN	Pn	05 38 58.5	+0.9
KNZ			AML	AML	05 39 38.2	
KNZ			AML	AML	05 39 38.5	
KNZ	Kokohu	2.22 169	Pn	Pn	05 38 58.5	+0.9
WHHZ	Waihua	2.24 178 ⇑	PN	Pn	05 38 59.1	+1.4
NMHZ	Naumai	2.27 187	PN	Pn	05 38 59.7	+1.5
NMHZ	Naumai	2.27 187	Pn	Pn	05 38 59.7	+1.5
BKZ	Black Stump Fm	2.38 192 ⇑	PN	Pn	05 38 59.9	+0.8
BKZ			AML	AML	05 39 40.3	
BKZ			AML	AML	05 39 42.1	
BKZ	Black Stump Fm	2.38 192	Pn	Pn	05 38 59.9	+0.8
MHGZ	Mahia Peninsul	2.39 166	PN	Pn	05 39 00.5	+1.4
MHGZ	Mahia Peninsul	2.39 166	Pn	Pn	05 39 00.5	+1.4
ARHZ	Aropaoanui	2.43 183 ⇑	PN	Pn	05 39 00.9	+1.5
ARHZ	Aropaoanui	2.43 183	Pn	Pn	05 39 00.9	+1.5
KRVZ	Karewarewa	2.55 207 ⇓	PN	Pn	05 39 02.2	+1.5
KRVZ	Karewarewa	2.55 207	Pn	Pn	05 39 02.2	+1.5
WTVZ	West Tongariro	2.59 208 ⇓	PN	Pn	05 39 02.6	+1.6
WTVZ	West Tongariro	2.59 208	Pn	Pn	05 39 02.6	+1.6
OTVZ	Oturere	2.60 206 ⇓	PN	Pn	05 39 02.9	+1.7
OTVZ	Oturere	2.60 206	Pn	Pn	05 39 02.9	+1.7
TWVZ	Taurewa	2.61 211	PN	Pn	05 39 02.8	+1.6
TWVZ	Taurewa	2.61 211	Pn	Pn	05 39 02.8	+1.6
MCHZ	McNeill Hill	2.63 188 ⇑	PN	Pn	05 39 02.9	+1.6
MCHZ	McNeill Hill	2.63 188	Pn	Pn	05 39 02.9	+1.6
NGZ	Ngauruhoe	2.64 207	PN	Pn	05 39 03.0	+1.5
NGZ	Ngauruhoe	2.64 207	Pn	Pn	05 39 03.0	+1.5
KWHZ	Kaweka Forest	2.65 192 ⇑	PN	Pn	05 39 02.7	+1.3
TUVZ	Tukino	2.70 205	PN	Pn	05 39 03.6	+1.5
TUVZ	Tukino	2.70 205	Pn	Pn	05 39 03.6	+1.5
FWVZ	Far West T-bar	2.73 207	PN	Pn	05 39 03.6	+1.1
FWVZ	Far West T-bar	2.73 207	Pn	Pn	05 39 03.6	+1.1
WHVZ	Whangaehu Hut	2.74 206 ⇑	PN	Pn	05 39 03.9	+1.4
WHVZ	Whangaehu Hut	2.74 206	Pn	Pn	05 39 03.9	+1.4
TRVZ	Turoa	2.77 207	PN	Pn	05 39 04.3	+1.5
TRVZ	Turoa	2.77 207	Pn	Pn	05 39 04.3	+1.5
WNVZ	Wahianoa	2.77 206 ⇑	PN	Pn	05 39 04.2	+1.4
WNVZ	Wahianoa	2.77 206	Pn	Pn	05 39 04.2	+1.4
BHHZ	Black Hill Sta	2.79 198 ⇑	PN	Pn	05 39 03.8	+1.0
BHHZ	Black Hill Sta	2.79 198	Pn	Pn	05 39 03.8	+1.0
MOVZ	Moawhango	2.79 203	PN	Pn	05 39 03.8	+0.9
MOVZ	Moawhango	2.79 203	Pn	Pn	05 39 03.8	+0.9
CKHZ	Cape Kidnapper	2.82 181	PN	Pn	05 39 04.5	+1.4
CKHZ	Cape Kidnapper	2.82 181	Pn	Pn	05 39 04.5	+1.4
PKVZ	Pokaka	2.83 210	PN	Pn	05 39 04.9	+1.6
PKVZ	Pokaka	2.83 210	Pn	Pn	05 39 04.9	+1.6
MTVZ	Mangateitei	2.87 207	PN	Pn	05 39 05.2	+1.6
MTVZ	Mangateitei	2.87 207	Pn	Pn	05 39 05.2	+1.6
KRHZ	Kereru	2.87 192	PN	Pn	05 39 04.7	+1.1
KAHZ	Kahuranaki	2.96 184	PN	Pn	05 39 06.0	+1.5
KAHZ	Kahuranaki	2.96 184	Pn	Pn	05 39 06.0	+1.5
PNHZ	Pukenui	3.16 193	PN	Pn	05 39 07.3	+0.8
PNHZ	Pukenui	3.16 193	Pn	Pn	05 39 07.3	+0.8
PXZ	Pawanui	3.20 184 ⇑	PN	Pn	05 39 07.9	+1.0
PXZ			AML	AML	05 39 56.7	
PXZ			AML	AML	05 39 56.7	
PXZ			AML	AML	05 39 57.3	
PXZ			AML	AML	05 39 57.3	
PXZ	Pawanui	3.20 184	Pn	Pn	05 39 07.9	+1.0
WPHZ	Waipukurau	3.27 190	PN	Pn	05 39 08.9	+1.3
WPHZ	Waipukurau	3.27 190	Pn	Pn	05 39 08.9	+1.3
TSZ	Takapari Road	3.35 196	PN	Pn	05 39 09.3	+0.8
TSZ			AML	AML	05 39 58.2	
TSZ			AML	AML	05 39 59.7	
TSZ	Takapari Road	3.35 196	Pn	Pn	05 39 09.3	+0.8
WAZ	Wanganui	3.38 210	PN	Pn	05 39 10.2	+1.5
WAZ	Wanganui	3.38 210	Pn	Pn	05 39 10.2	+1.5
NEZ	North Egmont	3.42 224	PN	Pn	05 39 12.5	+3.2
NEZ	North Egmont	3.42 224	Pn	Pn	05 39 12.5	+3.2
PRHZ	Porangahau	3.45 187	PN	Pn	05 39 10.6	+1.2
PRHZ	Porangahau	3.45 187	Pn	Pn	05 39 10.6	+1.2
DVHZ	Dannevirke	3.54 192	PN	Pn	05 39 11.4	+0.9
DVHZ	Dannevirke	3.54 192	Pn	Pn	05 39 11.4	+0.9
ANWZ	Angora Road	3.66 188	PN	Pn	05 39 13.0	+1.3
POWZ	Post Office Ro	3.71 197	PN	Pn	05 39 13.4	+1.1
POWZ	Post Office Ro	3.71 197	Pn	Pn	05 39 13.4	+1.1
PRWZ	Pori Road	3.83 194	PN	Pn	05 39 15.0	+1.5
PRWZ	Pori Road	3.83 194	Pn	Pn	05 39 15.0	+1.5
BFZ	Birch Farm	3.91 190	PN	Pn	05 39 15.3	+1.0
BFZ			AML	AML	05 40 10.0	
BFZ			AML	AML	05 40 10.0	
BFZ			AML	AML	05 40 10.1	
BFZ			AML	AML	05 40 10.1	
BFZ	Birch Farm	3.91 190	Pn	Pn	05 39 15.3	+1.0
MRZ	Mangatainoka R	4.01 197 ⇑	PN	Pn	05 39 16.0	+0.5
MRZ			AML	AML	05 40 11.0	
MRZ			AML	AML	05 40 11.8	
MRZ	Mangatainoka R	4.01 197	Pn	Pn	05 39 16.0	+0.5
TIWZ	Tintock	4.06 194	PN	Pn	05 39 17.1	+1.0
TIWZ			AML	AML	05 40 13.6	
TIWZ			AML	AML	05 40 13.6	
TIWZ	Tintock	4.06 194	Pn	Pn	05 39 17.1	+1.0
CPWZ	Castlepoint	4.14 190	PN	Pn	05 39 18.6	+1.7
CPWZ	Castlepoint	4.14 190	Pn	Pn	05 39 18.6	+1.7
HOWZ	Holdsworth Sta	4.25 197	PN	Pn	05 39 19.1	+0.9
HOWZ	Holdsworth Sta	4.25 197	Pn	Pn	05 39 19.1	+0.9
OGWZ	Otaki Gorge	4.27 201	PN	Pn	05 39 18.8	+0.4
OGWZ	Otaki Gorge	4.27 201	Pn	Pn	05 39 18.8	+0.4
TMWZ	Te Maipa	4.38 193	PN	Pn	05 39 20.9	+1.3
TMWZ	Te Maipa	4.38 193	Pn	Pn	05 39 20.9	+1.3
KIW	Kapiti Island	4.38 203	PN	Pn	05 39 20.0	+0.3
KIW			AML	AML	05 40 17.7	
KIW			AML	AML	05 40 17.7	
KIW	Kapiti Island	4.38 203	Pn	Pn	05 39 20.0	+0.3
MTW	Mount Morrison	4.50 196	PN	Pn	05 39 21.6	+0.5
MTW			AML	AML	05 40 21.2	
MTW			AML	AML	05 40 21.2	
MTW	Mount Morrison	4.50 196	Pn	Pn	05 39 21.6	+0.5
CAW	Cannon Point	4.56 200	PN	Pn	05 39 22.0	+0.2
CAW			AML	AML	05 40 23.4	
CAW			AML	AML	05 40 26.7	
CAW	Cannon Point	4.56 200	Pn	Pn	05 39 22.0	+0.2
DUWZ	D'Urville Isla	4.70 211	PN	Pn	05 39 23.4	+0.1
DUWZ	D'Urville Isla	4.70 211	Pn	Pn	05 39 23.4	+0.1
TRWZ	Traveller	4.70 194	PN	Pn	05 39 24.2	+0.9
TRWZ			AML	AML	05 40 26.2	
TRWZ			AML	AML	05 40 28.1	
TRWZ	Traveller	4.70 194	Pn	Pn	05 39 24.2	+0.9
PAWZ	Paruwai Farm	4.73 196	PN	Pn	05 39 24.7	+0.9
PAWZ			AML	AML	05 40 25.6	
PAWZ			AML	AML	05 40 28.6	
PAWZ	Paruwai Farm	4.73 196	Pn	Pn	05 39 24.7	+0.9
MSWZ	Moikau Station	4.81 197	PN	Pn	05 39 24.8	+0.2
MSWZ			AML	AML	05 40 26.8	
MSWZ			AML	AML	05 40 27.4	
MSWZ	Moikau Station	4.81 197	Pn	Pn	05 39 24.8	+0.2
BHW	Baring Head	4.90 200	PN	Pn	05 39 25.9	+0.4
BHW			AML	AML	05 40 28.5	
BHW			AML	AML	05 40 28.7	
BHW	Baring Head	4.90 200	Pn	Pn	05 39 25.9	+0.4
TCW	Tory Channel	4.91 206	PN	Pn	05 39 26.2	+0.5
TCW			AML	AML	05 40 28.9	
TCW			AML	AML	05 40 30.9	
TCW	Tory Channel	4.91 206	Pn	Pn	05 39 26.2	+0.5
PLWZ	Palliser	4.95 197	PN	Pn	05 39 26.6	+0.3
PLWZ	Palliser	4.95 197	Pn	Pn	05 39 26.6	+0.3
TUWZ	Tuamarina	5.22 208	Pn	Pn	05 39 30.2	+0.9
NNZ	Nelson	5.27 213	PN	Pn	05 39 30.1	+0.1
NNZ	Nelson	5.27 213	Pn	Pn	05 39 30.1	+0.1
QRZ	Quartz Range	5.37 221	PN	Pn	05 39 30.7	-0.5
QRZ	Quartz Range	5.37 221	Pn	Pn	05 39 30.7	-0.5
BSWZ	Blackbirch Sta	5.50 207	PN	Pn	05 39 33.3	+0.7
BSWZ			AML	AML	05 40 42.0	
BSWZ			AML	AML	05 40 42.7	
BSWZ	Blackbirch Sta	5.50 207	Pn	Pn	05 39 33.3	+0.7
THZ	Tophouse	5.92 212	PN	Pn	05 39 37.3	-0.5
THZ	Tophouse	5.92 212	Pn	Pn	05 39 37.3	-0.5
KHZ	Kahutara	6.23 205	PN	Pn	05 39 42.1	+0.6
KHZ	Kahutara	6.23 205	*e*Pn	Pn	05 39 42.0	+0.6
KHZ			*e*S	S	05 40 54.9	-0.4
DSZ	Denniston Nort	6.42 219	PN	Pn	05 39 42.9	-0.9
DSZ	Denniston Nort	6.42 219	Pn	Pn	05 39 42.9	-0.9
LTZ	Lake Taylor	7.03 211	PN	Pn	05 39 51.1	0.0
LTZ	Lake Taylor	7.03 211	Pn	Pn	05 39 49.2	-1.9
INZ	Inchbonnie	7.34 215 ⇑	PN	Pn	05 39 54.6	-0.3
OXZ	Oxford	7.57 210	PN	Pn	05 39 52.8	-5.0
OXZ	Oxford	7.57 210	Pn	Pn	05 39 52.8	-5.0
MQZ	McQueen's Vall	7.67 205	Pn	Pn	05 39 56.9	-2.1
WVZ	Waitaha Valley	7.94 216 ⇑	PN	Pn	05 40 02.1	-0.2
WVZ	Waitaha Valley	7.94 216	Pn	Pn	05 40 02.1	-0.2
RPZ	Rata Peaks	8.30 212	P	Pn	05 40 06.3	-0.4
	1.9nm,0.3s,baz=40,slow=2.8,SNR=5.8					
RPZ			S	S	05 41 38.1	-3.6
	6.5nm,0.3s,baz=122,slow=23,SNR=28					
FOZ	Fox Glacier	8.73 218	PN	Pn	05 40 11.4	-0.6
FOZ	Fox Glacier	8.73 218	Pn	Pn	05 40 11.4	-0.6
ODZ	Otahua Downs	9.56 209	PN	Pn	05 40 23.5	+1.2
ODZ	Otahua Downs	9.56 209	Pn	Pn	05 40 23.5	+1.2
JCZ	Jackson Bay	9.63 219	PN	Pn	05 40 22.9	-0.4
JCZ	Jackson Bay	9.63 219	Pn	Pn	05 40 22.9	-0.4
STKA	Stephens Creek	29.65 269	P	P	05 43 51.5	+2.9
	3.0nm,0.9s,baz=122,slow=7.4,SNR=2.9					
ASAR	Alice Springs	39.27 277	P	P	05 45 12.0	+1.2
	15nm,0.5s,baz=119,slow=7.9,SNR=166					
WRA	Warramunga Arr	40.88 282	P	P	05 45 24.4	+0.5
	8.2nm,0.4s,baz=120,slow=7.5,SNR=80					
ARCES	ARCESS Array B	143.81 344	PKP	PKPab	05 57 05.7	-1.1
	3.1nm,0.9s,baz=29,slow=2.1,SNR=4.3					
FINES	FINESS Array B	149.42 333	PKPbc	PKPbc	05 57 21.1	-2.1
	0.6nm,0.5s,baz=35,slow=7.0,SNR=5.7					
BRTR	Keskin Array B	151.33 287	PKPbc	PKPbc	05 57 27.9	-0.7
	0.4nm,0.4s,baz=93,slow=1.5,SNR=2.7					

ISCJB ***11*** *05:39:22.3±1.1,34.°08N±0.°04×25.°35E±0.°03, h6km±8km, mb3.7/4, Error ellipse: s-maj=6.7km s-min=4.5km az=17.9*
ATH ***11*** *05:39:23.8,34.°16N×25.°27E, h13km±2km, ML3.3/6, Error ellipse: s-maj=3.1km s-min=1.2km az=358.0*
IDC ***11*** *05:39:23.2±1.2,34.°24N×25.°26E, h0km, mb3.8/4, mb1 3.9/10, mb1mx3.6/51, mbtmpg3.7/10, ML3.7/5, Error ellipse: s-maj=19.5km s-min=17.9km az=24.0*
CSEM ***11*** *05:39:23.9±0.5,34.°17N×25.°30E, h2km, ML3.4, Error ellipse: s-maj=8.5km s-min=4.7km az=178.0*
THE ***11*** *05:39:24.6,34.°21N×25.°34E, h0km±3km, ML3.4/7, Error ellipse: s-maj=7.6km s-min=1.8km az=167.0*
ISK ***11*** *05:39:45.2,35.°88N×26.°06E, h29km, ML3.2*

ISC 11 05:39:24.0±1.7, 34.°17N±0.°06×25.°31E±0.°03, h4km±10km, n72, σ1°47/100, mb3.9/4, Crete

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
SIVA	**Sivas**	0.94	334	P	P	Pg	05 39 41.6	-0.5
SIVA				S	S	Sb	05 39 55.3	-0.5
SIVA	**Sivas**	0.94	334	P	P	Pg	05 39 41.9	-0.2
SIVA				S	S	Sg	05 39 54.4	+0.1
SIVA	**Sivas**	0.94	334	P	P	Pg	05 39 41.9	-0.2
SIVA				S	S	Sg	05 39 54.4	+0.1
SIVA				AML	AML		05 39 55.9	
	comp=E,30635µm,0.8s							
SIVA				AML	AML		05 39 58.2	
	comp=N,22331µm,0.6s							
LAST	**Lasithi**	1.00	8	P	P	Pg	05 39 42.7	-0.5
LAST				S	S	Sb	05 39 58.4	+0.8
LAST	**Lasithi**	1.00	8	P	P	Pg	05 39 42.7	-0.5
LAST				S	S	Sb	05 39 57.4	-0.2
LAST	**Lasithi**	1.00	8	P	P	Pg	05 39 42.6	-0.7
NPS	**Neapolis**	1.12	13	P	P	Pg	05 39 45.1	-0.4
NPS				S	S	Sb	05 40 01.1	+0.1
NPS	**Neapolis**	1.12	13	P	P	Pg	05 39 45.1	-0.4
NPS				S	S	Sb	05 40 01.1	+0.1
NPS	**Neapolis**	1.12	13	P	P	Pg	05 39 45.0	-0.6
NPS				S	S	Sb	05 40 01.4	+0.4
NPS				AML	AML		05 40 04.5	
	comp=N,1803µm,0.6s							
NPS				AML	AML		05 40 05.8	
	comp=E,2004µm,0.6s							
IACM	**Heraklion**	1.15	350	P	P	Pg	05 39 44.8	-1.3
IACM	**Heraklion**	1.15	350	P	P	Pg	05 39 44.8	-1.3
IDI	**Anoyia**	1.17	343	Pn	P	Pg	05 39 45.4	-1.0
	comp=E,12nm,0.3s,baz=192,slow=12,SNR=59							
IDI				Sn	S	Sb	05 40 02.0	-0.5
	comp=E,118nm,0.3s,baz=298,slow=15,SNR=50							
IDI	**Anoyia**	1.17	343	P	P	Pg	05 39 45.5	-1.0
IDI				S	S	Sb	05 40 01.9	-0.5
IDI	**Anoyia**	1.17	343	P	P	Pg	05 39 45.5	-1.0
IDI				S	S	Sg	05 40 01.8	+0.1
IDI				AML	AML		05 40 03.9	
	comp=E,1872µm,0.4s							
IDI				AML	AML		05 40 06.5	
	comp=N,1348µm,0.6s							
ZKR	**Zakros**	1.21	38	P	P	Pg	05 39 46.8	-0.4
ZKR				S	S	Sb	05 40 03.5	+0.1
ZKR	**Zakros**	1.21	38	P	P	Pg	05 39 46.8	-0.4
ZKR				S	S	Sb	05 40 03.5	+0.1
ZKR	**Zakros**	1.21	38	P	P	Pn	05 39 48.1	+0.4
ZKR				S	S	Sn	05 40 04.3	-0.3
ZKR				AML	AML		05 40 11.5	
	comp=E,2509µm,0.7s							
ZKR				AML	AML		05 40 12.2	
	comp=N,1685µm,0.5s							
GVD	**Gavdhos**	1.21	304	P	P	Pg	05 39 46.1	-1.1
GVD				S	S	Sn	05 40 05.0	+0.4
GVD	**Gavdhos**	1.21	304	P	P	Pg	05 39 46.3	-0.9
GVD				S	S	Sb	05 40 03.1	-0.4
GVD	**Gavdhos**	1.21	304	P	P	Pg	05 39 46.3	-0.9
GVD				S	S	Sb	05 40 03.1	-0.4
GVD				AML	AML		05 40 07.6	
	comp=E,5091µm,0.5s							
GVD				AML	AML		05 40 08.4	
	comp=N,6811µm,0.4s							
VAM	**Vamos**	1.54	324	P	P	Pn	05 39 51.7	-0.5
VAM				S	S	Sg	05 40 13.5	+0.1
VAM	**Vamos**	1.54	324	P	P	Pn	05 39 51.7	-0.5
VAM				S	S	Sg	05 40 13.3	-0.1
IMMV	**Iera Moni Meta**	1.69	320	P	P	Pn	05 39 54.5	+0.1
IMMV				S	S	Sg	05 40 18.7	+0.4
IMMV	**Iera Moni Meta**	1.69	320	P	P	Pn	05 39 54.5	+0.1
IMMV				S	S	Sg	05 40 18.1	-0.2
IMMV	**Iera Moni Meta**	1.69	320	P	P	Pg	05 39 55.9	-0.5
IMMV				S	S	Sg	05 40 18.1	-0.2
IMMV				AML	AML		05 40 25.3	
	comp=E,1675µm,0.8s							
IMMV				AML	AML		05 40 33.1	
	comp=N,1645µm,0.7s							
KARP	**Karpathos**	2.06	47	*e*PG	P	Pg	05 40 03.1	-0.3
KARP	**Karpathos**	2.06	47	*e*Pg	P	Pg	05 40 03.1	-0.3
KARP	**Karpathos**	2.06	47	P	P	Pn	05 40 00.2	+0.8
KARP	**Karpathos**	2.06	47	P	P	Pn	05 40 00.2	+0.8
THR5	**Thira Island,**	2.25	1	*e*PG	P	Pn	05 40 00.7	-1.3
THR5	**Thira Island,**	2.25	1	P	P	Pn	05 40 01.8	-0.2
THR5	**Thira Island,**	2.25	1	*e*Pg	P	Pn	05 40 00.7	-1.3
THR5	**Thira Island,**	2.25	1	P	P	Pn	05 40 01.8	-0.2
ANKY	**Antikythira Is**	2.36	316	P	P	Pn	05 40 04.9	+1.3
ANKY	**Antikythira Is**	2.36	316	P	P	Pn	05 40 04.9	+1.3
KYTH	**Kithira**	2.79	319	P	P	Pn	05 40 09.4	-0.1
KYTH	**Kithira**	2.79	319	P	P	Pn	05 40 09.4	-0.1
APE	**Apeiranthos**	2.90	4	*e*PN	P	Pn	05 40 07.3	-3.7
APE				*e*SN	P	Pg	05 40 23.4	+3.9
APE	**Apeiranthos**	2.90	4	*e*Pn	P	Pn	05 40 07.3	-3.7
APE				*e*Sn	P	Pg	05 40 23.5	+3.9
APE	**Apeiranthos**	2.90	4	P	P	Pn	05 40 11.9	+0.9
APE	**Apeiranthos**	2.90	4	P	P	Pn	05 40 11.9	+0.9
BDRM	**Kayabasi**	3.38	30	*i* P	P	Pg	05 40 27.8	-0.9
BDRM				*i* S	S	Sn	05 41 00.3	+2.2
DID	**Didima**	3.73	334	P	P	Pn	05 40 23.5	+1.0
DID	**Didima**	3.73	334	P	P	Pn	05 40 23.5	+1.0
DALY	**Dalyan (Mu˘la**	3.80	45	*e*PN	P	Pn	05 40 21.8	-1.5
DALY	**Dalyan (Mu˘la**	3.80	45	*e*Pn	P	Pn	05 40 21.8	-1.5
TURN	**Turunc**	3.81	44	*i* P	P	Pn	05 40 21.5	-2.0
TURN	**Turunc**	3.81	44	P	P	Pn	05 40 21.5	-2.0
YER	**Yerkesik**	3.83	38	*e*PN	P	Pn	05 40 20.7	-3.1
YER	**Yerkesik**	3.83	38	*e*Pn	P	Pn	05 40 20.7	-3.1
FETY	**Fethiye**	3.95	50	*e*PN	P	Pn	05 40 26.1	+0.7
FETY	**Fethiye**	3.95	50	*e*Pn	P	Pn	05 40 26.1	+0.7
AKAS	**Kas**	4.08	58	*i* P	P	Pn	05 40 28.1	+0.8
AKAS				*i* S	S	Sn	05 41 13.4	-2.2
AKAS	**Kas**	4.08	58	P	P	Pn	05 40 28.1	+0.8
AKAS				S	S	Sn	05 41 13.4	-2.2
ELL	**Elmali**	4.55	54	*e*PN	P	Pn	05 40 34.9	+1.0
ELL	**Elmali**	4.55	54	*e*Pn	P	Pn	05 40 34.9	+1.0
KORT	**Korkueli**	4.99	54	*i* P	P	Pn	05 40 43.3	+3.5
KORT				*i* S	S	Sn	05 41 37.5	-0.5
KORT	**Korkueli**	4.99	54	P	P	Pn	05 40 43.3	+3.5
KORT	**Korkueli**	4.99	54	S	S	Sn	05 41 37.5	-0.5
KULA	**Kula-Manisa**	5.11	31	*e*PN	P	Pn	05 40 37.5	-4.0
KULA	**Kula-Manisa**	5.11	31	*e*Pn	P	Pn	05 40 37.5	-4.0
KERG	**Konya-Eregli**	7.86	63	*i* P	P	Pn	05 41 20.2	+0.9
MMAI	**Mount Meron Ar**	8.50	95	Pn	Pn	Pn	05 41 26.4	-1.6
	baz=251,slow=9.0,SNR=1.8							
BRTR	**Keskin Array B**	8.67	48	Pn	Pn	Pn	05 41 33.0	+2.6
	comp=N,0.1nm,0.3s,baz=224,slow=12,SNR=4.4							
EIL	**Elat**	9.34	116	Pn	Pn	Pn	05 41 39.7	+0.2
	comp=N,1.2nm,0.3s,baz=351,slow=15,SNR=12							
KBZ	**Khabaz**	16.66	50	Pn	Pn	Pn	05 43 19.2	+0.9
	comp=N,0.1nm,0.3s,baz=221,slow=9.3,SNR=2.3							
AKASG	**Malin Array Be**	16.77	9	Pn	Pn	Pn	05 43 18.7	-0.9
	comp=N,1.0nm,0.3s,baz=200,slow=10,SNR=5.3							
GERES	**GERESS Array B**	17.02	333	Pn	Pn	Pn	05 43 23.5	+0.6
	comp=N,0.2nm,0.3s,baz=144,slow=12,SNR=8.5							
ESDC	**Sonseca Array**	23.98	292	P	P	P	05 44 38.5	-1.2
	comp=N,0.3nm,0.3s,baz=88,slow=9.5,SNR=5.3							
TORD	**Torodi Ar. Bea**	29.95	231	P	P	P	05 45 33.6	+0.1
	comp=N,0.9nm,0.6s,baz=38,slow=8.4,SNR=8.8							
MKAR	**Makanchi Array**	44.23	56	P	P	P	05 47 35.0	+0.7
	comp=N,2.1nm,0.6s,baz=282,slow=6.0,SNR=21							
ZALV	**Zalesovo Beam**	45.61	45	P	P	P	05 47 44.4	-0.7
	comp=N,1.0nm,0.5s,baz=272,slow=10,SNR=3.8							

ISCJB ***11*** *05:43:10.2±0.9,6.°53S±0.°08×130.°16E±0.°08, h146km, mb3.7/3, Error ellipse: s-maj=11.8km s-min=10.6km az=135.2*
IDC ***11*** *05:43:14.0±4.5,6.°65S×130.°03E, h166km±45km, mb3.4/4, mb1 3.6/8, mb1mx3.3/39, mbtmpg4.0/8, Error ellipse: s-maj=40.0km s-min=17.1km az=45.0*

ISC 11 05:43:12.0±1.0,6.°67S±0.°10×130.°2E±0.°1, h146km, n9, σ2°92/11, mb3.9/3, Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
BATI	**Baumata**	7.35	241	P	P	Pn	05 44 57.7	+0.9
	6.4nm,0.3s,baz=287,slow=24,SNR=9.8							
BATI				S	S	Sn	05 46 19.6	+0.6
	9.1nm,0.3s,baz=96,slow=24,SNR=5.8							
FITZ	**Fitzroy Crossi**	12.20	201	P	P	Pn	05 46 00.2	-0.9
	1.6nm,0.3s,baz=22,slow=11,SNR=34							
FITZ				S	S	Sn	05 48 09.3	-6.6
	2.6nm,0.3s,baz=220,slow=18,SNR=8.1							
WRA	**Warramunga Arr**	13.79	163	P	P	Pn	05 46 22.0	+0.4
	2.4nm,0.3s,baz=344,slow=12,SNR=33							
ASAR	**Alice Springs**	17.27	168	P	P	Pn	05 47 06.7	+2.1
	0.7nm,0.3s,baz=345,slow=10,SNR=18							
ASAR				S	S	S	05 50 12.5	-3.9
	0.1nm,0.3s,baz=348,slow=17,SNR=3.6							
CTA	**Charters Tower**	20.52	132	P	P	P	05 47 42.0	+3.0
	1.1nm,0.3s,baz=271,slow=12,SNR=4.1							
STKA	**Stephens Creek**	27.25	158	P	P	P	05 48 42.6	0.0
	2.2nm,0.6s,baz=352,

JIZZ	**Izumozaki**	**0.74**	**6**	⇓P	**Pg**	**05 59 22.6**	**-0.5**
JIZZ				S	**Sb**	**05 59 34.1**	**-0.9**
JAG	**Ashikaga**	**0.77**	**118**	P	**Pg**	**05 59 23.4**	**-0.1**
JAG				S	**Sb**	**05 59 33.8**	**-1.8**
JRY	**Ryogami san**	**0.81**	**163**	P	**Pg**	**05 59 23.7**	**-0.5**
JRY				S	**Sb**	**05 59 35.4**	**-1.3**
JHJ	**Hachijo jima 2**	**3.79**	**165**	LR	LR	06 01 43.0	
	comp=Z,450nm,18.7s,baz=122,slow=43						
JNU	**Nakatsue**	**7.33**	**242**	Pn	**Pn**	**06 00 58.1**	**+1.4**
	0.3nm,0.3s,baz=200,slow=11,SNR=4.2						
JNU				LR	LR	06 04 07.5	
	comp=Z,408nm,19.3s,baz=128,slow=41						
KSRS	**Korea Array**	**8.56**	**278**	Pn	**Pn**	**06 01 15.0**	**+1.4**
	0.8nm,0.3s,baz=90,slow=14,SNR=7.6						
KSRS				LR	LR	06 04 20.2	
	comp=Z,65nm,20.9s,baz=94,slow=36						
USRK	**Ussuriysk Ar.**	**8.95**	**328**	Pn	**Pn**	**06 01 21.5**	**+2.5**
	0.3nm,0.3s,baz=160,slow=12,SNR=6.5						
USRK				LR	LR	06 04 20.6	
	comp=Z,207nm,20.8s,baz=152,slow=34						
KLR	**Kul'dur**	**13.40**	**340**	Pn	**Pn**	**06 02 20.4**	**+0.6**
	0.1nm,0.3s,baz=143,slow=12,SNR=10						
KLR				LR	LR	06 07 09.9	
	comp=Z,158nm,18.7s,baz=296,slow=35						
GUMO	**Guam**	**23.77**	**165**	LR	LR	06 12 22.7	
	comp=Z,83nm,21.6s,baz=52,slow=34						
MA2	**Magadan**	**24.12**	**15**	LR	LR	06 13 41.8	
	comp=Z,99nm,20.1s,baz=290,slow=36						
YAK	**Yakutsk**	**25.88**	**350**	LR	LR	06 14 53.1	
	comp=Z,111nm,18.5s,baz=200,slow=36						
SONM	**Songino Array**	**26.07**	**305**	LR	LR	06 15 17.6	
	comp=Z,63nm,19.5s,baz=74,slow=37						
SEY	**Seymchan**	**27.51**	**14**	P	**P**	**06 04 57.3**	**+1.1**
	1.3nm,0.6s,baz=206,slow=7.8,SNR=6.7						
TLY	**Talaya**	**28.81**	**312**	LR	LR	06 16 50.5	
	comp=Z,72nm,18.1s,baz=114,slow=37						
CMAR	**Chiang Mai Arr**	**39.27**	**253**	LR	LR	06 23 05.8	
	comp=Z,31nm,18.5s,baz=45,slow=37						
ZALV	**Zalesovo Beam**	**40.42**	**313**	LR	LR	06 25 07.2	
	comp=Z,8.3nm,18.5s,baz=72,slow=38						
MKAR	**Makanchi Array**	**42.34**	**302**	LR	LR	06 23 60.0	
	comp=Z,65nm,18.4s,baz=90,slow=35						
NRIK	**Noril'sk**	**42.56**	**336**	LR	LR	06 26 03.5	
	comp=Z,59nm,18.7s,baz=143,slow=38						
ILAR	**Eielson Array**	**50.90**	**32**	P	**P**	**06 08 10.4**	**-0.4**
	0.6nm,0.9s,baz=268,slow=5.6,SNR=7.1						
ILAR				LR	LR	06 30 33.0	
	comp=Z,17nm,18.5s,baz=340,slow=37						
WRA	**Warramunga Arr**	**56.57**	**185**	P	**P**	**06 08 50.6**	**-2.1**
	1.0nm,0.7s,baz=0.2,slow=7.6,SNR=10						
ASAR	**Alice Springs**	**60.29**	**185**	P	**P**	**06 09 16.8**	**-1.9**
	0.4nm,0.7s,baz=7.8,slow=7.5,SNR=3.3						
ARCES	**ARCESS Array B**	**63.42**	**339**	LR	LR	06 39 56.2	
	comp=Z,40nm,21.1s,baz=64,slow=38						
YKA	**Yellowknife Ar**	**65.13**	**29**	P	**P**	**06 09 50.2**	**-0.3**
	0.2nm,0.7s,baz=306,slow=6.6,SNR=5.3						
AKASG	**Malin Array Be**	**73.10**	**321**	LR	LR	06 44 46.3	
	comp=Z,57nm,19.2s,baz=300,slow=37						
NOA	**NORSAR Array B**	**73.52**	**336**	LR	LR	06 47 56.3	
	comp=Z,29nm,18.4s,baz=40,slow=40						
PDAR	**Pinedale Array**	**79.42**	**44**	P	**P**	**06 11 17.4**	**+0.8**
	0.3nm,0.7s,baz=291,slow=4.1,SNR=4.6						
ULM	**Lac du Bonnet**	**80.92**	**32**	LR	LR	06 48 56.6	
	comp=Z,24nm,19.8s,baz=50,slow=37						
GERES	**GERESS Array B**	**81.71**	**327**	LR	LR	06 49 41.0	
	comp=Z,22nm,19.4s,baz=347,slow=37						
TXAR	**Lajitas Array**	**92.03**	**51**	P	**P**	**06 12 19.5**	**0.0**
	0.1nm,0.4s,baz=307,slow=3.2,SNR=2.6						

NIED **11** *06:00:00,36˚.80N×138˚.60E,h5km,Mw3.9 Best double couple: M₀7.61000×10¹⁴ NP1:φs24.00000°,δ79.00000°, λ0.00000°. NP2:φs114.00000°,δ90.00000°,λ-169.00000°.*

JMA 11 06:00:24.2,36˚.82N×138˚.60E,h0km,M3.5,2C-1D, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JGK	**Kuni**	**0.26**	**173**	⇓P	Pg	06 00 29.9	+0.7
JGK				S	Sg	06 00 33.9	+1.4
MAT	**Matsushiro**	**0.42**	**229**	P	Pg	06 00 32.2	0.0
MAT				S	Sg	06 00 37.6	-0.1
JKT	**Katashina**	**0.52**	**96**	P	Pg	06 00 34.5	+0.3
JKT				S	Sg	06 00 41.6	+0.6
JHK	**Hiroka**	**0.54**	**38**	⇑P	Pg	06 00 34.5	-0.1
JHK				S	Sg	06 00 41.7	+0.1
JNG	**Nsakai**	**0.58**	**224**	⇑P	Pg	06 00 35.1	-0.1
JNG				S	Sg	06 00 42.5	-0.2
JIZZ	**Izumozaki**	**0.72**	**7**	P	Pb	06 00 39.0	-0.6
JAG	**Ashikaga**	**0.79**	**120**	P	Pg	06 00 39.7	+0.3
JAG				S	Sg	06 00 49.6	0.0
JRY	**Ryogami san**	**0.84**	**163**	P	Pg	06 00 40.2	-0.1
JRY				S	Sg	06 00 51.6	+0.5

WEL 11 06:10:15.7±0.1,43˚.55S×172˚.39E,h5km,ML3.7/16,3C-3D, Error ellipse: s-maj=0.9km s-min=0.7km az=90.0,South Island

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
CRLZ	**Canterbury Las**	**0.17**	**97**	PG	Pg	06 10 18.9	-0.1
CRLZ				SG	Sg	06 10 21.6	+0.3
CRLZ				AML	AML	06 10 22.5	
MQZ	**McQueen's Vall**	**0.25**	**129**	PG	Pg	06 10 20.3	-0.2
MQZ				SG	Sg	06 10 24.2	+0.5
MQZ				AML	AML	06 10 24.6	
OXZ	**Oxford**	**0.34**	**312**	⇓PG	Pg	06 10 22.1	-0.1
LTZ	**Lake Taylor**	**0.78**	**354**	⇓P*	Pg	06 10 30.9	+0.4
LTZ				AML	AML	06 10 42.1	
LTZ				AML	AML	06 10 43.0	
RPZ	**Rata Peaks**	**0.98**	**260**	⇑P*	Pg	06 10 34.1	-0.4
RPZ				AML	AML	06 10 49.1	
RPZ				AML	AML	06 10 52.9	
INZ	**Inchbonnie**	**1.08**	**320**	⇓P*	Pg	06 10 36.2	-0.1
INZ				S*	Sb	06 10 50.9	-0.2
WVZ	**Waitaha Valley**	**1.30**	**291**	P*	Pn	06 10 38.7	-1.7
WVZ				AML	AML	06 11 01.3	
WVZ				AML	AML	06 11 03.4	
KHZ	**Kahutara**	**1.42**	**37**	PN	Pn	06 10 40.0	-2.0
LBZ	**Lake Benmore**	**1.79**	**242**	⇑PN	Pn	06 10 45.5	-1.8
LBZ				AML	AML	06 11 19.6	
LBZ				AML	AML	06 11 21.3	
THZ	**Tophouse**	**1.83**	**12**	PN	Pn	06 10 46.0	-1.8
THZ				AML	AML	06 11 19.9	
THZ				AML	AML	06 11 23.7	
DSZ	**Denniston Nort**	**1.86**	**346**	PN	Pn	06 10 46.6	-1.6
DSZ				AML	AML	06 11 18.1	
DSZ				AML	AML	06 11 18.3	
FOZ	**Fox Glacier**	**1.87**	**270**	PN	Pn	06 10 47.8	-0.4
FOZ				AML	AML	06 11 19.7	
FOZ				AML	AML	06 11 21.5	
ODZ	**Otahua Downs**	**1.95**	**219**	PN	Pn	06 10 47.0	-2.3
ODZ				AML	AML	06 11 19.4	
ODZ				AML	AML	06 11 24.8	
BSWZ	**Blackbirch Sta**	**2.14**	**31**	PN	Pn	06 10 50.7	-1.3
JCZ	**Jackson Bay**	**2.66**	**257**	PN	Pn	06 10 57.5	-1.7
JCZ				AML	AML	06 11 47.2	
JCZ				AML	AML	06 11 48.1	
QRZ	**Quartz Range**	**2.73**	**2**	PN	Pn	06 10 59.8	-0.3
QRZ				AML	AML	06 11 47.4	
QRZ				AML	AML	06 11 47.7	
WKZ	**Wanaka**	**2.74**	**241**	PN	Pn	06 10 58.1	-2.2
WKZ				AML	AML	06 11 49.0	
WKZ				AML	AML	06 11 50.8	
EAZ	**Earnscleugh**	**2.77**	**232**	⇑PN	Pn	06 10 58.5	-2.2
EAZ				AML	AML	06 11 49.0	
EAZ				AML	AML	06 11 50.1	
TUZ	**Tuapeka**	**3.10**	**218**	PN	Pn	06 11 02.9	-2.3
TUZ				AML	AML	06 11 60.0	
TUZ				AML	AML	06 12 05.0	
CAW	**Cannon Point**	**3.15**	**40**	PN	Pn	06 11 03.5	-2.4
MLZ	**Mavora Lakes**	**3.55**	**238**	*e*PN	Pn	06 11 09.0	-2.5
MRZ	**Mangatainoka R**	**3.74**	**40**	PN	Pn	06 11 11.9	-2.1
SYZ	**Scrubby Hill**	**3.77**	**217**	*e*PN	Pn	06 11 12.1	-2.2
SYZ				AML	AML	06 12 21.6	

IDC 11 06:32:46.6±2.5,54˚.15N×86˚.37E,h0km,mb1 2.9/2, mb1mx2.8/35,mbtmp2.9/2,ML2.0/2,Error ellipse: s-maj=19.1km s-min=12.5km az=62.0,Southwestern Siberia

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
I46RU	**ZALESOVO INFRA**	**0.94**	**258**	*i*		06 40 03.9	
	baz=77,slow=316,SNR=9.8						
ZALV	**Zalesovo Beam**	**0.94**	**258**	Pg	Pg	06 33 03.0	-1.6
	0.9nm,0.3s,baz=77,slow=16,SNR=13						
ZALV				Lg	Lg	06 33 17.6	
	1.3nm,0.3s,baz=78,slow=29,SNR=26						
KURBB	**Kurchatov Arra**	**5.96**	**237**	Pn	Pn	06 34 17.1	+1.0
	0.0nm,0.3s,baz=54,slow=14,SNR=16						
KURBB				Sn	Sn	06 35 25.4	+0.5
	0.0nm,0.3s,baz=93,slow=14,SNR=2.7						
KURBB				Lg	Lg	06 35 56.1	
	0.0nm,0.3s,baz=60,slow=33,SNR=6.4						
MKAR	**Makanchi Array**	**7.81**	**201**	Pn	Pn	06 34 42.4	+0.9
	0.0nm,0.3s,baz=27,slow=8.2,SNR=4.2						
MKAR				Lg	Lg	06 36 53.0	
	0.0nm,0.3s,baz=24,slow=25,SNR=8.8						

NIED **11** *06:52:00,39˚.10N×142˚.40E,h53km,Mw3.9 Best double couple: M₀7.63000×10¹⁴ NP1:φs78.00000°,δ42.00000°, λ22.00000°. NP2:φs331.00000°,δ75.00000°,λ130.00000°.*

JMA 11 06:52:41.2±0.1,39˚.12N×142˚.38E,h30km±2km,M3.5, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
OFUJ	**Ofunato**	**0.56**	**266**	P	Pb	06 52 52.3	-0.2
OFUJ				S	Sb	06 52 59.9	-0.3
MIYJ	**Miyakonagasawa**	**0.63**	**317**	P	Pb	06 52 53.1	-0.7
MIYJ				S	Sb	06 53 01.5	-0.8
JOM	**Ohasama**	**0.92**	**293**	P	Pn	06 52 58.1	+0.1
JOM				S	Sn	06 53 10.2	0.0
JMK	**Ichinoseki**	**0.92**	**260**	P	Pn	06 52 57.9	-0.1
JMK				S	Sn	06 53 09.8	-0.4
JIO	**Ouri**	**1.04**	**231**	P	Pn	06 52 59.0	-0.8
JKZ	**Kuzumaki**	**1.19**	**317**	P	Pb	06 53 02.5	-0.6
JKZ				S	Sn	06 53 17.3	+0.4
JRG	**Rokugo**	**1.38**	**282**	P	Pb	06 53 06.1	-0.3
JRG				S	Sb	06 53 24.3	+0.6
JOU	**Okura**	**1.54**	**241**	P	Pn	06 53 07.4	+0.8
JOU				S	Sb	06 53 27.1	-1.1
JYK	**Kaneyama**	**1.59**	**263**	P	Pb	06 53 08.6	-1.3
JYK				S	Sb	06 53 29.6	+0.1
JMM	**Marumori**	**1.77**	**225**	P	Pn	06 53 10.0	+0.3

IDC 11 06:55:39.2±1.1,12˚.50N×144˚.23E,h0km,mb3.6/7, mb1 3.9/7,mb1mx3.7/30,mbtmp3.6/7,Error ellipse: s-maj=37.5km s-min=29.6km az=102.0,South of Mariana Islands

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
H11S3	**WAKE ISLAND Hy**	**22.44**	**72**	T	T	07 24 17.0	
	baz=254,slow=74,SNR=7.6						
H11S1	**WAKE ISLAND Hy**	**22.45**	**72**	T	T	07 24 09.7	
	baz=254,slow=74,SNR=5.9						
H11S2	**WAKE ISLAND Hy**	**22.45**	**72**	T	T	07 24 11.0	
	baz=254,slow=74,SNR=8.1						
H11N1	**WAKE ISLAND Hy**	**22.91**	**69**	T	T	07 24 41.8	
	baz=255,slow=75,SNR=16						
H11N2	**WAKE ISLAND Hy**	**22.92**	**69**	T	T	07 24 42.3	
	baz=255,slow=75,SNR=14						
H11N3	**WAKE ISLAND Hy**	**22.93**	**69**	T	T	07 24 42.9	
	baz=255,slow=75,SNR=12						
WRA	**Warramunga Arr**	**33.67**	**197**	P	P	07 02 22.1	0.0
	0.4nm,0.7s,baz=20,slow=9.4,SNR=4.6						
SONM	**Songino Array**	**47.27**	**326**	P	P	07 04 15.1	+0.6
	0.2nm,0.3s,baz=139,slow=7.8,SNR=2.5						
MKAR	**Makanchi Array**	**61.85**	**317**	P	P	07 05 59.7	-0.6
	0.2nm,0.6s,baz=94,slow=6.0,SNR=2.8						
ILAR	**Eielson Array**	**69.82**	**25**	P	P	07 06 51.5	+0.1
	0.2nm,0.5s,baz=245,slow=6.1,SNR=3.7						
YKA	**Yellowknife Ar**	**84.11**	**27**	P	P	07 08 12.7	+0.9
	0.2nm,0.3s,baz=285,slow=5.1,SNR=10.0						
NVAR	**Mina Array Bea**	**88.09**	**51**	P	P	07 08 31.3	-1.0
	0.3nm,0.6s,baz=258,slow=4.5,SNR=2.8						
FINES	**FINESS Array B**	**91.88**	**335**	P	P	07 08 47.7	-1.5
	0.4nm,0.5s,baz=36,slow=5.2,SNR=3.5						
TORD	**Torodi Ar. Bea**	**134.95**	**303**	PKP	PKPdf	07 15 02.6	+1.2
	0.2nm,0.6s,baz=58,slow=2.8,SNR=2.3						

NIED **11** *07:06:00,37˚.40N×141˚.60E,h41km,Mw3.8 Best double couple: M₀5.46000×10¹⁴ NP1:φs117.00000°,δ80.00000°, λ179.00000°. NP2:φs207.00000°,δ89.00000°,λ10.00000°.*
IDC **11** *07:06:39.9±1.1,38˚.11N×141˚.21E,h0km,mb3.5/8, mb1 3.7/9,mb1mx3.5/57,mbtmp3.5/9,ML3.6/1,MS2.5/1, Ms1 2.5/1,ms1mx2.0/42,Error ellipse: s-maj=27.0km s-min=22.7km az=136.0*
ISCJB **11** *07:06:41.0±1.2,37˚.52N±0˚.06×141˚.5E±0˚.1,h49km±8km, mb3.5/8,Error ellipse: s-maj=18.2km s-min=8.5km az=24.1*
JMA **11** *07:06:41.4±0.1,37˚.49N×141˚.49E,h40km±2km,M4.0*
JMA Felt II J1.

ISC 11 07:06:41.1±1.9,37˚.51N±0˚.06×141˚.5E±0˚.1,h33km±8km, n21,σ0s75/19,mb3.5/8,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JFK	**Kawauchi**	**0.52**	**254**	P	**Pn**	**07 06 52.3**	**+0.1**
JFK				S	**Sb**	**07 06 59.8**	**+0.3**
JMM	**Marumori**	**0.66**	**302**	P	**Pb**	**07 06 54.5**	**+0.2**
JMM				S	**Sb**	**07 07 03.7**	**+0.4**
ONAJ	**Iwakimizuishiy**	**0.69**	**234**	P	**Pb**	**07 06 54.5**	**-0.4**
ONAJ				S	**Sb**	**07 07 03.5**	**-0.8**
JFT	**Otama**	**0.93**	**271**	P	**Pb**	**07 06 58.6**	**-0.1**
JFT				S	**Sb**	**07 07 10.9**	**+0.2**
JIO	**Ouri**	**0.95**	**353**	P	**Pn**	**07 06 58.1**	**0.0**
JIO				S	**Sn**	**07 07 09.8**	**-0.7**
JOU	**Okura**	**1.08**	**322**	P	**Pn**	**07 07 00.4**	**+0.5**
MJAR	**Matsushiro Arr**	**2.81**	**251**	Pn	**Pn**	**07 07 25.2**	**+1.5**
	9.6nm,0.3s,baz=83,slow=16,SNR=16						
MJAR				LR	LR	07 08 42.7	
	comp=Z,82nm,19.1s,baz=110,slow=43						
SONM	**Songino Array**	**27.58**	**303**	P	**P**	**07 12 24.5**	**-0.7**
	0.3nm,0.4s,baz=106,slow=11,SNR=2.2						
H11N2	**WAKE ISLAND Hy**	**28.34**	**122**	T	T	07 42 37.0	
	baz=316,slow=76,SNR=112						
H11N1	**WAKE ISLAND Hy**	**28.34**	**122**	T	T	07 43 03.6	
	baz=316,slow=76,SNR=153						
H11N3	**WAKE ISLAND Hy**	**28.35**	**122**	T	T	07 42 58.5	
	baz=316,slow=76,SNR=104						
H11S1	**WAKE ISLAND Hy**	**29.06**	**124**	T	T	07 43 39.6	
	baz=317,slow=76,SNR=108						
H11S3	**WAKE ISLAND Hy**	**29.07**	**124**	T	T	07 43 48.0	
	baz=317,slow=76,SNR=89						
H11S2	**WAKE ISLAND Hy**	**29.08**	**124**	T	T	07 43 58.5	
	baz=317,slow=76,SNR=79						
ZALV	**Zalesovo Beam**	**41.65**	**312**	P	**P**	**07 14 26.0**	**-0.1**
	0.5nm,0.3s,baz=118,slow=8.3,SNR=2.6						
MKAR	**Makanchi Array**	**43.92**	**302**	P	**P**	**07 14 44.2**	**-0.4**
	0.5nm,0.7s,baz=84,slow=11,SNR=5.7						
KURBB	**Kurchatov Arra**	**45.76**	**308**	P	**P**	**07 14 58.4**	**-0.8**
	0.9nm,0.5s,baz=82,slow=7.9,SNR=16						
ILAR	**Eielson Array**	**49.05**	**33**	P	**P**	**07 15 25.1**	**+0.5**
	0.2nm,0.6s,baz=264,slow=8.0,SNR=2.8						
WRA	**Warramunga Arr**	**57.55**	**188**	P	P	07 16 35.5	+8.1
	0.6nm,0.6s,baz=0.2,slow=7.3,SNR=6.0						
YKA	**Yellowknife Ar**	**63.36**	**30**	P	**P**	**07 17 08.0**	**+1.3**
	0.2nm,0.9s,baz=304,slow=6.7,SNR=3.0						
FINES	**FINESS Array B**	**68.42**	**332**	P	**P**	**07 17 38.2**	**-1.0**
	0.7nm,0.6s,baz=39,slow=9.0,SNR=2.7						

ISK **11** *07:13:09.7,37˚.13N×28˚.75E,h5km,MD2.7*
CSEM **11** *07:13:11.3±0.2,37˚.14N×28˚.73E,h8km,MD2.5,Error ellipse: s-maj=3.8km s-min=3.4km az=33.0*
DDA **11** *07:13:11.6,37˚.16N×28˚.68E,h7km,Md2.5*

ISC 11 07:13:11.3±1.2,37˚.16N±0˚.03×28˚.71E±0˚.03,h4km±10km, n29,σ0s70/40,Turkey

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
TURN	**Turunc**	**0.30**	**197**	*i* P	**Pb**	**07 13 20.2**	**+1.1**
TURN				*i* S	Sb	07 13 30.4	+6.1
DALY	**Dalyan (Mu˘la**	**0.34**	**188**	*e*PG	**Pg**	**07 13 17.0**	**-0.9**
DALY				*e*SG	**Sg**	**07 13 22.9**	**+0.6**
DALY	**Dalyan (Mu˘la**	**0.34**	**188**	*e*Pg	**Pg**	**07 13 17.0**	**-0.9**
DALY				*e*Sg	**Sg**	**07 13 22.9**	**+0.6**

YER	**Yerkesik**	**0.34**	**267**	*e*PG	**Pg**	**07 13 18.3**	**+0.3**
YER				*e*SG	**Sb**	**07 13 24.5**	**-1.3**
YER	**Yerkesik**	**0.34**	**267**	*e*Pg	**Pg**	**07 13 18.3**	**+0.3**
YER				*e*Sg	**Sb**	**07 13 24.5**	**-1.3**
FETY	**Fethiye**	**0.60**	**150**	*e*PG	**Pg**	**07 13 21.8**	**-1.0**
FETY	**Fethiye**	**0.60**	**150**	*e*Pg	**Pg**	**07 13 21.8**	**-1.0**
DENT	**Denizli**	**0.65**	**23**	*e*PG	**Pg**	**07 13 23.8**	**0.0**
DENT	**Denizli**	**0.65**	**23**	*e*Pg	**Pg**	**07 13 23.8**	**0.0**
AYDN	**Tasoluk**	**0.83**	**307**	*i* P	**Pb**	**07 13 28.3**	**0.0**
AYDN				*i* S	**Sn**	**07 13 41.9**	**-0.7**
AYDN	**Tasoluk**	**0.83**	**307**	P	**Pb**	**07 13 28.3**	**0.0**
BDRM	**Kayabasi**	**1.02**	**265**	*i* P	**Pb**	**07 13 30.6**	**-0.2**
BDRM				*i* S	**Sb**	**07 13 45.2**	**0.0**
BDRM	**Kayabasi**	**1.02**	**265**	P	**Pb**	**07 13 30.6**	**-0.2**
BDRM				S	**Sb**	**07 13 45.2**	**0.0**
AYDB	**Zeytinkoy-Aydi**	**1.02**	**321**	*e*PG	**Pg**	**07 13 31.2**	**+0.3**
AYDB	**Zeytinkoy-Aydi**	**1.02**	**321**	*e*Pg	**Pg**	**07 13 31.2**	**+0.3**
ELL	**Elmali**	**1.04**	**113**	*e*PG	**Pg**	**07 13 30.7**	**-0.6**
ELL	**Elmali**	**1.04**	**113**	*e*Pg	**Pg**	**07 13 30.7**	**-0.6**
BODT	**Bodrum**	**1.12**	**266**	*e*PN	**Pg**	**07 13 32.8**	**0.0**
BODT	**Bodrum**	**1.12**	**266**	*e*Pn	**Pg**	**07 13 32.8**	**0.0**
AKAS	**Kas**	**1.17**	**142**	*i* P	Pn	**07 13 34.0**	**-0.5**
AKAS				*i* S	**Sn**	**07 13 51.9**	**+0.9**
AKAS	**Kas**	**1.17**	**142**	P	Pn	**07 13 34.0**	**-0.5**
KORT	**Korkueli**	**1.32**	**96**	*i* P	**Pg**	**07 13 37.0**	**+0.4**
KORT				*i* S	**Sn**	**07 13 56.8**	**+2.2**
KORT	**Korkueli**	**1.32**	**96**	P	**Pg**	**07 13 37.0**	**+0.4**
KULA	**Kula-Manisa**	**1.36**	**358**	*e*PN	**Pb**	**07 13 37.3**	**0.0**
KULA	**Kula-Manisa**	**1.36**	**358**	*e*Pn	**Pb**	**07 13 37.3**	**0.0**
KHAL	**Karahalli**	**1.36**	**27**	*i* P	Pn	**07 13 36.4**	**-0.7**
KHAL				*i* S	**Sn**	**07 13 55.8**	**+0.1**
KHAL	**Karahalli**	**1.36**	**27**	P	Pn	**07 13 36.4**	**-0.7**
KHAL				S	**Sn**	**07 13 55.8**	**+0.1**
KARP	**Karpathos**	**2.04**	**218**	*e*PN	**Pn**	**07 13 46.4**	**+0.1**
KARP	**Karpathos**	**2.04**	**218**	*e*Pn	**Pn**	**07 13 46.4**	**+0.1**

NIED **11** *07:15:00,38˚.60N×144˚.40E,h5km,Mw3.9 Best double couple: M₀7.34000×10¹⁴ NP1:φs351.00000°,δ37.00000°, λ-98.00000°. NP2:φs181.00000°,δ54.00000°, λ-84.00000°.*
IDC **11** *07:15:36.8±0.7,38˚.26N×144˚.55E,h0km,mb3.7/16, mb1 3.9/17,mb1mx3.7/72,mbtmp3.7/17,ML3.5/1,MS2.8/4, Ms1 2.9/4,ms1mx2.5/45,Error ellipse: s-maj=19.6km s-min=17.5km az=138.0*
ISCJB **11** *07:15:40.6±0.5,38˚.58N±0˚.04×144˚.36E±0˚.04,h29km, mb3.7/16,MS2.7/1,Error ellipse: s-maj=5.8km s-min=4.9km az=162.2*
JMA **11** *07:15:41.2±0.2,38˚.56N×144˚.36E,h41km,M4.1*

ISC 11 07:15:41.7±0.7,38˚.48N±0˚.05×144˚.43E±0˚.07,h29km,n38, σ1s86/49,mb3.8/16,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
OFUJ	**Ofunato**	**2.24**	**286**	P	**Pn**	**07 16 15.9**	**-0.9**
OFUJ				S	**Sn**	**07 16 41.9**	**-1.5**
MIYJ	**Miyakonagasawa**	**2.31**	**299**	P	**Pn**	**07 16 16.7**	**-1.1**
MIYJ				S	**Sn**	**07 16 43.4**	**-1.8**
JMK	**Ichinoseki**	**2.55**	**282**	P	**Pn**	**07 16 20.6**	**-0.5**
JMK				*e*S	**Sn**	**07 16 48.7**	**-2.5**
JOM	**Ohasama**	**2.64**	**293**	P	Pn	**07 16 21.9**	**-0.4**
JOM				*e*S	**Sn**	**07 16 52.2**	**-1.1**
JANG	**Nango**	**2.94**	**311**	P	Pn	**07 16 25.4**	**-1.1**
JANG				*e*S	**Sn**	**07 16 58.6**	**-2.3**
JYK	**Kaneyama**	**3.21**	**279**	P	Pn	**07 16 30.2**	**0.0**
JYK				*e*S	**Sn**	**07 17 07.7**	**+0.2**
JFT	**Otama**	**3.37**	**255**	P	Pn	**07 16 32.6**	**+0.2**
JFT				S	**Sn**	**07 17 09.7**	**-1.7**
JOT	**Ohata**	**3.89**	**319**	*e*S	**Sn**	**07 17 21.4**	**-2.9**
JCH	**Churui**	**4.21**	**349**	P	Pn	**07 16 42.4**	**-1.5**
JCH				*e*S	**Sn**	**07 17 28.3**	**-3.8**
JKB	**Kayabe**	**4.28**	**324**	P	Pn	**07 16 45.5**	**+0.6**
JKB				S	**Sn**	**07 17 30.6**	**-3.3**
BSO1	**Boso 1**	**4.72**	**217**	P	Pn	**07 16 47.7**	**-2.7**
BSO1				*e*S	**Sn**	**07 17 39.9**	**-4.0**
NEM2	**Nemuro 2**	**4.98**	**11**	P	Pn	07 16 51.2	-3.3
NEM2				S	Sn	07 17 44.2	-6.9
JRY	**Ryogami san**	**5.04**	**243**	P	Pn	**07 16 55.7**	**+0.3**
JRY				*e*S	**Sn**	**07 17 48.0**	**-4.8**
JOSM	**Okushiri--Mats**	**5.22**	**315**	P	Pn	**07 16 58.8**	**+1.0**
MJAR	**Matsushiro Arr**	**5.31**	**251**	Pn	**Pn**	**07 16 59.3**	**+0.2**
	1.5nm,0.3s,baz=65,slow=9.9,SNR=18						
MJAR				LR	LR	07 19 08.3	
	comp=Z,127nm,20.7s,baz=75,slow=40						
MAT	**Matsushiro**	**5.31**	**251**	P	**Pn**	**07 16 59.4**	**+0.4**
JOD2	**Odawara 2**	**5.35**	**235**	P	**Pn**	**07 16 59.0**	**-0.6**
JOD2				*e*S	Sn	07 17

	21nm,0.3s							
KURBB				⇑S		**Sb**	07 29 42.5	-1.2
	86nm,0.5s							
KUR16	**Kurchatov Arra**	**0.62**	**356**	P		**Pg**	07 29 32.7	0.0
KUR16				S		**Sb**	07 29 42.2	-1.6
KUR17	**Kurchatov Arra**	**0.62**	**355**	P		**Pg**	07 29 32.9	+0.1
KUR17				S		**Sb**	07 29 42.5	-1.5
KUR05	**Kurchatov Arra**	**0.63**	**359**	P		**Pg**	07 29 32.9	-0.2
KUR05				S		**Sg**	07 29 42.2	+0.9
KUR04	**Kurchatov Arra**	**0.65**	**359**	P		**Pg**	07 29 33.0	-0.4
KUR04				S		**Sg**	07 29 42.6	+0.7
KURK	**Kurchatov**	**0.71**	**3**	⇑P		**Pg**	07 29 34.1	-0.3
	25nm,0.5s							
KURK				⇓S		**Sb**	07 29 44.7	-1.7
	46nm,0.7s							
MAKZ	**Makanchi**	**3.93**	**143**	⇓Pn		**Pn**	07 30 22.5	-0.1
	0.3nm,0.3s							
MAKZ				⇓Pg		**Pb**	07 30 30.7	-0.4
	0.1nm,0.2s							
MAKZ				⇓Lg		Lg	07 31 21.3	
	6.5nm,0.5s							
MK31	**Makanchi Array**	**4.07**	**141**	⇑Pn		**Pn**	07 30 25.0	+0.7
	0.1nm,0.3s,baz=323,slow=9.9,SNR=9.8							
MK31				⇓Pg		**Pb**	07 30 33.2	-0.2
	0.7nm,0.4s,baz=237,slow=8.9,SNR=17							
MK31				⇑Sn		**Sn**	07 31 12.6	0.0
	1.5nm,0.4s,baz=353,slow=25,SNR=2.7							
MK31				⇓Lg		Lg	07 31 27.5	
	0.1nm,0.3s,baz=305,slow=26,SNR=7.1							
MKAR	**Makanchi Array**	**4.07**	**141**	Pn		**Pn**	07 30 25.1	+0.7
	0.3nm,0.3s,baz=332,slow=12,SNR=16							
MKAR				Lg		Lg	07 31 26.7	
	5.0nm,0.3s,baz=336,slow=29,SNR=21							
I46RU	**ZALESOVO INFRA**	**5.52**	**42**	*i*			08 03 50.0	
	baz=224,slow=319,SNR=0.8							
ZALV	**Zalesovo Beam**	**5.52**	**42**	Pn		**Pn**	07 30 45.5	+1.2
	0.7nm,0.3s,baz=240,slow=13,SNR=6.1							
ZALV				Sn		**Sn**	07 31 48.9	+0.4
	0.3nm,0.3s,baz=223,slow=23,SNR=2.9							
ZALV				Lg		Lg	07 32 15.0	
	0.8nm,0.3s,baz=214,slow=28,SNR=5.5							
BVAR	**Borovoye Array**	**5.93**	**304**	Pn		**Pn**	07 30 50.5	+0.6
	0.3nm,0.3s,baz=136,slow=15,SNR=3.4							
BVAR				Sn		**Sn**	07 31 59.0	+0.6
	0.7nm,0.3s,baz=119,slow=23,SNR=7.5							
BVAR				Lg		Lg	07 32 32.7	
	0.3nm,0.3s,baz=112,slow=25,SNR=3.9							

NIED **11** *07:29:00,38.˚80N×142.˚10E,h47km,Mw3.8 Best double couple: M₀6.57000×10¹⁴ NP1:φ₈219.00000°,δ56.00000°, λ-140.00000°. NP2:φ₈104.00000°,δ58.00000°, λ-42.00000°.*

IDC **11** *07:29:33.2±1.1,39.˚17N×142.˚05E,h0km,mb3.5/5, mb1 3.7/6,mb1mx3.4/52,mbtmp3.5/6,ML3.2/1,MS2.8/4, Ms1 2.8/4,ms1mx2.5/41,Error ellipse: s-maj=32.8km s-min=23.3km az=124.0*

JMA **11** *07:29:36.1±0.1,38.˚78N×142.˚06E,h41km±1km,M3.7*

JMA Felt II J1.

ISC 11 07:29:30.6±2.2,38.˚74N±0.˚06×142.˚14E±0.˚08,h0km±13km, n17,σ1ᵍ85/21,mb3.5/5,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time		Res
				Op	ISC	h	m s	ISC
OFUJ	**Ofunato**	**0.50**	**313**	P	**Pn**	**07**	**29 46.0**	**+1.0**
OFUJ				S	**Sn**	**07**	**29 52.7**	**-1.7**
JIO	**Ouri**	**0.68**	**246**	P	**Pn**	**07**	**29 48.7**	**+1.2**
JIO				S	**Sn**	**07**	**29 57.2**	**-1.6**
JMK	**Ichinoseki**	**0.75**	**287**	P	**Pn**	**07**	**29 49.4**	**+1.0**
JMK				*e*S	**Sb**	**07**	**29 58.6**	**+1.3**
JOM	**Ohasama**	**0.99**	**318**	P	**Pn**	**07**	**29 52.7**	**+1.0**
JOM				S	**Sb**	**07**	**30 04.5**	**+0.3**
JOU	**Okura**	**1.22**	**253**	P	**Pn**	**07**	**29 56.3**	**+1.4**
JOU				S	**Sb**	**07**	**30 11.1**	**+0.3**
JMM	**Marumori**	**1.37**	**231**	P	**Pg**	**07**	**29 58.5**	**+1.6**
JMM				S	**Sg**	**07**	**30 14.8**	**+0.1**
MJAR	**Matsushiro Arr**	**3.81**	**236**	Pn	**Pb**	**07**	**30 35.0**	**-3.8**
	1.5nm,0.3s,baz=45,slow=11,SNR=9.6							
MJAR				LR	LR	07	32 15.0	
	comp=Z,112nm,18.0s,baz=35,slow=40							
MAT	**Matsushiro**	**3.82**	**236**	P	**Pb**	**07**	**30 36.2**	**-2.6**
MAT				S	**Sn**	**07**	**31 19.2**	**+3.0**
MAT	**Matsushiro**	**3.82**	**236**	P	**Sn**	**07**	**31 18.0**	**+1.8**
MAT				S	**Sb**	**07**	**31 23.2**	**-2.4**
JNU	**Nakatsue**	**10.71**	**242**	LR	LR	07	36 54.3	
	comp=Z,34nm,18.0s,baz=299,slow=41							
KLR	**Kulʹdur**	**12.87**	**328**	LR	LR	07	37 25.2	
	comp=Z,56nm,19.0s,baz=307,slow=38							
MA2	**Magadan**	**21.57**	**12**	LR	LR	07	42 56.1	
	comp=Z,28nm,18.4s,baz=303,slow=38							
MKAR	**Makanchi Array**	**43.72**	**301**	P	**P**	**07**	**37 38.6**	**+1.2**
	0.2nm,0.4s,baz=86,slow=8.5,SNR=3.6							
KURBB	**Kurchatov Arra**	**45.43**	**307**	P	**P**	**07**	**37 49.9**	**-1.0**
	0.6nm,0.3s,baz=81,slow=7.9,SNR=4.7							
ILAR	**Eielson Array**	**47.75**	**33**	P	**P**	**07**	**38 09.3**	**+0.4**
	0.6nm,0.6s,baz=264,slow=6.4,SNR=10							
WRA	**Warramunga Arr**	**58.83**	**189**	P	P	07	39 36.5	+5.7
	0.3nm,0.8s,baz=6.9,slow=7.1,SNR=3.5							
YKA	**Yellowknife Ar**	**62.05**	**31**	P	**P**	**07**	**39 52.2**	**-0.2**
	0.2nm,0.8s,baz=303,slow=6.6,SNR=5.5							

IDC **11** *07:49:00.2±1.0,24.˚13N×122.˚38E,h0km,mb3.6/6, mb1 3.8/7,mb1mx3.5/44,mbtmp3.7/7,ML3.5/1,MS2.9/7, Ms1 2.9/7,ms1mx2.7/67,Error ellipse: s-maj=31.7km s-min=19.6km az=74.0*

NIED **11** *07:49:00,24.˚00N×122.˚30E,h14km,Mw3.9 Best double couple: M₀9.20000×10¹⁴ NP1:φ₈55.00000°,δ20.00000°, λ-90.00000°. NP2:φ₈235.00000°,δ70.00000°, λ-90.00000°.*

JMA **11** *07:49:03.4±0.2,24.˚02N×122.˚30E,h18km±4km,M3.8*

ISCJB **11** *07:49:04.6±0.4,24.˚10N±0.˚02×122.˚31E±0.˚02,h21km±4km, mb3.5/6,MS3.0/3,Error ellipse: s-maj=4.3km s-min=2.1km az=157.7*

TAP **11** *07:49:04.1,24.˚12N×122.˚25E,h10km±1km,ML3.7,D*

ISC 11 07:49:03.5±1.0,24.˚10N±0.˚02×122.˚27E±0.˚02,h19km±3km, n67,σ0ᵍ79/98,mb3.5/6,MS3.0/3,Taiwan region

Code	Station Name	Δ°	AZ°	Phase ID		Time		Res
				Op	ISC	h	m s	ISC
ENA	**Nanau**	**0.59**	**304**	*i* P	**Pg**	**07**	**49 15.7**	**+0.5**
	baz=303							
ENA				S	**Sg**	**07**	**49 24.1**	**+1.0**
	baz=303							
TWD	**Chiawan**	**0.62**	**269**	P	**Pg**	**07**	**49 16.3**	**+0.5**
	baz=266							
TWD				*e*S	**Sn**	**07**	**49 26.6**	**-0.1**
	baz=266							
TWC	**Suao**	**0.64**	**323**	P	**Pb**	**07**	**49 16.0**	**-0.1**
	baz=324							
TWC				*e*S	**Sb**	**07**	**49 24.5**	**-0.1**
	baz=324							
JYNG	**Yonagunijimaku**	**0.71**	**60**	P	**Pb**	**07**	**49 16.9**	**-0.3**
JYNG				*e*S	**Sg**	**07**	**49 27.5**	**+0.6**
YOJ	**Yonaguni jima**	**0.77**	**61**	P	**Pg**	**07**	**49 18.6**	**+0.1**
YOJ				S	**Sg**	**07**	**49 29.0**	**+0.3**
EGS		**0.81**	**337**	P	**Pg**	**07**	**49 19.6**	**+0.2**
	baz=339							
EGS				S	**Sn**	**07**	**49 31.1**	**-0.3**
	baz=339							
ILA	**Ilan**	**0.82**	**324**	*e*P	**Pg**	**07**	**49 19.9**	**+0.3**
	baz=325							
ILA				*e*S	**Sn**	**07**	**49 31.2**	**-0.5**
	baz=325							
TWE	**Neicheng**	**0.83**	**319**	P	**Pn**	**07**	**49 20.2**	**0.0**
	baz=319							
TWE				*e*S	**Sn**	**07**	**49 31.6**	**-0.4**
	baz=319							
ENTT	**Nioudou**	**0.84**	**310**	P	**Pg**	**07**	**49 20.2**	**+0.2**
	baz=310							
ENTT				*e*S	**Sg**	**07**	**49 31.4**	**+0.3**
	baz=310							
NNS	**Nan Shan**	**0.89**	**293**	P	**Pg**	**07**	**49 21.1**	**+0.1**
	baz=291							
WHF	**Hehuan Shan**	**0.92**	**273**	*e*P	**Pb**	**07**	**49 21.3**	**+0.2**
	baz=271							
TWB1	**Santiao Chiao**	**0.94**	**344**	P	**Pg**	**07**	**49 22.2**	**+0.3**
	baz=345							
TWB1				S	**Sn**	**07**	**49 35.0**	**+0.2**
	baz=345							
NSK	**Sanguang**	**1.01**	**305**	P	**Pg**	**07**	**49 23.1**	**-0.1**
	baz=304							
NSK				*e*S	**Sg**	**07**	**49 36.6**	**0.0**
	baz=304							
TWT	**Tachien**	**1.01**	**279**	*e*P	**Pg**	**07**	**49 24.0**	**+0.7**
	baz=277							
EHY	**Hungye**	**1.05**	**236**	*e*P	**Pg**	**07**	**49 24.3**	**+0.4**
	baz=233							
NWF	**Wu-fen Shan**	**1.07**	**335**	P	**Pn**	**07**	**49 23.9**	**+0.3**
	baz=335							
NWF				*e*S	**Sn**	**07**	**49 37.7**	**-0.3**
	baz=335							
TWA	**Mucha**	**1.08**	**325**	P	**Pg**	**07**	**49 24.8**	**+0.3**
	baz=325							
TWA				*e*S	**Sg**	**07**	**49 39.4**	**+0.7**
	baz=325							
WDT	**Danda**	**1.10**	**252**	*e*P	**Pb**	**07**	**49 23.8**	**-0.3**
	baz=250							
TAP1	**Taipei**	**1.16**	**324**	P	**Pg**	**07**	**49 26.6**	**+0.6**
	baz=323							
TAP1				*e*S	**Sg**	**07**	**49 42.0**	**+0.7**
	baz=323							
TWF1	**Yuli**	**1.16**	**231**	*e*P	**Pn**	**07**	**49 24.7**	**-0.1**
	baz=228							
TWF1				*e*S	**Sg**	**07**	**49 41.1**	**-0.1**
	baz=228							
TAP	**Taipei**	**1.17**	**324**	*e*P	**Pg**	**07**	**49 26.2**	**+0.1**
	baz=323							
TAP				*e*S	**Sg**	**07**	**49 42.2**	**+0.7**
	baz=323							
TWS1	**Kuangyinshan**	**1.27**	**322**	*e*P	**Pg**	**07**	**49 28.3**	**+0.3**
	baz=322							
TWS1				*e*S	**Sg**	**07**	**49 45.1**	**+0.5**
	baz=322							
SMLT	**Sun Moon Lake**	**1.27**	**261**	*e*P	**Pb**	**07**	**49 27.1**	**+0.1**
	baz=259							
NSTT	**Nanjuang**	**1.28**	**295**	*e*P	**Pg**	**07**	**49 27.6**	**-0.6**
	baz=294							
TYC	**Yuchr**	**1.31**	**262**	P	**Pb**	**07**	**49 27.5**	**0.0**
	baz=260							
TWY	**Chenhua**	**1.32**	**333**	*e*P	**Pg**	**07**	**49 29.0**	**-0.1**
	baz=333							
IRIF	**Iriomote-Funau**	**1.35**	**80**	P	**Pn**	**07**	**49 27.7**	**+0.3**
IRIF				S	**Sg**	**07**	**49 46.5**	**-0.8**
YUS	**Yu-Shan**	**1.35**	**244**	P	**Pb**	**07**	**49 28.3**	**-0.3**
	baz=241							
YUS				*e*S	**Sg**	**07**	**49 46.8**	**-0.7**
	baz=241							
TWQ1	**Liyutan**	**1.39**	**281**	P	**Pb**	**07**	**49 29.6**	**+0.6**
	baz=279							
HATJ	**Hateruma jima**	**1.40**	**91**	P	**Pb**	**07**	**49 29.9**	**+0.8**
HATJ				*e*S	**Sg**	**07**	**49 48.1**	**-0.8**
NSY	**Sanyi**	**1.42**	**283**	*e*P	**Pg**	**07**	**49 30.4**	**-0.5**
	baz=282							
ELDTW	**Lidau**	**1.46**	**232**	*e*P	**Pn**	**07**	**49 29.5**	**+0.5**
	baz=230							
ELDTW				*e*S	**Sb**	**07**	**49 49.3**	**+0.8**
	baz=230							
ALS	**Alishan**	**1.47**	**247**	*e*P	**Pb**	**07**	**49 30.2**	**-0.2**
	baz=245							
PCYT	**Pengchaiyu**	**1.54**	**353**	P	**Pn**	**07**	**49 30.6**	**+0.6**
	baz=354							
CHN5	**Tsauling**	**1.54**	**252**	P	**Pb**	**07**	**49 31.8**	**+0.2**
	baz=250							
JKRS	**Kuro-shima**	**1.59**	**85**	P	**Pn**	**07**	**49 31.5**	**+0.8**
JKRS				*e*S	**Sb**	**07**	**49 53.3**	**+1.2**
STYT	**Tauyuan**	**1.67**	**237**	*e*P	**Pb**	**07**	**49 32.8**	**-0.9**
	baz=234							
STYT				*e*S	**Sb**	**07**	**49 54.3**	**-0.2**
	baz=234							
CHN4	**Tsaushan**	**1.71**	**245**	*e*P	**Pb**	**07**	**49 34.8**	**+0.5**
	baz=243							
CHN4				*e*S	**Sb**	**07**	**49 56.3**	**+0.8**
	baz=243							
JIJ	**Ishigaki jima**	**1.73**	**81**	P	**Pn**	**07**	**49 32.6**	**0.0**
JIJ				*e*S	**Sn**	**07**	**49 54.3**	**+0.1**
WTP	**Ta-pu**	**1.74**	**241**	P	**Pb**	**07**	**49 34.6**	**-0.3**
	baz=239							
WTP				*e*S	**Sg**	**07**	**49 58.3**	**-1.4**
	baz=239							
TWK	**Hsinying**	**1.83**	**244**	*e*P	**Pb**	**07**	**49 36.1**	**-0.4**
	baz=241							
TWK				*e*S	**Sb**	**07**	**49 59.5**	**+0.4**
	baz=241							
CHN1	**Nanshi**	**1.84**	**241**	P	**Pb**	**07**	**49 36.3**	**-0.3**
	baz=239							
CHN1				*e*S	**Sb**	**07**	**49 59.5**	**+0.2**
	baz=239							
SGST	**Jiashian**	**1.85**	**237**	*e*P	**Pb**	**07**	**49 36.6**	**-0.2**
	baz=235							
SGST				*e*S	**Sb**	**07**	**49 59.9**	**+0.3**
	baz=235							
JISG	**Ishigakijimahi**	**1.92**	**75**	P	**Pn**	**07**	**49 35.4**	**+0.2**
JISG				S	**Sn**	**07**	**49 59.2**	**+0.3**
SSD	**Sandimen**	**2.02**	**229**	*e*P	**Pb**	**07**	**49 39.1**	**-0.5**
	baz=227							
SSD				*e*S	**Sb**	**07**	**50 04.8**	**+0.4**
	baz=227							
EAST	**Anshuo**	**2.15**	**218**	*e*P	**Pb**	**07**	**49 40.8**	**-1.1**
	baz=216							
EAST				*e*S	**Sb**	**07**	**50 07.6**	**-0.6**
	baz=216							
JTJ	**Tarama**	**2.28**	**76**	P	**Pn**	**07**	**49 40.8**	**+0.6**
JTJ				S	**Sn**	**07**	**50 08.9**	**+1.1**
SCZT	**Fangliau**	**2.29**	**222**	P	**Pb**	**07**	**49 43.3**	**-1.0**
	baz=220							
HEN	**Hengchun**	**2.52**	**214**	*e*S	**Sb**	**07**	**50 16.4**	**-2.3**
	baz=213							
TSEB	**Hengchuen, Pin**	**2.52**	**210**	*e*S	**Sn**	**07**	**50 16.3**	**+2.5**
	baz=210							
TWK1	**Hengchun**	**2.53**	**213**	*e*P	**Pn**	**07**	**49 45.8**	**+2.2**
	baz=211							
TWK1				*e*S	**Sn**	**07**	**50 16.2**	**+2.1**
	baz=211							
JIRB	**Irabujima**	**2.74**	**74**	P	**Pn**	**07**	**49 47.6**	**+1.1**
JIRB				S	**Sn**	**07**	**50 19.0**	**-0.2**
JIKM	**Ikemajima**	**2.83**	**72**	P	**Pn**	**07**	**49 49.3**	**+1.5**
JIKM				*e*S	**Sn**	**07**	**50 22.4**	**+1.0**
JMJ	**Miyako jima 2**	**2.84**	**75**	*e*S	**Sn**	**07**	**50 23.4**	**+1.7**
JOW	**Kunigami**	**6.07**	**62**	Pn	**Pn**	**07**	**50 30.0**	**-2.3**
	2.9nm,0.3s,baz=120,slow=23,SNR=6.2							
JOW				Sn	**Sn**	**07**	**51 41.0**	**-0.4**
	1.5nm,0.3s,baz=52,slow=17,SNR=1.9							
JNU	**Nakatsue**	**11.74**	**38**	LR	LR	07	56 12.4	
	comp=Z,31nm,18.9s,baz=294,slow=37							
KSRS	**Korea Array**	**14.17**	**19**	LR	LR	07	57 55.3	
	comp=Z,33nm,19.1s,baz=157,slow=38							
DAV	**Davao City (W)**	**17.22**	**169**	LR	LR	07	59 19.1	
	comp=Z,43nm,21.4s,baz=327,slow=36							
MJAR	**Matsushiro Arr**	**18.49**	**44**	LR	LR	08	01 26.6	
	comp=Z,30nm,19.1s,baz=215,slow=40							
KLR	**Kulʹdur**	**26.17**	**14**	LR	LR	08	05 51.7	
	comp=Z,36nm,18.9s,baz=315,slow=39							
SONM	**Songino Array**	**26.84**	**336**	P	**P**	**07**	**54 41.7**	**-1.3**
	1.3nm,0.7s,baz=152,slow=9.0,SNR=9.2							
SONM				LR	LR	08	06 24.9	
	comp=Z,66nm,20.0s,baz=38,slow=39							
TLY	**Talaya**	**31.03**	**337**	LR	LR	08	08 47.4	
	comp=Z,33nm,18.5s,baz=157,slow=38							
MKAR	**Makanchi Array**	**39.09**	**316**	P	**P**	**07**	**56 30.4**	**+0.8**
	0.3nm,0.6s,baz=95,slow=11,SNR=4.4							
WRA	**Warramunga Arr**	**45.32**	**164**	P	**P**	**07**	**57 19.6**	**-1.0**
	0.9nm,0.7s,baz=346,slow=8.8,SNR=7.6							
ASAR	**Alice Springs**	**48.80**	**166**	P	**P**	**07**	**57 47.5**	**-0.2**
	0.2nm,0.5s,baz=351,slow=13,SNR=5.7							
STKA	**Stephens Creek**	**58.65**	**161**	P	**P**	**07**	**58 59.4**	**-0.2**
	2.1nm,0.9s,baz=314,slow=8.2,SNR=3.4							
YKA	**Yellowknife Ar**	**82.66**	**23**	P	**P**	**08**	**01 25.0**	**-0.5**
	0.1nm,0.5s,baz=312,slow=5.5,SNR=2.9							

NIED **11** *07:51:00,36.˚90N×142.˚00E,h32km,Mw3.5 Best double couple: M₀1.91000×10¹⁴ NP1:φ₈281.00000°,δ35.00000°, λ-137.00000°. NP2:φ₈154.00000°,δ67.00000°, λ-63.00000°.*

IDC **11** *07:51:25.2±1.1,36.˚73N×142.˚33E,h0km,mb3.4/4, mb1 3.8/6,mb1mx3.4/44,mbtmp3.6/6,ML3.8/2,Error ellipse: s-maj=34.9km s-min=20.4km az=129.0*

ISCJB **11** *07:51:26.2±0.8,36.˚85N±0.˚06×142.˚09E±0.˚07,h19km, mb3.5/4,Error ellipse: s-maj=9.2km s-min=6.9km az=138.7*

JMA **11** *07:51:29.0±0.3,36.˚91N×141.˚95E,h40km±5km,M3.5*

ISC 11 07:51:27.0±1.3,36.˚92N±0.˚07×141.˚90E±0.˚07,h19km,n17, σ1ᵍ57/14,mb3.5/4,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time		Res
				Op	ISC	h	m s	ISC
JFK	**Kawauchi**	**0.93**	**299**	P	**Pg**	**07**	**51 46.3**	**+1.1**
JFK				*e*S	**Sg**	**07**	**51 58.8**	**+1.2**
JHO	**Hitachi**	**1.11**	**254**	P	**Pg**	**07**	**51 48.8**	**+0.1**
JMM	**Marumori**	**1.29**	**317**	P	**Pg**	**07**	**51 51.5**	**-0.5**
JFT	**Otama**	**1.38**	**296**	P	**Pg**	**07**	**51 53.5**	**-0.3**
JFT				*e*S	**Sg**	**07**	**52 12.0**	**+0.1**
MJAR	**Matsushiro Arr**	**2.99**	**264**	Pn	**Pb**	**07**	**52 17.9**	**-1.8**
	4.5nm,0.3s,baz=84,slow=12,SNR=13							
MJAR				Sn	**Sb**	**07**	**52 59.1**	**+3.3**
	4.2nm,0.3s,baz=72,slow=28,SNR=5.5							
MAT	**Matsushiro**	**2.99**	**264**	P	**Pb**	**07**	**52 18.5**	**-1.2**
MAT				S	**Sb**	**07**	**52 53.2**	**-2.7**
JHJ	**Hachijo jima 2**	**4.17**	**205**	Pn	Pn	07	52 30.9	+1.2
	40nm,0.3s,baz=246,slow=19,SNR=1.8							
JHJ				Sn	**Sn**	**07**	**53 18.8**	**+0.8**
	89nm,0.3s,baz=59,slow=19,SNR=4.0							
H11N2	**WAKE ISLAND Hy**	**27.75**	**121**	T	T	08	26 27.5	
	baz=314,slow=75,SNR=10.0							
H11N1	**WAKE ISLAND Hy**	**27.76**	**121**	T	T	08	26 17.1	
	baz=314,slow=75,SNR=7.6							
H11N3	**WAKE ISLAND Hy**	**27.77**	**121**	T	T	08	26 20.1	
	baz=314,slow=75,SNR=7.1							
H11S1	**WAKE ISLAND Hy**	**28.47**	**123**	T	T	08	27 09.5	
	baz=315,slow=76,SNR=13							
H11S3	**WAKE ISLAND Hy**	**28.47**	**123**	T	T	08	27 08.6	
	baz=315,slow=76,SNR=7.6							
H11S2	**WAKE ISLAND Hy**	**28.49**	**123**	T	T	08	27 10.8	
	baz=315,slow=76,SNR=6.6							
ILAR	**Eielson Array**	**49.38**	**32**	P	**P**	**08**	**00 15.5**	**+0.5**
	0.3nm,0.6s,baz=272,slow=6.2,SNR=5.8							
WRA	**Warramunga Arr**	**57.01**	**188**	P	**P**	**08**	**01 11.1**	**-0.4**
	0.2nm,0.4s,baz=5.3,slow=7.1,SNR=6.4							
ASAR	**Alice Springs**	**60.73**	**188**	P	**P**	**08**	**01 37.7**	**+0.3**
	0.2nm,0.5s,baz=28,slow=8.6,SNR=3.2							
TXAR	**Lajitas Array**	**89.88**	**53**	P	P	08	04 26.1	+1.1
	0.2nm,0.7s,baz=310,slow=3.4,SNR=3.3							

ISCJB **11** *07:55:00.6±0.4,50.˚10N±0.˚03×18.˚41E±0.˚03,h0km,Error ellipse: s-maj=4.4km s-min=2.4km az=17.6*

IPEC **11** *07:55:01.2±0.2,50.˚04N×18.˚53E,h0km±2km,ML2.4/3, Error ellipse: s-maj=2.1km s-min=1.1km az=160.0*

CSEM **11** *07:55:01.8±0.2,50.˚07N×18.˚42E,h2km,ML3.0/7,Error ellipse: s-maj=6.3km s-min=3.3km az=10.0*

PRU **11** *07:55:02.9,50.˚05N×18.˚40E,h0km*

ISC 11 07:55:01.2±0.8,50.˚09N±0.˚03×18.˚46E±0.˚02,h0km,n33, σ0ᵍ85/59,Poland

Code	Station Name	Δ°	AZ°	Phase ID		Time		Res
				Op	ISC	h	m s	ISC
OKC	**Ostrava-Krasne**	**0.32**	**219**	*e*PG	**Pg**	**07**	**55 07.9**	**+0.6**
OKC				*e*SG	**Sg**	**07**	**55 12.0**	**+0.6**
	comp=Z,122nm,0.5s							
OKC	**Ostrava-Krasne**	**0.32**	**219**	Pg	**Pg**	**07**	**55 07.9**	**+0.6**
OKC				Sg	**Sg**	**07**	**55 12.0**	**+0.6**
	122nm,0.5s							
MORC	**Moravsky Berou**	**0.67**	**243**	*e*Pg	**Pg**	**07**	**55 14.4**	**+0.5**
MORC				*e*Sg	**Sg**	**07**	**55 22.7**	**+0.1**
	110nm,0.6s							
OJC	**Ojcow**	**0.87**	**81**	*e*Pg	**Pg**	**07**	**55 17.6**	**-0.3**
OJC				*e*Sg	**Sb**	**07**	**55 30.0**	**-1.4**
OJC	**Ojcow**	**0.87**	**81**	*e*Pg	**Pg**	**07**	**55 17.6**	**-0.3**
OJC				*e*Sg	**Sb**	**07**	**55 30.0**	**-1.4**
KRLC	**Kraliky**	**1.08**	**270**	*e*PG	**Pg**	**07**	**55 21.6**	**-0.2**
KRLC				*e*SG	**Sg**	**07**	**55 35.9**	**+0.1**
KRLC	**Kraliky**	**1.08**	**270**	Pg	**Pg**	**07**	**55 21.6**	**-0.2**
KRLC				Sg	**Sg**	**07**	**55 35.9**	**+0.1**
LANS	**Liptovska Anna**	**1.14**	**145**	*e*Pg	**Pg**	**07**	**55 23.0**	**0.0**
LANS				*e*Sg	**Sb**	**07**	**55 39.2**	**0.0**
LANS	**Liptovska Anna**	**1.14**	**145**	*e*PG	**Pg**	**07**	**55 23.0**	**0.0**
LANS				*e*SG	**Sb**	**07**	**55 39.2**	**0.0**
NIE	**Niedzica**	**1.37**	**119**	*e*Pg	**Pn**	**07**	**55 27.4**	**-0.1**
NIE				*e*Sg	**Sn**	**07**	**55 46.7**	**+0.3**
NIE	**Niedzica**	**1.37**	**119**	*e*Pg	**Pn**	**07**	**55 27.4**	**-0.1**
NIE				*e*Sg	**Sn**	**07**	**55 46.7**	**+0.3**
DPC	**Dobruska-Polom**	**1.40**	**282**	*e*PG	**Pg**	**07**	**55 27.8**	**-0.1**
DPC				*e*SG	**Sn**	**07**	**55 47.1**	**0.0**
	comp=Z,62nm,0.6s							
DPC	**Dobruska-Polom**	**1.40**	**282**	Pg	**Pg**	**07**	**55 27.8**	**-0.1**
DPC				Sg	**Sn**	**07**	**55 47.1**	**0.0**
	62nm,0.6s							
VRAC	**Vranov**	**1.44**	**238**	*e*Pg	**Pn**	**07**	**55 28.0**	**-0.5**
VRAC				*e*Sg	**Sg**	**07**	**55 46.9**	**-0.5**
	40nm,0.4s							
KSP	**Ksiaz**	**1.58**	**300**	*e*Pn	**Pn**	**07**	**55 30.0**	**-0.4**
KSP				*e*Pg	**Pg**	**07**	**55 32.4**	**+1.0**
KSP				*e*Sg	**Sg**	**07**	**55 53.1**	**+1.3**
KSP	**Ksiaz**	**1.58**	**300**	*e*Pn	**Pn**	**07**	**55 30.0**	**-0.4**
VYHS	**Vyhne**	**1.61**	**171**	*e*Pn	**Pn**	**07**	**55 30.7**	**-0.2**
VYHS				*e*Sn	**Sn**	**07**	**55 52.0**	**-0.4**
VYHS	**Vyhne**	**1.61**	**171**	*e*PN	**Pn**	**07**	**55 30.7**	**-0.2**
VYHS				*e*SN	**Sn**	**07**	**55 52.0**	**-0.4**
VYHS			

FSA Cafayete 2.35 160 *i* P Pn 07 55 51.6 -0.9
FSA IAML 07 55 53.3
comp=Z,406nm,0.7s
FSA *i* S Sn 07 56 24.8 -0.7
PB06 IPOC Station P 2.76 295 ⇑ *i* P Pn 07 55 58.1 +0.9
PB06 *i* S Sn 07 56 33.2 -0.5
PB06 IAML 07 56 34.7
comp=N,13µm,0.7s
MOCB Mochara 2.86 23 ⇑ *i* Pn Pn 07 55 59.7 +1.1
MOCB ⇑ *i* Sn Sn 07 56 39.3 +3.1
AHML Horco Molle 3.19 155 *i* P Pn 07 56 01.4 -0.8
AHML *i* S Sn 07 56 40.5 -2.3
PB04 IPOC Station P 3.41 296 ⇑ *i* P Pn 07 56 05.1 +0.2
PB04 *i* S Sn 07 56 45.7 -1.8
PB04 IPOC Station P 3.41 296 *e* Pn Pn 07 56 05.2 +0.2
PB04 *e* Sn Sn 07 56 46.4 -1.1
PB10 IPOC Station P 3.41 276 ⇑ *i* P Pn 07 56 04.9 +0.2
PB10 *e* S Sn 07 56 45.7 -1.6
PB10 IPOC Station P 3.41 276 *e* Pn Pn 07 56 05.0 +0.2
PB10 *e* Sn Sn 07 56 46.9 -0.5
PB07 IPOC Station P 3.53 307 ⇑ *i* P Pn 07 56 06.8 +0.4
PB07 *i* S Sn 07 56 48.5 -1.8
PB07 IAML 07 56 49.9
comp=E,8µm,0.4s
PB01 IPOC Station P 3.74 319 ⇑ *i* P Pn 07 56 09.2 +0.3
PB01 *i* S Sn 07 56 53.5 -1.2
PB01 IAML 07 56 55.8
comp=E,4µm,0.7s
PB01 IPOC Station P 3.74 319 *e* Pn Pn 07 56 09.2 +0.3
PB01 *e* Sn Sn 07 56 54.0 -0.7
PB08 IPOC Station P 4.30 330 ⇑ *i* P Pn 07 56 17.3 +1.1
PB08 *i* S Sn 07 57 08.1 +0.3
PB11 IPOC Station P 4.87 327 ⇑ *i* P Pn 07 56 22.5 -0.7
PB11 *i* S Sn 07 57 17.9 -2.5
PB11 IPOC Station P 4.87 327 *e* Pn Pn 07 56 22.5 -0.7
PB11 *e* Sn Sn 07 57 17.4 -3.1
MNMC Minye Minye 5.38 331 ⇑ *i* P Pn 07 56 29.5 -0.4
MNMC *i* S Sn 07 57 31.3 -1.3
LCO Las Campanas 6.16 213 *e* Pn Pn 07 56 36.9 -3.0
LCO *e* Sn Sn 07 57 36.3 -14
BBOJ La Paz, Jacaqu 6.99 349 ⇑ *i* Pn Pn 07 56 52.8 +1.7
BBOJ ⇑ *i* Sn Sn 07 58 11.0 +0.2
comp=E,145nm,0.8s
BBOE La Paz, Chanca 7.12 351 ⇑ *i* Pn Pn 07 56 54.7 +1.9
BBOD La Paz, Gloria 7.40 347 ⇑ *i* Pn Pn 07 56 57.2 +0.8
LPAZ La Paz 7.66 351 P Pn 07 57 00.8 +0.8
comp=E,3.9nm,0.3s,baz=160,slow=7.4,SNR=109
LPAZ S Sn 07 58 27.1 +0.4
comp=E,5.8nm,0.3s,baz=9.7,slow=3.7,SNR=9.7
LPAZ La Paz 7.66 351 ⇑ *i* Pn Pn 07 57 00.7 +0.8
LPAZ *e* Sn Sn 07 58 25.8 -0.9
BBOB La Paz, Bander 7.80 351 ⇑ *i* Pn Pn 07 57 02.4 +0.7
BBOB ⇑ *i* Sn Sn 07 58 29.2 -0.8
comp=E,166nm,0.7s
ARE Arequipa 8.58 329 *e* P Pn 07 57 09.0 -2.6
ARE *e* S Sn 07 58 44.0 -4.1
ARE Arequipa 8.58 329 *e* P Pn 07 57 09.0 -2.6
ARE *e* S Sn 07 58 44.0 -4.1
CPUP Villa Florida 8.97 108 P Pn 07 57 14.6 -1.7
comp=E,3.1nm,0.3s,baz=288,slow=11,SNR=149
CPUP Villa Florida 8.97 108 *e* Pn Pn 07 57 14.1 -2.2
SIV San Ignacio 9.55 36 P Pn 07 57 22.6 -1.4
comp=E,2.8nm,0.3s,baz=227,slow=12,SNR=59
SIV S Sn 07 58 57.5 -13
comp=E,0.1nm,0.3s,baz=236,slow=17,SNR=4.4
SIV San Ignacio 9.55 36 ⇑ *i* P Pn 07 57 22.7 -1.4
ROC1 El Roble 9.76 201 *e* Pn Pn 07 57 27.1 +0.2
TRQA Tornquist 14.72 165 *e* Pn Pn 07 58 26.1 -3.4
NNA Nana 15.17 320 *e* P P 07 58 36.8 +1.1
NNA pmax pmax
comp=Z,104nm,0.8s
NNA Nana 15.17 320 *e* Pn P 07 58 36.8 +1.1
comp=Z,104nm,0.8s
NNA *e* S Sn 08 01 31.9 +6.8
SAML Samuel 15.27 14 *e* Pn Pn 07 58 36.0 -0.2
comp=Z,24nm,0.8s
SAML *e* S S 08 01 23.6 -2.6
PLCA Paso Flores 17.08 190 P P 07 58 55.8 -0.7
comp=Z,3.6nm,0.3s,baz=32,slow=9.9,SNR=90
PLCA S Sn 08 02 08.9 -1.0
comp=Z,0.1nm,0.3s,baz=22,slow=5.8,SNR=2.2
PLCA PcP PcP 08 03 31.3 +0.6
comp=Z,0.3nm,0.3s,baz=131,slow=1.8,SNR=5.6
PLCA Paso Flores 17.08 190 *e* P P 07 58 55.8 -0.7
comp=Z,74nm,0.7s
PLCA *e* PcP PcP 08 03 31.4 +0.6
SPB Sao Paulo 17.79 93 *e* P P 07 59 03.4 -0.9
comp=Z,107nm,0.8s
BDFB Brasilia 19.52 69 P P 07 59 22.4 -0.8
comp=Z,13nm,0.3s,baz=236,slow=11,SNR=333
BDFB S S 08 02 51.8 -1.5
comp=Z,0.2nm,0.3s,baz=316,slow=27,SNR=2.3
ATAH Atahualpa 20.01 325 P P 07 59 30.1 +1.3
comp=Z,11nm,0.8s,baz=158,slow=13,SNR=8.3
CHRN Cochrane 23.76 190 *e* P P 08 00 04.4 -0.5
comp=Z,21nm,0.8s
PTGA Pitinga 23.97 17 P P 08 00 06.4 -0.7
comp=Z,7.9nm,0.6s,baz=203,slow=9.5,SNR=9.9
PTGA S S 08 04 07.6 -2.1
comp=Z,4.6nm,0.8s,baz=294,slow=23,SNR=4.4
PTGA Pitinga 23.97 17 *e* P P 08 00 06.4 -0.7
comp=Z,18nm,0.9s
PTGA *e* S S 08 04 07.6 -2.1
OTAV Otavalo 26.50 333 *e* P P 08 00 32.2 +1.7
comp=Z,16nm,1.2s
OTAV *e* PcP PcP 08 03 51.9 +1.5
CMBC Cumbal 26.89 335 *e* P P 08 00 35.8 +1.9
PRAC Prado 28.53 343 *e* P P 08 00 48.4 +0.3
comp=Z,13nm,1.0s
CHIC Chingaza 29.13 346 *e* P P 08 00 52.3 -1.5
ROSC El Rosal 29.47 345 LR LR 08 14 20.4
comp=Z,40nm,20.8s,baz=208,slow=39
MALC Bahia Malaga 29.56 338 *e* P P 08 00 57.9 +0.8
GUYC Guyana, Colomb 30.11 343 *e* P P 08 01 01.3 -1.2
BARC Barichara 30.92 348 *e* P P 08 01 14.3 +5.0
USHA Ushuaia 30.93 182 P P 08 01 08.0 -0.7
comp=Z,84nm,0.7s,baz=344,slow=8.8,SNR=12
HELC Santa Helena 31.07 343 *e* P P 08 01 10.0 -0.9
comp=Z,62nm,0.8s
HELC Santa Helena 31.07 343 *e* P P 08 01 08.7 -2.2
SDV Santo Domingo 32.78 353 *e* P P 08 01 24.5 -1.1
comp=Z,19nm,1.0s
SDV Santo Domingo 32.78 353 *e* P P 08 01 23.4 -2.2
RCBR Riachuelo 34.75 64 P P 08 01 41.8 -0.7
comp=Z,54nm,1.0s,baz=222,slow=12,SNR=22
RCBR Riachuelo 34.75 64 *e* P P 08 01 42.1 -0.4
comp=Z,40nm,0.8s
JTS JuntasAbangare 38.30 330 *e* P P 08 02 13.2 +0.8
JTS pmax pmax
comp=Z,38nm,1.1s
JTS JuntasAbangare 38.30 330 *e* P P 08 02 13.2 +0.8
comp=Z,38nm,1.1s
PMSA Palmer Station 40.92 178 P P 08 02 33.4 +0.1
comp=Z,15nm,0.7s,baz=28,slow=7.1,SNR=5.4
CELP Cerrillos 41.71 0 *e* P P 08 02 39.0 -1.3
SJG San Juan 41.75 1 *e* P P 08 02 39.3 -1.3
SJG pmax pmax
comp=Z,27nm,1.0s
SJG San Juan 41.75 1 *e* P P 08 02 39.3 -1.3
comp=Z,27nm,1.0s
TGUH Tegucigalpa,Un 42.67 330 *e* P P 08 02 49.7 +1.6
comp=Z,61nm,0.9s
GRTK Grand Turk 45.32 354 *e* P P 08 03 08.4 -0.7
comp=Z,62nm,0.9s
CCIG Comitan 46.95 326 *e* P P 08 03 22.8 +0.7
comp=Z,38nm,1.1s
TLIG Tlapa 51.54 320 *e* P P 08 03 58.5 +1.8
comp=Z,37nm,1.4s
DWPF Disney Wildern 53.58 344 *e* P P 08 04 12.1 +0.7
comp=Z,41nm,1.0s
VNA3 Neumayer Olymp 57.21 161 P P 08 04 36.9 0.0
TIGA Tifton 57.30 343 P P 08 04 37.9 0.0
baz=162
TIGA Tifton 57.30 343 *e* P P 08 04 37.6 -0.2
comp=Z,26nm,0.9s
VNA1 Neumayer--Stat 57.41 160 P P 08 04 38.7 +0.6
VNA2 Neumayer--Watz 57.77 160 P P 08 04 40.6 -0.1
baz=286,slow=7.5
RGRS Roger Stewart 57.90 347 *e* P P 08 04 42.9 +1.0
comp=Z,481nm,0.6s
ZAIG Zacatecas 57.93 321 *e* P P 08 04 44.8 +2.0
comp=Z,30nm,1.0s
BRAL Brewton 58.07 340 *e* P P 08 04 43.9 +0.7
comp=Z,65nm,0.6s
NHSC New Hope 58.09 347 *e* P P 08 04 44.4 +1.1
comp=Z,218nm,1.3s
447A Lucedale 58.25 338 P P 08 04 44.6 0.0
baz=156
348A Jackson 58.57 339 P P 08 04 46.4 -0.2
baz=157,SNR=5.0
347A Saraland 58.77 338 P P 08 04 48.2 +0.1
baz=157,SNR=8.2
346A Big Creek Wild 59.08 337 P P 08 04 50.0 -0.2
baz=156
GOGA Godfrey 59.14 344 *e* P P 08 04 50.4 -0.2
GOGA pmax pmax
comp=Z,20nm,0.9s
GOGA Godfrey 59.14 344 *e* P P 08 04 50.4 -0.2
comp=Z,20nm,0.9s
345A Thompson Farm, 59.20 337 P P 08 04 51.2 +0.1
baz=155
034A Hebbronville 59.26 327 P P 08 04 52.7 +1.1
baz=146
SNAA Sanae 59.41 161 P P 08 04 51.9 -0.2
SNAA Sanae 59.41 161 *e* P P 08 04 51.9 -0.2
SNAA Sanae 59.41 161 *e* P P 08 04 51.9 -0.2
comp=Z,1µm,0.8s
JSC Jenkinsville 59.45 346 *e* P P 08 04 53.3 +0.6
JSC pmax pmax
comp=Z,28nm,0.8s
JSC Jenkinsville 59.45 346 *e* P P 08 04 53.3 +0.6
comp=Z,28nm,0.8s
344A Westbrook Farm 59.59 336 P P 08 04 54.1 +0.4
baz=154,SNR=5.0
737A Port Lavaca 59.60 330 P P 08 04 55.4 +1.6
baz=148
934A Benavides 59.62 327 P P 08 04 55.6 +1.6
baz=146
LRAL Lakeview Retre 59.78 340 *e* P P 08 04 54.5 -0.5
comp=Z,26nm,0.9s
245A Little AP, Sta 59.81 337 P P 08 04 55.7 +0.4
baz=155
835A Beeville 59.85 328 P P 08 04 57.1 +1.5
baz=147
441A DeRidder 59.91 334 P P 08 04 57.7 +1.8
baz=152
933A Laredo 60.00 327 P P 08 04 57.5 +0.9
baz=146,SNR=13
736A Circle Diamond 60.05 329 P P 08 04 58.5 +1.7
baz=148,SNR=7.9
834A Tilden 60.07 328 P P 08 04 58.2 +1.2
baz=146,SNR=7.8
146A Union 60.07 338 P P 08 04 56.9 -0.1
baz=156,SNR=6.6
342A Flagon Creek P 60.12 335 P P 08 04 58.3 +0.9
baz=153,SNR=6.4
637A Eagle Lake 60.12 330 P P 08 04 58.7 +1.4
baz=149
VBMS Vicksburg 60.20 337 P P 08 04 58.4 +0.5
baz=155
VBMS Vicksburg 60.20 337 *e* P P 08 04 58.4 +0.5
comp=Z,34nm,0.3s
440A Kirbyville 60.22 333 P P 08 04 58.7 +0.7
baz=151
243A Waterproof 60.25 336 P P 08 04 58.7 +0.5
baz=154
KMSC Kings Mountain 60.29 346 P P 08 04 58.8 +0.4
baz=165,SNR=9.8
KMSC Kings Mountain 60.29 346 *e* P P 08 04 59.1 +0.7
comp=Z,27nm,0.9s
735A Kenedy 60.32 329 P P 08 04 59.9 +1.2
baz=147,SNR=5.5
HKT Hockley 60.34 331 *e* P P 08 04 59.9 +1.1
HKT pmax pmax
comp=Z,20nm,1.1s
HKT Hockley 60.34 331 *e* P P 08 04 59.9 +1.1
comp=Z,20nm,1.1s
145A Houston Renfro 60.34 338 P P 08 04 59.2 +0.4
baz=156
341A Kurthwood 60.42 334 P P 08 05 00.3 +1.0
baz=152
636A Smothers Creek 60.49 330 P P 08 05 01.1 +1.2
baz=148,SNR=6.6
144A Alexander Plac 60.54 337 P P 08 05 00.7 +0.6
baz=155
439A Center Grove, 60.60 332 P P 08 05 02.0 +1.4
baz=150
833A Chaparral WMA, 60.65 327 P P 08 05 01.8 +0.8
baz=146,SNR=28
537A Green Hill Far 60.66 331 P P 08 05 02.0 +1.0
baz=149
242A Grayson 60.67 335 P P 08 05 01.6 +0.6
baz=153,SNR=6.8
734A La Parita Cree 60.67 328 P P 08 05 01.7 +0.6
baz=146,SNR=17
635A Leesville 60.75 329 P P 08 05 01.5 -0.1
baz=147,SNR=5.2
340A Bronson 60.78 334 P P 08 05 03.0 +1.2
baz=152,SNR=6.3
832A Faith Ranch, C 60.91 327 P P 08 05 03.2 +0.5
baz=145,SNR=15
733A Divot King Ran 60.92 327 P P 08 05 03.2 +0.4
baz=146,SNR=6.5
241A Mo Tay, Goldon 60.93 335 P P 08 05 03.7 +1.0
baz=152,SNR=7.5
143A Socs Landing, 60.96 336 P P 08 05 03.9 +0.9
baz=148,SNR=5.0
339A Huntington 60.98 333 P P 08 05 03.8 +0.7
baz=151
536A Bastrop 61.00 330 P P 08 05 03.9 +0.6
baz=148
535A Dale 61.19 330 P P 08 05 04.9 +0.3
baz=148,SNR=7.3
437A Phantom Ranch, 61.23 331 P P 08 05 05.5 +0.7
baz=149
240A Hunter Patters 61.28 334 P P 08 05 05.6 +0.5
baz=152
338A Crockett 61.32 332 P P 08 05 06.2 +0.7
baz=150
CPCT Cooper Cave 61.34 344 *e* P P 08 05 05.3 -0.2
comp=Z,13nm,0.9s
TKL Tuckaleechee C 61.35 344 *e* P P 08 05 05.2 -0.4
TKL pmax pmax
comp=Z,25nm,1.0s
TKL Tuckaleechee C 61.35 344 *e* P P 08 05 05.2 -0.4
comp=Z,24nm,1.0s
NATX Nacogdoches 61.40 333 P P 08 05 06.7 +0.7
baz=151
141A Papa Simpson, 61.44 335 P P 08 05 07.3 +1.1
baz=153,SNR=6.9
436A Wall Ranch, Ga 61.47 331 P P 08 05 07.3 +0.9
baz=149,SNR=5.1
633A Saathoff Ranch 61.48 328 P P 08 05 07.0 +0.5
baz=146,SNR=9.9
SWET Senee 61.50 342 *e* P P 08 05 06.3 -0.3
comp=Z,16nm,0.8s
337A Centerville 61.53 332 P P 08 05 08.0 +1.1
baz=150
239A Gary 61.55 333 P P 08 05 07.7 +0.8
baz=151
534A Blanco 61.61 329 P P 08 05 07.2 -0.3
baz=147,SNR=9.6
140A Cam and Jess, 61.73 334 P P 08 05 09.2 +1.0
baz=152,SNR=5.4
238A Jacksonville 61.80 333 P P 08 05 09.3 +0.7
baz=150
435B Jarrell 61.83 330 P P 08 05 09.2 +0.4
baz=148
RKT Rikitea 61.88 256 *e* P P 08 05 13.5 +4.0
comp=Z,73nm,1.3s
OXF Oxford 61.91 339 *e* P P 08 05 08.8 -0.5
OXF pmax pmax
comp=Z,60nm,0.8s
OXF Oxford 61.91 339 *e* P P 08 05 08.8 -0.5
comp=Z,60nm,0.8s
PLAL Pickwick Lake 61.91 340 *e* P P 08 05 08.7 -0.7
comp=Z,31nm,0.9s
533A Kerrville 61.92 328 P P 08 05 09.5 0.0
baz=146,SNR=10
Z41A Richland Creek 61.98 335 P P 08 05 10.4 +0.7
baz=153
336A Riesel 62.01 331 P P 08 05 10.6 +0.5
baz=149,SNR=5.2
237A Washetta, Mont 62.09 332 P P 08 05 11.2 +0.6
baz=150
Y42A Garnett, Star 62.12 337 P P 08 05 11.9 +1.2
baz=154
434A Burnet 62.17 330 P P 08 05 11.1 -0.1
baz=147,SNR=7.9
335A Moody 62.18 331 P P 08 05 11.5 +0.3
baz=148,SNR=10
Z40A Long Farm, Mag 62.21 335 P P 08 05 12.4 +1.1
baz=152,SNR=14
236A Katherine and 62.40 332 P P 08 05 13.2 +0.6
baz=149
WLAR White Oak Lake 62.48 335 *e* P P 08 05 14.0 +0.9
comp=Z,104nm,1.0s
Z39A Irene McRaven, 62.50 334 P P 08 05 14.2 +0.9
baz=152
433A Art 62.51 329 P P 08 05 13.8 +0.4
baz=147,SNR=23
137A Heron Place, G 62.58 333 P P 08 05 14.7 +0.9
baz=150
334A Lometa 62.60 330 P P 08 05 14.1 +0.1
baz=148,SNR=5.9
JCT Junction City 62.62 328 P P 08 05 14.5 +0.3
baz=146,SNR=20
WHTX Lake Whitney, 62.80 331 P P 08 05 15.6 +0.3
baz=148
WHTX Lake Whitney, 62.80 331 *e* P P 08 05 15.8 +0.5
comp=Z,22nm,0.8s
136A Ennis 62.81 332 P P 08 05 15.5 +0.3
baz=149
Y40A Okolona 62.83 335 P P 08 05 15.7 +0.3
baz=153
Z38A Mt. Pleasant 62.83 334 P P 08 05 15.8 +0.3
baz=151
WVT Waverly 62.90 341 *e* P P 08 05 15.1 -0.8
WVT pmax pmax
comp=Z,65nm,0.7s
WVT Waverly 62.90 341 *e* P P 08 05 15.1 -0.8
comp=Z,65nm,0.7s
HPIG 62.92 321 *e* P P 08 05 17.4 +1.0
comp=Z,15nm,0.8s
Y39A Lockesburg 63.08 335 P P 08 05 17.4 +0.3
baz=152,SNR=6.3
X40A Basin Creek Fa 63.08 336 P P 08 05 16.8 -0.3
baz=153
234A Clairette 63.12 330 P P 08 05 17.6 +0.2
baz=148,SNR=39
UALR University of 63.16 337 *e* P P 08 05 17.7 +0.1
comp=Z,23nm,1.0s
135A Vickery Place, 63.26 331 P P 08 05 18.6 +0.3
baz=149
Y38A Idabel 63.32 334 P P 08 05 18.8 +0.2
baz=151
UTMT University of 63.41 340 *e* P P 08 05 19.3 +0.1
comp=Z,134nm,0.9s
MIAR Mount Ida 63.41 335 P P 08 05 19.1 -0.1
baz=152,SNR=15
MIAR Mount Ida 63.41 335 *e* P P 08 05 19.3 0.0
MIAR pmax pmax
comp=Z,30nm,1.0s
MIAR Mount Ida 63.41 335 *e* P P 08 05 19.3 0.0
comp=Z,30nm,1.0s
Z36A Blue Ridge 63.45 332 P P 08 05 20.2 +0.7
baz=150,SNR=14
233A Rising Star 63.48 330 P P 08 05 20.1 +0.3
baz=147,SNR=20
W41A Tony Mavity, V 63.48 337 P P 08 05 19.1 -0.5
baz=154,SNR=7.8
134A White-Moore Ra 63.57 331 P P 08 05 20.4 +0.1
baz=148,SNR=6.4
X39A Fountain Ranch 63.59 335 P P 08 05 21.0 +0.6
baz=152,SNR=20
X301 Greenbrier Sit 63.60 337 *e* P P 08 05 20.8 +0.3
comp=Z,12nm,0.8s
WHAR Wooly Hollow 63.60 337 *e* P P 08 05 20.4 -0.1
comp=Z,13nm,0.9s
X201 Greenbrier Sit 63.63 337 *e* P P 08 05 20.9 +0.2
comp=Z,12nm,0.8s
LTX Lajitas 63.67 324 *e* P P 08 05 21.8 +0.6
LTX Lajitas 63.67 324 *e* P P 08 05 21.8 +0.6
TX31 Lajitas Ar. Si 63.67 324 *e* P P 08 05 21.8 +0.6
TXAR Lajitas Array 63.67 324 P P 08 05 21.8 +0.6
comp=Z,6.8nm,0.8s,baz=152,slow=8.6,SNR=76
Y37A Hugo 63.72 334 P P 08 05 22.3 +1.0
baz=150,SNR=5.7
W40A Ferguson Farm, 63.80 336 P P 08 05 22.3 +0.6
baz=153,SNR=14
Z35A Perchaven, San 63.85 332 P P 08 05 22.8 +0.7
baz=149,SNR=11
Y36A Durant 63.93 333 P P 08 05 23.5 +0.9
baz=150
133A Hamilton Ranch 63.98 330 P P 08 05 23.2 +0.2
baz=147,SNR=8.4
X38A Whitesboro 64.01 335 P P 08 05 23.8 +0.7
baz=151,SNR=9.5
W39A Magazine 64.07 336 P P 08 05 24.2 +0.7
baz=152,SNR=18
X37A Clayton 64.15 334 P P 08 05 24.7 +0.6
baz=151,SNR=19
Z34A Collier Ranch, 64.17 331 P P 08 05 24.5 +0.2
baz=148,SNR=21
W38A Poteau 64.24 335 P P 08 05 25.4 +0.8
baz=152,SNR=13
Y35A Marietta 64.25 332 P P 08 05 25.2 +0.5
baz=149,SNR=7.8
V40A Witts Springs 64.26 337 P P 08 05 24.4 -0.4
baz=154,SNR=13
PBMO Poplar Bluff 64.31 339 *e* P P 08 05 25.1 +0.1
comp=Z,61nm,0.8s
ABTX Abilene, Hawle 64.33 330 P P 08 05 25.5 +0.2
baz=147,SNR=8.4
ABTX Abilene, Hawle 64.33 330 *e* P P 08 05 25.5 +0.2
comp=Z,5nm,1.4s
MCWV Mont Chateau 64.37 349 *e* P P 08 05 25.9 +0.5
comp=Z,47nm,2.0s
WCI Wyandotte Cave 64.43 343 *e* P P 08 05 24.9 -0.9
WCI pmax pmax
comp=Z,28nm,0.7s
WCI Wyandotte Cave 64.43 343 *e* P P 08 05 24.9 -0.9
comp=Z,28nm,0.7s
Z33A Whitaker Ranch 64.48 331 P P 08 05 26.8 +0.5
baz=148,SNR=18
X36A Centrahoma 64.54 333 P P 08 05 26.3 -0.3
baz=150,SNR=11
V39A Pettigrew 64.59 336 P P 08 05 27.1 +0.1
baz=153,SNR=27
Y34A Reagan Ranch, 64.60 332 P P 08 05 27.3 +0.3
baz=149,SNR=13
X35A Drake 64.65 333 P P 08 05 27.1 -0.2
baz=149,SNR=17
W37B Quinton 64.66 334 P P 08 05 27.7 +0.4
baz=151,SNR=19
O56A Blue Knob Stat 64.75 350 P P 08 05 28.4 +0.5
baz=168
U40A Yellville 64.76 337 P P 08 05 27.9 -0.1
baz=154
SIUC Southern Illin 64.79 341 *e* P P 08 05 27.6 -0.5
comp=Z,43nm,1.2s
V38A Canehill 64.89 335 P P 08 05 28.9 0.0
baz=152,SNR=28
W36A Wetumka 64.98 334 P P 08 05 29.1 -0.3
baz=150,SNR=10
N59A State Game Lan 65.00 353 P P 08 05 29.8 +0.3
baz=171
SSPA Standing Stone 65.01 351 *e* P P 08 05 30.3 +0.8
comp=Z,8.1nm,1.0s
U39A Green Forest 65.01 336 P P 08 05 29.4 -0.2
baz=153,SNR=24
Y33A Hilltop Ranch, 65.03 331 P P 08 05 29.8 0.0
baz=148,SNR=7.6
HHAR Hobbs 65.09 336 *e* P P 08 05 30.5 +0.4
comp=Z,36nm,0.9s
X34A Smith Ranch, M 65.18 332 P P 08 05 31.2 +0.4
baz=149,SNR=7.8
V37A Hulbert 65.19 335 P P 08 05 30.9 +0.1
baz=151,SNR=22
W35A Tecumseh 65.25 333 P P 08 05 30.6 -0.6
baz=150
T40A Mansfield 65.35 338 P P 08 05 31.4 -0.4
baz=154,SNR=13
BLO Bloomington 65.38 343 *e* P P 08 05 31.2 -0.7
BLO pmax pmax
comp=Z,22nm,0.6s
BLO Bloomington 65.38 343 *e* P P 08 05 31.2 -0.7
comp=Z,22nm,0.6s
U38A Gravette 65.40 336 P P 08 05 32.1 0.0
baz=152,SNR=10
V36A Jenks 65.42 334 P P 08 05 32.3 0.0
baz=151,SNR=25
TUL1 Leonard 65.47 334 P P 08 05 32.5 -0.1
baz=151,SNR=12
TUL1 Leonard 65.47 334 *e* P P 08 05 33.0 +0.4
comp=Z,42nm,1.1s
ACSO Alum Creek Sta 65.54 346 *e* P P 08 05 32.8 -0.1
comp=Z,20nm,0.9s
T39A Clever 65.54 337 P P 08 05 32.9 -0.2
baz=153,SNR=16
U37A Salina 65.64 335 P P 08 05 33.8 +0.1

baz=152,SNR=12
N54A **Moraine State** 65.67 349 P P 08 05 34.1 +0.4
baz=167,SNR=5.3
X32A **Elmer** 65.67 331 P P 08 05 33.9 0.0
baz=147
W34A **Bridge Creek,** 65.70 333 P P 08 05 34.0 -0.1
baz=149
W34A **Bridge Creek,** 65.70 333 eP P 08 05 34.6 +0.5
comp=Z,13nm,0.8s
S40A **Lebanon** 65.75 338 P P 08 05 34.3 0.0
baz=154,SNR=19
V35A **Meyer Ranch, C** 65.77 334 P P 08 05 34.3 -0.2
baz=150,SNR=13
U36A **Oologah** 65.87 335 P P 08 05 35.2 +0.1
baz=151,SNR=5.2
T38A **Diamond** 65.89 336 P P 08 05 35.3 +0.1
baz=152,SNR=42
W33A **Caddo, Fort Co** 65.93 332 P P 08 05 36.2 +0.7
baz=148,SNR=14
V34A **Guthrie** 66.11 333 P P 08 05 36.6 0.0
baz=149
V34A **Guthrie** 66.11 333 eP P 08 05 37.0 +0.4
comp=Z,41nm,1.0s
S39A **Bolivar** 66.12 337 P P 08 05 36.9 +0.3
baz=153,SNR=47
M54A **Oil Creek Stat** 66.14 350 P P 08 05 37.0 +0.2
baz=167
T37A **Cheneyville 18** 66.20 336 P P 08 05 37.3 +0.2
baz=152,SNR=29
HRV **Adam Dziewonsk** 66.21 356 eP P 08 05 37.7 +0.6
HRV pmax pmax
comp=Z,27nm,0.9s
HRV **Adam Dziewonsk** 66.21 356 eP P 08 05 37.7 +0.6
comp=Z,27nm,0.9s
W32A **Sentinel** 66.24 331 P P 08 05 38.0 +0.5
baz=148,SNR=17
U35A **Pawnee** 66.25 334 P P 08 05 38.1 +0.6
baz=150,SNR=27
S38A **Stockton** 66.28 337 P P 08 05 37.6 0.0
baz=153,SNR=28
R40A **Maddies Statio** 66.29 338 P P 08 05 37.4 -0.3
baz=154
BINY **Binghamton** 66.30 353 eP P 08 05 38.5 +0.8
comp=Z,47nm,1.1s
QSPA **South Pole Qui** 66.31 180 eP P 08 05 38.1 +0.3
V33A **Lossen Ranch,** 66.42 332 P P 08 05 38.8 +0.2
baz=149,SNR=13
MNTX **Cornudas Mount** 66.44 325 P P 08 05 38.9 0.0
baz=142,SNR=40
MNTX **Cornudas Mount** 66.44 325 eP P 08 05 38.8 0.0
comp=Z,24nm,0.9s
T36A **Boggs Farm, Ca** 66.51 335 P P 08 05 39.2 +0.1
baz=151,SNR=15
R39A **Chumby, Stover** 66.58 338 P P 08 05 39.5 -0.1
baz=154
U34A **Anderson Ranch** 66.63 333 P P 08 05 40.2 +0.3
baz=149,SNR=7.8
U34A **Anderson Ranch** 66.63 333 eP P 08 05 40.2 +0.3
comp=Z,59nm,1.2s
T35A **Sooner Cattle** 66.63 334 P P 08 05 40.2 +0.2
baz=150,SNR=11
V32A **Arapaho** 66.66 332 P P 08 05 40.3 +0.2
baz=148
SFIN **Lafayette** 66.66 343 P P 08 05 38.4 -1.6
baz=160,SNR=5.7
SFIN **Lafayette** 66.66 343 eP P 08 05 39.1 -0.9
comp=Z,36nm,1.0s
S37A **Fort Scott** 66.73 336 P P 08 05 40.7 +0.2
baz=152,SNR=44
R38A **Fenwick Farm,** 66.77 337 P P 08 05 40.6 -0.1
baz=153,SNR=33
ERPA **Erie** 66.79 349 eP P 08 05 41.4 +0.6
comp=Z,28nm,0.8s
Q40A **Laux Farm, Aux** 66.86 339 P P 08 05 41.3 0.0
baz=155,SNR=9.9
U33A **Lingo Farm, Me** 66.87 333 P P 08 05 41.3 -0.1
baz=149,SNR=9.0
MSTX **Muleshoe** 66.92 328 P P 08 05 42.3 +0.3
baz=144,SNR=26
MSTX **Muleshoe** 66.92 328 eP P 08 05 42.4 +0.5
comp=Z,74nm,1.0s
S36A **Lake Cedric, C** 66.98 336 P P 08 05 42.3 +0.2
baz=151,SNR=21
T34A **McClaskey Farm** 66.99 334 P P 08 05 42.5 +0.3
baz=150,SNR=10
AMTX **Amarillo** 67.14 329 P P 08 05 43.2 -0.1
baz=145
AMTX **Amarillo** 67.14 329 eP P 08 05 43.6 +0.2
comp=Z,25nm,1.1s
U32A **Winter Ranch,** 67.20 332 P P 08 05 43.6 0.0
baz=148
Q39A **Willow Grove F** 67.21 338 P P 08 05 43.3 -0.2
baz=154,SNR=44
R37A **Teagarden Farm** 67.22 336 P P 08 05 43.6 +0.1
baz=152,SNR=26
S35A **Otter Creek Ra** 67.22 335 P P 08 05 43.9 +0.3
baz=151,SNR=12
LIC **Lamto** 67.28 72 eP P 08 05 42.8 -1.7
P40A **Paris** 67.34 339 P P 08 05 44.1 -0.3
baz=155,SNR=21
Q38A **Cooks Store, C** 67.36 338 P P 08 05 44.5 +0.1
baz=153,SNR=35
HDIL **Hopedale** 67.43 342 P P 08 05 44.2 -0.6
baz=158,SNR=7.2
HDIL **Hopedale** 67.43 342 eP P 08 05 44.1 -0.8
comp=Z,36nm,0.6s
R36A **Gordon, Harris** 67.47 336 P P 08 05 45.0 -0.2
baz=152,SNR=14
T33A **Patterson Ranc** 67.48 333 P P 08 05 45.7 +0.4
baz=149
TIC **Toumodi** 67.48 71 eP P 08 05 44.2 -1.6
P39A **Salisbury** 67.54 339 P P 08 05 45.5 -0.1
baz=154,SNR=9.6
S34A **Willow Spring** 67.55 334 P P 08 05 45.9 +0.2
baz=150,SNR=5.2
Q37A **Longview Farm,** 67.58 337 P P 08 05 45.7 -0.1
baz=153,SNR=14
HSIG 67.58 319 eP P 08 05 47.7 +1.6
comp=Z,46nm,1.1s
KIC **Kosan Boka** 67.59 72 eP P 08 05 45.0 -1.5
comp=Z,28nm,0.6s
DBIC **Dimbokro** 67.64 72 P P 08 05 45.5 -1.3
comp=Z,13nm,0.7s,baz=214,slow=6.5,SNR=26
DBIC **Dimbokro** 67.64 72 eP P 08 05 45.5 -1.3
comp=Z,16nm,0.8s
R35A **Emporia Munici** 67.74 335 P P 08 05 47.0 +0.2
baz=151
S33A **Kaszmaul Farm,** 67.81 334 P P 08 05 47.7 +0.3
baz=149
O40A **La Belle** 67.82 339 P P 08 05 46.7 -0.6
baz=155,SNR=14
T32A **Huddler Ranch,** 67.84 333 P P 08 05 48.4 +0.8
baz=148,SNR=6.1
P38A **Dawn** 67.92 338 P P 08 05 47.7 -0.3
baz=154,SNR=26
R34A **Isabella, Hill** 68.12 335 P P 08 05 49.5 +0.2
baz=150,SNR=8.9
O39A **Kirksville** 68.16 339 P P 08 05 49.0 -0.5
baz=155,SNR=9.4
P37A **Lathrop** 68.17 337 P P 08 05 49.1 -0.4
baz=153,SNR=21
S32A **Newby Ranch, P** 68.29 333 P P 08 05 51.0 +0.7
baz=148,SNR=6.2
319A **Douglas** 68.33 322 eP P 08 05 52.6 +1.7
comp=Z,37nm,0.8s
O38A **Galt** 68.35 338 P P 08 05 50.4 -0.2
baz=154,SNR=14
121A **Cookes Peak, D** 68.37 323 P P 08 05 52.6 +1.4
baz=140,SNR=24
R33A **Olander Ranch,** 68.42 334 P P 08 05 51.5 +0.4
baz=149
P36A **Good Intent, A** 68.51 337 P P 08 05 51.2 -0.4
baz=152,SNR=11
Q34A **Chapman** 68.54 335 P P 08 05 51.9 +0.1
baz=150,SNR=11
KSU1 **Kansas State U** 68.57 335 P P 08 05 51.8 -0.3
baz=151,SNR=8.0
KSU1 **Kansas State U** 68.57 335 eP P 08 05 52.0 -0.1
comp=Z,39nm,1.0s
O37A **Wolven Farm, M** 68.62 338 P P 08 05 52.1 -0.2
baz=153,SNR=9.1
N39A **Derby Farms, D** 68.71 339 P P 08 05 52.3 -0.6
baz=155,SNR=13
P35A **Duane Minner,** 68.72 336 P P 08 05 52.8 -0.2
baz=151
R32A **Long Quarter,** 68.81 334 P P 08 05 54.0 +0.4
baz=149,SNR=17
PKME **Peaks-Kenny Pk** 68.86 358 eP P 08 05 54.2 +0.6
comp=Z,19nm,0.9s
N38A **Joes South For** 68.87 339 P P 08 05 53.3 -0.5
baz=154,SNR=8.8
O36A **Bolckow** 68.87 337 P P 08 05 53.3 -0.6
baz=152,SNR=13
Q33A **Connelly Farm,** 68.95 335 P P 08 05 54.7 +0.3
baz=150
BNM **Barren Site** 69.00 325 eP P 08 05 56.5 +1.4
P34A **Walnut Farm, R** 69.04 336 P P 08 05 55.1 +0.2
baz=151,SNR=22
LPM **Los Pinos Moun** 69.13 325 eP P 08 05 57.2 +1.4
N37A **Lee Faris, Mou** 69.17 338 P P 08 05 55.6 0.0
baz=153,SNR=14
Q32A **Meitler Ranch,** 69.24 334 P P 08 05 56.7 +0.5
baz=149
P33A **Williams Farm,** 69.28 335 P P 08 05 56.6 +0.2
baz=150
O35A **Humboldt** 69.33 337 P P 08 05 56.2 -0.5
baz=152
M38A **Pleasantville** 69.42 339 P P 08 05 56.6 -0.6
baz=154,SNR=18
LAZ **Ladron** 69.46 325 eP P 08 05 59.4 +1.5
N36A **Muff Farm, Cla** 69.48 338 P P 08 05 57.4 -0.2
baz=152,SNR=5.5
ANMO **Albuquerque** 69.53 326 P P 08 05 59.6 +1.4
baz=142
ANMO **Albuquerque** 69.53 326 eP P 08 05 59.7 +1.4
ANMO pmax pmax
comp=Z,23nm,0.9s
ANMO **Albuquerque** 69.53 326 eP P 08 05 59.7 +1.4
comp=Z,23nm,0.9s
O34A **Beatrice** 69.55 336 P P 08 05 57.9 -0.2
baz=151,SNR=6.2
CBKS **Cedar Bluff** 69.57 333 P P 08 05 59.0 +0.8
baz=148,SNR=6.2
CBKS **Cedar Bluff** 69.57 333 eP P 08 05 59.5 +1.3
CBKS pmax pmax
comp=Z,61nm,1.0s
CBKS **Cedar Bluff** 69.57 333 eP P 08 05 59.5 +1.3
comp=Z,61nm,1.0s
M37A **Trindle Farm,** 69.69 338 P P 08 05 58.9 0.0
baz=153,SNR=18
N35A **Tabor** 69.76 337 P P 08 05 59.0 -0.3
baz=152,SNR=6.6
O33A **Hebron** 69.79 335 P P 08 06 00.1 +0.6
baz=150,SNR=24
P32A **Huiting Farm,** 69.80 334 P P 08 05 59.9 +0.3
baz=149,SNR=6.7
SCIA **State Center** 69.87 339 eP P 08 06 00.2 +0.2
comp=Z,46nm,0.8s
TUC **Tucson** 69.88 321 P P 08 06 01.6 +1.3
baz=137
TUC **Tucson** 69.88 321 eP P 08 06 01.7 +1.3
TUC pmax pmax
comp=Z,27nm,1.1s
TUC **Tucson** 69.88 321 eP P 08 06 01.7 +1.3
comp=Z,27nm,1.1s
JFWS **Jewell Farm** 69.88 342 eP P 08 05 59.9 -0.1
JFWS pmax pmax
comp=Z,49nm,0.7s
JFWS **Jewell Farm** 69.88 342 eP P 08 05 59.9 -0.1
comp=Z,49nm,0.7s
M36A **Felix, Anita** 69.99 338 P P 08 06 00.6 -0.1
baz=153,SNR=7.4
L38A **Oak Wood Farm,** 70.00 340 P P 08 06 00.3 -0.4
baz=154,SNR=5.8
N34A **Lincoln** 70.05 336 P P 08 06 00.7 -0.4
baz=151,SNR=23
O32A **Brockman Farm,** 70.22 335 P P 08 06 02.4 +0.3
baz=150,SNR=10
L37A **Phoenix Point,** 70.24 339 P P 08 06 01.6 -0.6
baz=154,SNR=7.4
T25A **Trinidad** 70.26 329 P P 08 06 04.0 +1.3
baz=144,SNR=25
T25A **Trinidad** 70.26 329 eP P 08 06 04.1 +1.4
comp=Z,19nm,0.8s
M35A **Neola** 70.31 337 P P 08 06 03.8 +1.1
baz=152,SNR=5.6
N33A **J Bar K, Exete** 70.31 336 P P 08 06 02.9 +0.2
baz=150,SNR=5.4
K38A **Parkersburg** 70.39 340 P P 08 06 02.5 -0.6
baz=155
L36A **Harm Buss Farm** 70.52 338 P P 08 06 03.9 0.0
baz=153,SNR=12
O31A **Woolen Ranch,** 70.54 334 P P 08 06 04.6 +0.5
baz=148
M34A **Aspy Farms, Fr** 70.66 337 P P 08 06 04.8 0.0
baz=151,SNR=7.7
K37A **Belmond** 70.78 339 P P 08 06 05.0 -0.4
baz=154,SNR=7.7
214A **Organ Pipe Nat** 70.81 320 P P 08 06 07.7 +1.8
baz=136,SNR=14
L35A **Bielow Farm, R** 70.83 338 P P 08 06 05.7 -0.1
baz=152,SNR=11
J38A **Wedel Dairy, R** 70.91 340 P P 08 06 06.0 -0.3
baz=155
K36A **Gilmore City** 70.93 339 P P 08 06 06.2 -0.1
baz=153,SNR=11
M33A **Taylor Creek F** 70.94 336 P P 08 06 06.4 -0.1
baz=151,SNR=11
N31A **Bailey Ranch,** 70.96 335 P P 08 06 07.4 +0.7
baz=149
KSCO **Kaye Shedlock'** 70.97 331 P P 08 06 08.2 +1.4
baz=146,SNR=7.3
KSCO **Kaye Shedlock'** 70.97 331 eP P 08 06 08.2 +1.4
comp=Z,62nm,1.3s
L34A **Svendsen Farm,** 70.99 337 P P 08 06 06.7 0.0
baz=151,SNR=5.4
X18A **Snowflake** 71.06 323 eP P 08 06 09.5 +1.9
comp=Z,19nm,1.0s
BGNE **Belgrade** 71.16 336 P P 08 06 08.3 +0.5
baz=150,SNR=35
BGNE **Belgrade** 71.16 336 eP P 08 06 08.3 +0.5
comp=Z,233nm,0.8s
LMQ **La Malbaie** 71.17 358 eP P 08 06 08.1 +0.4
comp=Z,13nm,1.0s
J37A **Redenius Farm,** 71.24 340 P P 08 06 08.0 -0.2
baz=154
K35A **Storm Lake** 71.26 338 P P 08 06 08.6 +0.3
baz=153
SDCO **Great Sand Dun** 71.27 328 P P 08 06 10.2 +1.3
baz=143,SNR=32
SDCO **Great Sand Dun** 71.27 328 eP P 08 06 10.3 +1.5
comp=Z,97nm,1.8s
W18A **Petrified Fore** 71.39 324 P P 08 06 10.9 +1.4
baz=139,SNR=8.4
W18A **Petrified Fore** 71.39 324 eP P 08 06 11.1 +1.6
comp=Z,37nm,1.0s
M31A **Lambtecht Ranc** 71.42 335 P P 08 06 10.3 +1.0
baz=149,SNR=6.5
L33A **Hoskins** 71.49 337 P P 08 06 09.5 -0.3
baz=151
J36A **Seneca 1, Swea** 71.51 339 P P 08 06 09.5 -0.3
baz=154,SNR=7.3
I38A **Scanlan Farm,** 71.52 341 P P 08 06 09.3 -0.6
baz=155,SNR=12
K34A **Le Mars** 71.53 338 P P 08 06 09.7 -0.3
baz=152,SNR=6.7
L32A **Elgin** 71.62 336 P P 08 06 10.6 +0.1
baz=150
N29A **Votaw Ranch, W** 71.63 334 P P 08 06 11.5 +0.8
baz=148,SNR=7.2
K33A **Hardington** 71.78 337 P P 08 06 11.6 +0.2
baz=151,SNR=10.0
X16A **Lo Mia Camp, P** 71.80 322 eP P 08 06 13.8 +1.8
comp=Z,26nm,1.1s
I37A **Lemond, Waseca** 71.83 340 P P 08 06 11.5 -0.2
baz=154,SNR=15
J35A **Milford** 71.83 339 P P 08 06 11.5 -0.2
baz=153
S22A **4UR Ranch, Cre** 71.91 328 P P 08 06 13.9 +1.2
baz=142,SNR=13
S22A **4UR Ranch, Cre** 71.91 328 eP P 08 06 14.3 +1.6
comp=Z,6.2nm,0.8s
J34A **George** 72.01 338 P P 08 06 12.9 +0.1
baz=152
I36A **Fitzsimmons Fa** 72.02 340 P P 08 06 12.3 -0.5
baz=154,SNR=7.2
Q24A **Divide** 72.07 329 P P 08 06 14.8 +1.1
baz=143,SNR=8.0
Q24A **Divide** 72.07 329 eP P 08 06 15.1 +1.4
comp=Z,36nm,1.1s
L31A **Butterfield Fa** 72.08 336 P P 08 06 14.0 +0.7
baz=149,SNR=22
K32A **Verdigre** 72.17 336 P P 08 06 14.2 +0.4
baz=150
I35A **Creekview Farm** 72.19 339 P P 08 06 13.7 -0.1
baz=153,SNR=5.8
H37A **Dierke Farm, C** 72.19 341 P P 08 06 13.8 0.0
baz=155,SNR=5.2
OGNE **Ogallala** 72.31 333 P P 08 06 15.6 +0.9
baz=146
MVCO **Mesa Verde** 72.33 326 P P 08 06 16.7 +1.5
baz=140,SNR=22
MVCO **Mesa Verde** 72.33 326 eP P 08 06 16.6 +1.5
comp=Z,104nm,1.7s
Y14A **Wickenburg** 72.34 321 eP P 08 06 16.7 +1.7
comp=Z,104nm,1.3s
J33A **Davis** 72.39 337 P P 08 06 15.0 -0.1
baz=151,SNR=14
M28A **Bar X Bar Ranc** 72.42 333 P P 08 06 16.8 +1.4
baz=147
K31A **O'Neill** 72.43 336 P P 08 06 15.9 +0.5
baz=149,SNR=11
H36A **Jessenland, He** 72.50 340 P P 08 06 15.8 +0.1
baz=154,SNR=15
WUAZ **Wupatki** 72.57 323 P P 08 06 18.4 +1.9
baz=138,SNR=27
WUAZ **Wupatki** 72.57 323 eP P 08 06 18.5 +2.0
comp=Z,33nm,0.9s
ECSD **EROS Data Cent** 72.63 338 P P 08 06 16.4 -0.1
baz=152,SNR=40
ECSD **EROS Data Cent** 72.63 338 eP P 08 06 16.5 +0.1
comp=Z,54nm,1.1s
SPMN **Marine on St.** 72.74 341 P P 08 06 16.9 -0.1
baz=155,SNR=9.4
SPMN **Marine on St.** 72.74 341 eP P 08 06 16.9 -0.1
comp=Z,38nm,1.0s
J32A **Parkston** 72.75 337 P P 08 06 17.1 0.0
baz=150,SNR=11
GLA **Glamis** 72.78 319 P P 08 06 19.2 +1.6
baz=135,SNR=10.0
GLA **Glamis** 72.78 319 eP P 08 06 19.4 +1.7
GLA pmax pmax
comp=Z,18nm,0.8s
GLA **Glamis** 72.78 319 eP P 08 06 19.4 +1.7
comp=Z,18nm,0.8s
K30A **Basset** 72.80 335 P P 08 06 18.2 +0.7
baz=149,SNR=25
H35A **Sunnyside Ranc** 72.89 340 P P 08 06 17.7 -0.2
baz=153,SNR=14
ISCO **Idaho Springs** 72.96 330 P P 08 06 20.0 +1.2
baz=143,SNR=11
ISCO **Idaho Springs** 72.96 330 eP P 08 06 20.2 +1.3
ISCO pmax pmax
comp=Z,28nm,1.4s
ISCO **Idaho Springs** 72.96 330 eP P 08 06 20.2 +1.3
comp=Z,28nm,1.4s
J31A **Geddes** 73.00 336 P P 08 06 18.7 +0.1
baz=150,SNR=11
G36A **St. Michael** 73.03 340 P P 08 06 18.6 -0.2
baz=154,SNR=5.4
PV01 **Paradox Valley** 73.07 327 eP P 08 06 21.1 +1.6
Y12C **Blythe** 73.09 320 P P 08 06 21.2 +1.8
baz=135,SNR=9.9
Y12C **Blythe** 73.09 320 eP P 08 06 21.6 +2.2
comp=Z,32nm,1.0s
SMCO **Snowmass** 73.10 328 eP P 08 06 21.6 +1.7
comp=Z,16nm,0.8s
H34A **Spellman Lake,** 73.17 339 P P 08 06 19.4 -0.2
baz=152,SNR=8.8
I32A **Karley and Nic** 73.18 337 P P 08 06 19.8 +0.1
baz=151
G35A **Watkins** 73.25 340 P P 08 06 20.2 +0.1
baz=154
PDMCI **Parker Dam,Lak** 73.26 321 P P 08 06 21.9 +1.5
baz=135
IBP **Imperial Bould** 73.27 318 P P 08 06 22.1 +1.5
baz=134,SNR=8.4
DRLN **Deer Lake** 73.29 6 eP P 08 06 20.6 +0.4
comp=Z,44nm,0.8s
SWSC **Sam W. Stewart** 73.29 319 P P 08 06 22.4 +1.8
baz=134
PV05 **Paradox Valley** 73.30 326 eP P 08 06 22.3 +1.5
J30A **Dallas** 73.31 336 P P 08 06 20.8 +0.3
baz=149,SNR=25
PV10 **Paradox Valley** 73.50 327 eP P 08 06 23.1 +1.1
H33A **Prehn Over Nor** 73.51 338 P P 08 06 21.8 +0.2
baz=152,SNR=40
F36A **Milaca** 73.53 341 P P 08 06 21.4 -0.3
baz=154,SNR=18
BC3 **Big Chuckawall** 73.58 319 P P 08 06 24.0 +1.6
baz=134,SNR=20
H32A **Carlson Farm,** 73.59 338 P P 08 06 22.2 +0.1
baz=151,SNR=18
SYO **Syowa Base** 73.60 159⇑ eP P 08 06 17.8 -4.1
SYO **Syowa Base** 73.60 159⇑ i/P P 08 06 20.4 -1.5
SYO **Syowa Base** 73.60 159⇓ i/P P 08 06 22.4 +0.5
G34A **Benson** 73.64 339 P P 08 06 22.1 -0.2
baz=153
MONP2 **Monument Peak** 73.64 318 P P 08 06 24.4 +1.5
baz=133,SNR=7.0
PV09 **Paradox Valley** 73.64 327 eP P 08 06 24.4 +1.6
BAR **Barrett** 73.64 318 eP P 08 06 24.6 +2.0
comp=Z,23nm,0.8s
W13A **Hualapai Mount** 73.68 321 eP P 08 06 24.9 +1.8
comp=Z,9.7nm,0.8s
J29A **Okreek** 73.70 335 P P 08 06 23.4 +0.6
baz=148,SNR=33
IRM **Iron Mountain** 73.74 320 P P 08 06 24.8 +1.6
baz=135,SNR=18
I30A **Oacoma** 73.79 336 P P 08 06 23.5 +0.2
baz=149,SNR=27
SBA **Scott Base** 73.83 190 eP P 08 06 24.5 +1.4
SBA pmax pmax
comp=Z,44nm,1.5s
SBA **Scott Base** 73.83 190 eP P 08 06 24.5 +1.4
comp=Z,44nm,1.5s
E37A **Wrenshall** 73.84 342 P P 08 06 23.4 0.0
baz=156
F35A **Swanville** 73.85 340 P P 08 06 23.1 -0.4
baz=154,SNR=6.8
G33A **Ortonville** 73.86 339 P P 08 06 23.2 -0.4
baz=152,SNR=14
H31A **Wolsey** 73.93 337 P P 08 06 24.0 -0.1
baz=150,SNR=7.7
N23A **Red Feather La** 73.98 330 P P 08 06 26.1 +1.4
baz=143,SNR=13
N23A **Red Feather La** 73.98 330 eP P 08 06 26.2 +1.4
comp=Z,22nm,1.0s
F34A **Alexandria** 74.01 340 P P 08 06 24.5 +0.1
baz=153
E36A **McGregor** 74.05 341 P P 08 06 24.5 -0.1
baz=155,SNR=8.4
109C **Camp Elliot, M** 74.05 318 P P 08 06 26.2 +1.2
baz=133
J28A **Allard Ranch,** 74.07 335 P P 08 06 25.7 +0.8
baz=147,SNR=25
SUSD **Miller** 74.08 337 P P 08 06 25.0 +0.1
baz=150
BELC **Belle Mtn. Jos** 74.14 319 P P 08 06 27.2 +1.5
baz=134,SNR=10
PFO **Pinyon Flats O** 74.15 319 P P 08 06 27.6 +1.9
baz=134,SNR=10
PFO **Pinyon Flats O** 74.15 319 eP P 08 06 27.8 +2.1
PFO pmax pmax
comp=Z,17nm,0.9s
PFO **Pinyon Flats O** 74.15 319 eP P 08 06 27.8 +2.1
comp=Z,17nm,0.9s
I29A **Vivian Onida** 74.21 336 P P 08 06 25.9 +0.1
baz=148,SNR=15
J27A **Elkhorn Farm,** 74.23 334 P P 08 06 27.3 +1.4
baz=147,SNR=45
G32A **Webster** 74.27 338 P P 08 06 26.2 +0.2
baz=151
LDFC **Landfair** 74.37 321 eP P 08 06 29.2 +2.3
comp=Z,29nm,0.9s
F33A **5 Mile Ranch,** 74.38 339 P P 08 06 26.4 -0.2
baz=152,SNR=7.4
D37A **Cotton** 74.39 342 P P 08 06 26.9 +0.2
baz=156
E35A **Pequot Lakes** 74.42 341 P P 08 06 27.0 +0.1
baz=154
O20A **White River Ci** 74.46 328 P P 08 06 29.1 +1.7
baz=141,SNR=24
O20A **White River Ci** 74.46 328 eP P 08 06 29.0 +1.5
comp=Z,32nm,0.8s
KNB **Kanab** 74.47 323 eP P 08 06 29.8 +2.2
KNB pmax pmax
comp=Z,66nm,1.0s
KNB **Kanab** 74.47 323 eP P 08 06 29.8 +2.2
comp=Z,66nm,1.0s
GMRC **Granite Mounta** 74.49 320 P P 08 06 29.4 +1.8
baz=134,SNR=35
G31A **Conde** 74.49 338 P P 08 06 27.0 -0.3
baz=150,SNR=5.6

I28A	Midland	74.53	335	P		P	08 06 28.1	+0.5
	baz=148,SNR=13							
MURC	Murrieta	74.59	318	P		P	08 06 29.7	+1.6
	baz=133,SNR=8.1							
E34A	Wadena	74.62	340	P		P	08 06 29.0	+1.0
	baz=153							
F32A	Veblen	74.68	339	P		P	08 06 28.1	-0.2
	baz=151							
H29A	Onida	74.69	336	P		P	08 06 28.6	+0.1
	baz=148,SNR=15							
LCMT	Little Creek M	74.69	323	eP		P	08 06 30.6	+1.8
	comp=Z,16nm,0.9s							
J26A	Sides Ranch, S	74.71	333	P		P	08 06 29.9	+1.2
	baz=146,SNR=18							
G30A	Faulkton	74.73	337	P		P	08 06 29.5	+0.8
	baz=150							
D35A	Remer	74.79	341	P		P	08 06 29.5	+0.6
	baz=154							
SRU	San Rafael Swe	74.81	326	eP		P	08 06 30.7	+1.2
SRU				pmax	pmax			
	comp=Z,20nm,0.8s							
SRU	San Rafael Swe	74.81	326	eP		P	08 06 30.7	+1.2
	comp=Z,20nm,0.8s							
VNDA	Vanda	74.83	190	P		P	08 06 30.0	+1.1
	comp=Z,10nm,0.9s,baz=130,slow=4.7,SNR=21							
VNDA	Vanda	74.83	190	eP		P	08 06 30.0	+1.1
	comp=Z,15nm,1.1s							
C37A	Embarrass	74.84	343	P		P	08 06 29.1	-0.1
	baz=156							
EYMN	Ely	74.86	343	P		P	08 06 29.4	0.0
	baz=157							
E33A	Westby DABS, E	74.87	340	P		P	08 06 29.2	-0.2
	baz=152							
MTPU	Mount Pierson	74.87	324	eP		P	08 06 31.6	+1.5
	comp=Z,12nm,0.9s							
BBRC	Big Bear Solar	74.88	319	P		P	08 06 31.7	+1.7
	baz=133,SNR=6.9							
HEC	Hector,Ludlow	74.92	320	P		P	08 06 32.2	+2.1
	baz=134,SNR=5.9							
I27A	Quinn	74.93	335	P		P	08 06 30.7	+0.8
	baz=147,SNR=15							
H28A	Mission Ridge	75.04	335	P		P	08 06 30.9	+0.4
	baz=148,SNR=12							
C36A	Pine Crest Far	75.05	342	P		P	08 06 30.4	-0.1
	baz=155,SNR=5.1							
F31A	Hecla	75.05	338	P		P	08 06 30.4	-0.1
	baz=150,SNR=14							
P18A	Preston Nutter	75.06	327	eP		P	08 06 32.7	+1.7
	comp=Z,21nm,0.8s							
G29A	Hoven	75.07	336	P		P	08 06 30.7	+0.1
	baz=149,SNR=5.0							
J25A	Sunshine Ranch	75.07	333	P		P	08 06 32.0	+1.2
	baz=145,SNR=9.6							
TUQ	Turquoise Moun	75.09	320	P		P	08 06 32.9	+1.7
	baz=134,SNR=8.9							
D34A	Park Rapids	75.14	340	P		P	08 06 30.6	-0.3
	baz=153							
P17A	Butcher Ranch,	75.19	326	eP		P	08 06 33.2	+1.5
	comp=Z,27nm,1.0s							
CIS	Catalina Islan	75.21	317	P		P	08 06 32.9	+1.2
	baz=132							
I26A	New Underwood	75.22	334	P		P	08 06 32.1	+0.6
	baz=146,SNR=9.1							
MSU	Marysvale	75.22	325	eP		P	08 06 33.7	+1.8
MSU	Marysvale	75.22	325	eP		P	08 06 33.6	+1.8
TMUT	Trail Mountain	75.30	326	eP		P	08 06 33.7	+1.3
	comp=Z,7.6nm,0.9s							
BFSC	Mount Baldy Ra	75.31	318	P		P	08 06 34.0	+1.6
	baz=133,SNR=8.7							
C35A	Jirik Farms, M	75.33	341	P		P	08 06 31.5	-0.5
	baz=154,SNR=5.8							
G28A	Parade	75.34	336	P		P	08 06 32.7	+0.6
	baz=148,SNR=17							
D33A	AnnSam, Waubun	75.39	340	P		P	08 06 31.9	-0.5
	baz=153							
H27A	Howes	75.41	335	P		P	08 06 33.1	+0.5
	baz=147,SNR=28							
GSC	Goldstone, Bar	75.52	320	P		P	08 06 35.4	+1.9
	baz=134,SNR=15							
GSC	Goldstone, Bar	75.52	320	eP		P	08 06 35.2	+1.7
GSC				pmax	pmax			
	comp=Z,26nm,1.2s							
GSC	Goldstone, Bar	75.52	320	eP		P	08 06 35.2	+1.7
	comp=Z,26nm,1.2s							
E31A	Nome	75.54	338	P		P	08 06 33.5	+0.3
	baz=151,SNR=8.7							
MWC	Mount Wilson	75.54	318	eP		P	08 06 35.3	+1.5
MWC				pmax	pmax			
	comp=Z,47nm,1.5s							
MWC	Mount Wilson	75.54	318	eP		P	08 06 35.3	+1.5
	comp=Z,47nm,1.5s							
C34A	RKJ Ranch, Bem	75.56	341	P		P	08 06 32.9	-0.4
	baz=154,SNR=5.6							
I25A	Rochford	75.56	333	P		P	08 06 35.0	+1.4
	baz=145,SNR=32							
PASC	Pasadena Art C	75.58	318	eP		P	08 06 35.2	+1.5
	comp=Z,25nm,1.1s							
F29A	Eureka	75.59	337	P		P	08 06 33.8	+0.2
	baz=149							
SHOC	Shoshone, Teco	75.62	320	P		P	08 06 35.4	+1.4
	baz=134							
K22A	Casper	75.64	331	P		P	08 06 35.5	+1.4
	baz=143,SNR=10							
K22A	Casper	75.64	331	eP		P	08 06 35.8	+1.7
	comp=Z,39nm,1.3s							
H26A	Fairpoint	75.67	334	P		P	08 06 34.5	+0.4
	baz=146,SNR=9.5							
VAH	Vaihoa	75.71	259	eP		P	08 06 37.1	+2.2
	comp=Z,93nm,1.1s							
DECC	Green Verdugo	75.73	318	P		P	08 06 36.4	+1.8
	baz=132							
RSSD	Black Hills	75.77	333	P		P	08 06 35.9	+1.0
	baz=145							
RSSD	Black Hills	75.77	333	eP		P	08 06 36.1	+1.2
RSSD				pmax	pmax			
	comp=Z,21nm,0.9s							
RSSD	Black Hills	75.77	333	eP		P	08 06 36.1	+1.2
	comp=Z,21nm,0.9s							
E30A	Jud	75.84	338	P		P	08 06 35.1	+0.1
	baz=150,SNR=5.1							
B35A	Bob, Littlefor	75.85	342	P		P	08 06 34.6	-0.3
	baz=155,SNR=9.1							
C33A	Trail	75.92	340	P		P	08 06 35.2	-0.2
	baz=153,SNR=8.2							
EDW2	Edwards Air Fo	75.94	319	P		P	08 06 36.9	+1.1
	baz=133							
F28A	McLaughlin	75.95	336	P		P	08 06 36.3	+0.6
	baz=148,SNR=13							
G27A	Dupree	75.98	335	P		P	08 06 36.3	+0.5
	baz=147,SNR=20							
H25A	Fruitdale	76.00	334	P		P	08 06 36.9	+0.8
	baz=146,SNR=6.4							
PMOR	Pomariorio Ree	76.03	260	eP		P	08 06 39.3	+2.5
	comp=Z,66nm,0.9s							
MPU	Maple Canyon	76.05	326	eP		P	08 06 38.1	+1.5
	comp=Z,20nm,1.2s							
BLG	Laguna Peak, P	76.08	318	P		P	08 06 37.9	+1.3
	baz=132							
E29A	Napoleon	76.15	337	P		P	08 06 36.9	+0.1
	baz=149							
LRMC	Laurel Mtn Rad	76.16	319	P		P	08 06 38.5	+1.3
	baz=133,SNR=6.5							
G26A	Maurine	76.17	335	P		P	08 06 37.3	+0.4
	baz=146,SNR=26							
B34A	Aery, Baudette	76.23	341	P		P	08 06 36.9	-0.2
	baz=154							
NLU	North Lily Min	76.23	326	eP		P	08 06 39.2	+1.6
	comp=Z,43nm,1.8s							
D30A	Buchanan	76.31	338	P		P	08 06 38.2	+0.7
	baz=150,SNR=30							
B33A	Robert and Kas	76.32	341	P		P	08 06 37.3	-0.3
	baz=153,SNR=8.5							
TPNV	Topopah Spring	76.34	321	P		P	08 06 40.1	+1.9
	baz=134,SNR=28							
TPNV	Topopah Spring	76.34	321	eP		P	08 06 40.2	+2.0
TPNV				pmax	pmax			
	comp=Z,42nm,1.3s							
TPNV	Topopah Spring	76.34	321	eP		P	08 06 40.2	+2.0
	comp=Z,42nm,1.3s							
SCZ2	Santa Cruz Isl	76.36	317	P		P	08 06 40.2	+2.0
	baz=131							
FURC	Furnace Creek,	76.36	321	P		P	08 06 39.8	+1.8
	baz=134,SNR=14							
JLU	Jordanelle	76.40	327	eP		P	08 06 40.1	+1.6
	comp=Z,67nm,1.7s							
TOA0	Torodi Ar. Sit	76.40	69	eP		P	08 06 37.8	-1.0
TOA1	Torodi Ar. Sit	76.40	69	eP		P	08 06 37.8	-1.1
	comp=Z,19nm,0.7s							
TORD	Torodi Ar. Bea	76.40	69	P		P	08 06 37.8	-1.1
	comp=Z,18nm,0.7s,baz=255,slow=5.4,SNR=98							
G25A	Newell	76.40	334	P		P	08 06 38.9	+0.7
	baz=146,SNR=15							
AGMN	Agassiz Nation	76.42	341	P		P	08 06 38.2	0.0
	baz=153,SNR=14							
AGMN	Agassiz Nation	76.42	341	eP		P	08 06 38.2	0.0
	comp=Z,27nm,0.8s							
F27A	Lemmon	76.43	336	P		P	08 06 38.9	+0.6
	baz=147,SNR=23							
MPMC	Manual Prospec	76.44	320	P		P	08 06 40.1	+1.3
	baz=133							
E28A	Huff	76.53	337	P		P	08 06 39.4	+0.6
	baz=148,SNR=9.6							
D29A	Pettibone, Tap	76.56	338	P		P	08 06 39.4	+0.4
	baz=149							
C31A	Landman Farms,	76.57	339	P		P	08 06 39.0	0.0
	baz=151,SNR=7.9							
ARVC	Arvin	76.62	318	P		P	08 06 41.2	+1.6
	baz=132							
CTU	Camp Tracy	76.62	327	eP		P	08 06 41.2	+1.5
	comp=Z,4.6nm,0.8s							
DAC	Darwin (Calif)	76.66	320	eP		P	08 06 41.5	+1.5
DAC				pmax	pmax			
	comp=Z,25nm,1.0s							
DAC	Darwin (Calif)	76.66	320	eP		P	08 06 41.5	+1.5
	comp=Z,25nm,1.0s							
F26A	Lodgepole	76.66	335	P		P	08 06 40.3	+0.7
	baz=146,SNR=37							
B32A	Ashes, Strandq	76.72	340	P		P	08 06 39.9	+0.1
	baz=152,SNR=29							
E27A	Carson	76.73	336	P		P	08 06 40.7	+0.8
	baz=148,SNR=7.9							
C30A	Mose, Pekin	76.73	339	P		P	08 06 40.6	+0.6
	baz=150,SNR=10							
TCUT	Toone Canyon	76.76	327	eP		P	08 06 42.0	+1.4
	comp=Z,100nm,1.8s							
DUG	Dugway, Tooele	76.79	326	P		P	08 06 42.0	+1.4
	baz=137,SNR=14							
DUG	Dugway, Tooele	76.79	326	eP		P	08 06 42.3	+1.6
DUG				pmax	pmax			
	comp=Z,21nm,1.2s							
DUG	Dugway, Tooele	76.79	326	eP		P	08 06 42.2	+1.6
	comp=Z,21nm,1.2s							
A33A	Warroad	76.85	341	P		P	08 06 40.8	+0.3
	baz=153,SNR=15							
R11A	Troy Canyon, C	76.95	323	P		P	08 06 43.2	+1.6
	baz=135,SNR=28							
R11A	Troy Canyon, C	76.95	323	eP		P	08 06 43.3	+1.7
	comp=Z,30nm,1.4s							
D28A	Regan	77.01	337	P		P	08 06 41.9	+0.3
	baz=148							
GRAC	Grapevine Rang	77.02	321	P		P	08 06 43.4	+1.6
	baz=134							
F25A	Bowman	77.03	335	P		P	08 06 42.4	+0.7
	baz=146,SNR=5.9							
PKM	Mcpherson Peak	77.06	318	P		P	08 06 43.9	+1.6
	baz=131,SNR=14							
B31A	Greenbush Farm	77.09	340	P		P	08 06 41.9	0.0
	baz=151							
E26A	Carlson Angus	77.10	336	P		P	08 06 42.5	+0.4
	baz=147,SNR=12							
BW06	Boulder Array	77.12	329	P		P	08 06 43.3	+0.8
	baz=140,SNR=11							
BW06	Boulder Array	77.12	329	eP		P	08 06 43.3	+0.8
PD31	Pinedale Array	77.12	329	eP		P	08 06 43.1	+0.6
PDAR	Pinedale Array	77.12	329	P		P	08 06 43.1	+0.6
	comp=Z,3.0nm,0.6s,baz=123,slow=7.4,SNR=47							
RSUT	Red Spur Mount	77.16	327	eP		P	08 06 43.8	+1.0
A32A	Rocking H Ranc	77.17	340	P		P	08 06 42.7	+0.4
	baz=152							
HWUT	Hardware Ranch	77.21	327	eP		P	08 06 43.9	+1.0
	comp=Z,13nm,0.7s							
MDND	Maddock	77.24	338	P		P	08 06 43.5	+0.7
	baz=149,SNR=14							
MDND	Maddock	77.24	338	eP		P	08 06 43.7	+0.9
	comp=Z,150nm,0.8s							
D27A	Center	77.29	337	P		P	08 06 43.9	+0.8
	baz=148							
B30A	Myrvik Farm, E	77.34	339	P		P	08 06 43.5	+0.2
	baz=151,SNR=11							
C28A	Hausauer Farms	77.40	338	P		P	08 06 44.2	+0.5
	baz=149							
BGU	Big Grassy Mou	77.44	326	eP		P	08 06 45.3	+1.0
	comp=Z,33nm,1.4s							
SMMC	Simmler	77.45	318	P		P	08 06 46.1	+1.8
	baz=131,SNR=7.6							
E25A	Miller Ranch,	77.48	335	P		P	08 06 45.2	+1.0
	baz=146,SNR=13							
TSUM	Tsumeb	77.55	106	eP		P	08 06 44.8	-0.6
	comp=Z,9.4nm,0.7s							
D26A	Manning	77.56	336	P		P	08 06 45.3	+0.7
	baz=147,SNR=14							
TIN	Tinemaha, Big	77.56	320	P		P	08 06 47.2	+2.2
	baz=133							
RCTC	Rector, Farmer	77.65	319	P		P	08 06 46.5	+1.2
	baz=132							
B29A	Wagenman Farm,	77.69	339	P		P	08 06 45.8	+0.6
	baz=150,SNR=8.9							
A30A	Hoffart Farm,	77.75	339	P		P	08 06 45.5	-0.1
	baz=151,SNR=7.2							
C27A	Sayler Ranch,	77.79	337	P		P	08 06 46.6	+0.7
	baz=143,SNR=5.8							
MLI	Malad Range	77.80	327	eP		P	08 06 47.4	+1.1
AHID	Auburn Hatcher	77.86	328	eP		P	08 06 47.8	+1.3
	comp=Z,31nm,0.8s							
HVU	Hansel Valley	77.94	327	eP		P	08 06 48.0	+1.0
HVU				pmax	pmax			
	comp=Z,14nm,0.8s							
HVU	Hansel Valley	77.94	327	eP		P	08 06 48.0	+1.0
	comp=Z,14nm,0.8s							
D25A	Fairfield	77.99	335	P		P	08 06 48.2	+1.2
	baz=146,SNR=18							
B28A	Dugan Ranch, T	78.02	338	P		P	08 06 47.5	+0.5
	baz=149,SNR=20							
A29A	Manning Farm,	78.04	339	P		P	08 06 47.2	+0.1
	baz=150,SNR=26							
C26A	Wahner Farm, P	78.10	337	P		P	08 06 48.6	+1.1
	baz=147,SNR=9.8							
ULM	Lac du Bonnet	78.17	341	P		P	08 06 47.6	-0.2
	comp=Z,20nm,0.6s,baz=152,slow=6.2,SNR=33							
ULM	Lac du Bonnet	78.17	341	eP		P	08 06 47.6	-0.2
ULM				pmax	pmax			
	comp=Z,25nm,0.8s							
ULM	Lac du Bonnet	78.17	341	eP		P	08 06 47.6	-0.2
	comp=Z,24nm,0.8s							
REDW	Red Top Meadow	78.19	329	eP		P	08 06 49.5	+1.1
	comp=Z,17nm,0.9s							
SNOW	Snow King Moun	78.22	329	eP		P	08 06 50.0	+1.4
	comp=Z,17nm,0.8s							
LOHW	Long Hollow	78.26	329	eP		P	08 06 50.0	+1.2
	comp=Z,14nm,0.8s							
B27A	Peters Farms,	78.29	337	P		P	08 06 49.7	+1.1
	baz=148							
MLAC	Mammoth, Mammo	78.30	320	P		P	08 06 50.8	+1.6
	baz=133,SNR=10.0							
A28A	Rude Farm, Bot	78.38	338	P		P	08 06 49.8	+0.8
	baz=149							
SCHQ	Schefferville	78.40	0	P		P	08 06 48.8	-0.2
	comp=Z,9.3nm,0.7s,baz=193,slow=3.8,SNR=18							
SCHQ	Schefferville	78.40	0	eP		P	08 06 48.8	-0.2
	comp=Z,15nm,0.8s							
MOOW	Moose Ponds	78.43	329	eP		P	08 06 50.8	+1.1
	comp=Z,9.6nm,0.9s							
C25A	Freed Ranch, W	78.43	336	P		P	08 06 50.4	+1.0
	baz=146,SNR=7.1							
NV11	Mina Array Sit	78.45	321	eP		P	08 06 51.1	+1.3
	comp=Z,15nm,1.2s							
ELK	Elko	78.46	325	eP		P	08 06 51.2	+1.2
ELK				pmax	pmax			
	comp=Z,13nm,1.0s							
ELK	Elko	78.46	325	eP		P	08 06 51.2	+1.2
	comp=Z,13nm,1.0s							
NV01	Mina Array Sit	78.54	321	eP		P	08 06 51.8	+1.4
NVAR	Mina Array Bea	78.54	321	P		P	08 06 51.8	+1.3
	comp=Z,4.8nm,0.8s,baz=152,slow=6.3,SNR=42							
B26A	Jensen Ranch,	78.61	337	P		P	08 06 51.3	+1.0
	baz=147							
IMW	Indian Meadow	78.64	329	eP		P	08 06 52.3	+1.4
	comp=Z,26nm,0.9s							
FLWY	Flagg Ranch	78.67	329	eP		P	08 06 52.7	+1.7
	comp=Z,35nm,1.0s							
A27A	Ledoux Ranch,	78.75	338	P		P	08 06 52.0	+1.0
	baz=148,SNR=5.5							
LAO	LASA Array	78.75	334	P		P	08 06 51.9	+0.8
	baz=144,SNR=24							
LAO	LASA Array	78.75	334	eP		P	08 06 52.0	+0.8
	comp=Z,42nm,0.9s							
RLMT	Red Lodge	78.81	331	P		P	08 06 53.0	+1.3
	baz=141,SNR=20							
RLMT	Red Lodge	78.81	331	eP		P	08 06 53.1	+1.3
	comp=Z,92nm,1.8s							
H17A	Grant Village	78.85	330	eP		P	08 06 54.1	+2.1
	comp=Z,8.1nm,0.8s							
B25A	Knox Farm, Ray	78.86	336	P		P	08 06 53.3	+1.6
	baz=146,SNR=9.1							
LKWY	Lake	78.90	330	eP		P	08 06 54.5	+2.2
LKWY				pmax	pmax			
	comp=Z,15nm,1.0s							
LKWY	Lake	78.90	330	eP		P	08 06 54.5	+2.2
	comp=Z,15nm,1.0s							
A26A	Wade Farm, Ken	78.98	337	P		P	08 06 53.5	+1.2
	baz=147							
YFT	Old Faithful	79.01	330	eP		P	08 06 55.3	+2.4
	comp=Z,15nm,1.0s							
YMR	Madison River	79.23	330	eP		P	08 06 56.0	+1.9
	comp=Z,36nm,0.9s							
WAKR	Walker	79.24	321	eP		P	08 06 56.0	+1.7
BMN	Battle Mountai	79.31	323	eP		P	08 06 55.2	+0.7
BMN				pmax	pmax			
	comp=Z,12nm,1.4s							
BMN	Battle Mountai	79.31	323	eP		P	08 06 55.2	+0.7
	comp=Z,12nm,1.4s							
A25A	Svangstu Ranch	79.40	337	P		P	08 06 55.5	+0.9
	baz=146,SNR=13							
DGMT	Dagmar	79.42	336	P		P	08 06 55.9	+1.2
	baz=146,SNR=26							
DGMT	Dagmar	79.42	336	eP		P	08 06 56.1	+1.4
	comp=Z,80nm,0.8s							
CMB	Columbia Colle	79.48	320	eP		P	08 06 56.3	+0.9
CMB				pmax	pmax			
	comp=Z,6.0nm,0.9s							
CMB	Columbia Colle	79.48	320	eP		P	08 06 56.3	+0.9
	comp=Z,5.8nm,0.9s							
GCMT	Greycliff	79.51	331	eP		P	08 06 56.6	+1.2
QLMT	Earthquake Lak	79.57	329	eP		P	08 06 58.2	+2.3
HLID	Hailey	80.07	327	P		P	08 07 00.2	+1.7
	baz=137,SNR=58							
HLID	Hailey	80.07	327	eP		P	08 07 00.4	+1.8
	comp=Z,35nm,0.9s							
MCMT	McKenzie Canyo	80.24	329	eP		P	08 07 01.2	+1.7
BOZ	Bozeman (W)	80.28	330	P		P	08 07 00.2	+0.6
	baz=139,SNR=11							
BOZ	Bozeman (W)	80.28	330	eP		P	08 07 00.7	+1.1
BOZ				pmax	pmax			
	comp=Z,37nm,1.7s							
BOZ	Bozeman (W)	80.28	330	eP		P	08 07 00.7	+1.1
	comp=Z,37nm,1.7s							
AFDM	Forest Hills D	80.43	320	eP		P	08 07 01.6	+1.2
	comp=Z,17nm,1.2s							
DLMT	Dillon	80.52	329	eP		P	08 07 02.3	+1.4
	comp=Z,46nm,1.4s							
BOSA	Boshof	80.66	117	P		P	08 07 00.9	-1.2
	comp=Z,6.1nm,0.7s,baz=265,slow=5.3,SNR=10							
BOSA	Boshof	80.66	117	P		P	08 07 01.0	-1.2
BOSA				pmax	pmax			
	comp=Z,6.0nm,0.7s							
BOSA	Boshof	80.66	117	eP		P	08 07 00.9	-1.2
	comp=Z,27nm,1.4s							
MFID	Camas Ranch	80.68	326	eP		P	08 07 03.2	+1.5
	comp=Z,61nm,1.8s							
LRM	Limekiln Ridge	80.79	330	eP		P	08 07 03.7	+1.3
ORV	Oroville	81.14	320	eP		P	08 07 05.6	+1.5
ORV				pmax	pmax			
	comp=Z,36nm,1.2s							
ORV	Oroville	81.14	320	eP		P	08 07 05.6	+1.5
	comp=Z,36nm,1.2s							
HRY	Holter Researc	81.18	331	eP		P	08 07 05.6	+1.3
EGMT	Eagleton	81.28	332	P		P	08 07 05.2	+0.5
	baz=141,SNR=19							
EGMT	Eagleton	81.28	332	eP		P	08 07 05.2	+0.5
	comp=Z,37nm,1.0s							
WVOR	Wild Horse Val	81.46	324	eP		P	08 07 07.1	+1.2
WVOR				pmax	pmax			
	comp=Z,10.0nm,1.2s							
WVOR	Wild Horse Val	81.46	324	eP		P	08 07 07.0	+1.2
	comp=Z,9.5nm,1.2s							
MAW	Mawson	81.50	163	P		P	08 07 05.9	+0.3
	comp=Z,31nm,0.8s,baz=212,slow=6.1,SNR=46							
MAW	Mawson	81.50	163	eP		P	08 07 05.9	+0.3
	comp=Z,9.2nm,1.0s							
O03D	Paynes Creek	81.80	321	P		P	08 07 07.7	+0.1
	baz=131,SNR=6.8							
CHMT	Chamberlain Mo	81.98	330	eP		P	08 07 09.6	+1.0
MOD	Modoc Plateau	82.01	323	eP		P	08 07 09.9	+1.1
	comp=Z,25nm,1.1s							
MSO	Missoula	82.23	330	P		P	08 07 11.2	+1.4
	baz=137							
MSO	Missoula	82.23	330	eP		P	08 07 11.0	+1.2
	comp=Z,31nm,1.5s							
LBTB	Lobatse	82.31	114	eP		P	08 07 10.2	-0.6
LBTB				pmax	pmax			
	comp=Z,13nm,1.1s							
LBTB	Lobatse	82.31	114	eP		P	08 07 10.2	-0.6
	comp=Z,12nm,1.1s							
WDC	Whiskeytown Da	82.41	321	eP		P	08 07 10.6	-0.1
WDC				pmax	pmax			
	comp=Z,9.0nm,0.8s							
WDC	Whiskeytown Da	82.41	321	eP		P	08 07 10.6	-0.1
	comp=Z,8.8nm,0.8s							
BMO	Blue Mountains	82.45	326	eP		P	08 07 12.2	+1.3
	comp=Z,49nm,1.8s							
SWMT	Swartz Lake	82.76	330	eP		P	08 07 13.7	+1.2
N02D	Trinity Center	82.76	321	P		P	08 07 13.1	+0.5
	baz=130							
M04C	Macdoel	82.79	322	P		P	08 07 13.5	+0.7
	baz=131							
K05A	Summer Lake	82.89	323	eP		P	08 07 15.2	+1.9
	comp=Z,37nm,0.8s							
YBMT	Yellow Bay	83.03	330	eP		P	08 07 15.1	+1.2
JTMT	Jette	83.07	330	eP		P	08 07 15.1	+1.0
M02C	Callahan	83.12	321	P		P	08 07 14.8	+0.4
	baz=130							
F10A	Beach Ranch, E	83.19	327	eP		P	08 07 15.9	+1.2
	comp=Z,39nm,1.4s							
BLMT	Blacktail Moun	83.30	330	eP		P	08 07 16.4	+1.0
K04D	Chiloquin, OR	83.30	323	P		P	08 07 16.1	+0.7
	baz=131							
BSMT	Bassoo Peak	83.38	330	eP		P	08 07 16.7	+0.9
J05D	Fort Rock, OR	83.45	323	P		P	08 07 17.3	+1.2
	baz=132							
WALA	Waterton Lakes	83.87	331	eP		P	08 07 18.6	+0.5
	comp=Z,18nm,0.9s							
FFC	Flin Flon	83.90	340	eP		P	08 07 18.0	0.0
FFC				pmax	pmax			
	comp=Z,15nm,1.1s							
FF

JCW	**Jim Creek**	**87.06**	**327**	*e*P		**P**		**08 07 33.6**	**-0.1**
B05A	**Bryant**	**87.19**	**327**	P		**P**		**08 07 33.9**	**-0.5**
	baz=131								
CASY	**Casey**	**90.09**	**179**	*e*P		**P**		**08 07 48.4**	**+0.6**
	comp=Z,28nm,0.8s								
YKA	**Yellowknife Ar**	**94.07**	**340**	P		**P**		**08 08 06.2**	**+0.3**
	comp=Z,8.1nm,0.6s,baz=134,slow=4.5,SNR=288								
YKB5	**Yellowknife Ar**	**94.07**	**340**	*e*P		**P**		**08 08 06.0**	**0.0**
YKW3	**Yellowknife Ar**	**94.12**	**340**	*e*P		**P**		**08 08 06.3**	**+0.1**
	comp=Z,12nm,0.7s								
DLBC	**Dease Lake**	**97.19**	**332**	*e*P		Pdif		08 08 21.6	+1.1
	comp=Z,9.3nm,0.9s								
AKASG	**Malin Array Be**	**111.86**	**43**	PKiKP		**PKiKP**		**08 13 21.0**	**-0.8**
	comp=Z,0.3nm,0.3s,baz=272,slow=2.7,SNR=5.7								
OBN	**Obninsk**	**116.85**	**39**	*e*PKIKP		**PKPdf**		**08 13 29.9**	**-1.3**
OBN				pmax	pmax				
	comp=Z,7.0nm,1.0s								
KBZ	**Khabaz**	**120.11**	**52**	PKP		**PKPdf**		**08 13 36.8**	**-1.1**
	comp=Z,2.2nm,0.7s,baz=166,slow=4.1,SNR=4.6								
BILL	**Bilibino**	**125.43**	**338**	*e*PKIKP		**PKPdf**		**08 13 47.8**	**+0.4**
BILL				pmax	pmax				
	comp=Z,4.0nm,0.9s								
CTA	**Charters Tower**	**125.67**	**219**	PKP		**PKPdf**		**08 13 49.5**	**0.0**
	comp=Z,6.8nm,0.8s,baz=189,slow=1.5,SNR=9.9								
CTAO	**Charters Tower**	**125.67**	**219**	*e*PKIKP		**PKPdf**		**08 13 49.3**	**-0.1**
CTAO	**Charters Tower**	**125.67**	**219**	*e*PKPdf		**PKPdf**		**08 13 49.3**	**-0.1**
AS01	**Alice Springs**	**128.59**	**205**	*e*PKPdf		**PKPdf**		**08 13 54.2**	**-0.7**
ASAR	**Alice Springs**	**128.61**	**205**	PKP		**PKPdf**		**08 13 54.4**	**-0.7**
	comp=Z,13nm,0.8s,baz=148,slow=2.2,SNR=91								
ASAR				SKPbc	SKPbc			08 16 56.0	
	comp=Z,0.2nm,0.4s,baz=145,slow=3.3,SNR=4.1								
AS31	**Alice Springs**	**128.61**	**205**	*e*PKPdf		**PKPdf**		**08 13 54.5**	**-0.5**
ARU	**Arti**	**129.01**	**36**	PKP		**PKPdf**		**08 13 55.0**	**+0.4**
	comp=Z,9.2nm,0.2s,baz=330,slow=2.0,SNR=9.4								
ARU				SKPbc	SKPbc			08 16 57.5	+0.5
	comp=Z,7.0nm,0.2s,baz=256,slow=4.9,SNR=4.5								
AKTO	**Aktyubinsk**	**130.11**	**43**	PKP		**PKPdf**		**08 13 57.2**	**+0.3**
	comp=Z,4.5nm,0.8s,baz=268,slow=2.6,SNR=17								
AKTO				SKPbc		**SKPbc**		**08 17 01.1**	**-0.3**
	comp=Z,14nm,1.2s,baz=279,slow=3.5,SNR=17								
WSAR	**Wadi Sarin**	**130.29**	**79**	PKP		**PKPdf**		**08 13 57.6**	**-0.5**
	comp=Z,10nm,0.9s,baz=198,slow=4.1,SNR=4.5								
TIXI	**Tiksi**	**131.38**	**353**	PKP		**PKPdf**		**08 13 57.6**	**-1.1**
	comp=Z,3.4nm,0.8s,baz=34,slow=3.9,SNR=8.1								
TIXI				SKPbc		**SKPbc**		**08 17 04.9**	**-0.5**
	comp=Z,1.7nm,0.5s,baz=19,slow=4.3,SNR=4.6								
TIXI	**Tiksi**	**131.38**	**353**	*e*PKPdf		**PKPdf**		**08 13 57.6**	**-1.1**
TIXI				*e*PKPdf		**PkiKP**		**08 13 58.5**	**-1.1**
ABKAR	**Akbulak array**	**131.56**	**45**	*e*PKPdf		**PKPdf**		**08 14 00.4**	**+0.8**
WB2	**Warramunga Arr**	**131.78**	**207**	*e*PKPdf		**PKPdf**		**08 14 00.8**	**-0.3**
WR1	**Warramunga Arr**	**131.78**	**207**	*e*PKPdf		**PKPdf**		**08 14 00.8**	**-0.3**
WRA	**Warramunga Arr**	**131.78**	**207**	PKP		**PKPdf**		**08 14 00.8**	**-0.3**
	comp=Z,6.7nm,0.5s,baz=153,slow=2.0,SNR=80								
WRA				SKPbc		**SKPbc**		**08 17 07.7**	**-0.9**
	comp=Z,6.5nm,1.0s,baz=150,slow=3.4,SNR=16								
WRAB	**Tennant Creek**	**131.79**	**207**	*e*PKIKP		**PKPdf**		**08 14 00.9**	**-0.2**
WRAB	**Tennant Creek**	**131.79**	**207**	*e*PKPdf		**PKPdf**		**08 14 00.9**	**-0.2**
NRIK	**Noril'sk**	**132.03**	**12**	PKP		**PKPdf**		**08 13 59.5**	**-0.4**
	comp=Z,0.6nm,0.3s,baz=28,slow=1.3,SNR=3.9								
SEY	**Seymchan**	**133.03**	**337**	PKP		**PKPdf**		**08 14 02.6**	**+0.7**
	comp=Z,6.6nm,0.7s,baz=93,slow=1.3,SNR=5.9								
PEA1	**Petropavlovsk-**	**135.60**	**323**	*e*PKPdf		**PKPdf**		**08 14 07.2**	**0.0**
PETK	**Petropavlovsk-**	**135.61**	**323**	PKP		**PKPdf**		**08 14 07.2**	**0.0**
	comp=Z,6.3nm,0.8s,baz=104,slow=6.3,SNR=4.9								
ZRNK	**Zerenda**	**135.90**	**37**	*e*PKIKP		**PKPdf**		**08 14 08.6**	**+0.9**
ZRNK	**Zerenda**	**135.90**	**37**	*e*PKPdf		**PKPdf**		**08 14 08.6**	**+0.9**
FITZ	**Fitzroy Crossi**	**136.52**	**197**	PKP		**PKPdf**		**08 14 10.0**	**+0.1**
	comp=Z,5.2nm,0.7s,baz=204,slow=5.5,SNR=8.3								
BRVK	**Borovoye**	**136.55**	**37**	*e*PKIKP		**PKPdf**		**08 14 09.9**	**+1.0**
BRVK	**Borovoye**	**136.55**	**37**	*e*PKPdf		**PKPdf**		**08 14 09.9**	**+1.0**
BVAR	**Borovoye Array**	**136.63**	**37**	PKP		**PKPdf**		**08 14 08.6**	**-0.4**
	comp=Z,2.6nm,0.7s,baz=259,slow=3.0,SNR=15								
NVS	**Novosibirsk**	**141.95**	**28**	*e*PKIKP		**PKPdf**		**08 14 19.0**	**+0.4**
KURK	**Kurchatov**	**142.21**	**36**	*e*PKPpre	PKPpre			08 14 15.3	
KURK				*e*PKPdf		**PKPdf**		**08 14 19.3**	**+0.1**
KURBB	**Kurchatov Arra**	**142.21**	**36**	PKhKP	PKPpre			08 14 15.3	
	comp=Z,2.7nm,0.7s,baz=295,slow=2.9,SNR=16								
KURBB				PKP		**PKPdf**		**08 14 19.3**	**+0.1**
	comp=Z,4.0nm,0.9s,baz=294,slow=2.7,SNR=24								
EKS2	**Erkin-Say**	**142.55**	**50**	*e*PKIKP		**PKPdf**		**08 14 20.2**	**-0.1**
EKS2	**Erkin-Say**	**142.55**	**50**	*e*PKPdf		**PKPdf**		**08 14 20.2**	**-0.1**
AAK	**Ala-Archa**	**143.06**	**50**	PKP		PKPbc		08 14 18.7	0.0
	comp=Z,3.2nm,0.7s,baz=196,slow=4.1,SNR=9.2								
AAK	**Ala-Archa**	**143.06**	**50**	*e*PKPpre		PKPbab		08 14 18.7	+1.6
AAK				*e*PKPdf		PKPbc		08 14 19.2	+0.5
ZAA1	**Zalesovo Array**	**143.23**	**28**	*e*PKPpre		PKPbc		08 14 18.4	-0.1
ZAA0	**Zalesovo Array**	**143.23**	**28**	*e*PKPpre		PKPbc		08 14 18.1	-0.5
ZALV	**Zalesovo Beam**	**143.23**	**28**	PKP		PKPbc		08 14 18.4	-0.1
	comp=Z,19nm,0.7s,baz=300,slow=4.2,SNR=73								
TKM2	**Tokmak 2**	**143.74**	**49**	*e*PKIKP		PKPbc		08 14 20.4	-0.2
TKM2	**Tokmak 2**	**143.74**	**49**	*e*PKPpre		PKPbab		08 14 20.4	+0.5
NKL	**Nikolayevsk**	**144.13**	**332**	*i* PKIKP		**PKPdf**		**08 14 21.8**	**-0.7**
NKL				pmax	pmax				
	comp=E,15nm,0.9s								
NKL				pmax	pmax				
	comp=Z,130nm,0.9s								
BATI	**Baumata**	**144.59**	**198**	PKP		PKPbc		08 14 23.8	+0.1
	comp=Z,27nm,0.6s,baz=107,slow=23,SNR=7.2								
SOEI	**Soe**	**144.84**	**199**	*e*PKPbc		**PKPdf**		**08 14 25.4**	**+0.2**
KSH	**Kashi**	**145.02**	**55**	PKP		**PKPbc**		**08 14 24.3**	**-0.3**
KSH				AMB		AMB			
	comp=Z,100nm,5.4s								
BOD	**Bodaibo**	**146.10**	**359**	*e*PKIKP		**PKPdf**		**08 14 24.8**	**-1.0**
BOD				pmax	pmax				
	comp=Z,31nm,0.8s								
MAKZ	**Makanchi**	**146.16**	**40**	*e*PKP2		**PKPdf**		**08 14 26.8**	**+0.5**
MAKZ	**Makanchi**	**146.16**	**40**	*e*PKPdf		**PKPdf**		**08 14 26.8**	**+0.5**
MK32	**Makanchi Array**	**146.35**	**39**	*e*PKPdf		**PKPdf**		**08 14 27.3**	**+0.6**
MKAR	**Makanchi Array**	**146.35**	**39**	PKPbc		**PKPdf**		**08 14 27.3**	**+0.6**
	comp=Z,26nm,0.7s,baz=319,slow=2.2,SNR=125								
MKAR	**Makanchi Array**	**146.35**	**39**	*e*PKPdf		**PKPdf**		**08 14 27.1**	**+0.5**
HYB	**Hyderabad**	**147.05**	**95**	*i* PKP		**PKPdf**		**08 14 29.0**	**+0.3**
HYB				*e*				08 15 25.0	
JAGI	**Jajag, Banyuwa**	**147.82**	**182**	*e*PKPbc		**PKPbc**		**08 14 32.9**	**-0.3**
CISI	**Cisompet, Garu**	**148.31**	**170**	*e*PKPbc		**PKPbc**		**08 14 34.3**	**-0.2**
GUMO	**Guam**	**148.33**	**257**	PKPbc		**PKPbc**		**08 14 34.4**	**0.0**
	comp=Z,107nm,0.3s,baz=26,slow=13,SNR=6.9								
SMRI	**Semarang**	**149.14**	**175**	*e*PKPbc		**PKPbc**		**08 14 38.8**	**+2.3**
KAPI	**Kappang**	**150.56**	**193**	PKPbc		**PKPbc**		**08 14 39.8**	**-0.2**
	comp=Z,16nm,0.4s,baz=137,slow=4.2,SNR=5.8								
KAPI	**Kappang**	**150.56**	**193**	*e*PKPbc		**PKPbc**		**08 14 40.5**	**+0.6**
MOY	**Mondy**	**150.73**	**16**	*e*PKIKP		**PKPbc**		**08 14 40.5**	**+1.1**
MOY				pmax	pmax				
	comp=Z,51nm,1.7s								
KLR	**Kul'dur**	**150.78**	**335**	PKPbc		**PKPbc**		**08 14 39.3**	**-0.2**
	comp=Z,25nm,0.7s,baz=50,slow=2.7,SNR=64								
KLR				PKPab		**PKPab**		**08 14 47.5**	**+0.2**
	comp=Z,4.0nm,0.6s,baz=115,slow=2.9,SNR=5.6								
WMQ	**Urumqi**	**151.18**	**40**	*e*PKPbc		**PKPdf**		**08 14 32.3**	**-2.3**
WMQ				LR	LR				
	comp=Z,3μm,18.6s								
WMQ				LR	LR				
	comp=Z,2μm,17.0s								
WMQ				LR	LR				
	comp=Z,1μm,19.4s								
TLY	**Talaya**	**151.31**	**12**	PKPbc		**PKPbc**		**08 14 41.4**	**+0.7**
	comp=Z,4.3nm,0.5s,baz=298,slow=1.8,SNR=7.8								
TLY				PKPab		**PKPab**		**08 14 49.1**	**-0.3**
	comp=Z,7.6nm,0.8s,baz=169,slow=12,SNR=11								
TLY	**Talaya**	**151.31**	**12**	*e*PKIKP		**PKPdf**		**08 14 35.6**	**+1.1**
TLY	**Talaya**	**151.31**	**12**	*e*PKPdf		**PKPdf**		**08 14 35.6**	**+1.1**
TLY				*e*PKPbc		**PKPbc**		**08 14 41.3**	**+0.7**
TLY				*e*PKPab		**PKPab**		**08 14 50.4**	**+1.0**
ZAK	**Zakamensk**	**152.46**	**14**	*e*PKIKP		**PKPdf**		**08 14 36.8**	**+0.5**
ZAK				pmax	pmax				
	comp=Z,6.0nm,1.0s								
USRK	**Ussuriysk Ar.**	**154.54**	**327**	PKP		**PKPdf**		**08 14 38.4**	**-0.9**
	comp=Z,0.8nm,0.5s,baz=30,slow=5.0,SNR=5.4								
USRK				PKPbc		**PKiKP**		**08 14 48.2**	**+0.3**
	comp=Z,3.2nm,0.6s,baz=52,slow=1.1,SNR=8.1								
MJAR	**Matsushiro Arr**	**155.02**	**306**	PKP		**PKPdf**		**08 14 40.1**	**-0.2**
	comp=Z,3.4nm,1.2s,baz=277,slow=1.0,SNR=3.6								
MJAR				PKPab		**PKPab**		**08 15 05.5**	**-0.2**
	comp=Z,11nm,1.0s,baz=71,slow=2.4,SNR=12								
MJAR	**Matsushiro Arr**	**155.02**	**306**	PKIKP		**PKPdf**		**08 14 40.1**	**-0.2**
MJAR								08 15 05.5	
MJAR				pmax	pmax				
	comp=Z,2.0nm,1.0s								
MJAR				pmax	pmax				
	comp=Z,11nm,1.0s								
SONA1	**Songino Array**	**155.50**	**11**	*e*PKPdf		**PKPdf**		**08 14 41.3**	**+0.6**
SONA1				*e*PKPab		**PKPab**		**08 15 08.0**	**+0.6**
SONA0	**Songino Array**	**155.51**	**11**	*e*PKPdf		**PKPdf**		**08 14 40.7**	**0.0**
SONA0				*e*PKPab		**PKPab**		**08 15 06.8**	**-0.6**
SONM	**Songino Array**	**155.51**	**11**	PKP		**PKPdf**		**08 14 40.7**	**0.0**
	comp=Z,2.9nm,0.9s,baz=338,slow=0.6,SNR=18								
SONM				PKPab		**PKPab**		**08 15 06.8**	**-0.6**
	comp=Z,5.4nm,0.7s,baz=327,slow=4.3,SNR=17								
CN2	**Changchun**	**157.71**	**336**	*e*PKP		**PKPdf**		**08 14 45.9**	**+2.4**
GTA	**Gaotai**	**160.84**	**33**	*e*PKP		**PKPdf**		**08 14 48.2**	**+0.8**
KSRS	**Korea Array**	**161.48**	**320**	PKP		**PKPdf**		**08 14 48.0**	**+0.1**
	comp=Z,2.9nm,0.8s,baz=95,slow=1.7,SNR=9.6								
KSRS				PKPab		**PKPab**		**08 15 33.2**	**-0.2**
	comp=Z,1.9nm,0.8s,baz=25,slow=4.3,SNR=4.1								
KS01	**Wonju Array Si**	**161.48**	**320**	*e*PKPdf		**PKPdf**		**08 14 48.1**	**+0.1**
LZH	**Lanzhou**	**165.43**	**31**	*e*PKP		**PKPdf**		**08 14 50.8**	**-1.2**
LZH				pPKP		**pPKPdf**		**08 15 41.2**	**-1.8**
LZH				sPKP				08 16 02.0	
CM01	**Chiang Mai Arr**	**165.69**	**110**	*e*PKPab		**PKPab**		**08 15 52.2**	**-0.4**
CMAR	**Chiang Mai Arr**	**165.69**	**110**	PKP		**PKPdf**		**08 14 52.0**	**-0.5**
	comp=Z,1.5nm,0.6s,baz=249,slow=2.6,SNR=5.2								
CMAR				PKPab		**PKPab**		**08 15 52.3**	**-0.4**
	comp=Z,6.2nm,1.0s,baz=251,slow=5.0,SNR=6.2								
CMAR	**Chiang Mai Arr**	**165.69**	**110**	PKIKP		**PKPdf**		**08 14 52.0**	**-0.5**
CMAR								08 15 52.3	
CMAR				pmax	pmax				
	comp=Z,1.0nm,0.4s								
CMAR				pmax	pmax				
	comp=Z,6.0nm,1.0s								
CD2	**Chengdu**	**169.12**	**48**	PKP		**PKPdf**		**08 14 52.5**	**-2.1**
XAN	**Xi'an**	**169.23**	**19**	PKP		**PKPdf**		**08 14 54.8**	**+0.2**
NJ2	**Nanjing**	**170.43**	**329**	*e*PKP		**PKPdf**		**08 14 53.8**	**-1.5**
KMI	**Kunming**	**170.44**	**80**	PKP		**PKPdf**		**08 14 53.8**	**-2.0**
GYA	**Guiyang**	**173.59**	**65**	PKP		**PKPdf**		**08 14 55.2**	**-1.9**
GYA				pPKP		**pPKPdf**		**08 15 46.0**	**-2.1**
GYA				sPKP				08 16 05.6	
GYA				PP		**PP**		**08 20 20.4**	**+0.4**
GYA				AMB		AMB			
	comp=Z,130nm,8.6s								

IDC ***11*** *07:55:47.0±2.6, 54°.30N×86°.89E, h0km, mb1 3.1/3, mb1mx3.0/54, mbtmp3.1/3, ML2.8/3, Error ellipse: s-maj=21.6km s-min=13.5km az=61.0*
NNC ***11*** *07:55:47.6±1.7, 53°.85N×87°.30E, h0km, mb3.6, mpv3.2, Error ellipse: s-maj=21.7km s-min=12.4km az=167.0*

ISC 11 07:55:47.7±4.5, 54°.5N±0°.2×87°.0E±0°.2, h35km, n8, σ1s50/10, 3C-4D, Southwestern Siberia

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
I46RU	**ZALESOVO INFRA**	**1.41**	**246**	*i*				08 04 34.4	
	baz=75,slow=321,SNR=5.5								
ZALV	**Zalesovo Beam**	**1.41**	**246**	Pg		**Pn**		**07 56 09.7**	**-1.1**
	4.3nm,0.3s,baz=72,slow=16,SNR=32								
ZALV				Lg		Lg		07 56 28.1	
	2.8nm,0.3s,baz=72,slow=29,SNR=9.2								
KURK	**Kurchatov**	**6.37**	**236**	⇑Pn		**Pn**		**07 57 20.5**	**+1.4**
	4.4nm,1.3s								
KURK				⇓Lg		Lg		07 59 05.6	
	6.9nm,0.8s								
KURBB	**Kurchatov Arra**	**6.48**	**236**	Pn		**Pn**		**07 57 22.2**	**+1.8**
	0.2nm,0.3s,baz=52,slow=13,SNR=14								
KURBB				Sn		**Sn**		**07 58 32.6**	**-0.5**
	0.0nm,0.3s,baz=317,slow=32,SNR=2.9								
KURBB				Lg		Lg		07 59 07.5	
	0.1nm,0.3s,baz=56,slow=33,SNR=6.3								
KURBB	**Kurchatov Arra**	**6.48**	**236**	⇓Pn		**Pn**		**07 57 21.2**	**+0.8**
	2.7nm,0.7s								
KURBB				⇑Sn		**Sn**		**07 58 34.8**	**+1.7**
	2.2nm,0.5s								
KURBB				⇓Lg		Lg		07 59 07.8	
	6.1nm,0.7s								
MK31	**Makanchi Array**	**8.31**	**203**	⇑Pn		Pn		07 57 41.9	-3.8
	0.3nm,0.5s,baz=29,slow=14,SNR=5.5								
MK31				⇓Lg		Lg		07 59 54.0	
	2.9nm,1.1s,baz=29,slow=27,SNR=3.7								
MKAR	**Makanchi Array**	**8.31**	**203**	Pn		**Pn**		**07 57 46.1**	**+0.5**
	0.1nm,0.3s,baz=26,slow=13,SNR=5.8								
MKAR				Sn		**Sn**		**07 59 16.8**	**-1.5**
	0.1nm,0.3s,baz=25,slow=24,SNR=5.4								
MKAR				Lg		Lg		08 00 02.5	
	0.1nm,0.3s,baz=28,slow=31,SNR=5.3								
BVAR	**Borovoye Array**	**9.94**	**268**	Pn		**Pn**		**07 58 09.1**	**+1.1**
	0.1nm,0.3s,baz=67,slow=15,SNR=2.9								
BVAR				Sn		**Sn**		**07 59 56.8**	**-1.4**
	0.2nm,0.3s,baz=57,slow=24,SNR=3.3								

NIED ***11*** *08:10:00, 42°.70N×143°.40E, h77km, Mw4.0 Best double couple: M0 1.05000×10¹⁵ NP1:φs147.00000°, δ32.00000°, λ14.00000°. NP2:φs45.00000°, δ83.00000°, λ121.00000°.*
IDC ***11*** *08:10:14.8±2.3, 42°.73N×143°.37E, h75km±22km, mb4.0/26, mb1 4.1/31, mb1mx3.9/66, mbtmp4.3/31, Error ellipse: s-maj=15.4km s-min=12.6km az=154.0*
NEIC ***11*** *08:10:15.0±0.5, 42°.69N×143°.41E, h79km±5km, mb4.7/7, Error ellipse: s-maj=7.7km s-min=4.9km az=128.0*
MOS ***11*** *08:10:14.5±1.2, 42°.68N×143°.30E, h90km, mb4.4/17, Error ellipse: s-maj=11.4km s-min=6.8km az=74.5*
ISCJB ***11*** *08:10:15.0±0.3, 42°.63N±0°.04×143°.42E±0°.04, h99km±2km, mb4.2/32, Error ellipse: s-maj=6.8km s-min=4.3km az=150.0*
JMA ***11*** *08:10:17.1±0.1, 42°.67N×143°.33E, h85km±1km, M3.7 Broadband fault plane solution: P waves. NP1: φs45.00000°, δ77.00000°, λ125.00000°. NP2: φs153.00000°, δ37.00000°, λ21.00000°. Principal axes: T Plg46.0000°, Azm351.0000°; N Plg34.0000°, Azm217.0000°; P Plg24.0000°, Azm109.0000°;*
JMA Felt I J1.

ISC 11 08:10:15.4±0.6, 42°.60N±0°.04×143°.41E±0°.04, h88km±5km, n84, σ1s16/91, mb4.3/32, 5C-10D, Hokkaido region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
JCH	**Churui**	**0.04**	**294**	⇑P		**Pn**		**08 10 29.1**	**+1.3**
JCH				*e*S		**Sn**		**08 10 37.7**	**+0.7**
JOB	**Onbets**	**0.44**	**46**	⇑P		**Pn**		**08 10 31.1**	**+1.7**
JOB				*e*S		**Sn**		**08 10 41.5**	**+1.6**
JNBK	**Urakawa-nobuka**	**0.58**	**237**	⇑P		**Pn**		**08 10 32.6**	**+2.0**
JEM	**Erimo**	**0.61**	**198**	P		**Pn**		**08 10 33.0**	**+2.1**
ERM	**Erimo**	**0.61**	**198**	*e*Pn		**Pn**		**08 10 29.8**	**-1.1**
ERM				*e*				08 10 39.2	
ERM	**Erimo**	**0.61**	**198**	*e*Pn		**Pn**		**08 10 29.8**	**-1.1**
ERM				*e*Sn		**Sn**		**08 10 39.2**	**-3.2**
JAR	**Ashorobuto**	**0.75**	**21**	⇓P		**Pn**		**08 10 33.1**	**+0.9**
JAR				*e*S		**Sn**		**08 10 45.0**	**+0.3**
JBT2	**Biratori 2**	**0.79**	**283**	⇓P		**Pn**		**08 10 33.7**	**+1.1**
JFR	**Furan**	**0.82**	**314**	⇓P		**Pn**		**08 10 33.1**	**+0.1**
JAK	**Akkeshi**	**1.03**	**67**	P		**Pn**		**08 10 36.5**	**+1.3**
JAK				*e*S		**Sn**		**08 10 51.4**	**+1.3**
JAB	**Ashibetsu**	**1.25**	**317**	⇓P		**Pn**		**08 10 38.7**	**+0.7**
JKK2	**Kamakawa 2**	**1.36**	**339**	⇓P		**Pn**		**08 10 39.8**	**+0.5**
JNK	**Nakash**	**1.38**	**44**	P		**Pn**		**08 10 40.1**	**+0.6**
JNK				*e*S		**Sn**		**08 10 57.8**	**+0.1**
JMP	**Maruseppu**	**1.41**	**359**	⇓P		**Pn**		**08 10 40.5**	**+0.6**
JMP				*e*S		**Sn**		**08 10 58.1**	**-0.3**
JTKR	**Abashiri--Toko**	**1.42**	**15**	⇓P		**Pn**		**08 10 40.6**	**+0.6**
JTKR				*e*S		**Sn**		**08 10 58.3**	**-0.3**
JEW	**Eniwo**	**1.46**	**280**	⇓P		**Pn**		**08 10 42.2**	**+1.6**
JEW				*e*S		**Sn**		**08 11 01.5**	**+1.9**
ASAJ	**Asahikawa**	**1.63**	**339**	⇓P		**Pn**		**08 10 43.6**	**+0.9**
JHR	**Hokuryu**	**1.68**	**313**	⇓P		**Pn**		**08 10 44.3**	**+1.0**
JHR				*e*S		**Sn**		**08 11 05.5**	**+0.9**
YUK	**Yuzh-Kuril'sk**	**2.29**	**50**	*c i*PN		**Pn**		**08 10 53.5**	**+2.1**
YUK				*i* S		**Sn**		**08 11 19.6**	**+0.7**
YUK				pmax	pmax				
	comp=Z,268nm,0.4s								
YUK				pmax	pmax				
	comp=N,110nm,0.5s								
YUK				pmax	pmax				
	comp=E,103nm,0.4s								
YUK				smax	smax				
	comp=E,1μm,0.5s								
YUK				smax	smax				
	comp=N,657nm,0.6s								
SHO	**Shikotan**	**2.81**	**62**	*c i*PN		**Pn**		**08 10 59.2**	**+1.0**
SHO				*i* S		**Sn**		**08 11 29.6**	**-1.5**
SHO				pmax	pmax				
	comp=Z,132nm,0.5s								
SHO				pmax	pmax				
	comp=E,45nm,0.4s								
SHO				pmax	pmax				
	comp=N,34nm,0.5s								
SHO				smax	smax				
	comp=N,839nm,0.5s								
SHO				smax	smax				
	comp=E,583nm,0.5s								

KUR	**Kuril'sk**	**4.16**	**49**	PN		Pn		08 11 20.0	+3.5
KUR				S		**Sn**		**08 12 07.7**	**+3.8**
YSS	**Yuzh-Sakhalins**	**4.38**	**354**	*e*PN		**Pn**		**08 11 20.0**	**+0.5**
YSS				*e*				08 12 09.0	
YSS				pmax	pmax				
	comp=Z,40nm,0.8s								
YSS	**Yuzh-Sakhalins**	**4.38**	**354**	*e*Pn		**Pn**		**08 11 19.5**	**0.0**
MAJO	**Matsushiro**	**7.26**	**215**	*e*PN		**Pn**		**08 11 59.0**	**+0.2**
MAJO	**Matsushiro**	**7.26**	**215**	*e*Pn		**Pn**		**08 11 59.0**	**+0.2**
MJAR	**Matsushiro Arr**	**7.26**	**215**	P		**Pn**		**08 12 00.0**	**+1.2**
	comp=Z,1.0nm,0.3s,baz=34,slow=12,SNR=12								
USRK	**Ussuriysk Ar.**	**8.47**	**285**	P		**Pn**		**08 12 17.7**	**+2.5**
	comp=Z,0.8nm,0.3s,baz=86,slow=14,SNR=11								
JHJ	**Hachijo jima 2**	**9.89**	**198**	P		**Pn**		**08 12 34.1**	**-0.5**
	comp=Z,13nm,0.3s,baz=90,slow=22,SNR=6.5								
JHJ				S		Sn		08 14 17.6	-6.2
	comp=Z,18nm,0.3s,baz=247,slow=23,SNR=7.0								
NKL	**Nikolayevsk**	**10.71**	**351**	*e*PN		**Pn**		**08 12 43.2**	**-2.5**
KSRS	**Korea Array**	**12.93**	**252**	P		**Pn**		**08 13 16.7**	**+1.1**
	comp=Z,0.2nm,0.3s,baz=63,slow=14,SNR=3.5								
KSAR	**Wonju Array Be**	**12.96**	**252**	PN		**Pn**		**08 13 16.7**	**+0.6**
KSAR	**Wonju Array Be**	**12.96**	**252**	P		**Pn**		**08 13 16.7**	**+0.6**
PETK	**Petropavlovsk-**	**14.20**	**37**	P		**Pn**		**08 13 30.2**	**-2.0**
	comp=Z,0.3nm,0.3s,baz=219,slow=11,SNR=3.1								
MA2	**Magadan**	**17.60**	**12**	P		**P**		**08 14 13.1**	**-1.3**
	comp=Z,1.6nm,0.3s,baz=222,slow=10,SNR=11								
SEY	**Seymchan**	**21.04**	**11**	P		**P**		**08 14 49.8**	**-2.0**
	comp=Z,30nm,0.7s,baz=187,slow=8.2,SNR=61								
SONM	**Songino Array**	**26.42**	**294**	P		**P**		**08 15 43.2**	**-0.6**
	comp=Z,1.4nm,0.5s,baz=87,slow=7.4,SNR=4.9								
SONM	**Songino Array**	**26.42**

1.7nm,0.7s,baz=238,slow=6.9,SNR=9.1
ZALV Zalesovo Beam 52.38 32 P **P** **08 21 22.9 -1.5**
1.8nm,0.8s,baz=246,slow=6.3,SNR=6.6

CSEM ***11*** *08:15:46.3,34.˚31N×25.˚30E,h20km,ML2.3/5*
ATH 11 08:15:46.3,34.˚31N×25.˚30E,h20km±4km,ML2.3/4,Error ellipse: s-maj=4.9km s-min=1.4km az=350.0,Crete

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SIVA	**Sivas**	**0.82**	**330**	P	Pn	08 16 03.1	+0.4
SIVA				S	Sg	08 16 13.6	+0.4
SIVA	**Sivas**	**0.82**	**330**	P	Pn	08 16 02.8	+0.1
SIVA				S	Sn	08 16 14.2	-0.1
SIVA	**Sivas**	**0.82**	**330**	P	Pn	08 16 02.8	0.0
SIVA				S	Sn	08 16 14.2	-0.1
SIVA				AML	AML	08 16 16.9	
	comp=E,2562μm,0.9s						
SIVA				AML	AML	08 16 18.2	
	comp=N,2272μm,0.4s						
LAST	**Lasithi**	**0.87**	**9**	P	Pn	08 16 03.5	0.0
LAST				S	Sn	08 16 15.6	0.0
LAST	**Lasithi**	**0.87**	**9**	P	Pb	08 16 02.7	0.0
LAST				S	Sn	08 16 15.3	-0.3
LAST	**Lasithi**	**0.87**	**9**	P	Pb	08 16 02.7	0.0
NPS	**Neapolis**	**0.99**	**15**	P	Pb	08 16 04.5	-0.3
NPS	**Neapolis**	**0.99**	**15**	P	Pb	08 16 04.5	-0.2
IDI	**Anoyia**	**1.04**	**341**	P	Pg	08 16 06.5	0.0
IDI	**Anoyia**	**1.04**	**341**	P	Pb	08 16 05.3	-0.3
IDI				S	Sn	08 16 19.8	0.0
IDI	**Anoyia**	**1.04**	**341**	P	Pb	08 16 05.3	-0.3
IDI				S	Sn	08 16 19.8	-0.1
IDI				AML	AML	08 16 25.4	
	comp=E,170μm,0.6s						
IDI				AML	AML	08 16 27.5	
	comp=N,156μm,0.6s						
ZKR	**Zakros**	**1.10**	**43**	P	Pg	08 16 09.7	+2.0
ZKR	**Zakros**	**1.10**	**43**	P	Pb	08 16 07.2	+0.5
ZKR				S	Sg	08 16 23.0	+0.8
ZKR	**Zakros**	**1.10**	**43**	P	Pb	08 16 07.2	+0.5
ZKR				S	Sg	08 16 23.0	+0.7
ZKR				AML	AML	08 16 32.5	
	comp=E,164μm,0.5s						
ZKR				AML	AML	08 16 33.2	
	comp=N,143μm,0.3s						
GVD	**Gavdhos**	**1.14**	**298**	P	Pg	08 16 08.6	+0.3
GVD				S	Sn	08 16 22.3	+0.2
GVD	**Gavdhos**	**1.14**	**298**	P	Pb	08 16 07.6	+0.3
GVD				S	Sg	08 16 24.1	+0.8
GVD	**Gavdhos**	**1.14**	**298**	P	Pb	08 16 07.6	+0.4
GVD				S	Sg	08 16 24.1	+0.8
GVD				AML	AML	08 16 29.0	
	comp=E,514μm,0.4s						
GVD				AML	AML	08 16 29.8	
	comp=N,655μm,0.4s						
VAM	**Vamos**	**1.43**	**321**	P	Pg	08 16 13.2	-0.6
VAM	**Vamos**	**1.43**	**321**	P	Pb	08 16 12.9	+0.7
IMMV	**Iera Moni Meta**	**1.58**	**317**	P	Pb	08 16 15.3	+0.4
IMMV	**Iera Moni Meta**	**1.58**	**317**	P	Pb	08 16 15.3	+0.4
KARP	**Karpathos**	**1.96**	**50**	P	Pb	08 16 21.3	-0.1
KARP	**Karpathos**	**1.96**	**50**	P	Pb	08 16 21.3	-0.1

NIED ***11*** *08:16:00,36.˚90N×140.˚70E,h5km,Mw6.6 Best double couple: M0 9.58000×10^18 NP1:φs301.00000°,δ41.00000°, λ-99.00000°. NP2:φs132.00000°,δ50.00000°, λ-82.00000°.*

ISCJB ***11*** *08:16:10.1±0.4,36.˚96N±0.˚01×140.˚44E±0.˚01,h4km±2km, mb6.3/608,MS6.5/601,Error ellipse: s-maj=2.2km s-min=1.6km az=144.9*

IDC ***11*** *08:16:10.7±0.3,36.˚98N×140.˚47E,h0km,mb5.8/60, mb1 5.9/62,mb1mx5.9/63,mbtmp5.8/62,ML3.9/2,MS6.4/53, Ms1 6.4/53,ms1mx6.3/61,Error ellipse: s-maj=10.6km s-min=7.8km az=63.0*

MOS ***11*** *08:16:10.9±0.9,37.˚07N×140.˚51E,h12km,mb6.5/164, MS6.5/148,Error ellipse: s-maj=5.7km s-min=3.7km az=101.3*

BJI ***11*** *08:16:11.1,36.˚90N×140.˚70E,h30km,mb6.0/54,mB6.5/65, Ms6.8/98,Ms7 6.8/75*

NEIC ***11*** *08:16:12.7±0.1,37.˚00N×140.˚40E,h11km,mb6.4/299, ME6.5,MS6.5/300,MW6.6,MW6.6,Error ellipse: s-maj=2.4km s-min=1.8km az=135.0 Broadband fault plane solution: P waves. NP1:φs225.00000°,δ20.00000°, λ-90.00000°. NP2:φs45.00000°,δ70.00000°,λ-90.00000°. Principal axes: T Plg25.0000°, Azm135.0000°; N Plg0.0000°, Azm0.0000°; P Plg65.0000°, Azm315.0000°; Depth from synthetics of broadband displacement seismograms. Energy computed from BB mechanism.*

NEIC Six people killed by landslides at Iwaki and one person killed in Ibaraki. Felt [V] at Misawa and [IV] at Akiruno, Tokyo, Yokohama, Yokosuka and Zama. Felt in much of central and northern Honshu. Recorded [6L JMA] in Fukushima and Ibaraki.

GCMT ***11*** *08:16:12.7±0.0,37.˚00N×140.˚54E,h12km,MW6.7/138, Moment Tensor Solution. s135,c339; s138,c598; Duration: 5±2 Moment tensor: Scale 10^19Nm; Mrr-1.27±.00; Mθθ 0.76±.00; Mϕϕ 0.51±.01; Mrθ-0.01±.01; Mθϕ-0.33±.00; Mϕr 0.45±.01; Best double couple: M0 1.20000×10^19 NP1:φs139.00000°,δ53.00000°, λ-75.00000°. NP2:φs295.00000°,δ39.00000°, λ-109.00000°. Principal axes: T 1.0230, Plg7.0000°, Azm218.0000°; N 0.3560, Plg12.0000°, Azm310.0000°; P -1.3770, Plg76.0000°, Azm97.0000°; nsta1 refers to body waves, cutoff=50s. nsta2 refers to surface/mantle waves, cutoff=50s.*

JMA ***11*** *08:16:12.0,36.˚95N×140.˚67E,h6km±1km,M7.0 Broadband fault plane solution: P waves. NP1: φs175.00000°,δ50.00000°,λ-70.00000°. NP2: φs326.00000°,δ44.00000°,λ-111.00000°. Principal axes: T Plg3.0000°, Azm251.0000°; N Plg15.0000°, Azm342.0000°; P Plg75.0000°, Azm151.0000°;*

NEIC ***11*** *08:16:13.0±0.0,37.˚01N×140.˚68E,h15km,Moment Tensor Solution. s47 Moment tensor: Scale 10^19Nm; Mrr-1.06; Mθθ 0.48; Mϕϕ 0.57; Mrθ-0.02; Mθϕ-0.15; Mϕr 0.02; Best double couple: M0 0.90000×10^19 NP1:φs143.00000°, δ46.00000°,λ-90.00000°. NP2:φs324.00000°,δ44.00000°, λ-89.00000°. Principal axes: T 0.6800, Plg0.0000°, Azm233.0000°; N 0.3700, Plg0.0000°, Azm143.0000°; P -1.0600, Plg89.0000°, Azm45.0000°;*

NEIC ***11*** *08:16:33.5±0.0,37.˚20N×140.˚33E,h10km,Moment Tensor Solution. s102 Moment tensor: Scale 10^19Nm; Mrr-1.18; Mθθ 0.66; Mϕϕ 0.51; Mrθ-0.08; Mθϕ-0.27; Mϕr-0.22; Best double couple: M0 1.00000×10^19 NP1:φs316.00000°, δ48.00000°,λ-79.00000°. NP2:φs119.00000°,δ44.00000°, λ-102.00000°. Principal axes: T 0.8700, Plg2.0000°, Azm38.0000°; N 0.3400, Plg8.0000°, Azm128.0000°; P -1.2100, Plg81.0000°, Azm295.0000°;*

ISC 11 08:16:12.7±0.3,36.˚95N±0.˚02×140.˚58E±0.˚02,h13km±1km, h13km:pP-P,n2551,σ1561/2771,mb6.4/644,MS6.5/614, 73C-193D,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.23**	**49**	⇑P	**Pg**	**08 16 15.8**	**-1.9**
JHO	**Hitachi**	**0.34**	**182**	P	**Pg**	**08 16 18.7**	**-0.9**
JFK	**Kawauchi**	**0.47**	**29**	P	**Pg**	**08 16 20.6**	**-1.5**
JSB	**Shiboa**	**0.53**	**272**	⇑P	**Pb**	**08 16 24.4**	**+0.5**
JSB				S	**Sn**	**08 16 33.3**	**-1.5**
JFT	**Otama**	**0.60**	**341**	⇑P	**Pb**	**08 16 24.4**	**-0.6**
JFT				S	**Sb**	**08 16 33.4**	**0.0**
JYT	**Yasato**	**0.79**	**204**	⇑P	**Pg**	**08 16 27.3**	**-0.7**
JFY	**Yanaizu**	**0.84**	**303**	⇑P	**Pb**	**08 16 29.1**	**0.0**
JFY				S	**Sn**	**08 16 41.6**	**-0.7**
JMM	**Marumori**	**0.93**	**10**	⇑P	**Pg**	**08 16 29.3**	**-1.3**
JYS	**Shirataka**	**1.33**	**342**	⇓P	**Pb**	**08 16 37.3**	**-0.2**
JOU	**Okura**	**1.41**	**3**	⇓P	**Pn**	**08 16 38.0**	**-0.1**
JIO	**Ouri**	**1.62**	**22**	⇑P	**Pn**	**08 16 39.8**	**-1.1**
I30JP	**ISUMI INFRASON**	**1.66**	**188**	Pg	**Pg**	**08 16 45.0**	**+0.5**
	baz=354,slow=24,SNR=14						
I30JP				*i*		08 24 40.0	
	baz=12,slow=330,SNR=2.5						
JYA	**Atsumi**	**1.78**	**337**	⇓P	**Pb**	**08 16 44.2**	**-0.9**
MJAR	**Matsushiro Arr**	**1.95**	**259**	Pn	**Pn**	**08 16 46.7**	**+1.2**
	2μm,0.3s,baz=79,slow=16,SNR=1200						
MAJO	**Matsushiro**	**1.95**	**259**	*e*P	**Pb**	**08 16 47.8**	**-0.3**
MAJO				*e*		08 17 17.8	
MAJO	**Matsushiro**	**1.95**	**259**	*e*Pn	**Pb**	**08 16 47.8**	**-0.3**
MAJO				*e*Sn	**Sg**	**08 17 17.8**	**+2.3**
JYK	**Kaneyama**	**1.97**	**355**	P	**Pn**	**08 16 46.5**	**+0.8**
JMK	**Ichinoseki**	**2.06**	**14**	P	**Pn**	**08 16 46.7**	**-0.2**
JTB	**Tobi-shima**	**2.38**	**340**	P	**Pn**	**08 16 52.3**	**+0.9**
JRG	**Rokugo**	**2.44**	**1**	P	**Pn**	**08 16 53.6**	**+1.4**
JOM	**Ohasama**	**2.58**	**12**	P	**Pn**	**08 16 54.6**	**+0.5**
JYW	**Yuwa**	**2.60**	**354**	P	**Pn**	**08 16 56.2**	**+1.8**
JKZ	**Kuzumaki**	**3.08**	**11**	P	**Pn**	**08 17 02.0**	**+0.9**
JTH	**Tanohata**	**3.15**	**18**	P	**Pn**	**08 17 01.8**	**-0.1**
JAH	**Hinai**	**3.23**	**1**	P	**Pn**	**08 17 04.9**	**+1.8**
INU	**Inuyama**	**3.30**	**242**	*e*Pn	**Pn**	**08 17 07.6**	**+3.6**
JANG	**Nango**	**3.49**	**12**	P	**Pn**	**08 17 07.1**	**+0.4**
JIW	**Iwasaki**	**3.66**	**353**	P	**Pn**	**08 17 10.4**	**+1.4**
JTM	**Tenmabayashi**	**3.85**	**5**	P	**Pn**	**08 17 13.6**	**+2.1**
JHJ	**Hachijo jima 2**	**3.88**	**190**	Pn	**Pn**	**08 17 12.3**	**+0.3**
	624nm,0.3s,baz=336,slow=4.5,SNR=60						
JHJ				Sn	**Sb**	**08 18 07.0**	**-0.8**
	4μm,0.3s,baz=73,slow=19,SNR=5.0						
JHJ2	**Mitsune**	**3.88**	**190**	*e*Pn	**Pn**	**08 17 12.5**	**+0.4**
JHJ2				*e*Sn	**Sn**	**08 17 58.8**	**+1.4**
JSI2	**Shiura 2**	**4.10**	**358**	P	**Pn**	**08 17 17.2**	**+2.2**
JOT	**Ohata**	**4.44**	**5**	P	**Pn**	**08 17 22.0**	**+2.4**
JKSM	**Kasumi**	**4.97**	**256**	P	**Pn**	**08 17 30.8**	**+3.8**
ERM	**Erimo**	**5.43**	**21**	*e*P	**Pn**	**08 17 32.9**	**-0.4**
ERM				*e*		08 18 36.5	
ERM	**Erimo**	**5.43**	**21**	*e*Pn	**Pn**	**08 17 32.9**	**-0.4**
ERM				*e*Sn	**Sn**	**08 18 36.5**	**+0.8**
ERM	**Erimo**	**5.43**	**21**	*e*Pn	**Pg**	**08 17 57.7**	**+1.0**
JAD	**Aida**	**5.58**	**251**	P	**Pn**	**08 17 38.6**	**+3.3**
JKR	**Kurayoshi**	**5.69**	**256**	P	**Pn**	**08 17 41.3**	**+4.4**
JHIK	**Hikimi**	**7.44**	**254**	P	**Pn**	**08 18 04.9**	**+4.0**
YUK	**Yuzh-Kuril'sk**	**8.13**	**28**	*c i*P	**Pn**	**08 18 09.3**	**-1.1**
YUK				*i* S	**Sn**	**08 19 36.4**	**-5.7**
YUK				pmax	pmax		
	comp=Z,2μm,0.3s						
YUK				pmax	pmax		
	comp=N,862nm,0.5s						
YUK				pmax	pmax		
	comp=E,2μm,0.2s						
YUK				MLR	MLR		
	comp=Z,327μm,16.0s						
YUK				MLR	MLR		
	comp=N,415μm,11.0s						
SHO	**Shikotan**	**8.39**	**33**	*e*P	**Pn**	**08 18 10.9**	**-3.0**
SHO				*i* S	**Sn**	**08 19 41.3**	**-7.1**
SHO				pmax	pmax		
	comp=E,541nm,0.7s						
SHO				pmax	pmax		
	comp=Z,2μm,0.7s						
SHO				pmax	pmax		
	comp=N,663nm,0.3s						
JNU	**Nakatsue**	**8.83**	**247**	Pn	**Pn**	**08 18 23.2**	**+3.2**
	comp=N,11nm,0.3s,baz=53,slow=9.2,SNR=80						
JNU				Lg	Lg	08 20 52.0	
	baz=205,slow=15,SNR=2.9						
JNU	**Nakatsue**	**8.83**	**247**	*e*Pn	**Pn**	**08 18 24.5**	**+4.5**
JNU				*e*Sn	**Sn**	**08 19 56.1**	**-3.2**
VLA	**Vladivostok**	**9.08**	**315**	*c i*P	**Pn**	**08 18 24.0**	**+0.7**
USRK	**Ussuriysk Ar.**	**9.75**	**321**	Pn	**Pn**	**08 18 36.1**	**+3.6**
	comp=N,10nm,0.3s,baz=134,slow=13,SNR=264						
USRK				LR	LR	08 22 06.2	
	comp=N,145μm,18.9s,baz=129,slow=37						
I45RU	**USSURIYSK INFR**	**9.76**	**321**	Pn	Pn	08 18 45.0	+12
	baz=134,slow=19,SNR=1.6						
I45RU				*i*		09 07 40.0	
	baz=129,slow=349,SNR=1.9						
CBIJ	**Chichi jima**	**9.92**	**172**	*e*Pn	**Pn**	**08 18 32.2**	**-2.8**
CBIJ				*e*Sn	**Sn**	**08 20 18.2**	**-7.9**
JCJ	**Chichijima**	**9.92**	**172**	Pn	**Pn**	**08 18 30.8**	**-4.1**
	comp=N,254nm,0.3s,baz=76,slow=18,SNR=77						
JCJ				Sn	**Sn**	**08 20 21.6**	**-4.5**
	baz=90,slow=20						
KUR	**Kuril'sk**	**9.93**	**31**	*c i*P	**Pn**	**08 18 34.0**	**-0.9**
KUR				*e*S	**Sn**	**08 20 20.5**	**-5.6**
KUR				pmax	pmax		
	comp=Z,13μm,3.2s						
KUR				pmax	pmax		
	comp=N,140nm,0.7s						
KUR				pmax	pmax		
	comp=E,72nm,0.7s						
KUR				pmax	pmax		
	comp=Z,701nm,0.7s						
KUR				smax	smax		
	comp=N,1μm,0.6s						
KUR				smax	smax		
	comp=E,398nm,0.6s						
KUR				smax	smax		
	comp=E,35μm,7.3s						
KUR				MLR	MLR		
	comp=Z,115μm,20.0s						
KUR				MLR	MLR		
	comp=N,162μm,20.0s						
KUR				MLR	MLR		
	comp=E,70μm,20.0s						
KSRS	**Korea Array**	**10.11**	**277**	Pn	**Pn**	**08 18 41.9**	**+4.3**
	comp=E,3.5nm,0.3s,baz=93,slow=13,SNR=281						
KSRS				LR	LR	08 22 21.3	
	comp=E,460μm,19.2s,baz=85,slow=37						
KSRS				PcP	**PcP**	**08 24 47.9**	**+1.0**
	comp=E,0.2nm,0.3s,baz=105,slow=1.6,SNR=4.2						
KSRS				ScP	**ScP**	**08 28 21.2**	**+2.4**
	comp=E,0.2nm,0.3s,baz=31,slow=3.3,SNR=4.0						
YSS	**Yuzh-Sakhalins**	**10.12**	**8**	⇓*i*P	**Pn**	**08 18 36.7**	**-0.9**
YSS				*e*S	**Sn**	**08 20 27.5**	**-3.5**
YSS				pmax	pmax		
	comp=Z,310nm,0.8s						
YSS				MLR	MLR		
	comp=Z,192μm,15.0s						
YSS	**Yuzh-Sakhalins**	**10.12**	**8**	*e*Pn	**Pn**	**08 18 37.6**	**-0.1**
YSS				*e*Sn	**Sn**	**08 20 27.4**	**-3.5**
KS01	**Wonju Array Si**	**10.14**	**277**	*e*Pn	Pn	08 18 43.2	+5.3
KS15	**Wonju Array Si**	**10.14**	**277**	*e*Pn	Pn	08 18 43.2	+5.2
INCN	**Inchon**	**11.14**	**277**	*e*Pn	Pn	08 18 58.0	+6.3
INCN	**Inchon**	**11.14**	**277**	Pn	Pn	08 18 57.8	+6.2
SNR=126							
MDJ	**Mudanjiang**	**11.31**	**316**	P	**Pn**	**08 18 57.8**	**+3.9**
MDJ				S	**Sn**	**08 21 07.7**	**+7.7**
MDJ				PcP	**PcP**	**08 24 48.7**	**+0.7**
MDJ				pmax	pmax		
	comp=Z,650nm,2.4s						
MDJ				pmax	pmax		
	comp=Z,50μm,8.0s						
MDJ				LR	LR		
	comp=Z,364μm,20.6s						
MDJ				LR	LR		
	comp=Z,245μm,18.2s						
MDJ				LR	LR		
	comp=Z,221μm,27.6s						
MDJ	**Mudanjiang**	**11.31**	**316**	*e*Pn	**Pn**	**08 18 58.4**	**+4.6**
UGL	**Uglegorsk**	**12.17**	**5**	*e*P	**Pn**	**08 19 04.0**	**-1.6**
UGL				pmax	pmax		
	comp=Z,396nm,0.8s						
UGL				pmax	pmax		
	comp=Z,18μm,8.0s						
UGL				pmax	pmax		
	comp=N,20μm,12.0s						
UGL				pmax	pmax		
	comp=E,5μm,7.0s						
HABR	**Khabarovsk**	**12.21**	**342**	*d i*P	**Pn**	**08 19 04.7**	**-1.4**
HABR				*e*S	**Sn**	**08 21 19.2**	**-2.7**
HABR				pmax	pmax		
	comp=Z,157nm,2.5s						
HABR				pmax	pmax		
	comp=N,112nm,2.5s						
HABR				pmax	pmax		
	comp=E,78nm,2.5s						
HABR				MLR	MLR		
	comp=Z,49μm,13.0s						
CN2	**Changchun**	**13.40**	**305**	*e*P	**Pn**	**08 19 25.5**	**+3.0**
CN2				*es*P	P	08 19 35.3	+3.3
CN2				LR	LR		
	comp=Z,372μm,16.0s						
CN2				LR	LR		
	comp=Z,761μm,16.0s						
CN2				LR	LR		
	comp=Z,127μm,23.0s						
KLR	**Kul'dur**	**13.85**	**335**	Pn	**Pn**	**08 19 27.2**	**-1.3**
	comp=Z,2.0nm,0.3s,baz=132,slow=11,SNR=28						
KLR				LR	LR	08 24 25.8	
	comp=Z,132μm,20.8s,baz=145,slow=36						
SNY	**Shenyang**	**14.02**	**296**	⇓P	**Pn**	**08 19 34.0**	**+3.1**
SNY				S	Sn	08 22 16.8	+10
SNY				pmax	pmax		
	comp=Z,670nm,2.5s						
SNY				pmax	pmax		
	comp=Z,45μm,5.9s						
SNY				LR	LR		
	comp=Z,580μm,15.5s						
SNY				LR	LR		
	comp=Z,252μm,21.1s						
SNY				LR	LR		
	comp=Z,511μm,15.5s						
JOW	**Kunigami**	**14.52**	**229**	Pn	**Pn**	**08 19 37.9**	**+0.1**
	comp=Z,0.6nm,0.3s,baz=50,slow=12,SNR=6.0						
JOW				LR	LR	08 25 14.8	
	comp=Z,173μm,21.6s,baz=50,slow=38						
JOW	**Kunigami**	**14.52**	**229**	*e*Pn	**Pn**	**08 19 38.3**	**+0.5**
DL2	**Dalian**	**15.09**	**283**	P	**P**	**08 19 48.5**	**-2.2**
DL2				S	**Sn**	**08 22 38.5**	**+6.1**
DL2				pmax	pmax		
	comp=Z,1μm,1.6s						
DL2				pmax	pmax		
	comp=Z,66μm,9.1s						
DL2				LR	LR		
	comp=Z,228μm,18.3s						
DL2				LR	LR		
	comp=Z,280μm,18.0s						
NKL	**Nikolayevsk**	**16.20**	**0**	*i* P	**Pn**	**08 19 56.0**	**-3.8**
NKL				pmax	pmax		
	comp=N,10μm,11.0s						
NKL				pmax	pmax		
	comp=Z,9μm,7.5s						
OKH	**Okha**	**16.68**	**5**	⇓*i*P	**Pn**	**08 20 03.6**	**-2.3**
OKH				*e*S	**S**	**08 23 18.2**	**-3.8**
OKH				pmax	pmax		
	comp=Z,26μm,6.0s						
OKH				smax	smax		
	comp=N,39μm,6.0s						
OKH				smax	smax		
	comp=E,46μm,6.0s						
SSE	**Sheshan**	**17.10**	**256**	P	**Pn**	**08 20 12.0**	**+0.6**
SSE				sP	**sP**	**08 20 20.0**	**+1.5**
SSE				S	**Sn**	**08 23 24.8**	**+3.5**
SSE				pmax	pmax		
	comp=E,24μm,6.3s						
SSE				LR	LR		
	comp=E,163μm,25.0s						
SSE				LR	LR		
	comp=E,212μm,25.0s						
SSE				LR	LR		
	comp=E,286μm,17.4s						
SKR	**Severo-Kuril's**	**17.67**	**34**	*e*P	**Pn**	**08 20 16.9**	**-1.4**
SKR				*e*S	**S**	**08 23 40.1**	**-2.1**
SKR				pmax	pmax		
	comp=Z,2μm,0.8s						
SKR				MLR	MLR		
	comp=Z,170μm,18.0s						
NJ2	**Nanjing**	**18.55**	**261**	*e*P	**P**	**08 20 27.5**	**-1.6**
NJ2				S	**Sn**	**08 23 55.4**	**-1.1**
NJ2				sS	**sS**	**08 24 04.0**	**-2.4**
NJ2				pmax	pmax		
	comp=Z,42μm,6.0s						
NJ2				LR	LR		
	comp=Z,168μm,19.5s						
NJ2				LR	LR		
	comp=Z,326μm,22.8s						
NJ2				LR	LR		
	comp=Z,378μm,21.7s						
TIA	**Tai'an**	**18.85**	**275**	⇓P	**P**	**08 20 31.4**	**-1.0**
TIA				pmax	pmax		
	comp=Z,51μm,9.6s						
TIA				LR	LR		
	comp=Z,150μm,12.6s						
TIA				LR	LR		
	comp=Z,310μm,13.5s						
TIA				LR	LR		
	comp=Z,374μm,14.0s						
BJI	**Beijing**	**19.34**	**287**	P	**P**	**08 20 36.8**	**-0.8**
BJI				S	**Sn**	**08 24 12.9**	**-2.5**
BJI				pmax	pmax		
	comp=Z,280nm,0.9s						
BJI				LR	LR		
	comp=Z,119μm,15.4s						
BJI				LR	LR		
	comp=Z,97μm,20.2s						
BJI				LR	LR		
	comp=Z,167μm,28.4s						
BJT	**Baijiatuao**	**19.34**	**287**	*e*P	**P**	**08 20 36.6**	**-1.1**
BJT				pmax	pmax		
	comp=Z,1μm,1.3s						
BJT	**Baijiatuao**	**19.34**	**287**	*e*P	**P**	**08 20 36.6**	**-1.1**
	comp=Z,1μm,1.3s						
HIA	**Hailar**	**19.49**	**316**	*e*P	**P**	**08 20 38.8**	**-0.5**
HIA				pmax	pmax		
	comp=Z,296nm,1.0s						
HIA	**Hailar**	**19.49**	**316**	*e*P	**P**	**08 20 38.8**	**-0.5**
	comp=Z,296nm,1.0s						
YOJ	**Yonaguni jima**	**19.54**	**235**	*e*P	**P**	**08 20 40.6**	**+0.6**
YOJ				pmax	pmax		
	comp=Z,742nm,1.1s						
YOJ	**Yonaguni jima**	**19.54**	**235**	*e*P	**P**	**08 20 40.6**	**+0.6**
	comp=Z,742nm,1.1s						
PEA0	**Petropavlovsk-**	**20.09**	**31**	*e*P	**P**	**08 20 45.9**	**+0.1**
PEA0B	**Petropavlovsk-**	**20.09**	**31**	*e*P	Pn	08 20 46.8	-0.9
	comp=Z,3μm,1.4s						
PEA0B				LR	LR		
	comp=Z,190μm,22.0s						
PETK	**Petropavlovsk-**	**20.09**	**31**	P	**P**	**08 20 45.5**	**-0.3**
	comp=Z,88nm,0.7s,baz=207,slow=10,SNR=51						
PETK				PcP	**PcP**	**08 25 01.0**	**+0.3**
	comp=Z,28nm,0.9s,baz=222,slow=1.3,SNR=4.2						
PETK				LR	LR	08 28 10.8	
	comp=Z,170μm,21.4s,baz=218,slow=36						
PEA1	**Petropavlovsk-**	**20.10**	**31**	*e*P	**P**	**08 20 45.5**	**-0.3**
PEA1				*e*PcP	**PcP**	**08 25 01.0**	**+0.3**
TATO	**Taipei**	**20.22**	**239**	*e*P	Pn	08 20 49.6	+0.2
	comp=Z,743nm,1.2s						
TATO				LR	LR		
	comp=Z,107μm,20.0s						
PET	**Petropavlovsk**	**20.44**	**32**	*d i*P	**P**	**08 20 49.6**	**+0.1**
PET				*e*S	**S**	**08 24 33.1**	**-4.8**
PET				pmax	pmax		
	comp=Z,67μm,5.7s						
PET				pmax	pmax		
	comp=Z,43μm,10.6s						
PET				pmax	pmax		
	comp=Z,2μm,1.4s						
PET				smax	smax		
	comp=E,103μm,7.6s						
PET				smax	smax		
	comp=N,29μm,10.6s						
PET				MLR	MLR		
	comp=Z,131μm,19.0s						
PET				MLR	MLR		
	comp=Z,102μm,17.0s						
PET	**Petropavlovsk**	**20.44**	**32**	*e*P	**P**	**08 20 49.9**	**+0.4**
	comp=Z,3μm,1.4s						
PET				LR	LR		
	comp=Z,229μm,22.0s						
YHNB	**Yeheng**	**20.50**	**239**	*e*P	**P**	**08 20 50.8**	**+0.2**
	comp=Z,392nm,1.0s						
YHNB				LR	LR		
	comp=Z,109μm,21.0s						
NACB	**Ninganchiao**	**20.68**	**237**	*e*P	**P**	**08 20 51.3**	**-1.1**
	comp=Z,282nm,1.1s						
NACB				LR	LR		
	comp=Z,146μm,22.0s						
SSLB	**Suanglung**	**21.37**	**238**	*e*P	**P**	**08 20 58.9**	**-1.0**
	comp=Z,331nm,1.2s						
SSLB				LR	LR		
	comp=Z,136μm,22.0s						
YULB	**Yu-li**	**21.41**	**236**	*e*P	**P**	**08 20 58.1**	**-2.2**
	comp=Z,202nm,1.0s						
YULB				LR	LR		
	comp=Z,96μm,21.0s						
TPUB	**Ta-pu**	**21.92**	**237**	*e*P	**P**	**08 21 03.8**	**-2.0**
	comp=Z,504nm,0.7s						
TPUB				LR	LR		
	comp=Z,186μm,21.0s						
TWG	**Pinlang**	**21.95**	**236**	*e*P	**P**	**08 21 05.5**	**-0.6**
	comp=Z,2μm,0.7s						
TWG				LR	LR		
	comp=Z,228μm,22.0s						
QZH	**Quanzhou**	**22.28**	**244**	⇓*i*P	**P**	**08 21 03.4**	**-6.2**
QZH				S	**S**	**08 25 06.0**	**-8.4**
QZH				pmax	pmax		
	comp=Z,430nm,0.7s						
QZH	

comp=Z,10µm,4.9s
QZH LR LR
comp=Z,487µm,21.9s
QZH LR LR
comp=Z,463µm,21.3s
QZH LR LR
comp=Z,378µm,24.7s
TIY Taiyuan 22.37 281 *e*P **P 08 21 09.2 -1.4**
TIY pmax pmax
comp=Z,320nm,1.3s
TIY pmax pmax
comp=Z,18µm,6.7s
TIY LR LR
comp=Z,82µm,12.3s
TIY LR LR
comp=Z,164µm,12.0s
TIY LR LR
comp=Z,233µm,12.6s
CLNS Chul'man 22.49 337 *e*P **P 08 21 09.0 -2.7**
CLNS *e* 08 25 02.5
CLNS *e*S **S 08 25 12.8 -5.2**
CLNS *e*SS **SnSn 08 25 56.4 +10**
CLNS pmax pmax
comp=Z,262nm,0.9s
CLNS pmax pmax
comp=N,188nm,1.0s
CLNS pmax pmax
comp=E,100nm,1.0s
CLNS smax smax
comp=N,18µm,12.5s
CLNS smax smax
comp=E,12µm,12.2s
CLNS MLR MLR
comp=N,43µm,13.0s
CLNS MLR MLR
comp=Z,88µm,15.0s
CLNS MLR MLR
comp=N,88µm,14.0s
WHN Wuhan 22.69 261 ⇑P **P 08 21 12.5 -1.4**
WHN S **S 08 25 14.3 -7.6**
WHN LR LR
comp=N,257µm,12.6s
WHN LR LR
comp=N,534µm,12.0s
HHC Hu-ho-hao-te 22.87 289 *e*P **P 08 21 13.8 -2.1**
HHC PP **PnPn 08 21 45.0 +4.8**
HHC S **S 08 25 18.2 -7.0**
HHC SS **SnSn 08 25 59.5 +3.3**
HHC pmax pmax
comp=N,12µm,9.6s
HHC LR LR
comp=N,89µm,11.8s
HHC LR LR
comp=N,77µm,10.6s
HHC LR LR
comp=N,85µm,11.2s
MA2 Magadan 23.58 13 P **P 08 21 21.2 -1.5**
comp=N,128nm,0.6s,baz=221,slow=9.4,SNR=102
MA2 LR LR 08 30 35.3
comp=N,126µm,21.0s,baz=218,slow=37
MA2 Magadan 23.58 13 P **P 08 21 21.2 -1.5**
MA2 pmax pmax
comp=Z,307nm,0.8s
MA2 MLR MLR
comp=Z,126µm,21.0s
GUMO Guam 23.58 170 P **P 08 21 22.6 -0.4**
comp=Z,191nm,0.8s,baz=52,slow=18,SNR=4.5
GUMO Guam 23.58 170 *e*P **P 08 21 26.0 +2.9**
GUMO LR LR
comp=Z,163µm,22.0s
BTO Baotou 24.04 288 *e*P **P 08 21 23.6 -3.9**
CIT Chita 24.28 317 *e*P **P 08 21 26.7 -2.8**
CIT *e* 08 22 16.2
CIT *e* 08 25 09.9
CIT *e*S **S 08 25 46.1 -1.8**
CIT pmax pmax
comp=Z,1µm,1.9s
SGCP Mt. Cagua 24.76 226 *e*P **P 08 21 33.1 -1.0**
CVP Callao Caves 25.32 226⇓*e*P **P 08 21 38.8 -0.3**
APYP Conner 25.53 227 *e*P **P 08 21 38.3 -2.7**
PIP Pasuquin 25.54 229⇓*e*P **P 08 21 41.9 +0.8**
XAN Xi'an 25.88 273 P **P 08 21 42.2 -2.0**
XAN S **S 08 26 07.5 -6.3**
XAN SS **SnSn 08 27 15.3 +5.4**
XAN pmax pmax
comp=Z,8µm,7.1s
XAN LR LR
comp=Z,221µm,16.8s
XAN LR LR
comp=Z,121µm,17.9s
XAN LR LR
comp=Z,135µm,17.8s
CAUP Cauayan 25.93 225 *e*P **P 08 21 50.2 +5.5**
SIPP Brgy. Tapao 25.95 228⇓*e*P **P 08 21 47.0 +2.1**
YAK Yakutsk 26.01 348 P **P 08 21 43.7 -1.3**
comp=Z,330nm,0.5s,baz=152,slow=1.7,SNR=44
YAK S **S 08 26 12.6 -2.5**
comp=Z,22nm,0.4s,baz=288,slow=20,SNR=1.6
YAK LR LR 08 32 35.8
comp=Z,134µm,18.2s,baz=156,slow=38
YAK Yakutsk 26.01 348*d i*P **P 08 21 43.7 -1.3**
YAK *e*PPP PPP 08 22 28.0
YAK *e* 08 25 13.5
YAK *e*S **S 08 26 11.9 -3.2**
YAK *e*SSS SSS 08 27 38.6
YAK *e* 08 32 45.2
YAK pmax pmax
comp=N,919nm,1.3s
YAK pmax pmax
comp=E,420nm,1.4s
YAK smax smax
comp=E,8µm,4.1s
YAK smax smax
comp=N,4µm,2.8s
YAK MLR MLR
comp=N,119µm,20.0s
YAK MLR MLR
comp=Z,143µm,20.0s
YAK MLR MLR
comp=E,100µm,17.0s
YAK Yakutsk 26.01 348 *e*P **P 08 21 43.7 -1.3**
comp=E,1µm,0.9s
YAK LR LR
comp=Z,138µm,18.0s
ABRA Dolores 26.01 228 *e*P **P 08 21 43.6 -1.8**
ENH Enshi 26.66 265 *e*P **P 08 21 49.7 -1.6**
comp=Z,1µm,1.4s
ENH LR LR
comp=Z,168µm,22.0s
ULN Ulaanbaatar 26.85 305*de*P **P 08 21 51.6 -1.4**
ULN pmax pmax
comp=Z,140nm,1.2s
ULN MLR MLR
comp=Z,90µm,13.0s
ULN Ulaanbaatar 26.85 305 *e*P **P 08 21 51.5 -1.4**
comp=Z,743nm,1.3s
ULN LR LR
comp=Z,79µm,19.0s
ULN Ulaanbaatar 26.85 305 P **P 08 21 51.9 -1.1**
SNR=253
ULN Ulaanbaatar 26.85 305 P **P 08 21 51.9 -1.1**
SNR=253
SEY Seymchan 27.00 12 P **P 08 21 54.5 +0.6**
comp=Z,653nm,1.2s,baz=211,slow=7.5,SNR=102
SEY S **S 08 26 38.0 +7.1**
comp=Z,25nm,1.1s,baz=217,slow=20,SNR=1.8
SEY LR LR 08 33 07.0
comp=Z,169µm,21.3s,baz=215,slow=38
BALP Baler 27.04 224 *e*P **P 08 21 53.6 -1.0**
BCPH Baguio City Da 27.08 226⇓*e*P **P 08 21 53.7 -1.6**
HKC Hong Kong Obse 27.09 245⇑*i*P **P 08 21 57.0 +1.9**
GZH Guangzhou 27.22 247 P **P 08 21 50.2 -6.1**
GZH PP **PnPn 08 22 39.0 -0.8**
GZH S S 08 26 23.1 -12
GZH pmax pmax
comp=Z,28µm,7.6s
BOD Bodaibo 27.25 328⇑*i*P **P 08 21 54.9 -1.3**
BOD pmax pmax
comp=Z,353nm,1.8s
SONA1 Songino Array 27.28 304 *e*P **P 08 21 55.0 -1.8**
SONA0 Songino Array 27.28 304 *e*P **P 08 21 55.5 -1.3**
SONA0 *e*PcP **PcP 08 25 17.2 +1.0**
SONM Songino Array 27.28 304 P **P 08 21 55.5 -1.3**
comp=Z,251nm,1.0s,baz=109,slow=6.8,SNR=134
SONM PcP **PcP 08 25 17.2 +1.0**
comp=Z,68nm,1.1s,baz=138,slow=3.1,SNR=5.6
SONM ScP **ScP 08 28 59.5 +3.2**
comp=Z,15nm,1.0s,baz=112,slow=3.9,SNR=3.5
SONM LR LR 08 33 36.8
comp=Z,52µm,18.5s,baz=104,slow=38
SONM P3KPbc 08 54 32.0
comp=Z,1.8nm,0.9s,baz=289,slow=4.4,SNR=4.1
MCO Taipa Grande 27.65 245 P **P 08 22 04.0 +3.8**
GQP Guinayangan 28.09 220⇓*e*P P 08 22 11.0 +6.9
SMY Shemya 28.20 45 *e*P **P 08 22 06.6 +1.9**
SMY pmax pmax
comp=Z,4µm,1.7s
SMY MLR MLR
comp=Z,97µm,20.0s
SMY Shemya 28.20 45 *e*P **P 08 22 06.6 +1.9**
comp=Z,4µm,1.7s
SMY LR LR
comp=Z,97µm,20.0s
LQP Lukban 28.40 222 *e*P **P 08 22 09.7 +2.6**
AUQP San Andres 28.47 219 *e*P P 08 22 13.6 +6.1
H11N2 WAKE ISLAND Hy 28.68 120 P **P 08 22 09.1 0.0**
H11N2 T T 08 52 02.6
baz=311,slow=75
H11N1 WAKE ISLAND Hy 28.69 120 P **P 08 22 09.2 0.0**
H11N1 T T 08 52 01.8
baz=311,slow=75
H11N3 WAKE ISLAND Hy 28.70 120 P **P 08 22 09.3 0.0**
H11N3 T T 08 52 00.8
baz=311,slow=75
BOAC Boac 28.78 220 *e*P **P 08 22 12.5 +2.2**
PLP Palo 29.27 213⇓*e*P **P 08 22 13.1 -1.6**
H11S1 WAKE ISLAND Hy 29.38 122 P P 08 22 07.6 -7.8
H11S1 T T 08 52 58.8
baz=283,slow=76
H11S3 WAKE ISLAND Hy 29.38 122 P **P 08 22 17.2 +1.8**
H11S3 T T 08 52 59.2
baz=283,slow=76
H11S2 WAKE ISLAND Hy 29.39 122 P **P 08 22 14.3 -1.2**
H11S2 T T 08 52 54.2
baz=283,slow=76,SNR=9503
LZH Lanzhou 29.43 280⇓P **P 08 22 14.5 -1.6**
LZH PP **PnPn 08 23 09.6 -0.3**
LZH PcP **PcP 08 25 22.6 +0.8**
LZH S **S 08 27 06.0 -3.9**
LZH SS **SnSn 08 28 36.3 -0.3**
LZH pmax pmax
comp=Z,2µm,1.3s
LZH pmax pmax
comp=Z,13µm,8.6s
LZH LR LR
comp=Z,113µm,12.4s
LZH LR LR
comp=Z,217µm,15.2s
OTRP Odiongan 29.62 219 *e*P P 08 22 23.1 +5.4
IRK Irkutsk 29.66 313 *e*P **P 08 22 18.3 +0.5**
IRK *e* 08 23 14.7
IRK *e*S **S 08 27 13.8 +0.8**
IRK *e* 08 29 10.4
IRK pmax pmax
comp=Z,320nm,2.2s
ZAK Zakamensk 29.80 309 *e*P **P 08 22 17.7 -1.5**
ZAK *e* 08 25 22.6
ZAK pmax pmax
comp=Z,125nm,1.2s
TLY Talaya 29.88 311 P **P 08 22 18.4 -1.4**
comp=Z,22nm,0.9s,baz=92,slow=4.3,SNR=14
TLY PcP **PcP 08 25 22.7 +0.3**
comp=Z,60nm,1.0s,baz=48,slow=2.6,SNR=4.7
TLY LR LR 08 34 25.1
comp=Z,74µm,19.0s,baz=110,slow=37
TLY P3KPbc 08 54 21.0
comp=Z,1.5nm,0.4s,baz=288,slow=3.2,SNR=5.1
TLY Talaya 29.88 311*e i*P **P 08 22 18.5 -1.3**
TLY *e* 08 23 14.6
TLY *e*S **S 08 27 17.7 +1.2**
TLY *e*SS **ScP 08 28 55.7 -8.5**
TLY *e*SSS SSS 08 29 11.0
TLY pmax pmax
comp=Z,132nm,1.3s
TLY MLR MLR
comp=Z,49µm,13.0s
TLY Talaya 29.88 311 *e*P **P 08 22 18.5 -1.3**
TLY *e*PcP **PcP 08 25 22.7 +0.3**
TLY LR LR
comp=Z,57µm,19.0s
TLY Talaya 29.88 311 P **P 08 22 18.8 -1.0**
SNR=110
TLY Talaya 29.88 311 P **P 08 22 18.8 -1.0**
SNR=110
SJMP San Jose 30.00 221 *e*P **P 08 22 25.0 +4.0**
GYA Guiyang 30.55 260⇓*i*P **P 08 22 24.3 -1.8**
GYA PP **PnPn 08 23 27.0 +1.9**
GYA PcP **PcP 08 25 27.6 +2.8**
GYA S **S 08 27 29.1 +1.5**
GYA SS **ScP 08 29 07.8 +0.9**
GYA pmax pmax
comp=Z,320nm,1.0s
GYA LR LR
comp=Z,146µm,16.4s
GYA LR LR
comp=Z,101µm,22.6s
GYA LR LR
comp=Z,181µm,23.8s
GUIM Jordan 30.84 216 *e*P **P 08 22 28.4 0.0**
BUSP Coron 30.86 222 *e*P **P 08 22 27.4 -1.3**
CD2 Chengdu 31.01 270 P **P 08 22 28.0 -2.0**
CD2 PcP **PcP 08 25 24.3 -1.5**
CD2 S **S 08 27 28.3 -6.3**
CD2 pmax pmax
comp=Z,240nm,1.0s
CD2 pmax pmax
comp=Z,9µm,10.1s
CD2 LR LR
comp=Z,231µm,19.0s
MOY Mondy 31.48 311 *e*P **P 08 22 32.3 -1.8**
MOY pmax pmax
comp=Z,221nm,3.8s
CGP Cagayan de Oro 31.83 211 *e*P **P 08 22 36.7 -0.5**
ENPP El Nido 31.94 222 *e*P **P 08 22 38.7 +0.5**
GTA Gaotai 31.95 287 P **P 08 22 36.8 -1.5**
GTA PcP **PcP 08 25 28.2 -0.1**
GTA S **S 08 27 44.8 -4.5**
GTA pmax pmax
comp=Z,5µm,6.9s
GTA LR LR
comp=Z,96µm,16.9s
GTA LR LR
comp=Z,57µm,17.8s
GTA LR LR
comp=Z,87µm,25.4s
QIZ Qiongzhong 32.29 245 P **P 08 22 43.9 +2.6**
QIZ S **S 08 27 54.8 +0.1**
QIZ LR LR
comp=Z,84µm,17.4s
QIZ LR LR
comp=Z,133µm,20.7s
DAV Davao City (W) 32.74 208 LR LR 08 35 20.6
comp=Z,59nm,21.7s,baz=34,slow=35
PPR Puerto Princes 33.51 222 *e*P **P 08 22 53.5 +1.6**
PATS Pohnpei 34.06 147 *e*P **P 08 22 57.1 +0.3**
comp=Z,778nm,1.4s
PATS LR LR
comp=Z,107µm,22.0s
KMI Kunming 34.29 261 P **P 08 22 58.4 -0.6**
KMI pP pP 08 23 03.1 0.0
KMI PP **PnPn 08 24 13.8 +0.6**
KMI S **S 08 28 24.4 -1.7**
KMI pmax pmax
comp=Z,250nm,1.2s
KMI pmax pmax
comp=Z,6µm,6.4s
KMI LR LR
comp=Z,144µm,18.4s
KMI LR LR
comp=Z,126µm,18.4s
KMI LR LR
comp=Z,195µm,26.0s
BILL Bilibino 34.29 17*d i*P **P 08 22 57.5 -0.8**
BILL *e* 08 24 08.1
BILL *e*PPP PPP 08 24 29.8
BILL *i*S **S 08 28 23.0 -1.8**
BILL pmax pmax
comp=Z,566nm,1.4s
BILL MLR MLR
comp=Z,90µm,17.0s
BILL Bilibino 34.29 17 *e*P **P 08 22 57.6 -0.7**
comp=Z,679nm,1.1s
BILL LR LR
comp=Z,102µm,19.0s
ATKA Atka Island 35.01 50 *e*P **P 08 23 04.0 -0.6**
comp=Z,1µm,1.4s
ATKA LR LR
comp=Z,187µm,22.0s
TIXI Tiksi 35.29 354 P **P 08 23 05.9 -1.0**
comp=Z,84nm,0.7s,baz=145,slow=6.4,SNR=60
TIXI LR LR 08 38 47.1
comp=Z,62µm,18.1s,baz=136,slow=38
TIXI Tiksi 35.29 354*de*P **P 08 23 05.6 -1.2**
TIXI pmax pmax
comp=Z,246nm,1.7s
TIXI MLR MLR
comp=Z,89µm,15.0s
TIXI Tiksi 35.29 354 *e*P **P 08 23 05.8 -1.0**
comp=Z,152nm,0.8s
SGSI Sangihe 35.88 206 P **P 08 23 15.2 +2.7**
comp=Z,2µm,0.9s,comp=Z,18µm
MIDW Midway 36.24 92 PFAKE 08 23 30.0 +15
MIDW LR LR
comp=Z,97µm,20.0s
KDM Kudat 36.91 222 ⇑P **P 08 23 21.0 -0.2**
KRAR Krasnoyarsk 37.06 316 *e*P **P 08 23 21.7 -0.4**
KRAR pmax pmax
comp=Z,257nm,1.1s
KRAR MLR MLR
comp=Z,28µm,13.0s
KWAJ Kwajalein Atol 37.22 132 *e*P **P 08 23 27.1 +3.2**
KWAJ pmax pmax
comp=Z,267nm,1.1s
KWAJ Kwajalein Atol 37.22 132 *e*P **P 08 23 27.1 +3.2**
comp=Z,267nm,1.1s
MYLDM Lahad Datu 37.53 218 ⇓P **P 08 23 28.4 +1.8**
MYLDM Lahad Datu 37.53 218 *e*P **P 08 23 27.2 +0.6**
comp=Z,569nm,1.0s
MYLDM LR LR
comp=Z,110µm,20.0s
SDKM Sandakan 37.80 220 ⇑P **P 08 23 29.4 +0.5**
NONG Nongkai 37.85 250 P **P 08 23 29.3 0.0**
comp=Z,592nm,1.0s,comp=Z,12µm
SKNT Sakolnakorn 37.90 248 P **P 08 23 29.5 -0.2**
comp=Z,385nm,1.2s,comp=Z,12µm
KKM Kota Kinabalu 37.97 222 *e*P **P 08 23 32.8 +2.4**
comp=Z,268nm,1.1s
KKM LR LR
comp=Z,55µm,20.0s
TNTI Ternate 38.02 202 P **P 08 23 32.5 +1.9**
comp=Z,2µm,1.5s,comp=Z,38µmcomp=Z,61µm
TNTI Ternate 38.02 202 *e*P **P 08 23 32.5 +1.9**
comp=Z,867nm,0.8s
TNTI LR LR
comp=Z,43µm,20.0s
SPIA Saint Paul Isl 38.07 42 *e*P **P 08 23 32.5 +1.9**
comp=Z,979nm,1.3s
NIKH Nikolski High 38.33 49 *e*P **P 08 23 34.3 +1.4**
comp=Z,360nm,1.1s
NIKH LR LR
comp=Z,160µm,21.0s
SWI Sorong 38.61 195 P **P 08 23 35.3 -0.3**
comp=Z,2µm,1.0s,comp=Z,32µm
CRAI Chiangrai 38.72 256 P **P 08 23 35.5 -1.1**
comp=Z,240nm,0.8s,comp=Z,7µm
RKPI Ransiki, Papua 38.73 190 P **P 08 23 38.2 +1.6**
comp=Z,670nm,1.3s,comp=Z,24µm
GAMB Gambell 39.13 31 *e*P **P 08 23 40.0 +0.6**
comp=Z,656nm,1.6s
GAMB LR LR
comp=Z,43µm,20.0s
KHON Khomkaen 39.16 249 P **P 08 23 40.5 +0.2**
comp=Z,136nm,1.1s,comp=Z,2µm
JAY Jayapura 39.27 180 S **S 08 29 45.9 +4.3**
comp=Z,1.6nm,1.0s,baz=90,slow=20,SNR=3.0
JAY LR LR 08 38 48.8
comp=Z,1µm,21.4s,baz=312,slow=35
JAY Jayapura 39.27 180 P **P 08 23 41.7 +0.6**
comp=Z,562nm,1.1s,comp=Z,9µm
MANU Manus Island 39.31 169 *e*P **P 08 23 43.9 +2.4**
comp=Z,181nm,1.0s
MANU LR LR
comp=Z,18µm,21.0s
LBMI Labuha 39.32 201 P **P 08 23 41.6 0.0**
comp=Z,2µm,1.0s,comp=Z,26µm
KMSI Cibinong 39.32 207 P **P 08 23 41.7 +0.1**
GENI Genyem 39.34 181 P **P 08 23 43.2 +1.5**
comp=Z,2µm,1.1s,comp=Z,25µm
UNV Unalaska Valle 39.79 48 PFAKE 08 24 00.0 +15
UNV LR LR
comp=Z,54µm,20.0s
CMAI Chiengmai2 39.92 256 P **P 08 23 46.5 -0.3**
comp=Z,229nm,1.2s,comp=Z,8µm
UTTA Uttaradit 40.02 252 P **P 08 23 47.1 -0.3**
comp=Z,56nm,1.1s,comp=Z,498nm
CHAI Chaiyaphum 40.06 249 P **P 08 23 47.1 -0.6**
comp=Z,200nm,1.2s,comp=Z,2µm
MRSI Marisa 40.19 210 P **P 08 23 48.7 -0.1**
comp=Z,1µm,1.0s,comp=Z,23µm
AKUT Akutan 40.23 47 PFAKE 08 24 00.0 +11
AKUT LR LR
comp=Z,65µm,19.0s
LAMP Lampang 40.27 254 P **P 08 23 49.5 0.0**
comp=Z,77nm,0.9s,comp=Z,589nm
WMQ Urumqi 40.28 297 P **P 08 23 49.1 -0.4**
WMQ pP sP 08 24 00.2 +5.0
WMQ sP pP 08 24 04.4 +11
WMQ S **S 08 29 54.9 -1.6**
WMQ SS **SS 08 32 53.0 -1.8**
WMQ pmax pmax
comp=Z,150nm,0.8s
WMQ pmax pmax
comp=Z,5µm,4.6s
WMQ LR LR
comp=Z,35µm,17.8s
WMQ LR LR
comp=Z,43µm,19.4s
FAKI Fak Fak 40.42 193 P **P 08 23 51.2 +0.5**
comp=Z,2µm,2.3s,comp=Z,44µmcomp=Z,61µm
FAKI Fak Fak 40.42 193 *e*P **P 08 23 50.2 -0.5**
comp=Z,6µm,1.9s
FAKI LR LR
comp=Z,89µm,21.0s
PHIT Phitsanulok 40.45 252 P **P 08 23 55.2 +4.2**
comp=Z,103nm,0.9s,comp=Z,1µm
CMMT Chiang Mai 40.63 255 P **P 08 23 51.9 -0.6**
comp=Z,174nm,1.1s,comp=Z,7µm
CHTO Chiang Mai 40.63 255 P **P 08 23 51.9 -0.5**
comp=Z,1µm,1.2s,comp=Z,33µm
CHTO Chiang Mai 40.63 255 *e*P **P 08 23 52.0 -0.5**
CHTO pmax pmax
comp=Z,137nm,0.9s
CHTO MLR MLR
comp=Z,85µm,22.0s
CHTO Chiang Mai 40.63 255 *e*P **P 08 23 52.0 -0.5**
comp=Z,137nm,0.9s
CHTO LR LR
comp=Z,85µm,22.0s
CHTO Chiang Mai 40.63 255 P **P 08 23 52.3 -0.2**
SNR=98
CHTO Chiang Mai 40.63 255 P **P 08 23 52.3 -0.2**
SNR=98
CM31 Chiang Mai Arr 40.83 255 *e*P **P 08 23 54.2 0.0**
CMAR Chiang Mai Arr 40.83 255 P **P 08 23 53.5 -0.7**
comp=Z,23nm,0.7s,baz=45,slow=7.4,SNR=60
CMAR PcP **PcP 08 25 55.7 +0.6**
comp=Z,39nm,1.0s,baz=29,slow=2.1,SNR=4.3
CMAR ScP **ScP 08 29 45.4 +1.2**
comp=Z,2.7nm,1.0s,baz=69,slow=5.1,SNR=3.1
CMAR LR LR 08 41 00.3
comp=Z,75µm,21.6s,baz=53,slow=36
CM01 Chiang Mai Arr 40.84 255 *e*P **P 08 23 53.0 -1.3**
SUKH Sukhothai 40.88 253 P **P 08 23 54.3 -0.2**
comp=Z,45nm,1.3s,comp=Z,553nm
KMPI Kaimana, Papua 40.91 191 P **P 08 23 55.7 +1.0**
SANI Sanana 41.11 203 P **P 08 23 57.4 +1.0**
comp=Z,2µm,0.8s,comp=Z,29µmcomp=Z,55µm
SRAK Srakaew 41.22 247 P **P 08 23 53.7 -3.7**
comp=Z,846nm,0.9s,comp=Z,8µm
LUWI Luwuk 41.26 208 P **P 08 23 57.3 -0.3**
LUWI Luwuk 41.26 208 *e*P **P 08 23 55.8 -1.8**
comp=Z,1µm,0.7s
LUWI LR LR
comp=Z,18µm,20.0s
ZAA0 Zalesovo Array 41.48 312 *e*P **P 08 23 58.0 -1.0**
ZAA1 Zalesovo Array 41.48 312 *e*P **P 08 23 57.9 -1.2**
ZAA1 *e*PcP **PcP 08 25 56.1 -0.5**
ZALV Zalesovo Beam 41.48 312 P **P 08 23 57.9 -1.2**

comp=Z,128nm,0.7s,baz=99,slow=7.7,SNR=149
ZALV PcP **PcP** **08 25 56.1 -0.5**
comp=Z,279nm,1.1s,baz=90,slow=5.8,SNR=5.1
ZALV ScP **ScP** **08 29 47.3 +1.1**
comp=Z,60nm,1.0s,baz=72,slow=4.8,SNR=5.6
ZALV LR LR 08 41 00.2
comp=Z,40µm,19.2s,baz=92,slow=36
MSAI Masohi 41.54 198 P **P** **08 24 01.7 +1.8**
comp=Z,676nm,1.0s,comp=Z,13µm
LSA Lhasa 41.55 275 P **P** **08 24 00.9 +0.3**
LSA S **S** **08 30 15.5 -1.0**
LSA LR LR
comp=Z,22µm,23.1s
LSA LR LR
comp=Z,40µm,33.9s
LSA LR LR
comp=Z,89µm,33.9s
LSA Lhasa 41.55 275 *e*P **P** **08 24 01.1 +0.5**
LSA pmax pmax
comp=Z,777nm,1.6s
LSA MLR MLR
comp=Z,66µm,18.0s
LSA Lhasa 41.55 275 *e*P **P** **08 24 01.1 +0.5**
comp=Z,777nm,1.6s
LSA LR LR
comp=Z,66µm,18.0s
NAYO Nakonayok 41.56 248 P **P** **08 24 00.1 0.0**
comp=Z,250nm,1.2s,comp=Z,6µm
APSI Ampana 41.57 209 P **P** **08 24 00.1 -0.1**
FALS False Pass 41.64 46 PFAKE 08 24 10.0 +10
FALS LR LR
comp=Z,92µm,19.0s
CHBT CHBT 41.84 245 P **P** **08 24 02.5 +0.1**
comp=Z,528nm,1.4s,comp=Z,12µm
NLAI Namlea 41.91 200 P **P** **08 24 03.9 +0.9**
comp=Z,888nm,1.7s,comp=Z,23µm
BTM Bintulu 42.04 224 ⇑P **P** **08 24 04.8 +0.7**
ZSN Zaisan 42.08 303 *i* P P 08 24 11.7 +7.5
comp=Z,2µm,1.3s
ZSN *e*S **S** **08 30 29.8 +6.7**
ZSN LR LR 08 42 05.4
comp=Z,42µm,12.3s
PCI Palu 42.30 212 P **P** **08 24 06.5 +0.3**
comp=Z,1µm,1.3s
RABL Rabaul 42.33 163 *e*P **P** **08 24 06.4 0.0**
comp=Z,968nm,1.4s
RABL LR LR
comp=Z,28µm,22.0s
NVS Novosibirsk 42.42 314 ⇑*i*P **P** **08 24 06.5 -0.2**
NVS *i* PPP PPP 08 26 01.6
NVS *i* S **S** **08 30 20.5 -7.2**
NVS *e*SSS SSS 08 34 07.5
NVS pmax pmax
comp=Z,490nm,1.3s
NVS pmax pmax
comp=N,107nm,1.4s
NVS pmax pmax
comp=E,540nm,1.5s
NVS smax smax
comp=E,524nm,2.9s
BNDI Bandanaira 42.45 196 P **P** **08 24 07.6 +0.3**
comp=E,9µm,1.3s,comp=E,97µmcomp=E,73µm
SHL Shillong 42.74 269 *e*P **P** **08 24 08.7 -1.3**
PATY Pattaya 42.80 247 P **P** **08 24 11.2 +1.0**
comp=E,61nm,1.2s
NRIK Noril'sk 43.06 335 P **P** **08 24 11.0 -0.7**
comp=E,155nm,0.9s,baz=110,slow=8.6,SNR=52
NRIK LR LR 08 43 42.0
comp=E,45µm,18.2s,baz=98,slow=38
SBUM Sibu 43.14 224 ⇑P **P** **08 24 13.6 +0.6**
SBUM Sibu 43.14 224 *e*P **P** **08 24 13.6 +0.6**
comp=E,322nm,1.2s
SBUM LR LR
comp=Z,39µm,19.0s
SRDT SRDT 43.18 250 P **P** **08 24 13.4 +0.1**
comp=Z,825nm,1.3s,comp=Z,23µm
KHLT Khaolaem Dam 43.30 251 P **P** **08 24 14.5 +0.2**
comp=Z,140nm,1.1s,comp=Z,4µm
SDPT Sand Point 43.33 45 *e*P **P** **08 24 14.8 +0.8**
comp=Z,226nm,0.7s
SDPT LR LR
comp=Z,66µm,20.0s
MK31 Makanchi Array 43.60 302 *i* P **P** **08 24 15.9 -0.6**
MK31 pmax pmax
comp=Z,147nm,0.7s
MK32 Makanchi Array 43.60 302 *e*P **P** **08 24 15.8 -0.7**
MK32 *e*PP **PcP** **08 26 04.1 +0.2**
MK32 *e*S **S** **08 30 44.2 -1.2**
MKAR Makanchi Array 43.60 302 P **P** **08 24 15.8 -0.7**
comp=Z,52nm,0.9s,baz=88,slow=9.3,SNR=141
MKAR PcP **PcP** **08 26 04.1 +0.2**
baz=82,slow=3.9,SNR=2.8
MKAR ScP **ScP** **08 29 55.9 +0.9**
comp=Z,19nm,1.0s,baz=92,slow=4.3,SNR=3.8
MKAR S **S** **08 30 44.2 -1.2**
comp=Z,6.9nm,1.0s,baz=67,slow=13,SNR=1.8
MKAR LR LR 08 44 58.0
comp=Z,16µm,18.6s,baz=88,slow=40
MKAR P4KPbc 09 02 16.5
comp=Z,1.4nm,1.0s,baz=99,slow=4.7,SNR=3.4
MKAR Makanchi Array 43.60 302 *e*P **P** **08 24 16.2 -0.2**
PHET Kaeng Krachan 43.72 248 P **P** **08 24 17.9 +0.2**
comp=Z,178nm,0.9s,comp=Z,1µm
MAKZ Makanchi 43.81 302 *e*P **P** **08 24 17.7 -0.4**
MAKZ pmax pmax
comp=Z,238nm,0.8s
MAKZ MLR MLR
comp=Z,59µm,18.0s
MAKZ Makanchi 43.81 302 *e*P **P** **08 24 17.7 -0.4**
comp=Z,238nm,0.8s
MAKZ LR LR
comp=Z,59µm,18.0s
BKB Balikpapan 43.92 215 P **P** **08 24 20.1 +0.8**
comp=Z,1µm,1.7s,comp=Z,38µmcomp=Z,79µm
TTSI Tana Toraja 44.24 210 P **P** **08 24 21.8 0.0**
comp=Z,281nm,1.1s,comp=Z,9µmcomp=Z,30µm
SEM Semipalatinsk 44.46 307 ⇓*i*P **P** **08 24 25.3 +2.0**
comp=Z,2µm,1.3s
SEM *e*S **S** **08 31 00.7 +2.9**
SEM LR LR 08 42 32.1
comp=Z,51µm,15.2s
CHGN Chignik 44.48 44 *e*P **P** **08 24 23.6 +0.3**
MTKI Muara Teweh, K 44.60 218 P **P** **08 24 26.0 +1.3**
comp=Z,1µm,1.1s,comp=Z,31µm
KSM Kuching 45.02 225 ⇑P **P** **08 24 28.6 +0.5**
KSM Kuching 45.02 225 *e*P **P** **08 24 28.9 +0.8**
comp=Z,642nm,1.1s
SPSI Sidrap Palu 45.10 210 P **P** **08 24 28.5 -0.2**
TAPN Taplejung 45.28 274 *e*P **P** **08 24 30.8 +0.3**
comp=Z,2µm,1.4s
KURK Kurchatov 45.46 308 P **P** **08 24 31.2 0.0**
KURK S **S** **08 31 14.3 +2.1**
KURK pmax pmax
comp=Z,600nm,0.9s
KURK pmax pmax
comp=N,36nm,1.2s
KURK smax smax
comp=N,3.0nm,0.9s
KURK Kurchatov 45.46 308 *e*P **P** **08 24 30.6 -0.6**
comp=N,2µm,1.2s
KURK *e*S **S** **08 31 14.2 +2.1**
KURK LR LR
comp=Z,71µm,18.0s
KURK Kurchatov 45.46 308 P **P** **08 24 30.8 -0.4**
SNR=767
KURK Kurchatov 45.46 308 P **P** **08 24 30.8 -0.4**
SNR=767
STKI Sintang 45.53 223 P **P** **08 24 33.4 +1.3**
KURBB Kurchatov Arra 45.53 308 P **P** **08 24 31.2 -0.5**
comp=Z,302nm,0.9s,baz=82,slow=8.2,SNR=462
KURBB ScP **ScP** **08 30 05.0 +2.2**
comp=Z,36nm,1.2s,baz=85,slow=3.8,SNR=4.2
KURBB S **S** **08 31 14.2 +1.0**
comp=Z,3.3nm,0.9s,baz=85,slow=12,SNR=5.1
KURBB PKPPKP P'P'df 08 55 50.6 -21
comp=Z,1.0nm,0.8s,baz=273,slow=2.5,SNR=5.0
SAUI Saumlaki 45.54 193 P **P** **08 24 33.5 +1.4**
SAUI Saumlaki 45.54 193 *e*P **P** **08 24 31.9 -0.2**
comp=Z,2µm,1.1s
ODAN Odare 45.76 273 *e*P **P** **08 24 34.2 0.0**
comp=Z,2µm,1.1s
TT01 Tatalina 45.86 35 *e*P **P** **08 24 34.9 +0.7**
TTA Tatalina 45.87 35 *e*P **P** **08 24 35.1 +0.7**
TTA pmax pmax
comp=Z,390nm,1.5s
TTA Tatalina 45.87 35 *e*P **P** **08 24 35.1 +0.7**
comp=Z,390nm,1.5s

SHLS Shalkode 45.99 297 ⇓*i*P **P** **08 24 35.6 -0.2**
comp=Z,2µm,1.2s
SHLS *i* S **S** **08 31 21.7 +1.2**
SHLS LRM MLR 08 45 45.0
comp=Z,26µm,13.2s
SVW2 Sparrevohn 45.99 37 *e*P **P** **08 24 36.7 +1.4**
comp=Z,449nm,0.9s
KBKI Kotabaru 46.05 215 P **P** **08 24 36.0 -0.2**
comp=Z,558nm,0.8s,comp=Z,19µmcomp=Z,36µm
KAPI Kappang 46.06 209 S **S** **08 31 20.2 -1.2**
comp=Z,6.2nm,0.5s,baz=120,slow=20,SNR=1.9
KAPI LR LR 08 43 21.9
comp=Z,20µm,21.4s,baz=36,slow=35
KAPI Kappang 46.06 209 *e*P **P** **08 24 36.8 +0.5**
comp=Z,2µm,1.3s
KAPI LR LR
comp=Z,19µm,21.0s
KAPI Kappang 46.06 209 P **P** **08 24 36.3 0.0**
SNR=78
KAPI Kappang 46.06 209 P **P** **08 24 36.3 0.0**
SNR=78
PDGK Podgornoye 46.23 298 P **P** **08 24 36.9 -0.5**
PDGK pmax pmax
comp=Z,1µm,1.3s
TARA Tarawa 46.31 132 *e*P **P** **08 24 38.5 +0.1**
comp=Z,3µm,2.0s
TARA LR LR
comp=Z,61µm,21.0s
RAMN Ramite 46.35 274 *e*P **P** **08 24 38.9 +0.1**
comp=Z,2µm,0.8s
GUN Gumba 46.50 275 *e*P **P** **08 24 40.3 +0.1**
comp=Z,2µm,1.1s
PMG Port Moresby 46.52 171 S **S** **08 31 30.7 +2.7**
comp=Z,4.6nm,0.6s,baz=299,slow=19,SNR=1.9
PMG LR LR 08 43 22.5
comp=Z,20µm,20.0s,baz=12,slow=35
PMG Port Moresby 46.52 171 *e*P **P** **08 24 40.2 +0.3**
PMG pmax pmax
comp=Z,512nm,1.2s
PMG MLR MLR
comp=Z,30µm,22.0s
PMG Port Moresby 46.52 171 *e*P **P** **08 24 40.2 +0.3**
comp=Z,512nm,1.2s
PMG LR LR
comp=Z,30µm,22.0s
UZB Uzynbulak 46.60 298 ⇓*i*P **P** **08 24 40.4 -0.1**
comp=Z,2µm,1.4s
UZB *i* S **S** **08 31 29.5 +0.3**
UZB LRM MLR 08 46 08.3
comp=Z,26µm,13.3s
BSSI Bau Bau, Buton 46.81 208 P **P** **08 24 42.2 0.0**
comp=Z,624nm,1.0s,comp=Z,16µm
BBKI Banjar Baru 46.82 216 P **P** **08 24 42.0 -0.2**
comp=Z,2µm,1.3s,comp=Z,36µm
SURT Suratani 46.95 244 P **P** **08 24 43.4 +0.1**
comp=Z,174nm,1.3s,comp=Z,3µm
KKN Kakani 47.03 275 *e*P **P** **08 24 44.1 -0.1**
comp=Z,1µm,1.0s
KKN Kakani 47.03 275 *e*P **P** **08 24 44.2 0.0**
comp=Z,2µm,1.2s
PKIN Phulchoki 47.03 275 *e*P **P** **08 24 43.9 -0.3**
comp=Z,1µm,1.2s
SATY Saty 47.06 298 ⇓*i*P **P** **08 24 44.2 +0.1**
comp=Z,3µm,1.9s
SATY *e*S **S** **08 31 36.9 +1.2**
SATY LR LR 08 44 54.4
comp=Z,31µm,13.0s
TRTT Trang 47.08 242 P **P** **08 24 44.6 +0.3**
comp=Z,308nm,1.2s,comp=Z,9µm
KRAB Krabi 47.16 243 P **P** **08 24 45.2 +0.2**
comp=Z,796nm,1.0s,comp=Z,8µm
DMN Daman 47.25 275 *e*P **P** **08 24 45.8 -0.1**
comp=Z,2µm,1.5s
OHAK Old Harbor 47.26 43 *e*P **P** **08 24 45.2 0.0**
comp=Z,1µm,1.8s
OHAK LR LR
comp=Z,96µm,22.0s
RSO Redoubt South 47.38 38 *e*P **P** **08 24 47.0 +0.6**
GKN Gorkha 47.45 276 *e*P **P** **08 24 47.3 -0.1**
comp=Z,3µm,1.2s
KDAK Kodiak Island 47.60 42 P P 08 25 03.0 +15
comp=Z,130nm,0.6s,baz=272,slow=4.9,SNR=115
KDAK LR LR 08 44 39.8
comp=Z,107µm,21.3s,baz=249,slow=36
KDAK Kodiak Island 47.60 42 *e*P **P** **08 24 48.3 +0.4**
KDAK pmax pmax
comp=Z,627nm,0.9s
KDAK MLR MLR
comp=Z,132µm,22.0s
KDAK Kodiak Island 47.60 42 *e*P **P** **08 24 48.2 +0.4**
comp=Z,627nm,0.9s
KDAK LR LR
comp=Z,132µm,22.0s
PPLA Purkeypile 47.62 35 *e*P **P** **08 24 49.6 +1.5**
comp=Z,1µm,1.4s
CAST Castle Rocks 47.66 34 *e*P **P** **08 24 49.5 +1.2**
comp=Z,779nm,1.5s
CAST LR LR
comp=Z,45µm,22.0s
SPU Mount Spurr 47.70 37 *e*P **P** **08 24 49.5 +0.8**
PBKI Pangkalan Bun 47.75 221 P **P** **08 24 51.3 +1.8**
comp=Z,855nm,1.2s,comp=Z,13µmcomp=Z,35µm
CHKK Chushkaly 47.85 299 ⇓*i*P **P** **08 24 50.1 0.0**
comp=Z,2µm,1.4s
CHKK *e*S **S** **08 31 48.9 +2.2**
CHKK LR LR 08 45 01.8
comp=Z,42µm,14.2s
HOM Homer 47.97 39 *e*P **P** **08 24 51.3 +0.6**
comp=Z,1µm,1.3s
HOM LR LR
comp=Z,48µm,21.0s
MDOK Medeo 47.99 298 ⇑*i*P **P** **08 24 51.9 +0.5**
comp=Z,2µm,1.4s
MDOK *e*S **S** **08 31 50.2 +1.1**
MDOK LR LR 08 45 02.7
comp=Z,67µm,16.7s
PKDT Phuket 48.00 244 P **P** **08 24 52.0 +0.5**
comp=Z,906nm,1.1s,comp=Z,11µm
AAA Alma-Ata 48.04 298 *e*P **P** **08 24 52.7 +1.1**
AAA *e*S **S** **08 31 49.4 0.0**
AAA pmax pmax
comp=Z,13µm,5.4s
AAA smax smax
comp=E,21µm,8.0s
AAA MLR MLR
comp=Z,177µm,17.0s
AAA Alma-Ata 48.04 298 *i* P **P** **08 24 52.9 +1.3**
comp=Z,3µm,1.4s
AAA *e*S **S** **08 31 51.0 +1.6**
AAA LR LR 08 45 24.5
comp=Z,69µm,17.3s
BPAW Bear Paw Mtn. 48.16 33 *e*P **P** **08 24 53.2 +1.0**
comp=Z,397nm,1.2s
KTH Kantishna Hill 48.19 34 *e*P **P** **08 24 53.5 +1.0**
comp=Z,898nm,1.4s
KTH LR LR
comp=Z,41µm,22.0s
KULM Kulim 48.20 239 *e*P **P** **08 24 52.9 -0.2**
comp=Z,381nm,1.3s
KULM LR LR
comp=Z,62µm,19.0s
JOHN Johnston Islan 48.25 101 *e*P **P** **08 24 54.3 +0.9**
comp=Z,577nm,0.9s
JOHN LR LR
comp=Z,87µm,22.0s
MLY Manley 48.27 32 *e*P **P** **08 24 53.7 +0.6**
comp=Z,1µm,1.7s
MLY LR LR
comp=Z,46µm,21.0s
KUU Kurty 48.30 299 ⇓*i*P **P** **08 24 53.3 -0.3**
comp=Z,4µm,1.5s
KUU *e*S **S** **08 31 53.5 +0.4**
KUU LRM MLR 08 46 49.6
comp=Z,74µm,15.0s
BRLK Bradley Lake 48.34 39 *e*P **P** **08 24 54.6 +0.9**
comp=Z,280nm,1.1s
BRLK LR LR
comp=Z,39µm,21.0s
KOLN Koldanda 48.38 276 *e*P **P** **08 24 54.8 +0.2**
comp=Z,2µm,1.3s
BOK Bokaro 48.38 270 *e*P **P** **08 24 54.0 -0.5**
BOK IAmb IAmb 08 25 02.8
comp=Z,432nm,1.1s
BOK IAMs_20 IAMs_20 08 46 48.6
comp=Z,49µm,22.5s
TRF Thorofare Moun 48.47 34 *e*P **P** **08 24 55.2 +0.5**
comp=Z,222nm,0.9s
TRF LR LR

comp=Z,30µm,20.0s
MMRI Maumere 48.51 205 P **P** **08 24 55.3 0.0**
comp=Z,2µm,1.1s,comp=Z,48µmcomp=Z,72µm
MMRI Maumere 48.51 205 *e*P **P** **08 24 54.9 -0.4**
comp=Z,2µm,1.1s
IPM Ipoh 48.53 238 *e*P **P** **08 24 55.1 -0.6**
comp=Z,500nm,1.2s
IPM LR LR
comp=Z,56µm,19.0s
COLD Coldfoot 48.55 29 *e*P **P** **08 24 56.0 +0.9**
comp=Z,138nm,0.9s
COLD LR LR
comp=Z,34µm,18.0s
DGPR DIGLIPUR 48.61 254 *e*P **P** **08 24 56.1 -0.1**
DGPR IAmb IAmb 08 24 59.8
comp=Z,2µm,1.5s
DGPR IAMs_20 IAMs_20 08 45 07.0
comp=Z,87µm,23.7s
MYKOM Kota Tinggi 48.68 233 ⇓P **P** **08 24 57.0 +0.3**
MYKOM Kota Tinggi 48.68 233 *e*P **P** **08 24 56.8 0.0**
comp=Z,378nm,1.4s
PYUN Piuthan 48.72 277 *e*P **P** **08 24 57.3 +0.1**
comp=Z,2µm,1.1s
PYUN Piuthan 48.72 277 *e*P **P** **08 24 57.4 +0.2**
comp=Z,3µm,1.1s
RC01 Rabbit Creek A 48.83 37 *e*P **P** **08 24 57.4 +0.1**
comp=Z,703nm,1.3s
RC01 LR LR
comp=Z,62µm,21.0s
KGM Kluang 48.85 233 ⇑P **P** **08 24 58.5 +0.5**
SOEI Soe 48.92 202 P **P** **08 24 58.4 -0.3**
comp=Z,3µm,1.4s,comp=Z,40µm
SOEI Soe 48.92 202 *e*P **P** **08 24 58.3 -0.3**
comp=Z,3µm,1.0s
TPRI Tanjung Pinang 48.92 231 P **P** **08 24 59.9 +1.3**
comp=Z,439nm,1.3s,comp=Z,11µmcomp=Z,29µm
SEW Seward 49.04 39 *e*P **P** **08 24 58.9 -0.1**
comp=Z,381nm,0.9s
SEW LR LR
comp=Z,69µm,20.0s
MCK McKinley 49.07 34 *e*P **P** **08 24 59.6 +0.4**
MCK pmax pmax
comp=Z,353nm,1.0s
MCK MLR MLR
comp=Z,34µm,21.0s
MCK McKinley 49.07 34 *e*P **P** **08 24 59.6 +0.4**
comp=Z,353nm,1.0s
MCK LR LR
comp=Z,34µm,21.0s
TKM2 Tokmak 2 49.08 298 P **P** **08 25 00.5 +0.7**
TKM2 pmax pmax
comp=Z,2µm,1.5s
TKM2 Tokmak 2 49.08 298 *e*P **P** **08 25 00.5 +0.7**
comp=Z,2µm,1.5s
TKM2 LR LR
comp=Z,171µm,20.0s
PMR Palmer 49.09 37 *e*P **P** **08 24 59.1 -0.2**
PMR pmax pmax
comp=Z,862nm,1.5s
PMR MLR MLR
comp=Z,52µm,22.0s
PMR Palmer 49.09 37 *e*P **P** **08 24 59.1 -0.2**
comp=Z,862nm,1.5s
PMR LR LR
comp=Z,52µm,22.0s
RND Reindeer 49.12 34 *e*P **P** **08 24 59.7 +0.1**
RND pmax pmax
comp=Z,780nm,1.3s
RND MLR MLR
comp=Z,51µm,21.0s
RND Reindeer 49.12 34 *e*P **P** **08 24 59.7 +0.1**
comp=Z,780nm,1.3s
RND LR LR
comp=Z,51µm,21.0s
MDM Murphy Dome 49.34 32 *e*P **P** **08 25 02.0 +0.8**
comp=Z,1µm,1.4s
MDM LR LR
comp=Z,60µm,21.0s
WRH Wood River Hil 49.41 33 *e*P **P** **08 25 02.1 +0.3**
comp=Z,545nm,1.1s
WRH LR LR
comp=Z,42µm,21.0s
SML Sawmill 49.45 36 *e*P **P** **08 25 02.6 +0.4**
SML pmax pmax
comp=Z,409nm,0.8s
SML MLR MLR
comp=Z,53µm,22.0s
SML Sawmill 49.45 36 *e*P **P** **08 25 02.5 +0.4**
comp=Z,409nm,0.8s
SML LR LR
comp=Z,53µm,22.0s
COLA College 49.50 32 *d i*P **P** **08 25 02.5 +0.1**
COLA College 49.50 32 PFAKE 08 25 10.0 +7.6
COLA LR LR
comp=Z,56µm,22.0s
CCB Clear Creek Bu 49.53 32 *e*P **P** **08 25 02.9 +0.3**
comp=Z,353nm,1.2s
CCB LR LR
comp=Z,40µm,20.0s
BATI Baumata 49.53 202 P **P** **08 25 03.6 +0.4**
comp=Z,895nm,1.0s,comp=Z,10µm
HNR Honiara 49.59 155 P **P** **08 25 05.0 +1.4**
comp=Z,84nm,0.8s,baz=248,slow=5.4,SNR=4.0
HNR LR LR 08 44 16.1
comp=Z,41µm,21.8s,baz=328,slow=34
HNR Honiara 49.59 155 *e*P **P** **08 25 07.0 +3.4**
HNR Honiara 49.59 155 P **P** **08 25 05.0 +1.4**
HNR pmax pmax
comp=Z,84nm,0.8s
HNR Honiara 49.59 155 *e*P **P** **08 25 06.1 +2.5**
HNR LR LR
comp=Z,47µm,20.0s
PBA Port Blair 49.69 252 *e*P P 08 25 05.4 +0.9
FRU Bishkek 49.80 298 ⇓*i*P **P** **08 25 05.5 +0.4**
FRU *i* 08 25 11.5
FRU *e*S **S** **08 32 15.0 +0.8**
FRU pmax pmax
comp=Z,2µm,2.5s
FRU smax smax
comp=E,24µm,21.0s
FRU MLR MLR
comp=N,84µm,14.0s
FRU MLR MLR
comp=Z,110µm,18.0s
DHY Denali Highway 49.80 35 *e*P **P** **08 25 05.0 0.0**
comp=Z,512nm,1.3s
DHY LR LR
comp=Z,41µm,20.0s
KSH Kashi 49.83 294 ⇓*i*P **P** **08 25 09.5 +4.0**
KSH *e*sP sP 08 25 16.5 +5.2
KSH PcS **PcS** **08 30 25.7 +2.7**
KSH S **S** **08 32 18.9 +4.0**
KSH pmax pmax
comp=Z,440nm,1.4s
KSH pmax pmax
comp=Z,5µm,5.0s
KSH LR LR
comp=Z,102µm,17.5s
KSH LR LR
comp=Z,141µm,17.6s
KSH LR LR
comp=Z,88µm,19.8s
CHKZ Chkalovo 49.88 313 P **P** **08 25 04.9 -0.6**
CHKZ pmax pmax
comp=Z,1µm,1.2s
HDA Harding Lake 49.91 33 *e*P **P** **08 25 05.5 -0.1**
comp=Z,798nm,1.3s
HDA LR LR
comp=Z,37µm,20.0s
IL1 Eielson Array 49.92 32 *e*P **P** **08 25 05.7 0.0**
ILAR Eielson Array 49.92 32 P **P** **08 25 05.5 -0.2**
comp=Z,104nm,0.8s,baz=269,slow=5.8,SNR=168
ILAR ScP **ScP** **08 30 24.0 +3.0**
comp=Z,4.0nm,1.0s,baz=270,slow=2.7,SNR=2.5
ILAR S **S** **08 32 17.7 +2.5**
comp=Z,0.8nm,0.8s,baz=265,slow=7.2,SNR=2.6
ILAR LR LR 08 47 26.3
comp=Z,44µm,21.0s,baz=276,slow=38
ILAR PKPPKP P'P'df 08 55 57.0 -9.4
comp=Z,3.8nm,1.0s,baz=146,slow=0.3,SNR=4.3
ILB Eielson Array 49.92 32 *e*P **P** **08 25 05.5 -0.2**
SCM Sheep Creek Mo 49.92 36 *e*P **P** **08 25 06.4 +0.6**
SCM pmax pmax
comp=Z,663nm,1.4s
SCM MLR MLR
comp=Z,39µm,22.0s
SCM Sheep Creek Mo 49.92 36 *e*P **P** **08 25 06.3 +0.6**

comp=Z,663nm,1.4s
SCM LR LR
comp=Z,39µm,22.0s
OTUK Ortayu 49.94 306 P **P** **08 25 05.9 -0.1**
OTUK pmax pmax
comp=Z,670nm,1.2s
AAK Ala-Archa 49.94 298 P **P** **08 25 06.5 +0.2**
comp=Z,93nm,0.9s,baz=92,slow=5.5,SNR=82
AAK S **S** **08 32 18.6 +2.1**
comp=Z,7.3nm,1.0s,baz=129,slow=19,SNR=3.8
AAK LR LR 08 47 30.4
comp=Z,151µm,19.4s,baz=58,slow=38
AAK Ala-Archa 49.94 298 *eP* **P** **08 25 06.5 +0.2**
comp=Z,822nm,1.5s
AAK *eS* **S** **08 32 18.6 +2.1**
AAK LR LR
comp=Z,152µm,20.0s
AAK Ala-Archa 49.94 298 P **P** **08 25 06.8 +0.5**
SNR=234
AAK P **P** **08 25 06.8 +0.5**
SNR=234
AAK Ala-Archa 49.94 298 P **P** **08 25 06.8 +0.5**
SNR=234
DSRI Dabo 49.98 230 P P 08 25 14.5 +7.8
BVA0 Borovoye Array 50.13 312 *i* P **P** **08 25 07.1 -0.3**
BVA0 pmax pmax
comp=Z,568nm,1.2s
BVAR Borovoye Array 50.13 312 P **P** **08 25 07.2 -0.2**
comp=Z,209nm,0.8s,baz=79,slow=7.7,SNR=135
BVAR PcP **PcP** **08 26 26.9 +0.2**
comp=Z,189nm,1.0s,baz=30,slow=6.7,SNR=3.7
BVAR S **S** **08 32 16.3 -2.3**
comp=Z,1.3nm,0.7s,baz=97,slow=19,SNR=1.7
BVAR LR LR 08 45 28.7
comp=Z,44µm,20.1s,baz=78,slow=35
BVAR P4KPbc 09 02 41.4
comp=Z,1.4nm,0.6s,baz=76,slow=6.3,SNR=4.9
BRVK Borovoye 50.19 312 *ceP* **P** **08 25 07.5 -0.4**
BRVK pmax pmax
comp=Z,313nm,1.0s
BRVK Borovoye 50.19 312 *eP* **P** **08 25 07.6 -0.2**
comp=Z,684nm,1.1s
BRVK LR LR
comp=Z,61µm,22.0s
BRVK Borovoye 50.19 312 P **P** **08 25 08.0 +0.1**
SNR=320
BRVK Borovoye 50.19 312 P **P** **08 25 08.0 +0.1**
SNR=320
LGTI Lohaghat 50.31 280 *eP* **P** **08 25 11.6 +2.5**
PLAI Plampang 50.32 210 P **P** **08 25 07.4 -1.8**
comp=Z,1µm,1.2s,comp=Z,19µmcomp=Z,44µm
MTN Manton Dam 50.32 192 *eP* **P** **08 25 08.7 -0.4**
comp=Z,976nm,1.1s
MTN LR LR
comp=Z,15µm,20.0s
PPBI Pangkal Pinang 50.38 227 P **P** **08 25 10.7 +1.0**
comp=Z,318nm,1.2s,comp=Z,18µm
EKS2 Erkin-Say 50.44 298 *eP* **P** **08 25 10.2 +0.1**
EKS2 pmax pmax
comp=Z,251nm,1.2s
EKS2 MLR MLR
comp=Z,133µm,20.0s
EKS2 Erkin-Say 50.44 298 *eP* **P** **08 25 10.2 +0.1**
comp=Z,251nm,1.2s
EKS2 LR LR
comp=Z,133µm,20.0s
FYU Fort Yukon 50.51 30 *eP* **P** **08 25 11.7 +1.6**
comp=Z,3µm,1.8s
FYU LR LR
comp=Z,40µm,21.0s
BASI Baing, Sumba 50.55 206 P **P** **08 25 10.3 -0.6**
comp=Z,1µm,1.1s,comp=Z,20µm
TWSI Taliwang, Sumb 50.60 211 P **P** **08 25 10.3 -1.0**
comp=Z,914nm,1.3s,comp=Z,17µm
KLU Klutina 50.63 37 *eP* **P** **08 25 11.6 +0.4**
comp=Z,1µm,1.5s
KLU LR LR
comp=Z,70µm,22.0s
PAX Paxson 50.68 35 *eP* **P** **08 25 12.1 +0.6**
PAX pmax pmax
comp=Z,557nm,1.3s
PAX MLR MLR
comp=Z,37µm,21.0s
PAX Paxson 50.68 35 *eP* **P** **08 25 12.1 +0.6**
comp=Z,557nm,1.3s
PAX LR LR
comp=Z,37µm,21.0s
COEN Coen 50.70 177 *eP* **P** **08 25 12.3 +0.3**
comp=Z,687nm,0.9s
COEN LR LR
comp=Z,30µm,22.0s
SRBI Singaraja 50.72 213 P **P** **08 25 12.2 0.0**
comp=Z,1µm,1.5s,comp=Z,38µmcomp=Z,56µm
DIV Divide 50.74 37 *eP* **P** **08 25 13.0 +1.0**
comp=Z,2µm,1.6s
DIV LR LR
comp=Z,63µm,21.0s
EYAK Cordova Ski Ar 50.82 38 *eP* **P** **08 25 13.6 +1.1**
comp=Z,330nm,1.1s
EYAK LR LR
comp=Z,97µm,21.0s
LHMI Lhok Sumawe 50.84 242 P **P** **08 25 14.3 +1.1**
comp=Z,861nm,1.1s,comp=Z,18µmcomp=Z,69µm
LHMI Lhok Sumawe 50.84 242 *eP* **P** **08 25 13.9 +0.8**
comp=Z,992nm,1.1s
LHMI LR LR
comp=Z,100µm,22.0s
ABJI Asem Bagus 50.90 215 P **P** **08 25 14.4 +0.8**
comp=Z,1µm,1.5s,comp=Z,32µm
TSI Tuntungan 50.92 239 P **P** **08 25 15.0 +1.2**
comp=Z,432nm,1.2s,comp=Z,54µm
ZRNK Zerenda 50.97 312 *eP* **P** **08 25 13.8 0.0**
ZRNK pmax pmax
comp=Z,1µm,1.2s
ZRNK MLR MLR
comp=Z,54µm,22.0s
ZRNK Zerenda 50.97 312 *eP* **P** **08 25 13.8 0.0**
comp=Z,1µm,1.2s
ZRNK LR LR
comp=Z,54µm,22.0s
PSI Prapat 51.18 238 *eP* **P** **08 25 15.4 -0.5**
PSI pmax pmax
comp=Z,229nm,0.9s
PSI MLR MLR
comp=Z,45µm,21.0s
PSI Prapat 51.18 238 *eP* **P** **08 25 15.4 -0.5**
comp=Z,229nm,0.9s
PSI LR LR
comp=Z,45µm,21.0s
DOT Dot Lake 51.24 34 *eP* **P** **08 25 15.6 -0.1**
comp=Z,813nm,1.2s
DOT LR LR
comp=Z,129µm,19.0s
DNP Denpasar 51.25 213 P **P** **08 25 16.5 +0.3**
UWJI Ujung Watu 51.28 219 P **P** **08 25 17.9 +1.4**
BMRM Bremner River 51.33 37 *eP* **P** **08 25 17.2 +0.8**
comp=Z,1µm,1.5s
BMRM LR LR
comp=Z,92µm,22.0s
RAGM Ragged Mountai 51.37 38 *eP* **P** **08 25 18.0 +1.3**
comp=Z,341nm,1.1s
RAGM LR LR
comp=Z,101µm,22.0s
MNAS Manas 51.39 299 P **P** **08 25 17.6 +0.3**
MNAS pmax pmax
comp=Z,627nm,1.0s
KCSI Kotacane, Aceh 51.46 240 P **P** **08 25 16.2 -1.7**
comp=Z,205nm,1.0s,comp=Z,5µmcomp=Z,24µm
JMBI JAMBI 51.46 230 P P 08 25 23.3 +5.5
SFK Sufi-Kurgan 51.47 295 P **P** **08 25 18.3 +0.3**
SFK pmax pmax
comp=Z,734nm,1.1s
MENT Mentasta 51.48 35 *eP* **P** **08 25 18.7 +1.2**
comp=Z,465nm,1.0s
MENT LR LR
comp=Z,41µm,20.0s
JAGI Jajag, Banyuwa 51.54 214 P **P** **08 25 17.7 -0.7**
JAGI Jajag, Banyuwa 51.54 214 *eP* **P** **08 25 17.8 -0.5**
comp=Z,666nm,1.1s
JAGI LR LR
comp=Z,10µm,20.0s
BKNI Bangkinang 51.60 234 P **P** **08 25 19.5 +0.5**
BKNI Bangkinang 51.60 234 *eP* **P** **08 25 19.4 +0.5**
comp=Z,1µm,1.0s
BKNI LR LR
comp=Z,31µm,20.0s
DDI Dehra Dun 51.67 282 *eP* **P** **08 25 18.8 -0.6**
DDI IAmb IAmb 08 25 26.0
comp=Z,2µm,1.6s
DDI IAMs_20 IAMs_20 08 48 03.7
comp=Z,80µm,29.9s
GMJI Gumukmas 51.69 215 P **P** **08 25 18.6 -0.9**
PMBI Palembang 51.80 228 P **P** **08 25 22.2 +1.8**
CMBY CAMPBELL BAY 51.80 247 *eP* **P** **08 25 20.7 +0.3**
CMBY IAmb IAmb 08 25 28.4
comp=Z,622nm,1.1s
CMBY IAMs_20 IAMs_20 08 49 17.4
comp=Z,65µm,13.3s
NGJI Ngawi 51.84 218 P **P** **08 25 22.0 +1.4**
SMLA Simla 52.02 283 *eP* **P** **08 25 21.4 -0.5**
TPTI 52.06 240 P **P** **08 25 20.2 -2.1**
comp=Z,328nm,1.4s,comp=Z,6µm
SMRI Semarang 52.08 219 P **P** **08 25 24.0 +1.6**
SMRI Semarang 52.08 219 *eP* **P** **08 25 24.9 +2.4**
comp=Z,798nm,1.0s
SMRI LR LR
comp=Z,15µm,18.0s
MNSI Mandailing Nat 52.21 236 P **P** **08 25 23.1 -0.4**
DHRM DHARAMSHALA 52.24 285 *eP* **P** **08 25 22.9 -0.9**
DHRM IAMs_20 IAMs_20 08 50 45.5
comp=Z,71µm,25.7s
PWJI Pagerwojo 52.24 217 P **P** **08 25 22.0 -1.6**
SDSI Sungai Dareh 52.31 233 P **P** **08 25 24.1 -0.1**
EGAK Eagle 52.36 32 *eP* **P** **08 25 23.9 0.0**
comp=Z,421nm,1.3s
EGAK LR LR
comp=Z,33µm,20.0s
BALM Baldy 52.40 37 *eP* **P** **08 25 25.1 +0.6**
BALM pmax pmax
comp=Z,1µm,1.9s
BALM MLR MLR
comp=Z,26µm,20.0s
BALM Baldy 52.40 37 *eP* **P** **08 25 25.1 +0.6**
comp=Z,1µm,1.9s
BALM LR LR
comp=Z,26µm,20.0s
WOJI Wonogiri, Jawa 52.51 218 P **P** **08 25 24.6 -1.0**
CHLP Challavanipeta 52.55 266 *eP* **P** **08 25 25.9 0.0**
CHLP IAmb IAmb 08 25 36.8
comp=Z,516nm,1.3s
CHLP *eS* **S** **08 32 52.1 -0.4**
CHLP *eSS* **SS** **08 36 31.2 +0.4**
CHLP IVMs_BB IVMs_BB 08 46 36.9
comp=Z,25µm,27.7s
KKAR Karatay Array 52.59 300 *eP* **P** **08 25 25.9 -0.1**
KKAR Karatay Array 52.59 300 *eP* **P** **08 25 25.9 -0.1**
PPI Padang Panjang 52.61 234 P **P** **08 25 27.7 +1.3**
THN Thein Dam 52.61 286 *eP* **P** **08 25 25.0 -1.3**
PCJI Pacitan 52.70 218 P **P** **08 25 28.1 +1.1**
UGM Wanagama 52.77 219 P **P** **08 25 27.0 -0.6**
UGM Wanagama 52.77 219 *eP* **P** **08 25 26.1 -1.6**
comp=Z,3µm,1.1s
UGM LR LR
comp=Z,29µm,22.0s
KKR Kurukshetra 52.79 282 *eP* **P** **08 25 27.6 0.0**
BISR Bishrakh 52.91 280 *eP* **P** **08 25 25.4 -3.1**
PDSI Padang 52.91 234 P **P** **08 25 28.4 -0.3**
NDI New Delhi 53.03 281 *ex* **P** **08 25 26.0 -3.5**
NDI *eS* **S** **08 32 58.0 -1.1**
KPJI Karang Pucung 53.09 221 P **P** **08 25 29.2 -0.7**
GSI Gunungsitoli 53.19 238 P **P** **08 25 30.8 +0.1**
GSI Gunungsitoli 53.19 238 *eP* **P** **08 25 30.0 -0.7**
comp=Z,4µm,1.3s
GSI LR LR
comp=Z,74µm,20.0s
AYAN Aya Nagar 53.20 280 *eP* **P** **08 25 29.9 -0.8**
AYAN *eP* **P** **08 25 29.9 -0.8**
AYAN IAmb IAmb 08 25 36.9
comp=Z,541nm,1.2s
IUG luzhnay 53.24 299 ⇓ *iP* **P** **08 25 31.5 +0.5**
comp=Z,5µm,1.2s
IUG *eS* **S** **08 33 03.1 +1.3**
IUG LR LR 08 48 31.2
comp=Z,37µm,14.8s
BHGR Bahadurgarh 53.25 281 *eP* **P** **08 25 31.0 0.0**
LHSI Lahat 53.26 229 P **P** **08 25 31.4 +0.2**
BRLS Boroldoy 53.27 300 ⇓ *iP* **P** **08 25 31.2 +0.2**
comp=Z,512nm,1.1s
BRLS *i* S **S** **08 33 03.1 +1.1**
BRLS LR LR 08 48 18.8
comp=Z,7µm,15.4s
KEKH Kekaha 53.28 89 PFAKE 08 25 40.0 +8.6
KEKH LR LR
comp=Z,26µm,21.0s
KLI Kotabumi 53.30 227 P **P** **08 25 31.2 -0.3**
SONA Sohna 53.33 280 *eP* **P** **08 25 31.2 -0.4**
SONA *eP* **P** **08 25 31.2 -0.4**
SONA IAmb IAmb 08 25 38.1
comp=Z,460nm,1.0s
LEM Lembang 53.37 222 S **S** **08 33 08.4 +4.4**
comp=Z,18nm,0.6s,baz=16,slow=18,SNR=2.0
LEM LR LR 08 49 42.8
comp=Z,14µm,19.9s,baz=34,slow=38
LEM Lembang 53.37 222 P P 08 25 37.3 +5.2
MDSI Maura Dua 53.40 227 P **P** **08 25 31.5 -0.7**
CHM Chimkent 53.48 299 *eP* **P** **08 25 32.6 0.0**
CHM *eS* **S** **08 33 06.1 +1.3**
CHM LR LR 08 48 32.9
comp=Z,17µm,13.5s
BLSI Bandar Lampung 53.49 226 P **P** **08 25 32.4 -0.5**
MASI Maura Aman, Be 53.51 230 P **P** **08 25 33.3 +0.3**
VIS Vishakhapatnam 53.55 265 *eP* **P** **08 25 33.5 +0.1**
SBJI Serang 53.60 224 P **P** **08 25 34.5 +0.8**
DBJI Dramaga 53.61 223 P **P** **08 25 33.3 -0.5**
PBSI Pulau Batu 53.71 237 P **P** **08 25 34.4 -0.1**
CMJI Cimerak 53.73 221 P **P** **08 25 35.1 +0.5**
KUDL Kundal 53.85 280 *eP* **P** **08 25 34.2 -1.3**
KUDL *eP* **P** **08 25 34.2 -1.3**
KUDL IAmb IAmb 08 25 41.7
comp=Z,176nm,0.8s
CISI Cisompet, Garu 53.87 222 P **P** **08 25 34.9 -0.8**
CISI Cisompet, Garu 53.87 222 *eP* **P** **08 25 35.7 0.0**
comp=Z,336nm,0.8s
CISI LR LR
comp=Z,15µm,22.0s
LWLI Liwa 53.89 227 P **P** **08 25 36.8 +0.8**
YKU2 Yakutat 54.01 38 PFAKE 08 25 50.0 +14
YKU2 LR LR
comp=Z,32µm,20.0s
MNAI Manna 54.03 229 P P 08 25 46.0 +9.2
MNAI Manna 54.03 229 *eP* **P** **08 25 37.0 +0.1**
comp=Z,655nm,1.2s
CNJI Cibinong 54.03 223 P **P** **08 25 36.4 -0.4**
KASI Kota Agung 54.05 226 P **P** **08 25 34.9 -2.0**
SKJI Sukabumi 54.09 223 P P 08 25 48.9 +12
CGJI Cibinong 54.25 224 P **P** **08 25 36.7 -1.7**
KHET Khetri 54.42 281 *eP* **P** **08 25 38.1 -1.6**
KHET *eP* **P** **08 25 38.1 -1.6**
KHET IAmb IAmb 08 25 45.6
comp=Z,357nm,1.0s
PPSI Pulau Pagai 54.61 233 P **P** **08 25 41.5 +0.4**
INK Inuvik 54.76 27 P **P** **08 25 42.1 +0.6**
comp=Z,46nm,0.7s,baz=284,slow=7.6,SNR=100
INK LR LR 08 51 24.0
comp=Z,62µm,20.5s,baz=273,slow=39
INK Inuvik 54.76 27 P **P** **08 25 42.1 +0.6**
INK pmax pmax
comp=Z,89nm,0.8s
INK MLR MLR
comp=Z,62µm,20.5s
INK Inuvik 54.76 27 *eP* **P** **08 25 42.1 +0.6**
comp=Z,504nm,1.3s
SVE Sverdlovsk 54.77 318 *c iP* **P** **08 25 41.7 0.0**
SVE *eS* **S** **08 33 16.4 -5.4**
SVE *eSS* **SS** **08 37 04.6 +0.2**
SVE *eSSS* SSS 08 39 02.1
SVE pmax pmax
comp=Z,902nm,1.2s
SVE pmax pmax
comp=Z,4µm,11.9s
OPA Opana 54.80 88 *eP* **P** **08 25 45.4 +3.0**
OPA pmax pmax
comp=Z,2µm,1.6s
OPA MLR MLR
comp=Z,19µm,20.0s
OPA Opana 54.80 88 *eP* **P** **08 25 45.4 +3.0**
comp=Z,2µm,1.6s
OPA LR LR
comp=Z,19µm,20.0s
KIP Kipapa 54.93 88 *eP* **P** **08 25 44.1 +0.8**
KIP pmax pmax
comp=Z,1µm,1.8s
KIP MLR MLR
comp=Z,20µm,20.0s
KIP Kipapa 54.93 88 *eP* **P** **08 25 44.1 +0.8**
comp=Z,1µm,1.8s
KIP LR LR
comp=Z,20µm,20.0s
HON Honolulu 54.99 88 PFAKE 08 26 00.0 +16
HON LR LR
comp=Z,27µm,21.0s
PVM Polavaram 55.17 266 *eP* **P** **08 25 45.2 0.0**
PVM IAmb IAmb 08 25 54.6
comp=Z,283nm,1.0s
PVM *eS* **S** **08 33 26.7 -1.4**
PVM IVMs_BB IVMs_BB 08 48 06.1
comp=Z,20µm,28.8s
BHPL Bhopal 55.42 275 *eP* **P** **08 25 45.8 -1.2**
BHPL IAmb IAmb 08 25 52.2
comp=Z,312nm,0.3s
BHPL IAMs_20 IAMs_20 08 55 40.5
comp=Z,21µm,17.2s
ARU Arti 55.98 318 P **P** **08 25 50.1 -0.3**
comp=Z,274nm,0.7s,baz=76,slow=4.0,SNR=121
ARU S **S** **08 33 40.0 +1.9**
comp=Z,7.9nm,0.2s,baz=270,slow=20,SNR=3.0
ARU P4KPbc 09 03 06.7
comp=Z,1.4nm,0.3s,baz=90,slow=7.1,SNR=4.0
ARU Arti 55.98 318 *d iP* **P** **08 25 50.1 -0.3**
ARU 08 26 49.5
ARU 08 27 54.5
ARU *eS* **S** **08 33 37.8 -0.2**
ARU 08 35 31.5
ARU SS **SS** **08 37 15.6 -7.8**
ARU SSS SSS 08 39 22.9
ARU pmax pmax
comp=Z,521nm,1.0s
ARU pmax pmax
comp=Z,5µm,12.4s
ARU Arti 55.98 318 *eP* **P** **08 25 50.1 -0.3**
comp=Z,1µm,1.2s
ARU LR LR
comp=Z,40µm,20.0s
SOKR Solikamsk 55.98 322 *d iP* **P** **08 25 48.5 -1.9**
SOKR 08 27 49.6
SOKR PPP PPP 08 29 16.4
SOKR S **S** **08 33 33.7 -4.2**
SOKR SS **SS** **08 37 19.2 -4.1**
SOKR pmax pmax
comp=Z,322nm,1.5s
SOKR MLR MLR
comp=Z,45µm,19.0s
SKAG Skagway 56.17 38 *eP* **P** **08 25 53.0 +1.3**
comp=Z,2µm,2.0s
SKAG LR LR
comp=Z,45µm,22.0s
RPR Rampur 56.17 269 *eP* **P** **08 25 52.2 -0.1**
RPR IAmb IAmb 08 26 02.7
comp=Z,484nm,0.9s
RPR *eS* **S** **08 33 39.6 -1.9**
RPR IVMs_BB IVMs_BB 08 53 21.1
comp=Z,16µm,17.3s
FITZ Fitzroy Crossi 56.55 197 S **S** **08 33 48.2 +2.1**
comp=Z,7.1nm,1.0s,baz=261,slow=19,SNR=3.2
FITZ Fitzroy Crossi 56.55 197 *eP* **P** **08 25 55.2 +0.4**
comp=Z,428nm,1.0s
HLK Haleakala 56.68 88 PFAKE 08 26 10.0 +14
HLK LR LR
comp=Z,18µm,21.0s
WB0 Warramunga Arr 56.72 187 PFAKE 08 26 10.0 +14
WB0 LR LR
comp=Z,21µm,22.0s
WB9 Warramunga Arr 56.74 187 PFAKE 08 26 10.0 +14
WB9 LR LR
comp=Z,42µm,21.0s
WB8 Warramunga Arr 56.76 187 PFAKE 08 26 10.0 +14
WB8 LR LR
comp=Z,22µm,22.0s
WB6 Warramunga Arr 56.80 187 PFAKE 08 26 10.0 +13
WB6 LR LR
comp=Z,23µm,22.0s
KBL Kabul 56.82 291 *eP* **P** **08 25 56.5 -0.6**
KBL pmax pmax
comp=Z,502nm,1.1s
KBL MLR MLR
comp=Z,61µm,19.0s
KBL Kabul 56.82 291 *eP* **P** **08 25 56.5 -0.6**
comp=Z,502nm,1.1s
KBL LR LR
comp=Z,61µm,19.0s
WB5 Warramunga Arr 56.83 187 PFAKE 08 26 10.0 +13
WB5 LR LR
comp=Z,20µm,22.0s
WB4 Warramunga Arr 56.85 187 PFAKE 08 26 10.0 +13
WB4 LR LR
comp=Z,20µm,22.0s
WB3 Warramunga Arr 56.87 187 PFAKE 08 26 10.0 +13
WB3 LR LR
comp=Z,22µm,22.0s
WC2 Warramunga Arr 56.88 187 PFAKE 08 26 10.0 +13
WC2 LR LR
comp=Z,24µm,22.0s
WC1 Warramunga Arr 56.88 187 PFAKE 08 26 10.0 +13
WC1 LR LR
comp=Z,17µm,22.0s
WRAB Tennant Creek 56.88 187 *de* **P** **08 25 56.1 -1.1**
WRAB pmax pmax
comp=Z,1µm,0.8s
WRAB Tennant Creek 56.88 187 *eP* **P** **08 25 56.4 -0.8**
comp=Z,699nm,0.8s
WRAB LR LR
comp=Z,25µm,22.0s
WR0 Warramunga Arr 56.89 187 PFAKE 08 26 10.0 +13
WR0 LR LR
comp=Z,22µm,22.0s
WR8 Warramunga Arr 56.89 187 PFAKE 08 26 10.0 +13
WR8 LR LR
comp=Z,18µm,21.0s
WR9 Warramunga Arr 56.89 187 PFAKE 08 26 10.0 +13
WR9 LR LR
comp=Z,18µm,21.0s
WB2 Warramunga Arr 56.89 187 *eP* **P** **08 25 56.5 -0.7**
comp=Z,775nm,0.8s
WB2 LR LR
comp=Z,24µm,21.0s
WR7 Warramunga Arr 56.89 187 PFAKE 08 26 10.0 +13
WR7 LR LR
comp=Z,19µm,22.0s
WR1 Warramunga Arr 56.89 187 *eP* **P** **08 25 56.5 -0.8**
comp=Z,770nm,0.8s
WR1 *eS* **S** **08 33 49.4 -1.3**
WR1 LR LR
comp=Z,23µm,22.0s
WRA Warramunga Arr 56.89 187 P **P** **08 25 56.5 -0.8**
comp=Z,562nm,0.8s,baz=4.6,slow=7.5,SNR=278
WRA S **S** **08 33 49.4 -1.3**
comp=Z,10nm,0.9s,baz=0.7,slow=13,SNR=5.1
WRA LR LR 08 47 44.9
comp=Z,13µm,19.5s,baz=5.0,slow=33
WRA PKPPKP P'P'df 08 55 49.8 +8.5
comp=Z,6.7nm,1.0s,baz=162,slow=2.3,SNR=7.3
WRA PKP2bc 08 56 00.1
comp=Z,16nm,1.0s,baz=188,slow=2.3,SNR=4.7
WRA PKP2ab 08 56 16.8
comp=Z,6.5nm,0.9s,baz=202,slow=1.2,SNR=5.0
WRA P4KPbc 09 03 12.8
comp=Z,2.0nm,0.8s,baz=5.9,slow=5.1,SNR=4.2
SRSP Sriramsagar 56.90 270 *eP* **P** **08 25 56.6 -0.9**
SRSP IAmb IAmb 08 26 07.6
comp=Z,1µm,1.1s
SRSP *eS* **S** **08 33 47.6 -3.6**
SRSP IVMs_BB IVMs_BB 08 52 42.4
comp=Z,22µm,17.8s
WR3 Warramunga Arr 56.90 187 PFAKE 08 26 10.0 +13
WR3 LR LR
comp=Z,21µm,22.0s
WR4 Warramunga Arr 56.90 187 PFAKE 08 26 10.0 +13
WR4 LR LR
comp=Z,20µm,22.0s
WR5 Warramunga Arr 56.90 187 PFAKE 08 26 10.0 +13
WR5 LR LR
comp=Z,20µm,22.0s
WR6 Warramunga Arr 56.90 187 PFAKE 08 26 10.0 +13
WR6 LR LR
comp=Z,21µm,22.0s
WR2 Warramunga Arr 56.90 187 PFAKE 08 26 10.0 +13
WR2 LR LR

comp=Z,21µm,22.0s
WC3 Warramunga Arr 56.91 187 PFAKE 08 26 10.0 +13
WC3 LR LR
comp=Z,22µm,22.0s
WC4 Warramunga Arr 56.91 187 PFAKE 08 26 10.0 +13
WC4 LR LR
comp=Z,23µm,22.0s
CTA Charters Tower 56.98 174 S **S** **08 33 51.9 -0.1**
comp=Z,6.0nm,0.9s,baz=98,slow=18,SNR=2.6
CTA Charters Tower 56.98 174 P **P** **08 25 57.6 -0.4**
CTAO Charters Tower 56.98 174 *e*P **P** **08 25 57.5 -0.4**
CTAO pmax pmax
comp=F,873nm,1.9s
CTAO MLR MLR
comp=Z,20µm,22.0s
CTAO Charters Tower 56.98 174 *e*P **P** **08 25 57.5 -0.4**
comp=F,873nm,1.9s
CTAO LR LR
comp=Z,20µm,22.0s
ADKI Addanki 57.27 266 *e*P **P** **08 25 59.9 -0.2**
ADKI IAML 08 26 10.2
comp=Z,130nm,1.0s
ADKI *e*S **S** **08 33 55.3 -0.7**
ADKI *e*SS **SS** **08 37 42.0 -3.3**
ADKI IVMs_BB IVMs_BB 08 49 19.6
comp=Z,27µm,26.8s
NJS Nagarjunasagar 57.41 267 *e*P **P** **08 26 00.3 -0.8**
NJS IAmb IAmb 08 26 11.2
comp=Z,273nm,1.1s
NJS *e*S **S** **08 33 57.4 -0.5**
NJS IVMs_BB IVMs_BB 08 51 28.2
comp=Z,17µm,22.6s
XMIS Christmas Isla 57.47 222 *e*P **P** **08 25 60.0 -1.5**
comp=Z,708nm,1.5s
XMIS LR LR
comp=Z,9µm,20.0s
AB31 Akbulak array 57.48 310 *i* P **P** **08 26 00.5 -0.7**
AB31 pmax pmax
comp=Z,197nm,0.6s
ABKAR Akbulak array 57.48 310 *e*P **P** **08 26 00.8 -0.4**
HPAH Hawaii Prepara 57.50 88 PFAKE 08 26 20.0 +18
HPAH LR LR
comp=Z,25µm,20.0s
HYB Hyderabad 57.54 268⇓ *i*P **P** **08 26 02.0 -0.1**
comp=Z,2µm,2.0s
HYB *e*PP **PP** **08 28 12.0 +2.3**
HYB *e*S **S** **08 33 56.0 -3.7**
HYB *e*SS **SS** **08 37 50.0 +0.5**
HYB LR LR 08 52 50.0
comp=Z,70nm,22.0s
HYB *e*PKPPKP **P'P'df** **08 55 48.0 -2.3**
HYB Hyderabad 57.54 268 *e*P **P** **08 26 02.0 -0.1**
HYBB Hyderabad (bro 57.54 268 *e*P **P** **08 26 01.6 -0.5**
HYBB IAmb IAmb 08 26 12.0
comp=Z,605nm,1.1s
HYBB *e*S **S** **08 33 58.8 -0.9**
HYBB *e*SS **SS** **08 37 46.7 -2.8**
HYBB IVMs_BB IVMs_BB 08 52 48.6
comp=Z,16µm,18.6s
POHA Pohakuloa 57.77 89 *e*P **P** **08 26 03.1 -0.9**
comp=Z,595nm,1.1s
POHA LR LR
comp=Z,31µm,21.0s
MLOA Mauna Loa Obse 57.85 89 *e*P **P** **08 26 06.4 +1.6**
SRLM Srisailam 57.99 266 *e*P **P** **08 26 04.3 -0.9**
SRLM IAmb IAmb 08 26 15.1
comp=Z,461nm,1.2s
SRLM *e*S **S** **08 34 03.8 -1.8**
SRLM IVMs_BB IVMs_BB 08 51 45.4
comp=Z,16µm,23.1s
UWE Uwekahuna 58.14 89 PFAKE 08 26 20.0 +14
UWE LR LR
comp=Z,35µm,20.0s
AKTO Aktyubinsk 58.23 312 P **P** **08 26 05.9 -0.6**
comp=Z,99nm,0.8s,baz=68,slow=10,SNR=56
AKTO S **S** **08 34 07.2 -0.7**
comp=Z,5.0nm,0.8s,baz=266,slow=17,SNR=2.1
AKTO LR LR 08 52 06.3
comp=Z,33µm,19.6s,baz=70,slow=37
AKTO P4KPbc 09 03 15.4
comp=Z,3.7nm,0.9s,baz=71,slow=5.9,SNR=6.0
RCLA Racherla 58.29 266 *e*P **P** **08 26 06.5 -0.9**
RCLA IAmb IAmb 08 26 16.5
comp=Z,269nm,1.0s
RCLA *e*S **S** **08 34 07.7 -1.9**
RCLA IVMs_BB IVMs_BB 08 53 53.9
comp=Z,24µm,17.4s
CRAG Craig 58.56 42 *e*P **P** **08 26 06.0 -2.6**
comp=Z,304nm,1.2s
CRAG LR LR
comp=Z,52µm,22.0s
MDRS Chennai 58.62 263 *e*P **P** **08 26 09.1 -0.5**
MDRS IAmb IAmb 08 26 21.0
comp=Z,252nm,0.6s
WRAK Wrangell Islan 58.64 41 *e*P **P** **08 26 11.4 +2.2**
comp=Z,642nm,1.6s
WRAK LR LR
comp=Z,32µm,20.0s
SKHT Srikalahasti 58.66 264 *e*P **P** **08 26 09.8 -0.2**
SKHT IAmb IAmb 08 26 20.1
comp=Z,397nm,1.0s
SKHT *e*S **S** **08 34 13.3 -0.9**
SKHT IVMs_BB IVMs_BB 08 54 41.0
comp=Z,12µm,17.1s
KLRI Killari 58.75 270 *e*P **P** **08 26 09.7 -0.9**
KLRI IAmb IAmb 08 26 20.3
comp=Z,506nm,0.8s
KLRI *e*S **S** **08 34 13.6 -2.0**
KLRI IVMs_BB IVMs_BB 08 53 56.4
comp=Z,33µm,17.6s
JASL Jaisalmer 58.80 282 *e*P **P** **08 26 10.2 -0.7**
DLBC Dease Lake 59.10 38 LR LR 08 50 35.0
comp=Z,28µm,22.0s,baz=300,slow=35
DLBC Dease Lake 59.10 38 *e*P **P** **08 26 14.2 +1.7**
comp=Z,2µm,2.0s
DLBC LR LR
comp=Z,45µm,22.0s
H02N1 VAN INLET T-PH 59.69 44 P **P** **08 26 16.4 -0.3**
H02S1 DAWSON INLET T 59.74 44 P **P** **08 26 17.4 +0.5**
URV Uravakonda 59.93 266 *e*P **P** **08 26 18.2 -0.6**
URV IAmb IAmb 08 26 27.1
comp=Z,201nm,1.1s
URV *e*S **S** **08 34 30.6 -0.2**
URV IVMs_BB IVMs_BB 08 52 53.5
comp=Z,16µm,22.9s
HOPEN Hopen 59.96 346⇓ *i*P **P** **08 26 18.5 +0.5**
HOPEN *e*S **S** **08 34 32.1 +2.7**
SPA0 Spitsbergen Ar 60.47 349 *e*P **P** **08 26 22.8 +1.2**
SPA0 *e*S **S** **08 34 37.3 +1.2**
SPA0 IVMs_BB IVMs_BB 08 50 24.3
comp=Z,18µm,30.1s
SPA0 Spitsbergen Ar 60.47 349 *e*P **P** **08 26 22.1 +0.5**
SPITS Spitsbergen Ar 60.47 349 P **P** **08 26 21.6 0.0**
comp=Z,96nm,0.9s,baz=81,slow=10,SNR=37
SPITS S **S** **08 34 38.0 +1.9**
comp=Z,24nm,1.2s,baz=164,slow=16,SNR=1.8
SPITS LR LR 08 54 03.3
comp=Z,35µm,19.6s,baz=40,slow=38
AS01 Alice Springs 60.62 187 *e*P **P** **08 26 22.5 -0.7**
AS31 Alice Springs 60.62 187 *e*P **P** **08 26 22.8 -0.4**
comp=Z,120nm,0.6s
ASAR Alice Springs 60.62 187 P **P** **08 26 22.8 -0.4**
comp=Z,237nm,0.8s,baz=11,slow=5.8,SNR=480
ASAR S **S** **08 34 39.9 +0.8**
comp=Z,8.7nm,1.1s,baz=6.7,slow=9.5,SNR=4.3
ASAR LR LR 08 50 01.4
comp=Z,14µm,20.0s,baz=5.0,slow=34
ASAR PKPPKP **P'P'df** **08 55 41.6 +5.9**
comp=Z,4.3nm,0.7s,baz=148,slow=2.1,SNR=11
ASAR P4KPbc 09 03 27.8
comp=Z,1.8nm,0.8s,baz=1.0,slow=4.3,SNR=6.5
ASAR Alice Springs 60.62 187 P **P** **08 26 22.8 -0.4**
ASAR S **S** **08 34 39.9 +0.8**
ASAR pmax pmax
comp=Z,236nm,0.9s
ASAR smax smax
comp=N,9.0nm,1.1s
KBS Kingsbay 60.62 350⇓ *i*P **P** **08 26 21.8 -0.7**
KBS *e*S **S** **08 34 39.0 +1.1**
KBS *e*SS **SS** **08 38 38.5 +3.0**
KBS Kingsbay 60.62 350 *e*P **P** **08 26 23.7 +1.1**
KBS pmax pmax
comp=Z,1µm,1.3s
KBS MLR MLR
comp=Z,31µm,20.0s
KBS Kingsbay 60.62 350 *e*P **P** **08 26 23.7 +1.1**
comp=Z,1µm,1.3s
KBS LR LR
comp=Z,31µm,20.0s
POO Poona 60.71 272 *e*P **P** **08 26 23.8 -0.3**
MBWA Marble Bar 61.06 202 *e*P **P** **08 26 25.8 -0.3**
comp=Z,558nm,0.9s
MBWA Marble Bar 61.06 202 P **P** **08 26 26.1 -0.1**
SNR=45
HSPB Hornsund (broa 61.39 348⇓ *i*P **P** **08 26 28.4 +0.6**
HSPB *e*S **S** **08 34 51.3 +3.6**
HSPB IVMs_BB IVMs_BB 08 51 49.8
comp=Z,20µm,25.7s
HSPB Hornsund (broa 61.39 348 *e*P **P** **08 26 28.3 +0.6**
HSPB *e*S **S** **08 34 49.6 +1.9**
BHJ Bhuj 61.59 279 *e*P **P** **08 26 30.1 +0.1**
LVZ Lovozero 61.91 336 *de*P **P** **08 26 30.3 -1.2**
LVZ pmax pmax
comp=Z,302nm,1.7s
LVZ MLR MLR
comp=Z,36µm,16.0s
LVZ Lovozero 61.91 336 *e*P **P** **08 26 30.6 -0.9**
comp=Z,230nm,0.9s
LVZ LR LR
comp=Z,37µm,18.0s
BJO Bjornoya 62.33 345⇓ *i*P **P** **08 26 33.6 -0.6**
BJO *e*S **S** **08 35 02.6 +2.9**
BJO IVMs_BB IVMs_BB 08 54 35.6
comp=Z,21µm,20.7s
GOA Goa 62.38 269 *e*P **P** **08 26 35.2 -0.1**
APA Apatity 62.49 336⇓ *i*P **P** **08 26 35.4 +0.1**
APA *i* 08 27 08.0
APA *i*S **S** **08 35 00.0 -1.9**
APA *i*PS **PnS** **08 35 10.0 -7.0**
APA *i* 08 36 22.0
APA *i*SS **SS** **08 39 02.0 -3.0**
APA pmax pmax
comp=Z,192nm,1.0s
APA MLR MLR
comp=Z,51µm,23.0s
TMCR Tamitsa 62.50 331 *e*P **P** **08 26 35.4 0.0**
TMCR *e*S **S** **08 35 02.2 +0.2**
TMCR pmax pmax
comp=Z,488nm,1.4s
EIDS Eidsvold 62.77 169 *e*P **P** **08 26 37.9 +0.3**
comp=Z,293nm,1.0s
EIDS LR LR
comp=Z,21µm,21.0s
RES Resolute Bay 62.84 14 *e*P **P** **08 26 37.3 -0.3**
RES pmax pmax
comp=Z,764nm,1.4s
RES Resolute Bay 62.84 14 *e*P **P** **08 26 37.3 -0.3**
comp=Z,764nm,1.4s
KEV Kevo 63.28 339 *e*P **P** **08 26 40.4 -0.1**
KEV pmax pmax
comp=Z,725nm,1.3s
KEV MLR MLR
comp=Z,35µm,19.0s
KEV Kevo 63.28 339 *e*P **P** **08 26 40.4 -0.1**
comp=Z,725nm,1.3s
KEV LR LR
comp=Z,35µm,19.0s
GEYT Alibeck 63.29 299 P **P** **08 26 41.5 +0.2**
comp=Z,211nm,1.0s,baz=33,slow=3.5,SNR=80
GEYT S **S** **08 35 15.4 +2.4**
comp=Z,0.9nm,0.3s,baz=15,slow=12,SNR=2.0
GEYT LR LR 08 54 17.4
comp=Z,48µm,21.9s,baz=55,slow=36
KLMR Klimovskoe 63.47 328 *e*P **P** **08 26 38.4 -3.5**
KLMR *e*S **S** **08 35 07.4 -6.9**
KLMR *e* 08 36 30.4
KLMR *e*SS **SS** **08 39 15.3 -5.2**
KLMR pmax pmax
comp=Z,673nm,1.3s
KLMR MLR MLR
comp=Z,44µm,15.0s
DZM Mont Dzumac 63.58 153 P **P** **08 26 44.5 +1.3**
comp=Z,141nm,0.9s,baz=44,slow=9.4,SNR=22
DZM S **S** **08 35 13.8 -2.8**
comp=Z,2.4nm,0.7s,baz=180,slow=20,SNR=1.2
HAMF Hammerfest 63.67 341⇓ *i*P **P** **08 26 42.9 -0.3**
ARA0 ARCESS Array S 63.84 339 *e*P **P** **08 26 44.1 -0.2**
ARA0 *e*PP **PP** **08 29 01.8 -2.3**
ARA0 *e*S **S** **08 35 16.1 -2.7**
ARCES ARCESS Array B 63.84 339 P **P** **08 26 44.1 -0.2**
comp=Z,127nm,0.8s,baz=58,slow=4.9,SNR=79
ARCES PP **PP** **08 29 01.8 -2.3**
comp=Z,44nm,1.0s,baz=52,slow=10,SNR=2.1
ARCES S **S** **08 35 16.1 -2.7**
comp=Z,5.5nm,0.9s,baz=20,slow=3.0,SNR=2.0
ARCES PKPPKP **P'P'df** **08 55 40.9 -4.3**
comp=Z,8.1nm,0.9s,baz=203,slow=0.9,SNR=7.2
ARCES LR LR 08 57 37.9
comp=Z,32µm,20.4s,baz=46,slow=39
ARCES ARCESS Array B 63.84 339 P **P** **08 26 44.1 -0.2**
ARCES 08 29 01.8
ARCES S **S** **08 35 16.1 -2.7**
ARCES pmax pmax
comp=Z,128nm,0.8s
ARCES pmax pmax
comp=Z,44nm,1.0s
ARCES smax smax
comp=N,6.0nm,0.9s
ARE0 ARCESS Array S 63.84 339⇓ *i*P **P** **08 26 43.3 -1.0**
ARE0 *e*S **S** **08 35 19.4 +0.7**
ARE0 *e* 08 39 29.0
ARE0 ARCESS Array S 63.84 339 *e*P **P** **08 26 44.2 0.0**
comp=N,504nm,1.1s
ARE0 LR LR
comp=Z,33µm,20.0s
COCO West Island 63.88 229 *e*P **P** **08 26 46.2 +1.0**
COCO pmax pmax
comp=Z,817nm,1.1s
COCO West Island 63.88 229 *e*P **P** **08 26 46.1 +1.0**
comp=Z,817nm,1.1s
COCO West Island 63.88 229 P **P** **08 26 47.3 +2.1**
SNR=6.0
COCO P **P** **08 26 47.3 +2.1**
SNR=6.0
TRD Trivandrum 63.90 261 *e*P **P** **08 26 44.7 -0.8**
YKW3 Yellowknife Ar 64.17 30 *e*P **P** **08 26 46.3 -0.2**
comp=Z,311nm,1.4s
YKA Yellowknife Ar 64.21 30 P **P** **08 26 46.5 -0.3**
comp=Z,34nm,0.8s,baz=302,slow=6.5,SNR=212
YKA PP **PP** **08 29 07.2 -0.3**
comp=Z,16nm,1.0s,baz=301,slow=6.7,SNR=2.2
YKA PKKP **PKKPdf** **08 47 10.4 -5.9**
comp=Z,0.6nm,0.8s,baz=148,slow=2.2,SNR=3.7
YKA PKPPKP **P'P'df** **08 55 37.6 -6.7**
comp=Z,8.2nm,1.0s,baz=121,slow=2.4,SNR=15
YKA P4KPbc 09 03 33.0
comp=Z,0.1nm,0.6s,baz=307,slow=6.1,SNR=2.5
YKA Yellowknife Ar 64.21 30 P **P** **08 26 46.5 -0.3**
YKA 08 29 07.2
YKA pmax pmax
comp=Z,41nm,0.9s
YKA pmax pmax
comp=Z,16nm,1.0s
YKB5 Yellowknife Ar 64.21 30 *e*P **P** **08 26 46.0 -0.8**
KTK1 Kautokeino 64.80 339⇓ *i*P **P** **08 26 50.4 -0.1**
MSVF Nonsavu 64.86 140 *e*P **P** **08 26 53.8 +2.1**
MSVF pmax pmax
comp=Z,442nm,1.2s
MSVF MLR MLR
comp=Z,40µm,20.0s
MSVF Nonsavu 64.86 140 *e*P **P** **08 26 53.8 +2.1**
comp=Z,442nm,1.2s
MSVF LR LR
comp=Z,40µm,20.0s
TRO Tromso 65.57 341⇓ *i*P **P** **08 26 55.2 -0.4**
TRO IAmb IAmb 08 27 04.3
comp=Z,1µm,1.8s
TRO *e*S **S** **08 35 42.1 +2.0**
TRO *e*SS **SS** **08 39 59.5 +6.6**
TRO IVMs_BB IVMs_BB 09 00 27.7
comp=Z,23µm,13.4s
DAG Danmarks Havn 65.80 355⇓ *i*P **P** **08 26 56.7 -0.2**
comp=Z,2µm,1.5s
DAG *i* 08 29 20.5
DAG *i*S **S** **08 35 42.8 +0.2**
comp=Z,19µm,18.0s
DAG Danmarks Havn 65.80 355⇓ *i*P **P** **08 26 56.7 -0.2**
DAG *i* 08 29 20.5
DAG *i*S **S** **08 35 42.8 +0.2**
DAG pmax pmax
comp=Z,4µm,1.5s
DAG MLR MLR
comp=Z,19µm,18.0s
PGC Sidney 66.87 46 *e*P **P** **08 27 04.1 -0.1**
comp=Z,195nm,1.0s
PGC LR LR
comp=Z,34µm,22.0s
MOS Moscow 66.92 323k *i*P **P** **08 27 04.0 -0.4**
MOS *e* 08 27 37.9
MOS *e* 08 29 30.3
MOS *i*S **S** **08 35 55.8 -1.0**
MOS *e* 08 37 00.3
MOS *i*SS **SS** **08 40 11.5 -2.8**
MOS pmax pmax
comp=Z,5µm,2.4s
MOS pmax pmax
comp=Z,2µm,1.7s
MOS smax smax
comp=N,7µm,4.6s
MOS smax smax
comp=E,7µm,4.0s
VRH Novokhopyorsk 67.19 318 *e*P **P** **08 27 04.4 -1.8**
VRH *e* 08 27 08.3
VRH *e*S **S** **08 35 57.0 -3.3**
VRH pmax pmax
comp=Z,370nm,1.3s
VRH smax smax
comp=N,2µm,3.4s
NLWA Neilton Lookou 67.26 47 *e*P **P** **08 27 09.0 +2.2**
comp=N,398nm,1.0s
NLWA LR LR
comp=Z,40µm,22.0s
A04D Lummi Island 67.26 45 P **P** **08 27 06.4 -0.3**
baz=301
A04D S **S** **08 36 01.9 +0.8**
baz=301
AFI Afiamalu 67.59 129 P **P** **08 27 10.2 +0.9**
comp=Z,157nm,0.9s,baz=14,slow=23,SNR=9.3
STEI Steigen 67.72 341 *e*P **P** **08 27 09.0 -0.3**
STEI IAmb IAmb 08 27 17.9
comp=Z,2µm,2.2s
STEI *e*S **S** **08 36 06.6 +0.5**
OBN Obninsk 67.76 323 P **P** **08 27 09.0 -0.7**
comp=Z,212nm,0.9s,baz=42,slow=2.8,SNR=26
OBN PP **PP** **08 29 38.0 -0.6**
comp=Z,122nm,1.1s,baz=57,slow=17,SNR=3.2
OBN S **S** **08 36 07.0 0.0**
comp=Z,12nm,0.5s,baz=117,slow=24,SNR=5.1
OBN PKPPKP **P'P'df** **08 55 31.1 -6.9**
comp=Z,14nm,0.4s,baz=336,slow=18,SNR=5.8
OBN LR LR 09 00 14.9
comp=Z,37µm,19.3s,baz=60,slow=39
OBN Obninsk 67.76 323 *d*/*i*P **P** **08 27 08.7 -1.0**
OBN *i* 08 29 38.1
OBN *e*PPP PPP 08 31 10.4
OBN *i*S **S** **08 36 04.0 -2.9**
OBN pmax pmax
comp=Z,546nm,1.7s
OBN MLR MLR
comp=Z,39µm,19.0s
OBN Obninsk 67.76 323 *e*P **P** **08 27 09.0 -0.7**
comp=Z,2µm,1.6s
OBN LR LR
comp=Z,43µm,19.0s
ARMA Armidale 67.81 170 *e*P **P** **08 27 11.3 +1.0**
comp=Z,367nm,1.1s
ARMA LR LR
comp=Z,21µm,21.0s
B05A Bryant 67.84 46 P **P** **08 27 11.3 +0.9**
baz=301,SNR=13
E03A Lebam 67.87 48 *e*P **P** **08 27 12.6 +2.0**
comp=Z,517nm,1.0s
E03A LR LR
comp=Z,29µm,22.0s
PUL Pulkovo 67.92 329 *de*P **P** **08 27 10.7 0.0**
PUL pmax pmax
comp=Z,595nm,1.0s
LPSR Galich'ya Gora 67.94 320 *e*P **P** **08 27 10.3 -0.6**
LPSR *e* 08 27 12.4
LPSR pmax pmax
comp=Z,250nm,0.9s
LPSR MLR MLR
comp=Z,33µm,19.0s
TUM Tumwater 68.01 47 PFAKE 08 27 20.0 +8.5
TUM LR LR
comp=Z,14µm,22.0s
LOF Lofoten 68.03 341 *e*P **P** **08 27 11.5 +0.3**
LOF *e*S **S** **08 36 10.7 +0.9**
B06A Marblemount 68.06 45 *e*P **P** **08 27 13.1 +1.3**
comp=Z,311nm,1.1s
B06A LR LR
comp=Z,32µm,22.0s
KULLO Kullorsuaq 68.12 5⇓ *i*P **P** **08 27 11.3 -0.4**
comp=Z,701nm,1.1s
KULLO Kullorsuaq 68.12 5⇓ *i*P **P** **08 27 11.3 -0.4**
KULLO pmax pmax
comp=Z,700nm,1.1s
F03A Seaside 68.18 48 PFAKE 08 27 30.0 +17
F03A LR LR
comp=Z,31µm,21.0s
VORR Voronezh 68.29 319 *e*P **P** **08 27 11.0 -2.1**
VORR pmax pmax
comp=Z,1µm,1.8s
F04D Rainier, OR 68.43 48 P **P** **08 27 15.0 +0.8**
baz=301
D05A Enumclaw 68.46 47 *e*P **P** **08 27 16.4 +2.2**
comp=Z,953nm,1.6s
D05A LR LR
comp=Z,22µm,21.0s
STKA Stephens Creek 68.48 179 P **P** **08 27 14.2 -0.1**
comp=Z,140nm,0.9s,baz=355,slow=6.4,SNR=80
STKA PP **PP** **08 29 46.2 +0.2**
comp=Z,13nm,0.6s,baz=346,slow=12,SNR=1.8
STKA S **S** **08 36 20.3 +4.5**
comp=Z,3.0nm,0.7s,baz=134,slow=18,SNR=1.8
STKA PKP2bc 08 55 31.2
comp=Z,6.7nm,1.0s,baz=141,slow=7.4,SNR=4.4
STKA LR LR 08 58 27.9
comp=Z,16µm,19.6s,baz=347,slow=37
STKA Stephens Creek 68.48 179 P **P** **08 27 14.3 -0.1**
STKA 08 29 46.2
STKA S **S** **08 36 20.3 +4.5**
STKA pmax pmax
comp=Z,117nm,0.8s
STKA pmax pmax
comp=Z,13nm,0.6s
STKA smax smax
comp=N,3.0nm,0.7s
STKA Stephens Creek 68.48 179 *e*P **P** **08 27 14.2 -0.1**
comp=N,47nm,1.0s
STKA LR LR
comp=Z,5µm,21.0s
VSR Storozhevoye 68.55 319 *e*P **P** **08 27 13.3 -1.5**
VSR *e* 08 27 17.3
VSR *e*S **S** **08 36 12.5 -4.1**
VSR *e*SS **SS** **08 40 39.6 -0.2**
VSR pmax pmax
comp=Z,460nm,1.3s
VSR smax smax
comp=N,2µm,3.1s
FIA1 FINESS Array S 68.57 332 *e*P **P** **08 27 14.3 -0.4**
FIA0 FINESS Array S 68.58 332 *e*P **P** **08 27 14.3 -0.4**
FIA0 *e* 08 29 47.4
FIA0 *e*S **S** **08 36 18.5 +2.0**
FIA0 FINESS Array S 68.58 332 *e*P **P** **08 27 14.3 -0.4**
FIA0 *e*PP **PP** **08 29 47.4 +1.9**
FIA0 *e*S **S** **08 36 18.5 +2.0**
FINES FINESS Array B 68.58 332 P **P** **08 27 14.3 -0.4**
comp=N,385nm,0.8s,baz=57,slow=7.0,SNR=179
FINES PP **PP** **08 29 47.4 +1.9**
comp=N,73nm,1.0s,baz=23,slow=7.5,SNR=3.5
FINES S **S** **08 36 18.5 +2.0**
comp=N,3.5nm,0.9s,baz=68,slow=15,SNR=3.0
FINES PKP2bc 08 55 35.2
comp=N,4.1nm,0.8s,baz=236,slow=1.5,SNR=5.6
FINES LR LR 09 02 28.7
comp=N,55µm,18.1s,baz=40,slow=41
C06D Leavenworth 68.71 46 P **P** **08 27 16.7 +0.9**
baz=302
OBSR Observation Ro 68.71 47 *e*P **P** **08 27 17.8 +1.6**
G03D McMinnville, O 68.73 49 P **P** **08 27 17.5 +1.5**
baz=302
LON Longmire 68.80 47 *e*P **P** **08 27 17.7 +1.2**
LON pmax pmax
comp=Z,103nm,1.1s
LON MLR MLR
comp=Z,20µm,21.0s
LON Longmire 68.80 47 *e*P **P** **08 27 17.7 +1.2**

comp=Z,103nm,1.1s
LON LR LR
comp=Z,20µm,21.0s
VALT Mount Saint He 68.85 48 eP P 08 27 18.6 +1.6
F04A Amboy 68.86 48 eP P 08 27 18.0 +1.2
comp=Z,406nm,1.0s
COR Corvallis 69.03 50 eP P 08 27 19.3 +1.4
COR pmax pmax
comp=Z,611nm,0.9s
COR MLR MLR
comp=Z,25µm,21.0s
COR Corvallis 69.03 50 eP P 08 27 19.3 +1.4
COR LR LR
comp=Z,25µm,21.0s
LTY Liberty 69.19 46 eP P 08 27 19.4 +0.5
comp=Z,1µm,2.0s
LTY LR LR
comp=Z,34µm,22.0s
ETW Entiat 69.20 46 eP P 08 27 19.7 +0.6
MOR8 Moi Rana 69.21 339⇓iP P 08 27 17.0 -1.7
MOR8 IAmb IAmb 08 27 21.1
comp=Z,487nm,1.1s
G04A Mulino 69.21 49 eP P 08 27 20.4 +1.5
KONS Konsvik 69.33 340 eP P 08 27 19.9 +0.6
KONS IAmb IAmb 08 27 28.0
comp=Z,2µm,2.1s
B08A Colville Reser 69.36 45 eP P 08 27 20.0 +0.1
comp=Z,594nm,1.6s
B08A LR LR
comp=Z,28µm,22.0s
WTV Waterville 69.36 45 eP P 08 27 20.9 +0.8
I03D Drain, OR 69.47 50 P P 08 27 22.2 +1.6
baz=302,SNR=20
STOK Stokkvaagen 69.48 340 eP P 08 27 21.0 +0.7
BBOO Buckleboo 69.53 184 eP P 08 27 21.0 +0.1
comp=Z,211nm,0.8s
BBOO LR LR
comp=Z,16µm,21.0s
GOF Gofitskoye 69.65 311⇓iP P 08 27 21.6 -0.1
GOF iS S 08 36 35.4 +5.6
GOF pmax pmax
comp=Z,393nm,1.0s
H04A Detroit Lake 69.66 49 eP P 08 27 22.8 +0.9
comp=Z,497nm,1.0s
H04A LR LR
comp=Z,25µm,21.0s
G05D Wamic, OR 69.89 48 P P 08 27 23.7 +0.5
baz=303,SNR=9.8
I04A Tendick Farm, 70.00 50 P P 08 27 25.0 +1.0
baz=302,SNR=21
JMIC Jan Mayen 70.11 350 eP P 08 27 25.1 +1.1
JMIC eS S 08 36 36.4 +2.1
JMIC Jan Mayen 70.11 350 P P 08 27 25.0 +1.0
comp=Z,224nm,0.9s,baz=97,slow=11,SNR=4.0
JMIC LR LR 09 00 07.5
comp=Z,11µm,18.4s,baz=18,slow=38
DGRG David-gareji 70.12 307 P P 08 27 24.5 -0.2
DGRG David-gareji 70.12 307 eP P 08 27 24.5 -0.2
L02D Cave Junction, 70.13 52 P P 08 27 26.4 +1.7
baz=302
GUDG Gudauri 70.15 309 P P 08 27 24.7 -0.4
VSU Vasula 70.19 329ceP P 08 27 24.4 -0.3
VSU pmax pmax
comp=Z,1µm,1.0s
VSU MLR MLR
comp=Z,70µm,15.0s
DUS Dusheti 70.21 308 P P 08 27 25.9 +0.5
DUS Dusheti 70.21 308 eP P 08 27 25.8 +0.5
WSAR Wadi Sarin 70.25 285 P P 08 27 25.1 -0.6
comp=Z,90nm,1.0s,baz=72,slow=9.2,SNR=11
WSAR S S 08 36 37.9 +0.4
comp=Z,4.4nm,1.0s,baz=299,slow=19,SNR=1.9
C09A Chrisman Ranch 70.26 45 eP P 08 27 26.2 +0.7
comp=Z,206nm,0.9s
C09A LR LR
comp=Z,26µm,21.0s
LHI Lord Howe Isla 70.28 163 PFAKE 08 27 40.0 +15
LHI LR LR
comp=Z,15µm,19.0s
HUMO Hull Mountain 70.29 51 eP P 08 27 28.2 +2.5
comp=Z,658nm,1.9s
HUMO LR LR
comp=Z,28µm,21.0s
G06A Carlson Farm, 70.30 48 PFAKE 08 27 40.0 +14
G06A LR LR
comp=Z,23µm,22.0s
D08A Wollman Farm, 70.30 46 eP P 08 27 26.4 +0.7
comp=Z,221nm,1.1s
D08A LR LR
comp=Z,28µm,22.0s
HAWA Hanford 70.31 46 eP P 08 27 26.7 +0.9
comp=Z,180nm,1.0s
HAWA LR LR
comp=Z,20µm,22.0s
WBK Wadi Bani Khal 70.32 284 P P 08 27 26.5 +0.2
SNR=26
WBK Wadi Bani Khal 70.32 284 P P 08 27 26.5 +0.2
SNR=26
ZEI Tsey 70.34 309 eP P 08 27 25.2 -1.0
ZEI pmax pmax
comp=Z,618nm,1.2s
I05D Terrebonne, OR 70.36 49 P P 08 27 27.3 +1.1
baz=303,SNR=23
TBLG Delisi 70.38 308 eP P 08 28 3 +2.0
TBLG Delisi 70.38 308 P P 08 27 27.7 +1.4
TBLG Delisi 70.38 308 eP P 08 27 27.7 +1.4
KBZ Khabaz 70.45 310 P P 08 27 26.4 -0.2
comp=Z,174nm,0.9s,baz=54,slow=5.0,SNR=80
KBZ S S 08 36 39.5 +0.4
comp=Z,3.3nm,1.0s,baz=203,slow=15,SNR=1.7
KBZ PKP2ab 08 55 23.1
comp=Z,2.8nm,0.9s,baz=220,slow=5.1,SNR=7.1
KBZ LR LR 08 59 42.1
comp=Z,65µm,20.8s,baz=64,slow=37
KVAR Kislovodsk Arr 70.45 311 S S 08 36 40.2 +0.8
comp=Z,19nm,1.2s,baz=28,slow=17,SNR=1.8
KVAR PKPPKP 08 55 22.5
comp=Z,12nm,1.0s,baz=198,slow=3.2,SNR=12
KVAR LR LR 08 59 56.1
comp=Z,60µm,20.4s,baz=56,slow=37
KIV Kislovodsk 70.46 311 iP P 08 27 27.5 +0.7
SNR=175
KIV Kislovodsk 70.46 311 eP P 08 27 27.0 +0.2
KIV e 08 30 03.5
KIV ePPP PPP 08 31 46.0
KIV eS S 08 36 37.2 -2.3
KIV eSS SS 08 41 10.0 +0.3
KIV pmax pmax
comp=Z,2µm,4.4s
KIV pmax pmax
comp=Z,964nm,1.0s
KIV Kislovodsk 70.46 311 eP P 08 27 26.7 -0.1
comp=Z,965nm,1.0s
KIV LR LR
comp=Z,59µm,20.0s
KIV Kislovodsk 70.46 311 P P 08 27 26.9 +0.1
SNR=188
KIV P P 08 27 26.9 +0.1
SNR=188
KIV Kislovodsk 70.46 311 P P 08 27 26.9 +0.1
SNR=188
BIDO Bidbid 70.48 285 P P 08 27 27.5 +0.3
SNR=24
BIDO P P 08 27 27.5 +0.3
SNR=24
BIDO Bidbid 70.48 285 P P 08 27 27.5 +0.3
SNR=24
JCC Jacoby Creek, 70.57 53 PFAKE 08 27 40.0 +13
JCC LR LR
comp=Z,14µm,19.0s
BANOM Banah 70.60 288 iP P 08 27 28.3 +0.4
SNR=16
BANOM Banah 70.60 288 P P 08 27 28.3 +0.4
SNR=18
BANOM P P 08 27 28.3 +0.4
SNR=18
BANOM Banah 70.60 288 P P 08 27 28.3 +0.4
SNR=18
NEW Newport 70.65 44 P P 08 27 28.5 +0.6
baz=304,SNR=64
NEW Newport 70.65 44 eP P 08 27 28.5 +0.6
NEW pmax pmax
comp=Z,221nm,0.9s
NEW MLR MLR
comp=Z,26µm,20.0s
NEW Newport 70.65 44 eP P 08 27 28.5 +0.6
comp=Z,221nm,0.9s
NEW LR LR
comp=Z,26µm,20.0s
ONI Oni 70.72 309 P P 08 27 28.9 +0.5
ONI Oni 70.72 309 eP P 08 27 28.9 +0.5
KHMM Horse Mountain 70.73 53 eP P 08 27 30.4 +1.7
comp=Z,440nm,1.1s
KHMM LR LR
comp=Z,18µm,20.0s
SUMG Summit 70.76 360⇓iP P 08 27 29.4 +0.8
comp=Z,1µm,1.1s
comp=Z,78µm,22.0s
SUMG Summit 70.76 360 eP P 08 27 29.2 +0.6
SUMG pmax pmax
comp=Z,1µm,1.1s
SUMG MLR MLR
comp=Z,75µm,21.0s
SUMG Summit 70.76 360 eP P 08 27 29.2 +0.6
comp=Z,1µm,1.1s
SUMG LR LR
comp=Z,75µm,21.0s
SMDO Samad 70.79 285 P P 08 27 29.2 0.0
SNR=41
SMDO Samad 70.79 285 P P 08 27 29.2 0.0
SNR=41
NEY Neytrino 70.82 310diP P 08 27 29.0 -0.1
NEY pmax pmax
comp=Z,109nm,1.8s
NEY MLR MLR
comp=Z,24µm,16.0s
YBH Yreka Blue Hor 70.92 52 eP P 08 27 31.7 +2.0
YBH pmax pmax
comp=Z,305nm,1.1s
YBH MLR MLR
comp=Z,24µm,22.0s
YBH Yreka Blue Hor 70.92 52 eP P 08 27 31.7 +2.0
comp=Z,305nm,1.1s
YBH LR LR
comp=Z,24µm,22.0s
J05D Fort Rock, OR 70.99 50 P P 08 27 31.4 +1.3
baz=303,SNR=38
M02C Callahan 71.01 52 P P 08 27 31.7 +1.5
baz=303,SNR=22
K04D Chiloquin, OR 71.03 51 P P 08 27 31.8 +1.4
baz=303,SNR=16
HOQ Hoqain 71.08 286 P P 08 27 30.7 -0.1
SNR=29
HOQ Hoqain 71.08 286 P P 08 27 30.7 -0.1
SNR=29
KMRM Mail Ridge 71.09 54 eP P 08 27 33.1 +2.4
comp=Z,276nm,1.1s
KMRM LR LR
comp=Z,41µm,22.0s
NSS Namsos 71.12 339⇓iP P 08 27 29.2 -1.2
NSS eS S 08 36 46.8 +0.5
JMDO Jabal Madar 71.12 284 P P 08 27 31.6 +0.5
SNR=32
JMDO Jabal Madar 71.12 284 P P 08 27 31.6 +0.5
SNR=32
UOSS Minazif 71.20 287 eP P 08 27 31.8 +0.3
comp=Z,28nm,1.2s
UOSS LR LR
comp=Z,16µm,22.0s
GNI Garni 71.22 306 P P 08 27 32.0 +0.4
comp=Z,90nm,1.1s,baz=195,slow=3.1,SNR=27
GNI S S 08 36 48.5 -0.1
comp=Z,3.7nm,0.4s,baz=221,slow=17,SNR=2.3
GNI LR LR 09 01 56.4
comp=Z,34µm,18.4s,baz=64,slow=39
GNI Garni 71.22 306 iP P 08 27 32.2 +0.6
SNR=54
GNI Garni 71.22 306 eP P 08 27 32.0 +0.4
GNI eS S 08 36 48.5 -0.1
GNI LR LR
comp=Z,34µm,18.0s
GNI Garni 71.22 306 P P 08 27 32.2 +0.6
SNR=41
GNI P P 08 27 32.2 +0.6
SNR=41
GNI Garni 71.22 306 P P 08 27 32.2 +0.6
SNR=41
G08A Pilot Rock 71.25 47 PFAKE
G08A LR LR 08 27 40.0 +8.3
comp=Z,300nm,21.0s
HATD Hatta, Dubai 71.32 287 iP P 08 27 32.7 +0.4
SNR=21
HATD Hatta, Dubai 71.32 287 P P 08 27 31.3 -1.0
SNR=23
HATD P P 08 27 31.3 -1.0
SNR=23
HATD Hatta, Dubai 71.32 287 P P 08 27 31.3 -1.0
SNR=23
N02D Trinity Center 71.33 53 P P 08 27 33.7 +1.5
baz=303,SNR=22
AKH Akhalkalaki 71.33 308 eP P 08 27 32.9 +0.6
AKH Akhalkalaki 71.33 308 P P 08 27 32.8 +0.6
AKH Akhalkalaki 71.33 308⇑iP P 08 27 33.1 +0.8
AKH Akhalkalaki 71.33 308 eP P 08 27 32.8 +0.5
M04C Macdoel 71.44 51 P P 08 27 34.2 +1.3
baz=303,SNR=50
ASHO Ashiyah 71.45 287 iP P 08 27 33.0 -0.1
SNR=29
ASHO Ashiyah 71.45 287 P P 08 27 33.0 -0.1
SNR=23
ASHO P P 08 27 33.0 -0.1
SNR=23
ASHO Ashiyah 71.45 287 P P 08 27 33.0 -0.1
SNR=23
CHVG Ch'k'valeri 71.50 310 P P 08 27 34.4 +1.3
CHVG Ch'k'valeri 71.50 310⇓iP P 08 27 33.8 +0.7
K05A Summer Lake 71.51 50 eP P 08 27 34.9 +1.5
comp=Z,644nm,1.0s
K05A LR LR
comp=Z,27µm,20.0s
NAZ Nazwa, Dubai 71.59 288 iP P 08 27 33.8 -0.1
SNR=20
NAZ Nazwa, Dubai 71.59 288 P P 08 27 33.8 -0.1
SNR=27
NAZ P P 08 27 33.8 -0.1
SNR=27
NAZ Nazwa, Dubai 71.59 288 P P 08 27 33.8 -0.1
SNR=27
BSY Bisya 71.62 285 P P 08 27 34.4 +0.3
SNR=48
BSY Bisya 71.62 285 P P 08 27 34.4 +0.3
SNR=48
WDC Whiskeytown Da 71.65 53 eP P 08 27 35.0 +1.0
WDC pmax pmax
comp=Z,379nm,1.3s
WDC MLR MLR
comp=Z,16µm,20.0s
WDC Whiskeytown Da 71.65 53 eP P 08 27 35.0 +1.0
comp=Z,380nm,1.3s
WDC LR LR
comp=Z,16µm,20.0s
FAQ Al Faqa, Dubai 71.78 288 iP P 08 27 35.0 0.0
SNR=17
FAQ Al Faqa, Dubai 71.78 288 P P 08 27 34.7 -0.3
SNR=22
FAQ P P 08 27 34.7 -0.3
SNR=22
FAQ Al Faqa, Dubai 71.78 288 P P 08 27 34.7 -0.3
SNR=22
ARQ Araqi 71.82 286 P P 08 27 35.7 +0.4
SNR=57
ARQ Araqi 71.82 286 P P 08 27 35.7 +0.4
SNR=57
F10A Beach Ranch, E 71.88 46 eP P 08 27 36.0 +0.6
comp=Z,147nm,1.1s
F10A LR LR
comp=Z,30µm,21.0s
WALA Waterton Lakes 71.94 42 eP P 08 27 36.3 +0.5
comp=Z,470nm,1.1s
WALA LR LR
comp=Z,36µm,22.0s
KARS Kars 72.02 308 eP P 08 27 35.6 -0.8
ASUD Al Ashush, Dub 72.04 288 iP P 08 27 36.8 +0.2
SNR=17
ASUD Al Ashush, Dub 72.04 288 P P 08 27 40.0 +3.4
SNR=18
GASB Alder Springs 72.04 54 eP P 08 27 38.3 +1.7
IZAR Zarasai 72.12 327 eP P 08 27 36.6 +0.1
IZAR IAmb IAmb 08 27 46.9
comp=Z,339nm,1.3s
SCO Scoresbysund 72.12 354⇓iP P 08 27 37.1 +0.8
comp=Z,1µm,1.6s
SCO Scoresbysund 72.12 354⇓iP P 08 27 37.1 +0.8
SCO pmax pmax
comp=Z,1µm,1.6s
BSMT Bassoo Peak 72.17 43 eP P 08 27 38.2 +0.9
HOPS Hopland Field 72.17 54 eP P 08 27 38.6 +1.4
comp=Z,254nm,1.3s
HOPS LR LR
comp=Z,44µm,22.0s
IDID Didziasalis 72.18 327 eP P 08 27 37.0 +0.1
IDID IAmb IAmb 08 27 47.3
comp=Z,260nm,1.1s
MICGM Minsk 72.19 326⇓eP P 08 27 37.0 +0.1
MICGM PM 08 27 39.0
comp=Z,1.1nm,1.0s
MICGM PM 08 27 40.0
comp=N,0.9nm,1.0s
MICGM PM 08 27 40.0
comp=Z,12nm,4.0s
MICGM PM 08 27 41.0
comp=E,0.8nm,1.0s
MICGM PM 08 27 42.0
comp=Z,13nm,5.0s
MICGM ePcP PcP 08 28 02.0 +6.8
MICGM ePP PP 08 30 04.0 -13
MICGM ePPP PPP 08 32 02.0
MICGM ePsP 08 33 34.0
MICGM eS S 08 36 58.0 -0.9
MICGM SM 08 37 09.0
comp=E,13nm,9.0s
MICGM ePS PnS 08 37 32.0 +3.3
MICGM eScS ScS 08 38 00.0 +17
MICGM eSS SS 08 41 36.0 +0.6
MICGM eSSS SSS 08 44 12.0
MICGM eLQ LQ 08 52 08.0
MICGM eLR LR 08 57 20.0
MICGM LRM MLR 09 04 50.0
comp=N,32nm,16.0s
MICGM LRM MLR 09 04 52.0
comp=N,31nm,16.0s
MICGM LRM MLR 09 05 04.0
comp=Z,139nm,16.0s
MICGM LRM MLR 09 05 10.0
comp=Z,136nm,16.0s
MICGM LRM MLR 09 05 14.0
comp=E,95nm,16.0s
MICGM LRM MLR 09 05 16.0
comp=E,81nm,16.0s
MNK Minsk 72.19 326⇓iP P 08 27 37.0 +0.1
MNK e 08 28 02.0
MNK ePPP PPP 08 32 02.0
MNK eS S 08 36 58.0 -0.9
MNK ePS PnS 08 37 32.0 +3.3
MNK eSS SS 08 41 36.0 +0.6
MNK pmax pmax
comp=Z,1µm,1.0s
MNK pmax pmax
comp=Z,12µm,4.0s
MNK pmax pmax
comp=N,920nm,1.0s
MNK pmax pmax
comp=Z,13µm,5.0s
MNK pmax pmax
comp=E,800nm,1.0s
MNK smax smax
comp=E,13µm,9.0s
O03D Paynes Creek 72.28 53 P P 08 27 38.4 +0.5
baz=304,SNR=62
ISAL Salakas 72.28 327 eP P 08 27 37.7 +0.2
ISAL IAmb IAmb 08 27 52.1
comp=Z,300nm,1.0s
BLMT Blacktail Moun 72.31 43 eP P 08 27 39.1 +1.0
MOD Modoc Plateau 72.33 51 eP P 08 27 39.1 +0.8
comp=Z,254nm,1.1s
MOD LR LR
comp=Z,22µm,20.0s
CAN Canberra 72.33 173 eP P 08 27 38.7 +0.8
CAN pmax pmax
comp=Z,447nm,1.2s
CAN MLR MLR
comp=Z,19µm,20.0s
CAN Canberra 72.33 173 eP P 08 27 38.7 +0.8
comp=Z,447nm,1.2s
CAN LR LR
comp=Z,19µm,20.0s
IIGN Ignalina 72.39 327 eP P 08 27 38.3 +0.1
IIGN IAmb IAmb 08 27 48.7
comp=Z,268nm,1.1s
NACGM Naroch 72.42 326 eP P 08 27 37.0 -1.4
NACGM ePcP PcP 08 28 04.0 +7.8
NACGM ePP PP 08 30 05.0 -14
NACGM ePPP PPP 08 32 07.0
NACGM eS S 08 37 02.0 +0.4
NACGM ePS PnS 08 37 37.0 +5.2
NACGM eSS SS 08 41 38.0 -1.1
NACGM eSSS SSS 08 45 06.0
NACGM eLQ LQ 08 51 08.0
NACGM eLR LR 08 58 06.0
NACGM LRM MLR 09 05 00.0
comp=Z,68nm,18.0s
SOC Sochi 72.45 312diP P 08 27 38.3 -0.4
SOC e*PP sP 08 27 46.1 +1.4
SOC e 08 30 16.2
SOC ePPP PPP 08 32 00.7
SOC iS S 08 37 00.2 -2.1
SOC e 08 37 40.1
SOC eSS SS 08 41 42.8 +2.7
SOC pmax pmax
comp=Z,4µm,4.8s
SOC pmax pmax
comp=Z,362nm,1.1s
SOC MLR MLR
comp=N,53µm,17.0s
SOC MLR MLR
comp=Z,56µm,17.0s
SOC MLR MLR
comp=E,34µm,17.0s
BMO Blue Mountains 72.47 47 eP P 08 27 39.9 +0.9
comp=E,268nm,1.0s
BMO LR LR
comp=Z,20µm,21.0s
JTMT Jette 72.51 43 eP P 08 27 40.1 +0.9
TBLU Trondheim 72.59 339⇓iP P 08 27 38.1 -1.0
YBMT Yellow Bay 72.59 43 eP P 08 27 40.5 +0.8
AGRB Hanur-Agry 72.66 307 eP P 08 27 41.2 +0.9
MCCM Marconi Confer 72.77 55 eP P 08 27 41.8 +1.2
comp=Z,358nm,1.0s
MCCM LR LR
comp=Z,36µm,21.0s
SWMT Swartz Lake 72.80 43 eP P 08 27 41.5 +0.6
NWAO Narrogin (SRO) 72.86 200 eP P 08 27 40.2 -0.8
NWAO pmax pmax
comp=Z,477nm,1.0s
NWAO MLR MLR
comp=Z,14µm,22.0s
NWAO Narrogin (SRO) 72.86 200 eP P 08 27 40.2 -0.8
comp=Z,477nm,1.0s
NWAO LR LR
comp=Z,14µm,22.0s
NWAO Narrogin (SRO) 72.86 200 P P 08 27 41.5 +0.5
SNR=14
ORV Oroville 72.88 53 eP P 08 27 41.8 +0.4
ORV pmax pmax
comp=Z,250nm,1.0s
ORV MLR MLR
comp=Z,20µm,21.0s
ORV Oroville 72.88 53 eP P 08 27 41.8 +0.4
comp=Z,250nm,1.0s
ORV LR LR
comp=Z,20µm,21.0s
VANB Van 72.95 306 eP P 08 27 42.2 +0.2
WVOR Wild Horse Val 73.05 49 eP P 08 27 43.5 +1.0
WVOR pmax pmax
comp=Z,295nm,1.1s
WVOR MLR MLR
comp=Z,30µm,21.0s
WVOR Wild Horse Val 73.05 49 eP P 08 27 43.5 +1.0
comp=Z,295nm,1.1s
WVOR LR LR
comp=Z,30µm,21.0s
ANN Anapa 73.11 314diP P 08 27 41.8 -0.8
ANN i*PP sP 08 27 50.7 +2.2
ANN e 08 30 25.4
ANN ePPP PPP 08 32 11.3
ANN eS S 08 37 08.0 -1.7
ANN e 08 37 42.5
ANN eSS SS 08 41 47.6 -2.4

ANN eSSS SSS 08 45 07.8
ANN pmax pmax
comp=N,1µm,6.3s
ANN pmax pmax
comp=Z,3µm,6.4s
ANN pmax pmax
comp=E,1µm,6.3s
ANN pmax pmax
comp=N,170nm,1.5s
ANN pmax pmax
comp=Z,748nm,1.5s
ANN pmax pmax
comp=E,50nm,0.8s
ANN smax smax
comp=Z,91nm,1.7s
ANN MLR MLR
comp=N,56µm,20.0s
ANN MLR MLR
comp=E,27µm,20.0s
ANN MLR MLR
comp=Z,27µm,20.0s
MSO Missoula 73.24 44 P **P 08 27 43.8 +0.3**
baz=306,SNR=73
MSO Missoula 73.24 44 eP **P 08 27 43.9 +0.3**
comp=Z,244nm,1.1s
MSO LR LR
comp=Z,19µm,22.0s
EZM Erzurum 73.52 308 eP **P 08 27 49.6 +4.1**
CUKT Cukurca 73.55 304 eP **P 08 27 44.5 -1.0**
AFDM Forest Hills D 73.56 54 eP **P 08 27 46.0 +0.6**
comp=Z,335nm,1.5s
AFDM LR LR
comp=Z,22µm,20.0s
CHMT Chamberlain Mo 73.57 43 eP **P 08 27 45.7 +0.1**
NC405 NORSAR Array S 73.79 337 eP **P 08 27 46.1 -0.3**
ILULI Ilulissat 73.79 4⇓ iP **P 08 27 46.3 +0.1**
comp=Z,1µm,1.4s
comp=Z,35µm,19.0s
ILULI Ilulissat 73.79 4⇓ iP **P 08 27 46.3 +0.1**
ILULI pmax pmax
comp=Z,1µm,1.4s
ILULI MLR MLR
comp=Z,35µm,19.0s
NC303 NORSAR Array S 73.81 337 eP **P 08 27 46.5 0.0**
VRTB Varto-Mus 73.88 307 eP **P 08 27 46.9 -0.6**
HFS Hagfors 73.89 335 P **P 08 27 46.4 -0.5**
comp=Z,265nm,1.0s,baz=58,slow=5.9,SNR=72
HFS PP **PP 08 30 33.7 +2.6**
comp=Z,45nm,1.1s,baz=46,slow=12,SNR=3.6
HFS S **SKiKP 08 37 09.3 -5.9**
comp=Z,2.0nm,1.0s,baz=330,slow=19,SNR=1.7
HFS LR LR 09 03 06.1
comp=Z,30µm,18.8s,baz=38,slow=38
HFS P4KPbc 09 04 02.8
comp=Z,1.9nm,0.5s,baz=79,slow=7.5,SNR=4.8
MOL Molde 73.90 339⇓ iP **P 08 27 46.2 -0.7**
MOL eS **S 08 37 19.4 +1.3**
KTUT Trabzon 73.90 309 eP **P 08 27 45.0 -2.3**
AKASG Malin Array Be 73.95 322 P **P 08 27 46.6 -0.9**
comp=Z,156nm,0.8s,baz=46,slow=6.4,SNR=113
AKASG PP **PP 08 30 32.0 0.0**
comp=Z,22nm,1.0s,baz=42,slow=8.3,SNR=3.2
AKASG S **S 08 37 20.9 +1.9**
comp=Z,0.5nm,0.5s,baz=56,slow=8.3,SNR=4.7
AKASG PKKPbc **PKKPbc 08 47 20.6 +1.9**
comp=Z,0.2nm,0.2s,baz=243,slow=4.2,SNR=4.2
AKASG PKPPKP **P'P'df 08 55 19.9 -7.2**
comp=Z,0.2nm,0.3s,baz=232,slow=2.2,SNR=5.4
AKASG LR LR 09 02 03.3
comp=Z,41µm,21.7s,baz=45,slow=37
AKASG Malin Array Be 73.95 322 P **P 08 27 46.6 -0.9**
AKASG 08 30 32.0
AKASG S **S 08 37 21.0 +1.9**
AKASG pmax pmax
comp=Z,159nm,0.8s
AKASG pmax pmax
comp=Z,22nm,1.0s
AKASG smax smax
comp=N,1,0nm,0.5s
AKBB Malin Array Si 73.95 322 eP **P 08 27 46.6 -0.9**
AKBB pmax pmax
comp=Z,558nm,1.1s
AKBB MLR MLR
comp=Z,40µm,18.0s
AKBB Malin Array Si 73.95 322 eP **P 08 27 46.6 -0.9**
comp=Z,558nm,1.1s
AKBB LR LR
comp=Z,40µm,18.0s
NC204 NORSAR Array S 73.96 337 eP **P 08 27 47.4 0.0**
KIEV Kiev 73.97 322d iP **P 08 27 46.4 -1.1**
KIEV pmax pmax
comp=Z,240nm,1.0s
KIEV MLR MLR
comp=Z,35µm,15.0s
KIEV Kiev 73.97 322 eP **P 08 27 46.9 -0.6**
comp=Z,550nm,1.1s
KIEV LR LR
comp=Z,40µm,18.0s
NB201 NORSAR Array S 73.97 337 eP **P 08 27 47.3 -0.1**
AK11 Malin Array Si 74.00 322 eP **P 08 27 46.9 -0.8**
NB2 NORSAR Subarra 74.00 337 P **P 08 27 47.5 -0.1**
comp=Z,4µm,2.0s,baz=39,slow=6.2
NB2 NORSAR Subarra 74.00 337 eP **P 08 27 47.3 -0.3**
baz=39,slow=6.2
NB200 NORSAR Array S 74.00 337 eP **P 08 27 47.3 -0.3**
NB200 ePP **PP 08 30 33.7 +1.6**
NOA NORSAR Array B 74.00 337 P **P 08 27 47.3 -0.3**
comp=Z,239nm,0.9s,baz=40,slow=5.8,SNR=174
NOA PP **PP 08 30 33.7 +1.6**
comp=Z,13nm,0.8s,baz=45,slow=8.7,SNR=3.4
NOA LR LR 09 03 24.6
comp=Z,34µm,21.9s,baz=40,slow=38
NOA NORSAR Array B 74.00 337 P **P 08 27 47.3 -0.3**
NOA 08 30 33.7
NOA pmax pmax
comp=Z,241nm,0.9s
NOA pmax pmax
comp=Z,13nm,0.8s
NOA MLR MLR
comp=Z,34µm,21.9s
BAYT Ayd¯ntepe-Bay 74.01 309 eP **P 08 27 47.3 -0.9**
NBO02 NORSAR Array S 74.11 337 eP **P 08 27 48.2 -0.1**
FFC Flin Flon 74.13 32 eP **P 08 27 48.5 +0.1**
FFC pmax pmax
comp=Z,447nm,1.1s
FFC MLR MLR
comp=Z,25µm,20.0s
FFC Flin Flon 74.13 32 eP **P 08 27 48.5 +0.1**
comp=Z,447nm,1.1s
FFC LR LR
comp=Z,25µm,20.0s
NC602 NORSAR Array S 74.13 337⇓ iP **P 08 27 47.4 -0.9**
NC602 eS **S 08 37 20.9 +0.1**
NC602 NORSAR Array S 74.13 337 eP **P 08 27 47.8 -0.5**
NBO00 NORSAR Array S 74.15 337 eP **P 08 27 48.3 -0.1**
MFID Camas Ranch 74.17 47 eP **P 08 27 50.0 +1.0**
comp=Z,1µm,2.0s
MFID LR LR
comp=Z,23µm,22.0s
NAO01 NORSAR Array S 74.26 337 eP **P 08 27 48.6 -0.5**
AKN Aaknes 74.37 339 eP **P 08 27 50.1 +0.4**
FCC Fort Churchill 74.37 26 eP **P 08 27 49.5 -0.2**
FCC pmax pmax
comp=Z,456nm,1.0s
FCC MLR MLR
comp=Z,41µm,20.0s
FCC Fort Churchill 74.37 26 eP **P 08 27 49.5 -0.2**
comp=Z,456nm,1.0s
FCC LR LR
comp=Z,41µm,20.0s
GUMT Gumushane 74.38 309 eP **P 08 27 51.5 +1.1**
CMB Columbia Colle 74.45 54 eP **P 08 27 51.5 +0.8**
CMB pmax pmax
comp=Z,433nm,1.1s
CMB MLR MLR
comp=Z,44µm,22.0s
CMB Columbia Colle 74.45 54 eP **P 08 27 51.5 +0.8**
comp=Z,433nm,1.1s
CMB LR LR
comp=Z,44µm,22.0s
HRY Holter Researc 74.47 43 eP **P 08 27 51.5 +0.7**
BNGB Bing¯l 74.47 307 eP **P 08 27 51.6 +0.7**
SAO San Andreas Ge 74.48 56 eP **P 08 27 51.5 +0.7**
SAO pmax pmax
comp=Z,625nm,2.0s
SAO MLR MLR
comp=Z,30µm,19.0s
SAO San Andreas Ge 74.48 56 eP **P 08 27 51.5 +0.7**
comp=Z,625nm,2.0s
SAO LR LR
comp=Z,30µm,19.0s
ESPY Espiye-Giresun 74.58 310 eP **P 08 27 51.1 -0.3**
SUW Suwalki 74.60 327 eP **P 08 27 50.6 -0.5**
SUW epP **pP 08 27 53.0 -2.5**
SUW ePcP **sP 08 27 56.2 -0.9**
SUW ePP **PP 08 30 36.5 -0.8**
SUW eS **S 08 37 25.1 -1.1**
SUW LMZ LR 08 56 40.2
SUW Suwalki 74.60 327 eP **P 08 27 50.6 -0.5**
SUW e*PP **pP 08 27 53.0 -2.5**
SUW e 08 27 56.3
SUW e 08 30 36.5
SUW eS **S 08 37 25.2 -1.0**
SVAN Silvan-Diyarba 74.62 306 eP **P 08 27 52.0 +0.4**
LRM Limekiln Ridge 74.67 44 eP **P 08 27 52.8 +0.8**
ERZN Erzincan 74.74 308 eP **P 08 27 51.6 -0.9**
EGMT Eagleton 74.77 41 P **P 08 27 53.1 +0.7**
baz=309,SNR=231
EGMT Eagleton 74.77 41 eP **P 08 27 52.9 +0.5**
comp=Z,566nm,1.0s
EGMT LR LR
comp=Z,26µm,21.0s
WAKR Walker 74.80 53 eP **P 08 27 54.1 +1.2**
DLMT Dillon 74.86 44 eP **P 08 27 53.5 +0.5**
comp=Z,515nm,1.1s
DLMT LR LR
comp=Z,16µm,22.0s
HLID Hailey 74.91 47 P **P 08 27 54.6 +1.1**
baz=307,SNR=129
HLID Hailey 74.91 47 eP **P 08 27 54.5 +1.1**
comp=Z,233nm,1.1s
HLID LR LR
comp=Z,26µm,22.0s
SIM Simferopol' 74.92 315de P **P 08 27 52.9 -0.3**
SIM 08 30 38.3
SIM S **S 08 37 29.3 -0.8**
SIM pmax pmax
comp=Z,197nm,1.0s
SIM smax smax
comp=N,2µm,17.0s
LCCM Lewis and Clar 74.97 44 eP **P 08 27 54.5 +0.7**
OSL Oslo 75.01 336 eP **P 08 27 53.5 +0.1**
MCMT McKenzie Canyo 75.05 45 eP **P 08 27 54.5 +0.2**
BMN Battle Mountai 75.08 51 eP **P 08 27 55.7 +1.3**
BMN pmax pmax
comp=Z,369nm,1.0s
BMN MLR MLR
comp=Z,32µm,21.0s
BMN Battle Mountai 75.08 51 eP **P 08 27 55.7 +1.3**
comp=Z,369nm,1.0s
BMN LR LR
comp=Z,32µm,21.0s
BOZ Bozeman (W) 75.23 44 P **P 08 27 56.1 +0.9**
baz=308,SNR=140
BOZ Bozeman (W) 75.23 44 eP **P 08 27 56.3 +1.1**
BOZ pmax pmax
comp=Z,372nm,1.0s
BOZ MLR MLR
comp=Z,17µm,20.0s
BOZ Bozeman (W) 75.23 44 eP **P 08 27 56.3 +1.1**
comp=Z,372nm,1.0s
BOZ LR LR
comp=Z,17µm,20.0s
BGMT Barton Gulch 75.25 44 eP **P 08 27 56.3 +0.8**
PTK Pertek 75.35 308 eP **P 08 27 57.0 +0.9**
FOO Floro 75.38 340⇓ iP **P 08 27 55.2 -0.3**
HYA Hoyanger 75.41 339⇓ iP **P 08 27 55.8 +0.1**
HYA eS **S 08 37 36.1 +1.1**
DYBB Diyarbakir 75.42 307 eP **P 08 27 57.1 +0.8**
KLNR Kaliningrad 75.45 329 i P **P 08 27 55.5 -0.5**
KLNR pmax pmax
comp=Z,853nm,1.2s
MAZI Mazidag 75.50 306 eP **P 08 27 57.2 +0.3**
ILIC ¡lic-Erzincan 75.54 309 eP **P 08 27 56.7 -0.3**
NV01 Mina Array Sit 75.57 53 eP **P 08 27 58.3 +1.0**
NVAR Mina Array Bea 75.57 53 P **P 08 27 58.3 +1.0**
comp=Z,113nm,1.0s,baz=286,slow=4.9,SNR=194
NVAR LR LR 08 54 55.5
comp=Z,27µm,21.6s,baz=302,slow=31
NVAR PKPPKP **P'P'df 08 55 24.8 +0.9**
comp=Z,1.6nm,1.0s,baz=117,slow=3.1,SNR=3.9
H01W3 Cape Leeuwin H 75.59 202 P **P 08 27 58.5 +1.8**
baz=16,slow=3.5,SNR=6.4
KONO Kongsberg 75.59 337⇓ iP **P 08 27 56.6 -0.2**
KONO eS **S 08 37 41.2 +4.1**
KONO e 08 42 44.6
KONO Kongsberg 75.59 337 eP **P 08 27 56.6 -0.2**
KONO pmax pmax
comp=Z,1µm,1.8s
KONO MLR MLR
comp=Z,46µm,19.0s
KONO Kongsberg 75.59 337 eP **P 08 27 56.6 -0.2**
comp=Z,1µm,1.8s
KONO LR LR
comp=Z,46µm,19.0s
H01W1 Cape Leeuwin H 75.59 202 P **P 08 27 57.2 +0.5**
baz=16,slow=3.5,SNR=7.0
H01W2 Cape Leeuwin H 75.61 202 P **P 08 27 58.0 +1.3**
baz=16,slow=3.5,SNR=5.2
NV11 Mina Array Sit 75.66 53 eP **P 08 27 58.7 +0.9**
comp=Z,552nm,1.4s
NV11 LR LR
comp=Z,26µm,22.0s
MLAC Mammoth, Mammo 75.69 54 P **P 08 27 59.5 +1.4**
baz=306,SNR=78
SVRC Sivrice-ELAZID 75.70 307 eP **P 08 27 59.1 +1.0**
KBSD Kabsdagh 75.71 306 i P **P 08 27 58.1 +0.2**
RSDY Resadiye-TOKAT 75.75 310 eP **P 08 27 58.7 +0.6**
QLMT Earthquake Lak 75.84 44 eP **P 08 27 59.8 +1.0**
SUE Sulen 75.91 340⇓ iP **P 08 27 58.0 -0.5**
SUE IAmb IAmb 08 28 08.2
comp=Z,1µm,1.5s
SFJD Kangerlussuaq 76.02 5⇓ iP **P 08 27 59.2 +0.1**
comp=Z,408nm,1.1s
SFJD Kangerlussuaq 76.02 5⇓ iP **P 08 27 59.2 +0.1**
SFJD pmax pmax
comp=Z,410nm,1.1s
SFJD Kangerlussuaq 76.02 5 eP **P 08 27 59.2 +0.1**
comp=Z,1µm,1.6s
SFJD LR LR
comp=Z,19µm,19.0s
YHB Horse Butte 76.02 44 eP **P 08 28 01.1 +1.2**
SORM Soroca 76.03 320⇑ iP **P 08 27 59.3 -0.2**
SNOP Sinop 76.06 312 eP **P 08 27 59.5 -0.3**
ELK Elko 76.11 49 eP **P 08 28 01.7 +1.3**
ELK pmax pmax
comp=Z,301nm,1.5s
ELK MLR MLR
comp=Z,25µm,22.0s
ELK Elko 76.11 49 eP **P 08 28 01.7 +1.3**
comp=Z,301nm,1.5s
ELK LR LR
comp=Z,25µm,22.0s
KVT Kavak 76.12 311 eP **P 08 28 01.1 +0.9**
YMC Maple Creek 76.12 44 eP **P 08 28 01.6 +1.2**
CRMT Chrome Mountai 76.17 43 eP **P 08 28 01.6 +0.8**
YHH Holmes Hill 76.19 44 eP **P 08 28 02.0 +1.1**
RCTC Rector, Farmer 76.20 55 P **P 08 28 01.2 +0.6**
baz=306,SNR=24
YMR Madison River 76.20 44 eP **P 08 28 02.2 +1.3**
comp=Z,316nm,1.2s
YMR LR LR
comp=Z,15µm,19.0s
GCMT Greycliff 76.22 43 eP **P 08 28 01.9 +1.0**
SVSK Karacayir 76.24 310 eP **P 08 28 01.8 +1.0**
ASK Askoy 76.25 339 eP **P 08 28 00.7 +0.2**
ASK IAmb IAmb 08 28 10.2
comp=Z,1µm,1.6s
DIKM Dikmen 76.25 312 eP **P 08 28 01.9 +1.0**
YPM Purple Mountai 76.27 44 eP **P 08 28 02.8 +1.5**
SMMC Simmler 76.28 56 P **P 08 28 02.5 +1.2**
baz=306,SNR=21
BER Bergen 76.29 339 eP **P 08 28 01.4 +0.6**
BER IAmb IAmb 08 28 10.4
comp=Z,828nm,1.4s
BER eS **S 08 37 46.1 +1.4**
ODD1 Odda 76.30 338 eP **P 08 28 01.2 +0.3**
MZRK Al-Mazaregh 76.32 305 i P **P 08 28 02.5 +1.1**
SFNV Sufian 76.33 305 i P **P 08 28 03.0 +1.4**
MCID Moose Creek 76.38 45 eP **P 08 28 03.8 +1.9**
YFT Old Faithful 76.41 44 eP **P 08 28 04.8 +2.7**
comp=Z,404nm,1.3s
YFT LR LR
comp=Z,30µm,19.0s
TIN Tinemaha, Big 76.42 54 P **P 08 28 03.3 +1.2**
baz=306,SNR=17
KIS Kishinev 76.52 319⇓ iP **P 08 28 01.0 -1.3**
comp=Z,600nm,1.0s
KIS Kishinev 76.52 319 i PcP **PcP 08 28 20.0 +6.1**
KIS Kishinev 76.52 319 i PP PP 08 30 54.0 +0.2
comp=Z,2µm,10.0s
KIS Kishinev 76.52 319 i PPP PPP 08 32 40.0
KIS Kishinev 76.52 319 i PsP 08 34 10.0
KIS i S **S 08 37 40.0 -7.8**
comp=Z,3µm,8.0s
KIS Kishinev 76.52 319 i PS 08 38 50.0
KIS i SS SS 08 43 02.0 +20
KIS eLQ LQ 08 55 30.0
comp=Z,46µm,21.0s
KIS LRM MLR 09 10 16.0
comp=Z,35µm,16.0s
KIS Kishinev 76.52 319ĸ iP **P 08 28 01.0 -1.3**
KIS i 08 28 20.0
KIS i 08 30 54.0
KIS i PPP PPP 08 32 40.0
KIS i S **S 08 37 40.0 -7.8**
KIS pmax pmax
comp=Z,600nm,1.0s
KIS pmax pmax
comp=N,1µm,6.0s
KIS pmax pmax
comp=Z,4µm,6.0s
KIS pmax pmax
comp=E,1µm,5.0s
KIS pmax pmax
comp=Z,2µm,10.0s
KIS smax smax
comp=E,3µm,8.0s
KIS smax smax
comp=E,4µm,10.0s
YLT Little Thumb C 76.56 44 eP **P 08 28 05.7 +2.7**
LKWY Lake 76.58 44 eP **P 08 28 05.5 +2.4**
LKWY pmax pmax
comp=Z,256nm,1.0s
LKWY MLR MLR
comp=Z,23µm,21.0s
LKWY Lake 76.58 44 eP **P 08 28 05.5 +2.4**
comp=Z,256nm,1.0s
LKWY LR LR
comp=Z,23µm,21.0s
H17A Grant Village 76.59 44 eP **P 08 28 05.8 +2.6**
comp=Z,591nm,1.1s
H17A LR LR
comp=Z,28µm,19.0s
YMP Mirror Lake Pl 76.61 44 eP **P 08 28 04.8 +1.6**
PKM Mcpherson Peak 76.64 56 P **P 08 28 04.7 +1.2**
baz=306,SNR=32
BYBT Boyabat 76.66 312 eP **P 08 28 02.3 -0.8**
IMW Indian Meadow 76.70 45 eP **P 08 28 05.5 +1.7**
comp=Z,187nm,0.8s
IMW LR LR
comp=Z,17µm,20.0s
FLWY Flagg Ranch 76.72 45 eP **P 08 28 05.6 +1.8**
comp=Z,2µm,1.9s
FLWY LR LR
comp=Z,17µm,22.0s
DARE Darende-Malaty 76.74 308 eP **P 08 28 05.2 +1.3**
BLS5 Blasjo 76.74 338⇓ iP **P 08 28 03.4 0.0**
BLS5 IAmb IAmb 08 28 13.1
comp=Z,1µm,1.8s
YTP The Promontory 76.76 44 eP **P 08 28 06.0 +2.0**
BZK Bozkurt 76.81 313 eP **P 08 28 02.8 -1.2**
RLMT Red Lodge 76.86 43 P **P 08 28 05.4 +0.8**
baz=310,SNR=100
RLMT Red Lodge 76.86 43 eP **P 08 28 05.6 +1.0**
comp=Z,479nm,1.4s
RLMT LR LR
comp=Z,23µm,21.0s
RBK Rabkut 76.87 282 P **P 08 28 05.7 +0.9**
SNR=37
RBK Rabkut 76.87 282 P **P 08 28 05.7 +0.9**
SNR=37
NPI North Pocatell 76.88 47 eP **P 08 28 05.9 +1.2**
MOOW Moose Ponds 76.90 45 eP **P 08 28 06.1 +1.3**
comp=Z,552nm,1.5s
MOOW LR LR
comp=Z,20µm,21.0s
HVU Hansel Valley 76.95 47 eP **P 08 28 06.4 +1.3**
HVU pmax pmax
comp=Z,246nm,1.0s
HVU MLR MLR
comp=Z,20µm,21.0s
HVU Hansel Valley 76.95 47 eP **P 08 28 06.4 +1.3**
comp=Z,246nm,1.0s
HVU LR LR
comp=Z,20µm,21.0s
SBC Santa Barbara 76.97 57 P **P 08 28 06.6 +1.5**
baz=306
GRAC Grapevine Rang 77.01 53 P **P 08 28 06.5 +1.2**
baz=307,SNR=44
HOMB Homborsund 77.03 336⇓ iP **P 08 28 04.1 -0.9**
HOMB eS **S 08 37 55.4 +2.5**
IAS Iasi 77.05 320⇑ iP **P 08 28 05.1 -0.2**
LVV L'vov 77.05 324 eP **P 08 28 05.2 -0.1**
LVV e 08 31 01.2
LVV eS **S 08 37 50.6 -2.9**
LVV e 08 38 38.7
LVV e 08 42 56.7
ABL Mount Abel 77.06 56 eP **P 08 28 07.6 +1.7**
LOHW Long Hollow 77.07 45 eP **P 08 28 07.0 +1.3**
comp=Z,321nm,1.4s
LOHW LR LR
comp=Z,21µm,21.0s
SNOW Snow King Moun 77.08 45 eP **P 08 28 07.2 +1.3**
comp=Z,438nm,1.2s
SNOW LR LR
comp=Z,29µm,21.0s
ISA Isabella, Lake 77.08 55 P **P 08 28 05.9 0.0**
baz=306,SNR=24
ISA Isabella, Lake 77.08 55 eP **P 08 28 05.8 0.0**
ISA pmax pmax
comp=Z,247nm,1.4s
ISA MLR MLR
comp=Z,22µm,21.0s
ISA Isabella, Lake 77.08 55 eP **P 08 28 05.8 0.0**
comp=Z,247nm,1.4s
ISA LR LR
comp=Z,22µm,21.0s
REDW Red Top Meadow 77.08 45 eP **P 08 28 07.0 +1.2**
comp=Z,473nm,1.3s
REDW LR LR
comp=Z,28µm,22.0s
BEL Belsk 77.15 326 eP **P 08 28 06.4 +0.6**
BEL epP **pP 08 28 07.9 -2.2**
BEL ePcP **sP 08 28 11.9 +0.2**
BEL ePP **PP 08 31 00.1 +1.3**
BEL eS **S 08 37 56.0 +1.6**
BEL LMZ LR 08 58 56.0
BEL Belsk 77.15 326 eP **P 08 28 06.4 +0.6**
BEL e*PP **pP 08 28 07.9 -2.2**
BEL e 08 28 11.9
BEL e 08 31 00.2
BEL eS **S 08 37 56.1 +1.6**
ARVC Arvin 77.16 56 P **P 08 28 06.8 +0.7**
baz=306,SNR=55
LEOM Leova 77.16 319 eP **P 08 28 05.7 -0.2**
LEOM Leova 77.16 319⇑ iP **P 08 28 07.1 +1.2**
MTUT Morton Thiokol 77.19 47 eP **P 08 28 07.8 +1.4**
BSD Bornholm Skovb 77.20 331⇓ iP **P 08 28 05.5 -0.5**
comp=Z,827nm,1.2s
BSD i S **S 08 37 53.8 -1.0**
comp=Z,48µm,16.0s
BSD Bornholm Skovb 77.20 331⇓ iP **P 08 28 05.5 -0.5**
BSD i S **S 08 37 53.8 -1.0**
BSD pmax pmax
comp=Z,830nm,1.2s
BSD MLR MLR
comp=Z,48µm,16.0s
KMY Karmoy 77.28 338⇓ iP **P 08 28 06.5 +0.2**
KMY eS **S 08 37 55.9 +0.3**
SCZ2 Santa Cruz Isl 77.29 57 P **P 08 28 07.5 +0.5**
baz=306
DAC Darwin (Calif) 77.29 54 PFAKE 08 28 20.0 +13
DAC LR LR
comp=Z,32µm,22.0s
DGMT Dagmar 77.31 38 P **P 08 28 07.3 +0.5**
baz=312,SNR=65

DGMT	**Dagmar**	**77.31**	**38**	*e*P		**P**	**08 28 07.2**	**+0.3**
	comp=Z,738nm,1.1s							
DGMT				LR		LR		
	comp=Z,26µm,21.0s							
AHID	**Auburn Hatcher**	**77.31**	**46**	*e*P		**P**	**08 28 08.0**	**+0.8**
	comp=Z,279nm,1.3s							
AHID				LR		LR		
	comp=Z,28µm,21.0s							
BEI	**Bear River Ran**	**77.33**	**47**	*e*P		**P**	**08 28 08.3**	**+1.1**
BGU	**Big Grassy Mou**	**77.33**	**48**	*e*P		**P**	**08 28 08.3**	**+1.1**
	comp=Z,297nm,1.2s							
BGU				LR		LR		
	comp=Z,17µm,20.0s							
R11A	**Troy Canyon, C**	**77.33**	**51**	P		**P**	**08 28 08.4**	**+1.1**
	baz=307,SNR=449							
R11A	**Troy Canyon, C**	**77.33**	**51**	*e*P		**P**	**08 28 07.9**	**+0.5**
	comp=Z,412nm,1.1s							
R11A				LR		LR		
	comp=Z,16µm,19.0s							
DGAR	**Diego Garcia**	**77.34**	**251**	*e*P		**P**	**08 28 07.1**	**-0.2**
DGAR				pmax		pmax		
	comp=Z,407nm,0.9s							
DGAR				MLR		MLR		
	comp=Z,31µm,21.0s							
DGAR	**Diego Garcia**	**77.34**	**251**	*e*P		**P**	**08 28 07.1**	**-0.2**
	comp=Z,407nm,0.9s							
DGAR				LR		LR		
	comp=Z,31µm,21.0s							
TOS	**Tosya**	**77.36**	**312**	*e*P		**P**	**08 28 07.0**	**-0.3**
STAV	**Stavanger**	**77.37**	**338**	*e*P		**P**	**08 28 07.2**	**+0.3**
KSRV	**Kasrt alli**	**77.38**	**305**	*i* P		**P**	**08 28 08.1**	**+0.7**
LTU	**Little Mountai**	**77.38**	**47**	*e*P		**P**	**08 28 08.6**	**+1.1**
SNART	**Snartemo**	**77.39**	**337**	*e*P		**P**	**08 28 07.1**	**+0.1**
SNART				IAmb		IAmb	08 28 16.4	
	comp=Z,1µm,2.0s							
EPU	**East Promontor**	**77.41**	**47**	*e*P		**P**	**08 28 08.8**	**+1.1**
SPUT	**South Promonto**	**77.44**	**48**	*e*P		**P**	**08 28 09.5**	**+1.7**
	comp=Z,759nm,1.8s							
SPUT				LR		LR		
	comp=Z,14µm,20.0s							
YOZ	**Yozgat**	**77.44**	**310**	*e*P		**P**	**08 28 08.9**	**+1.1**
H08S3	**Diego Garcia H**	**77.45**	**250**	P		**P**	**08 28 07.1**	**-0.6**
	baz=3.9,slow=12,SNR=40							
H08S2	**Diego Garcia H**	**77.46**	**250**	P		**P**	**08 28 08.1**	**+0.5**
	baz=3.9,slow=12,SNR=57							
LAO	**LASA Array**	**77.47**	**40**	P		**P**	**08 28 08.6**	**+0.9**
	baz=311,SNR=117							
LAO	**LASA Array**	**77.47**	**40**	*e*P		**P**	**08 28 08.7**	**+0.9**
	comp=Z,690nm,1.1s							
LAO				LR		LR		
	comp=Z,32µm,22.0s							
H08S1	**Diego Garcia H**	**77.47**	**250**	P		**P**	**08 28 07.9**	**+0.2**
	baz=3.9,slow=12,SNR=40							
MPMC	**Manual Prospec**	**77.49**	**54**	P		**P**	**08 28 08.9**	**+0.6**
	baz=307,SNR=144							
CORM	**Corum**	**77.53**	**311**	*e*P		**P**	**08 28 09.2**	**+0.9**
A25A	**Svangstu Ranch**	**77.53**	**37**	P		**P**	**08 28 08.6**	**+0.6**
	baz=313,SNR=58							
OSI	**Osito Audit: C**	**77.53**	**56**	P		**P**	**08 28 09.3**	**+1.0**
	baz=306							
OSI	**Osito Audit: C**	**77.53**	**56**	*e*P		**P**	**08 28 09.9**	**+1.6**
	comp=Z,501nm,1.4s							
OSI				LR		LR		
	comp=Z,64µm,22.0s							
BNN	**Bunyan**	**77.59**	**309**	*e*P		**P**	**08 28 09.2**	**+0.5**
BLG	**Laguna Peak, P**	**77.60**	**57**	P		**P**	**08 28 09.2**	**+0.5**
	baz=306,SNR=12							
PRAR	**RASCA**	**77.62**	**321**	*i*P		**P**	**08 28 09.4**	**+0.9**
BORG	**Borgarnes**	**77.64**	**352**	P		**P**	**08 28 09.0**	**+0.7**
	comp=Z,308nm,0.9s,baz=27,slow=3.9,SNR=13							
BORG				LR		LR	09 01 06.9	
	comp=Z,8µm,21.7s,baz=17,slow=35							
BORG	**Borgarnes**	**77.64**	**352**	P		**P**	**08 28 09.0**	**+0.7**
BORG				pmax		pmax		
	comp=Z,357nm,1.0s							
BORG	**Borgarnes**	**77.64**	**352**	*e*P		**P**	**08 28 09.0**	**+0.7**
	comp=Z,549nm,1.0s							
BORG				LR		LR		
	comp=Z,13µm,18.0s							
GZU	**Grizzly Peak**	**77.64**	**47**	*e*P		**P**	**08 28 10.2**	**+1.0**
FURC	**Furnace Creek,**	**77.65**	**54**	P		**P**	**08 28 10.3**	**+1.4**
	baz=307,SNR=131							
ABTO	**Aybut**	**77.66**	**282**	P		**P**	**08 28 08.8**	**-0.5**
	SNR=53							
ABTO	**Aybut**	**77.66**	**282**	P		**P**	**08 28 08.8**	**-0.5**
	SNR=53							
SNUT	**Stansbury Nort**	**77.66**	**48**	*e*P		**P**	**08 28 10.5**	**+1.4**
COP	**Copenhagen**	**77.70**	**333**	*i*P		**P**	**08 28 08.9**	**+0.2**
COP				*i* S		**S**	**08 38 01.0**	**+0.8**
	comp=Z,25µm,18.0s							
COP	**Copenhagen**	**77.70**	**333**	*i*P		**P**	**08 28 08.9**	**+0.2**
COP				*i* S		**S**	**08 38 01.0**	**+0.8**
COP				MLR		MLR		
	comp=Z,25µm,18.0s							
LRMC	**Laurel Mtn Rad**	**77.71**	**55**	P		**P**	**08 28 10.0**	**+0.6**
	baz=307,SNR=62							
BMUT	**Black Mountain**	**77.74**	**46**	*e*P		**P**	**08 28 10.7**	**+1.0**
H08N1	**Diego Carcia H**	**77.75**	**252**	P		P	08 28 26.7	+17
	baz=4.9,slow=1.7,SNR=19							
H08N2	**Diego Garcia H**	**77.75**	**252**	P		P	08 28 27.5	+18
	baz=4.9,slow=1.7,SNR=25							
NAIU	**Northern Antel**	**77.75**	**48**	*e*P		**P**	**08 28 10.5**	**+0.9**
KMRS	**Kahramanmaras**	**77.75**	**308**	*e*P		**P**	**08 28 10.5**	**+1.0**
GAZ	**Gaziantep**	**77.75**	**307**	*e*P		**P**	**08 28 10.5**	**+0.9**
TPNV	**Topopah Spring**	**77.75**	**53**	P		**P**	**08 28 10.6**	**+0.9**
	baz=307,SNR=203							
TPNV	**Topopah Spring**	**77.75**	**53**	*e*P		**P**	**08 28 09.7**	**0.0**
TPNV				pmax		pmax		
	comp=Z,436nm,1.0s							
TPNV				MLR		MLR		
	comp=Z,44µm,22.0s							
TPNV	**Topopah Spring**	**77.75**	**53**	*e*P		**P**	**08 28 09.7**	**0.0**
	comp=Z,436nm,1.0s							
TPNV				LR		LR		
	comp=Z,44µm,22.0s							
H08N3	**Diego Garcia H**	**77.77**	**252**	P		P	08 28 26.0	+17
	baz=4.9,slow=1.7,SNR=24							
HWUT	**Hardware Ranch**	**77.77**	**47**	*e*P		**P**	**08 28 10.7**	**+1.0**
	comp=Z,399nm,1.1s							
HWUT				LR		LR		
	comp=Z,13µm,20.0s							
SNCC	**San Nicolas Is**	**77.80**	**58**	P		**P**	**08 28 10.2**	**+0.5**
	baz=306							
SNCC	**San Nicolas Is**	**77.80**	**58**	*e*P		**P**	**08 28 10.4**	**+0.6**
	comp=Z,759nm,1.4s							
SNCC				LR		LR		
	comp=Z,62µm,21.0s							
KWP	**Kalwaria Pacla**	**77.81**	**324**	*e*P		**P**	**08 28 10.0**	**+0.5**
KWP				*e*PP		**pP**	**08 28 12.3**	**-1.6**
KWP				*e*PcP		**sP**	**08 28 15.7**	**+0.2**
KWP				*e*PP		**PP**	**08 31 06.0**	**+1.5**
KWP				*e*S		**S**	**08 38 03.7**	**+2.1**
KWP				LMZ		LR	08 55 39.5	
KWP	**Kalwaria Pacla**	**77.81**	**324**	*e*P		**P**	**08 28 10.1**	**+0.5**
KWP				*e**PP		**pP**	**08 28 12.3**	**-1.6**
KWP				*e*			08 28 15.7	
KWP				*e*			08 31 06.1	
KWP				*e*S		**S**	**08 38 03.8**	**+2.1**
RSUT	**Red Spur Mount**	**77.84**	**47**	*e*P		**P**	**08 28 11.5**	**+1.2**
FSU	**Fish Springs**	**77.85**	**49**	*e*P		**P**	**08 28 11.3**	**+1.2**
EDW2	**Edwards Air Fo**	**77.86**	**56**	P		**P**	**08 28 11.1**	**+1.0**
	baz=307,SNR=124							
CANT	**Cankiri**	**77.87**	**312**	*e*P		**P**	**08 28 11.1**	**+0.9**
YEL1	**Yell**	**77.89**	**342**	*e*P		**P**	**08 28 09.7**	**0.0**
MCU	**Monte Cristo P**	**77.90**	**47**	*e*P		**P**	**08 28 11.6**	**+1.1**
DUG	**Dugway, Tooele**	**77.91**	**49**	P		**P**	**08 28 11.8**	**+1.3**
	baz=308,SNR=210							
DUG	**Dugway, Tooele**	**77.91**	**49**	*e*P		**P**	**08 28 11.6**	**+1.2**
DUG				pmax		pmax		
	comp=Z,309nm,0.9s							
DUG				MLR		MLR		
	comp=Z,22µm,21.0s							
DUG	**Dugway, Tooele**	**77.91**	**49**	*e*P		**P**	**08 28 11.6**	**+1.2**
	comp=Z,309nm,0.9s							
DUG				LR		LR		
	comp=Z,22µm,21.0s							
BUR08	**Bucovina Ar. S**	**77.95**	**321**	*e*P		**P**	**08 28 10.5**	**0.0**
B25A	**Knox Farm, Ray**	**77.96**	**38**	P		**P**	**08 28 11.4**	**+1.0**
	baz=313,SNR=27							
BURAR	**Bucovina Array**	**77.96**	**321**	*i*P		**P**	**08 28 10.7**	**+0.2**
TESR	**Tescani**	**77.97**	**320**	*i*P		**P**	**08 28 10.4**	**-0.1**
FPU	**Francis Peak**	**77.97**	**48**	*e*P		**P**	**08 28 11.9**	**+0.9**
DECC	**Green Verdugo**	**78.00**	**56**	P		**P**	**08 28 11.2**	**+0.3**
	baz=307							
SAFT	**Safranbolu**	**78.03**	**313**	*e*P		**P**	**08 28 14.2**	**+3.3**
NOQ	**North Oquirrh**	**78.04**	**48**	*e*P		**P**	**08 28 12.4**	**+1.2**
CFR	**Carcaliu**	**78.06**	**318**	*i*P		**P**	**08 28 11.3**	**+0.3**
A26A	**Wade Farm, Ken**	**78.07**	**37**	P		**P**	**08 28 11.5**	**+0.5**
	baz=314,SNR=36							
OUZ	**Omahuta**	**78.09**	**153**	*e*P		**P**	**08 28 13.2**	**+2.2**
	comp=Z,174nm,1.2s							
OUZ				LR		LR		
	comp=Z,42µm,20.0s							
RBU	**Red Butte Cany**	**78.14**	**48**	*e*P		**P**	**08 28 12.6**	**+0.8**
PASC	**Pasadena Art C**	**78.15**	**56**	*e*P		**P**	**08 28 12.5**	**+0.8**
	comp=Z,458nm,1.5s							
PASC				LR		LR		
	comp=Z,71µm,22.0s							
TCUT	**Toone Canyon**	**78.17**	**47**	*e*P		**P**	**08 28 13.2**	**+1.2**
	comp=Z,2µm,1.8s							
TCUT				LR		LR		
	comp=Z,21µm,20.0s							
PETR	**Petresti**	**78.19**	**319**	*i*P		**P**	**08 28 13.1**	**+1.4**
BW06	**Boulder Array**	**78.19**	**45**	P		**P**	**08 28 12.4**	**+0.3**
	baz=310,SNR=170							
BW06	**Boulder Array**	**78.19**	**45**	*e*P		**P**	**08 28 12.4**	**+0.3**
BW06				LR		LR		
	comp=Z,28µm,22.0s							
PD31	**Pinedale Array**	**78.19**	**45**	*e*P		**P**	**08 28 12.2**	**0.0**
PDAR	**Pinedale Array**	**78.19**	**45**	P		**P**	**08 28 12.2**	**0.0**
	comp=Z,55nm,0.8s,baz=274,slow=2.8,SNR=122							
PDAR				PP		**PP**	**08 31 09.7**	**+1.4**
	comp=Z,4.4nm,1.0s,baz=292,slow=7.7,SNR=1.9							
PDAR				PKKPbc		**PKKPbc**	**08 47 09.8**	**0.0**
	comp=Z,2.5nm,0.9s,baz=117,slow=4.1,SNR=6.6							
PDAR				PKP2ab			08 55 01.7	
	comp=Z,0.8nm,0.8s,baz=163,slow=1.5,SNR=5.0							
PDAR				PKPPKP		**P'P'df**	**08 55 12.4**	**-7.1**
	comp=Z,1.2nm,0.9s,baz=132,slow=1.3,SNR=4.6							
PDAR				LR		LR	08 58 25.9	
	comp=Z,21µm,21.9s,baz=334,slow=32							
MWC	**Mount Wilson**	**78.21**	**56**	*e*P		**P**	**08 28 13.3**	**+1.0**
MWC				pmax		pmax		
	comp=Z,566nm,1.6s							
MWC				MLR		MLR		
	comp=Z,74µm,21.0s							
MWC	**Mount Wilson**	**78.21**	**56**	*e*P		**P**	**08 28 13.3**	**+1.0**
	comp=Z,566nm,1.6s							
MWC				LR		LR		
	comp=Z,74µm,21.0s							
CTU	**Camp Tracy**	**78.23**	**48**	*e*P		**P**	**08 28 13.2**	**+0.9**
	comp=Z,373nm,1.4s							
CTU				LR		LR		
	comp=Z,20µm,21.0s							
RGN	**Rugen**	**78.23**	**332**	*e*P		**P**	**08 28 11.7**	**-0.1**
	comp=Z,1µm,1.5s							
RGN				LR		LR		
	comp=Z,43nm,21.0s							
MUD	**Monsted U'grnd**	**78.25**	**335**	*i*P		**P**	**08 28 11.5**	**-0.3**
	comp=Z,688nm,1.4s							
	comp=Z,48µm,16.0s							
MUD	**Monsted U'grnd**	**78.25**	**335**	*i*P		**P**	**08 28 11.5**	**-0.3**
MUD				pmax		pmax		
	comp=Z,690nm,1.4s							
MUD				MLR		MLR		
	comp=Z,48µm,16.0s							
ODBI	**Odobesti**	**78.25**	**319**	*i*P		**P**	**08 28 13.3**	**+1.3**
LRW	**Lerwick**	**78.27**	**342**	*e*P		**P**	**08 28 12.1**	**+0.3**
LRW				AMB		AMB	08 28 21.9	
	comp=Z,493nm,2.1s							
LRW				AMS		AMS	09 00 29.6	
	comp=Z,33µm,27.2s							
WAL1	**Walls**	**78.27**	**342**	*e*P		**P**	**08 28 13.1**	**+1.2**
C25A	**Freed Ranch, W**	**78.29**	**38**	P		**P**	**08 28 13.2**	**+1.0**
	baz=313,SNR=36							
GMU	**Granite Mounta**	**78.30**	**48**	*e*P		**P**	**08 28 13.8**	**+1.1**
B26A	**Jensen Ranch,**	**78.34**	**37**	P		**P**	**08 28 13.4**	**+0.8**
	baz=314,SNR=89							
FMP	**Fort Macarthur**	**78.35**	**57**	P		**P**	**08 28 13.5**	**+0.7**
	baz=307,SNR=6.3							
VRI	**Vrincioaia**	**78.36**	**319**	*e*P		**P**	**08 28 12.6**	**0.0**
VRI	**Vrincioaia**	**78.36**	**319**	*i*P		**P**	**08 28 13.5**	**+0.8**
SHOC	**Shoshone, Teco**	**78.37**	**54**	P		**P**	**08 28 13.7**	**+0.7**
	baz=308,SNR=55							
GSC	**Goldstone, Bar**	**78.39**	**55**	P		**P**	**08 28 13.9**	**+0.8**
	baz=307,SNR=76							
GSC	**Goldstone, Bar**	**78.39**	**55**	*e*P		**P**	**08 28 13.4**	**+0.3**
GSC				pmax		pmax		
	comp=Z,471nm,1.5s							
GSC				MLR		MLR		
	comp=Z,14µm,20.0s							
GSC	**Goldstone, Bar**	**78.39**	**55**	*e*P		**P**	**08 28 13.4**	**+0.3**
	comp=Z,470nm,1.5s							
GSC				LR		LR		
	comp=Z,14µm,20.0s							
TIRR	**Tirgusor**	**78.39**	**317**	*i*P		**P**	**08 28 13.1**	**+0.3**
TIRR	**Tirgusor**	**78.39**	**317**	*e*P		**P**	**08 28 12.5**	**-0.3**
TIRR				pmax		pmax		
	comp=Z,322nm,1.4s							
TIRR				MLR		MLR		
	comp=Z,60µm,18.0s							
TIRR	**Tirgusor**	**78.39**	**317**	*e*P		**P**	**08 28 12.5**	**-0.3**
	comp=Z,322nm,1.4s							
TIRR				LR		LR		
	comp=Z,60µm,18.0s							
BR101	**Keskin Array S**	**78.41**	**311**	*e*P		**P**	**08 28 13.1**	**-0.2**
BR101				*e*PP		**PP**	**08 31 13.1**	**+3.2**
BR131	**Keskin Array S**	**78.41**	**311**	*e*P		**P**	**08 28 13.1**	**-0.1**
BRTR	**Keskin Array B**	**78.41**	**311**	P		**P**	**08 28 13.1**	**-0.1**
	comp=Z,84nm,0.9s,baz=94,slow=3.3,SNR=68							
BRTR				PP		**PP**	**08 31 13.1**	**+3.2**
	comp=Z,28nm,1.0s,baz=83,slow=6.5,SNR=5.0							
BRTR				PKKPbc		**PKKPbc**	**08 47 09.8**	**+0.7**
	comp=Z,2.5nm,0.9s,baz=216,slow=3.6,SNR=4.9							
BRTR				PKPPKP		**P'P'df**	**08 55 14.4**	**-4.4**
	comp=Z,0.9nm,0.7s,baz=242,slow=3.1,SNR=3.6							
BRTR				LR		LR	09 04 51.5	
	comp=Z,24µm,21.9s,baz=44,slow=37							
BRTR	**Keskin Array B**	**78.41**	**311**	P		**P**	**08 28 13.1**	**-0.1**
BRTR							08 31 13.1	
BRTR				pmax		pmax		
	comp=Z,82nm,0.9s							
BRTR				pmax		pmax		
	comp=Z,28nm,1.0s							
PLOR	**Plostina**	**78.41**	**319**	*i*P		**P**	**08 28 13.3**	**+0.3**
A27A	**Ledoux Ranch,**	**78.42**	**36**	P		**P**	**08 28 13.4**	**+0.5**
	baz=314,SNR=40							
KOZT	**Kozan**	**78.44**	**308**	*e*P		**P**	**08 28 13.9**	**+0.6**
CIS	**Catalina Islan**	**78.46**	**57**	P		**P**	**08 28 14.0**	**+0.5**
	baz=307,SNR=15							
BFSC	**Mount Baldy Ra**	**78.46**	**56**	P		**P**	**08 28 13.7**	**+0.1**
	baz=307,SNR=49							
JLU	**Jordanelle**	**78.47**	**48**	*e*P		**P**	**08 28 14.6**	**+1.0**
	comp=Z,396nm,1.3s							
JLU				LR		LR		
	comp=Z,20µm,21.0s							
HLJ	**Hailstone**	**78.49**	**48**	*e*P		**P**	**08 28 14.8**	**+1.0**
HARR	**Harsova**	**78.49**	**318**	*i*P		**P**	**08 28 13.5**	**+0.1**
KOLS	**Kolonicke sedl**	**78.50**	**324**	*e*P		**P**	**08 28 12.8**	**-0.6**
KOLS				pmax		pmax		
	comp=Z,302nm,1.4s							
KOLS	**Kolonicke sedl**	**78.50**	**324**	*e*P		**P**	**08 28 12.8**	**-0.6**
KOLS				*e*S		**S**	**08 38 10.9**	**+1.8**
KOLS				*e*SS		**SS**	**08 43 17.3**	**+6.0**
KOLS				*e*L		L	09 08 36.8	
NLU	**North Lily Min**	**78.50**	**48**	*e*P		**P**	**08 28 14.8**	**+0.9**
	comp=Z,342nm,1.1s							
NLU				LR		LR		
	comp=Z,27µm,22.0s							
EFOR	**EFORIE**	**78.51**	**317**	*i*P		**P**	**08 28 14.4**	**+0.9**
RRX	**Edison Barstow**	**78.52**	**55**	P		**P**	**08 28 14.9**	**+1.1**
	baz=307,SNR=7.2							
DCU	**Deer Creek Res**	**78.54**	**48**	*e*P		**P**	**08 28 15.5**	**+1.5**
GRER		**78.55**	**319**	*i*P		**P**	**08 28 14.5**	**+0.8**
WMUT	**West Mountain**	**78.57**	**48**	*e*P		**P**	**08 28 15.2**	**+0.9**
SCI2	**San Clemente I**	**78.62**	**57**	P		**P**	**08 28 15.1**	**+0.8**
	baz=307							
D25A	**Fairfield**	**78.64**	**39**	P		**P**	**08 28 15.1**	**+0.8**
	baz=313,SNR=27							
STHS	**Stebnicka Huta**	**78.64**	**325**	*e*P		**P**	**08 28 14.9**	**+0.7**
STHS				pmax		pmax		
	comp=Z,265nm,1.1s							
STHS	**Stebnicka Huta**	**78.64**	**325**	*e*P		**P**	**08 28 14.9**	**+0.7**
UZH	**Uzhgorod**	**78.70**	**323**	*e*P		**P**	**08 28 14.6**	**+0.2**
UZH				*e*			08 28 24.2	
UZH				*e*			08 31 09.8	
UZH				*e*PPP		PPP	08 33 10.0	
UZH				*e*S		**S**	**08 38 06.4**	**-4.8**
UZH				*e*			08 38 25.6	
UZH				*e*PS		**PnS**	**08 38 58.8**	**+5.9**
UZH				*e*SS		**SS**	**08 43 08.0**	**-6.3**
DAU	**Daniels Canyon**	**78.70**	**48**	*e*P		**P**	**08 28 16.3**	**+1.3**
DAU	**Daniels Canyon**	**78.70**	**48**	*e*P		**P**	**08 28 16.3**	**+1.3**
MPU	**Maple Canyon**	**78.73**	**48**	*e*P		**P**	**08 28 16.1**	**+1.1**
	comp=Z,380nm,1.0s							
MPU				LR		LR		
	comp=Z,23µm,21.0s							
OJC	**Ojcow**	**78.73**	**326**	*e*P		**P**	**08 28 15.0**	**+0.4**
OJC				*e*pP		**pP**	**08 28 16.7**	**-2.3**
OJC				*e*PcP		**sP**	**08 28 20.6**	**0.0**
OJC				*e*PP		**PP**	**08 31 12.3**	**+0.1**
OJC				*e*S		**S**	**08 38 12.7**	**+1.1**
OJC				LMZ		LR	09 02 33.8	
OJC	**Ojcow**	**78.73**	**326**	*e*P		**P**	**08 28 15.0**	**+0.4**
OJC				*e**PP		**pP**	**08 28 16.8**	**-2.3**
OJC				*e*			08 28 20.7	
OJC				*e*			08 31 12.3	
OJC				*e*S		**S**	**08 38 12.7**	**+1.1**
OJC				MLR		MLR		
	comp=Z,35µm,22.7s							
OJC	**Ojcow**	**78.73**	**326**	*e*P		**P**	**08 28 14.9**	**+0.2**
	comp=Z,1µm,1.3s							
ARCR	**ARCALIA**	**78.75**	**321**	*i*P		**P**	**08 28 15.5**	**+0.7**
BMR	**Baia Mare**	**78.78**	**322**	*i*P		**P**	**08 28 15.9**	**+1.0**
CEYT	**Ceyhan**	**78.78**	**308**	*e*P		**P**	**08 28 16.3**	**+1.2**
C26A	**Wahner Farm, P**	**78.78**	**38**	P		**P**	**08 28 15.8**	**+0.8**
	baz=314,SNR=72							
B27A	**Peters Farms,**	**78.79**	**37**	P		**P**	**08 28 15.6**	**+0.6**
	baz=314,SNR=21							
FLU	**Fool Peak**	**78.80**	**49**	*e*P		**P**	**08 28 16.7**	**+1.2**
NIG	**Nigde**	**78.81**	**309**	*e*P		**P**	**08 28 16.5**	**+0.9**
ANTO	**Ankara**	**78.82**	**312**	*e*P		**P**	**08 28 15.4**	**0.0**
ANTO				pmax		pmax		
	comp=Z,291nm,1.0s							
ANTO				MLR		MLR		
	comp=Z,18µm,19.0s							
ANTO	**Ankara**	**78.82**	**312**	*e*P		**P**	**08 28 15.4**	**0.0**
	comp=Z,290nm,1.0s							
ANTO				LR		LR		
	comp=Z,18µm,19.0s							
BR231	**Keskin MP Arra**	**78.85**	**312**	*e*P		**P**	**08 28 13.8**	**-1.8**
PGOR	**Pogoanele**	**78.86**	**318**	*i*P		**P**	**08 28 16.7**	**+1.3**
TUQ	**Turquoise Moun**	**78.88**	**54**	P		**P**	**08 28 16.7**	**+0.8**
	baz=308,SNR=179							
TAHT	**Tahtakopru-Hat**	**78.89**	**307**	*e*P		**P**	**08 28 15.9**	**+0.2**
CRVS	**Cervenica-Dubn**	**78.90**	**324**	*e*P		**P**	**08 28 16.0**	**+0.4**
CRVS				*e*			08 28 25.5	
CRVS				*e*S		**S**	**08 38 12.7**	**-0.8**
CRVS				*e*SS		**SS**	**08 43 12.0**	**-5.4**
CRVS	**Cervenica-Dubn**	**78.90**	**324**	*e*P		**P**	**08 28 16.0**	**+0.4**
CRVS				*e*PCP		**PcP**	**08 28 25.5**	**+1.2**
CRVS				*e*S		**S**	**08 38 12.7**	**-0.8**
CRVS				*e*SS		**SS**	**08 43 12.0**	**-5.4**
A28A	**Rude Farm, Bot**	**78.91**	**36**	P		**P**	**08 28 16.2**	**+0.6**
	baz=315,SNR=72							
TRPA	**Tarpa**	**78.92**	**323**	*i*P	*e*PKiKP	**P**	**08 28 16.1**	**+0.4**
BBRC	**Big Bear Solar**	**78.94**	**55**	P		**P**	**08 28 16.8**	**+0.5**
	baz=307,SNR=36							
LEVU	**Levan**	**78.94**	**49**	*e*P		**P**	**08 28 17.4**	**+1.2**
MSAB	**Monastry St. A**	**78.94**	**317**	*i*P		**P**	**08 28 16.0**	**+0.1**
ISR	**Istrita**	**78.95**	**319**	*i*P		**P**	**08 28 17.0**	**+1.0**
HEC	**Hector,Ludlow**	**78.98**	**55**	P		**P**	**08 28 17.3**	**+0.9**
	baz=308,SNR=38							
DOPR	**Dopca**	**78.98**	**320**	*i*P		**P**	**08 28 17.3**	**+1.2**
WCZ	**Waipu Caves**	**79.01**	**153**	*e*P*		**P**	**08 28 17.8**	**+1.8**
MLR	**Muntele Rosu**	**79.02**	**319**	P		**P**	**08 28 16.5**	**0.0**
	comp=Z,32nm,1.2s,baz=34,slow=4.8,SNR=41							
MLR				PKKPbc		**PKKPbc**	**08 47 08.7**	**+0.8**
	comp=Z,1.2nm,0.8s,baz=180,slow=5.1,SNR=3.5							
MLR				PKPPKP		P'P'df	08 55 08.9	-9.1
	comp=Z,0.5nm,0.5s,baz=194,slow=4.2,SNR=3.2							
MLR	**Muntele Rosu**	**79.02**	**319**	*i*P		**P**	**08 28 16.8**	**+0.4**
MLR	**Muntele Rosu**	**79.02**	**319**	*e*P		**P**	**08 28 16.5**	**0.0**
	comp=Z,558nm,1.5s							
MLR				LR		LR		
	comp=Z,62µm,21.0s							
E25A	**Miller Ranch,**	**79.04**	**39**	P		**P**	**08 28 17.2**	**+0.7**
	baz=313,SNR=60							
KARA	**Karaisali**	**79.06**	**308**	*e*P		**P**	**08 28 17.5**	**+0.8**
NIE	**Niedzica**	**79.08**	**325**	*e*P		**P**	**08 28 17.4**	**+0.8**
NIE				*e*pP		**pP**	**08 28 19.5**	**-1.5**
NIE				*e*PcP		**sP**	**08 28 22.9**	**+0.3**
NIE				*e*PP		**PP**	**08 31 15.5**	**+0.4**
NIE				*e*S		**S**	**08 38 18.3**	**+2.9**
NIE				LMZ		LR	08 55 40.1	
NIE	**Niedzica**	**79.08**	**325**	*e*P		**P**	**08 28 17.4**	**+0.8**
NIE				*e**PP		**pP**	**08 28 19.5**	**-1.5**
NIE				*e*			08 28 22.9	
NIE				*e*			08 31 15.6	
NIE				*e*S		**S**	**08 38 18.4**	**+3.0**
DWU	**Dry Willow Pea**	**79.09**	**50**	*

KECS	**Kecovo**	**79.65**	**324**	*e*P		**P**	**08 28 20.0**	**+0.3**
KECS				*e*			08 28 29.9	
KECS				*e*			08 31 21.4	
KECS					pmax	pmax		
	comp=Z,75nm,1.2s							
KECS	**Kecovo**	**79.65**	**324**	*e*P		**P**	**08 28 20.0**	**+0.3**
KECS				*e*PCP		**PcP**	**08 28 29.9**	**+2.4**
KECS				*e*PP		**PP**	**08 31 21.4**	**+1.5**
C28A	**Hausauer Farms**	**79.69**	**37**	P		**P**	**08 28 20.5**	**+0.6**
	baz=315,SNR=26							
BELC	**Belle Mtn. Jos**	**79.70**	**55**	P		**P**	**08 28 20.8**	**+0.3**
	baz=308,SNR=64							
TAU	**Tasmania Unive**	**79.72**	**175**	*e*P		**P**	**08 28 21.3**	**+1.5**
TAU					pmax	pmax		
	comp=Z,278nm,1.3s							
TAU					MLR	MLR		
	comp=Z,12µm,21.0s							
TAU	**Tasmania Unive**	**79.72**	**175**	*e*P		**P**	**08 28 21.3**	**+1.5**
	comp=Z,278nm,1.3s							
TAU					LR	LR		
	comp=Z,12µm,21.0s							
OKC	**Ostrava-Krasne**	**79.75**	**326**	⇓*i*P		**P**	**08 28 20.3**	**+0.1**
OKC				*e*pP		**pP**	**08 28 23.0**	**-1.6**
OKC				*e*PP		**PP**	**08 31 22.2**	**+1.6**
OKC				*e*S		**S**	**08 38 21.4**	**-1.0**
OKC					AMS	AMS	09 09 20.0	
	comp=Z,46µm,16.7s							
OKC	**Ostrava-Krasne**	**79.75**	**326**	⇓*i*P		**P**	**08 28 20.3**	**+0.1**
OKC				*e*			08 28 23.0	
OKC				*e*			08 31 22.2	
OKC				*e*S		**S**	**08 38 21.4**	**-1.0**
OKC					MLR	MLR		
	comp=Z,46µm,16.7s							
PRD	**Provadia**	**79.77**	**317**	*i* P		**P**	**08 28 20.8**	**+0.4**
SPNC	**Sapanca-Adapaz**	**79.77**	**314**	*e*P		**P**	**08 28 20.1**	**-0.3**
DRGR		**79.77**	**322**	⇑*i*P		**P**	**08 28 20.2**	**-0.3**
ARR	**Arges**	**79.78**	**320**	⇑*i*P		**P**	**08 28 22.0**	**+1.5**
P18A	**Preston Nutter**	**79.80**	**48**	*e*P		**P**	**08 28 22.1**	**+1.0**
	comp=Z,509nm,1.2s							
P18A					LR	LR		
	comp=Z,28µm,22.0s							
A30A	**Hoffart Farm,**	**79.80**	**35**	P		**P**	**08 28 20.9**	**+0.4**
	baz=316,SNR=88							
GULT	**Gulveren**	**79.81**	**313**	*e*P		**P**	**08 28 20.9**	**+0.1**
KSP	**Ksiaz**	**79.82**	**328**	*e*P		**P**	**08 28 20.9**	**+0.4**
KSP				*e*pP		**pP**	**08 28 22.6**	**-2.3**
KSP				*e*PcP		**sP**	**08 28 26.6**	**+0.1**
KSP				*e*PP		**PP**	**08 31 21.3**	**+0.1**
KSP				*e*S		**S**	**08 38 25.7**	**+2.6**
KSP					LMZ	LR	09 01 30.4	
KSP	**Ksiaz**	**79.82**	**328**	*e*P		**P**	**08 28 21.0**	**+0.4**
KSP				*e**PP		**pP**	**08 28 22.6**	**-2.3**
KSP				*e*			08 28 26.6	
KSP				*e*			08 31 21.3	
KSP				*e*S		**S**	**08 38 25.7**	**+2.6**
SVRH	**Sivrihisar-ESK**	**79.85**	**312**	*e*P		**P**	**08 28 21.0**	**-0.1**
F26A	**Lodgepole**	**79.86**	**39**	P		**P**	**08 28 21.2**	**+0.3**
	baz=314,SNR=102							
KNB	**Kanab**	**79.88**	**51**	*e*P		**P**	**08 28 22.8**	**+1.4**
KNB					pmax	pmax		
	comp=Z,495nm,1.1s							
KNB	**Kanab**	**79.88**	**51**	*e*P		**P**	**08 28 22.8**	**+1.4**
	comp=Z,495nm,1.1s							
G25A	**Newell**	**79.92**	**40**	P		**P**	**08 28 21.4**	**+0.1**
	baz=313,SNR=49							
PKCU	**Pink Cliffs**	**79.93**	**51**	*e*P		**P**	**08 28 23.2**	**+1.4**
	comp=Z,243nm,1.0s							
ULM	**Lac du Bonnet**	**79.93**	**33**	P		**P**	**08 28 20.8**	**-0.4**
	comp=Z,58nm,0.8s,baz=318,slow=6.6,SNR=42							
ULM				PKKPbc		**PKKPbc**	**08 47 05.1**	**-0.8**
	comp=Z,5.2nm,0.9s,baz=123,slow=2.9,SNR=5.8							
ULM				PKPPKP		**P'P'df**	**08 55 10.1**	**-6.3**
	comp=Z,2.6nm,0.8s,baz=152,slow=1.7,SNR=3.2							
ULM					LR	LR	09 04 51.0	
	comp=Z,19µm,20.8s,baz=328,slow=36							
ULM	**Lac du Bonnet**	**79.93**	**33**	*e*P		**P**	**08 28 20.9**	**-0.3**
ULM					pmax	pmax		
	comp=Z,312nm,1.0s							
ULM					MLR	MLR		
	comp=Z,19µm,21.0s							
ULM	**Lac du Bonnet**	**79.93**	**33**	*e*P		**P**	**08 28 20.9**	**-0.3**
	comp=Z,312nm,1.0s							
ULM					LR	LR		
	comp=Z,19µm,21.0s							
SRU	**San Rafael Swe**	**79.96**	**48**	*e*P		**P**	**08 28 22.6**	**+0.8**
SRU					pmax	pmax		
	comp=Z,380nm,1.0s							
SRU					MLR	MLR		
	comp=Z,24µm,22.0s							
SRU	**San Rafael Swe**	**79.96**	**48**	*e*P		**P**	**08 28 22.6**	**+0.8**
	comp=Z,380nm,1.0s							
SRU					LR	LR		
	comp=Z,24µm,22.0s							
D28A	**Regan**	**79.97**	**37**	P		**P**	**08 28 21.8**	**+0.3**
	baz=315,SNR=17							
K22A	**Casper**	**79.97**	**44**	P		**P**	**08 28 22.1**	**+0.3**
	baz=312,SNR=82							
K22A	**Casper**	**79.97**	**44**	*e*P		**P**	**08 28 22.0**	**+0.3**
	comp=Z,975nm,1.6s							
K22A					LR	LR		
	comp=Z,12µm,21.0s							
MDND	**Maddock**	**79.97**	**36**	P		**P**	**08 28 21.9**	**+0.5**
	baz=315,SNR=24							
MDND	**Maddock**	**79.97**	**36**	*e*P		**P**	**08 28 22.4**	**+1.0**
	comp=Z,1µm,1.1s							
MDND					LR	LR		
	comp=Z,11µm,22.0s							
KIZT	**Kizilcal**	**80.00**	**311**	*e*P		**P**	**08 28 21.6**	**-0.3**
BTU	**Barney Top**	**80.00**	**50**	*e*P		**P**	**08 28 24.0**	**+1.7**
E27A	**Carson**	**80.01**	**38**	P		**P**	**08 28 22.4**	**+0.7**
	baz=314,SNR=102							
EKU	**East Kanab**	**80.05**	**51**	*e*P		**P**	**08 28 23.7**	**+1.4**
HRT	**Hereke**	**80.05**	**314**	*e*P		**P**	**08 28 20.1**	**-1.9**
BAR	**Barrett**	**80.06**	**57**	*e*P		**P**	**08 28 22.9**	**+0.6**
	comp=Z,547nm,1.5s							
BAR					LR	LR		
	comp=Z,46µm,21.0s							
MORC	**Moravsky Berou**	**80.06**	**327**	*e*P		**P**	**08 28 22.2**	**+0.3**
MORC					pmax	pmax		
	comp=Z,2µm,1.4s							
MORC					MLR	MLR		
	comp=Z,199µm,19.0s							
MORC	**Moravsky Berou**	**80.06**	**327**	*e*P		**P**	**08 28 22.2**	**+0.3**
	comp=Z,2µm,1.4s							
MORC					LR	LR		
	comp=Z,199µm,19.0s							
RAYN	**Ar Rayn**	**80.07**	**292**	*e*P		**P**	**08 28 22.2**	**-0.3**
	comp=Z,690nm,1.5s							
RAYN					LR	LR		
	comp=Z,39µm,20.0s							
MMU	**Miners Mountai**	**80.08**	**49**	*e*P		**P**	**08 28 23.9**	**+1.3**
MONP2	**Monument Peak**	**80.10**	**56**	P		**P**	**08 28 23.4**	**+0.8**
	baz=308,SNR=47							
NEE2	**Needles Airpor**	**80.13**	**54**	P		**P**	**08 28 23.3**	**+0.7**
	baz=308							
LADK	**Ladik-KONYA**	**80.14**	**311**	*e*P		**P**	**08 28 22.5**	**-0.1**
B30A	**Myrvik Farm, E**	**80.14**	**35**	P		**P**	**08 28 22.5**	**+0.2**
	baz=316,SNR=97							
IRM	**Iron Mountain**	**80.17**	**55**	P		**P**	**08 28 23.4**	**+0.6**
	baz=308,SNR=114							
LOT	**Lotru**	**80.17**	**320**	*e*P		**P**	**08 28 22.4**	**-0.3**
LOT	**Lotru**	**80.17**	**320**	⇑*i*P		**P**	**08 28 23.0**	**+0.3**
F27A	**Lemmon**	**80.17**	**39**	P		**P**	**08 28 22.9**	**+0.3**
	baz=314,SNR=111							
HUMR	**Humele**	**80.17**	**319**	⇑*i*P		**P**	**08 28 24.0**	**+1.4**
DPC	**Dobruska-Polom**	**80.17**	**327**	⇓*i*P		**P**	**08 28 23.0**	**+0.5**
DPC				*e*pP		**pP**	**08 28 25.6**	**-1.3**
DPC				*e*PP		**PP**	**08 31 26.4**	**+2.2**
DPC				*e*S		**S**	**08 38 28.0**	**+1.0**
DPC					AMS	AMS	09 11 00.0	
	comp=Z,48µm,16.2s							
DPC	**Dobruska-Polom**	**80.17**	**327**	⇓*i*P		**P**	**08 28 23.0**	**+0.5**
DPC				*e*			08 28 25.6	
DPC				*e*			08 31 26.4	
DPC				*e*S		**S**	**08 38 28.0**	**+1.0**
DPC					MLR	MLR		
	comp=Z,48µm,16.2s							
KRLC	**Kraliky**	**80.18**	**327**	⇓*e*P		**P**	**08 28 22.9**	**+0.3**
KRLC				*e*PP		**PP**	**08 31 23.9**	**-0.3**
KRLC	**Kraliky**	**80.18**	**327**	*e*P		**P**	**08 28 22.9**	**+0.3**
KRLC				*e*			08 31 23.9	
UPC	**Upice**	**80.19**	**328**	⇓*i*P		**P**	**08 28 23.0**	**+0.4**
UPC				*e*pP		**pP**	**08 28 25.4**	**-1.6**
UPC				*e*S		**S**	**08 38 28.0**	**+1.0**
UPC					AMS	AMS	09 09 30.0	
	comp=Z,66µm,20.4s							
UPC	**Upice**	**80.19**	**328**	⇓*i*P		**P**	**08 28 23.0**	**+0.4**
UPC				*e*			08 28 25.4	
UPC				*e*S		**S**	**08 38 28.0**	**+1.0**
UPC					MLR	MLR		
	comp=Z,66µm,20.4s							
H25A	**Fruitdale**	**80.22**	**41**	P		**P**	**08 28 23.0**	**+0.1**
	baz=313,SNR=54							
ISK	**Istanbul-Kandi**	**80.24**	**314**	*e*P		**P**	**08 28 23.0**	**0.0**
ISK	**Istanbul-Kandi**	**80.24**	**314**	P		**P**	**08 28 22.4**	**-0.6**
ISK	**Istanbul-Kandi**	**80.24**	**314**	P		**P**	**08 28 22.4**	**-0.6**
ISK	**Istanbul-Kandi**	**80.24**	**314**	*e*P		**P**	**08 28 22.4**	**-0.6**
ADVT	**Abdulvahap**	**80.26**	**314**	*e*P		**P**	**08 28 23.2**	**0.0**
BC3	**Big Chuckawall**	**80.27**	**55**	P		**P**	**08 28 24.1**	**+0.6**
	baz=308,SNR=111							
G26A	**Maurine**	**80.28**	**40**	P		**P**	**08 28 23.5**	**+0.3**
	baz=314,SNR=106							
KONT	**Konya--Tatoy**	**80.30**	**310**	*e*P		**P**	**08 28 23.6**	**+0.2**
DEV	**Deva**	**80.31**	**321**	⇑*i*P		**P**	**08 28 24.1**	**+0.8**
A31A	**Linda, St. Vin**	**80.31**	**34**	P		**P**	**08 28 22.7**	**-0.5**
	baz=317							
RSSD	**Black Hills**	**80.33**	**41**	P		**P**	**08 28 24.0**	**+0.2**
	baz=313							
RSSD	**Black Hills**	**80.33**	**41**	*e*P		**P**	**08 28 23.9**	**+0.2**
RSSD					pmax	pmax		
	comp=Z,917nm,2.0s							
RSSD					MLR	MLR		
	comp=Z,23µm,22.0s							
RSSD	**Black Hills**	**80.33**	**41**	*e*P		**P**	**08 28 23.9**	**+0.1**
	comp=Z,917nm,2.0s							
RSSD					LR	LR		
	comp=Z,23µm,22.0s							
PSZ	**Piszkesteto**	**80.33**	**324**	⇓*e*pPKiKP		**P**	**08 28 24.0**	**+0.5**
PSZ	**Piszkesteto**	**80.33**	**324**	*e*P		**P**	**08 28 23.9**	**+0.5**
PSZ					pmax	pmax		
	comp=Z,2µm,1.6s							
PSZ					MLR	MLR		
	comp=Z,41µm,19.0s							
PSZ	**Piszkesteto**	**80.33**	**324**	*e*P		**P**	**08 28 23.9**	**+0.4**
	comp=Z,2µm,1.6s							
PSZ					LR	LR		
	comp=Z,41µm,19.0s							
E28A	**Huff**	**80.34**	**38**	P		**P**	**08 28 23.9**	**+0.5**
	baz=315,SNR=31							
MKAZ	**Moumakai**	**80.34**	**153**	P*		**P**	**08 28 24.6**	**+1.3**
CAVI	**Cavuskoy**	**80.35**	**313**	*e*P		**P**	**08 28 23.8**	**+0.2**
BIGH	**Upper Bighouse**	**80.39**	**342**	⇓*e*P		**P**	**08 28 23.9**	**+0.5**
BIGH					AMS	AMS	09 03 04.7	
	comp=Z,41µm,21.7s							
W13A	**Hualapai Mount**	**80.40**	**53**	*e*P		**P**	**08 28 24.9**	**+0.6**
	comp=Z,267nm,1.3s							
W13A					LR	LR		
	comp=Z,15µm,20.0s							
VYHS	**Vyhne**	**80.41**	**325**	*e*P		**P**	**08 28 24.1**	**+0.3**
VYHS				*e*			08 28 26.6	
VYHS				*e*			08 28 32.6	
VYHS				*e*			08 31 31.0	
VYHS				*e*S		**S**	**08 38 26.6**	**-2.9**
VYHS				*e*SS		**SS**	**08 43 47.0**	**+7.0**
VYHS					pmax	pmax		
	comp=Z,677nm,2.0s							
VYHS					MLR	MLR		
	comp=Z,29µm,16.5s							
VYHS	**Vyhne**	**80.41**	**325**	*e*P		**P**	**08 28 24.1**	**+0.3**
VYHS				*e*			08 28 26.6	
VYHS				*e*PCP		**PcP**	**08 28 32.6**	**+1.8**
VYHS				*e*PP		**PP**	**08 31 31.0**	**+4.8**
VYHS				*e*S		**S**	**08 38 26.6**	**-2.9**
VYHS				*e*SS		**SS**	**08 43 47.0**	**+7.0**
VYHS				*e*L		L	09 07 37.2	
MLA1	**Latheron**	**80.42**	**342**	*e*P		**P**	**08 28 23.5**	**-0.1**
IBP	**Imperial Bould**	**80.46**	**56**	P		**P**	**08 28 25.4**	**+0.9**
	baz=308,SNR=46							
B31A	**Greenbush Farm**	**80.47**	**35**	P		**P**	**08 28 24.1**	**0.0**
	baz=317,SNR=39							
SWSC	**Sam W. Stewart**	**80.48**	**56**	P		**P**	**08 28 25.0**	**+0.6**
	baz=308,SNR=44							
IZI	**Iznik**	**80.48**	**314**	*e*P		**P**	**08 28 27.3**	**+2.9**
SZH	**Strazhica**	**80.52**	**318**	*i* P		**P**	**08 28 23.7**	**-0.8**
D29A	**Pettibone, Tap**	**80.53**	**37**	P		**P**	**08 28 24.7**	**+0.2**
	baz=315,SNR=12							
G27A	**Dupree**	**80.56**	**39**	P		**P**	**08 28 25.1**	**+0.4**
	baz=314,SNR=111							
I25A	**Rochford**	**80.56**	**41**	P		**P**	**08 28 24.8**	**-0.1**
	baz=313,SNR=60							
IKL	**Isikli**	**80.56**	**308**	*e*P		**P**	**08 28 24.6**	**-0.1**
U15A	**North Rim**	**80.58**	**51**	*e*P		**P**	**08 28 26.2**	**+0.9**
	comp=Z,788nm,1.4s							
U15A					LR	LR		
	comp=Z,27µm,21.0s							
C30A	**Mose, Pekin**	**80.61**	**36**	P		**P**	**08 28 24.8**	**-0.1**
	baz=316,SNR=41							
A32A	**Rocking H Ranc**	**80.64**	**34**	P		**P**	**08 28 24.6**	**-0.4**
	baz=317,SNR=62							
O20A	**White River Ci**	**80.65**	**46**	P		**P**	**08 28 25.8**	**+0.3**
	baz=311,SNR=107							
O20A	**White River Ci**	**80.65**	**46**	*e*P		**P**	**08 28 25.9**	**+0.4**
	comp=Z,328nm,1.2s							
O20A					LR	LR		
	comp=Z,18µm,21.0s							
H26A	**Fairpoint**	**80.65**	**40**	P		**P**	**08 28 25.6**	**+0.3**
	baz=314,SNR=96							
RAR	**Rarotonga**	**80.65**	**125**	PFAKE			08 28 40.0	+15
RAR					LR	LR		
	comp=Z,32µm,21.0s							
SIRR	**Siria**	**80.66**	**322**	⇓*i*P		**P**	**08 28 25.7**	**+0.5**
ARMT	**Armutlu**	**80.68**	**314**	*e*P		**P**	**08 28 25.2**	**-0.2**
EREN	**Erenkoy**	**80.70**	**308**	*e*P		**P**	**08 28 24.8**	**-0.7**
JMB	**Yambol**	**80.70**	**317**	*i* P		**P**	**08 28 25.5**	**0.0**
GZR	**Gura Zlata**	**80.71**	**321**	⇑*i*P		**P**	**08 28 25.8**	**+0.3**
PDMCI	**Parker Dam,Lak**	**80.73**	**54**	P		**P**	**08 28 26.6**	**+0.9**
	baz=309,SNR=78							
BRG	**Berggiesshubel**	**80.78**	**329**	*i* P		**P**	**08 28 25.8**	**+0.1**
	comp=Z,229nm,1.1s							
BRG				*i*			08 28 31.7	
	comp=Z,335nm,1.2s							
BRG					PP	**PP**	**08 31 28.0**	**-1.1**
BRG					S	**S**	**08 38 36.0**	**+2.8**
BRG					SS	**SS**	**08 43 50.0**	**+4.7**
BRG				*e*PKPPKP		**P'P'df**	**08 55 08.8**	**-6.1**
	comp=Z,15nm,1.3s							
	comp=N,19µm,14.1s							
	comp=E,41µm,14.8s							
	comp=Z,42µm,14.9s							
BRG	**Berggiesshubel**	**80.78**	**329**	*i* P		**P**	**08 28 25.8**	**+0.1**
BRG				*i*			08 28 31.7	
BRG							08 31 28.0	
BRG					S	**S**	**08 38 36.0**	**+2.8**
BRG					SS	**SS**	**08 43 50.0**	**+4.7**
BRG					pmax	pmax		
	comp=Z,229nm,1.1s							
BRG					MLR	MLR		
	comp=N,19µm,14.1s							
BRG					MLR	MLR		
	comp=E,41µm,14.8s							
BRG					MLR	MLR		
	comp=Z,42µm,14.9s							
PVCC	**Panska Ves**	**80.78**	**328**	⇓*i*P		**P**	**08 28 26.2**	**+0.5**
PVCC					AMS	AMS	09 09 10.0	
	comp=Z,56µm,18.9s							
PVCC	**Panska Ves**	**80.78**	**328**	⇓*i*P		**P**	**08 28 26.2**	**+0.5**
PVCC					MLR	MLR		
	comp=Z,56µm,18.9s							
F28A	**McLaughlin**	**80.80**	**38**	P		**P**	**08 28 26.3**	**+0.3**
	baz=315,SNR=83							
Y12C	**Blythe**	**80.82**	**55**	P		**P**	**08 28 27.3**	**+1.0**
	baz=309,SNR=54							
Y12C	**Blythe**	**80.82**	**55**	*e*P		**P**	**08 28 27.2**	**+1.0**
	comp=Z,513nm,1.2s							
Y12C					LR	LR		
	comp=Z,51µm,22.0s							
VRAC	**Vranov**	**80.83**	**327**	P		**P**	**08 28 26.5**	**+0.5**
	comp=Z,115nm,0.9s,baz=47,slow=5.5,SNR=44							
VRAC					PP	**PP**	**08 31 27.9**	**-1.6**
	comp=Z,46nm,1.1s,baz=49,slow=10,SNR=3.0							
VRAC					PKPPKP	**P'P'df**	**08 55 07.7**	**-7.1**
	comp=Z,1.9nm,0.4s,baz=214,slow=3.6,SNR=4.7							
VRAC	**Vranov**	**80.83**	**327**	⇓*i*P		**P**	**08 28 26.5**	**+0.5**
RSC	**Scourie**	**80.83**	**343**	*e*P		**P**	**08 28 26.1**	**+0.3**
CLL	**Collm**	**80.83**	**330**	⇓*i*P		**P**	**08 28 25.7**	**-0.3**
	comp=Z,435nm,1.1s							
CLL				*e*Pmax			08 28 27.0	
CLL				*i*			08 28 28.4	
	comp=Z,435nm,1.1s							
CLL				*i*			08 28 31.3	
CLL				*i*			08 28 34.4	
CLL				*i*			08 28 37.7	
	comp=Z,678nm,1.2s							
CLL				*i* PP		**PP**	**08 31 27.2**	**-2.3**
CLL				*i*			08 31 33.8	
CLL				*e*S		**S**	**08 38 32.0**	**-1.7**
CLL				*e*PS		**PnS**	**08 39 26.0**	**+6.4**
CLL				*e*			08 40 30.0	
CLL				*e*SS		**SS**	**08 43 55.0**	**+8.9**
CLL				*e*(PKKP)			08 47 03.0	
CLL				*e*SSS		SSS	08 47 24.0	
CLL				*e*SSSS			08 50 00.0	
CLL				*e*PKPPKPdf		**P'P'df**	**08 55 08.0**	**-6.8**
CLL					LmH		09 06 00.0	
	comp=N,31µm,18.1s							
CLL					LmH		09 06 00.0	
	comp=E,41µm,19.2s							
CLL					Lmax		09 07 00.0	
CLL					LmV		09 09 00.0	
	comp=Z,40µm,18.5s							
CLL	**Collm**	**80.83**	**330**	⇓*i*P		**P**	**08 28 25.7**	**-0.3**
CLL				*i*			08 28 28.4	
CLL				*e*S		**S**	**08 38 32.0**	**-1.7**
CLL					pmax	pmax		
	comp=Z,435nm,1.1s							
CLL					MLR	MLR		
	comp=Z,40µm,18.5s							
CLL	**Collm**	**80.83**	**330**	*e*P		**P**	**08 28 25.4**	**-0.6**
	comp=Z,852nm,1.3s							
CLL					LR	LR		
	comp=Z,49µm,18.0s							
E29A	**Napoleon**	**80.86**	**37**	P		**P**	**08 28 26.3**	**+0.1**
	baz=316,SNR=21							
C31A	**Landman Farms,**	**80.89**	**36**	P		**P**	**08 28 26.2**	**-0.2**
	baz=317,SNR=48							
D30A	**Buchanan**	**80.90**	**37**	P		**P**	**08 28 26.3**	**-0.2**
	baz=316,SNR=96							
J25A	**Sunshine Ranch**	**80.95**	**42**	P		**P**	**08 28 26.8**	**-0.1**
	baz=313,SNR=32							
CRLT	**Corlu**	**80.95**	**315**	*e*P		**P**	**08 28 27.6**	**+0.8**
MVH1	**Achvaich**	**80.96**	**342**	*e*P		**P**	**08 28 25.9**	**-0.6**
ASF	**Jabal al Asfar**	**81.00**	**303**	P		**P**	**08 28 27.6**	**+0.3**
	comp=Z,44nm,1.0s,baz=18,slow=1.8,SNR=19							
ASF					PP	**PP**	**08 31 33.6**	**+2.0**
	comp=Z,38nm,1.0s,baz=47,slow=5.6,SNR=3.8							
ASF					PKPPKP	**P'P'df**	**08 55 10.8**	**-2.7**
	comp=Z,2.0nm,0.9s,baz=301,slow=12,SNR=2.0							
H27A	**Howes**	**81.00**	**40**	P		**P**	**08 28 27.5**	**+0.4**
	baz=314,SNR=166							
SRE	**Strehaia**	**81.00**	**320**	⇑*i*P		**P**	**08 28 28.1**	**+1.1**
B32A	**Ashes, Strandq**	**81.00**	**35**	P		**P**	**08 28 26.4**	**-0.5**
	baz=317,SNR=100							
SHUT	**Suhut-Afyon**	**81.00**	**312**	*e*P		**P**	**08 28 27.9**	**+0.6**
I26A	**New Underwood**	**81.01**	**41**	P		**P**	**08 28 27.7**	**+0.5**
	baz=314,SNR=82							
TOZ	**Tahuroa Road**	**81.02**	**153**	P*		**P**	**08 28 28.4**	**+1.5**
EDRB	**Edirne**	**81.03**	**316**	*e*P		**P**	**08 28 28.0**	**+0.8**
EDRB	**Edirne**	**81.03**	**316**	P		**P**	**08 28 25.4**	**-1.8**
EDRB	**Edirne**	**81.03**	**316**	P		**P**	**08 28 25.4**	**-1.8**
SMOL	**Smolenice**	**81.04**	**326**	*e*P		**P**	**08 28 29.2**	**+2.0**
SMOL				*e*			08 28 30.7	
SMOL	**Smolenice**	**81.04**	**326**	*e*P		**P**	**08 28 29.2**	**+2.0**
SMOL				*e*			08 28 30.7	
BUD	**Budapest**	**81.06**	**324**	⇓*e*sPKiKP		**P**	**08 28 27.6**	**+0.4**
GLA	**Glamis**	**81.06**	**55**	P		**P**	**08 28 28.7**	**+1.1**
	baz=309,SNR=82							
GLA	**Glamis**	**81.06**	**55**	*e*P		**P**	**08 28 28.5**	**+0.9**
GLA					pmax	pmax		
	comp=Z,432nm,1.0s							
GLA					MLR	MLR		
	comp=Z,58µm,22.0s							
GLA	**Glamis**	**81.06**	**55**	*e*P		**P**	**08 28 28.5**	**+0.9**
	comp=Z,432nm,1.0s							
GLA					LR	LR		
	comp=Z,58µm,22.0s							
TVSB	**Tavsanli**	**81.07**	**313**	*e*P		**P**	**08 28 27.8**	**+0.2**
A33A	**Warroad**	**81.12**	**34**	P		**P**	**08 28 27.1**	**-0.4**
	baz=318,SNR=66							
BZS	**Buzias**	**81.14**	**322**	⇑*i*P		**P**	**08 28 28.0**	**+0.3**
GOPC	**GO Pecny, Ondr**	**81.15**	**328**	⇓*e*P		**P**	**08 28 28.1**	**+0.3**
GOPC				*e*S		**S**	**08 38 38.9**	**+1.7**
GOPC					AMS	AMS	09 11 40.0	
	comp=Z,50µm,16.8s							
GOPC	**GO Pecny, Ondr**	**81.15**	**328**	*e*P		**P**	**08 28 28.1**	**+0.3**
GOPC				*e*S		**S**	**08 38 38.9**	**+1.7**
GOPC					MLR	MLR		
	comp=Z,50µm,16.8s							
KCTX	**Karacabey (Bur**	**81.17**	**314**	*e*P		**P**	**08 28 28.1**	**+0.1**
PRA	**Prague**	**81.19**	**328**	⇓*e*P		**P**	**08 28 28.4**	**+0.5**
PRA				*e*pP		**pP**	**08 28 30.9**	**-1.4**
PRA				*e*PP		**PP**	**08 31 31.6**	**-0.9**
PRA				*e*S		**S**	**08 38 38.8**	**+1.4**
PRA					AMS	AMS	09 11 20.0	
	comp=Z,53µm,16.2s							
PRA	**Prague**	**81.19**	**328**	*e*P		**P**	**08 28 28.4**	**+0.5**
PRA				*e*			08 28 30.9	
PRA				*e*			08 31 31.6	
PRA				*e*S		**S**	**08 38 38.8**	**+1.4**
PRA					MLR	MLR		
	comp=Z,53µm,16.2s							
PV09	**Paradox Valley**	**81.19**	**48**	*e*P		**P**	**08 28 29.5**	**+1.0**
PRU	**Pruhonice**	**81.20**	**328**	⇓*i*P		**P**	**08 28 28.2**	**+0.2**
PRU				*e*PP		**PP**	**08 31 34.3**	**+1.7**
PRU				*e*S		**S**	**08 38 38.2**	**+0.6**
PRU					AMS	AMS	09 11 00.0	
	comp=Z,51µm,17.1s							
PRU	**Pruhonice**	**81.20**	**328**	⇓*i*P		**P**	**08 28 28.2**	**+0.2**
PRU				*e*			08 31 34.3	
PRU				*e*

ISP MLR MLR
comp=Z,208nm,1.1s

ISP Isparta 81.49 311 *e*P **P 08 28 32.3 +2.4**
comp=Z,23µm,21.0s

ISP LR LR
comp=Z,208nm,1.1s

CSKK Cs‡kako 81.50 324⇓*e*P **P 08 28 30.6 +1.0**
H28A Mission Ridge 81.51 39 P **P 08 28 30.5 +0.7**
baz=315,SNR=140

B33A Robert and Kas 81.52 34 P **P 08 28 29.2 -0.6**
baz=318,SNR=27

RKY Sarkoy-Tekirda 81.56 315 *e*P **P 08 28 29.5 -0.6**
RRH Rhenigidale 81.57 343 *e*P **P 08 28 30.4 +0.6**
CSS Mathiatis 81.59 308 *e*P **P 08 28 30.9 +0.6**
CSS Mathiatis 81.59 308 P **P 08 28 27.2 -3.1**
CSS Mathiatis 81.59 308 *e*P **P 08 28 29.6 -0.7**
comp=Z,168nm,1.5s

CSS LR LR
comp=Z,7µm,20.0s

KAC Achnashellach 81.61 342 *e*P **P 08 28 30.1 +0.1**
MPEP Malo Peshtene 81.63 319 *i*P **P 08 28 30.6 +0.2**
MDVR Moldovita 81.68 321⇑*i*P **P 08 28 30.9 +0.2**
PKST T"s 81.68 325⇓*e*sPKiKP **P 08 28 30.6 0.0**
F30A Leola 81.68 38 P **P 08 28 30.5 -0.2**
baz=316

BCK Bucak 81.69 311 *e*P **P 08 28 29.5 -1.4**
KRBG Karabiga-Canak 81.69 315 *e*P **P 08 28 32.0 +1.3**
Y14A Wickenburg 81.69 54 *e*P **P 08 28 31.8 +0.8**
comp=Z,1µm,1.1s

Y14A LR LR
comp=Z,61µm,21.0s

G29A Hoven 81.70 38 P **P 08 28 30.8 +0.1**
baz=315,SNR=20

D32A Dogwood Acres, 81.70 36 P **P 08 28 30.2 -0.5**
baz=317,SNR=12

E31A Nome 81.71 36 P **P 08 28 30.7 0.0**
baz=317,SNR=63

WUAZ Wupatki 81.73 52 P **P 08 28 32.6 +1.3**
baz=310,SNR=192

WUAZ Wupatki 81.73 52 *e*P **P 08 28 32.6 +1.3**
comp=Z,492nm,1.1s

WUAZ LR LR
comp=Z,31µm,22.0s

PV01 Paradox Valley 81.76 48 *e*P **P 08 28 32.2 +0.7**
KHL Karahalli 81.77 312 *e*P **P 08 28 31.4 +0.1**
LEF Lefka 81.77 308 *e*P **P 08 28 29.5 -1.7**
B34A Aery, Baudette 81.78 34 P **P 08 28 30.4 -0.7**
baz=319,SNR=28

C33A Trail 81.82 35 P **P 08 28 30.6 -0.7**
baz=318,SNR=38

KPL Plockton 81.85 342⇓*e*P **P 08 28 31.7 +0.5**
KPL AMS AMS 09 03 32.5
comp=Z,24µm,23.2s

BALB Balikesir 81.86 314 *e*P **P 08 28 31.8 +0.2**
EDU Dundee 81.88 341 *e*P **P 08 28 31.1 -0.3**
NKC Novy Kostel 81.89 329⇓*e*P **P 08 28 31.7 +0.1**
NKC *e*pP **pP 08 28 34.4 -1.6**
NKC *e*S **S 08 38 42.4 -2.4**
NKC AMS AMS 09 08 00.0
comp=Z,41µm,14.9s

NKC Novy Kostel 81.89 329 *e*P **P 08 28 31.7 +0.1**
NKC *e* 08 28 34.4
NKC *e*S **S 08 38 42.4 -2.4**
NKC MLR MLR
comp=Z,41µm,14.9s

KDZ Kurdzhali 81.89 317 *i*P **P 08 28 32.4 +0.6**
KSB Sheil Bridge 81.91 342 *e*P **P 08 28 31.5 0.0**
I28A Midland 81.91 40 P **P 08 28 32.1 +0.2**
baz=315,SNR=184

113A Mohawk Valley, 81.93 55 *e*P **P 08 28 32.8 +0.6**
comp=Z,236nm,1.1s

113A LR LR
comp=Z,50µm,22.0s

MXZ Matakaoa Point 81.94 151 *e*P **P 08 28 33.4 +1.7**
comp=Z,156nm,1.2s

MXZ LR LR
comp=Z,28µm,21.0s

ERIK Erikli-Kesan 81.95 315 *e*P **P 08 28 32.5 +0.4**
H29A Onida 81.95 39 P **P 08 28 32.4 +0.3**
baz=315,SNR=62

PGB Panagyurishte 81.96 318 *i*P **P 08 28 32.2 0.0**
J27A Elkhorn Farm, 82.00 41 P **P 08 28 33.2 +0.8**
baz=314,SNR=121

ANTB Antalya 82.01 310 *e*P **P 08 28 29.5 -3.0**
SMCO Snowmass 82.02 47 *e*P **P 08 28 33.7 +0.7**
comp=Z,297nm,1.2s

SMCO LR LR
comp=Z,15µm,20.0s

F31A Hecla 82.04 37 P **P 08 28 32.5 0.0**
baz=316,SNR=40

SOP Sopron 82.05 326⇓*e*P **P 08 28 33.2 +0.7**
ALN Alexandroupoli 82.06 316 *e*P **P 08 28 32.7 0.0**
ALN Alexandroupoli 82.06 316 P **P 08 28 30.2 -2.5**
ALN Alexandroupoli 82.06 316 P **P 08 28 30.2 -2.5**
ALN Alexandroupoli 82.06 316 P **P 08 28 30.2 -2.5**
PKS9 Tamasi 82.06 324⇓*e*P **P 08 28 32.3 -0.3**
E32A Braaten, Kindr 82.07 36 P **P 08 28 32.4 -0.3**
baz=317

URZ Urewera 82.09 152 P **P 08 28 31.8 -0.7**
comp=Z,46nm,0.9s,baz=320,slow=1.7,SNR=4.9

URZ Urewera 82.09 152 P* **P 08 28 31.8 -0.7**
URZ Urewera 82.09 152 *e*P **P 08 28 33.6 +1.1**
URZ LR LR
comp=Z,16µm,21.0s

ENEZ Enez 82.11 316 P **P 08 28 32.2 -0.7**
NRS Narsarsuaq 82.11 3⇓*i*P **P 08 28 32.2 -0.3**
NRS Narsarsuaq 82.11 3⇓*i*P **P 08 28 32.2 -0.3**
G30A Faulkton 82.13 38 P **P 08 28 33.2 +0.2**
baz=316,SNR=86

KULA Kula-Manisa 82.15 313 *e*P **P 08 28 33.4 +0.1**
KULA Kula-Manisa 82.15 313 P **P 08 28 32.3 -1.0**
GELI Tayfur-Gelibol 82.15 315 *e*P **P 08 28 33.4 +0.3**
CONA Conrad Observa 82.18 326 *i*pP **P 08 28 34.0 +0.7**
comp=Z,634nm,1.7s,SNR=121

CONA PP **PP 08 31 38.4 -2.5**
comp=Z,125nm,1.3s

D33A AnnSam, Waubun 82.24 35 P **P 08 28 33.1 -0.4**
baz=318,SNR=46

RZN Rozhen 82.25 317 *i*P **P 08 28 34.2 +0.3**
KHC Kasperske Hory 82.26 328⇓*i*P **P 08 28 33.8 +0.1**
KHC *e*pP **pP 08 28 36.4 -1.7**
KHC *ex* x 08 28 42.0
KHC *e*PP **PP 08 31 43.3 +1.9**
KHC *e*S **S 08 38 48.5 -0.2**
KHC AMS AMS 09 10 40.0
comp=Z,58µm,16.5s

KHC Kasperske Hory 82.26 328⇓*i*P **P 08 28 33.8 +0.1**
KHC *e* 08 28 36.4
KHC *e* 08 28 42.0
KHC *e* 08 31 43.3
KHC *e*S **S 08 38 48.5 -0.2**
KHC MLR MLR
comp=Z,58µm,16.5s

KHC Kasperske Hory 82.26 328 *e*P **P 08 28 33.8 +0.1**
comp=Z,258nm,1.4s

KHC LR LR
comp=Z,22µm,18.0s

J28A Allard Ranch, 82.28 40 P **P 08 28 34.7 +0.8**
baz=315,SNR=59

B35A Bob, Littlefor 82.28 33 P **P 08 28 33.4 -0.3**
baz=319,SNR=34

C34A RKJ Ranch, Bem 82.29 34 P **P 08 28 33.1 -0.7**
baz=318,SNR=29

MWZ Matawai 82.31 152 P* **P 08 28 33.1 -0.7**
ESY Stoneypath 82.32 340 *e*P **P 08 28 33.0 -0.8**
I29A Vivian Onida 82.34 39 P **P 08 28 34.0 -0.2**
baz=315,SNR=80

ISCO Idaho Springs 82.38 45 P **P 08 28 36.0 +1.2**
baz=313,SNR=93

ISCO Idaho Springs 82.38 45 *e*P **P 08 28 35.7 +0.9**
ISCO pmax pmax
comp=Z,715nm,1.8s

ISCO Idaho Springs 82.38 45 *e*P **P 08 28 35.7 +0.9**
comp=Z,715nm,1.8s

X16A Lo Mia Camp, P 82.39 52 *e*P **P 08 28 35.9 +1.1**
comp=Z,273nm,1.0s

X16A LR LR
comp=Z,18µm,20.0s

MVCO Mesa Verde 82.41 49 P **P 08 28 35.9 +0.9**
baz=311,SNR=120

MVCO Mesa Verde 82.41 49 *e*P **P 08 28 35.8 +0.9**
comp=Z,553nm,1.3s

MVCO LR LR
comp=Z,23µm,22.0s

GEC2 GERESS Array S 82.43 328 *e*P **P 08 28 34.4 -0.2**
GEC2 pmax pmax
comp=Z,839nm,1.9s

GEC2 GERESS Array S 82.43 328 *e*P **P 08 28 34.4 -0.2**
comp=Z,838nm,1.9s

GERES GERESS Array B 82.43 328 P **P 08 28 34.3 -0.2**
comp=Z,58nm,0.7s,baz=35,slow=4.9,SNR=86

GERES PP **PP 08 31 42.2 -0.7**
comp=Z,33nm,1.0s,baz=48,slow=6.0,SNR=5.2

GERES PKKPbc **PKKPbc 08 47 00.3 0.0**
comp=Z,4.9nm,0.8s,baz=204,slow=2.2,SNR=11

GERES PKPPKP P'P'df 08 55 00.8 -11
comp=Z,0.3nm,0.3s,baz=207,slow=2.4,SNR=6.2

GERES LR LR 09 10 54.0
comp=Z,22µm,18.1s,baz=24,slow=40

GERES GERESS Array B 82.43 328 P **P 08 28 34.3 -0.2**
GERES 08 31 42.2
GERES pmax pmax
comp=Z,57nm,0.7s

GERES pmax pmax
comp=Z,33nm,1.0s

VTS Vitosha 82.44 319⇑*i*P **P 08 28 35.6 +0.7**
VTS Vitosha 82.44 319 P **P 08 28 34.9 +0.1**
VTS Vitosha 82.44 319 *e*P **P 08 28 35.1 +0.3**
VTS pmax pmax
comp=Z,337nm,1.2s

VTS MLR MLR
comp=Z,22µm,19.0s

VTS Vitosha 82.44 319 *i*P **P 08 28 35.5 +0.7**
VTS Vitosha 82.44 319 *e*P **P 08 28 35.1 +0.3**
comp=Z,337nm,1.2s

VTS LR LR
comp=Z,22µm,19.0s

EDI Edinburgh 82.47 340⇓*e*P **P 08 28 34.3 -0.2**
EDI AMB AMB 08 28 44.3
comp=Z,318nm,3.5s

EDI AMS AMS 09 02 03.7
comp=Z,27µm,28.6s

G31A Conde 82.52 38 P **P 08 28 35.1 +0.1**
baz=316,SNR=25

EAB Aberfoyle 82.54 341 *e*P **P 08 28 35.0 +0.1**
ELL Elmali 82.56 311 *e*P **P 08 28 33.3 -2.3**
F32A Veblen 82.57 37 P **P 08 28 35.0 -0.3**
baz=317,SNR=17

D34A Park Rapids 82.58 35 P **P 08 28 35.2 -0.1**
baz=318,SNR=53

GADA Gvkgeada 82.62 315 P **P 08 28 34.0 -1.6**
GADA Gvkgeada 82.62 315 P **P 08 28 34.0 -1.6**
EZN Ezine 82.62 315 *e*P **P 08 28 34.2 -1.4**
EZN Ezine 82.62 315 P **P 08 28 35.6 0.0**
EZN Ezine 82.62 315 P **P 08 28 35.6 0.0**
EZN Ezine 82.62 315 P **P 08 28 35.6 0.0**
WAZ Wanganui 82.63 154 P* **P 08 28 36.4 +1.0**
SMTH Samothraki Isl 82.63 316 P **P 08 28 34.6 -1.1**
SMTH Samothraki Isl 82.63 316 P **P 08 28 34.6 -1.1**
E33A Westby DABS, E 82.64 36 P **P 08 28 35.7 +0.1**
baz=318,SNR=81

BKZ Black Stump Fm 82.65 153 *e*P* **P 08 28 35.4 -0.1**
BKZ Black Stump Fm 82.65 153 *e*P **P 08 28 35.6 +0.1**
comp=Z,240nm,1.3s

BKZ LR LR
comp=Z,41µm,21.0s

C35A Jirik Farms, M 82.67 34 P **P 08 28 35.0 -0.7**
baz=313,SNR=35

WTSB Winterswijk 82.69 333 *i*P **P 08 28 35.2 -0.5**
comp=Z,956nm,2.3s

SUSD Miller 82.72 38 P **P 08 28 36.0 0.0**
baz=316,SNR=37

QRZ Quartz Range 82.76 156 *e*P* **P 08 28 35.5 -0.5**
J29A Okreek 82.76 40 P **P 08 28 36.4 +0.1**
baz=315,SNR=43

DKL Dikili 82.80 314 *e*P **P 08 28 35.6 -0.9**
GRFO Grafenberg 82.81 330 *e*P **P 08 28 34.1 -2.4**
GRFO pmax pmax
comp=Z,1µm,1.3s

GRFO MLR MLR
comp=Z,25µm,21.0s

GRFO Grafenberg 82.81 330 *e*P **P 08 28 34.1 -2.4**
comp=Z,1µm,1.3s

GRFO LR LR
comp=Z,25µm,21.0s

ARSA Arzberg 82.84 326 *i*pP **P 08 28 36.9 +0.3**
comp=Z,393nm,1.6s,SNR=36

KAVA Kavala 82.84 317 P **P 08 28 35.5 -1.2**
G32A Webster 82.84 37 P **P 08 28 36.8 +0.1**
baz=317,SNR=53

BEHE Becsehely 82.85 325⇓*e*P **P 08 28 36.6 -0.1**
MMB Musomiste 82.86 318 *i*P **P 08 28 37.3 +0.4**
I30A Oacoma 82.86 39 P **P 08 28 36.9 +0.1**
baz=316,SNR=134

PGBU Glenifferbraes 82.91 341⇓*e*P **P 08 28 36.8 0.0**
H31A Wolsey 82.93 38 P **P 08 28 36.9 -0.3**
baz=316,SNR=20

MOA Molln 82.94 327 *i*pP **P 08 28 37.4 +0.2**
comp=Z,436nm,1.3s,SNR=74

NVR Nevrokopi 82.95 317 P **P 08 28 36.0 -1.4**
KNZ Kokohu 82.97 152 *e*P* **P 08 28 37.0 -0.1**
AYDB Zeytinkoy-Aydi 82.98 313 *e*P **P 08 28 36.6 -1.2**
EKA Eskdalemuir Ar 82.98 340 P **P 08 28 37.2 0.0**
comp=Z,41nm,0.8s,baz=29,slow=4.8,SNR=37

EKA PP **PP 08 31 47.1 0.0**
comp=Z,18nm,0.8s,baz=37,slow=8.3,SNR=4.7

EKA PKKPbc **PKKPbc 08 46 58.8 -0.3**
comp=Z,2.5nm,1.0s,baz=208,slow=1.4,SNR=3.8

F33A 5 Mile Ranch, 82.99 36 P **P 08 28 37.4 0.0**
baz=316,SNR=98

KKB Krupnik 83.01 318 *i*P **P 08 28 37.5 -0.2**
ESK Eskdalemuir 83.01 340⇓*e*P **P 08 28 37.4 +0.1**
ESK AMB AMB 08 28 48.9
comp=Z,317nm,1.9s

ESK AMS AMS 09 03 32.9
comp=Z,27µm,26.2s

ESK Eskdalemuir 83.01 340 *e*P **P 08 28 37.4 +0.1**
ESK pmax pmax
comp=Z,547nm,1.4s

ESK MLR MLR
comp=Z,22µm,18.0s

ESK Eskdalemuir 83.01 340 *e*P **P 08 28 37.4 +0.1**
comp=Z,547nm,1.4s

ESK LR LR
comp=Z,22µm,18.0s

W18A Petrified Fore 83.01 51 P **P 08 28 39.2 +1.2**
baz=311,SNR=15

W18A Petrified Fore 83.01 51 *e*P **P 08 28 39.2 +1.2**
comp=Z,555nm,1.6s

W18A LR LR
comp=Z,24µm,20.0s

E34A Wadena 83.02 35 P **P 08 28 36.9 -0.7**
baz=318,SNR=19

PRK Paraskevi 83.05 315 P **P 08 28 37.4 -0.4**
PRK Paraskevi 83.05 315 P **P 08 28 37.4 -0.4**
PRK Paraskevi 83.05 315 P **P 08 28 37.4 -0.4**
S22A 4UR Ranch, Cre 83.05 48 P **P 08 28 39.7 +1.3**
baz=312,SNR=208

S22A 4UR Ranch, Cre 83.05 48 *e*P **P 08 28 39.6 +1.3**
comp=Z,369nm,1.3s

S22A LR LR
comp=Z,17µm,20.0s

214A Organ Pipe Nat 83.07 55 P **P 08 28 39.1 +1.0**
baz=310,SNR=49

D35A Remer 83.10 34 P **P 08 28 37.3 -0.7**
baz=319,SNR=22

KOGS Kog 83.11 325⇓*i*P **P 08 28 37.4 -0.6**
comp=Z,2µm,2.3s

KOGS *e*PP **PP 08 31 51.2 +2.9**
KOGS *e* 08 33 37.7
KOGS *e* 08 35 18.0
KOGS *e*S **S 08 38 56.1 -1.2**
ECK Cauldkaine Hil 83.11 340 *e*P **P 08 28 37.6 -0.3**
C36A Pine Crest Far 83.13 33 P **P 08 28 37.9 -0.2**
baz=320,SNR=30

BLCB Balcova 83.18 313 *e*P **P 08 28 38.5 -0.1**
BHH Howats Hill 83.21 340 *e*P **P 08 28 38.3 -0.1**
Q24A Divide 83.21 46 P **P 08 28 39.9 +0.8**
baz=313,SNR=52

Q24A Divide 83.21 46 *e*P **P 08 28 39.8 +0.7**
comp=Z,85nm,0.9s

Q24A LR LR
comp=Z,27µm,22.0s

LIA Limnos Island 83.22 316 P **P 08 28 37.5 -1.2**
LIA Limnos Island 83.22 316 P **P 08 28 37.5 -1.2**
I31A Royce, Wessing 83.22 39 P **P 08 28 38.7 0.0**
baz=316

J30A Dallas 83.25 40 P **P 08 28 38.9 +0.1**
baz=316,SNR=79

TSZ Takapari Road 83.25 153 P* **P 08 28 38.6 0.0**

BWH Wardlaw 83.26 340 *e*P **P 08 28 38.0 -0.7**
X18A Snowflake 83.26 52 *e*P **P 08 28 40.3 +1.0**
comp=Z,557nm,1.4s

X18A LR LR
comp=Z,36µm,22.0s

YER Yerkesik 83.29 312 P **P 08 28 39.6 +0.4**
YER Yerkesik 83.29 312 P **P 08 28 39.6 +0.4**
YER Yerkesik 83.29 312 P **P 08 28 39.6 +0.4**
SIGR SIGRI 83.31 315 *e*P **P 08 28 36.4 -2.8**
SIGR SIGRI 83.31 315 P **P 08 28 37.9 -1.3**
SIGR SIGRI 83.31 315 P **P 08 28 37.9 -1.3**
E35A Pequot Lakes 83.33 35 P **P 08 28 38.7 -0.6**
baz=319,SNR=38

DSZ Denniston Nort 83.36 157 *e*P* **P 08 28 39.4 +0.3**
NNZ Nelson 83.39 156 P* **P 08 28 39.2 0.0**
G33A Ortonville 83.40 37 P **P 08 28 39.8 +0.2**
baz=318,SNR=85

H32A Carlson Farm, 83.42 38 P **P 08 28 39.6 -0.2**
baz=317,SNR=23

D36A Goodland 83.42 34 P **P 08 28 39.1 -0.6**
baz=320,SNR=13

C37A Embarrass 83.43 33 P **P 08 28 39.5 -0.2**
baz=320,SNR=23

GROS Grobnik 83.44 325 *e*P **P 08 28 39.3 -0.6**
PERS Pernice 83.48 326⇓*i*P **P 08 28 39.8 -0.3**
comp=Z,3µm,2.2s

PERS *e*PP **PP 08 31 54.3 +2.7**
PERS *e*S **S 08 38 58.0 -3.2**
comp=Z,3µm,0.1s

SOKA Soboth 83.49 326 *i*P **P 08 28 40.0 -0.1**
comp=Z,762nm,1.3s,SNR=176

F34A Alexandria 83.51 36 P **P 08 28 40.1 -0.1**
baz=318,SNR=20

BBO1 Bothel 83.53 340 *e*P **P 08 28 40.3 +0.2**
EYMN Ely 83.56 32 P **P 08 28 39.9 -0.5**
baz=321,SNR=28

EYMN Ely 83.56 32 *e*P **P 08 28 40.2 -0.1**
comp=Z,453nm,1.3s

EYMN LR LR
comp=Z,20µm,22.0s

HRFI Mount Harif 83.57 303 *e*P **P 08 28 40.7 -0.1**
OUR Ouranopolis 83.59 317 *e*P **P 08 28 40.4 -0.2**
OUR Ouranopolis 83.59 317 P **P 08 28 40.2 -0.4**
OGNE Ogallala 83.59 43 P **P 08 28 40.9 +0.2**
baz=314,SNR=19

OGNE Ogallala 83.59 43 *e*P **P 08 28 41.8 +1.0**
comp=Z,1µm,1.6s

OGNE LR LR
comp=Z,16µm,20.0s

KNT Kendrikon 83.60 318 *e*P **P 08 28 40.6 -0.1**
KNT Kendrikon 83.60 318 P **P 08 28 40.6 -0.1**
GMK Mull of Kintyr 83.62 341 *e*P **P 08 28 40.7 +0.3**
KESW Keswick, Cumbr 83.62 340⇓*e*P **P 08 28 40.4 -0.1**
H33A Prehn Over Nor 83.63 37 P **P 08 28 41.1 +0.3**
baz=318,SNR=213

M28A Bar X Bar Ranc 83.63 42 P **P 08 28 41.2 +0.3**
baz=315,SNR=10

K30A Basset 83.65 40 P **P 08 28 41.5 +0.6**
baz=316,SNR=82

J31A Geddes 83.65 39 P **P 08 28 40.9 0.0**
baz=316,SNR=14

VAY Valandovo 83.67 318 P **P 08 28 40.7 -0.3**
VAY Valandovo 83.67 318 *i*P **P 08 28 41.3 +0.3**
GOLS Golise 83.72 325 *e*P **P 08 28 40.9 -0.4**
THZ Tophouse 83.73 156 P* **P 08 28 40.8 -0.2**
THZ Tophouse 83.73 156 *e*P **P 08 28 41.1 0.0**
comp=Z,239nm,1.1s

THZ LR LR
comp=Z,28µm,22.0s

G34A Benson 83.74 36 P **P 08 28 41.3 -0.1**
baz=318,SNR=45

CHOS Chios island 83.75 314 *e*P **P 08 28 39.4 -2.3**
CHOS Chios island 83.75 314 P **P 08 28 39.3 -2.3**
I32A Karley and Nic 83.75 38 P **P 08 28 41.4 -0.1**
baz=317

D37A Cotton 83.76 33 P **P 08 28 41.0 -0.5**
baz=320

SISC Sisak 83.78 324 P **P 08 28 41.6 +0.1**
F35A Swanville 83.78 35 P **P 08 28 41.2 -0.3**
baz=319,SNR=29

LMK Market Rasen 83.80 338⇓*e*P **P 08 28 41.1 -0.3**
LMK AMB AMB 08 28 51.2
comp=Z,1µm,1.8s

LMK AMS AMS 09 09 26.9
comp=Z,27µm,17.8s

SKO Skopje 83.81 319 P **P 08 28 42.2 +0.5**
SKO Skopje 83.81 319 *i*P **P 08 28 42.5 +0.8**
GAL1 Galloway 83.81 341⇓*e*P **P 08 28 41.2 -0.3**
SDCO Great Sand Dun 83.83 47 P **P 08 28 43.4 +1.1**
baz=313,SNR=156

SDCO Great Sand Dun 83.83 47 *e*P **P 08 28 43.2 +0.9**
comp=Z,387nm,1.4s

SDCO LR LR
comp=Z,18µm,22.0s

C38A Sawbill Land. 83.83 32 P **P 08 28 41.4 -0.4**
baz=321,SNR=23

OBKA Obir 83.83 326 *i*P **P 08 28 41.5 -0.4**
comp=Z,319nm,1.6s,SNR=24

OBKA *e*PP **PP 08 31 54.5 0.0**
comp=Z,110nm,1.2s

PLG Polygyros 83.85 317 P **P 08 28 41.3 -0.8**
EIL Elat 83.86 303 *e*P **P 08 28 42.2 0.0**
EIL Elat 83.86 303 P **P 08 28 42.2 0.0**
comp=Z,197nm,1.0s,baz=31,slow=3.3,SNR=28

E36A McGregor 83.88 34 P **P 08 28 41.7 -0.3**
baz=320,SNR=31

HORT Hortiatis 83.89 317 P **P 08 28 41.5 -0.8**
PLE Pljevlja 83.89 321⇓*i*P **P 08 28 42.2 -0.1**
BFZ Birch Farm 83.90 154 P* **P 08 28 42.1 +0.2**
BFZ Birch Farm 83.90 154 *e*P **P 08 28 42.1 +0.2**
comp=Z,180nm,1.0s

BFZ LR LR
comp=Z,24µm,21.0s

BODT Bodrum 83.91 312 *e*P **P 08 28 41.2 -1.2**
SNZO South Karori 83.92 155 *e*P **P 08 28 43.4 +1.5**
comp=Z,212nm,1.4s

SNZO LR LR
comp=Z,24µm,21.0s

KBA Koelnbreinsper 83.94 327 *i*P **P 08 28 42.1 -0.4**
comp=Z,537nm,1.7s,SNR=80

KBA *e*PP **PP 08 31 54.2 -1.1**
comp=Z,468nm,1.5s

IVA Berane 83.96 321 *e*P **P 08 28 42.8 +0.2**
HGN Heimansgroeve 83.98 333 *i*P **P 08 28 41.9 -0.6**
comp=Z,2µm,3.2s

HGN Heimansgroeve 83.98 333 *e*S **S 08 39 14.3 +8.3**
HGN *e*SS SS 08 45 13.9 +41
ARG Arkhangelos 83.99 311 P **P 08 28 41.6 -1.2**
ARG Arkhangelos 83.99 311 P **P 08 28 41.6 -1.2**
ARG Arkhangelos 83.99 311 P **P 08 28 41.6 -1.2**
GRG Griva 84.01 318 *e*P **P 08 28 42.9 0.0**
GRG Griva 84.01 318 P **P 08 28 41.8 -1.1**
PAIG Paliouri 84.03 316 P **P 08 28 42.0 -0.9**
J32A Parkston 84.04 39 P **P 08 28 42.9 0.0**
baz=317,SNR=26

BEBN Eben Emael 84.05 333 P **P 08 28 42.5 -0.3**
I33A Coleman 84.07 38 P **P 08 28 43.1 +0.1**
baz=318

MEM Membach 84.08 333 P **P 08 28 42.5 -0.4**
comp=Z,232nm,2.3s

H34A Spellman Lake, 84.10 37 P **P 08 28 43.3 +0.1**
baz=318,SNR=25

K31A O'Neill 84.13 40 P **P 08 28 43.6 +0.2**
baz=316,SNR=64

PVY Plav 84.13 320⇓*i*P **P 08 28 43.5 0.0**
MYKA Terra Mystica 84.15 326 *i*P **P 08 28 42.7 -0.8**
comp=Z,541nm,1.7s,SNR=48

TUC Tucson 84.16 54 P **P 08 28 44.8 +1.0**
baz=310

TUC Tucson 84.16 54 *e*P **P 08 28 44.7 +0.8**
TUC pmax pmax
comp=Z,445nm,1.4s

TUC MLR MLR
comp=Z,42µm,22.0s

TUC Tucson 84.16 54 *e*P **P 08 28 44.7 +0.8**
comp=Z,445nm,1.4s

TUC LR LR
comp=Z,42µm,22.0s

LJU Ljubljana 84.20 326⇓*i*P **P 08 28 43.0 -0.7**
comp=Z,2µm,2.0s

LJU *e*PP **PP 08 31 59.7 +2.4**
LJU *e*S **S 08 39 07.5 -0.9**
UPM Unac-Piva 84.22 321⇓*i*P **P 08 28 43.2 -0.9**
E37A Wrenshall 84.23 34 P **P 08 28 43.1 -0.7**
baz=320

C39A Grand Marais 84.24 32 P P 08 28 43.1 -0.7
baz=322
F36A Milaca 84.26 35 P P 08 28 43.5 -0.5
baz=320,SNR=14
G35A Watkins 84.30 36 P P 08 28 44.4 +0.2
baz=319,SNR=35
NIS1 Nisyros Isl. 84.30 312 eP P 08 28 42.3 -2.1
STU Stuttgart 84.35 330 eP P 08 28 44.5 +0.1
STU pmax pmax
comp=Z,617nm,1.2s
STU MLR MLR
comp=Z,29µm,18.0s
STU Stuttgart 84.35 330 eP P 08 28 44.5 +0.1
comp=Z,617nm,1.2s
STU LR LR
comp=Z,29µm,18.0s
ECSD EROS Data Cent 84.39 38 P P 08 28 44.6 -0.1
baz=318,SNR=122
ECSD EROS Data Cent 84.39 38 eP P 08 28 43.7 -1.0
comp=Z,431nm,1.2s
ECSD LR LR
comp=Z,32µm,22.0s
FOZ Fox Glacier 84.40 159 P* P 08 28 45.0 +0.7
FOZ Fox Glacier 84.40 159 eP P 08 28 45.2 +0.9
comp=Z,233nm,1.2s
FOZ LR LR
comp=Z,21µm,22.0s
L31A Butterfield Fa 84.41 40 P P 08 28 45.0 +0.2
baz=316,SNR=132
N29A Votaw Ranch, W 84.44 42 P P 08 28 45.1 0.0
baz=315,SNR=23
WIM Isle of Man 84.44 340 eP P 08 28 44.8 0.0
LTZ Lake Taylor 84.45 157 eP P 08 28 46.6 +1.9
comp=Z,107nm,1.2s
LTZ LR LR
comp=Z,50µm,22.0s
AOS Alonnisos 84.45 316 P P 08 28 44.6 -0.5
NKY Niksic 84.46 321 ⇓iP P 08 28 44.6 -0.6
BCLA Clavier 84.49 333 P P 08 28 44.7 -0.3
comp=Z,328nm,2.2s
K32A Verdigre 84.50 39 P P 08 28 45.0 -0.3
baz=317,SNR=12
WATA Walderalm 84.50 328 iP P 08 28 44.8 -0.5
comp=Z,41nm,0.6s,SNR=17
NKME Niksic 84.51 321 ⇓iP P 08 28 44.8 -0.6
J33A Davis 84.52 38 P P 08 28 45.2 -0.2
baz=318,SNR=21
KHZ Kahutara 84.52 156 P* P 08 28 44.4 -0.6
KHZ Kahutara 84.52 156 eP P 08 28 44.3 -0.6
comp=Z,130nm,1.1s
KHZ LR LR
comp=Z,28µm,22.0s
JAVS Javornik 84.52 326 ⇓iP P 08 28 44.2 -1.2
comp=Z,2µm,2.3s
JAVS ePP PP 08 32 01.3 +1.3
JAVS eS S 08 39 10.4 -1.4
I34A Hadley 84.53 37 P P 08 28 45.5 0.0
baz=316,SNR=8.4
WTTA Wattenberg 84.53 328 iP P 08 28 45.3 -0.2
comp=Z,231nm,1.5s,SNR=22
H35A Sunnyside Ranc 84.53 36 P P 08 28 45.7 +0.3
baz=319,SNR=133
BIA Bitola 84.54 318 eP P 08 28 45.6 +0.1
ABTA Abfaltersbach 84.55 327 iP P 08 28 44.4 -1.2
comp=Z,258nm,1.2s,SNR=53
LIT Litokhoron 84.57 317 P P 08 28 44.7 -1.0
PDG Podgorica 84.61 321 P P 08 28 45.1 -0.7
TTG Podgorica 84.61 321 ⇓iP P 08 28 45.6 -0.2
KSCO Kaye Shedlock' 84.61 44 P P 08 28 46.3 +0.3
baz=314,SNR=41
KSCO Kaye Shedlock' 84.61 44 eP P 08 28 46.4 +0.3
comp=Z,1µm,1.8s
KSCO LR LR
comp=Z,26µm,21.0s
JCZ Jackson Bay 84.61 160 P* P 08 28 46.4 +0.9
BRY Bratogost 84.62 321 ⇓iP P 08 28 45.1 -1.0
G36A St. Michael 84.63 35 P P 08 28 45.8 -0.1
baz=319,SNR=17
FNA Florina 84.68 318 eP P 08 28 45.6 -0.7
FNA Florina 84.68 318 P P 08 28 45.3 -1.0
STNC Stoke 84.68 339⇓eP P 08 28 46.1 +0.1
STNC AMB AMB 08 28 56.1
comp=Z,640nm,2.1s
CEME Cevo 84.69 321 ⇓iP P 08 28 46.0 -0.3
MOTA Moosalm 84.69 328 iPcP P 08 28 46.9 +0.6
comp=Z,131nm,0.9s,SNR=47
XOR Xorichti 84.70 316 P P 08 28 43.4 -2.9
GMM Mts of Mourne 84.70 341 eP P 08 28 45.9 -0.2
CWF Charnwood Fore 84.72 338⇓eP P 08 28 45.6 -0.6
CWF AMB AMB 08 28 55.7
comp=Z,591nm,1.8s
CWF AMS AMS 09 05 43.4
comp=Z,31µm,25.7s
CWF Charnwood Fore 84.72 338 eP P 08 28 46.0 -0.1
comp=Z,2µm,1.9s
CWF LR LR
comp=Z,26µm,20.0s
RETA Reutte 84.72 328 iPcP P 08 28 46.4 0.0
comp=Z,264nm,0.9s,SNR=123
LANF Langenberg 84.73 331 eP P 08 28 46.2 -0.1
OHR Ohrid 84.76 319 iP P 08 28 46.4 -0.3
PMOR Pomariorio Ree 84.76 113 eP P 08 28 48.2 +1.4
comp=Z,448nm,1.5s
PMOR Pomariorio Ree 84.76 113 eT T 10 01 54.0
comp=Z,172nm,0.2s
SNF Seneffe 84.78 334 P P 08 28 46.0 -0.4
TRI Trieste 84.80 326 eP P 08 28 45.3 -1.4
TRI pmax pmax
comp=Z,524nm,1.5s
TRI MLR MLR
comp=Z,52µm,19.0s
TRI Trieste 84.80 326 eP P 08 28 45.3 -1.4
comp=Z,524nm,1.5s
TRI LR LR
comp=Z,52µm,19.0s
WLF Walferdange 84.80 332 P P 08 28 46.7 +0.2
comp=Z,665nm,2.1s
WLF Walferdange 84.80 332 eP P 08 28 46.8 +0.2
WLF pmax pmax
comp=Z,2µm,1.7s
WLF MLR MLR
comp=Z,41µm,18.0s
WLF Walferdange 84.80 332 eP P 08 28 46.8 +0.2
comp=Z,2µm,1.7s
WLF LR LR
comp=Z,41µm,18.0s
DRME Dracevica, Mon 84.82 320 ⇓iP P 08 28 46.8 -0.1
OXZ Oxford 84.87 158 eP P 08 28 47.0 +0.2
comp=Z,431nm,1.7s
OXZ LR LR
comp=Z,40µm,22.0s
T25A Trinidad 84.88 47 P P 08 28 48.5 +0.9
baz=314,SNR=134
T25A Trinidad 84.88 47 eP P 08 28 48.2 +0.6
comp=Z,583nm,1.3s
T25A LR LR
comp=Z,13µm,22.0s
BUM Brajici-Budva 84.88 321 ⇓iP P 08 28 46.7 -0.6
RPZ Rata Peaks 84.93 158 P P 08 28 46.2 -0.8
comp=Z,14nm,0.6s,baz=44,slow=4.8,SNR=8.3
RPZ Rata Peaks 84.93 158 eP P 08 28 47.0 0.0
RPZ LR LR
comp=Z,28µm,22.0s
M31A Lambtecht Ranc 84.93 41 P P 08 28 47.5 -0.1
baz=316,SNR=28
EREA Eretria 84.94 315 P P 08 28 46.5 -1.1
ULC Ulcinj 84.95 320 ⇓iP P 08 28 47.2 -0.4
APE Apeiranthos 84.95 313 eP P 08 28 46.4 -1.4
APE Apeiranthos 84.95 313 P P 08 28 45.6 -2.1
APE Apeiranthos 84.95 313 diP P 08 28 45.5 -2.1
APE pmax pmax
comp=Z,211nm,1.0s
APE Apeiranthos 84.95 313 P P 08 28 45.6 -2.1
L32A Elgin 84.95 40 P P 08 28 47.7 +0.1
baz=317,SNR=20
HCY Herceg Novi 84.98 321 ⇓iP P 08 28 46.7 -1.0
WME Myndd Eilian 85.01 340 eP P 08 28 47.1 -0.5
DOU Dourbes 85.02 333 P P 08 28 47.1 -0.5
comp=Z,240nm,2.2s
KARP Karpathos 85.02 311 eP P 08 28 47.2 -0.9
KARP Karpathos 85.02 311 P P 08 28 46.5 -1.6
KARP Karpathos 85.02 311 eP P 08 28 47.7 -0.4
comp=Z,200nm,0.9s
KARP LR LR
comp=Z,6µm,22.0s
WPM1 Penmaenmawr 85.02 339 eP P 08 28 47.1 -0.5

K33A Hardington 85.03 39 P P 08 28 47.9 -0.1
baz=318,SNR=22
SMIA Simia 85.03 316 P P 08 28 46.5 -1.5
J34A George 85.04 38 P P 08 28 47.8 -0.2
baz=318
H36A Jessenland, He 85.05 36 P P 08 28 48.6 +0.7
baz=319,SNR=31
BFO Black Forest 85.05 330 eP P 08 28 47.7 -0.2
BFO pmax pmax
comp=Z,798nm,1.3s
BFO MLR MLR
comp=Z,30µm,19.0s
BFO Black Forest 85.05 330 eP P 08 28 47.7 -0.2
comp=Z,798nm,1.3s
BFO LR LR
comp=Z,30µm,19.0s
STR Strasbourg 85.06 331 eP P 08 28 48.4 +0.5
STON Ston 85.06 322 P P 08 28 46.0 -2.0
SPMN Marine on St. 85.07 35 P P 08 28 47.9 -0.2
baz=320,SNR=23
SPMN Marine on St. 85.07 35 eP P 08 28 48.0 -0.1
comp=Z,410nm,1.4s
SPMN LR LR
comp=Z,42µm,22.0s
TIR Tirane 85.08 319 eP P 08 28 48.2 0.0
TIR pmax pmax
comp=Z,652nm,1.2s
TIR MLR MLR
comp=Z,56µm,19.0s
TIR Tirane 85.08 319 eP P 08 28 48.2 0.0
comp=Z,652nm,1.2s
TIR LR LR
comp=Z,56µm,19.0s
I35A Creekview Farm 85.09 37 P P 08 28 48.0 -0.2
baz=319,SNR=15
LAZ Ladron 85.09 50 eP P 08 28 49.7 +1.1
FETA Feichten 85.11 328 iP P 08 28 48.1 -0.3
comp=Z,200nm,1.4s,SNR=79
VAH Vaihoa 85.11 113 eP P 08 28 49.8 +1.3
comp=Z,173nm,1.4s
NEST Nestorio 85.12 318 P P 08 28 48.0 -0.6
WLF1 Llynfaes 85.13 340⇓eP P 08 28 47.9 -0.3
WLF1 AMB AMB 08 28 58.1
comp=Z,808nm,1.8s
WLF1 AMS AMS 09 03 21.3
comp=Z,24µm,30.3s
ANMO Albuquerque 85.14 49 P P 08 28 50.1 +1.2
baz=312
ANMO Albuquerque 85.14 49 ceP P 08 28 49.7 +0.8
ANMO pmax pmax
comp=Z,210nm,1.2s
ANMO MLR MLR
comp=Z,15µm,18.0s
ANMO Albuquerque 85.14 49 eP P 08 28 49.8 +0.8
comp=Z,480nm,1.2s
ANMO LR LR
comp=Z,24µm,21.0s
FOEL Foel Wylfa 85.15 339⇓eP P 08 28 48.4 +0.1
FOEL AMS AMS 09 04 40.4
comp=Z,32µm,28.0s
NVLJ Novalja 85.16 324 P P 08 28 46.7 -1.8
PPT Papeete 85.19 116 P P 08 28 51.5 +2.5
comp=Z,115nm,1.1s,baz=136,slow=15,SNR=5.6
PPT LR LR 09 00 06.7
comp=Z,26µm,21.3s,baz=298,slow=31
PPT Papeete 85.19 116 P P 08 28 51.5 +2.5
PPT pmax pmax
comp=Z,51nm,1.0s
YLL Lianberis 85.20 340 eP P 08 28 49.1 +0.6
THL Klokotos Trika 85.20 317 P P 08 28 47.1 -1.7
PPT2 Papeete2 85.21 116 eP P 08 28 50.6 +1.5
comp=Z,200nm,1.4s
PPT2 Papeete2 85.21 116 eS S 08 39 16.6 -2.5
PPT2 eSS SS 08 44 52.8 -0.9
comp=Z,9µm,25.0s
PPT2 Papeete2 85.21 116 eLR LR 08 55 27.8
comp=Z,131µm,29.5s,baz=310
PPT2 Papeete2 85.21 116 eT T 10 02 29.8
comp=Z,43nm,0.3s
L33A Hoskins 85.21 39 P P 08 28 48.8 -0.1
baz=317,SNR=14
DAVA Damuels 85.25 329 iPcP P 08 28 48.9 -0.2
comp=Z,306nm,1.1s,SNR=101
PAE Paea 85.25 116 eP P 08 28 50.4 +1.2
comp=Z,39nm,1.3s
PAE Paea 85.25 116 eT T 10 02 32.5
comp=Z,6.3nm,0.3s
CRLZ Canterbury Las 85.28 157 eP P 08 28 49.4 +0.7
comp=Z,267nm,1.5s
CRLZ LR LR
comp=Z,30µm,22.0s
LBZ Lake Benmore 85.29 159 P* P 08 28 48.8 0.0
LBZ Lake Benmore 85.29 159 eP P 08 28 49.9 +1.1
comp=Z,177nm,1.2s
LBZ LR LR
comp=Z,20µm,21.0s
LKR Lokris 85.30 316 P P 08 28 47.4 -2.0
BGNE Belgrade 85.31 40 P P 08 28 49.1 -0.3
baz=317,SNR=35
BGNE Belgrade 85.31 40 eP P 08 28 49.3 -0.1
comp=Z,821nm,1.0s
BGNE LR LR
comp=Z,24µm,21.0s
N31A Bailey Ranch, 85.32 41 P P 08 28 49.2 -0.3
baz=316
J35A Milford 85.35 37 P P 08 28 49.3 -0.2
baz=319
TIAR Tiarei 85.35 116 eP P 08 28 51.1 +1.3
comp=Z,50nm,1.1s
TIAR Tiarei 85.35 116 eT T 10 02 39.3
comp=Z,25nm,0.3s
WLS Welschbruch 85.36 331⇑eP P 08 28 49.2 -0.4
WKZ Wanaka 85.37 160 PFAKE 08 29 00.0 +11
WKZ LR LR
comp=Z,22µm,22.0s
HLM1 Long Mynd 85.38 339⇓eP P 08 28 49.1 -0.4
HLM1 AMB AMB 08 28 59.4
comp=Z,480nm,2.0s
MQZ McQueen's Vall 85.40 157 eP P 08 28 50.0 +0.6
comp=Z,233nm,1.5s
MQZ LR LR
comp=Z,26µm,22.0s
VLY Voula,Athens 85.41 315 P P 08 28 47.8 -2.1
YRE Yr Eifl 85.42 340 eP P 08 28 48.8 -0.8
K34A Le Mars 85.42 38 P P 08 28 49.7 -0.2
baz=318,SNR=29
I36A Fitzsimmons Fa 85.43 36 P P 08 28 49.7 -0.2
baz=319,SNR=21
Y22D IRIS PASSCAL I 85.44 50 P P 08 28 51.9 +1.5
baz=312,SNR=15
Y22D IRIS PASSCAL I 85.44 50 eP P 08 28 51.9 +1.5
comp=Z,606nm,1.1s
Y22D LR LR
comp=Z,9µm,20.0s
SKP1 Kophill 85.45 337 eP P 08 28 48.9 -1.0
LPM Los Pinos Moun 85.46 50 eP P 08 28 51.3 +0.8
VILL Villia 85.47 315 P P 08 28 47.7 -2.6
DCZ Deep Cove 85.47 162 eP P 08 28 51.6 +1.9
comp=Z,79nm,1.0s
DCZ LR LR
comp=Z,10µm,21.0s
SANT Santorini 85.47 313 eP P 08 28 48.5 -1.8
comp=Z,720nm,1.2s
SANT LR LR
comp=Z,27µm,21.0s
MENF Mencas 85.48 335 eP P 08 28 49.2 -0.8
THR5 Thira Island, 85.51 313 eP P 08 28 50.7 +0.3
H37A Dierke Farm, C 85.51 35 P P 08 28 50.6 +0.3
baz=320,SNR=27
THR6 Thira Island, 85.52 313 P P 08 28 49.0 -1.5
THR6 Thira Island, 85.52 313 P P 08 28 49.0 -1.5
TVO Taravao 85.57 116 eP P 08 28 52.6 +1.7
comp=Z,40nm,1.0s
TVO Taravao 85.57 116 eT T 10 02 56.2
comp=Z,4.0nm,0.3s
BNM Barren Site 85.57 50 eP P 08 28 52.0 +0.9
SCHQ Schefferville 85.59 15 P P 08 28 50.7 +0.2
comp=Z,72nm,0.9s,baz=356,slow=5.8,SNR=52
SCHQ PP PP 08 32 10.4 +2.1
comp=Z,19nm,0.9s,baz=317,slow=9.5,SNR=2.7
SCHQ PKKPbc PKKPbc 08 46 52.9 -0.2
comp=Z,5.6nm,0.6s,baz=198,slow=2.0,SNR=11
SCHQ PKPPKP P'P'df 08 54 57.9 -8.3
comp=Z,8.0nm,0.9s,baz=176,slow=5.5,SNR=6.9
SCHQ LR LR 09 08 47.8
comp=Z,27µm,21.8s,baz=338,slow=37

SCHQ Schefferville 85.59 15 eP P 08 28 50.7 +0.2
comp=Z,462nm,1.7s
SCHQ LR LR
comp=Z,28µm,21.0s
ECH Echery 85.60 331 eP P 08 28 49.8 -0.9
O31A Woolen Ranch, 85.61 42 P P 08 28 50.6 -0.3
baz=316,SNR=16
FUORN Ofenpass-Fuorn 85.62 328 eP P 08 28 51.0 -0.1
comp=Z,1µm,1.5s
FUORN LR LR
comp=Z,37µm,21.0s
MLZ Mavora Lakes 85.63 161 eP P 08 28 51.2 +0.7
comp=Z,62nm,1.0s
MLZ LR LR
comp=Z,20µm,20.0s
DAVOX Davos/Dischmat 85.65 329 P P 08 28 50.9 -0.3
comp=Z,91nm,1.1s,baz=70,slow=2.9,SNR=38
DAVOX PP PP 08 32 12.1 +2.8
comp=Z,43nm,1.1s,baz=28,slow=12,SNR=3.3
DAVOX PKKPbc PKKPbc 08 46 52.4 -0.6
comp=Z,2.9nm,0.6s,baz=265,slow=12,SNR=4.8
DAVOX PKPPKP P'P'df 08 55 02.1 -3.9
comp=Z,2.0nm,0.8s,baz=202,slow=5.4,SNR=3.4
M33A Taylor Creek F 85.69 40 P P 08 28 51.1 -0.2
baz=317,SNR=11
DSB Dublin 85.71 341 eP P 08 28 51.3 +0.2
comp=Z,2µm,2.0s
DSB LR LR
comp=Z,25µm,20.0s
N32A Stulken Farm, 85.71 41 P P 08 28 50.8 -0.6
baz=317
I37A Lemond, Waseca 85.72 36 P P 08 28 52.0 +0.7
baz=320,SNR=70
319A Douglas 85.74 54 eP P 08 28 52.8 +0.9
comp=Z,342nm,1.0s
319A LR LR
comp=Z,49µm,22.0s
EVR Evrytania 85.78 317 P P 08 28 50.1 -1.7
J36A Seneca 1, Swea 85.79 37 P P 08 28 51.9 +0.2
baz=319,SNR=28
L34A Svendsen Farm, 85.81 39 P P 08 28 51.8 -0.1
baz=318,SNR=26
K35A Storm Lake 85.82 38 P P 08 28 51.5 -0.3
baz=319,SNR=10.0
STRD Stroud 85.82 338⇓eP P 08 28 51.7 0.0
STRD AMB AMB 08 28 55.8
comp=Z,691nm,1.4s
STRD AMS AMS 09 06 15.9
comp=Z,37µm,25.2s
HMNX Herstmonceux 85.83 336⇓eP P 08 28 52.0 +0.3
HMNX AMB AMB 08 29 01.7
comp=Z,1µm,1.7s
HMNX AMS AMS 09 11 39.8
comp=Z,37µm,17.1s
MCH1 Michaelchurch 85.88 338⇓eP P 08 28 51.6 -0.3
MCH1 AMB AMB 08 29 01.7
comp=Z,847nm,1.8s
MCH1 AMS AMS 09 05 46.5
comp=Z,38µm,27.9s
ZKR Zakros 85.88 312 P P 08 28 51.7 -0.6
ZKR Zakros 85.88 312 P P 08 28 51.7 -0.6
MOF Molkenrain 85.91 331 eP P 08 28 51.5 -0.8
THAL Thalero 85.92 316 P P 08 28 50.5 -1.9
121A Cookes Peak, D 85.93 52 P P 08 28 53.9 +1.1
baz=312,SNR=86
WOL Wolverton 85.94 337⇓eP P 08 28 51.5 -0.7
WOL AMB AMB 08 29 01.6
comp=Z,722nm,1.8s
WOL AMS AMS 09 13 00.9
comp=Z,24µm,17.1s
SWN1 Swindon 85.94 338⇓eP P 08 28 52.3 0.0
SWN1 AMB AMB 08 28 55.9
comp=Z,577nm,1.4s
SWN1 AMS AMS 09 15 58.8
comp=Z,30µm,14.4s
MONM Monmouth 85.96 338⇓eP P 08 28 52.3 -0.1
MONM AMB AMB 08 29 02.0
comp=Z,904nm,1.8s
MONM AMS AMS 09 06 04.8
comp=Z,41µm,25.4s
KALE Kalithea 85.97 316 P P 08 28 50.7 -2.0
DID Didima 85.97 315 P P 08 28 49.7 -3.1
DSL Palaion Diasel 86.01 317 P P 08 28 52.2 -0.7
PYZ Puysegur Point 86.01 162 PFAKE 08 29 00.0 +7.7
PYZ LR LR
comp=Z,13µm,20.0s
COWI Conover 86.01 32 eP P 08 28 52.6 -0.2
comp=Z,316nm,1.5s
COWI LR LR
comp=Z,30µm,22.0s
ODZ Otahua Downs 86.02 159 eP P 08 28 54.2 +1.8
comp=Z,111nm,1.2s
ODZ LR LR
comp=Z,15µm,22.0s
OLDB Oldbury-Upon-S 86.04 338⇓eP P 08 28 52.2 -0.5
OLDB AMS AMS 09 06 34.2
comp=Z,41µm,24.4s
THEF They Montfort 86.04 331 eP P 08 28 52.3 -0.6
M34A Aspy Farms, Fr 86.05 39 P P 08 28 53.0 -0.1
baz=318,SNR=29
WHZ Wether Hill Ro 86.07 161 PFAKE 08 29 00.0 +7.3
WHZ LR LR
comp=Z,14µm,20.0s
O32A Brockman Farm, 86.08 41 P P 08 28 52.6 -0.7
baz=317,SNR=15
LPW Lampeter 86.08 339⇓eP P 08 28 52.9 0.0
LPW AMB AMB 08 29 02.7
comp=Z,773nm,1.7s
LPW AMS AMS 09 05 05.8
comp=Z,34µm,27.2s
L35A Bielow Farm, R 86.12 38 P P 08 28 52.9 -0.4
baz=318,SNR=11
TUE Stuetta 86.12 329 eP P 08 28 53.0 -0.6
comp=Z,557nm,1.4s
TUE LR LR
comp=Z,42µm,19.0s
SGD Sagiada 86.13 318 P P 08 28 52.6 -0.8
IGT Igoumenitsa 86.14 318 eP P 08 28 51.0 -2.5
IGT Igoumenitsa 86.14 318 P P 08 28 52.5 -1.0
NPS Neapolis 86.14 312 P P 08 28 51.8 -1.8
NPS Neapolis 86.14 312 P P 08 28 51.8 -1.8
NPS Neapolis 86.14 312 P P 08 28 51.8 -1.8
LAKA Lakka 86.16 316 P P 08 28 51.4 -2.3
BATH Bath 86.16 338⇓eP P 08 28 53.0 -0.4
BATH AMS AMS 09 06 26.3
comp=Z,39µm,24.2s
N33A J Bar K, Exete 86.17 40 P P 08 28 53.0 -0.7
baz=317
GUR Goura 86.17 316 P P 08 28 52.0 -1.8
HSIG 86.18 56 eP P 08 28 54.4 +0.5
comp=Z,558nm,1.5s
J37A Redenius Farm, 86.18 36 P P 08 28 53.7 0.0
baz=320,SNR=19
I38A Scanlan Farm, 86.20 35 P P 08 28 53.5 -0.2
baz=320,SNR=36
DAMY Dhamar 86.22 285 eP P 08 28 56.0 +1.4
comp=Z,1µm,1.7s
DAMY LR LR
comp=Z,24µm,18.0s
K36A Gilmore City 86.26 37 P P 08 28 54.2 +0.2
baz=319,SNR=28
KEK Kerkira 86.29 318 P P 08 28 53.1 -1.2
LAST Lasithi 86.29 312 P P 08 28 53.2 -1.2
LAST Lasithi 86.29 312 eP P 08 28 54.5 +0.1
comp=Z,2µm,1.4s
LAST LR LR
comp=Z,12µm,20.0s
CBKS Cedar Bluff 86.34 43 P P 08 28 54.2 -0.4
baz=316,SNR=15
CBKS Cedar Bluff 86.34 43 eP P 08 28 54.7 +0.1
CBKS pmax pmax
comp=Z,388nm,1.1s
CBKS MLR MLR
comp=Z,17µm,20.0s
CBKS Cedar Bluff 86.34 43 eP P 08 28 54.7 +0.1
comp=Z,388nm,1.1s
CBKS LR LR
comp=Z,17µm,20.0s
PDO Prodromos 86.34 317 P P 08 28 52.9 -1.6
P32A Huiting Farm, 86.37 42 P P 08 28 54.2 -0.5
baz=317,SNR=61
LOMF Lomont 86.43 331 eP P 08 28 54.0 -0.9
MEH Mehetia 86.48 115 eP P 08 28 56.8 +1.4
comp=Z,36nm,1.2s
MEH Mehetia 86.48 115 eT T 10 04 04.4
comp=Z,262nm,0.3s

LKD2	Lefkada island	86.50	317	P		P		08 28 53.1	-2.2
DRO	Drossia	86.51	316	P		P		08 28 53.3	-2.1
M35A	Neola	86.52	39	P		P		08 28 55.4	+0.1
	baz=318,SNR=52								
VLX	Vlachokerasia	86.55	315	P		P		08 28 53.3	-2.4
IDI	Anoyia	86.55	312	P		P		08 28 53.9	-1.8
	comp=Z,112nm,0.9s,baz=329,slow=12,SNR=6.3								
IDI				PP		PP		08 32 13.6	-3.2
	comp=Z,42nm,1.0s,baz=339,slow=4.7,SNR=3.6								
IDI	Anoyia	86.55	312	P		P		08 28 53.9	-1.8
IDI	Anoyia	86.55	312	*eP*		P		08 28 53.9	-1.8
	comp=Z,329nm,0.8s								
IDI				LR		LR			
	comp=Z,13µm,21.0s								
K37A	Belmond	86.55	37	P		P		08 28 55.3	-0.2
	baz=320,SNR=50								
L36A	Harm Buss Farm	86.56	38	P		P		08 28 55.3	-0.2
	baz=319,SNR=17								
TUZ	Tuapeka	86.58	160	*eP**		P		08 28 56.6	+1.5
O33A	Hebron	86.58	41	P		P		08 28 55.1	-0.5
	baz=317,SNR=14								
N34A	Lincoln	86.58	40	P		P		08 28 55.0	-0.7
	baz=318,SNR=47								
J38A	Wedel Dairy, R	86.68	36	P		P		08 28 56.0	-0.1
	baz=320,SNR=18								
VLI	Veliai	86.69	315	P		P		08 28 53.0	-3.3
TAOE	Nuku Hiva Isla	86.80	103	*eP*		P		08 28 58.1	+1.0
	comp=Z,260nm,1.1s								
TAOE	Nuku Hiva Isla	86.80	103	*eS*		S		08 39 30.6	-4.4
	comp=Z,23µm,28.8s								
TAOE	Nuku Hiva Isla	86.80	103	*e*LR		LR		08 56 20.6	
	comp=Z,111µm,24.6s,baz=316								
TAOE	Nuku Hiva Isla	86.80	103	*e*T		T		10 04 26.8	
	comp=Z,67nm,0.2s								
TAOE	Nuku Hiva Isla	86.80	103	PFAKE				08 29 10.0	+13
TAOE				LR		LR			
	comp=Z,55µm,22.0s								
AMT	Artemida-Makis	86.81	316	P		P		08 28 56.5	-0.4
Q32A	Meitler Ranch,	86.85	42	P		P		08 28 56.8	-0.3
	baz=317,SNR=35								
VAM	Vamos	86.88	313	P		P		08 28 55.4	-1.8
KFL	Anninata	86.91	317	P		P		08 28 57.1	-0.2
ITM	Ithomi	86.94	315	P		P		08 28 55.9	-1.6
O34A	Beatrice	86.96	40	P		P		08 28 56.9	-0.7
	baz=318,SNR=24								
IMMV	Iera Moni Meta	86.97	313	P		P		08 28 56.6	-1.1
VLS	Valsamata	86.97	317	P		P		08 28 55.3	-2.3
M36A	Felix, Anita	86.98	38	P		P		08 28 57.7	0.0
	baz=319,SNR=30								
L37A	Phoenix Point,	86.99	37	P		P		08 28 57.7	+0.1
	baz=320,SNR=24								
P33A	Williams Farm,	86.99	41	P		P		08 28 57.4	-0.3
	baz=317,SNR=28								
N35A	Tabor	87.00	39	P		P		08 28 57.8	+0.1
	baz=318,SNR=52								
SENIN	Lac Senin/Sane	87.05	330	*eP*		P		08 28 57.4	-0.7
	comp=Z,506nm,1.6s								
SENIN				LR		LR			
	comp=Z,22µm,20.0s								
K38A	Parkersburg	87.06	36	P		P		08 28 57.9	-0.1
	baz=320,SNR=12								
ANKY	Antikythira Is	87.08	314	P		P		08 28 56.0	-2.2
R32A	Long Quarter,	87.18	43	P		P		08 28 58.1	-0.5
	baz=317,SNR=22								
HTL	Hartland	87.20	339⇓	*eP*		P		08 28 58.5	+0.1
HTL				AMS		AMS		09 05 24.9	
	comp=Z,17µm,28.5s								
Q33A	Connelly Farm,	87.23	42	P		P		08 28 58.5	-0.4
	baz=317,SNR=41								
O35A	Humboldt	87.31	40	P		P		08 28 58.9	-0.3
	baz=318,SNR=23								
OG01	Vacheresse	87.33	330	*eP*		P		08 28 58.1	-1.2
GVD	Gavdhos	87.34	313	P		P		08 28 57.8	-1.6
L38A	Oak Wood Farm,	87.36	37	P		P		08 28 59.6	+0.2
	baz=320,SNR=21								
P34A	Walnut Farm, R	87.36	41	P		P		08 28 59.1	-0.4
	baz=318,SNR=55								
N36A	Muff Farm, Cla	87.38	39	P		P		08 28 60.0	+0.4
	baz=319,SNR=36								
M37A	Trindle Farm,	87.38	38	P		P		08 28 60.0	+0.4
	baz=319,SNR=29								
SCIA	State Center	87.41	37	*eP*		P		08 29 00.3	+0.7
	comp=Z,992nm,1.4s								
SCIA				LR		LR			
	comp=Z,36µm,22.0s								
VLC	Villacollemand	87.51	327	*eP*		P		08 29 00.8	+0.7
	comp=Z,117nm,1.3s								
VLC				LR		LR			
	comp=Z,22µm,21.0s								
DYA	Yadsworthy	87.53	338⇓	*eP*		P		08 28 59.8	-0.3
DYA				AMB		AMB		08 29 09.6	
	comp=Z,667nm,1.6s								
DYA				AMS		AMS		09 05 51.8	
	comp=Z,33µm,27.5s								
DYA	Yadsworthy	87.53	338	*eP*		P		08 29 00.3	+0.2
	comp=Z,1µm,1.6s								
DYA				LR		LR			
	comp=Z,28µm,19.0s								
S32A	Newby Ranch, P	87.58	43	P		P		08 29 00.8	+0.2
	baz=317,SNR=28								
R33A	Olander Ranch,	87.66	42	P		P		08 29 00.7	-0.3
	baz=317,SNR=16								
Q34A	Chapman	87.76	41	P		P		08 29 01.4	0.0
	baz=318,SNR=66								
M38A	Pleasantville	87.79	37	P		P		08 29 01.8	+0.3
	baz=320,SNR=35								
N37A	Lee Faris, Mou	87.80	38	P		P		08 29 01.9	+0.3
	baz=319,SNR=51								
P35A	Duane Minner,	87.80	40	P		P		08 29 01.3	-0.3
	baz=318,SNR=28								
KSU1	Kansas State U	87.81	41	P		P		08 29 01.5	-0.1
	baz=318,SNR=67								
KSU1	Kansas State U	87.81	41	*eP*		P		08 29 00.9	-0.7
	comp=Z,453nm,1.0s								
KSU1				LR		LR			
	comp=Z,21µm,20.0s								
RSL	Roselend	87.87	330	*eP*		P		08 29 01.0	-1.0
VAL	Valentia	87.88	342	*i*P		P		08 29 01.4	-0.2
VAL	Valentia	87.88	342	*i*S		S		08 39 49.1	+5.1
O36A	Bolckow	87.89	39	P		P		08 29 01.9	0.0
	baz=319,SNR=36								
T32A	Huddler Ranch,	87.96	44	P		P		08 29 02.8	+0.3
	baz=317,SNR=26								
MNTX	Cornudas Mount	88.00	51	P		P		08 29 02.8	+0.1
	baz=313,SNR=91								
MNTX	Cornudas Mount	88.00	51	*eP*		P		08 29 03.1	+0.3
	comp=Z,335nm,1.5s								
MNTX				LR		LR			
	comp=Z,17µm,22.0s								
JFWS	Jewell Farm	88.03	35	*eP*		P		08 29 02.1	-0.5
JFWS				pmax		pmax			
	comp=Z,121nm,1.0s								
JFWS				MLR		MLR			
	comp=Z,48µm,21.0s								
JFWS	Jewell Farm	88.03	35	*eP*		P		08 29 02.1	-0.5
	comp=Z,121nm,1.0s								
JFWS				LR		LR			
	comp=Z,48µm,21.0s								
MSTX	Muleshoe	88.03	48	P		P		08 29 03.0	0.0
	baz=314,SNR=27								
MSTX	Muleshoe	88.03	48	*eP*		P		08 29 03.0	0.0
	comp=Z,405nm,1.4s								
MSTX				LR		LR			
	comp=Z,20µm,22.0s								
AMTX	Amarillo	88.03	47	P		P		08 29 03.9	+0.9
	baz=315								
AMTX	Amarillo	88.03	47	*eP*		P		08 29 03.7	+0.8
	comp=Z,592nm,1.2s								
AMTX				LR		LR			
	comp=Z,19µm,21.0s								
R34A	Isabella, Hill	88.06	42	P		P		08 29 02.8	0.0
	baz=318,SNR=37								
JSA	Saint Aubin	88.09	337⇓	*eP*		P		08 29 02.3	-0.4
JSA				AMB		AMB		08 29 12.3	
	comp=Z,645nm,1.7s								
CCA1	Carnmenellis	88.13	339⇓	*eP*		P		08 29 02.8	-0.1
CCA1				AMB		AMB		08 29 12.6	
	comp=Z,607nm,1.8s								
CCA1				AMS		AMS		09 06 33.5	
	comp=Z,28µm,27.2s								
P36A	Good Intent, A	88.15	40	P		P		08 29 03.3	+0.1
	baz=319,SNR=42								
CUC	Castrocucco	88.15	321	*eP*		P		08 29 02.0	-1.3
	comp=Z,94nm,1.1s								
CUC				LR		LR			
	comp=Z,29µm,22.0s								
S33A	Kaszmaul Farm,	88.17	43	P		P		08 29 03.8	+0.3
	baz=317,SNR=16								
N38A	Joes South For	88.25	38	P		P		08 29 03.6	-0.1
	baz=320,SNR=10								
O37A	Wolven Farm, M	88.27	39	P		P		08 29 04.1	+0.3
	baz=319,SNR=12								
TIP	Timpagrande	88.28	320	P		P		08 29 03.9	-0.1
TIP	Timpagrande	88.28	320	*eP*		P		08 29 03.5	-0.4
	comp=Z,582nm,1.5s								
TIP				LR		LR			
	comp=Z,35µm,22.0s								
BNI	Bardonecchia	88.37	329	PFAKE				08 29 20.0	+16
BNI				LR		LR			
	comp=Z,31µm,19.0s								
T33A	Patterson Ranc	88.41	43	P		P		08 29 04.8	+0.2
	baz=317,SNR=9.4								
OG22	Abries	88.45	329	*eP*		P		08 29 04.7	-0.1
GDM	Grand'Maison	88.47	330	*eP*		P		08 29 04.3	-0.6
U32A	Winter Ranch,	88.50	44	P		P		08 29 05.6	+0.6
	baz=317,SNR=16								
Q36A	Arnold C. Orve	88.51	40	P		P		08 29 04.9	0.0
	baz=319,SNR=11								
N39A	Derby Farms, D	88.54	37	P		P		08 29 05.5	+0.4
	baz=320,SNR=32								
S34A	Willow Spring	88.57	42	P		P		08 29 05.4	+0.1
	baz=318,SNR=16								
GRN	Grenoble	88.59	330	*eP*		P		08 29 05.1	-0.2
R35A	Emporia Munici	88.60	41	P		P		08 29 05.7	+0.3
	baz=318,SNR=18								
P37A	Lathrop	88.61	39	P		P		08 29 05.2	-0.2
	baz=319,SNR=26								
O38A	Galt	88.64	38	P		P		08 29 05.6	+0.1
	baz=320,SNR=16								
VLDQ	Val d'Or	88.77	24	*eP*		P		08 29 05.0	-0.9
	comp=Z,347nm,1.0s								
VLDQ				LR		LR			
	comp=Z,34µm,21.0s								
PLDF	La Plantade	88.82	332⇑	*eP*		P		08 29 06.4	0.0
AUTN	U Aution	88.92	328	*eP*		P		08 29 05.8	-1.3
AGO	Saint Agoulin	88.94	332	*eP*		P		08 29 06.1	-0.8
V32A	Arapaho	88.95	45	P		P		08 29 07.9	+0.7
	baz=316,SNR=40								
U33A	Lingo Farm, Me	88.95	44	P		P		08 29 07.3	+0.2
	baz=317,SNR=24								
R36A	Gordon, Harris	88.96	41	P		P		08 29 07.1	0.0
	baz=319,SNR=37								
P38A	Dawn	88.99	39	P		P		08 29 07.5	+0.3
	baz=320,SNR=46								
O39A	Kirksville	89.00	38	P		P		08 29 07.7	+0.4
	baz=320,SNR=22								
S35A	Otter Creek Ra	89.01	42	P		P		08 29 07.8	+0.5
	baz=318,SNR=26								
T34A	McClaskey Farm	89.03	43	P		P		08 29 07.7	+0.2
	baz=318,SNR=35								
LUCF	Luceram	89.04	328	*eP*		P		08 29 07.8	+0.3
SSB	Saint Sauveur	89.04	331	*eP*		P		08 29 06.8	-0.6
SSB	Saint Sauveur	89.04	331	*eP*		P		08 29 06.4	-1.0
SSB				pmax		pmax			
	comp=Z,200nm,1.3s								
SSB				MLR		MLR			
	comp=Z,28µm,20.0s								
SSB	Saint Sauveur	89.04	331	*eP*		P		08 29 06.4	-1.0
	comp=Z,200nm,1.3s								
SSB				LR		LR			
	comp=Z,28µm,20.0s								
TBI	Tubuai	89.06	120	*eP*		P		08 29 09.3	+1.7
	comp=Z,224nm,1.0s								
TBI	Tubuai	89.06	120	*eS*		S		08 39 53.0	-2.9
	comp=Z,16µm,40.0s								
TBI				*e*SS		SS		08 45 48.6	-1.3
	comp=Z,5µm,27.8s								
TBI	Tubuai	89.06	120	*e*LR		LR		08 57 23.6	
	comp=Z,94µm,26.8s,baz=315								
TBI	Tubuai	89.06	120	*e*T		T		10 07 19.8	
	comp=Z,810nm,0.3s								
Q37A	Longview Farm,	89.09	40	P		P		08 29 07.2	-0.6
	baz=319								
MVIF	Mont Vial	89.11	328	*eP*		P		08 29 08.8	+0.9
REVF	Revere	89.15	328	*eP*		P		08 29 07.8	-0.2
PYM	Petit Puy Mans	89.24	332	*eP*		P		08 29 08.0	-0.4
ATD	Arta Tunnel	89.25	284	P		P		08 29 09.4	+0.6
	comp=Z,25nm,1.0s,baz=66,slow=2.7,SNR=16								
ATD				PP		PP		08 32 31.4	-7.9
	comp=Z,4.2nm,0.5s,baz=302,slow=5.8,SNR=2.1								
W32A	Sentinel	89.27	45	P		P		08 29 09.4	+0.7
	baz=316,SNR=32								
U34A	Anderson Ranch	89.27	43	P		P		08 29 09.1	+0.5
	baz=317,SNR=38								
U34A	Anderson Ranch	89.27	43	*eP*		P		08 29 09.0	+0.5
	comp=Z,648nm,1.4s								
U34A				LR		LR			
	comp=Z,17µm,22.0s								
V33A	Lossen Ranch,	89.30	44	P		P		08 29 09.1	+0.4
	baz=317,SNR=18								
OG26	St.-Nazaire-De	89.32	330	*eP*		P		08 29 09.3	+0.6
R37A	Teagarden Farm	89.32	40	P		P		08 29 08.4	-0.4
	baz=319								
CALN	Calern	89.34	328	*eP*		P		08 29 09.9	+0.9
S36A	Lake Cedric, C	89.36	41	P		P		08 29 09.1	+0.1
	baz=318,SNR=22								
O40A	La Belle	89.43	37	P		P		08 29 09.6	+0.3
	baz=321,SNR=34								
VERF	Verneugheol	89.44	332	*eP*		P		08 29 09.5	+0.2
Q38A	Cooks Store, C	89.45	39	P		P		08 29 09.2	-0.2
	baz=320,SNR=31								
T35A	Sooner Cattle	89.47	42	P		P		08 29 10.0	+0.5
	baz=318,SNR=36								
P39A	Salisbury	89.48	38	P		P		08 29 09.5	-0.1
	baz=320,SNR=29								
LBL	Lubilhac	89.58	331	*eP*		P		08 29 09.8	-0.2
W33A	Caddo, Fort Co	89.68	45	P		P		08 29 11.4	+0.9
	baz=317,SNR=19								
T36A	Boggs Farm, Ca	89.70	42	P		P		08 29 11.2	+0.6
	baz=318,SNR=38								
FRNF	Fournols	89.71	332	*eP*		P		08 29 09.2	-1.3
Q39A	Willow Grove F	89.71	39	P		P		08 29 10.9	+0.3
	baz=320,SNR=85								
V34A	Guthrie	89.72	44	P		P		08 29 11.3	+0.6
	baz=317,SNR=37								
V34A	Guthrie	89.72	44	*eP*		P		08 29 11.3	+0.6
	comp=Z,471nm,1.3s								
V34A				LR		LR			
	comp=Z,16µm,22.0s								
S37A	Fort Scott	89.74	41	P		P		08 29 10.6	-0.2
	baz=319,SNR=60								
X32A	Elmer	89.75	46	P		P		08 29 11.4	+0.5
	baz=316,SNR=51								
U35A	Pawnee	89.75	43	P		P		08 29 11.3	+0.5
	baz=318,SNR=28								
P40A	Paris	89.80	38	P		P		08 29 11.2	+0.2
	baz=321,SNR=24								
WMOK	Wichita Mounta	89.81	45	*eP*		P		08 29 10.8	-0.4
WMOK				pmax		pmax			
	comp=Z,280nm,1.2s								
WMOK				MLR		MLR			
	comp=Z,19µm,20.0s								
WMOK	Wichita Mounta	89.81	45	*eP*		P		08 29 10.8	-0.4
	comp=Z,280nm,1.2s								
WMOK				LR		LR			
	comp=Z,19µm,20.0s								
R38A	Fenwick Farm,	89.89	40	P		P		08 29 10.7	-0.8
	baz=320,SNR=22								
W34A	Bridge Creek,	90.01	44	P		P		08 29 13.0	+0.8
	baz=317,SNR=24								
W34A	Bridge Creek,	90.01	44	*eP*		P		08 29 12.8	+0.7
	comp=Z,900nm,1.6s								
W34A				LR		LR			
	comp=Z,20µm,22.0s								
X33A	Lawton	90.11	45	P		P		08 29 12.8	+0.2
	baz=317,SNR=25								
V35A	Meyer Ranch, C	90.14	43	P		P		08 29 13.1	+0.4
	baz=318,SNR=19								
T37A	Cheneyville 18	90.17	41	P		P		08 29 12.6	-0.2
	baz=319,SNR=46								
Q40A	Laux Farm, Aux	90.20	38	P		P		08 29 12.8	-0.1
	baz=321,SNR=41								
R39A	Chumby, Stover	90.24	39	P		P		08 29 13.1	0.0
	baz=320,SNR=43								
U36A	Oologah	90.28	42	P		P		08 29 13.4	+0.1
	baz=318,SNR=22								
S38A	Stockton	90.31	40	P		P		08 29 12.8	-0.7
	baz=320,SNR=28								
HDIL	Hopedale	90.32	36	P		P		08 29 13.6	+0.2
	baz=322,SNR=33								
HDIL	Hopedale	90.32	36	*eP*		P		08 29 13.7	+0.2
	comp=Z,486nm,1.3s								
HDIL				LR		LR			
	comp=Z,35µm,22.0s								
SLBS	Sierra La Lagu	90.33	60	*eP*		P		08 29 15.8	+2.0
	comp=Z,602nm,1.7s								
SLBS				LR		LR			
	comp=Z,22µm,20.0s								
MATF	Mathat	90.38	334	*eP*		P		08 29 13.7	+0.2
Y33A	Hilltop Ranch,	90.42	46	P		P		08 29 13.9	-0.1
	baz=317,SNR=21								
X34A	Smith Ranch, M	90.44	45	P		P		08 29 14.9	+0.7
	baz=317,SNR=41								
T38A	Diamond	90.56	41	P		P		08 29 14.7	+0.1
	baz=319,SNR=69								
S39A	Bolivar	90.57	40	P		P		08 29 14.1	-0.6
	baz=320,SNR=30								
W35A	Tecumseh	90.57	44	P		P		08 29 15.1	+0.3
	baz=318,SNR=40								
U37A	Salina	90.60	42	P		P		08 29 14.9	+0.1
	baz=319,SNR=44								
TUL1	Leonard	90.61	43	P		P		08 29 15.2	+0.3
	baz=318,SNR=25								
TUL1	Leonard	90.61	43	*eP*		P		08 29 15.1	+0.3
	comp=Z,515nm,1.4s								
TUL1				LR		LR			
	comp=Z,21µm,22.0s								
V36A	Jenks	90.62	43	P		P		08 29 15.1	+0.2
	baz=318,SNR=29								
R40A	Maddies Statio	90.65	39	P		P		08 29 14.9	-0.1
	baz=321								
TX31	Lajitas Ar. Si	90.69	52	*eP*		P		08 29 15.4	-0.1
LTX	Lajitas	90.69	52	*eP*		P		08 29 16.0	+0.5
LTX				*e*				08 32 54.4	
LTX	Lajitas	90.69	52	*eP*		P		08 29 16.0	+0.5
LTX				*e*PP		PP		08 32 54.4	+4.2
TXAR	Lajitas Array	90.69	52	P		P		08 29 16.0	+0.5
	comp=Z,42nm,0.8s,baz=293,slow=2.8,SNR=199								
TXAR				PP		PP		08 32 54.4	+4.2
	comp=Z,8.3nm,1.0s,baz=332,slow=7.5,SNR=4.1								
TXAR				PKKPbc		PKKPbc		08 46 44.1	+3.7
	comp=Z,1.7nm,0.7s,baz=151,slow=5.8,SNR=10								
TXAR				PKPPKP		P'P'df		08 54 49.2	-6.5
	comp=Z,1.5nm,1.0s,baz=165,slow=7.5,SNR=5.4								
TXAR				LR		LR		09 03 49.1	
	comp=Z,32µm,21.6s,baz=0.0,slow=32								
VAE	Valguarnera	90.77	320	P		P		08 29 14.3	-1.4
	comp=Z,10nm,0.4s,baz=153,slow=20,SNR=3.0								
VAE				PP		PP		08 32 54.5	+4.1
	comp=Z,13nm,0.4s,baz=23,slow=17,SNR=2.4								
ABTX	Abilene, Hawle	90.83	47	P		P		08 29 16.5	+0.5
	baz=316,SNR=55								
ABTX	Abilene, Hawle	90.83	47	*eP*		P		08 29 16.5	+0.5
	comp=Z,487nm,1.1s								
ABTX				LR		LR			
	comp=Z,20µm,21.0s								
Z33A	Whitaker Ranch	90.86	46	P		P		08 29 16.2	+0.1
	baz=317,SNR=51								
W36A	Wetumka	90.94	43	P		P		08 29 16.5	+0.1
	baz=318,SNR=18								
Y34A	Reagan Ranch,	90.95	45	P		P		08 29 16.5	0.0
	baz=317,SNR=30								
U38A	Gravette	90.96	41	P		P		08 29 16.4	-0.1
	baz=319,SNR=37								
V37A	Hulbert	90.98	42	P		P		08 29 16.5	0.0
	baz=319,SNR=62								
T39A	Clever	91.05	40	P		P		08 29 16.8	-0.1
	baz=320,SNR=30								
HPIG		91.05	55	*eP*		P		08 29 17.8	+0.5
	comp=Z,495nm,1.6s								
S40A	Lebanon	91.06	39	P		P		08 29 16.7	-0.2
	baz=320,SNR=33								
X35A	Drake	91.07	44	P		P		08 29 17.1	+0.1
	baz=318,SNR=53								
SADO	Sadowa	91.07	27	*eP*		P		08 29 17.1	+0.3
	comp=Z,98nm,1.0s								
133A	Hamilton Ranch	91.27	47	P		P		08 29 18.5	+0.5
	baz=317,SNR=51								
X36A	Centrahoma	91.29	44	P		P		08 29 18.3	+0.2
	baz=318,SNR=95								
Z34A	Collier Ranch,	91.29	46	P		P		08 29 18.3	+0.2
	baz=317,SNR=53								
CLTB	Caltabellotta	91.31	321	PFAKE				08 29 30.0	+12
CLTB				LR		LR			
	comp=Z,46µm,22.0s								
HHAR	Hobbs	91.32	41	*eP*		P		08 29 17.8	-0.4
	comp=Z,112nm,1.0s								
HHAR				LR		LR			
	comp=Z,16µm,20.0s								
W37B	Quinton	91.38	43	P		P		08 29 18.8	+0.3
	baz=319,SNR=52								
SLM	Saint Louis	91.38	37	*eP*		P		08 29 19.0	+0.6
SLM				pmax		pmax			
	comp=Z,343nm,1.3s								
SLM				MLR		MLR			
	comp=Z,25µm,22.0s								
SLM	Saint Louis	91.38	37	*eP*		P		08 29 19.0	+0.6
	comp=Z,343nm,1.3s								
SLM				LR		LR			
	comp=Z,25µm,22.0s								
V38A	Canehill	91.39	42	P		P		08 29 18.3	-0.2
	baz=319,SNR=59								
T40A	Mansfield	91.39	40	P		P		08 29 18.1	-0.4
	baz=320,SNR=28								
AAM	Ann Arbor	91.40	31	*eP*		P		08 29 19.0	+0.6
AAM				pmax		pmax			
	comp=Z,320nm,1.5s								
AAM				MLR		MLR			
	comp=Z,27µm,20.0s								
AAM	Ann Arbor	91.40	31	*eP*		P		08 29 19.0	+0.6
	comp=Z,320nm,1.5s								
AAM				LR		LR			
	comp=Z,27µm,20.0s								
Y35A	Marietta	91.40	45	P		P		08 29 18.4	-0.1
	baz=318,SNR=37								
LMQ	La Malbaie	91.45	20	*eP*		P		08 29 18.6	0.0
	comp=Z,376nm,1.2s								
LMQ				LR		LR			
	comp=Z,36µm,21.0s								
SFIN	Lafayette	91.47	34	P		P		08 29 18.9	+0.1
	baz=324,SNR=17								
SFIN	Lafayette	91.47	34	*eP*		P		08 29 19.0	+0.2
	comp=Z,797nm,1.9s								
SFIN				LR		LR			
	comp=Z,43µm,22.0s								
U39A	Green Forest	91.48	41	P		P		08 29 18.7	-0.2
	baz=320,SNR=64								
VSL	Villasalto	91.67	324	*eP*		P		08 29 20.5	+0.8
	comp=Z,199nm,1.5s								
VSL				LR		LR			
	comp=Z,26µm,20.0s				

JCT pmax pmax
comp=Z,1µm,1.9s
JCT MLR MLR
comp=Z,28µm,22.0s
JCT Junction City 92.27 49 *e*P **P 08 29 22.9 +0.2**
comp=Z,1µm,1.9s
JCT LR LR
comp=Z,28µm,22.0s
OLIL Olney 92.33 36 *e*P **P 08 29 23.6 +0.8**
comp=Z,378nm,1.3s
OLIL LR LR
comp=Z,28µm,20.0s
VALF Valcebollere 92.45 331 *e*P **P 08 29 23.3 -0.2**
SALF Salau 92.46 331⇑ *e*P **P 08 29 23.1 -0.3**
433A Art 92.50 48 P **P 08 29 23.7 0.0**
baz=316,SNR=44
X39A Fountain Ranch 92.56 42 P **P 08 29 24.2 +0.3**
baz=319,SNR=47
WHTX Lake Whitney, 92.56 46 P **P 08 29 24.3 +0.4**
baz=317,SNR=49
WHTX Lake Whitney, 92.56 46 *e*P **P 08 29 24.4 +0.4**
comp=Z,522nm,1.1s
WHTX LR LR
comp=Z,27µm,22.0s
334A Lometa 92.59 47 P **P 08 29 24.4 +0.2**
baz=317,SNR=59
SIUC Southern Illin 92.60 37 *e*P **P 08 29 24.2 +0.2**
comp=Z,267nm,1.1s
SIUC LR LR
comp=Z,26µm,21.0s
W40A Ferguson Farm, 92.60 41 P **P 08 29 24.0 -0.1**
baz=320,SNR=22
LABF Labassere 92.64 332⇑ *e*P **P 08 29 23.1 -1.1**
Y38A Idabel 92.66 43 P **P 08 29 23.9 -0.5**
baz=319
DRLN Deer Lake 92.68 12 *e*P **P 08 29 25.6 +1.5**
comp=Z,331nm,1.4s
DRLN LR LR
comp=Z,47µm,20.0s
BLO Bloomington 92.71 35 *e*P **P 08 29 25.2 +0.7**
BLO pmax pmax
comp=Z,388nm,1.6s
BLO MLR MLR
comp=Z,48µm,22.0s
BLO Bloomington 92.71 35 *e*P **P 08 29 25.2 +0.7**
comp=Z,388nm,1.6s
BLO LR LR
comp=Z,48µm,22.0s
Z37A Pogue Cattle C 92.72 44 P **P 08 29 24.7 +0.1**
baz=318,SNR=14
H06N1 SOCORRO T-PHAS 92.72 64 T T 10 12 09.3
136A Ennis 92.74 45 P **P 08 29 24.9 +0.1**
baz=318,SNR=24
PBMO Poplar Bluff 92.74 39 *e*P **P 08 29 25.3 +0.6**
comp=Z,355nm,1.3s
PBMO LR LR
comp=Z,15µm,19.0s
LONY Lake Ozonia 92.79 24 *e*P **P 08 29 24.6 -0.2**
comp=Z,232nm,1.5s
LONY LR LR
comp=Z,38µm,22.0s
REYF Montagne du Re 92.80 332 *e*P **P 08 29 25.2 +0.2**
VIEF Viey 92.80 332 *e*P **P 08 29 25.2 +0.2**
H06E1 SOCORRO T-PHAS 92.82 64 T T 10 12 13.1
H06S1 SOCORRO T 92.82 64 P **P 08 29 27.1 +1.7**
H06S1 T T 10 12 10.0
MIAR Mount Ida 92.83 42 P **P 08 29 25.2 +0.1**
baz=320,SNR=81
MIAR Mount Ida 92.83 42 *e*P **P 08 29 25.5 +0.4**
MIAR pmax pmax
comp=Z,472nm,1.4s
MIAR MLR MLR
comp=Z,21µm,22.0s
MIAR Mount Ida 92.83 42 *e*P **P 08 29 25.5 +0.4**
comp=Z,472nm,1.4s
MIAR LR LR
comp=Z,21µm,22.0s
ORDF Ordiarp 92.87 333⇑ *e*P **P 08 29 23.5 -1.7**
ATE Arette 92.89 333⇑ *e*P **P 08 29 26.2 +0.9**
X201 Greenbrier Sit 92.90 41 *e*P **P 08 29 25.7 +0.2**
comp=Z,525nm,1.5s
X201 LR LR
comp=Z,21µm,22.0s
FRNY Flat Rock 92.92 24 *e*P **P 08 29 25.4 +0.1**
comp=Z,195nm,1.7s
FRNY LR LR
comp=Z,38µm,22.0s
X301 Greenbrier Sit 92.92 41 *e*P **P 08 29 25.8 +0.2**
comp=Z,248nm,1.2s
X301 LR LR
comp=Z,17µm,22.0s
WHAR Wooly Hollow 92.94 41 *e*P **P 08 29 25.5 -0.2**
comp=Z,463nm,1.4s
WHAR LR LR
comp=Z,17µm,20.0s
434A Burnet 92.94 48 P **P 08 29 25.5 -0.3**
baz=317,SNR=36
OSSF Osses 92.95 333⇑ *e*P **P 08 29 26.4 +0.9**
Y39A Lockesburg 93.00 43 P **P 08 29 26.2 +0.2**
baz=319,SNR=32
533A Kerrville 93.02 48 P **P 08 29 26.4 +0.2**
baz=316,SNR=50
ERPA Erie 93.02 29 *e*P **P 08 29 26.4 +0.5**
comp=Z,319nm,1.5s
ERPA LR LR
comp=Z,28µm,20.0s
Z38A Mt. Pleasant 93.03 44 P **P 08 29 26.3 +0.2**
baz=319
LARF Larrau 93.04 333⇑ *e*P **P 08 29 24.5 -1.5**
W41A Tony Mavity, V 93.05 41 P **P 08 29 25.4 -0.7**
baz=320,SNR=24
W41B Gary Mavity, V 93.05 41 P **P 08 29 25.4 -0.7**
baz=320,SNR=25
137A Heron Place, G 93.09 45 P **P 08 29 26.7 +0.4**
baz=318
236A Katherine and 93.09 46 P **P 08 29 26.6 +0.2**
baz=318
335A Moody 93.10 47 P **P 08 29 26.7 +0.3**
baz=317,SNR=17
USIN University of 93.15 36 PFAKE 08 29 40.0 +13
USIN LR LR
comp=Z,30µm,21.0s
X40A Basin Creek Fa 93.27 42 P **P 08 29 27.2 0.0**
baz=320,SNR=45
UALR University of 93.31 41 *e*P **P 08 29 27.9 +0.6**
comp=Z,320nm,1.6s
UALR LR LR
comp=Z,21µm,20.0s
336A Riesel 93.36 46 P **P 08 29 28.0 +0.4**
baz=318,SNR=12
ALLY Alegheny Colle 93.36 29 *e*P **P 08 29 29.7 +2.2**
comp=Z,424nm,1.7s
ALLY LR LR
comp=Z,26µm,20.0s
435B Jarrell 93.37 47 P **P 08 29 28.0 +0.2**
baz=317,SNR=14
633A Saathoff Ranch 93.38 49 P **P 08 29 28.3 +0.5**
baz=316,SNR=16
PVMO Portageville 93.39 38 PFAKE 08 29 40.0 +12
PVMO LR LR
comp=Z,33µm,22.0s
Y40A Okolona 93.39 42 P **P 08 29 27.9 +0.2**
baz=320,SNR=14
534A Blanco 93.39 48 P **P 08 29 28.1 +0.2**
baz=317,SNR=68
ACSO Alum Creek Sta 93.40 32 *e*P **P 08 29 28.0 +0.3**
comp=Z,135nm,0.9s
ACSO LR LR
comp=Z,28µm,22.0s
138A Matatall Enter 93.41 44 P **P 08 29 28.5 +0.6**
baz=319
Z39A Irene McRaven, 93.48 43 P **P 08 29 28.6 +0.5**
baz=319,SNR=11
NCB Newcomb 93.48 24 PFAKE 08 29 40.0 +12
NCB LR LR
comp=Z,40µm,22.0s
237A Washetta, Mont 93.50 45 P **P 08 29 28.5 +0.2**
baz=318
WCI Wyandotte Cave 93.58 35 *e*P **P 08 29 28.7 +0.1**
WCI pmax pmax
comp=Z,523nm,1.9s
WCI MLR MLR
comp=Z,37µm,21.0s
WCI Wyandotte Cave 93.58 35 *e*P **P 08 29 28.7 +0.1**
comp=Z,523nm,1.9s
WCI LR LR
comp=Z,37µm,21.0s

M54A Oil Creek Stat 93.67 29 P **P 08 29 28.7 -0.2**
baz=329,SNR=14
WLAR White Oak Lake 93.73 42 *e*P **P 08 29 30.4 +1.1**
comp=Z,542nm,1.4s
WLAR LR LR
comp=Z,17µm,19.0s
832A Faith Ranch, C 93.73 50 P **P 08 29 30.1 +0.7**
baz=316,SNR=34
139A Bunkhouse Ranc 93.79 44 P **P 08 29 29.8 +0.2**
baz=319
MDV Middlebury 93.80 24 *e*P **P 08 29 29.9 +0.5**
PKME Peaks-Kenny Pk 93.83 21 *e*P **P 08 29 30.6 +1.1**
comp=Z,171nm,1.2s
PKME LR LR
comp=Z,36µm,19.0s
733A Divot King Ran 93.84 50 P **P 08 29 30.3 +0.4**
baz=316,SNR=13
436A Wall Ranch, Ga 93.84 47 P **P 08 29 30.4 +0.5**
baz=318
UTMT University of 93.86 38 *e*P **P 08 29 31.4 +1.5**
comp=Z,392nm,1.3s
238A Jacksonville 93.89 45 P **P 08 29 31.0 +1.0**
baz=319
Z40A Long Farm, Mag 93.90 43 P **P 08 29 30.6 +0.6**
baz=320,SNR=20
535A Dale 93.93 48 P **P 08 29 30.7 +0.4**
baz=317,SNR=11
634A China Grove, S 93.93 49 P **P 08 29 31.0 +0.6**
baz=317,SNR=11
AAE Adis Abeba 93.94 284 *i* P **P 08 29 31.8 +0.8**
AAE 08 33 23.7
AAE 08 41 54.2
337A Centerville 93.96 46 P **P 08 29 31.1 +0.7**
baz=318
LBNH Lisbon 93.98 23 *e*P **P 08 29 31.6 +1.3**
LBNH pmax pmax
comp=Z,82nm,1.0s
LBNH MLR MLR
comp=Z,41µm,22.0s
LBNH Lisbon 93.98 23 *e*P **P 08 29 31.6 +1.3**
comp=Z,82nm,1.0s
LBNH LR LR
comp=Z,41µm,22.0s
N54A Moraine State 94.01 30 P **P 08 29 30.8 +0.3**
baz=329,SNR=11
833A Chaparral WMA, 94.06 50 P **P 08 29 31.7 +0.8**
baz=316,SNR=26
FURI Furi 94.09 284 P **P 08 29 33.3 +1.6**
FURI Furi 94.09 284 PFAKE 08 29 40.0 +8.3
FURI LR LR
comp=Z,19µm,21.0s
437A Phantom Ranch, 94.18 46 P **P 08 29 32.3 +0.9**
baz=318
ACCN Adirondack Com 94.19 24 *e*P **P 08 29 31.3 0.0**
comp=Z,394nm,1.8s
ACCN LR LR
comp=Z,45µm,22.0s
536A Bastrop 94.19 47 P **P 08 29 32.1 +0.6**
baz=318
734A La Parita Cree 94.19 49 P **P 08 29 32.4 +0.9**
baz=317,SNR=12
Z41A Richland Creek 94.22 42 P **P 08 29 31.9 +0.3**
baz=320
239A Gary 94.24 44 P **P 08 29 31.6 0.0**
baz=319
338A Crockett 94.26 45 P **P 08 29 32.3 +0.5**
baz=319
CCAR Cane Creek 94.27 41 PFAKE 08 29 40.0 +8.2
CCAR LR LR
comp=Z,29µm,22.0s
140A Cam and Jess, 94.27 43 P **P 08 29 32.1 +0.3**
baz=320
635A Leesville 94.27 48 P **P 08 29 32.4 +0.5**
baz=317,SNR=14
MET Memphis--Engin 94.28 39 PFAKE 08 29 40.0 +8.2
MET LR LR
comp=Z,20µm,20.0s
NATX Nacogdoches 94.33 45 P **P 08 29 32.8 +0.7**
baz=319,SNR=6.5
NATX Nacogdoches 94.33 45 PFAKE 08 29 40.0 +7.9
NATX LR LR
comp=Z,46µm,22.0s
BINY Binghamton 94.44 26 *e*P **P 08 29 33.1 +0.7**
comp=Z,77nm,1.2s
BINY LR LR
comp=Z,26µm,19.0s
LMN Caledonia Moun 94.46 17 *e*P **P 08 29 33.1 +0.7**
comp=Z,67nm,1.0s
WVT Waverly 94.53 37 *e*P **P 08 29 33.4 +0.4**
WVT pmax pmax
comp=Z,129nm,1.4s
WVT MLR MLR
comp=Z,22µm,21.0s
WVT Waverly 94.53 37 *e*P **P 08 29 33.4 +0.4**
comp=Z,129nm,1.4s
WVT LR LR
comp=Z,22µm,21.0s
438A Sam Houston St 94.62 46 P **P 08 29 33.9 +0.5**
baz=318
240A Hunter Patters 94.62 44 P **P 08 29 33.7 +0.3**
baz=320
537A Green Hill Far 94.63 47 P **P 08 29 34.6 +1.1**
baz=318,SNR=12
GGN Saint George 94.63 19 *e*P **P 08 29 35.3 +2.1**
comp=Z,111nm,1.2s
GGN LR LR
comp=Z,33µm,22.0s
636A Smothers Creek 94.63 48 P **P 08 29 34.3 +0.8**
baz=318
735A Kenedy 94.64 49 P **P 08 29 35.1 +1.5**
baz=317,SNR=12
933A Laredo 94.64 50 P **P 08 29 35.2 +1.5**
baz=316,SNR=52
141A Papa Simpson, 94.66 43 P **P 08 29 34.1 +0.5**
baz=320
KEST Kesra 94.68 322 P **P 08 29 33.5 -0.3**
comp=Z,62nm,1.1s,baz=84,slow=0.5,SNR=25
KEST PP **PP 08 33 20.8 -0.4**
comp=Z,48nm,1.1s,baz=278,slow=6.0,SNR=5.0
KEST LR LR 09 15 40.1
comp=Z,25µm,20.6s,baz=344,slow=38
KEST Kesra 94.68 322 *e*P **P 08 29 33.5 -0.3**
comp=Z,172nm,1.3s
KEST LR LR
comp=Z,28µm,18.0s
339A Huntington 94.71 45 P **P 08 29 33.9 +0.1**
baz=319
834A Tilden 94.72 50 P **P 08 29 35.3 +1.4**
baz=317
CMAH Djebel Manchou 94.89 324 P **P 08 29 34.7 0.0**
439A Center Grove, 94.99 45 P **P 08 29 35.7 +0.6**
baz=319
538A Harpers Horsep 95.00 46 P **P 08 29 35.7 +0.5**
baz=316
HKT Hockley 95.00 47 *e*P **P 08 29 38.0 +2.8**
HKT pmax pmax
comp=Z,347nm,1.9s
HKT MLR MLR
comp=Z,16µm,20.0s
HKT Hockley 95.00 47 *e*P **P 08 29 38.0 +2.8**
comp=Z,347nm,1.9s
HKT LR LR
comp=Z,16µm,20.0s
736A Circle Diamond 95.01 48 P **P 08 29 37.0 +1.8**
baz=318,SNR=13
340A Bronson 95.02 44 P **P 08 29 35.6 +0.3**
baz=319
OXF Oxford 95.03 39 *e*P **P 08 29 35.5 +0.3**
OXF pmax pmax
comp=Z,318nm,1.3s
OXF MLR MLR
comp=Z,16µm,20.0s
OXF Oxford 95.03 39 *e*P **P 08 29 35.5 +0.3**
comp=Z,318nm,1.3s
OXF LR LR
comp=Z,16µm,20.0s
CAEH 'Ain El Ouahch 95.03 324 P **P 08 29 36.0 +0.7**
835A Beeville 95.04 49 P **P 08 29 37.3 +1.9**
baz=317,SNR=11
KSPA Keystone Colle 95.08 27 PFAKE 08 29 50.0 +15
KSPA LR LR
comp=Z,29µm,20.0s
637A Eagle Lake 95.09 47 P **P 08 29 37.3 +1.7**
baz=318,SNR=11
241A Mo Tay, Goldon 95.10 43 P **P 08 29 36.3 +0.7**
baz=320
SSPA Standing Stone 95.10 28 *e*P **P 08 29 35.5 0.0**
comp=Z,344nm,1.9s

SSPA LR LR
comp=Z,22µm,22.0s
934A Benavides 95.12 50 P **P 08 29 37.0 +1.3**
baz=317,SNR=12
ABSA Djebel Ababsia 95.15 324 P **P 08 29 35.5 -0.4**
O56A Blue Knob Stat 95.16 29 P **P 08 29 36.2 +0.3**
baz=330,SNR=9.9
MCWV Mont Chateau 95.18 30 *e*P **P 08 29 35.1 -0.7**
comp=Z,59nm,1.0s
MCWV LR LR
comp=Z,18µm,21.0s
142A Monroe 95.22 42 P **P 08 29 36.8 +0.7**
baz=321
PLAL Pickwick Lake 95.33 38 *e*P **P 08 29 38.1 +1.5**
comp=Z,76nm,1.5s
PLAL LR LR
comp=Z,22µm,22.0s
143A Socs Landing, 95.40 42 P **P 08 29 37.6 +0.6**
baz=321
034A Hebbronville 95.40 50 P **P 08 29 38.2 +1.1**
baz=316,SNR=20
CKFL Kef-Lekhel 95.41 324 P **P 08 29 37.8 +0.7**
341A Kurthwood 95.48 44 P **P 08 29 37.5 +0.2**
baz=320
440A Kirbyville 95.48 45 P **P 08 29 38.7 +1.3**
baz=319
242A Grayson 95.49 43 P **P 08 29 37.9 +0.5**
baz=320
737A Port Lavaca 95.52 48 P **P 08 29 38.2 +0.6**
baz=318
539A Cross D Ranch, 95.53 46 P **P 08 29 38.7 +1.1**
baz=319
KVTX Kingsville 95.54 50 *e*P P 08 29 44.4 +6.7
comp=Z,342nm,1.0s
KVTX LR LR
comp=Z,15µm,19.0s
N59A State Game Lan 95.65 27 P **P 08 29 38.6 +0.6**
baz=332,SNR=14
HRV Adam Dziewonsk 95.66 23 *e*P **P 08 29 40.2 +2.2**
HRV pmax pmax
comp=Z,187nm,1.4s
HRV MLR MLR
comp=Z,30µm,20.0s
HRV Adam Dziewonsk 95.66 23 *e*P **P 08 29 40.2 +2.2**
comp=Z,187nm,1.4s
HRV LR LR
comp=Z,30µm,20.0s
CTEI Djebel Teioual 95.83 324 P **P 08 29 38.8 -0.2**
035A Encino 95.85 50 P **P 08 29 40.5 +1.4**
baz=317
540A Vidor 95.88 45 P **P 08 29 40.7 +1.6**
baz=319
441A DeRidder 95.91 44 P **P 08 29 39.9 +0.5**
baz=320
ODNJ Ogdensburg 95.91 26 *e*P **P 08 29 41.3 +2.1**
comp=Z,45nm,1.2s
ODNJ LR LR
comp=Z,28µm,22.0s
342A Flagon Creek P 95.92 43 P **P 08 29 40.1 +0.8**
baz=320
ZAIG Zacatecas 95.95 56 *e*P **P 08 29 41.7 +1.7**
comp=Z,204nm,1.4s
ZAIG LR LR
comp=Z,53µm,21.0s
144A Alexander Plac 95.97 41 P **P 08 29 40.2 +0.6**
baz=322
243A Waterproof 95.99 42 P **P 08 29 40.2 +0.5**
baz=321
LUPA Lehigh Univers 96.07 27 *e*P **P 08 29 42.8 +2.9**
comp=Z,36nm,0.9s
LUPA LR LR
comp=Z,31µm,20.0s
PBRG Braganca 96.12 336 *e*P **P 08 29 39.4 -0.8**
comp=Z,192nm,1.4s
PBRG Braganca 96.12 336 *e*PP PP 08 33 34.8 +2.8
PBRG Braganca 96.12 336 *e*SS SS 08 47 46.7 +18
SET Setif 96.18 325 P **P 08 29 41.0 +0.4**
SWET Sewanee 96.19 37 *e*P **P 08 29 40.4 -0.2**
comp=Z,43nm,1.2s
SWET LR LR
comp=Z,10µm,22.0s
AKF Akfadou 96.20 326 P **P 08 29 42.5 +1.7**
TZTN Tazewell 96.21 34 *e*P **P 08 29 40.8 +0.2**
comp=Z,196nm,1.4s
TZTN LR LR
comp=Z,46µm,22.0s
035Z Hargill 96.22 50 P **P 08 29 42.1 +1.3**
baz=317
PAL Palisades 96.23 26 *e*P **P 08 29 41.9 +1.3**
PAL pmax pmax
comp=Z,280nm,1.8s
PAL MLR MLR
comp=Z,35µm,20.0s
PAL Palisades 96.23 26 *e*P **P 08 29 41.9 +1.3**
comp=Z,280nm,1.8s
PAL LR LR
comp=Z,35µm,20.0s
VBMS Vicksburg 96.25 42 P **P 08 29 41.4 +0.6**
baz=321
VBMS Vicksburg 96.25 42 *e*P **P 08 29 41.8 +1.0**
comp=Z,200nm,1.4s
VBMS LR LR
comp=Z,21µm,20.0s
145A Houston Renfro 96.26 41 P **P 08 29 41.3 +0.5**
baz=322
CKHR Kef el Ahmar 96.28 325 P **P 08 29 42.7 +1.6**
BRNJ Basking Ridge 96.28 26 *e*P **P 08 29 41.8 +1.0**
comp=Z,69nm,1.1s
BRNJ LR LR
comp=Z,28µm,22.0s
442A Mamou 96.36 44 P **P 08 29 42.7 +1.3**
baz=320
343A Vidalia 96.38 43 P **P 08 29 42.2 +0.8**
baz=321
CPNY Central Park 96.40 26 *e*P **P 08 29 43.8 +2.5**
comp=Z,180nm,1.7s
CPNY LR LR
comp=Z,37µm,21.0s
PGAV Gavieira, Arco 96.46 337 *e*P **P 08 29 41.1 -0.7**
comp=Z,141nm,1.9s
PGAV Gavieira, Arco 96.46 337 *e*PP PP 08 33 36.2 +1.6
PGAV *e*SKS **SKSac 08 40 20.7 +2.3**
PGAV *e*SS **SS 08 47 42.4 +9.0**
PGAV Gavieira, Arco 96.46 337 *e*LQ LQ 08 57 59.4
PGAV *e*LR LR 09 02 03.2
comp=Z,17µm,20.0s
SDMD Soldier's Deli 96.57 28 *e*P **P 08 29 43.0 +0.8**
comp=Z,15nm,1.0s
SDMD LR LR
comp=Z,17µm,21.0s
PCAB Cabril 96.62 337 *e*P **P 08 29 43.3 +0.9**
comp=Z,165nm,1.4s
PCAB Cabril 96.62 337 *e*PP PP 08 33 39.0 +3.2
CPCT Cooper Cave 96.66 36 *e*P **P 08 29 42.8 +0.1**
comp=Z,32nm,1.0s
CPCT LR LR
comp=Z,18µm,20.0s
443A Delano Plantat 96.68 43 P **P 08 29 44.0 +1.1**
baz=321
146A Union 96.69 40 P **P 08 29 43.5 +0.7**
baz=322
245A Little AP, Sta 96.72 41 P **P 08 29 43.2 +0.2**
baz=322
344A Westbrook Farm 96.72 42 P **P 08 29 43.5 +0.5**
baz=321
ABA Alger-Bouzarea 96.74 327 P **P 08 29 43.5 +0.5**
MVO Moncorvo 96.79 336 *e*P **P 08 29 42.7 -0.5**
comp=Z,248nm,1.4s
MVO Moncorvo 96.79 336 *e*PP PP 08 33 39.5 +2.3
MVO *e*SKS **SKSac 08 40 21.6 +1.6**
MVO *e*SS SS 08 47 51.1 +13
MVO Moncorvo 96.79 336 *e*LQ LQ 08 57 51.5
MVO *e*LR LR 09 02 09.0
comp=Z,27µm,18.0s
TKL Tuckaleechee C 96.84 35 PKKPbc PKKPbc 08 46 23.9 -0.6
comp=Z,2.8nm,0.9s,baz=189,slow=7.2,SNR=2.5
TKL Tuckaleechee C 96.84 35 *e*P **P 08 29 43.8 +0.3**
TKL pmax pmax
comp=Z,158nm,1.4s
TKL MLR MLR
comp=Z,30µm,22.0s
TKL Tuckaleechee C 96.84 35 *e*P **P 08 29 43.8 +0.3**
comp=Z,158nm,1.4s
TKL LR LR
comp=Z,30µm,22.0s
POLO Lamas de Olo 96.85 337 *e*P **P 08 29 42.8 -0.7**
comp=Z,85nm,1.6s

POLO Lamas de Olo 96.85 337 *e*PP PP 08 33 40.0 +2.4
POLO *e*SKS **SKSac 08 40 22.6 +2.2**
POLO *e*SS SS 08 47 52.8 +14
PVRL Vila Real 96.91 336 *e*P **P 08 29 45.0 +1.2**
comp=Z,44nm,0.1s
PVRL Vila Real 96.91 336 *e*PP PP 08 33 40.9 +2.8
ATAF Djebel Tarf 96.96 326 P **P 08 29 46.8 +2.6**
AKET Djebel Ketaf 97.00 326 P **P 08 29 45.9 +1.5**
BLA Blacksburg 97.02 32 *e*P **P 08 29 44.6 +0.3**
BLA pmax pmax
comp=Z,99nm,1.1s
BLA MLR MLR
comp=Z,35µm,22.0s
BLA Blacksburg 97.02 32 *e*P **P 08 29 44.6 +0.3**
comp=Z,100nm,1.1s
BLA LR LR
comp=Z,35µm,22.0s
ES19 SONSECA Array 97.02 333 *e*P **P 08 29 43.8 -0.5**
ESDC Sonseca Array 97.06 333 P **P 08 29 43.6 -0.9**
comp=Z,14nm,0.9s,baz=20,slow=4.2,SNR=28
ESDC PP **PP 08 33 40.3 +1.0**
comp=Z,21nm,1.1s,baz=24,slow=6.8,SNR=5.0
ESDC PKKPbc **PKKPbc 08 46 22.8 -1.2**
comp=Z,0.4nm,0.4s,baz=245,slow=2.6,SNR=3.8
ESDC LR LR 09 16 25.3
comp=Z,22µm,21.3s,baz=30,slow=37
ESLA Sonseca Array 97.06 333 *e*P **P 08 29 44.3 -0.2**
comp=Z,99nm,1.5s
ESLA LR LR
comp=Z,38µm,22.0s
ADJB Djebel Djouab 97.10 326 P Pdif 08 29 47.8 +2.9
VWCC Virginia Weste 97.17 32 *e*P Pdif 08 29 46.2 +1.2
345A Thompson Farm, 97.21 42 P **P 08 29 45.3 +0.1**
baz=322
EMHD Djebel Mahouad 97.28 327 P **P 08 29 44.7 -0.9**
444A Pine Grove 97.29 43 P **P 08 29 45.7 +0.1**
baz=321
PAB San Pablo 97.32 333 *e*P **P 08 29 45.4 -0.3**
PAB pmax pmax
comp=Z,50nm,1.1s
PAB MLR MLR
comp=Z,36µm,22.0s
PAB San Pablo 97.32 333 *e*P **P 08 29 45.4 -0.3**
comp=Z,50nm,1.1s
PAB LR LR
comp=Z,36µm,22.0s
CBN Corbin Frederi 97.41 29 PFAKE 08 30 00.0 +14
CBN LR LR
comp=Z,33µm,22.0s
LRAL Lakeview Retre 97.42 39 *e*P Pdif 08 29 47.3 +1.1
comp=Z,11nm,0.7s
LRAL LR LR
comp=Z,20µm,20.0s
346A Big Creek Wild 97.45 41 P Pdif 08 29 46.7 +0.4
baz=322
PVIS Viseu 97.48 336 *e*P Pdif 08 29 47.5 +1.1
comp=Z,128nm,1.9s
PVIS Viseu 97.48 336 *e*PP PP 08 33 44.7 +2.3
445A Amite 97.50 42 P Pdif 08 29 47.1 +0.5
baz=321
544A White Castle 97.53 43 P Pdif 08 29 47.3 +0.5
baz=321
MTE Manteigas 97.65 336 *e*P **P 08 29 46.7 -0.4**
comp=Z,188nm,1.8s
MTE Manteigas 97.65 336 *e*PP PP 08 33 45.2 +1.4
MTE *e*SKS **SKSac 08 40 26.1 +1.6**
MTE *e*SS SS 08 48 01.8 +12
MTE Manteigas 97.65 336 *e*LQ LQ 08 58 15.5
MTE *e*LR LR 09 02 44.1
comp=Z,26µm,18.0s
MTE Manteigas 97.65 336 *e*P Pdif 08 29 49.3 +2.1
comp=Z,362nm,1.9s
MTE LR LR
comp=Z,25µm,20.0s
JSRW J. Sargeant Re 97.65 30 *e*P Pdif 08 29 49.6 +2.5
347A Saraland 97.93 41 P Pdif 08 29 48.7 +0.2
baz=323
545A Edgard 97.95 43 P Pdif 08 29 48.9 +0.3
baz=321
446A Poplarville 97.97 42 P Pdif 08 29 48.8 +0.1
baz=322
PCBR Castelo Branco 98.13 336 *e*P Pdif 08 29 52.5 +3.3
comp=Z,112nm,1.8s
PCBR Castelo Branco 98.13 336 *e*PP PP 08 33 46.9 -0.5
348A Jackson 98.25 40 P **P 08 29 49.6 -0.2**
baz=323
PCAS Casmilo, Conde 98.27 337 *e*P P 08 29 44.5 -5.4
comp=Z,106nm,1.7s
PCAS Casmilo, Conde 98.27 337 *e*PP PP 08 33 50.5 +2.0
PCAS *e*SKS **SKSac 08 40 28.6 +1.1**
PCAS *e*SS SS 08 48 17.4 +19
EANR 'Ain N'Sour 98.30 328 P **P 08 29 49.4 -0.7**
645A Chauvin 98.34 43 P **P 08 29 50.1 -0.2**
baz=321
447A Lucedale 98.34 41 P Pdif 08 29 51.0 +0.6
baz=322
KMSC Kings Mountain 98.37 34 P **P 08 29 50.0 -0.4**
baz=328,SNR=11
KMSC Kings Mountain 98.37 34 *e*P **P 08 29 50.0 -0.4**
comp=Z,109nm,1.3s
KMSC LR LR
comp=Z,43µm,21.0s
OKGL Djebel Kef Gue 98.41 328 P Pdif 08 29 55.4 +4.8
PMRV Marv??o 98.47 335 *e*P **P 08 29 50.0 -0.8**
PMRV Marv??o 98.47 335 *e*PP PP 08 33 52.8 +2.7
PMRV *e*SKS **SKSac 08 40 30.2 +1.6**
PMRV *e*SS **SS 08 47 56.9 -4.8**
PMRV Marv??o 98.47 335 *e*LQ LQ 08 59 24.4
PMRV *e*LR LR 09 03 00.3
comp=Z,19µm,20.0s
RER Riviere de l'E 98.48 250 PFAKE 08 30 00.0 +8.9
RER LR LR
comp=Z,24µm,22.0s
PTOM Tomar 98.64 336 *e*P Pdif 08 29 56.5 +5.0
PTOM Tomar 98.64 336 *e*PP PP 08 33 54.1 +2.8
ETRT Tiaret 98.68 327 P **P 08 29 51.7 -0.3**
OJGS Djebel Guires 98.82 328 P Pdif 08 29 56.7 +4.2
GOGA Godfrey 98.83 36 *e*P Pdif 08 29 53.8 +1.3
GOGA *e* 08 33 50.0
GOGA pmax pmax
comp=Z,151nm,1.9s
GOGA MLR MLR
comp=Z,24µm,22.0s
GOGA Godfrey 98.83 36 *e*P Pdif 08 29 53.8 +1.4
comp=Z,150nm,1.9s
GOGA *e*PP **PP 08 33 50.0 -3.0**
GOGA LR LR
comp=Z,24µm,22.0s
BRAL Brewton 98.88 40 PFAKE 08 30 10.0 +17
BRAL LR LR
comp=Z,18µm,20.0s
MOIG Morelia 99.01 57 *e*P Pdif 08 29 55.6 +1.8
comp=Z,379nm,1.8s
PESTR Estremoz 99.05 335 *e*P **Pdif 08 29 52.8 -0.6**
PESTR Estremoz 99.05 335 *e*PP PP 08 33 55.8 +1.4
PESTR *e*SKS **SKSac 08 40 33.4 +1.9**
PESTR *e*SS **SS 08 48 15.3 +5.6**
PMTG Montargil 99.08 336 *e*P **Pdif 08 29 51.8 -1.7**
PMTG Montargil 99.08 336 *e*PP PP 08 33 55.7 +1.1
PMTG *e*SKS **SKSac 08 40 34.3 +2.7**
PMTG *e*SS **SS 08 48 09.3 -0.8**
JSC Jenkinsville 99.12 34 *e*P **Pdif 08 29 54.1 +0.3**
JSC pmax pmax
comp=Z,82nm,1.4s
JSC MLR MLR
comp=Z,34µm,21.0s
JSC Jenkinsville 99.12 34 *e*P **Pdif 08 29 54.1 +0.3**
comp=Z,82nm,1.4s
JSC LR LR
comp=Z,34µm,21.0s
RKT Rikitea 99.34 112 *e*PP PP 08 33 56.3 -1.9
comp=Z,1µm,31.2s
RKT *e*SKSac **SKSac 08 40 30.2 -2.8**
comp=Z,3µm,31.8s
RKT Rikitea 99.34 112 *e*PS PS 08 42 55.7 +0.7
comp=Z,6µm,36.2s
RKT *e*SS SS 08 48 15.2 -1.5
comp=Z,9µm,28.8s
RKT Rikitea 99.34 112 *e*LR LR 09 02 05.4
comp=Z,79µm,24.8s,baz=308
PBAR Barrancos 99.48 335 *e*P **Pdif 08 29 54.6 -0.7**
PBAR Barrancos 99.48 335 *e*PP PP 08 33 59.0 +1.2
PBAR *e*SKS **SKSac 08 40 35.2 +1.6**
PBAR *e*SS **SS 08 48 24.1 +8.3**
EVO Evora 99.49 336 *e*P **Pdif 08 29 54.8 -0.5**

EVO Evora 99.49 336 *e*PP PP 08 33 59.6 +1.8
PMAFR Mafra 99.52 337 *e*P **Pdif 08 29 56.5 +1.0**
PMAFR Mafra 99.52 337 *e*PP PP 08 34 00.5 +2.5
PMAFR *e*SKS **SKSac 08 40 39.1 +5.3**
PMAFR *e*SS SS 08 48 30.7 +14
PACT Alcochete 99.55 336 *e*P **Pdif 08 29 55.7 +0.2**
PACT Alcochete 99.55 336 *e*PP PP 08 34 00.5 +2.3
PMST Lisbon--Monsan 99.69 336 *e*P **Pdif 08 29 58.2 +2.0**
PMST Lisbon--Monsan 99.69 336 *e*PP PP 08 34 00.7 +1.4
LIS Lisbon 99.69 336 *e*P **Pdif 08 29 56.6 +0.4**
LIS *e*PP **PP 08 34 00.4 +1.1**
LIS AMS AMS 09 13 40.2
comp=E,26µm,18.7s
LIS Lisbon 99.69 336 *e*P **Pdif 08 29 56.6 +0.4**
LIS *e* 08 34 00.3
PBEJ Beja 99.90 335 *e*P **Pdif 08 29 58.6 +1.4**
PBEJ Beja 99.90 335 *e*PP PP 08 34 03.3 +2.4
PNCL Nicolau / Gran 100.04 336 *e*P **Pdif 08 29 58.5 +0.7**
PNCL Nicolau / Gran 100.04 336 *e*PP PP 08 34 04.3 +2.3
PNCL *e*SKS **SKSac 08 40 39.8 +3.4**
PNCL *e*SS SS 08 48 42.4 +19
MESJ Messejana 100.19 335 *e*P **Pdif 08 29 59.0 +0.5**
MESJ *e*PP **PP 08 34 04.1 +1.1**
MESJ AMS AMS 09 13 00.6
comp=E,22µm,17.5s
MESJ Messejana 100.19 335 *e*P **Pdif 08 29 59.0 +0.5**
MESJ Messejana 100.19 335 *e*P **Pdif 08 29 58.9 +0.5**
MESJ *e* 08 34 04.1
PCVE Castro Verde 100.31 335 *e*P **Pdif 08 29 58.6 -0.4**
PCVE Castro Verde 100.31 335 *e*PP PP 08 34 05.2 +1.1
PCVE Castro Verde 100.31 335 *e*SS SS 08 48 46.2 +19
TIGA Tifton 100.39 37 Pdiff **Pdif 08 29 59.5 0.0**
baz=326
TIGA Tifton 100.39 37 PFAKE 08 30 10.0 +11
TIGA LR LR
comp=Z,23µm,20.0s
PVAQ Vaqueiros 100.41 335 *e*P **Pdif 08 29 58.9 -0.5**
PVAQ Vaqueiros 100.41 335 *e*PP PP 08 34 06.7 +1.9
PVAQ *e*SKS **SKSac 08 40 41.5 +3.3**
PVAQ *e*SS **SS 08 48 36.3 +7.5**
PVAQ Vaqueiros 100.41 335 *e*LQ LQ 09 00 17.6
PVAQ *e*LR LR 09 04 03.1
comp=Z,25µm,18.0s
NHSC New Hope 100.59 34 *e*Pdif **Pdif 08 30 04.2 +3.9**
NHSC LR LR
comp=Z,40µm,21.0s
UNM Universidad Na 100.60 56 PFAKE 08 30 10.0 +9.1
UNM LR LR
comp=Z,30µm,22.0s
PTEO Sao Teotonio 100.62 336 *e*P **Pdif 08 30 01.3 +0.9**
PTEO Sao Teotonio 100.62 336 *e*PP PP 08 34 08.8 +2.4
PBDV Barranco-do-Ve 100.63 335 *e*P **Pdif 08 30 01.0 +0.5**
PBDV Barranco-do-Ve 100.63 335 *e*PP PP 08 34 06.7 +0.2
PBDV Barranco-do-Ve 100.63 335 *e*SS SS 08 48 50.5 +19
MORF Marmelete 100.81 335 *e*P **Pdif 08 30 01.5 +0.2**
MORF *e*PP **PP 08 34 08.9 +1.0**
MORF AMS AMS 09 13 08.7
comp=E,29µm,20.3s
MORF Marmelete 100.81 335 *e*P **Pdif 08 30 01.1 -0.2**
MORF Marmelete 100.81 335 *e*PP PP 08 34 09.0 +1.1
MORF Marmelete 100.81 335 *e*SS SS 08 48 51.8 +17
MORF Marmelete 100.81 335 *e*P **Pdif 08 30 01.5 +0.2**
MORF *e* 08 34 08.8
PFVI Vila Bisbo 101.03 336 *e*P **Pdif 08 30 03.5 +1.3**
PFVI Vila Bisbo 101.03 336 *e*PP PP 08 34 10.9 +1.4
PFVI *e*SKS **SKSac 08 40 42.9 +1.7**
PFVI *e*SS SS 08 48 52.7 +15
PFVI Vila Bisbo 101.03 336 PFAKE 08 30 10.0 +7.8
PFVI LR LR
comp=Z,32µm,21.0s
KMBO Kilima Mbogo 101.33 277 P **Pdif 08 30 03.6 -0.6**
comp=Z,4.2nm,0.7s,baz=34,slow=7.6,SNR=13
KMBO PP **PP 08 34 13.9 +0.5**
comp=Z,6.4nm,0.8s,baz=33,slow=7.9,SNR=5.0
KMBO PKKP **PKKPdf 08 46 18.4 +0.6**
comp=Z,1.0nm,0.3s,baz=180,slow=3.0,SNR=3.3
KMBO PKPPKP **P'P'df 08 54 31.7 -1.7**
comp=Z,0.5nm,0.3s,baz=214,slow=7.3,SNR=4.5
KMBO Kilima Mbogo 101.33 277 *e*Pdif **Pdif 08 30 03.6 -0.6**
KMBO *e*PP **PP 08 34 13.9 +0.5**
KMBO LR LR
comp=Z,25µm,22.0s
KMBO Kilima Mbogo 101.33 277 P **Pdif 08 30 03.8 -0.4**
SNR=22
TLIG Tlapa 102.26 57 PFAKE 08 30 20.0 +12
TLIG LR LR
comp=Z,15µm,21.0s
MDT Midelt 103.36 330 PKKP **PKKPdf 08 46 10.6 -2.5**
comp=Z,2.6nm,0.9s,baz=265,slow=2.6,SNR=5.7
ROSA Rosais 104.00 351 PFAKE 08 30 30.0 +15
ROSA LR LR
comp=Z,16µm,22.0s
PTCN Pitcairn Islan 104.10 111 PFAKE 08 30 30.0 +14
PTCN LR LR
comp=Z,29µm,21.0s
DWPF Disney Wildern 104.19 38 PFAKE 08 30 30.0 +14
DWPF LR LR
comp=Z,21µm,22.0s
CMLA Cha da Macela 104.55 349 PFAKE 08 30 30.0 +12
CMLA LR LR
comp=Z,14µm,19.0s
CASY Casey 105.48 192 PFAKE 08 34 50.0
CASY LR LR
comp=Z,7µm,19.0s
DODT Dodoma, Tanzan 105.55 274 *i* P **PP 08 34 43.9 -1.0**
DODT 08 43 45.1
PAF Port-aux-Franc 106.07 220 PFAKE 08 34 50.0
PAF LR LR
comp=Z,10µm,20.0s
TEIG Tepich 106.81 48 PFAKE 08 34 50.0
TEIG LR LR
comp=Z,15µm,22.0s
TAM Tamanrasset 107.02 317 PFAKE 08 34 50.0
TAM LR LR
comp=Z,16µm,21.0s
PMPS Porto Santo 107.09 340 *e*PP PP 08 34 57.0 +2.4
BBSR BB Station 107.10 22 PFAKE 08 34 50.0
BBSR LR LR
comp=Z,11µm,21.0s
PMOZ Porto Moniz, M 107.55 340 *e*PP PP 08 35 00.4 +2.4
PMOZ Porto Moniz, M 107.55 340 *e*LR LR 09 07 28.1
comp=Z,10µm,22.0s
FUL Funchal 107.63 340 *e*PP PP 08 34 58.8 +0.3
TGUH Tegucigalpa,Un 112.16 51 PFAKE 08 35 00.0
TGUH LR LR
comp=Z,16µm,22.0s
GTBY Guantanamo Bay 114.16 37 PFAKE 08 35 00.0 +7.8
GTBY LR LR
comp=Z,22µm,22.0s
MTDJ Mount Denham 114.39 40 PFAKE 08 35 00.0 +7.2
MTDJ LR LR
comp=Z,17µm,22.0s
GRTK Grand Turk 114.60 33 PFAKE 08 35 10.0 +17
GRTK LR LR
comp=Z,37µm,22.0s
CRZF Crozet Islands 114.83 230 PFAKE 08 35 00.0 +7.5
CRZF LR LR
comp=Z,11µm,20.0s
VNDA Vanda 114.95 175 PKP PKPdf 08 34 51.9 -0.1
comp=Z,9.2nm,0.7s,baz=327,slow=4.8,SNR=20
VNDA PP **PP 08 35 52.3 +0.6**
comp=Z,13nm,1.0s,baz=341,slow=8.9,SNR=6.1
VNDA PKKPab **PKKPbc 08 45 30.7 +0.6**
comp=Z,4.6nm,0.9s,baz=211,slow=2.7,SNR=8.6
SBA Scott Base 115.64 174 PFAKE 08 35 10.0 +17
SBA LR LR
comp=Z,7µm,22.0s
JTS JuntasAbangare 116.48 52 PKKPab PKKPab 08 45 29.2 -1.5
comp=Z,3.6nm,0.8s,baz=45,slow=22,SNR=5.4
SDDR Presa de Saban 116.76 34 PFAKE 08 35 10.0 +13
SDDR LR LR
comp=Z,28µm,19.0s
LSZ Lusaka 116.83 271 PFAKE 08 35 10.0 +13
LSZ LR LR
comp=Z,18µm,21.0s
TOC1 Torodi Ar. Sit 116.89 314 PFAKE 08 35 10.0 +12
TOC1 LR LR
comp=Z,14µm,22.0s
TOC2 Torodi Ar. Sit 116.89 314 PFAKE 08 35 10.0 +12
TOC2 LR LR
comp=Z,12µm,22.0s
TOB2 Torodi Ar. Sit 116.90 314 PFAKE 08 35 10.0 +12
TOB2 LR LR
comp=Z,12µm,21.0s

TOB1 Torodi Ar. Sit 116.90 314 PFAKE 08 35 10.0 +12
TOB1 LR LR
comp=Z,13µm,21.0s
TOC3 Torodi Ar. Sit 116.91 314 PFAKE 08 35 10.0 +12
TOC3 LR LR
comp=Z,12µm,21.0s
TOA2 Torodi Ar. Sit 116.91 314 PFAKE 08 35 10.0 +12
TOA2 LR LR
comp=Z,100nm,18.0s
TOC7 Torodi Ar. Sit 116.91 314 PFAKE 08 35 10.0 +12
TOC7 LR LR
comp=Z,12µm,21.0s
TOA1 Torodi Ar. Sit 116.91 314 *e*PKPdf **PKPdf 08 34 56.8 -0.8**
TOA1 *e*PP **PP 08 36 04.8 -0.8**
TOA1 LR LR
comp=Z,12µm,21.0s
TOA0 Torodi Ar. Sit 116.91 314 *e*PKPdf **PKPdf 08 34 56.8 -0.9**
TOA0 LR LR
comp=Z,12µm,22.0s
TORD Torodi Ar. Bea 116.91 314 PKP **PKPdf 08 34 56.8 -0.8**
comp=Z,18nm,0.9s,baz=23,slow=2.6,SNR=20
TORD PP **PP 08 36 04.8 -0.8**
comp=Z,52nm,1.1s,baz=34,slow=5.4,SNR=8.7
TORD PKKPbc **PKKPbc 08 45 24.1 +2.1**
comp=Z,9.3nm,0.7s,baz=209,slow=2.5,SNR=18
TOB3 Torodi Ar. Sit 116.92 314 PFAKE 08 35 10.0 +12
TOB3 LR LR
comp=Z,12µm,21.0s
TOB5 Torodi Ar. Sit 116.92 314 PFAKE 08 35 10.0 +12
TOB5 LR LR
comp=Z,13µm,21.0s
TOA3 Torodi Ar. Sit 116.92 314 PFAKE 08 35 10.0 +12
TOA3 LR LR
comp=Z,100nm,19.0s
TOB4 Torodi Ar. Sit 116.93 314 PFAKE 08 35 10.0 +12
TOB4 LR LR
comp=Z,12µm,22.0s
TOC4 Torodi Ar. Sit 116.93 314 PFAKE 08 35 10.0 +12
TOC4 LR LR
comp=Z,12µm,18.0s
TOC5 Torodi Ar. Sit 116.94 314 PFAKE 08 35 10.0 +12
TOC5 LR LR
comp=Z,14µm,22.0s
SDD Santo Domingo 117.83 33 PFAKE 08 35 10.0 +11
SDD LR LR
comp=Z,28µm,22.0s
AGP Aguadilla 119.04 30 PFAKE 08 35 10.0 +8.4
AGP LR LR
comp=Z,15µm,22.0s
MAW Mawson 119.18 205 PKP **PKPdf 08 35 00.7 +0.4**
comp=Z,38nm,0.7s,baz=52,slow=3.3,SNR=34
MAW PP **PP 08 36 20.8 -0.5**
comp=Z,11nm,0.9s,baz=37,slow=9.2,SNR=1.4
MAW PKKPbc **PKKPbc 08 45 14.3 -0.5**
comp=Z,4.7nm,0.8s,baz=233,slow=2.7,SNR=4.6
MAW Mawson 119.18 205 PFAKE 08 35 10.0 +10
MAW LR LR
comp=Z,2µm,22.0s
MPR Mayaguez 119.21 30 PFAKE 08 35 10.0 +8.1
MPR LR LR
comp=Z,22µm,22.0s
CELP Cerrillos 119.56 30 *e*PKPdf **PKPdf 08 35 02.9 +0.3**
CBYP Canovanas 119.67 29 PFAKE 08 35 10.0 +7.1
CBYP LR LR
comp=Z,28µm,21.0s
SJG San Juan 119.70 30 PP PP 08 36 24.4 -0.1
baz=320,slow=7.9
SJG San Juan 119.70 30 *e*PP PP 08 36 24.4 -0.1
SJG LR LR
comp=Z,18µm,22.0s
ABVI Anegada Island 119.83 27 PFAKE 08 35 20.0 +17
ABVI LR LR
comp=Z,7µm,20.0s
STVI Saint Thomas 119.94 28 *e*PKPdf **PKPdf 08 35 02.8 -0.5**
STVI LR LR
comp=Z,18µm,21.0s
BCIP Isla Barro Col 120.49 48 PFAKE 08 35 20.0 +15
BCIP LR LR
comp=Z,15µm,22.0s
PAYG Puerto Ayora 120.83 65 PFAKE 08 35 20.0 +15
PAYG LR LR
comp=Z,33µm,22.0s
SMRT St. Maarten 120.91 26 *e* **PP 08 36 30.2 -2.6**
SMRT St. Maarten 120.91 26 PFAKE 08 35 20.0 +15
SMRT LR LR
comp=Z,31µm,22.0s
RPN Rapa Nui 121.11 102 PFAKE 08 35 20.0 +15
RPN LR LR
comp=Z,13µm,22.0s
SABA Saba 121.25 27 *e*P **PKPdf 08 35 01.1 -4.8**
SABA Saba 121.25 27 *e* **PP 08 36 35.9 +0.8**
SABA Saba 121.25 27 PFAKE 08 35 20.0 +14
SABA LR LR
comp=Z,33µm,22.0s
SEUS St. Eustatius 121.46 27 *e* **PP 08 36 35.9 -0.6**
SEUS St. Eustatius 121.46 27 *e*P **PP 08 36 36.0 -0.5**
SEUS St. Eustatius 121.46 27 PFAKE 08 35 20.0 +14
SEUS LR LR
comp=Z,26µm,22.0s
ANWB Willy Bob 121.72 25 *e*P **PP 08 36 31.3 -6.9**
ANWB Willy Bob 121.72 25 *e*P **PP 08 36 34.4 -3.9**
ANWB Willy Bob 121.72 25 *e*P **PP 08 36 38.7 +0.5**
ANWB Willy Bob 121.72 25 PFAKE 08 35 20.0 +13
ANWB LR LR
comp=Z,17µm,22.0s
MLYT Lee's Yard 122.45 26 *e*P **PKPdf 08 35 09.6 +1.4**
MLYT Lee's Yard 122.45 26 *e* **PP 08 36 42.7 -0.6**
GDHS Morne Mazeau, 123.02 26 PFAKE 08 35 20.0 +11
GDHS LR LR
comp=Z,21µm,22.0s
H05N1 Guadeloupe/Mar 123.22 25 PKP **PKPdf 08 35 08.3 -1.4**
DEG La Desirade 123.22 25 *e*P **PKPdf 08 35 09.6 -0.2**
TBG Guadaloupe-3 123.45 26 *e* **PKPdf 08 35 08.3 -1.8**
BBL Barber's Block 123.81 26 *e*P **PKPdf 08 35 12.4 +1.5**
DWS Wesley 123.83 26 *e* **PKPdf 08 35 18.1 +7.3**
LBTB Lobatse 123.97 263 PKKPbc PKKPbc 08 45 00.6 +4.8
comp=Z,3.1nm,0.6s,baz=251,slow=5.7,SNR=5.4
SOLC Bahia Solano 124.27 48 *e*P **PKPdf 08 35 09.9 -1.9**
BBTS Babate 124.31 333 PKP **PKPdf 08 35 11.3 -0.5**
comp=Z,103nm,1.0s,baz=315,slow=2.0,SNR=7.7
BBTS PP **PP 08 36 56.6 +0.7**
comp=Z,37nm,0.8s,baz=4.5,slow=4.4,SNR=2.9
CXM Morne La Croix 124.58 26 *e*P **PP 08 36 57.1 -0.6**
FDF Fort de France 124.66 26 *e*P **PKPdf 08 35 15.1 +2.5**
FDF Fort de France 124.66 26 *e*P **PP 08 36 58.3 +0.1**
FDF Fort de France 124.66 26 *e* **PP 08 37 02.9 +4.7**
FDF Fort de France 124.66 26 *e*PKIKP **PKPdf 08 35 12.0 -0.5**
FDF MLR MLR
comp=Z,23µm,22.0s
FDF Fort de France 124.66 26 *e*PKPdf **PKPdf 08 35 12.0 -0.5**
FDF LR LR
comp=Z,23µm,22.0s
OCAC Ocana 124.95 42 *e*P **PKPdf 08 35 13.3 0.0**
HELC Santa Helena 125.40 46 *e*PKPdf **PKPdf 08 35 13.7 -0.8**
HELC LR LR
comp=Z,20µm,22.0s
HELC Santa Helena 125.40 46 *e*P **PKPdf 08 35 15.0 +0.5**
BRRC Barranca, Sant 125.68 44 *e*P **PKPdf 08 35 15.5 +1.0**
MCLT Moule a Chique 125.68 26 *e*P PKPpre 08 35 09.6
MCLT Moule a Chique 125.68 26 *e*P **PP 08 37 01.0 -4.0**
MCLT Moule a Chique 125.68 26 *e* **PP 08 37 07.1 +2.1**
SDV Santo Domingo 125.81 39 PP PP 08 37 08.3 +1.9
baz=24,slow=10.0
SDV Santo Domingo 125.81 39 *e*PKPdf **PKPdf 08 35 14.9 -0.1**
SDV LR LR
comp=Z,22µm,22.0s
SDV Santo Domingo 125.81 39 *e*P **PKPdf 08 35 15.5 +0.5**
DBIC Dimbokro 125.89 316 PKP **PKPdf 08 35 14.3 -0.5**
comp=Z,48nm,0.9s,baz=46,slow=1.8,SNR=25
DBIC PP **PP 08 37 03.9 -3.0**
comp=Z,54nm,1.0s,baz=12,slow=9.1,SNR=5.5
DBIC Dimbokro 125.89 316 *e*PKPdf **PKPdf 08 35 14.7 -0.2**
BOSA Boshof 125.91 259 PKhKP PKPpre 08 35 05.6
comp=Z,9.2nm,1.0s,baz=138,slow=2.2,SNR=4.9
BOSA PKP **PKPdf 08 35 14.4 -0.1**
comp=Z,51nm,0.9s,baz=74,slow=1.1,SNR=28
SVB Belmont 125.97 27 *e*P **PKPdf 08 35 20.4 +5.4**
SVB Belmont 125.97 27 *e* **PP 08 37 06.0 -1.0**
SVB Belmont 125.97 27 PFAKE 08 35 30.0 +15
SVB LR LR
comp=Z,21µm,22.0s
TIC Toumodi 126.00 316 *e*PKIKP **PKPdf 08 35 14.3 -0.8**
MALC Bahia Malaga 126.07 49 *e*P **PKPdf 08 35 14.4 -0.8**
KIC Kosan Boka 126.08 316 *e*PKIKP **PKPdf 08 35 14.7 -0.6**
comp=Z,368nm,1.3s

GUYC	**Guyana, Colomb**	**126.26**	**47**	*e*P		**PKPdf**	**08 35 15.5**	**-0.7**
NORC	**Norcasia**	**126.29**	**46**	*e*P		**PKPdf**	**08 35 15.5**	**-0.2**
GRGC	**Isla de Gorgon**	**126.35**	**51**	*e*P		**PKPdf**	**08 35 15.5**	**-0.2**
LIC	**Lamto**	**126.35**	**316**	*e*PKIKP		**PKPdf**	**08 35 15.0**	**-0.8**
	comp=Z,268nm,1.8s							
BARC	**Barichara**	**126.39**	**43**	*e*P		**PKPdf**	**08 35 16.1**	**-0.1**
BBGH	**Gun Hill**	**126.68**	**25**	*e*		**PP**	**08 37 13.3**	**+1.7**
BBGH	**Gun Hill**	**126.68**	**25**		PFAKE		08 35 30.0	+14
BBGH					LR	LR		
	comp=Z,20μm,22.0s							
QSPA	**South Pole Qui**	**126.70**	**180**		PFAKE		08 35 30.0	+15
QSPA					LR	LR		
	comp=Z,15μm,22.0s							
TOLC	**Tolima**	**126.82**	**47**	*e*P		**PKPdf**	**08 35 17.2**	**+0.1**
GRGR	**Grenville**	**126.88**	**28**	*e*P		**PKPdf**	**08 35 15.6**	**-1.2**
GRGR	**Grenville**	**126.88**	**28**	*e*P		**PP**	**08 37 09.5**	**-3.5**
GRGR	**Grenville**	**126.88**	**28**	*e*		**PP**	**08 37 12.8**	**-0.2**
GRGR	**Grenville**	**126.88**	**28**		PFAKE		08 35 30.0	+13
GRGR					LR	LR		
	comp=Z,29μm,22.0s							
ROSC	**El Rosal**	**127.19**	**46**		PKP	**PKPdf**	**08 35 18.6**	**+0.7**
	comp=Z,149nm,1.2s,baz=130,slow=2.5,SNR=27							
TSUM	**Tsumeb**	**127.45**	**273**		PP	PP	08 37 18.3	0.0
	baz=52,slow=8.3							
TSUM	**Tsumeb**	**127.45**	**273**	*e*PKPdf		**PKPdf**	**08 35 18.4**	**+0.6**
TSUM				*e*PP		**PP**	**08 37 18.3**	**0.0**
TSUM				LR	LR			
	comp=Z,13μm,21.0s							
CHIC	**Chingaza**	**127.70**	**45**	*e*P		**PKPdf**	**08 35 18.9**	**+0.1**
PRAC	**Prado**	**127.77**	**47**	*e*PKPdf		**PKPdf**	**08 35 18.6**	**+0.1**
PRAC				LR	LR			
	comp=Z,8μm,22.0s							
PRAC	**Prado**	**127.77**	**47**	*e*P		**PKPdf**	**08 35 18.9**	**+0.4**
SYO	**Syowa Base**	**127.84**	**207**	⇓*e*P		PKPpre	08 35 05.4	
SYO	**Syowa Base**	**127.84**	**207**	⇓*e*PKPdf		**PKPdf**	**08 35 16.0**	**-0.8**
TOSP	**Speyside**	**128.06**	**27**	*e*P		**PKPdf**	**08 35 20.8**	**+1.8**
TOSP	**Speyside**	**128.06**	**27**	*e*P		**PP**	**08 37 19.9**	**-0.8**
TOSP	**Speyside**	**128.06**	**27**	*e*		**PP**	**08 37 24.9**	**+4.2**
VILC	**Villavicencio,**	**128.14**	**46**	*e*P		**PKPdf**	**08 35 18.9**	**-0.4**
OTAV	**Otavalo**	**128.30**	**53**		PFAKE		08 35 30.0	+10
OTAV					LR	LR		
	comp=Z,17μm,22.0s							
TRN	**Trinidad (W)**	**128.34**	**28**	*e*P		**PKPdf**	**08 35 20.4**	**+0.9**
TBH	**Brigand Hill**	**128.61**	**28**	*e*P		**PKPdf**	**08 35 23.3**	**+3.2**
TBH	**Brigand Hill**	**128.61**	**28**	*e*		**PP**	**08 37 30.9**	**+6.5**
TPP	**Pointe-a-Pierr**	**128.62**	**28**	*e*P		**PKPdf**	**08 35 22.4**	**+2.3**
SUR	**Sutherland**	**130.97**	**257**	*e*PKPdf		**PKPdf**	**08 35 27.2**	**+3.0**
SUR				LR	LR			
	comp=Z,18μm,20.0s							
ATAH	**Atahualpa**	**133.78**	**60**	PKhKP		PKPpre	08 35 19.8	
	comp=Z,7.2nm,0.8s,baz=296,slow=9.8,SNR=1.4							
ATAH				PKP		**PKiKP**	**08 35 31.7**	**+0.1**
	comp=Z,19nm,0.6s,baz=283,slow=1.9,SNR=4.3							
NNA	**Nana**	**138.24**	**63**	*e*PKHKP		PKPpre	08 35 30.7	
NNA				MLR	MLR			
	comp=Z,35μm,20.0s							
NNA	**Nana**	**138.24**	**63**	*e*PKPpre		PKPpre	08 35 30.7	
NNA				LR	LR			
	comp=Z,35μm,20.0s							
PTGA	**Pitinga**	**139.25**	**33**	PKhKP		PKPpre	08 35 30.5	
	comp=Z,30nm,0.9s,baz=359,slow=1.9,SNR=14							
PTGA				PP		**PP**	**08 38 31.5**	**-0.8**
	comp=Z,19nm,0.9s,baz=324,slow=9.2,SNR=3.0							
PTGA	**Pitinga**	**139.25**	**33**	*e*PKPpre		PKPpre	08 35 30.5	
PTGA				*e*PP		**PP**	**08 38 31.5**	**-0.8**
PTGA				LR	LR			
	comp=Z,22μm,22.0s							
SNAA	**Sanae**	**140.48**	**197**	PKP		PKPpre	08 35 32.5	
SNAA	**Sanae**	**140.48**	**197**	*e*PKIKP		**PKPdf**	**08 35 40.9**	**+0.4**
SNAA	**Sanae**	**140.48**	**197**	PFAKE			08 35 50.0	+9.5
SNAA				LR	LR			
	comp=Z,540μm,22.0s							
VNA2	**Neumayer--Watz**	**142.05**	**196**	PKP		PKPpre	08 35 38.6	
	baz=108,slow=2.6							
VNA3	**Neumayer Olymp**	**142.31**	**195**	PKP		PKPpre	08 35 39.5	
VNA1	**Neumayer--Stat**	**142.45**	**196**	PKP		PKPpre	08 35 40.2	
ASCN	**Ascension**	**143.22**	**316**	*e*PKPdf		**PKPdf**	**08 35 46.8**	**-0.3**
ASCN				LR	LR			
	comp=Z,8μm,20.0s							
SHEL	**Horse Pasture**	**143.60**	**296**	*i* PKIKP		**PKPdf**	**08 35 47.9**	**+0.2**
H10S1	**ASCENSION HYDR**	**144.20**	**315**	PKP		**PKPdf**	**08 35 48.8**	**+0.3**
	baz=328,slow=3.2,SNR=12							
H10S2	**ASCENSION HYDR**	**144.21**	**315**	PKP		**PKPdf**	**08 35 48.5**	**-0.1**
	baz=328,slow=3.2,SNR=11							
H10S3	**ASCENSION HYDR**	**144.22**	**315**	PKP		**PKPdf**	**08 35 49.9**	**+1.4**
	baz=328,slow=3.2,SNR=7.5							
SAML	**Samuel**	**144.77**	**44**	*e*PKPdf		**PKPab**	**08 35 48.2**	**-0.4**
SAML				LR	LR			
	comp=Z,5μm,22.0s							
LPAZ	**La Paz**	**147.30**	**59**	⇓*i*P		**PKPbc**	**08 35 57.2**	**+0.1**
LPAZ	**La Paz**	**147.30**	**59**	PKP		**PKPdf**	**08 35 55.4**	**+0.6**
	comp=Z,158nm,0.9s,baz=353,slow=3.9,SNR=112							
LPAZ				PKPbc		**PKPbc**	**08 35 57.4**	**+0.3**
	comp=Z,153nm,0.8s,baz=353,slow=3.9,SNR=150							
PB12	**IPOC Station P**	**147.32**	**64**	⇑*e*P		**PKPdf**	**08 35 53.8**	**-0.3**
PB13	**IPOC Station P**	**147.73**	**63**	⇓*i*P		**PKPdf**	**08 35 56.2**	**+0.8**
PSGC	**Pisagua**	**148.09**	**66**	⇓*i*P		**PKPdf**	**08 35 54.1**	**-1.3**
MNMC	**Minye Minye**	**148.18**	**64**	⇓*i*P		**PKPdf**	**08 35 55.6**	**-0.1**
PMSA	**Palmer Station**	**148.53**	**160**		PFAKE		08 36 10.0	+8.4
PMSA					LR	LR		
	comp=Z,12μm,21.0s							
PB11	**IPOC Station P**	**148.54**	**65**	*e*PKPdf		**PKPdf**	**08 35 56.7**	**+0.5**
PB11				LR	LR			
	comp=Z,36μm,21.0s							
HMBC	**Humberstone**	**148.69**	**66**	*e*P		**PKPdf**	**08 35 56.3**	**0.0**
RCBR	**Riachuelo**	**148.85**	**353**	PKP		**PKPdf**	**08 35 56.3**	**-0.4**
	comp=Z,40nm,0.9s,baz=20,slow=2.4,SNR=15							
RCBR				PKPbc		**PKPbc**	**08 35 58.9**	**-1.7**
	comp=Z,224nm,1.0s,baz=19,slow=1.5,SNR=26							
RCBR				PP		**PP**	**08 39 34.7**	**+5.2**
	comp=Z,20nm,1.0s,baz=349,slow=16,SNR=1.8							
RCBR	**Riachuelo**	**148.85**	**353**	*e*PKPdf		**PKPdf**	**08 35 56.3**	**-0.4**
RCBR				*e*PKPdf		**PKPbc**	**08 35 57.5**	**-3.1**
RCBR				*e*PKPbc		**PKPbc**	**08 35 58.9**	**-1.7**
RCBR				*e*PP		**PP**	**08 39 34.7**	**+5.2**
RCBR				LR	LR			
	comp=Z,11μm,22.0s							
PB01	**IPOC Station P**	**149.46**	**67**	⇓*i*P		**PKPdf**	**08 35 58.3**	**+0.7**
PB01	**IPOC Station P**	**149.46**	**67**	*e*PKPdf		**PKPdf**	**08 35 58.2**	**+0.7**
PB01				LR	LR			
	comp=Z,35μm,20.0s							
PB07	**IPOC Station P**	**149.57**	**69**	⇓*i*P		**PKPdf**	**08 35 58.0**	**+0.2**
PB04	**IPOC Station P**	**149.73**	**70**	⇓*i*P		**PKPdf**	**08 35 58.6**	**+0.5**
PB04	**IPOC Station P**	**149.73**	**70**		PFAKE		08 36 10.0	+2.0
PB04					LR	LR		
	comp=Z,31μm,22.0s							
PB10	**IPOC Station P**	**150.09**	**72**	⇓*i*P		**PKPdf**	**08 35 58.3**	**-0.1**
PB10	**IPOC Station P**	**150.09**	**72**	*e*PKPdf		**PKPdf**	**08 36 00.6**	**+2.2**
PB10				LR	LR			
	comp=Z,32μm,22.0s							
PB06	**IPOC Station P**	**150.38**	**70**	⇓*i*P		**PKPdf**	**08 35 59.6**	**+0.6**
SIV	**San Ignacio**	**151.64**	**48**	PKP		**PKPdf**	**08 36 01.3**	**+0.3**
	comp=Z,31nm,0.8s,baz=7.3,slow=0.3,SNR=46							
SIV				PKPbc		**PKPbc**	**08 36 07.0**	**-0.2**
	comp=Z,375nm,0.8s,baz=333,slow=2.5,SNR=47							
LCO	**Las Campanas**	**152.68**	**82**	*e*PKPdf		**PKPdf**	**08 36 03.4**	**+0.9**
LCO				*e*PKPbc		**PKPbc**	**08 36 09.8**	**+0.2**
LCO				*e*PKPab		**PKPab**	**08 36 19.5**	**-0.7**
LCO				LR	LR			
	comp=Z,16μm,21.0s							
CHRN	**Cochrane**	**153.50**	**123**	*e*PKPbc		**PKPbc**	**08 36 11.0**	**+0.6**
ROC1	**El Roble**	**153.87**	**91**	⇑*i*P		PKPpre	08 35 58.9	
ROC1	**El Roble**	**153.87**	**91**	*e*PKPdf		**PKPdf**	**08 36 04.3**	**+0.2**
PEL	**Peldehue**	**154.18**	**91**	⇓*i*P		**PKPdf**	**08 36 03.8**	**-0.4**
CLCH	**Cerro Calan**	**154.37**	**91**	*e*P		**PKPdf**	**08 36 04.3**	**-0.3**
VCA	**Vinchina**	**154.53**	**80**	*i* P		**PKPdf**	**08 36 05.2**	**+0.2**
SLA	**San Lorenzo**	**154.58**	**69**	*i* P		**PKPdf**	**08 36 04.9**	**-0.3**
AZAP	**Zapla**	**154.62**	**67**	*i* P		**PKPdf**	**08 36 05.2**	**-0.1**
AGUA	**GUANDACOL**	**154.63**	**81**	*i* P		**PKPdf**	**08 36 05.8**	**+0.8**
RTLS	**Leoncito**	**154.86**	**87**	*i* P		**PKPdf**	**08 36 06.5**	**+0.9**
CANA	**Caviahue**	**154.91**	**102**	*i* P		**PKPdf**	**08 36 08.3**	**+3.0**
FSA	**Cafayete**	**154.99**	**72**	*i* P		**PKPdf**	**08 36 05.8**	**+0.1**
RTLL	**Cerro Villicun**	**155.36**	**85**	*i* P		**PKPdf**	**08 36 08.0**	**+2.0**
SJA	**San Juan**	**155.36**	**86**	*i* P		**PKPdf**	**08 36 07.4**	**+1.4**
SJA				IAML			08 36 23.5	
	comp=Z,36nm,0.6s							
RTCV	**Cerro Valdivia**	**155.49**	**87**	*i* P		**PKPdf**	**08 36 08.0**	**+1.9**
ARCO	**CERRO ARCO**	**155.49**	**89**	*i* P		**PKPdf**	**08 36 07.1**	**+0.8**
ASAL	**Salagasta**	**155.49**	**89**	*i* P		**PKPdf**	**08 36 05.8**	**-0.3**
PLCA	**Paso Flores**	**155.53**	**108**	PKP		**PKPdf**	**08 36 05.3**	**-0.6**
	comp=Z,9.9nm,0.9s,baz=288,slow=1.3,SNR=14							
PLCA				PKPab		**PKPab**	**08 36 33.4**	**+1.5**
	comp=Z,20nm,0.8s,baz=284,slow=2.5,SNR=6.5							
PLCA	**Paso Flores**	**155.53**	**108**	PKIKP		**PKPdf**	**08 36 05.3**	**-0.6**
PLCA				pmax	pmax			
	comp=Z,13nm,1.1s							
PLCA	**Paso Flores**	**155.53**	**108**	*e*PKPdf		**PKPdf**	**08 36 06.8**	**+0.9**
PLCA				*e*PKPab		**PKPab**	**08 36 32.5**	**+0.6**
ACLC	**CERRO LA CRUZ**	**155.82**	**80**	*i* P		**PKPdf**	**08 36 05.8**	**-1.0**
AHML	**Horco Molle**	**155.83**	**73**	⇓*i*P		**PKPdf**	**08 36 06.5**	**-0.3**
AHML				*i* P		**PKPdf**	**08 36 06.8**	**+0.1**
AHML				IAML			08 36 28.8	
	comp=Z,7.9nm,0.6s							
AVFE	**Valle Fertil**	**155.92**	**83**	*i* P		**PKPdf**	**08 36 07.4**	**+0.6**
CYA	**Choya**	**156.28**	**77**	*i* P		**PKPdf**	**08 36 08.0**	**+0.7**
CYA				IAML			08 36 22.4	
	comp=Z,85nm,0.6s							
AMAR	**Marayes**	**156.32**	**85**	⇑*i*P		**PKPdf**	**08 36 07.4**	**+0.2**
ACHE	**Chepes**	**156.74**	**84**	⇑*i*P		**PKPdf**	**08 36 07.4**	**-0.5**
BDFB	**Brasilia**	**157.44**	**22**	PKP		**PKPdf**	**08 36 08.5**	**-0.7**
	comp=Z,20nm,1.0s,baz=213,slow=0.7,SNR=12							
BDFB				PKPab		**PKPab**	**08 36 41.7**	**+1.3**
	comp=Z,91nm,1.1s,baz=291,slow=2.1,SNR=8.1							
BDFB				PP		**PP**	**08 40 16.8**	**-1.6**
	comp=Z,19nm,1.1s,baz=21,slow=8.6,SNR=3.2							
BDFB	**Brasilia**	**157.44**	**22**	*e*PKPdf		**PKPdf**	**08 36 08.5**	**-0.7**
BDFB				*e*PKPdf		**PKPdf**	**08 36 10.0**	**+0.9**
BDFB				*e*PKPab		**PKPab**	**08 36 41.7**	**+1.3**
BDFB				*e*PP		**PP**	**08 40 16.8**	**-1.6**
BDFB				LR	LR			
	comp=Z,25μm,22.0s							
MRA	**San Martin**	**157.93**	**86**	⇓*i*P		**PKPdf**	**08 36 08.0**	**-1.3**
TCA	**Tanti**	**158.45**	**82**	*i* P		**PKPdf**	**08 36 10.4**	**+0.5**
SUCO	**SUCO**	**158.89**	**88**	*i* P		**PKPdf**	**08 36 08.9**	**-1.5**
CPUP	**Villa Florida**	**161.46**	**60**	*i* P		**PKPdf**	**08 36 13.2**	**-0.2**
CPUP	**Villa Florida**	**161.46**	**60**	PKP		**PKPdf**	**08 36 12.2**	**-1.1**
	comp=Z,12nm,1.0s,baz=355,slow=3.2,SNR=9.6							
CPUP				PKPab		**PKPab**	**08 36 58.2**	**+0.5**
	comp=Z,28nm,0.8s,baz=315,slow=6.5,SNR=7.8							
CPUP				PP		**PP**	**08 40 40.8**	**-0.4**
	comp=Z,2.5nm,0.9s,baz=322,slow=19,SNR=1.8							
CPUP	**Villa Florida**	**161.46**	**60**	*e*PKPdf		**PKPdf**	**08 36 13.4**	**+0.1**
CPUP				*e*PKPab		**PKPab**	**08 36 58.2**	**+0.5**
TRQA	**Tornquist**	**162.07**	**100**	*e*PKPdf		**PKPdf**	**08 36 14.6**	**+0.9**
LPA	**La Plata**	**164.86**	**88**	*de*PKIKP		**PKPdf**	**08 36 18.0**	**+1.7**
LPA	**La Plata**	**164.86**	**88**	PKP		**PKPab**	**08 37 15.0**	**+2.5**
LPA				PP		**PP**	**08 41 01.0**	**+1.5**
LPA				PP(2)			08 43 23.0	
LPA				PPP	PPP		08 44 48.0	
LPA				PPP(2)			08 48 14.0	
LPA				PPS	PPS		08 54 37.0	
LPA				SS	SS		09 01 35.0	+1.4
	comp=Z,23μm,21.0s							
SPB	**Sao Paulo**	**165.00**	**30**	*e*PKPdf		**PKPdf**	**08 36 17.2**	**+0.4**

JMA 11 08:17:20.5, 37.04N×140.67E, h8km±1km, M4.8, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	Op	ID ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.12**	**59**	P		Pg	08 17 23.3	+0.1
ONAJ				S		Sg	08 17 26.0	+0.9
JFK	**Kawauchi**	**0.36**	**27**	*e*S		Sg	08 17 33.0	+0.5
JHO	**Hitachi**	**0.44**	**191**	*e*S		Sg	08 17 34.8	+0.1
JFT	**Otama**	**0.55**	**331**	*e*S		Sg	08 17 38.9	+0.6
JMM	**Marumori**	**0.83**	**7**	*e*S		Sg	08 17 47.4	+0.1

JMA 11 08:17:47.5, 36.89N×140.72E, h9km±1km, M5.7, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	Op	ID ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.22**	**17**	*e*S		Sg	08 17 55.7	+0.6
JHO	**Hitachi**	**0.30**	**204**	P		Pg	08 17 53.4	-0.1
JHO				S		Sg	08 17 57.9	+0.3
JFK	**Kawauchi**	**0.49**	**15**	P		Pg	08 17 57.3	+0.2
JFK				S		Sg	08 18 03.6	0.0
JSB	**Shiboa**	**0.65**	**277**	P		Pg	08 18 00.2	+0.2
JSB				S		Sg	08 18 09.2	+0.7
JFT	**Otama**	**0.70**	**334**	P		Pg	08 18 01.0	0.0
JFT				S		Sg	08 18 10.0	-0.1
JFY	**Yanaizu**	**0.96**	**303**	P		Pg	08 18 05.8	-0.2
JFY				S		Sg	08 18 17.8	-0.7
JMM	**Marumori**	**0.98**	**3**	S		Sg	08 18 18.1	-0.9

JMA 11 08:19:31.4, 37.01N×140.72E, h11km, M4.5, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	Op	ID ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.11**	**34**	P		Pg	08 19 34.5	+0.2
ONAJ				S		Sg	08 19 36.7	+0.2
JFK	**Kawauchi**	**0.38**	**19**	P		Pg	08 19 39.0	+0.1
JFK				*e*S		Sg	08 19 44.5	+0.5
JHO	**Hitachi**	**0.42**	**197**	P		Pg	08 19 39.5	-0.1
JHO				S		Sg	08 19 45.1	0.0
JFT	**Otama**	**0.59**	**329**	*e*S		Sb	08 19 51.5	-0.7
JMM	**Marumori**	**0.86**	**4**	P		Pg	08 19 47.7	-0.2
MAT	**Matsushiro**	**2.07**	**258**	P		Pb	08 20 09.1	+0.1
MAT				S		Sb	08 20 34.9	+0.1

JMA 11 08:20:26.5, 37.00N×140.75E, h7km±1km, M4.2, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	Op	ID ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.11**	**21**	P		Pg	08 20 29.1	+0.1
ONAJ				S		Sg	08 20 31.2	+0.5
JFK	**Kawauchi**	**0.38**	**15**	*e*S		Sg	08 20 39.5	+0.6
JHO	**Hitachi**	**0.41**	**201**	P		Pg	08 20 34.6	+0.1
JFT	**Otama**	**0.61**	**328**	*e*S		Sg	08 20 47.1	+0.7
JSB	**Shiboa**	**0.67**	**268**	*e*S		Sb	08 20 49.4	-0.5

JMA 11 08:24:03.7, 36.95N×140.67E, h8km, M3.9, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	Op	ID ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.18**	**34**	*e*S		Sg	08 24 10.5	+0.4
JHO	**Hitachi**	**0.35**	**194**	P		Pg	08 24 10.5	0.0
JHO				S		Sg	08 24 15.3	+0.2
JFK	**Kawauchi**	**0.45**	**21**	P		Pg	08 24 12.6	+0.2
JFK				*e*S		Sg	08 24 18.3	0.0
JFT	**Otama**	**0.63**	**335**	P		Pg	08 24 16.2	+0.4
JFT				S		Sg	08 24 24.7	+0.7

IDC ***11*** *08:26:27.8s·0.3, 37.07N×140.45E, h0km, mb4.9/54, mb1 5.0/55, mb1mx4.9/73, mbtmp4.9/55, ML4.5/1, Error ellipse: s-maj=11.5km s-min=8.9km az=87.0*

ISCJB ***11*** *08:26:28.8s·0.5, 37.08N±0.02×140.50E±0.02, h12km±2km, mb5.0/160, MS5.7/4, Error ellipse: s-maj=3.4km s-min=2.7km az=42.1*

BJI ***11*** *08:26:29.6, 37.05N×140.50E, h23km, mb5.1/33, Ms5.4/3, Ms7 5.1/5*

JMA ***11*** *08:26:29.0, 37.06N×140.62E, h5km±1km, M5.4 Broadband fault plane solution: P waves. NP1: φs118.00000°, δ48.00000°, λ-77.00000°. NP2: φs279.00000°, δ44.00000°, λ-104.00000°. Principal axes: T Plg2.0000°, Azm199.0000°; N Plg10.0000°, Azm289.0000°; P Plg80.0000°, Azm98.0000°;*

MOS ***11*** *08:26:30.6s·1.2, 37.07N×140.49E, h26km, mb5.3/71 Error ellipse: s-maj=7.9km s-min=5.2km az=99.0*

NEIC ***11*** *08:26:35.3s·0.5, 37.06N×140.35E, h49km±4km, mb5.2/97, Error ellipse: s-maj=4.4km s-min=3.3km az=143.0*

NEIC Recorded [5L JMA] in Fukushima.

ISC 11 08:26:34.0±0.7, **37.08N**±0.04×**140.53E**±0.04, **h40**km±5km, **n632**,σ1°07/642, **mb5.1**/161, **22C-4D, Eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase	Op	ID ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.21**	**84**	P		Pn	08 26 32.4	-9.1
JFK	**Kawauchi**	**0.40**	**43**	P		Pn	08 26 36.3	-7.1
JFK				S		Sn	08 26 41.8	-8.2
JFT	**Otama**	**0.47**	**340**	⇑P		Pn	08 26 39.2	-5.1
JFT				S		Sn	08 26 46.1	-5.5
JHO	**Hitachi**	**0.47**	**177**	P		Pn	08 26 37.8	-6.5
JHO				S		Sn	08 26 44.3	-7.3
JSB	**Shiboa**	**0.50**	**257**	P		Pn	08 26 40.8	-4.0
JSB				S		**Sn**	**08 26 48.8**	**-3.6**
JFY	**Yanaizu**	**0.74**	**297**	P		Pn	08 26 44.8	-3.1
JFY				S		**Sn**	**08 26 55.1**	**-2.9**
JMM	**Marumori**	**0.81**	**15**	⇑P		Pn	08 26 44.2	-4.7
JMM				S		Sn	08 26 55.4	-4.4
JYT	**Yasato**	**0.89**	**198**	P		Pn	08 26 45.9	-4.1
JYT				S		**Sn**	**08 26 57.8**	**-4.0**
MJAR	**Matsushiro Arr**	**1.94**	**255**		Pn	**Pn**	**08 27 04.2**	**-0.3**
	306nm,0.3s,baz=73,slow=15,SNR=62							
MJAR					Sn	**Sn**	**08 27 29.5**	**+1.9**
	447nm,0.3s,baz=81,slow=30,SNR=19							
MAJO	**Matsushiro**	**1.94**	**255**	*e*P		**Pn**	**08 27 04.5**	**0.0**
MAJO				*e*			08 27 33.8	
MAJO	**Matsushiro**	**1.94**	**255**	*e*Pn		**Pn**	**08 27 04.5**	**0.0**
MAJO				*e*Sn		**Sn**	**08 27 33.8**	**+6.1**
MAT	**Matsushiro**	**1.94**	**255**	P		**Pn**	**08 27 04.3**	**-0.2**
MAT				S		**Sn**	**08 27 31.8**	**+4.1**
INU	**Inuyama**	**3.33**	**240**	*e*Pn		**Pn**	**08 27 24.7**	**+1.2**
JHJ	**Hachijo jima 2**	**4.00**	**189**	Pn		**Pn**	**08 27 31.2**	**-1.5**
	85nm,0.3s,baz=55,slow=19,SNR=12							
JHJ					Sn	**Sn**	**08 28 18.7**	**+0.4**
	244nm,0.3s,baz=60,slow=20,SNR=4.3							
JHJ2	**Mitsune**	**4.00**	**189**	*e*Pn		**Pn**	**08 27 31.3**	**-1.4**
JHJ2				*e*Sn		**Sn**	**08 28 19.7**	**+1.3**
ERM	**Erimo**	**5.33**	**22**	*e*P		Pn	08 27 48.6	-2.3
ERM				*e*			08 28 52.5	
ERM	**Erimo**	**5.33**	**22**	*e*Pn		Pn	08 27 48.6	-2.3
ERM				*e*Sn		**Sn**	**08 28 52.5**	**+1.5**
YUK	**Yuzh-Kuril'sk**	**8.04**	**29**	*e*P		Pn	08 28 25.0	-3.1
YUK				*i* S		Sn	08 29 51.6	-6.1
YUK				pmax	pmax			
	comp=Z,249nm,0.5s							
YUK				pmax	pmax			
	comp=E,104nm,0.6s							
YUK				pmax	pmax			
	comp=N,106nm,0.4s							
SHO	**Shikotan**	**8.30**	**33**	*e*P		Pn	08 28 26.9	-4.9
SHO				pmax	pmax			
	comp=N,68nm,0.5s							
SHO				pmax	pmax			
	comp=E,113nm,0.5s							
SHO				pmax	pmax			
	comp=Z,129nm,0.5s							
JNU	**Nakatsue**	**8.84**	**246**	Pn		**Pn**	**08 28 40.0**	**+0.8**
	comp=Z,2.2nm,0.3s,baz=24,slow=4.9,SNR=15							
JNU				Lg	Lg		08 31 02.3	
	comp=Z,0.4nm,0.3s,baz=153,slow=14,SNR=2.1							
JNU	**Nakatsue**	**8.84**	**246**	*e*Pn		**Pn**	**08 28 40.8**	**+1.6**
VLA	**Vladivostok**	**8.96**	**315**	*e*P		**Pn**	**08 28 41.5**	**+0.8**
VLA				pmax	pmax			
	comp=Z,39nm,1.1s							
USRK	**Ussuriysk Ar.**	**9.63**	**320**	Pn		Pn	08 28 54.8	+5.0
	comp=Z,2.5nm,0.3s,baz=133,slow=12,SNR=32							
KUR	**Kuril'sk**	**9.84**	**32**	*e*P		Pn	08 28 50.2	-2.6
KUR				*i* S		Sn	08 30 35.4	-6.4
KUR				pmax	pmax			
	comp=Z,114nm,0.6s							
KUR				pmax	pmax			
	comp=N,40nm,0.1s							
KUR				pmax	pmax			
	comp=E,34nm,0.1s							
YSS	**Yuzh-Sakhalins**	**10.00**	**9**	*e*P		**Pn**	**08 28 53.9**	**-1.1**
YSS				pmax	pmax			
	comp=Z,94nm,0.7s							
YSS	**Yuzh-Sakhalins**	**10.00**	**9**	*e*Pn		**Pn**	**08 28 53.9**	**-1.1**
JCJ	**Chichijima**	**10.05**	**172**	Pn		Pn	08 28 49.7	-6.1
	comp=Z,18nm,0.3s,baz=294,slow=20,SNR=3.5							
JCJ					Sn	Sn	08 30 35.6	-12
	baz=255,slow=20							
KSRS	**Korea Array**	**10.06**	**276**	Pn		**Pn**	**08 28 58.6**	**+2.8**
	comp=Z,1.8nm,0.3s,baz=92,slow=13,SNR=35							
KS01	**Wonju Array Si**	**10.08**	**276**	*e*

BILL Bilibino 34.18 17⇓ *e*P P 08 33 14.1 -0.9
BILL *e* 08 34 27.9
BILL *e*S S 08 38 32.5 -5.9
BILL pmax pmax
comp=Z,62nm,2.5s
BILL MLR MLR
comp=Z,31µm,16.0s
KMI Kunming 34.27 261 P P 08 33 17.3 +0.7
KMI pmax pmax
comp=Z,13nm,0.7s
TIXI Tiksi 35.16 354 P P 08 33 21.4 -2.0
comp=Z,5.0nm,0.5s,baz=146,slow=3.6,SNR=5.5
TIXI Tiksi 35.16 354 *i* P P 08 33 24.2 +0.8
TIXI pmax pmax
comp=Z,7.0nm,0.9s
GAMB Gambell 39.04 31 *e*P P 08 33 57.5 +1.1
comp=Z,49nm,1.8s
WMQ Urumqi 40.19 297 P P 08 34 07.7 +1.4
WMQ pP pP 08 34 12.5 -5.2
WMQ PP PnPn 08 35 41.4 -1.5
WMQ pmax pmax
comp=Z,27nm,0.8s
CMAR Chiang Mai Arr 40.83 255 P P 08 34 10.7 -1.1
comp=Z,2.3nm,0.5s,baz=47,slow=6.8,SNR=6.1
CMAR Chiang Mai Arr 40.83 255 P P 08 34 10.7 -1.1
CMAR pmax pmax
comp=Z,3.0nm,0.6s
ZAA1 Zalesovo Array 41.36 312 *e*P P 08 34 15.2 -0.5
ZAA1 *e*PcP PcP 08 36 13.2 -0.2
ZALV Zalesovo Beam 41.36 312 P P 08 34 15.2 -0.5
comp=Z,14nm,0.7s,baz=92,slow=6.4,SNR=12
ZALV PcP PcP 08 36 13.2 -0.2
comp=Z,10nm,0.6s,baz=94,slow=3.0,SNR=7.7
ZALV ScP ScP 08 40 03.8 +3.7
comp=Z,3.2nm,0.9s,baz=97,slow=3.6,SNR=4.3
NRIK Noril'sk 42.93 335 P P 08 34 27.3 -1.1
comp=Z,18nm,0.9s,baz=97,slow=8.1,SNR=5.5
MK32 Makanchi Array 43.50 302 *e*P P 08 34 33.3 0.0
MK32 *e*PP PcP 08 36 20.3 -0.4
MKAR Makanchi Array 43.50 302 P P 08 34 33.3 0.0
comp=Z,8.5nm,0.7s,baz=86,slow=9.1,SNR=13
MKAR PcP PcP 08 36 20.3 -0.4
comp=Z,4.4nm,0.9s,baz=93,slow=4.9,SNR=3.9
KURK Kurchatov 45.35 308 P P 08 34 47.7 -0.2
KURK pmax pmax
comp=Z,22nm,0.6s
KURK Kurchatov 45.35 308 *e*P P 08 34 47.7 -0.2
KURBB Kurchatov Arra 45.42 308 P P 08 34 47.7 -0.8
comp=Z,22nm,0.6s,baz=83,slow=7.9,SNR=33
SVW2 Sparrevohn 45.91 37 *e*P P 08 34 53.8 +1.6
comp=Z,22nm,0.8s
KAPI Kappang 46.15 209 P P 08 34 54.5 -0.1
comp=Z,20nm,0.7s,baz=64,slow=1.4,SNR=6.9
KAPI Kappang 46.15 209 *e*P P 08 34 54.8 +0.1
comp=Z,77nm,1.3s
PMG Port Moresby 46.66 171 P P 08 34 57.6 -1.0
comp=Z,3.8nm,0.3s,baz=344,slow=7.4,SNR=2.6
RSO Redoubt South 47.30 38 *e*P P 08 35 05.0 +1.6
KDAK Kodiak Island 47.53 42 P P 08 35 20.0 +15
comp=Z,22nm,0.7s,baz=258,slow=6.2,SNR=21
KDAK Kodiak Island 47.53 42 *e*P P 08 35 05.8 +0.8
KDAK *e**PP pP 08 35 20.0 +3.5
KDAK pmax pmax
comp=Z,140nm,1.7s
KDAK Kodiak Island 47.53 42 *e*P P 08 35 05.8 +0.8
comp=Z,140nm,1.7s
KDAK *e*pP pP 08 35 20.0 +3.5
SPU Mount Spurr 47.62 37 *e*P P 08 35 06.7 +1.0
BPAW Bear Paw Mtn. 48.07 33 *e*P P 08 35 10.6 +1.5
comp=Z,82nm,2.0s
KTH Kantishna Hill 48.10 34 *e*P P 08 35 11.3 +1.9
comp=Z,42nm,1.2s
MLY Manley 48.18 32 *e*P P 08 35 11.9 +1.9
comp=Z,14nm,0.8s
RC01 Rabbit Creek A 48.75 37 *e*P P 08 35 14.6 +0.2
comp=Z,37nm,1.2s
SEW Seward 48.97 39 *e*P P 08 35 17.3 +1.3
comp=Z,68nm,1.5s
TKM2 Tokmak 2 48.99 298 *e*P P 08 35 17.5 +0.8
TKM2 pmax pmax
comp=Z,102nm,1.4s
TKM2 Tokmak 2 48.99 298 *e*P P 08 35 17.5 +0.8
comp=Z,102nm,1.4s
MDM Murphy Dome 49.25 32 *e*P P 08 35 19.7 +1.5
comp=Z,28nm,0.9s
WRH Wood River Hil 49.33 33 *e*P P 08 35 20.6 +1.9
comp=Z,9.8nm,0.8s
SML Sawmill 49.37 36 *e*P P 08 35 20.7 +1.5
SML pmax pmax
comp=Z,19nm,0.8s
SML Sawmill 49.37 36 *e*P P 08 35 20.6 +1.5
comp=Z,19nm,0.8s
COLA College 49.41 32 *e*P P 08 35 21.2 +1.9
COLA pmax pmax
comp=Z,13nm,0.6s
COLA College 49.41 32 *e*P P 08 35 21.2 +1.9
comp=Z,13nm,0.6s
KSH Kashi 49.74 294 *e*P P 08 35 27.7 +5.3
KSH *es*P pP 08 35 35.9 +1.9
KSH *e*PP PP 08 37 25.1 +8.1
KSH S S 08 42 39.0 +10
HDA Harding Lake 49.83 33 *e*P P 08 35 23.4 +0.9
comp=Z,54nm,1.5s
IL1 Eielson Array 49.83 32 *e*P P 08 35 23.3 +0.7
ILAR Eielson Array 49.83 32 P P 08 35 22.6 0.0
comp=Z,7.8nm,0.7s,baz=270,slow=5.4,SNR=37
ILAR PcP PcP 08 36 42.7 +0.1
comp=Z,1.7nm,0.7s,baz=258,slow=3.9,SNR=2.9
ILB Eielson Array 49.83 32 *e*P P 08 35 22.6 0.0
AAK Ala-Archa 49.85 298 P P 08 35 23.1 -0.1
comp=Z,6.6nm,0.7s,baz=102,slow=5.8,SNR=7.4
AAK Ala-Archa 49.85 298 P P 08 35 23.1 -0.1
AAK pmax pmax
comp=Z,8.0nm,0.8s
BVAR Borovoye Array 50.02 312 P P 08 35 23.4 -0.8
comp=Z,15nm,0.9s,baz=82,slow=11,SNR=7.8
BVAR PcP PcP 08 36 42.9 -0.7
comp=Z,13nm,0.7s,baz=104,slow=2.8,SNR=8.2
BVAR Borovoye Array 50.02 312 P P 08 35 23.4 -0.8
BVAR 08 36 42.9
BVAR pmax pmax
comp=Z,14nm,0.9s
BVAR pmax pmax
comp=Z,13nm,0.7s
BRVK Borovoye 50.08 312 *ce*P P 08 35 25.2 +0.6
BRVK pmax pmax
comp=Z,72nm,2.5s
MTN Manton Dam 50.44 192 *e*P P 08 35 27.2 -0.4
comp=Z,44nm,1.0s
DIV Divide 50.66 37 *e*P P 08 35 30.5 +1.5
comp=Z,149nm,2.0s
COEN Coen 50.82 177 *e*P P 08 35 30.9 +0.4
comp=Z,55nm,1.3s
DOT Dot Lake 51.16 34 *e*P P 08 35 33.1 +0.5
comp=Z,37nm,0.9s
PSI Prapat 51.22 238 P P 08 35 32.8 -0.9
comp=Z,8.2nm,0.8s,baz=59,slow=5.6,SNR=4.7
PSI Prapat 51.22 238 *e*P P 08 35 32.6 -1.1
PSI pmax pmax
comp=Z,15nm,0.9s
PSI Prapat 51.22 238 *e*P P 08 35 32.6 -1.1
comp=Z,15nm,0.9s
MENT Mentasta 51.40 35 *e*P P 08 35 35.7 +1.3
comp=Z,16nm,1.0s
KKAR Karatay Array 52.49 300 *e*P P 08 35 42.8 0.0
KKAR Karatay Array 52.49 300 *e*P P 08 35 42.8 0.0
GSI Gunungsitoli 53.22 238 *e*P P 08 35 48.1 -0.4
comp=Z,208nm,1.4s
INK Inuvik 54.67 27 P P 08 35 58.5 +0.2
comp=Z,8.0nm,0.7s,baz=295,slow=7.4,SNR=12
ARU Arti 55.86 318 P P 08 36 06.5 -0.6
comp=Z,30nm,0.6s,baz=102,slow=3.0,SNR=13
ARU Arti 55.86 318 *d i*P P 08 36 06.8 -0.3
ARU 08 38 08.5
ARU S S 08 43 52.1 +0.7
ARU SS SS 08 47 34.1 -2.8
ARU pmax pmax
comp=Z,84nm,1.2s
ARU Arti 55.86 318 *e*P P 08 36 07.0 -0.1
comp=Z,63nm,1.0s
SKAG Skagway 56.09 38 *e*P P 08 36 10.5 +1.8
comp=Z,16nm,1.1s
FITZ Fitzroy Crossi 56.66 197 P P 08 36 13.0 -0.1
comp=Z,10.0nm,0.6s,baz=10,slow=8.8,SNR=14
WRAB Tennant Creek 57.01 187 *ce*P P 08 36 15.5 -0.1
WRAB pmax pmax
comp=Z,73nm,1.0s
WR1 Warramunga Arr 57.02 187 *e*P P 08 36 14.6 -1.1
comp=Z,33nm,0.7s
WRA Warramunga Arr 57.02 187 P P 08 36 14.6 -1.1
comp=Z,24nm,0.7s,baz=2.6,slow=7.5,SNR=39
WRA Warramunga Arr 57.02 187 P P 08 36 14.6 -1.1
WRA pmax pmax
comp=Z,23nm,0.7s
CTA Charters Tower 57.12 174 P P 08 36 15.6 -0.8
comp=Z,4.6nm,0.6s,baz=13,slow=6.1,SNR=7.9
ABKAR Akbulak array 57.37 310 *e*P P 08 36 17.8 -0.2
HYB Hyderabad 57.50 268 *i* P P 08 36 19.0 -0.4
AKTO Aktyubinsk 58.12 312 P P 08 36 23.1 -0.2
comp=Z,11nm,0.7s,baz=79,slow=12,SNR=9.9
SPITS Spitsbergen Ar 60.34 349 P P 08 36 39.1 +0.9
comp=Z,6.8nm,0.7s,baz=83,slow=8.8,SNR=9.9
AS01 Alice Springs 60.74 187 *e*P P 08 36 41.1 -0.4
AS31 Alice Springs 60.74 187 *e*P P 08 36 41.5 0.0
comp=Z,4.4nm,0.8s
ASAR Alice Springs 60.74 187 P P 08 36 40.8 -0.7
comp=Z,6.4nm,0.7s,baz=14,slow=10,SNR=14
ASAR Alice Springs 60.74 187 P P 08 36 40.8 -0.7
ASAR pmax pmax
comp=Z,8.0nm,0.7s
MBWA Marble Bar 61.16 202 *e*P P 08 36 44.4 +0.1
comp=Z,44nm,1.3s
MBWA *e*PP PP 08 39 06.7 +7.0
APA Apatity 62.35 336⇓ *i*P P 08 36 51.8 -0.1
APA MLR MLR
comp=Z,2µm,17.0s
TMCR Tamitsa 62.37 331 *e*P P 08 36 52.8 +0.8
TMCR pmax pmax
comp=Z,22nm,0.6s
GEYT Alibeck 63.20 299 P P 08 36 58.1 +0.1
comp=Z,21nm,0.7s,baz=33,slow=3.5,SNR=15
ARA0 ARCESS Array S 63.70 339 *e*P P 08 37 00.1 -0.7
ARCES ARCESS Array B 63.70 339 P P 08 37 00.1 -0.7
comp=Z,9.5nm,0.6s,baz=53,slow=8.9,SNR=21
YKA Yellowknife Ar 64.12 30 P P 08 37 03.6 0.0
comp=Z,2.8nm,0.7s,baz=304,slow=6.5,SNR=8.8
YKB5 Yellowknife Ar 64.12 30 *e*P P 08 37 04.7 +1.1
DAG Danmarks Havn 65.67 355 P P 08 37 14.5 +1.0
VRH Novokhopyorsk 67.07 318 *e*P P 08 37 21.6 -1.3
VRH pmax pmax
comp=Z,30nm,0.6s
OBN Obninsk 67.64 323 P P 08 37 26.2 -0.1
comp=Z,18nm,0.4s,baz=64,slow=23,SNR=3.6
OBN Obninsk 67.64 323⇓ *e*P P 08 37 25.8 -0.5
OBN *i* 08 39 53.8
OBN pmax pmax
comp=Z,35nm,1.6s
OBN MLR MLR
comp=Z,13µm,15.0s
VSR Storozhevoye 68.43 318 *e*P P 08 37 30.5 -0.9
VSR pmax pmax
comp=Z,30nm,0.6s
FIA1 FINESS Array S 68.44 332 *e*P P 08 37 31.1 -0.2
FIA0 FINESS Array S 68.44 332 *e*P P 08 37 31.0 -0.3
FIA0 FINESS Array S 68.44 332 *e*P P 08 37 31.0 -0.3
FINES FINESS Array B 68.44 332 P P 08 37 31.0 -0.3
comp=Z,33nm,0.7s,baz=78,slow=5.1,SNR=36
STKA Stephens Creek 68.61 179 P P 08 37 31.8 -0.8
comp=Z,7.1nm,1.1s,baz=9.5,slow=6.3,SNR=6.6
STKA Stephens Creek 68.61 179 P P 08 37 31.8 -0.8
STKA pmax pmax
comp=Z,11nm,1.0s
I03D Drain, OR 69.42 50 P P 08 37 39.7 +1.9
baz=302
G05D Wamic, OR 69.83 48 P P 08 37 41.9 +1.6
baz=303
I04A Tendick Farm, 69.95 50 P P 08 37 42.5 +1.5
baz=302
VSU Vasula 70.06 329 *ce*P P 08 37 43.2 +1.9
VSU pmax pmax
comp=Z,122nm,1.7s
L02D Cave Junction, 70.08 52 P P 08 37 42.8 +0.9
baz=302
WSAR Wadi Sarin 70.17 285 P P 08 37 42.3 -0.4
comp=Z,8.7nm,0.8s,baz=93,slow=10,SNR=3.7
I05D Terrebonne, OR 70.31 49 P P 08 37 44.8 +1.6
baz=303
KBZ Khabz 70.34 310 P P 08 37 43.5 +0.2
comp=Z,14nm,0.8s,baz=23,slow=7.0,SNR=14
KVAR Kislovodsk Arr 70.34 311 P P 08 37 43.6 +0.1
comp=Z,34nm,0.8s,baz=190,slow=5.9,SNR=7.7
KIV Kislovodsk 70.34 311 *e*P P 08 37 44.4 +0.9
KIV pmax pmax
comp=Z,46nm,1.0s
KIV Kislovodsk 70.34 311 *e*P P 08 37 43.6 +0.1
comp=Z,240nm,1.9s
NEW Newport 70.58 44 P P 08 37 45.4 +0.5
baz=304
NEW Newport 70.58 44 *e*P P 08 37 45.7 +0.8
NEW pmax pmax
comp=Z,8.0nm,0.8s
NEW Newport 70.58 44 *e*P P 08 37 45.7 +0.8
comp=Z,8.4nm,0.8s
SUMG Summit 70.64 360 *e*P P 08 37 45.7 +0.5
SUMG pmax pmax
comp=Z,20nm,0.8s
SUMG Summit 70.64 360 *e*P P 08 37 45.7 +0.5
comp=Z,20nm,0.8s
J05D Fort Rock, OR 70.94 50 P P 08 37 47.9 +0.6
baz=303
K04D Chiloquin, OR 70.98 51 P P 08 37 48.5 +1.0
baz=303
N02D Trinity Center 71.28 53 P P 08 37 49.9 +0.6
baz=303
M04C Macdoel 71.39 51 P P 08 37 50.6 +0.6
baz=303
WALA Waterton Lakes 71.87 42 *e*P P 08 37 53.1 +0.4
comp=Z,18nm,1.0s
IDID Didziasalis 72.05 327 *e*P P 08 37 53.5 -0.1
IDID IAmb IAmb 08 37 55.7
comp=Z,16nm,0.7s
ISAL Salakas 72.16 327 *e*P P 08 37 54.1 -0.1
ISAL IAmb IAmb 08 37 56.4
comp=Z,27nm,0.6s
O03D Paynes Creek 72.23 53 P P 08 37 56.1 +1.1
baz=304
IIGN Ignalina 72.26 327 *e*P P 08 37 54.7 0.0
IIGN IAmb IAmb 08 37 57.0
comp=Z,20nm,0.7s
BMO Blue Mountains 72.41 47 *e*P P 08 37 57.0 +1.0
comp=Z,57nm,1.9s
JTMT Jette 72.44 43 *e*P P 08 37 57.3 +1.1
SWMT Swartz Lake 72.74 43 *e*P P 08 37 58.8 +0.8
ORV Oroville 72.84 53 *e*P P 08 37 59.1 +0.6
ORV pmax pmax
comp=Z,6.0nm,0.8s
ORV Oroville 72.84 53 *e*P P 08 37 59.1 +0.6
comp=Z,6.0nm,0.8s
ANN Anapa 72.99 314 *e*P P 08 37 56.9 -2.4
ANN pmax pmax
comp=Z,77nm,1.6s
MSO Missoula 73.17 44 P P 08 38 01.3 +0.8
baz=306
NC405 NORSAR Array S 73.66 337 *e*P P 08 38 03.0 +0.1
HFS Hagfors 73.75 335 P P 08 38 03.4 -0.1
comp=Z,16nm,0.8s,baz=72,slow=4.8,SNR=19
AKASG Malin Array Be 73.83 322 P P 08 38 03.6 -0.5
comp=Z,16nm,0.6s,baz=47,slow=6.1,SNR=40
AKASG Malin Array Be 73.83 322 P P 08 38 03.6 -0.5
AKASG pmax pmax
comp=Z,18nm,0.7s
AKBB Malin Array Si 73.83 322 *e*P P 08 38 03.6 -0.5
AKBB pmax pmax
comp=Z,29nm,0.8s
AKBB Malin Array Si 73.83 322 *e*P P 08 38 03.6 -0.5
comp=Z,29nm,0.8s
NC204 NORSAR Array S 73.83 337 *e*P P 08 38 04.2 +0.1
NB201 NORSAR Array S 73.84 337 *e*P P 08 38 04.0 0.0
KIEV Kiev 73.84 322 *e*P P 08 38 04.1 -0.1
KIEV pmax pmax
comp=Z,20nm,0.9s
NB2 NORSAR Subarra 73.87 337 P P 08 38 03.4 -0.8
comp=Z,27nm,1.0s,baz=40,slow=5.9
NB2 NORSAR Subarra 73.87 337 P P 08 38 03.4 -0.8
baz=40,slow=5.9
NB200 NORSAR Array S 73.87 337 *e*P P 08 38 03.8 -0.4
NOA NORSAR Array B 73.87 337 P P 08 38 03.8 -0.4
comp=Z,14nm,0.8s,baz=39,slow=5.8,SNR=24
AK11 Malin Array Si 73.87 322 *e*P P 08 38 03.5 -0.9
NBO02 NORSAR Array S 73.97 337 *e*P P 08 38 04.9 0.0
FFC Flin Flon 74.05 32 *i* P P 08 38 07.1 +1.8
MFID Camas Ranch 74.11 47 *e*P P 08 38 07.3 +1.2
comp=Z,56nm,1.8s
HRY Holter Researc 74.40 43 *e*P P 08 38 08.7 +1.0
CMB Columbia Colle 74.41 54 *e*P P 08 38 08.9 +1.0
CMB pmax pmax
comp=Z,47nm,1.8s
CMB Columbia Colle 74.41 54 *e*P P 08 38 08.9 +1.0
comp=Z,48nm,1.8s
LRM Limekiln Ridge 74.60 44 *e*P P 08 38 10.0 +1.0
EGMT Eagleton 74.70 41 P P 08 38 10.0 +0.6
baz=309
EGMT Eagleton 74.70 41 *e*P P 08 38 10.2 +0.8
comp=Z,140nm,1.9s
WAKR Walker 74.75 53 *e*P P 08 38 11.2 +1.2
DLMT Dillon 74.80 44 *e*P P 08 38 11.3 +1.2
comp=Z,59nm,1.6s
HLID Hailey 74.85 47 P P 08 38 10.7 +0.3
baz=307,SNR=5.6
HLID Hailey 74.85 47 *e*P P 08 38 11.7 +1.2
comp=Z,62nm,2.0s
BMN Battle Mountai 75.03 51 *e*P P 08 38 13.1 +1.6
BMN pmax pmax
comp=Z,9.0nm,0.8s
BMN Battle Mountai 75.03 51 *e*P P 08 38 13.1 +1.6
comp=Z,9.3nm,0.8s
BOZ Bozeman (W) 75.20 44 P P 08 38 12.1 -0.3
baz=308,SNR=6.7
BOZ Bozeman (W) 75.20 44 *e*P P 08 38 13.4 +1.0
BOZ pmax pmax
comp=Z,10.0nm,0.8s
BOZ Bozeman (W) 75.20 44 *e*P P 08 38 13.4 +1.0
comp=Z,10nm,0.8s
NV01 Mina Array Sit 75.52 53 *e*P P 08 38 15.8 +1.3
NVAR Mina Array Bea 75.52 53 P P 08 38 15.3 +0.8
comp=Z,3.5nm,100.0s,baz=290,slow=5.5,SNR=31
MLAC Mammoth, Mammo 75.65 54 P P 08 38 15.3 0.0
baz=306
YMR Madison River 76.14 44 *e*P P 08 38 19.2 +1.3
comp=Z,9.9nm,0.7s
RCTC Rector Farmer 76.16 55 P P 08 38 19.1 +1.3
baz=306
SMMC Simmler 76.24 56 P P 08 38 19.3 +1.0
baz=306
LKWY Lake 76.52 44 *e*P P 08 38 23.3 +3.2
LKWY pmax pmax
comp=Z,31nm,1.5s
LKWY Lake 76.52 44 *e*P P 08 38 23.3 +3.2
comp=Z,31nm,1.5s
H17A Grant Village 76.53 44 *e*P P 08 38 23.1 +3.0
comp=Z,18nm,0.8s
PKM Mcpherson Peak 76.61 56 P P 08 38 22.2 +1.5
baz=306
IMW Indian Meadow 76.64 45 *e*P P 08 38 22.3 +1.5
comp=Z,13nm,0.8s
RLMT Red Lodge 76.79 43 P P 08 38 22.1 +0.6
baz=310
RLMT Red Lodge 76.79 43 *e*P P 08 38 22.7 +1.2
comp=Z,54nm,1.8s
MOOW Moose Ponds 76.84 45 *e*P P 08 38 23.5 +1.6
comp=Z,44nm,1.9s
HVU Hansel Valley 76.90 47 *e*P P 08 38 22.8 +0.7
HVU pmax pmax
comp=Z,12nm,0.8s
HVU Hansel Valley 76.90 47 *e*P P 08 38 22.8 +0.7
comp=Z,12nm,0.8s
GRAC Grapevine Rang 76.97 53 P P 08 38 23.6 +1.2
baz=307
SNOW Snow King Moun 77.02 45 *e*P P 08 38 24.6 +1.7
comp=Z,8.1nm,0.8s
ISA Isabella, Lake 77.04 55 P P 08 38 22.8 -0.1
baz=306
DGMT Dagmar 77.24 38 P P 08 38 23.5 -0.2
baz=312
DGMT Dagmar 77.24 38 *e*P P 08 38 25.3 +1.5
comp=Z,115nm,1.8s
DAC Darwin (Calif) 77.25 54 *e*P P 08 38 25.1 +0.8
DAC pmax pmax
comp=Z,13nm,1.4s
DAC Darwin (Calif) 77.25 54 *e*P P 08 38 25.1 +0.8
comp=Z,13nm,1.4s
AHID Auburn Hatcher 77.26 46 *e*P P 08 38 25.2 +1.1
comp=Z,6.9nm,0.8s
BGU Big Grassy Mou 77.27 48 *e*P P 08 38 25.5 +1.2
comp=Z,32nm,2.0s
R11A Troy Canyon, C 77.29 51 P P 08 38 24.2 -0.2
baz=307
R11A Troy Canyon, C 77.29 51 *e*P P 08 38 25.7 +1.3
comp=Z,14nm,0.9s
LAO LASA Array 77.40 40 P P 08 38 24.7 0.0
baz=311
MPMC Manual Prospec 77.45 54 P P 08 38 25.1 -0.3
baz=307,SNR=7.2
A25A Svangstu Ranch 77.45 37 P P 08 38 24.7 -0.2
baz=313
FURC Furnace Creek, 77.61 54 P P 08 38 26.1 +0.2
baz=307,SNR=6.7
LRMC Laurel Mtn Rad 77.67 55 P P 08 38 26.4 -0.2
baz=307
TPNV Topopah Spring 77.71 53 P P 08 38 27.4 +0.6
baz=307,SNR=6.9
TPNV Topopah Spring 77.71 53 *e*P P 08 38 28.0 +1.2
TPNV pmax pmax
comp=Z,15nm,0.9s
TPNV Topopah Spring 77.71 53 *e*P P 08 38 28.0 +1.2
comp=Z,15nm,0.9s
HWUT Hardware Ranch 77.71 47 *e*P P 08 38 28.0 +1.3
comp=Z,20nm,1.1s
SNCC San Nicolas Is 77.77 58 P P 08 38 27.5 +0.5
baz=306
EDW2 Edwards Air Fo 77.82 56 P P 08 38 27.6 +0.3
baz=307
BUR08 Bucovina Ar. S 77.83 321 *e*P P 08 38 27.5 +0.3
BURAR Bucovina Array 77.84 321⇑ *i*P P 08 38 27.4 +0.2
TESR Tescani 77.85 320⇑ *i*P P 08 38 27.2 +0.1
DUG Dugway, Tooele 77.86 49 P P 08 38 28.1 +0.6
baz=308,SNR=8.1
DUG Dugway, Tooele 77.86 49 *e*P P 08 38 28.9 +1.4
DUG pmax pmax
comp=Z,14nm,0.8s
DUG Dugway, Tooele 77.86 49 *e*P P 08 38 28.9 +1.4
comp=Z,14nm,0.8s
B25A Knox Farm, Ray 77.88 38 P P 08 38 27.4 0.0
baz=313
A26A Wade Farm, Ken 78.00 37 P P 08 38 28.2 +0.2
baz=314
TCUT Toone Canyon 78.11 47 *e*P P 08 38 30.0 +0.9
comp=Z,20nm,0.8s
BW06 Boulder Array 78.13 45 P P 08 38 29.2 +0.1
baz=310,SNR=5.0
BW06 Boulder Array 78.13 45 *e*P P 08 38 29.6 +0.4
PD31 Pinedale Array 78.13 45 *e*P P 08 38 29.6 +0.4
PDAR Pinedale Array 78.13 45 P P 08 38 29.6 +0.4
comp=Z,4.9nm,0.7s,baz=251,slow=2.1,SNR=19
CTU Camp Tracy 78.18 48 *e*P P 08 38 30.4 +1.1
comp=Z,12nm,1.1s
C25A Freed Ranch, W 78.22 38 P P 08 38 29.5 +0.2
baz=313
VRI Vrincioaia 78.23 319⇑ *i*P P 08 38 30.3 +1.0
B26A Jensen Ranch, 78.26 37 P P 08 38 30.1 +0.6
baz=314
BR101 Keskin Array S 78.29 311 *e*P P 08 38 29.7 -0.3
BR131 Keskin Array S 78.29 311 *e*P P 08 38 29.9 0.0
BRTR Keskin Array B 78.29 311 P P 08 38 29.7 -0.3
comp=Z,5.3nm,0.7s,baz=107,slow=3.8,SNR=12
SHOC Shoshone, Teco 78.33 54 P P 08 38 30.4 +0.3
baz=308
A27A Ledoux Ranch, 78.34 36 P P 08 38 30.0 +0.1
baz=314
GSC Goldstone, Bar 78.35 55 P P 08 38 30.6 +0.4
baz=307
JLU Jordanelle 78.41 48 *e*P P 08 38 32.6 +1.9
comp=Z,40nm,1.9s
BFSC Mount Baldy Ra 78.42 56 P P 08 38 31.0 +0.2
baz=307
D25A Fairfield 78.57 39 P P 08 38 31.7 +0.5
baz=313
OJC Ojcow 78.61 326 *e*P P 08 38 31.8 +0.5
OJC pmax pmax
comp=Z,59nm,1.2s
OJC Ojcow 78.61 326 *e*P P 08 38 31.8 +0.5
comp=Z,58nm,1.2s
MPU Maple Canyon 78.67 48 *e*P P 08 38 33.2 +1.1
comp=Z,25nm,1.5s
C26A Wahner Farm, P 78.71 38 P P 08 38 31.9 0.0
baz=314
ANTO Ankara 78.71 312 *e*P P 08 38 32.5 +0.3
ANTO pmax pmax
comp=Z,60nm,1.4s

ANTO Ankara 78.71 312 eP P 08 38 32.5 +0.3
comp=Z,60nm,1.4s
BR231 Keskin MP Arra 78.74 312 eP P 08 38 30.6 -1.7
A28A Rude Farm, Bot 78.83 36 P P 08 38 32.4 -0.2
baz=315
TUQ Turquoise Moun 78.84 54 P P 08 38 32.8 -0.2
baz=308,SNR=7.2
DOPR Dopca 78.86 320⇑ iP P 08 38 34.0 +1.2
BBRC Big Bear Solar 78.90 55 P P 08 38 33.7 +0.2
baz=307
HEC Hector,Ludlow 78.94 55 P P 08 38 34.3 +0.8
baz=308
E25A Miller Ranch, 78.97 39 P P 08 38 33.8 +0.3
baz=313
C27A Sayler Ranch, 79.07 37 P P 08 38 33.4 -0.5
baz=314
D26A Manning 79.09 38 P P 08 38 34.2 +0.1
baz=314
B28A Dugan Ranch, T 79.11 36 P P 08 38 34.2 +0.1
baz=315
MURC Murrieta 79.12 56 P P 08 38 34.8 +0.3
baz=307
MSU Marysvale 79.29 50 eP P 08 38 37.3 +1.8
MSU Marysvale 79.29 50 eP P 08 38 37.3 +1.8
A29A Manning Farm, 79.30 35 P P 08 38 36.0 +0.9
baz=315
F25A Bowman 79.33 40 P P 08 38 35.5 +0.1
baz=313
GMRC Granite Mounta 79.41 54 P P 08 38 36.6 +0.4
baz=308,SNR=6.7
E26A Carlson Angus 79.46 39 P P 08 38 36.2 +0.1
baz=314
D27A Center 79.48 38 P P 08 38 36.8 +0.6
baz=314
P17A Butcher Ranch, 79.55 48 eP P 08 38 38.3 +1.4
comp=Z,19nm,0.8s
B29A Wagenman Farm, 79.57 36 P P 08 38 37.1 +0.5
baz=315
LCMT Little Creek M 79.57 51 eP P 08 38 38.5 +1.5
comp=Z,17nm,1.0s
LDFC Landfair 79.58 54 eP P 08 38 37.9 +0.8
comp=Z,23nm,1.0s
MTPU Mount Pierson 79.58 50 eP P 08 38 39.3 +2.0
comp=Z,17nm,0.8s
PFO Pinyon Flats O 79.60 56 P P 08 38 37.6 +0.5
baz=308,SNR=5.4
PFO Pinyon Flats O 79.60 56 iP P 08 38 39.3 +2.1
109C Camp Elliot, M 79.61 57 P P 08 38 37.7 +0.7
baz=308
C28A Hausauer Farms 79.61 37 P P 08 38 37.3 +0.5
baz=315
OKC Ostrava-Krasne 79.62 326 eP P 08 38 38.6 +1.8
OKC Ostrava-Krasne 79.62 326 eP P 08 38 38.6 +1.8
ARR Arges 79.66 320⇑ iP P 08 38 38.4 +1.2
BELC Belle Mtn. Jos 79.66 55 P P 08 38 37.9 +0.3
baz=308
A30A Hoffart Farm, 79.72 35 P P 08 38 37.6 +0.2
baz=316
P18A Preston Nutter 79.74 48 eP P 08 38 39.6 +1.5
comp=Z,66nm,1.9s
F26A Lodgepole 79.78 39 P P 08 38 38.1 +0.2
baz=314
ULM Lac du Bonnet 79.85 33 P P 08 38 37.6 -0.4
comp=Z,9.3nm,0.8s,baz=336,slow=11,SNR=4.5
G25A Newell 79.85 40 P P 08 38 38.7 +0.5
baz=313
MDND Maddock 79.89 36 P P 08 38 38.6 +0.2
baz=315
K22A Casper 79.91 44 P P 08 38 39.0 +0.2
baz=312
SRU San Rafael Swe 79.91 48 eP P 08 38 40.0 +1.1
SRU pmax pmax
comp=Z,23nm,0.7s
SRU San Rafael Swe 79.91 48 eP P 08 38 40.0 +1.1
comp=Z,23nm,0.7s
E27A Carson 79.94 38 P P 08 38 38.7 0.0
baz=314
RAYN Ar Rayn 79.99 292 eP P 08 38 39.4 +0.1
comp=Z,108nm,2.0s
DPC Dobruska-Polom 80.04 327 eP P 08 38 40.7 +1.5
DPC Dobruska-Polom 80.04 327 eP P 08 38 40.7 +1.5
B30A Myrvik Farm, E 80.06 35 P P 08 38 39.5 +0.2
baz=316
MONP2 Monument Peak 80.06 56 P P 08 38 40.7 +0.9
baz=308
F27A Lemmon 80.10 39 P P 08 38 39.9 +0.3
baz=314
IRM Iron Mountain 80.13 55 P P 08 38 40.4 +0.4
baz=308,SNR=5.3
H25A Fruitdale 80.15 41 P P 08 38 40.5 +0.6
baz=313
G26A Maurine 80.20 40 P P 08 38 40.4 +0.2
baz=314
BC3 Big Chuckawall 80.23 55 P P 08 38 41.0 +0.4
baz=308,SNR=7.3
RSSD Black Hills 80.26 41 P P 08 38 40.5 -0.2
baz=313
E28A Huff 80.27 38 P P 08 38 40.5 +0.1
baz=315
W13A Hualapai Mount 80.36 53 eP P 08 38 42.1 +0.8
comp=Z,40nm,1.8s
B31A Greenbush Farm 80.39 35 P P 08 38 40.8 -0.2
baz=317
IBP Imperial Bould 80.42 56 P P 08 38 41.7 +0.2
baz=308
SWSC Sam W. Stewart 80.44 56 P P 08 38 42.3 +0.8
baz=308
G27A Dupree 80.48 39 P P 08 38 41.8 +0.1
baz=314
I25A Rochford 80.49 41 P P 08 38 42.0 +0.1
baz=313
U15A North Rim 80.53 51 eP P 08 38 44.0 +1.7
comp=Z,142nm,2.0s
A32A Rocking H Ranc 80.56 34 P P 08 38 41.9 0.0
baz=317
H26A Fairpoint 80.58 40 P P 08 38 42.4 +0.2
baz=314
GZR Gura Zlata 80.59 321⇓ iP P 08 38 42.3 +0.1
O20A White River Ci 80.59 46 P P 08 38 42.8 +0.2
baz=311
PVCC Panska Ves 80.65 328 eP P 08 38 42.9 +0.5
PVCC Panska Ves 80.65 328 eP P 08 38 42.9 +0.5
PDMCI Parker Dam,Lak 80.69 54 P P 08 38 43.4 +0.5
baz=309,SNR=7.2
VRAC Vranov 80.70 327 P P 08 38 43.2 +0.5
comp=Z,7.9nm,0.6s,baz=14,slow=7.0,SNR=5.7
CLL Collm 80.70 330⇑ iP P 08 38 42.5 -0.1
comp=Z,29nm,1.0s
CLL Collm 80.70 330⇑ iP P 08 38 42.5 -0.1
CLL pmax pmax
comp=Z,29nm,1.0s
F28A McLaughlin 80.72 38 P P 08 38 43.3 +0.4
baz=315
E29A Napoleon 80.78 37 P P 08 38 43.4 +0.2
baz=316
Y12C Blythe 80.78 55 P P 08 38 44.3 +0.9
baz=309
Y12C Blythe 80.78 55 eP P 08 38 44.7 +1.4
comp=Z,13nm,0.8s
C31A Landman Farms, 80.81 36 P P 08 38 43.3 0.0
baz=317
D30A Buchanan 80.82 37 P P 08 38 43.7 +0.4
baz=316
J25A Sunshine Ranch 80.88 42 P P 08 38 44.1 +0.2
baz=313
ASF Jabal al Asfar 80.90 303 P P 08 38 43.2 -0.9
comp=Z,2.7nm,0.6s,baz=101,slow=5.2,SNR=3.5
B32A Ashes, Strandq 80.92 35 P P 08 38 43.6 -0.2
baz=317
H27A Howes 80.93 40 P P 08 38 44.3 +0.2
baz=314
I26A New Underwood 80.94 41 P P 08 38 44.5 +0.3
baz=314
GLA Glamis 81.02 55 P P 08 38 45.4 +0.7
baz=309
GLA Glamis 81.02 55 eP P 08 38 45.7 +1.0
GLA pmax pmax
comp=Z,15nm,0.8s
GLA Glamis 81.02 55 eP P 08 38 45.7 +1.0
comp=Z,15nm,0.8s
GOPC GO Pecny, Ondr 81.03 328 eP P 08 38 44.8 +0.4
GOPC GO Pecny, Ondr 81.03 328 eP P 08 38 44.8 +0.4
A33A Warroad 81.03 34 P P 08 38 44.7 +0.2
baz=318
PRU Pruhonice 81.07 328 eP P 08 38 45.1 +0.5
PRU Pruhonice 81.07 328 eP P 08 38 45.1 +0.5
PV09 Paradox Valley 81.13 48 eP P 08 38 47.3 +1.7

E30A Jud 81.18 37 P P 08 38 45.6 +0.2
baz=316
G28A Parade 81.21 39 P P 08 38 45.9 +0.3
baz=315
PV10 Paradox Valley 81.27 48 eP P 08 38 47.8 +1.5
AGMN Agassiz Nation 81.30 34 P P 08 38 45.6 -0.3
baz=318
J26A Sides Ranch, S 81.32 41 P P 08 38 45.9 -0.3
baz=314
I27A Quinn 81.33 40 P P 08 38 46.1 -0.2
baz=314
MMAI Mount Meron Ar 81.36 305 P P 08 38 45.5 -1.1
comp=Z,6.0nm,0.6s,baz=67,slow=11,SNR=5.1
PV05 Paradox Valley 81.43 48 eP P 08 38 48.5 +1.4
B33A Robert and Kas 81.44 34 P P 08 38 46.1 -0.5
baz=318
H28A Mission Ridge 81.44 39 P P 08 38 46.6 -0.1
baz=315
MDVR Moldovita 81.55 321⇑ iP P 08 38 47.2 -0.1
G29A Hoven 81.62 38 P P 08 38 47.6 -0.1
baz=315
E31A Nome 81.63 36 P P 08 38 47.7 0.0
baz=317
Y14A Wickenburg 81.65 54 eP P 08 38 49.2 +1.2
comp=Z,54nm,0.9s
WUAZ Wupatki 81.69 52 P P 08 38 49.1 +0.7
baz=310
WUAZ Wupatki 81.69 52 eP P 08 38 49.8 +1.4
comp=Z,15nm,0.9s
B34A Aery, Baudette 81.70 34 P P 08 38 47.5 -0.5
baz=319
PV01 Paradox Valley 81.71 48 eP P 08 38 50.1 +1.6
C33A Trail 81.73 35 P P 08 38 47.7 -0.5
baz=318
NKC Novy Kostel 81.76 329 eP P 08 38 49.0 +0.7
NKC Novy Kostel 81.76 329 eP P 08 38 49.0 +0.7
I28A Midland 81.84 40 P P 08 38 49.0 +0.1
baz=315
H29A Onida 81.88 39 P P 08 38 49.1 0.0
baz=315
J27A Elkhorn Farm, 81.92 41 P P 08 38 49.1 -0.3
baz=314
SMCO Snowmass 81.96 46 eP P 08 38 50.6 +0.6
comp=Z,39nm,2.0s
F31A Hecla 81.96 37 P P 08 38 49.6 +0.1
baz=316
G30A Faulkton 82.05 38 P P 08 38 49.4 -0.5
baz=316
KHC Kasperske Hory 82.13 328 eP P 08 38 49.9 -0.4
KHC Kasperske Hory 82.13 328 eP P 08 38 50.8 +0.5
KHC pmax pmax
comp=Z,8.0nm,1.1s
KHC Kasperske Hory 82.13 328 eP P 08 38 50.8 +0.5
comp=Z,7.7nm,1.1s
D33A AnnSam, Waubun 82.16 35 P P 08 38 50.1 -0.4
baz=318
B35A Bob, Littlefor 82.20 33 P P 08 38 50.1 -0.5
baz=319
C34A RKJ Ranch, Bem 82.20 34 P P 08 38 49.9 -0.8
baz=318
J28A Allard Ranch, 82.21 40 P P 08 38 50.9 +0.1
baz=315
I29A Vivian Onida 82.26 39 P P 08 38 50.7 -0.4
baz=315
GERES GERESS Array B 82.30 328 P P 08 38 50.8 -0.5
comp=Z,3.7nm,0.6s,baz=36,slow=5.9,SNR=12
GEA0 GERESS Array S 82.31 328 eP P 08 38 51.0 -0.3
VTS Vitosha 82.31 319⇑ iP P 08 38 51.1 -0.4
VTS Vitosha 82.31 319 eP P 08 38 52.1 +0.6
VTS pmax pmax
comp=Z,53nm,1.9s
VTS Vitosha 82.31 319 eP P 08 38 52.1 +0.6
comp=Z,53nm,1.9s
ISCO Idaho Springs 82.32 45 P P 08 38 51.4 -0.4
baz=313
ISCO Idaho Springs 82.32 45 eP P 08 38 53.0 +1.2
ISCO pmax pmax
comp=Z,53nm,1.9s
ISCO Idaho Springs 82.32 45 eP P 08 38 53.0 +1.2
comp=Z,53nm,1.9s
X16A Lo Mia Camp, P 82.35 52 eP P 08 38 53.2 +1.3
comp=Z,13nm,1.0s
MVCO Mesa Verde 82.36 49 P P 08 38 52.0 +0.1
baz=311
MVCO Mesa Verde 82.36 49 eP P 08 38 53.1 +1.1
comp=Z,68nm,1.8s
F32A Veblen 82.50 37 P P 08 38 52.1 -0.1
baz=317
D34A Park Rapids 82.50 35 P P 08 38 51.9 -0.3
baz=318
E33A Westby DABS, E 82.56 36 P P 08 38 52.3 -0.3
baz=318
C35A Jirik Farms, M 82.58 34 P P 08 38 52.1 -0.5
baz=319
SUSD Miller 82.64 38 P P 08 38 52.8 -0.3
baz=316
J29A Okreek 82.69 40 P P 08 38 53.3 0.0
baz=315
G32A Webster 82.77 37 P P 08 38 53.5 -0.1
baz=317
I30A Oacoma 82.78 39 P P 08 38 54.0 +0.2
baz=316
EKA Eskdalemuir Ar 82.85 340 P P 08 38 53.8 -0.1
comp=Z,2.5nm,0.5s,baz=31,slow=5.1,SNR=13
H31A Wolsey 82.85 38 P P 08 38 53.6 -0.5
baz=316
F33A 5 Mile Ranch, 82.91 36 P P 08 38 54.1 -0.2
baz=318
S22A 4UR Ranch, Cre 83.00 47 P P 08 38 56.0 +0.6
baz=312
214A Organ Pipe Nat 83.03 55 P P 08 38 55.7 +0.5
baz=310
C36A Pine Crest Far 83.04 33 P P 08 38 54.6 -0.4
baz=320
Q24A Divide 83.15 46 P P 08 38 56.0 -0.2
baz=313
J30A Dallas 83.17 40 P P 08 38 55.3 -0.5
baz=316
E35A Pequot Lakes 83.25 35 P P 08 38 55.9 -0.3
baz=319
G33A Ortonville 83.32 37 P P 08 38 56.6 +0.1
baz=318
D36A Goodland 83.34 34 P P 08 38 55.9 -0.7
baz=320
C37A Embarrass 83.35 33 P P 08 38 56.2 -0.4
baz=320
F34A Alexandria 83.43 36 P P 08 38 56.8 -0.3
baz=318
EYMN Ely 83.48 32 P P 08 38 57.6 +0.3
baz=321
OGNE Ogallala 83.52 43 P P 08 38 57.9 +0.2
baz=314
H33A Prehn Over Nor 83.55 37 P P 08 38 58.1 +0.3
baz=318
G34A Benson 83.67 36 P P 08 38 58.0 -0.2
baz=318
F35A Swanville 83.70 35 P P 08 38 57.8 -0.6
baz=319
C38A Sawbill Land. 83.75 32 P P 08 38 58.0 -0.7
baz=321
EIL Elat 83.76 303 P P 08 38 59.0 0.0
comp=Z,16nm,0.7s,baz=0.7,slow=8.7,SNR=7.7
SDCO Great Sand Dun 83.77 47 P P 08 38 60.0 +0.6
baz=313
SDCO Great Sand Dun 83.77 47 eP P 08 39 01.5 +2.1
comp=Z,9.1nm,1.0s
E36A McGregor 83.80 34 P P 08 38 58.2 -0.8
baz=320
MEM Membach 83.95 333 P P 08 38 59.5 -0.1
J32A Parkston 83.97 39 P P 08 38 59.8 -0.1
baz=317
H34A Spellman Lake, 84.03 37 P P 08 39 00.1 0.0
baz=318
K31A O'Neill 84.05 40 P P 08 39 00.5 +0.1
baz=316
TUC Tucson 84.12 54 P P 08 39 01.6 +0.6
baz=310
F36A Milaca 84.18 35 P P 08 39 01.0 +0.1
baz=320
ECSD EROS Data Cent 84.31 38 P P 08 39 01.1 -0.5
baz=318
L31A Butterfield Fa 84.33 40 P P 08 39 01.4 -0.4
baz=316
BCLA Clavier 84.36 333 P P 08 39 02.1 +0.4
J33A Davis 84.44 38 P P 08 39 02.3 0.0
baz=318
H35A Sunnyside Ranc 84.45 36 P P 08 39 02.4 +0.1
baz=319

G36A St. Michael 84.55 35 P P 08 39 02.3 -0.5
baz=319
LANF Langenberg 84.60 331⇑ eP P 08 39 03.4 +0.4
T25A Trinidad 84.82 47 P P 08 39 04.8 +0.2
baz=314
M31A Lambtecht Ranc 84.86 41 P P 08 39 04.5 0.0
baz=316
L32A Elgin 84.88 40 P P 08 39 04.2 -0.4
baz=317
BFO Black Forest 84.92 330 eP P 08 39 04.3 -0.3
BFO pmax pmax
comp=Z,27nm,0.9s
BFO Black Forest 84.92 330 eP P 08 39 04.3 -0.3
comp=Z,27nm,0.9s
K33A Hardington 84.95 39 P P 08 39 05.0 +0.1
baz=318
H36A Jessenland, He 84.97 36 P P 08 39 04.9 0.0
baz=319
SPMN Marine on St. 84.99 35 P P 08 39 05.1 +0.1
baz=320
I35A Creekview Farm 85.01 37 P P 08 39 05.0 -0.1
baz=319
LAZ Ladron 85.04 50 eP P 08 39 07.0 +1.3
RPZ Rata Peaks 85.06 158 P P 08 39 05.7 +0.7
comp=Z,6.4nm,0.7s,baz=14,slow=12,SNR=3.3
ANMO Albuquerque 85.09 49 P P 08 39 06.2 +0.3
baz=312
ANMO Albuquerque 85.09 49 ceP P 08 39 08.1 +2.1
ANMO pmax pmax
comp=Z,17nm,1.2s
ANMO Albuquerque 85.09 49 eP P 08 39 07.4 +1.5
comp=Z,14nm,1.1s
BGNE Belgrade 85.24 40 P P 08 39 05.9 -0.5
baz=317
K34A Le Mars 85.34 38 P P 08 39 06.6 -0.3
baz=318
H37A Dierke Farm, C 85.43 35 P P 08 39 07.1 -0.1
baz=320
ECH Echery 85.47 331⇑ eP P 08 39 07.0 -0.4
SCHQ Schefferville 85.48 15 P P 08 39 07.3 +0.1
comp=Z,6.4nm,0.7s,baz=0.9,slow=8.0,SNR=6.2
DAVOX Davos/Dischmat 85.52 328 P P 08 39 07.4 -0.4
comp=Z,7.4nm,0.7s,baz=33,slow=11,SNR=7.4
BNM Barren Site 85.52 50 eP P 08 39 09.2 +1.0
M33A Taylor Creek F 85.61 40 P P 08 39 08.2 0.0
baz=317
I37A Lemond, Waseca 85.64 36 P P 08 39 08.5 +0.2
baz=320
319A Douglas 85.70 54 eP P 08 39 09.9 +1.0
comp=Z,14nm,1.0s
J36A Seneca 1, Swea 85.72 37 P P 08 39 08.6 0.0
baz=319
L34A Svendsen Farm, 85.74 39 P P 08 39 08.8 0.0
baz=318
K35A Storm Lake 85.74 38 P P 08 39 08.7 -0.1
baz=319
MOF Molkenrain 85.78 331⇑ eP P 08 39 07.7 -1.3
121A Cookes Peak, D 85.89 52 P P 08 39 10.5 +0.6
baz=312
THEF They Montfort 85.91 331⇑ eP P 08 39 08.6 -0.9
J37A Redenius Farm, 86.11 36 P P 08 39 10.6 0.0
baz=320
I38A Scanlan Farm, 86.12 35 P P 08 39 10.7 +0.1
baz=320
LAST Lasithi 86.18 312 eP P 08 39 11.1 0.0
comp=Z,247nm,1.9s
K36A Gilmore City 86.18 37 P P 08 39 11.2 +0.2
baz=319
LOMF Lomont 86.30 330⇑ eP P 08 39 11.2 -0.4
P32A Huiting Farm, 86.31 42 P P 08 39 11.3 -0.4
baz=317
IDI Anoyia 86.44 312 P P 08 39 11.0 -1.4
comp=Z,20nm,0.7s,baz=28,slow=10,SNR=17
IDI Anoyia 86.44 312 eP P 08 39 12.2 -0.3
comp=Z,80nm,1.5s
M35A Neola 86.45 39 P P 08 39 11.9 -0.4
baz=318
K37A Belmond 86.48 37 P P 08 39 12.8 +0.4
baz=320
L36A Harm Buss Farm 86.48 38 P P 08 39 12.7 +0.2
baz=319
N34A Lincoln 86.51 40 P P 08 39 12.6 0.0
baz=318
J38A Wedel Dairy, R 86.61 36 P P 08 39 13.1 +0.1
baz=320
Q32A Meitler Ranch, 86.78 42 P P 08 39 14.5 +0.5
baz=317
O34A Beatrice 86.89 40 P P 08 39 14.3 -0.2
baz=318
M36A Felix, Anita 86.90 38 P P 08 39 14.8 +0.2
baz=319
L37A Phoenix Point, 86.91 37 P P 08 39 13.9 -0.6
baz=320
N35A Tabor 86.93 39 P P 08 39 14.7 0.0
baz=318
Q33A Connelly Farm, 87.17 42 P P 08 39 15.8 -0.1
baz=317
P34A Walnut Farm, R 87.29 41 P P 08 39 15.7 -0.7
baz=318
N36A Muff Farm, Cla 87.30 39 P P 08 39 16.1 -0.4
baz=319
R33A Olander Ranch, 87.59 42 P P 08 39 18.5 +0.5
baz=317
M38A Pleasantville 87.72 37 P P 08 39 18.8 +0.4
baz=320
N37A Lee Faris, Mou 87.72 38 P P 08 39 18.7 +0.2
baz=319
P35A Duane Minner, 87.73 40 P P 08 39 18.8 +0.3
baz=318
KSU1 Kansas State U 87.74 41 P P 08 39 18.9 +0.3
baz=318
KSU1 Kansas State U 87.74 41 eP P 08 39 19.6 +1.0
comp=Z,16nm,0.8s
O36A Bolckow 87.81 39 P P 08 39 19.2 +0.3
baz=319
T32A Huddler Ranch, 87.90 43 P P 08 39 20.1 +0.6
baz=317
R34A Isabella, Hill 87.99 42 P P 08 39 20.6 +0.8
baz=318
P36A Good Intent, A 88.08 40 P P 08 39 21.1 +0.9
baz=319
N38A Joes South For 88.18 38 P P 08 39 20.8 +0.1
baz=320
U32A Winter Ranch, 88.44 44 P P 08 39 23.3 +1.3
baz=317
Q36A Arnold C. Orve 88.44 40 P P 08 39 22.9 +1.0
baz=319
N39A Derby Farms, D 88.47 37 P P 08 39 22.9 +0.9
baz=320
S34A Willow Spring 88.50 42 P P 08 39 22.8 +0.5
baz=318
R35A Emporia Munici 88.53 41 P P 08 39 23.1 +0.8
baz=318
P37A Lathrop 88.54 39 P P 08 39 22.9 +0.5
baz=319
R36A Gordon, Harris 88.89 41 P P 08 39 24.7 +0.6
baz=319
P38A Dawn 88.92 39 P P 08 39 24.7 +0.5
baz=320
R37A Teagarden Farm 89.25 40 P P 08 39 25.8 0.0
baz=319
Q38A Cooks Store, C 89.38 39 P P 08 39 26.3 0.0
baz=320
P39A Salisbury 89.41 38 P P 08 39 27.2 +0.7
baz=320
T36A Boggs Farm, Ca 89.64 42 P P 08 39 28.1 +0.5
baz=318
Q39A Willow Grove F 89.64 39 P P 08 39 28.3 +0.7
baz=320
V34A Guthrie 89.65 44 P P 08 39 28.2 +0.5
baz=317
S37A Fort Scott 89.67 41 P P 08 39 28.1 +0.4
baz=319
X32A Elmer 89.69 46 P P 08 39 28.1 +0.2
baz=316
P40A Paris 89.73 38 P P 08 39 28.3 +0.4
baz=321
T37A Cheneyville 18 90.10 41 P P 08 39 30.0 +0.3
baz=319
R39A Chumby, Stover 90.17 39 P P 08 39 30.0 0.0
baz=320
U36A Oologah 90.21 42 P P 08 39 30.6 +0.3
baz=318
S38A Stockton 90.24 40 P P 08 39 30.8 +0.4
baz=320
Y33A Hilltop Ranch, 90.36 45 P P 08 39 31.4 +0.3
baz=317
T38A Diamond 90.49 41 P P 08 39 30.7 -0.9

baz=319
S39A Bolivar 90.50 40 P **P** 08 39 31.0 -0.6
baz=320
W35A Tecumseh 90.51 44 P **P** 08 39 31.5 -0.2
baz=318
U37A Salina 90.53 42 P **P** 08 39 31.7 -0.1
baz=319
TUL1 Leonard 90.54 43 P **P** 08 39 31.8 0.0
baz=318
V36A Jenks 90.55 43 P **P** 08 39 31.3 -0.6
baz=318
R40A Maddies Statio 90.57 39 P **P** 08 39 31.9 0.0
baz=321
TX31 Lajitas Ar. Si 90.65 52 *e*P **P** 08 39 33.4 +0.8
LTX Lajitas 90.65 52 *e*P **P** 08 39 32.9 +0.4
LTX Lajitas 90.65 52 *e*P **P** 08 39 32.9 +0.4
TXAR Lajitas Array 90.65 52 P **P** 08 39 32.9 +0.4
comp=Z,3.3nm,0.7s,baz=302,slow=3.4,SNR=10
ABTX Abilene, Hawle 90.77 47 P **P** 08 39 33.3 +0.3
baz=316
ABTX Abilene, Hawle 90.77 47 *e*P **P** 08 39 33.7 +0.7
comp=Z,36nm,1.6s
Z33A Whitaker Ranch 90.81 46 P **P** 08 39 33.1 -0.1
baz=317
U38A Gravette 90.89 41 P **P** 08 39 33.3 -0.1
baz=319
Y34A Reagan Ranch, 90.89 45 P **P** 08 39 33.6 +0.1
baz=317
V37A Hulbert 90.91 42 P **P** 08 39 33.6 0.0
baz=319
T39A Clever 90.98 40 P **P** 08 39 33.8 0.0
baz=320
133A Hamilton Ranch 91.21 47 P **P** 08 39 35.4 +0.4
baz=317
X36A Centrahoma 91.23 44 P **P** 08 39 36.2 +1.2
baz=318
Z34A Collier Ranch, 91.23 46 P **P** 08 39 35.4 +0.3
baz=317
V38A Canehill 91.32 42 P **P** 08 39 35.4 0.0
baz=319
Y35A Marietta 91.34 45 P **P** 08 39 35.7 +0.2
baz=318
Z35A Perchaven, San 91.64 45 P **P** 08 39 37.1 +0.2
baz=318
233A Rising Star 91.65 47 P **P** 08 39 37.3 +0.3
baz=317
134A White-Moore Ra 91.72 46 P **P** 08 39 37.9 +0.6
baz=317
X37A Clayton 91.75 43 P **P** 08 39 38.1 +0.7
baz=319
U40A Yellville 91.76 40 P **P** 08 39 37.4 0.0
baz=320
Y36A Durant 91.76 44 P **P** 08 39 38.4 +0.9
baz=318
X38A Whitesboro 91.99 43 P **P** 08 39 39.8 +1.3
baz=319
234A Clairette 92.10 47 P **P** 08 39 39.9 +0.8
baz=317
Z36A Blue Ridge 92.14 45 P **P** 08 39 40.5 +1.2
baz=318
W39A Magazine 92.15 42 P **P** 08 39 40.0 +0.8
baz=320
JCT Junction City 92.22 49 P **P** 08 39 40.7 +0.9
baz=316
433A Art 92.44 48 P **P** 08 39 41.6 +0.8
baz=316
X39A Fountain Ranch 92.50 42 P **P** 08 39 41.6 +0.7
baz=319
WHTX Lake Whitney, 92.50 46 P **P** 08 39 41.8 +0.8
baz=317
334A Lometa 92.53 47 P **P** 08 39 41.8 +0.7
baz=317
MIAR Mount Ida 92.76 42 P **P** 08 39 42.8 +0.7
baz=320
Y39A Lockesburg 92.94 43 P **P** 08 39 43.1 +0.1
baz=319
W41A Tony Mavity, V 92.98 41 P **P** 08 39 44.0 +0.9
baz=320
W41B Gary Mavity, V 92.98 41 P **P** 08 39 43.7 +0.6
baz=320
534A Blanco 93.34 48 P **P** 08 39 45.3 +0.4
baz=317
NATX Nacogdoches 94.27 45 P **P** 08 39 49.3 +0.3
baz=319
933A Laredo 94.59 50 P **P** 08 39 51.4 +0.7
baz=316
440A Kirbyville 95.42 45 P **P** 08 39 53.3 -1.1
baz=319
343A Vidalia 96.31 43 P **P** 08 39 57.4 -1.0
baz=321
TKL Tuckaleechee C 96.75 35 P **P** 08 39 59.6 -0.7
comp=Z,5.2nm,1.0s,baz=188,slow=5.4,SNR=2.4
ESDC Sonseca Array 96.93 333 P **P** 08 40 00.4 -0.8
comp=Z,0.4nm,0.4s,baz=17,slow=3.8,SNR=4.4
KMSC Kings Mountain 98.28 34 P **P** 08 40 07.3 +0.1
baz=328
VNDA Vanda 115.08 175 PKP **PKPdf** 08 45 09.1 -0.2
comp=Z,1.3nm,0.8s,baz=331,slow=5.0,SNR=4.6
TOA1 Torodi Ar. Sit 116.79 314 *e*PKPdf **PKPdf** 08 45 13.2 -1.3
TORD Torodi Ar. Bea 116.80 314 PKP **PKPdf** 08 45 13.2 -1.3
comp=Z,2.7nm,1.0s,baz=313,slow=1.3,SNR=5.7
TORD PKKPbc **PKKPbc** 08 55 41.5 +1.8
comp=Z,0.7nm,0.7s,baz=208,slow=2.2,SNR=4.6
LBTB Lobatse 123.94 263 PKP **PKPdf** 08 45 28.0 0.0
comp=Z,5.5nm,0.7s,baz=243,slow=1.5,SNR=5.0
LBTB Lobatse 123.94 263 *e*PKPdf **PKPdf** 08 45 29.2 +1.1
SDV Santo Domingo 125.74 39 PKP **PKPdf** 08 45 32.0 +0.1
comp=Z,13nm,0.7s,baz=310,slow=3.1,SNR=13
DBIC Dimbokro 125.77 316 PKP **PKPdf** 08 45 31.4 -0.4
comp=Z,2.3nm,0.6s,baz=340,slow=1.7,SNR=7.0
BOSA Boshof 125.89 259 PKP **PKPdf** 08 45 31.8 +0.1
comp=Z,3.0nm,0.7s,baz=72,slow=1.7,SNR=5.1
PTGA Pitinga 139.17 32 PKP **PKPdf** 08 45 58.7 +1.6
comp=Z,5.9nm,0.4s,baz=342,slow=20,SNR=5.1
LPAZ La Paz 147.27 58 PKPbc **PKPbc** 08 46 14.2 0.0
comp=Z,14nm,0.7s,baz=322,slow=2.5,SNR=15
LPAZ La Paz 147.27 58 *e*PKPbc **PKPbc** 08 46 14.6 +0.4
PB11 IPOC Station P 148.52 65 *e*PKPbc **PKPbc** 08 46 17.5 +0.6
RCBR Riachuelo 148.72 353 PKPbc **PKPbc** 08 46 16.9 -0.5
baz=17,slow=0.3,SNR=5.4
PB01 IPOC Station P 149.44 67 *e*PKPbc **PKPbc** 08 46 19.3 +0.2
PB04 IPOC Station P 149.73 70 *e*PKPbc **PKPbc** 08 46 19.9 0.0
SIV San Ignacio 151.58 48 PKP **PKPdf** 08 46 18.7 +0.7
comp=Z,13nm,0.7s,baz=253,slow=2.7,SNR=5.1
SIV PKPbc **PKPbc** 08 46 24.5 +0.2
comp=Z,19nm,0.7s,baz=351,slow=2.1,SNR=19
PLCA Paso Flores 155.60 108 PKPab **PKPab** 08 46 50.6 +1.1
comp=Z,9.9nm,1.1s,baz=239,slow=4.5,SNR=4.2
BDFB Brasilia 157.34 22 PKPab **PKPab** 08 46 58.1 +0.8
comp=Z,3.7nm,0.8s,baz=277,slow=8.1,SNR=2.2
CPUP Villa Florida 161.43 60 PKPab **PKPab** 08 47 15.2 +0.3
comp=Z,4.3nm,1.1s,baz=292,slow=5.4,SNR=3.4

*ISCJB **11** 08:27:06.8₀0.5, 36°.47N₀0°.02×28°.77E±0°.02, h1^{km}.5^{km}, Error ellipse: s-maj=4.2km s-min=3.3km az=168.4*
*ATH **11** 08:27:06.3, 36°.49N×28°.80E, h21^{km}± 1^{km}, ML2.9/3, Error ellipse: s-maj=2.9km s-min=1.1km az=189.0*
*CSEM **11** 08:27:07.0±0.2, 36°.46N×28°.78E, h2^{km}, ML2.8, Error ellipse: s-maj=5.2km s-min=3.9km az=169.0*
*ISK **11** 08:27:07.7, 36°.55N×28°.79E, h9^{km}, ML2.8*
*DDA **11** 08:27:07.2, 36°.47N×28°.74E, h24^{km}, Ml3.4*
ISC 11 08:27:07.2±1.1, 36°.50N±0°.02×28°.78E±0°.02, h5^{km}±9^{km}, n114, σ1§30/127, Dodecanese Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FETY	**Fethiye**	**0.28**	**60**	*e*PG	**Pg**	**08 27 12.6**	**-0.2**
FETY				*e*SG	**Sg**	**08 27 17.4**	**+0.8**
FETY	**Fethiye**	**0.28**	**60**	*e*Pg	**Pg**	**08 27 12.6**	**-0.2**
FETY				*e*Sg	**Sg**	**08 27 17.4**	**+0.8**
DALY	**Dalyan (Mu˘la**	**0.34**	**343**	*e*PG	**Pg**	**08 27 13.5**	**-0.3**
DALY				*e*SG	**Sg**	**08 27 18.3**	**+0.1**
DALY	**Dalyan (Mu˘la**	**0.34**	**343**	*e*Pg	**Pg**	**08 27 13.5**	**-0.3**
DALY				*e*Sg	**Sg**	**08 27 18.3**	**+0.1**
TURN	**Turunc**	**0.40**	**340**	*i* P	**Pb**	**08 27 16.6**	**-0.3**
TURN				*i* S	**Sb**	**08 27 25.6**	**+2.2**
TURN	**Turunc**	**0.40**	**340**	P	**Pb**	**08 27 16.6**	**-0.3**
TURN				S	**Sb**	**08 27 25.5**	**+2.2**
ARG	**Arkhangelos**	**0.59**	**242**	P	**Pg**	**08 27 17.4**	**-1.2**
ARG				S	**Sg**	**08 27 27.4**	**+1.1**
AKAS	**Kas**	**0.72**	**111**	*i* P	**Pg**	**08 27 19.8**	**-1.3**
AKAS				*i* S	**Sb**	**08 27 33.2**	**+0.6**
AKAS	**Kas**	**0.72**	**111**	P	**Pg**	**08 27 19.8**	**-1.3**
AKAS				S	**Sb**	**08 27 33.2**	**+0.6**
KSL	**Kastellorizon**	**0.74**	**118**	P	**Pg**	**08 27 20.8**	**-0.6**
KSL				S	**Sg**	**08 27 30.6**	**-0.4**
KSL				AML	AML	08 27 35.7	
comp=N,661μm,0.5s
KSL AML AML 08 27 37.7
comp=E,1493μm,0.3s
YER Yerkesik 0.75 328 *e*PG **Pb** **08 27 22.2** **-0.7**
YER Yerkesik 0.75 328 *e*Pg **Pb** **08 27 22.2** **-0.7**
ELL Elmali 0.95 74 *e*PG **Pb** **08 27 26.2** **-0.1**
ELL Elmali 0.95 74 *e*Pg **Pb** **08 27 26.2** **-0.1**
BDRM Kayabasi 1.21 298 *i* P **Pb** **08 27 29.4** **-1.3**
BDRM *i* S **Sn** **08 27 47.7** **-0.1**
BDRM Kayabasi 1.21 298 P **Pb** **08 27 29.4** **-1.3**
NIS1 Nisyros Isl. 1.29 275 *e*PN **Pg** **08 27 32.8** **+0.8**
NIS1 Nisyros Isl. 1.29 275 P **Pn** **08 27 31.3** **-0.7**
NIS1 Nisyros Isl. 1.29 275 *e*Pn **Pg** **08 27 32.8** **+0.8**
NIS1 S **Sn** **08 27 49.9** **+0.2**
NIS1 Nisyros Isl. 1.29 275 P **Pn** **08 27 31.3** **-0.7**
NIS1 S **Sn** **08 27 49.9** **+0.2**
NIS1 AML AML 08 27 54.0
comp=E,2440μm,0.4s
NIS1 AML AML 08 27 55.2
comp=N,1877μm,0.4s
BODT Bodrum 1.30 296 *e*PN **Pg** **08 27 32.9** **+0.6**
BODT Bodrum 1.30 296 *e*Pn **Pg** **08 27 32.9** **+0.6**
KORT Korkueli 1.36 68 *i* P **Pg** **08 27 33.4** **0.0**
KORT *i* S **Sg** **08 27 55.5** **+4.5**
KORT Korkueli 1.36 68 P **Pg** **08 27 33.4** **0.0**
AYDN Tasoluk 1.37 329 *i* P **Pb** **08 27 32.8** **-0.6**
AYDN *i* S **Sg** **08 27 52.1** **+0.9**
AYDN Tasoluk 1.37 329 P **Pb** **08 27 32.8** **-0.6**
ANTB Antalya 1.56 74 *e*PN **Pn** **08 27 35.6** **-0.1**
ANTB Antalya 1.56 74 *e*Pn **Pn** **08 27 35.6** **-0.1**
AYDB Zeytinkoy-Aydi 1.61 334 *e*PN **Pb** **08 27 36.5** **-1.0**
AYDB Zeytinkoy-Aydi 1.61 334 *e*Pn **Pb** **08 27 36.6** **-1.0**
KARP Karpathos 1.61 235 *e*PN **Pn** **08 27 36.7** **+0.2**
KARP Karpathos 1.61 235 P **Pn** **08 27 36.3** **-0.2**
KARP Karpathos 1.61 235 *e*Pn **Pn** **08 27 36.7** **+0.2**
KARP S **Sn** **08 27 58.7** **+1.0**
KARP Karpathos 1.61 235 P **Pn** **08 27 36.3** **-0.2**
KARP S **Sn** **08 27 58.7** **+1.0**
KARP AML AML 08 28 04.6
comp=N,493μm,0.4s
KARP AML AML 08 28 10.9
comp=E,416μm,0.5s
BCK Bucak 1.74 56 *e*PN **Pb** **08 27 38.7** **-1.1**
BCK Bucak 1.74 56 *e*Pn **Pb** **08 27 38.7** **-1.1**
KHL Karahalli 1.92 18 *e*PN **Pn** **08 27 40.1** **-0.7**
KHL Karahalli 1.92 18 *e*Pn **Pn** **08 27 40.1** **-0.7**
KHAL Karahalli 1.96 17 *i* P **Pn** **08 27 40.9** **-0.5**
KHAL *i* S **Sg** **08 28 08.1** **-2.1**
KHAL Karahalli 1.96 17 P **Pn** **08 27 40.8** **-0.5**
KHAL S **Sg** **08 28 08.1** **-2.1**
SMG Samos 1.97 309 P **Pn** **08 27 40.8** **-0.5**
SMG Samos 1.97 309 P **Pn** **08 27 40.8** **-0.5**
KULA Kula-Manisa 2.02 357 *e*PN **Pn** **08 27 42.1** **0.0**
KULA Kula-Manisa 2.02 357 *e*Pn **Pn** **08 27 42.1** **0.0**
IZM Izmir 2.25 328 *e*PN **Pn** **08 27 46.0** **+0.8**
IZM Izmir 2.25 328 *e*Pn **Pn** **08 27 46.0** **+0.8**
BLCB Balcova 2.34 324 *e*PN **Pn** **08 27 46.6** **+0.2**
BLCB Balcova 2.34 324 *e*Pn **Pn** **08 27 46.6** **+0.2**
ZKR Zakros 2.49 237 P **Pn** **08 27 48.7** **+0.1**
ZKR Zakros 2.49 237 P **Pn** **08 27 48.7** **+0.1**
AKHS Akhisar 2.50 343 *i* P **Pn** **08 27 48.7** **+0.1**
AKHS *i* S **Sb** **08 28 20.6** **-3.2**
AKHS Akhisar 2.50 343 P **Pn** **08 27 48.7** **+0.1**
AKHS S **Sb** **08 28 20.6** **-3.2**
AKS Akhisar 2.50 343 *e*PN **Pn** **08 27 49.1** **+0.5**
AKS Akhisar 2.50 343 *e*Pn **Pn** **08 27 49.1** **+0.5**
URLA Izmir 2.54 318 *i* P **Pb** **08 27 51.1** **-2.4**
URLA *i* S **Sb** **08 28 22.1** **-3.0**
URLA Izmir 2.54 318 P **Pb** **08 27 51.1** **-2.4**
URLA S **Sb** **08 28 22.1** **-3.0**
APE Apeiranthos 2.67 283 *e*PN **Pn** **08 27 51.5** **+0.5**
APE Apeiranthos 2.67 283 *e*Pn **Pn** **08 27 51.5** **+0.5**
NPS Neapolis 2.85 245 P **Pn** **08 27 52.5** **-0.9**
NPS Neapolis 2.85 245 P **Pn** **08 27 52.5** **-0.9**
CHOS Chios island 2.87 312 *e*PN **Pn** **08 27 55.4** **+1.6**
CHOS Chios island 2.87 312 *e*Pn **Pn** **08 27 55.4** **+1.6**
LAST Lasithi 2.99 245 P **Pn** **08 27 55.0** **-0.4**
LAST Lasithi 2.99 245 P **Pn** **08 27 55.0** **-0.4**
TVSB Tavsanli 3.00 10 *e*PN **Pn** **08 27 55.2** **-0.4**
TVSB Tavsanli 3.00 10 *e*Pn **Pn** **08 27 55.2** **-0.4**
DST Dursunbey 3.11 358 *e*P **Pg** **08 28 07.7** **+0.9**
IDI Anoyia 3.38 250 P **Pn** **08 28 00.3** **-0.4**
IDI Anoyia 3.38 250 P **Pn** **08 28 00.3** **-0.4**
GEMT Gemlik 3.95 5 *e*P **Pg** **08 28 23.9** **+1.0**
LFK Lefkose 4.05 106 *e*P Pn 08 28 13.4 +3.5
LFK Lefkose 4.05 106 *e*P Pn 08 28 13.4 +3.4
GADA Gvkgeada 4.33 329 *e*P **Pg** **08 28 31.4** **+1.2**
MDUB Mudurnu 4.40 25 *e*P Pn 08 28 18.7 +3.8
MDUB Mudurnu 4.40 25 *e*P Pn 08 28 18.7 +3.8
AFSR Afˇar-Bala (A 4.50 48 *e*P **Pn** **08 28 16.4** **+0.3**
AFSR Afˇar-Bala (A 4.50 48 *e*P **Pn** **08 28 16.4** **+0.3**
TKR Tekirdag 4.59 348 *e*P **Pb** **08 28 28.6** **+0.3**
LOD Lodumlu 4.62 42 *e*P **Pn** **08 28 16.0** **-1.9**
LOD Lodumlu 4.62 42 *e*P **Pn** **08 28 16.0** **-1.9**
MERS Mersin 4.63 84 *e*P **Pn** **08 28 20.2** **+2.2**
MERS Mersin 4.63 84 *e*P **Pn** **08 28 20.2** **+2.2**
BGKT Bogazkoy 4.68 360 *e*P Pn 08 28 21.6 +3.0
BGKT Bogazkoy 4.68 360 *e*P Pn 08 28 21.6 +3.0
SILT Sile 4.70 8 *e*P **Pn** **08 28 21.1** **+2.2**
SILT Sile 4.70 8 *e*P **Pn** **08 28 21.1** **+2.2**
ENEZ Enez 4.71 335 *e*P **Pb** **08 28 31.4** **+1.1**
CTKS Kestanelik-??a 4.74 358 *e*P Pn 08 28 23.4 +4.0
CTKS Kestanelik-??a 4.74 358 *e*P Pn 08 28 23.4 +4.0
KLYT Kilyos 4.76 2 *e*P Pn 08 28 22.7 +3.0
KLYT Kilyos 4.76 2 *e*P Pn 08 28 22.7 +3.1
KAMT Kaman 4.84 52 *e*P **Pg** **08 28 38.4** **-1.7**
CTYL Yalikoy Yolu 4.99 356 *e*P **Pn** **08 28 23.9** **+1.1**
CTYL Yalikoy Yolu 4.99 356 *e*P **Pn** **08 28 23.9** **+1.1**
PHSR Pinarhisar 5.22 350 *e*P **Pn** **08 28 24.4** **-1.6**
PHSR Pinarhisar 5.22 350 *e*P **Pn** **08 28 24.4** **-1.6**
DSF Desfina 5.33 293 P **Pg** **08 28 49.1** **-0.2**
FYTO Fytoko, Volos 5.45 304 P **Pb** **08 28 44.6** **+1.6**
KLV Kalavryta, Ach 5.50 288 P **Pg** **08 28 51.1** **-1.6**
PYL PYLOS 5.67 276 P **Pg** **08 28 56.9** **+1.1**
ANX Ano Chora 5.83 293 P **Pb** **08 28 50.8** **+1.2**
RLS Riolos of Patr 6.03 287 P **Pb** **08 28 53.9** **+1.0**
SOH Sokhos 6.05 317 P **Pn** **08 28 40.1** **+2.6**
SOH Sokhos 6.05 317 P **Pn** **08 28 40.1** **+2.6**
SRS Serrai 6.14 320 P **Pn** **08 28 37.4** **-1.2**
SRS Serrai 6.14 320 P **Pn** **08 28 37.4** **-1.2**
THE Thessaloniki 6.15 314 P **Pn** **08 28 41.1** **+2.4**
THE Thessaloniki 6.15 314 P **Pn** **08 28 41.1** **+2.4**
KZN Kozani 6.69 307 P **Pn** **08 28 44.8** **-1.5**
KZN Kozani 6.69 307 P **Pn** **08 28 44.8** **-1.5**
KPRO Kipourio 6.78 303 P **Pn** **08 28 47.5** **0.0**
KPRO Kipourio 6.78 303 P **Pn** **08 28 47.5** **0.0**
JAN Janina 7.00 299 P **Pn** **08 28 51.0** **+0.5**
JAN Janina 7.00 299 P **Pn** **08 28 51.0** **+0.5**

*IDC **11** 08:29:58.9₀0.7, 37°.02N×140°.61E, h0^{km}, mb4.1/14, mb1 4.3/15, mb1mx4.0/74, mbtmp4.1/15, ML3.7/1, Error ellipse: s-maj=18.3km s-min=16.6km az=106.0*
*ISCJB **11** 08:30:02.1±0.4, 36°.97N×0°.05×140°.78E±0°.05, h35^{km}, mb4.1/21, Error ellipse: s-maj=7.1km s-min=5.7km az=146.1*
*NEIC **11** 08:30:04.6±1.1, 36°.91N×140°.51E, h41^{km}±10^{km}, mb4.3/7, Error ellipse: s-maj=10.3km s-min=7.1km az=59.0*
ISC 11 08:30:04.1±0.6, 36°.99N±0°.07×140°.66E±0°.07, h35^{km}, n35, σ1§12/33, mb4.1/21, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MJAR	**Matsushiro Arr**	**2.02**	**258**	Pn	**Pn**	**08 30 35.4**	**-0.3**
MJAR	41nm,0.3s,baz=80,slow=15,SNR=4.4			Sn	**Sn**	**08 31 01.6**	**+1.9**
	81nm,0.3s,baz=82,slow=30,SNR=8.0						
MAJO	**Matsushiro**	**2.02**	**258**	*e*Pn	**Pn**	**08 30 34.1**	**-1.6**
MAJO				*e*Sn	**Sn**	**08 31 00.8**	**+1.0**
MAT	**Matsushiro**	**2.02**	**258**	P	**Pn**	**08 30 35.8**	**+0.1**
MAT				S	**Sn**	**08 31 02.6**	**+2.8**
JHJ	**Hachijo jima 2**	**3.93**	**191**	Pn	**Pn**	**08 31 01.9**	**-0.1**
JHJ	12nm,0.3s,baz=95,slow=19,SNR=2.4			Sn	**Sn**	**08 31 48.6**	**+1.7**
	36nm,0.3s,baz=60,slow=20,SNR=3.4						
JHJ2	**Mitsune**	**3.93**	**190**	*e*Pn	**Pn**	**08 31 00.3**	**-1.6**
USRK	**Ussuriysk Ar.**	**9.76**	**320**	Pn	Pn	08 32 25.4	+3.5
	0.2nm,0.3s,baz=127,slow=11,SNR=6.6						
KSRS Korea Array 10.17 276 Pn Pn 08 32 32.5 +5.0
baz=92,slow=13,SNR=6.0
KSAR Wonju Array Be 10.20 276 Pn Pn 08 32 32.5 +4.5
SONM Songino Array 27.31 304 P **P** **08 35 45.4** **-0.2**
2.6nm,0.8s,baz=109,slow=9.1,SNR=3.2
H11S1 WAKE ISLAND Hy 29.34 122 T T 09 06 37.4
baz=314
H11S3 WAKE ISLAND Hy 29.34 122 T T 09 06 38.3
baz=314
H11S2 WAKE ISLAND Hy 29.36 122 T T 09 06 41.3
baz=314
ZALV Zalesovo Beam 41.50 312 P **P** **08 37 46.6** **-1.0**
1.6nm,0.6s,baz=100,slow=6.5,SNR=2.4
MKAR Makanchi Array 43.63 302 P **P** **08 38 04.4** **-0.7**
1.1nm,0.6s,baz=90,slow=10,SNR=3.8
KURK Kurchatov 45.48 308 P **P** **08 38 19.0** **-0.7**
KURBB Kurchatov Arra 45.55 308 P **P** **08 38 19.0** **-1.3**
2.6nm,0.7s,baz=82,slow=7.7,SNR=6.4
TKM2 Tokmak 2 49.12 298 *e*P **P** **08 38 48.4** **0.0**
1.1nm,0.5s
ILAR Eielson Array 49.85 32 P **P** **08 38 54.1** **+0.7**
1.4nm,0.9s,baz=270,slow=7.4,SNR=5.2
BVAR Borovoye Array 50.16 312 P **P** **08 38 55.2** **-0.7**
2.9nm,0.9s,baz=60,slow=8.5,SNR=3.6
FITZ Fitzroy Crossi 56.60 197 *e*P **P** **08 39 41.8** **-1.7**
7.0nm,1.1s
WRAB Tennant Creek 56.93 187 *e*P **P** **08 39 45.2** **-0.6**
3.8nm,0.6s
WRA Warramunga Arr 56.94 187 P **P** **08 39 45.2** **-0.7**
6.7nm,0.7s,baz=4.3,slow=7.4,SNR=10
ABKAR Akbulak array 57.51 310 *e*P **P** **08 39 48.6** **-1.0**
1.1nm,0.4s
ASAR Alice Springs 60.67 187 P **P** **08 40 11.7** **-0.1**
2.8nm,0.8s,baz=23,slow=6.6,SNR=5.5
YKA Yellowknife Ar 64.14 30 P **P** **08 40 34.2** **-0.4**
0.4nm,0.7s,baz=304,slow=6.6,SNR=3.3
FINES FINESS Array B 68.57 332 P **P** **08 41 01.7** **-1.2**
1.8nm,0.7s,baz=40,slow=11,SNR=3.3
SUMG Summit 70.73 360 *e*P **P** **08 41 17.3** **+0.8**
2.1nm,0.6s
AKASG Malin Array Be 73.96 322 P **P** **08 41 35.2** **-0.5**
0.6nm,0.5s,baz=38,slow=5.0,SNR=3.9
NOA NORSAR Array B 73.99 337 P **P** **08 41 36.0** **+0.2**
1.5nm,0.8s,baz=40,slow=5.9,SNR=3.7
HLID Hailey 74.84 47 *e*P **P** **08 41 42.3** **+1.1**
1.0nm,0.8s
NVAR Mina Array Bea 75.49 53 P **P** **08 41 46.1** **+1.0**
0.7nm,0.6s,baz=290,slow=5.7,SNR=4.7
DUG Dugway, Tooele 77.84 49 *e*P **P** **08 41 59.1** **+1.0**
1.5nm,0.7s
TXAR Lajitas Array 90.62 52 P **P** **08 43 04.4** **+1.1**
0.7nm,0.8s,baz=298,slow=4.0,SNR=3.6
LPAZ La Paz 147.23 59 PKPbc **PKPbc** **08 49 45.0** **0.0**
2.4nm,0.7s,baz=20,slow=5.5,SNR=4.4
SIV San Ignacio 151.56 48 PKPbc **PKPbc** **08 49 55.4** **+0.4**
4.0nm,0.8s,baz=296,slow=2.0,SNR=4.6

IDC 11 08:30:46.1±550.0, 47°.97N×49°.06E, h0^{km}, Error ellipse: s-maj=202.8km s-min=128.3km az=54.0, Western Kazakhstan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
I31KZ	**AKTYUBINSK INF**	**6.37**	**64**	*i*		09 10 30.0	
	baz=251,slow=321,SNR=0.7						
I43RU	**DUBNA INFRASONI**	**11.35**	**325**	*i*		09 43 10.0	
	baz=136,slow=326,SNR=0.4						
I46RU	**ZALESOVO INFRA**	**23.12**	**62**	*i*		10 52 00.0	
	baz=270,slow=324,SNR=1.6						

*CSEM **11** 08:30:48.9, 39°.68N×29°.45E, h7^{km}, ML2.7, Suspected Mining explosion.*
DDA 11 08:30:48.9, 39°.68N×29°.45E, h7^{km}, Ml2.7, Suspected Mining explosion., Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ULDT	**Uludag**	**0.52**	**332**	*i* P	Pg	08 30 59.5	+0.4
ULDT				*i* S	Sb	08 31 08.8	+0.4
ULDT	**Uludag**	**0.52**	**332**	P	Pg	08 30 59.5	+0.4
ULDT				S	Sb	08 31 08.8	+0.4
GDZ	**Gediz**	**0.59**	**178**	*i* P	Pg	08 31 00.5	+0.2
GDZ				*i* S	Sg	08 31 08.8	+0.7
GDZ	**Gediz**	**0.59**	**178**	P	Pg	08 31 00.5	+0.2
GDZ				S	Sg	08 31 08.8	+0.8
DURS	**Dursunbey**	**0.76**	**264**	*i* P	Pg	08 31 03.1	-0.4
DURS				*i* S	Sb	08 31 15.0	-0.1
DURS	**Dursunbey**	**0.76**	**264**	P	Pg	08 31 03.1	-0.4
DURS				S	Sb	08 31 15.0	-0.1
BORA	**Eskisehir**	**0.80**	**75**	*i* P	Pg	08 31 04.7	+0.4
BORA				*i* S	Sn	08 31 21.2	+2.3
BORA	**Eskisehir**	**0.80**	**75**	P	Pg	08 31 04.7	+0.4
BORA				S	Sn	08 31 21.2	+2.3
DEMI	**Demirci**	**0.85**	**222**	*i* P	Pg	08 31 05.7	+0.4
DEMI				*i* S	Sn	08 31 22.2	+2.0
DEMI	**Demirci**	**0.85**	**222**	P	Pg	08 31 05.7	+0.4
DEMI				S	Sn	08 31 22.2	+2.0
KHAL	**Karahalli**	**1.31**	**179**	*i* P	Pn	08 31 12.4	-1.3
KHAL				*i* S	Sn	08 31 33.5	+2.1
KHAL	**Karahalli**	**1.31**	**179**	P	Pn	08 31 12.4	-1.3
KHAL				S	Sn	08 31 33.5	+2.0

*IDC **11** 08:30:46.8±0.8, 37°.02N×140°.75E, h0^{km}, mb4.0/11, mb1 4.1/12, mb1mx3.9/73, mbtmp4.0/12, ML3.6/1, Error ellipse: s-maj=21.2km s-min=20.3km az=113.0*
*ISCJB **11** 08:30:49.9±0.5, 37°.01N±0°.05×140°.82E±0°.07, h35^{km}, mb4.1/15, Error ellipse: s-maj=8.2km s-min=6.3km az=19.4*
*NEIC **11** 08:30:52.0±0.5, 36°.97N×140°.63E, h35^{km}, mb4.3/4, Error ellipse: s-maj=11.4km s-min=9.7km az=104.0*
ISC 11 08:30:52.2±0.7, 37°.01N±0°.07×140°.72E±0°.08, h35^{km}, n21, σ1§18/25, mb4.1/15, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MJAR	**Matsushiro Arr**	**2.07**	**258**	Pn	**Pn**	**08 31 24.5**	**0.0**
MJAR	19nm,0.3s,baz=72,slow=16,SNR=3.3			Sn	**Sn**	**08 31 50.5**	**+1.4**
	33nm,0.3s,baz=75,slow=24,SNR=4.0						
MAJO	**Matsushiro**	**2.07**	**258**	*e*Pn	**Pn**	**08 31 22.1**	**-2.3**
MAJO				*e*Sn	**Sn**	**08 31 50.3**	**+1.3**
JHJ	**Hachijo jima 2**	**3.95**	**192**	Sn	**Sn**	**08 32 37.4**	**+2.0**
	9.0nm,0.3s,baz=52,slow=19,SNR=2.0						
JHJ2	**Mitsune**	**3.95**	**191**	*e*Pn	**Pn**	**08 31 48.7**	**-1.6**
JHJ2				*e*Sn	**Sn**	**08 32 36.2**	**+0.7**
SONM	**Songino Array**	**27.34**	**304**	P	**P**	**08 36 33.8**	**-0.1**
	1.1nm,0.6s,baz=104,slow=8.5,SNR=3.2						
ZALV	**Zalesovo Beam**	**41.53**	**312**	P	**P**	**08 38 35.2**	**-0.6**
	0.9nm,0.4s,baz=96,slow=7.4,SNR=2.7						
MKAR	**Makanchi Array**	**43.67**	**302**	P	**P**	**08 38 53.7**	**+0.3**
	1.5nm,0.6s,baz=81,slow=8.9,SNR=5.6						
KURK	**Kurchatov**	**45.52**	**308**	*e*P	**P**	**08 39 04.9**	**-3.1**
	4.1nm,0.4s						
KURBB	**Kurchatov Arra**	**45.58**	**308**	P	**P**	**08 39 07.4**	**-1.2**
	1.4nm,0.5s,baz=82,slow=7.9,SNR=4.7						
TKM2	**Tokmak 2**	**49.16**	**298**	*e*P	**P**	**08 39 37.3**	**+0.6**
ILAR	**Eielson Array**	**49.81**	**32**	P	**P**	**08 39 40.7**	**-0.4**
	0.8nm,0.9s,baz=282,slow=6.5,SNR=4.7						
ILAR				PcP	**PcP**	**08 41 01.6**	**+0.1**
	0.5nm,0.9s,baz=264,slow=5.3,SNR=2.4						
BVAR	**Borovoye Array**	**50.18**	**312**	P	**P**	**08 39 44.0**	**-0.2**
	0.8nm,0.6s,baz=62,slow=10.0,SNR=2.6						
INK	**Inuvik**	**54.66**	**27**	P	**P**	**08 40 17.5**	**+0.5**
	1.9nm,1.0s,baz=277,slow=1.9,SNR=4.0						
WRAB	**Tennant Creek**	**56.95**	**187**	*e*P	**P**	**08 40 34.0**	**0.0**
	2.1nm,0.6s			

*ISCJB **11** 08:33:11.2±0.7, 37.0°N±0.1°×140.8°E±0.0°8, h35km, mb3.8/14, Error ellipse: s-maj=15.0km s-min=8.5km az=159.1*

*IDC **11** 08:33:14.8±3.9, 37.0°N×140.5°E, h44km±37km, mb3.6/14, mb1 3.7/14, mb1mx3.5/74, mbtmp3.8/14, Error ellipse: s-maj=24.4km s-min=18.2km az=83.0*

ISC 11 08:33:13.8±0.9, 37.1N±0.2×140.7E±0.1, h35km, n25, σ0°77/18, mb3.7/14, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MJAR	**Matsushiro Arr**	**2.07**	**256**	P	**Pn**	**08 33 45.6**	**-0.4**
	13nm,0.3s,baz=75,slow=16,SNR=3.6						
MJAR				S	**Sn**	**08 34 12.4**	**+1.7**
	65nm,0.3s,baz=89,slow=28,SNR=11						
MAT	**Matsushiro**	**2.07**	**256**	P	**Pn**	**08 33 45.7**	**-0.4**
USRK	**Ussuriysk Ar.**	**9.73**	**320**	P	Pn	08 35 36.1	+4.9
	0.2nm,0.3s,baz=119,slow=11,SNR=5.7						
KSRS	**Korea Array**	**10.20**	**276**	P	Pn	08 35 41.8	+4.2
	0.2nm,0.3s,baz=91,slow=14,SNR=5.6						
SONM	**Songino Array**	**27.30**	**304**	P	**P**	**08 38 55.2**	**0.0**
	1.0nm,0.7s,baz=102,slow=9.2,SNR=1.9						
H11N2	**WAKE ISLAND Hy**	**28.65**	**120**	T	T	09 09 35.6	
	baz=313,slow=75						
H11N1	**WAKE ISLAND Hy**	**28.66**	**120**	T	T	09 09 38.1	
	baz=313,slow=75,SNR=5.1						
H11N3	**WAKE ISLAND Hy**	**28.67**	**120**	T	T	09 09 40.2	
	baz=313,slow=75,SNR=0.1						
H11S1	**WAKE ISLAND Hy**	**29.35**	**122**	T	T	09 10 34.2	
	baz=314,slow=76,SNR=7.4						
H11S3	**WAKE ISLAND Hy**	**29.35**	**122**	T	T	09 10 30.7	
	baz=314,slow=76,SNR=6.1						
H11S2	**WAKE ISLAND Hy**	**29.36**	**122**	T	T	09 10 33.7	
	baz=314,slow=76,SNR=5.5						
ZALV	**Zalesovo Beam**	**41.48**	**312**	P	**P**	**08 40 56.4**	**-0.7**
	0.6nm,0.3s,baz=90,slow=4.3,SNR=2.7						
MKAR	**Makanchi Array**	**43.63**	**302**	P	**P**	**08 41 14.8**	**+0.1**
	0.7nm,0.6s,baz=85,slow=10,SNR=4.0						
KURBB	**Kurchatov Arra**	**45.54**	**308**	P	**P**	**08 41 29.3**	**-0.6**
	0.5nm,0.5s,baz=84,slow=8.1,SNR=4.8						
ILAR	**Eielson Array**	**49.78**	**32**	P	**P**	**08 42 02.8**	**+0.2**
	0.5nm,0.6s,baz=261,slow=5.9,SNR=5.3						
BVAR	**Borovoye Array**	**50.14**	**312**	P	**P**	**08 42 04.8**	**-0.7**
	1.0nm,0.7s,baz=71,slow=6.2,SNR=3.3						
INK	**Inuvik**	**54.63**	**27**	P	**P**	**08 42 38.3**	**-0.2**
	0.5nm,0.6s,baz=298,slow=6.5,SNR=4.3						
WRA	**Warramunga Arr**	**57.01**	**187**	P	**P**	**08 42 55.2**	**-0.8**
	2.3nm,0.7s,baz=4.1,slow=7.4,SNR=11						
ASAR	**Alice Springs**	**60.73**	**187**	P	**P**	**08 43 21.5**	**-0.4**
	0.7nm,0.6s,baz=23,slow=6.7,SNR=6.5						
ARCES	**ARCESS Array B**	**63.78**	**339**	P	**P**	**08 43 41.6**	**-0.1**
	1.7nm,0.7s,baz=58,slow=8.8,SNR=4.1						
YKA	**Yellowknife Ar**	**64.07**	**30**	P	**P**	**08 43 43.7**	**0.0**
	0.2nm,0.7s,baz=302,slow=6.7,SNR=3.3						
HFS	**Hagfors**	**73.83**	**335**	P	**P**	**08 44 44.7**	**+0.2**
	1.3nm,0.7s,baz=12,slow=7.4,SNR=3.5						
AKASG	**Malin Array Be**	**73.93**	**322**	P	**P**	**08 44 44.4**	**-0.8**
	0.3nm,0.3s,baz=42,slow=5.8,SNR=3.2						
NVAR	**Mina Array Bea**	**75.43**	**53**	P	**P**	**08 44 55.9**	**+1.4**
	0.6nm,0.8s,baz=292,slow=5.7,SNR=3.8						
LPAZ	**La Paz**	**147.17**	**59**	PKPbc	**PKPbc**	**08 52 55.1**	**+0.7**
	1.7nm,0.9s,baz=0.0,slow=6.1,SNR=4.4						

*IDC **11** 08:33:26.5±0.9, 36.97°N×140.60°E, h0km, mb3.7/6, mb1 3.9/6, mb1mx3.6/73, mbtmp3.7/6, Error ellipse: s-maj=31.1km s-min=23.7km az=98.0*

*ISCJB **11** 08:33:33.4±0.7, 36.93°N±0.07°×140.7°E±0.1, h72km±4km, mb3.6/6, Error ellipse: s-maj=13.9km s-min=11.4km az=17.3*

*JMA **11** 08:33:39.6, 36.98°N×140.64°E, h10km±1km, M4.2*

JMA Felt III J1.

ISC 11 08:33:34.7±0.9, 36.94N±0.07°×140.74E±0.1°0, h63km±7km, n13, σ1§05/15, mb3.7/6, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.17**	**16**	P	**Pn**	**08 33 43.7**	**-0.7**
ONAJ				S	Sn	08 33 46.4	-5.0
JHO	**Hitachi**	**0.36**	**203**	P	**Pn**	**08 33 46.9**	**+1.4**
JHO				*e*S	**Sn**	**08 33 52.3**	**-1.1**
JFK	**Kawauchi**	**0.44**	**14**	P	**Pn**	**08 33 48.1**	**+1.8**
JFK				*e*S	**Sn**	**08 33 54.0**	**-0.8**
JSB	**Shiboa**	**0.66**	**273**	*e*S	**Sn**	**08 33 59.6**	**+0.8**
JFT	**Otama**	**0.66**	**331**	S	**Sn**	**08 33 59.2**	**+0.3**
KSRS	**Korea Array**	**10.24**	**277**	Pn	**Pn**	**08 35 58.4**	**-0.4**
	0.2nm,0.3s,baz=98,slow=12,SNR=4.2						
MKAR	**Makanchi Array**	**43.71**	**302**	P	**P**	**08 41 32.6**	**-0.9**
	0.6nm,0.6s,baz=88,slow=11,SNR=2.3						
KURBB	**Kurchatov Arra**	**45.63**	**308**	P	**P**	**08 41 47.2**	**-1.5**
	0.8nm,0.5s,baz=83,slow=8.1,SNR=4.0						
ILAR	**Eielson Array**	**49.86**		P	**P**	**08 42 21.4**	**+0.2**
	0.3nm,0.6s,baz=273,slow=6.8,SNR=3.6						
WRA	**Warramunga Arr**	**56.90**	**187**	P	**P**	**08 43 13.3**	**+0.1**
	1.5nm,0.6s,baz=3.3,slow=7.3,SNR=4.8						
ASAR	**Alice Springs**	**60.62**	**187**	P	**P**	**08 43 39.1**	**+0.1**
	0.6nm,0.7s,baz=16,slow=5.5,SNR=4.1						
YKA	**Yellowknife Ar**	**64.16**	**30**	P	**P**	**08 44 02.3**	**+0.1**
	0.2nm,0.7s,baz=290,slow=7.2,SNR=3.0						
LPAZ	**La Paz**	**147.20**	**59**	PKPbc	**PKPbc**	**08 53 13.0**	**+1.0**
	10.0nm,35.6s,baz=304,slow=2.4,SNR=3.7						

*ISCJB **11** 08:33:40.6±0.9, 36.8N±0.1°×140.82E±0.1°0, h35km, mb4.0/9, Error ellipse: s-maj=15.7km s-min=11.1km az=166.7*

*IDC **11** 08:33:46.9±4.0, 36.82N×140.28E, h62km±35km, mb3.6/9, mb1 3.8/9, mb1mx3.5/73, mbtmp3.9/9, Error ellipse: s-maj=34.0km s-min=18.5km az=73.0*

ISC 11 08:33:43.7±1.0, 36.8N±0.1°×140.6E±0.1, h35km, n15, σ1§84/15, mb4.0/9, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MJAR	**Matsushiro Arr**	**1.96**	**264**	P	**Pn**	**08 34 13.5**	**-0.9**
	52nm,0.3s,baz=90,slow=17,SNR=11						
MAT	**Matsushiro**	**1.96**	**264**	P	**Pn**	**08 34 13.5**	**-0.9**
MAT				S	**Sn**	**08 34 40.1**	**+2.3**
USRK	**Ussuriysk Ar.**	**9.91**	**321**	P	**Pn**	**08 36 05.9**	**+2.4**
	baz=133,slow=15,SNR=6.2						
KSRS	**Korea Array**	**10.17**	**278**	P	Pn	08 36 11.3	+4.2
	0.1nm,0.3s,baz=94,slow=13,SNR=7.4						
SONM	**Songino Array**	**27.41**	**305**	P	**P**	**08 39 24.6**	**-1.4**
	1.0nm,0.7s,baz=107,slow=9.2,SNR=2.0						
MKAR	**Makanchi Array**	**43.73**	**302**	P	**P**	**08 41 44.5**	**-0.8**
	0.7nm,0.5s,baz=90,slow=11,SNR=2.7						
KURBB	**Kurchatov Arra**	**45.67**	**308**	P	**P**	**08 41 59.2**	**-1.6**
	0.9nm,0.5s,baz=82,slow=7.6,SNR=4.0						
BVAR	**Borovoye Array**	**50.28**	**312**	P	**P**	**08 42 35.2**	**-1.2**
	0.4nm,0.3s,baz=63,slow=9.9,SNR=2.7						
WRA	**Warramunga Arr**	**56.72**	**187**	P	**P**	**08 43 23.5**	**-0.3**
	3.0nm,0.7s,baz=5.4,slow=7.4,SNR=7.5						
ASAR	**Alice Springs**	**60.45**	**187**	P	**P**	**08 43 50.5**	**+0.8**
	1.6nm,0.7s,baz=9.8,slow=7.0,SNR=7.8						
YKA	**Yellowknife Ar**	**64.35**	**30**	P	**P**	**08 44 16.6**	**+1.2**
	0.4nm,0.7s,baz=301,slow=6.2,SNR=3.4						
FINES	**FINESS Array B**	**68.75**	**332**	P	**P**	**08 44 41.3**	**-2.3**
	2.8nm,0.9s,baz=79,slow=9.9,SNR=3.7						
NB2	**NORSAR Subarra**	**74.18**	**337**	P	**P**	**08 45 15.1**	**-1.3**
	comp=Z,4.3nm,1.0s,baz=41,slow=6.2						
NOA	**NORSAR Array B**	**74.18**	**337**	P	**P**	**08 45 14.7**	**-1.7**
	comp=Z,1.1nm,0.9s,baz=40,slow=5.6,SNR=4.0						
LPAZ	**La Paz**	**147.37**	**59**	PKPbc	**PKPdf**	**08 53 25.6**	**+3.1**
	baz=15,slow=7.6,SNR=5.0						

*BJI **11** 08:33:46.9, 36.94°N×140.84E, h15km, mb4.7/18*

*MOS **11** 08:33:55.6±1.4, 37.08°N×140.62E, h54km, mb4.6/23, Error ellipse: s-maj=9.9km s-min=7.2km az=78.1*

*NEIC **11** 08:33:57.3±0.9, 37.02°N×140.44E, h53km±8km, mb4.7/18, Error ellipse: s-maj=8.4km s-min=6.7km az=114.0*

NEIC Recorded [3 JMA] in Fukushima and Ibaraki.

*IDC **11** 08:33:58.7±2.7, 37.03°N×140.42E, h64km±24km, mb4.0/23, mb1 4.2/23, mb1mx3.9/71, mbtmp4.3/23, Error ellipse: s-maj=16.1km s-min=15.2km az=108.0*

*ISCJB **11** 08:33:59.4±0.3, 36.96N±0.06°×140.39E±0.05, h89km, mb4.4/46, Error ellipse: s-maj=8.1km s-min=5.6km az=158.8*

ISC 11 08:34:00.3±0.5, 36.88N±0.07°×140.37E±0.06, h89km, n96, σ1§84/92, mb4.5/46, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MJAR	**Matsushiro Arr**	**1.77**	**260**	P	**Pn**	**08 34 28.0**	**-1.4**
	101nm,0.3s,baz=85,slow=17,SNR=7.3						
MJAR				S	**Sn**	**08 34 52.9**	**+1.3**
	177nm,0.3s,baz=96,slow=24,SNR=13						
MAJO	**Matsushiro**	**1.77**	**260**	*e*P	**Pn**	**08 34 28.5**	**-1.0**
MAJO				*e*		08 34 45.1	
MAJO	**Matsushiro**	**1.77**	**260**	*e*Pn	**Pn**	**08 34 28.5**	**-1.0**
MAJO				*e*Sn	**Sn**	**08 34 45.1**	**-6.5**
INU	**Inuyama**	**3.12**	**242**	*e*Pn	Pn	08 34 40.8	-6.5
JHJ2	**Mitsune**	**3.79**	**187**	Pn	**Pn**	**08 34 53.0**	**-3.5**
JHJ2				*e*Sn	**Sn**	**08 35 37.8**	**-2.1**
YUK	**Yuzh-Kuril'sk**	**8.28**	**29**	*e*P	Pn	08 35 49.9	-7.5
YUK				*i* S	Sn	08 37 13.7	-15
YUK				pmax	pmax		
	comp=E,54nm,0.2s						
YUK				pmax	pmax		
	comp=Z,89nm,0.2s						
YUK				pmax	pmax		
	comp=N,35nm,0.3s						
SHO	**Shikotan**	**8.54**	**33**	*e*P	Pn	08 35 53.0	-8.0
SHO				pmax	pmax		
	comp=Z,52nm,0.9s						
SHO				pmax	pmax		
	comp=N,56nm,1.0s						
SHO				pmax	pmax		
	comp=E,22nm,0.9s						
USRK	**Ussuriysk Ar.**	**9.70**	**321**	P	**Pn**	**08 36 18.1**	**+1.3**
	baz=132,slow=12,SNR=4.3						
KSRS	**Korea Array**	**9.95**	**277**	P	**Pn**	**08 36 23.4**	**+3.2**
	comp=E,0.4nm,0.3s,baz=93,slow=13,SNR=8.4						
KSAR	**Wonju Array Be**	**9.98**	**277**	P	**Pn**	**08 36 23.5**	**+2.8**
KSAR	**Wonju Array Be**	**9.98**	**277**	P	**Pn**	**08 36 23.4**	**+2.8**
KUR	**Kuril'sk**	**10.07**	**32**	*e*P	**Pn**	**08 36 17.7**	**-4.2**
KUR				*i* S	Sn	08 37 58.8	-14
KUR				pmax	pmax		
	comp=Z,29nm,0.5s						
KUR				pmax	pmax		
	comp=E,15nm,0.1s						
KUR				pmax	pmax		
	comp=N,16nm,0.4s						
YSS	**Yuzh-Sakhalins**	**10.22**	**9**	*e*P	Pn	08 36 16.7	-7.1
YSS	**Yuzh-Sakhalins**	**10.22**	**9**	*e*Pn	Pn	08 36 16.7	-7.2
CN2	**Changchun**	**13.30**	**306**	*e*P	Pn	08 37 00.6	-4.8
NJ2	**Nanjing**	**18.37**	**261**	*e*P	**P**	**08 38 05.1**	**-2.9**
NJ2				pmax	pmax		
	comp=N,11nm,0.8s						
PEA0	**Petropavlovsk-**	**20.24**	**31**	*e*P	**P**	**08 38 26.9**	**-1.2**
PETK	**Petropavlovsk-**	**20.24**	**31**	P	**P**	**08 38 27.6**	**-0.6**
	comp=N,0.4nm,100.0s,baz=180,slow=19,SNR=4.4						
PET	**Petropavlovsk**	**20.59**	**33**	*e*P	**P**	**08 38 32.5**	**+0.7**
PET	**Petropavlovsk**	**20.59**	**33**	*e*P	**P**	**08 38 32.5**	**+0.7**
HHC	**Hu-ho-hao-te**	**22.73**	**289**	*e*P	**P**	**08 38 54.4**	**-0.5**
HHC				sP	pP	08 39 04.3	-8.4
HHC				S	**S**	**08 42 57.6**	**+0.8**
HHC				pmax	pmax		
	comp=N,31nm,0.9s						
MA2	**Magadan**	**23.68**	**13**	P	**P**	**08 39 02.9**	**-0.6**
	comp=N,6.6nm,0.7s,baz=207,slow=10.0,SNR=5.6						
MA2	**Magadan**	**23.68**	**13**	P	**P**	**08 39 02.9**	**-0.6**
MA2				pmax	pmax		
	comp=Z,6.0nm,0.6s						
SONA1	**Songino Array**	**27.18**	**305**	*e*P	**P**	**08 39 34.9**	**-0.5**
SONM	**Songino Array**	**27.18**	**304**	P	**P**	**08 39 35.2**	**-0.2**
	comp=Z,5.1nm,0.9s,baz=98,slow=8.2,SNR=7.1						
LZH	**Lanzhou**	**29.27**	**280**	*e*P	**P**	**08 39 52.1**	**-2.1**
LZH				pP	pP	08 39 59.3	-15
LZH				sP	sP	08 40 02.8	-22
LZH				PP	**PnPn**	**08 40 46.0**	**-5.5**
LZH				pmax	pmax		
	comp=Z,22nm,1.1s						
H11S1	**WAKE ISLAND Hy**	**29.49**	**121**	T	T	09 08 35.2	
	baz=314,slow=76,SNR=3.2						
H11S3	**WAKE ISLAND Hy**	**29.49**	**121**	T	T	09 08 33.2	
	baz=314,slow=76,SNR=3.6						
H11S2	**WAKE ISLAND Hy**	**29.50**	**121**	T	T	09 08 35.7	
	baz=314,slow=76,SNR=3.0						
TLY	**Talaya**	**29.80**	**311**	*e*P	**P**	**08 39 57.2**	**-1.4**
TLY				pmax	pmax		
	comp=Z,21nm,1.7s						
TLY	**Talaya**	**29.80**	**311**	*e*P	**P**	**08 39 57.1**	**-1.4**
	comp=Z,21nm,1.7s						
GYA	**Guiyang**	**30.37**	**260**	*e*P	**P**	**08 40 04.6**	**+0.7**
GYA				pmax	pmax		
	comp=Z,10.0nm,0.8s						
CD2	**Chengdu**	**30.84**	**270**	P	**P**	**08 40 06.7**	**-1.2**
KMI	**Kunming**	**34.11**	**261**	P	**P**	**08 40 37.7**	**+0.9**
KMI				pmax	pmax		
	comp=Z,17nm,0.6s						
WMQ	**Urumqi**	**40.16**	**297**	*e*P	**P**	**08 41 28.6**	**+1.0**
WMQ				pP	pP	08 41 35.5	-13
WMQ				pmax	pmax		
	comp=Z,1.0nm,0.6s						
ZAA0	**Zalesovo Array**	**41.40**	**313**	*e*P	**P**	**08 41 37.5**	**0.0**
ZALV	**Zalesovo Beam**	**41.40**	**313**	P	**P**	**08 41 38.5**	**+1.0**
	comp=Z,3.2nm,0.7s,baz=93,slow=6.9,SNR=6.0						
MKAR	**Makanchi Array**	**43.49**	**302**	P	**P**	**08 41 55.6**	**+0.9**
	comp=Z,0.7nm,100.0s,baz=90,slow=10,SNR=5.8						
KURK	**Kurchatov**	**45.37**	**308**	*e*P	**P**	**08 42 09.5**	**0.0**
KURK				pmax	pmax		
	comp=Z,12nm,0.7s						
KURK	**Kurchatov**	**45.37**	**308**	*e*P	**P**	**08 42 09.5**	**0.0**
	comp=Z,12nm,0.7s						
KURBB	**Kurchatov Arra**	**45.44**	**308**	P	**P**	**08 42 10.2**	**+0.2**
	comp=Z,6.0nm,0.8s,baz=83,slow=7.8,SNR=13						
TKM2	**Tokmak 2**	**48.97**	**298**	*e*P	**P**	**08 42 40.2**	**+2.4**
TKM2	**Tokmak 2**	**48.97**	**298**	*e*P	**P**	**08 42 40.2**	**+2.4**
KSH	**Kashi**	**49.70**	**294**	*e*P	**P**	**08 42 47.9**	**+4.5**
KSH				esP	pP	08 42 58.2	-6.8
BVAR	**Borovoye Array**	**50.05**	**312**	P	**P**	**08 42 46.0**	**+0.3**
	comp=Z,5.7nm,0.9s,baz=84,slow=7.6,SNR=9.9						
ILAR	**Eielson Array**	**50.07**	**32**	P	**P**	**08 42 44.5**	**-1.2**
	comp=Z,2.1nm,0.8s,baz=271,slow=6.3,SNR=11						
ILB	**Eielson Array**	**50.07**	**32**	*e*P	**P**	**08 42 46.2**	**+0.6**
BRVK	**Borovoye**	**50.11**	**312**	*e*P	**P**	**08 42 42.7**	**-3.4**
BRVK				pmax	pmax		
	comp=Z,7.0nm,0.9s						
BRVK	**Borovoye**	**50.11**	**312**	*e*P	**P**	**08 42 42.6**	**-3.4**
	comp=Z,6.8nm,0.9s						
COEN	**Coen**	**50.64**	**176**	*e*P	**P**	**08 42 53.0**	**+2.6**
	comp=Z,21nm,1.1s						
ARU	**Arti**	**55.92**	**318**	P	**P**	**08 43 29.6**	**+0.9**
ARU	**Arti**	**55.92**	**318**	*e*P	**P**	**08 43 29.3**	**+0.6**
	comp=Z,11nm,1.0s						
FITZ	**Fitzroy Crossi**	**56.43**	**197**	*e*P	**P**	**08 43 35.2**	**+2.5**
	comp=Z,4.8nm,0.9s						
WRAB	**Tennant Creek**	**56.80**	**187**	*e*P	**P**	**08 43 36.8**	**+1.5**
WRAB				pmax	pmax		
	comp=Z,9.0nm,0.8s						
WRAB	**Tennant Creek**	**56.80**	**187**	*e*P	**P**	**08 43 36.8**	**+1.5**
	comp=Z,9.0nm,0.8s						
WB2	**Warramunga Arr**	**56.80**	**187**	*e*P	**P**	**08 43 37.1**	**+1.8**
	comp=Z,10nm,0.8s						
WRA	**Warramunga Arr**	**56.80**	**187**	P	**P**	**08 43 36.8**	**+1.4**
	comp=Z,7.6nm,0.7s,baz=5.1,slow=7.5,SNR=14						
ABKAR	**Akbulak array**	**57.40**	**310**	*e*P	**P**	**08 43 39.8**	**+0.6**
	comp=Z,2.3nm,0.6s						
AS01	**Alice Springs**	**60.53**	**187**	*e*P	**P**	**08 44 02.4**	**+1.3**
ASAR	**Alice Springs**	**60.53**	**187**	P	**P**	**08 44 03.3**	**+2.1**
	comp=Z,2.5nm,0.8s,baz=12,slow=7.1,SNR=8.0						
RES	**Resolute Bay**	**62.95**	**14**	P	**P**	**08 44 16.0**	**-0.7**
	comp=Z,1.2nm,0.5s,baz=282,slow=9.3,SNR=7.2						
GEYT	**Alibeck**	**63.17**	**299**	P	**P**	**08 44 20.4**	**+1.5**
	comp=Z,3.0nm,0.6s,baz=11,slow=1.5,SNR=5.0						
ARCES	**ARCESS Array B**	**63.84**	**339**	P	**P**	**08 44 23.4**	**+0.6**
	comp=Z,5.1nm,0.8s,baz=47,slow=7.5,SNR=7.3						
YKA	**Yellowknife Ar**	**64.36**	**30**	P	**P**	**08 44 25.9**	**-0.3**
	comp=Z,0.8nm,0.8s,baz=300,slow=6.6,SNR=5.7						
FINES	**FINESS Array B**	**68.56**	**332**	P	**P**	**08 44 53.3**	**+0.3**
	comp=Z,4.2nm,0.8s,baz=49,slow=8.6,SNR=8.2						
KBZ	**Khabaz**	**70.36**	**310**	P	**P**	**08 45 04.7**	**+0.3**
	comp=Z,3.7nm,0.9s,baz=34,slow=4.4,SNR=5.1						
KIV	**Kislovodsk**	**70.37**	**311**	*e*P	**P**	**08 45 06.6**	**+2.0**
KIV				pmax	pmax		
	comp=Z,15nm,1.0s						
HFS	**Hagfors**	**73.88**	**335**	P	**P**	**08 45 25.9**	**+0.8**
	comp=Z,3.6nm,0.8s,baz=64,slow=3.4,SNR=6.6						
AKASG	**Malin Array Be**	**73.90**	**322**	P	**P**	**08 45 25.4**	**0.0**
	comp=Z,1.4nm,0.5s,baz=49,slow=6.7,SNR=6.7						
NOA	**NORSAR Array B**	**74.00**	**337**	P	**P**	**08 45 26.5**	**+0.7**
	comp=Z,3.6nm,0.9s,baz=39,slow=5.8,SNR=6.5						
FFC	**Flin Flon**	**74.28**	**32**	*e*P	**P**	**08 45 27.5**	**0.0**
FFC				pmax	pmax		
	comp=Z,2.0nm,0.8s						
FFC	**Flin Flon**	**74.28**	**32**	*e*P	**P**	**08 45 27.5**	**0.0**
	comp=Z,2.0nm,0.8s						
FCC	**Fort Churchill**	**74.51**	**26**	*e*P	**P**	**08 45 28.7**	**0.0**
FCC				pmax	pmax		
	comp=Z,3.0nm,0.8s						
FCC	**Fort Churchill**	**74.51**	**26**	*e*P	**P**	**08 45 28.7**	**0.0**
	comp=Z,2.9nm,0.8s						
LRM	**Limekiln Ridge**	**74.83**	**44**	*e*P	**P**	**08 45 32.8**	**+1.6**
DLMT	**Dillon**	**75.03**	**44**	*e*P	**P**	**08 45 33.9**	**+1.6**
	comp=Z,5.5nm,0.9s						
HLID	**Hailey**	**75.08**	**47**	*e*P	**P**	**08 45 33.7**	**+1.1**
NV01	**Mina Array Sit**	**75.75**	**53**	*e*P	**P**	**08 45 37.7**	**+1.2**
NVAR	**Mina Array Bea**	**75.75**	**53**	P	**P**	**08 45 37.8**	**+1.2**
	comp=Z,3.4nm,0.9s,baz=292,slow=5.5,SNR=9.0						
TPNV	**Topopah Spring**	**77.93**	**53**	*e*P	**P**	**08 45 50.3**	**+1.5**
TPNV				pmax	pmax		
	comp=Z,6.0nm,1.0s						
TPNV	**Topopah Spring**	**77.93**	**53**	*e*P	**P**	**08 45 50.3**	**+1.5**
	comp=Z,6.3nm,1.0s						
DUG	**Dugway, Tooele**	**78.08**	**49**	*e*P	**P**	**08 45 50.8**	**+1.2**
DUG				pmax	pmax		
	comp=Z,2.0nm,0.7s						
DUG	**Dugway, Tooele**	**78.08**	**49**	*e*P	**P**	**08 45 50.8**	**+1.2**
	comp=Z,1.8nm,0.7s						
BRTR	**Keskin Array B**	**78.32**	**311**	P	**P**	**08 45 51.9**	**+1.0**
	comp=Z,1.5nm,1.0s,baz=191,slow=0.6,SNR=3.6						
BRTR	**Keskin Array B**	**78.32**	**311**	P	**P**	**08 45 51.9**	**+1.0**
BRTR				pmax	pmax		
	comp=Z,1.0nm,0.7s						
PDAR	**Pinedale Array**	**78.36**	**45**	P	**P**	**08 45 51.8**	**+0.6**
	comp=Z,1.4nm,0.9s,baz=232,slow=1.7,SNR=5.8						
CLL	**Collm**	**80.81**	**330**	*i* (P)	**P**	**08 46 04.9**	**+1.0**
	comp=Z,8.0nm,1.1s						
CLL	**Collm**	**80.81**	**330**	*i* P	**P**	**08 46 04.9**	**+1.0**
WUAZ	**Wupatki**	**81.91**	**51**	*e*P	**P**	**08 46 09.8**	**-0.5**
	comp=Z,8.2nm,1.2s						
GERES	**GERESS Array B**	**82.39**	**328**	P	**P**	**08 46 12.8**	**+0.4**
	comp=Z,0.5nm,0.3s,baz=28,slow=6.8,SNR=3.6						
JFWS	**Jewell Farm**	**88.18**	**35**	*e*P	**P**	**08 46 39.3**	**-2.0**
JFWS				pmax	pmax		
	comp=Z,13nm,0.8s						
JFWS	**Jewell Farm**	**88.18**	**35**	*e*P	**P**	**08 46 39.3**	**-2.0**
	comp=Z,13nm,0.8s						
MSTX	**Muleshoe**	**88.20**	**48**	*e*P	**P**	**08 46 43.2**	**+1.5**
	comp=Z,18nm,0.8s						
U34A	**Anderson Ranch**	**89.44**	**43**	*e*P	**P**	**08 46 45.1**	**-2.2**
	comp=Z,17nm,0.7s						
LPAZ	**La Paz**	**147.49**	**58**	PKPbc	**PKPab**	**08 53 36.7**	**-0.7**
	baz=4.3,slow=6.5,SNR=8.9						
SIV	**San Ignacio**	**151.81**	**48**	PKPbc	**PKPbc**	**08 53 46.9**	**+1.8**
	comp=Z,3.1nm,0.7s,baz=357,slow=2.1,SNR=4.5						

*ISCJB **11** 08:35:55.5±0.9, 36.9N±0.1°×140.8E±0.1, h50km, mb3.9/6, Error ellipse: s-maj=16.0km s-min=11.2km az=164.7*

*IDC **11** 08:35:59.5±5.4, 36.89N×140.44E, h57km±46km, mb3.6/7, mb1 3.8/7, mb1mx3.4/68, mbtmp3.9/7, Error ellipse: s-maj=43.9km s-min=22.9km az=75.0*

ISC 11 08:35:58.7±0.9, 36.9N±0.1°×140.6E±0.1, h50km, n12, σ1§56/14, mb4.0/6, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MJAR	**Matsushiro Arr**	**1.99**	**260**	P	**Pn**	**08 36 28.3**	**-1.6**
	19nm,0.3s,baz=80,slow=15,SNR=2.3						
MAT	**Matsushiro**	**1.99**	**260**	P	**Pn**	**08 36 28.7**	**-1.3**
MAT				S	**Sn**	**08 36 55.3**	**+1.6**
USRK	**Ussuriysk Ar.**	**9.82**	**321**	P	**Pn**	**08 38 19.1**	**+2.0**
	0.1nm,0.3s,baz=139,slow=14,SNR=4.9						
KSRS	**Korea Array**	**10.17**	**277**	P	Pn	08 38 25.6	+3.7
	0.3nm,0.3s,baz=102,slow=14,SNR=4.9						
SONM	**Songino Array**	**27.35**	**304**	P	**P**	**08 41 37.9**	**-1.1**
	1.0nm,0.7s,baz=115,slow=9.7,SNR=3.1						
MKAR	**Makanchi Array**	**43.66**	**302**	P	**P**	**08 43 57.9**	**-0.5**
	0.6nm,0.6s,baz=93,slow=8.0,SNR=2.2						
KURBB	**Kurchatov Arra**	**45.59**	**308**	P	**P**	**08 44 12.5**	**-1.2**
	0.0nm,100.0s,baz=83,slow=7.9,SNR=3.9						
WRA	**Warramunga

IDC 11 08:37:27.5±1.1, 36°.87N×141°.00E, h0km, mb4.0/3, mb1 4.3/4, mb1mx3.6/66, mbtmp4.0/4, ML3.9/1, Error ellipse: s-maj=41.4km s-min=25.7km az=110.0, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MJAR	**Matsushiro Arr**	**2.26**	**263**	Pn	Pn	08 38 06.2	0.0
	33nm,0.3s,baz=78,slow=16,SNR=4.6						
MJAR				Sn	Sn	08 38 30.6	-4.3
	74nm,0.3s,baz=108,slow=18,SNR=6.6						
MAT	**Matsushiro**	**2.26**	**263**	P	Pn	08 38 06.5	+0.3
MAT				S	Sn	08 38 31.6	-3.3
USRK	**Ussuriysk Ar.**	**10.03**	**320**	Pn	Pn	08 39 57.2	+4.5
	0.3nm,0.3s,baz=118,slow=15,SNR=2.9						
WRA	**Warramunga Arr**	**56.85**	**187**	P	P	08 47 13.4	-0.6
	2.5nm,0.7s,baz=6.8,slow=7.5,SNR=4.8						
ASAR	**Alice Springs**	**60.58**	**187**	P	P	08 47 39.8	-0.1
	1.2nm,0.8s,baz=14,slow=6.5,SNR=5.0						
RES	**Resolute Bay**	**62.84**	**14**	P	P	08 47 54.0	-0.6
	1.6nm,1.0s,baz=288,slow=6.4,SNR=2.6						
LPAZ	**La Paz**	**147.06**	**59**	PKPbc	PKPbc	08 57 13.9	+0.3
	1.0nm,0.8s,baz=120,slow=3.1,SNR=2.9						

IDC 11 08:37:43.7±1.8, 36°.75N×140°.92E, h0km, mb4.1/2, mb1 4.3/3, mb1mx3.5/67, mbtmp4.0/3, ML3.7/1, Error ellipse: s-maj=49.8km s-min=38.3km az=173.0, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MJAR	**Matsushiro Arr**	**2.19**	**265**	Pn	Pn	08 38 21.2	-0.2
	22nm,0.3s,baz=75,slow=16,SNR=3.1						
MJAR				Sn	Sn	08 38 46.3	-2.9
	34nm,0.3s,baz=86,slow=27,SNR=4.1						
USRK	**Ussuriysk Ar.**	**10.08**	**320**	Pn	Pn	08 40 10.7	+1.1
	0.2nm,0.3s,baz=144,slow=13,SNR=4.2						
WRA	**Warramunga Arr**	**56.73**	**187**	P	P	08 47 28.8	-0.5
	2.0nm,0.5s,baz=3.7,slow=7.3,SNR=4.4						
ASAR	**Alice Springs**	**60.45**	**187**	P	P	08 47 55.6	+0.4
	0.7nm,0.5s,baz=13,slow=10.0,SNR=3.3						
LPAZ	**La Paz**	**147.18**	**59**	PKPbc	PKPbc	08 57 29.2	-0.9
	1.1nm,0.8s,baz=349,slow=2.8,SNR=3.5						

*ISCJB **11** 08:38:36.1±0.6, 37°.01N±0°.03×140°.74E±0°.05, h17km±4km, mb3.9/15, Error ellipse: s-maj=7.2km s-min=4.5km az=16.6*
*JMA **11** 08:38:36.5, 37°.01N×140°.65E, h8km±1km, M4.0*
JMA Felt II J1.
*IDC **11** 08:38:42.5±3.6, 36°.96N×140°.45E, h54km±32km, mb3.7/16, mb1 3.8/17, mb1mx3.6/66, mbtmp3.9/17, ML3.3/1, Error ellipse: s-maj=23.3km s-min=17.4km az=85.0*
ISC 11 08:38:35.9±1.3, 36°.97N±0°.04×140°.63E±0°.04, h5km±8km, n32, σ0°83/34, mb3.8/15, 1C, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.19**	**45**	P	**Pg**	**08 38 39.6**	**-0.1**
JHO	**Hitachi**	**0.36**	**187**	⇑P	**Pb**	**08 38 44.5**	**-0.3**
JHO				*e*S	**Sb**	**08 38 50.2**	**-0.5**
JFK	**Kawauchi**	**0.45**	**26**	P	**Pg**	**08 38 44.3**	**-0.2**
JFK				S	**Sg**	**08 38 50.2**	**-0.2**
JFT	**Otama**	**0.60**	**337**	P	**Pg**	**08 38 47.7**	**+0.3**
JFT				S	**Sg**	**08 38 55.1**	**-0.1**
JYT	**Yasato**	**0.81**	**205**	P	**Pb**	**08 38 52.8**	**+0.2**
JYT				S	**Sb**	**08 39 04.0**	**+0.1**
JFY	**Yanaizu**	**0.86**	**301**	P	**Pb**	**08 38 53.0**	**-0.3**
JFY				S	**Sg**	**08 39 03.6**	**+0.1**
MJAR	**Matsushiro Arr**	**1.99**	**258**	P	**Pb**	**08 39 11.8**	**-0.8**
	23nm,0.3s,baz=77,slow=15,SNR=3.1						
MJAR				S	**Sb**	**08 39 37.7**	**0.0**
	50nm,0.3s,baz=93,slow=26,SNR=9.2						
MAT	**Matsushiro**	**1.99**	**258**	P	**Pb**	**08 39 12.1**	**-0.5**
MAT				S	**Sb**	**08 39 38.1**	**+0.4**
JHJ	**Hachijo jima 2**	**3.90**	**190**	S	**Sn**	**08 40 23.9**	**+1.2**
	38nm,0.3s,baz=66,slow=20,SNR=3.1						
USRK	**Ussuriysk Ar.**	**9.76**	**320**	P	Pn	08 41 02.5	+5.6
	0.3nm,0.3s,baz=126,slow=12,SNR=10						
KSRS	**Korea Array**	**10.15**	**277**	P	Pn	08 41 08.8	+6.5
	0.3nm,0.3s,baz=96,slow=13,SNR=7.4						
KLR	**Kul'dur**	**13.85**	**335**	P	**Pn**	**08 41 55.2**	**+2.3**
	0.1nm,0.3s,baz=122,slow=13,SNR=3.0						
SONM	**Songino Array**	**27.30**	**304**	P	**P**	**08 44 21.8**	**+0.2**
	1.9nm,0.8s,baz=106,slow=8.8,SNR=5.2						
H11S1	**WAKE ISLAND Hy**	**29.36**	**122**	T	T	09 15 13.9	
	baz=314,slow=76,SNR=16						
H11S3	**WAKE ISLAND Hy**	**29.36**	**122**	T	T	09 15 13.6	
	baz=314,slow=76,SNR=8.7						
H11S2	**WAKE ISLAND Hy**	**29.37**	**122**	T	T	09 15 15.2	
	baz=314,slow=76,SNR=4.8						
ZALV	**Zalesovo Beam**	**41.49**	**312**	P	**P**	**08 46 22.8**	**-1.0**
	0.8nm,0.5s,baz=105,slow=8.2,SNR=3.5						
MKAR	**Makanchi Array**	**43.62**	**302**	P	**P**	**08 46 40.9**	**-0.4**
	0.9nm,0.6s,baz=89,slow=9.9,SNR=5.8						
KURBB	**Kurchatov Arra**	**45.55**	**308**	P	**P**	**08 46 55.8**	**-0.7**
	2.4nm,0.6s,baz=83,slow=7.8,SNR=5.8						
ILAR	**Eielson Array**	**49.89**	**32**	P	**P**	**08 47 29.8**	**-0.2**
	0.9nm,0.9s,baz=272,slow=5.7,SNR=4.6						
WRA	**Warramunga Arr**	**56.91**	**187**	P	**P**	**08 48 20.2**	**-1.8**
	2.4nm,0.6s,baz=4.2,slow=7.4,SNR=7.4						
ASAR	**Alice Springs**	**60.64**	**187**	P	**P**	**08 48 48.5**	**+0.5**
	1.1nm,0.7s,baz=9.9,slow=7.2,SNR=6.7						
RES	**Resolute Bay**	**62.82**	**14**	P	**P**	**08 49 01.8**	**-0.3**
	126nm,100.0s,baz=303,slow=5.0,SNR=9.3						
ARCES	**ARCESS Array B**	**63.84**	**339**	P	**P**	**08 49 08.5**	**-0.4**
	1.9nm,0.8s,baz=64,slow=8.1,SNR=3.0						
YKA	**Yellowknife Ar**	**64.19**	**30**	P	**P**	**08 49 11.5**	**+0.2**
	0.3nm,0.6s,baz=304,slow=6.6,SNR=3.8						
FINES	**FINESS Array B**	**68.58**	**332**	P	**P**	**08 49 38.7**	**-0.7**
	1.9nm,0.7s,baz=35,slow=8.5,SNR=4.0						
HFS	**Hagfors**	**73.89**	**335**	P	**P**	**08 50 11.3**	**-0.3**
	1.3nm,0.7s,baz=354,slow=7.5,SNR=3.8						
AKASG	**Malin Array Be**	**73.96**	**322**	P	**P**	**08 50 11.0**	**-1.2**
	0.2nm,0.3s,baz=42,slow=6.1,SNR=4.3						
NOA	**NORSAR Array B**	**74.00**	**337**	P	**P**	**08 50 10.9**	**-1.4**
	0.7nm,0.7s,baz=39,slow=8.8,SNR=3.0						
NVAR	**Mina Array Bea**	**75.53**	**53**	P	**P**	**08 50 23.3**	**+1.5**
	0.6nm,0.7s,baz=272,slow=6.9,SNR=3.0						
TXAR	**Lajitas Array**	**90.66**	**52**	P	**P**	**08 51 40.6**	**+0.6**
	0.3nm,0.7s,baz=316,slow=2.5,SNR=3.3						
LPAZ	**La Paz**	**147.27**	**59**	PKPbc	**PKPbc**	**08 58 22.2**	**+0.5**
	1.4nm,0.7s,baz=342,slow=4.0,SNR=3.8						

*ISCJB **11** 08:39:24.0±0.8, 36°.9N±0°.1×140°.83E±0°.09, h50km, mb3.8/8, Error ellipse: s-maj=15.9km s-min=9.6km az=165.5*
*IDC **11** 08:39:26.9±4.2, 36°.97N×140°.62E, h59km±38km, mb3.5/9, mb1 3.8/9, mb1mx3.4/63, mbtmp3.8/9, Error ellipse: s-maj=31.0km s-min=21.3km az=85.0*
ISC 11 08:39:26.0±0.9, 36°.9N±0°.1×140°.75E±0°.10, h50km, n13, σ0°96/13, mb3.9/8, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MJAR	**Matsushiro Arr**	**2.07**	**261**	P	**Pn**	**08 39 57.8**	**-0.5**
	52nm,0.3s,baz=82,slow=16,SNR=4.5						
MJAR				S	**Sn**	**08 40 23.6**	**+0.7**
	87nm,0.3s,baz=8.6,slow=18,SNR=8.6						
USRK	**Ussuriysk Ar.**	**9.87**	**320**	P	**Pn**	**08 41 46.7**	**+1.6**
	0.0nm,0.3s,baz=116,slow=13,SNR=2.1						
KSRS	**Korea Array**	**10.25**	**277**	P	Pn	08 41 53.6	+3.3
	0.4nm,0.3s,baz=97,slow=13,SNR=4.2						
SONM	**Songino Array**	**27.41**	**304**	P	**P**	**08 45 05.5**	**-1.3**
	0.8nm,0.6s,baz=106,slow=7.7,SNR=3.3						
MKAR	**Makanchi Array**	**43.73**	**302**	P	**P**	**08 47 25.6**	**-0.6**
	0.8nm,0.6s,baz=88,slow=9.7,SNR=4.1						
KURBB	**Kurchatov Arra**	**45.66**	**308**	P	**P**	**08 47 40.3**	**-1.1**
	1.6nm,0.7s,baz=84,slow=7.8,SNR=3.8						
ILAR	**Eielson Array**	**49.89**	**32**	P	**P**	**08 48 13.7**	**-0.3**
	0.9nm,0.8s,baz=260,slow=5.4,SNR=3.6						
WRA	**Warramunga Arr**	**56.86**	**187**	P	**P**	**08 49 05.5**	**-0.1**
	2.6nm,0.6s,baz=2.9,slow=7.3,SNR=7.2						
ASAR	**Alice Springs**	**60.59**	**187**	P	**P**	**08 49 32.2**	**+0.7**
	1.0nm,0.9s,baz=11,slow=6.9,SNR=3.8						
YKA	**Yellowknife Ar**	**64.19**	**30**	P	**P**	**08 49 55.4**	**+0.3**
	0.3nm,0.8s,baz=303,slow=7.0,SNR=2.6						
NOA	**NORSAR Array B**	**74.10**	**337**	P	**P**	**08 50 55.8**	**-0.7**
	0.1nm,100.0s,baz=41,slow=5.9,SNR=2.7						
TXAR	**Lajitas Array**	**90.62**	**52**	P	**P**	**08 52 23.5**	**+0.1**
	0.6nm,1.0s,baz=320,slow=3.5,SNR=3.7						
LPAZ	**La Paz**	**147.22**	**59**	PKPbc	**PKPdf**	**08 59 03.8**	**+1.1**
	0.6nm,0.7s,baz=14,slow=8.3,SNR=1.5						

*SOME **11** 08:41:08.4, 41°.02N×74°.47E, h10km*
*KRNET **11** 08:41:10.6±0.1, 41°.23N×74°.40E, h12km, mb2.1*
*NNC **11** 08:41:12.8±1.4, 41°.27N×74°.31E, h0km, mb2.8, mpv2.5, Error ellipse: s-maj=19.4km s-min=7.5km az=104.0*
ISC 11 08:41:11.7±1.4, 41°.25N±0°.04×74°.45E±0°.03, h3km±12km, n20, σ0°64/36, 25C-6D, Kyrgyzstan

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ARLS	**Aral**	**0.62**	**351**	⇓*i*P	**Pg**	**08 41 23.3**	**-0.3**
	baz=355						
ARLS				⇓*i*S	**Sg**	**08 41 32.5**	**+0.9**
	baz=355						
UCH	**Uchtor**	**0.98**	**3**	⇑*i*P	**Pg**	**08 41 30.3**	**-0.2**
	baz=5.0						
UCH				⇑*i*S	**Sb**	**08 41 44.5**	**-0.5**
	baz=5.0						
KZA	**Kyzart**	**1.02**	**36**	⇑*i*P	**Pg**	**08 41 31.0**	**-0.3**
	baz=36						
KZA				⇑*i*S	**Sb**	**08 41 46.1**	**-0.1**
	baz=36						
AML	**Almayashu**	**1.05**	**327**	⇑*i*P	**Pg**	**08 41 30.8**	**-1.0**
	baz=329						
AML				⇑*i*S	**Sg**	**08 41 45.1**	**-0.3**
	baz=329						
NRN	**Naryn**	**1.18**	**81**	⇓*e*P	**Pg**	**08 41 33.9**	**-0.5**
	baz=80						
NRN				⇓*e*S	**Sg**	**08 41 49.2**	**-0.5**
	baz=80						
AAK	**Ala-Archa**	**1.38**	**1**	⇑*i*P	**Pg**	**08 41 37.5**	**-0.7**
	baz=3.0						
AAK				⇑*i*S	**Sg**	**08 41 56.2**	**+0.1**
	baz=3.0						
SFK	**Sufi-Kurgan**	**1.43**	**211**	⇑P	**Pb**	**08 41 40.1**	**+0.9**
	1.0nm,0.2s						
SFK				⇓S	**Sn**	**08 41 57.7**	**-0.5**
	8.3nm,0.4s						
KBK	**Karagaybulak**	**1.45**	**15**	⇑*i*P	**Pg**	**08 41 39.3**	**-0.3**
	baz=16						
KBK				⇑*i*S	**Sn**	**08 41 59.4**	**+0.7**
	baz=16						
EKS2	**Erkin-Say**	**1.50**	**341**	⇑*i*P	**Pn**	**08 41 39.3**	**-0.3**
	baz=343						
EKS2				⇑*i*S	**Sg**	**08 41 59.6**	**-0.2**
	baz=343						
BOOM	**Boomskoye usch**	**1.66**	**41**	⇑*e*P	**Pg**	**08 41 43.3**	**-0.3**
	baz=42						
BOOM				⇑*e*S	**Sg**	**08 42 05.7**	**+0.5**
	baz=42						
ULHL	**Ulahol**	**1.67**	**53**	⇑*i*P	**Pb**	**08 41 43.2**	**0.0**
	baz=53						
ULHL				⇑*i*S	**Sg**	**08 42 05.8**	**+0.5**
	baz=53						
MRKS	**Merke**	**1.75**	**329**	*e*P	**Pn**	**08 41 43.3**	**+0.3**
	5.5nm,0.3s						
MRKS				*e*S	**Sg**	**08 42 08.6**	**+0.6**
	14nm,0.4s						
TKM2	**Tokmak 2**	**1.87**	**27**	⇑*i*P	**Pb**	**08 41 46.6**	**-0.1**
	baz=27						
TKM2				⇑*i*S	**Sg**	**08 42 13.0**	**+1.1**
	baz=27						
TKM2	**Tokmak 2**	**1.87**	**27**	⇑Pg	**Pb**	**08 41 46.9**	**+0.2**
	1.6nm,0.7s						
TKM2				⇑Lg	Lg	08 42 14.0	
	4.9nm,0.6s						
MNAS	**Manas**	**1.91**	**311**	⇓Pg	**Pn**	**08 41 45.3**	**+0.1**
	2.2nm,0.4s						
MNAS				⇑Lg	Lg	08 42 12.4	
	4.6nm,0.6s						
USP	**Ospenovka**	**2.02**	**1**	⇑*i*P	**Pb**	**08 41 49.4**	**+0.4**
	baz=2.0						
USP				⇑*i*S	**Sg**	**08 42 16.7**	**+0.3**
	baz=2.0						
KST	**Kastek**	**2.11**	**32**	*e*P	**Pb**	**08 41 50.6**	**-0.1**
	3.4nm,0.2s						
KST				*e*S	**Sg**	**08 42 20.9**	**+1.3**
	8.0nm,0.6s						
DGS	**Degeres**	**2.22**	**26**	*e*P	**Pb**	**08 41 52.6**	**+0.1**
	2.8nm,0.5s						
DGS				*e*S	**Sg**	**08 42 24.8**	**+1.8**
	11nm,0.5s						
MTBS	**Maitube**	**2.38**	**37**	*e*P	**Pb**	**08 41 54.6**	**-0.7**
	1.6nm,0.1s						
MTBS				*e*S	**Sg**	**08 42 28.1**	**-0.2**
	12nm,0.4s						
KK31	**Karatay Array**	**3.46**	**304**	⇑Lg	Lg	08 42 58.1	
	1.0nm,0.2s,baz=122,slow=28,SNR=2.6						

*JMA **11** 08:43:54.3, 37°.05N×140°.71E, h12km±1km, M3.7*
JMA Felt II J1.
*IDC **11** 08:43:58.2±4.0, 36°.74N×140°.09E, h64km±35km, mb3.5/5, mb1 3.7/5, mb1mx3.3/60, mbtmp3.8/5, Error ellipse: s-maj=37.1km s-min=22.6km az=84.0*
ISC 11 08:43:54.2±0.9, 37°.04N±0°.04×140°.70E±0°.08, h13km±7km, n15, σ1°61/15, mb3.7/5, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.10**	**53**	P	**Pg**	**08 43 57.0**	**-0.2**
ONAJ				*e*S	**Sg**	**08 43 58.8**	**-0.6**
JFK	**Kawauchi**	**0.35**	**24**	S	**Sg**	**08 44 06.1**	**-0.1**
JHO	**Hitachi**	**0.44**	**193**	P	**Pg**	**08 44 03.4**	**+0.5**
JHO				*e*S	**Sg**	**08 44 08.6**	**-0.2**
JFT	**Otama**	**0.56**	**329**	*e*S	**Sg**	**08 44 12.3**	**-0.2**
JMM	**Marumori**	**0.83**	**5**	P	**Pg**	**08 44 09.9**	**-0.3**
JMM				*e*S	**Sg**	**08 44 20.8**	**-0.3**
MJAR	**Matsushiro Arr**	**2.06**	**257**	P	Pn	08 44 22.9	-5.6
	8.6nm,0.3s,baz=82,slow=15,SNR=2.1						
MJAR				S	**Sn**	**08 44 52.5**	**-1.6**
	baz=85,slow=27,SNR=1.8						
MAT	**Matsushiro**	**2.06**	**257**	P	Pn	08 44 23.4	-5.1
MAT				S	**Pn**	**08 44 28.9**	**+0.4**
JHJ	**Hachijo jima 2**	**3.98**	**191**	S	**Sn**	**08 45 40.1**	**-1.5**
	12nm,0.3s,baz=107,slow=19,SNR=1.3						
USRK	**Ussuriysk Ar.**	**9.74**	**320**	P	**Pn**	**08 46 17.0**	**+3.0**
	0.1nm,0.3s,baz=132,slow=10,SNR=4.0						
MKAR	**Makanchi Array**	**43.63**	**302**	P	P	08 51 53.4	-4.9
	0.4nm,0.6s,baz=72,slow=9.3,SNR=1.5						
KURBB	**Kurchatov Arra**	**45.55**	**308**	P	**P**	**08 52 10.1**	**-3.4**
	2.8nm,0.5s,baz=84,slow=7.8,SNR=9.2						
ILAR	**Eielson Array**	**49.80**	**32**	P	**P**	**08 52 47.5**	**+1.2**
	0.5nm,0.8s,baz=266,slow=6.6,SNR=5.1						
WRA	**Warramunga Arr**	**56.99**	**187**	P	P	08 53 34.5	-5.0
	1.2nm,0.6s,baz=4.3,slow=7.4,SNR=9.7						
ASAR	**Alice Springs**	**60.72**	**187**	P	P	08 54 00.6	-4.9
	0.4nm,0.7s,baz=6.3,slow=6.5,SNR=5.1						
LPAZ	**La Paz**	**147.18**	**59**	PKPbc	**PKPdf**	**09 03 36.9**	**+0.7**
	0.9nm,0.7s,baz=22,slow=2.1,SNR=3.8						

*IDC **11** 08:45:10.9±0.6, 36°.96N×140°.76E, h0km, mb4.3/26, mb1 4.5/29, mb1mx4.3/61, mbtmp4.4/29, ML4.6/3, MS5.8/1, Ms1 5.8/1, ms1mx4.4/45, Error ellipse: s-maj=14.4km s-min=12.7km az=113.0*
*ISCJB **11** 08:45:11.7±0.6, 36°.93N±0°.02×140°.84E±0°.05, h18km±3km, mb4.4/43, MS5.6/2, Error ellipse: s-maj=6.5km s-min=3.7km az=18.0*
*JMA **11** 08:45:12.5, 36°.95N×140°.72E, h7km±1km, M4.7*
*MOS **11** 08:45:13.8±1.5, 36°.91N×140°.71E, h30km, mb4.6/30, Error ellipse: s-maj=9.7km s-min=7.1km az=103.0*
*NEIC **11** 08:45:15.7±1.9, 36°.90N×140°.78E, h34km±13km, mb4.5/14, Error ellipse: s-maj=7.6km s-min=5.9km az=103.0*
NEIC Recorded [3 JMA] in Fukushima, Ibaraki, Miyagi and Tochigi.
ISC 11 08:45:12.5±1.0, 36°.92N±0°.03×140°.75E±0°.05, h11km±6km, n105, σ1°28/106, mb4.4/43, 7C-1D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.19**	**12**	*e*S	**Sg**	**08 45 19.1**	**-0.4**
JHO	**Hitachi**	**0.34**	**205**	P	**Pg**	**08 45 19.7**	**+0.3**
JHO				*e*S	**Sg**	**08 45 24.4**	**+0.5**
JFK	**Kawauchi**	**0.46**	**13**	P	**Pg**	**08 45 21.1**	**-0.4**
JFT	**Otama**	**0.68**	**331**	P	**Pg**	**08 45 25.4**	**-0.4**
JYT	**Yasato**	**0.82**	**213**	P	**Pb**	**08 45 28.8**	**0.0**
JYT				S	**Sg**	**08 45 39.3**	**+0.1**
JMM	**Marumori**	**0.94**	**2**	P	**Pg**	**08 45 30.0**	**-0.8**
JMM				S	**Sg**	**08 45 42.4**	**-0.7**
JFY	**Yanaizu**	**0.97**	**301**	P	**Pg**	**08 45 30.0**	**-1.1**
JFY				S	**Sg**	**08 45 42.4**	**-1.3**
MJAR	**Matsushiro Arr**	**2.08**	**260**	Pn	**Pn**	**08 45 48.4**	**+1.1**
	112nm,0.3s,baz=91,slow=16,SNR=30						
MJAR				Sn	**Sb**	**08 46 15.0**	**-1.0**
	580nm,0.3s,baz=93,slow=18,SNR=29						
MAJO	**Matsushiro**	**2.08**	**260**	*e*P	**Pn**	**08 45 48.6**	**+1.3**
MAJO	**Matsushiro**	**2.08**	**260**	*e*Pn	**Pn**	**08 45 48.6**	**+1.3**
MAT	**Matsushiro**	**2.08**	**260**	P	**Pn**	**08 45 48.8**	**+1.5**
MAT				S	**Sb**	**08 46 15.3**	**-0.8**
JHJ	**Hachijo jima 2**	**3.87**	**192**	Pn	**Pn**	**08 46 13.6**	**+1.6**
	82nm,0.3s,baz=220,slow=0.9,SNR=7.5						
JHJ				Sn	**Sn**	**08 46 58.2**	**+0.7**
	115nm,0.3s,baz=60,slow=23,SNR=4.1						
JHJ2	**Mitsune**	**3.88**	**192**	*e*Pn	**Pn**	**08 46 13.8**	**+1.8**
ERM	**Erimo**	**5.42**	**19**	*ce*P	Pn	08 46 37.9	+4.7
ERM				pmax	pmax		
	comp=Z,48nm,1.0s						
JNU	**Nakatsue**	**8.94**	**248**	Pn	**Pn**	**08 47 24.1**	**+2.5**
	comp=Z,0.5nm,0.3s,baz=48,slow=4.9,SNR=11						
JNU	**Nakatsue**	**8.94**	**248**	Pn	**Pn**	**08 47 23.4**	**+1.8**
	comp=Z,21nm,1.1s						
USRK	**Ussuriysk Ar.**	**9.86**	**320**	Pn	Pn	08 47 38.0	+3.8
	comp=Z,0.4nm,0.3s,baz=134,slow=12,SNR=18						
CBIJ	**Chichi jima**	**9.87**	**173**	Pn	**Pn**	**08 47 33.5**	**-0.8**
CBIJ				Sn	**Sn**	**08 49 20.0**	**-5.2**
JCJ	**Chichijima**	**9.87**	**173**	Pn	**Pn**	**08 47 33.5**	**-0.8**
	comp=Z,12nm,0.3s,baz=37,slow=20,SNR=5.5						
JCJ				Sn	**Sn**	**08 49 20.0**	**-5.2**
	comp=Z,4.0nm,0.3s,baz=168,slow=20,SNR=1.9						
YSS	**Yuzh-Sakhalins**	**10.14**	**8**	*e*P	**Pn**	**08 47 38.8**	**+0.9**
YSS				pmax	pmax		
	comp=Z,30nm,0.7s						
YSS	**Yuzh-Sakhalins**	**10.14**	**8**	*e*Pn	**Pn**	**08 47 39.2**	**+1.2**
YSS				*e*Sn	**Sn**	**08 49 30.8**	**-0.8**
KSRS	**Korea Array**	**10.25**	**277**	Pn	**Pn**	**08 47 40.0**	**+0.5**
	baz=68,slow=40,SNR=1.8						
KSAR	**Wonju Array Be**	**10.28**	**277**	P	**Pn**	**08 47 40.0**	**+0.1**
KSAR	**Wonju Array Be**	**10.28**	**277**	Pn	**Pn**	**08 47 40.0**	**+0.1**
KLR	**Kul'dur**	**13.94**	**335**	Pn	Pn	08 48 33.5	+3.6
	comp=Z,0.1nm,0.3s,baz=155,slow=19,SNR=3.4						
NKL	**Nikolayevsk**	**16.23**	**360**	*e*P	**P**	**08 49 05.8**	**+2.4**
PET	**Petropavlovsk**	**20.39**	**32**	P	**P**	**08 49 48.1**	**-1.1**
PET				pmax	pmax		
	comp=Z,10.0nm,0.3s						
PET	**Petropavlovsk**	**20.39**	**32**	P	**P**	**08 49 48.1**	**-1.1**
	comp=Z,9.8nm,0.3s						
MA2	**Magadan**	**23.58**	**13**	P	**P**	**08 50 21.6**	**-1.3**
	comp=Z,12nm,0.8s,baz=195,slow=9.8,SNR=8.5						
MA2	**Magadan**	**23.58**	**13**	*e*P	**P**	**08 50 22.8**	**-0.1**
MA2				pmax	pmax		
	comp=Z,18nm,0.3s						
MA2	**Magadan**	**23.58**	**13**	*e*P	**P**	**08 50 22.8**	**-0.1**
	comp=Z,18nm,0.3s						
ULN	**Ulaanbaatar**	**26.98**	**305**	*ce*P	**P**	**08 50 54.9**	**+0.6**
ULN				pmax	pmax		
	comp=Z,17nm,2.5s						
ULN	**Ulaanbaatar**	**26.98**	**305**	*e*P	**P**	**08 50 54.5**	**+0.2**
	comp=Z,2.5nm,0.8s						
SEY	**Seymchan**	**27.01**	**12**	P	**P**	**08 50 54.6**	**+0.4**
	comp=Z,11nm,1.0s,baz=193,slow=7.5,SNR=17						
BOD	**Bodaibo**	**27.34**	**328**	*e*P	**P**	**08 50 55.2**	**-2.1**
BOD				pmax	pmax		
	comp=Z,4.0nm,1.5s						
SONM	**Songino Array**	**27.41**	**304**	P	**P**	**08 50 57.6**	**-0.5**
	comp=Z,4.3nm,0.9s,baz=111,slow=7.9,SNR=14						
H11N2	**WAKE ISLAND Hy**	**28.55**	**120**	T	T	09 20 56.8	
	baz=313,slow=75,SNR=20						
H11N1	**WAKE ISLAND Hy**	**28.56**	**120**	T	T	09 20 56.9	
	baz=313,slow=75,SNR=17						
H11N3	**WAKE ISLAND Hy**	**28.57**	**120**	T	T	09 20 58.2	
	baz=313,slow=75,SNR=8.5						
H11S1	**WAKE ISLAND Hy**	**29.25**	**122**	T	T	09 21 48.8	
	baz=314,slow=76,SNR=93						
H11S3	**WAKE ISLAND Hy**	**29.25**	**122**	T	T	09 22 07.3	
	baz=314,slow=76,SNR=35						
H11S2	**WAKE ISLAND Hy**	**29.26**	**122**	T	T	09 22 06.3	
	baz=314,slow=76,SNR=28						
BILL	**Bilibino**	**34.29**	**17**	⇓*e*	P	**08 51 58.8**	**+0.4**
BILL				*e*		08 53 12.0	
BILL				pmax	pmax		
	comp=Z,7.0nm,1.0s						
BILL				MLR	MLR		
	comp=Z,5μm,15.0s						
BILL	**Bilibino**	**34.29**	**17**	*e*P	**P**	**08 51 58.3**	**-0.1**
	comp=Z,2.3nm,0.3s						
TIXI	**Tiksi**	**35.34**	**354**	P	**P**	**08 52 06.4**	**-1.0**
	comp=Z,1μm,100.0s,baz=140,slow=8.2,SNR=6.1						
TIXI	**Tiksi**	**35.34**	**354**	*ce*P	**P**	**08 52 09.1**	**+1.7**

HFS Hagfors 73.97 335 P P 08 56 49.1 +1.5
comp=Z,4.5nm,0.9s,baz=36,slow=7.9,SNR=5.3
AKASG Malin Array Be 74.06 322 P P 08 56 48.2 0.0
comp=Z,2.6nm,0.7s,baz=48,slow=6.1,SNR=11
NB2 NORSAR Subarra 74.08 337 P P 08 56 48.5 +0.2
comp=Z,12nm,1.0s,baz=41,slow=5.9
NOA NORSAR Array B 74.08 337 P P 08 56 48.0 -0.3
comp=Z,4.7nm,1.0s,baz=38,slow=5.8,SNR=6.7
FFC Flin Flon 74.09 32 *eP* **P 08 56 49.1 +0.7**
FFC pmax pmax
comp=Z,2.0nm,0.6s
FFC Flin Flon 74.09 32 *eP* **P 08 56 49.1 +0.7**
comp=Z,1.8nm,0.6s
FCC Fort Churchill 74.34 26 *eP* **P 08 56 49.3 -0.4**
FCC pmax pmax
comp=Z,6.0nm,1.0s
FCC Fort Churchill 74.34 26 *eP* **P 08 56 49.3 -0.4**
comp=Z,6.5nm,1.0s
NVAR Mina Array Bea 75.48 53 P P **08 56 57.2 +0.1**
comp=Z,2.2nm,1.0s,baz=298,slow=1.9,SNR=6.6
PDAR Pinedale Array 78.12 45 P P **08 57 11.9 0.0**
comp=Z,1.7nm,1.1s,baz=266,slow=2.7,SNR=4.0
BRTR Keskin Array B 78.53 311 P P **08 57 14.2 +0.1**
comp=Z,1.5nm,0.9s,baz=123,slow=4.6,SNR=4.5
BRTR Keskin Array B 78.53 311 P P **08 57 14.2 +0.1**
BRTR pmax pmax
comp=Z,1.0nm,0.9s
BRG Berggiesshubel 80.88 329 *eP* **P 08 57 28.6 +2.1**
comp=Z,12nm,1.4s
BRG *e* 08 57 50.6
comp=Z,9.7nm,1.2s
BRG Berggiesshubel 80.88 329 *eP* **P 08 57 28.6 +2.1**
BRG pmax pmax
comp=Z,12nm,1.4s
BRG pmax pmax
comp=Z,10.0nm,1.2s
CLL Collm 80.93 330 *eP* **P 08 57 25.0 -1.7**
comp=Z,6.0nm,0.9s
CLL *i* 08 57 49.9
CLL Collm 80.93 330 *eP* **P 08 57 25.0 -1.7**
CLL pmax pmax
comp=Z,6.0nm,0.9s
GERES GERESS Array B 82.53 328 P P **08 57 34.7 -0.6**
comp=Z,0.6nm,0.4s,baz=45,slow=8.1,SNR=5.0
ANMO Albuquerque 85.07 49 *ceP* **P 08 57 51.2 +2.5**
ANMO pmax pmax
comp=Z,4.0nm,1.2s
ANMO Albuquerque 85.07 49 *eP* **P 08 57 49.9 +1.2**
comp=Z,2.4nm,1.0s
BFO Black Forest 85.14 330 *ceP* **P 08 57 49.9 +1.3**
TXAR Lajitas Array 90.61 52 P P **08 58 16.2 +0.9**
comp=Z,0.9nm,0.8s,baz=272,slow=1.6,SNR=8.1
TORD Torodi Ar. Bea 117.03 314 PKP **PKPdf 09 03 57.8 -0.3**
comp=Z,0.7nm,0.9s,baz=21,slow=1.1,SNR=3.6
TORD PKKP **PKKPdf 09 14 48.8 +0.8**
comp=Z,0.7nm,0.8s,baz=215,slow=2.8,SNR=5.2
LPAZ La Paz 147.21 59 PKPbc **PKPbc 09 04 57.5 +0.4**
baz=304,slow=3.6,SNR=11
CPUP Villa Florida 161.36 61 PP PP 09 09 40.2 -0.6
comp=Z,4.6nm,1.1s,baz=350,slow=6.1,SNR=2.8

*IDC **11** 08:45:35.6±0.5,37.°07N×140.°47E,h0km,mb4.6/31, mb1 4.7/31,mb1mx4.6/58,mbtmp4.6/31,Error ellipse: s-maj=14.3km s-min=13.5km az=78.0*
*ISCJB **11** 08:45:37.6±0.5,37.°06N±0.°02×140.°61E±0.°04,h21km±3km, mb4.7/60,Error ellipse: s-maj=5.6km s-min=3.7km az=24.0*
*JMA **11** 08:45:37.3,37.°02N×140.°62E,h10km±1km,M4.8*
JMA Felt III J1.
*MOS **11** 08:45:39.8±1.5,37.°18N×140.°65E,h41km,mb4.8/35,Error ellipse: s-maj=9.3km s-min=6.9km az=84.3*
*NEIC **11** 08:45:42.2±0.8,37.°15N×140.°44E,h40km±7km,mb4.7/23, Error ellipse: s-maj=8.2km s-min=6.3km az=132.0*
ISC 11 08:45:37.1±1.0,37.°06N±0.°03×140.°56E±0.°03,h10km±6km, n111,σ1§12/117,mb4.7/60,Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
					Op		h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.20**	**77**	P		**Pg**	**08 45 41.2**	**-0.1**
JFK	**Kawauchi**	**0.40**	**40**	P		**Pg**	**08 45 45.3**	**+0.3**
JFK				*eS*		**Sg**	**08 45 50.8**	**+0.5**
JHO	**Hitachi**	**0.45**	**179**	*eS*		**Sg**	**08 45 51.0**	**-0.7**
JFT	**Otama**	**0.49**	**339**	P		**Pb**	**08 45 48.3**	**+0.4**
JFT				*eS*		**Sb**	**08 45 55.4**	**+0.2**
JSB	**Shiboa**	**0.52**	**260**	P		**Pb**	**08 45 48.7**	**+0.4**
JFY	**Yanaizu**	**0.76**	**297**	P		**Pn**	**08 45 53.4**	**-0.6**
JFY				S		**Sb**	**08 46 03.6**	**+0.7**
JMM	**Marumori**	**0.83**	**13**	P		**Pb**	**08 45 53.5**	**-0.1**
JMM				S		**Sb**	**08 46 05.0**	**+0.2**
JYT	**Yasato**	**0.88**	**199**	S		**Sg**	**08 46 05.1**	**-0.3**
MJAR	**Matsushiro Arr**	**1.95**	**255**	Pn		**Pn**	**08 46 10.9**	**+0.6**
	249nm,0.3s,baz=3.8,slow=16,SNR=7.8							
MJAR				Sn		**Sg**	**08 46 38.3**	**-1.5**
	493nm,0.3s,baz=202,slow=23,SNR=13							
MAJO	**Matsushiro**	**1.95**	**255**	*eP*		**Pg**	**08 46 14.0**	**-0.5**
MAJO				*e*			08 46 39.8	
MAJO	**Matsushiro**	**1.95**	**255**	*ePn*		**Pg**	**08 46 14.0**	**-0.5**
MAJO				*eSn*		**Sg**	**08 46 39.8**	**-0.1**
JHJ	**Hachijo jima 2**	**3.98**	**189**	Sn		**Sn**	**08 47 26.6**	**+1.7**
	84nm,0.3s,baz=90,slow=20,SNR=2.8							
JHJ2	**Mitsune**	**3.98**	**189**	*ePn*		Pn	08 46 42.0	+3.8
JHJ2				*eSn*		**Sn**	**08 47 26.9**	**+2.0**
ERM	**Erimo**	**5.34**	**21**	*eP*		**Pn**	**08 46 57.6**	**+0.7**
ERM				pmax	pmax			
comp=Z,116nm,1.0s								
ERM	**Erimo**	**5.34**	**21**	*ePn*		**Pn**	**08 46 57.6**	**+0.7**
comp=Z,116nm,1.0s								
YUK	**Yuzh-Kuril'sk**	**8.05**	**28**	P		**Pn**	**08 47 33.8**	**-0.3**
YUK				*eS*		**Sn**	**08 49 03.0**	**-2.2**
YUK				pmax	pmax			
comp=Z,162nm,0.3s								
SHO	**Shikotan**	**8.31**	**33**	*eP*		**Pn**	**08 47 35.1**	**-2.6**
SHO				*i* S		Sn	08 49 04.6	-7.0
SHO				pmax	pmax			
comp=Z,67nm,0.6s								
JNU	**Nakatsue**	**8.85**	**247**	Pn		Pn	08 47 49.1	+4.0
comp=Z,28nm,0.9s								
USRK	**Ussuriysk Ar.**	**9.65**	**320**	Pn		Pn	08 48 02.8	+6.7
comp=Z,0.6nm,0.3s,baz=136,slow=13,SNR=17								
KUR	**Kuril'sk**	**9.85**	**32**	*eP*		**Pn**	**08 47 58.7**	**0.0**
KUR				*eS*		**Sn**	**08 49 47.0**	**-2.3**
KUR				pmax	pmax			
comp=Z,70nm,0.3s								
KUR				pmax	pmax			
comp=N,33nm,0.1s								
KUR				pmax	pmax			
comp=E,32nm,0.1s								
YSS	**Yuzh-Sakhalins**	**10.02**	**9**	*eP*		**Pn**	**08 48 00.1**	**-1.0**
YSS				pmax	pmax			
comp=Z,76nm,1.0s								
YSS	**Yuzh-Sakhalins**	**10.02**	**9**	*ePn*		**Pn**	**08 48 00.1**	**-1.0**
comp=Z,76nm,1.0s								
JCJ	**Chichijima**	**10.03**	**172**	Sn		**Sn**	**08 49 49.3**	**-4.5**
comp=Z,17nm,0.3s,baz=288,slow=19,SNR=3.8								
KSRS	**Korea Array**	**10.08**	**276**	Pn		Pn	08 48 08.2	+6.4
comp=Z,0.5nm,0.3s,baz=94,slow=14,SNR=14								
KSAR	**Wonju Array Be**	**10.11**	**276**	P		Pn	08 48 08.3	+6.0
KSAR	**Wonju Array Be**	**10.11**	**276**	Pn		Pn	08 48 08.2	+6.0
BJT	**Baijiatuau**	**19.29**	**286**	*eP*		**P**	**08 50 02.3**	**+0.3**
BJT				pmax	pmax			
comp=Z,27nm,1.0s								
BJT	**Baijiatuau**	**19.29**	**286**	*eP*		**P**	**08 50 02.3**	**+0.3**
comp=Z,27nm,1.0s								
MA2	**Magadan**	**23.48**	**13**	P		P	**08 50 45.7**	**-1.0**
comp=Z,5.8nm,0.5s,baz=212,slow=8.4,SNR=4.3								
ENH	**Enshi**	**26.65**	**264**	*eP*		**P**	**08 51 16.8**	**+0.7**
comp=Z,17nm,0.8s								
ULN	**Ulaanbaatar**	**26.77**	**304**	*eP*		**P**	**08 51 18.2**	**+1.0**
ULN				pmax	pmax			
comp=Z,12nm,1.0s								
ULN	**Ulaanbaatar**	**26.77**	**304**	*eP*		**P**	**08 51 18.2**	**+1.0**
comp=Z,12nm,1.0s								
SONM	**Songino Array**	**27.20**	**304**	P		**P**	**08 51 20.7**	**-0.3**
comp=Z,9.0nm,0.8s,baz=104,slow=8.9,SNR=12								
SONM				PcP		**PcP**	**08 54 41.4**	**+0.3**
comp=Z,2.2nm,0.8s,baz=142,slow=1.7,SNR=5.4								
TIXI	**Tiksi**	**35.19**	**354**	P		**P**	**08 52 29.8**	**-1.0**
comp=Z,2.8nm,0.4s,baz=156,slow=7.1,SNR=6.9								
NONG	**Nongkai**	**37.87**	**250**	P		P	08 53 00.0	+5.7
comp=Z,204nm,1.4s								
CRAI	**Chiangrai**	**38.72**	**256**	P		**P**	**08 53 00.9**	**-0.6**
comp=Z,8.6nm,1.0s								
CMAI	**Chiengmai2**	**39.92**	**256**	P		**P**	**08 53 12.0**	**+0.3**
comp=Z,347nm,2.8s								
CHAI	**Chaiyaphum**	**40.07**	**249**	P		**P**	**08 53 14.9**	**+2.1**
comp=Z,5.0nm,1.1s,comp=Z,304nm								
ZALV	**Zalesovo Beam**	**41.39**	**312**	P		**P**	**08 53 22.3**	**-1.0**
comp=Z,0.9nm,100.0s,baz=91,slow=6.2,SNR=10								
ZALV				PcP		**PcP**	**08 55 21.1**	**-0.2**
comp=Z,2.7nm,0.3s,baz=120,slow=2.6,SNR=9.8								
ZALV	**Zalesovo Beam**	**41.39**	**312**	P		**P**	**08 53 22.3**	**-1.0**
ZALV							08 55 21.1	
ZALV				pmax	pmax			
comp=Z,11nm,0.9s								
ZALV				pmax	pmax			
comp=Z,3.0nm,0.3s								
NRIK	**Noril'sk**	**42.96**	**335**	P		**P**	**08 53 35.4**	**-0.5**
comp=Z,3.5nm,0.5s,baz=96,slow=14,SNR=4.5								
MKAR	**Makanchi Array**	**43.52**	**302**	P		**P**	**08 53 40.6**	**-0.2**
comp=Z,0.3nm,100.0s,baz=83,slow=10,SNR=9.1								
MKAR				PcP		**PcP**	**08 55 28.6**	**+0.1**
baz=73,slow=5.0,SNR=3.2								
MKAR	**Makanchi Array**	**43.52**	**302**	P		**P**	**08 53 40.6**	**-0.2**
MKAR							08 55 28.6	
MKAR				pmax	pmax			
comp=Z,3.0nm,0.6s								
PHET	**Kaeng Krachan**	**43.73**	**248**	P		**P**	**08 53 45.6**	**+2.9**
comp=Z,5.3nm,0.8s								
KURK	**Kurchatov**	**45.38**	**308**	*eP*		**P**	**08 53 54.8**	**-0.7**
KURK				pmax	pmax			
comp=Z,13nm,0.4s								
KURK	**Kurchatov**	**45.38**	**308**	*eP*		**P**	**08 53 54.8**	**-0.7**
comp=Z,13nm,0.4s								
KURBB	**Kurchatov Arra**	**45.45**	**308**	P		**P**	**08 53 55.2**	**-0.8**
comp=Z,11nm,0.6s,baz=83,slow=8.4,SNR=11								
KRAB	**Krabi**	**47.19**	**243**	P		**P**	**08 54 11.7**	**+1.6**
comp=Z,37nm,0.5s,comp=Z,777nm								
BPAW	**Bear Paw Mtn.**	**48.08**	**33**	*eP*		**P**	**08 54 17.8**	**+1.2**
comp=Z,2.2nm,1.2s								
KTH	**Kantishna Hill**	**48.11**	**34**	*eP*		**P**	**08 54 17.9**	**+1.0**
comp=Z,18nm,1.2s								
TKM2	**Tokmak 2**	**49.01**	**298**	*eP*		**P**	**08 54 25.4**	**+1.1**
TKM2				pmax	pmax			
comp=Z,13nm,0.7s								
TKM2	**Tokmak 2**	**49.01**	**298**	*eP*		**P**	**08 54 25.4**	**+1.1**
comp=Z,13nm,0.7s								
ILAR	**Eielson Array**	**49.84**	**32**	P		**P**	**08 54 31.0**	**+1.0**
comp=Z,4.2nm,0.8s,baz=275,slow=6.8,SNR=16								
BVAR	**Borovoye Array**	**50.05**	**312**	P		**P**	**08 54 31.5**	**-0.2**
comp=Z,6.8nm,0.9s,baz=84,slow=7.6,SNR=7.8								
BVAR				PcP		**PcP**	**08 55 51.4**	**0.0**
comp=Z,3.1nm,0.6s,baz=101,slow=3.2,SNR=3.9								
DIV	**Divide**	**50.67**	**37**	*eP*		P	08 54 39.8	+3.4
comp=Z,19nm,1.1s								
INK	**Inuvik**	**54.68**	**27**	P		**P**	**08 55 06.8**	**+1.0**
comp=Z,3.0nm,0.8s,baz=272,slow=7.3,SNR=9.3								
ARU	**Arti**	**55.89**	**318**	P		**P**	**08 55 14.1**	**-0.6**
comp=Z,2.7nm,0.3s,baz=84,slow=5.6,SNR=10.0								
FITZ	**Fitzroy Crossi**	**56.64**	**197**	*eP*		**P**	**08 55 21.5**	**+1.1**
comp=Z,2.5nm,0.5s								
WRAB	**Tennant Creek**	**56.98**	**187**	*eP*		**P**	**08 55 22.5**	**-0.4**
WRAB				pmax	pmax			
comp=Z,15nm,0.8s								
WRAB	**Tennant Creek**	**56.98**	**187**	*eP*		**P**	**08 55 22.5**	**-0.4**
comp=Z,15nm,0.8s								
WRA	**Warramunga Arr**	**56.99**	**187**	P		**P**	**08 55 22.2**	**-0.8**
comp=Z,17nm,0.8s,baz=4.0,slow=7.3,SNR=20								
WRA	**Warramunga Arr**	**56.99**	**187**	P		**P**	**08 55 22.2**	**-0.8**
WRA				pmax	pmax			
comp=Z,15nm,0.8s								
ABKAR	**Akbulak array**	**57.40**	**310**	*eP*		**P**	**08 55 25.2**	**-0.3**
comp=Z,4.4nm,0.5s								
AKTO	**Aktyubinsk**	**58.15**	**312**	P		**P**	**08 55 30.4**	**-0.5**
comp=Z,4.2nm,0.7s,baz=71,slow=10,SNR=6.3								
ASAR	**Alice Springs**	**60.72**	**187**	P		**P**	**08 55 49.3**	**+0.4**
comp=Z,11nm,0.9s,baz=9.9,slow=5.1,SNR=15								
GEYT	**Alibeck**	**63.22**	**299**	P		**P**	**08 56 05.9**	**+0.2**
comp=Z,6.3nm,0.7s,baz=42,slow=4.5,SNR=6.5								
ARCES	**ARCESS Array B**	**63.73**	**339**	P		**P**	**08 56 08.5**	**0.0**
comp=Z,4.4nm,0.7s,baz=59,slow=8.4,SNR=11								
ARCES	**ARCESS Array B**	**63.73**	**339**	P		**P**	**08 56 08.5**	**0.0**
ARCES				pmax	pmax			
comp=Z,12nm,1.1s								
YKA	**Yellowknife Ar**	**64.13**	**30**	P		**P**	**08 56 11.8**	**+0.6**
comp=Z,1.9nm,0.8s,baz=299,slow=6.4,SNR=11								
FINES	**FINESS Array B**	**68.47**	**332**	P		**P**	**08 56 38.5**	**-0.5**
comp=Z,6.5nm,0.6s,baz=38,slow=8.2,SNR=10								
FINES	**FINESS Array B**	**68.47**	**332**	P		**P**	**08 56 38.6**	**-0.5**
FINES				pmax	pmax			
comp=Z,6.0nm,0.6s								
STKA	**Stephens Creek**	**68.58**	**179**	P		**P**	**08 56 39.8**	**-0.2**
comp=Z,4.0nm,0.6s,baz=342,slow=6.6,SNR=6.0								
KBZ	**Khabaz**	**70.36**	**310**	P		**P**	**08 56 51.1**	**+0.1**
comp=Z,7.1nm,0.9s,baz=32,slow=4.0,SNR=6.6								
KIV	**Kislovodsk**	**70.37**	**311**	*eP*		**P**	**08 56 51.9**	**+0.7**
KIV				pmax	pmax			
comp=Z,21nm,1.0s								
HFS	**Hagfors**	**73.78**	**335**	P		**P**	**08 57 11.2**	**0.0**
comp=Z,2.7nm,0.4s,baz=54,slow=7.5,SNR=18								
AKASG	**Malin Array Be**	**73.86**	**322**	P		**P**	**08 57 11.2**	**-0.7**
comp=Z,5.7nm,0.6s,baz=47,slow=5.8,SNR=12								
AKASG	**Malin Array Be**	**73.86**	**322**	P		**P**	**08 57 11.2**	**-0.7**
AKASG				pmax	pmax			
comp=Z,3.0nm,0.4s								
NOA	**NORSAR Array B**	**73.90**	**337**	P		**P**	**08 57 11.7**	**-0.3**
comp=Z,8.7nm,0.9s,baz=39,slow=5.8,SNR=10								
NOA	**NORSAR Array B**	**73.90**	**337**	P		**P**	**08 57 11.7**	**-0.3**
NOA				pmax	pmax			
comp=Z,6.0nm,0.8s								
FFC	**Flin Flon**	**74.06**	**32**	*eP*		**P**	**08 57 13.4**	**+0.4**
FFC				pmax	pmax			
comp=Z,2.0nm,0.4s								
FFC	**Flin Flon**	**74.06**	**32**	*eP*		**P**	**08 57 13.4**	**+0.4**
comp=Z,1.8nm,0.4s								
FCC	**Fort Churchill**	**74.28**	**26**	*eP*		**P**	**08 57 14.3**	**+0.1**
FCC				pmax	pmax			
comp=Z,6.0nm,0.8s								
FCC	**Fort Churchill**	**74.28**	**26**	*eP*		**P**	**08 57 14.3**	**+0.1**
comp=Z,6.0nm,0.8s								
EGMT	**Eagleton**	**74.70**	**41**	*eP*		**P**	**08 57 18.0**	**+1.0**
comp=Z,13nm,0.8s								
NVAR	**Mina Array Bea**	**75.52**	**53**	P		**P**	**08 57 22.6**	**+0.5**
comp=Z,3.3nm,0.7s,baz=297,slow=5.1,SNR=9.4								
LKWY	**Lake**	**76.53**	**44**	*eP*		**P**	**08 57 30.7**	**+3.0**
LKWY				pmax	pmax			
comp=Z,4.0nm,0.8s								
LKWY	**Lake**	**76.53**	**44**	*eP*		**P**	**08 57 30.7**	**+3.0**
comp=Z,4.1nm,0.8s								
FLWY	**Flagg Ranch**	**76.66**	**45**	*eP*		P	08 57 31.8	+3.4
comp=Z,14nm,1.3s								
REDW	**Red Top Meadow**	**77.03**	**45**	*eP*		**P**	**08 57 31.4**	**+0.9**
comp=Z,9.8nm,1.3s								
LAO	**LASA Array**	**77.40**	**40**	*eP*		**P**	**08 57 33.9**	**+1.5**
comp=Z,19nm,1.4s								
HWUT	**Hardware Ranch**	**77.72**	**47**	*eP*		**P**	**08 57 34.5**	**+0.1**
comp=Z,8.7nm,1.4s								
PDAR	**Pinedale Array**	**78.14**	**45**	P		**P**	**08 57 37.1**	**+0.4**
comp=Z,2.9nm,0.7s,baz=271,slow=1.4,SNR=14								
BRTR	**Keskin Array B**	**78.32**	**311**	P		**P**	**08 57 38.0**	**+0.3**
comp=Z,1.6nm,0.5s,baz=121,slow=3.6,SNR=7.8								
PV04	**Paradox Valley**	**81.34**	**48**	*eP*		**P**	**08 57 55.5**	**+1.4**
MMAI	**Mount Meron Ar**	**81.39**	**305**	P		**P**	**08 57 54.7**	**+0.3**
comp=Z,2.2nm,0.5s,baz=27,slow=9.7,SNR=3.6								
PV01	**Paradox Valley**	**81.71**	**48**	*eP*		**P**	**08 57 57.4**	**+1.2**
comp=Z,450nm,0.9s								
KHC	**Kasperske Hory**	**82.16**	**328**	*eP*		**P**	**08 57 58.2**	**+0.1**
KHC				pmax	pmax			
comp=Z,2.0nm,0.8s								
KHC	**Kasperske Hory**	**82.16**	**328**	*eP*		**P**	**08 57 58.1**	**+0.1**
comp=Z,1.6nm,0.8s								
GERES	**GERESS Array B**	**82.33**	**328**	P		**P**	**08 57 58.7**	**-0.3**
comp=Z,1.5nm,0.3s,baz=40,slow=5.7,SNR=10								
SDCO	**Great Sand Dun**	**83.78**	**47**	*eP*		**P**	**08 58 08.5**	**+1.5**
comp=Z,7.0nm,1.5s								
ANMO	**Albuquerque**	**85.09**	**49**	*eP*		**P**	**08 58 15.0**	**+1.4**
ANMO				pmax	pmax			
comp=Z,8.0nm,1.3s								
ANMO	**Albuquerque**	**85.09**	**49**	*eP*		**P**	**08 58 15.0**	**+1.4**
comp=Z,8.0nm,1.3s								
SCHQ	**Schefferville**	**85.50**	**15**	P		**P**	**08 58 16.1**	**+1.1**
comp=Z,3.0nm,0.7s,baz=342,slow=3.2,SNR=4.3								
IDI	**Anoyia**	**86.47**	**312**	P		**P**	**08 58 19.2**	**-1.1**
comp=Z,5.7nm,0.3s,baz=68,slow=4.4,SNR=12								
TXAR	**Lajitas Array**	**90.65**	**52**	P		**P**	**08 58 40.7**	**+0.4**
comp=Z,2.2nm,0.7s,baz=299,slow=2.8,SNR=13								
TXAR				PKKP		**PKKPdf**	**09 15 57.5**	**-3.2**
comp=Z,0.6nm,1.0s,baz=186,slow=0.9,SNR=3.5								
JCT	**Junction City**	**92.22**	**49**	*eP*		**P**	**08 58 48.6**	**+1.1**
JCT				pmax	pmax			
comp=Z,3.0nm,0.7s								
JCT	**Junction City**	**92.22**	**49**	*eP*		**P**	**08 58 48.6**	**+1.1**
comp=Z,3.4nm,0.7s								
VNDA	**Vanda**	**115.06**	**175**	PKP		**PKPdf**	**09 04 16.6**	**-0.5**
comp=Z,0.7nm,0.7s,baz=324,slow=3.9,SNR=3.0								
TORD	**Torodi Ar. Bea**	**116.82**	**314**	PKP		**PKPdf**	**09 04 21.8**	**-0.6**
comp=Z,0.4nm,0.5s,baz=24,slow=1.7,SNR=7.4								
TORD				PP		**PP**	**09 05 27.7**	**-2.3**
comp=Z,0.9nm,0.9s,baz=21,slow=5.6,SNR=4.1								
DBIC	**Dimbokro**	**125.80**	**316**	PKP		**PKPdf**	**09 04 39.6**	**-0.1**
comp=Z,3.5nm,0.9s,baz=57,slow=2.4,SNR=4.5								
LPAZ	**La Paz**	**147.27**	**58**	PKPbc		**PKPbc**	**09 05 22.0**	**0.0**
comp=Z,9.2nm,0.7s,baz=300,slow=5.5,SNR=17								

IDC 11 08:47:24.2±28.0,14.°01N×122.°27E,h0km,mb3.9/3, mb1 4.1/3,mb1mx3.5/59,mbtmp3.9/3,Error ellipse: s-maj=504.6km s-min=263.2km az=152.0,Luzon

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
					Op		h m s	ISC
WRA	**Warramunga Arr**	**35.77**	**160**	P		P	08 54 24.2	-1.0
	0.6nm,0.8s,baz=340,slow=8.9,SNR=4.8							
ASAR	**Alice Springs**	**39.14**	**163**	P		P	08 54 54.2	+0.4
	1.0nm,0.4s,baz=338,slow=7.5,SNR=19							
STKA	**Stephens Creek**	**49.25**	**158**	P		P	08 56 14.6	0.0
	2.9nm,0.7s,baz=322,slow=9.0,SNR=4.0							

*ISCJB **11** 08:48:10.0±0.6,36.°88N±0.°04×140.°77E±0.°05,h10km, mb3.9/12,Error ellipse: s-maj=7.3km s-min=4.7km az=139.6*
*IDC **11** 08:48:09.7±1.1,36.°78N×140.°78E,h0km,mb3.8/9, mb1 4.1/10,mb1mx3.8/58,mbtmp3.8/10,ML4.0/1,Error ellipse: s-maj=33.0km s-min=19.6km az=173.0*
*JMA **11** 08:48:10.5±0.1,36.°90N×140.°68E,h7km±1km,M3.9*
JMA Felt II J1.
*NEIC **11** 08:48:14.6±0.6,36.°76N×140.°67E,h35km,mb4.5/3,Error ellipse: s-maj=16.5km s-min=11.8km az=175.0*
ISC 11 08:48:11.0±0.7,36.°88N±0.°08×140.°69E±0.°05,h10km,n23, σ0§99/26,mb3.8/12,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
					Op		h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.24**	**22**	*eS*		**Sg**	**08 48 19.0**	**-0.4**
JFK	**Kawauchi**	**0.51**	**17**	*eS*		**Sg**	**08 48 26.8**	**-1.0**
JSB	**Shiboa**	**0.62**	**279**	P		**Pb**	**08 48 23.0**	**-1.0**
JSB				*eS*		**Sg**	**08 48 31.2**	**0.0**
JFT	**Otama**	**0.70**	**337**	S		**Sg**	**08 48 32.9**	**-0.8**
MJAR	**Matsushiro Arr**	**2.02**	**261**	Pn		**Pn**	**08 48 45.3**	**+0.1**
	51nm,0.3s,baz=87,slow=16,SNR=7.2							
MJAR				Sn		**Sb**	**08 49 12.1**	**-0.9**
	43nm,0.3s,baz=79,slow=30,SNR=11							
MAJO	**Matsushiro**	**2.02**	**261**	*ePn*		**Pn**	**08 48 45.9**	**+0.8**
MAJO				*eSn*		**Sb**	**08 49 13.1**	**+0.1**
MAT	**Matsushiro**	**2.02**	**261**	P		**Pn**	**08 48 45.8**	**+0.6**
MAT				S		**Sb**	**08 49 13.0**	**-0.1**
MDJ	**Mudanjiang**	**11.42**	**316**	*ePn*		**Pn**	**08 50 54.0**	**-0.1**
SONM	**Songino Array**	**27.39**	**304**	P		**P**	**08 53 57.5**	**+0.9**
	0.9nm,0.6s,baz=105,slow=9.1,SNR=3.4							
TLY	**Talaya**	**29.99**	**311**	*eP*		P	08 54 22.7	+3.1
MKAR	**Makanchi Array**	**43.71**	**302**	P		**P**	**08 56 18.6**	**+2.4**
	1.4nm,0.7s,baz=89,slow=10,SNR=2.5							
KURK	**Kurchatov**	**45.57**	**308**	*eP*		**P**	**08 56 30.2**	**-0.7**
	5.4nm,0.6s							
KURBB	**Kurchatov Arra**	**45.64**	**308**	P		**P**	**08 56 32.8**	**+1.3**
	1.6nm,0.6s,baz=84,slow=8.2,SNR=3.9							
FITZ	**Fitzroy Crossi**	**56.50**	**197**	*eP*		**P**	**08 57 50.8**	**-2.5**
	6.1nm,1.0s							
WRA	**Warramunga Arr**	**56.83**	**187**	P		**P**	**08 57 55.1**	**-0.6**
	1.4nm,0.6s,baz=4.4,slow=7.4,SNR=2.8							
YKA	**Yellowknife Ar**	**64.23**	**30**	P		**P**	**08 58 45.2**	**-0.6**
	0.9nm,0.9s,baz=302,slow=6.5,SNR=3.5							
AKASG	**Malin Array Be**	**74.06**	**322**	P		**P**	**08 59 47.6**	**+0.6**
	0.3nm,0.3s,baz=48,slow=6.2,SNR=1.5							
FFC	**Flin Flon**	**74.15**	**32**	*eP*		**P**	**08 59 47.5**	**+0.1**
FCC	**Fort Churchill**	**74.40**	**26**	*eP*		**P**	**08 59 48.2**	**-0.6**
	0.7nm,0.3s							
NVAR	**Mina Array Bea**	**75.55**	**53**	P		**P**	**08 59 57.3**	**+1.2**
	0.7nm,0.9s,baz=291,slow=5.7,SNR=2.5							
PDAR	**Pinedale Array**	**78.19**	**45**	P		**P**	**09 00 11.6**	**+0.6**
	0.2nm,0.3s,baz=322,slow=5.1,SNR=2.6							

NEIC Recorded [3 JMA] in Fukushima and Ibaraki.
*IDC **11** 08:51:05.3±2.3, 36.98N×140.62E, h46km±22km, mb3.8/21, mb1 3.9/22, mb1mx3.8/56, mbtmp4.0/22, ML4.0/1, Error ellipse: s-maj=18.1km s-min=15.0km az=89.0*

ISC 11 08:50:59.4±1.2, 36.96N±0.03×140.64E±0.04, h5km±7km, n53, σ0§79/56, mb4.1/26, 6C, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.19**	**40**	⇑P	**Pg**	**08 51 03.5**	**+0.3**
ONAJ				*eS*	**Sg**	**08 51 05.5**	**-0.2**
JHO	**Hitachi**	**0.35**	**190**	⇑P	**Pb**	**08 51 08.7**	**+0.6**
JHO				*eS*	**Sb**	**08 51 14.1**	**+0.2**
JFK	**Kawauchi**	**0.45**	**24**	⇑P	**Pg**	**08 51 08.1**	**+0.1**
JSB	**Shiboa**	**0.58**	**271**	⇑P	**Pn**	**08 51 13.8**	**-0.5**
JFT	**Otama**	**0.61**	**336**	P	**Pb**	**08 51 12.7**	**+0.1**
JFT				S	**Sb**	**08 51 20.8**	**-0.7**
JYT	**Yasato**	**0.81**	**207**	⇑P	**Pn**	**08 51 17.2**	**-0.2**
JYT				S	**Sn**	**08 51 29.2**	**-0.7**
JFY	**Yanaizu**	**0.88**	**301**	P	**Pn**	**08 51 18.4**	**0.0**
JFY				S	**Sb**	**08 51 30.1**	**+1.0**
JMM	**Marumori**	**0.92**	**7**	⇑P	**Pg**	**08 51 16.8**	**-0.1**
JMM				S	**Sg**	**08 51 28.2**	**-0.7**
MJAR	**Matsushiro Arr**	**2.00**	**259**	P	**Pb**	**08 51 36.5**	**+0.3**
	baz=81,slow=18,SNR=12						
MJAR				S	**Sg**	**08 52 03.6**	**0.0**
	118nm,0.3s,baz=89,slow=28,SNR=14						
MAJO	**Matsushiro**	**2.00**	**259**	*e*Pn	**Pg**	**08 51 37.9**	**+0.2**
MAT	**Matsushiro**	**2.00**	**259**	P	**Pg**	**08 51 37.0**	**-0.7**
MAT				S	**Sg**	**08 52 03.0**	**-0.6**
JHJ	**Hachijo jima 2**	**3.89**	**191**	P	**Pn**	**08 52 02.7**	**+2.8**
	29nm,0.3s,baz=253,slow=19,SNR=4.4						
JHJ				S	**Sn**	**08 52 45.8**	**-0.1**
	29nm,0.3s,baz=74,slow=20,SNR=3.0						
ERM	**Erimo**	**5.41**	**20**	*e*Pn	**Pn**	**08 52 22.9**	**+2.2**
USRK	**Ussuriysk Ar.**	**9.78**	**320**	P	Pn	08 53 25.2	+4.6
	0.2nm,0.3s,baz=138,slow=12,SNR=10						
CBIJ	**Chichi jima**	**9.92**	**172**	P	**Pn**	**08 53 20.4**	**-2.1**
CBIJ				S	Sn	08 55 04.5	-10
JCJ	**Chichijima**	**9.92**	**172**	P	**Pn**	**08 53 20.4**	**-2.1**
	baz=17,slow=19						
JCJ				S	Sn	08 55 04.5	-10
	baz=270,slow=20						
MA2	**Magadan**	**23.56**	**13**	P	**P**	**08 56 10.1**	**-0.4**
	4.6nm,0.6s,baz=235,slow=8.7,SNR=4.8						
SEY	**Seymchan**	**26.99**	**12**	P	**P**	**08 56 42.4**	**+0.6**
	2.8nm,0.7s,baz=208,slow=11,SNR=3.5						
SONM	**Songino Array**	**27.32**	**304**	P	**P**	**08 56 45.9**	**+0.8**
	1.9nm,0.8s,baz=104,slow=9.0,SNR=4.8						
H11N2	**WAKE ISLAND Hy**	**28.64**	**120**	T	T	09 26 45.0	
	baz=313,slow=75,SNR=25						
H11N1	**WAKE ISLAND Hy**	**28.65**	**120**	T	T	09 26 45.5	
	baz=313,slow=75,SNR=32						
H11N3	**WAKE ISLAND Hy**	**28.66**	**120**	T	T	09 26 46.3	
	baz=313,slow=75,SNR=22						
H11S1	**WAKE ISLAND Hy**	**29.34**	**122**	T	T	09 27 38.1	
	baz=314,slow=76,SNR=29						
H11S3	**WAKE ISLAND Hy**	**29.34**	**122**	T	T	09 27 38.1	
	baz=314,slow=76,SNR=26						
H11S2	**WAKE ISLAND Hy**	**29.35**	**122**	T	T	09 27 39.9	
	baz=314,slow=76,SNR=22						
ZALV	**Zalesovo Beam**	**41.51**	**312**	P	**P**	**08 58 47.5**	**+0.2**
	2.1nm,0.6s,baz=97,slow=6.8,SNR=5.2						
ZALV				PcP	**PcP**	**09 00 45.0**	**+0.2**
	0.9nm,0.4s,baz=83,slow=6.0,SNR=3.1						
MKAR	**Makanchi Array**	**43.64**	**302**	P	**P**	**08 59 05.0**	**+0.2**
	1.5nm,0.6s,baz=88,slow=9.9,SNR=10						
KURK	**Kurchatov**	**45.49**	**308**	*e*P	**P**	**08 59 19.4**	**0.0**
	12nm,0.8s						
KURBB	**Kurchatov Arra**	**45.56**	**308**	P	**P**	**08 59 19.8**	**-0.2**
	3.7nm,0.8s,baz=85,slow=7.9,SNR=14						
TKM2	**Tokmak 2**	**49.12**	**298**	*e*P	**P**	**08 59 49.5**	**+1.3**
	1.9nm,0.4s						
ILAR	**Eielson Array**	**49.89**	**32**	P	**P**	**08 59 53.5**	**+0.1**
	0.0nm,100.0s,baz=264,slow=5.8,SNR=8.2						
BVAR	**Borovoye Array**	**50.17**	**312**	P	**P**	**08 59 55.7**	**0.0**
	1.2nm,0.6s,baz=69,slow=8.1,SNR=4.6						
INK	**Inuvik**	**54.74**	**27**	P	**P**	**09 00 29.9**	**+0.6**
	0.9nm,0.5s,baz=292,slow=4.3,SNR=5.1						
WRAB	**Tennant Creek**	**56.89**	**187**	*e*P	**P**	**09 00 45.3**	**0.0**
	2.3nm,0.6s						
WRA	**Warramunga Arr**	**56.90**	**187**	P	**P**	**09 00 45.3**	**-0.1**
	1.6nm,0.5s,baz=3.3,slow=7.0,SNR=13						
ABKAR	**Akbulak array**	**57.52**	**310**	*e*P	**P**	**09 00 49.5**	**0.0**
	0.9nm,0.4s						
ASAR	**Alice Springs**	**60.63**	**187**	P	**P**	**09 01 11.5**	**+0.2**
	0.6nm,0.6s,baz=13,slow=9.1,SNR=6.8						
RES	**Resolute Bay**	**62.83**	**14**	P	**P**	**09 01 25.4**	**-0.1**
	0.8nm,0.6s,baz=315,slow=5.3,SNR=6.8						
ARCES	**ARCESS Array B**	**63.85**	**339**	P	**P**	**09 01 32.4**	**0.0**
	2.1nm,0.8s,baz=46,slow=8.7,SNR=5.2						
YKA	**Yellowknife Ar**	**64.18**	**30**	P	**P**	**09 01 34.6**	**0.0**
	0.2nm,0.6s,baz=304,slow=6.5,SNR=5.2						
FINES	**FINESS Array B**	**66.59**	**332**	P	**P**	**09 02 02.7**	**-0.2**
	4.0nm,0.8s,baz=53,slow=7.4,SNR=5.3						
SUMG	**Summit**	**70.76**	**360**	*e*P	**P**	**09 02 17.0**	**+0.4**
	2.2nm,0.5s						
HFS	**Hagfors**	**73.90**	**335**	P	**P**	**09 02 34.7**	**-0.3**
	1.6nm,0.7s,baz=97,slow=6.1,SNR=4.5						
AKASG	**Malin Array Be**	**73.98**	**322**	P	**P**	**09 02 35.4**	**-0.2**
	1.1nm,0.6s,baz=48,slow=6.0,SNR=5.9						
NB2	**NORSAR Subarra**	**74.02**	**337**	P	**P**	**09 02 35.4**	**-0.4**
	comp=Z,9nm,0.5s,baz=39,slow=6.2						
NOA	**NORSAR Array B**	**74.02**	**337**	P	**P**	**09 02 34.9**	**-0.9**
	comp=Z,1.1nm,0.7s,baz=38,slow=6.0,SNR=4.1						
FCC	**Fort Churchill**	**74.34**	**26**	*e*P	**P**	**09 02 37.4**	**-0.3**
	comp=Z,0.8nm,0.6s						
NVAR	**Mina Array Bea**	**75.53**	**53**	P	**P**	**09 02 45.4**	**+0.3**
	comp=Z,0.3nm,0.6s,baz=273,slow=5.2,SNR=3.7						
GERES	**GERESS Array B**	**82.45**	**328**	P	**P**	**09 03 22.7**	**-0.1**
	comp=Z,0.7nm,0.4s,baz=38,slow=6.8,SNR=4.9						
TXAR	**Lajitas Array**	**90.66**	**52**	P	**P**	**09 04 03.7**	**+0.3**
	comp=Z,0.3nm,0.6s,baz=277,slow=3.3,SNR=3.9						
TORD	**Torodi Ar. Bea**	**116.95**	**314**	PKP	**PKPdf**	**09 09 45.2**	**-0.6**
	comp=Z,0.1nm,0.4s,baz=79,slow=2.4,SNR=2.4						
DBIC	**Dimbokro**	**125.92**	**316**	PKP	**PKPdf**	**09 10 02.3**	**-0.8**
	comp=Z,3.5nm,1.0s,baz=153,slow=6.8,SNR=4.0						
LPAZ	**La Paz**	**147.26**	**59**	PKPbc	**PKPbc**	**09 10 44.6**	**-0.5**
	comp=Z,1.7nm,0.7s,baz=359,slow=7.2,SNR=6.7						

*ISCJB **11** 08:52:20.5±0.5, 38.62N±0.06×144.21E±0.08, h35km, mb4.1/23, Error ellipse: s-maj=11.3km s-min=6.1km az=41.9*
*IDC **11** 08:52:21.9±7.3, 38.61N×144.30E, h30km±52km, mb3.9/21, mb1 4.1/23, mb1mx4.0/55, mbtmp4.1/23, ML2.8/1, Error ellipse: s-maj=19.4km s-min=15.4km az=125.0*
*NEIC **11** 08:52:22.4±0.5, 38.65N×144.31E, h35km, mb4.3/2, Error ellipse: s-maj=12.1km s-min=8.2km az=135.0*

ISC 11 08:52:22.7±0.7, 38.71N±0.07×144.28E±0.09, h35km, n32, σ1§13/32, mb4.2/23, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ERM	**Erimo**	**3.41**	**346**	*e*Pn	**Pn**	**08 53 12.2**	**-1.2**
ERM				*e*Sn	**Sn**	**08 53 49.9**	**-2.7**
MJAR	**Matsushiro Arr**	**5.28**	**248**	Pn	**Pn**	**08 53 36.8**	**-2.3**
	baz=88,slow=15,SNR=2.0						
MAJO	**Matsushiro**	**5.28**	**248**	*e*Pn	**Pn**	**08 53 40.0**	**+0.9**
MAJO				*e*Sn	**Sn**	**08 54 37.1**	**-1.7**
JHJ	**Hachijo jima 2**	**6.66**	**215**	Sn	**Sn**	**08 55 10.3**	**-2.4**
	13nm,0.3s,baz=73,slow=19,SNR=2.3						
USRK	**Ussuriysk Ar.**	**10.73**	**305**	Pn	**Pn**	**08 54 54.5**	**+0.8**
	0.7nm,0.3s,baz=98,slow=14,SNR=8.6						
KLR	**Kul'dur**	**13.84**	**324**	Pn	Pn	08 55 31.6	-4.6
	0.1nm,0.3s,baz=169,slow=5.2,SNR=3.1						
MA2	**Magadan**	**21.29**	**9**	P	**P**	**08 57 06.1**	**+0.2**
	6.4nm,0.6s,baz=216,slow=8.2,SNR=5.5						
SEY	**Seymchan**	**24.75**	**9**	P	**P**	**08 57 41.6**	**+1.0**
	9.7nm,0.7s,baz=186,slow=7.6,SNR=15						
SONM	**Songino Array**	**28.81**	**301**	P	**P**	**08 58 19.1**	**+1.7**
	0.6nm,0.6s,baz=115,slow=8.4,SNR=4.1						
BILL	**Bilibino**	**31.80**	**16**	*e*P	**P**	**08 58 43.0**	**-0.4**
	4.0nm,0.6s						
TIXI	**Tiksi**	**33.94**	**351**	P	**P**	**08 59 01.2**	**-0.9**
	0.9nm,0.5s,baz=77,slow=6.4,SNR=3.2						
ZALV	**Zalesovo Beam**	**42.50**	**311**	P	**P**	**09 00 14.6**	**+0.3**
	0.9nm,0.4s,baz=87,slow=8.1,SNR=3.0						
MKAR	**Makanchi Array**	**45.17**	**301**	P	**P**	**09 00 36.8**	**+0.8**
	0.9nm,0.7s,baz=86,slow=8.6,SNR=5.2						
KURK	**Kurchatov**	**46.71**	**307**	P	**P**	**09 00 48.2**	**+0.4**
KURBB	**Kurchatov Arra**	**46.78**	**307**	P	**P**	**09 00 48.2**	**-0.2**
	0.9nm,0.4s,baz=83,slow=8.4,SNR=2.6						
ILAR	**Eielson Array**	**46.86**	**33**	P	**P**	**09 00 49.0**	**0.0**
	1.3nm,0.8s,baz=267,slow=6.8,SNR=7.2						
INK	**Inuvik**	**51.86**	**28**	P	**P**	**09 01 27.6**	**+0.7**
	4.9nm,0.5s,baz=293,slow=6.5,SNR=36						
ABKAR	**Akbulak array**	**58.60**	**310**	*e*P	**P**	**09 02 16.2**	**+0.4**
	0.9nm,0.4s						
WRA	**Warramunga Arr**	**59.08**	**191**	P	**P**	**09 02 18.1**	**-1.3**
	3.4nm,0.9s,baz=12,slow=7.3,SNR=7.5						
AKTO	**Aktyubinsk**	**59.24**	**312**	P	**P**	**09 02 22.0**	**+1.7**
	1.5nm,0.6s,baz=73,slow=11,SNR=6.7						
RES	**Resolute Bay**	**60.41**	**15**	P	**P**	**09 02 28.1**	**+0.3**
	3.5nm,0.8s,baz=297,slow=6.6,SNR=10.0						
YKA	**Yellowknife Ar**	**61.21**	**31**	P	**P**	**09 02 33.4**	**-0.1**
	0.5nm,0.7s,baz=292,slow=6.6,SNR=6.5						
ASAR	**Alice Springs**	**62.80**	**191**	P	**P**	**09 02 44.1**	**-0.5**
	1.1nm,0.8s,baz=15,slow=5.9,SNR=6.4						
FINES	**FINESS Array B**	**68.38**	**333**	P	**P**	**09 03 19.8**	**-0.4**
	2.4nm,0.7s,baz=70,slow=9.0,SNR=4.8						
NVAR	**Mina Array Bea**	**72.17**	**55**	P	**P**	**09 03 45.0**	**+0.9**
	1.7nm,0.7s,baz=286,slow=5.8,SNR=12						
HFS	**Hagfors**	**73.48**	**337**	P	**P**	**09 03 51.1**	**-0.1**
	2.3nm,0.5s,baz=52,slow=7.7,SNR=7.6						
NOA	**NORSAR Array B**	**73.50**	**338**	P	**P**	**09 03 51.4**	**0.0**
	2.2nm,0.8s,baz=44,slow=5.2,SNR=5.5						
AKASG	**Malin Array Be**	**74.34**	**323**	P	**P**	**09 03 56.4**	**0.0**
	1.8nm,0.6s,baz=43,slow=6.2,SNR=7.9						
PDAR	**Pinedale Array**	**74.87**	**47**	P	**P**	**09 04 00.6**	**+0.6**
	0.9nm,0.6s,baz=259,slow=1.6,SNR=10						
TXAR	**Lajitas Array**	**87.30**	**54**	P	**P**	**09 05 06.4**	**+0.3**
	0.6nm,0.7s,baz=293,slow=2.8,SNR=8.2						
TORD	**Torodi Ar. Bea**	**117.68**	**318**	PKP	**PKPdf**	**09 11 05.1**	**-0.5**
	0.6nm,0.9s,baz=32,slow=2.0,SNR=4.9						
LPAZ	**La Paz**	**143.89**	**61**	PKP	PKPbc	09 11 53.1	-0.1
	0.8nm,0.7s,baz=337,slow=3.4,SNR=2.9						

IDC 11 08:54:15.4±1.6, 36.95N×140.76E, h0km, mb3.9/5, mb1 4.0/6, mb1mx3.6/52, mbtmp3.8/6, ML3.6/1, Error ellipse: s-maj=35.2km s-min=25.6km az=62.0, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MJAR	**Matsushiro Arr**	**2.09**	**259**	Pn	Pn	08 54 51.6	-0.1
	21nm,0.3s,baz=76,slow=15,SNR=8.2						
MJAR				Sn	Sn	08 55 18.8	+0.3
	32nm,0.3s,baz=91,slow=26,SNR=10.0						
MAT	**Matsushiro**	**2.09**	**259**	P	Pn	08 54 52.4	+0.7
MAT				S	Sn	08 55 18.9	+0.5
JHJ	**Hachijo jima 2**	**3.91**	**192**	Sn	Sn	08 56 04.2	+1.0
	11nm,0.3s,baz=38,slow=19,SNR=1.4						
USRK	**Ussuriysk Ar.**	**9.84**	**320**	Pn	Pn	08 56 42.7	+4.6
	0.1nm,0.3s,baz=123,slow=10,SNR=2.4						
KSRS	**Korea Array**	**10.25**	**277**	Pn	Pn	08 56 48.5	+4.7
	0.1nm,0.3s,baz=94,slow=14,SNR=4.5						
SONM	**Songino Array**	**27.40**	**304**	P	P	09 00 01.6	-1.0
	0.9nm,0.8s,baz=109,slow=9.4,SNR=2.7						
H11N2	**WAKE ISLAND Hy**	**28.56**	**120**	T	T	09 30 45.4	
	baz=310						
H11N1	**WAKE ISLAND Hy**	**28.57**	**120**	T	T	09 30 43.9	
	baz=310,slow=74						
H11N3	**WAKE ISLAND Hy**	**28.58**	**120**	T	T	09 30 47.0	
	baz=310,slow=74						
H11S1	**WAKE ISLAND Hy**	**29.26**	**122**	T	T	09 31 04.7	
	baz=314,slow=76,SNR=16						
H11S3	**WAKE ISLAND Hy**	**29.26**	**122**	T	T	09 31 33.9	
	baz=314,slow=76,SNR=22						
H11S2	**WAKE ISLAND Hy**	**29.27**	**122**	T	T	09 31 34.1	
	baz=314,slow=76,SNR=16						
ZALV	**Zalesovo Beam**	**41.58**	**312**	P	P	09 02 05.5	+0.8
	0.9nm,0.5s,baz=106,slow=5.1,SNR=2.4						
WRA	**Warramunga Arr**	**56.91**	**187**	P	P	09 04 02.1	-0.1
	1.6nm,0.8s,baz=4.4,slow=7.2,SNR=4.7						
ASAR	**Alice Springs**	**60.64**	**187**	P	P	09 04 28.2	0.0
	0.4nm,0.7s,baz=3.3,slow=6.5,SNR=3.6						
FINES	**FINESS Array B**	**68.64**	**332**	P	P	09 05 20.0	0.0
	2.1nm,0.8s,baz=39,slow=9.0,SNR=2.8						

IDC 11 08:54:54.7±1.1, 37.09N×140.61E, h0km, mb3.8/5, mb1 4.0/5, mb1mx3.6/49, mbtmp3.8/5, Error ellipse: s-maj=27.0km s-min=22.4km az=117.0, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MJAR	**Matsushiro Arr**	**2.01**	**255**	Pn	Pn	08 55 30.2	+0.4
	42nm,0.3s,baz=82,slow=16,SNR=6.0						
MJAR				Sn	Sn	08 55 56.1	+0.4
	baz=91,slow=27,SNR=7.9						
MAT	**Matsushiro**	**2.01**	**255**	P	Pn	08 55 26.7	-3.2
MAT				S	Sn	08 55 55.1	-0.6
USRK	**Ussuriysk Ar.**	**9.66**	**320**	Pn	Pn	08 57 21.3	+6.4
	0.4nm,0.3s,baz=144,slow=13,SNR=4.7						
KSRS	**Korea Array**	**10.12**	**276**	Pn	Pn	08 57 27.4	+6.1
	baz=99,slow=13,SNR=4.5						
SONM	**Songino Array**	**27.23**	**304**	P	P	09 00 40.1	-0.3
	0.7nm,0.7s,baz=116,slow=9.8,SNR=2.5						
WRA	**Warramunga Arr**	**57.03**	**187**	P	P	09 04 42.2	-0.3
	1.8nm,0.7s,baz=3.7,slow=7.3,SNR=5.7						
ASAR	**Alice Springs**	**60.76**	**187**	P	P	09 05 08.2	-0.1
	0.0nm,9.9s,baz=6.5,slow=3.8,SNR=5.0						
YKA	**Yellowknife Ar**	**64.08**	**30**	P	P	09 05 30.4	+0.3
	0.2nm,0.8s,baz=302,slow=6.2,SNR=3.3						
FINES	**FINESS Array B**	**68.47**	**332**	P	P	09 05 58.1	-0.1
	1.6nm,0.8s,baz=74,slow=10,SNR=3.0						

*ISCJB **11** 08:58:01.2±0.5, 37.02N±0.02×140.42E±0.02, h9km±3km, mb4.9/192, MS5.1/8, Error ellipse: s-maj=3.6km s-min=2.9km az=144.9*
*JMA **11** 08:58:02.8, 37.02N×140.61E, h10km±1km, M4.9 Broadband fault plane solution: P waves. NP1: ϕs321.00000°, δ66.00000°, λ-93.00000°. NP2: ϕs148.00000°, δ24.00000°, λ-83.00000°. Principal axes: T Plg21.0000°, Azm53.0000°; N Plg3.0000°, Azm322.0000°; P Plg69.0000°, Azm225.0000°;*
JMA Felt IV J1.
*BJI **11** 08:58:02.3, 37.00N×140.40E, h17km, mb4.8/54, mB5.2/6, Ms5.4/19, MS7 5.1/18*
*MOS **11** 08:58:05.4±0.8, 37.34N×140.36E, h27km, mb5.1/83, Error ellipse: s-maj=6.7km s-min=4.5km az=94.0*
*IDC **11** 08:58:06.2±3.6, 37.04N×140.46E, h33km±26km, mb4.6/34, mb1 4.7/36, mb1mx4.7/48, mbtmp4.8/36, ML4.1/2, MS5.2/1, Ms1 5.2/1, ms1mx4.3/53, Error ellipse: s-maj=12.5km s-min=10.0km az=103.0*
*NEIC **11** 08:58:07.2±0.5, 37.03N×140.37E, h38km±4km, mb5.0/134, Error ellipse: s-maj=3.9km s-min=2.7km az=134.0*
NEIC Recorded [4 JMA] in Fukushima and Ibaraki.

ISC 11 08:58:02.6±0.7, 37.06N±0.03×140.52E±0.03, h11km±4km, n685, σ1§07/699, mb5.0/192, MS5.2/8, 23C-4D, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.23**	**78**	⇑P	**Pg**	**08 58 06.8**	**-0.7**
ONAJ				S	**Sg**	**08 58 09.5**	**-1.2**
JFK	**Kawauchi**	**0.42**	**43**	⇑P	**Pg**	**08 58 10.8**	**-0.2**
JFK				S	**Sg**	**08 58 16.5**	**-0.1**
JHO	**Hitachi**	**0.45**	**174**	⇑P	**Pg**	**08 58 10.9**	**-0.5**
JHO				S	**Sg**	**08 58 16.5**	**-0.8**
JFT	**Otama**	**0.48**	**343**	⇑P	**Pb**	**08 58 13.5**	**+0.3**
JFT				S	**Sb**	**08 58 20.7**	**+0.3**
JSB	**Shiboa**	**0.48**	**260**	⇑P	**Pn**	**08 58 14.2**	**-1.4**
JFY	**Yanaizu**	**0.74**	**299**	P	**Pn**	**08 58 18.5**	**-0.6**
JFY				S	**Sb**	**08 58 28.9**	**+1.3**
I30JP	**ISUMI INFRASON**	**1.75**	**185**	Pn	**Pn**	**08 58 30.0**	**-3.0**
	baz=7.9,slow=15,SNR=0.6						
MJAR	**Matsushiro Arr**	**1.92**	**255**	Pn	**Pb**	**08 58 37.3**	**-0.4**
	461nm,0.3s,baz=81,slow=16,SNR=96						
MJAR				Sn	**Sg**	**08 59 03.3**	**-1.1**
	850nm,0.3s,baz=95,slow=26,SNR=22						
MAJO	**Matsushiro**	**1.92**	**255**	*e*P	**Pb**	**08 58 37.7**	**0.0**
MAJO				*e*		08 59 04.5	
MAJO	**Matsushiro**	**1.92**	**255**	*e*Pn	**Pb**	**08 58 37.7**	**0.0**
MAJO				*e*Sn	**Sg**	**08 59 04.5**	**0.0**
MAT	**Matsushiro**	**1.92**	**255**	P	**Pb**	**08 58 37.6**	**-0.1**
MAT				S	**Sg**	**08 59 03.8**	**-0.6**
INU	**Inuyama**	**3.30**	**240**	*e*Pn	**Pn**	**08 58 56.7**	**+2.4**
JHJ	**Hachijo jima 2**	**3.97**	**189**	Pn	**Pn**	**08 59 03.3**	**-0.3**
	73nm,0.3s,baz=119,slow=23,SNR=18						
JHJ				Sn	**Sn**	**08 59 49.0**	**-1.2**
	96nm,0.3s,baz=252,slow=19,SNR=3.4						
JHJ2	**Mitsune**	**3.98**	**188**	*e*Pn	**Pn**	**08 59 03.5**	**-0.1**
JHJ2				*e*Sn	**Sn**	**08 59 53.4**	**+3.2**
ERM	**Erimo**	**5.36**	**22**	*e*P	**Pn**	**08 59 22.8**	**+0.3**
ERM				*e*		09 00 27.3	
ERM	**Erimo**	**5.36**	**22**	*e*Pn	**Pn**	**08 59 22.8**	**+0.3**
ERM				*e*Sn	**Sn**	**09 00 27.2**	**+3.0**
YUK	**Yuzh-Kuril'sk**	**8.07**	**29**	*e*P	**Pn**	**09 00 00.5**	**+0.7**
YUK				*i* S	**Sn**	**09 01 26.7**	**-4.3**
YUK				pmax	pmax		
	comp=Z,199nm,0.6s						
YUK				pmax	pmax		
	comp=E,123nm,0.5s						
YUK				pmax	pmax		
	comp=N,117nm,0.3s						
SHO	**Shikotan**	**8.33**	**33**	*e*P	**Pn**	**09 00 02.2**	**-1.2**
SHO				*i* S	Sn	09 01 30.2	-7.3
SHO				pmax	pmax		
	comp=Z,85nm,0.6s						
SHO				pmax	pmax		
	comp=N,12nm,0.4s						
SHO				pmax	pmax		
	comp=E,28nm,0.5s						
JNU	**Nakatsue**	**8.82**	**246**	Pn	Pn	09 00 13.3	+3.2
	comp=E,2.3nm,0.3s,baz=67,slow=7.0,SNR=19						
JNU				Sn	Sn	09 01 55.2	+5.7
	comp=E,0.4nm,0.3s,baz=225,slow=18,SNR=1.4						
JNU	**Nakatsue**	**8.82**	**246**	*e*Pn	Pn	09 00 13.5	+3.3
JNU				*e*Sn	**Sn**	**09 01 50.5**	**+0.9**
JNU	**Nakatsue**	**8.82**	**246**	Sn	Sn	09 01 55.2	+5.7
VLA	**Vladivostok**	**8.96**	**315**	*e*P	**Pn**	**09 00 12.3**	**+0.3**
USRK	**Ussuriysk Ar.**	**9.64**	**320**	Pn	Pn	09 00 27.3	+6.1
	comp=E,1.6nm,0.3s,baz=134,slow=12,SNR=112						
KUR	**Kuril'sk**	**9.87**	**32**	*e*P	**Pn**	**09 00 23.4**	**-1.0**
KUR				*i* S	Sn	09 02 08.3	-6.9
KUR				pmax	pmax		
	comp=Z,87nm,0.4s						
KUR				pmax	pmax		
	comp=E,14nm,0.2s						
KUR				pmax	pmax		
	comp=N,20nm,0.3s						
CBIJ	**Chichi jima**	**10.03**	**171**	*e*Pn	Pn	09 00 23.4	-3.3
CBIJ				*e*Sn	Sn	09 02 05.9	-13
JCJ	**Chichijima**	**10.03**	**171**	Pn	Pn	09 00 22.9	-3.8
	baz=351,slow=13						
JCJ				Sn	Sn	09 02 04.9	-14
	comp=N,16nm,0.3s,baz=283,slow=18,SNR=2.7						
YSS	**Yuzh-Sakhalins**	**10.03**	**9**	*e*P	**Pn**	**09 00 28.1**	**+1.5**
YSS	**Yuzh-Sakhalins**	**10.03**	**9**	*e*Pn	**Pn**	**09 00 27.7**	**+1.1**
KSRS	**Korea Array**	**10.05**	**276**	Pn	Pn	09 00 33.3	+6.4
	comp=N,1.2nm,0.3s,baz=93,slow=13,SNR=100						
KS01	**Wonju Array Si**	**10.07**	**276**	*e*Pn	Pn	09 00 33.4	+6.2
KS15	**Wonju Array Si**	**10.08**	**276**	*e*Pn	Pn	09 00 33.8	+6.4
MDJ	**Mudanjiang**	**11.20**	**316**	P	Pn	09 00 47.2	+4.6
MDJ				pmax	pmax		
	comp=N,21nm,1.4s						
MDJ				pmax	pmax		
	comp=N,2μm,9.9s						
CN2	**Changchun**	**13.30**	**305**	*e*P	Pn	09 01 15.1	+3.7
KLR	**Kul'dur**	**13.73**	**335**	Pn	**Pn**	**09 01 18.8**	**+1.5**
	comp=N,0.4nm,0.3s,baz=139,slow=13,SNR=11						
TYV	**Tymovskoe**	**13.89**	**6**	*e*P	**Pn**	**09 01 20.2**	**+0.9**
TYV				pmax	pmax		
	comp=Z,20nm,0.8s						
JOW	**Kunigami**	**14.54**	**229**	Pn	**Pn**	**09 01 31.2**	**+2.8**
	comp=Z,1.1nm,0.3s,baz=51,slow=17,SNR=2.6						
JOW	**Kunigami**	**14.54**	**229**	*e*Pn	**Pn**	**09 01 28.8**	**+0.3**
DL2	**Dalian**	**15.01**	**283**	P	**P**	**09 01 38.7**	**-1.5**
DL2				pmax	pmax		
	comp=Z,48nm,1.4s						
NKL	**Nikolayevsk**	**16.10**	**0**	*e*P	**P**	**09 01 54.0**	**+1.9**
NKL				pmax	pmax		
	comp=N,10.0nm,1.1s						
NKL				pmax	pmax		
	comp=Z,22nm,1.1s						
SKR	**Severo-

LZH LR LR
comp=Z,570nm,12.9s
LZH LR LR
comp=Z,600nm,13.5s
LZH LR LR
comp=Z,800nm,16.7s
H11S1 WAKE ISLAND Hy 29.48 122 T T 09 34 45.2
baz=315
H11S3 WAKE ISLAND Hy 29.48 122 T T 09 34 43.0
baz=315
H11S2 WAKE ISLAND Hy 29.49 122 T T 09 34 45.0
baz=315
ZAK Zakamensk 29.69 309 *e*P **P** **09 04 08.9 +0.3**
ZAK *e* 09 05 20.7
ZAK *e* 09 07 11.5
ZAK pmax pmax
comp=Z,4.0nm,1.2s
ZAK pmax pmax
comp=Z,5.0nm,1.1s
ZAK pmax pmax
comp=Z,4.0nm,1.1s
TLY Talaya 29.77 311 P **P** **09 04 09.3 +0.1**
comp=Z,6.1nm,0.9s,baz=296,slow=3.6,SNR=6.9
TLY Talaya 29.77 311 *e*P **P** **09 04 10.0 +0.8**
TLY pmax pmax
comp=Z,5.0nm,0.8s
TLY Talaya 29.77 311 *e*P **P** **09 04 10.3 +1.1**
GYA Guiyang 30.52 260⇑ *i*P **P** **09 04 15.1 -1.0**
GYA PP **PnPn** **09 05 16.2 +1.3**
GYA PcP **PcP** **09 07 16.8 +1.7**
GYA S **S** **09 09 15.0 -2.7**
GYA ScP **ScP** **09 10 56.6 -0.9**
GYA ScS **ScS** **09 14 51.2 -2.8**
GYA pmax pmax
comp=Z,20nm,0.8s
GYA pmax pmax
comp=Z,130nm,4.9s
GYA LR LR
comp=Z,570nm,17.0s
GYA LR LR
comp=Z,540nm,16.8s
GYA LR LR
comp=Z,520nm,17.0s
CD2 Chengdu 30.95 270 P **P** **09 04 18.4 -1.5**
CD2 sP sP 09 04 26.0 +1.5
CD2 S **S** **09 09 21.8 -2.5**
CD2 sS sS 09 09 30.8 +1.1
CD2 pmax pmax
comp=Z,30nm,0.4s
CD2 pmax pmax
comp=Z,3μm,13.1s
CD2 LR LR
comp=Z,7μm,13.7s
CD2 LR LR
comp=Z,6μm,14.3s
GTA Gaotai 31.87 287 *e*P **P** **09 04 26.8 -1.2**
GTA pP pP 09 04 31.2 0.0
GTA sP sP 09 04 34.2 +1.7
GTA pmax pmax
comp=Z,9.0nm,0.7s
BILL Bilibino 34.21 17⇑ *e*P **P** **09 04 47.9 0.0**
BILL *e* 09 06 01.5
BILL *e*PPP PPP 09 06 14.7
BILL *e*S **S** **09 10 16.9 +2.7**
BILL *e*SS **SnSn** **09 12 13.6 -8.7**
BILL pmax pmax
comp=Z,12nm,1.2s
BILL MLR MLR
comp=Z,5μm,16.0s
KMI Kunming 34.26 261 P **P** **09 04 48.6 -0.4**
KMI pmax pmax
comp=Z,17nm,0.8s
TIXI Tiksi 35.19 354 P **P** **09 04 55.6 -0.6**
comp=Z,5.3nm,0.5s,baz=144,slow=6.5,SNR=13
TIXI Tiksi 35.19 354⇓ *i*P **P** **09 04 55.8 -0.5**
TIXI pmax pmax
comp=Z,7.0nm,0.8s
TIXI Tiksi 35.19 354 *e*P **P** **09 04 55.9 -0.4**
WMQ Urumqi 40.19 297 P **P** **09 05 40.9 +1.9**
WMQ pP sP 09 05 44.5 +0.8
WMQ sP pP 09 05 47.8 +5.5
WMQ PP **PnPn** **09 07 16.5 +1.6**
WMQ PcP **PcP** **09 07 42.8 -0.3**
WMQ pmax pmax
comp=Z,13nm,0.8s
WMQ LR LR
comp=Z,5μm,15.2s
WMQ LR LR
comp=Z,2μm,17.0s
WMQ LR LR
comp=Z,2μm,19.0s
CHTO Chiang Mai 40.60 255 *e*P **P** **09 05 42.6 0.0**
CHTO pmax pmax
comp=Z,11nm,1.4s
CHTO Chiang Mai 40.60 255 *e*P **P** **09 05 42.6 0.0**
comp=Z,11nm,1.4s
CMAR Chiang Mai Arr 40.81 255 P **P** **09 05 44.4 0.0**
comp=Z,2.9nm,0.6s,baz=44,slow=8.1,SNR=14
CMAR PcP **PcP** **09 07 44.5 -0.9**
comp=Z,0.9nm,0.4s,baz=31,slow=2.4,SNR=5.9
CM01 Chiang Mai Arr 40.82 254 *e*P **P** **09 05 46.4 +2.0**
ZAA0 Zalesovo Array 41.37 312 *e*P **P** **09 05 48.5 0.0**
ZAA1 Zalesovo Array 41.37 312 *e*P **P** **09 05 48.4 -0.1**
ZAA1 *e*PP **PP** **09 07 23.3 -0.6**
ZAA1 *e*PcP **PcP** **09 07 46.6 0.0**
ZALV Zalesovo Beam 41.37 312 P **P** **09 05 48.4 -0.1**
comp=Z,11nm,0.6s,baz=95,slow=7.3,SNR=32
ZALV PP **PP** **09 07 23.3 -0.6**
comp=Z,1.8nm,0.3s,baz=95,slow=11,SNR=5.5
ZALV PcP **PcP** **09 07 46.6 0.0**
comp=Z,4.6nm,0.3s,baz=111,slow=3.1,SNR=6.7
NVS Novosibirsk 42.31 314 *e*P **P** **09 05 55.0 -1.2**
NRIK Noril'sk 42.95 335 P **P** **09 06 01.0 -0.2**
comp=Z,222μm,100.0s,baz=92,slow=19,SNR=8.5
NRIK Noril'sk 42.95 335 P **P** **09 06 01.0 -0.2**
MK32 Makanchi Array 43.50 302 *e*P **P** **09 06 06.7 +0.7**
MKAR Makanchi Array 43.50 302 P **P** **09 06 06.7 +0.7**
comp=Z,7.5nm,0.6s,baz=88,slow=10,SNR=44
MAKZ Makanchi 43.71 302 *e*P **P** **09 06 07.9 +0.2**
MAKZ pmax pmax
comp=Z,8.0nm,0.6s
MAKZ Makanchi 43.71 302 *e*P **P** **09 06 07.9 +0.2**
comp=Z,7.7nm,0.6s
KSM Kuching 45.05 225 *e*P **P** **09 06 19.6 +0.9**
comp=Z,25nm,0.8s
KURK Kurchatov 45.35 308 *e*P **P** **09 06 20.5 -0.2**
KURK pmax pmax
comp=Z,40nm,0.7s
KURK Kurchatov 45.35 308 *e*P **P** **09 06 20.5 -0.2**
comp=Z,40nm,0.7s
KURBB Kurchatov Arra 45.42 308 P **P** **09 06 21.2 -0.1**
comp=Z,26nm,0.6s,baz=83,slow=7.8,SNR=96
SVW2 Sparrevohn 45.94 37 *e*P **P** **09 06 27.5 +2.3**
comp=Z,18nm,0.9s
KAPI Kappang 46.12 209 *e*P **P** **09 06 27.4 +0.3**
comp=Z,85nm,1.3s
PDGK Podgornoye 46.13 298 P **P** **09 06 27.5 +0.5**
RAMN Ramite 46.28 274 *e*P **P** **09 06 28.9 +0.2**
comp=Z,85nm,0.8s
GUN Gumba 46.44 275 *e*P **P** **09 06 30.3 +0.3**
comp=Z,35nm,0.5s
PMG Port Moresby 46.63 171 LR LR 09 26 18.3
comp=Z,2μm,18.6s,baz=248,slow=36
KKN Kakani 46.97 275 *e*P **P** **09 06 34.3 +0.3**
comp=Z,27nm,0.5s
PKIN Phulchoki 46.97 275 *e*P **P** **09 06 34.4 +0.3**
comp=Z,13nm,0.6s
DMN Daman 47.19 275 *e*P **P** **09 06 35.8 0.0**
RSO Redoubt South 47.33 38 *e*P **P** **09 06 37.6 +1.2**
GKN Gorkha 47.39 276 *e*P **P** **09 06 37.3 +0.1**
comp=Z,54nm,0.7s
KDAK Kodiak Island 47.56 42 P P 09 06 53.5 +16
comp=Z,15nm,0.7s,baz=272,slow=5.9,SNR=10
KDAK Kodiak Island 47.56 42 *ce*P **P** **09 06 38.4 +0.5**
PPLA Purkeypile 47.56 35 *e*P **P** **09 06 40.2 +2.1**
comp=Z,34nm,1.4s
CAST Castle Rocks 47.61 34 *e*P **P** **09 06 40.3 +2.0**
comp=Z,7.1nm,0.9s
SPU Mount Spurr 47.65 37 *e*P **P** **09 06 40.2 +1.5**
BPAW Bear Paw Mtn. 48.10 33 *e*P **P** **09 06 43.7 +1.6**
comp=Z,6.3nm,1.0s
KTH Kantishna Hill 48.13 34 *e*P **P** **09 06 44.1 +1.7**
comp=Z,20nm,1.0s
MLY Manley 48.21 32 *e*P **P** **09 06 44.9 +1.9**
comp=Z,11nm,0.8s
KOLN Koldanda 48.31 276 *e*P **P** **09 06 44.8 +0.3**
comp=Z,12nm,0.6s
TRF Thorofare Moun 48.42 34 *e*P **P** **09 06 47.2 +2.5**
comp=Z,31nm,1.7s
COLD Coldfoot 48.48 29 *e*P **P** **09 06 47.0 +2.1**
comp=Z,23nm,1.6s
PYUN Piuthan 48.65 277 *e*P **P** **09 06 47.5 +0.4**
comp=Z,145nm,1.0s
RC01 Rabbit Creek A 48.78 37 *e*P **P** **09 06 48.5 +1.1**
comp=Z,22nm,1.1s
TKM2 Tokmak 2 48.99 298 *e*P **P** **09 06 50.4 +0.9**
TKM2 pmax pmax
comp=Z,32nm,0.9s
TKM2 Tokmak 2 48.99 298 *e*P **P** **09 06 50.4 +0.9**
comp=Z,32nm,0.9s
SOEI Soe 49.00 201 *e*P **P** **09 06 49.0 -0.6**
comp=Z,147nm,1.2s
MCK McKinley 49.02 34 *e*P **P** **09 06 50.6 +1.5**
MCK pmax pmax
comp=Z,14nm,0.9s
MCK McKinley 49.02 34 *e*P **P** **09 06 50.6 +1.5**
comp=Z,14nm,0.9s
PMR Palmer 49.04 37 *e*P **P** **09 06 49.8 +0.6**
PMR pmax pmax
comp=Z,27nm,1.4s
PMR Palmer 49.04 37 *e*P **P** **09 06 49.8 +0.6**
comp=Z,27nm,1.4s
RND Reindeer 49.06 34 *e*P **P** **09 06 50.4 +0.8**
RND pmax pmax
comp=Z,16nm,1.0s
RND Reindeer 49.06 34 *e*P **P** **09 06 50.4 +0.8**
comp=Z,16nm,1.0s
MDM Murphy Dome 49.28 32 *e*P **P** **09 06 52.4 +1.3**
comp=Z,20nm,0.9s
WRH Wood River Hil 49.36 33 *e*P **P** **09 06 52.7 +1.0**
comp=Z,12nm,0.7s
SML Sawmill 49.40 36 *e*P **P** **09 06 53.1 +1.0**
SML pmax pmax
comp=Z,11nm,0.8s
SML Sawmill 49.40 36 *e*P **P** **09 06 53.1 +1.0**
comp=Z,11nm,0.8s
COLA College 49.44 32 *e*P **P** **09 06 54.2 +1.9**
COLA pmax pmax
comp=Z,9.0nm,0.8s
COLA College 49.44 32 *e*P **P** **09 06 54.2 +1.9**
comp=Z,8.7nm,0.8s
CCB Clear Creek Bu 49.47 33 *e*P **P** **09 06 54.4 +1.8**
comp=Z,15nm,1.4s
KSH Kashi 49.74 294 P P 09 06 59.6 +4.4
KSH *e*pP sP 09 07 04.0 +4.2
KSH S **S** **09 14 08.3 +4.0**
KSH pmax pmax
comp=Z,12nm,0.8s
OTUK Ortayu 49.83 306 P **P** **09 06 55.7 +0.1**
AAK Ala-Archa 49.85 298 *d i*P **P** **09 06 56.4 +0.4**
AAK pmax pmax
comp=Z,25nm,0.9s
AAK Ala-Archa 49.85 298 *e*P **P** **09 06 56.2 +0.2**
comp=Z,8.3nm,0.8s
HDA Harding Lake 49.85 33 *e*P **P** **09 06 56.0 +0.5**
comp=Z,24nm,1.4s
IL1 Eielson Array 49.86 32 *e*P **P** **09 06 56.1 +0.6**
ILAR Eielson Array 49.86 32 P **P** **09 06 56.1 +0.5**
comp=Z,7.7nm,0.8s,baz=270,slow=6.3,SNR=46
ILB Eielson Array 49.86 32 *e*P **P** **09 06 56.1 +0.5**
BVAR Borovoye Array 50.03 312 P **P** **09 06 57.3 +0.3**
comp=Z,8.5nm,0.7s,baz=69,slow=8.1,SNR=23
BVAR PcP **PcP** **09 08 16.8 +0.1**
comp=Z,3.9nm,0.6s,baz=92,slow=2.2,SNR=4.7
BRVK Borovoye 50.08 312 *ce*P **P** **09 06 57.7 +0.3**
BRVK pmax pmax
comp=Z,18nm,1.0s
BRVK Borovoye 50.08 312 *e*P **P** **09 06 57.9 +0.5**
comp=Z,17nm,0.9s
EKS2 Erkin-Say 50.34 298 *e*P **P** **09 07 00.5 +0.8**
EKS2 pmax pmax
comp=Z,9.0nm,0.9s
EKS2 Erkin-Say 50.34 298 *e*P **P** **09 07 00.5 +0.8**
comp=Z,8.8nm,0.9s
MTN Manton Dam 50.41 192 *e*P **P** **09 06 59.5 -0.7**
comp=Z,85nm,1.5s
FYU Fort Yukon 50.45 30 *e*P **P** **09 07 02.1 +2.2**
comp=Z,63nm,1.8s
KLU Klutina 50.58 37 *e*P **P** **09 07 02.1 +0.9**
comp=Z,12nm,1.2s
DIV Divide 50.69 37 *e*P **P** **09 07 03.5 +1.5**
comp=Z,39nm,1.4s
COEN Coen 50.80 177 *e*P **P** **09 07 03.7 +0.5**
comp=Z,28nm,0.8s
ZRNK Zerenda 50.86 312 *e*P **P** **09 07 03.6 +0.3**
ZRNK pmax pmax
comp=Z,27nm,1.0s
ZRNK Zerenda 50.86 312 *e*P **P** **09 07 03.6 +0.3**
comp=Z,27nm,1.0s
DOT Dot Lake 51.19 34 *e*P **P** **09 07 06.3 +0.7**
comp=Z,18nm,1.0s
PSI Prapat 51.19 238 *e*P **P** **09 07 06.2 -0.1**
PSI pmax pmax
comp=Z,19nm,1.1s
PSI Prapat 51.19 238 *e*P **P** **09 07 06.2 -0.1**
comp=Z,19nm,1.1s
BMRM Bremner River 51.28 37 *e*P **P** **09 07 07.6 +1.2**
comp=Z,17nm,1.0s
MNAS Manas 51.29 298 P **P** **09 07 07.6 +0.7**
SFK Sufi-Kurgan 51.38 295 P **P** **09 07 08.2 +0.5**
MENT Mentasta 51.42 35 *e*P **P** **09 07 09.0 +1.6**
comp=Z,14nm,1.0s
EGAK Eagle 52.30 32 *e*P **P** **09 07 14.7 +0.8**
comp=Z,9.4nm,1.2s
KKAR Karatay Array 52.49 300 *e*P **P** **09 07 16.3 +0.6**
KKAR Karatay Array 52.49 300 *e*P **P** **09 07 16.3 +0.6**
NDI New Delhi 52.96 280 *e*P P 09 07 16.0 -3.3
GSI Gunungsitoli 53.20 238 *e*P **P** **09 07 20.8 -0.3**
comp=Z,78nm,0.7s
SVE Sverdlovsk 54.66 318 *e*P **P** **09 07 31.6 +0.3**
SVE pmax pmax
comp=Z,32nm,0.9s
INK Inuvik 54.70 27 P **P** **09 07 32.3 +0.9**
comp=Z,5.0nm,0.7s,baz=306,slow=7.2,SNR=25
ARU Arti 55.87 318 *d i*P **P** **09 07 40.0 0.0**
ARU S **S** **09 15 26.4 -0.8**
ARU SS SS 09 19 03.5 -8.8
ARU pmax pmax
comp=Z,49nm,1.2s
ARU Arti 55.87 318 *e*P **P** **09 07 39.8 -0.2**
comp=Z,31nm,0.9s
SOKR Solikamsk 55.87 322 *e*P **P** **09 07 39.1 -0.8**
SOKR pmax pmax
comp=Z,16nm,0.9s
FITZ Fitzroy Crossi 56.63 197 *e*P **P** **09 07 45.9 +0.2**
comp=Z,11nm,0.8s
KBL Kabul 56.74 291 *e*P **P** **09 07 46.6 -0.2**
KBL pmax pmax
comp=Z,19nm,0.9s
KBL Kabul 56.74 291 *e*P **P** **09 07 46.6 -0.2**
comp=Z,19nm,0.9s
WRAB Tennant Creek 56.98 187 *ce*P **P** **09 07 47.7 -0.6**
WRAB pmax pmax
comp=Z,120nm,0.9s
WRAB Tennant Creek 56.98 187 *e*P **P** **09 07 47.7 -0.6**
comp=Z,41nm,0.8s
WB2 Warramunga Arr 56.99 187 *e*P **P** **09 07 47.7 -0.7**
comp=Z,42nm,0.8s
WR1 Warramunga Arr 56.99 187 *e*P **P** **09 07 47.5 -0.8**
comp=Z,40nm,0.7s
WR1 *e*PP **PP** **09 09 56.3 +1.0**
WRA Warramunga Arr 56.99 187 P **P** **09 07 47.5 -0.8**
comp=Z,43nm,0.7s,baz=4.2,slow=7.4,SNR=125
WRA PP **PP** **09 09 56.3 +1.0**
comp=Z,7.5nm,0.7s,baz=3.2,slow=7.2,SNR=2.5
WRA Warramunga Arr 56.99 187 P **P** **09 07 47.6 -0.8**
WRA 09 09 56.3
WRA pmax pmax
comp=Z,41nm,0.7s
WRA pmax pmax
comp=Z,8.0nm,0.7s
CTAO Charters Tower 57.09 174 *e*P **P** **09 07 47.9 -1.2**
CTAO pmax pmax
comp=Z,15nm,1.2s
CTAO Charters Tower 57.09 174 *e*P **P** **09 07 47.9 -1.2**
comp=Z,15nm,1.2s
ABKAR Akbulak array 57.38 310 *e*P **P** **09 07 50.8 -0.1**
HYB Hyderabad 57.49 268 *i*P **P** **09 07 52.5 +0.4**
DLBC Dease Lake 59.05 38 *e*P **P** **09 08 03.1 +0.6**
comp=Z,13nm,1.1s
AS01 Alice Springs 60.71 187 *e*P **P** **09 08 13.8 -0.4**
AS31 Alice Springs 60.72 187 *e*P **P** **09 08 13.8 -0.4**
comp=Z,5.4nm,0.7s
ASAR Alice Springs 60.72 187 P **P** **09 08 13.8 -0.4**
comp=Z,14nm,0.8s,baz=18,slow=6.4,SNR=111
MBWA Marble Bar 61.13 202 *e*P **P** **09 08 16.8 -0.2**
comp=Z,78nm,1.6s
APA Apatity 62.37 336⇑ *i*P **P** **09 08 25.4 +0.5**
APA MLR MLR
comp=Z,3μm,18.0s
TMCR Tamitsa 62.38 331 *e*P **P** **09 08 24.7 -0.3**
TMCR pmax pmax
comp=Z,10.0nm,0.4s
RES Resolute Bay 62.76 14 P **P** **09 08 27.5 +0.1**
comp=Z,208μm,100.0s,baz=307,slow=6.1,SNR=60
RES Resolute Bay 62.76 14 *e*P **P** **09 08 27.5 +0.1**
comp=Z,15nm,1.2s
EIDS Eidsvold 62.88 169 *e*P **P** **09 08 28.6 -0.1**
comp=Z,20nm,1.1s
GEYT Ailbeck 63.20 299 P **P** **09 08 31.4 +0.4**
comp=Z,16nm,0.7s,baz=34,slow=3.7,SNR=24
KLMR Klimovskoe 63.35 327 *e*P **P** **09 08 29.3 -2.2**
KLMR pmax pmax
comp=Z,12nm,0.6s
ARA0 ARCESS Array S 63.72 339 *e*P **P** **09 08 34.1 +0.3**
ARCES ARCESS Array B 63.72 339 P **P** **09 08 34.1 +0.3**
comp=Z,7.2nm,0.7s,baz=56,slow=7.8,SNR=29
ARCES ARCESS Array B 63.72 339 P **P** **09 08 34.2 +0.3**
ARCES pmax pmax
comp=Z,5.0nm,0.5s
YKA Yellowknife Ar 64.15 30 P **P** **09 08 36.8 +0.1**
comp=Z,3.1nm,0.7s,baz=302,slow=6.5,SNR=42
YKB5 Yellowknife Ar 64.15 30 *e*P **P** **09 08 36.9 +0.1**
VRH Novokhopyorsk 67.08 318 *e*P **P** **09 08 54.0 -1.9**
VRH pmax pmax
comp=Z,20nm,0.6s
OBN Obninsk 67.65 323⇑ *i*P **P** **09 08 59.6 +0.2**
OBN *e* 09 11 33.0
OBN *e*PPP PPP 09 13 03.1
OBN pmax pmax
comp=Z,36nm,1.7s
LPSR Galich'ya Gora 67.82 320 *e*P **P** **09 08 59.9 -0.7**
LPSR pmax pmax
comp=Z,10.0nm,0.6s
ARMA Armidale 67.92 170 *e*P **P** **09 09 02.6 +1.2**
comp=Z,22nm,1.0s
VSR Storozhevoye 68.44 318 *e*P **P** **09 09 03.9 -0.6**
VSR pmax pmax
comp=Z,20nm,0.6s
FIA1 FINESS Array S 68.46 332 *e*P **P** **09 09 04.2 -0.2**
FIA0 FINESS Array S 68.46 332 *e*P **P** **09 09 04.2 -0.2**
FIA0 FINESS Array S 68.46 332 *e*P **P** **09 09 04.2 -0.2**
FINES FINESS Array B 68.46 332 P **P** **09 09 04.2 -0.2**
comp=Z,18nm,0.7s,baz=64,slow=8.7,SNR=55
STKA Stephens Creek 68.58 179 P **P** **09 09 05.5 +0.1**
comp=Z,11nm,0.8s,baz=348,slow=6.8,SNR=18
STKA Stephens Creek 68.58 179 *e*P **P** **09 09 05.5 +0.1**
comp=Z,2.0nm,0.8s
I03D Drain, OR 69.45 50 P **P** **09 09 12.8 +1.9**
baz=302
GOF Gofitskoye 69.54 311 *ce*P P 09 09 00.8 -11
G05D Wamic, OR 69.86 48 P **P** **09 09 14.7 +1.3**
baz=303
I04A Tendick Farm, 69.97 50 P **P** **09 09 15.5 +1.3**
baz=302
VSU Vasula 70.07 329⇑ *i*P **P** **09 09 14.6 +0.2**
VSU pmax pmax
comp=Z,66nm,1.0s
C09A Chrisman Ranch 70.23 45 *e*P **P** **09 09 16.9 +1.3**
comp=Z,6.6nm,0.6s
ZEI Tsey 70.23 309 *e*P **P** **09 09 14.5 -1.5**
ZEI pmax pmax
comp=Z,8.0nm,0.6s
I05D Terrebonne, OR 70.33 49 P **P** **09 09 17.4 +1.0**
baz=303
KBZ Khabaz 70.34 310 P **P** **09 09 16.8 +0.4**
comp=Z,10nm,0.8s,baz=70,slow=3.1,SNR=19
KIV Kislovodsk 70.35 311 *e*P **P** **09 09 17.3 +0.8**
KIV pmax pmax
comp=Z,38nm,1.0s
NEW Newport 70.61 44 P **P** **09 09 19.0 +1.0**
baz=304
NEW Newport 70.61 44 *e*P **P** **09 09 18.9 +0.9**
NEW pmax pmax
comp=Z,5.0nm,0.7s
NEW Newport 70.61 44 *e*P **P** **09 09 18.9 +0.9**
comp=Z,5.5nm,0.7s
SUMG Summit 70.66 360 *i*P **P** **09 09 17.6 -0.7**
SUMG Summit 70.66 360 *i*P **P** **09 09 18.6 +0.3**
comp=Z,17nm,0.8s
SUMG Summit 70.66 360 *e*P **P** **09 09 19.6 +1.3**
SUMG pmax pmax
comp=Z,27nm,1.0s
SUMG Summit 70.66 360 *e*P **P** **09 09 19.6 +1.3**
comp=Z,27nm,1.0s
J05D Fort Rock, OR 70.97 50 P **P** **09 09 21.7 +1.3**
baz=303
N02D Trinity Center 71.31 53 P **P** **09 09 23.5 +1.0**
baz=303
M04C Macdoel 71.42 51 P **P** **09 09 24.3 +1.2**
baz=303
WALA Waterton Lakes 71.90 42 *e*P **P** **09 09 27.2 +1.3**
comp=Z,9.4nm,0.8s
O03D Paynes Creek 72.26 53 P **P** **09 09 28.9 +0.8**
baz=304
BMO Blue Mountains 72.44 47 *e*P **P** **09 09 30.6 +1.5**
comp=Z,9.0nm,1.0s
JTMT Jette 72.47 43 *e*P **P** **09 09 30.8 +1.5**
SWMT Swartz Lake 72.77 43 *e*P **P** **09 09 32.3 +1.2**
ORV Oroville 72.86 53 *e*P **P** **09 09 32.6 +0.9**
ORV pmax pmax
comp=Z,4.0nm,0.8s
ORV Oroville 72.86 53 *e*P **P** **09 09 32.6 +0.9**
comp=Z,4.3nm,0.8s
WVOR Wild Horse Val 73.03 49 *e*P **P** **09 09 34.3 +1.6**
WVOR pmax pmax
comp=Z,10.0nm,1.3s
WVOR Wild Horse Val 73.03 49 *e*P **P** **09 09 34.3 +1.6**
comp=Z,10nm,1.3s
MSO Missoula 73.20 44 P **P** **09 09 33.8 +0.1**
baz=306
MSO Missoula 73.20 44 *e*P **P** **09 09 35.0 +1.3**
comp=Z,8.7nm,1.3s
NC405 NORSAR Array S 73.67 337 *e*P **P** **09 09 36.2 +0.1**
AKASG Malin Array Be 73.84 322 P **P** **09 09 36.8 -0.4**
comp=Z,8.1nm,0.6s,baz=47,slow=6.1,SNR=40
AKASG Malin Array Be 73.84 322 P **P** **09 09 36.8 -0.4**
AKASG pmax pmax
comp=Z,11nm,0.6s
AKBB Malin Array Si 73.84 322 *e*P **P** **09 09 36.8 -0.4**
AKBB pmax pmax
comp=Z,18nm,0.8s
AKBB Malin Array Si 73.84 322 *e*P **P** **09 09 36.8 -0.4**
comp=Z,18nm,0.8s
NC204 NORSAR Array S 73.85 337 *e*P **P** **09 09 37.5 +0.3**
KIEV Kiev 73.85 322⇑ *i*P **P** **09 09 37.1 -0.1**
KIEV pmax pmax
comp=Z,20nm,0.9s
KIEV Kiev 73.85 322 *e*P **P** **09 09 37.2 0.0**
comp=Z,16nm,0.8s
NB201 NORSAR Array S 73.86 337 *e*P **P** **09 09 37.5 +0.3**
AK11 Malin Array Si 73.88 322 *e*P **P** **09 09 37.3 -0.2**
NB2 NORSAR Subarra 73.89 337 P **P** **09 09 36.9 -0.5**
comp=Z,19nm,1.0s,baz=40,slow=5.9
NB2 NORSAR Subarra 73.89 337 P **P** **09 09 36.9 -0.5**
baz=40,slow=5.9
NB200 NORSAR Array S 73.89 337 *e*P **P** **09 09 37.3 -0.1**
NOA NORSAR Array B 73.89 337 P **P** **09 09 37.3 -0.1**
comp=Z,11nm,0.8s,baz=39,slow=5.8,SNR=39
NBO02 NORSAR Array S 73.99 337 *e*P **P** **09 09 38.0 0.0**
FFC Flin Flon 74.07 32 *e*P **P** **09 09 39.1 +0.6**
FFC pmax pmax
comp=Z,9.0nm,0.8s
FFC Flin Flon 74.07 32 *e*P **P** **09 09 39.1 +0.6**
comp=Z,9.3nm,0.8s
MFID Camas Ranch 74.14 47 *e*P **P** **09 09 40.5 +1.2**
comp=Z,53nm,2.0s
FCC Fort Churchill 74.30 26 *e*P **P** **09 09 39.9 +0.2**
FCC pmax pmax
comp=Z,21nm,1.3s
FCC Fort Churchill 74.30 26 *e*P **P** **09 09 39.9 +0.2**
comp=Z,21nm,1.3s
HRY Holter Researc 74.43 43 *e*P **P** **09 09 42.2 +1.4**
CMB Columbia Colle 74.44 54 *e*P **P** **09 09 42.5 +1.5**
CMB pmax pmax
comp=Z,7.0nm,0.9s
CMB Columbia Colle 74.44 54 *e*P **P** **09 09 42.5 +1.5**
comp=Z,6.6nm,0.9s

LRM Limekiln Ridge 74.63 44 eP P 09 09 43.6 +1.4
EGMT Eagleton 74.73 41 P P 09 09 42.9 +0.4
baz=309
EGMT Eagleton 74.73 41 eP P 09 09 43.3 +0.8
comp=Z,22nm,0.8s
WAKR Walker 74.78 53 eP P
DLMT Dillon 74.83 44 eP P 09 09 44.9 +1.6
comp=Z,16nm,0.8s
HLID Hailey 74.88 47 P P 09 09 44.3 +0.7
baz=307,SNR=7.9
HLID Hailey 74.88 47 eP P 09 09 45.0 +1.3
comp=Z,5.8nm,1.0s
BOZ Bozeman (W) 75.19 44 P P 09 09 46.5 +1.2
baz=308
BOZ Bozeman (W) 75.19 44 eP P 09 09 46.9 +1.5
BOZ pmax pmax
comp=Z,8.0nm,0.7s
BOZ Bozeman (W) 75.19 44 eP P 09 09 46.9 +1.5
comp=Z,8.2nm,0.7s
NV01 Mina Array Sit 75.55 53 eP P 09 09 49.0 +1.3
NVAR Mina Array Bea 75.55 53 P P 09 09 49.0 +1.3
comp=Z,5.3nm,0.7s,baz=300,slow=5.4,SNR=20
QLMT Earthquake Lak 75.81 44 eP P 09 09 50.5 +1.5
SFJD Kangerlussuaq 75.92 4 iP P 09 09 48.3 -0.6
comp=Z,9.1nm,0.7s
SFJD Kangerlussuaq 75.92 4 eP P 09 09 49.6 +0.7
SFJD pmax pmax
comp=Z,14nm,0.9s
SFJD Kangerlussuaq 75.92 4 eP P 09 09 49.6 +0.7
comp=Z,14nm,0.9s
YMR Madison River 76.17 44 eP P 09 09 53.0 +1.9
comp=Z,8.2nm,0.7s
LKWY Lake 76.55 44 eP P 09 09 56.3 +3.0
LKWY pmax pmax
comp=Z,8.0nm,0.9s
LKWY Lake 76.55 44 eP P 09 09 56.2 +3.0
comp=Z,7.6nm,0.9s
H17A Grant Village 76.56 44 eP P 09 09 56.3 +3.0
comp=Z,12nm,0.8s
PKM Mcpherson Peak 76.63 56 P P 09 09 54.5 +0.6
baz=306
IMW Indian Meadow 76.67 45 eP P 09 09 55.3 +1.3
comp=Z,10.0nm,0.7s
FLWY Flagg Ranch 76.68 45 eP P 09 09 56.4 +2.4
comp=Z,12nm,1.1s
RLMT Red Lodge 76.82 43 P P 09 09 55.5 +0.8
baz=310,SNR=9.8
RLMT Red Lodge 76.82 43 eP P 09 09 56.1 +1.3
comp=Z,36nm,1.6s
MOOW Moose Ponds 76.87 45 eP P 09 09 57.0 +1.9
comp=Z,5.8nm,0.9s
HVU Hansel Valley 76.92 47 eP P 09 09 57.1 +1.8
HVU pmax pmax
comp=Z,7.0nm,0.7s
HVU Hansel Valley 76.92 47 eP P 09 09 57.1 +1.8
comp=Z,6.9nm,0.7s
GRAC Grapevine Rang 76.99 53 P P 09 09 56.8 +1.1
baz=307,SNR=6.7
LOHW Long Hollow 77.03 45 eP P 09 09 57.7 +1.7
comp=Z,3.4nm,0.8s
SNOW Snow King Moun 77.04 45 eP P 09 09 57.9 +1.8
comp=Z,5.2nm,0.6s
REDW Red Top Meadow 77.05 45 eP P 09 09 57.9 +1.8
comp=Z,14nm,1.4s
ISA Isabella, Lake 77.06 55 P P 09 09 57.6 +1.5
baz=306
BSD Bornholm Skovb 77.08 331 iP P 09 09 54.9 -0.8
comp=Z,16nm,0.7s
BSD Bornholm Skovb 77.08 331 iP P 09 09 55.8 +0.1
BSD Bornholm Skovb 77.08 331 iP P 09 09 54.9 -0.8
BSD pmax pmax
comp=Z,16nm,0.7s
ARVC Arvin 77.15 56 P P 09 09 57.6 +1.1
baz=306
DGMT Dagmar 77.27 38 P P 09 09 57.6 +0.6
baz=312
DGMT Dagmar 77.27 38 eP P 09 09 57.8 +0.9
comp=Z,16nm,0.8s
DAC Darwin (Calif) 77.28 54 eP P 09 09 58.4 +1.0
DAC pmax pmax
comp=Z,4.0nm,0.9s
DAC Darwin (Calif) 77.28 54 eP P 09 09 58.4 +1.0
comp=Z,4.4nm,0.9s
BGU Big Grassy Mou 77.30 48 eP P 09 09 58.8 +1.4
comp=Z,5.8nm,0.9s
R11A Troy Canyon, C 77.31 51 P P 09 09 58.6 +1.1
baz=307,SNR=9.6
R11A Troy Canyon, C 77.31 51 eP P 09 09 58.8 +1.2
comp=Z,7.7nm,0.9s
LAO LASA Array 77.43 40 P P 09 09 58.6 +0.7
baz=311
LAO LASA Array 77.43 40 eP P 09 09 58.8 +0.9
comp=Z,13nm,0.9s
MPMC Manual Prospec 77.47 54 P P 09 09 59.6 +1.1
baz=307
A25A Svangstu Ranch 77.48 37 P P 09 09 59.1 +1.0
baz=313
FURC Furnace Creek, 77.63 54 P P 09 09 59.8 +0.6
baz=307,SNR=7.4
KWP Kalwaria Pacla 77.69 324 eP P 09 10 00.3 +1.0
KWP Kalwaria Pacla 77.69 324 eP P 09 10 00.3 +1.0
LRMC Laurel Mtn Rad 77.69 55 P P 09 10 00.4 +0.7
baz=307
TPNV Topopah Spring 77.74 53 P P 09 10 01.2 +1.3
baz=307,SNR=11
TPNV Topopah Spring 77.74 53 eP P 09 10 01.3 +1.3
TPNV pmax pmax
comp=Z,15nm,0.9s
TPNV Topopah Spring 77.74 53 eP P 09 10 01.3 +1.3
comp=Z,15nm,0.9s
HWUT Hardware Ranch 77.74 47 eP P 09 10 01.5 +1.5
comp=Z,8.1nm,1.0s
BUR08 Bucovina Ar. S 77.84 321 eP P 09 10 00.8 +0.5
EDW2 Edwards Air Fo 77.84 56 P P 09 10 01.2 +0.8
baz=307
BURAR Bucovina Array 77.85 321⇑ iP P 09 10 00.9 +0.6
TESR Tescani 77.86 320⇑ iP P 09 10 00.6 +0.4
DUG Dugway, Tooele 77.88 49 P P 09 10 02.1 +1.4
baz=309,SNR=10
DUG Dugway, Tooele 77.88 49 eP P 09 10 02.4 +1.7
DUG pmax pmax
comp=Z,10.0nm,0.8s
DUG Dugway, Tooele 77.88 49 eP P 09 10 02.4 +1.7
comp=Z,10nm,0.8s
B25A Knox Farm, Ray 77.91 38 P P 09 10 01.1 +0.6
baz=313
A26A Wade Farm, Ken 78.03 37 P P 09 10 02.0 +0.8
baz=314
TCUT Toone Canyon 78.14 47 eP P 09 10 03.9 +1.6
comp=Z,13nm,0.7s
BW06 Boulder Array 78.16 45 P P 09 10 02.7 +0.4
baz=310,SNR=9.1
BW06 Boulder Array 78.16 45 eP P 09 10 02.9 +0.6
PD31 Pinedale Array 78.16 45 eP P 09 10 02.9 +0.5
PDAR Pinedale Array 78.16 45 P P 09 10 02.9 +0.5
comp=Z,4.1nm,0.7s,baz=258,slow=2.0,SNR=27
VRI Vrincioaia 78.24 319⇑ iP P 09 10 02.9 +0.5
C25A Freed Ranch, W 78.24 38 P P 09 10 03.1 +0.7
baz=313
BR101 Keskin Array S 78.30 311 eP P 09 10 03.2 +0.2
BR131 Keskin Array S 78.30 311 eP P 09 10 03.2 +0.3
BRTR Keskin Array B 78.30 311 P P 09 10 03.2 +0.2
comp=Z,4.0nm,0.5s,baz=89,slow=3.8,SNR=20
A27A Ledoux Ranch, 78.37 36 P P 09 10 03.9 +0.8
baz=314
GSC Goldstone, Bar 78.37 55 P P 09 10 04.2 +0.8
baz=307
KOLS Kolonicke sedl 78.38 324 eP P 09 10 03.6 +0.5
KOLS pmax pmax
comp=Z,7.0nm,1.0s
KOLS Kolonicke sedl 78.38 324 eP P 09 10 03.6 +0.5
JLU Jordanelle 78.44 48 eP P 09 10 05.2 +1.3
comp=Z,3.9nm,0.7s
BFSC Mount Baldy Ra 78.45 56 P P 09 10 04.8 +0.9
baz=307
NLU North Lily Min 78.47 48 eP P 09 10 05.7 +1.6
comp=Z,7.7nm,0.9s
STHS Stebnicka Huta 78.53 324 eP P 09 10 04.8 +0.9
STHS pmax pmax
comp=Z,8.0nm,1.0s
STHS Stebnicka Huta 78.53 324 eP P 09 10 04.8 +0.9
UZH Uzhgorod 78.58 323 eP P 09 10 01.4 -2.8
UZH e 09 10 11.8
D25A Fairfield 78.59 39 P P 09 10 05.6 +1.2
baz=313
OJC Ojcow 78.62 326 eP P 09 10 05.3 +0.8
OJC Ojcow 78.62 326 eP P 09 10 05.2 +0.8
OJC pmax pmax
comp=Z,24nm,1.1s
OJC Ojcow 78.62 326 eP P 09 10 05.2 +0.8
comp=Z,24nm,1.1s
MPU Maple Canyon 78.70 48 eP P 09 10 06.9 +1.6
comp=Z,8.2nm,0.9s
C26A Wahner Farm, P 78.74 38 P P 09 10 05.8 +0.7
baz=314
BR231 Keskin MP Arra 78.74 312 eP P 09 10 03.9 -1.5
CRVS Cervenica-Dubn 78.79 324 eP P 09 10 05.9 +0.5
CRVS Cervenica-Dubn 78.79 324 eP P 09 10 05.9 +0.5
A28A Rude Farm, Bot 78.86 36 P P 09 10 06.6 +0.8
baz=315
TUQ Turquoise Moun 78.86 54 P P 09 10 07.3 +1.1
baz=308
DOPR Dopca 78.87 320⇑ iP P 09 10 07.3 +1.4
BBRC Big Bear Solar 78.92 55 P P 09 10 06.7 0.0
baz=307
HEC Hector,Ludlow 78.97 55 P P 09 10 07.5 +0.8
baz=308
E25A Miller Ranch, 79.00 39 P P 09 10 07.0 +0.4
baz=313
C27A Sayler Ranch, 79.10 37 P P 09 10 07.8 +0.7
baz=314
D26A Manning 79.12 38 P P 09 10 07.1 -0.2
baz=314
B28A Dugan Ranch, T 79.14 36 P P 09 10 07.7 +0.5
baz=315,SNR=7.4
MURC Murrieta 79.14 56 P P 09 10 09.2 +1.5
baz=307
MSU Marysvale 79.32 50 eP P 09 10 10.8 +2.1
MSU Marysvale 79.32 50 eP P 09 10 10.8 +2.1
A29A Manning Farm, 79.33 35 P P 09 10 08.9 +0.6
baz=316,SNR=9.1
F25A Bowman 79.36 40 P P 09 10 08.7 0.0
baz=313
GMRC Granite Mounta 79.43 54 P P 09 10 10.1 +0.8
baz=308,SNR=5.6
E26A Carlson Angus 79.49 39 P P 09 10 09.5 +0.2
baz=314
D27A Center 79.51 38 P P 09 10 09.8 +0.4
baz=314
P17A Butcher Ranch, 79.58 48 eP P 09 10 11.5 +1.5
comp=Z,15nm,0.8s
LCMT Little Creek M 79.60 51 eP P 09 10 12.0 +1.8
comp=Z,8.2nm,0.9s
B29A Wagenman Farm, 79.60 36 P P 09 10 10.1 +0.3
baz=316
MTPU Mount Pierson 79.61 50 eP P 09 10 11.3 +0.8
comp=Z,9.3nm,0.8s
PFO Pinyon Flats O 79.62 56 P P 09 10 10.5 +0.2
baz=308
PFO Pinyon Flats O 79.62 56 eP P 09 10 12.6 +2.2
109C Camp Elliot, M 79.63 57 P P 09 10 10.5 +0.2
baz=308
C28A Hausauer Farms 79.64 37 P P 09 10 10.5 +0.4
baz=315
ARR Arges 79.67 320⇑ iP P 09 10 11.8 +1.5
BELC Belle Mtn. Jos 79.69 55 P P 09 10 10.2 -0.5
baz=308
KSP Ksiaz 79.70 328 eP P 09 10 11.3 +1.0
KSP Ksiaz 79.70 328 eP P 09 10 11.4 +1.1
A30A Hoffart Farm, 79.75 35 P P 09 10 11.3 +0.7
baz=316,SNR=7.7
P18A Preston Nutter 79.77 48 eP P 09 10 12.8 +1.5
comp=Z,26nm,1.4s
F26A Lodgepole 79.81 39 P P 09 10 11.2 +0.2
baz=314
ULM Lac du Bonnet 79.88 33 P P 09 10 10.9 -0.4
comp=Z,4.4nm,0.8s,baz=322,slow=7.5,SNR=5.5
G25A Newell 79.88 40 P P 09 10 11.4 -0.1
baz=313
K22A Casper 79.93 44 P P 09 10 12.5 +0.6
baz=312
K22A Casper 79.93 44 eP P 09 10 14.8 +2.8
comp=Z,6.1nm,0.8s
SRU San Rafael Swe 79.94 48 eP P 09 10 13.3 +1.2
SRU pmax pmax
comp=Z,12nm,0.6s
SRU San Rafael Swe 79.94 48 eP P 09 10 13.2 +1.2
comp=Z,12nm,0.6s
MORC Moravsky Berou 79.95 326 eP P 09 10 12.2 +0.5
MORC pmax pmax
comp=Z,40nm,1.0s
MORC Moravsky Berou 79.95 326 eP P 09 10 12.2 +0.5
comp=Z,40nm,1.0s
E27A Carson 79.97 38 P P 09 10 12.5 +0.7
baz=314,SNR=6.7
RAYN Ar Rayn 79.98 292 eP P 09 10 12.3 0.0
comp=Z,32nm,1.7s
DPC Dobruska-Polom 80.06 327 eP P 09 10 13.0 +0.7
DPC Dobruska-Polom 80.06 327 eP P 09 10 13.0 +0.7
UPC Upice 80.07 328 eP P 09 10 12.9 +0.6
UPC Upice 80.07 328 eP P 09 10 12.9 +0.6
MONP2 Monument Peak 80.08 56 P P 09 10 13.3 +0.3
baz=308
B30A Myrvik Farm, E 80.09 35 P P 09 10 13.0 +0.6
baz=316
F27A Lemmon 80.12 39 P P 09 10 13.2 +0.4
baz=314
IRM Iron Mountain 80.15 55 P P 09 10 13.2 +0.1
baz=308
H25A Fruitdale 80.18 41 P P 09 10 13.1 0.0
baz=313
G26A Maurine 80.23 40 P P 09 10 13.6 +0.3
baz=314,SNR=8.2
BC3 Big Chuckawall 80.26 55 P P 09 10 14.2 +0.4
baz=308
RSSD Black Hills 80.29 41 P P 09 10 14.2 +0.3
baz=313
RSSD Black Hills 80.29 41 eP P 09 10 14.5 +0.6
RSSD pmax pmax
comp=Z,7.0nm,1.0s
RSSD Black Hills 80.29 41 eP P 09 10 14.5 +0.6
comp=Z,6.8nm,1.0s
E28A Huff 80.29 38 P P 09 10 13.9 +0.3
baz=315
VYHS Vyhne 80.30 325 eP P 09 10 14.5 +0.9
VYHS Vyhne 80.30 325 eP P 09 10 14.5 +0.9
W13A Hualapai Mount 80.38 53 eP P 09 10 15.9 +1.3
comp=Z,6.0nm,1.0s
B31A Greenbush Farm 80.42 35 P P 09 10 14.4 +0.2
baz=317
IBP Imperial Bould 80.45 56 P P 09 10 15.4 +0.6
baz=308
SWSC Sam W. Stewart 80.47 56 P P 09 10 15.0 +0.2
baz=308
G27A Dupree 80.51 39 P P 09 10 15.1 +0.3
baz=314
I25A Rochford 80.52 41 P P 09 10 15.3 +0.2
baz=313
C30A Mose, Pekin 80.56 36 P P 09 10 15.3 +0.3
baz=316
U15A North Rim 80.56 51 eP P 09 10 17.3 +1.7
comp=Z,54nm,1.8s
A32A Rocking H Ranc 80.58 34 P P 09 10 15.0 -0.1
baz=317
GZR Gura Zlata 80.60 321⇑ iP P 09 10 13.5 -1.8
H26A Fairpoint 80.61 40 P P 09 10 15.6 +0.2
baz=314
O20A White River Ci 80.62 46 P P 09 10 15.9 +0.2
baz=311
O20A White River Ci 80.62 46 eP P 09 10 16.7 +1.0
comp=Z,37nm,1.7s
BRG Berggiesshubel 80.67 329 eP P 09 10 15.8 +0.3
comp=Z,8.4nm,0.9s
BRG Berggiesshubel 80.67 329 eP P 09 10 15.8 +0.3
BRG pmax pmax
comp=Z,8.0nm,0.9s
PVCC Panska Ves 80.67 328 eP P 09 10 15.6 +0.1
PVCC Panska Ves 80.67 328 eP P 09 10 15.6 +0.1
PDMCI Parker Dam,Lak 80.71 54 P P 09 10 16.5 +0.4
baz=309
CLL Collm 80.72 330 iP P 09 10 15.8 +0.1
comp=Z,15nm,1.0s
CLL i 09 10 18.3
CLL Collm 80.72 330 iP P 09 10 15.8 +0.1
CLL pmax pmax
comp=Z,15nm,1.0s
F28A McLaughlin 80.75 38 P P 09 10 16.4 +0.3
baz=315
Y12C Blythe 80.81 55 P P 09 10 17.1 +0.6
baz=309
C31A Landman Farms, 80.84 36 P P 09 10 16.5 +0.1
baz=317
D30A Buchanan 80.85 36 P P 09 10 16.4 -0.2
baz=316
B32A Ashes, Strandq 80.95 34 P P 09 10 16.6 -0.4
baz=317,SNR=10
H27A Howes 80.96 40 P P 09 10 17.8 +0.5
baz=314
I26A New Underwood 80.97 41 P P 09 10 17.9 +0.5
baz=314,SNR=6.9
GOPC GO Pecny, Ondr 81.04 328 eP P 09 10 18.2 +0.7
GOPC GO Pecny, Ondr 81.04 328 eP P 09 10 18.2 +0.7
GLA Glamis 81.04 55 P P 09 10 17.7 -0.3
baz=309
GLA Glamis 81.04 55 eP P 09 10 19.3 +1.4
pmax pmax
GLA comp=Z,27nm,1.5s
GLA Glamis 81.04 55 eP P 09 10 19.3 +1.4
comp=Z,27nm,1.5s
A33A Warroad 81.06 34 P P 09 10 17.2 -0.5
baz=318
PRU Pruhonice 81.09 328 eP P 09 10 18.2 +0.4
PRU ex x 09 10 20.9
PRU Pruhonice 81.09 328 eP P 09 10 18.2 +0.4
PV09 Paradox Valley 81.16 48 eP P 09 10 20.7 +1.9
TREC Trest 81.20 327 eP P 09 10 18.5 +0.1
TREC Trest 81.20 327 eP P 09 10 18.5 +0.1
E30A Jud 81.21 37 P P 09 10 18.9 +0.4
baz=316
G28A Parade 81.24 39 P P 09 10 19.4 +0.7
baz=315
PV10 Paradox Valley 81.30 48 eP P 09 10 21.3 +1.8
AGMN Agassiz Nation 81.32 34 P P 09 10 18.5 -0.6
baz=318
J26A Sides Ranch, S 81.35 41 P P 09 10 19.5 +0.1
baz=314
I27A Quinn 81.36 40 P P 09 10 19.6 +0.1
baz=314
N23A Red Feather La 81.43 45 P P 09 10 19.0 -1.1
baz=312
N23A Red Feather La 81.43 45 eP P 09 10 21.2 +1.1
comp=Z,26nm,1.6s
PV05 Paradox Valley 81.45 48 eP P 09 10 21.9 +1.6
B33A Robert and Kas 81.47 34 P P 09 10 19.5 -0.3
baz=318
H28A Mission Ridge 81.47 39 P P 09 10 20.7 +0.8
baz=315
D32A Dogwood Acres, 81.65 36 P P 09 10 21.0 +0.2
baz=317
G29A Hoven 81.65 38 P P 09 10 21.1 +0.2
baz=316
E31A Nome 81.66 36 P P 09 10 20.9 0.0
baz=317
Y14A Wickenburg 81.68 54 eP P 09 10 22.6 +1.4
comp=Z,43nm,1.0s
WUAZ Wupatki 81.71 52 P P 09 10 22.7 +1.1
baz=310,SNR=8.5
WUAZ Wupatki 81.71 52 eP P 09 10 23.3 +1.8
comp=Z,15nm,1.0s
B34A Aery, Baudette 81.72 33 P P 09 10 20.6 -0.6
baz=319
PV01 Paradox Valley 81.73 48 eP P 09 10 23.1 +1.3
C33A Trail 81.76 35 P P 09 10 21.2 -0.2
baz=318
I28A Midland 81.86 40 P P 09 10 22.6 +0.5
baz=315,SNR=7.3
H29A Onida 81.91 39 P P 09 10 22.4 +0.2
baz=315
J27A Elkhorn Farm, 81.95 41 P P 09 10 23.5 +0.8
baz=314
SMCO Snowmass 81.98 46 eP P 09 10 24.6 +1.3
comp=Z,26nm,1.8s
F31A Hecla 81.99 37 P P 09 10 22.8 +0.2
baz=316
G30A Faulkton 82.08 38 P P 09 10 23.4 +0.3
baz=316
KHC Kasperske Hory 82.15 328 eP P 09 10 23.7 +0.3
KHC ePCP pP 09 10 26.3 -0.7
KHC Kasperske Hory 82.15 328 eP P 09 10 23.7 +0.3
D33A AnnSam, Waubun 82.19 35 P P 09 10 23.3 -0.4
baz=318
B35A Bob, Littlefor 82.22 33 P P 09 10 23.4 -0.4
baz=319
C34A RKJ Ranch, Bem 82.23 34 P P 09 10 23.5 -0.4
baz=318
J28A Allard Ranch, 82.23 40 P P 09 10 24.7 +0.6
baz=315
GERES GERESS Array B 82.31 328 P P 09 10 24.2 -0.2
comp=Z,3.2nm,0.4s,baz=37,slow=6.4,SNR=23
GEA0 GERESS Array S 82.32 328 eP P 09 10 24.2 -0.2
VTS Vitosha 82.33 319⇑ iP P 09 10 25.6 +1.0
ISCO Idaho Springs 82.35 45 eP P 09 10 26.5 +1.4
ISCO pmax pmax
comp=Z,4.0nm,0.8s
ISCO Idaho Springs 82.35 45 eP P 09 10 26.5 +1.4
comp=Z,4.4nm,0.8s
X16A Lo Mia Camp, P 82.37 52 eP P 09 10 25.7 +0.6
comp=Z,8.9nm,1.0s
MVCO Mesa Verde 82.38 49 P P 09 10 26.3 +1.1
baz=311
D34A Park Rapids 82.53 35 P P 09 10 25.3 -0.1
baz=318
E33A Westby DABS, E 82.59 36 P P 09 10 25.8 0.0
baz=318,SNR=6.7
C35A Jirik Farms, M 82.61 34 P P 09 10 25.2 -0.6
baz=319
J29A Okreek 82.72 40 P P 09 10 26.8 +0.3
baz=315
G32A Webster 82.80 37 P P 09 10 27.8 +0.9
baz=317
I30A Oacoma 82.81 39 P P 09 10 27.3 +0.3
baz=316
H31A Wolsey 82.88 38 P P 09 10 27.4 0.0
baz=316
F33A 5 Mile Ranch, 82.94 36 P P 09 10 27.6 0.0
baz=318
S22A 4UR Ranch, Cre 83.02 47 P P 09 10 29.6 +1.0
baz=312
D35A Remer 83.05 34 P P 09 10 27.6 -0.5
baz=319
214A Organ Pipe Nat 83.06 55 P P 09 10 29.1 +0.6
baz=310
C36A Pine Crest Far 83.07 33 P P 09 10 27.8 -0.4
baz=320
Q24A Divide 83.18 46 P P 09 10 29.6 +0.2
baz=313
J30A Dallas 83.20 40 P P 09 10 28.8 -0.2
baz=316
E35A Pequot Lakes 83.28 35 P P 09 10 29.2 -0.1
baz=319
G33A Ortonville 83.35 37 P P 09 10 29.7 0.0
baz=318,SNR=6.3
D36A Goodland 83.37 34 P P 09 10 29.4 -0.4
baz=320
C37A Embarrass 83.38 33 P P 09 10 29.9 +0.1
baz=320
F34A Alexandria 83.46 36 P P 09 10 30.5 +0.2
baz=318
EYMN Ely 83.50 32 P P 09 10 30.4 0.0
baz=321
H33A Prehn Over Nor 83.58 37 P P 09 10 31.4 +0.5
baz=318,SNR=8.4
K30A Basset 83.61 40 P P 09 10 31.4 +0.2
baz=316
G34A Benson 83.69 36 P P 09 10 31.9 +0.4
baz=318
F35A Swanville 83.73 35 P P 09 10 31.5 -0.1
baz=319
C38A Sawbill Land. 83.78 32 P P 09 10 31.7 -0.2
baz=321
SDCO Great Sand Dun 83.80 47 eP P 09 10 33.7 +1.2
comp=Z,20nm,1.8s
E36A McGregor 83.83 34 P P 09 10 32.2 0.0
baz=320
J32A Parkston 84.00 39 P P 09 10 33.1 0.0
baz=317
H34A Spellman Lake, 84.06 37 P P 09 10 33.6 +0.3
baz=318
K31A O'Neill 84.08 40 P P 09 10 34.3 +0.7
baz=316
TUC Tucson 84.15 54 P P 09 10 35.0 +0.9
baz=311
TUC Tucson 84.15 54 eP P 09 10 35.0 +0.9
TUC pmax pmax
comp=Z,5.0nm,0.9s
TUC Tucson 84.15 54 eP P 09 10 35.0 +0.9
comp=Z,5.4nm,0.9s
G35A Watkins 84.25 36 P P 09 10 34.7 +0.4
baz=319
ECSD EROS Data Cent 84.34 38 P P 09 10 35.0 +0.1
baz=318,SNR=6.9

ECSD	**EROS Data Cent**	84.34	38	*e*P		P	09 10 35.2	+0.4
	comp=Z,7.9nm,0.8s							
L31A	**Butterfield Fa**	84.36	40	P		P	09 10 35.1	+0.1
	baz=316							
H35A	**Sunnyside Ranc**	84.48	36	P		P	09 10 35.9	+0.4
	baz=319,SNR=7.1							
KSCO	**Kaye Shedlock'**	84.57	44	P		P	09 10 37.0	+0.8
	baz=314							
T25A	**Trinidad**	84.85	47	P		P	09 10 38.7	+0.9
	baz=314,SNR=7.8							
T25A	**Trinidad**	84.85	47	*e*P		P	09 10 38.9	+1.1
	comp=Z,8.2nm,0.8s							
BFO	**Black Forest**	84.93	330	*e*P		P	09 10 37.9	+0.1
BFO				pmax		pmax		
	comp=Z,31nm,0.7s							
BFO	**Black Forest**	84.93	330	*e*P		P	09 10 37.9	+0.1
	comp=Z,31nm,0.7s							
K33A	**Hardington**	84.98	39	P		P	09 10 38.5	+0.4
	baz=318							
H36A	**Jessenland, He**	85.00	36	P		P	09 10 38.5	+0.4
	baz=319							
ANMO	**Albuquerque**	85.12	49	P		P	09 10 40.4	+1.3
	baz=312							
ANMO	**Albuquerque**	85.12	49	*ce*P		P	09 10 41.1	+1.9
ANMO				pmax		pmax		
	comp=Z,10.0nm,1.2s							
ANMO	**Albuquerque**	85.12	49	*e*P		P	09 10 40.7	+1.5
	comp=Z,8.6nm,1.1s							
K34A	**Le Mars**	85.37	38	P		P	09 10 40.4	+0.4
	baz=318							
H37A	**Dierke Farm, C**	85.46	35	P		P	09 10 40.4	0.0
	baz=320							
FUORN	**Ofenpass-Fuorn**	85.50	328	*e*P		P	09 10 41.3	+0.4
	comp=Z,9.8nm,0.7s							
SCHQ	**Schefferville**	85.51	15	P		P	09 10 39.8	-0.7
	comp=Z,3.7nm,0.7s,baz=1.8,slow=5.5,SNR=6.2							
BNM	**Barren Site**	85.55	50	*e*P		P	09 10 42.8	+1.4
I37A	**Lemond, Waseca**	85.67	36	P		P	09 10 42.0	+0.5
	baz=320							
319A	**Douglas**	85.72	54	*e*P		P	09 10 43.9	+1.8
L34A	**Svendsen Farm,**	85.77	39	P		P	09 10 42.7	+0.7
	baz=318							
121A	**Cookes Peak, D**	85.91	52	P		P	09 10 43.8	+0.7
	baz=312							
J37A	**Redenius Farm,**	86.13	36	P		P	09 10 44.1	+0.3
	baz=320							
I38A	**Scanlan Farm,**	86.15	35	P		P	09 10 44.1	+0.2
	baz=320							
LAST	**Lasithi**	86.18	312	*e*P		P	09 10 44.2	-0.1
	comp=Z,24nm,0.9s							
K36A	**Gilmore City**	86.21	37	P		P	09 10 44.3	+0.1
	baz=319							
P32A	**Huiting Farm,**	86.33	42	P		P	09 10 44.6	-0.3
	baz=317							
IDI	**Anoyia**	86.44	312	*e*P		P	09 10 44.8	-0.8
	comp=Z,65nm,1.6s							
M35A	**Neola**	86.48	39	P		P	09 10 45.9	+0.4
	baz=318							
K37A	**Belmond**	86.51	37	P		P	09 10 45.5	-0.2
	baz=320							
N34A	**Lincoln**	86.54	40	P		P	09 10 45.7	-0.1
	baz=318							
M36A	**Felix, Anita**	86.93	38	P		P	09 10 47.9	+0.1
	baz=319							
P33A	**Williams Farm,**	86.95	41	P		P	09 10 48.3	+0.4
	baz=317							
N35A	**Tabor**	86.95	39	P		P	09 10 48.1	+0.2
	baz=318							
R32A	**Long Quarter,**	87.14	43	P		P	09 10 49.6	+0.7
	baz=317							
Q33A	**Connelly Farm,**	87.20	42	P		P	09 10 49.1	0.0
	baz=317							
L38A	**Oak Wood Farm,**	87.31	37	P		P	09 10 49.8	+0.2
	baz=320							
P34A	**Walnut Farm, R**	87.32	41	P		P	09 10 49.4	-0.3
	baz=318							
N36A	**Muff Farm, Cla**	87.33	39	P		P	09 10 49.6	-0.2
	baz=319							
S32A	**Newby Ranch, P**	87.54	43	P		P	09 10 51.1	+0.2
	baz=317							
R33A	**Olander Ranch,**	87.62	42	P		P	09 10 51.0	-0.1
	baz=317							
Q34A	**Chapman**	87.72	41	P		P	09 10 51.6	0.0
	baz=318							
M38A	**Pleasantville**	87.75	37	P		P	09 10 51.6	0.0
	baz=320							
KSU1	**Kansas State U**	87.77	41	P		P	09 10 51.7	-0.1
	baz=318							
O36A	**Bolckow**	87.84	39	P		P	09 10 52.4	+0.2
	baz=319							
T32A	**Huddler Ranch,**	87.93	43	P		P	09 10 52.2	-0.5
	baz=317							
MNTX	**Cornudas Mount**	87.98	51	P		P	09 10 53.1	+0.1
	baz=313							
MNTX	**Cornudas Mount**	87.98	51	*e*P		P	09 10 53.8	+0.8
	comp=Z,6.2nm,1.3s							
MSTX	**Muleshoe**	88.00	48	P		P	09 10 52.9	-0.3
	baz=314							
P36A	**Good Intent, A**	88.10	40	P		P	09 10 53.8	+0.3
	baz=319							
N38A	**Joes South For**	88.20	38	P		P	09 10 54.3	+0.4
	baz=320							
N39A	**Derby Farms, D**	88.50	37	P		P	09 10 55.7	+0.4
	baz=320							
S34A	**Willow Spring**	88.53	42	P		P	09 10 55.9	+0.3
	baz=318							
R35A	**Emporia Munici**	88.56	41	P		P	09 10 56.4	+0.8
	baz=318							
P37A	**Lathrop**	88.56	39	P		P	09 10 56.2	+0.6
	baz=319							
VLDQ	**Val d'Or**	88.70	24	*e*P		P	09 10 55.5	-0.5
	comp=Z,48nm,1.6s							
V32A	**Arapaho**	88.92	45	P		P	09 10 58.6	+1.2
	baz=317							
P38A	**Dawn**	88.95	39	P		P	09 10 57.7	+0.3
	baz=320							
S35A	**Otter Creek Ra**	88.97	42	P		P	09 10 58.6	+1.1
	baz=318							
W32A	**Sentinel**	89.23	45	P		P	09 10 59.5	+0.6
	baz=316							
V33A	**Lossen Ranch,**	89.27	44	P		P	09 10 59.4	+0.4
	baz=317							
P39A	**Salisbury**	89.44	38	P		P	09 10 59.3	-0.4
	baz=320							
T36A	**Boggs Farm, Ca**	89.67	42	P		P	09 11 01.2	+0.4
	baz=318							
Q39A	**Willow Grove F**	89.67	39	P		P	09 11 01.0	+0.2
	baz=320							
V34A	**Guthrie**	89.68	44	P		P	09 11 01.4	+0.5
	baz=317							
S37A	**Fort Scott**	89.70	41	P		P	09 11 01.3	+0.3
	baz=319							
X32A	**Elmer**	89.72	46	P		P	09 11 01.5	+0.4
	baz=316							
P40A	**Paris**	89.76	38	P		P	09 11 01.1	-0.1
	baz=321							
V35A	**Meyer Ranch, C**	90.11	43	P		P	09 11 03.0	+0.1
	baz=318							
T37A	**Chenoweth 18**	90.13	41	P		P	09 11 03.2	+0.2
	baz=319							
Q40A	**Laux Farm, Aux**	90.16	38	P		P	09 11 03.9	+0.8
	baz=321							
R39A	**Chumby, Stover**	90.20	39	P		P	09 11 03.3	+0.1
	baz=320							
U36A	**Oologah**	90.24	42	P		P	09 11 03.2	-0.3
	baz=318							
S38A	**Stockton**	90.27	40	P		P	09 11 03.2	-0.4
	baz=320							
X34A	**Smith Ranch, M**	90.41	45	P		P	09 11 04.7	+0.4
	baz=317							
T38A	**Diamond**	90.52	41	P		P	09 11 04.4	-0.4
	baz=319							
S39A	**Bolivar**	90.53	40	P		P	09 11 04.4	-0.4
	baz=320							
W35A	**Tecumseh**	90.54	44	P		P	09 11 04.7	-0.3
	baz=318							
U37A	**Salina**	90.56	42	P		P	09 11 04.5	-0.5
	baz=319							
TUL1	**Leonard**	90.57	42	P		P	09 11 04.5	-0.5
	baz=318							
V36A	**Jenks**	90.58	43	P		P	09 11 04.5	-0.6
	baz=318							
R40A	**Maddies Statio**	90.60	39	P		P	09 11 05.5	+0.3
	baz=321							
TX31	**Lajitas Ar. Si**	90.67	52	*e*P		P	09 11 06.8	+1.0
LTX	**Lajitas**	90.67	52	*e*P		P	09 11 06.6	+0.8
LTX	**Lajitas**	90.67	52	*e*P		P	09 11 06.6	+0.8
TXAR	**Lajitas Array**	90.67	52	P		P	09 11 06.6	+0.8
	comp=Z,3.4nm,0.6s,baz=303,slow=2.9,SNR=37							
TXAR					PKKPbc	**PKKPbc**	09 28 32.0	+1.2
	comp=Z,0.3nm,0.8s,baz=148,slow=3.9,SNR=3.8							
ABTX	**Abilene, Hawle**	90.80	47	P		P	09 11 06.7	+0.5
	baz=316							
Z33A	**Whitaker Ranch**	90.83	46	P		P	09 11 06.4	0.0
	baz=317							
W36A	**Wetumka**	90.90	43	P		P	09 11 06.6	0.0
	baz=318							
Y34A	**Reagan Ranch,**	90.92	45	P		P	09 11 06.7	0.0
	baz=317							
U38A	**Gravette**	90.92	41	P		P	09 11 06.4	-0.3
	baz=319							
V37A	**Hulbert**	90.94	42	P		P	09 11 06.9	+0.1
	baz=319							
T39A	**Clever**	91.01	40	P		P	09 11 06.8	-0.3
	baz=320							
S40A	**Lebanon**	91.02	39	P		P	09 11 06.4	-0.7
	baz=320							
X35A	**Drake**	91.04	44	P		P	09 11 06.4	-0.9
	baz=318							
133A	**Hamilton Ranch**	91.24	47	P		P	09 11 08.2	0.0
	baz=317							
X36A	**Centrahoma**	91.26	44	P		P	09 11 08.5	+0.2
	baz=318							
Z34A	**Collier Ranch,**	91.26	45	P		P	09 11 08.4	+0.1
	baz=317							
W37B	**Quinton**	91.34	43	P		P	09 11 09.0	+0.3
	baz=319							
V38A	**Canehill**	91.35	42	P		P	09 11 08.7	0.0
	baz=319							
SFIN	**Lafayette**	91.42	34	P		P	09 11 08.4	-0.5
	baz=324							
U39A	**Green Forest**	91.44	41	P		P	09 11 07.8	-1.3
	baz=320							
Z35A	**Perchaven, San**	91.67	45	P		P	09 11 10.2	0.0
	baz=318							
233A	**Rising Star**	91.67	47	P		P	09 11 10.4	+0.1
	baz=317							
V39A	**Pettigrew**	91.77	41	P		P	09 11 10.7	0.0
	baz=320							
U40A	**Yellville**	91.79	40	P		P	09 11 10.5	-0.2
	baz=320							
Y36A	**Durant**	91.79	44	P		P	09 11 11.5	+0.7
	baz=318							
X38A	**Whitesboro**	92.02	43	P		P	09 11 12.1	+0.3
	baz=319							
234A	**Clairette**	92.13	47	P		P	09 11 12.7	+0.3
	baz=317							
135A	**Vickery Place,**	92.14	46	P		P	09 11 13.0	+0.6
	baz=318							
Z36A	**Blue Ridge**	92.17	45	P		P	09 11 12.8	+0.2
	baz=318							
V40A	**Witts Springs**	92.22	41	P		P	09 11 12.4	-0.4
	baz=320							
JCT	**Junction City**	92.25	49	P		P	09 11 13.2	+0.2
	baz=316							
JCT	**Junction City**	92.25	49	*e*P		P	09 11 13.9	+0.9
JCT				pmax		pmax		
	comp=Z,6.0nm,0.8s							
JCT	**Junction City**	92.25	49	*e*P		P	09 11 13.9	+0.9
	comp=Z,5.5nm,0.8s							
433A	**Art**	92.47	48	P		P	09 11 14.1	+0.1
	baz=316							
X39A	**Fountain Ranch**	92.52	42	P		P	09 11 14.3	+0.2
	baz=319							
334A	**Lometa**	92.56	47	P		P	09 11 14.5	+0.1
	baz=317							
W40A	**Ferguson Farm,**	92.56	41	P		P	09 11 14.0	-0.3
	baz=320							
Z37A	**Pogue Cattle C**	92.68	44	P		P	09 11 16.6	+1.7
	baz=318							
MIAR	**Mount Ida**	92.79	42	P		P	09 11 15.6	+0.3
	baz=320							
434A	**Burnet**	92.92	47	P		P	09 11 15.9	-0.2
	baz=317							
533A	**Kerrville**	93.00	48	P		P	09 11 16.4	0.0
	baz=316							
W41B	**Gary Mavity, V**	93.01	41	P		P	09 11 16.0	-0.3
	baz=321							
M54A	**Oil Creek Stat**	93.61	29	P		P	09 11 19.4	+0.3
	baz=329							
ESDC	**Sonseca Array**	96.95	333	P		P	09 11 34.2	-0.2
	comp=Z,1.1nm,0.8s,baz=12,slow=4.2,SNR=2.9							
VNDA	**Vanda**	115.06	175	PKP		**PKPdf**	09 16 42.4	-0.2
	comp=Z,0.8nm,0.7s,baz=325,slow=5.3,SNR=10							
TOA1	**Torodi Ar. Sit**	116.80	314	*e*PKPdf		**PKPdf**	09 16 47.0	-0.7
TOA0	**Torodi Ar. Sit**	116.80	314	*e*PKPdf		**PKPdf**	09 16 47.2	-0.6
TORD	**Torodi Ar. Bea**	116.80	314	PKP		**PKPdf**	09 16 47.0	-0.7
	comp=Z,0.7nm,0.5s,baz=16,slow=1.4,SNR=17							
TORD				PP		**PP**	09 17 51.6	-3.7
	comp=Z,2.9nm,1.2s,baz=41,slow=7.6,SNR=5.7							
TORD				PKKPbc		**PKKPbc**	09 27 14.9	+2.0
	comp=Z,1.3nm,0.8s,baz=217,slow=2.3,SNR=5.6							
MAW	**Mawson**	119.25	205	PKP		**PKPdf**	09 16 51.0	+0.2
	comp=Z,3.3nm,0.8s,baz=13,slow=2.9,SNR=4.6							
MAW	**Mawson**	119.25	205	PKIKP		**PKPdf**	09 16 51.0	+0.2
MAW				pmax		pmax		
	comp=Z,3.0nm,0.8s							
SDV	**Santo Domingo**	125.77	39	*e*PKPdf		**PKPdf**	09 17 05.5	+0.2
DBIC	**Dimbokro**	125.78	316	PKP		**PKPdf**	09 17 04.7	-0.4
	comp=Z,3.0nm,0.6s,baz=34,slow=3.1,SNR=10							
BOSA	**Boshof**	125.87	259	PKP		**PKPdf**	09 17 05.2	+0.3
	comp=Z,3.3nm,0.8s,baz=80,slow=3.0,SNR=5.0							
QSPA	**South Pole Qui**	126.80	180	*e*PKPdf		**PKPdf**	09 17 05.1	-0.3
SNAA	**Sanae**	140.56	197	PKP		PKPpre	09 17 23.0	
VNA2	**Neumayer--Watz**	142.14	197	PKP		PKPpre	09 17 28.9	
	baz=180,slow=2.6							
VNA3	**Neumayer Olymp**	142.40	195	PKP		PKPpre	09 17 27.6	
SAML	**Samuel**	144.73	43	*e*PKPdf		**PKPab**	09 17 39.0	+0.1
LPAZ	**La Paz**	147.30	58	PKPbc		**PKPbc**	09 17 46.9	-0.7
	baz=340,slow=3.4,SNR=47							
PB01	**IPOC Station P**	149.47	67	*e*PKPdf		**PKPdf**	09 17 46.1	-1.9
PB01				*e*PKPbc		**PKiKP**	09 17 53.3	-0.2
PB01				*e*PKPab		**PKPab**	09 17 58.0	+0.8
PLCA	**Paso Flores**	155.61	108	PKPab		**PKPab**	09 18 23.6	+1.0
	comp=Z,3.4nm,0.9s,baz=300,slow=5.5,SNR=6.5							
BDFB	**Brasilia**	157.37	22	PKPab		**PKPab**	09 18 29.1	-1.4
	comp=Z,1.4nm,0.5s,baz=103,slow=19,SNR=3.0							

*ISCJB **11** 08:59:45.0±0.4, 37.01N±0.02×140.79E±0.04, h20km±2km, mb4.7/57, Error ellipse: s-maj=5.3km s-min=3.5km az=30.5*
*JMA **11** 08:59:45.3, 36.99N×140.73E, h12km±1km, M4.8*
JMA Felt IV J1.
*MOS **11** 08:59:48.8±0.9, 37.29N×140.69E, h39km, mb4.9/38, Error ellipse: s-maj=9.5km s-min=7.0km az=90.3*
*IDC **11** 08:59:49.6±2.5, 37.07N×140.63E, h41km±22km, mb4.4/28, mb1 4.6/29, mb1mx4.4/47, mbtmp4.7/29, ML4.0/1, Error ellipse: s-maj=14.6km s-min=12.9km az=104.0*
*NEIC **11** 08:59:50.7±0.7, 37.08N×140.60E, h50km±6km, mb4.7/25, Error ellipse: s-maj=6.3km s-min=4.9km az=123.0*
ISC 11 08:59:45.1±0.9, 37.02N±0.03×140.65E±0.03, h12km±5km, n131, σ0.995/137, mb4.8/57, 4C-2D, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	0.15	55	P		P	**Pg**	08 59 48.6	0.0
ONAJ				S		S	**Sg**	08 59 50.8	-0.4
JFK	**Kawauchi**	0.40	28	P		P	**Pg**	08 59 53.1	+0.1
JFK				S		S	**Sg**	08 59 58.6	+0.3
JHO	**Hitachi**	0.41	189	⇑P		P	**Pg**	08 59 53.2	0.0
JHO				S		S	**Sg**	08 59 58.7	+0.1
JFT	**Otama**	0.56	334	P		P	**Pb**	08 59 57.3	+0.4
JFT				S		S	**Sb**	09 00 05.6	+0.8
JSB	**Shiboa**	0.58	266	P		P	**Pn**	08 59 58.3	-0.9
JSB				S		S	**Sn**	09 00 07.2	-1.5
JFY	**Yanaizu**	0.85	298	P		P	**Pn**	09 00 02.8	-0.1
JFY				S		S	**Sn**	09 00 14.4	-0.9
JMM	**Marumori**	0.86	8	⇑P		P	**Pg**	09 00 01.6	0.0
JMM				S		S	**Sg**	09 00 13.1	+0.3
JYT	**Yasato**	0.87	205	P		P	**Pg**	09 00 01.7	-0.1
JYT				S		S	**Sb**	09 00 13.2	-0.4
MJAR	**Matsushiro Arr**	2.01	257	P		P	**Pb**	09 00 21.4	-0.2
	182nm,0.3s,baz=95,slow=15,SNR=5.6								
MJAR				S		S	**Sb**	09 00 47.2	+0.6
	237nm,0.3s,baz=91,slow=28,SNR=7.1								
MAJO	**Matsushiro**	2.01	257	*e*P		P	**Pg**	09 00 23.3	-0.4
MAJO				*e*				09 00 49.0	
MAJO	**Matsushiro**	2.01	257	*e*Pn		P	**Pg**	09 00 23.3	-0.4
MAJO				*e*Sn		S	**Sg**	09 00 49.0	-0.8
MAT	**Matsushiro**	2.01	257	P		P	**Pb**	09 00 21.3	-0.3
MAT				S		S	**Sb**	09 00 47.4	+0.7
JHJ	**Hachijo jima 2**	3.95	191	P		P	Pn	09 00 49.4	+3.8
	30nm,0.3s,baz=30,slow=20,SNR=1.5								
JHJ				S		S	**Sn**	09 01 28.6	-3.3
	36nm,0.3s,baz=233,slow=20,SNR=1.5								
JHJ2	**Mitsune**	3.95	190	*e*Pn		P	Pn	09 00 49.4	+3.8
JHJ2				*e*Sn		S	**Sn**	09 01 34.2	+2.3
YUK	**Yuzh-Kuril'sk**	8.06	28	*e*P		P	**Pn**	09 01 40.4	-1.5
YUK				*e*S		S	**Sn**	09 03 07.1	-5.8
SHO	**Shikotan**	8.31	33	P		P	Pn	09 01 41.6	-3.8
SHO				*i* S		S	Sn	09 03 10.5	-8.6
JNU	**Nakatsue**	8.90	247	P		P	Pn	09 01 58.3	+4.8
	0.8nm,0.3s,baz=61,slow=9.8,SNR=3.8								
JNU	**Nakatsue**	8.90	247	P		P	Pn	09 01 58.3	+4.8
USRK	**Ussuriysk Ar.**	9.73	320	P		P	Pn	09 02 09.9	+5.1
	1.5nm,0.3s,baz=136,slow=12,SNR=8.8								
JCJ	**Chichijima**	9.98	172	S		S	Sn	09 03 50.5	-10
	baz=287,slow=19								
YSS	**Yuzh-Sakhalins**	10.05	8	⇑*i*P		P	**Pn**	09 02 09.8	+0.6
YSS				pmax		pmax			
	comp=Z,70nm,0.8s								
YSS	**Yuzh-Sakhalins**	10.05	8	*e*Pn		P	**Pn**	09 02 09.9	+0.6
	comp=Z,75nm,0.8s								
KSRS	**Korea Array**	10.16	276	P		P	Pn	09 02 17.4	+6.7
	comp=Z,0.6nm,0.3s,baz=93,slow=14,SNR=7.6								
KSAR	**Wonju Array Be**	10.19	276	P		P	Pn	09 02 17.4	+6.3
KSAR	**Wonju Array Be**	10.19	276	P		P	Pn	09 02 17.4	+6.2
TYV	**Tymovskoe**	13.92	5	*e*P		P	**Pn**	09 03 02.2	+0.2
TYV				pmax		pmax			
	comp=Z,39nm,0.6s								
PET	**Petropavlovsk**	20.36	32	*e*P		P	**P**	09 04 21.3	+0.1
PET	**Petropavlovsk**	20.36	32	*e*P		P	**P**	09 04 21.3	+0.1
MA2	**Magadan**	23.50	13	P		P	**P**	09 04 53.9	-0.7
	comp=Z,30nm,0.7s,baz=228,slow=9.6,SNR=13								
MA2	**Magadan**	23.50	13	*e*P		P	**P**	09 04 54.6	0.0
SEY	**Seymchan**	26.93	12	P		P	**P**	09 05 27.0	+1.1
	comp=Z,38nm,1.1s,baz=209,slow=8.6,SNR=8.7								
SONM	**Songino Array**	27.29	304	P		P	**P**	09 05 30.1	+0.6
	comp=Z,5.9nm,0.6s,baz=106,slow=9.1,SNR=6.5								
SONM				PcP		**PcP**		09 08 49.5	+0.6
	comp=Z,2.9nm,0.6s,baz=136,slow=2.5,SNR=8.7								
H11N2	**WAKE ISLAND Hy**	28.67	120	T		T		09 35 29.3	
	baz=313,slow=75,SNR=140								
H11N1	**WAKE ISLAND Hy**	28.68	120	T		T		09 35 30.5	
	baz=313,slow=75,SNR=35								
H11N3	**WAKE ISLAND Hy**	28.69	120	T		T		09 35 30.7	
	baz=313,slow=75,SNR=56								
H11S1	**WAKE ISLAND Hy**	29.37	122	T		T		09 36 28.0	
	baz=314,slow=75,SNR=26								
H11S3	**WAKE ISLAND Hy**	29.37	122	T		T		09 36 22.0	
	baz=314,slow=75,SNR=20								
H11S2	**WAKE ISLAND Hy**	29.39	122	T		T		09 36 23.7	
	baz=314,slow=75,SNR=20								
BILL	**Bilibino**	34.22	17	⇑*e*P		P	**P**	09 06 29.8	-0.4
BILL				pmax		pmax			
	comp=Z,13nm,1.1s								
BILL	**Bilibino**	34.22	17	*e*P		P	**P**	09 06 30.1	-0.2
	comp=Z,8.8nm,0.9s								
TIXI	**Tiksi**	35.24	354	P		P	**P**	09 06 38.3	-0.7
	comp=Z,6.7nm,0.6s,baz=137,slow=6.0,SNR=6.0								
TIXI	**Tiksi**	35.24	354	*e*P		P	**P**	09 06 38.2	-0.7
	comp=Z,4.9nm,0.6s								
CMAR	**Chiang Mai Arr**	40.90	255	P		P	**P**	09 07 28.1	+0.7
	comp=Z,0.7nm,0.5s,baz=45,slow=8.6,SNR=3.1								
CMAR				PcP		**PcP**		09 09 28.6	+0.8
	comp=Z,1.1nm,0.3s,baz=60,slow=2.2,SNR=4.5								
ZALV	**Zalesovo Beam**	41.47	312	P		P	**P**	09 07 31.4	-0.2
	comp=Z,2.9nm,0.3s,baz=98,slow=29,SNR=8.3								
ZALV				PcP		**PcP**		09 09 29.0	-0.2
	comp=Z,5.4nm,0.5s,baz=106,slow=3.2,SNR=5.9								
NRIK	**Noril'sk**	43.03	335	P		P	**P**	09 07 44.0	-0.1
	comp=Z,4.2nm,0.5s,baz=124,slow=11,SNR=3.5								
MKAR	**Makanchi Array**	43.61	302	P		P	**P**	09 07 49.8	+0.6
	comp=Z,6.7nm,0.6s,baz=88,slow=10.0,SNR=11								
MKAR				PcP		**PcP**		09 09 36.2	-0.3
	comp=Z,2.9nm,0.8s,baz=77,slow=5.4,SNR=4.4								
KURK	**Kurchatov**	45.46	308	*e*P		P	**P**	09 08 03.1	-0.7
KURK				pmax		pmax			
	comp=Z,52nm,0.6s								
KURK	**Kurchatov**	45.46	308	*e*P		P	**P**	09 08 03.1	-0.7
	comp=Z,52nm,0.6s								
KURBB	**Kurchatov Arra**	45.53	308	P		P	**P**	09 08 04.3	-0.1
	comp=Z,18nm,0.8s,baz=83,slow=7.8								
TKM2	**Tokmak 2**	49.10	298	*e*P		P	**P**	09 08 33.5	+0.9
TKM2				pmax		pmax			
	comp=Z,8.0nm,0.6s								
TKM2	**Tokmak 2**	49.10	298	*e*P		P	**P**	09 08 33.5	+0.9
	comp=Z,8.1nm,0.6s								
ILAR	**Eielson Array**	49.84	32	P		P	**P**	09 08 37.7	0.0
	comp=Z,4.8nm,0.6s,baz=262,slow=5.4,SNR=12								
ILAR	**Eielson Array**	49.84	32	P		P	**P**	09 08 37.7	0.0
ILAR				pmax		pmax			
	comp=Z,4.0nm,0.6s								
BVAR	**Borovoye Array**	50.13	312	P		P	**P**	09 08 40.1	+0.1
	comp=Z,7.5nm,0.7s,baz=69,slow=8.1,SNR=6.2								
BVAR				PcP		**PcP**		09 09 59.7	+0.3
	comp=Z,4.6nm,0.6s,baz=43,slow=2.8,SNR=6.3								
BRVK	**Borovoye**	50.19	312	*e*P		P	**P**	09 08 40.8	+0.4
BRVK				pmax		pmax			
	comp=Z,15nm,0.8

FCC	**Fort Churchill**	**74.29**	**26**	*e*P		**P**	**09 11 22.1**	**+0.2**
FCC				pmax		pmax			
	comp=Z,16nm,1.1s								
FCC	**Fort Churchill**	**74.29**	**26**	*e*P		**P**	**09 11 22.1**	**+0.2**
	comp=Z,16nm,1.1s								
EGMT	**Eagleton**	**74.69**	**41**	*e*P		**P**	**09 11 25.3**	**+0.7**
	comp=Z,7.0nm,0.8s								
HLID	**Hailey**	**74.83**	**47**	*e*P		**P**	**09 11 26.7**	**+1.1**
	comp=Z,1.8nm,0.9s								
NVAR	**Mina Array Bea**	**75.49**	**53**	P		**P**	**09 11 30.5**	**+1.0**
	comp=Z,5.1nm,1.0s,baz=293,slow=5.9,SNR=4.8								
LKWY	**Lake**	**76.50**	**44**	*e*P		**P**	**09 11 36.3**	**+1.0**
LKWY				pmax		pmax			
	comp=Z,5.0nm,1.0s								
LKWY	**Lake**	**76.50**	**44**	*e*P		**P**	**09 11 36.3**	**+1.0**
	comp=Z,5.1nm,1.0s								
RAO	**Raoul Island**	**76.53**	**144**	P		**P**	**09 11 36.2**	**+1.2**
	comp=Z,319nm,0.3s,baz=15,slow=20,SNR=2.8								
IMW	**Indian Meadow**	**76.62**	**45**	*e*P		**P**	**09 11 38.0**	**+2.0**
MOOW	**Moose Ponds**	**76.82**	**45**	*e*P		**P**	**09 11 38.5**	**+1.5**
	comp=Z,2.3nm,1.1s								
SNOW	**Snow King Moun**	**77.00**	**45**	*e*P		**P**	**09 11 39.5**	**+1.4**
	comp=Z,2.9nm,0.8s								
DUG	**Dugway, Tooele**	**77.83**	**49**	*e*P		**P**	**09 11 43.8**	**+1.1**
DUG				pmax		pmax			
	comp=Z,5.0nm,1.0s								
DUG	**Dugway, Tooele**	**77.83**	**49**	*e*P		**P**	**09 11 43.8**	**+1.1**
	comp=Z,5.3nm,1.0s								
PDAR	**Pinedale Array**	**78.12**	**45**	P		**P**	**09 11 44.7**	**+0.4**
	comp=Z,1.8nm,0.7s,baz=252,slow=2.1,SNR=5.1								
BRTR	**Keskin Array B**	**78.40**	**311**	P		**P**	**09 11 46.1**	**+0.3**
	comp=Z,4.3nm,0.8s,baz=102,slow=3.5,SNR=8.1								
ULM	**Lac du Bonnet**	**79.85**	**33**	P		**P**	**09 11 52.9**	**-0.5**
	comp=Z,2.7nm,0.6s,baz=315,slow=4.3,SNR=3.7								
DPC	**Dobruska-Polom**	**80.14**	**328**	*e*P		**P**	**09 11 55.8**	**+0.8**
DPC	**Dobruska-Polom**	**80.14**	**328**	*e*P		**P**	**09 11 55.8**	**+0.8**
BRG	**Berggiesshubel**	**80.75**	**329**	*e*P		**P**	**09 11 58.5**	**+0.3**
	comp=Z,9.9nm,1.3s								
BRG	**Berggiesshubel**	**80.75**	**329**	*e*P		**P**	**09 11 58.5**	**+0.3**
BRG				pmax		pmax			
	comp=Z,10.0nm,1.3s								
CLL	**Collm**	**80.80**	**330**	⇓*i*P		**P**	**09 11 58.5**	**0.0**
	comp=Z,10.0nm,0.8s								
CLL				*e*			09 12 02.0		
CLL				*e*			09 12 30.0		
CLL	**Collm**	**80.80**	**330**	⇓*i*P		**P**	**09 11 58.5**	**0.0**
CLL				pmax		pmax			
	comp=Z,10.0nm,0.8s								
GOPC	**GO Pecny, Ondr**	**81.13**	**328**	*e*P		**P**	**09 12 01.0**	**+0.7**
GOPC	**GO Pecny, Ondr**	**81.13**	**328**	*e*P		**P**	**09 12 01.0**	**+0.7**
PRU	**Pruhonice**	**81.17**	**328**	*e*P		**P**	**09 12 01.2**	**+0.7**
PRU	**Pruhonice**	**81.17**	**328**	*e*P		**P**	**09 12 01.2**	**+0.7**
WUAZ	**Wupatki**	**81.66**	**52**	*e*P		**P**	**09 12 05.0**	**+1.4**
	comp=Z,6.6nm,1.0s								
PV01	**Paradox Valley**	**81.68**	**48**	*e*P		**P**	**09 12 04.6**	**+0.9**
	comp=Z,381nm,1.0s								
KHC	**Kasperske Hory**	**82.23**	**328**	*e*P		**P**	**09 12 06.5**	**+0.3**
KHC	**Kasperske Hory**	**82.23**	**328**	*e*P		**P**	**09 12 06.5**	**+0.3**
GERES	**GERESS Array B**	**82.40**	**328**	P		**P**	**09 12 07.0**	**-0.1**
	comp=Z,3.3nm,0.4s,baz=39,slow=6.1,SNR=18								
GERES	**GERESS Array B**	**82.40**	**328**	P		**P**	**09 12 07.0**	**-0.1**
GERES				pmax		pmax			
	comp=Z,3.0nm,0.4s								
ECSD	**EROS Data Cent**	**84.31**	**38**	*e*P		**P**	**09 12 16.8**	**-0.1**
	comp=Z,3.5nm,1.0s								
ANMO	**Albuquerque**	**85.07**	**49**	*e*P		**P**	**09 12 22.1**	**+0.9**
ANMO				pmax		pmax			
	comp=Z,3.0nm,1.0s								
ANMO	**Albuquerque**	**85.07**	**49**	*e*P		**P**	**09 12 22.1**	**+0.9**
	comp=Z,3.1nm,1.0s								
SCHQ	**Schefferville**	**85.52**	**16**	P		**P**	**09 12 23.0**	**+0.2**
	comp=Z,5.0nm,0.8s,baz=29,slow=6.5,SNR=4.8								
WMOK	**Wichita Mounta**	**89.73**	**45**	*e*P		**P**	**09 12 43.9**	**+0.4**
WMOK				pmax		pmax			
	comp=Z,7.0nm,0.6s								
WMOK	**Wichita Mounta**	**89.73**	**45**	*e*P		**P**	**09 12 43.9**	**+0.4**
	comp=Z,7.5nm,0.6s								
TXAR	**Lajitas Array**	**90.62**	**52**	P		**P**	**09 12 48.5**	**+0.8**
	comp=Z,2.4nm,0.8s,baz=302,slow=2.8,SNR=6.5								
TXAR				PP		**PP**	**09 16 20.5**	**-1.7**
	comp=Z,0.2nm,0.7s,baz=321,slow=7.1,SNR=2.7								
TORD	**Torodi Ar. Bea**	**116.91**	**314**	PKP		**PKPdf**	**09 18 29.6**	**-0.6**
	comp=Z,1.2nm,0.9s,baz=21,slow=1.9,SNR=4.3								
TORD				PP		**PP**	**09 19 34.3**	**-3.9**
	comp=Z,0.7nm,0.9s,baz=43,slow=5.2,SNR=2.8								
DBIC	**Dimbokro**	**125.88**	**316**	PKP		**PKPdf**	**09 18 47.1**	**-0.4**
	comp=Z,5.8nm,1.0s,baz=109,slow=2.9,SNR=6.1								
BOSA	**Boshof**	**125.97**	**259**	PKP		**PKPdf**	**09 18 46.9**	**-0.5**
	comp=Z,2.1nm,0.8s,baz=300,slow=4.6,SNR=3.9								
LPAZ	**La Paz**	**147.23**	**59**	PKPbc		**PKPbc**	**09 19 29.7**	**+0.2**
	comp=Z,6.9nm,0.7s,baz=314,slow=4.7,SNR=7.4								
LCO	**Las Campanas**	**152.62**	**82**	*e*PKPdf		**PKPdf**	**09 19 34.3**	**-0.8**
LCO				*e*PKPbc		**PKiKP**	**09 19 43.0**	**+0.7**

JMA 11 09:00:12.4, 36.99N×140.73E, h12km±1km, M4.5, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.12**	**26**	P	Pg	09 00 15.8	+0.2
ONAJ				S	Sg	09 00 18.2	+0.2
JFK	**Kawauchi**	**0.39**	**17**	P	Pg	09 00 20.2	-0.1
JFK				S	Sg	09 00 25.8	+0.3
JHO	**Hitachi**	**0.40**	**199**	P	Pg	09 00 20.1	-0.2
JHO				S	Sg	09 00 25.7	0.0
JFT	**Otama**	**0.61**	**329**	S	Sb	09 00 33.3	-0.4
JSB	**Shiboa**	**0.65**	**268**	P	Pb	09 00 25.6	-0.1
JSB				S	Sb	09 00 34.6	-0.1
JYT	**Yasato**	**0.88**	**210**	S	Sb	09 00 41.4	+0.3
JMM	**Marumori**	**0.88**	**3**	P	Pg	09 00 29.2	-0.1
JMM				*e*S	Sg	09 00 40.3	-0.5

OBM 11 09:01:11.2±0.2, 40.44N×104.61E, h15km, MI3.8, Error ellipse: s-maj=17.4km s-min=3.6km az=89.0, Western Nei Mongol

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
DZBM		**3.37**	**359**	*e*Pg	Pb	09 02 12.6	+1.9
	baz=179						
DZBM		**3.37**	**359**	*e*Pg	Pb	09 02 12.8	+2.1
DZBM				*e*Sg	Sg	09 02 56.5	-2.9
	97nm,0.5s						
DZBM				*e*Sg	Sb	09 02 56.6	+5.1

*ISCJB **11** 09:03:16.0±0.5, 31.27N±0.03×115.50W±0.03, h2km±5km, Error ellipse: s-maj=5.0km s-min=3.7km az=17.0*
*MEX **11** 09:03:17.6±0.3, 31.15N×115.33W, h16km±11km, MD3.8*
*ECX **11** 09:03:17.0±0.6, 31.22N×115.59W, h5km, MD3.6, ML3.8*
ISC 11 09:03:17.2±0.8, 31.20N±0.06×115.48W±0.03, h14km±10km, n39, σ1°52/50, 4C-7D, Baja California

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
SPIG	**San Pedro Mart**	**0.15**	**176**	⇓*e*P	**Pg**	**09 03 20.8**	**-0.6**
SPIG				*e*S	**Sg**	**09 03 24.4**	**+0.4**
SPIG	**San Pedro Mart**	**0.15**	**176**	*e*P	**Pg**	**09 03 21.3**	**0.0**
SPIG				*e*S	**Sg**	**09 03 24.0**	**0.0**
SPIG				*e*S	**Sg**	**09 03 24.5**	**+0.4**
SPX	**San Pedro Mart**	**0.15**	**176**	⇓*e*P	**Pg**	**09 03 21.4**	**0.0**
SPX				*e*S	**Sg**	**09 03 24.3**	**+0.3**
ECBX	**El Chinero**	**0.46**	**53**	⇑*e*P	**Pb**	**09 03 26.1**	**-0.9**
ECBX				*e*S	**Sb**	**09 03 33.1**	**-0.6**
ECBX				AML	AML	09 03 33.6	
	comp=E,6μm,0.4s						
ECBX				⇓*e*		09 03 33.6	
ZAX	**El Zacaton**	**0.75**	**295**	⇑*e*P	Pb	09 03 28.2	-3.9
ZAX				*e*S	Sb	09 03 37.4	-4.9
ZAX				⇑*e*		09 03 39.0	
ZAX				AML	AML	09 03 39.0	
	comp=E,6μm,0.6s						
ZAX				⇑*e*		09 03 42.1	
ZAX				AML	AML	09 03 42.1	
	comp=N,4μm,0.7s						
ECNX	**Esteban Cantu**	**1.06**	**296**	⇓*e*P	Pn	09 03 34.1	-3.7
ECNX				*e*S	Sb	09 03 47.0	-4.3
PBX	**Punta Banda**	**1.20**	**297**	⇓*e*P	Pn	09 03 36.4	-3.2
MBIG	**Mexicali**	**1.23**	**11**	*e*P	Pn	09 03 36.9	-3.1
CBX	**Cerro Bola**	**1.50**	**318**	⇓*e*P	Pn	09 03 42.0	-1.9
CBX				*e*S	**Sn**	**09 04 00.7**	**-2.7**
CBX	**Cerro Bola**	**1.50**	**318**	*e*P	Pn	09 03 42.1	-1.9
CBX				*e*S	**Sn**	**09 04 01.3**	**-2.1**
IBP	**Imperial Bould**	**1.55**	**340**	⇓*e*P	**Pn**	**09 03 43.8**	**-0.8**
IBP	**Imperial Bould**	**1.55**	**340**	P	**Pn**	**09 03 43.7**	**-0.8**
	baz=157,SNR=288						
IBP				S	**Sn**	**09 04 03.4**	**-1.1**
	baz=157						
TJIG	**Tijuana**	**1.60**	**321**	*e*P	Pn	09 03 43.8	-1.4
TJIG				*e*S	**Sn**	**09 04 03.8**	**-1.8**
SWSC	**Sam W. Stewart**	**1.77**	**351**	P	**Pn**	**09 03 46.1**	**-1.3**
	baz=170,SNR=106						
MONP2	**Monument Peak**	**1.87**	**335**	P	**Pn**	**09 03 48.6**	**-0.5**
	baz=152,SNR=178						
MONP2				S	**Sn**	**09 04 12.1**	**-0.5**
	baz=152						
GLA	**Glamis**	**1.93**	**16**	P	**Pn**	**09 03 48.9**	**-0.8**
	baz=198,SNR=17						
GLA				S	**Sn**	**09 04 12.8**	**-1.0**
	baz=198						
109C	**Camp Elliot, M**	**2.18**	**321**	P	**Pn**	**09 03 53.0**	**-0.1**
	baz=137,SNR=36						
109C				S	**Sn**	**09 04 20.1**	**+0.2**
	baz=137						
214A	**Organ Pipe Nat**	**2.40**	**71**	P	**Pn**	**09 03 56.8**	**+0.7**
	baz=256,SNR=9.4						
214A				S	**Sb**	**09 04 26.5**	**-3.1**
	baz=256						
BC3	**Big Chuckawall**	**2.45**	**0**	P	**Pn**	**09 03 56.4**	**-0.6**
	baz=180,SNR=8.4						
PFO	**Pinyon Flats O**	**2.55**	**341**	P	**Pn**	**09 03 57.2**	**-1.0**
	baz=159,SNR=37						
PFO				S	**Sn**	**09 04 33.3**	**+4.1**
	baz=159						
Y12C	**Blythe**	**2.67**	**17**	P	**Pn**	**09 03 59.3**	**-0.5**
	baz=199						
MURC	**Murrieta**	**2.81**	**329**	P	**Pn**	**09 04 01.5**	**-0.2**
	baz=146						
MURC				S	**Sn**	**09 04 39.8**	**+4.4**
	baz=146						
BELC	**Belle Mtn. Jos**	**2.83**	**351**	P	**Pn**	**09 04 01.8**	**-0.4**
	baz=170,SNR=13						
BELC				Sg	**Sb**	**09 04 44.7**	**+2.5**
	baz=170						
IRM	**Iron Mountain**	**2.97**	**5**	P	**Pn**	**09 04 04.0**	**0.0**
	baz=186						
BBRC	**Big Bear Solar**	**3.29**	**339**	P	**Pn**	**09 04 08.5**	**-0.1**
	baz=157,SNR=19						
BBRC				Sb	**Sb**	**09 04 55.9**	**+0.3**
	baz=157						
CIS	**Catalina Islan**	**3.32**	**312**	Sb	**Sb**	**09 04 56.9**	**+0.7**
	baz=128						
FMP	**Fort Macarthur**	**3.46**	**317**	Sb	**Sb**	**09 05 00.7**	**+0.5**
	baz=134						
BFSC	**Mount Baldy Ra**	**3.55**	**329**	Pb	Pb	09 04 17.9	-2.0
	baz=147						
BFSC				Sb	**Sb**	**09 05 03.2**	**+0.3**
	baz=147						
GMRC	**Granite Mounta**	**3.58**	**358**	P	**Pn**	**09 04 12.7**	**+0.2**
	baz=177						
HEC	**Hector,Ludlow**	**3.70**	**349**	Sg	**Sg**	**09 05 14.7**	**-1.2**
	baz=168						
DECC	**Green Verdugo**	**3.89**	**322**	Sb	**Sb**	**09 05 12.9**	**+0.4**
	baz=139						
RRX	**Edison Barstow**	**3.89**	**341**	Sg	**Sg**	**09 05 20.6**	**-1.4**
	baz=160						
TUC	**Tucson**	**4.15**	**73**	Sg	**Sg**	**09 05 32.8**	**+2.3**
	baz=258						
BLG	**Laguna Peak, P**	**4.20**	**315**	Sb	**Sb**	**09 05 22.4**	**+1.0**
	baz=131						
EDW2	**Edwards Air Fo**	**4.24**	**331**	Sb	**Sb**	**09 05 23.6**	**+0.9**
	baz=148						
OSI	**Osito Audit: C**	**4.37**	**322**	S	**Sn**	**09 05 13.4**	**-0.5**
	baz=139						
ARVC	**Arvin**	**4.83**	**325**	Sb	**Sb**	**09 05 42.4**	**+2.9**
	baz=142						
ISA	**Isabella, Lake**	**5.11**	**331**	Sb	**Sb**	**09 05 50.0**	**+2.2**
	baz=149						
WUAZ	**Wupatki**	**5.51**	**37**	P	**Pn**	**09 04 40.8**	**+1.8**
	baz=221,SNR=7.6						
WUAZ				S	**Sn**	**09 05 43.0**	**+0.8**
	baz=221						

*IDC **11** 09:03:56.1±0.6, 37.05N×140.61E, h0km, mb4.0/17, mb1 4.2/18, mb1mx4.0/49, mbtmp4.0/18, ML3.7/1, MS4.9/1, Ms1 4.9/1, ms1mx4.0/59, Error ellipse: s-maj=16.1km s-min=12.3km az=150.0*
*ISCJB **11** 09:03:57.2±0.5, 37.02N±0.03×140.75E±0.04, h19km±3km, mb4.0/20, Error ellipse: s-maj=6.2km s-min=4.4km az=21.3*
*JMA **11** 09:03:57.5, 37.02N×140.68E, h9km±1km, M4.1*
JMA Felt II J1.
*NEIC **11** 09:04:02.6±1.0, 37.01N×140.51E, h47km±9km, mb4.4/2, Error ellipse: s-maj=9.8km s-min=6.9km az=57.0*
ISC 11 09:03:57.3±1.0, 37.05N±0.03×140.61E±0.04, h8km±7km, n39, σ0°63/45, mb4.0/20, 2C, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.16**	**71**	P	**Pg**	**09 04 00.7**	**0.0**
ONAJ				S	**Sg**	**09 04 02.4**	**-0.6**
JFK	**Kawauchi**	**0.38**	**34**	⇑P	**Pg**	**09 04 05.1**	**+0.3**
JFK				S	**Sg**	**09 04 10.6**	**+0.8**
JHO	**Hitachi**	**0.44**	**184**	P	**Pg**	**09 04 05.7**	**-0.2**
JHO				S	**Sg**	**09 04 11.4**	**-0.3**
JFT	**Otama**	**0.52**	**335**	P	**Pb**	**09 04 08.7**	**0.0**
JFT				S	**Sb**	**09 04 16.3**	**0.0**
JSB	**Shiboa**	**0.56**	**262**	P	**Pb**	**09 04 10.0**	**+0.6**
JSB				S	**Sb**	**09 04 18.5**	**+0.9**
JFY	**Yanaizu**	**0.81**	**296**	⇑P	**Pb**	**09 04 14.1**	**+0.5**
JFY				S	**Sb**	**09 04 25.3**	**+0.6**
JMM	**Marumori**	**0.83**	**10**	P	**Pb**	**09 04 13.4**	**-0.6**
JMM				S	**Sb**	**09 04 24.9**	**-0.4**
MJAR	**Matsushiro Arr**	**1.99**	**256**	Pn	**Pn**	**09 04 32.3**	**+0.9**
	48nm,0.3s,baz=80,slow=14,SNR=12						
MJAR				Lg	Lg	09 04 59.0	
	63nm,0.3s,baz=81,slow=30,SNR=8.8						
MAJO	**Matsushiro**	**2.00**	**256**	*e*Pn	**Pb**	**09 04 33.3**	**-0.6**
MAT	**Matsushiro**	**2.00**	**256**	P	**Pn**	**09 04 31.9**	**+0.5**
MAT				S	**Sg**	**09 05 00.2**	**-1.2**
JHJ	**Hachijo jima 2**	**3.98**	**190**	Pn	**Pn**	**09 04 59.6**	**+0.9**
	12nm,0.3s,baz=17,slow=19,SNR=3.7						
JHJ				Sn	**Sn**	**09 05 45.8**	**+0.2**
	46nm,0.3s,baz=82,slow=23,SNR=5.1						
JHJ2	**Mitsune**	**3.98**	**190**	*e*Pn	**Pn**	**09 05 00.2**	**+1.5**
USRK	**Ussuriysk Ar.**	**9.69**	**320**	Pn	Pn	09 06 23.1	+6.2
	0.2nm,0.3s,baz=136,slow=12,SNR=12						
KSRS	**Korea Array**	**10.12**	**276**	Pn	Pn	09 06 29.1	+6.1
	baz=89,slow=14,SNR=7.6						
KSAR	**Wonju Array Be**	**10.15**	**276**	Pn	Pn	09 06 29.1	+5.6
PETK	**Petropavlovsk-**	**20.00**	**31**	LR	LR	09 15 09.1	
	comp=Z,3μm,19.9s,baz=160,slow=34						
SONM	**Songino Array**	**27.24**	**304**	P	**P**	**09 09 41.8**	**-0.1**
	2.0nm,0.7s,baz=97,slow=8.5,SNR=5.9						
ZALV	**Zalesovo Beam**	**41.43**	**312**	P	**P**	**09 11 45.1**	**+1.0**
	1.0nm,0.3s,baz=94,slow=7.9,SNR=2.8						
MKAR	**Makanchi Array**	**43.56**	**302**	P	**P**	**09 12 01.4**	**-0.3**
	0.9nm,0.5s,baz=87,slow=9.8,SNR=4.6						
KURK	**Kurchatov**	**45.41**	**308**	*e*P	**P**	**09 12 15.6**	**-0.7**
	8.2nm,0.8s						
KURK				P	**P**	**09 12 16.6**	**+0.3**
KURBB	**Kurchatov Arra**	**45.48**	**308**	P	**P**	**09 12 16.6**	**-0.3**
	2.2nm,0.7s,baz=83,slow=7.8,SNR=8.0						
ILAR	**Eielson Array**	**49.82**	**32**	P	**P**	**09 12 50.5**	**0.0**
	1.3nm,0.8s,baz=269,slow=5.9,SNR=8.2						
BVAR	**Borovoye Array**	**50.09**	**312**	P	**P**	**09 12 52.5**	**-0.1**
	0.9nm,0.6s,baz=92,slow=7.8,SNR=3.6						
INK	**Inuvik**	**54.66**	**27**	P	**P**	**09 13 26.6**	**+0.3**
	0.3nm,0.4s,baz=295,slow=6.8,SNR=5.1						
WRAB	**Tennant Creek**	**56.98**	**187**	*e*P	**P**	**09 13 42.8**	**-0.7**
	5.1nm,0.9s						
WRA	**Warramunga Arr**	**56.99**	**187**	P	**P**	**09 13 42.9**	**-0.6**
	4.7nm,0.6s,baz=3.9,slow=7.3,SNR=18						
ABKAR	**Akbulak array**	**57.44**	**310**	*e*P	**P**	**09 13 46.0**	**-0.4**
	1.1nm,0.5s						
ASAR	**Alice Springs**	**60.72**	**187**	P	**P**	**09 14 09.0**	**-0.4**
	1.9nm,0.8s,baz=13,slow=6.9,SNR=9.6						
ARCES	**ARCESS Array B**	**63.75**	**339**	P	**P**	**09 14 28.8**	**-0.4**
	5.1nm,1.1s,baz=59,slow=7.4,SNR=2.6						
YKA	**Yellowknife Ar**	**64.11**	**30**	P	**P**	**09 14 31.5**	**-0.1**
	0.3nm,0.6s,baz=302,slow=6.7,SNR=4.8						
FINES	**FINESS Array B**	**68.50**	**332**	P	**P**	**09 14 59.6**	**-0.1**
	2.1nm,0.7s,baz=48,slow=8.3,SNR=5.0						
AKASG	**Malin Array Be**	**73.89**	**322**	P	**P**	**09 15 31.8**	**-0.8**
	0.2nm,0.2s,baz=46,slow=5.7,SNR=4.2						
NOA	**NORSAR Array B**	**73.92**	**337**	P	**P**	**09 15 32.7**	**0.0**
	1.2nm,0.8s,baz=38,slow=5.8,SNR=3.9						
NVAR	**Mina Array Bea**	**75.49**	**53**	P	**P**	**09 15 43.6**	**+1.2**
	1.0nm,0.7s,baz=301,slow=5.9,SNR=1.0						
PDAR	**Pinedale Array**	**78.11**	**45**	P	**P**	**09 15 57.2**	**+0.1**
	0.8nm,0.8s,baz=319,slow=5.0,SNR=5.9						
TXAR	**Lajitas Array**	**90.62**	**52**	P	**P**	**09 17 01.1**	**+0.4**
	0.6nm,0.7s,baz=278,slow=2.4,SNR=5.4						
TORD	**Torodi Ar. Bea**	**116.86**	**314**	PKP	**PKPdf**	**09 22 42.1**	**-0.9**
	0.2nm,0.5s,baz=28,slow=0.9,SNR=2.5						
LPAZ	**La Paz**	**147.24**	**59**	PKPbc	**PKPbc**	**09 23 42.9**	**+0.4**
	2.9nm,0.8s,baz=5.3,slow=4.2,SNR=9.6						
SIV	**San Ignacio**	**151.56**	**48**	PKPbc	**PKPbc**	**09 23 52.5**	**-0.1**
	3.2nm,0.8s,baz=268,slow=2.1,SNR=6.0						

*ISCJB **11** 09:05:05.8±0.6, 31.18N±0.05×115.58W±0.04, h19km±5km, Error ellipse: s-maj=8.5km s-min=4.6km az=26.7*
*ECX **11** 09:05:06.4±0.5, 31.25N×115.57W, h5km, MD3.5, ML3.7*
*MEX **11** 09:05:08.0±0.4, 31.11N×115.60W, h12km±16km, MD3.8*
ISC 11 09:05:05.1±0.9, 31.26N±0.03×115.58W±0.03, h11km±9km, n20, σ0°69/35, 5C-3D, Baja California

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
SPIG	**San Pedro Mart**	**0.23**	**155**	⇑*e*P	**Pg**	**09 05 10.4**	**+0.2**
SPIG				*e*S	**Sg**	**09 05 13.8**	**+0.2**
SPIG	**San Pedro Mart**	**0.23**	**155**	*i* P	**Pb**	**09 05 10.9**	**-0.6**
SPIG				*e*S	**Sg**	**09 05 13.2**	**-0.4**
SPX	**San Pedro Mart**	**0.24**	**154**	⇓*e*P	**Pb**	**09 05 10.9**	**-0.6**
SPX				*e*S	**Sg**	**09 05 14.0**	**+0.3**
ECBX	**El Chinero**	**0.50**	**65**	⇑*e*P	**Pg**	**09 05 14.6**	**-0.3**
ECBX				*e*S	**Sg**	**09 05 21.6**	**0.0**
ECBX				⇑*e*		09 05 22.2	
ECBX				AML	AML	09 05 22.2	
	comp=E,3μm,0.4s						
ECBX				AML	AML	09 05 22.2	
	comp=N,6μm,0.4s						
ECBX				*e*		09 05 22.2	
ZAX	**El Zacaton**	**0.64**	**293**	⇑*e*P	**Pg**	**09 05 17.8**	**+0.2**
ZAX				*e*S	**Sb**	**09 05 27.0**	**-0.4**
ZAX				⇑*e*		09 05 28.8	
ZAX				AML	AML	09 05 28.8	
	comp=N,3μm,0.5s						
ECNX	**Esteban Cantu**	**0.95**	**295**	⇓*e*P	**Pg**	**09 05 23.5**	**0.0**
ECNX				*e*S	**Sb**	**09 05 36.4**	**0.0**
PBX	**Punta Banda**	**1.09**	**297**	*e*P	**Pb**	**09 05 25.7**	**-0.2**
PBX				*e*S	**Sg**	**09 05 40.4**	**+0.2**
CBX	**Cerro Bola**	**1.40**	**319**	*e*P	**Pb**	**09 05 31.3**	**0.0**
CBX				*e*S	**Sg**	**09 05 49.7**	**-0.4**
CBX	**Cerro Bola**	**1.40**	**319**	*e*P	**Pb**	**09 05 31.3**	**0.0**
CBX				*e*S	**Sn**	**09 05 49.0**	**-0.1**
RMX	**La Rumorosa**	**1.40**	**343**	*e*P	**Pg**	**09 05 32.0**	**-0.1**
RMX				*e*S	**Sg**	**09 05 50.7**	**+0.4**
IBP	**Imperial Bould**	**1.46**	**343**	⇓*e*P	**Pg**	**09 05 33.3**	**+0.1**
IBP	**Imperial Bould**	**1.46**	**343**	P	**Pg**	**09 05 33.3**	**+0.1**
	baz=156						
IBP				S	**Sg**	**09 05 52.4**	**+0.2**
	baz=156						
TJIG	**Tijuana**	**1.50**	**322**	*e*P	**Pb**	**09 05 33.0**	**+0.1**
TJIG				*e*S	**Sn**	**09 05 51.4**	**+0.1**
SWSC	**Sam W. Stewart**	**1.69**	**354**	Pb	**Pg**	**09 05 37.7**	**+0.1**
	baz=169						
MONP2	**Monument Peak**	**1.78**	**337**	P	**Pb**	**09 05 38.2**	**+0.4**
	baz=150						
MONP2				Sb	**Sg**	**09 06 01.9**	**-0.5**
	baz=150						
109C	**Camp Elliot, M**	**2.08**	**322**	P	**Pb**	**09 05 42.7**	**-0.1**
	baz=136						
109C				S	**Sb**	**09 06 09.5**	**+0.9**
	baz=136						
PFO	**Pinyon Flats O**	**2.46**	**343**	Pb	**Pg**	**09 05 51.8**	**-0.5**
	baz=159						
PFO				Sb	**Sg**	**09 06 22.5**	**-1.7**
	baz=159						
214A	**Organ Pipe Nat**	**2.46**	**73**	S	**Sn**	**09 06 16.1**	**+0.8**
	baz=258						
MURC	**Murrieta**	**2.70**	**330**	Sb	**Sb**	**09 06 28.3**	**+1.7**
	baz=145						
BBRC	**Big Bear Solar**	**3.20**	**340**	Sb	**Sg**	**09 06 45.7**	**-2.2**
	baz=156						

*IDC **11** 09:05:16.4±0.4, 37.02N×140.56E, h0km, mb5.0/34, mb1 5.0/37, mb1mx5.0/48, mbtmp4.9/37, ML4.0/3, MS4.7/1, Ms1 4.7/1, ms1mx3.7/58, Error ellipse: s-maj=12.7km s-min=10.0km az=94.0*
*BJI **11** 09:05:18.8, 37.00N×140.60E, h30km, mb4.9/58, mB5.3/6, Ms5.4/17, Ms7 5.1/18*
*ISCJB **11** 09:05:18.7±

comp=E,65nm,0.6s
JNU Nakatsue 8.90 247 Pn **Pn 09 07 29.9 +3.1**
comp=E,3.3nm,0.3s,baz=224,slow=7.8,SNR=12
JNU Nakatsue 8.90 247 *e*Pn **Pn 09 07 30.2 +3.4**
VLA Vladivostok 9.06 315 *e*P **Pn 09 07 29.1 +0.1**
USRK Ussuriysk Ar. 9.73 320 Pn **Pn 09 07 40.3 +2.2**
comp=E,0.5nm,0.3s,baz=136,slow=12,SNR=4.8
KUR Kuril'sk 9.85 31 *e*P **Pn 09 07 38.9 -0.8**
KUR *i* S **Sn 09 09 22.6 -7.3**
KUR pmax pmax
comp=N,83nm,0.5s
KUR pmax pmax
comp=E,75nm,0.5s
KUR pmax pmax
comp=Z,166nm,0.5s
CBIJ Chichi jima 9.98 172 *e*Pn **Pn 09 07 38.9 -2.7**
JCJ Chichijima 9.98 172 Pn **Pn 09 07 37.9 -3.8**
comp=Z,38nm,0.3s,baz=0.0,slow=12,SNR=13
YSS Yuzh-Sakhalins 10.05 8⇓*e*P **Pn 09 07 42.3 -0.2**
YSS pmax pmax
comp=Z,70nm,0.9s
YSS Yuzh-Sakhalins 10.05 8 *e*Pn **Pn 09 07 43.1 +0.6**
KSRS Korea Array 10.15 276 Pn **Pn 09 07 47.8 +3.8**
comp=Z,3.2nm,0.3s,baz=92,slow=14,SNR=81
KS01 Wonju Array Si 10.18 276 *e*Pn **Pn 09 07 48.1 +3.8**
KS15 Wonju Array Si 10.18 276 *e*Pn Pn 09 07 50.0 +5.6
KSAR Wonju Array Be 10.18 276 P **Pn 09 07 47.8 +3.4**
KSAR Wonju Array Be 10.18 276 Pn **Pn 09 07 47.8 +3.4**
MDJ Mudanjiang 11.29 316 P Pn 09 08 05.1 +5.6
MDJ pmax pmax
comp=Z,39nm,1.0s
MDJ pmax pmax
comp=Z,6μm,13.6s
MDJ Mudanjiang 11.29 316 *e*Pn Pn 09 08 04.8 +5.2
comp=Z,31nm,0.8s
CN2 Changchun 13.40 305 *e*P **Pn 09 08 29.5 +1.1**
CN2 *es*P P 09 08 41.6 +3.8
CN2 pmax pmax
comp=Z,10.0nm,0.4s
KLR Kul'dur 13.81 335 Pn **Pn 09 08 35.0 +1.1**
comp=Z,0.5nm,0.3s,baz=146,slow=10.0,SNR=9.5
TYV Tymovskoe 13.91 5 *e*P **Pn 09 08 34.5 -0.8**
TYV pmax pmax
comp=Z,44nm,0.8s
SNY Shenyang 14.03 295 ⇑P **Pn 09 08 40.5 +3.5**
SNY S **Sn 09 11 17.3 +4.9**
SNY pmax pmax
comp=Z,17nm,1.4s
SNY LR LR
comp=Z,3μm,14.9s
SNY LR LR
comp=Z,5μm,14.1s
SNY LR LR
comp=Z,9μm,14.8s
JOW Kunigami 14.60 229 Pn **Pn 09 08 45.2 +0.4**
comp=Z,1.0nm,0.3s,baz=83,slow=18,SNR=2.1
DL2 Dalian 15.12 283 P **P 09 08 58.7 +1.8**
DL2 pmax pmax
comp=Z,58nm,0.6s
NKL Nikolayevsk 16.13 0 *e*P **Pn 09 09 03.0 -1.8**
NKL pmax pmax
comp=N,10.0nm,1.0s
NKL pmax pmax
comp=Z,20nm,1.0s
NJ2 Nanjing 18.61 261 *e*P **Pn 09 09 35.7 -0.2**
NJ2 pmax pmax
comp=Z,11nm,0.8s
TIA Tai'an 18.89 275 ⇑P **P 09 09 38.0 -0.7**
TIA pmax pmax
comp=Z,10.0nm,1.1s
BJI Beijing 19.36 286 P **P 09 09 43.8 0.0**
BJI pmax pmax
comp=Z,34nm,0.7s
BJI LR LR
comp=Z,5μm,17.2s
BJT Baijiatuau 19.37 286 *e*P **P 09 09 43.8 -0.1**
BJT pmax pmax
comp=Z,25nm,0.6s
BJT Baijiatuau 19.37 286 *e*P **P 09 09 43.8 -0.1**
comp=Z,25nm,0.6s
PEA0 Petropavlovsk- 20.01 31 *e*P **P 09 09 51.2 +0.5**
PETK Petropavlovsk- 20.01 31 P **P 09 09 50.6 -0.2**
comp=Z,7.5nm,0.9s,baz=224,slow=8.3,SNR=5.3
TPUB Ta-pu 22.00 237 *e*P **P 09 10 13.1 +0.7**
comp=Z,25nm,0.6s
WHN Wuhan 22.75 261 P **P 09 10 18.7 -1.7**
HHC Hu-ho-hao-te 22.89 289 *e*P **P 09 10 21.1 -0.9**
HHC pP sP 09 10 30.6 +2.3
HHC sP pP 09 10 34.2 +7.9
HHC S **S 09 14 23.1 -8.1**
HHC pmax pmax
comp=Z,28nm,0.7s
HHC pmax pmax
comp=Z,3μm,7.0s
HHC LR LR
comp=Z,2μm,13.6s
HHC LR LR
comp=Z,4μm,14.8s
HHC LR LR
comp=Z,4μm,13.0s
MA2 Magadan 23.50 13 P **P 09 10 27.5 -0.3**
comp=Z,76nm,0.9s,baz=226,slow=7.6,SNR=19
MA2 Magadan 23.50 13 P **P 09 10 27.5 -0.3**
MA2 pmax pmax
comp=Z,80nm,0.9s
GUMO Guam 23.64 170 LR LR 09 17 25.0
comp=Z,2μm,21.7s,baz=326,slow=31
XAN Xi'an 25.93 273 P **P 09 10 49.5 -0.9**
XAN pP sP 09 10 57.9 +0.9
XAN pmax pmax
comp=Z,15nm,0.6s
YAK Yakutsk 25.95 348 P **P 09 10 49.4 -0.8**
comp=Z,25nm,0.4s,baz=299,slow=0.9,SNR=7.2
YAK Yakutsk 25.95 348 *e*P **P 09 10 49.6 -0.7**
YAK *e* 09 15 16.5
YAK pmax pmax
comp=Z,74nm,1.1s
YAK pmax pmax
comp=N,31nm,1.3s
YAK pmax pmax
comp=E,17nm,1.2s
YAK Yakutsk 25.95 348 *e*P **P 09 10 49.7 -0.7**
comp=E,63nm,0.8s
ENH Enshi 26.72 265 *e*P **P 09 10 56.5 -1.1**
comp=E,31nm,0.7s
ULN Ulaanbaatar 26.85 304 *e*P **P 09 10 57.6 -1.2**
ULN *e* 09 14 21.0
ULN pmax pmax
comp=Z,41nm,1.5s
ULN Ulaanbaatar 26.85 304 *e*P **P 09 10 57.6 -1.2**
comp=Z,41nm,1.5s
ULN *e*PcP **PcP 09 14 21.0 0.0**
SEY Seymchan 26.93 12 P **P 09 10 59.7 +0.6**
comp=Z,26nm,1.0s,baz=200,slow=7.2,SNR=17
BOD Bodaibo 27.21 328 *e*P **P 09 11 00.3 -1.5**
BOD pmax pmax
comp=Z,10.0nm,0.8s
SONA1 Songino Array 27.28 304 *e*P **P 09 11 01.3 -1.4**
SONA1 *e*PcP **PcP 09 14 22.3 +0.3**
SONM Songino Array 27.28 304 P **P 09 11 01.3 -1.4**
comp=Z,18nm,0.6s,baz=110,slow=8.1,SNR=59
SONM PcP **PcP 09 14 22.1 +0.1**
comp=Z,6.4nm,0.6s,baz=127,slow=2.4,SNR=20
H11N2 WAKE ISLAND Hy 28.67 120 T T 09 41 03.1
baz=313,slow=75,SNR=188
H11N1 WAKE ISLAND Hy 28.68 120 T T 09 41 02.2
baz=313,slow=75,SNR=255
H11N3 WAKE ISLAND Hy 28.69 120 T T 09 41 07.5
baz=313,slow=75,SNR=214
H11S1 WAKE ISLAND Hy 29.37 122 T T 09 41 57.7
baz=314,slow=76,SNR=200
H11S3 WAKE ISLAND Hy 29.37 122 T T 09 41 57.8
baz=314,slow=76,SNR=245
H11S2 WAKE ISLAND Hy 29.39 122 T T 09 41 59.5
baz=314,slow=76,SNR=266
LZH Lanzhou 29.46 279 *e*P **P 09 11 20.1 -2.1**
LZH pP sP 09 11 29.0 +0.2
LZH sP pP 09 11 32.7 +5.8
LZH PP **PnPn 09 12 16.3 +0.1**
LZH pmax pmax
comp=Z,23nm,1.1s
LZH pmax pmax
comp=Z,76nm,5.4s
LZH LR LR
comp=Z,410nm,12.9s
LZH LR LR
comp=Z,430nm,13.4s
LZH LR LR
comp=Z,610nm,17.2s
ZAK Zakamensk 29.79 309 *e*P **P 09 11 22.4 -2.6**
ZAK pmax pmax
comp=Z,5.0nm,1.1s
TLY Talaya 29.87 311 PcP **PcP 09 14 28.4 +0.2**
comp=Z,5.5nm,0.7s,baz=229,slow=4.5,SNR=3.6
GYA Guiyang 30.61 260⇑*i*P **P 09 11 31.0 -1.4**
GYA pP sP 09 11 42.8 +3.8
GYA PP **PnPn 09 12 35.2 +3.4**
GYA PcP **PcP 09 14 33.0 +2.3**
GYA S **S 09 16 31.6 -2.6**
GYA sS sS 09 16 47.4 +5.5
GYA ScP **ScP 09 18 12.9 +0.2**
GYA ScS **ScS 09 22 07.0 -2.3**
GYA pmax pmax
comp=Z,20nm,0.7s
GYA pmax pmax
comp=Z,120nm,4.9s
GYA LR LR
comp=Z,540nm,17.0s
GYA LR LR
comp=Z,480nm,16.8s
GYA LR LR
comp=Z,520nm,17.0s
CD2 Chengdu 31.06 270 P **P 09 11 35.1 -1.1**
CD2 sP sP 09 11 47.8 +5.0
CD2 S **S 09 16 38.4 -2.5**
CD2 sS sS 09 16 53.5 +4.8
CD2 pmax pmax
comp=Z,20nm,0.5s
CD2 LR LR
comp=Z,6μm,14.3s
CD2 LR LR
comp=Z,9μm,14.3s
GTA Gaotai 31.98 287 *e*P **P 09 11 43.2 -1.2**
GTA S **S 09 16 55.6 +0.3**
GTA sS sS 09 17 05.8 +2.7
GTA SS **SnSn 09 18 40.1 -4.2**
GTA pmax pmax
comp=Z,11nm,0.6s
GTA LR LR
comp=Z,3μm,13.3s
GTA LR LR
comp=Z,4μm,13.3s
GTA LR LR
comp=Z,7μm,14.3s
BILL Bilibino 34.22 17⇑*e*P **P 09 12 03.4 0.0**
BILL *e* 09 13 17.3
BILL *e*PPP PPP 09 13 31.7
BILL *e*SS SS 09 20 02.3 +5.2
BILL pmax pmax
comp=Z,23nm,1.0s
BILL MLR MLR
comp=Z,5μm,14.0s
BILL Bilibino 34.22 17 *e*P **P 09 12 03.3 0.0**
comp=Z,20nm,0.9s
BILL *e*PcP **PcP 09 14 40.6 +0.9**
KMI Kunming 34.35 261 P **P 09 12 07.2 +1.9**
KMI pmax pmax
comp=Z,19nm,0.8s
TIXI Tiksi 35.23 354 P **P 09 12 11.4 -0.7**
comp=Z,7.7nm,0.5s,baz=146,slow=6.3,SNR=23
TIXI PcP **PcP 09 14 42.9 +0.3**
comp=Z,1.4nm,0.3s,baz=172,slow=1.6,SNR=3.0
TIXI Tiksi 35.23 354 *e*P **P 09 12 11.5 -0.6**
TIXI pmax pmax
comp=Z,12nm,1.0s
TIXI Tiksi 35.23 354 *e*P **P 09 12 11.2 -0.9**
comp=Z,9.1nm,0.6s
TIXI PcP **PcP 09 14 42.9 +0.3**
KWAJ Kwajalein Atol 37.23 132 *i* P **P 09 12 30.9 +1.1**
GAMB Gambell 39.05 31 *e*P **P 09 12 47.5 +2.9**
comp=Z,8.8nm,1.1s
WMQ Urumqi 40.30 297 P **P 09 12 56.0 +0.6**
WMQ pP sP 09 13 05.9 +3.9
WMQ sP pP 09 13 10.6 +10
WMQ PP **PnPn 09 14 35.8 +4.1**
WMQ PcP **PcP 09 14 59.5 +0.7**
WMQ pmax pmax
comp=Z,17nm,1.0s
WMQ pmax pmax
comp=Z,300nm,4.0s
WMQ LR LR
comp=Z,2μm,16.6s
WMQ LR LR
comp=Z,2μm,14.0s
WMQ LR LR
comp=Z,1μm,16.6s
FAKI Fak Fak 40.50 193 *e*P **P 09 12 57.7 +0.5**
comp=Z,41nm,0.5s
CHTO Chiang Mai 40.69 255 *e*P **P 09 12 58.1 -0.7**
CHTO *e* 09 15 01.2
CHTO pmax pmax
comp=Z,7.0nm,0.6s
CHTO Chiang Mai 40.69 255 *e*P **P 09 12 58.1 -0.7**
comp=Z,6.7nm,0.6s
CHTO *e*PcP **PcP 09 15 01.2 +0.8**
CM31 Chiang Mai Arr 40.90 255 *e*P **P 09 13 01.2 +0.7**
CMAR Chiang Mai Arr 40.90 255 P **P 09 12 59.8 -0.7**
comp=Z,3.8nm,0.6s,baz=47,slow=7.8,SNR=16
CMAR PcP **PcP 09 15 01.8 +0.8**
comp=Z,4.2nm,0.8s,baz=16,slow=2.3,SNR=13
CM01 Chiang Mai Arr 40.91 255 *e*P **P 09 13 00.3 -0.3**
CM01 *e*PcP **PcP 09 15 01.9 +0.9**
ZAA0 Zalesovo Array 41.47 312 *e*P **P 09 13 03.8 -1.0**
ZAA0 *e*P **P 09 13 04.0 -0.8**
ZAA0 *e*PcP **PcP 09 15 01.4 -0.9**
ZAA0 *e*PcP **PcP 09 15 02.0 -0.2**
ZALV Zalesovo Beam 41.47 312 P **P 09 13 04.2 -0.6**
comp=Z,15nm,0.5s,baz=90,slow=6.6,SNR=32
ZALV PcP **PcP 09 15 02.0 -0.3**
comp=Z,16nm,0.5s,baz=104,slow=3.2,SNR=14
ZALV ScP **ScP 09 18 52.1 +0.3**
comp=Z,0.6nm,0.4s,baz=90,slow=4.5,SNR=4.1
LSA Lhasa 41.59 275 *e*P **P 09 13 06.4 -0.3**
LSA pmax pmax
comp=Z,6.0nm,0.4s
LSA Lhasa 41.59 275 *e*P **P 09 13 06.4 -0.3**
comp=Z,6.1nm,0.4s
NVS Novosibirsk 42.40 314 *e*P **P 09 13 11.9 -0.5**
NVS *e* 09 15 04.1
NVS pmax pmax
comp=Z,31nm,1.0s
NVS pmax pmax
comp=E,22nm,1.1s
NRIK Noril'sk 43.02 335 P **P 09 13 16.8 -0.5**
comp=E,9.6nm,0.6s,baz=98,slow=10,SNR=8.2
NRIK PcP **PcP 09 15 07.2 +0.1**
comp=E,11nm,0.6s,baz=104,slow=3.6,SNR=4.0
SBUM Sibu 43.22 224 *e*P **P 09 13 19.1 -0.4**
comp=E,15nm,0.9s
MKAR Makanchi Array 43.60 302 P **P 09 13 22.0 -0.3**
comp=E,15nm,0.6s,baz=88,slow=9.8,SNR=80
MKAR PcP **PcP 09 15 09.3 -0.3**
comp=E,6.5nm,0.8s,baz=66,slow=3.6,SNR=4.9
MAKZ Makanchi 43.81 302 *e*P **P 09 13 24.4 +0.4**
MAKZ pmax pmax
comp=Z,17nm,0.8s
MAKZ Makanchi 43.81 302 *e*P **P 09 13 24.4 +0.4**
comp=Z,17nm,0.8s
KSM Kuching 45.10 225 *e*P **P 09 13 35.1 +0.6**
comp=Z,22nm,0.6s
TAPN Taplejung 45.33 274 *e*P **P 09 13 37.3 +0.7**
comp=Z,27nm,0.4s
KURK Kurchatov 45.45 308 *e*P **P 09 13 36.6 -0.4**
KURK 09 15 15.4
KURK pmax pmax
comp=Z,70nm,0.7s
KURK Kurchatov 45.45 308 *e*P **P 09 13 36.6 -0.4**
comp=Z,70nm,0.7s
KURK PcP **PcP 09 15 15.4 -0.4**
KURBB Kurchatov Arra 45.52 308 P **P 09 13 37.2 -0.3**
comp=Z,45nm,0.8s,baz=84,slow=7.9,SNR=89
KURBB PcP **PcP 09 15 15.4 -0.7**
comp=Z,3.1nm,0.6s,baz=88,slow=3.6,SNR=5.0
TT01 Tatalina 45.78 35 *e*P **P 09 13 40.5 +1.1**
ODAN Odare 45.80 273 *e*P **P 09 13 40.3 0.0**
comp=Z,27nm,0.6s
SVW2 Sparrevohn 45.91 37 *e*P **P 09 13 42.4 +2.0**
comp=Z,29nm,0.8s
KAPI Kappang 46.14 210 *e*P **P 09 13 43.3 +0.5**
comp=Z,62nm,0.8s
PDGK Podgornoye 46.24 298 P **P 09 13 43.2 -0.1**
RAMN Ramite 46.39 274 *e*P **P 09 13 44.8 -0.2**
comp=Z,99nm,0.7s
GUN Gumba 46.54 275 *e*P **P 09 13 46.3 0.0**
comp=Z,44nm,0.5s
KKN Kakani 47.07 275 *e*P **P 09 13 50.1 -0.2**
comp=Z,35nm,0.6s
DMN Daman 47.29 275 *e*P **P 09 13 51.9 -0.1**
RSO Redoubt South 47.29 38 *e*P **P 09 13 53.1 +1.5**
GKN Gorkha 47.49 276 *e*P **P 09 13 53.5 0.0**
comp=Z,81nm,0.6s
KDAK Kodiak Island 47.52 42 P P 09 14 07.6 +15
comp=Z,23nm,0.8s,baz=268,slow=6.1,SNR=11
KDAK Kodiak Island 47.52 42 *i* P **P 09 13 53.3 +0.2**
PPLA Purkeypile 47.53 35 *e*P **P 09 13 55.6 +2.3**
comp=Z,19nm,1.0s
CAST Castle Rocks 47.58 34 *e*P **P 09 13 55.2 +1.7**
comp=Z,10nm,0.9s
SPU Mount Spurr 47.62 37 *e*P **P 09 13 55.3 +1.4**
BPAW Bear Paw Mtn. 48.07 33 *e*P **P 09 13 58.7 +1.3**
comp=Z,5.5nm,0.8s
KTH Kantishna Hill 48.10 34 *e*P **P 09 13 59.2 +1.5**
comp=Z,17nm,0.8s
MLY Manley 48.19 32 *e*P **P 09 13 59.9 +1.7**
comp=Z,15nm,0.9s
TRF Thorofare Moun 48.39 34 *e*P **P 09 14 02.3 +2.3**
comp=Z,14nm,0.8s
KOLN Koldanda 48.42 276 *e*P **P 09 14 00.8 +0.1**
comp=Z,15nm,0.5s
COLD Coldfoot 48.46 29 *e*P **P 09 14 02.8 +2.5**
comp=Z,7.2nm,0.9s
MMRI Maumere 48.59 205 *e*P **P 09 14 01.4 -0.3**
comp=Z,82nm,1.0s
RC01 Rabbit Creek A 48.74 37 *e*P **P 09 14 03.1 +0.5**
comp=Z,17nm,0.9s
PYUN Piuthan 48.76 277 *e*P **P 09 14 03.5 +0.1**
comp=Z,126nm,0.8s
MCK McKinley 48.99 34 *e*P **P 09 14 05.7 +1.3**
MCK pmax pmax
comp=Z,20nm,1.0s
MCK McKinley 48.99 34 *e*P **P 09 14 05.7 +1.3**
comp=Z,20nm,1.0s
PMR Palmer 49.00 37 *e*P **P 09 14 04.8 +0.4**
PMR pmax pmax
comp=Z,14nm,0.7s
PMR Palmer 49.00 37 *e*P **P 09 14 04.8 +0.4**
comp=Z,14nm,0.7s
SOEI Soe 49.00 202 *e*P **P 09 14 05.2 +0.2**
comp=Z,93nm,0.8s
SOEI *ep*P **sP 09 14 14.9 +3.1**
RND Reindeer 49.04 34 *e*P **P 09 14 05.3 +0.5**
RND pmax pmax
comp=Z,18nm,1.0s
RND Reindeer 49.04 34 *e*P **P 09 14 05.3 +0.5**
comp=Z,18nm,1.0s
TKM2 Tokmak 2 49.09 298 *e*P **P 09 14 06.5 +0.7**
TKM2 pmax pmax
comp=Z,77nm,1.3s
TKM2 Tokmak 2 49.09 298 *e*P **P 09 14 06.5 +0.7**
comp=Z,77nm,1.3s
MDM Murphy Dome 49.25 32 *e*P **P 09 14 07.1 +0.7**
comp=Z,24nm,0.9s
WRH Wood River Hil 49.33 33 *e*PcP **PcP 09 15 29.9 +0.5**
SML Sawmill 49.37 36 *e*P **P 09 14 08.6 +1.3**
SML pmax pmax
comp=Z,16nm,0.8s
SML Sawmill 49.37 36 *e*P **P 09 14 08.6 +1.3**
comp=Z,16nm,0.8s
COLA College 49.42 32 *e*P **P 09 14 09.0 +1.4**
COLA pmax pmax
comp=Z,13nm,0.8s
COLA College 49.42 32 *e*P **P 09 14 09.0 +1.4**
comp=Z,13nm,0.8s
CCB Clear Creek Bu 49.45 33 *e*P **P 09 14 09.4 +1.6**
comp=Z,5.1nm,0.7s
DHY Denali Highway 49.72 35 *e*P **P 09 14 13.1 +2.9**
comp=Z,11nm,1.0s
FRU Bishkek 49.81 298 *e*P **P 09 14 11.0 0.0**
HDA Harding Lake 49.83 33 *e*P **P 09 14 11.1 +0.3**
comp=Z,21nm,1.0s
IL1 Eielson Array 49.84 32 *e*P **P 09 14 10.9 +0.1**
ILAR Eielson Array 49.84 32 P **P 09 14 10.6 -0.2**
comp=Z,12nm,0.8s,baz=268,slow=5.8,SNR=23
ILB Eielson Array 49.84 32 *e*P **P 09 14 11.2 +0.4**
SCM Sheep Creek Mo 49.84 36 *e*P **P 09 14 12.1 +1.1**
SCM pmax pmax
comp=Z,71nm,1.6s
SCM Sheep Creek Mo 49.84 36 *e*P **P 09 14 12.1 +1.1**
comp=Z,71nm,1.6s
KSH Kashi 49.85 294 P **P 09 14 15.4 +4.0**
KSH *ep*P sP 09 14 26.4 +8.2
KSH S **S 09 21 22.6 +1.8**
KSH pmax pmax
comp=Z,12nm,0.9s
OTUK Ortayu 49.93 306 P **P 09 14 11.7 -0.1**
AAK Ala-Archa 49.95 298 P **P 09 14 11.6 -0.7**
comp=Z,8.1nm,0.5s,baz=99,slow=5.2,SNR=15
AAK Ala-Archa 49.95 298 *e*P **P 09 14 12.5 +0.3**
AAK pmax pmax
comp=Z,18nm,1.1s
AAK Ala-Archa 49.95 298 *e*P **P 09 14 12.5 +0.3**
comp=Z,18nm,1.1s
BVAR Borovoye Array 50.12 312 P **P 09 14 12.9 -0.3**
comp=Z,16nm,0.6s,baz=80,slow=7.4,SNR=52
BVAR PcP **PcP 09 15 32.4 -0.1**
comp=Z,10.0nm,0.7s,baz=82,slow=2.2,SNR=7.7
BRVK Borovoye 50.18 312 *ce*P **P 09 14 12.6 -1.0**
BRVK pmax pmax
comp=Z,32nm,1.0s
BRVK Borovoye 50.18 312 *e*P **P 09 14 12.5 -1.0**
MTN Manton Dam 50.40 192 *e*P **P 09 14 17.0 +1.4**
comp=Z,42nm,1.2s
EKS2 Erkin-Say 50.45 298 *e*P **P 09 14 16.3 +0.3**
EKS2 pmax pmax
comp=Z,10.0nm,0.7s
EKS2 Erkin-Say 50.45 298 *e*P **P 09 14 16.2 +0.3**
comp=Z,10nm,0.7s
KLU Klutina 50.54 37 *e*P **P 09 14 17.5 +1.2**
comp=Z,12nm,0.8s
PAX Paxson 50.60 35 *e*P **P 09 14 17.9 +1.2**
PAX pmax pmax
comp=Z,10.0nm,0.8s
PAX Paxson 50.60 35 *e*P **P 09 14 17.9 +1.2**
comp=Z,9.7nm,0.8s
EYAK Cordova Ski Ar 50.74 38 *e*P **P 09 14 20.7 +3.0**
comp=Z,26nm,1.2s
COEN Coen 50.76 177 *e*P **P 09 14 18.5 +0.2**
comp=Z,30nm,1.2s
ZRNK Zerenda 50.96 312 *e*P **P 09 14 19.6 +0.1**
ZRNK pmax pmax
comp=Z,43nm,0.9s
ZRNK Zerenda 50.96 312 *e*P **P 09 14 19.6 +0.1**
comp=Z,43nm,0.9s
DOT Dot Lake 51.16 34 *e*P **P 09 14 21.3 +0.5**
comp=Z,16nm,0.8s
PSI Prapat 51.26 238 *e*P **P 09 14 22.0 -0.3**
PSI *e* 09 15 37.7
PSI pmax pmax
comp=Z,15nm,0.8s
PSI Prapat 51.26 238 *e*P **P 09 14 22.0 -0.3**
comp=Z,15nm,0.8s
PSI *e*PcP **PcP 09 15 37.7 +0.3**
MENT Mentasta 51.40 35 *e*P **P 09 14 24.4 +1.8**
comp=Z,15nm,0.9s
MNAS Manas 51.40 299 P **P 09 14 23.6 +0.5**
SFK Sufi-Kurgan 51.48 295 P **P 09 14 24.1 +0.2**
EGAK Eagle 52.28 32 *e*P **P 09 14 31.2 +2.1**
comp=Z,7.0nm,0.8s
KKAR Karatay Array 52.60 300 *e*P **P 09 14 31.9 0.0**
KKAR Karatay Array 52.60 300 *e*P **P 09 14 31.9 0.0**
UGM Wanagama 52.86 219 *e*P **P 09 14 34.2 +0.1**
comp=Z,332nm,1.2s
NDI New Delhi 53.07 281 *e*P **P 09 14 32.0 -3.5**
GSI Gunungsitoli 53.27 238 *e*P **P 09 14 36.7 -0.4**
comp=Z,93nm,0.7s
INK Inuvik 54.68 27 P **P 09 14 47.2 +0.6**
comp=Z,16nm,0.9s,baz=285,slow=8.0,SNR=15
INK Inuvik 54.68 27 *e*P **P 09 14 47.5 +0.8**
comp=Z,12nm,0.8s
SVE Sverdlovsk 54.75 318 *e*P **P 09 14 48.0 +0.6**
SVE pmax pmax
comp=Z,50nm,1.1s
KIP Kipapa 54.88 88 *ce*P **P 09 14 49.5 +0.7**
KIP pmax pmax
comp=Z,788nm,1.7s
ARU Arti 55.96 318 *d* iP **P 09 14 55.9 -0.2**
ARU S **S 09 22 44.3 +0.9**
ARU SS **SS 09 26 31.7 +2.9**

ARU pmax pmax
comp=Z,41nm,1.0s
ARU Arti 55.96 318 *e*P **P 09 14 55.8 -0.4**
comp=Z,38nm,1.0s
SKAG Skagway 56.08 38 *e*P **P 09 14 59.2 +2.3**
comp=Z,12nm,1.1s
FITZ Fitzroy Crossi 56.62 197 *e*P **P 09 15 01.4 +0.2**
comp=Z,21nm,0.8s
KBL Kabul 56.84 291 *e*P **P 09 15 02.8 -0.2**
KBL pmax pmax
comp=Z,25nm,1.0s
KBL Kabul 56.84 291 *e*P **P 09 15 02.8 -0.2**
comp=Z,25nm,1.0s
WRAB Tennant Creek 56.96 187 *ce*P **P 09 15 03.0 -0.6**
WRAB pmax pmax
comp=Z,110nm,0.8s
WRAB Tennant Creek 56.96 187 *e*P **P 09 15 02.8 -0.8**
comp=Z,38nm,0.8s
WB2 Warramunga Arr 56.97 187 *e*P **P 09 15 02.8 -0.8**
comp=Z,44nm,0.8s
WRA Warramunga Arr 56.97 187 P **P 09 15 02.8 -0.8**
comp=Z,33nm,0.6s,baz=2.7,slow=7.1,SNR=90
WRA PcP **PcP 09 15 59.1 +0.3**
comp=Z,6.9nm,0.6s,baz=0.1,slow=3.7,SNR=5.1
WRA Warramunga Arr 56.97 187 P **P 09 15 02.8 -0.8**
WRA 09 15 59.1
WRA pmax pmax
comp=Z,34nm,0.6s
WRA pmax pmax
comp=Z,7.0nm,0.6s
ABKAR Akbulak array 57.48 310 *e*P **P 09 15 06.7 -0.4**
HYB Hyderabad 57.59 268 *i*P **P 09 15 09.0 +0.7**
DLBC Dease Lake 59.02 38 *e*P **P 09 15 20.4 +2.7**
comp=Z,11nm,1.3s
HOPEN Hopen 59.90 346 *e*P **P 09 15 24.2 +0.7**
SPA0 Spitsbergen Ar 60.41 349 *e*P **P 09 15 28.6 +1.6**
AS01 Alice Springs 60.69 187 *e*P **P 09 15 28.7 -0.8**
AS31 Alice Springs 60.69 187 *e*P **P 09 15 28.9 -0.6**
comp=Z,6.3nm,0.9s
ASAR Alice Springs 60.70 187 P **P 09 15 28.8 -0.8**
comp=Z,16nm,0.8s,baz=11,slow=6.7,SNR=81
ASAR PKP2bc 09 44 58.3
comp=Z,0.8nm,0.8s,baz=165,slow=1.8,SNR=7.0
POO Poona 60.75 272 ||*i*P **P 09 15 27.0 -3.2**
comp=Z,50nm,1.0s
MBWA Marble Bar 61.14 202 *e*P **P 09 15 32.2 -0.3**
comp=Z,45nm,0.6s
TMCR Tamitsa 62.46 331 *e*P **P 09 15 40.6 -0.3**
TMCR pmax pmax
comp=Z,18nm,0.4s
RES Resolute Bay 62.77 14 *e*P **P 09 15 42.7 -0.1**
RES Resolute Bay 62.77 14 *e*P **P 09 15 42.7 -0.1**
EIDS Eidsvold 62.83 169 *e*P **P 09 15 44.1 +0.2**
comp=Z,9.3nm,1.0s
GEYT Alibeck 63.30 299 P **P 09 15 46.9 -0.2**
comp=Z,20nm,0.7s,baz=29,slow=3.4,SNR=28
KLMR Klimovskoe 63.44 328 *e*P **P 09 15 45.4 -2.1**
KLMR pmax pmax
comp=Z,15nm,0.6s
HAMF Hammerfest 63.63 341 *e*P **P 09 15 48.7 +0.1**
ARCES ARCESS Array B 63.79 339 P **P 09 15 49.6 -0.1**
comp=Z,11nm,0.7s,baz=58,slow=8.1,SNR=52
ARE0 ARCESS Array S 63.79 339 *e*P **P 09 15 50.0 +0.2**
YKW3 Yellowknife Ar 64.09 30 *e*P **P 09 15 51.8 0.0**
comp=Z,3.7nm,0.9s
YKA Yellowknife Ar 64.13 30 P **P 09 15 51.9 -0.1**
comp=Z,4.6nm,0.9s,baz=303,slow=6.8,SNR=29
YKA PKP2bc 09 44 36.4
comp=Z,0.1nm,0.7s,baz=131,slow=2.0,SNR=3.6
YKA Yellowknife Ar 64.13 30 P **P 09 15 51.9 -0.1**
YKA pmax pmax
comp=Z,3.0nm,0.8s
YKB5 Yellowknife Ar 64.13 30 *e*P **P 09 15 52.3 +0.2**
KTK1 Kautokeino 64.75 339 *e*P **P 09 15 55.9 -0.2**
KTK1 IAmb IAmb 09 15 57.3
comp=Z,26nm,1.0s
TRO Tromso 65.53 341 *e*P **P 09 16 01.0 0.0**
DAG Danmarks Havn 65.73 355 *i*P **P 09 16 02.4 +0.1**
comp=Z,28nm,0.7s
DAG Danmarks Havn 65.73 355 *i*P **P 09 16 02.4 +0.1**
DAG pmax pmax
comp=Z,20nm,0.7s
VRH Novokhopyorsk 67.17 318 *e*P **P 09 16 10.9 -1.0**
VRH pmax pmax
comp=Z,30nm,0.6s
OBN Obninsk 67.74 323⇑*e*P **P 09 16 14.9 -0.5**
OBN *e* 09 18 44.7
OBN *e*PPP PPP 09 20 20.8
OBN *e*S **PnS 09 25 32.7 -2.2**
OBN pmax pmax
comp=Z,36nm,1.2s
OBN MLR MLR
comp=Z,2μm,15.0s
LPSR Galich'ya Gora 67.92 320 *e*P **P 09 16 15.9 -0.6**
LPSR *e**PP **sP 09 16 22.0 -1.4**
LPSR pmax pmax
comp=Z,30nm,0.8s
KULLO Kullorsuaq 68.05 5 *i*P **P 09 16 17.2 +0.2**
comp=Z,20nm,0.9s
KULLO Kullorsuaq 68.05 5 *i*P **P 09 16 17.2 +0.2**
KULLO pmax pmax
comp=Z,20nm,0.9s
VSR Storozhevoye 68.53 319 *e*P **P 09 16 19.8 -0.7**
VSR pmax pmax
comp=Z,30nm,0.6s
FIA1 FINESS Array S 68.54 332 *e*P **P 09 16 19.9 -0.3**
FINES FINESS Array B 68.54 332 P **P 09 16 19.9 -0.4**
comp=Z,35nm,0.7s,baz=57,slow=7.7,SNR=70
STKA Stephens Creek 68.55 179 P **P 09 16 20.5 -0.1**
comp=Z,4.6nm,0.6s,baz=357,slow=6.6,SNR=11
STKA Stephens Creek 68.55 179 *e*P **P 09 16 20.8 +0.2**
comp=Z,2.6nm,1.2s
MOR8 Moi Rana 69.16 339 *e*P **P 09 16 22.8 -1.4**
MOR8 IAmb IAmb 09 16 23.6
comp=Z,31nm,0.6s
GOF Gofitskoye 69.64 311⇑*e*P **P 09 16 26.5 -1.0**
GOF pmax pmax
comp=Z,33nm,1.0s
NCK Nalchik 70.14 310 *e*P **P 09 16 31.0 +0.4**
NCK pmax pmax
comp=Z,20nm,0.7s
VSU Vasula 70.15 329 *ce*P **P 09 16 30.4 +0.1**
VSU pmax pmax
comp=Z,96nm,0.8s
C09A Chrisman Ranch 70.18 45 *e*P **P 09 16 32.2 +1.4**
comp=Z,6.1nm,0.8s
ZEI Tsey 70.33 309 *e*P **P 09 16 30.4 -1.6**
ZEI pmax pmax
comp=Z,12nm,0.6s
KBZ Khabaz 70.44 310 P **P 09 16 32.6 +0.2**
comp=Z,19nm,0.9s,baz=66,slow=3.3,SNR=26
KIV Kislovodsk 70.45 311 *e*P **P 09 16 32.6 0.0**
KIV pmax pmax
comp=Z,63nm,1.1s
KIV Kislovodsk 70.45 311 *e*P **P 09 16 33.2 +0.6**
comp=Z,48nm,0.9s
NEW Newport 70.57 44 P **P 09 16 34.0 +0.8**
baz=304
NEW Newport 70.57 44 *e*P **P 09 16 33.8 +0.6**
NEW pmax pmax
comp=Z,40nm,1.9s
NEW Newport 70.57 44 *e*P **P 09 16 33.8 +0.6**
comp=Z,40nm,1.9s
SUMG Summit 70.70 360 *i*P **P 09 16 34.9 +0.9**
comp=Z,59nm,1.1s
SUMG Summit 70.70 360 *i*P **P 09 16 34.9 +0.9**
SUMG pmax pmax
comp=Z,59nm,1.1s
SUMG Summit 70.70 360 *e*P **P 09 16 34.6 +0.6**
comp=Z,52nm,1.0s
NSS Namsos 71.08 339 *e*P **P 09 16 35.6 -0.2**
AKH Akhalkalaki 71.33 308 ||*i*P **P 09 16 38.8 +0.7**
CHVG Ch'k'valeri 71.49 310⇑*i*P **P 09 16 39.4 +0.6**
WALA Waterton Lakes 71.86 42 *e*P **P 09 16 41.8 +0.7**
comp=Z,6.9nm,0.8s
SCO Scoresbysund 72.06 354 *i*P **P 09 16 42.4 +0.7**
comp=Z,11nm,0.7s
SCO Scoresbysund 72.06 354 *i*P **P 09 16 42.4 +0.7**
SCO pmax pmax
comp=Z,11nm,0.7s
BMO Blue Mountains 72.39 47 *e*P **P 09 16 45.6 +1.3**
comp=Z,5.4nm,0.8s
NACGM Naroch 72.39 326 *e* **P 09 16 42.0 -2.0**
JTMT Jette 72.43 43 *e*P **P 09 16 45.8 +1.3**
SWMT Swartz Lake 72.72 43 *e*P **P 09 16 47.8 +1.5**
ORV Oroville 72.80 53 *e*P **P 09 16 48.8 +2.1**

ORV pmax pmax
comp=Z,6.0nm,0.9s
ORV Oroville 72.80 53 *e*P **P 09 16 48.8 +2.1**
comp=Z,5.7nm,0.9s
WVOR Wild Horse Val 72.97 50 *e*P **P 09 16 49.6 +1.8**
WVOR pmax pmax
comp=Z,7.0nm,1.0s
WVOR Wild Horse Val 72.97 50 *e*P **P 09 16 49.6 +1.8**
comp=Z,6.7nm,1.0s
ANN Anapa 73.09 314 *e*P **P 09 16 47.7 -0.6**
ANN pmax pmax
comp=Z,58nm,1.1s
MSO Missoula 73.16 44 P **P 09 16 49.4 +0.6**
baz=306
MSO Missoula 73.16 44 *e*P **P 09 16 49.2 +0.3**
comp=Z,5.8nm,1.1s
NC405 NORSAR Array S 73.75 337 *e*P **P 09 16 52.0 +0.1**
NC303 NORSAR Array S 73.77 337 *e*P **P 09 16 52.1 +0.1**
NC204 NORSAR Array S 73.92 337 *e*P **P 09 16 53.2 +0.3**
NB201 NORSAR Array S 73.93 337 *e*P **P 09 16 53.0 0.0**
AKASG Malin Array Be 73.93 322 P **P 09 16 52.5 -0.6**
comp=Z,14nm,0.6s,baz=46,slow=6.0,SNR=43
AKBB Malin Array Si 73.93 322 *e*P **P 09 16 53.0 -0.1**
AKBB pmax pmax
comp=Z,26nm,0.9s
AKBB Malin Array Si 73.93 322 *e*P **P 09 16 53.0 -0.1**
comp=Z,26nm,0.9s
KIEV Kiev 73.94 322 *e*P **P 09 16 52.5 -0.7**
KIEV pmax pmax
comp=Z,28nm,0.9s
KIEV Kiev 73.94 322 *e*P **P 09 16 52.5 -0.7**
comp=Z,24nm,0.8s
NB2 NORSAR Subarra 73.96 337 P **P 09 16 53.0 -0.2**
comp=Z,13nm,0.6s,baz=40,slow=6.2
NB2 NORSAR Subarra 73.96 337 P **P 09 16 53.0 -0.2**
baz=40,slow=6.2
NOA NORSAR Array B 73.96 337 P **P 09 16 53.1 -0.2**
comp=Z,14nm,0.7s,baz=38,slow=5.9,SNR=47
AK11 Malin Array Si 73.97 322 *e*P **P 09 16 53.0 -0.4**
FFC Flin Flon 74.05 32 *e*P **P 09 16 54.0 +0.2**
FFC pmax pmax
comp=Z,9.0nm,0.8s
FFC Flin Flon 74.05 32 *e*P **P 09 16 54.0 +0.2**
comp=Z,9.1nm,0.8s
NBO02 NORSAR Array S 74.06 337 *e*P **P 09 16 53.6 -0.1**
MFID Camas Ranch 74.09 47 *e*P **P 09 16 55.6 +1.3**
comp=Z,6.5nm,1.0s
NC602 NORSAR Array S 74.09 337 *e*P **P 09 16 53.5 -0.3**
NC602 NORSAR Array S 74.09 337 *e*P **P 09 16 53.7 -0.2**
NBO00 NORSAR Array S 74.10 337 *e*P **P 09 16 54.0 0.0**
NAO01 NORSAR Array S 74.21 337 *e*P **P 09 16 54.6 0.0**
FCC Fort Churchill 74.29 26 *e*P **P 09 16 55.1 +0.1**
FCC Fort Churchill 74.29 26 *e*P **P 09 16 55.1 +0.1**
CMB Columbia Colle 74.38 54 *e*P **P 09 16 57.2 +1.2**
CMB pmax pmax
comp=Z,10.0nm,1.0s
CMB Columbia Colle 74.38 54 *e*P **P 09 16 57.2 +1.2**
comp=Z,9.5nm,1.0s
LRM Limekiln Ridge 74.58 44 *e*P **P 09 16 58.6 +1.2**
EGMT Eagleton 74.69 41 P **P 09 16 58.5 +0.8**
baz=309
EGMT Eagleton 74.69 41 *e*P **P 09 16 58.7 +1.0**
comp=Z,23nm,0.8s
WAKR Walker 74.72 53 *e*P **P 09 16 59.6 +1.4**
DLMT Dillon 74.78 44 *e*P **P 09 16 59.8 +1.4**
comp=Z,11nm,0.8s
HLID Hailey 74.83 47 P **P 09 16 59.7 +0.9**
baz=307
HLID Hailey 74.83 47 *e*P **P 09 17 00.1 +1.4**
comp=Z,6.1nm,1.0s
SIM Simferopol' 74.90 315 P **P 09 16 58.9 0.0**
SIM pmax pmax
comp=Z,19nm,0.8s
MCMT McKenzie Canyo 74.97 45 *e*P **P 09 17 01.0 +1.4**
BOZ Bozeman (W) 75.15 44 P **P 09 17 01.2 +0.7**
baz=308
HYA Hoyanger 75.37 339 *e*P **P 09 17 01.4 +0.2**
HYA IAmb IAmb 09 17 01.8
comp=Z,13nm,0.7s
KLNR Kaliningrad 75.42 329 *e*P **P 09 17 01.4 -0.3**
KLNR pmax pmax
comp=Z,81nm,1.1s
NV01 Mina Array Sit 75.49 53 *e*P **P 09 17 03.6 +1.0**
NVAR Mina Array Bea 75.49 53 P **P 09 17 03.8 +1.1**
comp=Z,8.6nm,0.9s,baz=287,slow=6.3,SNR=11
KONO Kongsberg 75.55 337 *e*P **P 09 17 02.4 0.0**
KONO Kongsberg 75.55 337 *e*P **P 09 17 02.6 +0.3**
KONO pmax pmax
comp=Z,38nm,1.0s
NV11 Mina Array Sit 75.58 53 *e*P **P 09 17 04.4 +1.3**
comp=Z,4.1nm,0.9s
SFJD Kangerlussuaq 75.95 5 *i*P **P 09 17 04.8 +0.3**
comp=Z,9.4nm,0.8s
SFJD Kangerlussuaq 75.95 5 *e*P **P 09 17 05.1 +0.6**
SFJD pmax pmax
comp=Z,13nm,0.9s
SFJD Kangerlussuaq 75.95 5 *e*P **P 09 17 05.1 +0.6**
comp=Z,13nm,0.9s
ELK Elko 76.03 49 *e*P **P 09 17 07.1 +1.3**
ELK pmax pmax
comp=Z,4.0nm,0.9s
ELK Elko 76.03 49 *e*P **P 09 17 07.1 +1.3**
comp=Z,3.7nm,0.9s
ASK Askoy 76.21 339 *e*P **P 09 17 05.6 -0.4**
ODD1 Odda 76.25 338 *e*P **P 09 17 07.1 +0.7**
LKWY Lake 76.50 44 *e*P **P 09 17 10.6 +2.2**
LKWY pmax pmax
comp=Z,8.0nm,0.8s
LKWY Lake 76.50 44 *e*P **P 09 17 10.6 +2.2**
comp=Z,7.9nm,0.8s
H17A Grant Village 76.51 44 P **P 09 17 11.4 +2.9**
baz=309
IMW Indian Meadow 76.62 45 *e*P **P 09 17 10.7 +1.6**
comp=Z,6.5nm,0.8s
FLWY Flagg Ranch 76.64 45 *e*P **P 09 17 09.9 +0.8**
comp=Z,9.1nm,1.1s
BLS5 Blasjo 76.70 338 *e*P **P 09 17 09.6 +0.7**
RLMT Red Lodge 76.78 43 P **P 09 17 11.1 +1.2**
baz=310
RLMT Red Lodge 76.78 43 *e*P **P 09 17 12.4 +2.5**
comp=Z,11nm,1.3s
MOOW Moose Ponds 76.82 45 *e*P **P 09 17 12.0 +1.8**
comp=Z,3.4nm,0.8s
HVU Hansel Valley 76.87 47 *e*P **P 09 17 12.0 +1.6**
HVU pmax pmax
comp=Z,6.0nm,0.9s
HVU Hansel Valley 76.87 47 *e*P **P 09 17 12.0 +1.6**
comp=Z,6.0nm,0.9s
GRAC Grapevine Rang 76.93 54 P **P 09 17 12.1 +1.3**
baz=307
HOMB Homborsund 76.99 336 *e*P **P 09 17 10.8 +0.3**
LOHW Long Hollow 76.99 45 *e*P **P 09 17 11.5 +0.4**
comp=Z,2.8nm,0.9s
SNOW Snow King Moun 77.00 45 *e*P **P 09 17 13.1 +1.9**
comp=Z,13nm,1.3s
LVV Lvov 77.02 324 *e*P **P 09 17 10.4 -0.5**
BSD Bornholm Skovb 77.16 331 *i*P **P 09 17 11.0 -0.6**
comp=Z,34nm,1.0s
BSD Bornholm Skovb 77.16 331 *i*P **P 09 17 11.0 -0.6**
BSD pmax pmax
comp=Z,34nm,1.0s
DGMT Dagmar 77.23 38 P **P 09 17 12.9 +0.7**
baz=312
DGMT Dagmar 77.23 38 *e*P **P 09 17 12.2 0.0**
comp=Z,13nm,0.8s
BGU Big Grassy Mou 77.25 48 *e*P **P 09 17 14.2 +1.7**
comp=Z,5.5nm,1.0s
R11A Troy Canyon, C 77.25 52 P **P 09 17 13.5 +0.8**
baz=307
R11A Troy Canyon, C 77.25 52 *e*P **P 09 17 13.7 +1.0**
SNART Snartemo 77.34 337 *e*P **P 09 17 13.0 +0.5**
LAO LASA Array 77.39 40 P **P 09 17 14.1 +1.0**
baz=311
LAO LASA Array 77.39 40 *e*P **P 09 17 14.4 +1.3**
comp=Z,13nm,0.9s
MPMC Manual Prospec 77.41 54 P **P 09 17 14.4 +0.8**
baz=307
A25A Svangstu Ranch 77.44 37 P **P 09 17 14.1 +0.8**
baz=313
FURC Furnace Creek, 77.57 54 P **P 09 17 15.8 +1.6**
baz=307
TPNV Topopah Spring 77.68 53 P **P 09 17 16.2 +1.2**
baz=307
TPNV Topopah Spring 77.68 53 *e*P **P 09 17 16.0 +0.9**
TPNV pmax pmax
comp=Z,14nm,0.9s

TPNV Topopah Spring 77.68 53 *e*P **P 09 17 16.0 +0.9**
comp=Z,14nm,0.9s
HWUT Hardware Ranch 77.69 47 *e*P **P 09 17 16.6 +1.6**
comp=Z,9.3nm,1.0s
KWP Kalwaria Pacla 77.78 324 *e*P **P 09 17 15.8 +0.6**
KWP Kalwaria Pacla 77.78 324 *e*P **P 09 17 15.9 +0.7**
EDW2 Edwards Air Fo 77.78 56 P **P 09 17 16.6 +1.1**
baz=307
DUG Dugway, Tooele 77.83 49 P **P 09 17 17.0 +1.2**
baz=308
DUG Dugway, Tooele 77.83 49 *e*P **P 09 17 17.1 +1.3**
DUG pmax pmax
comp=Z,8.0nm,1.0s
DUG Dugway, Tooele 77.83 49 *e*P **P 09 17 17.1 +1.3**
comp=Z,7.6nm,1.0s
BUR08 Bucovina Ar. S 77.93 321 *e*P **P 09 17 16.7 +0.5**
BURAR Bucovina Array 77.94 321⇑*i*P **P 09 17 16.5 +0.3**
TESR Tescani 77.95 320⇑*i*P **P 09 17 16.4 +0.2**
CFR Carcaliu 78.05 318⇑*i*P **P 09 17 16.8 +0.1**
TCUT Toone Canyon 78.09 47 *e*P **P 09 17 18.3 +0.9**
comp=Z,10nm,0.8s
BW06 Boulder Array 78.11 45 P **P 09 17 17.6 +0.1**
baz=310
BW06 Boulder Array 78.11 45 *e*P **P 09 17 17.6 +0.1**
BW06 *e*P **P 09 17 17.8 +0.4**
PD31 Pinedale Array 78.11 45 *e*P **P 09 17 18.1 +0.6**
PDAR Pinedale Array 78.11 45 P **P 09 17 17.6 +0.1**
comp=Z,2.4nm,0.7s,baz=274,slow=2.9,SNR=14
CTU Camp Tracy 78.15 48 *e*P **P 09 17 17.3 -0.3**
comp=Z,8.8nm,1.2s
GSC Goldstone, Bar 78.31 55 P **P 09 17 19.2 +0.8**
baz=307
GSC Goldstone, Bar 78.31 55 *e*P **P 09 17 20.4 +1.9**
GSC pmax pmax
comp=Z,8.0nm,1.3s
GSC Goldstone, Bar 78.31 55 *e*P **P 09 17 20.4 +1.9**
comp=Z,7.6nm,1.3s
VRI Vrincioaia 78.33 319⇑*i*P **P 09 17 18.9 +0.6**
PLOR Plostina 78.39 319⇑*i*P **P 09 17 19.3 +0.6**
JLU Jordanelle 78.39 48 *e*P **P 09 17 20.9 +1.9**
comp=Z,4.9nm,0.9s
BR131 Keskin Array S 78.40 311 *e*P **P 09 17 19.2 +0.2**
BRTR Keskin Array B 78.40 311 P **P 09 17 18.6 -0.4**
comp=Z,6.6nm,0.6s,baz=104,slow=3.9,SNR=27
NLU North Lily Min 78.42 49 *e*P **P 09 17 20.6 +1.4**
comp=Z,7.1nm,0.9s
KOLS Kolonicke sedl 78.47 324 *e*P **P 09 17 19.5 +0.5**
KOLS pmax pmax
comp=Z,9.0nm,1.0s
KOLS Kolonicke sedl 78.47 324 *e*P **P 09 17 19.5 +0.5**
STHS Stebnicka Huta 78.61 325 *e*P **P 09 17 20.8 +1.0**
STHS pmax pmax
comp=Z,15nm,1.1s
STHS Stebnicka Huta 78.61 325 *e*P **P 09 17 20.8 +1.0**
MPU Maple Canyon 78.65 48 *e*P **P 09 17 21.8 +1.4**
comp=Z,8.2nm,0.9s
UZH Uzhgorod 78.67 323 *ce*iP **P 09 17 21.0 +0.9**
UZH *e* 09 17 27.2
UZH *e* 09 17 36.4
OJC Ojcow 78.70 326 *e*P **P 09 17 20.5 +0.2**
OJC Ojcow 78.70 326 *e*P **P 09 17 20.2 -0.1**
OJC pmax pmax
comp=Z,37nm,1.1s
OJC Ojcow 78.70 326 *e*P **P 09 17 20.2 -0.1**
comp=Z,37nm,1.1s
ARCR ARCALIA 78.73 321 ||*i*P **P 09 17 21.1 +0.6**
TUQ Turquoise Moun 78.80 54 P **P 09 17 22.4 +1.1**
baz=308
A28A Rude Farm, Bot 78.83 36 P **P 09 17 21.8 +0.8**
baz=315
BR231 Keskin MP Arra 78.84 312 *e*P **P 09 17 19.6 -1.8**
CRVS Cervenica-Dubn 78.87 324 *e*P **P 09 17 22.0 +0.8**
CRVS Cervenica-Dubn 78.87 324 *e*P **P 09 17 22.0 +0.8**
MSAB Monastry St. A 78.93 317⇑*i*P **P 09 17 21.9 +0.3**
ISR Istrita 78.93 319⇑*i*P **P 09 17 22.8 +1.1**
E25A Miller Ranch, 78.96 39 P **P 09 17 22.4 +0.6**
baz=313
MLR Muntele Rosu 79.00 319⇑*i*P **P 09 17 22.5 +0.4**
NIE Niedzica 79.05 325 *e*P **P 09 17 23.1 +0.9**
NIE Niedzica 79.05 325 *e*P **P 09 17 23.2 +1.0**
B28A Dugan Ranch, T 79.10 36 P **P 09 17 23.5 +1.0**
baz=315
MSU Marysvale 79.26 50 *e*P **P 09 17 25.8 +1.9**
MSU Marysvale 79.26 50 *e*P **P 09 17 25.8 +1.9**
A29A Manning Farm, 79.30 35 P **P 09 17 24.2 +0.7**
baz=315
TMUT Trail Mountain 79.36 49 *e*P **P 09 17 26.4 +1.9**
comp=Z,4.7nm,0.8s
GMRC Granite Mounta 79.37 54 P **P 09 17 25.4 +1.1**
baz=308
E26A Carlson Angus 79.45 39 P **P 09 17 25.0 +0.5**
baz=314
P17A Butcher Ranch, 79.52 48 *e*P **P 09 17 26.7 +1.5**
comp=Z,12nm,0.9s
LCMT Little Creek M 79.54 51 *e*P **P 09 17 26.9 +1.6**
comp=Z,7.9nm,0.9s
PFO Pinyon Flats O 79.56 56 P **P 09 17 27.3 +1.9**
baz=308
PFO Pinyon Flats O 79.56 56 *i*P **P 09 17 29.6 +4.2**
LANS Liptovska Anna 79.62 325 *e*P **P 09 17 26.7 +1.3**
LANS Liptovska Anna 79.62 325 *e*P **P 09 17 26.7 +1.3**
KECS Kecovo 79.63 324 *e*P **P 09 17 25.8 +0.5**
KECS pmax pmax
comp=Z,3.0nm,0.6s
KECS Kecovo 79.63 324 *e*P **P 09 17 25.8 +0.5**
A30A Hoffart Farm, 79.72 35 P **P 09 17 26.4 +0.5**
baz=316
OKC Ostrava-Krasne 79.72 326 *e*P **P 09 17 26.3 +0.5**
OKC Ostrava-Krasne 79.72 326 *e*P **P 09 17 26.3 +0.5**
P18A Preston Nutter 79.72 48 *e*P **P 09 17 28.6 +2.1**
comp=Z,10nm,0.9s
ARR Arges 79.76 320⇑*i*P **P 09 17 27.6 +1.4**
F26A Lodgepole 79.77 39 P **P 09 17 26.6 +0.3**
baz=314
KSP Ksiaz 79.79 328 *e*P **P 09 17 26.7 +0.6**
KSP Ksiaz 79.79 328 *e*P **P 09 17 26.8 +0.6**
KNB Kanab 79.80 51 *e*P **P 09 17 29.1 +2.3**
KNB pmax pmax
comp=Z,14nm,1.1s
KNB Kanab 79.80 51 *e*P **P 09 17 29.1 +2.3**
comp=Z,14nm,1.1s
G25A Newell 79.84 40 P **P 09 17 27.4 +0.7**
baz=313
ULM Lac du Bonnet 79.85 33 P **P 09 17 26.2 -0.3**
comp=Z,13nm,0.9s,baz=330,slow=6.5,SNR=8.2
SRU San Rafael Swe 79.88 48 *e*P **P 09 17 28.4 +1.2**
SRU pmax pmax
comp=Z,10.0nm,0.7s
SRU San Rafael Swe 79.88 48 *e*P **P 09 17 28.4 +1.2**
comp=Z,10nm,0.7s
K22A Casper 79.89 44 P **P 09 17 27.3 +0.2**
baz=312
K22A Casper 79.89 44 *e*P **P 09 17 29.1 +2.0**
E27A Carson 79.93 38 P **P 09 17 27.1 0.0**
baz=314
MORC Moravsky Berou 80.03 327 *e*P **P 09 17 28.0 +0.4**
MORC pmax pmax
comp=Z,49nm,1.0s
MORC Moravsky Berou 80.03 327 *e*P **P 09 17 28.0 +0.4**
comp=Z,49nm,1.0s
B30A Myrvik Farm, E 80.06 35 P **P 09 17 28.3 +0.6**
baz=316
IRM Iron Mountain 80.09 55 P **P 09 17 29.0 +0.9**
baz=308
RAYN Ar Rayn 80.09 292 *e*P **P 09 17 28.2 -0.1**
comp=Z,12nm,0.8s
DPC Dobruska-Polom 80.14 328 *e*P **P 09 17 28.8 +0.6**
DPC Dobruska-Polom 80.14 328 *e*P **P 09 17 28.8 +0.6**
G26A Maurine 80.19 40 P **P 09 17 28.9 +0.3**
baz=314
BC3 Big Chuckawall 80.19 55 P **P 09 17 29.2 +0.4**
baz=308
PSZ Piszkesteto 80.31 324 *e*P **P 09 17 29.2 +0.1**
PSZ pmax pmax
comp=Z,14nm,0.8s
PSZ Piszkesteto 80.31 324 *e*P **P 09 17 29.2 +0.1**
comp=Z,14nm,0.8s
W13A Hualapai Mount 80.32 53 *e*P **P 09 17 30.7 +1.1**
comp=Z,4.6nm,1.1s
IBP Imperial Bould 80.38 56 P **P 09 17 31.7 +1.8**
baz=308
VYHS Vyhne 80.38 325 *e*P **P 09 17 30.3 +0.8**
VYHS pmax pmax
comp=Z,5.0nm,0.9s
VYHS Vyhne 80.38 325 *e*P **P 09 17 30.3 +0.8**

G27A	**Dupree**	80.47	39	P		P		09 17 30.0	-0.1
	baz=314								
U15A	**North Rim**	80.50	51	*e*P		P		09 17 35.2	+4.6
	comp=Z,8.5nm,0.9s								
C30A	**Mose, Pekin**	80.52	36	P		P		09 17 31.0	+0.8
	baz=316								
A32A	**Rocking H Ranc**	80.56	34	P		P		09 17 30.2	-0.1
	baz=317								
O20A	**White River Ci**	80.57	46	P		P		09 17 31.4	+0.6
	baz=311								
O20A	**White River Ci**	80.57	46	*e*P		P		09 17 31.7	+0.8
H26A	**Fairpoint**	80.57	40	P		P		09 17 31.2	+0.6
	baz=314								
PDMCI	**Parker Dam,Lak**	80.65	54	P		P		09 17 32.0	+0.9
	baz=309								
GZR	**Gura Zlata**	80.69	321	⇑*i*P		P		09 17 31.4	+0.2
F28A	**McLaughlin**	80.72	38	P		P		09 17 31.8	+0.5
	baz=315								
Y12C	**Blythe**	80.75	55	P		P		09 17 32.6	+1.0
	baz=309								
Y12C	**Blythe**	80.75	55	*e*P		P		09 17 34.0	+2.4
BRG	**Berggiesshubel**	80.75	329	*i* P		P		09 17 31.4	+0.1
	comp=Z,21nm,1.2s								
BRG	**Berggiesshubel**	80.75	329	*i* P		P		09 17 31.4	+0.1
BRG					pmax	pmax			
	comp=Z,21nm,1.2s								
PVCC	**Panska Ves**	80.75	328	*e*P		P		09 17 32.0	+0.6
PVCC	**Panska Ves**	80.75	328	*e*P		P		09 17 32.0	+0.6
VRAC	**Vranov**	80.79	327	⇓*i*P		P		09 17 32.5	+0.9
CLL	**Collm**	80.80	330	⇓*i*P		P		09 17 31.5	-0.1
	comp=Z,34nm,1.2s								
CLL				*i*				09 17 34.3	
CLL	**Collm**	80.80	330	⇓*i*P		P		09 17 31.5	-0.1
CLL					pmax	pmax			
	comp=Z,34nm,1.2s								
CLL	**Collm**	80.80	330	*e*P		P		09 17 31.1	-0.5
	comp=Z,25nm,0.8s								
C31A	**Landman Farms,**	80.81	36	P		P		09 17 32.0	+0.3
	baz=317								
H27A	**Howes**	80.92	40	P		P		09 17 32.8	+0.3
	baz=314								
B32A	**Ashes, Strandq**	80.92	35	P		P		09 17 32.2	-0.1
	baz=317								
GLA	**Glamis**	80.98	55	*e*P		P		09 17 34.2	+1.2
GLA					pmax	pmax			
	comp=Z,9.0nm,0.9s								
GLA	**Glamis**	80.98	55	*e*P		P		09 17 34.2	+1.2
	comp=Z,9.2nm,0.9s								
A33A	**Warroad**	81.03	34	P		P		09 17 32.8	-0.1
	baz=318								
PV09	**Paradox Valley**	81.11	48	*e*P		P		09 17 35.0	+1.1
GOPC	**GO Pecny, Ondr**	81.12	328	*e*P		P		09 17 33.8	+0.4
GOPC	**GO Pecny, Ondr**	81.12	328	*e*P		P		09 17 33.8	+0.4
PRU	**Pruhonice**	81.17	328	*e*P		P		09 17 33.9	+0.3
PRU	**Pruhonice**	81.17	328	*e*P		P		09 17 33.9	+0.3
G28A	**Parade**	81.20	39	P		P		09 17 34.5	+0.6
	baz=315								
PV10	**Paradox Valley**	81.24	48	*e*P		P		09 17 36.2	+1.6
AGMN	**Agassiz Nation**	81.30	34	P		P		09 17 33.9	-0.4
	baz=318								
AGMN	**Agassiz Nation**	81.30	34	*e*P		P		09 17 34.1	-0.2
	comp=Z,12nm,0.9s								
PV04	**Paradox Valley**	81.31	48	*e*P		P		09 17 35.7	+0.8
I27A	**Quinn**	81.32	40	P		P		09 17 34.9	+0.3
	baz=314								
N23A	**Red Feather La**	81.38	45	P		P		09 17 37.1	+1.9
	baz=312								
N23A	**Red Feather La**	81.38	45	*e*P		P		09 17 37.3	+2.1
PV05	**Paradox Valley**	81.40	48	*e*P		P		09 17 36.5	+1.2
H28A	**Mission Ridge**	81.43	39	P		P		09 17 35.9	+0.7
	baz=315								
Y14A	**Wickenburg**	81.61	54	*e*P		P		09 17 37.5	+1.2
	comp=Z,31nm,0.9s								
E31A	**Nome**	81.63	37	P		P		09 17 36.5	+0.3
	baz=317								
MDVR	**Moldovita**	81.65	321	⇓*i*P		P		09 17 36.4	+0.1
WUAZ	**Wupatki**	81.65	52	P		P		09 17 38.0	+1.4
	baz=310								
WUAZ	**Wupatki**	81.65	52	*e*P		P		09 17 38.2	+1.5
	comp=Z,11nm,0.9s								
PV01	**Paradox Valley**	81.68	48	*e*P		P		09 17 38.1	+1.2
B34A	**Aery, Baudette**	81.70	34	P		P		09 17 35.9	-0.5
	baz=318								
C33A	**Trail**	81.73	35	P		P		09 17 35.9	-0.8
	baz=318								
I28A	**Midland**	81.83	40	P		P		09 17 37.8	+0.5
	baz=315								
NKC	**Novy Kostel**	81.85	329	*e*P		P		09 17 38.1	+0.8
NKC	**Novy Kostel**	81.85	329	*e*P		P		09 17 38.1	+0.8
H29A	**Onida**	81.87	39	P		P		09 17 38.3	+0.8
	baz=315								
SMCO	**Snowmass**	81.93	47	*e*P		P		09 17 39.6	+1.2
	comp=Z,7.8nm,1.2s								
G30A	**Faulkton**	82.05	38	P		P		09 17 38.9	+0.6
	baz=316								
CONA	**Conrad Observa**	82.15	326	*i* P		P		09 17 39.5	+0.5
	comp=Z,8.2nm,0.6s,SNR=8.0								
B35A	**Bob, Littlefor**	82.20	33	P		P		09 17 38.9	-0.2
	baz=319								
C34A	**RKJ Ranch, Bem**	82.20	34	P		P		09 17 38.8	-0.3
	baz=318								
KHC	**Kasperske Hory**	82.23	328	*e*P		P		09 17 39.5	+0.2
KHC	**Kasperske Hory**	82.23	328	*e*P		P		09 17 39.5	+0.2
KHC	**Kasperske Hory**	82.23	328	*e*P		P		09 17 39.5	+0.2
	comp=Z,6.3nm,0.5s								
I29A	**Vivian Onida**	82.25	40	P		P		09 17 40.0	+0.5
	baz=315								
ISCO	**Idaho Springs**	82.30	45	*e*P		P		09 17 41.8	+1.6
ISCO					pmax	pmax			
	comp=Z,3.0nm,0.8s								
ISCO	**Idaho Springs**	82.30	45	*e*P		P		09 17 41.8	+1.6
	comp=Z,3.0nm,0.8s								
X16A	**Lo Mia Camp, P**	82.31	53	*e*P		P		09 17 41.9	+1.7
	comp=Z,6.3nm,0.9s								
MVCO	**Mesa Verde**	82.33	49	P		P		09 17 40.7	+0.4
	baz=311								
MVCO	**Mesa Verde**	82.33	49	*e*P		P		09 17 41.5	+1.3
	comp=Z,9.4nm,1.0s								
GEC2	**GERESS Array S**	82.40	328	*e*P		P		09 17 40.2	-0.1
GEC2					pmax	pmax			
	comp=Z,11nm,0.5s								
GEC2	**GERESS Array S**	82.40	328	*e*P		P		09 17 40.2	-0.1
	comp=Z,11nm,0.5s								
GERES	**GERESS Array B**	82.40	328	P		P		09 17 40.0	-0.2
	comp=Z,7.7nm,0.4s,baz=39,slow=6.1,SNR=57								
VTS	**Vitosha**	82.42	319	⇑*i*P		P		09 17 41.2	+0.7
VTS	**Vitosha**	82.42	319	*e*P		P		09 17 40.9	+0.4
VTS					pmax	pmax			
	comp=Z,11nm,0.8s								
VTS	**Vitosha**	82.42	319	*e*P		P		09 17 40.9	+0.4
	comp=Z,11nm,0.8s								
D34A	**Park Rapids**	82.50	35	P		P		09 17 40.5	-0.2
	baz=318								
E33A	**Westby DABS, E**	82.56	36	P		P		09 17 40.7	-0.3
	baz=318								
C35A	**Jirik Farms, M**	82.58	34	P		P		09 17 40.9	-0.3
	baz=319								
SUSD	**Miller**	82.63	39	P		P		09 17 41.9	+0.4
	baz=316								
J29A	**Okreek**	82.68	40	P		P		09 17 42.1	+0.4
	baz=315								
G32A	**Webster**	82.76	37	P		P		09 17 42.6	+0.5
	baz=317								
I30A	**Oacoma**	82.78	39	P		P		09 17 43.1	+0.9
	baz=316								
F33A	**5 Mile Ranch,**	82.91	36	P		P		09 17 43.1	+0.2
	baz=318								
MOA	**Molln**	82.91	327	*i* P		P		09 17 43.2	+0.4
	comp=Z,6.7nm,0.8s								
S22A	**4UR Ranch, Cre**	82.97	48	P		P		09 17 45.0	+1.3
	baz=312								
S22A	**4UR Ranch, Cre**	82.97	48	*e*P		P		09 17 45.4	+1.7
C36A	**Pine Crest Far**	83.04	33	P		P		09 17 43.5	0.0
	baz=320								
E35A	**Pequot Lakes**	83.25	35	P		P		09 17 43.9	-0.7
	baz=319								
G33A	**Ortonville**	83.32	37	P		P		09 17 45.0	+0.1
	baz=318								
C37A	**Embarrass**	83.35	33	P		P		09 17 44.7	-0.4
	baz=320								
SOKA	**Soboth**	83.46	326	*i* P		P		09 17 46.1	+0.3
	comp=Z,14nm,0.5s,SNR=13								
H33A	**Prehn Over Nor**	83.55	37	P		P		09 17 46.8	+0.6
	baz=318								
K30A	**Basset**	83.57	40	P		P		09 17 46.4	+0.1
	baz=316								
VAY	**Valandovo**	83.65	318	*i* P		P		09 17 47.3	+0.6
SDCO	**Great Sand Dun**	83.75	47	P		P		09 17 48.9	+1.3
	baz=313								
SDCO	**Great Sand Dun**	83.75	47	*e*P		P		09 17 49.0	+1.3
	comp=Z,2.9nm,0.9s								
SKO	**Skopje**	83.78	319	*e*P		P		09 17 48.5	+1.0
KBA	**Koelnbreinsper**	83.90	327	*e*P		P		09 17 48.1	-0.1
	comp=Z,11nm,0.9s,SNR=6.9								
MEM	**Membach**	84.04	333	P		P		09 17 48.5	0.0
	comp=Z,5.6nm,0.8s								
TUC	**Tucson**	84.08	54	P		P		09 17 49.7	+0.5
	baz=310								
MYKA	**Terra Mystica**	84.12	326	*i* P		P		09 17 48.7	-0.4
	comp=Z,6.9nm,0.5s								
ECSD	**EROS Data Cent**	84.31	38	P		P		09 17 50.3	+0.2
	baz=318								
ECSD	**EROS Data Cent**	84.31	38	*e*P		P		09 17 50.3	+0.2
	comp=Z,12nm,0.8s								
L31A	**Butterfield Fa**	84.32	40	P		P		09 17 50.0	-0.2
	baz=316								
H35A	**Sunnyside Ranc**	84.45	36	P		P		09 17 50.8	0.0
	baz=319								
BCLA	**Clavier**	84.45	333	P		P		09 17 50.6	0.0
ABTA	**Abfaltersbach**	84.52	327	*i* P		P		09 17 50.3	-0.9
	comp=Z,5.6nm,0.6s								
MOTA	**Moosalm**	84.66	328	*i* PcP		P		09 17 53.0	+1.0
	comp=Z,3.6nm,0.4s								
RETA	**Reutte**	84.69	328	*i* P		P		09 17 52.0	0.0
	comp=Z,12nm,0.5s,SNR=7.6								
OHR	**Ohrid**	84.74	319	*e*P		P		09 17 52.3	-0.1
T25A	**Trinidad**	84.80	47	P		P		09 17 53.6	+0.7
	baz=314								
T25A	**Trinidad**	84.80	47	*e*P		P		09 17 53.8	+0.8
DOU	**Dourbes**	84.98	333	P		P		09 17 53.2	-0.1
SPMN	**Marine on St.**	84.99	35	*e*P		P		09 17 56.8	+3.3
BFO	**Black Forest**	85.01	330	*e*P		P		09 17 53.4	-0.2
BFO					pmax	pmax			
	comp=Z,30nm,1.1s								
BFO	**Black Forest**	85.01	330	*e*P		P		09 17 53.4	-0.2
	comp=Z,30nm,1.1s								
LAZ	**Ladron**	85.01	50	*e*P		P		09 17 55.5	+1.5
ANMO	**Albuquerque**	85.07	49	P		P		09 17 55.5	+1.2
	baz=312								
ANMO	**Albuquerque**	85.07	49	*e*P		P		09 17 54.7	+0.4
ANMO					pmax	pmax			
	comp=Z,6.0nm,1.0s								
ANMO	**Albuquerque**	85.07	49	*e*P		P		09 17 55.7	+1.4
	comp=Z,5.8nm,0.9s								
FETA	**Feichten**	85.07	328	*i* PcP		P		09 17 54.1	+0.1
	comp=Z,15nm,1.2s,SNR=6.3								
DAVA	**Davis**	85.22	329	*i* PcP		P		09 17 55.0	+0.2
	comp=Z,26nm,1.1s,SNR=8.1								
BGNE	**Belgrade**	85.23	40	P		P		09 17 56.4	+1.6
	baz=317								
LPM	**Los Pinos Moun**	85.38	50	*e*P		P		09 17 56.8	+0.9
BNM	**Barren Site**	85.50	50	*e*P		P		09 17 57.7	+1.2
SCHQ	**Schefferville**	85.52	16	P		P		09 17 56.1	+0.2
	comp=Z,8.4nm,0.9s,baz=9.9,slow=5.2,SNR=7.8								
FUORN	**Ofenpass-Fuorn**	85.58	328	*e*P		P		09 17 57.1	+0.4
	comp=Z,20nm,0.6s								
I37A	**Lemond, Waseca**	85.64	36	P		P		09 17 57.4	+0.7
	baz=320								
121A	**Cookes Peak, D**	85.85	52	P		P		09 17 59.0	+0.7
	baz=312								
TUE	**Stuetta**	86.09	329	*e*P		P		09 17 58.7	-0.5
	comp=Z,19nm,1.4s								
I38A	**Scanlan Farm,**	86.12	35	P		P		09 17 59.5	+0.4
	baz=320								
LAST	**Lasithi**	86.28	312	*e*P		P		09 17 59.8	-0.4
	comp=Z,46nm,0.9s								
P32A	**Huiting Farm,**	86.29	42	P		P		09 17 59.8	-0.3
	baz=317								
K37A	**Belmond**	86.47	37	P		P		09 18 01.5	+0.6
	baz=320								
N34A	**Lincoln**	86.50	40	P		P		09 18 00.6	-0.5
	baz=318								
O34A	**Beatrice**	86.88	40	P		P		09 18 02.8	-0.2
	baz=318								
N35A	**Tabor**	86.92	39	P		P		09 18 03.8	+0.7
	baz=318								
Q33A	**Connelly Farm,**	87.15	42	P		P		09 18 04.6	+0.3
	baz=317								
P34A	**Walnut Farm, R**	87.28	41	P		P		09 18 04.6	-0.3
	baz=318								
S32A	**Newby Ranch, P**	87.50	43	P		P		09 18 06.5	+0.5
	baz=316								
M38A	**Pleasantville**	87.71	37	P		P		09 18 07.3	+0.4
	baz=320								
N37A	**Lee Faris, Mou**	87.71	38	P		P		09 18 07.4	+0.5
	baz=319								
KSU1	**Kansas State U**	87.72	41	P		P		09 18 07.6	+0.6
	baz=318								
O36A	**Bolckow**	87.81	39	P		P		09 18 08.0	+0.6
	baz=319								
MNTX	**Cornudas Mount**	87.92	51	P		P		09 18 09.1	+1.0
	baz=313								
AMTX	**Amarillo**	87.95	47	*e*P		P		09 18 09.3	+1.0
	comp=Z,9.0nm,0.4s								
Q35A	**Mercer Eighty,**	88.20	41	P		P		09 18 09.8	+0.5
	baz=318								
VLDQ	**Val d'Or**	88.69	24	*e*P		P		09 18 10.9	-0.4
	comp=Z,15nm,0.8s								
P38A	**Dawn**	88.91	39	P		P		09 18 13.0	+0.4
	baz=320								
W32A	**Sentinel**	89.18	45	P		P		09 18 14.5	+0.4
	baz=316								
V34A	**Guthrie**	89.64	44	P		P		09 18 16.5	+0.3
	baz=317								
V34A	**Guthrie**	89.64	44	*e*P		P		09 18 17.4	+1.2
S37A	**Fort Scott**	89.66	41	P		P		09 18 16.2	+0.1
	baz=319								
X32A	**Elmer**	89.67	46	P		P		09 18 17.0	+0.7
	baz=316								
T38A	**Diamond**	90.48	41	P		P		09 18 19.7	-0.3
	baz=319								
S39A	**Bolivar**	90.49	40	P		P		09 18 19.7	-0.3
	baz=320								
TUL1	**Leonard**	90.52	43	P		P		09 18 20.6	+0.3
	baz=318								
V36A	**Jenks**	90.53	43	P		P		09 18 20.9	+0.6
	baz=318								
R40A	**Maddies Statio**	90.56	39	P		P		09 18 21.2	+0.8
	baz=321								
TX31	**Lajitas Ar. Si**	90.61	52	*e*P		P		09 18 21.4	+0.4
TX31				*e*P		P		09 18 21.8	+0.8
TXAR	**Lajitas Array**	90.62	52	P		P		09 18 21.5	+0.5
	comp=Z,4.7nm,0.8s,baz=294,slow=3.2,SNR=26								
TXAR					PKKPbc	**PKKPbc**		09 35 48.4	+2.1
	comp=Z,0.3nm,0.5s,baz=149,slow=6.1,SNR=7.5								
ABTX	**Abilene, Hawle**	90.75	47	P		P		09 18 21.8	+0.4
	baz=316								
ABTX	**Abilene, Hawle**	90.75	47	*e*P		P		09 18 22.3	+0.9
V37A	**Hulbert**	90.89	42	P		P		09 18 21.7	-0.3
	baz=319								
HPIG		90.97	55	*e*P		P		09 18 23.8	+1.0
	comp=Z,7.1nm,1.1s								
X35A	**Drake**	90.99	44	P		P		09 18 22.0	-0.5
	baz=318								
133A	**Hamilton Ranch**	91.19	47	P		P		09 18 23.5	+0.1
	baz=317								
Z34A	**Collier Ranch,**	91.21	46	P		P		09 18 23.8	+0.3
	baz=317								
HHAR	**Hobbs**	91.23	41	*e*P		P		09 18 24.3	+0.7
	comp=Z,11nm,0.6s								
V38A	**Canehill**	91.30	42	P		P		09 18 24.1	+0.2
	baz=319								
U39A	**Green Forest**	91.40	41	P		P		09 18 24.2	-0.1
	baz=320								
Z35A	**Perchaven, San**	91.62	45	P		P		09 18 25.5	+0.1
	baz=318								
233A	**Rising Star**	91.62	47	P		P		09 18 26.1	+0.6
	baz=317								
V39A	**Pettigrew**	91.73	41	P		P		09 18 25.8	-0.1
	baz=320								
Y36A	**Durant**	91.74	44	P		P		09 18 26.4	+0.5
	baz=318								
U40A	**Yellville**	91.75	40	P		P		09 18 25.8	-0.1
	baz=320								
X38A	**Whitesboro**	91.97	43	P		P		09 18 27.7	+0.8
	baz=319								
333A	**Richland Sprin**	92.07	48	P		P		09 18 28.1	+0.5
	baz=317								
Z36A	**Blue Ridge**	92.12	45	P		P		09 18 28.0	+0.3
	baz=318								
JCT	**Junction City**	92.19	49	*e*P		P		09 18 28.2	0.0
JCT					pmax	pmax			
	comp=Z,5.0nm,0.7s								
JCT	**Junction City**	92.19	49	*e*P		P		09 18 28.1	0.0
	comp=Z,4.8nm,0.7s								
X39A	**Fountain Ranch**	92.48	42	P		P		09 18 29.8	+0.4
	baz=319								
334A	**Lometa**	92.51	47	P		P		09 18 30.3	+0.8
	baz=317								
W40A	**Ferguson Farm,**	92.52	41	P		P		09 18 29.2	-0.2
	baz=320								
MIAR	**Mount Ida**	92.74	42	P		P		09 18 31.0	+0.5
	baz=320								
MIAR	**Mount Ida**	92.74	42	*e*P		P		09 18 31.1	+0.5
MIAR					pmax	pmax			
	comp=Z,5.0nm,0.8s								
MIAR	**Mount Ida**	92.74	42	*e*P		P		09 18 31.1	+0.5
	comp=Z,4.9nm,0.8s								
KEST	**Kesra**	94.66	322	P		P		09 18 38.7	-0.7
	comp=Z,2.4nm,0.5s,baz=281,slow=0.4,SNR=4.1								
ESDC	**Sonseca Array**	97.03	333	P		P		09 18 49.7	-0.4
	comp=Z,0.7nm,0.4s,baz=11,slow=4.3,SNR=6.6								
VNDA	**Vanda**	115.02	175	PKP		**PKPdf**		09 23 57.4	-0.5
	comp=Z,1.0nm,0.7s,baz=314,slow=3.4,SNR=10								
TORD	**Torodi Ar. Bea**	116.90	314	PKP		**PKPdf**		09 24 02.4	-1.0
	comp=Z,1.2nm,0.5s,baz=22,slow=1.6,SNR=22								
TORD				PP		PP		09 25 01.5	-10
	comp=Z,1.9nm,0.9s,baz=28,slow=7.3,SNR=4.3								
TORD				PKKPbc		**PKKPbc**		09 34 28.5	+0.6
	comp=Z,0.4nm,0.6s,baz=217,slow=2.4,SNR=5.1								
MAW	**Mawson**	119.26	205	PKP		**PKPdf**		09 24 06.0	-0.2
	comp=Z,3.5nm,0.7s,baz=66,slow=5.0,SNR=5.6								
MAW	**Mawson**	119.26	205	PKIKP		**PKPdf**		09 24 06.0	-0.2
MAW					pmax	pmax			
	comp=Z,4.0nm,0.7s								
LBTB	**Lobatse**	124.02	263	*e*PKIKP		**PKPdf**		09 24 17.2	+0.4
LBTB	**Lobatse**	124.02	263	*e*PKPdf		**PKPdf**		09 24 17.2	+0.4
SDV	**Santo Domingo**	125.73	39	*e*PKPdf		**PKPdf**		09 24 20.4	-0.2
DBIC	**Dimbokro**	125.87	316	PKP		**PKPdf**		09 24 20.1	-0.5
	comp=Z,6.0nm,0.6s,baz=44,slow=2.4,SNR=20								
BOSA	**Boshof**	125.97	259	PKP		**PKPdf**		09 24 20.3	-0.2
	comp=Z,6.0nm,0.7s,baz=102,slow=1.7,SNR=9.5								
BOSA	**Boshof**	125.97	259	*e*PKPdf		**PKPdf**		09 24 20.7	+0.2
TIC	**Tumodi**	125.99	316	*e*PKP1		**PKPdf**		09 24 20.2	-0.7
KIC	**Kosan Boka**	126.06	316	*e*PKP1		**PKPdf**		09 24 20.6	-0.4
	comp=Z,18nm,1.0s								
LIC	**Lamto**	126.34	316	*e*PKP1		**PKPdf**		09 24 19.8	-1.7
CHIC	**Chingaza**	127.62	45	*e*P		PKPpre		09 24 20.5	
SYO	**Syowa Base**	127.92	207	⇓*e*P		**PKPdf**		09 24 21.4	-1.4
PTGA	**Pitinga**	139.17	33	PKP		**PKPdf**		09 24 45.5	-0.1
	comp=Z,2.6nm,0.2s,baz=17,slow=2.4,SNR=5.5								
PTGA	**Pitinga**	139.17	33	*e*PKPdf		**PKPdf**		09 24 46.6	+0.9
SNAA	**Sanae**	140.56	197	PKP		PKPpre		09 24 38.5	
VNA2	**Neumayer--Watz**	142.13	196	PKP		PKPpre		09 24 44.3	
	baz=121,slow=2.4								
VNA3	**Neumayer Olymp**	142.39	195	PKP		PKPpre		09 24 45.0	
SHEL	**Horse Pasture**	143.61	296	*i* PKIKP		**PKPdf**		09 24 59.9	+6.4
SAML	**Samuel**	144.69	44	*e*PKPdf		**PKPab**		09 24 54.2	+0.1
LPAZ	**La Paz**	147.23	59	PKPbc		**PKPbc**		09 25 02.8	+0.1
	comp=Z,16nm,0.7s,baz=313,slow=2.3,SNR=38								
LPAZ	**La Paz**	147.23	59	*e*PKIKP		**PKPdf**		09 25 01.6	+1.2
LPAZ	**La Paz**	147.23	59	*e*PKPdf		**PKPdf**		09 25 01.6	+1.2
RCBR	**Riachuelo**	148.79	353	PKPbc		**PKPbc**		09 25 05.7	-0.5
	comp=Z,24nm,0.8s,baz=0.4,slow=3.3,SNR=11								
RCBR	**Riachuelo**	148.79	353	*e*PKPbc		**PKPbc**		09 25 06.3	0.0
PB01	**IPOC Station P**	149.39	67	*e*PKPbc		**PKPbc**		09 25 08.4	+0.8
SIV	**San Ignacio**	151.56	48	PKP		**PKPdf**		09 25 06.8	+0.2
	comp=Z,3.8nm,0.8s,baz=314,slow=0.9,SNR=5.1								
SIV				PKPbc		**PKPbc**		09 25 13.0	+0.2
	comp=Z,22nm,0.8s,baz=288,slow=2.7,SNR=26								
LCO	**Las Campanas**	152.62	82	*e*PKPbc		**PKPbc**		09 25 15.8	+0.6
PLCA	**Paso Flores**	155.50	108	PKPab		**PKPab**		09 25 38.6	+1.1
	comp=Z,2.4nm,1.1s,baz=274,slow=5.7,SNR=4.6								

ISCJB ***11*** *09:11:36.7±1.1,36.98N±0.05×140.9E±0.1,h18km±8km, mb3.8/2,Error ellipse: s-maj=13.7km s-min=7.3km az=11.5*
JMA ***11*** *09:11:37.8,37.01N×140.70E,h11km±1km,M3.4*
IDC ***11*** *09:11:41.8±2.6,36.16N×140.31E,h0km,mb3.7/2, mb1 3.9/2,mb1mx3.2/40,mbtmp3.7/2,Error ellipse: s-maj=49.7km s-min=16.3km az=29.0*

ISC 11 09:11:37.0±1.3,36.96N±0.07×140.65E±0.06,h7km±15km, n8,σ0§51/12,3C-1D,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	0.18	41	⇓P		**Pg** 09 11 40.9	+0.1
JHO	**Hitachi**	0.36	190	⇑P		**Pb** 09 11 46.0	+0.3
JHO				S

comp=Z,80nm,0.5s
YUK pmax pmax
comp=E,39nm,0.2s
YUK pmax pmax
comp=N,30nm,0.3s
SHO Shikotan 8.40 32 P **Pn** 09 14 33.8 +1.3
SHO *i* S **Sn** 09 16 02.8 -4.1
SHO pmax pmax
comp=Z,52nm,0.5s
SHO pmax pmax
comp=E,38nm,0.6s
SHO pmax pmax
comp=N,28nm,0.4s
JNU Nakatsue 8.88 248 Pn **Pn** 09 14 42.6 +3.4
comp=N,0.6nm,0.3s,baz=45,slow=9.5,SNR=7.2
JNU Nakatsue 8.88 248 *e*Pn **Pn** 09 14 42.8 +3.7
VLA Vladivostok 9.19 315 *e*P **Pn** 09 14 42.5 -0.8
CBIJ Chichi jima 9.84 172 Pn **Pn** 09 14 49.5 -2.7
CBIJ *e*Pn Pn 09 14 58.6 +6.4
CBIJ Sn **Sn** 09 16 36.6 -5.7
JCJ Chichijima 9.84 172 Pn **Pn** 09 14 49.5 -2.7
baz=209,slow=19
JCJ Sn **Sn** 09 16 36.6 -5.7
baz=270,slow=20
USRK Ussuriysk Ar. 9.86 321 Pn **Pn** 09 14 56.9 +4.4
comp=N,0.7nm,0.3s,baz=132,slow=13,SNR=38
KUR Kuril'sk 9.94 31 *e*P **Pn** 09 14 52.7 -0.9
KUR *i* S **Sn** 09 16 37.9 -6.8
KUR pmax pmax
comp=Z,34nm,1.0s
KUR pmax pmax
comp=N,23nm,0.5s
KUR pmax pmax
comp=E,22nm,0.9s
YSS Yuzh-Sakhalins 10.18 8 *i* P **Pn** 09 14 57.5 +0.7
YSS pmax pmax
comp=Z,63nm,1.7s
KSRS Korea Array 10.21 277 Pn **Pn** 09 15 01.2 +3.9
comp=Z,0.7nm,0.3s,baz=94,slow=13,SNR=23
KS01 Wonju Array Si 10.23 277 *e*Pn **Pn** 09 14 57.4 -0.2
KS15 Wonju Array Si 10.24 277 *e*Pn **Pn** 09 14 58.4 +0.7
KSAR Wonju Array Be 10.24 277 P **Pn** 09 15 01.2 +3.5
KSAR Wonju Array Be 10.24 277 Pn **Pn** 09 15 01.2 +3.5
MDJ Mudanjiang 11.42 316 P **Pn** 09 15 13.6 -0.2
MDJ pmax pmax
comp=Z,4.0nm,0.4s
MDJ pmax pmax
comp=Z,3µm,12.5s
MDJ Mudanjiang 11.42 316 *e*Pn **Pn** 09 15 17.0 +3.2
comp=Z,17nm,1.0s
CN2 Changchun 13.52 305 *e*P **Pn** 09 15 44.6 +2.1
CN2 pmax pmax
comp=Z,10.0nm,0.4s
KLR Kul'dur 13.95 335 Pn **Pn** 09 15 49.6 +1.2
comp=Z,0.2nm,0.3s,baz=141,slow=12,SNR=3.1
TYV Tymovskoe 14.05 5 *e*P **Pn** 09 15 49.0 -0.7
TYV pmax pmax
comp=Z,15nm,0.8s
NKL Nikolayevsk 16.27 360 *e*P **Pn** 09 16 19.0 -0.1
NKL pmax pmax
comp=Z,20nm,1.1s
NJ2 Nanjing 18.63 261 *e*P **P** 09 16 46.1 -2.2
NJ2 pmax pmax
comp=Z,11nm,0.8s
TIA Tai'an 18.95 275 ⇓P **Pn** 09 16 53.0 +0.6
TIA pmax pmax
comp=Z,10.0nm,1.0s
BJI Beijing 19.44 287 P **P** 09 16 56.0 -1.1
BJI pmax pmax
comp=Z,9.0nm,0.9s
BJI LR LR
comp=Z,2µm,23.1s
PETK Petropavlovsk- 20.11 31 P **P** 09 17 03.9 -0.4
comp=Z,3.3nm,1.0s,baz=212,slow=9.5,SNR=3.0
MA2 Magadan 23.63 13 P **P** 09 17 41.6 +0.1
comp=Z,17nm,0.8s,baz=218,slow=11,SNR=8.9
YAK Yakutsk 26.10 348 *i* P **P** 09 18 03.5 -0.6
YAK pmax pmax
comp=Z,42nm,1.0s
ENH Enshi 26.75 265 *e*P **P** 09 18 10.3 -0.1
comp=Z,12nm,0.5s
ULN Ulaanbaatar 26.97 305 *e*P **P** 09 18 11.7 -0.6
ULN pmax pmax
comp=Z,24nm,1.6s
ULN Ulaanbaatar 26.97 305 *e*P **P** 09 18 11.7 -0.6
comp=Z,24nm,1.6s
SEY Seymchan 27.05 12 P **P** 09 18 12.8 0.0
comp=Z,7.7nm,0.7s,baz=203,slow=8.7,SNR=16
SONA1 Songino Array 27.39 304 *e*P **P** 09 18 15.2 -0.9
SONA1 *e*PcP **PcP** 09 21 35.4 +0.6
SONM Songino Array 27.39 304 P **P** 09 18 15.6 -0.6
comp=Z,5.1nm,0.7s,baz=113,slow=7.7,SNR=25
SONM PcP **PcP** 09 21 34.8 +0.1
comp=Z,1.9nm,0.5s,baz=124,slow=2.2,SNR=13
H11N2 WAKE ISLAND Hy 28.57 120 T T 09 48 12.6
baz=313,slow=75,SNR=202
H11N1 WAKE ISLAND Hy 28.58 120 T T 09 48 13.7
baz=313,slow=75,SNR=305
H11N3 WAKE ISLAND Hy 28.59 120 T T 09 48 14.3
baz=313,slow=75,SNR=283
H11S1 WAKE ISLAND Hy 29.26 122 T T 09 49 05.2
baz=314,slow=76,SNR=104
H11S3 WAKE ISLAND Hy 29.26 122 T T 09 49 04.9
baz=314,slow=76,SNR=90
H11S2 WAKE ISLAND Hy 29.28 122 T T 09 49 07.3
baz=314,slow=76,SNR=99
LZH Lanzhou 29.53 280 *e*P **P** 09 18 34.3 -1.0
LZH pP sP 09 18 41.6 -0.7
LZH sP pP 09 18 45.0 +4.7
LZH pmax pmax
comp=Z,23nm,1.1s
LZH LR LR
comp=Z,380nm,12.8s
LZH LR LR
comp=Z,390nm,14.0s
LZH LR LR
comp=Z,440nm,16.5s
ZAK Zakamensk 29.91 309 *e*P **P** 09 18 38.3 -0.2
ZAK pmax pmax
comp=Z,2.0nm,1.3s
TLY Talaya 30.00 311 *e*P **P** 09 18 39.7 +0.6
TLY pmax pmax
comp=Z,2.0nm,0.6s
GYA Guiyang 30.63 260 P **P** 09 18 45.8 +0.7
GYA pmax pmax
comp=Z,10.0nm,0.9s
CD2 Chengdu 31.10 270 P **P** 09 18 47.9 -1.2
CD2 pmax pmax
comp=Z,1.0nm,0.5s
BILL Bilibino 34.34 17 ⇑*i*P **P** 09 19 17.0 +0.1
BILL pmax pmax
comp=Z,13nm,1.7s
BILL Bilibino 34.34 17 *e*P **P** 09 19 17.2 +0.3
comp=Z,9.8nm,1.2s
KMI Kunming 34.37 261 P **P** 09 19 18.7 +0.7
KMI pmax pmax
comp=Z,17nm,0.9s
KMI pmax pmax
comp=Z,2µm,13.5s
TIXI Tiksi 35.38 354 P **P** 09 19 25.1 -0.7
comp=Z,5.0nm,0.5s,baz=142,slow=6.2,SNR=15
TIXI PcP **PcP** 09 21 55.3 -0.2
comp=Z,0.8nm,0.4s,baz=223,slow=2.6,SNR=3.0
TIXI Tiksi 35.38 354 ⇑*i*P **P** 09 19 25.7 -0.1
TIXI pmax pmax
comp=Z,15nm,1.7s
TIXI Tiksi 35.38 354 *e*P **P** 09 19 25.1 -0.7
comp=Z,22nm,1.5s
TIXI PcP **PcP** 09 21 55.3 -0.2
WMQ Urumqi 40.40 297 P **P** 09 20 10.2 +1.5
WMQ sP sP 09 20 20.3 +4.5
WMQ PcP **PcP** 09 22 12.8 +1.2
WMQ S **S** 09 26 13.5 -2.7
WMQ pmax pmax
comp=Z,5.0nm,0.6s
WMQ LR LR
comp=Z,2µm,12.4s
WMQ LR LR
comp=Z,2µm,13.6s
WMQ LR LR
comp=Z,650nm,13.6s
CMAR Chiang Mai Arr 40.90 255 P **P** 09 20 14.1 +1.0
comp=Z,0.9nm,0.3s,baz=55,slow=7.9,SNR=3.1
CMAR PcP **PcP** 09 22 13.6 +0.1
comp=Z,0.6nm,0.4s,baz=17,slow=0.7,SNR=8.4
CM01 Chiang Mai Arr 40.91 255 *e*P **P** 09 20 11.0 -2.1
CM01 *e*PcP **PcP** 09 22 14.8 +1.2
ZAA0 Zalesovo Array 41.59 313 *e*P **P** 09 20 18.2 -0.1
ZAA0 *e*P **P** 09 20 18.6 +0.3
ZAA0 *e*PcP **PcP** 09 22 14.9 -0.3
ZAA0 *e*PcP **PcP** 09 22 15.5 +0.3
ZALV Zalesovo Beam 41.59 313 P **P** 09 20 17.9 -0.4
comp=Z,3.0nm,0.4s,baz=94,slow=6.6,SNR=12
ZALV PcP **PcP** 09 22 15.0 -0.2
comp=Z,3.4nm,0.4s,baz=98,slow=3.2,SNR=11
RABL Rabaul 42.24 163 *e*PcP **PcP** 09 22 15.8 -2.1
NVS Novosibirsk 42.53 314 *e*P **P** 09 20 25.8 -0.1
SBUM Sibu 43.15 224 *e*P **P** 09 20 31.2 -0.2
comp=Z,11nm,0.6s
NRIK Noril'sk 43.17 335 P **P** 09 20 30.6 -0.3
comp=Z,4.6nm,0.6s,baz=124,slow=12,SNR=5.2
MKAR Makanchi Array 43.71 302 P **P** 09 20 35.2 -0.5
comp=Z,3.3nm,0.7s,baz=87,slow=9.8,SNR=18
MKAR Makanchi Array 43.71 302 *e*P **P** 09 20 36.5 +0.8
MAKZ Makanchi 43.92 302 *e*P **P** 09 20 38.5 +1.1
MAKZ pmax pmax
comp=Z,4.0nm,0.6s
MAKZ Makanchi 43.92 302 *e*P **P** 09 20 38.5 +1.1
comp=Z,4.0nm,0.6s
KURK Kurchatov 45.57 308 *e*P **P** 09 20 49.8 -0.6
KURK pmax pmax
comp=Z,17nm,0.6s
KURK Kurchatov 45.57 308 *e*P **P** 09 20 49.8 -0.6
comp=Z,17nm,0.6s
PDGK Podgornoye 46.34 298 P **P** 09 20 56.9 +0.4
RAMN Ramite 46.44 274 *e*P **P** 09 20 58.1 +0.2
comp=Z,34nm,0.9s
GUN Gumba 46.60 275 *e*P **P** 09 20 59.8 +0.6
comp=Z,10.0nm,0.4s
GKN Gorkha 47.55 276 *e*P **P** 09 21 06.8 +0.4
comp=Z,19nm,0.5s
KDAK Kodiak Island 47.60 42 P P 09 21 21.3 +15
comp=Z,3.0nm,0.5s,baz=281,slow=7.4,SNR=5.7
KDAK Kodiak Island 47.60 42 *e*P **P** 09 21 07.9 +1.8
KTH Kantishna Hill 48.20 34 *e*P **P** 09 21 12.6 +1.8
comp=Z,9.2nm,1.2s
KOLN Koldanda 48.48 276 *e*P **P** 09 21 14.2 +0.5
comp=Z,6.5nm,0.5s
PYUN Piuthan 48.82 277 *e*P **P** 09 21 16.8 +0.5
comp=Z,14nm,0.5s
TKM2 Tokmak 2 49.20 298 *e*P **P** 09 21 20.0 +1.0
TKM2 pmax pmax
comp=Z,20nm,1.2s
TKM2 Tokmak 2 49.20 298 *e*P **P** 09 21 19.9 +1.0
comp=Z,20nm,1.2s
WRH Wood River Hil 49.42 33 *e*PcP **PcP** 09 22 43.2 +1.0
COLA College 49.51 32 ⇓*i*P **P** 09 21 21.8 +1.0
COLA pmax pmax
comp=Z,9.0nm,1.7s
FRU Bishkek 49.91 298 *i* P **P** 09 21 23.0 -1.3
HDA Harding Lake 49.92 33 *e*P **P** 09 21 27.7 +3.7
comp=Z,11nm,1.2s
IL1 Eielson Array 49.93 32 *e*P **P** 09 21 24.2 +0.2
ILAR Eielson Array 49.93 32 P **P** 09 21 24.2 +0.2
comp=Z,1.0nm,0.6s,baz=265,slow=5.1,SNR=15
ILAR PcP **PcP** 09 22 44.0 0.0
comp=Z,1.0nm,0.6s,baz=287,slow=3.5,SNR=7.3
ILAR Eielson Array 49.93 32 P **P** 09 21 24.2 +0.2
ILAR 09 22 44.1
ILAR pmax pmax
comp=Z,1.0nm,0.6s
ILAR pmax pmax
comp=Z,1.0nm,0.6s
ILB Eielson Array 49.93 32 *e*P **P** 09 21 24.6 +0.6
KSH Kashi 49.94 294 *e*P **P** 09 21 28.9 +4.3
KSH *e*pP sP 09 21 35.4 +3.6
KSH S **S** 09 28 35.6 +1.1
KSH ScS **ScS** 09 31 15.8 +0.2
AAK Ala-Archa 50.06 298 ⇓*i*P **P** 09 21 25.5 0.0
AAK pmax pmax
comp=Z,8.0nm,0.9s
AAK Ala-Archa 50.06 298 *e*P **P** 09 21 24.9 -0.6
comp=Z,2.6nm,0.6s
BVAR Borovoye Array 50.25 312 P **P** 09 21 25.8 -0.8
comp=Z,4.9nm,0.5s,baz=83,slow=7.7,SNR=25
BVAR PcP **PcP** 09 22 45.4 0.0
comp=Z,3.4nm,0.8s,baz=99,slow=4.5,SNR=6.4
BRVK Borovoye 50.31 312 ⇑*i*P **P** 09 21 26.6 -0.4
BRVK pmax pmax
comp=Z,8.0nm,1.0s
ZRNK Zerenda 51.09 312 *e*P **P** 09 21 32.7 -0.2
ZRNK pmax pmax
comp=Z,11nm,0.8s
ZRNK Zerenda 51.09 312 *e*P **P** 09 21 32.7 -0.2
comp=Z,11nm,0.8s
MNAS Manas 51.50 299 P **P** 09 21 37.3 +0.9
KKAR Karatay Array 52.70 300 *e*P **P** 09 21 45.5 +0.3
KKAR Karatay Array 52.70 300 *e*P **P** 09 21 45.5 +0.3
GSI Gunungsitoli 53.23 239 *e*P **P** 09 21 50.0 +0.7
comp=Z,49nm,1.2s
INK Inuvik 54.78 27 P **P** 09 22 00.5 +0.6
comp=Z,1.3nm,0.5s,baz=301,slow=7.2,SNR=9.6
ARU Arti 56.09 318 *d i*P **P** 09 22 09.2 -0.4
ARU 09 24 11.8
ARU S **S** 09 29 56.0 -1.5
ARU SS **SS** 09 33 33.1 -10
ARU pmax pmax
comp=Z,18nm,1.2s
ARU Arti 56.09 318 *e*P **P** 09 22 09.5 0.0
comp=Z,12nm,0.9s
FITZ Fitzroy Crossi 56.50 197 *e*P **P** 09 22 14.5 +1.7
comp=Z,11nm,1.2s
WRAB Tennant Creek 56.82 187 *d i*P **P** 09 22 14.7 -0.4
WRAB pmax pmax
comp=Z,40nm,1.3s
WRAB Tennant Creek 56.82 187 *e*P **P** 09 22 15.0 -0.1
comp=Z,9.4nm,0.9s
WB2 Warramunga Arr 56.83 187 *e*P **P** 09 22 15.2 0.0
comp=Z,32nm,1.6s
WRA Warramunga Arr 56.83 187 P **P** 09 22 14.7 -0.5
comp=Z,5.3nm,0.5s,baz=2.7,slow=7.3,SNR=65
ABKAR Akbulak array 57.60 310 *e*P **P** 09 22 19.5 -0.8
AS01 Alice Springs 60.55 187 *e*P **P** 09 22 40.9 -0.1
AS31 Alice Springs 60.56 187 *e*P **P** 09 22 41.6 +0.5
comp=Z,1.4nm,0.7s
ASAR Alice Springs 60.56 187 P **P** 09 22 41.1 0.0
comp=Z,1.9nm,0.6s,baz=20,slow=6.9,SNR=31
MBWA Marble Bar 61.02 202 *e*P **P** 09 22 44.3 +0.1
RES Resolute Bay 62.89 14 P **P** 09 22 56.2 +0.1
comp=Z,4.0nm,0.6s,baz=313,slow=4.4,SNR=62
GEYT Alibeck 63.41 299 P **P** 09 23 00.4 +0.1
comp=Z,1.4nm,0.4s,baz=55,slow=5.5,SNR=4.6
KLMR Klimovskoe 63.58 328 *e*P **P** 09 22 58.9 -2.0
KLMR *e* 09 23 36.5
KLMR pmax pmax
comp=Z,6.0nm,0.6s
ARCES ARCESS Array B 63.94 339 P **P** 09 23 03.1 -0.1
comp=Z,5.3nm,0.8s,baz=58,slow=8.4,SNR=11
YKA Yellowknife Ar 64.23 30 P **P** 09 23 05.2 +0.1
comp=Z,0.6nm,0.5s,baz=299,slow=6.3,SNR=14
YKA PcP **PcP** 09 23 40.6 +0.7
comp=Z,0.9nm,0.6s,baz=296,slow=3.7,SNR=10.0
DAG Danmarks Havn 65.88 355 *i* P **P** 09 23 15.6 -0.1
comp=Z,12nm,0.7s
DAG Danmarks Havn 65.88 355 *i* P **P** 09 23 15.6 -0.1
DAG pmax pmax
comp=Z,9.0nm,0.7s
VRH Novokhopyorsk 67.31 318 *e*P **P** 09 23 24.1 -1.1
VRH pmax pmax
comp=Z,10.0nm,0.7s
OBN Obninsk 67.87 323 ⇑*i*P **P** 09 23 28.9 +0.2
OBN pmax pmax
comp=Z,20nm,1.3s
LPSR Galich'ya Gora 68.05 320 *e*P **P** 09 23 29.0 -0.9
LPSR pmax pmax
comp=Z,10.0nm,0.6s
STKA Stephens Creek 68.41 179 P **P** 09 23 32.6 +0.4
comp=Z,2.0nm,0.6s,baz=358,slow=6.7,SNR=8.6
VSR Storozhevoye 68.67 319 *e*P **P** 09 23 33.5 -0.3
VSR pmax pmax
comp=Z,9.0nm,0.5s
FIA1 FINESS Array S 68.68 332 *e*P **P** 09 23 33.2 -0.4
FIA1 *e*P **P** 09 23 33.7 0.0
FINES FINESS Array B 68.68 332 P **P** 09 23 33.1 -0.5
comp=Z,8.8nm,0.7s,baz=57,slow=7.0,SNR=24
VSU Vasula 70.29 329 ⇑*i*P **P** 09 23 44.2 +0.5
VSU pmax pmax
comp=Z,39nm,0.9s
KBZ Khabaz 70.56 310 P **P** 09 23 45.3 -0.3
comp=Z,4.1nm,0.8s,baz=27,slow=6.8,SNR=7.3
KIV Kislovodsk 70.57 311 *e*P **P** 09 23 46.1 +0.3
KIV pmax pmax
comp=Z,18nm,1.1s
SUMG Summit 70.84 360 *i* P **P** 09 23 48.6 +1.3
comp=Z,14nm,0.9s
SUMG Summit 70.84 360 *i* P **P** 09 23 48.6 +1.3
SUMG pmax pmax
comp=Z,14nm,0.9s
NC405 NORSAR Array S 73.89 337 *e*P **P** 09 24 05.8 +0.5
NC204 NORSAR Array S 74.06 337 *e*P **P** 09 24 06.8 +0.5
AKASG Malin Array Be 74.06 322 P **P** 09 24 06.0 -0.4
comp=Z,2.1nm,0.4s,baz=46,slow=6.1,SNR=14
AKASG Malin Array Be 74.06 322 P **P** 09 24 06.0 -0.4
AKASG pmax pmax
comp=Z,2.0nm,0.4s
NB201 NORSAR Array S 74.07 337 *e*P **P** 09 24 06.9 +0.6
KIEV Kiev 74.08 322 ⇑*i*P **P** 09 24 06.4 -0.1
KIEV pmax pmax
comp=Z,10.0nm,0.9s
KIEV Kiev 74.08 322 *e*P **P** 09 24 05.8 -0.6
comp=Z,3.3nm,0.3s
NB2 NORSAR Subarra 74.10 337 P **P** 09 24 06.3 -0.3
comp=Z,18nm,1.4s,baz=41,slow=5.9
NOA NORSAR Array B 74.10 337 P **P** 09 24 06.2 -0.3
comp=Z,3.7nm,0.7s,baz=39,slow=5.9,SNR=15
NOA NORSAR Array B 74.10 337 P **P** 09 24 06.2 -0.3
NOA pmax pmax
comp=Z,6.0nm,0.9s
AK11 Malin Array Si 74.11 322 *e*P **P** 09 24 06.2 -0.4
FFC Flin Flon 74.14 32 *e*P **P** 09 24 08.7 +1.9
NBO02 NORSAR Array S 74.21 337 *e*P **P** 09 24 07.6 +0.5
LRM Limekiln Ridge 74.66 44 *e*P **P** 09 24 12.4 +2.1
EGMT Eagleton 74.76 41 *e*P **P** 09 24 12.1 +1.4
comp=Z,2.5nm,0.6s
DLMT Dillon 74.85 44 *e*P **P** 09 24 13.8 +2.5
comp=Z,6.3nm,1.1s
NV01 Mina Array Sit 75.54 53 *e*P **P** 09 24 17.1 +1.7
NVAR Mina Array Bea 75.54 53 P **P** 09 24 17.0 +1.5
comp=Z,1.2nm,0.8s,baz=281,slow=5.7,SNR=5.7
NV11 Mina Array Sit 75.63 53 *e*P **P** 09 24 18.6 +2.7
comp=Z,8.7nm,1.5s
FLWY Flagg Ranch 76.71 45 *e*P **P** 09 24 24.8 +2.7
comp=Z,21nm,1.6s
MOOW Moose Ponds 76.89 45 *e*P **P** 09 24 26.0 +3.0
comp=Z,19nm,2.0s
REDW Red Top Meadow 77.07 45 *e*P **P** 09 24 26.2 +2.1
comp=Z,18nm,1.8s
BSD Bornholm Skovb 77.31 331 *i* P **P** 09 24 24.6 -0.2
comp=Z,25nm,1.4s
BSD Bornholm Skovb 77.31 331 *i* P **P** 09 24 24.6 -0.2
BSD pmax pmax
comp=Z,25nm,1.4s
R11A Troy Canyon, C 77.31 52 *e*P **P** 09 24 27.2 +1.7
comp=Z,18nm,1.8s
TPNV Topopah Spring 77.73 53 *e*P **P** 09 24 29.3 +1.5
TPNV pmax pmax
comp=Z,13nm,1.5s
TPNV Topopah Spring 77.73 53 *e*P **P** 09 24 29.3 +1.5
comp=Z,13nm,1.5s
HWUT Hardware Ranch 77.75 47 *e*P **P** 09 24 30.0 +2.1
comp=Z,6.8nm,1.3s
DUG Dugway, Tooele 77.89 49 *e*P **P** 09 24 30.8 +2.2
DUG pmax pmax
comp=Z,5.0nm,1.0s
DUG Dugway, Tooele 77.89 49 *e*P **P** 09 24 30.8 +2.2
comp=Z,5.3nm,1.0s
BUR08 Bucovina Ar. S 78.06 321 *e*P **P** 09 24 30.4 +1.0
BW06 Boulder Array 78.18 45 *e*P **P** 09 24 31.1 +0.8
BW06 *e*P **P** 09 24 31.8 +1.5
PD31 Pinedale Array 78.18 45 *e*P **P** 09 24 31.8 +1.5
PDAR Pinedale Array 78.18 45 P **P** 09 24 31.3 +1.0
comp=Z,0.9nm,0.5s,baz=284,slow=3.6,SNR=9.4
JLU Jordanelle 78.45 48 *e*P **P** 09 24 34.5 +2.7
comp=Z,6.1nm,1.4s
BR131 Keskin Array S 78.52 311 *e*P **P** 09 24 32.0 -0.1
BRTR Keskin Array B 78.52 311 P **P** 09 24 32.6 +0.5
comp=Z,1.3nm,0.5s,baz=102,slow=3.4,SNR=8.5
KOLS Kolonicke sedl 78.61 324 *e*P **P** 09 24 32.9 +0.7
KOLS pmax pmax
comp=Z,11nm,1.4s
KOLS Kolonicke sedl 78.61 324 *e*P **P** 09 24 32.9 +0.7
MPU Maple Canyon 78.71 48 *e*P **P** 09 24 35.5 +2.2
comp=Z,5.0nm,1.0s
STHS Stebnicka Huta 78.75 325 *e*P **P** 09 24 34.8 +1.8
STHS pmax pmax
comp=Z,7.0nm,1.3s
STHS Stebnicka Huta 78.75 325 *e*P **P** 09 24 34.8 +1.8
OJC Ojcow 78.84 326 *e*P **P** 09 24 34.0 +0.5
OJC Ojcow 78.84 326 *e*P **P** 09 24 34.1 +0.5
BR231 Keskin MP Arra 78.97 312 *e*P **P** 09 24 33.4 -1.1
P17A Butcher Ranch, 79.58 48 *e*P **P** 09 24 40.4 +2.4
comp=Z,8.1nm,1.0s
LCMT Little Creek M 79.59 51 *e*P **P** 09 24 40.3 +2.3
comp=Z,12nm,1.7s
PFO Pinyon Flats O 79.60 56 *e*P **P** 09 24 41.1 +3.0
P18A Preston Nutter 79.78 48 *e*P **P** 09 24 42.0 +2.7
KNB Kanab 79.86 51 *e*P **P** 09 24 42.1 +2.6
KNB pmax pmax
comp=Z,14nm,1.4s
KNB Kanab 79.86 51 *e*P **P** 09 24 42.1 +2.6
comp=Z,14nm,1.4s
KSP Ksiaz 79.93 328 *e*P **P** 09 24 40.5 +1.1
KSP Ksiaz 79.93 328 *e*P **P** 09 24 40.6 +1.1
SRU San Rafael Swe 79.94 48 *e*P **P** 09 24 41.8 +1.8
SRU pmax pmax
comp=Z,4.0nm,0.8s
SRU San Rafael Swe 79.94 48 *e*P **P** 09 24 41.8 +1.8
comp=Z,4.2nm,0.8s
DPC Dobruska-Polom 80.28 328 *e*P **P** 09 24 42.4 +1.0
DPC Dobruska-Polom 80.28 328 *e*P **P** 09 24 42.4 +1.0
VYHS Vyhne 80.52 325 *e*P **P** 09 24 41.0 -1.7
VYHS pmax pmax
comp=Z,6.0nm,1.5s
VYHS Vyhne 80.52 325 *e*P **P** 09 24 41.0 -1.7
BRG Berggiesshubel 80.89 329 *e*P **P** 09 24 44.3 -0.3
comp=Z,7.4nm,1.3s
BRG Berggiesshubel 80.89 329 *e*P **P** 09 24 44.3 -0.3
BRG pmax pmax
comp=Z,7.0nm,1.3s
CLL Collm 80.94 330 *i* P **P** 09 24 45.1 +0.3
comp=Z,14nm,1.1s
CLL *e* 09 24 55.0
CLL *e* 09 25 15.0
CLL *e*PP **PP** 09 27 51.0 +2.3
CLL Collm 80.94 330 *i* P **P** 09 24 45.1 +0.3
CLL *e* 09 24 55.0
CLL pmax pmax
comp=Z,14nm,1.1s
PV09 Paradox Valley 81.17 48 *e*P **P** 09 24 48.9 +2.2
GOPC GO Pecny, Ondr 81.26 328 *e*P **P** 09 24 47.7 +1.1
GOPC GO Pecny, Ondr 81.26 328 *e*P **P** 09 24 47.7 +1.1
PRU Pruhonice 81.31 328 *e*P **P** 09 24 47.8 +1.0
PRU Pruhonice 81.31 328 *e*P **P** 09 24 47.8 +1.0
PV04 Paradox Valley 81.37 48 *e*P **P** 09 24 49.2 +1.6
PV05 Paradox Valley 81.46 48 *e*P **P** 09 24 50.3 +2.2
WUAZ Wupatki 81.71 52 *e*P **P** 09 24 51.5 +2.1
comp=Z,11nm,1.4s
PV01 Paradox Valley 81.74 48 *e*P **P** 09 24 51.7 +2.0
NKC Novy Kostel 81.99 329 *e*P **P** 09 24 51.6 +1.1
NKC Novy Kostel 81.99 329 *e*P **P** 09 24 51.6 +1.1
SMCO Snowmass 82.00 47 *e*P **P** 09 24 53.0 +1.8
comp=Z,5.1nm,1.3s
KHC Kasperske Hory 82.37 328 *e*P **P** 09 24 52.7 +0.2
KHC Kasperske Hory 82.37 328 *e*P **P** 09 24 53.1 +0.6
KHC pmax pmax
comp=Z,5.0nm,1.2s
KHC Kasperske Hory 82.37 328 *e*P **P** 09 24 53.1 +0.6
comp=Z,5.1nm,1.2s
MVCO Mesa Verde 82.39 49 *e*P **P** 09 24 54.5 +1.4
comp=Z,13nm,1.4s
GERES GERESS Array B 82.54 328 P **P** 09 24 53.5 +0.1
comp=Z,2.9nm,0.4s,baz=40,slow=5.7,SNR=23
S22A 4UR Ranch, Cre 83.03 48 *e*P **P** 09 24 58.8 +2.3
comp=Z,9.7nm,1.5s
SDCO Great Sand Dun 83.81 47 *e*P **P** 09 25 02.6 +2.1
comp=Z,4.7nm,1.2s
ANMO Albuquerque 85.12 49 *e*P **P** 09 25 09.3 +2.2
ANMO pmax pmax
comp=Z,9.0nm,1.3s
ANMO Albuquerque 85.12 49 *e*P **P** 09 25 09.3 +2.2
comp=Z,8.6nm,1.3s
BFO Black Forest 85.15 330 *e*P **P** 09 25 07.2 +0.4
BFO pmax pmax
comp=Z,11nm,1.0s
BFO Black Forest 85.15 330 *e*P **P** 09 25 07.2 +0.4
comp=Z,11nm,1.0s
SCHQ Schefferville 85.64 16 P **P** 09 25 09.4 +0.4

comp=Z,2.9nm,0.8s,baz=297,slow=11,SNR=5.1
FUORN Ofenpass-Fuorn 85.73 328 *e*P **P 09 25 10.5 +0.6**
comp=Z,8.3nm,0.6s
MNTX Cornudas Mount 87.98 51 *e*P **P 09 25 22.3 +1.4**
comp=Z,10nm,1.7s
TX31 Lajitas Ar. Si 90.67 52 *e*P **P 09 25 34.4 +0.7**
TX31 *e*P **P 09 25 35.1 +1.5**
TXAR Lajitas Array 90.67 52 P **P 09 25 34.3 +0.6**
comp=Z,1.5nm,0.7s,baz=293,slow=2.9,SNR=17
TORD Torodi Ar. Bea 117.03 314 PKP **PKPdf 09 31 15.7 -0.4**
comp=Z,0.8nm,0.5s,baz=28,slow=1.7,SNR=13
BOSA Boshof 125.98 259 PKP **PKPdf 09 31 34.0 +1.0**
comp=Z,1.2nm,0.5s,baz=134,slow=2.4,SNR=4.0
BOSA Boshof 125.98 259 PKIKP **PKPdf 09 31 34.0 +1.0**
BOSA pmax pmax
comp=Z,1.0nm,0.6s
DBIC Dimbokro 126.00 316 PKP **PKPdf 09 31 33.6 +0.3**
comp=Z,2.3nm,0.5s,baz=32,slow=2.3,SNR=11
SYO Syowa Base 127.81 207⇑ *e*P **Pdif 09 28 08.8 -10**
LPAZ La Paz 147.26 59 PKPbc **PKPbc 09 32 15.2 0.0**
comp=Z,2.8nm,0.5s,baz=11,slow=2.9,SNR=22
SIV San Ignacio 151.62 49 PKPbc **PKPbc 09 32 26.0 +0.6**
comp=Z,4.4nm,0.5s,baz=303,slow=2.8,SNR=14

ISCJB ***11*** *09:13:17.9±0.7,36.92N±0.04×140.7E±0.1,h18km±6km, mb4.2/5, Error ellipse: s-maj=15.5km s-min=5.7km az=11.0*
IDC ***11*** *09:13:17.2±1.0,36.85N×140.56E,h0km, mb4.2/5, mb1 4.5/5, mb1mx3.9/41, mbtmp4.2/5, Error ellipse: s-maj=40.7km s-min=25.2km az=91.0*
JMA ***11*** *09:13:18.4,36.95N×140.66E,h7km±1km, M4.1*
ISC 11 09:13:18.3±1.2, 36.96N±0.04×140.60E±0.09, h8km±9km, n12, σ0.51/16, mb4.2/5, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.21**	**49**	P	**Pg**	**09 13 22.5**	**-0.1**
ONAJ				S	**Sg**	**09 13 25.5**	**0.0**
JHO	**Hitachi**	**0.35**	**184**	P	**Pg**	**09 13 25.3**	**+0.1**
JHO				S	**Sg**	**09 13 30.2**	**+0.3**
JFK	**Kawauchi**	**0.46**	**29**	P	**Pg**	**09 13 27.2**	**-0.1**
JFK				S	**Sg**	**09 13 33.5**	**+0.2**
JFT	**Otama**	**0.59**	**339**	P	**Pb**	**09 13 30.8**	**-0.2**
JFT				S	**Sb**	**09 13 39.4**	**-0.1**
JMM	**Marumori**	**0.91**	**10**	P	**Pg**	**09 13 35.7**	**-0.2**
JMM				S	**Sg**	**09 13 48.2**	**+0.4**
MJAR	**Matsushiro Arr**	**1.96**	**258**	Lg	Lg	09 14 19.7	
	baz=304,slow=43,SNR=1.9						
SONM	**Songino Array**	**27.28**	**304**	P	**P**	**09 19 03.8**	**+0.5**
	1.9nm,0.9s,baz=99,slow=8.7,SNR=1.8						
WRA	**Warramunga Arr**	**56.91**	**187**	P	**P**	**09 23 02.7**	**-1.3**
	6.3nm,0.8s,baz=5.1,slow=7.6,SNR=7.6						
ASAR	**Alice Springs**	**60.63**	**187**	P	**P**	**09 23 29.3**	**-0.6**
	2.6nm,0.8s,baz=10,slow=6.5,SNR=6.7						
RES	**Resolute Bay**	**62.83**	**14**	P	**P**	**09 23 44.2**	**+0.2**
	0.8nm,0.5s,baz=291,slow=5.3,SNR=4.0						
TXAR	**Lajitas Array**	**90.68**	**52**	P	**P**	**09 26 22.7**	**+0.6**
	1.0nm,0.8s,baz=310,slow=3.3,SNR=4.2						
LPAZ	**La Paz**	**147.29**	**59**	PKPbc	**PKPbc**	**09 33 04.0**	**+0.3**
	2.9nm,0.8s,baz=6.1,slow=7.2,SNR=5.1						

JMA 11 09:15:13.2, 37.03N×140.70E, h10km±1km, M3.5, 2C-1D, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.11**	**48**	⇑P	Pg	09 15 16.1	+0.1
ONAJ				S	Sg	09 15 18.3	+0.4
JFK	**Kawauchi**	**0.36**	**22**	⇓P	Pg	09 15 20.5	+0.1
JFK				S	Sg	09 15 25.6	+0.3
JHO	**Hitachi**	**0.43**	**194**	⇑P	Pg	09 15 21.7	0.0
JHO				S	Sg	09 15 27.6	+0.2
JFT	**Otama**	**0.57**	**329**	P	Pg	09 15 24.4	+0.2
JFT				S	Sg	09 15 31.9	+0.2
JMM	**Marumori**	**0.84**	**5**	P	Pg	09 15 29.1	-0.3
JMM				S	Sg	09 15 40.1	-0.2
MAT	**Matsushiro**	**2.06**	**257**	P	Pb	09 15 49.8	-0.9
MAT				S	Sb	09 16 16.4	0.0

IDC ***11*** *09:17:09.0±0.5,37.76N×142.56E,h0km, mb4.4/31, mb1 4.5/37, mb1mx4.5/46, mbtmp4.4/37, ML3.6/4, Error ellipse: s-maj=13.2km s-min=11.4km az=112.0*
BJI ***11*** *09:17:10.1,37.57N×142.35E,h10km, mb4.7/52, mB5.0/5, Ms5.4/18, Ms7 5.0/18*
ISCJB ***11*** *09:17:10.1±1.1,37.73N±0.03×142.57E±0.03,h15km±7km, mb4.6/120, MS4.9/7, Error ellipse: s-maj=4.8km s-min=3.5km az=162.4*
MOS ***11*** *09:17:11.3±1.2,37.89N×142.55E,h23km, mb4.8/51, Error ellipse: s-maj=7.6km s-min=5.0km az=92.5*
JMA ***11*** *09:17:13.3±0.3,37.82N×142.52E,h36km, M4.8*
JMA Felt II J1.
NEIC ***11*** *09:17:14.6±0.1,37.74N×142.55E,h35km, mb4.7/70, Error ellipse: s-maj=4.4km s-min=3.0km az=145.0*
ISC 11 09:17:13.5±0.4, 37.78N±0.04×142.72E±0.04, h31km±2km, h30km: pP-P, n276, σ1.977/307, mb4.7/120, MS5.0/7, 5C-3D, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**1.27**	**302**	P	**Pn**	**09 17 33.2**	**-2.0**
JIO				S	**Sn**	**09 17 47.2**	**-4.0**
JFK	**Kawauchi**	**1.52**	**255**	P	**Pn**	**09 17 36.5**	**-2.1**
JFK				S	**Sn**	**09 17 53.2**	**-4.2**
JMM	**Marumori**	**1.53**	**274**	P	**Pn**	**09 17 36.5**	**-2.2**
JMM				S	**Sn**	**09 17 53.6**	**-3.9**
JMK	**Ichinoseki**	**1.66**	**315**	P	**Pn**	**09 17 39.1**	**-1.4**
JOU	**Okura**	**1.72**	**291**	P	**Pn**	**09 17 40.1**	**-1.3**
JFT	**Otama**	**1.91**	**263**	P	**Pn**	**09 17 43.0**	**-0.9**
JOM	**Ohasama**	**2.03**	**327**	P	**Pn**	**09 17 44.4**	**-1.2**
JOM				S	**Sn**	**09 18 07.2**	**-2.6**
JYS	**Shirataka**	**2.14**	**283**	P	**Pn**	**09 17 46.6**	**-0.5**
JYK	**Kaneyama**	**2.17**	**302**	P	**Pn**	**09 17 46.7**	**-0.9**
JRG	**Rokugo**	**2.30**	**315**	P	**Pn**	**09 17 48.5**	**-0.8**
MJAR	**Matsushiro Arr**	**3.81**	**252**	Pn	**Pn**	**09 18 06.0**	**-4.1**
	13nm,0.3s,baz=82,slow=15,SNR=9.5						
MJAR	**Matsushiro Arr**	**3.81**	**252**	P	**Pn**	**09 18 06.0**	**-4.1**
MJAR				pmax	pmax		
	comp=Z,13nm,0.3s						
MAJO	**Matsushiro**	**3.81**	**252**	*e*P	**Pn**	**09 18 09.4**	**-0.7**
MAJO	**Matsushiro**	**3.81**	**252**	*e*Pn	**Pn**	**09 18 09.4**	**-0.7**
MAT	**Matsushiro**	**3.81**	**252**	P	**Pn**	**09 18 06.5**	**-3.6**
MAT				*e*S	**Sn**	**09 18 54.8**	**+1.0**
ERM	**Erimo**	**4.25**	**4**	*e*P	**Pn**	**09 18 15.0**	**-1.0**
ERM	**Erimo**	**4.25**	**4**	*e*Pn	**Pn**	**09 18 15.0**	**-1.0**
INU	**Inuyama**	**5.19**	**244**	*e*Pn	**Pn**	**09 18 29.1**	**+0.1**
JHJ2	**Mitsune**	**5.22**	**208**	*e*Pn	**Pn**	**09 18 27.6**	**-1.9**
JHJ	**Hachijo jima 2**	**5.23**	**208**	Pn	**Pn**	**09 18 27.2**	**-2.4**
	comp=Z,597nm,0.3s,baz=327,slow=14,SNR=97						
JHJ				Sn	**Sn**	**09 19 23.9**	**-5.0**
	comp=Z,133nm,0.3s,baz=90,slow=20,SNR=2.7						
ASAJ	**Asahikawa**	**6.33**	**359**	*e*Pn	**Pn**	**09 18 45.0**	**+0.3**
YUK	**Yuzh-Kuril'sk**	**6.69**	**20**	*c i*P	**Pn**	**09 18 47.4**	**-2.2**
YUK				*i* S	**Sn**	**09 19 57.6**	**-7.1**
YUK				pmax	pmax		
	comp=Z,704nm,0.4s						
YUK				pmax	pmax		
	comp=N,231nm,0.3s						
YUK				pmax	pmax		
	comp=E,266nm,0.1s						
SHO	**Shikotan**	**6.84**	**26**	*d i*P	**Pn**	**09 18 49.9**	**-1.7**
SHO				*i* S	**Sn**	**09 20 00.9**	**-7.4**
SHO				pmax	pmax		
	comp=N,105nm,0.5s						
SHO				pmax	pmax		
	comp=Z,214nm,0.5s						
SHO				pmax	pmax		
	comp=E,202nm,0.6s						
KUR	**Kuril'sk**	**8.39**	**26**	*e*P	**Pn**	**09 19 12.1**	**-0.8**
KUR				*i* S	**Sn**	**09 20 39.8**	**-6.7**
KUR				pmax	pmax		
	comp=Z,119nm,0.5s						
KUR				pmax	pmax		
	comp=N,41nm,0.4s						
KUR				pmax	pmax		
	comp=E,57nm,0.6s						
YSS	**Yuzh-Sakhalins**	**9.17**	**0**	*e*P	**Pn**	**09 19 22.8**	**-0.8**
YSS				*e*S	**Sn**	**09 21 01.3**	**-4.4**
YSS				pmax	pmax		
	comp=Z,110nm,0.8s						
YSS	**Yuzh-Sakhalins**	**9.17**	**0**	*e*Pn	**Pn**	**09 19 23.1**	**-0.5**
VLA	**Vladivostok**	**9.83**	**306**	*e*P	**Pn**	**09 19 36.4**	**+3.8**
USRK	**Ussuriysk Ar.**	**10.33**	**312**	Pn	**Pn**	**09 19 39.7**	**+0.1**
	comp=Z,1.0nm,0.3s,baz=118,slow=14,SNR=17						
CBIJ	**Chichi jima**	**10.66**	**183**	*e*Pn	**Pn**	**09 19 42.7**	**-1.4**
CBIJ				Sn	Sn	09 21 30.8	-12
JCJ	**Chichijima**	**10.66**	**183**	Pn	**Pn**	**09 19 40.8**	**-3.3**
	comp=Z,67nm,0.3s,baz=344,slow=12,SNR=29						
JCJ				Sn		09 21 30.8	-12
	comp=Z,36nm,0.3s,baz=60,slow=21,SNR=4.4						
JNU	**Nakatsue**	**10.71**	**248**	Pn	**Pn**	**09 19 44.8**	**0.0**
	comp=Z,1.1nm,0.3s,baz=57,slow=6.5,SNR=14						
JNU	**Nakatsue**	**10.71**	**248**	*e*Pn	**Pn**	**09 19 45.0**	**+0.2**
KSRS	**Korea Array**	**11.74**	**273**	Pn	**Pn**	**09 19 58.4**	**-0.4**
	comp=Z,0.4nm,0.3s,baz=88,slow=13,SNR=14						
KS15	**Wonju Array Si**	**11.77**	**273**	*e*Pn	**Pn**	**09 19 59.5**	**+0.2**
KSAR	**Wonju Array Be**	**11.77**	**273**	P	**Pn**	**09 19 58.4**	**-0.9**
KSAR	**Wonju Array Be**	**11.77**	**273**	Pn	**Pn**	**09 19 58.4**	**-0.9**
MDJ	**Mudanjiang**	**12.01**	**309**	P	**Pn**	**09 20 03.6**	**+1.1**
MDJ				pmax	pmax		
	comp=Z,7.0nm,1.1s						
MDJ				pmax	pmax		
	comp=Z,5μm,12.3s						
MDJ	**Mudanjiang**	**12.01**	**309**	*e*Pn	**Pn**	**09 20 03.1**	**+0.7**
	comp=Z,44nm,1.1s						
TYV	**Tymovskoe**	**13.08**	**360**	*e*P	**Pn**	**09 20 15.5**	**-1.6**
TYV				pmax	pmax		
	comp=Z,18nm,0.8s						
KLR	**Kul'dur**	**13.92**	**329**	Pn	**Pn**	**09 20 25.5**	**-3.1**
	comp=Z,0.3nm,0.3s,baz=126,slow=14,SNR=12						
CN2	**Changchun**	**14.39**	**300**	*e*P	**Pn**	**09 20 33.9**	**-1.1**
CN2				pmax	pmax		
	comp=Z,10.0nm,0.4s						
NKL	**Nikolayevsk**	**15.44**	**355**	*e*P	**Pn**	**09 20 45.6**	**-3.3**
NKL				pmax	pmax		
	comp=N,10.0nm,1.0s						
NKL				pmax	pmax		
	comp=Z,20nm,1.0s						
SKR	**Severo-Kuril's**	**16.05**	**32**	*e*P	Pn	09 20 48.5	-8.3
DL2	**Dalian**	**16.58**	**280**	P	**P**	**09 21 06.4**	**+0.5**
DL2				pmax	pmax		
	comp=Z,53nm,1.0s						
PETK	**Petropavlovsk-**	**18.53**	**29**	P	**P**	**09 21 26.8**	**-0.5**
	comp=Z,0.5nm,0.3s,baz=193,slow=6.1,SNR=7.5						
NJ2	**Nanjing**	**20.36**	**261**	*e*P	**P**	**09 21 47.1**	**-0.4**
NJ2				pmax	pmax		
	comp=Z,11nm,0.8s						
TIA	**Tai'an**	**20.49**	**273**	⇑P	**P**	**09 21 47.1**	**-1.7**
TIA				pmax	pmax		
	comp=Z,10.0nm,0.9s						
BJI	**Beijing**	**20.75**	**285**	P	**P**	**09 21 50.9**	**-0.8**
BJI				pmax	pmax		
	comp=Z,8.0nm,0.9s						
BJI				LR	LR		
	comp=Z,7μm,16.1s						
BJI				LR	LR		
	comp=Z,5μm,14.0s						
BJI				LR	LR		
	comp=Z,3μm,17.8s						
BJT	**Baijiatuau**	**20.76**	**284**	*e*P	**P**	**09 21 50.0**	**-1.8**
BJT				pmax	pmax		
	comp=Z,16nm,0.6s						
BJT	**Baijiatuau**	**20.76**	**284**	*e*P	**P**	**09 21 50.0**	**-1.8**
	comp=Z,16nm,0.6s						
MA2	**Magadan**	**22.42**	**11**	P	**P**	**09 22 09.7**	**+0.3**
	comp=Z,39nm,0.8s,baz=214,slow=9.7,SNR=32						
MA2	**Magadan**	**22.42**	**11**	*e*P	**P**	**09 22 09.6**	**+0.3**
MA2				P	**P**	**09 22 09.7**	**+0.3**
SSLB	**Suanglung**	**23.25**	**239**	*e*P	**P**	**09 22 16.1**	**-2.2**
	comp=Z,26nm,0.9s						
TPUB	**Ta-pu**	**23.80**	**239**	*e*P	**P**	**09 22 20.9**	**-2.8**
HHC	**Hu-ho-hao-te**	**24.23**	**287**	*e*P	**P**	**09 22 25.6**	**-2.1**
HHC				sP	pP	09 22 35.6	-0.9
HHC				S	**S**	**09 26 39.2**	**-5.1**
HHC				SS	**SnSn**	**09 27 33.4**	**+5.7**
HHC				pmax	pmax		
	comp=Z,11nm,0.7s						
HHC				LR	LR		
	comp=Z,3μm,13.6s						
HHC				LR	LR		
	comp=Z,3μm,14.8s						
HHC				LR	LR		
	comp=Z,3μm,14.8s						
WHN	**Wuhan**	**24.50**	**261**	⇓P	**P**	**09 22 26.3**	**-3.7**
YAK	**Yakutsk**	**25.59**	**346**	P	**P**	**09 22 39.0**	**-0.6**
	comp=Z,23nm,0.5s,baz=176,slow=2.0,SNR=7.4						
YAK	**Yakutsk**	**25.59**	**346**	*e*P	**P**	**09 22 38.5**	**-1.1**
YAK				*e*		09 27 08.8	
YAK				pmax	pmax		
	comp=E,13nm,1.1s						
YAK				pmax	pmax		
	comp=N,26nm,1.1s						
YAK				pmax	pmax		
	comp=Z,46nm,1.1s						
YAK	**Yakutsk**	**25.59**	**346**	P	**P**	**09 22 39.0**	**-0.6**
SEY	**Seymchan**	**25.87**	**10**	P	**P**	**09 22 43.6**	**+1.5**
	comp=Z,0.2nm,0.6s,baz=197,slow=8.8,SNR=50						
SEY	**Seymchan**	**25.87**	**10**	⇑P	**P**	**09 22 43.8**	**+1.7**
BOD	**Bodaibo**	**27.47**	**326**	*e*P	**P**	**09 22 55.1**	**-1.5**
BOD				pmax	pmax		
	comp=Z,11nm,1.3s						
XAN	**Xi'an**	**27.54**	**273**	P	P	09 23 05.5	+7.9
XAN				pP	sP	09 23 10.7	+0.5
XAN				pmax	pmax		
	comp=Z,14nm,0.7s						
ULN	**Ulaanbaatar**	**27.81**	**303**	*e*P	**P**	**09 22 59.6**	**-0.4**
ULN				pmax	pmax		
	comp=Z,9.0nm,1.1s						
ULN	**Ulaanbaatar**	**27.81**	**303**	*e*S	**P**	**09 22 59.5**	**-0.5**
SONA1	**Songino Array**	**28.24**	**303**	*e*P	**P**	**09 23 03.6**	**-0.2**
SONM	**Songino Array**	**28.25**	**303**	P	**P**	**09 23 03.5**	**-0.4**
	comp=Z,5.1nm,0.7s,baz=108,slow=9.2,SNR=29						
SONM	**Songino Array**	**28.25**	**303**	P	**P**	**09 23 03.5**	**-0.4**
SONM				pmax	pmax		
	comp=Z,6.0nm,0.8s						
ENH	**Enshi**	**28.43**	**265**	*e*P	**P**	**09 23 04.7**	**-0.9**
	comp=Z,57nm,1.1s						
ZAK	**Zakamensk**	**30.64**	**307**	*e*P	**P**	**09 23 24.6**	**-0.4**
ZAK				pmax	pmax		
	comp=Z,6.0nm,1.4s						
TLY	**Talaya**	**30.64**	**310**	P	**P**	**09 23 24.9**	**0.0**
	comp=Z,2.9nm,0.6s,baz=114,slow=3.1,SNR=4.5						
TLY	**Talaya**	**30.64**	**310**	*e*P	**P**	**09 23 25.9**	**+1.0**
TLY				pmax	pmax		
	comp=Z,3.0nm,0.6s						
TLY	**Talaya**	**30.64**	**310**	*e*P	**P**	**09 23 25.4**	**+0.5**
	comp=Z,6.5nm,0.7s						
LZH	**Lanzhou**	**30.97**	**279**	*e*P	**P**	**09 23 31.3**	**+3.1**
LZH				pP	pP	09 23 37.2	+0.1
LZH				sP	sP	09 23 40.3	-0.5
LZH				PP	**PnPn**	**09 24 32.5**	**+3.1**
LZH				pmax	pmax		
	comp=Z,24nm,1.1s						
LZH				pmax	pmax		
	comp=Z,71nm,5.5s						
LZH				LR	LR		
	comp=Z,340nm,13.3s						
LZH				LR	LR		
	comp=Z,360nm,14.0s						
LZH				LR	LR		
	comp=Z,400nm,17.0s						
MOY	**Mondy**	**32.26**	**309**	*e*P	P	09 23 49.1	+10
GYA	**Guiyang**	**32.37**	**260**	⇑*i*P	**P**	**09 23 38.5**	**-2.0**
GYA				pP	pP	09 23 47.2	-2.2
GYA				PP	**PnPn**	**09 24 50.0**	**+2.4**
GYA				PcP	**PcP**	**09 26 29.8**	**+2.1**
GYA				S	**S**	**09 28 52.4**	**-0.4**
GYA				ScP	**ScP**	**09 30 11.2**	**+2.0**
GYA				SS	**SnSn**	**09 30 46.0**	**-0.4**
GYA				ScS	**ScS**	**09 34 09.6**	**+1.0**
GYA				pmax	pmax		
	comp=Z,30nm,0.8s						
GYA				pmax	pmax		
	comp=Z,120nm,4.9s						
GYA				LR	LR		
	comp=Z,520nm,17.3s						
GYA				LR	LR		
	comp=Z,490nm,16.9s						
GYA				LR	LR		
	comp=Z,500nm,17.2s						
CD2	**Chengdu**	**32.71**	**270**	P	**P**	**09 23 41.5**	**-1.9**
CD2				sP	pP	09 23 50.5	-1.8
CD2				PP	**PP**	**09 24 55.1**	**-2.4**
CD2				S	**S**	**09 28 56.5**	**-1.5**
CD2				sS	sS	09 29 07.2	-5.5
CD2				pmax	pmax		
	comp=Z,3μm,13.1s						
CD2				LR	LR		
	comp=Z,7μm,14.3s						
CD2				LR	LR		
	comp=Z,6μm,14.3s						
BILL	**Bilibino**	**33.02**	**16**	*e*P	**P**	**09 23 45.7**	**+0.1**
BILL				pmax	pmax		
	comp=Z,5.0nm,1.0s						
BILL	**Bilibino**	**33.02**	**16**	*e*P	**P**	**09 23 46.3**	**+0.7**
	comp=Z,10nm,0.9s						
GTA	**Gaotai**	**33.34**	**286**	*e*P	**P**	**09 23 50.0**	**+1.1**
GTA				pP	sP	09 23 59.4	-2.1
GTA				S	**S**	**09 29 10.8**	**+3.0**
GTA				sS	sS	09 29 20.5	-2.0
GTA				pmax	pmax		
	comp=Z,9.0nm,0.9s						
GTA				LR	LR		
	comp=Z,4μm,13.8s						
GTA				LR	LR		
	comp=Z,4μm,13.3s						
GTA				LR	LR		
	comp=Z,4μm,13.5s						
TIXI	**Tiksi**	**34.68**	**352**	P	**P**	**09 23 58.6**	**-1.3**
	comp=Z,1.5nm,0.8s,baz=155,slow=7.0,SNR=4.0						
TIXI	**Tiksi**	**34.68**	**352**	*e*P	**P**	**09 23 57.4**	**-2.5**
TIXI				pmax	pmax		
	comp=Z,17nm,3.4s						
TIXI	**Tiksi**	**34.68**	**352**	*e*P	**P**	**09 24 00.3**	**+0.4**
	comp=Z,4.7nm,0.9s						
KMI	**Kunming**	**36.10**	**261**	P	**P**	**09 24 13.7**	**+0.8**
KMI				pmax	pmax		
	comp=Z,22nm,0.9s						
KMI				pmax	pmax		
	comp=Z,1μm,9.8s						
WMQ	**Urumqi**	**41.44**	**296**	P	**P**	**09 24 58.6**	**+1.3**
WMQ				pP	pP	09 25 04.0	-2.4
WMQ				sP	sP	09 25 07.1	-3.0
WMQ				PP	**PnPn**	**09 26 38.7**	**+0.8**
WMQ				pmax	pmax		
	comp=Z,6.0nm,0.6s						
WMQ				LR	LR		
	comp=Z,1μm,14.4s						
WMQ				LR	LR		
	comp=Z,3μm,15.8s						
WMQ				LR	LR		
	comp=Z,1μm,17.2s						
ZAA0	**Zalesovo Array**	**42.19**	**312**	*e*P	**P**	**09 25 02.6**	**-0.5**
ZAA0				*e*P	**P**	**09 25 03.7**	**+0.5**
ZALV	**Zalesovo Beam**	**42.19**	**312**	P	**P**	**09 25 02.6**	**-0.6**
	comp=Z,2.7nm,0.6s,baz=87,slow=7.4,SNR=5.8						
CHTO	**Chiang Mai**	**42.48**	**256**	*e*P	**P**	**09 25 04.7**	**-1.3**
CHTO				pmax	pmax		
	comp=Z,4.0nm,0.8s						
CHTO	**Chiang Mai**	**42.48**	**256**	*e*P	**P**	**09 25 04.7**	**-1.3**
	comp=Z,3.7nm,0.8s						
CMAR	**Chiang Mai Arr**	**42.69**	**256**	P	**P**	**09 25 06.9**	**-0.8**
	comp=Z,1.4nm,0.6s,baz=43,slow=6.0,SNR=7.8						
NRIK	**Noril'sk**	**43.03**	**335**	P	**P**	**09 25 09.7**	**-0.2**
	comp=Z,2.6nm,0.4s,baz=106,slow=10,SNR=3.6						
NVS	**Novosibirsk**	**43.08**	**313**	*e*P	**P**	**09 25 09.7**	**-0.7**
SVW2	**Sparrevohn**	**44.30**	**38**	*e*P	**P**	**09 25 22.6**	**+2.4**
SVW2				*es*P	**pP**	**09 25 31.0**	**+1.6**
MKAR	**Makanchi Array**	**44.61**	**302**	P	**P**	**09 25 22.3**	**-0.5**
	comp=Z,5.2nm,0.7s,baz=90,slow=8.8,SNR=25						
MKAR	**Makanchi Array**	**44.61**	**302**	*e*P	**P**	**09 25 23.0**	**+0.1**
MAKZ	**Makanchi**	**44.81**	**302**	*e*P	**P**	**09 25 26.1**	**+1.6**
MAKZ				pmax	pmax		
	comp=Z,10.0nm,0.8s						
MAKZ	**Makanchi**	**44.81**	**302**	*e*P	**P**	**09 25 26.1**	**+1.6**
	comp=Z,10.0nm,0.8s						
RSO	**Redoubt South**	**45.67**	**39**	*e*P	**P**	**09 25 33.5**	**+2.1**
KDAK	**Kodiak Island**	**45.85**	**42**	P	P	09 25 48.3	+16
	comp=Z,21nm,0.7s,baz=271,slow=7.1,SNR=21						
KDAK	**Kodiak Island**	**45.85**	**42**	*e*P	**P**	**09 25 33.8**	**+1.3**
KDAK						09 25 48.3	
KDAK				pmax	pmax		
	comp=Z,33nm,0.9s						
KDAK	**Kodiak Island**	**45.85**	**42**	*e*P	**P**	**09 25 33.8**	**+1.3**
	comp=Z,32nm,0.9s						
KDAK				P	**sP**	**09 25 48.3**	**+3.0**
PPLA	**Purkeypile**	**45.96**	**35**	*e*P	**P**	**09 25 35.0**	**+1.4**
	comp=Z,4.1nm,1.6s						
SPU	**Mount Spurr**	**46.01**	**38**	*e*P	**P**	**09 25 35.9**	**+2.0**
CAST	**Castle Rocks**	**46.03**	**35**	*e*P	**P**	**09 25 35.8**	**+2.0**
	comp=Z,7.4nm,1.0s						
KURK	**Kurchatov**	**46.29**	**308**	P	**P**	**09 25 35.6**	**-0.5**
KURK				pmax	pmax		
	comp=Z,5.0nm,0.5s						
KURK	**Kurchatov**	**46.29**	**308**	P	P	09 25 23.9	-12
KURK				P	**P**	**09 25 35.6**	**-0.5**
KURBB	**Kurchatov Arra**	**46.37**	**308**	P	**P**	**09 25 35.6**	**-1.0**
	comp=Z,0.9nm,0.4s,baz=81,slow=8.1,SNR=6.3						
KTH	**Kantishna Hill**	**46.55**	**34**	*e*P	**P**	**09 25 40.5**	**+2.4**
	comp=Z,12nm,1.0s						
MLY	**Manley**	**46.67**	**32**	*e*P	**P**	**09 25 41.0**	**+2.1**
	comp=Z,7.4nm,1.0s						
KSM	**Kuching**	**46.82**	**227**	*e*P	**P**	**09 25 40.8**	**+0.2**
	comp=Z,18nm,0.9s						
RC01	**Rabbit Creek A**	**47.14**	**38**	*e*P	**P**	**09 25 43.7**	**+1.1**
RND	**Reindeer**	**47.48**	**35**	*e*P	**P**	**09 25 46.7**	**+1.4**
RND	**Reindeer**	**47.48**	**35**	*e*P	**P**	**09 25 46.7**	**+1.4**
MDM	**Murphy Dome**	**47.73**	**32**	*e*P	**P**	**09 25 49.1**	**+1.9**
	comp=Z,9.9nm,0.8s						
SML	**Sawmill**	**47.78**	**37**	*e*P	**P**	**09 25 48.1**	**+0.5**
SML				pmax	pmax		
	comp=Z,4.0nm,1.0s						
SML	**Sawmill**	**47.78**	**37**	*e*P	**P**	**09 25 48.1**	**+0.5**
	comp=Z,3.5nm,1.0s						
WRH	**Wood River Hil**	**47.80**	**33**	*e*P	**P**	**09 25 49.3**	**+1.7**
	comp=Z,9.9nm,1.0s						
COLA	**College**	**47.90**	**33**	*e*P	**P**	**09 25 49.7**	**+1.3**
COLA				pmax	pmax		
	comp=Z,2.0nm,0.8s						
COLA	**College**	**47.90**	**33**	*e*P	**P**	**09 25 49.7**	**+1.3**
	comp=Z,2.1nm,0.8s						
RAMN	**Ramite**	**47.98**	**274**	*e*P	**P**	**09 25 48.7**	**-1.2**
	comp=Z,60nm,0.9s						
GUN	**Gumba**	**48.12**	**276**	*e*P	**P**	**09 25 52.7**	**+1.7**
	comp=Z,75nm,0.9s						
DHY	**Denali Highway**	**48.16**	**35**	*e*P	**P**	**09 25 52.6**	**+1.9**
	comp

	comp=Z,4.8nm,0.8s								
ZRNK	**Zerenda**	**51.67**	**312**	*e*P		**P**	**09 26 17.1**	**-0.2**
ZRNK				pmax	pmax				
	comp=Z,16nm,0.8s								
ZRNK	**Zerenda**	**51.67**	**312**	*e*P		**P**	**09 26 17.1**	**-0.2**
	comp=Z,16nm,0.8s								
INK	**Inuvik**	**53.25**	**27**	P		**P**	**09 26 30.0**	**+1.3**
	comp=Z,1.6nm,0.5s,baz=296,slow=6.3,SNR=15								
KKAR	**Karatay Array**	**53.65**	**300**	*e*P		**P**	**09 26 32.1**	**0.0**
KKAR	**Karatay Array**	**53.65**	**300**	*e*P		**P**	**09 26 32.1**	**0.0**
SOKR	**Solikamsk**	**56.37**	**322**	*e*P		**pP**	**09 27 01.4**	**+0.7**
SOKR				pmax	pmax				
	comp=Z,29nm,1.0s								
ARU	**Arti**	**56.49**	**318**	*d* /P		**P**	**09 26 51.7**	**-0.6**
ARU				S		**S**	**09 34 40.7**	**-0.7**
ARU				SS		**SS**	**09 38 26.3**	**-2.0**
ARU				pmax	pmax				
	comp=Z,8.0nm,1.0s								
ARU	**Arti**	**56.49**	**318**	*e*P		**P**	**09 26 51.8**	**-0.5**
	comp=Z,46nm,0.9s								
WRAB	**Tennant Creek**	**57.94**	**189**	*e*P		**P**	**09 27 02.8**	**-0.1**
WRAB				pmax	pmax				
	comp=Z,24nm,0.8s								
WRAB	**Tennant Creek**	**57.94**	**189**	*e*P		**P**	**09 27 02.8**	**-0.1**
	comp=Z,24nm,0.8s								
WB2	**Warramunga Arr**	**57.95**	**189**	*e*P		**P**	**09 27 02.9**	**-0.1**
	comp=Z,26nm,0.8s								
WRA	**Warramunga Arr**	**57.95**	**189**	P		**P**	**09 27 02.6**	**-0.4**
	comp=Z,8.2nm,0.6s,baz=6.1,slow=7.2,SNR=38								
KBL	**Kabul**	**58.12**	**291**	*e*P		**P**	**09 27 04.8**	**+0.4**
KBL	**Kabul**	**58.12**	**291**	*e*P		**P**	**09 27 04.8**	**+0.4**
ABKAR	**Akbulak array**	**58.25**	**310**	*e*P		**P**	**09 27 04.0**	**-0.9**
RES	**Resolute Bay**	**61.62**	**15**	P		**P**	**09 27 27.9**	**+0.4**
	comp=Z,2.4nm,0.5s,baz=311,slow=6.2,SNR=18								
RES				pP		**sP**	**09 27 40.8**	**+0.1**
	baz=291,slow=3.4,SNR=15								
AS01	**Alice Springs**	**61.67**	**189**	*e*P		**P**	**09 27 28.6**	**+0.1**
AS31	**Alice Springs**	**61.68**	**189**	*e*P		**P**	**09 27 28.9**	**+0.3**
	comp=Z,3.2nm,0.6s								
ASAR	**Alice Springs**	**61.68**	**189**	P		**P**	**09 27 28.6**	**0.0**
	comp=Z,3.1nm,0.7s,baz=13,slow=6.7,SNR=27								
MBWA	**Marble Bar**	**62.49**	**204**	*e*P		**P**	**09 27 33.8**	**-0.3**
	comp=Z,50nm,0.8s								
YKA	**Yellowknife Ar**	**62.64**	**31**	P		**P**	**09 27 35.3**	**+0.6**
	comp=Z,1.3nm,0.6s,baz=303,slow=6.3,SNR=27								
YKB5	**Yellowknife Ar**	**62.64**	**31**	*e*P		**P**	**09 27 33.5**	**-1.1**
ARCES	**ARCESS Array B**	**63.66**	**340**	P		**P**	**09 27 41.1**	**-0.3**
	comp=Z,1.8nm,0.7s,baz=56,slow=6.7,SNR=4.6								
KLMR	**Klimovskoe**	**63.68**	**328**	*e*P		**P**	**09 27 40.2**	**-1.3**
KLMR				pmax	pmax				
	comp=Z,42nm,1.5s								
GEYT	**Alibeck**	**64.38**	**299**	P		**P**	**09 27 46.6**	**0.0**
	comp=Z,1.5nm,0.3s,baz=80,slow=7.9,SNR=2.6								
MOS	**Moscow**	**67.27**	**324**	*e*P		**pP**	**09 28 15.9**	**+1.6**
MOS				pmax	pmax				
	comp=Z,55nm,1.0s								
VRH	**Novokhopyorsk**	**67.72**	**318**	*e*P		**pP**	**09 28 18.2**	**+0.9**
VRH				pmax	pmax				
	comp=Z,20nm,0.7s								
OBN	**Obninsk**	**68.12**	**324**	*e*P		**P**	**09 28 13.3**	**+3.2**
OBN				pmax	pmax				
	comp=Z,19nm,1.1s								
LPSR	**Galich'ya Gora**	**68.39**	**320**	*e*P		**pP**	**09 28 22.6**	**+1.1**
LPSR				pmax	pmax				
	comp=Z,20nm,1.1s								
FIA1	**FINESS Array S**	**68.64**	**333**	*e*P		**P**	**09 28 12.8**	**-0.5**
FIA1				*e*P		**P**	**09 28 12.9**	**-0.4**
FINES	**FINESS Array B**	**68.64**	**333**	P		**P**	**09 28 12.9**	**-0.4**
	comp=Z,3.5nm,0.7s,baz=55,slow=7.9,SNR=12								
FINES				pP		**sP**	**09 28 25.1**	**-1.3**
	comp=Z,9.4nm,0.7s,baz=48,slow=8.5,SNR=12								
VSR	**Storozhevoye**	**69.05**	**319**	*e*P		**pP**	**09 28 27.0**	**+1.4**
VSR				pmax	pmax				
	comp=Z,10.0nm,0.8s								
STKA	**Stephens Creek**	**69.31**	**181**	P		**P**	**09 28 18.1**	**+0.4**
	comp=Z,2.7nm,0.8s,baz=14,slow=8.3,SNR=3.1								
SUMG	**Summit**	**69.94**	**0**	*i* P		**P**	**09 28 21.4**	**-0.3**
SUMG	**Summit**	**69.94**	**0**	*e*P		**P**	**09 28 22.5**	**+0.8**
SUMG				pmax	pmax				
	comp=Z,9.0nm,0.7s								
SUMG	**Summit**	**69.94**	**0**	*e*P		**P**	**09 28 22.5**	**+0.8**
	comp=Z,8.7nm,0.7s								
GOF	**Gofitskoye**	**70.37**	**312**⇑	*e*P		**pP**	**09 28 35.5**	**+1.6**
GOF				pmax	pmax				
	comp=Z,33nm,0.9s								
NCK	**Nalchik**	**70.91**	**311**	*e*P		**P**	**09 28 30.0**	**+2.3**
NCK				pmax	pmax				
	comp=Z,13nm,0.8s								
ZEI	**Tsey**	**71.12**	**310**	*e*P		**pP**	**09 28 39.2**	**+0.4**
ZEI				pmax	pmax				
	comp=Z,64nm,1.6s								
KIV	**Kislovodsk**	**71.20**	**311**	*e*P		**P**	**09 28 30.4**	**+0.9**
KIV				pmax	pmax				
	comp=Z,15nm,1.1s								
KIV	**Kislovodsk**	**71.20**	**311**	*e*P		**P**	**09 28 30.5**	**+1.0**
	comp=Z,71nm,1.3s								
KBZ	**Khabaz**	**71.20**	**311**	P		**P**	**09 28 29.2**	**-0.2**
	comp=Z,3.9nm,0.9s,baz=59,slow=5.9,SNR=5.6								
KBZ				pP		**sP**	**09 28 41.2**	**-1.3**
	comp=Z,14nm,0.8s,baz=20,slow=0.9,SNR=13								
ONI	**Oni**	**71.51**	**310**	P		pP	09 28 43.6	+2.6
ONI	**Oni**	**71.51**	**310**	*e*P		pP	09 28 43.6	+2.6
MFID	**Camas Ranch**	**72.36**	**49**	*e*P		**P**	**09 28 37.0**	**+0.5**
	comp=Z,23nm,1.9s								
FFC	**Flin Flon**	**72.52**	**33**	*e*P		**P**	**09 28 37.8**	**+0.7**
FFC				pmax	pmax				
	comp=Z,9.0nm,0.9s								
FFC	**Flin Flon**	**72.52**	**33**	*e*P		**P**	**09 28 37.8**	**+0.7**
	comp=Z,9.2nm,0.9s								
CMB	**Columbia Colle**	**72.59**	**55**	*e*P		**P**	**09 28 38.5**	**+0.6**
CMB				pmax	pmax				
	comp=Z,12nm,1.4s								
CMB	**Columbia Colle**	**72.59**	**55**	*e*P		**P**	**09 28 38.5**	**+0.6**
	comp=Z,12nm,1.4s								
LRM	**Limekiln Ridge**	**72.89**	**45**	*e*P		**P**	**09 28 41.1**	**+1.3**
EGMT	**Eagleton**	**73.03**	**42**	*e*P		**P**	**09 28 38.9**	**-1.5**
	comp=Z,12nm,0.6s								
DLMT	**Dillon**	**73.08**	**45**	*e*P		**P**	**09 28 42.6**	**+1.8**
	comp=Z,5.2nm,0.9s								
HLID	**Hailey**	**73.10**	**48**	*e*P		**P**	**09 28 42.1**	**+1.0**
	comp=Z,2.5nm,0.9s								
NC405	**NORSAR Array S**	**73.69**	**338**	*e*P		**P**	**09 28 44.6**	**+0.7**
NVAR	**Mina Array Bea**	**73.71**	**54**	P		**P**	**09 28 45.8**	**+1.0**
	comp=Z,2.2nm,0.8s,baz=295,slow=6.2,SNR=14								
NVAR				pP		**sP**	**09 28 58.7**	**+0.8**
	comp=Z,3.0nm,0.9s,baz=288,slow=5.7,SNR=9.7								
NV01	**Mina Array Sit**	**73.71**	**54**	*e*P		**P**	**09 28 46.2**	**+1.5**
NV11	**Mina Array Sit**	**73.81**	**54**	*e*P		**P**	**09 28 46.3**	**+1.1**
	comp=Z,17nm,1.9s								
NC204	**NORSAR Array S**	**73.84**	**338**	*e*P		**P**	**09 28 45.1**	**+0.2**
NB2	**NORSAR Subarra**	**73.90**	**338**	P		**P**	**09 28 44.8**	**-0.4**
	comp=Z,10.0nm,0.9s,baz=38,slow=6.2								
NOA	**NORSAR Array B**	**73.90**	**338**	P		**P**	**09 28 45.0**	**-0.2**
	comp=Z,1.4nm,0.7s,baz=39,slow=5.9,SNR=8.3								
NOA				pP		**sP**	**09 28 57.1**	**-1.3**
	comp=Z,5.2nm,0.8s,baz=38,slow=5.9,SNR=12								
NOA	**NORSAR Array B**	**73.90**	**338**	P		**P**	**09 28 45.0**	**-0.2**
NOA				*PP		**sP**	**09 28 57.1**	**-1.3**
NOA				pmax	pmax				
	comp=Z,2.0nm,0.7s								
NOA				pmax	pmax				
	comp=Z,5.0nm,0.8s								
AKASG	**Malin Array Be**	**74.34**	**323**	P		**P**	**09 28 47.0**	**-0.9**
	comp=Z,1.9nm,0.5s,baz=44,slow=6.0,SNR=7.5								
AKASG				pP		**sP**	**09 28 59.4**	**-1.7**
	comp=Z,10nm,0.8s,baz=45,slow=6.0,SNR=9.3								
KIEV	**Kiev**	**74.35**	**323**	*e*P		**P**	**09 28 48.9**	**+1.0**
KIEV				pmax	pmax				
	comp=Z,15nm,0.9s								
KIEV	**Kiev**	**74.35**	**323**	*e*P		**P**	**09 28 48.9**	**+1.0**
	comp=Z,15nm,0.9s								
AK11	**Malin Array Si**	**74.38**	**323**	*e*P		**P**	**09 28 48.2**	**0.0**
IMW	**Indian Meadow**	**74.91**	**46**	*e*P		**P**	**09 28 53.3**	**+1.6**
	comp=Z,4.9nm,0.8s								
MOOW	**Moose Ponds**	**75.11**	**46**	*e*P		**P**	**09 28 54.6**	**+1.8**
	comp=Z,3.1nm,0.8s								
R11A	**Troy Canyon, C**	**75.49**	**53**	*e*P		**P**	**09 28 56.8**	**+1.7**
	comp=Z,18nm,1.7s								
TPNV	**Topopah Spring**	**75.90**	**54**	*e*P		**P**	**09 28 59.0**	**+1.6**
TPNV				pmax	pmax				
	comp=Z,5.0nm,0.9s								
TPNV	**Topopah Spring**	**75.90**	**54**	*e*P		**P**	**09 28 59.0**	**+1.6**
	comp=Z,5.0nm,0.9s								
HWUT	**Hardware Ranch**	**75.96**	**48**	*e*P		**P**	**09 28 59.5**	**+1.8**
	comp=Z,9.7nm,1.3s								
DUG	**Dugway, Tooele**	**76.08**	**50**	*e*P		**P**	**09 28 59.9**	**+1.6**
DUG				pmax	pmax				
	comp=Z,4.0nm,0.8s								
DUG	**Dugway, Tooele**	**76.08**	**50**	*e*P		**P**	**09 28 59.9**	**+1.6**
	comp=Z,3.6nm,0.8s								
BW06	**Boulder Array**	**76.40**	**46**	*e*P		**P**	**09 29 00.8**	**+0.6**
BW06				*e*P		**P**	**09 29 01.3**	**+1.1**
PD31	**Pinedale Array**	**76.40**	**46**	*e*P		**P**	**09 29 01.3**	**+1.0**
PDAR	**Pinedale Array**	**76.40**	**46**	P		**P**	**09 29 00.9**	**+0.7**
	comp=Z,1.9nm,0.6s,baz=261,slow=1.8,SNR=21								
NLU	**North Lily Min**	**76.68**	**50**	*e*P		**P**	**09 29 03.6**	**+1.8**
	comp=Z,4.5nm,1.0s								
MPU	**Maple Canyon**	**76.91**	**49**	*e*P		**P**	**09 29 04.9**	**+1.8**
	comp=Z,9.7nm,1.4s								
MSU	**Marysvale**	**77.51**	**51**	*e*P		**P**	**09 29 08.8**	**+2.3**
MSU	**Marysvale**	**77.51**	**51**	*e*P		**P**	**09 29 08.8**	**+2.3**
LCMT	**Little Creek M**	**77.77**	**53**	*e*P		**P**	**09 29 09.9**	**+2.0**
	comp=Z,4.3nm,1.0s								
P17A	**Butcher Ranch,**	**77.78**	**49**	*e*P		**P**	**09 29 09.8**	**+1.9**
	comp=Z,27nm,1.6s								
P18A	**Preston Nutter**	**77.98**	**49**	*e*P		**P**	**09 29 11.0**	**+1.8**
	comp=Z,15nm,1.7s								
KNB	**Kanab**	**78.03**	**52**	*e*P		**P**	**09 29 11.2**	**+1.8**
KNB				pmax	pmax				
	comp=Z,7.0nm,1.2s								
KNB	**Kanab**	**78.03**	**52**	*e*P		**P**	**09 29 11.2**	**+1.8**
	comp=Z,7.4nm,1.2s								
BUR08	**Bucovina Ar. S**	**78.35**	**322**	*e*P		**P**	**09 29 11.3**	**+0.4**
OJC	**Ojcow**	**78.99**	**327**	*e*P		**P**	**09 29 14.0**	**-0.2**
OJC				pmax	pmax				
	comp=Z,18nm,1.0s								
OJC	**Ojcow**	**78.99**	**327**	*e*P		**P**	**09 29 14.0**	**-0.2**
	comp=Z,18nm,1.0s								
BR131	**Keskin Array S**	**79.13**	**312**	*e*P		**P**	**09 29 14.9**	**-0.5**
BRTR	**Keskin Array B**	**79.13**	**312**	P		**P**	**09 29 15.4**	**+0.1**
	comp=Z,1.4nm,1.0s,baz=67,slow=4.8,SNR=4.6								
BRTR				pP		**sP**	**09 29 27.0**	**-1.6**
	comp=Z,3.2nm,0.9s,baz=44,slow=4.1,SNR=8.7								
PV10	**Paradox Valley**	**79.50**	**49**	*e*P		**P**	**09 29 19.6**	**+2.0**
BR231	**Keskin MP Arra**	**79.56**	**313**	*e*P		**P**	**09 29 16.2**	**-1.5**
PV04	**Paradox Valley**	**79.57**	**49**	*e*P		**P**	**09 29 18.6**	**+0.8**
PV05	**Paradox Valley**	**79.66**	**50**	*e*P		**P**	**09 29 19.7**	**+1.3**
Y14A	**Wickenburg**	**79.83**	**55**	*e*P		**P**	**09 29 20.8**	**+1.6**
	comp=Z,16nm,0.9s								
WUAZ	**Wupatki**	**79.88**	**53**	*e*P		**P**	**09 29 21.1**	**+1.6**
	comp=Z,4.8nm,0.9s								
PV01	**Paradox Valley**	**79.94**	**49**	*e*P		**P**	**09 29 21.5**	**+1.6**
113A	**Mohawk Valley,**	**80.06**	**56**	*e*P		**P**	**09 29 21.7**	**+1.4**
	comp=Z,17nm,1.8s								
SMCO	**Snowmass**	**80.21**	**48**	*e*P		**P**	**09 29 23.1**	**+1.6**
	comp=Z,9.8nm,1.6s								
MORC	**Moravsky Berou**	**80.30**	**327**	*e*P		**P**	**09 29 22.9**	**+1.5**
MORC				pmax	pmax				
	comp=Z,32nm,0.9s								
MORC	**Moravsky Berou**	**80.30**	**327**	*e*P		**P**	**09 29 22.9**	**+1.5**
	comp=Z,32nm,0.9s								
DPC	**Dobruska-Polom**	**80.37**	**328**	*e*pP		pP	09 29 33.3	+1.8
DPC	**Dobruska-Polom**	**80.37**	**328**	*e*P		pP	09 29 33.3	+1.8
X16A	**Lo Mia Camp, P**	**80.54**	**54**	*e*P		**P**	**09 29 24.8**	**+1.7**
	comp=Z,3.4nm,0.9s								
MVCO	**Mesa Verde**	**80.58**	**50**	*e*P		**P**	**09 29 24.1**	**+0.7**
	comp=Z,2.3nm,0.9s								
VYHS	**Vyhne**	**80.70**	**326**	*e*P		**P**	**09 29 24.7**	**+1.2**
VYHS				*e*			09 29 36.4		
VYHS	**Vyhne**	**80.70**	**326**	*e*P		**P**	**09 29 24.7**	**+1.2**
VYHS				*e*			09 29 36.4		
BRG	**Berggiesshubel**	**80.93**	**330**	*e*P		pP	09 29 37.3	+2.9
	comp=Z,8.0nm,1.0s								
BRG	**Berggiesshubel**	**80.93**	**330**	*e*P		**pP**	**09 29 37.3**	**+2.9**
BRG				pmax	pmax				
	comp=Z,8.0nm,1.0s								
CLL	**Collm**	**80.96**	**331**	*e*P		**P**	**09 29 25.0**	**+0.2**
CLL				*e*			09 29 34.0		
CLL				*i*			09 29 37.1		
	comp=Z,12nm,1.0s								
CLL	**Collm**	**80.96**	**331**	*e*P		**P**	**09 29 25.0**	**+0.2**
CLL				*e*			09 29 34.0		
S22A	**4UR Ranch, Cre**	**81.23**	**49**	*e*P		**P**	**09 29 28.9**	**+2.0**
	comp=Z,4.1nm,1.1s								
RAYN	**Ar Rayn**	**81.33**	**293**	*e*P		**P**	**09 29 27.7**	**+0.4**
	comp=Z,19nm,1.5s								
PRU	**Pruhonice**	**81.38**	**329**	*e*pP		pP	09 29 38.5	+1.7
PRU	**Pruhonice**	**81.38**	**329**	*e*P		pP	09 29 38.5	+1.7
KHC	**Kasperske Hory**	**82.44**	**329**	*e*P		**P**	**09 29 29.0**	**-3.8**
KHC				*e*pP		**pP**	**09 29 43.5**	**+1.0**
KHC	**Kasperske Hory**	**82.44**	**329**	*e*P		pP	09 29 43.5	+1.0
GERES	**GERESS Array B**	**82.62**	**329**	P		**P**	**09 29 33.4**	**-0.3**
	comp=Z,0.4nm,0.2s,baz=34,slow=7.1,SNR=3.7								
ECSD	**EROS Data Cent**	**82.69**	**39**	*e*P		**P**	**09 29 34.5**	**+0.4**
	comp=Z,5.8nm,1.0s								
T25A	**Trinidad**	**83.07**	**48**	*e*P		**P**	**09 29 37.4**	**+0.9**
	comp=Z,4.4nm,0.8s								
ANMO	**Albuquerque**	**83.31**	**51**	*e*P		**P**	**09 29 39.5**	**+1.8**
ANMO				pmax	pmax				
	comp=Z,9.0nm,1.4s								
ANMO	**Albuquerque**	**83.31**	**51**	*e*P		**P**	**09 29 39.5**	**+1.8**
	comp=Z,9.2nm,1.4s								
SCHQ	**Schefferville**	**84.33**	**17**	P		**P**	**09 29 42.5**	**+0.1**
	comp=Z,2.8nm,0.7s,baz=289,slow=11,SNR=3.1								
BFO	**Black Forest**	**85.16**	**331**	*e*P		**P**	**09 29 46.6**	**0.0**
BFO				pmax	pmax				
	comp=Z,10.0nm,1.0s								
BFO	**Black Forest**	**85.16**	**331**	*e*P		**P**	**09 29 46.5**	**0.0**
	comp=Z,9.8nm,1.0s								
MNTX	**Cornudas Mount**	**86.16**	**52**	*e*P		**P**	**09 29 53.0**	**+1.1**
	comp=Z,12nm,1.9s								
TX31	**Lajitas Ar. Si**	**88.84**	**53**	*e*P		**P**	**09 30 05.7**	**+0.7**
TXAR	**Lajitas Array**	**88.84**	**53**	P		**P**	**09 30 05.6**	**+0.6**
	comp=Z,1.9nm,0.8s,baz=303,slow=3.4,SNR=20								
MIAR	**Mount Ida**	**91.07**	**43**	*e*P		**P**	**09 30 15.8**	**+0.7**
MIAR				pmax	pmax				
	comp=Z,7.0nm,0.8s								
MIAR	**Mount Ida**	**91.07**	**43**	*e*P		**P**	**09 30 15.8**	**+0.7**
	comp=Z,7.1nm,0.8s								
DBIC	**Dimbokro**	**126.44**	**319**	PKP		**PKPdf**	**09 36 13.6**	**-0.3**
	comp=Z,1.4nm,0.7s,baz=90,slow=2.0,SNR=3.7								
LPAZ	**La Paz**	**145.42**	**60**	PKPbc		**PKPdf**	**09 36 49.8**	**+0.2**
	comp=Z,10nm,0.8s,baz=342,slow=4.2,SNR=34								
SIV	**San Ignacio**	**149.81**	**50**	PKP		**PKPdf**	**09 36 56.8**	**+0.6**
	comp=Z,9.6nm,0.9s,baz=336,slow=0.2,SNR=3.3								
SIV				PKPbc		**PKPbc**	**09 37 01.3**	**+0.4**
	comp=Z,2.4nm,0.6s,baz=295,slow=1.8,SNR=3.0								
PLCA	**Paso Flores**	**154.16**	**107**	PKPab		**PKPab**	**09 37 25.7**	**+1.6**
	comp=Z,3.6nm,0.8s,baz=280,slow=4.4,SNR=9.6								

ATH **11** *09:17:41.4,34.˚78N×23.˚84E,h39km±1km, ML3.1/2, Error ellipse: s-maj=3.1km s-min=1.8km az=232.0*
CSEM **11** *09:17:41.8±0.6,34.˚78N×23.˚76E,h20km, ML3.1, Error ellipse: s-maj=11.7km s-min=6.6km az=34.0*
THE 11 09:17:43.3,34.˚82N×23.˚80E,h22km±2km, ML2.8/3, Error ellipse: s-maj=3.1km s-min=1.4km az=203.0, Crete

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
GVD	**Gavdhos**	**0.24**	**86**	P	Pb	09 17 48.7	-0.7
GVD				S	Sb	09 17 54.4	+0.8
GVD	**Gavdhos**	**0.24**	**86**	P	Pb	09 17 48.9	-0.5
GVD				S	Sb	09 17 54.4	+0.8
GVD	**Gavdhos**	**0.24**	**86**	P	Pb	09 17 48.9	-0.5
GVD				AML	AML	09 17 54.6	
	comp=E,11662μm,0.4s						
GVD				S	Sb	09 17 54.9	+1.3
GVD				AML	AML	09 17 55.0	
	comp=N,21543μm,0.3s						
IMMV	**Iera Moni Meta**	**0.65**	**13**	P	Pb	09 17 55.0	-1.1
IMMV				S	Sb	09 18 05.5	+0.7
IMMV	**Iera Moni Meta**	**0.65**	**13**	P	Pb	09 17 55.0	-1.1
IMMV				S	Sb	09 18 05.5	+0.7
IMMV	**Iera Moni Meta**	**0.65**	**13**	P	Pb	09 17 55.0	-1.2
IMMV				S	Sn	09 18 06.3	-0.7
IMMV				AML	AML	09 18 06.4	
	comp=N,1173μm,0.5s						
IMMV				AML	AML	09 18 06.8	
	comp=E,1770μm,0.3s						
VAM	**Vamos**	**0.67**	**30**	P	Pb	09 17 55.1	-1.3
VAM				S	Sb	09 18 05.5	+0.2
VAM	**Vamos**	**0.67**	**30**	P	Pb	09 17 55.1	-1.3
VAM				S	Sb	09 18 05.5	+0.2
SIVA	**Sivas**	**0.86**	**77**	P	Pb	09 17 58.9	-0.6
SIVA				S	Sn	09 18 11.6	-0.3
SIVA	**Sivas**	**0.86**	**77**	P	Pb	09 17 58.9	-0.6
SIVA				S	Sn	09 18 11.6	-0.3
IDI	**Anoyia**	**1.01**	**62**	P	Pb	09 18 00.5	-1.6
IDI				S	Sb	09 18 15.0	0.0
IDI	**Anoyia**	**1.01**	**62**	P	Pb	09 18 00.5	-1.6
IDI				S	Sb	09 18 14.7	-0.3
IDI	**Anoyia**	**1.01**	**62**	P	Pb	09 18 00.3	-1.8
	comp=E,76nm,0.5s						
ANKY	**Antikythira Is**	**1.12**	**339**	P	Pn	09 18 03.2	-0.5
ANKY				S	Sn	09 18 18.4	0.0
ANKY	**Antikythira Is**	**1.12**	**339**	P	Pn	09 18 03.2	-0.5
ANKY				S	Sn	09 18 18.4	0.0
ANKY	**Antikythira Is**	**1.12**	**339**	P	Pn	09 18 03.2	-0.4

ISCJB **11** *09:19:02.8±1.1,38.˚10N±0.˚04×142.˚36E±0.˚05,h21km±7km, mb4.1/21, MS4.8/1, Error ellipse: s-maj=7.7km s-min=5.5km az=42.5*
JMA **11** *09:19:04.8±0.3,38.˚14N×142.˚33E,h37km, M4.5*
JMA Felt II J1.
IDC **11** *09:19:06.0±0.7,38.˚09N×142.˚34E,h29km±3km, mb3.9/19, mb1 4.1/22, mb1mx4.0/45, mbtmp4.2/22, ML2.3/2, MS4.9/1, Ms1 4.9/1, ms1mx3.5/50, Error ellipse: s-maj=16.7km s-min=15.4km az=96.0*
NEIC **11** *09:19:05.1±2.0,38.˚10N×142.˚38E,h23km±14km, mb4.2/1, Error ellipse: s-maj=7.4km s-min=5.1km az=122.0*
NEIC Recorded [2 JMA] in Fukushima, Iwate and Miyagi.
ISC 11 09:19:05.7±0.7, 38.˚12N±0.˚05×142.˚30E±0.˚06, h29km±4km, n37,σ1s00/50, mb4.2/21, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**0.82**	**294**	P	Pn	**09 19 20.3**	**-1.0**
JIO				S	Sb	**09 19 30.9**	**-1.2**
OFUJ	**Ofunato**	**1.08**	**333**	P	Pn	**09 19 23.1**	**-1.8**
OFUJ				S	Sn	**09 19 36.1**	**-2.8**
JMK	**Ichinoseki**	**1.18**	**315**	P	Pn	**09 19 26.0**	**-0.3**
JMK				*e*S	Sn	**09 19 40.4**	**-1.1**
JMM	**Marumori**	**1.21**	**258**	P	Pn	**09 19 26.0**	**-0.7**
JMM				S	Sn	**09 19 41.1**	**-1.1**
JOU	**Okura**	**1.31**	**281**	S	Sn	**09 19 44.6**	**0.0**
JFK	**Kawauchi**	**1.35**	**237**	P	Pn	**09 19 27.6**	**-1.1**
JFK				S	Sn	**09 19 43.8**	**-1.9**
JOM	**Ohasama**	**1.56**	**330**	P	Pn	**09 19 30.9**	**-0.7**
JOM				*e*S	Sn	**09 19 49.1**	**-1.7**
JFT	**Otama**	**1.66**	**249**	*e*S	Sn	**09 19 53.5**	**+0.2**
JYS	**Shirataka**	**1.76**	**274**	*e*S	Sn	**09 19 56.4**	**+0.7**
MAJO	**Matsushiro**	**3.62**	**245**	Pn	Pn	**09 20 00.6**	**+0.7**
ERM	**Erimo**	**3.95**	**9**	*e*Pn	Pn	**09 20 03.9**	**-0.4**
JHJ	**Hachijo jima 2**	**5.39**	**203**	Pn	Pn	**09 20 23.6**	**-0.5**
	67nm,0.3s,baz=233,slow=20,SNR=1.4						
JHJ				Sn	Sn	**09 21 22.6**	**-2.7**
	46nm,0.3s,baz=90,slow=20,SNR=3.6						
USRK	**Ussuriysk Ar.**	**9.86**	**311**	Pn	Pn	**09 21 27.3**	**+1.9**
	0.1nm,0.3s,baz=121,slow=14,SNR=3.5						
PETK	**Petropavlovsk-**	**18.40**	**30**	P	Pn	**09 23 18.8**	**+0.3**
	0.2nm,0.3s,baz=196,slow=9.8,SNR=4.6						
MA2	**Magadan**	**22.15**	**11**	P	P	**09 23 58.9**	**0.0**
	6.2nm,0.5s,baz=210,slow=14,SNR=5.1						
SONM	**Songino Array**	**27.78**	**302**	P	P	**09 24 52.9**	**+0.8**
	0.7nm,0.4s,baz=101,slow=9.4,SNR=5.6						
SONM				LR	LR	09 35 30.0	
	comp=Z,2μm,18.5s,baz=301,slow=35						
ZALV	**Zalesovo Beam**	**41.71**	**311**	P	P	**09 26 52.7**	**+1.0**
	1.3nm,0.3s,baz=90,slow=8.3,SNR=2.7						
MKAR	**Makanchi Array**	**44.15**	**301**	P	P	**09 27 12.2**	**+0.6**

JHJ Hachijo jima 2 3.96 193 Pn **Pn** 09 24 25.0 +1.5
8.8nm,0.3s,baz=346,slow=17,SNR=4.2
JHJ Sn **Sn** 09 25 11.8 +1.9
18nm,0.3s,baz=72,slow=19,SNR=4.4
JHJ2 Mitsune 3.96 192 Pn **Pn** 09 24 24.1 +0.6
USRK Ussuriysk Ar. 9.85 320 Pn Pn 09 25 48.5 +4.1
0.2nm,0.3s,baz=138,slow=13,SNR=4.5
KSRS Korea Array 10.31 276 Pn Pn 09 25 57.6 +6.9
0.2nm,0.3s,baz=92,slow=14,SNR=8.3
KSAR Wonju Array Be 10.34 276 Pn Pn 09 25 57.6 +6.5
SONM Songino Array 27.43 304 P **P** 09 29 09.0 +0.3
0.5nm,0.5s,baz=102,slow=8.5,SNR=4.5
H11N2 WAKE ISLAND Hy 28.52 120 T T 09 59 05.2
baz=313,slow=75,SNR=37
H11N1 WAKE ISLAND Hy 28.53 120 T T 09 59 05.7
baz=313,slow=75,SNR=65
H11N3 WAKE ISLAND Hy 28.54 120 T T 09 59 06.5
baz=313,slow=75,SNR=62
H11S1 WAKE ISLAND Hy 29.23 122 T T 09 59 57.9
baz=314,slow=76,SNR=52
H11S3 WAKE ISLAND Hy 29.23 122 T T 09 59 57.9
baz=314,slow=76,SNR=47
H11S2 WAKE ISLAND Hy 29.24 122 T T 09 59 59.7
baz=314,slow=76,SNR=36
TIXI Tiksi 35.28 353 P **P** 09 30 16.9 -0.3
1.4nm,0.4s,baz=148,slow=8.7,SNR=3.3
ZALV Zalesovo Beam 41.60 312 P **P** 09 31 10.6 -0.1
0.9nm,0.4s,baz=83,slow=6.8,SNR=3.9
ZALV PcP **PcP** 09 33 07.5 0.0
0.6nm,0.4s,baz=87,slow=4.9,SNR=3.7
MKAR Makanchi Array 43.75 302 P **P** 09 31 28.3 +0.1
1.1nm,0.6s,baz=89,slow=9.6,SNR=9.6
MKAR PcP **PcP** 09 33 14.7 -0.2
0.2nm,0.3s,baz=72,slow=4.7,SNR=3.2
KURK Kurchatov 45.59 308 P **P** 09 31 43.3 +0.5
KURK PcP **PcP** 09 33 20.9 -0.2
KURBB Kurchatov Arra 45.66 308 P **P** 09 31 43.3 -0.1
1.5nm,0.4s,baz=84,slow=8.1,SNR=13
KURBB PcP **PcP** 09 33 20.9 -0.4
0.5nm,0.7s,baz=88,slow=4.2,SNR=4.4
WRAB Tennant Creek 56.94 187 *e*P **P** 09 33 07.9 -0.3
WRA Warramunga Arr 56.95 187 P **P** 09 33 07.7 -0.6
1.0nm,0.5s,baz=3.8,slow=7.2,SNR=10.0
ABKAR Akbulak array 57.61 310 *e*P **P** 09 33 12.8 +0.1
1.2nm,0.7s
ASAR Alice Springs 60.68 187 P **P** 09 33 33.5 -0.7
0.4nm,0.6s,baz=14,slow=9.0,SNR=4.5
ARCES ARCESS Array B 63.88 339 P **P** 09 33 55.0 -0.1
4.0nm,0.9s,baz=59,slow=7.7,SNR=6.3
YKA Yellowknife Ar 64.08 30 P **P** 09 33 55.4 -1.0
0.2nm,0.7s,baz=302,slow=6.7,SNR=3.7
FINES FINESS Array B 68.64 332 P **P** 09 34 25.7 0.0
3.4nm,0.8s,baz=54,slow=9.7,SNR=8.9
FINES pP **pP** 09 34 29.7 +0.2
baz=45,slow=11,SNR=4.8
NB2 NORSAR Subarra 74.05 337 P **P** 09 34 58.6 +0.1
comp=Z,0.5nm,0.3s,baz=41,slow=6.2
NOA NORSAR Array B 74.05 337 P **P** 09 34 58.3 -0.1
comp=Z,0.9nm,0.6s,baz=39,slow=5.9,SNR=4.5
AKASG Malin Array Be 74.05 322 P **P** 09 34 58.1 -0.4
comp=Z,0.7nm,0.4s,baz=49,slow=6.0,SNR=6.1
TXAR Lajitas Array 90.52 52 P **P** 09 36 26.2 +0.9
comp=Z,0.3nm,0.5s,baz=320,slow=2.9,SNR=5.6
LPAZ La Paz 147.12 59 PKPbc **PKPab** 09 43 08.0 -0.7
comp=Z,1.1nm,0.7s,baz=18,slow=3.2,SNR=5.2

JMA 11 09:25:39.1, 37.01N×140.64E, h9km±1km, M3.1, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.16**	**54**	P	Pg	09 25 42.7	+0.2
ONAJ				S	Sg	09 25 45.1	+0.2
JFK	**Kawauchi**	**0.40**	**28**	P	Pg	09 25 47.0	0.0
JFK				S	Sg	09 25 52.7	+0.4
JHO	**Hitachi**	**0.40**	**188**	P	Pg	09 25 46.9	-0.1
JHO				S	Sg	09 25 52.5	+0.2
JFT	**Otama**	**0.56**	**335**	P	Pg	09 25 50.4	+0.4
JFT				S	Sg	09 25 57.8	+0.4
MAT	**Matsushiro**	**2.01**	**257**	P	Pb	09 26 15.6	-0.2
MAT				S	Sb	09 26 40.4	-0.5

*ISCJB **11** 09:30:32.5±0.5, 36.97N±0.02×140.50E±0.03, h8km±3km, mb4.5/94, MS5.0/8, Error ellipse: s-maj=4.9km s-min=3.2km az=25.5*
*BJI **11** 09:30:33.2, 36.90N×140.56E, h19km, mb4.5/32, mB4.5/3, Ms5.2/10, Ms7 4.9/10*
*JMA **11** 09:30:33.4, 36.91N×140.72E, h6km±1km, M4.7*
JMA Felt III J1.
*IDC **11** 09:30:34.3±4.2, 36.93N×140.58E, h15km±25km, mb4.3/26, mb1 4.4/28, mb1mx4.3/58, mbtmp4.4/28, ML3.8/2, MS5.2/3, Ms1 5.3/3, ms1mx4.2/61, Error ellipse: s-maj=15.4km s-min=11.7km az=101.0*
*MOS **11** 09:30:35.9±1.2, 37.02N×140.54E, h33km, mb4.7/51, Error ellipse: s-maj=9.7km s-min=5.7km az=94.1*
*NEIC **11** 09:30:38.4±0.5, 37.00N×140.47E, h37km±5km, mb4.7/51, Error ellipse: s-maj=5.3km s-min=4.0km az=120.0*
NEIC Recorded [3 JMA] in Fukushima.
ISC 11 09:30:33.8±0.9, 36.97N±0.03×140.58E±0.03, h10km±5km, n218, σ1°43/236, mb4.7/94, MS5.0/8, 9C-1D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.22**	**52**	P	**Pg**	**09 30 37.8**	**-0.6**
ONAJ				*e*S	**Sg**	**09 30 41.1**	**-0.4**
JHO	**Hitachi**	**0.36**	**181**	P	**Pg**	**09 30 39.9**	**-1.0**
JHO				S	**Sg**	**09 30 44.5**	**-1.1**
JFK	**Kawauchi**	**0.46**	**30**	⇑P	**Pg**	**09 30 42.5**	**-0.4**
JFK				*e*S	**Sg**	**09 30 49.0**	**0.0**
JSB	**Shiboa**	**0.53**	**270**	⇑P	**Pn**	**09 30 46.4**	**-1.1**
JSB				S	**Sn**	**09 30 55.4**	**-1.2**
JFT	**Otama**	**0.58**	**341**	P	**Pb**	**09 30 46.8**	**+0.6**
JFT				S	**Sb**	**09 30 55.5**	**+0.9**
JYT	**Yasato**	**0.80**	**203**	⇑P	**Pg**	**09 30 48.6**	**-0.7**
JYT				*e*S	**Sg**	**09 30 59.4**	**-0.3**
I30JP	**ISUMI INFRASON**	**1.67**	**187**	Pn	**Pn**	**09 31 00.0**	**-3.2**
baz=16,slow=15,SNR=0.4							
MJAR	**Matsushiro Arr**	**1.95**	**258**	Pn	**Pb**	**09 31 08.5**	**-1.0**
93nm,0.3s,baz=102,slow=14,SNR=110							
MJAR				Lg	Lg	09 31 35.1	
69nm,0.3s,baz=79,slow=28,SNR=4.7							
MAJO	**Matsushiro**	**1.95**	**258**	*e*P	**Pb**	**09 31 09.5**	**0.0**
MAJO				*e*		09 31 34.9	
MAJO	**Matsushiro**	**1.95**	**258**	*e*Pn	**Pb**	**09 31 09.5**	**0.0**
MAJO				*e*Sn	**Sg**	**09 31 34.9**	**-1.7**
MAT	**Matsushiro**	**1.95**	**258**	P	**Pb**	**09 31 09.1**	**-0.4**
MAT				S	**Sg**	**09 31 35.4**	**-1.2**
INU	**Inuyama**	**3.31**	**242**	*e*Pn	**Pn**	**09 31 28.5**	**+2.9**
JHJ	**Hachijo jima 2**	**3.89**	**190**	Pn	**Pn**	**09 31 32.7**	**-1.1**
70nm,0.3s,baz=74,slow=17,SNR=19							
JHJ				Sn	**Sn**	**09 32 20.6**	**+1.0**
59nm,0.3s,baz=249,slow=24,SNR=5.7							
JHJ2	**Mitsune**	**3.90**	**189**	*e*Pn	**Pn**	**09 31 35.8**	**+2.0**
ERM	**Erimo**	**5.42**	**21**	*e*P	**Pn**	**09 31 55.6**	**+0.9**
ERM				*e*		09 33 00.8	
ERM	**Erimo**	**5.42**	**21**	*e*Pn	**Pn**	**09 31 55.6**	**+0.9**
ERM				*e*Sn	**Sn**	**09 33 00.8**	**+3.6**
ASAJ	**Asahikawa**	**7.30**	**11**	*e*Pn	**Pn**	**09 32 20.8**	**+0.2**
YUK	**Yuzh-Kuril'sk**	**8.12**	**28**	*e*P	**Pn**	**09 32 32.7**	**+0.9**
SHO	**Shikotan**	**8.38**	**33**	*e*P	Pn	09 32 45.6	+10
SHO				pmax	pmax		
comp=Z,46nm,0.8s							
SHO				pmax	pmax		
comp=N,38nm,1.1s							
SHO				pmax	pmax		
comp=E,21nm,0.9s							
JNU	**Nakatsue**	**8.83**	**247**	*e*Pn	**Pn**	**09 32 42.8**	**+1.2**
USRK	**Ussuriysk Ar.**	**9.74**	**321**	Pn	Pn	09 33 00.3	+6.4
comp=E,0.6nm,0.3s,baz=135,slow=12,SNR=39							
KUR	**Kuril'sk**	**9.92**	**31**	*e*P	**Pn**	**09 32 54.1**	**-2.3**
KUR				*e*S	**Sn**	**09 34 39.8**	**-7.9**
KUR				smax	smax		
comp=N,17nm,0.9s							
KUR				smax	smax		
comp=E,21nm,0.9s							
KSRS	**Korea Array**	**10.11**	**277**	Pn	Pn	09 33 06.3	+7.3
comp=E,0.2nm,0.3s,baz=93,slow=13,SNR=25							
YSS	**Yuzh-Sakhalins**	**10.11**	**9**	⇑*i*P	**Pn**	**09 32 59.3**	**+0.3**
YSS				pmax	pmax		
comp=Z,40nm,1.1s							
YSS	**Yuzh-Sakhalins**	**10.11**	**9**	*e*Pn	**Pn**	**09 32 59.4**	**+0.3**
KS15	**Wonju Array Si**	**10.14**	**276**	*e*Pn	**Pn**	**09 32 59.1**	**-0.4**
KSAR	**Wonju Array Be**	**10.14**	**276**	P	Pn	09 33 06.3	+6.8
KSAR	**Wonju Array Be**	**10.14**	**276**	Pn	Pn	09 33 06.3	+6.8
MDJ	**Mudanjiang**	**11.29**	**316**	P	Pn	09 33 20.3	+5.0
MDJ				pmax	pmax		
comp=Z,11nm,0.9s							
MDJ				pmax	pmax		
comp=Z,4μm,12.3s							
MDJ	**Mudanjiang**	**11.29**	**316**	*e*Pn	**Pn**	**09 33 16.7**	**+1.4**
comp=Z,17nm,1.1s							
CN2	**Changchun**	**13.39**	**305**	*e*P	**Pn**	**09 33 44.8**	**+0.9**
CN2				pmax	pmax		
comp=Z,10.0nm,0.4s							
KLR	**Kul'dur**	**13.84**	**335**	Pn	**Pn**	**09 33 51.4**	**+1.4**
comp=Z,0.1nm,0.3s,baz=140,slow=14,SNR=2.8							
TYV	**Tymovskoe**	**13.97**	**5**	*e*P	**Pn**	**09 33 51.8**	**0.0**
TYV				pmax	pmax		
comp=Z,24nm,0.8s							
NKL	**Nikolayevsk**	**16.18**	**0**	*e*P	**P**	**09 34 23.9**	**-0.5**
NKL				pmax	pmax		
comp=N,10.0nm,1.0s							
NKL				pmax	pmax		
comp=Z,20nm,1.0s							
NJ2	**Nanjing**	**18.55**	**261**	*e*P	**P**	**09 34 50.1**	**-0.7**
NJ2				pmax	pmax		
comp=Z,11nm,0.8s							
BJI	**Beijing**	**19.33**	**287**	P	**Pn**	**09 34 59.8**	**-0.5**
BJI				S	**Sn**	**09 38 36.1**	**-0.9**
BJI				pmax	pmax		
comp=Z,7.0nm,0.8s							
BJI				LR	LR		
comp=Z,5μm,14.2s							
BJI				LR	LR		
comp=Z,4μm,11.9s							
BJI				LR	LR		
comp=Z,3μm,21.3s							
HHC	**Hu-ho-hao-te**	**22.86**	**289**	*e*P	**P**	**09 35 38.8**	**+1.3**
HHC				sP	sP	09 35 45.8	+4.3
HHC				S	**S**	**09 39 42.8**	**-4.3**
HHC				SS	**SnSn**	**09 40 26.0**	**+8.2**
HHC				pmax	pmax		
comp=Z,17nm,0.7s							
HHC				LR	LR		
comp=Z,3μm,13.6s							
HHC				LR	LR		
comp=Z,3μm,13.6s							
HHC				LR	LR		
comp=Z,5μm,14.0s							
MA2	**Magadan**	**23.56**	**13**	P	**P**	**09 35 44.2**	**-0.1**
comp=Z,26nm,0.8s,baz=210,slow=8.8,SNR=16							
MA2	**Magadan**	**23.56**	**13**	P	**P**	**09 35 44.2**	**-0.1**
MA2				*e*P	**P**	**09 35 44.6**	**+0.3**
YAK	**Yakutsk**	**25.99**	**348**	*e*P	**P**	**09 36 01.3**	**-5.3**
YAK				pmax	pmax		
comp=Z,29nm,1.0s							
YAK				pmax	pmax		
comp=N,17nm,1.3s							
YAK				pmax	pmax		
comp=E,9.0nm,1.1s							
ULN	**Ulaanbaatar**	**26.84**	**305**	*e*P	**P**	**09 36 14.8**	**+0.2**
ULN				pmax	pmax		
comp=Z,4.0nm,1.0s							
SEY	**Seymchan**	**26.99**	**12**	P	**P**	**09 36 15.8**	**+0.3**
comp=Z,29nm,1.1s,baz=196,slow=7.6,SNR=25							
BOD	**Bodaibo**	**27.23**	**328**	*e*P	**P**	**09 36 15.7**	**-2.1**
BOD				pmax	pmax		
comp=Z,4.0nm,1.4s							
SONA1	**Songino Array**	**27.27**	**304**	*e*P	**P**	**09 36 17.4**	**-1.0**
SONA1				*e*PcP	**PcP**	**09 39 38.3**	**+0.3**
SONM	**Songino Array**	**27.27**	**304**	P	**P**	**09 36 17.9**	**-0.5**
comp=Z,4.5nm,0.8s,baz=105,slow=8.5,SNR=24							
SONM				PcP	**PcP**	**09 39 37.8**	**-0.2**
comp=Z,1.4nm,0.6s,baz=132,slow=2.7,SNR=8.0							
SONM	**Songino Array**	**27.27**	**304**	P	**P**	**09 36 17.9**	**-0.5**
SONM						09 39 37.8	
SONM				pmax	pmax		
comp=Z,4.0nm,0.9s							
SONM				pmax	pmax		
comp=Z,1.0nm,0.6s							
H11N2	**WAKE ISLAND Hy**	**28.69**	**120**	T	T	10 06 15.8	
baz=313,slow=75,SNR=51							
H11N1	**WAKE ISLAND Hy**	**28.70**	**120**	T	T	10 06 16.2	
baz=313,slow=75,SNR=90							
H11N3	**WAKE ISLAND Hy**	**28.71**	**120**	T	T	10 06 16.9	
baz=313,slow=75,SNR=74							
H11S1	**WAKE ISLAND Hy**	**29.39**	**122**	T	T	10 07 07.8	
baz=314,slow=76,SNR=66							
H11S3	**WAKE ISLAND Hy**	**29.39**	**122**	T	T	10 07 08.5	
baz=314,slow=76,SNR=72							
H11S2	**WAKE ISLAND Hy**	**29.40**	**122**	T	T	10 07 10.6	
baz=314,slow=76,SNR=54							
LZH	**Lanzhou**	**29.42**	**279**	*e*P	**P**	**09 36 37.5**	**-0.3**
LZH				pP	sP	09 36 41.0	-0.9
LZH				sP	pP	09 36 43.6	+2.9
LZH				PP	**PnPn**	**09 37 32.7**	**+1.3**
LZH				pmax	pmax		
comp=Z,21nm,1.0s							
LZH				pmax	pmax		
comp=Z,67nm,5.3s							
LZH				LR	LR		
comp=Z,320nm,13.2s							
LZH				LR	LR		
comp=Z,340nm,13.7s							
LZH				LR	LR		
comp=Z,380nm,16.4s							
ZAK	**Zakamensk**	**29.79**	**309**	*e*P	**P**	**09 36 40.5**	**-0.3**
ZAK				pmax	pmax		
comp=Z,2.0nm,1.2s							
GYA	**Guiyang**	**30.55**	**260**	*e*P	**P**	**09 36 48.6**	**+0.8**
GYA				pmax	pmax		
comp=Z,10.0nm,0.8s							
CD2	**Chengdu**	**31.01**	**270**	P	**P**	**09 36 51.2**	**-0.5**
CD2				pmax	pmax		
comp=Z,1.0nm,0.5s							
PATS	**Pohnpei**	**34.07**	**147**	*e*P	**P**	**09 37 17.9**	**-0.6**
comp=Z,144nm,2.0s							
BILL	**Bilibino**	**34.28**	**17**	⇑*e*P	**P**	**09 37 19.7**	**-0.1**
BILL				*e*		09 38 35.2	
BILL				*e*PPP	PPP	09 38 49.8	
BILL				*e*S	**S**	**09 42 45.9**	**-0.8**
BILL				pmax	pmax		
comp=Z,13nm,1.0s							
BILL				MLR	MLR		
comp=Z,2μm,17.0s							
BILL	**Bilibino**	**34.28**	**17**	*e*P	**P**	**09 37 19.8**	**-0.1**
comp=Z,20nm,1.3s							
KMI	**Kunming**	**34.29**	**261**	P	**P**	**09 37 21.8**	**+1.1**
KMI				pmax	pmax		
comp=Z,10.0nm,0.6s							
KMI				pmax	pmax		
comp=Z,2μm,13.2s							
TIXI	**Tiksi**	**35.28**	**354**	P	**P**	**09 37 27.8**	**-0.6**
comp=Z,2.8nm,0.6s,baz=157,slow=7.9,SNR=16							
TIXI	**Tiksi**	**35.28**	**354**	*e*P	**P**	**09 37 27.9**	**-0.5**
TIXI				pmax	pmax		
comp=Z,6.0nm,1.2s							
TIXI	**Tiksi**	**35.28**	**354**	*e*P	**P**	**09 37 26.9**	**-1.5**
comp=Z,3.2nm,0.6s							
WMQ	**Urumqi**	**40.27**	**297**	P	**P**	**09 38 12.7**	**+1.6**
WMQ				pP	sP	09 38 16.3	+1.0
WMQ				sP	pP	09 38 19.3	+5.2
WMQ				pmax	pmax		
comp=Z,3.0nm,0.6s							
WMQ				LR	LR		
comp=Z,1μm,15.0s							
WMQ				LR	LR		
comp=Z,1μm,13.4s							
WMQ				LR	LR		
comp=Z,590nm,15.0s							
CMAR	**Chiang Mai Arr**	**40.84**	**255**	PcP	**PcP**	**09 40 17.6**	**+0.8**
baz=0.5,slow=2.7,SNR=5.5							
ZAA0	**Zalesovo Array**	**41.47**	**312**	*e*P	**P**	**09 38 20.9**	**+0.2**
ZAA0				*e*P	**P**	**09 38 21.6**	**+0.9**
ZAA0				*e*PcP	**PcP**	**09 40 17.9**	**-0.4**
ZALV	**Zalesovo Beam**	**41.47**	**312**	P	**P**	**09 38 20.3**	**-0.3**
comp=Z,4.9nm,0.8s,baz=85,slow=6.7,SNR=16							
ZALV				PcP	**PcP**	**09 40 17.5**	**-0.8**
comp=Z,5.2nm,0.9s,baz=93,slow=2.7,SNR=7.8							
RABL	**Rabaul**	**42.35**	**163**	*e*P	**P**	**09 38 30.1**	**+1.9**
comp=Z,189nm,0.3s							
NRIK	**Noril'sk**	**43.05**	**335**	P	**P**	**09 38 33.5**	**+0.1**
comp=Z,2.1nm,0.3s,baz=105,slow=8.4,SNR=5.0							
MKAR	**Makanchi Array**	**43.59**	**302**	P	**P**	**09 38 37.8**	**-0.3**
comp=Z,2.1nm,0.6s,baz=87,slow=10.0,SNR=23							
MKAR				PcP	**PcP**	**09 40 24.7**	**-0.9**
comp=Z,2.2nm,0.9s,baz=100,slow=3.7,SNR=6.0							
MKAR	**Makanchi Array**	**43.59**	**302**	*e*P	**P**	**09 38 38.4**	**+0.3**
MKAR				PcP	**PcP**	**09 40 24.7**	**-0.9**
KURK	**Kurchatov**	**45.45**	**308**	*e*P	**P**	**09 38 52.9**	**+0.1**
KURK						09 40 31.2	
KURK				pmax	pmax		
comp=Z,11nm,0.8s							
KURK	**Kurchatov**	**45.45**	**308**	*e*P	**P**	**09 38 52.9**	**+0.1**
comp=Z,11nm,0.8s							
KURK				PcP	**PcP**	**09 40 31.2**	**-0.5**
KURBB	**Kurchatov Arra**	**45.52**	**308**	P	**P**	**09 38 52.8**	**-0.6**
comp=Z,7.8nm,0.8s,baz=84,slow=8.0,SNR=20							
KURBB				PcP	**PcP**	**09 40 31.2**	**-0.8**
comp=Z,1.5nm,0.8s,baz=82,slow=4.2,SNR=4.3							
KAPI	**Kappang**	**46.07**	**209**	LR	LR	09 57 42.2	
comp=Z,1μm,20.0s,baz=334,slow=35							
RAMN	**Ramite**	**46.34**	**274**	*e*P	**P**	**09 39 00.7**	**+0.2**
comp=Z,24nm,0.8s							
GUN	**Gumba**	**46.50**	**275**	*e*P	**P**	**09 39 03.0**	**+1.1**
KKN	**Kakani**	**47.03**	**275**	*e*P	**P**	**09 39 06.1**	**+0.2**
RSO	**Redoubt South**	**47.37**	**38**	*e*P	**P**	**09 39 08.0**	**-0.1**
GKN	**Gorkha**	**47.45**	**276**	*e*P	**P**	**09 39 09.3**	**+0.2**
SPU	**Mount Spurr**	**47.69**	**37**	*e*P	**P**	**09 39 11.6**	**+1.2**
KTH	**Kantishna Hill**	**48.18**	**34**	*e*P	**P**	**09 39 16.7**	**+2.6**
comp=Z,26nm,1.4s							
MLY	**Manley**	**48.26**	**32**	*e*P	**P**	**09 39 16.5**	**+1.8**
comp=Z,3.3nm,0.8s							
KOLN	**Koldanda**	**48.38**	**276**	*e*P	**P**	**09 39 16.7**	**+0.4**
comp=Z,6.4nm,0.6s							
PYUN	**Piuthan**	**48.72**	**277**	*e*P	**P**	**09 39 19.2**	**+0.3**
comp=Z,43nm,1.0s							
TKM2	**Tokmak 2**	**49.07**	**298**	*e*P	**P**	**09 39 22.8**	**+1.3**
TKM2				pmax	pmax		
comp=Z,5.0nm,0.8s							
TKM2	**Tokmak 2**	**49.07**	**298**	*e*P	**P**	**09 39 22.8**	**+1.3**
comp=Z,5.3nm,0.8s							
RND	**Reindeer**	**49.11**	**34**	*e*P	**P**	**09 39 22.9**	**+1.6**
RND				pmax	pmax		
comp=Z,18nm,1.4s							
RND	**Reindeer**	**49.11**	**34**	*e*P	**P**	**09 39 22.9**	**+1.6**
comp=Z,18nm,1.4s							
MDM	**Murphy Dome**	**49.33**	**32**	*e*P	**P**	**09 39 24.2**	**+1.3**
comp=Z,11nm,1.2s							
WRH	**Wood River Hil**	**49.40**	**33**	*e*P	**P**	**09 39 25.7**	**+2.3**
WRH				*e*PcP	**PcP**	**09 40 46.0**	**+0.4**
DHY	**Denali Highway**	**49.80**	**35**	*e*P	**P**	**09 39 28.4**	**+1.8**
comp=Z,14nm,1.4s							
KSH	**Kashi**	**49.82**	**294**	*e*P	**P**	**09 39 31.8**	**+4.6**
KSH				*e*pP	sP	09 39 36.0	+4.6
KSH				S	**S**	**09 46 41.2**	**+4.3**
ILAR	**Eielson Array**	**49.91**	**32**	P	**P**	**09 39 26.9**	**-0.3**
comp=Z,1.9nm,0.9s,baz=261,slow=5.6,SNR=11							
ILAR				PcP	**PcP**	**09 40 46.5**	**-1.0**
comp=Z,0.7nm,0.7s,baz=276,slow=3.8,SNR=4.4							
IL1	**Eielson Array**	**49.91**	**32**	*e*P	**P**	**09 39 26.9**	**-0.4**
AAK	**Ala-Archa**	**49.93**	**298**	*e*P	**P**	**09 39 28.5**	**+0.5**
AAK				pmax	pmax		
comp=Z,5.0nm,1.1s							
AAK	**Ala-Archa**	**49.93**	**298**	*e*P	**P**	**09 39 28.5**	**+0.5**
comp=Z,4.6nm,1.1s							
AAK				*e*P	**P**	**09 39 29.1**	**+1.1**
BVAR	**Borovoye Array**	**50.12**	**312**	P	**P**	**09 39 28.5**	**-0.6**
comp=Z,3.4nm,0.6s,baz=77,slow=7.5,SNR=11							
BRVK	**Borovoye**	**50.18**	**312**	*e*P	**P**	**09 39 30.1**	**+0.6**
BRVK				pmax	pmax		
comp=Z,6.0nm,0.8s							
COEN	**Coen**	**50.71**	**177**	*e*P	**P**	**09 39 35.4**	**+1.6**
comp=Z,14nm,1.1s							
ZRNK	**Zerenda**	**50.96**	**312**	*e*P	**P**	**09 39 35.6**	**+0.2**
ZRNK				pmax	pmax		
comp=Z,7.0nm,0.8s							
ZRNK	**Zerenda**	**50.96**	**312**	*e*P	**P**	**09 39 35.6**	**+0.2**
comp=Z,6.8nm,0.8s							
DOT	**Dot Lake**	**51.23**	**34**	*e*P	**P**	**09 39 38.3**	**+0.9**
comp=Z,31nm,1.5s							
INK	**Inuvik**	**54.75**	**27**	P	**P**	**09 40 02.4**	**-0.8**
comp=Z,3.1nm,0.9s,baz=295,slow=7.7,SNR=9.5							
INK	**Inuvik**	**54.75**	**27**	*e*P	**P**	**09 40 03.9**	**+0.8**
comp=Z,3.4nm,0.9s							
ARU	**Arti**	**55.97**	**318**	*d i*P	**P**	**09 40 12.3**	**+0.2**
ARU						09 42 13.1	
ARU				S	**S**	**09 47 59.5**	**-0.4**
ARU				pmax	pmax		
comp=Z,8.0nm,0.8s							
ARU	**Arti**	**55.97**	**318**	*e*P	**P**	**09 40 12.2**	**+0.2**
comp=Z,6.8nm,0.7s							
WRAB	**Tennant Creek**	**56.90**	**187**	*ce*P	**P**	**09 40 20.1**	**+1.1**
WRAB				pmax	pmax		
comp=Z,17nm,1.0s							
WRAB	**Tennant Creek**	**56.90**	**187**	*e*P	**P**	**09 40 19.8**	**+0.7**
comp=Z,11nm,0.9s							
WB2	**Warramunga Arr**	**56.91**	**187**	*e*P	**P**	**09 40 18.7**	**-0.4**
comp=Z,10nm,0.8s							
WRA	**Warramunga Arr**	**56.91**	**187**	P	**P**	**09 40 18.0**	**-1.1**
comp=Z,5.7nm,0.7s,baz=3.7,slow=7.3,SNR=40							
WRA	**Warramunga Arr**	**56.91**	**187**	P	**P**	**09 40 18.0**	**-1.1**
WRA				pmax	pmax		
comp=Z,6.0nm,0.7s							
WRA	**Warramunga Arr**	**56.91**	**187**	P	**P**	**09 40 18.0**	**-1.1**
ABKAR	**Akbulak array**	**57.47**	**310**	*e*P	**P**	**09 40 23.0**	**+0.1**
AS01	**Alice Springs**	**60.63**	**187**	*e*P	**P**	**09 40 44.2**	**-0.8**
AS31	**Alice Springs**	**60.63**	**187**	*e*P	**P**	**09 40 45.9**	**+0.9**
comp=Z,1.4nm,0.7s							
ASAR	**Alice Springs**	**60.63**	**187**	P	**P**	**09 40 44.0**	**-1.0**
comp=Z,3.3nm,0.8s,baz=12,slow=6.3,SNR=34							
MBWA	**Marble Bar**	**61.07**	**202**	*e*P	**P**	**09 40 49.9**	**+1.9**
RES	**Resolute Bay**	**62.83**	**14**	P	**P**	**09 40 59.0**	**-0.2**
comp=Z,2.7nm,0.7s,baz=314,slow=7.3,SNR=16							
RES	**Resolute Bay**	**62.83**	**14**	*e*P	**P**	**09 40 59.2**	**0.0**
RES				pmax	pmax		
comp=Z,3.0nm,0.8s							
RES	**Resolute Bay**	**62.83**	**14**	*e*P	**P**	**09 40 59.2**	**0.0**
comp=Z,3.0nm,0.8s							
KLMR	**Klimovskoe**	**63.45**	**328**	*e*P	**P**	**09 41 00.5**	**-3.1**
KLMR				pmax	pmax		
comp=Z,24nm,1.5s							
ARCES	**ARCESS Array B**	**63.82**	**339**	P	**P**	**09 41 05.8**	**-0.1**
comp=Z,4.1nm,0.8s,baz=47,slow=8.8,SNR=6.4							
YKA	**Yellowknife Ar**	**64.20**	**30**	P	**P**	**09 41 08.2**	**-0.2**
comp=Z,1.0nm,0.8s,baz=304,slow=6.9,SNR=22							
VRH	**

comp=Z,5.6nm,1.0s,baz=38,slow=5.9,SNR=12
NOA NORSAR Array B 73.99 337 P P 09 42 09.0 -0.3
NOA pmax pmax
comp=Z,5.0nm,0.9s
NBO02 NORSAR Array S 74.09 337 eP P 09 42 10.2 +0.3
FFC Flin Flon 74.12 32 eP P 09 42 10.4 +0.3
FFC pmax pmax
comp=Z,4.0nm,0.8s
FFC Flin Flon 74.12 32 eP P 09 42 10.4 +0.3
comp=Z,3.7nm,0.8s
FCC Fort Churchill 74.36 26 eP P 09 42 11.1 -0.3
FCC pmax pmax
comp=Z,10.0nm,1.1s
FCC Fort Churchill 74.36 26 eP P 09 42 11.1 -0.3
comp=Z,9.8nm,1.1s
CMB Columbia Colle 74.45 54 eP P 09 42 13.1 +0.7
CMB pmax pmax
comp=Z,4.0nm,1.0s
CMB Columbia Colle 74.45 54 eP P 09 42 13.1 +0.7
comp=Z,4.3nm,1.0s
LRM Limekiln Ridge 74.66 44 eP P 09 42 14.8 +1.0
BOZ Bozeman (W) 75.22 44 eP P 09 42 18.1 +1.2
BOZ pmax pmax
comp=Z,3.0nm,0.8s
BOZ Bozeman (W) 75.22 44 eP P 09 42 18.1 +1.2
comp=Z,2.9nm,0.8s
NVAR Mina Array Bea 75.56 53 P P 09 42 19.0 0.0
comp=Z,1.5nm,0.8s,baz=279,slow=5.3,SNR=9.7
IMW Indian Meadow 76.69 45 eP P 09 42 27.2 +1.7
comp=Z,1.1nm,1.4s
MOOW Moose Ponds 76.89 45 eP P 09 42 28.8 +2.2
comp=Z,6.3nm,1.5s
SNOW Snow King Moun 77.07 45 eP P 09 42 30.1 +2.5
comp=Z,7.8nm,1.3s
REDW Red Top Meadow 77.08 45 eP P 09 42 29.0 +1.4
comp=Z,7.4nm,1.3s
DGMT Dagmar 77.30 38 eP P 09 42 29.1 +0.6
comp=Z,10nm,1.0s
R11A Troy Canyon, C 77.33 51 eP P 09 42 30.1 +1.0
comp=Z,8.3nm,1.3s
LAO LASA Array 77.46 40 eP P 09 42 30.9 +1.4
comp=Z,21nm,1.5s
TPNV Topopah Spring 77.75 53 eP P 09 42 32.3 +0.9
TPNV pmax pmax
comp=Z,5.0nm,1.2s
TPNV Topopah Spring 77.75 53 eP P 09 42 32.3 +0.9
comp=Z,5.0nm,1.2s
HWUT Hardware Ranch 77.76 47 eP P 09 42 32.6 +1.1
comp=Z,9.1nm,1.4s
DUG Dugway, Tooele 77.90 49 eP P 09 42 33.1 +0.9
DUG pmax pmax
comp=Z,10.0nm,1.4s
DUG Dugway, Tooele 77.90 49 eP P 09 42 33.1 +0.9
comp=Z,10nm,1.4s
BUR08 Bucovina Ar. S 77.94 321 eP P 09 42 32.8 +0.6
BW06 Boulder Array 78.19 45 eP P 09 42 33.6 -0.2
PDAR Pinedale Array 78.19 45 P P 09 42 33.8 0.0
comp=Z,0.9nm,0.9s,baz=304,slow=2.7,SNR=6.4
BRTR Keskin Array B 78.39 311 P P 09 42 34.9 0.0
comp=Z,1.7nm,0.9s,baz=59,slow=3.8,SNR=5.7
NLU North Lily Min 78.49 48 eP P 09 42 36.5 +1.0
comp=Z,3.1nm,1.1s
MPU Maple Canyon 78.72 48 eP P 09 42 37.9 +1.2
comp=Z,6.8nm,1.3s
BR231 Keskin MP Arra 78.84 312 eP P 09 42 35.7 -1.6
P17A Butcher Ranch, 79.60 48 eP P 09 42 42.7 +1.2
comp=Z,12nm,1.3s
LCMT Little Creek M 79.61 51 eP P 09 42 43.1 +1.4
P18A Preston Nutter 79.79 48 eP P 09 42 43.9 +1.1
comp=Z,14nm,1.6s
KNB Kanab 79.87 51 eP P 09 42 44.8 +1.7
KNB pmax pmax
comp=Z,12nm,1.4s
KNB Kanab 79.87 51 eP P 09 42 44.8 +1.7
comp=Z,12nm,1.4s
SRU San Rafael Swe 79.96 48 eP P 09 42 44.6 +1.1
SRU pmax pmax
comp=Z,8.0nm,1.1s
SRU San Rafael Swe 79.96 48 eP P 09 42 44.6 +1.1
comp=Z,7.7nm,1.1s
DPC Dobruska-Polom 80.16 327 eP P 09 42 45.1 +0.9
DPC Dobruska-Polom 80.16 327 eP P 09 42 45.1 +0.9
BRG Berggiesshubel 80.77 329 eP P 09 42 47.7 +0.3
BRG Berggiesshubel 80.77 329 eP P 09 42 47.7 +0.3
BRG pmax pmax
comp=Z,5.0nm,0.9s
CLL Collm 80.82 330 ⇑iP P 09 42 47.8 +0.1
comp=Z,11nm,1.1s
CLL Collm 80.82 330 ⇑iP P 09 42 47.8 +0.1
CLL pmax pmax
comp=Z,11nm,1.1s
PV09 Paradox Valley 81.18 48 eP P 09 42 51.3 +1.1
PRU Pruhonice 81.19 328 eP P 09 42 50.2 +0.5
PRU Pruhonice 81.19 328 eP P 09 42 50.2 +0.5
PV04 Paradox Valley 81.39 48 eP P 09 42 52.3 +1.1
PV05 Paradox Valley 81.47 48 eP P 09 42 52.0 +0.3
Y14A Wickenburg 81.69 54 eP P 09 42 53.6 +1.0
comp=Z,26nm,1.2s
WUAZ Wupatki 81.73 52 eP P 09 42 54.5 +1.5
comp=Z,19nm,1.8s
PV01 Paradox Valley 81.75 48 eP P 09 42 54.3 +1.1
SMCO Snowmass 82.01 47 eP P 09 42 55.6 +0.9
comp=Z,6.0nm,1.4s
KHC Kasperske Hory 82.25 328 eP P 09 42 55.6 +0.3
KHC Kasperske Hory 82.25 328 eP P 09 42 55.6 +0.3
MVCO Mesa Verde 82.40 49 eP P 09 42 58.0 +1.4
comp=Z,7.6nm,1.2s
GERES GERESS Array B 82.41 328 P P 09 42 56.0 -0.3
comp=Z,0.8nm,0.4s,baz=43,slow=5.9,SNR=6.6
S22A 4UR Ranch, Cre 83.04 48 eP P 09 43 01.6 +1.5
comp=Z,7.8nm,1.5s
SDCO Great Sand Dun 83.82 47 eP P 09 43 05.2 +1.2
comp=Z,2.9nm,1.1s
TUC Tucson 84.16 54 eP P 09 43 06.4 +0.8
TUC pmax pmax
comp=Z,4.0nm,1.2s
TUC Tucson 84.16 54 eP P 09 43 06.4 +0.8
comp=Z,3.9nm,1.2s
T25A Trinidad 84.87 47 eP P 09 43 10.3 +1.1
comp=Z,8.1nm,1.2s
BFO Black Forest 85.03 330 eP P 09 43 09.4 -0.2
BFO pmax pmax
comp=Z,6.0nm,0.8s
BFO Black Forest 85.03 330 eP P 09 43 09.4 -0.2
comp=Z,6.1nm,0.8s
ANMO Albuquerque 85.14 49 eP P 09 43 11.7 +1.1
ANMO pmax pmax
comp=Z,8.0nm,1.3s
ANMO Albuquerque 85.14 49 eP P 09 43 11.7 +1.1
comp=Z,7.7nm,1.3s
TX31 Lajitas Ar. Si 90.69 52 eP P 09 43 37.4 +0.2
TXAR Lajitas Array 90.69 52 P P 09 43 37.3 +0.1
comp=Z,1.3nm,0.8s,baz=288,slow=2.8,SNR=11
KEST Kesra 94.67 322 LR LR 10 32 16.8
comp=Z,3μm,20.1s,baz=168,slow=39
ESDC Sonseca Array 97.05 333 LR LR 10 31 55.6
comp=Z,1μm,19.9s,baz=160,slow=38
TORD Torodi Ar. Bea 116.90 314 PKP PKPdf 09 49 18.1 -1.3
comp=Z,0.4nm,0.7s,baz=8.4,slow=1.7,SNR=2.6
DBIC Dimbokro 125.88 316 PKP PKPdf 09 49 36.0 -0.6
comp=Z,3.1nm,0.8s,baz=13,slow=2.8,SNR=5.1
DBIC Dimbokro 125.88 316 PKIKP PKPdf 09 49 36.0 -0.6
DBIC pmax pmax
comp=Z,3.0nm,0.8s
LPAZ La Paz 147.30 59 PKPbc PKPbc 09 50 17.9 -1.0
comp=Z,4.1nm,0.9s,baz=323,slow=3.9,SNR=15
RCBR Riachuelo 148.84 353 PKPbc PKPbc 09 50 22.1 -0.3
comp=Z,7.7nm,1.1s,baz=63,slow=4.5,SNR=3.6

JMA 11 09:31:33.6,36.96N×140.66E,h8km±1km, M3.9,2C-1D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.18**	**38**	⇓P		Pg	09 31 37.8	+0.5
ONAJ				S		Sg	09 31 40.4	+0.5
JHO	**Hitachi**	**0.36**	**192**	⇑P		Pg	09 31 40.5	-0.1
JHO				S		Sg	09 31 45.4	+0.1
JFK	**Kawauchi**	**0.44**	**23**	⇑P		Pg	09 31 42.3	+0.1
JFK				S		Sg	09 31 48.6	+0.6
MAT	**Matsushiro**	**2.01**	**259**	P		Pn	09 32 08.0	+0.1
MAT				S		Sb	09 32 35.5	-0.2

JMA 11 09:34:20.7,36.95N×140.68E,h8km±1km, M3.0, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.18**	**32**	S		Sg	09 34 27.8	+0.8
JHO	**Hitachi**	**0.35**	**195**	P		Pg	09 34 27.7	+0.1
JHO				S		Sg	09 34 32.1	-0.1
JFK	**Kawauchi**	**0.44**	**20**	P		Pg	09 34 29.6	+0.2
JFK				S		Sg	09 34 35.8	+0.6
JFT	**Otama**	**0.63**	**334**	P		Pg	09 34 33.1	+0.2
JFT				S		Sg	09 34 41.7	+0.6
MAT	**Matsushiro**	**2.03**	**259**	P		Pn	09 34 56.3	+1.1
MAT				S		Sb	09 35 22.9	-0.3

*IDC **11** 09:35:16.1±0.8, 37.08N×140.58E, h0km, mb3.7/9, mb1 4.0/10, mb1mx3.7/58, mbtmp3.8/10, ML3.4/1, MS4.6/1, Ms1 4.6/1, ms1mx3.7/61, Error ellipse: s-maj=19.9km s-min=16.9km az=100.0*
*ISCJB **11** 09:35:17.2±0.5, 37.06N±0.04×140.75E±0.06, h18km±4km, mb3.7/8, MS4.5/1, Error ellipse: s-maj=8.2km s-min=6.2km az=19.4*
*JMA **11** 09:35:17.3, 37.05N×140.67E, h7km±1km, M3.5 Broadband fault plane solution: P waves. NP1: ϕ±50.00000°, δ49.00000°, λ-77.00000°. NP2: ϕ211.00000°, δ43.00000°, λ-104.00000°. Principal axes: T Plg3.0000°, Azm131.0000°; N Plg10.0000°, Azm222.0000°; P Plg80.0000°, Azm24.0000°;*
JMA Felt II J1.
ISC 11 09:35:17.7±1.0, 37.06N±0.04×140.67E±0.04, h10km±6km, n21, σ0.86/25, mb3.6/8, 3C, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.11**	**69**	⇑P		Pg	09 35 20.2	-0.3
ONAJ				S		Sg	09 35 22.3	-0.1
JFK	**Kawauchi**	**0.34**	**28**	P		Pg	09 35 24.5	-0.1
JFK				S		Sg	09 35 29.6	+0.4
JHO	**Hitachi**	**0.46**	**190**	P		Pg	09 35 26.2	-0.4
JFT	**Otama**	**0.53**	**330**	⇑P		Pg	09 35 28.0	0.0
JFT				S		Sg	09 35 35.3	+0.4
JSB	**Shiboa**	**0.61**	**261**	⇑P		Pg	09 35 29.6	+0.1
MJAR	**Matsushiro Arr**	**2.04**	**256**	Pn		Pn	09 35 52.6	+0.5
	17nm,0.3s,baz=76,slow=15,SNR=14							
MJAR				Sn		Sn	09 36 18.2	+0.4
	26nm,0.3s,baz=68,slow=25,SNR=12							
MAT	**Matsushiro**	**2.04**	**256**	P		Pn	09 35 53.2	+1.0
MAT				S		Sb	09 36 20.6	+0.2
JHJ	**Hachijo jima 2**	**4.00**	**191**	Pn		Pn	09 36 20.2	+1.2
	7.3nm,0.3s,baz=36,slow=17,SNR=4.0							
JHJ				Sn		Sn	09 37 06.7	+0.7
	21nm,0.3s,baz=94,slow=22,SNR=4.3							
USRK	**Ussuriysk Ar.**	**9.71**	**320**	Pn		Pn	09 37 43.4	+6.0
	0.1nm,0.3s,baz=137,slow=12,SNR=7.2							
SONM	**Songino Array**	**27.28**	**304**	P		P	09 41 02.0	-0.3
	0.6nm,0.6s,baz=105,slow=9.6,SNR=4.5							
TLY	**Talaya**	**29.86**	**311**	LR		LR	09 53 54.8	
	comp=Z,1μm,19.0s,baz=336,slow=38							
MKAR	**Makanchi Array**	**43.60**	**302**	P		P	09 43 21.4	-0.5
	0.4nm,0.4s,baz=86,slow=10.0,SNR=5.1							
KURBB	**Kurchatov Arra**	**45.52**	**308**	P		P	09 43 36.5	-0.6
	baz=84,slow=7.7							
ILAR	**Eielson Array**	**49.79**	**32**	P		P	09 44 10.9	+0.8
	0.4nm,0.8s,baz=274,slow=6.1,SNR=4.4							
WRA	**Warramunga Arr**	**57.01**	**187**	P		P	09 45 02.8	-0.9
	2.7nm,0.5s,baz=3.0,slow=7.3,SNR=41							
ASAR	**Alice Springs**	**60.74**	**187**	P		P	09 45 29.1	-0.4
	0.7nm,0.6s,baz=18,slow=6.8,SNR=12							
FINES	**FINESS Array B**	**68.51**	**332**	P		P	09 46 18.8	-1.1
	1.1nm,0.7s,baz=50,slow=7.5,SNR=3.2							
AKASG	**Malin Array Be**	**73.91**	**322**	P		P	09 46 50.5	-2.2
	0.2nm,0.3s,baz=49,slow=6.6,SNR=5.1							
NVAR	**Mina Array Bea**	**75.44**	**53**	P		P	09 47 03.8	+1.5
	0.7nm,100.0s,baz=292,slow=5.0,SNR=3.8							
TXAR	**Lajitas Array**	**90.57**	**52**	P		P	09 48 21.3	+0.8
	0.3nm,0.9s,baz=302,slow=5.2,SNR=3.1							
LPAZ	**La Paz**	**147.19**	**59**	PKPbc		**PKPbc**	09 55 02.6	+0.2
	0.4nm,0.5s,baz=315,slow=2.9,SNR=4.2							

*BJI **11** 09:36:17.0, 36.80N×140.84E, h15km, mb4.6/38, mB5.1/5, Ms5.0/13, Ms7 4.8/11*
*ISCJB **11** 09:36:18.1±0.7, 36.94N±0.02×140.42E±0.03, h0km±4km, mb4.8/137, MS4.7/5, Error ellipse: s-maj=4.4km s-min=3.5km az=42.3*
*IDC **11** 09:36:20.9±2.6, 36.91N×140.57E, h12km±16km, mb4.4/33, mb1 4.6/34, mb1mx4.5/58, mbtmp4.5/34, ML3.8/2, Error ellipse: s-maj=11.8km s-min=10.1km az=102.0*
*JMA **11** 09:36:20.2, 36.90N×140.68E, h8km±1km, M4.8*
JMA Felt IV J1.
*MOS **11** 09:36:24.1±0.9, 37.25N×140.39E, h31km, mb5.0/64, Error ellipse: s-maj=7.3km s-min=5.2km az=93.0*
*NEIC **11** 09:36:25.1±0.6, 36.95N×140.42E, h37km±5km, mb4.8/83, Error ellipse: s-maj=4.4km s-min=3.5km az=141.0*
NEIC Recorded [4 JMA] in Fukushima.
ISC 11 09:36:19.5±0.8, 36.93N±0.03×140.57E±0.03, h3km±5km, n317, σ1.9/40/346, mb4.8/137, MS4.9/5, 6C-3D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.26**	**47**	P		Pg	09 36 24.9	+0.5
ONAJ				*e*S		Sg	09 36 28.8	+1.1
JHO	**Hitachi**	**0.32**	**180**	P		Pg	09 36 26.2	+0.7
JHO				*e*S		Sg	09 36 30.7	+1.1
JFK	**Kawauchi**	**0.50**	**29**	P		Pg	09 36 29.6	+0.5
JFK				S		Sg	09 36 36.9	+1.2
JMM	**Marumori**	**0.95**	**11**	S		Sb	09 36 51.8	+0.1
I30JP	**ISUMI INFRASON**	**1.63**	**187**	Pg		Pb	09 36 49.9	-0.3
	baz=15,slow=15,SNR=0.5							
MJAR	**Matsushiro Arr**	**1.93**	**259**	Pn		Pb	09 36 54.8	-0.6
	256nm,0.3s,baz=92,slow=16,SNR=70							
MJAR				Lg		Lg	09 37 21.8	
	313nm,0.3s,baz=96,slow=27,SNR=19							
MAJO	**Matsushiro**	**1.93**	**259**	*e*P		Pg	09 36 56.3	-0.2
MAJO				*e*			09 37 22.5	
MAJO	**Matsushiro**	**1.93**	**259**	*e*Pn		Pg	09 36 56.3	-0.2
MAJO				*e*Sn		Sg	09 37 22.5	+0.9
MAT	**Matsushiro**	**1.93**	**259**	P		Pb	09 36 55.3	-0.1
MAT				S		Sg	09 37 21.5	-0.1
INU	**Inuyama**	**3.28**	**242**	*e*Pn		Pn	09 37 03.9	-7.8
INU				*e*Pg		Pb	09 37 15.2	-3.0
JHJ	**Hachijo jima 2**	**3.85**	**190**	Pn		Pn	09 37 20.4	+0.7
	88nm,0.3s,baz=261,slow=17,SNR=8.4							
JHJ				Sn		Sn	09 38 03.9	-1.6
	118nm,0.3s,baz=64,slow=22,SNR=7.1							
JHJ2	**Mitsune**	**3.86**	**189**	*e*Pn		Pn	09 37 23.1	+3.4
ERM	**Erimo**	**5.46**	**21**	*e*P		Pn	09 37 43.1	+1.4
ERM	**Erimo**	**5.46**	**21**	*e*Pn		Pn	09 37 43.1	+1.4
YUK	**Yuzh-Kuril'sk**	**8.16**	**28**	*i*P		Pn	09 38 19.9	+1.1
YUK				*i*S		Sn	09 39 47.2	-4.4
YUK				pmax	pmax			
	comp=Z,72nm,0.4s							
YUK				pmax	pmax			
	comp=E,33nm,0.2s							
YUK				pmax	pmax			
	comp=N,53nm,0.3s							
SHO	**Shikotan**	**8.42**	**33**	*e*P		Pn	09 38 22.2	-0.1
SHO				*i*S		Sn	09 39 50.4	-7.5
SHO				pmax	pmax			
	comp=Z,39nm,0.6s							
SHO				pmax	pmax			
	comp=N,22nm,0.7s							
SHO				pmax	pmax			
	comp=E,7.0nm,0.2s							
JNU	**Nakatsue**	**8.80**	**247**	Pn		Pn	09 38 31.2	+3.5
	comp=E,0.8nm,0.3s,baz=40,slow=17,SNR=9.8							
JNU	**Nakatsue**	**8.80**	**247**	*e*Pn		Pn	09 38 34.2	+6.4
USRK	**Ussuriysk Ar.**	**9.76**	**321**	Pn		Pn	09 38 47.4	+6.6
	comp=E,0.3nm,0.3s,baz=134,slow=13,SNR=33							
CBIJ	**Chichi jima**	**9.90**	**172**	Pn		**Pn**	09 38 39.0	-3.7
JCJ	**Chichijima**	**9.90**	**172**	Pn		**Pn**	09 38 39.0	-3.7
	comp=E,13nm,0.3s,baz=317,slow=18,SNR=8.5							
KUR	**Kuril'sk**	**9.96**	**31**	*e*P		**Pn**	09 38 45.2	+1.8
KUR				*i*S		**Sn**	09 40 31.6	-4.0
KUR				pmax	pmax			
	comp=Z,30nm,0.3s							
KUR				pmax	pmax			
	comp=N,19nm,0.2s							
KUR				pmax	pmax			
	comp=E,13nm,0.1s							
KSRS	**Korea Array**	**10.10**	**277**	Pn		**Pn**	09 38 46.1	+0.7
	comp=E,0.2nm,0.3s,baz=360,slow=37,SNR=2.4							
KS01	**Wonju Array Si**	**10.12**	**277**	*e*Pn		Pn	09 38 53.6	+7.8
KS15	**Wonju Array Si**	**10.13**	**277**	*e*Pn		Pn	09 38 52.4	+6.5
KSAR	**Wonju Array Be**	**10.13**	**277**	P		**Pn**	09 38 46.1	+0.2
KSAR	**Wonju Array Be**	**10.13**	**277**	Pn		**Pn**	09 38 46.1	+0.2
YSS	**Yuzh-Sakhalins**	**10.15**	**9**	⇑*i*P		**Pn**	09 38 46.6	+0.5
YSS				pmax	pmax			
	comp=Z,60nm,0.9s							
YSS	**Yuzh-Sakhalins**	**10.15**	**9**	*e*Pn		**Pn**	09 38 46.3	+0.2
	comp=Z,48nm,0.8s							
MDJ	**Mudanjiang**	**11.32**	**316**	P		**Pn**	09 39 02.4	+0.4
MDJ				pmax	pmax			
	comp=Z,3.0nm,0.6s							
MDJ	**Mudanjiang**	**11.32**	**316**	Pn		**Pn**	09 39 03.8	+1.8
	comp=Z,6.7nm,0.5s							
CN2	**Changchun**	**13.41**	**305**	*e*P		**Pn**	09 39 31.7	+1.1
CN2				pmax	pmax			
	comp=Z,10.0nm,0.4s							
KLR	**Kul'dur**	**13.87**	**335**	Pn		**P**	09 39 43.0	-2.4
	comp=Z,0.3nm,0.3s,baz=137,slow=14,SNR=21							
TYV	**Tymovskoe**	**14.01**	**5**	*e*P		**Pn**	09 39 38.8	0.0
TYV				pmax	pmax			
	comp=Z,53nm,0.8s							
NKL	**Nikolayevsk**	**16.22**	**0**	*e*P		**P**	09 40 12.0	+0.5
NKL				pmax	pmax			
	comp=Z,10.0nm,0.8s							
NJ2	**Nanjing**	**18.54**	**261**	*e*P		**P**	09 40 35.6	-1.6
NJ2				pmax	pmax			
	comp=Z,11nm,0.8s							
TIA	**Tai'an**	**18.84**	**275**	⇓P		**Pn**	09 40 44.1	+3.1
TIA				pmax	pmax			
	comp=Z,10.0nm,0.9s							
BJI	**Beijing**	**19.33**	**287**	P		**P**	09 40 45.1	-0.8
BJI				S		**Sn**	09 44 20.3	-3.7
BJI				pmax	pmax			
	comp=Z,7.0nm,0.7s							
BJI				LR	LR			
	comp=Z,2μm,11.0s							
BJI				LR	LR			
	comp=Z,1μm,20.2s							
BJI				LR	LR			
	comp=Z,4μm,14.4s							
PETK	**Petropavlovsk-**	**20.12**	**31**	P		**P**	09 40 54.9	+0.5
	comp=Z,7.5nm,0.9s,baz=216,slow=4.8,SNR=5.1							
HHC	**Hu-ho-hao-te**	**22.86**	**289**	*e*P		**P**	09 41 25.3	+1.2
HHC				sP		sP	09 41 32.5	+7.2
HHC				S		**S**	09 45 29.3	-5.2
HHC				SS		**SnSn**	09 46 13.7	+8.9
HHC				pmax	pmax			
	comp=Z,19nm,0.9s							
MA2	**Magadan**	**23.61**	**13**	P		**P**	09 41 31.6	+0.2
	comp=Z,23nm,0.7s,baz=220,slow=10,SNR=22							
MA2	**Magadan**	**23.61**	**13**	*e*P		**P**	09 41 30.7	-0.6
MA2				P		**P**	09 41 31.6	+0.2
YAK	**Yakutsk**	**26.03**	**348**	P		**P**	09 41 52.7	-0.9
	comp=Z,9.4nm,0.4s,baz=140,slow=1.9,SNR=4.1							
YAK	**Yakutsk**	**26.03**	**348**	*e*P		**P**	09 41 53.1	-0.5
YAK				pmax	pmax			
	comp=Z,24nm,0.9s							
YAK				pmax	pmax			
	comp=N,17nm,1.3s							
YAK				pmax	pmax			
	comp=E,8.0nm,1.0s							
ENH	**Enshi**	**26.65**	**265**	*e*P		**P**	09 41 59.6	0.0
	comp=E,12nm,0.7s							
ULN	**Ulaanbaatar**	**26.86**	**305**	*ce*P		**P**	09 42 01.4	0.0
ULN				pmax	pmax			
	comp=Z,9.0nm,1.2s							
ULN	**Ulaanbaatar**	**26.86**	**305**	*e*P		**P**	09 42 01.1	-0.4
	comp=Z,4.9nm,0.7s							
SEY	**Seymchan**	**27.03**	**12**	P		**P**	09 42 03.3	+0.7
	comp=Z,24nm,1.1s,baz=197,slow=5.7,SNR=27							
BOD	**Bodaibo**	**27.26**	**329**	*e*P		**P**	09 42 03.2	-1.6
BOD				pmax	pmax			
	comp=Z,4.0nm,1.5s							
SONA1	**Songino Array**	**27.28**	**304**	*e*P		**P**	09 42 04.5	-0.7
SONA1				*e*PcP		**PcP**	09 45 25.4	+0.6
SONM	**Songino Array**	**27.28**	**304**	P		**P**	09 42 04.4	-0.9
	comp=Z,4.5nm,0.6s,baz=107,slow=8.5,SNR=32							
SONM				PcP		**PcP**	09 45 24.7	-0.1
	comp=Z,1.6nm,0.6s,baz=112,slow=1.9,SNR=6.8							
H11N2	**WAKE ISLAND Hy**	**28.68**	**119**	T		T	10 12 02.5	
	baz=313,slow=75,SNR=287							
H11N1	**WAKE ISLAND Hy**	**28.69**	**120**	T		T	10 12 03.0	
	baz=313,slow=75,SNR=349							
H11N3	**WAKE ISLAND Hy**	**28.70**	**119**	T		T	10 12 03.8	
	baz=313,slow=75,SNR=333							
H11S1	**WAKE ISLAND Hy**	**29.38**	**122**	T		T	10 12 55.1	
	baz=314,slow=76,SNR=263							
H11S3	**WAKE ISLAND Hy**	**29.38**	**122**	T		T	10 12 55.3	
	baz=314,slow=76,SNR=258							
H11S2	**WAKE ISLAND Hy**	**29.39**	**122**	T		T	10 12 56.3	
	baz=314,slow=76,SNR=101							
LZH	**Lanzhou**	**29.42**	**280**	*e*P		**P**	09 42 25.0	+0.6
LZH				pP		sP	09 42 29.3	+3.7
LZH				sP		pP	09 42 32.1	+6.9
LZH				PP		**PnPn**	09 43 20.1	+2.3
LZH				pmax	pmax			
	comp=Z,26nm,1.3s							
LZH				pmax	pmax			
	comp=Z,83nm,5.7s							
LZH				LR	LR			
	comp=Z,360nm,13.5s							
LZH				LR	LR			
	comp=Z,380nm,13.9s							
LZH				LR	LR			
	comp=Z,440nm,17.2s							
ZAK	**Zakamensk**	**29.80**	**309**	*e*P		**P**	09 42 26.6	-1.0
ZAK				pmax	pmax			
	comp=Z,2.0nm,1.2s							
TLY	**Talaya**	**29.89**	**311**	PcP		**PcP**	09 45 31.2	+0.1
	comp=Z,3.7nm,0.8s,baz=301,slow=1.8,SNR=5.8							
GYA	**Guiyang**	**30.53**	**260**	P		P	09 42 24.5	-10
GYA				PP		**PnPn**	09 43 34.2	+1.2
GYA				PcP		**PcP**	09 45 35.8	+2.5
GYA				S		**S**	09 47 34.0	-2.8
GYA				ScP		**ScP**	09 49 15.5	-1.2
GYA	**Guiyang**	**30.53**	**260**	ScS		ScS	09 53 10.4	-2.8
GYA				pmax	pmax			
	comp=Z,30nm,0.8s							
GYA				pmax	pmax			
	comp=Z,120nm,4.9s							
GYA				LR	LR			
	comp=N,560nm,17.2s							
GYA				LR	LR			
	comp=E,520nm,17.0s							
GYA				LR	LR			
	comp=Z,540nm,17.4s							
CD2	**Chengdu**	**30.99**	**270**	P		**P**	09 42 36.9	-1.4
CD2				pmax	pmax			
	comp=Z,20nm,0.5s							
KMI	**Kunming**	**34.27**	**261**	P		**P**	09 43 07.5	+0.2
KMI				pmax	pmax			
	comp=Z,17nm,0.8s							
BILL	**Bilibino**	**34.32**	**17**	⇑*e*P		**P**	09 43 06.6	-0.3
BILL				*e*			09 44 14.9	
BILL				*e*PPP		PPP	09 44 38.7	
BILL				pmax	pmax			
	comp=Z,23nm,1.7s							
BILL				MLR	MLR			
	comp=Z,2μm,17.0s							
BILL	**Bilibino**	**34.32**	**17**	*e*P		**P**	09 43 06.8	-0.1
	comp=Z,12nm,1.0s							
BILL				*e*PcP		**PcP**	09 45 44.6	+1.7
TIXI	**Tiksi**	**35.32**	**354**	P		**P**	09 43 14.6	-0.8
	comp=Z,2.9nm,0.6s,baz=139,slow=7.4,SNR=12							
TIXI	**Tiksi**	**35.32**	**354**	*e*P		**P**	09 43 15.2	-0.2
TIXI				pmax	pmax			
	comp=Z,6.0nm,1.7s							
TIXI	**Tiksi**	**35.32**	**354**	*e*P		**P**	09 43 14.8	-0.6
	comp=Z,3.8nm,0.7s							
WMQ	**Urumqi**	**40.

CMAR Chiang Mai Arr 40.81 255 P **P** 09 44 02.4 -0.1
comp=Z,0.4nm,0.3s,baz=45,slow=9.3,SNR=2.1
CMAR PcP **PcP** 09 46 03.8 +0.2
comp=Z,0.6nm,0.3s,baz=23,slow=2.6,SNR=6.9
ZAA0 Zalesovo Array 41.48 312 *e*P **P** 09 44 07.2 -0.3
ZAA0 *e*P **P** 09 44 07.7 +0.1
ZAA0 *e*PcP **PcP** 09 46 04.8 -0.4
ZAA0 *e*PcP **PcP** 09 46 05.2 0.0
ZALV Zalesovo Beam 41.48 312 P **P** 09 44 07.5 -0.1
comp=Z,6.4nm,0.6s,baz=89,slow=6.8,SNR=21
ZALV PcP **PcP** 09 46 04.8 -0.3
comp=Z,4.0nm,0.5s,baz=90,slow=3.2,SNR=10.0
NVS Novosibirsk 42.42 314 *e*P **P** 09 44 14.8 -0.4
NRIK Noril'sk 43.08 335 P **P** 09 44 20.1 -0.3
comp=Z,2.9nm,0.5s,baz=102,slow=9.5,SNR=4.8
NRIK PcP **PcP** 09 46 09.9 -0.2
comp=Z,5.6nm,0.6s,baz=120,slow=2.8,SNR=4.4
MKAR Makanchi Array 43.60 302 P **P** 09 44 25.0 0.0
comp=Z,3.3nm,0.7s,baz=89,slow=9.9,SNR=22
MKAR PcP **PcP** 09 46 12.2 -0.2
comp=Z,2.6nm,0.9s,baz=86,slow=4.6,SNR=5.3
MKAR Makanchi Array 43.60 302 *e*P **P** 09 44 25.8 +0.8
MKAR PcP **PcP** 09 46 12.2 -0.2
MAKZ Makanchi 43.81 302 *e*P **P** 09 44 27.5 +0.9
MAKZ pmax pmax
comp=Z,4.0nm,0.7s
MAKZ Makanchi 43.81 302 *e*P **P** 09 44 27.5 +0.9
comp=Z,4.4nm,0.7s
KURK Kurchatov 45.46 308 *e*P **P** 09 44 39.1 -0.6
KURK pmax pmax
comp=Z,41nm,1.3s
KURK Kurchatov 45.46 308 *e*P **P** 09 44 39.1 -0.6
comp=Z,41nm,1.3s
PDGK Podgornoye 46.23 298 P **P** 09 44 46.2 +0.4
PDGK pmax pmax
comp=Z,16nm,0.9s
RAMN Ramite 46.33 274 *e*P **P** 09 44 47.1 -0.1
comp=Z,22nm,0.8s
RAMN Ramite 46.33 274 *e*P **P** 09 44 47.7 +0.5
comp=Z,22nm,0.8s
GUN Gumba 46.49 275 *e*P **P** 09 44 48.8 +0.3
GUN Gumba 46.49 275 *e*P **P** 09 44 49.0 +0.5
comp=Z,12nm,0.7s
KKN Kakani 47.02 275 *e*P **P** 09 44 53.0 +0.5
KKN Kakani 47.02 275 *e*P **P** 09 44 53.1 +0.5
comp=Z,3.6nm,0.2s
PKIN Phulchoki 47.02 275 *e*P **P** 09 44 52.8 +0.2
comp=Z,4.6nm,0.5s
GKN Gorkha 47.44 276 *e*P **P** 09 44 55.9 +0.2
comp=Z,18nm,0.6s
GKN Gorkha 47.44 276 *e*P **P** 09 44 56.1 +0.4
comp=Z,18nm,0.6s
KDAK Kodiak Island 47.63 42 P P 09 45 10.0 +13
comp=Z,9.6nm,0.9s,baz=282,slow=6.7,SNR=7.0
KDAK Kodiak Island 47.63 42 *e*P **P** 09 44 56.7 +0.1
PPLA Purkeypile 47.64 35 *e*P **P** 09 44 58.7 +1.8
comp=Z,49nm,1.8s
CAST Castle Rocks 47.70 34 *e*P **P** 09 44 58.7 +1.7
comp=Z,12nm,1.5s
MLY Manley 48.30 32 *e*P **P** 09 45 03.3 +1.6
MLY *e*PcP **PcP** 09 46 29.6 +1.1
KOLN Koldanda 48.37 276 *e*P **P** 09 45 02.8 -0.2
PYUN Piuthan 48.71 277 *e*P **P** 09 45 06.0 +0.4
comp=Z,50nm,1.0s
PYUN Piuthan 48.71 277 *e*P **P** 09 45 06.2 +0.6
comp=Z,50nm,1.0s
RC01 Rabbit Creek A 48.86 37 *e*P **P** 09 45 07.5 +1.4
RC01 *e*PcP **PcP** 09 46 31.7 +1.2
SOEI Soe 48.90 202 *e*P **P** 09 45 07.1 +0.2
comp=Z,44nm,0.9s
TKM2 Tokmak 2 49.08 298 *e*P **P** 09 45 09.4 +1.1
TKM2 pmax pmax
comp=Z,16nm,1.1s
TKM2 Tokmak 2 49.08 298 *e*P **P** 09 45 09.4 +1.1
comp=Z,16nm,1.1s
RND Reindeer 49.15 34 *e*P **P** 09 45 08.8 +0.5
RND pmax pmax
comp=Z,31nm,1.8s
RND Reindeer 49.15 34 *e*P **P** 09 45 08.8 +0.5
comp=Z,31nm,1.8s
MDM Murphy Dome 49.37 32 *e*P **P** 09 45 11.0 +1.1
comp=Z,19nm,1.4s
WRH Wood River Hil 49.44 33 *e*P **P** 09 45 11.4 +1.0
WRH *e*PcP **PcP** 09 46 32.8 +0.3
KSH Kashi 49.83 294 *e*P P 09 45 19.9 +6.0
KSH *es*P sP 09 45 26.7 +12
KSH PcS **PcS** 09 50 34.7 +3.1
KSH S **S** 09 52 30.2 +5.8
KSH SS **SS** 09 56 01.1 +4.4
DHY Denali Highway 49.84 35 *e*P **P** 09 45 14.7 +1.1
DHY *e*PcP **PcP** 09 46 35.1 +0.8
OTUK Ortayu 49.94 306 P **P** 09 45 14.7 +0.2
OTUK pmax pmax
comp=Z,11nm,0.8s
AAK Ala-Archa 49.94 298 *e*P **P** 09 45 15.5 +0.7
AAK pmax pmax
comp=Z,7.0nm,1.2s
AAK Ala-Archa 49.94 298 *e*P **P** 09 45 15.5 +0.7
comp=Z,7.1nm,1.2s
IL1 Eielson Array 49.95 32 *e*P **P** 09 45 14.2 -0.1
ILAR Eielson Array 49.95 32 P **P** 09 45 14.0 -0.3
comp=Z,2.2nm,0.7s,baz=264,slow=5.4,SNR=21
ILAR PcP **PcP** 09 46 33.5 -0.9
comp=Z,2.0nm,0.6s,baz=268,slow=3.2,SNR=13
ILB Eielson Array 49.95 32 *e*P **P** 09 45 14.6 +0.2
BRVK Borovoye 50.20 312 *e*P **P** 09 45 17.2 +0.8
BRVK pmax pmax
comp=Z,8.0nm,0.8s
BRVK Borovoye 50.20 312 *e*P **P** 09 45 16.0 -0.3
comp=Z,8.2nm,0.8s
ZRNK Zerenda 50.98 312 *e*P **P** 09 45 22.5 +0.2
ZRNK pmax pmax
comp=Z,11nm,0.8s
ZRNK Zerenda 50.98 312 *e*P **P** 09 45 22.5 +0.2
comp=Z,11nm,0.8s
DOT Dot Lake 51.27 34 *e*P **P** 09 45 24.7 +0.3
DOT *e*PcP **PcP** 09 46 40.7 +1.3
MNAS Manas 51.39 299 P **P** 09 45 26.7 +1.0
MNAS pmax pmax
comp=Z,11nm,0.9s
SFK Sufi-Kurgan 51.47 295 P **P** 09 45 27.2 +0.8
SFK pmax pmax
comp=Z,8.0nm,0.7s
MENT Mentasta 51.51 34 *e*P **P** 09 45 26.7 +0.6
comp=Z,8.8nm,1.2s
KKAR Karatay Array 52.59 300 *e*P **P** 09 45 35.0 +0.5
KKAR Karatay Array 52.59 300 *e*P **P** 09 45 35.0 +0.5
INK Inuvik 54.79 27 P **P** 09 45 50.2 0.0
comp=Z,5.6nm,1.1s,baz=282,slow=7.0,SNR=13
INK PcP **PcP** 09 46 52.1 -0.4
comp=Z,3.9nm,1.1s,baz=265,slow=2.3,SNR=3.2
ARU Arti 55.99 318 *e*P **P** 09 45 59.2 +0.2
ARU pmax pmax
comp=Z,11nm,0.8s
ARU Arti 55.99 318 *e*P **P** 09 45 58.9 -0.1
comp=Z,14nm,0.9s
KBL Kabul 56.82 291 P **P** 09 46 04.1 -1.4
KBL pmax pmax
comp=Z,10.0nm,0.9s
WRAB Tennant Creek 56.86 187 *ce*P **P** 09 46 05.2 -0.3
WRAB pmax pmax
comp=Z,40nm,1.2s
WRAB Tennant Creek 56.86 187 *e*P **P** 09 46 05.0 -0.5
comp=Z,18nm,0.8s
WB2 Warramunga Arr 56.87 187 *e*P **P** 09 46 05.0 -0.5
comp=Z,19nm,0.7s
WRA Warramunga Arr 56.87 187 P **P** 09 46 04.7 -0.9
comp=Z,14nm,0.7s,baz=3.0,slow=7.2,SNR=56
WRA PcP **PcP** 09 47 01.4 +0.3
comp=Z,3.6nm,0.7s,baz=0.0,slow=3.8,SNR=7.1
WRA Warramunga Arr 56.87 187 P **P** 09 46 04.7 -0.9
WRA 09 47 01.5
WRA pmax pmax
comp=Z,15nm,0.7s
WRA pmax pmax
comp=Z,4.0nm,0.7s
ABKAR Akbulak array 57.49 310 *e*P **P** 09 46 09.6 -0.2
DLBC Dease Lake 59.13 38 P **P** 09 46 21.3 +0.1
comp=Z,1.4nm,0.3s,baz=225,slow=5.7,SNR=27
DLBC Dease Lake 59.13 38 *e*P **P** 09 46 23.1 +1.9
comp=Z,8.3nm,1.0s
SPITS Spitsbergen Ar 60.49 349 P **P** 09 46 31.6 +1.3
comp=Z,21nm,1.1s,baz=83,slow=6.8,SNR=5.3
AS01 Alice Springs 60.59 187 *e*P **P** 09 46 31.0 -0.4
AS31 Alice Springs 60.59 187 *e*P **P** 09 46 30.9 -0.6
comp=Z,2.1nm,0.6s

ASAR Alice Springs 60.59 187 P **P** 09 46 30.8 -0.7
comp=Z,5.6nm,0.7s,baz=17,slow=6.9,SNR=46
MBWA Marble Bar 61.03 202 *e*P **P** 09 46 34.5 0.0
comp=Z,21nm,1.2s
EIDS Eidsvold 62.75 169 *e*P **P** 09 46 46.0 0.0
comp=Z,5.3nm,1.0s
RES Resolute Bay 62.87 14 P **P** 09 46 46.0 -0.3
comp=Z,5.4nm,0.7s,baz=306,slow=6.8,SNR=40
RES PcP **PcP** 09 47 24.7 +0.2
comp=Z,3.4nm,0.7s,baz=294,slow=5.2,SNR=6.4
GEYT Alibeck 63.29 299 P **P** 09 46 49.8 +0.1
comp=Z,3.1nm,0.3s,baz=58,slow=5.9,SNR=4.9
KLMR Klimovskoe 63.48 328 *e*P **P** 09 46 49.3 -1.2
KLMR pmax pmax
comp=Z,9.0nm,0.8s
ARCES ARCESS Array B 63.86 339 P **P** 09 46 53.2 +0.3
comp=Z,4.7nm,0.8s,baz=47,slow=6.3,SNR=7.0
YKA Yellowknife Ar 64.24 30 P **P** 09 46 55.1 -0.4
comp=Z,2.2nm,0.7s,baz=302,slow=6.7,SNR=45
YKA PcP **PcP** 09 47 30.3 0.0
comp=Z,2.3nm,0.7s,baz=303,slow=4.1,SNR=19
YKB5 Yellowknife Ar 64.24 30 *e*P **P** 09 46 54.3 -1.1
DAG Danmarks Havn 65.82 355 *i*P **P** 09 47 05.7 +0.2
comp=Z,14nm,0.9s
DAG pmax pmax
comp=Z,11nm,0.9s
VRH Novokhopyorsk 67.20 318 *e*P **P** 09 47 13.1 -1.7
VRH pmax pmax
comp=Z,10.0nm,0.9s
OBN Obninsk 67.77 323‖ *e*P **P** 09 47 18.1 -0.2
OBN *e* 09 49 47.2
OBN *e*S S 09 56 42.2 +25
OBN *e*SSS SSS 10 03 30.1
OBN pmax pmax
comp=Z,12nm,1.8s
OBN MLR MLR
comp=Z,1μm,17.0s
LPSR Galich'ya Gora 67.95 320 *e*P **P** 09 47 18.7 -0.8
LPSR pmax pmax
comp=Z,10.0nm,0.6s
STKA Stephens Creek 68.45 179 P **P** 09 47 22.3 -0.4
comp=Z,4.4nm,0.6s,baz=352,slow=7.0,SNR=8.9
VSR Storozhevoye 68.56 319 *e*P **P** 09 47 22.4 -1.0
VSR pmax pmax
comp=Z,10.0nm,0.7s
FIA1 FINESS Array S 68.59 332 *e*P **P** 09 47 22.9 -0.5
comp=Z,25nm,1.0s
FIA1 *e*P **pP** 09 47 23.0 -1.2
FINES FINESS Array B 68.59 332 P **P** 09 47 22.8 -0.5
comp=Z,7.0nm,0.7s,baz=46,slow=6.0,SNR=21
FINES FINESS Array B 68.59 332 P **P** 09 47 22.8 -0.5
FINES pmax pmax
comp=Z,6.0nm,0.4s
KBZ Khabaz 70.45 310 P **P** 09 47 35.3 +0.2
comp=Z,4.6nm,0.9s,baz=50,slow=6.5,SNR=7.0
KIV Kislovodsk 70.46 311 *e*P **P** 09 47 35.4 0.0
KIV pmax pmax
comp=Z,15nm,0.9s
SUMG Summit 70.79 360 *i*P **P** 09 47 38.3 +1.1
comp=Z,21nm,1.0s
SUMG Summit 70.79 360 *i*P **P** 09 47 38.3 +1.1
SUMG pmax pmax
comp=Z,21nm,1.0s
SUMG Summit 70.79 360 *e*P **P** 09 47 38.1 +0.8
comp=Z,20nm,0.9s
SWMT Swartz Lake 72.83 43 *e*P **P** 09 47 51.1 +1.4
NC405 NORSAR Array S 73.81 337 *e*P **P** 09 47 55.0 0.0
AKASG Malin Array Be 73.96 322 P **P** 09 47 55.4 -0.7
comp=Z,3.2nm,0.6s,baz=46,slow=6.1,SNR=12
KIEV Kiev 73.98 322 *e*P **P** 09 47 55.9 -0.2
KIEV pmax pmax
comp=Z,12nm,1.2s
KIEV Kiev 73.98 322 *e*P **P** 09 47 55.9 -0.2
comp=Z,12nm,1.2s
NC204 NORSAR Array S 73.98 337 *e*P **P** 09 47 56.5 +0.5
AK11 Malin Array Si 74.01 322 *e*P **P** 09 47 56.0 -0.3
NB2 NORSAR Subarra 74.02 337 P **P** 09 47 56.0 -0.3
comp=Z,4.9nm,0.8s,baz=39,slow=6.2
NOA NORSAR Array B 74.02 337 P **P** 09 47 55.7 -0.6
comp=Z,3.7nm,0.7s,baz=39,slow=5.9,SNR=14
NBO02 NORSAR Array S 74.12 337 *e*P **P** 09 47 56.8 -0.1
FFC Flin Flon 74.16 32 *e*P **P** 09 47 57.0 -0.2
FFC pmax pmax
comp=Z,8.0nm,0.8s
FFC Flin Flon 74.16 32 *e*P **P** 09 47 57.0 -0.2
comp=Z,7.8nm,0.8s
MFID Camas Ranch 74.20 47 *e*P **P** 09 47 59.0 +1.2
comp=Z,10nm,1.3s
FCC Fort Churchill 74.40 26 *e*P **P** 09 47 58.4 0.0
FCC pmax pmax
comp=Z,19nm,1.2s
FCC Fort Churchill 74.40 26 *e*P **P** 09 47 58.4 0.0
comp=Z,19nm,1.2s
CMB Columbia Colle 74.48 54 *e*P **P** 09 48 00.7 +1.3
CMB pmax pmax
comp=Z,7.0nm,0.9s
CMB Columbia Colle 74.48 54 *e*P **P** 09 48 00.7 +1.3
comp=Z,7.0nm,0.9s
LRM Limekiln Ridge 74.69 44 *e*P **P** 09 48 01.9 +1.1
EGMT Eagleton 74.80 41 *e*P **P** 09 48 01.7 +0.6
comp=Z,11nm,0.9s
WAKR Walker 74.83 53 *e*P **P** 09 48 03.1 +1.5
DLMT Dillon 74.89 44 *e*P **P** 09 48 03.0 +1.2
comp=Z,6.8nm,0.8s
HLID Hailey 74.94 47 *e*P **P** 09 48 03.5 +1.3
comp=Z,4.5nm,1.1s
BOZ Bozeman (W) 75.26 44 *e*P **P** 09 48 04.7 +0.8
BOZ pmax pmax
comp=Z,9.0nm,1.1s
BOZ Bozeman (W) 75.26 44 *e*P **P** 09 48 04.7 +0.8
comp=Z,9.4nm,1.1s
NV01 Mina Array Sit 75.59 53 *e*P **P** 09 48 06.7 +0.6
NVAR Mina Array Bea 75.59 53 P **P** 09 48 06.3 +0.3
comp=Z,3.9nm,0.8s,baz=292,slow=5.5,SNR=29
NV11 Mina Array Sit 75.69 53 *e*P **P** 09 48 07.8 +1.3
comp=Z,4.6nm,1.0s
YMR Madison River 76.23 44 *e*P **P** 09 48 11.3 +1.7
comp=Z,14nm,1.6s
IMW Indian Meadow 76.73 45 *e*P **P** 09 48 13.6 +1.2
comp=Z,7.7nm,1.0s
FLWY Flagg Ranch 76.75 45 *e*P **P** 09 48 14.4 +1.9
comp=Z,17nm,1.5s
RLMT Red Lodge 76.89 43 *e*P **P** 09 48 14.3 +1.1
comp=Z,7.0nm,1.2s
MOOW Moose Ponds 76.93 45 *e*P **P** 09 48 15.3 +1.7
comp=Z,7.2nm,1.3s
SNOW Snow King Moun 77.10 45 *e*P **P** 09 48 16.4 +1.8
comp=Z,9.1nm,1.2s
REDW Red Top Meadow 77.11 45 *e*P **P** 09 48 16.1 +1.5
comp=Z,26nm,1.3s
BSD Bornholm Skovb 77.22 331 *i*P **P** 09 48 13.8 -0.8
comp=Z,9.6nm,0.9s
BSD Bornholm Skovb 77.22 331 *e*P **P** 09 48 13.8 -0.8
BSD pmax pmax
comp=Z,10.0nm,0.9s
DGMT Dagmar 77.34 38 *e*P **P** 09 48 16.2 +0.7
comp=Z,14nm,1.0s
BGU Big Grassy Mou 77.36 48 *e*P **P** 09 48 17.4 +1.5
comp=Z,14nm,1.7s
R11A Troy Canyon, C 77.36 51 *e*P **P** 09 48 17.0 +1.0
comp=Z,9.3nm,1.1s
LAO LASA Array 77.50 40 *e*P **P** 09 48 18.0 +1.5
comp=Z,20nm,1.2s
TPNV Topopah Spring 77.78 53 *e*P **P** 09 48 19.3 +0.9
TPNV pmax pmax
comp=Z,11nm,1.0s
TPNV Topopah Spring 77.78 53 *e*P **P** 09 48 19.3 +0.9
comp=Z,11nm,1.0s
HWUT Hardware Ranch 77.80 47 *e*P **P** 09 48 19.8 +1.4
comp=Z,16nm,1.4s
KWP Kalwaria Pacla 77.82 324 *e*P **P** 09 48 19.2 +1.1
KWP Kalwaria Pacla 77.82 324 *e*P **P** 09 48 19.3 +1.1
DUG Dugway, Tooele 77.94 49 *e*P **P** 09 48 20.7 +1.5
DUG pmax pmax
comp=Z,14nm,1.3s
DUG Dugway, Tooele 77.94 49 *e*P **P** 09 48 20.6 +1.5
comp=Z,14nm,1.3s
BUR08 Bucovina Ar. S 77.96 321 *e*P **P** 09 48 19.4 +0.4
TCUT Toone Canyon 78.20 47 *e*P **P** 09 48 22.1 +1.4
comp=Z,10nm,1.0s
BW06 Boulder Array 78.22 45 *e*P **P** 09 48 20.3 -0.5
BW06 *e*P **P** 09 48 20.9 +0.1
PD31 Pinedale Array 78.22 45 *e*P **P** 09 48 21.4 +0.6
PDAR Pinedale Array 78.22 45 P **P** 09 48 20.7 -0.1
comp=Z,2.2nm,0.8s,baz=248,slow=2.8,SNR=20

BRTR Keskin Array B 78.41 311 P **P** 09 48 21.7 -0.1
comp=Z,1.4nm,0.6s,baz=95,slow=4.2,SNR=6.9
BRTR Keskin Array B 78.41 311 P **P** 09 48 21.7 -0.1
BRTR pmax pmax
comp=Z,2.0nm,0.7s
JLU Jordanelle 78.50 48 *e*P **P** 09 48 23.8 +1.4
comp=Z,11nm,1.3s
KOLS Kolonicke sedl 78.51 324 *e*P **P** 09 48 23.0 +1.0
KOLS Kolonicke sedl 78.51 324 *e*P **P** 09 48 23.0 +1.0
NLU North Lily Min 78.53 48 *e*P **P** 09 48 23.9 +1.4
comp=Z,8.3nm,1.1s
STHS Stebnicka Huta 78.65 324 *e*P **P** 09 48 23.1 +0.3
STHS Stebnicka Huta 78.65 324 *e*P **P** 09 48 23.1 +0.3
OJC Ojcow 78.75 326 *e*P **P** 09 48 22.0 -1.2
OJC Ojcow 78.75 326 *e*P **P** 09 48 22.1 -1.2
MPU Maple Canyon 78.75 48 *e*P **P** 09 48 25.1 +1.4
comp=Z,11nm,1.2s
BR231 Keskin MP Arra 78.86 312 *e*P **P** 09 48 23.3 -0.9
CRVS Cervenica-Dubn 78.91 324 *e*P **P** 09 48 24.9 +0.7
CRVS Cervenica-Dubn 78.91 324 *e*P **P** 09 48 24.9 +0.7
NIE Niedzica 79.09 325 *e*P **P** 09 48 26.3 +1.1
NIE Niedzica 79.09 325 *e*P **P** 09 48 26.4 +1.2
MSU Marysvale 79.37 50 *e*P **P** 09 48 28.7 +1.5
MSU Marysvale 79.37 50 *e*P **P** 09 48 28.7 +1.5
TMUT Trail Mountain 79.46 49 *e*P **P** 09 48 29.4 +1.6
comp=Z,16nm,1.5s
P17A Butcher Ranch, 79.63 48 *e*P **P** 09 48 29.7 +1.2
comp=Z,11nm,0.9s
LCMT Little Creek M 79.65 51 *e*P **P** 09 48 30.2 +1.6
comp=Z,8.6nm,1.0s
PFO Pinyon Flats O 79.66 56 *e*P **P** 09 48 29.5 +0.8
P18A Preston Nutter 79.83 48 *e*P **P** 09 48 31.4 +1.7
comp=Z,7.7nm,0.9s
KSP Ksiaz 79.83 328 *e*P **P** 09 48 30.0 +0.9
KSP Ksiaz 79.83 328 *e*P **P** 09 48 30.1 +0.9
KNB Kanab 79.91 51 *e*P **P** 09 48 31.8 +1.7
KNB pmax pmax
comp=Z,14nm,1.1s
KNB Kanab 79.91 51 *e*P **P** 09 48 31.8 +1.7
comp=Z,14nm,1.1s
ULM Lac du Bonnet 79.96 33 P **P** 09 48 29.1 -0.8
comp=Z,3.6nm,0.7s,baz=258,slow=4.8,SNR=5.0
SRU San Rafael Swe 79.99 48 *e*P **P** 09 48 31.4 +0.9
SRU pmax pmax
comp=Z,11nm,0.8s
SRU San Rafael Swe 79.99 48 *e*P **P** 09 48 31.4 +0.9
comp=Z,11nm,0.8s
MORC Moravsky Berou 80.08 327 *e*P **P** 09 48 31.3 +0.7
MORC pmax pmax
comp=Z,54nm,1.5s
MORC Moravsky Berou 80.08 327 *e*P **P** 09 48 31.3 +0.7
comp=Z,54nm,1.5s
MMU Miners Mountai 80.11 49 *e*P **P** 09 48 32.2 +1.0
DPC Dobruska-Polom 80.19 327 *e*P **P** 09 48 32.1 +1.0
DPC Dobruska-Polom 80.19 327 *e*P **P** 09 48 32.1 +1.0
VYHS Vyhne 80.42 325 *e*P **P** 09 48 32.2 -0.2
VYHS Vyhne 80.42 325 *e*P **P** 09 48 32.2 -0.2
W13A Hualapai Mount 80.43 53 *e*P **P** 09 48 34.0 +1.0
comp=Z,8.5nm,1.4s
U15A North Rim 80.61 51 *e*P **P** 09 48 35.2 +1.3
comp=Z,22nm,1.4s
O20A White River Ci 80.68 46 *e*P **P** 09 48 35.0 +0.8
comp=Z,5.0nm,0.9s
BRG Berggiesshubel 80.80 329 *e*P **P** 09 48 30.2 -4.1
comp=Z,4.1nm,1.0s
BRG Berggiesshubel 80.80 329 *e*P **P** 09 48 30.2 -4.1
BRG pmax pmax
comp=Z,4.0nm,1.0s
CLL Collm 80.85 330‖ *i*P **P** 09 48 34.5 -0.1
comp=Z,16nm,1.4s
CLL *e*PP **PP** 09 51 35.0 -3.1
CLL Collm 80.85 330‖ *i*P **P** 09 48 34.5 -0.1
CLL pmax pmax
comp=Z,16nm,1.4s
Y12C Blythe 80.85 55 *e*P **P** 09 48 36.3 +1.3
comp=Z,15nm,1.2s
GLA Glamis 81.08 55 *e*P **P** 09 48 37.8 +1.5
GLA pmax pmax
comp=Z,22nm,1.4s
GLA Glamis 81.08 55 *e*P **P** 09 48 37.8 +1.5
comp=Z,22nm,1.4s
GOPC GO Pecny, Ondr 81.17 328 *e*P **P** 09 48 37.1 +0.7
GOPC GO Pecny, Ondr 81.17 328 *e*P **P** 09 48 37.1 +0.7
PRU Pruhonice 81.22 328 *e*P **P** 09 48 37.1 +0.5
PRU Pruhonice 81.22 328 *e*P **P** 09 48 37.1 +0.5
PV09 Paradox Valley 81.22 48 *e*P **P** 09 48 38.6 +1.3
PV04 Paradox Valley 81.42 48 *e*P **P** 09 48 38.9 +0.7
PV05 Paradox Valley 81.51 48 *e*P **P** 09 48 39.9 +1.2
Y14A Wickenburg 81.72 54 *e*P **P** 09 48 40.5 +0.8
comp=Z,28nm,1.0s
WUAZ Wupatki 81.76 52 *e*P **P** 09 48 41.4 +1.4
comp=Z,10nm,1.0s
PV01 Paradox Valley 81.79 48 *e*P **P** 09 48 41.4 +1.2
SMCO Snowmass 82.04 46 *e*P **P** 09 48 42.9 +1.1
comp=Z,8.3nm,1.4s
KHC Kasperske Hory 82.28 328 *e*P **P** 09 48 42.5 +0.2
KHC Kasperske Hory 82.28 328 *e*P **P** 09 48 42.5 +0.2
ISCO Idaho Springs 82.41 45 *e*P **P** 09 48 44.7 +1.2
ISCO pmax pmax
comp=Z,3.0nm,1.0s
ISCO Idaho Springs 82.41 45 *e*P **P** 09 48 44.7 +1.2
comp=Z,3.3nm,1.0s
X16A Lo Mia Camp, P 82.42 52 *e*P **P** 09 48 45.0 +1.6
comp=Z,8.3nm,1.1s
MVCO Mesa Verde 82.44 49 *e*P **P** 09 48 44.8 +1.2
comp=Z,8.6nm,0.9s
GERES GERESS Array B 82.44 328 P **P** 09 48 42.9 -0.3
comp=Z,1.6nm,0.5s,baz=39,slow=5.7,SNR=14
EKA Eskdalemuir Ar 83.00 340 P **P** 09 48 46.0 +0.1
comp=Z,1.1nm,0.6s,baz=38,slow=6.3,SNR=3.4
EKA Eskdalemuir Ar 83.00 340 P **P** 09 48 46.0 +0.1
EKA pmax pmax
comp=Z,1.0nm,0.6s
S22A 4UR Ranch, Cre 83.08 47 *e*P **P** 09 48 48.6 +1.6
comp=Z,11nm,1.2s
SDCO Great Sand Dun 83.86 47 *e*P **P** 09 48 52.3 +1.3
comp=Z,7.7nm,1.3s
ECSD EROS Data Cent 84.42 38 *e*P **P** 09 48 53.6 +0.2
comp=Z,8.8nm,1.0s
BFO Black Forest 85.06 330 *ce*P **P** 09 48 56.6 0.0
LAZ Ladron 85.12 50 *e*P **P** 09 48 58.7 +1.3
ANMO Albuquerque 85.17 49 *e*P **P** 09 48 58.9 +1.3
ANMO pmax pmax
comp=Z,11nm,1.2s
ANMO Albuquerque 85.17 49 *e*P **P** 09 48 58.9 +1.3
comp=Z,8.2nm,1.0s
BNM Barren Site 85.60 50 *e*P **P** 09 49 01.0 +1.2
SCHQ Schefferville 85.62 15 P **P** 09 48 58.3 -0.9
comp=Z,2.7nm,0.7s,baz=0.0,slow=7.1,SNR=4.2
MNTX Cornudas Mount 88.03 51 *e*P **P** 09 49 11.8 +0.4
comp=Z,13nm,1.8s
V34A Guthrie 89.75 44 *e*P **P** 09 49 20.2 +0.8
comp=Z,12nm,0.8s
WMOK Wichita Mounta 89.83 45 *e*P **P** 09 49 20.9 +1.0
WMOK pmax pmax
comp=Z,12nm,0.9s
WMOK Wichita Mounta 89.83 45 *e*P **P** 09 49 20.9 +1.0
comp=Z,12nm,0.9s
TX31 Lajitas Ar. Si 90.72 52 *e*P **P** 09 49 24.3 +0.1
TXAR Lajitas Array 90.72 52 P **P** 09 49 24.5 +0.3
comp=Z,3.6nm,0.6s,baz=300,slow=3.2,SNR=52
ABTX Abilene, Hawle 90.86 47 *e*P **P** 09 49 25.6 +0.9
comp=Z,15nm,1.2s
HPIG 91.08 55 *e*P **P** 09 49 26.4 +0.4
comp=Z,4.7nm,0.8s
HHAR Hobbs 91.35 41 *e*P **P** 09 49 26.8 -0.1
comp=Z,6.7nm,0.6s
JCT Junction City 92.30 49 *e*P **P** 09 49 31.8 +0.4
JCT pmax pmax
comp=Z,6.0nm,0.7s
JCT Junction City 92.30 49 *e*P **P** 09 49 31.8 +0.4
comp=Z,5.7nm,0.7s
MIAR Mount Ida 92.85 42 *e*P **P** 09 49 34.6 +0.8
MIAR pmax pmax
comp=Z,7.0nm,0.8s
MIAR Mount Ida 92.85 42 *e*P **P** 09 49 34.6 +0.8
comp=Z,7.1nm,0.8s
VNDA Vanda 114.93 175 PKP PKPdf 09 55 00.1 -0.4
comp=Z,0.6nm,0.6s,baz=333,slow=2.3,SNR=6.2
TOA0 Torodi Ar. Sit 116.92 314 *e*PKPdf **PKPdf** 09 55 05.5 -0.7
TORD Torodi Ar. Bea 116.92 314 PKP **PKPdf** 09 55 05.1 -1.1
comp=Z,0.5nm,0.5s,baz=39,slow=2.6,SNR=6.1
SDV Santo Domingo 125.84 39 *e*PKPdf **PKPdf** 09 55 23.4 -0.3
DBIC Dimbokro 125.90 316 PKP **PKPdf** 09 55 22.9 -0.6
comp=Z,2.8nm,0.6s,baz=171,slow=1.3,SNR=9.7

DBIC	**Dimbokro**	**125.90**	**316**	PKIKP	**PKPdf**	**09 55 22.9**	**-0.6**
DBIC				pmax	pmax		
	comp=Z,4.0nm,0.8s						
SNAA	**Sanae**	**140.45**	**197**	PKP	PKPpre	09 55 41.5	
VNA2	**Neumayer--Watz**	**142.03**	**196**	PKP	PKPpre	09 55 46.6	
	baz=86,slow=1.7						
VNA3	**Neumayer Olymp**	**142.29**	**195**	PKP	PKPpre	09 55 48.6	
LPAZ	**La Paz**	**147.33**	**59**	PKPbc	**PKPdf**	**09 56 04.7**	**+1.2**
	comp=Z,7.0nm,0.6s,baz=338,slow=3.0,SNR=23						
LPAZ	**La Paz**	**147.33**	**59**	ePKPdf	**PKPbc**	**09 56 04.9**	**-0.9**
PLCA	**Paso Flores**	**155.53**	**109**	PKPab	**PKPab**	**09 56 41.4**	**+1.0**
	comp=Z,3.5nm,1.1s,baz=275,slow=7.5,SNR=3.0						

ISCJB ***11*** *09:39:23.9±0.9, 37.01N±0.06×140.83E±0.10, h17km±7km, mb3.6/2, Error ellipse: s-maj=13.0km s-min=9.5km az=9.4*
JMA ***11*** *09:39:24.5, 37.03N×140.68E, h9km±1km, M3.4*
JMA Felt II J1.
IDC ***11*** *09:39:25.7±2.4, 36.64N×140.63E, h0km, mb3.6/2, mb1 3.8/2, mb1mx3.3/52, mbtmp3.6/2, Error ellipse: s-maj=40.3km s-min=18.5km az=16.0*

ISC 11 09:39:23.9±1.6, 36.98N±0.10×140.66E±0.06, h6km±19km, n8, σ0s37/12, 4C, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.16**	**43**	↑P	**Pg**	**09 39 27.5**	**+0.3**
ONAJ				S	**Sg**	**09 39 29.6**	**+0.1**
JHO	**Hitachi**	**0.38**	**191**	↑P	**Pb**	**09 39 32.7**	**-0.3**
JFK	**Kawauchi**	**0.42**	**24**	↑P	**Pg**	**09 39 31.9**	**-0.2**
JFK				S	**Sg**	**09 39 37.2**	**-0.4**
JFT	**Otama**	**0.59**	**334**	↑P	**Pg**	**09 39 35.6**	**+0.3**
JFT				S	**Sg**	**09 39 43.1**	**0.0**
MJAR	**Matsushiro Arr**	**2.02**	**258**	Pn	**Pb**	**09 40 00.4**	**-0.6**
	11nm,0.3s,baz=82,slow=16,SNR=4.1						
MJAR				Lg	Lg	09 40 26.6	
	15nm,0.3s,baz=87,slow=27,SNR=4.7						
MAT	**Matsushiro**	**2.02**	**258**	P	**Pb**	**09 40 00.9**	**-0.1**
MAT				S	**Sb**	**09 40 26.5**	**+0.1**
WRA	**Warramunga Arr**	**56.93**	**187**	P	**P**	**09 49 09.8**	**-0.1**
	0.6nm,0.5s,baz=3.1,slow=7.3,SNR=6.5						
ASAR	**Alice Springs**	**60.66**	**187**	P	**P**	**09 49 36.4**	**+0.5**
	0.2nm,0.6s,baz=20,slow=8.5,SNR=2.6						

JMA 11 09:42:08.3, 36.99N×140.75E, h9km±1km, M3.3, 3C, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.12**	**19**	↑P	Pg	09 42 11.3	+0.2
ONAJ				S	Sg	09 42 13.2	+0.1
JFK	**Kawauchi**	**0.39**	**15**	P	Pg	09 42 16.0	0.0
JFK				S	Sg	09 42 21.4	+0.3
JHO	**Hitachi**	**0.41**	**201**	↑P	Pg	09 42 16.2	0.0
JHO				S	Sg	09 42 21.6	0.0
JFT	**Otama**	**0.62**	**328**	↑P	Pg	09 42 20.5	+0.2
JFT				S	Sg	09 42 29.0	+0.5
MAT	**Matsushiro**	**2.09**	**258**	P	Pn	09 42 40.4	-3.1
MAT				S	Pb	09 42 45.7	-0.7

IDC 11 09:43:36.2±16.0, 35.22N×143.11E, h0km, mb3.6/4, mb1 3.9/4, mb1mx3.4/52, mbtmp3.6/4, Error ellipse: s-maj=607.3km s-min=33.5km az=10.0, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SONM	**Songino Array**	**29.95**	**306**	P	P	09 49 46.0	-0.1
	0.4nm,0.8s,baz=98,slow=7.4,SNR=2.8						
KURBB	**Kurchatov Arra**	**48.21**	**309**	P	P	09 52 18.2	0.0
	1.0nm,0.9s,baz=82,slow=7.6,SNR=6.9						
NVAR	**Mina Array Bea**	**74.36**	**54**	P	P	09 55 19.7	+0.1
	0.4nm,0.6s,baz=297,slow=4.0,SNR=4.6						
TXAR	**Lajitas Array**	**90.12**	**53**	P	P	09 56 38.4	-0.1
	0.3nm,0.8s,baz=295,slow=3.8,SNR=3.6						

ISCJB ***11*** *09:44:57.4±0.6, 36.99N±0.03×140.87E±0.05, h20km±4km, mb3.8/13, Error ellipse: s-maj=7.4km s-min=4.6km az=20.3*
JMA ***11*** *09:44:58.4, 37.00N×140.75E, h11km±1km, M4.2*
JMA Felt III J1.
IDC ***11*** *09:45:02.6±2.6, 36.97N×140.80E, h48km±25km, mb3.5/13, mb1 3.7/15, mb1mx3.5/51, mbtmp3.8/15, ML3.4/2, Error ellipse: s-maj=22.0km s-min=12.1km az=57.0*

ISC 11 09:44:58.2±0.9, 37.01N±0.03×140.75E±0.04, h13km±5km, n31, σ0s80/34, mb3.8/13, 2C, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.10**	**23**	P	**Pg**	**09 45 01.4**	**+0.2**
ONAJ				S	**Sg**	**09 45 03.3**	**-0.1**
JFK	**Kawauchi**	**0.37**	**15**	↑P	**Pb**	**09 45 06.0**	**-0.6**
JFK				S	**Sb**	**09 45 11.5**	**-0.8**
JHO	**Hitachi**	**0.42**	**200**	P	**Pg**	**09 45 06.5**	**-0.1**
JHO				S	**Sg**	**09 45 12.1**	**-0.2**
JFT	**Otama**	**0.60**	**327**	P	**Pb**	**09 45 10.5**	**-0.2**
JFT				S	**Sb**	**09 45 18.9**	**-0.2**
JSB	**Shiboa**	**0.67**	**267**	P	**Pb**	**09 45 11.8**	**+0.1**
JSB				S	**Sb**	**09 45 21.1**	**+0.2**
JMM	**Marumori**	**0.85**	**2**	↑P	**Pb**	**09 45 14.7**	**-0.2**
JMM				S	**Sb**	**09 45 26.1**	**-0.2**
JYT	**Yasato**	**0.90**	**210**	P	**Pg**	**09 45 14.9**	**-0.7**
JFY	**Yanaizu**	**0.92**	**296**	P	**Pg**	**09 45 16.0**	**-0.1**
JFY				S	**Sg**	**09 45 27.9**	**-0.2**
MJAR	**Matsushiro Arr**	**2.09**	**258**	P	**Pn**	**09 45 34.1**	**+1.1**
	30nm,0.3s,baz=83,slow=16,SNR=31						
MJAR				S	**Sb**	**09 46 01.1**	**-0.9**
	86nm,0.3s,baz=88,slow=26,SNR=21						
MAT	**Matsushiro**	**2.10**	**258**	P	**Pb**	**09 45 34.7**	**-1.4**
MAT				S	**Sn**	**09 46 00.7**	**+1.7**
JHJ	**Hachijo jima 2**	**3.96**	**192**	P	**Pn**	**09 46 01.1**	**+2.4**
	3.6nm,0.3s,baz=25,slow=12,SNR=1.6						
JHJ				S	**Sn**	**09 46 44.9**	**-0.1**
	18nm,0.3s,baz=72,slow=19,SNR=3.1						
USRK	**Ussuriysk Ar.**	**9.79**	**320**	P	Pn	09 47 23.9	+5.3
	0.3nm,0.3s,baz=141,slow=12,SNR=8.6						
SONM	**Songino Array**	**27.36**	**304**	P	**P**	**09 50 43.3**	**+0.2**
	0.9nm,0.6s,baz=101,slow=8.7,SNR=5.7						
H11N2	**WAKE ISLAND Hy**	**28.59**	**120**	T	T	10 20 42.6	
	baz=313,slow=75,SNR=126						
H11N1	**WAKE ISLAND Hy**	**28.60**	**120**	T	T	10 20 43.3	
	baz=313,slow=75,SNR=104						
H11N3	**WAKE ISLAND Hy**	**28.61**	**120**	T	T	10 20 44.0	
	baz=313,slow=75,SNR=106						
H11S1	**WAKE ISLAND Hy**	**29.30**	**122**	T	T	10 21 34.8	
	baz=314,slow=76,SNR=64						
H11S3	**WAKE ISLAND Hy**	**29.30**	**122**	T	T	10 21 34.8	
	baz=314,slow=76,SNR=42						
H11S2	**WAKE ISLAND Hy**	**29.31**	**122**	T	T	10 21 36.0	
	baz=314,slow=76,SNR=37						
ZALV	**Zalesovo Beam**	**41.54**	**312**	P	**P**	**09 52 44.9**	**-0.2**
	1.0nm,0.4s,baz=88,slow=6.8,SNR=3.8						
MKAR	**Makanchi Array**	**43.68**	**302**	P	**P**	**09 53 02.9**	**+0.2**
	0.9nm,0.5s,baz=88,slow=10,SNR=13						
KURBB	**Kurchatov Arra**	**45.60**	**308**	P	**P**	**09 53 17.5**	**-0.3**
	2.3nm,0.8s,baz=85,slow=7.8,SNR=20						
ILAR	**Eielson Array**	**49.80**	**32**	P	**P**	**09 53 51.7**	**+1.5**
	0.3nm,0.6s,baz=268,slow=6.0,SNR=4.5						
BVAR	**Borovoye Array**	**50.20**	**312**	P	**P**	**09 53 53.6**	**+0.1**
	1.1nm,0.7s,baz=90,slow=5.8,SNR=5.0						
WRA	**Warramunga Arr**	**56.97**	**187**	P	**P**	**09 54 43.1**	**-0.3**
	1.5nm,0.6s,baz=3.2,slow=7.1,SNR=32						
ASAR	**Alice Springs**	**60.70**	**187**	P	**P**	**09 55 09.1**	**-0.2**
	0.6nm,0.8s,baz=10,slow=5.7,SNR=6.7						
RES	**Resolute Bay**	**62.75**	**14**	P	**P**	**09 55 21.9**	**-0.6**
	0.3nm,0.4s,baz=321,slow=9.5,SNR=4.2						
YKA	**Yellowknife Ar**	**64.09**	**30**	P	**P**	**09 55 30.7**	**-0.9**
	0.1nm,0.7s,baz=298,slow=6.0,SNR=3.5						
FINES	**FINESS Array B**	**68.59**	**332**	P	**P**	**09 56 00.3**	**0.0**
	1.2nm,0.8s,baz=47,slow=6.5,SNR=4.5						
AKASG	**Malin Array Be**	**73.99**	**322**	P	**P**	**09 56 33.1**	**-0.1**
	0.2nm,0.3s,baz=51,slow=5.8,SNR=4.2						
GERES	**GERESS Array B**	**82.45**	**328**	P	**P**	**09 57 19.5**	**-0.8**
	0.4nm,0.3s,baz=41,slow=6.5,SNR=4.7						

CSEM ***11*** *09:46:11.5, 44.08N×19.20E, h0km, ML1.3, Mining explosion.*

BEO 11 09:46:11.5±0.8, 44.08N×19.20E, h0km, M1.3/1, Mining explosion., Northwestern Balkan Peninsula

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
BBLS	**Lazići**	**0.26**	**145**	*e*Pg	Pg	09 46 15.4	-1.1
BBLS				*e*Sg	Sg	09 46 19.9	+0.1
BBLS	**Lazići**	**0.26**	**145**	*e*Pg	Pg	09 46 15.4	-1.1
BBLS				*e*Sg	Sg	09 46 19.9	+0.1
TEKS	**Tekeris**	**0.53**	**27**	*e*Pg	Pg	09 46 20.5	-1.1
TEKS	**Tekeris**	**0.53**	**27**	*e*Pg	Pg	09 46 20.5	-1.1
DIVS	**Divibare**	**0.57**	**88**	*e*Pg	Pg	09 46 20.9	-1.5
DIVS				*e*Sg	Sg	09 46 29.7	-0.1
DIVS	**Divibare**	**0.57**	**88**	*e*Pg	Pg	09 46 20.9	-1.5
DIVS				*e*Sg	Sg	09 46 29.7	-0.1
IVAS	**Ivanjica**	**0.85**	**126**	*e*Pg	Pg	09 46 28.2	+0.4
IVAS	**Ivanjica**	**0.85**	**126**	*e*Pg	Pg	09 46 28.2	+0.4
TRUS	**Trudelj**	**0.88**	**80**	*e*Pg	Pg	09 46 27.5	-0.9
TRUS	**Trudelj**	**0.88**	**80**	*e*Pg	Pg	09 46 27.5	-0.9
FGSL	**Fruska Gora**	**1.16**	**22**	*e*Pg	Pg	09 46 32.8	-1.0
FRGS	**Fruska Gora**	**1.16**	**22**	*e*Pg	Pg	09 46 32.8	-1.0

IDC ***11*** *09:46:45.5±0.9, 36.78N×140.77E, h0km, mb3.6/11, mb1 3.7/12, mb1mx3.6/50, mbtmp3.6/12, ML2.4/1, Error ellipse: s-maj=20.9km s-min=14.3km az=160.0*
ISCJB ***11*** *09:46:47.3±0.7, 36.97N±0.04×140.80E±0.08, h18km±4km, mb3.5/11, Error ellipse: s-maj=10.3km s-min=5.7km az=13.4*
JMA ***11*** *09:46:48.2, 36.99N×140.73E, h10km±1km, M3.9*
JMA Felt II J1.

ISC 11 09:46:47.6±1.1, 36.97N±0.04×140.66E±0.06, h9km±8km, n18, σ1s05/23, mb3.6/11, 2C, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.17**	**39**	P	**Pg**	**09 46 51.4**	**+0.1**
ONAJ				*e*S	**Sg**	**09 46 53.5**	**-0.3**
JHO	**Hitachi**	**0.36**	**192**	↑P	**Pb**	**09 46 56.0**	**-0.3**
JHO				S	**Sb**	**09 47 01.5**	**-0.6**
JFK	**Kawauchi**	**0.43**	**23**	↑P	**Pg**	**09 46 55.9**	**-0.2**
JFT	**Otama**	**0.61**	**335**	P	**Pg**	**09 47 00.2**	**+0.8**
JFT				S	**Sb**	**09 47 08.7**	**-0.5**
MJAR	**Matsushiro Arr**	**2.02**	**259**	Pn	**Pn**	**09 47 20.7**	**-1.2**
	1.3nm,0.3s,baz=74,slow=16,SNR=2.1						
MJAR				Lg	Lg	09 47 51.4	
	57nm,0.3s,baz=78,slow=30,SNR=9.7						
MAT	**Matsushiro**	**2.02**	**259**	P	**Pn**	**09 47 21.3**	**-0.6**
MAT				S	**Sb**	**09 47 50.4**	**+0.7**
JHJ	**Hachijo jima 2**	**3.91**	**191**	Pn	**Pn**	**09 47 50.0**	**+2.2**
	24nm,0.3s,baz=75,slow=21,SNR=3.0						
JHJ				Sn	**Sn**	**09 48 33.7**	**-0.1**
	16nm,0.3s,baz=78,slow=23,SNR=2.9						
SEY	**Seymchan**	**26.98**	**12**	P	**P**	**09 52 30.6**	**+1.3**
	0.4nm,0.4s,baz=227,slow=11,SNR=3.6						
SONM	**Songino Array**	**27.32**	**304**	P	**P**	**09 52 34.2**	**+1.4**
	0.5nm,0.7s,baz=98,slow=10.0,SNR=3.3						
ZALV	**Zalesovo Beam**	**41.52**	**312**	P	**P**	**09 54 35.8**	**+0.8**
	0.6nm,0.3s,baz=111,slow=7.9,SNR=2.2						
MKAR	**Makanchi Array**	**43.64**	**302**	P	**P**	**09 54 52.3**	**-0.2**
	0.3nm,0.4s,baz=90,slow=8.9,SNR=3.8						
KURBB	**Kurchatov Arra**	**45.57**	**308**	P	**P**	**09 55 07.5**	**-0.2**
	0.8nm,0.7s,baz=85,slow=8.1,SNR=6.3						
ILAR	**Eielson Array**	**49.87**	**32**	P	**P**	**09 55 40.7**	**-0.2**
	0.3nm,0.7s,baz=259,slow=5.3,SNR=4.3						
WRA	**Warramunga Arr**	**56.92**	**187**	P	**P**	**09 56 30.8**	**-2.4**
	0.9nm,0.5s,baz=3.7,slow=7.1,SNR=9.0						
ASAR	**Alice Springs**	**60.64**	**187**	P	**P**	**09 56 57.5**	**-1.6**
	0.9nm,1.0s,baz=17,slow=7.0,SNR=4.1						
RES	**Resolute Bay**	**62.81**	**14**	P	**P**	**09 57 13.2**	**+0.2**
	0.5nm,0.7s,baz=292,slow=7.4,SNR=3.7						
YKA	**Yellowknife Ar**	**64.17**	**30**	P	**P**	**09 57 22.3**	**+0.2**
	0.1nm,0.6s,baz=303,slow=6.6,SNR=4.1						
TXAR	**Lajitas Array**	**90.64**	**52**	P	**P**	**09 59 51.1**	**+0.2**
	0.2nm,0.6s,baz=316,slow=3.8,SNR=3.1						

IDC ***11*** *09:48:12.4±0.5, 37.04N×140.57E, h0km, mb4.4/30, mb1 4.5/32, mb1mx4.4/52, mbtmp4.4/32, ML3.4/2, MS4.9/4, Ms1 4.9/4, ms1mx4.1/60, Error ellipse: s-maj=12.8km s-min=9.9km az=143.0*
ISCJB ***11*** *09:48:13.6±0.4, 36.99N±0.02×140.72E±0.04, h22km±2km, mb4.5/55, MS4.8/7, Error ellipse: s-maj=5.4km s-min=3.4km az=25.8*
JMA ***11*** *09:48:14.1, 36.97N×140.65E, h10km±1km, M4.6*
Broadband fault plane solution: P waves. NP1: φs326.00000°, δ66.00000°, λ-73.00000°. NP2: φs109.00000°, δ30.00000°, λ-124.00000°. Principal axes: T Plg19.0000°, Azm43.0000°; N Plg16.0000°, Azm139.0000°; P Plg65.0000°, Azm266.0000°;
JMA Felt III J1.
MOS ***11*** *09:48:15.6±1.2, 37.06N×140.72E, h35km, mb4.7/47 Error ellipse: s-maj=8.1km s-min=5.7km az=93.9*
NEIC ***11*** *09:48:16.4±1.7, 37.04N×140.62E, h26km±11km, mb4.8/7, Error ellipse: s-maj=7.5km s-min=5.3km az=117.0*
NEIC Recorded [3 JMA] in Fukushima, Ibaraki and Tochigi.
BJI ***11*** *09:48:17.0, 37.00N×140.60E, h45km, mb4.7/18, mB5.2/2, Ms4.7/5, Ms7 4.7/5*

ISC 11 09:48:13.5±0.8, 37.02N±0.03×140.61E±0.04, h8km±5km, n128, σ1s08/130, mb4.5/55, MS4.9/7, 13C-2D, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.17**	**61**	↑P	**Pg**	**09 48 18.1**	**+0.9**
ONAJ				S	**Sg**	**09 48 20.8**	**+1.1**
JHO	**Hitachi**	**0.41**	**184**	↑P	**Pg**	**09 48 21.1**	**-0.3**
JHO				S	**Sg**	**09 48 26.3**	**-0.5**
JFK	**Kawauchi**	**0.41**	**31**	↑P	**Pb**	**09 48 22.5**	**-0.5**
JFK				*e*S	**Sb**	**09 48 28.5**	**-0.9**
JFT	**Otama**	**0.55**	**337**	P	**Pb**	**09 48 25.9**	**+0.6**
JFT				*e*S	**Sb**	**09 48 33.9**	**+0.6**
JSB	**Shiboa**	**0.55**	**265**	P	**Pb**	**09 48 26.1**	**+0.7**
JSB				S	**Sb**	**09 48 34.3**	**+0.8**
JFY	**Yanaizu**	**0.82**	**299**	↓P	**Pb**	**09 48 30.6**	**+0.6**
JFY				S	**Sb**	**09 48 41.9**	**+0.7**
JYT	**Yasato**	**0.85**	**203**	↑P	**Pg**	**09 48 29.5**	**-0.4**
JYT				S	**Sg**	**09 48 40.8**	**-0.2**
JMM	**Marumori**	**0.86**	**10**	↑P	**Pb**	**09 48 30.8**	**+0.1**
JMM				S	**Sb**	**09 48 42.9**	**+0.5**
MJAR	**Matsushiro Arr**	**1.98**	**257**	Pn	**Pn**	**09 48 48.5**	**+1.2**
	141nm,0.3s,baz=83,slow=16,SNR=22						
MJAR				Lg	Lg	09 49 14.9	
	323nm,0.3s,baz=88,slow=26,SNR=27						
MAJO	**Matsushiro**	**1.98**	**257**	*e*P	**Pb**	**09 48 48.9**	**-0.9**
MAJO	**Matsushiro**	**1.98**	**257**	*e*Pn	**Pb**	**09 48 49.2**	**-0.6**
MAT	**Matsushiro**	**1.98**	**257**	P	**Pb**	**09 48 49.1**	**-0.7**
MAT				S	**Sb**	**09 49 15.0**	**+0.3**
JHJ	**Hachijo jima 2**	**3.95**	**190**	Pn	**Pn**	**09 49 15.9**	**+1.6**
	22nm,0.3s,baz=36,slow=17,SNR=2.9						
JHJ				Sn	**Sn**	**09 50 00.9**	**+0.1**
	45nm,0.3s,baz=108,slow=20,SNR=3.8						
JHJ2	**Mitsune**	**3.95**	**190**	*e*Pn	**Pn**	**09 49 16.0**	**+1.6**
ERM	**Erimo**	**5.37**	**21**	*ce*P	**Pn**	**09 49 36.4**	**+2.6**
ERM				pmax	pmax		
	comp=Z,71nm,1.0s						
ERM	**Erimo**	**5.37**	**21**	*e*Pn	**Pn**	**09 49 31.7**	**-2.1**
	comp=Z,168nm,0.8s						
YUK	**Yuzh-Kuril'sk**	**8.07**	**28**	*e*P	**Pn**	**09 50 10.9**	**0.0**
YUK				*i* S	**Sn**	**09 51 38.2**	**-4.1**
YUK				pmax	pmax		
	comp=N,97nm,0.4s						
YUK				pmax	pmax		
	comp=Z,123nm,0.4s						
YUK				pmax	pmax		
	comp=E,54nm,0.1s						
SHO	**Shikotan**	**8.33**	**33**	*e*P	**Pn**	**09 50 13.6**	**-0.8**
SHO				*e*S	Sn	09 51 42.3	-6.3
SHO				pmax	pmax		
	comp=Z,66nm,0.6s						
SHO				pmax	pmax		
	comp=N,21nm,0.3s						
SHO				pmax	pmax		
	comp=E,41nm,0.4s						
JNU	**Nakatsue**	**8.87**	**247**	Pn	**Pn**	**09 50 23.2**	**+1.3**
	comp=E,0.2nm,0.3s,baz=42,slow=12,SNR=3.5						
USRK	**Ussuriysk Ar.**	**9.71**	**320**	Pn	Pn	09 50 39.4	+6.0
	comp=E,0.6nm,0.3s,baz=135,slow=12,SNR=37						
KUR	**Kuril'sk**	**9.86**	**31**	*e*P	**Pn**	**09 50 35.5**	**0.0**
KUR				*i* S	**Sn**	**09 52 21.0**	**-5.4**
KUR				pmax	pmax		
	comp=Z,80nm,0.4s						
KUR				pmax	pmax		
	comp=N,16nm,0.3s						
KUR				pmax	pmax		
	comp=E,17nm,0.2s						
YSS	**Yuzh-Sakhalins**	**10.06**	**8**	*e*P	Pn	09 50 33.6	-4.6
YSS				pmax	pmax		
	comp=Z,10.0nm,0.7s						
YSS	**Yuzh-Sakhalins**	**10.06**	**8**	Pn	**Pn**	**09 50 39.4**	**+1.3**
	comp=Z,17nm,0.6s						
KSRS	**Korea Array**	**10.12**	**276**	Pn	Pn	09 50 45.4	+6.3
	comp=Z,0.3nm,0.3s,baz=94,slow=13,SNR=41						
KSAR	**Wonju Array Be**	**10.16**	**276**	P	Pn	09 50 45.4	+5.8
KSAR	**Wonju Array Be**	**10.16**	**276**	Pn	Pn	09 50 45.4	+5.8
MDJ	**Mudanjiang**	**11.27**	**316**	*e*Pn	**Pn**	**09 50 55.6**	**+0.8**
KLR	**Kul'dur**	**13.80**	**335**	Pn	**Pn**	**09 51 31.5**	**+2.2**
	comp=Z,0.2nm,0.3s,baz=136,slow=13,SNR=9.9						
TYV	**Tymovskoe**	**13.92**	**5**	*e*P	**Pn**	**09 51 31.0**	**+0.1**
TYV				pmax	pmax		
	comp=Z,6.0nm,0.6s						
NKL	**Nikolayevsk**	**16.13**	**0**	*e*P	Pn	09 51 54.0	-6.4
PETK	**Petropavlovsk-**	**20.03**	**31**	P	**P**	**09 52 46.0**	**-0.7**
	comp=Z,3.7nm,0.8s,baz=214,slow=10,SNR=3.0						
PETK	**Petropavlovsk-**	**20.03**	**31**	P	**P**	**09 52 46.0**	**-0.7**
PETK				pmax	pmax		
	comp=Z,4.0nm,0.8s						
PET	**Petropavlovsk**	**20.37**	**33**	*e*P	**P**	**09 52 48.5**	**-1.9**
PET				pmax	pmax		
	comp=Z,97nm,1.5s						
MA2	**Magadan**	**23.51**	**13**	P	**P**	**09 53 21.9**	**-1.7**
	comp=Z,4.9nm,0.6s,baz=226,slow=11,SNR=3.9						
YAK	**Yakutsk**	**25.95**	**348**	*i* P	**P**	**09 53 46.5**	**+0.4**
YAK				pmax	pmax		
	comp=Z,25nm,0.8s						
ULN	**Ulaanbaatar**	**26.83**	**304**	*ce*P	**P**	**09 53 53.5**	**-0.9**
ULN				pmax	pmax		
	comp=Z,7.0nm,1.2s						
ULN	**Ulaanbaatar**	**26.83**	**304**	*e*P	**P**	**09 53 54.1**	**-0.3**
	comp=Z,4.7nm,0.9s						
SEY	**Seymchan**	**26.94**	**12**	P	**P**	**09 53 55.6**	**+0.6**
	comp=Z,7.3nm,0.8s,baz=197,slow=6.8,SNR=22						
BOD	**Bodaibo**	**27.20**	**328**	*e*P	**P**	**09 53 54.6**	**-2.8**
BOD				pmax	pmax		
	comp=Z,3.0nm,1.3s						
SONM	**Songino Array**	**27.26**	**304**	P	**P**	**09 53 57.6**	**-0.6**
	comp=Z,5.9nm,0.7s,baz=108,slow=8.6,SNR=25						
SONM				PcP	**PcP**	**09 57 18.0**	**+0.1**
	comp=Z,1.0nm,0.5s,baz=112,slow=2.2,SNR=5.7						
H11N2	**WAKE ISLAND Hy**	**28.70**	**120**	T	T	10 24 45.2	
	baz=317,slow=75,SNR=52						
H11N1	**WAKE ISLAND Hy**	**28.70**	**120**	T	T	10 24 45.0	
	baz=317,slow=75,SNR=75						
H11N3	**WAKE ISLAND Hy**	**28.71**	**120**	T	T	10 24 55.1	
	baz=317,slow=75,SNR=49						
H11S1	**WAKE ISLAND Hy**	**29.40**	**122**	T	T	10 25 39.3	
	baz=318,slow=76,SNR=71						
H11S3	**WAKE ISLAND Hy**	**29.40**	**122**	T	T	10 25 40.5	
	baz=318,slow=76,SNR=73						
H11S2	**WAKE ISLAND Hy**	**29.41**	**122**	T	T	10 25 37.7	
	baz=318,slow=76,SNR=73						
ZAK	**Zakamensk**	**29.77**	**309**	*e*P	**P**	**09 54 20.0**	**-0.6**
ZAK				pmax	pmax		
	comp=Z,3.0nm,0.9s						
TLY	**Talaya**	**29.86**	**311**	*e*P	P	09 54 33.7	+13
TLY				pmax	pmax		
	comp=Z,5.0nm,0.8s						
BILL	**Bilibino**	**34.23**	**17**	↑*e*P	**P**	**09 55 00.1**	**+0.8**
BILL				*e*		09 56 09.7	
BILL				pmax	pmax		
	comp=E,6.0nm,1.1s						
BILL				MLR	MLR		
	comp=Z,1μm,15.0s						
TIXI	**Tiksi**	**35.23**	**354**	P	**P**	**09 55 07.4**	**-0.5**
	comp=Z,3.9nm,0.7s,baz=159,slow=7.3,SNR=7.8						
TIXI	**Tiksi**	**35.23**	**354**	↑*i*P	**P**	**09 55 07.6**	**-0.3**
TIXI				pmax	pmax		
	comp=Z,7.0nm,1.0s						
JAY	**Jayapura**	**39.33**	**180**	LR	LR	10 09 52.6	
	comp=Z,29nm,20.2s,baz=328,slow=33						
CMAR	**Chiang Mai Arr**	**40.87**	**255**	P	**P**	**09 55 57.0**	**+0.9**
	comp=Z,1.0nm,0.5s,baz=43,slow=9.7,SNR=4.4						
CMAR	**Chiang Mai Arr**	**40.87**	**255**	P	**P**	**09 55 57.0**	**+0.9**
CMAR				pmax	pmax		
	comp=Z,1.0nm,0.6s						
ZALV	**Zalesovo Beam**	**41.45**	**312**	P	**P**	**09 56 00.1**	**-0.4**
	comp=Z,4.7nm,0.6s,baz=90,slow=7.2,SNR=13						
ZALV				PcP	**PcP**	**09 57 57.6**	**-0.5**
	comp=Z,2.6nm,0.6s,baz=84,slow=2.6,SNR=6.7						
MKAR	**Makanchi Array**	**43.58**	**302**	P	**P**	**09 56 18.3**	**+0.4**
	comp=Z,2.9nm,0.6s,baz=87,slow=9.9,SNR=28						
MKAR				PcP	**PcP**	**09 58 05.1**	**-0.3**
	comp=Z,1.2nm,0.7s,baz=86,slow=5.9,SNR=2.8						
KURK	**Kurchatov**	**45.43**	**308**	*e*P	**P**	**09 56 32.2**	**-0.4**
KURK				pmax	pmax		
	comp=Z,25nm,0.8s						
**K

comp=Z,18nm,0.8s
WRA Warramunga Arr 56.96 187 P **P** 09 57 58.8 -0.6
comp=Z,15nm,0.7s,baz=4.1,slow=7.4,SNR=52
WRA Warramunga Arr 56.96 187 P **P** 09 57 58.8 -0.6
WRA pmax pmax
comp=Z,14nm,0.7s
ABKAR Akbulak array 57.46 310 *e*P **P** 09 58 02.2 -0.4
comp=Z,7.5nm,0.6s
AKTO Aktyubinsk 58.20 312 P **P** 09 58 07.6 -0.3
comp=Z,2.9nm,0.7s,baz=61,slow=10,SNR=9.4
ASAR Alice Springs 60.69 187 P **P** 09 58 25.1 -0.3
comp=Z,6.2nm,0.7s,baz=15,slow=6.3,SNR=55
RES Resolute Bay 62.78 14 P **P** 09 58 38.9 +0.1
comp=Z,1.7nm,0.5s,baz=308,slow=5.8,SNR=20
GEYT Alibeck 63.28 299 P **P** 09 58 42.6 -0.2
comp=Z,3.7nm,0.6s,baz=74,slow=5.1,SNR=6.1
ARCES ARCESS Array B 63.78 339 P **P** 09 58 45.6 0.0
comp=Z,6.1nm,0.8s,baz=51,slow=9.6,SNR=6.2
YKA Yellowknife Ar 64.15 30 P **P** 09 58 48.2 +0.1
comp=Z,1.3nm,0.6s,baz=302,slow=6.4,SNR=24
DAG Danmarks Havn 65.73 355 *i* P **P** 09 58 57.2 -0.9
comp=Z,4.5nm,0.6s
DAG Danmarks Havn 65.73 355 *i* P **P** 09 58 57.2 -0.9
DAG pmax pmax
comp=Z,3.0nm,0.6s
LPSR Galich'ya Gora 67.90 320 *e*P **P** 09 59 13.5 +1.2
LPSR pmax pmax
comp=Z,8.0nm,0.6s
VSR Storozhevoye 68.52 319 *e*P **P** 09 59 15.5 -0.7
VSR pmax pmax
comp=Z,7.0nm,0.5s
FINES FINESS Array B 68.53 332 P **P** 09 59 15.8 -0.3
comp=Z,6.5nm,0.7s,baz=55,slow=7.2,SNR=20
STKA Stephens Creek 68.54 179 P **P** 09 59 16.4 -0.1
comp=Z,3.8nm,0.7s,baz=346,slow=7.2,SNR=6.2
KBZ Khabaz 70.42 310 P **P** 09 59 28.6 +0.5
comp=Z,5.3nm,1.0s,baz=155,slow=6.2,SNR=6.4
KIV Kislovodsk 70.43 311 *e*P **P** 09 59 28.7 +0.4
KIV pmax pmax
comp=Z,15nm,1.0s
SUMG Summit 70.70 360 *i* P **P** 09 59 30.5 +0.7
comp=Z,10nm,1.0s
SUMG Summit 70.70 360 *i* P **P** 09 59 30.5 +0.7
SUMG pmax pmax
comp=Z,10.0nm,1.0s
AKASG Malin Array Be 73.91 322 P **P** 09 59 48.5 -0.4
comp=Z,1.5nm,0.4s,baz=46,slow=6.2,SNR=13
KIEV Kiev 73.93 322 *i* P **P** 09 59 48.7 -0.3
KIEV pmax pmax
comp=Z,5.0nm,0.7s
NB2 NORSAR Subarra 73.95 337 P **P** 09 59 48.9 -0.1
comp=Z,1.5nm,0.7s,baz=39,slow=6.2
NOA NORSAR Array B 73.95 337 P **P** 09 59 48.8 -0.1
comp=Z,3.4nm,0.8s,baz=39,slow=5.8,SNR=11
FFC Flin Flon 74.07 32 *i* P **P** 09 59 51.4 +1.7
NVAR Mina Array Bea 75.51 53 P **P** 10 00 00.5 +1.7
comp=Z,0.8nm,0.7s,baz=282,slow=5.4,SNR=8.9
PDAR Pinedale Array 78.14 45 P **P** 10 00 14.1 +0.7
comp=Z,1.0nm,0.7s,baz=288,slow=3.5,SNR=11
BRTR Keskin Array B 78.38 311 P **P** 10 00 14.3 -0.4
comp=Z,1.6nm,0.7s,baz=84,slow=6.5,SNR=5.6
BRTR LR LR 10 40 28.7
comp=Z,544nm,19.9s,baz=214,slow=40
MLR Muntele Rosu 78.98 319 LR LR 10 39 17.4
comp=Z,458nm,19.6s,baz=236,slow=39
BRG Berggiesshubel 80.74 329 *e*P **P** 10 00 27.7 +0.5
comp=Z,2.7nm,0.8s
BRG Berggiesshubel 80.74 329 *e*P **P** 10 00 27.7 +0.5
BRG pmax pmax
comp=Z,3.0nm,0.8s
VRAC Vranov 80.78 327 LR LR 10 40 03.1
comp=Z,1μm,19.0s,baz=216,slow=38
CLL Collm 80.79 330 *i* P **P** 10 00 27.6 +0.2
comp=Z,6.0nm,0.9s
CLL Lm MLR 10 40 00.0
comp=Z,2μm,21.0s
CLL Collm 80.79 330 *i* P **P** 10 00 27.6 +0.2
CLL pmax pmax
comp=Z,6.0nm,0.9s
CLL MLR MLR
comp=Z,2μm,21.0s
KHC Kasperske Hory 82.22 328 *e*P **P** 10 00 35.5 +0.4
KHC Kasperske Hory 82.22 328 *e*P **P** 10 00 35.5 +0.4
GERES GERESS Array B 82.38 328 P **P** 10 00 35.6 -0.4
comp=Z,1.0nm,0.5s,baz=40,slow=5.2,SNR=8.6
BFO Black Forest 85.00 330 *i* P **P** 10 00 50.0 +0.6
ANMO Albuquerque 85.09 49 P **P** 10 00 51.9 +1.6
ANMO pmax pmax
comp=Z,4.0nm,1.9s
SCHQ Schefferville 85.53 16 LR LR 10 40 55.7
comp=Z,960nm,21.3s,baz=164,slow=37
TXAR Lajitas Array 90.64 52 P **P** 10 01 18.0 +1.1
comp=Z,1.5nm,0.7s,baz=293,slow=3.0,SNR=19
VNDA Vanda 115.01 175 PKP **PKPdf** 10 06 53.1 -0.6
comp=Z,0.4nm,0.7s,baz=326,slow=2.1,SNR=3.5
TORD Torodi Ar. Bea 116.88 314 PKP **PKPdf** 10 06 58.4 -0.8
comp=Z,0.5nm,0.9s,baz=27,slow=2.9,SNR=3.4
LPAZ La Paz 147.26 59 PKPbc **PKPbc** 10 07 59.1 +0.4
comp=Z,6.9nm,0.8s,baz=9.7,slow=4.1,SNR=18

JMA 11 09:50:02.7±0.1, 37.06N×140.69E, h10km±4km, M3.3, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JFK	**Kawauchi**	**0.34**	**26**	P	Pg	09 50 09.5	0.0
JFK				S	Sg	09 50 14.3	+0.3
JHO	**Hitachi**	**0.46**	**192**	S	Sg	09 50 18.2	+0.5
JFT	**Otama**	**0.54**	**328**	S	Sg	09 50 20.8	+0.5
JMM	**Marumori**	**0.81**	**6**	P	Pg	09 50 18.1	-0.2
JMM				S	Sg	09 50 29.3	+0.4
MAT	**Matsushiro**	**2.06**	**256**	P	Pb	09 50 41.0	+0.8
MAT				S	Sb	09 51 07.0	+1.2

IDC ***11*** *09:52:20.8±0.9, 37.13N×141.51E, h0km, mb3.5/7, mb1 3.7/9, mb1mx3.5/49, mbtmp3.6/9, ML3.5/2, Error ellipse: s-maj=23.0km s-min=15.3km az=152.0*
ISCJB ***11*** *09:52:24.0±0.7, 37.10N±0.04×141.60E±0.06, h33km, mb3.5/7, Error ellipse: s-maj=7.1km s-min=6.4km az=177.4*
JMA ***11*** *09:52:26.9±0.2, 37.18N×141.43E, h42km±2km, M3.9*
JMA Felt III J1.
ISC 11 09:52:25.6±0.8, 37.11N±0.05×141.50E±0.07, h33km, n16, σ0963/20, mb3.5/7, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JFK	**Kawauchi**	**0.56**	**297**	P	Pn	09 52 37.4	+0.1
JFK				S	Sb	09 52 44.7	-0.4
ONAJ	**Iwakimizuishiy**	**0.56**	**269**	P	Pn	09 52 38.0	+0.7
ONAJ				S	Sn	09 52 45.7	+0.3
JHO	**Hitachi**	**0.90**	**236**	P	Pb	09 52 42.7	0.0
JHO				S	Sn	09 52 54.1	+0.4
JMM	**Marumori**	**0.94**	**324**	S	Sn	09 52 53.3	-1.4
JFT	**Otama**	**1.01**	**294**	S	Sn	09 52 56.8	+0.2
JIO	**Ouri**	**1.34**	**355**	P	Pn	09 52 48.9	+0.8
MJAR	**Matsushiro Arr**	**2.70**	**259**	Pn	Pn	09 53 06.8	+0.1
	10nm,0.3s,baz=66,slow=27,SNR=11						
MJAR				Lg	Lg	09 53 45.6	
	11nm,0.3s,baz=203,slow=21,SNR=4.4						
JHJ	**Hachijo jima 2**	**4.22**	**200**	Pn	Pn	09 53 26.9	-0.8
	5.2nm,0.3s,baz=83,slow=21,SNR=5.9						
JHJ				Sn	Sn	09 54 16.5	+0.6
	68nm,0.3s,baz=227,slow=21,SNR=8.0						
SONM	**Songino Array**	**27.80**	**304**	P	P	09 58 12.1	+0.4
	0.3nm,0.3s,baz=117,slow=9.4,SNR=3.7						
MKAR	**Makanchi Array**	**44.13**	**302**	P	P	10 00 30.8	-0.1
	0.2nm,0.3s,baz=65,slow=6.2,SNR=3.2						
KURBB	**Kurchatov Arra**	**46.01**	**308**	P	P	10 00 45.1	-0.6
	0.4nm,0.4s,baz=80,slow=7.6,SNR=4.0						
ILAR	**Eielson Array**	**49.39**	**32**	P	P	10 01 11.8	+0.1
	0.5nm,0.7s,baz=266,slow=6.1,SNR=7.1						
WRA	**Warramunga Arr**	**57.15**	**188**	P	P	10 02 09.3	+0.2
	0.4nm,0.6s,baz=6.0,slow=7.4,SNR=4.8						
YKA	**Yellowknife Ar**	**63.71**	**30**	P	P	10 02 52.8	-0.7
	0.2nm,0.7s,baz=298,slow=6.6,SNR=4.4						
TXAR	**Lajitas Array**	**90.02**	**52**	P	P	10 05 23.1	+0.8
	0.1nm,0.5s,baz=339,slow=4.8,SNR=2.9						
LPAZ	**La Paz**	**146.60**	**60**	PKPbc	**PKPbc**	10 12 04.5	-0.4
	0.6nm,0.6s,baz=19,slow=6.5,SNR=4.6						

ISCJB ***11*** *09:54:59.7±0.5, 37.11N±0.04×140.75E±0.06, h20km±3km, mb4.1/23, Error ellipse: s-maj=8.7km s-min=6.1km az=7.3*
JMA ***11*** *09:54:59.9, 37.07N×140.68E, h8km±1km, M4.3*
JMA Felt III J1.
IDC ***11*** *09:55:00.8±4.7, 37.10N×140.57E, h15km±29km, mb4.0/21, mb1 4.2/22, mb1mx4.0/46, mbtmp4.1/22, ML3.6/1, Error ellipse: s-maj=18.0km s-min=13.3km az=102.0*
NEIC ***11*** *09:55:05.7±0.9, 37.04N×140.55E, h57km±8km, mb4.2/2, Error ellipse: s-maj=9.4km s-min=7.5km az=87.0*
NEIC Recorded [3 JMA] in Fukushima.
ISC 11 09:54:59.3±1.3, 37.11N±0.05×140.59E±0.07, h6km±9km, n43, σ0977/36, mb4.0/23, 3C, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.16**	**91**	⇑P	**Pg**	**09 55 02.3**	**-0.3**
ONAJ				S	**Sg**	**09 55 04.1**	**-0.8**
JFK	**Kawauchi**	**0.34**	**41**	⇑P	**Pg**	**09 55 06.6**	**+0.6**
JFK				S	**Sg**	**09 55 11.1**	**+0.5**
JFT	**Otama**	**0.46**	**334**	⇑P	**Pb**	**09 55 10.3**	**+0.4**
JFT				S	**Sb**	**09 55 17.4**	**+0.4**
MJAR	**Matsushiro Arr**	**1.99**	**254**	Pn	**Pb**	**09 55 35.1**	**-0.9**
	30nm,0.3s,baz=94,slow=16,SNR=13						
MJAR				Lg	Lg	09 56 02.4	
	58nm,0.3s,baz=88,slow=26,SNR=17						
MAJO	**Matsushiro**	**2.00**	**254**	*e*Pn	**Pb**	**09 55 35.7**	**-0.3**
JHJ	**Hachijo jima 2**	**4.03**	**190**	Pn	**Pn**	**09 56 02.7**	**+1.1**
	12nm,0.3s,baz=55,slow=18,SNR=3.1						
JHJ				Sn	**Sn**	**09 56 51.4**	**+2.2**
	27nm,0.3s,baz=65,slow=23,SNR=6.5						
JHJ2	**Mitsune**	**4.03**	**189**	Pn	**Pn**	**09 56 03.5**	**+1.9**
JNU	**Nakatsue**	**8.89**	**246**	Pn	Pn	09 57 12.4	+4.0
	0.3nm,0.3s,baz=45,slow=15,SNR=3.4						
USRK	**Ussuriysk Ar.**	**9.64**	**320**	Pn	Pn	09 57 25.0	+6.5
	0.2nm,0.3s,baz=134,slow=13,SNR=21						
KSRS	**Korea Array**	**10.11**	**276**	Pn	Pn	09 57 32.3	+7.4
	0.2nm,0.3s,baz=93,slow=14,SNR=16						
KSAR	**Wonju Array Be**	**10.14**	**276**	Pn	Pn	09 57 32.3	+6.9
KLR	**Kul'dur**	**13.72**	**335**	Pn	P	09 58 19.3	-3.8
	0.1nm,0.3s,baz=141,slow=13,SNR=5.4						
MA2	**Madan**	**23.43**	**13**	P	**P**	**10 00 09.5**	**+0.5**
	6.2nm,0.7s,baz=202,slow=10,SNR=5.2						
SEY	**Seymchan**	**26.85**	**12**	P	**P**	**10 00 41.5**	**+1.2**
	2.3nm,0.7s,baz=193,slow=8.8,SNR=8.0						
SONM	**Songino Array**	**27.20**	**304**	P	**P**	**10 00 44.3**	**+0.4**
	2.1nm,0.8s,baz=104,slow=9.1,SNR=8.9						
H11N2	**WAKE ISLAND Hy**	**28.75**	**120**	T	T	10 30 47.1	
	baz=313,slow=75,SNR=11						
H11N1	**WAKE ISLAND Hy**	**28.76**	**120**	T	T	10 30 47.8	
	baz=313,slow=75,SNR=11						
H11N3	**WAKE ISLAND Hy**	**28.77**	**120**	T	T	10 30 48.6	
	baz=313,slow=75,SNR=11						
H11S1	**WAKE ISLAND Hy**	**29.45**	**122**	T	T	10 31 38.8	
	baz=314,slow=76,SNR=14						
H11S3	**WAKE ISLAND Hy**	**29.45**	**122**	T	T	10 31 39.3	
	baz=314,slow=76,SNR=11						
H11S2	**WAKE ISLAND Hy**	**29.47**	**122**	T	T	10 31 40.1	
	baz=314,slow=76,SNR=11						
TIXI	**Tiksi**	**35.14**	**354**	P	**P**	**10 01 52.6**	**-0.7**
	0.5nm,0.3s,baz=148,slow=6.3,SNR=3.7						
ZALV	**Zalesovo Beam**	**41.38**	**312**	P	**P**	**10 02 45.8**	**-0.3**
	1.3nm,0.6s,baz=83,slow=7.4,SNR=4.3						
MKAR	**Makanchi Array**	**43.52**	**302**	P	**P**	**10 03 03.8**	**+0.2**
	1.4nm,0.6s,baz=89,slow=8.7,SNR=11						
KURK	**Kurchatov**	**45.37**	**308**	P	**P**	**10 03 18.3**	**0.0**
KURBB	**Kurchatov Arra**	**45.44**	**308**	P	**P**	**10 03 18.3**	**-0.5**
	3.5nm,0.7s,baz=84,slow=7.9,SNR=12						
ILAR	**Eielson Array**	**49.78**	**32**	P	**P**	**10 03 51.7**	**-0.7**
	1.5nm,0.8s,baz=272,slow=6.8,SNR=17						
BVAR	**Borovoye Array**	**50.04**	**312**	P	**P**	**10 03 54.3**	**-0.2**
	2.1nm,0.8s,baz=111,slow=8.2,SNR=5.8						
KKAR	**Karatay Array**	**52.52**	**300**	*e*P	**P**	**10 04 12.7**	**-0.6**
	2.4nm,0.8s						
INK	**Inuvik**	**54.62**	**27**	P	**P**	**10 04 28.3**	**+0.1**
	0.9nm,0.7s,baz=279,slow=5.2,SNR=4.7						
WRA	**Warramunga Arr**	**57.05**	**187**	P	**P**	**10 04 45.4**	**-0.8**
	9.4nm,0.7s,baz=4.1,slow=7.3,SNR=71						
ABKAR	**Akbulak array**	**57.39**	**310**	*e*P	**P**	**10 04 48.2**	**-0.2**
	1.0nm,0.5s						
ASAR	**Alice Springs**	**60.77**	**187**	P	**P**	**10 05 11.6**	**-0.5**
	2.8nm,0.7s,baz=16,slow=7.0,SNR=31						
RES	**Resolute Bay**	**62.69**	**14**	P	**P**	**10 05 24.1**	**-0.3**
	2.5nm,1.0s,baz=312,slow=5.7,SNR=9.3						
ARCES	**ARCESS Array B**	**63.70**	**339**	P	**P**	**10 05 31.2**	**0.0**
	2.4nm,0.8s,baz=51,slow=7.1,SNR=3.8						
YKA	**Yellowknife Ar**	**64.08**	**30**	P	**P**	**10 05 33.4**	**-0.3**
	0.4nm,0.7s,baz=306,slow=7.0,SNR=9.0						
FINES	**FINESS Array B**	**68.44**	**332**	P	**P**	**10 06 01.5**	**-0.2**
	2.6nm,0.7s,baz=44,slow=6.4,SNR=8.2						
AKASG	**Malin Array Be**	**73.84**	**322**	P	**P**	**10 06 34.0**	**-0.6**
	0.5nm,0.4s,baz=49,slow=6.0,SNR=3.6						
NOA	**NORSAR Array B**	**73.87**	**337**	P	**P**	**10 06 34.2**	**-0.4**
	1.0nm,0.7s,baz=41,slow=5.9,SNR=3.6						
NVAR	**Mina Array Bea**	**75.47**	**53**	P	**P**	**10 06 45.5**	**+0.9**
	1.5nm,0.7s,baz=291,slow=5.4,SNR=13						
PDAR	**Pinedale Array**	**78.08**	**45**	P	**P**	**10 06 59.4**	**+0.1**
	0.9nm,0.7s,baz=241,slow=0.9,SNR=7.2						
TXAR	**Lajitas Array**	**90.59**	**52**	P	**P**	**10 08 03.1**	**+0.2**
	0.5nm,0.8s,baz=291,slow=3.8,SNR=7.2						
LPAZ	**La Paz**	**147.22**	**58**	PKPbc	**PKPbc**	**10 14 44.0**	**-0.8**
	2.2nm,0.8s,baz=342,slow=3.2,SNR=8.5						

ISCJB ***11*** *09:57:25.5±0.7, 38.24N±0.04×141.90E±0.09, h71km±5km, mb3.7/12, Error ellipse: s-maj=12.8km s-min=5.9km az=19.1*
JMA ***11*** *09:57:26.9±0.1, 38.26N×141.87E, h62km±1km, M4.1*
JMA Felt I J1.
IDC ***11*** *09:57:26.4±0.7, 38.18N×141.65E, h64km±6km, mb3.5/12, mb1 3.7/13, mb1mx3.5/43, mbtmp3.8/13, Error ellipse: s-maj=22.3km s-min=11.5km az=103.0*
ISC 11 09:57:26.5±0.7, 38.21N±0.04×141.91E±0.07, h66km±6km, n31, σ1903/40, mb3.8/12, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**0.50**	**299**	P	**Pn**	**09 57 38.7**	**-0.2**
JIO				S	**Sn**	**09 57 46.9**	**-1.1**
OFUJ	**Ofunato**	**0.89**	**348**	P	**Pn**	**09 57 42.9**	**-0.5**
OFUJ				S	**Sn**	**09 57 54.6**	**-1.2**
JMK	**Ichinoseki**	**0.92**	**324**	P	**Pn**	**09 57 43.5**	**-0.2**
JMK				S	**Sn**	**09 57 55.3**	**-1.1**
JMM	**Marumori**	**0.94**	**249**	P	**Pn**	**09 57 44.0**	**0.0**
JMM				S	**Sn**	**09 57 56.4**	**-0.6**
JOU	**Okura**	**0.99**	**279**	P	**Pn**	**09 57 44.6**	**0.0**
JOU				S	**Sn**	**09 57 57.6**	**-0.5**
JFK	**Kawauchi**	**1.17**	**225**	P	**Pn**	**09 57 47.5**	**+0.5**
JFK				S	**Sn**	**09 58 02.4**	**0.0**
JOM	**Ohasama**	**1.35**	**339**	P	**Pn**	**09 57 49.2**	**-0.1**
JOM				S	**Sn**	**09 58 05.6**	**-0.8**
JYK	**Kaneyama**	**1.41**	**301**	P	**Pn**	**09 57 49.9**	**-0.1**
JYK				*e*S	**Sn**	**09 58 07.7**	**0.0**
JFT	**Otama**	**1.42**	**241**	P	**Pn**	**09 57 51.1**	**+0.8**
JFT				S	**Sn**	**09 58 09.0**	**+0.8**
JYS	**Shirataka**	**1.45**	**271**	P	**Pn**	**09 57 51.0**	**+0.4**
JYS				*e*S	**Sn**	**09 58 09.1**	**+0.3**
JRG	**Rokugo**	**1.55**	**320**	P	**Pn**	**09 57 52.4**	**+0.5**
JHJ	**Hachijo jima 2**	**5.37**	**199**	P	**Pn**	**09 58 43.5**	**-0.4**
	27nm,0.3s,baz=124,slow=22,SNR=6.5						
JHJ				S	**Sn**	**09 59 40.2**	**-4.2**
	26nm,0.3s,baz=36,slow=23,SNR=7.8						
H11N2	**WAKE ISLAND Hy**	**28.44**	**123**	T	T	10 33 41.9	
	baz=316,slow=75,SNR=10						
H11N1	**WAKE ISLAND Hy**	**28.45**	**123**	T	T	10 33 42.3	
	baz=316,slow=75,SNR=12						
H11N3	**WAKE ISLAND Hy**	**28.45**	**123**	T	T	10 33 40.2	
	baz=316,slow=75,SNR=10.0						
H11S1	**WAKE ISLAND Hy**	**29.19**	**125**	T	T	10 34 41.0	
	baz=318,slow=76,SNR=15						
H11S3	**WAKE ISLAND Hy**	**29.19**	**125**	T	T	10 34 39.6	
	baz=318,slow=76,SNR=19						
H11S2	**WAKE ISLAND Hy**	**29.21**	**125**	T	T	10 34 42.9	
	baz=318,slow=76,SNR=19						
ZALV	**Zalesovo Beam**	**41.42**	**311**	P	**P**	**10 05 04.7**	**-1.6**
	0.8nm,0.4s,baz=79,slow=7.5,SNR=2.9						
ZALV				pP	**pP**	**10 05 20.8**	**-1.8**
	1.1nm,0.7s,baz=81,slow=9.2,SNR=2.7						
MKAR	**Makanchi Array**	**43.84**	**301**	P	**P**	**10 05 25.8**	**-0.2**
	0.4nm,0.5s,baz=92,slow=9.1,SNR=3.6						
ILAR	**Eielson Array**	**48.29**	**33**	P	**P**	**10 06 01.7**	**+1.0**
	0.3nm,0.8s,baz=279,slow=7.3,SNR=3.6						
ILAR				pP	**pP**	**10 06 18.4**	**+1.0**
	0.4nm,0.6s,baz=269,slow=5.9,SNR=3.9						
WRA	**Warramunga Arr**	**58.28**	**188**	P	**P**	**10 07 14.5**	**+0.1**
	2.1nm,0.5s,baz=6.0,slow=7.2,SNR=10.0						
RES	**Resolute Bay**	**61.37**	**15**	P	**P**	**10 07 35.0**	**0.0**
	0.8nm,1.0s,baz=307,slow=6.6,SNR=5.4						
ASAR	**Alice Springs**	**62.01**	**188**	P	**P**	**10 07 40.2**	**+0.4**
	0.9nm,0.6s,baz=12,slow=6.2,SNR=10						
YKA	**Yellowknife Ar**	**62.60**	**31**	P	**P**	**10 07 43.4**	**0.0**
	0.1nm,0.5s,baz=300,slow=5.8,SNR=3.3						
ARCES	**ARCESS Array B**	**63.04**	**339**	P	**P**	**10 07 45.6**	**-0.6**
	2.0nm,0.8s,baz=49,slow=7.5,SNR=4.7						
FINES	**FINESS Array B**	**67.96**	**332**	P	**P**	**10 08 17.9**	**-0.1**
	1.8nm,0.6s,baz=46,slow=8.2,SNR=5.7						
NOA	**NORSAR Array B**	**73.25**	**337**	P	**P**	**10 08 50.0**	**-0.3**
	0.7nm,0.7s,baz=41,slow=5.8,SNR=3.7						
PDAR	**Pinedale Array**	**76.56**	**46**	P	**P**	**10 09 10.5**	**+0.4**
	0.3nm,0.5s,baz=291,slow=2.5,SNR=4.5						
PDAR				pP	**pP**	**10 09 28.4**	**+0.5**
	0.3nm,0.6s,baz=288,slow=1.4,SNR=3.5						
TXAR	**Lajitas Array**	**89.09**	**53**	P	**P**	**10 10 15.8**	**+0.9**
	0.4nm,0.6s,baz=292,slow=2.9,SNR=6.4						
TXAR				pP	**pP**	**10 10 34.9**	**+1.8**
	0.3nm,0.6s,baz=284,slow=2.3,SNR=2.8						
LPAZ	**La Paz**	**145.75**	**59**	PKPbc	**PKPab**	**10 16 59.5**	**-0.1**
	0.5nm,0.5s,baz=32,slow=2.6,SNR=4.4						

BJI ***11*** *10:00:03.2, 36.82N×140.58E, h11km, mb4.7/38, mB5.2/4, Ms4.9/11, Ms7 4.7/9*
JMA ***11*** *10:00:04.4, 36.94N×140.72E, h6km±1km, M4.7*
Broadband fault plane solution: P waves. NP1: ϕs271.00000°, δ61.00000°, λ-113.00000°. NP2: ϕs131.00000°, δ36.00000°, λ-55.00000°. Principal axes: T Plg13.0000°, Azm17.0000°; N Plg20.0000°, Azm282.0000°; P Plg66.0000°, Azm139.0000°;
JMA Felt III J1.
ISCJB ***11*** *10:00:04.6±0.5, 36.92N±0.02×140.73E±0.03, h19km±3km, mb4.5/86, MS4.9/5 Error ellipse: s-maj=4.5km s-min=3.1km az=27.9*
MOS ***11*** *10:00:06.9±1.1, 36.96N×140.71E, h35km, mb4.8/55, Error ellipse: s-maj=8.0km s-min=5.4km az=98.9*
NEIC ***11*** *10:00:08.8±0.5, 36.93N×140.61E, h36km±4km, mb4.7/38, Error ellipse: s-maj=5.0km s-min=3.7km az=120.0*
NEIC Felt in eastern Honshu. Recorded [3 JMA] in Fukushima and Ibaraki.
IDC ***11*** *10:00:08.4±4.0, 36.92N×140.61E, h33km±29km, mb4.2/28, mb1 4.3/30, mb1mx4.2/49, mbtmp4.4/30, ML3.9/2, Error ellipse: s-maj=14.6km s-min=11.2km az=99.0*
ISC 11 10:00:04.1±0.7, 36.95N±0.03×140.61E±0.03, h4km±4km, n217, σ1902/235, mb4.6/86, MS4.7/5, 13C-3D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.22**	**45**	⇑P	**Pg**	**10 00 08.2**	**-0.1**
JHO	**Hitachi**	**0.34**	**185**	⇑P	**Pb**	**10 00 11.4**	**-1.2**
JHO				*e*S	**Sg**	**10 00 16.1**	**+1.1**
JFK	**Kawauchi**	**0.47**	**27**	⇑P	**Pg**	**10 00 13.2**	**+0.1**
JSB	**Shiboa**	**0.55**	**272**	⇑P	**Pn**	**10 00 17.7**	**-1.0**
JSB				S	**Sn**	**10 00 26.6**	**-1.8**
JFT	**Otama**	**0.61**	**339**	⇑P	**Pb**	**10 00 17.3**	**0.0**
JFT				S	**Sb**	**10 00 26.2**	**-0.1**
JYT	**Yasato**	**0.79**	**205**	⇑P	**Pb**	**10 00 20.0**	**-0.3**
JYT				S	**Sb**	**10 00 31.2**	**-0.2**
JFY	**Yanaizu**	**0.85**	**303**	⇑P	**Pn**	**10 00 22.4**	**-0.5**
JFY				S	**Sb**	**10 00 34.6**	**+1.3**
JMM	**Marumori**	**0.93**	**9**	⇑P	**Pg**	**10 00 21.8**	**-0.1**
JMM				S	**Sg**	**10 00 34.2**	**+0.2**
MJAR	**Matsushiro Arr**	**1.97**	**259**	Pn	**Pb**	**10 00 40.2**	**-0.2**
	148nm,0.3s,baz=81,slow=16,SNR=109						
MJAR				Sn	**Sg**	**10 01 06.7**	**-0.6**
	353nm,0.3s,baz=88,slow=27,SNR=26						
MAJO	**Matsushiro**	**1.97**	**259**	*e*P	**Pb**	**10 00 40.8**	**+0.3**
MAJO				*e*		10 01 04.3	
MAJO	**Matsushiro**	**1.97**	**259**	*e*Pn	**Pb**	**10 00 40.8**	**+0.3**
MAJO				*e*Sn	**Sn**	**10 01 04.3**	**+0.9**
MAT	**Matsushiro**	**1.97**	**259**	P	**Pb**	**10 00 40.6**	**+0.1**
MAT				S	**Sg**	**10 01 07.8**	**+0.5**
INU	**Inuyama**	**3.31**	**242**	*e*Pn	**Pn**	**10 00 59.6**	**+2.9**
JHJ	**Hachijo jima 2**	**3.88**	**190**	Pn	**Pn**	**10 01 04.6**	**+0.2**
	90nm,0.3s,baz=17,slow=3.7,SNR=12						
JHJ				Sn	**Sn**	**10 01 50.6**	**+0.2**
	132nm,0.3s,baz=240,slow=19,SNR=6.9						
JHJ2	**Mitsune**	**3.88**	**190**	*e*Pn	**Pn**	**10 01 04.9**	**+0.4**
ERM	**Erimo**	**5.43**	**20**	*e*P	**Pn**	**10 01 26.0**	**+0.2**
ERM				*e*		10 02 30.2	
ERM	**Erimo**	**5.43**	**20**	*e*Pn	**Pn**	**10 01 26.0**	**+0.2**
ERM				*e*Sn	**Sn**	**10 02 30.2**	**+1.5**
ASAJ	**Asahikawa**	**7.32**	**11**	*e*Pn	**Pn**	**10 01 52.0**	**+0.3**
YUK	**Yuzh-Kuril'sk**	**8.13**	**28**	P	**Pn**	**10 02 03.9**	**+1.1**
YUK				*i* S	Sn	10 03 28.4	-6.7
YUK				pmax	pmax		
	comp=Z,70nm,0.5s						
YUK				pmax	pmax		
	comp=E,25nm,0.4s						
YUK				pmax	pmax		
	comp=N,32nm,0.3s						
SHO	**Shikotan**	**8.38**	**33**	*e*P	**Pn**	**10 02 06.3**	**0.0**
SHO				pmax	pmax		
	comp=Z,35nm,0.4s						
JNU	**Nakatsue**	**8.84**	**247**	Pn	Pn	10 02 18.8	+6.1
	comp=Z,0.6nm,0.3s,baz=77,slow=7.0,SNR=10						
JNU	**Nakatsue**	**8.84**	**247**	*e*Pn	**Pn**	**10 02 15.5**

comp=Z,59nm,0.8s
MA2 Magadan 23.58 13 *e*P P **10 05 15.2 -0.3**
comp=Z,59nm,0.8s
MA2 P P **10 05 16.0 +0.5**
YAK Yakutsk 26.02 348 *e*P P **10 05 39.2 +1.4**
YAK pmax pmax
comp=Z,13nm,0.7s
ENH Enshi 26.68 265 *e*P P **10 05 43.7 -0.5**
comp=Z,15nm,0.7s
ULN Ulaanbaatar 26.87 305 *e*P P **10 05 47.7 +1.8**
ULN pmax pmax
comp=Z,6.0nm,1.2s
ULN Ulaanbaatar 26.87 305 *e*P P **10 05 47.0 +1.1**
comp=Z,4.1nm,0.8s
SEY Seymchan 27.00 12 P P **10 05 46.8 +0.1**
comp=Z,5.6nm,0.9s,baz=191,slow=7.3,SNR=14
BOD Bodaibo 27.26 328 *e*P P **10 05 47.4 -1.7**
BOD pmax pmax
comp=Z,4.0nm,1.2s
SONA1 Songino Array 27.30 304 *e*P P **10 05 48.4 -1.3**
SONA1 *e*PcP PcP **10 09 09.2 0.0**
SONM Songino Array 27.30 304 P P **10 05 49.3 -0.5**
comp=Z,5.9nm,0.7s,baz=105,slow=8.5,SNR=27
SONM PcP PcP **10 09 09.6 +0.4**
comp=Z,2.6nm,0.6s,baz=152,slow=3.3,SNR=11
H11N2 WAKE ISLAND Hy 28.66 120 T T 10 35 46.5
baz=312,slow=75,SNR=109
H11N1 WAKE ISLAND Hy 28.67 120 T T 10 35 47.1
baz=312,slow=75,SNR=77
H11N3 WAKE ISLAND Hy 28.68 120 T T 10 35 47.8
baz=312,slow=75,SNR=69
H11S1 WAKE ISLAND Hy 29.36 122 T T 10 36 40.3
baz=314,slow=76,SNR=232
H11S3 WAKE ISLAND Hy 29.36 122 T T 10 36 39.0
baz=314,slow=76,SNR=141
H11S2 WAKE ISLAND Hy 29.37 122 T T 10 36 41.1
baz=314,slow=76,SNR=160
LZH Lanzhou 29.45 280 *e*P P **10 06 09.4 +0.4**
LZH pP sP 10 06 14.0 +3.2
LZH sP pP 10 06 16.5 +6.2
LZH PP **PnPn** **10 07 05.6 +3.0**
LZH pmax pmax
comp=Z,20nm,1.0s
LZH pmax pmax
comp=Z,69nm,5.2s
LZH LR LR
comp=Z,350nm,12.9s
LZH LR LR
comp=Z,370nm,13.2s
LZH LR LR
comp=Z,400nm,16.3s
GYA Guiyang 30.57 260 *e*P P **10 06 21.0 +2.0**
GYA pmax pmax
comp=Z,10.0nm,0.8s
CD2 Chengdu 31.03 270 P P **10 06 23.0 +0.1**
CD2 pmax pmax
comp=Z,1.0nm,0.5s
GTA Gaotai 31.97 287 *e*P P **10 06 29.9 -1.4**
GTA pP sP 10 06 34.4 +1.3
GTA sP pP 10 06 37.1 +4.6
GTA pmax pmax
comp=Z,5.0nm,0.8s
BILL Bilibino 34.29 17⇓ *i*P P **10 06 51.1 +0.1**
BILL *e* 10 08 07.4
BILL pmax pmax
comp=Z,7.0nm,1.2s
BILL MLR MLR
comp=Z,1μm,17.0s
BILL Bilibino 34.29 17 *e*P P **10 06 52.1 +1.0**
comp=Z,5.8nm,1.1s
KMI Kunming 34.31 261 P P **10 06 54.0 +2.1**
KMI pmax pmax
comp=Z,16nm,0.5s
KMI pmax pmax
comp=Z,1μm,13.6s
TIXI Tiksi 35.30 354 *e*P P **10 06 59.2 -0.5**
TIXI pmax pmax
comp=Z,2.0nm,0.7s
TIXI Tiksi 35.30 354 *e*P P **10 06 58.7 -1.0**
comp=Z,2.5nm,0.7s
WMQ Urumqi 40.30 297 P P **10 07 44.3 +1.9**
WMQ pP sP 10 07 49.0 +4.8
WMQ PcP PcP **10 09 47.8 +1.8**
WMQ pmax pmax
comp=Z,6.0nm,1.0s
CMAR Chiang Mai Arr 40.85 255 P P **10 07 48.0 +0.8**
comp=Z,0.6nm,0.4s,baz=46,slow=6.9,SNR=4.7
CMAR PcP PcP **10 09 49.2 +1.2**
comp=Z,1.4nm,0.5s,baz=3.5,slow=1.8,SNR=12
CM01 Chiang Mai Arr 40.86 255 *e*P P **10 07 48.6 +1.4**
CM01 *e*PcP PcP **10 09 48.6 +0.5**
ZAA0 Zalesovo Array 41.50 312 *e*P P **10 07 51.5 -0.5**
ZAA0 *e*P pP **10 07 52.2 -1.1**
ZAA0 *e*PcP PcP **10 09 48.9 -0.7**
ZALV Zalesovo Beam 41.50 312 P P **10 07 51.8 -0.2**
comp=Z,9.3nm,0.7s,baz=100,slow=7.1,SNR=23
ZALV PcP PcP **10 09 49.1 -0.4**
comp=Z,6.2nm,0.7s,baz=88,slow=3.0,SNR=11
NVS Novosibirsk 42.43 314 *e*P P **10 08 00.0 +0.4**
NVS *e* 10 09 51.8
NVS *e*S S **10 14 18.5 -3.2**
NVS pmax pmax
comp=E,6.0nm,1.1s
NVS pmax pmax
comp=Z,11nm,1.1s
NVS smax smax
comp=E,6.0nm,1.6s
NRIK Noril'sk 43.08 335 P P **10 08 04.7 0.0**
comp=E,2.8nm,0.5s,baz=122,slow=3.0,SNR=3.7
NRIK PcP PcP **10 09 54.9 +0.4**
comp=E,1.2nm,0.4s,baz=90,slow=5.7,SNR=4.5
MKAR Makanchi Array 43.62 302 P P **10 08 09.9 +0.5**
comp=E,4.9nm,0.7s,baz=89,slow=9.8,SNR=33
MKAR PcP PcP **10 09 56.6 -0.2**
comp=E,3.0nm,0.8s,baz=69,slow=4.7,SNR=8.1
MKAR Makanchi Array 43.62 302 *e*P P **10 08 09.6 +0.2**
MKAR PcP PcP **10 09 56.6 -0.2**
MAKZ Makanchi 43.83 302 *e*P P **10 08 11.4 +0.3**
MAKZ pmax pmax
comp=Z,6.0nm,0.8s
MAKZ Makanchi 43.83 302 *e*P P **10 08 11.4 +0.3**
comp=Z,5.7nm,0.8s
KSM Kuching 45.03 225 *e*P P **10 08 21.5 +0.5**
comp=Z,15nm,0.7s
KURK Kurchatov 45.48 308 *e*P P **10 08 23.4 -0.7**
KURK pmax pmax
comp=Z,23nm,0.9s
KURK Kurchatov 45.48 308 *e*P P **10 08 23.4 -0.7**
comp=Z,23nm,0.9s
ODAN Odare 45.77 273 *e*P P **10 08 27.0 -0.1**
comp=Z,11nm,0.5s
RAMN Ramite 46.37 274 *e*P P **10 08 31.7 -0.1**
comp=Z,46nm,0.9s
GUN Gumba 46.52 275 *e*P P **10 08 34.0 +0.9**
comp=Z,27nm,0.8s
KKN Kakani 47.05 275 *e*P P **10 08 37.1 0.0**
comp=Z,21nm,0.6s
GKN Gorkha 47.47 276 *e*P P **10 08 40.2 -0.1**
comp=Z,19nm,0.5s
CAST Castle Rocks 47.66 34 *e*P P **10 08 42.6 +1.5**
comp=Z,11nm,1.6s
MLY Manley 48.27 32 *e*P P **10 08 46.9 +1.1**
comp=Z,3.0nm,0.7s
KOLN Koldanda 48.40 276 *e*P P **10 08 47.5 -0.1**
comp=Z,11nm,0.8s
TRF Thorofare Moun 48.47 34 *e*P P **10 08 47.8 +0.2**
comp=Z,22nm,1.5s
PYUN Piuthan 48.74 277 *e*P P **10 08 50.4 +0.2**
comp=Z,76nm,1.0s
SOEI Soe 48.92 202 *e*P P **10 08 51.7 +0.2**
TKM2 Tokmak 2 49.10 298 *e*P P **10 08 53.6 +0.8**
TKM2 pmax pmax
comp=Z,18nm,1.3s
TKM2 Tokmak 2 49.10 298 *e*P P **10 08 53.6 +0.8**
comp=Z,18nm,1.3s
SML Sawmill 49.44 36 *e*P P **10 08 55.0 0.0**
SML pmax pmax
comp=Z,2.0nm,0.8s
SML Sawmill 49.44 36 *e*P P **10 08 55.0 0.0**
comp=Z,2.4nm,0.8s
KSH Kashi 49.85 294 P P 10 09 02.7 +4.2
KSH *e*SP sP 10 09 09.7 +9.4
KSH *e*ScP **ScP** **10 14 15.8 +0.4**
KSH PcS **PcS** **10 14 18.0 +2.0**
KSH S S **10 16 12.3 +3.3**
ILAR Eielson Array 49.91 32 P P **10 08 58.2 -0.2**
comp=Z,2.0nm,0.6s,baz=266,slow=5.4,SNR=17
ILB Eielson Array 49.91 32 *e*P P **10 08 60.0 +1.6**
AAK Ala-Archa 49.96 298 *i* P P **10 08 59.8 +0.5**
AAK pmax pmax
comp=Z,16nm,1.0s
AAK Ala-Archa 49.96 298 *e*P P **10 08 59.0 -0.4**
comp=Z,6.4nm,1.0s
BVA0 Borovoye Array 50.15 312⇑Pn P **10 09 00.1 -0.3**
comp=Z,6.2nm,0.9s,baz=124,slow=9.7,SNR=25
BVAR Borovoye Array 50.15 312 P P **10 08 59.9 -0.5**
comp=Z,4.6nm,0.8s,baz=72,slow=7.0,SNR=14
BRVK Borovoye 50.21 312 *e*P P **10 09 01.3 +0.5**
BRVK pmax pmax
comp=Z,9.0nm,0.8s
EKS2 Erkin-Say 50.46 298 *e*P P **10 09 03.5 +0.5**
EKS2 pmax pmax
comp=Z,7.0nm,0.5s
EKS2 Erkin-Say 50.46 298 *e*P P **10 09 03.5 +0.5**
comp=Z,6.6nm,0.5s
DIV Divide 50.73 37 *e*P P **10 09 02.0 -2.7**
comp=Z,19nm,0.8s
ZRNK Zerenda 50.99 312 *e*P P **10 09 06.7 0.0**
ZRNK pmax pmax
comp=Z,9.0nm,0.8s
ZRNK Zerenda 50.99 312 *e*P P **10 09 06.7 0.0**
comp=Z,9.0nm,0.8s
PSI Prapat 51.20 238 *e*P P **10 09 08.4 -0.5**
PSI pmax pmax
comp=Z,10.0nm,1.0s
PSI Prapat 51.20 238 *e*P P **10 09 08.4 -0.5**
comp=Z,10nm,1.0s
DOT Dot Lake 51.23 34 *e*P P **10 09 08.6 +0.2**
comp=Z,7.1nm,0.8s
KKAR Karatay Array 52.61 300 *e*P P **10 09 19.1 +0.1**
KKAR Karatay Array 52.61 300 *e*P P **10 09 19.1 +0.1**
GSI Gunungsitoli 53.20 238 *e*P P **10 09 24.0 +0.4**
comp=Z,30nm,0.8s
INK Inuvik 54.76 27 P P **10 09 34.6 +0.4**
comp=Z,1.6nm,0.7s,baz=265,slow=5.4,SNR=7.4
ARU Arti 56.00 318*c i*P P **10 09 43.2 -0.2**
ARU S S **10 17 29.8 -2.2**
ARU SS SS **10 21 17.3 -0.1**
ARU pmax pmax
comp=Z,11nm,0.8s
ARU Arti 56.00 318 *e*P P **10 09 43.4 0.0**
comp=Z,12nm,1.0s
FITZ Fitzroy Crossi 56.55 197 *e*P P **10 09 48.0 +0.3**
comp=Z,31nm,1.6s
WRAB Tennant Creek 56.88 187 *e*P P **10 09 49.3 -0.7**
WRAB pmax pmax
comp=Z,9.0nm,0.7s
WRAB Tennant Creek 56.88 187 *e*P P **10 09 49.3 -0.7**
comp=Z,9.1nm,0.7s
WB2 Warramunga Arr 56.89 187 *e*P P **10 09 49.0 -1.1**
comp=Z,11nm,0.8s
WRA Warramunga Arr 56.89 187 P P **10 09 49.0 -1.1**
comp=Z,9.0nm,0.6s,baz=3.5,slow=7.4,SNR=102
WRA Warramunga Arr 56.89 187 P P **10 09 49.0 -1.1**
WRA pmax pmax
comp=Z,9.0nm,0.6s
ABKAR Akbulak array 57.50 310 *e*P P **10 09 53.2 -1.0**
AS01 Alice Springs 60.61 187 *e*P P **10 10 14.5 -1.5**
AS31 Alice Springs 60.62 187 *e*P P **10 10 15.4 -0.7**
comp=Z,1.6nm,1.0s
ASAR Alice Springs 60.62 187 P P **10 10 15.2 -0.8**
comp=Z,4.2nm,0.9s,baz=18,slow=6.7,SNR=33
MBWA Marble Bar 61.06 202 *e*P P **10 10 18.6 -0.5**
comp=Z,10.0nm,0.8s
RES Resolute Bay 62.84 14 P P **10 10 30.9 +0.5**
comp=Z,2.1nm,0.7s,baz=304,slow=6.0,SNR=12
GEYT Alibeck 63.31 299 P P **10 10 34.7 +0.5**
comp=Z,5.6nm,0.7s,baz=35,slow=3.6,SNR=7.5
ARCES ARCESS Array B 63.85 339 P P **10 10 37.1 -0.1**
comp=Z,2.9nm,0.7s,baz=60,slow=8.1,SNR=14
YKA Yellowknife Ar 64.21 30 P P **10 10 39.2 -0.4**
comp=Z,0.8nm,0.7s,baz=303,slow=6.6,SNR=19
DAG Danmarks Havn 65.80 355 *i* P P **10 10 49.3 -0.5**
comp=Z,8.9nm,0.7s
DAG Danmarks Havn 65.80 355 *i* P P **10 10 49.3 -0.5**
DAG pmax pmax
comp=Z,6.0nm,0.7s
VRH Novokhopyorsk 67.21 318 *e*P P **10 10 57.9 -1.3**
VRH pmax pmax
comp=Z,6.0nm,0.5s
OBN Obninsk 67.78 323⇑ *e*P P **10 11 02.4 -0.3**
OBN *e* 10 13 29.7
OBN pmax pmax
comp=Z,3.0nm,0.7s
OBN MLR MLR
comp=Z,2μm,23.0s
STKA Stephens Creek 68.47 179 P P **10 11 06.9 -0.3**
comp=Z,3.4nm,0.8s,baz=11,slow=5.7,SNR=8.4
VSR Storozhevoye 68.57 319 *e*P P **10 11 06.6 -1.1**
VSR pmax pmax
comp=Z,8.0nm,0.6s
FIA1 FINESS Array S 68.59 332 *e*P P **10 11 07.1 -0.6**
FIA1 *e*P **pP** **10 11 07.6 -1.4**
FINES FINESS Array B 68.59 332 P P **10 11 07.4 -0.3**
comp=Z,8.2nm,0.7s,baz=56,slow=7.1,SNR=25
VSU Vasula 70.20 329 *e*P P **10 11 18.8 +1.1**
VSU pmax pmax
comp=Z,44nm,1.2s
KBZ Khabaz 70.47 310 P P **10 11 19.9 +0.3**
comp=Z,3.2nm,0.7s,baz=38,slow=5.6,SNR=8.0
KIV Kislovodsk 70.47 311 *e*P P **10 11 20.2 +0.4**
KIV pmax pmax
comp=Z,14nm,0.9s
SUMG Summit 70.77 360 *i* P P **10 11 21.8 +0.3**
comp=Z,15nm,1.0s
SUMG Summit 70.77 360 *e*P P **10 11 21.7 +0.3**
SUMG pmax pmax
comp=Z,16nm,1.0s
SUMG Summit 70.77 360 *e*P P **10 11 21.7 +0.3**
comp=Z,16nm,1.0s
NC405 NORSAR Array S 73.80 337 *e*P P **10 11 39.4 +0.1**
HFS Hagfors 73.90 335 P P **10 11 39.8 -0.1**
comp=Z,4.1nm,0.8s,baz=48,slow=6.4,SNR=4.7
AKASG Malin Array Be 73.97 322 P P **10 11 39.7 -0.7**
comp=Z,4.6nm,0.7s,baz=48,slow=6.1,SNR=19
AKBB Malin Array Si 73.97 322 *e*P P **10 11 40.1 -0.3**
AKBB pmax pmax
comp=Z,8.0nm,0.8s
AKBB Malin Array Si 73.97 322 *e*P P **10 11 40.1 -0.3**
comp=Z,7.6nm,0.8s
NC204 NORSAR Array S 73.97 337 *e*P P **10 11 40.6 +0.3**
KIEV Kiev 73.98 322 *e*P P **10 11 39.9 -0.6**
KIEV pmax pmax
comp=Z,7.0nm,0.8s
KIEV Kiev 73.98 322 *e*P P **10 11 39.9 -0.6**
comp=Z,7.4nm,0.8s
AK11 Malin Array Si 74.01 322 *e*P P **10 11 40.1 -0.6**
NB2 NORSAR Array B 74.02 337 P P **10 11 40.1 -0.5**
comp=Z,4.7nm,0.8s,baz=40,slow=6.2
NOA NORSAR Array B 74.02 337 P P **10 11 40.4 -0.2**
comp=Z,4.2nm,0.8s,baz=40,slow=5.8,SNR=14
NBO02 NORSAR Array S 74.12 337 *e*P P **10 11 40.8 -0.4**
FFC Flin Flon 74.12 32 *e*P P **10 11 41.7 +0.4**
NBO00 NORSAR Array S 74.16 337 *e*P P **10 11 41.4 0.0**
CMB Columbia Colle 74.44 54 *e*P P **10 11 44.4 +0.9**
CMB pmax pmax
comp=Z,3.0nm,0.9s
CMB Columbia Colle 74.44 54 *e*P P **10 11 44.4 +0.9**
comp=Z,3.4nm,0.9s
LRM Limekiln Ridge 74.66 44 *e*P P **10 11 45.0 +0.1**
DLMT Dillon 74.86 44 *e*P P **10 11 46.7 +0.7**
comp=Z,6.0nm,1.0s
NV01 Mina Array Sit 75.56 53 *e*P P **10 11 50.6 +0.5**
NVAR Mina Array Bea 75.56 53 P P **10 11 51.0 +0.8**
comp=Z,1.6nm,0.8s,baz=280,slow=6.2,SNR=9.6
H17A Grant Village 76.58 44 *e*P P **10 11 57.0 +1.0**
comp=Z,3.2nm,0.8s
IMW Indian Meadow 76.69 45 *e*P P **10 11 57.5 +0.9**
comp=Z,3.8nm,1.1s
BSD Bornholm Skovb 77.21 331 *i* P P **10 11 57.7 -1.2**
comp=Z,9.5nm,0.9s
BSD Bornholm Skovb 77.21 331 *i* P P **10 11 57.7 -1.2**
BSD pmax pmax
comp=Z,10.0nm,0.9s
DAC Darwin (Calif) 77.28 54 *e*P P **10 11 59.9 -0.1**
DAC pmax pmax
comp=Z,8.0nm,1.4s
DAC Darwin (Calif) 77.28 54 *e*P P **10 11 59.9 -0.1**
comp=Z,7.6nm,1.4s
R11A Troy Canyon, C 77.32 52 *e*P P **10 12 00.7 +0.6**
comp=Z,4.1nm,1.3s
KWP Kalwaria Pacla 77.82 324 *e*P P **10 12 03.3 +0.8**
KWP Kalwaria Pacla 77.82 324 *e*P P **10 12 03.3 +0.8**
BUR08 Bucovina Ar. S 77.97 321 *e*P P **10 12 03.7 +0.3**
BW06 Boulder Array 78.19 45 *e*P P **10 12 03.7 -1.2**
PDAR Pinedale Array 78.19 45 P P **10 12 04.7 -0.2**
comp=Z,0.6nm,0.6s,baz=284,slow=2.1,SNR=7.1
BRTR Keskin Array B 78.42 311 P P **10 12 06.8 +0.6**
comp=Z,1.9nm,0.9s,baz=118,slow=4.0,SNR=6.1
STHS Stebnicka Huta 78.66 325 *e*P P **10 12 08.1 +1.0**
STHS Stebnicka Huta 78.66 325 *e*P P **10 12 08.1 +1.0**
OJC Ojcow 78.75 326 *e*P P **10 12 07.6 0.0**
OJC Ojcow 78.75 326 *e*P P **10 12 07.6 0.0**
BR231 Keskin MP Arra 78.87 312 *e*P P **10 12 06.7 -1.9**
CRVS Cervenica-Dubn 78.92 324 *e*P P **10 12 09.1 +0.5**
CRVS Cervenica-Dubn 78.92 324 *e*P P **10 12 09.1 +0.5**
NIE Niedzica 79.09 325 *e*P P **10 12 11.3 +1.8**
NIE Niedzica 79.09 325 *e*P P **10 12 11.4 +1.9**
LCMT Little Creek M 79.61 51 *e*P P **10 12 13.6 +0.9**
comp=Z,3.1nm,1.0s
KSP Ksiaz 79.83 328 *e*P P **10 12 14.0 +0.5**
KSP Ksiaz 79.83 328 *e*P P **10 12 14.0 +0.5**
KNB Kanab 79.87 51 *e*P P **10 12 15.4 +1.2**
KNB pmax pmax
comp=Z,14nm,1.5s
KNB Kanab 79.87 51 *e*P P **10 12 15.4 +1.2**
comp=Z,14nm,1.5s
RSSD Black Hills 80.32 41 *e*P P **10 12 16.2 -0.4**
RSSD Black Hills 80.32 41 *e*P P **10 12 16.2 -0.4**
VYHS Vyhne 80.43 325 *e*P P **10 12 16.8 0.0**
VYHS Vyhne 80.43 325 *e*P P **10 12 16.8 0.0**
BRG Berggiesshubel 80.80 329 *e*P P **10 12 18.8 +0.1**
comp=Z,4.4nm,1.0s
BRG Berggiesshubel 80.80 329 *e*P P **10 12 18.8 +0.1**
BRG pmax pmax
comp=Z,4.0nm,1.0s
CLL Collm 80.85 330⇓ *i*P P **10 12 18.6 -0.3**
comp=Z,8.0nm,0.6s
CLL *i* 10 12 20.1
CLL *e* 10 12 29.0
CLL LmV 10 59 00.0
comp=Z,1μm,18.1s
CLL Collm 80.85 330⇓ *i*P P **10 12 18.6 -0.3**
CLL pmax pmax
comp=Z,8.0nm,0.6s
CLL MLR MLR
comp=Z,1μm,18.1s
PV05 Paradox Valley 81.47 48 *e*P P **10 12 23.9 +1.1**
PV01 Paradox Valley 81.75 48 *e*P P **10 12 25.1 +0.8**
KHC Kasperske Hory 82.28 328 *e*P P **10 12 26.8 +0.2**
KHC pmax pmax
comp=Z,1.0nm,0.7s
KHC Kasperske Hory 82.28 328 *e*P P **10 12 26.8 +0.2**
comp=Z,1.5nm,0.7s
GERES GERESS Array B 82.44 328 P P **10 12 27.2 -0.3**
comp=Z,1.5nm,0.5s,baz=22,slow=4.7,SNR=11
EKA Eskdalemuir Ar 83.00 340 P P **10 12 30.4 +0.2**
comp=Z,1.0nm,0.6s,baz=31,slow=4.6,SNR=3.3
BFO Black Forest 85.06 330*e*P P **10 12 41.1 +0.2**
ANMO Albuquerque 85.14 49 *e*P P **10 12 41.9 +0.2**
ANMO pmax pmax
comp=Z,2.0nm,1.1s
TX31 Lajitas Ar. Si 90.68 52 *e*P P **10 13 08.3 0.0**
TXAR Lajitas Array 90.68 52 P P **10 13 08.6 +0.2**
comp=Z,0.9nm,0.7s,baz=301,slow=3.3,SNR=11
TORD Torodi Ar. Bea 116.93 314 PKP **PKPdf** **10 18 49.0 -1.6**
comp=Z,0.3nm,0.4s,baz=47,slow=1.5,SNR=5.2
SDV Santo Domingo 125.80 39 *e*PKPdf **PKPdf** **10 19 07.6 -0.3**
DBIC Dimbokro 125.91 316 PKP **PKPdf** **10 19 06.2 -1.7**
comp=Z,4.3nm,0.8s,baz=136,slow=0.3,SNR=8.9
BOSA Boshof 125.92 259 PKP **PKPdf** **10 19 06.4 -1.2**
comp=Z,2.4nm,0.7s,baz=54,slow=2.0,SNR=5.4
SAML Samuel 144.76 44 *e*PKPdf **PKPab** **10 19 41.4 -0.1**
LPAZ La Paz 147.29 59 PKPbc **PKPbc** **10 19 49.8 -0.3**
comp=Z,5.4nm,0.8s,baz=343,slow=3.7,SNR=22
LPAZ La Paz 147.29 59 *e*PKPbc **PKPbc** **10 19 50.1 +0.1**

JMA 11 10:01:22.1, 36.90N×140.67E, h8km±1km, M3.3, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.23**	**27**	P	Pg	10 01 27.0	+0.3
ONAJ				S	Sg	10 01 30.4	+0.6
JHO	**Hitachi**	**0.30**	**196**	P	Pg	10 01 28.0	0.0
JHO				S	Sg	10 01 32.4	+0.4
JFK	**Kawauchi**	**0.49**	**19**	P	Pg	10 01 31.5	-0.2
JFK				S	Sg	10 01 38.4	+0.2
JFT	**Otama**	**0.67**	**337**	P	Pg	10 01 35.3	+0.2
JFT				S	Sg	10 01 44.4	+0.5

JMA 11 10:02:36.3, 37.03N×140.62E, h7km±2km, M3.5, 1C, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JFK	**Kawauchi**	**0.39**	**31**	S	Sg	10 02 49.6	+0.4
JHO	**Hitachi**	**0.42**	**186**	P	Pg	10 02 44.4	-0.1
JHO				S	Sg	10 02 51.0	+1.0
JFT	**Otama**	**0.54**	**335**	⇑P	Pg	10 02 47.0	+0.3
JFT				S	Sg	10 02 54.4	+0.7
JSB	**Shiboa**	**0.56**	**264**	P	Pb	10 02 47.9	-0.6
JSB				*e*S	Sb	10 02 55.8	-1.0
MAT	**Matsushiro**	**2.00**	**257**	P	Pn	10 03 09.6	-0.9
MAT				S	Sn	10 03 34.5	-1.3

*ISCJB **11** 10:05:05.9±0.6, 37.08N±0.03×140.69E±0.04, h15km±4km, mb3.8/14, MS4.1/1, Error ellipse: s-maj=6.2km s-min=4.6km az=28.9*
*JMA **11** 10:05:06.0, 37.07N×140.62E, h7km±2km, M4.3 Broadband fault plane solution: P waves. NP1: ϕs279.00000°, δ46.00000°, λ-103.00000°. NP2: ϕs117.00000°, δ46.00000°, λ-77.00000°. Principal axes: T Plg0.0000°, Azm18.0000°; N Plg9.0000°, Azm288.0000°; P Plg81.0000°, Azm108.0000°;*
JMA Felt III J1.
*IDC **11** 10:05:12.5±2.8, 37.06N×140.40E, h56km±26km, mb3.6/14, mb1 3.8/15, mb1mx3.6/56, mbtmp3.9/15, ML3.7/1, MS4.2/2, Ms1 4.3/2, ms1mx3.5/66 Error ellipse: s-maj=20.8km s-min=16.2km az=67.0*

ISC 11 10:05:06.3±1.0, 37.07N±0.03×140.60E±0.04, h8km±7km, n28, σ0.84/31, mb3.8/14, 5C, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.16**	**79**	⇑P	**Pg**	**10 05 09.3**	**-0.4**
JFK	**Kawauchi**	**0.37**	**37**	⇑P	**Pg**	**10 05 13.2**	**-0.3**
JFK				S	**Sg**	**10 05 18.5**	**+0.1**
JHO	**Hitachi**	**0.46**	**183**	⇑P	**Pg**	**10 05 14.9**	**-0.3**
JHO				*e*S	**Sg**	**10 05 21.4**	**+0.1**
JFT	**Otama**	**0.49**	**335**	⇑P	**Pg**	**10 05 16.0**	**+0.2**
JFT				S	**Sg**	**10 05 22.8**	**+0.5**
JSB	**Shiboa**	**0.55**	**259**	⇑P	**Pb**	**10 05 17.8**	**-0.4**
JSB				S	**Sg**	**10 05 25.4**	**+1.2**
JFY	**Yanaizu**	**0.79**	**295**	S	**Sg**	**10 05 32.0**	**+0.3**
JYT	**Yasato**	**0.90**	**201**	P	**Pg**	**10 05 23.2**	**-0.4**
JYT				S	**Sg**	**10 05 35.2**	**-0.2**
MJAR	**Matsushiro Arr**	**1.99**	**255**	P	**Pb**	**10 05 41.5**	**-1.2**
MJAR	34nm,0.3s,baz=74,slow=14,SNR=30			S	**Sb**	**10 06 07.5**	**-0.1**
MAT	**Matsushiro**	**1.99**	**255**	P	**Pb**	**10 05 41.6**	**-1.1**
MAT				S	**Sb**	**10 06 08.2**	**+0.5**
JHJ	**Hachijo jima 2**	**4.00**	**190**	P	**Pn**	**10 06 10.2**	**+2.4**
JHJ	14nm,0.3s,baz=45,slow=13,SNR=5.1			LR	LR	10 07 26.5	
JNU	**Nakatsue**	**8.89**	**247**	P	Pn	10 07 19.1	+4.2
USRK	**Ussuriysk Ar.**	**9.67**	**320**	P	Pn	10 07 31.4	+5.9
KSRS	**Korea Array**	**10.11**	**276**	P	Pn	10 07 38.6	+7.0
SONM	**Songino Array**	**27.22**	**304**	P	**P**	**10 10 50.1**	**-0.5**
CMAR	**Chiang Mai Arr**	**40.88**	**255**	LR	LR	10 32 32.3	
ZALV	**Zalesovo Beam**	**41.41**	**312**	P	**P**	**10 12 51.9**	**-0.9**
MKAR	**Makanchi Array**	**43.55**	**302**	P	**P**	**10 13 10.4**	**0.0**
ILAR	**Eielson Array**	**49.81**	**32**	P	**P**	**10 13 59.5**	**+0.4**

0.3nm,0.3s,baz=51,slow=13,SNR=4.4
0.2nm,0.3s,baz=135,slow=14,SNR=12
0.1nm,0.3s,baz=94,slow=14,SNR=9.9
1.2nm,0.6s,baz=104,slow=9.0,SNR=7.8
comp=Z,265nm,18.1s,baz=0.0,slow=40
0.6nm,0.4s,baz=79,slow=9.0,SNR=2.9
1.0nm,0.7s,baz=88,slow=9.8,SNR=7.9

0.5nm,0.6s,baz=268,slow=6.1,SNR=4.8
WRA Warramunga Arr 57.01 187 P **P 10 14 52.0 -0.5**
3.1nm,0.7s,baz=2.9,slow=7.3,SNR=23
ASAR Alice Springs 60.74 187 P **P 10 15 18.2 -0.1**
1.1nm,0.8s,baz=7.3,slow=4.8,SNR=10
ARCES ARCESS Array B 63.73 339 P **P 10 15 37.2 -0.7**
6.6nm,1.0s,baz=54,slow=6.6,SNR=3.7
YKA Yellowknife Ar 64.10 30 P **P 10 15 40.5 0.0**
0.2nm,0.8s,baz=307,slow=6.6,SNR=3.8
FINES FINESS Array B 68.47 332 P **P 10 16 08.0 -0.4**
2.2nm,0.7s,baz=58,slow=7.6,SNR=7.8
AKASG Malin Array Be 73.87 322 P **P 10 16 40.5 -0.8**
0.9nm,0.5s,baz=47,slow=5.5,SNR=5.8
NVAR Mina Array Bea 75.48 53 P **P 10 16 52.9 +1.6**
0.6nm,0.7s,baz=295,slow=5.4,SNR=5.9
PDAR Pinedale Array 78.10 45 P **P 10 17 06.8 +0.8**
0.2nm,0.6s,baz=255,slow=3.5,SNR=3.5
BRTR Keskin Array B 78.34 311 P **P 10 17 06.0 -1.2**
0.6nm,0.6s,baz=116,slow=3.4,SNR=2.5
TXAR Lajitas Array 90.61 52 P **P 10 18 10.1 +0.6**
0.2nm,0.6s,baz=299,slow=3.7,SNR=3.5

*ISCJB **11** 10:05:37.0±0.6,36.94N±0.03×140.68E±0.10,h20km±4km, mb3.7/9, Error ellipse: s-maj=13.3km s-min=5.4km az=8.7*
*IDC **11** 10:05:36.0±0.8,36.98N×140.43E,h0km,mb3.7/9, mb1 3.9/10,mb1mx3.7/58,mbtmp3.8/10,ML3.8/1, Error ellipse: s-maj=27.9km s-min=18.5km az=91.0*
*JMA **11** 10:05:37.4,36.95N×140.67E,h7km±1km,M3.9*
ISC 11 10:05:37.2±1.2,36.99N±0.04×140.56E±0.08,h8km±9km, n16,σ0.79/21,mb3.7/9,3C,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizushiy**	**0.22**	**58**	P	**Pg**	**10 05 41.4**	**-0.3**
ONAJ				S	**Sg**	**10 05 44.3**	**-0.4**
JHO	**Hitachi**	**0.38**	**179**	⇑P	**Pg**	**10 05 44.4**	**-0.2**
JHO				S	**Sg**	**10 05 49.3**	**-0.2**
JFK	**Kawauchi**	**0.45**	**33**	⇑P	**Pg**	**10 05 46.1**	**0.0**
JFK				S	**Sg**	**10 05 52.2**	**+0.2**
JFT	**Otama**	**0.56**	**341**	⇑P	**Pb**	**10 05 49.7**	**+0.3**
JFT				S	**Sb**	**10 05 58.1**	**+0.5**
JMM	**Marumori**	**0.90**	**12**	P	**Pg**	**10 05 54.6**	**+0.1**
JMM				S	**Sb**	**10 06 06.9**	**-0.3**
JHJ	**Hachijo jima 2**	**3.91**	**190**	Pn	**Pn**	**10 06 39.1**	**+1.5**
	20nm,0.3s,baz=333,slow=21,SNR=7.6						
SONM	**Songino Array**	**27.25**	**304**	P	**P**	**10 11 20.3**	**-1.6**
	0.7nm,0.6s,baz=106,slow=9.1,SNR=2.6						
ZALV	**Zalesovo Beam**	**41.45**	**312**	P	**P**	**10 13 24.9**	**+0.7**
	0.6nm,0.3s,baz=89,slow=6.1,SNR=2.5						
MKAR	**Makanchi Array**	**43.57**	**302**	P	**P**	**10 13 41.2**	**-0.5**
	0.3nm,0.4s,baz=90,slow=9.2,SNR=2.3						
ILAR	**Eielson Array**	**49.90**	**32**	P	**P**	**10 14 31.6**	**+0.6**
	0.4nm,0.8s,baz=277,slow=8.4,SNR=3.2						
WRA	**Warramunga Arr**	**56.92**	**187**	P	**P**	**10 15 22.1**	**-0.9**
	2.5nm,0.5s,baz=3.1,slow=7.5,SNR=13						
ASAR	**Alice Springs**	**60.65**	**187**	P	**P**	**10 15 48.4**	**-0.5**
	1.1nm,0.7s,baz=11,slow=6.1,SNR=10						
YKA	**Yellowknife Ar**	**64.19**	**30**	P	**P**	**10 16 11.7**	**-0.4**
	0.2nm,0.6s,baz=304,slow=6.6,SNR=4.3						
FINES	**FINESS Array B**	**68.54**	**332**	P	**P**	**10 16 38.8**	**-1.2**
	0.8nm,0.6s,baz=55,slow=7.3,SNR=2.1						
TXAR	**Lajitas Array**	**90.69**	**52**	P	**P**	**10 18 41.8**	**+0.8**
	0.2nm,0.5s,baz=291,slow=2.5,SNR=2.3						
LPAZ	**La Paz**	**147.30**	**59**	PKPbc	**PKPbc**	**10 25 23.3**	**+0.6**
	0.9nm,0.5s,baz=354,slow=7.1,SNR=4.5						

*ISCJB **11** 10:05:54.0±0.3,36.77N±0.03×141.21E±0.04,h10km, mb4.2/27,Error ellipse: s-maj=4.7km s-min=4.1km az=0.9*
*JMA **11** 10:05:55.6,36.80N×141.12E,h16km±1km,M4.5*
*MOS **11** 10:05:59.0±1.2,36.77N×141.17E,h54km,mb4.4/20,Error ellipse: s-maj=10.6km s-min=7.7km az=80.8*
*IDC **11** 10:06:00.8±2.2,36.74N×141.16E,h52km±20km,mb3.9/22, mb1 4.1/25,mb1mx3.9/61,mbtmp4.2/25,ML4.1/3,Error ellipse: s-maj=15.3km s-min=10.6km az=71.0*
*NEIC **11** 10:06:01.1±0.8,36.77N×141.13E,h55km±7km,mb4.4/2, Error ellipse: s-maj=9.2km s-min=7.3km az=114.0*
ISC 11 10:05:55.6±0.5,36.81N±0.04×141.13E±0.05,h10km,n65, σ1.37/60,mb4.2/27,1D,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizushiy**	**0.40**	**318**	P	**Pg**	**10 06 03.7**	**+0.3**
ONAJ				S	**Sg**	**10 06 09.5**	**+0.8**
JHO	**Hitachi**	**0.49**	**247**	*e*S	**Sg**	**10 06 11.9**	**+0.2**
JFK	**Kawauchi**	**0.59**	**340**	*e*S	**Sg**	**10 06 15.5**	**+0.5**
JFT	**Otama**	**0.95**	**318**	P	**Pg**	**10 06 13.7**	**-0.2**
JFT				S	**Sg**	**10 06 26.5**	**+0.2**
JMM	**Marumori**	**1.09**	**346**	*e*S	**Sg**	**10 06 29.9**	**-0.9**
MJAR	**Matsushiro Arr**	**2.36**	**264**	P	**Pb**	**10 06 37.4**	**-0.9**
	89nm,0.3s,baz=77,slow=12,SNR=12						
MJAR				S	**Sb**	**10 07 05.8**	**-1.7**
	112nm,0.3s,baz=78,slow=31,SNR=11						
MAJO	**Matsushiro**	**2.37**	**264**	*e*P	**Pb**	**10 06 38.7**	**+0.4**
MAJO	**Matsushiro**	**2.37**	**264**	*e*Pn	**Pb**	**10 06 38.7**	**+0.4**
JHJ2	**Mitsune**	**3.84**	**197**	*e*Pn	**Pn**	**10 06 56.6**	**+1.9**
JHJ	**Hachijo jima 2**	**3.84**	**197**	P	**Pn**	**10 06 55.4**	**+0.6**
	52nm,0.3s,baz=55,slow=23,SNR=7.0						
JHJ				S	**Sn**	**10 07 40.1**	**+0.2**
	42nm,0.3s,baz=107,slow=19,SNR=2.4						
ERM	**Erimo**	**5.43**	**16**	*e*P	**Pn**	**10 07 18.7**	**+2.1**
ERM	**Erimo**	**5.43**	**16**	*e*Pn	**Pn**	**10 07 18.7**	**+2.1**
YUK	**Yuzh-Kuril'sk**	**8.07**	**25**	P	Pn	10 07 56.4	+3.6
YUK				*e*S	**Sn**	**10 09 22.6**	**-1.4**
YUK				pmax	pmax		
	comp=Z,107nm,0.6s						
YUK				pmax	pmax		
	comp=N,37nm,0.3s						
YUK				pmax	pmax		
	comp=E,25nm,0.2s						
SHO	**Shikotan**	**8.29**	**30**	P	**Pn**	**10 07 58.2**	**+2.4**
SHO				*e*S	**Sn**	**10 09 25.0**	**-4.4**
SHO				pmax	pmax		
	comp=Z,46nm,0.5s						
SHO				pmax	pmax		
	comp=N,8.0nm,0.3s						
JNU	**Nakatsue**	**9.18**	**249**	*e*Pn	**Pn**	**10 08 10.8**	**+2.6**
KUR	**Kuril'sk**	**9.83**	**29**	P	Pn	10 08 21.2	+4.3
KUR				S	**Sn**	**10 10 05.3**	**-2.0**
USRK	**Ussuriysk Ar.**	**10.14**	**320**	P	Pn	10 08 29.1	+7.8
	comp=N,0.5nm,0.3s,baz=129,slow=13,SNR=7.7						
KSRS	**Korea Array**	**10.57**	**277**	P	Pn	10 08 30.9	+3.8
	comp=N,0.5nm,0.3s,baz=95,slow=14,SNR=9.6						
KSAR	**Wonju Array Be**	**10.60**	**277**	P	Pn	10 08 30.9	+3.4
KSAR	**Wonju Array Be**	**10.60**	**277**	P	Pn	10 08 30.9	+3.4
KLR	**Kul'dur**	**14.17**	**334**	P	**P**	**10 09 24.8**	**+1.0**
	comp=N,0.1nm,0.3s,baz=135,slow=17,SNR=3.6						
MA2	**Magadan**	**23.62**	**12**	P	**P**	**10 11 05.8**	**-0.7**
	comp=N,15nm,0.8s,baz=229,slow=6.3,SNR=4.5						
SEY	**Seymchan**	**27.06**	**11**	P	**P**	**10 11 38.2**	**+0.4**
	comp=N,2.6nm,0.7s,baz=184,slow=4.0,SNR=7.0						
SONM	**Songino Array**	**27.73**	**304**	P	**P**	**10 11 43.9**	**-0.3**
	comp=N,3.0nm,0.8s,baz=104,slow=8.8,SNR=9.0						
H11N2	**WAKE ISLAND Hy**	**28.23**	**120**	T	T	10 41 17.3	
	baz=313,slow=75,SNR=536						
H11N1	**WAKE ISLAND Hy**	**28.24**	**120**	T	T	10 41 17.9	
	baz=313,slow=75,SNR=417						
H11N3	**WAKE ISLAND Hy**	**28.25**	**120**	T	T	10 41 18.7	
	baz=313,slow=75,SNR=384						
H11S1	**WAKE ISLAND Hy**	**28.93**	**122**	T	T	10 42 12.8	
	baz=314,slow=76,SNR=150						
H11S3	**WAKE ISLAND Hy**	**28.93**	**122**	T	T	10 42 09.7	
	baz=314,slow=76,SNR=111						
H11S2	**WAKE ISLAND Hy**	**28.94**	**122**	T	T	10 42 10.9	
	baz=314,slow=76,SNR=102						
BILL	**Bilibino**	**34.31**	**16**	⇓*e*P	**P**	**10 12 44.8**	**+3.0**
BILL				pmax	pmax		
	comp=Z,4.0nm,1.1s						
ZALV	**Zalesovo Beam**	**41.90**	**313**	P	**P**	**10 13 47.1**	**+1.1**
	comp=Z,6.6nm,0.9s,baz=93,slow=6.9,SNR=9.3						
MKAR	**Makanchi Array**	**44.05**	**302**	P	**P**	**10 14 03.2**	**-0.3**
	comp=Z,3.1nm,0.9s,baz=86,slow=11,SNR=7.8						
KURK	**Kurchatov**	**45.89**	**308**	*e*P	**P**	**10 14 16.6**	**-1.5**
KURK				pmax	pmax		
	comp=Z,26nm,1.0s						
KURK	**Kurchatov**	**45.89**	**308**	*e*P	**P**	**10 14 16.6**	**-1.5**
	comp=Z,26nm,1.0s						
SML	**Sawmill**	**49.31**	**36**	*e*P	**P**	**10 14 46.2**	**+1.7**
SML	**Sawmill**	**49.31**	**36**	*e*P	**P**	**10 14 46.2**	**+1.7**
ILAR	**Eielson Array**	**49.81**	**32**	P	**P**	**10 14 48.0**	**-0.2**
	comp=Z,2.3nm,0.9s,baz=276,slow=7.1,SNR=6.8						
BVAR	**Borovoye Array**	**50.56**	**312**	P	**P**	**10 14 54.8**	**+0.7**
	comp=Z,0.6nm,0.5s,baz=54,slow=7.3,SNR=3.1						
KKAR	**Karatay Array**	**53.04**	**300**	*e*P	**P**	**10 15 11.8**	**-1.0**
KKAR				pmax	pmax		
	comp=Z,3.0nm,0.9s						
KKAR	**Karatay Array**	**53.04**	**300**	*e*P	**P**	**10 15 11.8**	**-1.0**
	comp=Z,2.8nm,0.9s						
INK	**Inuvik**	**54.69**	**27**	P	**P**	**10 15 24.8**	**+0.4**
	comp=Z,1.8nm,0.7s,baz=295,slow=6.2,SNR=5.7						
WRAB	**Tennant Creek**	**56.80**	**188**	*e*P	**P**	**10 15 38.8**	**-1.2**
WRAB	**Tennant Creek**	**56.80**	**188**	*e*P	**P**	**10 15 38.8**	**-1.2**
WRA	**Warramunga Arr**	**56.81**	**188**	P	**P**	**10 15 38.9**	**-1.3**
	comp=Z,7.1nm,0.5s,baz=4.5,slow=7.4,SNR=24						
ABKAR	**Akbulak array**	**57.91**	**310**	*e*P	**P**	**10 15 47.2**	**-0.5**
	comp=Z,2.9nm,0.7s						
ASAR	**Alice Springs**	**60.53**	**188**	P	**P**	**10 16 05.0**	**-1.0**
	comp=Z,3.3nm,0.7s,baz=12,slow=6.2,SNR=16						
ASAR	**Alice Springs**	**60.53**	**188**	P	**P**	**10 16 05.1**	**-1.0**
ASAR				pmax	pmax		
	comp=Z,4.0nm,0.8s						
YKA	**Yellowknife Ar**	**64.12**	**30**	P	**P**	**10 16 29.3**	**-0.3**
	comp=Z,2.8nm,1.0s,baz=303,slow=6.6,SNR=8.9						
YKA	**Yellowknife Ar**	**64.12**	**30**	P	**P**	**10 16 29.3**	**-0.3**
YKA				pmax	pmax		
	comp=Z,1.0nm,0.8s						
STKA	**Stephens Creek**	**68.33**	**180**	P	**P**	**10 16 56.1**	**-0.8**
	comp=Z,3.2nm,0.6s,baz=345,slow=5.2,SNR=7.5						
FINES	**FINESS Array B**	**68.91**	**332**	P	**P**	**10 16 59.3**	**-0.9**
	comp=Z,2.3nm,0.7s,baz=51,slow=11,SNR=5.8						
KBZ	**Khabaz**	**70.88**	**311**	P	**P**	**10 17 12.9**	**+0.2**
	comp=Z,1.5nm,0.7s,baz=12,slow=3.8,SNR=2.7						
KIV	**Kislovodsk**	**70.88**	**311**	*e*P	**P**	**10 17 13.8**	**+0.9**
KIV				pmax	pmax		
	comp=Z,12nm,1.0s						
HFS	**Hagfors**	**74.20**	**336**	P	**P**	**10 17 32.2**	**0.0**
	comp=Z,1.5nm,0.6s,baz=46,slow=4.2,SNR=3.8						
NB2	**NORSAR Subarra**	**74.31**	**337**	P	**P**	**10 17 30.1**	**-2.8**
	comp=Z,1.1nm,0.8s,baz=41,slow=5.9						
NOA	**NORSAR Array B**	**74.31**	**337**	P	**P**	**10 17 31.7**	**-1.2**
	comp=Z,1.3nm,0.9s,baz=39,slow=5.8,SNR=3.4						
AKASG	**Malin Array Be**	**74.34**	**322**	P	**P**	**10 17 31.7**	**-1.4**
	comp=Z,0.8nm,0.4s,baz=47,slow=5.9,SNR=6.4						
NVAR	**Mina Array Bea**	**75.31**	**53**	P	**P**	**10 17 40.5**	**+1.2**
	comp=Z,0.9nm,0.7s,baz=304,slow=4.9,SNR=4.8						
PDAR	**Pinedale Array**	**77.99**	**45**	P	**P**	**10 17 54.6**	**+0.2**
	comp=Z,0.8nm,0.7s,baz=241,slow=1.5,SNR=3.7						
BRTR	**Keskin Array B**	**78.83**	**311**	P	**P**	**10 18 00.1**	**+1.1**
	comp=Z,2.0nm,1.0s,baz=23,slow=5.2,SNR=4.4						
BRTR	**Keskin Array B**	**78.83**	**311**	P	**P**	**10 18 00.1**	**+1.1**
BRTR				pmax	pmax		
	comp=Z,1.0nm,0.7s						
GERES	**GERESS Array B**	**82.78**	**328**	P	**P**	**10 18 18.7**	**-1.2**
	comp=Z,0.4nm,0.4s,baz=42,slow=7.9,SNR=2.4						
TXAR	**Lajitas Array**	**90.44**	**52**	P	**P**	**10 18 57.7**	**-0.1**
	comp=Z,0.8nm,0.8s,baz=306,slow=3.7,SNR=6.1						
LPAZ	**La Paz**	**147.00**	**60**	PKPbc	**PKPbc**	**10 25 39.5**	**-0.2**
	comp=Z,3.1nm,0.6s,baz=5.1,slow=3.9,SNR=8.2						

JMA 11 10:09:37.4,37.06N×140.74E,h10km±1km,M3.5,Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizushiy**	**0.06**	**48**	P	**Pg**	10 09 39.6	0.0
ONAJ				*e*S	Sg	10 09 40.9	-0.3
JFK	**Kawauchi**	**0.32**	**19**	P	Pg	10 09 44.1	+0.2
JFK				*e*S	Sg	10 09 48.8	+0.5
JHO	**Hitachi**	**0.47**	**197**	S	Sg	10 09 52.9	+0.2
JFT	**Otama**	**0.56**	**325**	P	Pg	10 09 48.5	+0.2
JFT				*e*S	Sg	10 09 56.0	+0.3
JMM	**Marumori**	**0.81**	**3**	P	Pg	10 09 52.7	-0.3
JMM				*e*S	Sg	10 10 03.8	+0.3

JMA 11 10:10:08.4,37.09N×140.61E,h14km±1km,M3.9,2C-1D, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizushiy**	**0.15**	**86**	P	Pg	10 10 12.3	0.0
ONAJ				*e*S	Sg	10 10 14.9	0.0
JFK	**Kawauchi**	**0.35**	**37**	⇑P	Pg	10 10 15.4	-0.1
JFK				S	Sg	10 10 20.3	0.0
JHO	**Hitachi**	**0.48**	**184**	⇑P	Pg	10 10 17.8	-0.1
JHO				*e*S	Sg	10 10 24.1	-0.2
JFT	**Otama**	**0.48**	**333**	⇓P	Pg	10 10 18.0	+0.1
JFT				S	Sg	10 10 24.4	0.0
JSB	**Shiboa**	**0.56**	**258**	P	Pg	10 10 19.7	+0.2
JMM	**Marumori**	**0.79**	**11**	P	Pg	10 10 23.0	-0.7
JMM				S	Sg	10 10 33.2	-0.9
JFY	**Yanaizu**	**0.79**	**294**	P	Pg	10 10 23.3	-0.4
JFY				S	Sg	10 10 33.4	-0.7
JYT	**Yasato**	**0.92**	**201**	P	Pb	10 10 25.6	-0.6
JYT				S	Sb	10 10 38.2	-0.1

JMA 11 10:10:43.4±0.1,38.63N×141.77E,h46km±1km,M3.6, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**0.37**	**242**	P	Pn	10 10 52.9	0.0
JIO				S	Sn	10 10 59.3	-0.3
OFUJ	**Ofunato**	**0.46**	**350**	P	Pn	10 10 53.8	-0.1
OFUJ				S	Sn	10 11 01.1	-0.3
JMK	**Ichinoseki**	**0.54**	**307**	P	Pn	10 10 54.9	0.0
JMK				S	Sn	10 11 02.9	-0.2
JOU	**Okura**	**0.91**	**253**	P	Pn	10 10 59.8	0.0
JOU				*e*S	Sn	10 11 11.7	-0.1
JOM	**Ohasama**	**0.92**	**336**	P	Pn	10 11 00.1	+0.1
JOM				*e*S	Sn	10 11 12.4	+0.3
MIYJ	**Miyakonagasawa**	**0.95**	**2**	P	Pn	10 11 00.3	0.0
MIYJ				*e*S	Sn	10 11 11.8	-0.9
JMM	**Marumori**	**1.08**	**226**	*e*S	Sn	10 11 15.1	-0.9
JYK	**Kaneyama**	**1.14**	**285**	*e*S	Sn	10 11 17.8	+0.4
JKZ	**Kuzumaki**	**1.40**	**346**	P	Pn	10 11 07.0	+0.5
JKZ				*e*S	Sn	10 11 23.7	0.0
JYS	**Shirataka**	**1.40**	**254**	*e*S	Sn	10 11 24.4	+0.6
JFK	**Kawauchi**	**1.45**	**210**	*e*S	Sn	10 11 23.7	-1.3

*JMA **11** 10:11:24.1,36.99N×140.71E,h9km±1km,M3.3*
*IDC **11** 10:11:26.9±0.8,36.44N×140.45E,h0km,mb3.7/11, mb1 3.9/12,mb1mx3.7/59,mbtmp3.6/12,ML2.8/1,Error ellipse: s-maj=23.6km s-min=19.6km az=179.0*
ISC 11 10:11:25.6±1.0,36.97N±0.05×140.80E±0.09,h10km,n26, σ2.16/16,mb3.7/11,2C-1D,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizushiy**	**0.14**	**0**	⇓P	**Pg**	**10 11 27.2**	**-1.6**
ONAJ				S	**Sg**	**10 11 29.3**	**-1.8**
JHO	**Hitachi**	**0.40**	**207**	⇑P	**Pg**	**10 11 31.8**	**-1.7**
JHO				S	**Sg**	**10 11 37.6**	**-1.2**
JFK	**Kawauchi**	**0.41**	**9**	⇑P	**Pg**	**10 11 31.8**	**-1.8**
JMM	**Marumori**	**0.90**	**360**	P	**Pg**	**10 11 40.6**	**-2.4**
MJAR	**Matsushiro Arr**	**2.12**	**259**	Pn	**Pn**	**10 12 00.2**	**-1.0**
	5.9nm,0.3s,baz=74,slow=15,SNR=3.6						
MJAR				Sn	**Sn**	**10 12 27.1**	**-0.5**
	12nm,0.3s,baz=70,slow=29,SNR=5.2						
MAT	**Matsushiro**	**2.12**	**259**	P	**Pn**	**10 12 00.0**	**-1.2**
MAT				S	**Sg**	**10 12 33.5**	**-0.4**
USRK	**Ussuriysk Ar.**	**9.85**	**320**	Pn	Pn	10 13 56.3	+9.1
	0.2nm,0.3s,baz=134,slow=12,SNR=10						
KSRS	**Korea Array**	**10.28**	**277**	Pn	**Pn**	**10 13 53.0**	**-0.2**
	0.1nm,0.3s,baz=101,slow=14,SNR=2.4						
SONM	**Songino Array**	**27.41**	**304**	P	**P**	**10 17 14.0**	**+2.5**
	1.0nm,0.6s,baz=108,slow=7.9,SNR=6.2						
H11N2	**WAKE ISLAND Hy**	**28.54**	**120**	T	T	10 47 14.6	
	baz=313,slow=75,SNR=9.9						
H11N1	**WAKE ISLAND Hy**	**28.55**	**120**	T	T	10 47 14.9	
	baz=313,slow=75,SNR=6.3						
H11N3	**WAKE ISLAND Hy**	**28.56**	**120**	T	T	10 47 15.6	
	baz=313,slow=75,SNR=4.3						
H11S1	**WAKE ISLAND Hy**	**29.24**	**122**	T	T	10 46 50.4	
	baz=314,slow=76,SNR=4.2						
H11S3	**WAKE ISLAND Hy**	**29.24**	**122**	T	T	10 46 50.5	
	baz=314,slow=76,SNR=5.0						
H11S2	**WAKE ISLAND Hy**	**29.25**	**122**	T	T	10 46 51.5	
	baz=314,slow=76,SNR=32						
MKAR	**Makanchi Array**	**43.74**	**302**	P	P	10 19 35.0	+4.0
	0.9nm,0.5s,baz=86,slow=10,SNR=9.6						
KURBB	**Kurchatov Arra**	**45.66**	**308**	P	**P**	**10 19 49.4**	**+3.2**
	1.4nm,0.5s,baz=81,slow=7.3,SNR=5.4						
ILAR	**Eielson Array**	**49.81**	**32**	P	P	10 20 24.5	+6.2
	0.3nm,0.8s,baz=249,slow=4.7,SNR=4.5						
WRA	**Warramunga Arr**	**56.93**	**187**	P	**P**	**10 21 09.2**	**-1.9**
	0.6nm,0.7s,baz=3.0,slow=7.1,SNR=3.7						
ASAR	**Alice Springs**	**60.66**	**187**	P	**P**	**10 21 35.3**	**-1.6**
	0.4nm,0.9s,baz=11,slow=7.5,SNR=3.1						
YKA	**Yellowknife Ar**	**64.11**	**30**	P	P	10 22 06.0	+6.4
	0.2nm,0.7s,baz=301,slow=6.0,SNR=3.7						
FINES	**FINESS Array B**	**68.64**	**332**	P	P	10 22 32.5	+3.9
	2.7nm,1.0s,baz=5.5,slow=4.3,SNR=4.1						
NOA	**NORSAR Array B**	**74.06**	**337**	P	P	10 23 06.8	+5.3
	0.6nm,0.6s,baz=39,slow=5.8,SNR=3.2						
NVAR	**Mina Array Bea**	**75.42**	**53**	P	P	10 23 16.5	+6.5
	0.3nm,0.6s,baz=304,slow=6.4,SNR=4.1						
PDAR	**Pinedale Array**	**78.06**	**45**	P	P	10 23 31.3	+6.4
	0.3nm,0.7s,baz=328,slow=3.2,SNR=3.2						
LPAZ	**La Paz**	**147.15**	**59**	PKPbc	**PKPab**	**10 31 15.8**	**+4.0**
	0.7nm,0.6s,baz=30,slow=0.9,SNR=5.8						

JMA 11 10:11:30.4,37.04N×140.67E,h9km±1km,M3.7,1C, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizushiy**	**0.12**	**59**	*e*S	Sg	10 11 35.2	0.0
JHO	**Hitachi**	**0.44**	**191**	*e*S	Sg	10 11 45.2	+0.6
JFT	**Otama**	**0.55**	**331**	⇑P	Pg	10 11 41.3	+0.3
JFT				S	Sg	10 11 48.9	+0.7

JMA 11 10:13:50.5,37.11N×140.64E,h12km±1km,M2.8,Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizushiy**	**0.13**	**94**	P	Pg	10 13 53.8	0.0
ONAJ				S	Sg	10 13 56.1	0.0
JFK	**Kawauchi**	**0.32**	**36**	P	Pg	10 13 57.0	0.0
JFK				S	Sg	10 14 01.4	+0.1
JFT	**Otama**	**0.47**	**329**	P	Pg	10 14 00.0	+0.2
JFT				S	Sg	10 14 06.4	+0.2
JHO	**Hitachi**	**0.50**	**187**	P	Pg	10 14 00.0	-0.3
MAT	**Matsushiro**	**2.03**	**255**	P	Pb	10 14 28.2	+0.8
MAT				S	Sb	10 14 51.6	-1.0

JMA 11 10:16:06.2,37.02N×140.71E,h9km±1km,M3.1,Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizushiy**	**0.11**	**41**	P	Pg	10 16 08.9	0.0
ONAJ				S	Sg	10 16 10.7	0.0
JFK	**Kawauchi**	**0.37**	**21**	P	Pg	10 16 13.6	+0.1
JFK				S	Sg	10 16 18.7	+0.3
JHO	**Hitachi**	**0.42**	**196**	P	Pg	10 16 14.7	+0.2
JHO				S	Sg	10 16 20.7	+0.6
JFT	**Otama**	**0.58**	**329**	P	Pg	10 16 17.6	+0.2
JFT				S	Sg	10 16 25.5	+0.4
JMM	**Marumori**	**0.85**	**4**	P	Pg	10 16 22.1	-0.4
JMM				S	Sg	10 16 33.5	-0.1
MAT	**Matsushiro**	**2.06**	**257**	P	Pn	10 16 42.4	+1.3
MAT				S	Sb	10 17 09.6	-0.1

*IDC **11** 10:17:10.3±0.6,36.49N×141.31E,h0km,mb3.8/15, mb1 4.1/18,mb1mx3.9/73,mbtmp3.9/18,ML4.3/3,Error ellipse: s-maj=16.6km s-min=14.1km az=111.0*
*ISCJB **11** 10:17:12.7±0.9,36.50N±0.03×141.39E±0.05,h29km±6km, mb3.8/16,Error ellipse: s-maj=6.2km s-min=5.6km az=164.3*
*JMA **11** 10:17:15.1±0.1,36.57N×141.24E,h42km±2km,M3.9*
JMA Felt I J1
*NEIC **11** 10:17:16.0±1.1,36.44N×141.27E,h42km±11km,mb4.2/1, Error ellipse: s-maj=12.0km s-min=8.3km az=50.0*
ISC 11 10:17:12.0±1.9,36.50N±0.04×141.35E±0.05,h15km±11km, n42,σ1.82/45,mb3.9/16,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JHO	**Hitachi**	**0.64**	**280**	P	**Pn**	**10 17 26.3**	**-0.2**
JHO				S	**Sb**	**10 17 34.1**	**+0.6**
ONAJ	**Iwakimizushiy**	**0.74**	**324**	P	**Pn**	**10 17 27.6**	**-0.4**
ONAJ				S	**Sb**	**10 17 36.4**	**-0.3**
JFK	**Kawauchi**	**0.94**	**337**	P	**Pn**	**10 17 30.4**	**-0.4**
JYT	**Yasato**	**0.97**	**254**	P	**Pn**	**10 17 31.4**	**+0.4**
JFT	**Otama**	**1.30**	**322**	P	**Pg**	**10 17 36.5**	**-0.5**
JFT				S	**Sb**	**10 17 51.4**	**-1.2**

TXAR	**Lajitas Array**	**90.49**	**52**	P	**P**	**10 30 14.6**	**+1.0**
	0.3nm,0.4s,baz=299,slow=2.7,SNR=5.3						
LPAZ	**La Paz**	**147.01**	**60**	PKPbc	**PKPbc**	**10 36 55.8**	**+0.5**
	1.0nm,0.5s,baz=7.8,slow=5.0,SNR=5.6						

*IDC **11** 10:18:58.7±0.5,37.07N×140.59E,h0km,mb4.3/31, mb1 4.4/32,mb1mx4.3/70,mbtmp4.3/32,Error ellipse: s-maj=13.8km s-min=11.9km az=106.0*

*ISCJB **11** 10:18:59.7±0.4,37.03N±0.03×140.65E±0.04,h19km±3km, mb4.3/58,MS4.7/2,Error ellipse: s-maj=5.5km s-min=4.0km az=31.5*

*JMA **11** 10:18:59.6,37.02N×140.62E,h9km±1km,M4.6*

JMA Felt III J1.

*MOS **11** 10:19:01.9±1.2,37.05N×140.50E,h33km,mb4.5/42,Error ellipse: s-maj=9.9km s-min=6.3km az=104.9*

*NEIC **11** 10:19:04.0±0.4,37.04N×140.58E,h35km,mb4.7/5,Error ellipse: s-maj=9.5km s-min=7.3km az=126.0*

NEIC Recorded [3 JMA] in Fukushima.

*BJI **11** 10:19:05.0,37.10N×140.40E,h48km,mb4.6/9,mB5.1/2, Ms4.7/2,Ms7 4.5/2*

ISC 11 10:19:00.1±0.9,37°02N±0°03×140°59E±0°04,h11km±5km, n109,σ1§37/108,mb4.4/58,10C-1D,Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time	Res
ONAJ	**Iwakimizuishiy**	**0.18**	**64**	P			**Pg**	**10 19 03.3**	**-0.8**
ONAJ				*eS*			**Sg**	**10 19 05.9**	**-1.0**
JFK	**Kawauchi**	**0.41**	**33**	⇑P			**Pg**	**10 19 07.5**	**-0.7**
JFK				*eS*			**Sg**	**10 19 13.1**	**-0.6**
JHO	**Hitachi**	**0.41**	**183**	⇑P			**Pg**	**10 19 07.6**	**-0.6**
JHO				*eS*			**Sg**	**10 19 13.6**	**-0.1**
JFT	**Otama**	**0.54**	**338**	⇑P			**Pg**	**10 19 10.3**	**-0.3**
JFT				S			**Sg**	**10 19 17.8**	**+0.1**
JSB	**Shiboa**	**0.54**	**264**	⇑P			**Pb**	**10 19 11.4**	**-0.3**
JFY	**Yanaizu**	**0.81**	**299**	S			**Sb**	**10 19 26.2**	**-0.9**
JYT	**Yasato**	**0.86**	**202**	P			**Pg**	**10 19 16.0**	**-0.6**
JMM	**Marumori**	**0.86**	**11**	S			**Sg**	**10 19 27.1**	**-0.7**
MJAR	**Matsushiro Arr**	**1.97**	**257**	Pn			**Pn**	**10 19 34.5**	**+0.9**
	70nm,0.3s,baz=77,slow=15,SNR=27								
MJAR				Sn			**Sb**	**10 20 00.9**	**+0.2**
	102nm,0.3s,baz=86,slow=28,SNR=15								
MAJO	**Matsushiro**	**1.97**	**257**	P			**Pn**	**10 19 34.6**	**+1.0**
MAT	**Matsushiro**	**1.98**	**257**	P			**Pb**	**10 19 34.7**	**-1.4**
MAT				S			**Sb**	**10 19 59.5**	**-1.2**
JHJ	**Hachijo jima 2**	**3.95**	**190**	Pn			**Pn**	**10 20 02.5**	**+1.7**
	baz=74,slow=12,SNR=1.8								
JHJ				Sn			**Sn**	**10 20 43.4**	**-3.7**
	21nm,0.3s,baz=66,slow=20,SNR=1.8								
ERM	**Erimo**	**5.37**	**21**	*e*P			**Pn**	**10 20 22.6**	**+2.5**
SHO	**Shikotan**	**8.33**	**33**	P			Pb	10 21 13.6	-11
SHO				*e*S			**Sn**	**10 22 28.9**	**-5.9**
SHO				pmax	pmax				
	comp=Z,38nm,0.5s								
JNU	**Nakatsue**	**8.86**	**247**	Pn			Pn	10 21 12.6	+4.4
	comp=Z,0.4nm,0.3s,baz=53,slow=15,SNR=5.2								
USRK	**Ussuriysk Ar.**	**9.70**	**320**	Pn			Pn	10 21 25.6	+6.0
	comp=Z,0.3nm,0.3s,baz=129,slow=13,SNR=16								
YSS	**Yuzh-Sakhalins**	**10.05**	**9**	*e*P			**Pn**	**10 21 25.8**	**+1.4**
YSS	**Yuzh-Sakhalins**	**10.05**	**9**	*e*Pn			**Pn**	**10 21 27.1**	**+2.7**
	comp=Z,19nm,0.6s								
KSRS	**Korea Array**	**10.11**	**276**	Pn			Pn	10 21 31.1	+5.8
	comp=Z,0.5nm,0.3s,baz=94,slow=14,SNR=22								
KSAR	**Wonju Array Be**	**10.14**	**276**	P			Pn	10 21 31.1	+5.4
KSAR	**Wonju Array Be**	**10.14**	**276**	Pn			Pn	10 21 31.1	+5.4
KLR	**Kul'dur**	**13.79**	**335**	Pn			**Pn**	**10 22 17.6**	**+2.1**
	comp=Z,0.1nm,0.3s,baz=157,slow=16,SNR=2.0								
MA2	**Magadan**	**23.51**	**13**	P			**P**	**10 24 10.8**	**+0.9**
	comp=Z,3.3nm,0.5s,baz=241,slow=13,SNR=3.7								
YAK	**Yakutsk**	**25.94**	**348**	*i* P			**P**	**10 24 34.3**	**+2.1**
YAK				pmax	pmax				
	comp=Z,11nm,0.7s								
ENH	**Enshi**	**26.68**	**265**	*e*P			**P**	**10 24 38.8**	**-0.5**
	comp=Z,13nm,0.7s								
ULN	**Ulaanbaatar**	**26.82**	**304**	*ce*P			**P**	**10 24 40.5**	**0.0**
ULN				pmax	pmax				
	comp=Z,5.0nm,1.2s								
SEY	**Seymchan**	**26.93**	**12**	P			**P**	**10 24 42.8**	**+1.7**
	comp=Z,2.1nm,0.8s,baz=207,slow=9.2,SNR=5.0								
BOD	**Bodaibo**	**27.19**	**328**	*e*P			**P**	**10 24 41.5**	**-2.1**
BOD				pmax	pmax				
	comp=Z,3.0nm,1.8s								
SONM	**Songino Array**	**27.25**	**304**	P			**P**	**10 24 43.7**	**-0.7**
	comp=Z,5.2nm,0.8s,baz=99,slow=8.0,SNR=18								
H11N2	**WAKE ISLAND Hy**	**28.71**	**120**	T			T	10 54 43.5	
	baz=313,slow=75,SNR=13								
H11N1	**WAKE ISLAND Hy**	**28.72**	**120**	T			T	10 54 43.5	
	baz=313,slow=75,SNR=13								
H11N3	**WAKE ISLAND Hy**	**28.73**	**120**	T			T	10 54 47.6	
	baz=313,slow=75,SNR=14								
H11S1	**WAKE ISLAND Hy**	**29.41**	**122**	T			T	10 55 37.1	
	baz=314,slow=75,SNR=65								
H11S3	**WAKE ISLAND Hy**	**29.41**	**122**	T			T	10 55 37.2	
	baz=314,slow=75,SNR=20								
H11S2	**WAKE ISLAND Hy**	**29.42**	**122**	T			T	10 55 41.3	
	baz=314,slow=75,SNR=27								
ZAK	**Zakamensk**	**29.76**	**309**	*e*P			**P**	**10 25 04.8**	**-1.9**
ZAK				pmax	pmax				
	comp=Z,2.0nm,2.3s								
BILL	**Bilibino**	**34.23**	**17**	⇑*e*P			**P**	**10 25 46.4**	**+0.9**
BILL				*e*				10 27 05.6	
BILL				*e*PPP		PPP		10 27 17.2	
BILL				*e*SS		SS		10 33 15.9	-24
BILL				pmax	pmax				
	comp=Z,9.0nm,2.5s								
BILL				MLR	MLR				
	comp=Z,493nm,16.0s								
TIXI	**Tiksi**	**35.23**	**354**	*e*P			**P**	**10 25 56.2**	**+2.1**
TIXI				pmax	pmax				
	comp=Z,1.0nm,0.8s								
CMAR	**Chiang Mai Arr**	**40.86**	**255**	P			**P**	**10 26 43.1**	**+0.9**
	comp=Z,0.8nm,0.7s,baz=51,slow=5.9,SNR=5.3								
ZALV	**Zalesovo Beam**	**41.44**	**312**	P			**P**	**10 26 46.0**	**-0.6**
	comp=Z,2.3nm,0.6s,baz=92,slow=7.4,SNR=7.7								
ZALV	**Zalesovo Beam**	**41.44**	**312**	P			**P**	**10 26 46.0**	**-0.6**
ZALV				pmax	pmax				
	comp=Z,2.0nm,0.6s								
MKAR	**Makanchi Array**	**43.57**	**302**	P			**P**	**10 27 03.5**	**-0.6**
	comp=Z,1.9nm,0.7s,baz=87,slow=9.6,SNR=9.3								
KURK	**Kurchatov**	**45.42**	**308**	P			**P**	**10 27 17.8**	**-0.9**
KURK				pmax	pmax				
	comp=Z,4.0nm,0.5s								
KURK	**Kurchatov**	**45.42**	**308**	P			**P**	**10 27 17.8**	**-0.9**
KURBB	**Kurchatov Arra**	**45.49**	**308**	P			**P**	**10 27 17.8**	**-1.5**
	comp=Z,2.7nm,0.4s,baz=82,slow=8.5,SNR=12								
PDGK	**Podgornoye**	**46.20**	**298**	P			**P**	**10 27 24.1**	**-0.9**
PDGK				pmax	pmax				
	comp=Z,5.0nm,0.9s								
RAMN	**Ramite**	**46.35**	**274**	*e*P			**P**	**10 27 25.7**	**-1.0**
	comp=Z,25nm,0.9s								
GUN	**Gumba**	**46.50**	**275**	*e*P			**P**	**10 27 28.1**	**+0.1**
	comp=Z,11nm,0.4s								
GKN	**Gorkha**	**47.45**	**276**	*e*P			**P**	**10 27 35.1**	**-0.1**
KTH	**Kantishna Hill**	**48.12**	**34**	P			**P**	**10 27 39.5**	**-0.4**
KOLN	**Koldanda**	**48.38**	**276**	*e*P			**P**	**10 27 41.9**	**-0.6**
PYUN	**Piuthan**	**48.72**	**277**	*e*P			**P**	**10 27 45.1**	**0.0**
	comp=Z,43nm,1.0s								
ILAR	**Eielson Array**	**49.85**	**32**	P			**P**	**10 27 53.2**	**+0.3**
	comp=Z,1.5nm,0.9s,baz=269,slow=6.2,SNR=7.5								
OTUK	**Ortayu**	**49.90**	**306**	P			**P**	**10 27 52.1**	**-1.5**
OTUK				pmax	pmax				
	comp=Z,5.0nm,0.9s								
AAK	**Ala-Archa**	**49.92**	**298**	P			**P**	**10 27 55.9**	**+1.9**
	comp=Z,1.0nm,0.5s,baz=90,slow=8.1,SNR=4.1								
AAK	**Ala-Archa**	**49.92**	**298**	*i* P			**P**	**10 27 53.0**	**-1.0**
AAK				pmax	pmax				
	comp=Z,2.0nm,0.9s								
BVAR	**Borovoye Array**	**50.09**	**312**	P			**P**	**10 27 54.5**	**-0.5**
	comp=Z,5.8nm,1.0s,baz=81,slow=8.9,SNR=11								
BRVK	**Borovoye**	**50.15**	**312**	*ce*P			**P**	**10 27 55.6**	**+0.2**
BRVK				pmax	pmax				
	comp=Z,7.0nm,1.0s								
MNAS	**Manas**	**51.36**	**299**	P			**P**	**10 28 04.2**	**-0.7**
MNAS				pmax	pmax				
	comp=Z,5.0nm,1.1s								
SFK	**Sufi-Kurgan**	**51.45**	**295**	P			**P**	**10 28 06.3**	**+0.6**
SFK				pmax	pmax				
	comp=Z,3.0nm,0.7s								
KKAR	**Karatay Array**	**52.56**	**300**	*e*P			**P**	**10 28 13.3**	**-0.4**
KKAR				pmax	pmax				
	comp=Z,1.0nm,0.3s								
KKAR	**Karatay Array**	**52.56**	**300**	*e*P			**P**	**10 28 13.3**	**-0.4**
	comp=Z,1.2nm,0.3s								
INK	**Inuvik**	**54.70**	**27**	P			**P**	**10 28 29.1**	**+0.3**
	comp=Z,1.2nm,0.8s,baz=316,slow=7.8,SNR=5.5								
INK	**Inuvik**	**54.70**	**27**	P			**P**	**10 28 29.1**	**+0.3**
INK				pmax	pmax				
	comp=Z,3.0nm,1.1s								
ARU	**Arti**	**55.93**	**318**	*c* P			**P**	**10 28 38.6**	**+0.7**
	comp=Z,4.1nm,0.5s,baz=79,slow=3.2,SNR=10								
ARU	**Arti**	**55.93**	**318**	*c* P			**P**	**10 28 37.3**	**-0.7**
ARU								10 30 40.4	
ARU				S			**S**		
ARU				SS			**SS**	**10 40 05.7**	**-5.1**
ARU				pmax	pmax				
	comp=Z,11nm,1.0s								
FITZ	**Fitzroy Crossi**	**56.61**	**197**	P			**P**	**10 28 44.7**	**+1.6**
	comp=Z,2.7nm,0.7s,baz=11,slow=5.2,SNR=5.2								
KBL	**Kabul**	**56.80**	**291**	P			**P**	**10 28 43.3**	**-1.5**
KBL				pmax	pmax				
	comp=Z,7.0nm,1.0s								
WRAB	**Tennant Creek**	**56.95**	**187**	*ce*P			**P**	**10 28 46.6**	**+1.0**
WRAB				pmax	pmax				
	comp=Z,27nm,1.0s								
WRAB	**Tennant Creek**	**56.95**	**187**	*e*P			**P**	**10 28 45.0**	**-0.6**
	comp=Z,8.1nm,0.8s								
WRA	**Warramunga Arr**	**56.96**	**187**	P			**P**	**10 28 45.0**	**-0.7**
	comp=Z,9.9nm,0.7s,baz=5.1,slow=7.4,SNR=33								
WRA	**Warramunga Arr**	**56.96**	**187**	P			**P**	**10 28 45.0**	**-0.7**
WRA				pmax	pmax				
	comp=Z,10.0nm,0.7s								
ABKAR	**Akbulak array**	**57.44**	**310**	*e*P			**P**	**10 28 48.0**	**-0.8**
	comp=Z,8.4nm,0.9s								
AKTO	**Aktyubinsk**	**58.19**	**312**	P			**P**	**10 28 55.7**	**+1.7**
	comp=Z,2.0nm,0.6s,baz=60,slow=8.4,SNR=7.3								
SPITS	**Spitsbergen Ar**	**60.41**	**349**	P			**P**	**10 29 08.7**	**-0.3**
	comp=Z,18nm,1.0s,baz=86,slow=7.4,SNR=4.1								
ASAR	**Alice Springs**	**60.69**	**187**	P			**P**	**10 29 11.2**	**-0.3**
	comp=Z,3.8nm,0.7s,baz=9.6,slow=6.0,SNR=26								
RES	**Resolute Bay**	**62.77**	**14**	P			**P**	**10 29 25.5**	**+0.6**
RES				pmax	pmax				
	comp=Z,4.0nm,1.3s								
GEYT	**Alibeck**	**63.27**	**299**	P			**P**	**10 29 30.0**	**+1.1**
	comp=Z,4.3nm,0.6s,baz=46,slow=4.2,SNR=7.0								
ARCES	**ARCESS Array B**	**63.77**	**339**	P			**P**	**10 29 30.8**	**-0.9**
	comp=Z,1.0nm,0.6s,baz=52,slow=7.9,SNR=6.7								
YKA	**Yellowknife Ar**	**64.15**	**30**	P			**P**	**10 29 34.0**	**-0.2**
	comp=Z,1.3nm,1.0s,baz=297,slow=6.6,SNR=9.9								
YKA	**Yellowknife Ar**	**64.15**	**30**	P			**P**	**10 29 34.0**	**-0.2**
YKA				pmax	pmax				
	comp=Z,2.0nm,1.1s								
OBN	**Obninsk**	**67.71**	**323**	⇓*e*P			**P**	**10 29 59.0**	**+1.8**
OBN				*e*				10 32 29.2	
OBN				*e*PPP		PPP		10 34 05.0	
OBN				*e*S			**S**	**10 38 57.1**	**+2.7**
OBN				pmax	pmax				
	comp=Z,4.0nm,0.7s								
OBN				MLR	MLR				
	comp=Z,799nm,19.0s								
FINES	**FINESS Array B**	**68.52**	**332**	P			**P**	**10 30 01.4**	**-0.8**
	comp=Z,5.0nm,0.8s,baz=64,slow=8.7,SNR=11								
STKA	**Stephens Creek**	**68.55**	**179**	P			**P**	**10 30 04.2**	**+1.5**
	comp=Z,4.0nm,0.8s,baz=347,slow=5.6,SNR=6.4								
KBZ	**Khabaz**	**70.41**	**310**	P			**P**	**10 30 15.7**	**+1.5**
	comp=Z,3.0nm,0.8s,baz=34,slow=3.6,SNR=4.7								
KBZ	**Khabaz**	**70.41**	**310**	P			**P**	**10 30 15.7**	**+1.5**
KBZ				pmax	pmax				
	comp=Z,4.0nm,1.0s								
KIV	**Kislovodsk**	**70.42**	**311**	*e*P			**P**	**10 30 16.0**	**+1.6**
KIV				pmax	pmax				
	comp=Z,15nm,1.1s								
NEW	**Newport**	**70.59**	**44**	P			**P**	**10 30 15.3**	**-0.1**
HFS	**Hagfors**	**73.83**	**335**	P			**P**	**10 30 34.1**	**-0.3**
	comp=Z,4.5nm,0.9s,baz=54,slow=7.3,SNR=6.5								
AKASG	**Malin Array Be**	**73.90**	**322**	P			**P**	**10 30 33.9**	**-1.1**
	comp=Z,0.8nm,0.5s,baz=44,slow=5.8,SNR=8.0								
KIEV	**Kiev**	**73.92**	**322**	*e*P			**P**	**10 30 34.7**	**-0.4**
KIEV				pmax	pmax				
	comp=Z,3.0nm,0.8s								
NB2	**NORSAR Subarra**	**73.94**	**337**	P			**P**	**10 30 34.4**	**-0.7**
	comp=Z,4.2nm,0.9s,baz=42,slow=5.9								
NOA	**NORSAR Array B**	**73.94**	**337**	P			**P**	**10 30 34.1**	**-1.0**
	comp=Z,3.9nm,0.9s,baz=40,slow=5.8,SNR=8.5								
FFC	**Flin Flon**	**74.07**	**32**	*e*P			**P**	**10 30 37.2**	**+1.3**
DLMT	**Dillon**	**74.81**	**44**	P			**P**	**10 30 41.3**	**+0.7**
	comp=Z,9.8nm,1.1s								
NVAR	**Mina Array Bea**	**75.52**	**53**	P			**P**	**10 30 45.5**	**+0.5**
	comp=Z,1.8nm,0.8s,baz=287,slow=6.1,SNR=8.7								
PDAR	**Pinedale Array**	**78.14**	**45**	P			**P**	**10 31 00.0**	**+0.3**
	comp=Z,0.6nm,0.7s,baz=224,slow=0.9,SNR=5.7								
BRTR	**Keskin Array B**	**78.37**	**311**	P			**P**	**10 31 00.8**	**0.0**
	comp=Z,2.1nm,1.0s,baz=82,slow=4.3,SNR=4.7								
OJC	**Ojcow**	**78.68**	**326**	P			**P**	**10 31 00.8**	**-1.4**
OJC				pmax	pmax				
	comp=Z,9.0nm,0.9s								
NIE	**Niedzica**	**79.02**	**325**	P			**P**	**10 31 03.4**	**-0.7**
NIE				pmax	pmax				
	comp=Z,3.0nm,1.0s								
CLL	**Collm**	**80.78**	**330**	*e*P			**P**	**10 31 13.0**	**-0.5**
	comp=Z,6.0nm,0.9s								
CLL	**Collm**	**80.78**	**330**	*e*P			**P**	**10 31 13.0**	**-0.5**
CLL				pmax	pmax				
	comp=Z,6.0nm,0.9s								
TREC	**Trest**	**81.26**	**327**	P			**P**	**10 31 15.8**	**-0.4**
TREC				pmax	pmax				
	comp=Z,4.0nm,1.2s								
GERES	**GERESS Array B**	**82.37**	**328**	P			**P**	**10 31 21.4**	**-0.8**
	comp=Z,0.4nm,0.3s,baz=34,slow=7.1,SNR=5.1								
GERES	**GERESS Array B**	**82.37**	**328**	P			**P**	**10 31 21.4**	**-0.8**
GERES				pmax	pmax				
	comp=Z,1.0nm,0.4s								
TUC	**Tucson**	**84.12**	**54**	P			**P**	**10 31 31.7**	**+0.2**
TUC				pmax	pmax				
	comp=Z,3.0nm,2.8s								
ANMO	**Albuquerque**	**85.09**	**49**	*ce*P			**P**	**10 31 37.5**	**+1.0**
ANMO				pmax	pmax				
	comp=Z,3.0nm,1.2s								
TXAR	**Lajitas Array**	**90.65**	**52**	P			**P**	**10 32 03.7**	**+0.6**
	comp=Z,1.3nm,0.9s,baz=306,slow=3.0,SNR=7.4								
LPAZ	**La Paz**	**147.26**	**59**	PKPbc			**PKPbc**	**10 38 44.4**	**-0.5**
	comp=Z,3.9nm,0.9s,baz=337,slow=0.9,SNR=9.0								

JMA 11 10:20:05.5,36.96N×140.77E,h10km±1km,M3.5,2C,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time	Res
ONAJ	**Iwakimizuishiy**	**0.14**	**9**	⇑P			Pg	10 20 08.8	0.0
ONAJ				*e*S			Sg	10 20 11.2	+0.1
JHO	**Hitachi**	**0.38**	**205**	⇑P			Pg	10 20 13.1	0.0
JHO				S			Sg	10 20 18.2	0.0
JFK	**Kawauchi**	**0.41**	**12**	P			Pg	10 20 13.7	0.0
JFK				*e*S			Sg	10 20 19.5	+0.3
JFT	**Otama**	**0.66**	**328**	*e*S			Sg	10 20 27.3	+0.5

JMA 11 10:20:39.7,37.00N×140.74E,h8km±1km,M3.4,3C, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time	Res
ONAJ	**Iwakimizuishiy**	**0.11**	**25**	⇑P			Pg	10 20 42.4	+0.1
ONAJ				S			Sg	10 20 44.3	+0.2
JFK	**Kawauchi**	**0.38**	**16**	P			Pg	10 20 47.2	0.0
JFK				*e*S			Sg	10 20 52.5	+0.3
JHO	**Hitachi**	**0.41**	**200**	⇑P			Pg	10 20 47.8	+0.1
JHO				S			Sg	10 20 53.5	+0.4
JMM	**Marumori**	**0.86**	**3**	⇑P			Pg	10 20 56.2	-0.2
JMM				S			Sg	10 21 07.7	+0.1
MAT	**Matsushiro**	**2.08**	**258**	P			Pn	10 21 09.4	-5.6
MAT				S			Sn	10 21 30.7	-10

JMA 11 10:20:53.2,36.98N×140.65E,h10km±1km,M3.5,1C,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time	Res
ONAJ	**Iwakimizuishiy**	**0.17**	**44**	⇑P			Pg	10 20 57.0	+0.1
ONAJ				S			Sg	10 20 59.6	+0.1
JHO	**Hitachi**	**0.37**	**190**	P			Pg	10 21 00.6	0.0
JHO				*e*S			Sg	10 21 06.1	+0.6
JFK	**Kawauchi**	**0.42**	**25**	P			Pg	10 21 01.4	-0.2

JMA 11 10:22:20.0,37.04N×140.68E,h10km±1km,M3.2,1C, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time	Res
ONAJ	**Iwakimizuishiy**	**0.11**	**57**	⇑P			Pg	10 22 23.0	+0.2
ONAJ				S			Sg	10 22 25.0	+0.1
JFK	**Kawauchi**	**0.36**	**25**	P			Pg	10 22 27.2	0.0
JFK				S			Sg	10 22 32.3	+0.3
JHO	**Hitachi**	**0.44**	**192**	P			Pg	10 22 28.5	-0.1
JHO				S			Sg	10 22 34.6	+0.3
JFT	**Otama**	**0.55**	**330**	P			Pg	10 22 31.0	+0.3
JFT				*e*S			Sg	10 22 38.3	+0.3
MAT	**Matsushiro**	**2.05**	**257**	P			Pn	10 22 55.6	+1.1
MAT				S			Sb	10 23 21.7	-1.1

JMA 11 10:22:58.1,37.02N×140.62E,h11km±1km,M3.4,4C, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time	Res
ONAJ	**Iwakimizuishiy**	**0.16**	**60**	⇑P			Pg	10 23 01.9	+0.1
ONAJ				S			Sg	10 23 04.4	0.0
JFK	**Kawauchi**	**0.40**	**30**	⇑P			Pg	10 23 06.0	-0.1
JFK				S			Sg	10 23 11.5	+0.1
JHO	**Hitachi**	**0.41**	**186**	⇑P			Pg	10 23 06.2	0.0
JHO				S			Sg	10 23 11.8	+0.2
JFT	**Otama**	**0.55**	**336**	⇑P			Pg	10 23 08.9	+0.1
JFT				S			Sg	10 23 16.3	+0.3
MAT	**Matsushiro**	**2.00**	**257**	P			Pn	10 23 30.7	-1.1
MAT				S			Sb	10 23 59.3	0.0

*IDC **11** 10:25:03.9±0.8,37.01N×140.70E,h0km,mb3.9/12, mb1 4.0/15,mb1mx3.8/69,mbtmp3.9/15,ML2.9/3,Error ellipse: s-maj=21.1km s-min=16.3km az=85.0*

*ISCJB **11** 10:25:04.9±0.5,37.02N±0.03×140.79E±0.05,h19km±3km, mb3.9/13,Error ellipse: s-maj=7.0km s-min=4.3km az=17.0*

*JMA **11** 10:25:05.5,37.02N×140.70E,h10km±1km,M4.0 Broadband fault plane solution: P waves. NP1: ϕs118.00000°,δ59.00000°,λ-69.00000°. NP2: ϕs261.00000°,δ37.00000°,λ-122.00000°. Principal axes: T Plg12.0000°, Azm193.0000°; N Plg18.0000°, Azm287.0000°; P Plg68.0000°, Azm72.0000°;*

*NEIC **11** 10:25:11.4±1.1,36.95N×140.63E,h58km±10km,mb4.3/1 Error ellipse: s-maj=13.5km s-min=10.2km az=98.0*

ISC 11 10:25:05.4±1.0,37°04N±0°03×140°63E±0°05,h8km±7km, n38,σ0§77/38,mb3.7/13,6C,Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time	Res
ONAJ	**Iwakimizuishiy**	**0.15**	**65**	⇑P			**Pg**	**10 25 08.5**	**-0.1**
ONAJ				S			**Sg**	**10 25 10.5**	**-0.3**
JFK	**Kawauchi**	**0.38**	**30**	⇑P			**Pg**	**10 25 12.9**	**0.0**
JFK				S			**Sg**	**10 25 18.2**	**+0.3**
JHO	**Hitachi**	**0.43**	**187**	⇑P			**Pg**	**10 25 13.7**	**-0.1**
JHO				S			**Sg**	**10 25 19.6**	**+0.2**
JFT	**Otama**	**0.53**	**334**	P			**Pg**	**10 25 16.9**	**-0.2**
JFT				S			**Sg**	**10 25 24.7**	**-0.2**
JSB	**Shiboa**	**0.57**	**263**	⇑P			**Pb**	**10 25 18.2**	**+0.4**
JSB				S			**Sb**	**10 25 26.4**	**+0.3**
JFY	**Yanaizu**	**0.83**	**297**	⇑P			**Pb**	**10 25 22.3**	**+0.2**
JFY				S			**Sb**	**10 25 33.6**	**+0.2**
JMM	**Marumori**	**0.83**	**9**	P			**Pg**	**10 25 21.3**	**-0.2**
JMM				S			**Sg**	**10 25 32.6**	**+0.2**
JYT	**Yasato**	**0.88**	**204**	⇑P			**Pg**	**10 25 22.0**	**-0.4**
JYT				S			**Sg**	**10 25 34.0**	**+0.1**
MJAR	**Matsushiro Arr**	**2.01**	**256**	Pn			**Pb**	**10 25 41.2**	**-1.0**
	25nm,0.3s,baz=76,slow=16,SNR=15								
MJAR				Sn			**Sb**	**10 26 07.7**	**+0.3**
	40nm,0.3s,baz=312,slow=13,SNR=4.5								
MAJO	**Matsushiro**	**2.01**	**256**	*e*Pn			**Pb**	**10 25 42.3**	**+0.1**
JHJ	**Hachijo jima 2**	**3.97**	**190**	Pn			**Pn**	**10 26 06.9**	**+0.2**
	4.0nm,0.3s,baz=325,slow=22,SNR=2.8								
JHJ2	**Mitsune**	**3.98**	**190**	*e*Pn			**Pn**	**10 26 08.6**	**+2.0**
ERM	**Erimo**	**5.34**	**21**	*e*Pn			Pn	10 26 29.5	+4.1
USRK	**Ussuriysk Ar.**	**9.71**	**320**	Pn			**Pn**	**10 27 24.6**	**-0.7**
	0.1nm,0.3s,baz=122,slow=14,SNR=3.0								
KSRS	**Korea Array**	**10.14**	**276**	Pn			Pn	10 27 37.7	+6.4
	baz=90,slow=12,SNR=6.1								
KSAR	**Wonju Array Be**	**10.18**	**276**	Pn			Pn	10 27 37.7	+6.0
SEY	**Seymchan**	**26.91**	**12**

MJAR	**Matsushiro Arr**	**2.03**	**257**	Pn	**Pn**	**10 26 21.6**	**+0.5**
	90nm,0.3s,baz=81,slow=16,SNR=15						
MJAR				Sn	**Sb**	**10 26 47.9**	**-1.2**
	71nm,0.3s,baz=76,slow=13,SNR=4.1						
MAT	**Matsushiro**	**2.04**	**257**	P	**Pn**	**10 26 21.9**	**+0.9**
MAT				S	**Sb**	**10 26 48.0**	**-1.2**
JHJ	**Hachijo jima 2**	**3.95**	**191**	Pn	**Pn**	**10 26 48.6**	**+1.3**
	26nm,0.3s,baz=100,slow=14,SNR=3.5						
JHJ				Sn	**Sn**	**10 27 34.0**	**-0.1**
	49nm,0.3s,baz=108,slow=20,SNR=3.8						
ERM	**Erimo**	**5.35**	**20**	*e*P	**Pn**	**10 27 08.0**	**+1.4**
SHO	**Shikotan**	**8.30**	**32**	*e*P	**Pn**	**10 27 44.7**	**-2.3**
SHO				*e*S	**Sn**	**10 29 16.4**	**-4.7**
SHO				pmax	pmax		
	comp=Z,17nm,0.6s						
SHO				pmax	pmax		
	comp=N,11nm,0.5s						
JNU	**Nakatsue**	**8.92**	**247**	Pn	Pn	10 27 59.0	+3.4
	comp=N,0.3nm,0.3s,baz=63,slow=5.6,SNR=4.6						
USRK	**Ussuriysk Ar.**	**9.75**	**320**	Pn	Pn	10 28 12.6	+5.7
	comp=N,0.5nm,0.3s,baz=132,slow=13,SNR=19						
KUR	**Kuril'sk**	**9.84**	**31**	P	**Pn**	**10 28 07.8**	**-0.3**
KUR				*e*S	**Sn**	**10 29 57.7**	**-1.2**
KUR				pmax	pmax		
	comp=Z,24nm,0.6s						
KUR				pmax	pmax		
	comp=N,13nm,0.5s						
KUR				pmax	pmax		
	comp=E,13nm,0.5s						
YSS	**Yuzh-Sakhalins**	**10.05**	**8**	*e*P	**Pn**	**10 28 11.9**	**+0.8**
YSS				pmax	pmax		
	comp=Z,20nm,0.8s						
YSS	**Yuzh-Sakhalins**	**10.05**	**8**	*e*Pn	**Pn**	**10 28 11.6**	**+0.5**
	comp=Z,19nm,0.8s						
KSRS	**Korea Array**	**10.18**	**276**	Pn	Pn	10 28 18.2	+5.4
	comp=Z,0.5nm,0.3s,baz=98,slow=13,SNR=18						
KSAR	**Wonju Array Be**	**10.21**	**276**	P	Pn	10 28 18.2	+5.0
KSAR	**Wonju Array Be**	**10.21**	**276**	Pn	Pn	10 28 18.2	+5.0
KLR	**Kul'dur**	**13.83**	**335**	Pn	P	10 29 07.2	-4.0
	comp=Z,0.1nm,0.3s,baz=130,slow=12,SNR=6.8						
NKL	**Nikolayevsk**	**16.14**	**0**	*e*P	P	10 29 43.0	+6.2
PETK	**Petropavlovsk-**	**20.01**	**31**	P	**P**	**10 30 20.1**	**+0.7**
	comp=Z,0.1nm,0.3s,baz=181,slow=12,SNR=4.0						
MA2	**Magadan**	**23.50**	**13**	P	**P**	**10 30 56.4**	**-0.2**
	comp=Z,9.3nm,0.7s,baz=230,slow=12,SNR=6.9						
YAK	**Yakutsk**	**25.97**	**348**	*e*P	**P**	**10 31 19.4**	**+0.2**
YAK				pmax	pmax		
	comp=Z,8.0nm,1.0s						
ULN	**Ulaanbaatar**	**26.88**	**304**	*ce*P	**P**	**10 31 26.9**	**-1.0**
ULN				pmax	pmax		
	comp=Z,4.0nm,1.2s						
SEY	**Seymchan**	**26.93**	**12**	P	**P**	**10 31 28.1**	**+0.2**
	comp=Z,3.0nm,0.8s,baz=213,slow=8.6,SNR=10						
BOD	**Bodaibo**	**27.23**	**328**	*e*P	**P**	**10 31 29.1**	**-1.7**
BOD				pmax	pmax		
	comp=Z,2.0nm,1.2s						
SONM	**Songino Array**	**27.31**	**304**	P	**P**	**10 31 31.4**	**-0.3**
	comp=Z,2.3nm,0.7s,baz=106,slow=8.7,SNR=14						
H11N2	**WAKE ISLAND Hy**	**28.65**	**120**	T	T	11 01 33.1	
	baz=313,slow=75,SNR=151						
H11N1	**WAKE ISLAND Hy**	**28.66**	**120**	T	T	11 01 33.7	
	baz=313,slow=75,SNR=118						
H11N3	**WAKE ISLAND Hy**	**28.67**	**120**	T	T	11 01 34.5	
	baz=313,slow=75,SNR=116						
H11S1	**WAKE ISLAND Hy**	**29.35**	**122**	T	T	11 02 26.3	
	baz=314,slow=76,SNR=212						
H11S3	**WAKE ISLAND Hy**	**29.35**	**122**	T	T	11 02 26.5	
	baz=314,slow=76,SNR=148						
H11S2	**WAKE ISLAND Hy**	**29.36**	**122**	T	T	11 02 27.7	
	baz=314,slow=76,SNR=137						
BILL	**Bilibino**	**34.22**	**17**	*j*P	**P**	**10 32 32.2**	**0.0**
BILL				*e*		10 33 54.6	
BILL				*e*PPP	PPP	10 34 02.4	
BILL				pmax	pmax		
	comp=Z,4.0nm,1.0s						
BILL				MLR	MLR		
	comp=Z,551nm,16.0s						
TIXI	**Tiksi**	**35.24**	**354**	P	**P**	**10 32 39.3**	**-1.7**
	comp=Z,1.4nm,0.4s,baz=162,slow=6.1,SNR=8.2						
TIXI	**Tiksi**	**35.24**	**354**	*e*P	**P**	**10 32 42.9**	**+1.9**
TIXI				pmax	pmax		
	comp=Z,10.0nm,3.4s						
CMAR	**Chiang Mai Arr**	**40.92**	**255**	P	**P**	**10 33 30.2**	**+0.7**
	comp=Z,0.7nm,0.6s,baz=46,slow=7.8,SNR=4.3						
ZALV	**Zalesovo Beam**	**41.49**	**312**	P	**P**	**10 33 33.8**	**-0.1**
	comp=Z,1.4nm,0.5s,baz=98,slow=10,SNR=6.2						
ZALV				PcP	**PcP**	**10 35 29.8**	**-1.5**
	comp=Z,1.6nm,0.7s,baz=82,slow=2.6,SNR=5.2						
ZALV	**Zalesovo Beam**	**41.49**	**312**	P	**P**	**10 33 33.8**	**-0.1**
ZALV						10 35 29.8	
ZALV				pmax	pmax		
	comp=Z,2.0nm,0.6s						
ZALV				pmax	pmax		
	comp=Z,2.0nm,0.7s						
MKAR	**Makanchi Array**	**43.63**	**302**	P	**P**	**10 33 51.1**	**-0.3**
	comp=Z,1.5nm,0.6s,baz=86,slow=9.7,SNR=11						
MKAR				PcP	**PcP**	**10 35 38.3**	**-0.4**
	comp=Z,0.5nm,0.6s,baz=94,slow=4.3,SNR=3.1						
KURK	**Kurchatov**	**45.48**	**308**	*e*P	**P**	**10 34 05.1**	**-0.9**
KURK				pmax	pmax		
	comp=Z,19nm,0.8s						
KURK	**Kurchatov**	**45.48**	**308**	*e*P	**P**	**10 34 05.1**	**-0.9**
	comp=Z,19nm,0.8s						
KURK				P	**pP**	**10 34 05.8**	**-1.8**
KURBB	**Kurchatov Arra**	**45.55**	**308**	P	**P**	**10 34 05.8**	**-0.8**
	comp=Z,3.2nm,0.2s,baz=84,slow=8.0,SNR=14						
ODAN	**Odare**	**45.82**	**273**	*e*P	**P**	**10 34 11.8**	**+2.4**
	comp=Z,8.0nm,0.6s						
PDGK	**Podgornoye**	**46.27**	**298**	P	**P**	**10 34 13.6**	**+1.3**
PDGK				pmax	pmax		
	comp=Z,3.0nm,1.0s						
RAMN	**Ramite**	**46.41**	**274**	*e*P	**P**	**10 34 15.4**	**+1.3**
	comp=Z,22nm,0.9s						
JIRN	**Jiri**	**46.43**	**275**	*e*P	P	10 34 20.0	+5.7
	comp=Z,0.3nm,0.4s						
GUN	**Gumba**	**46.57**	**275**	*e*P	P	10 34 22.2	+6.8
	comp=Z,3.7nm,0.2s						
KDAK	**Kodiak Island**	**47.51**	**42**	*ce*P	**P**	**10 34 22.2**	**+0.3**
KOLN	**Koldanda**	**48.45**	**276**	*e*P	**P**	**10 34 31.0**	**+1.2**
PYUN	**Piuthan**	**48.79**	**277**	*e*P	**P**	**10 34 33.8**	**+1.4**
ILAR	**Eielson Array**	**49.83**	**32**	P	**P**	**10 34 39.7**	**0.0**
	comp=Z,1.8nm,0.8s,baz=273,slow=6.5,SNR=12						
OTUK	**Ortayu**	**49.96**	**306**	P	**P**	**10 34 42.1**	**+1.2**
OTUK				pmax	pmax		
	comp=Z,4.0nm,1.4s						
AAK	**Ala-Archa**	**49.98**	**298**	*e*P	**P**	**10 34 39.8**	**-1.5**
AAK				pmax	pmax		
	comp=Z,3.0nm,0.9s						
BVAR	**Borovoye Array**	**50.15**	**312**	P	**P**	**10 34 41.8**	**-0.5**
	comp=Z,1.4nm,0.7s,baz=87,slow=7.7,SNR=6.8						
BVAR				PcP	**PcP**	**10 36 00.0**	**-1.6**
	comp=Z,1.2nm,0.5s,baz=5.7,slow=1.5,SNR=4.9						
BRVK	**Borovoye**	**50.20**	**312**	*ce*P	**P**	**10 34 43.7**	**+1.0**
BRVK				pmax	pmax		
	comp=Z,3.0nm,0.7s						
MNAS	**Manas**	**51.42**	**299**	P	**P**	**10 34 54.0**	**+1.8**
MNAS				pmax	pmax		
	comp=Z,3.0nm,0.7s						
KKAR	**Karatay Array**	**52.62**	**300**	*e*P	**P**	**10 35 01.2**	**+0.2**
KKAR	**Karatay Array**	**52.62**	**300**	*e*P	**P**	**10 35 01.2**	**+0.2**
INK	**Inuvik**	**54.68**	**27**	P	**P**	**10 35 15.5**	**0.0**
	comp=Z,3.3nm,1.0s,baz=288,slow=4.3,SNR=4.8						
ARU	**Arti**	**55.98**	**318**	P	**P**	**10 35 25.0**	**-0.2**
	comp=Z,1.7nm,0.4s,baz=80,slow=12,SNR=4.9						
ARU	**Arti**	**55.98**	**318**	*d*P	**P**	**10 35 26.3**	**+1.1**
ARU						10 37 27.4	
ARU				S	**S**	**10 43 15.3**	**+1.7**
ARU				SS	**SS**	**10 47 03.9**	**+4.9**
ARU				pmax	pmax		
	comp=Z,8.0nm,1.2s						
WRAB	**Tennant Creek**	**56.95**	**187**	*ce*P	**P**	**10 35 33.0**	**+0.6**
WRAB				pmax	pmax		
	comp=Z,30nm,1.2s						
WRA	**Warramunga Arr**	**56.96**	**187**	P	**P**	**10 35 31.7**	**-0.8**
	comp=Z,8.7nm,0.7s,baz=3.9,slow=7.4,SNR=25						
ABKAR	**Akbulak array**	**57.50**	**310**	*e*P	**P**	**10 35 35.1**	**-1.0**
	comp=Z,3.0nm,0.6s						
ASAR	**Alice Springs**	**60.69**	**187**	P	**P**	**10 35 58.0**	**-0.4**
	comp=Z,3.1nm,0.7s,baz=11,slow=7.4,SNR=19						
ASAR	**Alice Springs**	**60.69**	**187**	P	**P**	**10 35 58.0**	**-0.4**
ASAR				pmax	pmax		
	comp=Z,3.0nm,0.7s						
GEYT	**Alibeck**	**63.33**	**299**	P	**P**	**10 36 17.1**	**+1.0**
	comp=Z,1.5nm,0.4s,baz=69,slow=7.9,SNR=4.8						
ARCES	**ARCESS Array B**	**63.81**	**339**	P	**P**	**10 36 18.1**	**-0.7**
	comp=Z,4.3nm,1.0s,baz=53,slow=8.4,SNR=5.8						
YKA	**Yellowknife Ar**	**64.12**	**30**	P	**P**	**10 36 21.0**	**+0.1**
	comp=Z,0.9nm,0.7s,baz=303,slow=6.6,SNR=18						
YKA	**Yellowknife Ar**	**64.12**	**30**	P	**P**	**10 36 21.0**	**+0.1**
YKA				pmax	pmax		
	comp=Z,1.0nm,0.7s						
STKA	**Stephens Creek**	**68.54**	**179**	P	**P**	**10 36 49.2**	**-0.2**
	comp=Z,2.8nm,0.8s,baz=334,slow=8.3,SNR=5.5						
FINES	**FINESS Array B**	**68.56**	**332**	P	**P**	**10 36 48.0**	**-1.4**
	comp=Z,3.5nm,0.7s,baz=56,slow=7.1,SNR=10						
FINES	**FINESS Array B**	**68.56**	**332**	P	**P**	**10 36 48.0**	**-1.4**
FINES				pmax	pmax		
	comp=Z,4.0nm,0.7s						
KIV	**Kislovodsk**	**70.47**	**311**	*e*P	**P**	**10 37 01.2**	**-0.4**
KIV				pmax	pmax		
	comp=Z,5.0nm,0.9s						
HFS	**Hagfors**	**73.86**	**335**	P	**P**	**10 37 20.8**	**-0.7**
	comp=Z,1.9nm,0.7s,baz=66,slow=8.1,SNR=3.1						
AKASG	**Malin Array Be**	**73.95**	**322**	P	**P**	**10 37 21.1**	**-1.1**
	comp=Z,0.7nm,0.4s,baz=46,slow=6.0,SNR=7.7						
KIEV	**Kiev**	**73.96**	**322**	*e*P	**P**	**10 37 22.2**	**0.0**
KIEV				pmax	pmax		
	comp=Z,5.0nm,1.1s						
NOA	**NORSAR Array B**	**73.98**	**337**	P	**P**	**10 37 21.1**	**-1.2**
	comp=Z,1.2nm,0.7s,baz=40,slow=5.8,SNR=5.4						
FFC	**Flin Flon**	**74.04**	**32**	*e*P	**P**	**10 37 23.5**	**+0.8**
DUG	**Dugway, Tooele**	**77.81**	**49**	P	**P**	**10 37 46.2**	**+1.5**
DUG				pmax	pmax		
	comp=Z,6.0nm,1.0s						
PDAR	**Pinedale Array**	**78.10**	**45**	P	**P**	**10 37 46.6**	**+0.3**
	comp=Z,1.0nm,0.7s,baz=255,slow=2.3,SNR=13						
CLL	**Collm**	**80.82**	**330**	*e*P	**P**	**10 37 59.0**	**-1.6**
CLL	**Collm**	**80.82**	**330**	*e*P	**P**	**10 37 59.0**	**-1.6**
PV01	**Paradox Valley**	**81.67**	**48**	*e*P	**P**	**10 38 04.4**	**-1.4**
GERES	**GERESS Array B**	**82.42**	**328**	P	**P**	**10 38 08.7**	**-0.6**
	comp=Z,0.4nm,0.4s,baz=50,slow=6.5,SNR=4.7						
BFO	**Black Forest**	**85.03**	**330**	*ce*P	**P**	**10 38 24.4**	**+1.8**
ANMO	**Albuquerque**	**85.05**	**49**	*e*P	**P**	**10 38 23.2**	**0.0**
ANMO				pmax	pmax		
	comp=Z,4.0nm,1.2s						
TXAR	**Lajitas Array**	**90.60**	**52**	P	**P**	**10 38 50.2**	**+0.4**
	comp=Z,1.1nm,0.8s,baz=305,slow=3.5,SNR=12						
LPAZ	**La Paz**	**147.21**	**59**	PKPbc	**PKPbc**	**10 45 31.6**	**-0.1**
	comp=Z,4.7nm,0.8s,baz=344,slow=2.4,SNR=11						
SIV	**San Ignacio**	**151.54**	**48**	PKPbc	**PKPbc**	**10 45 41.8**	**0.0**
	comp=Z,3.1nm,0.6s,baz=306,slow=3.7,SNR=6.4						

JMA 11 10:27:09.8,37.02N×140.68E,h11km±1km, M2.8, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizushiy**	**0.12**	**49**	P	Pg	10 27 12.9	0.0
ONAJ				S	Sg	10 27 15.0	-0.2
JFK	**Kawauchi**	**0.38**	**24**	P	Pg	10 27 17.2	-0.2
JFK				*e*S	Sg	10 27 22.5	+0.1
JHO	**Hitachi**	**0.42**	**192**	P	Pg	10 27 18.0	0.0
JHO				S	Sg	10 27 23.9	+0.3
JMM	**Marumori**	**0.85**	**6**	P	Pg	10 27 25.7	-0.5
JMM				S	Sg	10 27 37.1	-0.2

JMA 11 10:27:29.7,37.03N×140.67E,h10km±1km, M3.2, 4C, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizushiy**	**0.12**	**55**	⇑P	Pg	10 27 32.8	+0.1
ONAJ				S	Sg	10 27 34.7	-0.2
JFK	**Kawauchi**	**0.37**	**26**	⇑P	Pg	10 27 37.1	0.0
JFK				S	Sg	10 27 42.3	+0.2
JHO	**Hitachi**	**0.43**	**191**	⇑P	Pg	10 27 38.1	0.0
JHO				S	Sg	10 27 44.1	+0.4
JFT	**Otama**	**0.56**	**331**	⇑P	Pg	10 27 40.7	+0.2
JFT				S	Sg	10 27 48.1	+0.3
MAT	**Matsushiro**	**2.04**	**257**	P	Pb	10 28 07.0	+0.2
MAT				S	Sb	10 28 33.1	+0.9

*IDC **11** 10:28:17.8±1.9,5.28S×151.78E,h0km,mb3.9/5, mb1 4.1/6,mb1mx3.7/49,mbtmp3.9/6,ML1.4/1,Error ellipse: s-maj=73.9km s-min=22.7km az=122.0*

ISC 11 10:28:24.8±1.9,5.3S±0.3×151.6E±0.4,h45km,n7,σ1s34/8, mb3.7/5,New Britain region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PMG	**Port Moresby**	**5.97**	**227**	Pn	**Pn**	**10 29 51.6**	**+1.0**
	0.6nm,0.3s,baz=38,slow=6.7,SNR=7.0						
PMG				Sn	**Sn**	**10 30 56.0**	**-1.7**
	0.9nm,0.3s,baz=189,slow=19,SNR=3.4						
WRA	**Warramunga Arr**	**22.19**	**228**	P	**P**	**10 33 18.4**	**+1.0**
	1.5nm,0.6s,baz=52,slow=9.9,SNR=9.0						
ASAR	**Alice Springs**	**24.95**	**221**	P	**P**	**10 33 45.0**	**+0.9**
	1.3nm,0.6s,baz=55,slow=8.7,SNR=22						
FITZ	**Fitzroy Crossi**	**28.34**	**241**	P	**P**	**10 34 13.8**	**-0.9**
	1.4nm,0.3s,baz=60,slow=9.0,SNR=5.6						
SONM	**Songino Array**	**66.12**	**328**	P	**P**	**10 39 08.6**	**+1.1**
	0.8nm,0.6s,baz=143,slow=5.0,SNR=4.1						
ILAR	**Eielson Array**	**83.10**	**22**	P	**P**	**10 40 44.4**	**-1.1**
	0.6nm,0.7s,baz=257,slow=6.0,SNR=4.7						
TORD	**Torodi Ar. Bea**	**149.30**	**287**	PKPbc	**PKPbc**	**10 48 09.2**	**-0.6**
	3.3nm,0.7s,baz=78,slow=3.2,SNR=22						

*IDC **11** 10:28:35.9±1.1,37.13N×141.04E,h0km,mb3.5/5, mb1 3.7/6,mb1mx3.4/65,mbtmp3.5/6,ML3.6/1,MS4.4/1, Ms1 4.4/1,ms1mx3.3/59,Error ellipse: s-maj=29.4km s-min=23.8km az=81.0*

*ISCJB **11** 10:28:37.4±1.1,36.94N±0.05×140.96E±0.09,h20km±6km, mb3.5/5,Error ellipse: s-maj=12.7km s-min=7.2km az=27.0*

*JMA **11** 10:28:39.3,36.98N×140.72E,h12km±1km,M3.9*

ISC 11 10:28:38.2±1.4,36.94N±0.05×140.9E±0.1,h14km±7km, n12,σ0s89/15,mb3.4/5,2C-1D,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizushiy**	**0.18**	**330**	⇓P	**Pg**	**10 28 42.7**	**+0.1**
ONAJ				S	**Sg**	**10 28 45.1**	**-0.4**
JFK	**Kawauchi**	**0.42**	**356**	⇑P	**Pg**	**10 28 47.2**	**+0.5**
JFK				S	**Sg**	**10 28 52.8**	**+0.3**
JHO	**Hitachi**	**0.43**	**220**	⇑P	**Pg**	**10 28 46.9**	**+0.1**
JHO				S	**Sg**	**10 28 52.2**	**-0.5**
MJAR	**Matsushiro Arr**	**2.21**	**260**	Pn	**Pn**	**10 29 14.7**	**+0.2**
	15nm,0.3s,baz=75,slow=16,SNR=5.9						
MJAR				Sn	**Sn**	**10 29 41.5**	**0.0**
	32nm,0.3s,baz=92,slow=31,SNR=8.9						
MAT	**Matsushiro**	**2.21**	**260**	P	**Pn**	**10 29 14.8**	**+0.4**
MAT				S	**Sn**	**10 29 41.3**	**-0.2**
KSRS	**Korea Array**	**10.38**	**277**	Pn	Pn	10 31 12.1	+5.6
	0.2nm,0.3s,baz=84,slow=13,SNR=4.3						
PETK	**Petropavlovsk-**	**19.97**	**31**	LR	LR	10 40 11.1	
	comp=Z,940nm,18.9s,baz=53,slow=35						
SONM	**Songino Array**	**27.50**	**304**	P	**P**	**10 34 24.0**	**-0.2**
	0.4nm,0.5s,baz=98,slow=10,SNR=2.8						
MKAR	**Makanchi Array**	**43.83**	**302**	P	**P**	**10 36 43.6**	**-0.1**
	0.2nm,0.3s,baz=90,slow=7.2,SNR=3.3						
ILAR	**Eielson Array**	**49.78**	**32**	P	**P**	**10 37 28.0**	**-2.0**
	0.2nm,0.8s,baz=262,slow=6.3,SNR=3.3						
WRA	**Warramunga Arr**	**56.92**	**187**	P	**P**	**10 38 23.7**	**+0.9**
	0.9nm,0.6s,baz=2.7,slow=7.4,SNR=7.5						
ASAR	**Alice Springs**	**60.65**	**187**	P	**P**	**10 38 50.5**	**+1.7**
	0.3nm,0.7s,baz=16,slow=7.2,SNR=3.4						

*ISCJB **11** 10:29:10.9±0.6,36.94N±0.03×140.78E±0.05,h11km±3km, mb3.9/19,Error ellipse: s-maj=6.7km s-min=4.1km az=14.0*

*IDC **11** 10:29:10.8±0.7,36.74N×140.70E,h0km,mb3.9/16, mb1 4.0/17,mb1mx3.8/65,mbtmp3.9/17,ML3.8/1,MS3.8/1, Ms1 3.8/1,ms1mx3.2/67,Error ellipse: s-maj=18.2km s-min=14.5km az=101.0*

*JMA **11** 10:29:11.3,36.97N×140.74E,h12km±1km,M4.3 Broadband fault plane solution: P waves. NP1: ϕs336.00000°,δ63.00000°,λ-108.00000°. NP2: ϕs192.00000°,δ32.00000°,λ-59.00000°. Principal axes: T Plg16.0000°, Azm79.0000°; N Plg16.0000°, Azm344.0000°; P Plg67.0000°, Azm211.0000°;*

JMA Felt III J1.

*NEIC **11** 10:29:17.6±1.1,36.74N×140.44E,h50km±10km,mb4.0/1 Error ellipse: s-maj=13.1km s-min=9.3km az=103.0*

NEIC Recorded [3 JMA] in Fukushima.

ISC 11 10:29:11.5±1.1,36.96N±0.03×140.70E±0.05,h6km±7km, n42,σ1s21/35,mb3.8/19,3C-2D,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizushiy**	**0.16**	**29**	⇓P	**Pg**	**10 29 14.8**	**0.0**
ONAJ				S	**Sg**	**10 29 17.3**	**+0.3**
JHO	**Hitachi**	**0.37**	**197**	⇑P	**Pg**	**10 29 18.8**	**+0.2**
JHO				*e*S	**Sg**	**10 29 23.9**	**+0.5**
JFK	**Kawauchi**	**0.43**	**19**	⇓P	**Pg**	**10 29 19.4**	**-0.4**
JFK				S	**Sg**	**10 29 25.0**	**-0.4**
JSB	**Shiboa**	**0.62**	**271**	⇑P	**Pb**	**10 29 24.6**	**-0.3**
JSB				S	**Sb**	**10 29 33.8**	**-0.1**
JFT	**Otama**	**0.63**	**333**	⇑P	**Pg**	**10 29 23.8**	**+0.2**
JFT				S	**Sg**	**10 29 31.9**	**+0.1**
JYT	**Yasato**	**0.84**	**209**	S	**Sg**	**10 29 38.6**	**+0.2**
JFY	**Yanaizu**	**0.91**	**300**	S	**Sg**	**10 29 41.0**	**+0.2**
MJAR	**Matsushiro Arr**	**2.04**	**259**	Pn	**Pn**	**10 29 47.3**	**+0.8**
	78nm,0.3s,baz=77,slow=17,SNR=15						
MJAR				Sn	**Sb**	**10 30 13.9**	**-0.8**
	156nm,0.3s,baz=105,slow=18,SNR=13						
MAJO	**Matsushiro**	**2.05**	**259**	Pn	**Pn**	**10 29 44.0**	**-2.5**
JHJ	**Hachijo jima 2**	**3.91**	**191**	Pn	**Pn**	**10 30 11.2**	**-0.9**
	21nm,0.3s,baz=81,slow=19,SNR=5.0						
JHJ				Sn	**Sn**	**10 30 59.4**	**+1.2**
	16nm,0.3s,baz=60,slow=23,SNR=3.4						
JHJ2	**Mitsune**	**3.91**	**191**	*e*Pn	**Pn**	**10 30 12.3**	**+0.2**
ERM	**Erimo**	**5.39**	**20**	*e*Pn	Pb	10 30 39.5	-6.5
USRK	**Ussuriysk Ar.**	**9.80**	**320**	Pn	Pn	10 31 37.9	+4.9
	0.1nm,0.3s,baz=133,slow=12,SNR=6.5						
JCJ	**Chichijima**	**9.92**	**172**	LR	LR	10 35 06.5	
	comp=Z,654nm,21.8s,baz=328,slow=37						
KSRS	**Korea Array**	**10.21**	**277**	Pn	Pn	10 31 43.8	+5.3
	0.3nm,0.3s,baz=92,slow=13,SNR=7.5						
KSAR	**Wonju Array Be**	**10.24**	**277**	Pn	Pn	10 31 43.8	+4.9
SEY	**Seymchan**	**26.98**	**12**	P	**P**	**10 34 56.4**	**+2.8**
	0.9nm,0.6s,baz=210,slow=11,SNR=4.5						
SONM	**Songino Array**	**27.35**	**304**	P	**P**	**10 34 58.8**	**+1.4**
	0.6nm,0.5s,baz=111,slow=9.3,SNR=3.3						
H11N2	**WAKE ISLAND Hy**	**28.60**	**120**	T	T	11 04 51.0	
	baz=313						
H11N1	**WAKE ISLAND Hy**	**28.61**	**120**	T	T	11 04 50.7	
	baz=313						
H11N3	**WAKE ISLAND Hy**	**28.62**	**120**	T	T	11 04 52.5	
	baz=313						
H11S1	**WAKE ISLAND Hy**	**29.30**	**122**	T	T	11 05 50.3	
	baz=314,slow=76,SNR=8.9						
H11S3	**WAKE ISLAND Hy**	**29.30**	**122**	T	T	11 05 47.5	
	baz=314,slow=76,SNR=6.7						
H11S2	**WAKE ISLAND Hy**	**29.32**	**122**	T	T	11 05 49.4	
	baz=314,slow=76,SNR=5.6						
ZALV	**Zalesovo Beam**	**41.54**	**312**	P	**P**	**10 37 00.3**	**+0.8**
	0.8nm,0.4s,baz=64,slow=6.6,SNR=2.8						
MKAR	**Makanchi Array**	**43.67**	**302**	P	**P**	**10 37 16.4**	**-0.6**
	0.8nm,0.6s,baz=89,slow=9.0,SNR=5.5						
ILAR	**Eielson Array**	**49.86**	**32**	P	P	10 38 07.1	+1.9
	0.8nm,0.8s,baz=252,slow=5.4,SNR=4.9						
BVAR	**Borovoye Array**	**50.20**	**312**	P	**P**	**10 38 10.0**	**+2.1**
	0.8nm,0.7s,baz=101,slow=4.6,SNR=2.4						
INK	**Inuvik**	**54.71**	**27**	P	P	10 38 43.3	+2.2
	0.6nm,0.8s,baz=315,slow=6.0,SNR=3.6						
FITZ	**Fitzroy Crossi**	**56.58**	**197**	P	**P**	**10 38 54.1**	**-0.9**
	1.5nm,0.7s,baz=38,slow=5.3,SNR=4.6						
WRAB	**Tennant Creek**	**56.90**	**187**	*e*P	**P**	**10 38 55.7**	**-1.6**
	16nm,1.7s						
WRA	**Warramunga Arr**	**56.91**	**187**	P	**P**	**10 38 55.2**	**-2.2**
	2.3nm,0.4s,baz=3.3,slow=7.2,SNR=23						
ABKAR	**Akbulak array**	**57.55**	**310**	*e*P	**P**	**10 39 00.5**	**-1.2**
	0.5nm,0.4s						
ASAR	**Alice Springs**	**60.64**	**187**	P	**P**	**10 39 21.8**	**-1.6**
	0.7nm,0.5s,baz=19,slow=8.8,SNR=8.4						
GEYT	**Alibeck**	**63.37**	**299**	P	**P**	**10 39 42.9**	**+1.2**
	1.6nm,0.5s,baz=135,slow=57,SNR=2.7						
ARCES	**ARCESS Array B**	**63.86**	**339**	P	**P**	**10 39 45.5**	**+1.1**
	3.2nm,0.9s,baz=49,slow=8.4,SNR=3.5						
YKA	**Yellowknife Ar**	**64.16**	**30**	P	P	10 39 49.4	+3.0
	0.2nm,0.7s,baz=303,slow=6.9,SNR=3.8						
FINES	**FINESS Array B**	**68.61**	**332**	P	**P**	**10 40 15.5**	**+0.5**
	0.6nm,0.4s,baz=71,slow=9.0,SNR=3.8						
NB2	**NORSAR Subarra**	**74.03**	**337**	P	**P**	**10 40 46.6**	**-1.2

ZALV PcP **PcP** **10 40 53.4 -0.9**
1.5nm,0.5s,baz=110,slow=3.6,SNR=4.0
MKAR Makanchi Array 43.66 302 P **P** **10 39 14.2 -0.2**
0.9nm,0.7s,baz=87,slow=8.8,SNR=2.1
KURK Kurchatov 45.52 308 *eP* **P** **10 39 29.1 -0.1**
7.9nm,0.4s
KURK P **pP** **10 39 29.2 -2.0**
KURBB Kurchatov Arra 45.59 308 P **P** **10 39 29.2 -0.4**
2.5nm,0.4s,baz=84,slow=8.3,SNR=7.1
ILAR Eielson Array 49.93 32 P **P** **10 40 03.2 0.0**
0.6nm,0.8s,baz=266,slow=5.7,SNR=5.0
ILAR PcP **PcP** **10 41 22.4 -0.9**
0.5nm,0.6s,baz=273,slow=3.5,SNR=4.3
BVAR Borovoye Array 50.19 312 P **P** **10 40 04.8 -0.6**
0.7nm,0.5s,baz=72,slow=6.4,SNR=5.0
INK Inuvik 54.78 27 P **P** **10 40 40.4 +1.3**
1.3nm,0.9s,baz=275,slow=7.7,SNR=4.1
ARU Arti 56.04 318 P **P** **10 40 50.4 +2.0**
1.9nm,0.4s,baz=152,slow=0.8,SNR=4.8
WRAB Tennant Creek 56.85 187 *eP* **P** **10 40 53.4 -1.1**
WRA Warramunga Arr 56.86 187 P **P** **10 40 53.9 -0.7**
3.0nm,0.5s,baz=3.4,slow=7.6,SNR=28
ABKAR Akbulak array 57.54 310 *eP* **P** **10 40 58.4 -0.7**
2.6nm,0.7s
ASAR Alice Springs 60.59 187 P **P** **10 41 19.8 -0.7**
1.0nm,0.6s,baz=18,slow=6.3,SNR=13
YKA Yellowknife Ar 64.22 30 P **P** **10 41 44.0 -0.4**
0.4nm,0.7s,baz=302,slow=6.7,SNR=8.5
YKA PcP **PcP** **10 42 19.8 +0.6**
0.4nm,0.6s,baz=298,slow=4.0,SNR=7.8
STKA Stephens Creek 68.44 179 P **P** **10 42 11.0 -0.6**
2.0nm,0.8s,baz=345,slow=9.0,SNR=4.4
FINES FINESS Array B 68.63 332 P **P** **10 42 11.4 -1.2**
2.9nm,0.8s,baz=54,slow=9.7,SNR=8.1
HFS Hagfors 73.94 335 P **P** **10 42 44.4 -0.3**
0.8nm,0.4s,baz=62,slow=7.4,SNR=5.3
AKASG Malin Array Be 74.01 322 P **P** **10 42 46.3 +1.0**
0.8nm,0.5s,baz=50,slow=6.3,SNR=4.6
NB2 NORSAR Subarra 74.06 337 P **P** **10 42 45.6 +0.1**
comp=Z,1.7nm,1.0s,baz=40,slow=6.2
NOA NORSAR Array B 74.06 337 P **P** **10 42 45.2 -0.3**
comp=Z,1.5nm,0.8s,baz=39,slow=5.8,SNR=3.9
NVAR Mina Array Bea 75.56 53 P **P** **10 42 55.0 +0.2**
comp=Z,0.7nm,0.7s,baz=290,slow=3.7,SNR=3.6
NVAR Mina Array Bea 75.56 53 P **P** **10 42 55.0 +0.2**
PDAR Pinedale Array 78.19 145 P **P** **10 43 09.9 +0.3**
comp=Z,0.4nm,0.8s,baz=272,slow=5.8,SNR=3.9
GERES GERESS Array B 82.48 328 P **P** **10 43 32.0 -0.4**
comp=Z,0.5nm,0.4s,baz=21,slow=4.6,SNR=4.0
TXAR Lajitas Array 90.68 52 P **P** **10 44 13.7 +0.7**
comp=Z,0.6nm,0.6s,baz=298,slow=3.3,SNR=8.3
TORD Torodi Ar. Bea 116.97 314 PKP **PKPdf** **10 49 54.0 -1.3**
comp=Z,0.3nm,0.7s,baz=39,slow=1.7,SNR=2.5
LPAZ La Paz 147.29 59 PKPbc **PKPbc** **10 50 54.6 0.0**
comp=Z,1.8nm,0.8s,baz=28,slow=5.6,SNR=4.7
SIV San Ignacio 151.63 48 PKPbc **PKPbc** **10 51 04.9 +0.1**
comp=Z,2.6nm,0.6s,baz=298,slow=2.7,SNR=5.1

JMA 11 10:33:51.5, 37.03N×140.68E, h9km±1km, M2.7, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.12**	**53**	*eS*	Sg	10 33 56.6	+0.3
JFK	**Kawauchi**	**0.37**	**25**	P	Pg	10 33 59.0	+0.2
JFK				S	Sg	10 34 04.2	+0.5
JHO	**Hitachi**	**0.43**	**192**	P	Pg	10 33 59.7	-0.2
JHO				*eS*	Sg	10 34 05.9	+0.4
JFT	**Otama**	**0.56**	**331**	P	Pg	10 34 02.6	+0.2
JFT				S	Sg	10 34 10.3	+0.6
JMM	**Marumori**	**0.84**	**6**	P	Pg	10 34 07.5	-0.2
JMM				S	Sg	10 34 18.8	+0.2
MAT	**Matsushiro**	**2.04**	**257**	P	Pb	10 34 29.2	+0.4
MAT				*eS*	Sb	10 34 53.9	-0.4

*IDC **11** 10:34:46.7±1.0, 36.93N×140.75E, h0km, mb3.7/8, mb1 3.8/10, mb1mx3.6/62, mbtmp3.7/10, ML3.7/2, Error ellipse: s-maj=24.1km s-min=18.8km az=81.0*
*ISCJB **11** 10:34:47.8±0.6, 36.90N±0.03×140.79E±0.05, h19km±4km, mb3.6/8, Error ellipse: s-maj=7.2km s-min=4.2km az=18.1*
*JMA **11** 10:34:48.4, 36.92N×140.69E, h7km±1km, M4.0*
JMA Felt II J1.
ISC 11 10:34:48.5±1.0, 36.92N±0.03×140.69E±0.04, h11km±6km, n25, σ0.57/30, mb3.8/8, 2C, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.20**	**26**	P	**Pg**	**10 34 52.8**	**-0.1**
ONAJ				S	**Sg**	**10 34 56.1**	**+0.3**
JHO	**Hitachi**	**0.33**	**197**	⇑P	**Pg**	**10 34 54.8**	**-0.3**
JHO				S	**Sg**	**10 34 59.5**	**+0.1**
JFK	**Kawauchi**	**0.47**	**19**	P	**Pg**	**10 34 57.5**	**-0.2**
JFK				S	**Sg**	**10 35 04.0**	**0.0**
JSB	**Shiboa**	**0.62**	**275**	⇑P	**Pb**	**10 35 01.1**	**-0.2**
JSB				S	**Sb**	**10 35 09.7**	**-0.3**
JFT	**Otama**	**0.66**	**335**	P	**Pg**	**10 35 01.2**	**-0.1**
JFT				S	**Sg**	**10 35 10.3**	**+0.3**
JYT	**Yasato**	**0.80**	**210**	P	**Pg**	**10 35 03.5**	**-0.4**
JYT				S	**Sg**	**10 35 14.2**	**-0.2**
JFY	**Yanaizu**	**0.92**	**302**	P	**Pg**	**10 35 06.1**	**-0.2**
JFY				S	**Sg**	**10 35 18.0**	**-0.3**
JMM	**Marumori**	**0.95**	**5**	P	**Pg**	**10 35 05.8**	**-1.0**
JMM				S	**Sg**	**10 35 18.8**	**-0.3**
MJAR	**Matsushiro Arr**	**2.03**	**260**	Pn	**Pn**	**10 35 23.7**	**+1.1**
	33nm,0.3s,baz=82,slow=16,SNR=16						
MJAR				Sn	**Sb**	**10 35 50.1**	**-0.5**
	69nm,0.3s,baz=80,slow=30,SNR=16						
MAT	**Matsushiro**	**2.03**	**260**	P	**Pn**	**10 35 23.9**	**+1.2**
MAT				S	**Sn**	**10 35 48.7**	**+0.7**
JHJ	**Hachijo jima 2**	**3.87**	**191**	Pn	**Pn**	**10 35 49.2**	**+1.3**
	13nm,0.3s,baz=46,slow=18,SNR=3.9						
JHJ				Sn	**Sn**	**10 36 32.6**	**-0.7**
	11nm,0.3s,baz=30,slow=20,SNR=2.6						
SONM	**Songino Array 27.37 304**			P	**P**	**10 40 33.5**	**-0.3**
	0.5nm,0.7s,baz=103,slow=9.8,SNR=3.0						
H11N2	**WAKE ISLAND Hy 28.59 120**			T	T	11 10 31.1	
	baz=313,slow=75,SNR=26						
H11N1	**WAKE ISLAND Hy 28.60 120**			T	T	11 10 32.6	
	baz=313,slow=75,SNR=32						
H11N3	**WAKE ISLAND Hy 28.61 120**			T	T	11 10 32.7	
	baz=313,slow=75,SNR=28						
H11S1	**WAKE ISLAND Hy 29.29 122**			T	T	11 11 23.8	
	baz=314,slow=75,SNR=26						
H11S3	**WAKE ISLAND Hy 29.29 122**			T	T	11 11 27.2	
	baz=314,slow=75,SNR=28						
H11S2	**WAKE ISLAND Hy 29.31 122**			T	T	11 11 25.5	
	baz=314,slow=75,SNR=25						
MKAR	**Makanchi Array 43.69 302**			P	**P**	**10 42 53.6**	**+0.3**
	0.3nm,0.6s,baz=81,slow=9.1,SNR=3.4						
KURBB	**Kurchatov Arra 45.61 308**			P	**P**	**10 43 08.2**	**-0.4**
	0.6nm,0.4s,baz=81,slow=7.5,SNR=6.7						
BVAR	**Borovoye Array 50.22 312**			P	**P**	**10 43 44.0**	**-0.3**
	0.4nm,0.5s,baz=84,slow=5.9,SNR=3.0						
WRA	**Warramunga Arr 56.87 187**			P	**P**	**10 44 32.9**	**-0.5**
	0.9nm,0.4s,baz=3.5,slow=7.3,SNR=23						
ASAR	**Alice Springs 60.60 187**			P	**P**	**10 44 59.1**	**-0.2**
	0.7nm,0.8s,baz=8.1,slow=7.9,SNR=7.8						
YKA	**Yellowknife Ar 64.20 30**			P	**P**	**10 45 23.3**	**+0.4**
	0.1nm,0.5s,baz=301,slow=6.1,SNR=3.5						
FINES	**FINESS Array B 68.64 332**			P	**P**	**10 45 51.4**	**0.0**
	1.9nm,1.0s,baz=51,slow=9.1,SNR=3.8						

JMA 11 10:38:07.2, 36.99N×140.76E, h10km±1km, M3.2, 5C, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.12**	**15**	⇑P	Pg	10 38 10.2	+0.1
ONAJ				S	Sg	10 38 11.9	-0.2
JFK	**Kawauchi**	**0.39**	**14**	⇑P	Pg	10 38 14.9	0.0
JFK				S	Sg	10 38 20.2	+0.2
JHO	**Hitachi**	**0.41**	**202**	⇑P	Pg	10 38 15.1	-0.1
JHO				S	Sg	10 38 20.5	-0.1
JFT	**Otama**	**0.63**	**327**	⇑P	Pg	10 38 19.4	0.0
JFT				S	Sg	10 38 27.7	+0.1
JMM	**Marumori**	**0.88**	**2**	⇑P	Pg	10 38 23.6	-0.5
MAT	**Matsushiro**	**2.10**	**258**	P	Pn	10 38 42.6	+0.2
MAT				S	Sn	10 39 09.4	+0.8

JMA 11 10:39:26.0, 36.98N×140.65E, h11km±1km, M3.0, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.17**	**44**	P	Pg	10 39 29.9	+0.1
ONAJ				S	Sg	10 39 32.6	+0.1
JHO	**Hitachi**	**0.37**	**190**	P	Pg	10 39 33.4	0.0
JHO				*eS*	Sg	10 39 38.7	+0.3
JFK	**Kawauchi**	**0.42**	**25**	P	Pg	10 39 34.3	-0.1
JFK				S	Sg	10 39 39.7	-0.4
MAT	**Matsushiro**	**2.01**	**258**	P	Pb	10 40 01.5	-1.1
MAT				S	Sb	10 40 27.6	0.0

JMA 11 10:42:03.6, 37.02N×140.61E, h11km±1km, M3.5, 2C, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.17**	**62**	*eS*	Sg	10 42 10.3	+0.2
JFK	**Kawauchi**	**0.41**	**31**	⇑P	Pg	10 42 11.6	0.0
JFK				*eS*	Sg	10 42 17.1	+0.1
JHO	**Hitachi**	**0.41**	**185**	P	Pg	10 42 11.5	-0.2
JFT	**Otama**	**0.54**	**336**	⇑P	Pg	10 42 14.5	+0.3
JFT				S	Sg	10 42 21.8	+0.4
JMM	**Marumori**	**0.86**	**10**	P	Pg	10 42 19.7	-0.4

JMA 11 10:43:26.0, 36.86N×140.66E, h10km, M2.8, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JHO	**Hitachi**	**0.26**	**196**	*eS*	Sg	10 43 35.0	+0.2
ONAJ	**Iwakimizuishiy**	**0.27**	**25**	P	Pg	10 43 31.4	0.0
ONAJ				S	Sg	10 43 35.2	+0.1
MAT	**Matsushiro**	**2.00**	**262**	P	Pn	10 43 56.3	-3.5
MAT				S	Sb	10 44 27.6	+0.2

JMA 11 10:44:05.8, 37.02N×140.65E, h10km±1km, M2.9, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.14**	**55**	P	Pg	10 44 09.3	+0.2
ONAJ				S	Sg	10 44 11.7	+0.3
JFK	**Kawauchi**	**0.39**	**27**	P	Pg	10 44 13.5	0.0
JHO	**Hitachi**	**0.41**	**189**	*eS*	Sg	10 44 19.4	0.0
JFT	**Otama**	**0.56**	**333**	*eS*	Sg	10 44 24.1	+0.1
MAT	**Matsushiro**	**2.02**	**257**	P	Pn	10 44 35.5	-4.4
MAT				S	Sb	10 45 07.8	0.0

*FUNV **11** 10:44:25.2, 5.47N×73.28W, h2km, MW3.6*
*RSNC **11** 10:44:27.7±1.3, 5.89N×73.38W, h4km±6km, ML3.5*
ISC 11 10:44:25.9±1.4, 5.87N±0.03×73.38W±0.04, h1km±11km, n20, σ1.41/32, 1C, Colombia

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
BARC	**Barichara**	**0.74**	**16**	*i* P	**Pg**	**10 44 39.9**	**-0.3**
BARC				*eS*	**Sg**	**10 44 50.3**	**+0.5**
BARC				*i*		10 44 54.7	
	comp=Z,629nm,0.1s						
YOPC	**Yopal, Colombi**	**1.09**	**118**	*eP*	**Pg**	**10 44 47.3**	**+0.5**
YOPC				*eS*	**Sg**	**10 45 00.9**	**-0.1**
YOPC				*i*		10 45 07.5	
	comp=Z,496nm,0.5s						
GIRC	**Giron, Santand**	**1.21**	**9**	*eP*	**Pb**	**10 44 48.3**	**-1.4**
BRRC	**Barranca, Sant**	**1.27**	**345**	⇑*iP*	**Pn**	**10 44 50.0**	**-0.8**
BRRC				*eS*	**Sb**	**10 45 07.0**	**-0.4**
BRRC				*i*		10 45 14.2	
	comp=Z,794nm,0.1s						
CHIC	**Chingaza**	**1.28**	**196**	*eS*	**Sb**	**10 45 09.0**	**+0.7**
CHIC				*i*		10 45 17.9	
	comp=Z,308nm,0.4s						
NORC	**Norcasia**	**1.51**	**258**	*eP*	**Pn**	**10 44 53.1**	**-1.1**
PAMC	**Pamplona, Colo**	**1.61**	**25**	*eP*	**Pn**	**10 44 56.1**	**+0.2**
PAMC				*i*		10 44 56.8	
	comp=Z,430nm,0.1s						
PAMC				*eS*	**Sn**	**10 45 17.1**	**-0.4**
VILC	**Villavicencio,**	**1.78**	**190**	*eP*	**Pn**	**10 44 58.4**	**+0.5**
VILC				*i*		10 45 31.0	
	comp=Z,319nm,0.4s						
GRMC	**Gramalote, San**	**1.92**	**17**	*eS*	**Sg**	**10 45 28.8**	**+1.1**
GRMC				*i*		10 45 37.6	
	comp=Z,1μm,0.3s						
GUYC	**Guyana, Colomb**	**2.10**	**252**	*eP*	**Pn**	**10 45 03.3**	**+0.6**
GUYC				*eS*	**Sn**	**10 45 29.7**	**+0.1**
GUYC				*i*		10 45 33.9	
	comp=Z,544nm,0.3s						
HELC	**Santa Helena**	**2.16**	**279**	*eP*	**Pn**	**10 45 02.9**	**-0.4**
HELC				*eS*	**Sn**	**10 45 30.9**	**0.0**
HELC				*i*		10 45 33.0	
	comp=Z,249nm,0.3s						
CAPV	**Capacho**	**2.25**	**28**	*eP*	**Pb**	**10 45 06.7**	**-0.7**
CAPV				*eS*	**Sg**	**10 45 38.0**	**-0.1**
TOLC	**Tolima**	**2.31**	**237**	*eP*	**Pn**	**10 45 06.0**	**+0.5**
PRAC	**Prado**	**2.62**	**215**	*eP*	**Pn**	**10 45 09.7**	**+0.3**
PRAC				*eS*	**Sn**	**10 45 42.1**	**+0.2**
SOCV	**Socops**	**3.47**	**46**	*eP*	**Pn**	**10 45 22.1**	**+1.0**
SOCV				*eS*	**Sn**	**10 46 03.8**	**+0.9**
VIRV	**Villa del Rosa**	**4.70**	**12**	*eP*	**Pn**	**10 45 40.0**	**+2.0**
VIRV				*eS*	**Sn**	**10 46 37.4**	**+4.1**
SANV	**Sanarito**	**5.25**	**46**	*eP*	**Pn**	**10 45 46.0**	**+0.3**
CURV	**Curarigua**	**5.33**	**39**	*eP*	**Pn**	**10 45 48.0**	**+1.3**
CURV				*eS*	**Sn**	**10 46 49.3**	**+0.5**
TEPV	**Terepaima**	**5.81**	**45**	*eP*	**Pn**	**10 45 54.0**	**+0.7**
BAUV	**El Baul**	**6.11**	**60**	*eP*	**Pn**	**10 45 56.8**	**-0.7**
BAUV				*eS*	**Sn**	**10 47 03.4**	**-4.7**

*IDC **11** 10:44:58.1±0.7, 36.99N×140.87E, h0km, mb3.7/12, mb1 3.8/14, mb1mx3.7/60, mbtmp3.7/14, ML3.6/2, Error ellipse: s-maj=19.6km s-min=16.4km az=108.0*
*JMA **11** 10:44:59.0, 36.97N×140.86E, h8km±1km, M3.6*
Broadband fault plane solution: P waves. NP1: ϕs22.00000°, δ58.00000°, λ-68.00000°. NP2: ϕs166.00000°, δ38.00000°, λ-120.00000°. Principal axes: T Plg10.0000°, Azm97.0000°; N Plg18.0000°, Azm190.0000°; P Plg69.0000°, Azm339.0000°;
ISC 11 10:44:59.0±1.1, 36.98N±0.05×140.71E±0.06, h6km±7km, n29, σ0.82/28, mb3.7/12, 1C-1D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.14**	**30**	P	**Pg**	**10 45 02.0**	**0.0**
ONAJ				S	**Sg**	**10 45 04.4**	**+0.4**
JHO	**Hitachi**	**0.39**	**197**	⇑P	**Pb**	**10 45 07.2**	**-1.0**
JHO				*eS*	**Sb**	**10 45 13.2**	**-1.2**
JFK	**Kawauchi**	**0.41**	**19**	P	**Pg**	**10 45 06.9**	**-0.1**
JFK				S	**Sg**	**10 45 12.7**	**+0.3**
JMM	**Marumori**	**0.89**	**4**	⇓P	**Pg**	**10 45 15.8**	**-0.3**
JMM				S	**Sg**	**10 45 27.9**	**+0.3**
MJAR	**Matsushiro Arr**	**2.06**	**258**	Pn	**Pb**	**10 45 36.4**	**-0.3**
	35nm,0.3s,baz=85,slow=16,SNR=36						
MJAR				Sn	**Sg**	**10 46 04.9**	**-0.1**
	35nm,0.3s,baz=88,slow=28,SNR=12						
MAT	**Matsushiro**	**2.06**	**258**	P	**Pb**	**10 45 36.8**	**0.0**
MAT				S	**Sg**	**10 46 05.0**	**-0.1**
JHJ	**Hachijo jima 2**	**3.93**	**191**	Pn	**Pn**	**10 46 01.6**	**+1.8**
	6.1nm,0.3s,baz=2.6,slow=22,SNR=6.4						
JHJ				Sn	**Sn**	**10 46 47.5**	**+1.3**
	14nm,0.3s,baz=232,slow=19,SNR=3.0						
USRK	**Ussuriysk Ar.**	**9.79**	**320**	Pn	Pn	10 47 25.9	+5.6
	0.1nm,0.3s,baz=118,slow=11,SNR=4.8						
KSRS	**Korea Array 10.21 277**			Pn	Pn	10 47 34.4	+8.4
	0.1nm,0.3s,baz=86,slow=14,SNR=4.1						
KLR	**Kul'dur 13.87 335**			Pn	**P**	**10 48 23.0**	**-1.5**
	0.1nm,0.3s,baz=150,slow=12,SNR=3.6						
SONM	**Songino Array 27.35 304**			P	**P**	**10 50 46.7**	**+1.9**
	0.4nm,0.3s,baz=108,slow=8.4,SNR=2.5						
H11N2	**WAKE ISLAND Hy 28.61 120**			T	T	11 20 40.0	
	baz=313,slow=75,SNR=32						
H11N1	**WAKE ISLAND Hy 28.61 120**			T	T	11 20 44.3	
	baz=313,slow=75,SNR=39						
H11N3	**WAKE ISLAND Hy 28.62 120**			T	T	11 20 43.4	
	baz=313,slow=75,SNR=41						
H11S1	**WAKE ISLAND Hy 29.31 122**			T	T	11 21 33.3	
	baz=314,slow=76,SNR=38						
H11S3	**WAKE ISLAND Hy 29.31 122**			T	T	11 21 35.5	
	baz=314,slow=76,SNR=41						
H11S2	**WAKE ISLAND Hy 29.32 122**			T	T	11 21 35.0	
	baz=314,slow=76,SNR=23						
ZALV	**Zalesovo Beam 41.53 312**			P	**P**	**10 52 47.8**	**+0.8**
	0.6nm,0.3s,baz=89,slow=6.1,SNR=3.4						
MKAR	**Makanchi Array 43.67 302**			P	**P**	**10 53 04.8**	**+0.3**
	0.6nm,0.6s,baz=90,slow=9.4,SNR=6.4						
KURBB	**Kurchatov Arra 45.59 308**			P	**P**	**10 53 19.9**	**+0.3**
	2.4nm,0.8s,baz=85,slow=8.1,SNR=7.3						
ILAR	**Eielson Array 49.84 32**			P	**P**	**10 53 52.2**	**-0.3**
	0.3nm,0.8s,baz=258,slow=5.6,SNR=3.1						
WRA	**Warramunga Arr 56.93 187**			P	**P**	**10 54 44.5**	**-0.5**
	0.5nm,0.5s,baz=4.0,slow=7.3,SNR=9.7						
ASAR	**Alice Springs 60.66 187**			P	**P**	**10 55 10.8**	**-0.1**
	0.3nm,0.7s,baz=22,slow=6.1,SNR=6.1						
RES	**Resolute Bay 62.79 14**			P	**P**	**10 55 24.6**	**-0.1**
	0.7nm,0.8s,baz=308,slow=6.3,SNR=4.6						
YKA	**Yellowknife Ar 64.14 30**			P	**P**	**10 55 32.9**	**-0.9**
	0.1nm,0.7s,baz=304,slow=6.6,SNR=3.2						
FINES	**FINESS Array B 68.60 332**			P	**P**	**10 56 02.3**	**0.0**
	2.1nm,0.8s,baz=54,slow=9.7,SNR=5.3						
AKASG	**Malin Array Be 73.99 322**			P	**P**	**10 56 34.7**	**-0.5**
	0.4nm,0.4s,baz=48,slow=5.5,SNR=3.3						
NVAR	**Mina Array Bea 75.47 53**			P	**P**	**10 56 44.8**	**+0.5**
	0.3nm,0.7s,baz=285,slow=3.5,SNR=2.7						
LPAZ	**La Paz 147.21 59**			PKPbc	**PKPbc**	**11 04 44.3**	**0.0**
	0.5nm,0.5s,baz=198,slow=3.2,SNR=2.9						

*ISCJB **11** 10:46:54.4±0.9, 36.98N±0.04×140.85E±0.10, h15km±6km, mb3.6/3, Error ellipse: s-maj=13.2km s-min=6.7km az=13.7*
*IDC **11** 10:46:54.2±2.1, 36.91N×140.81E, h0km, mb3.6/3, mb1 3.7/4, mb1mx3.3/64, mbtmp3.5/4, ML2.9/1, Error ellipse: s-maj=43.3km s-min=26.5km az=47.0*
*JMA **11** 10:46:55.4, 37.02N×140.70E, h10km±1km, M3.3*
ISC 11 10:46:55.5±1.0, 37.01N±0.04×140.71E±0.07, h9km±8km, n9, σ0.65/14, mb3.6/3, 5C, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.12**	**39**	⇑P	**Pg**	**10 46 58.4**	**0.0**
ONAJ				S	**Sg**	**10 47 00.5**	**+0.1**
JFK	**Kawauchi**	**0.38**	**21**	⇑P	**Pg**	**10 47 02.9**	**-0.2**
JFK				S	**Sg**	**10 47 08.2**	**0.0**
JHO	**Hitachi**	**0.41**	**195**	⇑P	**Pg**	**10 47 03.5**	**-0.1**
JHO				S	**Sg**	**10 47 08.9**	**-0.1**
JFT	**Otama**	**0.59**	**330**	⇑P	**Pg**	**10 47 06.8**	**-0.1**
JFT				S	**Sg**	**10 47 14.8**	**+0.1**
JMM	**Marumori**	**0.86**	**5**	⇑P	**Pg**	**10 47 11.3**	**-0.8**
MJAR	**Matsushiro Arr**	**2.06**	**258**	Pn	**Pn**	**10 47 30.7**	**+0.4**
	3.8nm,0.3s,baz=80,slow=15,SNR=4.1						
MJAR				Sn	**Sb**	**10 47 57.9**	**-0.9**
	8.6nm,0.3s,baz=76,slow=26,SNR=4.9						
MKAR	**Makanchi Array 43.65 302**			P	**P**	**10 55 01.6**	**+1.3**
	0.2nm,0.2s,baz=84,slow=9.4,SNR=2.3						
WRA	**Warramunga Arr 56.96 187**			P	**P**	**10 56 40.4**	**-0.9**
	0.7nm,0.5s,baz=3.9,slow=7.3,SNR=8.5						
ASAR	**Alice Springs 60.69 187**			P	**P**	**10 57 06.8**	**-0.4**
	0.4nm,0.8s,baz=19,slow=6.3,SNR=5.4						

*IDC **11** 10:49:24.6±2.6, 36.88N×140.85E, h0km, mb3.4/2, mb1 3.5/4, mb1mx3.2/73, mbtmp3.4/4, ML2.9/2, Error ellipse: s-maj=39.5km s-min=27.9km az=49.0*
*ISCJB **11** 10:49:25.3±0.7, 36.92N±0.03×140.84E±0.07, h13km±4km, mb3.5/2, Error ellipse: s-maj=9.8km s-min=4.2km az=16.4*
*JMA **11** 10:49:26.3, 36.97N×140.68E, h8km±1km, M3.4*
ISC 11 10:49:26.1±1.1, 36.95N±0.03×140.79E±0.06, h11km±7km, n12, σ0.79/21, 5C, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.15**	**3**	⇑P	**Pg**	**10 49 30.0**	**+0.3**
ONAJ				S	**Sg**	**10 49 32.5**	**+0.3**
JHO	**Hitachi**	**0.38**	**208**	⇑P	**Pg**	**10 49 33.6**	**0.0**
JHO				S	**Sg**	**10 49 38.5**	**-0.1**
JFK	**Kawauchi**	**0.42**	**9**	⇑P	**Pg**	**10 49 34.6**	**+0.1**
JFK				S	**Sg**	**10 49 40.7**	**+0.6**
JFT	**Otama**	**0.67**	**328**	⇑P	**Pg**	**10 49 38.3**	**-0.9**
JFT				S	**Sg**	**10 49 46.6**	**-1.4**
JMM	**Marumori**	**0.92**	**0**	⇑P	**Pg**	**10 49 43.0**	**-0.8**
JMM				S	**Sg**	**10 49 55.2**	**-0.5**
JOU	**Okura**	**1.42**	**356**	P	**Pn**	**10 49 52.2**	**+0.4**
JIO	**Ouri**	**1.57**	**16**	P	**Pn**	**10 49 54.1**	**+0.2**
JIO				S	**Sb**	**10 50 14.8**	**-0.2**
MJAR	**Matsushiro Arr**	**2.11**	**260**	Pn	**Pn**	**10 50 02.0**	**+0.7**
	5.7nm,0.3s,baz=80,slow=15,SNR=7.5						
MJAR				Sn	**Sn**	**10 50 28.5**	**+0.9**
	13nm,0.3s,baz=79,slow=30,SNR=14						
MAT	**Matsushiro**	**2.11**	**260**	P	**Pn**	**10 50 02.0**	**+0.7**
MAT				S	**Sn**	**10 50 28.5**	**+0.9**
JHJ	**Hachijo jima 2**	**3.91**	**192**	Pn	**Pn**	**10 50 24.6**	**-1.4**
	1.9nm,0.3s,baz=131,slow=19,SNR=3.3						
JHJ				Sn	**Sn**	**10 51 12.9**	**+1.0**
	5.2nm,0.3s,baz=239,slow=19,SNR=2.9						
WRA	**Warramunga Arr 56.91 187**			P	**P**	**10 59 10.5**	**-0.7**
	0.5nm,0.7s,baz=4.0,slow=7.5,SNR=6.8						
ASAR	**Alice Springs 60.64 187**			P	**P**	**10 59 37.4**	**+0.4**
	0.2nm,0.6s,baz=12,slow=9.5,SNR=4.0						

*ISCJB **11** 10:50:21.5±0.8, 37.00N±0.04×140.85E±0.08, h14km±4km, mb3.6/9, Error ellipse: s-maj=10.5km s-min=6.0km az=7.9*
*IDC **11** 10:50:21.1±0.9, 37.01N×140.70E, h0km, mb3.7/9, mb1 3.8/10, mb1mx3.6/70, mbtmp3.6/10, ML3.3/1, Error ellipse: s-maj=22.2km s-min=19.2km az=94.0*
*JMA **11**

JMA 11 10:51:48.5, 37.01N×140.69E, h9km±1km, M2.8, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.13**	**43**	P	Pg	10 51 51.6	+0.2
ONAJ				S	Sg	10 51 53.7	+0.2
JFK	**Kawauchi**	**0.39**	**22**	P	Pg	10 51 56.0	-0.1
JFK				S	Sg	10 52 01.5	+0.3
JHO	**Hitachi**	**0.41**	**194**	P	Pg	10 51 56.4	-0.1
JHO				S	Sg	10 52 02.3	+0.4
JFT	**Otama**	**0.58**	**331**	P	Pg	10 52 00.0	+0.2
JFT				S	Sg	10 52 07.8	+0.4
JMM	**Marumori**	**0.86**	**5**	P	Pg	10 52 05.0	0.0
JMM				S	Sg	10 52 16.4	+0.2
MAT	**Matsushiro**	**2.05**	**258**	P	Pn	10 52 20.4	-2.7
MAT				S	Sb	10 52 51.5	+0.1

JMA 11 10:53:12.5, 36.88N×140.67E, h7km±1km, M3.0, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.24**	**25**	*eS*	Sg	10 53 21.2	+0.5
JHO	**Hitachi**	**0.28**	**197**	*eS*	Sg	10 53 22.1	+0.4
JFK	**Kawauchi**	**0.51**	**19**	P	Pg	10 53 22.4	0.0
JFK				*eS*	Sg	10 53 29.4	+0.3
MAT	**Matsushiro**	**2.01**	**261**	P	Pn	10 53 47.6	+0.8
MAT				S	Sb	10 54 13.8	-0.8

SJA 11 10:55:05.4±0.7, 31.28S×68.70W, h102km±3km, ML2.9, MW3.6, San Juan Province

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RTLL	**Cerro Villicun**	**0.20**	**106**	*i* P	Pn	10 55 20.6	+0.7
RTLL				*i* S	Sn	10 55 31.6	+0.7
SJA	**San Juan**	**0.28**	**155**	*i* P	Pn	10 55 20.9	+0.6
SJA				IAML		10 55 21.7	
	comp=Z,375nm,0.2s						
SJA				*i* S	Sn	10 55 32.2	+0.9
AMOG	**MOGNA**	**0.38**	**28**	*i* S	Pn	10 55 21.6	+0.8
RTCV	**Cerro Valdivia**	**0.60**	**167**	*i* P	Pn	10 55 23.2	+0.9
RTCV				*i* S	Sn	10 55 36.3	+1.4
RTLS	**Leoncito**	**0.73**	**224**	*i* P	Pn	10 55 24.6	+1.0
RTLS				*i* S	Sn	10 55 39.0	+1.6
AUSP	**Uspallata**	**1.11**	**212**	*i* P	Pn	10 55 28.7	+1.2
AUSP				*i* S	Sn	10 55 45.7	+1.5
ASAL	**Salagasta**	**1.32**	**185**	*i* P	Pn	10 55 31.1	+1.5
ASAL				*i* S	Sn	10 55 48.9	+0.9
ARCO	**CERRO ARCO**	**1.57**	**187**	*i* P	Pn	10 55 34.0	+1.1
ARCO				*i* S	Sn	10 55 55.4	+1.7
ARCO				IAML		10 55 57.7	
	comp=Z,106nm,0.2s						
ACAN	**Cantantal**	**1.62**	**128**	*i* P	Pn	10 55 34.4	+1.0
ACAN				*i* S	Sn	10 55 55.7	+1.1
AGUA	**GUANDACOL**	**1.79**	**6**	*i* P	Pn	10 55 36.5	+0.9
AGUA				*i* S	Sn	10 55 59.9	+1.4
APLL	**PUNTA DE LOS L**	**2.06**	**65**	*i* P	Pn	10 55 39.9	+1.0
APLL				*i* S	Sn	10 56 05.5	+1.0

JMA 11 10:55:06.9, 37.00N×140.71E, h10km±1km, M2.7, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.12**	**35**	*eS*	Sg	10 55 12.3	+0.3
JFK	**Kawauchi**	**0.39**	**20**	*eS*	Sg	10 55 20.0	+0.2
JFT	**Otama**	**0.60**	**330**	*eS*	Sg	10 55 26.6	+0.2
MAT	**Matsushiro**	**2.06**	**258**	P	Pn	10 55 42.7	+1.1
MAT				S	Sb	10 56 10.1	0.0

JMA 11 10:56:49.0, 37.03N×140.67E, h9km±1km, M2.5, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.12**	**55**	P	Pg	10 56 52.1	+0.2
ONAJ				S	Sg	10 56 54.2	+0.2
JFK	**Kawauchi**	**0.37**	**26**	P	Pg	10 56 56.5	+0.1
JFK				S	Sg	10 57 01.8	+0.5
JHO	**Hitachi**	**0.43**	**191**	P	Pg	10 56 57.3	0.0
JFT	**Otama**	**0.56**	**331**	P	Pg	10 57 00.0	+0.2
JFT				*eS*	Sg	10 57 07.6	+0.5
JMM	**Marumori**	**0.84**	**7**	P	Pg	10 57 04.9	-0.3
JMM				S	Sg	10 57 16.1	0.0
MAT	**Matsushiro**	**2.04**	**257**	P	Pn	10 57 24.8	+1.3
MAT				S	Sb	10 57 52.1	+0.5

JMA 11 10:59:06.6±0.2, 36.58N×140.99E, h32km±1km, M3.7, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHO	**Hitachi**	**0.34**	**275**	P	Pb	10 59 14.4	-0.4
JYT	**Yasato**	**0.73**	**242**	P	Pn	10 59 20.3	-0.4
JAG	**Ashikaga**	**1.25**	**263**	P	Pn	10 59 28.2	+0.4
MAT	**Matsushiro**	**2.24**	**270**	P	Pb	10 59 46.6	+0.2
MAT				S	Sb	11 00 14.5	+0.7

*IDC **11** 10:59:09.1±0.6, 37.02N×140.66E, h0km, mb4.0/19, mb1 4.2/20, mb1mx4.0/50, mbtmp4.1/20, ML3.9/1, Error ellipse: s-maj=15.9km s-min=13.2km az=113.0*
*JMA **11** 10:59:10.2, 37.07N×140.70E, h6km±2km, M4.5*
JMA Felt II J1.
*NEIC **11** 10:59:15.1±0.8, 37.00N×140.69E, h42km±7km, mb4.0/1, Error ellipse: s-maj=9.4km s-min=6.4km az=118.0*
NEIC Recorded [3 JMA] in Fukushima and Ibaraki.
ISC 11 10:59:10.2±1.0, 37.06N±0.04×140.69E±0.05, h6km±7km, n43, σ1°40/49, mb4.0/21, 5C, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.10**	**64**	⇑P	**Pg**	**10 59 12.2**	**-0.2**
ONAJ				S	**Sg**	**10 59 13.9**	**0.0**
JFK	**Kawauchi**	**0.34**	**26**	⇑P	**Pg**	**10 59 16.8**	**0.0**
JFK				S	**Sg**	**10 59 21.6**	**+0.3**
JHO	**Hitachi**	**0.46**	**192**	P	**Pb**	**10 59 19.5**	**-1.1**
JHO				S	**Sb**	**10 59 26.4**	**-1.3**
JHO	**Hitachi**	**0.46**	**192**	S	**Pb**	**10 59 20.0**	**-0.6**
JFT	**Otama**	**0.54**	**328**	⇑P	**Pg**	**10 59 20.9**	**+0.3**
JSB	**Shiboa**	**0.62**	**262**	⇑P	**Pb**	**10 59 23.1**	**-0.4**
JMM	**Marumori**	**0.81**	**6**	⇑P	**Pg**	**10 59 25.3**	**-0.4**
MJAR	**Matsushiro Arr**	**2.06**	**256**	Pn	**Pn**	**10 59 45.4**	**+0.1**
	65nm,0.3s,baz=298,slow=12,SNR=108						
MJAR				Sn	**Sn**	**11 00 11.3**	**+0.1**
	54nm,0.3s,baz=308,slow=38,SNR=11						
MAJO	**Matsushiro**	**2.06**	**256**	*e*Pn	**Pb**	**10 59 46.9**	**-1.0**
MAJO				*e*Sn	**Sn**	**11 00 09.8**	**-1.5**
JHJ	**Hachijo jima 2**	**4.00**	**191**	Pn	**Pn**	**11 00 12.2**	**+0.2**
	24nm,0.3s,baz=310,slow=23,SNR=10						
JHJ				Sn	**Sn**	**11 01 02.5**	**+3.3**
	25nm,0.3s,baz=251,slow=23,SNR=5.8						
JHJ2	**Mitsune**	**4.00**	**191**	*e*Pn	**Pn**	**11 00 13.2**	**+1.2**
ERM	**Erimo**	**5.30**	**20**	*e*Pn	**Pn**	**11 00 31.8**	**+2.0**
JNU	**Nakatsue**	**8.95**	**247**	*e*Pn	**Pn**	**11 01 21.6**	**+1.6**
USRK	**Ussuriysk Ar.**	**9.72**	**320**	Pn	Pn	11 01 35.7	+5.2
	0.3nm,0.3s,baz=129,slow=12,SNR=25						
YSS	**Yuzh-Sakhalins**	**10.01**	**8**	Pn	**Pn**	**11 01 35.3**	**+1.0**
	15nm,0.6s						
KSRS	**Korea Array**	**10.19**	**276**	Pn	**Pn**	**11 01 41.1**	**+4.2**
	0.3nm,0.3s,baz=90,slow=14,SNR=13						
KSAR	**Wonju Array Be**	**10.22**	**276**	Pn	**Pn**	**11 01 41.1**	**+3.8**
KLR	**Kul'dur**	**13.79**	**335**	Pn	**P**	**11 02 30.7**	**-4.0**
	0.1nm,0.3s,baz=143,slow=14,SNR=6.9						
MA2	**Magadan**	**23.45**	**13**	P	**P**	**11 04 21.1**	**+1.1**
	8.1nm,0.8s,baz=204,slow=7.2,SNR=5.3						
SEY	**Seymchan**	**26.88**	**12**	P	**P**	**11 04 52.6**	**+1.2**
	7.7nm,1.1s,baz=202,slow=11,SNR=12						
SONM	**Songino Array**	**27.29**	**304**	P	**P**	**11 04 55.3**	**-0.2**
	0.8nm,0.7s,baz=106,slow=9.7,SNR=5.1						
ZALV	**Zalesovo Beam**	**41.47**	**312**	P	**P**	**11 06 58.3**	**+0.7**
	2.1nm,0.9s,baz=89,slow=7.1,SNR=4.4						
MKAR	**Makanchi Array**	**43.62**	**302**	P	**P**	**11 07 14.8**	**-0.4**
	0.4nm,0.4s,baz=85,slow=11,SNR=4.8						
KURK	**Kurchatov**	**45.46**	**308**	P	**P**	**11 07 28.7**	**-1.1**
KURK				*e*P	**P**	**11 07 29.5**	**-0.3**
KURBB	**Kurchatov Arra**	**45.53**	**308**	P	**P**	**11 07 28.7**	**-1.6**
	3.5nm,0.8s,baz=85,slow=8.3,SNR=23						
ILAR	**Eielson Array**	**49.78**	**32**	P	**P**	**11 08 03.1**	**-0.1**
	1.4nm,0.7s,baz=268,slow=5.7,SNR=15						
BVAR	**Borovoye Array**	**50.13**	**312**	P	**P**	**11 08 06.0**	**0.0**
	0.7nm,0.4s,baz=96,slow=11,SNR=5.4						
BMRM	**Bremner River**	**51.19**	**37**	P	**P**	**11 08 14.9**	**+1.0**
INK	**Inuvik**	**54.63**	**27**	P	**P**	**11 08 38.6**	**-0.5**
	1.2nm,0.7s,baz=290,slow=6.4,SNR=6.8						
WRA	**Warramunga Arr**	**57.01**	**187**	P	**P**	**11 08 55.7**	**-1.0**
	12nm,0.6s,baz=4.2,slow=7.5,SNR=29						
ABKAR	**Akbulak array**	**57.48**	**310**	*e*P	**P**	**11 08 59.4**	**-0.4**
	0.7nm,0.4s						
ASAR	**Alice Springs**	**60.74**	**187**	P	**P**	**11 09 22.4**	**-0.3**
	4.9nm,0.7s,baz=14,slow=6.4,SNR=22						
ARCES	**ARCESS Array B**	**63.77**	**339**	P	**P**	**11 09 43.3**	**+0.9**
	3.5nm,0.8s,baz=52,slow=8.0,SNR=5.3						
YKA	**Yellowknife Ar**	**64.08**	**30**	P	**P**	**11 09 44.3**	**-0.2**
	0.8nm,1.0s,baz=302,slow=6.6,SNR=8.6						
FINES	**FINESS Array B**	**68.52**	**332**	P	**P**	**11 10 12.5**	**-0.5**
	2.8nm,1.0s,baz=69,slow=6.9,SNR=4.6						
STKA	**Stephens Creek**	**68.58**	**179**	P	**P**	**11 10 13.4**	**-0.2**
	1.7nm,0.6s,baz=315,slow=10,SNR=4.8						
AKASG	**Malin Array Be**	**73.92**	**322**	P	**P**	**11 10 46.0**	**+0.1**
	0.3nm,0.4s,baz=48,slow=6.6,SNR=4.5						
NB2	**NORSAR Subarra**	**73.94**	**337**	P	**P**	**11 10 45.5**	**-0.4**
	comp=Z,1.3nm,0.8s,baz=40,slow=6.2						
NOA	**NORSAR Array B**	**73.94**	**337**	P	**P**	**11 10 46.1**	**+0.2**
	comp=Z,1.2nm,0.8s,baz=39,slow=5.7,SNR=3.4						
NVAR	**Mina Array Bea**	**75.44**	**53**	P	**P**	**11 10 56.6**	**+1.3**
	comp=Z,1.0nm,0.6s,baz=290,slow=5.5,SNR=12						
PDAR	**Pinedale Array**	**78.06**	**45**	P	**P**	**11 11 09.8**	**-0.3**
	comp=Z,0.8nm,0.7s,baz=273,slow=2.3,SNR=10						
TXAR	**Lajitas Array**	**90.56**	**52**	P	**P**	**11 12 13.8**	**+0.2**
	comp=Z,0.4nm,0.7s,baz=320,slow=3.7,SNR=5.7						
LPAZ	**La Paz**	**147.18**	**59**	PKPbc	**PKPbc**	**11 18 54.9**	**-0.6**
	comp=Z,2.5nm,0.8s,baz=18,slow=12,SNR=6.0						

*IDC **11** 10:59:08.4±4.2, 20.29S×178.40W, h444km±41km, mb3.4/7, mb1 3.6/8, mb1mx3.2/35, mbtmp4.2/8, Error ellipse: s-maj=31.0km s-min=13.8km az=97.0*
*ISCJB **11** 10:59:18.7±1.2, 20.75S±0.2×178.6W±0.3, h587km, mb3.8/7, Error ellipse: s-maj=33.6km s-min=19.0km az=21.4*
ISC 11 10:59:20.0±1.2, 20.7S±0.2×178.6W±0.3, h587km, n15, σ1°15/12, mb3.8/7, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
URZ	**Urewera**	**17.86**	**191**	P	**P**	**11 02 54.8**	**0.0**
	1.4nm,0.3s,baz=338,slow=4.4,SNR=11						
URZ				S	S	11 06 01.0	+12
	0.9nm,0.3s,baz=4.4,slow=23,SNR=9.1						
STKA	**Stephens Creek**	**37.16**	**244**	P	**P**	**11 05 42.3**	**-0.2**
	1.2nm,0.4s,baz=52,slow=11,SNR=5.5						
ASAR	**Alice Springs**	**43.90**	**257**	P	**P**	**11 06 36.1**	**0.0**
	2.4nm,0.7s,baz=89,slow=8.3,SNR=14						
WRA	**Warramunga Arr**	**43.99**	**262**	P	**P**	**11 06 36.5**	**-0.3**
	0.7nm,0.3s,baz=96,slow=7.1,SNR=9.2						
PETK	**Petropavlovsk-**	**76.34**	**346**	P	**P**	**11 10 08.9**	**-0.5**
	4.5nm,0.8s,baz=168,slow=7.4,SNR=4.1						
USRK	**Ussuriysk Ar.**	**78.82**	**326**	P	**P**	**11 10 24.6**	**+1.7**
	2.3nm,0.7s,baz=128,slow=4.7,SNR=6.1						
ILAR	**Eielson Array**	**88.66**	**13**	P	**P**	**11 11 09.8**	**-1.3**
	0.5nm,0.5s,baz=216,slow=5.1,SNR=8.3						
CMAR	**Chiang Mai Arr**	**89.64**	**290**	P	P	11 11 20.2	+3.6
	0.7nm,0.3s,baz=133,slow=3.2,SNR=9.6						
ARCES	**ARCESS Array B**	**129.03**	**349**	PKP	**PKPdf**	**11 17 21.9**	**+0.6**
	4.6nm,1.0s,baz=73,slow=3.3,SNR=3.5						
FINES	**FINESS Array B**	**135.82**	**343**	PKP	**PKPdf**	**11 17 35.9**	**+1.7**
	0.6nm,0.8s,baz=147,slow=2.8,SNR=4.6						
HFS	**Hagfors**	**139.66**	**351**	PKhKP	PKPpre	11 17 35.6	
	0.5nm,0.4s,baz=17,slow=1.5,SNR=5.1						
AKASG	**Malin Array Be**	**142.92**	**330**	PKhKP	PKPpre	11 17 45.6	
	4.0nm,0.4s,baz=42,slow=4.0,SNR=14						
BRTR	**Keskin Array B**	**146.55**	**312**	PKPbc	**PKPbc**	**11 17 57.5**	**+0.7**
	1.3nm,0.5s,baz=153,slow=5.6,SNR=6.4						
MMAI	**Mount Meron Ar**	**147.41**	**299**	PKPbc	**PKPab**	**11 18 01.5**	**-1.8**
	2.2nm,0.4s,baz=95,slow=4.4,SNR=4.0						
GERES	**GERESS Array B**	**150.25**	**343**	PKPbc	**PKPbc**	**11 18 05.9**	**+0.2**
	0.4nm,0.3s,baz=15,slow=4.1,SNR=5.1						

*ISCJB **11** 11:00:23.4±0.5, 37.00N±0.03×140.76E±0.05, h19km±3km, mb4.1/24, Error ellipse: s-maj=7.1km s-min=4.1km az=17.0*
*JMA **11** 11:00:24.0, 37.02N×140.70E, h11km±1km, M4.2*
*IDC **11** 11:00:27.6±0.5, 36.99N×140.60E, h34km±3km, mb3.9/21, mb1 4.1/21, mb1mx3.9/49, mbtmp4.1/21, Error ellipse: s-maj=13.8km s-min=11.7km az=80.0*
*NEIC **11** 11:00:27.3±0.3, 36.94N×140.64E, h35km, mb4.5/2, Error ellipse: s-maj=7.2km s-min=5.8km az=106.0*
ISC 11 11:00:25.5±0.4, 37.02N±0.03×140.72E±0.04, h23km±2km, h23km:pP-P, n52, σ1°39/69, mb4.1/24, 3C, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.10**	**35**	P	**Pb**	**11 00 27.1**	**-2.9**
ONAJ				*e*S	**Sb**	**11 00 29.2**	**-3.8**
JFK	**Kawauchi**	**0.37**	**19**	⇑P	**Pb**	**11 00 31.5**	**-2.0**
JFK				*e*S	**Sb**	**11 00 36.6**	**-2.4**
JHO	**Hitachi**	**0.42**	**197**	⇑P	**Pb**	**11 00 32.3**	**-2.0**
JHO				*e*S	**Sb**	**11 00 38.1**	**-2.2**
JFT	**Otama**	**0.59**	**329**	⇑P	**Pb**	**11 00 35.4**	**-1.8**
JFT				S	**Sb**	**11 00 43.2**	**-1.9**
JSB	**Shiboa**	**0.64**	**266**	P	**Pb**	**11 00 36.6**	**-1.5**
JMM	**Marumori**	**0.85**	**4**	P	**Pb**	**11 00 39.2**	**-2.4**
JMM				S	**Sb**	**11 00 51.5**	**-1.1**
JYT	**Yasato**	**0.89**	**209**	P	**Pb**	**11 00 40.5**	**-1.8**
JYT				S	**Sb**	**11 00 52.0**	**-1.8**
JFY	**Yanaizu**	**0.90**	**296**	P	**Pb**	**11 00 40.2**	**-2.3**
JFY				S	**Sb**	**11 00 51.4**	**-2.7**
MJAR	**Matsushiro Arr**	**2.07**	**258**	Pn	**Pn**	**11 01 00.3**	**+1.3**
	56nm,0.3s,baz=80,slow=16,SNR=7.3						
MAJO	**Matsushiro**	**2.07**	**258**	*e*Pn	**Pn**	**11 00 58.3**	**-0.6**
MAT	**Matsushiro**	**2.07**	**258**	P	**Pn**	**11 00 59.7**	**+0.8**
MAT				S	**Sb**	**11 01 27.0**	**-0.8**
JHJ2	**Mitsune**	**3.96**	**191**	Pn	**Pn**	**11 01 24.9**	**0.0**
JNU	**Nakatsue**	**8.95**	**247**	*e*Pn	**Pn**	**11 02 33.1**	**-0.4**
USRK	**Ussuriysk Ar.**	**9.77**	**320**	Pn	Pn	11 02 50.1	+5.6
	0.3nm,0.3s,baz=132,slow=12,SNR=10.0						
CBIJ	**Chichi jima**	**9.97**	**172**	Pn	**Pn**	**11 02 45.2**	**-2.2**
JCJ	**Chichijima**	**9.97**	**172**	Pn	**Pn**	**11 02 45.2**	**-2.2**
	11nm,0.3s,baz=317,slow=18,SNR=5.3						
KSRS	**Korea Array**	**10.22**	**276**	Pn	Pn	11 02 56.5	+5.9
	0.3nm,0.3s,baz=92,slow=13,SNR=9.3						
KSAR	**Wonju Array Be**	**10.25**	**276**	Pn	Pn	11 02 56.5	+5.4
KLR	**Kul'dur**	**13.84**	**335**	Pn	**P**	**11 03 47.0**	**-1.3**
	0.1nm,0.3s,baz=135,slow=13,SNR=4.4						
SEY	**Seymchan**	**26.92**	**12**	P	**P**	**11 06 06.0**	**+1.3**
	4.8nm,1.1s,baz=212,slow=6.0,SNR=3.1						
SONM	**Songino Array**	**27.34**	**304**	P	**P**	**11 06 08.7**	**-0.1**
	1.4nm,0.5s,baz=104,slow=9.3,SNR=5.1						
SONM				PcP	**PcP**	**11 09 28.4**	**+0.7**
	0.5nm,0.4s,baz=155,slow=2.9,SNR=3.5						
SONM				pPcP		11 09 37.7	
	0.6nm,0.4s,baz=110,slow=3.5,SNR=4.2						
H11N2	**WAKE ISLAND Hy**	**28.62**	**120**	T	T	11 36 09.3	
	baz=313,slow=75,SNR=40						
H11N1	**WAKE ISLAND Hy**	**28.62**	**120**	T	T	11 36 09.6	
	baz=313,slow=75,SNR=35						
H11N3	**WAKE ISLAND Hy**	**28.63**	**120**	T	T	11 36 10.3	
	baz=313,slow=75,SNR=29						
H11S1	**WAKE ISLAND Hy**	**29.32**	**122**	T	T	11 37 01.2	
	baz=314,slow=75,SNR=1007						
H11S3	**WAKE ISLAND Hy**	**29.32**	**122**	T	T	11 37 03.1	
	baz=314,slow=75,SNR=905						
H11S2	**WAKE ISLAND Hy**	**29.33**	**122**	T	T	11 37 02.7	
	baz=314,slow=75,SNR=522						
ZALV	**Zalesovo Beam**	**41.52**	**312**	P	**P**	**11 08 10.8**	**0.0**
	1.8nm,0.5s,baz=106,slow=7.0,SNR=4.7						
ZALV				pP	**sP**	**11 08 21.4**	**+0.8**
	1.7nm,0.5s,baz=103,slow=5.8,SNR=2.9						
ZALV				PcP	**PcP**	**11 10 07.8**	**-0.1**
	0.9nm,0.4s,baz=94,slow=3.7,SNR=3.5						
MKAR	**Makanchi Array**	**43.66**	**302**	P	**P**	**11 08 28.3**	**0.0**
	1.6nm,0.6s,baz=85,slow=9.8,SNR=8.9						
MKAR				pP	**sP**	**11 08 38.7**	**+0.6**
	1.6nm,0.6s,baz=85,slow=11,SNR=4.5						
KURK	**Kurchatov**	**45.51**	**308**	*e*P	**P**	**11 08 42.4**	**-0.6**
	8.0nm,0.8s						
KURK				P	**P**	**11 08 42.9**	**-0.1**
KURK				pP	**sP**	**11 08 53.4**	**+0.6**
KURBB	**Kurchatov Arra**	**45.58**	**308**	P	**P**	**11 08 42.9**	**-0.6**
	2.8nm,0.6s,baz=84,slow=8.3,SNR=8.0						
KURBB				pP	**sP**	**11 08 53.4**	**+0.1**
	2.8nm,0.5s,baz=85,slow=8.1,SNR=5.2						
ILAR	**Eielson Array**	**49.81**	**32**	P	**P**	**11 09 16.8**	**+0.6**
	1.9nm,0.9s,baz=269,slow=5.9,SNR=7.7						
ILAR				pP	**sP**	**11 09 27.4**	**+1.4**
	1.4nm,0.8s,baz=275,slow=7.5,SNR=4.6						
BVAR	**Borovoye Array**	**50.17**	**312**	P	**P**	**11 09 18.8**	**-0.3**
	1.3nm,0.6s,baz=69,slow=8.1,SNR=5.6						
BVAR				pP	**sP**	**11 09 30.2**	**+1.2**
	1.6nm,0.6s,baz=70,slow=7.9,SNR=4.5						
BVAR				PcP	**PcP**	**11 10 38.5**	**+0.3**
	1.5nm,0.6s,baz=31,slow=4.0,SNR=4.7						
BVAR				pPcP		11 10 48.7	
	1.1nm,0.6s,baz=60,slow=5.8,SNR=3.8						
INK	**Inuvik**	**54.66**	**27**	P	**P**	**11 09 53.3**	**+1.2**
	1.6nm,0.9s,baz=299,slow=6.0,SNR=5.3						
WRAB	**Tennant Creek**	**56.96**	**187**	*e*P	**P**	**11 10 08.5**	**-0.6**
	6.4nm,0.6s						
WRA	**Warramunga Arr**	**56.97**	**187**	P	**P**	**11 10 08.8**	**-0.4**
	7.2nm,0.6s,baz=3.6,slow=7.4,SNR=15						
WRA				pP	**sP**	**11 10 19.4**	**+0.3**
	12nm,0.8s,baz=2.8,slow=7.3,SNR=12						
WRA				PcP	**PcP**	**11 11 04.8**	**+0.5**
	1.5nm,0.7s,baz=359,slow=4.4,SNR=2.4						
ABKAR	**Akbulak array**	**57.53**	**310**	*e*P	**P**	**11 10 12.4**	**-0.5**
	1.7nm,0.5s						
ASAR	**Alice Springs**	**60.70**	**187**	P	**P**	**11 10 35.3**	**+0.2**
	2.3nm,0.6s,baz=10,slow=5.9,SNR=9.0						
ASAR				pP	**sP**	**11 10 45.8**	**+0.7**
	1.9nm,0.8s,baz=6.9,slow=32,SNR=2.4						
ARCES	**ARCESS Array B**	**63.82**	**339**	P	**P**	**11 10 56.1**	**+0.7**
	2.7nm,0.9s,baz=50,slow=8.0,SNR=3.8						
YKA	**Yellowknife Ar**	**64.10**	**30**	P	**P**	**11 10 57.9**	**+0.5**
	0.7nm,0.8s,baz=302,slow=6.5,SNR=9.6						
STKA	**Stephens Creek**	**68.54**	**179**	P	**P**	**11 11 26.3**	**+0.2**
	1.8nm,0.9s,baz=312,slow=11,SNR=2.8						
STKA				pP	**sP**	**11 11 37.0**	**+0.9**
	3.5nm,0.9s,baz=352,slow=6.9,SNR=3.3						
FINES	**FINESS Array B**	**68.57**	**332**	P	**P**	**11 11 26.1**	**+0.1**
	3.8nm,0.7s,baz=44,slow=8.8,SNR=9.9						
FINES				pP	**sP**	**11 11 36.7**	**+0.6**
	3.5nm,0.9s,baz=45,slow=6.1,SNR=4.3						
AKASG	**Malin Array Be**	**73.97**	**322**	P	**P**	**11 11 58.4**	**-0.5**
	0.8nm,0.4s,baz=46,slow=6.1,SNR=7.8						
NB2	**NORSAR Subarra**	**73.99**	**337**	P	**P**	**11 11 58.5**	**-0.4**
	comp=Z,0.9nm,0.6s,baz=40,slow=5.9						
NOA	**NORSAR Array B**	**73.99**	**337**	P	**P**	**11 11 58.8**	**0.0**
	comp=Z,1.3nm,0.7s,baz=39,slow=5.9,SNR=4.5						
NOA				pP	**sP**	**11 12 09.4**	**+0.4**
	comp=Z,1.1nm,0.7s,baz=40,slow=5.7,SNR=3.3						
NVAR	**Mina Array Bea**	**75.44**	**53**	P	**P**	**11 12 09.8**	**+1.9**
	comp=Z,0.9nm,0.6s,baz=297,slow=5.6,SNR=7.6						
NVAR				pP	**PcP**	**11 12 19.9**	**-1.1**
	comp=Z,1.0nm,0.7s,baz=293,slow=5.4,SNR=5.6						
PDAR	**Pinedale Array**	**78.07**	**45**	P	**P**	**11 12 23.7**	**+1.0**
	comp=Z,0.8nm,0.7s,baz=258,slow=2.9,SNR=7.2						
BRTR	**Keskin Array B**	**78.45**	**311**	P	**P**	**11 12 24.8**	**+0.1**
	comp=Z,1.6nm,1.0s,baz=95,slow=4.9,SNR=3.4						
GERES	**GERESS Array B**	**82.43**	**328**	P	**P**	**11 12 45.9**	**0.0**
	comp=Z,0.3nm,0.2s,baz=64,slow=6.7,SNR=3.0						
TXAR	**Lajitas Array**	**90.57**	**52**	P	**P**	**11 13 27.4**	**+1.3**
	comp=Z,0.8nm,0.8s,baz=272,slow=3.7,SNR=6.2						
TORD	**Torodi Ar. Bea**	**116.95**	**314**	PKP	**PKPdf**	**11 19 08.2**	**-0.7**
	comp=Z,0.2nm,0.3s,baz=11,slow=2.9,SNR=3.0						
LPAZ	**La Paz**	**147.18**	**59**	PKPbc	**PKPbc**	**11 20 08.7**	**+0.7**
	comp=Z,2.9nm,0.7s,baz=346,slow=2.8,SNR=7.0						
LPAZ				pPKPbc	**pPKPbc**	**11 20 19.0**	**+3.3**
	comp=Z,2.2nm,0.7s,baz=288,slow=3.2,SNR=4.0						

JMA 11 11:00:34.2, 37.02N×140.70E, h11km±1km, M4.4, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.11**	**44**	P	Pg	11

ILAR	**Eielson Array**	**49.86**	**32**	P	**P**	**11 16 42.4**	**0.0**	
	0.3nm,0.7s,baz=261,slow=6.1,SNR=4.8							
WRA	**Warramunga Arr**	**56.91**	**187**	P	**P**	**11 17 34.1**	**-0.5**	
	0.4nm,0.6s,baz=3.8,slow=7.3,SNR=8.0							
ASAR	**Alice Springs**	**60.64**	**187**	P	**P**	**11 18 02.3**	**+1.8**	
	0.2nm,0.7s,baz=0.0,slow=5.7,SNR=3.7							

JMA 11 11:10:59.3, 37.03N×140.63E, h9km±2km, M3.1, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.15**	**62**	P	Pg	11 11 02.9	+0.3
ONAJ				*e*S	Sg	11 11 05.4	+0.4
JFK	**Kawauchi**	**0.39**	**30**	P	Pg	11 11 07.1	+0.1
JFK				S	Sg	11 11 12.5	+0.4
JHO	**Hitachi**	**0.42**	**187**	P	Pg	11 11 07.5	0.0
JHO				S	Sg	11 11 13.2	+0.1
JFT	**Otama**	**0.54**	**334**	P	Pg	11 11 10.1	+0.3
JFT				S	Sg	11 11 17.3	+0.4
MAT	**Matsushiro**	**2.00**	**257**	P	Pn	11 11 34.2	+0.8
MAT				S	Sb	11 12 00.1	-0.9

*ISCJB **11** 11:12:40.3±0.6, 36.91N±0.03×140.78E±0.05, h16km±4km, mb4.0/22, Error ellipse: s-maj=7.5km s-min=4.1km az=20.2*
*JMA **11** 11:12:41.0, 36.95N×140.66E, h8km±1km, M4.3 Broadband fault plane solution: P waves. NP1: φs284.00000°, δ73.00000°, λ-97.00000°. NP2: φs128.00000°, δ18.00000°, λ-68.00000°. Principal axes: T Plg28.0000°, Azm20.0000°; N Plg7.0000°, Azm286.0000°; P Plg61.0000°, Azm184.0000°;*
JMA Felt II J1.
*NEIC **11** 11:12:43.9±2.7, 36.82N×140.55E, h26km±20km, mb4.3/2 Error ellipse: s-maj=10.9km s-min=7.4km az=80.0*
*IDC **11** 11:12:46.8±1.8, 36.86N×140.40E, h47km±18km, mb3.8/21, mb1 3.9/24, mb1mx3.8/58, mbtmp4.0/24, ML3.5/3, Error ellipse: s-maj=18.3km s-min=10.9km az=83.0*

ISC 11 11:12:40.9±1.1, 36.93N±0.03×140.63E±0.05, h4km±7km, n53, σ1°§16/55, mb4.0/22, 6C, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.21**	**38**	⇑P	**Pg**	**11 12 45.1**	**0.0**
ONAJ				S	**Sg**	**11 12 48.1**	**+0.2**
JHO	**Hitachi**	**0.33**	**189**	⇑P	**Pg**	**11 12 47.9**	**+0.7**
JHO				S	**Sg**	**11 12 52.8**	**+1.4**
JFK	**Kawauchi**	**0.47**	**24**	⇑P	**Pg**	**11 12 49.8**	**-0.2**
JFK				*e*S	**Sg**	**11 12 56.0**	**-0.2**
JSB	**Shiboa**	**0.57**	**274**	P	**Pb**	**11 12 53.2**	**-0.3**
JFT	**Otama**	**0.63**	**338**	⇑P	**Pg**	**11 12 53.2**	**+0.2**
JFT				S	**Sg**	**11 13 01.5**	**+0.3**
JYT	**Yasato**	**0.79**	**207**	⇑P	**Pg**	**11 12 56.4**	**+0.4**
JMM	**Marumori**	**0.94**	**8**	⇑P	**Pg**	**11 12 58.0**	**-0.9**
MJAR	**Matsushiro Arr**	**1.99**	**259**	P	**Pn**	**11 13 15.6**	**+0.4**
	128nm,0.3s,baz=87,slow=16,SNR=80						
MJAR				S	**Sb**	**11 13 42.2**	**-0.5**
	159nm,0.3s,baz=85,slow=26,SNR=20						
MAJO	**Matsushiro**	**1.99**	**259**	*e*Pn	**Pn**	**11 13 14.2**	**-1.1**
MAJO				*e*Pn	**Pb**	**11 13 16.1**	**-1.4**
MAT	**Matsushiro**	**1.99**	**259**	P	**Pn**	**11 13 15.7**	**+0.5**
MAT				S	**Sb**	**11 13 42.4**	**-0.3**
JHJ	**Hachijo jima 2**	**3.87**	**191**	P	**Pn**	**11 13 40.7**	**-0.4**
	28nm,0.3s,baz=30,slow=14,SNR=14						
JHJ				S	**Sn**	**11 14 26.2**	**-0.8**
	43nm,0.3s,baz=63,slow=23,SNR=2.2						
JHJ2	**Mitsune**	**3.87**	**190**	*e*Pn	**Pn**	**11 13 39.8**	**-1.3**
ERM	**Erimo**	**5.44**	**20**	*e*Pn	**Pn**	**11 14 02.5**	**-0.2**
JNU	**Nakatsue**	**8.86**	**247**	P	**Pn**	**11 14 50.7**	**+1.0**
	0.5nm,0.3s,baz=105,slow=1.1,SNR=5.0						
USRK	**Ussuriysk Ar.**	**9.79**	**321**	P	Pn	11 15 07.9	+5.6
	0.4nm,0.3s,baz=130,slow=13,SNR=14						
CBIJ	**Chichi jima**	**9.90**	**172**	P	**Pn**	**11 15 00.9**	**-2.9**
JCJ	**Chichijima**	**9.90**	**172**	P	**Pn**	**11 15 00.9**	**-2.9**
	8.9nm,0.3s,baz=291,slow=18,SNR=7.0						
KSRS	**Korea Array**	**10.16**	**277**	P	Pn	11 15 13.2	+5.8
	0.3nm,0.3s,baz=95,slow=14,SNR=13						
KSAR	**Wonju Array Be**	**10.19**	**277**	P	Pn	11 15 13.2	+5.4
KLR	**Kul'dur**	**13.89**	**335**	P	**Pn**	**11 16 00.1**	**+1.8**
	0.1nm,0.3s,baz=169,slow=18,SNR=3.3						
MA2	**Magadan**	**23.59**	**13**	P	**P**	**11 17 55.1**	**+2.8**
	5.0nm,0.6s,baz=212,slow=9.4,SNR=5.8						
ENH	**Enshi**	**26.70**	**265**	P	**P**	**11 18 20.6**	**-0.5**
SEY	**Seymchan**	**27.01**	**12**	P	**P**	**11 18 24.2**	**+0.6**
	2.6nm,0.8s,baz=211,slow=6.2,SNR=7.5						
SONM	**Songino Array**	**27.32**	**304**	P	**P**	**11 18 26.3**	**-0.5**
	1.2nm,0.4s,baz=118,slow=9.1,SNR=7.0						
H11N2	**WAKE ISLAND Hy**	**28.64**	**120**	T	T	11 48 25.7	
	baz=313,slow=75,SNR=153						
H11N1	**WAKE ISLAND Hy**	**28.64**	**120**	T	T	11 48 26.8	
	baz=313,slow=75,SNR=143						
H11N3	**WAKE ISLAND Hy**	**28.65**	**120**	T	T	11 48 26.1	
	baz=313,slow=75,SNR=136						
H11S1	**WAKE ISLAND Hy**	**29.33**	**122**	T	T	11 49 17.3	
	baz=314,slow=76,SNR=32						
H11S3	**WAKE ISLAND Hy**	**29.33**	**122**	T	T	11 49 17.1	
	baz=314,slow=76,SNR=55						
H11S2	**WAKE ISLAND Hy**	**29.35**	**122**	T	T	11 49 18.2	
	baz=314,slow=76,SNR=67						
TIXI	**Tiksi**	**35.32**	**354**	P	**P**	**11 19 36.0**	**-0.6**
	1.0nm,0.3s,baz=114,slow=8.7,SNR=6.3						
ZALV	**Zalesovo Beam**	**41.52**	**312**	P	**P**	**11 20 27.5**	**-1.4**
	0.8nm,0.5s,baz=96,slow=8.2,SNR=4.6						
MKAR	**Makanchi Array**	**43.64**	**302**	P	**P**	**11 20 45.7**	**-0.7**
	0.5nm,0.4s,baz=85,slow=10,SNR=6.2						
KURK	**Kurchatov**	**45.50**	**308**	*e*P	**P**	**11 20 59.8**	**-1.3**
TKM2	**Tokmak 2**	**49.13**	**298**	*e*P	**P**	**11 21 29.8**	**0.0**
ILAR	**Eielson Array**	**49.91**	**32**	P	**P**	**11 21 36.0**	**+0.9**
	0.9nm,0.6s,baz=265,slow=5.7,SNR=14						
ILAR				PcP	**PcP**	**11 22 56.2**	**+0.8**
	0.3nm,0.6s,baz=271,slow=3.5,SNR=2.8						
BVAR	**Borovoye Array**	**50.18**	**312**	P	**P**	**11 21 36.2**	**-1.1**
	0.6nm,0.5s,baz=100,slow=6.0,SNR=4.8						
INK	**Inuvik**	**54.76**	**27**	P	**P**	**11 22 12.6**	**+1.5**
	0.6nm,0.4s,baz=305,slow=8.1,SNR=7.9						
ARU	**Arti**	**56.02**	**318**	P	**P**	**11 22 20.7**	**+0.4**
	1.9nm,0.4s,baz=0.4,slow=0.9,SNR=3.6						
WRAB	**Tennant Creek**	**56.87**	**187**	*e*P	**P**	**11 22 25.4**	**-1.3**
WRAB				P	**P**	**11 22 26.1**	**-0.6**
WRA	**Warramunga Arr**	**56.88**	**187**	P	**P**	**11 22 25.6**	**-1.2**
	6.0nm,0.6s,baz=3.4,slow=7.3,SNR=36						
ABKAR	**Akbulak array**	**57.53**	**310**	P	**P**	**11 22 30.7**	**-0.4**
	0.6nm,0.4s						
SPITS	**Spitsbergen Ar**	**60.50**	**349**	P	**P**	**11 22 53.5**	**+2.2**
	9.5nm,1.0s,baz=61,slow=12,SNR=4.0						
ASAR	**Alice Springs**	**60.61**	**187**	P	**P**	**11 22 52.0**	**-0.7**
	2.7nm,0.7s,baz=12,slow=7.8,SNR=51						
ARCES	**ARCESS Array B**	**63.87**	**339**	P	**P**	**11 23 14.1**	**0.0**
	2.9nm,0.9s,baz=45,slow=12,SNR=3.7						
YKA	**Yellowknife Ar**	**64.21**	**30**	P	**P**	**11 23 16.7**	**+0.3**
	0.4nm,0.6s,baz=303,slow=6.7,SNR=10						
YKA				PcP	**PcP**	**11 23 53.1**	**+1.8**
	0.1nm,0.4s,baz=308,slow=3.6,SNR=4.6						
STKA	**Stephens Creek**	**68.46**	**179**	P	**P**	**11 23 43.6**	**-0.3**
	0.7nm,0.5s,baz=31,slow=3.8,SNR=3.5						
HFS	**Hagfors**	**73.92**	**335**	P	**P**	**11 24 16.2**	**-0.6**
	0.9nm,0.5s,baz=61,slow=7.1,SNR=6.8						
NOA	**NORSAR Array B**	**74.04**	**337**	P	**P**	**11 24 16.8**	**-0.7**
	0.6nm,0.7s,baz=40,slow=5.7,SNR=2.6						
PDAR	**Pinedale Array**	**78.18**	**45**	P	**P**	**11 24 43.1**	**+1.5**
	0.3nm,0.6s,baz=336,slow=1.8,SNR=4.7						
GERES	**GERESS Array B**	**82.47**	**328**	P	**P**	**11 25 02.8**	**-1.7**
	0.3nm,0.3s,baz=37,slow=8.6,SNR=2.7						
TXAR	**Lajitas Array**	**90.67**	**52**	P	**P**	**11 25 45.2**	**+0.2**
	0.3nm,0.5s,baz=290,slow=2.8,SNR=6.0						
LPAZ	**La Paz**	**147.28**	**59**	PKPbc	**PKPbc**	**11 32 26.8**	**+0.1**
	1.6nm,0.6s,baz=18,slow=3.2,SNR=5.4						

JMA 11 11:14:59.2, 37.02N×140.62E, h11km±1km, M2.8, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.16**	**60**	P	Pg	11 15 03.1	+0.2
ONAJ				S	Sg	11 15 05.8	+0.3
JFK	**Kawauchi**	**0.40**	**30**	P	Pg	11 15 07.0	-0.2
JFK				S	Sg	11 15 12.6	+0.1
JHO	**Hitachi**	**0.41**	**186**	P	Pg	11 15 07.2	-0.1
JHO				S	Sg	11 15 12.9	+0.2
JFT	**Otama**	**0.55**	**336**	P	Pg	11 15 10.2	+0.3
JFT				S	Sg	11 15 17.3	+0.2
MAT	**Matsushiro**	**2.00**	**257**	P	Pb	11 15 34.6	-0.9
MAT				S	Sb	11 16 00.7	+0.3

JMA 11 11:17:13.3, 37.03N×140.62E, h10km±1km, M2.9, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.16**	**63**	P	Pg	11 17 17.0	+0.1
ONAJ				S	Sg	11 17 19.6	+0.3
JFK	**Kawauchi**	**0.39**	**31**	P	Pg	11 17 21.1	0.0
JFK				S	Sg	11 17 26.6	+0.3
JHO	**Hitachi**	**0.42**	**186**	P	Pg	11 17 21.4	-0.2
JHO				*e*S	Sg	11 17 27.3	+0.2
MAT	**Matsushiro**	**2.00**	**257**	P	Pn	11 17 48.2	+1.1
MAT				S	Sb	11 18 13.5	-1.2

JMA 11 11:18:52.4, 36.98N×140.69E, h21km±1km, M2.8, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.15**	**35**	P	Pb	11 18 57.0	-1.6
ONAJ				S	Sb	11 19 00.2	-2.8
JHO	**Hitachi**	**0.38**	**195**	P	Pb	11 19 00.1	-0.2
JHO				S	Sb	11 19 05.5	-0.2
JFK	**Kawauchi**	**0.41**	**21**	P	Pb	11 19 00.8	-0.1
JFK				S	Sb	11 19 06.7	0.0
JFT	**Otama**	**0.61**	**332**	P	Pb	11 19 04.4	0.0
JFT				S	Sb	11 19 12.7	+0.1
MAT	**Matsushiro**	**2.04**	**258**	P	Pn	11 19 27.0	+1.5
MAT				S	Sb	11 19 53.4	-0.3

JMA 11 11:21:46.6, 36.95N×140.63E, h9km±1km, M3.1, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.20**	**42**	P	Pg	11 21 51.0	+0.2
ONAJ				S	Sg	11 21 54.2	+0.5
JHO	**Hitachi**	**0.34**	**188**	P	Pg	11 21 53.4	0.0
JHO				S	Sg	11 21 58.1	+0.2
JFK	**Kawauchi**	**0.46**	**25**	P	Pg	11 21 55.5	-0.1
JFK				*e*S	Sg	11 22 01.9	+0.3
MAT	**Matsushiro**	**1.99**	**259**	P	Pn	11 22 20.7	+0.3
MAT				S	Sb	11 22 47.2	-0.6

DDA 11 11:22:07.3, 37.61N×35.80E, h7km, Md2.7, Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ANDN	**Andirin**	**0.43**	**94**	*i* P	Pg	11 22 15.9	+0.1
KAMA	**Osmaniye**	**0.81**	**121**	*i* P	Pn	11 22 24.6	-0.7
AYKD	**Aykdinkavak**	**0.82**	**103**	*i* P	Pg	11 22 23.3	+0.2
AYKD				*i* S	Sn	11 22 39.2	+1.4
GULE	**Gulek**	**0.88**	**248**	*i* P	Pg	11 22 20.8	-3.4
GULE				*i* S	Sg	11 22 35.5	-0.1
DED	**Mersin**	**1.03**	**231**	*i* P	Pg	11 22 27.0	0.0
KERG	**Konya-Eregli**	**1.35**	**262**	*i* P	Pn	11 22 27.1	-5.5

IDC 11 11:22:27.6±2.8, 16.35N×146.24E, h108km±25km, mb3.1/5, mb1 3.4/6, mb1mx3.1/54, mbtmp3.5/6, Error ellipse: s-maj=40.1km s-min=21.4km az=111.0, Mariana Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
GUMO	**Guam**	**3.05**	**206**	P	Pn	11 23 15.3	+1.1
	20nm,0.3s,baz=6.3,slow=9.2,SNR=19						
GUMO				S	Sn	11 23 50.2	+0.1
	34nm,0.3s,baz=319,slow=23,SNR=6.8						
H11S3	**WAKE ISLAND Hy**	**19.63**	**81**	T	T	11 47 38.4	
	baz=266,slow=75,SNR=13						
H11S1	**WAKE ISLAND Hy**	**19.64**	**81**	T	T	11 47 38.7	
	baz=266,slow=75,SNR=12						
H11S2	**WAKE ISLAND Hy**	**19.65**	**81**	T	T	11 47 39.1	
	baz=266,slow=75,SNR=21						
WRA	**Warramunga Arr**	**37.91**	**198**	P	P	11 29 34.5	-0.2
	0.3nm,0.5s,baz=16,slow=8.2,SNR=13						
ASAR	**Alice Springs**	**41.56**	**197**	P	P	11 30 04.8	0.0
	0.3nm,0.6s,baz=20,slow=14,SNR=7.0						
CMAR	**Chiang Mai Arr**	**45.08**	**280**	P	P	11 30 33.5	+0.2
	0.6nm,0.6s,baz=75,slow=6.1,SNR=5.9						
ILAR	**Eielson Array**	**65.52**	**26**	P	P	11 32 58.6	-0.6
	0.3nm,0.4s,baz=258,slow=5.8,SNR=6.6						
YKA	**Yellowknife Ar**	**79.81**	**28**	P	P	11 34 24.3	+0.4
	0.2nm,0.6s,baz=288,slow=5.3,SNR=4.5						

*ISCJB **11** 11:23:21.4±0.6, 36.71N±0.03×140.65E±0.05, h9km±3km, mb3.5/7, Error ellipse: s-maj=7.3km s-min=4.5km az=27.7*
*JMA **11** 11:23:21.8, 36.70N×140.63E, h7km±1km, M3.8*
JMA Felt III J1.
*IDC **11** 11:23:21.5±0.9, 36.77N×140.55E, h0km, mb3.5/7, mb1 3.8/8, mb1mx3.5/55, mbtmp3.6/8, ML3.3/1, Error ellipse: s-maj=22.1km s-min=19.3km az=120.0*

ISC 11 11:23:22.1±1.1, 36.72N±0.03×140.61E±0.04, h4km±7km, n23, σ0°§72/24, mb3.6/7, 1C-5D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JHO	**Hitachi**	**0.11**	**196**	⇓P	**Pg**	**11 23 24.1**	**-0.3**
JHO				S	**Sg**	**11 23 25.8**	**0.0**
ONAJ	**Iwakimizuishiy**	**0.41**	**22**	⇓P	**Pg**	**11 23 30.2**	**0.0**
ONAJ				S	**Sg**	**11 23 36.0**	**+0.4**
JYT	**Yasato**	**0.59**	**215**	⇓P	**Pg**	**11 23 33.0**	**-0.5**
JSB	**Shiboa**	**0.61**	**295**	⇑P	**Pg**	**11 23 34.5**	**+0.7**
JSB				S	**Sg**	**11 23 43.1**	**+1.4**
JFK	**Kawauchi**	**0.69**	**18**	⇓P	**Pg**	**11 23 34.9**	**-0.4**
JFK				S	**Sg**	**11 23 44.2**	**0.0**
JFT	**Otama**	**0.83**	**345**	⇓P	**Pg**	**11 23 38.0**	**-0.1**
JAG	**Ashikaga**	**0.97**	**253**	P	**Pg**	**11 23 40.0**	**-0.8**
MJAR	**Matsushiro Arr**	**1.94**	**266**	Pn	**Pn**	**11 23 55.5**	**-0.4**
	9.6nm,0.3s,baz=85,slow=11,SNR=26						
MJAR				Sn	**Sn**	**11 24 21.1**	**+0.4**
	21nm,0.3s,baz=4.6,slow=5.4,SNR=14						
MAT	**Matsushiro**	**1.94**	**266**	P	**Pn**	**11 23 55.4**	**-0.4**
MAT				S	**Sn**	**11 24 21.1**	**+0.5**
JHJ	**Hachijo jima 2**	**3.65**	**191**	Pn	**Pn**	**11 24 20.6**	**+1.2**
	5.7nm,0.3s,baz=60,slow=20,SNR=2.9						
JHJ				Sn	**Sn**	**11 25 03.9**	**+1.1**
	11nm,0.3s,baz=74,slow=22,SNR=1.7						
SONM	**Songino Array**	**27.43**	**305**	P	**P**	**11 29 08.1**	**-0.9**
	0.3nm,0.5s,baz=98,slow=10,SNR=2.7						
H11N2	**WAKE ISLAND Hy**	**28.55**	**119**	T	T	11 59 00.6	
	baz=312,slow=75,SNR=125						
H11N1	**WAKE ISLAND Hy**	**28.56**	**119**	T	T	11 59 01.2	
	baz=312,slow=75,SNR=98						
H11N3	**WAKE ISLAND Hy**	**28.57**	**119**	T	T	11 59 01.7	
	baz=312,slow=75,SNR=177						
H11S1	**WAKE ISLAND Hy**	**29.24**	**121**	T	T	11 59 53.9	
	baz=314,slow=75,SNR=214						
H11S3	**WAKE ISLAND Hy**	**29.24**	**121**	T	T	11 59 53.3	
	baz=314,slow=75,SNR=118						
H11S2	**WAKE ISLAND Hy**	**29.25**	**121**	T	T	11 59 55.2	
	baz=314,slow=75,SNR=324						
ZALV	**Zalesovo Beam**	**41.65**	**313**	P	**P**	**11 31 10.1**	**-1.3**
	0.7nm,0.6s,baz=79,slow=7.5,SNR=3.6						
ILAR	**Eielson Array**	**50.11**	**32**	P	**P**	**11 32 17.6**	**-0.4**
	0.3nm,0.8s,baz=266,slow=7.9,SNR=3.2						
WRA	**Warramunga Arr**	**56.66**	**187**	P	**P**	**11 33 06.6**	**0.0**
	0.8nm,0.8s,baz=4.4,slow=7.4,SNR=7.0						
ASAR	**Alice Springs**	**60.39**	**187**	P	**P**	**11 33 32.8**	**+0.3**
	0.5nm,0.7s,baz=17,slow=6.3,SNR=7.2						
NVAR	**Mina Array Bea**	**75.70**	**53**	P	**P**	**11 35 09.9**	**+0.9**
	0.4nm,0.7s,baz=317,slow=3.8,SNR=3.5						
TXAR	**Lajitas Array**	**90.83**	**52**	P	**P**	**11 36 27.1**	**0.0**
	0.2nm,0.6s,baz=260,slow=2.7,SNR=2.9						

*IDC **11** 11:23:56.7±5.8, 36.97N×141.08E, h0km, mb3.5/2, mb1 3.8/3, mb1mx3.3/55, mbtmp3.5/3, ML3.4/1, Error ellipse: s-maj=117.4km s-min=44.0km az=25.0*
*ISCJB **11** 11:23:57.9±0.9, 36.95N±0.06×140.82E±0.09, h20km±7km, mb3.6/2, Error ellipse: s-maj=13.2km s-min=8.7km az=25.7*
*JMA **11** 11:23:58.9, 37.00N×140.63E, h10km±1km, M3.4*
JMA Felt I J1.

ISC 11 11:23:58.6±1.0, 36.99N±0.05×140.64E±0.06, h12km±10km, n10, σ0°§35/13, 3C, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.17**	**49**	⇑P	**Pg**	**11 24 02.7**	**0.0**
ONAJ				*e*S	**Sg**	**11 24 05.4**	**-0.1**
JHO	**Hitachi**	**0.38**	**188**	⇑P	**Pg**	**11 24 06.4**	**+0.2**
JFK	**Kawauchi**	**0.42**	**27**	⇑P	**Pg**	**11 24 07.0**	**-0.1**
JSB	**Shiboa**	**0.57**	**268**	P	**Pb**	**11 24 10.6**	**0.0**
JFT	**Otama**	**0.58**	**336**	P	**Pg**	**11 24 10.3**	**+0.3**
JYT	**Yasato**	**0.84**	**205**	*e*S	**Sg**	**11 24 25.6**	**-0.1**
MJAR	**Matsushiro Arr**	**2.00**	**258**	Pn	**Pg**	**11 24 36.6**	**-0.4**
	11nm,0.3s,baz=77,slow=15,SNR=4.7						
MJAR				Sn	**Sb**	**11 25 00.1**	**+0.3**
	16nm,0.3s,baz=198,slow=20,SNR=6.1						
MAT	**Matsushiro**	**2.00**	**258**	P	**Pg**	**11 24 37.4**	**+0.4**
MAT				S	**Sb**	**11 24 59.1**	**-0.7**
WRA	**Warramunga Arr**	**56.93**	**187**	P	**P**	**11 33 43.6**	**0.0**
	0.9nm,0.7s,baz=1.5,slow=7.3,SNR=6.4						
ASAR	**Alice Springs**	**60.66**	**187**	P	**P**	**11 34 09.8**	**+0.2**
	0.2nm,0.7s,baz=19,slow=6.1,SNR=3.7						

JMA 11 11:24:30.4, 37.06N×140.72E, h6km±1km, M3.0, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.07**	**56**	P	Pg	11 24 32.3	+0.1
ONAJ				S	Sg	11 24 33.7	+0.2
JFK	**Kawauchi**	**0.33**	**22**	S	Sg	11 24 41.6	+0.4
JMM	**Marumori**	**0.81**	**4**	S	Sg	11 24 56.4	0.0

JMA 11 11:26:01.0, 37.04N×140.67E, h13km±1km, M2.7, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.12**	**59**	P	Pg	11 26 04.3	0.0
ONAJ				S	Sg	11 26 06.5	-0.1
JFK	**Kawauchi**	**0.36**	**27**	P	Pg	11 26 08.5	+0.1
JFK				S	Sg	11 26 13.7	+0.4
JHO	**Hitachi**	**0.44**	**191**	P	Pg	11 26 09.4	-0.2
JHO				S	Sg	11 26 15.3	-0.2
JFT	**Otama**	**0.55**	**331**	P	Pg	11 26 11.7	0.0
JFT				S	Sg	11 26 19.6	+0.6
MAT	**Matsushiro**	**2.04**	**257**	P	Pn	11 26 36.3	+1.3
MAT				S	Sb	11 27 02.3	-0.9

*IDC **11** 11:27:28.0±0.5, 37.04N×140.64E, h0km, mb4.5/33, mb1 4.6/37, mb1mx4.5/57, mbtmp4.5/37, ML3.8/4, Error ellipse: s-maj=12.7km s-min=10.7km az=128.0*
*BJI **11** 11:27:29.8, 36.91N×140.70E, h22km, mb4.6/34, mB5.0/13, Ms4.6/13, Ms7 4.5/13*
*JMA **11** 11:27:29.8, 37.04N×140.68E, h11km±1km, M4.6 Broadband fault plane solution: P waves. NP1: φs144.00000°, δ70.00000°, λ-93.00000°. NP2: φs332.00000°, δ20.00000°, λ-82.00000°. Principal axes: T Plg25.0000°, Azm236.0000°; N Plg3.0000°, Azm145.0000°; P Plg65.0000°, Azm49.0000°;*
JMA Felt III J1.
*ISCJB **11** 11:27:29.6±0.4, 37.05N±0.02×140.63E±0.03, h16km±2km, mb4.6/144, MS4.3/4 Error ellipse: s-maj=4.0km s-min=3.1km az=139.4*
*MOS **11** 11:27:32.0±0.8, 37.36N×140.48E, h26km, mb4.8/67, Error ellipse: s-maj=8.0km s-min=5.4km az=86.1*
*NEIC **11** 11:27:34.0±0.5, 37.08N×140.53E, h36km±4km, mb4.7/92, Error ellipse: s-maj=4.6km s-min=3.3km az=141.0*
NEIC Recorded [3 JMA] in Fukushima, Ibaraki and Tochigi.

ISC 11 11:27:29.0±0.7, 37.05N±0.03×140.70E±0.04, h7km±4km, n281, σ1°§42/288, mb4.7/144, MS4.3/4, 11C-5D, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.09**	**57**	⇑P	**Pg**	**11 27 32.8**	**+1.6**
ONAJ				S	**Sg**	**11 27 34.8**	**+2.1**
JFK	**Kawauchi**	**0.34**	**24**	⇑P	**Pb**	**11 27 36.9**	**-0.6**
JFK				S	**Sg**	**11 27 41.9**	**+1.6**
JHO	**Hitachi**	**0.45**	**194**	⇑P	**Pg**	**11 27 38.3**	**+0.5**
JHO				S	**Sg**	**11 27 44.3**	**+0.6**
JFT	**Otama**	**0.55**	**328**	⇓P	**Pb**	**11 27 40.7**	**-0.4**
JFT				*e*S	**Sb**	**11 27 48.0**	**-1.2**
JSB	**Shiboa**	**0.63**	**263**	⇑P	**Pb**	**11 27 42.3**	**-0.1**
JSB				*e*S	**Sb**	**11 27 51.0**	**-0.5**
JMM	**Marumori**	**0.82**	**5**	P	**Pg**	**11 27 45.2**	**+0.5**
JMM				S	**Sg**	**11 27 56.0**	**+0.6**
JFY	**Yanaizu**	**0.87**	**294**	S	**Sg**	**11 27 57.1**	**-1.3**
JYT	**Yasato**	**0.92**	**207**	⇑P	**Pg**	**11 27 46.5**	**-0.2**
MJAR	**Matsushiro Arr**	**2.06**	**256**	Pn	**Pn**	**11 28 04.8**	**+0.6**
	478nm,0.3s,baz=72,slow=16,SNR=364						
MJAR				Sn	**Sb**	**11 28 31.1**	**-1.7**
	380nm,0.3s,baz=87,slow=26,SNR=9.6						
MAJO	**Matsushiro**	**2.07**	**257**	*e*P	**Pb**	**11 28 05.5**	**-1.4**
MAJO				*e*		11 28 33.3	
MAJO	**Matsushiro**	**2.07**	**257**	*e*Pn	**Pb**	**11 28 05.5**	**-1.4**
MAJO				*e*Sn	**Sb**	**11 28 33.3**	**+0.

KLR Kul'dur 13.80 335 Pn **Pn** 11 30 47.0 +1.9
comp=Z,0.2nm,0.3s,baz=137,slow=12,SNR=12
KLR Kul'dur 13.80 335 P **Pn** 11 30 47.0 +1.9
TYV Tymovskoe 13.88 5 *e*P **Pn** 11 30 46.8 +0.7
NKL Nikolayevsk 16.10 360 *e*P **P** 11 31 19.8 +0.7
NJ2 Nanjing 18.66 261 *e*P **Pn** 11 31 47.9 0.0
NJ2 pmax pmax
comp=Z,11nm,0.8s
BJI Beijing 19.40 286 P **Pn** 11 31 57.2 +0.5
BJI pmax pmax
comp=Z,6.0nm,0.7s
BJI LR LR
comp=Z,450nm,22.9s
BJI LR LR
comp=Z,430nm,20.6s
BJI LR LR
comp=Z,490nm,21.4s
BJT Baijiatuau 19.41 286 P **P** 11 31 54.6 -1.1
BJT Baijiatuau 19.41 286 P **P** 11 31 54.6 -1.1
PETK Petropavlovsk- 19.96 31 P **Pn** 11 32 03.1 -0.2
comp=Z,0.4nm,0.3s,baz=215,slow=7.9,SNR=7.9
HHC Hu-ho-hao-te 22.93 289 *e*P **P** 11 32 33.2 -0.6
HHC sP sP 11 32 44.8 +8.2
HHC S **S** **11 36 37.8 -6.4**
HHC SS **SnSn** **11 37 21.1 +5.9**
HHC pmax pmax
comp=Z,28nm,0.7s
HHC pmax pmax
comp=Z,400nm,6.8s
HHC LR LR
comp=Z,1μm,13.6s
HHC LR LR
comp=Z,1μm,12.3s
HHC LR LR
comp=Z,1μm,13.7s
MA2 Magadan 23.46 13 P **P** 11 32 39.0 +0.2
comp=Z,13nm,0.6s,baz=222,slow=10.0,SNR=16
YAK Yakutsk 25.93 348 *e*P **P** 11 32 59.5 -2.1
YAK pmax pmax
comp=Z,13nm,0.5s
ENH Enshi 26.77 265 *e*P **P** 11 33 08.6 -1.0
comp=Z,10nm,0.8s
ULN Ulaanbaatar 26.88 304 *e*P **P** 11 33 10.7 +0.2
ULN pmax pmax
comp=Z,5.0nm,0.9s
ULN Ulaanbaatar 26.88 304 *e*P **P** 11 33 10.7 +0.2
comp=Z,4.5nm,0.9s
SEY Seymchan 26.89 12 P **P** 11 33 10.7 +0.4
comp=Z,10.0nm,0.9s,baz=189,slow=7.3,SNR=26
SEY Seymchan 26.89 12 P **P** 11 33 10.7 +0.4
SEY pmax pmax
comp=Z,9.0nm,1.0s
BOD Bodaibo 27.21 328 *e*P **P** 11 33 11.2 -2.1
BOD pmax pmax
comp=Z,4.0nm,0.8s
SONA1 Songino Array 27.30 304 *e*P **P** 11 33 14.2 -0.2
SONM Songino Array 27.30 304 P **P** 11 33 13.9 -0.4
comp=Z,7.3nm,0.8s,baz=109,slow=8.8,SNR=24
SONM PcP **PcP** **11 36 34.0 +0.2**
comp=Z,1.2nm,0.5s,baz=171,slow=1.0,SNR=7.7
H11N2 WAKE ISLAND Hy 28.65 120 T T 12 03 14.0
baz=313,slow=75,SNR=408
H11N1 WAKE ISLAND Hy 28.66 120 T T 12 03 14.6
baz=313,slow=75,SNR=308
H11N3 WAKE ISLAND Hy 28.66 120 T T 12 03 16.1
baz=313,slow=75,SNR=307
H11S1 WAKE ISLAND Hy 29.35 122 T T 12 04 08.5
baz=314,slow=76,SNR=402
H11S3 WAKE ISLAND Hy 29.35 122 T T 12 04 08.7
baz=314,slow=76,SNR=415
H11S2 WAKE ISLAND Hy 29.36 122 T T 12 04 10.6
baz=314,slow=76,SNR=234
LZH Lanzhou 29.50 279 *e*P **P** **11 33 35.0 +0.9**
LZH pP sP 11 33 41.5 +4.4
LZH sP pP 11 33 44.3 +8.1
LZH PP **PnPn** **11 34 31.2 +3.1**
LZH pmax pmax
comp=Z,20nm,1.2s
LZH pmax pmax
comp=Z,68nm,5.7s
LZH LR LR
comp=Z,340nm,13.2s
LZH LR LR
comp=Z,370nm,13.7s
LZH LR LR
comp=Z,410nm,16.5s
ZAK Zakamensk 29.81 309 *e*P **P** **11 33 35.5 -1.1**
ZAK pmax pmax
comp=Z,2.0nm,1.4s
TLY Talaya 29.89 311 P **P** **11 33 38.9 +1.7**
comp=Z,0.9nm,0.3s,baz=153,slow=4.5,SNR=3.7
TLY Talaya 29.89 311 *e*P P 11 33 41.1 +3.9
TLY pmax pmax
comp=Z,2.0nm,0.8s
GYA Guiyang 30.66 260 P **P** **11 33 46.8 +2.4**
GYA pmax pmax
comp=Z,10.0nm,0.9s
CD2 Chengdu 31.11 270 P **P** **11 33 47.7 -0.5**
CD2 pmax pmax
comp=Z,1.0nm,0.5s
GTA Gaotai 32.01 287 *e*P **P** **11 33 54.0 -2.2**
GTA pmax pmax
comp=Z,3.0nm,0.7s
BILL Bilibino 34.17 17 *e*P **P** **11 34 14.9 +0.3**
BILL *e* 11 35 29.1
BILL *e*PPP PPP 11 35 43.8
BILL *e*SS SS 11 41 42.8 -26
BILL pmax pmax
comp=Z,11nm,1.2s
BILL MLR MLR
comp=Z,728nm,21.0s
BILL Bilibino 34.17 17 *e*P **P** **11 34 14.2 -0.4**
comp=Z,12nm,1.3s
KMI Kunming 34.40 261 P **P** **11 34 19.9 +2.6**
KMI pmax pmax
comp=Z,16nm,0.9s
KMI pmax pmax
comp=Z,770nm,12.9s
TIXI Tiksi 35.21 354 *e*P **P** **11 34 22.0 -1.5**
TIXI pmax pmax
comp=Z,2.0nm,0.5s
TIXI Tiksi 35.21 354 *e*P **P** **11 34 21.9 -1.5**
comp=Z,2.7nm,0.7s
WMQ Urumqi 40.32 297 *e*P **P** **11 35 08.8 +1.6**
WMQ pP sP 11 35 15.2 +5.1
WMQ PP **PnPn** **11 36 45.3 +1.9**
WMQ PcP **PcP** **11 37 13.6 +3.0**
WMQ pmax pmax
comp=Z,4.0nm,0.8s
WMQ LR LR
comp=Z,120nm,17.2s
WMQ LR LR
comp=Z,92nm,17.2s
WMQ LR LR
comp=Z,98nm,19.0s
CMAR Chiang Mai Arr 40.95 255 P **P** **11 35 13.1 +0.6**
comp=Z,0.8nm,0.6s,baz=47,slow=7.9,SNR=4.3
ZAA0 Zalesovo Array 41.48 312 *e*P **P** **11 35 15.4 -1.0**
ZAA0 *e*P **pP** **11 35 15.8 -2.8**
ZALV Zalesovo Beam 41.48 312 P **P** **11 35 15.6 -0.9**
comp=Z,2.8nm,0.5s,baz=96,slow=7.3,SNR=11
ZALV PcP **PcP** **11 37 13.6 -0.4**
comp=Z,1.7nm,0.4s,baz=102,slow=2.6,SNR=4.7
ZALV ScP **ScP** **11 41 03.6 -0.8**
comp=Z,1.1nm,0.7s,baz=95,slow=5.1,SNR=5.4
NVS Novosibirsk 42.42 314 *e*P P 11 35 31.7 +7.6
MKAR Makanchi Array 43.63 302 P **P** **11 35 34.0 -0.1**
comp=Z,4.3nm,0.6s,baz=91,slow=9.0,SNR=22
MKAR PcP **PcP** **11 37 21.1 -0.3**
comp=Z,0.9nm,0.6s,baz=75,slow=5.9,SNR=3.3
MAKZ Makanchi 43.84 302 *e*P **P** **11 35 35.8 0.0**
MAKZ pmax pmax
comp=Z,4.0nm,0.8s
MAKZ Makanchi 43.84 302 *e*P **P** **11 35 35.8 0.0**
comp=Z,3.6nm,0.8s
KURK Kurchatov 45.47 308 *e*P **P** **11 35 47.5 -1.2**
KURK pmax pmax
comp=Z,14nm,0.8s
KURK Kurchatov 45.47 308 *e*P **P** **11 35 47.5 -1.2**
comp=Z,14nm,0.8s
KURBB Kurchatov Arra 45.54 308 P **P** **11 35 48.3 -1.0**
comp=Z,12nm,0.6s,baz=84,slow=8.0,SNR=45
PDGK Podgornoye 46.27 298 P **P** **11 35 55.6 +0.6**
PDGK pmax pmax
comp=Z,7.0nm,0.7s
RAMN Ramite 46.44 274 *e*P **P** **11 35 55.5 -1.4**
comp=Z,16nm,0.7s
GUN Gumba 46.59 275 *e*P **P** **11 36 00.1 +1.9**
comp=Z,15nm,0.4s
KKN Kakani 47.12 275 *e*P **P** **11 36 03.3 +1.1**
KDAK Kodiak Island 47.47 42 *i* P **P** **11 36 04.5 +0.3**
CAST Castle Rocks 47.53 34 *e*P **P** **11 36 06.5 +1.8**
comp=Z,5.3nm,0.8s
GKN Gorkha 47.54 276 *e*P **P** **11 36 06.3 +0.9**
comp=Z,14nm,0.6s
SPU Mount Spurr 47.56 37 *e*P **P** **11 36 06.7 +1.7**
BPAW Bear Paw Mtn. 48.02 33 *e*P **P** **11 36 10.2 +1.6**
comp=Z,16nm,1.6s
KTH Kantishna Hill 48.05 34 *e*P **P** **11 36 10.6 +1.8**
comp=Z,16nm,1.1s
MLY Manley 48.14 32 *e*P **P** **11 36 11.0 +1.6**
comp=Z,8.5nm,0.8s
COLD Coldfoot 48.41 29 *e*P **P** **11 36 12.4 +0.9**
KOLN Koldanda 48.46 276 *e*P **P** **11 36 11.6 -1.0**
comp=Z,5.0nm,0.5s
RC01 Rabbit Creek A 48.69 37 *e*P **P** **11 36 14.5 +0.8**
comp=Z,17nm,1.2s
PYUN Piuthan 48.80 277 *e*P **P** **11 36 15.3 0.0**
comp=Z,24nm,0.7s
MCK McKinley 48.93 34 *e*P **P** **11 36 17.2 +1.6**
MCK pmax pmax
comp=Z,25nm,1.5s
MCK McKinley 48.93 34 *e*P **P** **11 36 17.1 +1.6**
comp=Z,25nm,1.5s
PMR Palmer 48.95 37 *e*P **P** **11 36 15.6 0.0**
PMR pmax pmax
comp=Z,14nm,1.3s
PMR Palmer 48.95 37 *e*P **P** **11 36 15.6 0.0**
comp=Z,14nm,1.3s
RND Reindeer 48.98 34 *e*P **P** **11 36 16.7 +0.7**
RND pmax pmax
comp=Z,9.0nm,1.0s
RND Reindeer 48.98 34 *e*P **P** **11 36 16.7 +0.7**
comp=Z,9.4nm,1.0s
TKM2 Tokmak 2 49.12 298 *e*P **P** **11 36 18.0 +0.5**
TKM2 pmax pmax
comp=Z,6.0nm,0.7s
TKM2 Tokmak 2 49.12 298 *e*P **P** **11 36 18.0 +0.5**
comp=Z,6.4nm,0.7s
MDM Murphy Dome 49.20 32 *e*P **P** **11 36 18.9 +1.3**
comp=Z,11nm,0.9s
WRH Wood River Hil 49.28 33 *e*P **P** **11 36 19.1 +1.0**
comp=Z,5.0nm,0.7s
SML Sawmill 49.31 36 *e*P **P** **11 36 19.6 +1.1**
SML pmax pmax
comp=Z,44nm,1.8s
SML Sawmill 49.31 36 *e*P **P** **11 36 19.6 +1.1**
comp=Z,44nm,1.8s
COLA College 49.37 32 *e*P **P** **11 36 20.6 +1.9**
COLA pmax pmax
comp=Z,8.0nm,0.8s
COLA College 49.37 32 *e*P **P** **11 36 20.6 +1.9**
comp=Z,7.6nm,0.8s
CCB Clear Creek Bu 49.40 33 *e*P **P** **11 36 20.4 +1.4**
comp=Z,3.3nm,0.8s
DHY Denali Highway 49.67 35 *e*P **P** **11 36 22.7 +1.4**
comp=Z,21nm,1.6s
HDA Harding Lake 49.78 33 *e*P **P** **11 36 22.6 +0.6**
comp=Z,10nm,1.0s
IL1 Eielson Array 49.78 32 *e*P **P** **11 36 22.0 +0.1**
ILAR Eielson Array 49.78 32 P **P** **11 36 22.3 +0.3**
comp=Z,4.7nm,0.7s,baz=271,slow=6.5,SNR=59
ILB Eielson Array 49.78 32 *e*P **P** **11 36 22.4 +0.5**
KSH Kashi 49.88 294 *e*P P 11 36 29.4 +6.2
KSH *e*pP sP 11 36 35.6 +9.4
KSH S **S** **11 43 39.3 +5.7**
KSH SS **SS** **11 47 09.5 +3.5**
KSH pmax pmax
comp=Z,86nm,3.6s
KSH LR LR
comp=Z,150nm,6.6s
KSH LR LR
comp=Z,290nm,9.3s
KSH LR LR
comp=Z,420nm,9.1s
AAK Ala-Archa 49.98 298 P **P** **11 36 24.3 +0.3**
comp=Z,3.0nm,0.8s,baz=124,slow=5.1,SNR=10
AAK Ala-Archa 49.98 298 *i* P **P** **11 36 23.6 -0.4**
AAK pmax pmax
comp=Z,7.0nm,0.8s
BVAR Borovoye Array 50.14 312 P **P** **11 36 24.4 -0.5**
comp=Z,3.7nm,0.6s,baz=79,slow=7.7,SNR=14
BVAR PcP **PcP** **11 37 44.1 -0.2**
comp=Z,3.0nm,0.6s,baz=118,slow=5.2,SNR=5.5
BRVK Borovoye 50.20 312 *ce*P **P** **11 36 25.2 -0.1**
BRVK pmax pmax
comp=Z,10.0nm,1.0s
BRVK Borovoye 50.20 312 *e*P **P** **11 36 24.9 -0.4**
comp=Z,10nm,1.0s
KLU Klutina 50.49 37 *e*P **P** **11 36 28.9 +1.4**
comp=Z,7.1nm,1.0s
ZRNK Zerenda 50.97 312 *e*P **P** **11 36 30.8 -0.4**
ZRNK pmax pmax
comp=Z,9.0nm,0.9s
ZRNK Zerenda 50.97 312 *e*P **P** **11 36 30.8 -0.4**
comp=Z,9.3nm,0.9s
DOT Dot Lake 51.11 34 *e*P **P** **11 36 32.7 +0.6**
comp=Z,49nm,1.8s
PSI Prapat 51.32 238 P **P** **11 36 32.7 -1.6**
comp=Z,4.3nm,0.6s,baz=69,slow=6.7,SNR=5.2
MENT Mentasta 51.34 35 *e*P **P** **11 36 35.5 +1.6**
comp=Z,11nm,1.2s
MNAS Manas 51.43 299 P **P** **11 36 34.7 -0.2**
MNAS pmax pmax
comp=Z,9.0nm,0.8s
SFK Sufi-Kurgan 51.51 295 P **P** **11 36 35.7 0.0**
SFK pmax pmax
comp=Z,6.0nm,0.9s
EGAK Eagle 52.23 32 *e*P **P** **11 36 41.1 +0.8**
comp=Z,22nm,1.7s
KKAR Karatay Array 52.62 300 *e*P **P** **11 36 43.1 -0.6**
KKAR Karatay Array 52.62 300 *e*P **P** **11 36 43.1 -0.6**
GSI Gunungsitoli 53.32 238 *e*P **P** **11 36 48.7 -0.4**
comp=Z,22nm,0.7s
INK Inuvik 54.63 27 P **P** **11 36 58.4 +0.5**
comp=Z,2.7nm,0.6s,baz=302,slow=6.7,SNR=18
INK Inuvik 54.63 27 *e*P **P** **11 36 58.7 +0.8**
INK pmax pmax
comp=Z,8.0nm,1.2s
INK Inuvik 54.63 27 *e*P **P** **11 36 58.7 +0.8**
comp=Z,7.8nm,1.2s
ARU Arti 55.97 318 P **P** **11 37 07.3 -0.5**
comp=Z,3.0nm,0.3s,baz=70,slow=3.1,SNR=8.4
ARU Arti 55.97 318 *c i*P **P** **11 37 07.4 -0.4**
ARU 11 39 11.1
ARU S **S** **11 44 55.1 -0.8**
ARU SS **SS** **11 48 37.6 -3.7**
ARU pmax pmax
comp=Z,10.0nm,1.0s
ARU Arti 55.97 318 *e*P **P** **11 37 07.2 -0.5**
comp=Z,8.9nm,0.9s
WRAB Tennant Creek 56.99 187 *ce*P **P** **11 37 18.1 +2.7**
WRAB pmax pmax
comp=Z,24nm,0.8s
WRAB Tennant Creek 56.99 187 *e*P **P** **11 37 15.4 0.0**
comp=Z,9.9nm,0.8s
WB2 Warramunga Arr 57.00 187 *e*P **P** **11 37 15.7 +0.2**
comp=Z,13nm,0.6s
WRA Warramunga Arr 57.00 187 P **P** **11 37 14.9 -0.6**
comp=Z,9.8nm,0.6s,baz=2.2,slow=7.1,SNR=73
ABKAR Akbulak array 57.49 310 *e*P **P** **11 37 18.0 -0.7**
AKTO Aktyubinsk 58.24 312 P **P** **11 37 25.4 +1.5**
comp=Z,1.4nm,0.4s,baz=66,slow=3.8,SNR=6.3
AKTO Aktyubinsk 58.24 312 P **P** **11 37 25.4 +1.5**
AKTO pmax pmax
comp=Z,2.0nm,0.5s
SPITS Spitsbergen Ar 60.40 349 P **P** **11 37 39.1 +0.7**
comp=Z,11nm,0.9s,baz=87,slow=8.4,SNR=5.6
AS01 Alice Springs 60.73 187 *e*P **P** **11 37 41.5 +0.2**
AS31 Alice Springs 60.73 187 *e*P **P** **11 37 41.9 +0.6**
comp=Z,1.8nm,0.7s
ASAR Alice Springs 60.73 187 P **P** **11 37 41.9 +0.5**
comp=Z,4.3nm,0.7s,baz=14,slow=6.5,SNR=51
MBWA Marble Bar 61.19 202 *e*P **P** **11 37 44.5 +0.1**
comp=Z,10nm,0.6s
EIDS Eidsvold 62.85 169 *e*P **P** **11 37 55.7 +0.1**
comp=Z,20nm,1.5s
GEYT Alibeck 63.33 299 P **P** **11 37 57.6 -1.2**
comp=Z,4.1nm,0.6s,baz=40,slow=2.5,SNR=4.5
KLMR Klimovskoe 63.44 328 *e*P **P** **11 37 58.9 -0.2**
KLMR pmax pmax
comp=Z,7.0nm,0.8s
ARCES ARCESS Array B 63.78 339 P **P** **11 38 00.8 -0.4**
comp=Z,6.8nm,0.9s,baz=56,slow=8.3,SNR=13
YKA Yellowknife Ar 64.08 30 P **P** **11 38 03.3 0.0**
comp=Z,1.9nm,0.7s,baz=302,slow=6.7,SNR=41
YKB5 Yellowknife Ar 64.08 30 *e*P **P** **11 38 02.8 -0.5**
DAG Danmarks Havn 65.71 355 P **P** **11 38 12.9 -0.8**
DAG pmax pmax
comp=Z,14nm,2.7s
VRH Novokhopyorsk 67.18 318 *e*P **P** **11 38 22.3 -1.3**
VRH pmax pmax
comp=Z,7.0nm,0.5s
OBN Obninsk 67.74 323 *e*P **P** **11 38 27.0 0.0**
OBN *e* 11 40 57.5
OBN *e*PPP PPP 11 42 32.8
OBN *e*S S 11 47 42.3 +18
OBN pmax pmax
comp=Z,4.0nm,0.8s
LPSR Galich'ya Gora 67.92 320 *e*P **P** **11 38 27.1 -1.1**
LPSR pmax pmax
comp=Z,7.0nm,0.6s
FIA1 FINESS Array S 68.53 332 *e*P **P** **11 38 31.4 -0.5**
FINES FINESS Array B 68.53 332 P **P** **11 38 31.2 -0.7**
comp=Z,5.1nm,0.6s,baz=58,slow=7.6,SNR=19
VSR Storozhevoye 68.54 319 *e*P **P** **11 38 30.7 -1.4**
VSR pmax pmax
comp=Z,7.0nm,0.6s
STKA Stephens Creek 68.58 179 P **P** **11 38 31.7 -0.7**
comp=Z,1.9nm,0.6s,baz=342,slow=6.2,SNR=6.3
KBZ Khabaz 70.46 310 P **P** **11 38 43.9 -0.2**
comp=Z,4.3nm,0.8s,baz=136,slow=0.6,SNR=8.9
KIV Kislovodsk 70.46 311 *e*P **P** **11 38 45.5 +1.2**
KIV pmax pmax
comp=Z,11nm,0.9s
SUMG Summit 70.67 360 *e*P **P** **11 38 46.1 +0.7**
SUMG pmax pmax
comp=Z,12nm,0.9s
SUMG Summit 70.67 360 *e*P **P** **11 38 46.1 +0.7**
comp=Z,12nm,0.9s
WALA Waterton Lakes 71.80 42 *e*P **P** **11 38 52.0 -0.3**
comp=Z,5.3nm,0.7s
BMO Blue Mountains 72.33 47 *e*P **P** **11 38 55.9 +0.4**
comp=Z,6.1nm,0.9s
NC405 NORSAR Array S 73.74 337 *e*P **P** **11 39 03.3 -0.2**
NC204 NORSAR Array S 73.91 337 *e*P **P** **11 39 04.6 +0.1**
AKASG Malin Array Be 73.93 322 P **P** **11 39 03.8 -0.9**
comp=Z,3.6nm,0.7s,baz=47,slow=6.0,SNR=14
AKASG Malin Array Be 73.93 322 P **P** **11 39 03.8 -0.9**
AKASG pmax pmax
comp=Z,5.0nm,0.8s
KIEV Kiev 73.95 322 *e*P **P** **11 39 04.1 -0.7**
KIEV pmax pmax
comp=Z,3.0nm,0.7s
KIEV Kiev 73.95 322 *e*P **P** **11 39 04.1 -0.7**
comp=Z,4.4nm,0.7s
NB2 NORSAR Subarra 73.95 337 P **P** **11 39 04.0 -0.7**
comp=Z,4.6nm,0.9s,baz=40,slow=6.2
NOA NORSAR Array B 73.95 337 P **P** **11 39 04.3 -0.4**
comp=Z,4.2nm,0.8s,baz=38,slow=5.8,SNR=11
FFC Flin Flon 74.00 32 *e*P **P** **11 39 05.5 +0.4**
FFC pmax pmax
comp=Z,6.0nm,0.8s
FFC Flin Flon 74.00 32 *e*P **P** **11 39 05.5 +0.4**
comp=Z,5.7nm,0.8s
MFID Camas Ranch 74.03 47 *e*P **P** **11 39 07.0 +1.3**
comp=Z,8.7nm,1.2s
NBO02 NORSAR Array S 74.05 337 *e*P **P** **11 39 05.1 -0.2**
FCC Fort Churchill 74.24 26 *e*P **P** **11 39 06.4 0.0**
FCC pmax pmax
comp=Z,8.0nm,1.0s
FCC Fort Churchill 74.24 26 *e*P **P** **11 39 06.4 0.0**
comp=Z,7.7nm,1.0s
CMB Columbia Colle 74.32 54 *e*P **P** **11 39 08.9 +1.6**
CMB pmax pmax
comp=Z,4.0nm,0.8s
CMB Columbia Colle 74.32 54 *e*P **P** **11 39 08.9 +1.6**
comp=Z,4.5nm,0.8s
LRM Limekiln Ridge 74.53 44 *e*P **P** **11 39 10.1 +1.4**
EGMT Eagleton 74.63 41 *e*P **P** **11 39 10.2 +1.1**
comp=Z,13nm,0.8s
WAKR Walker 74.66 53 *e*P **P** **11 39 11.3 +1.8**
DLMT Dillon 74.73 44 *e*P **P** **11 39 11.3 +1.6**
comp=Z,9.5nm,0.7s
HLID Hailey 74.78 47 *e*P **P** **11 39 11.7 +1.6**
comp=Z,1.8nm,0.8s
BOZ Bozeman (W) 75.09 44 *e*P **P** **11 39 12.6 +0.8**
BOZ pmax pmax
comp=Z,8.0nm,0.7s
BOZ Bozeman (W) 75.09 44 *e*P **P** **11 39 12.6 +0.8**
comp=Z,8.0nm,0.7s
NV01 Mina Array Sit 75.43 53 *e*P **P** **11 39 15.2 +1.2**
NVAR Mina Array Bea 75.43 53 P **P** **11 39 15.4 +1.4**
comp=Z,4.7nm,0.7s,baz=292,slow=5.6,SNR=47
NV11 Mina Array Sit 75.52 53 *e*P **P** **11 39 15.8 +1.4**
comp=Z,2.6nm,0.8s
ELK Elko 75.97 49 *e*P **P** **11 39 18.9 +1.8**
ELK pmax pmax
comp=Z,3.0nm,0.6s
ELK Elko 75.97 49 *e*P **P** **11 39 18.9 +1.8**
comp=Z,2.5nm,0.6s
YMR Madison River 76.07 44 *e*P **P** **11 39 19.4 +1.9**
comp=Z,5.4nm,0.6s
H17A Grant Village 76.45 44 *e*P **P** **11 39 22.1 +2.3**
comp=Z,9.9nm,0.9s
IMW Indian Meadow 76.56 45 *e*P **P** **11 39 22.3 +1.9**
comp=Z,6.2nm,0.8s
RLMT Red Lodge 76.72 43 *e*P **P** **11 39 22.5 +1.3**
comp=Z,3.6nm,0.8s
MOOW Moose Ponds 76.77 45 *e*P **P** **11 39 23.0 +1.5**
comp=Z,3.6nm,0.9s
HVU Hansel Valley 76.82 47 *e*P **P** **11 39 23.6 +1.8**
HVU pmax pmax
comp=Z,5.0nm,0.8s
HVU Hansel Valley 76.82 47 *e*P **P** **11 39 23.6 +1.8**
comp=Z,4.9nm,0.8s
LOHW Long Hollow 76.93 45 *e*P **P** **11 39 24.2 +1.7**
comp=Z,1.9nm,0.8s
SNOW Snow King Moun 76.94 45 *e*P **P** **11 39 24.6 +2.1**
comp=Z,5.0nm,0.9s
REDW Red Top Meadow 76.95 45 *e*P **P** **11 39 24.3 +1.7**
comp=Z,4.1nm,0.9s
DGMT Dagmar 77.18 38 *e*P **P** **11 39 24.3 +0.8**
comp=Z,8.0nm,0.8s
BGU Big Grassy Mou 77.19 48 *e*P **P** **11 39 25.9 +2.0**
comp=Z,5.8nm,1.3s
R11A Troy Canyon, C 77.20 52 *e*P **P** **11 39 25.2 +1.2**
comp=Z,5.4nm,0.9s
LAO LASA Array 77.33 40 *e*P **P** **11 39 25.8 +1.4**
comp=Z,8.4nm,0.9s
TPNV Topopah Spring 77.62 53 *e*P **P** **11 39 27.5 +1.2**
TPNV pmax pmax
comp=Z,10.0nm,1.0s
TPNV Topopah Spring 77.62 53 *e*P **P** **11 39 27.5 +1.2**
comp=Z,9.9nm,1.0s
HWUT Hardware Ranch 77.63 47 *e*P **P** **11 39 27.6 +1.2**
comp=Z,6.5nm,1.0s
DUG Dugway, Tooele 77.77 49 *e*P **P** **11 39 28.6 +1.5**
DUG pmax pmax
comp=Z,6.0nm,0.8s
DUG Dugway, Tooele 77.77 49 *e*P **P** **11 39 28.6 +1.5**
comp=Z,6.3nm,0.8s
BUR08 Bucovina Ar. S 77.93 321 *e*P **P** **11 39 27.4 -0.4**
TCUT Toone Canyon 78.03 47 *e*P **P** **11 39 30.4 +1.7**
comp=Z,9.3nm,0.7s
BW06 Boulder Array 78.06 45 *e*P **P** **11 39 29.1 +0.3**
BW06 *e*P **pP** **11 39 29.6 -1.4**
PD31 Pinedale Array 78.06 45 *e*P **P** **11 39 29.6 +0.8**
PDAR Pinedale Array 78.06 45 P **P** **11 39 29.3 +0.5**
comp=Z,2.8nm,0.7s,baz=263,slow=2.4,SNR=30
JLU Jordanelle 78.33 48 *e*P **P** **11 39 32.2 +1.9**
comp=Z,4.1nm,1.0s
NLU North Lily Min 78.36 49 *e*P **P** **11 39 32.1 +1.6**
comp=Z,4.1nm,0.9s
BRTR Keskin Array B 78.41 311 P **P** **11 39 30.4 -0.2**
comp=Z,1.5nm,0.7s,baz=111,slow=6.3,SNR=5.7
MPU Maple Canyon 78.59 48 *e*P **P** **11 39 33.4 +1.6**
comp=Z,6.2nm,0.9s
BR231 Keskin MP Arra 78.86 312 *e*P **P** **11 39 31.7 -1.4**
MSU Marysvale 79.21 50 *e*P **P** **11 39 37.0 +1.8**
MSU Marysvale 79.21 50 *e*P **P** **11 39 37.0 +1.8**
P17A Butcher Ranch, 79.47 48 *e*P **P** **11 39 38.2 +1.7**
comp=Z,7.7nm,0.8s
LCMT Little Creek M 79.48 51 *e*P **P** **11 39 38.2 +1.6**
comp=Z,5.7nm,0.9s
P18A Preston Nutter 79.66 48 *e*P **P** **11 39 39.3 +1.5**
comp=Z,5.2nm,0.8s
KNB Kanab 79.74 51 *e*P **P** **11 39 40.1 +2.0**
KNB pmax pmax

Code	Station Name	Δ°	AZ°	Op	ISC	Time	Res
	comp=Z,7.0nm,1.0s						
KNB	Kanab	79.74	51	eP	P	11 39 40.1	+2.0
	comp=Z,7.0nm,1.0s						
ULM	Lac du Bonnet	79.80	33	P	P	11 39 37.6	-0.3
	comp=Z,3.5nm,0.8s,baz=284,slow=9.1,SNR=3.8						
SRU	San Rafael Swe	79.83	48	eP	P	11 39 39.7	+1.2
SRU				pmax	pmax		
	comp=Z,10.0nm,0.7s						
SRU	San Rafael Swe	79.83	48	eP	P	11 39 39.6	+1.2
	comp=Z,9.5nm,0.7s						
MMU	Miners Mountai	79.94	50	eP	P	11 39 40.9	+1.6
MORC	Moravsky Berou	80.03	327	eP	P	11 39 39.4	+0.2
MORC				pmax	pmax		
	comp=Z,13nm,0.9s						
MORC	Moravsky Berou	80.03	327	eP	P	11 39 39.4	+0.2
	comp=Z,12nm,0.9s						
RSSD	Black Hills	80.19	41	eP	P	11 39 41.1	+0.7
RSSD				pmax	pmax		
	comp=Z,6.0nm,1.1s						
RSSD	Black Hills	80.19	41	eP	P	11 39 41.1	+0.7
	comp=Z,6.0nm,1.1s						
W13A	Hualapai Mount	80.27	53	eP	P	11 39 42.4	+1.4
	comp=Z,3.4nm,1.0s						
CLL	Collm	80.80	330	i (P)	P	11 39 43.5	+0.3
	comp=Z,5.0nm,0.5s						
CLL	Collm	80.80	330	i P	P	11 39 43.5	+0.3
PV09	Paradox Valley	81.05	48	eP	P	11 39 46.8	+1.5
PV04	Paradox Valley	81.26	48	eP	P	11 39 47.4	+1.2
N23A	Red Feather La	81.32	45	eP	P	11 39 48.2	+1.6
	comp=Z,8.7nm,1.1s						
PV05	Paradox Valley	81.34	49	eP	P	11 39 48.4	+1.7
Y14A	Wickenburg	81.56	54	eP	P	11 39 49.1	+1.4
	comp=Z,24nm,0.8s						
WUAZ	Wupatki	81.60	52	eP	P	11 39 49.5	+1.4
	comp=Z,7.5nm,0.9s						
PV01	Paradox Valley	81.62	48	eP	P	11 39 49.6	+1.4
SMCO	Snowmass	81.88	47	eP	P	11 39 51.1	+1.3
	comp=Z,2.6nm,0.8s						
X16A	Lo Mia Camp, P	82.25	53	eP	P	11 39 53.4	+1.8
	comp=Z,4.6nm,0.8s						
MVCO	Mesa Verde	82.27	49	eP	P	11 39 53.1	+1.4
	comp=Z,5.2nm,0.9s						
GERES	GERESS Array B	82.39	328	P	P	11 39 51.3	-0.6
	comp=Z,1.5nm,0.7s,baz=37,slow=6.5,SNR=6.5						
GRFO	Grafenberg	82.77	330	P	P	11 39 53.2	-0.5
GRFO				pmax	pmax		
	comp=Z,44nm,1.3s						
GRFO	Grafenberg	82.77	330	P	P	11 39 53.2	-0.5
	comp=Z,44nm,1.3s						
S22A	4UR Ranch, Cre	82.91	48	eP	P	11 39 56.9	+1.8
	comp=Z,3.0nm,0.8s						
X18A	Snowflake	83.12	52	eP	P	11 39 57.6	+1.5
	comp=Z,7.7nm,1.4s						
TUC	Tucson	84.03	54	eP	P	11 40 02.0	+1.4
TUC				pmax	pmax		
	comp=Z,5.0nm,0.9s						
TUC	Tucson	84.03	54	eP	P	11 40 02.0	+1.4
	comp=Z,4.9nm,0.9s						
ECSD	EROS Data Cent	84.25	38	eP	P	11 40 01.8	+0.3
	comp=Z,5.5nm,0.8s						
T25A	Trinidad	84.74	47	eP	P	11 40 05.6	+1.3
	comp=Z,5.4nm,0.8s						
BFO	Black Forest	85.01	330	i P	P	11 40 05.8	+0.6
ANMO	Albuquerque	85.01	49	eP	P	11 40 07.2	+1.6
ANMO				pmax	pmax		
	comp=Z,6.0nm,1.1s						
ANMO	Albuquerque	85.01	49	eP	P	11 40 07.2	+1.6
	comp=Z,6.0nm,1.1s						
IDI	Anoyia	86.56	312	P	P	11 40 13.1	-0.1
	comp=Z,12nm,0.9s,baz=0.0,slow=9.1,SNR=5.1						
TX31	Lajitas Ar. Si	90.56	52	eP	P	11 40 32.9	+0.6
TXAR	Lajitas Array	90.56	52	P	P	11 40 32.9	+0.6
	comp=Z,2.2nm,0.8s,baz=293,slow=3.1,SNR=30						
WHAR	Wooly Hollow	92.80	41	eP	P	11 40 42.0	-0.4
	comp=Z,9.9nm,0.5s						
DBIC	Dimbokro	125.89	316	PKP	PKPdf	11 46 31.9	-0.5
	comp=Z,3.5nm,1.1s,baz=31,slow=0.4,SNR=4.5						
DBIC	Dimbokro	125.89	316	PKIKP	PKPdf	11 46 31.9	-0.5
DBIC				pmax	pmax		
	comp=Z,1.0nm,0.6s						
SYO	Syowa Base	127.97	207	⇓eP	PKPdf	11 46 42.0	+7.5
LPAZ	La Paz	147.17	59	PKPbc	PKPbc	11 47 14.4	+0.2
	comp=Z,7.5nm,0.7s,baz=352,slow=3.1,SNR=23						

MAN 11 11:31:13,7°.80N×127°.08E,h16km,mb4.5,ML3.4,MS3.3, 1C,Philippine Islands region

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
MATI	Mati	1.17	224	eP	Pn	11 31 34.1	-0.7
MATI				eS	Sb	11 31 49.4	-0.5
BUTP	Butuan	1.85	309	eP	Pn	11 31 43.4	-0.7
BUKP	Musuan	2.00	272	eP	Pb	11 31 47.6	-1.4
CGP	Cagayan de Oro	2.45	286	⇑eP	Pn	11 31 53.8	+1.4
CGP				eS	Sn	11 32 23.6	+1.6

JMA 11 11:32:05.4,37°.02N×140°.61E,h9km±1km,M2.6,Eastern Honshu

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
ONAJ	Iwakimizuishiy	0.17	62	P	Pg	11 32 09.3	+0.2
ONAJ				S	Sg	11 32 11.9	+0.3
JFK	Kawauchi	0.41	31	P	Pg	11 32 13.4	0.0
JFK				S	Sg	11 32 19.1	+0.4
JHO	Hitachi	0.41	185	P	Pg	11 32 13.5	+0.1
JHO				S	Sg	11 32 19.1	+0.3
JFT	Otama	0.54	336	S	Sg	11 32 23.6	+0.5
MAT	Matsushiro	1.99	257	P	Pn	11 32 40.1	+0.9
MAT				S	Sb	11 33 06.7	+0.1

JMA 11 11:32:48.8,36°.96N×140°.63E,h9km±1km,M2.9,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
ONAJ	Iwakimizuishiy	0.20	44	P	Pg	11 32 53.1	+0.2
ONAJ				S	Sg	11 32 56.3	+0.6
JHO	Hitachi	0.35	188	P	Pg	11 32 55.8	+0.1
JHO				S	Sg	11 33 00.5	+0.1
JFK	Kawauchi	0.45	26	eS	Sg	11 33 03.6	0.0
MAT	Matsushiro	1.99	259	P	Pn	11 33 21.9	-0.8
MAT				eS	Sg	11 34 02.9	+10

JMA 11 11:37:55.3,37°.05N×140°.76E,h10km±1km,M2.5,Eastern Honshu

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
ONAJ	Iwakimizuishiy	0.06	31	P	Pg	11 37 57.4	-0.1
ONAJ				S	Sg	11 37 58.9	-0.2
JFK	Kawauchi	0.33	16	P	Pg	11 38 02.0	+0.1
JFK				S	Sg	11 38 06.6	+0.3
JHO	Hitachi	0.46	199	P	Pg	11 38 04.2	-0.2
JHO				S	Sg	11 38 10.4	-0.1
JFT	Otama	0.58	324	P	Pg	11 38 06.7	+0.2
JFT				S	Sg	11 38 14.6	+0.5
MAT	Matsushiro	2.11	257	P	Pb	11 38 33.9	+0.2
MAT				eS	Sn	11 38 58.1	+1.1

*CSEM **11** 11:38:12.0,37°.39N×21°.64E,h24km,ML1.3/3*

ATH 11 11:38:12.0,37°.39N×21°.64E,h24km±6km,ML1.3/3,Error ellipse: s-maj=7.2km s-min=1.1km az=96.0,Southern Greece

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
ITM	Ithomi	0.31	133	P	Pb	11 38 18.6	-0.4
ITM				S	Sb	11 38 24.9	+1.1
ITM	Ithomi	0.31	133	P	Pb	11 38 18.6	-0.4
ITM				S	Sb	11 38 24.9	+1.0
ITM				AML	AML	11 38 26.9	
	comp=N,100μm,0.2s						
ITM				AML	AML	11 38 26.9	
	comp=E,90μm,0.5s						
PYL	PYLOS	0.50	171	P	Pb	11 38 21.4	-0.7
PYL				S	Sn	11 38 30.4	-1.1
PYL	PYLOS	0.50	171	P	Pb	11 38 21.4	-0.8
PYL				S	Sn	11 38 30.4	-1.2
PYL				AML	AML	11 38 31.4	
	comp=N,86μm,0.1s						
PYL				AML	AML	11 38 32.4	
	comp=E,65μm,0.2s						
DRO	Drossia	0.56	5	P	Pn	11 38 24.2	-0.4
DRO				S	Sb	11 38 30.8	-0.2
DRO	Drossia	0.56	5	P	Pn	11 38 24.2	-0.5
DRO				S	Sb	11 38 30.8	-0.2
DRO				AML	AML	11 38 34.3	
	comp=E,171μm,0.2s						
DRO				AML	AML	11 38 36.7	
	comp=N,155μm,0.4s						
KLV	Kalavryta, Ach	0.77	31	P	Pb	11 38 26.4	-0.3
KLV	Kalavryta, Ach	0.77	31	P	Pb	11 38 26.4	-0.3
LAKA	Lakka	0.89	17	P	Pn	11 38 29.4	+0.3
LAKA				S	Sn	11 38 41.9	+0.6
LAKA	Lakka	0.89	17	P	Pn	11 38 29.4	+0.3
LAKA				S	Sn	11 38 41.9	+0.6
KALE	Kalithea	1.07	21	P	Pb	11 38 32.3	+0.3
KALE	Kalithea	1.07	21	P	Pb	11 38 32.4	+0.4

JMA 11 11:38:49.8,37°.01N×140°.74E,h9km±1km,M3.2,3C, Eastern Honshu

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
ONAJ	Iwakimizuishiy	0.10	27	⇑P	Pg	11 38 52.5	+0.1
ONAJ				eS	Sg	11 38 54.4	+0.2
JFK	Kawauchi	0.37	17	⇑P	Pg	11 38 57.2	0.0
JFK				S	Sg	11 39 02.6	+0.5
JHO	Hitachi	0.42	199	⇑P	Pg	11 38 57.9	-0.1
JHO				S	Sg	11 39 03.9	+0.3
JFT	Otama	0.60	328	P	Pg	11 39 01.6	+0.2
JFT				S	Sg	11 39 09.9	+0.6
MAT	Matsushiro	2.09	258	P	Pn	11 39 25.5	+0.5
MAT				S	Sb	11 39 53.0	-0.9

JMA 11 11:41:55.1,37°.08N×140°.67E,h6km±2km,M2.2,Eastern Honshu

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
ONAJ	Iwakimizuishiy	0.10	78	P	Pg	11 41 57.3	-0.1
ONAJ				S	Sg	11 41 59.1	+0.1
JFK	Kawauchi	0.33	30	P	Pg	11 42 01.4	-0.1
JFK				S	Sg	11 42 05.9	0.0
JHO	Hitachi	0.47	190	P	Pg	11 42 04.3	0.0
JFT	Otama	0.51	329	S	Sg	11 42 12.2	+0.5

*NIED **11** 11:42:00,36°.90N×140°.60E,h8km,Mw5.5 Best double couple: $M_0$1.72000×10^17 NP1:ϕ_s89.00000°,δ28.00000°, λ-86.00000°. NP2:ϕ_s264.00000°,δ62.00000°, λ-92.00000°.*

*ISCJB **11** 11:42:32.9±0.5,37°.00N±0°.01×140°.42E±0°.02,h5km±2km, mb5.6/507,MS5.0/202,Error ellipse: s-maj=2.7km s-min=1.8km az=148.5*

*BJI **11** 11:42:33.9,37°.00N×140°.50E,h14km,mb5.3/85,mB5.4/66, Ms5.4/82,Ms7 5.2/82*

*NEIC **11** 11:42:35.1±0.1,36°.98N×140°.36E,h10km,mb5.6/298, MS4.9/125,MW5.5,Error ellipse: s-maj=2.6km s-min=1.9km az=137.0,Moment Tensor Solution. s12 Moment tensor: Scale 10^17Nm; M_{rr}-2.01; $M_{\theta\theta}$1.75; $M_{\phi\phi}$0.27; $M_{r\theta}$0.66; $M_{\theta\phi}$0.02; $M_{\phi r}$0.39; Best double couple: $M_0$2.00000×10^17 NP1:ϕ_s260.00000°,δ56.00000°, λ-100.00000°. NP2:ϕ_s97.00000°,δ36.00000°, λ-76.00000°. Principal axes: T 1.8700, Plg10.0000°, Azm357.0000°; N 0.3200, Plg8.0000°, Azm265.0000°; P -2.1900, Plg77.0000°, Azm137.0000°;*

NEIC Felt at Ebina, Mishima, Shibukawa, Tokyo, Tsukuba, Yashio and Yokosuka. Recorded [5L JMA] in Fukushima.

*JMA **11** 11:42:35.1,36°.97N×140°.63E,h11km±1km,M5.9 Broadband fault plane solution: P waves. NP1: ϕ_s260.00000°,δ67.00000°,λ-79.00000°. NP2:ϕ_s54.00000°, δ25.00000°,λ-115.00000°. Principal axes: T Plg21.0000°, Azm342.0000°; N Plg10.0000°, Azm76.0000°; P Plg66.0000°, Azm190.0000°;*

*GCMT **11** 11:42:35.1±0.2,37°.01N×140°.53E,h12km,MW5.5/116, Moment Tensor Solution. s64,c94; s116,c230; Duration: 1s4 Moment tensor: Scale 10^17Nm; M_{rr}-1.86±.06; $M_{\theta\theta}$1.95±.04; $M_{\phi\phi}$-0.09±.04; $M_{r\theta}$0.45±.09; $M_{\theta\phi}$0.01±.03; $M_{\phi r}$0.96±.13; Best double couple: $M_0$2.16600×10^17 NP1:ϕ_s247.00000°,δ56.00000°, λ-117.00000°. NP2:ϕ_s110.00000°,δ42.00000°, λ-55.00000°. Principal axes: T 2.0100, Plg8.0000°, Azm356.0000°; N 0.3070, Plg23.0000°, Azm263.0000°; P -2.3220, Plg66.0000°, Azm104.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface/mantle waves, cutoff=50s.*

*IDC **11** 11:42:37.7±1.3,36°.98N×140°.48E,h28km±8km,mb5.2/40, mb1 5.3/42,mb1mx5.3/47,mbtmp5.4/42,ML4.6/2,MS4.9/42, Ms1 4.9/42,ms1mx4.8/50 Error ellipse: s-maj=10.1km s-min=7.1km az=77.0*

*MOS **11** 11:42:38.6±0.9,37°.27N×140°.39E,h36km,mb5.8/148, MS5.0/81,Error ellipse: s-maj=5.5km s-min=3.6km az=108.6*

ISC 11 11:42:35.7±0.4,37°.01N±0°.02×140°.52E±0°.03,h16km±2km, h16km:pP-P,n1709,σ1s42/1817,mb5.7/539,MS5.0/205, 45C-89D,Eastern Honshu

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
ONAJ	Iwakimizuishiy	0.24	68	⇓P	Pg	11 42 39.3	-1.8
ONAJ				S	Sg	11 42 42.2	-2.7
JHO	Hitachi	0.40	174	⇑P	Pg	11 42 42.2	-1.7
JFK	Kawauchi	0.46	39	⇑P	Pg	11 42 43.7	-1.2
JSB	Shiboa	0.48	265	⇑P	Pn	11 42 46.9	-1.0
JSB				S	Sn	11 42 55.2	-0.8
JFT	Otama	0.53	344	⇑P	Pb	11 42 46.9	+0.3
JFT				S	Sb	11 42 55.3	+1.3
JFY	Yanaizu	0.76	302	⇑P	Pn	11 42 51.4	-0.4
JFY				S	Sn	11 43 02.9	0.0
JYT	Yasato	0.82	199	⇑P	Pb	11 42 50.6	-1.0
JYT				S	Sb	11 43 01.3	-1.1
JMM	Marumori	0.88	14	⇑P	Pb	11 42 51.9	-0.7
JMM				S	Sb	11 43 04.2	+0.1
I30JP	ISUMI INFRASON	1.71	186	Pg	Pn	11 43 05.0	+0.2
	baz=24,slow=22,SNR=1.5						
I30JP				Lg	Lg	11 43 27.8	
MJAR	Matsushiro Arr	1.91	257	Pn	Pb	11 43 09.5	-0.7
	745nm,0.3s,baz=75,slow=17,SNR=1946						
MJAR				Sn	Sb	11 43 34.6	+0.8
	3μm,0.3s,baz=85,slow=26,SNR=24						
MAJO	Matsushiro	1.91	257	eP	Pb	11 43 09.8	-0.4
MAJO	Matsushiro	1.91	257	ePn	Pb	11 43 09.8	-0.4
INU	Inuyama	3.28	241	ePn	Pn	11 43 29.1	+2.6
JHJ	Hachijo jima 2	3.93	189	Pn	Pn	11 43 35.4	+0.1
	276nm,0.3s,baz=314,slow=23,SNR=41						
JHJ				Sn	Sn	11 44 19.8	-1.3
	475nm,0.3s,baz=51,slow=20,SNR=7.9						
JHJ				LR	LR	11 44 56.2	
	comp=Z,17μm,19.9s,baz=66,slow=36						
JHJ2	Mitsune	3.93	189	ePn	Pn	11 43 35.2	-0.2
ERM	Erimo	5.40	21	deP	Pn	11 43 55.0	-0.5
ERM				pmax	pmax		
	comp=Z,265nm,0.8s						
ERM	Erimo	5.40	21	ePn	Pn	11 43 54.8	-0.7
YUK	Yuzh-Kuril'sk	8.11	28	eP	Pn	11 44 31.0	-1.7
YUK				i S	Sn	11 45 58.8	-5.1
YUK				pmax	pmax		
	comp=Z,754nm,0.5s						
YUK				pmax	pmax		
	comp=E,114nm,0.2s						
YUK				pmax	pmax		
	comp=N,313nm,0.4s						
YUK				MLR	MLR		
	comp=Z,7μm,14.0s						
YUK				MLR	MLR		
	comp=N,14μm,11.0s						
YUK				MLR	MLR		
	comp=E,6μm,15.0s						
SHO	Shikotan	8.37	33	c iP	Pn	11 44 32.8	-3.5
SHO				i S	Sn	11 46 02.2	-8.2
SHO				pmax	pmax		
	comp=N,175nm,0.5s						
SHO				pmax	pmax		
	comp=E,150nm,0.5s						
SHO				pmax	pmax		
	comp=Z,515nm,0.5s						
JNU	Nakatsue	8.80	247	Pn	Pn	11 44 46.0	+3.7
	comp=Z,5.0nm,0.3s,baz=32,slow=5.2,SNR=43						
JNU				LR	LR	11 47 55.1	
	comp=Z,5μm,21.3s,baz=63,slow=36						
JNU	Nakatsue	8.80	247	ePn	Pn	11 44 44.8	+2.5
VLA	Vladivostok	9.00	315	eP	Pn	11 44 45.2	+0.3
USRK	Ussuriysk Ar.	9.67	321	Pn	Pn	11 44 59.3	+5.2
	comp=Z,2.3nm,0.3s,baz=138,slow=10,SNR=193						
USRK				LR	LR	11 48 29.5	
	comp=Z,11μm,18.2s,baz=126,slow=36						
KUR	Kuril'sk	9.90	32	ceP	Pn	11 44 55.9	-1.4
KUR				i S	Sn	11 46 40.9	-7.2
KUR				pmax	pmax		
	comp=E,52nm,0.7s						
KUR				pmax	pmax		
	comp=Z,176nm,0.7s						
KUR				pmax	pmax		
	comp=N,72nm,0.6s						
KUR				pmax	pmax		
	comp=Z,975nm,3.7s						
KUR				smax	smax		
	comp=N,1μm,5.9s						
KUR				smax	smax		
	comp=E,2μm,5.9s						
KUR				smax	smax		
	comp=N,309nm,0.6s						
KUR				smax	smax		
	comp=E,190nm,0.6s						
KUR				MLR	MLR		
	comp=N,3μm,12.0s						
KUR				MLR	MLR		
	comp=E,4μm,12.0s						
KUR				MLR	MLR		
	comp=Z,2μm,12.0s						
CBIJ	Chichi jima	9.99	171	ePn	Pn	11 44 55.1	-3.4
CBIJ				Sn	Sn	11 46 38.8	-11
JCJ	Chichijima	9.99	171	Pn	Pn	11 44 55.0	-3.5
	comp=Z,94nm,0.3s,baz=78,slow=12,SNR=48						
JCJ				Sn	Sn	11 46 38.8	-11
	comp=Z,74nm,0.3s,baz=277,slow=23,SNR=2.5						
KSRS	Korea Array	10.05	276	Pn	Pn	11 45 04.2	+4.8
	comp=Z,2.8nm,0.3s,baz=94,slow=14,SNR=257						
KSRS				LR	LR	11 48 57.0	
	comp=Z,4μm,18.2s,baz=83,slow=38						
KSRS				PcP	PcP	11 51 10.2	+0.8
	comp=Z,0.4nm,0.3s,baz=102,slow=0.8,SNR=5.3						
YSS	Yuzh-Sakhalins	10.07	9	⇓eP	Pn	11 45 00.4	+0.8
YSS				eS	Sn	11 46 53.8	+1.6
YSS				pmax	pmax		
	comp=Z,50nm,0.9s						
YSS				MLR	MLR		
	comp=N,5μm,13.0s						
YSS				MLR	MLR		
	comp=E,9μm,13.0s						
YSS				MLR	MLR		
	comp=Z,8μm,13.0s						
YSS	Yuzh-Sakhalins	10.07	9	ePn	Pn	11 45 00.7	+1.1
KS01	Wonju Array Si	10.08	276	ePn	Pn	11 45 05.3	+5.6
KS15	Wonju Array Si	10.09	276	ePn	Pn	11 45 04.5	+4.7
KSAR	Wonju Array Be	10.09	276	P	Pn	11 45 04.2	+4.4
KSAR	Wonju Array Be	10.09	276	Pn	Pn	11 45 04.2	+4.4
KSAR				PcP	PcP	11 51 10.2	+0.8
INCN	Inchon	11.08	277	ePn	Pn	11 45 20.3	+6.8
INCN	Inchon	11.08	277	Pn	Pn	11 45 19.7	+6.2
	SNR=11						
MDJ	Mudanjiang	11.23	316	P	Pn	11 45 20.4	+5.0
MDJ				S	Sn	11 47 28.3	+7.7
MDJ				PcP	PcP	11 51 09.4	-1.0
MDJ				ScP	ScP	11 54 45.9	+3.5
MDJ				ScS	ScS	11 58 19.3	+1.7
MDJ				pmax	pmax		
	comp=Z,46nm,1.0s						
MDJ				pmax	pmax		
	comp=Z,2μm,5.2s						
MDJ				LR	LR		
	comp=Z,11μm,17.4s						
MDJ				LR	LR		
	comp=Z,9μm,19.5s						
MDJ				LR	LR		
	comp=Z,8μm,16.2s						
MDJ	Mudanjiang	11.23	316	ePn	Pn	11 45 20.4	+5.0
	comp=Z,547nm,1.3s						
UGL	Uglegorsk	12.11	5	P	Pn	11 45 30.0	+2.5
UGL				pmax	pmax		
	comp=Z,1μm,8.0s						
UGL				MLR	MLR		
	comp=N,11μm,15.0s						
UGL				MLR	MLR		
	comp=E,6μm,15.0s						
UGL				MLR	MLR		
	comp=Z,13μm,15.0s						
HABR	Khabarovsk	12.13	342	deP	Pn	11 45 26.2	-1.6
HABR				eS	Sn	11 47 40.4	-2.3
HABR				MLR	MLR		
	comp=Z,5μm,14.0s						
CN2	Changchun	13.33	305	eP	P	11 45 50.4	-3.3
CN2				eS	Sn	11 48 23.7	+12
CN2				pmax	pmax		
	comp=Z,30nm,1.0s						
CN2				pmax	pmax		
	comp=Z,200nm,6.0s						
CN2				LR	LR		
	comp=Z,8μm,13.0s						
CN2				LR	LR		
	comp=Z,12μm,13.0s						
CN2				LR	LR		
	comp=Z,11μm,14.0s						
KLR	Kul'dur	13.78	335	Pn	Pn	11 45 52.1	+1.9
	comp=Z,1.0nm,0.3s,baz=136,slow=13,SNR=27						
KLR				LR	LR	11 51 08.1	
	comp=Z,7μm,18.1s,baz=154,slow=37						
TYV	Tymovskoe	13.93	6	eP	Pn	11 45 53.2	+0.9
SNY	Shenyang	13.95	295	⇓P	Pn	11 45 56.4	+3.8
SNY				pmax	pmax		
	comp=Z,37nm,2.2s						
SNY				pmax	pmax		
	comp=Z,2μm,4.1s						
SNY				LR	LR		
	comp=Z,20μm,12.5s						
SNY				LR	LR		
	comp=Z,13μm,15.1s						
SNY				LR	LR		
	comp=Z,17μm,14.3s						
JOW	Kunigami	14.51	229	eP	P	11 46 05.2	-1.8
DL2	Dalian	15.02	283	P	P	11 46 10.1	-2.5
DL2				S	S	11 49 03.3	-7.4
DL2				pmax	pmax		
	comp=Z,310nm,1.2s						
DL2				pmax	pmax		
	comp=Z,2μm,7.0s						
DL2				LR	LR		
	comp=Z,3μm,12.0s						
DL2				LR	LR		
	comp=Z,8μm,13.4s						
DL2				LR	LR		
	comp=Z,9μm,12.7s						
NKL	Nikolayevsk	16.14	0	eP	Pn	11 46 13.3	-8.4
NKL				eS	Sn	11 49 23.0	+2.8
NKL				pmax	pmax		
	comp=Z,24nm,1.2s						
NKL				smax	smax		
	comp=E,1μm,8.0s						
NKL				MLR	MLR		
	comp=E,4μm,19.0s						
NKL				MLR	MLR		
	comp=N,5μm,13.0s						
NKL				MLR	MLR		
	comp=Z,9μm,13.0s						
OKH	Okha	16.62	5	eP	Pn	11 46 25.6	-2.2
OKH				eS	Sn	11 49 32.0	0.0
OKH				pmax	pmax		
	comp=Z,2μm,10.0s						
OKH				smax	smax		
	comp=E,2μm,7.0s						
OKH				smax	smax		
	comp=Z,6μm,14.0s						
SSE	Sheshan	17.06	255	P	P	11 46 34.6	-0.6
SSE				S	Sn	11 49 47.4	+4.5
SSE				pmax	pmax		
	comp=Z,38nm,0.7s						
SSE				pmax	pmax		
	comp=Z,2μm,5.3s						
SSE				LR	LR		
	comp=Z,7μm,13.0s						
SSE				LR	LR		

comp=Z,2μm,13.0s
SSE LR LR
comp=Z,7μm,15.1s
SKR Severo-Kuril's 17.65 34 *e*P **Pn 11 46 36.5 -4.2**
SKR pmax pmax
comp=N,220nm,1.0s
SKR pmax pmax
comp=Z,220nm,1.0s
SKR pmax pmax
comp=E,80nm,0.5s
NJ2 Nanjing 18.51 261 *e*P **P 11 46 50.8 -0.4**
NJ2 pP **pP 11 46 53.8 -2.0**
NJ2 S **Sn 11 50 15.7 -2.3**
NJ2 sS **S 11 50 23.0 +1.1**
NJ2 pmax pmax
comp=E,50nm,0.7s
NJ2 pmax pmax
comp=E,1μm,5.4s
NJ2 LR LR
comp=E,7μm,16.3s
NJ2 LR LR
comp=E,4μm,16.3s
NJ2 LR LR
comp=E,4μm,13.0s
TIA Tai'an 18.79 275 ⇓P **P 11 46 54.1 -0.2**
TIA pmax pmax
comp=E,50nm,1.1s
TIA pmax pmax
comp=E,2μm,5.3s
TIA LR LR
comp=E,4μm,13.3s
TIA LR LR
comp=E,10μm,13.3s
TIA LR LR
comp=E,11μm,13.6s
BJI Beijing 19.27 286 P **Pn 11 47 00.2 -0.3**
BJI S **Sn 11 50 34.3 -1.9**
BJI pmax pmax
comp=E,120nm,0.7s
BJI LR LR
comp=E,4μm,13.4s
BJI LR LR
comp=E,5μm,11.6s
BJT Baijiatuau 19.27 286 *e*P **Pn 11 47 00.3 -0.3**
BJT pmax pmax
comp=Z,190nm,0.7s
BJT Baijiatuau 19.27 286 *e*P **Pn 11 47 00.3 -0.3**
comp=Z,190nm,0.7s
HIA Hailar 19.41 316 *e*P **P 11 47 00.4 -0.7**
HIA pmax pmax
comp=Z,27nm,0.6s
HIA Hailar 19.41 316 *e*P **P 11 47 00.4 -0.7**
comp=Z,27nm,0.6s
PEA0 Petropavlovsk- 20.07 31 *e*P Pn 11 47 09.1 -0.9
PEA0B Petropavlovsk- 20.07 31 *e*P Pn 11 47 11.0 +1.0
comp=Z,330nm,1.5s
PETK Petropavlovsk- 20.07 31 P **P 11 47 08.8 +0.6**
comp=Z,41nm,0.8s,baz=213,slow=10,SNR=20
PETK PcP **PcP 11 51 23.9 +0.8**
comp=Z,8.5nm,0.9s,baz=116,slow=3.4,SNR=4.0
PETK LR LR 11 55 51.4
comp=Z,1μm,19.4s,baz=219,slow=40
TATO Taipei 20.21 239 PFAKE 11 47 20.0 +8.2
TATO LR LR
comp=Z,3μm,19.0s
PET Petropavlovsk 20.42 33 *e*P Pn 11 47 13.6 -0.4
PET *e*S **S 11 50 59.6 -0.2**
PET pmax pmax
comp=Z,253nm,1.4s
PET pmax pmax
comp=Z,1μm,8.8s
PET MLR MLR
comp=Z,3μm,20.0s
PET Petropavlovsk 20.42 33 *e*P Pn 11 47 13.9 -0.1
comp=Z,450nm,1.4s
PET LR LR
comp=Z,4μm,20.0s
YHNB Yeheng 20.48 238 *e*P **P 11 47 12.5 -0.5**
comp=Z,131nm,1.3s
YHNB LR LR
comp=Z,2μm,21.0s
NACB Ninganchiao 20.67 237 PFAKE 11 47 30.0 +13
NACB LR LR
comp=Z,2μm,21.0s
SSLB Suanglung 21.36 237 *e*P **P 11 47 19.9 -2.4**
comp=Z,36nm,0.8s
SSLB LR LR
comp=Z,2μm,22.0s
YULB Yu-li 21.40 236 PFAKE 11 47 30.0 +7.3
YULB LR LR
comp=Z,2μm,19.0s
TPUB Ta-pu 21.91 237 *e*P **P 11 47 25.5 -2.7**
comp=Z,86nm,0.7s
TPUB LR LR
comp=Z,2μm,20.0s
TWG Pinlang 21.94 235 *e*P **P 11 47 26.8 -1.8**
comp=Z,490nm,1.2s
TWG LR LR
comp=Z,6μm,20.0s
QZH Quanzhou 22.26 243⇑ *i*P **P 11 47 26.7 -5.3**
QZH S **S 11 51 27.1 -9.3**
TIY Taiyuan 22.30 280 *e*P **P 11 47 31.2 -1.3**
TIY S **S 11 51 33.4 -3.8**
TIY pmax pmax
comp=Z,41nm,0.8s
TIY pmax pmax
comp=Z,360nm,4.1s
TIY LR LR
comp=Z,2μm,12.3s
TIY LR LR
comp=Z,7μm,11.7s
TIY LR LR
comp=Z,10μm,13.0s
CLNS Chul'man 22.42 337 *e*P **P 11 47 32.3 -1.2**
CLNS *e**PP **sP 11 47 42.0 +1.8**
CLNS *e* 11 47 54.0
CLNS *e*S **S 11 51 29.6 -9.4**
CLNS *e* 11 51 31.7
CLNS *e*SS **SnSn 11 52 05.9 -1.4**
CLNS *e* 11 58 53.0
CLNS pmax pmax
comp=Z,149nm,0.9s
CLNS pmax pmax
comp=E,15nm,1.0s
CLNS pmax pmax
comp=N,91nm,0.9s
CLNS pmax pmax
comp=N,90nm,1.0s
CLNS pmax pmax
comp=Z,40nm,0.9s
CLNS pmax pmax
comp=E,49nm,1.0s
CLNS smax smax
comp=N,419nm,9.0s
CLNS smax smax
comp=E,553nm,9.0s
CLNS MLR MLR
comp=E,3μm,12.0s
CLNS MLR MLR
comp=Z,3μm,11.0s
CLNS MLR MLR
comp=N,2μm,10.0s
WHN Wuhan 22.65 261 P **P 11 47 34.8 -1.3**
WHN S **S 11 51 34.2 -9.3**
WHN pmax pmax
comp=N,96nm,0.7s
HHC Hu-ho-hao-te 22.80 289 *e*P **P 11 47 37.2 -0.6**
HHC sP sP 11 47 44.1 -0.4
HHC S **S 11 51 41.2 -5.1**
HHC sS sS 11 51 46.9 -7.3
HHC SS **SnSn 11 52 20.6 +3.6**
HHC pmax pmax
comp=N,58nm,1.1s
HHC pmax pmax
comp=N,320nm,5.8s
HHC LR LR
comp=N,2μm,11.9s
HHC LR LR
comp=N,3μm,9.9s
HHC LR LR
comp=N,3μm,10.0s
MA2 Magadan 23.53 13 P **P 11 47 44.3 -0.5**
comp=N,92nm,0.7s,baz=225,slow=9.1,SNR=47
MA2 LR LR 11 58 36.0
comp=N,2μm,18.8s,baz=220,slow=41
GUMO Guam 23.65 169 PFAKE 11 48 00.0 +14
GUMO LR LR
comp=Z,5μm,20.0s
BTO Baotou 23.98 288 *e*P **P 11 47 46.1 -3.3**
CIT Chita 24.20 317 *e*P **P 11 47 51.2 -0.2**
CIT *e* 11 48 02.7
CIT *e* 11 48 19.4
CIT *e* 11 51 35.0
CIT pmax pmax
comp=Z,200nm,2.1s
XAN Xi'an 25.83 273 P **P 11 48 05.0 -1.3**
XAN pP pP 11 48 09.2 -2.0
XAN PP **PnPn 11 48 45.9 +2.6**
XAN S **S 11 52 28.2 -7.0**
XAN SS **SnSn 11 53 32.6 +1.6**
XAN pmax pmax
comp=Z,23nm,0.7s
XAN pmax pmax
comp=Z,700nm,8.5s
XAN LR LR
comp=Z,3μm,14.4s
XAN LR LR
comp=Z,2μm,16.1s
XAN LR LR
comp=Z,3μm,15.3s
YAK Yakutsk 25.94 348 P **P 11 48 06.7 -0.2**
comp=Z,202nm,0.8s,baz=342,slow=3.4,SNR=26
YAK S **S 11 52 34.6 -1.8**
comp=Z,8.1nm,0.4s,baz=56,slow=1.3,SNR=1.4
YAK LR LR 11 58 26.3
comp=Z,3μm,20.1s,baz=124,slow=36
YAK Yakutsk 25.94 348 *e*P **P 11 48 06.4 -0.5**
YAK *e**PP **sP 11 48 18.6 +4.7**
YAK *e* 11 48 42.7
YAK *e*S **S 11 52 32.3 -4.0**
YAK *e**SS **sS 11 52 47.4 +2.9**
YAK *e*SS **SnSn 11 53 30.2 -3.0**
YAK *e* 11 59 02.9
YAK pmax pmax
comp=E,51nm,1.1s
YAK pmax pmax
comp=N,126nm,1.1s
YAK pmax pmax
comp=Z,264nm,0.9s
YAK pmax pmax
comp=Z,91nm,0.8s
YAK pmax pmax
comp=E,154nm,1.1s
YAK pmax pmax
comp=N,116nm,1.1s
YAK smax smax
comp=N,689nm,3.2s
YAK smax smax
comp=E,191nm,1.6s
YAK MLR MLR
comp=E,2μm,11.0s
YAK MLR MLR
comp=Z,8μm,14.0s
YAK MLR MLR
comp=N,6μm,13.0s
YAK Yakutsk 25.94 348 *e*P **P 11 48 06.8 -0.2**
comp=N,246nm,0.9s
YAK S **S 11 52 34.6 -1.8**
YAK *e*S S 11 52 42.6 +6.3
ENH Enshi 26.62 265 *e*P **P 11 48 12.2 -1.3**
comp=N,113nm,0.8s
ENH LR LR
comp=Z,3μm,20.0s
ULN Ulaanbaatar 26.78 304 *e*P **P 11 48 14.1 -0.8**
ULN pmax pmax
comp=Z,152nm,1.1s
ULN MLR MLR
comp=Z,2μm,18.0s
ULN Ulaanbaatar 26.78 304 *e*P **P 11 48 14.1 -0.8**
comp=Z,152nm,1.1s
ULN LR LR
comp=Z,2μm,18.0s
ULN Ulaanbaatar 26.78 304 P **P 11 48 14.4 -0.5**
SNR=96
ULN Ulaanbaatar 26.78 304 P **P 11 48 14.4 -0.5**
SNR=96
SEY Seymchan 26.96 12 P **P 11 48 17.1 +1.0**
comp=Z,80nm,1.0s,baz=200,slow=6.7,SNR=73
HKC Hong Kong Obse 27.07 245 P **P 11 48 18.0 +0.5**
BOD Bodaibo 27.17 328⇑ *i*P **P 11 48 17.0 -1.1**
BOD pmax pmax
comp=Z,43nm,0.9s
GZH Guangzhou 27.20 247 P **P 11 48 13.3 -5.3**
GZH PP **PnPn 11 48 58.3 -3.8**
GZH S **S 11 52 49.1 -7.7**
SONA1 Songino Array 27.20 304 *e*P **P 11 48 17.4 -1.3**
SONM Songino Array 27.20 304 P **P 11 48 18.0 -0.7**
comp=Z,77nm,0.8s,baz=109,slow=9.0,SNR=170
SONM PcP **PcP 11 51 39.2 +0.6**
comp=Z,6.7nm,0.5s,baz=120,slow=2.1,SNR=10.0
SONM ScP **ScP 11 55 19.2 +1.0**
comp=Z,3.5nm,1.0s,baz=87,slow=3.3,SNR=4.5
SONM LR LR 11 59 04.2
comp=Z,1μm,19.3s,baz=103,slow=36
SONM Songino Array 27.20 304 P **P 11 48 18.0 -0.7**
SONM 11 51 39.2
SONM pmax pmax
comp=Z,78nm,0.8s
SONM pmax pmax
comp=Z,7.0nm,0.5s
SONM pmax pmax
comp=N,4.0nm,1.0s
SONM MLR MLR
comp=Z,1μm,19.3s
H11N2 WAKE ISLAND Hy 28.76 120 T T 12 18 19.6
baz=313,slow=75,SNR=1489
H11N1 WAKE ISLAND Hy 28.76 120 T T 12 18 19.3
baz=313,slow=75,SNR=2081
H11N3 WAKE ISLAND Hy 28.77 120 T T 12 18 22.0
baz=313,slow=75,SNR=1715
LZH Lanzhou 29.36 279⇑ P **P 11 48 37.1 -1.0**
LZH pP pP 11 48 41.5 -1.5
LZH sP sP 11 48 44.2 -0.9
LZH PP **PnPn 11 49 33.0 +1.3**
LZH S **S 11 53 28.3 -2.9**
LZH SS **SnSn 11 54 59.2 +1.7**
LZH pmax pmax
comp=Z,120nm,1.0s
LZH pmax pmax
comp=Z,520nm,4.6s
LZH LR LR
comp=Z,4μm,13.0s
LZH LR LR
comp=Z,5μm,12.1s
LZH LR LR
comp=Z,7μm,16.0s
H11S1 WAKE ISLAND Hy 29.45 122 T T 12 19 12.1
baz=314,slow=76
H11S3 WAKE ISLAND Hy 29.45 122 T T 12 19 12.1
baz=314,slow=76
H11S2 WAKE ISLAND Hy 29.47 122 T T 12 19 14.4
baz=314,slow=76,SNR=9878
IRK Irkutsk 29.59 313 *e*P **P 11 48 40.8 +1.1**
IRK *e* 11 49 30.3
IRK pmax pmax
comp=Z,41nm,1.3s
ZAK Zakamensk 29.72 309 *e*P **P 11 48 40.0 -1.1**
ZAK pmax pmax
comp=Z,35nm,1.5s
TLY Talaya 29.81 311 P **P 11 48 41.3 -0.4**
comp=Z,7.9nm,0.7s,baz=110,slow=5.7,SNR=16
TLY PcP **PcP 11 51 46.0 +1.2**
comp=Z,16nm,0.8s,baz=213,slow=3.2,SNR=8.5
TLY LR LR 11 59 56.7
comp=Z,2μm,21.4s,baz=108,slow=35
TLY Talaya 29.81 311 *e*P **P 11 48 41.5 -0.2**
TLY pmax pmax
comp=Z,27nm,1.4s
TLY MLR MLR
comp=Z,4μm,12.0s
TLY Talaya 29.81 311 *e*P **P 11 48 41.1 -0.6**
comp=Z,14nm,0.8s
TLY *e*PcP **PcP 11 51 46.1 +1.3**
TLY Talaya 29.81 311 P **P 11 48 41.7 0.0**
SNR=18
TLY Talaya 29.81 311 P **P 11 48 41.7 0.0**
SNR=18
GYA Guiyang 30.51 260⇓ *i*P **P 11 48 46.9 -1.4**
GYA PP **PnPn 11 49 48.8 +1.6**
GYA PcP **PcP 11 51 49.6 +2.4**
GYA S **S 11 53 49.3 0.0**
GYA SS **ScP 11 55 29.0 0.0**
GYA ScS **ScS 11 59 25.2 -0.2**
GYA pmax pmax
comp=Z,70nm,0.9s
GYA pmax pmax
comp=Z,310nm,7.9s
GYA LR LR
comp=Z,2μm,16.9s
GYA LR LR
comp=Z,3μm,17.2s
GYA LR LR
comp=Z,4μm,16.9s
CD2 Chengdu 30.96 270 P **P 11 48 51.1 -1.0**
CD2 S **S 11 53 54.8 -1.2**
CD2 sS sS 11 54 02.5 -1.7
CD2 pmax pmax
comp=Z,90nm,0.9s
CD2 pmax pmax
comp=Z,820nm,11.3s
CD2 LR LR
comp=Z,6μm,16.7s
CD2 LR LR
comp=Z,6μm,15.5s
MOY Mondy 31.41 310 *e*P **P 11 48 57.0 +1.1**
MOY pmax pmax
comp=Z,30nm,2.2s
GTA Gaotai 31.89 287 *e*P **P 11 48 59.6 -0.7**
GTA pP pP 11 49 03.6 -1.6
GTA sP sP 11 49 06.7 -0.6
GTA PcP **PcP 11 51 51.5 +0.8**
GTA S **S 11 54 08.0 -2.6**
GTA sS sS 11 54 18.7 0.0
GTA SS **SnSn 11 55 59.6 +0.9**
GTA pmax pmax
comp=Z,22nm,0.8s
GTA pmax pmax
comp=Z,430nm,5.7s
GTA LR LR
comp=Z,2μm,12.4s
GTA LR LR
comp=Z,2μm,13.5s
GTA LR LR
comp=Z,2μm,11.6s
DAV Davao City (W) 32.77 208 LR LR 12 02 05.6
comp=Z,2μm,20.5s,baz=72,slow=36
PATS Pohnpei 34.14 147 *e*P **P 11 49 20.0 0.0**
comp=Z,484nm,1.7s
KMI Kunming 34.25 261 P **P 11 49 21.0 -0.2**
KMI pP pP 11 49 26.2 0.0
KMI sP sP 11 49 27.9 -0.3
KMI PP **PnPn 11 50 36.6 +1.3**
KMI S **S 11 54 45.6 -2.1**
KMI sS sS 11 54 54.2 -1.7
KMI SS **SnSn 11 56 55.4 -1.2**
KMI pmax pmax
comp=Z,78nm,1.0s
KMI pmax pmax
comp=Z,480nm,6.8s
KMI LR LR
comp=Z,4μm,15.6s
KMI LR LR
comp=Z,3μm,18.4s
KMI LR LR
comp=Z,3μm,15.0s
BILL Bilibino 34.25 17*d i*P **P 11 49 20.2 -0.3**
BILL *e* 11 50 34.9
BILL *e*PPP PPP 11 50 47.3
BILL *e*S **S 11 54 41.7 -4.8**
BILL *e*SS **SnSn 11 56 54.9 -0.4**
BILL pmax pmax
comp=Z,97nm,1.0s
BILL MLR MLR
comp=Z,2μm,15.0s
BILL Bilibino 34.25 17 *e*P **P 11 49 19.5 -0.9**
comp=Z,88nm,1.0s
BILL LR LR
comp=Z,1μm,20.0s
TIXI Tiksi 35.23 354 P **P 11 49 28.2 -0.6**
comp=Z,24nm,0.5s,baz=144,slow=6.8,SNR=65
TIXI S **S 11 55 01.0 -0.4**
comp=Z,5.8nm,0.9s,baz=329,slow=17,SNR=3.9
TIXI LR LR 12 04 31.1
comp=Z,2μm,18.1s,baz=154,slow=37
TIXI Tiksi 35.23 354 *e*P **P 11 49 28.3 -0.6**
TIXI pmax pmax
comp=Z,41nm,0.8s
TIXI Tiksi 35.23 354 *e*P **P 11 49 27.5 -1.3**
comp=Z,38nm,0.6s
TIXI S **S 11 55 01.0 -0.4**
KRAR Krasnoyarsk 36.98 316 *e*P **P 11 49 44.1 +0.1**
KRAR pmax pmax
comp=Z,25nm,0.4s
KRAR MLR MLR
comp=Z,3μm,14.0s
MYLDM Lahad Datu 37.55 218 *e*P **P 11 49 50.7 +1.4**
comp=Z,114nm,1.1s
SDKM Sandakan 37.81 220 ⇓P **P 11 49 52.2 +0.7**
NONG Nongkai 37.83 250 P **P 11 49 51.7 +0.1**
comp=Z,53nm,0.9s,comp=Z,12μm
KKM Kota Kinabalu 37.98 222 ⇓P **P 11 49 52.7 -0.3**
KKM Kota Kinabalu 37.98 222 PFAKE 11 50 00.0 +7.0
KKM LR LR
comp=Z,1μm,19.0s
TNTI Ternate 38.06 202 P **P 11 49 53.5 0.0**
comp=Z,262nm,1.1s,comp=Z,4μm
TNTI Ternate 38.06 202 *e*P **P 11 49 53.2 -0.3**
comp=Z,1μm,2.0s
SWI Sorong 38.65 195 P **P 11 49 58.6 +0.1**
comp=Z,323nm,1.2s,comp=Z,4μm
CRAI Chiangrai 38.68 256 P **P 11 49 57.8 -1.0**
comp=Z,52nm,1.2s,comp=Z,1μm
GAMB Gambell 39.11 31 *e*P **P 11 50 03.0 +1.2**
comp=Z,74nm,1.7s
KHON Khomkaen 39.13 248 P **P 11 50 02.8 +0.2**
comp=Z,29nm,1.0s
JAY Jayapura 39.32 180 LR LR 12 05 44.4
comp=Z,58nm,20.1s,slow=35
JAY Jayapura 39.32 180 P **P 11 50 07.5 +3.3**
comp=Z,82nm,2.0s,comp=Z,2μm
KMSI Cibinong 39.35 207 P **P 11 50 07.2 +2.8**
comp=Z,1μm,0.8s
LBMI Labuha 39.36 201 P **P 11 50 04.7 +0.3**
comp=Z,246nm,0.9s,comp=Z,3μm
MANU Manus Island 39.37 169 *e*P **P 11 50 03.9 -0.6**
comp=Z,246nm,0.1s
GENI Genyem 39.40 181 P **P 11 50 06.1 +1.3**
comp=Z,296nm,1.2s,comp=Z,5μm
CMAI Chiengmai2 39.88 256 P **P 11 50 09.4 +0.4**
comp=Z,93nm,1.0s,comp=Z,1μm
UTTA Uttaradit 39.98 252 P **P 11 50 09.7 +0.1**
comp=Z,9.6nm,1.1s,comp=Z,96nm
CHAI Chaiyaphum 40.03 249 P **P 11 50 09.6 -0.5**
comp=Z,26nm,1.0s,comp=Z,228nm
MRSI Marisa 40.21 210 P **P 11 50 11.9 +0.4**
comp=Z,250nm,1.1s,comp=Z,3μm
WMQ Urumqi 40.21 297 P **P 11 50 12.9 +1.5**
WMQ pP pP 11 50 16.7 +0.3
WMQ PcP **PcP 11 52 16.1 +0.8**
WMQ S **S 11 56 20.3 +2.6**
WMQ SS **SS 11 59 12.2 -3.5**
WMQ ScS **ScS 12 00 16.6 -0.7**
WMQ pmax pmax
comp=Z,37nm,0.8s
WMQ pmax pmax
comp=Z,470nm,4.0s
WMQ LR LR
comp=Z,4μm,16.4s
WMQ LR LR
comp=Z,900nm,20.6s
WMQ LR LR
comp=Z,1μm,16.4s
LAMP Lampang 40.23 254 P **P 11 50 12.5 +0.8**
comp=Z,13nm,1.1s,comp=Z,122nm
PBKT Sadao Pong 40.38 250 P **P 11 50 12.8 -0.1**
comp=Z,59nm,1.2s,comp=Z,2μm
FAKI Fak Fak 40.47 193 P **P 11 50 14.9 +1.3**
comp=Z,331nm,1.8s,comp=Z,6μm
FAKI Fak Fak 40.47 193 *e*P **P 11 50 13.8 +0.1**
comp=Z,1μm,1.8s
CMMT Chiang Mai 40.59 255 P **P 11 50 14.6 -0.1**
comp=Z,84nm,1.0s
CHTO Chiang Mai 40.59 255 P **P 11 50 14.6 -0.2**
comp=Z,138nm,0.7s,comp=Z,5μm
CHTO Chiang Mai 40.59 255 *e*P **P 11 50 14.5 -0.2**
CHTO *e* 11 52 17.8
CHTO pmax pmax
comp=Z,21nm,0.6s

CHTO MLR MLR
comp=Z,1μm,19.0s
CHTO Chiang Mai 40.59 255 *e*P **P 11 50 14.5 -0.2**
comp=Z,21nm,0.6s
CHTO *e*PcP **PcP 11 52 17.8 +1.1**
CHTO LR LR
comp=Z,1μm,19.0s
CHTO Chiang Mai 40.59 255 P **P 11 50 14.6 -0.2**
SNR=15
CHTO Chiang Mai 40.59 255 P **P 11 50 14.6 -0.2**
SNR=15
CM31 Chiang Mai Arr 40.80 255 *e*P **P 11 50 17.9 +1.5**
CMAR Chiang Mai Arr 40.80 255 P **P 11 50 16.4 -0.1**
comp=Z,8.1nm,0.6s,baz=45,slow=8.2,SNR=25
CMAR PcP **PcP 11 52 18.6 +1.2**
comp=Z,10nm,0.9s,baz=19,slow=2.3,SNR=8.4
CMAR ScP **ScP 11 56 06.0 -0.3**
comp=Z,0.5nm,0.3s,baz=41,slow=3.5,SNR=4.7
CMAR LR LR 12 08 29.3
comp=Z,773nm,20.8s,baz=50,slow=38
CM01 Chiang Mai Arr 40.81 255 *e*P **P 11 50 16.3 -0.2**
CM01 *e*PcP **PcP 11 52 18.5 +1.0**
SUKH Sukhothai 40.84 253 P **P 11 50 17.0 +0.2**
comp=Z,13nm,0.9s,comp=Z,127nm
SANI Sanana 41.14 202 P **P 11 50 19.7 +0.5**
comp=Z,309nm,0.9s,comp=Z,4μm
SRAK Srakaew 41.20 246 P **P 11 50 16.2 -3.5**
comp=Z,214nm,1.1s,comp=Z,2μm
LUWI Luwuk 41.29 208 P **P 11 50 19.0 -1.4**
comp=Z,295nm,1.3s,comp=Z,4μm
LUWI Luwuk 41.29 208 *e*P **P 11 50 18.2 -2.2**
comp=Z,499nm,1.3s
ZAA0 Zalesovo Array 41.40 312 *e*P **P 11 50 20.4 -0.6**
ZAA0 *e*P **pP 11 50 20.9 -5.1**
ZALV Zalesovo Beam 41.40 312 P **P 11 50 20.8 -0.2**
comp=Z,26nm,0.4s,baz=96,slow=7.0,SNR=90
ZALV PcP **PcP 11 52 18.9 +0.1**
comp=Z,38nm,0.7s,baz=99,slow=2.8,SNR=11
ZALV ScP **ScP 11 56 09.0 +0.9**
comp=Z,15nm,0.9s,baz=90,slow=4.4,SNR=11
ZALV LR LR 12 07 36.1
comp=Z,1μm,19.9s,baz=84,slow=36
LSA Lhasa 41.50 275 P **P 11 50 23.3 +0.7**
LSA pmax pmax
comp=Z,29nm,1.1s
LSA Lhasa 41.50 275 *e*P **P 11 50 23.6 +0.9**
LSA pmax pmax
comp=Z,139nm,1.4s
LSA MLR MLR
comp=Z,1μm,21.0s
LSA Lhasa 41.50 275 *e*P **P 11 50 23.6 +0.9**
comp=Z,139nm,1.4s
LSA LR LR
comp=Z,1μm,21.0s
NAYO Nakonayok 41.53 248 P **P 11 50 22.6 +0.1**
comp=Z,30nm,1.0s,comp=Z,700nm
MSAI Masohi 41.58 198 P **P 11 50 24.8 +2.0**
comp=Z,143nm,1.4s,comp=Z,2μm
APSI Ampana 41.59 209 P **P 11 50 22.7 -0.2**
comp=Z,451nm,1.1s,comp=Z,5μm
CHBT CHBT 41.82 245 P **P 11 50 25.4 +0.6**
comp=Z,90nm,1.1s,comp=Z,2μm
NLAI Namlea 41.95 200 P **P 11 50 28.5 +2.7**
comp=Z,203nm,1.0s,comp=Z,3μm
ZSN Zaisan 42.01 303⇑ *i*P P 11 50 35.8 +10
comp=Z,826nm,0.9s
ZSN *e*S S 11 56 53.4 +9.2
ZSN LRM MLR 12 09 49.2
comp=Z,2μm,12.7s
BTM Bintulu 42.05 223⇑⇑P **P 11 50 27.3 +0.6**
PCI Palu 42.32 212 P **P 11 50 29.1 +0.2**
comp=Z,309nm,1.3s,comp=Z,3μm
NVS Novosibirsk 42.34 314 *i* P **P 11 50 28.9 +0.3**
NVS *e* 11 52 21.1
NVS *e*S **S 11 56 50.0 +1.2**
NVS pmax pmax
comp=Z,175nm,1.7s
NVS pmax pmax
comp=N,18nm,1.4s
NVS pmax pmax
comp=E,131nm,1.7s
NVS smax smax
comp=E,31nm,2.1s
RABL Rabaul 42.41 163 *e*P **P 11 50 29.5 0.0**
comp=E,139nm,1.0s
BNDI Bandanaira 42.49 196 P **P 11 50 31.2 +1.0**
comp=E,3μm,1.2s,comp=E,28μm
SHL Shillong 42.69 269 *e*P **P 11 50 32.0 -0.1**
SHL IAmb IAmb 11 50 34.5
comp=Z,25nm,0.3s
SHL *ex* x 11 56 18.0
NRIK Noril'sk 42.99 335 P **P 11 50 33.7 0.0**
comp=Z,41nm,0.7s,baz=112,slow=10,SNR=28
NRIK PcP **PcP 11 52 24.4 +0.6**
comp=Z,26nm,0.8s,baz=103,slow=3.2,SNR=5.5
NRIK S **S 11 56 56.1 -2.0**
comp=Z,2.5nm,0.6s,baz=317,slow=21,SNR=1.3
NRIK LR LR 12 09 17.7
comp=Z,2μm,19.7s,baz=105,slow=37
SBUM Sibu 43.15 224⇑⇑P **P 11 50 36.9 +1.3**
SBUM Sibu 43.15 224 *e*P **P 11 50 34.9 -0.7**
comp=Z,18nm,0.9s
SRDT SRDT 43.15 250 P **P 11 50 35.8 +0.2**
comp=Z,180nm,1.4s,comp=Z,12μm
KHLT Khaolaem Dam 43.27 251 P **P 11 50 37.1 +0.5**
comp=Z,34nm,1.0s,comp=Z,628nm
MK31 Makanchi Array 43.52 302 *i* P **P 11 50 38.5 +0.1**
MK31 pmax pmax
comp=Z,29nm,0.7s
MKAR Makanchi Array 43.52 302 P **P 11 50 38.3 -0.1**
comp=Z,29nm,0.6s,baz=86,slow=9.5,SNR=240
MKAR PcP **PcP 11 52 26.3 +0.2**
comp=Z,23nm,0.9s,baz=90,slow=6.1,SNR=5.2
MKAR LR LR 12 08 50.5
comp=Z,2μm,19.8s,baz=86,slow=36
PHET Kaeng Krachan 43.69 248 P **P 11 50 40.4 +0.4**
comp=Z,38nm,0.9s,comp=Z,298nm
MAKZ Makanchi 43.73 302 *e*P **P 11 50 40.1 0.0**
MAKZ pmax pmax
comp=Z,117nm,1.4s
MAKZ Makanchi 43.73 302 *e*P **P 11 50 40.1 0.0**
comp=Z,117nm,1.4s
BKB Balikpapan 43.94 215 P **P 11 50 43.5 +1.6**
comp=Z,244nm,1.3s,comp=Z,4μm
TTSI Tana Toraja 44.27 210 P **P 11 50 48.2 +3.6**
comp=Z,64nm,1.0s
SEM Semipalatinsk 44.39 307⇓ *i*P **P 11 50 47.6 +2.4**
comp=Z,909nm,1.6s
SEM *e*S **S 11 57 20.8 +1.9**
SEM LR LR 12 09 36.6
comp=Z,3μm,14.1s
MTKI Muara Teweh, K 44.61 218 P **P 11 50 48.8 +1.4**
comp=Z,161nm,1.2s
KSM Kuching 45.02 225⇓⇓P **P 11 50 52.5 +1.8**
KSM Kuching 45.02 225 *e*P **P 11 50 51.5 +0.9**
comp=Z,64nm,0.9s
KSM LR LR
comp=Z,505nm,21.0s
SPSI Sidrap Palu 45.12 210 P **P 11 50 51.7 +0.3**
comp=Z,138nm,1.2s,comp=Z,2μm
TAPN Taplejung 45.23 274 *e*P **P 11 50 53.1 +0.5**
comp=Z,98nm,0.7s
KURK Kurchatov 45.38 308 *e*P **P 11 50 52.1 -1.0**
KURK 11 52 32.5
KURK S **S 11 57 34.1 +0.8**
KURK pmax pmax
comp=Z,442nm,1.2s
KURK MLR MLR
comp=Z,3μm,20.0s
KURK Kurchatov 45.38 308 *e*P **P 11 50 52.1 -1.0**
comp=Z,442nm,1.2s
KURK PcP **PcP 11 52 32.5 +0.2**
KURK S **S 11 57 34.1 +0.8**
KURK LR LR
comp=Z,3μm,20.0s
KURK Kurchatov 45.38 308 P **P 11 50 53.2 0.0**
SNR=164
KURK Kurchatov 45.38 308 P **P 11 50 53.2 0.0**
SNR=164
KURBB Kurchatov Arra 45.45 308 P **P 11 50 53.6 -0.1**
comp=Z,150nm,0.8s,baz=84,slow=7.6,SNR=334
KURBB PcP **PcP 11 52 32.5 0.0**
comp=Z,13nm,0.8s,baz=83,slow=4.7,SNR=4.2
KURBB ScP **ScP 11 56 25.1 +0.5**
comp=Z,5.5nm,1.0s,baz=90,slow=3.4,SNR=5.2
KURBB S **S 11 57 34.1 -0.2**
comp=Z,1.7nm,1.0s,baz=85,slow=19,SNR=4.1

STKI Sintang 45.53 223 P **P 11 50 55.7 +1.0**
comp=Z,70nm,0.3s,comp=Z,25μm
SAUI Saumlaki 45.58 193 P P 11 51 02.3 +7.3
ODAN Odare 45.70 273 *e*P **P 11 50 56.7 +0.4**
comp=Z,180nm,0.8s
TT01 Tatalina 45.84 35 *e*P **P 11 50 57.8 +1.2**
TTA Tatalina 45.85 35 *e*P **P 11 50 57.9 +1.1**
TTA pmax pmax
comp=Z,23nm,1.0s
TTA Tatalina 45.85 35 *e*P **P 11 50 57.9 +1.1**
comp=Z,23nm,1.0s
SHLS Shalkode 45.91 297⇓ *i*P **P 11 50 58.0 +0.2**
comp=Z,924nm,1.1s
SHLS *e*S **S 11 57 40.4 -1.3**
SHLS LRM MLR 12 12 13.2
comp=Z,1μm,13.3s
SVW2 Sparrevohn 45.98 37 *e*P **P 11 50 58.1 +0.4**
comp=Z,83nm,1.0s
KBKI Kotabaru 46.07 215 P **P 11 51 03.2 +4.3**
comp=Z,71nm,0.9s,comp=Z,1μm
KAPI Kappang 46.09 209 LR LR 12 10 06.2
comp=Z,654nm,20.6s,baz=38,slow=36
KAPI Kappang 46.09 209 *e*P **P 11 50 59.5 +0.5**
comp=Z,292nm,1.0s
KAPI Kappang 46.09 209 P **P 11 50 59.4 +0.4**
SNR=14
PDGK Podgornoye 46.16 298 P **P 11 50 59.7 +0.4**
PDGK pmax pmax
comp=Z,376nm,1.3s
RAMN Ramite 46.29 274 *e*P **P 11 51 01.2 +0.3**
comp=Z,809nm,1.1s
JIRN Jiri 46.30 275 *e*P **P 11 51 02.0 +0.8**
GUN Gumba 46.44 275 *e*P **P 11 51 02.6 +0.3**
comp=Z,324nm,0.9s
KTGM Kuala Trenggan 46.48 236⇓⇓P **P 11 51 03.6 +1.4**
UZB Uzynbulak 46.53 298⇓⇓*i*P **P 11 51 03.0 +0.4**
comp=Z,1μm,1.5s
UZB *e*S **S 11 57 49.1 -1.3**
UZB LRM MLR 12 12 39.9
comp=Z,1μm,12.1s
PMG Port Moresby 46.59 171 LR LR 12 10 05.0
comp=Z,606nm,19.8s,baz=16,slow=35
PMG Port Moresby 46.59 171 *de*P **P 11 51 02.5 -0.4**
PMG pmax pmax
comp=Z,255nm,1.0s
PMG Port Moresby 46.59 171 *e*P **P 11 51 02.8 -0.2**
comp=Z,67nm,1.0s
BBKI Banjar Baru 46.83 216 P **P 11 51 04.6 -0.3**
comp=Z,282nm,1.1s,comp=Z,3μmcomp=Z,62μm
SURT Suratani 46.92 244 P **P 11 51 06.1 +0.4**
comp=Z,35nm,0.8s,comp=Z,484nm
KKN Kakani 46.97 275 *e*P **P 11 51 06.6 +0.3**
comp=Z,236nm,0.9s
PKIN Phulchoki 46.97 275 *e*P **P 11 51 06.3 0.0**
comp=Z,131nm,0.9s
SATY Saty 46.99 298⇓⇓*i*P **P 11 51 06.6 +0.6**
comp=Z,2μm,1.5s
SATY *e*S **S 11 57 56.1 -0.8**
TRTT Trang 47.05 242 P **P 11 51 07.1 +0.4**
comp=Z,72nm,1.1s,comp=Z,2μm
KRAB Krabi 47.14 243 P **P 11 51 10.9 +3.5**
comp=Z,209nm,0.7s,comp=Z,9μm
DMN Daman 47.19 275 *e*P **P 11 51 08.3 +0.3**
comp=Z,96nm,0.8s
OHAK Old Harbor 47.26 43 *e*P **P 11 51 08.1 +0.3**
comp=Z,60nm,1.2s
RSO Redoubt South 47.36 38 *e*P **P 11 51 09.9 +1.1**
GKN Gorkha 47.39 276 *e*P **P 11 51 09.8 +0.3**
comp=Z,1μm,1.2s
KDAK Kodiak Island 47.59 42 *e*P **P 11 51 10.8 +0.4**
KDAK pmax pmax
comp=Z,216nm,1.5s
KDAK MLR MLR
comp=Z,1μm,19.0s
KDAK Kodiak Island 47.59 42 *e*P **P 11 51 10.8 +0.4**
comp=Z,216nm,1.5s
KDAK LR LR
comp=Z,1μm,19.0s
PPLA Purkeypile 47.60 35 *e*P **P 11 51 12.4 +1.9**
comp=Z,152nm,1.3s
CAST Castle Rocks 47.65 34 *e*P **P 11 51 12.5 +1.7**
comp=Z,36nm,1.0s
SPU Mount Spurr 47.69 37 *e*P **P 11 51 12.4 +1.2**
PBKI Pangkalan Bun 47.76 221 P P 11 51 17.3 +5.2
comp=Z,139nm,1.0s,comp=Z,5μm
CHKK Chushkaly 47.77 299⇓ *i*P **P 11 51 12.7 +0.6**
comp=Z,539nm,0.9s
MDOK Medeo 47.92 298⇑⇑*i*P **P 11 51 14.4 +1.0**
comp=Z,2μm,1.4s
MDOK *e*S **S 11 58 10.1 -0.2**
MDOK LR LR 12 11 58.6
comp=Z,2μm,13.2s
HOM Homer 47.96 39 *e*P **P 11 51 14.2 +1.0**
comp=Z,103nm,0.9s
AAA Alma-Ata 47.96 298 *e*P **P 11 51 14.4 +0.8**
AAA *e*S **S 11 58 13.2 +2.5**
AAA pmax pmax
comp=Z,3μm,18.2s
AAA smax smax
comp=E,3μm,17.1s
AAA MLR MLR
comp=Z,6μm,15.0s
PKDT Phuket 47.98 244 P **P 11 51 14.5 +0.6**
comp=Z,206nm,0.9s,comp=Z,6μm
BPAW Bear Paw Mtn. 48.14 33 *e*P **P 11 51 15.9 +1.3**
comp=Z,38nm,1.0s
KTH Kantishna Hill 48.17 34 *e*P **P 11 51 16.4 +1.5**
comp=Z,81nm,1.0s
KULM Kulim 48.19 239 *e*P **P 11 51 15.6 0.0**
comp=Z,68nm,1.3s
KULM LR LR
comp=Z,825nm,20.0s
KUU Kurty 48.23 299⇓⇓*i*P **P 11 51 15.8 +0.2**
comp=Z,3μm,1.4s
KUU *e*S **S 11 58 14.1 -0.2**
KUU LR LR 12 11 59.1
comp=Z,2μm,14.6s
MLY Manley 48.25 32 *e*P **P 11 51 17.0 +1.5**
comp=Z,44nm,0.8s
KOLN Koldanda 48.32 276 *e*P **P 11 51 17.1 +0.4**
comp=Z,313nm,1.2s
BOK Bokaro 48.33 270 *e*P **P 11 51 16.5 0.0**
BRLK Bradley Lake 48.33 39 *e*P **P 11 51 17.9 +1.7**
comp=Z,36nm,0.8s
TRF Thorofare Moun 48.45 34 *e*P **P 11 51 18.1 +0.9**
comp=Z,29nm,0.8s
IPM Ipoh 48.52 238 *e*P **P 11 51 16.9 -1.2**
comp=Z,65nm,1.1s
COLD Coldfoot 48.52 29 *e*P **P 11 51 18.9 +1.5**
comp=Z,36nm,1.2s
DGPR DIGLIPUR 48.58 254 *e*P **P 11 51 18.9 +0.4**
PYUN Piuthan 48.66 277 *e*P **P 11 51 19.9 +0.6**
comp=Z,1μm,1.2s
MYKOM Kota Tinggi 48.67 233 *e*P **P 11 51 19.9 +0.6**
comp=Z,93nm,1.6s
RC01 Rabbit Creek A 48.81 37 *e*P **P 11 51 20.6 +0.9**
comp=Z,97nm,1.2s
TPRI Tanjung Pinang 48.92 231 P **P 11 51 25.1 +4.0**
comp=Z,119nm,0.3s
SOEI Soe 48.96 201 P **P 11 51 17.6 -3.9**
SOEI Soe 48.96 201 *e*P **P 11 51 21.1 -0.4**
comp=Z,721nm,1.0s
TKM2 Tokmak 2 49.01 298 *e*P **P 11 51 23.1 +1.2**
TKM2 pmax pmax
comp=Z,387nm,1.3s
TKM2 MLR MLR
comp=Z,4μm,19.0s
TKM2 Tokmak 2 49.01 298 *e*P **P 11 51 23.1 +1.2**
comp=Z,386nm,1.3s
TKM2 LR LR
comp=Z,4μm,19.0s
SEW Seward 49.03 39 *e*P **P 11 51 22.1 +0.7**
comp=Z,69nm,0.9s
MCK McKinley 49.05 34 *e*P **P 11 51 22.4 +0.8**
MCK pmax pmax
comp=Z,48nm,0.9s
MCK McKinley 49.05 34 *e*P **P 11 51 22.4 +0.8**
comp=Z,48nm,0.9s
PMR Palmer 49.07 37 *e*P **P 11 51 22.0 +0.3**
PMR pmax pmax
comp=Z,61nm,1.1s
PMR Palmer 49.07 37 *e*P **P 11 51 22.0 +0.3**
comp=Z,61nm,1.1s
RND Reindeer 49.10 34 *e*P **P 11 51 22.6 +0.5**
RND pmax pmax
comp=Z,105nm,1.2s
RND Reindeer 49.10 34 *e*P **P 11 51 22.6 +0.5**
comp=Z,105nm,1.2s
MDM Murphy Dome 49.32 32 *e*P **P 11 51 24.0 +0.4**
comp=Z,89nm,1.0s
WRH Wood River Hil 49.39 33 *e*P **P 11 51 24.9 +0.7**
comp=Z,65nm,0.9s
SML Sawmill 49.44 36 *e*P **P 11 51 25.5 +0.9**
SML pmax pmax
comp=Z,67nm,1.0s
SML Sawmill 49.44 36 *e*P **P 11 51 25.5 +0.9**
comp=Z,67nm,1.0s
COLA College 49.48 32 *e*P **P 11 51 26.1 +1.3**
COLA pmax pmax
comp=Z,63nm,1.2s
COLA MLR MLR
comp=Z,736nm,20.0s
COLA College 49.48 32 *e*P **P 11 51 26.1 +1.3**
comp=Z,63nm,1.2s
COLA LR LR
comp=Z,736nm,20.0s
CCB Clear Creek Bu 49.51 33 *e*P **P 11 51 25.7 +0.7**
comp=Z,55nm,1.3s
BATI Baumata 49.56 202 S **S 11 58 37.1 +3.7**
comp=Z,34nm,0.9s,baz=109,slow=23,SNR=5.2
BATI Baumata 49.56 202 P **P 11 51 27.8 +1.8**
comp=Z,105nm,1.0s,comp=Z,1μm
HNR Honiara 49.67 154 PFAKE 11 51 40.0 +13
HNR LR LR
comp=Z,1μm,21.0s
FRU Bishkek 49.73 298 *e*P **P 11 51 27.5 +0.4**
FRU *e*S **S 11 58 37.0 +1.6**
FRU pmax pmax
comp=Z,450nm,1.8s
FRU smax smax
comp=E,800nm,5.5s
FRU MLR MLR
comp=E,3μm,13.5s
KSH Kashi 49.76 294 P **P 11 51 31.9 +4.4**
KSH *ep*P sP 11 51 36.5 +1.9
KSH *es*P pP 11 51 38.7 +6.1
KSH *e*PcP **PcP 11 52 52.3 +4.0**
KSH *e*ScP **ScP 11 56 46.6 +3.4**
KSH S **S 11 58 40.9 +4.7**
KSH ScS **ScS 12 01 19.7 +1.1**
KSH SS **SS 12 02 09.5 +1.1**
KSH pmax pmax
comp=E,120nm,1.3s
KSH pmax pmax
comp=E,690nm,2.9s
KSH LR LR
comp=E,2μm,17.2s
DHY Denali Highway 49.79 35 *e*P **P 11 51 28.1 +0.7**
comp=E,29nm,0.8s
CHKZ Chkalovo 49.80 313 P **P 11 51 27.4 0.0**
CHKZ pmax pmax
comp=Z,226nm,1.2s
OTUK Ortayu 49.86 306 P **P 11 51 27.9 -0.1**
OTUK pmax pmax
comp=Z,196nm,1.2s
AAK Ala-Archa 49.87 298 P **P 11 51 28.9 +0.6**
comp=Z,54nm,0.8s,baz=96,slow=5.3,SNR=67
AAK LR LR 12 14 04.8
comp=Z,4μm,18.2s,baz=62,slow=38
AAK Ala-Archa 49.87 298 P **P 11 51 28.9 +0.6**
AAK pmax pmax
comp=Z,109nm,1.1s
AAK Ala-Archa 49.87 298 *e*P **P 11 51 28.9 +0.6**
comp=Z,89nm,1.0s
AAK Ala-Archa 49.87 298 P **P 11 51 29.1 +0.7**
SNR=60
AAK Ala-Archa 49.87 298 P **P 11 51 29.1 +0.7**
SNR=60
AAK P **P 11 51 29.1 +0.7**
SNR=60
HDA Harding Lake 49.89 33 *e*P **P 11 51 28.4 +0.4**
comp=Z,68nm,1.0s
IL1 Eielson Array 49.90 32 *e*P **P 11 51 27.4 -0.6**
ILAR Eielson Array 49.90 32 P **P 11 51 28.4 +0.4**
comp=Z,22nm,0.8s,baz=270,slow=5.7,SNR=155
ILAR PcP **PcP 11 52 48.2 +0.1**
comp=Z,6.2nm,0.6s,baz=274,slow=3.1,SNR=5.2
ILAR LR LR 12 14 32.9
comp=Z,885nm,18.2s,baz=290,slow=38
ILAR PKPPKP P'P'df 12 22 11.7 -17
comp=Z,0.6nm,1.0s,baz=316,slow=2.5,SNR=4.1
ILAR Eielson Array 49.90 32 P **P 11 51 28.4 +0.4**
ILAR 11 52 48.3
ILAR pmax pmax
comp=Z,22nm,0.8s
ILAR pmax pmax
comp=Z,6.0nm,0.6s
ILAR MLR MLR
comp=Z,885nm,18.2s
ILB Eielson Array 49.90 32 *e*P **P 11 51 28.4 +0.4**
SCM Sheep Creek Mo 49.91 36 *e*P **P 11 51 29.2 +1.0**
SCM pmax pmax
comp=Z,68nm,1.1s
SCM Sheep Creek Mo 49.91 36 *e*P **P 11 51 29.2 +1.0**
comp=Z,68nm,1.1s
BVA0 Borovoye Array 50.06 312 *i* P **P 11 51 29.4 0.0**
BVA0 pmax pmax
comp=Z,91nm,0.9s
BVAR Borovoye Array 50.06 312 P **P 11 51 29.7 +0.3**
comp=Z,50nm,0.7s,baz=75,slow=6.7,SNR=122
BVAR PcP **PcP 11 52 49.3 +0.3**
comp=Z,29nm,0.7s,baz=93,slow=3.0,SNR=6.5
BVAR S **S 11 58 39.8 +0.1**
comp=Z,0.7nm,0.7s,baz=219,slow=40,SNR=3.4
BVAR LR LR 12 13 13.6
comp=Z,2μm,18.5s,baz=74,slow=37
BVAR P4KPbc 12 29 03.3
comp=Z,0.6nm,0.7s,baz=77,slow=7.8,SNR=4.5
BRVK Borovoye 50.11 312 *de*P **P 11 51 30.1 +0.3**
BRVK pmax pmax
comp=Z,150nm,1.2s
BRVK Borovoye 50.11 312 *e*P **P 11 51 30.1 +0.3**
comp=Z,107nm,1.0s
BRVK LR LR
comp=Z,2μm,20.0s
BRVK Borovoye 50.11 312 P **P 11 51 30.3 +0.5**
SNR=59
BRVK Borovoye 50.11 312 P **P 11 51 30.3 +0.5**
SNR=59
BRVK P **P 11 51 30.3 +0.5**
SNR=59
WSI Waingapu 50.16 206 P **P 11 51 30.0 -0.5**
comp=Z,268nm,0.7s,comp=Z,5μm
PLAI Plampang 50.34 210 P **P 11 51 30.3 -1.6**
comp=Z,127nm,1.0s,comp=Z,2μm
EKS2 Erkin-Say 50.37 298 *e*P **P 11 51 32.7 +0.6**
EKS2 pmax pmax
comp=Z,52nm,0.9s
EKS2 MLR MLR
comp=Z,3μm,19.0s
EKS2 Erkin-Say 50.37 298 *e*P **P 11 51 32.7 +0.6**
comp=Z,52nm,0.9s
EKS2 LR LR
comp=Z,3μm,19.0s
MTN Manton Dam 50.37 192 *e*P **P 11 51 31.6 -0.4**
comp=Z,92nm,0.7s
PPBI Pangkal Pinang 50.38 227 P **P 11 51 32.9 +0.7**
comp=Z,93nm,1.4s,comp=Z,2μm
FYU Fort Yukon 50.49 30 *e*P **P 11 51 34.9 +2.5**
comp=Z,72nm,1.1s
KLU Klutina 50.61 37 *e*P **P 11 51 34.8 +1.3**
comp=Z,49nm,1.1s
TWSI Taliwang, Sumb 50.62 211 P **P 11 51 32.8 -1.2**
comp=Z,143nm,1.2s,comp=Z,2μm
PAX Paxson 50.66 35 *e*P **P 11 51 35.0 +1.0**
PAX pmax pmax
comp=Z,47nm,0.8s
PAX Paxson 50.66 35 *e*P **P 11 51 35.0 +1.0**
comp=Z,47nm,0.8s
DIV Divide 50.73 37 *e*P **P 11 51 36.1 +1.7**
comp=Z,86nm,1.2s
COEN Coen 50.76 177 *e*P **P 11 51 35.3 +0.3**
comp=Z,187nm,1.1s
EYAK Cordova Ski Ar 50.81 38 *e*P **P 11 51 36.7 +1.8**
comp=Z,54nm,1.0s
LHMI Lhok Sumawe 50.81 242 P **P 11 51 37.5 +1.9**
comp=Z,155nm,0.9s,comp=Z,2μm
LHMI Lhok Sumawe 50.81 242 *e*P **P 11 51 36.9 +1.3**
comp=Z,108nm,0.9s
ZRNK Zerenda 50.89 312 P **P 11 51 36.1 +0.4**
ZRNK pmax pmax
comp=Z,253nm,1.2s
ZRNK Zerenda 50.89 312 *e*P **P 11 51 36.1 +0.4**
comp=Z,380nm,1.4s

TSI **Tuntungan** **50.91 239** P **P** **11 51 39.7 +3.4**
comp=Z,130nm,0.9s
ABJI **Asem Bagus** **50.92 214** P **P** **11 51 37.5 +1.2**
comp=Z,196nm,1.1s,comp=Z,3μm
PSI **Prapat** **51.17 238** *eP* **P** **11 51 37.8 -0.6**
PSI pmax pmax
comp=Z,61nm,0.9s
PSI **Prapat** **51.17 238** *eP* **P** **11 51 37.8 -0.6**
comp=Z,61nm,0.9s
DOT **Dot Lake** **51.22 34** *eP* **P** **11 51 38.5 +0.4**
comp=Z,57nm,0.8s
DNP **Denpasar** **51.27 213** P **P** **11 51 42.8 +3.9**
comp=Z,509nm,0.3s,comp=Z,25μm
BMRM **Bremner River** **51.31 37** *eP* **P** **11 51 40.2 +1.4**
comp=Z,131nm,1.3s
MNAS **Manas** **51.32 299** P **P** **11 51 40.0 +0.8**
MNAS pmax pmax
comp=Z,135nm,1.1s
RAGM **Ragged Mountai** **51.36 38** *eP* **P** **11 51 41.2 +2.0**
comp=Z,86nm,1.3s
SFK **Sufi-Kurgan** **51.40 295** P **P** **11 51 40.7 +0.7**
SFK pmax pmax
comp=Z,256nm,1.3s
KCSI **Kotacane, Aceh** **51.44 240** P **P** **11 51 38.7 -1.6**
comp=Z,49nm,1.0s,comp=Z,747nm
MENT **Mentasta** **51.46 35** *eP* **P** **11 51 41.6 +1.7**
comp=Z,116nm,1.4s
JAGI **Jajag, Banyuwa** **51.55 214** P **P** **11 51 41.4 +0.4**
comp=Z,174nm,1.1s,comp=Z,2μm
JAGI **Jajag, Banyuwa** **51.55 214** *eP* **P** **11 51 40.0 -1.0**
comp=Z,151nm,1.1s
BKNI **Bangkinang** **51.59 234** P **P** **11 51 42.1 +0.7**
comp=Z,286nm,1.0s,comp=Z,3μm
BKNI **Bangkinang** **51.59 234** *eP* **P** **11 51 42.1 +0.7**
comp=Z,210nm,0.9s
DDI **Dehra Dun** **51.60 282** *eP* **P** **11 51 41.3 -0.1**
GMJI **Gumukmas** **51.70 215** P **P** **11 51 41.0 -1.1**
comp=Z,120nm,1.2s
CMBY **CAMPBELL BAY** **51.78 247** *eP* **P** **11 51 39.8 -3.0**
NGJI **Ngawi** **51.85 218** P **P** **11 51 46.6 +3.3**
comp=Z,144nm,1.4s
SDNR **Sundarnagar** **51.96 284** *eP* **P** **11 51 45.0 +0.9**
SMLA **Simla** **51.96 283** *i P* **P** **11 51 44.3 +0.3**
TPTI **52.04 240** P **P** **11 51 46.4 +1.7**
comp=Z,48nm,1.3s
SMRI **Semarang** **52.09 219** P P 11 51 50.5 +5.4
comp=Z,230nm,1.4s
SMRI **Semarang** **52.09 219** *eP* **P** **11 51 49.5 +4.4**
comp=Z,288nm,1.2s
DHRM **DHARAMSHALA** **52.17 285** *eP* **P** **11 51 44.8 -1.0**
MNSI **Mandailing Nat** **52.20 236** P **P** **11 51 45.8 -0.1**
comp=Z,62nm,0.8s
PWJI **Pagerwojo** **52.26 217** P **P** **11 51 44.9 -1.3**
comp=Z,257nm,1.0s,comp=Z,2μm
SDSI **Sungai Dareh** **52.30 233** P **P** **11 51 46.9 +0.2**
comp=Z,358nm,1.2s,comp=Z,41μm
EGAK **Eagle** **52.34 32** *eP* **P** **11 51 47.0 +0.6**
comp=Z,50nm,1.3s
EGAK LR LR
comp=Z,688nm,20.0s
CHLP **Challavanipeta** **52.50 266** *eP* **P** **11 51 48.8 +0.6**
CHLP lAmb lAmb 11 51 52.8
comp=Z,64nm,0.9s
KK31 **Karatay Array** **52.52 300** *i P* **P** **11 51 48.3 +0.3**
KK31 pmax pmax
comp=Z,257nm,1.4s
KKAR **Karatay Array** **52.52 300** *eP* **P** **11 51 48.5 +0.5**
KKAR **Karatay Array** **52.52 300** *eP* **P** **11 51 48.5 +0.5**
WOJI **Wonogiri, Jawa** **52.52 218** P P 11 51 54.1 +5.8
KKR **Kurukshetra** **52.73 282** *eP* **P** **11 51 50.0 +0.3**
UGM **Wanagama** **52.79 218** P **P** **11 51 50.2 -0.1**
comp=Z,475nm,1.1s,comp=Z,5μm
UGM **Wanagama** **52.79 218** *eP* **P** **11 51 49.7 -0.6**
comp=Z,669nm,1.2s
PDSI **Padang** **52.91 234** P **P** **11 51 55.1 +3.9**
comp=Z,31nm,0.9s
NDI **New Delhi** **52.97 281** *eP* **P** **11 51 49.0 -2.6**
KPJI **Karang Pucung** **53.10 221** P **P** **11 51 51.8 -0.7**
comp=Z,161nm,1.1s,comp=Z,3μm
AYAN **Aya Nagar** **53.13 280** *eP* **P** **11 51 52.5 -0.2**
AYAN lAmb lAmb 11 51 56.7
comp=Z,145nm,0.9s
IUG **Iuzhnay** **53.16 299** *i P* **P** **11 51 53.9 +1.0**
comp=Z,3μm,1.3s
IUG *eS* **S** **11 59 22.9 -0.1**
IUG LR LR 12 15 09.3
comp=Z,1μm,14.2s
GSI **Gunungsitoli** **53.18 238** P **P** **11 51 52.9 -0.3**
comp=Z,352nm,1.0s,comp=Z,3μm
GSI **Gunungsitoli** **53.18 238** *eP* **P** **11 51 52.8 -0.4**
comp=Z,268nm,0.8s
BHGR **Bahadurgarh** **53.19 281** *eP* **P** **11 51 53.1 0.0**
LHSI **Lahat** **53.26 229** P **P** **11 51 54.0 +0.3**
comp=Z,283nm,1.0s,comp=Z,3μm
SONA **Sohna** **53.27 280** *eP* **P** **11 51 54.0 +0.3**
SONA lAmb lAmb 11 51 54.5
comp=Z,10nm,0.8s
KLI **Kotabumi** **53.30 226** P **P** **11 51 53.7 -0.3**
comp=Z,343nm,1.0s,comp=Z,5μm
LEM **Lembang** **53.37 222** LR LR 12 15 45.6
comp=Z,589nm,19.6s,baz=20,slow=37
LEM **Lembang** **53.37 222** P P 11 52 00.1 +5.4
comp=Z,3μm,1.0s,comp=Z,29μm
MDSI **Maura Dua** **53.40 227** P **P** **11 51 54.1 -0.6**
comp=Z,152nm,1.0s,comp=Z,2μm
CBJI **Citeko** **53.45 223** P **P** **11 51 59.4 +4.3**
comp=Z,252nm,0.8s
BLSI **Bandar Lampung** **53.49 226** P **P** **11 51 58.6 +3.2**
comp=Z,227nm,1.0s
MASI **Maura Aman, Be** **53.50 230** P **P** **11 51 55.9 +0.3**
comp=Z,432nm,1.1s,comp=Z,7μm
VIS **Vishakhapatnam** **53.51 265** *eP* **P** **11 51 56.1 +0.6**
DBJI **Dramaga** **53.62 223** P **P** **11 51 59.9 +3.5**
comp=Z,78nm,1.6s
PBSI **Pulau Batu** **53.70 237** P **P** **11 52 00.0 +3.0**
comp=Z,178nm,1.0s
KUDL **Kundal** **53.79 280** *eP* **P** **11 51 56.9 -0.6**
KUDL lAmb lAmb 11 52 01.5
comp=Z,68nm,0.7s
CISI **Cisompet, Garu** **53.88 222** *eP* **P** **11 51 56.9 -1.4**
comp=Z,75nm,0.9s
LWLI **Liwa** **53.89 227** P P 11 52 03.9 +5.4
comp=Z,132nm,0.8s
CNJI **Cibinong** **54.04 222** P **P** **11 52 03.5 +4.1**
comp=Z,95nm,1.2s
KASI **Kota Agung** **54.05 226** P P 11 52 04.3 +4.8
comp=Z,90nm,1.0s
CGJI **Cibinong** **54.25 224** P **P** **11 52 02.5 +1.5**
comp=Z,49nm,1.1s
KHET **Khetri** **54.36 281** *eP* **P** **11 52 01.5 -0.2**
KHET lAmb lAmb 11 52 05.4
comp=Z,133nm,1.0s
SVE **Sverdlovsk** **54.69 318** *c i P* **P** **11 52 04.3 +0.6**
SVE pmax pmax
comp=Z,232nm,1.1s
SVE MLR MLR
comp=Z,3μm,15.0s
INK **Inuvik** **54.73 27** P **P** **11 52 04.6 +0.8**
comp=Z,67nm,1.1s,baz=300,slow=6.0,SNR=4.1
INK **Inuvik** **54.73 27** *eP* **P** **11 52 04.9 +1.1**
comp=Z,44nm,0.9s
KIP **Kipapa** **54.98 88** *eP* **P** **11 52 07.0 +0.7**
KIP pmax pmax
comp=Z,525nm,1.2s
PVM **Polavaram** **55.12 266** *eP* **P** **11 52 07.7 +0.3**
PVM lAmb lAmb 11 52 11.2
comp=Z,69nm,1.0s
PVM *eS* **S** **11 59 51.2 +1.4**
BHPL **Bhopal** **55.36 275** *eP* **P** **11 52 08.3 -0.8**
BHPL lAmb lAmb 11 52 11.4
comp=Z,68nm,1.1s
ARU **Arti** **55.90 318** P **P** **11 52 12.6 +0.2**
comp=Z,110nm,0.9s,baz=82,slow=4.1,SNR=97
ARU S **S** **11 59 59.2 0.0**
comp=Z,2.2nm,0.3s,baz=100,slow=21,SNR=2.4
ARU LR LR 12 16 21.2
comp=Z,1μm,18.7s,baz=72,slow=36
ARU **Arti** **55.90 318** *d i P* **P** **11 52 12.5 +0.1**
ARU 11 53 09.3
ARU 11 54 13.4
ARU PPP PPP 11 55 34.7
ARU S **S** **12 00 00.1 +0.9**
ARU pmax pmax
comp=Z,302nm,1.2s
ARU MLR MLR
comp=Z,2μm,16.0s
ARU **Arti** **55.90 318** *eP* **P** **11 52 12.7 +0.2**
comp=Z,212nm,1.0s
ARU S **S** **11 59 59.2 0.0**
SOKR **Solikamsk** **55.91 322** *eP* **P** **11 52 11.7 -0.7**
SOKR pmax pmax
comp=Z,105nm,1.0s
SOKR MLR MLR
comp=Z,2μm,19.0s
RPR **Rampur** **56.12 269** *eP* **P** **11 52 14.6 +0.1**
RPR lAmb lAmb 11 52 18.1
comp=Z,76nm,0.8s
RPR *eS* **S** **12 00 03.7 +0.6**
SKAG **Skagway** **56.15 38** *eP* **P** **11 52 16.2 +2.1**
comp=Z,47nm,1.0s
FITZ **Fitzroy Crossi** **56.59 197** S **S** **12 00 08.0 -0.9**
comp=Z,2.4nm,1.0s,baz=207,slow=19,SNR=1.4
FITZ **Fitzroy Crossi** **56.59 197** *eP* **P** **11 52 17.9 +0.2**
comp=Z,120nm,1.3s
FITZ S **S** **12 00 08.0 -0.9**
KBL **Kabul** **56.75 291** *eP* **P** **11 52 19.1 -0.1**
KBL pmax pmax
comp=Z,100nm,0.8s
KBL **Kabul** **56.75 291** *eP* **P** **11 52 19.1 -0.1**
comp=Z,100nm,0.8s
SRSP **Sriramsagar** **56.84 270** *eP* **P** **11 52 18.8 -0.9**
SRSP lAmb lAmb 11 52 23.6
comp=Z,240nm,1.1s
SRSP *eS* **S** **12 00 12.7 0.0**
WRAB **Tennant Creek** **56.94 187** *eP* **P** **11 52 19.5 -0.6**
WRAB pmax pmax
comp=Z,175nm,0.9s
WRAB MLR MLR
comp=Z,1μm,22.0s
WRAB **Tennant Creek** **56.94 187** *eP* **P** **11 52 19.5 -0.6**
comp=Z,175nm,0.9s
WRAB LR LR
comp=Z,1μm,22.0s
WB2 **Warramunga Arr** **56.94 187** *eP* **P** **11 52 19.6 -0.6**
comp=Z,169nm,0.8s
WRA **Warramunga Arr** **56.95 187** P **P** **11 52 19.1 -1.1**
comp=Z,153nm,0.8s,baz=5.3,slow=7.4,SNR=306
WRA S **S** **12 00 10.7 -3.0**
comp=Z,3.9nm,1.0s,baz=8.7,slow=14,SNR=8.5
WRA LR LR 12 15 37.1
comp=Z,763nm,21.5s,baz=5.0,slow=35
WRA PKPPKP **P'P'df** **12 22 08.8 +4.8**
comp=Z,1.5nm,1.0s,baz=158,slow=2.6,SNR=3.8
WRA PKP2bc 12 22 22.6
comp=Z,2.7nm,0.9s,baz=197,slow=1.9,SNR=6.3
CTA **Charters Tower** **57.05 174** LR LR 12 16 21.9
comp=Z,356nm,21.9s,baz=350,slow=36
CTAO **Charters Tower** **57.05 174** *eP* **P** **11 52 19.4 -1.5**
CTAO pmax pmax
comp=Z,60nm,1.1s
CTAO MLR MLR
comp=Z,824nm,22.0s
CTAO **Charters Tower** **57.05 174** *eP* **P** **11 52 19.4 -1.5**
comp=Z,60nm,1.1s
CTAO LR LR
comp=Z,824nm,22.0s
NJS **Nagarjunasagar** **57.36 267** *eP* **P** **11 52 22.7 -0.6**
NJS lAmb lAmb 11 52 27.2
comp=Z,56nm,1.0s
NJS *eS* **S** **12 00 19.9 +0.4**
AB31 **Akbulak array** **57.41 310** *i P* **P** **11 52 23.3 +0.1**
AB31 pmax pmax
comp=Z,288nm,1.3s
ABKAR **Akbulak array** **57.41 310** *eP* **P** **11 52 23.4 +0.2**
HYB **Hyderabad** **57.49 268** *ǁ iP* **P** **11 52 24.0 -0.3**
HYB *ePcP* **PcP** **11 53 18.0 +0.1**
HYB **Hyderabad** **57.49 268** *eP* **P** **11 52 24.2 -0.1**
HYB lAmb lAmb 11 52 25.2
comp=Z,64nm,0.6s
HYBB **Hyderabad (bro** **57.49 268** *eP* **P** **11 52 24.1 -0.2**
HYBB lAmb lAmb 11 52 28.0
comp=Z,86nm,0.9s
HYBB *eS* **S** **12 00 20.9 -0.4**
MLOA **Mauna Loa Obse** **57.91 89** *eP* **P** **11 52 30.0 +2.3**
SRLM **Srisailam** **57.94 266** *eP* **P** **11 52 26.7 -0.8**
SRLM lAmb lAmb 11 52 31.1
comp=Z,49nm,1.0s
SRLM *eS* **S** **12 00 27.4 +0.2**
FUNA **Funafuti** **58.01 133** PFAKE 11 52 40.0 +12
FUNA LR LR
comp=Z,7μm,21.0s
AKTO **Aktyubinsk** **58.16 312** P **P** **11 52 28.3 -0.2**
comp=Z,9.3nm,0.4s,baz=79,slow=6.8,SNR=38
AKTO S **S** **12 00 28.4 -0.7**
comp=Z,1.3nm,0.8s,baz=85,slow=21,SNR=2.0
AKTO LR LR 12 18 11.4
comp=Z,2μm,19.0s,baz=65,slow=37
RCLA **Racherla** **58.24 266** *eP* **P** **11 52 29.1 -0.5**
RCLA lAmb lAmb 11 52 33.5
comp=Z,56nm,0.9s
RCLA *eS* **S** **12 00 30.8 -0.3**
MDRS **Chennai** **58.57 263** *eP* **P** **11 52 32.5 +0.7**
SKHT **Srikalahasti** **58.61 264** *eP* **P** **11 52 31.9 -0.3**
SKHT lAmb lAmb 11 52 36.7
comp=Z,78nm,0.8s
SKHT *eS* **S** **12 00 37.7 +1.8**
WRAK **Wrangell Islan** **58.63 41** *eP* **P** **11 52 33.7 +2.0**
comp=Z,41nm,1.1s
KLRI **Killari** **58.70 270** *eP* **P** **11 52 32.2 -0.6**
KLRI lAmb lAmb 11 52 33.0
comp=Z,111nm,0.6s
KLRI *eS* **S** **12 00 36.0 -1.1**
JASL **Jaisalmer** **58.74 282** *eP* **P** **11 52 33.5 +0.5**
DLBC **Dease Lake** **59.08 38** *eP* **P** **11 52 37.1 +2.1**
comp=Z,44nm,1.0s
URV **Uravakonda** **59.88 266** *eP* **P** **11 52 40.4 -0.6**
URV lAmb lAmb 11 52 44.2
comp=Z,50nm,1.0s
HOPEN **Hopen** **59.89 346** *eP* **P** **11 52 41.4 +1.3**
SPA0 **Spitsbergen Ar** **60.41 349** *eP* **P** **11 52 44.5 +0.9**
SPA0 **Spitsbergen Ar** **60.41 349** *eP* **P** **11 52 45.4 +1.7**
SPITS **Spitsbergen Ar** **60.41 349** P **P** **11 52 44.1 +0.5**
comp=Z,8.9nm,0.4s,baz=78,slow=7.8,SNR=30
KBS **Kingsbay** **60.55 350** *eP* **P** **11 52 47.2 +2.6**
KBS **Kingsbay** **60.55 350** PFAKE 11 53 00.0 +15
KBS LR LR
comp=Z,899nm,20.0s
POO **Poona** **60.65 272** *eP* **P** **11 52 46.4 +0.2**
AS01 **Alice Springs** **60.67 187** *eP* **P** **11 52 44.6 -1.4**
AS31 **Alice Springs** **60.67 187** *eP* **P** **11 52 45.7 -0.4**
comp=Z,21nm,0.9s
ASAR **Alice Springs** **60.67 187** P **P** **11 52 45.8 -0.4**
comp=Z,65nm,0.8s,baz=21,slow=6.2,SNR=660
ASAR S **S** **12 01 00.4 -1.7**
comp=Z,2.6nm,1.1s,baz=5.6,slow=11,SNR=6.1
ASAR LR LR 12 18 02.2
comp=Z,683nm,20.7s,baz=6.0,slow=35
ASAR PKPPKP **P'P'df** **12 21 57.5 -0.8**
comp=Z,1.6nm,1.0s,baz=153,slow=4.1,SNR=6.2
MBWA **Marble Bar** **61.09 202** *eP* **P** **11 52 48.7 -0.2**
comp=Z,93nm,0.8s
MBWA **Marble Bar** **61.09 202** P **P** **11 52 48.9 0.0**
SNR=12
BHJ **Bhuj** **61.53 279** *eP* **P** **11 52 52.0 -0.2**
LVZ **Lovozero** **61.84 336** *c eP* **P** **11 52 54.7 +1.2**
LVZ pmax pmax
comp=Z,105nm,1.2s
LVZ **Lovozero** **61.84 336** *eP* **P** **11 52 54.3 +0.7**
comp=Z,199nm,1.6s
LVZ LR LR
comp=Z,2μm,19.0s
GOA **Goa** **62.33 269** *eP* **P** **11 52 57.4 -0.1**
TMCR **Tamitsa** **62.42 331** *eP* **P** **11 52 57.4 0.0**
TMCR pmax pmax
comp=Z,197nm,1.2s
RES **Resolute Bay** **62.80 14** *eP* **P** **11 52 59.9 +0.1**
RES pmax pmax
comp=Z,116nm,1.4s
RES **Resolute Bay** **62.80 14** *eP* **P** **11 52 59.9 +0.1**
comp=Z,116nm,1.4s
EIDS **Eidsvold** **62.84 169** *eP* **P** **11 53 01.0 +0.4**
comp=Z,45nm,0.8s
KEV **Kevo** **63.21 339** *eP* **P** **11 53 03.4 +0.8**
KEV pmax pmax
comp=Z,173nm,1.4s
KEV MLR MLR
comp=Z,1μm,19.0s
KEV **Kevo** **63.21 339** *eP* **P** **11 53 03.4 +0.8**
comp=Z,173nm,1.4s
KEV LR LR
comp=Z,1μm,19.0s
GEYT **Alibeck** **63.22 299** P **P** **11 53 04.0 +0.7**
comp=Z,86nm,0.9s,baz=37,slow=3.7,SNR=62
GEYT PKPPKP P'P'df 12 21 55.7 -11
comp=Z,2.4nm,0.3s,baz=232,slow=6.6,SNR=5.7
GEYT LR LR 12 22 17.5
comp=Z,776nm,20.8s,baz=50,slow=38
KLMR **Klimovskoe** **63.39 327** *eP* **P** **11 53 02.8 -1.1**
KLMR *e* 11 55 21.4
KLMR *eSS* SS 12 05 37.5 -4.1
KLMR pmax pmax
KLMR comp=Z,68nm,0.7s MLR MLR
comp=Z,2μm,15.0s
HAMF **Hammerfest** **63.60 341** *eP* **P** **11 53 05.8 +0.6**
HAMF lAmb lAmb 11 53 08.7
comp=Z,254nm,1.6s
DZM **Mont Dzumac** **63.65 153** LR LR 12 18 21.7
comp=Z,863nm,20.6s,baz=338,slow=34
ARA0 **ARCESS Array S** **63.76 339** *eP* **P** **11 53 06.7 +0.4**
ARCES **ARCESS Array B** **63.77 339** P **P** **11 53 06.7 +0.4**
comp=Z,23nm,0.6s,baz=56,slow=7.1,SNR=40
ARCES LR LR 12 25 24.7
comp=Z,1μm,18.4s,baz=43,slow=40
ARE0 **ARCESS Array S** **63.77 339** *eP* **P** **11 53 07.0 +0.6**
ARE0 lAmb lAmb 11 53 10.3
comp=Z,42nm,0.9s
ARE0 **ARCESS Array S** **63.77 339** *eP* **P** **11 53 06.7 +0.4**
comp=Z,67nm,1.1s
TRD **Trivandrum** **63.85 261** *eP* **P** **11 53 07.9 +0.2**
YKW3 **Yellowknife Ar** **64.15 30** *eP* **P** **11 53 09.2 +0.3**
comp=Z,79nm,1.5s
YKA **Yellowknife Ar** **64.19 30** P **P** **11 53 09.4 +0.2**
comp=Z,13nm,0.6s,baz=302,slow=6.5,SNR=221
YKA PKPPKP **P'P'df** **12 21 59.4 -7.3**
comp=Z,5.7nm,1.2s,baz=113,slow=2.4,SNR=7.8
YKA PKP2ab 12 22 10.4
comp=Z,1.3nm,0.9s,baz=124,slow=2.3,SNR=5.2
YKB5 **Yellowknife Ar** **64.19 30** *eP* **P** **11 53 08.5 -0.7**
KTK1 **Kautokeino** **64.73 339** *eP* **P** **11 53 13.4 +0.8**
KTK1 lAmb lAmb 11 53 16.6
comp=Z,96nm,1.1s
MSVF **Nonsavu** **64.94 140** *eP* **P** **11 53 16.8 +2.1**
MSVF pmax pmax
comp=Z,136nm,1.2s
MSVF **Nonsavu** **64.94 140** *eP* **P** **11 53 16.8 +2.1**
comp=Z,136nm,1.2s
DAG **Danmarks Havn** **65.73 355** *ǁ iP* **P** **11 53 19.2 +0.2**
DAG **Danmarks Havn** **65.73 355** *ǁ iP* **P** **11 53 19.2 +0.2**
MOS **Moscow** **66.84 323** *eP* **P** **11 53 25.8 -0.6**
MOS *e* 11 55 49.2
MOS *i S* **S** **12 02 16.4 -1.7**
MOS pmax pmax
comp=Z,266nm,1.5s
MOS pmax pmax
comp=Z,600nm,1.9s
MOS MLR MLR
comp=Z,2μm,16.0s
VRH **Novokhopyorsk** **67.11 318** *eP* **P** **11 53 27.8 -0.4**
VRH pmax pmax
comp=Z,70nm,0.7s
VRH MLR MLR
comp=Z,2μm,14.0s
NLWA **Neilton Lookou** **67.26 47** *eP* **P** **11 53 31.8 +2.5**
comp=Z,65nm,0.9s
A04D **Lummi Island** **67.26 45** P **P** **11 53 31.0 +1.8**
baz=301
STEI **Steigen** **67.65 341** *eP* **P** **11 53 32.5 +1.1**
OBN **Obninsk** **67.68 323** P **P** **11 53 31.9 +0.2**
comp=Z,52nm,0.6s,baz=50,slow=9.3,SNR=24
OBN **Obninsk** **67.68 323** *d iP* **P** **11 53 31.3 -0.5**
OBN *e* 11 56 00.4
OBN *eS* S 12 02 16.9 -11
OBN pmax pmax
comp=Z,104nm,1.5s
OBN MLR MLR
comp=Z,2μm,13.0s
OBN **Obninsk** **67.68 323** *eP* **P** **11 53 32.1 +0.4**
comp=Z,316nm,1.5s
OBN LR LR
comp=Z,1μm,20.0s
B05A **Bryant** **67.84 46** P **P** **11 53 34.2 +1.3**
baz=301,SNR=6.8
LPSR **Galich'ya Gora** **67.86 320** *eP* **P** **11 53 32.8 -0.1**
LPSR pmax pmax
comp=Z,60nm,0.7s
LPSR MLR MLR
comp=Z,3μm,15.0s
E03A **Lebam** **67.87 48** *eP* **P** **11 53 35.3 +2.2**
comp=Z,97nm,1.0s
ARMA **Armidale** **67.88 170** *eP* **P** **11 53 34.1 +0.7**
comp=Z,97nm,1.1s
JCW **Jim Creek** **67.97 46** P **P** **11 53 35.2 +1.4**
B06A **Marblemount** **68.06 45** *eP* **P** **11 53 35.7 +1.4**
comp=Z,40nm,1.0s
KULLO **Kullorsuaq** **68.06 5** *ǁ iP* **P** **11 53 33.9 0.0**
comp=Z,125nm,1.2s
KULLO **Kullorsuaq** **68.06 5** *ǁ iP* **P** **11 53 33.9 0.0**
KULLO pmax pmax
comp=Z,120nm,1.2s
F04D **Rainier, OR** **68.43 48** P **P** **11 53 38.1 +1.4**
baz=301
D05A **Enumclaw** **68.46 47** *eP* **P** **11 53 39.2 +2.4**
comp=Z,54nm,1.0s
VSR **Storozhevoye** **68.47 318** *eP* **P** **11 53 36.5 -0.3**
VSR pmax pmax
comp=Z,60nm,0.6s
VSR MLR MLR
comp=Z,2μm,13.0s
FIA1 **FINESS Array S** **68.50 332** *eP* **P** **11 53 36.8 0.0**
FINES **FINESS Array B** **68.50 332** P **P** **11 53 36.8 0.0**
comp=Z,85nm,0.8s,baz=59,slow=7.4,SNR=163
FINES PP **PP** **11 56 07.5 +0.1**
comp=Z,17nm,0.9s,baz=52,slow=12,SNR=6.0
FINES LR LR 12 26 33.6
comp=Z,1μm,18.5s,baz=46,slow=38
STKA **Stephens Creek** **68.54 179** P **P** **11 53 37.0 -0.3**
comp=Z,51nm,0.9s,baz=346,slow=7.0,SNR=58
STKA PKP2ab 12 21 54.0
comp=Z,2.5nm,0.9s,baz=188,slow=8.1,SNR=2.8
STKA LR LR 12 24 10.8
comp=Z,645nm,21.2s,baz=5.7,slow=36
STKA **Stephens Creek** **68.54 179** P **P** **11 53 37.0 -0.3**
STKA pmax pmax
comp=Z,51nm,0.9s
STKA **Stephens Creek** **68.54 179** *eP* **P** **11 53 37.4 +0.1**
comp=Z,11nm,0.9s
C06D **Leavenworth** **68.71 46** P **P** **11 53 39.5 +1.1**
baz=302
G03D **McMinnville, O** **68.73 49** P **P** **11 53 40.0 +1.4**
baz=302
TDL **Tradedollar La** **68.77 47** P **P** **11 53 40.6 +1.7**
LON **Longmire** **68.79 47** *eP* **P** **11 53 40.5 +1.5**
LON pmax pmax
comp=Z,20nm,1.1s
LON **Longmire** **68.79 47** *eP* **P** **11 53 40.5 +1.5**
comp=Z,20nm,1.1s
F04A **Amboy** **68.86 48** *eP* **P** **11 53 40.9 +1.5**
comp=Z,89nm,0.9s
COR **Corvallis** **69.04 50** *eP* **P** **11 53 43.1 +2.7**
COR pmax pmax
comp=Z,154nm,1.1s
COR **Corvallis** **69.04 50** *eP* **P** **11 53 43.1 +2.7**
comp=Z,154nm,1.1s
MOR8 **Moi Rana** **69.13 339** *eP* **P** **11 53 39.6 -1.1**
MOR8 lAmb lAmb 11 53 43.2
comp=Z,162nm,1.1s
LTY **Liberty** **69.19 46** *eP* **P** **11 53 42.3 +0.9**
comp=Z,23nm,0.8s
ETW **Entiat** **69.20 46** P **P** **11 53 42.7 +1.1**
B08A **Colville Reser** **69.36 45** *eP* **P** **11 53 43.5 +1.0**
comp=Z,30nm,1.0s
NAC **Naches** **69.38 47** P **P** **11 53 44.1 +1.5**
I03D **Drain, OR** **69.48 50** P **P** **11 53 45.0 +1.8**
baz=302,SNR=7.7
GOF **Gofitskoye** **69.57 311** *⇑ eP* **P** **11 53 44.1 +0.3**
GOF pmax pmax
comp=Z,193nm,1.1s
TDH **Tom, Dick, Har** **69.58 48** P **P** **11 53 45.4 +1.3**
BBOO **Buckleboo** **69.59 184** *eP* **P** **11 53 43.8 0.0**
comp=Z,76nm,0.9s
H04A **Detroit Lake** **69.66 49** *eP* **P** **11 53 45.9 +1.4**
comp=Z,75nm,0.9s
VFP **Flag Point** **69.76 48** P **P** **11 53 46.5 +1.4**
G05D **Wamic, OR** **69.89 48** P **P** **11 53 47.2 +1.5**
baz=303,SNR=6.7
I04A **Tendick Farm,** **70.00 50** P **P** **11 53 47.8 +1.3**
baz=302,SNR=13
DGRG **David-gareji** **70.04 307** P **P** **11 53 46.8 -0.1**

DGRG **David-gareji** 70.04 307 *e*P P 11 53 46.7 -0.1
NCK **Nalchik** 70.07 310 *d* iP P 11 53 46.3 -0.6
NCK pmax pmax
comp=Z,47nm,0.4s
GUDG **Gudauri** 70.07 308 P P 11 53 48.0 +0.9
VSU **Vasula** 70.11 329 *ce*P P 11 53 46.9 +0.1
VSU pmax pmax
comp=Z,483nm,1.2s
DUS **Dusheti** 70.13 308 P P 11 53 48.0 +0.6
DUS **Dusheti** 70.13 308 *e*P P 11 53 47.9 +0.6
L02D **Cave Junction,** 70.13 52 P P 11 53 48.6 +1.3
baz=302
WBK **Wadi Bani Khal** 70.25 284 P P 11 53 48.2 -0.2
SNR=5.9
WBK **Wadi Bani Khal** 70.25 284 P P 11 53 48.2 -0.2
SNR=5.9
C09A **Chrisman Ranch** 70.26 45 *e*P P 11 53 49.0 +1.0
comp=Z,52nm,1.0s
ZEI **Tsey** 70.26 309 *e*P P 11 53 47.5 -0.8
ZEI pmax pmax
comp=Z,70nm,0.9s
G06A **Carlson Farm,** 70.30 48 *e*P P 11 53 49.7 +1.4
comp=Z,40nm,0.9s
TBLG **Delisi** 70.30 308 P P 11 53 50.1 +1.7
TBLG **Delisi** 70.30 308 *e*P P 11 53 50.0 +1.7
HUMO **Hull Mountain** 70.30 51 *e*P P 11 53 49.8 +1.5
comp=Z,191nm,1.3s
D08A **Wollman Farm,** 70.30 46 *e*P P 11 53 48.5 +0.3
comp=Z,27nm,0.8s
HAWA **Hanford** 70.31 46 *e*P P 11 53 49.6 +1.3
comp=Z,33nm,1.0s
I05D **Terrebonne, OR** 70.36 49 P P 11 53 50.1 +1.4
baz=303,SNR=7.3
VTHM **Trough** 70.37 48 P P 11 53 50.3 +1.6
KBZ **Khabaz** 70.37 310 P P 11 53 49.0 +0.3
comp=Z,94nm,1.1s,baz=40,slow=3.4,SNR=62
KBZ LR LR 12 26 51.2
comp=Z,1μm,19.2s,baz=52,slow=38
KBZ **Khabaz** 70.37 310 P P 11 53 49.0 +0.3
KBZ pmax pmax
comp=Z,94nm,1.1s
KBZ MLR MLR
comp=Z,1μm,19.2s
KIV **Kislovodsk** 70.38 311 *i* P P 11 53 49.5 +0.7
SNR=29
KIV **Kislovodsk** 70.38 311 *e*P P 11 53 49.4 +0.5
KIV *e*S S 12 02 59.7 -1.1
KIV pmax pmax
comp=Z,244nm,1.1s
KIV pmax pmax
comp=Z,111nm,3.5s
KIV MLR MLR
comp=Z,881nm,17.0s
KIV **Kislovodsk** 70.38 311 *e*P P 11 53 49.6 +0.7
comp=Z,297nm,1.2s
KIV LR LR
comp=Z,1μm,19.0s
KIV **Kislovodsk** 70.38 311 P P 11 53 49.5 +0.7
SNR=45
KIV **Kislovodsk** 70.38 311 P P 11 53 49.5 +0.7
SNR=45
BIDO **Bidbid** 70.42 285 P P 11 53 50.3 +1.0
SNR=9.0
BIDO **Bidbid** 70.42 285 P P 11 53 50.3 +1.0
SNR=9.0
BIDO P P 11 53 50.3 +1.0
SNR=9.0
BANOM **Banah** 70.54 288 *i* P P 11 53 50.8 +0.8
SNR=10
NEW **Newport** 70.64 44 P P 11 53 51.2 +0.8
baz=304,SNR=25
NEW **Newport** 70.64 44 *e*P P 11 53 51.3 +1.0
NEW pmax pmax
comp=Z,37nm,0.9s
NEW MLR MLR
comp=Z,324nm,20.0s
NEW **Newport** 70.64 44 *e*P P 11 53 51.3 +1.0
comp=Z,37nm,0.9s
NEW LR LR
comp=Z,324nm,20.0s
ONI **Oni** 70.64 309 P P 11 53 51.2 +0.7
ONI **Oni** 70.64 309 *e*P P 11 53 51.2 +0.7
SUMG **Summit** 70.71 360 ⇓ *i*P P 11 53 51.9 +1.2
comp=Z,80nm,0.9s
SUMG **Summit** 70.71 360 *e*P P 11 53 51.7 +1.0
SUMG pmax pmax
comp=Z,203nm,1.3s
SUMG **Summit** 70.71 360 *e*P P 11 53 51.7 +1.0
comp=Z,203nm,1.3s
SMDO **Samad** 70.73 285 P P 11 53 52.4 +1.0
SNR=10
SMDO **Samad** 70.73 285 P P 11 53 52.4 +1.0
SNR=10
KHMM **Horse Mountain** 70.74 53 *e*P P 11 53 53.4 +2.2
comp=Z,69nm,1.1s
NEY **Neytrino** 70.74 310 *d* iP P 11 53 51.8 +0.6
NEY pmax pmax
comp=Z,10.0nm,0.9s
YBH **Yreka Blue Hor** 70.92 52 *e*P P 11 53 53.9 +1.7
YBH pmax pmax
comp=Z,35nm,1.0s
YBH **Yreka Blue Hor** 70.92 52 *e*P P 11 53 53.9 +1.7
comp=Z,35nm,1.0s
J05D **Fort Rock, OR** 71.00 50 P P 11 53 54.5 +1.8
baz=303,SNR=17
M02C **Callahan** 71.02 52 P P 11 53 54.6 +1.8
baz=303,SNR=11
K04D **Chiloquin, OR** 71.04 51 P P 11 53 54.6 +1.6
baz=303,SNR=5.9
NSS **Namsos** 71.05 339 *e*P P 11 53 52.5 +0.1
NSS lAmb lAmb 11 53 56.0
comp=Z,57nm,1.0s
JMDO **Jabal Madar** 71.06 284 P P 11 53 53.7 +0.5
SNR=8.0
JMDO **Jabal Madar** 71.06 284 P P 11 53 53.7 +0.5
SNR=8.0
KMRM **Mail Ridge** 71.10 54 *e*P P 11 53 56.1 +2.8
comp=Z,96nm,1.5s
UOSS **Minazif** 71.13 287 *e*P P 11 53 54.3 +0.7
comp=Z,8.3nm,1.3s
GNI **Garni** 71.14 306 *i* P P 11 53 55.0 +1.2
SNR=7.9
GNI **Garni** 71.14 306 *e*P P 11 53 54.9 +1.2
GNI **Garni** 71.14 306 *e*P P 11 53 54.9 +1.2
comp=Z,62nm,0.9s
GNI LR LR
comp=Z,1μm,21.0s
GNI **Garni** 71.14 306 P P 11 53 54.9 +1.2
SNR=13
GNI **Garni** 71.14 306 P P 11 53 54.9 +1.2
SNR=13
HATD **Hatta, Dubai** 71.25 287 *i* P P 11 53 55.0 +0.6
SNR=14
HATD **Hatta, Dubai** 71.25 287 P P 11 53 55.5 +1.1
SNR=6.6
HATD **Hatta, Dubai** 71.25 287 P P 11 53 55.5 +1.1
SNR=6.6
HATD P P 11 53 55.5 +1.1
SNR=6.6
AKH **Akhalkalaki** 71.26 308 P P 11 53 55.4 +0.9
AKH **Akhalkalaki** 71.26 308 ⇓ *i*P P 11 53 55.7 +1.3
AKH **Akhalkalaki** 71.26 308 *e*P P 11 53 55.3 +0.9
HOG **Hogback Mounta** 71.27 51 P P 11 53 56.1 +1.6
N02D **Trinity Center** 71.34 53 P P 11 53 56.8 +2.0
baz=303,SNR=12
ASHO **Ashiyiah** 71.38 287 *i* P P 11 53 55.6 +0.4
SNR=7.8
ASHO **Ashiyiah** 71.38 287 P P 11 53 55.9 +0.7
SNR=9.1
ASHO **Ashiyiah** 71.38 287 P P 11 53 55.9 +0.7
SNR=9.1
ASHO P P 11 53 55.9 +0.7
SNR=9.1
CHVG **Ch'k'valeri** 71.42 310 P P 11 53 55.7 +0.6
CHVG **Ch'k'valeri** 71.42 310 ⇑ *i*P P 11 53 56.0 +0.9
M04C **Macdoel** 71.44 51 P P 11 53 57.0 +1.6
baz=303,SNR=27
K05A **Summer Lake** 71.51 50 *e*P P 11 53 57.7 +1.8
comp=Z,107nm,1.0s
NAZ **Nazwa, Dubai** 71.52 288 *i* P P 11 53 56.4 +0.4
SNR=7.4
NAZ **Nazwa, Dubai** 71.52 288 P P 11 53 57.1 +1.1
SNR=6.7
NAZ **Nazwa, Dubai** 71.52 288 P P 11 53 57.1 +1.1
SNR=6.7
BSY **Bisya** 71.56 285 P P 11 53 56.9 +0.6
SNR=11
BSY **Bisya** 71.56 285 P P 11 53 56.9 +0.6
SNR=11
WDC **Whiskeytown Da** 71.66 53 *e*P P 11 53 57.9 +1.4
WDC pmax pmax
comp=Z,40nm,1.1s
WDC **Whiskeytown Da** 71.66 53 *e*P P 11 53 57.9 +1.4
comp=Z,40nm,1.1s
FAQ **Al Faqa, Dubai** 71.71 287 P P 11 53 57.3 +0.1
ARQ **Araqi** 71.76 286 P P 11 53 58.6 +1.2
SNR=15
ARQ **Araqi** 71.76 286 P P 11 53 58.6 +1.2
SNR=15
F10A **Beach Ranch, E** 71.88 46 *e*P P 11 53 59.4 +1.4
comp=Z,19nm,0.9s
WALA **Waterton Lakes** 71.93 42 *e*P P 11 53 59.3 +1.0
comp=Z,37nm,0.8s
ASUD **Al Ashush, Dub** 71.97 288 *i* P P 11 53 59.4 +0.7
SNR=6.4
ASUD **Al Ashush, Dub** 71.97 288 P P 11 53 59.5 +0.8
SNR=7.3
ASUD **Al Ashush, Dub** 71.97 288 P P 11 53 59.5 +0.8
SNR=7.3
IZAR **Zarasai** 72.04 327 *e*P P 11 53 59.4 +0.8
IZAR lAmb lAmb 11 54 02.5
comp=Z,36nm,0.7s
SCO **Scoresbysund** 72.06 354 *i* P P 11 53 59.7 +1.3
SCO **Scoresbysund** 72.06 354 *i* P P 11 53 59.7 +1.3
IDID **Didziasalis** 72.10 327 *e*P P 11 53 59.7 +0.8
IDID lAmb lAmb 11 54 02.9
comp=Z,31nm,0.8s
MICGM **Minsk** 72.11 326 ⇑ *e*P P 11 54 01.0 +2.0
MICGM PM 11 54 02.0
comp=Z,0.3nm,1.0s
MICGM PM 11 54 03.0
comp=Z,1.0nm,2.0s
MICGM *e*PP PP 11 56 36.0 -2.7
MICGM *e*PPP PPP 11 58 36.0
MICGM *e*S S 12 03 22.0 +1.8
MICGM *e*LQ LQ 12 20 10.0
MICGM *e*LR LR 12 23 22.0
MICGM LRM MLR 12 29 14.0
comp=Z,4.1nm,14.0s
MICGM LRM MLR 12 29 18.0
comp=E,4.0nm,14.0s
MNK **Minsk** 72.11 326 ⇑ *e*P P 11 54 01.0 +2.0
MNK *e* 11 56 36.0
MNK *e*S S 12 03 22.0 +1.8
MNK pmax pmax
comp=Z,250nm,1.0s
MNK pmax pmax
comp=Z,1μm,2.0s
MNK MLR MLR
comp=Z,4μm,14.0s
MNK MLR MLR
comp=E,4μm,14.0s
BSMT **Bassoo Peak** 72.17 43 P P 11 54 01.0 +1.2
HOPS **Hopland Field** 72.18 54 *e*P P 11 54 01.1 +1.4
comp=E,23nm,1.0s
ISAL **Salakas** 72.21 327 *e*P P 11 54 00.5 +0.9
ISAL lAmb lAmb 11 54 04.6
comp=Z,67nm,0.7s
O03D **Paynes Creek** 72.28 53 P P 11 54 01.1 +0.7
baz=304,SNR=20
BLMT **Blacktail Moun** 72.30 43 *e*P P 11 54 02.4 +1.8
IIGN **Ignalina** 72.31 327 *e*P P 11 54 01.0 +0.9
IIGN lAmb lAmb 11 54 04.2
comp=Z,43nm,0.7s
MOD **Modoc Plateau** 72.33 51 *e*P P 11 54 02.1 +1.3
comp=Z,26nm,1.0s
NACGM **Naroch** 72.35 326 *e* P 11 54 01.0 +0.6
NACGM *e*LQ LQ 12 21 22.0
NACGM *e*LR LR 12 28 02.0
SOC **Sochi** 72.38 312 *e*P P 11 54 02.5 +1.7
SOC *e*S S 12 03 23.5 -0.2
SOC *e*SSS SSS 12 11 14.4
SOC pmax pmax
comp=Z,115nm,1.2s
SOC MLR MLR
comp=Z,2μm,19.0s
CAN **Canberra** 72.40 173 *e*P P 11 54 01.7 +0.9
CAN pmax pmax
comp=Z,98nm,1.2s
CAN MLR MLR
comp=Z,1μm,22.0s
CAN **Canberra** 72.40 173 *e*P P 11 54 01.7 +0.9
comp=Z,98nm,1.2s
CAN LR LR
comp=Z,1μm,22.0s
BMO **Blue Mountains** 72.47 47 *e*P P 11 54 02.8 +1.3
comp=Z,32nm,0.8s
BMO LR LR
comp=Z,388nm,19.0s
JTMT **Jette** 72.50 43 *e*P P 11 54 03.0 +1.3
YBMT **Yellow Bay** 72.58 43 *e*P P 11 54 03.4 +1.2
MCCM **Marconi Confer** 72.78 55 *e*P P 11 54 04.6 +1.4
comp=Z,68nm,1.0s
SWMT **Swartz Lake** 72.80 43 *e*P P 11 54 04.4 +1.0
ORV **Oroville** 72.89 53 *e*P P 11 54 04.5 +0.5
ORV pmax pmax
comp=Z,31nm,1.0s
ORV **Oroville** 72.89 53 *e*P P 11 54 04.5 +0.5
comp=Z,31nm,1.0s
NWAO **Narrogin (SRO)** 72.90 200 *e*P P 11 54 03.5 -0.3
NWAO pmax pmax
comp=Z,74nm,1.0s
NWAO **Narrogin (SRO)** 72.90 200 *e*P P 11 54 03.5 -0.3
comp=Z,74nm,1.0s
ANN **Anapa** 73.03 314 *e*P P 11 54 03.3 -1.3
ANN *e*S S 12 03 28.5 -2.5
ANN pmax pmax
comp=Z,206nm,1.1s
ANN MLR MLR
comp=Z,711nm,15.0s
WVOR **Wild Horse Val** 73.06 49 *e*P P 11 54 06.4 +1.3
WVOR pmax pmax
comp=Z,36nm,1.1s
WVOR **Wild Horse Val** 73.06 49 *e*P P 11 54 06.4 +1.3
comp=Z,36nm,1.1s
MSO **Missoula** 73.23 44 P P 11 54 06.7 +0.7
baz=306,SNR=16
MSO **Missoula** 73.23 44 *e*P P 11 54 06.5 +0.5
comp=Z,27nm,1.0s
CHMT **Chamberlain Mo** 73.56 43 *e*P P 11 54 08.4 +0.4
AFDM **Forest Hills D** 73.57 54 *e*P P 11 54 09.1 +1.1
comp=Z,28nm,1.2s
NC405 **NORSAR Array S** 73.72 337 *e*P P 11 54 08.9 +0.4
ILULI **Ilulissat** 73.74 4 *i* P P 11 54 09.0 +0.6
comp=Z,117nm,1.2s
ILULI **Ilulissat** 73.74 4 *i* P P 11 54 09.0 +0.6
ILULI pmax pmax
comp=Z,120nm,1.2s
AKASG **Malin Array Be** 73.88 322 P P 11 54 09.3 -0.2
comp=Z,10nm,0.3s,baz=47,slow=6.1,SNR=98
AKASG LR LR 12 29 30.6
comp=Z,2μm,18.2s,baz=30,slow=38
AKASG **Malin Array Be** 73.88 322 P P 11 54 09.3 -0.2
AKASG pmax pmax
comp=Z,38nm,0.7s
AKASG MLR MLR
comp=Z,2μm,18.2s
AKBB **Malin Array Si** 73.88 322 *e*P P 11 54 08.8 -0.7
AKBB pmax pmax
comp=Z,99nm,1.0s
AKBB **Malin Array Si** 73.88 322 *e*P P 11 54 08.8 -0.7
comp=Z,99nm,1.0s
KIEV **Kiev** 73.89 322 *e*P P 11 54 08.7 -0.9
KIEV pmax pmax
comp=Z,99nm,1.0s
KIEV MLR MLR
comp=Z,2μm,19.0s
KIEV **Kiev** 73.89 322 *e*P P 11 54 08.7 -0.9
comp=Z,99nm,1.0s
KIEV LR LR
comp=Z,2μm,19.0s
NC204 **NORSAR Array S** 73.89 337 *e*P P 11 54 09.7 +0.1
NB201 **NORSAR Array S** 73.90 337 *e*P P 11 54 09.8 +0.3
AK11 **Malin Array Si** 73.92 322 *e*P P 11 54 09.5 -0.3
NB2 **NORSAR Subarra** 73.93 337 P P 11 54 09.7 0.0
comp=Z,102nm,0.9s,baz=41,slow=6.2
NB2 **NORSAR Subarra** 73.93 337 P P 11 54 09.7 0.0
baz=41,slow=6.2
NOA **NORSAR Array B** 73.93 337 P P 11 54 09.9 +0.2
comp=Z,78nm,0.9s,baz=40,slow=5.8,SNR=132
NOA PP PP 11 56 52.3 -1.8
comp=Z,4.0nm,0.8s,baz=62,slow=6.1,SNR=3.5
NOA LR LR 12 30 06.5
comp=Z,1μm,18.1s,baz=45,slow=38
NOA **NORSAR Array B** 73.93 337 P P 11 54 09.9 +0.2
NOA 11 56 52.3
NOA pmax pmax
comp=Z,80nm,1.0s
NOA pmax pmax
comp=Z,4.0nm,0.8s
NOA MLR MLR
comp=Z,1μm,18.1s
NBO02 **NORSAR Array S** 74.03 337 *e*P P 11 54 10.6 +0.2
NC602 **NORSAR Array S** 74.06 337 *e*P P 11 54 11.1 +0.6
NC602 lAmb lAmb 11 54 14.1
comp=Z,92nm,1.3s
NC602 **NORSAR Array S** 74.06 337 *e*P P 11 54 10.3 -0.1
NBO00 **NORSAR Array S** 74.07 337 *e*P P 11 54 10.8 +0.2
FFC **Flin Flon** 74.11 32 *e*P P 11 54 11.3 +0.5
FFC pmax pmax
comp=Z,117nm,1.3s
FFC MLR MLR
comp=Z,473nm,20.0s
FFC **Flin Flon** 74.11 32 *e*P P 11 54 11.3 +0.5
comp=Z,117nm,1.3s
FFC LR LR
comp=Z,473nm,20.0s
MFID **Camas Ranch** 74.17 47 *e*P P 11 54 12.8 +1.2
comp=Z,35nm,1.0s
NAO01 **NORSAR Array S** 74.18 337 *e*P P 11 54 10.7 -0.5
AKN **Aaknes** 74.29 339 *e*P P 11 54 13.6 +1.8
FCC **Fort Churchill** 74.34 26 *e*P P 11 54 12.4 +0.3
FCC pmax pmax
comp=Z,181nm,1.4s
FCC **Fort Churchill** 74.34 26 *e*P P 11 54 12.4 +0.3
comp=Z,181nm,1.4s
CMB **Columbia Colle** 74.46 54 *e*P P 11 54 14.5 +1.2
CMB pmax pmax
comp=Z,60nm,1.0s
CMB **Columbia Colle** 74.46 54 *e*P P 11 54 14.5 +1.2
comp=Z,60nm,1.0s
SAO **San Andreas Ge** 74.49 56 *e*P P 11 54 14.8 +1.4
SAO pmax pmax
comp=Z,29nm,1.0s
SAO **San Andreas Ge** 74.49 56 *e*P P 11 54 14.8 +1.4
comp=Z,29nm,1.0s
SUW **Suwalki** 74.52 327 *e*P P 11 54 13.2 0.0
SUW *e*pP pP 11 54 15.7 -2.8
SUW **Suwalki** 74.52 327 *e*P P 11 54 13.3 0.0
LRM **Limekiln Ridge** 74.66 44 *e*P P 11 54 15.7 +1.1
EGMT **Eagleton** 74.76 41 P P 11 54 15.7 +0.9
baz=309,SNR=62
EGMT **Eagleton** 74.76 41 *e*P P 11 54 15.8 +0.9
comp=Z,94nm,0.9s
EGMT LR LR
comp=Z,452nm,19.0s
WAKR **Walker** 74.81 53 *e*P P 11 54 16.9 +1.5
SIM **Simferopol'** 74.84 315 P P 11 54 15.2 -0.1
SIM S S 12 03 50.7 -0.8
SIM pmax pmax
comp=Z,91nm,0.8s
SIM MLR MLR
comp=Z,460nm,16.0s
DLMT **Dillon** 74.86 44 *e*P P 11 54 16.4 +0.8
comp=Z,69nm,0.8s
HLID **Hailey** 74.91 47 P P 11 54 17.3 +1.4
baz=307,SNR=44
HLID **Hailey** 74.91 47 *e*P P 11 54 17.4 +1.5
comp=Z,27nm,1.0s
HLID LR LR
comp=Z,553nm,19.0s
LCCM **Lewis and Clar** 74.97 44 *e*P P 11 54 17.4 +1.1
MCMT **McKenzie Canyo** 75.04 45 *e*P P 11 54 17.4 +0.6
BMN **Battle Mountai** 75.08 51 *e*P P 11 54 18.7 +1.7
BMN pmax pmax
comp=Z,58nm,1.1s
BMN **Battle Mountai** 75.08 51 *e*P P 11 54 18.6 +1.7
comp=Z,58nm,1.1s
BOZ **Bozeman (W)** 75.22 44 P P 11 54 18.8 +1.1
baz=308,SNR=44
BOZ **Bozeman (W)** 75.22 44 *e*P P 11 54 19.0 +1.3
BOZ pmax pmax
comp=Z,39nm,0.9s
BOZ MLR MLR
comp=Z,476nm,19.0s
BOZ **Bozeman (W)** 75.22 44 *e*P P 11 54 19.0 +1.3
comp=Z,39nm,0.9s
BOZ LR LR
comp=Z,476nm,19.0s
BGMT **Barton Gulch** 75.25 44 *e*P P 11 54 19.2 +1.2
HYA **Hoyanger** 75.34 339 *e*P P 11 54 18.6 +0.8
HYA lAmb lAmb 11 54 22.1
comp=Z,92nm,0.9s
KLNR **Kaliningrad** 75.38 329 *i* P P 11 54 17.7 -0.4
KLNR pmax pmax
comp=Z,150nm,1.0s
KONO **Kongsberg** 75.52 337 *e*P P 11 54 19.2 +0.3
KONO lAmb lAmb 11 54 22.9
comp=Z,59nm,1.2s
KONO **Kongsberg** 75.52 337 *e*P P 11 54 19.1 +0.2
KONO pmax pmax
comp=Z,51nm,1.2s
KONO MLR MLR
comp=Z,1μm,21.0s
KONO **Kongsberg** 75.52 337 *e*P P 11 54 19.1 +0.2
comp=Z,51nm,1.2s
KONO LR LR
comp=Z,1μm,21.0s
NV01 **Mina Array Sit** 75.57 53 *e*P P 11 54 20.4 +0.5
NVAR **Mina Array Bea** 75.57 53 P P 11 54 21.3 +1.4
comp=Z,56nm,1.0s,baz=285,slow=6.0,SNR=189
KBSD **Kabsdagh** 75.63 306 *e*P P 11 54 12.9 -7.2
KBSD **Kabsdagh** 75.63 306 *i* P P 11 54 15.4 -4.6
NV11 **Mina Array Sit** 75.67 53 *e*P P 11 54 21.6 +1.3
comp=Z,53nm,1.3s
MLAC **Mammoth, Mammo** 75.70 54 P P 11 54 22.1 +1.5
baz=306,SNR=28
SUE **Sulen** 75.83 340 *e*P P 11 54 21.9 +1.3
QLMT **Earthquake Lak** 75.84 44 *e*P P 11 54 22.6 +1.3
SORM **Soroca** 75.95 320 ⇓ *i*P P 11 54 21.0 -0.6
SFJD **Kangerlussuaq** 75.97 4 *i* P P 11 54 21.8 +0.5
comp=Z,108nm,1.2s
SFJD **Kangerlussuaq** 75.97 4 *i* P P 11 54 21.8 +0.5
SFJD pmax pmax
comp=Z,110nm,1.2s
SFJD **Kangerlussuaq** 75.97 4 *e*P P 11 54 21.6 +0.3
comp=Z,98nm,1.1s
YHB **Horse Butte** 76.02 44 *e*P P 11 54 23.9 +1.6
ELK **Elko** 76.11 49 *e*P P 11 54 24.5 +1.6
ELK pmax pmax
comp=Z,22nm,1.0s
ELK **Elko** 76.11 49 *e*P P 11 54 24.5 +1.6
comp=Z,22nm,1.0s
YMC **Maple Creek** 76.12 44 *e*P P 11 54 24.5 +1.6
ASK **Askoy** 76.18 339 *e*P P 11 54 24.1 +1.5
YHH **Holmes Hill** 76.19 44 *e*P P 11 54 24.7 +1.3
YMR **Madison River** 76.20 44 *e*P P 11 54 25.5 +2.1
comp=Z,164nm,1.9s
RCTC **Rector, Farmer** 76.21 55 P P 11 54 23.7 +0.4
baz=306,SNR=7.6
GCMT **Greycliff** 76.21 43 *e*P P 11 54 24.6 +1.3
ODD1 **Odda** 76.22 338 *e*P P 11 54 24.1 +1.1
MZRK **Al-Mazaregh** 76.24 304 *e*P P 11 54 15.6 -7.9
SFNV **Sufian** 76.25 305 *e*P P 11 54 17.3 -6.3
SFNV **Sufian** 76.25 305 *i* P P 11 54 19.6 -4.1
SMMC **Simmler** 76.29 56 P P 11 54 25.2 +1.4
baz=306,SNR=6.8
MCID **Moose Creek** 76.38 45 *e*P P 11 54 26.6 +2.2
TIN **Tinemaha, Big** 76.43 54 P P 11 54 26.2 +1.5
baz=306,SNR=5.7
KIS **Kishinev** 76.44 319 *e*P P 11 54 23.0 -1.4
KIS *e*S SKiKP 12 03 54.0 +12
KIS LRM MLR 12 30 56.0
comp=Z,2μm,16.0s
KIS **Kishinev** 76.44 319 *e*P P 11 54 23.0 -1.4
KIS MLR MLR
comp=N,2μm,16.0s
KIS MLR MLR
comp=E,2μm,16.0s
KIS MLR MLR
comp=Z,4μm,16.0s
LKWY **Lake** 76.58 44 *e*P P 11 54 28.1 +2.5
LKWY pmax pmax
comp=Z,23nm,0.8s
LKWY MLR MLR
comp=Z,586nm,20.0s
LKWY **Lake** 76.58 44 *e*P P 11 54 28.1 +2.5
comp=Z,23nm,0.8s
LKWY LR LR

comp=Z,586nm,20.0s
H17A Grant Village 76.59 44 *e*P **P** 11 54 28.6 +3.0
comp=Z,48nm,0.8s
PKM Mcpherson Peak 76.66 56 P **P** 11 54 27.4 +1.3
baz=306,SNR=12
BLS5 Blasjo 76.67 338 *e*P **P** 11 54 27.0 +1.5
BLS5 IAMs_20 IAMs_20 12 30 47.5
comp=Z,2µm,20.7s
IMW Indian Meadow 76.70 45 *e*P **P** 11 54 28.3 +2.0
comp=Z,37nm,0.8s
FLWY Flagg Ranch 76.71 45 *e*P **P** 11 54 28.6 +2.3
comp=Z,37nm,0.9s
YTP The Promontory 76.75 44 *e*P **P** 11 54 28.9 +2.3
RLMT Red Lodge 76.85 43 P **P** 11 54 28.2 +1.2
baz=310,SNR=32
RLMT Red Lodge 76.85 43 *e*P **P** 11 54 27.6 +0.5
comp=Z,24nm,0.7s
RLMT LR LR
comp=Z,431nm,20.0s
MOOW Moose Ponds 76.90 45 *e*P **P** 11 54 28.9 +1.5
comp=Z,36nm,1.2s
HVU Hansel Valley 76.95 47 *e*P **P** 11 54 29.2 +1.6
HVU pmax pmax
comp=Z,32nm,0.9s
HVU Hansel Valley 76.95 47 *e*P **P** 11 54 29.2 +1.6
comp=Z,32nm,0.9s
HOMB Homborsund 76.95 336 *e*P **P** 11 54 27.7 +0.6
LVV L'vov 76.97 323 *e*P **P** 11 54 27.0 -0.4
LVV MLR MLR
comp=Z,2µm,15.0s
LVV MLR MLR
comp=N,800nm,16.0s
LVV MLR MLR
comp=E,2µm,16.0s
SBC Santa Barbara 76.98 57 P **P** 11 54 29.0 +1.3
baz=306
GRAC Grapevine Rang 77.02 53 P **P** 11 54 29.4 +1.4
baz=307,SNR=36
LOHW Long Hollow 77.06 45 *e*P **P** 11 54 29.8 +1.5
comp=E,17nm,1.0s
BEL Belsk 77.07 326 *e*P **P** 11 54 28.6 +0.8
BEL *e*pP **pP** 11 54 31.5 -1.7
BEL Belsk 77.07 326 *e*P **P** 11 54 28.7 +0.9
SNOW Snow King Moun 77.07 45 *e*P **P** 11 54 30.1 +1.7
comp=E,31nm,0.9s
MNKR ALMNKUR 77.08 305 *e*P P 11 54 21.8 -6.5
MNKR ALMNKUR 77.08 305 *i* P **P** 11 54 25.1 -3.2
REDW Red Top Meadow 77.08 45 *e*P **P** 11 54 29.5 +1.1
comp=E,44nm,1.1s
ISA Isabella, Lake 77.09 55 P **P** 11 54 28.4 +0.1
baz=306,SNR=12
ISA Isabella, Lake 77.09 55 *e*P **P** 11 54 28.6 +0.2
ISA pmax pmax
comp=Z,43nm,1.2s
ISA Isabella, Lake 77.09 55 *e*P **P** 11 54 28.6 +0.2
comp=Z,43nm,1.2s
BSD Bornholm Skovb 77.12 331 *i* P **P** 11 54 28.0 -0.1
comp=Z,193nm,1.1s
BSD Bornholm Skovb 77.12 331 *i* P **P** 11 54 28.0 -0.1
BSD pmax pmax
comp=Z,190nm,1.1s
ARVC Arvin 77.17 56 P **P** 11 54 29.4 +0.7
baz=306,SNR=16
DAC Darwin (Calif) 77.30 54 *e*P **P** 11 54 30.6 +0.9
DAC pmax pmax
comp=Z,35nm,1.0s
DAC Darwin (Calif) 77.30 54 *e*P **P** 11 54 30.6 +0.9
comp=Z,35nm,1.0s
DGMT Dagmar 77.30 38 P **P** 11 54 29.9 +0.6
baz=312,SNR=22
DGMT Dagmar 77.30 38 *e*P **P** 11 54 28.2 -1.1
comp=Z,201nm,1.5s
DGMT LR LR
comp=Z,521nm,20.0s
SCZ2 Santa Cruz Isl 77.30 57 P **P** 11 54 30.7 +1.1
baz=306
KSRV Kasrt alli 77.30 305 *e*P **P** 11 54 25.8 -3.7
KSRV Kasrt alli 77.30 305 *i* P **P** 11 54 27.9 -1.6
DGAR Diego Garcia 77.31 251 *e*P **P** 11 54 29.7 0.0
DGAR pmax pmax
comp=Z,100nm,0.8s
DGAR Diego Garcia 77.31 251 *e*P **P** 11 54 29.7 0.0
comp=Z,100nm,0.8s
AHID Auburn Hatcher 77.31 46 *e*P **P** 11 54 30.9 +1.2
comp=Z,24nm,0.9s
AHID LR LR
comp=Z,495nm,22.0s
BEI Bear River Ran 77.33 47 *e*P **P** 11 54 31.4 +1.6
BGU Big Grassy Mou 77.33 48 *e*P **P** 11 54 31.2 +1.5
comp=Z,20nm,0.9s
R11A Troy Canyon, C 77.34 51 P **P** 11 54 31.0 +1.1
baz=307,SNR=111
R11A Troy Canyon, C 77.34 51 *e*P **P** 11 54 31.2 +1.3
comp=Z,75nm,1.1s
LAO LASA Array 77.46 40 P **P** 11 54 31.6 +1.3
baz=311,SNR=29
LAO LASA Array 77.46 40 *e*P **P** 11 54 31.4 +1.2
comp=Z,69nm,1.0s
LAO LR LR
comp=Z,470nm,22.0s
MPMC Manual Prospec 77.50 54 P **P** 11 54 31.7 +0.9
baz=307,SNR=75
A25A Svangstu Ranch 77.51 37 P **P** 11 54 31.2 +0.8
baz=313,SNR=12
PRAR RASCA 77.54 321 ⇓ *i* P **P** 11 54 31.3 +0.7
OSI Osito Audit: C 77.54 56 P **P** 11 54 32.1 +1.2
baz=306
ABTO Aybut 77.60 282 P **P** 11 54 31.3 -0.2
SNR=7.9
ABTO Aybut 77.60 282 P **P** 11 54 31.3 -0.2
SNR=7.9
BLG Laguna Peak, P 77.61 57 P **P** 11 54 32.0 +0.8
baz=306,SNR=5.3
TLCR 77.62 318 ⇑ *i* P **P** 11 54 31.2 +0.2
COP Copenhagen 77.62 333 ⇓ *i* P **P** 11 54 31.4 +0.6
comp=Z,66nm,1.0s
COP Copenhagen 77.62 333 ⇓ *i* P **P** 11 54 31.4 +0.6
COP pmax pmax
comp=Z,66nm,1.0s
FURC Furnace Creek, 77.66 54 P **P** 11 54 32.6 +1.2
baz=307,SNR=71
GIRR Girov 77.67 320 ⇑ *i* P **P** 11 54 32.1 +0.8
LRMC Laurel Mtn Rad 77.72 55 P **P** 11 54 32.7 +0.7
baz=307,SNR=8.1
KWP Kalwaria Pacla 77.73 324 *e*P **P** 11 54 32.6 +1.0
KWP *e*pP **pP** 11 54 35.1 -1.8
KWP Kalwaria Pacla 77.73 324 *e*P **P** 11 54 32.6 +1.0
BMUT Black Mountain 77.74 46 *e*P **P** 11 54 33.6 +1.4
TPNV Topopah Spring 77.76 53 P **P** 11 54 33.5 +1.3
baz=307,SNR=128
TPNV Topopah Spring 77.76 53 *e*P **P** 11 54 33.4 +1.1
TPNV pmax pmax
comp=Z,77nm,0.9s
TPNV Topopah Spring 77.76 53 *e*P **P** 11 54 33.4 +1.1
comp=Z,77nm,0.9s
HWUT Hardware Ranch 77.77 47 *e*P **P** 11 54 33.6 +1.4
comp=Z,74nm,1.2s
HWUT LR LR
comp=Z,374nm,19.0s
SNCC San Nicolas Is 77.81 58 P **P** 11 54 33.6 +1.2
baz=306
RSUT Red Spur Mount 77.84 47 *e*P **P** 11 54 34.3 +1.6
FSU Fish Springs 77.85 49 *e*P **P** 11 54 34.2 +1.5
EDW2 Edwards Air Fo 77.87 55 P **P** 11 54 33.9 +1.2
baz=307,SNR=33
BUR08 Bucovina Ar. S 77.87 321 *e*P **P** 11 54 33.2 +0.6
BURAR Bucovina Array 77.88 321 ⇑ *i* P **P** 11 54 33.5 +0.9
TESR Tescani 77.89 320 ⇑ *i* P **P** 11 54 33.3 +0.7
MCU Monte Cristo P 77.89 47 *e*P **P** 11 54 34.4 +1.3
DUG Dugway, Tooele 77.91 49 P **P** 11 54 34.5 +1.5
baz=308,SNR=53
DUG Dugway, Tooele 77.91 49 *e*P **P** 11 54 34.5 +1.5
DUG pmax pmax
comp=Z,57nm,1.1s
DUG MLR MLR
comp=Z,399nm,19.0s
DUG Dugway, Tooele 77.91 49 *e*P **P** 11 54 34.5 +1.5
comp=Z,57nm,1.1s
DUG LR LR
comp=Z,399nm,19.0s
B25A Knox Farm, Ray 77.94 38 P **P** 11 54 33.9 +1.0
baz=313,SNR=12
CFR Carcaliu 77.99 318 ⇓ *i* P **P** 11 54 33.2 +0.1
KAMA Osmaniye 78.01 308 *i* P **P** 11 54 34.4 +0.9
DECC Green Verdugo 78.02 56 P **P** 11 54 34.2 +0.6
baz=307

A26A Wade Farm, Ken 78.06 37 P **P** 11 54 34.2 +0.7
baz=314,SNR=11
RGN Rugen 78.16 332 *e*P **P** 11 54 34.7 +0.9
comp=Z,163nm,1.1s
PASC Pasadena Art C 78.16 56 *e*P **P** 11 54 35.5 +1.2
comp=Z,35nm,1.2s
TCUT Toone Canyon 78.17 47 *e*P **P** 11 54 36.1 +1.5
comp=Z,127nm,1.4s
ODBI Odobesti 78.17 319 ⇓ *i* P **P** 11 54 36.3 +2.2
BW06 Boulder Array 78.19 45 P **P** 11 54 35.0 +0.4
baz=310,SNR=29
BW06 Boulder Array 78.19 45 *e*P **P** 11 54 34.2 -0.4
BW06 *e*P **P** 11 54 35.1 +0.5
BW06 LR LR
comp=Z,468nm,21.0s
PD31 Pinedale Array 78.19 45 *e*P **P** 11 54 35.2 +0.6
PDAR Pinedale Array 78.19 45 P **P** 11 54 35.2 +0.6
comp=Z,9.1nm,0.6s,baz=268,slow=2.9,SNR=111
PDAR PKKPbc **PKKPbc** 12 13 32.2 0.0
comp=Z,0.6nm,0.8s,baz=82,slow=3.1,SNR=4.4
MWC Mount Wilson 78.22 56 *e*P **P** 11 54 35.7 +0.9
MWC pmax pmax
comp=Z,60nm,1.3s
MWC Mount Wilson 78.22 56 *e*P **P** 11 54 35.7 +0.9
comp=Z,60nm,1.3s
CTU Camp Tracy 78.23 48 *e*P **P** 11 54 36.2 +1.3
comp=Z,29nm,1.1s
C25A Freed Ranch, W 78.28 38 P **P** 11 54 35.7 +1.0
baz=313
VRI Vrincioaia 78.28 319 ⇓ *i* P **P** 11 54 35.7 +0.9
TIRR Tirgusor 78.31 317 ⇑ *i* P **P** 11 54 35.5 +0.6
TIRR Tirgusor 78.31 317 *e*P **P** 11 54 35.1 +0.2
TIRR pmax pmax
comp=Z,64nm,1.2s
TIRR Tirgusor 78.31 317 *e*P **P** 11 54 35.1 +0.2
comp=Z,64nm,1.2s
B26A Jensen Ranch, 78.32 37 P **P** 11 54 35.8 +0.8
baz=314
BR131 Keskin Array S 78.33 311 *e*P **P** 11 54 35.6 +0.3
BRTR Keskin Array B 78.33 311 P **P** 11 54 35.5 +0.1
comp=Z,29nm,0.8s,baz=92,slow=3.9,SNR=55
BRTR LR LR 12 32 31.3
comp=Z,463nm,18.9s,baz=48,slow=38
PLOR Plostina 78.33 319 ⇑ *i* P **P** 11 54 35.9 +0.8
FMP Fort Macarthur 78.36 57 P **P** 11 54 36.3 +0.9
baz=307
SHOC Shoshone, Teco 78.38 54 P **P** 11 54 36.5 +1.0
baz=308,SNR=13
GSC Goldstone, Bar 78.40 55 P **P** 11 54 36.5 +0.8
baz=307,SNR=26
GSC Goldstone, Bar 78.40 55 *e*P **P** 11 54 36.7 +1.0
GSC pmax pmax
comp=Z,36nm,1.0s
GSC Goldstone, Bar 78.40 55 *e*P **P** 11 54 36.7 +1.0
comp=Z,36nm,1.0s
A27A Ledoux Ranch, 78.40 36 P **P** 11 54 36.1 +0.8
baz=314,SNR=17
HARR Harsova 78.42 318 ⇓ *i* P **P** 11 54 36.5 +1.0
KOLS Kolonicke sedl 78.42 324 *e*P **P** 11 54 36.3 +0.8
KOLS pmax pmax
comp=Z,44nm,1.1s
KOLS Kolonicke sedl 78.42 324 *e*P **P** 11 54 36.3 +0.8
KOLS *e*L L 12 32 22.5
JLU Jordanelle 78.47 48 *e*P **P** 11 54 37.5 +1.3
comp=Z,38nm,1.1s
CIS Catalina Islan 78.47 57 P **P** 11 54 36.9 +0.9
baz=307,SNR=5.5
GRER 78.47 319 ⇓ *i* P **P** 11 54 38.1 +2.3
BFSC Mount Baldy Ra 78.47 56 P **P** 11 54 36.9 +0.7
baz=307,SNR=16
NLU North Lily Min 78.50 48 *e*P **P** 11 54 37.8 +1.4
comp=Z,34nm,1.0s
RRX Edison Barstow 78.53 55 P **P** 11 54 37.5 +1.1
baz=307
STHS Stebnicka Huta 78.56 324 *e*P **P** 11 54 37.6 +1.3
STHS *e* 11 54 40.8
STHS pmax pmax
comp=Z,66nm,1.0s
STHS Stebnicka Huta 78.56 324 *e*P **P** 11 54 37.5 +1.3
STHS *e* 11 54 40.8
UZH Uzhgorod 78.62 323 *e*P **P** 11 54 34.6 -1.9
UZH *e* 11 54 46.0
UZH *e*PPP PPP 11 59 28.8
UZH *e*S **S** 12 04 26.8 -5.8
UZH *e*PS **PnS** 12 05 14.8 +0.3
UZH *e*SS **SS** 12 09 34.2 -1.2
UZH *e*SSS SSS 12 12 53.6
UZH MLR MLR
comp=N,4µm,16.0s
UZH MLR MLR
comp=E,2µm,16.0s
UZH MLR MLR
comp=Z,2µm,16.0s
D25A Fairfield 78.63 39 P **P** 11 54 37.7 +0.9
baz=313,SNR=9.1
SCI2 San Clemente I 78.63 57 P **P** 11 54 37.8 +0.9
baz=307
OJC Ojcow 78.66 326 *e*P **P** 11 54 37.4 +0.7
OJC *e*pP **pP** 11 54 40.3 -1.8
OJC Ojcow 78.66 326 *e*P **P** 11 54 37.3 +0.5
OJC pmax pmax
comp=Z,172nm,1.1s
OJC Ojcow 78.66 326 *e*P **P** 11 54 37.3 +0.5
comp=Z,172nm,1.1s
ARCR ALIA 78.67 321 ⇓ *i* P **P** 11 54 38.5 +1.6
MPU Maple Canyon 78.73 48 *e*P **P** 11 54 39.0 +1.4
comp=Z,58nm,1.1s
ANTO Ankara 78.75 312 *e*P **P** 11 54 38.2 +0.7
ANTO pmax pmax
comp=Z,63nm,1.0s
ANTO MLR MLR
comp=Z,81nm,20.0s
ANTO Ankara 78.75 312 *e*P **P** 11 54 38.2 +0.7
comp=Z,63nm,1.0s
ANTO LR LR
comp=Z,81nm,20.0s
C26A Wahner Farm, P 78.77 38 P **P** 11 54 38.2 +0.7
baz=314,SNR=11
B27A Peters Farms, 78.77 37 P **P** 11 54 38.1 +0.6
baz=314
BR231 Keskin MP Arra 78.77 312 *e*P **P** 11 54 36.2 -1.5
FLU Fool Peak 78.81 49 *e*P **P** 11 54 39.6 +1.5
CRVS Cervenica-Dubn 78.82 324 *e*P **P** 11 54 38.7 +1.0
CRVS Cervenica-Dubn 78.82 324 *e*P **P** 11 54 38.7 +1.0
TRPA Tarpa 78.85 323 ⇓ *e*P **P** 11 54 39.2 +1.4
MSAB Monastry St. A 78.87 317 ⇑ *i* P **P** 11 54 39.1 +1.1
ISR Istrita 78.87 319 ⇑ *i* P **P** 11 54 39.3 +1.2
TUQ Turquoise Moun 78.89 54 P **P** 11 54 39.5 +1.1
baz=308,SNR=35
A28A Rude Farm, Bot 78.89 36 P **P** 11 54 38.8 +0.7
baz=315,SNR=20
DOPR Dopca 78.91 320 ⇑ *i* P **P** 11 54 39.9 +1.7
MLR Muntele Rosu 78.94 319 ⇑ *i* P **P** 11 54 39.2 +0.7
MLR Muntele Rosu 78.94 319 *e*P **P** 11 54 39.3 +0.7
MLR pmax pmax
comp=Z,85nm,1.3s
MLR Muntele Rosu 78.94 319 *e*P **P** 11 54 39.3 +0.7
comp=Z,85nm,1.3s
BBRC Big Bear Solar 78.95 55 P **P** 11 54 39.7 +0.7
baz=307,SNR=13
HEC Hector,Ludlow 78.99 55 P **P** 11 54 40.1 +1.2
baz=308,SNR=22
NIE Niedzica 79.00 325 *e*P **P** 11 54 39.8 +1.1
NIE *e*pP **pP** 11 54 42.5 -1.5
NIE Niedzica 79.00 325 *e*P **P** 11 54 39.9 +1.2
NIE *e**PP **pP** 11 54 42.6 -1.5
E25A Miller Ranch, 79.03 39 P **P** 11 54 39.8 +0.8
baz=313,SNR=23
WCU Willow Creek 79.11 49 *e*P **P** 11 54 41.5 +1.6
C27A Sayler Ranch, 79.14 37 P **P** 11 54 40.3 +0.9
baz=314
GULE Gulek 79.14 309 *i* P **P** 11 54 41.0 +1.2
D26A Manning 79.15 38 P **P** 11 54 40.2 +0.6
baz=314,SNR=8.1
MURC Murrieta 79.17 56 P **P** 11 54 40.7 +0.9
baz=307,SNR=16
B28A Dugan Ranch, T 79.17 36 P **P** 11 54 40.2 +0.6
baz=315,SNR=19
SECR 79.18 319 ⇑ *i* P **P** 11 54 40.7 +1.0
SGU Sterling 79.25 49 *e*P **P** 11 54 42.4 +1.8
ARNB Al Arnab 79.27 307 *e*P P 11 54 35.6 -4.8
ARNB Al Arnab 79.27 307 *i* P **P** 11 54 36.5 -3.9
CJR Cluj-Napoca 79.31 321 ⇓ *i* P **P** 11 54 41.9 +1.5
MSU Marysvale 79.34 50 *e*P **P** 11 54 42.8 +1.7
MSU Marysvale 79.34 50 *e*P **P** 11 54 42.8 +1.7

A29A Manning Farm, 79.36 35 P **P** 11 54 41.3 +0.6
baz=316,SNR=44
F25A Bowman 79.39 40 P **P** 11 54 41.5 +0.6
baz=313,SNR=11
TMUT Trail Mountain 79.44 49 *e*P **P** 11 54 42.9 +1.3
comp=Z,76nm,1.5s
ROOS tl_alroos 79.44 305 *e*P **P** 11 54 37.1 -4.3
GMRC Granite Mounta 79.46 54 P **P** 11 54 42.5 +1.0
baz=308,SNR=49
E26A Carlson Angus 79.52 39 P **P** 11 54 42.3 +0.7
baz=314,SNR=13
D27A Center 79.55 38 P **P** 11 54 42.7 +1.0
baz=314,SNR=7.5
LANS Liptovska Anna 79.57 325 *e*P **P** 11 54 43.5 +1.7
LANS *e* 11 54 46.8
LANS *e* 11 57 46.8
LANS Liptovska Anna 79.57 325 *e*P **P** 11 54 43.5 +1.7
LANS *e* 11 54 46.8
LANS *e*PP **PP** 11 57 46.8 +5.0
KECS Kecovo 79.58 324 *e*P **P** 11 54 42.6 +0.8
KECS *e* 11 54 46.0
KECS *e* 11 57 41.5
KECS pmax pmax
comp=Z,15nm,1.2s
KECS Kecovo 79.58 324 *e*P **P** 11 54 42.6 +0.8
KECS *e* 11 54 46.0
KECS *e*PP **PP** 11 57 41.5 -0.3
P17A Butcher Ranch, 79.60 48 *e*P **P** 11 54 43.8 +1.5
comp=Z,59nm,0.8s
LCMT Little Creek M 79.62 51 *e*P **P** 11 54 44.1 +1.6
comp=Z,68nm,1.0s
LDFC Landfair 79.63 54 *e*P **P** 11 54 43.5 +1.0
comp=Z,99nm,1.1s
B29A Wagenman Farm, 79.63 36 P **P** 11 54 42.6 +0.5
baz=315,SNR=5.9
MTPU Mount Pierson 79.64 50 *e*P **P** 11 54 44.8 +2.0
comp=Z,45nm,0.9s
PFO Pinyon Flats O 79.65 56 P **P** 11 54 43.2 +0.6
baz=308,SNR=31
PFO Pinyon Flats O 79.65 56 *e*P **P** 11 54 43.5 +0.9
PFO pmax pmax
comp=Z,77nm,1.3s
PFO MLR MLR
comp=Z,472nm,21.0s
PFO Pinyon Flats O 79.65 56 *e*P **P** 11 54 43.5 +0.9
comp=Z,77nm,1.3s
PFO LR LR
comp=Z,472nm,21.0s
109C Camp Elliot, M 79.66 57 P **P** 11 54 43.0 +0.5
baz=308
OKC Ostrava-Krasne 79.67 326 ⇓ *e*P **P** 11 54 43.3 +1.0
OKC *e*pP **pP** 11 54 45.8 -1.8
OKC AMS AMS 12 36 20.0
comp=Z,1µm,19.2s
OKC Ostrava-Krasne 79.67 326 *e*P **P** 11 54 43.3 +1.0
OKC *e* 11 54 45.8
OKC MLR MLR
comp=Z,1µm,19.2s
C28A Hausauer Farms 79.67 37 P **P** 11 54 43.2 +0.9
baz=315,SNR=13
PRD Provadia 79.69 317 P **P** 11 54 43.2 +0.7
DRGR 79.69 322 ⇑ *i* P **P** 11 54 43.5 +0.9
ARR Arges 79.70 320 ⇓ *i* P **P** 11 54 44.3 +1.7
BELC Belle Mtn. Jos 79.71 55 P **P** 11 54 43.5 +0.5
baz=308,SNR=25
KSP Ksiaz 79.74 328 *e*P **P** 11 54 43.3 +0.6
KSP *e*pP **pP** 11 54 46.2 -1.8
KSP Ksiaz 79.74 328 *e*P **P** 11 54 43.4 +0.7
KSP *e**PP **pP** 11 54 46.2 -1.8
A30A Hoffart Farm, 79.78 35 P **P** 11 54 43.5 +0.6
baz=316,SNR=27
TAU Tasmania Unive 79.78 175 PFAKE 11 54 50.0 +7.4
TAU LR LR
comp=Z,1µm,19.0s
P18A Preston Nutter 79.80 48 *e*P **P** 11 54 45.0 +1.4
comp=Z,51nm,1.0s
F26A Lodgepole 79.84 39 P **P** 11 54 44.0 +0.6
baz=314,SNR=14
KNB Kanab 79.88 51 *e*P **P** 11 54 45.7 +1.8
KNB pmax pmax
comp=Z,111nm,1.2s
KNB Kanab 79.88 51 *e*P **P** 11 54 45.7 +1.8
comp=Z,111nm,1.2s
G25A Newell 79.91 40 P **P** 11 54 44.1 +0.3
baz=313,SNR=8.4
ULM Lac du Bonnet 79.91 33 P **P** 11 54 43.4 -0.2
comp=Z,14nm,0.5s,baz=319,slow=6.2,SNR=21
ULM LR LR 12 33 08.2
comp=Z,297nm,19.6s,baz=329,slow=38
ULM Lac du Bonnet 79.91 33 *e*P **P** 11 54 43.6 +0.1
comp=Z,24nm,0.8s
PKCU Pink Cliffs 79.93 51 *e*P **P** 11 54 46.5 +2.1
comp=Z,40nm,0.9s
D28A Regan 79.95 37 P **P** 11 54 44.1 +0.2
baz=315
MDND Maddock 79.95 36 P **P** 11 54 44.4 +0.5
baz=315,SNR=6.9
MDND Maddock 79.95 36 *e*P **P** 11 54 44.8 +0.9
comp=Z,92nm,0.9s
K22A Casper 79.96 44 P **P** 11 54 44.7 +0.4
baz=312,SNR=14
K22A Casper 79.96 44 *e*P **P** 11 54 44.9 +0.6
comp=Z,59nm,1.3s
SRU San Rafael Swe 79.96 48 *e*P **P** 11 54 45.4 +1.1
SRU pmax pmax
comp=Z,186nm,1.5s
SRU San Rafael Swe 79.96 48 *e*P **P** 11 54 45.4 +1.1
comp=Z,186nm,1.5s
MORC Moravsky Berou 79.98 326 *e*P **P** 11 54 44.7 +0.6
MORC pmax pmax
comp=Z,391nm,1.2s
MORC Moravsky Berou 79.98 326 *e*P **P** 11 54 44.7 +0.6
comp=Z,391nm,1.2s
E27A Carson 80.00 38 P **P** 11 54 45.0 +0.8
baz=314,SNR=12
RAYN Ar Rayn 80.00 292 *e*P **P** 11 54 44.8 +0.2
comp=Z,211nm,1.5s
RAYN LR LR
comp=Z,822nm,20.0s
BTU Barney Top 80.01 50 *e*P **P** 11 54 46.9 +2.1
MARH Ras Al Marh 80.06 305 *e*P **P** 11 54 40.9 -4.2
BAR Barrett 80.07 57 *e*P **P** 11 54 45.8 +1.0
comp=Z,60nm,1.0s
MMU Miners Mountai 80.08 49 *e*P **P** 11 54 45.4 +0.3
DPC Dobruska-Polom 80.09 327 ⇓ *i* P **P** 11 54 45.6 +1.0
DPC *e*pP **pP** 11 54 48.3 -1.7
DPC AMS AMS 12 34 30.0
comp=Z,2µm,16.3s
DPC Dobruska-Polom 80.09 327 ⇓ *i* P **P** 11 54 45.6 +1.0
DPC *e* 11 54 48.3
DPC MLR MLR
comp=Z,2µm,16.3s
MONP2 Monument Peak 80.11 56 P **P** 11 54 46.0 +0.7
baz=308,SNR=18
UPC Upice 80.11 328 ⇓ *i* P **P** 11 54 45.5 +0.8
UPC *e*pP **pP** 11 54 48.2 -1.8
UPC *e*S **S** 12 04 47.5 -0.9
UPC AMS AMS 12 33 50.0
comp=Z,2µm,16.1s
UPC Upice 80.11 328 ⇓ *i* P **P** 11 54 45.5 +0.8
UPC *e* 11 54 48.2
UPC *e*S **S** 12 04 47.5 -0.9
UPC MLR MLR
comp=Z,2µm,16.1s
B30A Myrvik Farm, E 80.12 35 P **P** 11 54 45.1 +0.4
baz=316,SNR=22
NEE2 Needles Airpor 80.14 54 P **P** 11 54 45.7 +0.6
baz=308
F27A Lemmon 80.16 39 P **P** 11 54 45.4 +0.3
baz=314,SNR=7.2
ZALF Zalf 80.17 304 *i* P **P** 11 54 44.9 -0.5
IRM Iron Mountain 80.18 55 P **P** 11 54 46.4 +1.1
baz=308,SNR=41
H25A Fruitdale 80.21 41 P **P** 11 54 45.7 +0.3
baz=313,SNR=20
PSZ Piszkesteto 80.26 324 ⇓ *e*P **P** 11 54 46.5 +0.8
PSZ Piszkesteto 80.26 324 *e*P **P** 11 54 46.4 +0.8
PSZ pmax pmax
comp=Z,165nm,1.2s
PSZ MLR MLR
comp=Z,907nm,20.0s
PSZ Piszkesteto 80.26 324 *e*P **P** 11 54 46.4 +0.8
comp=Z,165nm,1.2s
PSZ LR LR
comp=Z,907nm,20.0s
G26A Maurine 80.26 40 P **P** 11 54 46.1 +0.4

baz=314,SNR=33
BC3 Big Chuckawall 80.28 55 P P 11 54 46.5 +0.5
baz=308,SNR=28
RSSD Black Hills 80.32 41 P P 11 54 46.6 +0.4
baz=313
RSSD Black Hills 80.32 41 *e*P P 11 54 46.6 +0.4
RSSD pmax pmax
comp=Z,19nm,0.8s
RSSD Black Hills 80.32 41 *e*P P 11 54 46.6 +0.4
comp=Z,19nm,0.8s
E28A Huff 80.33 38 P P 11 54 46.4 +0.5
baz=315,SNR=5.3
VYHS Vyhne 80.33 325 *e*P P 11 54 46.9 +1.0
VYHS *e* 11 57 52.5
VYHS pmax pmax
comp=Z,38nm,1.2s
VYHS Vyhne 80.33 325 *e*P P 11 54 46.9 +1.0
VYHS *e* 11 54 49.5
VYHS *e*PP PP 11 57 52.5 +4.4
MLA1 Latheron 80.35 342 *e*P P 11 54 46.7 +0.9
W13A Hualapai Mount 80.41 53 *e*P P 11 54 48.0 +1.1
comp=Z,41nm,1.1s
SZH Strazhica 80.44 318 P P 11 54 46.7 +0.1
B31A Greenbush Farm 80.45 35 P P 11 54 46.9 +0.4
baz=317,SNR=9.2
IBP Imperial Bould 80.47 56 P P 11 54 48.1 +1.0
baz=308,SNR=25
SWSC Sam W. Stewart 80.49 56 P P 11 54 47.7 +0.7
baz=308,SNR=14
TOTH TOTAH 80.50 305 *e*P P 11 54 43.7 -3.5
TOTH TOTAH 80.50 305 *i* P P 11 54 44.8 -2.4
D29A Pettibone, Tap 80.52 37 P P 11 54 47.0 +0.1
baz=316
G27A Dupree 80.55 39 P P 11 54 47.4 +0.2
baz=314,SNR=19
I25A Rochford 80.55 41 P P 11 54 47.4 0.0
baz=313,SNR=16
U15A North Rim 80.58 51 *e*P P 11 54 49.6 +1.8
comp=Z,90nm,1.1s
C30A Mose, Pekin 80.59 36 P P 11 54 47.7 +0.3
baz=316,SNR=10
A32A Rocking H Ranc 80.62 34 P P 11 54 47.4 0.0
baz=317,SNR=16
JMB Yambol 80.62 317 P P 11 54 48.1 +0.5
GZR Gura Zlata 80.63 321 ⇓ *i*P P 11 54 48.3 +0.6
H26A Fairpoint 80.64 40 P P 11 54 48.1 +0.4
baz=314,SNR=15
O20A White River Ci 80.65 46 P P 11 54 48.7 +0.7
baz=311,SNR=20
O20A White River Ci 80.65 46 *e*P P 11 54 48.6 +0.5
comp=Z,30nm,0.8s
BRG Berggiesshubel 80.70 329 *i* P P 11 54 48.1 +0.3
comp=Z,34nm,0.9s
BRG *i* 11 54 51.2
comp=Z,66nm,1.1s
BRG *e*PP PP 11 57 48.0 -3.0
comp=Z,19nm,1.3s
BRG Berggiesshubel 80.70 329 *i* P P 11 54 48.2 +0.3
BRG *e* 11 57 48.0
BRG pmax pmax
comp=Z,34nm,0.9s
BRG pmax pmax
comp=Z,66nm,1.1s
BRG pmax pmax
comp=Z,19nm,1.3s
BRG MLR MLR
comp=N,1µm,17.6s
BRG MLR MLR
comp=E,1µm,14.6s
BRG MLR MLR
comp=Z,2µm,14.3s
PVCC Panska Ves 80.71 328 ⇓ *e*P P 11 54 48.7 +0.8
PVCC *e*pP pP 11 54 51.4 -1.8
PVCC AMS AMS 12 33 30.0
comp=Z,2µm,16.4s
PVCC Panska Ves 80.71 328 *e*P P 11 54 48.7 +0.8
PVCC MLR MLR
comp=Z,2µm,16.4s
PDMCI Parker Dam,Lak 80.74 54 P P 11 54 49.2 +0.9
baz=309,SNR=25
VRAC Vranov 80.75 327 ⇓ *i*P P 11 54 49.3 +1.2
CLL Collm 80.76 330 ⇓ *i*P P 11 54 48.3 +0.2
comp=Z,141nm,1.0s
CLL *i* 11 54 51.1
comp=Z,141nm,1.0s
CLL *i* 11 54 55.4
CLL *e*PP PP 11 57 50.0 -1.4
CLL *e*SS SS 12 10 18.0 +11
CLL *e*SSS SSS 12 14 06.0
CLL LmV 12 35 00.0
comp=Z,2µm,18.4s
CLL Collm 80.76 330 ⇓ *i*P P 11 54 48.3 +0.2
CLL pmax pmax
comp=Z,141nm,1.0s
CLL MLR MLR
comp=Z,2µm,18.4s
CLL Collm 80.76 330 *e*P P 11 54 48.1 +0.1
comp=Z,144nm,1.0s
F28A McLaughlin 80.78 38 P P 11 54 49.1 +0.7
baz=315,SNR=10.0
Y12C Blythe 80.83 55 P P 11 54 49.9 +1.0
baz=309,SNR=27
Y12C Blythe 80.83 55 *e*P P 11 54 50.1 +1.2
comp=Z,80nm,1.0s
E29A Napoleon 80.84 37 P P 11 54 48.9 +0.2
baz=316
C31A Landman Farms, 80.87 36 P P 11 54 48.9 +0.1
baz=317,SNR=15
D30A Buchanan 80.89 36 P P 11 54 49.0 +0.1
baz=316,SNR=24
J25A Sunshine Ranch 80.94 42 P P 11 54 49.3 -0.1
baz=313
MCD Coleburn Disti 80.96 341 *e*P P 11 54 49.5 +0.5
BUD Budapest 80.98 324 ⇓ *e*P P 11 54 50.5 +1.1
B32A Ashes, Strandq 80.98 34 P P 11 54 49.2 -0.1
baz=317,SNR=39
H27A Howes 80.99 40 P P 11 54 50.2 +0.7
baz=314,SNR=44
I26A New Underwood 81.00 41 P P 11 54 50.4 +0.8
baz=314,SNR=16
BZS Buzias 81.06 322 ⇓ *i*P P 11 54 50.2 +0.4
GLA Glamis 81.07 55 P P 11 54 51.4 +1.2
baz=309,SNR=25
GLA Glamis 81.07 55 *e*P P 11 54 51.5 +1.3
GLA pmax pmax
comp=Z,98nm,1.1s
GLA Glamis 81.07 55 *e*P P 11 54 51.5 +1.3
comp=Z,98nm,1.1s
GOPC GO Pecny, Ondr 81.08 328 ⇓ *e*P P 11 54 50.7 +0.8
GOPC *e*pP pP 11 54 53.4 -1.8
GOPC *e*S S 12 04 54.6 -4.0
GOPC AMS AMS 12 34 10.0
comp=Z,2µm,15.8s
GOPC GO Pecny, Ondr 81.08 328 *e*P P 11 54 50.7 +0.8
GOPC *e*S S 12 04 54.6 -4.0
GOPC MLR MLR
comp=Z,2µm,15.8s
A33A Warroad 81.10 34 P P 11 54 49.6 -0.4
baz=318,SNR=22
PRA Prague 81.11 328 ⇓ *e*P P 11 54 51.1 +1.1
PRA *e*pP pP 11 54 54.0 -1.3
PRA AMS AMS 12 34 30.0
comp=Z,2µm,15.2s
PRA Prague 81.11 328 *e*P P 11 54 51.1 +1.1
PRA MLR MLR
comp=Z,2µm,15.2s
PRU Pruhonice 81.12 328 ⇓ *i*P P 11 54 50.9 +0.8
PRU *e*pP pP 11 54 53.5 -1.9
PRU *e*S S 12 04 59.5 +0.4
PRU AMS AMS 12 34 30.0
comp=Z,2µm,14.2s
PRU Pruhonice 81.12 328 ⇓ *i*P P 11 54 50.9 +0.8
PRU *e*S S 12 04 59.5 +0.4
PRU MLR MLR
comp=Z,2µm,14.2s
PV09 Paradox Valley 81.19 48 *e*P P 11 54 52.4 +1.3
PKS7 Kunszentmiklos 81.23 324 ⇑ *e*P P 11 54 51.9 +1.2
TCHB Talchebab 81.23 304 *e*P P 11 54 47.5 -3.6
TREC Trest 81.24 327 ⇓ *e*P P 11 54 51.4 +0.6
TREC *e*pP pP 11 54 54.1 -2.0
TREC AMS AMS 12 39 10.0
comp=Z,2µm,16.0s
TREC Trest 81.24 327 *e*P P 11 54 51.4 +0.6
TREC MLR MLR
comp=Z,2µm,16.0s
E30A Jud 81.25 37 P P 11 54 51.3 +0.5
baz=316,SNR=9.1
G28A Parade 81.27 39 P P 11 54 51.5 +0.4
baz=315,SNR=8.1
F29A Eureka 81.28 38 P P 11 54 51.4 +0.3
baz=315
PV10 Paradox Valley 81.33 48 *e*P P 11 54 53.2 +1.5
PKSG 81.34 324 ⇓ *e*P P 11 54 52.0 +0.7
AGMN Agassiz Nation 81.36 34 P P 11 54 50.6 -0.8
baz=318,SNR=13
AGMN Agassiz Nation 81.36 34 *e*P P 11 54 51.2 -0.2
comp=Z,83nm,1.4s
AGMN LR LR
comp=Z,445nm,20.0s
PKS6 Bocsa 81.36 323 ⇓ *e*P P 11 54 51.8 +0.4
J26A Sides Ranch, S 81.38 41 P P 11 54 52.2 +0.5
baz=314,SNR=16
PV04 Paradox Valley 81.39 48 *e*P P 11 54 53.1 +1.1
I27A Quinn 81.39 40 P P 11 54 52.2 +0.4
baz=314,SNR=35
C32A Crookston 81.41 35 P P 11 54 51.5 -0.1
baz=317
ISP Isparta 81.42 311 PFAKE 11 55 00.0 +8.0
ISP LR LR
comp=Z,517nm,19.0s
D31A Mcclaflin, Tow 81.42 36 P P 11 54 51.7 0.0
baz=317
N23A Red Feather La 81.46 45 P P 11 54 53.6 +1.2
baz=312,SNR=36
N23A Red Feather La 81.46 45 *e*P P 11 54 53.8 +1.4
comp=Z,132nm,1.4s
PHWY Pilot Hill 81.46 44 *e*P P 11 54 53.2 +0.8
comp=Z,53nm,1.5s
PV05 Paradox Valley 81.48 48 *e*P P 11 54 53.8 +1.3
H28A Mission Ridge 81.50 39 P P 11 54 52.9 +0.7
baz=315,SNR=35
B33A Robert and Kas 81.50 34 P P 11 54 52.1 0.0
baz=318,SNR=10
CSS Mathiatis 81.51 308 *e*P P 11 54 51.9 -0.6
comp=Z,10nm,0.9s
CSS LR LR
comp=Z,179nm,19.0s
KAC Achnashellach 81.54 342 *e*P P 11 54 52.8 +0.6
MPEP Malo Peshtene 81.55 319 P P 11 54 53.0 +0.5
HIZ Hauiti 81.56 153 *e*P P 11 54 54.4 +2.1
comp=Z,88nm,1.2s
MDVR Moldovita 81.60 321 ⇑ *i*P P 11 54 52.4 -0.4
PKST T``s 81.60 324 ⇓ *e*P P 11 54 53.2 +0.5
PKS2 Kecel 81.61 323 ⇓ *e*P P 11 54 53.6 +0.9
F30A Leola 81.67 38 P P 11 54 53.3 +0.2
baz=316
D32A Dogwood Acres, 81.69 36 P P 11 54 52.9 -0.3
baz=317,SNR=6.7
G29A Hoven 81.69 38 P P 11 54 53.5 +0.3
baz=316,SNR=6.7
E31A Nome 81.69 36 P P 11 54 53.4 +0.2
baz=317,SNR=15
Y14A Wickenburg 81.70 54 *e*P P 11 54 54.5 +1.0
comp=Z,258nm,1.0s
WUAZ Wupatki 81.74 52 P P 11 54 55.1 +1.2
baz=310,SNR=83
WUAZ Wupatki 81.74 52 *e*P P 11 54 55.3 +1.5
comp=Z,87nm,1.0s
B34A Aery, Baudette 81.76 33 P P 11 54 53.0 -0.5
baz=319,SNR=11
PV01 Paradox Valley 81.76 48 *e*P P 11 54 55.2 +1.2
KPL Plockton 81.78 342 *e*P P 11 54 54.1 +0.8
KPL AMB AMB 11 54 57.6
comp=Z,115nm,1.2s
C33A Trail 81.80 35 P P 11 54 53.6 -0.2
baz=318,SNR=15
NKC Novy Kostel 81.81 329 ⇓ *i*P P 11 54 54.0 +0.2
NKC *e*pP pP 11 54 56.9 -2.2
NKC AMS AMS 12 38 30.0
comp=Z,2µm,14.4s
NKC Novy Kostel 81.81 329 ⇓ *i*P P 11 54 54.0 +0.2
NKC MLR MLR
comp=Z,2µm,14.4s
KDZ Kurdzhali 81.82 317 P P 11 54 54.7 +0.8
PGB Panagyurishte 81.88 318 P P 11 54 54.7 +0.4
I28A Midland 81.90 40 P P 11 54 54.9 +0.6
baz=315,SNR=40
113A Mohawk Valley, 81.94 55 *e*P P 11 54 55.7 +1.0
comp=Z,38nm,1.0s
H29A Onida 81.94 39 P P 11 54 55.0 +0.5
baz=315,SNR=7.7
SOP Sopron 81.97 326 ⇓ *e*P P 11 54 56.0 +1.4
PKS9 Tamasi 81.98 324 ⇓ *e*P P 11 54 53.4 -1.3
J27A Elkhorn Farm, 81.99 41 P P 11 54 55.8 +0.9
baz=314,SNR=15
SMCO Snowmass 82.01 46 *e*P P 11 54 56.6 +1.1
comp=Z,21nm,0.9s
F31A Hecla 82.03 37 P P 11 54 55.1 +0.1
baz=316,SNR=9.7
E32A Braaten, Kindr 82.06 36 P P 11 54 54.8 -0.3
baz=317
CONA Conrad Observa 82.10 326 *e*pP P 11 54 56.5 +1.1
comp=Z,78nm,1.5s,SNR=33
G30A Faulkton 82.12 38 P P 11 54 55.7 +0.2
baz=316,SNR=18
URZ Urewera 82.17 152 P P 11 54 54.1 -1.3
comp=Z,14nm,0.9s,baz=330,slow=9.1
RZN Rozhen 82.17 317 P P 11 54 56.7 +0.7
KHC Kasperske Hory 82.19 328 ⇓ *i*P P 11 54 56.4 +0.6
KHC *e*pP pP 11 54 59.0 -2.1
KHC *e*PP PP 11 58 03.5 +0.2
KHC *e*S S 12 05 09.2 -0.9
KHC AMS AMS 12 34 50.0
comp=Z,2µm,17.4s
KHC Kasperske Hory 82.19 328 ⇓ *i*P P 11 54 56.4 +0.6
KHC *e* 11 58 03.5
KHC *e*S S 12 05 09.2 -0.9
KHC MLR MLR
comp=Z,2µm,17.4s
KHC Kasperske Hory 82.19 328 *e*P P 11 54 55.4 -0.4
comp=Z,27nm,0.9s
KHC *e*PP PP 11 58 05.7 +2.3
D33A AnnSam, Waubun 82.22 35 P P 11 54 55.4 -0.5
baz=318
ESY Stoneypath 82.25 340 *e*P P 11 54 55.5 -0.4
B35A Bob, Littlefor 82.26 33 P P 11 54 56.3 +0.2
baz=319,SNR=8.2
J28A Allard Ranch, 82.27 40 P P 11 54 57.0 +0.7
baz=315,SNR=12
C34A RKJ Ranch, Bem 82.27 34 P P 11 54 55.9 -0.3
baz=318,SNR=7.4
I29A Vivian Onida 82.33 39 P P 11 54 56.8 +0.2
baz=315,SNR=13
GEC2 GERESS Array S 82.35 328 *e*P P 11 54 57.0 +0.3
GEC2 pmax pmax
comp=Z,33nm,0.8s
GEC2 GERESS Array S 82.35 328 *e*P P 11 54 57.0 +0.3
comp=Z,33nm,0.8s
GERES GERESS Array B 82.35 328 P P 11 54 56.9 +0.1
comp=Z,15nm,0.6s,baz=38,slow=5.0,SNR=73
GERES PP PP 11 58 03.4 -1.4
comp=Z,5.1nm,1.0s,baz=53,slow=7.3,SNR=4.7
GERES PKKPbc PKKPbc 12 13 22.4 -0.6
comp=Z,1.3nm,0.7s,baz=196,slow=3.9,SNR=8.3
GERES LR LR 12 33 53.8
comp=Z,496nm,20.7s,baz=45,slow=37
VTS Vitosha 82.36 319 ⇓ *i*P P 11 54 57.9 +0.9
VTS Vitosha 82.36 319 P P 11 54 57.2 +0.2
VTS Vitosha 82.36 319 *e*P P 11 54 57.7 +0.7
VTS pmax pmax
comp=Z,43nm,0.8s
VTS Vitosha 82.36 319 P P 11 54 57.5 +0.5
VTS Vitosha 82.36 319 *e*P P 11 54 57.7 +0.7
comp=Z,43nm,0.8s
ISCO Idaho Springs 82.38 45 P P 11 54 58.4 +1.1
baz=313,SNR=17
ISCO Idaho Springs 82.38 45 *e*P P 11 54 58.6 +1.3
ISCO pmax pmax
comp=Z,15nm,0.8s
ISCO MLR MLR
comp=Z,360nm,19.0s
ISCO Idaho Springs 82.38 45 *e*P P 11 54 58.6 +1.3
comp=Z,15nm,0.8s
ISCO LR LR
comp=Z,360nm,19.0s
X16A Lo Mia Camp, P 82.40 52 *e*P P 11 54 59.0 +1.6
comp=Z,55nm,1.0s
MVCO Mesa Verde 82.41 49 P P 11 54 58.4 +1.0
baz=311,SNR=44
MVCO Mesa Verde 82.41 49 *e*P P 11 54 58.7 +1.2
comp=Z,60nm,1.0s
MVCO LR LR
comp=Z,435nm,20.0s
EAB Aberfoyle 82.47 341 *e*P P 11 54 57.6 +0.5
G31A Conde 82.51 38 P P 11 54 57.7 +0.2
baz=317,SNR=6.1
D34A Park Rapids 82.56 35 P P 11 54 57.4 -0.3
baz=318,SNR=16
WTSB Winterswijk 82.61 333 *i* P P 11 54 57.7 -0.1
comp=Z,24nm,0.7s
E33A Westby DABS, E 82.62 36 P P 11 54 58.3 +0.2
baz=316,SNR=25
C35A Jirik Farms, M 82.65 34 P P 11 54 57.8 -0.4
baz=319,SNR=14
SUSD Miller 82.70 38 P P 11 54 58.6 +0.1
baz=316,SNR=8.2
BKZ Black Stump Fm 82.73 153 *e*P P 11 54 58.4 -0.1
comp=Z,36nm,1.2s
GRFO Grafenberg 82.73 330 *e*P P 11 54 59.0 +0.4
GRFO pmax pmax
comp=Z,159nm,1.1s
GRFO Grafenberg 82.73 330 *e*P P 11 54 59.0 +0.4
comp=Z,159nm,1.1s
J29A Okreek 82.75 40 P P 11 54 59.0 +0.2
baz=315,SNR=9.5
ARSA Arzberg 82.76 326 *i* pP P 11 54 59.4 +0.6
comp=Z,59nm,1.5s,SNR=17
BEHE Becsehely 82.77 325 ⇓ *e*P P 11 54 59.3 +0.5
MMB Musomiste 82.78 318 P P 11 54 59.4 +0.4
G32A Webster 82.83 37 P P 11 54 59.3 +0.1
baz=317,SNR=17
PGBU Glenifferbraes 82.84 341 *e*P P 11 54 59.7 +0.8
PGBU AMB AMB 11 55 03.7
comp=Z,108nm,1.1s
I30A Oacoma 82.85 39 P P 11 54 59.4 +0.1
baz=316,SNR=12
MOA Molln 82.86 327 *i* P P 11 54 59.6 +0.3
comp=Z,58nm,1.3s,SNR=20
NVR Nevrokopi 82.87 317 P P 11 54 59.5 0.0
NVR Nevrokopi 82.87 317 P P 11 54 59.5 0.0
H31A Wolsey 82.91 38 P P 11 54 59.7 +0.1
baz=316
KKB Krupnik 82.93 318 P P 11 55 01.1 +1.3
ESK Eskdalemuir 82.94 340 *e*P P 11 54 59.8 +0.3
ESK AMB AMB 11 55 04.0
comp=Z,33nm,1.4s
ESK Eskdalemuir 82.94 340 *e*P P 11 55 00.3 +0.8
ESK pmax pmax
comp=Z,61nm,1.4s
ESK MLR MLR
comp=Z,1µm,20.0s
ESK Eskdalemuir 82.94 340 *e*P P 11 55 00.3 +0.8
comp=Z,61nm,1.4s
ESK LR LR
comp=Z,1µm,20.0s
F33A 5 Mile Ranch, 82.98 36 P P 11 55 00.2 +0.3
baz=318,SNR=15
E34A Wadena 83.00 35 P P 11 54 60.0 -0.1
baz=318
W18A Petrified Fore 83.02 51 P P 11 55 02.0 +1.4
baz=311,SNR=6.4
W18A Petrified Fore 83.02 51 *e*P P 11 55 02.4 +1.8
comp=Z,27nm,0.9s
ECK Cauldkaine Hil 83.04 340 *e*P P 11 55 00.3 +0.2
S22A 4UR Ranch, Cre 83.05 47 P P 11 55 01.9 +1.0
baz=312,SNR=61
S22A 4UR Ranch, Cre 83.05 47 *e*P P 11 55 02.4 +1.6
comp=Z,50nm,1.1s
214A Organ Pipe Nat 83.08 55 P P 11 55 01.4 +0.7
baz=310,SNR=16
214A Organ Pipe Nat 83.08 55 *e*P P 11 55 01.8 +1.0
comp=Z,340nm,1.5s
D35A Remer 83.08 34 P P 11 54 59.9 -0.6
baz=319,SNR=7.4
C36A Pine Crest Far 83.11 33 P P 11 55 00.6 +0.1
baz=320,SNR=11
BHH Howats Hill 83.14 340 *e*P P 11 55 01.2 +0.6
Q24A Divide 83.21 46 P P 11 55 02.4 +0.7
baz=313,SNR=13
Q24A Divide 83.21 46 *e*P P 11 55 02.5 +0.8
comp=Z,16nm,0.9s
I31A Royce, Wessing 83.21 39 P P 11 55 01.1 0.0
baz=316
YER Yerkesik 83.21 312 P P 11 55 01.3 -0.1
YER Yerkesik 83.21 312 P P 11 55 01.3 -0.1
YER Yerkesik 83.21 312 P P 11 55 01.3 -0.1
J30A Dallas 83.23 40 P P 11 55 01.5 +0.2
baz=316,SNR=8.7
X18A Snowflake 83.27 52 *e*P P 11 55 03.3 +1.4
comp=Z,64nm,1.2s
G33A Ortonville 83.38 37 P P 11 55 02.1 +0.1
baz=318,SNR=17
D36A Goodland 83.41 34 P P 11 55 01.6 -0.6
baz=320
PERS Pernice 83.41 326 ⇓ *i*P P 11 55 02.4 +0.3
PERS *i* 11 55 05.2
PERS *e*S S 12 05 23.7 +1.0
H32A Carlson Farm, 83.41 38 P P 11 55 02.3 +0.1
baz=317
SOKA Soboth 83.41 326 *i* P P 11 55 02.5 +0.3
comp=Z,134nm,1.1s,SNR=76
C37A Embarrass 83.41 33 P P 11 55 01.9 -0.2
baz=320,SNR=11
BBO1 Bothel 83.46 340 *e*P P 11 55 02.9 +0.7
F34A Alexandria 83.49 36 P P 11 55 02.7 +0.1
baz=318
EYMN Ely 83.54 32 P P 11 55 02.7 -0.1
baz=321,SNR=6.7
EYMN Ely 83.54 32 *e*P P 11 55 02.8 0.0
comp=Z,38nm,0.9s
EYMN LR LR
comp=Z,437nm,19.0s
GMK Mull of Kintyr 83.55 341 *e*P P 11 55 03.1 +0.5
KESW Keswick, Cumbr 83.55 340 *e*P P 11 55 03.3 +0.6
KESW AMB AMB 11 55 07.4
comp=Z,83nm,1.4s
OGNE Ogallala 83.58 43 P P 11 55 03.5 +0.2
baz=315
OGNE Ogallala 83.58 43 *e*P P 11 55 04.0 +0.8
comp=Z,120nm,1.4s
OGNE LR LR
comp=Z,514nm,19.0s
VAY Valandovo 83.59 318 P P 11 55 03.5 +0.4
VAY Valandovo 83.59 318 *i* P P 11 55 03.7 +0.6
VAY Valandovo 83.59 318 P P 11 55 03.5 +0.4
VAY Valandovo 83.59 318 P P 11 55 03.5 +0.4
H33A Prehn Over Nor 83.61 37 P P 11 55 03.6 +0.3
baz=318,SNR=39
M28A Bar X Bar Ranc 83.62 42 P P 11 55 03.6 +0.1
baz=315
K30A Basset 83.64 40 P P 11 55 04.0 +0.5
baz=316,SNR=19
J31A Geddes 83.64 39 P P 11 55 03.5 +0.1
baz=316
SKO Skopje 83.73 319 *i* P P 11 55 05.1 +1.3
G34A Benson 83.73 36 P P 11 55 04.0 +0.2
baz=318,SNR=15
I32A Karley and Nic 83.74 38 P P 11 55 03.9 -0.1
baz=317
GAL1 Galloway 83.74 341 *e*P P 11 55 04.0 +0.4
GAL1 AMB AMB 11 55 08.0
comp=Z,37nm,1.1s
D37A Cotton 83.75 33 P P 11 55 03.7 -0.2
baz=320
OBKA Obir 83.76 326 *i* P P 11 55 04.0 0.0
comp=Z,30nm,1.4s
F35A Swanville 83.77 35 P P 11 55 04.0 +0.1
baz=319
PLG Polygyros 83.78 317 P P 11 55 01.9 -2.3
PLG Polygyros 83.78 317 P P 11 55 01.9 -2.3
PLG Polygyros 83.78 317 P P 11 55 01.9 -2.3
THZ Tophouse 83.80 156 *e*P P 11 55 04.0 0.0
comp=Z,71nm,1.1s
PLE Pljevlja 83.81 321 ⇓ *i*P P 11 55 04.6 +0.2
C38A Sawbill Land. 83.81 32 P P 11 55 04.0 -0.2
baz=321,SNR=7.8
SDCO Great Sand Dun 83.83 47 P P 11 55 06.1 +1.2
baz=313,SNR=55
SDCO Great Sand Dun 83.83 47 *e*P P 11 55 06.0 +1.2
comp=Z,32nm,1.0s
SDCO LR LR
comp=Z,486nm,20.0s
KBA Koelnbreinsper 83.86 327 *i* P P 11 55 04.7 +0.1
comp=Z,69nm,1.4s,SNR=31
E36A McGregor 83.87 34 P P 11 55 04.4 -0.1
baz=320,SNR=14
IVA Berane 83.88 320 ⇓ *i*P P 11 55 05.1 +0.3
HGN Heimansgroeve 83.91 333 *i* P P 11 55 04.4 -0.1
comp=Z,266nm,0.9s

BEBN Eben Emael 83.97 333 P P 11 55 04.9 +0.1
comp=Z,21nm,1.4s
BFZ Birch Farm 83.97 153 *e*P P 11 55 05.2 +0.5
comp=Z,53nm,1.1s
MEM Membach 84.01 333 P P 11 55 05.1 0.0
comp=Z,34nm,1.4s
J32A Parkston 84.03 39 P P 11 55 05.5 +0.1
baz=317,SNR=8.9
PVY Plav 84.05 320⇓ *i*P P 11 55 05.3 -0.4
I33A Coleman 84.05 38 P P 11 55 05.4 -0.1
baz=318
MYKA Terra Mystica 84.07 326 *i* P P 11 55 05.2 -0.4
comp=Z,45nm,1.0s,SNR=16
H34A Spellman Lake, 84.09 37 P P 11 55 05.6 0.0
baz=318
K31A O'Neill 84.11 40 P P 11 55 06.2 +0.3
baz=316,SNR=20
LJU Ljubljana 84.12 325⇓ *e*P P 11 55 05.5 -0.3
LJU *i* 11 55 08.3
UPM Unac-Piva 84.14 321⇓ *i*P P 11 55 06.0 -0.2
TUC Tucson 84.17 54 P P 11 55 07.6 +1.2
baz=310
TUC Tucson 84.17 54 *e*P P 11 55 07.5 +1.1
TUC pmax pmax
comp=Z,47nm,1.0s
TUC Tucson 84.17 54 *e*P P 11 55 07.5 +1.1
comp=Z,47nm,1.0s
E37A Wrenshall 84.21 34 P P 11 55 05.7 -0.6
baz=320
C39A Grand Marais 84.22 32 P P 11 55 06.8 +0.5
baz=322
F36A Milaca 84.24 35 P P 11 55 06.2 -0.2
baz=320
STU Stuttgart 84.27 330 *e*P P 11 55 07.3 +0.8
STU pmax pmax
comp=Z,157nm,1.1s
STU Stuttgart 84.27 330 *e*P P 11 55 07.3 +0.8
comp=Z,157nm,1.1s
G35A Watkins 84.29 36 P P 11 55 07.1 +0.4
baz=319
ECSD EROS Data Cent 84.38 38 P P 11 55 07.1 -0.1
baz=318,SNR=28
ECSD EROS Data Cent 84.38 38 *e*P P 11 55 07.2 0.0
comp=Z,40nm,1.0s
ECSD LR LR
comp=Z,442nm,20.0s
NKY Niksic 84.38 321⇓ *i*P P 11 55 07.1 -0.2
L31A Butterfield Fa 84.39 40 P P 11 55 07.8 +0.5
baz=316,SNR=22
BCLA Clavier 84.42 333 P P 11 55 07.5 +0.3
comp=Z,35nm,1.6s
N29A Votaw Ranch, W 84.43 42 P P 11 55 07.8 +0.3
baz=315
NKME Niksic 84.44 321⇓ *i*P P 11 55 07.3 -0.2
JAVS Javornik 84.44 326⇓ *i*P P 11 55 06.7 -0.9
JAVS *i* 11 55 09.6
JAVS *e*S S 12 05 29.6 -3.6
FOZ Fox Glacier 84.47 159 *e*P P 11 55 08.1 +0.9
comp=Z,45nm,1.0s
ABTA Abfaltersbach 84.48 327 *i* P P 11 55 06.8 -0.9
comp=Z,33nm,1.1s,SNR=11
K32A Verdigre 84.49 39 P P 11 55 07.7 -0.1
baz=317
LIT Litokhoron 84.49 317 P P 11 55 07.2 -0.6
LIT Litokhoron 84.49 317 P P 11 55 07.2 -0.6
LIT Litokhoron 84.49 317 P P 11 55 07.2 -0.6
J33A Davis 84.51 38 P P 11 55 07.5 -0.3
baz=318
H35A Sunnyside Ranc 84.52 36 P P 11 55 08.5 +0.7
baz=319,SNR=30
I34A Hadley 84.52 37 P P 11 55 08.0 +0.2
baz=318
LTZ Lake Taylor 84.52 157 *e*P P 11 55 08.2 +0.6
comp=Z,51nm,1.4s
TTG Podgorica 84.53 321⇓ *i*P P 11 55 08.1 +0.2
BRY Bratogost 84.55 321⇓ *i*P P 11 55 07.7 -0.5
KHZ Kahutara 84.59 156 *e*P P 11 55 07.2 -0.6
comp=Z,122nm,1.8s
KSCO Kaye Shedlock' 84.60 44 P P 11 55 09.0 +0.4
baz=314,SNR=7.1
KSCO Kaye Shedlock' 84.60 44 *e*P P 11 55 09.2 +0.7
comp=Z,97nm,1.4s
FNA Florina 84.61 318 P P 11 55 06.1 -2.3
FNA Florina 84.61 318 P P 11 55 06.1 -2.3
FNA Florina 84.61 318 P P 11 55 06.1 -2.3
CEME Cevo 84.61 321⇓ *i*P P 11 55 08.5 +0.1
G36A St. Michael 84.61 35 P P 11 55 08.4 +0.1
baz=319
MOTA Moosalm 84.62 328 *i* pP P 11 55 09.4 +0.9
comp=Z,32nm,0.9s,SNR=16
MOTA *i* PP PP 11 58 24.3 +1.0
comp=Z,9.6nm,1.0s
GMM Mts of Mourne 84.63 341 *e*P P 11 55 08.4 +0.3
RETA Reutte 84.65 328 *i* pP P 11 55 08.9 +0.4
comp=Z,102nm,1.1s,SNR=45
CWF Charnwood Fore 84.65 338 *e*P P 11 55 08.5 +0.2
CWF AMB AMB 11 55 11.9
comp=Z,57nm,1.5s
CWF Charnwood Fore 84.65 338 *e*P P 11 55 08.9 +0.6
comp=Z,69nm,1.2s
LANF Langenberg 84.65 331 *e*P P 11 55 08.8 +0.4
OHR Ohrid 84.68 319 *i* P P 11 55 08.9 +0.2
SNF Seneffe 84.71 334 P P 11 55 08.5 -0.1
SNF AP PcP 11 55 12.6 +0.5
TRI Trieste 84.72 326 *e*P P 11 55 07.9 -0.9
TRI pmax pmax
comp=Z,81nm,1.3s
TRI Trieste 84.72 326 *e*P P 11 55 07.9 -0.9
comp=Z,81nm,1.3s
WLF Walferdange 84.73 332 PFAKE 11 55 20.0 +11
WLF LR LR
comp=Z,1μm,19.0s
DRME Dracevica, Mon 84.74 320⇓ *i*P P 11 55 08.5 -0.5
BUM Brajici-Budva 84.81 321⇓ *i*P P 11 55 08.9 -0.5
PMOR Pomariorio Ree 84.83 113 *e*T T 13 28 09.3
comp=Z,53nm,0.2s
ULC Ulcinj 84.87 320⇓ *i*P P 11 55 09.1 -0.6
T25A Trinidad 84.88 47 P P 11 55 11.0 +1.0
baz=314,SNR=34
T25A Trinidad 84.88 47 *e*P P 11 55 11.1 +1.0
comp=Z,59nm,1.0s
HCY Herceg Novi 84.90 321⇓ *i*P P 11 55 09.3 -0.5
M31A Lambtecht Ranc 84.92 41 P P 11 55 09.9 -0.1
baz=316
DOU Dourbes 84.94 333 P P 11 55 09.7 -0.2
comp=Z,28nm,2.0s
OXZ Oxford 84.94 157 *e*P P 11 55 09.9 +0.3
comp=Z,80nm,1.1s
KARP Karpathos 84.94 311 *e*P P 11 55 10.4 +0.2
comp=Z,83nm,1.1s
L32A Elgin 84.94 40 P P 11 55 10.0 -0.1
baz=317
BFO Black Forest 84.97 330 *e*P P 11 55 10.1 0.0
BFO pmax pmax
comp=Z,171nm,1.2s
BFO MLR MLR
comp=Z,797nm,20.0s
BFO Black Forest 84.97 330 *e*P P 11 55 10.1 0.0
comp=Z,171nm,1.2s
BFO LR LR
comp=Z,797nm,20.0s
STON Ston 84.99 322 P P 11 55 08.8 -1.4
TIR Tirane 85.00 319 *e*P P 11 55 11.0 +0.7
TIR pmax pmax
comp=Z,108nm,1.1s
TIR MLR MLR
comp=Z,3μm,20.0s
TIR Tirane 85.00 319 *e*P P 11 55 11.0 +0.7
comp=Z,108nm,1.1s
TIR LR LR
comp=Z,3μm,20.0s
RPZ Rata Peaks 85.00 158 *e*P P 11 55 10.6 +0.6
comp=Z,41nm,1.2s
K33A Hardington 85.01 39 P P 11 55 10.4 0.0
baz=318
FETA Feichten 85.03 328 *i* P P 11 55 10.7 +0.1
comp=Z,12nm,0.8s,SNR=17
J34A George 85.03 38 P P 11 55 10.1 -0.3
baz=318
H36A Jessenland, He 85.03 36 P P 11 55 11.2 +0.8
baz=319,SNR=10
NEST Nestorio 85.04 318 P P 11 55 09.7 -1.0
SPMN Marine on St. 85.06 35 P P 11 55 10.6 +0.1
baz=320
SPMN Marine on St. 85.06 35 *e*P P 11 55 10.6 +0.1
comp=Z,28nm,1.0s

I35A Creekview Farm 85.07 37 P P 11 55 10.3 -0.3
baz=319
FOEL Foel Wylfa 85.08 339 *e*P P 11 55 10.8 +0.3
FOEL AMB AMB 11 55 15.3
comp=Z,110nm,1.5s
NVLJ Novalja 85.08 324 P P 11 55 09.9 -0.8
LAZ Ladron 85.09 50 *e*P P 11 55 12.5 +1.3
ANMO Albuquerque 85.15 49 P P 11 55 13.0 +1.5
baz=312
ANMO Albuquerque 85.15 49 *e*P P 11 55 12.7 +1.3
ANMO pmax pmax
comp=Z,69nm,1.1s
ANMO MLR MLR
comp=Z,379nm,20.0s
ANMO Albuquerque 85.15 49 *e*P P 11 55 12.7 +1.3
comp=Z,69nm,1.1s
ANMO LR LR
comp=Z,379nm,20.0s
DAVA Damuels 85.17 329 *i* P P 11 55 11.4 +0.1
comp=Z,90nm,1.1s,SNR=27
L33A Hoskins 85.20 39 P P 11 55 11.3 -0.1
baz=317
ELSH Elham, Standar 85.25 336 *e*P P 11 55 11.2 -0.1
ELSH AMB AMB 11 55 15.4
comp=Z,156nm,1.1s
PPT Papeete 85.27 116 LR LR 12 31 32.3
comp=Z,377nm,18.9s,baz=310,slow=34
PPT2 Papeete2 85.28 116 *e*LR LR 12 21 29.7
comp=Z,799nm,23.0s
PPT2 Papeete2 85.28 116 *e*T T 13 28 43.3
comp=Z,11nm,0.3s
WLS Welschbruch 85.29 331⇑ *e*P P 11 55 11.8 +0.1
BGNE Belgrade 85.31 40 P P 11 55 11.8 -0.1
baz=317,SNR=12
BGNE Belgrade 85.31 40 *e*P P 11 55 12.2 +0.3
comp=Z,121nm,0.9s
N31A Bailey Ranch, 85.31 41 P P 11 55 11.7 -0.2
baz=316
J35A Milford 85.33 37 P P 11 55 12.0 0.0
baz=319
LBZ Lake Benmore 85.36 159 *e*P P 11 55 12.8 +1.1
comp=Z,58nm,1.0s
SANT Santorini 85.40 313 PFAKE 11 55 20.0 +7.6
SANT LR LR
comp=Z,541nm,20.0s
K34A Le Mars 85.40 38 P P 11 55 12.3 -0.1
baz=318,SNR=12
I36A Fitzsimmons Fa 85.41 36 P P 11 55 12.8 +0.4
baz=319
TIAR Tiarei 85.42 116 *e*T T 13 28 53.5
comp=Z,9.5nm,0.3s
THR6 Thira Island, 85.44 313 P P 11 55 13.2 +0.6
THR6 Thira Island, 85.44 313 P P 11 55 13.2 +0.6
Y22D IRIS PASSCAL I 85.45 50 P P 11 55 14.1 +1.2
baz=312,SNR=6.2
Y22D IRIS PASSCAL I 85.45 50 *e*P P 11 55 14.7 +1.8
comp=Z,48nm,0.8s
LPM Los Pinos Moun 85.47 50 *e*P P 11 55 14.2 +1.1
MQZ McQueen's Vall 85.48 157 *e*P P 11 55 13.7 +1.5
comp=Z,39nm,1.2s
H37A Dierke Farm, C 85.50 35 P P 11 55 13.5 +0.8
baz=320
ECH Echery 85.52 331 *e*P P 11 55 12.7 -0.1
FUORN Ofenpass-Fuorn 85.54 328 *e*P P 11 55 13.7 +0.4
comp=Z,188nm,1.4s
SCHQ Schefferville 85.55 15 P P 11 55 13.2 +0.3
comp=Z,14nm,0.7s,baz=348,slow=5.5,SNR=12
SCHQ LR LR 12 38 16.7
comp=Z,429nm,18.3s,baz=352,slow=39
SCHQ Schefferville 85.55 15 *e*P P 11 55 13.8 +0.9
comp=Z,14nm,0.8s
BNM Barren Site 85.58 50 *e*P P 11 55 14.8 +1.1
O31A Woolen Ranch, 85.60 42 P P 11 55 13.2 -0.2
baz=316
DSB Dublin 85.64 341 *e*P P 11 55 13.8 +0.6
comp=Z,95nm,1.3s
M33A Taylor Creek F 85.67 40 P P 11 55 13.8 0.0
baz=318,SNR=7.8
N32A Stulken Farm, 85.70 41 P P 11 55 13.4 -0.5
baz=317
I37A Lemond, Waseca 85.70 36 P P 11 55 14.6 +0.8
baz=320,SNR=19
STRD Stroud 85.75 338 *e*P P 11 55 14.2 +0.3
STRD AMB AMB 11 55 17.7
comp=Z,260nm,1.2s
HMNX Herstmonceux 85.75 336⇓ *e*P P 11 55 14.8 +1.0
HMNX AMB AMB 11 55 18.0
comp=Z,201nm,1.1s
J36A Seneca 1, Swea 85.78 37 P P 11 55 14.1 -0.1
baz=319,SNR=6.2
L34A Svendsen Farm, 85.80 39 P P 11 55 14.2 -0.1
baz=318,SNR=6.7
K35A Storm Lake 85.80 38 P P 11 55 14.1 -0.2
baz=319
MCH1 Michaelchurch 85.80 338 *e*P P 11 55 14.4 +0.3
ZKR Zakros 85.80 311 P P 11 55 14.5 0.0
ZKR Zakros 85.80 311 P P 11 55 14.5 0.0
MOF Molkenrain 85.83 331 *e*P P 11 55 14.2 -0.3
WOL Wolverton 85.86 337 *e*P P 11 55 13.9 -0.5
ANX Anchora 85.86 316 P P 11 55 13.9 -0.9
MONM Monmouth 85.88 338 *e*P P 11 55 14.8 +0.3
MONM AMB AMB 11 55 18.3
comp=Z,122nm,1.2s
DSL Palaion Diasel 85.93 317 P P 11 55 13.0 -2.1
DSL Palaion Diasel 85.93 317 P P 11 55 13.0 -2.1
121A Cookes Peak, D 85.94 52 P P 11 55 16.7 +1.3
baz=312,SNR=28
121A Cookes Peak, D 85.94 52 *e*P P 11 55 16.5 +1.1
comp=Z,59nm,1.0s
THEF They Montfort 85.97 331 *e*P P 11 55 14.8 -0.2
COWI Conover 85.99 32 PFAKE 11 55 30.0 +15
COWI LR LR
comp=Z,567nm,20.0s
LPW Lampeter 86.01 339 *e*P P 11 55 15.3 +0.2
LPW AMB AMB 11 55 19.0
comp=Z,88nm,1.2s
M34A Aspy Farms, Fr 86.04 39 P P 11 55 14.9 -0.6
baz=318
TUE Stuetta 86.04 329 *e*P P 11 55 15.7 0.0
comp=Z,82nm,1.3s
TUE LR LR
comp=Z,2μm,20.0s
O32A Brockman Farm, 86.07 41 P P 11 55 15.0 -0.7
baz=317
LAKA Lakka 86.08 316 P P 11 55 14.5 -1.3
LAKA Lakka 86.08 316 P P 11 55 14.5 -1.3
GUR Goura 86.09 316 P P 11 55 14.5 -1.5
GUR Goura 86.09 316 P P 11 55 14.5 -1.5
ODZ Otahua Downs 86.10 159 *e*P P 11 55 17.1 +1.7
comp=Z,49nm,1.2s
L35A Bielow Farm, R 86.10 38 P P 11 55 15.6 -0.2
baz=318
DAMY Dhamar 86.15 285 *e*P P 11 55 17.9 +1.0
comp=Z,170nm,1.5s
N33A J Bar K, Exete 86.16 40 P P 11 55 15.8 -0.3
baz=317
J37A Redenius Farm, 86.17 36 P P 11 55 16.4 +0.3
baz=320,SNR=7.7
I38A Scanlan Farm, 86.18 35 P P 11 55 16.2 0.0
baz=320,SNR=7.0
HSIG 86.19 56 *e*P P 11 55 17.3 +0.8
comp=Z,43nm,1.0s
LAST Lasithi 86.21 312 P P 11 55 16.3 -0.3
LAST Lasithi 86.21 312 *e*P P 11 55 16.8 +0.3
comp=Z,218nm,1.0s
K36A Gilmore City 86.25 37 P P 11 55 16.9 +0.4
baz=319,SNR=12
PDO Prodromos 86.27 317 P P 11 55 15.6 -1.1
CBKS Cedar Bluff 86.34 43 P P 11 55 16.7 -0.3
baz=316,SNR=7.8
CBKS Cedar Bluff 86.34 43 *e*P P 11 55 17.4 +0.3
CBKS pmax pmax
comp=Z,65nm,1.0s
CBKS MLR MLR
comp=Z,584nm,21.0s
CBKS Cedar Bluff 86.34 43 *e*P P 11 55 17.4 +0.3
comp=Z,64nm,1.0s
CBKS LR LR
comp=Z,584nm,21.0s
LOMF Lomont 86.36 330 *e*P P 11 55 17.0 -0.1
P32A Huiting Farm, 86.36 42 P P 11 55 16.8 -0.3
baz=317,SNR=11
IDI Anoyia 86.48 312 P P 11 55 16.6 -1.2
IDI Anoyia 86.48 312 *e*P P 11 55 17.0 -0.8
comp=Z,62nm,0.8s
M35A Neola 86.51 39 P P 11 55 18.1 +0.3
baz=318
K37A Belmond 86.54 37 P P 11 55 18.1 +0.2
baz=320,SNR=12
L36A Harm Buss Farm 86.55 38 P P 11 55 17.8 -0.2
baz=319
MEH Mehetia 86.56 115 *e*T T 13 30 18.3
comp=Z,62nm,0.3s
N34A Lincoln 86.57 40 P P 11 55 17.7 -0.5
baz=318,SNR=6.0
O33A Hebron 86.57 41 P P 11 55 17.6 -0.6
baz=317
J38A Wedel Dairy, R 86.67 36 P P 11 55 18.5 -0.1
baz=320
Q32A Meitler Ranch, 86.84 42 P P 11 55 19.3 -0.2
baz=317,SNR=14
TAOE Nuku Hiva Isla 86.86 103 *e*LR LR 12 22 39.5
comp=Z,596nm,24.7s
TAOE Nuku Hiva Isla 86.86 103 *e*T T 13 30 44.5
comp=Z,19nm,0.2s
ITM Ithomi 86.86 315 P P 11 55 18.3 -1.4
ITM Ithomi 86.86 315 P P 11 55 18.3 -1.4
O34A Beatrice 86.95 40 P P 11 55 19.6 -0.5
baz=318,SNR=7.8
M36A Felix, Anita 86.97 38 P P 11 55 20.6 +0.5
baz=319,SNR=7.1
L37A Phoenix Point, 86.97 37 P P 11 55 20.5 +0.4
baz=320
SENIN Lac Senin/Sane 86.97 330 *e*P P 11 55 19.9 -0.4
comp=Z,44nm,1.2s
P33A Williams Farm, 86.98 41 P P 11 55 20.1 -0.1
baz=317,SNR=9.7
N35A Tabor 86.99 39 P P 11 55 20.6 +0.4
baz=318,SNR=14
K38A Parkersburg 87.04 36 P P 11 55 20.3 -0.1
baz=320
R32A Long Quarter, 87.17 43 P P 11 55 21.1 -0.1
baz=317
Q33A Connelly Farm, 87.23 42 P P 11 55 21.3 -0.1
baz=317,SNR=18
O35A Humboldt 87.30 40 P P 11 55 21.2 -0.4
baz=318,SNR=9.4
L38A Oak Wood Farm, 87.34 37 P P 11 55 21.8 -0.1
baz=320,SNR=6.3
P34A Walnut Farm, R 87.35 41 P P 11 55 21.5 -0.5
baz=318,SNR=18
N36A Muff Farm, Cla 87.36 39 P P 11 55 22.7 +0.7
baz=319
M37A Trindle Farm, 87.37 38 P P 11 55 22.7 +0.7
baz=319,SNR=6.3
SCIA State Center 87.40 37 *e*P P 11 55 23.4 +1.3
comp=Z,100nm,1.3s
SCIA LR LR
comp=Z,562nm,20.0s
VLC Villacolemand 87.43 327 PFAKE 11 55 30.0 +7.7
VLC LR LR
comp=Z,1μm,20.0s
DYA Yadsworthy 87.46 338 *e*P P 11 55 22.5 +0.2
DYA AMB AMB 11 55 25.8
comp=Z,74nm,1.2s
DYA Yadsworthy 87.46 338 *e*P P 11 55 22.6 +0.4
comp=Z,102nm,1.2s
S32A Newby Ranch, P 87.58 43 P P 11 55 23.0 -0.1
baz=317,SNR=14
R33A Olander Ranch, 87.65 42 P P 11 55 23.1 -0.3
baz=317,SNR=7.5
Q34A Chapman 87.75 41 P P 11 55 24.0 0.0
baz=318,SNR=22
M38A Pleasantville 87.78 37 P P 11 55 24.0 0.0
baz=320,SNR=12
N37A Lee Faris, Mou 87.78 38 P P 11 55 24.3 +0.3
baz=319,SNR=8.9
P35A Duane Minner, 87.79 40 P P 11 55 24.0 -0.1
baz=318,SNR=8.4
RSL Roseland 87.80 330 *e*P P 11 55 23.4 -0.8
KSU1 Kansas State U 87.80 41 P P 11 55 24.0 -0.1
baz=318,SNR=12
KSU1 Kansas State U 87.80 41 *e*P P 11 55 24.2 +0.1
comp=Z,52nm,0.9s
KSU1 LR LR
comp=Z,515nm,20.0s
O36A Bolckow 87.88 39 P P 11 55 24.8 +0.3
baz=319,SNR=10
T32A Huddler Ranch, 87.96 43 P P 11 55 25.4 +0.4
baz=317,SNR=10.0
MNTX Cornudas Mount 88.00 51 P P 11 55 26.1 +0.9
baz=313,SNR=29
MNTX Cornudas Mount 88.00 51 *e*P P 11 55 26.0 +0.7
comp=Z,52nm,1.6s
MNTX LR LR
comp=Z,385nm,20.0s
JFWS Jewell Farm 88.01 35 *e*P P 11 55 25.0 0.0
JFWS pmax pmax
comp=Z,27nm,1.0s
JFWS MLR MLR
comp=Z,471nm,20.0s
JFWS Jewell Farm 88.01 35 *e*P P 11 55 25.0 0.0
comp=Z,27nm,1.0s
JFWS LR LR
comp=Z,471nm,20.0s
JSA Saint Aubin 88.02 337 *e*P P 11 55 25.0 +0.1
JSA AMB AMB 11 55 28.6
comp=Z,106nm,1.1s
MSTX Muleshoe 88.03 48 P P 11 55 25.8 +0.3
baz=314,SNR=12
MSTX Muleshoe 88.03 48 *e*P P 11 55 26.0 +0.5
comp=Z,41nm,1.1s
AMTX Amarillo 88.03 47 P P 11 55 26.3 +0.8
baz=315
AMTX Amarillo 88.03 47 *e*P P 11 55 26.6 +1.1
comp=Z,52nm,1.0s
R34A Isabella, Hill 88.05 42 P P 11 55 25.6 +0.3
baz=318,SNR=10
CCA1 Carmenellis 88.06 339 *e*P P 11 55 24.6 -0.5
CUC Castrocucco 88.07 321 *e*P P 11 55 24.2 -1.3
comp=Z,18nm,0.9s
CUC LR LR
comp=Z,934nm,20.0s
P36A Good Intent, A 88.14 40 P P 11 55 25.8 0.0
baz=319,SNR=8.1
S33A Kaszmaul Farm, 88.16 43 P P 11 55 26.2 +0.3
baz=317,SNR=8.0
TIP Timpagrande 88.20 320 *e*P P 11 55 26.1 0.0
comp=Z,44nm,1.2s
TIP LR LR
comp=Z,1μm,19.0s
N38A Joes South For 88.24 38 P P 11 55 26.4 +0.3
baz=320,SNR=7.8
O37A Wolven Farm, M 88.26 39 P P 11 55 26.6 +0.3
baz=319,SNR=8.6
BNI Bardonecchia 88.29 329 PFAKE 11 55 40.0 +13
BNI LR LR
comp=Z,1μm,21.0s
GDM Grand'Maison 88.40 330 *e*P P 11 55 26.9 -0.1
T33A Patterson Ranc 88.40 43 P P 11 55 27.2 +0.2
baz=317
U32A Winter Ranch, 88.49 44 P P 11 55 27.8 +0.3
baz=317
Q36A Arnold C. Orve 88.50 40 P P 11 55 27.2 -0.2
baz=319
GRN Grenoble 88.52 330 *e*P P 11 55 27.2 -0.3
N39A Derby Farms, D 88.53 37 P P 11 55 27.6 0.0
baz=320,SNR=13
S34A Willow Spring 88.56 42 P P 11 55 28.1 +0.3
baz=318,SNR=9.6
R35A Emporia Munici 88.59 41 P P 11 55 28.3 +0.4
baz=318,SNR=15
P37A Lathrop 88.60 39 P P 11 55 28.2 +0.3
baz=319,SNR=7.3
O38A Galt 88.63 38 P P 11 55 28.3 +0.3
baz=320
VLDQ Val d'Or 88.74 24 *e*P P 11 55 28.0 -0.3
comp=Z,156nm,1.4s
PLDF La Plantade 88.74 332⇑ *e*P P 11 55 28.7 +0.1
AGO Saint Agoulin 88.86 332⇑ *e*P P 11 55 28.5 -0.5
V32A Arapaho 88.94 45 P P 11 55 30.4 +0.8
baz=317,SNR=15
U33A Lingo Farm, Me 88.95 44 P P 11 55 29.7 0.0
baz=317,SNR=8.6
R36A Gordon, Harris 88.95 41 P P 11 55 29.9 +0.3
baz=319,SNR=8.2
SSB Saint Sauveur 88.96 331 *e*P P 11 55 32.3 +2.8
SSB pmax pmax
comp=Z,31nm,1.5s
SSB MLR MLR
comp=Z,941nm,20.0s
SSB Saint Sauveur 88.96 331 *e*P P 11 55 32.3 +2.8
comp=Z,31nm,1.5s
SSB LR LR

comp=Z,941nm,20.0s
P38A Dawn 88.98 39 P **P** 11 55 30.0 +0.3
baz=320,SNR=13
O39A Kirksville 88.99 38 P **P** 11 55 30.4 +0.6
baz=320
S35A Otter Creek Ra 89.00 42 P **P** 11 55 30.1 +0.3
baz=316,SNR=12
T34A McClaskey Farm 89.02 43 P **P** 11 55 30.2 +0.3
baz=318,SNR=6.1
Q37A Longview Farm, 89.08 40 P **P** 11 55 29.7 -0.5
baz=319
TBI Tubuai 89.13 120 *e*LR LR 12 23 20.8
comp=Z,726nm,24.2s
TBI Tubuai 89.13 120 *e*T T 13 33 30.5
comp=Z,90nm,0.3s
U34A Anderson Ranch 89.26 43 P **P** 11 55 31.7 +0.7
baz=317,SNR=11
U34A Anderson Ranch 89.26 43 *e*P **P** 11 55 32.3 +1.3
comp=Z,79nm,1.1s
W32A Sentinel 89.26 45 P **P** 11 55 31.8 +0.7
baz=316,SNR=14
V33A Lossen Ranch, 89.30 44 P **P** 11 55 31.7 +0.4
baz=317,SNR=5.9
R37A Teagarden Farm 89.31 40 P **P** 11 55 31.2 -0.1
baz=319
S36A Lake Cedric, C 89.35 41 P **P** 11 55 31.8 +0.3
baz=319
O40A La Belle 89.42 37 P **P** 11 55 32.2 +0.5
baz=321,SNR=10
Q38A Cooks Store, C 89.44 39 P **P** 11 55 31.9 0.0
baz=320,SNR=7.3
T35A Sooner Cattle 89.46 42 P **P** 11 55 32.3 +0.3
baz=318,SNR=11
P39A Salisbury 89.47 38 P **P** 11 55 32.1 +0.2
baz=320
W33A Caddo, Fort Co 89.68 45 P **P** 11 55 34.4 +1.3
baz=317
T36A Boggs Farm, Ca 89.70 42 P **P** 11 55 33.5 +0.4
baz=318,SNR=9.6
Q39A Willow Grove F 89.70 39 P **P** 11 55 33.5 +0.4
baz=320,SNR=13
V34A Guthrie 89.71 44 P **P** 11 55 34.0 +0.8
baz=317,SNR=6.1
V34A Guthrie 89.71 44 *e*P **P** 11 55 34.4 +1.2
comp=Z,71nm,1.0s
S37A Fort Scott 89.73 41 P **P** 11 55 33.3 0.0
baz=319,SNR=9.4
X32A Elmer 89.75 46 P **P** 11 55 33.8 +0.4
baz=316,SNR=17
U35A Pawnee 89.75 43 P **P** 11 55 33.6 +0.3
baz=318,SNR=12
P40A Paris 89.79 38 P **P** 11 55 33.6 +0.1
baz=321,SNR=17
WMOK Wichita Mounta 89.80 45 *e*P **P** 11 55 34.6 +0.9
WMOK pmax pmax
comp=Z,84nm,1.6s
WMOK Wichita Mounta 89.80 45 *e*P **P** 11 55 34.6 +0.9
comp=Z,84nm,1.6s
R38A Fenwick Farm, 89.88 40 P **P** 11 55 33.2 -0.7
baz=320,SNR=7.8
W34A Bridge Creek, 90.01 44 P **P** 11 55 35.4 +0.8
baz=317
W34A Bridge Creek, 90.01 44 *e*P **P** 11 55 36.1 +1.4
comp=Z,49nm,0.9s
X33A Lawton 90.11 45 P **P** 11 55 35.2 +0.2
baz=317
V35A Meyer Ranch, C 90.14 43 P **P** 11 55 35.7 +0.5
baz=318,SNR=7.4
T37A Cheneyville 18 90.16 41 P **P** 11 55 35.0 -0.2
baz=319,SNR=14
Q40A Laux Farm, Aux 90.19 38 P **P** 11 55 35.6 +0.3
baz=321,SNR=8.8
R39A Chumby, Stover 90.23 39 P **P** 11 55 35.3 -0.2
baz=320,SNR=9.9
U36A Oologah 90.27 42 P **P** 11 55 36.3 +0.5
baz=318
S38A Stockton 90.30 40 P **P** 11 55 35.6 -0.4
baz=320,SNR=8.0
HDIL Hopedale 90.31 36 P **P** 11 55 35.9 0.0
baz=322
HDIL Hopedale 90.31 36 *e*P **P** 11 55 36.3 +0.5
comp=Z,36nm,0.9s
HDIL LR LR
comp=Z,557nm,20.0s
SLBS Sierra La Lagu 90.34 60 *e*P **P** 11 55 38.7 +2.3
comp=Z,35nm,0.6s
Y33A Hilltop Ranch, 90.42 45 P **P** 11 55 36.7 +0.2
baz=317,SNR=15
X34A Smith Ranch, M 90.44 45 P **P** 11 55 37.4 +0.8
baz=317,SNR=11
T38A Diamond 90.55 41 P **P** 11 55 37.2 +0.1
baz=319,SNR=21
S39A Bolivar 90.56 40 P **P** 11 55 36.7 -0.4
baz=320,SNR=12
W35A Tecumseh 90.57 44 P **P** 11 55 37.6 +0.4
baz=318,SNR=10
U37A Salina 90.59 42 P **P** 11 55 37.3 0.0
baz=319,SNR=14
TUL1 Leonard 90.60 42 P **P** 11 55 37.9 +0.5
baz=318,SNR=9.5
TUL1 Leonard 90.60 42 *e*P **P** 11 55 38.0 +0.6
comp=Z,32nm,0.9s
V36A Jenks 90.61 43 P **P** 11 55 38.0 +0.7
baz=318,SNR=17
R40A Maddies Statio 90.63 39 P **P** 11 55 37.6 +0.1
baz=321,SNR=13
TX31 Lajitas Ar. Si 90.70 52 *e*P **P** 11 55 38.3 +0.2
TX31 *e*P **P** 11 55 38.9 +0.9
TXAR Lajitas Array 90.70 52 P **P** 11 55 38.7 +0.6
comp=Z,22nm,0.8s,baz=292,slow=3.4,SNR=164
TXAR PKKPbc **PKKPbc** 12 13 04.6 +1.8
comp=Z,0.4nm,0.7s,baz=148,slow=6.8,SNR=6.2
TXAR Lajitas Array 90.70 52 P **P** 11 55 38.7 +0.6
TXAR pmax pmax
comp=Z,21nm,0.8s
ABTX Abilene, Hawle 90.83 47 P **P** 11 55 39.2 +0.7
baz=316,SNR=16
ABTX Abilene, Hawle 90.83 47 *e*P **P** 11 55 39.4 +0.9
comp=Z,66nm,1.0s
Z33A Whitaker Ranch 90.86 46 P **P** 11 55 38.9 +0.3
baz=317,SNR=9.3
W36A Wetumka 90.94 43 P **P** 11 55 39.1 +0.2
baz=318,SNR=11
Y34A Reagan Ranch, 90.95 45 P **P** 11 55 39.3 +0.3
baz=317,SNR=12
U38A Gravette 90.95 41 P **P** 11 55 38.9 -0.1
baz=319,SNR=15
V37A Hulbert 90.97 42 P **P** 11 55 39.3 +0.3
baz=319,SNR=12
T39A Clever 91.04 40 P **P** 11 55 39.1 -0.3
baz=320,SNR=12
S40A Lebanon 91.05 39 P **P** 11 55 39.1 -0.3
baz=320,SNR=8.2
HPIG 91.06 55 *e*P **P** 11 55 40.5 +0.6
comp=Z,38nm,1.1s
HPIG *e*PP PP 11 59 07.7 -8.1
X35A Drake 91.07 44 P **P** 11 55 39.9 +0.4
baz=318,SNR=11
CLTB Caltabellotta 91.23 321 PFAKE 11 55 50.0 +10
CLTB LR LR
comp=Z,824nm,21.0s
133A Hamilton Ranch 91.27 47 P **P** 11 55 41.0 +0.5
baz=317,SNR=9.6
X36A Centrahoma 91.29 44 P **P** 11 55 40.8 +0.3
baz=318,SNR=29
Z34A Collier Ranch, 91.29 45 P **P** 11 55 40.6 0.0
baz=317,SNR=12
HHAR Hobbs 91.31 41 *e*P **P** 11 55 40.8 +0.1
comp=Z,18nm,0.9s
W37B Quinton 91.37 43 P **P** 11 55 41.6 +0.6
baz=319,SNR=13
AAM Ann Arbor 91.37 31 PFAKE 11 55 50.0 +9.2
AAM LR LR
comp=Z,572nm,20.0s
V38A Canehill 91.38 42 P **P** 11 55 41.0 0.0
baz=319,SNR=22
T40A Mansfield 91.38 40 P **P** 11 55 40.9 0.0
baz=320,SNR=10
Y35A Marietta 91.39 45 P **P** 11 55 41.2 +0.2
baz=318,SNR=8.1
LMQ La Malbaie 91.41 20 *e*P **P** 11 55 41.5 +0.6
comp=Z,44nm,1.3s
SFIN Lafayette 91.46 34 P **P** 11 55 41.5 +0.3
baz=324
SFIN Lafayette 91.46 34 *e*P **P** 11 55 42.1 +0.9
comp=Z,40nm,1.1s
U39A Green Forest 91.47 41 P **P** 11 55 41.3 -0.1
baz=320,SNR=26

VSL Villasalto 91.59 324 PFAKE 11 55 50.0 +8.1
VSL LR LR
comp=Z,674nm,20.0s
Z35A Perchaven, San 91.69 45 P **P** 11 55 42.5 0.0
baz=318,SNR=25
233A Rising Star 91.70 47 P **P** 11 55 43.2 +0.6
baz=317,SNR=24
134A White-Moore Ra 91.78 46 P **P** 11 55 43.6 +0.8
baz=317,SNR=10
V39A Pettigrew 91.80 41 P **P** 11 55 42.8 -0.2
baz=320,SNR=16
X37A Clayton 91.81 43 P **P** 11 55 43.4 +0.4
baz=319,SNR=8.6
U40A Yellville 91.82 40 P **P** 11 55 43.0 0.0
baz=320,SNR=30
Y36A Durant 91.82 44 P **P** 11 55 43.2 +0.2
baz=318,SNR=14
WDD Wied Dalam 91.86 319 PFAKE 11 55 50.0 +6.9
WDD LR LR
comp=Z,880nm,21.0s
W38A Poteau 91.91 42 P **P** 11 55 44.0 +0.5
baz=319,SNR=14
X38A Whitesboro 92.05 43 P **P** 11 55 44.7 +0.6
baz=319,SNR=16
Y37A Hugo 92.13 44 P **P** 11 55 44.5 0.0
baz=318
234A Clairette 92.16 47 P **P** 11 55 45.0 +0.4
baz=317,SNR=22
135A Vickery Place, 92.17 46 P **P** 11 55 45.1 +0.4
baz=318,SNR=6.7
Z36A Blue Ridge 92.20 45 P **P** 11 55 45.2 +0.4
baz=318,SNR=16
W39A Magazine 92.21 42 P **P** 11 55 44.8 0.0
baz=320,SNR=9.2
V40A Witts Springs 92.26 41 P **P** 11 55 44.8 -0.3
baz=320
JCT Junction City 92.27 49 P **P** 11 55 45.3 0.0
baz=316,SNR=12
JCT Junction City 92.27 49 *e*P **P** 11 55 45.7 +0.4
JCT pmax pmax
comp=Z,150nm,1.8s
JCT MLR MLR
comp=Z,399nm,19.0s
JCT Junction City 92.27 49 *e*P **P** 11 55 45.7 +0.4
comp=Z,150nm,1.8s
JCT LR LR
comp=Z,399nm,19.0s
OLIL Olney 92.31 36 *e*P **P** 11 55 46.3 +1.1
comp=Z,41nm,1.0s
433A Art 92.50 48 P **P** 11 55 46.3 0.0
baz=316,SNR=13
X39A Fountain Ranch 92.56 42 P **P** 11 55 46.9 +0.5
baz=319,SNR=18
WHTX Lake Whitney, 92.56 46 P **P** 11 55 47.1 +0.7
baz=317,SNR=13
WHTX Lake Whitney, 92.56 46 *e*P **P** 11 55 47.8 +1.3
comp=Z,62nm,0.9s
334A Lometa 92.59 47 P **P** 11 55 47.2 +0.5
baz=317,SNR=27
SIUC Southern Illin 92.59 37 *e*P **P** 11 55 47.1 +0.6
comp=Z,29nm,0.8s
W40A Ferguson Farm, 92.59 41 P **P** 11 55 46.6 0.0
baz=320,SNR=13
Y38A Idabel 92.66 43 P **P** 11 55 46.7 -0.2
baz=319
Z37A Pogue Cattle C 92.71 44 P **P** 11 55 47.7 +0.5
baz=318
PBMO Poplar Bluff 92.73 39 *e*P **P** 11 55 47.8 +0.7
comp=Z,47nm,1.4s
136A Ennis 92.74 45 P **P** 11 55 47.6 +0.3
baz=318
LONY Lake Ozonia 92.76 24 PFAKE 11 56 00.0 +13
LONY LR LR
comp=Z,718nm,22.0s
MIAR Mount Ida 92.82 42 P **P** 11 55 48.0 +0.4
baz=320,SNR=28
MIAR Mount Ida 92.82 42 *e*P **P** 11 55 48.1 +0.5
MIAR pmax pmax
comp=Z,57nm,1.2s
MIAR MLR MLR
comp=Z,401nm,22.0s
MIAR Mount Ida 92.82 42 *e*P **P** 11 55 48.1 +0.5
comp=Z,57nm,1.2s
MIAR LR LR
comp=Z,401nm,22.0s
WHAR Wooly Hollow 92.93 41 *e*P **P** 11 55 48.6 +0.5
comp=Z,34nm,1.0s
434A Burnet 92.94 47 P **P** 11 55 48.3 0.0
baz=317,SNR=10
Y39A Lockesburg 93.00 43 P **P** 11 55 48.8 +0.4
baz=319,SNR=10
533A Kerrville 93.03 48 P **P** 11 55 48.6 -0.1
baz=316,SNR=7.8
Z38A Mt. Pleasant 93.03 44 P **P** 11 55 48.5 -0.1
baz=319
W41A Tony Mavity, V 93.04 41 P **P** 11 55 48.1 -0.5
baz=321
W41B Gary Mavity, V 93.04 41 P **P** 11 55 48.1 -0.5
baz=321
236A Katherine and 93.09 46 P **P** 11 55 49.3 +0.4
baz=318
335A Moody 93.10 47 P **P** 11 55 49.2 +0.3
baz=317
X40A Basin Creek Fa 93.26 42 P **P** 11 55 49.8 +0.1
baz=320,SNR=9.2
435B Jarrell 93.37 47 P **P** 11 55 50.6 +0.4
baz=317
ACSO Alum Creek Sta 93.38 32 *e*P **P** 11 55 51.0 +0.9
comp=Z,17nm,0.8s
ACSO LR LR
comp=Z,364nm,20.0s
633A Saathoff Ranch 93.38 49 P **P** 11 55 50.7 +0.4
baz=316,SNR=11
Y40A Okolona 93.38 42 P **P** 11 55 50.5 +0.2
baz=320
534A Blanco 93.39 48 P **P** 11 55 50.6 +0.3
baz=317,SNR=18
138A Matatall Enter 93.41 44 P **P** 11 55 51.3 +0.9
baz=319
NCB Newcomb 93.45 24 PFAKE 11 56 00.0 +10
NCB LR LR
comp=Z,5µm,22.0s
Z39A Irene McRaven, 93.47 43 P **P** 11 55 51.3 +0.6
baz=319
237A Washetta, Mont 93.50 45 P **P** 11 55 51.1 +0.3
baz=318
M54A Oil Creek Stat 93.64 29 P **P** 11 55 51.3 0.0
baz=329
WLAR White Oak Lake 93.72 42 *e*P **P** 11 55 53.5 +1.7
comp=Z,100nm,1.4s
WLAR *e*PP **PP** 11 59 36.2 0.0
832A Faith Ranch, C 93.74 50 P **P** 11 55 52.6 +0.7
baz=316,SNR=6.9
139A Bunkhouse Ranc 93.78 44 P **P** 11 55 51.7 -0.4
baz=319
PKME Peaks-Kenny Pk 93.79 21 PFAKE 11 56 00.0 +8.1
PKME LR LR
comp=Z,768nm,22.0s
436A Wall Ranch, Ga 93.84 47 P **P** 11 55 53.4 +1.0
baz=318
733A Divot King Ran 93.84 50 P **P** 11 55 53.1 +0.7
baz=316
Z40A Long Farm, Mag 93.89 43 P **P** 11 55 53.3 +0.7
baz=320
634A China Grove, S 93.93 48 P **P** 11 55 53.6 +0.8
baz=317
337A Centerville 93.96 46 P **P** 11 55 53.8 +0.9
baz=318
833A Chaparral WMA, 94.06 50 P **P** 11 55 54.1 +0.7
baz=316,SNR=7.7
ACCN Adirondack Com 94.16 24 *e*P **P** 11 55 54.7 +1.0
comp=Z,45nm,1.4s
437A Phantom Ranch, 94.18 46 P **P** 11 55 54.1 +0.1
baz=318
536A Bastrop 94.19 47 P **P** 11 55 54.4 +0.4
baz=318
734A La Parita Cree 94.20 49 P **P** 11 55 54.9 +0.8
baz=317
Z41A Richland Creek 94.21 42 P **P** 11 55 54.4 +0.4
baz=320
239A Gary 94.24 44 P **P** 11 55 53.9 -0.2
baz=319
338A Crockett 94.26 45 P **P** 11 55 55.2 +0.9
baz=319
635A Leesville 94.28 48 P **P** 11 55 54.9 +0.5
baz=317
Y42A Garnett, Star 94.31 41 P **P** 11 55 55.0 +0.5
baz=321

NATX Nacogdoches 94.32 45 P **P** 11 55 55.1 +0.5
baz=319
NATX Nacogdoches 94.32 45 PFAKE 11 56 10.0 +15
NATX LR LR
comp=Z,556nm,19.0s
BINY Binghamton 94.41 26 PFAKE 11 56 10.0 +15
BINY LR LR
comp=Z,748nm,19.0s
WVT Waverly 94.52 37 *e*P **P** 11 55 56.0 +0.6
WVT pmax pmax
comp=Z,8.0nm,0.8s
WVT Waverly 94.52 37 *e*P **P** 11 55 56.0 +0.6
comp=Z,8.3nm,0.8s
KEST Kesra 94.60 322 P **P** 11 55 56.0 0.0
comp=Z,12nm,1.0s,baz=23,slow=8.6,SNR=7.3
KEST PP **PP** 11 59 45.9 +2.8
comp=Z,24nm,1.4s,baz=4.1,slow=1.6,SNR=4.1
KEST PKKPbc **PKKPdf** 12 12 51.5 +0.2
comp=Z,3.4nm,0.8s,baz=90,slow=1.0,SNR=5.4
KEST LR LR 12 42 13.7
comp=Z,599nm,20.1s,baz=316,slow=38
KEST Kesra 94.60 322 *e*P **P** 11 55 56.1 +0.2
comp=Z,31nm,1.3s
KEST *e*PP **PP** 11 59 47.5 +4.4
438A Sam Houston St 94.62 46 P **P** 11 55 56.6 +0.6
baz=318
537A Green Hill Far 94.63 47 P **P** 11 55 56.8 +0.8
baz=318
636A Smothers Creek 94.63 48 P **P** 11 55 57.4 +1.4
baz=318
735A Kenedy 94.64 49 P **P** 11 55 57.5 +1.4
baz=317
933A Laredo 94.65 50 P **P** 11 55 57.7 +1.5
baz=316,SNR=15
141A Papa Simpson, 94.66 43 P **P** 11 55 56.7 +0.6
baz=320
834A Tilden 94.72 49 P **P** 11 55 57.9 +1.4
baz=317
736A Circle Diamond 95.01 48 P **P** 11 55 59.0 +1.3
baz=318
835A Beeville 95.04 49 P **P** 11 55 59.3 +1.4
baz=317
O56A Blue Knob Stat 95.14 29 P **P** 11 55 57.7 -0.5
baz=330
034A Hebbronville 95.41 50 P **P** 11 56 01.1 +1.5
baz=316,SNR=6.4
N59A State Game Lan 95.62 27 P **P** 11 56 01.5 +1.1
baz=332
035A Encino 95.85 50 P **P** 11 56 02.1 +0.4
baz=317
ZAIG Zacatecas 95.96 56 *e*P **P** 11 56 04.2 +1.6
comp=Z,53nm,1.3s
PBRG Braganca 96.05 336 *e*P **P** 11 56 02.1 -0.2
comp=Z,27nm,1.4s
SWET Sewanee 96.17 37 *e*P **P** 11 56 03.1 +0.1
comp=Z,5.6nm,1.0s
TZTN Tazewell 96.19 34 *e*P **P** 11 56 03.7 +0.6
comp=Z,32nm,1.2s
035Z Hargill 96.22 50 P **P** 11 56 04.5 +1.1
baz=317
145A Houston Renfro 96.25 41 P **P** 11 56 03.8 +0.4
baz=322
PGAV Gavieira, Arco 96.39 337 *e*LR LR 12 29 17.8
comp=Z,720nm,18.0s
CPCT Cooper Cave 96.64 36 *e*P **P** 11 56 05.6 +0.4
comp=Z,11nm,1.1s
MVO Moncorvo 96.72 336 *e*LR LR 12 29 39.8
comp=Z,1000nm,18.0s
POLO Lamas de Olo 96.77 337 *e*P **P** 11 56 05.8 +0.1
comp=Z,15nm,1.4s
TKL Tuckaleechee C 96.82 35 *e*P **P** 11 56 06.4 +0.5
TKL pmax pmax
comp=Z,22nm,1.3s
TKL Tuckaleechee C 96.82 35 *e*P **P** 11 56 06.4 +0.5
comp=Z,22nm,1.3s
ES19 SONSECA Array 96.94 333 *e*P **P** 11 56 06.5 0.0
ESDC Sonseca Array 96.99 333 P **P** 11 56 06.0 -0.7
comp=Z,2.4nm,0.7s,baz=16,slow=4.7,SNR=12
ESDC LR LR 12 44 23.7
comp=Z,832nm,18.7s,baz=10.0,slow=38
BLA Blacksburg 97.00 32 PFAKE 11 56 20.0 +13
BLA LR LR
comp=Z,491nm,20.0s
PAB San Pablo 97.24 333 PFAKE 11 56 20.0 +12
PAB LR LR
comp=Z,941nm,21.0s
CBN Corbin Frederi 97.38 29 PFAKE 11 56 20.0 +12
CBN LR LR
comp=Z,499nm,19.0s
MTE Manteigas 97.57 336 *e*LR LR 12 30 00.7
comp=Z,1µm,20.0s
MTE Manteigas 97.57 336 PFAKE 11 56 20.0 +11
MTE LR LR
comp=Z,1µm,20.0s
PMRV Marv??o 98.40 335 *e*LR LR 12 30 20.8
comp=Z,834nm,18.0s
GOGA Godfrey 98.81 36 PFAKE 11 56 30.0 +15
GOGA LR LR
comp=Z,480nm,20.0s
BRAL Brewton 98.87 40 PFAKE 11 56 30.0 +15
BRAL LR LR
comp=Z,505nm,21.0s
RKT Rikitea 99.41 112 *e*LR LR 12 28 24.5
comp=Z,570nm,23.6s
PVAQ Vaqueiros 100.34 335 *e*LR LR 12 30 55.9
comp=Z,1µm,18.0s
NHSC New Hope 100.58 34 PFAKE 11 56 30.0 +7.3
NHSC LR LR
comp=Z,577nm,20.0s
KMBO Kilima Mbogo 101.27 277 P **Pdif** 11 56 26.2 -0.2
comp=Z,1.0nm,0.5s,baz=51,slow=6.6,SNR=5.8
KMBO PP **PP** 12 00 37.3 +1.7
comp=Z,4.0nm,1.1s,baz=68,slow=3.4,SNR=3.9
KMBO Kilima Mbogo 101.27 277 P **Pdif** 11 56 26.2 -0.2
KMBO 12 00 37.3
KMBO pmax pmax
comp=Z,2.0nm,0.9s
KMBO pmax pmax
comp=Z,4.0nm,1.1s
KMBO Kilima Mbogo 101.27 277 *e*Pdif **Pdif** 11 56 26.5 +0.1
KMBO *e*PP **PP** 12 00 41.3 +5.7
KMBO LR LR
comp=Z,293nm,19.0s
CASY Casey 105.53 192 PFAKE 12 01 10.0
CASY LR LR
comp=Z,163nm,21.0s
TAM Tamanrasset 106.94 317 PFAKE 12 01 10.0
TAM LR LR
comp=Z,343nm,19.0s
BBSR BB Station 107.06 22 PFAKE 12 01 10.0
BBSR LR LR
comp=Z,470nm,20.0s
GTBY Guantanamo Bay 114.15 37 PFAKE 12 01 30.0 +15
GTBY LR LR
comp=Z,373nm,20.0s
MTDJ Mount Denham 114.38 40 PFAKE 12 01 30.0 +15
MTDJ LR LR
comp=Z,278nm,20.0s
GRTK Grand Turk 114.58 33 PFAKE 12 01 30.0 +15
GRTK LR LR
comp=Z,533nm,20.0s
VNDA Vanda 115.01 175 PKP **PKPdf** 12 01 14.6 +0.1
comp=Z,2.7nm,0.6s,baz=325,slow=4.4,SNR=26
VNDA PP **PP** 12 02 14.3 -0.4
comp=Z,3.6nm,1.1s,baz=347,slow=10,SNR=4.3
VNDA PKKPbc **PKKPbc** 12 11 52.1 -0.3
comp=Z,0.3nm,0.4s,baz=91,slow=2.6,SNR=3.4
VNDA PKKPab **PKKPab** 12 11 58.0 +4.4
comp=Z,1.2nm,0.9s,baz=273,slow=2.2,SNR=4.6
SBA Scott Base 115.70 174 *e*PKIKP **PKPdf** 12 01 16.9 +1.0
SBA Scott Base 115.70 174 *e*PKPdf **PKPdf** 12 01 16.9 +1.0
JTS JuntasAbangare 116.49 52 PFAKE 12 01 30.0 +11
JTS LR LR
comp=Z,243nm,21.0s
SDDR Presa de Saban 116.74 34 PFAKE 12 01 30.0 +10
SDDR LR LR
comp=Z,583nm,20.0s
LSZ Lusaka 116.77 271 *e*PKIKP **PKPdf** 12 01 19.5 -0.4
LSZ MLR MLR
comp=Z,462nm,19.0s
LSZ Lusaka 116.77 271 *e*PKPdf **PKPdf** 12 01 19.5 -0.4
LSZ LR LR
comp=Z,462nm,19.0s
TOA0 Torodi Ar. Sit 116.84 314 *e*PKPdf **PKPdf** 12 01 19.3 -0.7
TOA0 *e*PKPdf **PKiKP** 12 01 19.5 -0.5
TOA0 *e*PP **PP** 12 02 25.3 -2.3
TORD Torodi Ar. Bea 116.84 314 PKP **PKPdf** 12 01 19.4 -0.6

	comp=Z,3.4nm,0.4s,baz=10,slow=1.8,SNR=17							
TORD					PP	**PP**	12 02 20.6	**-7.1**
	comp=Z,3.0nm,0.8s,baz=33,slow=8.3,SNR=7.4							
TORD					PKKPbc	**PKKPbc**	12 11 46.5	**+1.7**
	comp=Z,4.0nm,0.8s,baz=220,slow=2.6,SNR=18							
MAW	**Mawson**	**119.21**	**205**		PKP	**PKPdf**	12 01 23.0	**+0.2**
	comp=Z,8.7nm,0.7s,baz=20,slow=1.5,SNR=14							
MAW	**Mawson**	**119.21**	**205**	*e*PKPdf		**PKPdf**	12 01 23.3	**+0.5**
BCIP	**Isla Barro Col**	**120.49**	**48**		PFAKE		12 01 40.0	+13
BCIP					LR	LR		
	comp=Z,228nm,20.0s							
ANWB	**Willy Bob**	**121.69**	**25**		PFAKE		12 01 40.0	+11
ANWB					LR	LR		
	comp=Z,315nm,19.0s							
MOTC	**Monteria, Cord**	**123.21**	**44**	*e*P		**PKPdf**	12 01 31.6	**-0.7**
LBTB	**Lobatse**	**123.92**	**263**	*e*PKIKP		**PKPdf**	12 01 33.2	**-0.2**
LBTB	**Lobatse**	**123.92**	**263**	*e*PKPdf		**PKPdf**	12 01 33.2	**-0.2**
FDF	**Fort de France**	**124.63**	**26**	*e*PKIKP		**PKPdf**	12 01 37.9	**+2.9**
FDF					MLR	MLR		
	comp=Z,390nm,22.0s							
FDF	**Fort de France**	**124.63**	**26**	*e*PKPdf		**PKPdf**	12 01 37.9	**+2.9**
FDF					LR	LR		
	comp=Z,390nm,22.0s							
OCAC	**Ocana**	**124.94**	**42**	*e*P		**PKPdf**	12 01 35.5	**-0.3**
GRMC	**Gramalote, San**	**125.66**	**42**	*e*P		**PKPdf**	12 01 38.9	**+1.8**
SDV	**Santo Domingo**	**125.80**	**39**	*e*PKPdf		**PKPdf**	12 01 37.6	**+0.1**
SDV	**Santo Domingo**	**125.80**	**39**	*e*P		**PKPdf**	12 01 37.2	**-0.3**
DBIC	**Dimbokro**	**125.81**	**316**		PKP	**PKPdf**	12 01 37.0	**-0.2**
	comp=Z,15nm,0.7s,baz=15,slow=2.8,SNR=36							
DBIC					PP	**PP**	12 03 25.0	**-3.9**
	comp=Z,13nm,1.1s,baz=35,slow=5.0,SNR=3.5							
DBIC	**Dimbokro**	**125.81**	**316**	*e*PKPdf		**PKPdf**	12 01 37.4	**+0.1**
DBIC				*e*PP		**PP**	12 03 25.8	**-3.1**
BOSA	**Boshof**	**125.87**	**259**		PKP	**PKPdf**	12 01 36.8	**-0.2**
	comp=Z,14nm,0.9s,baz=56,slow=1.8,SNR=18							
BOSA	**Boshof**	**125.87**	**259**	*e*PKPdf		**PKPdf**	12 01 37.5	**+0.4**
TIC	**Toumodi**	**125.92**	**316**	*e*PKIKP		**PKPdf**	12 01 36.9	**-0.6**
KIC	**Kosan Boka**	**126.00**	**316**	*e*PKIKP		**PKPdf**	12 01 37.2	**-0.4**
	comp=Z,145nm,1.4s							
PAMC	**Pamplona, Colo**	**126.03**	**42**	*e*P		**PKPdf**	12 01 37.8	**-0.5**
GUYC	**Guyana, Colomb**	**126.26**	**46**	*e*P		**PKPdf**	12 01 38.9	**+0.2**
LIC	**Lamto**	**126.27**	**316**	*e*PKIKP		**PKPdf**	12 01 36.7	**-1.4**
	comp=Z,63nm,1.6s							
NORC	**Norcasia**	**126.29**	**46**	*e*P		**PKPdf**	12 01 37.2	**-1.0**
BARC	**Barichara**	**126.39**	**43**	*e*P		**PKPdf**	12 01 39.5	**+0.8**
QSPA	**South Pole Qui**	**126.75**	**180**	*e*PKPdf		**PKPdf**	12 01 37.1	**-0.4**
QSPA					LR	LR		
	comp=Z,947nm,22.0s							
GRGR	**Grenville**	**126.85**	**27**		PFAKE		12 01 50.0	+11
GRGR					LR	LR		
	comp=Z,424nm,20.0s							
ROSC	**El Rosal**	**127.19**	**46**		PKP	**PKPdf**	12 01 41.0	**+0.6**
	comp=Z,45nm,1.0s,baz=309,slow=13,SNR=14							
ROSC	**El Rosal**	**127.19**	**46**	*e*PKPdf		**PKPdf**	12 01 41.6	**+1.2**
ROSC	**El Rosal**	**127.19**	**46**	*e*P		**PKPdf**	12 01 42.3	**+1.9**
TSUM	**Tsumeb**	**127.39**	**273**	*e*PKPdf		**PKPdf**	12 01 40.9	**+0.7**
CHIC	**Chingaza**	**127.69**	**45**	*e*P		**PKPdf**	12 01 41.2	**-0.2**
SYO	**Syowa Base**	**127.86**	**207**⇑	*e*P		**PKPdf**	12 01 32.4	**-7.0**
SYO	**Syowa Base**	**127.86**	**207**⇑	*e*P		**PKPdf**	12 01 38.4	**-1.0**
OTAV	**Otavalo**	**128.31**	**53**	*e*PKPdf		**PKPdf**	12 01 43.1	**+0.5**
OTAV					LR	LR		
	comp=Z,202nm,21.0s							
OTAV	**Otavalo**	**128.31**	**53**	*e*P		**PKPdf**	12 01 42.9	**+0.3**
SUR	**Sutherland**	**130.93**	**257**		PFAKE		12 02 00.0	+13
SUR					LR	LR		
	comp=Z,669nm,20.0s							
NVL	**N'lazarevskaya**	**137.00**	**202**	*e*PKHKP		PKPpre	12 01 50.9	
NNA	**Nana**	**138.26**	**63**	*e*PKIKP		**PKPdf**	12 02 03.0	**+2.3**
NNA					MLR	MLR		
	comp=Z,212nm,19.0s							
NNA	**Nana**	**138.26**	**63**	*e*PKPdf		**PKPdf**	12 02 03.0	**+2.3**
NNA					LR	LR		
	comp=Z,212nm,19.0s							
PTGA	**Pitinga**	**139.23**	**32**	*e*PKPpre		PKPpre	12 01 54.3	
PTGA					LR	LR		
	comp=Z,39μm,20.0s							
SNAA	**Sanae**	**140.52**	**197**		PKP	PKPpre	12 01 55.1	
VNA2	**Neumayer--Watz**	**142.09**	**197**		PKP	PKPpre	12 02 00.8	
	baz=93,slow=2.4							
VNA3	**Neumayer Olymp**	**142.36**	**195**		PKP	PKPpre	12 02 02.3	
VNA1	**Neumayer--Stat**	**142.49**	**196**		PKP	PKPpre	12 02 02.1	
ASCN	**Ascension**	**143.14**	**315**		PFAKE		12 02 20.0	+11
ASCN					LR	LR		
	comp=Z,2μm,22.0s							
SAML	**Samuel**	**144.76**	**43**	*e*PKPdf		**PKPab**	**12 02 11.1**	**0.0**
SAML					LR	LR		
	comp=Z,297nm,19.0s							
LPAZ	**La Paz**	**147.32**	**59**		PKPbc	**PKPdf**	**12 02 18.4**	**+1.1**
	comp=Z,71nm,0.9s,baz=349,slow=3.3,SNR=105							
RCBR	**Riachuelo**	**148.79**	**353**	*e*PKPbc		**PKPbc**	**12 02 23.0**	**0.0**
RCBR					LR	LR		
	comp=Z,340nm,20.0s							
PB01	**IPOC Station P**	**149.48**	**67**	*e*PKPdf		**PKPdf**	**12 02 19.4**	**-0.7**
PB10	**IPOC Station P**	**150.13**	**72**	*e*PKPbc		**PKPbc**	**12 02 26.9**	**+1.0**
LCO	**Las Campanas**	**152.72**	**82**	*e*PKPdf		**PKPbc**	**12 02 29.0**	**-3.2**
LCO					LR	LR		
	comp=Z,235nm,19.0s							
HJA	**Humahuaca**	**153.79**	**66**	*i* P		**PKPdf**	**12 02 28.9**	**+1.9**
AGUA	**GUANDACOL**	**154.67**	**81**	*i* P		**PKPdf**	**12 02 28.6**	**+0.9**
RTLS	**Leoncito**	**154.91**	**87**	*e*P		**PKPdf**	**12 02 27.6**	**-0.6**
ASTB	**Santa Barbara**	**154.94**	**66**	*i* P		**PKPdf**	**12 02 28.9**	**+0.7**
AUSP	**Uspallata**	**154.98**	**88**	*e*P		**PKPdf**	**12 02 28.9**	**+0.6**
ALOL	**LOMAS DE OLMED**	**155.20**	**65**	*e*P		**PKPdf**	**12 02 29.4**	**+1.0**
AMOG	**MOGNA**	**155.25**	**84**	*e*P		**PKPdf**	**12 02 28.9**	**+0.5**
RTLL	**Cerro Villicun**	**155.40**	**85**	*e*P		**PKPdf**	**12 02 28.1**	**-0.4**
RTCV	**Cerro Valdivia**	**155.54**	**86**	*e*P		**PKPdf**	**12 02 29.0**	**+0.3**
ASAL	**Salagasta**	**155.54**	**88**	*e*P		**PKPdf**	**12 02 28.8**	**+0.1**
PLCA	**Paso Flores**	**155.59**	**108**		PKP	**PKPdf**	**12 02 28.3**	**-0.2**
	comp=Z,8.1nm,1.2s,baz=262,slow=5.8,SNR=5.2							
PLCA					PKPab	**PKPab**	**12 02 55.5**	**+0.8**
	comp=Z,17nm,1.0s,baz=284,slow=4.9,SNR=10							
PLCA	**Paso Flores**	**155.59**	**108**	*e*PKPdf		**PKPdf**	**12 02 30.5**	**+2.0**
PLCA					PKPab	**PKPab**	**12 02 55.5**	**+0.8**
ACLC	**CERRO LA CRUZ**	**155.86**	**80**	*i* P		**PKPdf**	**12 02 29.5**	**+0.2**
AVFE	**Valle Fertil**	**155.97**	**83**	*i* P		**PKPdf**	**12 02 29.5**	**+0.2**
ACAN	**Cantantal**	**156.76**	**86**	*e*P		**PKPdf**	**12 02 30.6**	**+0.4**
BDFB	**Brasilia**	**157.41**	**22**		PKP	**PKPdf**	**12 02 32.6**	**+1.0**
	comp=Z,8.2nm,1.1s,baz=256,slow=4.2,SNR=5.1							
BDFB					PKPab	**PKPab**	**12 03 03.5**	**+0.7**
	comp=Z,11nm,1.0s,baz=26,slow=6.3,SNR=4.8							
BDFB					PP	**PP**	**12 06 39.2**	**-1.6**
	comp=Z,8.0nm,1.1s,baz=333,slow=9.4,SNR=4.3							
BDFB	**Brasilia**	**157.41**	**22**	*e*PKPdf		**PKPdf**	**12 02 35.6**	**+4.0**
BDFB					PKPab	**PKPab**	**12 03 03.5**	**+0.7**
BDFB					PP	**PP**	**12 06 39.2**	**-1.6**
TCA	**Tanti**	**158.49**	**82**	*e*P		**PKPdf**	**12 02 32.2**	**-0.3**
CPUP	**Villa Florida**	**161.48**	**60**		PKP	**PKPdf**	**12 02 35.7**	**-0.2**
	comp=Z,6.6nm,1.1s,baz=38,slow=1.0,SNR=4.8							
CPUP					PKPab	**PKPab**	**12 03 20.6**	**+0.2**
	comp=Z,15nm,0.9s,baz=318,slow=6.0,SNR=14							
CPUP	**Villa Florida**	**161.48**	**60**	*e*PKPdf		**PKPdf**	**12 02 39.1**	**+3.3**
CPUP					*e*PKPab	**PKPab**	**12 03 20.7**	**+0.4**
TRQA	**Tornquist**	**162.13**	**100**	*e*PKPab		**PKPab**	**12 03 24.0**	**+0.9**
SPB	**Sao Paulo**	**164.98**	**29**		PFAKE		12 02 50.0	+11
SPB					LR	LR		
	comp=Z,432nm,22.0s							

*ISCJB **11** 11:53:53.0±0.9, 36°.94N±0°.03×140°.81E±0°.06, h16km±6km, mb3.6/9, Error ellipse: s-maj=8.2km s-min=5.3km az=12.8*
*IDC **11** 11:53:52.5±0.9, 36°.95N×140°.65E, h0km, mb3.6/9, mb1 3.8/10, mb1mx3.6/67, mbtmp3.7/10, ML3.7/1, Error ellipse: s-maj=22.3km s-min=17.3km az=98.0*
*JMA **11** 11:53:53.7, 36°.96N×140°.71E, h7km±1km, M3.7*
JMA Felt III J1.

ISC 11 11:53:54.0±1.2, 36°.98N±0°.03×140°.55E±0°.05, h10km±8km, n24, σ0967/25, mb3.7/9, 3C-1D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
JHO	**Hitachi**	**0.37**	**177**	⇑P		**Pg**		**11 54 00.9**	**-0.4**
JHO				S		**Sg**		**11 54 06.0**	**-0.3**
JSB	**Shiboa**	**0.50**	**268**	⇓P		**Pn**		**11 54 06.7**	**-0.6**
JSB				S		**Sn**		**11 54 15.7**	**-0.4**
JFT	**Otama**	**0.56**	**342**	⇑P		**Pb**		**11 54 05.9**	**0.0**
JFT				S		**Sb**		**11 54 14.5**	**+0.5**
JFY	**Yanaizu**	**0.80**	**302**	P		**Pn**		**11 54 10.9**	**-0.4**
JFY				S		**Sn**		**11 54 23.1**	**-0.2**
JMM	**Marumori**	**0.90**	**12**	⇑P		**Pg**		**11 54 10.4**	**-1.0**
JMM				S		**Sg**		**11 54 23.2**	**+0.1**
MJAR	**Matsushiro Arr**	**1.93**	**257**	Pn		**Pb**		**11 54 29.3**	**+0.1**
	26nm,0.3s,baz=83,slow=15,SNR=72								
MJAR				Sn		**Sg**		**11 54 55.4**	**-0.6**
	18nm,0.3s,baz=94,slow=15,SNR=7.5								
MAT	**Matsushiro**	**1.93**	**258**	P		**Pb**		**11 54 29.2**	**-0.1**
MAT				S		**Sg**		**11 54 56.3**	**+0.2**
JHJ	**Hachijo jima 2**	**3.91**	**189**	Pn		**Pn**		**11 54 54.1**	**0.0**
	15nm,0.3s,baz=354,slow=19,SNR=5.0								
JHJ				Sn		**Sn**		**11 55 39.8**	**-0.2**
	25nm,0.3s,baz=48,slow=23,SNR=5.6								
USRK	**Ussuriysk Ar.**	**9.71**	**321**	Pn		Pn		11 56 20.9	+7.2
	0.1nm,0.3s,baz=133,slow=13,SNR=4.9								
SONM	**Songino Array**	**27.24**	**304**	P		**P**		**11 59 39.7**	**+1.4**
	0.4nm,0.4s,baz=108,slow=9.3,SNR=3.5								
H11N2	**WAKE ISLAND Hy**	**28.72**	**120**	T		T		12 29 37.2	
	baz=312,slow=75,SNR=21								
H11N1	**WAKE ISLAND Hy**	**28.73**	**120**	T		T		12 29 37.6	
	baz=312,slow=75,SNR=11								
H11N3	**WAKE ISLAND Hy**	**28.74**	**120**	T		T		12 29 38.5	
	baz=312,slow=75,SNR=22								
H11S1	**WAKE ISLAND Hy**	**29.42**	**122**	T		T		12 30 30.4	
	baz=314,slow=75,SNR=34								
H11S3	**WAKE ISLAND Hy**	**29.42**	**122**	T		T		12 30 29.5	
	baz=314,slow=75,SNR=27								
H11S2	**WAKE ISLAND Hy**	**29.43**	**122**	T		T		12 30 30.3	
	baz=314,slow=75,SNR=21								
MKAR	**Makanchi Array**	**43.56**	**302**	P		**P**		**12 01 58.5**	**+0.5**
	0.6nm,0.7s,baz=108,slow=8.2,SNR=3.7								
KURBB	**Kurchatov Arra**	**45.49**	**308**	P		**P**		**12 02 13.4**	**+0.1**
	0.9nm,0.7s,baz=86,slow=7.8,SNR=5.3								
ILAR	**Eielson Array**	**49.91**	**32**	P		**P**		**12 02 48.9**	**+1.5**
	0.3nm,0.8s,baz=272,slow=5.1,SNR=4.2								
WRA	**Warramunga Arr**	**56.92**	**187**	P		**P**		**12 03 38.7**	**-0.7**
	0.8nm,0.4s,baz=3.1,slow=7.2,SNR=28								
ASAR	**Alice Springs**	**60.65**	**187**	P		**P**		**12 04 05.2**	**0.0**
	0.7nm,0.8s,baz=0.7,slow=5.8,SNR=6.2								
YKA	**Yellowknife Ar**	**64.20**	**30**	P		**P**		**12 04 28.8**	**+0.3**
	0.1nm,0.7s,baz=307,slow=6.9,SNR=3.2								
FINES	**FINESS Array B**	**68.53**	**332**	P		**P**		**12 04 55.9**	**-0.5**
	1.3nm,0.8s,baz=342,slow=8.7,SNR=3.0								
BRTR	**Keskin Array B**	**78.36**	**311**	P		**P**		**12 05 53.6**	**-1.3**
	0.5nm,0.7s,baz=34,slow=10,SNR=2.3								

JMA 11 11:55:28.2, 36°.97N×140°.71E, h9km±1km, M2.8, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.15**	**28**	P		Pg		11 55 31.8	+0.3
ONAJ				S		Sg		11 55 34.2	+0.4
JHO	**Hitachi**	**0.38**	**198**	P		Pg		11 55 35.5	-0.1
JHO				S		Sg		11 55 40.6	+0.1
JFK	**Kawauchi**	**0.42**	**18**	P		Pg		11 55 36.5	+0.1
JFK				S		Sg		11 55 42.2	+0.3
JFT	**Otama**	**0.62**	**332**	P		Pg		11 55 40.4	+0.1
JFT				S		Sg		11 55 49.0	+0.6

JMA 11 11:56:02.8, 37°.00N×140°.68E, h7km±1km, M2.7, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.14**	**43**	P		Pg		11 56 05.9	+0.1
ONAJ				S		Sg		11 56 08.2	+0.4
JFK	**Kawauchi**	**0.40**	**23**	P		Pg		11 56 10.6	0.0
JFK				S		Sg		11 56 16.1	+0.3
JHO	**Hitachi**	**0.40**	**193**	P		Pg		11 56 10.7	+0.2
JHO				eS		Sg		11 56 16.3	+0.5
JFT	**Otama**	**0.58**	**332**	S		Sg		11 56 22.0	+0.2

JMA 11 11:57:20.3, 36°.89N×140°.70E, h7km±1km, M3.1, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.23**	**20**	P		Pg		11 57 25.2	+0.4
ONAJ				eS		Sg		11 57 28.1	+0.2
JHO	**Hitachi**	**0.30**	**201**	P		Pg		11 57 26.2	+0.1
JHO				S		Sg		11 57 30.7	+0.6
JFK	**Kawauchi**	**0.50**	**16**	P		Pg		11 57 29.9	0.0
JFK				S		Sg		11 57 36.8	+0.4
MAT	**Matsushiro**	**2.03**	**261**	P		Pn		11 57 55.5	+0.5
MAT				S		Sn		11 58 21.8	+1.2

*ISCJB **11** 11:57:34.7±0.7, 10°.68N±0°.04×62°.67W±0°.03, h104km±7km, Error ellipse: s-maj=7.7km s-min=4.6km az=149.3*
*FUNV **11** 11:57:35.6, 10°.68N×62°.57W, h100km, MW3.1*
*TRN **11** 11:57:37.4, 10°.74N×62°.47W, h119km, MD3.5*

ISC 11 11:57:33.8±1.4, 10°.64N±0°.04×62°.67W±0°.04, h118km±10km, n17, σ1968/30, 3C-1D, Near coast of Venezuela

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
GUNV	**Guanoco**	**0.54**	**210**⇑	*e*P		**Pn**		**11 57 52.9**	**+1.0**
GUNV				eS		**Sn**		**11 58 03.6**	**-1.8**
CRUV	**Carupano**	**0.56**	**274**⇑	*e*P		**Pn**		**11 57 51.9**	**0.0**
CRUV				eS		**Sn**		**11 58 03.8**	**-1.7**
TPP	**Pointe-a-Pierr**	**1.24**	**105**	*e*P		**Pn**		**11 58 00.7**	**+2.5**
TPP				eS		**Sn**		**11 58 17.1**	**+0.4**
TRN	**Trinidad (W)**	**1.25**	**89**	*i* P		**Pn**		**11 58 00.5**	**+2.2**
TRN				eS		**Sn**		**11 58 15.9**	**-0.9**
TBH	**Brigand Hill**	**1.58**	**95**	*e*P		**Pn**		**11 58 03.8**	**+1.7**
TBH				eS		**Sn**		**11 58 23.2**	**-0.5**
ORIV	**Oritupano**	**1.72**	**205**	*e*P		**Pn**		**11 58 05.7**	**+1.9**
GRW	**Mount Saint Ca**	**1.81**	**33**	*e*P		**Pn**		**11 58 06.2**	**+1.2**
GRW				eS		**Sn**		**11 58 28.4**	**-0.3**
GRHS	**Sauteurs**	**1.87**	**32**	*e*P		**Pn**		**11 58 06.8**	**+1.0**
GRHS				eS		**Sn**		**11 58 28.7**	**-1.3**
GRSS	**Sisters**	**1.95**	**32**	*e*P		**Pn**		**11 58 08.1**	**+1.5**
GRSS				eS		**Sn**		**11 58 29.7**	**-2.0**
BOT	**Bacolet**	**1.99**	**74**	*e*P		**Pn**		**11 58 08.8**	**+1.7**
BOT				eS		**Sn**		**11 58 31.1**	**-1.4**
TOSP	**Speyside**	**2.20**	**72**	*e*P		**Pn**		**11 58 10.0**	**+0.3**
TOSP				eS		**Sn**		**11 58 34.9**	**-2.3**
GURV	**El Guri**	**2.89**	**188**⇓	*e*P		**Pn**		**11 58 20.0**	**+1.4**
SVB	**Belmont**	**2.97**	**28**	*e*P		**Pn**		**11 58 20.5**	**+0.9**
SVB				eS		**Sn**		**11 58 53.0**	**-2.0**
CUPV	**Cœpira**	**3.12**	**260**	*e*P		**Pn**		**11 58 23.5**	**+1.8**
CUPV				eS		**Sn**		**11 58 59.6**	**+0.9**
MERV	**Las Mercedes**	**3.83**	**249**	*e*P		**Pn**		**11 58 32.4**	**+1.3**
LUEV	**Luepa**	**4.91**	**166**	*e*P		**Pn**		**11 58 45.9**	**+0.1**
LUEV				eS		**Sn**		**11 59 37.9**	**-3.7**
BAUV	**El Baul**	**5.55**	**253**	*e*P		**Pn**		**11 58 54.8**	**+0.5**
BAUV				eS		Sn		11 59 54.4	-2.6

IDC 11 11:58:24.7±3.5, 54°.46N×86°.79E, h0km, mb1 3.0/2, mb1mx2.8/60, mbtmp3.0/2, ML2.6/2, Error ellipse: s-maj=31.6km s-min=19.2km az=47.0, Southwestern Siberia

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
I46RU	**ZALESOVO INFRA**	**1.26**	**247**	*i*				12 07 25.0	
	baz=67,slow=319,SNR=10.0								
ZALV	**Zalesovo Beam**	**1.26**	**247**	Pg		Pg		11 58 47.4	-1.5
	1.5nm,0.3s,baz=64,slow=16,SNR=13								
ZALV				Lg		Lg		11 59 05.4	
	1.0nm,0.3s,baz=63,slow=26,SNR=6.0								
KURBB	**Kurchatov Arra**	**6.33**	**236**	Pn		Pn		12 00 00.5	+1.3
	0.1nm,0.3s,baz=53,slow=14,SNR=4.1								
MKAR	**Makanchi Array**	**8.19**	**202**	Pn		Pn		12 00 25.8	+1.1
	0.2nm,0.3s,baz=24,slow=14,SNR=5.3								

JMA 11 11:58:27.1, 36°.95N×140°.61E, h9km±1km, M2.8, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.21**	**45**	P		Pg		11 58 31.7	+0.2
ONAJ				S		Sg		11 58 35.0	+0.5
JHO	**Hitachi**	**0.34**	**186**	P		Pg		11 58 33.9	+0.1
JHO				eS		Sg		11 58 38.5	+0.2
JFK	**Kawauchi**	**0.47**	**27**	P		Pg		11 58 36.1	-0.1
JFK				S		Sg		11 58 42.4	0.0
MAT	**Matsushiro**	**1.97**	**259**	P		Pn		11 59 00.5	-0.2
MAT				S		Sb		11 59 27.7	-0.2

IDC 11 12:01:24.3±4.5, 3°.12S×139°.87E, h52km±43km, mb2.9/2, mb1 3.3/3, mb1mx3.0/43, mbtmp3.2/3, ML3.6/1, Error ellipse: s-maj=101.1km s-min=19.4km az=121.0, Irian Jaya

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
JAY	**Jayapura**	**1.03**	**54**	P		Pn		12 01 42.9	+0.4
	4.9nm,0.3s,baz=216,slow=23,SNR=150								
JAY				S		Sn		12 01 56.2	+0.3
	12nm,0.3s,baz=73,slow=19,SNR=20								
WRA	**Warramunga Arr**	**17.57**	**197**	P		Pn		12 05 25.0	-0.7
	0.2nm,0.3s,baz=18,slow=13,SNR=8.8								
ASAR	**Alice Springs**	**21.23**	**195**	P		P		12 06 06.2	+0.2
	0.4nm,0.6s,baz=25,slow=9.3,SNR=8.7								
ILAR	**Eielson Array**	**85.73**	**24**	P		P		12 13 57.5	0.0
	0.1nm,0.7s,baz=258,slow=4.4,SNR=3.1								

JMA 11 12:01:27.6±0.1, 37°.11N×141°.12E, h52km±1km, M3.2, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**0.32**	**323**	P		Pn		12 01 37.0	-0.2
JFK				S		Sn		12 01 43.8	-0.2
JHO	**Hitachi**	**0.67**	**222**	P		Pn		12 01 40.6	-0.4
JHO				S		Sn		12 01 49.8	-0.9
JFT	**Otama**	**0.75**	**303**	P		Pn		12 01 42.5	+0.5
JFT				S		Sn		12 01 52.8	+0.3
JMM	**Marumori**	**0.80**	**341**	P		Pn		12 01 42.6	-0.1
JMM				S		Sn		12 01 53.4	-0.3
MAT	**Matsushiro**	**2.41**	**257**	P		Pn		12 02 06.0	+1.5
MAT				S		Sn		12 02 32.8	0.0

*IDC **11** 12:02:13.6±1.0, 28°.00N×58°.74E, h0km, mb3.7/11, mb1 3.9/13, mb1mx3.6/58, mbtmp3.7/13, ML3.8/2, Error ellipse: s-maj=27.8km s-min=18.7km az=87.0*
*CSEM **11** 12:02:14.6±0.3, 28°.08N×59°.09E, h2km, ML4.2, Error ellipse: s-maj=10.1km s-min=8.9km az=104.0*
*ISCJB **11** 12:02:14.5±0.5, 28°.09N±0°.05×59°.11E±0°.06, h10km, mb3.6/12, Error ellipse: s-maj=7.5km s-min=6.7km az=30.7*
*THR **11** 12:02:15.3±0.7, 27°.89N×58°.91E, h15km, ML4.1*
*TEH **11** 12:02:20.4, 28°.29N×58°.87E, h30km, ML4.2*
*NEIC **11** 12:02:20.4, 28°.29N×58°.87E, h30km, MN4.2(TEH), After TEH.*

ISC 11 12:02:14.5±0.6, 28°.09N±0°.04×58°.88E±0°.05, h10km, n51, σ1949/48, mb3.6/12, Southern Iran

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
NIAN	**Nian**	**1.88**	**254**	*e*Pn		**Pg**		**12 02 50.4**	**-0.3**
NIAN	**Nian**	**1.88**	**254**	*e*Pn		**Pg**		**12 02 50.4**	**-0.3**
CHMN	**Cheshme madani**	**2.12**	**327**	*e*Pn		**Pn**		**12 02 51.5**	**+1.1**
CHMN	**Cheshme madani**	**2.12**	**327**	*e*Pn		**Pn**		**12 02 51.5**	**+1.1**
IBND	**Bandar-abas**	**2.17**	**254**	*e*Pn		**Pg**		**12 02 55.1**	**-1.0**
IBND				*e*AMB		AMB		12 03 38.9	
	comp=Z,34μm,0.2s								
IBND				*e*AMB		AMB		12 03 39.7	
	comp=Z,32μm,0.3s								
IBND	**Bandar-abas**	**2.17**	**254**	*e*Pn		**Pg**		**12 02 55.1**	**-1.0**
ZHSF	**Zahedan**	**2.25**	**47**	*e*Pn		**Pg**		**12 02 56.0**	**-1.8**
NGRK	**Negar Kerman**	**2.44**	**310**	*e*Pn		**Pb**		**12 02 56.9**	**-1.9**
NGRK	**Negar Kerman**	**2.44**	**310**	*e*Pn		**Pb**		**12 02 56.9**	**-1.9**
GENO	**Geno**	**2.49**	**255**	*e*Pn		**Pb**		**12 03 00.4**	**+0.9**
GENO	**Geno**	**2.49**	**255**	*e*Pn		**Pb**		**12 03 00.4**	**+0.9**
BNDS	**Bandar-Abbas**	**2.49**	**255**	*e*Pn		**Pb**		**12 02 57.5**	**-2.0**
BNDS				AML		AML		12 03 37.4	
	comp=E,703nm,0.4s								
BND

JFY	**Yanaizu**	**0.90**	**300**	P	Pg	12 05 21.2	-0.2
JFY				S	Sg	12 05 32.7	-0.5
JMM	**Marumori**	**0.91**	**5**	P	Pg	12 05 20.8	-0.7
JMM				S	Sg	12 05 32.8	-0.6

IDC 11 12:05:53.2±24.0, 11°47S×75°83W, h394km±193km, mb3.1/4, mb1 3.2/4, mb1mx3.0/22, mbtmp3.8/4, Error ellipse: s-maj=767.2km s-min=31.3km az=29.0, Central Peru

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
TXAR	**Lajitas Array**	**48.65**	**327**	P	P	12 13 59.5	0.0
	0.3nm,0.4s,baz=152,slow=9.2,SNR=8.5						
DBIC	**Dimbokro**	**72.86**	**79**	P	P	12 16 41.0	-0.1
	1.2nm,0.3s,baz=241,slow=5.5,SNR=12						
YKA	**Yellowknife Ar**	**79.63**	**343**	P	P	12 17 17.5	-0.1
	0.2nm,0.5s,baz=142,slow=5.9,SNR=7.1						
TORD	**Torodi Ar. Bea**	**80.70**	**75**	P	P	12 17 24.6	+0.3
	0.5nm,0.5s,baz=250,slow=3.7,SNR=5.5						

IDC 11 12:06:16.4±0.6, 36°88N×140°47E, h0km, mb3.9/20, mb1 4.0/22, mb1mx3.9/53, mbtmp3.9/22, ML3.1/2, Error ellipse: s-maj=17.3km s-min=12.9km az=94.0
ISCJB 11 12:06:17.0±1.4, 36°94N±0°02×140°68E±0°04, h15km±9km, mb3.8/22, Error ellipse: s-maj=5.7km s-min=3.7km az=26.2
JMA 11 12:06:17.1, 36°95N×140°62E, h9km±1km, M4.0
Broadband fault plane solution: P waves. NP1: φs274.00000°, δ72.00000°, λ-91.00000°. NP2:φs97.00000°, δ18.00000°, λ-87.00000°. Principal axes: T Plg27.0000°, Azm5.0000°; N Plg1.0000°, Azm275.0000°; P Plg63.0000°, Azm183.0000°;
JMA Felt II J1.
NEIC 11 12:06:18.6±3.2, 36°83N×140°52E, h15km±20km, mb4.3/2 Error ellipse: s-maj=10.3km s-min=7.3km az=90.0

ISC 11 12:06:17.1±1.1, 36°94N±0°03×140°60E±0°04, h5km±7km, n50, σ0°75/49, mb3.8/22, 7C, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.22**	**45**	⇑P	**Pg**	**12 06 21.6**	**0.0**
ONAJ				S	**Sg**	**12 06 24.7**	**+0.2**
JHO	**Hitachi**	**0.33**	**184**	⇑P	**Pg**	**12 06 24.0**	**+0.4**
JFK	**Kawauchi**	**0.48**	**27**	⇑P	**Pg**	**12 06 26.0**	**-0.3**
JFK				S	**Sg**	**12 06 32.3**	**-0.3**
JSB	**Shiboa**	**0.55**	**273**	P	**Pb**	**12 06 28.7**	**-0.5**
JSB				S	**Sb**	**12 06 36.8**	**-0.6**
JFT	**Otama**	**0.61**	**340**	⇑P	**Pg**	**12 06 29.1**	**+0.2**
JFT				S	**Sg**	**12 06 37.2**	**+0.3**
JYT	**Yasato**	**0.79**	**205**	⇑P	**Pg**	**12 06 32.2**	**0.0**
JYT				S	**Sg**	**12 06 42.7**	**+0.3**
JFY	**Yanaizu**	**0.85**	**303**	⇑P	**Pg**	**12 06 33.5**	**0.0**
JFY				S	**Sg**	**12 06 44.5**	**-0.1**
JMM	**Marumori**	**0.93**	**9**	⇑P	**Pg**	**12 06 34.2**	**-0.9**
JMM				S	**Sg**	**12 06 46.7**	**-0.5**
MJAR	**Matsushiro Arr**	**1.96**	**259**	Pn	**Pn**	**12 06 51.2**	**+0.1**
	23nm,0.3s,baz=78,slow=16,SNR=11						
MJAR				Sn	**Sb**	**12 07 17.8**	**-0.3**
	51nm,0.3s,baz=85,slow=27,SNR=7.5						
MAJO	**Matsushiro**	**1.96**	**259**	*e*Pn	**Pn**	**12 06 51.6**	**+0.5**
MAT	**Matsushiro**	**1.96**	**259**	P	**Pn**	**12 06 51.5**	**+0.4**
MAT				S	**Sb**	**12 07 17.9**	**-0.3**
JHJ	**Hachijo jima 2**	**3.87**	**190**	Pn	**Pn**	**12 07 18.2**	**+0.9**
	13nm,0.3s,baz=65,slow=17,SNR=3.6						
JHJ				Sn	**Sn**	**12 08 03.9**	**+0.7**
	33nm,0.3s,baz=53,slow=20,SNR=3.9						
JHJ2	**Mitsune**	**3.88**	**190**	*e*Pn	**Pn**	**12 07 16.9**	**-0.5**
ERM	**Erimo**	**5.44**	**21**	Pn	Pn	12 07 41.4	+2.6
USRK	**Ussuriysk Ar.**	**9.77**	**321**	Pn	Pn	12 08 44.0	+5.8
	0.1nm,0.3s,baz=138,slow=12,SNR=13						
CBIJ	**Chichi jima**	**9.91**	**172**	Pn	Pn	12 08 36.6	-3.6
CBIJ				Sn	Sn	12 10 21.8	-10
JCJ	**Chichijima**	**9.91**	**172**	Pn	Pn	12 08 36.6	-3.6
	baz=73,slow=19						
JCJ				Sn	Sn	12 10 21.8	-10
	4.9nm,0.3s,baz=288,slow=20,SNR=2.8						
KSRS	**Korea Array**	**10.13**	**277**	Pn	Pn	12 08 48.5	+5.4
	0.1nm,0.3s,baz=99,slow=14,SNR=7.3						
KSAR	**Wonju Array Be**	**10.16**	**277**	Pn	Pn	12 08 48.5	+4.9
KLR	**Kul'dur**	**13.87**	**335**	Pn	**Pn**	**12 09 35.2**	**+1.0**
	0.0nm,0.3s,baz=135,slow=14,SNR=1.5						
SEY	**Seymchan**	**27.01**	**12**	P	**P**	**12 12 01.0**	**+1.2**
	0.6nm,0.5s,baz=100,slow=4.2,SNR=3.5						
SONM	**Songino Array**	**27.30**	**304**	P	**P**	**12 12 01.7**	**-0.9**
	1.6nm,0.7s,baz=109,slow=10,SNR=8.2						
H11N2	**WAKE ISLAND Hy 28.66**		**120**	T	T	12 42 02.6	
	baz=313,slow=75,SNR=31						
H11N1	**WAKE ISLAND Hy 28.67**		**120**	T	T	12 42 02.2	
	baz=313,slow=75,SNR=34						
H11N3	**WAKE ISLAND Hy 28.68**		**120**	T	T	12 42 04.1	
	baz=313,slow=75,SNR=39						
H11S1	**WAKE ISLAND Hy 29.36**		**122**	T	T	12 42 54.9	
	baz=314,slow=76,SNR=134						
H11S3	**WAKE ISLAND Hy 29.36**		**122**	T	T	12 42 55.0	
	baz=314,slow=76,SNR=157						
H11S2	**WAKE ISLAND Hy 29.38**		**122**	T	T	12 42 52.9	
	baz=314,slow=76,SNR=8.7						
ZALV	**Zalesovo Beam**	**41.49**	**312**	P	**P**	**12 14 04.0**	**-1.0**
	0.5nm,0.4s,baz=107,slow=6.8,SNR=3.7						
MKAR	**Makanchi Array**	**43.62**	**302**	P	**P**	**12 14 21.8**	**-0.5**
	0.7nm,0.6s,baz=87,slow=8.4,SNR=7.2						
KURK	**Kurchatov**	**45.48**	**308**	*e*P	**P**	**12 14 35.5**	**-1.5**
	6.3nm,1.0s						
KURK				P	**P**	**12 14 36.5**	**-0.5**
KURBB	**Kurchatov Arra**	**45.54**	**308**	P	**P**	**12 14 36.5**	**-1.1**
	1.1nm,0.5s,baz=84,slow=7.8,SNR=14						
ILAR	**Eielson Array**	**49.92**	**32**	P	**P**	**12 15 11.0**	**-0.4**
	0.5nm,0.7s,baz=270,slow=6.6,SNR=7.7						
BVAR	**Borovoye Array**	**50.15**	**312**	P	**P**	**12 15 12.0**	**-1.4**
	0.7nm,0.6s,baz=86,slow=7.9,SNR=4.4						
INK	**Inuvik**	**54.76**	**27**	P	**P**	**12 15 49.1**	**+1.8**
	1.2nm,0.9s,baz=275,slow=5.0						
FITZ	**Fitzroy Crossi**	**56.54**	**197**	P	**P**	**12 15 59.7**	**-0.8**
	1.1nm,0.5s,baz=342,slow=3.2,SNR=4.2						
WRA	**Warramunga Arr**	**56.89**	**187**	P	**P**	**12 16 01.8**	**-1.2**
	3.1nm,0.6s,baz=3.2,slow=7.3,SNR=35						
ABKAR	**Akbulak array**	**57.50**	**310**	*e*P	**P**	**12 16 07.4**	**+0.2**
	1.1nm,0.5s						
ASAR	**Alice Springs**	**60.61**	**187**	P	**P**	**12 16 28.1**	**-0.8**
	1.3nm,0.7s,baz=19,slow=6.6,SNR=26						
ARCES	**ARCESS Array B**	**63.85**	**339**	P	**P**	**12 16 50.8**	**+0.7**
	2.7nm,0.9s,baz=60,slow=7.6,SNR=3.0						
YKA	**Yellowknife Ar**	**64.21**	**30**	P	**P**	**12 16 53.7**	**+1.2**
	0.2nm,0.7s,baz=302,slow=7.0,SNR=4.9						
STKA	**Stephens Creek**	**68.47**	**179**	P	**P**	**12 17 19.9**	**-0.2**
	2.2nm,1.0s,baz=354,slow=9.2,SNR=3.2						
FINES	**FINESS Array B**	**68.59**	**332**	P	**P**	**12 17 21.0**	**+0.3**
	1.3nm,0.7s,baz=55,slow=10.0,SNR=4.7						
AKASG	**Malin Array Be**	**73.97**	**322**	P	**P**	**12 17 53.6**	**+0.3**
	0.2nm,0.2s,baz=41,slow=5.8,SNR=3.0						
NB2	**NORSAR Subarra**	**74.02**	**337**	P	**P**	**12 17 53.8**	**+0.3**
	comp=Z,0.9nm,0.8s,baz=39,slow=6.2						
NOA	**NORSAR Array B**	**74.02**	**337**	P	**P**	**12 17 54.3**	**+0.8**
	comp=Z,0.6nm,0.7s,baz=43,slow=5.5,SNR=4.4						
NVAR	**Mina Array Bea**	**75.56**	**53**	P	**P**	**12 18 04.2**	**+1.1**
	comp=Z,0.2nm,0.5s,baz=316,slow=2.5,SNR=3.3						
PDAR	**Pinedale Array**	**78.19**	**45**	P	**P**	**12 18 18.1**	**+0.1**
	comp=Z,0.3nm,0.6s,baz=180,slow=0.1,SNR=3.6						
TXAR	**Lajitas Array**	**90.69**	**52**	P	**P**	**12 19 21.0**	**-0.3**
	comp=Z,0.3nm,0.7s,baz=301,slow=3.8,SNR=3.7						
LPAZ	**La Paz**	**147.30**	**59**	PKPbc	**PKPab**	**12 26 04.9**	**+0.2**
	comp=Z,1.0nm,0.4s,baz=267,slow=1.9,SNR=4.7						

JMA 11 12:07:39.9, 36°98N×140°63E, h10km±1km, M3.2, 2C, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.18**	**48**	⇑P	Pg	12 07 43.9	+0.1
ONAJ				S	Sg	12 07 46.7	+0.2
JHO	**Hitachi**	**0.37**	**188**	⇑P	Pg	12 07 47.2	0.0
JHO				S	Sg	12 07 52.3	+0.1
JFK	**Kawauchi**	**0.43**	**27**	P	Pg	12 07 48.5	+0.1
JFK				S	Sg	12 07 54.1	0.0
JFT	**Otama**	**0.59**	**337**	P	Pg	12 07 51.4	+0.1
JFT				S	Sg	12 07 59.3	+0.3
JMM	**Marumori**	**0.89**	**8**	P	Pg	12 07 56.7	-0.4
JMM				S	Sg	12 08 08.3	-0.5
MAT	**Matsushiro**	**1.99**	**258**	P	Pb	12 08 16.4	+0.1
MAT				*e*S	Sb	12 08 41.0	-0.2

JMA 11 12:07:55.0, 36°97N×140°64E, h10km±1km, M3.5, 2C, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.18**	**44**	⇑P	Pg	12 07 59.1	+0.2
ONAJ				S	Sg	12 08 02.0	+0.3
JHO	**Hitachi**	**0.36**	**189**	⇑P	Pg	12 08 02.2	0.0
JHO				S	Sg	12 08 07.7	+0.7
JFK	**Kawauchi**	**0.44**	**25**	P	Pg	12 08 03.5	-0.1
JFT	**Otama**	**0.60**	**336**	P	Pg	12 08 06.8	+0.2
JFT				S	Sg	12 08 14.9	+0.4
JMM	**Marumori**	**0.90**	**8**	S	Sg	12 08 24.0	-0.2

MAN 11 12:09:03, 15°55N×119°79E, h39km, mb4.2, ML3.1, MS2.8, 1C, Luzon

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
SCZP	**Santa Cruz**	**0.26**	**26**	*e*P	Pn	12 09 12.5	+1.5
SCZP				*e*S	Sn	12 09 19.3	+1.8
BOLP	**Bolinao**	**0.84**	**8**	*e*P	Pn	12 09 19.4	+1.0
BOLP				*e*S	Sn	12 09 31.4	+1.9
PCPH	**Palayan**	**1.25**	**89**	⇑*e*P	Pn	12 09 24.6	+0.6
BALP	**Baler**	**1.73**	**83**	*e*P	Pn	12 09 32.0	+1.5

IDC 11 12:09:58.4±1.2, 37°05N×140°98E, h0km, mb3.4/5, mb1 3.6/7, mb1mx3.4/45, mbtmp3.5/7, ML3.2/1, Error ellipse: s-maj=26.4km s-min=20.4km az=77.0
ISCJB 11 12:09:59.1±0.8, 37°01N±0°03×140°95E±0°07, h11km±4km, mb3.4/5, Error ellipse: s-maj=9.3km s-min=4.9km az=7.3
JMA 11 12:10:00.6, 37°03N×140°79E, h7km±1km, M3.4
Broadband fault plane solution: P waves. NP1: φs55.00000°, δ47.00000°, λ-85.00000°. NP2:φs227.00000°, δ43.00000°, λ-95.00000°. Principal axes: T Plg2.0000°, Azm141.0000°; N Plg4.0000°, Azm231.0000°; P Plg86.0000°, Azm28.0000°;

ISC 11 12:10:00.4±1.1, 37°03N±0°04×140°83E±0°07, h9km±6km, n13, σ0°85/21, mb3.5/5, 5C, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.08**	**344**	⇑P	**Pg**	**12 10 02.5**	**-0.1**
ONAJ				S	**Sg**	**12 10 04.0**	**-0.3**
JFK	**Kawauchi**	**0.34**	**7**	⇑P	**Pg**	**12 10 07.4**	**+0.3**
JFK				S	**Sg**	**12 10 12.4**	**+0.7**
JHO	**Hitachi**	**0.46**	**206**	⇑P	**Pg**	**12 10 09.3**	**-0.1**
JHO				S	**Sg**	**12 10 15.5**	**0.0**
JFT	**Otama**	**0.62**	**322**	⇑P	**Pg**	**12 10 12.5**	**0.0**
JFT				S	**Sg**	**12 10 21.0**	**+0.3**
JMM	**Marumori**	**0.84**	**358**	⇑P	**Pg**	**12 10 16.3**	**-0.2**
JMM				S	**Sg**	**12 10 27.5**	**+0.1**
MJAR	**Matsushiro Arr**	**2.15**	**258**	Pn	**Pn**	**12 10 37.8**	**+1.3**
	6.1nm,0.3s,baz=79,slow=17,SNR=5.5						
MJAR				Sn	**Sb**	**12 11 05.1**	**-1.3**
	15nm,0.3s,baz=75,slow=20,SNR=9.3						
MAT	**Matsushiro**	**2.16**	**258**	P	**Pn**	**12 10 37.7**	**+1.2**
MAT				S	**Sb**	**12 11 05.7**	**-0.7**
JHJ	**Hachijo jima 2**	**3.99**	**193**	Pn	**Pn**	**12 11 02.6**	**+1.0**
	baz=76,slow=19,SNR=2.5						
JHJ				Sn	**Sn**	**12 11 49.9**	**+1.3**
	6.8nm,0.3s,baz=218,slow=18,SNR=2.4						
MKAR	**Makanchi Array**	**43.72**	**302**	P	**P**	**12 18 06.6**	**+0.9**
	0.1nm,0.2s,baz=90,slow=12,SNR=2.4						
KURBB	**Kurchatov Arra**	**45.63**	**308**	P	**P**	**12 18 19.9**	**-1.0**
	0.5nm,0.7s,baz=86,slow=7.9,SNR=4.3						
WRA	**Warramunga Arr**	**56.99**	**187**	P	**P**	**12 19 45.5**	**-0.9**
	0.4nm,0.6s,baz=4.2,slow=7.1,SNR=6.6						
ASAR	**Alice Springs**	**60.72**	**187**	P	**P**	**12 20 12.0**	**-0.2**
	0.2nm,0.8s,baz=8.2,slow=8.7,SNR=4.0						
TXAR	**Lajitas Array**	**90.50**	**52**	P	**P**	**12 23 02.0**	**-0.9**
	0.2nm,0.8s,baz=285,slow=3.5,SNR=2.5						

JMA 11 12:10:07.4±0.1, 41°87N×140°87E, h8km±3km, M0.8, Hokkaido region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JKB	**Kayabe**	**0.12**	**82**	P	Pg	12 10 10.1	0.0
JKB				*e*S	Sg	12 10 12.1	+0.1
JYM2	**Yakumo 2**	**0.45**	**304**	*e*S	Sg	12 10 22.1	+0.1
JSR	**Shiriuchi**	**0.48**	**225**	*e*S	Sg	12 10 23.2	+0.2
MAT	**Matsushiro**	**5.71**	**202**	P	Pg	12 11 59.6	+2.9
MAT				S	Sn	12 12 27.0	-11

ISCJB 11 12:12:02.8±0.7, 36°92N±0°03×140°76E±0°08, h14km±4km, mb3.7/5, Error ellipse: s-maj=11.1km s-min=4.2km az=15.7
JMA 11 12:12:03.2, 36°95N×140°66E, h8km±1km, M3.5
IDC 11 12:12:13.2±1.0, 35°51N×137°20E, h0km, mb3.6/5, mb1 3.8/7, mb1mx3.5/50, mbtmp3.7/7, ML2.6/2, Error ellipse: s-maj=28.1km s-min=18.4km az=74.0

ISC 11 12:12:03.2±1.1, 36°98N±0°04×140°60E±0°07, h6km±9km, n16, σ0°90/23, mb3.5/5, 6C, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.20**	**52**	⇑P	**Pg**	**12 12 07.3**	**+0.1**
ONAJ				S	**Sg**	**12 12 10.2**	**+0.3**
JHO	**Hitachi**	**0.37**	**184**	⇑P	**Pg**	**12 12 10.0**	**-0.3**
JHO				S	**Sg**	**12 12 15.0**	**-0.1**
JFK	**Kawauchi**	**0.45**	**29**	⇑P	**Pg**	**12 12 12.0**	**+0.2**
JFK				S	**Sg**	**12 12 18.2**	**+0.5**
JFT	**Otama**	**0.58**	**339**	⇑P	**Pb**	**12 12 15.4**	**-0.3**
JFT				S	**Sb**	**12 12 24.2**	**0.0**
JMM	**Marumori**	**0.90**	**10**	⇑P	**Pg**	**12 12 20.3**	**-0.2**
JMM				S	**Sb**	**12 12 32.9**	**-0.6**
JOU	**Okura**	**1.39**	**2**	⇑P	**Pb**	**12 12 29.2**	**-0.3**
JIO	**Ouri**	**1.59**	**22**	P	**Pn**	**12 12 31.5**	**-0.3**
JIO				S	**Sb**	**12 12 52.6**	**-0.7**
MJAR	**Matsushiro Arr**	**1.97**	**258**	Pg	**Pb**	**12 12 38.4**	**-1.0**
	13nm,0.3s,baz=92,slow=15,SNR=11						
MJAR				Lg	Lg	12 13 04.4	
	20nm,0.3s,baz=78,slow=27,SNR=13						
MAT	**Matsushiro**	**1.97**	**258**	P	**Pb**	**12 12 38.4**	**-1.0**
MAT				S	**Sb**	**12 13 04.8**	**+0.6**
JHJ	**Hachijo jima 2**	**3.91**	**190**	Pn	**Pn**	**12 13 05.5**	**+1.8**
	9.8nm,0.3s,baz=73,slow=19,SNR=3.5						
JHJ				Sn	**Sn**	**12 13 49.3**	**-0.6**
	8.2nm,0.3s,baz=253,slow=19,SNR=4.0						
USRK	**Ussuriysk Ar.**	**9.74**	**320**	Pn	Pn	12 14 31.6	+7.9
	0.1nm,0.3s,baz=102,slow=18,SNR=4.2						
SONM	**Songino Array**	**27.28**	**304**	P	**P**	**12 17 48.8**	**+0.4**
	0.2nm,0.4s,baz=96,slow=7.5,SNR=2.5						
KURBB	**Kurchatov Arra**	**45.52**	**308**	P	**P**	**12 20 23.5**	**+0.2**
	0.5nm,0.8s,baz=82,slow=7.8,SNR=4.5						
BVAR	**Borovoye Array**	**50.13**	**312**	P	**P**	**12 21 01.2**	**+2.1**
	0.2nm,0.3s,baz=68,slow=5.3,SNR=2.9						
WRA	**Warramunga Arr**	**56.92**	**187**	P	**P**	**12 21 47.8**	**-1.3**
	1.2nm,0.5s,baz=2.8,slow=7.2,SNR=16						
ASAR	**Alice Springs**	**60.65**	**187**	P	**P**	**12 22 14.1**	**-0.9**
	1.3nm,0.9s,baz=6.5,slow=7.7,SNR=8.5						

JMA 11 12:13:22.8, 37°01N×140°70E, h10km±1km, M3.2, 3C, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.12**	**41**	⇑P	Pg	12 13 25.9	+0.1
ONAJ				S	Sg	12 13 27.6	-0.3
JFK	**Kawauchi**	**0.38**	**21**	⇑P	Pg	12 13 30.4	0.0
JFK				S	Sg	12 13 35.4	-0.1
JHO	**Hitachi**	**0.41**	**195**	⇑P	Pg	12 13 30.7	-0.2
JHO				S	Sg	12 13 36.7	+0.4
JFT	**Otama**	**0.58**	**330**	S	Sg	12 13 42.4	+0.5
JMM	**Marumori**	**0.86**	**5**	P	Pg	12 13 38.9	-0.4
JMM				S	Sg	12 13 50.2	-0.3
JOU	**Okura**	**1.35**	**359**	P	Pb	12 13 48.3	0.0
JOU				S	Sb	12 14 05.7	0.0
MAT	**Matsushiro**	**2.06**	**258**	P	Pg	12 14 01.3	-0.9
MAT				*e*S	Sb	12 14 26.1	+0.3

ISCJB 11 12:15:31.3±0.6, 37°03N±0°03×140°79E±0°05, h13km±3km, mb3.7/6, Error ellipse: s-maj=7.4km s-min=4.1km az=12.9
JMA 11 12:15:31.9, 37°04N×140°70E, h8km±1km, M3.6
Broadband fault plane solution: P waves. NP1: φs255.00000°, δ53.00000°, λ-75.00000°. NP2:φs50.00000°, δ39.00000°, λ-109.00000°. Principal axes: T Plg7.0000°, Azm334.0000°; N Plg12.0000°, Azm65.0000°; P Plg76.0000°, Azm214.0000°;
JMA Felt II J1.
IDC 11 12:15:38.0±2.8, 36°97N×140°56E, h53km±27km, mb3.4/6, mb1 3.6/7, mb1mx3.3/48, mbtmp3.7/7, ML3.4/1 Error ellipse: s-maj=28.3km s-min=14.7km az=81.0

ISC 11 12:15:32.1±1.0, 37°04N±0°03×140°68E±0°04, h6km±8km, n24, σ0°77/28, mb3.6/6, 4C, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.11**	**58**	P	**Pg**	**12 15 34.4**	**-0.1**
ONAJ				S	**Sg**	**12 15 35.9**	**-0.3**
JFK	**Kawauchi**	**0.36**	**26**	⇑P	**Pg**	**12 15 38.9**	**-0.2**
JFK				S	**Sg**	**12 15 43.9**	**+0.1**
JHO	**Hitachi**	**0.44**	**192**	P	**Pg**	**12 15 40.4**	**-0.2**
JHO				S	**Sg**	**12 15 46.4**	**+0.1**
JFT	**Otama**	**0.55**	**330**	⇑P	**Pg**	**12 15 42.9**	**+0.3**
JFT				S	**Sg**	**12 15 50.3**	**+0.5**
JSB	**Shiboa**	**0.61**	**263**	P	**Pb**	**12 15 44.8**	**-0.4**
JSB				S	**Sb**	**12 15 53.4**	**-0.7**
JMM	**Marumori**	**0.83**	**6**	⇑P	**Pg**	**12 15 47.4**	**-0.6**
JMM				S	**Sg**	**12 15 58.5**	**-0.2**
JFY	**Yanaizu**	**0.86**	**295**	⇑P	**Pg**	**12 15 48.7**	**+0.1**
JFY				S	**Sg**	**12 16 00.0**	**+0.3**
JYT	**Yasato**	**0.90**	**206**	P	**Pg**	**12 15 48.8**	**-0.6**
JYT				S	**Sg**	**12 16 00.7**	**-0.4**
MJAR	**Matsushiro Arr**	**2.04**	**257**	P	**Pn**	**12 16 07.7**	**+0.7**
	16nm,0.3s,baz=80,slow=15,SNR=15						
MJAR				S	**Sb**	**12 16 35.1**	**-0.1**
	21nm,0.3s,baz=86,slow=26,SNR=12						
MAT	**Matsushiro**	**2.04**	**257**	P	**Pn**	**12 16 07.9**	**+0.9**
MAT				S	**Sb**	**12 16 35.1**	**-0.2**
JHJ	**Hachijo jima 2**	**3.98**	**191**	P	**Pn**	**12 16 36.5**	**+2.9**
	6.8nm,0.3s,baz=53,slow=20,SNR=2.2						
JHJ				S	**Sn**	**12 17 20.3**	**-0.3**
	6.9nm,0.3s,baz=66,slow=20,SNR=3.1						
KSRS	**Korea Array**	**10.18**	**276**	P	Pn	12 18 05.2	+6.6
	0.1nm,0.3s,baz=98,slow=14,SNR=4.6						
SONM	**Songino Array**	**27.29**	**304**	P	**P**	**12 21 17.5**	**+0.1**
	0.6nm,0.7s,baz=103,slow=8.6,SNR=4.0						
H11N2	**WAKE ISLAND Hy 28.66**		**120**	T	T	12 52 12.8	
	baz=313,slow=75,SNR=9.8						
H11N1	**WAKE ISLAND Hy 28.67**		**120**	T	T	12 52 13.6	
	baz=313,slow=75,SNR=11						
H11N3	**WAKE ISLAND Hy 28.68**		**120**	T	T	12 52 13.5	
	baz=313,slow=75,SNR=12						
H11S1	**WAKE ISLAND Hy 29.36**		**122**	T	T	12 53 00.0	
	baz=314,slow=76,SNR=14						
H11S3	**WAKE ISLAND Hy 29.36**		**122**	T	T	12 53 03.9	
	baz=314,slow=76,SNR=17						
H11S2	**WAKE ISLAND Hy 29.38**		**122**	T	T	12 53 04.8	
	baz=314,slow=76,SNR=12						
MKAR	**Makanchi Array**	**43.62**	**302**	P	**P**	**12 23 36.7**	**-0.4**
	0.5nm,0.6s,baz=82,slow=9.2,SNR=3.2						
ILAR	**Eielson Array**	**49.80**	**32**	P	**P**	**12 24 25.9**	**+0.6**
	0.5nm,0.8s,baz=267,slow=7.2,SNR=6.1						
INK	**Inuvik**	**54.65**	**27**	P	**P**	**12 25 01.4**	**+0.2**
	0.7nm,0.9s,baz=284,slow=8.3,SNR=6.8						
WRA	**Warramunga Arr**	**56.99**	**187**	P	**P**	**12 25 17.5**	**-1.0**
	2.1nm,0.6s,baz=3.5,slow=7.3,SNR=28						
ASAR	**Alice Springs**	**60.72**	**187**	P	**P**	**12 25 43.5**	**-0.9**
	0.6nm,0.7s,baz=16,slow=6.8,SNR=14						

IDC 11 12:16:25.3±0.8, 36°98N×140°72E, h0km, mb3.7/9, mb1 3.9/11, mb1mx3.7/51, mbtmp3.7/11, ML3.9/2, MS3.5/1, Ms1 3.5/1, ms1mx2.8/56, Error ellipse: s-maj=20.6km s-min=17.9km az=139.0
ISCJB 11 12:16:26.7±1.0, 36°96N±0°03×140°76E±0°06, h15km±6km, mb3.6/9, Error ellipse: s-maj=8.7km s-min=4.1km az=20.3
JMA 11 12:16:26.9, 36°98N×140°65E, h10km±1km, M3.9

ISC 11 12:16:27.0±1.0, 36°99N±0°04×140°67E±0°06, h10km±6km, n23, σ1°13/29, mb3.6/9, 2C, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.15**	**41**	P	**Pg**	**12 16 30.6**	**+0.2**
ONAJ				S	**Sg**	**12 16 33.6**	**+0.7**
JHO	**Hitachi**	**0.39**	**193**	P	**Pg**	**12 16 34.1**	**+0.5**
JHO				S	**Sb**	**12 16 40.2**	**-1.6**
JFK	**Kawauchi**	**0.41**	**23**	⇑P	**Pb**	**12 16 35.3**	**-1.1**
JFK				S	**Sg**	**12 16 41.0**	**+0.4**
JFT	**Otama**	**0.59**	**333**	⇑P	**Pb**	**12 16 38.6**	**-0.9**
JFT				S	**Sg**	**12 16 46.5**	**+0.1**
JMM	**Marumori**	**0.88**	**6**	S	**Sg**	**12 16 55.4**	**-0.1**
JOU	**Okura**	**1.38**	**360**	S	**Sn**	**12 17 11.1**	**+0.6**
JIO	**Ouri**	**1.

ONAJ				S	Sg	12 20 16.1	+0.6		
JFK	**Kawauchi**	**0.45**	**26**	P	Pg	12 20 17.5	+0.1		
JFK				*eS*	Sg	12 20 23.4	0.0		
JFT	**Otama**	**0.60**	**337**	P	Pg	12 20 20.4	+0.1		
JFT				S	Sg	12 20 28.5	+0.2		
JMM	**Marumori**	**0.91**	**8**	S	Sg	12 20 37.9	-0.2		
MAT	**Matsushiro**	**1.99**	**259**	P	Pn	12 20 40.7	-1.8		
MAT				S	Sb	12 21 08.8	-1.1		

IDC 11 12:20:21.3±1.6, 1°20.S × 129°.95E, h0 km, mb4.2/4, mb1 4.0/5, mb1mx3.6/47, mbtmp3.9/5, ML3.1/1, Error ellipse: s-maj=123.5km s-min=21.4km az=72.0, Halmahera

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
WRA	**Warramunga Arr**	**19.11**	**167**	P	P	12 24 45.7	-0.3
	0.1nm,0.3s,baz=347,slow=11,SNR=4.9						
ASAR	**Alice Springs**	**22.66**	**171**	P	P	12 25 23.9	-0.4
	0.2nm,0.4s,baz=345,slow=11,SNR=5.5						
SONM	**Songino Array**	**52.98**	**340**	P	P	12 29 39.3	-0.6
	0.3nm,0.5s,baz=160,slow=8.6,SNR=3.3						
MKAR	**Makanchi Array**	**63.42**	**325**	P	P	12 30 52.7	-0.1
	2.4nm,0.3s,baz=114,slow=7.9,SNR=38						
KURBB	**Kurchatov Arra**	**67.60**	**327**	P	P	12 31 19.9	+0.1
	2.8nm,0.6s,baz=125,slow=5.9,SNR=33						
BVAR	**Borovoye Array**	**73.18**	**327**	P	P	12 31 54.7	+0.8
	1.0nm,0.6s,baz=114,slow=6.6,SNR=5.0						

IDC 11 12:21:52.4±8.6, 1°.85S × 127°.78E, h393 km ±105 km, mb3.5/4, mb1 3.5/6, mb1mx3.0/50, mbtmp4.1/6, Error ellipse: s-maj=62.9km s-min=27.0km az=50.0, Halmahera

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
FITZ	**Fitzroy Crossi**	**16.29**	**187**	P	P	12 25 19.0	-0.1
	0.2nm,0.3s,baz=7.1,slow=6.7,SNR=2.9						
WRA	**Warramunga Arr**	**19.10**	**161**	P	P	12 25 48.7	-0.1
	1.5nm,0.3s,baz=338,slow=10,SNR=80						
ASAR	**Alice Springs**	**22.49**	**165**	P	P	12 26 20.9	+0.8
	0.9nm,0.3s,baz=350,slow=7.6,SNR=28						
CTA	**Charters Tower**	**25.59**	**136**	P	P	12 26 48.0	0.0
	1.0nm,0.3s,baz=0.0,slow=13,SNR=3.3						
STKA	**Stephens Creek**	**32.59**	**158**	P	P	12 27 48.4	-0.8
	14nm,0.4s,baz=355,slow=7.2,SNR=118						
MKAR	**Makanchi Array**	**62.73**	**327**	P	P	12 31 37.3	0.0
	0.7nm,0.7s,baz=128,slow=6.4,SNR=4.5						

JMA 11 12:23:09.6, 37°.02N × 140°.63E, h10 km ±1 km, M2.7, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.16**	**59**	P	Pg	12 23 13.2	+0.1
ONAJ				S	Sg	12 23 15.5	-0.1
JFK	**Kawauchi**	**0.40**	**29**	P	Pg	12 23 17.4	-0.1
JFK				*eS*	Sg	12 23 23.1	+0.4
JHO	**Hitachi**	**0.41**	**187**	P	Pg	12 23 17.6	-0.1
JHO				S	Sg	12 23 23.4	+0.3
JFT	**Otama**	**0.55**	**335**	P	Pg	12 23 20.3	0.0
JFT				S	Sg	12 23 27.8	+0.2
JMM	**Marumori**	**0.85**	**9**	P	Pg	12 23 25.6	-0.5
JMM				*eS*	Sg	12 23 36.8	-0.4
JOU	**Okura**	**1.34**	**1**	P	Pn	12 23 34.5	0.0
JOU				*eS*	Sb	12 23 52.2	0.0
JIO	**Ouri**	**1.54**	**21**	P	Pn	12 23 37.3	+0.2
JIO				*eS*	Sn	12 23 56.8	-0.4
MAT	**Matsushiro**	**2.00**	**257**	P	Pb	12 23 45.5	-0.6
MAT				S	Sb	12 24 11.7	+0.6

JMA 11 12:25:50.3, 36°.91N × 140°.67E, h8 km ±1 km, M2.8, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.22**	**28**	S	Sg	12 25 57.7	0.0
JHO	**Hitachi**	**0.31**	**195**	P	Pg	12 25 56.5	+0.1
JHO				S	Sg	12 26 00.8	+0.3
JFT	**Otama**	**0.66**	**336**	P	Pg	12 26 03.1	0.0
JFT				S	Sg	12 26 11.9	+0.1
JMM	**Marumori**	**0.96**	**6**	P	Pg	12 26 08.3	-0.4
JMM				S	Sg	12 26 20.5	-0.7
JOU	**Okura**	**1.45**	**360**	P	Pb	12 26 17.5	-0.1
JOU				*eS*	Sn	12 26 35.9	-0.3
MAT	**Matsushiro**	**2.01**	**260**	P	Pn	12 26 24.8	+0.2
MAT				S	Sb	12 26 51.9	-0.5

JMA 11 12:26:42.8, 36°.99N × 140°.65E, h11 km ±1 km, M2.5, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.16**	**47**	P	Pg	12 26 46.6	+0.1
ONAJ				*eS*	Sg	12 26 49.4	+0.3
JHO	**Hitachi**	**0.38**	**190**	P	Pg	12 26 50.4	0.0
JHO				S	Sg	12 26 56.2	+0.7
JFK	**Kawauchi**	**0.42**	**25**	P	Pg	12 26 50.9	-0.2
JFK				S	Sg	12 26 56.6	0.0
JFT	**Otama**	**0.58**	**335**	P	Pg	12 26 54.4	+0.2
JFT				S	Sg	12 27 02.2	+0.3
JMM	**Marumori**	**0.88**	**7**	P	Pg	12 26 59.2	-0.6
JMM				S	Sg	12 27 11.1	-0.2
JOU	**Okura**	**1.37**	**0**	P	Pb	12 27 08.3	-0.2
JIO	**Ouri**	**1.56**	**21**	S	Sn	12 27 31.0	+0.2
MAT	**Matsushiro**	**2.01**	**258**	P	Pb	12 27 20.3	+0.9
MAT				*eS*	Sb	12 27 44.1	-0.4

*ISCJB **11** 12:27:38.0±0.6, 36°.91N±0°.02 × 140°.74E±0°.06, h11 km ±4 km, mb3.4/5, Error ellipse: s-maj=7.9km s-min=3.9km az=11.6*
*IDC **11** 12:27:38.1±1.2, 36°.96N × 140°.65E, h0 km, mb3.4/5, mb1 3.6/6, mb1mx3.3/60, mbtmp3.5/6, ML3.7/1, Error ellipse: s-maj=26.0km s-min=21.5km az=89.0*
*JMA **11** 12:27:38.3, 36°.92N × 140°.71E, h6 km ± 1 km, M3.8*
JMA Felt I J1.

ISC 11 12:27:38.5±1.2, 36°.92N±0°.03 × 140°.71E±0°.04, h5 km ±8 km, n21, σ0°.83/25, mb3.6/5, 3C, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.20**	**20**	⇑P	**Pg**	**12 27 42.6**	**+0.2**
ONAJ				*eS*	**Sg**	**12 27 45.8**	**+0.7**
JHO	**Hitachi**	**0.33**	**201**	⇑P	**Pg**	**12 27 44.8**	**0.0**
JHO				*eS*	**Sg**	**12 27 49.2**	**+0.1**
JFK	**Kawauchi**	**0.47**	**16**	P	**Pg**	**12 27 47.4**	**-0.2**
JFK				S	**Sg**	**12 27 53.8**	**+0.1**
JSB	**Shiboa**	**0.64**	**275**	⇑P	**Pg**	**12 27 51.2**	**+0.4**
JSB				S	**Sg**	**12 28 00.1**	**+1.0**
JFT	**Otama**	**0.67**	**334**	P	**Pg**	**12 27 51.4**	**0.0**
JFT				S	**Sg**	**12 28 00.4**	**+0.2**
JYT	**Yasato**	**0.80**	**211**	P	**Pg**	**12 27 52.9**	**-1.1**
JYT				S	**Sg**	**12 28 04.1**	**-0.3**
JFY	**Yanaizu**	**0.94**	**302**	P	**Pg**	**12 27 56.3**	**-0.3**
JFY				S	**Sg**	**12 28 08.3**	**-0.5**
JMM	**Marumori**	**0.95**	**4**	P	**Pg**	**12 27 55.9**	**-0.9**
JMM				S	**Sg**	**12 28 08.7**	**-0.4**
MJAR	**Matsushiro Arr**	**2.05**	**260**	Pn	**Pn**	**12 28 14.1**	**+0.4**
	22nm,0.3s,baz=84,slow=15,SNR=38						
MJAR				Sn	**Sn**	**12 28 39.5**	**-0.1**
	48nm,0.3s,baz=84,slow=23,SNR=22						
JHJ	**Hachijo jima 2**	**3.86**	**192**	Pn	**Pn**	**12 28 38.6**	**0.0**
	13nm,0.3s,baz=68,slow=19,SNR=5.4						
JHJ				Sn	**Sn**	**12 29 25.9**	**+1.4**
	11nm,0.3s,baz=90,slow=20,SNR=3.8						
SONM	**Songino Array**	**27.39**	**304**	P	**P**	**12 33 24.4**	**-0.5**
	0.2nm,0.6s,baz=105,slow=9.1,SNR=2.4						
H11N2	**WAKE ISLAND Hy**	**28.57**	**120**	T	T	13 03 20.9	
	baz=312,slow=75,SNR=20						
H11N1	**WAKE ISLAND Hy**	**28.58**	**120**	T	T	13 03 21.8	
	baz=312,slow=75,SNR=21						
H11N3	**WAKE ISLAND Hy**	**28.59**	**120**	T	T	13 03 22.4	
	baz=312,slow=75,SNR=21						
H11S1	**WAKE ISLAND Hy**	**29.27**	**122**	T	T	13 04 14.0	
	baz=314,slow=76,SNR=42						
H11S3	**WAKE ISLAND Hy**	**29.27**	**122**	T	T	13 04 13.4	
	baz=314,slow=76,SNR=40						
H11S2	**WAKE ISLAND Hy**	**29.29**	**122**	T	T	13 04 13.9	
	baz=314,slow=76,SNR=40						
KURBB	**Kurchatov Arra**	**45.63**	**308**	P	**P**	**12 35 58.5**	**-1.2**
	0.3nm,0.4s,baz=82,slow=8.5,SNR=3.9						
ILAR	**Eielson Array**	**49.89**	**32**	P	**P**	**12 36 33.0**	**+0.3**
	0.4nm,1.1s,baz=264,slow=6.3,SNR=3.3						
WRA	**Warramunga Arr**	**56.87**	**187**	P	**P**	**12 37 23.3**	**-1.0**
	0.4nm,0.6s,baz=2.0,slow=7.5,SNR=6.3						
ASAR	**Alice Springs**	**60.60**	**187**	P	**P**	**12 37 52.5**	**+2.2**
	0.7nm,1.1s,baz=9.6,slow=8.1,SNR=4.8						

IDC 11 12:29:08.5±1.9, 1°.74N × 99°.37E, h171 km ±8 km, mb3.3/5, mb1 3.4/5, mb1mx3.0/55, mbtmp3.8/5, Error ellipse: s-maj=101.6km s-min=15.3km az=58.0, Northern Sumatera

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
PSI	**Prapat**	**1.15**	**337**	P	Pn	12 29 36.0	-0.6
	5.8nm,0.3s,baz=336,slow=14,SNR=22						
PSI				S	Sn	12 29 57.1	-1.3
	1.5nm,0.3s,baz=283,slow=20,SNR=6.8						
WRA	**Warramunga Arr**	**40.51**	**124**	P	P	12 36 30.9	-0.1
	1.2nm,0.4s,baz=303,slow=9.0,SNR=20						
ASAR	**Alice Springs**	**42.02**	**129**	P	P	12 36 43.1	-0.2
	0.1nm,0.4s,baz=298,slow=7.4,SNR=6.8						
SONM	**Songino Array**	**46.32**	**7**	P	P	12 37 17.3	0.0
	0.4nm,0.5s,baz=201,slow=7.7,SNR=2.5						
MKAR	**Makanchi Array**	**47.28**	**344**	P	P	12 37 24.8	+0.1
	1.0nm,0.3s,baz=158,slow=8.1,SNR=16						
ZALV	**Zalesovo Beam**	**53.40**	**349**	P	P	12 38 09.8	-0.6
	1.0nm,0.5s,baz=148,slow=6.0,SNR=5.5						

*ISCJB **11** 12:29:16.2±0.6, 36°.53N±0°.04 × 71°.29E±0°.08, h200 km, mb3.2/3, Error ellipse: s-maj=9.5km s-min=4.7km az=161.7*
*IDC **11** 12:29:19.3±4.0, 36°.54N × 71°.69E, h224 km ± 37 km, mb3.0/3, mb1 3.3/9, mb1mx3.0/60, mbtmp4.0/9, MS3.7/1, Ms1 3.7/1, ms1mx2.9/20, Error ellipse: s-maj=30.2km s-min=23.1km az=23.0*
*NNC **11** 12:29:22.4±2.2, 36°.96N × 71°.20E, h225 km ± 22 km, mb3.2, mpv4.4, Error ellipse: s-maj=23.0km s-min=18.0km az=55.0*

ISC 11 12:29:17.5±0.9, 36°.53N±0°.07 × 71°.4E±0°.1, h200 km, n28, σ1°.21/32, mb3.2/3, 6C-6D, Afghanistan-Tajikistan border region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
SFK	**Sufi-Kurgan**	**3.84**	**24**	⇑P	**Pn**	**12 30 19.7**	**+2.2**
	22nm,0.3s						
SFK				⇓S	**Sn**	**12 31 06.0**	**+1.3**
	41nm,0.3s						
MNAS	**Manas**	**6.01**	**8**	⇓P	**Pn**	**12 30 45.5**	**+0.6**
	16nm,0.3s						
MNAS				⇑S	**Sn**	**12 31 51.3**	**-2.9**
	50nm,0.7s						
AAK	**Ala-Archa**	**6.54**	**20**	P	**Pn**	**12 30 53.5**	**+1.7**
	13nm,0.3s,baz=185,slow=9.0,SNR=120						
AAK				S	**Sn**	**12 32 07.6**	**+1.0**
	1.1nm,0.3s,baz=301,slow=23,SNR=11						
AAK	**Ala-Archa**	**6.54**	**20**	P	**Pn**	**12 30 53.2**	**+1.4**
	20nm,0.3s						
AAK				⇑S	**Sn**	**12 32 06.4**	**-0.3**
	24nm,0.8s						
KK31	**Karatay Array**	**6.61**	**354**	⇓P	**Pn**	**12 30 52.7**	**+0.2**
	3.0nm,0.3s,baz=172,slow=12,SNR=37						
KK31				S	Sn	12 32 02.7	-5.3
	38nm,0.5s,baz=184,slow=21,SNR=24						
TKM2	**Tokmak 2**	**7.15**	**25**	⇑P	**Pn**	**12 31 00.2**	**+0.5**
	30nm,0.5s						
TKM2				⇑S	**Sn**	**12 32 20.0**	**-1.0**
	18nm,1.1s						
PYUN	**Piuthan**	**12.88**	**127**	*e*P	**Pn**	**12 32 13.6**	**-0.1**
	31nm,0.5s						
MAKZ	**Makanchi**	**12.94**	**34**	⇓P	**Pn**	**12 32 12.6**	**-1.4**
	9.7nm,0.5s						
MK31	**Makanchi Array**	**13.07**	**35**	P	**Pn**	**12 32 15.9**	**+0.2**
	1.2nm,0.3s,baz=216,slow=13,SNR=29						
MKAR	**Makanchi Array**	**13.07**	**35**	P	**Pn**	**12 32 15.4**	**-0.3**
	1.1nm,0.3s,baz=220,slow=14,SNR=24						
KOLN	**Koldanda**	**13.50**	**127**	*e*P	**Pn**	**12 32 22.5**	**+1.1**
	13nm,0.3s						
GKN	**Gorkha**	**14.03**	**124**	*e*P	**P**	**12 32 29.5**	**-0.3**
	20nm,0.2s						
DMN	**Daman**	**14.60**	**124**	*e*P	**P**	**12 32 36.0**	**-0.2**
	24nm,0.5s						
KKN	**Kakani**	**14.60**	**123**	*e*P	**P**	**12 32 35.8**	**-0.4**
	31nm,0.5s						
PKIN	**Phulchoki**	**14.81**	**123**	*e*P	**P**	**12 32 38.8**	**+0.2**
	27nm,0.4s						
GUN	**Gumba**	**14.93**	**121**	*e*P	**P**	**12 32 40.4**	**+0.4**
	23nm,0.4s						
KURBB	**Kurchatov Arra**	**14.99**	**18**	P	**Pn**	**12 32 38.2**	**-1.1**
	0.3nm,0.3s,baz=206,slow=11,SNR=14						
AB31	**Akbulak array**	**15.23**	**330**	⇑P	Pn	12 32 40.1	-2.2
	2.9nm,0.7s,baz=164,slow=10,SNR=4.3						
AB31				⇓S	S	12 35 25.2	-6.0
	1.3nm,0.7s,baz=154,slow=23,SNR=5.3						
RAMN	**Ramite**	**16.03**	**122**	*e*P	**Pn**	**12 32 53.3**	**+0.8**
	14nm,0.4s						
BVA0	**Borovoye Array**	**16.52**	**358**	P	**P**	**12 32 58.6**	**+1.8**
	1.3nm,0.5s,baz=154,slow=11,SNR=7.6						
BVAR	**Borovoye Array**	**16.52**	**358**	P	**P**	**12 32 57.9**	**+1.1**
	0.5nm,0.3s,baz=159,slow=9.8,SNR=9.5						
BVAR				S	**S**	**12 35 58.6**	**-0.6**
	0.1nm,0.3s,baz=165,slow=20,SNR=5.6						
AKTO	**Aktyubinsk**	**16.93**	**329**	P	**P**	**12 33 01.2**	**-0.2**
	1.0nm,0.3s,baz=140,slow=8.1,SNR=9.3						
AKTO	**Aktyubinsk**	**16.93**	**329**	⇓P	**P**	**12 33 01.1**	**-0.3**
	6.1nm,0.8s						
ZALV	**Zalesovo Beam**	**19.75**	**24**	P	**P**	**12 33 31.6**	**-0.2**
	1.5nm,0.3s,baz=218,slow=11,SNR=17						
OBN	**Obninsk**	**30.14**	**319**	LR	LR	12 48 05.7	
	comp=Z,138nm,20.7s,baz=250,slow=37						
TORD	**Tordi Ar. Bea**	**66.06**	**269**	P	**P**	**12 39 44.7**	**+1.5**
	0.4nm,0.7s,baz=66,slow=2.8,SNR=4.2						
WRA	**Warramunga Arr**	**81.71**	**122**	P	**P**	**12 41 11.9**	**-1.8**
	0.2nm,0.4s,baz=324,slow=4.9,SNR=7.1						
ASAR	**Alice Springs**	**83.98**	**125**	P	**P**	**12 41 23.4**	**-2.0**
	0.3nm,0.6s,baz=303,slow=4.6,SNR=6.1						

*IDC **11** 12:29:58.0±1.7, 36°.90N × 141°.44E, h0 km, mb3.5/4, mb1 3.6/6, mb1mx3.4/62, mbtmp3.5/6, ML3.3/2, Error ellipse: s-maj=39.1km s-min=21.1km az=63.0*
*JMA **11** 12:30:03.5, 36°.79N × 141°.11E, h13 km ± 1 km, M3.7*

ISC 11 12:29:59.4±2.0, 36°.70N±0°.04 × 141°.37E±0°.08, h13 km ±11 km, n20, σ1°.63/22, mb3.5/4, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.61**	**311**	P	**Pg**	**12 30 11.5**	**+0.2**
JHO	**Hitachi**	**0.65**	**262**	P	**Pg**	**12 30 12.7**	**+0.6**
JHO				S	**Sg**	**12 30 19.4**	**-1.3**
JFK	**Kawauchi**	**0.78**	**329**	P	**Pb**	**12 30 15.2**	**+0.4**
JFK				S	**Sb**	**12 30 23.7**	**-1.6**
JYT	**Yasato**	**1.06**	**244**	P	**Pn**	**12 30 20.7**	**+0.7**
JYT				S	**Sb**	**12 30 33.7**	**+0.3**
JFT	**Otama**	**1.16**	**315**	P	**Pn**	**12 30 21.8**	**+0.4**
JFT				S	**Sb**	**12 30 34.7**	**-1.7**
JSB	**Shiboa**	**1.20**	**283**	P	**Pn**	**12 30 22.3**	**+0.4**
JSB				S	**Sb**	**12 30 35.8**	**-1.5**
JMM	**Marumori**	**1.25**	**339**	P	**Pn**	**12 30 23.9**	**+1.3**
JMM				S	**Sb**	**12 30 37.5**	**-1.4**
MJAR	**Matsushiro Arr**	**2.55**	**267**	Pn	**Pn**	**12 30 42.3**	**+1.8**
	3.0nm,0.3s,baz=85,slow=15,SNR=13						
MJAR				Sn	**Sn**	**12 31 13.9**	**+2.4**
	18nm,0.3s,baz=79,slow=31,SNR=11						
MAT	**Matsushiro**	**2.55**	**267**	P	**Pn**	**12 30 41.5**	**+1.0**
MAT				S	**Sb**	**12 31 14.6**	**-1.8**
JHJ	**Hachijo jima 2**	**3.80**	**201**	Pn	**Pn**	**12 30 58.7**	**+1.0**
	8.9nm,0.3s,baz=17,slow=20,SNR=2.7						
JHJ				Sn	**Sn**	**12 31 38.7**	**-3.6**
	5.6nm,0.3s,baz=60,slow=20,SNR=1.9						
H11N2	**WAKE ISLAND Hy**	**28.01**	**120**	T	T	13 05 28.8	
	baz=313,slow=75,SNR=41						
H11N1	**WAKE ISLAND Hy**	**28.02**	**120**	T	T	13 05 27.4	
	baz=313,slow=75,SNR=40						
H11N3	**WAKE ISLAND Hy**	**28.03**	**120**	T	T	13 05 29.9	
	baz=313,slow=75,SNR=41						
H11S1	**WAKE ISLAND Hy**	**28.71**	**122**	T	T	13 06 24.3	
	baz=315,slow=76,SNR=61						
H11S3	**WAKE ISLAND Hy**	**28.71**	**122**	T	T	13 06 24.2	
	baz=315,slow=76,SNR=67						
H11S2	**WAKE ISLAND Hy**	**28.72**	**122**	T	T	13 06 25.5	
	baz=315,slow=76,SNR=60						
MKAR	**Makanchi Array**	**44.27**	**302**	P	**P**	**12 38 10.0**	**+1.4**
	0.1nm,0.3s,baz=71,slow=6.2,SNR=2.6						
KURBB	**Kurchatov Arra**	**46.18**	**308**	P	**P**	**12 38 21.9**	**-1.8**
	0.3nm,0.5s,baz=83,slow=7.7,SNR=3.1						
WRA	**Warramunga Arr**	**56.73**	**188**	P	P	12 39 46.8	+3.9
	0.7nm,0.6s,baz=5.3,slow=7.4,SNR=8.6						
ASAR	**Alice Springs**	**60.45**	**188**	P	**P**	**12 40 09.6**	**+0.7**
	0.3nm,0.7s,baz=14,slow=6.3,SNR=2.8						

*MEX **11** 12:36:36.9±0.2, 31°.00N × 115°.71W, h5 km, MD3.9*
*ECX **11** 12:36:36.4±0.5, 31°.23N × 115°.60W, h4 km, MD3.7, ML3.9*
*IDC **11** 12:36:36.5±2.5, 31°.15N × 115°.63W, h0 km, mb3.4/1, mb1 3.4/5, mb1mx3.3/51, mbtmp3.0/5, ML3.3/4, MS2.9/1, Ms1 2.9/1, ms1mx2.7/26, Error ellipse: s-maj=42.2km s-min=12.1km az=47.0*

ISC 11 12:36:35.8±1.0, 31°.26N±0°.03 × 115°.62W±0°.03, h6 km ±9 km, n52, σ1°.62/77, 7C-4D, Baja California

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
SPIG	**San Pedro Mart**	**0.25**	**149**	⇓*e*P	**Pg**	**12 36 40.5**	**-0.4**
SPIG				*eS*	**Sg**	**12 36 44.2**	**-0.1**
SPIG	**San Pedro Mart**	**0.25**	**149**	*e*P	**Pg**	**12 36 40.9**	**+0.1**
SPIG				*eS*	**Sg**	**12 36 44.0**	**-0.3**
SPX	**San Pedro Mart**	**0.25**	**149**	⇑*e*P	**Pg**	**12 36 41.0**	**+0.1**
SPX				*eS*	**Sg**	**12 36 44.1**	**-0.2**
ECBX	**El Chinero**	**0.53**	**66**	⇑*e*P	**Pg**	**12 36 46.1**	**+0.1**
ECBX				*eS*	**Sg**	**12 36 53.1**	**+0.3**
ECBX				⇑*e*		12 36 53.9	
ECBX				AML	AML	12 36 53.9	
	comp=E,9μm,0.4s						
ZAX	**El Zacaton**	**0.61**	**294**	⇑*e*P	**Pg**	**12 36 47.6**	**-0.1**
ZAX				*eS*	**Sg**	**12 36 57.0**	**+1.2**
ZAX				AML	AML	12 36 58.6	
	comp=E,7μm,0.7s						
ZAX				⇓*e*		12 36 58.6	
ECNX	**Esteban Cantu**	**0.93**	**295**	⇓*e*P	**Pg**	**12 36 53.5**	**-0.2**
ECNX				*eS*	**Sg**	**12 37 06.0**	**+0.3**
PBX	**Punta Banda**	**1.06**	**297**	⇑*e*P	**Pg**	**12 36 55.5**	**-0.7**
PBX				*eS*	**Sg**	**12 37 10.2**	**+0.2**
MBIG	**Mexicali**	**1.20**	**17**	*i*P	**Pg**	**12 37 00.6**	**+1.8**
MBIG				*eS*	**Sn**	**12 37 18.1**	**+2.5**
CBX	**Cerro Bola**	**1.38**	**320**	⇑*e*P	**Pn**	**12 37 01.3**	**-0.5**
CBX				*eS*	**Sb**	**12 37 19.8**	**-0.2**
CBX				⇑*e*		12 37 24.3	
CBX				AML	AML	12 37 24.3	
	comp=E,2μm,0.7s						
CBX	**Cerro Bola**	**1.38**	**320**	*e*P	**Pn**	**12 37 01.2**	**-0.5**
CBX				*eS*	**Sg**	**12 37 20.6**	**+0.5**
IBP	**Imperial Bould**	**1.45**	**344**	⇓*e*P	**Pb**	**12 37 03.2**	**-0.2**
IBP	**Imperial Bould**	**1.45**	**344**	P	**Pb**	**12 37 03.1**	**-0.2**
	baz=160,SNR=231						
IBP				S	**Sn**	**12 37 21.4**	**-0.8**
	baz=160						
TJIG	**Tijuana**	**1.48**	**323**	*i*P	**Pn**	**12 37 02.9**	**-0.1**
TJIG				*eS*	**Sg**	**12 37 23.5**	**+0.2**
SWSC	**Sam W. Stewart**	**1.69**	**355**	P	**Pn**	**12 37 05.5**	**-0.4**
	baz=172,SNR=120						
SWSC				S	**Sn**	**12 37 27.2**	**-0.5**
	baz=172						
MONP2	**Monument Peak**	**1.76**	**337**	P	**Pb**	**12 37 08.0**	**-0.7**
	baz=154,SNR=204						
MONP2				Sb	**Sg**	**12 37 32.4**	**-0.1**
	baz=154						
GLA	**Glamis**	**1.91**	**20**	S	**Sn**	**12 37 32.0**	**-1.3**
	baz=199						
109C	**Camp Elliot, M**	**2.06**	**322**	P	**Pb**	**12 37 12.3**	**-1.3**
	baz=139						
109C				Sb	**Sb**	**12 37 39.7**	**+0.3**
	baz=139						
BC3	**Big Chuckawall**	**2.39**	**3**	P	Pn	**12 37 15.5**	**-0.1**
	baz=182,SNR=7.7						
PFO	**Pinyon Flats O**	**2.45**	**343**	Pn	**Pn**	**12 37 16.7**	**+0.2**
	comp=E,1.4nm,0.3s,baz=184,slow=11,SNR=51						
PFO				Pg	**Pg**	**12 37 22.1**	**-0.7**
	comp=E,11nm,0.3s,baz=173,slow=16,SNR=54						
PFO				Sn	**Sb**	**12 37 52.2**	**+1.3**
	comp=E,64nm,0.3s,baz=304,slow=10,SNR=23						
PFO				LR	LR	12 38 21.7	
	comp=E,225nm,18.1s,baz=354,slow=41						
PFO	**Pinyon Flats O**	**2.45**	**343**	P	**Pn**	**12 37 16.7**	**+0.2**
	baz=161,SNR=29						
PFO				Sb	**Sg**	**12 37 52.9**	**-1.7**
	baz=161						
214A	**Organ Pipe Nat**	**2.49**	**73**	P	**Pn**	**12 37 16.2**	**-0.7**
	baz=256,SNR=14						
214A				S	**Sn**	**12 37 46.1**	**-1.6**
	baz=256						
Y12C	**Blythe**	**2.65**	**20**	P	**Pn**	**12 37 18.9**	**-0.2**
	baz=200						
MURC	**Murrieta**	**2.69**	**331**	P	**Pn**	**12 37 19.2**	**-0.4**
	baz=148						
MURC				Sb	**Sb**	**12 37 58.6**	**+1.0**
	baz=148						
BELC	**Belle Mtn. Jos**	**2.75**	**353**	P	**Pn**	**12 37 21.0**	**+0.4**
	baz=172,SNR=13						
IRM	**Iron Mountain**	**2.91**	**8**	P	**Pn**	**12 37 22.4**	**-0.4**
	baz=187						
SCI2	**San Clemente I**	**3.02**	**305**	P	**Pn**	**12 37 24.5**	**+0.3**
	baz=122						
SCI2				S	**Sn**	**12 37 59

121A	**Cookes Peak, D**	**6.78**	**77**	P	**Pn**	**12 38 17.5**	**+1.5**
	baz=262							
121A				S	**Sn**	**12 39 31.6**	**-2.0**
	baz=262							
NVAR	**Mina Array Bea**	**7.48**	**344**	Pn	Pn	12 38 30.2	+4.4
	comp=E,0.1nm,0.3s,baz=169,slow=15,SNR=5.2							
NVAR				Lg	Lg	12 40 34.0		
	comp=E,0.1nm,0.3s,baz=161,slow=23,SNR=2.8							
TXAR	**Lajitas Array**	**10.51**	**97**	Pn	Pn	12 39 10.1	+3.0
	comp=E,0.1nm,0.3s,baz=276,slow=11,SNR=6.8							
PDAR	**Pinedale Array**	**12.46**	**21**	Pn	Pn	12 39 40.4	+6.5
	comp=E,0.1nm,0.3s,baz=189,slow=14,SNR=2.3							
ILAR	**Eielson Array**	**38.72**	**339**	P	P	12 44 03.8	+3.5
	comp=E,0.3nm,0.6s,baz=158,slow=6.7,SNR=6.3							

*IDC **11** 12:37:13.4±0.9, 37°.10N×140°.96E, h0km, mb3.6/8, mb1 3.8/10, mb1mx3.6/50, mbtmp3.7/10, ML3.4/2, MS3.8/1, Ms1 3.8/1, ms1mx2.8/49, Error ellipse: s-maj=22.5km s-min=17.6km az=91.0*

*ISCJB **11** 12:37:15.1±0.6, 37°.03N±0°.03×140°.83E±0°.06, h18km±4km, mb3.7/8, MS3.8/1, Error ellipse: s-maj=7.6km s-min=4.4km az=14.5*

*JMA **11** 12:37:16.0, 37°.04N×140°.71E, h8km±1km, M3.6 Broadband fault plane solution: P waves. NP1: ϕs259.00000°, δ52.00000°, λ-83.00000°. NP2: ϕs67.00000°, δ38.00000°, λ-99.00000°. Principal axes: T Plg7.0000°, Azm344.0000°; N Plg6.0000°, Azm75.0000°; P Plg81.0000°, Azm205.0000°;*

JMA Felt I J1.

ISC 11 12:37:15.6±0.8, 37°.04N±0°.03×140°.72E±0°.06, h12km±6km, n25, σ0°.98/28, mb3.6/8, 6C, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.09**	**47**	⇑P	**Pg**	**12 37 18.5**	**+0.1**
ONAJ				S	**Sg**	**12 37 20.4**	**-0.1**
JFK	**Kawauchi**	**0.35**	**21**	⇑P	**Pg**	**12 37 23.1**	**+0.4**
JFK				S	**Sg**	**12 37 27.9**	**+0.5**
JHO	**Hitachi**	**0.45**	**196**	⇑P	**Pg**	**12 37 24.4**	**-0.1**
JHO				S	**Sg**	**12 37 30.5**	**+0.1**
JFT	**Otama**	**0.56**	**327**	⇑P	**Pb**	**12 37 27.1**	**-0.4**
JFT				S	**Sb**	**12 37 34.7**	**-0.8**
JSB	**Shiboa**	**0.64**	**264**	P	**Pb**	**12 37 29.0**	**+0.2**
JSB				S	**Sb**	**12 37 37.6**	**-0.2**
JMM	**Marumori**	**0.82**	**4**	⇑P	**Pg**	**12 37 31.6**	**0.0**
JMM				S	**Sg**	**12 37 42.7**	**+0.3**
JFY	**Yanaizu**	**0.89**	**294**	P	**Pb**	**12 37 32.9**	**-0.1**
JFY				S	**Sb**	**12 37 44.3**	**-0.5**
JYT	**Yasato**	**0.92**	**208**	⇑P	**Pg**	**12 37 32.9**	**-0.4**
JYT				S	**Sg**	**12 37 44.9**	**-0.4**
MJAR	**Matsushiro Arr**	**2.08**	**257**	Pn	**Pb**	**12 37 51.8**	**-1.4**
	11nm,0.3s,baz=81,slow=15,SNR=21							
MJAR				Sn	**Sb**	**12 38 19.5**	**+0.5**
	15nm,0.3s,baz=80,slow=31,SNR=12							
JHJ	**Hachijo jima 2**	**3.99**	**191**	Pn	**Pn**	**12 38 16.9**	**+0.4**
	6.9nm,0.3s,baz=53,slow=20,SNR=2.1							
JHJ				Sn	**Sn**	**12 39 05.6**	**+2.4**
	13nm,0.3s,baz=35,slow=16,SNR=3.7							
SONM	**Songino Array**	**27.32**	**304**	P	**P**	**12 43 02.6**	**+2.4**
	0.3nm,0.5s,baz=92,slow=10,SNR=3.5							
H11N2	**WAKE ISLAND Hy 28.63**	**120**		T	T	13 12 57.2		
	baz=312,slow=75,SNR=23							
H11N1	**WAKE ISLAND Hy 28.64**	**120**		T	T	13 13 00.7		
	baz=312,slow=75,SNR=19							
H11N3	**WAKE ISLAND Hy 28.65**	**120**		T	T	13 12 58.3		
	baz=312,slow=75,SNR=22							
H11S1	**WAKE ISLAND Hy 29.33**	**122**		T	T	13 13 53.6		
	baz=314,slow=76,SNR=18							
H11S3	**WAKE ISLAND Hy 29.33**	**122**		T	T	13 13 55.5		
	baz=314,slow=76,SNR=22							
H11S2	**WAKE ISLAND Hy 29.35**	**122**		T	T	13 13 56.7		
	baz=314,slow=76,SNR=23							
MKAR	**Makanchi Array**	**43.64**	**302**	P	**P**	**12 45 20.5**	**+0.6**
	0.2nm,0.4s,baz=82,slow=9.5,SNR=3.4							
KURBB	**Kurchatov Arra**	**45.56**	**308**	P	**P**	**12 45 35.3**	**+0.2**
	0.5nm,0.6s,baz=84,slow=7.7,SNR=7.7							
ILAR	**Eielson Array**	**49.78**	**32**	P	**P**	**12 46 07.0**	**-0.7**
	0.4nm,0.6s,baz=274,slow=5.9,SNR=5.3							
LEM	**Lembang**	**53.51**	**222**	LR	LR	13 09 27.1		
	comp=Z,86nm,19.9s,slow=36							
WRA	**Warramunga Arr**	**57.00**	**187**	P	**P**	**12 47 01.5**	**+0.4**
	0.8nm,0.3s,baz=2.4,slow=7.4,SNR=32							
ASAR	**Alice Springs**	**60.72**	**187**	P	**P**	**12 47 27.6**	**+0.6**
	0.4nm,0.8s,baz=4.2,slow=6.4,SNR=6.1							
FINES	**FINESS Array B**	**68.55**	**332**	P	**P**	**12 48 16.9**	**-0.8**
	1.1nm,0.9s,baz=15,slow=13,SNR=3.9							
TXAR	**Lajitas Array**	**90.56**	**52**	P	**P**	**12 50 15.7**	**-2.2**
	1.1nm,1.2s,baz=211,slow=1.5,SNR=4.0							

SJA 11 12:39:02.3±0.8, 29°.78S×68°.93W, h120km±6km, ML3.9, MW3.8, 4D, San Juan Province

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AGUA	**GUANDACOL**	**0.48**	**53**	*i* P	Pn	12 39 21.0	+0.7
VCA	**Vinchina**	**1.22**	**32**	*i* P	Pn	12 39 28.1	+1.3
VCA				⇓*i* S	Sn	12 39 46.5	+1.2
VCA				IAML		12 39 50.2		
	comp=Z,2μm,0.6s							
AVFE	**Valle Fertil**	**1.55**	**125**	⇓*i* P	Pn	12 39 31.0	+0.6
AVFE				*i* S	Sn	12 39 52.5	+0.7
AVFE				IAML		12 39 53.2		
	comp=Z,2μm,0.3s							
RTLL	**Cerro Villicun**	**1.59**	**166**	⇓*i* P	Pn	12 39 31.6	+0.8
RTLL				*i* S	Sn	12 39 53.8	+1.2
LCO	**Las Campanas**	**1.72**	**296**	*i* P	Pn	12 39 33.3	+0.6
LCO				*i* S	Sn	12 39 56.4	+0.7
RTLS	**Leoncito**	**2.04**	**189**	*i* P	Pn	12 39 37.9	+1.4
RTCV	**Cerro Valdivia**	**2.10**	**171**	*i* P	Pn	12 39 38.6	+1.5
RTCV				*i* S	Sn	12 40 04.1	+0.4
APLL	**PUNTA DE LOS L**	**2.17**	**107**	*i* P	Pn	12 39 38.9	+0.9
APLL				*i* S	Sn	12 40 05.8	+0.5
ASAL	**Salagasta**	**2.80**	**178**	*e*Pg	Pn	12 39 47.4	+1.3
ASAL				*i* P	Pn	12 39 47.4	+1.3
ASAL				*i* S	Sn	12 40 20.6	+0.8
ACAN	**Cantantal**	**2.90**	**149**	*i* P	Pn	12 39 48.2	+0.8
ARCO	**CERRO ARCO**	**3.05**	**180**	⇓*i* P	Pn	12 39 50.8	+1.4
ARCO				*i* S	Sn	12 40 26.9	+1.2
ARCO				IAML		12 40 31.0		
	comp=Z,102nm,0.3s							
FSA	**Cafayete**	**4.49**	**36**	*i* P	Pn	12 40 09.9	+1.2

JMA 11 12:39:11.2, 37°.02N×140°.67E, h10km±1km, M2.7, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.13**	**51**	P	Pg	12 39 14.4	+0.1
ONAJ				S	Sg	12 39 16.4	-0.1
JFK	**Kawauchi**	**0.38**	**25**	P	Pg	12 39 18.7	-0.1
JFK				S	Sg	12 39 24.0	+0.1
JHO	**Hitachi**	**0.42**	**191**	P	Pg	12 39 19.3	-0.1
JHO				S	Sg	12 39 25.1	+0.2
JFT	**Otama**	**0.56**	**332**	P	Pg	12 39 22.3	+0.1
JFT				S	Sg	12 39 29.9	+0.3
JMM	**Marumori**	**0.85**	**7**	P	Pg	12 39 27.0	-0.6
JMM				S	Sg	12 39 38.5	-0.2
JOU	**Okura**	**1.34**	**360**	P	Pn	12 39 36.2	+0.2
JOU				S	Sb	12 39 53.7	-0.1
JIO	**Ouri**	**1.53**	**20**	S	Sn	12 39 58.5	0.0
MAT	**Matsushiro**	**2.03**	**257**	P	Pb	12 39 46.9	-1.4
MAT				S	Sb	12 40 14.3	+0.7

JMA 11 12:43:09.2, 37°.06N×140°.66E, h8km±1km, M2.5, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.12**	**69**	P	Pg	12 43 11.8	-0.1
ONAJ				S	Sg	12 43 14.0	+0.2
JFK	**Kawauchi**	**0.35**	**29**	P	Pg	12 43 16.2	+0.1
JFK				S	Sg	12 43 21.1	+0.3
JHO	**Hitachi**	**0.45**	**189**	P	Pg	12 43 18.0	0.0
JHO				S	Sg	12 43 24.0	0.0
JFT	**Otama**	**0.53**	**331**	P	Pg	12 43 19.7	+0.3
JFT				S	Sg	12 43 26.9	+0.6
JMM	**Marumori**	**0.81**	**7**	P	Pg	12 43 24.5	-0.3
JMM				S	Sg	12 43 35.5	+0.1
JOU	**Okura**	**1.30**	**0**	P	Pn	12 43 33.6	-0.1
JOU				S	Sb	12 43 51.0	+0.1

*ISCJB **11** 12:45:37.8±0.5, 37°.03N±0°.03×140°.71E±0°.05, h17km±5km, mb3.5/2, MS3.4/1, Error ellipse: s-maj=6.6km s-min=4.6km az=9.5*

*IDC **11** 12:45:37.8±2.6, 36°.87N×140°.71E, h0km, mb3.5/2, mb1 3.7/5, mb1mx3.3/48, mbtmp3.8/5, ML3.7/3, MS3.4/1, Ms1 3.5/1, ms1mx2.6/38, Error ellipse: s-maj=40.2km s-min=26.4km az=44.0*

*JMA **11** 12:45:38.1, 37°.04N×140°.61E, h7km±2km, M3.4*

JMA Felt I J1.

ISC 11 12:45:37.7±0.9, 37°.05N±0°.03×140°.65E±0°.03, h12km±7km, n19, σ0°.61/25, 5C, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.13**	**67**	P	**Pb**	**12 45 41.7**	**-0.5**
ONAJ				S	**Sg**	**12 45 43.8**	**+0.4**
JFK	**Kawauchi**	**0.36**	**30**	⇑P	**Pb**	**12 45 45.8**	**-0.4**
JFK				S	**Sb**	**12 45 51.3**	**-0.6**
JHO	**Hitachi**	**0.44**	**188**	⇑P	**Pg**	**12 45 46.4**	**-0.1**
JHO				S	**Sg**	**12 45 52.5**	**+0.1**
JFT	**Otama**	**0.53**	**332**	⇑P	**Pb**	**12 45 48.6**	**-0.4**
JFT				S	**Sg**	**12 45 55.7**	**+0.6**
JSB	**Shiboa**	**0.59**	**262**	⇑P	**Pb**	**12 45 49.7**	**-0.3**
JSB				S	**Sg**	**12 45 57.5**	**+0.5**
JMM	**Marumori**	**0.82**	**8**	P	**Pg**	**12 45 53.7**	**+0.1**
JMM				S	**Sb**	**12 46 05.0**	**0.0**
JFY	**Yanaizu**	**0.83**	**296**	⇑P	**Pg**	**12 45 53.8**	**0.0**
JFY				S	**Sg**	**12 46 04.4**	**-0.3**
JYT	**Yasato**	**0.90**	**204**	P	**Pg**	**12 45 54.7**	**-0.4**
JYT				S	**Sb**	**12 46 08.0**	**+0.8**
MJAR	**Matsushiro Arr**	**2.02**	**256**	Pn	**Pb**	**12 46 13.6**	**-0.9**
	10nm,0.3s,baz=77,slow=15,SNR=23							
MJAR				Sn	**Sb**	**12 46 38.8**	**-0.8**
	7.1nm,0.3s,baz=82,slow=27,SNR=6.2							
MAT	**Matsushiro**	**2.02**	**256**	P	**Pn**	**12 46 12.7**	**+1.0**
MAT				S	**Sb**	**12 46 39.8**	**+0.2**
JHJ	**Hachijo jima 2**	**3.99**	**190**	Pn	**Pn**	**12 46 39.4**	**+0.7**
	7.9nm,0.3s,baz=108,slow=22,SNR=7.7							
JHJ				Sn	**Sn**	**12 47 25.7**	**+0.3**
	8.4nm,0.3s,baz=66,slow=19,SNR=2.5							
JCJ	**Chichijima**	**10.01**	**172**	Pn	**Pn**	**12 48 00.2**	**-1.2**
	4.6nm,0.3s,baz=71,slow=12,SNR=3.7							
JCJ				Sn	Sn	12 49 40.9	-13
	5.9nm,0.3s,baz=273,slow=19,SNR=3.4							
KSRS	**Korea Array**	**10.15**	**276**	Pn	Pn	12 48 11.4	+8.1
	0.2nm,0.3s,baz=93,slow=16,SNR=4.6							
H11N2	**WAKE ISLAND Hy 28.68**	**120**		T	T	13 21 23.0		
	baz=312,slow=75,SNR=22							
H11N1	**WAKE ISLAND Hy 28.69**	**120**		T	T	13 21 23.8		
	baz=312,slow=75,SNR=24							
H11N3	**WAKE ISLAND Hy 28.70**	**120**		T	T	13 21 24.6		
	baz=312,slow=75,SNR=20							
ILAR	**Eielson Array**	**49.81**	**32**	LR	LR	13 16 54.7		
	comp=Z,36nm,19.4s,baz=42,slow=38							
WRA	**Warramunga Arr**	**57.00**	**187**	P	**P**	**12 55 23.7**	**+0.4**
	0.3nm,0.6s,baz=2.7,slow=7.6,SNR=8.7							
ASAR	**Alice Springs**	**60.73**	**187**	P	**P**	**12 55 49.8**	**+0.6**
	0.3nm,0.8s,baz=9.6,slow=6.1,SNR=4.5							

*NIED **11** 12:47:00, 36°.90N×140°.70E, h5km, Mw4.1 Best double couple: M0 1.34000×10^15 NP1: ϕs33.00000°, δ45.00000°, λ-115.00000°. NP2: ϕs246.00000°, δ50.00000°, λ-68.00000°.*

*ISCJB **11** 12:47:19.6±0.6, 36°.93N±0°.03×140°.77E±0°.04, h16km±4km, mb4.1/25, Error ellipse: s-maj=6.0km s-min=3.7km az=26.4*

*IDC **11** 12:47:19.0±0.5, 36°.95N×140°.50E, h0km, mb4.1/20, mb1 4.3/21, mb1mx4.1/47, mbtmp4.1/21, ML3.6/1, MS3.2/3, Ms1 3.2/3, ms1mx2.9/59, Error ellipse: s-maj=18.4km s-min=12.7km az=94.0*

*JMA **11** 12:47:20.0, 36°.95N×140°.68E, h7km±1km, M4.3 Broadband fault plane solution: P waves. NP1: ϕs41.00000°, δ47.00000°, λ-102.00000°. NP2: ϕs239.00000°, δ45.00000°, λ-77.00000°. Principal axes: T Plg1.0000°, Azm140.0000°; N Plg9.0000°, Azm50.0000°; P Plg81.0000°, Azm236.0000°;*

JMA Felt II J1.

*NEIC **11** 12:47:24.4±0.3, 36°.96N×140°.57E, h35km, mb4.6/5 Error ellipse: s-maj=9.7km s-min=7.0km az=144.0*

ISC 11 12:47:19.9±1.1, 36°.97N±0°.03×140°.59E±0°.04, h6km±7km, n51, σ0°.79/61, mb4.1/25, 7C, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.21**	**52**	⇑P	**Pg**	**12 47 24.0**	**-0.1**
ONAJ				S	**Sg**	**12 47 26.9**	**-0.1**
JHO	**Hitachi**	**0.36**	**183**	⇑P	**Pg**	**12 47 26.8**	**-0.1**
JHO				S	**Sg**	**12 47 31.6**	**0.0**
JFK	**Kawauchi**	**0.46**	**30**	⇑P	**Pg**	**12 47 28.8**	**0.0**
JFK				S	**Sg**	**12 47 34.9**	**+0.2**
JSB	**Shiboa**	**0.54**	**270**	⇑P	**Pb**	**12 47 32.5**	**+0.7**
JSB				S	**Sb**	**12 47 40.9**	**+1.1**
JFT	**Otama**	**0.58**	**340**	⇑P	**Pb**	**12 47 32.4**	**-0.2**
JFT				S	**Sb**	**12 47 41.2**	**+0.1**
JYT	**Yasato**	**0.81**	**203**	P	**Pg**	**12 47 35.6**	**+0.2**
JYT				S	**Sg**	**12 47 46.3**	**+0.5**
JFY	**Yanaizu**	**0.83**	**302**	⇑P	**Pb**	**12 47 37.2**	**+0.4**
JFY				S	**Sb**	**12 47 49.0**	**+0.8**
JMM	**Marumori**	**0.91**	**10**	P	**Pg**	**12 47 37.3**	**-0.1**
JMM				S	**Sg**	**12 47 49.7**	**+0.5**
MJAR	**Matsushiro Arr**	**1.96**	**258**	Pn	**Pb**	**12 47 55.4**	**-0.6**
	50nm,0.3s,baz=85,slow=17,SNR=47							
MJAR				Sn	**Sg**	**12 48 21.7**	**-1.1**
	103nm,0.3s,baz=81,slow=28,SNR=24							
MAJO	**Matsushiro**	**1.96**	**258**	*e*Pn	**Pb**	**12 47 55.8**	**-0.3**
MAJO				*e*Sn	**Sb**	**12 48 20.8**	**+0.1**
MAT	**Matsushiro**	**1.96**	**258**	P	**Pb**	**12 47 55.3**	**-0.7**
MAT				S	**Sg**	**12 48 22.1**	**-0.8**
JHJ	**Hachijo jima 2**	**3.90**	**190**	Pn	**Pn**	**12 48 20.4**	**0.0**
	12nm,0.3s,baz=57,slow=7.9,SNR=3.2							
JHJ				Sn	**Sn**	**12 49 06.4**	**-0.1**
	63nm,0.3s,baz=246,slow=23,SNR=8.5							
JNU	**Nakatsue**	**8.84**	**247**	Pn	**Pn**	**12 49 30.9**	**+2.6**
	0.3nm,0.3s,baz=60,slow=9.4,SNR=7.9							
USRK	**Ussuriysk Ar.**	**9.74**	**321**	Pn	Pn	12 49 45.1	+4.6
	0.2nm,0.3s,baz=137,slow=13,SNR=18							
USRK				LR	LR	12 53 10.5		
	comp=Z,148nm,20.9s,baz=113,slow=36							
KSRS	**Korea Array**	**10.12**	**277**	Pn	Pn	12 49 52.5	+6.8
	0.2nm,0.3s,baz=92,slow=14,SNR=11							
KSRS				LR	LR	12 53 13.3		
	comp=Z,118nm,20.6s,baz=195,slow=35							
KSAR	**Wonju Array Be**	**10.15**	**276**	Pn	Pn	12 49 52.5	+6.4
KLR	**Kul'dur**	**13.84**	**335**	Pn	**P**	**12 50 42.8**	**-2.3**
	0.1nm,0.3s,baz=141,slow=12,SNR=7.9							
KLR				LR	LR	12 55 03.3		
	comp=Z,128nm,19.8s,baz=197,slow=34							
MA2	**Magadan**	**23.56**	**13**	P	**P**	**12 52 31.2**	**+0.3**
	8.0nm,0.8s,baz=232,slow=12,SNR=5.2							
SEY	**Seymchan**	**26.98**	**12**	P	**P**	**12 53 03.2**	**+1.0**
	0.7nm,0.3s,baz=195,slow=8.4,SNR=4.6							
SONM	**Songino Array**	**27.27**	**304**	P	**P**	**12 53 03.9**	**-1.3**
	2.1nm,0.9s,baz=107,slow=8.4,SNR=13							
SONM				PcP	**PcP**	**12 56 25.3**	**+0.5**
	0.5nm,0.6s,baz=118,slow=2.2,SNR=4.0							
H11N2	**WAKE ISLAND Hy 28.69**	**120**		T	T	13 23 03.1		
	baz=313,slow=75,SNR=45							
H11N1	**WAKE ISLAND Hy 28.69**	**120**		T	T	13 23 04.0		
	baz=313,slow=75,SNR=44							
H11N3	**WAKE ISLAND Hy 28.70**	**120**		T	T	13 23 04.4		
	baz=313,slow=75,SNR=39							
H11S1	**WAKE ISLAND Hy 29.38**	**122**		T	T	13 23 54.1		
	baz=314,slow=75,SNR=52							
H11S3	**WAKE ISLAND Hy 29.38**	**122**		T	T	13 23 55.3		
	baz=314,slow=75,SNR=50							
H11S2	**WAKE ISLAND Hy 29.40**	**122**		T	T	13 23 55.3		
	baz=314,slow=75,SNR=36							
ZALV	**Zalesovo Beam**	**41.47**	**312**	P	**P**	**12 55 07.8**	**+0.4**
	1.4nm,0.5s,baz=95,slow=7.9,SNR=6.5							
ZALV				PcP	**PcP**	**12 57 04.8**	**-0.2**
	0.7nm,0.4s,baz=106,slow=3.6,SNR=3.9							
MKAR	**Makanchi Array**	**43.59**	**302**	P	**P**	**12 55 24.7**	**-0.1**
	0.7nm,0.6s,baz=92,slow=8.2,SNR=8.2							
MKAR				PcP	**PcP**	**12 57 12.2**	**-0.1**
	0.2nm,0.3s,baz=90,slow=1.7,SNR=3.4							
KURK	**Kurchatov**	**45.45**	**308**	*e*P	**P**	**12 55 39.3**	**-0.3**
	9.2nm,0.8s							
TKM2	**Tokmak 2**	**49.08**	**298**	*e*P	**P**	**12 56 08.1**	**-0.1**
	3.0nm,0.8s							
ILAR	**Eielson Array**	**49.90**	**32**	P	**P**	**12 56 13.7**	**-0.2**
	1.4nm,0.9s,baz=267,slow=6.0,SNR=14							
ILAR				PcP	**PcP**	**12 57 33.4**	**-0.8**
	0.6nm,0.8s,baz=275,slow=3.4,SNR=4.5							
INK	**Inuvik**	**54.74**	**27**	P	**P**	**12 56 50.2**	**+0.4**
	1.1nm,0.7s,baz=333,slow=7.5,SNR=5.7							
WRAB	**Tennant Creek**	**56.90**	**187**	*e*P	**P**	**12 57 04.8**	**-1.0**
	5.6nm,0.8s							
WRA	**Warramunga Arr**	**56.91**	**187**	P	**P**	**12 57 04.8**	**-1.0**
	5.1nm,0.6s,baz=2.0,slow=7.2,SNR=69							
WRA				PcP	**PcP**	**12 58 01.5**	**+0.3**
	1.2nm,0.6s,baz=1.3,slow=4.5,SNR=6.8							
ABKAR	**Akbulak array**	**57.48**	**310**	*e*P	**P**	**12 57 09.2**	**-0.4**
	1.0nm,0.6s							
ASAR	**Alice Springs**	**60.64**	**187**	P	**P**	**12 57 31.3**	**-0.5**
	2.7nm,0.8s,baz=8.0,slow=8.6,SNR=36							
ASAR				PcP	**PcP**	**12 58 16.8**	**+0.8**
	0.9nm,0.9s,baz=348,slow=3.1,SNR=2.6							
ARCES	**ARCESS Array B**	**63.82**	**339**	P	**P**	**12 57 52.0**	**-0.6**
	2.9nm,0.8s,baz=27,slow=8.2,SNR=3.8							
YKA	**Yellowknife Ar**	**64.19**	**30**	P	**P**	**12 57 54.5**	**-0.6**
	0.7nm,0.8s,baz=302,slow=6.8,SNR=17							
YKA				PcP	**PcP**	**12 58 30.6**	**+0.6**
	0.4nm,0.7s,baz=301,slow=4.2,SNR=7.3							
STKA	**Stephens Creek**	**68.50**	**179**	P	**P**	**12 58 22.8**	**-0.2**
	1.4nm,0.7s,baz=6.8,slow=5.2,SNR=5.3							
FINES	**FINESS Array B**	**68.56**	**332**	P	**P**	**12 58 22.9**	**-0.2**
	3.8nm,0.8s,baz=57,slow=7.0,SNR=11							
KBZ	**Khabaz**	**70.44**	**310**	P	**P**	**12 58 35.5**	**+0.5**
	2.1nm,0.9s,baz=254,slow=5.2,SNR=4.0							
AKASG	**Malin Array Be**	**73.94**	**322**	P	**P**	**12 58 55.4**	**-0.5**
	0.4nm,0.3s,baz=46,slow=5.9,SNR=8.4							
NB2	**NORSAR Subarra**	**73.99**	**337**	P	**P**	**12 58 55.8**	**-0.2**
	comp=Z,1.3nm,0.6s,baz=39,slow=6.2							
NOA	**NORSAR Array B**	**73.99**	**337**	P	**P**	**12 58 56.1**	**+0.1**
	comp=Z,1.3nm,0.7s,baz=38,slow=5.9,SNR=5.6							
NVAR	**Mina Array Bea**	**75.55**	**53**	P	**P**	**12 59 07.1**	**+1.4**
	comp=Z,0.9nm,0.8s,baz=274,slow=5.8,SNR=7.6							
LKWY	**Lake**	**76.57**	**44**	P	**P**	**12 59 13.8**	**+2.3**
	comp=Z,9.3nm,1.1s							
PDAR	**Pinedale Array**	**78.18**	**45**	P	**P**	**12 59 20.9**	**+0.5**
	comp=Z,0.7nm,0.9s,baz=270,slow=2.4,SNR=5.9							
GERES	**GERESS Array B**	**82.42**	**328**	P	**P**	**12 59 42.7**	**-0.3**
	comp=Z,0.4nm,0.3s,baz=23,slow=7.2,SNR=4.3							
TXAR	**Lajitas Array**	**90.68**	**52**	P	**P**	**13 00 24.5**	**+0.6**
	comp=Z,1.0nm,0.8s,baz=316,slow=5.5,SNR=9.1							
SYO	**Syowa Base**	**127.85**	**207**	P	**Pdif**	**13 03 09.0**	**+0.1**
LPAZ	**La Paz**	**147.29**	**59**	PKPbc	**PKPbc**	**13 07 05.5**	**-0.1**
	comp=Z,4.9nm,0.9s,baz=0.3,slow=0.5,SNR=3.8							

JMA 11 12:49:58.2, 37°.01N×140°.61E, h10km±1km, M2.7, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.18**	**59**	S	Sg	12 50 05.3	+0.6
JHO	**Hitachi**	**0.40**	**185**	P	Pg	12 50 06.1	0.0
JHO				S	Sg	12 50 11.7	+0.3
JFK	**Kawauchi**	**0.41**	**31**	P	Pg	12 50 06.4	0.0
JFK				S	Sg	12 50 12.1	+0.2
JFT	**Otama**	**0.55**	**337**	P	Pg	12 50 09.2	+0.2
JFT				S	Sg	12 50 16.7	+0.5
JMM	**Marumori**	**0.87**	**10**	P	Pg	12 50 14.5	-0.4
JOU	**Okura**	**1.35**	**2**	P	Pn	12 50 23.4	+0.2
JOU				S	Sb	12 50 40.8	-0.3
MAT	**Matsushiro**	**1.98**	**257**	P	Pb	12 50 34.2	-0.2
MAT				S	Sb	12 50 58.6	-0.6

*IDC **11** 12:52:38.2±2.0, 37°.10N×141°.18E, h0km, mb3.4/5, mb1 3.6/7, mb1mx3.4/57, mbtmp3.5/7, ML3.4/2, MS2.9/1, Ms1 2.9/1, ms1mx2.5/40, Error ellipse: s-maj=53.3km s-min=20.7km az=66.0*

*ISCJB **11** 12:52:43.6±0.6, 36°.90N±0°.03×140°.75E±0°.06, h28km±4km, mb3.4/5, Error ellipse: s-maj=8.0km s-min=5.4km az=14.0*

*JMA **11** 12:52:44.5±0.1, 36°.91N×140°.64E, h19km±2km, M3.8*

JMA Felt II J1.

ISC 11 12:52:44.0±0.9, 36°.91N±0°.03×140°.67E±0°.05, h20km±3km, n19, σ0°.68/24, mb3.6/5, 2C-1D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.22**	**28**	⇓P	**Pb**	**12 52 49.9**	**0.0**
ONAJ				S	**Sb**	**12 52 54.0**	**+0.1**
JHO	**Hitachi**	**0.31**	**195**	P	**Pb**	**12 52 50.5**	**-0.3**
JFK	**Kawauchi**	**0.49**	**20**	⇑P	**Pb**	**12 52 54.4**	**+0.5**
JFK				S	**Sb**	**12 53 00.6**	**-0.1**
JSB	**Shiboa**	**0.60**	**276**	⇑P

SEYT	**Eskypehyr**	**0.22**	**141**	P		**Pg**	12 56 16.7	**-0.1**
BORA	**Eskisehir**	**0.25**	**318**	*i* P		**Pg**	12 56 17.4	**-0.1**
BORA				*i* S		**Sg**	12 56 22.6	**+1.9**
AUKIR	**K¯–rka- Seyitg**	**0.43**	**195**	*i* P		**Pg**	12 56 21.3	**+0.5**
AUKIR				*i* S		**Sb**	12 56 28.9	**-1.3**
AUKIR	**K¯–rka- Seyitg**	**0.43**	**195**	P		**Pg**	12 56 21.3	**+0.5**
AUKIR				S		**Sb**	12 56 28.9	**-1.3**
SVRH	**Sivrihisar-ESK**	**0.70**	**110**	*e*PG		**Pg**	12 56 25.9	**-0.2**
SVRH	**Sivrihisar-ESK**	**0.70**	**110**	*e*Pg		**Pg**	12 56 25.9	**-0.2**
GULT	**Gulveren**	**0.75**	**351**	*e*PG		**Pn**	12 56 29.5	**-1.1**
GULT				*e*SG		**Sn**	12 56 41.9	**-0.8**
GULT	**Gulveren**	**0.75**	**351**	*e*Pg		**Pn**	12 56 29.5	**-1.1**
GULT				*e*Sg		**Sn**	12 56 41.9	**-0.8**
CAVI	**Cavuskoy**	**0.82**	**309**	*e*PG		**Pb**	12 56 30.0	**+0.3**
CAVI				*e*SG		**Sn**	12 56 43.0	**-1.2**
CAVI	**Cavuskoy**	**0.82**	**309**	*e*Pg		**Pb**	12 56 30.0	**+0.3**
CAVI				*e*Sg		**Sn**	12 56 43.0	**-1.2**
MDUB	**Mudurnu**	**0.88**	**27**	*e*PG		**Pn**	12 56 31.7	**-0.7**
MDUB	**Mudurnu**	**0.88**	**27**	*e*Pg		**Pn**	12 56 31.7	**-0.7**
BTAS	**Taskesti**	**0.91**	**16**	*i* P		**Pg**	12 56 29.1	**-1.0**
BTAS				*i* S		**Sb**	12 56 44.4	**+0.3**
BTAS	**Taskesti**	**0.91**	**16**	P		**Pg**	12 56 29.1	**-1.0**
BTAS				S		**Sb**	12 56 44.4	**+0.3**
TVSB	**Tavsanli**	**0.96**	**256**	*e*PG		**Pg**	12 56 30.6	**-0.5**
TVSB	**Tavsanli**	**0.96**	**256**	*e*Pg		**Pg**	12 56 30.6	**-0.5**
BOLV	**Bolvadin**	**1.00**	**167**	*i* P		**Pb**	12 56 32.3	**-0.5**
BOLV				*i* S		**Sn**	12 56 50.5	**+1.7**
BOLV	**Bolvadin**	**1.00**	**167**	P		**Pb**	12 56 32.3	**-0.5**
GDZ	**Gediz**	**1.10**	**237**	*i* P		**Pn**	12 56 35.2	**-0.2**
GDZ				*i* S		**Sn**	12 56 51.1	**-0.3**
GDZ	**Gediz**	**1.10**	**237**	P		**Pn**	12 56 35.2	**-0.2**
GDZ				S		**Sn**	12 56 51.1	**-0.3**
SHUT	**Suhut-Afyon**	**1.14**	**185**	*e*PG		**Pg**	12 56 32.5	**-2.0**
SHUT	**Suhut-Afyon**	**1.14**	**185**	*e*Pg		**Pg**	12 56 32.5	**-2.0**
SAHE	**Sakarya_HENDEK**	**1.17**	**7**	*i* P		**Pg**	12 56 34.9	**-0.1**
SAHE				*i* S		**Sb**	12 56 51.6	**+0.2**
SAHE	**Sakarya_HENDEK**	**1.17**	**7**	P		**Pg**	12 56 34.9	**-0.1**
SAHE				S		**Sb**	12 56 51.6	**+0.2**
KIZT	**Kizilcal**	**1.24**	**130**	*e*PN		**Pg**	12 56 35.2	**-1.2**
KIZT	**Kizilcal**	**1.24**	**130**	*e*Pn		**Pg**	12 56 35.2	**-1.2**
ULDT	**Uludag**	**1.26**	**291**	*i* P		**Pg**	12 56 36.7	**-0.2**
ULDT				*i* S		**Sn**	12 56 56.9	**+1.4**
ULDT	**Uludag**	**1.26**	**291**	P		**Pg**	12 56 36.7	**-0.2**
ULDT				S		**Sn**	12 56 56.9	**+1.4**
KDHN	**Kadinhani**	**1.62**	**136**	*i* P		**Pn**	12 56 42.4	**-0.2**
KDHN				*i* S		**Sg**	12 57 07.7	**+3.0**
KDHN	**Kadinhani**	**1.62**	**136**	P		**Pn**	12 56 42.4	**-0.2**

*IDC **11** 12:56:44.7±0.6,35°.97N×143°.46E, h0km, mb3.9/20, mb1 4.0/24, mb1mx3.9/60, mbtmp3.8/24, ML3.4/3, Error ellipse: s-maj=17.1km s-min=14.4km az=148.0*
*ISCJB **11** 12:56:47.4±0.5,35°.84N±0°.06×143°.35E±0°.06, h33km, mb3.9/23, Error ellipse: s-maj=9.3km s-min=6.4km az=153.9*
*NEIC **11** 12:56:49.3±0.4,35°.84N×143°.44E, h35km, mb4.4/2, Error ellipse: s-maj=9.9km s-min=8.6km az=156.0*

ISC 11 12:56:48.9±0.5,35°.77N±0°.06×143°.38E±0°.07, h35km, n41, σ1s74/41, mb3.8/23, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHJ	**Hachijo jima 2**	**3.98**	**229**	Pn	**Pn**	**12 57 48.7**	**+1.2**
	12nn,0.3s,baz=350,slow=18,SNR=10.0						
JHJ				Sn	**Sn**	**12 58 33.2**	**+0.3**
	164nm,0.3s,baz=70,slow=20,SNR=15						
MJAR	**Matsushiro Arr**	**4.25**	**282**	Pn	**Pn**	**12 57 50.8**	**-0.5**
	7.9nm,0.3s,baz=100,slow=9.1,SNR=18						
MJAR				Sn	**Sn**	**12 58 38.7**	**-1.0**
	4.4nm,0.3s,baz=71,slow=20,SNR=4.6						
MAT	**Matsushiro**	**4.26**	**282**	P	**Pn**	**12 57 50.9**	**-0.3**
MAT				*e*S	**Sn**	**12 58 35.3**	**-4.4**
CBIJ	**Chichi jima**	**8.71**	**187**	Pn	**Pn**	**12 58 51.0**	**-1.4**
CBIJ				Sn	**Sn**	**13 00 25.6**	**-3.8**
JCJ	**Chichijima**	**8.71**	**187**	Pn	**Pn**	**12 58 51.0**	**-1.4**
	baz=333,slow=14						
JCJ				Sn	**Sn**	**13 00 25.6**	**-3.8**
	4.9nm,0.3s,baz=300,slow=20,SNR=3.4						
USRK	**Ussuriysk Ar.**	**12.12**	**317**	Pn	**Pn**	**12 59 36.8**	**-2.2**
	0.3nm,0.3s,baz=138,slow=13,SNR=3.4						
KSRS	**Korea Array**	**12.54**	**282**	Pn	**Pn**	**12 59 46.7**	**+2.0**
	baz=88,slow=13,SNR=3.8						
KSAR	**Wonju Array Be**	**12.57**	**282**	Pn	**Pn**	**12 59 46.8**	**+1.6**
KLR	**Kul'dur**	**15.92**	**331**	Pn	**Pn**	**13 00 25.6**	**-4.6**
	0.2nm,0.3s,baz=145,slow=14,SNR=4.9						
H11N2	**WAKE ISLAND Hy 26.14**		**121**	T	T	13 29 35.1	
	baz=313,slow=75,SNR=26						
H11N1	**WAKE ISLAND Hy 26.15**		**121**	T	T	13 29 39.0	
	baz=313,slow=75,SNR=4.5						
H11N3	**WAKE ISLAND Hy 26.16**		**121**	T	T	13 29 37.5	
	baz=313,slow=75,SNR=5.4						
H11S1	**WAKE ISLAND Hy 26.84**		**124**	T	T	13 30 33.1	
	baz=314,slow=75,SNR=24						
H11S3	**WAKE ISLAND Hy 26.84**		**124**	T	T	13 30 33.1	
	baz=314,slow=75,SNR=24						
H11S2	**WAKE ISLAND Hy 26.86**		**124**	T	T	13 30 33.1	
	baz=314,slow=75,SNR=38						
SEY	**Seymchan**	**27.75**	**9**	P	**P**	**13 02 33.7**	**-0.3**
	1.0nm,0.6s,baz=185,slow=12,SNR=4.0						
ENH	**Enshi**	**28.85**	**269**	*e*Pn	**P**	**13 02 46.1**	**+2.0**
	4.4nm,0.6s						
SONM	**Songino Array**	**29.81**	**305**	P	**P**	**13 02 53.6**	**+1.1**
	1.2nm,0.8s,baz=106,slow=8.4,SNR=6.6						
CMAR	**Chiang Mai Arr**	**42.75**	**258**	P	**P**	**13 04 45.2**	**+2.1**
	0.8nm,0.8s,baz=41,slow=7.0,SNR=6.9						
ZALV	**Zalesovo Beam**	**43.93**	**313**	P	**P**	**13 04 52.7**	**+0.6**
	0.4nm,0.3s,baz=78,slow=7.5,SNR=2.4						
MKAR	**Makanchi Array**	**46.13**	**303**	P	**P**	**13 05 10.1**	**+0.3**
	0.3nm,0.3s,baz=90,slow=8.1,SNR=6.3						
KURK	**Kurchatov**	**47.96**	**309**	*e*P	**P**	**13 05 23.7**	**-0.2**
	9.9nm,0.9s						
KURK				P	**P**	**13 05 24.5**	**+0.6**
KURBB	**Kurchatov Arra**	**48.03**	**309**	P	**P**	**13 05 24.5**	**0.0**
	2.6nm,0.8s,baz=83,slow=8.0,SNR=24						
ILAR	**Eielson Array**	**49.72**	**32**	P	**P**	**13 05 36.4**	**-0.9**
	0.5nm,0.7s,baz=260,slow=5.9,SNR=7.5						
BVAR	**Borovoye Array**	**52.59**	**313**	P	**P**	**13 05 58.6**	**-0.3**
	0.4nm,0.4s,baz=78,slow=9.2,SNR=4.9						
INK	**Inuvik**	**54.79**	**27**	P	**P**	**13 06 14.2**	**-0.5**
	0.5nm,0.6s,baz=290,slow=9.3,SNR=4.4						
WRA	**Warramunga Arr**	**56.07**	**190**	P	**P**	**13 06 26.7**	**+2.2**
	1.3nm,0.8s,baz=11,slow=7.3,SNR=8.2						
ASAR	**Alice Springs**	**59.79**	**190**	P	**P**	**13 06 53.1**	**+2.5**
	0.3nm,0.5s,baz=3.0,slow=6.9,SNR=14						
ABKAR	**Akbulak array**	**59.96**	**311**	*e*P	**P**	**13 06 51.4**	**-0.1**
	2.9nm,0.8s						
RES	**Resolute Bay**	**63.42**	**15**	P	**P**	**13 07 14.1**	**-0.3**
	1.5nm,0.8s,baz=311,slow=8.1,SNR=6.9						
YKA	**Yellowknife Ar**	**64.10**	**30**	P	**P**	**13 07 18.5**	**-0.6**
	0.4nm,0.9s,baz=302,slow=6.8,SNR=6.8						
FINES	**FINESS Array B**	**70.66**	**333**	P	**P**	**13 08 00.4**	**-0.1**
	1.4nm,0.7s,baz=35,slow=7.0,SNR=5.2						
KBZ	**Khabaz**	**72.93**	**312**	P	**P**	**13 08 15.2**	**+0.7**
	2.2nm,0.9s,baz=75,slow=4.5,SNR=5.1						
NVAR	**Mina Array Bea**	**74.46**	**54**	P	**P**	**13 08 25.1**	**+1.2**
	1.3nm,0.7s,baz=285,slow=6.2,SNR=12						
NB2	**NORSAR Subarra**	**75.95**	**338**	P	**P**	**13 08 31.9**	**0.0**
	comp=Z,0.9nm,0.6s,baz=38,slow=5.9						
NOA	**NORSAR Array B**	**75.95**	**338**	P	**P**	**13 08 31.8**	**-0.1**
	comp=Z,1.2nm,0.6s,baz=39,slow=5.7,SNR=6.5						
AKASG	**Malin Array Be**	**76.26**	**323**	P	**P**	**13 08 33.6**	**-0.1**
	comp=Z,0.3nm,0.3s,baz=45,slow=5.1,SNR=4.5						
R11A	**Troy Canyon, C**	**76.28**	**53**	P	**P**	**13 08 34.6**	**+0.3**
PDAR	**Pinedale Array**	**77.41**	**46**	P	**P**	**13 08 40.8**	**+0.1**
	comp=Z,0.5nm,0.6s,baz=259,slow=3.0,SNR=6.7						
TXAR	**Lajitas Array**	**89.61**	**54**	P	**P**	**13 09 43.9**	**+0.5**
	comp=Z,0.7nm,0.6s,baz=302,slow=2.9,SNR=10						
LPAZ	**La Paz**	**145.90**	**64**	PKPbc	**PKPab**	**13 16 25.8**	**-0.6**
	comp=Z,0.7nm,0.5s,baz=180,slow=2.0,SNR=3.4						

JMA 11 12:58:03.0,36°.94N×140°.68E, h7km±1km, M3.2, 3C, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.19**	**30**	⇑P	Pg	12 58 07.0	+0.2
ONAJ				S	Sg	12 58 10.0	+0.6
JHO	**Hitachi**	**0.34**	**195**	⇑P	Pg	12 58 09.7	+0.1
JFK	**Kawauchi**	**0.45**	**20**	⇑P	Pg	12 58 11.7	-0.1
JFK				S	Sg	12 58 18.0	+0.2
JFT	**Otama**	**0.64**	**335**	S	Sg	12 58 24.1	+0.4
JMM	**Marumori**	**0.93**	**6**	P	Pg	12 58 20.2	-0.6
JMM				S	Sg	12 58 32.5	-0.4
JOU	**Okura**	**1.42**	**359**	S	Sb	12 58 48.1	-0.1
JIO	**Ouri**	**1.60**	**19**	S	Sn	12 58 52.0	-0.7
MAT	**Matsushiro**	**2.03**	**259**	P	Pn	12 58 36.4	-1.2
MAT				S	Sb	12 59 05.0	-0.6

*ISCJB **11** 12:59:34.3±0.9,36°.91N±0°.04×140°.8E±0°.1, h14km±6km, mb3.6/2, Error ellipse: s-maj=15.9km s-min=5.5km az=11.9*
*JMA **11** 12:59:34.9,36°.95N×140°.68E, h6km±1km, M3.3 Broadband fault plane solution: P waves. NP1: ϕs244.00000°, δ52.00000°, λ-69.00000°. NP2: ϕs33.00000°, δ42.00000°, λ-114.00000°. Principal axes: T Plg5.0000°, Azm320.0000°; N Plg16.0000°, Azm51.0000°; P Plg73.0000°, Azm213.0000°.*

ISC 11 12:59:35.1±1.1,36°.94N±0°.04×140°.70E±0°.07, h10km±9km, n10, σ0s35/15, 2C, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.18**	**28**	P	**Pg**	**12 59 38.9**	**0.0**
ONAJ				S	**Sg**	**12 59 41.8**	**+0.2**
JHO	**Hitachi**	**0.35**	**197**	⇑P	**Pg**	**12 59 41.7**	**-0.2**
JHO				S	**Sg**	**12 59 46.4**	**-0.1**
JFK	**Kawauchi**	**0.45**	**19**	⇑P	**Pg**	**12 59 43.7**	**-0.1**
JFK				S	**Sg**	**12 59 49.8**	**+0.1**
JFT	**Otama**	**0.64**	**334**	P	**Pg**	**12 59 47.3**	**-0.2**
JFT				S	**Sg**	**12 59 55.9**	**0.0**
JMM	**Marumori**	**0.92**	**5**	P	**Pg**	**12 59 52.2**	**-0.7**
JMM				S	**Sg**	**13 00 04.8**	**-0.1**
JOU	**Okura**	**1.42**	**359**	P	**Pn**	**13 00 01.3**	**+0.3**
JIO	**Ouri**	**1.59**	**19**	P	**Pn**	**13 00 03.6**	**+0.2**
MAT	**Matsushiro**	**2.04**	**259**	P	**Pn**	**13 00 10.0**	**+0.5**
WRA	**Warramunga Arr**	**56.90**	**187**	P	**P**	**13 09 19.8**	**-0.5**
	0.5nm,0.6s,baz=2.9,slow=7.1,SNR=9.2						
ASAR	**Alice Springs**	**60.62**	**187**	P	**P**	**13 09 46.5**	**+0.3**
	0.2nm,0.7s,baz=9.7,slow=6.6,SNR=5.5						

*ISCJB **11** 12:59:48.7±0.9,36°.91N±0°.04×140°.82E±0°.08, h21km±5km, mb3.5/5, Error ellipse: s-maj=10.6km s-min=5.6km az=18.5*
*IDC **11** 12:59:48.0±7.6,35°.89N×141°.02E, h55km±57km, mb3.3/7, mb1 3.4/8, mb1mx3.2/54, mbtmp3.6/8, ML4.1/1, Error ellipse: s-maj=68.4km s-min=20.5km az=65.0*
*JMA **11** 12:59:49.8,36°.92N×140°.72E, h10km±1km, M3.8*
JMA Felt II J1.

ISC 11 12:59:49.7±1.0,36°.92N±0°.04×140°.71E±0°.06, h13km±7km, n15, σ0s31/19, mb3.6/7, 2C, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.20**	**22**	⇑P	**Pg**	**12 59 54.1**	**-0.1**
ONAJ				S	**Sg**	**12 59 57.3**	**+0.1**
JHO	**Hitachi**	**0.33**	**200**	⇑P	**Pg**	**12 59 56.3**	**-0.1**
JHO				S	**Sg**	**13 00 00.7**	**-0.1**
JFK	**Kawauchi**	**0.47**	**17**	S	**Sg**	**13 00 05.2**	**0.0**
JSB	**Shiboa**	**0.63**	**275**	P	**Pb**	**13 00 02.6**	**0.0**
JSB				S	**Sb**	**13 00 11.4**	**+0.1**
JFT	**Otama**	**0.67**	**334**	S	**Sg**	**13 00 11.7**	**+0.2**
JYT	**Yasato**	**0.80**	**211**	S	**Sg**	**13 00 15.9**	**+0.1**
JFY	**Yanaizu**	**0.94**	**302**	S	**Sg**	**13 00 19.5**	**-0.6**
MJAR	**Matsushiro Arr**	**2.04**	**260**	P	**Pn**	**13 00 24.2**	**+0.5**
	47nm,0.3s,baz=76,slow=8.1,SNR=18						
MJAR				S	**Sb**	**13 00 52.0**	**+0.2**
	40nm,0.3s,baz=79,slow=21,SNR=8.8						
SONM	**Songino Array**	**27.38**	**304**	P	**P**	**13 05 34.2**	**-0.5**
	0.4nm,0.7s,baz=116,slow=9.8,SNR=3.1						
ZALV	**Zalesovo Beam**	**41.58**	**312**	P	**P**	**13 07 37.0**	**+0.2**
	0.4nm,0.4s,baz=84,slow=5.9,SNR=2.2						
MKAR	**Makanchi Array**	**43.70**	**302**	P	**P**	**13 07 54.6**	**+0.4**
	0.2nm,0.3s,baz=92,slow=10,SNR=3.2						
KURBB	**Kurchatov Arra**	**45.63**	**308**	P	**P**	**13 08 09.0**	**-0.4**
	0.9nm,0.4s,baz=83,slow=7.8,SNR=9.2						
BVAR	**Borovoye Array**	**50.23**	**312**	P	**P**	**13 08 45.0**	**-0.2**
	0.4nm,0.5s,baz=90,slow=7.8,SNR=3.1						
WRA	**Warramunga Arr**	**56.87**	**187**	pP	**P**	**13 09 33.7**	**-0.4**
	0.6nm,0.5s,baz=2.3,slow=7.4,SNR=5.3						
ASAR	**Alice Springs**	**60.60**	**187**	pP	**P**	**13 09 60.0**	**-0.1**
	0.4nm,0.6s,baz=9.4,slow=9.1,SNR=3.3						

*ISCJB **11** 13:00:11.8±0.5,31°.23N±0°.03×115°.56W±0°.03, h9km±5km, mb3.1/3, Error ellipse: s-maj=5.8km s-min=3.4km az=25.9*
*MEX **11** 13:00:12.7±0.3,30°.97N×115°.69W, h9km±8km, MD3.6*
*NEIC **11** 13:00:12.6,31°.22N×115°.59W, h5km, ML4.1(PAS), ML4.1(ECX), After ECX.*
*ECX **11** 13:00:12.6±0.6,31°.22N×115°.59W, h5km, ML4.1*
*IDC **11** 13:00:13.1±2.6,31°.36N×115°.49W, h0km, mb3.3/3, mb1 3.5/6, mb1mx3.4/52, mbtmp3.2/6, ML3.1/3, Error ellipse: s-maj=55.2km s-min=12.5km az=45.0*

ISC 11 13:00:12.0±1.0,31°.22N±0°.03×115°.63W±0°.03, h5km±9km, n68, σ1s29/94, mb3.3/3, 5C-5D, Baja California

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SPIG	**San Pedro Mart**	**0.23**	**142**	⇑*e*P	**Pg**	**13 00 16.4**	**-0.1**
SPIG				*e*S	**Sg**	**13 00 19.7**	**+0.2**
SPIG	**San Pedro Mart**	**0.23**	**142**	*e*P	**Pg**	**13 00 16.8**	**+0.3**
SPIG				*e*S	**Sg**	**13 00 19.6**	**+0.1**
SPIG	**San Pedro Mart**	**0.23**	**142**	*e*P	**Pg**	**13 00 16.8**	**+0.3**
SPIG				*e*S	**Sg**	**13 00 19.6**	**+0.1**
SPIG				*e*S	**Sg**	**13 00 19.7**	**+0.2**
SPX	**San Pedro Mart**	**0.23**	**141**	⇓*e*P	**Pg**	**13 00 16.8**	**+0.2**
SPX				*e*S	**Sg**	**13 00 19.8**	**+0.2**
SPX				⇓*e*		13 00 20.9	
SPX				AML	AML	13 00 20.9	
	comp=N,17μm,0.5s						
SPX	**San Pedro Mart**	**0.23**	**141**	*e*P	**Pg**	**13 00 16.4**	**-0.1**
SPX				*i* S	**Sg**	**13 00 19.7**	**+0.2**
ECBX	**El Chinero**	**0.55**	**63**	⇑*e*P	**Pg**	**13 00 22.0**	**-0.7**
ECBX				*e*S	**Sg**	**13 00 29.0**	**-0.9**
ECBX				⇑*e*		13 00 29.7	
ECBX				AML	AML	13 00 29.7	
	comp=E,13μm,0.4s						
ZAX	**El Zacaton**	**0.62**	**298**	⇑*e*P	**Pg**	**13 00 23.7**	**-0.3**
ZAX				*e*S	**Sg**	**13 00 33.0**	**+0.9**
ZAX				⇑*e*		13 00 36.4	
ZAX				AML	AML	13 00 36.4	
	comp=E,11μm,0.6s						
ECNX	**Esteban Cantu**	**0.94**	**298**	⇓*e*P	**Pg**	**13 00 29.6**	**-0.4**
ECNX				*e*S	**Sg**	**13 00 42.4**	**+0.3**
PBX	**Punta Banda**	**1.07**	**299**	⇓*e*P	**Pg**	**13 00 31.8**	**-0.7**
CPBX	**Cerro Prieto**	**1.22**	**13**	*e*P	**Pg**	**13 00 36.2**	**+0.8**
CPBX				*e*S	**Sn**	**13 00 54.3**	**+1.6**
MBIG	**Mexicali**	**1.24**	**17**	*e*P	**Pg**	**13 00 36.0**	**+0.3**
MBIG				*e*S	**Sn**	**13 00 54.3**	**+1.3**
CBX	**Cerro Bola**	**1.40**	**321**	⇓*e*P	**Pn**	**13 00 37.4**	**-0.9**
CBX				*e*S	**Sb**	**13 00 55.9**	**-1.0**
CBX				AML	AML	13 01 02.4	
	comp=E,3μm,0.5s						
CBX	**Cerro Bola**	**1.40**	**321**	*e*P	**Pn**	**13 00 37.3**	**-1.1**
CBX				*e*S	**Sb**	**13 00 55.7**	**-1.2**
CBX	**Cerro Bola**	**1.40**	**321**	*e*P	**Pn**	**13 00 37.3**	**-1.1**
CBX				*e*S	**Sb**	**13 00 55.7**	**-1.2**
IBP	**Imperial Bould**	**1.49**	**345**	*e*P	**Pb**	**13 00 39.1**	**-1.1**
IBP	**Imperial Bould**	**1.49**	**345**	P	**Pb**	**13 00 39.1**	**-1.1**
	baz=164,SNR=558						
IBP				S	**Sn**	**13 00 57.8**	**-1.6**
	baz=164						
TJIG	**Tijuana**	**1.50**	**324**	*e*P	**Pn**	**13 00 38.9**	**-0.7**
TJIG				*e*S	**Sb**	**13 00 58.7**	**-1.0**
SWSC	**Sam W. Stewart**	**1.72**	**355**	P	**Pn**	**13 00 41.5**	**-1.1**
	baz=174,SNR=125						
MONP2	**Monument Peak**	**1.80**	**338**	P	**Pb**	**13 00 44.2**	**-1.3**
	baz=157,SNR=290						
MONP2				Sb	**Sb**	**13 01 07.8**	**-0.7**
	baz=157						
GLA	**Glamis**	**1.95**	**20**	P	**Pn**	**13 00 44.4**	**-1.3**
	baz=200,SNR=51						
GLA				S	**Sn**	**13 01 06.6**	**-4.1**
	baz=200						
109C	**Camp Elliot, M**	**2.08**	**323**	P	**Pb**	**13 00 48.6**	**-1.7**
	baz=142,SNR=35						
109C				S	**Sb**	**13 01 15.0**	**-1.4**
	baz=142						
BC3	**Big Chuckawall**	**2.43**	**3**	P	**Pn**	**13 00 51.8**	**-0.7**
	baz=183,SNR=19						
PFO	**Pinyon Flats O**	**2.48**	**344**	Pn	**Pn**	**13 00 52.7**	**-0.5**
	comp=E,2.6nm,0.3s,baz=186,slow=11,SNR=53						
PFO				Lg	Lg	13 01 28.3	
	comp=E,145nm,0.3s,baz=261,slow=7.4,SNR=29						
PFO	**Pinyon Flats O**	**2.48**	**344**	P	**Pn**	**13 00 52.7**	**-0.5**
	baz=163,SNR=39						
PFO				Sb	**Sb**	**13 01 28.2**	**+0.1**
	baz=163						
PFO	**Pinyon Flats O**	**2.48**	**344**	*e*Pn	**Pn**	**13 00 52.5**	**-0.8**
PFO				*e*Pg	**Pb**	**13 00 57.1**	**-0.1**
PFO				Lg	Lg	13 01 28.3	
214A	**Organ Pipe Nat**	**2.51**	**72**	P	**Pn**	**13 00 52.3**	**-1.2**
	baz=253,SNR=15						
214A				S	**Sn**	**13 01 21.1**	**-3.5**
	baz=253						
214A	**Organ Pipe Nat**	**2.51**	**72**	*e*Pn	**Pn**	**13 00 52.0**	**-1.6**
Y12C	**Blythe**	**2.69**	**20**	P	**Pn**	**13 00 55.3**	**-0.6**
	baz=200,SNR=12						
MURC	**Murrieta**	**2.72**	**331**	P	**Pn**	**13 00 56.7**	**+0.4**
	baz=150						
MURC				Sb	**Sb**	**13 01 35.0**	**+0.2**
	baz=150						
BELC	**Belle Mtn. Jos**	**2.79**	**354**	P	**Pn**	**13 00 57.3**	**-0.2**
	baz=173,SNR=30						
IRM	**Iron Mountain**	**2.96**	**8**	P	**Pn**	**13 00 59.4**	**-0.2**
	baz=187,SNR=13						
CIS	**Catalina Islan**	**3.21**	**313**	P	**Pn**	**13 01 04.4**	**+1.3**
	baz=132						
CIS				Sb	**Sg**	**13 01 52.3**	**-2.8**
	baz=132						
BBRC	**Big Bear Solar**	**3.22**	**341**	P	**Pn**	**13 01 04.1**	**+0.7**
	baz=160,SNR=8.9						
BBRC				Sb	**Sb**	**13 01 50.6**	**+1.1**
	baz=160						
PDMCI	**Parker Dam,Lak**	**3.32**	**22**	P	**Pn**	**13 01 04.2**	**-0.3**
	baz=202						
FMP	**Fort Macarthur**	**3.35**	**318**	Sb	**Sb**	**13 01 55.3**	**+2.3**
	baz=137						
BFSC	**Mount Baldy Ra**	**3.46**	**331**	P	**Pn**	**13 01 08.1**	**+1.4**
	baz=150						
BFSC				Sb	**Sb**	**13 01 57.6**	**+1.3**
	baz=150						
GMRC	**Granite Mounta**	**3.55**	**360**	P	**Pn**	**13 01 08.0**	**+0.1**
	baz=179						
HEC	**Hector,Ludlow**	**3.65**	**351**	P	**Pn**	**13 01 08.9**	**-0.2**
	baz=170						
HEC				Sg	**Sg**	**13 02 09.2**	**+0.1**
	baz=170						
DECC	**Green Verdugo**	**3.79**	**324**	Sb	**Sb**	**13 02 08.9**	**+3.4**
	baz=142						
EDW2	**Edwards Air Fo**	**4.15**	**332**	P	Pn	13 01 18.8	+2.7
	baz=151						
EDW2				Sb	**Sb**	**13 02 18.3**	**+2.1**
	baz=151						
GSC	**Goldstone, Bar**	**4.19**	**347**	P	**Pn**	**13 01 16.8**	**+0.2**
	baz=166						
TUQ	**Turquoise Moun**	**4.21**	**357**	P	**Pn**	**13 01 15.6**	**-1.4**
	baz=176						
TUC	**Tucson**	**4.26**	**74**	P	**Pn**	**13 01 16.0**	**-1.2**
	baz=256						
TUC	**Tucson**	**4.26**	**74**	*e*Pn	**Pn**	**13 01 16.0**	**-1.7**
LRMC	**Laurel Mtn Rad**	**4.58**	**339**	P	**Pn**	**13 01 22.6**	**+0.6**
	baz=157						
SHOC	**Shoshone, Teco**	**4.70**	**354**	Sg	**Sg**	**13 02 43.4**	**+0.5**
	baz=173						
ARVC	**Arvin**	**4.73**	**326**	P	**Pn**	**13 01 26.0**	**+2.0**
	baz=144						
ISA	**Isabella, Lake**	**5.03**	**333**	P	**Pn**	**13 01 28.7**	**+0.5**
	baz=151						
MPMC	**Manual Prospec**	**5.07**	**343**	P	**Pn**	**13 01 29.7**	**+0.9**
	baz=161						
DAC	**Darwin (Calif)**	**5.30**	**343**	*e*Pn	**Pn**	**13 01 32.5**	**+0.5**
	comp=E,15nm,0.9s						
WUAZ	**Wupatki**	**5.57**	**39**	P	**Pn**	**13 01 36.6**	**+0.9**
	baz=220,SNR=14						
WUAZ	**Wupatki**	**5.57**	**39**	*e*Pn	**Pn**	**13 01 36.8**	**+1.1**
	comp=E,11nm,0.6s						
TPNV	**Topopah Spring**	**5.74**	**355**	P	**Pn**	**13 01 40.2**	**+2.3**
	baz=174,SNR=20						
W18A	**Petrified Fore**	**6.28**	**50**

baz=138
PFO Pinyon Flats O 2.45 343 Sb Sg 13 03 00.1 -0.7
baz=160
214A Organ Pipe Nat 2.48 73 S Sn 13 02 53.2 +0.2
baz=257
MURC Murrieta 2.69 330 Sb Sb 13 03 04.7 +1.4
baz=147
BBRC Big Bear Solar 3.19 340 Sb Sg 13 03 22.5 -2.1
baz=157

IDC 11 13:01:44.0±2.9, 28°48S×62°67E, h0km, mb3.8/3, mb1 4.1/3, mb1mx3.5/56, mbtmp3.8/3, Error ellipse: s-maj=91.9km s-min=43.8km az=49.0, Southwest Indian Ridge

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CMAR	Chiang Mai Arr	58.37	41	P	P	13 11 41.0	-0.3
	0.5nm,0.6s,baz=228,slow=7.8,SNR=5.0						
ASAR	Alice Springs	63.32	104	P	P	13 12 15.4	+0.2
	0.8nm,0.5s,baz=243,slow=6.4,SNR=26						
WRA	Warramunga Arr	65.08	100	P	P	13 12 26.7	-0.1
	0.7nm,0.7s,baz=247,slow=6.0,SNR=7.1						
YKA	Yellowknife Ar	145.93	358	PKPbc	PKPdf	13 21 24.0	-0.2
	1.3nm,0.6s,baz=348,slow=3.4,SNR=33						

IDC 11 13:02:23.8±1.9, 37°83N×142°06E, h0km, mb3.7/6, mb1 3.6/9, mb1mx3.4/57, mbtmp3.6/9, ML2.6/3, Error ellipse: s-maj=47.3km s-min=21.9km az=78.0
ISCJB 11 13:02:29.3±1.3, 37°72N±0°04×141°8E±0°1, h49km±9km, mb3.6/6, Error ellipse: s-maj=17.0km s-min=6.8km az=4.5
JMA 11 13:02:31.7±0.1, 37°77N×141°61E, h44km±2km, M3.5
ISC 11 13:02:29.7±1.8, 37°73N±0°05×141°72E±0°09, h32km±11km, n16, σ0°90/23, mb3.6/6, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JMM	Marumori	0.74	281	P	Pb	13 02 44.6	+0.4
JMM				S	Sb	13 02 53.8	-0.3
JFK	Kawauchi	0.76	242	P	Pb	13 02 45.3	+0.8
JFK				S	Sn	13 02 54.8	+0.1
JIO	Ouri	0.78	338	P	Pb	13 02 45.3	+0.5
JIO				S	Sb	13 02 54.6	-0.5
ONAJ	Iwakimizuishiy	0.96	230	eS	Sn	13 02 59.7	0.0
JOU	Okura	1.04	308	P	Pb	13 02 48.8	-0.5
JOU				S	Sn	13 03 01.6	0.0
JFT	Otama	1.12	259	P	Pb	13 02 50.7	+0.2
JFT				S	Sb	13 03 04.2	-0.5
MJAR	Matsushiro Arr	3.04	248	Pn	Pn	13 03 16.7	+1.1
	1.4nm,0.3s,baz=80,slow=16,SNR=5.3						
MAT	Matsushiro	3.04	248	P	Pn	13 03 17.7	+2.1
MAT				eS	Sb	13 03 57.3	-2.6
JHJ	Hachijo jima 2	4.87	200	Pn	Pn	13 03 40.6	-0.1
	1.7nm,0.3s,baz=90,slow=20,SNR=2.1						
JHJ				Sn	Sn	13 04 36.0	+0.1
	8.3nm,0.3s,baz=252,slow=19,SNR=4.7						
USRK	Ussuriysk Ar.	9.79	314	Pn	Pn	13 04 47.9	-0.2
	0.1nm,0.3s,baz=132,slow=14,SNR=2.4						
SONM	Songino Array	27.60	303	P	P	13 08 14.8	+0.7
	0.3nm,0.4s,baz=103,slow=10,SNR=2.5						
ZALV	Zalesovo Beam	41.63	312	P	P	13 10 14.3	-0.3
	0.9nm,0.5s,baz=93,slow=9.5,SNR=4.3						
MKAR	Makanchi Array	43.96	302	P	P	13 10 33.5	-0.1
	0.2nm,0.3s,baz=78,slow=6.8,SNR=4.8						
KURBB	Kurchatov Arra	45.77	307	P	P	13 10 48.1	+0.2
	0.9nm,0.5s,baz=80,slow=8.1,SNR=9.7						
WRA	Warramunga Arr	57.78	188	P	P	13 12 17.8	0.0
	0.2nm,0.4s,baz=5.0,slow=7.2,SNR=5.1						
FINES	FINESS Array B	68.31	332	P	P	13 13 26.4	-0.8
	0.7nm,0.7s,baz=57,slow=10,SNR=2.5						

IDC 11 13:04:34.6±1.7, 36°99N×140°76E, h0km, mb3.4/4, mb1 3.5/5, mb1mx3.3/51, mbtmp3.4/5, ML3.2/1, MS3.5/2, Ms1 3.6/2, ms1mx2.9/29, Error ellipse: s-maj=39.2km s-min=24.1km az=55.0
ISCJB 11 13:04:36.5±0.7, 36°97N±0°04×140°76E±0°07, h19km±5km, mb3.4/4, MS3.5/2, Error ellipse: s-maj=10.4km s-min=5.2km az=24.2
JMA 11 13:04:37.1, 37°03N×140°62E, h0km±2km, M3.3
ISC 11 13:04:37.3±1.0, 37°02N±0°04×140°66E±0°05, h14km±7km, n15, σ0°61/21, mb3.4/4, 4C-1D, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	Iwakimizuishiy	0.14	55	↑P	Pg	13 04 40.8	-0.1
ONAJ				S	Sg	13 04 43.5	+0.2
JFK	Kawauchi	0.38	27	↑P	Pg	13 04 45.0	0.0
JFK				S	Sg	13 04 50.5	+0.3
JHO	Hitachi	0.42	190	S	Sg	13 04 51.0	-0.3
JFT	Otama	0.56	333	↑P	Pg	13 04 47.8	-0.4
JFT				S	Sg	13 04 55.2	-0.4
JMM	Marumori	0.85	7	P	Pg	13 04 52.9	-0.8
JMM				S	Sg	13 05 04.9	+0.1
JOU	Okura	1.34	0	↑P	Pn	13 05 01.9	+0.3
JOU				S	Sb	13 05 19.8	+0.6
JIO	Ouri	1.53	21	↓P	Pn	13 05 04.4	+0.2
JIO				S	Sb	13 05 24.8	+0.2
MJAR	Matsushiro Arr	2.03	257	Pn	Pn	13 05 11.4	+0.3
	7.6nm,0.3s,baz=80,slow=15,SNR=13						
MJAR				Sn	Sn	13 05 37.4	+1.2
	14nm,0.3s,baz=92,slow=22,SNR=9.7						
MAT	Matsushiro	2.03	257	P	Pn	13 05 12.0	+0.9
MAT				S	Sb	13 05 38.9	-0.1
MKAR	Makanchi Array	43.61	302	P	P	13 12 40.1	-1.0
	0.1nm,0.2s,baz=90,slow=7.8,SNR=2.8						
KURBB	Kurchatov Arra	45.53	308	P	P	13 12 57.0	+0.7
	0.2nm,0.4s,baz=79,slow=7.6,SNR=3.8						
WRA	Warramunga Arr	56.97	187	P	P	13 14 21.8	-0.6
	0.5nm,0.7s,baz=2.8,slow=7.2,SNR=5.2						
AKTO	Aktyubinsk	58.23	312	LR	LR	13 40 44.7	
	comp=Z,23nm,21.0s,slow=37						
ASAR	Alice Springs	60.70	187	P	P	13 14 47.6	-0.6
	0.2nm,0.8s,baz=22,slow=12,SNR=2.9						
NOA	NORSAR Array B	73.96	337	LR	LR	13 52 48.0	
	comp=Z,46nm,18.7s,baz=30,slow=39						

NIED 11 13:05:00, 37°00N×140°80E, h5km, Mw4.4 Best double couple: M0 3.90000×10^15 NP1:φs225.00000°, δ43.00000°, λ-113.00000°. NP2:φs75.00000°, δ51.00000°, λ-70.00000°.
ISCJB 11 13:05:38.8±0.5, 37°05N±0°02×140°52E±0°03, h11km±3km, mb4.7/158, MS4.0/11, Error ellipse: s-maj=4.3km s-min=3.4km az=137.9
BJI 11 13:05:39.9, 36°78N×140°56E, h26km, mb4.6/44, mB4.9/24, Ms4.4/20, Ms7 4.2/17
MOS 11 13:05:40.9±1.0, 37°09N×140°57E, h26km, mb4.9/73, Error ellipse: s-maj=7.3km s-min=5.0km az=100.9
JMA 11 13:05:40.2, 37°02N×140°69E, h11km±1km, M4.7 Broadband fault plane solution: P waves. NP1: φs86.00000°, δ55.00000°, λ-63.00000°. NP2:φs224.00000°, δ43.00000°, λ-123.00000°. Principal axes: T Plg6.0000°, Azm157.0000°; N Plg22.0000°, Azm249.0000°; P Plg67.0000°, Azm52.0000°;
JMA Felt IV J1.
NEIC 11 13:05:44.7±0.5, 37°07N×140°49E, h42km±4km, mb4.8/104 Error ellipse: s-maj=4.3km s-min=3.0km az=136.0
NEIC Recorded [4 JMA] in Fukushima.
IDC 11 13:05:45.6±2.0, 37°07N×140°51E, h51km±17km, mb4.3/34, mb1 4.4/38, mb1mx4.3/55, mbtmp4.5/38, ML3.5/4, MS3.4/8, Ms1 3.4/8, ms1mx3.1/54, Error ellipse: s-maj=12.8km s-min=9.9km az=115.0
ISC 11 13:05:40.6±0.8, 37°03N±0°03×140°64E±0°04, h16km±4km, n328, σ1°16/340, mb4.8/158, MS4.0/11, 16C-9D, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	Iwakimizuishiy	0.15	61	↑P	Pg	13 05 43.3	-1.3
ONAJ				S	Sg	13 05 45.5	-1.7
JFK	Kawauchi	0.38	29	↑P	Pg	13 05 47.6	-0.9
JFK				S	Sg	13 05 52.8	-1.0
JHO	Hitachi	0.42	188	↑P	Pg	13 05 48.4	-0.7
JHO				S	Sg	13 05 53.9	-1.0
JFT	Otama	0.54	334	↑P	Pg	13 05 51.4	0.0
JFT				S	Sg	13 05 59.0	+0.3
MJAR	Matsushiro Arr	2.01	257	P	Pn	13 06 15.4	+1.5
	273nm,0.3s,baz=77,slow=16,SNR=121						
MJAR				S	Sb	13 06 42.5	+0.8
	210nm,0.3s,baz=83,slow=24,SNR=18						
MJAR				LR	LR	13 07 23.5	
	comp=Z,545nm,19.2s,baz=80,slow=52						
MAJO	Matsushiro	2.01	257	eP	Pn	13 06 15.8	+1.8
MAJO	Matsushiro	2.01	257	ePn	Pn	13 06 15.8	+1.8
MAT	Matsushiro	2.01	257	P	Pn	13 06 15.7	+1.7
MAT				S	Sb	13 06 43.3	+1.6
INU	Inuyama	3.38	241	ePn	Pn	13 06 35.4	+2.7
JHJ	Hachijo jima 2	3.96	190	P	Pn	13 06 41.5	+0.7
	118nm,0.3s,baz=59,slow=18,SNR=24						
JHJ				S	Sn	13 07 29.1	+2.1
	156nm,0.3s,baz=53,slow=20,SNR=4.3						
JHJ				LR	LR	13 07 50.2	
	comp=Z,255nm,20.8s,baz=106,slow=31						
JHJ2	Mitsune	3.97	190	ePn	Pn	13 06 40.6	-0.2
ERM	Erimo	5.34	21	ceP	Pn	13 06 59.8	+0.1
ERM				pmax	pmax		
	comp=Z,69nm,1.0s						
ERM	Erimo	5.34	21	ePn	Pn	13 06 59.3	-0.4
YUK	Yuzh-Kuril'sk	8.04	28	eP	Pn	13 07 35.6	-1.2
YUK				i S	Sn	13 09 06.0	-1.4
YUK				pmax	pmax		
	comp=N,67nm,0.2s						
YUK				pmax	pmax		
	comp=E,91nm,0.2s						
YUK				pmax	pmax		
	comp=Z,122nm,0.2s						
YUK				MLR	MLR		
	comp=Z,520nm,13.0s						
SHO	Shikotan	8.30	33	eP	Pn	13 07 36.5	-3.8
SHO				eS	Sn	13 09 06.3	-7.4
SHO				pmax	pmax		
	comp=E,47nm,0.5s						
SHO				pmax	pmax		
	comp=Z,80nm,0.5s						
SHO				pmax	pmax		
	comp=N,13nm,0.8s						
JNU	Nakatsue	8.90	247	P	Pn	13 07 51.8	+3.2
	comp=N,1.3nm,0.3s,baz=51,slow=2.6,SNR=9.9						
JNU				LR	LR	13 11 41.4	
	comp=N,110nm,20.2s,baz=300,slow=40						
JNU	Nakatsue	8.90	247	ePn	Pn	13 07 52.0	+3.4
USRK	Ussuriysk Ar.	9.72	320	P	Pn	13 08 02.8	+3.0
	comp=N,0.8nm,0.3s,baz=134,slow=13,SNR=49						
USRK				LR	LR	13 11 16.3	
	comp=N,392nm,20.1s,baz=140,slow=34						
KUR	Kuril'sk	9.84	31	↓iP	Pn	13 07 59.6	-1.8
KUR				eS	Sn	13 09 46.4	-5.0
KUR				pmax	pmax		
	comp=N,9.0nm,0.7s						
KUR				pmax	pmax		
	comp=E,9.0nm,0.7s						
KUR				pmax	pmax		
	comp=Z,23nm,0.7s						
KUR				smax	smax		
	comp=N,22nm,0.7s						
KUR				smax	smax		
	comp=E,18nm,0.7s						
CBIJ	Chichi jima	9.99	172	ePn	Pn	13 07 58.9	-4.7
YSS	Yuzh-Sakhalins	10.04	8	↓eP	Pn	13 08 04.8	+0.7
YSS				pmax	pmax		
	comp=Z,30nm,0.6s						
YSS				MLR	MLR		
	comp=Z,400nm,13.0s						
YSS	Yuzh-Sakhalins	10.04	8	ePn	Pn	13 08 04.3	+0.2
KSRS	Korea Array	10.15	276	P	Pn	13 08 09.3	+3.6
	comp=Z,0.5nm,0.3s,baz=93,slow=14,SNR=38						
KSRS				LR	LR	13 11 08.1	
	comp=Z,85nm,20.1s,baz=112,slow=32						
KSAR	Wonju Array Be	10.18	276	P	Pn	13 08 09.3	+3.2
KSAR	Wonju Array Be	10.18	276	P	Pn	13 08 09.3	+3.2
MDJ	Mudanjiang	11.28	316	P	Pn	13 08 26.4	+5.2
MDJ				pmax	pmax		
	comp=Z,10.0nm,1.0s						
MDJ				pmax	pmax		
	comp=Z,140nm,5.3s						
MDJ	Mudanjiang	11.28	316	ePn	Pn	13 08 24.0	+2.8
HABR	Khabarovsk	12.15	342	deP	Pn	13 08 35.1	+2.2
HABR				eSS	Sn	13 10 47.5	-0.5
HABR				pmax	pmax		
	comp=E,20nm,1.8s						
HABR				pmax	pmax		
	comp=Z,26nm,2.1s						
HABR				pmax	pmax		
	comp=N,22nm,2.0s						
HABR				MLR	MLR		
	comp=Z,199nm,12.0s						
CN2	Changchun	13.40	305	eP	Pn	13 08 51.5	+1.5
KLR	Kul'dur	13.80	335	P	Pn	13 08 57.7	+2.2
	comp=Z,0.1nm,0.3s,baz=136,slow=15,SNR=3.1						
NKL	Nikolayevsk	16.12	0	eP	Pn	13 09 27.7	+1.3
NKL				pmax	pmax		
	comp=Z,10.0nm,0.9s						
NKL				MLR	MLR		
	comp=N,400nm,12.0s						
NKL				MLR	MLR		
	comp=Z,500nm,12.0s						
NJ2	Nanjing	18.61	261	eP	P	13 09 57.2	-0.1
NJ2				pmax	pmax		
	comp=Z,11nm,0.8s						
TIA	Tai'an	18.89	275	eP	Pn	13 10 01.5	+0.5
TIA				pmax	pmax		
	comp=Z,10.0nm,0.9s						
BJI	Beijing	19.36	286	P	P	13 10 03.9	-1.6
BJI				S	Sn	13 13 38.0	-5.3
BJI				pmax	pmax		
	comp=Z,8.0nm,0.8s						
BJI				pmax	pmax		
	comp=Z,220nm,3.3s						
BJI				LR	LR		
	comp=Z,290nm,15.5s						
BJI				LR	LR		
	comp=Z,110nm,8.8s						
PEA0	Petropavlovsk-	20.01	31	eP	P	13 10 12.6	+0.1
PETK	Petropavlovsk-	20.01	31	P	P	13 10 13.3	+0.9
	comp=Z,10.0nm,0.9s,baz=209,slow=12,SNR=6.3						
HHC	Hu-ho-hao-te	22.89	289	eP	P	13 10 44.2	+0.5
HHC				sP	sP	13 10 54.7	+4.6
HHC				S	S	13 14 46.9	-6.0
HHC				pmax	pmax		
	comp=Z,16nm,0.9s						
HHC				pmax	pmax		
	comp=Z,100nm,5.9s						
HHC				LR	LR		
	comp=Z,1μm,13.6s						
HHC				LR	LR		
	comp=Z,1μm,13.6s						
HHC				LR	LR		
	comp=Z,1μm,13.6s						
MA2	Magadan	23.49	13	P	P	13 10 49.8	+0.3
	comp=Z,19nm,0.8s,baz=209,slow=12,SNR=9.8						
MA2				LR	LR	13 21 45.5	
	comp=Z,57nm,18.7s,baz=190,slow=41						
MA2	Magadan	23.49	13	eP	P	13 10 49.5	0.0
	comp=Z,101nm,0.8s						
GUMO	Guam	23.65	170	LR	LR	13 19 29.7	
	comp=Z,142nm,21.8s,baz=12,slow=35						
YAK	Yakutsk	25.94	348	P	P	13 11 11.6	-0.4
	comp=Z,12nm,0.5s,baz=324,slow=2.9,SNR=5.1						
YAK	Yakutsk	25.94	348	eP	P	13 11 11.6	-0.4
YAK				pmax	pmax		
	comp=Z,34nm,1.1s						
YAK				pmax	pmax		
	comp=N,17nm,1.1s						
YAK				pmax	pmax		
	comp=E,5.0nm,1.0s						
YAK	Yakutsk	25.94	348	eP	P	13 11 10.5	-1.4
	comp=E,46nm,1.2s						
ENH	Enshi	26.71	265	eP	P	13 11 18.7	-0.6
	comp=E,11nm,0.9s						
ULN	Ulaanbaatar	26.84	304	eP	P	13 11 18.7	-1.8
ULN				e		13 14 43.6	
ULN				pmax	pmax		
	comp=Z,4.0nm,0.8s						
ULN	Ulaanbaatar	26.84	304	eP	P	13 11 18.7	-1.8
	comp=Z,4.1nm,0.8s						
ULN				ePcP	PcP	13 14 43.6	+0.8
SEY	Seymchan	26.92	12	P	P	13 11 21.0	+0.2
	comp=Z,21nm,1.1s,baz=199,slow=7.2,SNR=25						
SEY	Seymchan	26.92	12	P	P	13 11 21.0	+0.2
SEY				pmax	pmax		
	comp=Z,13nm,0.9s						
BOD	Bodaibo	27.20	328	eP	P	13 11 21.9	-1.5
BOD				pmax	pmax		
	comp=Z,7.0nm,1.2s						
SONA1	Songino Array	27.27	304	eP	P	13 11 22.9	-1.4
SONM	Songino Array	27.27	304	P	P	13 11 23.5	-0.8
	comp=Z,4.3nm,0.7s,baz=105,slow=8.6,SNR=24						
SONM				PcP	PcP	13 14 44.4	+0.6
	comp=Z,1.8nm,0.5s,baz=116,slow=3.1,SNR=9.3						
H11N2	WAKE ISLAND Hy	28.68	120	T	T	13 41 25.4	
	baz=313,slow=75,SNR=168						
H11N1	WAKE ISLAND Hy	28.69	120	T	T	13 41 26.0	
	baz=313,slow=75,SNR=31						
H11N3	WAKE ISLAND Hy	28.70	120	T	T	13 41 26.8	
	baz=313,slow=75,SNR=172						
H11S1	WAKE ISLAND Hy	29.38	122	T	T	13 42 21.3	
	baz=314,slow=76,SNR=3182						
H11S3	WAKE ISLAND Hy	29.38	122	T	T	13 42 17.4	
	baz=314,slow=76,SNR=451						
H11S2	WAKE ISLAND Hy	29.40	122	T	T	13 42 17.9	
	baz=314,slow=76,SNR=202						
LZH	Lanzhou	29.46	279	eP	P	13 11 43.1	-0.8
LZH				pP	sP	13 11 50.3	-0.3
LZH				sP	pP	13 11 53.8	+5.1
LZH				pmax	pmax		
	comp=Z,21nm,1.0s						
LZH				pmax	pmax		
	comp=Z,75nm,6.2s						
LZH				LR	LR		
	comp=Z,340nm,13.2s						
LZH				LR	LR		
	comp=Z,370nm,12.9s						
LZH				LR	LR		
	comp=Z,420nm,15.8s						
ZAK	Zakamensk	29.79	309	eP	P	13 11 47.1	+0.5
ZAK				pmax	pmax		
	comp=Z,2.0nm,1.2s						
GYA	Guiyang	30.61	260	P	P	13 11 54.8	+0.6
GYA				pP	sP	13 12 03.0	+2.1
GYA				PP	PnPn	13 12 55.0	+1.5
GYA				PcP	PcP	13 13 53.2	+0.7
GYA				S	S	13 16 53.8	-2.1
GYA				SS	SnSn	13 18 33.4	+0.3
GYA				ScS	ScS	13 22 28.6	-2.4
GYA				pmax	pmax		
	comp=Z,20nm,0.8s						
GYA				pmax	pmax		
	comp=Z,120nm,5.3s						
GYA				LR	LR		
	comp=Z,520nm,16.9s						
GYA				LR	LR		
	comp=Z,480nm,17.2s						
GYA				LR	LR		
	comp=Z,500nm,16.9s						
CD2	Chengdu	31.05	270	P	P	13 11 56.0	-2.0
CD2				sP	sP	13 12 07.1	+2.4
CD2				S	S	13 16 59.1	-3.5
CD2				sS	sS	13 17 12.3	+1.8
CD2				pmax	pmax		
	comp=Z,10.0nm,0.4s						
CD2				pmax	pmax		
	comp=Z,120nm,5.0s						
CD2				LR	LR		
	comp=Z,310nm,9.5s						
CD2				LR	LR		
	comp=Z,290nm,13.1s						
GTA	Gaotai	31.97	287	eP	P	13 12 04.8	-1.3
GTA				pmax	pmax		
	comp=Z,2.0nm,0.4s						
BILL	Bilibino	34.21	17	c iP	P	13 12 24.8	-0.3
BILL				e		13 13 43.1	
BILL				eS	S	13 17 57.8	+7.0
BILL				eSS	SS	13 20 30.6	+12
BILL				pmax	pmax		
	comp=Z,13nm,1.2s						
BILL				MLR	MLR		
	comp=Z,54nm,15.0s						
BILL	Bilibino	34.21	17	eP	P	13 12 24.6	-0.5
	comp=Z,12nm,1.0s						
KMI	Kunming	34.35	261	P	P	13 12 28.1	+1.0
KMI				pmax	pmax		
	comp=Z,12nm,0.7s						
KMI				pmax	pmax		
	comp=Z,160nm,5.4s						
TIXI	Tiksi	35.22	354	P	P	13 12 32.8	-0.9
	comp=Z,2.7nm,0.5s,baz=144,slow=6.8,SNR=15						
TIXI	Tiksi	35.22	354	ceP	P	13 12 33.1	-0.7
TIXI				pmax	pmax		
	comp=Z,5.0nm,1.0s						
TIXI	Tiksi	35.22	354	eP	P	13 12 32.7	-1.1
	comp=Z,4.6nm,0.9s						
GAMB	Gambell	39.04	31	eP	P	13 13 06.5	+0.2
	comp=Z,11nm,1.4s						
WMQ	Urumqi	40.29	297	eP	P	13 13 17.6	+0.5
WMQ				pP	sP	13 13 23.7	-0.1
WMQ				sP	pP	13 13 26.7	+4.8
WMQ				pmax	pmax		
	comp=Z,6.0nm,0.8s						
WMQ				pmax	pmax		
	comp=Z,81nm,5.0s						
WMQ				LR	LR		
	comp=Z,130nm,22.2s						
WMQ				LR	LR		
	comp=Z,30nm,18.2s						
CMAR	Chiang Mai Arr	40.90	255	P	P	13 13 21.4	-0.9
	comp=Z,0.9nm,0.6s,baz=48,slow=7.3,SNR=6.3						
CMAR				PcP	PcP	13 15 24.0	+1.2
	comp=Z,0.6nm,0.6s,baz=354,slow=2.5,SNR=6.5						
CM01	Chiang Mai Arr	40.91	255	eP	P	13 13 23.8	+1.4
CM01				ePcP	PcP	13 15 23.7	+0.9
LUWI	Luwuk	41.35	208	eP	P	13 13 24.6	-1.4
	comp=Z,20nm,0.7s						
ZAA0	Zalesovo Array	41.46	312	eP	P	13 13 25.7	-0.8
ZAA0				ePcP	PcP	13 15 24.2	+0.2
ZALV	Zalesovo Beam	41.46	312	P	P	13 13 26.1	-0.4
	comp=Z,4.3nm,0.6s,baz=96,slow=6.5,SNR=18						
ZALV				PcP	PcP	13 15 23.8	-0.2
	comp=Z,3.5nm,0.4s,baz=100,slow=3.0,SNR=8.1						
NVS	Novosibirsk	42.40	314	eP	P	13 13 33.2	-0.9
NVS				pmax	pmax		
	comp=Z,9.0nm,1.3s						
NVS				pmax	pmax		
	comp=E,5.0nm,1.1s						
NRIK	Noril'sk	43.01	335	P	P	13 13 38.0	-0.9
	comp=E,3.4nm,0.5s,baz=116,slow=8.7,SNR=6.0						
NRIK	Noril'sk	43.01	335	P	P	13 13 38.0	-0.9
NRIK				pmax	pmax		
	comp=Z,5.0nm,0.7s						
MKAR	Makanchi Array	43.59	302	P	P	13 13 44.3	+0.3
	comp=Z,4.7nm,0.6s,baz=88,slow=9.9,SNR=61						
MKAR				PcP	PcP	13 15 31.3	0.0
	comp=Z,2.0nm,0.9s,baz=74,slow=6.4,SNR=4.0						
MKAR	Makanchi Array	43.59	302	eP	P	13 13 43.2	-0.8
MKAR				PcP	PcP	13 15 31.3	0.0
MAKZ	Makanchi	43.81	302	eP	P	13 13 45.5	-0.2
MAKZ				pmax	pmax		
	comp=Z,5.0nm,0.6s						
MAKZ	Makanchi	43.81	302	eP	P	13 13 45.5	-0.2
	comp=Z,4.6nm,0.6s						
KURK	Kurchatov	45.45	308	eP	P	13 13 57.7	-1.0
KURK				pmax	pmax		
	comp=Z,22nm,0.9s						
KURK	Kurchatov	45.45	308	eP	P	13 13 57.7	-1.0
	comp=Z,22nm,0.9s						
KURBB	Kurchatov Arra	45.52	308	P	P	13 13 58.8	-0.4
	comp=Z,10nm,0.6s,baz=84,slow=8.0,SNR=78						
ODAN	Odare	45.80	273	eP	P	13 14 01.6	-0.4
	comp=Z,24nm,1.1s						
SVW2	Sparrevohn	45.90	37	eP	P	13 14 03.9	+1.7
	comp=Z,13nm,1.0s						
KAPI	Kappang	46.15	210	P	P	13 14 04.7	+0.2
	comp=Z,26nm,1.0s,baz=17,slow=2.7,SNR=3.9						
PDGK	Podgornoye	46.23	298	P	P	13 14 05.3	+0.3
PDGK				pmax	pmax		
	comp=Z,10.0nm,1.2s						
RAMN	Ramite	46.39	274	eP	P	13 14 06.6	-0.1
	comp=Z,38nm,0.8s						
GUN	Gumba	46.54	275	eP	P	13 14 08.0	0.0
	comp=Z,14nm,0.6s						
KKN	Kakani	47.07	275	eP	P	13 14 11.9	-0.1
	comp=Z,21nm,0.8s						
RSO	Redoubt South	47.29	38	eP	P	13 14 13.5	+0.2
GKN	Gorkha	47.49	276	eP	P	13 14 15.0	-0.2
	comp=Z,55nm,1.1s						
KDAK	Kodiak Island	47.52	42	eP	P	13 14 15.1	+0.3
KDAK				pmax	pmax		
	comp=Z,130nm,1.9s						
KDAK	Kodiak Island	47.52	42	eP	P	13 14 15.1	+0.3

comp=Z,130nm,1.9s
PPLA Purkeypile 47.53 35 *e*P **P** 13 14 16.6 +1.6
CAST Castle Rocks 47.58 34 *e*P **P** 13 14 16.6 +1.4
comp=Z,5.3nm,1.0s
SPU Mount Spurr 47.61 37 *e*P **P** 13 14 16.6 +1.1
BPAW Bear Paw Mtn. 48.07 33 *e*P **P** 13 14 20.3 +1.3
comp=Z,12nm,1.5s
KTH Kantishna Hill 48.10 34 *e*P **P** 13 14 20.7 +1.4
comp=Z,18nm,1.1s
MLY Manley 48.18 32 *e*P **P** 13 14 21.4 +1.4
comp=Z,7.8nm,0.9s
TRF Thorofare Moun 48.38 34 *e*P **P** 13 14 22.4 +0.7
comp=Z,20nm,1.6s
KOLN Koldanda 48.41 276 *e*P **P** 13 14 22.5 0.0
comp=Z,6.9nm,0.6s
RC01 Rabbit Creek A 48.74 37 *e*P **P** 13 14 24.8 +0.5
comp=Z,24nm,1.4s
PYUN Piuthan 48.76 277 *e*P **P** 13 14 25.2 +0.1
comp=Z,68nm,1.1s
MCK McKinley 48.98 34 *e*P **P** 13 14 26.8 +0.7
MCK pmax pmax
comp=Z,11nm,1.2s
MCK McKinley 48.98 34 *e*P **P** 13 14 26.8 +0.7
comp=Z,11nm,1.2s
PMR Palmer 49.00 37 *e*P **P** 13 14 26.5 +0.3
PMR pmax pmax
comp=Z,23nm,1.4s
PMR Palmer 49.00 37 *e*P **P** 13 14 26.5 +0.3
comp=Z,23nm,1.4s
SOEI Soe 49.01 202 *e*P **P** 13 14 28.7 +1.8
comp=Z,79nm,1.2s
RND Reindeer 49.03 34 *e*P **P** 13 14 27.0 +0.5
RND pmax pmax
comp=Z,19nm,1.4s
RND Reindeer 49.03 34 *e*P **P** 13 14 26.9 +0.5
comp=Z,19nm,1.4s
TKM2 Tokmak 2 49.09 298 *e*P **P** 13 14 27.4 0.0
TKM2 pmax pmax
comp=Z,9.0nm,0.7s
TKM2 Tokmak 2 49.09 298 *e*P **P** 13 14 27.4 0.0
comp=Z,8.8nm,0.7s
MDM Murphy Dome 49.25 32 *e*P **P** 13 14 29.2 +1.1
comp=Z,12nm,1.0s
WRH Wood River Hil 49.32 33 *e*P **P** 13 14 29.3 +0.7
WRH *e*PcP **PcP** 13 15 51.8 +0.7
SML Sawmill 49.36 36 *e*P **P** 13 14 29.6 +0.5
SML pmax pmax
comp=Z,20nm,1.2s
SML Sawmill 49.36 36 *e*P **P** 13 14 29.6 +0.5
comp=Z,20nm,1.2s
COLA College 49.41 32 *e*P **P** 13 14 30.2 +0.9
COLA pmax pmax
comp=Z,5.0nm,0.9s
COLA College 49.41 32 *e*P **P** 13 14 30.2 +0.9
comp=Z,5.4nm,0.9s
CCB Clear Creek Bu 49.44 33 *e*P **P** 13 14 30.5 +1.0
comp=Z,6.0nm,1.3s
DHY Denali Highway 49.72 35 *e*P **P** 13 14 32.4 +0.5
comp=Z,5.2nm,0.8s
HDA Harding Lake 49.82 33 *e*P **P** 13 14 33.0 +0.5
comp=Z,17nm,1.1s
ILAR Eielson Array 49.83 32 P **P** 13 14 33.0 +0.5
comp=Z,4.0nm,0.7s,baz=271,slow=6.3,SNR=50
ILB Eielson Array 49.83 32 *e*P **P** 13 14 32.6 +0.1
IL1 Eielson Array 49.83 32 *e*P **P** 13 14 32.6 +0.1
KSH Kashi 49.84 294 *e*P P 13 14 37.3 +4.2
KSH *es*P sP 13 14 48.2 +8.2
KSH *e*ScP **ScP** 13 19 49.8 +1.2
KSH S **S** 13 21 45.4 +3.0
KSH pmax pmax
comp=Z,120nm,4.4s
KSH LR LR
comp=Z,560nm,13.5s
KSH LR LR
comp=Z,260nm,10.5s
KSH LR LR
comp=Z,150nm,6.7s
OTUK Ortayu 49.93 306 P **P** 13 14 33.4 -0.1
OTUK pmax pmax
comp=Z,11nm,1.1s
AAK Ala-Archa 49.95 298 P **P** 13 14 33.3 -0.6
comp=Z,2.9nm,0.4s,baz=108,slow=4.0,SNR=6.0
BVAR Borovoye Array 50.12 312 P **P** 13 14 34.9 +0.1
comp=Z,4.2nm,0.7s,baz=76,slow=7.8,SNR=24
BVAR PcP **PcP** 13 15 54.3 0.0
comp=Z,3.6nm,0.7s,baz=64,slow=3.4,SNR=7.8
BRVK Borovoye 50.17 312 *ce*P **P** 13 14 35.5 +0.2
BRVK pmax pmax
comp=Z,10.0nm,1.0s
BRVK Borovoye 50.17 312 *e*P **P** 13 14 35.0 -0.3
comp=Z,7.1nm,0.8s
EKS2 Erkin-Say 50.44 298 *e*P **P** 13 14 37.7 0.0
EKS2 Erkin-Say 50.44 298 *e*P **P** 13 14 37.7 0.0
KLU Klutina 50.54 37 *e*P **P** 13 14 38.9 +0.9
comp=Z,34nm,1.7s
COEN Coen 50.77 177 *e*P **P** 13 14 42.9 +2.8
comp=Z,26nm,1.3s
ZRNK Zerenda 50.95 312 *e*P **P** 13 14 40.9 -0.3
ZRNK pmax pmax
comp=Z,12nm,0.8s
ZRNK Zerenda 50.95 312 *e*P **P** 13 14 40.9 -0.3
comp=Z,12nm,0.8s
DOT Dot Lake 51.15 34 *e*P **P** 13 14 42.9 +0.3
comp=Z,74nm,2.0s
BMRM Bremner River 51.24 37 *e*P **P** 13 14 44.2 +1.0
comp=Z,14nm,1.1s
MENT Mentasta 51.39 35 *e*P **P** 13 14 45.7 +1.3
comp=Z,14nm,1.1s
MNAS Manas 51.39 299 P **P** 13 14 45.4 +0.6
MNAS pmax pmax
comp=Z,10.0nm,0.7s
SFK Sufi-Kurgan 51.48 295 P **P** 13 14 46.1 +0.5
SFK pmax pmax
comp=Z,9.0nm,0.9s
EGAK Eagle 52.27 32 *e*P **P** 13 14 51.2 +0.4
comp=Z,21nm,1.8s
KKAR Karatay Array 52.59 300 *e*P **P** 13 14 53.2 -0.4
KKAR Karatay Array 52.59 300 *e*P **P** 13 14 53.2 -0.4
GSI Gunungsitoli 53.27 238 *e*P **P** 13 14 58.4 -0.5
comp=Z,26nm,0.7s
INK Inuvik 54.67 27 P **P** 13 15 09.2 +0.8
comp=Z,3.3nm,0.7s,baz=297,slow=6.1,SNR=19
INK Inuvik 54.67 27 *e*P **P** 13 15 08.6 +0.2
INK pmax pmax
comp=Z,9.0nm,1.3s
INK Inuvik 54.67 27 *e*P **P** 13 15 08.6 +0.2
comp=Z,8.9nm,1.3s
ARU Arti 55.95 318 *d i*P **P** 13 15 17.3 -0.5
ARU 13 17 20.3
ARU S **S** 13 23 07.9 +2.9
ARU pmax pmax
comp=Z,14nm,1.0s
ARU Arti 55.95 318 *e*P **P** 13 15 17.0 -0.8
comp=Z,11nm,0.9s
FITZ Fitzroy Crossi 56.63 197 *e*P **P** 13 15 23.6 +0.6
comp=Z,8.4nm,0.8s
KBL Kabul 56.84 291 *e*P **P** 13 15 23.8 -1.0
KBL pmax pmax
comp=Z,7.0nm,0.9s
KBL Kabul 56.84 291 *e*P **P** 13 15 23.8 -1.0
comp=Z,7.2nm,0.9s
WRAB Tennant Creek 56.97 187 *ce*P **P** 13 15 25.6 +0.2
WRAB pmax pmax
comp=Z,60nm,0.8s
WRAB Tennant Creek 56.97 187 *e*P **P** 13 15 25.0 -0.3
comp=Z,18nm,0.6s
WB2 Warramunga Arr 56.98 187 *e*P **P** 13 15 25.0 -0.5
comp=Z,20nm,0.8s
WRA Warramunga Arr 56.98 187 P **P** 13 15 25.1 -0.4
comp=Z,19nm,0.7s,baz=2.0,slow=7.2,SNR=122
WRA PcP **PcP** 13 16 22.4 +1.9
comp=Z,3.8nm,0.7s,baz=0.9,slow=5.0,SNR=5.5
WRA Warramunga Arr 56.98 187 P **P** 13 15 25.1 -0.4
WRA 13 16 22.5
WRA pmax pmax
comp=Z,18nm,0.7s
WRA pmax pmax
comp=Z,4.0nm,0.7s
ABKAR Akbulak array 57.47 310 *e*P **P** 13 15 28.1 -0.6
HYB Hyderabad 57.58 268 *i*P **P** 13 15 30.0 0.0
DLBC Dease Lake 59.01 38 P **P** 13 15 41.0 +1.6
comp=Z,4.2nm,0.9s,baz=278,slow=9.3,SNR=7.5
DLBC Dease Lake 59.01 38 *e*P **P** 13 15 41.5 +2.1
comp=Z,9.0nm,1.1s
AS01 Alice Springs 60.70 187 *e*P **P** 13 15 51.2 -0.1
AS31 Alice Springs 60.70 187 *e*P **P** 13 15 51.1 -0.2
comp=Z,2.4nm,0.6s
ASAR Alice Springs 60.70 187 P **P** 13 15 51.5 +0.1
comp=Z,8.0nm,0.8s,baz=7.8,slow=5.9,SNR=76
MBWA Marble Bar 61.15 202 *e*P **P** 13 15 54.3 -0.1
comp=Z,60nm,1.8s
RES Resolute Bay 62.76 14 *e*P **P** 13 16 04.4 -0.1
RES pmax pmax
comp=Z,10.0nm,1.3s
RES Resolute Bay 62.76 14 *e*P **P** 13 16 04.4 -0.1
comp=Z,10nm,1.3s
GEYT Alibeck 63.29 299 P **P** 13 16 07.6 -1.2
comp=Z,5.9nm,0.6s,baz=65,slow=3.9,SNR=9.9
KLMR Klimovskoe 63.43 328 *e*P **P** 13 16 06.7 -2.5
KLMR pmax pmax
comp=Z,8.0nm,0.7s
ARCES ARCESS Array B 63.78 339 P **P** 13 16 11.7 +0.2
comp=Z,2.6nm,0.5s,baz=59,slow=8.2,SNR=26
YKA Yellowknife Ar 64.12 30 P **P** 13 16 14.1 +0.3
comp=Z,2.3nm,0.7s,baz=302,slow=6.6,SNR=49
YKA PcP **PcP** 13 16 48.7 -0.1
comp=Z,1.0nm,0.8s,baz=303,slow=4.9,SNR=7.5
YKB5 Yellowknife Ar 64.12 30 *e*P **P** 13 16 12.9 -0.8
DAG Danmarks Havn 65.72 355 *i* P **P** 13 16 23.7 -0.3
comp=Z,9.5nm,0.7s
DAG Danmarks Havn 65.72 355 *i* P **P** 13 16 23.7 -0.3
DAG pmax pmax
comp=Z,7.0nm,0.7s
VRH Novokhopyorsk 67.17 318 *e*P **P** 13 16 32.5 -1.1
VRH pmax pmax
comp=Z,10.0nm,0.9s
OBN Obninsk 67.73 323⇑ *e*P **P** 13 16 36.9 -0.1
OBN *e* 13 19 03.7
OBN *e*PPP PPP 13 20 43.2
OBN pmax pmax
comp=Z,8.0nm,1.0s
LPSR Galich'ya Gora 67.91 320 *e*P **P** 13 16 38.1 -0.1
LPSR pmax pmax
comp=Z,20nm,1.4s
VSR Storozhevoye 68.53 319 *e*P **P** 13 16 39.9 -2.3
VSR pmax pmax
comp=Z,7.0nm,0.9s
FIA1 FINESS Array S 68.53 332 *e*P **P** 13 16 41.2 -0.7
FINES FINESS Array B 68.53 332 P **P** 13 16 41.9 -0.1
comp=Z,10.0nm,0.8s,baz=60,slow=7.7,SNR=32
STKA Stephens Creek 68.56 179 P **P** 13 16 42.3 -0.1
comp=Z,2.4nm,0.4s,baz=324,slow=9.7,SNR=7.4
VSU Vasula 70.14 329 *ce*P **P** 13 16 53.0 +1.0
VSU pmax pmax
comp=Z,36nm,1.0s
KBZ Khabaz 70.43 310 P **P** 13 16 53.9 -0.2
comp=Z,7.5nm,1.0s,baz=198,slow=11,SNR=9.8
KIV Kislovodsk 70.44 311 *e*P **P** 13 16 54.7 +0.4
KIV pmax pmax
comp=Z,18nm,1.0s
KIV Kislovodsk 70.44 311 *e*P **P** 13 16 54.9 +0.6
comp=Z,15nm,0.8s
SUMG Summit 70.69 360 *i* P **P** 13 16 56.7 +1.0
comp=Z,16nm,0.9s
SUMG Summit 70.69 360 *e*P **P** 13 16 55.8 +0.2
SUMG pmax pmax
comp=Z,21nm,1.0s
SUMG Summit 70.69 360 *e*P **P** 13 16 55.8 +0.2
comp=Z,21nm,1.0s
WALA Waterton Lakes 71.85 42 *e*P **P** 13 17 03.8 +1.0
comp=Z,9.4nm,0.9s
BMO Blue Mountains 72.39 47 *e*P **P** 13 17 06.8 +0.8
comp=Z,8.4nm,0.9s
JTMT Jette 72.42 43 *e*P **P** 13 17 07.1 +0.9
NC405 NORSAR Array S 73.73 337 *e*P **P** 13 17 13.6 0.0
NC204 NORSAR Array S 73.91 337 *e*P **P** 13 17 14.7 0.0
NB201 NORSAR Array S 73.92 337 *e*P **P** 13 17 14.5 -0.2
AKASG Malin Array Be 73.92 322 P **P** 13 17 14.3 -0.5
comp=Z,4.6nm,0.7s,baz=46,slow=5.9,SNR=26
AKASG LR LR 13 52 18.9
comp=Z,59nm,21.0s,baz=30,slow=38
AKBB Malin Array Si 73.92 322 *e*P **P** 13 17 14.0 -0.8
AKBB pmax pmax
comp=Z,8.0nm,0.7s
AKBB Malin Array Si 73.92 322 *e*P **P** 13 17 14.0 -0.8
comp=Z,7.8nm,0.7s
KIEV Kiev 73.93 322 *e*P **P** 13 17 14.2 -0.7
KIEV pmax pmax
comp=Z,7.0nm,0.8s
KIEV Kiev 73.93 322 *e*P **P** 13 17 14.2 -0.7
comp=Z,7.3nm,0.8s
NB2 NORSAR Subarra 73.95 337 P **P** 13 17 14.6 -0.3
comp=Z,8.2nm,1.0s,baz=40,slow=6.2
NOA NORSAR Array B 73.95 337 P **P** 13 17 14.7 -0.2
comp=Z,4.3nm,0.8s,baz=39,slow=5.8,SNR=13
AK11 Malin Array Si 73.96 322 *e*P **P** 13 17 14.3 -0.7
FFC Flin Flon 74.04 32 *e*P **P** 13 17 15.6 +0.1
FFC pmax pmax
comp=Z,8.0nm,0.8s
FFC Flin Flon 74.04 32 *e*P **P** 13 17 15.6 +0.1
comp=Z,8.2nm,0.8s
NBO02 NORSAR Array S 74.05 337 *e*P **P** 13 17 15.0 -0.5
FCC Fort Churchill 74.28 26 *e*P **P** 13 17 16.9 +0.1
FCC pmax pmax
comp=Z,17nm,1.1s
FCC Fort Churchill 74.28 26 *e*P **P** 13 17 16.9 +0.1
comp=Z,17nm,1.1s
CMB Columbia Colle 74.37 54 *e*P **P** 13 17 18.8 +1.0
CMB pmax pmax
comp=Z,6.0nm,1.0s
CMB Columbia Colle 74.37 54 *e*P **P** 13 17 18.8 +1.0
comp=Z,5.8nm,1.0s
LRM Limekiln Ridge 74.58 44 *e*P **P** 13 17 20.1 +1.0
EGMT Eagleton 74.68 41 *e*P **P** 13 17 20.4 +0.9
comp=Z,15nm,0.9s
DLMT Dillon 74.78 44 *e*P **P** 13 17 21.4 +1.2
comp=Z,10nm,0.8s
HLID Hailey 74.83 47 *e*P **P** 13 17 21.6 +1.1
comp=Z,5.7nm,1.1s
BMN Battle Mountai 74.99 51 *e*P **P** 13 17 22.7 +1.2
BMN pmax pmax
comp=Z,8.0nm,1.2s
BMN Battle Mountai 74.99 51 *e*P **P** 13 17 22.7 +1.2
comp=Z,8.3nm,1.2s
NV01 Mina Array Sit 75.48 53 *e*P **P** 13 17 25.5 +1.1
NVAR Mina Array Bea 75.48 53 P **P** 13 17 25.8 +1.4
comp=Z,3.7nm,0.7s,baz=289,slow=5.8,SNR=24
NV11 Mina Array Sit 75.58 53 *e*P **P** 13 17 26.1 +1.2
comp=Z,13nm,1.5s
IMW Indian Meadow 76.61 45 *e*P **P** 13 17 32.2 +1.3
comp=Z,6.7nm,0.8s
RLMT Red Lodge 76.77 43 *e*P **P** 13 17 33.0 +1.3
comp=Z,5.0nm,0.8s
MOOW Moose Ponds 76.82 45 *e*P **P** 13 17 33.3 +1.4
comp=Z,3.2nm,0.9s
HVU Hansel Valley 76.87 47 *e*P **P** 13 17 33.3 +1.1
HVU pmax pmax
comp=Z,6.0nm,0.9s
HVU Hansel Valley 76.87 47 *e*P **P** 13 17 33.3 +1.1
comp=Z,5.5nm,0.9s
LOHW Long Hollow 76.98 45 *e*P **P** 13 17 33.9 +1.1
comp=Z,2.1nm,0.8s
REDW Red Top Meadow 77.00 45 *e*P **P** 13 17 34.4 +1.4
comp=Z,5.7nm,1.0s
DAC Darwin (Calif) 77.21 54 *e*P **P** 13 17 35.2 +1.0
DAC pmax pmax
comp=Z,4.0nm,1.0s
DAC Darwin (Calif) 77.21 54 *e*P **P** 13 17 35.2 +1.0
comp=Z,3.7nm,1.0s
BGU Big Grassy Mou 77.24 48 *e*P **P** 13 17 35.6 +1.3
comp=Z,3.0nm,1.0s
R11A Troy Canyon, C 77.25 52 *e*P **P** 13 17 35.5 +1.1
comp=Z,8.4nm,1.1s
LAO LASA Array 77.38 40 *e*P **P** 13 17 35.8 +0.9
comp=Z,8.5nm,0.8s
TPNV Topopah Spring 77.67 53 *e*P **P** 13 17 38.0 +1.2
TPNV pmax pmax
comp=Z,13nm,1.1s
TPNV Topopah Spring 77.67 53 *e*P **P** 13 17 38.0 +1.2
comp=Z,13nm,1.1s
HWUT Hardware Ranch 77.69 47 *e*P **P** 13 17 38.0 +1.2
comp=Z,9.3nm,1.1s
DUG Dugway, Tooele 77.82 49 *e*P **P** 13 17 39.0 +1.5
DUG pmax pmax
comp=Z,6.0nm,0.8s
DUG Dugway, Tooele 77.82 49 *e*P **P** 13 17 39.0 +1.5
comp=Z,5.6nm,0.8s
BUR08 Bucovina Ar. S 77.92 321 *e*P **P** 13 17 38.0 +0.2
BURAR Bucovina Array 77.93 321⇑ *i*P **P** 13 17 38.4 +0.5
BURAR Bucovina Array 77.93 321⇑ P **P** 13 17 38.4 +0.5
TESR Tescani 77.94 320⇑ *i*P **P** 13 17 38.2 +0.3
TCUT Toone Canyon 78.08 47 *e*P **P** 13 17 40.5 +1.4
comp=Z,9.3nm,0.8s
BW06 Boulder Array 78.11 45 *e*P **P** 13 17 39.6 +0.5
comp=Z,0.2nm,0.9s
PD31 Pinedale Array 78.11 45 *e*P **P** 13 17 39.6 +0.4
PDAR Pinedale Array 78.11 45 P **P** 13 17 39.9 +0.7
comp=Z,2.6nm,0.7s,baz=264,slow=2.4,SNR=27
VRI Vrincioaia 78.33 319⇓ *i*P **P** 13 17 41.7 +1.7
VRI Vrincioaia 78.33 319⇓ P **P** 13 17 41.7 +1.7
BRTR Keskin Array B 78.39 311 P **P** 13 17 40.1 -0.6
comp=Z,4.1nm,0.8s,baz=104,slow=5.2,SNR=9.2
NLU North Lily Min 78.42 49 *e*P **P** 13 17 42.1 +1.1
comp=Z,4.1nm,0.9s
KOLS Kolonicke sedl 78.46 324 *e*P **P** 13 17 43.9 +3.2
KOLS Kolonicke sedl 78.46 324 *e* **P** 13 17 43.8 +3.1
STHS Stebnicka Huta 78.60 325 *e*P **P** 13 17 41.8 +0.3
STHS pmax pmax
comp=Z,3.0nm,1.1s
STHS Stebnicka Huta 78.60 325 *e*P **P** 13 17 41.8 +0.3
MPU Maple Canyon 78.64 48 *e*P **P** 13 17 43.2 +1.0
comp=Z,9.0nm,1.0s
UZH Uzhgorod 78.66 323 *e*P **P** 13 17 40.2 -1.6
BR231 Keskin MP Arra 78.83 312 *e*P **P** 13 17 41.4 -1.7
DOPR Dopca 78.95 320⇓ *i*P P 13 17 46.8 +3.3
MSU Marysvale 79.26 50 *e*P **P** 13 17 47.1 +1.5
MSU Marysvale 79.26 50 *e*P **P** 13 17 47.1 +1.5
TMUT Trail Mountain 79.35 49 *e*P **P** 13 17 47.2 +1.0
comp=Z,9.3nm,1.5s
P17A Butcher Ranch, 79.52 48 *e*P **P** 13 17 48.3 +1.4
comp=Z,14nm,1.2s
LCMT Little Creek M 79.54 51 *e*P **P** 13 17 48.5 +1.5
comp=Z,6.7nm,1.0s
LANS Liptovska Anna 79.61 325 *e*P **P** 13 17 46.4 -0.7
LANS Liptovska Anna 79.61 325 *e*P **P** 13 17 46.4 -0.7
KECS Kecovo 79.62 324 *e*P **P** 13 17 47.3 +0.3
KECS Kecovo 79.62 324 *e*P **P** 13 17 47.3 +0.3
P18A Preston Nutter 79.71 48 *e*P **P** 13 17 49.3 +1.2
comp=Z,8.8nm,1.1s
ARR Arges 79.75 320⇑ *i*P **P** 13 17 49.6 +1.7
KNB Kanab 79.80 51 *e*P **P** 13 17 50.2 +1.7
KNB pmax pmax
comp=Z,9.0nm,1.1s
KNB Kanab 79.80 51 *e*P **P** 13 17 50.2 +1.7
comp=Z,9.4nm,1.1s
ULM Lac du Bonnet 79.84 33 P **P** 13 17 46.8 -1.4
comp=Z,3.6nm,0.8s,baz=316,slow=6.8,SNR=4.5
SRU San Rafael Swe 79.88 48 *e*P **P** 13 17 49.9 +1.0
SRU pmax pmax
comp=Z,9.0nm,0.9s
SRU San Rafael Swe 79.88 48 *e*P **P** 13 17 49.9 +1.0
comp=Z,8.8nm,0.9s
MORC Moravsky Berou 80.02 327 *e*P **P** 13 17 49.7 +0.4
MORC pmax pmax
comp=Z,31nm,1.1s
MORC Moravsky Berou 80.02 327 *e*P **P** 13 17 49.6 +0.4
comp=Z,31nm,1.1s
RAYN Ar Rayn 80.08 292 *e*P **P** 13 17 49.6 -0.5
comp=Z,4.7nm,0.9s
W13A Hualapai Mount 80.32 53 *e*P **P** 13 17 52.5 +1.1
comp=Z,4.7nm,1.3s
VYHS Vyhne 80.37 325 *e*P **P** 13 17 51.3 +0.1
VYHS pmax pmax
comp=Z,2.0nm,1.1s
VYHS Vyhne 80.37 325 *e*P **P** 13 17 51.2 +0.1
U15A North Rim 80.50 51 *e*P **P** 13 17 52.9 +0.5
comp=Z,10.0nm,1.1s
BRG Berggiesshubel 80.74 329 *e*P **P** 13 17 53.5 +0.5
comp=Z,6.5nm,1.1s
BRG Berggiesshubel 80.74 329 *e*P **P** 13 17 53.5 +0.5
BRG pmax pmax
comp=Z,7.0nm,1.1s
VRAC Vranov 80.78 327 LR LR 13 56 18.8
comp=Z,65nm,19.4s,baz=46,slow=38
CLL Collm 80.79 330⇓ *i*P **P** 13 17 53.1 -0.2
comp=Z,10.0nm,1.0s
CLL Collm 80.79 330⇓ *i*P **P** 13 17 53.1 -0.2
CLL pmax pmax
comp=Z,10.0nm,1.0s
GLA Glamis 80.98 55 *e*P **P** 13 17 56.1 +1.4
GLA pmax pmax
comp=Z,13nm,1.3s
GLA Glamis 80.98 55 *e*P **P** 13 17 56.1 +1.4
comp=Z,13nm,1.3s
PV09 Paradox Valley 81.10 48 *e*P **P** 13 17 56.9 +1.3
PV10 Paradox Valley 81.24 48 *e*P **P** 13 17 57.8 +1.5
N23A Red Feather La 81.37 45 *e*P **P** 13 17 58.4 +1.4
comp=Z,8.6nm,1.1s
PV05 Paradox Valley 81.40 48 *e*P **P** 13 17 58.4 +1.3
Y14A Wickenburg 81.61 54 *e*P **P** 13 17 59.3 +1.2
comp=Z,23nm,0.9s
WUAZ Wupatki 81.65 52 *e*P **P** 13 17 59.9 +1.5
comp=Z,8.9nm,0.9s
PV01 Paradox Valley 81.68 48 *e*P **P** 13 17 59.8 +1.2
SMCO Snowmass 81.93 47 *e*P **P** 13 18 01.1 +1.0
comp=Z,2.5nm,0.8s
KHC Kasperske Hory 82.22 328 *e*P **P** 13 18 00.0 -1.0
KHC Kasperske Hory 82.22 328 *e*P **P** 13 18 00.0 -1.0
ISCO Idaho Springs 82.30 45 *e*P **P** 13 18 02.9 +1.0
ISCO pmax pmax
comp=Z,9.0nm,1.7s
ISCO Idaho Springs 82.30 45 *e*P **P** 13 18 02.9 +1.0
comp=Z,9.3nm,1.7s
X16A Lo Mia Camp, P 82.31 53 *e*P **P** 13 18 02.8 +0.9
comp=Z,7.4nm,1.0s
MVCO Mesa Verde 82.32 49 *e*P **P** 13 18 03.0 +1.0
comp=Z,11nm,1.1s
GERES GERESS Array B 82.39 328 P **P** 13 18 01.3 -0.7
comp=Z,1.3nm,0.4s,baz=43,slow=8.0,SNR=10
S22A 4UR Ranch, Cre 82.97 48 *e*P **P** 13 18 07.1 +1.6
comp=Z,7.2nm,1.1s
X18A Snowflake 83.18 52 *e*P **P** 13 18 07.7 +1.2
comp=Z,4.3nm,1.0s
SDCO Great Sand Dun 83.75 47 *e*P **P** 13 18 10.6 +1.2
comp=Z,3.4nm,1.0s
TUC Tucson 84.08 54 *e*P **P** 13 18 12.1 +1.1
TUC pmax pmax
comp=Z,14nm,1.5s
TUC Tucson 84.08 54 *e*P **P** 13 18 12.1 +1.1
comp=Z,14nm,1.5s
ECSD EROS Data Cent 84.30 38 *e*P **P** 13 18 11.8 0.0
comp=Z,10nm,1.1s
T25A Trinidad 84.79 47 *e*P **P** 13 18 14.6 0.0
comp=Z,7.1nm,0.8s
BFO Black Forest 85.00 330 *e*P **P** 13 18 15.2 -0.1
BFO pmax pmax
comp=Z,8.0nm,1.0s
BFO Black Forest 85.00 330 *e*P **P** 13 18 15.2 -0.1
comp=Z,8.4nm,1.0s
ANMO Albuquerque 85.06 49 *ce*P **P** 13 18 16.2 +0.2
ANMO pmax pmax
comp=Z,7.0nm,1.2s
ANMO Albuquerque 85.06 49 *e*P **P** 13 18 17.4 +1.3
comp=Z,5.8nm,1.0s
BNM Barren Site 85.49 50 *e*P **P** 13 18 19.4 +1.2
SCHQ Schefferville 85.51 16 P **P** 13 18 17.7 +0.1
comp=Z,3.9nm,0.8s,baz=353,slow=5.8,SNR=4.0
TX31 Lajitas Ar. Si 90.61 52 *e*P **P** 13 18 43.3 +0.6
TXAR Lajitas Array 90.61 52 P **P** 13 18 43.7 +1.0
comp=Z,3.2nm,0.9s,baz=298,slow=3.7,SNR=26
SDV Santo Domingo 125.72 39 *e*PKPdf **PKPdf** 13 24 42.1 -0.2
DBIC Dimbokro 125.86 316 PKP **PKPdf** 13 24 41.8 -0.5
comp=Z,1.7nm,0.6s,baz=357,slow=3.1,SNR=6.1
QSPA South Pole Qui 126.77 180 *e*PKPdf **PKPdf** 13 24 42.8 +0.3
SNAA Sanae 140.56 197 PKP PKPdf 13 25 00.6 -7.6
VNA2 Neumayer--Watz 142.14 196 PKP **PKPdf** 13 25 07.0 -3.9
baz=120,slow=2.5
VNA3 Neumayer Olymp 142.40 195 PKP **PKPdf** 13 25 08.3 -3.2
SAML Samuel 144.68 44 *e*PKPdf **PKPab** 13 25 15.8 0.0
LPAZ La Paz 147.23 59 PKPbc **PKPbc** 13 25 23.6 -0.8
comp=Z,9.3nm,0.8s,baz=335,slow=1.9,SNR=28
LPAZ La Paz 147.23 59 *e*PKPbc **PKPbc** 13 25 24.3 -0.1

JMA 11 13:09:33.3, 37.06N×140.29E, h8km±2km, M3.0, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID Op	ID ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.41**	**84**	P		Pg	13 09 40.9	-0.4
ONAJ				S		Sg	13 09 47.7	+1.0
JFT	**Otama**	**0.46**	**5**	P		Pg	13 09 42.6	+0.4
JFT				S		Sg	13 09 49.1	+0.8
JHO	**Hitachi**	**0.50**	**153**	P		Pg	13 09 42.9	-0.1
JHO				S		Sg	13 09 50.1	+0.5
JFK	**Kawauchi**	**0.56**	**57**	P		Pg	13 09 44.3	+0.2
JFK				S		Sg	13 09 51.9	+0.5
JMM	**Marumori**	**0.90**	**26**	P		Pg	13 09 50.3	-0.3

JMM				S	Sg	13 10 02.1	-0.2
JOU	**Okura**	**1.34**	**13**	P	Pb	13 09 58.7	+0.1
JOU				S	Sn	13 10 16.2	-0.1
MAT	**Matsushiro**	**1.75**	**253**	P	Pn	13 10 04.6	+0.6
MAT				S	Sb	13 10 27.9	+0.1

*ISCJB **11** 13:14:34.5±0.6, 37.°02N±0.°03×140.°71E±0.°09, h13km±5km, mb3.5/5, Error ellipse: s-maj=12.6km s-min=4.6km az=16.3*

*JMA **11** 13:14:34.8, 37.°04N×140.°68E, h9km±1km, M3.3 Broadband fault plane solution: P waves. NP1: ϕs111.00000°, δ60.00000°, λ-81.00000°. NP2: ϕs273.00000°, δ31.00000°, λ-106.00000°. Principal axes: T Plg15.0000°, Azm194.0000°; N Plg8.0000°, Azm286.0000°; P Plg73.0000°, Azm43.0000°;*

*IDC **11** 13:14:34.4±1.0, 36.°99N×140.°62E, h0km, mb3.4/5, mb1 3.6/6, mb1mx3.4/53, mbtmp3.4/6, ML1.9/1 Error ellipse: s-maj=22.1km s-min=16.1km az=159.0*

ISC 11 13:14:35.2±1.0, 37.°04N±0.°03×140.°69E±0.°06, h7km±7km, n14, σ0s88/21, mb3.5/5, 5C, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.10**	**55**	⇑P	**Pg**	**13 14 37.7**	**0.0**
ONAJ				S	**Sg**	**13 14 39.5**	**+0.1**
JFK	**Kawauchi**	**0.35**	**24**	⇑P	**Pg**	**13 14 42.1**	**-0.1**
JFK				S	**Sg**	**13 14 47.1**	**+0.2**
JHO	**Hitachi**	**0.44**	**193**	⇑P	**Pg**	**13 14 43.2**	**-0.6**
JHO				S	**Sg**	**13 14 49.6**	**0.0**
JFT	**Otama**	**0.55**	**329**	⇑P	**Pg**	**13 14 45.7**	**-0.2**
JFT				S	**Sg**	**13 14 53.1**	**-0.1**
JMM	**Marumori**	**0.83**	**6**	⇑P	**Pg**	**13 14 50.4**	**-0.7**
JMM				S	**Sg**	**13 15 01.8**	**-0.1**
JOU	**Okura**	**1.32**	**359**	P	**Pb**	**13 14 59.7**	**-0.6**
JOU				S	**Sb**	**13 15 17.1**	**-0.4**
JIO	**Ouri**	**1.50**	**20**	P	**Pn**	**13 15 02.0**	**-0.5**
JIO				S	**Sn**	**13 15 21.2**	**-1.1**
MJAR	**Matsushiro Arr**	**2.06**	**257**	Pn	**Pn**	**13 15 09.9**	**-0.3**
	6.8nm,0.3s,baz=82,slow=16,SNR=14						
MJAR				Lg	Lg	13 15 36.4	
	13nm,0.3s,baz=88,slow=27,SNR=16						
USRK	**Ussuriysk Ar.**	**9.74**	**320**	Pn	**Pn**	**13 16 57.8**	**+2.2**
	0.1nm,0.3s,baz=128,slow=12,SNR=2.5						
MKAR	**Makanchi Array**	**43.62**	**302**	P	**P**	**13 22 38.9**	**-1.3**
	0.2nm,0.2s,baz=80,slow=10.0,SNR=2.8						
ILAR	**Eielson Array**	**49.80**	**32**	P	**P**	**13 23 29.0**	**+0.9**
	0.3nm,0.9s,baz=272,slow=6.2,SNR=3.4						
WRA	**Warramunga Arr**	**56.99**	**187**	P	**P**	**13 24 20.4**	**-1.0**
	0.3nm,0.5s,baz=2.8,slow=7.3,SNR=6.6						
ASAR	**Alice Springs**	**60.72**	**187**	P	**P**	**13 24 48.2**	**+0.9**
	0.2nm,0.7s,baz=17,slow=9.8,SNR=3.4						
FINES	**FINESS Array B**	**68.54**	**332**	P	**P**	**13 25 38.7**	**+0.8**
	0.9nm,0.8s,baz=22,slow=12,SNR=2.4						

JMA 11 13:16:38.6, 37.°01N×140.°69E, h14km±1km, M3.2, 2C-1D, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.13**	**43**	⇑P	Pg	13 16 42.1	0.0
ONAJ				S	Sg	13 16 44.5	0.0
JFK	**Kawauchi**	**0.39**	**22**	P	Pg	13 16 46.2	-0.2
JFK				S	Sg	13 16 51.4	-0.3
JHO	**Hitachi**	**0.41**	**194**	⇑P	Pg	13 16 46.7	-0.1
JHO				S	Sg	13 16 52.3	-0.1
JFT	**Otama**	**0.58**	**331**	⇓P	Pg	13 16 50.0	0.0
JFT				S	Sg	13 16 57.7	0.0
JMM	**Marumori**	**0.86**	**5**	P	Pg	13 16 54.7	-0.5
JMM				S	Sg	13 17 05.6	-0.9
MAT	**Matsushiro**	**2.05**	**258**	P	Pn	13 17 14.0	+1.4
MAT				S	Sb	13 17 40.3	-0.6

JMA 11 13:16:53.9, 37.°03N×140.°67E, h9km±1km, M2.9, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.12**	**55**	P	Pg	13 16 56.9	+0.1
ONAJ				S	Sg	13 16 58.8	-0.1
JHO	**Hitachi**	**0.43**	**191**	*e*S	Sg	13 17 08.2	+0.4
JFT	**Otama**	**0.56**	**331**	S	Sg	13 17 12.6	+0.6
JMM	**Marumori**	**0.84**	**7**	S	Sg	13 17 21.4	+0.4
JOU	**Okura**	**1.33**	**360**	*e*S	Sg	13 17 37.0	+0.2

GUC 11 13:16:58.2±0.4, 37.°39S×74.°17W, h30km±3km, ML3.8, Off coast of central Chile

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CCSP	**San Pedro de C**	**1.01**	**58**	*i* P	Pn	13 17 15.3	-1.0
CCSP				*i* S	Sn	13 17 28.4	-1.1
CCSP				IAML		13 17 32.9	
	comp=N,5μm,0.2s						
COCH	**Cobquecura**	**1.68**	**42**	*i* P	Pn	13 17 25.7	+0.2
COCH				*i* S	Sn	13 17 47.0	+1.1
COCH				IAML		13 17 59.1	
	comp=E,1μm,0.6s						
CCHI	**Chillan**	**1.85**	**65**	*i* P	Pn	13 17 28.8	+0.9
CCHI				*i* S	Sn	13 17 51.7	+1.4
CCHI				IAML		13 18 03.4	
	comp=N,3μm,1.1s						
ROC1	**El Roble**	**5.10**	**31**	*i* P	Pn	13 18 14.0	+1.1
ROC1				*i* S	Sn	13 19 14.2	+3.3
ROCH	**El Roble**	**5.11**	**31**	*i* P	Pn	13 18 13.8	+0.8
ROCH				*i* S	Sn	13 19 11.4	+0.3
ARCO	**CERRO ARCO**	**6.24**	**45**	*i* P	Pn	13 18 29.1	+0.6
ARCO				IAML		13 18 37.1	
	comp=Z,9.5nm,0.2s						
ARCO				*i* S	Sn	13 19 40.3	+1.4
AUSP	**Uspallata**	**6.48**	**39**	*i* P	Pn	13 18 32.8	+1.0
ASAL	**Salagasta**	**6.49**	**44**	*i* P	Pn	13 18 32.8	+1.1
RTLS	**Leoncito**	**6.87**	**37**	*i* P	Pn	13 18 38.6	+1.4

*ISCJB **11** 13:19:18.4±1.4, 37.°02N±0.°04×142.°06E±0.°07, h23km±9km, mb3.6/10, Error ellipse: s-maj=9.5km s-min=6.8km az=166.0*

*JMA **11** 13:19:20.1±0.2, 37.°12N×141.°94E, h18km±3km, M4.0*

*IDC **11** 13:19:21.2±0.7, 36.°96N×142.°11E, h30km±5km, mb3.5/10, mb1 3.7/16, mb1mx3.6/68, mbtmp3.8/16, ML3.6/4, Error ellipse: s-maj=17.3km s-min=13.7km az=117.0*

ISC 11 13:19:20.8±0.7, 37.°04N±0.°05×141.°94E±0.°06, h29km±5km, n32, σ1s28/34, mb3.6/10, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JFK	**Kawauchi**	**0.91**	**291**	P	**Pn**	**13 19 36.6**	**-1.0**
JFK				*e*S	**Sb**	**13 19 48.7**	**-0.9**
ONAJ	**Iwakimizuishiy**	**0.91**	**274**	P	**Pn**	**13 19 37.4**	**-0.3**
ONAJ				*e*S	**Sb**	**13 19 48.9**	**-0.9**
JHO	**Hitachi**	**1.18**	**249**	P	**Pb**	**13 19 42.1**	**-0.4**
JMM	**Marumori**	**1.22**	**312**	P	**Pn**	**13 19 41.3**	**-0.6**
JMM				*e*S	**Sn**	**13 19 56.8**	**-0.7**
JFT	**Otama**	**1.36**	**291**	P	**Pn**	**13 19 44.2**	**+0.4**
JFT				*e*S	**Sn**	**13 20 01.2**	**+0.3**
JIO	**Ouri**	**1.48**	**342**	P	**Pn**	**13 19 44.2**	**-1.3**
JIO				S	**Sn**	**13 20 01.4**	**-2.5**
JOU	**Okura**	**1.66**	**323**	P	**Pn**	**13 19 48.1**	**+0.1**
JOU				S	**Sn**	**13 20 09.1**	**+0.7**
MJAR	**Matsushiro Arr**	**3.03**	**262**	Pn	**Pn**	**13 20 09.4**	**+2.6**
	23nm,0.3s,baz=87,slow=15,SNR=57						
MAT	**Matsushiro**	**3.03**	**262**	P	**Pn**	**13 20 08.8**	**+1.9**
MAT				S	**Sb**	**13 20 47.5**	**-3.2**
JHJ	**Hachijo jima 2**	**4.29**	**205**	Pn	**Pn**	**13 20 23.9**	**-0.3**
	13nm,0.3s,baz=342,slow=22,SNR=29						
JHJ				Sn	**Sn**	**13 21 12.1**	**-1.2**
	58nm,0.3s,baz=72,slow=23,SNR=8.4						
JNU	**Nakatsue**	**9.87**	**250**	Pn	Pn	13 21 44.0	+3.3
	0.4nm,0.3s,baz=239,slow=6.9,SNR=4.5						
JCJ	**Chichijima**	**9.92**	**179**	Pn	**Pn**	**13 21 38.7**	**-2.7**
	baz=270,slow=20						
JCJ				Sn	Sn	13 23 21.4	-10
	baz=276,slow=19						
USRK	**Ussuriysk Ar.**	**10.40**	**317**	Pn	Pn	13 21 52.0	+4.1
	0.3nm,0.3s,baz=125,slow=12,SNR=6.9						
KSRS	**Korea Array**	**11.18**	**276**	Pn	Pn	13 22 02.9	+4.3
	0.2nm,0.3s,baz=89,slow=13,SNR=8.1						
H11N2	**WAKE ISLAND Hy 27.80**	**122**		T	T	13 54 15.0	
	baz=314,slow=75,SNR=24						
H11N1	**WAKE ISLAND Hy 27.80**	**122**		T	T	13 54 23.2	
	baz=314,slow=75,SNR=22						
H11N3	**WAKE ISLAND Hy 27.81**	**122**		T	T	13 54 17.3	
	baz=314,slow=75,SNR=20						
SONM	**Songino Array**	**28.13**	**304**	P	**P**	**13 25 11.7**	**+1.4**
	0.9nm,0.6s,baz=100,slow=9.4,SNR=7.8						
ZALV	**Zalesovo Beam**	**42.22**	**312**	P	**P**	**13 27 11.4**	**+0.5**
	1.0nm,0.5s,baz=98,slow=7.9,SNR=5.0						
MKAR	**Makanchi Array**	**44.47**	**302**	P	**P**	**13 27 30.2**	**+1.0**
	0.6nm,0.5s,baz=86,slow=9.5,SNR=9.5						
KURBB	**Kurchatov Arra**	**46.32**	**308**	P	**P**	**13 27 45.0**	**+1.2**
	1.1nm,0.4s,baz=81,slow=7.9,SNR=6.0						
ILAR	**Eielson Array**	**49.26**	**32**	P	**P**	**13 28 06.5**	**+0.1**
	0.4nm,0.8s,baz=269,slow=6.2,SNR=5.5						
ILAR				pP	**pP**	**13 28 15.7**	**+0.6**
	1.0nm,0.7s,baz=268,slow=6.3,SNR=7.9						
INK	**Inuvik**	**54.19**	**27**	P	**P**	**13 28 43.5**	**+0.3**
	0.4nm,0.6s,baz=266,slow=3.5,SNR=3.0						
WRA	**Warramunga Arr**	**57.13**	**189**	P	**P**	**13 29 04.8**	**0.0**
	0.7nm,0.6s,baz=6.9,slow=7.4,SNR=7.1						
ASAR	**Alice Springs**	**60.86**	**188**	P	**P**	**13 29 30.1**	**-0.5**
	0.2nm,0.7s,baz=13,slow=8.2,SNR=6.7						
ASAR				pP	**pP**	**13 29 39.6**	**+0.1**
	0.4nm,0.7s,baz=359,slow=5.7,SNR=5.1						
YKA	**Yellowknife Ar**	**63.59**	**30**	P	**P**	**13 29 48.2**	**-0.3**
	0.2nm,0.7s,baz=302,slow=6.7,SNR=5.3						
YKA				pP	**pP**	**13 29 57.7**	**+0.4**
	0.4nm,0.7s,baz=301,slow=6.7,SNR=7.9						
FINES	**FINESS Array B**	**69.00**	**332**	pP	pP	13 30 31.9	-0.2
	2.2nm,0.7s,baz=54,slow=9.7,SNR=5.5						
NOA	**NORSAR Array B**	**74.34**	**337**	pP	pP	13 31 05.0	+0.7
	1.6nm,0.8s,baz=38,slow=5.8,SNR=5.8						
NVAR	**Mina Array Bea**	**74.65**	**53**	P	**P**	**13 30 58.5**	**+0.7**
	0.3nm,0.7s,baz=297,slow=6.5,SNR=3.6						
NVAR				pP	**pP**	**13 31 07.8**	**+1.0**
	0.5nm,0.6s,baz=286,slow=5.7,SNR=4.8						
PDAR	**Pinedale Array**	**77.36**	**46**	pP	pP	13 31 22.8	+0.5
	0.4nm,0.7s,baz=298,slow=2.6,SNR=4.0						
GERES	**GERESS Array B**	**82.92**	**328**	pP	pP	13 31 52.2	+0.2
	0.5nm,0.4s,baz=27,slow=9.0,SNR=2.1						
LPAZ	**La Paz**	**146.33**	**60**	PKPbc	**PKPbc**	**13 39 00.0**	**+0.1**
	1.3nm,0.9s,baz=291,slow=5.5,SNR=4.0						

JMA 11 13:21:02.0, 36.°99N×140.°77E, h8km±1km, M3.7, 5C, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.11**	**11**	⇑P	Pg	13 21 04.6	-0.1
ONAJ				S	Sg	13 21 07.0	+0.5
JFK	**Kawauchi**	**0.39**	**12**	⇑P	Pg	13 21 09.6	0.0
JHO	**Hitachi**	**0.41**	**203**	⇑P	Pg	13 21 10.1	+0.1
JHO				S	Sg	13 21 15.6	+0.2
JFT	**Otama**	**0.63**	**327**	⇑P	Pg	13 21 14.4	+0.2
JFT				S	Sg	13 21 23.2	+0.8
JMM	**Marumori**	**0.88**	**1**	⇑P	Pg	13 21 18.3	-0.5
JMM				S	Sg	13 21 30.2	0.0
JOU	**Okura**	**1.38**	**357**	P	Pn	13 21 27.6	+0.1
JOU				S	Sg	13 21 46.4	+0.1
JIO	**Ouri**	**1.53**	**17**	P	Pn	13 21 29.4	-0.2
JIO				S	Sn	13 21 48.0	-1.7
MAT	**Matsushiro**	**2.11**	**259**	P	Pn	13 21 38.4	+0.8

*NIED **11** 13:21:00, 37.°00N×140.°70E, h11km, Mw3.8 Best double couple: M0 6.49000×10^14 NP1:ϕs300.00000°, δ23.00000°, λ-160.00000°. NP2:ϕs192.00000°, δ82.00000°, λ-68.00000°.*

*IDC **11** 13:21:16.1±0.9, 36.°89N×140.°69E, h0km, mb3.7/9, mb1 3.8/11, mb1mx3.5/69, mbtmp3.6/11, ML2.7/1, Error ellipse: s-maj=20.2km s-min=14.9km az=171.0*

*ISCJB **11** 13:21:18.8±0.6, 36.°92N±0.°05×140.°7E±0.°1, h30km±4km, mb3.7/9, Error ellipse: s-maj=16.0km s-min=7.1km az=19.5*

*JMA **11** 13:21:20.1, 36.°95N×140.°61E, h17km±1km, M4.0*

JMA Felt III J1.

ISC 11 13:21:19.7±1.0, 36.°92N±0.°06×140.°7E±0.°1, h23km±7km, n21, σ0s71/18, mb3.7/9, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.20**	**19**	P	**Pb**	**13 21 25.2**	**-0.1**
ONAJ				S	**Sb**	**13 21 28.7**	**-0.1**
JHO	**Hitachi**	**0.33**	**201**	P	**Pb**	**13 21 27.1**	**+0.1**
JHO				S	**Sb**	**13 21 31.8**	**-0.2**
JFK	**Kawauchi**	**0.47**	**16**	P	**Pb**	**13 21 29.2**	**-0.1**
JFK				S	**Sb**	**13 21 35.4**	**-0.4**
MJAR	**Matsushiro Arr**	**2.05**	**260**	Pn	**Pn**	**13 21 52.8**	**-0.1**
	75nm,0.3s,baz=82,slow=16,SNR=26						
MJAR				Lg	Lg	13 22 18.9	
	51nm,0.3s,baz=81,slow=30,SNR=8.7						
USRK	**Ussuriysk Ar.**	**9.85**	**320**	Pn	**Pn**	**13 23 40.8**	**+1.0**
	baz=128,slow=11,SNR=2.0						
KSRS	**Korea Array**	**10.22**	**277**	Pn	**Pn**	**13 23 45.8**	**+0.7**
	0.1nm,0.3s,baz=94,slow=13,SNR=2.8						
SONM	**Songino Array**	**27.39**	**304**	P	**P**	**13 27 02.3**	**-1.2**
	2.0nm,0.8s,baz=96,slow=9.8,SNR=3.5						
H11N2	**WAKE ISLAND Hy 28.57**	**120**		T	T	13 56 59.8	
	baz=313,slow=76,SNR=22						
H11N1	**WAKE ISLAND Hy 28.58**	**120**		T	T	13 57 00.5	
	baz=313,slow=76,SNR=24						
H11N3	**WAKE ISLAND Hy 28.59**	**120**		T	T	13 57 04.2	
	baz=313,slow=76,SNR=24						
H11S1	**WAKE ISLAND Hy 29.27**	**122**		T	T	13 57 57.7	
	baz=314,slow=76,SNR=38						
H11S3	**WAKE ISLAND Hy 29.27**	**122**		T	T	13 57 58.8	
	baz=314,slow=76,SNR=39						
H11S2	**WAKE ISLAND Hy 29.28**	**122**		T	T	13 58 00.5	
	baz=314,slow=76,SNR=31						
ZALV	**Zalesovo Beam**	**41.58**	**312**	P	**P**	**13 29 04.8**	**-0.7**
	0.4nm,0.4s,baz=76,slow=12,SNR=2.1						
MKAR	**Makanchi Array**	**43.71**	**302**	P	**P**	**13 29 22.4**	**-0.6**
	0.2nm,0.3s,baz=85,slow=9.0,SNR=2.6						
KURBB	**Kurchatov Arra**	**45.63**	**308**	P	**P**	**13 29 37.4**	**-0.8**
	1.1nm,0.5s,baz=82,slow=7.9,SNR=6.6						
WRA	**Warramunga Arr**	**56.87**	**187**	P	**P**	**13 31 02.3**	**-0.5**
	1.2nm,0.5s,baz=4.1,slow=7.5,SNR=9.6						
ASAR	**Alice Springs**	**60.60**	**187**	P	**P**	**13 31 28.1**	**-0.5**
	0.4nm,0.7s,baz=19,slow=14,SNR=4.6						
YKA	**Yellowknife Ar**	**64.19**	**30**	P	**P**	**13 31 52.0**	**-0.2**
	0.2nm,0.5s,baz=306,slow=6.1,SNR=4.0						
FINES	**FINESS Array B**	**68.66**	**332**	P	**P**	**13 32 21.8**	**+1.0**
	1.2nm,0.8s,baz=46,slow=8.2,SNR=4.3						
TXAR	**Lajitas Array**	**90.63**	**52**	P	**P**	**13 34 21.7**	**+0.9**
	0.3nm,0.9s,baz=258,slow=3.5,SNR=2.6						

JMA 11 13:23:56.6, 36.°97N×140.°70E, h8km±1km, M2.9, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.15**	**31**	P	Pg	13 24 00.1	+0.2
ONAJ				S	Sg	13 24 02.5	+0.4
JHO	**Hitachi**	**0.37**	**196**	P	Pg	13 24 04.0	+0.1
JHO				S	Sg	13 24 09.2	+0.4
JFK	**Kawauchi**	**0.42**	**19**	P	Pg	13 24 04.7	-0.1
JFK				S	Sg	13 24 10.5	+0.2
JMM	**Marumori**	**0.90**	**5**	S	Sg	13 24 25.4	-0.1

*BJI **11** 13:24:08.5, 38.°20N×142.°40E, h5km, mb4.5/36, mB4.7/19, Ms4.1/7, Ms7 4.0/5*

*MOS **11** 13:24:09.8±1.1, 38.°21N×142.°45E, h25km, mb4.6/40, Error ellipse: s-maj=8.2km s-min=5.2km az=90.6*

*NEIC **11** 13:24:10.6±2.0, 38.°14N×142.°41E, h18km±12km, mb4.5/23, Error ellipse: s-maj=5.7km s-min=4.2km az=118.0*

NEIC Recorded [3 JMA] in Fukushima.

*IDC **11** 13:24:14.4±0.7, 38.°15N×142.°40E, h46km±5km, mb4.1/28, mb1 4.2/35, mb1mx4.1/74, mbtmp4.3/35, MS3.5/14, Ms1 3.5/14, ms1mx3.3/64, Error ellipse: s-maj=12.4km s-min=10.5km az=127.0*

*JMA **11** 13:24:29.7, 36.°97N×140.°62E, h11km±1km, M3.9*

JMA Felt III J1.

ISC 11 13:24:12.2±0.5, 38.°24N±0.°04×142.°41E±0.°05, h30km±2km, h30km:pP-P, n21, σ1s64/229, mb4.4/62, MS3.8/11, 6C-4D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JFK	**Kawauchi**	**1.49**	**235**	P	**Pb**	**13 24 38.0**	**-1.3**
JFK				S	Sn	13 24 44.8	-11
ONAJ	**Iwakimizuishiy**	**1.71**	**229**	⇑P	Pn	13 24 34.2	-5.8
ONAJ				S	Sn	13 24 37.3	-23
JHO	**Hitachi**	**2.19**	**223**	⇑P	Pn	13 24 36.9	-10
MJA0	**Matsu Arr-Jizo**	**3.72**	**244**	*e*P	**Pn**	**13 25 06.9**	**-0.7**
MJA0				pmax	pmax		
	comp=Z,29nm,0.3s						
MJAR	**Matsushiro Arr**	**3.75**	**244**	P	**Pn**	**13 25 07.1**	**-0.9**
	comp=Z,28nm,0.3s,baz=79,slow=17,SNR=13						
MJAR				LR	LR	13 26 57.0	
	comp=Z,696nm,18.4s,baz=65,slow=44						
MJAR	**Matsushiro Arr**	**3.75**	**244**	P	**Pn**	**13 25 07.1**	**-0.9**
MJAR				pmax	pmax		
	comp=Z,29nm,0.3s						
MJAR				MLR	MLR		
	comp=Z,696nm,18.4s						
MJAR	**Matsushiro Arr**	**3.75**	**244**	P	**Pn**	**13 25 07.1**	**-0.9**
MAJO	**Matsushiro**	**3.75**	**244**	*e*P	**Pn**	**13 25 04.3**	**-3.7**
MAJO	**Matsushiro**	**3.75**	**244**	*e*Pn	**Pn**	**13 25 04.3**	**-3.7**
MAT	**Matsushiro**	**3.75**	**244**	P	**Pn**	**13 25 03.9**	**-4.1**
MAT				S	Sn	13 25 30.3	-21
ERM	**Erimo**	**3.82**	**8**	*de*P	**Pn**	**13 25 09.4**	**+0.5**
ERM				pmax	pmax		
	comp=Z,63nm,0.8s						
ERM	**Erimo**	**3.82**	**8**	*e*Pn	**Pn**	**13 25 08.9**	**0.0**
INU	**Inuyama**	**5.20**	**238**	*e*Pn	**Pn**	**13 25 24.2**	**-3.6**
JHJ2	**Mitsune**	**5.53**	**203**	*e*Pn	**Pn**	**13 25 32.3**	**-0.2**
JHJ2				*e*Sn	**Sn**	**13 26 35.0**	**0.0**
JHJ	**Hachijo jima 2**	**5.54**	**203**	P	**Pn**	**13 25 31.9**	**-0.6**
	comp=Z,63nm,0.3s,baz=68,slow=6.9,SNR=13						
JHJ				S	**Sn**	**13 26 31.4**	**-3.8**
	comp=Z,68nm,0.3s,baz=59,slow=22,SNR=6.2						
YUK	**Yuzh-Kuril'sk**	**6.35**	**23**	*c* iP	**Pn**	**13 25 42.4**	**-1.3**
YUK				*i* S	**Sn**	**13 26 49.4**	**-5.7**
YUK				pmax	pmax		
	comp=Z,550nm,0.2s						
YUK				pmax	pmax		
	comp=E,125nm,0.3s						
YUK				pmax	pmax		
	comp=N,57nm,0.2s						
SHO	**Shikotan**	**6.54**	**29**	*d* iP	**Pn**	**13 25 44.2**	**-2.1**
SHO				pmax	pmax		
	comp=N,103nm,0.3s						
SHO				pmax	pmax		
	comp=E,160nm,0.3s						
SHO				pmax	pmax		
	comp=Z,264nm,0.3s						
KUR	**Kuril'sk**	**8.09**	**29**	*e*P	**Pn**	**13 26 06.9**	**-0.7**
KUR				*i* S	**Sn**	**13 27 31.9**	**-6.0**
KUR				pmax	pmax		
	comp=Z,160nm,0.4s						
KUR				pmax	pmax		
	comp=N,18nm,0.2s						
KUR				pmax	pmax		
	comp=E,66nm,0.3s						
YSS	**Yuzh-Sakhalins**	**8.71**	**2**	⇑*e*P	**Pn**	**13 26 17.8**	**+1.7**
YSS				pmax	pmax		
	comp=Z,110nm,0.7s						
YSS	**Yuzh-Sakhalins**	**8.71**	**2**	*e*Pn	**Pn**	**13 26 17.3**	**+1.2**
USRK	**Ussuriysk Ar.**	**9.85**	**310**	P	**Pn**	**13 26 33.2**	**+1.6**
	comp=Z,0.3nm,0.3s,baz=118,slow=13,SNR=3.4						
USRK				LR	LR	13 30 16.5	
	comp=Z,185nm,19.1s,baz=129,slow=37						
JNU	**Nakatsue**	**10.67**	**245**	P	**Pn**	**13 26 43.7**	**+0.6**
	comp=Z,0.4nm,0.3s,baz=135,slow=6.1,SNR=6.6						
JNU				LR	LR	13 31 19.4	
	comp=Z,308nm,19.3s,baz=114,slow=40						
JNU	**Nakatsue**	**10.67**	**245**	P	**Pn**	**13 26 43.7**	**+0.6**
CBIJ	**Chichi jima**	**11.11**	**181**	P	**Pn**	**13 26 46.4**	**-2.6**
JCJ	**Chichijima**	**11.11**	**181**	P	**Pn**	**13 26 46.4**	**-2.6**
	comp=Z,8.5nm,0.3s,baz=288,slow=20,SNR=4.8						
KSRS	**Korea Array**	**11.48**	**271**	P	**Pn**	**13 26 56.5**	**+2.5**
	comp=Z,0.3nm,0.3s,baz=78,slow=14,SNR=5.5						
KSRS				LR	LR	13 31 05.2	
	comp=Z,113nm,19.9s,baz=94,slow=36						
KSRS	**Korea Array**	**11.48**	**271**	P	**Pn**	**13 26 56.5**	**+2.5**
KSRS				MLR	MLR		
	comp=Z,113nm,19.9s						
KSAR	**Wonju Array Be**	**11.51**	**271**	P	**Pn**	**13 26 56.5**	**+2.0**
KSAR	**Wonju Array Be**	**11.51**	**271**	P	**Pn**	**13 26 56.5**	**+2.0**
HABR	**Khabarovsk**	**11.54**	**335**	*e*P	**Pn**	**13 26 54.5**	**-0.2**
HABR				*e*S	**Sn**	**13 29 03.6**	**+1.1**
HABR				pmax	pmax		
	comp=Z,9.0nm,1.6s						
HABR				pmax	pmax		
	comp=Z,15nm,1.3s						
HABR				MLR	MLR		
	comp=Z,82nm,15.0s						
TYV	**Tymovskoe**	**12.62**	**1**	*e*P	**Pn**	**13 27 10.5**	**+0.9**
TYV				pmax	pmax		
	comp=Z,8.0nm,0.6s						
KLR	**Kul'dur**	**13.40**	**328**	P	**Pn**	**13 27 21.0**	**+0.8**
	comp=Z,0.3nm,0.3s,baz=138,slow=13,SNR=14						
KLR				LR	LR	13 32 40.2	
	comp=Z,288nm,18.3s,baz=122,slow=38						
KLR	**Kul'dur**	**13.40**	**328**	P	**Pn**	**13 27 21.0**	**+0.8**
KLR				MLR	MLR		
	comp=Z,288nm,18.3s						
KLR	**Kul'dur**	**13.40**	**328**	P	**Pn**	**13 27 21.0**	**+0.8**
CN2	**Changchun**	**13.95**	**299**	*e*P	**Pn**	**13 27 28.4**	**+0.7**
NKL	**Nikolayevsk**	**14.96**	**356**	*e*P	**Pn**	**13 27 40.2**	**-1.1**
PETK	**Petropavlovsk-**	**18.25**	**31**	P	**P**	**13 28 24.8**	**+1.8**
	comp=Z,0.2nm,0.3s,baz=212,slow=11,SNR=4.6						
PETK				LR	LR	13 35 57.3	
	comp=Z,84nm

YAK				*e*PcP	**PcP**	**13 33 06.0 -1.4**
SEY	**Seymchan**	**25.46**	**11**	P	**P**	**13 29 38.9 +1.7**
	comp=N,4.9nm,0.7s,baz=206,slow=9.9,SNR=19					
SEY	**Seymchan**	**25.46**	**11**	P	**P**	**13 29 38.9 +1.7**
SEY				pmax	pmax	
	comp=Z,5.0nm,0.7s					
SEY	**Seymchan**	**25.46**	**11**	P	**P**	**13 29 38.9 +1.7**
BOD	**Bodaibo**	**26.95**	**326**	*e*P	**P**	**13 29 50.8 +0.1**
BOD				pmax	pmax	
	comp=Z,10.0nm,1.0s					
ULN	**Ulaanbaatar**	**27.36**	**302**	*e*P	**P**	**13 29 56.5 +1.8**
ULN				pmax	pmax	
	comp=Z,6.0nm,1.7s					
SONA1	**Songino Array**	**27.79**	**302**	*e*P	**P**	**13 29 58.2 -0.3**
SONM	**Songino Array**	**27.79**	**302**	P	**P**	**13 29 59.4 +0.8**
	comp=Z,1.8nm,0.6s,baz=113,slow=9.4,SNR=12					
SONM	**Songino Array**	**27.79**	**302**	*e*P	**P**	**13 30 00.5 +1.9**
SONM				pmax	pmax	
	comp=Z,2.0nm,0.6s					
SONM	**Songino Array**	**27.79**	**302**	P	**P**	**13 29 59.4 +0.8**
H11N2	**WAKE ISLAND Hy**	**28.13**	**124**	T	T	14 00 31.1
	baz=316,slow=75,SNR=49					
H11N1	**WAKE ISLAND Hy**	**28.14**	**124**	T	T	14 00 31.8
	baz=316,slow=75,SNR=58					
H11N3	**WAKE ISLAND Hy**	**28.14**	**124**	T	T	14 00 32.4
	baz=316,slow=75,SNR=55					
ENH	**Enshi**	**28.23**	**264**	*e*P	**P**	**13 30 01.5 -1.0**
	comp=Z,15nm,0.9s					
H11S1	**WAKE ISLAND Hy**	**28.89**	**126**	T	T	14 01 08.7
	SNR=27					
H11S3	**WAKE ISLAND Hy**	**28.89**	**126**	T	T	14 01 44.9
	baz=253,slow=74,SNR=35					
H11S2	**WAKE ISLAND Hy**	**28.91**	**126**	T	T	14 01 26.3
	baz=315,slow=74,SNR=34					
TLY	**Talaya**	**30.16**	**309**	LR	LR	13 43 01.1
	comp=Z,102nm,18.6s,baz=122,slow=37					
TLY	**Talaya**	**30.16**	**309**	*e*P	**P**	**13 30 23.0 +3.6**
TLY				pmax	pmax	
	comp=Z,6.0nm,0.9s					
ZAK	**Zakamensk**	**30.16**	**306**	*e*P	**P**	**13 30 17.3 -2.3**
ZAK				pmax	pmax	
	comp=Z,3.0nm,1.1s					
LZH	**Lanzhou**	**30.66**	**278**	*e*P	**P**	**13 30 21.8 -2.4**
LZH				*e*PP	**PnPn**	**13 31 22.0 -2.1**
LZH				pmax	pmax	
	comp=Z,20nm,1.0s					
LZH				pmax	pmax	
	comp=Z,53nm,4.9s					
LZH				LR	LR	
	comp=Z,220nm,12.8s					
LZH				LR	LR	
	comp=Z,250nm,13.3s					
LZH				LR	LR	
	comp=Z,300nm,16.2s					
CD2	**Chengdu**	**32.47**	**269**	P	**P**	**13 30 38.3 -1.7**
CD2				pmax	pmax	
	comp=Z,1.0nm,0.5s					
BILL	**Bilibino**	**32.65**	**16**	*e*P	**P**	**13 30 41.7 +0.6**
BILL				*e*		13 31 45.6
BILL				pmax	pmax	
	comp=Z,8.0nm,2.3s					
BILL	**Bilibino**	**32.65**	**16**	*e*P	**P**	**13 30 41.6 +0.5**
	comp=Z,34nm,1.8s					
GTA	**Gaotai**	**32.98**	**286**	*e*P	**P**	**13 30 46.8 +2.3**
GTA				pP	pP	13 30 51.1 -2.2
GTA				sP	sP	13 30 54.2 -2.8
GTA				pmax	pmax	
	comp=Z,3.0nm,1.1s					
TIXI	**Tiksi**	**34.20**	**352**	P	**P**	**13 30 55.0 +0.5**
	comp=Z,0.4nm,0.3s,baz=149,slow=6.1,SNR=4.0					
TIXI	**Tiksi**	**34.20**	**352**	*e*P	**P**	**13 30 54.8 +0.3**
TIXI				pmax	pmax	
	comp=Z,8.0nm,2.7s					
TIXI	**Tiksi**	**34.20**	**352**	*e*P	**P**	**13 30 53.2 -1.2**
	comp=Z,1.6nm,0.8s					
DAV	**Davao City (W)**	**34.57**	**210**	LR	LR	13 44 51.5
	comp=Z,56nm,20.7s,baz=114,slow=36					
KMI	**Kunming**	**35.93**	**260**	P	**P**	**13 31 11.3 +1.1**
KMI				pmax	pmax	
	comp=Z,8.0nm,0.5s					
KMI				pmax	pmax	
	comp=Z,96nm,4.4s					
WMQ	**Urumqi**	**41.01**	**296**	*e*P	**P**	**13 31 53.8 +1.2**
WMQ				pmax	pmax	
	comp=Z,7.0nm,0.6s					
WMQ				pmax	pmax	
	comp=Z,30nm,4.6s					
ZAA0	**Zalesovo Array**	**41.70**	**311**	*e*P	**P**	**13 31 58.8 +0.9**
ZALV	**Zalesovo Beam**	**41.70**	**311**	P	**P**	**13 31 59.5 +1.6**
	comp=Z,4.7nm,0.5s,baz=88,slow=8.0,SNR=15					
ZALV				PcP	**PcP**	**13 33 54.4 +0.3**
	comp=Z,2.4nm,0.5s,baz=104,slow=3.1,SNR=6.8					
ZALV				LR	LR	13 50 06.8
	comp=Z,74nm,18.9s,baz=72,slow=37					
ZALV	**Zalesovo Beam**	**41.70**	**311**	P	**P**	**13 31 59.6 +1.6**
ZALV						13 33 54.4
ZALV				pmax	pmax	
	comp=Z,5.0nm,0.5s					
ZALV				pmax	pmax	
	comp=Z,2.0nm,0.5s					
ZALV				MLR	MLR	
	comp=Z,74nm,18.9s					
ZALV	**Zalesovo Beam**	**41.70**	**311**	P	**P**	**13 31 59.5 +1.6**
ZALV				PcP	**PcP**	**13 33 54.4 +0.3**
CMAR	**Chiang Mai Arr**	**42.57**	**255**	P	**P**	**13 32 05.8 +0.3**
	comp=Z,0.9nm,0.9s,baz=55,slow=5.9,SNR=6.0					
CMAR				PcP	**PcP**	**13 33 57.8 +0.2**
	comp=Z,0.6nm,0.5s,baz=29,slow=2.8,SNR=4.4					
CMAR	**Chiang Mai Arr**	**42.57**	**255**	P	**P**	**13 32 05.8 +0.3**
CMAR						13 33 57.8
CMAR				pmax	pmax	
	comp=Z,1.0nm,0.7s					
CMAR				pmax	pmax	
	comp=Z,1.0nm,0.5s					
CMAR	**Chiang Mai Arr**	**42.57**	**255**	P	**P**	**13 32 05.8 +0.3**
CMAR				PcP	**PcP**	**13 33 57.8 +0.2**
CM01	**Chiang Mai Arr**	**42.58**	**255**	*e*P	**P**	**13 32 05.7 +0.2**
NVS	**Novosibirsk**	**42.59**	**313**	*e*P	**P**	**13 32 07.6 +2.4**
MK01	**Makanchi Array**	**44.16**	**301**	*e*P	**P**	**13 32 18.3 +0.3**
MK31	**Makanchi Array**	**44.16**	**301**	*e*P	**P**	**13 32 18.5 +0.5**
MK31	**Makanchi Array**	**44.16**	**301**	*e*P	**P**	**13 32 18.5 +0.5**
MKAR	**Makanchi Array**	**44.16**	**301**	P	**P**	**13 32 19.1 +1.1**
	comp=Z,3.6nm,0.7s,baz=86,slow=9.5,SNR=30					
MKAR	**Makanchi Array**	**44.16**	**301**	P	**P**	**13 32 19.1 +1.1**
MKAR				pmax	pmax	
	comp=Z,4.0nm,0.7s					
MKAR	**Makanchi Array**	**44.16**	**301**	*e*P	**P**	**13 32 18.4 +0.4**
MAKZ	**Makanchi**	**44.37**	**301**	*e*P	**P**	**13 32 20.9 +1.2**
MAKZ				pmax	pmax	
	comp=Z,5.0nm,0.9s					
MAKZ	**Makanchi**	**44.37**	**301**	*e*P	**P**	**13 32 20.9 +1.2**
	comp=Z,4.9nm,0.9s					
KDAK	**Kodiak Island**	**45.68**	**43**	*i* P	**P**	**13 32 31.0 +1.1**
KURK	**Kurchatov**	**45.82**	**307**	*e*P	**P**	**13 32 31.7 +0.6**
KURK				*PP	**sP**	**13 32 44.8 +1.0**
KURK				pmax	pmax	
	comp=Z,12nm,0.8s					
KURK	**Kurchatov**	**45.82**	**307**	*e*P	**P**	**13 32 31.7 +0.6**
	comp=Z,12nm,0.8s					
KURK				pP	**sP**	**13 32 44.8 +1.0**
KURBB	**Kurchatov Arra**	**45.89**	**307**	P	**P**	**13 32 32.5 +0.8**
	comp=Z,8.8nm,0.5s,baz=81,slow=8.1,SNR=64					
KURBB				pP	**sP**	**13 32 44.8 +0.5**
	comp=Z,11nm,0.6s,baz=81,slow=8.2,SNR=12					
ODAN	**Odare**	**47.13**	**273**	*e*P	**P**	**13 32 41.6 -0.4**
	comp=Z,9.2nm,0.7s					
MDM	**Murphy Dome**	**47.48**	**33**	*e*P	**P**	**13 32 45.2 +1.2**
	comp=Z,6.1nm,1.0s					
RAMN	**Ramite**	**47.71**	**274**	*e*P	**P**	**13 32 46.9 +0.4**
	comp=Z,17nm,0.7s					
GUN	**Gumba**	**47.83**	**275**	*e*P	**P**	**13 32 48.6 +1.0**
	comp=Z,31nm,0.8s					
ILAR	**Eielson Array**	**48.06**	**33**	P	**P**	**13 32 49.2 +0.8**
	comp=Z,1.8nm,0.7s,baz=270,slow=6.6,SNR=21					
ILAR	**Eielson Array**	**48.06**	**33**	P	**P**	**13 32 49.2 +0.8**
ILAR				pmax	pmax	
	comp=Z,2.0nm,0.7s					
ILAR	**Eielson Array**	**48.06**	**33**	P	**P**	**13 32 49.2 +0.8**
ILB	**Eielson Array**	**48.06**	**33**	*e*P	**P**	**13 32 48.5 +0.1**
KKN	**Kakani**	**48.35**	**275**	*e*P	**P**	**13 32 52.1 +0.6**
	comp=Z,21nm,0.7s					
PKIN	**Phulchoki**	**48.36**	**275**	*e*P	**P**	**13 32 52.1 +0.5**
	comp=Z,5.7nm,0.5s					
GKN	**Gorkha**	**48.76**	**276**	*e*P	**P**	**13 32 55.3 +0.8**
	comp=Z,18nm,0.6s					
KOLN	**Koldanda**	**49.68**	**276**	*e*P	**P**	**13 33 02.3 +0.7**
	comp=Z,11nm,0.7s					
TKM2	**Tokmak 2**	**49.76**	**298**	*e*P	**P**	**13 33 02.9 +0.9**
TKM2				pmax	pmax	
	comp=Z,3.0nm,0.6s					
TKM2	**Tokmak 2**	**49.76**	**298**	*e*P	**P**	**13 33 02.9 +0.9**
	comp=Z,3.4nm,0.6s					
PYUN	**Piuthan**	**50.00**	**277**	*e*P	**P**	**13 33 04.8 +0.7**
	comp=Z,44nm,1.1s					
BVAR	**Borovoye Array**	**50.35**	**312**	P	**P**	**13 33 07.2 +1.1**
	comp=Z,3.0nm,0.6s,baz=67,slow=7.7,SNR=22					
BVAR				PcP	**PcP**	**13 34 25.0 +0.6**
	comp=Z,2.9nm,0.6s,baz=82,slow=2.3,SNR=8.3					
BVAR				pPcP		13 34 39.0
	comp=Z,1.9nm,0.8s,baz=96,slow=4.5,SNR=4.2					
BVAR	**Borovoye Array**	**50.35**	**312**	P	**P**	**13 33 07.2 +1.1**
BVAR						13 34 25.0
BVAR				pmax	pmax	
	comp=Z,2.0nm,0.5s					
BVAR				pmax	pmax	
	comp=Z,3.0nm,0.6s					
BVAR				pmax	pmax	
	comp=Z,2.0nm,0.8s					
BVAR	**Borovoye Array**	**50.35**	**312**	P	**P**	**13 33 07.2 +1.1**
BVAR				PcP	**PcP**	**13 34 25.0 +0.6**
BVAR				pPcP		13 34 39.0
BRVK	**Borovoye**	**50.41**	**312**	*e*P	**P**	**13 33 06.4 -0.1**
BRVK				pmax	pmax	
	comp=Z,3.0nm,0.7s					
BRVK	**Borovoye**	**50.41**	**312**	*e*P	**P**	**13 33 06.4 -0.1**
	comp=Z,3.2nm,0.7s					
AAK	**Ala-Archa**	**50.62**	**298**	*e*P	**P**	**13 33 11.7 +3.2**
AAK				pmax	pmax	
	comp=Z,3.0nm,1.0s					
ZRNK	**Zerenda**	**51.18**	**312**	*e*P	**P**	**13 33 13.2 +0.8**
ZRNK				pmax	pmax	
	comp=Z,3.0nm,0.6s					
ZRNK	**Zerenda**	**51.18**	**312**	*e*P	**P**	**13 33 13.2 +0.8**
	comp=Z,2.6nm,0.6s					
INK	**Inuvik**	**52.96**	**28**	P	**P**	**13 33 25.9 +0.7**
	comp=Z,1.3nm,0.6s,baz=287,slow=7.2,SNR=11					
INK	**Inuvik**	**52.96**	**28**	*e*P	**P**	**13 33 26.2 +0.9**
INK				pmax	pmax	
	comp=Z,3.0nm,0.9s					
INK	**Inuvik**	**52.96**	**28**	*e*P	**P**	**13 33 26.2 +0.9**
	comp=Z,2.6nm,0.9s					
ARU	**Arti**	**55.98**	**318**	P	**P**	**13 33 48.4 +0.9**
	comp=Z,5.7nm,0.6s,baz=87,slow=2.8,SNR=11					
ARU	**Arti**	**55.98**	**318**	*c i*P	**P**	**13 33 48.1 +0.6**
ARU				S	**S**	**13 41 37.9 +4.5**
ARU				SS	**SS**	**13 45 21.1 +2.0**
ARU				pmax	pmax	
	comp=Z,5.0nm,0.7s					
ARU	**Arti**	**55.98**	**318**	*e*P	**P**	**13 33 48.0 +0.6**
	comp=Z,5.7nm,0.7s					
ABKAR	**Akbulak array**	**57.77**	**310**	*e*P	**P**	**13 34 00.7 +0.4**
WRAB	**Tennant Creek**	**58.35**	**189**	*ce*P	**P**	**13 34 04.7 +0.1**
WRAB				pmax	pmax	
	comp=Z,18nm,1.2s					
WB2	**Warramunga Arr**	**58.36**	**189**	*e*P	**P**	**13 34 04.3 -0.4**
	comp=Z,8.6nm,0.8s					
WRA	**Warramunga Arr**	**58.37**	**189**	P	**P**	**13 34 04.2 -0.5**
	comp=Z,8.4nm,0.7s,baz=7.7,slow=7.2,SNR=46					
WRA	**Warramunga Arr**	**58.37**	**189**	P	**P**	**13 34 04.2 -0.5**
WRA				pmax	pmax	
	comp=Z,8.0nm,0.7s					
WRA	**Warramunga Arr**	**58.37**	**189**	P	**P**	**13 34 04.2 -0.5**
AKTO	**Aktyubinsk**	**58.46**	**312**	P	**P**	**13 34 05.2 +0.1**
	comp=Z,2.4nm,0.7s,baz=69,slow=12,SNR=11					
AKTO	**Aktyubinsk**	**58.46**	**312**	P	**P**	**13 34 05.2 +0.1**
AKTO				pmax	pmax	
	comp=Z,2.0nm,0.7s					
AKTO	**Aktyubinsk**	**58.46**	**312**	P	**P**	**13 34 05.2 +0.1**
RES	**Resolute Bay**	**61.24**	**15**	*e*P	**P**	**13 34 23.7 -0.1**
RES				pmax	pmax	
	comp=Z,4.0nm,1.0s					
RES	**Resolute Bay**	**61.24**	**15**	*e*P	**P**	**13 34 23.7 -0.1**
	comp=Z,3.6nm,1.0s					
AS01	**Alice Springs**	**62.09**	**189**	*e*P	**P**	**13 34 29.7 -0.4**
AS31	**Alice Springs**	**62.09**	**189**	*e*P	**P**	**13 34 29.6 -0.5**
	comp=Z,1.3nm,0.8s					
ASAR	**Alice Springs**	**62.09**	**189**	P	**P**	**13 34 29.9 -0.2**
	comp=Z,3.9nm,0.7s,baz=8.7,slow=5.2,SNR=53					
ASAR	**Alice Springs**	**62.09**	**189**	P	**P**	**13 34 30.0 -0.2**
ASAR				pmax	pmax	
	comp=Z,4.0nm,0.7s					
ASAR	**Alice Springs**	**62.09**	**189**	P	**P**	**13 34 29.9 -0.2**
YKA	**Yellowknife Ar**	**62.37**	**31**	P	**P**	**13 34 31.9 +0.4**
	comp=Z,1.6nm,0.7s,baz=303,slow=6.7,SNR=23					
YKA				pP	**sP**	**13 34 45.8 +1.4**
	comp=Z,1.0nm,0.6s,baz=300,slow=6.3,SNR=9.0					
YKA	**Yellowknife Ar**	**62.37**	**31**	P	**P**	**13 34 31.9 +0.4**
YKA				*PP	**sP**	**13 34 45.8 +1.4**
YKA				pmax	pmax	
	comp=Z,2.0nm,0.7s					
YKA				pmax	pmax	
	comp=Z,1.0nm,0.6s					
YKA	**Yellowknife Ar**	**62.37**	**31**	P	**P**	**13 34 31.9 +0.4**
YKA				pP	**sP**	**13 34 45.9 +1.4**
ARCES	**ARCESS Array B**	**63.15**	**339**	P	**P**	**13 34 37.3 +0.6**
	comp=Z,2.3nm,0.9s,baz=40,slow=9.6,SNR=5.6					
ARCES				pP	**sP**	**13 34 50.7 +1.1**
	comp=Z,3.5nm,0.8s,baz=52,slow=7.9,SNR=2.2					
ARCES	**ARCESS Array B**	**63.15**	**339**	P	**P**	**13 34 37.3 +0.6**
ARCES				*PP	**sP**	**13 34 50.7 +1.1**
ARCES				pmax	pmax	
	comp=Z,2.0nm,0.8s					
ARCES				pmax	pmax	
	comp=Z,4.0nm,0.9s					
ARCES	**ARCESS Array B**	**63.15**	**339**	P	**P**	**13 34 37.3 +0.6**
ARCES				pP	**sP**	**13 34 50.7 +1.1**
OBN	**Obninsk**	**67.60**	**323**	LR	LR	14 09 58.2
	comp=Z,40nm,18.2s,baz=273,slow=40					
OBN	**Obninsk**	**67.60**	**323**	*e*P	**P**	**13 35 06.5 +0.8**
OBN				*e*		13 37 32.0
OBN				*e*PPP	PPP	13 39 16.0
OBN				pmax	pmax	
	comp=Z,4.0nm,0.8s					
OBN				MLR	MLR	
	comp=Z,49nm,15.0s					
FINES	**FINESS Array B**	**68.12**	**332**	P	**P**	**13 35 09.5 +0.7**
	comp=Z,3.0nm,0.6s,baz=38,slow=9.6,SNR=11					
FINES	**FINESS Array B**	**68.12**	**332**	P	**P**	**13 35 09.5 +0.7**
FINES				pmax	pmax	
	comp=Z,3.0nm,0.6s					
FINES	**FINESS Array B**	**68.12**	**332**	P	**P**	**13 35 09.5 +0.7**
STKA	**Stephens Creek**	**69.76**	**181**	P	**P**	**13 35 18.7 -0.6**
	comp=Z,2.4nm,0.7s,baz=321,slow=6.6,SNR=4.4					
STKA	**Stephens Creek**	**69.76**	**181**	*e*P	**P**	**13 35 19.8 +0.5**
STKA				pmax	pmax	
	comp=Z,2.0nm,0.7s					
STKA	**Stephens Creek**	**69.76**	**181**	P	**P**	**13 35 18.7 -0.6**
KVAR	**Kislovodsk Arr**	**70.71**	**311**	LR	LR	14 08 24.1
	comp=Z,54nm,20.1s,slow=37					
KIV	**Kislovodsk**	**70.71**	**311**	*e*P	**P**	**13 35 27.2 +1.9**
KIV				pmax	pmax	
	comp=Z,8.0nm,1.1s					
KBZ	**Khabaz**	**70.72**	**311**	P	**P**	**13 35 25.9 +0.7**
	comp=Z,2.6nm,0.8s,baz=101,slow=3.6,SNR=4.9					
KBZ	**Khabaz**	**70.72**	**311**	P	**P**	**13 35 25.9 +0.7**
KBZ				pmax	pmax	
	comp=Z,3.0nm,0.8s					
KBZ	**Khabaz**	**70.72**	**311**	P	**P**	**13 35 25.9 +0.7**
FFC	**Flin Flon**	**72.27**	**33**	*e*P	**P**	**13 35 34.7 +0.3**
FFC				pmax	pmax	
	comp=Z,6.0nm,0.8s					
FFC	**Flin Flon**	**72.27**	**33**	*e*P	**P**	**13 35 34.7 +0.3**
	comp=Z,9.9nm,0.8s					
LRM	**Limekiln Ridge**	**72.74**	**45**	*e*P	**P**	**13 35 38.3 +0.6**
HFS	**Hagfors**	**73.31**	**336**	P	**P**	**13 35 41.3 +0.8**
	comp=Z,2.4nm,0.7s,baz=36,slow=5.5,SNR=6.3					
HFS				pP	**PcP**	**13 35 54.7 -2.0**
	comp=Z,2.6nm,0.5s,baz=58,slow=3.7,SNR=5.9					
HFS	**Hagfors**	**73.31**	**336**	P	**P**	**13 35 41.3 +0.8**
HFS				*PP	**PcP**	**13 35 54.7 -2.0**
HFS				pmax	pmax	
	comp=Z,2.0nm,0.7s					
HFS				pmax	pmax	
	comp=Z,3.0nm,0.5s					
HFS	**Hagfors**	**73.31**	**336**	P	**P**	**13 35 41.3 +0.8**
HFS				pP	**PcP**	**13 35 54.7 -2.0**
NB2	**NORSAR Subarra**	**73.38**	**338**	P	**P**	**13 35 41.3 +0.4**
	comp=Z,1.4nm,0.7s,baz=38,slow=6.2					
NOA	**NORSAR Array B**	**73.38**	**338**	P	**P**	**13 35 41.6 +0.7**
	comp=Z,1.7nm,0.6s,baz=38,slow=6.0,SNR=9.0					
NOA				pP	**sP**	**13 35 55.0 +1.1**
	comp=Z,3.6nm,0.8s,baz=38,slow=6.0,SNR=7.0					
NOA				LR	LR	14 10 49.3
	comp=Z,30nm,20.5s,baz=25,slow=38					
NOA	**NORSAR Array B**	**73.38**	**338**	P	**P**	**13 35 41.6 +0.7**
NOA				*PP	**sP**	**13 35 55.0 +1.1**
NOA				pmax	pmax	
	comp=Z,2.0nm,0.6s					
NOA				pmax	pmax	
	comp=Z,4.0nm,0.8s					
NOA				MLR	MLR	
	comp=Z,30nm,20.5s					
NOA	**NORSAR Array B**	**73.38**	**338**	P	**P**	**13 35 41.6 +0.7**
NOA				pP	**sP**	**13 35 55.0 +1.1**
NV01	**Mina Array Sit**	**73.64**	**54**	*e*P	**P**	**13 35 43.7 +0.6**
NVAR	**Mina Array Bea**	**73.64**	**54**	P	**P**	**13 35 43.5 +0.4**
	comp=Z,1.3nm,0.8s,baz=277,slow=6.1,SNR=12					
NVAR	**Mina Array Bea**	**73.64**	**54**	P	**P**	**13 35 43.5 +0.4**
AKASG	**Malin Array Be**	**73.83**	**323**	P	**P**	**13 35 44.0 +0.3**
	comp=Z,2.4nm,0.7s,baz=45,slow=5.7,SNR=7.1					
AKASG	**Malin Array Be**	**73.83**	**323**	P	**P**	**13 35 44.0 +0.3**
AKASG				pmax	pmax	
	comp=Z,2.0nm,0.5s					
AKASG	**Malin Array Be**	**73.83**	**323**	P	**P**	**13 35 44.0 +0.3**
KIEV	**Kiev**	**73.84**	**323**	*e*P	**P**	**13 35 44.3 +0.6**
KIEV				pmax	pmax	
	comp=Z,2.0nm,0.9s					
ELK	**Elko**	**74.17**	**50**	LR	LR	14 05 00.2
	comp=Z,58nm,18.6s,baz=315,slow=33					
IMW	**Indian Meadow**	**74.77**	**46**	*e*P	**P**	**13 35 51.1 +1.4**
	comp=Z,3.6nm,0.8s					
MOOW	**Moose Ponds**	**74.97**	**46**	*e*P	**P**	**13 35 52.2 +1.4**
	comp=Z,2.0nm,0.8s					
R11A	**Troy Canyon, C**	**75.40**	**53**	*e*P	**P**	**13 35 53.8 +0.5**
	comp=Z,2.7nm,1.0s					
HWUT	**Hardware Ranch**	**75.84**	**48**	*e*P	**P**	**13 35 55.9 +0.2**
	comp=Z,6.3nm,1.3s					
DUG	**Dugway, Tooele**	**75.97**	**50**	*e*P	**P**	**13 35 57.5 +1.0**
DUG				pmax	pmax	
	comp=Z,4.0nm,1.0s					
DUG	**Dugway, Tooele**	**75.97**	**50**	*e*P	**P**	**13 35 57.5 +1.0**
	comp=Z,4.0nm,1.0s					
BW06	**Boulder Array**	**76.26**	**46**	*e*P	**P**	**13 35 58.4 +0.2**
PD31	**Pinedale Array**	**76.26**	**46**	*e*P	**P**	**13 35 58.0 -0.2**
PDAR	**Pinedale Array**	**76.26**	**46**	P	**P**	**13 35 58.6 +0.5**
	comp=Z,1.8nm,0.7s,baz=261,slow=2.2,SNR=23					
PDAR	**Pinedale Array**	**76.26**	**46**	P	**P**	**13 35 58.6 +0.5**
ULM	**Lac du Bonnet**	**78.06**	**34**	P	**P**	**13 36 08.1 +0.3**
	comp=Z,3.2nm,0.7s,baz=267,slow=4.2,SNR=3.5					
ULM	**Lac du Bonnet**	**78.06**	**34**	P	**P**	**13 36 08.1 +0.3**
ULM				pmax	pmax	
	comp=Z,3.0nm,0.7s					
ULM	**Lac du Bonnet**	**78.06**	**34**	P	**P**	**13 36 08.1 +0.3**
CLL	**Collm**	**80.44**	**331**	*e*P	**P**	**13 36 21.0 +0.2**
	comp=Z,5.0nm,0.4s					
CLL				*e*		13 36 23.0
CLL	**Collm**	**80.44**	**331**	*e*P	**P**	**13 36 21.0 +0.2**
CLL				pmax	pmax	
	comp=Z,5.0nm,0.4s					
RAYN	**Ar Rayn**	**80.92**	**293**	*e*P	**P**	**13 36 24.4 +0.4**
	comp=Z,1.4nm,0.7s					
ANMO	**Albuquerque**	**83.21**	**51**	*e*P	**P**	**13 36 35.7 -0.3**
ANMO				pmax	pmax	
	comp=Z,2.0nm,0.8s					
TX31	**Lajitas Ar. Si**	**88.76**	**53**	*e*P	**P**	**13 37 03.8 +0.5**
TXAR	**Lajitas Array**	**88.77**	**53**	P	**P**	**13 37 03.9 +0.5**
	comp=Z,1.1nm,0.6s,baz=298,slow=2.9,SNR=17					
TXAR	**Lajitas Array**	**88.77**	**53**	P	**P**	**13 37 03.9 +0.5**
TXAR				pmax	pmax	
	comp=Z,1.0nm,0.6s					
TXAR	**Lajitas Array**	**88.77**	**53**	P	**P**	**13 37 03.9 +0.5**
SNAA	**Sanae**	**142.13**	**197**	PKP	PKPpre	13 43 28.0
VNA2	**Neumayer--Watz**	**143.69**	**196**	PKP	PKPbc	13 43 40.6 0.0
	baz=122,slow=1.6					
VNA3	**Neumayer Olymp**	**143.93**	**195**	PKP	PKPab	13 43 40.7 0.0
VNA1	**Neumayer--Stat**	**144.09**	**196**	PKP	PKPbc	13 43 42.5 +0.7
LPAZ	**La Paz**	**145.40**	**59**	PKPbc	**PKPab**	**13 43 48.7 +0.2**
	comp=Z,3.6nm,0.8s,baz=329,slow=3.6,SNR=11					
LPAZ	**La Paz**	**145.40**	**59**	*e*PKIKP	**PKPab**	**13 43 48.6 +0.2**
LPAZ				pmax	pmax	
	comp=Z,4.0nm,0.7s					
LPAZ	**La Paz**	**145.40**	**59**	PKPbc	**PKPab**	**13 43 48.7 +0.2**
SIV	**San Ignacio**	**149.70**	**49**	PKPbc	**PKPbc**	**13 43 59.7 +0.3**
	comp=Z,4.3nm,0.6s,baz=299,slow=3.4,SNR=8.6					
SIV	**San Ignacio**	**149.70**	**49**	PKPbc	**PKPbc**	**13 43 59.7 +0.3**

JMA 11 13:28:07.1, 37.01N×140.80E, h9km±1km, M2.8, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.09**	**359**	P	Pg	13 28 09.6	+0.1
ONAJ				S	Sg	13 28 11.4	+0.1
JFK	**Kawauchi**	**0.36**	**9**	P	Pg	13 28 14.3	+0.1
JFK				S	Sg	13 28 19.6	+0.6
JHO	**Hitachi**	**0.44**	**205**	P	Pg	13 28 15.5	-0.2
JHO				S	Sg	13 28 21.5	0.0
JFT	**Otama**	**0.63**	**324**	P	Pg	13 28 19.4	+0.1
JFT				S	Sg	13 28 27.9	+0.4
JMM	**Marumori**	**0.85**	**360**	P	Pg	13 28 23.3	-0.3
JMM				S	Sg	13 28 34.7	0.0
JOU	**Okura**	**1.36**	**355**	P	Pn	13 28 32.4	+0.1
JOU				S	Sg	13 28 50.8	0.0
JIO	**Ouri**	**1.51**	**17**	P	Pn	13 28 34.3	0.0
JIO				S	Sn	13 28 53.5	-0.5
MAT	**Matsushiro**	**2.13**	**258**	P	Pn	13 28 43.0	+0.1
MAT				*e*S	Sb	13 29 11.9	-0.6

JMA 11 13:28:29.0, 37.03N×140.68E, h10km±1km, M2.9, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res

11µm,0.3s,baz=276,slow=19,SNR=18
MXZ Matakaoa Point 8.67 204 *e*PN **Pn** **13 35 45.4 +0.7**
MXZ *e*SN **Sn** **13 37 24.0 +2.4**
MXZ Matakaoa Point 8.67 204 *e*Pn **Pn** **13 35 45.8 +1.1**
WMGZ Waiomatatini S 8.86 203 PN **Pn** **13 35 48.3 +1.0**
WMGZ SN **Sn** **13 37 32.0 +5.7**
HAZ Te Kaha 9.03 206 PN **Pn** **13 35 50.4 +0.8**
HAZ SN **Sn** **13 37 37.3 +6.7**
PUZ Puketiti 9.14 203 PN **Pn** **13 35 50.6 -0.6**
PUZ SN **Sn** **13 37 35.7 +2.3**
TWGZ Tauwhareparae 9.33 204 PN **Pn** **13 35 54.0 +0.1**
WCZ Waipu Caves 9.42 227 PN Pn 13 36 05.2 +10
OUZ Omahuta 9.50 232 PN **Pn** 13 36 05.7 +10
CNGZ Carnagh Statio 9.53 202 PN **Pn** **13 35 56.8 +0.3**
MWZ Matawai 9.64 205 *e*PN **Pn** **13 35 56.9 -1.1**
MWZ SN **Sn** **13 37 49.2 +3.7**
URZ Urewera 9.73 207 Pn **Pn** **13 36 00.2 +1.0**
1.9nm,0.3s,baz=272,slow=4.7,SNR=17
URZ Sn **Sn** **13 37 51.5 +3.8**
9.9nm,0.3s,baz=334,slow=23,SNR=9.9
URZ Urewera 9.73 207 *e*PN **Pn** **13 35 58.4 -0.9**
URZ *e*SN **Sn** **13 37 50.8 +3.1**
URZ Urewera 9.73 207 *e*Pn **Pn** **13 35 59.8 +0.5**
URZ *e*Sn **Sn** **13 37 51.8 +4.0**
RAGZ Rawiri 9.82 205 PN **Pn** **13 36 00.2 -0.3**
KNZ Kokohu 10.20 203 *e*PN **Pn** **13 36 05.0 -0.6**
KNZ *e*SN **Sn** **13 37 59.8 +0.7**
BKZ Black Stump Fm 10.76 207 *e*Pn **Pn** **13 36 11.8 -1.6**
PXZ Pawanui 11.38 204 *e*PN **Pn** **13 36 18.7 -3.1**
PXZ *e*SN **Sn** **13 38 22.4 -5.7**
BFZ Birch Farm 12.17 204 PN **Pn** **13 36 29.5 -3.2**
BFZ Birch Farm 12.17 204 *e*Pn **Pn** **13 36 31.5 -1.1**
MRZ Mangatainoka R 12.40 206 *e*PN Pn 13 36 31.3 -4.5
MRZ *e*SN **Sn** **13 38 47.5 -5.7**
NIUE Niue 12.50 34 P Pn 13 36 29.1 -8.1
baz=12,SNR=3.2
MSVF Nonsavu 12.68 339 *e*P Pn 13 36 39.8 0.0
MSVF Nonsavu 12.68 339 *e*Pn Pn 13 36 39.8 0.0
SNZO South Karori 13.30 207 *e*Pn **Pn** **13 36 47.7 -0.3**
SNZO *e*Sn **Sn** **13 39 12.6 -2.4**
NNZ Nelson 13.79 211 *e*PN **Pn** **13 36 55.5 +0.8**
THZ Tophouse 14.44 211 *e*PN **Pn** **13 37 03.2 -0.4**
THZ *e*SN **Sn** **13 39 36.4 -6.5**
THZ Tophouse 14.44 211 *e*Pn **Pn** **13 37 05.2 +1.5**
THZ *e*Sn **Sn** **13 39 39.3 -3.6**
KHZ Kahutara 14.70 208 *e*Pn **Pn** **13 37 03.6 -3.6**
KHZ *e*Sn **Sn** **13 39 46.8 -2.4**
LTZ Lake Taylor 15.54 210 *e*Pn **Pn** **13 37 15.4 -2.9**
52nm,1.5s
LTZ *e*Sn **Sn** **13 40 10.5 +0.9**
INZ Inchbonnie 15.86 212 *e*PN **Pn** **13 37 21.0 -1.4**
OXZ Oxford 16.07 209 *e*PN **Pn** **13 37 22.8 -2.3**
OXZ Oxford 16.07 209 *e*Pn **Pn** **13 37 22.8 -2.3**
54nm,0.7s
MQZ McQueen's Vall 16.13 207 *e*SN Sn 13 40 12.1 -12
MQZ McQueen's Vall 16.13 207 *e*Pn **Pn** **13 37 21.9 -4.0**
142nm,1.9s
MQZ *e*Sn Sn 13 40 14.2 -10
WVZ Waitaha Valley 16.46 213 *e*PN **Pn** **13 37 28.3 -1.7**
AFI Afiamalu 16.51 19 LR LR 13 44 46.4
comp=Z,292nm,19.1s,baz=164,slow=41
DZM Mont Dzumac 16.54 294 Pn **Pn** **13 37 35.1 +3.8**
0.9nm,0.3s,baz=180,slow=15,SNR=10
DZM LR LR 13 42 48.7
comp=Z,3µm,18.7s,baz=124,slow=34
RPZ Rata Peaks 16.82 211 P **P** **13 37 37.0 +0.4**
4.4nm,0.3s,baz=32,slow=0.4,SNR=17
RPZ Rata Peaks 16.82 211 *e*Pn **Pn** **13 37 31.4 -3.1**
65nm,1.5s
RAR Rarotonga 17.87 66 P **Pn** **13 37 44.1 -3.8**
3.8nm,0.3s,baz=200,slow=5.9,SNR=7.9
RAR LR LR 13 42 45.0
comp=Z,2µm,21.4s,baz=256,slow=31
RAR Rarotonga 17.87 66 *e*P **Pn** **13 37 46.0 -1.8**
RAR pmax pmax
comp=Z,72nm,0.8s
RAR Rarotonga 17.87 66 *e*Pn **Pn** **13 37 46.0 -1.8**
comp=Z,72nm,0.8s
ODZ Otahua Downs 18.05 209 PN **Pn** **13 37 49.7 -0.2**
ODZ Otahua Downs 18.05 209 *e*P **Pn** **13 37 49.9 -0.1**
comp=Z,98nm,1.7s
JCZ Jackson Bay 18.14 214 *e*PN **Pn** **13 37 47.9 -3.3**
WHZ Wether Hill Ro 19.90 212 *e*P **P** **13 38 09.7 -0.8**
TBI Tubuai 25.60 82 *e*S **S** **13 43 34.5 -0.5**
comp=Z,450nm,27.0s
TBI *e*LR LR 13 45 33.2
comp=Z,2µm,27.5s,baz=249
TBI Tubuai 25.60 82 *e*T T 14 05 48.5
comp=Z,300nm,0.3s
ARMA Armidale 26.93 261 P **P** **13 39 24.1 +3.7**
baz=27,SNR=16
ARMA Armidale 26.93 261 *e*P **P** **13 39 22.8 +2.4**
comp=Z,20nm,0.9s
MGCD Mangrove Creek 27.18 254 P **P** **13 39 26.7 +4.2**
baz=26,SNR=8.0
PAE Paea 27.94 71 *e*T T 14 08 38.3
comp=Z,14nm,0.3s
PPT2 Papeete2 27.98 71 *e*S **S** **13 44 12.3 -0.5**
comp=Z,312nm,27.2s
PPT2 *e*LR LR 13 46 32.7
comp=Z,3µm,26.0s,baz=234
PPT2 Papeete2 27.98 71 *e*T T 14 08 42.3
comp=Z,9.0nm,0.3s
EIDS Eidsvold 28.38 271 P **P** **13 39 34.7 +1.4**
baz=29,SNR=13
EIDS Eidsvold 28.38 271 *e*P **P** **13 39 34.5 +1.2**
comp=Z,21nm,0.8s
CNB Canberra Magne 28.64 250 P **P** **13 39 38.7 +3.1**
baz=29,SNR=4.5
CAN Canberra 28.93 250 *e*P **P** **13 39 37.9 -0.3**
CAN Canberra 28.93 250 *e*P **P** **13 39 37.9 -0.3**
YNG Young 29.42 252 P **P** **13 39 46.2 +3.7**
baz=30,SNR=5.2
RMQ Roma 30.12 268 P **P** **13 39 51.1 +2.4**
baz=31,SNR=14
VAH Vaihoa 30.80 69 *e*T T 14 12 11.8
comp=Z,31nm,0.3s
TOO Toolangi 31.85 246 P **P** **13 40 07.1 +3.1**
baz=32,SNR=4.1
CMSA Cobar Meteorol 31.87 257 P **P** **13 40 06.2 +2.1**
baz=32,SNR=22
QLP Quilpie 34.02 266 P **P** **13 40 24.1 +1.1**
baz=34,SNR=10
CTA Charters Tower 34.36 278 P **P** **13 40 26.7 +0.7**
CTAO Charters Tower 34.36 278 *e*P **P** **13 40 26.5 +0.5**
CTAO pmax pmax
comp=Z,24nm,0.6s
CTAO Charters Tower 34.36 278 *e*P **P** **13 40 26.4 +0.5**
comp=Z,24nm,0.6s
STKA Stephens Creek 35.29 256 P **P** **13 40 34.3 +0.4**
comp=Z,320nm,0.9s,baz=94,slow=9.0,SNR=30
STKA LR LR 13 53 39.4
comp=Z,1µm,19.2s,baz=88,slow=34
STKA Stephens Creek 35.29 256 P **P** **13 40 35.2 +1.3**
baz=36,SNR=28
STKA Stephens Creek 35.29 256 *e*P **P** **13 40 35.0 +1.1**
STKA pmax pmax
comp=Z,6.0nm,0.8s
STKA Stephens Creek 35.29 256 *e*P **P** **13 40 35.0 +1.1**
comp=Z,6.0nm,0.8s
MTSU Mount Surprise 36.84 279 P **P** **13 40 48.1 +0.8**
baz=37,SNR=18
HTT Hallett 37.34 253 P **P** **13 40 52.4 +0.9**
baz=38,SNR=23
RKT Rikitea 38.25 90 *e*S **S** **13 46 52.0 +0.2**
comp=Z,307nm,28.5s
RKT *e*LR LR 13 51 26.0
comp=Z,1µm,27.0s,baz=259
COEN Coen 39.74 285 P **P** **13 41 11.5 -0.2**
baz=40,SNR=4.2
BBOO Buckleboo 39.80 253 P **P** **13 41 12.6 +0.5**
baz=40,SNR=13
BBOO Buckleboo 39.80 253 *e*P **P** **13 41 11.7 -0.4**
comp=Z,65nm,1.6s
TAOE Nuku Hiva Isla 40.42 67 *e*S **S** **13 47 20.8 -4.0**
comp=Z,246nm,25.7s
TAOE *e*LR LR 13 52 13.5
comp=Z,1µm,26.0s,baz=242
AS01 Alice Springs 43.78 266 *e*P **P** **13 41 43.8 -1.0**
AS31 Alice Springs 43.82 266 *e*P **P** **13 41 44.3 -0.8**
comp=Z,4.7nm,1.1s
ASAR Alice Springs 43.82 266 P **P** **13 41 44.1 -1.0**
comp=Z,6.0nm,0.5s,baz=106,slow=7.5,SNR=178
ASAR ScP **ScP** **13 47 22.5 +0.8**
comp=Z,2.0nm,1.0s,baz=128,slow=4.1,SNR=4.7

WB2 Warramunga Arr 44.74 271 *e*P **P** **13 41 51.3 -1.2**
comp=Z,12nm,0.8s
WRAB Tennant Creek 44.74 271 *d*/P **P** **13 41 52.1 -0.4**
WRAB pmax pmax
comp=Z,37nm,1.0s
WRAB Tennant Creek 44.74 271 *e*P **P** **13 41 51.9 -0.6**
comp=Z,17nm,1.0s
WRA Warramunga Arr 44.75 271 P **P** **13 41 51.0 -1.6**
comp=Z,5.4nm,0.4s,baz=110,slow=7.9,SNR=147
WRA ScP **ScP** **13 47 26.5 +1.0**
comp=Z,1.0nm,0.9s,baz=105,slow=4.3,SNR=4.7
WRA Warramunga Arr 44.75 271 P **P** **13 41 51.0 -1.6**
SBA Scott Base 48.77 184 *e*P P 13 42 29.5 +6.3
SBA pmax pmax
comp=Z,24nm,1.0s
SBA Scott Base 48.77 184 *e*P P 13 42 29.4 +6.2
comp=Z,24nm,1.0s
VNDA Vanda 48.84 186 P **P** **13 42 26.4 +2.6**
comp=Z,1.7nm,0.8s,baz=12,slow=7.0,SNR=7.2
VNDA LR LR 13 58 41.5
comp=Z,136nm,21.4s,baz=174,slow=31
MTN Manton Dam 50.55 278 P **P** **13 42 36.3 -1.3**
baz=51,SNR=4.6
FITZ Fitzroy Crossi 53.04 269 P **P** **13 42 55.6 -0.5**
baz=54,SNR=7.8
FITZ Fitzroy Crossi 53.04 269 *e*P **P** **13 42 56.0 -0.2**
comp=Z,39nm,1.3s
CASY Casey 56.06 208 *e*P **P** **13 43 18.9 +1.5**
comp=Z,18nm,0.7s
GUMO Guam 56.48 314 LR LR 14 04 13.3
comp=Z,153nm,21.5s,baz=132,slow=33
MBWA Marble Bar 56.97 263 *e*P **P** **13 43 22.6 -2.0**
comp=Z,17nm,0.9s
MORW Morawa 57.37 253 P **P** **13 43 26.5 -0.9**
baz=58,SNR=5.5
QSPA South Pole Qui 60.40 180 *e*P **P** **13 43 51.9 +3.9**
DAV Davao City (W) 65.95 294 LR LR 14 13 35.9
comp=Z,79nm,18.4s,baz=54,slow=36
MAW Mawson 73.18 200 P **P** **13 45 10.1 +1.0**
comp=Z,6.7nm,0.8s,baz=97,slow=8.0,SNR=5.1
MAW LR LR 14 16 59.7
comp=Z,204nm,18.9s,baz=68,slow=35
MAW Mawson 73.18 200 *e*P **P** **13 45 12.3 +3.1**
MAW pmax pmax
comp=Z,4.0nm,1.2s
MAW Mawson 73.18 200 *e*P **P** **13 45 12.2 +3.1**
comp=Z,4.3nm,1.2s
SBUM Sibu 74.43 282 *e*P **P** **13 45 16.1 -1.2**
comp=Z,16nm,1.2s
SYO Syowa Base 77.93 193‖ *e*P **P** **13 45 37.0 +0.7**
SYO Syowa Base 77.93 193‖ *e*PcP **PcP** **13 45 45.0 -1.1**
MJAR Matsushiro Arr 78.06 325 P P 13 45 35.2 -2.3
comp=Z,2.4nm,0.4s,baz=169,slow=5.4,SNR=6.1
SNAA Sanae 78.82 178 P **P** **13 45 44.4 +3.1**
SNAA Sanae 78.82 178 *e*P **P** **13 45 44.1 +2.8**
SNAA Sanae 78.82 178 *e*P **P** **13 45 44.1 +2.8**
comp=Z,738nm,1.1s
VNA3 Neumayer Olymp 78.94 176 P **P** **13 45 42.9 +1.0**
VNA2 Neumayer--Watz 79.39 177 P **P** **13 45 47.1 +2.8**
baz=182,slow=4.5
JNU Nakatsue 79.50 318 LR LR 14 15 37.3
comp=Z,58nm,20.8s,baz=127,slow=32
NVL N'lazarevskaya 79.60 183 *e*P **P** **13 45 45.5 0.0**
VNA1 Neumayer--Stat 79.61 176 P **P** **13 45 47.1 +1.6**
MYKOM Kota Tinggi 81.27 277 *e*P **P** **13 45 54.3 -1.1**
comp=Z,43nm,1.3s
PLCA Paso Flores 82.48 133 P **P** **13 46 02.5 +0.9**
comp=Z,3.9nm,1.0s,baz=237,slow=7.4,SNR=5.7
PLCA LR LR 14 14 07.0
comp=Z,187nm,21.6s,baz=296,slow=29
LPIG La Paz 83.60 58 LR LR 14 14 06.1
comp=Z,141nm,20.3s,baz=202,slow=29
KSRS Korea Array 84.26 319 P **P** **13 46 08.9 -1.5**
comp=Z,2.3nm,0.9s,baz=130,slow=4.9,SNR=4.8
KSRS LR LR 14 19 56.5
comp=Z,76nm,20.5s,baz=355,slow=33
KSAR Wonju Array Be 84.28 319 P **P** **13 46 08.9 -1.5**
KSAR Wonju Array Be 84.28 319 P **P** **13 46 08.9 -1.5**
KS01 Wonju Array Si 84.30 319 *e*P **P** **13 46 10.4 -0.1**
YSS Yuzh-Sakhalins 84.43 334 *e*P **P** **13 46 10.5 -0.4**
YSS pmax pmax
comp=Z,21nm,0.8s
YSS Yuzh-Sakhalins 84.43 334 *e*P P 13 46 07.0 -4.0
comp=Z,19nm,0.7s
MONP2 Monument Peak 84.81 48 P **P** **13 46 14.5 +1.0**
baz=230
EDW2 Edwards Air Fo 85.11 45 P **P** **13 46 16.0 +1.1**
baz=229
PEA0 Petropavlovsk- 85.32 345 *e*P P 13 46 13.0 -2.3
PETK Petropavlovsk- 85.32 345 *e*P **P** **13 46 13.8 -1.5**
comp=Z,6.5nm,0.6s,baz=120,slow=8.7,SNR=16
PETK LR LR 14 17 21.3
comp=Z,112nm,20.1s,baz=160,slow=31
LRMC Laurel Mtn Rad 85.70 45 P **P** **13 46 19.3 +1.4**
baz=229
BELC Belle Mtn. Jos 85.79 47 P **P** **13 46 19.9 +1.5**
baz=230
GLA Glamis 85.94 48 P **P** **13 46 20.2 +1.2**
baz=231
PSI Prapat 86.03 275 *e*P P 13 46 17.1 -2.9
PSI pmax pmax
comp=Z,16nm,1.1s
PSI Prapat 86.03 275 *e*P P 13 46 17.1 -2.9
comp=Z,16nm,1.1s
HEC Hector,Ludlow 86.11 46 P **P** **13 46 21.1 +1.3**
baz=230
GSC Goldstone, Bar 86.13 45 *e*P **P** **13 46 19.6 -0.3**
GSC pmax pmax
comp=Z,12nm,1.1s
GSC Goldstone, Bar 86.13 45 *e*P **P** **13 46 19.6 -0.3**
comp=Z,12nm,1.1s
MPMC Manual Prospec 86.20 45 P **P** **13 46 21.3 +1.0**
baz=229
NJ2 Nanjing 86.31 310 *e*P **P** **13 46 19.2 -1.5**
NJ2 pmax pmax
comp=Z,11nm,1.0s
WDC Whiskeytown Da 86.36 39 *e*P **P** **13 46 21.0 +0.2**
WDC pmax pmax
comp=Z,41nm,1.8s
WDC Whiskeytown Da 86.36 39 *e*P **P** **13 46 21.0 +0.2**
comp=Z,41nm,1.8s
IRM Iron Mountain 86.44 47 P **P** **13 46 22.9 +1.5**
baz=230
N02D Trinity Center 86.55 38 P **P** **13 46 23.8 +2.0**
baz=225
O03D Paynes Creek 86.56 39 P **P** **13 46 23.7 +1.8**
baz=226
WAKR Walker 86.67 42 *e*P **P** **13 46 22.6 0.0**
TUQ Turquoise Moun 86.76 46 P **P** **13 46 24.7 +1.6**
baz=230
SHOC Shoshone, Teco 86.84 45 P **P** **13 46 24.8 +1.5**
baz=230
USRK Ussuriysk Ar. 86.96 326 P **P** **13 46 22.1 -1.5**
comp=Z,3.2nm,0.9s,baz=119,slow=2.4,SNR=7.9
USRK LR LR 14 20 21.9
comp=Z,148nm,20.9s,baz=124,slow=32
PDMCI Parker Dam,Lak 87.17 48 P **P** **13 46 26.5 +1.6**
baz=231
NV01 Mina Array Sit 87.28 42 *e*P **P** **13 46 26.0 +0.4**
NVAR Mina Array Bea 87.28 42 P **P** **13 46 25.0 -0.6**
comp=Z,3.3nm,0.7s,baz=222,slow=8.3,SNR=29
NVAR LR LR 14 21 55.0
comp=Z,445nm,18.1s,baz=260,slow=33
NV11 Mina Array Sit 87.37 42 *e*P **P** **13 46 26.3 +0.3**
comp=Z,7.1nm,1.0s
TPNV Topopah Spring 87.54 45 P **P** **13 46 27.9 +1.0**
baz=230
TPNV Topopah Spring 87.54 45 *e*P **P** **13 46 27.1 +0.3**
TPNV pmax pmax
comp=Z,8.0nm,1.0s
TPNV Topopah Spring 87.54 45 *e*P **P** **13 46 27.1 +0.3**
comp=Z,8.2nm,1.0s
Y14A Wickenburg 87.68 49 *e*P **P** **13 46 28.2 +0.7**
comp=Z,34nm,1.1s
W13A Hualapai Mount 87.83 47 *e*P **P** **13 46 29.1 +0.8**
comp=Z,22nm,2.0s
TUC Tucson 88.16 51 P **P** **13 46 31.3 +1.5**
baz=233
TUC Tucson 88.16 51 *e*P **P** **13 46 30.9 +1.1**
TUC pmax pmax
comp=Z,19nm,1.4s
TUC Tucson 88.16 51 *e*P **P** **13 46 30.9 +1.1**
comp=Z,19nm,1.4s
HABR Khabarovsk 88.78 330 *ce*P P 13 46 29.8 -2.4
HABR *e*PP pP 13 46 40.3 +0.3
HABR *e*SP sP 13 46 44.3 +1.5
HABR *e* 13 49 56.8

HABR *e*S **SKSac** **13 56 55.0 -4.7**
HABR *e**SS **SKKSac** **13 57 13.4 +2.3**
HABR *e*SS SS 14 03 02.2 -8.5
HABR *e*SSS SSS 14 06 36.6
HABR MLR MLR
comp=Z,127nm,18.0s
LCO Las Campanas 88.78 123 *e*P **P** **13 46 32.8 -0.6**
comp=Z,38nm,0.4s
J05D Fort Rock, OR 88.94 37 P **P** **13 46 34.9 +1.6**
baz=226
X16A Lo Mia Camp, P 89.00 49 *e*P **P** **13 46 35.0 +1.2**
comp=Z,6.1nm,0.9s
LCMT Little Creek M 89.43 46 *e*P **P** **13 46 37.6 +1.8**
KDAK Kodiak Island 89.59 13 LR LR 14 23 25.8
comp=Z,89nm,18.5s,baz=160,slow=34
KNB Kanab 89.70 46 *e*P **P** **13 46 38.1 +1.0**
KNB pmax pmax
comp=Z,7.0nm,1.1s
KNB Kanab 89.70 46 *e*P **P** **13 46 38.1 +1.0**
comp=Z,6.9nm,1.1s
WUAZ Wupatki 89.71 48 P **P** **13 46 38.7 +1.6**
baz=233
WUAZ Wupatki 89.71 48 *e*P **P** **13 46 38.6 +1.5**
comp=Z,6.7nm,0.9s
TIA Tai'an 90.00 313 *e*P **P** **13 46 38.3 0.0**
TIA pmax pmax
comp=Z,10.0nm,1.1s
CN2 Changchun 90.00 322 *e*P P 13 46 44.9 +6.8
CN2 pmax pmax
comp=Z,10.0nm,0.7s
X18A Snowflake 90.05 50 *e*P **P** **13 46 40.1 +1.3**
comp=Z,11nm,1.4s
NKL Nikolayevsk 90.28 336 *i* P **P** **13 46 38.0 -1.1**
NKL pmax pmax
comp=N,10.0nm,1.0s
NKL pmax pmax
comp=Z,30nm,1.0s
KLR Kul'dur 90.78 329 P **P** **13 46 41.2 -0.3**
comp=Z,3.2nm,0.7s,baz=42,slow=2.1,SNR=7.7
KLR LR LR 14 25 25.7
comp=Z,89nm,18.8s,baz=174,slow=34
TX31 Lajitas Ar. Si 91.45 57 *e*P **P** **13 46 45.8 +0.5**
TXAR Lajitas Array 91.45 57 P **P** **13 46 45.5 +0.2**
comp=Z,0.9nm,0.8s,baz=222,slow=6.7,SNR=8.1
TXAR LR LR 14 22 32.8
comp=Z,101nm,18.3s,baz=0.0,slow=32
MNTX Cornudas Mount 91.53 54 P **P** **13 46 46.3 +0.7**
baz=236
ENH Enshi 91.77 304 *e*P **P** **13 46 45.7 -1.0**
comp=Z,36nm,1.3s
GYA Guiyang 91.80 299 P **P** **13 46 47.0 0.0**
GYA pP sP 13 46 59.4 +1.7
GYA PP **PP** **13 50 28.6 +2.2**
GYA SKS **SKSac** **13 57 15.2 -3.4**
GYA S **SKKSac** **13 57 42.0 +7.0**
GYA SS **SS** **14 03 54.8 -0.7**
GYA pmax pmax
comp=Z,20nm,1.0s
GYA pmax pmax
comp=Z,120nm,6.4s
GYA LR LR
comp=Z,570nm,22.6s
GYA LR LR
comp=Z,520nm,23.2s
GYA LR LR
comp=Z,540nm,22.9s
TMUT Trail Mountain 92.10 45 *e*P **P** **13 46 49.2 +0.8**
comp=Z,6.1nm,1.1s
ANMO Albuquerque 92.62 51 P **P** **13 46 50.5 -0.3**
baz=235
ANMO Albuquerque 92.62 51⇑ *i*P **P** **13 46 51.4 +0.7**
ANMO pmax pmax
comp=Z,2.0nm,1.0s
HVU Hansel Valley 92.68 42 *e*P **P** **13 46 50.7 -0.1**
HVU pmax pmax
comp=Z,9.0nm,1.1s
HVU Hansel Valley 92.68 42 *e*P **P** **13 46 50.6 -0.1**
comp=Z,9.1nm,1.1s
HLID Hailey 92.85 40 P **P** **13 46 52.4 +0.9**
baz=231
F10A Beach Ranch, E 92.87 37 *e*P **P** **13 46 51.0 -0.5**
comp=Z,8.1nm,1.0s
BJI Beijing 92.91 315 P **P** **13 46 51.5 -0.1**
BJI pmax pmax
comp=Z,9.0nm,0.4s
BJI pmax pmax
comp=Z,53nm,5.8s
CM01 Chiang Mai Arr 93.78 289 *e*P **P** **13 46 58.5 +2.4**
CMAR Chiang Mai Arr 93.81 289 P **P** **13 46 57.1 +0.8**
comp=Z,1.4nm,0.9s,baz=138,slow=2.8,SNR=8.4
S22A 4UR Ranch, Cre 93.97 48 P **P** **13 46 57.3 +0.3**
baz=235
KMI Kunming 94.11 296 P **P** **13 46 57.6 -0.3**
KMI pP pP 13 47 09.1 +3.3
KMI sP sP 13 47 13.9 +5.3
KMI PP **PP** **13 50 46.9 +2.1**
KMI S S 13 58 01.3 -6.4
KMI sS sS 13 58 22.0 +1.2
KMI SS **SS** **14 04 27.5 -1.5**
KMI pmax pmax
comp=Z,8.0nm,0.6s
KMI pmax pmax
comp=Z,91nm,4.0s
KMI LR LR
comp=Z,140nm,6.5s
KMI LR LR
comp=Z,130nm,8.5s
XAN Xi'an 94.24 307 P **P** **13 46 59.6 +1.6**
XAN pP pP 13 47 09.7 +3.8
XAN pmax pmax
comp=Z,6.0nm,1.0s
REDW Red Top Meadow 94.77 42 *e*P **P** **13 47 00.6 +0.1**
PDAR Pinedale Array 95.17 43 P **P** **13 47 01.4 -0.9**
comp=Z,0.4nm,0.6s,baz=186,slow=3.2,SNR=4.6
PDAR LR LR 14 26 32.2
comp=Z,213nm,18.2s,baz=234,slow=34
SEY Seymchan 95.46 347 P **P** **13 47 00.9 -1.9**
comp=Z,4.8nm,1.0s,baz=133,slow=6.2,SNR=14
SEY Seymchan 95.46 347⇑ *i*P **P** **13 47 01.5 -1.3**
HHC Hu-ho-hao-te 96.24 314 *e*P **P** **13 47 05.9 -1.2**
HHC pP pP 13 47 16.5 +1.5
HHC sP sP 13 47 20.8 +3.0
HHC S **S** **13 58 20.0 -5.3**
HHC SS **SS** **14 04 58.8 +0.3**
HHC pmax pmax
comp=Z,27nm,0.6s
HHC pmax pmax
comp=Z,85nm,5.4s
HHC LR LR
comp=Z,100nm,14.8s
HHC LR LR
comp=Z,170nm,14.8s
HHC LR LR
comp=Z,160nm,14.8s
CD2 Chengdu 96.29 302 P **P** **13 47 06.3 -1.2**
CD2 pmax pmax
comp=Z,10.0nm,0.5s
COLA College 97.02 12⇑ *i*P **P** **13 47 08.7 -1.1**
COLA pmax pmax
comp=Z,15nm,3.0s
ILAR Eielson Array 97.11 13 P **P** **13 47 07.8 -2.4**
comp=Z,0.5nm,0.8s,baz=228,slow=5.6,SNR=6.0
ILAR LR LR 14 23 25.8
comp=Z,82nm,21.6s,baz=163,slow=31
LPAZ La Paz 97.81 114 LR LR 14 23 29.3
comp=Z,81nm,21.2s,baz=238,slow=31
BILL Bilibino 98.23 354⇑ *e*P **P** **13 47 13.5 -1.7**
BILL *e*PPP PPP 13 53 18.6
BILL *e*SSS SSS 14 09 11.0
BILL pmax pmax
comp=Z,5.0nm,1.8s
BILL MLR MLR
comp=Z,92nm,18.0s
CPUP Villa Florida 99.88 128 LR LR 14 25 14.9
comp=Z,98nm,20.3s,baz=242,slow=31
WMQ Urumqi 113.33 308 *e*PKP **PKiKP** **13 52 15.0 -1.4**
WMQ LR LR
comp=Z,35nm,22.6s
WMQ LR LR
comp=Z,35nm,20.8s
MKAR Makanchi Array 117.84 310 PKP **PKPdf** **13 52 23.8 -1.2**
comp=Z,1.4nm,0.4s,baz=216,slow=1.2,SNR=33
MKAR Makanchi Array 117.84 310 *e*PKiKP **PKPdf** **13 52 23.6 -1.4**
MKAR Makanchi Array 117.84 310 *e*PKPdf **PKPdf** **13 52 23.6 -1.4**
ZAA0 Zalesovo Array 117.97 318 *e*PKPdf **PKPdf** **13 52 22.5 -2.4**
ZALV Zalesovo Beam 117.97 318 PKP **PKPdf** **13 52 23.4 -1.5**

comp=Z,0.7nm,0.4s,baz=166,slow=3.1,SNR=5.4
MAKZ Makanchi 118.06 310 *e*PKIKP **PKPdf** 13 52 23.3 -2.1
MAKZ Makanchi 118.06 310 *e*PKPdf **PKPdf** 13 52 23.3 -2.1
NVS Novosibirsk 119.06 319 *e*PKIKP **PKPdf** 13 52 23.7 -3.3
NVS pmax pmax
comp=Z,9.0nm,1.6s
KSH Kashi 120.47 301 PKP **PKPdf** 13 52 30.9 +0.5
KSH *es*PKP 13 52 45.5
KSH *e*PP **PP** 13 54 03.4 +5.7
KSH SKS **SKSdf** 13 59 39.7 -1.3
KSH AMB AMB
comp=Z,170nm,6.3s
KSH LR LR
comp=Z,260nm,13.1s
KSH LR LR
comp=Z,200nm,7.1s
KSH LR LR
comp=Z,260nm,6.1s
KURK Kurchatov 121.06 314 *e*PKIKP **PKPdf** 13 52 28.9 -2.0
KURK Kurchatov 121.06 314 *e*PKPdf **PKPdf** 13 52 28.9 -2.0
TKM2 Tokmak 2 121.56 305 *e*PKIKP **PKPdf** 13 52 31.2 -1.3
TKM2 Tokmak 2 121.56 305 *e*PKPdf **PKPdf** 13 52 31.2 -1.3
FRU Bishkek 122.24 304 *i* PKIKP **PKPdf** 13 52 33.5 -0.1
AAK Ala-Archa 122.29 304*c i*PKIKP **PKPdf** 13 52 33.2 -0.6
AAK Ala-Archa 122.29 304 *e*PKPdf **PKPdf** 13 52 33.2 -0.6
KBL Kabul 124.56 293 *e*PKIKP **PKPdf** 13 52 38.4 -0.1
KBL Kabul 124.56 293 *e*PKPdf **PKPdf** 13 52 38.4 -0.1
KKAR Karatay Array 125.25 304 *e*PKIKP **PKPdf** 13 52 38.5 -0.8
KKAR Karatay Array 125.25 304 *e*PKPdf **PKPdf** 13 52 38.5 -0.8
BRVK Borovoye 126.44 316*c i*PKIKP **PKPdf** 13 52 40.3 -0.9
BRVK pmax pmax
comp=Z,13nm,1.2s
BRVK Borovoye 126.44 316 *e*PKPdf **PKPdf** 13 52 40.0 -1.2
ZRNK Zerenda 127.21 316 *e*PKIKP **PKPdf** 13 52 41.2 -1.5
ZRNK Zerenda 127.21 316 *e*PKPdf **PKPdf** 13 52 41.1 -1.5
ABKAR Akbulak array 132.97 311 *e*PKPdf **PKPdf** 13 52 53.4 -0.4
ARU Arti 132.98 321 *i* PKIKP **PKPdf** 13 52 52.8 -0.7
ARU Arti 132.98 321 *e*PKIKP **PKPdf** 13 52 54.4 +0.9
GEYT Alibeck 133.87 296 PKP **PKPdf** 13 52 55.6 -0.2
comp=Z,2.6nm,0.5s,baz=233,slow=1.5,SNR=7.7
H10S3 ASCENSION HYDR 138.05 154 T T 16 28 34.9
baz=204,slow=75,SNR=41
H10S2 ASCENSION HYDR 138.05 154 T T 16 29 00.5
baz=204,slow=75,SNR=44
ARCES ARCESS Array B 138.06 348 PKhKP PKPpre 13 52 54.2
comp=Z,3.0nm,0.8s,baz=83,slow=1.5,SNR=11
ARCES PKP **PKPdf** 13 53 02.1 -0.6
comp=Z,1.2nm,0.4s,baz=101,slow=1.9,SNR=15
H10S1 ASCENSION HYDR 138.07 154 T T 16 29 01.7
baz=204,slow=75,SNR=45
H10N3 ASCENSION HYDR 139.13 153 T T 16 29 47.1
baz=203,slow=75,SNR=84
H10N1 ASCENSION HYDR 139.13 153 T T 16 29 48.4
baz=203,slow=75,SNR=64
H10N2 ASCENSION HYDR 139.15 153 T T 16 29 48.6
baz=203,slow=75,SNR=82
KLMR Klimovskoe 140.47 333 *e*PKIKP **PKPdf** 13 53 06.7 -0.5
KLMR pmax pmax
comp=Z,16nm,1.3s
RAYN Ar Rayn 141.47 271 *e*PKPdf **PKPdf** 13 53 08.6 -1.7
ZEI Tsey 144.70 303 *i* PKIKP **PKPab** 13 53 16.5 +2.1
ZEI pmax pmax
comp=Z,17nm,0.8s
FIA1 FINESS Array S 144.72 341 *e*PKPdf PKPbc 13 53 11.7 -2.0
FINES FINESS Array B 144.72 341 PKP PKPbc 13 53 12.1 -1.6
comp=Z,7.6nm,0.4s,baz=55,slow=3.6,SNR=92
GOF Gofitskoye 144.92 307*ll e*PKIKP **PKPbc** 13 53 15.7 +0.8
GOF pmax pmax
comp=Z,17nm,0.9s
OBN Obninsk 144.98 326*ce*PKIKP **PKPbc** 13 53 13.3 -1.4
OBN *e* 13 56 36.5
OBN *e*PPP PPP 13 59 44.2
OBN pmax pmax
comp=Z,25nm,0.7s
OBN pmax pmax
comp=Z,35nm,1.0s
OBN MLR MLR
comp=Z,112nm,19.0s
LPSR Galich'ya Gora 145.01 321 *e*PKIKP **PKPbc** 13 53 13.5 -1.4
LPSR pmax pmax
comp=Z,10.0nm,0.9s
KBZ Khabaz 145.28 305 PKPbc **PKPdf** 13 53 15.2 -1.1
comp=Z,4.1nm,0.8s,baz=145,slow=3.0,SNR=7.6
KIV Kislovodsk 145.39 305 *i* PKIKP **PKPdf** 13 53 15.6 -1.0
KIV pmax pmax
comp=Z,16nm,1.1s
KIV Kislovodsk 145.39 305 *e*PKPbc **PKPdf** 13 53 15.7 -1.0
VSR Storozhevoye 145.47 319 *e*PKIKP **PKPdf** 13 53 14.9 -1.5
VSR pmax pmax
comp=Z,20nm,0.9s
NEY Neytrino 145.49 304 *i* PKIKP **PKPdf** 13 53 16.9 0.0
VSU Vasula 146.86 337*c i*PKP2 **PKPdf** 13 53 19.0 +0.5
KBSD Kabsdagh 147.78 293 *i* P **PKPbc** 13 53 24.3 +0.6
NC303 NORSAR Array S 147.97 352 *e*PKPbc **PKPdf** 13 53 22.2 +1.9
NC405 NORSAR Array S 148.04 352 *e*PKPbc **PKPdf** 13 53 22.3 +1.9
SFNV Sufian 148.15 292 *i* P **PKPbc** 13 53 26.9 +2.1
NB201 NORSAR Array S 148.15 352 *e*PKPbc **PKPdf** 13 53 23.6 +2.9
NB2 NORSAR Subarra 148.17 352 PKP **PKPdf** 13 53 22.7 +2.0
comp=Z,49nm,1.7s,baz=11,slow=3.0
NB2 NORSAR Subarra 148.17 352 PKP **PKPdf** 13 53 22.7 +2.0
baz=11,slow=3.0
NOA NORSAR Array B 148.17 352 PKPbc **PKPdf** 13 53 21.5 +0.8
comp=Z,8.7nm,0.9s,baz=15,slow=4.5,SNR=12
NBO02 NORSAR Array S 148.20 353 *e*PKPbc **PKPdf** 13 53 22.9 +2.2
NBO00 NORSAR Array S 148.23 353 *e*PKPbc **PKPdf** 13 53 23.4 +2.6
NAO01 NORSAR Array S 148.40 352 *e*PKPbc **PKPdf** 13 53 23.4 +2.3
NC602 NORSAR Array S 148.43 352 *e*PKPbc **PKPdf** 13 53 23.0 +2.0
HFS Hagfors 148.70 349 PKPbc **PKPdf** 13 53 23.8 +2.3
comp=Z,5.1nm,0.4s,baz=241,slow=1.5,SNR=26
KSRV Kasrt alli 149.06 291 *i* P **PKPbc** 13 53 28.2 +1.2
IZAR Zarasai 149.08 334 *e*P **PKPdf** 13 53 25.4 +3.1
IZAR IAmb IAmb 13 53 40.3
comp=Z,13nm,0.9s
IDID Didziasalis 149.21 333 *e*P **PKPdf** 13 53 26.3 +3.8
ISAL Salakas 149.26 334 *e*P **PKPdf** 13 53 26.3 +3.7
ISAL IAmb IAmb 13 53 31.1
comp=Z,12nm,1.1s
IIGN Ignalina 149.39 333 *e*P **PKPdf** 13 53 26.7 +3.9
IIGN IAmb IAmb 13 53 38.2
comp=Z,8.0nm,0.6s
NACGM Naroch 149.49 332 *e* **PKPdf** 13 53 26.0 +3.1
KONO Kongsberg 149.71 353 *e*PKP2 **PKPdf** 13 53 26.8 +3.6
KONO Kongsberg 149.71 353 *e*PKPbc **PKPdf** 13 53 26.8 +3.6
ZALF Zalf 150.38 285 *i* P **PKPbc** 13 53 33.3 +2.9
ROOS tl_alroos 150.46 288 *i* P **PKPbc** 13 53 31.7 +1.0
SIM Simferopol' 151.03 310 *i* PKIKP **PKPbc** 13 53 31.8 +0.3
SIM pmax pmax
comp=Z,27nm,1.0s
AKASG Malin Array Be 151.15 324 PKPbc **PKPdf** 13 53 29.7 +4.0
comp=Z,14nm,0.9s,baz=22,slow=0.5,SNR=4.5
AKBB Malin Array Si 151.15 324 *e*PKIKP **PKPdf** 13 53 30.2 +4.5
AKBB Malin Array Si 151.15 324 *e*PKPbc **PKPdf** 13 53 30.1 +4.5
TOTH TOTAH 151.16 286 *i* P **PKPbc** 13 53 33.5 +1.2
KIEV Kiev 151.16 324 *i* PKIKP **PKPdf** 13 53 30.0 +4.3
KIEV *i* 13 53 33.7
KIEV Kiev 151.16 324 *e*PKPbc **PKPdf** 13 53 30.2 +4.6
AK11 Malin Array Si 151.19 324 *e*PKPbc **PKPbc** 13 53 30.6 -1.0
SUW Suwalki 151.56 334 *e*PKP **PKPbc** 13 53 32.0 -0.3
SUW Suwalki 151.56 334 *e*PKIKP **PKPbc** 13 53 32.1 -0.3
MMAI Mount Meron Ar 152.01 285 PKPbc **PKPbc** 13 53 34.8 +0.5
comp=Z,14nm,0.4s,baz=89,slow=7.3,SNR=9.4
BR131 Keskin Array S 152.85 300 *e*PKPbc **PKPbc** 13 53 35.1 -0.9
BRTR Keskin Array B 152.85 300 PKPbc **PKPbc** 13 53 35.1 -0.9
comp=Z,4.2nm,0.4s,baz=137,slow=4.2,SNR=30
ANTO Ankara 153.46 301 *e*PKIKP **PKPbc** 13 53 36.8 -0.4
ANTO Ankara 153.46 301 *e*PKPbc **PKPbc** 13 53 36.8 -0.4
BR231 Keskin MP Arra 153.47 300 *e*PKPbc **PKPbc** 13 53 35.9 -1.4
KWP Kalwaria Pacla 155.02 328 *e*PKP **PKPab** 13 53 54.5 -1.3
KWP Kalwaria Pacla 155.02 328 *e*PKP2 **PKPab** 13 53 54.5 -1.3
BUR08 Bucovina Ar. S 155.10 322 *e*PKPbc PKPdf 13 53 40.9 +9.2
KOLS Kolonicke sedl 155.71 328 *e*PKP2 **PKPab** 13 54 00.6 +1.8
KOLS Kolonicke sedl 155.71 328 *e*PKP **PKPab** 13 54 00.6 +1.8
OJC Ojcow 155.82 333 *e*PKP PKPdf 13 53 42.0 +10
OJC Ojcow 155.82 333 *e*PKIKP PKPdf 13 53 42.0 +10
STHS Stebnicka Huta 155.83 330 *e*PKP2 **PKPab** 13 53 58.6 -0.6
STHS Stebnicka Huta 155.83 330 *e*PKP **PKPab** 13 53 58.6 -0.6
UZH Uzhgorod 155.92 327 *e*PKIKP PKPdf 13 53 42.4 +10
UZH *e* 13 53 47.8
UZH *e* 13 53 57.6
CRVS Cervenica-Dubn 156.11 329 *e*PKP2 **PKPab** 13 53 59.3 -1.2
CRVS Cervenica-Dubn 156.11 329 *e*PKP **PKPab** 13 53 59.3 -1.2
KSP Ksiaz 156.58 338 *e*PKP **PKPab** 13 54 01.6 -0.8
KSP Ksiaz 156.58 338 *e*PKP2 **PKPab** 13 54 01.6 -0.8
KECS Kecovo 156.86 329 *e*PKP2 **PKPab** 13 54 06.9 +3.2
KECS Kecovo 156.86 329 *e*PKP **PKPab** 13 54 06.9 +3.2
UPC Upice 156.96 338 *e*PKPAB **PKPab** 13 54 03.1 -0.9
UPC Upice 156.96 338 *e*PKP2 **PKPab** 13 54 03.1 -0.9
DPC Dobruska-Polom 156.99 337 *e*PKPAB **PKPab** 13 54 03.5 -0.7
DPC Dobruska-Polom 156.99 337 *e*PKP2 **PKPab** 13 54 03.5 -0.7
CLL Collm 157.11 343 *i* PKPab **PKPab** 13 54 02.6 -2.0
comp=Z,15nm,1.1s
CLL *e* 13 54 06.0
CLL LmV 15 02 00.0
comp=Z,100nm,20.1s
CLL Collm 157.11 343 *i* PKP2 **PKPab** 13 54 02.6 -2.0
CLL pmax pmax
comp=Z,15nm,1.1s
BRG Berggiesshubel 157.26 341 *e*PKP PKPdf 13 53 47.9 +14
comp=Z,13nm,1.8s
BRG *e* 13 54 03.9
comp=Z,12nm,1.0s
BRG Berggiesshubel 157.26 341 *e*PKIKP PKPdf 13 53 47.9 +14
BRG *e* 13 54 03.9
BRG pmax pmax
comp=Z,13nm,1.8s
PVCC Panska Ves 157.39 340 *e*PKPAB **PKPab** 13 54 05.1 -0.8
PVCC Panska Ves 157.39 340 *e*PKP2 **PKPab** 13 54 05.1 -0.8
PSZ Piszkesteto 157.54 329 *e*PKP2 **PKPab** 13 54 06.0 -0.7
PSZ Piszkesteto 157.54 329 *e*PKPab **PKPab** 13 54 06.0 -0.7
VYHS Vyhne 157.56 331 *e*PKP2 **PKPab** 13 54 09.5 +2.8
VYHS Vyhne 157.56 331 *e*PKP **PKPab** 13 54 09.5 +2.8
GOPC GO Pecny, Ondr 157.87 339 *e*PKPAB **PKPab** 13 54 07.2 -0.8
GOPC GO Pecny, Ondr 157.87 339 *e*PKP2 **PKPab** 13 54 07.2 -0.8
PRU Pruhonice 157.88 340 *e*PKPAB **PKPab** 13 54 06.9 -1.1
PRU Pruhonice 157.88 340 *e*PKP2 **PKPab** 13 54 06.9 -1.1
NKC Novy Kostel 158.24 343 *e*PKPAB **PKPab** 13 54 08.5 -1.1
NKC Novy Kostel 158.24 343 *e*PKP2 **PKPab** 13 54 08.5 -1.1
KHC Kasperske Hory 158.93 340 *e*PKPAB **PKPab** 13 54 11.6 -1.0
KHC *ex* x 13 54 15.6
KHC Kasperske Hory 158.93 340 *e*PKP2 **PKPab** 13 54 11.6 -1.0
KHC Kasperske Hory 158.93 340 *e*PKPab **PKPab** 13 54 10.8 -1.8
GEC2 GERESS Array S 159.15 339 *e*PKP2 **PKPab** 13 54 12.1 -1.5
GEC2 GERESS Array S 159.15 339 *e*PKPab **PKPab** 13 54 12.1 -1.5
GERES GERESS Array B 159.15 339 PKPab **PKPab** 13 54 11.0 -2.6
comp=Z,0.5nm,0.3s,baz=27,slow=4.5,SNR=7.5
DAVOX Davos/Dischmat 162.08 344 PKPab **PKPab** 13 54 25.3 -1.3
comp=Z,4.3nm,0.8s,baz=146,slow=3.8,SNR=4.5
FUORN Ofenpass-Fuorn 162.14 343 *e*PKPab **PKPab** 13 54 25.9 -1.0
TORD Torodi Ar. Bea 163.49 176 PKP **PKPdf** 13 53 42.6 +0.4
comp=Z,1.6nm,1.1s,baz=162,slow=0.7,SNR=6.0

JMA 11 13:35:29.4,37.04N×140.63E,h9km±1km, M2.9, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.15**	**65**	P	Pg	13 35 32.9	+0.2
ONAJ				S	Sg	13 35 35.5	+0.6
JFK	**Kawauchi**	**0.38**	**31**	P	Pg	13 35 37.0	+0.1
JFK				S	Sg	13 35 42.3	+0.4
JHO	**Hitachi**	**0.43**	**187**	P	Pg	13 35 37.8	0.0
JHO				S	Sg	13 35 43.8	+0.3
JFT	**Otama**	**0.53**	**334**	P	Pg	13 35 40.0	+0.3
JFT				S	Sg	13 35 47.1	+0.4
JMM	**Marumori**	**0.83**	**9**	P	Pg	13 35 45.1	-0.4
JMM				S	Sg	13 35 56.3	-0.1
JOU	**Okura**	**1.32**	**1**	P	Pn	13 35 54.0	-0.1
JOU				S	Sb	13 36 11.5	0.0
JIO	**Ouri**	**1.52**	**22**	P	Pn	13 35 56.5	-0.3
JIO				S	Sn	13 36 16.1	-0.6
MAT	**Matsushiro**	**2.01**	**256**	P	Pn	13 36 04.7	+1.2
MAT				S	Sb	13 36 31.6	+0.4

*CSEM **11** 13:37:22.8, 58.39N×12.94E, h0km, ML1.0, Mining explosion.*

UPP 11 13:37:22.8,58.39N×12.94E, h0km, ML1.0, Mining explosion., Sweden

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
VANU	**Vaenersborg**	**0.47**	**283**	P	Pg	13 37 31.8	+0.1
VANU				S	Sg	13 37 37.7	-0.1
FKPU	**Falk**	**0.48**	**119**	P	Pg	13 37 32.0	+0.1
FKPU				S	Sg	13 37 38.4	+0.4
NASU	**Vaermlandsnaes**	**0.56**	**13**	P	Pg	13 37 33.3	-0.1
NASU				S	Sg	13 37 40.8	+0.2
BORU	**Boraas**	**0.76**	**187**	P	Pg	13 37 37.1	-0.3
FINU	**Finntorp**	**1.04**	**347**	P	Pg	13 37 42.1	-0.7
ASKU	**Askersund**	**1.11**	**62**	P	Pg	13 37 43.5	-0.6
ASKU				S	Sg	13 37 58.7	+0.3

JMA 11 13:40:59.7,36.97N×140.64E, h9km±1km, M2.8, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.18**	**44**	P	Pg	13 41 03.7	+0.1
ONAJ				S	Sg	13 41 06.6	+0.4
JHO	**Hitachi**	**0.36**	**189**	P	Pg	13 41 06.8	0.0
JHO				S	Sg	13 41 11.7	+0.1
JFK	**Kawauchi**	**0.44**	**25**	S	Sg	13 41 14.0	-0.1
JFT	**Otama**	**0.60**	**336**	P	Pg	13 41 11.3	0.0
JFT				S	Sg	13 41 19.4	+0.2
JMM	**Marumori**	**0.90**	**8**	P	Pg	13 41 16.8	-0.3
JMM				S	Sg	13 41 28.4	-0.4
JOU	**Okura**	**1.39**	**1**	P	Pn	13 41 25.4	0.0
JOU				S	Sb	13 41 43.6	-0.2
JIO	**Ouri**	**1.58**	**21**	S	Sb	13 41 49.0	-0.3
MAT	**Matsushiro**	**2.00**	**258**	P	Pn	13 41 34.0	+0.3
MAT				S	Sb	13 42 00.4	-0.9

*SCB **11** 13:43:18.2±1.0, 22.35S×66.33W, h281km±7km, Ml3.6/2, Error ellipse: s-maj=28.3km s-min=11.4km az=39.0*
*SJA **11** 13:43:19.8±0.5, 22.47S×65.99W, h301km±5km, ML2.8, MW3.3*
*IDC **11** 13:43:21.7±1.9, 22.33S×65.76W, h257km±15km, mb3.4/5, mb1 3.6/9, mb1mx3.4/37, mbtmp4.1/9, Error ellipse: s-maj=21.3km s-min=16.0km az=29.0*
*ISCJB **11** 13:43:22.6±0.5, 22.39S±0.03×65.98W±0.05, h251km, mb3.9/7, Error ellipse: s-maj=6.2km s-min=4.4km az=155.3*
*GUC **11** 13:43:22.9±0.4, 22.31S×66.43W, h290km, ML4.8*
ISC 11 13:43:21.6±0.6, 22.34S±0.05×65.99W±0.05, h251km, n34, s29/50, mb4.2/7, 15C-1D, Jujuy Province

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
HJA	**Humahuaca**	**1.02**	**148**	*i* P	**Pn**	**13 44 00.9**	**+3.7**
HJA				*i* S	**S**	**13 44 31.0**	**+5.7**
HJA				IAML		13 44 38.2	
MOCB	**Mochara**	**1.14**	**17**	*e*Pn	**Pn**	**13 44 01.6**	**+3.5**
MOCB				*e*Sn	**S**	**13 44 30.9**	**+4.1**
AZAP	**Zapla**	**2.06**	**156**	*i* P	**Pn**	**13 44 06.8**	**+1.9**
ALOL	**LOMAS DE OLMED**	**2.36**	**129**	*i* P	**Pn**	**13 44 09.1**	**+1.5**
SLA	**San Lorenzo**	**2.41**	**169**	*i* P	**Pn**	**13 44 09.8**	**+1.7**
SLA				*i* S	**S**	**13 44 46.4**	**+1.4**
SLA				IAML		13 45 08.2	
comp=Z,18nm,0.6s							
PB06	**IPOC Station P**	**3.33**	**263**	⇑*i* P	**Pn**	**13 44 19.9**	**+2.0**
PB06				*i* S	**S**	**13 45 04.3**	**+1.8**
PB06				IAML		13 45 07.6	
comp=N,911nm,0.1s							
PB01	**IPOC Station P**	**3.50**	**291**	⇑*i* P	**Pn**	**13 44 22.1**	**+2.3**
PB01				*i* S	**S**	**13 45 07.1**	**+1.3**
PB08	**IPOC Station P**	**3.67**	**306**	⇑*i* P	**Pn**	**13 44 25.4**	**+3.3**
PB08				*i* S	**S**	**13 45 12.5**	**+2.5**
PB08				IAML		13 45 15.1	
comp=E,425nm,0.3s							
FSA	**Cafayete**	**3.75**	**180**	*i* P	**Pn**	**13 44 22.5**	**-0.2**
PB04	**IPOC Station P**	**3.85**	**269**	⇑*i* P	**Pn**	**13 44 25.9**	**+2.1**
PB04				*i* S	**S**	**13 45 13.1**	**-0.1**
HMBC	**Humberstone**	**4.17**	**299**	⇑*i* P	**Pn**	**13 44 29.1**	**+1.5**
HMBC				*i* S	**S**	**13 45 19.9**	**-0.1**
PB10	**IPOC Station P**	**4.36**	**254**	⇑*i* P	**Pn**	**13 44 30.8**	**+1.1**
PB10				*i* S	**S**	**13 45 22.5**	**-1.3**
MNMC	**Minye Minye**	**4.64**	**313**	⇑*i* P	**Pn**	**13 44 35.6**	**+2.2**
MNMC				*i* S	**S**	**13 45 32.3**	**+1.7**
BBOJ	**La Paz, Jacaqu**	**5.73**	**338**	⇑*i* Pn	**Pn**	**13 44 50.3**	**+3.4**
BBOJ				⇑*i* Sn	**S**	**13 45 55.9**	**+0.8**
BBOE	**La Paz, Chanca**	**5.81**	**341**	⇑*i* Pn	**Pn**	**13 44 51.1**	**+3.1**
BBOD	**La Paz, Gloria**	**6.18**	**336**	⇑*i* Pn	**Pn**	**13 44 54.4**	**+1.8**
BBOD				⇑*i* Sn	**S**	**13 46 04.9**	**-0.5**
comp=E,11nm,0.5s							
LPAZ	**La Paz**	**6.35**	**341**	P	**Pn**	**13 44 57.0**	**+2.2**
comp=E,4.2nm,0.3s,baz=140,slow=5.5,SNR=46							
LPAZ				S	**S**	**13 46 09.0**	**-0.4**
comp=E,0.5nm,0.3s,baz=301,slow=18,SNR=17							
LPAZ	**La Paz**	**6.35**	**341**	⇑*i* Pn	**Pn**	**13 44 56.9**	**+2.1**
LPAZ				eSn	**S**	**13 46 10.4**	**+1.0**
BBOB	**La Paz, Bander**	**6.49**	**342**	⇑*i* Pn	**Pn**	**13 44 58.4**	**+1.9**
BBOB				⇑*i* Sn	**S**	**13 46 12.5**	**+0.1**
comp=E,29nm,0.7s							
SIV	**San Ignacio**	**7.84**	**37**	P	**Pn**	**13 45 12.7**	**-0.3**
comp=E,4.0nm,0.3s,baz=230,slow=15,SNR=36							
SIV	**San Ignacio**	**7.84**	**37**	⇓*i* P	**Pn**	**13 45 12.9**	**-0.1**
BDFB	**Brasilia**	**18.25**	**72**	P	**P**	**13 47 15.6**	**-1.6**
comp=E,1.4nm,0.3s,baz=240,slow=14,SNR=9.9							
PLCA	**Paso Flores**	**18.73**	**191**	P	**P**	**13 47 21.9**	**-0.1**
comp=E,0.3nm,0.3s,baz=48,slow=8.3,SNR=5.2							
TXAR	**Lajitas Array**	**62.89**	**323**	P	**P**	**13 53 21.5**	**+0.1**
comp=E,0.2nm,0.6s,baz=152,slow=8.2,SNR=3.9							
LIC	**Lamto**	**66.05**	**72**	*e*PKIKP	**P**	**13 53 42.2**	**+0.1**
comp=E,20nm,0.9s							
TIC	**Toumodi**	**66.25**	**72**	*e*PKIKP	**P**	**13 53 41.8**	**-1.6**
KIC	**Kosan Boka**	**66.36**	**72**	*e*PKIKP	**P**	**13 53 42.0**	**-2.1**
comp=E,8.7nm,0.6s							
DBIC	**Dimbokro**	**66.40**	**72**	P	**P**	**13 53 42.5**	**-1.8**
comp=E,2.7nm,0.6s,baz=232,slow=7.4,SNR=14							
TORD	**Torodi Ar. Bea**	**75.11**	**69**	P	**P**	**13 54 33.6**	**-3.0**
comp=E,3.1nm,0.3s,baz=177,slow=3.9,SNR=68							
PDAR	**Pinedale Array**	**76.21**	**328**	P	**P**	**13 54 43.5**	**+0.9**
comp=E,0.2nm,0.4s,baz=116,slow=6.1,SNR=3.4							
YKA	**Yellowknife Ar**	**92.90**	**340**	P	**P**	**13 56 05.6**	**+0.1**
comp=E,0.3nm,0.7s,baz=129,slow=4.2,SNR=8.1							
ASAR	**Alice Springs**	**130.34**	**204**	PKP	**PKPdf**	**14 02 02.5**	**-0.3**
comp=E,0.3nm,0.6s,baz=127,slow=1.7,SNR=6.5							
ASAR				SKPbc	**SKPbc**	**14 05 00.7**	**-1.6**
comp=E,0.5nm,0.5s,baz=145,slow=3.2,SNR=16							
WRA	**Warramunga Arr**	**133.51**	**207**	PKP	**PKPdf**	**14 02 08.6**	**-0.2**
comp=E,0.3nm,0.4s,baz=153,slow=1.9,SNR=8.6							
MKAR	**Makanchi Array**	**144.66**	**39**	PKP	**PKPab**	**14 02 27.6**	**-0.1**
comp=E,0.9nm,0.4s,baz=342,slow=3.1,SNR=20							

JMA 11 13:44:33.9,36.96N×140.64E, h11km±1km, M2.8, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.19**	**42**	P	Pg	13 44 38.3	+0.2
ONAJ				S	Sg	13 44 41.2	+0.3
JHO	**Hitachi**	**0.35**	**189**	P	Pg	13 44 41.0	+0.1
JHO				S	Sg	13 44 46.0	+0.3
JFK	**Kawauchi**	**0.45**	**25**	P	Pg	13 44 42.6	-0.1
JFK				S	Sg	13 44 48.6	-0.1
JFT	**Otama**	**0.61**	**337**	P	Pg	13 44 45.8	+0.1
JFT				S	Sg	13 44 53.8	0.0
JMM	**Marumori**	**0.91**	**8**	P	Pg	13 44 50.8	-0.7
JMM				S	Sg	13 45 02.6	-0.8
JOU	**Okura**	**1.40**	**1**	P	Pn	13 45 00.0	-0.1
JOU				S	Sb	13 45 18.1	0.0
JIO	**Ouri**	**1.59**	**20**	P	Pn	13 45 02.4	+0.4
JIO				S	Sn	13 45 23.0	+0.4
MAT	**Matsushiro**	**2.00**	**259**	P	Pn	13 45 08.5	+0.9
MAT				S	Sb	13 45 34.5	-0.7

JMA 11 13:45:38.7,37.01N×140.75E, h8km±1km, M3.1, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.10**	**23**	P	Pg	13 45 41.1	0.0
ONAJ				S	Sg	13 45 43.0	+0.2
JFK	**Kawauchi**	**0.37**	**16**	P	Pg	13 45 46.1	+0.1
JFK				S	Sg	13 45 51.2	+0.3
JHO	**Hitachi**	**0.42**	**200**	P	Pg	13 45 47.0	0.0
JHO				S	Sg	13 45 52.9	+0.4
JFT	**Otama**	**0.60**	**327**	P	Pg	13 45 50.6	+0.2
JFT				S	Sg	13 45 58.5	+0.2
JMM	**Marumori**	**0.85**	**2**	P	Pg	13 45 55.0	-0.2
JMM				S	Sg	13 46 06.2	-0.1
JOU	**Okura**	**1.35**	**357**	S	Sb	13 46 21.8	-0.1
JIO	**Ouri**	**1.52**	**18**	S	Sn	13 46 25.3	-0.8

*NIED **11** 13:46:00, 36.80N×138.60E, h5km, Mw4.0 Best double couple: M₀9.62000×10¹⁴ NP1:φs108.00000°, δ71.00000°, λ-178.00000°. NP2:φs18.00000°, δ88.00000°, λ-19.00000°.*
*IDC **11** 13:46:05.8±0.8, 36.61N×138.77E, h0km, mb3.5/6, mb1 3.8/10, mb1mx3.6/64, mbtmp3.7/10, ML3.4/3, MS3.2/6, Ms1 3.2/6, ms1mx2.9/45, Error ellipse: s-maj=20.8km s-min=7.6km az=161.0*
*ISCJB **11** 13:46:06.7±0.5, 36.81N±0.03×138.58E±0.04, h10km±4km, mb3.5/6, MS3.1/4, Error ellipse: s-maj=5.9km s-min=4.2km az=39.8*
*JMA **11** 13:46:06.7, 36.83N×138.58E, h0km, M3.8*
JMA Felt III J1.
ISC 11 13:46:07.2±1.0, 36.73N±0.04×138.70E±0.04, h7km±8km, n25, σ1 9 43/27, mb3.6/6, MS3.1/4, 3C-3D, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JGK	**Kuni**	**0.18**	**195**	⇓P	Pg	13 46 12.7	+1.9
JGK				S	**Sg**	**13 46 16.9**	**+3.7**
MJAR	**Matsushiro Arr**	**0.43**	**244**	Pg	**Pg**	**13 46 14.0**	**-1.6**
678nm,0.3s,baz=41,slow=19,SNR=986							
MJAR				Lg	Lg	13 46 19.6	
1μm,0.3s,baz=44,slow=29,SNR=117							
MAT	**Matsushiro**	**0.44**	**244**	P	**Pg**	**13 46 14.7**	**-0.9**
MAT				S	**Sg**	**13 46 20.1**	**-1.3**
MAT	**Matsushiro**	**0.44**	**244**	P	**Pg**	**13 46 14.7**	**-0.9**
MAT				S	**Sg**	**13 46 20.1**	**-1.3**
JKT	**Katashina**	**0.45**	**85**	⇑P	**Pg**	**13 46 17.3**	**-0.1**
JKT				S	**Sb**	**13 46 24.6**	**+0.3**
JHK	**Hiroka**	**0.58**	**27**	⇑P	**Pg**	**13 46 17.3**	**-1.0**
JHK				S	**Sg**	**13 46 24.6**	**-1.2**
JNG	**Nsakai**	**0.58**	**236**	⇑P	**Pg**	**13 46 17.7**	**-0.7**
JNG				S	**Sg**	**13 46 25.3**	**-0.6**
JAG	**Ashikaga**	**0.68**	**116**	P	**Pn**	**13 46 22.8**	**-0.4**
JRY

mb3.9/2, Error ellipse: s-maj=10.8km s-min=4.9km az=20.5

JMA ***11*** *13:48:39.0, 37.02N×140.68E, h11km±1km, M3.4 Broadband fault plane solution: P waves. NP1: φs67.00000°, δ54.00000°, λ-91.00000°. NP2:φs249.00000°, δ36.00000°, λ-88.00000°. Principal axes: T Plg9.0000°, Azm158.0000°; N Plg1.0000°, Azm68.0000°; P Plg81.0000°, Azm332.0000°;*

ISC 11 13:48:38.6±1.1, 37.00N±0.04×140.73E±0.06, h12km±7km, n11, σ0.74/20, 5C, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.12**	**28**	P	**Pb**	**13 48 42.1**	**-0.7**
ONAJ				S	**Sb**	**13 48 44.4**	**+0.4**
JFK	**Kawauchi**	**0.38**	**17**	⇑P	**Pb**	**13 48 46.5**	**-0.9**
JFK				S	**Sg**	**13 48 51.7**	**+0.2**
JHO	**Hitachi**	**0.41**	**199**	⇑P	**Pb**	**13 48 47.1**	**-0.7**
JHO				S	**Sb**	**13 48 52.9**	**-1.1**
JFT	**Otama**	**0.60**	**329**	⇑P	**Pg**	**13 48 50.1**	**-0.3**
JFT				S	**Sg**	**13 48 57.9**	**-0.6**
JMM	**Marumori**	**0.87**	**3**	⇑P	**Pb**	**13 48 54.8**	**-0.8**
JMM				S	**Sg**	**13 49 06.5**	**-0.2**
JOU	**Okura**	**1.36**	**358**	⇑P	**Pb**	**13 49 03.7**	**-0.4**
JOU				S	**Sb**	**13 49 21.7**	**+0.2**
JIO	**Ouri**	**1.53**	**18**	P	**Pb**	**13 49 05.9**	**-1.0**
JIO				S	**Sb**	**13 49 26.1**	**-0.2**
MJAR	**Matsushiro Arr**	**2.08**	**258**	Pn	**Pn**	**13 49 14.4**	**+1.1**
	8.7nm,0.3s,baz=77,slow=15,SNR=11						
MJAR				Sn	**Sb**	**13 49 42.0**	**0.0**
	8.4nm,0.3s,baz=91,slow=26,SNR=8.8						
MAT	**Matsushiro**	**2.08**	**258**	P	**Pn**	**13 49 14.2**	**+0.9**
MAT				S	**Sb**	**13 49 41.6**	**-0.4**
WRA	**Warramunga Arr**	**56.95**	**187**	P	**P**	**13 58 24.1**	**+0.2**
	1.2nm,0.6s,baz=4.0,slow=7.3,SNR=19						
ASAR	**Alice Springs**	**60.68**	**187**	P	**P**	**13 58 50.6**	**+0.9**
	0.5nm,0.8s,baz=8.6,slow=6.0,SNR=7.7						

JMA 11 13:51:18.3, 36.95N×140.74E, h13km±1km, M3.6, 3C-1D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.16**	**17**	⇑P	Pg	13 51 22.2	0.0
ONAJ				S	Sg	13 51 25.0	+0.2
JHO	**Hitachi**	**0.36**	**202**	⇑P	Pg	13 51 25.7	0.0
JHO				S	Sg	13 51 30.6	0.0
JFK	**Kawauchi**	**0.43**	**14**	⇑P	Pg	13 51 26.7	-0.2
JFK				S	Sg	13 51 32.7	0.0
JFT	**Otama**	**0.65**	**331**	⇓P	Pg	13 51 31.0	0.0
JFT				S	Sg	13 51 39.9	+0.2
JMM	**Marumori**	**0.92**	**3**	P	Pg	13 51 35.2	-0.8
JMM				S	Sg	13 51 47.1	-0.9
JOU	**Okura**	**1.41**	**358**	P	Pb	13 51 44.8	+0.2
JOU				S	Sb	13 52 02.7	+0.2
JIO	**Ouri**	**1.58**	**18**	P	Pn	13 51 46.0	0.0
JIO				S	Sn	13 52 05.8	-0.4

JMA 11 13:54:25.8, 36.96N×140.71E, h7km±1km, M3.1, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.16**	**27**	P	Pg	13 54 29.3	+0.2
ONAJ				*e*S	Sg	13 54 32.2	+0.8
JHO	**Hitachi**	**0.37**	**198**	P	Pg	13 54 33.0	+0.1
JHO				S	Sg	13 54 38.1	+0.3
JFK	**Kawauchi**	**0.43**	**18**	P	Pg	13 54 34.2	+0.1
JFT	**Otama**	**0.63**	**332**	P	Pg	13 54 38.2	+0.2
JFT				S	Sg	13 54 46.6	+0.4
JMM	**Marumori**	**0.91**	**4**	P	Pg	13 54 42.7	-0.5
JMM				S	Sg	13 54 54.9	-0.1
JOU	**Okura**	**1.40**	**359**	P	Pn	13 54 51.9	+0.1
JOU				S	Sb	13 55 10.2	-0.3
JIO	**Ouri**	**1.57**	**19**	P	Pn	13 54 53.8	-0.4
JIO				S	Sn	13 55 14.5	-0.3
MAT	**Matsushiro**	**2.05**	**259**	P	Pn	13 55 01.5	+0.7
MAT				S	Sb	13 55 29.1	-0.1

ISCJB ***11*** *13:58:46.6±0.6, 37.03N±0.04×140.78E±0.09, h15km±5km, mb3.4/2, Error ellipse: s-maj=13.1km s-min=5.0km az=20.4*

IDC ***11*** *13:58:46.6±2.6, 36.84N×140.64E, h0km, mb3.4/2, mb1 3.7/2, mb1mx3.1/60, mbtmp3.4/2, Error ellipse: s-maj=44.3km s-min=18.4km az=9.0*

JMA ***11*** *13:58:47.0, 37.07N×140.67E, h8km±1km, M3.2*

ISC 11 13:58:46.9±0.9, 37.07N±0.03×140.72E±0.06, h12km±7km, n10, σ0.48/16, 3C, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.07**	**63**	⇑P	**Pg**	**13 58 49.5**	**0.0**
ONAJ				S	**Sg**	**13 58 51.4**	**0.0**
JHO	**Hitachi**	**0.47**	**195**	P	**Pg**	**13 58 56.1**	**-0.1**
JHO				S	**Sg**	**13 59 02.1**	**-0.3**
JFT	**Otama**	**0.54**	**326**	⇑P	**Pg**	**13 58 57.4**	**-0.1**
JFT				S	**Sg**	**13 59 04.5**	**-0.2**
JMM	**Marumori**	**0.80**	**4**	P	**Pg**	**13 59 02.1**	**-0.2**
JMM				S	**Sg**	**13 59 12.7**	**-0.1**
JOU	**Okura**	**1.29**	**358**	P	**Pb**	**13 59 11.4**	**+0.2**
JOU				S	**Sg**	**13 59 28.4**	**-0.2**
JIO	**Ouri**	**1.47**	**20**	⇑P	**Pb**	**13 59 13.7**	**-0.4**
JIO				S	**Sb**	**13 59 32.9**	**+0.1**
MJAR	**Matsushiro Arr**	**2.08**	**256**	Pn	**Pn**	**13 59 22.6**	**+1.0**
	4.1nm,0.3s,baz=82,slow=16,SNR=11						
MJAR				Lg	Lg	13 59 47.7	
	6.4nm,0.3s,baz=76,slow=25,SNR=12						
MAT	**Matsushiro**	**2.08**	**256**	P	Pn	13 59 12.6	-9.0
MAT				S	**Sb**	**13 59 49.8**	**-0.6**
WRA	**Warramunga Arr**	**57.02**	**187**	P	**P**	**14 08 31.8**	**-0.8**
	0.5nm,0.6s,baz=3.5,slow=7.2,SNR=8.5						
ASAR	**Alice Springs**	**60.75**	**187**	P	**P**	**14 08 58.8**	**+0.4**
	0.1nm,0.6s,baz=21,slow=12,SNR=3.4						

NIED ***11*** *13:59:00, 36.90N×140.70E, h5km, Mw3.9 Best double couple: Mw7.06000×10^14 NP1:φs121.00000°, δ41.00000°, λ-85.00000°. NP2:φs294.00000°, δ49.00000°, λ-95.00000°.*

ISCJB ***11*** *13:59:50.4±0.6, 36.94N±0.03×140.71E±0.05, h17km±4km, mb3.9/17, MS2.9/1, Error ellipse: s-maj=6.7km s-min=4.7km az=19.8*

JMA ***11*** *13:59:50.6, 36.94N×140.67E, h7km±1km, M4.2 Broadband fault plane solution: P waves. NP1: φs285.00000°, δ54.00000°, λ-104.00000°. NP2: φs128.00000°, δ38.00000°, λ-72.00000°. Principal axes: T Plg8.0000°, Azm25.0000°; N Plg11.0000°, Azm293.0000°; P Plg76.0000°, Azm151.0000°;*

JMA Felt II J1.

IDC ***11*** *13:59:54.6±3.9, 36.88N×140.43E, h33km±30km, mb3.7/17, mb1 3.9/20, mb1mx3.7/65, mbtmp3.9/20, ML2.4/2, MS3.1/1, Ms1 3.1/1, ms1mx2.4/45 Error ellipse: s-maj=20.0km s-min=14.6km az=82.0*

ISC 11 13:59:50.8±1.1, 36.95N±0.03×140.64E±0.04, h7km±7km, n35, σ0.87/38, mb3.9/17, 6C, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.20**	**39**	⇑P	**Pg**	**13 59 54.7**	**-0.2**
ONAJ				S	**Sg**	**13 59 57.7**	**+0.1**
JHO	**Hitachi**	**0.34**	**190**	⇑P	**Pg**	**13 59 57.4**	**-0.1**
JHO				S	**Sg**	**14 00 02.0**	**0.0**
JSB	**Shiboa**	**0.58**	**272**	⇑P	**Pb**	**14 00 03.0**	**-0.3**
JSB				S	**Sb**	**14 00 11.5**	**-0.3**
JFT	**Otama**	**0.62**	**337**	⇑P	**Pg**	**14 00 02.9**	**+0.1**
JFT				S	**Sg**	**14 00 11.6**	**+0.7**
JFY	**Yanaizu**	**0.88**	**302**	⇑P	**Pg**	**14 00 07.8**	**+0.1**
JFY				S	**Sg**	**14 00 19.5**	**+0.4**
JMM	**Marumori**	**0.93**	**7**	⇑P	**Pg**	**14 00 07.7**	**-0.9**
JMM				S	**Sg**	**14 00 20.3**	**-0.4**
MJAR	**Matsushiro Arr**	**2.00**	**259**	Pn	**Pn**	**14 00 25.0**	**0.0**
	43nm,0.3s,baz=95,slow=16,SNR=63						
MJAR				Lg	Lg	14 00 51.9	
	77nm,0.3s,baz=341,slow=25,SNR=5.5						
MAT	**Matsushiro**	**2.00**	**259**	P	**Pn**	**14 00 25.7**	**+0.7**
MAT				S	**Sb**	**14 00 52.2**	**-0.4**
JHJ	**Hachijo jima 2**	**3.88**	**191**	Pn	**Pn**	**14 00 51.1**	**+0.1**
	32nm,0.3s,baz=284,slow=2.6,SNR=9.1						
JHJ				Sn	**Sn**	**14 01 37.9**	**+1.1**
	37nm,0.3s,baz=246,slow=20,SNR=4.4						
USRK	**Ussuriysk Ar.**	**9.78**	**320**	Pn	**Pn**	**14 02 13.3**	**+1.4**
	0.1nm,0.3s,baz=108,slow=18,SNR=2.5						
JCJ	**Chichijima**	**9.91**	**172**	Pn	Pn	14 02 08.8	-4.9
	8.2nm,0.3s,baz=286,slow=20,SNR=4.3						
KSRS	**Korea Array**	**10.16**	**277**	Pn	**Pn**	**14 02 17.6**	**+0.5**
	0.1nm,0.3s,baz=92,slow=13,SNR=3.6						
YAK	**Yakutsk**	**26.02**	**348**	LR	LR	14 16 22.7	
	comp=Z,35nm,18.5s,baz=250,slow=38						
SEY	**Seymchan**	**27.00**	**12**	P	**P**	**14 05 34.5**	**+1.5**
	1.3nm,0.7s,baz=123,slow=22,SNR=4.2						
SONM	**Songino Array**	**27.32**	**304**	P	**P**	**14 05 34.7**	**-1.6**
	1.4nm,0.7s,baz=99,slow=8.8,SNR=6.7						
H11S1	**WAKE ISLAND Hy**	**29.34**	**122**	T	T	14 36 25.8	
	baz=314,slow=76,SNR=77						
H11S3	**WAKE ISLAND Hy**	**29.34**	**122**	T	T	14 36 25.8	
	baz=314,slow=76,SNR=54						
H11S2	**WAKE ISLAND Hy**	**29.35**	**122**	T	T	14 36 29.7	
	baz=314,slow=76,SNR=51						
ZALV	**Zalesovo Beam**	**41.52**	**312**	P	**P**	**14 07 37.8**	**-0.8**
	0.9nm,0.4s,baz=92,slow=10,SNR=4.8						
MKAR	**Makanchi Array**	**43.64**	**302**	P	**P**	**14 07 54.6**	**-1.4**
	0.6nm,0.5s,baz=82,slow=9.7,SNR=9.2						
KURBB	**Kurchatov Arra**	**45.57**	**308**	P	**P**	**14 08 09.7**	**-1.6**
	1.1nm,0.4s,baz=82,slow=7.7,SNR=16						
ILAR	**Eielson Array**	**49.90**	**32**	P	**P**	**14 08 44.6**	**0.0**
	0.5nm,0.6s,baz=267,slow=5.4,SNR=8.5						
BVAR	**Borovoye Array**	**50.17**	**312**	P	**P**	**14 08 45.5**	**-1.4**
	0.8nm,0.6s,baz=81,slow=9.2,SNR=5.4						
INK	**Inuvik**	**54.74**	**27**	P	**P**	**14 09 21.6**	**+1.1**
	0.5nm,0.5s,baz=282,slow=4.4,SNR=5.4						
WRA	**Warramunga Arr**	**56.89**	**187**	P	**P**	**14 09 35.2**	**-1.3**
	3.7nm,0.5s,baz=3.0,slow=7.3,SNR=61						
ASAR	**Alice Springs**	**60.62**	**187**	P	**P**	**14 10 01.6**	**-0.7**
	2.2nm,0.8s,baz=9.5,slow=5.9,SNR=28						
ARCES	**ARCESS Array B**	**63.86**	**339**	P	**P**	**14 10 24.2**	**+0.6**
	1.6nm,0.8s,baz=71,slow=9.6,SNR=3.8						
YKA	**Yellowknife Ar**	**64.19**	**30**	P	**P**	**14 10 26.8**	**+0.9**
	0.4nm,0.7s,baz=304,slow=6.8,SNR=9.7						
FINES	**FINESS Array B**	**68.60**	**332**	P	**P**	**14 10 53.1**	**-1.0**
	2.0nm,0.8s,baz=64,slow=8.9,SNR=6.2						
HFS	**Hagfors**	**73.91**	**335**	P	**P**	**14 11 26.2**	**-0.1**
	1.1nm,0.8s,baz=85,slow=4.9,SNR=5.6						
NB2	**NORSAR Subarra**	**74.03**	**337**	P	**P**	**14 11 27.6**	**+0.6**
	comp=Z,0.6nm,0.6s,baz=41,slow=5.9						
NOA	**NORSAR Array B**	**74.03**	**337**	P	**P**	**14 11 27.6**	**+0.6**
	comp=Z,0.9nm,0.6s,baz=40,slow=5.9,SNR=3.8						
PDAR	**Pinedale Array**	**78.17**	**45**	P	**P**	**14 11 52.4**	**+1.2**
	comp=Z,0.3nm,0.5s,baz=270,slow=2.8,SNR=4.1						
TXAR	**Lajitas Array**	**90.66**	**52**	P	**P**	**14 12 54.1**	**-0.4**
	comp=Z,0.5nm,0.9s,baz=278,slow=2.3,SNR=4.2						
LPAZ	**La Paz**	**147.27**	**59**	PKPbc	**PKPbc**	**14 19 35.8**	**-0.5**
	comp=Z,1.9nm,0.6s,baz=23,slow=5.2,SNR=8.5						

NIED ***11*** *14:02:00, 36.90N×140.70E, h5km, Mw4.0 Best double couple: Mw1.03000×10^15 NP1:φs350.00000°, δ28.00000°, λ-90.00000°. NP2:φs170.00000°, δ62.00000°, λ-90.00000°.*

IDC ***11*** *14:02:03.8±0.5, 36.88N×140.66E, h0km, mb4.0/19, mb1 4.1/24, mb1mx4.0/65, mbtmp4.0/24, ML3.7/2, MS3.3/2, Ms1 3.3/2, ms1mx2.6/45, Error ellipse: s-maj=13.2km s-min=11.7km az=151.0*

ISCJB ***11*** *14:02:05.2±0.6, 36.89N±0.03×140.76E±0.05, h20km±3km, mb4.0/27, MS3.9/3, Error ellipse: s-maj=6.3km s-min=4.6km az=21.5*

JMA ***11*** *14:02:05.8, 36.91N×140.68E, h8km±1km, M4.1*

JMA Felt II J1.

NEIC ***11*** *14:02:07.6±2.1, 36.88N×140.70E, h24km±15km, mb4.2/4, Error ellipse: s-maj=8.9km s-min=6.3km az=90.0*

ISC 11 14:02:05.8±0.9, 36.89N±0.03×140.71E±0.04, h13km±5km, n62, σ1.04/67, mb4.1/27, MS4.0/3, 4C, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.22**	**19**	⇑P	**Pg**	**14 02 10.4**	**-0.3**
ONAJ				S	**Sg**	**14 02 14.0**	**0.0**
JHO	**Hitachi**	**0.30**	**201**	⇑P	**Pg**	**14 02 11.9**	**-0.2**
JHO				S	**Sg**	**14 02 16.2**	**-0.1**
JSB	**Shiboa**	**0.64**	**277**	⇑P	**Pg**	**14 02 18.3**	**+0.1**
JSB				S	**Sg**	**14 02 27.0**	**+0.4**
JFT	**Otama**	**0.69**	**335**	P	**Pg**	**14 02 19.0**	**-0.2**
JFT				S	**Sg**	**14 02 27.9**	**-0.5**
JFY	**Yanaizu**	**0.95**	**303**	⇑P	**Pg**	**14 02 23.4**	**-0.7**
JFY				S	**Sg**	**14 02 35.4**	**-1.2**
JMM	**Marumori**	**0.97**	**4**	P	**Pb**	**14 02 24.2**	**-0.3**
JMM				S	**Sb**	**14 02 36.4**	**-0.9**
MJAR	**Matsushiro Arr**	**2.04**	**261**	Pn	**Pn**	**14 02 40.2**	**+0.4**
	85nm,0.3s,baz=76,slow=15,SNR=28						
MJAR				Lg	Lg	14 03 06.3	
	112nm,0.3s,baz=86,slow=27,SNR=13						
MJAR				LR	LR	14 03 33.8	
	comp=Z,237nm,18.8s,baz=75,slow=46						
MAJO	**Matsushiro**	**2.04**	**261**	*e*Pn	**Pn**	**14 02 41.1**	**+1.3**
MAT	**Matsushiro**	**2.04**	**261**	P	**Pn**	**14 02 40.8**	**+1.0**
MAT				S	**Sb**	**14 03 07.3**	**-0.7**
INU	**Inuyama**	**3.36**	**244**	*e*Pn	**Pn**	**14 02 60.0**	**+2.0**
JHJ	**Hachijo jima 2**	**3.84**	**192**	Pn	**Pn**	**14 03 05.0**	**+0.4**
	28nm,0.3s,baz=45,slow=20,SNR=6.6						
JHJ2	**Mitsune**	**3.84**	**191**	*e*Pn	**Pn**	**14 03 05.9**	**+1.3**
CBIJ	**Chichi jima**	**9.85**	**172**	*e*Pn	**Pn**	**14 04 24.9**	**-2.2**
JCJ	**Chichijima**	**9.85**	**172**	Pn	**Pn**	**14 04 24.5**	**-2.6**
	10nm,0.3s,baz=296,slow=23,SNR=5.6						
USRK	**Ussuriysk Ar.**	**9.86**	**320**	Pn	**Pn**	**14 04 28.7**	**+1.6**
	0.2nm,0.3s,baz=139,slow=15,SNR=9.2						
YSS	**Yuzh-Sakhalins**	**10.17**	**8**	*e*Pn	**Pn**	**14 04 31.7**	**+0.4**
	15nm,0.8s						
KSRS	**Korea Array**	**10.22**	**277**	Pn	**Pn**	**14 04 33.6**	**+1.6**
	baz=90,slow=15,SNR=2.7						
KSRS				LR	LR	14 08 13.2	
	comp=Z,84nm,18.8s,baz=79,slow=36						
KSAR	**Wonju Array Be**	**10.25**	**277**	Pn	**Pn**	**14 04 33.6**	**+1.1**
CN2	**Changchun**	**13.52**	**305**	*e*P	Pn	14 05 12.0	-5.2
KLR	**Kul'dur**	**13.95**	**335**	Pn	**Pn**	**14 05 24.4**	**+1.5**
	0.2nm,0.3s,baz=345,slow=20,SNR=1.6						
BJI	**Beijing**	**19.45**	**287**	P	**P**	**14 06 32.5**	**+0.5**
BJI				pmax	pmax		
	comp=Z,5.0nm,0.6s						
BJI				LR	LR		
	comp=N,140nm,16.8s						
BJI				LR	LR		
	comp=E,120nm,6.6s						
BJI				LR	LR		
	comp=Z,49nm,22.2s						
HHC	**Hu-ho-hao-te**	**22.98**	**289**	*e*P	**P**	**14 07 11.1**	**+0.9**
HHC				sP	sP	14 07 18.9	+3.2
HHC				S	**S**	**14 11 17.0**	**-3.3**
HHC				pmax	pmax		
	comp=Z,19nm,0.6s						
HHC				pmax	pmax		
	comp=Z,83nm,8.8s						
HHC				LR	LR		
	comp=N,380nm,12.4s						
HHC				LR	LR		
	comp=E,400nm,13.6s						
HHC				LR	LR		
	comp=Z,380nm,14.8s						
MA2	**Magadan**	**23.61**	**13**	P	**P**	**14 07 15.7**	**-0.5**
	comp=Z,4.7nm,0.5s,baz=199,slow=12,SNR=4.5						
SEY	**Seymchan**	**27.04**	**12**	P	**P**	**14 07 47.8**	**+0.4**
	comp=Z,4.2nm,1.0s,baz=200,slow=7.4,SNR=8.5						
SONM	**Songino Array**	**27.39**	**304**	P	**P**	**14 07 49.9**	**-1.0**
	comp=Z,1.1nm,0.6s,baz=101,slow=9.4,SNR=5.5						
H11N2	**WAKE ISLAND Hy**	**28.57**	**120**	T	T	14 37 48.8	
	baz=313,slow=75,SNR=89						
H11N1	**WAKE ISLAND Hy**	**28.57**	**120**	T	T	14 37 48.8	
	baz=313,slow=75,SNR=76						
H11N3	**WAKE ISLAND Hy**	**28.58**	**120**	T	T	14 37 51.4	
	baz=313,slow=75,SNR=82						
H11S1	**WAKE ISLAND Hy**	**29.26**	**122**	T	T	14 38 39.8	
	baz=314,slow=76,SNR=511						
H11S3	**WAKE ISLAND Hy**	**29.26**	**122**	T	T	14 38 40.5	
	baz=314,slow=76,SNR=82						
H11S2	**WAKE ISLAND Hy**	**29.28**	**122**	T	T	14 38 41.7	
	baz=314,slow=76,SNR=62						
LZH	**Lanzhou**	**29.53**	**280**	*e*P	**P**	**14 08 10.0**	**-0.2**
LZH				pP	pP	14 08 14.3	+0.1
LZH				sP	sP	14 08 16.8	+0.9
LZH				*e*PP	**PnPn**	**14 09 06.2**	**+1.7**
LZH				pmax	pmax		
	comp=Z,19nm,1.0s						
LZH				pmax	pmax		
	comp=Z,41nm,5.3s						
LZH				LR	LR		
	comp=N,190nm,13.0s						
LZH				LR	LR		
	comp=E,200nm,13.5s						
LZH				LR	LR		
	comp=Z,280nm,16.0s						
CD2	**Chengdu**	**31.11**	**270**	P	**P**	**14 08 23.8**	**-0.2**
CD2				pmax	pmax		
	comp=Z,1.0nm,0.5s						
BILL	**Bilibino**	**34.32**	**17**	*e*P	**P**	**14 08 52.2**	**+0.6**
	comp=Z,4.1nm,1.2s						
WMQ	**Urumqi**	**40.40**	**297**	*e*P	**P**	**14 09 45.6**	**+2.1**
WMQ				pmax	pmax		
	comp=Z,3.0nm,0.6s						
WMQ				pmax	pmax		
	comp=Z,20nm,4.6s						
ZAA0	**Zalesovo Array**	**41.59**	**313**	*e*P	**P**	**14 09 52.7**	**-0.4**
ZAA0				*e*PcP	**PcP**	**14 11 50.1**	**+0.1**
ZALV	**Zalesovo Beam**	**41.59**	**313**	P	**P**	**14 09 52.4**	**-0.7**
	comp=Z,2.1nm,0.7s,baz=95,slow=6.1,SNR=5.8						
ZALV				PcP	**PcP**	**14 11 50.1**	**+0.1**
	comp=Z,1.3nm,0.5s,baz=116,slow=4.3,SNR=5.8						
MKAR	**Makanchi Array**	**43.71**	**302**	P	**P**	**14 10 11.0**	**+0.5**
	comp=Z,0.7nm,0.6s,baz=89,slow=11,SNR=6.5						
MKAR	**Makanchi Array**	**43.71**	**302**	*e*P	**P**	**14 10 10.8**	**+0.3**
KURK	**Kurchatov**	**45.57**	**308**	*e*P	**P**	**14 10 24.5**	**-0.7**
	comp=Z,7.5nm,1.3s						
KURBB	**Kurchatov Arra**	**45.64**	**308**	P	**P**	**14 10 25.1**	**-0.6**
	comp=Z,1.8nm,0.4s,baz=82,slow=7.8,SNR=20						
MLY	**Manley**	**48.27**	**32**	*e*PcP	**PcP**	**14 12 14.8**	**+1.9**
ILAR	**Eielson Array**	**49.91**	**32**	P	**P**	**14 10 58.9**	**+0.1**
	comp=Z,0.4nm,0.7s,baz=272,slow=6.6,SNR=4.9						
ILAR				PcP	**PcP**	**14 12 18.4**	**-0.5**
	comp=Z,0.5nm,0.6s,baz=273,slow=3.3,SNR=5.2						
BVAR	**Borovoye Array**	**50.25**	**312**	P	**P**	**14 11 01.3**	**-0.1**
	comp=Z,1.0nm,0.5s,baz=74,slow=8.3,SNR=7.0						
ZRNK	**Zerenda**	**51.08**	**312**	*e*P	**P**	**14 11 07.5**	**-0.2**
	comp=Z,2.6nm,0.8s						
FITZ	**Fitzroy Crossi**	**56.52**	**197**	LR	LR	14 37 26.9	
	comp=Z,54nm,18.0s,slow=38						
WRA	**Warramunga Arr**	**56.85**	**187**	P	**P**	**14 11 50.1**	**0.0**
	comp=Z,3.9nm,0.6s,baz=3.0,slow=7.2,SNR=36						
ABKAR	**Akbulak array**	**57.60**	**310**	*e*P	**P**	**14 11 54.6**	**-0.6**
AS01	**Alice Springs**	**60.57**	**187**	*e*P	**P**	**14 12 16.1**	**+0.1**
AS31	**Alice Springs**	**60.57**	**187**	*e*P	**P**	**14 12 16.8**	**+0.7**
	comp=Z,2.3nm,1.4s						
ASAR	**Alice Springs**	**60.58**	**187**	P	**P**	**14 12 16.2**	**+0.2**
	comp=Z,1.5nm,0.7s,baz=18,slow=12,SNR=18						
YKA	**Yellowknife Ar**	**64.21**	**30**	P	**P**	**14 12 40.0**	**+0.1**
	comp=Z,0.4nm,0.7s,baz=302,slow=6.4,SNR=7.8						
YKA				PcP	**PcP**	**14 13 15.1**	**+0.4**
	comp=Z,0.5nm,0.7s,baz=299,slow=4.1,SNR=8.1						
STKA	**Stephens Creek**	**68.42**	**179**	P	**P**	**14 13 06.2**	**-1.0**
	comp=Z,1.0nm,0.5s,baz=340,slow=6.6,SNR=4.2						
FINES	**FINESS Array B**	**68.67**	**332**	P	**P**	**14 13 07.6**	**-0.8**
	comp=Z,2.2nm,0.8s,baz=44,slow=6.6,SNR=6.0						
HFS	**Hagfors**	**73.98**	**335**	P	**P**	**14 13 41.1**	**+0.5**
	comp=Z,0.6nm,0.4s,baz=72,slow=9.5,SNR=5.2						
NOA	**NORSAR Array B**	**74.09**	**337**	P	**P**	**14 13 41.5**	**+0.2**
	comp=Z,0.7nm,0.6s,baz=38,slow=6.0,SNR=3.7						
NVAR	**Mina Array Bea**	**75.52**	**53**	P	**P**	**14 13 51.5**	**+1.3**
	comp=Z,1.1nm,0.8s,baz=286,slow=7.6,SNR=6.0						
PDAR	**Pinedale Array**	**78.17**	**45**	P	**P**	**14 14 06.4**	**+1.3**
	comp=Z,0.3nm,0.6s,baz=48,slow=1.3,SNR=3.6						
GERES	**GERESS Array B**	**82.53**	**328**	P	**P**	**14 14 27.4**	**-0.9**
	comp=Z,0.3nm,0.4s,baz=30,slow=6.5,SNR=4.7						
TX31	**Lajitas Ar. Si**	**90.65**	**52**	*e*P	**P**	**14 15 09.3**	**+0.8**
TXAR	**Lajitas Array**	**90.65**	**52**	P	**P**	**14 15 08.5**	**0.0**
	comp=Z,0.7nm,0.6s,baz=299,slow=3.0,SNR=10						
LPAZ	**La Paz**	**147.25**	**59**	PKPbc	**PKPab**	**14 21 51.1**	**-0.7**
	comp=Z,2.0nm,0.7s,baz=337,slow=3.6,SNR=7.2						

IDC ***11*** *14:07:06.1±1.1, 36.89N×140.70E, h0km, mb3.5/5, mb1 3.6/7, mb1mx3.3/60, mbtmp3.5/7, ML3.4/2, Error ellipse: s-maj=19.8km s-min=17.4km az=164.0*

ISCJB ***11*** *14:07:07.2±0.7, 36.88N±0.03×140.80E±0.06, h19km±5km, mb3.4/5, Error ellipse: s-maj=8.7km s-min=4.9km az=15.0*

JMA ***11*** *14:07:08.0, 36.89N×140.70E, h8km±1km, M3.7 Broadband fault plane solution: P waves. NP1: φs345.00000°, δ57.00000°, λ-91.00000°. NP2: φs167.00000°, δ33.00000°, λ-88.00000°. Principal axes: T Plg12.0000°, Azm76.0000°; N Plg1.0000°, Azm346.0000°; P Plg78.0000°, Azm251.0000°;*

JMA Felt II J1.

ISC 11 14:07:08.0±1.0, 36.90N±0.03×140.70E±0.05, h13km±7km, n15, σ0.63/23, mb3.4/5, 4C, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.22**	**21**	⇑P	**Pg**	**14 07 12.9**	**+0.1**
ONAJ				*e*S	**Sg**	**14 07 16.4**	**+0.3**
JHO	**Hitachi**	**0.30**	**200**	⇑P	**Pg**	**14 07 14.0**	**-0.2**
JHO				S	**Sg**	**14 07 18.3**	**-0.1**

NIED ***11*** *14:08:00,37.°00N×140.°70E,h5km,Mw4.0 Best double couple: M₀1.07000×10¹⁵ NP1:φ₀38.00000°,δ36.00000°, λ-96.00000°. NP2:φ₀225.00000°,δ55.00000°, λ-86.00000°.*

IDC ***11*** *14:08:46.7±0.6,37.°02N×140.°61E,h0km,mb4.0/16, mb1 4.2/19,mb1mx4.0/56,mbtmp4.0/19,ML2.5/2,Error ellipse: s-maj=15.2km s-min=11.5km az=151.0*

ISCJB ***11*** *14:08:47.8±0.4,37.°02N±0.°02×140.°72E±0.°04,h19km±3km, mb4.2/29,MS3.9/3,Error ellipse: s-maj=5.5km s-min=3.9km az=17.4*

JMA ***11*** *14:08:48.2,37.°02N×140.°68E,h9km±1km,M4.3 Broadband fault plane solution: P waves. NP1: φ₀53.00000°,δ46.00000°,λ-82.00000°. NP2:φ₀221.00000°, δ44.00000°,λ-99.00000°. Principal axes: T Plg1.0000°, Azm137.0000°; N Plg6.0000°, Azm227.0000°; P Plg84.0000°, Azm41.0000°;*

JMA Felt II J1.

NEIC ***11*** *14:08:50.8±1.9,36.°95N×140.°64E,h28km±14km,mb4.4/8 Error ellipse: s-maj=8.0km s-min=6.0km az=107.0*

ISC 11 14:08:48.1±0.9,37.°01N±0.°03×140.°67E±0.°04,h9km±6km, n65,σ1°941/73,mb4.1/29,MS4.0/3,5C,Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.14**	**47**	⇑P	**Pg**	**14 08 51.3**	**+0.1**
ONAJ				S	**Sg**	**14 08 53.3**	**0.0**
JHO	**Hitachi**	**0.41**	**192**	P	**Pg**	**14 08 56.2**	**+0.1**
JHO				S	**Sg**	**14 09 02.1**	**+0.6**
JFT	**Otama**	**0.57**	**332**	⇑P	**Pg**	**14 08 59.4**	**+0.1**
JFT				S	**Sg**	**14 09 06.9**	**+0.1**
JSB	**Shiboa**	**0.61**	**266**	⇑P	**Pb**	**14 09 00.6**	**-0.3**
JSB				S	**Sb**	**14 09 09.1**	**-0.5**
JMM	**Marumori**	**0.86**	**6**	⇑P	**Pg**	**14 09 04.1**	**-0.6**
JMM				S	**Sg**	**14 09 15.4**	**-0.5**
JFY	**Yanaizu**	**0.87**	**297**	⇑P	**Pg**	**14 09 04.7**	**-0.2**
JFY				S	**Sg**	**14 09 15.9**	**-0.3**
JYT	**Yasato**	**0.87**	**206**	P	**Pg**	**14 09 04.5**	**-0.4**
JYT				S	**Sb**	**14 09 17.3**	**+0.1**
MJAR	**Matsushiro Arr**	**2.03**	**257**	Pn	**Pn**	**14 09 23.3**	**+0.7**
	84nm,0.3s,baz=77,slow=15,SNR=40						
MJAR				Lg	Lg	14 09 49.7	
	100nm,0.3s,baz=81,slow=29,SNR=12						
MAJO	**Matsushiro**	**2.04**	**257**	*e*Pn	**Pb**	**14 09 24.0**	**-1.3**
MAT	**Matsushiro**	**2.04**	**257**	P	**Pn**	**14 09 23.7**	**+1.1**
MAT				S	**Sb**	**14 09 50.6**	**-0.1**
INU	**Inuyama**	**3.39**	**242**	*e*Pn	**Pn**	**14 09 43.4**	**+2.1**
JHJ	**Hachijo jima 2**	**3.95**	**191**	Pn	**Pn**	**14 09 49.2**	**+0.2**
	32nm,0.3s,baz=322,slow=2.7,SNR=7.1						
JHJ				Sn	**Sn**	**14 10 37.3**	**+1.9**
	91nm,0.3s,baz=74,slow=20,SNR=6.0						
JHJ2	**Mitsune**	**3.95**	**191**	*e*Pn	**Pn**	**14 09 48.8**	**-0.2**
ERM	**Erimo**	**5.35**	**20**	*e*Pn	**Pn**	**14 10 10.3**	**+2.1**
ERM				*e*Sn	Sn	14 11 18.0	+8.0
USRK	**Ussuriysk Ar.**	**9.75**	**320**	Pn	**Pn**	**14 11 09.9**	**+1.3**
	0.3nm,0.3s,baz=137,slow=12,SNR=19						
CBIJ	**Chichi jima**	**9.97**	**172**	*e*Pn	**Pn**	**14 11 08.6**	**-2.9**
JCJ	**Chichijima**	**9.97**	**172**	Pn	Pn	14 11 08.2	-3.3
	13nm,0.3s,baz=283,slow=19,SNR=4.2						
YSS	**Yuzh-Sakhalins**	**10.06**	**8**	*e*Pn	**Pn**	**14 11 13.3**	**+0.6**
KSRS	**Korea Array**	**10.18**	**276**	Pn	**Pn**	**14 11 14.7**	**+0.3**
	0.1nm,0.3s,baz=90,slow=14,SNR=2.9						
KSAR	**Wonju Array Be**	**10.21**	**276**	Pn	**Pn**	**14 11 14.7**	**-0.1**
BJI	**Beijing**	**19.39**	**286**	P	**Pn**	**14 13 15.5**	**+0.1**
BJI				S	**S**	**14 16 54.3**	**+0.7**
BJI				pmax	pmax		
	comp=Z,6.0nm,0.9s						
BJI				LR	LR		
	comp=N,140nm,7.4s						
BJI				LR	LR		
	comp=E,95nm,12.6s						
BJI				LR	LR		
	comp=Z,150nm,24.9s						
HHC	**Hu-ho-hao-te**	**22.92**	**289**	*e*P	**P**	**14 13 52.6**	**+0.1**
HHC				sP	sP	14 14 02.4	+6.2
HHC				S	**S**	**14 17 57.6**	**-5.0**
HHC				SS	**SnSn**	**14 18 40.8**	**+7.1**
HHC				pmax	pmax		
	comp=Z,21nm,0.7s						
HHC				pmax	pmax		
	comp=Z,150nm,7.4s						
HHC				LR	LR		
	comp=N,500nm,13.6s						
HHC				LR	LR		
	comp=E,560nm,14.8s						
HHC				LR	LR		
	comp=Z,540nm,14.8s						
SEY	**Seymchan**	**26.93**	**12**	P	**P**	**14 14 29.4**	**-0.1**
	comp=Z,3.8nm,1.0s,baz=188,slow=7.5,SNR=6.8						
SONM	**Songino Array**	**27.31**	**304**	P	**P**	**14 14 33.0**	**-0.2**
	comp=Z,1.8nm,0.7s,baz=94,slow=7.4,SNR=8.0						
H11N2	**WAKE ISLAND Hy**	**28.65**	**120**	T	T	14 44 32.1	
	baz=312,slow=75,SNR=96						
H11N1	**WAKE ISLAND Hy**	**28.66**	**120**	T	T	14 44 32.4	
	baz=312,slow=75,SNR=106						
H11N3	**WAKE ISLAND Hy**	**28.66**	**120**	T	T	14 44 33.4	
	baz=312,slow=75,SNR=96						
H11S1	**WAKE ISLAND Hy**	**29.35**	**122**	T	T	14 45 21.8	
	baz=314,slow=76,SNR=146						
H11S3	**WAKE ISLAND Hy**	**29.35**	**122**	T	T	14 45 26.4	
	baz=314,slow=76,SNR=60						
H11S2	**WAKE ISLAND Hy**	**29.36**	**122**	T	T	14 45 25.9	
	baz=314,slow=76,SNR=94						
LZH	**Lanzhou**	**29.49**	**279**	*e*P	**P**	**14 14 52.6**	**-0.2**
LZH				pP	sP	14 14 59.9	+3.3
LZH				sP	pP	14 15 03.3	+7.8
LZH				*e*PP	**PnPn**	**14 15 48.5**	**+1.8**
LZH				pmax	pmax		
	comp=Z,20nm,1.0s						
LZH				pmax	pmax		
	comp=Z,45nm,5.3s						
LZH				LR	LR		
	comp=N,220nm,13.4s						
LZH				LR	LR		
	comp=E,240nm,13.6s						
LZH				LR	LR		
	comp=Z,290nm,17.0s						
CD2	**Chengdu**	**31.08**	**270**	P	**P**	**14 15 05.6**	**-1.2**
CD2				pmax	pmax		
	comp=Z,1.0nm,0.5s						
KMI	**Kunming**	**34.37**	**261**	P	**P**	**14 15 37.5**	**+1.7**
KMI				pmax	pmax		
	comp=Z,11nm,0.7s						
KMI				pmax	pmax		
	comp=Z,71nm,3.7s						
WMQ	**Urumqi**	**40.32**	**297**	*e*P	**P**	**14 16 27.5**	**+1.6**
WMQ				pP	sP	14 16 35.0	+5.2
WMQ				sP	pP	14 16 37.4	+8.7
WMQ				pmax	pmax		
	comp=Z,2.0nm,0.6s						
WMQ				pmax	pmax		
	comp=Z,56nm,3.6s						
WMQ				LR	LR		
	comp=N,36nm,22.4s						
WMQ				LR	LR		
	comp=E,35nm,20.4s						
WMQ				LR	LR		
	comp=Z,46nm,22.4s						
ZALV	**Zalesovo Beam**	**41.49**	**312**	PcP	**PcP**	**14 18 31.6**	**-1.2**
	comp=Z,0.4nm,0.3s,baz=114,slow=3.7,SNR=3.8						
MKAR	**Makanchi Array**	**43.63**	**302**	P	**P**	**14 16 52.5**	**-0.3**
	comp=Z,0.9nm,0.5s,baz=87,slow=9.2,SNR=10.0						
MKAR	**Makanchi Array**	**43.63**	**302**	*e*P	**P**	**14 16 52.3**	**-0.5**
CHGN	**Chignik**	**44.39**	**44**	*e*P	**P**	**14 16 58.9**	**+0.2**
KURK	**Kurchatov**	**45.48**	**308**	*e*P	**P**	**14 17 06.5**	**-1.0**
	comp=Z,4.9nm,0.9s						
KURBB	**Kurchatov Arra**	**45.55**	**308**	P	**P**	**14 17 05.9**	**-2.1**
	comp=Z,2.4nm,0.6s,baz=83,slow=8.7,SNR=10						
TKM2	**Tokmak 2**	**49.12**	**298**	*e*P	**P**	**14 17 36.3**	**0.0**
	comp=Z,1.8nm,0.8s						
ILAR	**Eielson Array**	**49.83**	**32**	P	**P**	**14 17 41.5**	**+0.3**
	comp=Z,1.0nm,0.6s,baz=270,slow=6.2,SNR=13						
BVAR	**Borovoye Array**	**50.15**	**312**	P	**P**	**14 17 42.7**	**-1.0**
	comp=Z,1.9nm,0.8s,baz=79,slow=8.0,SNR=6.9						
BVAR				PcP	**PcP**	**14 19 02.9**	**-0.1**
	comp=Z,0.7nm,0.6s,baz=95,slow=3.4,SNR=3.8						
ZRNK	**Zerenda**	**50.98**	**312**	*e*P	**P**	**14 17 49.3**	**-0.7**
	comp=Z,3.4nm,1.0s						
INK	**Inuvik**	**54.68**	**27**	P	**P**	**14 18 17.4**	**+0.3**
	comp=Z,0.5nm,0.4s,baz=293,slow=8.4,SNR=5.3						
WRAB	**Tennant Creek**	**56.95**	**187**	*e*P	**P**	**14 18 33.2**	**-0.7**
	comp=Z,8.1nm,1.0s						
WB2	**Warramunga Arr**	**56.96**	**187**	*e*P	**P**	**14 18 33.0**	**-0.9**
	comp=Z,5.6nm,0.7s						
WRA	**Warramunga Arr**	**56.96**	**187**	P	**P**	**14 18 32.6**	**-1.3**
	comp=Z,6.2nm,0.8s,baz=4.1,slow=7.4,SNR=45						
ABKAR	**Akbulak array**	**57.50**	**310**	*e*P	**P**	**14 18 36.5**	**-1.0**
AS01	**Alice Springs**	**60.68**	**187**	*e*P	**P**	**14 18 59.3**	**-0.4**
AS31	**Alice Springs**	**60.69**	**187**	*e*P	**P**	**14 18 59.5**	**-0.4**
	comp=Z,1.0nm,0.9s						
ASAR	**Alice Springs**	**60.69**	**187**	P	**P**	**14 18 59.8**	**0.0**
	comp=Z,2.3nm,0.7s,baz=24,slow=6.3,SNR=29						
YKA	**Yellowknife Ar**	**64.12**	**30**	P	**P**	**14 19 22.6**	**+0.2**
	comp=Z,0.7nm,0.7s,baz=302,slow=6.5,SNR=11						
YKA				PcP	**PcP**	**14 19 57.4**	**0.0**
	comp=Z,0.3nm,0.7s,baz=293,slow=4.2,SNR=4.2						
FINES	**FINESS Array B**	**68.56**	**332**	P	**P**	**14 19 50.3**	**-0.5**
	comp=Z,2.1nm,0.7s,baz=36,slow=7.1,SNR=7.0						
AKASG	**Malin Array Be**	**73.95**	**322**	P	**P**	**14 20 22.4**	**-1.2**
	comp=Z,0.8nm,0.5s,baz=48,slow=6.0,SNR=6.0						
NB2	**NORSAR Subarra**	**73.98**	**337**	P	**P**	**14 20 24.2**	**+0.5**
	comp=Z,0.5nm,0.7s,baz=36,slow=6.2						
NOA	**NORSAR Array B**	**73.98**	**337**	P	**P**	**14 20 23.2**	**-0.4**
	comp=Z,1.4nm,0.8s,baz=39,slow=5.7,SNR=4.4						
EGMT	**Eagleton**	**74.68**	**41**	*e*P	**P**	**14 20 29.0**	**+1.0**
	comp=Z,22nm,1.8s						
NV01	**Mina Array Sit**	**75.47**	**53**	*e*P	**P**	**14 20 33.2**	**+0.2**
NVAR	**Mina Array Bea**	**75.47**	**53**	P	**P**	**14 20 33.6**	**+0.7**
	comp=Z,0.7nm,0.6s,baz=302,slow=5.9,SNR=7.2						
IMW	**Indian Meadow**	**76.61**	**45**	*e*P	**P**	**14 20 41.3**	**+1.9**
	comp=Z,1.5nm,0.8s						
BW06	**Boulder Array**	**78.10**	**45**	*e*P	**P**	**14 20 47.5**	**-0.3**
PDAR	**Pinedale Array**	**78.10**	**45**	P	**P**	**14 20 48.4**	**+0.6**
	comp=Z,0.9nm,0.8s,baz=242,slow=3.2,SNR=7.2						
TXAR	**Lajitas Array**	**90.60**	**52**	P	**P**	**14 21 52.2**	**+0.9**
	comp=Z,0.5nm,0.7s,baz=304,slow=4.2,SNR=6.7						
LPAZ	**La Paz**	**147.21**	**59**	PKPbc	**PKPbc**	**14 28 33.5**	**+0.4**
	comp=Z,2.9nm,0.7s,baz=17,slow=5.6,SNR=9.5						

JMA 11 14:11:32.4,36.°92N×140.°71E,h7km±1km,M2.6,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.20**	**21**	P	Pg	14 11 36.8	+0.4
ONAJ				S	Sg	14 11 39.6	+0.6
JHO	**Hitachi**	**0.33**	**200**	P	Pg	14 11 39.0	+0.2
JHO				S	Sg	14 11 43.6	+0.4
MAT	**Matsushiro**	**2.05**	**260**	P	Pn	14 11 59.6	-7.7
MAT				S	Sb	14 12 35.6	+0.1
MAT	**Matsushiro**	**2.05**	**260**	P	Pn	14 12 08.3	+1.0
MAT				S	Sg	14 12 44.8	+6.7

ISCJB ***11*** *14:12:05.8±0.7,37.°01N±0.°03×140.°78E±0.°07,h20km±5km, mb3.6/3,Error ellipse: s-maj=8.8km s-min=5.3km az=5.6*

JMA ***11*** *14:12:06.7,37.°03N×140.°70E,h10km±1km,M3.4*

JMA Felt II J1.

IDC ***11*** *14:12:07.4±2.5,36.°75N×140.°05E,h0km,mb3.5/3, mb1 3.7/4,mb1mx3.3/51,mbtmp3.6/4,ML3.3/1,Error ellipse: s-maj=55.9km s-min=25.9km az=52.0*

ISC 11 14:12:06.1±1.0,36.°99N±0.°05×140.°70E±0.°05,h10km±9km, n12,σ0°946/18,mb3.6/3,5C,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.13**	**36**	⇑P	**Pg**	**14 12 09.5**	**+0.3**
ONAJ				S	**Sg**	**14 12 11.4**	**+0.1**
JHO	**Hitachi**	**0.40**	**196**	⇑P	**Pb**	**14 12 15.1**	**-0.1**
JHO				S	**Sb**	**14 12 21.1**	**-0.2**
JFT	**Otama**	**0.60**	**331**	⇑P	**Pg**	**14 12 17.8**	**+0.1**
JFT				S	**Sg**	**14 12 25.4**	**-0.2**
JSB	**Shiboa**	**0.63**	**268**	⇑P	**Pb**	**14 12 19.4**	**+0.3**
JSB				S	**Sb**	**14 12 28.1**	**+0.1**
JYT	**Yasato**	**0.87**	**208**	P	**Pb**	**14 12 23.4**	**+0.2**
JYT				S	**Sb**	**14 12 34.8**	**-0.1**
JMM	**Marumori**	**0.87**	**5**	⇑P	**Pg**	**14 12 22.3**	**-0.6**
JMM				S	**Sg**	**14 12 33.7**	**-0.6**
JFY	**Yanaizu**	**0.90**	**298**	P	**Pg**	**14 12 23.3**	**0.0**
JFY				S	**Sg**	**14 12 34.6**	**-0.4**
MJAR	**Matsushiro Arr**	**2.05**	**258**	Pn	Pn	14 12 35.0	-5.7
	5.6nm,0.3s,baz=123,slow=8.8,SNR=8.4						
JHJ	**Hachijo jima 2**	**3.94**	**191**	Pn	**Pn**	**14 13 05.8**	**-0.9**
	6.3nm,0.3s,baz=105,slow=19,SNR=3.9						
MKAR	**Makanchi Array**	**43.66**	**302**	P	**P**	**14 20 11.3**	**+0.4**
	0.2nm,0.5s,baz=86,slow=12,SNR=2.6						
WRA	**Warramunga Arr**	**56.95**	**187**	P	**P**	**14 21 51.9**	**+0.3**
	1.0nm,0.6s,baz=4.4,slow=7.3,SNR=9.8						
ASAR	**Alice Springs**	**60.67**	**187**	P	**P**	**14 22 18.4**	**+0.9**
	0.3nm,0.7s,baz=16,slow=7.4,SNR=4.1						

ISCJB ***11*** *14:19:16.3±0.6,37.°01N±0.°03×140.°70E±0.°06,h24km±4km, mb3.5/4,Error ellipse: s-maj=7.7km s-min=5.6km az=10.6*

JMA ***11*** *14:19:17.2,37.°02N×140.°62E,h10km±1km,M3.7 Broadband fault plane solution: P waves. NP1: φ₀122.00000°,δ53.00000°,λ-85.00000°. NP2: φ₀293.00000°,δ37.00000°,λ-97.00000°. Principal axes: T Plg8.0000°, Azm208.0000°; N Plg4.0000°, Azm299.0000°; P Plg81.0000°, Azm55.0000°;*

JMA Felt II J1.

IDC ***11*** *14:19:22.9±2.7,36.°71N×140.°62E,h87km±29km,mb3.3/4, mb1 3.4/6,mb1mx3.2/42,mbtmp3.7/6 Error ellipse: s-maj=36.5km s-min=22.7km az=23.0*

ISC 11 14:19:16.6±0.9,37.°03N±0.°03×140.°63E±0.°04,h16km±7km, n14,σ0°964/20,mb3.5/4,6C-1D,Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.15**	**60**	⇑P	**Pb**	**14 19 21.0**	**-0.2**
ONAJ				S	**Sg**	**14 19 23.6**	**+0.1**
JHO	**Hitachi**	**0.42**	**187**	⇑P	**Pg**	**14 19 25.1**	**0.0**
JHO				S	**Sg**	**14 19 30.5**	**-0.3**
JFT	**Otama**	**0.55**	**334**	⇑P	**Pb**	**14 19 28.0**	**+0.2**
JFT				S	**Sb**	**14 19 35.3**	**-0.1**
JSB	**Shiboa**	**0.57**	**264**	⇑P	**Pb**	**14 19 28.7**	**+0.4**
JSB				S	**Sb**	**14 19 36.5**	**+0.2**
JFY	**Yanaizu**	**0.83**	**297**	⇓P	**Pg**	**14 19 32.9**	**+0.1**
JFY				S	**Sb**	**14 19 43.5**	**-0.2**
JMM	**Marumori**	**0.85**	**9**	⇑P	**Pg**	**14 19 33.1**	**0.0**
JMM				S	**Sb**	**14 19 44.2**	**+0.1**
JYT	**Yasato**	**0.87**	**204**	⇑P	**Pb**	**14 19 33.2**	**-0.2**
MJAR	**Matsushiro Arr**	**2.00**	**257**	P	**Pb**	**14 19 52.0**	**-0.7**
	18nm,0.3s,baz=84,slow=15,SNR=48						
MJAR				S	**Sb**	**14 20 18.3**	**+0.9**
	27nm,0.3s,baz=183,slow=13,SNR=20						
JHJ	**Hachijo jima 2**	**3.96**	**190**	P	**Pn**	**14 20 17.1**	**+0.3**
	6.8nm,0.3s,baz=102,slow=20,SNR=2.8						
USRK	**Ussuriysk Ar.**	**9.72**	**320**	P	Pn	14 21 42.9	+7.1
	0.3nm,0.3s,baz=137,slow=12,SNR=9.5						
ZALV	**Zalesovo Beam**	**41.46**	**312**	P	**P**	**14 27 00.9**	**-1.6**
	0.4nm,0.3s,baz=97,slow=12,SNR=2.3						
MKAR	**Makanchi Array**	**43.59**	**302**	P	**P**	**14 27 18.9**	**-1.0**
	0.3nm,0.6s,baz=88,slow=9.7,SNR=4.0						
ILAR	**Eielson Array**	**49.84**	**32**	P	**P**	**14 28 09.4**	**+0.9**
	0.3nm,0.7s,baz=264,slow=4.5,SNR=4.1						
FINES	**FINESS Array B**	**68.53**	**332**	P	**P**	**14 30 18.5**	**+0.6**
	1.1nm,0.7s,baz=32,slow=8.2,SNR=3.0						

JMA 11 14:22:25.1±0.1,35.°39N×139.°07E,h12km±1km,M2.5, Near south coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JOD2	**Odawara 2**	**0.13**	**173**	P	Pg	14 22 28.0	-0.3
JOD2				S	Sg	14 22 30.5	-0.1
JYN	**Shimob**	**0.44**	**284**	P	Pg	14 22 33.5	-0.4
JYN				S	Sg	14 22 40.1	+0.3
KTJJ	**Kamata 2**	**0.46**	**181**	P	Pg	14 22 33.3	-0.9
KTJJ				S	Sg	14 22 39.5	-0.9
JRY	**Ryogami san**	**0.64**	**348**	P	Pg	14 22 36.9	-0.7
JRY				S	Sg	14 22 45.7	-0.3
SHZ3	**Shizuoka 3**	**0.78**	**246**	P	Pg	14 22 39.4	-0.7
SHZ3				S	Sg	14 22 50.4	+0.1
MAT	**Matsushiro**	**1.35**	**329**	P	Pn	14 22 49.0	-0.8
MAT				S	Sb	14 23 06.6	-0.9

JMA 11 14:23:45.9,37.°01N×140.°61E,h10km±1km,M2.7,Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.18**	**59**	P	Pg	14 23 50.0	+0.3
ONAJ				*e*S	Sg	14 23 52.8	+0.4
JHO	**Hitachi**	**0.40**	**185**	P	Pg	14 23 53.7	-0.1
JHO				S	Sg	14 23 59.5	+0.4
JFT	**Otama**	**0.55**	**337**	P	Pg	14 23 56.8	+0.1
JFT				S	Sg	14 24 04.2	+0.3
MAT	**Matsushiro**	**1.98**	**257**	P	Pb	14 24 21.1	-1.0
MAT				S	Sb	14 24 46.9	0.0

ISCJB ***11*** *14:23:45.6±0.8,5.°53S±0.°06×154.°20E±0.°06,h169km±7km, mb4.4/23,Error ellipse: s-maj=11.0km s-min=8.6km az=155.4*

BJI ***11*** *14:23:45.4,5.°66S×154.°30E,h184km,mb4.4/17,mB4.8/8*

IDC ***11*** *14:23:45.4±0.8,5.°70S×154.°11E,h148km±7km,mb3.6/7, mb1 3.7/9,mb1mx3.4/39,mbtmp4.1/9,Error ellipse: s-maj=16.7km s-min=14.7km az=127.0*

NEIC ***11*** *14:23:46.7±0.8,5.°40S×154.°21E,h173km±8km,mb4.8/8, Error ellipse: s-maj=13.7km s-min=9.2km az=194.0*

ISC 11 14:23:46.4±0.6,5.°52S±0.°06×154.°18E±0.°08,h164km±4km, h164km:pP-P,n41,σ1°962/52,mb4.5/23, Bougainville-Solomon Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
RABL	**Rabaul**	**2.40**	**303**	*e*Pn	**Pn**	**14 24 26.6**	**-0.5**
HNR	**Honiara**	**6.92**	**125**	P	**Pn**	**14 25 24.4**	**-1.0**
	3.0nm,0.3s,baz=266,slow=7.0,SNR=4.6						
HNR	**Honiara**	**6.92**	**125**	*e*P	**Pn**	**14 25 26.0**	**+0.6**
HNR	**Honiara**	**6.92**	**125**	*e*Pn	**Pn**	**14 25 26.3**	**+0.9**
MANU	**Manus Island**	**7.62**	**297**	*e*Pn	**Pn**	**14 25 34.9**	**0.0**
PMG	**Port Moresby**	**7.96**	**241**	P	**Pn**	**14 25 40.7**	**+1.4**
	1.8nm,0.3s,baz=34,slow=8.0,SNR=23						
PMG	**Port Moresby**	**7.96**	**241**	*e*Pn	**Pn**	**14 25 41.9**	**+2.6**
COEN	**Coen**	**13.71**	**231**	*e*Pn	**P**	**14 26 56.6**	**-0.8**
CTA	**Charters Tower**	**16.41**	**207**	P	**P**	**14 27 26.6**	**-0.7**
	1.2nm,0.3s,baz=27,slow=14,SNR=39						
CTAO	**Charters Tower**	**16.41**	**207**	*e*P	**Pn**	**14 27 28.8**	**+1.2**
	22nm,0.7s						
DZM	**Mont Dzumac**	**20.29**	**145**	P	**P**	**14 28 09.4**	**-0.2**
	35nm,0.7s,baz=307,slow=8.0,SNR=60						
WRAB	**Tennant Creek**	**24.03**	**232**	*e*P	**P**	**14 28 46.7**	**+0.2**
	28nm,0.6s						
WB2	**Warramunga Arr**	**24.03**	**232**	*e*P	**P**	**14 28 46.6**	**+0.1**
	26nm,0.6s						
WRA	**Warramunga Arr**	**24.04**	**232**	P	**P**	**14 28 47.1**	**+0.5**
	25nm,0.7s,baz=56,slow=10.0,SNR=168						
WRA				S	**S**	**14 32 50.4**	**-1.7**
	1.0nm,0.9s,baz=52,slow=16,SNR=3.4						
AS01	**Alice Springs**	**26.55**	**225**	*e*P	**P**	**14 29 09.0**	**-0.3**
AS31	**Alice Springs**	**26.59**	**225**	*e*P	**P**	**14 29 09.3**	**-0.3**
	1.5nm,0.6s						
ASAR	**Alice Springs**	**26.59**	**225**	P	**P**	**14 29 09.4**	**-0.1**
	1.7nm,0.5s,baz=55,slow=9.2,SNR=82						
ASAR				S	**S**	**14 33 30.4**	**-1.9**
	0.5nm,0.8s,baz=55,slow=14,SNR=4.3						
ASAR				ScP	**ScP**	**14 35 54.4**	**-0.2**
	0.5nm,0.9s,baz=51,slow=3.0,SNR=4.6						
STKA	**Stephens Creek**	**28.75**	**203**	P	**P**	**14 29 28.1**	**-0.6**
	0.7nm,0.4s,baz=4.2,slow=12,SNR=3.9						
FITZ	**Fitzroy Crossi**	**30.55**	**243**	*e*P	**P**	**14 29 44.1**	**-0.6**
	8.2nm,0.8s						
THZ	**Tophouse**	**39.77**	**158**	*e*P	**P**	**14 31 03.1**	**-0.2**
	16nm,0.9s						
LTZ	**Lake Taylor**	**40.43**	**159**	*e*P	**P**	**14 31 08.5**	**-0.2**
	76nm,1.8s						
RPZ	**Rata Peaks**	**40.85**	**161**	*e*P	**P**	**14 31 11.9**	**-0.2**
	24nm,0.8s						
NJ2	**Nanjing**	**50.27**	**320**	*e*P	**P**	**14 32 24.1**	**-2.1**
NJ2				pmax	pmax		
	comp=Z,11nm,1.0s						
CN2	**Changchun**	**55.52**	**335**	*e*P	**P**	**14 33 07.0**	**+2.6**
CN2				pmax	pmax		
	comp=Z,10.0nm,0.4s						
GYA	**Guiyang**	**55.92**	**307**	P	**P**	**14 33 09.0**	**+1.2**
GYA				pP	pP	14 33 48.6	+3.0
GYA				sP	PcP	14 34 08.2	+3.7
GYA				PP	**PP**	**14 35 17.0**	**+2.6**
GYA				ScP	**ScP**	**14 37 46.4**	**-1.9**
GYA				S	**S**	**14 40 41.8**	**-1.3**
GYA				sS	sS	14 41 51.0	+2.4
GYA				ScS	**ScS**	**14 42 37.6**	**-3.5**
GYA				pmax	pmax		
	comp=Z,10.0nm,1.0s						
BJI	**Beijing**	**57.25**	**326**	P	**P**	**14 33 17.0**	**+0.2**
BJI				pP	**pP**	**14 33 56.6**	**+1.9**
BJI				sP	**sP**	**14 34 15.4**	**+2.8**
BJI				pmax	pmax		
	comp=Z,4.0nm,0.9s						
KMI	**Kunming**	**58.52**	**304**	P	**P**	**14 33 27.6**	**+1.4**
KMI				pmax	pmax		
	comp=Z,11nm,0.6s						
KMI				pmax	pmax		
	comp=Z,98nm,5.1s						
CMAR	**Chiang Mai Arr**	**59.42**	**295**	P	**P**	**14 33 33.9**	**+1.6**
	0.6nm,1.0s,baz=121,slow=3.4,SNR=3.3						
CMAR				pP	**pP**	**14 34 08.1**	**-2.3**
	0.5nm,0.7s,baz=123,slow=6.6,SNR=2.9						
CD2	**Chengdu**	**60.24**	**310**	P	**P**	**14 33 36.2**	**-1.5**
CD2				pmax	pmax		
	comp=Z,2.0nm,0.6s						
HHC	**Hu-ho-hao-te**	**60.43**	**324**	*e*P	**P**	**14 33 39.9**	**+1.0**
HHC				pmax	pmax		
	comp=

PAMC			*e*S	**Sg**	**14 24 08.5**	**-0.1**
PAMC			*i*		14 24 10.6	
	comp=Z,60nm,0.4s					
CAPV	**Capacho**	**0.73 352**	*e*P	**Pg**	**14 24 05.2**	**-0.3**
CAPV			*e*S	**Sb**	**14 24 15.5**	**-0.3**
BARC	**Barichara**	**1.10 241**	*e*P	**Pg**	**14 24 12.7**	**+0.2**
BARC			*i*		14 24 18.1	
	comp=Z,74nm,0.3s					
OCAC	**Ocana**	**1.55 315**	*e*P	**Pn**	**14 24 18.8**	**+0.3**
OCAC			*e*S	**Sb**	**14 24 38.9**	**-0.5**
OCAC			*i*		14 24 48.0	
	comp=Z,214nm,0.5s					
SOCV	**Socops**	**1.76 50**	*e*P	**Pn**	**14 24 22.2**	**+0.8**
SOCV			*e*S	**Sn**	**14 24 43.0**	**-0.6**
SDV	**Santo Domingo**	**2.34 42**	*e*P	**Pn**	**14 24 31.0**	**+1.6**
SDV			*e*S	**Sb**	**14 25 02.2**	**+0.1**
SDV			*i*		14 25 06.2	
	comp=Z,54nm,0.5s					
VIRV	**Villa del Rosa**	**3.35 357**	*e*P	**Pn**	**14 24 44.1**	**+0.9**
VIRV			*e*S	**Sn**	**14 25 22.3**	**-0.5**
QARV	**Quebrada Arrib**	**3.48 29**	*e*P	**Pn**	**14 24 46.3**	**+1.3**
CURV	**Curarigua**	**3.62 38**	*e*P	**Pn**	**14 24 48.0**	**+1.0**
BAUV	**El Baul**	**4.50 66**	*e*P	**Pn**	**14 24 59.0**	**0.0**
CUPV	**Cœpira**	**6.98 65**	*e*P	**Pn**	**14 25 32.4**	**-0.9**

JMA 11 14:26:03.3, 37°.09N×140°.65E, h16km±1km, M3.7, 3D, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.12**	**84**	⇓P	Pg	14 26 06.9	-0.1
ONAJ				S	Sg	14 26 09.4	0.0
JHO	**Hitachi**	**0.48**	**188**	⇓P	Pg	14 26 12.6	-0.3
JHO				S	Sg	14 26 19.1	-0.3
JFT	**Otama**	**0.49**	**330**	⇓P	Pg	14 26 13.2	0.0
JFT				S	Sg	14 26 19.8	-0.1
MAT	**Matsushiro**	**2.04**	**255**	P	Pb	14 26 38.9	-1.0
MAT				S	Sb	14 27 05.4	+0.4

JMA 11 14:27:03.9, 37°.02N×140°.69E, h8km±1km, M2.5, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.12**	**47**	P	Pg	14 27 06.8	+0.2
ONAJ				S	Sg	14 27 08.9	+0.4
JHO	**Hitachi**	**0.42**	**193**	P	Pg	14 27 12.1	0.0
JHO				S	Sg	14 27 18.3	+0.7
JFT	**Otama**	**0.57**	**331**	P	Pg	14 27 15.3	+0.3
JFT				S	Sg	14 27 23.0	+0.5
MAT	**Matsushiro**	**2.05**	**257**	P	Pn	14 27 39.6	+0.9
MAT				*e*S	Sb	14 28 07.4	+0.4

*ISCJB **11** 14:27:57.7±0.5, 40°.88N±0°.04×30°.39E±0°.04, h11km±6km, Error ellipse: s-maj=7.0km s-min=4.2km az=29.2*
*CSEM **11** 14:27:57.7±0.1, 40°.89N×30°.40E, h10km, MD2.7, Error ellipse: s-maj=3.6km s-min=2.1km az=25.0*
*ISK **11** 14:27:57.0, 40°.90N×30°.42E, h7km, MD2.7*
*DDA **11** 14:27:58.1, 40°.91N×30°.45E, h7km, Md2.4*
ISC 11 14:27:57.2±1.2, 40°.89N±0°.03×30°.41E±0°.02, h14km±11km, n32, σ0°22/42, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SPNC	**Sapanca-Adapaz**	**0.22**	**200**	*e*PG	**Pg**	**14 28 02.0**	**-0.1**
SPNC	**Sapanca-Adapaz**	**0.22**	**200**	*e*Pg	**Pg**	**14 28 02.0**	**-0.1**
KAND	**Kocaeli-Kandir**	**0.26**	**321**	*i* P	**Pb**	**14 28 03.8**	**+0.1**
KAND				*i* S	**Sb**	**14 28 07.9**	**-0.2**
KAND	**Kocaeli-Kandir**	**0.26**	**321**	P	**Pb**	**14 28 03.8**	**+0.1**
KAND				S	**Sb**	**14 28 07.9**	**-0.2**
SAHE	**Sakarya_HENDEK**	**0.34**	**97**	*i* P	**Pg**	**14 28 04.3**	**+0.1**
SAHE				*i* S	**Sb**	**14 28 10.6**	**+0.1**
SAHE	**Sakarya_HENDEK**	**0.34**	**97**	P	**Pg**	**14 28 04.3**	**+0.1**
SAHE				S	**Sb**	**14 28 10.6**	**+0.1**
GULT	**Gulveren**	**0.47**	**170**	*e*PG	**Pg**	**14 28 06.8**	**+0.3**
GULT				*e*SG	**Sb**	**14 28 13.9**	**-0.2**
GULT	**Gulveren**	**0.47**	**170**	*e*Pg	**Pg**	**14 28 06.8**	**+0.3**
GULT				*e*Sg	**Sb**	**14 28 13.9**	**-0.2**
BTAS	**Taskesti**	**0.55**	**125**	*i* P	**Pb**	**14 28 08.5**	**-0.3**
BTAS				*i* S	**Sb**	**14 28 17.3**	**+0.7**
BTAS	**Taskesti**	**0.55**	**125**	P	**Pb**	**14 28 08.5**	**-0.3**
BTAS				S	**Sb**	**14 28 17.3**	**+0.7**
HRT	**Hereke**	**0.56**	**263**	*e*PG	**Pg**	**14 28 08.6**	**+0.2**
HRT				*e*SG	**Sb**	**14 28 17.0**	**+0.1**
HRT	**Hereke**	**0.56**	**263**	*e*Pg	**Pg**	**14 28 08.6**	**+0.2**
HRT				*e*Sg	**Sb**	**14 28 17.0**	**+0.1**
SILT	**Sile**	**0.63**	**294**	*e*PG	**Pb**	**14 28 09.9**	**-0.2**
SILT	**Sile**	**0.63**	**294**	*e*Pg	**Pb**	**14 28 09.9**	**-0.2**
ADVT	**Abdulvahap**	**0.69**	**228**	*e*PG	**Pg**	**14 28 10.8**	**+0.2**
ADVT	**Abdulvahap**	**0.69**	**228**	*e*Pg	**Pg**	**14 28 10.8**	**+0.2**
MDUB	**Mudurnu**	**0.73**	**125**	*e*PG	**Pg**	**14 28 11.4**	**-0.2**
MDUB	**Mudurnu**	**0.73**	**125**	*e*Pg	**Pg**	**14 28 11.4**	**-0.2**
IZI	**Iznik**	**0.90**	**232**	*e*PG	**Pg**	**14 28 14.7**	**0.0**
IZI	**Iznik**	**0.90**	**232**	*e*Pg	**Pg**	**14 28 14.7**	**0.0**
ISK	**Istanbul-Kandi**	**1.03**	**280**	*e*PG	**Pn**	**14 28 17.3**	**0.0**
ISK	**Istanbul-Kandi**	**1.03**	**280**	*e*Pg	**Pn**	**14 28 17.3**	**0.0**
KLYT	**Kilyos**	**1.09**	**290**	*e*PN	**Pg**	**14 28 18.4**	**+0.1**
KLYT	**Kilyos**	**1.09**	**290**	*e*Pn	**Pg**	**14 28 18.4**	**+0.1**
ARMT	**Armutlu**	**1.22**	**255**	*e*PN	**Pg**	**14 28 20.8**	**+0.1**
ARMT	**Armutlu**	**1.22**	**255**	*e*Pn	**Pg**	**14 28 20.8**	**+0.1**
BGKT	**Bogazkoy**	**1.27**	**284**	*e*PN	**Pg**	**14 28 21.6**	**-0.1**
BGKT	**Bogazkoy**	**1.27**	**284**	*e*Pn	**Pg**	**14 28 21.6**	**-0.1**
CTKS	**Kestanelik-??a**	**1.48**	**284**	*e*PN	**Pb**	**14 28 24.5**	**0.0**
CTKS	**Kestanelik-??a**	**1.48**	**284**	*e*Pn	**Pb**	**14 28 24.5**	**0.0**
TVSB	**Tavsanli**	**1.61**	**207**	*e*PN	**Pb**	**14 28 26.8**	**-0.1**
TVSB	**Tavsanli**	**1.61**	**207**	*e*Pn	**Pb**	**14 28 26.8**	**-0.1**

*IDC **11** 14:31:54.8±0.9, 39°.07N×143°.60E, h0km, mb3.7/10, mb1 3.9/14, mb1mx3.7/46, mbtmp3.8/14, ML3.5/4, MS3.3/1, Ms1 3.3/1, ms1mx2.5/47, Error ellipse: s-maj=23.6km s-min=15.8km az=101.0*
*ISCJB **11** 14:31:56.0±0.6, 39°.09N±0°.05×143°.53E±0°.05, h20km, mb3.7/10, Error ellipse: s-maj=7.6km s-min=5.6km az=175.8*
*JMA **11** 14:31:57.9±0.2, 39°.14N×143°.39E, h20km, M4.3*
ISC 11 14:31:57.8±0.8, 39°.08N±0°.07×143°.47E±0°.07, h20km, n29, σ1°02/32, mb3.7/10, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MIYJ	**Miyakonagasawa**	**1.37**	**292**	P	**Pn**	**14 32 21.2**	**-0.6**
MIYJ				S	**Sn**	**14 32 37.8**	**-1.6**
OFUJ	**Ofunato**	**1.40**	**271**	P	**Pn**	**14 32 21.7**	**-0.5**
OFUJ				S	**Sn**	**14 32 39.0**	**-1.1**
JOM	**Ohasama**	**1.74**	**284**	P	**Pn**	**14 32 26.8**	**0.0**
JOM				S	**Sn**	**14 32 47.6**	**-0.7**
JMK	**Ichinoseki**	**1.76**	**267**	P	**Pn**	**14 32 27.2**	**+0.2**
JMK				*e*S	**Sn**	**14 32 48.7**	**-0.1**
JIO	**Ouri**	**1.77**	**250**	P	**Pn**	**14 32 27.3**	**+0.1**
JIO				*e*S	**Sn**	**14 32 47.6**	**-1.5**
JKZ	**Kuzumaki**	**1.89**	**299**	P	**Pn**	**14 32 28.4**	**-0.5**
JKZ				S	**Sn**	**14 32 51.8**	**-0.3**
JANG	**Nango**	**1.99**	**311**	P	**Pn**	**14 32 29.2**	**-1.0**
JANG				*e*S	**Sn**	**14 32 54.6**	**0.0**
JRG	**Rokugo**	**2.23**	**279**	P	**Pn**	**14 32 34.3**	**+0.8**
JRG				*e*S	**Sb**	**14 33 03.5**	**-0.9**
JYK	**Kaneyama**	**2.43**	**267**	P	**Pn**	**14 32 37.1**	**+0.8**
MJAR	**Matsushiro Arr**	**4.87**	**240**	Pn	**Pn**	**14 33 11.5**	**+1.6**
	4.1nm,0.3s,baz=57,slow=13,SNR=28						
MAT	**Matsushiro**	**4.88**	**240**	P	**Pn**	**14 33 12.3**	**+2.4**
MAT				*e*S	Sb	14 34 15.0	-5.7
JHJ	**Hachijo jima 2**	**6.65**	**208**	Pn	**Pn**	**14 33 33.0**	**-1.4**
	17nm,0.3s,baz=144,slow=23,SNR=6.4						
JHJ				LR	LR	14 35 57.4	
	comp=Z,292nm,21.4s,baz=138,slow=36						
USRK	**Ussuriysk Ar.**	**10.00**	**304**	Pn	**Pn**	**14 34 22.1**	**+1.9**
	0.6nm,0.3s,baz=97,slow=14,SNR=7.1						
KLR	**Kul'dur**	**13.17**	**324**	Pn	**Pn**	**14 35 02.6**	**-0.9**
	0.1nm,0.3s,baz=126,slow=8.9,SNR=4.0						
MA2	**Magadan**	**21.04**	**10**	P	**P**	**14 36 39.6**	**-0.4**
	5.8nm,0.7s,baz=209,slow=12,SNR=5.0						
SEY	**Seymchan**	**24.49**	**10**	P	**P**	**14 37 15.7**	**+0.4**
	3.0nm,0.9s,baz=190,slow=7.8,SNR=12						
H11N2	**WAKE ISLAND Hy 27.93**	**127**		T	T	15 07 06.3	
	baz=322,slow=74,SNR=72						
H11N3	**WAKE ISLAND Hy 27.95**	**127**		T	T	15 07 08.1	
	baz=312,slow=74,SNR=58						
SONM	**Songino Array**	**28.07**	**300**	P	**P**	**14 37 48.4**	**+0.4**
	0.6nm,0.5s,baz=96,slow=10.0,SNR=3.5						
H11S1	**WAKE ISLAND Hy 28.74**	**129**		T	T	15 08 08.8	
	baz=321,slow=76,SNR=9.3						
H11S3	**WAKE ISLAND Hy 28.74**	**129**		T	T	15 08 11.8	
	baz=321,slow=76,SNR=7.3						
H11S2	**WAKE ISLAND Hy 28.76**	**129**		T	T	15 08 15.1	
	baz=321,slow=76,SNR=6.9						
ZALV	**Zalesovo Beam**	**41.78**	**311**	P	**P**	**14 39 46.8**	**+1.3**
	0.6nm,0.4s,baz=98,slow=7.9,SNR=2.8						
MKAR	**Makanchi Array**	**44.44**	**301**	P	**P**	**14 40 07.0**	**-0.2**
	0.3nm,0.6s,baz=81,slow=7.5,SNR=4.3						
ILAR	**Eielson Array**	**46.90**	**33**	P	**P**	**14 40 25.1**	**-1.3**
	0.5nm,0.7s,baz=260,slow=6.9,SNR=7.3						
WRA	**Warramunga Arr**	**59.33**	**190**	P	**P**	**14 41 58.8**	**+0.5**
	1.2nm,0.4s,baz=7.9,slow=6.9,SNR=27						
YKA	**Yellowknife Ar**	**61.23**	**31**	P	**P**	**14 42 11.6**	**+0.8**
	0.2nm,0.6s,baz=304,slow=7.0,SNR=3.8						
ASAR	**Alice Springs**	**63.05**	**190**	P	**P**	**14 42 23.8**	**+0.2**
	0.3nm,0.7s,baz=18,slow=13,SNR=6.8						
FINES	**FINESS Array B**	**67.76**	**333**	P	**P**	**14 42 54.1**	**+0.5**
	1.0nm,0.8s,baz=51,slow=11,SNR=2.2						

IDC 11 14:35:49.5±1.2, 37°.81N×144°.22E, h0km, mb3.4/5, mb1 3.6/7, mb1mx3.4/42, mbtmp3.4/7, ML3.1/2, Error ellipse: s-maj=28.9km s-min=24.3km az=138.0, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MJAR	**Matsushiro Arr**	**4.96**	**257**	Pn	Pn	14 37 07.0	+1.7
	3.5nm,0.3s,baz=84,slow=15,SNR=14						
USRK	**Ussuriysk Ar.**	**11.22**	**308**	Pn	Pn	14 38 30.2	-1.0
	0.3nm,0.3s,baz=99,slow=18,SNR=3.8						
ZALV	**Zalesovo Beam**	**43.05**	**312**	P	P	14 43 50.4	-0.4
	0.3nm,0.4s,baz=116,slow=9.8,SNR=2.8						
MKAR	**Makanchi Array**	**45.60**	**302**	P	P	14 44 11.0	-0.4
	0.5nm,0.7s,baz=83,slow=9.0,SNR=5.1						
ILAR	**Eielson Array**	**47.64**	**33**	P	P	14 44 27.4	+0.4
	0.2nm,0.6s,baz=277,slow=7.2,SNR=3.2						
WRA	**Warramunga Arr**	**58.19**	**191**	P	P	14 45 45.0	-0.4
	0.6nm,1.1s,baz=11,slow=6.9,SNR=2.9						
YKA	**Yellowknife Ar**	**62.01**	**31**	P	P	14 46 11.0	-0.1
	0.1nm,0.5s,baz=300,slow=6.3,SNR=2.7						

*NIED **11** 14:37:00, 36°.90N×140°.70E, h5km, Mw3.6 Best double couple: M₀3.06000×10¹⁴ NP1:φ₁357.00000°, δ26.00000°, λ-100.00000°. NP2:φ₂189.00000°, δ65.00000°, λ-85.00000°.*
*ISCJB **11** 14:37:19.2±0.6, 36°.88N±0°.03×140°.76E±0°.06, h10km, mb3.4/8, Error ellipse: s-maj=6.8km s-min=4.2km az=7.8*
*JMA **11** 14:37:20.8, 36°.90N×140°.67E, h6km±1km, M3.9*
JMA Felt I J1.
*IDC **11** 14:37:24.3±4.8, 36°.91N×140°.45E, h35km±38km, mb3.4/8, mb1 3.6/9, mb1mx3.4/42, mbtmp3.6/9, ML3.4/1, MS2.7/1, Ms1 2.7/1, ms1mx2.2/29, Error ellipse: s-maj=27.9km s-min=17.5km az=81.0*
ISC 11 14:37:20.6±0.7, 36°.90N±0°.03×140°.65E±0°.05, h10km, n25, σ0°69/22, mb3.6/8, 2C, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.23**	**30**	⇑P	**Pg**	**14 37 25.5**	**+0.1**
JHO	**Hitachi**	**0.30**	**193**	P	**Pg**	**14 37 26.7**	**+0.1**
JHO				S	**Sg**	**14 37 30.9**	**+0.3**
JSB	**Shiboa**	**0.59**	**277**	⇑P	**Pb**	**14 37 33.1**	**+0.1**
JSB				S	**Sb**	**14 37 41.7**	**+0.2**
JFT	**Otama**	**0.67**	**338**	P	**Pg**	**14 37 34.0**	**+0.5**
JFT				S	**Sg**	**14 37 42.9**	**+0.7**
JYT	**Yasato**	**0.77**	**209**	S	**Sg**	**14 37 45.3**	**-0.1**
JFY	**Yanaizu**	**0.91**	**304**	P	**Pg**	**14 37 38.5**	**+0.4**
JFY				S	**Sg**	**14 37 50.3**	**+0.3**
JMM	**Marumori**	**0.97**	**7**	S	**Sg**	**14 37 51.8**	**-0.1**
MJAR	**Matsushiro Arr**	**2.00**	**260**	Pn	**Pn**	**14 37 54.6**	**+0.2**
	36nm,0.3s,baz=84,slow=16,SNR=38						
MJAR				Lg	Lg	14 38 22.1	
	35nm,0.3s,baz=258,slow=22,SNR=7.4						
JHJ	**Hachijo jima 2**	**3.84**	**191**	Pn	**Pn**	**14 38 21.1**	**+1.4**
	7.2nm,0.3s,baz=68,slow=19,SNR=3.0						
JNU	**Nakatsue**	**8.86**	**248**	LR	LR	14 42 25.5	
	comp=Z,50nm,20.8s,baz=142,slow=35						
SEY	**Seymchan**	**27.04**	**12**	P	**P**	**14 43 02.5**	**-0.2**
	0.7nm,0.6s,baz=215,slow=5.6,SNR=4.7						
SONM	**Songino Array**	**27.35**	**304**	P	**P**	**14 43 04.6**	**-1.3**
	0.2nm,0.4s,baz=151,slow=3.3,SNR=2.7						
H11N2	**WAKE ISLAND Hy 28.61**	**120**		T	T	15 13 03.0	
	baz=313,slow=75,SNR=76						
H11N1	**WAKE ISLAND Hy 28.62**	**120**		T	T	15 13 04.5	
	baz=313,slow=75,SNR=65						
H11N3	**WAKE ISLAND Hy 28.63**	**120**		T	T	15 13 04.2	
	baz=313,slow=75,SNR=63						
H11S1	**WAKE ISLAND Hy 29.30**	**122**		T	T	15 13 56.1	
	baz=314,slow=75,SNR=57						
H11S3	**WAKE ISLAND Hy 29.30**	**122**		T	T	15 13 56.4	
	baz=314,slow=75,SNR=81						
H11S2	**WAKE ISLAND Hy 29.32**	**122**		T	T	15 13 57.3	
	baz=314,slow=75,SNR=78						
MKAR	**Makanchi Array**	**43.67**	**302**	P	**P**	**14 45 25.2**	**-0.3**
	0.2nm,0.7s,baz=94,slow=12,SNR=2.3						
WRA	**Warramunga Arr**	**56.85**	**187**	P	**P**	**14 47 04.8**	**-0.7**
	0.4nm,0.4s,baz=345,slow=7.9,SNR=14						
ASAR	**Alice Springs**	**60.58**	**187**	P	**P**	**14 47 30.8**	**-0.6**
	0.3nm,0.8s,baz=16,slow=10,SNR=8.8						
YKA	**Yellowknife Ar**	**64.23**	**30**	P	**P**	**14 47 56.0**	**+0.7**
	0.2nm,0.8s,baz=307,slow=6.6,SNR=3.9						
FINES	**FINESS Array B**	**68.64**	**332**	P	**P**	**14 48 22.2**	**-1.4**
	1.0nm,0.8s,baz=8.9,slow=9.8,SNR=2.4						
TXAR	**Lajitas Array**	**90.68**	**52**	P	**P**	**14 50 24.2**	**+0.3**
	0.2nm,0.6s,baz=294,slow=2.7,SNR=2.7						
LPAZ	**La Paz**	**147.28**	**59**	PKPbc	**PKPbc**	**14 57 06.5**	**+1.0**
	0.3nm,0.3s,baz=46,slow=5.9,SNR=3.6						

*ISCJB **11** 14:40:13.7±0.7, 35°.65N±0°.04×139°.97E±0°.06, h112km±5km, mb3.8/2, Error ellipse: s-maj=9.4km s-min=5.3km az=148.7*
*JMA **11** 14:40:15.1±0.2, 35°.71N×139°.99E, h97km±2km, M3.3*
*IDC **11** 14:40:16.8±2.5, 35°.49N×139°.72E, h110km±13km, mb3.4/2, mb1 3.6/3, mb1mx3.0/41, mbtmp3.8/3, Error ellipse: s-maj=55.7km s-min=7.5km az=67.0*
ISC 11 14:40:14.9±1.2, 35°.65N±0°.05×139°.95E±0°.06, h106km±8km, n16, σ0°69/28, Near south coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JCN	**Nagara**	**0.31**	**139**	P	**Pn**	**14 40 30.5**	**+0.3**
JCN				S	**Sn**	**14 40 42.3**	**+0.6**
JOD2	**Odawara 2**	**0.81**	**241**	P	**Pn**	**14 40 33.6**	**-0.3**
JOD2				S	**Sn**	**14 40 47.2**	**-0.9**
JAG	**Ashikaga**	**0.87**	**332**	P	**Pn**	**14 40 34.0**	**-0.5**
JAG				S	**Sn**	**14 40 47.7**	**-1.5**
JRY	**Ryogami san**	**0.93**	**293**	P	**Pn**	**14 40 35.5**	**+0.5**
BSO3	**Boso 3**	**0.97**	**152**	P	**Pn**	**14 40 35.1**	**0.0**
BSO3				S	**Sn**	**14 40 51.3**	**+0.9**
JIM2	**Oshima 3**	**1.03**	**205**	P	**Pn**	**14 40 35.5**	**-0.6**
JIM2				S	**Sn**	**14 40 51.1**	**-1.0**
JYN	**Shimob**	**1.16**	**263**	P	**Pn**	**14 40 37.9**	**+0.3**
JYN				*e*S	**Sn**	**14 40 55.2**	**+0.5**
JKT	**Katashina**	**1.25**	**333**	P	**Pn**	**14 40 38.4**	**-0.2**
JKT				S	**Sn**	**14 40 55.7**	**-0.8**
JIZS	**Izushimoda**	**1.28**	**224**	P	**Pn**	**14 40 39.2**	**+0.3**
JIZS				S	**Sn**	**14 40 57.6**	**+0.6**
BSO1	**Boso 1**	**1.31**	**140**	P	**Pn**	**14 40 38.4**	**-0.2**
BSO1				S	**Sn**	**14 40 57.6**	**+1.0**
MJAR	**Matsushiro Arr**	**1.67**	**303**	P	**Pn**	**14 40 43.4**	**-0.1**
	23nm,0.3s,baz=135,slow=11,SNR=32						
MJAR				S	**Sn**	**14 41 06.3**	**+1.0**
	13nm,0.3s,baz=124,slow=15,SNR=5.9						
MAT	**Matsushiro**	**1.67**	**303**	P	**Pn**	**14 40 43.8**	**+0.3**
MAT				S	**Sn**	**14 41 05.7**	**+0.4**
MAT	**Matsushiro**	**1.67**	**303**	P	**Pn**	**14 40 44.0**	**+0.5**
JHJ	**Hachijo jima 2**	**2.53**	**183**	P	**Pn**	**14 40 54.2**	**-0.4**
	32nm,0.3s,baz=145,slow=23,SNR=11						
JHJ				S	**Sn**	**14 41 24.1**	**-1.0**
	81nm,0.3s,baz=239,slow=22,SNR=12						
WRA	**Warramunga Arr**	**55.55**	**186**	P	**P**	**14 49 39.1**	**-0.2**
	0.6nm,0.4s,baz=0.8,slow=7.6,SNR=30						
ASAR	**Alice Springs**	**59.27**	**186**	P	**P**	**14 50 05.8**	**+0.4**
	0.8nm,1.1s,baz=359,slow=6.4,SNR=12						

JMA 11 14:49:02.0, 36°.99N×140°.70E, h9km±1km, M2.8, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.14**	**35**	P	Pg	14 49 05.1	0.0
JHO	**Hitachi**	**0.39**	**196**	P	Pg	14 49 09.7	0.0
JHO				S	Sg	14 49 15.1	+0.2
JFT	**Otama**	**0.60**	**331**	P	Pg	14 49 13.7	0.0
JFT				S	Sg	14 49 21.7	+0.1
MAT	**Matsushiro**	**2.05**	**258**	P	Pn	14 49 36.2	-0.5
MAT				S	Sb	14 50 04.1	-0.9

*ISCJB **11** 14:54:14.2±1.5, 37°.05N±0°.06×141°.0E±0°.1, h18km±7km, mb3.6/2, Error ellipse: s-maj=16.3km s-min=9.9km az=171.7*
*IDC **11** 14:54:15.9±3.7, 36°.72N×140°.73E, h0km, mb3.5/2, mb1 3.6/3, mb1mx3.2/53, mbtmp3.4/3, ML2.8/1, Error ellipse: s-maj=74.2km s-min=18.4km az=11.0*
*JMA **11** 14:54:16.6, 37°.04N×140°.69E, h10km±1km, M3.0*
ISC 11 14:54:16.3±1.1, 37°.04N±0°.04×140°.74E±0°.09, h15km±8km, n7, σ0°60/11, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.08**	**33**	P	**Pg**	**14 54 19.4**	**0.0**
ONAJ				S	**Sg**	**14 54 21.4**	**0.0**
JHO	**Hitachi**	**0.45**	**198**	P	**Pg**	**14 54 25.1**	**-0.1**
JHO				S	**Sg**	**14 54 31.2**	**0.0**
JFT	**Otama**	**0.58**	**326**	P	**Pg**	**14 54 27.7**	**0.0**
JFT				S	**Sg**	**14 54 35.1**	**-0.4**
MJAR	**Matsushiro Arr**	**2.09**	**257**	Pn	**Pn**	**14 54 52.2**	**+1.3**
	3.8nm,0.3s,baz=80,slow=16,SNR=9.1						
MJAR				Lg	Lg	14 55 19.3	
	8.2nm,0.3s,baz=312,slow=22,SNR=14						
MAT	**Matsushiro**	**2.10**	**257**	P	**Pb**	**14 54 53.4**	**-0.6**
MAT				*e*S	**Sb**	**14 55 19.8**	**-0.1**
WRA	**Warramunga Arr**	**56.99**	**187**	P	**P**	**15 04 00.9**	**-0.4**
	0.4nm,0.5s,baz=2.8,slow=7.5,SNR=12						
ASAR	**Alice Springs**	**60.72**	**187**	P	**P**	**15 04 26.9**	**-0.4**
	0.3nm,0.7s,baz=7.6,slow=8.4,SNR=4.8						

*ISCJB **11** 14:56:27.1±1.2, 37°.10N±0°.06×140°.8E±0°.1, h17km±5km, mb3.4/2, Error ellipse: s-maj=16.0km s-min=8.8km az=164.6*
*JMA **11** 14:56:27.9, 37°.09N×140°.66E, h9km±1km, M3.0*
*IDC **11** 14:56:29.0±2.5, 36°.83N×140°.67E, h0km, mb3.3/2, mb1 3.6/2, mb1mx3.0/52, mbtmp3.3/2, Error ellipse: s-maj=42.2km s-min=18.6km az=10.0*
ISC 11 14:56:28.4±1.1, 37°.08N±0°.04×140°.65E±0°.06, h6km±11km, n7, σ0°31/11, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.12**	**77**	P	**Pg**	**14 56 30.8**	**-0.1**
ONAJ				S	**Sg**	**14 56 32.9**	**+0.2**
JHO	**Hitachi**	**0.47**	**188**	P	**Pg**	**14 56 37.1**	**-0.3**
JHO				S	**Sg**	**14 56 43.8**	**+0.3**
JFT	**Otama**	**0.51**	**330**	P	**Pg**	**14 56 38.1**	**-0.1**
JFT				S	**Sg**	**14 56 44.8**	**-0.1**
MJAR	**Matsushiro Arr**	**2.03**	**256**	Pn	**Pn**	**14 57 03.5**	**+0.3**
	7.1nm,0.3s,baz=82,slow=17,SNR=18						
MJAR				Lg	Lg	14 57 31.9	
	6.8nm,0.3s,baz=80,slow=27,SNR=9.5						
MAT	**Matsushiro**	**2.03**	**256**	P	**Pn**	**14 57 03.4**	**+0.2**
MAT				S	**Sb**	**14 57 31.4**	**+0.1**
WRA	**Warramunga Arr**	**57.02**	**187**	P	**P**	**15 06 14.6**	**-0.4**
	0.3nm,0.5s,baz=3.3,slow=7.3,SNR=7.2						
ASAR	**Alice Springs**	**60.75**	**187**	P	**P**	**15 06 41.1**	**+0.1**
	0.2nm,0.9s,baz=20,slow=12,SNR=3.4						

JMA 11 14:57:55.6, 37°.05N×140°.73E, h9km±1km, M2.9, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.07**	**47**	P	Pg	14 57 57.8	0.0
ONAJ				S	Sg	14 57 59.4	0.0
JHO	**Hitachi**	**0.46**	**196**	P	Pg	14 58 04.4	-0.1
JHO				S	Sg	14 58 10.6	+0.1
JFT	**Otama**	**0.56**	**326**	P	Pg	14 58 06.8	+0.3
JFT				S	Sg	14 58 14.5	+0.6
MAT	**Matsushiro**	**2.09**	**257**	P	Pb	14 58 32.4	-1.2
MAT				S	Sb	14 58 58.6	-1.1

*IDC **11** 15:00:12.7±2.3, 37°.03N×140°.89E, h0km, mb3.2/3, mb1 3.4/4, mb1mx3.1/45, mbtmp3.2/4, ML3.1/1, Error ellipse: s-maj=46.9km s-min=29.5km az=35.0*
*ISCJB **11** 15:00:13

JYN				*e*S		**Sn**	**15 03 01.1**	**-0.8**
NEM2	**Nemuro 2**	**5.46**	**10**	P		**Pn**	**15 02 01.8**	**-1.3**
NEM2				*e*S		**Sn**	**15 03 00.5**	**-4.1**
JNY	**Yasuok**	**5.90**	**246**	P		**Pn**	**15 02 10.8**	**+1.6**
JTKR	**Abashiri--Toko**	**5.99**	**356**	P		**Pn**	**15 02 11.1**	**+0.8**
JTKR				S		**Sn**	**15 03 15.5**	**-2.1**
JHR	**Hokuryu**	**6.11**	**341**	*e*S		**Sn**	**15 03 21.7**	**+1.2**
JHJ	**Hachijo jima 2**	**6.16**	**219**	Pn		Pn	15 02 04.5	-8.2
	4.8nm,0.3s,baz=40,slow=16,SNR=2.4							
JHJ				Sn		Sn	15 03 14.7	-7.3
	14nm,0.3s,baz=132,slow=22,SNR=6.1							
USRK	**Ussuriysk Ar.**	**11.25**	**307**	Pn		Pn	15 03 18.0	-4.4
	0.3nm,0.3s,baz=101,slow=15,SNR=3.8							
MKAR	**Makanchi Array**	**45.65**	**302**	P		**P**	**15 08 59.0**	**-2.3**
	0.1nm,0.4s,baz=80,slow=8.9,SNR=2.3							
WRA	**Warramunga Arr**	**58.40**	**191**	P		**P**	**15 10 35.0**	**-1.2**
	0.6nm,1.0s,baz=7.9,slow=7.2,SNR=2.6							
YKA	**Yellowknife Ar**	**61.76**	**31**	P		**P**	**15 10 59.7**	**+0.9**
	0.2nm,0.7s,baz=301,slow=6.4,SNR=4.4							
NVAR	**Mina Array Bea**	**72.48**	**55**	P		**P**	**15 12 09.8**	**+2.2**
	0.6nm,0.8s,baz=280,slow=5.4,SNR=4.1							

JMA 11 15:00:48.8, 36.96N×140.67E, h7km±1km, M2.5, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.17**	**36**	P	Pg	15 00 52.5	+0.1
ONAJ				S	Sg	15 00 55.4	+0.6
JHO	**Hitachi**	**0.36**	**193**	P	Pg	15 00 55.9	+0.1
JFT	**Otama**	**0.62**	**335**	S	Sg	15 01 09.3	+0.5
JMM	**Marumori**	**0.91**	**6**	S	Sg	15 01 18.0	-0.1

JMA 11 15:01:20.2, 37.04N×140.74E, h8km±1km, M2.6, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.08**	**37**	P	Pg	15 01 22.2	-0.1
ONAJ				S	Sg	15 01 23.8	0.0
JHO	**Hitachi**	**0.45**	**198**	P	Pg	15 01 28.9	0.0
JHO				S	Sg	15 01 35.0	+0.2
JFT	**Otama**	**0.58**	**326**	P	Pg	15 01 31.5	+0.2
JFT				S	Sg	15 01 39.6	+0.7
JMM	**Marumori**	**0.83**	**3**	P	Pg	15 01 36.0	-0.1
JMM				S	Sg	15 01 47.0	+0.2
MAT	**Matsushiro**	**2.09**	**257**	P	Pb	15 01 59.2	+0.8

JMA 11 15:02:55.3, 36.90N×140.71E, h8km±1km, M2.6, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.21**	**19**	P	Pg	15 02 59.8	+0.1
ONAJ				S	Sg	15 03 03.1	+0.5
JHO	**Hitachi**	**0.31**	**201**	P	Pg	15 03 01.5	+0.1
JHO				S	Sg	15 03 05.9	+0.4
JFT	**Otama**	**0.69**	**334**	S	Sg	15 03 17.7	+0.2
MAT	**Matsushiro**	**2.04**	**261**	P	Pn	15 03 26.4	-3.6
MAT				*e*S	Sn	15 03 55.4	-0.3

JMA 11 15:06:16.4, 37.04N×140.66E, h10km±1km, M3.1, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.13**	**61**	P	Pg	15 06 19.5	+0.1
JHO	**Hitachi**	**0.43**	**190**	*e*S	Sg	15 06 31.0	+0.4
JFT	**Otama**	**0.54**	**332**	*e*S	Sg	15 06 34.2	+0.1
JMM	**Marumori**	**0.83**	**7**	*e*S	Sg	15 06 42.7	-0.6
JFY	**Yanaizu**	**0.85**	**296**	*e*S	Sg	15 06 43.5	-0.2
MAT	**Matsushiro**	**2.03**	**257**	P	Pn	15 06 51.9	+1.2
MAT				S	Sb	15 07 18.7	0.0

*IDC **11** 15:08:03.9±0.6, 37.61N×142.48E, h0km, mb4.0/21, mb1 4.2/26, mb1mx4.1/41, mbtmp4.1/26, ML2.9/3, MS3.1/4, Ms1 3.1/4, ms1mx2.7/49, Error ellipse: s-maj=16.8km s-min=12.8km az=104.0*

*JMA **11** 15:08:03.1±0.2, 37.65N×142.53E, h0km, M4.4*

JMA Felt I J1.

*ISCJB **11** 15:08:06.7±0.3, 37.62N±0.03×142.60E±0.04, h35km, mb4.3/41, MS3.8/3, Error ellipse: s-maj=5.4km s-min=3.6km az=138.1*

*BJI **11** 15:08:06.3, 37.45N×142.36E, h17km, mb4.5/33, mB4.7/18, Ms4.2/13, Ms7 4.1/9*

*MOS **11** 15:08:07.4±1.1, 37.69N×142.52E, h37km, mb4.5/26, Error ellipse: s-maj=9.3km s-min=6.3km az=90.4*

*NEIC **11** 15:08:08.8±0.4, 37.62N×142.55E, h35km±2km, mb4.5/11, Error ellipse: s-maj=7.0km s-min=4.9km az=123.0*

ISC 11 15:08:08.5±0.5, **37.59N**±0.05×**142.58E**±0.05, **h35**km, **n124,** σ**1§26**/120, **mb4.2**/41, **MS4.1**/3, **1C, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**1.29**	**312**	P	Pn	15 08 26.8	-3.3
JIO				S	**Sn**	**15 08 43.5**	**-2.7**
JMM	**Marumori**	**1.44**	**281**	P	**Pn**	**15 08 29.3**	**-2.8**
JMM				S	**Sn**	**15 08 48.1**	**-1.6**
ONAJ	**Iwakimizuishiy**	**1.50**	**251**	*e*S	**Sn**	**15 08 51.1**	**-0.2**
JOU	**Okura**	**1.69**	**298**	P	**Pn**	**15 08 33.3**	**-2.3**
JFT	**Otama**	**1.78**	**268**	P	**Pn**	**15 08 35.4**	**-1.4**
JFT				S	**Sn**	**15 08 59.1**	**+0.9**
JHO	**Hitachi**	**1.88**	**239**	P	**Pn**	**15 08 36.8**	**-1.3**
JHO				*e*S	**Sn**	**15 09 01.2**	**+0.6**
MJAR	**Matsushiro Arr**	**3.65**	**255**	P	**Pn**	**15 09 03.7**	**+1.3**
	7.6nm,0.3s,baz=74,slow=12,SNR=24						
MJAR				LR	LR	15 10 28.6	
	comp=Z,213nm,18.6s,baz=75,slow=41						
MAJO	**Matsushiro**	**3.65**	**255**	*e*P	**Pn**	**15 09 04.0**	**+1.5**
MAJO	**Matsushiro**	**3.65**	**255**	*e*Pn	**Pn**	**15 09 04.0**	**+1.5**
MAT	**Matsushiro**	**3.65**	**255**	P	**Pn**	**15 09 04.2**	**+1.7**
MAT				*e*S	**Sn**	**15 09 48.0**	**+3.7**
ERM	**Erimo**	**4.44**	**6**	*e*P	**Pn**	**15 09 12.1**	**-1.2**
ERM				*e*		15 10 04.5	
ERM	**Erimo**	**4.44**	**6**	*e*Pn	**Pn**	**15 09 12.1**	**-1.2**
ERM				*e*Sn	**Sn**	**15 10 04.5**	**+0.8**
JHJ2	**Mitsune**	**5.01**	**208**	*e*Pn	**Pn**	**15 09 21.2**	**+0.1**
INU	**Inuyama**	**5.01**	**245**	*e*Pn	**Pn**	**15 09 21.6**	**+0.5**
JHJ	**Hachijo jima 2**	**5.01**	**208**	Pn	**Pn**	**15 09 20.9**	**-0.4**
	43nm,0.3s,baz=328,slow=20,SNR=18						
JHJ				Sn	**Sn**	**15 10 13.8**	**-4.2**
	21nm,0.3s,baz=78,slow=20,SNR=1.8						
YUK	**Yuzh-Kuril'sk**	**6.90**	**20**	*e*P	**Pn**	**15 09 46.1**	**-1.0**
YUK				*i* S	Sn	15 10 55.2	-9.1
YUK				pmax	pmax		
	comp=Z,76nm,0.2s						
YUK				pmax	pmax		
	comp=E,13nm,0.1s						
YUK				pmax	pmax		
	comp=N,13nm,0.3s						
YUK				MLR	MLR		
	comp=Z,341nm,11.0s						
SHO	**Shikotan**	**7.05**	**26**	*e*P	**Pn**	**15 09 47.4**	**-1.8**
SHO				pmax	pmax		
	comp=Z,49nm,1.0s						
SHO				pmax	pmax		
	comp=N,27nm,0.9s						
SHO				pmax	pmax		
	comp=E,37nm,0.9s						
KUR	**Kuril'sk**	**8.60**	**26**	*e*P	**Pn**	**15 10 11.8**	**+1.4**
KUR				*e*S	Sn	15 11 38.7	-7.5
KUR				pmax	pmax		
	comp=Z,10.0nm,0.9s						
KUR				pmax	pmax		
	comp=N,8.0nm,0.5s						
KUR				smax	smax		
	comp=N,16nm,0.5s						
KUR				smax	smax		
	comp=E,17nm,0.5s						
YSS	**Yuzh-Sakhalins**	**9.36**	**1⇑**	*e*P	**Pn**	**15 10 22.8**	**+2.1**
YSS				*e*S	**Sn**	**15 12 01.0**	**-3.6**
YSS				pmax	pmax		
	comp=Z,20nm,1.8s						
YSS				MLR	MLR		
	comp=Z,300nm,17.0s						
YSS	**Yuzh-Sakhalins**	**9.36**	**1**	*e*Pn	**Pn**	**15 10 20.8**	**0.0**
USRK	**Ussuriysk Ar.**	**10.38**	**313**	Pn	**Pn**	**15 10 34.6**	**-0.1**
	comp=Z,1.0nm,0.3s,baz=120,slow=15,SNR=11						
CBIJ	**Chichi jima**	**10.47**	**182**	Pn	**Pn**	**15 10 34.7**	**-1.5**
CBIJ				Sn	Sn	15 12 24.7	-7.6
JCJ	**Chichijima**	**10.47**	**182**	Pn	**Pn**	**15 10 34.7**	**-1.5**
	comp=Z,4.8nm,0.3s,baz=90,slow=20,SNR=4.0						
JCJ				Sn	Sn	15 12 24.7	-7.6
	comp=Z,2.5nm,0.3s,baz=318,slow=16,SNR=2.6						
JNU	**Nakatsue**	**10.54**	**248**	LR	LR	15 15 06.2	
	comp=Z,92nm,19.5s,baz=130,slow=40						
JNU	**Nakatsue**	**10.54**	**248**	*e*Pn	**Pn**	**15 10 37.3**	**+0.2**
KSRS	**Korea Array**	**11.64**	**274**	Pn	**Pn**	**15 10 53.7**	**+1.7**
	comp=Z,0.1nm,0.3s,baz=87,slow=13,SNR=8.7						
KSRS				LR	LR	15 15 04.2	
	comp=Z,112nm,19.6s,baz=73,slow=36						
KSAR	**Wonju Array Be**	**11.67**	**274**	P	**Pn**	**15 10 53.7**	**+1.2**
KSAR	**Wonju Array Be**	**11.67**	**274**	Pn	**Pn**	**15 10 53.7**	**+1.2**
KLR	**Kul'dur**	**14.02**	**329**	Pn	**Pn**	**15 11 22.6**	**-2.0**
	comp=Z,0.2nm,0.3s,baz=121,slow=14,SNR=3.6						
CN2	**Changchun**	**14.39**	**301**	*e*P	**Pn**	**15 11 32.3**	**+2.8**
PETK	**Petropavlovsk-**	**18.74**	**29**	P	**Pn**	**15 12 25.2**	**+0.4**
	comp=Z,0.1nm,0.3s,baz=203,slow=17,SNR=2.7						
NJ2	**Nanjing**	**20.22**	**261**	*e*P	**P**	**15 12 40.1**	**-0.3**
NJ2				pmax	pmax		
	comp=Z,11nm,0.7s						
BJI	**Beijing**	**20.69**	**285**	P	Pn	15 12 47.0	-1.0
BJI				S	**S**	**15 16 35.5**	**+0.9**
BJI				pmax	pmax		
	comp=Z,7.0nm,0.6s						
BJI				pmax	pmax		
	comp=Z,150nm,4.1s						
BJI				LR	LR		
	comp=Z,140nm,7.5s						
BJI				LR	LR		
	comp=Z,92nm,9.7s						
MA2	**Magadan**	**22.62**	**11**	P	**P**	**15 13 05.6**	**-0.4**
	comp=Z,5.4nm,0.7s,baz=292,slow=3.0,SNR=3.8						
MA2				LR	LR	15 22 27.2	
	comp=Z,55nm,18.5s,baz=82,slow=38						
MA2	**Magadan**	**22.62**	**11**	P	**P**	**15 13 05.6**	**-0.4**
MA2				pmax	pmax		
	comp=Z,6.0nm,0.8s						
MA2				MLR	MLR		
	comp=Z,55nm,18.5s						
HHC	**Hu-ho-hao-te**	**24.18**	**287**	*e*P	**P**	**15 13 22.1**	**+0.5**
HHC				pP	pP	15 13 30.0	-1.6
HHC				sP	sP	15 13 32.5	-3.4
HHC				S	**S**	**15 17 36.7**	**-0.8**
HHC				pmax	pmax		
	comp=Z,30nm,0.8s						
HHC				pmax	pmax		
	comp=Z,140nm,6.3s						
HHC				LR	LR		
	comp=Z,620nm,11.1s						
HHC				LR	LR		
	comp=Z,650nm,13.6s						
HHC				LR	LR		
	comp=Z,620nm,11.1s						
YAK	**Yakutsk**	**25.74**	**346**	P	**P**	**15 13 34.7**	**-0.7**
	comp=Z,4.2nm,0.3s,baz=157,slow=1.3,SNR=4.7						
YAK	**Yakutsk**	**25.74**	**346**	P	**P**	**15 13 34.7**	**-0.7**
YAK				pmax	pmax		
	comp=Z,10.0nm,0.5s						
SEY	**Seymchan**	**26.07**	**10**	P	**P**	**15 13 40.1**	**+1.7**
	comp=Z,4.6nm,0.6s,baz=190,slow=7.8,SNR=37						
XAN	**Xi'an**	**27.43**	**273**	P	P	15 13 59.8	+8.7
XAN				pP	sP	15 14 05.6	+0.3
BOD	**Bodaibo**	**27.56**	**326**	*e*P	**P**	**15 13 49.8**	**-2.1**
BOD				pmax	pmax		
	comp=Z,5.0nm,0.8s						
H11N2	**WAKE ISLAND Hy**	**27.66**	**123**	T	T	15 42 53.4	
	baz=316,slow=75,SNR=196						
H11N1	**WAKE ISLAND Hy**	**27.67**	**123**	T	T	15 42 54.5	
	baz=316,slow=75,SNR=229						
H11N3	**WAKE ISLAND Hy**	**27.68**	**123**	T	T	15 42 54.8	
	baz=316,slow=75,SNR=158						
ULN	**Ulaanbaatar**	**27.82**	**303**	*e*P	**P**	**15 13 53.8**	**-0.7**
ULN				pmax	pmax		
	comp=Z,2.0nm,0.7s						
ULN	**Ulaanbaatar**	**27.82**	**303**	*e*P	**P**	**15 13 53.8**	**-0.7**
	comp=Z,2.3nm,0.7s						
SONA1	**Songino Array**	**28.25**	**303**	*e*P	**P**	**15 13 57.9**	**-0.4**
SONM	**Songino Array**	**28.25**	**303**	P	**P**	**15 13 58.1**	**-0.2**
	comp=Z,3.4nm,0.7s,baz=102,slow=8.5,SNR=18						
H11S1	**WAKE ISLAND Hy**	**28.41**	**125**	T	T	15 43 50.8	
	baz=318,slow=76,SNR=217						
H11S3	**WAKE ISLAND Hy**	**28.41**	**125**	T	T	15 43 51.9	
	baz=318,slow=76,SNR=149						
H11S2	**WAKE ISLAND Hy**	**28.42**	**125**	T	T	15 43 51.9	
	baz=318,slow=76,SNR=98						
ZAK	**Zakamensk**	**30.66**	**307**	*e*P	**P**	**15 14 16.7**	**-2.9**
ZAK				pmax	pmax		
	comp=Z,3.0nm,1.1s						
LZH	**Lanzhou**	**30.89**	**279**	*e*P	**P**	**15 14 21.8**	**0.0**
LZH				pP	pP	15 14 32.0	+0.1
LZH				sP	sP	15 14 36.7	+0.6
LZH				pmax	pmax		
	comp=Z,18nm,1.1s						
LZH				pmax	pmax		
	comp=Z,49nm,5.4s						
LZH				LR	LR		
	comp=Z,230nm,13.2s						
LZH				LR	LR		
	comp=Z,250nm,13.1s						
LZH				LR	LR		
	comp=Z,310nm,16.7s						
CD2	**Chengdu**	**32.60**	**270**	P	**P**	**15 14 35.4**	**-1.4**
CD2				pmax	pmax		
	comp=Z,1.0nm,0.5s						
TIXI	**Tiksi**	**34.85**	**352**	P	**P**	**15 14 57.7**	**+1.9**
	comp=Z,0.5nm,0.3s,baz=103,slow=7.4,SNR=2.8						
KMI	**Kunming**	**35.96**	**261**	P	**P**	**15 15 07.5**	**+1.3**
KMI				pmax	pmax		
	comp=Z,10.0nm,0.6s						
KMI				pmax	pmax		
	comp=Z,83nm,6.1s						
WMQ	**Urumqi**	**41.42**	**296**	*e*P	**P**	**15 15 53.0**	**+1.5**
WMQ				pP	pP	15 16 01.8	0.0
WMQ				sP	sP	15 16 06.3	+0.3
WMQ				pmax	pmax		
	comp=Z,3.0nm,0.6s						
WMQ				pmax	pmax		
	comp=Z,79nm,4.2s						
ZAA0	**Zalesovo Array**	**42.23**	**312**	*e*P	**P**	**15 15 57.3**	**-0.6**
ZALV	**Zalesovo Beam**	**42.23**	**312**	P	**P**	**15 15 57.9**	**0.0**
	comp=Z,2.2nm,0.6s,baz=98,slow=8.3,SNR=11						
ZALV				PcP	**PcP**	**15 17 51.7**	**+0.3**
	comp=Z,0.8nm,0.4s,baz=79,slow=3.1,SNR=4.7						
CMAR	**Chiang Mai Arr**	**42.53**	**256**	P	**P**	**15 16 01.1**	**+0.3**
	comp=Z,0.2nm,0.5s,baz=43,slow=7.8,SNR=3.2						
CMAR				PcP	**PcP**	**15 17 53.4**	**+0.3**
	comp=Z,0.3nm,0.7s,baz=12,slow=4.3,SNR=4.2						
NVS	**Novosibirsk**	**43.13**	**313**	*e*P	P	15 16 10.1	+4.9
TTA	**Tatalina**	**44.43**	**35**	*e*P	**P**	**15 16 17.0**	**+1.3**
TTA	**Tatalina**	**44.43**	**35**	*e*P	**P**	**15 16 17.0**	**+1.3**
MKAR	**Makanchi Array**	**44.61**	**302**	P	**P**	**15 16 17.1**	**-0.1**
	comp=Z,1.9nm,0.7s,baz=83,slow=9.6,SNR=21						
MKAR	**Makanchi Array**	**44.61**	**302**	*e*P	**P**	**15 16 16.7**	**-0.6**
MAKZ	**Makanchi**	**44.82**	**302**	*e*P	**P**	**15 16 18.8**	**-0.1**
MAKZ				pmax	pmax		
	comp=Z,5.0nm,1.4s						
MAKZ	**Makanchi**	**44.82**	**302**	*e*P	**P**	**15 16 18.8**	**-0.1**
	comp=Z,4.7nm,1.4s						
KURK	**Kurchatov**	**46.32**	**308**	*e*P	**P**	**15 16 29.8**	**-0.9**
KURK				pmax	pmax		
	comp=Z,7.0nm,0.7s						
KURK	**Kurchatov**	**46.32**	**308**	*e*P	**P**	**15 16 29.8**	**-0.9**
	comp=Z,7.2nm,0.7s						
TAPN	**Taplejung**	**46.83**	**274**	*e*P	**P**	**15 16 34.7**	**-0.6**
	comp=Z,5.0nm,0.5s						
ODAN	**Odare**	**47.30**	**274**	*e*P	**P**	**15 16 39.1**	**+0.1**
	comp=Z,7.8nm,0.7s						
RAMN	**Ramite**	**47.89**	**274**	*e*P	**P**	**15 16 43.6**	**0.0**
	comp=Z,20nm,0.8s						
GUN	**Gumba**	**48.02**	**276**	*e*P	**P**	**15 16 44.8**	**+0.1**
	comp=Z,8.4nm,0.3s						
ILAR	**Eielson Array**	**48.53**	**33**	P	**P**	**15 16 48.5**	**+0.8**
	comp=Z,1.1nm,0.6s,baz=262,slow=6.1,SNR=24						
ILB	**Eielson Array**	**48.53**	**33**	*e*P	**P**	**15 16 48.1**	**+0.4**
KKN	**Kakani**	**48.55**	**276**	*e*P	**P**	**15 16 49.0**	**+0.4**
	comp=Z,15nm,0.7s						
GKN	**Gorkha**	**48.96**	**277**	*e*P	**P**	**15 16 52.0**	**+0.3**
	comp=Z,45nm,1.0s						
KOLN	**Koldanda**	**49.88**	**277**	*e*P	**P**	**15 17 00.0**	**+1.2**
	comp=Z,5.8nm,0.5s						
TKM2	**Tokmak 2**	**50.18**	**298**	*e*P	**P**	**15 17 01.2**	**+0.3**
TKM2				pmax	pmax		
	comp=Z,20nm,1.5s						
TKM2	**Tokmak 2**	**50.18**	**298**	*e*P	**P**	**15 17 01.2**	**+0.3**
	comp=Z,20nm,1.5s						
PYUN	**Piuthan**	**50.22**	**278**	*e*P	**P**	**15 17 02.5**	**+1.2**
	comp=Z,32nm,0.8s						
BRVK	**Borovoye**	**50.94**	**312**	*e*P	**P**	**15 17 06.2**	**+0.1**
BRVK				pmax	pmax		
	comp=Z,3.0nm,1.0s						
BRVK	**Borovoye**	**50.94**	**312**	*e*P	**P**	**15 17 06.2**	**+0.1**
	comp=Z,2.9nm,1.0s						
ZRNK	**Zerenda**	**51.71**	**312**	*e*P	**P**	**15 17 11.9**	**-0.1**
ZRNK				pmax	pmax		
	comp=Z,3.0nm,0.9s						
ZRNK	**Zerenda**	**51.71**	**312**	*e*P	**P**	**15 17 11.9**	**-0.1**
	comp=Z,3.3nm,0.9s						
KKAR	**Karatay Array**	**53.65**	**300**	*e*P	**P**	**15 17 26.3**	**-0.2**
KKAR				pmax	pmax		
	comp=Z,2.0nm,0.6s						
KKAR	**Karatay Array**	**53.65**	**300**	*e*P	**P**	**15 17 26.3**	**-0.2**
	comp=Z,1.7nm,0.6s						
ARU	**Arti**	**56.55**	**319**	*e*P	**P**	**15 17 47.0**	**-0.2**
ARU				pmax	pmax		
	comp=Z,5.0nm,0.8s						
ARU	**Arti**	**56.55**	**319**	*e*P	**P**	**15 17 47.0**	**-0.2**
	comp=Z,4.9nm,0.8s						
WRAB	**Tennant Creek**	**57.74**	**189**	*e*P	**P**	**15 17 55.6**	**-0.3**
WRAB				pmax	pmax		
	comp=Z,18nm,1.3s						
WRAB	**Tennant Creek**	**57.74**	**189**	*e*P	**P**	**15 17 55.5**	**-0.3**
	comp=Z,18nm,1.3s						
WB2	**Warramunga Arr**	**57.75**	**189**	*e*P	**P**	**15 17 56.6**	**+0.6**
	comp=Z,8.2nm,0.8s						
WRA	**Warramunga Arr**	**57.75**	**189**	P	**P**	**15 17 56.8**	**+0.8**
	comp=Z,8.8nm,0.9s,baz=6.1,slow=7.1,SNR=64						
WRA	**Warramunga Arr**	**57.75**	**189**	P	**P**	**15 17 56.8**	**+0.8**
WRA				pmax	pmax		
	comp=Z,8.0nm,0.9s						
ABKAR	**Akbulak array**	**58.29**	**310**	*e*P	**P**	**15 17 58.7**	**-0.8**
AS01	**Alice Springs**	**61.47**	**189**	*e*P	**P**	**15 18 22.3**	**+0.8**
ASAR	**Alice Springs**	**61.48**	**189**	P	**P**	**15 18 22.8**	**+1.1**
	comp=Z,2.2nm,0.7s,baz=15,slow=7.5,SNR=33						
RES	**Resolute Bay**	**61.83**	**15**	*e*P	**P**	**15 18 23.9**	**+0.6**
RES				pmax	pmax		
	comp=Z,18nm,2.0s						
RES	**Resolute Bay**	**61.83**	**15**	*e*P	**P**	**15 18 23.9**	**+0.6**
	comp=Z,18nm,2.0s						
YKA	**Yellowknife Ar**	**62.86**	**31**	P	**P**	**15 18 30.9**	**+0.5**
	comp=Z,0.4nm,0.6s,baz=303,slow=6.6,SNR=10						
FINES	**FINESS Array B**	**68.75**	**333**	P	**P**	**15 19 08.7**	**+0.3**
	comp=Z,2.8nm,0.6s,baz=44,slow=8.5,SNR=11						
KIV	**Kislovodsk**	**71.24**	**311**	*e*P	**P**	**15 19 21.4**	**-2.7**
KIV				pmax	pmax		
	comp=Z,6.0nm,1.0s						
KBZ	**Khabaz**	**71.24**	**311**	P	**P**	**15 19 24.4**	**+0.4**
	comp=Z,1.3nm,0.7s,baz=30,slow=8.1,SNR=3.8						
NVAR	**Mina Array Bea**	**73.91**	**54**	P	**P**	**15 19 42.1**	**+1.8**
	comp=Z,0.2nm,0.4s,baz=268,slow=7.2,SNR=3.3						
NB2	**NORSAR Subarra**	**74.03**	**338**	P	**P**	**15 19 40.7**	**+0.4**
	comp=Z,3.4nm,1.1s,baz=38,slow=6.2						
NOA	**NORSAR Array B**	**74.03**	**338**	P	**P**	**15 19 40.5**	**+0.1**
	comp=Z,1.9nm,0.9s,baz=37,slow=6.1,SNR=4.5						
AKASG	**Malin Array Be**	**74.42**	**323**	P	**P**	**15 19 42.8**	**+0.1**
	comp=Z,2.1nm,0.6s,baz=46,slow=5.7,SNR=6.7						
AKASG	**Malin Array Be**	**74.42**	**323**	P	**P**	**15 19 42.8**	**+0.1**
AKASG				pmax	pmax		
	comp=Z,3.0nm,0.6s						
RLMT	**Red Lodge**	**75.30**	**44**	*e*pP	pP	15 19 58.2	-0.9
PDAR	**Pinedale Array**	**76.61**	**46**	P	**P**	**15 19 56.6**	**+0.8**
	comp=Z,0.1nm,0.4s,baz=226,slow=18,SNR=3.5						
BUR08	**Bucovina Ar. S**	**78.43**	**322**	*e*P	**P**	**15 20 05.2**	**-0.5**
STHS	**Stebnicka Huta**	**79.03**	**325**	*e*P	**P**	**15 20 10.2**	**+1.4**
STHS	**Stebnicka Huta**	**79.03**	**325**	*e*P	**P**	**15 20 10.2**	**+1.4**
BRTR	**Keskin Array B**	**79.17**	**312**	P	**P**	**15 20 10.0**	**+0.1**
	comp=Z,0.4nm,0.5s,baz=35,slow=5.3,SNR=2.9						
BRTR	**Keskin Array B**	**79.17**	**312**	P	**P**	**15 20 10.0**	**+0.1**
BRTR				pmax	pmax		
	comp=Z,1.0nm,0.7s						
GERES	**GERESS Array B**	**82.72**	**329**	P	**P**	**15 20 28.9**	**+0.3**
	comp=Z,0.3nm,0.4s,baz=44,slow=7.1,SNR=3.3						
TXAR	**Lajitas Array**	**89.05**	**53**	P	**P**	**15 20 59.9**	**-0.3**
	comp=Z,0.4nm,0.6s,baz=325,slow=2.7,SNR=4.2						
USIN	**University of**	**91.68**	**37**	*e*P	**P**	**15 21 09.9**	**-2.3**
	comp=Z,316nm,0.8s						
OXF	**Oxford**	**93.52**	**41**	*e*sP	sP	15 21 35.4	-0.5
CPCT	**Cooper Cave**	**95.21**	**37**	*e*pP	pP	15 21 42.2	+2.5
SNAA	**Sanae**	**141.55**	**197**	PKP	**PKPdf**	**15 27 33.3**	**-1.6**
VNA2	**Neumayer--Watz**	**143.11**	**196**	PKP	PKPbc	15 27 36.2	+1.7
	baz=156,slow=2.7						
VNA3	**Neumayer Olymp**	**143.34**	**195**	PKP	PKPbc	15 27 36.5	+1.4
LPAZ	**La Paz**	**145.61**	**60**	PKPbc	**PKPbc**	**15 27 44.8**	**+0.3**
	comp=Z,2.3nm,0.5s,baz=294,slow=5.1,SNR=11						

*ISCJB **11** 15:14:27.4±0.6, 36.98N±0.03×140.65E±0.07, h10km, mb3.2/3, Error ellipse: s-maj=8.0km s-min=4.4km az=19.7*

*JMA **11** 15:14:27.7, 36.97N×140.65E, h10km±2km, M2.8*

*IDC **11** 15:14:34.9±8.9, 36.85N×140.26E, h33km±58km, mb3.0/3, mb1 3.2/3, mb1mx3.0/42, mbtmp3.2/3, Error ellipse: s-maj=63.6km s-min=24.6km az=70.0*

ISC 11 15:14:28.3±1.0, **36.98N**±0.04×**140.61E**±0.05, **h10**km, **n10,** σ**1§22**/13, **mb3.4**/3, **Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.19**	**51**	P	**Pg**	**15 14 31.9**	**-0.4**
ONAJ				S	**Sg**	**15 14 33.8**	**-1.3**
JHO	**Hitach

JSB S **Sb** **15 21 56.4 +0.2**
MJAR Matsushiro Arr 1.87 261 Pn **Pn** **15 22 11.6 +0.8**
97nm,0.3s,baz=72,slow=17,SNR=363
MJAR Sn **Sb** **15 22 35.4 -0.9**
311nm,0.3s,baz=88,slow=25,SNR=32
MAJO Matsushiro 1.87 261 *e*P **Pb** **15 22 12.1 -1.1**
MAJO Matsushiro 1.87 261 *e*Pn **Pb** **15 22 12.1 -1.1**
MAT Matsushiro 1.87 261 P **Pb** **15 22 12.4 -0.8**
MAT S **Sb** **15 22 37.3 +0.9**
INU Inuyama 3.20 243 *e*Pn **Pn** **15 22 31.4 +2.3**
JHJ Hachijo jima 2 3.79 189 Pn **Pn** **15 22 37.6 +0.4**
24nm,0.3s,baz=172,slow=5.4,SNR=8.3
JHJ Sn **Sn** **15 23 19.9 -1.6**
27nm,0.3s,baz=349,slow=5.2,SNR=3.2
JHJ LR LR 15 24 08.5
comp=Z,635nm,20.4s,baz=62,slow=40
JHJ2 Mitsune 3.79 189 *e*Pn **Pn** **15 22 38.1 +0.9**
ERM Erimo 5.54 21 *e*P **Pn** **15 23 01.9 +0.7**
ERM Erimo 5.54 21 *e*Pn **Pn** **15 23 01.9 +0.7**
YUK Yuzh-Kuril'sk 8.24 28 *e*P **Pn** **15 23 37.9 -0.5**
YUK *i* S **Sn** **15 25 06.9 -4.3**
YUK pmax pmax
comp=E,56nm,0.3s
YUK pmax pmax
comp=Z,138nm,0.3s
YUK pmax pmax
comp=N,24nm,0.2s
YUK MLR MLR
comp=Z,239nm,11.0s
SHO Shikotan 8.50 33 *e*P **Pn** **15 23 39.6 -2.3**
SHO *i* S **Sn** **15 25 09.5 -8.1**
SHO pmax pmax
comp=Z,30nm,0.6s
SHO pmax pmax
comp=N,17nm,0.4s
SHO pmax pmax
comp=E,11nm,0.6s
JNU Nakatsue 8.73 247 Pn **Pn** **15 23 46.9 +1.7**
comp=E,0.2nm,0.3s,baz=57,slow=16,SNR=3.2
JNU LR LR 15 27 06.0
comp=E,246nm,20.1s,baz=306,slow=38
JNU Nakatsue 8.73 247 *e*Pn **Pn** **15 23 47.4 +2.3**
VLA Vladivostok 9.09 316 *i* P **Pn** **15 23 53.0 +3.0**
VLA pmax pmax
comp=Z,18nm,1.0s
USRK Ussuriysk Ar. 9.77 321 Pn Pn 15 24 05.0 +5.6
comp=Z,0.6nm,0.3s,baz=134,slow=12,SNR=82
USRK LR LR 15 27 28.1
comp=Z,635nm,19.8s,baz=146,slow=36
CBIJ Chichi jima 9.85 171 *e*Pn **Pn** **15 23 57.3 -3.1**
CBIJ Sn Sn 15 25 39.9 -11
JCJ Chichijima 9.85 171 Pn **Pn** **15 23 56.8 -3.7**
comp=Z,15nm,0.3s,baz=286,slow=21,SNR=5.8
JCJ Sn Sn 15 25 39.9 -11
comp=Z,2.4nm,0.3s,baz=53,slow=20,SNR=2.5
KUR Kuril'sk 10.04 31 *e*P **Pn** **15 24 03.0 0.0**
KUR *i* S **Sn** **15 25 50.3 -5.0**
KUR pmax pmax
comp=Z,60nm,0.4s
KUR pmax pmax
comp=N,12nm,0.3s
KUR pmax pmax
comp=E,13nm,0.3s
KSRS Korea Array 10.05 277 Pn **Pn** **15 24 07.7 +4.4**
comp=E,0.5nm,0.3s,baz=96,slow=13,SNR=47
KSRS LR LR 15 27 40.5
comp=E,534nm,21.0s,baz=88,slow=36
KS01 Wonju Array Si 10.08 277 *e*Pn **Pn** **15 24 07.4 +3.9**
KS15 Wonju Array Si 10.08 277 *e*Pn Pn 15 24 09.6 +6.0
KSAR Wonju Array Be 10.08 277 P **Pn** **15 24 07.7 +4.0**
KSAR Wonju Array Be 10.08 277 Pn **Pn** **15 24 07.7 +4.0**
YSS Yuzh-Sakhalins 10.22 9‖ *e*P **Pn** **15 24 06.5 +1.1**
YSS *e*S **Sn** **15 26 00.0 +0.3**
YSS pmax pmax
comp=Z,30nm,0.7s
YSS MLR MLR
comp=Z,600nm,13.0s
YSS MLR MLR
comp=N,700nm,16.0s
YSS Yuzh-Sakhalins 10.22 9 *e*Pn **Pn** **15 24 06.5 +1.1**
MDJ Mudanjiang 11.32 317 P Pn 15 24 26.1 +5.6
MDJ S **Sn** **15 26 31.7 +4.9**
MDJ PcP **PcP** **15 30 17.0 +2.5**
MDJ pmax pmax
comp=N,35nm,1.1s
MDJ pmax pmax
comp=N,260nm,3.6s
MDJ LR LR
comp=N,420nm,14.1s
MDJ LR LR
comp=N,310nm,15.6s
MDJ LR LR
comp=N,550nm,19.2s
HABR Khabarovsk 12.27 343 *ce*P **Pn** **15 24 31.5 -1.9**
HABR *e*S **Sn** **15 26 45.9 -4.0**
HABR pmax pmax
comp=E,17nm,2.0s
HABR MLR MLR
comp=Z,273nm,12.0s
CN2 Changchun 13.40 306 *e*P **Pn** **15 24 52.4 +3.5**
KLR Kul'dur 13.90 335 Pn **Pn** **15 24 57.4 +1.6**
comp=Z,0.3nm,0.3s,baz=133,slow=11,SNR=10
KLR LR LR 15 30 08.8
comp=Z,545nm,18.3s,baz=181,slow=37
SNY Shenyang 13.99 296 ⇑P **P** **15 25 01.1 -3.9**
SNY pmax pmax
comp=Z,20nm,2.4s
SNY pmax pmax
comp=Z,300nm,3.5s
SNY LR LR
comp=Z,660nm,16.4s
SNY LR LR
comp=Z,520nm,18.8s
SNY LR LR
comp=Z,770nm,18.2s
TYV Tymovskoe 14.08 6 *e*P **Pn** **15 24 57.2 -1.0**
TYV pmax pmax
comp=Z,18nm,0.6s
TYV MLR MLR
comp=E,1μm,14.0s
TYV MLR MLR
comp=Z,500nm,14.0s
NJ2 Nanjing 18.47 261 *e*P **P** **15 25 53.6 -1.1**
NJ2 pmax pmax
comp=Z,11nm,0.7s
TIA Tai'an 18.79 275 *e*P **Pn** **15 25 59.4 +0.8**
TIA pmax pmax
comp=Z,20nm,1.2s
BJI Beijing 19.29 287 P **P** **15 26 03.8 +0.1**
BJI S **Sn** **15 29 37.9 -2.8**
BJI pmax pmax
comp=Z,10.0nm,1.0s
BJI pmax pmax
comp=Z,92nm,3.1s
BJI LR LR
comp=Z,250nm,14.2s
BJI LR LR
comp=Z,190nm,13.8s
PEA0 Petropavlovsk- 20.20 31 *e*P Pn 15 26 16.4 +0.9
PETK Petropavlovsk- 20.20 31 P **P** **15 26 14.7 +1.1**
comp=Z,14nm,0.9s,baz=241,slow=4.9,SNR=8.8
PETK LR LR 15 34 35.8
comp=Z,68nm,18.6s,baz=236,slow=38
MA2 Magadan 23.68 13 P **P** **15 26 50.1 0.0**
comp=Z,22nm,0.8s,baz=217,slow=8.4,SNR=12
MA2 Magadan 23.68 13 *e*P **P** **15 26 50.9 +0.7**
MA2 pmax pmax
comp=Z,57nm,0.7s
MA2 Magadan 23.68 13 *e*P **P** **15 26 50.9 +0.7**
comp=Z,57nm,0.7s
YAK Yakutsk 26.08 348 P **P** **15 27 11.8 -0.3**
comp=Z,18nm,0.3s,baz=132,slow=6.8,SNR=14
YAK Yakutsk 26.08 348 *e*P **P** **15 27 12.0 -0.1**
YAK *e* 15 27 49.5
YAK *e*PPP PPP 15 27 57.5
YAK *e* 15 30 40.0
YAK *e*S **S** **15 31 43.0 +0.4**
YAK *e*SS **SnSn** **15 32 37.0 -3.5**
YAK *e*SSS SSS 15 32 55.0
YAK pmax pmax
comp=E,3.0nm,0.9s
YAK pmax pmax
comp=N,10.0nm,0.4s
YAK pmax pmax
comp=Z,40nm,1.0s
YAK pmax pmax
comp=E,2.0nm,0.4s
YAK pmax pmax
comp=N,6.0nm,0.6s
YAK pmax pmax
comp=Z,8.0nm,0.6s
YAK smax smax
comp=E,13nm,1.4s
YAK smax smax
comp=N,22nm,1.6s
YAK Yakutsk 26.08 348 *e*P **P** **15 27 11.3 -0.8**
comp=N,37nm,0.8s
ULN Ulaanbaatar 26.84 305 *ce*P **P** **15 27 18.7 -0.7**
ULN pmax pmax
comp=Z,8.0nm,1.0s
ULN Ulaanbaatar 26.84 305 *e*P **P** **15 27 18.4 -1.0**
comp=Z,7.8nm,1.0s
SEY Seymchan 27.10 12 P **P** **15 27 22.5 +1.2**
comp=Z,16nm,0.9s,baz=207,slow=8.2,SNR=37
SONA1 Songino Array 27.27 304 *e*P **P** **15 27 22.1 -1.1**
SONM Songino Array 27.27 304 P **P** **15 27 22.6 -0.6**
comp=Z,11nm,0.8s,baz=106,slow=9.0,SNR=37
SONM PcP **PcP** **15 30 43.0 +0.4**
comp=Z,1.8nm,0.9s,baz=116,slow=3.1,SNR=4.1
SONM LR LR 15 38 24.0
comp=Z,267nm,18.3s,baz=72,slow=37
BOD Bodaibo 27.28 329 *e*P **P** **15 27 19.9 -3.1**
BOD pmax pmax
comp=Z,6.0nm,1.2s
H11N2 WAKE ISLAND Hy 28.70 119 T T 15 57 23.6
baz=313,slow=75,SNR=120
H11N1 WAKE ISLAND Hy 28.71 119 T T 15 57 24.8
baz=313,slow=75,SNR=119
H11N3 WAKE ISLAND Hy 28.72 119 T T 15 57 24.8
baz=313,slow=75,SNR=171
LZH Lanzhou 29.37 280 *e*P **P** **15 27 43.0 +0.9**
LZH pP sP 15 27 53.5 +5.3
LZH *e*S **S** **15 32 31.0 -4.4**
LZH pmax pmax
comp=Z,32nm,1.2s
LZH pmax pmax
comp=Z,150nm,4.8s
LZH LR LR
comp=Z,380nm,11.0s
LZH LR LR
comp=Z,590nm,13.0s
LZH LR LR
comp=Z,800nm,16.3s
H11S1 WAKE ISLAND Hy 29.39 121 T T 15 58 16.0
baz=314,slow=76,SNR=1015
H11S3 WAKE ISLAND Hy 29.39 121 T T 15 58 14.8
baz=314,slow=76,SNR=870
H11S2 WAKE ISLAND Hy 29.41 121 T T 15 58 13.7
baz=314,slow=76,SNR=502
ZAK Zakamensk 29.80 309 *e*P **P** **15 27 42.4 -3.2**
ZAK pmax pmax
comp=Z,3.0nm,1.3s
GYA Guiyang 30.47 260 P **P** **15 27 52.8 +1.0**
GYA pP sP 15 28 04.3 +6.3
GYA PP **PnPn** **15 28 52.0 +1.5**
GYA PcP **PcP** **15 30 51.8 +0.8**
GYA S **S** **15 32 49.6 -3.1**
GYA sS sS 15 33 07.4 +7.5
GYA SS **SnSn** **15 34 29.2 +0.7**
GYA pmax pmax
comp=Z,20nm,0.8s
GYA pmax pmax
comp=Z,120nm,5.2s
GYA LR LR
comp=Z,560nm,16.9s
GYA LR LR
comp=Z,520nm,17.2s
GYA LR LR
comp=Z,540nm,16.9s
CD2 Chengdu 30.94 270 P **P** **15 27 54.1 -1.8**
CD2 S **S** **15 32 54.9 -4.9**
CD2 pmax pmax
comp=Z,10.0nm,0.5s
CD2 pmax pmax
comp=Z,130nm,5.7s
CD2 LR LR
comp=Z,390nm,13.7s
CD2 LR LR
comp=Z,390nm,17.3s
KMI Kunming 34.21 261 P **P** **15 28 25.6 +0.8**
KMI pmax pmax
comp=Z,14nm,0.7s
KMI pmax pmax
comp=Z,130nm,6.3s
BILL Bilibino 34.40 17⇑ *i*P **P** **15 28 26.0 +0.4**
BILL *e* 15 29 43.7
BILL *e*PPP PPP 15 29 52.3
BILL *e*S S 15 33 42.0 -11
BILL *e*SS **SnSn** **15 35 59.9 -2.9**
BILL pmax pmax
comp=Z,15nm,1.0s
BILL MLR MLR
comp=Z,67nm,16.0s
BILL Bilibino 34.40 17 *e*P **P** **15 28 25.7 +0.1**
comp=Z,16nm,1.0s
TIXI Tiksi 35.37 354 *e*P **P** **15 28 33.7 -0.3**
TIXI pmax pmax
comp=Z,7.0nm,0.8s
TIXI Tiksi 35.37 354 *e*P **P** **15 28 33.6 -0.4**
comp=Z,7.1nm,0.9s
WMQ Urumqi 40.26 297 P **P** **15 29 16.2 +0.5**
WMQ pP sP 15 29 26.2 +4.3
WMQ PcP **PcP** **15 31 19.6 +0.2**
WMQ pmax pmax
comp=Z,9.0nm,1.0s
WMQ pmax pmax
comp=Z,92nm,4.6s
WMQ LR LR
comp=Z,88nm,22.6s
WMQ LR LR
comp=Z,44nm,21.2s
CMAR Chiang Mai Arr 40.74 255 P **P** **15 29 19.9 0.0**
comp=Z,0.8nm,0.6s,baz=49,slow=7.6,SNR=9.3
CMAR PcP **PcP** **15 31 22.4 +1.2**
comp=Z,1.5nm,0.9s,baz=27,slow=2.9,SNR=10
CMAR LR LR 15 47 11.1
comp=Z,65nm,18.8s,baz=50,slow=38
CM01 Chiang Mai Arr 40.75 255 *e*P **P** **15 29 18.7 -1.3**
ZAA0 Zalesovo Array 41.48 313 *e*P **P** **15 29 24.8 -0.8**
ZALV Zalesovo Beam 41.48 313 P **P** **15 29 25.5 -0.1**
comp=Z,8.5nm,0.7s,baz=98,slow=6.9,SNR=32
ZALV PcP **PcP** **15 31 23.2 +0.2**
comp=Z,3.5nm,0.7s,baz=102,slow=2.3,SNR=6.8
ZALV ScP **ScP** **15 35 13.2 +0.6**
comp=Z,1.3nm,0.8s,baz=98,slow=3.0,SNR=4.1
ZALV LR LR 15 47 05.6
comp=Z,146nm,18.9s,baz=70,slow=37
ZALV Zalesovo Beam 41.48 313 P **P** **15 29 25.5 -0.1**
ZALV 15 31 23.2
ZALV pmax pmax
comp=Z,8.0nm,0.7s
ZALV pmax pmax
comp=Z,4.0nm,0.7s
ZALV pmax pmax
comp=N,1.0nm,0.8s
ZALV MLR MLR
comp=Z,146nm,18.9s
NVS Novosibirsk 42.42 314 *e*P **P** **15 29 32.8 -0.4**
NVS *e* 15 35 52.3
NVS pmax pmax
comp=Z,7.0nm,1.1s
NVS pmax pmax
comp=E,8.0nm,1.2s
NRIK Noril'sk 43.11 336 P **P** **15 29 38.4 -0.3**
comp=E,2.8nm,0.5s,baz=96,slow=7.7,SNR=6.3
NRIK PcP **PcP** **15 31 28.8 +0.7**
comp=E,4.0nm,0.6s,baz=112,slow=3.0,SNR=4.5
NRIK LR LR 15 48 59.6
comp=E,179nm,18.2s,baz=104,slow=38
MKAR Makanchi Array 43.58 302 P **P** **15 29 42.8 0.0**
comp=E,2.1nm,0.6s,baz=89,slow=9.8,SNR=40
MKAR PcP **PcP** **15 31 29.9 -0.3**
comp=E,2.0nm,0.8s,baz=72,slow=5.5,SNR=5.0
MKAR LR LR 15 48 21.0
comp=E,129nm,18.7s,baz=91,slow=37
MAKZ Makanchi 43.79 302 *e*P **P** **15 29 44.4 -0.1**
MAKZ pmax pmax
comp=Z,3.0nm,0.8s
MAKZ Makanchi 43.79 302 *e*P **P** **15 29 44.4 -0.1**
comp=Z,3.4nm,0.8s
TAPN Taplejung 45.22 274 *e*P **P** **15 29 56.5 +0.1**
comp=Z,6.8nm,0.6s
KURK Kurchatov 45.46 308 *e*P **P** **15 29 57.1 -0.6**
KURK pmax pmax
comp=Z,27nm,1.0s
KURK Kurchatov 45.46 308 *e*P **P** **15 29 57.1 -0.6**
comp=Z,27nm,1.0s
ODAN Odare 45.69 273 *e*P **P** **15 30 00.1 0.0**
comp=Z,16nm,0.8s
KAPI Kappang 45.95 209 P **P** **15 30 02.5 +0.7**
comp=Z,18nm,0.9s,baz=352,slow=8.2,SNR=4.4
SVW2 Sparevohn 46.10 37 *e*P **P** **15 30 04.2 +1.5**
comp=Z,13nm,1.0s
RAMN Ramite 46.28 274 *e*P **P** **15 30 04.7 -0.1**
comp=Z,50nm,1.0s
GUN Gumba 46.44 275 *e*P **P** **15 30 06.5 +0.4**
comp=Z,34nm,1.0s
KKN Kakani 46.97 275 *e*P **P** **15 30 10.2 +0.1**
comp=Z,24nm,1.0s
GKN Gorkha 47.39 276 *e*P **P** **15 30 13.4 0.0**
comp=Z,50nm,1.1s
RSO Redoubt South 47.49 38 *e*P **P** **15 30 15.9 +2.2**
KDAK Kodiak Island 47.71 42 *i* P **P** **15 30 16.8 +1.6**
CAST Castle Rocks 47.78 34 *e*P **P** **15 30 17.7 +1.9**
comp=Z,5.3nm,1.1s
SPU Mount Spurr 47.81 37 *e*P **P** **15 30 17.9 +1.9**
KTH Kantishna Hill 48.30 34 *e*P **P** **15 30 21.7 +1.9**
comp=Z,19nm,1.2s
KOLN Koldanda 48.32 276 *e*P **P** **15 30 20.5 -0.1**
comp=Z,11nm,0.9s
MLY Manley 48.38 32 *e*P **P** **15 30 22.3 +1.9**
comp=Z,8.0nm,1.1s
TRF Thorofare Moun 48.58 34 *e*P **P** **15 30 24.9 +2.8**
comp=Z,9.4nm,1.2s
PYUN Piuthan 48.66 277 *e*P **P** **15 30 23.5 +0.2**
comp=Z,54nm,1.0s
TKM2 Tokmak 2 49.06 298 *e*P **P** **15 30 26.9 +0.7**
TKM2 pmax pmax
comp=Z,50nm,1.5s
TKM2 Tokmak 2 49.06 298 *e*P **P** **15 30 26.9 +0.7**
comp=Z,50nm,1.5s
MCK McKinley 49.18 34 *e*P **P** **15 30 27.9 +1.4**
MCK pmax pmax
comp=Z,7.0nm,1.0s
MCK McKinley 49.18 34 *e*P **P** **15 30 27.9 +1.4**
comp=Z,6.9nm,1.0s
RND Reindeer 49.23 34 *e*P **P** **15 30 28.0 +1.0**
RND pmax pmax
comp=Z,13nm,1.2s
RND Reindeer 49.23 34 *e*P **P** **15 30 28.0 +1.0**
comp=Z,13nm,1.2s
BATI Baumata 49.42 202 P **P** **15 30 29.7 +0.9**
comp=Z,7.7nm,0.6s,baz=307,slow=20,SNR=4.0
MDM Murphy Dome 49.45 32 *e*P **P** **15 30 30.3 +1.7**
comp=Z,14nm,1.2s
WRH Wood River Hil 49.52 33 *e*PcP **PcP** **15 31 52.3 +1.5**
FRU Bishkek 49.78 298 *i* P **P** **15 30 31.5 +0.1**
KSH Kashi 49.80 294 P **P** **15 30 36.1 +4.4**
KSH *e*pP sP 15 30 46.1 +8.1
KSH S **S** **15 37 41.2 +0.3**
KSH SS **SS** **15 41 12.2 -1.0**
KSH pmax pmax
comp=Z,200nm,6.0s
KSH LR LR
comp=Z,140nm,7.3s
KSH LR LR
comp=Z,120nm,6.1s
KSH LR LR
comp=Z,250nm,7.6s
DHY Denali Highway 49.92 34 *e*P **P** **15 30 31.9 -0.4**
comp=Z,7.8nm,1.2s
AAK Ala-Archa 49.92 298 *e*P **P** **15 30 31.8 -0.9**
AAK pmax pmax
comp=Z,11nm,1.3s
AAK Ala-Archa 49.92 298 *e*P **P** **15 30 31.8 -0.9**
comp=Z,11nm,1.3s
IL1 Eielson Array 50.03 32 *e*P **P** **15 30 33.4 +0.5**
ILAR Eielson Array 50.03 32 P **P** **15 30 33.7 +0.8**
comp=Z,2.6nm,0.9s,baz=273,slow=6.3,SNR=24
ILAR PcP **PcP** **15 31 52.7 +0.1**
comp=Z,2.0nm,1.0s,baz=280,slow=5.0,SNR=3.2
ILB Eielson Array 50.03 32 *e*P **P** **15 30 33.6 +0.7**
BRVK Borovoye 50.20 312 *ce*P **P** **15 30 34.7 +0.3**
BRVK pmax pmax
comp=Z,13nm,1.0s
BRVK Borovoye 50.20 312 *e*P **P** **15 30 33.6 -0.7**
comp=Z,12nm,1.0s
EKS2 Erkin-Say 50.42 298 *e*P **P** **15 30 36.4 0.0**
EKS2 pmax pmax
comp=Z,4.0nm,0.8s
EKS2 Erkin-Say 50.42 298 *e*P **P** **15 30 36.4 0.0**
comp=Z,3.8nm,0.8s
KLU Klutina 50.74 36 *e*P **P** **15 30 38.8 +0.4**
comp=Z,21nm,1.5s
ZRNK Zerenda 50.98 312 *e*P **P** **15 30 40.3 0.0**
ZRNK pmax pmax
comp=Z,17nm,0.9s
ZRNK Zerenda 50.98 312 *e*P **P** **15 30 40.3 0.0**
comp=Z,17nm,0.9s
MENT Mentasta 51.59 34 *e*P **P** **15 30 46.8 +2.0**
comp=Z,7.5nm,1.0s
EGAK Eagle 52.47 32 *e*P **P** **15 30 52.1 +0.9**
comp=Z,15nm,1.8s
KKAR Karatay Array 52.57 300 *e*P **P** **15 30 52.5 +0.1**
KKAR Karatay Array 52.57 300 *e*P **P** **15 30 52.5 +0.1**
SVE Sverdlovsk 54.78 319 *e*P **P** **15 31 08.9 +0.6**
SVE pmax pmax
comp=Z,22nm,0.9s
INK Inuvik 54.87 27 P **P** **15 31 09.0 +0.3**
comp=Z,5.3nm,0.9s,baz=276,slow=9.5,SNR=14
INK Inuvik 54.87 27 *e*P **P** **15 31 09.9 +1.2**
INK pmax pmax
comp=Z,5.0nm,0.8s
INK Inuvik 54.87 27 *e*P **P** **15 31 09.9 +1.2**
comp=Z,5.0nm,0.8s
KBL Kabul 56.79 291 *e*P **P** **15 31 22.5 -0.8**
KBL pmax pmax
comp=Z,8.0nm,0.8s
KBL Kabul 56.79 291 *e*P **P** **15 31 22.5 -0.8**
comp=Z,8.3nm,0.8s
WRAB Tennant Creek 56.79 187 *ce*P **P** **15 31 23.9 +0.9**
WRAB pmax pmax
comp=Z,37nm,1.7s
WRAB Tennant Creek 56.79 187 *e*P **P** **15 31 22.6 -0.4**
comp=Z,6.3nm,0.8s
WB2 Warramunga Arr 56.80 187 *e*P **P** **15 31 23.0 -0.1**
comp=Z,8.2nm,0.9s
WRA Warramunga Arr 56.80 187 P **P** **15 31 22.6 -0.5**
comp=Z,9.6nm,1.0s,baz=4.1,slow=7.3,SNR=54
WRA PcP **PcP** **15 32 21.0 +2.2**
comp=Z,1.8nm,0.9s,baz=0.7,slow=4.2,SNR=4.7
ABKAR Akbulak array 57.48 310 *e*P **P** **15 31 27.5 -0.2**
AS01 Alice Springs 60.52 187 *e*P **P** **15 31 48.7 -0.3**
AS31 Alice Springs 60.53 187 *e*P **P** **15 31 48.6 -0.5**
comp=Z,1.6nm,1.0s
ASAR Alice Springs 60.53 187 P **P** **15 31 49.1 +0.1**
comp=Z,3.5nm,0.9s,baz=9.0,slow=5.1,SNR=27
RES Resolute Bay 62.94 14 *e*P **P** **15 32 04.9 +0.2**
RES pmax pmax
comp=Z,4.0nm,0.8s
RES Resolute Bay 62.94 14 *e*P **P** **15 32 04.8 +0.2**
comp=Z,3.8nm,0.8s
GEYT Alibeck 63.27 299 P **P** **15 32 07.9 +0.4**
comp=Z,6.3nm,1.0s,baz=38,slow=2.6,SNR=11
GEYT LR LR 16 00 16.4
comp=Z,55nm,18.4s,baz=255,slow=37
KLMR Klimovskoe 63.50 328 *e*P **P** **15 32 06.3 -2.3**
KLMR pmax pmax
comp=Z,17nm,1.4s
ARCES ARCESS Array B 63.89 339 P **P** **15 32 11.4 +0.3**
comp=Z,5.5nm,0.8s,baz=44,slow=8.8,SNR=11
ARCES LR LR 16 03 09.9
comp=Z,69nm,19.2s,baz=41,slow=39
ARCES ARCESS Array B 63.89 339 P **P** **15 32 11.4 +0.3**
ARCES pmax pmax
comp=Z,5.0nm,0.8s
ARCES MLR MLR
comp=Z,69nm,19.2s
YKA Yellowknife Ar 64.32 30 P **P** **15 32 14.8 +0.9**
comp=Z,1.2nm,0.7s,baz=301,slow=6.6,SNR=28
YKB5 Yellowknife Ar 64.32 30 *e*P **P** **15 32 13.6 -0.4**
DAG Danmarks Havn 65.88 355 *i* P **P** **15 32 23.4 -0.5**
comp=Z,13nm,1.0s
DAG Danmarks Havn 65.88 355 *i* P **P** **15 32 23.4 -0.5**
DAG pmax pmax
comp=Z,13nm,1.0s
VRH Novokhopyorsk 67.21 318 *e*P **P** **15 32 31.9 -0.9**
VRH pmax pmax
comp=Z,10.0nm,0.9s
OBN Obninsk 67.79 323⇑ *i*P **P** **15 32 36.5 +0.2**

OBN e 15 35 02.9
OBN ePPP PPP 15 36 40.8
OBN eSSS SSS 15 48 54.2
OBN pmax pmax
comp=Z,22nm,1.7s
OBN MLR MLR
comp=Z,88nm,15.0s
LPSR Galich'ya Gora 67.96 320 eP P **15 32 36.9 -0.6**
LPSR pmax pmax
comp=Z,20nm,1.0s
STKA Stephens Creek 68.39 179 P P **15 32 40.6 +0.3**
comp=Z,1.7nm,0.7s,baz=22,slow=6.0,SNR=3.5
VSR Storozhevoye 68.57 319 eP P **15 32 41.0 -0.4**
VSR pmax pmax
comp=Z,20nm,1.2s
FIA1 FINESS Array S 68.62 332 eP P **15 32 41.4 -0.1**
FINES FINESS Array B 68.62 332 P P **15 32 41.7 +0.2**
comp=Z,9.6nm,0.9s,baz=64,slow=8.7,SNR=23
FINES LR LR 16 03 28.0
comp=Z,98nm,20.8s,baz=32,slow=37
H04A Detroit Lake 69.77 49 eP P **15 32 50.4 +1.4**
comp=Z,61nm,1.8s
ZEI Tsey 70.33 309 eP P **15 32 51.5 -1.2**
ZEI pmax pmax
comp=Z,10.0nm,1.1s
KBZ Khabaz 70.45 310 P P **15 32 53.1 0.0**
comp=Z,5.5nm,1.0s,baz=50,slow=3.1,SNR=8.2
KBZ LR LR 16 08 31.0
comp=Z,60nm,18.7s,baz=45,slow=40
KIV Kislovodsk 70.46 311 eP P **15 32 54.4 +1.1**
KIV pmax pmax
comp=Z,17nm,1.0s
KIV Kislovodsk 70.46 311 eP P **15 32 52.9 -0.4**
comp=Z,37nm,1.4s
SUMG Summit 70.85 360 i P P **15 32 57.0 +1.4**
comp=Z,15nm,1.1s
SUMG Summit 70.85 360 i P P **15 32 57.0 +1.4**
SUMG pmax pmax
comp=Z,15nm,1.1s
SUMG Summit 70.85 360 eP P **15 32 56.2 +0.6**
comp=Z,13nm,1.0s
AKH Akhalkalaki 71.33 308 ↓iP P **15 33 00.3 +1.5**
K05A Summer Lake 71.62 50 eP P **15 33 03.2 +2.7**
comp=Z,22nm,1.1s
WDC Whiskeytown Da 71.76 53 eP P **15 33 02.2 +1.1**
WDC pmax pmax
comp=Z,8.0nm,1.1s
WDC Whiskeytown Da 71.76 53 eP P **15 33 02.2 +1.1**
comp=Z,8.2nm,1.1s
BMO Blue Mountains 72.58 47 eP P **15 33 07.6 +1.5**
comp=Z,12nm,1.4s
SWMT Swartz Lake 72.91 43 eP P **15 33 10.2 +2.1**
ORV Oroville 72.99 53 eP P **15 33 09.8 +1.3**
ORV pmax pmax
comp=Z,8.0nm,1.1s
ORV Oroville 72.99 53 eP P **15 33 09.8 +1.3**
comp=Z,7.8nm,1.1s
WVOR Wild Horse Val 73.16 49 eP P **15 33 11.5 +1.9**
WVOR pmax pmax
comp=Z,7.0nm,1.1s
WVOR Wild Horse Val 73.16 49 eP P **15 33 11.5 +1.9**
comp=Z,7.3nm,1.1s
AFDM Forest Hills D 73.67 53 eP P **15 33 14.2 +1.7**
comp=Z,7.4nm,1.2s
AKASG Malin Array Be 73.98 322 P P **15 33 13.8 -0.2**
comp=Z,1.7nm,0.4s,baz=44,slow=6.1,SNR=20
AKASG LR LR 16 08 28.6
comp=Z,132nm,19.3s,baz=25,slow=38
AKASG Malin Array Be 73.98 322 P P **15 33 13.8 -0.2**
AKASG pmax pmax
comp=Z,3.0nm,0.6s
AKASG MLR MLR
comp=Z,132nm,19.3s
KIEV Kiev 73.99 322 ceP P **15 33 14.2 +0.1**
KIEV pmax pmax
comp=Z,7.0nm,1.0s
KIEV Kiev 73.99 322 eP P **15 33 13.6 -0.5**
comp=Z,7.7nm,1.0s
NC204 NORSAR Array S 74.01 337 eP P **15 33 13.4 -0.7**
AK11 Malin Array Si 74.02 322 eP P **15 33 13.8 -0.5**
NB201 NORSAR Array S 74.02 337 eP P **15 33 13.6 -0.6**
NB2 NORSAR Subarra 74.05 337 P P **15 33 14.0 -0.4**
comp=Z,15nm,1.2s,baz=41,slow=5.9
NOA NORSAR Array B 74.05 337 P P **15 33 14.4 0.0**
comp=Z,7.9nm,1.0s,baz=39,slow=5.8,SNR=14
NOA LR LR 16 08 59.3
comp=Z,108nm,18.3s,baz=30,slow=38
NBO02 NORSAR Array S 74.16 337 eP P **15 33 15.2 +0.2**
NBO00 NORSAR Array S 74.20 337 eP P **15 33 15.3 +0.1**
FFC Flin Flon 74.24 32 eP P **15 33 15.8 +0.2**
FFC pmax pmax
comp=Z,6.0nm,1.0s
FFC Flin Flon 74.24 32 eP P **15 33 15.8 +0.2**
comp=Z,6.3nm,1.0s
MFID Camas Ranch 74.28 47 eP P **15 33 17.5 +1.4**
comp=Z,8.7nm,1.2s
FCC Fort Churchill 74.48 26 eP P **15 33 17.3 +0.5**
FCC pmax pmax
comp=Z,12nm,1.2s
FCC Fort Churchill 74.48 26 eP P **15 33 17.2 +0.5**
comp=Z,12nm,1.2s
CMB Columbia Colle 74.56 54 eP P **15 33 19.5 +1.7**
CMB pmax pmax
comp=Z,12nm,0.9s
CMB Columbia Colle 74.56 54 eP P **15 33 19.5 +1.7**
comp=Z,12nm,0.9s
LRM Limekiln Ridge 74.78 44 eP P **15 33 20.7 +1.6**
DLMT Dillon 74.98 44 eP P **15 33 21.8 +1.6**
comp=Z,9.2nm,0.9s
HLID Hailey 75.02 47 eP P **15 33 22.5 +2.0**
comp=Z,4.9nm,1.1s
BMN Battle Mountai 75.19 50 eP P **15 33 23.8 +2.3**
BMN pmax pmax
comp=Z,10.0nm,1.0s
BMN Battle Mountai 75.19 50 eP P **15 33 23.8 +2.3**
comp=Z,10nm,1.0s
NV01 Mina Array Sit 75.67 53 eP P **15 33 26.3 +1.9**
NVAR Mina Array Bea 75.67 53 P P **15 33 26.6 +2.1**
comp=Z,11nm,0.9s,baz=287,slow=6.0,SNR=51
ELK Elko 76.22 49 eP P **15 33 29.5 +2.0**
ELK pmax pmax
comp=Z,4.0nm,1.0s
ELK Elko 76.22 49 eP P **15 33 29.4 +2.0**
comp=Z,3.9nm,1.0s
IMW Indian Meadow 76.81 45 eP P **15 33 33.4 +2.5**
comp=Z,10.0nm,1.1s
FLWY Flagg Ranch 76.83 44 eP P **15 33 33.7 +2.8**
comp=Z,14nm,1.3s
RLMT Red Lodge 76.97 43 eP P **15 33 33.4 +1.7**
comp=Z,15nm,1.4s
MOOW Moose Ponds 77.01 45 eP P **15 33 34.1 +2.2**
comp=Z,5.3nm,1.1s
HVU Hansel Valley 77.06 47 eP P **15 33 34.2 +2.0**
HVU pmax pmax
comp=Z,6.0nm,0.9s
HVU Hansel Valley 77.06 47 eP P **15 33 34.2 +2.0**
comp=Z,5.7nm,0.9s
LOHW Long Hollow 77.18 45 eP P **15 33 34.8 +1.9**
comp=Z,4.4nm,0.5s
REDW Red Top Meadow 77.19 45 eP P **15 33 35.2 +2.2**
comp=Z,8.4nm,1.2s
DAC Darwin (Calif) 77.40 54 eP P **15 33 35.7 +1.5**
DAC pmax pmax
comp=Z,5.0nm,0.8s
DAC Darwin (Calif) 77.40 54 eP P **15 33 35.7 +1.5**
comp=Z,4.9nm,0.8s
BGU Big Grassy Mou 77.44 48 eP P **15 33 36.2 +1.9**
comp=Z,4.9nm,1.1s
R11A Troy Canyon, C 77.44 51 eP P **15 33 36.2 +1.8**
comp=Z,14nm,1.0s
KWP Kalwaria Pacla 77.83 324 eP P **15 33 37.5 +1.4**
KWP Kalwaria Pacla 77.83 324 eP P **15 33 37.5 +1.4**
TPNV Topopah Spring 77.86 53 eP P **15 33 38.6 +1.8**
TPNV pmax pmax
comp=Z,16nm,0.9s
TPNV Topopah Spring 77.86 53 eP P **15 33 38.6 +1.8**
comp=Z,16nm,0.9s
HWUT Hardware Ranch 77.88 47 eP P **15 33 38.8 +2.0**
comp=Z,12nm,1.1s
BUR08 Bucovina Ar. S 77.97 321 eP P **15 33 37.4 +0.3**
BURAR Bucovina Array 77.98 321 ↑iP P **15 33 37.4 +0.3**
BURAR Bucovina Array 77.98 321 ↑iP P **15 33 37.4 +0.3**
TESR Tescani 77.99 320 ↑iP P **15 33 37.6 +0.5**
DUG Dugway, Tooele 78.02 49 eP P **15 33 39.1 +1.6**
DUG pmax pmax
comp=Z,12nm,1.1s
DUG Dugway, Tooele 78.02 49 eP P **15 33 39.1 +1.6**
comp=Z,12nm,1.1s
BW06 Boulder Array 78.31 45 eP P **15 33 40.1 +0.9**
PD31 Pinedale Array 78.31 45 eP P **15 33 40.2 +1.0**
PDAR Pinedale Array 78.31 45 P P **15 33 40.5 +1.3**
comp=Z,2.4nm,0.9s,baz=280,slow=2.8,SNR=17
VRI Vrincioaia 78.37 319 ↓iP P **15 33 41.3 +2.1**
VRI Vrincioaia 78.37 319 ↓iP P **15 33 41.3 +2.1**
BRTR Keskin Array B 78.41 311 P P **15 33 40.0 +0.4**
comp=Z,1.9nm,0.8s,baz=100,slow=6.4,SNR=8.6
BRTR LR LR 16 12 44.0
comp=Z,47nm,18.4s,baz=74,slow=39
GSC Goldstone, Bar 78.49 55 eP P **15 33 41.8 +1.6**
GSC pmax pmax
comp=Z,8.0nm,0.4s
GSC Goldstone, Bar 78.49 55 eP P **15 33 41.8 +1.6**
comp=Z,8.2nm,0.4s
KOLS Kolonicke sedl 78.52 324 eP P **15 33 40.6 +0.6**
KOLS pmax pmax
comp=Z,5.0nm,1.1s
KOLS Kolonicke sedl 78.52 324 eP P **15 33 40.6 +0.6**
JLU Jordanelle 78.58 48 eP P **15 33 42.4 +1.7**
comp=Z,9.4nm,1.3s
NLU North Lily Min 78.61 48 eP P **15 33 42.9 +2.0**
comp=Z,7.1nm,1.0s
STHS Stebnicka Huta 78.67 324 eP P **15 33 42.5 +1.7**
STHS pmax pmax
comp=Z,5.0nm,1.1s
STHS Stebnicka Huta 78.67 324 eP P **15 33 42.5 +1.7**
OJC Ojcow 78.77 326 eP P **15 33 42.5 +1.2**
OJC Ojcow 78.77 326 eP P **15 33 41.8 +0.5**
OJC pmax pmax
comp=Z,22nm,1.2s
OJC Ojcow 78.77 326 eP P **15 33 41.8 +0.5**
comp=Z,22nm,1.2s
MPU Maple Canyon 78.84 48 eP P **15 33 43.8 +1.7**
comp=Z,12nm,1.2s
BR231 Keskin MP Arra 78.86 312 eP P **15 33 40.6 -1.5**
CRVS Cervenica-Dubn 78.93 324 eP P **15 33 43.1 +0.8**
CRVS Cervenica-Dubn 78.93 324 eP P **15 33 43.0 +0.8**
NIE Niedzica 79.11 325 eP P **15 33 44.1 +0.9**
NIE Niedzica 79.11 325 eP P **15 33 44.1 +0.9**
VOIR 79.54 320 ↑iP P **15 33 46.9 +1.2**
VOIR 79.54 320 ↑iP P **15 33 46.9 +1.2**
TMUT Trail Mountain 79.55 49 eP P **15 33 47.9 +1.8**
comp=Z,4.7nm,0.9s
LANS Liptovska Anna 79.68 325 eP P **15 33 48.0 +1.7**
LANS Liptovska Anna 79.68 325 eP P **15 33 48.0 +1.7**
KECS Kecovo 79.68 324 eP P **15 33 46.2 -0.1**
KECS pmax pmax
comp=Z,2.0nm,0.8s
KECS Kecovo 79.68 324 eP P **15 33 46.2 -0.1**
P17A Butcher Ranch, 79.71 48 eP P **15 33 48.4 +1.5**
comp=Z,14nm,1.0s
LCMT Little Creek M 79.73 51 eP P **15 33 49.1 +2.2**
comp=Z,12nm,1.0s
PFO Pinyon Flats O 79.74 56 eP P **15 33 49.2 +2.1**
PFO pmax pmax
comp=Z,9.0nm,1.0s
PFO Pinyon Flats O 79.74 56 eP P **15 33 49.2 +2.1**
comp=Z,9.5nm,1.0s
ARR Arges 79.80 320 ↑iP P **15 33 48.7 +1.6**
KSP Ksiaz 79.85 328 eP P **15 33 48.3 +1.1**
KSP Ksiaz 79.85 328 eP P **15 33 48.3 +1.1**
P18A Preston Nutter 79.91 48 eP P **15 33 49.6 +1.5**
comp=Z,6.4nm,0.8s
KNB Kanab 79.99 51 eP P **15 33 50.9 +2.5**
KNB pmax pmax
comp=Z,17nm,1.1s
KNB Kanab 79.99 51 eP P **15 33 50.9 +2.5**
comp=Z,17nm,1.1s
RAYN Ar Rayn 80.04 292 eP P **15 33 48.0 -0.8**
comp=Z,4.4nm,1.0s
PKCU Pink Cliffs 80.04 51 ePcP PcP **15 33 56.5 +0.2**
SRU San Rafael Swe 80.07 48 eP P **15 33 49.9 +1.0**
SRU pmax pmax
comp=Z,10.0nm,0.9s
SRU San Rafael Swe 80.07 48 eP P **15 33 49.9 +1.0**
comp=Z,10nm,0.9s
MORC Moravsky Berou 80.09 326 eP P **15 33 49.6 +1.0**
MORC pmax pmax
comp=Z,31nm,1.1s
MORC Moravsky Berou 80.09 326 eP P **15 33 49.5 +1.0**
comp=Z,31nm,1.1s
BAR Barrett 80.17 57 eP P **15 33 51.0 +1.7**
comp=Z,10nm,0.9s
DPC Dobruska-Polom 80.20 327 eP P **15 33 50.4 +1.2**
DPC Dobruska-Polom 80.20 327 eP P **15 33 50.4 +1.2**
VYHS Vyhne 80.44 325 eP P **15 33 51.2 +0.8**
VYHS pmax pmax
comp=Z,3.0nm,1.2s
VYHS Vyhne 80.44 325 eP P **15 33 51.2 +0.8**
W13A Hualapai Mount 80.51 53 eP P **15 33 52.9 +1.6**
comp=Z,6.5nm,1.0s
SIRR Siria 80.68 322 ↓iP P 15 33 45.2 -6.6
U15A North Rim 80.69 51 eP P **15 33 54.0 +1.7**
comp=Z,12nm,1.0s
BRG Berggiesshubel 80.82 329 eP P **15 33 52.9 +0.5**
comp=Z,9.6nm,1.2s
BRG Berggiesshubel 80.82 329 eP P **15 33 52.9 +0.5**
BRG pmax pmax
comp=Z,12nm,1.2s
VRAC Vranov 80.86 327 ↓iP P **15 33 55.1 +2.4**
VRAC Vranov 80.86 327 ↓iP P **15 33 55.1 +2.4**
CLL Collm 80.87 330 ↓iP P **15 33 52.7 +0.1**
comp=Z,11nm,1.0s
CLL ePP PP **15 36 58.0 +1.7**
CLL Collm 80.87 330 ↓iP P **15 33 52.7 +0.1**
CLL pmax pmax
comp=Z,11nm,1.0s
Y12C Blythe 80.93 55 eP P **15 33 55.1 +1.8**
comp=Z,12nm,0.8s
BZS Buzias 81.16 322 ↓iP P **15 33 55.0 +0.7**
BZS Buzias 81.16 322 ↓iP P **15 33 55.0 +0.7**
GLA Glamis 81.16 55 eP P **15 33 56.5 +1.9**
GLA pmax pmax
comp=Z,17nm,1.1s
GLA Glamis 81.16 55 eP P **15 33 56.5 +1.9**
comp=Z,16nm,1.1s
GOPC GO Pecny, Ondr 81.19 328 eP P **15 33 55.4 +1.0**
GOPC GO Pecny, Ondr 81.19 328 eP P **15 33 55.4 +1.0**
PRU Pruhonice 81.24 328 eP P **15 33 55.2 +0.6**
PRU Pruhonice 81.24 328 eP P **15 33 55.2 +0.6**
PV10 Paradox Valley 81.43 48 eP P **15 33 58.4 +2.1**
PV04 Paradox Valley 81.50 48 eP P **15 33 57.6 +1.1**
N23A Red Feather La 81.57 45 eP P **15 33 58.7 +1.7**
comp=Z,17nm,1.3s
PV05 Paradox Valley 81.59 48 eP P **15 33 59.0 +2.0**
Y14A Wickenburg 81.80 54 eP P **15 33 59.8 +1.8**
comp=Z,36nm,0.9s
WUAZ Wupatki 81.84 52 eP P **15 34 00.4 +2.1**
comp=Z,14nm,1.0s
PV01 Paradox Valley 81.87 48 eP P **15 34 00.2 +1.7**
113A Mohawk Valley, 82.04 55 eP P **15 34 00.6 +1.4**
comp=Z,7.0nm,1.0s
SMCO Snowmass 82.12 46 eP P **15 34 01.7 +1.7**
comp=Z,6.1nm,1.2s
KHC Kasperske Hory 82.30 328 eP P **15 34 01.0 +0.7**
KHC ePCP sP **15 34 06.6 -0.2**
KHC Kasperske Hory 82.30 328 eP P **15 34 01.0 +0.7**
KHC e 15 34 06.6
GERES GERESS Array B 82.46 328 P P **15 34 01.0 -0.2**
comp=Z,1.9nm,0.7s,baz=45,slow=4.0,SNR=12
GERES LR LR 16 14 26.8
comp=Z,60nm,18.7s,baz=52,slow=38
MVCO Mesa Verde 82.52 49 eP P **15 34 03.6 +1.7**
comp=Z,11nm,1.1s
S22A 4UR Ranch, Cre 83.16 47 eP P **15 34 07.4 +2.1**
comp=Z,8.5nm,1.1s
X18A Snowflake 83.37 52 eP P **15 34 08.1 +1.7**
comp=Z,7.7nm,1.1s
SDCO Great Sand Dun 83.94 47 eP P **15 34 11.0 +1.7**
comp=Z,4.9nm,1.1s
TUC Tucson 84.27 54 eP P **15 34 12.4 +1.5**
TUC pmax pmax
comp=Z,6.0nm,0.9s
TUC Tucson 84.27 54 eP P **15 34 12.4 +1.5**
comp=Z,6.3nm,0.9s
T25A Trinidad 84.99 47 eP P **15 34 16.1 +1.5**
comp=Z,7.8nm,0.8s
BFO Black Forest 85.09 330 eP P **15 34 14.4 -0.2**
BFO pmax pmax
comp=Z,12nm,1.1s
BFO Black Forest 85.09 330 eP P **15 34 14.4 -0.2**
comp=Z,12nm,1.1s
ANMO Albuquerque 85.25 49 ceP P **15 34 16.9 +1.0**
ANMO pmax pmax
comp=Z,8.0nm,1.0s
ANMO Albuquerque 85.25 49 eP P **15 34 17.6 +1.7**
comp=Z,6.3nm,0.9s
WMOK Wichita Mounta 89.92 45 eP P **15 34 39.2 +1.0**
WMOK pmax pmax
comp=Z,6.0nm,0.8s
WMOK Wichita Mounta 89.92 45 eP P **15 34 39.2 +1.0**
comp=Z,6.1nm,0.8s
TX31 Lajitas Ar. Si 90.80 52 eP P **15 34 43.8 +1.3**
TXAR Lajitas Array 90.80 52 P P **15 34 43.7 +1.3**
comp=Z,2.7nm,0.7s,baz=300,slow=2.9,SNR=25
KEST Kesra 94.70 322 LR LR 16 21 53.2
comp=Z,76nm,18.9s,baz=266,slow=38
TORD Torodi Ar. Bea 116.92 314 PKP **PKPdf 15 40 22.8 -1.2**
comp=Z,0.6nm,0.8s,baz=29,slow=3.3,SNR=3.0
DBIC Dimbokro 125.90 316 PKP **PKPdf 15 40 41.6 +0.2**
comp=Z,2.5nm,0.9s,baz=8.5,slow=4.0,SNR=3.5
SHEL Horse Pasture 143.57 296 i PKIKP **PKPdf 15 41 15.1 +1.0**
SAML Samuel 144.88 44 ePKP PKPbc 15 41 15.8 +0.3
LPAZ La Paz 147.41 59 PKPbc **PKPbc 15 41 23.4 -0.4**
comp=Z,2.6nm,0.7s,baz=353,slow=6.6,SNR=7.9

JMA 11 15:24:23.6,37.10N×140.61E,h13km±1km,M3.7,1C-2D, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.15**	**89**	↑↑P		Pg 15 24 27.4	+0.1
ONAJ				S		Sg 15 24 29.9	0.0
JFT	**Otama**	**0.47**	**333**	↓↓P		Pg 15 24 33.3	+0.4
JFT				S		Sg 15 24 39.6	+0.4
JHO	**Hitachi**	**0.49**	**184**	P		Pg 15 24 33.0	-0.2
JHO				eS		Sg 15 24 39.6	-0.2
JSB	**Shiboa**	**0.57**	**257**	P		Pb 15 24 35.3	-0.1
JSB				S		Sb 15 24 43.0	-0.4
JMM	**Marumori**	**0.78**	**11**	P		Pg 15 24 38.3	-0.4
JMM				S		Sg 15 24 48.7	-0.2
JFY	**Yanaizu**	**0.79**	**293**	↓↓P		Pg 15 24 38.7	-0.1
JFY				S		Sg 15 24 48.8	-0.3
MAT	**Matsushiro**	**2.01**	**255**	P		Pb 15 24 59.1	-0.9
MAT				S		Sb 15 25 26.2	+1.3

JMA 11 15:25:00.3,37.01N×140.70E,h8km±1km,M3.6,2C, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.12**	**41**	↑↑P		Pg 15 25 03.1	0.0
ONAJ				S		Sg 15 25 05.2	+0.2
JHO	**Hitachi**	**0.41**	**195**	↑↑P		Pg 15 25 08.4	+0.1
JHO				eS		Sg 15 25 14.0	+0.3
JFT	**Otama**	**0.58**	**330**	eS		Sg 15 25 19.6	+0.3
JSB	**Shiboa**	**0.63**	**266**	P		Pg 15 25 12.8	+0.4
JMM	**Marumori**	**0.86**	**5**	P		Pg 15 25 16.4	-0.4
JMM				S		Sg 15 25 27.9	-0.1
JFY	**Yanaizu**	**0.89**	**297**	P		Pg 15 25 17.3	-0.1
JFY				i S		Sg 15 25 28.7	-0.2
MAT	**Matsushiro**	**2.06**	**258**	P		Pb 15 25 37.5	-0.4
MAT				S		Sb 15 26 03.7	+0.1

NIED ***11*** *15:26:00, 37.00N×140.70E, h5km, Mw3.7 Best double couple: M0=4.15000×10^14 NP1:φ=235.00000°, δ=37.00000°, λ=-75.00000°. NP2:φ=36.00000°, δ=54.00000°, λ=-101.00000°.*

IDC ***11*** *15:26:28.2±0.7, 37.04N×140.64E, h0km, mb3.7/15, mb1 4.0/16, mb1mx3.8/43, mbtmp3.8/16, ML3.7/1, Error ellipse: s-maj=18.9km s-min=15.7km az=118.0*

ISCJB ***11*** *15:26:29.1±0.6, 37.00N±0.03×140.77E±0.05, h17km±4km, mb3.7/15, Error ellipse: s-maj=7.0km s-min=4.7km az=19.1*

JMA ***11*** *15:26:29.5, 37.01N×140.68E, h8km±1km, M4.0 Broadband fault plane solution: P waves. NP1: φ=75.00000°, δ=54.00000°, λ=-84.00000°. NP2:φ=245.00000°, δ=36.00000°, λ=-98.00000°. Principal axes: T Plg9.0000°, Azm161.0000°; N Plg5.0000°, Azm252.0000°; P Plg80.0000°, Azm10.0000°;*

JMA Felt II J1.

ISC 11 15:26:29.5±0.9, 37.01N±0.03×140.68E±0.04, h10km±6km, n34, σ0=60/35, mb3.7/15, 6C, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.14**	**46**	P	**Pg**	**15 26 32.7**	**0.0**
ONAJ				S	**Sg**	**15 26 34.9**	**0.0**
JHO	**Hitachi**	**0.41**	**192**	↑↑P	**Pg**	**15 26 37.5**	**0.0**
JFT	**Otama**	**0.58**	**332**	↑↑P	**Pg**	**15 26 40.9**	**+0.2**
JFT				S	**Sg**	**15 26 48.5**	**+0.2**
JSB	**Shiboa**	**0.61**	**266**	↑↑P	**Pb**	**15 26 42.0**	**-0.2**
JMM	**Marumori**	**0.86**	**6**	↑↑P	**Pg**	**15 26 45.6**	**-0.5**
JMM				S	**Sg**	**15 26 57.3**	**0.0**
JYT	**Yasato**	**0.87**	**207**	↑↑P	**Pg**	**15 26 45.9**	**-0.3**
JYT				S	**Sg**	**15 26 57.9**	**+0.3**
JFY	**Yanaizu**	**0.87**	**297**	↑↑P	**Pg**	**15 26 46.3**	**0.0**
JFY				S	**Sg**	**15 26 57.6**	**-0.1**
MJAR	**Matsushiro Arr**	**2.04**	**258**	Pn	**Pn**	**15 27 05.0**	**+1.1**
	21nm,0.3s,baz=81,slow=16,SNR=8.7						
MJAR				Sn	**Sn**	**15 27 29.9**	**+0.6**
	41nm,0.3s,baz=82,slow=27,SNR=15						
MAT	**Matsushiro**	**2.04**	**258**	P	**Pb**	**15 27 05.4**	**-1.2**
MAT				S	**Sb**	**15 27 32.3**	**+0.3**
JHJ	**Hachijo jima 2**	**3.95**	**191**	Pn	**Pn**	**15 27 30.7**	**+0.6**
	14nm,0.3s,baz=331,slow=23,SNR=3.4						
JHJ				Sn	**Sn**	**15 28 16.1**	**-0.5**
	9.1nm,0.3s,baz=60,slow=20,SNR=3.8						
USRK	**Ussuriysk Ar.**	**9.75**	**320**	Pn	Pn	15 28 55.0	+5.2
	0.2nm,0.3s,baz=135,slow=14,SNR=13						
KSRS	**Korea Array**	**10.18**	**276**	Pn	Pn	15 29 02.1	+6.4
	0.1nm,0.3s,baz=99,slow=14,SNR=5.4						
SEY	**Seymchan**	**26.93**	**12**	P	**P**	**15 32 11.4**	**+0.8**
	1.6nm,0.9s,baz=228,slow=11,SNR=4.0						
SONM	**Songino Array**	**27.31**	**304**	P	**P**	**15 32 14.9**	**+0.5**
	1.1nm,0.8s,baz=107,slow=8.7,SNR=5.1						
H11N2	**WAKE ISLAND Hy**	**28.64**	**120**	T	T	16 02 14.6	
	baz=313						
H11N1	**WAKE ISLAND Hy**	**28.65**	**120**	T	T	16 02 15.2	
	baz=313,slow=74,SNR=11						
H11N3	**WAKE ISLAND Hy**	**28.66**	**120**	T	T	16 02 16.0	
	baz=313,slow=74,SNR=12						
H11S1	**WAKE ISLAND Hy**	**29.34**	**122**	T	T	16 03 07.8	
	baz=314,slow=76,SNR=13						
H11S3	**WAKE ISLAND Hy**	**29.36**	**122**	T	T	16 03 07.4	
	baz=314,slow=76,SNR=11						
H11S2	**WAKE ISLAND Hy**	**29.36**	**122**	T	T	16 03 07.1	
	baz=314,slow=76,SNR=11						
ZALV	**Zalesovo Beam**	**41.50**	**312**	P	**P**	**15 34 15.3**	**-1.2**
	0.5nm,0.4s,baz=110,slow=7.0,SNR=3.0						
ZALV				PcP	**PcP**	**15 36 13.5**	**-0.5**
	0.5nm,0.4s,baz=87,slow=3.4,SNR=2.6						
MKAR	**Makanchi Array**	**43.63**	**302**	P	**P**	**15 34 34.2**	**+0.1**
	0.6nm,0.5s,baz=86,slow=9.0,SNR=6.2						
ILAR	**Eielson Array**	**49.83**	**32**	P	**P**	**15 35 22.6**	**+0.3**
	0.4nm,0.6s,baz=269,slow=5.7,SNR=5.8						
WRA	**Warramunga Arr**	**56.96**	**187**	P	**P**	**15 36 14.8**	**-0.3**
	3.2nm,0.7s,baz=5.1,slow=7.4,SNR=18						
ASAR	**Alice Springs**	**60.69**	**187**	P	**P**	**15 36 41.4**	**+0.4**
	1.3nm,0.8s,baz=14,slow=7.5,SNR=14						
YKA	**Yellowknife Ar**	**64.12**	**30**	P	**P**	**15 37 03.8**	**+0.3**
	0.2nm,0.7s,baz=303,slow=6.4,SNR=4.5						
FINES	**FINESS Array B**	**68.56**	**332**	P	**P**	**15 37 31.9**	**-0.1**
	1.2nm,0.8s,baz=70,slow=12,SNR=3.8						
AKASG	**Malin Array Be**	**73.95**	**322**	P	**P**	**15 38 03.8**	**-1.0**
	0.2nm,0.2s,baz=50,slow=5.8,SNR=3.5						
NOA	**NORSAR Array B**	**73.98**	**337**	P	**P**	**15 38 04.9**	**0.0**
	0.8nm,0.7s,baz=42,slow=5.6,SNR=3.4						
NVAR	**Mina Array Bea**	**75.47**	**53**	P	**P**	**15 38 14.9**	**+0.7**
	0.4nm,0.7s,baz=292,slow=5.3,SNR=3.2						
PDAR	**Pinedale Array**	**78.10**	**45**	P	**P**	**15 38 29.8**	**+0.8**
	0.5nm,0.7s,baz=349,slow=3.8,SNR=4.1						
GERES	**GERESS Array B**	**82.42**	**328**	P	**P**	**15 38 50.8**	**-1.2**
	0.3nm,0.4s,baz=23,slow=8.5,SNR=3.4						
TXAR	**Lajitas Array**	**90.60**	**52**	P	**P**	**15 39 32.7**	**+0.2**
	0.2nm,0.6s,baz=333,slow=5.3,SNR=2.1						
LPAZ	**La Paz**	**147.21**	**59**	PKPbc	**PKPbc**	**15 46 14.6**	**+0.3**
	1.7nm,0.8s,baz=314,slow=4.2,SNR=5.9						

DDA ***11*** *15:27:10.7, 41.02N×34.40E, h7km, Md2.7*
CSEM ***11*** *15:27:10.9±0.3, 41.04N×34.40E, h2km, MD2.7, Error*

ellipse: s-maj=5.7km s-min=4.7km az=137.0
*ISK **11** 15:27:10.2,41.05N×34.44E,h10km,MD2.7*

ISC 11 15:27:10.2±1.1, 41.06N±0.02×34.36E±0.03, h10km±12km, n26,σ0.34/42, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TOS	**Tosya**	**0.26**	**265**	*e*PG	**Pb**	**15 27 17.0**	**0.0**
TOS	**Tosya**	**0.26**	**265**	*e*Pg	**Pb**	**15 27 17.0**	**0.0**
ILGA	**Ilgaz**	**0.49**	**269**	*i* P	**Pb**	**15 27 20.9**	**0.0**
ILGA				*i* S	**Sb**	**15 27 28.4**	**+0.1**
ILGA	**Ilgaz**	**0.49**	**269**	P	**Pb**	**15 27 21.0**	**0.0**
ILGA				S	**Sb**	**15 27 28.4**	**+0.1**
BYBT	**Boyabat**	**0.51**	**37**	*e*PG	**Pg**	**15 27 20.4**	**+0.3**
BYBT				*e*SG	**Sg**	**15 27 27.1**	**+0.3**
BYBT	**Boyabat**	**0.51**	**37**	*e*Pg	**Pg**	**15 27 20.4**	**+0.3**
BYBT				*e*Sg	**Sg**	**15 27 27.1**	**+0.3**
BOYT	**Boyabat**	**0.54**	**48**	*i* P	**Pb**	**15 27 21.7**	**-0.1**
BOYT				*i* S	**Sb**	**15 27 29.3**	**-0.4**
BOYT	**Boyabat**	**0.54**	**48**	P	**Pb**	**15 27 21.7**	**-0.1**
BOYT				S	**Sb**	**15 27 29.3**	**-0.4**
DIKM	**Dikmen**	**0.90**	**49**	*e*PG	**Pg**	**15 27 27.1**	**-0.3**
DIKM	**Dikmen**	**0.90**	**49**	*e*Pg	**Pg**	**15 27 27.1**	**-0.3**
CORM	**Corum**	**0.90**	**167**	*e*PG	**Pg**	**15 27 27.6**	**0.0**
CORM	**Corum**	**0.90**	**167**	*e*Pg	**Pg**	**15 27 27.6**	**0.0**
COAL	**Corum-Alaca**	**0.93**	**149**	*i* P	**Pg**	**15 27 27.6**	**-0.6**
COAL				*i* S	**Sg**	**15 27 40.4**	**+0.1**
COAL	**Corum-Alaca**	**0.93**	**149**	P	**Pg**	**15 27 27.6**	**-0.6**
COAL				S	**Sg**	**15 27 40.4**	**+0.1**
HAVZ	**Havza**	**1.02**	**89**	*i* P	**Pg**	**15 27 30.0**	**+0.1**
HAVZ				*i* S	**Sb**	**15 27 44.1**	**+0.5**
HAVZ	**Havza**	**1.02**	**89**	P	**Pg**	**15 27 30.0**	**+0.1**
HAVZ				S	**Sb**	**15 27 44.1**	**+0.5**
KVT	**Kavak**	**1.27**	**89**	*e*PN	**Pn**	**15 27 33.8**	**-0.3**
KVT	**Kavak**	**1.27**	**89**	*e*Pn	**Pn**	**15 27 33.8**	**-0.3**
CDAG	**Cicekdag**	**1.44**	**180**	*i* P	**Pg**	**15 27 37.7**	**0.0**
CDAG				*i* S	**Sb**	**15 27 55.7**	**+0.3**
CDAG	**Cicekdag**	**1.44**	**180**	P	**Pg**	**15 27 37.7**	**0.0**
CDAG				S	**Sb**	**15 27 55.7**	**+0.3**
YOZ	**Yozgat**	**1.60**	**152**	*e*PN	**Pn**	**15 27 38.7**	**+0.1**
YOZ	**Yozgat**	**1.60**	**152**	*e*Pn	**Pn**	**15 27 38.7**	**+0.1**
ERBA	**Erbaa**	**1.85**	**101**	*i* P	**Pb**	**15 27 44.3**	**+0.2**
ERBA				*i* S	**Sb**	**15 28 07.7**	**+0.3**
ERBA	**Erbaa**	**1.85**	**101**	P	**Pb**	**15 27 44.3**	**+0.2**
ERBA				S	**Sb**	**15 28 07.7**	**+0.3**
CUSAR	**Sarkisla-SIVAS**	**2.18**	**138**	*i* P	**Pb**	**15 27 50.2**	**+0.4**
CUSAR				*i* S	**Sg**	**15 28 19.5**	**-0.8**
CUSAR	**Sarkisla-SIVAS**	**2.18**	**138**	P	**Pb**	**15 27 50.2**	**+0.4**
CUSAR				S	**Sg**	**15 28 19.5**	**-0.8**

IDC 11 15:30:07.3±2.1, 2.20N×126.80E, h0km, mb3.1/3, mb1 3.3/3, mb1mx3.1/35, mbtmp3.1/3, Error ellipse: s-maj=174.0km s-min=25.5km az=66.0, Northern Molucca Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**23.22**	**162**	P	P	15 35 16.7	+0.5
	0.2nm,0.3s,baz=340,slow=10,SNR=5.2						
ASAR	**Alice Springs**	**26.63**	**165**	P	P	15 35 47.1	-0.7
	0.3nm,0.8s,baz=349,slow=6.8,SNR=4.4						
MKAR	**Makanchi Array**	**58.84**	**326**	P	P	15 40 07.9	+0.1
	0.1nm,0.4s,baz=116,slow=5.6,SNR=3.2						

JMA 11 15:30:37.0, 37.03N×140.61E, h11km±1km, M2.7, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.17**	**65**	P	Pg	15 30 41.0	+0.2
ONAJ				S	Sg	15 30 43.9	+0.5
JHO	**Hitachi**	**0.42**	**185**	P	Pg	15 30 45.2	-0.1
JHO				S	Sg	15 30 51.0	+0.2
JFT	**Otama**	**0.53**	**336**	P	Pg	15 30 47.7	+0.3
JFT				S	Sg	15 30 55.0	+0.5
JMM	**Marumori**	**0.85**	**10**	P	Pg	15 30 53.0	-0.4
MAT	**Matsushiro**	**1.99**	**257**	P	Pb	15 31 12.0	-1.2
MAT				S	Sb	15 31 37.8	-0.2

*CSEM **11** 15:32:16.7, 40.97N×24.68E, h12km, ML1.7/9*

ATH 11 15:32:16.7, 40.97N×24.68E, h12km±3km, ML1.7/6, Error ellipse: s-maj=3.2km s-min=0.7km az=351.0, Aegean Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KAVA	**Kavala**	**0.13**	**281**	P	Pg	15 32 20.3	+0.3
KAVA				S	Sg	15 32 22.0	-0.4
KAVA	**Kavala**	**0.13**	**281**	P	Pg	15 32 20.3	+0.3
NVR	**Nevrokopi**	**0.73**	**302**	P	Pb	15 32 31.4	+0.2
NVR				S	Sg	15 32 40.0	-0.3
SMTH	**Samothraki Isl**	**0.82**	**128**	P	Pb	15 32 32.7	0.0
SMTH				S	Sb	15 32 44.3	+0.6
SMTH	**Samothraki Isl**	**0.82**	**128**	P	Pb	15 32 32.7	-0.1
SMTH				S	Sb	15 32 44.4	+0.7
SMTH				AML	AML	15 32 45.6	
	comp=E,58μm,0.1s						
SMTH				AML	AML	15 32 46.9	
	comp=N,72μm,0.7s						
OUR	**Ouranopolis**	**0.83**	**220**	P	Pn	15 32 33.8	-0.3
OUR				S	Sb	15 32 44.1	0.0
OUR	**Ouranopolis**	**0.83**	**220**	P	Pn	15 32 33.8	-0.3
OUR				S	Sb	15 32 44.1	+0.1
OUR				AML	AML	15 32 45.9	
	comp=N,315μm,0.2s						
OUR				AML	AML	15 32 46.3	
	comp=E,235μm,0.2s						
SRS	**Serrai**	**0.84**	**280**	P	Pg	15 32 32.5	-0.4
SRS				S	Sn	15 32 45.5	-1.0
SRS	**Serrai**	**0.84**	**280**	P	Pg	15 32 32.5	-0.4
SRS				S	Sn	15 32 45.5	-0.9
SRS				AML	AML	15 32 46.7	
	comp=N,72μm,0.1s						
SRS				AML	AML	15 32 47.5	
	comp=E,81μm,0.1s						
SOH	**Sokhos**	**1.02**	**262**	P	Pg	15 32 36.4	+0.1
SOH				S	Sn	15 32 50.4	-0.6
SOH	**Sokhos**	**1.02**	**262**	P	Pg	15 32 36.4	+0.1
SOH				S	Sn	15 32 50.4	-0.6
SOH				AML	AML	15 32 51.3	
	comp=E,108μm,0.4s						
SOH				AML	AML	15 32 52.1	
	comp=N,139μm,0.5s						
ALN	**Alexandroupoli**	**1.03**	**94**	P	Pb	15 32 35.9	-0.6
ALN				S	Sb	15 32 49.6	-0.4
ALN	**Alexandroupoli**	**1.03**	**94**	P	Pb	15 32 35.9	-0.6
ALN				S	Sb	15 32 49.6	-0.4
PLG	**Polygyros**	**1.11**	**238**	P	Pb	15 32 37.5	-0.4
PLG				S	Sb	15 32 52.3	0.0
PLG	**Polygyros**	**1.11**	**238**	P	Pb	15 32 37.5	-0.3
PLG				S	Sb	15 32 52.3	0.0
PLG				AML	AML	15 32 53.9	
	comp=E,79μm,0.4s						
PLG				AML	AML	15 32 54.5	
	comp=N,106μm,0.3s						
LIA	**Limnos Island**	**1.14**	**160**	P	Pb	15 32 37.8	-0.4
LIA				S	Sb	15 32 53.1	+0.2
HORT	**Hortiatis**	**1.26**	**253**	P	Pn	15 32 39.4	-0.7
HORT				S	Sg	15 32 58.7	+1.4
HORT	**Hortiatis**	**1.26**	**253**	P	Pn	15 32 39.4	-0.7
HORT				S	Sg	15 32 58.6	+1.4
HORT				AML	AML	15 32 58.7	
	comp=E,36μm,0.3s						
HORT				AML	AML	15 32 59.0	
	comp=N,27μm,0.2s						
PAIG	**Paliouri**	**1.29**	**217**	P	Pn	15 32 40.2	-0.3
PAIG				S	Sn	15 32 57.9	+0.2
PAIG	**Paliouri**	**1.29**	**217**	P	Pn	15 32 40.2	-0.2
PAIG				S	Sn	15 32 57.9	+0.2

*IDC **11** 15:38:53.9±1.1, 37.06N×140.65E, h0km, mb3.4/5, mb1 3.6/6, mb1mx3.4/33, mbtmp3.4/6, ML3.0/1, Error ellipse: s-maj=25.2km s-min=23.1km az=106.0*
*ISCJB **11** 15:38:54.9±0.7, 36.99N±0.04×140.79E±0.06, h17km±5km, mb3.4/5, Error ellipse: s-maj=7.6km s-min=6.1km az=19.0*
*JMA **11** 15:38:55.6, 37.01N×140.69E, h8km±1km, M3.4*
JMA Felt I J1.

ISC 11 15:38:55.3±0.9, 37.01N±0.04×140.69E±0.04, h12km±7km, n22,σ0.68/22, mb3.3/5, 7C, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.12**	**44**	⇑P	**Pg**	**15 38 58.6**	**+0.1**
ONAJ				S	**Sg**	**15 39 00.8**	**0.0**
JHO	**Hitachi**	**0.41**	**194**	⇑P	**Pg**	**15 39 03.6**	**+0.1**
JFT	**Otama**	**0.58**	**331**	⇑P	**Pb**	**15 39 07.0**	**-0.4**
JFT				S	**Sg**	**15 39 14.8**	**+0.6**
JSB	**Shiboa**	**0.62**	**266**	⇑P	**Pb**	**15 39 08.2**	**+0.1**
JSB				S	**Sb**	**15 39 16.8**	**0.0**
JMM	**Marumori**	**0.85**	**5**	⇑P	**Pg**	**15 39 11.6**	**-0.2**
JMM				S	**Sb**	**15 39 23.1**	**-0.4**
JFY	**Yanaizu**	**0.88**	**297**	⇑P	**Pg**	**15 39 12.5**	**+0.2**
JFY				*i* S	**Sg**	**15 39 23.8**	**0.0**
JYT	**Yasato**	**0.88**	**207**	⇑P	**Pb**	**15 39 12.0**	**-0.5**
MJAR	**Matsushiro Arr**	**2.05**	**257**	Pn	**Pb**	**15 39 31.1**	**-1.3**
	6.0nm,0.3s,baz=74,slow=16,SNR=10						
MJAR				Sn	**Sn**	**15 39 55.1**	**0.0**
	11nm,0.3s,baz=83,slow=28,SNR=21						
MAT	**Matsushiro**	**2.05**	**257**	P	**Pb**	**15 39 31.5**	**-1.0**
MAT				S	**Sb**	**15 39 58.5**	**+0.6**
JHJ	**Hachijo jima 2**	**3.96**	**191**	Sn	**Sn**	**15 40 41.6**	**-0.5**
	4.9nm,0.3s,baz=311,slow=9.3,SNR=1.5						
USRK	**Ussuriysk Ar.**	**9.76**	**320**	Pn	Pn	15 41 21.0	+5.5
	0.1nm,0.3s,baz=147,slow=11,SNR=6.1						
H11N2	**WAKE ISLAND Hy**	**28.64**	**120**	T	T	16 14 39.0	
	baz=313,slow=75,SNR=13						
H11N1	**WAKE ISLAND Hy**	**28.64**	**120**	T	T	16 14 37.6	
	baz=313,slow=75,SNR=12						
H11N3	**WAKE ISLAND Hy**	**28.66**	**120**	T	T	16 14 40.1	
	baz=313,slow=75,SNR=15						
H11S1	**WAKE ISLAND Hy**	**29.34**	**122**	T	T	16 15 31.6	
	baz=314,slow=75,SNR=14						
H11S3	**WAKE ISLAND Hy**	**29.34**	**122**	T	T	16 15 30.2	
	baz=314,slow=75,SNR=14						
H11S2	**WAKE ISLAND Hy**	**29.35**	**122**	T	T	16 15 31.6	
	baz=314,slow=75,SNR=8.0						
ZALV	**Zalesovo Beam**	**41.50**	**312**	P	**P**	**15 46 40.5**	**-1.6**
	0.3nm,0.5s,baz=99,slow=8.9,SNR=2.6						
MKAR	**Makanchi Array**	**43.64**	**302**	P	**P**	**15 46 59.9**	**+0.3**
	0.2nm,0.6s,baz=89,slow=8.5,SNR=3.2						
ILAR	**Eielson Array**	**49.82**	**32**	P	**P**	**15 47 48.7**	**+1.0**
	0.3nm,0.8s,baz=254,slow=6.0,SNR=3.8						
WRA	**Warramunga Arr**	**56.97**	**187**	P	**P**	**15 48 40.9**	**+0.3**
	1.0nm,0.8s,baz=3.2,slow=7.6,SNR=10						
ASAR	**Alice Springs**	**60.69**	**187**	P	**P**	**15 49 07.2**	**+0.7**
	0.3nm,0.7s,baz=19,slow=12,SNR=5.5						

*ATH **11** 15:41:08.5, 35.73N×27.48E, h27km±1km, ML3.4/3, Error ellipse: s-maj=2.4km s-min=0.9km az=128.0*
*ISCJB **11** 15:41:09.4±0.7, 35.85N±0.05×27.36E±0.05, h5km±7km, Error ellipse: s-maj=9.3km s-min=3.2km az=142.8*
*CSEM **11** 15:41:09.5±0.2, 35.81N×27.39E, h5km, ML3.4, Error ellipse: s-maj=5.5km s-min=2.4km az=146.0*
*THE **11** 15:41:09.6, 35.76N×27.47E, h4km±2km, ML3.6/5, Error ellipse: s-maj=3.0km s-min=0.7km az=139.0*
*ISK **11** 15:41:10.3, 35.73N×27.45E, h87km, ML3.1*

ISC 11 15:41:08.2±1.3, 35.73N±0.03×27.42E±0.03, h2km±11km, n85,σ0.71/109, Dodecanese Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KARP	**Karpathos**	**0.28**	**230**	P	**Pb**	**15 41 16.7**	**+0.7**
KARP				S	**Sb**	**15 41 20.8**	**-0.3**
KARP	**Karpathos**	**0.28**	**230**	P	**Pb**	**15 41 15.9**	**0.0**
KARP				S	**Sb**	**15 41 20.8**	**-0.3**
KARP	**Karpathos**	**0.28**	**230**	P	**Pb**	**15 41 15.9**	**0.0**
KARP				S	**Sb**	**15 41 21.0**	**-0.1**
KARP				AML	AML	15 41 21.9	
	comp=N,40712μm,0.3s						
KARP				AML	AML	15 41 22.7	
	comp=E,40960μm,0.2s						
ARG	**Arkhangelos**	**0.75**	**49**	P	**Pg**	**15 41 22.5**	**-0.1**
ARG				S	**Sb**	**15 41 33.7**	**-1.1**
ARG	**Arkhangelos**	**0.75**	**49**	P	**Pg**	**15 41 22.5**	**-0.1**
ARG				S	**Sg**	**15 41 33.2**	**+0.8**
NIS1	**Nisyros Isl.**	**0.90**	**347**	*e*PG	**Pn**	**15 41 29.5**	**+1.6**
NIS1	**Nisyros Isl.**	**0.90**	**347**	P	**Pg**	**15 41 24.8**	**-0.6**
NIS1	**Nisyros Isl.**	**0.90**	**347**	*e*Pg	**Pn**	**15 41 29.5**	**+1.6**
NIS1	**Nisyros Isl.**	**0.90**	**347**	P	**Pg**	**15 41 24.8**	**-0.6**
NIS1				S	**Sb**	**15 41 40.2**	**+1.2**
ZKR	**Zakros**	**1.16**	**239**	P	**Pn**	**15 41 31.6**	**+0.1**
ZKR				S	**Sn**	**15 41 48.2**	**+0.3**
ZKR	**Zakros**	**1.16**	**239**	P	**Pn**	**15 41 31.8**	**+0.4**
ZKR				S	**Sn**	**15 41 48.2**	**+0.3**
ZKR	**Zakros**	**1.16**	**239**	P	**Pn**	**15 41 31.8**	**+0.4**
ZKR				S	**Sn**	**15 41 48.7**	**+0.8**
ZKR				AML	AML	15 41 52.0	
	comp=E,3198μm,0.3s						
ZKR				AML	AML	15 41 53.5	
	comp=N,3253μm,0.4s						
BODT	**Bodrum**	**1.34**	**356**	*e*PN	**Pb**	**15 41 34.7**	**+0.7**
BODT	**Bodrum**	**1.34**	**356**	*e*Pn	**Pb**	**15 41 34.7**	**+0.7**
DALY	**Dalyan (Mu˘la**	**1.48**	**42**	*e*PN	**Pb**	**15 41 36.3**	**-0.1**
DALY				*e*SN	**Sb**	**15 41 55.8**	**+0.2**
DALY	**Dalyan (Mu˘la**	**1.48**	**42**	*e*Pn	**Pb**	**15 41 36.3**	**-0.1**
DALY				*e*Sn	**Sb**	**15 41 55.8**	**+0.2**
NPS	**Neapolis**	**1.55**	**253**	P	**Pn**	**15 41 37.1**	**+0.3**
NPS				S	**Sg**	**15 41 58.4**	**+0.5**
NPS	**Neapolis**	**1.55**	**253**	P	**Pn**	**15 41 37.2**	**+0.4**
NPS				S	**Sn**	**15 41 57.4**	**-0.1**
NPS	**Neapolis**	**1.55**	**253**	P	**Pn**	**15 41 37.2**	**+0.4**
NPS				S	**Sn**	**15 41 57.4**	**-0.1**
NPS				AML	AML	15 41 59.9	
	comp=N,1193μm,0.4s						
NPS				AML	AML	15 42 03.7	
	comp=E,1894μm,0.2s						
YER	**Yerkesik**	**1.57**	**26**	*e*PN	**Pn**	**15 41 37.3**	**+0.2**
YER	**Yerkesik**	**1.57**	**26**	P	**Pn**	**15 41 36.6**	**-0.6**
YER				S	**Sn**	**15 41 56.3**	**-1.8**
YER	**Yerkesik**	**1.57**	**26**	P	**Pn**	**15 41 36.6**	**-0.6**
YER	**Yerkesik**	**1.57**	**26**	*e*Pn	**Pn**	**15 41 37.3**	**+0.2**
YER				S	**Sn**	**15 41 56.3**	**-1.8**
FETY	**Fethiye**	**1.62**	**55**	*e*PN	**Pn**	**15 41 38.1**	**+0.2**
FETY	**Fethiye**	**1.62**	**55**	*e*Pn	**Pn**	**15 41 38.1**	**+0.2**
LAST	**Lasithi**	**1.68**	**251**	P	**Pb**	**15 41 39.7**	**-0.3**
LAST				S	**Sg**	**15 42 02.4**	**+0.1**
LAST	**Lasithi**	**1.68**	**251**	P	**Pb**	**15 41 39.7**	**-0.3**
LAST				S	**Sb**	**15 42 01.8**	**+0.1**
LAST	**Lasithi**	**1.68**	**251**	P	**Pg**	**15 41 40.4**	**-0.1**
SANT	**Santorini**	**1.72**	**293**	P	**Pn**	**15 41 38.3**	**-0.9**
SANT	**Santorini**	**1.72**	**293**	P	**Pn**	**15 41 38.3**	**-0.9**
THR6	**Thira Island,**	**1.76**	**292**	P	**Pn**	**15 41 39.2**	**-0.5**
THR6	**Thira Island,**	**1.76**	**292**	P	**Pn**	**15 41 39.2**	**-0.5**
THR2	**Thira Island,**	**1.76**	**295**	P	**Pn**	**15 41 39.3**	**-0.5**
THR2	**Thira Island,**	**1.76**	**295**	P	**Pn**	**15 41 39.3**	**-0.5**
THR3	**Thira Island,**	**1.77**	**293**	P	**Pn**	**15 41 39.8**	**-0.1**
THR3	**Thira Island,**	**1.77**	**293**	P	**Pn**	**15 41 39.8**	**-0.1**
CMBO	**Columbo, Santo**	**1.79**	**295**	P	**Pn**	**15 41 39.9**	**-0.3**
CMBO	**Columbo, Santo**	**1.79**	**295**	P	**Pn**	**15 41 39.9**	**-0.3**
CMBO	**Columbo, Santo**	**1.79**	**295**	P	**Pn**	**15 41 39.3**	**-0.9**
THR5	**Thira Island,**	**1.82**	**293**	*e*PN	**Pb**	**15 41 42.2**	**0.0**
THR5	**Thira Island,**	**1.82**	**293**	P	**Pn**	**15 41 40.4**	**-0.1**
THR5	**Thira Island,**	**1.82**	**293**	P	**Pn**	**15 41 40.4**	**-0.1**
THR5	**Thira Island,**	**1.82**	**293**	*e*Pn	**Pb**	**15 41 42.2**	**0.0**
IACM	**Heraklion**	**1.96**	**258**	P	**Pn**	**15 41 43.0**	**+0.5**
IACM	**Heraklion**	**1.96**	**258**	P	**Pn**	**15 41 43.0**	**+0.5**
APE	**Apeiranthos**	**2.03**	**312**	P	**Pn**	**15 41 42.0**	**-1.5**
APE	**Apeiranthos**	**2.03**	**312**	P	**Pn**	**15 41 42.0**	**-1.5**
IDI	**Anoyia**	**2.11**	**259**	P	**Pn**	**15 41 44.9**	**+0.3**
IDI				S	**Sn**	**15 42 11.3**	**-0.2**
IDI	**Anoyia**	**2.11**	**259**	P	**Pn**	**15 41 45.0**	**+0.3**
IDI				S	**Sn**	**15 42 11.3**	**-0.2**
IDI	**Anoyia**	**2.11**	**259**	P	**Pn**	**15 41 45.0**	**+0.3**
AYDB	**Zeytinkoy-Aydi**	**2.25**	**9**	*e*PN	**Pn**	**15 41 47.0**	**+0.4**
AYDB	**Zeytinkoy-Aydi**	**2.25**	**9**	*e*Pn	**Pn**	**15 41 47.0**	**+0.4**
SIVA	**Sivas**	**2.25**	**252**	P	**Pb**	**15 41 48.8**	**-0.7**
SIVA	**Sivas**	**2.25**	**252**	P	**Pb**	**15 41 48.8**	**-0.7**
SIVA	**Sivas**	**2.25**	**252**	P	**Pg**	**15 41 50.5**	**-0.8**
ELL	**Elmali**	**2.25**	**62**	*e*PN	**Pn**	**15 41 47.0**	**+0.3**
ELL	**Elmali**	**2.25**	**62**	*e*Pn	**Pn**	**15 41 47.0**	**+0.3**
DENT	**Denizli**	**2.40**	**32**	*e*PN	**Pn**	**15 41 49.6**	**+1.0**
DENT	**Denizli**	**2.40**	**32**	*e*Pn	**Pn**	**15 41 49.6**	**+1.0**
VAM	**Vamos**	**2.65**	**264**	P	**Pn**	**15 41 53.7**	**+1.8**
IZM	**Izmir**	**2.67**	**357**	*e*PN	**Pn**	**15 41 53.0**	**+0.7**
IZM	**Izmir**	**2.67**	**357**	*e*Pn	**Pn**	**15 41 53.0**	**+0.7**
IMMV	**Iera Moni Meta**	**2.82**	**266**	P	**Pn**	**15 41 54.7**	**+0.4**
IMMV	**Iera Moni Meta**	**2.82**	**266**	P	**Pn**	**15 41 54.7**	**+0.4**
IMMV	**Iera Moni Meta**	**2.82**	**266**	P	**Pn**	**15 41 53.9**	**-0.4**
GVD	**Gavdhos**	**2.87**	**253**	P	**Pb**	**15 41 59.7**	**-0.4**
KULA	**Kula-Manisa**	**2.95**	**19**	*e*PN	**Pn**	**15 41 56.3**	**+0.1**
KULA	**Kula-Manisa**	**2.95**	**19**	*e*Pn	**Pn**	**15 41 56.3**	**+0.1**
AKS	**Akhisar**	**3.16**	**6**	*e*PN	**Pn**	**15 41 58.9**	**-0.1**
AKS	**Akhisar**	**3.16**	**6**	*e*Pn	**Pn**	**15 41 58.9**	**-0.1**
ANKY	**Antikythira Is**	**3.35**	**274**	P	**Pn**	**15 42 02.2**	**+0.6**
ANKY	**Antikythira Is**	**3.35**	**274**	P	**Pn**	**15 42 02.2**	**+0.6**
KYTH	**Kithira**	**3.60**	**280**	P	**Pn**	**15 42 05.5**	**+0.5**
KYTH				S	**Sn**	**15 42 47.8**	**-0.3**
KYTH	**Kithira**	**3.60**	**280**	P	**Pn**	**15 42 05.5**	**+0.5**
KYTH				S	**Sn**	**15 42 47.8**	**-0.3**
KYTH	**Kithira**	**3.60**	**280**	P	**Pn**	**15 42 04.4**	**-0.6**
VLI	**Veliai**	**3.76**	**287**	P	**Pn**	**15 42 08.0**	**+0.8**
VLI				S	**Sn**	**15 42 52.4**	**+0.3**
VLI	**Veliai**	**3.76**	**287**	P	**Pn**	**15 42 07.8**	**+0.6**
VLI				S	**Sn**	**15 42 52.4**	**+0.3**
VLI	**Veliai**	**3.76**	**287**	P	**Pn**	**15 42 07.8**	**+0.6**
DID	**Didima**	**3.81**	**299**	P	**Pn**	**15 42 08.7**	**+0.8**
DID	**Didima**	**3.81**	**299**	P	**Pn**	**15 42 08.7**	**+0.8**
VLX	**Vlachokerasia**	**4.38**	**293**	P	**Pn**	**15 42 16.4**	**+0.6**
VLX	**Vlachokerasia**	**4.38**	**293**	P	**Pn**	**15 42 16.4**	**+0.6**
VLX	**Vlachokerasia**	**4.38**	**293**	P	**Pn**	**15 42 19.0**	**+3.1**
GUR	**Goura**	**4.63**	**300**	P	**Pn**	**15 42 19.0**	**-0.3**
GUR	**Goura**	**4.63**	**300**	P	**Pn**	**15 42 19.0**	**-0.3**

*IDC **11** 15:41:17.2±2.3, 37.12N×140.81E, h0km, mb3.2/3, mb1 3.4/4, mb1mx3.2/32, mbtmp3.2/4, ML3.0/1, Error ellipse: s-maj=46.0km s-min=30.0km az=33.0*
*ISCJB **11** 15:41:19.2±0.7, 37.01N±0.03×140.80E±0.06, h18km±5km, mb3.2/3, Error ellipse: s-maj=8.5km s-min=5.3km az=9.6*
*JMA **11** 15:41:20.0, 37.02N×140.69E, h9km±1km, M3.4*
JMA Felt I J1.

ISC 11 15:41:19.7±0.9, 37.02N±0.03×140.69E±0.06, h12km±8km, n12,σ0.53/21, mb3.3/3, 3C, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.12**	**48**	⇑P	**Pg**	**15 41 22.9**	**0.0**
ONAJ				S	**Sg**	**15 41 25.0**	**-0.2**
JHO	**Hitachi**	**0.42**	**193**	⇑P	**Pg**	**15 41 28.1**	**+0.1**
JHO				S	**Sg**	**15 41 33.9**	**+0.3**
JFT	**Otama**	**0.57**	**331**	P	**Pb**	**15 41 31.6**	**-0.1**
JFT				S	**Sg**	**15 41 38.9**	**+0.5**
JSB	**Shiboa**	**0.61**	**265**	⇑P	**Pb**	**15 41 32.6**	**+0.1**
JSB				S	**Sb**	**15 41 41.2**	**+0.1**
JMM	**Marumori**	**0.85**	**6**	P	**Pg**	**15 41 36.1**	**0.0**
JMM				S	**Sg**	**15 41 47.2**	**-0.1**
JFY	**Yanaizu**	**0.87**	**297**	P	**Pb**	**15 41 36.8**	**-0.1**
JFY				S	**Sg**	**15 41 47.9**	**-0.1**
JYT	**Yasato**	**0.88**	**207**	P	**Pg**	**15 41 36.6**	**-0.2**
JYT				S	**Sg**	**15 41 48.5**	**+0.2**
MJAR	**Matsushiro Arr**	**2.04**	**257**	Pn	**Pn**	**15 41 55.0**	**+1.0**
	5.2nm,0.3s,baz=71,slow=15,SNR=11						
MJAR				Sn	**Sb**	**15 42 21.2**	**-1.1**
	11nm,0.3s,baz=87,slow=25,SNR=12						
MAT	**Matsushiro**	**2.05**	**257**	P	**Pb**	**15 41 55.7**	**-1.2**
MAT				S	**Sb**	**15 42 22.9**	**+0.6**
MKAR	**Makanchi Array**	**43.63**	**302**	P	**P**	**15 49 23.5**	**-0.5**
	0.1nm,0.7s,baz=66,slow=7.0,SNR=2.4						
WRA	**Warramunga Arr**	**56.97**	**187**	P	**P**	**15 51 04.9**	**-0.2**
	0.3nm,0.5s,baz=5.1,slow=7.3,SNR=6.1						
ASAR	**Alice Springs**	**60.70**	**187**	P	**P**	**15 51 31.4**	**+0.3**
	0.2nm,0.7s,baz=10,slow=6.3,SNR=4.2						

*INMG **11** 15:41:34.6±0.9, 32.17N×7.36W, h31km, MD2.4, ML2.5, Error ellipse: s-maj=14.0km s-min=6.4km az=88.0*
*IGIL **11** 15:41:35.3, 32.05N×7.46W, h76km*
*CSEM **11** 15:41:37.9±0.4, 32.43N×7.44W, h30km, mb3.8, Error ellipse: s-maj=13.2km s-min=7.2km az=83.0*

MDD 11 15:41:33.6±3.0, 32.26N×7.46W, h0km, mb3.8/4, Error ellipse: s-maj=46.9km s-min=25.8km az=86.0, PRXIMO, Morocco

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PFVI	**Vila Bisbo**	**4.99**	**347**	*e*Pn	Pn	15 42 49.0	-0.8
PFVI				*e*Sn	Sn	15 43 44.4	-3.7
PFVI	**Vila Bisbo**	**4.99**	**347**	P	Pn	15 42

ECAB	**El Cabril**	**6.04**	**16**	P	Pn	15 43 03.5	-0.7
	0.1nm,0.1s,SNR=7.9						
ECAB				S	Sn	15 44 08.3	-5.7
	0.4nm,0.3s,SNR=7.9						
PMTG	**Montargil**	**6.82**	**355**	*e*Pn	Pn	15 43 12.7	-2.2
PMTG	**Montargil**	**6.82**	**355**	*e*Pn	Pn	15 43 12.7	-2.2

NIED ***11*** *15:43:00, 36˚.90N×140˚.70E, h8km, Mw4.2 Best double couple: M₀2.36000×10¹⁵ NP1:φs286.00000°, δ48.00000°, λ-133.00000°. NP2:φs161.00000°, δ57.00000°, λ-53.00000°.*

ISCJB ***11*** *15:43:12.7±0.2, 36˚.91N±0˚.03×140˚.74E±0˚.04, h10km, mb4.3/51, MS3.5/7, Error ellipse: s-maj=5.2km s-min=3.4km az=37.4*

JMA ***11*** *15:43:14.3, 36˚.94N×140˚.65E, h11km±1km, M4.5 Broadband fault plane solution: P waves. NP1: φs285.00000°, δ49.00000°, λ-121.00000°. NP2: φs147.00000°, δ49.00000°, λ-59.00000°. Principal axes: T Plg0.0000°, Azm36.0000°; N Plg23.0000°, Azm306.0000°; P Plg67.0000°, Azm126.0000°;*

JMA Felt III J1.

MOS ***11*** *15:43:14.4±1.5, 36˚.94N×140˚.75E, h25km, mb4.5/34 Error ellipse: s-maj=8.9km s-min=6.4km az=87.8*

NEIC ***11*** *15:43:18.6±0.7, 36˚.92N×140˚.52E, h42km±6km, mb4.4/18, Error ellipse: s-maj=6.8km s-min=5.2km az=125.0*

NEIC Recorded [3 JMA] in Fukushima and Ibaraki.

IDC ***11*** *15:43:19.2±1.5, 36˚.88N×140˚.61E, h48km±14km, mb3.9/22, mb1 4.1/25, mb1mx4.1/36, mbtmp4.2/25, ML3.8/2, MS3.2/6, Ms1 3.2/6, ms1mx2.9/47, Error ellipse: s-maj=12.2km s-min=9.7km az=70.0*

ISC 11 15:43:14.1±0.4, 36˚.91N±0˚.04×140˚.70E±0˚.05, h10km, n131, σ1§32/128, mb4.4/51, MS3.3/7, 8C-2D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.21**	**22**	P	**Pg**	**15 43 18.8**	**+0.3**
JHO	**Hitachi**	**0.31**	**200**	⇑P	**Pg**	**15 43 21.0**	**+0.7**
JHO				S	**Sg**	**15 43 25.7**	**+1.2**
MJAR	**Matsushiro Arr**	**2.04**	**260**	P	**Pn**	**15 43 48.7**	**+0.3**
	135nm,0.3s,baz=81,slow=17,SNR=187						
MJAR				LR	LR	15 44 13.6	
	comp=Z,151nm,18.4s,baz=65,slow=28						
MJAR				S	**Sn**	**15 44 13.7**	**-0.2**
	329nm,0.3s,baz=81,slow=27,SNR=20						
MJAR	**Matsushiro Arr**	**2.04**	**260**	P	**Pn**	**15 43 48.7**	**+0.3**
MJAR				S	**Sn**	**15 44 13.7**	**-0.2**
MJAR				pmax	pmax		
	comp=Z,135nm,0.3s						
MJAR				MLR	MLR		
	comp=Z,151nm,18.4s						
MJAR				smax	smax		
	comp=N,329nm,0.3s						
MJAR	**Matsushiro Arr**	**2.04**	**260**	P	**Pn**	**15 43 48.7**	**+0.3**
MJAR				S	**Sn**	**15 44 13.7**	**-0.2**
MAJO	**Matsushiro**	**2.04**	**260**	*c i*P	**Pn**	**15 43 48.8**	**+0.4**
MAJO	**Matsushiro**	**2.04**	**260**	*e*Pn	**Pn**	**15 43 49.0**	**+0.6**
MAT	**Matsushiro**	**2.04**	**260**	P	**Pn**	**15 43 49.1**	**+0.7**
MAT				S	**Sb**	**15 44 14.6**	**-2.0**
INU	**Inuyama**	**3.36**	**244**	*e*Pn	**Pn**	**15 44 08.2**	**+1.5**
JHJ	**Hachijo jima 2**	**3.85**	**192**	P	**Pn**	**15 44 14.3**	**+0.9**
	comp=N,18nm,0.3s,baz=17,slow=18,SNR=14						
JHJ				S	**Sn**	**15 44 58.4**	**-0.3**
	comp=N,53nm,0.3s,baz=37,slow=20,SNR=7.0						
JHJ				LR	LR	15 45 53.5	
	comp=N,223nm,19.9s,baz=22,slow=40						
JHJ2	**Mitsune**	**3.85**	**191**	*e*Pn	**Pn**	**15 44 14.3**	**+0.9**
ERM	**Erimo**	**5.45**	**20**	*e*P	**Pn**	**15 44 35.6**	**+0.4**
ERM				*e*		15 45 39.8	
ERM	**Erimo**	**5.45**	**20**	*e*Pn	**Pn**	**15 44 35.6**	**+0.4**
ERM				*e*Sn	**Sn**	**15 45 39.8**	**+1.9**
YUK	**Yuzh-Kuril'sk**	**8.13**	**27**	*e*P	**Pn**	**15 45 10.3**	**-1.8**
YUK				*i* S	Sn	15 46 37.3	-6.8
YUK				pmax	pmax		
	comp=Z,77nm,0.4s						
YUK				pmax	pmax		
	comp=N,29nm,0.3s						
YUK				pmax	pmax		
	comp=E,32nm,0.2s						
SHO	**Shikotan**	**8.38**	**32**	*e*P	**Pn**	**15 45 13.6**	**-1.9**
SHO				*i* S	Sn	15 46 42.4	-7.7
SHO				pmax	pmax		
	comp=Z,51nm,0.8s						
SHO				pmax	pmax		
	comp=N,17nm,0.5s						
SHO				pmax	pmax		
	comp=E,19nm,0.4s						
JNU	**Nakatsue**	**8.90**	**248**	P	**Pn**	**15 45 23.9**	**+1.2**
	comp=E,0.8nm,0.3s,baz=82,slow=3.3,SNR=7.1						
JNU	**Nakatsue**	**8.90**	**248**	*e*Pn	Pn	15 45 19.1	-3.6
USRK	**Ussuriysk Ar.**	**9.85**	**320**	P	Pn	15 45 39.3	+3.7
	comp=E,0.3nm,0.3s,baz=134,slow=13,SNR=20						
CBIJ	**Chichi jima**	**9.86**	**172**	*e*Pn	Pn	15 45 31.9	-4.0
JCJ	**Chichijima**	**9.86**	**172**	P	Pn	15 45 32.2	-3.7
	comp=E,6.8nm,0.3s,baz=306,slow=18,SNR=4.0						
JCJ				LR	LR	15 49 19.3	
	comp=E,236nm,18.8s,baz=224,slow=37						
KUR	**Kuril'sk**	**9.92**	**31**	*e*P	**Pn**	**15 45 35.9**	**-0.7**
KUR				*i* S	Sn	15 47 21.7	-6.2
KUR				pmax	pmax		
	comp=Z,39nm,0.8s						
KUR				pmax	pmax		
	comp=E,8.0nm,0.4s						
KUR				pmax	pmax		
	comp=N,22nm,0.5s						
YSS	**Yuzh-Sakhalins**	**10.16**	**8**	*e*P	**Pn**	**15 45 42.3**	**+2.5**
YSS				pmax	pmax		
	comp=Z,40nm,0.7s						
YSS	**Yuzh-Sakhalins**	**10.16**	**8**	*e*Pn	**Pn**	**15 45 42.8**	**+2.9**
KSRS	**Korea Array**	**10.21**	**277**	P	Pn	15 45 45.2	+4.5
	comp=Z,0.3nm,0.3s,baz=95,slow=14,SNR=22						
KSRS				LR	LR	15 49 24.8	
	comp=Z,146nm,19.4s,baz=92,slow=36						
KSAR	**Wonju Array Be**	**10.24**	**277**	P	Pn	15 45 45.2	+4.1
KSAR	**Wonju Array Be**	**10.24**	**277**	P	Pn	15 45 45.2	+4.1
KLR	**Kul'dur**	**13.93**	**335**	P	**P**	**15 46 37.1**	**-2.6**
	comp=Z,0.1nm,0.3s,baz=132,slow=10,SNR=8.0						
KLR				LR	LR	15 51 59.4	
	comp=Z,105nm,18.3s,baz=148,slow=37						
NKL	**Nikolayevsk**	**16.24**	**360**	*e*P	**Pn**	**15 47 03.0**	**+0.8**
TIA	**Tai'an**	**18.95**	**275**	*e*P	**Pn**	**15 47 37.3**	**+1.4**
TIA				pmax	pmax		
	comp=Z,10.0nm,0.8s						
BJI	**Beijing**	**19.44**	**287**	P	**P**	**15 47 39.8**	**-0.8**
BJI				S	**Sn**	**15 51 18.7**	**-1.2**
BJI				pmax	pmax		
	comp=Z,6.0nm,0.7s						
BJI				LR	LR		
	comp=N,150nm,6.4s						
BJI				LR	LR		
	comp=E,98nm,4.8s						
BJI				LR	LR		
	comp=Z,42nm,20.0s						
PETK	**Petropavlovsk-**	**20.09**	**31**	P	Pn	15 47 50.6	+1.2
	comp=Z,4.9nm,1.0s,baz=214,slow=12,SNR=4.5						
HHC	**Hu-ho-hao-te**	**22.97**	**289**	*e*P	**P**	**15 48 17.0**	**-1.8**
HHC				sP	sP	15 48 27.4	+4.4
HHC				S	S	15 52 19.4	-10
HHC				SS	**SnSn**	**15 53 03.8**	**+3.1**
HHC				pmax	pmax		
	comp=Z,25nm,0.6s						
HHC				pmax	pmax		
	comp=Z,100nm,8.9s						
HHC				LR	LR		
	comp=N,1μm,13.6s						
HHC				LR	LR		
	comp=E,1μm,13.6s						
HHC				LR	LR		
	comp=Z,1μm,13.6s						
MA2	**Magadan**	**23.60**	**13**	LR	LR	15 58 00.1	
	comp=Z,26nm,18.9s,baz=135,slow=37						
YAK	**Yakutsk**	**26.07**	**348**	LR	LR	15 58 54.1	
	comp=Z,79nm,20.7s,baz=229,slow=36						
YAK	**Yakutsk**	**26.07**	**348**	*e*P	**P**	**15 48 49.2**	**+1.7**
YAK				pmax	pmax		
	comp=Z,9.0nm,0.8s						
ULN	**Ulaanbaatar**	**26.96**	**305**	*ce*P	**P**	**15 48 55.4**	**-0.4**
ULN				pmax	pmax		
	comp=Z,4.0nm,1.2s						
ULN	**Ulaanbaatar**	**26.96**	**305**	*e*P	**P**	**15 48 56.0**	**+0.2**
	comp=Z,2.3nm,0.8s						
SEY	**Seymchan**	**27.03**	**12**	P	**P**	**15 48 56.8**	**+0.7**
	comp=Z,2.9nm,0.8s,baz=163,slow=19,SNR=3.9						
SONA1	**Songino Array**	**27.38**	**304**	*e*P	**P**	**15 48 58.1**	**-1.5**
SONM	**Songino Array**	**27.39**	**304**	P	**P**	**15 48 59.2**	**-0.4**
	comp=Z,5.5nm,0.7s,baz=102,slow=8.7,SNR=22						
H11N2	**WAKE ISLAND Hy**	**28.58**	**120**	T	T	16 18 59.8	
	baz=313,slow=75,SNR=22						
H11N1	**WAKE ISLAND Hy**	**28.58**	**120**	T	T	16 18 58.3	
	baz=313,slow=75,SNR=19						
H11N3	**WAKE ISLAND Hy**	**28.59**	**120**	T	T	16 19 00.6	
	baz=313,slow=75,SNR=25						
H11S1	**WAKE ISLAND Hy**	**29.27**	**122**	T	T	16 19 50.1	
	baz=314,slow=76,SNR=592						
H11S3	**WAKE ISLAND Hy**	**29.27**	**122**	T	T	16 19 50.1	
	baz=314,slow=76,SNR=556						
H11S2	**WAKE ISLAND Hy**	**29.29**	**122**	T	T	16 19 51.3	
	baz=314,slow=76,SNR=670						
LZH	**Lanzhou**	**29.53**	**280**	*e*P	**P**	**15 49 18.5**	**-0.4**
LZH				pP	sP	15 49 24.4	+1.2
LZH				sP	pP	15 49 27.5	+5.6
LZH				*e*PP	**PnPn**	**15 50 14.3**	**+1.3**
LZH				pmax	pmax		
	comp=Z,18nm,1.0s						
LZH				pmax	pmax		
	comp=Z,45nm,5.2s						
LZH				LR	LR		
	comp=N,230nm,13.0s						
LZH				LR	LR		
	comp=E,250nm,13.4s						
LZH				LR	LR		
	comp=Z,280nm,16.5s						
CD2	**Chengdu**	**31.10**	**270**	P	**P**	**15 49 30.5**	**-2.2**
CD2				pmax	pmax		
	comp=Z,1.0nm,0.5s						
GTA	**Gaotai**	**32.06**	**287**	*e*P	**P**	**15 49 38.3**	**-2.8**
GTA				pP	pP	15 49 42.4	-1.8
GTA				sP	sP	15 49 45.3	-0.1
GTA				pmax	pmax		
	comp=Z,4.0nm,1.0s						
BILL	**Bilibino**	**34.31**	**17**	⇑*e*P	P	15 50 04.0	+3.7
BILL				*e*		15 51 27.1	
BILL				pmax	pmax		
	comp=Z,11nm,2.5s						
BILL				MLR	MLR		
	comp=Z,38nm,14.0s						
BILL	**Bilibino**	**34.31**	**17**	*e*P	**P**	**15 50 00.5**	**+0.1**
	comp=Z,7.4nm,1.2s						
KMI	**Kunming**	**34.38**	**261**	P	**P**	**15 50 02.3**	**+0.7**
KMI				pmax	pmax		
	comp=Z,10.0nm,0.6s						
KMI				pmax	pmax		
	comp=Z,57nm,4.6s						
TIXI	**Tiksi**	**35.35**	**354**	*ce*P	**P**	**15 50 11.6**	**+2.4**
TIXI				pmax	pmax		
	comp=Z,2.0nm,0.8s						
TIXI	**Tiksi**	**35.35**	**354**	*e*P	**P**	**15 50 07.9**	**-1.3**
	comp=Z,2.1nm,0.8s						
WMQ	**Urumqi**	**40.39**	**297**	*e*P	**P**	**15 50 52.5**	**+0.3**
WMQ				pP	sP	15 50 58.7	+2.1
WMQ				pmax	pmax		
	comp=Z,3.0nm,0.6s						
WMQ				pmax	pmax		
	comp=Z,17nm,3.6s						
WMQ				LR	LR		
	comp=N,18nm,17.4s						
WMQ				LR	LR		
	comp=E,14nm,17.4s						
WMQ				LR	LR		
	comp=Z,9.0nm,19.0s						
CMAR	**Chiang Mai Arr**	**40.91**	**255**	P	**P**	**15 50 56.8**	**+0.1**
	comp=Z,0.2nm,0.5s,baz=54,slow=6.2,SNR=3.3						
ZALV	**Zalesovo Beam**	**41.58**	**312**	P	**P**	**15 51 00.3**	**-1.5**
	comp=Z,2.7nm,0.5s,baz=91,slow=6.1,SNR=9.5						
ZALV				PcP	**PcP**	**15 52 58.1**	**-0.7**
	comp=Z,2.0nm,0.6s,baz=109,slow=2.5,SNR=4.2						
NVS	**Novosibirsk**	**42.52**	**314**	*e*P	**P**	**15 51 09.2**	**-0.2**
MKAR	**Makanchi Array**	**43.70**	**302**	P	**P**	**15 51 18.6**	**-0.6**
	comp=Z,1.7nm,0.6s,baz=89,slow=9.7,SNR=18						
MKAR				PcP	**PcP**	**15 53 04.6**	**-1.5**
	comp=Z,0.6nm,0.7s,baz=78,slow=5.0,SNR=2.7						
MKAR	**Makanchi Array**	**43.70**	**302**	*e*P	**P**	**15 51 17.4**	**-1.8**
MKAR				PcP	**PcP**	**15 53 04.6**	**-1.5**
MAKZ	**Makanchi**	**43.91**	**302**	*e*P	**P**	**15 51 19.4**	**-1.5**
MAKZ				pmax	pmax		
	comp=Z,2.0nm,0.6s						
MAKZ	**Makanchi**	**43.91**	**302**	*e*P	**P**	**15 51 19.4**	**-1.5**
	comp=Z,1.9nm,0.6s						
TAPN	**Taplejung**	**45.38**	**274**	*e*P	P	15 51 36.5	+3.3
	comp=Z,7.7nm,0.8s						
KURK	**Kurchatov**	**45.56**	**308**	*e*P	**P**	**15 51 32.2**	**-1.7**
KURK				pmax	pmax		
	comp=Z,14nm,1.2s						
KURK	**Kurchatov**	**45.56**	**308**	*e*P	**P**	**15 51 32.2**	**-1.7**
	comp=Z,14nm,1.2s						
ODAN	**Odare**	**45.85**	**273**	*e*P	**P**	**15 51 38.0**	**+1.2**
	comp=Z,6.9nm,0.8s						
RAMN	**Ramite**	**46.44**	**274**	*e*P	**P**	**15 51 42.5**	**+1.0**
	comp=Z,18nm,0.8s						
GUN	**Gumba**	**46.60**	**275**	*e*P	**P**	**15 51 43.8**	**+1.0**
	comp=Z,17nm,0.8s						
KKN	**Kakani**	**47.13**	**276**	*e*P	**P**	**15 51 48.2**	**+1.4**
	comp=Z,8.4nm,0.7s						
PKIN	**Phulchoki**	**47.13**	**275**	*e*P	**P**	**15 51 47.5**	**+0.6**
	comp=Z,2.5nm,0.5s						
GKN	**Gorkha**	**47.55**	**276**	*e*P	**P**	**15 51 50.1**	**+0.1**
	comp=Z,11nm,0.6s						
KDAK	**Kodiak Island**	**47.58**	**42**	*i* P	P	15 51 55.7	+6.1
KOLN	**Koldanda**	**48.48**	**276**	*e*P	**P**	**15 51 56.3**	**-1.0**
	comp=Z,5.8nm,0.7s						
PYUN	**Piuthan**	**48.82**	**277**	*e*P	**P**	**15 51 59.8**	**-0.1**
	comp=Z,30nm,1.0s						
TKM2	**Tokmak 2**	**49.19**	**298**	*e*P	**P**	**15 52 01.9**	**-0.7**
TKM2				pmax	pmax		
	comp=Z,5.0nm,0.8s						
TKM2	**Tokmak 2**	**49.19**	**298**	*e*P	**P**	**15 52 01.9**	**-0.7**
	comp=Z,4.6nm,0.8s						
ILAR	**Eielson Array**	**49.91**	**32**	P	**P**	**15 52 07.9**	**+0.5**
	comp=Z,2.3nm,0.9s,baz=271,slow=6.1,SNR=10						
ILB	**Eielson Array**	**49.91**	**32**	*e*P	**P**	**15 52 07.4**	**0.0**
AAK	**Ala-Archa**	**50.05**	**298**	*e*P	**P**	**15 52 07.5**	**-1.6**
AAK				pmax	pmax		
	comp=Z,5.0nm,0.9s						
AAK	**Ala-Archa**	**50.05**	**298**	*e*P	**P**	**15 52 09.8**	**+0.8**
	comp=Z,2.1nm,0.6s						
BRVK	**Borovoye**	**50.29**	**312**	*ce*P	**P**	**15 52 10.5**	**0.0**
BRVK				pmax	pmax		
	comp=Z,3.0nm,0.8s						
BRVK	**Borovoye**	**50.29**	**312**	*e*P	**P**	**15 52 09.6**	**-1.0**
	comp=Z,3.0nm,0.9s						
ZRNK	**Zerenda**	**51.07**	**312**	*e*P	**P**	**15 52 15.3**	**-1.1**
ZRNK				pmax	pmax		
	comp=Z,6.0nm,1.0s						
ZRNK	**Zerenda**	**51.07**	**312**	*e*P	**P**	**15 52 15.2**	**-1.1**
	comp=Z,6.0nm,1.0s						
INK	**Inuvik**	**54.76**	**27**	P	**P**	**15 52 43.4**	**0.0**
	comp=Z,2.1nm,0.9s,baz=272,slow=10,SNR=6.9						
ARU	**Arti**	**56.08**	**318**	*d i*P	**P**	**15 52 54.9**	**+1.8**
ARU						15 54 59.5	
ARU				S	**S**	**16 00 46.3**	**+4.8**
ARU				SS	**SS**	**16 04 30.5**	**+3.3**
ARU				pmax	pmax		
	comp=Z,6.0nm,0.8s						
ARU	**Arti**	**56.08**	**318**	*e*P	**P**	**15 52 53.3**	**+0.3**
	comp=Z,6.5nm,0.9s						
WRAB	**Tennant Creek**	**56.85**	**187**	*ce*P	**P**	**15 52 59.2**	**+0.3**
WRAB				pmax	pmax		
	comp=Z,41nm,2.5s						
WB2	**Warramunga Arr**	**56.86**	**187**	*e*P	**P**	**15 52 58.3**	**-0.6**
	comp=Z,9.6nm,0.7s						
WRA	**Warramunga Arr**	**56.86**	**187**	P	**P**	**15 52 58.5**	**-0.4**
	comp=Z,7.7nm,0.6s,baz=4.0,slow=7.4,SNR=146						
WRA				PcP	**PcP**	**15 53 54.4**	**-0.2**
	comp=Z,1.5nm,0.7s,baz=1.7,slow=4.3,SNR=3.1						
ABKAR	**Akbulak array**	**57.59**	**310**	*e*P	**P**	**15 53 02.3**	**-1.6**
AS01	**Alice Springs**	**60.58**	**187**	*e*P	**P**	**15 53 24.4**	**-0.4**
AS31	**Alice Springs**	**60.59**	**187**	*e*P	**P**	**15 53 24.5**	**-0.3**
	comp=Z,1.5nm,0.5s						
ASAR	**Alice Springs**	**60.59**	**187**	P	**P**	**15 53 24.9**	**0.0**
	comp=Z,3.3nm,0.6s,baz=14,slow=7.6,SNR=66						
GEYT	**Alibeck**	**63.40**	**299**	P	**P**	**15 53 45.2**	**+1.4**
	comp=Z,2.0nm,0.5s,baz=32,slow=8.7,SNR=6.5						
ARCES	**ARCESS Array B**	**63.91**	**339**	P	**P**	**15 53 46.5**	**-0.2**
	comp=Z,3.8nm,0.9s,baz=62,slow=10,SNR=3.5						
YKA	**Yellowknife Ar**	**64.20**	**30**	P	**P**	**15 53 48.7**	**+0.1**
	comp=Z,1.0nm,0.7s,baz=303,slow=6.7,SNR=14						
YKB5	**Yellowknife Ar**	**64.20**	**30**	*e*P	**P**	**15 53 49.9**	**+1.2**
OBN	**Obninsk**	**67.86**	**323**	⇑*e*P	**P**	**15 54 11.0**	**-1.2**
OBN				*e*		15 56 42.8	
OBN				*e*PPP	PPP	15 58 18.2	
OBN				pmax	pmax		
	comp=Z,4.0nm,0.6s						
OBN				MLR	MLR		
	comp=Z,49nm,16.0s						
STKA	**Stephens Creek**	**68.43**	**179**	P	**P**	**15 54 15.8**	**-0.2**
	comp=Z,2.4nm,0.6s,baz=343,slow=7.0,SNR=7.5						
FINES	**FINESS Array B**	**68.66**	**332**	P	**P**	**15 54 15.2**	**-2.0**
	comp=Z,3.5nm,0.8s,baz=50,slow=2.2,SNR=7.6						
KIV	**Kislovodsk**	**70.56**	**311**	*e*P	**P**	**15 54 31.5**	**+2.1**
KIV				pmax	pmax		
	comp=Z,8.0nm,1.0s						
AKASG	**Malin Array Be**	**74.05**	**322**	P	**P**	**15 54 48.7**	**-1.2**
	comp=Z,1.8nm,0.6s,baz=48,slow=5.9,SNR=4.5						
AKASG	**Malin Array Be**	**74.05**	**322**	P	**P**	**15 54 48.7**	**-1.2**
AKASG				pmax	pmax		
	comp=Z,1.0nm,0.4s						
KIEV	**Kiev**	**74.06**	**322**	*e*P	**P**	**15 54 51.6**	**+1.6**
KIEV				pmax	pmax		
	comp=Z,2.0nm,0.9s						
NB2	**NORSAR Subarra**	**74.08**	**337**	P	**P**	**15 54 48.3**	**-1.7**
	comp=Z,3.5nm,1.0s,baz=40,slow=6.2						
NOA	**NORSAR Array B**	**74.08**	**337**	P	**P**	**15 54 48.6**	**-1.4**
	comp=Z,2.3nm,0.9s,baz=40,slow=5.9,SNR=5.1						
FCC	**Fort Churchill**	**74.37**	**26**	*e*P	**P**	**15 54 51.4**	**-0.2**
FCC				pmax	pmax		
	comp=Z,8.0nm,1.1s						
FCC	**Fort Churchill**	**74.37**	**26**	*e*P	**P**	**15 54 51.4**	**-0.2**
	comp=Z,8.1nm,1.1s						
LRM	**Limekiln Ridge**	**74.64**	**44**	*e*P	**P**	**15 54 54.6**	**+0.8**
NV01	**Mina Array Sit**	**75.52**	**53**	*e*P	**P**	**15 55 00.1**	**+1.1**
NVAR	**Mina Array Bea**	**75.52**	**53**	P	**P**	**15 55 00.7**	**+1.6**
	comp=Z,1.6nm,0.8s,baz=283,slow=5.9,SNR=12						
IMW	**Indian Meadow**	**76.67**	**45**	*e*P	**P**	**15 55 07.3**	**+1.7**
	comp=Z,3.2nm,0.8s						
R11A	**Troy Canyon, C**	**77.29**	**52**	*e*P	**P**	**15 55 10.1**	**+1.1**
	comp=Z,3.3nm,1.1s						
TPNV	**Topopah Spring**	**77.71**	**53**	*e*P	**P**	**15 55 12.4**	**+1.0**
TPNV				pmax	pmax		
	comp=Z,4.0nm,0.9s						
TPNV	**Topopah Spring**	**77.71**	**53**	*e*P	**P**	**15 55 12.3**	**+1.0**
	comp=Z,3.5nm,0.9s						
PDAR	**Pinedale Array**	**78.16**	**45**	P	**P**	**15 55 13.7**	**-0.1**
	comp=Z,0.8nm,0.7s,baz=270,slow=2.2,SNR=7.3						
NLU	**North Lily Min**	**78.46**	**49**	*e*P	**P**	**15 55 15.4**	**-0.1**
	comp=Z,15nm,1.9s						
BRTR	**Keskin Array B**	**78.51**	**311**	P	**P**	**15 55 16.9**	**+1.3**
	comp=Z,1.1nm,0.8s,baz=67,slow=7.3,SNR=4.9						
BRTR	**Keskin Array B**	**78.51**	**311**	P	**P**	**15 55 17.0**	**+1.3**
BRTR				pmax	pmax		
	comp=Z,1.0nm,0.8s						
SRU	**San Rafael Swe**	**79.92**	**48**	*e*P	**P**	**15 55 24.5**	**+1.0**
SRU				pmax	pmax		
	comp=Z,3.0nm,0.8s						
SRU	**San Rafael Swe**	**79.92**	**48**	*e*P	**P**	**15 55 24.5**	**+1.0**
	comp=Z,2.7nm,0.8s						
CLL	**Collm**	**80.92**	**330**	*e*P	**P**	**15 55 27.0**	**-1.4**
CLL	**Collm**	**80.92**	**330**	*e*P	**P**	**15 55 27.0**	**-1.4**
PV01	**Paradox Valley**	**81.72**	**48**	*e*P	**P**	**15 55 34.3**	**+1.1**
	comp=Z,318nm,1.1s						
GERES	**GERESS Array B**	**82.52**	**328**	P	**P**	**15 55 35.8**	**-1.2**
	comp=Z,0.5nm,0.5s,baz=36,slow=6.6,SNR=5.2						
ANMO	**Albuquerque**	**85.11**	**49**	⇓*e*P	**P**	**15 55 51.6**	**+1.0**
ANMO				pmax	pmax		
	comp=Z,3.0nm,1.2s						
TX31	**Lajitas Ar. Si**	**90.65**	**52**	*e*P	**P**	**15 56 17.5**	**+0.3**
TXAR	**Lajitas Array**	**90.65**	**52**	P	**P**	**15 56 18.0**	**+0.8**
	comp=Z,0.8nm,0.5s,baz=306,slow=3.1,SNR=10.0						
TORD	**Torodi Ar. Bea**	**117.01**	**314**	PKP	**PKPdf**	**16 01 58.5**	**-1.3**
	comp=Z,0.2nm,0.4s,baz=343,slow=0.9,SNR=2.6						
LPAZ	**La Paz**	**147.25**	**59**	PKPbc	**PKPbc**	**16 02 58.9**	**0.0**
	comp=Z,3.8nm,0.7s,baz=312,slow=3.0,SNR=16						

JMA 11 15:47:20.0, 36˚.94N×140˚.67E, h8km±1km, M2.6, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.19**	**32**	P	Pg	15 47 24.2	+0.2
ONAJ				S	Sg	15 47 26.9	+0.3
JHO	**Hitachi**	**0.34**	**194**	P	Pg	15 47 26.7	+0.1
JHO				S	Sg	15 47 31.2	+0.1
JFT	**Otama**	**0.64**	**335**	S	Sg	15 47 41.2	+0.6
JMM	**Marumori**	**0.93**	**6**	P	Pg	15 47 37.3	-0.6
JMM				S	Sg	15 47 49.9	-0.1
MAT	**Matsushiro**	**2.02**	**259**	P	Pn	15 47 55.3	+0.9
MAT				S	Sb	15 48 22.2	0.0

JMA 11 15:48:19.5±0.1, 37˚.08N×140˚.87E, h7km±1km, M2.8, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.06**	**291**	P	Pg	15 48 21.1	-0.2
ONAJ				S	Sg	15 48 22.1	-0.4
JHO	**Hitachi**	**0.53**	**207**	S	Sg	15 48 37.6	+1.1
JFT	**Otama**	**0.61**	**316**	P	Pg	15 48 31.4	+0.1
JFT				S	Sg	15 48 39.6	+0.4
JMM	**Marumori**	**0.79**	**356**	P	Pg	15 48 34.4	-0.2
JMM				S	Sg	15 48 44.9	0.0
MAT	**Matsushiro**	**2.20**	**257**	P	Pb	15 48 58.6	-1.1
MAT				S	Sb	15 49 27.4	+0.2

NIED ***11*** *15:55:00, 37˚.00N×140˚.70E, h8km, Mw3.8 Best double couple: M₀5.45000×10¹⁴ NP1:φs302.00000°, δ42.00000°, λ-106.00000°. NP2:φs142.00000°, δ50.00000°, λ-76.00000°.*

IDC ***11*** *15:55:11.0±0.6, 37˚.04N×140˚.70E, h0km, mb3.8/20, mb1 4.0/22, mb1mx3.9/45, mbtmp3.8/22, ML3.6/2, Error ellipse: s-ma

KSAR	**Wonju Array Be**	**10.22**	**276**	Pn		Pn		15 57 44.4	+5.1
MA2	**Magadan**	**23.50**	**13**	P		**P**		**16 00 22.1**	**-0.1**
	4.9nm,0.8s,baz=208,slow=15,SNR=3.0								
MA2	**Magadan**	**23.50**	**13**	*e*P		**P**		**16 00 23.4**	**+1.1**
SEY	**Seymchan**	**26.93**	**12**	P		**P**		**16 00 54.2**	**+0.6**
	1.5nm,0.9s,baz=181,slow=6.5,SNR=5.3								
SONM	**Songino Array**	**27.31**	**304**	P		**P**		**16 00 57.7**	**+0.3**
	1.0nm,0.7s,baz=103,slow=7.5,SNR=6.0								
H11N2	**WAKE ISLAND Hy**	**28.64**	**120**	T		T		16 30 57.0	
	baz=318								
H11N1	**WAKE ISLAND Hy**	**28.65**	**120**	T		T		16 30 57.6	
	baz=318								
H11N3	**WAKE ISLAND Hy**	**28.66**	**120**	T		T		16 30 58.3	
	baz=318								
H11S1	**WAKE ISLAND Hy**	**29.34**	**122**	T		T		16 31 48.5	
	baz=314								
H11S3	**WAKE ISLAND Hy**	**29.34**	**122**	T		T		16 31 49.5	
	baz=314,slow=74,SNR=30								
H11S2	**WAKE ISLAND Hy**	**29.36**	**122**	T		T		16 31 50.4	
	baz=314,slow=74,SNR=34								
TIXI	**Tiksi**	**35.24**	**354**	P		**P**		**16 02 06.1**	**-0.6**
	0.5nm,0.4s,baz=184,slow=8.7,SNR=2.4								
ZALV	**Zalesovo Beam**	**41.50**	**312**	P		**P**		**16 02 59.2**	**-0.3**
	0.8nm,0.4s,baz=95,slow=6.7,SNR=5.1								
ZALV				PcP		**PcP**		**16 04 57.0**	**+0.1**
	0.6nm,0.3s,baz=72,slow=1.7,SNR=3.5								
MKAR	**Makanchi Array**	**43.63**	**302**	P		**P**		**16 03 17.5**	**+0.4**
	0.8nm,0.6s,baz=89,slow=9.8,SNR=16								
MKAR				PcP		**PcP**		**16 05 03.9**	**-0.4**
	0.4nm,0.8s,baz=79,slow=3.1,SNR=3.4								
KURK	**Kurchatov**	**45.48**	**308**	*e*P		**P**		**16 03 31.4**	**-0.4**
	2.8nm,0.6s								
ILAR	**Eielson Array**	**49.82**	**32**	P		**P**		**16 04 05.2**	**0.0**
	0.4nm,0.6s,baz=269,slow=7.1,SNR=6.9								
AAK	**Ala-Archa**	**49.98**	**298**	*e*P		**P**		**16 04 06.8**	**-0.2**
BRVK	**Borovoye**	**50.21**	**312**	*e*P		**P**		**16 04 08.4**	**+0.1**
INK	**Inuvik**	**54.67**	**27**	P		**P**		**16 04 41.1**	**0.0**
	0.3nm,0.4s,baz=306,slow=5.6,SNR=3.2								
WRAB	**Tennant Creek**	**56.95**	**187**	*e*P		**P**		**16 04 57.8**	**-0.3**
	4.3nm,0.8s								
WRA	**Warramunga Arr**	**56.97**	**187**	P		**P**		**16 04 57.7**	**-0.4**
	2.7nm,0.7s,baz=3.6,slow=7.3,SNR=36								
WRA				PcP		**PcP**		**16 05 54.1**	**+0.8**
	0.7nm,0.7s,baz=3.0,slow=4.6,SNR=3.6								
ABKAR	**Akbulak array**	**57.51**	**310**	*e*P		**P**		**16 05 01.9**	**+0.2**
	1.1nm,0.5s								
ASAR	**Alice Springs**	**60.69**	**187**	P		**P**		**16 05 24.3**	**+0.3**
	1.2nm,0.7s,baz=14,slow=6.5,SNR=16								
MBWA	**Marble Bar**	**61.15**	**202**	*e*P		**P**		**16 05 27.1**	**+0.1**
	2.7nm,0.6s								
GEYT	**Alibeck**	**63.33**	**299**	P		**P**		**16 05 42.0**	**+0.1**
	1.8nm,0.7s,baz=100,slow=7.5,SNR=3.7								
YKA	**Yellowknife Ar**	**64.12**	**30**	P		**P**		**16 05 46.8**	**+0.3**
	0.2nm,0.7s,baz=306,slow=7.1,SNR=5.2								
FINES	**FINESS Array B**	**68.56**	**332**	P		**P**		**16 06 14.8**	**-0.2**
	1.6nm,0.7s,baz=46,slow=8.2,SNR=6.7								
AKASG	**Malin Array Be**	**73.95**	**322**	P		**P**		**16 06 47.8**	**-0.1**
	0.3nm,0.3s,baz=44,slow=5.6,SNR=5.4								
NOA	**NORSAR Array B**	**73.98**	**337**	P		**P**		**16 06 47.2**	**-0.6**
	0.6nm,0.6s,baz=40,slow=5.9,SNR=3.2								
NVAR	**Mina Array Bea**	**75.47**	**53**	P		**P**		**16 06 57.8**	**+0.7**
	0.5nm,0.7s,baz=294,slow=5.6,SNR=3.2								
PDAR	**Pinedale Array**	**78.09**	**45**	P		**P**		**16 07 12.2**	**+0.3**
	0.3nm,0.7s,baz=196,slow=1.6,SNR=2.6								
BRTR	**Keskin Array B**	**78.43**	**311**	P		**P**		**16 07 13.1**	**-0.6**
	2.2nm,1.2s,baz=69,slow=4.8,SNR=2.8								
PHWY	**Pilot Hill**	**81.36**	**44**	*e*P		**P**		**16 07 29.0**	**-0.7**
	27nm,0.8s								
GERES	**GERESS Array B**	**82.42**	**328**	P		**P**		**16 07 33.9**	**-1.0**
	0.3nm,0.4s,baz=46,slow=5.8,SNR=4.2								
TXAR	**Lajitas Array**	**90.59**	**52**	P		**P**		**16 08 15.1**	**-0.3**
	0.4nm,0.8s,baz=254,slow=2.6,SNR=3.0								
LPAZ	**La Paz**	**147.20**	**59**	PKPbc		**PKPbc**		**16 14 56.1**	**-1.1**
	1.4nm,0.7s,baz=11,slow=5.8,SNR=6.2								

NIED ***11*** *15:57:00,37˚.10N×140˚.70E,h5km,Mw4.7 Best double couple: M0 1.48000×10^16 NP1:φs14.00000°,δ37.00000°, λ-79.00000°. NP2:φs180.00000°,δ54.00000°, λ-98.00000°.*

JMA ***11*** *15:57:55.8,37˚.06N×140˚.65E,h11km±1km,M5.0 Broadband fault plane solution: P waves. NP1: φs213.00000°,δ46.00000°,λ-97.00000°. NP2:φs43.00000°, δ44.00000°,λ-83.00000°. Principal axes: T Plg1.0000°, Azm308.0000°; N Plg5.0000°, Azm218.0000°; P Plg85.0000°, Azm49.0000°;*

JMA Felt IV J1.

ISCJB ***11*** *15:57:55.3±0.6,37˚.05N±0˚.02×140˚.44E±0˚.03,h10km±3km, mb4.8/230,MS4.2/35 Error ellipse: s-maj=3.6km s-min=3.0km az=31.8*

IDC ***11*** *15:57:57.6±3.0,37˚.08N×140˚.55E,h16km±18km, mb4.5/31, mb1 4.6/32,mb1mx4.6/44,mbtmp4.6/32,ML4.2/1,MS4.0/25, Ms1 4.0/25,ms1mx3.9/38,Error ellipse: s-maj=12.5km s-min=9.5km az=98.0*

MOS ***11*** *15:57:58.7±0.9,37˚.08N×140˚.38E,h33km,mb5.0/102, Error ellipse: s-maj=7.5km s-min=4.4km az=105.3*

BJI ***11*** *15:57:59.4,37˚.10N×140˚.40E,h43km,mb4.7/62,mB4.9/52, Ms4.6/63,Ms7 4.4/56*

NEIC ***11*** *15:58:01.7±0.5,37˚.06N×140˚.38E,h46km±5km,mb4.9/133, Error ellipse: s-maj=4.0km s-min=2.9km az=130.0*

NEIC Recorded [4 JMA] in Fukushima.

ISC 11 15:57:57.0±0.6,37˚.05N±0˚.03×140˚.59E±0˚.03,h16km±3km, n496,σ1°39/508,mb4.9/236,MS4.2/37,21C-19D,Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.18**	**72**	⇓P		**Pg**	**15 57 58.9**	**-2.6**
JHO	**Hitachi**	**0.43**	**182**	⇑P		**Pg**	**15 58 04.6**	**-1.2**
JHO				S		**Sg**	**15 58 11.0**	**-0.7**
JFT	**Otama**	**0.51**	**337**	⇑P		**Pg**	**15 58 06.2**	**-1.0**
JFT				S		**Sg**	**15 58 13.1**	**-1.0**
MJAR	**Matsushiro Arr**	**1.97**	**256**	Pn		**Pb**	**15 58 31.8**	**-0.8**
	142nm,0.3s,baz=95,slow=16,SNR=105							
MJAR				Sn		**Sn**	**15 58 55.6**	**+1.4**
	229nm,0.3s,baz=93,slow=26,SNR=11							
MJAR				LR		LR	15 59 07.7	
	comp=Z,714nm,20.4s,baz=70,slow=36							
MAJO	**Matsushiro**	**1.97**	**256**	*e*P		**Pb**	**15 58 32.0**	**-0.6**
MAJO	**Matsushiro**	**1.97**	**256**	*e*Pn		**Pb**	**15 58 32.0**	**-0.6**
MAT	**Matsushiro**	**1.97**	**256**	P		**Pb**	**15 58 32.4**	**-0.2**
MAT				S		**Sg**	**15 58 59.6**	**-1.0**
INU	**Inuyama**	**3.35**	**241**	*e*Pn		**Pn**	**15 58 51.4**	**+2.7**
JHJ	**Hachijo jima 2**	**3.97**	**190**	Pn		**Pn**	**15 58 58.0**	**+0.7**
	44nm,0.3s,baz=66,slow=14,SNR=8.7							
JHJ				Sn		**Sn**	**15 59 44.8**	**+1.3**
	83nm,0.3s,baz=18,slow=23,SNR=5.7							
JHJ				LR		LR	16 00 28.6	
	comp=Z,677nm,20.6s,baz=347,slow=38							
JHJ2	**Mitsune**	**3.98**	**189**	*e*Pn		**Pn**	**15 58 57.6**	**+0.2**
ERM	**Erimo**	**5.35**	**21**	⇓*i*P		**Pn**	**15 59 16.7**	**+0.6**
ERM	**Erimo**	**5.35**	**21**	*e*Pn		**Pn**	**15 59 15.9**	**-0.2**
YUK	**Yuzh-Kuril'sk**	**8.05**	**28**	*e*P		**Pn**	**15 59 51.8**	**-1.5**
YUK				*i* S		**Sn**	**16 01 20.0**	**-4.0**
YUK					pmax	pmax		
	comp=Z,129nm,0.4s							
YUK					pmax	pmax		
	comp=N,36nm,0.2s							
YUK					pmax	pmax		
	comp=E,56nm,0.4s							
SHO	**Shikotan**	**8.31**	**33**	*e*P		Pn	15 59 53.3	-3.5
SHO					pmax	pmax		
	comp=Z,94nm,0.8s							
SHO					pmax	pmax		
	comp=N,47nm,0.6s							
SHO					pmax	pmax		
	comp=E,44nm,0.6s							
JNU	**Nakatsue**	**8.87**	**247**	Pn		**Pn**	**16 00 07.3**	**+2.8**
	comp=E,0.8nm,0.3s,baz=68,slow=8.4,SNR=15							
JNU				LR		LR	16 03 49.2	
	comp=E,1μm,19.2s,baz=65,slow=40							
JNU	**Nakatsue**	**8.87**	**247**	*e*Pn		**Pn**	**16 00 06.9**	**+2.4**
VLA	**Vladivostok**	**9.01**	**315**	*e*P		**Pn**	**16 00 06.7**	**+0.3**
USRK	**Ussuriysk Ar.**	**9.68**	**320**	Pn		Pn	16 00 21.4	+5.8
	comp=E,0.7nm,0.3s,baz=135,slow=13,SNR=81							
USRK				LR		LR	16 03 43.1	
	comp=E,1μm,19.2s,baz=131,slow=36							
KUR	**Kuril'sk**	**9.85**	**32**	*e*P		**Pn**	**16 00 16.4**	**-1.5**
KUR					pmax	pmax		
	comp=N,21nm,0.8s							
KUR					pmax	pmax		
	comp=E,12nm,0.8s							
KUR					pmax	pmax		
	comp=Z,20nm,0.8s							
CBIJ	**Chichi jima**	**10.01**	**172**	Pn		**Pn**	**16 00 17.4**	**-2.8**
CBIJ				Sn		Sn	16 02 01.8	-11
JCJ	**Chichijima**	**10.01**	**172**	Pn		**Pn**	**16 00 17.4**	**-2.8**
	comp=Z,24nm,0.3s,baz=314,slow=3.5,SNR=7.0							
JCJ				Sn		Sn	16 02 01.8	-11
	comp=Z,5.5nm,0.3s,baz=287,slow=19,SNR=2.6							
YSS	**Yuzh-Sakhalins**	**10.03**	**9**	*e*P		**Pn**	**16 00 21.0**	**+0.6**
YSS				*e*S		**Sn**	**16 02 16.3**	**+3.7**
YSS					pmax	pmax		
	comp=Z,60nm,0.8s							
YSS					MLR	MLR		
	comp=E,1μm,15.0s							
YSS					MLR	MLR		
	comp=Z,1μm,15.0s							
YSS	**Yuzh-Sakhalins**	**10.03**	**9**	*e*Pn		**Pn**	**16 00 20.9**	**+0.5**
KSRS	**Korea Array**	**10.10**	**276**	Pn		Pn	16 00 27.6	+6.2
	comp=Z,0.7nm,0.3s,baz=94,slow=13,SNR=96							
KSRS					LR	LR	16 04 00.4	
	comp=Z,2μm,19.6s,baz=78,slow=36							
KS01	**Wonju Array Si**	**10.13**	**276**	*e*Pn		Pn	16 00 27.0	+5.2
KS15	**Wonju Array Si**	**10.14**	**276**	*e*Pn		Pn	16 00 27.2	+5.3
KSAR	**Wonju Array Be**	**10.14**	**276**	P		Pn	16 00 27.7	+5.8
KSAR	**Wonju Array Be**	**10.14**	**276**	Pn		Pn	16 00 27.6	+5.8
INCN	**Inchon**	**11.13**	**276**	*e*Pn		Pn	16 00 42.8	+7.2
MDJ	**Mudanjiang**	**11.24**	**316**	P		Pn	16 00 41.0	+4.0
MDJ				S		**Sn**	**16 02 48.1**	**+5.8**
MDJ				PcP		**PcP**	**16 06 31.4**	**-0.5**
MDJ				ScP		**ScP**	**16 10 00.6**	**-3.2**
MDJ				ScS		**ScS**	**16 13 36.0**	**-3.0**
MDJ					pmax	pmax		
	comp=Z,26nm,1.3s							
MDJ					pmax	pmax		
	comp=Z,200nm,4.4s							
MDJ					LR	LR		
	comp=Z,960nm,20.0s							
MDJ					LR	LR		
	comp=Z,880nm,17.4s							
MDJ					LR	LR		
	comp=Z,990nm,20.5s							
HABR	**Khabarovsk**	**12.12**	**342**	*ce*P		Pn	16 00 45.5	-3.4
HABR				*e*S		Sn	16 02 56.4	-7.3
HABR					MLR	MLR		
	comp=Z,390nm,14.0s							
CN2	**Changchun**	**13.35**	**305**	*e*P		Pn	16 01 09.3	+3.5
CN2				*e*S		**Sn**	**16 03 37.2**	**+3.3**
CN2					pmax	pmax		
	comp=Z,10.0nm,0.4s							
CN2					pmax	pmax		
	comp=Z,200nm,4.0s							
CN2					LR	LR		
	comp=Z,1μm,15.0s							
CN2					LR	LR		
	comp=Z,900nm,15.0s							
CN2					LR	LR		
	comp=Z,800nm,16.0s							
KLR	**Kul'dur**	**13.77**	**335**	Pn		Pn	16 01 14.8	+3.4
	comp=Z,0.3nm,0.3s,baz=137,slow=12,SNR=8.5							
KLR					LR	LR	16 06 21.9	
	comp=Z,756nm,18.2s,baz=171,slow=37							
TYV	**Tymovskoe**	**13.89**	**5**	*e*P		**Pn**	**16 01 13.0**	**-0.2**
TYV					pmax	pmax		
	comp=Z,20nm,0.8s							
TYV					MLR	MLR		
	comp=E,1μm,16.0s							
TYV					MLR	MLR		
	comp=Z,1μm,16.0s							
SNY	**Shenyang**	**13.98**	**295**	⇑P		P	16 01 18.4	-3.9
SNY					pmax	pmax		
	comp=Z,25nm,2.2s							
SNY					pmax	pmax		
	comp=Z,400nm,3.5s							
SNY					LR	LR		
	comp=Z,2μm,14.6s							
SNY					LR	LR		
	comp=Z,1μm,20.4s							
SNY					LR	LR		
	comp=Z,2μm,17.3s							
DL2	**Dalian**	**15.07**	**283**	P		**P**	**16 01 32.9**	**-1.6**
DL2				S		**Sn**	**16 04 19.3**	**+3.5**
DL2					pmax	pmax		
	comp=Z,44nm,0.9s							
DL2					pmax	pmax		
	comp=Z,300nm,6.8s							
DL2					LR	LR		
	comp=Z,760nm,12.6s							
DL2					LR	LR		
	comp=Z,920nm,15.1s							
DL2					LR	LR		
	comp=Z,1μm,17.5s							
NKL	**Nikolayevsk**	**16.10**	**0**	*e*P		**P**	**16 01 47.0**	**+1.2**
NKL					pmax	pmax		
	comp=Z,10.0nm,0.8s							
NKL					MLR	MLR		
	comp=E,600nm,19.0s							
SSE	**Sheshan**	**17.12**	**255**	P		**Pn**	**16 01 56.0**	**+0.3**
SSE				pP		**sP**	**16 02 03.9**	**+0.1**
SSE				S		**Sn**	**16 05 09.7**	**+4.0**
SSE					pmax	pmax		
	comp=E,22nm,0.6s							
SSE					pmax	pmax		
	comp=E,240nm,4.2s							
SSE					LR	LR		
	comp=E,1μm,18.9s							
SSE					LR	LR		
	comp=E,690nm,18.9s							
SSE					LR	LR		
	comp=E,880nm,20.0s							
NJ2	**Nanjing**	**18.57**	**261**	*e*P		**Pn**	**16 02 16.2**	**+2.7**
NJ2				S		**Sn**	**16 05 38.2**	**-2.6**
NJ2					pmax	pmax		
	comp=E,25nm,0.8s							
NJ2					LR	LR		
	comp=E,790nm,19.5s							
NJ2					LR	LR		
	comp=E,950nm,26.0s							
NJ2					LR	LR		
	comp=E,1μm,26.0s							
TIA	**Tai'an**	**18.84**	**275**	⇓P		**Pn**	**16 02 17.1**	**+0.3**
TIA					pmax	pmax		
	comp=E,20nm,0.8s							
TIA					LR	LR		
	comp=E,680nm,11.6s							
TIA					LR	LR		
	comp=E,1μm,13.4s							
TIA					LR	LR		
	comp=E,2μm,15.3s							
BJI	**Beijing**	**19.31**	**286**	P		**P**	**16 02 20.0**	**-1.3**
BJI				S		**Sn**	**16 05 52.6**	**-6.0**
BJI					pmax	pmax		
	comp=E,21nm,1.0s							
BJI					pmax	pmax		
	comp=E,260nm,3.6s							
BJI					LR	LR		
	comp=E,460nm,13.8s							
BJI					LR	LR		
	comp=E,590nm,14.9s							
PEA0	**Petropavlovsk-**	**20.02**	**31**	*e*P		**Pn**	**16 02 30.1**	**-0.6**
PETK	**Petropavlovsk-**	**20.02**	**31**	P		**P**	**16 02 28.8**	**-0.1**
	comp=E,9.0nm,0.8s,baz=202,slow=6.2,SNR=6.7							
PETK					LR	LR	16 09 49.1	
	comp=E,304nm,20.3s,baz=216,slow=36							
PET	**Petropavlovsk**	**20.36**	**33**	*e*P		Pn	16 02 37.6	+2.9
PET				*e*S		S	16 06 12.9	-7.2
PET					pmax	pmax		
	comp=Z,100nm,11.1s							
PET					MLR	MLR		
	comp=Z,300nm,16.0s							
QZH	**Quanzhou**	**22.32**	**244**	P		**P**	**16 02 53.3**	**-0.7**
QZH				S		S	16 06 49.2	-10
QZH					LR	LR		
	comp=Z,840nm,11.6s							
QZH					LR	LR		
	comp=Z,1μm,13.4s							
QZH					LR	LR		
	comp=Z,1μm,19.9s							
WHN	**Wuhan**	**22.71**	**261**	P		**P**	**16 02 58.0**	**-0.1**
WHN				S		**S**	**16 07 03.0**	**-2.9**
WHN					LR	LR		
	comp=Z,2μm,14.4s							
WHN					LR	LR		
	comp=Z,2μm,11.9s							
WHN					LR	LR		
	comp=Z,3μm,13.2s							
HHC	**Hu-ho-hao-te**	**22.84**	**289**	*e*P		P	16 02 54.5	-5.1
HHC				S		S	16 06 55.2	-13
HHC					SS	**SnSn**	**16 07 38.4**	**-0.9**
HHC					pmax	pmax		
	comp=Z,33nm,0.9s							
HHC					pmax	pmax		
	comp=Z,130nm,7.7s							
HHC					LR	LR		
	comp=Z,1μm,13.6s							
HHC					LR	LR		
	comp=Z,1μm,13.6s							
HHC					LR	LR		
	comp=Z,1μm,13.7s							
MA2	**Magadan**	**23.49**	**13**	P		**P**	**16 03 06.2**	**+0.4**
	comp=Z,11nm,0.6s,baz=225,slow=12,SNR=12							
MA2					LR	LR	16 13 05.7	
	comp=Z,156nm,18.8s,baz=136,slow=39							
XAN	**Xi'an**	**25.88**	**273**	P		**P**	**16 03 29.5**	**+1.4**
XAN				pP		sP	16 03 39.6	+4.7
XAN				S		**S**	**16 07 53.2**	**-4.3**
XAN					pmax	pmax		
	comp=Z,11nm,0.6s							
XAN					pmax	pmax		
	comp=Z,74nm,5.8s							
XAN					LR	LR		
	comp=Z,740nm,15.3s							
XAN					LR	LR		
	comp=Z,440nm,17.0s							
YAK	**Yakutsk**	**25.92**	**348**	P		**P**	**16 03 28.3**	**+0.2**
	comp=Z,13nm,0.6s,baz=180,slow=3.7,SNR=11							
YAK					LR	LR	16 13 17.2	
	comp=Z,188nm,21.3s,baz=168,slow=36							
YAK	**Yakutsk**	**25.92**	**348**	*d*iP		**P**	**16 03 26.8**	**-1.3**
YAK				*e**PP		**sP**	**16 03 32.3**	**-2.6**
YAK				*e*			16 04 11.1	
YAK				*e*PPP		PPP	16 04 17.7	
YAK				*e*S		**S**	**16 08 01.0**	**+3.6**
YAK				*e*SS		SnSn	16 09 12.4	+18
YAK					pmax	pmax		
	comp=Z,16nm,0.9s							
YAK					pmax	pmax		
	comp=N,8.0nm,1.2s							
YAK					pmax	pmax		
	comp=E,4.0nm,1.5s							
YAK					pmax	pmax		
	comp=Z,7.0nm,0.4s							
YAK					pmax	pmax		
	comp=N,6.0nm,0.6s							
YAK					pmax	pmax		
	comp=E,5.0nm,0.6s							
YAK					smax	smax		
	comp=N,164nm,2.7s							
YAK					MLR	MLR		
	comp=N,231nm,17.0s							
YAK					MLR	MLR		
	comp=Z,279nm,15.0s							
YAK					MLR	MLR		
	comp=E,244nm,17.0s							
YAK	**Yakutsk**	**25.92**	**348**	*e*P		**P**	**16 03 26.7**	**-1.4**
	comp=E,30nm,0.9s							
ULN	**Ulaanbaatar**	**26.80**	**304**	*e*P		**P**	**16 03 35.3**	**-1.2**
ULN				*e*			16 07 00.1	
ULN					pmax	pmax		
	comp=Z,13nm,1.0s							
ULN	**Ulaanbaatar**	**26.80**	**304**	*e*P		**P**	**16 03 35.3**	**-1.2**
	comp=Z,12nm,1.0s							
ULN				*e*PcP		**PcP**	**16 07 00.1**	**+1.1**
SEY	**Seymchan**	**26.91**	**12**	P		**P**	**16 03 36.8**	**-0.3**
	comp=Z,16nm,1.2s,baz=207,slow=7.6,SNR=14							
BOD	**Bodaibo**	**27.17**	**328**	*e*P		**P**	**16 03 37.8**	**-1.7**
BOD					pmax	pmax		
	comp=Z,7.0nm,1.2s							
SONA1	**Songino Array**	**27.23**	**304**	*e*P		**P**	**16 03 39.0**	**-1.3**
SONM	**Songino Array**	**27.23**	**304**	P		**P**	**16 03 39.6**	**-0.7**
	comp=Z,11nm,0.7s,baz=109,slow=8.2,SNR=52							
SONM				PcP		**PcP**	**16 07 00.8**	**+0.8**
	comp=Z,1.8nm,0.6s,baz=126,slow=1.6,SNR=8.8							
SONM				LR		LR	16 14 08.5	
	comp=Z,294nm,21.6s,baz=98,slow=36							
GZH	**Guangzhou**	**27.26**	**247**	P		**P**	**16 03 37.4**	**-3.2**
GZH				S		**S**	**16 08 15.0**	**-4.3**
GZH					pmax	pmax		
	comp=Z,390nm,3.8s							
H11N2	**WAKE ISLAND Hy**	**28.73**	**120**	T		T	16 33 41.5	
	baz=313,slow=75,SNR=164							
H11N1	**WAKE ISLAND Hy**	**28.73**	**120**	T		T	16 33 42.9	
	baz=313,slow=75,SNR=135							
H11N3	**WAKE ISLAND Hy**	**28.74**	**120**	T		T	16 33 43.0	
	baz=313,slow=75,SNR=180							
LZH	**Lanzhou**	**29.41**	**279**	*e*P		**P**	**16 04 00.3**	**+0.4**
LZH				pP		sP	16 04 12.0	+5.2
LZH				sP		pP	16 04 17.1	+12
LZH				PP		**PnPn**	**16 04 56.0**	**+2.3**
LZH				*e*S		**S**	**16 08 48.5**	**-4.9**
LZH				sS		sS	16 09 09.3	+8.0
LZH				*e*SS		**SnSn**	**16 10 21.0**	**+0.9**
LZH					pmax	pmax		
	comp=Z,37nm,1.2s							
LZH					pmax	pmax		
	comp=Z,150nm,4.5s							
LZH					LR	LR		
	comp=Z,560nm,12.8s							
LZH					LR	LR		
	comp=Z,1μm,14.0s							
LZH					LR	LR		
	comp=Z,1μm,15.3s							
H11S1	**WAKE ISLAND Hy**	**29.43**	**122**	T		T	16 34 36.7	
	baz=314,slow=75,SNR=286							
H11S3	**WAKE ISLAND Hy**	**29.43**	**122**	T		T	16 34 34.8	
	baz=314,slow=75,SNR=365							
H11S2	**WAKE ISLAND Hy**	**29.44**	**122**	T		T	16 34 35.3	
	baz=314,slow=75,SNR=354							
ZAK	**Zakamensk**	**29.74**	**309**	*e*P		**P**	**16 04 01.2**	**-1.4**
ZAK					pmax	pmax		
	comp=Z,4.0nm,1.4s							
TLY	**Talaya**	**29.82**	**311**	P		**P**	**16 04 03.5**	**+0.3**
	comp=Z,1.7nm,0.4s,baz=87,slow=1.3,SNR=4.1							
TLY					LR	LR	16 16 12.2	
	comp=Z,352nm,19.3s,baz=106,slow=37							
TLY	**Talaya**	**29.82**	**311**	*e*P		**P**	**16 04 04.1**	**+0.9**
TLY				*e*S		**S**	**16 08 56.1**	**-3.1**
TLY					pmax	pmax		
	comp=Z,7.0nm,1.5s							
TLY					MLR	MLR		
	comp=Z,275nm,11.0s							
TLY	**Talaya**	**29.82**	**311**	*e*P		**P**	**16 04 01.9**	**-1.3**
	comp=Z,4.1nm,1.0s							
GYA	**Guiyang**	**30.57**	**260**	⇑*i*P		**P**	**16 04 09.0**	**-1.2**
GYA				pP		sP	16 04 21.8	+4.8
GYA				PP		**PnPn**	**16 05 11.6**	**+2.2**
GYA				PcP		**PcP**	**16 07 10.0**	**+1.3**
GYA				S		S	16 09 06.4	-5.2
GYA				sS		sS	16 09 27.2	+7.6
GYA				ScP		**ScP**	**16 10 47.7**	**-2.9**
GYA				ScS		**ScS**	**16 14 42.0**	**-5.1**
GYA					pmax	pmax		
	comp=Z,10.0nm,0.9s							
GYA					pmax	pmax		
	comp=Z,120nm,5.2s							
GYA					LR	LR		
	comp=Z,560nm,16.9s							
GYA					LR	LR		
	comp=Z,520nm,17.2s							
GYA					LR	LR		
	comp=Z,540nm,16.9s							
CD2	**Chengdu**	**31.01**	**270**	P		**P**	**16 04 12.3**	**-1.7**
CD2				pP		sP	16 04 23.9	+3.1
CD2				sP		pP	16 04 29.3	+10
CD2				S		**S**	**16 09 13.4**	**-4.9**
CD2				sS		s

GTA LR LR
comp=Z,300nm,15.4s
BILL Bilibino 34.20 17 *e*P **P** **16 04 41.5 +0.1**
BILL *i* 16 05 57.9
BILL *i* PPP PPP 16 06 09.6
BILL *i* SS SS 16 12 37.9 +2.9
BILL pmax pmax
comp=Z,17nm,1.2s
BILL MLR MLR
comp=Z,193nm,17.0s
BILL Bilibino 34.20 17 *e*P **P** **16 04 41.0 -0.4**
comp=Z,36nm,1.7s
KMI Kunming 34.31 261 P **P** **16 04 42.7 -0.4**
KMI pmax pmax
comp=Z,11nm,0.8s
KMI pmax pmax
comp=Z,120nm,6.6s
TIXI Tiksi 35.20 354 P **P** **16 04 49.2 -0.8**
comp=Z,2.7nm,0.5s,baz=152,slow=6.9,SNR=11
TIXI Tiksi 35.20 354 *e*P **P** **16 04 49.4 -0.6**
TIXI pmax pmax
comp=Z,12nm,1.7s
TIXI Tiksi 35.20 354 *e*P **P** **16 04 49.0 -1.0**
comp=Z,13nm,1.4s
SKNT Sakolnakorn 37.93 248 P P 16 05 22.0 +8.1
TNTI Ternate 38.11 202 P P 16 05 19.9 +4.6
SWI Sorong 38.70 195 P **P** **16 05 20.8 +0.5**
comp=Z,75nm,0.9s
GAMB Gambell 39.05 31 *e*P **P** **16 05 23.9 +1.2**
comp=Z,37nm,1.8s
JAY Jayapura 39.36 180 P P 16 05 29.3 +3.4
comp=Z,15nm,0.9s
LBMI Labuha 39.41 201 P **P** **16 05 27.2 +1.0**
comp=Z,44nm,0.8s
GENI Genyem 39.44 181 P **P** **16 05 27.7 +1.2**
comp=Z,62nm,0.9s
UTTA Uttaradit 40.04 252 P P 16 05 35.5 +4.0
comp=Z,2.1nm,0.9s
CHAI Chaiyaphum 40.09 249 P **P** **16 05 32.0 0.0**
comp=Z,5.7nm,1.0s,comp=Z,56nm
WMQ Urumqi 40.24 297 P **P** **16 05 33.7 +0.6**
WMQ pP sP 16 05 41.9 +1.9
WMQ sP pP 16 05 51.4 +13
WMQ PcP **PcP** **16 07 38.0 +1.2**
WMQ S **S** **16 11 41.5 +1.9**
WMQ ScS ScS 16 15 31.1 -7.9
WMQ pmax pmax
comp=Z,16nm,0.8s
WMQ pmax pmax
comp=Z,96nm,3.6s
WMQ LR LR
comp=Z,210nm,20.0s
WMQ LR LR
comp=Z,120nm,25.4s
WMQ LR LR
comp=Z,150nm,26.6s
MRSI Marisa 40.27 210 P **P** **16 05 34.3 +0.9**
comp=Z,38nm,1.1s
PBKT Sadao Pong 40.44 251 P **P** **16 05 35.2 +0.4**
comp=Z,9.4nm,1.9s
CMMT Chiang Mai 40.65 255 P **P** **16 05 36.9 +0.3**
comp=Z,5.3nm,0.9s
CHTO Chiang Mai 40.65 255 P **P** **16 05 36.9 +0.3**
comp=Z,32nm,1.0s
CHTO Chiang Mai 40.65 255 *e*P **P** **16 05 35.7 -0.9**
CHTO *e* 16 07 39.5
CHTO pmax pmax
comp=Z,3.0nm,0.9s
CHTO Chiang Mai 40.65 255 *e*P **P** **16 05 35.7 -0.9**
comp=Z,3.3nm,0.9s
CHTO *e*PcP **PcP** **16 07 39.5 +1.1**
CMAR Chiang Mai Arr 40.86 255 P **P** **16 05 38.2 -0.1**
comp=Z,1.2nm,0.6s,baz=45,slow=7.9,SNR=13
CMAR PcP **PcP** **16 07 40.3 +1.3**
comp=Z,1.8nm,0.9s,baz=11,slow=1.8,SNR=10
CMAR LR LR 16 23 33.7
comp=Z,187nm,19.9s,baz=55,slow=38
CM01 Chiang Mai Arr 40.87 255 *e*P **P** **16 05 37.6 -0.8**
CM01 *e*PcP **PcP** **16 07 40.1 +1.1**
SANI Sanana 41.20 202 P **P** **16 05 42.3 +1.3**
comp=Z,74nm,0.8s,comp=Z,857nm
SRAK Srakaew 41.26 247 P **P** **16 05 39.1 -2.5**
comp=Z,35nm,0.8s,comp=Z,367nm
LUWI Luwuk 41.34 208 P P 16 05 46.0 +3.8
comp=Z,39nm,1.2s,comp=Z,1µm
LUWI Luwuk 41.34 208 *e*P **P** **16 05 41.3 -0.9**
comp=Z,69nm,1.3s
ZAA0 Zalesovo Array 41.42 312 *e*P **P** **16 05 41.5 -1.0**
ZAA0 *e*PcP **PcP** **16 07 40.2 -0.1**
ZALV Zalesovo Beam 41.42 312 P **P** **16 05 42.1 -0.3**
comp=Z,7.8nm,0.6s,baz=94,slow=6.3,SNR=33
ZALV PcP **PcP** **16 07 40.5 +0.3**
comp=Z,4.5nm,0.6s,baz=96,slow=2.8,SNR=9.0
ZALV ScP **ScP** **16 11 29.7 +0.1**
comp=Z,2.4nm,0.8s,baz=101,slow=3.0,SNR=11
ZALV LR LR 16 23 48.2
comp=Z,184nm,18.6s,baz=70,slow=38
NAYO Nakonayok 41.59 248 P **P** **16 05 45.2 +0.8**
comp=Z,46nm,0.7s
MSAI Masohi 41.63 198 P **P** **16 05 46.7 +2.1**
comp=Z,29nm,1.4s,comp=Z,436nm
APSI Ampana 41.65 209 P **P** **16 05 45.3 +0.5**
comp=Z,55nm,1.2s
NLAI Namlea 42.00 200 P **P** **16 05 49.7 +2.1**
comp=Z,32nm,1.0s
NVS Novosibirsk 42.35 314 *e*P **P** **16 05 49.7 -0.4**
NVS *e* 16 07 43.3
NVS pmax pmax
comp=Z,46nm,2.3s
NVS pmax pmax
comp=E,31nm,2.2s
BNDI Bandanaira 42.54 196 P **P** **16 05 53.7 +1.7**
comp=E,560nm,1.1s
NRIK Noril'sk 42.98 335 P **P** **16 05 55.0 0.0**
comp=E,3.0nm,0.6s,baz=112,slow=5.7,SNR=8.2
NRIK PcP **PcP** **16 07 45.0 -0.1**
comp=E,2.0nm,0.5s,baz=116,slow=3.7,SNR=3.9
NRIK LR LR 16 24 38.5
comp=E,243nm,19.2s,baz=109,slow=37
SRDT SRDT 43.21 250 P P 16 06 04.9 +7.4
comp=E,26nm,0.9s
KHLT Khaolaem Dam 43.33 251 P **P** **16 05 59.5 +1.0**
comp=E,5.7nm,0.9s
MK31 Makanchi Array 43.55 302 P **P** **16 05 59.9 -0.1**
MK31 pmax pmax
comp=Z,5.0nm,0.6s
MKAR Makanchi Array 43.55 302 P **P** **16 06 00.3 +0.3**
comp=Z,5.8nm,0.6s,baz=87,slow=9.6,SNR=64
MKAR PcP **PcP** **16 07 47.6 +0.1**
comp=Z,3.1nm,0.8s,baz=64,slow=5.5,SNR=5.5
MKAR ScP **ScP** **16 11 38.1 -0.3**
comp=Z,0.5nm,0.8s,baz=72,slow=4.7,SNR=3.6
MKAR LR LR 16 24 27.7
comp=Z,300nm,19.1s,baz=86,slow=36
MKAR Makanchi Array 43.55 302 *e*P **P** **16 05 59.7 -0.3**
MKAR PcP **PcP** **16 07 47.6 +0.1**
MKAR ScP **ScP** **16 11 38.1 -0.3**
PHET Kaeng Krachan 43.75 248 P **P** **16 06 02.9 +1.0**
comp=Z,11nm,0.7s
MAKZ Makanchi 43.76 302 P **P** **16 06 01.7 0.0**
MAKZ pmax pmax
comp=Z,8.0nm,0.8s
MAKZ Makanchi 43.76 302 *e*P **P** **16 06 01.5 -0.2**
comp=Z,6.9nm,0.8s
SPSI Sidrap Palu 45.18 210 P P 16 06 16.3 +3.1
comp=Z,21nm,1.1s
TAPN Taplejung 45.28 274 *e*P **P** **16 06 14.7 +0.3**
comp=Z,27nm,0.9s
KURK Kurchatov 45.40 308 P **P** **16 06 14.2 -0.4**
KURK pmax pmax
comp=Z,172nm,1.4s
KURK Kurchatov 45.40 308 *e*P **P** **16 06 14.3 -0.4**
comp=Z,58nm,1.3s
ODAN Odare 45.75 273 *e*P **P** **16 06 18.1 0.0**
comp=Z,17nm,0.7s
TTA Tatalina 45.79 35 *e*P **P** **16 06 19.0 +1.3**
TTA pmax pmax
comp=Z,18nm,1.4s
TTA Tatalina 45.79 35 *e*P **P** **16 06 19.0 +1.3**
comp=Z,18nm,1.4s
SVW2 Sparrevohn 45.91 37 *e*P **P** **16 06 20.7 +2.1**
comp=Z,19nm,1.0s
KAPI Kappang 46.14 209 *e*P **P** **16 06 21.7 +0.8**
comp=Z,51nm,1.0s
PDGK Podgornoye 46.19 298 P **P** **16 06 20.4 -0.6**
PDGK pmax pmax
comp=Z,21nm,0.9s

RAMN Ramite 46.34 274 *e*P **P** **16 06 22.9 +0.2**
comp=Z,111nm,1.0s
GUN Gumba 46.49 275 *e*P **P** **16 06 24.5 +0.5**
comp=Z,50nm,0.8s
PMG Port Moresby 46.62 171 P **P** **16 06 25.3 +0.8**
comp=Z,7.2nm,0.8s,baz=274,slow=16,SNR=3.5
PMG PcP **PcP** **16 07 59.7 +1.3**
comp=Z,8.2nm,0.9s,baz=357,slow=17,SNR=2.7
BBKI Banjar Baru 46.89 216 P **P** **16 06 26.9 +0.1**
comp=Z,58nm,1.2s,comp=Z,1µm
SURT Suratani 46.99 244 P **P** **16 06 28.6 +1.0**
comp=Z,10.0nm,1.4s
KKN Kakani 47.02 275 *e*P **P** **16 06 27.8 -0.2**
comp=Z,45nm,1.0s
PKIN Phulchoki 47.02 275 *e*P **P** **16 06 27.9 -0.2**
comp=Z,14nm,0.8s
GKN Gorkha 47.44 276 *e*P **P** **16 06 31.0 -0.2**
comp=Z,135nm,1.2s
KDAK Kodiak Island 47.53 42 LR LR 16 26 41.3
comp=Z,186nm,20.5s,baz=252,slow=36
KDAK Kodiak Island 47.53 42 *ce*P P 16 06 34.2 +2.9
PPLA Purkeypile 47.54 35 *e*P P 16 06 34.3 +2.8
comp=Z,58nm,1.5s
CAST Castle Rocks 47.59 34 *e*P **P** **16 06 33.5 +1.7**
comp=Z,12nm,1.0s
SPU Mount Spurr 47.62 37 *e*P **P** **16 06 33.0 +1.0**
PKDT Phuket 48.05 244 P **P** **16 06 36.9 +1.1**
comp=Z,51nm,0.8s
BPAW Bear Paw Mtn. 48.08 33 *e*P **P** **16 06 37.1 +1.6**
comp=Z,35nm,1.7s
KTH Kantishna Hill 48.11 34 *e*P **P** **16 06 37.1 +1.3**
comp=Z,21nm,1.0s
MLY Manley 48.19 32 *e*P **P** **16 06 38.0 +1.7**
comp=Z,11nm,0.8s
MLY *e*PcP **PcP** **16 08 06.5 +3.0**
KOLN Koldanda 48.37 276 *e*P **P** **16 06 38.7 +0.2**
comp=Z,34nm,1.0s
TRF Thorofare Moun 48.40 34 *e*P **P** **16 06 40.1 +1.9**
comp=Z,12nm,1.2s
COLD Coldfoot 48.46 29 *e*P **P** **16 06 40.8 +2.4**
comp=Z,5.9nm,1.0s
PYUN Piuthan 48.71 277 *e*P **P** **16 06 41.6 +0.5**
comp=Z,98nm,0.9s
RC01 Rabbit Creek A 48.75 37 *e*P **P** **16 06 42.6 +1.9**
comp=Z,38nm,1.4s
MCK McKinley 48.99 34 *e*P **P** **16 06 44.8 +2.3**
MCK pmax pmax
comp=Z,14nm,1.0s
MCK McKinley 48.99 34 *e*P **P** **16 06 44.8 +2.3**
comp=Z,14nm,1.0s
SOEI Soe 49.01 202 *e*P **P** **16 06 43.2 -0.1**
comp=Z,90nm,1.0s
PMR Palmer 49.01 37 *e*P **P** **16 06 43.1 +0.5**
PMR pmax pmax
comp=Z,7.0nm,0.8s
PMR Palmer 49.01 37 *e*P **P** **16 06 43.1 +0.5**
comp=Z,7.5nm,0.8s
RND Reindeer 49.04 34 *e*P **P** **16 06 44.4 +1.4**
RND pmax pmax
comp=Z,61nm,1.6s
RND Reindeer 49.04 34 *e*P **P** **16 06 44.4 +1.4**
comp=Z,61nm,1.6s
TKM2 Tokmak 2 49.04 298 P **P** **16 06 44.1 +0.6**
TKM2 pmax pmax
comp=Z,59nm,1.9s
TKM2 Tokmak 2 49.04 298 *e*P **P** **16 06 44.2 +0.7**
comp=Z,42nm,1.3s
MDM Murphy Dome 49.26 32 *e*P **P** **16 06 46.0 +1.4**
comp=Z,26nm,1.1s
WRH Wood River Hil 49.33 33 *e*P **P** **16 06 46.9 +1.8**
WRH *e*PcP **PcP** **16 08 08.7 +1.2**
SML Sawmill 49.38 36 *e*P **P** **16 06 46.5 +1.0**
SML pmax pmax
comp=Z,14nm,0.9s
SML Sawmill 49.38 36 *e*P **P** **16 06 46.5 +1.0**
comp=Z,14nm,0.9s
COLA College 49.42 32 *c i*P **P** **16 06 47.1 +1.3**
COLA pmax pmax
comp=Z,31nm,1.8s
COLA College 49.42 32 *e*P **P** **16 06 47.1 +1.3**
comp=Z,7.4nm,0.8s
CCB Clear Creek Bu 49.45 33 *e*P **P** **16 06 47.9 +1.9**
comp=Z,12nm,1.3s
DHY Denali Highway 49.73 35 *e*P **P** **16 06 49.0 +0.6**
comp=Z,36nm,1.6s
FRU Bishkek 49.76 298 *i*P **P** **16 06 49.0 +0.3**
FRU pmax pmax
comp=Z,70nm,2.1s
VOSK Vostochnaya 49.78 312 P **P** **16 06 48.2 -0.5**
VOSK pmax pmax
comp=Z,26nm,1.0s
KSH Kashi 49.80 294 P P 16 06 53.4 +4.2
KSH *es*P sP 16 07 11.0 +15
KSH *e*PcP **PcP** **16 08 12.2 +2.4**
KSH *e*ScP **ScP** **16 12 03.3 -1.5**
KSH PcS **PcS** **16 12 08.7 +1.9**
KSH S **S** **16 13 58.7 +0.6**
KSH ScS **ScS** **16 16 38.6 -1.7**
KSH SS **SS** **16 17 29.2 -1.2**
KSH pmax pmax
comp=Z,10.0nm,1.0s
KSH pmax pmax
comp=Z,110nm,2.9s
KSH LR LR
comp=Z,500nm,14.0s
KSH LR LR
comp=Z,310nm,12.2s
KSH LR LR
comp=Z,680nm,15.4s
CHKZ Chkalovo 49.82 313 P **P** **16 06 48.4 -0.5**
CHKZ pmax pmax
comp=Z,18nm,0.9s
HDA Harding Lake 49.83 33 *e*P **P** **16 06 49.4 +0.5**
comp=Z,14nm,1.0s
IL1 Eielson Array 49.84 32 *e*P **P** **16 06 49.1 +0.1**
ILAR Eielson Array 49.84 32 P **P** **16 06 49.8 +0.8**
comp=Z,6.2nm,0.8s,baz=271,slow=6.1,SNR=51
ILAR LR LR 16 28 44.5
comp=Z,102nm,19.8s,baz=304,slow=37
ILB Eielson Array 49.84 32 *e*P **P** **16 06 49.4 +0.4**
SCM Sheep Creek Mo 49.85 36 *e*P **P** **16 06 51.3 +2.1**
SCM pmax pmax
comp=Z,28nm,1.2s
SCM Sheep Creek Mo 49.85 36 *e*P **P** **16 06 51.3 +2.1**
comp=Z,28nm,1.2s
OTUK Ortayu 49.88 306 P **P** **16 06 49.3 -0.3**
OTUK pmax pmax
comp=Z,20nm,0.9s
AAK Ala-Archa 49.90 298 LR LR 16 29 18.7
comp=Z,743nm,18.6s,baz=56,slow=38
AAK Ala-Archa 49.90 298 *e*P **P** **16 06 50.3 +0.3**
AAK pmax pmax
comp=Z,13nm,1.1s
AAK Ala-Archa 49.90 298 *e*P **P** **16 06 50.3 +0.3**
comp=Z,13nm,1.1s
BVA0 Borovoye Array 50.07 312 P **P** **16 06 50.7 -0.2**
BVA0 pmax pmax
comp=Z,13nm,1.0s
BRVK Borovoye 50.13 312 *ce*P **P** **16 06 51.6 +0.3**
BRVK pmax pmax
comp=Z,50nm,2.5s
BRVK Borovoye 50.13 312 *e*P **P** **16 06 51.4 +0.1**
comp=Z,14nm,0.9s
EKS2 Erkin-Say 50.40 298 *e*P **P** **16 06 53.5 -0.2**
EKS2 pmax pmax
comp=Z,8.0nm,1.0s
EKS2 Erkin-Say 50.40 298 *e*P **P** **16 06 53.5 -0.2**
comp=Z,7.7nm,1.0s
PLAI Plampang 50.40 210 P **P** **16 06 52.6 -1.1**
comp=Z,28nm,0.9s
FYU Fort Yukon 50.43 30 *e*P **P** **16 06 55.6 +2.2**
comp=Z,51nm,1.4s
PPBI Pangkal Pinang 50.44 227 P **P** **16 06 56.8 +2.7**
comp=Z,21nm,1.2s,comp=Z,550nm
KLU Klutina 50.55 37 *e*P **P** **16 06 56.7 +2.2**
comp=Z,21nm,1.3s
DIV Divide 50.67 37 *e*P **P** **16 06 57.6 +2.2**
comp=Z,39nm,1.3s
COEN Coen 50.79 177 *e*P **P** **16 06 57.5 +0.9**
comp=Z,46nm,1.1s
ZRNK Zerenda 50.91 312 P P **P** **16 06 56.9 -0.3**
ZRNK pmax pmax
comp=Z,44nm,1.0s
ZRNK Zerenda 50.91 312 *e*P **P** **16 06 57.3 +0.1**
comp=Z,26nm,0.9s
DOT Dot Lake 51.16 34 *e*P **P** **16 06 59.5 +0.5**
comp=Z,110nm,2.0s

PSI Prapat 51.23 238 *e*P **P** **16 06 59.9 -0.4**
PSI pmax pmax
comp=Z,12nm,0.8s
PSI Prapat 51.23 238 *e*P **P** **16 06 59.9 -0.4**
comp=Z,12nm,0.8s
BMRM Bremner River 51.25 37 *e*P **P** **16 07 00.9 +1.2**
comp=Z,37nm,1.5s
MNAS Manas 51.35 299 P **P** **16 07 01.6 +0.7**
MNAS pmax pmax
comp=Z,17nm,1.4s
MENT Mentasta 51.40 35 *e*P **P** **16 07 02.5 +1.7**
comp=Z,31nm,1.4s
SFK Sufi-Kurgan 51.43 295 P **P** **16 07 01.9 +0.3**
SFK pmax pmax
comp=Z,24nm,1.1s
EGAK Eagle 52.28 32 *e*P **P** **16 07 09.0 +1.7**
comp=Z,10nm,1.1s
KK31 Karatay Array 52.54 300 *i*P **P** **16 07 09.9 +0.3**
KK31 pmax pmax
comp=Z,20nm,1.2s
KKAR Karatay Array 52.54 300 *e*P **P** **16 07 09.8 +0.2**
KKAR Karatay Array 52.54 300 *e*P **P** **16 07 09.8 +0.2**
KPJI Karang Pucung 53.16 221 P **P** **16 07 14.6 +0.2**
comp=Z,56nm,1.2s
GSI Gunungsitoli 53.24 238 P **P** **16 07 15.0 0.0**
comp=Z,126nm,1.0s,comp=Z,2µm
GSI Gunungsitoli 53.24 238 *e*P **P** **16 07 14.7 -0.3**
comp=Z,80nm,0.9s
LHSI Lahat 53.32 229 P **P** **16 07 16.3 +0.7**
comp=Z,46nm,1.0s
LEM Lembang 53.44 222 P P 16 07 22.2 +5.6
MDSI Maura Dua 53.46 227 P **P** **16 07 16.6 0.0**
comp=Z,27nm,1.2s,comp=Z,852nm
INK Inuvik 54.68 27 P **P** **16 07 25.8 +1.0**
comp=Z,3.9nm,0.8s,baz=292,slow=11,SNR=16
INK Inuvik 54.68 27 *e*P **P** **16 07 25.8 +1.0**
comp=Z,53nm,2.0s
SVE Sverdlovsk 54.70 318 ⇓ *i*P **P** **16 07 25.9 +0.7**
SVE pmax pmax
comp=Z,32nm,1.1s
ARU Arti 55.91 318 *d i*P **P** **16 07 33.6 -0.3**
ARU PCP **PcP** **16 08 29.2 -3.2**
ARU S **S** **16 15 18.4 -2.4**
ARU SS SS 16 18 58.9 -7.2
ARU pmax pmax
comp=Z,54nm,1.7s
ARU Arti 55.91 318 *e*P **P** **16 07 33.6 -0.3**
comp=Z,26nm,0.9s
SKAG Skagway 56.09 38 *e*P **P** **16 07 37.0 +1.9**
comp=Z,44nm,1.8s
FITZ Fitzroy Crossi 56.63 197 *e*P **P** **16 07 40.1 +0.7**
comp=Z,38nm,1.3s
KBL Kabul 56.79 291 *e*P **P** **16 07 40.2 -0.6**
KBL pmax pmax
comp=Z,18nm,1.0s
KBL Kabul 56.79 291 *e*P **P** **16 07 40.2 -0.6**
comp=Z,18nm,1.0s
WRAB Tennant Creek 56.98 187 *ce*P **P** **16 07 42.0 +0.2**
WRAB pmax pmax
comp=Z,138nm,0.8s
WRAB Tennant Creek 56.98 187 *e*P **P** **16 07 41.6 -0.2**
comp=Z,50nm,0.8s
WB2 Warramunga Arr 56.98 187 *e*P **P** **16 07 41.5 -0.4**
comp=Z,54nm,0.7s
WRA Warramunga Arr 56.99 187 P **P** **16 07 42.1 +0.2**
comp=Z,47nm,0.7s,baz=3.6,slow=7.3,SNR=196
WRA PcP **PcP** **16 08 38.3 +1.3**
comp=Z,5.3nm,0.8s,baz=359,slow=4.0,SNR=4.8
WRA Warramunga Arr 56.99 187 P **P** **16 07 42.1 +0.2**
WRA 16 08 38.3
WRA pmax pmax
comp=Z,51nm,0.7s
WRA pmax pmax
comp=Z,5.0nm,0.8s
CTA Charters Tower 57.08 174 P **P** **16 07 42.4 -0.1**
comp=Z,5.8nm,0.8s,baz=17,slow=8.0,SNR=10
CTAO Charters Tower 57.08 174 *e*P **P** **16 07 42.7 +0.2**
CTAO pmax pmax
comp=Z,16nm,1.2s
CTAO Charters Tower 57.08 174 *e*P **P** **16 07 42.7 +0.2**
comp=Z,16nm,1.2s
AB31 Akbulak array 57.42 310 *i*P **P** **16 07 44.7 -0.1**
AB31 pmax pmax
comp=Z,11nm,0.7s
ABKAR Akbulak array 57.42 310 *e*P **P** **16 07 44.5 -0.2**
HYB Hyderabad 57.54 268 *i*P **P** **16 07 47.0 +0.9**
AKTO Aktyubinsk 58.17 312 P **P** **16 07 49.2 -0.8**
AKTO pmax pmax
comp=Z,13nm,1.2s
DLBC Dease Lake 59.02 38 *e*P P 16 07 59.0 +3.1
comp=Z,41nm,1.6s
AS01 Alice Springs 60.71 187 *e*P **P** **16 08 07.8 0.0**
AS31 Alice Springs 60.71 187 *e*P **P** **16 08 08.0 +0.2**
comp=Z,5.8nm,0.6s
ASAR Alice Springs 60.71 187 P **P** **16 08 08.5 +0.7**
comp=Z,18nm,0.8s,baz=12,slow=7.2,SNR=167
MBWA Marble Bar 61.14 202 *e*P **P** **16 08 10.9 +0.2**
comp=Z,51nm,1.5s
RES Resolute Bay 62.75 14 *e*P **P** **16 08 21.0 +0.1**
RES pmax pmax
comp=Z,7.0nm,1.0s
RES Resolute Bay 62.75 14 *e*P **P** **16 08 21.0 +0.1**
comp=Z,7.3nm,1.0s
EIDS Eidsvold 62.86 169 *e*P **P** **16 08 23.0 +0.9**
comp=Z,9.4nm,0.8s
GEYT Alibeck 63.25 299 P **P** **16 08 25.5 +0.7**
comp=Z,14nm,0.8s,baz=45,slow=4.4,SNR=33
GEYT LR LR 16 37 37.9
comp=Z,149nm,18.7s,baz=145,slow=38
ARCES ARCESS Array B 63.75 339 P **P** **16 08 27.9 +0.3**
comp=Z,3.9nm,0.6s,baz=55,slow=8.5,SNR=18
ARCES LR LR 16 38 29.2
comp=Z,102nm,21.1s,baz=53,slow=38
YKW3 Yellowknife Ar 64.09 30 *e*P **P** **16 08 30.5 +0.6**
comp=Z,38nm,2.0s
YKA Yellowknife Ar 64.13 30 P **P** **16 08 30.5 +0.4**
comp=Z,1.6nm,0.8s,baz=305,slow=6.9,SNR=28
YKB5 Yellowknife Ar 64.13 30 *e*P **P** **16 08 30.4 +0.2**
DAG Danmarks Havn 65.70 355 *i*P **P** **16 08 40.1 -0.1**
comp=Z,6.1nm,0.8s
DAG Danmarks Havn 65.70 355 *i*P **P** **16 08 40.1 -0.1**
DAG pmax pmax
comp=Z,5.0nm,0.8s
MOS Moscow 66.84 323 *e*P **P** **16 08 46.5 -1.3**
MOS pmax pmax
comp=Z,42nm,1.1s
VRH Novokhopyorsk 67.12 318 *e*P **P** **16 08 48.6 -1.1**
VRH pmax pmax
comp=Z,10.0nm,0.6s
AFI Afiamalu 67.65 129 LR LR 16 37 23.3
comp=Z,43nm,18.8s,baz=2.5,slow=35
OBN Obninsk 67.69 323 *d i*P **P** **16 08 52.6 -0.6**
OBN *i* 16 11 21.0
OBN *i* PPP PPP 16 13 01.4
OBN *i* S **S** **16 17 47.8 -1.9**
OBN pmax pmax
comp=Z,38nm,1.8s
OBN MLR MLR
comp=Z,159nm,16.0s
LPSR Galich'ya Gora 67.87 320 *e*P **P** **16 08 53.6 -0.8**
LPSR pmax pmax
comp=Z,20nm,1.0s
ARMA Armidale 67.91 170 *e*P **P** **16 08 56.3 +1.4**
comp=Z,30nm,1.1s
VSR Storozhevoye 68.48 318 *e*P **P** **16 08 57.7 -0.6**
VSR pmax pmax
comp=Z,10.0nm,0.6s
FIA1 FINESS Array S 68.49 332 *e*P **P** **16 08 58.0 -0.1**
FINES FINESS Array B 68.49 332 P **P** **16 08 58.2 +0.1**
comp=Z,12nm,0.7s,baz=60,slow=7.5,SNR=47
STKA Stephens Creek 68.57 179 P **P** **16 08 59.1 +0.3**
comp=Z,13nm,0.8s,baz=349,slow=6.8,SNR=23
STKA Stephens Creek 68.57 179 *e*P **P** **16 08 59.5 +0.6**
STKA pmax pmax
comp=Z,23nm,1.9s
STKA Stephens Creek 68.57 179 *e*P **P** **16 08 59.5 +0.6**
comp=Z,23nm,1.9s
BBOO Buckleboo 69.62 184 *e*P **P** **16 09 06.0 +0.6**
comp=Z,120nm,1.1s
NCK Nalchik 70.09 310 *e*P **P** **16 09 07.7 -0.7**
NCK pmax pmax
comp=Z,6.0nm,0.8s
VSU Vasula 70.11 329 *ce*P **P** **16 09 08.8 +0.6**
VSU pmax pmax
comp=Z,40nm,1.0s
KBZ Khabaz 70.39 310 P **P** **16 09 11.1 +0.9**

comp=Z,7.5nm,0.7s,baz=37,slow=2.3,SNR=4.6
KBZ LR LR 16 44 31.9
comp=Z,178nm,18.6s,baz=73,slow=40
KIV Kislovodsk 70.40 311 *e*P **P 16 09 10.7 +0.3**
KIV pmax pmax
comp=Z,23nm,0.9s
KIV MLR MLR
comp=Z,109nm,18.0s
SUMG Summit 70.67 360 *i* P **P 16 09 13.1 +1.2**
comp=Z,14nm,0.9s
SUMG Summit 70.67 360 *e*P **P 16 09 12.7 +0.8**
SUMG pmax pmax
comp=Z,52nm,1.7s
SUMG Summit 70.67 360 *e*P **P 16 09 12.7 +0.8**
comp=Z,52nm,1.7s
AKH Akhalkalaki 71.28 308⇓ *i*P **P 16 09 17.4 +1.5**
CHVG Ch'k'valeri 71.44 310⇑ *i*P **P 16 09 19.3 +2.7**
K05A Summer Lake 71.45 50 *e*P **P 16 09 19.0 +2.1**
comp=Z,48nm,1.6s
WALA Waterton Lakes 71.87 42 *e*P **P 16 09 20.4 +1.1**
comp=Z,5.2nm,0.8s
SCO Scoresbysund 72.03 354 *i* P **P 16 09 20.5 +0.8**
comp=Z,9.1nm,1.1s
SCO Scoresbysund 72.03 354 *i* P **P 16 09 20.5 +0.8**
SCO pmax pmax
comp=Z,9.0nm,1.1s
IZAR Zarasai 72.04 327 *e*P **P 16 09 20.2 +0.2**
IZAR IAmb IAmb 16 09 21.2
comp=Z,12nm,0.7s
IDID Didziasalis 72.10 327 *e*P **P 16 09 20.5 +0.2**
IDID IAmb IAmb 16 09 21.6
comp=Z,6.4nm,0.8s
ISAL Salakas 72.21 327 *e*P **P 16 09 21.2 +0.2**
ISAL IAmb IAmb 16 09 23.9
comp=Z,9.9nm,0.8s
IIGN Ignalina 72.31 327 *e*P **P 16 09 21.8 +0.3**
IIGN IAmb IAmb 16 09 22.9
comp=Z,7.6nm,0.7s
BMO Blue Mountains 72.41 47 *e*P **P 16 09 23.3 +0.8**
comp=Z,6.8nm,0.9s
JTMT Jette 72.44 43 *e*P **P 16 09 23.8 +1.0**
YBMT Yellow Bay 72.52 43 *e*P **P 16 09 24.5 +1.3**
SWMT Swartz Lake 72.73 43 *e*P **P 16 09 25.5 +1.1**
ORV Oroville 72.82 53 *e*P P 16 09 27.6 +2.6
ORV pmax pmax
comp=Z,7.0nm,1.0s
ORV Oroville 72.82 53 *e*P P 16 09 27.6 +2.6
comp=Z,6.9nm,1.0s
WVOR Wild Horse Val 72.99 50 *e*P **P 16 09 28.3 +2.2**
WVOR pmax pmax
comp=Z,21nm,1.6s
WVOR Wild Horse Val 72.99 50 *e*P **P 16 09 28.3 +2.2**
comp=Z,21nm,1.6s
NC405 NORSAR Array S 73.70 337 *e*P **P 16 09 29.6 -0.2**
NC204 NORSAR Array S 73.88 337 *e*P **P 16 09 31.3 +0.4**
AKASG Malin Array Be 73.88 322 P **P 16 09 30.8 -0.2**
comp=Z,8.1nm,0.7s,baz=48,slow=6.0,SNR=48
AKBB Malin Array Si 73.88 322 *e*P **P 16 09 30.5 -0.4**
AKBB pmax pmax
comp=Z,11nm,0.8s
AKBB Malin Array Si 73.88 322 *e*P **P 16 09 30.5 -0.4**
comp=Z,11nm,0.8s
NB201 NORSAR Array S 73.89 337 *e*P **P 16 09 30.9 0.0**
KIEV Kiev 73.89 322 *e*P **P 16 09 30.6 -0.4**
KIEV pmax pmax
comp=Z,13nm,0.9s
KIEV Kiev 73.89 322 *e*P **P 16 09 30.6 -0.4**
comp=Z,12nm,0.9s
NB2 NORSAR Subarra 73.92 337 P **P 16 09 31.0 -0.1**
comp=Z,9.8nm,0.9s,baz=38,slow=5.9
NOA NORSAR Array B 73.92 337 P **P 16 09 31.6 +0.5**
comp=Z,5.5nm,0.8s,baz=38,slow=5.8,SNR=22
AK11 Malin Array Si 73.92 322 *e*P **P 16 09 30.7 -0.5**
NBO02 NORSAR Array S 74.02 337 *e*P **P 16 09 31.7 0.0**
FFC Flin Flon 74.05 32 *e*P **P 16 09 32.1 +0.2**
FFC pmax pmax
comp=Z,8.0nm,0.9s
FFC Flin Flon 74.05 32 *e*P **P 16 09 32.1 +0.2**
comp=Z,8.1nm,0.9s
NBO00 NORSAR Array S 74.06 337 *e*P **P 16 09 31.9 0.0**
MFID Camas Ranch 74.11 47 *e*P **P 16 09 33.8 +1.2**
comp=Z,8.9nm,1.3s
FCC Fort Churchill 74.28 26 *e*P **P 16 09 33.5 +0.4**
FCC pmax pmax
comp=Z,9.0nm,0.9s
FCC Fort Churchill 74.28 26 *e*P **P 16 09 33.5 +0.4**
comp=Z,8.8nm,0.9s
CMB Columbia Colle 74.40 54 *e*P **P 16 09 35.4 +1.1**
CMB pmax pmax
comp=Z,14nm,1.3s
CMB Columbia Colle 74.40 54 *e*P **P 16 09 35.4 +1.1**
comp=Z,14nm,1.3s
LRM Limekiln Ridge 74.60 44 *e*P **P 16 09 36.1 +0.5**
WAKR Walker 74.74 53 *e*P **P 16 09 37.6 +1.1**
DLMT Dillon 74.80 44 *e*P **P 16 09 37.7 +1.0**
comp=Z,9.9nm,0.8s
HLID Hailey 74.85 47 *e*P **P 16 09 38.5 +1.5**
comp=Z,4.4nm,0.9s
SIM Simferopol' 74.85 315 P **P 16 09 37.1 +0.4**
SIM pmax pmax
comp=Z,14nm,0.7s
BMN Battle Mountai 75.02 51 *e*P **P 16 09 39.3 +1.3**
BMN pmax pmax
comp=Z,7.0nm,0.9s
BMN Battle Mountai 75.02 51 *e*P **P 16 09 39.3 +1.3**
comp=Z,7.4nm,0.9s
BOZ Bozeman (W) 75.16 44 *e*P **P 16 09 39.7 +1.0**
BOZ pmax pmax
comp=Z,8.0nm,0.8s
BOZ Bozeman (W) 75.16 44 *e*P **P 16 09 39.7 +1.0**
comp=Z,8.1nm,0.8s
NV01 Mina Array Sit 75.51 53 *e*P **P 16 09 42.2 +1.2**
NVAR Mina Array Bea 75.51 53 P **P 16 09 42.7 +1.8**
comp=Z,4.4nm,0.7s,baz=288,slow=5.4,SNR=28
ELK Elko 76.05 49 *e*P **P 16 09 45.6 +1.6**
ELK pmax pmax
comp=Z,3.0nm,0.8s
ELK Elko 76.05 49 *e*P **P 16 09 45.6 +1.6**
comp=Z,3.3nm,0.8s
IMW Indian Meadow 76.63 45 *e*P **P 16 09 49.2 +1.9**
comp=Z,9.1nm,0.9s
FLWY Flagg Ranch 76.65 45 *e*P **P 16 09 49.7 +2.4**
comp=Z,14nm,1.3s
RLMT Red Lodge 76.79 43 *e*P **P 16 09 50.6 +2.5**
comp=Z,21nm,1.5s
MOOW Moose Ponds 76.84 45 *e*P **P 16 09 50.0 +1.6**
comp=Z,11nm,1.3s
HVU Hansel Valley 76.89 47 *e*P **P 16 09 49.9 +1.3**
HVU pmax pmax
comp=Z,8.0nm,0.9s
HVU Hansel Valley 76.89 47 *e*P **P 16 09 49.9 +1.3**
comp=Z,8.1nm,0.9s
LOHW Long Hollow 77.00 45 *e*P **P 16 09 51.4 +2.1**
comp=Z,6.8nm,1.5s
BGU Big Grassy Mou 77.27 48 *e*P **P 16 09 52.1 +1.3**
comp=Z,7.2nm,1.0s
R11A Troy Canyon, C 77.28 52 *e*P **P 16 09 52.4 +1.4**
comp=Z,7.3nm,1.0s
HWUT Hardware Ranch 77.71 47 *e*P **P 16 09 54.5 +1.3**
comp=Z,18nm,1.3s
KWP Kalwaria Pacla 77.73 324 *e*P **P 16 09 53.8 +0.8**
KWP Kalwaria Pacla 77.73 324 *e*P **P 16 09 53.9 +0.9**
DUG Dugway, Tooele 77.85 49 *e*P **P 16 09 55.5 +1.5**
DUG pmax pmax
comp=Z,10.0nm,0.9s
DUG Dugway, Tooele 77.85 49 *e*P **P 16 09 55.5 +1.5**
comp=Z,9.9nm,0.9s
BUR08 Bucovina Ar. S 77.88 321 *e*P **P 16 09 54.4 +0.4**
BURAR Bucovina Array 77.89 321⇓ *i*P **P 16 09 55.0 +0.9**
BURAR Bucovina Array 77.89 321 P **P 16 09 54.9 +0.9**
TESR Tescani 77.90 320⇑ *i*P **P 16 09 54.4 +0.4**
CFR Carcaliu 78.00 318⇓ *i*P **P 16 09 55.1 +0.6**
TCUT Toone Canyon 78.11 47 *e*P **P 16 09 57.0 +1.5**
comp=Z,17nm,0.9s
BW06 Boulder Array 78.13 45 *e*P **P 16 09 56.2 +0.5**
PD31 Pinedale Array 78.13 45 *e*P **P 16 09 56.2 +0.6**
PDAR Pinedale Array 78.13 45 P **P 16 09 56.6 +0.9**
comp=Z,3.2nm,0.8s,baz=272,slow=2.4,SNR=29
CTU Camp Tracy 78.17 48 *e*P **P 16 09 56.8 +1.0**
comp=Z,7.0nm,1.0s
VRI Vrincioaia 78.29 319⇑ *i*P **P 16 09 58.4 +2.2**
VRI Vrincioaia 78.29 319 P **P 16 09 58.6 +2.4**
VRI pmax pmax
comp=Z,96nm,1.6s
BR131 Keskin Array S 78.35 311 *e*P **P 16 09 57.0 +0.3**
BRTR Keskin Array B 78.35 311 P **P 16 09 57.1 +0.3**
comp=Z,3.3nm,0.7s,baz=102,slow=4.1,SNR=14
BRTR LR LR 16 46 42.3
comp=Z,63nm,19.7s,baz=68,slow=37
BRTR Keskin Array B 78.35 311 P **P 16 09 57.1 +0.3**
BRTR pmax pmax
comp=Z,4.0nm,0.7s
BRTR MLR MLR
comp=Z,63nm,19.7s
JLU Jordanelle 78.41 48 *e*P **P 16 09 58.8 +1.5**
comp=Z,9.3nm,1.2s
KOLS Kolonicke sedl 78.42 324 *e*P **P 16 09 57.6 +0.7**
KOLS *e* 16 10 15.3
KOLS pmax pmax
comp=Z,6.0nm,1.1s
KOLS Kolonicke sedl 78.42 324 *e*P **P 16 09 57.6 +0.7**
KOLS *es*P PcP 16 10 15.3 +9.2
NLU North Lily Min 78.44 48 *e*P **P 16 09 58.1 +0.6**
comp=Z,7.1nm,1.0s
STHS Stebnicka Huta 78.57 324 *e*P **P 16 09 58.8 +1.1**
STHS pmax pmax
comp=Z,5.0nm,0.9s
STHS Stebnicka Huta 78.57 324 *e*P **P 16 09 58.8 +1.1**
UZH Uzhgorod 78.62 323 *e*P **P 16 09 57.4 -0.5**
UZH *i* 16 10 06.8
OJC Ojcow 78.66 326 *e*P **P 16 09 59.0 +0.9**
OJC Ojcow 78.66 326 *e*P **P 16 09 58.4 +0.3**
OJC pmax pmax
comp=Z,19nm,1.0s
OJC Ojcow 78.66 326 *e*P **P 16 09 58.4 +0.3**
comp=Z,19nm,1.0s
MPU Maple Canyon 78.67 48 *e*P **P 16 10 00.1 +1.4**
comp=Z,12nm,1.1s
BR231 Keskin MP Arra 78.79 312 *e*P **P 16 09 57.6 -1.6**
CRVS Cervenica-Dubn 78.83 324 *e*P **P 16 09 59.9 +0.8**
CRVS Cervenica-Dubn 78.83 324 *e*P **P 16 09 59.9 +0.8**
MSAB Monastry St. A 78.88 317⇑ *i*P **P 16 10 01.4 +2.0**
ISR Istrita 78.88 319⇑ *i*P **P 16 10 01.4 +1.9**
NIE Niedzica 79.00 325 *e*P **P 16 10 01.0 +0.9**
NIE Niedzica 79.00 325 *e*P **P 16 10 01.0 +0.9**
P17A Butcher Ranch, 79.54 48 *e*P **P 16 10 04.8 +1.4**
comp=Z,17nm,1.0s
LCMT Little Creek M 79.56 51 *e*P **P 16 10 05.2 +1.7**
comp=Z,10nm,1.0s
MTPU Mount Pierson 79.57 50 *e*P P 16 10 07.8 +3.9
comp=Z,8.6nm,0.9s
LANS Liptovska Anna 79.57 325 *e*P **P 16 10 04.5 +1.3**
LANS Liptovska Anna 79.57 325 *e*P **P 16 10 04.5 +1.3**
KECS Kecovo 79.58 324 *e*P **P 16 10 03.9 +0.7**
KECS pmax pmax
comp=Z,4.0nm,1.3s
KECS Kecovo 79.58 324 *e*P **P 16 10 03.9 +0.7**
PFO Pinyon Flats O 79.58 56 *e*P **P 16 10 05.6 +1.9**
PFO pmax pmax
comp=Z,11nm,1.1s
PFO Pinyon Flats O 79.58 56 *e*P **P 16 10 05.6 +1.9**
comp=Z,11nm,1.1s
OKC Ostrava-Krasne 79.67 326⇓ *e*P **P 16 10 04.2 +0.5**
OKC *e*PCP **PcP 16 10 09.9 -1.6**
OKC Ostrava-Krasne 79.67 326 *e*P **P 16 10 04.2 +0.5**
OKC *e* 16 10 09.9
DRGR 79.70 322⇓ *i*P **P 16 10 04.7 +0.7**
P18A Preston Nutter 79.74 48 *e*P **P 16 10 05.8 +1.1**
comp=Z,9.9nm,1.0s
KSP Ksiaz 79.74 328 *e*P **P 16 10 04.7 +0.7**
KSP Ksiaz 79.74 328 *e*P **P 16 10 04.7 +0.7**
KNB Kanab 79.82 51 *e*P **P 16 10 07.1 +2.1**
KNB pmax pmax
comp=Z,27nm,1.3s
KNB Kanab 79.82 51 *e*P **P 16 10 07.1 +2.1**
comp=Z,27nm,1.3s
ULM Lac du Bonnet 79.86 33 P **P 16 10 04.5 -0.2**
comp=Z,3.3nm,0.8s,baz=325,slow=7.0,SNR=4.5
SRU San Rafael Swe 79.90 48 *e*P **P 16 10 06.6 +1.2**
SRU pmax pmax
comp=Z,13nm,0.8s
SRU San Rafael Swe 79.90 48 *e*P **P 16 10 06.6 +1.2**
comp=Z,13nm,0.8s
MORC Moravsky Berou 79.98 327 *e*P **P 16 10 05.9 +0.5**
MORC pmax pmax
comp=Z,46nm,1.1s
MORC Moravsky Berou 79.98 327 *e*P **P 16 10 05.9 +0.5**
comp=Z,46nm,1.1s
RAYN Ar Rayn 80.04 292 *e*P **P 16 10 06.3 +0.2**
comp=Z,7.7nm,0.8s
DPC Dobruska-Polom 80.09 327 *e*P **P 16 10 06.8 +0.8**
DPC *ex* x 16 10 11.2
DPC Dobruska-Polom 80.09 327 *e*P **P 16 10 06.8 +0.8**
DPC *e* 16 10 11.2
KRLC Kraliky 80.10 327⇓ *e*P **P 16 10 06.7 +0.6**
KRLC Kraliky 80.10 327 *e*P **P 16 10 06.7 +0.6**
UPC Upice 80.11 328⇓ *e*P **P 16 10 07.0 +0.9**
UPC Upice 80.11 328 *e*P **P 16 10 07.0 +0.9**
RSSD Black Hills 80.26 41 *e*P **P 16 10 08.9 +1.6**
RSSD pmax pmax
comp=Z,7.0nm,0.9s
RSSD Black Hills 80.26 41 *e*P **P 16 10 08.9 +1.6**
comp=Z,6.8nm,0.9s
PSZ Piszkesteto 80.26 324⇑ *e*P **P 16 10 08.1 +1.1**
PSZ Piszkesteto 80.26 324 *e*P **P 16 10 07.6 +0.6**
PSZ pmax pmax
comp=Z,12nm,1.0s
PSZ Piszkesteto 80.26 324 *e*P **P 16 10 07.6 +0.6**
comp=Z,12nm,1.0s
VYHS Vyhne 80.34 325 *e*P **P 16 10 08.3 +1.0**
VYHS pmax pmax
comp=Z,5.0nm,1.2s
VYHS Vyhne 80.34 325 *e*P **P 16 10 08.3 +1.0**
W13A Hualapai Mount 80.34 53 *e*P **P 16 10 09.2 +1.3**
comp=Z,5.2nm,1.0s
U15A North Rim 80.52 51 *e*P **P 16 10 10.6 +1.7**
comp=Z,15nm,1.0s
SIRR Siria 80.58 322⇑ *i*P **P 16 10 10.2 +1.5**
GZR Guna Zlata 80.64 321⇑ *i*P **P 16 10 09.7 +0.6**
BRG Berggiesshubel 80.70 329 *e*P **P 16 10 09.3 +0.1**
comp=Z,12nm,1.2s
comp=N,194nm,16.9s
comp=E,118nm,16.9s
comp=Z,304nm,18.4s
BRG Berggiesshubel 80.70 329 *e*P **P 16 10 09.3 +0.1**
BRG pmax pmax
comp=Z,4.0nm,1.2s
BRG MLR MLR
comp=N,12μm,16.9s
BRG MLR MLR
comp=E,194nm,16.9s
BRG MLR MLR
comp=Z,118nm,18.4s
PVCC Panska Ves 80.70 328⇓ *e*P **P 16 10 10.3 +1.1**
PVCC Panska Ves 80.70 328 *e*P **P 16 10 10.3 +1.1**
CLL Collm 80.75 330 *i* P **P 16 10 08.9 -0.6**
comp=Z,16nm,1.0s
CLL *i* 16 10 14.5
CLL *i* 16 10 25.1
CLL Lm MLR 16 52 00.0
comp=Z,200nm,18.2s
CLL Collm 80.75 330 *i* P **P 16 10 08.9 -0.6**
CLL *i* 16 10 14.5
CLL *i* 16 10 25.1
CLL pmax pmax
comp=Z,16nm,1.0s
CLL Collm 80.75 330 *e*P **P 16 10 09.4 -0.1**
comp=Z,16nm,1.0s
GOPC GO Pecny, Ondr 81.08 328 *e*P **P 16 10 12.1 +0.8**
GOPC GO Pecny, Ondr 81.08 328 *e*P **P 16 10 12.1 +0.8**
PRU Pruhonice 81.12 328⇓ *e*P **P 16 10 12.2 +0.7**
PRU Pruhonice 81.12 328 *e*P **P 16 10 12.2 +0.7**
PV09 Paradox Valley 81.13 48 *e*P **P 16 10 13.3 +1.2**
TREC Trest 81.24 327⇓ *e*P **P 16 10 12.9 +0.7**
TREC Trest 81.24 327 *e*P **P 16 10 12.9 +0.7**
PV10 Paradox Valley 81.26 48 *e*P **P 16 10 14.4 +1.6**
AGMN Agassiz Nation 81.30 34 *e*P **P 16 10 12.8 +0.3**
comp=Z,13nm,1.3s
PV04 Paradox Valley 81.33 48 *e*P **P 16 10 14.7 +1.6**
N23A Red Feather La 81.39 45 *e*P P 16 10 16.2 +2.7
comp=Z,24nm,1.5s
PV05 Paradox Valley 81.42 48 *e*P **P 16 10 15.1 +1.5**
MDVR Moldovita 81.61 321⇑ *i*P **P 16 10 14.5 +0.3**
Y14A Wickenburg 81.64 54 *e*P **P 16 10 16.0 +1.4**
comp=Z,27nm,0.8s
WUAZ Wupatki 81.67 52 *e*P **P 16 10 16.5 +1.6**
comp=Z,10nm,1.0s
PV01 Paradox Valley 81.70 48 *e*P **P 16 10 16.3 +1.2**
NKC Novy Kostel 81.81 329⇓ *e*P **P 16 10 15.8 +0.7**
NKC Novy Kostel 81.81 329 *e*P **P 16 10 15.8 +0.7**
SMCO Snowmass 81.95 47 *e*P **P 16 10 17.8 +1.2**
comp=Z,6.5nm,1.1s
CONA Conrad Observa 82.10 326 *i* P **P 16 10 17.9 +1.1**
comp=Z,6.8nm,1.0s
URZ Urewera 82.17 152 LR LR 16 40 28.2
comp=Z,97nm,22.0s,baz=324,slow=31
KHC Kasperske Hory 82.18 328⇓ *i*P **P 16 10 17.5 +0.3**
KHC *e*PCP **PcP 16 10 22.5 0.0**
KHC AMS AMS 16 50 00.0
comp=Z,300nm,20.8s
KHC Kasperske Hory 82.18 328 *e*P **P 16 10 17.3 +0.2**
KHC pmax pmax
comp=Z,4.0nm,1.1s
KHC Kasperske Hory 82.18 328 *e*P **P 16 10 17.3 +0.2**
comp=Z,3.9nm,1.1s
ISCO Idaho Springs 82.32 45 *e*P **P 16 10 20.1 +1.7**
ISCO pmax pmax
comp=Z,33nm,2.0s
ISCO Idaho Springs 82.32 45 *e*P **P 16 10 20.1 +1.7**
comp=Z,33nm,2.0s
X16A Lo Mia Camp, P 82.33 53 *e*P **P 16 10 20.2 +1.8**
MVCO Mesa Verde 82.35 49 *e*P **P 16 10 19.3 +0.8**
comp=Z,8.6nm,0.9s
GEC2 GERESS Array S 82.35 328 *e*P **P 16 10 17.6 -0.5**
GEC2 pmax pmax
comp=Z,3.0nm,0.8s
GEC2 GERESS Array S 82.35 328 *e*P **P 16 10 17.6 -0.5**
comp=Z,3.4nm,0.8s
GERES GERESS Array B 82.35 328 P **P 16 10 18.2 0.0**
comp=Z,1.2nm,0.4s,baz=38,slow=5.0,SNR=15
VTS Vitosha 82.37 319⇑ *i*P **P 16 10 19.3 +0.9**
VTS Vitosha 82.37 319 *e*P **P 16 10 19.0 +0.6**
VTS pmax pmax
comp=Z,7.0nm,1.0s
VTS Vitosha 82.37 319 *e*P **P 16 10 18.9 +0.6**
comp=Z,7.3nm,1.0s
GRFO Grafenberg 82.73 330 *e*P **P 16 10 20.4 +0.5**
GRFO pmax pmax
comp=Z,18nm,1.0s
GRFO Grafenberg 82.73 330 *e*P **P 16 10 20.4 +0.5**
comp=Z,18nm,1.0s
ARSA Arzberg 82.76 326 *i* P **P 16 10 20.8 +0.6**
comp=Z,4.2nm,1.0s
S22A 4UR Ranch, Cre 82.99 48 *e*P **P 16 10 23.6 +1.7**
comp=Z,7.7nm,1.0s
Q24A Divide 83.15 46 *e*P P 16 10 25.4 +2.6
X18A Snowflake 83.20 52 *e*P **P 16 10 23.0 +0.1**
comp=Z,8.2nm,1.1s
SOKA Soboth 83.41 326 *i* P **P 16 10 24.0 +0.4**
comp=Z,9.7nm,0.9s
SDCO Great Sand Dun 83.77 47 *e*P **P 16 10 24.2 -1.7**
comp=Z,3.7nm,1.1s
TUC Tucson 84.11 54 *e*P **P 16 10 28.6 +1.1**
TUC pmax pmax
comp=Z,8.0nm,1.0s
TUC Tucson 84.11 54 *e*P **P 16 10 28.6 +1.1**
comp=Z,7.7nm,1.0s
ECSD EROS Data Cent 84.31 38 *e*P **P 16 10 28.7 +0.5**
comp=Z,13nm,1.1s
RETA Reute 84.65 328 *i* PcP **P 16 10 30.3 +0.4**
comp=Z,11nm,1.1s
PMOR Pomariorio Ree 84.79 113 *e*T T 17 43 32.7
comp=Z,8.8nm,0.2s
T25A Trinidad 84.81 47 *e*P **P 16 10 32.3 +1.2**
comp=Z,10nm,0.9s
BFO Black Forest 84.97 330 *e*P **P 16 10 31.5 0.0**
BFO pmax pmax
comp=Z,14nm,1.1s
BFO Black Forest 84.97 330 *e*P **P 16 10 31.5 0.0**
comp=Z,14nm,1.1s
RPZ Rata Peaks 85.01 158 LR LR 16 42 28.9
comp=Z,114nm,21.3s,baz=286,slow=31
ANMO Albuquerque 85.08 49 *e*P **P 16 10 34.2 +1.7**
ANMO pmax pmax
comp=Z,24nm,1.7s
ANMO Albuquerque 85.08 49 *e*P **P 16 10 34.1 +1.7**
comp=Z,24nm,1.7s
DAVA Damuels 85.17 329 *i* PcP **P 16 10 32.9 +0.3**
comp=Z,8.7nm,0.9s
PPT2 Papeete2 85.25 116 *e*LR LR 16 37 27.3
comp=Z,245nm,24.5s
SCHQ Schefferville 85.50 16 P **P 16 10 33.2 -0.8**
comp=Z,4.0nm,0.8s,baz=290,slow=5.1,SNR=2.9
BNM Barren Site 85.51 50 *e*P **P 16 10 36.8 +2.0**
121A Cookes Peak, D 85.88 52 *e*P **P 16 10 38.3 +1.8**
comp=Z,4.9nm,0.9s
TUE Stuetta 86.04 329 *e*P **P 16 10 36.5 -0.6**
comp=Z,5.1nm,1.0s
MEH Mehetia 86.52 115 *e*T T 17 45 41.1
comp=Z,62nm,0.3s
TAOE Nuku Hiva Isla 86.82 103 *e*LR LR 16 38 00.1
comp=Z,271nm,22.0s
MNTX Cornudas Mount 87.94 51 *e*P **P 16 10 48.1 +1.7**
comp=Z,8.2nm,1.5s
TBI Tubuai 89.10 120 *e*LR LR 16 39 20.7
comp=Z,442nm,27.5s
TBI Tubuai 89.10 120 *e*T T 17 48 52.6
comp=Z,32nm,0.3s
LPIG La Paz 89.76 60 LR LR 16 45 14.5
comp=Z,38nm,19.6s,baz=127,slow=32
TX31 Lajitas Ar. Si 90.64 52 *e*P **P 16 11 00.0 +0.9**
TXAR Lajitas Array 90.64 52 P **P 16 10 59.7 +0.6**
comp=Z,2.1nm,0.8s,baz=292,slow=2.9,SNR=15
RKT Rikitea 99.37 112 *e*LR LR 16 44 18.8
comp=Z,237nm,24.2s
VNDA Vanda 115.04 175 PKP **PKPdf 16 16 36.3 +0.3**
comp=Z,0.6nm,0.6s,baz=329,slow=6.3,SNR=4.9
TORD Torodi Ar. Bea 116.85 314 PKP **PKPdf 16 16 41.3 -0.1**
comp=Z,0.3nm,0.4s,baz=5.6,slow=2.1,SNR=3.5
TORD PP PP 16 17 42.2 -6.9
comp=Z,1.9nm,1.1s,baz=14,slow=5.1,SNR=5.6
TORD PKKPbc **PKKPbc 16 27 07.7 +1.5**
comp=Z,0.9nm,0.8s,baz=233,slow=3.3,SNR=4.9
LBTB Lobatse 123.98 263 *e*PKIKP **PKPdf 16 16 55.3 +0.4**
LBTB Lobatse 123.98 263 *e*PKPdf **PKPdf 16 16 55.3 +0.4**
SDV Santo Domingo 125.74 39 *e*PKPdf **PKPdf 16 16 59.1 +0.4**
DBIC Dimbokro 125.82 316 PKP **PKPdf 16 16 57.5 -1.2**
comp=Z,1.6nm,0.6s,baz=239,slow=0.5,SNR=4.4
BOSA Boshof 125.93 259 PKP **PKPdf 16 16 57.9 -0.7**
comp=Z,3.4nm,0.7s,baz=299,slow=6.2,SNR=6.7
SNAA Sanae 140.56 197 PKP PKPdf 16 17 17.8 -6.8
VNA2 Neumayer--Watz 142.14 197 PKP **PKPdf 16 17 23.4 -4.0**
baz=119,slow=3.1
VNA3 Neumayer Olymp 142.41 195 PKP **PKPdf 16 17 24.0 -3.8**
SAML Samuel 144.70 44 *e*PKPdf **PKPdf 16 17 32.6 -0.9**
LPAZ La Paz 147.25 59 PKPbc **PKPbc 16 17 40.0 -0.9**
comp=Z,12nm,0.8s,baz=308,slow=5.7,SNR=18
LPAZ La Paz 147.25 59 PKP2 **PKPbc 16 17 40.0 -0.9**
LPAZ pmax pmax
comp=Z,12nm,0.8s
LPAZ La Paz 147.25 59 *e*PKPdf **PKPbc 16 17 39.6 -1.3**
PB01 IPOC Station P 149.42 67 *e*PKPbc **PKPbc 16 17 46.8 +1.0**
LCO Las Campanas 152.66 82 *e*PKPbc **PKPbc 16 17 54.4 +0.9**

JMA 11 16:00:46.2, 36.84N×140.61E, h5km±1km, M3.2, 1C, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JHO	**Hitachi**	**0.23**	**188**	⇑P	Pg	16 00 50.8	+0.1
JHO				S	Sg	16 00 54.0	+0.3
ONAJ	**Iwakimizuishiy**	**0.30**	**30**	S	Sg	16 00 56.9	+0.8
JFT	**Otama**	**0.71**	**342**	S	Sg	16 01 10.0	+0.9
JMM	**Marumori**	**1.03**	**8**	S	Sg	16 01 19.5	0.0
MAT	**Matsushiro**	**1.95**	**262**	P	Pn	16 01 21.1	+1.1
MAT				S	Sb	16 01 47.1	+0.1

JMA 11 16:02:49.5, 37.10N×140.59E, h15km±1km, M3.3, 2D, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.17**	**89**	⇓P	Pg	16 02 53.8	+0.1
ONAJ				S	Sg	16 02 56.7	+0.2
JFT	**Otama**	**0.46**	**334**	⇓P	Pg	16 02 58.9	+0.1
JFT				S	Sg	16 03 05.3	+0.2
JHO	**Hitachi**	**0.49**	**182**	P	Pg	16 02 59.1	-0.1
JHO				S	Sg	16 03 05.7	-0.1
JMM	**Marumori**	**0.78**	**12**	P	Pg	16 03 04.2	-0.5
JMM				S	Sg	16 03 14.6	-0.4
MAT	**Matsushiro**	**1.99**	**254**	P	Pb	16 03 24.1	-1.3

*IDC **11** 16:05:09.7±0.8, 49.21S×127.19E, h0km, mb4.6/8, mb1 4.8/8, mb1mx4.4/28, mbtmp4.6/8, MS4.0/8, Ms1 4.0/8,*

ms1mx3.7/23, Error ellipse: s-maj=39.4km s-min=18.0km az=104.0
*ISCJB **11** 16:05:10.7±0.4, 49°.22S×0°.06×127°.6E±0°.1, h10km, mb4.9/18, MS4.0/8, Error ellipse: s-maj=13.0km s-min=9.2km az=8.6*
*NEIC **11** 16:05:11.8±0.5, 49°.21S×127°.27E, h10km, mb4.9/6, Error ellipse: s-maj=15.1km s-min=9.4km az=111.0*

ISC 11 16:05:11.8±0.5, 49°.26S±0°.08×127°.5E±0°.1, h10km, n54, σ1°19/40, mb4.9/18, MS4.0/8, Western Indian-Antarctic Ridge

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
TAU	**Tasmania Unive**	**15.10**	**73**	*eP*		**P**	**16 08 48.8**	**-1.5**
H01W1	**Cape Leeuwin H**	**17.42**	**321**	T		T	16 26 52.2	
	baz=147,slow=74,SNR=111							
H01W2	**Cape Leeuwin H**	**17.43**	**320**	T		T	16 26 52.2	
	baz=147,slow=74,SNR=186							
H01W3	**Cape Leeuwin H**	**17.44**	**321**	T		T	16 26 49.2	
	baz=147,slow=74,SNR=114							
NWAO	**Narrogin (SRO)**	**18.05**	**331**	LR		LR	16 14 38.2	
	comp=Z,5.3nm,20.4s,baz=217,slow=32							
NWAO	**Narrogin (SRO)**	**18.05**	**331**	*eP*		**P**	**16 09 23.9**	**+0.9**
CASY	**Casey**	**19.20**	**201**	*eP*		**Pn**	**16 09 36.2**	**-0.1**
STKA	**Stephens Creek**	**20.33**	**36**	P		**P**	**16 09 48.6**	**+0.7**
	17nm,1.0s,baz=192,slow=12,SNR=7.9							
STKA				LR		LR	16 16 28.8	
	comp=Z,833nm,19.7s,baz=204,slow=33							
CAN	**Canberra**	**21.02**	**57**	*eP*		**P**	**16 09 56.4**	**+0.8**
ASAR	**Alice Springs**	**26.04**	**13**	P		**P**	**16 10 44.5**	**-0.6**
	90nm,1.0s,baz=187,slow=9.3,SNR=131							
ASAR				PcP		**PcP**	**16 14 11.2**	**-1.8**
	0.4nm,0.8s,baz=214,slow=1.3,SNR=2.7							
ASAR				LR		LR	16 20 31.5	
	comp=Z,92nm,18.5s,baz=186,slow=35							
ARMA	**Armidale**	**26.20**	**53**	*eP*		**P**	**16 10 48.5**	**+1.9**
	26nm,1.1s							
MBWA	**Marble Bar**	**28.73**	**345**	*eP*		**P**	**16 11 08.5**	**-0.7**
	21nm,1.5s							
WRA	**Warramunga Arr**	**29.76**	**13**	P		**P**	**16 11 17.2**	**-1.1**
	21nm,1.0s,baz=196,slow=9.8,SNR=30							
WRA				PcP		**PcP**	**16 14 21.0**	**-1.0**
	0.3nm,0.7s,baz=204,slow=2.0,SNR=2.3							
WRAB	**Tennant Creek**	**29.77**	**13**	*eP*		**P**	**16 11 17.7**	**-0.8**
	36nm,1.1s							
VNDA	**Vanda**	**31.22**	**166**	P		**P**	**16 11 32.1**	**+1.3**
	6.8nm,1.0s,baz=316,slow=8.5,SNR=23							
VNDA				LR		LR	16 23 10.6	
	comp=Z,377nm,18.7s,baz=324,slow=34							
CTA	**Charters Tower**	**32.74**	**34**	P		**P**	**16 11 44.0**	**-0.6**
	3.4nm,0.9s,baz=237,slow=11,SNR=4.3							
CTAO	**Charters Tower**	**32.74**	**34**	*eP*		**P**	**16 11 45.2**	**+0.5**
	12nm,1.4s							
MAW	**Mawson**	**36.36**	**216**	P		**P**	**16 12 12.5**	**-3.0**
	2.8nm,0.5s,baz=256,slow=11,SNR=4.0							
MAW				LR		LR	16 24 08.7	
	comp=Z,225nm,21.8s,baz=62,slow=31							
QSPA	**South Pole Qui**	**40.86**	**180**	*eP*		**P**	**16 12 54.7**	**+1.2**
	98nm,1.3s							
PMG	**Port Moresby**	**42.98**	**29**	LR		LR	16 31 14.3	
	comp=Z,343nm,18.1s,baz=193,slow=36							
GENI	**Genyem**	**47.73**	**17**	P		P	16 13 53.4	+4.6
	46nm,1.1s							
LBMI	**Labuha**	**48.44**	**360**	P		P	16 13 59.0	+4.7
MDSI	**Maura Dua**	**48.83**	**328**	P		**P**	**16 13 59.0**	**+1.7**
	19nm,1.2s							
PPBI	**Pangkal Pinang**	**50.37**	**332**	P		**P**	**16 14 10.9**	**+1.9**
	17nm,1.3s							
STKI	**Sintang**	**51.05**	**339**	P		**P**	**16 14 16.9**	**+2.8**
	32nm,0.9s							
SNAA	**Sanae**	**54.38**	**197**	*eP*		**P**	**16 14 39.9**	**+1.7**
	991nm,1.0s							
KCSI	**Kotacane, Aceh**	**58.57**	**324**	P		**P**	**16 15 09.4**	**+0.8**
	17nm,1.2s							
H08S2	**Diego Garcia H**	**61.84**	**293**	T		T	17 22 27.1	
	baz=143							
H08S1	**Diego Garcia H**	**61.85**	**293**	T		T	17 22 24.7	
	baz=143							
H08S3	**Diego Garcia H**	**61.86**	**293**	T		T	17 22 27.4	
	baz=143							
H08N1	**Diego Garcia H**	**63.77**	**292**	T		T	17 25 03.5	
	baz=142							
H08N3	**Diego Garcia H**	**63.78**	**292**	T		T	17 25 01.7	
	baz=142							
H08N2	**Diego Garcia H**	**63.79**	**292**	T		T	17 25 01.9	
	baz=142							
CMAR	**Chiang Mai Arr**	**72.05**	**331**	P		**P**	**16 16 35.8**	**-0.1**
	6.2nm,1.1s,baz=178,slow=5.7,SNR=38							
CHTO	**Chiang Mai**	**72.38**	**332**	*eP*		**P**	**16 16 38.4**	**+0.5**
	12nm,1.3s							
BOSA	**Boshof**	**76.27**	**242**	LR		LR	16 44 02.2	
	comp=Z,129nm,18.7s,baz=114,slow=31							
ODAN	**Odare**	**83.81**	**325**	*eP*		**P**	**16 17 41.4**	**0.0**
	3.9nm,0.6s							
RAMN	**Ramite**	**84.20**	**324**	*eP*		**P**	**16 17 43.5**	**+0.1**
PKIN	**Phulchoki**	**85.22**	**323**	*eP*		**P**	**16 17 48.3**	**-0.3**
	12nm,1.1s							
GUN	**Gumba**	**85.34**	**324**	*eP*		**P**	**16 17 49.5**	**+0.3**
	48nm,1.3s							
KKN	**Kakani**	**85.46**	**323**	*eP*		**P**	**16 17 49.8**	**+0.1**
	15nm,1.0s							
GKN	**Gorkha**	**85.90**	**323**	*eP*		**P**	**16 17 51.9**	**+0.1**
	9.5nm,0.6s							
KOLN	**Koldanda**	**86.11**	**322**	*eP*		**P**	**16 17 52.7**	**-0.2**
	6.5nm,0.8s							
KSAR	**Wonju Array Be**	**86.33**	**0**	P		**P**	**16 17 52.2**	**-1.2**
KSRS	**Korea Array**	**86.34**	**0**	P		**P**	**16 17 52.3**	**-1.2**
	2.5nm,1.0s,baz=176,slow=5.2,SNR=5.3							
PYUN	**Piuthan**	**86.65**	**322**	*eP*		**P**	**16 17 55.5**	**-0.1**
	16nm,0.8s							
PLCA	**Paso Flores**	**88.97**	**166**	LR		LR	16 53 51.3	
	comp=Z,53nm,19.9s,baz=206,slow=33							
WSAR	**Wadi Sarin**	**94.56**	**301**	LR		LR	16 51 45.0	
	comp=Z,59nm,21.8s,slow=30							
TORD	**Torodi Ar. Bea**	**122.99**	**250**	PKP		**PKPdf**	**16 24 07.5**	**-0.9**
	0.1nm,0.6s,baz=262,slow=4.4,SNR=2.3							
NVAR	**Mina Array Bea**	**132.71**	**77**	PKP		**PKPdf**	**16 24 27.5**	**+0.9**
	0.2nm,0.4s,baz=224,slow=5.0,SNR=1.8							
FINES	**FINESS Array B**	**136.48**	**317**	PKP		**PKPdf**	**16 24 32.3**	**-0.3**
	0.7nm,0.6s,baz=61,slow=9.7,SNR=2.5							
YKA	**Yellowknife Ar**	**144.22**	**45**	PKP		**PKPdf**	**16 24 46.3**	**-0.2**
	2.6nm,1.0s,baz=262,slow=3.0,SNR=24							
ESDC	**Sonseca Array**	**144.63**	**273**	PKP		**PKPab**	**16 24 45.6**	**-1.2**
	0.2nm,0.3s,baz=133,slow=1.6,SNR=3.3							
RES	**Resolute Bay**	**148.97**	**20**	PKPbc		**PKPbc**	**16 24 57.2**	**-1.0**
	2.5nm,0.7s,baz=276,slow=4.3,SNR=8.6							

*ISCJB **11** 16:06:45.5±0.3, 43°.28N±0°.02×43°.58E±0°.02, h1km±4km, Error ellipse: s-maj=3.3km s-min=2.4km az=32.9*
*CSEM **11** 16:06:45.7±0.1, 43°.29N×43°.57E, h2km, mb3.9, Error ellipse: s-maj=2.8km s-min=2.1km az=31.0*
*MOS **11** 16:06:45.0±0.9, 43°.31N×43°.62E, h9km, mb3.9/1, Error ellipse: s-maj=7.7km s-min=5.3km az=122.6*
*TIF **11** 16:06:45.4, 43°.27N×43°.61E, h13km±1km*

ISC 11 16:06:45.3±0.8, 43°.31N±0°.02×43°.61E±0°.02, h14km±6km, n51, σ0°54/96, 5C-12D, Western Caucasus

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
LSNR	**Lesken**	**0.16**	**99**	⇓*i*	PG	**Pg**	**16 06 48.8**	**-0.5**
LSNR				*i*	S	**Sg**	**16 06 52.2**	**+0.2**
LSNR	**Lesken**	**0.16**	**99**	*i*	Pg	**Pg**	**16 06 48.8**	**-0.5**
LSNR				*i*	Sg	**Sg**	**16 06 52.2**	**+0.2**
NCK	**Nalchik**	**0.19**	**358**	*d*	iPG	**Pb**	**16 06 50.6**	**0.0**
NCK				*i*	S	**Sb**	**16 06 54.9**	**+0.7**
NCK					pmax	pmax		
	comp=Z,3μm,0.3s							
NCK					smax	smax		
	comp=E,4μm,0.4s							
NCK	**Nalchik**	**0.19**	**358**	*i*	Pg	**Pb**	**16 06 50.6**	**0.0**
	comp=E,3μm,0.3s							
STDR	**Stavd-Durt**	**0.34**	**79**	⇓*i*	PG	**Pg**	**16 06 52.3**	**+0.1**
STDR				*eS*		**Sb**	**16 06 58.4**	**0.0**
STDR	**Stavd-Durt**	**0.34**	**79**	*i*	Pg	**Pg**	**16 06 52.3**	**+0.1**
STDR				*eSg*		**Sb**	**16 06 58.4**	**0.0**
KORR	**Kora**	**0.40**	**123**	⇑*i*	PG	**Pg**	**16 06 53.2**	**-0.1**
KORR				*eS*		**Sg**	**16 06 59.1**	**+0.3**
KORR	**Kora**	**0.40**	**123**	*i*	Pg	**Pg**	**16 06 53.2**	**-0.1**
KORR				*eSg*		**Sg**	**16 06 59.1**	**+0.3**
DIGR	**Digorskoe uzhe**	**0.41**	**183**	⇓*i*	PG	**Pg**	**16 06 53.7**	**+0.2**
DIGR				*eS*		**Sg**	**16 06 59.2**	**+0.2**
DIGR	**Digorskoe uzhe**	**0.41**	**183**	*i*	Pg	**Pg**	**16 06 53.7**	**+0.2**
DIGR				*eSg*		**Sg**	**16 06 59.2**	**+0.2**
ARNR	**Ardon**	**0.51**	**104**	⇓*i*	PG	**Pb**	**16 06 55.8**	**-0.2**
ARNR				*i*	S	**Sb**	**16 07 03.7**	**+0.4**
ARNR	**Ardon**	**0.51**	**104**	*i*	Pg	**Pb**	**16 06 55.8**	**-0.2**
ARNR				*i*	Sg	**Sb**	**16 07 03.7**	**+0.4**
ZEI	**Tsey**	**0.56**	**157**	⇓*i*	PG	**Pg**	**16 06 55.8**	**-0.5**
ZEI				*eS*		**Sg**	**16 07 03.2**	**-0.6**
NEY	**Neytrino**	**0.65**	**265**	⇓*i*	PG	**Pb**	**16 06 58.6**	**+0.1**
NEY				*eS*		**Sb**	**16 07 07.4**	**0.0**
NEY	**Neytrino**	**0.65**	**265**	*i*	Pg	**Pb**	**16 06 58.6**	**+0.1**
NEY				*eSg*		**Sb**	**16 07 07.4**	**0.0**
PRTR	**Priterechnaya**	**0.66**	**48**	⇓*i*	PG	**Pb**	**16 06 59.0**	**+0.4**
PRTR				*i*	S	**Sn**	**16 07 09.5**	**-1.0**
PRTR	**Priterechnaya**	**0.66**	**48**	*i*	Pg	**Pb**	**16 06 59.0**	**+0.4**
PRTR				*i*	Sg	**Sn**	**16 07 09.5**	**-1.0**
BTKR	**Batakoyurt**	**0.69**	**84**	⇓*i*	PG	**Pb**	**16 06 59.2**	**+0.2**
BTKR				*eS*		**Sb**	**16 07 09.6**	**+1.2**
BTKR	**Batakoyurt**	**0.69**	**84**	*i*	Pg	**Pb**	**16 06 59.2**	**+0.2**
BTKR				*eSg*		**Sb**	**16 07 09.6**	**+1.2**
LACR	**Lac**	**0.70**	**133**	⇓*i*	PG	**Pg**	**16 06 58.4**	**-0.4**
LACR				*i*	S	**Sg**	**16 07 07.8**	**-0.2**
LACR	**Lac**	**0.70**	**133**	*i*	Pg	**Pg**	**16 06 58.4**	**-0.4**
LACR				*i*	Sg	**Sg**	**16 07 07.8**	**-0.2**
ONI	**Oni**	**0.72**	**189**	P		**Pb**	**16 06 60.0**	**+0.3**
ONI				S		**Sb**	**16 07 10.4**	**+0.9**
ONI	**Oni**	**0.72**	**189**	*e*	PG	**Pb**	**16 06 59.9**	**+0.3**
ONI				*eS*		**Sb**	**16 07 10.4**	**+0.9**
SHA1	**Shidzhatmaz**	**0.81**	**302**	⇓*e*	PG	**Pg**	**16 07 01.0**	**-0.1**
SHA1				*eS*		**Sb**	**16 07 12.5**	**+0.2**
SHA1	**Shidzhatmaz**	**0.81**	**302**	*e*	Pg	**Pg**	**16 07 01.0**	**-0.1**
SHA1				*eSg*		**Sb**	**16 07 12.5**	**+0.2**
VLKR	**Vladikavkaz**	**0.82**	**108**	*e*	PG	**Pb**	**16 07 01.5**	**+0.1**
VLKR				*eS*		**Sb**	**16 07 13.2**	**+0.8**
VLKR	**Vladikavkaz**	**0.82**	**108**	*e*	Pg	**Pb**	**16 07 01.5**	**+0.1**
VLKR				*eSg*		**Sb**	**16 07 13.2**	**+0.8**
BEYR	**Belyy Ugol+**	**0.91**	**321**	*i*	PG	**Pg**	**16 07 02.8**	**-0.1**
BEYR				*eS*		**Sb**	**16 07 15.5**	**+0.6**
BEYR	**Belyy Ugol+**	**0.91**	**321**	*i*	Pg	**Pg**	**16 07 02.8**	**-0.1**
BEYR				*eSg*		**Sb**	**16 07 15.5**	**+0.6**
TRKR	**Terskaya**	**0.92**	**63**	*e*	PG	**Pn**	**16 07 03.9**	**+0.1**
TRKR				*i*	S	**Sn**	**16 07 17.8**	**+1.0**
TRKR	**Terskaya**	**0.92**	**63**	*e*	Pg	**Pn**	**16 07 03.9**	**+0.1**
TRKR				*i*	Sg	**Sn**	**16 07 17.8**	**+1.0**
KIV	**Kislovodsk**	**0.93**	**315**	*i*	PG	**Pg**	**16 07 03.1**	**-0.2**
KIV				*i*	S	**Sb**	**16 07 16.5**	**+0.9**
KIV	**Kislovodsk**	**0.93**	**315**	*i*	Pg	**Pg**	**16 07 03.1**	**-0.2**
KIV				*i*	Sg	**Sb**	**16 07 16.5**	**+0.9**
KMGR	**Komgaron**	**0.95**	**105**	⇑*i*	PG	**Pn**	**16 07 04.5**	**+0.2**
KMGR				*eS*		**Sn**	**16 07 18.0**	**+0.2**
KMGR	**Komgaron**	**0.95**	**105**	*i*	Pg	**Pn**	**16 07 04.5**	**+0.2**
KMGR				*eSg*		**Sn**	**16 07 18.0**	**+0.2**
GUDG	**Gudauri**	**1.06**	**142**	P		**Pb**	**16 07 05.4**	**-0.1**
GUDG				S		**Sb**	**16 07 18.9**	**-0.3**
GUDG	**Gudauri**	**1.06**	**142**	P		**Pb**	**16 07 05.4**	**-0.1**
GUDG				S		**Sb**	**16 07 18.9**	**-0.3**
DOMR	**Dombai**	**1.45**	**270**	⇑*e*	PG	**Pb**	**16 07 12.2**	**+0.1**
DOMR				*eS*		**Sg**	**16 07 32.4**	**+0.5**
DOMR	**Dombai**	**1.45**	**270**	*e*	Pg	**Pb**	**16 07 12.2**	**+0.1**
DOMR				*eSg*		**Sg**	**16 07 32.4**	**+0.5**
TBLG	**Delisi**	**1.78**	**152**	P		**Pb**	**16 07 18.4**	**+0.7**
TBLG				S		**Sg**	**16 07 43.1**	**+0.4**
TBLG	**Delisi**	**1.78**	**152**	*e*	PN	**Pb**	**16 07 18.4**	**+0.7**
TBLG				*eS*		**Sg**	**16 07 43.0**	**+0.4**
TBLG	**Delisi**	**1.78**	**152**	P		**Pb**	**16 07 18.4**	**+0.7**
TBLG				*eSg*		**Sg**	**16 07 43.0**	**+0.4**
GOF	**Gofitskoye**	**1.80**	**347**	⇑*e*	PN	**Pb**	**16 07 17.9**	**-0.1**
GOF				*i*	S	**Sg**	**16 07 43.3**	**+0.2**
GOF					pmax	pmax		
	comp=Z,47nm,0.9s							
GOF	**Gofitskoye**	**1.80**	**347**	*e*	Pn	**Pb**	**16 07 17.9**	**-0.1**
	comp=Z,47nm,0.9s							
GOF				*i*	Sg	**Sg**	**16 07 43.3**	**+0.2**
DGRG	**David-gareji**	**2.27**	**144**	P		**Pb**	**16 07 26.3**	**+0.3**
DGRG				S		**Sg**	**16 07 58.0**	**-0.2**
DGRG	**David-gareji**	**2.27**	**144**	*e*	PN	**Pb**	**16 07 26.3**	**+0.3**
DGRG				*eS*		**Sg**	**16 07 58.0**	**-0.2**
DGRG	**David-gareji**	**2.27**	**144**	P		**Pb**	**16 07 26.3**	**+0.3**
DGRG				S		**Sg**	**16 07 58.0**	**-0.2**
DOPR	**Dopca**	**13.24**	**288**	⇓*i*	P	**P**	**16 10 01.8**	**-0.9**
ARR	**Arges**	**13.74**	**285**	⇑*i*	P	**P**	**16 10 05.8**	**-2.4**
VSU	**Vasula**	**18.45**	**331**	*e*	P	**Pn**	**16 11 01.4**	**+1.1**
VSU					pmax	pmax		
	comp=Z,9.0nm,0.9s							
BRVK	**Borovoye**	**20.18**	**52**	*e*	P	Pn	16 11 21.5	+0.4

WEL 11 16:09:33.7±0.3, 37°.69S×177°.47E, h108km±2km, ML3.8/18, 10C-16D, Error ellipse: s-maj=1.6km s-min=1.3km az=0.0, Off east coast of North Island

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
HAZ	**Te Kaha**	**0.26**	**105**	⇓	PN	Pn	16 09 48.5	-0.5
HAZ					SN	Sn	16 09 59.4	-1.1
WIZ	**White Island**	**0.27**	**306**		PN	Pn	16 09 49.1	0.0
PKGZ	**Pakihiroa**	**0.52**	**113**		PN	Pn	16 09 50.7	+0.2
TWGZ	**Tauwhareparae**	**0.64**	**140**	⇑	PN	Pn	16 09 51.8	+0.4
TWGZ					SN	Sn	16 10 05.4	+0.6
URZ	**Urewera**	**0.64**	**206**		PN	Pn	16 09 51.0	-0.3
URZ					AML	AML	16 10 04.5	
URZ					AML	AML	16 10 04.7	
MWZ	**Matawai**	**0.65**	**176**	⇑	PN	Pn	16 09 51.4	-0.1
MWZ					SN	Sn	16 10 04.9	0.0
MWZ					AML	AML	16 10 05.5	
MXZ	**Matakaoa Point**	**0.68**	**80**	⇑	PN	Pn	16 09 52.0	+0.3
MXZ					SN	Sn	16 10 05.3	+0.1
MXZ					AML	AML	16 10 09.3	
MARZ	**Manawahe**	**0.69**	**244**	⇓	PN	Pn	16 09 51.8	-0.1
EDRZ	**Edgecumbe**	**0.71**	**234**	⇓	PN	Pn	16 09 52.1	+0.1
PUZ	**Puketiti**	**0.73**	**122**	⇑	PN	Pn	16 09 52.1	-0.1
PUZ					SN	Sn	16 10 05.4	-0.7
PUZ					AML	AML	16 10 07.1	
OPRZ	**Ohinepanea**	**0.74**	**258**	⇓	PN	Pn	16 09 52.1	-0.1
WMGZ	**Waiomatatini S**	**0.76**	**100**	⇑	PN	Pn	16 09 52.6	+0.3
RAGZ	**Rawiri**	**0.81**	**183**	⇓	PN	Pn	16 09 53.0	+0.1
TKGZ	**Te Karaka**	**0.81**	**158**	⇑	PN	Pn	16 09 52.8	0.0
TARZ	**Mount Tarawera**	**0.94**	**234**	⇑	PN	Pn	16 09 54.6	+0.4
CNGZ	**Carnagh Statio**	**0.99**	**144**		PN	Pn	16 09 55.0	+0.4
RRRZ	**Republican Roa**	**0.99**	**229**		PN	Pn	16 09 54.7	0.0
KARZ	**Kaharoa**	**1.02**	**251**		PN	Pn	16 09 55.1	+0.1
RIGZ	**Rimuhau**	**1.04**	**167**		PN	Pn	16 09 55.1	-0.1
SNGZ	**Shannon Statio**	**1.10**	**185**	⇓	PN	Pn	16 09 55.6	-0.2
PRRZ	**Plateau Road**	**1.17**	**226**	⇓	PN	Pn	16 09 56.5	-0.1
ALRZ	**Allen Road**	**1.25**	**225**	⇓	PN	Pn	16 09 57.4	0.0
RAHZ	**Arahi**	**1.26**	**194**		PN	Pn	16 09 57.6	0.0
PRGZ	**Paritu Road**	**1.28**	**165**		PN	Pn	16 09 57.5	-0.3
WPRZ	**Whakapapatarin**	**1.32**	**231**	⇓	PN	Pn	16 09 58.6	+0.3
KNZ	**Kokohu**	**1.34**	**173**		PN	Pn	16 09 58.1	-0.4
WHHZ	**Waihua**	**1.40**	**187**		PN	Pn	16 09 59.1	0.0
MRHZ	**Matea Rd**	**1.41**	**216**	⇓	PN	Pn	16 09 59.0	-0.4
NMHZ	**Naumai**	**1.50**	**200**		PN	Pn	16 10 00.7	+0.3
MHGZ	**Mahia Peninsul**	**1.50**	**167**		PN	Pn	16 10 00.4	0.0
WHTZ	**Whakaora**	**1.54**	**230**		PN	Pn	16 10 01.5	+0.6
ARHZ	**Aropaoanui**	**1.62**	**193**	⇓	PN	Pn	16 10 01.6	-0.2
TLZ	**Tolley Road**	**1.65**	**247**	⇓	PN	Pn	16 10 02.7	+0.5
BKZ	**Black Stump Fm**	**1.66**	**207**		PN	Pn	16 10 01.8	-0.6
KUZ	**Kuaotunu**	**1.68**	**303**		PN	Pn	16 10 02.6	0.0
RITZ	**Rihia Road**	**1.81**	**224**		PN	Pn	16 10 04.3	+0.1
MCHZ	**McNeill Hill**	**1.85**	**199**		PN	Pn	16 10 04.3	-0.4
KWHZ	**Kaweka Forest**	**1.92**	**205**		PN	Pn	16 10 05.0	-0.6
MKAZ	**Moumakai**	**1.93**	**287**		PN	Pn	16 10 06.3	+0.7
CKHZ	**Cape Kidnapper**	**1.99**	**189**	⇑	PN	Pn	16 10 05.5	-0.9
OTVZ	**Oturere**	**2.04**	**223**		PN	Pn	16 10 07.0	-0.3
WTVZ	**West Tongariro**	**2.05**	**225**		PN	Pn	16 10 07.2	-0.1
BHHZ	**Black Hill Sta**	**2.11**	**211**		PN	Pn	16 10 07.2	-0.9
TUVZ	**Tukino**	**2.12**	**222**		PN	Pn	16 10 07.7	-0.6
KRHZ	**Kereru**	**2.13**	**203**		PN	Pn	16 10 06.9	-1.4
KAHZ	**Kahuranaki**	**2.15**	**192**		PN	Pn	16 10 07.7	-0.9
MOVZ	**Moawhango**	**2.18**	**218**		PN	Pn	16 10 07.9	-1.1
WNVZ	**Wahianoa**	**2.20**	**221**	⇑	PN	Pn	16 10 08.6	-0.7
HIZ	**Hauiti**	**2.22**	**247**		PN	Pn	16 10 10.3	+0.9
MTVZ	**Mangateitei**	**2.31**	**222**		PN	Pn	16 10 10.1	-0.5
PKVZ	**Pokaka**	**2.31**	**226**		PN	Pn	16 10 10.4	-0.2
PXZ	**Pawanui**	**2.39**	**191**	⇓	PN	Pn	16 10 09.7	-1.8
PNHZ	**Pukenui**	**2.43**	**204**	⇓	PN	Pn	16 10 10.5	-1.7
WPHZ	**Waipukurau**	**2.50**	**198**		PN	Pn	16 10 11.3	-1.8
TSZ	**Takapari Road**	**2.64**	**206**	⇓	PN	Pn	16 10 12.9	-2.0
PRHZ	**Porangahau**	**2.66**	**194**		PN	Pn	16 10 13.1	-1.9
DVHZ	**Dannevirke**	**2.80**	**201**	⇑	PN	Pn	16 10 14.4	-2.5
WAZ	**Wanganui**	**2.83**	**222**		PN	Pn	16 10 16.7	-0.7
ANWZ	**Angora Road**	**2.87**	**195**		PN	Pn	16 10 15.8	-2.1
POWZ	**Post Office Ro**	**3.01**	**206**		PN	Pn	16 10 17.4	-2.3
PRWZ	**Pori Road**	**3.09**	**202**		PN	Pn	16 10 18.5	-2.3
BFZ	**Birch Farm**	**3.14**	**197**		PN	Pn	16 10 18.6	-2.8
MRZ	**Mangatainoka R**	**3.31**	**206**	⇓	PN	Pn	16 10 20.8	-2.9
TIWZ	**Tintock**	**3.32**	**201**		PN	Pn	16 10 21.1	-2.8
CPWZ	**Castlepoint**	**3.36**	**197**		PN	Pn	16 10 22.2	-2.2
HOWZ	**Holdsworth Sta**	**3.54**	**205**		PN	Pn	16 10 23.5	-3.4
OGWZ	**Otaki Gorge**	**3.60**	**209**		PN	Pn	16 10 24.6	-2.9
KIW	**Kapiti Island**	**3.74**	**211**		PN	Pn	16 10 26.2	-3.2
MTW	**Mount Morrison**	**3.79**	**203**		PN	Pn	16 10 26.3	-3.8
CAW	**Cannon Point**	**3.89**	**208**		PN	Pn	16 10 27.9	-3.5
TRWZ	**Traveller**	**3.95**	**200**		PN	Pn	16 10 28.6	-3.7
PAWZ	**Paruwai Farm**	**4.01**	**203**		PN	Pn	16 10 29.1	-4.0
MSWZ	**Moikau Station**	**4.10**	**204**		PN	Pn	16 10 30.2	-4.1
DUWZ	**D'Urville Isla**	**4.15**	**220**		PN	Pn	16 10 31.5	-3.6
PLWZ	**Palliser**	**4.24**	**203**		PN	Pn	16 10 31.8	-4.4
TCW	**Tory Channel**	**4.30**	**214**		PN	Pn	16 10 33.3	-3.7
TUWZ	**Tuamarina**	**4.62**	**215**		PN	Pn	16 10 37.2	-4.1
BSWZ	**Blackbirch Sta**	**4.88**	**213**		PN	Pn	16 10 40.9	-4.0
QRZ	**Quartz Range**	**4.95**	**229**		PN	Pn	16 10 42.3	-3.4
THZ	**Tophouse**	**5.38**	**219**		PN	Pn	16 10 47.3	-4.3
DSZ	**Denniston Nort**	**5.96**	**225**		PN	Pn	16 10 54.9	-4.5
OXZ	**Oxford**	**6.99**	**215**		PN	Pn	16 11 07.6	-5.7
MQZ	**McQueen's Vall**	**7.04**	**210**		PN	Pn	16 11 07.5	-6.4
ODZ	**Otahua Downs**	**8.96**	**213**		PN	Pn	16 11 33.9	-6.1

JMA 11 16:12:00.5±0.3, 36°.93N×140°.64E, h4km±2km, M3.0, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op		ISC	h m s	ISC
JHO	**Hitachi**	**0.32**	**190**	P		Pg	16 12 06.9	+0.2
JYT	**Yasato**	**0.79**	**207**	P		Pg	16 12 15.7	+0.1

IDC 11 16:12:45.8±2.4, 36°.90N×142°.24E, h0km, mb3.3/4, mb1 3.5/6, mb1mx3.3/41, mbtmp3.4/6, ML3.5/2, Error ellipse: s-maj=58.3km s-min=25.5km az=61.0, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op		ISC	h m s	ISC
MJAR	**Matsushiro Arr**	**3.26**	**265**	P		Pn	16 13 36.8	-1.4
	5.0nm,0.3s,baz=76,slow=22,SNR=8.4							
MAT	**Matsushiro**	**3.26**	**265**	P		Pn	16 13 36.9	-1.3
JHJ	**

MJAR	**Matsushiro Arr**	**3.10 281**	Pn		**Pn**		**16 16 34.5**	**+0.6**
	9.0nm,0.3s,baz=103,slow=8.2,SNR=12							
MAJO	**Matsushiro**	**3.10 281**	*e*Pn		**Pn**		**16 16 34.2**	**+0.2**
MAT	**Matsushiro**	**3.10 281**	P		**Pn**		**16 16 34.4**	**+0.4**
MAT			*e*S		**Sn**		**16 17 11.9**	**+1.6**
JHJ	**Hachijo jima 2**	**3.42 213**	Pn		**Pn**		**16 16 38.0**	**-0.2**
	37nm,0.3s,baz=318,slow=9.2,SNR=6.7							
JHJ			Sn		**Sn**		**16 17 17.6**	**-0.4**
	67nm,0.3s,baz=89,slow=23,SNR=8.5							
ERM	**Erimo**	**6.06 8**	*e*Pn		**Pn**		**16 17 13.7**	**-0.8**
CBIJ	**Chichi jima**	**8.89 179**	*e*Pn		**Pn**		**16 17 51.6**	**-2.0**
USRK	**Ussuriysk Ar.**	**11.19 320**	Pn		**Pn**		**16 18 25.2**	**+0.3**
	0.2nm,0.3s,baz=132,slow=16,SNR=4.4							
KSRS	**Korea Array**	**11.38 281**	Pn		**Pn**		**16 18 28.9**	**+1.4**
	0.1nm,0.3s,baz=90,slow=13,SNR=6.4							
KSAR	**Wonju Array Be**	**11.41 281**	Pn		**Pn**		**16 18 28.9**	**+0.9**
YAK	**Yakutsk**	**27.16 347**	P		**P**		**16 21 26.4**	**-1.3**
	5.1nm,0.4s,baz=304,slow=2.9,SNR=4.9							
SEY	**Seymchan**	**27.70 10**	P		**P**		**16 21 34.5**	**+1.9**
	0.2nm,0.3s,baz=23,slow=16,SNR=2.9							
ENH	**Enshi**	**27.73 267**	*e*P		**P**		**16 21 31.8**	**-1.4**
	7.1nm,0.7s							
ULN	**Ulaanbaatar**	**28.32 306**	*e*P		**P**		**16 21 38.5**	**0.0**
SONM	**Songino Array**	**28.75 305**	P		**P**		**16 21 42.5**	**+0.3**
	3.2nm,0.6s,baz=106,slow=8.4,SNR=19							
CHTO	**Chiang Mai**	**41.51 257**	P		**P**		**16 23 32.5**	**+0.4**
CMAR	**Chiang Mai Arr**	**41.70 257**	P		**P**		**16 23 33.1**	**-0.6**
	0.4nm,0.7s,baz=53,slow=6.6,SNR=5.9							
ZALV	**Zalesovo Beam**	**42.95 313**	P		**P**		**16 23 43.6**	**+0.3**
	1.6nm,0.6s,baz=92,slow=7.1,SNR=8.9							
MKAR	**Makanchi Array**	**45.06 303**	P		**P**		**16 24 00.7**	**+0.2**
	1.9nm,0.7s,baz=87,slow=9.0,SNR=17							
KURK	**Kurchatov**	**46.93 309**	*e*P		**P**		**16 24 14.8**	**-0.2**
	7.7nm,0.7s							
ILAR	**Eielson Array**	**50.11 32**	P		**P**		**16 24 40.2**	**+0.9**
	0.3nm,0.7s,baz=267,slow=5.0,SNR=4.4							
BRVK	**Borovoye**	**51.66 313**	*e*P		**P**		**16 24 51.4**	**+0.2**
	1.7nm,0.6s							
WRAB	**Tennant Creek**	**56.11 189**	*e*P		**P**		**16 25 23.6**	**-0.4**
	2.6nm,0.9s							
WRA	**Warramunga Arr**	**56.12 189**	P		**P**		**16 25 24.7**	**+0.6**
	1.0nm,0.6s,baz=7.4,slow=7.1,SNR=6.4							
ABKAR	**Akbulak array**	**58.95 311**	*e*P		**P**		**16 25 43.6**	**-0.2**
	1.2nm,0.5s							
ASAR	**Alice Springs**	**59.85 189**	P		**P**		**16 25 50.2**	**0.0**
	0.4nm,0.6s,baz=13,slow=9.2,SNR=8.0							
YKA	**Yellowknife Ar**	**64.45 30**	P		**P**		**16 26 20.4**	**-0.2**
	0.1nm,0.4s,baz=294,slow=5.9,SNR=2.7							
FINES	**FINESS Array B**	**69.93 333**	P		**P**		**16 26 55.2**	**-0.2**
	2.3nm,0.9s,baz=87,slow=9.7,SNR=4.8							
HFS	**Hagfors**	**75.20 336**	P		**P**		**16 27 26.5**	**-0.3**
	1.6nm,0.9s,baz=33,slow=7.8,SNR=2.9							
NB2	**NORSAR Subarra**	**75.30 338**	P		**P**		**16 27 27.9**	**+0.5**
	comp=Z,0.6nm,0.6s,baz=40,slow=5.9							
NOA	**NORSAR Array B**	**75.30 338**	P		**P**		**16 27 27.8**	**+0.3**
	comp=Z,1.2nm,0.8s,baz=40,slow=5.7,SNR=3.9							
AKASG	**Malin Array Be**	**75.39 323**	P		**P**		**16 27 27.4**	**-0.6**
	comp=Z,0.9nm,0.5s,baz=46,slow=6.0,SNR=10							

*JMA **11** 16:19:19.7,37.10N×140.66E,h15km±1km,M4.0*
JMA Felt III J1.
*IDC **11** 16:19:21.2±0.7,36.05N×141.96E,h0km,mb4.0/23,*
mb1 4.1/27,mb1mx4.0/52,mbtmp4.0/27,ML3.9/3,MS3.4/5,
Ms1 3.4/5,ms1mx3.0/49,Error ellipse: s-maj=15.6km
s-min=14.6km az=114.0
*ISCJB **11** 16:19:23.3±0.5,36.12N±0.04×141.85E±0.07,h23km,*
mb4.1/44,MS3.8/5,Error ellipse: s-maj=9.2km
s-min=5.4km az=24.8
*MOS **11** 16:19:23.7±0.8,36.10N×141.84E,h27km,mb4.5/28,Error*
ellipse: s-maj=12.4km s-min=7.2km az=125.5
*NEIC **11** 16:19:30.9±0.9,36.42N×141.61E,h52km±8km,mb4.3/13,*
Error ellipse: s-maj=10.1km s-min=8.7km az=138.0
NEIC Recorded [3 JMA] in Fukushima.

ISC 11 16:19:24.8±0.6,36.15N±0.06×141.76E±0.07,h23km,n95,
σ1§91/95,mb4.2/44,MS3.6/5,3D,Near east coast of
eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JHO	**Hitachi**	**1.06**	**296**	⇓P	Pn	16 19 29.2	-15
JHO				S	Sn	16 19 35.7	-23
ONAJ	**Iwakimizuishiy**	**1.22**	**321**	⇓P	Pn	16 19 23.1	-23
ONAJ				S	Sn	16 19 25.4	-37
JFT	**Otama**	**1.78**	**320**	⇓P	Pn	16 19 29.6	-25
JFT				S	Sn	16 19 36.3	-40
MJAR	**Matsushiro Arr**	**2.89**	**279**	Pn	**Pn**	**16 20 11.7**	**+2.2**
	24nm,0.3s,baz=103,slow=8.5,SNR=20						
MAT	**Matsushiro**	**2.89**	**279**	P	**Pn**	**16 20 12.4**	**+2.9**
MAT				*e*S	**Sb**	**16 20 49.9**	**-0.8**
JHJ2	**Mitsune**	**3.43**	**208**	*e*Pn	**Pn**	**16 20 18.3**	**+1.4**
JHJ	**Hachijo jima 2**	**3.44**	**209**	Pn	**Pn**	**16 20 17.1**	**+0.1**
	58nm,0.3s,baz=249,slow=21,SNR=10						
JHJ				Sn	**Sn**	**16 20 55.7**	**-1.3**
	53nm,0.3s,baz=66,slow=23,SNR=7.6						
INU	**Inuyama**	**3.94**	**260**	*e*Pn	Pn	16 20 15.6	-8.2
ERM	**Erimo**	**5.95**	**10**	*e*P	**Pn**	**16 20 53.5**	**+2.0**
ERM				*e*		16 22 00.3	
ERM	**Erimo**	**5.95**	**10**	*e*Pn	**Pn**	**16 20 53.5**	**+2.0**
ERM				*e*Sn	**Sn**	**16 22 00.3**	**+1.4**
YUK	**Yuzh-Kuril'sk**	**8.47**	**20**	P	**Pn**	**16 21 22.5**	**-3.6**
YUK				S	**Sn**	**16 22 54.6**	**-6.3**
YUK				pmax	pmax		
	comp=Z,55nm,0.3s						
SHO	**Shikotan**	**8.63**	**25**	*e*P	Pn	16 21 22.4	-5.8
CBIJ	**Chichi jima**	**9.04**	**178**	*e*Pn	Pn	16 21 44.2	+10
KUR	**Kuril'sk**	**10.18**	**25**	P	Pn	16 21 44.4	-5.1
KUR				pmax	pmax		
	comp=N,8.0nm,0.5s						
KUR				pmax	pmax		
	comp=Z,11nm,0.5s						
KUR				pmax	pmax		
	comp=E,5.0nm,0.2s						
USRK	**Ussuriysk Ar.**	**10.97**	**320**	Pn	**Pn**	**16 22 02.8**	**+2.5**
	comp=E,0.2nm,0.3s,baz=152,slow=13,SNR=4.0						
USRK				LR	LR	16 26 09.6	
	comp=E,182nm,19.5s,baz=119,slow=37						
KSRS	**Korea Array**	**11.17**	**281**	Pn	**Pn**	**16 22 05.2**	**+2.2**
	comp=E,0.2nm,0.3s,baz=94,slow=13,SNR=7.7						
KSRS				LR	LR	16 26 21.5	
	comp=E,185nm,18.1s,baz=75,slow=37						
KSAR	**Wonju Array Be**	**11.20**	**281**	P	**Pn**	**16 22 05.2**	**+1.8**
KSAR	**Wonju Array Be**	**11.20**	**281**	Pn	**Pn**	**16 22 05.2**	**+1.8**
KLR	**Kul'dur**	**14.98**	**334**	Pn	**Pn**	**16 22 54.0**	**-0.9**
	comp=E,0.1nm,0.3s,baz=137,slow=18,SNR=2.7						
KLR				LR	LR	16 28 48.1	
	comp=E,90nm,18.1s,baz=134,slow=37						
BJI	**Beijing**	**20.48**	**289**	P	**P**	**16 23 56.4**	**-4.5**
BJI				pmax	pmax		
	comp=Z,4.0nm,0.6s						
BJI				pmax	pmax		
	comp=Z,150nm,4.9s						
BJI				LR	LR		
	comp=N,130nm,11.4s						
BJI				LR	LR		
	comp=E,130nm,13.2s						
HHC	**Hu-ho-hao-te**	**24.03**	**290**	*e*P	**P**	**16 24 34.5**	**-3.6**
HHC				sP	**pP**	**16 24 44.8**	**-0.1**
HHC				S	S	16 28 40.4	-14
HHC				pmax	pmax		
	comp=Z,29nm,0.7s						
HHC				pmax	pmax		
	comp=Z,100nm,6.0s						
HHC				LR	LR		
	comp=N,360nm,11.1s						
HHC				LR	LR		
	comp=E,360nm,12.3s						
HHC				LR	LR		
	comp=Z,350nm,12.3s						
XAN	**Xi'an**	**26.88**	**275**	P	**P**	**16 25 04.4**	**+0.4**
XAN				pP	**pP**	**16 25 10.0**	**-0.8**
XAN				pmax	pmax		
	comp=Z,8.0nm,0.8s						
YAK	**Yakutsk**	**26.99**	**347**	P	**P**	**16 25 05.2**	**+0.7**
	comp=Z,6.0nm,0.4s,baz=351,slow=7.5,SNR=5.9						
SEY	**Seymchan**	**27.60**	**10**	P	**P**	**16 25 12.0**	**+2.0**
	comp=Z,0.4nm,0.4s,baz=221,slow=19,SNR=3.3						
ULN	**Ulaanbaatar**	**28.08**	**305**	*e*P	**P**	**16 25 14.9**	**+0.1**
ULN				pmax	pmax		
	comp=Z,4.0nm,0.8s						
ULN	**Ulaanbaatar**	**28.08**	**305**	*e*P	**P**	**16 25 14.9**	**+0.1**
	comp=Z,4.1nm,0.8s						
BOD	**Bodaibo**	**28.42**	**328**	*e*P	**P**	**16 25 17.3**	**-0.1**
BOD				pmax	pmax		
	comp=Z,5.0nm,1.5s						
SONA1	**Songino Array**	**28.51**	**305**	*e*P	**P**	**16 25 19.5**	**+0.9**
SONM	**Songino Array**	**28.51**	**305**	P	**P**	**16 25 20.3**	**+1.7**
	comp=Z,4.6nm,0.6s,baz=104,slow=8.0,SNR=22						
SONM				LR	LR	16 36 57.2	
	comp=Z,89nm,19.6s,baz=114,slow=37						
LZH	**Lanzhou**	**30.50**	**281**	*e*P	**P**	**16 25 34.0**	**-2.3**
LZH				pP	**pP**	**16 25 37.0**	**-6.2**
LZH				sP	sP	16 25 38.7	-7.4
LZH				*e*PP	**PnPn**	**16 26 29.3**	**-6.0**
LZH				pmax	pmax		
	comp=Z,18nm,1.0s						
LZH				pmax	pmax		
	comp=Z,43nm,5.4s						
LZH				LR	LR		
	comp=N,220nm,12.6s						
LZH				LR	LR		
	comp=E,250nm,13.0s						
LZH				LR	LR		
	comp=Z,280nm,16.4s						
ZAK	**Zakamensk**	**31.04**	**309**	*e*P	**P**	**16 25 42.3**	**+1.5**
ZAK				pmax	pmax		
	comp=Z,5.0nm,1.1s						
TLY	**Talaya**	**31.12**	**312**	P	**P**	**16 25 42.9**	**+1.4**
	comp=Z,4.0nm,0.7s,baz=110,slow=6.7,SNR=4.9						
TLY	**Talaya**	**31.12**	**312**	*e*P	**P**	**16 25 42.4**	**+1.0**
TLY				pmax	pmax		
	comp=Z,6.0nm,0.8s						
TLY	**Talaya**	**31.12**	**312**	*e*P	**P**	**16 25 42.4**	**+1.0**
	comp=Z,5.5nm,0.8s						
CD2	**Chengdu**	**31.96**	**272**	P	**P**	**16 25 46.0**	**-3.1**
CD2				pmax	pmax		
	comp=Z,1.0nm,0.5s						
KMI	**Kunming**	**35.11**	**263**	P	**P**	**16 26 17.0**	**+0.2**
KMI				pmax	pmax		
	comp=Z,13nm,0.5s						
KMI				pmax	pmax		
	comp=Z,130nm,9.5s						
TIXI	**Tiksi**	**36.19**	**353**	P	**P**	**16 26 26.4**	**+1.1**
	comp=Z,0.8nm,0.3s,baz=134,slow=2.4,SNR=3.8						
CHTO	**Chiang Mai**	**41.35**	**257**	*e*P	**P**	**16 27 10.4**	**+1.2**
CHTO				pmax	pmax		
	comp=Z,11nm,1.8s						
CHTO	**Chiang Mai**	**41.35**	**257**	*e*P	**P**	**16 27 10.4**	**+1.2**
	comp=Z,10nm,1.8s						
WMQ	**Urumqi**	**41.49**	**298**	*e*P	**P**	**16 27 10.2**	**+0.1**
WMQ				pP	**pP**	**16 27 14.3**	**-2.8**
WMQ				pmax	pmax		
	comp=Z,3.0nm,0.6s						
CMAR	**Chiang Mai Arr**	**41.55**	**257**	P	**P**	**16 27 11.0**	**+0.2**
	comp=Z,0.6nm,0.7s,baz=52,slow=5.8,SNR=8.4						
CM01	**Chiang Mai Arr**	**41.56**	**256**	*e*P	**P**	**16 27 09.6**	**-1.3**
ZAA0	**Zalesovo Array**	**42.71**	**313**	*e*P	**P**	**16 27 20.7**	**+0.9**
ZALV	**Zalesovo Beam**	**42.71**	**313**	P	**P**	**16 27 21.6**	**+1.8**
	comp=Z,2.9nm,0.6s,baz=90,slow=6.5,SNR=13						
NVS	**Novosibirsk**	**43.65**	**314**	*e*P	**P**	**16 27 27.5**	**+0.1**
NVS				pmax	pmax		
	comp=E,5.0nm,1.3s						
NVS				pmax	pmax		
	comp=Z,8.0nm,1.3s						
MKAR	**Makanchi Array**	**44.82**	**303**	P	**P**	**16 27 38.6**	**+1.7**
	comp=Z,2.8nm,0.7s,baz=87,slow=9.3,SNR=23						
MKAR	**Makanchi Array**	**44.82**	**303**	*e*P	**P**	**16 27 38.0**	**+1.1**
MAKZ	**Makanchi**	**45.03**	**303**	*e*P	**P**	**16 27 40.1**	**+1.5**
MAKZ				pmax	pmax		
	comp=Z,4.0nm,0.7s						
MAKZ	**Makanchi**	**45.03**	**303**	*e*P	**P**	**16 27 40.1**	**+1.5**
	comp=Z,3.5nm,0.7s						
TAPN	**Taplejung**	**46.29**	**275**	*e*P	**P**	**16 27 48.9**	**-0.2**
	comp=Z,8.5nm,0.5s						
KURK	**Kurchatov**	**46.70**	**309**	*e*P	**P**	**16 27 52.6**	**+1.0**
KURK				pmax	pmax		
	comp=Z,14nm,1.3s						
KURK	**Kurchatov**	**46.70**	**309**	*e*P	**P**	**16 27 52.6**	**+1.0**
	comp=Z,14nm,1.3s						
ODAN	**Odare**	**46.75**	**275**	*e*P	**P**	**16 27 53.9**	**+1.2**
	comp=Z,10nm,0.6s						
KURBB	**Kurchatov Arra**	**46.76**	**309**	P	**P**	**16 27 53.5**	**+1.4**
	comp=Z,4.8nm,0.5s,baz=82,slow=7.7,SNR=33						
RAMN	**Ramite**	**47.35**	**275**	*e*P	**P**	**16 27 58.7**	**+1.3**
	comp=Z,36nm,0.7s						
GUN	**Gumba**	**47.52**	**277**	*e*P	**P**	**16 28 00.2**	**+1.4**
	comp=Z,23nm,0.9s						
KKN	**Kakani**	**48.06**	**277**	*e*P	**P**	**16 28 04.0**	**+1.2**
	comp=Z,14nm,0.9s						
GKN	**Gorkha**	**48.48**	**277**	*e*P	**P**	**16 28 07.5**	**+1.5**
KOLN	**Koldanda**	**49.41**	**278**	*e*P	**P**	**16 28 15.0**	**+1.8**
PYUN	**Piuthan**	**49.76**	**278**	*e*P	**P**	**16 28 17.8**	**+1.9**
ILAR	**Eielson Array**	**50.09**	**32**	P	**P**	**16 28 17.2**	**-0.4**
	comp=Z,1.1nm,0.9s,baz=263,slow=6.6,SNR=5.4						
TKM2	**Tokmak 2**	**50.30**	**299**	*e*P	**P**	**16 28 21.7**	**+2.0**
TKM2				pmax	pmax		
	comp=Z,4.0nm,0.7s						
TKM2	**Tokmak 2**	**50.30**	**299**	*e*P	**P**	**16 28 21.7**	**+2.0**
	comp=Z,3.7nm,0.7s						
AAK	**Ala-Archa**	**51.16**	**299**	P	**P**	**16 28 27.7**	**+1.5**
	comp=Z,1.7nm,0.7s,baz=153,slow=5.2,SNR=6.7						
AAK	**Ala-Archa**	**51.16**	**299**	*e*P	**P**	**16 28 27.5**	**+1.3**
	comp=Z,1.9nm,0.8s						
BVAR	**Borovoye Array**	**51.37**	**313**	P	**P**	**16 28 28.4**	**+1.0**
	comp=Z,1.5nm,0.7s,baz=73,slow=6.7,SNR=8.8						
BVAR	**Borovoye Array**	**51.37**	**313**	P	**P**	**16 28 28.4**	**+1.0**
BVAR				pmax	pmax		
	comp=Z,1.0nm,0.6s						
BRVK	**Borovoye**	**51.43**	**313**	*e*P	**P**	**16 28 28.2**	**+0.4**
BRVK				pmax	pmax		
	comp=Z,4.0nm,1.0s						
BRVK	**Borovoye**	**51.43**	**313**	*e*P	**P**	**16 28 28.2**	**+0.4**
	comp=Z,4.0nm,1.0s						
ZRNK	**Zerenda**	**52.20**	**313**	*e*P	**P**	**16 28 34.4**	**+0.8**
ZRNK				pmax	pmax		
	comp=Z,8.0nm,1.4s						
ZRNK	**Zerenda**	**52.20**	**313**	*e*P	**P**	**16 28 34.4**	**+0.8**
	comp=Z,8.3nm,1.4s						
KKAR	**Karatay Array**	**53.81**	**301**	*e*P	**P**	**16 28 47.5**	**+1.8**
KKAR				pmax	pmax		
	comp=Z,1.0nm,0.4s						
KKAR	**Karatay Array**	**53.81**	**301**	*e*P	**P**	**16 28 47.5**	**+1.8**
	comp=Z,0.9nm,0.4s						
WRA	**Warramunga Arr**	**56.23**	**188**	P	**P**	**16 29 02.5**	**-0.7**
	comp=Z,2.5nm,0.8s,baz=6.4,slow=7.2,SNR=17						
ARU	**Arti**	**57.20**	**319**	P	**P**	**16 29 10.5**	**+0.7**
ARU	**Arti**	**57.20**	**319**	*e*P	**P**	**16 29 10.7**	**+1.0**
	comp=Z,7.5nm,1.2s						
ABKAR	**Akbulak array**	**58.72**	**311**	*e*P	**P**	**16 29 21.4**	**+0.9**
AS31	**Alice Springs**	**59.96**	**188**	*e*P	P	16 29 38.1	+8.8
	comp=Z,0.8nm,0.6s						
ASAR	**Alice Springs**	**59.96**	**188**	P	**P**	**16 29 29.2**	**-0.1**
	comp=Z,0.7nm,0.6s,baz=7.7,slow=7.6,SNR=11						
YKA	**Yellowknife Ar**	**64.43**	**30**	P	**P**	**16 29 59.9**	**+1.1**
	comp=Z,0.4nm,0.8s,baz=300,slow=6.6,SNR=5.5						
FINES	**FINESS Array B**	**69.72**	**333**	P	**P**	**16 30 33.5**	**+1.0**
	comp=Z,1.4nm,0.8s,baz=62,slow=8.9,SNR=4.0						
KBZ	**Khabaz**	**71.69**	**311**	P	**P**	**16 30 45.2**	**+0.5**
	comp=Z,1.6nm,0.9s,baz=211,slow=5.9,SNR=3.4						
NB2	**NORSAR Subarra**	**75.10**	**337**	P	**P**	**16 31 05.8**	**+1.2**
	comp=Z,0.6nm,0.6s,baz=40,slow=5.9						
NOA	**NORSAR Array B**	**75.10**	**337**	P	**P**	**16 31 05.9**	**+1.3**
	comp=Z,2.3nm,0.9s,baz=39,slow=5.8,SNR=4.7						
AKASG	**Malin Array Be**	**75.16**	**323**	P	**P**	**16 31 05.8**	**+0.7**
	comp=Z,2.1nm,0.7s,baz=45,slow=6.1,SNR=15						
KIEV	**Kiev**	**75.17**	**323**	*e*P	**P**	**16 31 05.6**	**+0.5**
KIEV				pmax	pmax		
	comp=Z,5.0nm,1.2s						
KIEV	**Kiev**	**75.17**	**323**	*e*P	**P**	**16 31 05.6**	**+0.5**
	comp=Z,5.4nm,1.2s						
NVAR	**Mina Array Bea**	**75.29**	**53**	P	**P**	**16 31 04.3**	**-2.1**
	comp=Z,0.1nm,0.3s,baz=289,slow=5.6,SNR=2.3						
ELK	**Elko**	**75.90**	**50**	LR	LR	17 01 47.0	
	comp=Z,28nm,21.4s,baz=314,slow=34						
PDAR	**Pinedale Array**	**78.08**	**45**	P	**P**	**16 31 23.9**	**+1.8**
	comp=Z,0.5nm,0.8s,baz=289,slow=4.5,SNR=3.4						
BRTR	**Keskin Array B**	**79.64**	**312**	P	**P**	**16 31 31.2**	**+0.6**
	comp=Z,0.9nm,0.6s,baz=58,slow=3.1,SNR=4.8						
GERES	**GERESS Array B**	**83.60**	**328**	P	**P**	**16 31 51.4**	**+0.2**
	comp=Z,0.2nm,0.3s,baz=321,slow=1.9,SNR=3.7						
TXAR	**Lajitas Array**	**90.44**	**53**	P	**P**	**16 32 24.7**	**-0.2**
	comp=Z,0.1nm,0.4s,baz=146,slow=38,SNR=2.6						
VNA3	**Neumayer Olymp**	**141.79**	**194**	PKP	**PKPdf**	**16 38 52.6**	**-0.8**
VNA1	**Neumayer--Stat**	**141.95**	**196**	PKP	**PKPdf**	**16 38 56.9**	**+3.3**

*JMA **11** 16:23:46.7,37.00N×140.67E,h12km±1km,M2.6*
*ISCJB **11** 16:23:48.6±1.9,37.04N±0.08×140.9E±0.1,h5km±12km,*
mb3.5/4,Error ellipse: s-maj=16.5km s-min=11.8km
az=152.4

*IDC **11** 16:23:49.3±2.3,37.07N×141.03E,h0km,mb3.6/4,*
mb1 3.7/7,mb1mx3.4/49,mbtmp3.6/7,ML2.9/3,Error
ellipse: s-maj=56.2km s-min=22.5km az=63.0

ISC 11 16:23:50.4±2.7,37.05N±0.10×140.8E±0.1,h0km±22km,n9,
σ1§24/11,mb3.6/4,Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.05**	**352**	P	**Pg**	**16 23 50.3**	**-1.1**
ONAJ				S	**Sg**	**16 23 52.8**	**+0.7**
JHO	**Hitachi**	**0.48**	**204**	P	Pg	16 23 54.3	-5.3
MJAR	**Matsushiro Arr**	**2.15**	**257**	Pn	**Pn**	**16 24 27.8**	**+0.3**
	10nm,0.3s,baz=81,slow=16,SNR=2.6						
MJAR				Sn	**Sn**	**16 24 54.1**	**-0.8**
	18nm,0.3s,baz=79,slow=19,SNR=5.1						
JHJ	**Hachijo jima 2**	**4.01**	**192**	Pn	**Pn**	**16 24 54.6**	**+1.5**
	6.5nm,0.3s,baz=274,slow=24,SNR=3.6						
JHJ				Sn	**Sn**	**16 25 40.5**	**-0.3**
	13nm,0.3s,baz=66,slow=18,SNR=3.7						
USRK	**Ussuriysk Ar.**	**9.79**	**320**	Pn	**Pn**	**16 26 14.2**	**+1.7**
	0.1nm,0.3s,baz=132,slow=13,SNR=2.4						
SONM	**Songino Array**	**27.37**	**304**	P	**P**	**16 29 37.1**	**-0.4**
	0.2nm,0.3s,baz=107,slow=9.7,SNR=2.7						
MKAR	**Makanchi Array**	**43.70**	**302**	P	**P**	**16 31 57.2**	**+0.1**
	0.2nm,0.6s,baz=96,slow=8.5,SNR=3.5						
WRA	**Warramunga Arr**	**57.01**	**187**	P	**P**	**16 33 36.5**	**-1.5**
	1.1nm,0.8s,baz=2.9,slow=7.3,SNR=7.9						
ASAR	**Alice Springs**	**60.74**	**187**	P	**P**	**16 34 03.2**	**-0.7**
	0.7nm,0.8s,baz=16,slow=4.9,SNR=6.9						

JMA 11 16:23:52.5,36.98N×140.70E,h11km±1km,M3.8,1C,Near
east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.14**	**33**	P	Pg	16 23 56.0	+0.1
ONAJ				S	Sg	16 23 58.3	-0.1
JHO	**Hitachi**	**0.38**	**196**	P	Pg	16 24 00.0	-0.1
JHO				S	Sg	16 24 05.5	+0.3
JFT	**Otama**	**0.61**	**332**	⇑P	Pg	16 24 04.5	+0.1
JFT				S	Sg	16 24 12.8	+0.4
JYT	**Yasato**	**0.85**	**209**	P	Pg	16 24 08.5	-0.5
JYT				S	Sg	16 24 19.6	-0.5

*JMA **11** 16:30:22.8±0.2,37.66N×142.01E,h13km±2km,M3.8*
*IDC **11** 16:30:22.7±2.3,37.33N×142.22E,h0km,mb3.5/3,*
mb1 3.7/5,mb1mx3.3/49,mbtmp3.6/5,ML3.3/2,Error
ellipse: s-maj=49.2km s-min=28.0km az=71.0

ISC 11 16:30:22.6±2.0,37.62N±0.05×141.94E±0.09,h12km±12km,
n11,σ1§29/17,mb3.7/3,Near east coast of eastern
Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JMM	**Marumori**	**0.94**	**285**	P	**Pn**	**16 30 41.3**	**-0.3**
JMM				S	**Sg**	**16 30 53.9**	**+1.0**
JIO	**Ouri**	**0.95**	**331**	P	**Pb**	**16 30 40.3**	**-0.7**
JIO				*e*S	**Sg**	**16 30 53.3**	**0.0**
JOU	**Okura**	**1.25**	**307**	P	**Pg**	**16 30 46.4**	**-0.2**
JOU				S	**Sb**	**16 31 02.7**	**+0.5**
JFT	**Otama**	**1.27**	**266**	P	**Pg**	**16 30 47.5**	**+0.4**
JFT				S	**Sn**	**16 31 04.6**	**+1.3**
JHO	**Hitachi**	**1.49**	**228**	P	**Pb**	**16 30 50.0**	**-0.2**
JHO				S	**Sb**	**16 31 09.5**	**+0.5**
MJAR	**Matsushiro Arr**	**3.17**	**251**	Pn	**Pn**	**16 31 14.3**	**+2.0**
	2.4nm,0.3s,baz=79,slow=16,SNR=8.0						
MAT	**Matsushiro**	**3.17**	**251**	P	**Pb**	**16 31 15.8**	**-3.1**
MAT				S	**Sb**	**16 31 56.2**	**-1.3**
JHJ	**Hachijo jima 2**	**4.83**	**202**	Pn	**Pn**	**16 31 36.0**	**+1.0**
	4.1nm,0.3s,baz=37,slow=20,SNR=2.8						
JHJ				Sn	**Sn**	**16 32 30.0**	**-0.9**
	7.7nm,0.3s,baz=77,slow=19,SNR=2.1						
MKAR	**Makanchi Array**	**44.16**	**302**	P	P	16 38 36.0	+4.9
	0.4nm,0.9s,baz=86,slow=7.5,SNR=3.1						
WRA	**Warramunga Arr**	**57.70**	**188**	P	**P**	**16 40 12.5**	**-0.6**
	1.1nm,0.8s,baz=4.0,slow=7.3,SNR=5.1						
ASAR	**Alice Springs**	**61.43**	**188**	P	**P**	**16 40 39.4**	**+0.6**
	0.4nm,0.6s,baz=12,slow=5.7,SNR=4.6						

*ISCJB **11** 16:32:21.2±0.8,22.24S±0.09×179.6W±0.1,h592km,*
mb3.7/11,Error ellipse: s-maj=17.6km s-min=12.3km
*az

STKA	**Stephens Creek**	**44.17**	**131**	P		**P**	**16 46 30.9**	**+1.9**
	2.5nm,0.7s,baz=301,slow=8.3,SNR=6.8							
MKAR	**Makanchi Array**	**55.56**	**343**	P		**P**	**16 47 55.6**	**+0.3**
	0.3nm,0.4s,baz=141,slow=9.1,SNR=8.2							
KURBB	**Kurchatov Arra**	**60.11**	**342**	P		**P**	**16 48 26.4**	**-0.8**
	0.2nm,0.2s,baz=160,slow=6.7,SNR=2.3							
ZALV	**Zalesovo Beam**	**61.50**	**348**	P		**P**	**16 48 36.0**	**-0.6**
	0.5nm,0.3s,baz=137,slow=4.1,SNR=3.1							
TXAR	**Lajitas Array**	**145.35**	**44**	PKP		**PKPbc**	**16 57 57.7**	**-0.7**
	0.2nm,0.5s,baz=294,slow=0.9,SNR=3.3							

JMA 11 16:40:01.6, 37.00N×140.69E, h5km±1km, M2.7, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.13**	**40**	P	Pg	16 40 04.5	+0.1
ONAJ				S	Sg	16 40 06.6	+0.4
JHO	**Hitachi**	**0.40**	**194**	P	Pg	16 40 09.6	+0.3
JHO				S	Sg	16 40 14.9	+0.3
JFT	**Otama**	**0.59**	**332**	S	Sg	16 40 21.2	+0.6
JFY	**Yanaizu**	**0.89**	**298**	S	Sg	16 40 30.3	+0.2
MAT	**Matsushiro**	**2.04**	**258**	P	Pb	16 40 38.2	-1.0
MAT				S	Sb	16 41 04.9	-0.1

IDC ***11*** *16:43:45.0±0.8, 35.95N×141.24E, h0km, mb3.6/10, mb1 3.7/12, mb1mx3.6/57, mbtmp3.6/12, ML3.2/2, MS3.6/3, Ms1 3.6/3, ms1mx2.8/46, Error ellipse: s-maj=22.8km s-min=16.0km az=91.0*

ISCJB ***11*** *16:43:46.3±0.7, 35.82N±0.06×141.28E±0.08, h26km, mb3.5/10, MS3.6/3, Error ellipse: s-maj=10.3km s-min=7.1km az=30.2*

JMA ***11*** *16:43:46.6±0.2, 35.76N×141.28E, h29km±2km, M3.3*

ISC 11 16:43:48.4±0.8, 35.82N±0.06×141.17E±0.08, h26km, n25, σ1s00/20, mb3.6/10, MS3.5/3, 1C, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.28**	**245**	⇑P	**Pb**	**16 43 54.4**	**-0.8**
CHOJ				S	**Sb**	**16 44 00.0**	**+0.2**
JYT	**Yasato**	**0.89**	**297**	P	**Pn**	**16 44 04.2**	**-1.0**
MJAR	**Matsushiro Arr**	**2.50**	**288**	Pn	**Pn**	**16 44 27.9**	**+0.5**
	4.8nm,0.3s,baz=96,slow=10.0,SNR=38						
MAT	**Matsushiro**	**2.50**	**288**	P	**Pn**	**16 44 28.3**	**+0.9**
MAT				*e*S	**Sb**	**16 45 03.0**	**-0.1**
JHJ	**Hachijo jima 2**	**2.93**	**203**	Pn	**Pn**	**16 44 33.3**	**0.0**
	8.0nm,0.3s,baz=74,slow=20,SNR=4.2						
JHJ				Sn	**Sn**	**16 45 05.9**	**-1.6**
	15nm,0.3s,baz=53,slow=20,SNR=4.2						
USRK	**Ussuriysk Ar.**	**10.93**	**323**	Pn	**Pn**	**16 46 24.2**	**+1.1**
	0.1nm,0.3s,baz=114,slow=14,SNR=3.0						
H11N2	**WAKE ISLAND Hy**	**27.72**	**118**	T	T	17 18 17.2	
	baz=311,slow=75,SNR=99						
H11N1	**WAKE ISLAND Hy**	**27.73**	**119**	T	T	17 18 28.1	
	baz=311,slow=75,SNR=80						
H11N3	**WAKE ISLAND Hy**	**27.74**	**118**	T	T	17 18 31.6	
	baz=311,slow=75,SNR=40						
SEY	**Seymchan**	**28.02**	**11**	P	**P**	**16 49 37.6**	**+0.6**
	0.3nm,0.3s,baz=163,slow=19,SNR=3.0						
SONM	**Songino Array**	**28.32**	**306**	P	**P**	**16 49 40.0**	**0.0**
	0.3nm,0.7s,baz=99,slow=9.3,SNR=2.5						
H11S1	**WAKE ISLAND Hy**	**28.39**	**121**	T	T	17 19 21.1	
	baz=312,slow=76,SNR=19						
H11S3	**WAKE ISLAND Hy**	**28.39**	**121**	T	T	17 19 10.2	
	baz=312,slow=76,SNR=56						
H11S2	**WAKE ISLAND Hy**	**28.40**	**121**	T	T	17 19 22.3	
	baz=312,slow=76,SNR=57						
TIXI	**Tiksi**	**36.47**	**353**	P	**P**	**16 50 50.3**	**-0.5**
	baz=139,slow=5.3						
ZALV	**Zalesovo Beam**	**42.59**	**313**	P	**P**	**16 51 42.1**	**+0.1**
	0.8nm,0.5s,baz=106,slow=6.7,SNR=5.9						
MKAR	**Makanchi Array**	**44.61**	**303**	P	**P**	**16 51 58.4**	**0.0**
	0.7nm,0.5s,baz=80,slow=9.4,SNR=16						
KURBB	**Kurchatov Arra**	**46.60**	**309**	P	**P**	**16 52 14.1**	**+0.1**
	1.2nm,0.5s,baz=84,slow=7.7,SNR=16						
ILAR	**Eielson Array**	**50.62**	**32**	P	**P**	**16 52 43.9**	**-0.9**
	0.2nm,0.5s,baz=262,slow=6.8,SNR=4.1						
ILAR				LR	LR	17 14 29.3	
	comp=Z,43nm,21.9s,baz=223,slow=36						
WRA	**Warramunga Arr**	**55.83**	**188**	P	**P**	**16 53 24.8**	**+1.3**
	1.1nm,0.6s,baz=2.6,slow=7.6,SNR=21						
ASAR	**Alice Springs**	**59.56**	**188**	P	**P**	**16 53 52.2**	**+2.5**
	0.4nm,0.6s,baz=13,slow=12,SNR=12						
YKA	**Yellowknife Ar**	**64.95**	**30**	P	**P**	**16 54 24.7**	**-0.7**
	0.1nm,0.5s,baz=297,slow=6.8,SNR=3.5						
GNI	**Garni**	**72.28**	**307**	LR	LR	17 28 06.3	
	comp=Z,24nm,19.0s,baz=202,slow=37						
AKASG	**Malin Array Be**	**75.14**	**322**	P	**P**	**16 55 27.5**	**-0.5**
	0.1nm,0.2s,baz=45,slow=6.2,SNR=4.2						
SCHQ	**Schefferville**	**86.56**	**16**	LR	LR	17 40 44.1	
	comp=Z,50nm,18.5s,baz=356,slow=40						

NIED ***11*** *16:45:00, 36.70N×140.60E, h5km, Mw3.8 Best double couple: M0 5.56000×10^14 NP1:φs=354.00000°, δ27.00000°, λ-98.00000°. NP2:φs=184.00000°, δ63.00000°, λ-86.00000°.*

ISCJB ***11*** *16:45:25.8±0.7, 36.67N±0.03×140.67E±0.05, h18km±4km, mb3.7/19, Error ellipse: s-maj=7.5km s-min=4.9km az=33.2*

JMA ***11*** *16:45:26.5, 36.70N×140.57E, h4km±1km, M3.7*

JMA Felt II J1.

IDC ***11*** *16:45:31.6±2.0, 36.64N×140.54E, h50km±20km, mb3.5/19, mb1 3.7/22, mb1mx3.6/61, mbtmp3.8/22, ML2.6/3, Error ellipse: s-maj=15.1km s-min=9.9km az=57.0*

ISC 11 16:45:26.5±1.0, 36.69N±0.03×140.54E±0.05, h10km±6km, n38, σ0s84/38, mb3.8/19, 3C, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHO	**Hitachi**	**0.08**	**162**	⇑P	**Pg**	**16 45 28.7**	**-0.1**
ONAJ	**Iwakimizuishiy**	**0.46**	**27**	P	**Pg**	**16 45 35.2**	**-0.3**
ONAJ				S	**Sg**	**16 45 41.3**	**-0.4**
JYT	**Yasato**	**0.54**	**211**	⇑P	**Pb**	**16 45 37.3**	**-0.7**
JYT				S	**Sb**	**16 45 45.1**	**-0.6**
JSB	**Shiboa**	**0.57**	**300**	⇑P	**Pb**	**16 45 38.5**	**-0.1**
JSB				S	**Sb**	**16 45 47.1**	**+0.3**
JFT	**Otama**	**0.84**	**349**	P	**Pg**	**16 45 42.8**	**0.0**
JAG	**Ashikaga**	**0.91**	**254**	P	**Pg**	**16 45 44.1**	**+0.1**
JAG				S	**Sb**	**16 45 56.5**	**-0.1**
JFY	**Yanaizu**	**0.98**	**317**	P	**Pb**	**16 45 45.5**	**-0.1**
MJAR	**Matsushiro Arr**	**1.88**	**266**	P	**Pb**	**16 45 59.8**	**-1.2**
	30nm,0.3s,baz=86,slow=15,SNR=20						
MJAR				S	**Sb**	**16 46 24.1**	**-0.4**
	31nm,0.3s,baz=100,slow=27,SNR=13						
MAT	**Matsushiro**	**1.88**	**266**	P	**Pb**	**16 46 00.2**	**-0.7**
MAT				S	**Sb**	**16 46 25.6**	**+1.1**
JHJ	**Hachijo jima 2**	**3.61**	**190**	P	**Pn**	**16 46 24.9**	**+2.4**
	11nm,0.3s,baz=69,slow=20,SNR=1.9						
JHJ				S	**Sn**	**16 47 04.6**	**-0.7**
	1.8nm,0.3s,baz=55,slow=19,SNR=1.9						
USRK	**Ussuriysk Ar.**	**9.93**	**322**	P	**Pn**	**16 47 50.9**	**+1.6**
	0.2nm,0.3s,baz=94,slow=13,SNR=3.0						
KSRS	**Korea Array**	**10.11**	**278**	P	Pn	16 47 56.6	+4.9
	0.0nm,0.3s,baz=96,slow=14,SNR=2.9						
KLR	**Kul'dur**	**14.08**	**336**	P	**P**	**16 48 52.7**	**-1.0**
	0.1nm,0.3s,baz=112,slow=7.9,SNR=3.6						
SEY	**Seymchan**	**27.27**	**12**	P	**P**	**16 51 10.8**	**+0.2**
	1.5nm,0.8s,baz=187,slow=2.9,SNR=4.4						
SONM	**Songino Array**	**27.40**	**305**	P	**P**	**16 51 12.1**	**-0.1**
	0.9nm,0.6s,baz=110,slow=9.3,SNR=4.0						
H11N2	**WAKE ISLAND Hy**	**28.58**	**119**	T	T	17 21 06.6	
	baz=312,slow=76,SNR=36						
H11N1	**WAKE ISLAND Hy**	**28.59**	**119**	T	T	17 21 07.8	
	baz=312,slow=76,SNR=41						
H11N3	**WAKE ISLAND Hy**	**28.60**	**119**	T	T	17 21 09.1	
	baz=312,slow=76,SNR=44						
H11S1	**WAKE ISLAND Hy**	**29.27**	**121**	T	T	17 21 58.1	
	baz=314,slow=76,SNR=140						
H11S3	**WAKE ISLAND Hy**	**29.27**	**121**	T	T	17 21 59.8	
	baz=314,slow=76,SNR=115						
H11S2	**WAKE ISLAND Hy**	**29.29**	**121**	T	T	17 21 59.3	
	baz=314,slow=76,SNR=82						
TIXI	**Tiksi**	**35.55**	**354**	P	**P**	**16 52 21.9**	**-1.5**
	0.8nm,0.3s,baz=151,slow=3.0,SNR=4.3						
CMAR	**Chiang Mai Arr**	**40.73**	**255**	P	**P**	**16 53 08.0**	**+0.4**
	0.2nm,0.6s,baz=48,slow=9.9,SNR=2.7						
ZALV	**Zalesovo Beam**	**41.63**	**313**	P	**P**	**16 53 14.3**	**-0.3**
	2.0nm,0.6s,baz=94,slow=6.9,SNR=8.3						
MKAR	**Makanchi Array**	**43.71**	**302**	P	**P**	**16 53 31.0**	**-0.7**
	0.6nm,0.8s,baz=111,slow=5.7,SNR=4.3						
KURBB	**Kurchatov Arra**	**45.66**	**308**	P	**P**	**16 53 46.7**	**-0.5**
	1.7nm,0.2s,baz=84,slow=8.1,SNR=14						
ILAR	**Eielson Array**	**50.16**	**32**	P	**P**	**16 54 22.3**	**+0.5**
	0.6nm,0.8s,baz=272,slow=6.5,SNR=5.6						
INK	**Inuvik**	**55.01**	**27**	P	**P**	**16 54 58.4**	**+0.8**
	0.8nm,0.6s,baz=273,slow=5.7,SNR=3.7						
WRA	**Warramunga Arr**	**56.63**	**187**	P	**P**	**16 55 09.3**	**-0.4**
	1.1nm,0.8s,baz=3.0,slow=7.2,SNR=5.4						
ASAR	**Alice Springs**	**60.35**	**187**	P	**P**	**16 55 35.4**	**-0.4**
	0.4nm,0.7s,baz=5.7,slow=4.9,SNR=5.5						
RES	**Resolute Bay**	**63.11**	**14**	P	**P**	**16 55 53.1**	**-0.6**
	0.9nm,0.6s,baz=302,slow=6.1,SNR=6.3						
YKA	**Yellowknife Ar**	**64.46**	**30**	P	**P**	**16 56 02.8**	**+0.1**
	0.4nm,0.7s,baz=304,slow=6.8,SNR=7.1						
FINES	**FINESS Array B**	**68.79**	**332**	P	**P**	**16 56 29.9**	**-0.5**
	1.7nm,0.8s,baz=44,slow=11,SNR=4.0						
AKASG	**Malin Array Be**	**74.14**	**322**	P	**P**	**16 57 01.9**	**-1.0**
	0.4nm,0.4s,baz=47,slow=6.2,SNR=5.9						
NOA	**NORSAR Array B**	**74.23**	**337**	P	**P**	**16 57 03.0**	**-0.3**
	0.5nm,0.6s,baz=39,slow=6.0,SNR=3.2						
NVAR	**Mina Array Bea**	**75.76**	**53**	P	**P**	**16 57 14.3**	**+1.5**
	0.6nm,0.6s,baz=300,slow=6.0,SNR=4.3						
PDAR	**Pinedale Array**	**78.41**	**45**	P	**P**	**16 57 28.7**	**+1.1**
	0.6nm,0.6s,baz=270,slow=2.9,SNR=7.4						
GERES	**GERESS Array B**	**82.63**	**328**	P	**P**	**16 57 50.2**	**+0.2**
	0.3nm,0.4s,baz=32,slow=7.8,SNR=3.7						

CSEM ***11*** *16:47:57.6±0.6, 28.06N×59.14E, h10km, ML3.3, Error ellipse: s-maj=19.1km s-min=15.8km az=92.0*

TEH 11 16:47:59.3, 28.17N×58.96E, h10km, ML3.6, Southern Iran

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ZHSF	**Zahedan**	**2.14**	**48**	*e*Pn	Pb	16 48 37.7	-0.6
NGRK	**Negar Kerman**	**2.44**	**307**	*e*Pn	Pb	16 48 41.8	-1.8
NGRK	**Negar Kerman**	**2.44**	**307**	*e*Pn	Pb	16 48 41.8	-1.8
BNDS	**Bandar-Abbas**	**2.59**	**253**	*e*Pn	Pn	16 48 40.7	-0.7
KRBR	**Kerman**	**2.64**	**314**	*e*Pn	Pn	16 48 44.0	+1.8
TVBK	**TV Kerman**	**2.64**	**314**	*e*Pn	Pb	16 48 45.2	-1.7
TVBK	**TV Kerman**	**2.64**	**314**	*e*Pn	Pb	16 48 45.2	-1.7
CHBR	**Chabahar**	**2.91**	**152**	*e*Pn	Pn	16 48 42.0	-3.6
KHGB	**Koh Gabri**	**3.09**	**316**	*e*Pn	Pb	16 48 53.0	-1.5
KHGB	**Koh Gabri**	**3.09**	**316**	*e*Pn	Pb	16 48 53.0	-1.5
IKOO	**Kooshah**	**4.24**	**0**	*e*AMB	AMB	16 49 16.3	
	comp=Z,608nm,0.2s						
IKOO				*e*Pn	Pn	16 49 02.9	-1.3
IDAH	**Dahanechah**	**4.62**	**10**	*e*AMB	AMB	16 49 09.8	
	comp=Z,492nm,0.2s						
IDAH				*e*Pn	Pn	16 49 09.1	-0.3
IDAH	**Dahanechah**	**4.62**	**10**	*e*Pn	Pn	16 49 09.1	-0.3
ITEG	**Tejag**	**4.71**	**358**	*e*AMB	AMB	16 49 30.1	
	comp=Z,531nm,0.2s						
ITEG				*e*Pn	Pn	16 49 09.7	-0.9
ITEG				*e*Sg	Sg	16 50 26.2	-4.4
IMON	**Monand**	**5.04**	**7**	*e*Pn	Pn	16 49 15.0	-0.2
IMON				*e*AMB	AMB	16 49 15.6	
	comp=Z,397nm,0.2s						
IMON	**Monand**	**5.04**	**7**	*e*Pn	Pn	16 49 15.0	-0.2
IKAZ	**Kazeroun**	**6.44**	**286**	*e*Pn	Pn	16 49 33.6	-0.9
IKAZ				*e*AMB	AMB	16 50 58.4	
	comp=Z,199nm,0.2s						
IKAZ	**Kazeroun**	**6.44**	**286**	*e*Pn	Pn	16 49 33.6	-0.9

JMA 11 16:48:40.6, 36.86N×140.51E, h6km±2km, M2.0, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.33**	**44**	P	Pg	16 48 47.4	+0.3
MAT	**Matsushiro**	**1.88**	**261**	P	Pb	16 49 14.6	-0.7
MAT				S	Sb	16 49 39.0	0.0

NIED ***11*** *16:49:00, 37.10N×140.70E, h5km, Mw4.1 Best double couple: M0 1.63000×10^15 NP1:φs=69.00000°, δ37.00000°, λ-90.00000°. NP2:φs=248.00000°, δ53.00000°, λ-90.00000°.*

JMA ***11*** *16:49:17.6, 37.07N×140.61E, h8km±2km, M4.3 Broadband fault plane solution: P waves. NP1: φs=272.00000°, δ49.00000°, λ-62.00000°. NP2:φs=52.00000°, δ49.00000°, λ-118.00000°. Principal axes: T Plg0.0000°, Azm342.0000°; N Plg21.0000°, Azm72.0000°; P Plg69.0000°, Azm252.0000°;*

JMA Felt III J1.

ISCJB ***11*** *16:49:17.3±0.5, 37.09N±0.03×140.64E±0.04, h18km±3km, mb4.1/43, MS3.5/4 Error ellipse: s-maj=5.5km s-min=4.5km az=34.6*

MOS ***11*** *16:49:19.3±1.6, 37.12N×140.72E, h33km, mb4.4/28, Error ellipse: s-maj=9.6km s-min=7.2km az=79.8*

IDC ***11*** *16:49:22.8±1.8, 37.07N×140.40E, h45km±18km, mb3.9/28, mb1 4.0/29, mb1mx3.9/53, mbtmp4.1/29, ML3.7/1, MS3.2/4, Ms1 3.2/4, ms1mx2.9/43, Error ellipse: s-maj=14.3km s-min=10.7km az=86.0*

NEIC ***11*** *16:49:22.7±0.7, 37.11N×140.44E, h43km±6km, mb4.4/10, Error ellipse: s-maj=6.7km s-min=5.5km az=121.0*

NEIC Recorded [3 JMA] in Fukushima.

ISC 11 16:49:17.6±1.1, 37.10N±0.04×140.55E±0.05, h8km±7km, n102, σ1s29/103, mb4.2/43, MS3.3/4, 1C, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.20**	**90**	P	**Pg**	**16 49 21.2**	**-0.5**
ONAJ				S	**Sg**	**16 49 23.8**	**-0.7**
JFT	**Otama**	**0.45**	**338**	⇑P	**Pb**	**16 49 27.6**	**-0.2**
JFT				S	**Sb**	**16 49 34.4**	**-0.3**
JHO	**Hitachi**	**0.49**	**178**	P	**Pg**	**16 49 26.4**	**-0.6**
JHO				S	**Sg**	**16 49 32.8**	**-0.6**
JSB	**Shiboa**	**0.52**	**255**	P	**Pb**	**16 49 29.1**	**+0.1**
JSB				*e*S	**Sb**	**16 49 36.6**	**0.0**
MJAR	**Matsushiro Arr**	**1.96**	**254**	P	**Pn**	**16 49 51.9**	**+0.7**
	29nm,0.3s,baz=74,slow=15,SNR=44						
MJAR				S	**Sb**	**16 50 18.4**	**+0.4**
	43nm,0.3s,baz=48,slow=27,SNR=9.8						
MJAR				LR	LR	16 50 42.9	
	comp=Z,185nm,18.0s,baz=85,slow=44						
MAJO	**Matsushiro**	**1.96**	**254**	*e*P	**Pb**	**16 49 52.7**	**-0.8**
MAJO	**Matsushiro**	**1.96**	**254**	*e*Pn	**Pb**	**16 49 52.7**	**-0.8**
INU	**Inuyama**	**3.35**	**240**	*e*Pn	**Pn**	**16 50 12.6**	**+2.4**
JHJ	**Hachijo jima 2**	**4.02**	**189**	P	**Pn**	**16 50 20.4**	**+1.0**
	12nm,0.3s,baz=47,slow=19,SNR=5.1						
JHJ				S	**Sn**	**16 51 07.2**	**+0.5**
	29nm,0.3s,baz=60,slow=20,SNR=3.8						
JHJ2	**Mitsune**	**4.02**	**189**	*e*Pn	**Pn**	**16 50 22.6**	**+3.1**
ERM	**Erimo**	**5.31**	**22**	*e*P	**Pn**	**16 50 37.3**	**+0.2**
ERM				*e*		16 51 43.7	
ERM	**Erimo**	**5.31**	**22**	*e*Pn	**Pn**	**16 50 37.3**	**+0.2**
ERM				*e*Sn	**Sn**	**16 51 43.7**	**+5.3**
YUK	**Yuzh-Kuril'sk**	**8.02**	**29**	*e*P	**Pn**	**16 51 13.4**	**-0.9**
YUK				*e*S	Sn	16 52 38.9	-6.3
SHO	**Shikotan**	**8.28**	**33**	*e*P	Pn	16 51 14.3	-3.7
SHO				*e*S	Sn	16 52 41.7	-10
JNU	**Nakatsue**	**8.86**	**246**	P	**Pn**	**16 51 28.5**	**+2.5**
	0.3nm,0.3s,baz=68,slow=5.4,SNR=6.7						
JNU				LR	LR	16 55 04.2	
	comp=Z,106nm,21.0s,baz=118,slow=39						
JNU	**Nakatsue**	**8.86**	**246**	*e*Pn	**Pn**	**16 51 27.7**	**+1.8**
USRK	**Ussuriysk Ar.**	**9.62**	**320**	P	Pn	16 51 43.0	+6.8
	0.4nm,0.3s,baz=133,slow=14,SNR=14						
USRK				LR	LR	16 55 04.7	
	comp=Z,135nm,20.6s,baz=139,slow=36						
KUR	**Kuril'sk**	**9.82**	**32**	*e*P	**Pn**	**16 51 38.1**	**-0.9**
KUR				*e*S	**Sn**	**16 53 24.2**	**-5.2**
KUR				pmax	pmax		
	comp=N,7.0nm,0.8s						
KUR				pmax	pmax		
	comp=E,6.0nm,0.8s						
KUR				pmax	pmax		
	comp=Z,9.0nm,0.8s						
KUR				smax	smax		
	comp=E,14nm,0.5s						
KUR				smax	smax		
	comp=N,13nm,0.6s						
KSRS	**Korea Array**	**10.07**	**276**	P	Pn	16 51 49.5	+7.1
	comp=N,0.3nm,0.3s,baz=94,slow=13,SNR=15						
KSAR	**Wonju Array Be**	**10.10**	**276**	P	Pn	16 51 49.6	+6.7
KSAR	**Wonju Array Be**	**10.10**	**276**	P	Pn	16 51 49.5	+6.7
BJI	**Beijing**	**19.27**	**286**	P	**P**	**16 53 42.8**	**+0.3**
BJI				pmax	pmax		
	comp=Z,6.0nm,0.8s						
BJI				LR	LR		
	comp=N,120nm,12.6s						
BJI				LR	LR		
	comp=E,86nm,9.0s						
BJI				LR	LR		
	comp=Z,43nm,19.1s						
HHC	**Hu-ho-hao-te**	**22.79**	**288**	*e*P	**P**	**16 54 21.2**	**+0.4**
HHC				sP	sP	16 54 31.3	+7.3
HHC				S	**S**	**16 58 25.0**	**-5.1**
HHC				pmax	pmax		
	comp=Z,13nm,0.8s						
HHC				pmax	pmax		
	comp=Z,140nm,7.8s						
HHC				LR	LR		
	comp=N,320nm,11.1s						
HHC				LR	LR		
	comp=E,340nm,11.1s						
HHC				LR	LR		
	comp=Z,390nm,12.4s						
MA2	**Magadan**	**23.44**	**13**	P	**P**	**16 54 28.8**	**+1.8**
	comp=Z,5.4nm,0.6s,baz=248,slow=8.7,SNR=4.8						
MA2				LR	LR	17 04 07.8	
	comp=Z,68nm,19.6s,baz=112,slow=38						
YAK	**Yakutsk**	**25.86**	**348**	P	**P**	**16 54 50.4**	**+1.1**
	comp=Z,8.4nm,0.3s,baz=322,slow=0.8,SNR=3.6						
ULN	**Ulaanbaatar**	**26.74**	**304**	*e*P	**P**	**16 54 58.3**	**+0.5**
ULN				pmax	pmax		
	comp=Z,2.0nm,0.7s						
ULN	**Ulaanbaatar**	**26.74**	**304**	*e*P	**P**	**16 54 58.3**	**+0.5**
	comp=Z,2.2nm,0.7s						
SEY	**Seymchan**	**26.86**	**12**	P	**P**	**16 55 00.0**	**+1.6**
	comp=Z,1.3nm,0.6s,baz=191,slow=5.4,SNR=8.1						
SONA1	**Songino Array**	**27.17**	**304**	*e*P	**P**	**16 55 02.1**	**+0.5**
SONM	**Songino Array**	**27.17**	**304**	P	**P**	**16 55 01.5**	**-0.1**
	comp=Z,1.7nm,0.7s,baz=105,slow=9.2,SNR=12						
H11N2	**WAKE ISLAND Hy**	**28.78**	**120**	T	T	17 25 01.7	
	baz=313,slow=75,SNR=153						
H11N1	**WAKE ISLAND Hy**	**28.79**	**120**	T	T	17 25 02.3	
	baz=313,slow=75,SNR=195						
H11N3	**WAKE ISLAND Hy**	**28.80**	**120**	T	T	17 25 03.0	
	baz=313,slow=75,SNR=117						
H11S1	**WAKE ISLAND Hy**	**29.48**	**122**	T	T	17 25 54.7	
	baz=314,slow=76,SNR=115						
H11S3	**WAKE ISLAND Hy**	**29.48**	**122**	T	T	17 25 54.4	
	baz=314,slow=76,SNR=63						
H11S2	**WAKE ISLAND Hy**	**29.50**	**122**	T	T	17 25 58.4	
	baz=314,slow=76,SNR=63						
TLY	**Talaya**	**29.76**	**311**	*e*PcP	**PcP**	**16 58 28.8**	**+0.8**
CD2	**Chengdu**	**30.98**	**269**	P	**P**	**16 55 34.6**	**-0.9**
CD2				pmax	pmax		
	comp=Z,1.0nm,0.5s						
GTA	**Gaotai**	**31.88**	**287**	*i* P	**P**	**16 55 43.5**	**+0.1**
GTA				pP	sP	16 55 47.6	+0.8
GTA				sP	pP	16 55 51.2	+5.4
GTA				pmax	pmax		
	comp=Z,3.0nm,0.9s						
KMI	**Kunming**	**34.29**	**261**	P	**P**	**16 56 05.6**	**+0.9**
KMI				pmax	pmax		
	comp=Z,8.0nm,0.5s						
KMI				pmax	pmax		
	comp=Z,100nm,5.1s						
TIXI	**Tiksi**	**35.14**	**354**	P	**P**	**16 56 10.5**	**-0.7**
	comp=Z,0.9nm,0.4s,baz=128,slow=4.0,SNR=9.2						
WMQ	**Urumqi**	**40.19**	**297**	*e*P	**P**	**16 56 56.2**	**+1.8**
WMQ				pP	sP	16 57 06.6	+8.8
WMQ				sP	pP	16 57 10.3	+13
WMQ				pmax	pmax		
	comp=Z,3.0nm,0.6s						
WMQ				LR	LR		
	comp=N,17nm,21.2s						
WMQ				LR	LR		
	comp=E,27nm,21.2s						
WMQ				LR	LR		
	comp=Z,30nm,18.2s						
CMAR	**Chiang Mai Arr**	**40.84**	**255**	P	**P**	**16 56 58.9**	**-1.1**
	comp=Z,0.2nm,0.5s,baz=42,slow=7.3,SNR=3.6						
ZAA0	**Zalesovo Array**	**41.36**	**312**	*e*P	**P**	**16 57 03.7**	**-0.1**
ZALV	**Zalesovo Beam**	**41.36**	**312**	P	**P**	**16 57 02.0**	**-1.8**
	comp=Z,1.9nm,0.9s,baz=88,slow=5.6,SNR=6.7						
ZALV				PcP	**PcP**	**16 59 02.8**	**+0.9**
	comp=Z,1.4nm,0.6s,baz=87,slow=3.0,SNR=6.1						
MKAR	**Makanchi Array**	**43.49**	**302**	P	**P**	**16 57 21.9**	**+0.6**
	comp=Z,1.0nm,0.7s,baz=87,slow=9.6,SNR=14						
MKAR				PcP	**PcP**	**16 59 08.2**	**-1.1**
	comp=Z,0.4nm,0.7s,baz=78,slow=4.5,SNR=3.5						
MKAR				LR	LR	17 15 48.3	
	comp=Z,48nm,19.5s,baz=95,slow=36						
MKAR	**Makanchi Array**	**43.49**	**302**	*e*P	**P**	**16 57 21.5**	**+0.1**
MKAR				PcP	**PcP**	**16 59 08.2**	**-1.1**
MAKZ	**Makanchi**	**43.70**	**302**	*e*P	**P**	**16 57 23.4**	**+0.3**
MAKZ				pmax	pmax		
	comp=Z,6.0nm,1.8s						
MAKZ	**Makanchi**	**43.70**	**302**	*e*P	**P**	**16 57 23.4**	**+0.3**
	comp=Z,5.8nm,1.8s						
TAPN	**Taplejung**	**45.24**	**273**	*e*P	**P**	**16 57 37.1**	**+1.2**
	comp=Z,2.9nm,0.5s						
KURK	**Kurchatov**	**45.34**	**308**	*e*P	**P**	**16 57 35.5**	**-0.5**

FRB	**Frobisher Bay**	**76.86**	**13**	P		**P**	**17 01 09.7**	**0.0**
	comp=Z,2.7nm,0.7s,baz=317,slow=6.2,SNR=6.8							
BUR08	**Bucovina Ar. S**	**77.82**	**321**	*e*P		**P**	**17 01 15.6**	**+0.1**
DUG	**Dugway, Tooele**	**77.83**	**49**	*e*P		**P**	**17 01 17.0**	**+1.2**
DUG				pmax	pmax			
	comp=Z,3.0nm,0.8s							
DUG	**Dugway, Tooele**	**77.83**	**49**	*e*P		**P**	**17 01 17.0**	**+1.2**
	comp=Z,2.5nm,0.8s							
BW06	**Boulder Array**	**78.11**	**45**	*e*P		**P**	**17 01 17.7**	**+0.3**
PDAR	**Pinedale Array**	**78.11**	**45**	P		**P**	**17 01 18.1**	**+0.6**
	comp=Z,0.7nm,0.6s,baz=257,slow=1.3,SNR=10.0							
BRTR	**Keskin Array B**	**78.29**	**311**	P		**P**	**17 01 18.6**	**+0.3**
	comp=Z,1.1nm,0.8s,baz=105,slow=3.7,SNR=6.3							
BR231	**Keskin MP Arra**	**78.73**	**312**	*e*P		**P**	**17 01 19.3**	**-1.4**
SRU	**San Rafael Swe**	**79.89**	**48**	*e*P		**P**	**17 01 28.2**	**+1.0**
SRU				pmax	pmax			
	comp=Z,4.0nm,0.7s							
SRU	**San Rafael Swe**	**79.89**	**48**	*e*P		**P**	**17 01 28.2**	**+1.0**
	comp=Z,3.7nm,0.7s							
GERES	**GERESS Array B**	**82.29**	**328**	P		**P**	**17 01 39.0**	**-0.6**
	comp=Z,0.6nm,0.4s,baz=42,slow=6.7,SNR=7.9							
TXAR	**Lajitas Array**	**90.63**	**52**	P		**P**	**17 02 21.9**	**+0.9**
	comp=Z,0.3nm,0.6s,baz=310,slow=4.4,SNR=4.5							
TORD	**Torodi Ar. Bea**	**116.79**	**314**	PKP		**PKPdf**	**17 08 02.0**	**-1.2**
	comp=Z,0.1nm,0.4s,baz=26,slow=1.0,SNR=2.6							
LPAZ	**La Paz**	**147.25**	**58**	PKPbc		**PKPbc**	**17 09 03.3**	**+0.5**
	comp=Z,1.7nm,0.6s,baz=250,slow=4.1,SNR=9.1							
SIV	**San Ignacio**	**151.56**	**48**	PKPbc		**PKPbc**	**17 09 13.3**	**+0.4**
	comp=Z,1.8nm,0.5s,baz=20,slow=0.6,SNR=4.4							

SKHL 11 16:51:24.0±0.7, 48.89N×131.34E, h8km±1km, mb3.9/5, Priamurye-Northeastern China border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KHBR	**Khabarovsk**	**2.50**	**98**	*e*Pn	Pn	16 52 05.3	+0.4
KHBR				pPn	pPn	16 52 07.8	+1.1
KHBR				sPn	Pb	16 52 09.1	0.0
KHBR				*e*Pg	Pg	16 52 09.6	-2.2
KHBR				*e*Sg	Sb	16 52 41.3	+1.4
KHBR				A	A	16 52 44.2	
	243nm,0.3s						
GRNR	**Gornyy**	**3.79**	**58**	*e*Pn	Pn	16 52 23.0	+0.3
GRNR				*e*Pg	Pb	16 52 33.0	+1.9
GRNR				AMB	AMB	16 52 37.0	
	17nm,0.3s						
GRNR				*e*Sg	Sg	16 53 22.3	-3.3
GRNR				A	A	16 53 28.6	
	133nm,0.5s						
EKMR	**Ekimchan**	**4.31**	**13**	*e*Pn	Pn	16 52 32.0	+2.2
EKMR				pPn	pPn	16 52 35.5	+3.8
EKMR				*e*Pg	Pb	16 52 42.4	+2.5
EKMR				AMB	AMB	16 52 50.0	
	11nm,0.5s						
EKMR				*e*Sn	Sn	16 53 20.5	+0.3
EKMR				*e*Sg	Sg	16 53 38.5	-3.7
EKMR				A	A	16 53 52.0	
	85nm,0.7s						
EKMR				A	A	16 53 52.0	
	36nm,0.7s						
EKMR				A	A	16 53 52.0	
	32nm,0.7s						
TEY	**Ternei**	**5.28**	**135**	*e*Sg	Sg	16 54 09.0	-4.3
TEY				A	A	16 54 14.0	
	32nm,0.5s						
ZEA	**Zeya**	**5.49**	**334**	*e*Pn	Pn	16 52 48.0	+2.0
ZEA				*e*Sn	Sn	16 53 49.7	+0.4
ZEA				*e*Sg	Sg	16 54 16.1	-4.0
ZEA				A	A	16 54 18.5	
	62nm,0.8s						
ZEA				A	A	16 54 18.5	
	33nm,0.8s						
ZEA				A	A	16 54 18.5	
	25nm,0.8s						
BMKR	**Bomnak**	**6.03**	**346**	*e*Pn	Pn	16 52 56.4	+3.0
BMKR				AMB	AMB	16 52 58.4	
	6.0nm,0.5s						
BMKR				*e*Sg	Sg	16 54 33.0	-4.5
BMKR				A	A	16 54 43.9	
	34nm,0.5s						
KROS	**Kirovskiy**	**6.18**	**336**	*e*Pn	Pn	16 52 57.5	+2.0
KROS				AMB	AMB	16 52 59.3	
	3.0nm,0.3s						
KROS				*e*Sg	Sg	16 54 36.8	-5.4
KROS				A	A	16 54 42.0	
	40nm,0.8s						
NKL	**Nikolayevsk**	**7.27**	**51**	*e*Sg	Sg	16 55 12.0	-5.2
NKL				A	A	16 55 22.1	
	50nm,0.9s						

ISCJB 11 16:52:47.8±0.6, 24.05N±0.02×122.29E±0.02, h8km±4km, Error ellipse: s-maj=3.1km s-min=2.4km az=148.2
TAP 11 16:52:48.4, 24.10N×122.26E, h17km±1km, ML3.1, D
JMA 11 16:52:48.9±0.1, 24.03N×122.28E, h32km±4km, M2.4

ISC 11 16:52:46.6±1.2, 24.04N±0.02×122.28E±0.02, h3km±10km, n45, σ0.57/85, Taiwan region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ENA	**Nanau**	**0.63**	**308**	P	**Pb**	**16 53 00.4**	**+0.1**
	baz=305						
ENA				*e*S	**Sb**	**16 53 08.9**	**-0.7**
	baz=305						
TWC	**Suao**	**0.70**	**325**	P	**Pb**	**16 53 00.8**	**-0.6**
	baz=324						
TWC				*e*S	**Sg**	**16 53 09.1**	**+0.1**
	baz=324						
JYNG	**Yonagunijimaku**	**0.73**	**55**	P	**Pb**	**16 53 02.8**	**+0.8**
JYNG				*e*S	**Sb**	**16 53 12.5**	**+0.1**
YOJ	**Yonaguni jima**	**0.79**	**57**	P	**Pb**	**16 53 03.6**	**+0.6**
YOJ				S	**Sb**	**16 53 14.3**	**+0.3**
ESL	**Shilin**	**0.81**	**254**	*e*P	**Pb**	**16 53 03.9**	**+0.6**
	baz=249						
ESL				*e*S	**Sb**	**16 53 15.4**	**+0.7**
	baz=249						
EGS		**0.87**	**338**	P	**Pb**	**16 53 04.2**	**-0.2**
	baz=338						
EGS				S	**Sg**	**16 53 15.2**	**+0.7**
	baz=338						
ILA	**Ilan**	**0.88**	**326**	*e*S	**Sb**	**16 53 16.2**	**-0.4**
	baz=325						
TWE	**Neicheng**	**0.89**	**321**	P	**Pb**	**16 53 04.7**	**+0.1**
	baz=319						
TWE				S	**Sb**	**16 53 16.4**	**-0.4**
	baz=319						
ENTT	**Nioudou**	**0.89**	**313**	P	**Pb**	**16 53 04.8**	**+0.1**
	baz=310						
ENTT				S	**Sb**	**16 53 16.4**	**-0.5**
	baz=310						
NNS	**Nan Shan**	**0.92**	**296**	P	**Pb**	**16 53 05.7**	**+0.4**
	baz=292						
NNS				*e*S	**Sb**	**16 53 18.4**	**+0.4**
	baz=292						
TWB1	**Santiao Chiao**	**1.01**	**345**	*e*P	**Pb**	**16 53 06.7**	**0.0**
	baz=345						
TWB1				S	**Sg**	**16 53 18.6**	**-0.3**
	baz=345						
EHY	**Hungye**	**1.03**	**239**	*e*P	**Pn**	**16 53 08.2**	**+0.3**
	baz=235						
EHY				*e*S	**Sg**	**16 53 20.0**	**+0.4**
	baz=235						
TWT	**Tachien**	**1.03**	**282**	*e*P	**Pn**	**16 53 08.4**	**+0.2**
	baz=278						
TWT				*e*S	**Sn**	**16 53 22.7**	**-0.5**
	baz=278						
NSK	**Sanguang**	**1.06**	**307**	P	**Pb**	**16 53 07.8**	**+0.1**
	baz=305						
NSK				S	**Sb**	**16 53 21.4**	**-0.5**
	baz=305						
WDT	**Danda**	**1.09**	**255**	*e*P	**Pb**	**16 53 08.7**	**+0.4**
	baz=251						
WDT				*e*S	**Sb**	**16 53 23.0**	**0.0**
	baz=251						
NWF	**Wu-fen Shan**	**1.13**	**336**	*e*P	**Pb**	**16 53 08.7**	**-0.1**
	baz=335						
NWF				*e*S	**Sg**	**16 53 22.5**	**-0.4**
	baz=335						
TWF1	**Yuli**	**1.13**	**233**	P	**Pb**	**16 53 09.3**	**+0.4**
	baz=229						
TWF1				S	**Sb**	**16 53 24.2**	**+0.3**
	baz=229						
TWA	**Mucha**	**1.14**	**326**	*e*P	**Pn**	**16 53 09.7**	**+0.2**
	baz=325						
TWA				*e*S	**Sb**	**16 53 24.7**	**+0.6**
	baz=325						
TAP	**Taipei**	**1.23**	**325**	*e*S	**Sb**	**16 53 27.2**	**+0.6**
	baz=324						
CHKT	**Chengkung**	**1.26**	**222**	*e*P	**Pn**	**16 53 11.3**	**+0.3**
	baz=219						
CHKT				*e*S	**Sg**	**16 53 26.0**	**-1.0**
	baz=219						
SMLT	**Sun Moon Lake**	**1.27**	**263**	*e*P	**Pb**	**16 53 11.5**	**+0.2**
	baz=260						
SMLT				*e*S	**Sb**	**16 53 28.3**	**+0.1**
	baz=260						
NSTT	**Nanjuang**	**1.31**	**297**	*e*P	**Pb**	**16 53 12.5**	**+0.6**
	baz=294						
NSTT				*e*S	**Sn**	**16 53 30.2**	**+0.4**
	baz=294						
TYC	**Yuchr**	**1.31**	**265**	*e*P	**Pb**	**16 53 13.7**	**+1.8**
	baz=261						
TYC				*e*S	**Sn**	**16 53 30.6**	**+0.8**
	baz=261						
TWS1	**Kuangyinshan**	**1.32**	**324**	*e*P	**Pg**	**16 53 11.9**	**-0.1**
	baz=322						
TWS1				*e*S	**Sg**	**16 53 28.7**	**-0.5**
	baz=322						
YUS	**Yu-Shan**	**1.34**	**246**	P	**Pn**	**16 53 12.8**	**+0.2**
	baz=242						
YUS				S	**Sg**	**16 53 29.6**	**0.0**
	baz=242						
IRIF	**Iriomote-Funau**	**1.35**	**77**	P	**Pb**	**16 53 13.0**	**+0.4**
IRIF				S	**Sb**	**16 53 30.5**	**+0.2**
TWQ1	**Liyutan**	**1.41**	**283**	*e*P	**Pb**	**16 53 13.9**	**+0.2**
	baz=280						
ELDTW	**Lidau**	**1.44**	**234**	*e*P	**Pn**	**16 53 12.6**	**-1.0**
	baz=231						
ELDTW				*e*S	**Sg**	**16 53 31.1**	**-1.7**
	baz=231						
ALS	**Alishan**	**1.45**	**249**	*e*P	**Pb**	**16 53 14.6**	**+0.1**
	baz=246						
ALS				*e*S	**Sg**	**16 53 32.9**	**-0.4**
	baz=246						
CHN5	**Tsauling**	**1.53**	**254**	*e*P	**Pg**	**16 53 16.2**	**+0.2**
	baz=251						
CHN5				*e*S	**Sg**	**16 53 36.5**	**+0.5**
	baz=251						
JKRS	**Kuro-shima**	**1.59**	**82**	P	**Pg**	**16 53 17.0**	**-0.1**
WGK	**Gukeng**	**1.61**	**258**	*e*P	**Pg**	**16 53 17.7**	**+0.1**
	baz=255						
WGK				*e*S	**Sg**	**16 53 38.6**	**+0.1**
	baz=255						
TWG	**Pinlang**	**1.64**	**223**	*e*P	**Pn**	**16 53 15.7**	**-0.7**
	baz=220						
TWG				*e*S	**Sn**	**16 53 36.0**	**-2.0**
	baz=220						
STYT	**Tauyuan**	**1.65**	**239**	*e*P	**Pg**	**16 53 18.2**	**-0.1**
	baz=235						
STYT				S	**Sn**	**16 53 38.0**	**-0.3**
	baz=235						
CHN4	**Tsaushan**	**1.69**	**247**	*e*S	**Sg**	**16 53 41.1**	**0.0**
	baz=244						
WTP	**Ta-pu**	**1.72**	**243**	*e*P	**Pg**	**16 53 19.5**	**-0.1**
	baz=240						
WTP				*e*S	**Sg**	**16 53 42.1**	**+0.1**
	baz=240						
JIJ	**Ishigaki jima**	**1.73**	**79**	P	**Pn**	**16 53 17.6**	**0.0**
JIJ				S	**Sn**	**16 53 39.1**	**-1.0**
TWK	**Hsinying**	**1.82**	**245**	*e*P	**Pg**	**16 53 21.5**	**0.0**
	baz=242						
TWK				*e*S	**Sb**	**16 53 43.8**	**+0.2**
	baz=242						
CHN1	**Nanshi**	**1.82**	**243**	*e*P	**Pb**	**16 53 20.8**	**+0.2**
	baz=240						
CHN1				*e*S	**Sg**	**16 53 44.6**	**-0.5**
	baz=240						
SGST	**Jiashian**	**1.83**	**239**	*e*P	**Pb**	**16 53 20.8**	**+0.1**
	baz=236						
SGST				*e*S	**Sg**	**16 53 45.0**	**-0.3**
	baz=236						
ECL	**Taimali**	**1.88**	**221**	*e*P	**Pn**	**16 53 20.1**	**+0.4**
	baz=218						
ECL				*e*S	**Sn**	**16 53 43.0**	**-0.9**
	baz=218						
JISG	**Ishigakijimahi**	**1.93**	**73**	P	**Pn**	**16 53 20.3**	**0.0**
JISG				*e*S	**Sn**	**16 53 45.0**	**-0.1**
SSD	**Sandimen**	**1.99**	**230**	*e*P	**Pb**	**16 53 23.6**	**+0.2**
	baz=227						
SSD				*e*S	**Sb**	**16 53 48.5**	**-0.1**
	baz=227						
EAST	**Anshuo**	**2.11**	**219**	*e*P	**Pb**	**16 53 25.9**	**+0.3**
	baz=217						
EAST				*e*S	**Sb**	**16 53 52.6**	**+0.5**
	baz=217						
SCZT	**Fangliau**	**2.25**	**223**	*e*P	**Pb**	**16 53 27.9**	**-0.1**
	baz=221						
SCZT				*e*S	**Sn**	**16 53 54.5**	**+1.4**
	baz=221						

IDC 11 16:56:57.3±2.0, 36.80N×140.87E, h0km, mb3.3/4, mb1 3.5/5, mb1mx3.2/40, mbtmp3.3/5, ML3.4/1, Error ellipse: s-maj=41.5km s-min=24.3km az=53.0
JMA 11 16:56:59.7, 36.88N×140.68E, h9km±1km, M3.4
JMA Felt I J1.

ISC 11 16:56:58.5±1.7, 36.83N±0.06×140.73E±0.06, h3km±12km, n12, σ0.81/18, mb3.4/4, 3C, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHO	**Hitachi**	**0.25**	**210**	P	**Pb**	**16 57 05.4**	**-0.3**
JHO				S	**Sb**	**16 57 09.6**	**-0.9**
ONAJ	**Iwakimizuishiy**	**0.28**	**12**	P	**Pg**	**16 57 04.5**	**+0.6**
JSB	**Shiboa**	**0.66**	**282**	⇑P	**Pb**	**16 57 12.2**	**-0.5**
JSB				S	**Sg**	**16 57 20.7**	**+1.0**
JYT	**Yasato**	**0.74**	**216**	P	**Pb**	**16 57 14.2**	**+0.2**
JFT	**Otama**	**0.75**	**336**	⇑P	**Pg**	**16 57 13.1**	**+0.1**
JFT				S	**Sg**	**16 57 22.1**	**-0.7**
JFY	**Yanaizu**	**1.00**	**306**	⇑P	**Pg**	**16 57 17.3**	**-0.4**
JFY				S	**Sg**	**16 57 29.6**	**-1.0**
MJAR	**Matsushiro Arr**	**2.04**	**263**	Pn	**Pn**	**16 57 34.5**	**+0.7**
	12nm,0.3s,baz=88,slow=16,SNR=37						
MJAR				Sn	**Sn**	**16 58 01.2**	**+1.4**
	12nm,0.3s,baz=80,slow=26,SNR=16						
MAT	**Matsushiro**	**2.04**	**263**	P	**Pn**	**16 57 34.7**	**+0.9**
MAT				S	**Sb**	**16 58 01.7**	**-0.4**
SONM	**Songino Array**	**27.44**	**304**	P	**P**	**17 02 45.9**	**+0.2**
	0.4nm,0.7s,baz=106,slow=11,SNR=3.0						
MKAR	**Makanchi Array**	**43.76**	**302**	P	**P**	**17 05 05.4**	**+0.3**
	0.1nm,0.6s,baz=81,slow=9.1,SNR=2.1						
WRA	**Warramunga Arr**	**56.79**	**187**	P	**P**	**17 06 43.0**	**-1.0**
	0.3nm,0.6s,baz=3.9,slow=7.6,SNR=5.6						
ASAR	**Alice Springs**	**60.51**	**187**	P	**P**	**17 07 09.0**	**-0.9**
	0.3nm,0.8s,baz=22,slow=12,SNR=3.3						

ISCJB 11 16:58:38.5±0.7, 33.83S±0.04×70.85W±0.06, h104km±7km, Error ellipse: s-maj=10.5km s-min=4.1km az=36.6
SJA 11 16:58:38.5±0.8, 33.80S×70.69W, h131km±14km, ML3.1, MW3.3
GUC 11 16:58:39.6±1.1, 33.88S×70.78W, h95km±7km, ML3.8

ISC 11 16:58:39.4±1.5, 33.83S±0.05×70.83W±0.06, h98km±10km, n19, σ0.82/33, Chile-Argentina border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ANTU	**Antumapu**	**0.30**	**32**	*i* P	**Pn**	**16 58 53.6**	**-0.3**
ANTU				*i* S	**Sn**	**16 59 03.5**	**-1.1**
CLCH	**Cerro Calan**	**0.49**	**29**	*i* P	**Pn**	**16 58 55.0**	**-0.1**
CLCH				*i* S	**Sn**	**16 59 05.8**	**-0.9**
CLCH				IAML		16 59 06.8	
	comp=E,12μm,0.4s						
PEL	**Peldehue**	**0.69**	**10**	*i* P	**Pn**	**16 58 56.8**	**+0.1**
PEL				*i* S	**Sn**	**16 59 09.3**	**-0.2**
PEL				IAML		16 59 09.8	
	comp=N,4μm,0.2s						
ROCH	**El Roble**	**0.87**	**350**	*i* P	**Pn**	**16 58 59.2**	**+0.6**
ROCH				*i* S	**Sn**	**16 59 13.7**	**+0.9**
ROCH				IAML		16 59 16.2	
	comp=E,2μm,0.3s						
CHPI	**Pichilemu**	**1.13**	**240**	*i* P	**Pn**	**16 59 00.9**	**-0.2**
CHPI				*i* S	**Sn**	**16 59 17.1**	**-0.3**
NICH	**Los Niches**	**1.22**	**196**	*i* P	**Pn**	**16 59 03.4**	**+1.2**
NICH				*i* S	**Sn**	**16 59 21.4**	**+2.0**
TALC	**Talca**	**1.70**	**203**	*i* P	**Pn**	**16 59 08.0**	**-0.1**
TALC				*i* S	**Sn**	**16 59 29.0**	**-0.9**
AAGR	**Agrelo**	**1.83**	**67**	*i* P	**Pn**	**16 59 09.6**	**-0.2**
ARCO	**CERRO ARCO**	**1.86**	**59**	*i* P	**Pn**	**16 59 10.4**	**0.0**
ARCO				*i* S	**Sn**	**16 59 34.6**	**+0.7**
ARCO				IAML		16 59 36.2	
	comp=Z,125nm,0.3s						
AVIZ	**Vizcacheras**	**1.96**	**80**	*i* P	**Pn**	**16 59 11.7**	**+0.2**
AVIZ				*i* S	**Sn**	**16 59 36.8**	**+0.9**
AUSP	**Uspallata**	**2.00**	**37**	*i* P	**Pn**	**16 59 13.1**	**+0.8**
AUSP				*i* S	**Sn**	**16 59 38.6**	**+1.4**
ASAL	**Salagasta**	**2.08**	**54**	*i* P	**Pn**	**16 59 13.4**	**+0.5**
ASAL				*i* S	**Sn**	**16 59 38.4**	**-0.2**
RTLS	**Leoncito**	**2.40**	**33**	*i* P	**Pn**	**16 59 18.7**	**+1.2**
RTCV	**Cerro Valdivia**	**2.75**	**45**	*i* P	**Pn**	**16 59 21.9**	**+0.1**
RTCV				*i* S	**Sn**	**16 59 53.3**	**-1.0**
CCHI	**Chillan**	**2.95**	**200**	*i* P	**Pn**	**16 59 24.3**	**-0.1**
CCHI				*i* S	**Sn**	**16 59 58.2**	**-0.9**
RTLL	**Cerro Villicun**	**3.19**	**39**	*i* P	**Pn**	**16 59 27.2**	**-0.4**
RTLL				*i* S	**Sn**	**17 00 03.9**	**-0.9**
ACAN	**Cantantal**	**3.42**	**64**	*i* P	**Pn**	**16 59 30.0**	**-0.9**
AMOG	**MOGNA**	**3.49**	**35**	*i* P	**Pn**	**16 59 31.8**	**0.0**
AGUA	**GUANDACOL**	**4.76**	**25**	*i* P	**Pn**	**16 59 48.7**	**-0.3**

NIED 11 17:05:00.36˚90N×140˚70E, h62km, Mw3.7 Best double couple: M0 3.54000×10^14 NP1:φs 343.00000°, δ40.00000°, λ131.00000°. NP2:φs 115.00000°, δ61.00000°, λ61.00000°.
IDC 11 17:05:31.6±1.5, 36.92N×140.82E, h0km, mb3.4/6, mb1 3.5/7, mb1mx3.3/45, mbtmp3.4/7, ML3.4/1, Error ellipse: s-maj=37.5km s-min=21.5km az=62.0
JMA 11 17:05:33.1, 36.92N×140.71E, h6km±1km, M3.6
JMA Felt I J1.

ISC 11 17:05:33.2±1.1, 36.94N±0.04×140.62E±0.06, h6km±10km, n20, σ0.56/19, mb3.4/6, 5C, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.21**	**41**	⇑P	**Pg**	**17 05 37.3**	**-0.1**
ONAJ				S	**Sg**	**17 05 40.5**	**+0.2**
JHO	**Hitachi**	**0.33**	**187**	⇑P	**Pg**	**17 05 39.7**	**0.0**
JHO				S	**Sg**	**17 05 44.4**	**+0.3**
JSB	**Shiboa**	**0.56**	**273**	⇑P	**Pb**	**17 05 46.1**	**+0.7**
JFT	**Otama**	**0.62**	**338**	S	**Sb**	**17 05 55.4**	**+0.1**
JFY	**Yanaizu**	**0.87**	**303**	⇑P	**Pb**	**17 05 50.9**	**+0.3**
JFY				S	**Sb**	**17 06 03.1**	**+0.6**
JMM	**Marumori**	**0.93**	**8**	⇑P	**Pg**	**17 05 50.6**	**-0.5**
MJAR	**Matsushiro Arr**	**1.98**	**259**	Pn	**Pb**	**17 06 09.1**	**-0.5**
	12nm,0.3s,baz=89,slow=16,SNR=41						
MJAR				Sn	**Sb**	**17 06 34.8**	**+0.3**
	26nm,0.3s,baz=79,slow=30,SNR=15						
MAT	**Matsushiro**	**1.98**	**259**	P	**Pb**	**17 06 09.4**	**-0.2**
MAT				S	**Sg**	**17 06 36.1**	**-0.7**
H11N2	**WAKE ISLAND Hy**	**28.65**	**120**	T	T	17 41 16.3	
	baz=313,slow=75,SNR=35						
H11N1	**WAKE ISLAND Hy**	**28.66**	**120**	T	T	17 41 16.9	
	baz=313,slow=75,SNR=38						
H11N3	**WAKE ISLAND Hy**	**28.67**	**120**	T	T	17 41 17.1	
	baz=313,slow=75,SNR=34						
H11S1	**WAKE ISLAND Hy**	**29.35**	**122**	T	T	17 42 07.7	
	baz=314,slow=76,SNR=59						
H11S3	**WAKE ISLAND Hy**	**29.35**	**122**	T	T	17 42 07.3	
	baz=314,slow=76,SNR=59						
H11S2	**WAKE ISLAND Hy**	**29.36**	**122**	T	T	17 42 08.5	
	baz=314,slow=76,SNR=89						
ZALV	**Zalesovo Beam**	**41.51**	**312**	P	**P**	**17 13 21.8**	**+1.0**
	0.2nm,0.2s,baz=72,slow=9.3,SNR=2.4						
MKAR	**Makanchi Array**	**43.63**	**302**	P	**P**	**17 13 38.9**	**+0.6**
	0.3nm,0.7s,baz=99,slow=7.4,SNR=3.4						
KURBB	**Kurchatov Arra**	**45.56**	**308**	P	**P**	**17 13 53.2**	**-0.3**
	0.4nm,0.4s,baz=84,slow=7.8,SNR=5.1						
BVAR	**Borovoye Array**	**50.16**	**312**	P	**P**	**17 14 29.4**	**+0.1**
	0.2nm,0.4s,baz=81,slow=9.1,SNR=2.7						
WRA	**Warramunga Arr**	**56.89**	**187**	P	**P**	**17 15 17.9**	**-0.9**
	0.5nm,0.5s,baz=2.3,slow=7.2,SNR=12						
ASAR	**Alice Springs**	**60.62**	**187**	P	**P**	**17 15 44.3**	**-0.5**
	0.2nm,0.8s,baz=357,slow=9.3,SNR=4.9						

TAP 11 17:06:22.7, 22.27N×120.21E, h24km, ML3.6, 2C-6D, C, Taiwan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TWP	**Hsiaoliuchiu**	**0.16**	**61**	⇑*i* P	Pb	17 06 28.6	+0.7
	baz=64						
TWP				*i* S	Sb	17 06 33.1	+1.8
	baz=64						
KAU	**Kaohsiung**	**0.31**	**17**	*e*P	Pn	17 06 31.6	-0.2
	baz=19						
KAU				*e*S	Sn	17 06 38.2	+0.5
	baz=19						
SCZT	**Fangliau**	**0.40**	**75**	⇓*i* P	Pn	17 06 32.2	-0.8
	baz=75						
SCZT				*i* S	Sn	17 06 39.1	-0.6
	baz=75						
SGLT	**Jiouru**	**0.53**	**30**	⇓*i* P	Pn	17 06 35.3	+0.5
	baz=16						
SGLT				*e*S	Sn	17 06 44.5	+1.6
	baz=16						
HEN	**Hengchun**	**0.56**	**118**	*e*P	Pn	17 06 35.0	-0.2
	baz=126						
TWM1	**Shoushan**	**0.59**	**20**	P	Pn	17 06 36.4	+0.8
	baz=6.0						
TWM1				*e*S	Sn	17 06 46.3	+1.8
	baz=6.0						
EAST	**Anshuo**	**0.60**	**79**	⇓*i* P	Pn	17 06 35.6	-0.3
	baz=79						
EAST				*i* S	Sn	17 06 45.2	+0.2
	baz=79						
SSD	**Sandimen**	**0.62**	**39**	⇓*i* P	Pb	17 06 35.4	+0.5
	baz=55						
SSD				*e*S	Sn	17 06 44.2	-1.0
	baz=55						
TWK1	**Hengchun**	**0.64**	**120**	⇓*i* P	Pn	17 06 36.2	-0.1
	baz=108						
TWK1				*i* S	Sn	17 06 46.0	+0.2
	baz=108						
TAW	**Tawu**	**0.64**	**82**	P	Pb	17 06 35.8	+0.5
	baz=74						
TAW				*e*S	Sn	17 06 46.3	+0.4
	baz=74						
TSEB	**Hengchuen, Pin**	**0.74**	**119**	*e*P	Pb	17 06 36.5	-0.4
	baz=111						
TSEB				*e*S	Sn	17 06 48.3	+0.1
	baz=111						
ECL	**Taimali**	**0.77**	**64**	⇓*i* P	Pn	17 06 37.7	-0.3
	baz=65						
ECL				S	Sb	17 06 47.9	+0.6
	baz=65						
TAI1	**Yung-k'ang**	**0.77**	**1**	*e*P	Pn	17 06 39.0	+0.9
	baz=2.0						
TAI1				*e*S	Sn	17 06 49.2	+0.3
	baz=2.0						
CHN3	**Shinhua**	**0.82**	**10**	*e*P	Pn	17 06 39.2	+0.4
	baz=11						
SGST	**Jiashian**	**0.88**	**23**	*e*P	Pb	17 06 39.0	-0.4
	baz=24						
SGST				*e*S	Sn	17 06 53.2	+1.4
	baz=24						
SCLT	**Jiali**	**0.90**	**359**	*e*P	Pn	17 06 40.8	+0.9
CHN1	**Nanshi**	**0.96**	**18**	*

ALS	**Alishan**	**1.35**	**24**	*e*P	Pn	17 06 46.2	-0.2
	baz=24						
WSF	**Szhu**	**1.36**	**1**	*e*P	Pn	17 06 44.7	-1.6
	baz=1.0						
CHN5	**Tsauling**	**1.39**	**18**	*e*P	Pn	17 06 46.0	-0.8
	baz=5.0						
YUS	**Yu-Shan**	**1.40**	**29**	*e*P	Pn	17 06 47.2	+0.1
	baz=30						
PNG	**Penghu**	**1.43**	**335**	*e*P	Pn	17 06 45.9	-1.3
	baz=336						
WGK	**Gukeng**	**1.45**	**13**	*e*P	Pb	17 06 49.1	+0.1
	baz=14						
TWF1	**Yuli**	**1.48**	**43**	*e*P	Pn	17 06 48.3	+0.4
	baz=43						
EHY	**Hungye**	**1.61**	**40**	*e*P	Pn	17 06 50.4	+0.8
	baz=53						
WNT	**Mingjian**	**1.66**	**15**	*e*P	Pb	17 06 52.8	+0.1
	baz=3.0						
SMLT	**Sun Moon Lake**	**1.73**	**22**	*e*P	Pn	17 06 50.8	-0.7
	baz=22						
TYC	**Yuchr**	**1.74**	**20**	*e*P	Pn	17 06 51.6	+0.2
	baz=21						
ESL	**Shilin**	**1.91**	**36**	*e*P	Pn	17 06 54.6	+0.8
	baz=21						
TCU	**Taichung**	**1.92**	**13**	*e*P	Pn	17 06 54.2	+0.2
	baz=3.0						
WHF	**Hehuan Shan**	**2.11**	**27**	*e*P	Pb	17 06 59.5	-1.0
	baz=27						
TWQ1	**Liyutan**	**2.14**	**14**	*e*P	Pn	17 06 57.5	+0.5
	baz=5.0						
TWT	**Tachien**	**2.17**	**24**	*e*P	Pn	17 06 58.1	+0.6
	baz=24						
NNS	**Nan Shan**	**2.41**	**26**	*e*P	Pn	17 07 02.8	+1.9
	baz=26						
ENA	**Nanau**	**2.57**	**33**	*e*P	Pn	17 07 04.8	+1.9
	baz=33						
NSK	**Sanguang**	**2.62**	**24**	*e*P	Pn	17 07 06.0	+2.3
	baz=23						
ENTT	**Nioudou**	**2.67**	**28**	*e*P	Pn	17 07 06.4	+2.1
	baz=28						
ENTT				*e*S	Sn	17 07 37.2	+1.3
	baz=28						
TWE	**Neicheng**	**2.79**	**28**	*e*P	Pn	17 07 07.0	+1.1
	baz=45						

PRE ***11*** *17:07:26.9±1.7, 26°.43S×27°.44E, h2km, ML2.5*

ISC 11 17:07:26.9±1.3, 26°.29S±0°.05×27°.37E±0°.04, h4km±11km, n10, σ1§06/20, South Africa

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KSR	**Koster**	**0.61**	**316**	*e*P	**Pb**	**17 07 41.2**	**+1.0**
KSR				*e*S	**Sn**	**17 07 51.8**	**-1.1**
KSR				AML	AML	17 08 00.4	
	comp=Z,20nm,0.2s						
OBSV	**Observatory**	**0.65**	**81**	*e*P	**Pg**	**17 07 39.3**	**0.0**
OBSV				*e*S	**Sg**	**17 07 47.4**	**-0.2**
OBSV				AML	AML	17 07 48.5	
	comp=Z,412nm,0.3s						
ERPM	**east rand prop**	**0.79**	**94**	*e*P	**Pg**	**17 07 42.1**	**+0.1**
ERPM				*e*S	**Sg**	**17 07 50.9**	**-1.3**
ERPM				AML	AML	17 07 52.7	
	comp=Z,55nm,0.2s						
MOAB	**Moab Khotsong**	**0.86**	**216**	*e*P	**Pg**	**17 07 43.3**	**-0.1**
MOAB				*e*S	**Sg**	**17 07 52.5**	**-2.0**
MOAB				AML	AML	17 07 59.1	
	comp=Z,60nm,0.2s						
BNON	**Benoni**	**0.87**	**81**	*e*P	**Pg**	**17 07 44.0**	**+0.5**
BNON				*e*S	**Sg**	**17 07 54.2**	**-0.5**
BNON				AML	AML	17 08 03.4	
	comp=Z,263nm,0.2s						
SWZ	**Schweizer**	**2.02**	**244**	*e*P	**Pn**	**17 08 02.8**	**+0.9**
SWZ				*e*S	**Sn**	**17 08 27.3**	**-0.5**
SWZ				AML	AML	17 08 29.3	
	comp=Z,61nm,0.2s						
BOSA	**Boshof**	**2.98**	**219**	*i* P	**Pn**	**17 08 16.9**	**+1.8**
BOSA				*i*		17 08 16.9	
	baz=14,slow=28						
BOSA				*i* S	**Sb**	**17 08 57.9**	**+0.5**
POGA	**Pongola**	**3.94**	**107**	*e*P	**Pn**	**17 08 28.1**	**-0.2**
POGA				*e*S	**Sn**	**17 09 13.9**	**-1.0**
POGA				AML	AML	17 09 35.5	
	comp=Z,19nm,0.9s						
UPI	**Upington**	**5.82**	**248**	*e*P	**Pn**	**17 08 54.9**	**+0.9**
UPI				*e*S	**Sn**	**17 10 00.3**	**-0.9**
UPI				AML	AML	17 10 25.5	
	comp=Z,11nm,0.6s						
MATP	**Matopo**	**5.93**	**10**	*i* P	**Pn**	**17 08 54.4**	**-1.3**
MATP				*i*		17 08 54.5	
	baz=253,slow=28						
MATP				*i* S	**Sn**	**17 10 03.5**	**-0.7**

ISCJB ***11*** *17:12:51.7±0.5, 37°.65N±0°.06×95°.72E±0°.07, h10km, mb3.8/16, MS4.3/1, Error ellipse: s-maj=9.5km s-min=7.0km az=22.9*

IDC ***11*** *17:12:51.9±0.7, 37°.64N×95°.75E, h0km, mb3.9/16, mb1 4.0/21, mb1mx3.8/65, mbtmp3.8/21, ML3.6/5, MS3.4/3, Ms1 3.4/3, ms1mx2.7/58, Error ellipse: s-maj=21.6km s-min=13.5km az=51.0*

BJI ***11*** *17:12:53.5, 37°.69N×95°.74E, h10km, mb4.2/11, mB4.4/4, ML3.7/10, Ms3.6/6, Ms7 3.4/3*

ISC 11 17:12:53.3±0.7, 37°.60N±0°.08×95°.74E±0°.05, h10km, n26, σ1§08/29, mb4.0/16, Qinghai

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GTA	**Gaotai**	**3.67**	**59**	Pn	**Pn**	**17 13 52.9**	**+2.6**
GTA				Pg	**Pb**	**17 13 59.0**	**+0.6**
GTA				Sn	**Sn**	**17 14 33.1**	**-0.6**
GTA				Sg	**Sb**	**17 14 42.4**	**-0.6**
GTA				smax	smax		
	comp=N,110nm,0.9s						
GTA				smax	smax		
	comp=E,110nm,0.8s						
GTA				LR	LR		
	comp=N,530nm,8.1s						
GTA				LR	LR		
	comp=E,520nm,7.4s						
GTA				LR	LR		
	comp=Z,500nm,9.3s						
LZH	**Lanzhou**	**6.67**	**101**	*e*Pg	Pb	17 14 53.6	+4.0
LZH				Sg	**Sg**	**17 16 25.1**	**-2.5**
LZH				smax	smax		
	comp=N,65nm,1.1s						
LZH				smax	smax		
	comp=E,100nm,1.2s						
LZH				LR	LR		
	comp=N,250nm,5.4s						
LZH				LR	LR		
	comp=E,260nm,6.0s						
LZH				LR	LR		
	comp=Z,340nm,7.0s						
SONM	**Songino Array**	**12.87**	**34**	Pn	**Pn**	**17 15 57.6**	**+1.2**
	0.7nm,0.3s,baz=218,slow=15,SNR=9.6						
SONM				LR	LR	17 21 19.5	
	comp=Z,60nm,20.1s,baz=9.0,slow=40						
MKAR	**Makanchi Array**	**13.54**	**317**	Pn	**Pn**	**17 16 04.4**	**-1.0**
	1.0nm,0.3s,baz=125,slow=14,SNR=67						
MKAR				Sn	**Sn**	**17 18 35.6**	**-0.3**
	0.1nm,0.3s,baz=126,slow=24,SNR=8.8						
AAK	**Ala-Archa**	**17.00**	**294**	Pn	**Pn**	**17 16 51.8**	**+0.6**
	0.3nm,0.3s,baz=86,slow=9.5,SNR=5.8						
KURBB	**Kurchatov Arra**	**17.89**	**322**	P	**Pn**	**17 17 00.9**	**-1.3**
	0.1nm,0.3s,baz=134,slow=11,SNR=9.6						
ZALV	**Zalesovo Beam**	**18.00**	**339**	P	**P**	**17 17 04.7**	**+0.7**
	0.1nm,0.3s,baz=156,slow=11,SNR=9.9						
CMAR	**Chiang Mai Arr**	**19.28**	**171**	P	**Pn**	**17 17 20.2**	**+0.9**
	0.3nm,0.3s,baz=341,slow=9.9,SNR=24						
CMAR				LR	LR	17 25 22.5	
	comp=Z,28nm,19.5s,baz=100,slow=39						
BVAR	**Borovoye Array**	**23.40**	**319**	P	**P**	**17 18 02.7**	**+0.5**
	1.3nm,0.8s,baz=115,slow=10.0,SNR=8.0						
KSRS	**Korea Array**	**25.46**	**80**	P	**P**	**17 18 20.6**	**-0.8**
	2.0nm,0.6s,baz=279,slow=9.0,SNR=14						
AKTO	**Aktyubinsk**	**29.67**	**308**	P	**P**	**17 18 57.2**	**-1.9**
	1.6nm,0.5s,baz=90,slow=12,SNR=3.8						
ARU	**Arti**	**31.04**	**319**	P	**P**	**17 19 09.1**	**-2.0**
	2.9nm,0.8s,baz=168,slow=1.4,SNR=6.4						
TIXI	**Tiksi**	**38.09**	**16**	P	**P**	**17 20 11.4**	**-0.4**
	0.8nm,0.3s,baz=235,slow=1.0,SNR=9.0						
LEM	**Lembang**	**45.57**	**163**	LR	LR	17 40 44.9	
	comp=Z,342nm,19.8s,slow=37						
FINES	**FINESS Array B**	**48.28**	**323**	P	**P**	**17 21 34.4**	**+0.2**
	0.6nm,0.6s,baz=93,slow=7.6,SNR=3.7						
ARCES	**ARCESS Array B**	**48.45**	**334**	P	**P**	**17 21 36.3**	**+0.8**
	2.3nm,0.9s,baz=95,slow=11,SNR=3.6						
NB2	**NORSAR Subarra**	**55.41**	**324**	P	**P**	**17 22 27.4**	**-0.2**
	comp=Z,0.9nm,0.7s,baz=75,slow=7.9						
NOA	**NORSAR Array B**	**55.41**	**324**	P	**P**	**17 22 27.8**	**+0.2**
	comp=Z,1.0nm,0.7s,baz=72,slow=7.0,SNR=3.8						
ILAR	**Eielson Array**	**66.89**	**24**	P	**P**	**17 23 45.4**	**+0.1**
	comp=Z,0.9nm,0.8s,baz=294,slow=5.4,SNR=12						
WRA	**Warramunga Arr**	**67.79**	**141**	P	**P**	**17 23 51.6**	**+0.1**
	comp=Z,1.1nm,0.9s,baz=337,slow=7.1,SNR=5.8						
INK	**Inuvik**	**68.20**	**18**	P	**P**	**17 23 53.7**	**+0.2**
	comp=Z,1.3nm,0.8s,baz=302,slow=7.0,SNR=5.2						
ASAR	**Alice Springs**	**70.73**	**143**	P	**P**	**17 24 10.2**	**+0.5**
	comp=Z,0.7nm,0.7s,baz=330,slow=5.9,SNR=18						
ESDC	**Sonseca Array**	**73.56**	**308**	P	**P**	**17 24 26.9**	**+0.3**
	comp=Z,0.3nm,0.4s,baz=42,slow=5.9,SNR=3.6						
YKA	**Yellowknife Ar**	**77.30**	**14**	P	**P**	**17 24 46.9**	**-0.7**
	comp=Z,0.1nm,0.4s,baz=337,slow=5.5,SNR=6.1						
STKA	**Stephens Creek**	**81.30**	**142**	P	**P**	**17 25 09.4**	**-0.3**
	comp=Z,1.9nm,1.0s,baz=5.8,slow=4.6,SNR=3.2						
TORD	**Torodi Ar. Bea**	**85.25**	**283**	P	**P**	**17 25 31.3**	**+0.7**
	comp=Z,0.6nm,0.9s,baz=59,slow=2.7,SNR=3.3						

JMA 11 17:15:05.8, 37°.00N×140°.62E, h9km±1km, M2.6, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.17**	**55**	P	Pg	17 15 09.7	+0.2
ONAJ				S	Sg	17 15 12.3	+0.2
JHO	**Hitachi**	**0.39**	**186**	P	Pg	17 15 13.6	+0.1
JHO				S	Sg	17 15 18.9	+0.3
JFT	**Otama**	**0.56**	**336**	P	Pg	17 15 16.9	+0.1
JFT				S	Sg	17 15 24.9	+0.7
JMM	**Marumori**	**0.88**	**9**	P	Pg	17 15 22.1	-0.6
JMM				S	Sg	17 15 33.9	-0.2
MAT	**Matsushiro**	**1.99**	**257**	P	Pn	17 15 40.8	+1.1
MAT				S	Sb	17 16 07.3	+0.2

CSEM ***11*** *17:16:45.2, 43°.40N×12°.45E, h7km, MD1.4/5*

ROM 11 17:16:45.2±0.3, 43°.40N×12°.45E, h7km±3km, Md1.4/5, Ml0.8/2, Error ellipse: s-maj=2.3km s-min=1.1km az=95.0, Central Italy

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ATVO	**AVT- Monte Val**	**0.04**	**237**	Pg	Pg	17 16 46.8	+0.1
ATVO				Sg	Sg	17 16 48.0	+0.2
ATVO	**AVT- Monte Val**	**0.04**	**237**	Pg	Pg	17 16 46.8	+0.1
ATVO				Sg	Sg	17 16 48.0	+0.2
ATPC	**Poggio Castell**	**0.08**	**2**	Pg	Pg	17 16 47.5	+0.3
ATPC				Sg	Sg	17 16 49.2	+0.6
ATPC	**Poggio Castell**	**0.08**	**2**	Pg	Pg	17 16 47.5	+0.3
ATPC				Sg	Sg	17 16 49.2	+0.6
PIEI	**Pieia**	**0.14**	**24**	Pg	Pg	17 16 48.7	+0.4
PIEI				Sg	Sg	17 16 51.7	+1.3
PIEI	**Pieia**	**0.14**	**24**	Pg	Pg	17 16 48.7	+0.4
PIEI				Sg	Sg	17 16 51.7	+1.3
MURB	**Monte Urbino**	**0.15**	**160**	Pg	Pg	17 16 49.0	+0.6
MURB				Sg	Sg	17 16 51.9	+1.4
	25nm,0.2s						
MURB	**Monte Urbino**	**0.15**	**160**	Pg	Pg	17 16 49.0	+0.6
MURB				Sg	Sg	17 16 51.9	+1.4
	25nm,0.2s						
SSFR	**Montelago di S**	**0.24**	**82**	Pg	Pg	17 16 50.5	+0.5
SSFR				Sg	Sg	17 16 54.6	+1.3
	9.0nm,0.2s						
SSFR	**Montelago di S**	**0.24**	**82**	Pg	Pg	17 16 50.5	+0.5
SSFR				Sg	Sg	17 16 54.6	+1.3
	9.0nm,0.2s						

NIED ***11*** *17:18:00, 37°.00N×140°.70E, h26km, Mw3.8 Best double couple: M0 6.11000×10^14 NP1:ϕs240.00000°, δ27.00000°, λ122.00000°. NP2:ϕs25.00000°, δ67.00000°, λ75.00000°.*

ISCJB ***11*** *17:18:01.2±0.5, 37°.04N±0°.04×140°.83E±0°.06, h10km, mb4.0/23, Error ellipse: s-maj=7.9km s-min=4.9km az=30.4*

JMA ***11*** *17:18:05.0, 36°.99N×140°.63E, h19km±1km, M4.1 Broadband fault plane solution: P waves. NP1: ϕs34.00000°, δ67.00000°, λ81.00000°. NP2:ϕs236.00000°, δ25.00000°, λ111.00000°. Principal axes: T Plg67.0000°, Azm287.0000°; N Plg9.0000°, Azm38.0000°; P Plg21.0000°, Azm131.0000°;*

JMA Felt III J1.

IDC ***11*** *17:18:08.6±2.3, 37°.01N×140°.50E, h50km±21km, mb3.7/24, mb1 3.9/26, mb1mx3.8/55, mbtmp4.0/26, ML3.4/2, MS3.1/1, Ms1 3.1/1, ms1mx2.4/50 Error ellipse: s-maj=16.3km s-min=12.0km az=90.0*

ISC 11 17:18:03.6±0.5, 37°.00N±0°.04×140°.62E±0°.05, h10km, n40, σ1§31/38, mb4.0/23, 2C-1D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.18**	**55**	⇑P	**Pg**	**17 18 09.7**	**+2.3**
ONAJ				S	**Sg**	**17 18 13.1**	**+3.0**
JHO	**Hitachi**	**0.39**	**186**	⇑P	**Pg**	**17 18 12.7**	**+1.4**
JHO				S	**Sg**	**17 18 18.2**	**+1.8**
JSB	**Shiboa**	**0.56**	**267**	⇓P	**Pb**	**17 18 16.7**	**+1.2**
MJAR	**Matsushiro Arr**	**1.99**	**257**	P	**Pn**	**17 18 38.4**	**+1.1**
	43nm,0.3s,baz=82,slow=16,SNR=241						
MJAR				S	**Sn**	**17 19 04.3**	**+2.0**
	89nm,0.3s,baz=78,slow=30,SNR=20						
MAT	**Matsushiro**	**1.99**	**257**	P	**Pn**	**17 18 38.8**	**+1.5**
MAT				S	**Sb**	**17 19 05.4**	**+0.7**
JHJ	**Hachijo jima 2**	**3.93**	**190**	P	**Pn**	**17 19 04.7**	**+0.7**
	18nm,0.3s,baz=104,slow=22,SNR=15						
JHJ				S	**Sn**	**17 19 49.2**	**-0.9**
	66nm,0.3s,baz=70,slow=22,SNR=7.9						
JNU	**Nakatsue**	**8.87**	**247**	P	**Pn**	**17 20 14.9**	**+3.0**
	0.2nm,0.3s,baz=120,slow=12,SNR=3.6						
USRK	**Ussuriysk Ar.**	**9.73**	**320**	P	Pn	17 20 29.3	+5.8
	0.3nm,0.3s,baz=130,slow=13,SNR=10.0						
KSRS	**Korea Array**	**10.14**	**276**	P	Pn	17 20 35.1	+6.0
	0.2nm,0.3s,baz=90,slow=14,SNR=16						
KSRS				LR	LR	17 24 21.3	
	comp=Z,102nm,18.1s,baz=84,slow=37						
KLR	**Kul'dur**	**13.82**	**335**	P	Pn	17 21 24.1	+4.6
	0.1nm,0.3s,baz=128,slow=14,SNR=7.4						
MA2	**Magadan**	**23.52**	**13**	P	**P**	**17 23 14.0**	**+0.4**
	8.5nm,0.9s,baz=326,slow=3.6,SNR=2.7						
SEY	**Seymchan**	**26.95**	**12**	P	**P**	**17 23 44.9**	**0.0**
	1.0nm,0.4s,baz=208,slow=7.3,SNR=6.8						
SONM	**Songino Array**	**27.28**	**304**	P	**P**	**17 23 47.9**	**-0.3**
	2.0nm,0.7s,baz=109,slow=8.7,SNR=8.5						
H11N2	**WAKE ISLAND Hy**	**28.68**	**120**	T	T	17 53 52.0	
	baz=313,slow=75,SNR=832						
H11N1	**WAKE ISLAND Hy**	**28.69**	**120**	T	T	17 53 52.0	
	baz=313,slow=75,SNR=1034						
H11N3	**WAKE ISLAND Hy**	**28.70**	**120**	T	T	17 53 52.8	
	baz=313,slow=75,SNR=768						
H11S1	**WAKE ISLAND Hy**	**29.38**	**122**	T	T	17 54 42.4	
	baz=314,slow=75,SNR=1540						
H11S3	**WAKE ISLAND Hy**	**29.38**	**122**	T	T	17 54 42.5	
	baz=314,slow=75,SNR=1443						
H11S2	**WAKE ISLAND Hy**	**29.39**	**122**	T	T	17 54 43.6	
	baz=314,slow=75,SNR=1504						
TIXI	**Tiksi**	**35.25**	**354**	P	**P**	**17 24 56.4**	**-1.4**
	1.6nm,0.6s,baz=147,slow=3.7,SNR=12						
CMAR	**Chiang Mai Arr**	**40.87**	**255**	P	**P**	**17 25 45.8**	**-0.1**
	0.4nm,0.6s,baz=46,slow=7.4,SNR=6.5						
ZALV	**Zalesovo Beam**	**41.47**	**312**	P	**P**	**17 25 49.2**	**-1.2**
	1.5nm,0.6s,baz=102,slow=6.3,SNR=7.6						
ZALV				PcP	**PcP**	**17 27 47.0**	**-0.9**
	0.8nm,0.4s,baz=131,slow=5.9,SNR=3.7						
MKAR	**Makanchi Array**	**43.60**	**302**	P	**P**	**17 26 07.3**	**-0.6**
	1.2nm,0.5s,baz=86,slow=10,SNR=20						
MKAR				PcP	**PcP**	**17 27 54.1**	**-1.1**
	0.4nm,0.7s,baz=88,slow=4.9,SNR=3.3						
KURBB	**Kurchatov Arra**	**45.52**	**308**	P	**P**	**17 26 22.2**	**-0.9**
	1.9nm,0.4s,baz=83,slow=8.1,SNR=9.1						
ILAR	**Eielson Array**	**49.86**	**32**	P	**P**	**17 26 56.9**	**+0.3**
	0.5nm,0.7s,baz=277,slow=6.1,SNR=5.6						
BVAR	**Borovoye Array**	**50.12**	**312**	P	**P**	**17 26 57.5**	**-1.3**
	1.2nm,0.6s,baz=77,slow=7.0,SNR=11						
BVAR				PcP	**PcP**	**17 28 17.4**	**-0.8**
	0.6nm,0.7s,baz=46,slow=4.2,SNR=3.0						
INK	**Inuvik**	**54.71**	**27**	P	**P**	**17 27 32.6**	**+0.1**
	0.7nm,0.7s,baz=301,slow=7.3,SNR=3.1						
ARU	**Arti**	**55.96**	**318**	P	P	17 27 39.7	-2.1
	1.3nm,0.4s,baz=297,slow=10,SNR=4.5						
WRA	**Warramunga Arr**	**56.94**	**187**	P	**P**	**17 27 47.6**	**-1.5**
	3.7nm,0.6s,baz=3.0,slow=7.3,SNR=65						
SPITS	**Spitsbergen Ar**	**60.43**	**349**	P	**P**	**17 28 12.5**	**-0.3**
	17nm,1.1s,baz=86,slow=2.2,SNR=4.1						
ASAR	**Alice Springs**	**60.67**	**187**	P	**P**	**17 28 14.7**	**-0.3**
	0.9nm,0.7s,baz=17,slow=11,SNR=20						
ARCES	**ARCESS Array B**	**63.80**	**339**	P	**P**	**17 28 34.8**	**-0.7**
	6.3nm,1.1s,baz=46,slow=8.7,SNR=3.5						
YKA	**Yellowknife Ar**	**64.16**	**30**	P	**P**	**17 28 37.8**	**-0.1**
	0.3nm,0.7s,baz=303,slow=6.8,SNR=5.8						
STKA	**Stephens Creek**	**68.53**	**179**	P	**P**	**17 29 06.0**	**-0.1**
	1.2nm,0.8s,baz=315,slow=14,SNR=1.9						
FINES	**FINESS Array B**	**68.55**	**332**	P	**P**	**17 29 05.2**	**-0.8**
	2.4nm,0.8s,baz=64,slow=8.7,SNR=7.4						
AKASG	**Malin Array Be**	**73.93**	**322**	P	**P**	**17 29 37.9**	**-0.9**
	0.2nm,0.3s,baz=47,slow=6.0,SNR=5.4						
NB2	**NORSAR Subarra**	**73.97**	**337**	P	**P**	**17 29 37.7**	**-1.2**
	comp=Z,1.4nm,0.7s,baz=40,slow=5.9						
NOA	**NORSAR Array B**	**73.97**	**337**	P	**P**	**17 29 38.0**	**-0.8**
	comp=Z,1.1nm,0.7s,baz=39,slow=5.8,SNR=4.8						
NVAR	**Mina Array Bea**	**75.52**	**53**	P	**P**	**17 29 49.9**	**+1.4**
	comp=Z,0.4nm,0.6s,baz=298,slow=6.1,SNR=3.2						
GERES	**GERESS Array B**	**82.40**	**328**	P	**P**	**17 30 24.3**	**-1.6**
	comp=Z,0.4nm,0.4s,baz=44,slow=7.1,SNR=5.7						

ISCJB ***11*** *17:20:59.0±0.3, 37°.04N±0°.04×140°.67E±0°.04, h10km, mb4.3/54, MS3.2/4, Error ellipse: s-maj=6.0km s-min=3.7km az=141.6*

JMA ***11*** *17:21:00.5, 37°.00N×140°.61E, h9km±1km, M4.3 Broadband fault plane solution: P waves. NP1: ϕs97.00000°, δ46.00000°, λ-97.00000°. NP2:ϕs287.00000°, δ44.00000°, λ-83.00000°. Principal axes: T Plg1.0000°, Azm192.0000°; N Plg5.0000°, Azm102.0000°; P Plg85.0000°, Azm293.0000°;*

JMA Felt III J1.

NIED ***11*** *17:21:00, 37°.00N×140°.60E, h5km, Mw4.1 Best double couple: M0 1.36000×10^15 NP1:ϕs274.00000°, δ43.00000°, λ-84.00000°. NP2:ϕs86.00000°, δ47.00000°, λ-95.00000°.*

MOS ***11*** *17:21:01.8±1.7, 37°.06N×140°.64E, h27km, mb4.5/45, Error ellipse: s-maj=8.2km s-min=5.5km az=96.1*

NEIC ***11*** *17:21:05.8±1.0, 37°.00N×140°.48E, h48km±8km, mb4.5/8, Error ellipse: s-maj=10.6km s-min=6.9km az=120.0*

NEIC Recorded [3 JMA] in Fukushima.

BJI ***11*** *17:21:06.0, 37°.10N×140°.30E, h44km, mb4.5/7, mB4.8/3, Ms4.6/1, Ms7 4.5/1*

IDC ***11*** *17:21:06.0±2.0, 36°.94N×140°.46E, h51km±18km, mb3.9/30, mb1 4.1/33, mb1mx4.0/50, mbtmp4.2/33, ML3.5/3, MS3.1/3, Ms1 3.1/3, ms1mx2.6/53, Error ellipse: s-maj=13.7km s-min=11.5km az=100.0*

ISC 11 17:21:00.6±0.4, 37°.05N±0°.05×140°.60E±0°.05, h10km, n121, σ1§39/113, mb4.4/54, MS3.1/4, 7C-5D, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.17**	**71**	P	**Pg**	**17 21 04.5**	**+0.1**
ONAJ				S	**Sg**	**17 21 07.0**	**0.0**
JHO	**Hitachi**	**0.43**	**183**	⇑P	**Pg**	**17 21 08.1**	**-1.0**
JSB	**Shiboa**	**0.55**	**262**	⇓P	**Pb**	**17 21 11.8**	**-0.5**
JSB				S	**Sb**	**17 21 19.6**	**-0.6**
MJAR	**Matsushiro Arr**	**1.98**	**256**	P	**Pn**	**17 21 35.1**	**+0.9**
	76nm,0.3s,baz=86,slow=16,SNR=40						
MJAR				S	**Sb**	**17 22 00.8**	**-0.7**
	72nm,0.3s,baz=82,slow=28,SNR=13						
MAJO	**Matsushiro**	**1.98**	**256**	*d* P	**Pn**	**17 21 35.0**	**+0.8**
MAJO	**Matsushiro**	**1.98**	**256**	*e*Pn	**Pn**	**17 21 35.0**	**+0.8**
MAT	**Matsushiro**	**1.98**	**256**	P	**Pn**	**17 21 35.2**	**+1.0**
MAT				S	**Sb**	**17 22 01.0**	**-0.5**
JHJ	**Hachijo jima 2**	**3.97**	**190**	P	**Pn**	**17 22 01.1**	**-0.5**
	24nm,0.3s,baz=86,slow=15,SNR=9.3						
JHJ				S	**Sn**	**17 22 48.8**	**+0.5**
	23nm,0.3s,baz=78,slow=20,SNR=3.9						
ERM	**Erimo**	**5.34**	**21**	*e*P	Pn	17 22 23.7	+3.3
YUK	**Yuzh-Kuril'sk**	**8.05**	**28**	*e*P	**Pn**	**17 22 56.2**	**-1.3**
YUK				*e*S	Sn	17 24 23.0	-5.6
YUK				pmax	pmax		
	comp=N,44nm,0.3s						
YUK				pmax	pmax		
	comp=Z,59nm,0.3s						
YUK				pmax	pmax		
	comp=E,26nm,0.2s						
SHO	**Shikotan**	**8.31**	**33**	*e*P	**Pn**	**17 22 59.4**	**-1.7**
SHO				pmax	pmax		
	comp=Z,16nm,0.4s						
JNU	**Nakatsue**	**8.87**	**247**	P	**Pn**	**17 23 10.8**	**+1.9**
	comp=Z,0.4nm,0.3s,baz=51,slow=8.6,SNR=3.9						
JNU				LR	LR	17 26 46.1	
	comp=Z,137nm,19.7s,baz=97,slow=39						
USRK	**Ussuriysk Ar.**	**9.68**	**320**	P	Pn	17 23 26.3	+6.3
	comp=Z,0.7nm,0.3s,baz=134,slow=12,SNR=26						
KUR	**Kuril'sk**	**9.84**	**32**	*e*P	**Pn**	**17 23 21.7**	**-0.4**
KUR				*e*S	**Sn**	**17 25 08.3**	**-4.3**
KUR				pmax	pmax		
	comp=N,5.0nm,0.5s						
KUR				pmax	pmax		
	comp=E,4.0nm,0.5s						
KUR				pmax	pmax		
	comp=Z,12nm,0.5s						
KUR				smax	smax		
	comp=N,15nm,0.8s						
KUR				smax	smax		
	comp=E,8.0nm,0.8s						
YSS	**Yuzh-Sakhalins**	**10.03**	**9**	*e*P	Pn	17 23 28.1	+3.4
YSS				pmax	pmax		
	comp=Z,72nm,1.7s						
YSS	**Yuzh-Sakhalins**	**10.03**	**9**	*e*Pn	**Pn**	**17 23 25.9**	**+1.2**
	comp=Z,34nm,0.8s						
KSRS	**Korea Array**	**10.11**	**276**	P	Pn	17 23 32.0	+6.2
	comp=Z

ZALV	**Zalesovo Beam**	**41.42**	**312**	P	**P**	**17**	**28**	**46.6 -0.5**
	comp=Z,3.1nm,0.5s,baz=92,slow=7.1,SNR=9.7							
ZALV				PcP	**PcP**	**17**	**30**	**43.3 -1.5**
	comp=Z,1.4nm,0.3s,baz=91,slow=3.7,SNR=4.9							
NRIK	**Noril'sk**	**42.98**	**335**	P	**P**	**17**	**29**	**01.7 +2.1**
	comp=Z,1.8nm,0.3s,baz=119,slow=10,SNR=2.6							
MKAR	**Makanchi Array**	**43.56**	**302**	P	**P**	**17**	**29**	**04.3 -0.2**
	comp=Z,1.5nm,0.7s,baz=89,slow=9.6,SNR=12							
MKAR				PcP	**PcP**	**17**	**30**	**51.6 -0.6**
	comp=Z,0.8nm,0.9s,baz=88,slow=4.5,SNR=3.7							
TAPN	**Taplejung**	**45.29**	**274**	*eP*	**P**	**17**	**29**	**20.8 +1.8**
	comp=Z,2.5nm,0.4s							
KURK	**Kurchatov**	**45.41**	**308**	*eP*	**P**	**17**	**29**	**18.4 -0.9**
KURK				pmax	pmax			
	comp=Z,14nm,0.8s							
KURK	**Kurchatov**	**45.41**	**308**	*eP*	**P**	**17**	**29**	**18.4 -0.9**
	comp=Z,14nm,0.8s							
ODAN	**Odare**	**45.76**	**273**	*eP*	**P**	**17**	**29**	**21.4 -1.2**
	comp=Z,6.0nm,0.7s							
PDGK	**Podgornoye**	**46.19**	**298**	P	**P**	**17**	**29**	**25.9 +0.4**
PDGK				pmax	pmax			
	comp=Z,6.0nm,0.9s							
RAMN	**Ramite**	**46.35**	**274**	*eP*	**P**	**17**	**29**	**26.1 -1.2**
	comp=Z,22nm,1.0s							
GUN	**Gumba**	**46.50**	**275**	*eP*	**P**	**17**	**29**	**31.1 +2.5**
	comp=Z,6.7nm,0.4s							
PKIN	**Phulchoki**	**47.03**	**275**	*eP*	**P**	**17**	**29**	**33.2 +0.5**
	comp=Z,2.0nm,0.5s							
GKN	**Gorkha**	**47.45**	**276**	*eP*	**P**	**17**	**29**	**36.9 +1.1**
	comp=Z,8.5nm,0.5s							
KOLN	**Koldanda**	**48.38**	**276**	*eP*	**P**	**17**	**29**	**42.4 -0.6**
PYUN	**Piuthan**	**48.72**	**277**	*eP*	**P**	**17**	**29**	**44.9 -0.8**
	comp=Z,32nm,1.0s							
TKM2	**Tokmak 2**	**49.05**	**298**	*eP*	**P**	**17**	**29**	**48.2 +0.2**
TKM2				pmax	pmax			
	comp=Z,6.0nm,0.8s							
TKM2	**Tokmak 2**	**49.05**	**298**	*eP*	**P**	**17**	**29**	**48.2 +0.2**
	comp=Z,5.7nm,0.8s							
ILAR	**Eielson Array**	**49.84**	**32**	P	**P**	**17**	**29**	**53.9 +0.4**
	comp=Z,2.0nm,0.7s,baz=266,slow=6.5,SNR=15							
OTUK	**Ortayu**	**49.89**	**306**	P	**P**	**17**	**29**	**53.6 -0.5**
OTUK				pmax	pmax			
	comp=Z,3.0nm,1.9s							
AAK	**Ala-Archa**	**49.91**	**298**	*eP*	**P**	**17**	**29**	**53.5 -1.0**
AAK				pmax	pmax			
	comp=Z,4.0nm,0.9s							
BVAR	**Borovoye Array**	**50.08**	**312**	P	**P**	**17**	**29**	**55.0 -0.5**
	comp=Z,2.1nm,0.8s,baz=86,slow=7.6,SNR=9.3							
BVAR	**Borovoye Array**	**50.08**	**312**	P	**P**	**17**	**29**	**55.0 -0.5**
BVAR				pmax	pmax			
	comp=Z,2.0nm,0.8s							
BRVK	**Borovoye**	**50.14**	**312**	*ceP*	**P**	**17**	**29**	**56.0 +0.1**
BRVK				pmax	pmax			
	comp=Z,4.0nm,0.8s							
BRVK	**Borovoye**	**50.14**	**312**	*eP*	**P**	**17**	**29**	**54.4 -1.5**
	comp=Z,3.5nm,0.8s							
MNAS	**Manas**	**51.35**	**299**	P	**P**	**17**	**30**	**05.5 +0.1**
MNAS				pmax	pmax			
	comp=Z,4.0nm,0.9s							
SFK	**Sufi-Kurgan**	**51.44**	**295**	P	**P**	**17**	**30**	**05.9 -0.3**
SFK				pmax	pmax			
	comp=Z,4.0nm,0.9s							
INK	**Inuvik**	**54.67**	**27**	P	**P**	**17**	**30**	**30.3 +1.0**
	comp=Z,1.0nm,0.7s,baz=292,slow=6.6,SNR=4.4							
ARU	**Arti**	**55.92**	**318**	P	**P**	**17**	**30**	**37.1 -1.4**
	comp=Z,6.9nm,0.9s,baz=41,slow=1.3,SNR=9.2							
ARU	**Arti**	**55.92**	**318**	*diP*	**P**	**17**	**30**	**37.7 -0.8**
ARU				S	**S**	**17**	**38**	**21.0 -5.0**
ARU				SS	**SS**	**17**	**42**	**06.1 -5.1**
ARU				pmax	pmax			
	comp=Z,6.0nm,0.8s							
ARU	**Arti**	**55.92**	**318**	*eP*	**P**	**17**	**30**	**37.0 -1.4**
	comp=Z,6.4nm,0.9s							
WRAB	**Tennant Creek**	**56.98**	**187**	*ceP*	**P**	**17**	**30**	**48.0 +1.7**
WRAB				pmax	pmax			
	comp=Z,22nm,1.2s							
WRAB	**Tennant Creek**	**56.98**	**187**	*eP*	**P**	**17**	**30**	**45.2 -1.1**
	comp=Z,7.0nm,0.8s							
WRA	**Warramunga Arr**	**56.99**	**187**	P	**P**	**17**	**30**	**45.4 -1.0**
	comp=Z,7.8nm,0.8s,baz=5.2,slow=7.4,SNR=32							
WRA	**Warramunga Arr**	**56.99**	**187**	P	**P**	**17**	**30**	**45.4 -1.0**
WRA				pmax	pmax			
	comp=Z,7.0nm,0.8s							
ABKAR	**Akbulak array**	**57.43**	**310**	*eP*	**P**	**17**	**30**	**48.5 -0.8**
	comp=Z,2.5nm,0.6s							
AKTO	**Aktyubinsk**	**58.18**	**312**	P	**P**	**17**	**30**	**56.3 +1.7**
	comp=Z,1.1nm,0.5s,baz=60,slow=7.1,SNR=5.4							
SPITS	**Spitsbergen Ar**	**60.38**	**349**	P	**P**	**17**	**31**	**10.6 +1.2**
	comp=Z,1.9nm,1.2s,baz=73,slow=15,SNR=6.0							
SPITS	**Spitsbergen Ar**	**60.38**	**349**	P	**P**	**17**	**31**	**10.6 +1.2**
SPITS				pmax	pmax			
	comp=Z,6.0nm,1.0s							
ASAR	**Alice Springs**	**60.71**	**187**	P	**P**	**17**	**31**	**11.3 -0.9**
	comp=Z,3.5nm,0.8s,baz=7.7,slow=5.6,SNR=33							
MBWA	**Marble Bar**	**61.15**	**202**	P	**P**	**17**	**31**	**15.6 +0.4**
RES	**Resolute Bay**	**62.75**	**14**	P	**P**	**17**	**31**	**25.0 -0.4**
RES				pmax	pmax			
	comp=Z,4.0nm,1.1s							
GEYT	**Ailbeck**	**63.26**	**299**	P	**P**	**17**	**31**	**29.4 0.0**
	comp=Z,2.8nm,0.6s,baz=43,slow=2.6,SNR=6.6							
ARCES	**ARCESS Array B**	**63.75**	**339**	P	**P**	**17**	**31**	**34.2 +2.0**
	comp=Z,2.7nm,0.7s,baz=56,slow=8.0,SNR=15							
YKA	**Yellowknife Ar**	**64.13**	**30**	P	**P**	**17**	**31**	**34.8 +0.2**
	comp=Z,0.7nm,0.8s,baz=304,slow=6.7,SNR=12							
YKA				PcP	**PcP**	**17**	**32**	**08.8 -0.9**
	comp=Z,0.3nm,0.6s,baz=298,slow=3.8,SNR=4.0							
DAG	**Danmarks Havn**	**65.70**	**355**	P	**P**	**17**	**31**	**44.2 -0.6**
DAG				pmax	pmax			
	comp=Z,5.0nm,1.8s							
OBN	**Obninsk**	**67.69**	**323**	*eP*	**P**	**17**	**31**	**59.2 +1.5**
OBN				*e*		17	34	33.2
OBN				*e*	PPP	17	36	10.2
OBN				*e*	S	17	40	46.4 -8.5
OBN				pmax	pmax			
	comp=Z,3.0nm,0.9s							
OBN				MLR	MLR			
	comp=Z,53nm,14.0s							
LPSR	**Galich'ya Gora**	**67.87**	**320**	*eP*	**P**	**17**	**31**	**56.9 -2.0**
LPSR				pmax	pmax			
	comp=Z,9.0nm,0.6s							
VSR	**Storozhevoye**	**68.49**	**318**	*eP*	**P**	**17**	**32**	**02.6 -0.2**
VSR				pmax	pmax			
	comp=Z,4.0nm,0.9s							
FINES	**FINESS Array B**	**68.50**	**332**	P	**P**	**17**	**32**	**02.2 -0.5**
	comp=Z,6.2nm,0.8s,baz=64,slow=8.7,SNR=13							
STKA	**Stephens Creek**	**68.57**	**179**	P	**P**	**17**	**32**	**03.8 +0.3**
	comp=Z,2.9nm,0.8s,baz=356,slow=8.1,SNR=5.2							
KBZ	**Khabaz**	**70.40**	**310**	P	**P**	**17**	**32**	**14.2 -0.5**
	comp=Z,2.8nm,0.9s,baz=330,slow=4.4,SNR=4.1							
KIV	**Kislovodsk**	**70.40**	**311**	*eP*	**P**	**17**	**32**	**14.9 -0.1**
KIV				pmax	pmax			
	comp=Z,7.0nm,0.9s							
AKASG	**Malin Array Be**	**73.89**	**322**	P	**P**	**17**	**32**	**34.7 -0.8**
	comp=Z,1.0nm,0.5s,baz=46,slow=5.8,SNR=12							
KIEV	**Kiev**	**73.90**	**322**	*eP*	**P**	**17**	**32**	**36.2 +0.6**
KIEV				pmax	pmax			
	comp=Z,4.0nm,1.0s							
NB2	**NORSAR Subarra**	**73.92**	**337**	P	**P**	**17**	**32**	**35.7 +0.1**
	comp=Z,3.2nm,0.8s,baz=41,slow=6.2							
NOA	**NORSAR Array B**	**73.92**	**337**	P	**P**	**17**	**32**	**35.2 -0.5**
	comp=Z,3.9nm,0.9s,baz=40,slow=5.8,SNR=12							
FFC	**Flin Flon**	**74.05**	**32**	*iP*	P	17	32	39.7 +3.3
NVAR	**Mina Array Bea**	**75.50**	**53**	P	**P**	**17**	**32**	**46.1 +0.6**
	comp=Z,1.0nm,0.8s,baz=286,slow=6.9,SNR=6.1							
PDAR	**Pinedale Array**	**78.12**	**45**	P	**P**	**17**	**33**	**00.7 +0.5**
	comp=Z,1.2nm,0.8s,baz=288,slow=2.6,SNR=9.0							
BRTR	**Keskin Array B**	**78.35**	**311**	P	**P**	**17**	**33**	**01.4 0.0**
	comp=Z,0.8nm,0.6s,baz=127,slow=4.4,SNR=5.0							
KOLS	**Kolonicke sedl**	**78.43**	**324**	*eP*	**P**	**17**	**33**	**02.3 +0.9**
KOLS	**Kolonicke sedl**	**78.43**	**324**	*eP*	**P**	**17**	**33**	**02.3 +0.9**
STHS	**Stebnicka Huta**	**78.57**	**324**	*eP*	**P**	**17**	**33**	**05.1 +2.9**
STHS				pmax	pmax			
	comp=Z,2.0nm,0.8s							
STHS	**Stebnicka Huta**	**78.57**	**324**	*eP*	**P**	**17**	**33**	**05.1 +2.9**
NIE	**Niedzica**	**79.01**	**325**	P	**P**	**17**	**33**	**05.4 +0.7**
NIE				pmax	pmax			
	comp=Z,3.0nm,1.5s							
LANS	**Liptovska Anna**	**79.58**	**325**	*eP*	**P**	**17**	**33**	**09.3 +1.5**
LANS	**Liptovska Anna**	**79.58**	**325**	*eP*	**P**	**17**	**33**	**09.3 +1.5**
DPC	**Dobruska-Polom**	**80.10**	**327**	*eP*	**P**	**17**	**33**	**10.8 +0.2**
DPC	**Dobruska-Polom**	**80.10**	**327**	*eP*	**P**	**17**	**33**	**10.8 +0.2**
CLL	**Collm**	**80.76**	**330**	*iP*	**P**	**17**	**33**	**13.7 -0.3**
	comp=Z,4.0nm,1.1s							
CLL	**Collm**	**80.76**	**330**	*iP*	**P**	**17**	**33**	**13.7 -0.3**
CLL				pmax	pmax			
	comp=Z,4.0nm,1.1s							
KHC	**Kasperske Hory**	**82.19**	**328**	*eP*	**P**	**17**	**33**	**23.7 +2.0**
KHC	**Kasperske Hory**	**82.19**	**328**	*eP*	**P**	**17**	**33**	**23.7 +2.0**
GERES	**GERESS Array B**	**82.36**	**328**	P	**P**	**17**	**33**	**22.1 -0.6**
	comp=Z,0.6nm,0.4s,baz=40,slow=5.3,SNR=8.6							
EKA	**Eskdalemuir Ar**	**82.90**	**340**	P	**P**	**17**	**33**	**25.5 +0.2**
	comp=Z,1.2nm,0.7s,baz=42,slow=4.3,SNR=3.2							
BFO	**Black Forest**	**84.97**	**330**	*iP*	**P**	**17**	**33**	**38.5 +2.5**
ANMO	**Albuquerque**	**85.08**	**49**	*ceP*	**P**	**17**	**33**	**39.7 +2.7**
ANMO				pmax	pmax			
	comp=Z,8.0nm,2.5s							
TXAR	**Lajitas Array**	**90.63**	**52**	P	**P**	**17**	**34**	**04.2 +0.5**
	comp=Z,1.2nm,0.8s,baz=293,slow=2.9,SNR=8.4							
TORD	**Torodi Ar. Bea**	**116.86**	**314**	PKP	**PKPdf**	**17**	**39**	**46.8 +0.8**
	comp=Z,0.3nm,0.8s,baz=9.9,slow=1.7,SNR=4.2							
LPAZ	**La Paz**	**147.25**	**59**	PKPbc	**PKPbc**	**17**	**40**	**45.7 +0.2**
	comp=Z,10.0nm,1.2s,baz=360,slow=3.4,SNR=10							

IDC 11 17:23:32.4±1.2, 37.04N×143.63E, h0km, mb3.5/5, mb1 3.7/5, mb1mx3.4/43, mbtmp3.5/5, Error ellipse: s-maj=36.6km s-min=25.5km az=82.0, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SONM	**Songino Array**	**29.25**	**303**	P	P	17 29 36.3	+0.2
	0.5nm,0.9s,baz=99,slow=8.9,SNR=3.2						
MKAR	**Makanchi Array**	**45.61**	**302**	P	P	17 31 54.1	-0.2
	0.6nm,0.8s,baz=89,slow=9.1,SNR=3.7						
ILAR	**Eielson Array**	**48.54**	**32**	P	P	17 32 16.6	-0.3
	0.3nm,0.6s,baz=262,slow=6.5,SNR=3.5						
WRA	**Warramunga Arr**	**57.35**	**190**	P	P	17 33 22.2	-0.1
	1.0nm,0.6s,baz=11,slow=7.4,SNR=4.6						
ASAR	**Alice Springs**	**61.08**	**190**	P	P	17 33 48.1	0.0
	0.2nm,0.6s,baz=4.6,slow=7.5,SNR=5.1						

IDC 11 17:35:08.2±0.8, 37.02N×144.07E, h0km, mb3.7/14, mb1 4.0/18, mb1mx3.8/54, mbtmp3.8/18, ML3.8/4, MS2.7/3, Ms1 2.7/3, ms1mx2.4/59, Error ellipse: s-maj=19.8km s-min=15.5km az=105.0
ISCJB 11 17:35:11.9±0.5, 37.14N±0.05×143.81E±0.06, h35km, mb3.8/17, Error ellipse: s-maj=7.2km s-min=5.8km az=38.0
JMA 11 17:35:11.3±0.4, 37.21N×143.90E, h50km, M4.1
NEIC 11 17:35:14.8±2.1, 37.02N×143.93E, h46km±18km, mb4.5/2, Error ellipse: s-maj=20.3km s-min=14.1km az=133.0

ISC 11 17:35:13.6±0.7, 37.09N±0.05×143.88E±0.08, h35km, n42, σ2s24/45, mb3.8/17, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**2.43**	**305**	P	**Pn**	**17 35 48.9**	**-1.9**
JIO				*e*S	**Sn**	**17 36 16.1**	**-3.1**
JMM	**Marumori**	**2.58**	**288**	P	**Pn**	**17 35 51.4**	**-1.4**
JMM				*e*S	**Sn**	**17 36 21.3**	**-1.6**
OFUJ	**Ofunato**	**2.65**	**319**	P	**Pn**	**17 35 51.1**	**-2.7**
OFUJ				S	**Sn**	**17 36 20.2**	**-4.5**
JMK	**Ichinoseki**	**2.81**	**312**	P	**Pn**	**17 35 54.1**	**-1.9**
JMK				S	**Sn**	**17 36 25.3**	**-3.3**
JOU	**Okura**	**2.85**	**298**	P	**Pn**	**17 35 55.6**	**-1.1**
JFT	**Otama**	**2.86**	**280**	P	**Pn**	**17 35 56.8**	**+0.1**
JFT				S	**Sn**	**17 36 29.5**	**-0.5**
JOM	**Ohasama**	**3.13**	**320**	P	**Pn**	**17 35 58.3**	**-2.2**
JOM				S	**Sn**	**17 36 33.1**	**-3.6**
JYK	**Kaneyama**	**3.33**	**304**	P	**Pn**	**17 36 02.1**	**-1.1**
BSO1	**Boso 1**	**3.39**	**225**	P	**Pn**	**17 36 03.0**	**-0.5**
MJAR	**Matsushiro Ar**	**4.58**	**265**	Pn	**Pn**	**17 36 20.9**	**+0.4**
	10nm,0.3s,baz=71,slow=9.6,SNR=103						
MJAR				LR	LR	17 38 58.1	
	comp=Z,54nm,19.0s,baz=85,slow=49						
MAJO	**Matsushiro**	**4.59**	**265**	*e*Pn	**Pn**	**17 36 21.3**	**+0.8**
MAT	**Matsushiro**	**4.59**	**265**	P	**Pn**	**17 36 16.4**	**-4.1**
JHJ2	**Mitsune**	**5.18**	**221**	*e*Pn	**Pn**	**17 36 26.5**	**-2.2**
JHJ	**Hachijo jima 2**	**5.19**	**222**	Pn	**Pn**	**17 36 25.9**	**-2.9**
	19nm,0.3s,baz=337,slow=17,SNR=21						
JHJ				Sn	**Sn**	**17 37 23.9**	**-3.5**
	43nm,0.3s,baz=270,slow=23,SNR=5.8						
CBIJ	**Chichi jima**	**10.07**	**189**	*e*Pn	**Pn**	**17 37 31.8**	**-3.9**
JCJ	**Chichijima**	**10.07**	**189**	LR	LR	17 41 56.2	
	comp=Z,41nm,18.4s,slow=41						
USRK	**Ussuriysk Ar.**	**11.49**	**312**	Pn	**Pn**	**17 37 54.6**	**-0.4**
	0.9nm,0.3s,baz=125,slow=15,SNR=13						
KSRS	**Korea Array**	**12.72**	**276**	Pn	**Pn**	**17 38 15.7**	**+3.8**
	0.3nm,0.3s,baz=81,slow=14,SNR=9.1						
KSRS				LR	LR	17 42 57.4	
	comp=Z,36nm,20.9s,baz=26,slow=36						
KSAR	**Wonju Array Be**	**12.75**	**276**	Pn	**Pn**	**17 38 15.7**	**+3.3**
KLR	**Kul'dur**	**15.00**	**328**	Pn	**Pn**	**17 38 41.7**	**-1.2**
	0.4nm,0.3s,baz=156,slow=12,SNR=4.0						
PETK	**Petropavlovsk-**	**18.70**	**27**	P	**Pn**	**17 39 31.9**	**+2.5**
	0.1nm,0.3s,baz=175,slow=18,SNR=3.5						
SEY	**Seymchan**	**26.40**	**9**	P	**P**	**17 40 46.6**	**+0.2**
	2.3nm,0.7s,baz=192,slow=7.4,SNR=16						
H11N2	**WAKE ISLAND Hy**	**26.51**	**124**	T	T	18 07 46.1	
	baz=312,slow=75,SNR=19						
H11N1	**WAKE ISLAND Hy**	**26.52**	**124**	T	T	18 07 47.0	
	baz=312,SNR=7.6						
H11N3	**WAKE ISLAND Hy**	**26.53**	**124**	T	T	18 07 51.7	
	baz=312,slow=75,SNR=9.5						
SONM	**Songino Array**	**29.40**	**303**	P	**P**	**17 41 16.0**	**+2.4**
	0.8nm,0.5s,baz=97,slow=10.0,SNR=8.4						
TIXI	**Tiksi**	**35.49**	**352**	P	**P**	**17 42 04.7**	**-1.7**
	0.3nm,0.2s,baz=236,slow=0.4,SNR=6.3						
ZALV	**Zalesovo Beam**	**43.34**	**312**	P	**P**	**17 43 16.1**	**+4.0**
	1.2nm,0.5s,baz=80,slow=8.1,SNR=7.5						
CMAR	**Chiang Mai Arr**	**43.43**	**257**	P	**P**	**17 43 14.9**	**+1.7**
	0.4nm,0.8s,baz=43,slow=6.5,SNR=4.8						
MKAR	**Makanchi Array**	**45.76**	**302**	P	**P**	**17 43 32.5**	**+0.9**
	1.0nm,1.0s,baz=99,slow=7.5,SNR=6.4						
KURK	**Kurchatov**	**47.45**	**308**	P	**P**	**17 43 43.0**	**-1.7**
	4.8nm,0.6s						
KURBB	**Kurchatov Arra**	**47.52**	**308**	P	**P**	**17 43 45.4**	**+0.2**
	0.6nm,0.4s,baz=82,slow=7.9,SNR=8.9						
ILAR	**Eielson Array**	**48.39**	**32**	P	**P**	**17 43 52.0**	**+0.2**
	0.6nm,0.8s,baz=249,slow=6.0,SNR=6.1						
TKM2	**Tokmak 2**	**51.34**	**299**	*eP*	**P**	**17 44 15.8**	**+1.1**
BVAR	**Borovoye Array**	**51.99**	**313**	P	**P**	**17 44 19.3**	**+0.1**
	0.3nm,0.5s,baz=72,slow=11,SNR=3.5						
AAK	**Ala-Archa**	**52.20**	**299**	P	**P**	**17 44 22.3**	**+1.2**
	0.2nm,0.4s,baz=111,slow=14,SNR=1.6						
INK	**Inuvik**	**53.44**	**27**	P	**P**	**17 44 29.2**	**-0.4**
	0.7nm,0.5s,baz=286,slow=3.0,SNR=5.7						
WRA	**Warramunga Arr**	**57.43**	**191**	P	**P**	**17 44 58.0**	**-0.8**
	2.3nm,0.5s,baz=9.5,slow=7.0,SNR=18						
ABKAR	**Akbulak array**	**59.41**	**311**	*eP*	**P**	**17 45 11.8**	**-0.6**
	2.3nm,0.8s						
ASAR	**Alice Springs**	**61.16**	**190**	P	**P**	**17 45 24.1**	**-0.5**
	0.8nm,0.4s,baz=5.2,slow=6.6,SNR=14						
GERES	**GERESS Array B**	**83.69**	**329**	P	**P**	**17 47 40.3**	**+1.5**
	0.1nm,0.4s,baz=20,slow=3.1,SNR=2.3						
TXAR	**Lajitas Array**	**88.51**	**54**	P	**P**	**17 48 02.7**	**-0.2**
	0.2nm,0.6s,baz=322,slow=2.8,SNR=3.3						

ISCJB 11 17:37:58.1±0.5, 10.10S±0.05×107.63E±0.05, h10km, mb4.1/13, Error ellipse: s-maj=9.2km s-min=5.5km az=40.7
DJA 11 17:38:00.6±0.4, 10.5±3.3×107.8E±.1, h10km, M4.7/17, mb5.0/7, mB5.3/5, MLv4.5/17, Mw(mB)4.7/5
NEIC 11 17:38:00.2±0.6, 10.10S×107.62E, h10km, mb4.3/4, Error ellipse: s-maj=15.8km s-min=10.0km az=210.0
IDC 11 17:38:00.1±1.9, 9.88S×107.88E, h0km, mb4.0/11, mb1 4.1/12, mb1mx3.8/44, mbtmp4.0/12, ML4.0/1, MS3.0/2, Ms1 3.0/2, ms1mx2.7/50, Error ellipse: s-maj=78.6km s-min=14.8km az=50.0

ISC 11 17:38:00.3±0.7, 10.06S±0.06×107.56E±0.07, h10km, n40, σ1s36/39, mb4.1/13, South of Jawa

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
XMIS	**Christmas Isla**	**1.92**	**257**	*e*Pn	**Pn**	**17 38 31.5**	**-1.7**
CMJI	**Cimerak**	**2.42**	**21**	P	**Pn**	**17 38 38.3**	**-1.7**
CISI	**Cisompet, Garu**	**2.50**	**6**	P	**Pn**	**17 38 39.9**	**-1.2**
CISI	**Cisompet, Garu**	**2.50**	**6**	*e*Pn	**Pn**	**17 38 40.2**	**-0.9**
CNJI	**Cibinong**	**2.76**	**351**	P	**Pn**	**17 38 43.9**	**-0.8**
CNJI				S	**Sn**	**17 39 15.5**	**-2.6**
KPJI	**Karang Pucung**	**3.03**	**27**	P	**Pn**	**17 38 48.6**	**+0.2**
SKJI	**Sukabumi**	**3.19**	**342**	S	**Sn**	**17 39 29.5**	**+0.8**
LEM	**Lembang**	**3.21**	**1**	Pn	**Pb**	**17 38 57.1**	**-0.5**
	53nm,0.3s,baz=296,slow=1.2,SNR=97						
LEM				Sn	**Sb**	**17 39 34.9**	**-1.9**
	58nm,0.3s,baz=294,slow=23,SNR=19						
LEM	**Lembang**	**3.21**	**1**	P	**Pb**	**17 38 57.1**	**-0.5**
DBJI	**Dramaga**	**3.57**	**347**	P	**Pn**	**17 38 55.8**	**-0.1**
CGJI	**Cibinong**	**3.89**	**332**	P	**Pn**	**17 38 59.8**	**-0.4**
WOJI	**Wonogiri, Jawa**	**3.99**	**57**	P	Pg	17 39 19.8	+3.0
PCJI	**Pacitan**	**4.03**	**63**	P	**Pn**	**17 39 02.7**	**+0.6**
PWJI	**Pagerwojo**	**4.66**	**65**	P	**Pn**	**17 39 10.3**	**-0.5**
NGJI	**Ngawi**	**4.69**	**56**	P	**Pg**	**17 39 32.2**	**+1.9**
KASI	**Kota Agung**	**5.43**	**326**	P	**Pn**	**17 39 21.3**	**-0.1**
	31nm,0.9s,0.4nm						
GMJI	**Gumukmas**	**6.08**	**74**	P	**Pn**	**17 39 29.7**	**-0.6**
	57nm,0.7s,1μm						
JAGI	**Jajag, Banyuwa**	**6.70**	**77**	P	**Pn**	**17 39 37.0**	**-1.9**
	131nm,0.6s,3μm						
JAGI	**Jajag, Banyuwa**	**6.70**	**77**	*e*Pn	**Pn**	**17 39 37.5**	**-1.4**
	69nm,0.4s						
TWSI	**Taliwang, Sumb**	**9.29**	**83**	P	**Pn**	**17 40 13.2**	**-1.3**
	46nm,0.7s,1μm						
PLAI	**Plampang**	**10.15**	**84**	P	**Pn**	**17 40 24.7**	**-1.6**
KAPI	**Kappang**	**13.08**	**68**	LR	LR	17 46 06.9	
	comp=Z,57nm,18.3s,baz=349,slow=38						
MBWA	**Marble Bar**	**16.09**	**135**	*eP*	Pn	17 41 42.4	-4.5
	7.2nm,0.6s						
SOEI	**Soe**	**16.46**	**90**	*eP*	**Pn**	**17 41 48.7**	**-3.1**
	23nm,0.9s						
FITZ	**Fitzroy Crossi**	**19.26**	**117**	P	**P**	**17 42 25.0**	**-0.3**
	0.3nm,0.3s,baz=291,slow=6.9,SNR=12						
FITZ				LR	LR	17 49 06.6	
	comp=Z,59nm,20.9s,baz=298,slow=35						
WRA	**Warramunga Arr**	**27.63**	**114**	P	**P**	**17 43 47.6**	**-0.9**
	2.0nm,0.5s,baz=286,slow=11,SNR=18						
ASAR	**Alice Springs**	**28.55**	**122**	P	**P**	**17 43 56.1**	**-0.5**
	1.6nm,0.8s,baz=303,slow=9.2,SNR=21						
CMAR	**Chiang Mai Arr**	**29.58**	**343**	P	**P**	**17 44 07.0**	**+1.3**
	0.5nm,0.6s,baz=178,slow=8.4,SNR=7.4						
STKA	**Stephens Creek**	**38.23**	**130**	P	**P**	**17 45 21.4**	**+0.6**
	1.2nm,0.5s,baz=302,slow=12,SNR=6.3						
SONM	**Songino Array**	**57.64**	**359**	P	**P**	**17 47 51.7**	**+0.9**
	0.7nm,0.4s,baz=178,slow=8.2,SNR=12						
MKAR	**Makanchi Array**	**60.93**	**340**	P	**P**	**17 48 14.1**	**+0.6**
	1.4nm,0.5s,baz=144,slow=7.1,SNR=14						
KLR	**Kul'dur**	**62.75**	**18**	P	**P**	**17 48 24.7**	**-1.0**
	0.8nm,0.6s,baz=202,slow=3.1,SNR=6.8						
KURBB	**Kurchatov Arra**	**65.50**	**340**	P	**P**	**17 48 44.2**	**+0.5**
	0.6nm,0.6s,baz=157,slow=5.9,SNR=4.5						
KURK	**Kurchatov**	**65.54**	**340**	*eP*	**P**	**17 48 45.7**	**+1.7**
	1.2nm,0.6s						
ZALV	**Zalesovo Beam**	**66.61**	**346**	P	**P**	**17 48 52.9**	**+2.1**
	0.7nm,0.3s,baz=160,slow=6.5,SNR=5.3						
BVAR	**Borovoye Array**	**70.38**	**337**	P	**P**	**17 49 15.0**	**+0.6**
	1.0nm,0.6s,baz=128,slow=9.6,SNR=7.3						
ABKAR	**Akbulak array**	**72.31**	**329**	*eP*	**P**	**17 49 25.9**	**-0.2**
	33nm,1.2s						
TIXI	**Tiksi**	**82.76**	**7**	P	**P**	**17 50 23.9**	**-0.2**
	2.1nm,0.6s,baz=162,slow=1.9,SNR=13						
TIXI	**Tiksi**	**82.76**	**7**	*eP*	**P**	**17 50 23.5**	**-0.6**
	1.2nm,0.6s						
**

s-min=1.7km az=165.4

BJI ***11*** *17:53:31.4, 37.81N×144.22E, h7km, mb5.2/86, mB5.4/72, Ms5.4/94, Ms7 5.2/82*

GCMT ***11*** *17:53:31.7±0.1, 37.70N×144.50E, h15km, MW5.5/127, Moment Tensor Solution. s107,c214; s127,c308; Duration: 1s3 Moment tensor: Scale 10¹⁷Nm; Mrr-2.03±.03; Mθθ1.37±.02; Mφφ0.66±.02; Mrθ0.11±.03; Mθφ0.81±.01; Mφr0.47±.04; Best double couple: M₀2.02000×10¹⁷ NP1:φs228.00000°,δ51.00000°, λ-101.00000°. NP2:φs65.00000°,δ41.00000°, λ-77.00000°. Principal axes: T 1.9320, Plg5.0000°, Azm326.0000°; N 0.1770, Plg8.0000°, Azm235.0000°; P -2.1080, Plg80.0000°, Azm88.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface/mantle waves, cutoff=50s.*

NEIC ***11*** *17:53:32.0±0.1, 37.64N×144.47E, h12km, mb5.7/273, ME5.3, MS4.9/135, MW5.4 Error ellipse: s-maj=2.9km s-min=2.0km az=148.0, Moment Tensor Solution. s57 Moment tensor: Scale 10¹⁷Nm; Mrr-1.47; Mθθ0.93; Mφφ0.53; Mrθ-0.11; Mθφ1.06; Mφr-0.18; Best double couple: M₀1.70000×10¹⁷ NP1:φs47.00000°,δ49.00000°, λ-95.00000°. NP2:φs234.00000°,δ42.00000°, λ-85.00000°. Principal axes: T 1.8300, Plg3.0000°, Azm140.0000°; N -0.3500, Plg3.0000°, Azm50.0000°; P -1.4800, Plg85.0000°, Azm275.0000°; Depth from synthetics of broadband displacement seismograms. Energy computed from CMT mechanism.*

MOS ***11*** *17:53:33.8±0.9, 38.00N×144.47E, h23km, mb5.7/130, MS5.0/63 Error ellipse: s-maj=5.6km s-min=3.3km az=106.9*

JMA ***11*** *17:53:33.3±0.2, 37.67N×144.41E, h47km, M5.4*

JMA Felt II J1.

ISC 11 17:53:32.7±0.5, 37.69N±0.03×144.54E±0.03, h17km±2km, h17km:pP-P, n1730, σ1936/1844, mb5.6/471, MS5.0/187, 61C-82D, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
JIO	**Ouri**	**2.63**	**288**	⇑P			**Pn**	**17 54 13.4**	**-0.8**
JIO				S			**Sn**	**17 54 42.9**	**-2.8**
OFUJ	**Ofunato**	**2.65**	**302**	⇑P			**Pn**	**17 54 13.6**	**-0.9**
OFUJ				S			**Sn**	**17 54 43.6**	**-2.5**
JMK	**Ichinoseki**	**2.90**	**297**	⇑P			**Pn**	**17 54 17.4**	**-0.5**
JOM	**Ohasama**	**3.10**	**306**	⇑P			**Pn**	**17 54 20.1**	**-0.7**
JOM				S			**Sn**	**17 54 55.5**	**-1.9**
JFT	**Otama**	**3.34**	**268**	P			**Pn**	**17 54 23.9**	**-0.2**
JFT				S			**Sn**	**17 55 01.2**	**-2.1**
JHO	**Hitachi**	**3.35**	**252**	P			**Pn**	**17 54 23.2**	**-1.0**
JYK	**Kaneyama**	**3.51**	**292**	⇑P			**Pn**	**17 54 26.3**	**0.0**
JYK				S			**Sn**	**17 55 05.2**	**-2.2**
JYT	**Yasato**	**3.77**	**249**	P			**Pn**	**17 54 28.8**	**-1.2**
JYT				S			**Sn**	**17 55 09.9**	**-4.1**
BSO1	**Boso 1**	**4.18**	**225**	P			**Pn**	**17 54 33.5**	**-1.6**
JAG	**Ashikaga**	**4.26**	**254**	P			**Pn**	**17 54 36.0**	**-0.7**
JAG				S			**Sn**	**17 55 22.1**	**-3.9**
BSO4	**Boso 4**	**4.33**	**233**	P			**Pn**	**17 54 37.2**	**-0.4**
BSO3	**Boso 3**	**4.35**	**230**	P			**Pn**	**17 54 36.8**	**-0.9**
ERM	**Erimo**	**4.45**	**347**	*de*P			**Pn**	**17 54 37.7**	**-1.5**
ERM	comp=Z,1μm,1.0s			pmax			pmax		
ERM	**Erimo**	**4.45**	**347**	*e*Pn			**Pn**	**17 54 37.7**	**-1.5**
JOT	**Ohata**	**4.56**	**325**	P			**Pn**	**17 54 40.5**	**-0.4**
JHU	**Hanno**	**4.60**	**248**	P			**Pn**	**17 54 39.9**	**-1.5**
JHU				*e*S			**Sn**	**17 55 30.6**	**-3.8**
JRY	**Ryogami san**	**4.82**	**251**	P			**Pn**	**17 54 43.6**	**-0.8**
JRY				*e*S			**Sn**	**17 55 34.9**	**-4.9**
JKB	**Kayabe**	**4.98**	**328**	P			**Pn**	**17 54 46.4**	**-0.2**
JKB				*e*S			**Sn**	**17 55 38.4**	**-5.3**
JCH	**Churui**	**5.00**	**350**	P			**Pn**	**17 54 45.5**	**-1.3**
JOD2	**Odawara 2**	**5.02**	**243**	P			**Pn**	**17 54 46.2**	**-0.9**
MJAR	**Matsushiro Arr**	**5.19**	**259**	Pn			**Pn**	**17 54 49.9**	**+0.4**
	comp=Z,81nm,0.3s,baz=86,slow=15,SNR=548								
MJAR				Sn			**Sn**	**17 55 47.6**	**-1.3**
	comp=Z,94nm,0.3s,baz=87,slow=27,SNR=7.2								
MJAR				LR			LR	17 56 59.9	
	comp=Z,11μm,18.2s,baz=80,slow=40								
MJAR	**Matsushiro Arr**	**5.19**	**259**	P			**Pn**	**17 54 49.9**	**+0.4**
MJAR								17 55 47.6	
MJAR				pmax			pmax		
	comp=Z,81nm,0.3s								
MJAR				smax			smax		
	comp=N,94nm,0.3s								
MJAR				MLR			MLR		
	comp=Z,11μm,18.2s								
MAJO	**Matsushiro**	**5.19**	**259**	*c* i P			**Pn**	**17 54 50.2**	**+0.7**
MAJO	**Matsushiro**	**5.19**	**259**	*e*Pn			**Pn**	**17 54 50.3**	**+0.8**
MAT	**Matsushiro**	**5.19**	**259**	P			**Pn**	**17 54 50.4**	**+0.9**
MAT				S			**Sn**	**17 55 47.5**	**-1.4**
NEM2	**Nemuro 2**	**5.74**	**9**	P			**Pn**	**17 54 53.4**	**-3.6**
JNY	**Yasuok**	**5.86**	**249**	P			**Pn**	**17 55 00.1**	**+1.4**
JNY				S			**Sn**	**17 56 05.3**	**-0.2**
JOSM	**Okushiri--Mats**	**5.86**	**320**	P			**Pn**	**17 54 57.8**	**-0.9**
JHJ2	**Mitsune**	**5.98**	**222**	P			**Pn**	**17 54 57.7**	**-2.6**
JHJ2	**Mitsune**	**5.98**	**222**	*e*Pn			**Pn**	**17 54 58.3**	**-2.0**
JHJ	**Hachijo jima 2**	**5.99**	**222**	Pn			**Pn**	**17 54 58.1**	**-2.4**
	comp=Z,151nm,0.3s,baz=329,slow=16,SNR=44								
JHJ				Sn			**Sn**	**17 56 01.4**	**-7.3**
	comp=Z,684nm,0.3s,baz=94,slow=24,SNR=11								
JTKR	**Abashiri--Toko**	**6.29**	**356**	P			**Pn**	**17 55 03.1**	**-1.4**
JTKR				*e*S			**Sn**	**17 56 10.5**	**-5.4**
JAO	**Obara**	**6.34**	**250**	P			**Pn**	**17 55 06.6**	**+1.2**
JHR	**Hokuryu**	**6.41**	**341**	P			**Pn**	**17 55 06.3**	**+0.1**
SHO	**Shikotan**	**6.41**	**15**	*c* i P			**Pn**	**17 55 02.7**	**-3.5**
SHO				*i* S			Sn	17 56 09.5	-9.4
SHO				pmax			pmax		
	comp=Z,3μm,0.7s								
SHO				pmax			pmax		
	comp=N,967nm,0.8s								
SHO				pmax			pmax		
	comp=E,1μm,0.8s								
YUK	**Yuzh-Kuril'sk**	**6.41**	**9**	*c* i P			**Pn**	**17 55 02.9**	**-3.3**
YUK				*i* S			Sn	17 56 09.8	-9.2
YUK				pmax			pmax		
	comp=E,295nm,0.4s								
YUK				pmax			pmax		
	comp=Z,4μm,0.4s								
YUK				pmax			pmax		
	comp=N,11μm,9.9s								
YUK				MLR			MLR		
	comp=Z,11μm,10.0s								
INU	**Inuyama**	**6.49**	**251**	*e*Pn			**Pn**	**17 55 08.1**	**+0.7**
JKN2	**Miekihoku**	**7.53**	**245**	P			**Pn**	**17 55 21.5**	**-0.2**
KUR	**Kuril'sk**	**7.94**	**17**	*c* i P			**Pn**	**17 55 24.0**	**-3.1**
KUR				*e*S			Sn	17 56 47.6	-8.8
KUR				pmax			pmax		
	comp=N,103nm,0.7s								
KUR				pmax			pmax		
	comp=E,99nm,0.7s								
KUR				pmax			pmax		
	comp=Z,476nm,0.7s								
KUR				smax			smax		
	comp=N,537nm,0.5s								
KUR				smax			smax		
	comp=E,787nm,0.5s								
KUR				smax			smax		
	comp=N,2μm,2.3s								
KUR				smax			smax		
	comp=E,2μm,3.5s								
YSS	**Yuzh-Sakhalins**	**9.35**	**352**	⇑*e*P			**Pn**	**17 55 45.7**	**-0.8**
YSS				*e*S			**Sn**	**17 57 25.7**	**-5.4**
YSS				pmax			pmax		
	comp=Z,130nm,0.8s								
YSS				MLR			MLR		
	comp=Z,7μm,16.0s								
YSS				MLR			MLR		
	comp=N,6μm,13.0s								
YSS				MLR			MLR		
	comp=E,9μm,14.0s								
YSS	**Yuzh-Sakhalins**	**9.35**	**352**	*e*Pn			**Pn**	**17 55 45.2**	**-1.2**
CBIJ	**Chichi jima**	**10.75**	**191**	*e*Pn			Pn	17 55 60.0	-5.8
CBIJ				Sn			Sn	17 57 51.8	-14
JCJ	**Chichijima**	**10.75**	**191**	Pn			Pn	17 56 00.1	-5.7
	comp=E,49nm,0.3s,baz=60,slow=19,SNR=22								
JCJ				Sn			Sn	17 57 51.8	-14
	baz=0.0,slow=20								
VLA	**Vladivostok**	**11.06**	**303**	*c* i P			**Pn**	**17 56 11.0**	**+1.1**
USRK	**Ussuriysk Ar.**	**11.49**	**308**	Pn			**Pn**	**17 56 16.8**	**+0.9**
	comp=E,4.1nm,0.3s,baz=115,slow=13,SNR=151								
USRK				Sn			**Sn**	**17 58 26.4**	**+2.6**
	baz=114,slow=28,SNR=1.8								
UGL	**Uglegorsk**	**11.52**	**352**	*e*P			**Pn**	**17 56 15.0**	**-1.2**
UGL				*e*S			**Sn**	**17 58 22.0**	**-2.3**
UGL				pmax			pmax		
	comp=Z,331nm,1.1s								
UGL				smax			smax		
	comp=N,2μm,4.0s								
UGL				smax			smax		
	comp=E,2μm,4.0s								
UGL				MLR			MLR		
	comp=N,4μm,17.0s								
UGL				MLR			MLR		
	comp=Z,4μm,17.0s								
UGL				MLR			MLR		
	comp=E,4μm,16.0s								
JNU	**Nakatsue**	**12.04**	**252**	Pn			**Pn**	**17 56 23.9**	**+0.5**
	comp=E,1.6nm,0.3s,baz=49,slow=5.2,SNR=19								
JNU				Sn			Sn	17 58 47.2	+10
	baz=209,slow=19,SNR=1.5								
HABR	**Khabarovsk**	**12.80**	**330**	*c* i P			**Pn**	**17 56 31.8**	**-1.9**
HABR				*e*S			**Sn**	**17 58 53.8**	**-1.8**
HABR				pmax			pmax		
	comp=N,56nm,1.5s								
HABR				pmax			pmax		
	comp=E,51nm,1.5s								
HABR				pmax			pmax		
	comp=Z,140nm,1.5s								
HABR				MLR			MLR		
	comp=Z,1μm,14.0s								
KSRS	**Korea Array**	**13.19**	**274**	Pn			**Pn**	**17 56 39.7**	**+0.7**
	comp=Z,2.8nm,0.3s,baz=87,slow=13,SNR=86								
KSRS				PcP			**PcP**	**18 02 10.2**	**+0.6**
	comp=Z,0.3nm,0.3s,baz=103,slow=0.4,SNR=18								
MDJ	**Mudanjiang**	**13.21**	**306**	P			**Pn**	**17 56 39.8**	**+0.5**
MDJ				S			**Sn**	**17 59 08.2**	**+2.6**
MDJ				PcP			**PcP**	**18 02 12.0**	**+2.5**
MDJ				ScP			**ScP**	**18 05 44.4**	**+2.5**
MDJ				ScS			**ScS**	**18 09 20.3**	**+1.9**
MDJ				pmax			pmax		
	comp=Z,350nm,1.3s								
MDJ				pmax			pmax		
	comp=Z,970nm,3.6s								
MDJ				LR			LR		
	comp=Z,3μm,16.4s								
MDJ				LR			LR		
	comp=Z,9μm,16.1s								
MDJ				LR			LR		
	comp=Z,12μm,16.3s								
MDJ	**Mudanjiang**	**13.21**	**306**	*e*Pn			**Pn**	**17 56 39.5**	**+0.2**
	comp=Z,572nm,1.3s								
KS01	**Wonju Array Si**	**13.21**	**274**	*e*Pn			**Pn**	**17 56 39.6**	**+0.3**
KS15	**Wonju Array Si**	**13.22**	**274**	*e*Pn			**Pn**	**17 56 41.0**	**+1.6**
KSAR	**Wonju Array Be**	**13.22**	**274**	P			**Pn**	**17 56 39.7**	**+0.2**
KSAR	**Wonju Array Be**	**13.22**	**274**	Pn			**Pn**	**17 56 39.7**	**+0.2**
KSAR				PcP			**PcP**	**18 02 10.2**	**+0.6**
TYV	**Tymovskoe**	**13.23**	**355**	*e*P			**Pn**	**17 56 39.2**	**-0.4**
TYV				*e*S			**Sn**	**17 59 05.0**	**-1.3**
TYV				pmax			pmax		
	comp=N,2μm,4.0s								
TYV				pmax			pmax		
	comp=Z,2μm,3.0s								
TYV				pmax			pmax		
	comp=Z,64nm,0.8s								
TYV				smax			smax		
	comp=E,2μm,4.0s								
TYV				MLR			MLR		
	comp=N,7μm,15.0s								
TYV				MLR			MLR		
	comp=Z,8μm,16.0s								
INCN	**Inchon**	**14.20**	**275**	*e*Pn			**Pn**	**17 56 54.1**	**+1.2**
INCN	**Inchon**	**14.20**	**275**	Pn			**Pn**	**17 56 54.6**	**+1.6**
	SNR=14								
INCN	**Inchon**	**14.20**	**275**	P			**Pn**	**17 56 54.6**	**+1.6**
	SNR=14								
KLR	**Kul'dur**	**14.78**	**325**	Pn			**Pn**	**17 56 58.0**	**-2.7**
	comp=Z,0.6nm,0.3s,baz=138,slow=13,SNR=35								
KLR				Sn			**Sn**	**17 59 42.1**	**-1.8**
	baz=149,slow=19,SNR=2.4								
KLR				PcP			**PcP**	**18 02 12.4**	**+1.0**
	comp=Z,0.2nm,0.3s,baz=251,slow=6.8,SNR=4.9								
SKR	**Severo-Kuril's**	**15.39**	**29**	*e*P			Pn	17 57 01.7	-7.1
SKR				pmax			pmax		
	comp=Z,130nm,0.7s								
SKR				MLR			MLR		
	comp=N,5μm,16.0s								
SKR				MLR			MLR		
	comp=E,7μm,16.0s								
SKR				MLR			MLR		
	comp=Z,8μm,16.0s								
CN2	**Changchun**	**15.69**	**299**	*e*P			**Pn**	**17 57 10.7**	**-2.1**
CN2				pmax			pmax		
	comp=Z,10.0nm,0.4s								
CN2				pmax			pmax		
	comp=Z,200nm,4.0s								
CN2				LR			LR		
	comp=Z,4μm,16.0s								
CN2				LR			LR		
	comp=Z,6μm,16.0s								
CN2				LR			LR		
	comp=Z,6μm,16.0s								
NKL	**Nikolayevsk**	**15.69**	**351**	*e*P			**Pn**	**17 57 10.0**	**-2.7**
NKL				*e*S			**Sn**	**18 00 08.0**	**+2.0**
NKL				pmax			pmax		
	comp=E,300nm,3.0s								
NKL				pmax			pmax		
	comp=N,700nm,3.5s								
NKL				pmax			pmax		
	comp=Z,900nm,3.5s								
NKL				pmax			pmax		
	comp=N,100nm,1.1s								
NKL				pmax			pmax		
	comp=E,30nm,1.1s								
NKL				pmax			pmax		
	comp=Z,140nm,1.1s								
NKL				smax			smax		
	comp=N,1μm,6.0s								
NKL				MLR			MLR		
	comp=N,3μm,15.0s								
NKL				MLR			MLR		
	comp=E,2μm,17.0s								
NKL				MLR			MLR		
	comp=Z,4μm,17.0s								
OKH	**Okha**	**15.90**	**357**	*e*P			**Pn**	**17 57 13.8**	**-1.6**
OKH				pmax			pmax		
	comp=Z,2μm,8.0s								
SNY	**Shenyang**	**16.63**	**291**	⇑P			**Pn**	**17 57 23.4**	**-1.4**
SNY				pmax			pmax		
	comp=Z,40nm,1.7s								
SNY				pmax			pmax		
	comp=Z,2μm,12.0s								
SNY				LR			LR		
	comp=Z,9μm,17.1s								
SNY				LR			LR		
	comp=Z,6μm,17.9s								
SNY				LR			LR		
	comp=Z,15μm,16.7s								
JOW	**Kunigami**	**17.48**	**236**	P			**P**	**17 57 37.4**	**+0.7**
	comp=Z,1.2nm,0.3s,baz=50,slow=9.8,SNR=3.9								
JOW	**Kunigami**	**17.48**	**236**	*e*Pn			**P**	**17 57 42.2**	**+5.5**
	comp=Z,90nm,0.9s								
PEA0	**Petropavlovsk-**	**17.93**	**26**	*e*Pn			**Pn**	**17 57 40.5**	**-0.4**
PEA0B	**Petropavlovsk-**	**17.93**	**26**	*e*Pn			**P**	**17 57 41.3**	**-0.1**
	comp=Z,387nm,1.6s								
PETK	**Petropavlovsk-**	**17.93**	**26**	P			**Pn**	**17 57 39.0**	**-1.9**
	comp=Z,1.0nm,0.3s,baz=212,slow=3.7,SNR=19								
PETK				PcP			**PcP**	**18 02 16.5**	**+0.4**
	comp=Z,0.3nm,0.3s,baz=205,slow=3.1,SNR=4.8								
DL2	**Dalian**	**18.02**	**281**	P			**Pn**	**17 57 41.5**	**-0.6**
DL2				S			**Sn**	**18 00 56.4**	**-6.3**
DL2				pmax			pmax		
	comp=Z,92nm,0.9s								
DL2				pmax			pmax		
	comp=Z,2μm,5.7s								
DL2				LR			LR		
	comp=Z,6μm,15.9s								
DL2				LR			LR		
	comp=Z,7μm,16.1s								
PET	**Petropavlovsk**	**18.20**	**28**	*e*P			**Pn**	**17 57 43.2**	**-1.1**
PET				*e*S			**Sn**	**18 01 05.7**	**-1.3**
PET				pmax			pmax		
	comp=Z,1μm,8.4s								
PET				pmax			pmax		
	comp=Z,86nm,1.2s								
PET				MLR			MLR		
	comp=Z,4μm,18.0s								
PET	**Petropavlovsk**	**18.20**	**28**	*e*Pn			**Pn**	**17 57 44.0**	**-0.3**
SSE	**Sheshan**	**20.34**	**258**	P			**P**	**17 58 07.3**	**-0.7**
SSE				pP			**sP**	**17 58 15.7**	**+0.5**
SSE				S			**S**	**18 01 55.5**	**+0.3**
SSE				pmax			pmax		
	comp=Z,22nm,0.7s								
SSE				pmax			pmax		
	comp=Z,640nm,5.6s								
SSE				LR			LR		
	comp=Z,5μm,21.9s								
SSE				LR			LR		
	comp=Z,3μm,21.9s								
SSE				LR			LR		
	comp=Z,4μm,16.6s								
HIA	**Hailar**	**21.29**	**311**	*e*P			**P**	**17 58 17.0**	**-1.2**
HIA				pmax			pmax		
	comp=E,55nm,0.6s								
HIA				MLR			MLR		
	comp=E,3μm,19.0s								
HIA	**Hailar**	**21.29**	**311**	*e*Pn			**P**	**17 58 17.0**	**-1.2**
	comp=E,55nm,0.6s								
HIA				LR			LR		
	comp=E,3μm,19.0s								
NJ2	**Nanjing**	**21.78**	**263**	*e*P			**P**	**17 58 23.7**	**+0.2**
NJ2				S			**S**	**18 02 26.9**	**+3.2**
NJ2				pmax			pmax		
	comp=Z,30nm,0.9s								
NJ2				pmax			pmax		
	comp=Z,1μm,11.9s								
NJ2				LR			LR		
	comp=Z,6μm,18.4s								
NJ2				LR			LR		
	comp=Z,6μm,10.8s								
NJ2				LR			LR		
	comp=Z,5μm,13.0s								
TIA	**Tai'an**	**21.93**	**275**	⇑P			**P**	**17 58 25.6**	**+0.4**
TIA				S			**S**	**18 02 21.5**	**-5.2**
TIA				pmax			pmax		
	comp=Z,30nm,0.9s								
TIA				pmax			pmax		
	comp=Z,1μm,5.7s								
TIA				LR			LR		
	comp=Z,2μm,13.8s								
TIA				LR			LR		
	comp=Z,3μm,15.8s								
TIA				LR			LR		
	comp=Z,5μm,17.1s								
BJI	**Beijing**	**22.17**	**285**	P			**P**	**17 58 26.2**	**-1.5**
BJI				S			**S**	**18 02 25.8**	**-5.4**
BJI				pmax			pmax		
	comp=Z,60nm,0.9s								
BJI				LR			LR		
	comp=Z,5μm,15.0s								
BJI				LR			LR		
	comp=Z,2μm,17.0s								
BJT	**Baijiatuan**	**22.18**	**285**	*e*P			**P**	**17 58 26.1**	**-1.7**
BJT				pmax			pmax		
	comp=Z,318nm,1.4s								
BJT				MLR			MLR		
	comp=Z,2μm,19.0s								
BJT	**Baijiatuan**	**22.18**	**285**	*e*P			**P**	**17 58 26.1**	**-1.7**
	comp=Z,318nm,1.4s								
BJT				LR			LR		
	comp=Z,2μm,19.0s								
MA2	**Magadan**	**22.26**	**8**	P			**P**	**17 58 28.9**	**+0.4**
	comp=Z,36nm,0.9s,baz=214,slow=8.5,SNR=9.9								
MA2				S			**S**	**18 02 33.7**	**+1.1**
	comp=Z,6.6nm,1.0s,baz=24,slow=20,SNR=2.5								
MA2	**Magadan**	**22.26**	**8**	*e*P			**P**	**17 58 29.0**	**+0.5**
MA2				S			**S**	**18 02 33.7**	**+1.1**
MA2				pmax			pmax		
	comp=Z,685nm,1.4s								
MA2				MLR			MLR		
	comp=Z,2μm,21.0s								
MA2	**Magadan**	**22.26**	**8**	*e*P			**P**	**17 58 29.0**	**+0.5**
	comp=Z,685nm,1.4s								
MA2				S			**S**	**18 02 33.7**	**+1.1**
MA2				LR			LR		
	comp=Z,2μm,21.0s								
TATO	**Taipei**	**23.34**	**244**	PFAKE				17 58 50.0	+10
TATO				LR			LR		
	comp=Z,2μm,21.0s								
YHNB	**Yeheng**	**23.61**	**243**	PFAKE				17 58 50.0	+7.2
YHNB				LR			LR		
	comp=Z,2μm,21.0s								
GUMO	**Guam**	**24.01**	**179**	P			**P**	**17 58 46.1**	**-0.4**
	comp=Z,43nm,0.8s,baz=204,slow=19,SNR=1.9								
GUMO	**Guam**	**24.01**	**179**	P			**P**	**17 58 46.1**	**-0.4**
GUMO				LR			LR		
	comp=Z,3μm,21.0s								
SSLB	**Suanglung**	**24.47**	**242**	*e*P			**P**	**17 58 50.0**	**-0.8**
	comp=Z,87nm,1.4s								
YULB	**Yu-li**	**24.48**	**241**	*e*P			**P**	**17 58 51.2**	**+0.3**
	comp=Z,76nm,0.9s								
TPUB	**Ta-pu**	**25.01**	**242**	*e*P			**P**	**17 58 55.5**	**-0.2**
	comp=Z,149nm,1.2s								
TWG	**Pinlang**	**25.02**	**240**	*e*P			**P**	**17 58 58.2**	**+2.5**
	comp=Z,847nm,1.6s								
TIY	**Taiyuan**	**25.34**	**280**	*e*P			**P**	**17 59 01.0**	**+2.4**
TIY				S			**S**	**18 03 26.0**	**+1.9**
TIY				pmax			pmax		
	comp=Z,95nm,1.1s								
TIY				pmax			pmax		
	comp=Z,2μm,6.8s								
TIY				LR			LR		
	comp=Z,510nm,10.2s								
TIY				LR			LR		
	comp=Z,4μm,13.5s								
TIY				LR			LR		
	comp=Z,5μm,15.3s								
QZH	**Quanzhou**	**25.46**	**248**	⇓*i* P			**P**	**17 58 56.7**	**-3.0**
QZH				S			**S**	**18 03 23.6**	**-2.4**
QZH				pmax			pmax		
	comp=Z,140nm,1.0s								
QZH				pmax			pmax		
	comp=Z,2μm,7.3s								
QZH				LR			LR		
	comp=Z,3μm,12.9s								
QZH				LR			LR		
	comp=Z,6μm,14.3s								
QZH				LR			LR		
	comp=Z,8μm,13.8s								
HHC	**Hu-ho-hao-te**	**25.64**	**287**	*e*P			**P**	**17 59 01.4**	**0.0**
HHC				S			**S**	**18 03 25.6**	**-3.3**
HHC				sS			sS	18 03 33.4	-4.3
HHC				SS			**SnSn**	**18 04 29.3**	**+6.2**
HHC				pmax			pmax		
	comp=Z,44nm,1.0s								
HHC				pmax			pmax		
	comp=Z,2μm,7.4s								
HHC				LR			LR		
	comp=Z,4μm,13.6s								
HHC				LR			LR		
	comp=Z,5μm,14.8s								
HHC				LR			LR		
	comp=Z,5μm,13.6s								
SEY	**Seymchan**	**25.72**	**8**	P			**P**	**17 59 02.9**	**+1.2**
	comp=Z,26nm,0.8s,baz=185,slow=7.2,SNR=126								
WHN	**Wuhan**	**25.91**	**263**	⇑P			**P**	**17 59 05.0**	**+1.2**
WHN				S			**S**	**18 03 34.9**	**+1.7**
WHN				pmax			pmax		
	comp=Z,330nm,1.7s								
WHN				pmax			pmax		
	comp=Z,3μm,5.2s								
WHN				LR			LR		
	comp=Z,8μm,13.6s								
WHN				LR			LR		
	comp=Z,7μm,16.0s								
WHN				LR			LR		
	comp=Z,10μm,15.6s								
CIT	**Chita**	**25.98**	**313**	*e*P			**P**	**17 59 05.3**	**+1.0**
CIT				*e*				17 59 39.7	
CIT				*e*				18 00 01.4	
CIT				*e*S			**S**	**18 03 33.8**	**-0.2**
CIT				*e*				18 04 51.8	
CIT				pmax			pmax		
	comp=Z,621nm,2.8s								
YAK	**Yakutsk**	**26.05**	**344**	P			**P**	**17 59 05.1**	**+0.4**
	comp=Z,38nm,0.6s,baz=157,slow=2.4,SNR=24								
YAK				S			**S**	**18 03 32.9**	**-1.7**
	comp=Z,5.8nm,0.3s,baz=260

YAK pmax pmax
comp=Z,22nm,0.7s
YAK pmax pmax
comp=E,3.0nm,0.8s
YAK pmax pmax
comp=N,19nm,1.3s
YAK pmax pmax
comp=E,70nm,0.9s
YAK pmax pmax
comp=Z,44nm,0.9s
YAK pmax pmax
comp=N,222nm,1.5s
YAK smax smax
comp=E,355nm,2.2s
YAK smax smax
comp=N,811nm,3.8s
YAK MLR MLR
comp=E,1μm,16.0s
YAK Yakutsk 26.05 344 *e*P **P 17 59 04.4 -0.2**
comp=E,146nm,1.0s
YAK S **S 18 03 32.9 -1.7**
YAK LR LR
comp=Z,2μm,20.0s
H11N2 WAKE ISLAND Hy 26.44 126 T T 18 25 59.5
baz=317,slow=74,SNR=164
H11N1 WAKE ISLAND Hy 26.45 126 T T 18 26 12.5
baz=317,slow=74,SNR=92
H11N3 WAKE ISLAND Hy 26.45 126 T T 18 26 09.3
baz=317,slow=74,SNR=149
BTO Baotou 26.82 287 *e*P **P 17 59 12.7 +0.6**
BTO pmax pmax
comp=Z,26nm,1.1s
H11S1 WAKE ISLAND Hy 27.22 129 T T 18 27 05.2
baz=319,slow=76,SNR=39
H11S3 WAKE ISLAND Hy 27.22 129 T T 18 27 03.8
baz=319,slow=76,SNR=42
H11S2 WAKE ISLAND Hy 27.24 129 T T 18 27 06.7
baz=319,slow=76,SNR=39
BOD Bodaibo 28.36 325 *e*P **P 17 59 25.8 +0.3**
BOD pmax pmax
comp=Z,137nm,1.2s
XAN Xi'an 28.98 274 P **P 17 59 31.7 +0.3**
XAN S **S 18 04 22.2 +0.5**
XAN pmax pmax
comp=Z,32nm,1.2s
XAN pmax pmax
comp=Z,1μm,8.9s
XAN LR LR
comp=Z,3μm,15.3s
XAN LR LR
comp=Z,4μm,16.1s
ULN Ulaanbaatar 29.07 303 *e*P **P 17 59 33.9 +1.7**
ULN pmax pmax
comp=Z,172nm,1.6s
ULN MLR MLR
comp=Z,4μm,19.0s
ULN Ulaanbaatar 29.07 303 *e*P **P 17 59 33.9 +1.7**
comp=Z,172nm,1.6s
ULN LR LR
comp=Z,4μm,19.0s
ULN Ulaanbaatar 29.07 303 P **P 17 59 33.7 +1.5**
SNR=63
ULN Ulaanbaatar 29.07 303 P **P 17 59 33.7 +1.5**
SNR=63
SONA1 Songino Array 29.50 302 *e*P **P 17 59 36.8 +0.8**
SONM Songino Array 29.51 302 P **P 17 59 37.3 +1.3**
comp=Z,16nm,0.8s,baz=96,slow=7.8,SNR=35
SONM PcP **PcP 18 02 41.2 +0.2**
comp=Z,6.7nm,0.9s,baz=158,slow=4.1,SNR=3.9
SONM S **S 18 04 26.6 -3.3**
comp=Z,1.8nm,1.0s,baz=40,slow=25,SNR=2.2
ENH Enshi 29.86 266 *e*P **P 17 59 39.8 +0.6**
comp=Z,179nm,1.2s
ENH LR LR
comp=Z,1μm,20.0s
HKC Hong Kong Obse 30.28 248 P P 17 59 50.0 +7.2
GZH Guangzhou 30.43 250 P **P 17 59 41.0 -3.2**
GZH S **S 18 04 39.3 -5.0**
GZH pmax pmax
comp=Z,1μm,9.7s
IRK Irkutsk 31.53 311⇑ *i*P **P 17 59 54.9 +1.2**
IRK pmax pmax
comp=Z,101nm,1.6s
TLY Talaya 31.81 309 *e*P P 18 00 04.4 +8.3
TLY *e*S **S 18 05 08.5 +3.0**
TLY pmax pmax
comp=Z,62nm,1.4s
TLY MLR MLR
comp=Z,4μm,13.0s
TLY Talaya 31.81 309 PFAKE 18 00 10.0 +14
TLY LR LR
comp=Z,3μm,19.0s
ZAK Zakamensk 31.84 307 *e*P **P 17 59 57.1 +0.6**
ZAK pmax pmax
comp=Z,54nm,1.2s
LZH Lanzhou 32.41 280⇑P **P 18 00 02.5 +0.8**
LZH pP pP 18 00 04.8 -2.3
LZH sP sP 18 00 06.1 -3.2
LZH PP **PnPn 18 01 09.4 +0.8**
LZH PcP **PcP 18 02 50.3 +1.4**
LZH S **S 18 05 14.2 -1.3**
LZH sS sS 18 05 22.1 -2.2
LZH SS **SnSn 18 07 11.2 +2.9**
LZH pmax pmax
comp=Z,100nm,1.2s
LZH pmax pmax
comp=Z,800nm,7.4s
LZH LR LR
comp=Z,4μm,16.0s
LZH LR LR
comp=Z,4μm,15.1s
LZH LR LR
comp=Z,6μm,16.5s
BILL Bilibino 32.72 15*d i*P **P 18 00 03.4 -0.4**
BILL *e* 18 01 11.2
BILL *e*S S 18 05 09.2 -10
BILL pmax pmax
comp=Z,28nm,0.8s
BILL MLR MLR
comp=Z,2μm,19.0s
BILL Bilibino 32.72 15 *e*P **P 18 00 03.5 -0.4**
comp=Z,26nm,0.9s
BILL LR LR
comp=Z,2μm,20.0s
PATS Pohnpei 33.17 154 *e*P **P 18 00 08.4 +0.1**
comp=Z,278nm,1.9s
MOY Mondy 33.44 309 *e*P **P 18 00 11.5 +1.0**
MOY pmax pmax
comp=Z,94nm,4.0s
GYA Guiyang 33.78 262⇓ *i*P **P 18 00 13.7 -0.1**
GYA PP **PnPn 18 01 27.2 +1.1**
GYA PcP **PcP 18 02 54.0 +1.1**
GYA S **S 18 05 35.4 -1.5**
GYA ScP **ScP 18 06 38.8 +2.1**
GYA SS **SnSn 18 07 41.6 -0.2**
GYA ScS **ScS 18 10 37.4 -1.1**
GYA pmax pmax
comp=Z,50nm,1.0s
GYA pmax pmax
comp=Z,380nm,8.4s
GYA LR LR
comp=Z,2μm,15.2s
GYA LR LR
comp=Z,2μm,17.4s
GYA LR LR
comp=Z,3μm,18.0s
CD2 Chengdu 34.16 271 P **P 18 00 17.0 +0.1**
CD2 sP pP 18 00 21.0 -1.3
CD2 PP **PP 18 01 34.2 -0.1**
CD2 S **S 18 05 39.0 -3.5**
CD2 sS sS 18 05 48.5 -2.8
CD2 pmax pmax
comp=Z,60nm,0.9s
CD2 pmax pmax
comp=Z,650nm,8.9s
CD2 LR LR
comp=Z,4μm,17.8s
CD2 LR LR
comp=Z,4μm,17.8s
GTA Gaotai 34.75 287 P **P 18 00 23.3 +1.2**
GTA pP pP 18 00 27.4 0.0
GTA sP sP 18 00 30.6 +1.0
GTA PcP **PcP 18 02 56.5 +1.0**
GTA S **S 18 05 53.0 +1.4**
GTA sS sS 18 05 59.8 -0.7
GTA pmax pmax
comp=Z,24nm,1.6s
GTA pmax pmax
comp=Z,680nm,5.0s
GTA LR LR
comp=Z,4μm,17.8s
GTA LR LR
comp=Z,5μm,16.4s
GTA LR LR
comp=Z,6μm,16.2s
TIXI Tiksi 34.97 351 P **P 18 00 22.7 -0.6**
comp=Z,4.1nm,0.7s,baz=148,slow=7.8,SNR=23
TIXI PcP **PcP 18 02 55.0 -0.3**
comp=Z,5.4nm,0.8s,baz=92,slow=5.3,SNR=3.3
TIXI PKiKP **PKiKP 18 10 15.5 -1.5**
comp=Z,0.2nm,0.3s,baz=45,slow=4.3,SNR=3.6
TIXI Tiksi 34.97 351*de*P **P 18 00 22.6 -0.8**
TIXI pmax pmax
comp=Z,27nm,2.5s
TIXI Tiksi 34.97 351 *e*P **P 18 00 22.7 -0.6**
comp=Z,12nm,0.8s
TIXI PcP **PcP 18 02 55.0 -0.3**
TIXI PKiKP **PKiKP 18 10 15.5 -1.5**
TIXI LR LR
comp=Z,1μm,19.0s
QIZ Qiongzhong 35.48 248 P **P 18 00 26.8 -1.5**
QIZ S **S 18 06 08.1 +5.2**
QIZ LR LR
comp=Z,2μm,16.6s
QIZ LR LR
comp=Z,2μm,18.9s
KWAJ Kwajalein Atol 35.52 138 *i*P **P 18 00 27.0 -1.7**
GAMB Gambell 36.87 31 *e*P **P 18 00 40.9 +1.1**
comp=Z,8.0nm,1.0s
KMI Kunming 37.52 263 P **P 18 00 46.5 +0.5**
KMI pP pP 18 00 48.7 -2.7
KMI sP sP 18 00 49.9 -3.6
KMI PP **PnPn 18 02 14.2 +1.8**
KMI S **S 18 06 34.2 -0.2**
KMI sS sS 18 06 38.5 -4.8
KMI SS **SnSn 18 09 05.2 -7.2**
KMI pmax pmax
comp=Z,71nm,1.2s
KMI pmax pmax
comp=Z,490nm,4.8s
KMI LR LR
comp=Z,2μm,17.0s
KMI LR LR
comp=Z,3μm,16.3s
KMI LR LR
comp=Z,2μm,19.1s
KRAR Krasnoyarsk 38.73 315*d i*P **P 18 00 56.4 +0.9**
KRAR pmax pmax
comp=Z,56nm,1.3s
MANU Manus Island 39.62 176 *e*P **P 18 01 01.8 -1.6**
comp=Z,19nm,0.8s
TNTI Ternate 40.00 207 *e*P **P 18 01 06.2 -0.4**
comp=Z,220nm,1.4s
MYLDM Lahad Datu 40.14 223⇓P **P 18 01 10.1 +2.4**
JAY Jayapura 40.16 186 P **P 18 01 08.0 +0.1**
comp=Z,3.9nm,0.8s,baz=261,slow=20,SNR=7.7
KKM Kota Kinabalu 40.70 226⇑P **P 18 01 13.8 +1.3**
KKM Kota Kinabalu 40.70 226 PFAKE 18 01 20.0 +7.5
KKM LR LR
comp=Z,788nm,19.0s
NONG Nongkai 41.08 253 P **P 18 01 16.6 +1.1**
comp=Z,134nm,1.1s,comp=Z,2μm
SKNT Sakolnakorn 41.11 251 P **P 18 01 16.9 +1.1**
comp=Z,118nm,1.4s
CRAI Chiangrai 41.96 258 P **P 18 01 24.0 +1.3**
comp=Z,100nm,1.7s
RABL Rabaul 42.27 169 *e*P **P 18 01 26.1 +0.9**
comp=Z,133nm,1.1s
KHON Khomkaen 42.37 251 P **P 18 01 27.1 +1.0**
comp=Z,38nm,0.9s,comp=Z,401nm
MRSI Marisa 42.49 215 P **P 18 01 27.7 +0.7**
comp=Z,112nm,1.4s,comp=Z,2μm
WMQ Urumqi 42.76 297 P **P 18 01 30.8 +1.7**
WMQ pP sP 18 01 35.3 -1.4
WMQ sP pP 18 01 38.6 +4.0
WMQ PcP **PcP 18 03 21.0 +0.6**
WMQ S **S 18 07 52.4 +0.2**
WMQ sS sS 18 08 05.5 +4.3
WMQ ScS **ScS 18 11 30.2 +0.8**
WMQ pmax pmax
comp=Z,15nm,0.8s
WMQ pmax pmax
comp=Z,190nm,3.6s
WMQ LR LR
comp=Z,1μm,15.4s
WMQ LR LR
comp=Z,470nm,16.8s
UTTA Uttaradit 43.25 255 P **P 18 01 34.3 +1.1**
comp=Z,46nm,0.9s,comp=Z,361nm
CHAI Chaiyaphum 43.27 252 P **P 18 01 34.1 +0.7**
comp=Z,62nm,0.9s,comp=Z,497nm
ZAA0 Zalesovo Array 43.32 312 *e*P **P 18 01 33.0 -0.4**
ZALV Zalesovo Beam 43.32 312 P **P 18 01 33.8 +0.4**
comp=Z,8.7nm,0.6s,baz=92,slow=7.0,SNR=40
ZALV PcP **PcP 18 03 21.9 0.0**
comp=Z,34nm,0.6s,baz=96,slow=2.8,SNR=15
TT01 Tatalina 43.45 35 *e*P **P 18 01 35.2 +0.9**
TTA Tatalina 43.46 35 *e*P **P 18 01 35.3 +0.8**
TTA pmax pmax
comp=Z,170nm,2.0s
TTA Tatalina 43.46 35 *e*P **P 18 01 35.3 +0.8**
comp=Z,170nm,2.0s
LUWI Luwuk 43.48 213 *e*P **P 18 01 33.3 -1.7**
comp=Z,57nm,0.8s
SVW2 Sparrevohn 43.48 38 *e*P **P 18 01 36.0 +1.4**
comp=Z,113nm,1.0s
LAMP Lampang 43.50 257 P **P 18 01 36.7 +1.4**
comp=Z,87nm,0.8s,comp=Z,630nm
PBKT Sabao Pong 43.63 253 P **P 18 01 37.2 +0.9**
comp=Z,162nm,1.4s,comp=Z,2μm
NRIK Noril'sk 43.73 334 P **P 18 01 36.8 +0.3**
comp=Z,10nm,0.6s,baz=110,slow=8.0,SNR=25
NRIK S **S 18 07 57.7 -7.8**
comp=Z,1.5nm,0.5s,baz=2.2,slow=16,SNR=1.4
CMMT Chiang Mai 43.86 258 P **P 18 01 38.9 +0.7**
comp=Z,139nm,1.2s,comp=Z,1μm
CHTO Chiang Mai 43.87 258 P **P 18 01 39.0 +0.8**
comp=Z,619nm,1.3s,comp=Z,7μm
CHTO Chiang Mai 43.87 258 *e*P **P 18 01 39.2 +1.0**
CHTO pmax pmax
comp=Z,100nm,0.9s
CHTO MLR MLR
comp=Z,875nm,19.0s
CHTO Chiang Mai 43.87 258 *e*P **P 18 01 39.2 +1.0**
comp=Z,100nm,0.9s
CHTO LR LR
comp=Z,875nm,19.0s
CHTO Chiang Mai 43.87 258 P **P 18 01 39.7 +1.5**
SNR=92
CHTO Chiang Mai 43.87 258 P **P 18 01 39.7 +1.5**
SNR=92
CMAR Chiang Mai Arr 44.07 257 P **P 18 01 41.1 +1.3**
comp=Z,35nm,0.7s,baz=46,slow=7.2,SNR=365
CMAR PcP **PcP 18 03 25.1 +0.1**
comp=Z,5.2nm,0.8s,baz=40,slow=1.6,SNR=6.4
CMAR LR LR 18 23 10.4
comp=Z,976nm,19.4s,baz=70,slow=40
CM01 Chiang Mai Arr 44.08 257 *e*P **P 18 01 39.4 -0.5**
SUKH Sukhothai 44.11 255 P **P 18 01 41.5 +1.4**
comp=Z,43nm,0.9s,comp=Z,335nm
NVS Novosibirsk 44.19 313 *e*P **P 18 01 41.5 +1.1**
NVS *e* 18 03 24.4
NVS pmax pmax
comp=Z,51nm,1.2s
NVS pmax pmax
comp=N,7.0nm,1.5s
NVS pmax pmax
comp=E,37nm,1.3s
NVS pmax pmax
comp=Z,92nm,2.4s
NVS pmax pmax
comp=E,33nm,2.3s
ZSN Zaisan 44.34 303 *i*P **P 18 01 40.5 -1.2**
comp=E,520nm,1.4s
ZSN *i*S **S 18 08 12.7 -2.4**
ZSN LRM MLR 18 22 28.4
comp=E,650nm,12.2s
SRAK Srakaew 44.42 250 P **P 18 01 40.4 -2.2**
comp=E,324nm,1.0s,comp=E,3μm
OHAK Old Harbor 44.58 43 *e*P **P 18 01 43.6 +0.2**
comp=E,129nm,1.4s
TARA Tarawa 44.60 137 PFAKE 18 01 50.0 +5.9
TARA LR LR
comp=Z,180nm,19.0s
PCI Palu 44.68 216 P **P 18 01 44.4 -0.3**
comp=Z,122nm,1.3s,comp=Z,1μm
NAYO Nakonayok 44.77 250 P **P 18 01 46.7 +1.3**
comp=Z,269nm,0.7s
BTM Bintulu 44.81 228⇓P **P 18 01 47.1 +1.3**
RSO Redoubt South 44.84 39 *e*P **P 18 01 46.3 +0.6**
KDAK Kodiak Island 44.94 42 P P 18 02 01.2 +15
comp=Z,86nm,0.7s,baz=271,slow=4.8,SNR=40
KDAK Kodiak Island 44.94 42 *e*P **P 18 01 46.2 -0.1**
KDAK pmax pmax
comp=Z,156nm,0.9s
KDAK MLR MLR
comp=Z,1μm,20.0s
KDAK Kodiak Island 44.94 42 *e*P **P 18 01 46.1 -0.1**
comp=Z,156nm,0.9s
KDAK LR LR
comp=Z,1μm,20.0s
CHBT CHBT 45.02 248 P **P 18 01 48.8 +1.4**
comp=Z,169nm,1.2s,comp=Z,2μm
SPU Mount Spurr 45.20 38 *e*P **P 18 01 49.3 +0.9**
PPLA Purkeypile 45.20 35 *e*P **P 18 01 50.1 +1.6**
comp=Z,373nm,1.7s
CAST Castle Rocks 45.28 34 *e*P **P 18 01 50.2 +1.3**
comp=Z,415nm,2.0s
JOHN Johnston Islan 45.34 105 PFAKE 18 02 00.0 +10
JOHN LR LR
comp=Z,248nm,19.0s
BPAW Bear Paw Mtn. 45.80 34 *e*P **P 18 01 54.1 +1.0**
comp=Z,173nm,1.9s
KTH Kantishna Hill 45.80 34 *e*P **P 18 01 54.2 +1.0**
comp=Z,101nm,1.0s
MK31 Makanchi Array 45.88 302 *i*P **P 18 01 54.9 +1.0**
MK31 pmax pmax
comp=Z,85nm,1.2s
MKAR Makanchi Array 45.88 302 P **P 18 01 54.5 +0.5**
comp=Z,21nm,0.8s,baz=85,slow=9.1,SNR=213
MKAR PcP **PcP 18 03 31.1 +0.2**
comp=Z,11nm,0.8s,baz=63,slow=5.6,SNR=4.4
MKAR S **S 18 08 37.2 -0.2**
comp=Z,0.3nm,0.7s,baz=34,slow=21,SNR=1.9
SHL Shillong 45.90 271 *e*P **P 18 01 54.0 -0.5**
SHL *ex* x 18 08 52.0
SBUM Sibu 45.92 228⇓P **P 18 01 55.8 +1.3**
MLY Manley 45.97 32 *e*P **P 18 01 55.8 +1.3**
comp=Z,76nm,0.9s
MAKZ Makanchi 46.09 302 *e*P **P 18 01 56.2 +0.6**
MAKZ pmax pmax
comp=Z,55nm,0.9s
MAKZ Makanchi 46.09 302 *e*P **P 18 01 56.2 +0.6**
comp=Z,55nm,0.9s
TRF Thorofare Moun 46.09 34 *e*P **P 18 01 56.0 +0.5**
comp=Z,44nm,0.8s
RC01 Rabbit Creek A 46.32 38 *e*P **P 18 01 57.6 +0.4**
comp=Z,93nm,1.1s
COLD Coldfoot 46.36 29 *e*P **P 18 01 58.4 +0.9**
comp=Z,18nm,1.0s
SRDT SRDT 46.40 252 P **P 18 01 59.7 +1.4**
comp=Z,260nm,1.6s,comp=Z,4μm
BKB Balikpapan 46.43 220 P **P 18 01 59.8 +1.3**
comp=Z,111nm,1.1s,comp=Z,2μm
SEW Seward 46.49 39 *e*P **P 18 01 58.9 +0.5**
comp=Z,63nm,1.0s
SEM Semipalatinsk 46.52 307⇓ *e*P **P 18 02 01.6 +2.8**
comp=Z,179nm,1.0s
SEM *e*S **S 18 08 48.7 +2.4**
SEM LR LR 18 21 47.8
comp=Z,2μm,16.8s
KHLT Khaolaem Dam 46.52 253 P **P 18 02 01.0 +1.7**
comp=Z,30nm,1.7s,comp=Z,541nm
PMR Palmer 46.60 37 *e*P **P 18 01 59.4 +0.1**
PMR pmax pmax
comp=Z,112nm,1.1s
PMR Palmer 46.60 37 *e*P **P 18 01 59.4 +0.1**
comp=Z,112nm,1.1s
MCK McKinley 46.70 34 *e*P **P 18 02 00.5 +0.4**
MCK pmax pmax
comp=Z,59nm,0.9s
MCK McKinley 46.70 34 *e*P **P 18 02 00.5 +0.4**
comp=Z,59nm,0.9s
RND Reindeer 46.73 35 *e*P **P 18 02 00.6 +0.1**
RND pmax pmax
comp=Z,92nm,0.9s
RND Reindeer 46.73 35 *e*P **P 18 02 00.6 +0.1**
comp=Z,92nm,0.9s
PMG Port Moresby 46.92 176 P **P 18 02 02.0 -0.3**
comp=Z,41nm,1.0s,baz=6.8,slow=5.4,SNR=12
PMG Port Moresby 46.92 176*de*P **P 18 02 01.5 -0.8**
PMG pmax pmax
comp=Z,473nm,1.7s
PMG Port Moresby 46.92 176 *e*P **P 18 02 02.2 -0.1**
comp=Z,80nm,1.1s
PMG LR LR
comp=Z,546nm,20.0s
PHET Kaeng Krachan 46.92 250 P **P 18 02 04.3 +1.9**
comp=Z,55nm,0.9s,comp=Z,450nm
MDM Murphy Dome 47.03 32 *e*P **P 18 02 03.8 +1.0**
comp=Z,125nm,0.8s
WRH Wood River Hil 47.08 33 *e*P **P 18 02 03.4 +0.3**
comp=Z,44nm,0.8s
SAUI Saumlaki 47.09 198 P **P 18 02 04.7 +1.0**
SAUI Saumlaki 47.09 198 *e*P **P 18 02 03.8 +0.1**
comp=Z,252nm,1.5s
COLA College 47.19 33*d i*P **P 18 02 04.3 +0.4**
COLA pmax pmax
comp=Z,147nm,2.1s
COLA College 47.19 33 *e*P **P 18 02 05.5 +1.6**
comp=Z,53nm,0.7s
COLA LR LR
comp=Z,636nm,19.0s
MTKI Muara Teweh, K 47.20 222 P **P 18 02 08.1 +3.5**
comp=Z,103nm,0.9s,comp=Z,17μm
CCB Clear Creek Bu 47.20 33 *e*P **P 18 02 04.7 +0.7**
comp=Z,25nm,1.0s
DHY Denali Highway 47.40 35 *e*P **P 18 02 05.9 +0.1**
comp=Z,248nm,1.9s
SPSI Sidrap Palu 47.41 215 P **P 18 02 06.3 +0.2**
comp=Z,42nm,1.0s,comp=Z,693nm
SCM Sheep Creek Mo 47.46 37 *e*P **P 18 02 07.2 +1.1**
SCM pmax pmax
comp=Z,173nm,1.2s
SCM Sheep Creek Mo 47.46 37 *e*P **P 18 02 07.2 +1.1**
comp=Z,173nm,1.2s
KURK Kurchatov 47.49 308 *e*P **P 18 02 06.7 +0.3**
KURK 18 03 36.4
KURK S **S 18 08 58.6 -1.5**
KURK pmax pmax
comp=Z,56nm,0.7s
KURK MLR MLR
comp=Z,2μm,20.0s
KURK Kurchatov 47.49 308 *e*P **P 18 02 06.7 +0.3**
comp=Z,56nm,0.7s
KURK PcP **PcP 18 03 36.4 -0.1**
KURK S **S 18 08 58.6 -1.5**
KURK LR LR
comp=Z,2μm,20.0s
KURK Kurchatov 47.49 308 P **P 18 02 07.0 +0.5**
SNR=32
KURK Kurchatov 47.49 308 P **P 18 02 07.0 +0.5**
SNR=32
KURBB Kurchatov Arra 47.56 308 P **P 18 02 07.3 +0.3**
comp=Z,39nm,0.5s,baz=82,slow=7.9,SNR=473
KURBB PcP **PcP 18 03 36.4 -0.3**
comp=Z,11nm,0.8s,baz=85,slow=3.9,SNR=4.7
KURBB S **S 18 08 58.6 -2.6**
comp=Z,0.5nm,0.9s,baz=37,slow=49,SNR=2.5
HDA Harding Lake 47.57 33 *e*P **P 18 02 06.7 -0.3**
comp=Z,68nm,0.8s
ILAR Eielson Array 47.60 33 P **P 18 02 07.0 -0.1**
comp=Z,53nm,0.7s,baz=261,slow=6.3,SNR=470
ILB Eielson Array 47.60 33 *e*P **P 18 02 07.2 0.0**
IL1 Eielson Array 47.60 33 *e*P **P 18 02 06.1 -1.1**
KSM Kuching 47.84 229 *e*P **P 18 02 10.4 +0.8**
comp=Z,30nm,0.6s
KSM LR LR
comp=Z,314nm,20.0s
KLU Klutina 48.15 37 *e*P **P 18 02 12.3 +0.8**
comp=Z,172nm,1.3s
DIV Divide 48.24 38 *e*P **P 18 02 13.9 +1.6**
comp=Z,304nm,1.4s
PAX Paxson 48.27 35 *e*P **P 18 02 13.0 +0.5**
PAX pmax pmax
comp=Z,39nm,0.8s
PAX Paxson 48.27 35 *e*P **P 18 02 13.0 +0.5**
comp=Z,39nm,0.8s
STKI Sintang 48.28 227 P **P 18 02 14.0 +1.1**
comp=Z,204nm,0.9s,comp=Z,2μm

FYU	**Fort Yukon**	48.29	30	*e*P		**P**	**18 02 12.7**	**+0.3**
	comp=Z,549nm,1.8s								
EYAK	**Cordova Ski Ar**	48.30	38	*e*P		**P**	**18 02 14.2**	**+1.6**
	comp=Z,273nm,1.7s								
KAPI	**Kappang**	48.35	214	P		**P**	**18 02 13.6**	**+0.2**
	comp=Z,32nm,0.8s,baz=37,slow=5.3,SNR=14								
KAPI	**Kappang**	48.35	214	*e*P		**P**	**18 02 13.6**	**+0.2**
	comp=Z,49nm,1.0s								
KAPI				LR	LR				
	comp=Z,420nm,20.0s								
TAPN	**Taplejung**	48.37	275	*e*P		**P**	**18 02 15.0**	**+1.0**
	comp=Z,103nm,1.2s								
SHLS	**Shalkode**	48.44	298⇓	*i*P		**P**	**18 02 14.6**	**+0.5**
	comp=Z,321nm,0.9s								
SHLS				*e*S		**S**	**18 09 14.0**	**-0.3**
SHLS				LR	LR		18 23 08.5		
	comp=Z,687nm,15.7s								
KBKI	**Kotabaru**	48.54	219	P		**P**	**18 02 15.8**	**+0.8**
	comp=Z,68nm,0.9s,comp=Z,1μm								
PDGK	**Podgornoye**	48.66	298	P		**P**	**18 02 15.9**	**+0.3**
PDGK				pmax	pmax				
	comp=Z,114nm,1.7s								
BMRM	**Bremner River**	48.82	38	*e*P		**P**	**18 02 17.7**	**+1.0**
	comp=Z,262nm,1.4s								
RAGM	**Ragged Mountai**	48.84	39	*e*P		**P**	**18 02 18.8**	**+2.0**
	comp=Z,223nm,1.6s								
ODAN	**Odare**	48.85	275	*e*P		**P**	**18 02 18.3**	**+0.7**
	comp=Z,53nm,0.8s								
DOT	**Dot Lake**	48.87	34	*e*P		**P**	**18 02 16.9**	**0.0**
	comp=Z,95nm,0.7s								
UZB	**Uzynbulak**	49.04	298⇓	*i*P		**P**	**18 02 19.3**	**+0.6**
	comp=Z,338nm,1.5s								
UZB				*e*S		**S**	**18 09 22.1**	**-0.6**
UZB				LR	LR		18 23 27.2		
	comp=Z,839nm,16.1s								
HNR	**Honiara**	49.05	160	P		**P**	**18 02 18.0**	**-0.8**
	comp=Z,28nm,0.9s,baz=184,slow=15,SNR=2.6								
HNR	**Honiara**	49.05	160	P		**P**	**18 02 20.0**	**+1.2**
HNR	**Honiara**	49.05	160	*e*P		**P**	**18 02 21.9**	**+3.1**
HNR				pmax	pmax				
	comp=Z,221nm,1.6s								
HNR				MLR	MLR				
	comp=Z,1μm,22.0s								
HNR	**Honiara**	49.05	160	*e*P		**P**	**18 02 21.9**	**+3.1**
	comp=Z,221nm,1.6s								
HNR				LR	LR				
	comp=Z,1μm,22.0s								
MENT	**Mentasta**	49.07	35	*e*P		**P**	**18 02 20.0**	**+1.4**
	comp=Z,351nm,2.0s								
BBKI	**Banjar Baru**	49.36	221	P		**P**	**18 02 21.0**	**-0.2**
	comp=Z,241nm,1.0s,comp=Z,2μm								
RAMN	**Ramite**	49.43	275	*e*P		**P**	**18 02 22.8**	**+0.7**
	comp=Z,108nm,0.7s								
SATY	**Saty**	49.50	298⇓	*i*P		**P**	**18 02 23.0**	**+0.8**
	comp=Z,548nm,1.0s								
SATY				*e*S		**S**	**18 09 27.6**	**-1.4**
SATY				LR	LR		18 23 33.5		
	comp=Z,1μm,14.2s								
GUN	**Gumba**	49.56	277	*e*P		**P**	**18 02 24.0**	**+0.9**
	comp=Z,161nm,1.0s								
EGAK	**Eagle**	50.05	33	*e*P		**P**	**18 02 26.0**	**+0.1**
	comp=Z,156nm,1.8s								
EGAK				LR	LR				
	comp=Z,697nm,19.0s								
KKN	**Kakani**	50.09	277	*e*P		**P**	**18 02 27.8**	**+0.8**
	comp=Z,117nm,0.9s								
PKIN	**Phulchoki**	50.09	277	*e*P		**P**	**18 02 27.5**	**+0.4**
	comp=Z,28nm,0.7s								
SURT	**Suratani**	50.12	247	P		**P**	**18 02 28.6**	**+1.5**
	comp=Z,37nm,1.2s,comp=Z,598nm								
TRTT	**Trang**	50.23	245	P		**P**	**18 02 29.2**	**+1.3**
	comp=Z,93nm,1.5s								
DMN	**Daman**	50.31	277	*e*P		**P**	**18 02 29.3**	**+0.6**
	comp=Z,72nm,1.0s								
KRAB	**Krabi**	50.33	246	P		**P**	**18 02 30.7**	**+2.1**
	comp=Z,180nm,0.8s,comp=Z,10μm								
MDOK	**Medeo**	50.41	299	*i* P		**P**	**18 02 30.3**	**+1.1**
	comp=Z,395nm,1.2s								
MDOK				*i* PP		**PP**	**18 04 28.2**	**+3.6**
MDOK				*e*S		**S**	**18 09 42.4**	**+0.5**
MDOK				*i* SS		**SS**	**18 13 20.9**	**+5.5**
MDOK				LRM		MLR	18 26 14.4		
	comp=Z,942nm,16.5s								
PBKI	**Pangkalan Bun**	50.43	225	P		**P**	**18 02 29.9**	**+0.5**
AAA	**Alma-Ata**	50.45	299	*e*P		**P**	**18 02 31.2**	**+1.8**
AAA				pmax	pmax				
	comp=Z,500nm,2.8s								
AAA				MLR	MLR				
	comp=Z,4μm,16.0s								
GKN	**Gorkha**	50.49	277	*e*P		**P**	**18 02 30.7**	**+0.7**
	comp=Z,522nm,1.6s								
KUU	**Kurty**	50.68	300⇓	*i*P		**P**	**18 02 31.2**	**+0.2**
	comp=Z,744nm,1.5s								
KUU				*i* PP		**PP**	**18 04 31.5**	**+4.6**
KUU				*e*S		**S**	**18 09 45.5**	**+0.2**
KUU				LR	LR		18 24 37.2		
	comp=Z,1μm,15.0s								
SOEI	**Soe**	50.87	206	P		**P**	**18 02 32.3**	**-0.5**
	comp=Z,128nm,0.9s,comp=Z,2μm								
SOEI	**Soe**	50.87	206	*e*P		**P**	**18 02 31.9**	**-1.0**
	comp=Z,127nm,0.9s								
PKDT	**Phuket**	51.17	247	P		**P**	**18 02 36.5**	**+1.5**
	comp=Z,172nm,1.6s,comp=Z,2μm								
KULM	**Kulim**	51.31	242	*e*P		**P**	**18 02 36.9**	**+0.8**
	comp=Z,23nm,0.6s								
KULM				LR	LR				
	comp=Z,569nm,21.0s								
COEN	**Coen**	51.39	182	*e*P		**P**	**18 02 36.2**	**-0.4**
	comp=Z,66nm,0.8s								
KOLN	**Koldanda**	51.42	278	*e*P		**P**	**18 02 37.8**	**+0.8**
	comp=Z,35nm,0.8s								
TKM2	**Tokmak 2**	51.50	299	*e*P		**P**	**18 02 38.8**	**+1.3**
TKM2				pmax	pmax				
	comp=Z,490nm,1.9s								
TKM2				MLR	MLR				
	comp=Z,1μm,19.0s								
TKM2	**Tokmak 2**	51.50	299	*e*P		**P**	**18 02 38.8**	**+1.3**
	comp=Z,490nm,1.9s								
TKM2				LR	LR				
	comp=Z,1μm,19.0s								
BATI	**Baumata**	51.51	207	P		**P**	**18 02 37.1**	**-0.4**
	comp=Z,24nm,0.7s,baz=263,slow=23,SNR=8.4								
IPM	**Ipoh**	51.62	241	*e*P		**P**	**18 02 38.6**	**+0.2**
	comp=Z,106nm,0.8s								
CHKZ	**Chkalovo**	51.68	313	P		**P**	**18 02 38.2**	**-0.1**
CHKZ				pmax	pmax				
	comp=Z,34nm,0.8s								
PYUN	**Piuthan**	51.74	278	*e*P		**P**	**18 02 40.3**	**+0.8**
	comp=Z,404nm,1.2s								
MTN	**Manton Dam**	51.82	197	*e*P		**P**	**18 02 38.9**	**-0.8**
	comp=Z,155nm,0.8s								
TPRI	**Tanjung Pinang**	51.89	235	P		**P**	**18 02 40.9**	**+0.5**
BVA0	**Borovoye Array**	51.97	312	*i* P		**P**	**18 02 41.1**	**+0.6**
BVA0				pmax	pmax				
	comp=Z,30nm,0.8s								
BVAR	**Borovoye Array**	51.97	312	P		**P**	**18 02 41.0**	**+0.5**
	comp=Z,17nm,0.7s,baz=75,slow=8.5,SNR=135								
BVAR				PcP		**PcP**	**18 03 53.2**	**+0.4**
	comp=Z,18nm,0.8s,baz=81,slow=3.8,SNR=6.8								
BVAR				S		**S**	**18 10 02.0**	**-0.8**
	comp=Z,0.7nm,0.6s,baz=72,slow=9.3,SNR=2.0								
BRVK	**Borovoye**	52.02	313	*e*P		**P**	**18 02 41.6**	**+0.7**
BRVK				pmax	pmax				
	comp=Z,65nm,1.3s								
BRVK				MLR	MLR				
	comp=Z,1μm,19.0s								
BRVK	**Borovoye**	52.02	313	*e*P		**P**	**18 02 41.6**	**+0.7**
	comp=Z,65nm,1.3s								
BRVK				LR	LR				
	comp=Z,1μm,19.0s								
BRVK	**Borovoye**	52.02	313	P		**P**	**18 02 42.0**	**+1.1**
	SNR=27								
BRVK	**Borovoye**	52.02	313	P		**P**	**18 02 42.0**	**+1.1**
	SNR=27								
OTUK	**Ortayu**	52.05	306	P		**P**	**18 02 41.2**	**-0.1**
OTUK				pmax	pmax				
	comp=Z,85nm,1.5s								
FRU	**Bishkek**	52.21	299	*i* P		**P**	**18 02 43.5**	**+1.0**
FRU				*e*			18 02 55.5		
FRU				*e*S		**S**	**18 10 06.0**	**-0.4**
FRU				*i*			18 10 24.0		
FRU				pmax	pmax				
	comp=Z,230nm,2.1s								
FRU				MLR	MLR				
	comp=E,2μm,16.5s								
WSI	**Waingapu**	52.30	211	P		**P**	**18 02 42.8**	**-0.5**
	comp=E,249nm,0.8s,comp=E,3μm								
AAK	**Ala-Archa**	52.36	299	*e*P		**P**	**18 02 44.6**	**+0.8**
AAK				pmax	pmax				
	comp=Z,23nm,1.0s								
AAK				MLR	MLR				
	comp=Z,1μm,19.0s								
AAK	**Ala-Archa**	52.36	299	*e*P		**P**	**18 02 44.6**	**+0.8**
	comp=Z,23nm,1.0s								
AAK				LR	LR				
	comp=Z,1μm,19.0s								
AAK	**Ala-Archa**	52.36	299	P		**P**	**18 02 44.1**	**+0.3**
	SNR=24								
AAK	**Ala-Archa**	52.36	299	P		**P**	**18 02 44.1**	**+0.3**
	SNR=24								
KSH	**Kashi**	52.40	295	P		P	18 02 49.0	+4.9	
KSH				*e*PcP		**PcP**	**18 03 59.4**	**+4.5**
KSH				PcS		**PcS**	**18 07 56.8**	**+3.4**
KSH				S		**S**	**18 10 15.7**	**+6.4**
KSH				ScS		**ScS**	**18 12 35.4**	**+2.0**
KSH				SS		**SS**	**18 13 53.9**	**+7.0**
KSH				pmax	pmax				
	comp=Z,120nm,1.6s								
KSH				LR	LR				
	comp=Z,2μm,17.6s								
KSH				LR	LR				
	comp=Z,3μm,16.6s								
KSH				LR	LR				
	comp=Z,2μm,18.3s								
PLAI	**Plampang**	52.61	214	P		**P**	**18 02 44.0**	**-1.7**
	comp=Z,111nm,0.9s,comp=Z,1μm								
INK	**Inuvik**	52.66	28	P		**P**	**18 02 46.1**	**+0.7**
	comp=Z,39nm,0.7s,baz=291,slow=6.3,SNR=190								
BASI	**Baing, Sumba**	52.68	210	P		**P**	**18 02 47.3**	**+1.2**
	comp=Z,245nm,0.9s,comp=Z,3μm								
ZRNK	**Zerenda**	52.80	313	P		**P**	**18 02 46.9**	**+0.2**
ZRNK				pmax	pmax				
	comp=Z,51nm,1.0s								
ZRNK	**Zerenda**	52.80	313	*e*P		**P**	**18 02 47.3**	**+0.6**
	comp=Z,39nm,0.8s								
EKS2	**Erkin-Say**	52.85	299	*e*P		**P**	**18 02 48.0**	**+0.6**
EKS2				pmax	pmax				
	comp=Z,26nm,0.8s								
EKS2				MLR	MLR				
	comp=Z,2μm,19.0s								
EKS2	**Erkin-Say**	52.85	299	*e*P		**P**	**18 02 48.0**	**+0.6**
	comp=Z,26nm,0.8s								
EKS2				LR	LR				
	comp=Z,2μm,19.0s								
TWSI	**Taliwang, Sumb**	52.94	215	P		**P**	**18 02 46.6**	**-1.5**
	comp=Z,116nm,0.8s								
PPBI	**Pangkal Pinang**	53.24	231	P		**P**	**18 02 51.5**	**+1.1**
	comp=Z,82nm,1.1s								
LGTI	**Lohaghat**	53.27	281	*e*P		**P**	**18 02 54.2**	**+3.7**
ABJI	**Asem Bagus**	53.37	219	P		**P**	**18 02 52.7**	**+1.4**
	comp=Z,120nm,1.0s								
SKAG	**Skagway**	53.64	39	*e*P		**P**	**18 02 53.1**	**+0.4**
	comp=Z,138nm,1.8s								
MNAS	**Manas**	53.79	299	P		**P**	**18 02 55.1**	**+0.8**
MNAS				pmax	pmax				
	comp=Z,53nm,0.8s								
SFK	**Sufi-Kurgan**	53.99	296	P		**P**	**18 02 56.7**	**+0.8**
SFK				pmax	pmax				
	comp=Z,75nm,0.9s								
LHMI	**Lhok Sumawe**	53.99	245	P		**P**	**18 02 59.5**	**+3.6**
	comp=Z,98nm,1.6s,comp=Z,2μm								
LHMI	**Lhok Sumawe**	53.99	245	*e*P		**P**	**18 02 58.3**	**+2.4**
	comp=Z,199nm,1.5s								
JAGI	**Jajag, Banyuwa**	53.99	218	P		**P**	**18 02 55.1**	**-0.8**
	comp=Z,45nm,0.9s								
JAGI	**Jajag, Banyuwa**	53.99	218	*e*P		**P**	**18 02 53.8**	**-2.1**
	comp=Z,94nm,1.2s								
PSI	**Prapat**	54.28	242	P		**P**	**18 02 58.5**	**+0.4**
	comp=Z,37nm,0.8s,baz=13,slow=4.9,SNR=39								
PSI	**Prapat**	54.28	242	*e*P		**P**	**18 02 58.0**	**-0.2**
PSI				pmax	pmax				
	comp=Z,47nm,0.8s								
PSI	**Prapat**	54.28	242	*e*P		**P**	**18 02 58.0**	**-0.2**
	comp=Z,47nm,0.8s								
JMBI	**JAMBI**	54.40	234	P		**P**	**18 03 01.9**	**+3.1**
	comp=Z,500nm,0.9s,comp=Z,8μm								
NGJI	**Ngawi**	54.43	222	P		P	18 03 06.1	+7.1	
KCSI	**Kotacane, Aceh**	54.58	243	P		**P**	**18 02 59.9**	**-0.3**
	comp=Z,22nm,1.0s,comp=Z,485nm								
BKNI	**Bangkinang**	54.63	238	P		**P**	**18 03 01.9**	**+1.4**
	comp=Z,422nm,0.9s,comp=Z,4μm								
BKNI	**Bangkinang**	54.63	238	*e*P		**P**	**18 03 02.0**	**+1.5**
	comp=Z,414nm,1.0s								
KK31	**Karatay Array**	54.94	301	*i* P		**P**	**18 03 02.1**	**-0.4**
KK31				pmax	pmax				
	comp=Z,15nm,0.8s								
KKAR	**Karatay Array**	54.94	301	*e*P		**P**	**18 03 03.0**	**+0.4**
KKAR	**Karatay Array**	54.94	301	*e*P		**P**	**18 03 03.0**	**+0.4**
MNSI	**Mandailing Nat**	55.27	239	P		**P**	**18 03 05.2**	**0.0**
	comp=Z,65nm,0.7s,comp=Z,1μm								
SDSI	**Sungai Dareh**	55.30	236	P		**P**	**18 03 06.2**	**+0.8**
	comp=Z,270nm,1.0s,comp=Z,47μm								
UGM	**Wanagama**	55.38	222	P		**P**	**18 03 06.1**	**+0.1**
	comp=Z,219nm,1.2s								
UGM	**Wanagama**	55.38	222	*e*P		**P**	**18 03 04.9**	**-1.1**
	comp=Z,307nm,1.2s								
THN	**Thein Dam**	55.44	287	*e*P		**P**	**18 03 05.6**	**-0.6**
JCJI	**Jatiwangi**	55.45	226	P		**P**	**18 03 08.3**	**+1.9**
	comp=Z,283nm,1.7s,comp=Z,4μm								
IUG	**Iuzhnay**	55.62	300⇓	*i*P		**P**	**18 03 08.5**	**+0.9**
	comp=Z,648nm,1.7s								
IUG				*e*S		**S**	**18 10 53.2**	**+0.4**
IUG				LR	LR		18 27 22.3		
	comp=Z,591nm,17.5s								
KKR	**Kurukshetra**	55.70	284	*e*P		**P**	**18 03 09.1**	**+0.9**
CHLP	**Challavanipeta**	55.74	268	*e*P		**P**	**18 03 09.6**	**+1.1**
CHLP				IAmb	IAmb		18 03 11.0		
	comp=Z,325nm,2.1s								
CHLP				*e*S		**S**	**18 10 56.8**	**+2.3**
KPJI	**Karang Pucung**	55.77	224	P		**P**	**18 03 08.4**	**-0.3**
	comp=Z,104nm,1.1s,comp=Z,1μm								
BISR	**Bishrakh**	55.86	282	*e*P		**P**	**18 03 07.3**	**-2.0**
BISR				IAmb	IAmb		18 03 09.2		
	comp=Z,2μm,0.0s								
NDI	**New Delhi**	55.98	282	*e*P		**P**	**18 03 09.0**	**-1.2**
WRAK	**Wrangell Islan**	56.01	42	PFAKE			18 03 20.0	+10	
WRAK				LR	LR				
	comp=Z,946nm,21.0s								
LEM	**Lembang**	56.09	226	P		**P**	**18 03 15.7**	**+4.5**
	comp=Z,199nm,0.8s,baz=24,slow=6.0,SNR=28								
LEM	**Lembang**	56.09	226	P		P	18 03 16.1	+4.9	
AYAN	**Aya Nagar**	56.15	282	*e*P		**P**	**18 03 11.2**	**-0.1**
AYAN				IAmb	IAmb		18 03 12.4		
	comp=Z,63nm,0.5s								
KLI	**Kotabumi**	56.15	230	P		**P**	**18 03 11.5**	**+0.1**
	comp=Z,114nm,1.6s,comp=Z,2μm								
LHSI	**Lahat**	56.16	232	P		**P**	**18 03 12.0**	**+0.5**
	comp=Z,293nm,1.0s,comp=Z,3μm								
BHGR	**Bahadurgarh**	56.19	282	*e*P		**P**	**18 03 12.2**	**+0.5**
BHGR				IAmb	IAmb		18 03 13.6		
	comp=Z,1μm,0.1s								
FUNA	**Funafuti**	56.24	137	PFAKE			18 03 20.0	+8.0	
FUNA				LR	LR				
	comp=Z,13μm,20.0s								
MDSI	**Maura Dua**	56.27	231	P		**P**	**18 03 11.9**	**-0.4**
	comp=Z,158nm,1.2s,comp=Z,2μm								
GSI	**Gunungsitoli**	56.29	241	P		**P**	**18 03 13.3**	**+0.8**
	comp=Z,317nm,1.1s,comp=Z,3μm								
GSI	**Gunungsitoli**	56.29	241	*e*P		**P**	**18 03 11.3**	**-1.1**
	comp=Z,155nm,1.0s								
SVE	**Sverdlovsk**	56.29	319	*ce*P		**P**	**18 03 12.9**	**+0.9**
SVE				*e*			18 05 17.3		
SVE				*e*			18 06 31.7		
SVE				*e*S		**S**	**18 11 02.0**	**+1.0**
SVE				pmax	pmax				
	comp=Z,71nm,1.1s								
SVE				MLR	MLR				
	comp=Z,6μm,15.0s								
SVE				MLR	MLR				
	comp=E,4μm,15.0s								
BLSI	**Bandar Lampung**	56.31	229	P		**P**	**18 03 12.4**	**-0.2**
	comp=E,165nm,0.4s,comp=E,3μm								
DLBC	**Dease Lake**	56.56	39	P		**P**	**18 03 15.8**	**+1.8**
	comp=E,18nm,0.9s,baz=285,slow=7.9,SNR=31								
DLBC				PcP		**PcP**	**18 04 12.0**	**+1.7**
	comp=E,7.9nm,0.9s,baz=323,slow=5.1,SNR=3.2								
DLBC	**Dease Lake**	56.56	39	*e*P		**P**	**18 03 15.7**	**+1.7**
	comp=E,34nm,1.0s								
DLBC				PcP		**PcP**	**18 04 12.0**	**+1.7**
CISI	**Cisompet, Garu**	56.57	225	*e*P		**P**	**18 03 12.6**	**-2.0**
	comp=E,46nm,0.9s								
LWLI	**Liwa**	56.76	231	P		**P**	**18 03 15.0**	**-0.9**
KUDL	**Kundal**	56.80	282	*e*P		**P**	**18 03 16.0**	**0.0**
KUDL				IAmb	IAmb		18 03 17.6		
	comp=Z,43nm,0.7s								
SOKR	**Solikamsk**	57.31	323*d*	*i*P		**P**	**18 03 18.0**	**-1.1**
SOKR				S		**S**	**18 11 13.2**	**-1.1**
SOKR				pmax	pmax				
	comp=Z,59nm,1.8s								
SOKR				MLR	MLR				
	comp=Z,2μm,15.0s								
KHET	**Khetri**	57.36	282	*e*P		**P**	**18 03 19.6**	**-0.4**
KHET				IAmb	IAmb		18 03 20.6		
	comp=Z,37nm,0.9s								
CTA	**Charters Tower**	57.49	178	P		**P**	**18 03 19.9**	**-0.9**
	comp=Z,5.8nm,0.8s,baz=336,slow=8.8,SNR=6.2								
CTAO	**Charters Tower**	57.49	178	*e*P		**P**	**18 03 19.9**	**-0.9**
CTAO				pmax	pmax				
	comp=Z,56nm,1.7s								
CTAO				MLR	MLR				
	comp=Z,520nm,19.0s								
CTAO	**Charters Tower**	57.49	178	*e*P		**P**	**18 03 19.9**	**-0.9**
	comp=Z,56nm,1.7s								
CTAO				LR	LR				
	comp=Z,520nm,19.0s								
ARU	**Arti**	57.51	319	P		**P**	**18 03 21.0**	**+0.4**
	comp=Z,14nm,0.5s,baz=76,slow=5.2,SNR=45								
ARU	**Arti**	57.51	319*d*	*i*P		**P**	**18 03 21.0**	**+0.4**
ARU							18 04 12.7		
ARU							18 05 23.6		
ARU				*e*S		**S**	**18 11 18.9**	**+1.9**
ARU							18 13 01.9		
ARU				SS		**SS**	**18 15 06.3**	**0.0**
ARU				pmax	pmax				
	comp=Z,123nm,1.7s								
ARU				MLR	MLR				
	comp=Z,5μm,18.0s								
ARU	**Arti**	57.51	319	*e*P		**P**	**18 03 21.1**	**+0.4**
	comp=Z,218nm,1.7s								
ARU				LR	LR				
	comp=Z,2μm,19.0s								
WRAB	**Tennant Creek**	58.12	191*d*	*e*P		**P**	**18 03 23.7**	**-1.5**
WRAB				pmax	pmax				
	comp=Z,669nm,1.0s								
WRAB	**Tennant Creek**	58.12	191	*e*P		**P**	**18 03 23.5**	**-1.7**
	comp=Z,211nm,0.8s								
WRAB				LR	LR				
	comp=Z,700nm,20.0s								
WB2	**Warramunga Arr**	58.12	191	*e*P		**P**	**18 03 23.7**	**-1.5**
	comp=Z,224nm,0.7s								
WRA	**Warramunga Arr**	58.13	191	P		**P**	**18 03 23.8**	**-1.5**
	comp=Z,177nm,0.7s,baz=11,slow=7.3,SNR=460								
WRA				S		**S**	**18 11 20.4**	**-5.3**
	comp=Z,2.5nm,1.2s,baz=6.7,slow=12,SNR=5.7								
FITZ	**Fitzroy Crossi**	58.28	201	P		**P**	**18 03 26.2**	**-0.2**
	comp=Z,54nm,0.8s,baz=16,slow=7.0,SNR=83								
FITZ	**Fitzroy Crossi**	58.28	201	*e*P		**P**	**18 03 26.0**	**-0.3**
	comp=Z,67nm,0.9s								
PVM	**Polavaram**	58.36	268	*e*P		**P**	**18 03 27.6**	**+0.5**
PVM				IAmb	IAmb		18 03 29.0		
	comp=Z,210nm,2.2s								
PVM				*e*S		**S**	**18 11 30.5**	**+1.4**
RPR	**Rampur**	59.32	271	*e*P		**P**	**18 03 33.7**	**-0.1**
RPR				IAmb	IAmb		18 03 35.2		
	comp=Z,35nm,0.8s								
RPR				*e*S		**S**	**18 11 42.5**	**+0.8**
AB31	**Akbulak array**	59.41	311	*i* P		**P**	**18 03 34.0**	**0.0**
AB31				pmax	pmax				
	comp=Z,17nm,0.6s								
ABKAR	**Akbulak array**	59.41	311	*e*P		**P**	**18 03 34.3**	**+0.3**
KBL	**Kabul**	59.49	292	*e*P		**P**	**18 03 35.4**	**+0.3**
KBL				pmax	pmax				
	comp=Z,45nm,1.2s								
KBL	**Kabul**	59.49	292	*e*P		**P**	**18 03 35.4**	**+0.3**
	comp=Z,45nm,1.2s								
SRSP	**Sriramsagar**	60.04	272	*e*P		**P**	**18 03 38.3**	**-0.5**
SRSP				IAmb	IAmb		18 03 39.5		
	comp=Z,78nm,0.9s								
SRSP				*e*S		**S**	**18 11 50.7**	**-0.2**
AKTO	**Aktyubinsk**	60.07	313	P		**P**	**18 03 38.7**	**+0.1**
	comp=Z,18nm,0.7s,baz=71,slow=7.4,SNR=65								
AKTO				PcP		**PcP**	**18 04 24.3**	**0.0**
	comp=Z,22nm,0.7s,baz=52,slow=2.4,SNR=7.2								
AKTO				S		**S**	**18 11 49.7**	**-0.9**
	comp=Z,0.3nm,0.4s,baz=237,slow=17,SNR=3.0								
SPITS	**Spitsbergen Ar**	60.35	349	P		**P**	**18 03 40.6**	**+0.5**
	comp=Z,6.2nm,0.6s,baz=110,slow=9.8,SNR=14								
KBS	**Kingsbay**	60.42	351	*e*P		**P**	**18 03 40.7**	**+0.2**
KBS				pmax	pmax				
	comp=Z,352nm,1.7s								
ADKI	**Addanki**	60.46	268	*e*P		**P**	**18 03 42.3**	**+0.7**
ADKI				IAmb	IAmb		18 03 47.3		
	comp=Z,98nm,1.7s								
ADKI				*e*S		**S**	**18 11 57.6**	**+1.3**
NJS	**Nagarjunasagar**	60.58	269	*e*P		**P**	**18 03 42.0**	**-0.5**
NJS				IAmb	IAmb		18 03 43.8		
	comp=Z,18nm,0.9s								
NJS				*e*S		**S**	**18 11 58.4**	**+0.4**
HYB	**Hyderabad**	60.70	270⇓	*i*P		**P**	**18 03 43.0**	**-0.3**
HYB				*e*			18 03 55.5		
HYB				*e*PcP		**PcP**	**18 04 27.0**	**-0.4**
HYBB	**Hyderabad (bro**	60.70	270	*e*P		**P**	**18 03 43.2**	**-0.1**
HYBB				IAmb	IAmb		18 03 44.0		
	comp=Z,41nm,1.0s								
HYBB				*e*S		**S**	**18 11 59.8**	**+0.3**
SRLM	**Srisailam**	61.17	269	*e*P		**P**	**18 03 46.3**	**-

comp=Z,57nm,1.1s
MSVF Nonsavu 63.51 144 *e*P **P** **18 04 03.5 +1.5**
MSVF pmax pmax
comp=Z,76nm,1.4s
MSVF MLR MLR
comp=Z,1µm,20.0s
MSVF Nonsavu 63.51 144 *e*P **P** **18 04 03.5 +1.5**
comp=Z,76nm,1.4s
MSVF LR LR
comp=Z,1µm,20.0s
KEV Kevo 63.69 340 *e*P **P** **18 04 03.4 +0.8**
KEV pmax pmax
comp=Z,27nm,0.9s
KEV MLR MLR
comp=Z,885nm,19.0s
KEV Kevo 63.69 340 *e*P **P** **18 04 03.4 +0.8**
comp=Z,27nm,0.9s
KEV LR LR
comp=Z,885nm,19.0s
XMAS Kiritimati 63.80 109 PFAKE 18 04 10.0 +5.9
XMAS LR LR
comp=Z,2.0nm,22.0s
POO Poona 63.82 274 *i* P **P** **18 04 03.0 -1.2**
comp=Z,100nm,1.0s
ARA0 ARCESS Array S 64.24 340 *e*P **P** **18 04 06.6 +0.4**
ARCES ARCESS Array B 64.24 340 P **P** **18 04 06.6 +0.4**
comp=Z,6.9nm,0.7s,baz=52,slow=7.9,SNR=17
OSR Olympics--Salm 64.31 49 P **P** **18 04 09.5 +2.4**
NLWA Neilton Lookou 64.42 49 *e*P **P** **18 04 10.1 +2.3**
comp=Z,140nm,1.0s
A04D Lummi Island 64.47 47 P **P** **18 04 09.1 +1.1**
baz=299
KLMR Klimovskoe 64.51 328 *e*P **P** **18 04 04.0 -4.1**
KLMR *e*SS SS 18 16 52.3 -3.4
KLMR pmax pmax
comp=Z,86nm,1.5s
KLMR MLR MLR
comp=Z,1µm,15.0s
CMW Cultus Mountai 64.96 47 P **P** **18 04 13.2 +1.8**
B05A Bryant 65.05 47 P **P** **18 04 13.1 +1.4**
baz=299,SNR=9.1
JCW Jim Creek 65.18 47 P **P** **18 04 14.4 +1.7**
B06A Marblemount 65.28 47 *e*P **P** **18 04 14.7 +1.5**
comp=Z,77nm,1.2s
RPW Rockport 65.30 47 P **P** **18 04 14.7 +1.2**
DAG Danmarks Havn 65.32 356 *i* P **P** **18 04 12.5 -0.6**
comp=Z,51nm,1.2s
DAG Danmarks Havn 65.32 356 *i* P **P** **18 04 12.5 -0.6**
DAG pmax pmax
comp=Z,80nm,1.2s
F04D Rainier, OR 65.57 50 P **P** **18 04 15.4 +0.2**
baz=300
D05A Enumclaw 65.64 48 *e*P **P** **18 04 17.9 +2.3**
comp=Z,480nm,1.9s
GEYT Alibeck 65.68 300 P **P** **18 04 16.6 +0.5**
comp=Z,30nm,0.8s,baz=29,slow=3.4,SNR=62
G03D McMinnville, O 65.85 51 P **P** **18 04 18.5 +1.5**
baz=300
C06D Leavenworth 65.92 47 P **P** **18 04 18.4 +0.9**
baz=300,SNR=5.8
LVP Lakeview Peak 65.94 50 P **P** **18 04 19.6 +1.8**
RCS Mount Rainier- 65.95 49 P **P** **18 04 20.0 +1.9**
WRW Wenatchee Ridg 65.96 47 P **P** **18 04 19.4 +1.6**
LON Longmire 65.96 49 *e*P **P** **18 04 19.2 +1.3**
LON pmax pmax
comp=Z,33nm,1.2s
LON Longmire 65.96 49 *e*P **P** **18 04 19.1 +1.3**
comp=Z,33nm,1.2s
NLW Nelson Butte 66.16 47 P **P** **18 04 20.7 +1.5**
TWW Teanaway 66.33 48 P **P** **18 04 22.3 +2.1**
LTY Liberty 66.38 48 *e*P **P** **18 04 21.3 +0.8**
comp=Z,59nm,1.0s
TBM Table Mountain 66.47 48 P **P** **18 04 22.8 +1.7**
I03D Drain, OR 66.55 52 P **P** **18 04 23.0 +1.5**
baz=300
B08A Colville Reser 66.60 46 *e*P **P** **18 04 22.5 +0.6**
comp=Z,173nm,1.6s
H04A Detroit Lake 66.77 51 *e*P **P** **18 04 23.9 +0.9**
comp=Z,150nm,1.4s
SAW Saint Andrews 66.90 47 P **P** **18 04 24.8 +1.1**
G05D Wamic, OR 67.02 50 P **P** **18 04 26.0 +1.4**
baz=301,SNR=7.3
KULLO Kullorsuaq 67.07 6 *i* P **P** **18 04 23.9 -0.5**
comp=Z,57nm,1.2s
KULLO Kullorsuaq 67.07 6 *i* P **P** **18 04 23.9 -0.5**
KULLO pmax pmax
comp=Z,57nm,1.2s
I04A Tendick Farm, 67.09 52 P **P** **18 04 26.1 +1.0**
baz=301,SNR=7.7
L02D Cave Junction, 67.17 54 P **P** **18 04 26.6 +1.0**
baz=301
HUMO Hull Mountain 67.35 53 *e*P **P** **18 04 28.7 +2.0**
comp=Z,68nm,1.8s
I05D Terrebonne, OR 67.47 51 P **P** **18 04 28.5 +1.0**
baz=301,SNR=6.8
C09A Chrisman Ranch 67.50 46 *e*P **P** **18 04 28.3 +0.8**
comp=Z,64nm,0.8s
HAWA Hanford 67.50 48 *e*P **P** **18 04 29.2 +1.7**
comp=Z,39nm,1.0s
D08A Wolfman Farm, 67.51 47 *e*P **P** **18 04 28.7 +1.1**
comp=Z,47nm,0.8s
VTHM Trough 67.51 50 P **P** **18 04 29.5 +1.8**
KHMM Horse Mountain 67.74 55 *e*P **P** **18 04 31.2 +1.8**
comp=Z,304nm,1.9s
NEW Newport 67.91 46 P **P** **18 04 30.9 +0.8**
baz=302,SNR=24
NEW Newport 67.91 46 *e*P **P** **18 04 30.8 +0.6**
NEW pmax pmax
comp=Z,53nm,0.9s
NEW MLR MLR
comp=Z,339nm,20.0s
NEW Newport 67.91 46 *e*P **P** **18 04 30.8 +0.6**
comp=Z,53nm,0.9s
NEW LR LR
comp=Z,339nm,20.0s
YBH Yreka Blue Hor 67.96 54 *e*P **P** **18 04 32.6 +1.9**
YBH pmax pmax
comp=Z,34nm,1.0s
YBH Yreka Blue Hor 67.96 54 *e*P **P** **18 04 32.6 +1.9**
comp=Z,34nm,1.0s
M02C Callahan 68.04 54 P **P** **18 04 32.6 +1.4**
baz=301,SNR=12
ARMA Armidale 68.08 173 *e*P **P** **18 04 31.8 +0.5**
comp=Z,112nm,1.5s
J05D Fort Rock, OR 68.08 52 P **P** **18 04 33.2 +1.7**
baz=302,SNR=14
K04D Chiloquin, OR 68.10 53 P **P** **18 04 32.7 +1.1**
baz=302
MOS Moscow 68.18 324 *e*P **P** **18 04 31.0 -0.7**
MOS *e* 18 07 00.7
MOS *e*S **S** **18 13 30.2 -0.6**
MOS pmax pmax
comp=Z,161nm,1.5s
MOS pmax pmax
comp=Z,500nm,2.2s
MOS MLR MLR
comp=Z,2µm,16.0s
N02D Trinity Center 68.36 54 P **P** **18 04 34.5 +1.3**
baz=302,SNR=14
M04C Macdoel 68.49 53 P **P** **18 04 35.3 +1.3**
baz=302,SNR=8.6
K05A Summer Lake 68.59 52 *e*P **P** **18 04 36.2 +1.5**
comp=Z,189nm,1.3s
WDC Whiskeytown Da 68.67 55 *e*P **P** **18 04 36.1 +1.1**
WDC pmax pmax
comp=Z,36nm,1.1s
WDC Whiskeytown Da 68.67 55 *e*P **P** **18 04 36.1 +1.1**
comp=Z,36nm,1.1s
VRH Novokhopyorsk 68.74 319 *e*P **P** **18 04 34.4 -0.8**
VRH *e* 18 05 08.4
VRH *e*S **S** **18 13 31.5 -6.1**
VRH *e*SS **SS** **18 18 05.5 +3.9**
VRH pmax pmax
comp=Z,30nm,0.7s
VRH smax smax
comp=E,300nm,9.7s
VRH MLR MLR
comp=Z,3µm,16.0s
PUL Pulkovo 68.87 330 *d i*P **P** **18 04 35.9 0.0**
PUL pmax pmax
comp=Z,35nm,0.9s
OBN Obninsk 69.04 324 P **P** **18 04 37.6 +0.6**
comp=Z,22nm,0.6s,baz=44,slow=5.1,SNR=20
OBN Obninsk 69.04 324 *d i*P **P** **18 04 37.0 0.0**
OBN *e* 18 07 19.0
OBN *e*S S 18 13 30.9 -10
OBN pmax pmax
comp=Z,207nm,2.5s
OBN MLR MLR
comp=Z,2µm,15.0s
OBN Obninsk 69.04 324 *e*P **P** **18 04 37.9 +0.9**
comp=Z,278nm,1.8s
OBN LR LR
comp=Z,820nm,19.0s
F10A Beach Ranch, E 69.08 48 *e*P **P** **18 04 38.3 +0.7**
comp=Z,25nm,0.9s
HOPS Hopland Field 69.16 56 *e*P **P** **18 04 39.7 +1.6**
comp=Z,176nm,1.8s
WALA Waterton Lakes 69.26 44 *e*P **P** **18 04 39.3 +0.6**
comp=Z,64nm,1.1s
STKA Stephens Creek 69.27 183 P **P** **18 04 37.7 -0.9**
comp=Z,11nm,0.7s,baz=341,slow=7.4,SNR=25
STKA Stephens Creek 69.27 183 *e*P **P** **18 04 37.7 -0.9**
comp=Z,22nm,2.0s
O03D Paynes Creek 69.30 55 P **P** **18 04 39.5 +0.5**
baz=302,SNR=20
FIA1 FINESS Array S 69.37 333 *e*P **P** **18 04 39.7 +0.8**
FINES FINESS Array B 69.37 333 P **P** **18 04 39.6 +0.6**
comp=Z,13nm,0.6s,baz=46,slow=8.2,SNR=45
LPSR Galich'ya Gora 69.37 321 *e*P **P** **18 04 39.2 +0.1**
LPSR *e*S **S** **18 13 43.4 -1.6**
LPSR pmax pmax
comp=Z,40nm,0.9s
LPSR smax smax
comp=N,210nm,3.7s
LPSR MLR MLR
comp=Z,890nm,15.0s
MOD Modoc Plateau 69.40 53 *e*P **P** **18 04 41.2 +1.5**
comp=Z,155nm,1.7s
BSMT Bassoo Peak 69.45 45 *e*P **P** **18 04 41.4 +1.5**
BLMT Blacktail Moun 69.59 45 *e*P **P** **18 04 42.1 +1.2**
BMO Blue Mountains 69.64 49 *e*P **P** **18 04 42.0 +0.9**
comp=Z,207nm,1.8s
BMO LR LR
comp=Z,291nm,19.0s
JTMT Jette 69.79 45 *e*P **P** **18 04 43.0 +1.0**
YBMT Yellow Bay 69.87 45 *e*P **P** **18 04 43.9 +1.4**
ORV Oroville 69.89 55 *e*P **P** **18 04 43.0 +0.4**
ORV pmax pmax
comp=Z,113nm,1.6s
ORV Oroville 69.89 55 *e*P **P** **18 04 43.0 +0.4**
comp=Z,113nm,1.6s
SUMG Summit 70.01 1 *i* P **P** **18 04 43.8 +0.6**
comp=Z,57nm,0.9s
SUMG Summit 70.01 1 *i* P **P** **18 04 43.8 +0.6**
SUMG pmax pmax
comp=Z,57nm,0.9s
SUMG Summit 70.01 1 *e*P **P** **18 04 43.7 +0.6**
comp=Z,47nm,0.9s
VSR Storozhevoye 70.06 320 *e*P **P** **18 04 42.9 -0.5**
VSR *e*S **S** **18 13 48.6 -4.5**
VSR *e*SS **SS** **18 18 15.0 -6.8**
VSR pmax pmax
comp=Z,30nm,0.7s
VSR smax smax
comp=E,370nm,9.8s
VSR MLR MLR
comp=Z,4µm,17.0s
SWMT Swartz Lake 70.08 45 *e*P **P** **18 04 44.5 +0.7**
WVOR Wild Horse Val 70.15 51 *e*P **P** **18 04 45.2 +0.9**
WVOR pmax pmax
comp=Z,42nm,1.0s
WVOR MLR MLR
comp=Z,620nm,19.0s
WVOR Wild Horse Val 70.15 51 *e*P **P** **18 04 45.2 +0.9**
comp=Z,42nm,1.0s
WVOR LR LR
comp=Z,620nm,19.0s
MSO Missoula 70.50 46 P **P** **18 04 46.4 0.0**
baz=304,SNR=23
MSO Missoula 70.50 46 *e*P **P** **18 04 46.7 +0.3**
comp=Z,70nm,1.3s
AFDM Forest Hills D 70.56 56 *e*P **P** **18 04 47.8 +1.0**
comp=Z,39nm,1.3s
BBOO Buckleboo 70.59 188 *e*P **P** **18 04 46.0 -0.6**
comp=Z,53nm,1.4s
CHMT Chamberlain Mo 70.84 45 *e*P **P** **18 04 48.6 +0.1**
VSU Vasula 71.13 331 *ce*P **P** **18 04 49.9 +0.2**
VSU pmax pmax
comp=Z,396nm,2.5s
MFID Camas Ranch 71.32 49 *e*P **P** **18 04 52.3 +0.8**
comp=Z,43nm,0.8s
SAO San Andreas Ge 71.44 58 *e*P **P** **18 04 53.5 +1.4**
SAO pmax pmax
comp=Z,43nm,1.4s
SAO San Andreas Ge 71.44 58 *e*P **P** **18 04 53.5 +1.4**
comp=Z,42nm,1.4s
CMB Columbia Colle 71.45 56 *e*P **P** **18 04 53.0 +0.8**
CMB pmax pmax
comp=Z,89nm,1.3s
CMB Columbia Colle 71.45 56 *e*P **P** **18 04 53.0 +0.8**
comp=Z,89nm,1.3s
GOF Gofitskoye 71.49 313 ⇓ *i*P **P** **18 04 53.1 +0.9**
GOF pmax pmax
comp=Z,59nm,1.0s
SCO Scoresbysund 71.69 355 *i* P **P** **18 04 52.8 -0.1**
comp=Z,53nm,1.3s
SCO Scoresbysund 71.69 355 *i* P **P** **18 04 52.8 -0.1**
SCO pmax pmax
comp=Z,53nm,1.3s
FFC Flin Flon 71.78 34 *e*P **P** **18 04 54.0 +0.2**
FFC pmax pmax
comp=Z,154nm,1.4s
FFC MLR MLR
comp=Z,443nm,19.0s
FFC Flin Flon 71.78 34 *e*P **P** **18 04 54.0 +0.2**
comp=Z,154nm,1.4s
FFC LR LR
comp=Z,443nm,19.0s
WAKR Walker 71.81 55 *e*P **P** **18 04 55.9 +1.3**
LRM Limekiln Ridge 71.92 46 *e*P **P** **18 04 55.8 +0.7**
NCK Nalchik 72.06 311 *e*P **P** **18 04 56.4 +0.7**
NCK pmax pmax
comp=Z,79nm,1.3s
HLID Hailey 72.08 49 P **P** **18 04 57.0 +1.0**
baz=305,SNR=42
HLID Hailey 72.08 49 *e*P **P** **18 04 57.1 +1.0**
comp=Z,31nm,0.9s
HLID LR LR
comp=Z,514nm,19.0s
DLMT Dillon 72.11 46 *e*P **P** **18 04 57.4 +1.2**
comp=Z,78nm,1.0s
EGMT Eagleton 72.11 43 P **P** **18 04 56.1 +0.1**
baz=307
EGMT Eagleton 72.11 43 *e*P **P** **18 04 56.0 -0.1**
comp=Z,262nm,1.8s
EGMT LR LR
comp=Z,586nm,19.0s
GUDG Gudauri 72.12 310 P **P** **18 04 58.7 +2.4**
BMN Battle Mountai 72.15 53 *e*P **P** **18 04 57.7 +1.2**
BMN pmax pmax
comp=Z,250nm,1.8s
BMN Battle Mountai 72.15 53 *e*P **P** **18 04 57.7 +1.2**
comp=Z,250nm,1.8s
DUS Dusheti 72.20 310 P **P** **18 04 59.1 +2.5**
DUS Dusheti 72.20 310 *e*P **P** **18 04 59.1 +2.5**
MCMT McKenzie Canyo 72.27 47 *e*P **P** **18 04 57.8 +0.5**
FCC Fort Churchill 72.28 28 *e*P **P** **18 04 56.4 -0.3**
FCC pmax pmax
comp=Z,171nm,1.5s
FCC Fort Churchill 72.28 28 *e*P **P** **18 04 56.4 -0.3**
comp=Z,171nm,1.5s
ZEI Tsey 72.28 311 *e*P **P** **18 04 57.3 0.0**
ZEI pmax pmax
comp=Z,37nm,0.7s
KIV Kislovodsk 72.33 312 *i* P **P** **18 04 58.5 +1.1**
SNR=30
KIV Kislovodsk 72.33 312 *e*P **P** **18 04 58.3 +0.9**
KIV *e* 18 07 40.0
KIV *e*PPP PPP 18 09 24.7
KIV *e*S **S** **18 14 19.7 -0.3**
KIV *e*SS **SS** **18 18 59.4 +2.1**
KIV pmax pmax
comp=Z,115nm,1.0s
KIV pmax pmax
comp=Z,139nm,3.2s
KIV Kislovodsk 72.33 312 *e*P **P** **18 04 58.5 +1.1**
comp=Z,116nm,1.0s
KIV LR LR
comp=Z,516nm,21.0s
KIV Kislovodsk 72.33 312 P **P** **18 04 58.9 +1.4**
SNR=35
KIV Kislovodsk 72.33 312 P **P** **18 04 58.9 +1.4**
SNR=35
KBZ Khabaz 72.34 312 P **P** **18 04 58.5 +1.1**
comp=Z,30nm,1.0s,baz=60,slow=4.0,SNR=46
TBLG Delisi 72.38 309 P **P** **18 05 01.0 +3.4**
BOZ Bozeman (W) 72.49 46 P **P** **18 04 59.4 +0.9**
baz=306,SNR=14
BOZ Bozeman (W) 72.49 46 *e*P **P** **18 04 59.3 +0.9**
BOZ pmax pmax
comp=Z,60nm,0.9s
BOZ MLR MLR
comp=Z,491nm,20.0s
BOZ Bozeman (W) 72.49 46 *e*P **P** **18 04 59.3 +0.8**
comp=Z,60nm,0.9s
BOZ LR LR
comp=Z,491nm,20.0s
NV01 Mina Array Sit 72.59 55 *e*P **P** **18 04 59.5 +0.2**
NVAR Mina Array Bea 72.59 55 P **P** **18 05 00.2 +1.0**
comp=Z,34nm,0.8s,baz=286,slow=6.3,SNR=204
ONI Oni 72.67 311 P **P** **18 05 01.2 +1.7**
ONI Oni 72.67 311 *e*P **P** **18 05 01.1 +1.7**
NV11 Mina Array Sit 72.68 55 *e*P **P** **18 05 01.3 +1.6**
comp=Z,142nm,1.8s
MLAC Mammoth, Mammo 72.69 56 P **P** **18 05 01.1 +1.2**
baz=304,SNR=6.9
CAN Canberra 72.77 176 *e*P **P** **18 04 59.3 -0.5**
CAN pmax pmax
comp=Z,46nm,1.2s
CAN MLR MLR
comp=Z,732nm,20.0s
CAN Canberra 72.77 176 *e*P **P** **18 04 59.3 -0.5**
comp=Z,46nm,1.2s
CAN LR LR
comp=Z,732nm,20.0s
ILULI Ilulissat 72.78 6 ⇓ *i*P **P** **18 04 59.8 +0.3**
comp=Z,43nm,1.0s
ILULI Ilulissat 72.78 6 ⇓ *i*P **P** **18 04 59.8 +0.3**
ILULI pmax pmax
comp=Z,43nm,1.0s
QLMT Earthquake Lak 73.09 46 *e*P **P** **18 05 03.2 +1.1**
IZAR Zarasai 73.16 329 *e*P **P** **18 05 02.6 +0.6**
IZAR IAmb IAmb 18 05 03.8
comp=Z,16nm,0.6s
ELK Elko 73.21 51 *e*P **P** **18 05 03.9 +1.0**
ELK pmax pmax
comp=Z,126nm,1.9s
ELK Elko 73.21 51 *e*P **P** **18 05 03.9 +1.0**
comp=Z,126nm,1.9s
SMMC Simmler 73.23 58 P **P** **18 05 04.1 +1.3**
baz=304
IDID Didziasalis 73.26 328 *e*P **P** **18 05 02.9 +0.4**
IDID IAmb IAmb 18 05 04.5
comp=Z,14nm,0.7s
YHB Horse Butte 73.27 46 *e*P **P** **18 05 04.2 +1.1**
GNI Garni 73.29 308 P **P** **18 05 05.0 +1.7**
comp=Z,29nm,1.1s,baz=139,slow=1.6,SNR=18
GNI Garni 73.29 308 *i* P **P** **18 05 04.1 +0.9**
SNR=10
GNI Garni 73.29 308 *e*P **P** **18 05 05.3 +2.0**
GNI pmax pmax
comp=Z,149nm,1.7s
GNI MLR MLR
comp=Z,1µm,19.0s
GNI Garni 73.29 308 *e*P **P** **18 05 05.3 +2.0**
comp=Z,149nm,1.7s
GNI LR LR
comp=Z,1µm,19.0s
GNI Garni 73.29 308 P **P** **18 05 05.1 +1.9**
SNR=12
GNI Garni 73.29 308 P **P** **18 05 05.1 +1.9**
SNR=12
BIDO Bidbid 73.31 287 P **P** **18 05 05.0 +1.6**
SNR=6.2
BIDO Bidbid 73.31 287 P **P** **18 05 05.0 +1.6**
SNR=6.2
MICGM Minsk 73.32 327 ⇑ *e*P **P** **18 05 04.0 +1.0**
MICGM PM 18 05 05.0
comp=Z,0.2nm,2.0s
MICGM *e*PcP PcP 18 05 34.0 +15
MICGM *e*PP PP 18 08 11.0 +25
MICGM *e*PPP PPP 18 09 28.0
MICGM *e*PsP 18 11 02.0
MICGM *e*S **S** **18 14 30.0 -0.6**
MICGM *e*SS SS 18 19 30.0 +18
MICGM *e*SSS SSS 18 22 26.0
MICGM *e*LR LR 18 36 10.0
MICGM LRM MLR 18 40 20.0
comp=Z,5.2nm,16.0s
MNK Minsk 73.32 327 ⇑ *e*P **P** **18 05 04.0 +1.0**
MNK *e*PPP PPP 18 09 28.0
MNK *e*S **S** **18 14 30.0 -0.6**
MNK *e*SSS SSS 18 22 26.0
MNK pmax pmax
comp=Z,180nm,2.0s
MNK MLR MLR
comp=Z,5µm,16.0s
ISAL Salakas 73.34 329 *e*P **P** **18 05 03.6 +0.6**
ISAL IAmb IAmb 18 05 05.0
comp=Z,22nm,0.8s
CHVG Ch'k'valeri 73.41 311 *e*P **P** **18 05 05.1 +1.3**
CHVG Ch'k'valeri 73.41 311 P **P** **18 05 05.5 +1.8**
TIN Tinemaha, Big 73.42 56 P **P** **18 05 04.9 +0.9**
baz=305
IIGN Ignalina 73.45 328 *e*P **P** **18 05 04.1 +0.4**
IIGN IAmb IAmb 18 05 05.7
comp=Z,16nm,0.8s
YMR Madison River 73.45 46 *e*P **P** **18 05 06.0 +1.8**
comp=Z,231nm,1.8s
GCMT Greycliff 73.50 45 *e*P **P** **18 05 06.0 +1.6**
NACGM Naroch 73.52 328 *e* **P** **18 05 04.0 -0.1**
NACGM *e*LQ LQ 18 35 08.0
NACGM *e*LR LR 18 38 18.0
PKM Mcpherson Peak 73.59 59 P **P** **18 05 06.0 +0.8**
baz=305,SNR=11
MCID Moose Creek 73.61 47 *e*P **P** **18 05 07.0 +1.8**
YFT Old Faithful 73.65 46 *e*P **P** **18 05 08.5 +3.1**
comp=Z,90nm,1.2s
LKWY Lake 73.83 46 *e*P **P** **18 05 09.2 +2.7**
LKWY pmax pmax
comp=Z,86nm,1.3s
LKWY MLR MLR
comp=Z,800nm,19.0s
LKWY Lake 73.83 46 *e*P **P** **18 05 09.2 +2.7**
comp=Z,86nm,1.3s
LKWY LR LR
comp=Z,800nm,19.0s
H17A Grant Village 73.83 46 *e*P **P** **18 05 09.0 +2.4**
comp=Z,153nm,1.2s
SBC Santa Barbara 73.91 59 P **P** **18 05 07.8 +1.0**
baz=305
IMW Indian Meadow 73.93 47 *e*P **P** **18 05 08.8 +1.6**
comp=Z,95nm,1.0s
FLWY Flagg Ranch 73.95 46 *e*P **P** **18 05 09.0 +1.8**
comp=Z,199nm,1.4s
UOSS Minazif 73.96 289 *e*P **P** **18 05 07.7 +0.5**
comp=Z,3.7nm,0.9s
YTP The Promontory 74.00 46 *e*P **P** **18 05 09.4 +1.9**
GRAC Grapevine Rang 74.02 56 P **P** **18 05 08.6 +1.1**
baz=305,SNR=26
FXWY Fox Creek 74.03 47 *e*P **P** **18 05 08.9 +1.3**
comp=Z,78nm,1.0s
ISA Isabella, Lake 74.05 57 P **P** **18 05 07.4 -0.3**
baz=305,SNR=7.4
ISA Isabella, Lake 74.05 57 *e*P **P** **18 05 08.1 +0.4**
ISA pmax pmax
comp=Z,28nm,1.1s
ISA Isabella, Lake 74.05 57 *e*P **P** **18 05 08.1 +0.4**
comp=Z,28nm,1.1s
HATD Hatta, Dubai 74.08 289 *i* P **P** **18 05 08.2 +0.2**
SNR=13
HATD Hatta, Dubai 74.08 289 P **P** **18 05 08.2 +0.2**
SNR=6.2
HATD Hatta, Dubai 74.08 289 P **P** **18 05 08.2 +0.2**
SNR=6.2
HVU Hansel Valley 74.11 49 *e*P **P** **18 05 09.8 +1.8**
HVU pmax pmax
comp=Z,50nm,1.0s
HVU Hansel Valley 74.11 49 *e*P **P** **18 05 09.8 +1.8**
comp=Z,50nm,1.0s
ARVC Arvin 74.12 58 P **P** **18 05 08.2 +0.2**
baz=305
MOOW Moose Ponds 74.13 47 *e*P **P** **18 05 09.5 +1.3**
comp=Z,91nm,1.2s
RLMT Red Lodge 74.14 45 P **P** **18 05 09.1 +0.9**
baz=308,SNR=24
RLMT Red Lodge 74.14 45 *e*P **P** **18 05 09.4 +1.2**

comp=Z,96nm,1.4s
RLMT LR LR
comp=Z,179nm,21.0s
ASHO Ashiyiah 74.22 289 *i* P **P 18 05 09.1 +0.3**
SNR=8.4
ASHO Ashiyiah 74.22 289 P **P 18 05 08.4 -0.4**
SNR=6.1
ASHO Ashiyiah 74.22 289 P **P 18 05 08.4 -0.4**
SNR=6.1
SCZ2 Santa Cruz Isl 74.22 59 P **P 18 05 09.1 +0.4**
baz=305
DAC Darwin (Calif) 74.28 56 *e*P **P 18 05 09.7 +0.5**
DAC pmax pmax
comp=Z,36nm,1.0s
DAC Darwin (Calif) 74.28 56 *e*P **P 18 05 09.7 +0.5**
comp=Z,36nm,1.0s
SOC Sochi 74.29 313 *e*P **P 18 05 09.4 +0.6**
SOC *e* 18 07 53.1
SOC *e*PPP PPP 18 09 39.8
SOC *e*S **SKiKP 18 14 38.2 +3.1**
SOC *e* 18 15 19.2
SOC *e*SS **SS 18 19 31.4 +4.5**
SOC pmax pmax
comp=Z,69nm,1.0s
SOC MLR MLR
comp=Z,1µm,18.0s
LOHW Long Hollow 74.29 47 *e*P **P 18 05 10.4 +1.2**
comp=Z,50nm,1.3s
SNOW Snow King Moun 74.29 47 *e*P **P 18 05 11.2 +2.0**
comp=Z,53nm,0.9s
REDW Red Top Meadow 74.30 47 *e*P **P 18 05 10.5 +1.2**
comp=Z,96nm,1.2s
NC405 NORSAR Array S 74.31 338 *e*P **P 18 05 09.2 +0.5**
NC303 NORSAR Array S 74.32 338 *e*P **P 18 05 09.2 +0.5**
NAZ Nazwa, Dubai 74.34 290 *i* P **P 18 05 09.5 0.0**
SNR=6.0
R11A Troy Canyon, C 74.38 54 P **P 18 05 10.6 +0.8**
baz=306,SNR=95
R11A Troy Canyon, C 74.38 54 *e*P **P 18 05 10.5 +0.8**
comp=Z,77nm,1.2s
NC204 NORSAR Array S 74.45 339 *e*P **P 18 05 09.2 -0.3**
BGU Big Grassy Mou 74.46 50 *e*P **P 18 05 11.2 +1.1**
comp=Z,31nm,1.1s
MPMC Manual Prospec 74.48 56 P **P 18 05 11.1 +0.8**
baz=306,SNR=57
OSI Osito Audit: C 74.48 58 P **P 18 05 11.1 +0.9**
baz=305
OSI Osito Audit: C 74.48 58 *e*P **P 18 05 11.8 +1.6**
comp=Z,48nm,0.9s
NB201 NORSAR Array S 74.48 338 *e*P **P 18 05 10.2 +0.5**
HFS Hagfors 74.49 337 P **P 18 05 10.2 +0.5**
comp=Z,28nm,0.8s,baz=57,slow=5.5,SNR=32
AHID Auburn Hatcher 74.51 48 *e*P **P 18 05 11.8 +1.3**
comp=Z,210nm,1.8s
AHID LR LR
comp=Z,428nm,19.0s
NB2 NORSAR Subarra 74.52 338 P **P 18 05 09.7 -0.2**
comp=Z,44nm,0.9s,baz=38,slow=5.9
NB2 NORSAR Subarra 74.52 338 P **P 18 05 09.7 -0.2**
baz=38,slow=5.9
NOA NORSAR Array B 74.52 338 P **P 18 05 09.9 0.0**
comp=Z,28nm,0.9s,baz=38,slow=5.8,SNR=44
FAQ Al Faqa, Dubai 74.53 289 *i* P **P 18 05 10.6 0.0**
SNR=14
FAQ Al Faqa, Dubai 74.53 289 P **P 18 05 10.1 -0.5**
SNR=7.0
FAQ Al Faqa, Dubai 74.53 289 P **P 18 05 10.1 -0.5**
SNR=7.0
BLG Laguna Peak, P 74.54 59 P **P 18 05 10.8 +0.3**
baz=305
SPUT South Promonto 74.58 50 *e*P **P 18 05 12.7 +1.9**
comp=Z,86nm,1.4s
ARQ Araqi 74.63 288 P **P 18 05 11.5 +0.3**
SNR=12
ARQ Araqi 74.63 288 P **P 18 05 11.5 +0.3**
SNR=12
FURC Furnace Creek, 74.65 56 P **P 18 05 11.8 +0.7**
baz=306,SNR=9.8
NC602 NORSAR Array S 74.66 338 *e*P **P 18 05 11.1 +0.4**
LRMC Laurel Mtn Rad 74.68 57 P **P 18 05 12.0 +0.5**
baz=306,SNR=30
AGRB Hanur-Agry 74.71 308 *e*P **P 18 05 13.0 +1.4**
SNCC San Nicolas Is 74.72 60 P **P 18 05 11.9 +0.3**
baz=305
NWAO Narrogin (SRO) 74.73 204 *e*P **P 18 05 10.7 -0.6**
NWAO pmax pmax
comp=Z,19nm,0.8s
NWAO Narrogin (SRO) 74.73 204 *e*P **P 18 05 10.7 -0.6**
comp=Z,19nm,0.8s
DGMT Dagmar 74.75 40 P **P 18 05 11.6 +0.1**
baz=310
DGMT Dagmar 74.75 40 *e*P **P 18 05 12.2 +0.7**
comp=Z,257nm,1.8s
DGMT LR LR
comp=Z,662nm,22.0s
TPNV Topopah Spring 74.77 55 P **P 18 05 12.5 +0.5**
baz=306,SNR=106
TPNV Topopah Spring 74.77 55 *e*P **P 18 05 12.7 +0.7**
TPNV pmax pmax
comp=Z,86nm,1.0s
TPNV Topopah Spring 74.77 55 *e*P **P 18 05 12.7 +0.7**
comp=Z,86nm,1.0s
ASUD Al Ashush, Dub 74.80 289 *i* P **P 18 05 12.7 +0.6**
SNR=7.1
ASUD Al Ashush, Dub 74.80 289 P **P 18 05 12.6 +0.6**
SNR=7.5
ASUD Al Ashush, Dub 74.80 289 P **P 18 05 12.6 +0.6**
SNR=7.5
EDW2 Edwards Air Fo 74.82 58 P **P 18 05 13.2 +1.0**
baz=306,SNR=42
LAO LASA Array 74.83 42 P **P 18 05 12.9 +0.8**
baz=309,SNR=7.2
LAO LASA Array 74.83 42 *e*P **P 18 05 13.4 +1.4**
comp=Z,153nm,1.4s
LAO LR LR
comp=Z,505nm,20.0s
ANN Anapa 74.84 315 *e*P **P 18 05 09.7 -2.3**
ANN *e*S **S 18 14 46.5 -1.5**
ANN pmax pmax
comp=Z,67nm,0.9s
BMUT Black Mountain 74.92 48 *e*P **P 18 05 14.1 +1.2**
HWUT Hardware Ranch 74.94 49 *e*P **P 18 05 13.8 +0.9**
comp=Z,171nm,1.4s
HWUT LR LR
comp=Z,340nm,20.0s
FSU Fish Springs 74.95 51 *e*P **P 18 05 14.1 +1.1**
DECC Green Verdugo 74.95 58 P **P 18 05 13.2 +0.3**
baz=306
SFJD Kangerlussuaq 74.99 6 ǁ *i*P **P 18 05 12.8 +0.3**
comp=Z,36nm,0.9s
SFJD Kangerlussuaq 74.99 6 *e*P **P 18 05 13.1 +0.6**
SFJD pmax pmax
comp=Z,215nm,1.9s
SFJD MLR MLR
comp=Z,479nm,20.0s
SFJD Kangerlussuaq 74.99 6 *e*P **P 18 05 13.1 +0.6**
comp=Z,215nm,1.9s
SFJD LR LR
comp=Z,479nm,20.0s
A25A Svangstu Ranch 75.00 39 P **P 18 05 13.4 +0.5**
baz=311
DUG Dugway, Tooele 75.03 51 P **P 18 05 14.2 +0.8**
baz=307,SNR=61
DUG Dugway, Tooele 75.03 51 *e*P **P 18 05 14.4 +1.0**
DUG pmax pmax
comp=Z,70nm,0.9s
DUG MLR MLR
comp=Z,471nm,20.0s
DUG Dugway, Tooele 75.03 51 *e*P **P 18 05 14.4 +1.0**
comp=Z,70nm,0.9s
DUG LR LR
comp=Z,471nm,20.0s
VANB Van 75.05 307 *e*P **P 18 05 14.6 +1.1**
MCU Monte Cristo P 75.06 49 *e*P **P 18 05 14.7 +0.9**
PASC Pasadena Art C 75.10 58 *e*P **P 18 05 14.8 +1.1**
comp=Z,140nm,1.7s
MWC Mount Wilson 75.16 58 *e*P **P 18 05 15.4 +1.1**
MWC pmax pmax
comp=Z,140nm,1.5s
MWC Mount Wilson 75.16 58 *e*P **P 18 05 15.4 +1.1**
comp=Z,140nm,1.5s
AKASG Malin Array Be 75.27 324 P **P 18 05 14.4 +0.1**
AKASG PP **PP 18 08 04.2 +1.8**
comp=Z,19nm,0.6s,baz=45,slow=6.0,SNR=120
comp=Z,2.9nm,1.0s,baz=44,slow=7.9,SNR=4.9
AKASG Malin Array Be 75.27 324 P **P 18 05 14.5 +0.1**
AKASG 18 08 04.2
AKASG pmax pmax
comp=Z,20nm,0.6s
AKASG pmax pmax
comp=Z,3.0nm,1.0s
AKBB Malin Array Si 75.27 324 *e*P **P 18 05 15.2 +0.8**
AKBB pmax pmax
comp=Z,33nm,0.8s
AKBB Malin Array Si 75.27 324 *e*P **P 18 05 15.2 +0.8**
comp=Z,33nm,0.8s
KIEV Kiev 75.28 324 *d i*P **P 18 05 14.4 -0.1**
KIEV pmax pmax
comp=Z,118nm,1.9s
KIEV Kiev 75.28 324 *e*P **P 18 05 14.6 +0.1**
comp=Z,31nm,0.7s
KIEV LR LR
comp=Z,597nm,20.0s
FMP Fort Macarthur 75.29 59 P **P 18 05 15.6 +0.7**
baz=306
AK11 Malin Array Si 75.31 324 *e*P **P 18 05 14.6 0.0**
TCUT Toone Canyon 75.33 49 *e*P **P 18 05 16.8 +1.6**
comp=Z,529nm,1.9s
GSC Goldstone, Bar 75.37 57 P **P 18 05 16.1 +0.6**
baz=306,SNR=20
GSC Goldstone, Bar 75.37 57 *e*P **P 18 05 16.0 +0.6**
GSC pmax pmax
comp=Z,38nm,0.9s
GSC Goldstone, Bar 75.37 57 *e*P **P 18 05 16.0 +0.6**
comp=Z,38nm,0.9s
SHOC Shoshone, Teco 75.37 56 P **P 18 05 16.1 +0.8**
baz=306,SNR=8.6
CTU Camp Tracy 75.38 50 *e*P **P 18 05 16.9 +1.4**
comp=Z,55nm,1.2s
CIS Catalina Islan 75.39 59 P **P 18 05 15.4 -0.1**
baz=306,SNR=6.3
B25A Knox Farm, Ray 75.41 40 P **P 18 05 15.8 +0.5**
baz=311
BW06 Boulder Array 75.41 47 P **P 18 05 15.8 +0.1**
baz=308,SNR=41
BW06 Boulder Array 75.41 47 *e*P **P 18 05 15.0 -0.7**
BW06 LR LR
comp=Z,506nm,19.0s
PD31 Pinedale Array 75.41 47 *e*P **P 18 05 16.0 +0.3**
PDAR Pinedale Array 75.41 47 P **P 18 05 15.8 +0.2**
comp=Z,16nm,0.7s,baz=265,slow=2.5,SNR=162
BFSC Mount Baldy Ra 75.42 58 P **P 18 05 16.3 +0.5**
baz=306,SNR=11
RRX Edison Barstow 75.49 57 P **P 18 05 16.8 +0.8**
baz=306
EZM Erzurum 75.52 309 *e*P **P 18 05 17.6 +1.2**
SCI2 San Clemente I 75.55 60 P **P 18 05 16.7 +0.3**
baz=306
A26A Wade Farm, Ken 75.56 39 P **P 18 05 16.3 +0.1**
baz=311,SNR=6.8
JLU Jordanelle 75.61 50 *e*P **P 18 05 18.1 +1.2**
comp=Z,66nm,1.2s
NLU North Lily Min 75.62 51 *e*P **P 18 05 17.9 +0.9**
comp=Z,35nm,0.9s
SUW Suwalki 75.65 329 *e*P **P 18 05 16.6 +0.1**
SUW LMZ LR 18 41 43.8
SUW Suwalki 75.65 329 *e*P **P 18 05 16.6 +0.1**
C25A Freed Ranch, W 75.72 40 P **P 18 05 17.4 +0.2**
baz=311
B26A Jensen Ranch, 75.81 39 P **P 18 05 17.9 +0.4**
baz=311
MPU Maple Canyon 75.86 50 *e*P **P 18 05 19.9 +1.7**
comp=Z,53nm,0.8s
TUQ Turquoise Moun 75.87 56 P **P 18 05 19.0 +0.6**
baz=306,SNR=48
BBRC Big Bear Solar 75.90 58 P **P 18 05 19.0 +0.4**
baz=306
FLU Fool Peak 75.91 51 *e*P **P 18 05 19.6 +1.0**
VRTB Varto-Mus 75.92 309 *e*P **P 18 05 18.7 +0.2**
HEC Hector,Ludlow 75.96 57 P **P 18 05 19.7 +1.0**
baz=306,SNR=8.0
BAYT Ayd¯–ntepe-Bay 75.97 310 *e*P **P 18 05 20.1 +1.2**
D25A Fairfield 76.06 41 P **P 18 05 18.9 -0.2**
baz=311
MURC Murrieta 76.10 58 P **P 18 05 19.7 +0.2**
baz=306,SNR=9.1
KONO Kongsberg 76.12 338 *e*P **P 18 05 19.9 +0.8**
KONO pmax pmax
comp=Z,32nm,1.1s
KONO MLR MLR
comp=Z,1µm,19.0s
KONO Kongsberg 76.12 338 *e*P **P 18 05 19.9 +0.8**
comp=Z,32nm,1.1s
KONO LR LR
comp=Z,1µm,19.0s
C26A Wahner Farm, P 76.24 40 P **P 18 05 20.7 +0.6**
baz=312,SNR=7.6
B27A Peters Farms, 76.27 39 P **P 18 05 20.8 +0.6**
baz=312
GUMT Gumushane 76.33 311 *e*P **P 18 05 23.0 +2.1**
KLNR Kaliningrad 76.41 330 *i* P **P 18 05 20.9 +0.1**
KLNR pmax pmax
comp=Z,141nm,1.5s
A28A Rude Farm, Bot 76.42 38 P **P 18 05 21.2 +0.1**
baz=312,SNR=12
GMRC Granite Mounta 76.43 57 P **P 18 05 21.9 +0.4**
baz=307,SNR=42
MSU Marysvale 76.43 52 *e*P **P 18 05 22.9 +1.3**
MSU Marysvale 76.43 52 *e*P **P 18 05 22.9 +1.3**
E25A Miller Ranch, 76.44 41 P **P 18 05 21.5 +0.2**
baz=311,SNR=8.4
BNGB Bing¶ll 76.50 309 *e*P **P 18 05 23.1 +1.3**
ESPY Espiye-Giresun 76.50 311 *e*P **P 18 05 20.9 -0.7**
TMUT Trail Mountain 76.56 51 *e*P **P 18 05 23.4 +1.0**
comp=Z,114nm,1.6s
SIM Simferopol' 76.58 317 *de*P **P 18 05 22.6 +0.6**
SIM S **S 18 15 07.6 +0.3**
SIM pmax pmax
comp=Z,32nm,0.8s
SIM smax smax
comp=E,130nm,11.0s
109C Camp Elliot, M 76.58 59 P **P 18 05 22.3 +0.1**
baz=306
PFO Pinyon Flats O 76.59 58 P **P 18 05 22.7 +0.3**
baz=306,SNR=15
PFO Pinyon Flats O 76.59 58 *e*P **P 18 05 23.0 +0.6**
PFO pmax pmax
comp=Z,51nm,1.1s
PFO MLR MLR
comp=Z,1µm,20.0s
PFO Pinyon Flats O 76.59 58 *e*P **P 18 05 23.0 +0.6**
comp=Z,51nm,1.1s
PFO LR LR
comp=Z,1µm,20.0s
D26A Manning 76.59 40 P **P 18 05 22.4 +0.3**
baz=312,SNR=6.9
C27A Sayler Ranch, 76.61 39 P **P 18 05 22.3 +0.1**
baz=312,SNR=5.0
LDFC Landfair 76.62 56 *e*P **P 18 05 23.7 +1.2**
comp=Z,109nm,1.2s
LCMT Little Creek M 76.67 54 *e*P **P 18 05 24.0 +1.2**
comp=Z,77nm,0.9s
BELC Belle Mtn. Jos 76.67 57 P **P 18 05 23.2 +0.3**
baz=307,SNR=6.1
B28A Dugan Ranch, T 76.69 38 P **P 18 05 22.9 +0.4**
baz=312,SNR=6.3
MTPU Mount Pierson 76.72 52 *e*P **P 18 05 25.5 +2.2**
comp=Z,56nm,0.8s
P17A Butcher Ranch, 76.73 50 *e*P **P 18 05 24.2 +1.1**
comp=Z,94nm,0.9s
F25A Bowman 76.79 42 P **P 18 05 23.6 +0.3**
baz=311,SNR=7.0
A29A Manning Farm, 76.92 37 P **P 18 05 24.0 +0.1**
baz=313,SNR=33
KNB Kanab 76.94 53 *e*P **P 18 05 25.8 +1.4**
KNB pmax pmax
comp=Z,110nm,1.0s
KNB Kanab 76.94 53 *e*P **P 18 05 25.8 +1.4**
comp=Z,110nm,1.0s
P18A Preston Nutter 76.94 50 *e*P **P 18 05 25.5 +0.9**
comp=Z,194nm,1.7s
E26A Carlson Angus 76.95 41 P **P 18 05 24.3 +0.2**
baz=312
BAR Barrett 77.00 59 *e*P **P 18 05 25.3 +0.7**
comp=Z,38nm,0.9s
PKCU Pink Cliffs 77.00 53 *e*P **P 18 05 27.1 +2.2**
comp=Z,202nm,2.0s
D27A Center 77.01 40 P **P 18 05 24.4 0.0**
baz=312
MONP2 Monument Peak 77.04 58 P **P 18 05 25.7 +0.6**
baz=307,SNR=17
BTU Barney Top 77.08 52 *e*P **P 18 05 27.1 +1.6**
SRU San Rafael Swe 77.09 50 *e*P **P 18 05 26.0 +0.8**
SRU pmax pmax
comp=Z,114nm,0.8s
SRU San Rafael Swe 77.09 50 *e*P **P 18 05 26.0 +0.8**
comp=Z,114nm,0.8s
NEE2 Needles Airpor 77.13 56 P **P 18 05 25.3 +0.1**
baz=307
IRM Iron Mountain 77.15 57 P **P 18 05 26.2 +0.8**
baz=307,SNR=34
B29A Wagenman Farm, 77.17 38 P **P 18 05 25.4 +0.1**
baz=313,SNR=15
C28A Hausauer Farms 77.17 39 P **P 18 05 25.7 +0.4**
baz=313
MMU Miners Mountai 77.17 52 *e*P **P 18 05 27.0 +1.2**
K22A Casper 77.23 46 P **P 18 05 26.2 +0.3**
baz=310,SNR=18
K22A Casper 77.23 46 *e*P **P 18 05 26.8 +0.8**
comp=Z,174nm,1.4s
BC3 Big Chuckawall 77.24 57 P **P 18 05 26.2 +0.2**
baz=307,SNR=20
F26A Lodgepole 77.25 41 P **P 18 05 25.9 +0.1**
baz=312,SNR=7.2
G25A Newell 77.29 42 P **P 18 05 25.8 -0.3**
baz=311
A30A Hoffart Farm, 77.35 37 P **P 18 05 26.7 +0.4**
baz=314,SNR=12
PTK Pertek 77.35 309 *e*P **P 18 05 28.8 +2.1**
IBP Imperial Bould 77.40 59 P **P 18 05 27.7 +0.7**
baz=307,SNR=18
W13A Hualapai Mount 77.41 55 *e*P **P 18 05 28.2 +1.1**
SWSC Sam W. Stewart 77.43 58 P **P 18 05 27.3 +0.4**
baz=307,SNR=6.9
D28A Regan 77.43 39 P **P 18 05 27.0 +0.2**
baz=313,SNR=5.1
SORM Soroca 77.43 322 ⇑ *i*P **P 18 05 27.5 +0.8**
E27A Carson 77.44 40 P **P 18 05 27.3 +0.5**
baz=312,SNR=7.3
DYBB Diyarbakir 77.47 308 *e*P **P 18 05 29.1 +1.9**
MDND Maddock 77.47 38 P **P 18 05 27.3 +0.3**
baz=313,SNR=8.7
MDND Maddock 77.47 38 *e*P **P 18 05 27.3 +0.3**
comp=Z,110nm,1.1s
ILIC ilic-Erzincan 77.50 310 *e*P **P 18 05 28.8 +1.3**
ULM Lac du Bonnet 77.56 35 P **P 18 05 27.0 -0.4**
comp=Z,22nm,0.9s,baz=313,slow=6.7,SNR=20
ULM LR LR 18 45 21.4
comp=Z,139nm,18.9s,baz=328,slow=40
ULM Lac du Bonnet 77.56 35 P **P 18 05 27.0 -0.4**
ULM pmax pmax
comp=Z,22nm,0.9s
ULM MLR MLR
comp=Z,139nm,18.9s
ULM Lac du Bonnet 77.56 35 *e*P **P 18 05 27.6 +0.2**
comp=Z,65nm,1.2s
H25A Fruitdale 77.57 43 P **P 18 05 27.7 0.0**
baz=311,SNR=6.9
F27A Lemmon 77.58 41 P **P 18 05 27.6 0.0**
baz=312,SNR=15
MAZI Mazidag 77.58 308 *e*P **P 18 05 29.3 +1.4**
U15A North Rim 77.63 54 *e*P **P 18 05 29.3 +0.9**
RSDY Resadiye-TOKAT 77.66 312 *e*P **P 18 05 29.9 +1.7**
RSSD Black Hills 77.66 43 P **P 18 05 28.2 -0.1**
baz=311
RSSD Black Hills 77.66 43 *e*P **P 18 05 28.1 -0.3**
RSSD pmax pmax
comp=Z,204nm,2.0s
RSSD Black Hills 77.66 43 *e*P **P 18 05 28.1 -0.3**
comp=Z,204nm,2.0s
B30A Myrvik Farm, E 77.67 37 P **P 18 05 28.2 +0.1**
baz=314,SNR=13
PDMCI Parker Dam,Lak 77.72 56 P **P 18 05 29.0 +0.5**
baz=307,SNR=20
SVRC Sivrice-ELAZIĞ 77.72 309 *e*P **P 18 05 30.4 +1.6**
E28A Huff 77.79 40 P **P 18 05 28.5 -0.3**
baz=313
KBSD Kabsdagh 77.80 307 *i* P **P 18 05 30.3 +1.2**
Y12C Blythe 77.80 57 P **P 18 05 29.5 +0.5**
baz=307,SNR=9.3
Y12C Blythe 77.80 57 *e*P **P 18 05 30.4 +1.4**
comp=Z,64nm,1.1s
O20A White River Ci 77.83 49 P **P 18 05 29.6 +0.3**
baz=309,SNR=6.5
O20A White River Ci 77.83 49 *e*P **P 18 05 30.3 +1.0**
comp=Z,56nm,0.9s
A31A Linda, St. Vin 77.88 36 P **P 18 05 28.5 -0.7**
baz=314
I25A Rochford 77.89 43 P **P 18 05 29.6 0.0**
baz=311,SNR=12
G27A Dupree 77.95 41 P **P 18 05 29.2 -0.5**
baz=312,SNR=12
KVT Kavak 77.97 313 *e*P **P 18 05 31.8 +1.8**
KIS Kishinev 77.98 321 ǁ *i*P **P 18 05 30.0 +0.2**
comp=Z,200nm,2.0s
KIS Kishinev 77.98 321 *e*PP PP 18 08 28.0 +2.7
KIS Kishinev 77.98 321 *ke*P **P 18 05 30.0 +0.2**
KIS *e* 18 08 28.0
KIS *e* 18 15 22.0
KIS pmax pmax
comp=Z,200nm,2.0s
KIS pmax pmax
comp=Z,400nm,2.0s
KIS MLR MLR
comp=N,800nm,16.0s
KIS MLR MLR
comp=E,2µm,16.0s
KIS MLR MLR
comp=Z,2µm,16.0s
D29A Pettibone, Tap 78.01 39 P **P 18 05 29.9 -0.1**
baz=313,SNR=5.9
BSD Bornholm Skovb 78.01 333 *i* P **P 18 05 29.6 -0.2**
comp=Z,204nm,1.6s
BSD Bornholm Skovb 78.01 333 *i* P **P 18 05 29.6 -0.2**
BSD pmax pmax
comp=Z,200nm,1.6s
H26A Fairpoint 78.02 42 P **P 18 05 30.3 +0.2**
baz=312,SNR=8.4
B31A Greenbush Farm 78.02 37 P **P 18 05 30.1 +0.2**
baz=314,SNR=8.2
GLA Glamis 78.02 58 P **P 18 05 31.2 +0.9**
baz=307,SNR=13
GLA Glamis 78.02 58 *e*P **P 18 05 31.8 +1.4**
GLA pmax pmax
comp=Z,71nm,1.0s
GLA Glamis 78.02 58 *e*P **P 18 05 31.8 +1.4**
comp=Z,71nm,1.0s
DIKM Dikmen 78.06 314 *e*P **P 18 05 30.1 -0.3**
C30A Mose, Pekin 78.12 38 P **P 18 05 30.2 -0.4**
baz=314,SNR=16
SVSK Karacayir 78.15 311 *e*P **P 18 05 32.9 +2.0**
A32A Rocking H Ranc 78.22 36 P **P 18 05 30.7 -0.3**
baz=315,SNR=11
F28A McLaughlin 78.22 40 P **P 18 05 31.3 +0.1**
baz=313,SNR=6.4
BEL Belsk 78.23 328 *e*P **P 18 05 32.2 +1.2**
BEL LMZ LR 18 44 07.7
BEL Belsk 78.23 328 *e*P **P 18 05 32.3 +1.2**
BEL MLR MLR
comp=Z,800nm,18.8s
J25A Sunshine Ranch 78.27 44 P **P 18 05 31.1 -0.5**
baz=311
LVV L'vov 78.28 325 *e*P **P 18 05 30.2 -1.2**
LVV MLR MLR
comp=N,2µm,15.0s
LVV MLR MLR
comp=E,2µm,15.0s
LVV MLR MLR
comp=Z,3µm,15.0s
PV09 Paradox Valley 78.32 50 *e*P **P 18 05 33.1 +0.8**
E29A Napoleon 78.32 39 P **P 18 05 31.4 -0.4**
baz=313
I26A New Underwood 78.36 43 P **P 18 05 32.2 +0.2**
baz=312,SNR=10
H27A Howes 78.38 42 P **P 18 05 32.1 0.0**
baz=312,SNR=24
D30A Buchanan 78.39 39 P **P 18 05 31.6 -0.5**
baz=314,SNR=13
C31A Landman Farms, 78.42 38 P **P 18 05 31.9 -0.4**
baz=314,SNR=10
COP Copenhagen 78.43 335 ǁ *i*P **P 18 05 32.5 +0.4**
COP Copenhagen 78.43 335 ǁ *i*P **P 18 05 32.5 +0.4**
SFNV Sufian 78.44 307 *i* P **P 18 05 34.4 +1.8**
PV10 Paradox Valley 78.45 50 *e*P **P 18 05 33.9 +1.0**
PV04 Paradox Valley 78.53 50 *e*P **P 18 05 33.8 +0.6**
B32A Ashes, Strandq 78.57 37 P **P 18 05 32.7 -0.4**
baz=315,SNR=22
PV05 Paradox Valley 78.61 51 *e*P **P 18 05 34.7 +1.0**
LEOM Leova 78.63 321 *e*P **P 18 05 32.7 -0.6**
G28A Parade 78.69 41 P **P 18 05 33.6 -0.2**
baz=313,SNR=5.8

N23A Red Feather La 78.69 47 P P 18 05 35.2 +1.0
baz=310,SNR=30
N23A Red Feather La 78.69 47 *eP* P 18 05 35.1 +0.9
comp=Z,120nm,1.3s
Y14A Wickenburg 78.69 56 *eP* P 18 05 34.7 +0.6
PHWY Pilot Hill 78.70 46 *eP* P 18 05 35.1 +0.8
comp=Z,61nm,1.4s
DARE Darende-Malaty 78.72 310 *eP* P 18 05 36.3 +2.2
J26A Sides Ranch, S 78.72 43 P P 18 05 34.1 0.0
baz=312,SNR=8.7
A33A Warroad 78.72 36 P P 18 05 33.2 -0.6
baz=316,SNR=27
F29A Eureka 78.73 40 P P 18 05 33.5 -0.5
baz=313,SNR=7.0
E30A Jud 78.74 39 P P 18 05 33.5 -0.5
baz=314,SNR=9.6
I27A Quinn 78.77 42 P P 18 05 34.8 +0.5
baz=312,SNR=16
WUAZ Wupatki 78.78 54 P P 18 05 35.6 +1.0
baz=308,SNR=49
WUAZ Wupatki 78.78 54 *eP* P 18 05 35.7 +1.1
comp=Z,78nm,0.9s
WUAZ LR LR
comp=Z,577nm,19.0s
PV01 Paradox Valley 78.89 50 *eP* P 18 05 36.1 +0.8
113A Mohawk Valley, 78.90 57 *eP* P 18 05 35.8 +0.6
H28A Mission Ridge 78.90 41 P P 18 05 35.0 0.0
baz=313,SNR=36
D31A Mcclaflin, Tow 78.94 38 P P 18 05 35.0 -0.1
baz=314
AGMN Agassiz Nation 78.95 36 P P 18 05 34.6 -0.6
baz=315,SNR=13
AGMN Agassiz Nation 78.95 36 *eP* P 18 05 34.4 -0.8
comp=Z,60nm,1.1s
AGMN LR LR
comp=Z,425nm,20.0s
C32A Crookston 78.97 37 P P 18 05 34.8 -0.5
baz=315
KWP Kalwaria Pacla 79.02 326 *eP* P 18 05 36.6 +1.1
KWP LMZ LR 18 43 46.4
KWP Kalwaria Pacla 79.02 326 *eP* P 18 05 36.6 +1.1
KWP MLR MLR
comp=Z,3μm,16.1s
B33A Robert and Kas 79.10 36 P P 18 05 35.6 -0.4
baz=316,SNR=7.3
G29A Hoven 79.12 41 P P 18 05 35.8 -0.4
baz=313
F30A Leola 79.14 40 P P 18 05 35.7 -0.5
baz=314
SMCO Snowmass 79.19 49 *eP* P 18 05 37.9 +0.7
comp=Z,80nm,1.4s
E31A Nome 79.21 39 P P 18 05 36.3 -0.3
baz=314,SNR=10.0
TLCR 79.22 320⇓ *iP* P 18 05 37.3 +0.7
TLCR 79.22 320 ⇓P P 18 05 37.3 +0.7
D32A Dogwood Acres, 79.23 38 P P 18 05 36.1 -0.6
baz=315
I28A Midland 79.28 42 P P 18 05 35.9 -1.2
baz=313
BUR08 Bucovina Ar. S 79.30 323 *eP* P 18 05 38.0 +0.8
BURAR Bucovina Array 79.31 323⇑ *iP* P 18 05 38.2 +1.0
BURAR Bucovina Array 79.31 323 ⇑P P 18 05 38.2 +1.0
J27A Elkhorn Farm, 79.34 43 P P 18 05 38.0 +0.5
baz=312
H29A Onida 79.36 41 P P 18 05 37.2 -0.3
baz=313,SNR=20
CORM Corum 79.38 313 *eP* P 18 05 39.8 +2.0
C33A Trail 79.38 37 P P 18 05 37.0 -0.5
baz=316,SNR=10
B34A Aery, Baudette 79.38 36 P P 18 05 36.8 -0.7
baz=316,SNR=9.4
TESR Tescani 79.39 322⇓ *iP* P 18 05 38.2 +0.6
X16A Lo Mia Camp, P 79.42 55 *eP* P 18 05 39.3 +1.1
KSRV Kasrt alli 79.48 307 *i P* P 18 05 40.2 +2.0
F31A Hecla 79.51 39 P P 18 05 37.5 -0.8
baz=314,SNR=5.8
BNN Bunyan 79.52 311 *eP* P 18 05 37.7 -0.9
MVCO Mesa Verde 79.52 51 P P 18 05 39.4 +0.6
baz=310,SNR=31
MVCO Mesa Verde 79.52 51 *eP* P 18 05 39.4 +0.6
comp=Z,283nm,1.9s
MVCO LR LR
comp=Z,465nm,20.0s
G30A Faulkton 79.57 40 P P 18 05 38.3 -0.3
baz=314,SNR=22
CFR Carcaliu 79.58 320⇑ *iP* P 18 05 39.6 +1.0
CFR Carcaliu 79.58 320 ⇑P P 18 05 39.6 +1.0
E32A Braaten, Kindr 79.58 38 P P 18 05 38.3 -0.4
baz=315
ISCO Idaho Springs 79.59 47 P P 18 05 39.7 +0.5
baz=311,SNR=24
ISCO Idaho Springs 79.59 47 *eP* P 18 05 40.0 +0.8
ISCO pmax pmax
comp=Z,97nm,1.6s
ISCO MLR MLR
comp=Z,332nm,19.0s
ISCO Idaho Springs 79.59 47 *eP* P 18 05 40.0 +0.8
comp=Z,97nm,1.6s
ISCO LR LR
comp=Z,332nm,19.0s
J28A Allard Ranch, 79.64 42 P P 18 05 39.2 +0.2
baz=313,SNR=21
PETR Petresti 79.66 321⇓ *iP* P 18 05 41.5 +2.5
CANT Cankiri 79.68 314 *eP* P 18 05 39.6 +0.2
ODBI Odobesti 79.72 321⇑ *iP* P 18 05 42.1 +2.8
KOLS Kolonicke sedl 79.72 325 *eP* P 18 05 40.5 +1.2
KOLS pmax pmax
comp=Z,24nm,1.0s
KOLS Kolonicke sedl 79.72 325 *eP* P 18 05 40.5 +1.2
KOLS *ePP* PP 18 08 39.2 -0.5
KOLS *eL* L 18 44 25.8
I29A Vivian Onida 79.73 42 P P 18 05 39.1 -0.4
baz=313,SNR=17
GAZ Gazianteр 79.77 309 *eP* P 18 05 41.8 +1.9
D33A AnnSam, Waubun 79.79 37 P P 18 05 39.1 -0.6
baz=316,SNR=5.1
SAFT Safranbolu 79.79 315 *eP* P 18 05 41.8 +1.9
VRI Vrincioaia 79.81 321 *eP* P 18 05 41.0 +1.2
VRI Vrincioaia 79.81 321⇑ *iP* P 18 05 41.4 +1.5
VRI Vrincioaia 79.81 321 ⇑P P 18 05 41.4 +1.5
STHS Stebnicka Huta 79.82 326 *eP* P 18 05 41.3 +1.4
STHS pmax pmax
comp=Z,23nm,1.1s
STHS Stebnicka Huta 79.82 326 *eP* P 18 05 41.3 +1.4
OJC Ojcow 79.85 328 *eP* P 18 05 40.8 +0.7
OJC LMZ LR 18 44 48.0
OJC Ojcow 79.85 328 *eP* P 18 05 40.7 +0.7
OJC pmax pmax
comp=Z,230nm,1.6s
OJC Ojcow 79.85 328 *eP* P 18 05 40.7 +0.7
comp=Z,230nm,1.6s
PLOR Plostina 79.86 321⇓ *iP* P 18 05 41.5 +1.4
PLOR Plostina 79.86 321 ⇓P P 18 05 41.6 +1.4
C34A RKJ Ranch, Bem 79.86 36 P P 18 05 39.4 -0.8
baz=316
B35A Bob, Littlefor 79.90 35 P P 18 05 39.7 -0.6
baz=317,SNR=7.9
TIRR Tirgusor 79.93 319⇑ *iP* P 18 05 41.4 +0.9
TIRR Tirgusor 79.93 319 *eP* P 18 05 40.7 +0.2
TIRR pmax pmax
comp=Z,158nm,1.9s
TIRR Tirgusor 79.93 319 *eP* P 18 05 40.7 +0.2
comp=Z,158nm,1.9s
UZH Uzhgorod 79.93 325 *d iP* P 18 05 39.0 -1.4
UZH *e* 18 05 50.2
UZH *ePPP* PPP 18 10 33.0
UZH *eS* S 18 15 36.8 -6.4
UZH *ePS* PnS 18 16 19.0 -8.8
UZH MLR MLR
comp=N,2μm,16.0s
UZH MLR MLR
comp=E,3μm,16.0s
UZH MLR MLR
comp=Z,3μm,16.0s
G31A Conde 79.98 40 P P 18 05 40.7 -0.1
baz=314,SNR=12
214A Organ Pipe Nat 80.04 57 P P 18 05 42.0 +0.6
baz=308,SNR=18
214A Organ Pipe Nat 80.04 57 *eP* P 18 05 42.4 +1.0
comp=Z,158nm,1.2s
F32A Veblen 80.06 39 P P 18 05 40.4 -0.9
baz=315
W18A Petrified Fore 80.07 53 P P 18 05 42.8 +1.0
baz=309,SNR=8.3
W18A Petrified Fore 80.07 53 *eP* P 18 05 43.2 +1.5
comp=Z,34nm,1.0s

BMR Baia Mare 80.08 324⇑ *iP* P 18 05 43.2 +1.9
BMR Baia Mare 80.08 324 ⇑P P 18 05 43.2 +1.9
EFOR EFORIE 80.08 319⇑ *iP* P 18 05 43.2 +1.9
ARCR ARCALIA 80.10 323⇓ *iP* P 18 05 43.3 +1.9
CRVS Cervenica-Dubn 80.11 326 *eP* P 18 05 42.9 +1.5
CRVS Cervenica-Dubn 80.11 326 *eP* P 18 05 42.9 +1.5
J29A Okreek 80.14 42 P P 18 05 41.6 -0.2
baz=313,SNR=8.3
D34A Park Rapids 80.14 37 P P 18 05 41.2 -0.4
baz=316,SNR=11
SUSD Miller 80.14 41 P P 18 05 41.3 -0.4
baz=314,SNR=6.0
E33A Westby DABS, E 80.17 38 P P 18 05 41.5 -0.3
baz=316,SNR=13
TRPA Tarpa 80.19 325⇓ *eP* P 18 05 43.0 +1.2
S22A 4UR Ranch, Cre 80.20 50 P P 18 05 43.8 +1.3
baz=310,SNR=55
S22A 4UR Ranch, Cre 80.20 50 *eP* P 18 05 43.6 +1.1
comp=Z,214nm,1.8s
NIE Niedzica 80.23 327 *eP* P 18 05 43.3 +1.2
NIE LMZ LR 18 44 47.4
NIE Niedzica 80.23 327 *eP* P 18 05 43.4 +1.3
NIE MLR MLR
comp=Z,2μm,16.1s
BR131 Keskin Array S 80.25 313 *eP* P 18 05 43.7 +1.1
BRTR Keskin Array B 80.25 313 P P 18 05 43.7 +1.1
comp=Z,5.4nm,0.6s,baz=108,slow=4.0,SNR=44
BRTR PP PP 18 08 50.4 +5.8
comp=Z,1.9nm,1.0s,baz=22,slow=4.7,SNR=2.9
I30A Oacoma 80.26 41 P P 18 05 42.0 -0.4
baz=314,SNR=20
C35A Jirik Farms, M 80.26 36 P P 18 05 41.7 -0.6
baz=317,SNR=11
X18A Snowflake 80.31 54 *eP* P 18 05 44.0 +0.9
G32A Webster 80.31 39 P P 18 05 42.6 0.0
baz=315,SNR=22
PGOR Pogoanele 80.35 320⇑ *iP* P 18 05 45.0 +2.2
DOPR Dopca 80.40 322⇓ *iP* P 18 05 44.8 +1.7
Q24A Divide 80.41 48 P P 18 05 43.7 +0.1
baz=311,SNR=14
Q24A Divide 80.41 48 *eP* P 18 05 44.3 +0.7
comp=Z,20nm,1.0s
ISR Istrita 80.42 321⇑ *iP* P 18 05 44.9 +1.6
ISR Istrita 80.42 321 ⇑P P 18 05 44.9 +1.6
DRWC Darouich 80.46 309 *i P* P 18 05 45.6 +1.9
MLR Muntele Rosu 80.46 321 P P 18 05 44.3 +0.8
comp=Z,3.1nm,0.8s,baz=31,slow=4.4,SNR=25
MLR Muntele Rosu 80.46 321⇑ *iP* P 18 05 44.8 +1.2
MLR Muntele Rosu 80.46 321 *eP* P 18 05 43.9 +0.3
MLR pmax pmax
comp=Z,131nm,1.6s
MLR Muntele Rosu 80.46 321 *eP* P 18 05 43.9 +0.3
comp=Z,131nm,1.6s
MSAB Monastry St. A 80.49 319⇑ *iP* P 18 05 44.8 +1.3
F33A 5 Mile Ranch, 80.50 38 P P 18 05 43.3 -0.2
baz=316,SNR=22
E34A Wadena 80.56 37 P P 18 05 43.2 -0.8
baz=316
PSN Preselentsi 80.59 319 *eP* P 18 05 44.2 +0.1
RAC Raciborz 80.63 328 *eP* P 18 05 45.4 +1.2
J30A Dallas 80.63 42 P P 18 05 43.9 -0.5
baz=314,SNR=6.8
ANTO Ankara 80.64 314 *eP* P 18 05 45.6 +1.0
ANTO pmax pmax
comp=Z,51nm,0.9s
ANTO MLR MLR
comp=Z,59nm,19.0s
ANTO Ankara 80.64 314 *eP* P 18 05 45.6 +1.0
comp=Z,51nm,0.9s
ANTO LR LR
comp=Z,59nm,19.0s
I31A Royce, Wessing 80.64 41 P P 18 05 44.0 -0.4
baz=314
LOD Lodumlu 80.65 314 *eP* P 18 05 45.3 +0.7
BR231 Keskin MP Arra 80.67 314 *eP* P 18 05 44.2 -0.5
D35A Remer 80.68 36 P P 18 05 44.0 -0.5
baz=317
CJR Cluj-Napoca 80.72 323⇑ *iP* P 18 05 46.8 +1.9
CJR Cluj-Napoca 80.72 323 ⇑P P 18 05 46.8 +1.9
NIG Nigde 80.74 311 *eP* P 18 05 46.7 +1.3
C36A Pine Crest Far 80.75 35 P P 18 05 44.4 -0.5
baz=318,SNR=8.0
AFSR Af`ar-Bala (A 80.76 313 *eP* P 18 05 46.7 +1.5
LANS Liptovska Anna 80.80 327 *eP* P 18 05 47.2 +2.0
LANS Liptovska Anna 80.80 327 *eP* P 18 05 47.2 +2.0
HIZ Hauiti 80.81 156 *eP* P 18 05 46.3 +1.2
comp=Z,92nm,1.3s
KSP Ksiaz 80.82 330 *eP* P 18 05 46.0 +0.8
KSP LMZ LR 18 44 03.8
KSP Ksiaz 80.82 330 *eP* P 18 05 46.1 +0.8
KSP MLR MLR
comp=Z,800nm,19.4s
OKC Ostrava-Krasne 80.83 328⇓ *iP* P 18 05 46.2 +0.9
OKC *epP* pP 18 05 50.0 -1.1
OKC *eS* S 18 15 54.5 +1.9
OKC AMS AMS 18 46 20.0
comp=Z,2μm,15.4s
OKC Ostrava-Krasne 80.83 328⇓ *iP* P 18 05 46.2 +0.9
OKC *e* 18 05 50.0
OKC *eS* S 18 15 54.5 +1.9
OKC MLR MLR
comp=Z,2μm,15.4s
KECS Kecovo 80.85 326 *eP* P 18 05 46.6 +1.2
KECS pmax pmax
comp=Z,11nm,1.0s
KECS Kecovo 80.85 326 *eP* P 18 05 46.6 +1.2
KECS *ePP* PP 18 08 52.4 +3.3
OGNE Ogallala 80.88 45 P P 18 05 45.5 -0.4
baz=313,SNR=5.1
OGNE Ogallala 80.88 45 *eP* P 18 05 46.0 +0.1
comp=Z,207nm,1.6s
OGNE LR LR
comp=Z,452nm,19.0s
SULR 80.88 320⇑ *iP* P 18 05 47.2 +1.6
G33A Ortonville 80.89 39 P P 18 05 45.4 -0.3
baz=316,SNR=28
E35A Pequot Lakes 80.89 37 P P 18 05 44.9 -0.8
baz=317
VOIR 80.94 322⇑ *iP* P 18 05 47.3 +1.2
VOIR 80.94 322 ⇑P P 18 05 47.3 +1.2
SDCO Great Sand Dun 81.00 49 P P 18 05 47.5 +0.7
baz=311,SNR=32
SDCO Great Sand Dun 81.00 49 *eP* P 18 05 47.5 +0.7
comp=Z,35nm,1.2s
SDCO LR LR
comp=Z,414nm,19.0s
K30A Basset 81.02 42 P P 18 05 46.4 -0.1
baz=314,SNR=13
D36A Goodland 81.02 36 P P 18 05 45.7 -0.6
baz=317
F34A Alexandria 81.03 38 P P 18 05 46.1 -0.4
baz=316,SNR=8.6
J31A Geddes 81.05 41 P P 18 05 46.3 -0.3
baz=314,SNR=5.3
C37A Embarrass 81.06 35 P P 18 05 46.1 -0.5
baz=318,SNR=7.4
DRGR 81.09 324⇑ *iP* P 18 05 47.8 +1.0
DRGR 81.09 324 ⇑P P 18 05 47.8 +1.0
H33A Prehn Over Nor 81.10 39 P P 18 05 46.6 -0.3
baz=315,SNR=37
MORC Moravsky Berou 81.13 328 *eP* P 18 05 47.8 +0.8
MORC pmax pmax
comp=Z,196nm,1.0s
MORC Moravsky Berou 81.13 328 *eP* P 18 05 47.8 +0.8
comp=Z,196nm,1.0s
MDUB Mudurnu 81.15 315 *eP* P 18 05 47.5 +0.2
TUC Tucson 81.16 56 P P 18 05 48.1 +0.6
baz=309
TUC Tucson 81.16 56 *eP* P 18 05 48.1 +0.6
TUC pmax pmax
comp=Z,97nm,1.8s
TUC MLR MLR
comp=Z,705nm,19.0s
TUC Tucson 81.16 56 *eP* P 18 05 48.1 +0.6
comp=Z,97nm,1.8s
TUC LR LR
comp=Z,705nm,19.0s
DPC Dobruska-Polom 81.19 329⇓ *iP* P 18 05 48.3 +1.0
DPC *epP* pP 18 05 52.5 -0.6
DPC *eS* S 18 15 57.9 +1.5
DPC AMS AMS 18 45 30.0
comp=Z,1μm,14.4s
DPC Dobruska-Polom 81.19 329⇓ *iP* P 18 05 48.3 +1.0
DPC *e* 18 05 52.5
DPC *eS* S 18 15 57.9 +1.5

DPC MLR MLR
comp=Z,1μm,14.4s
UPC Upice 81.19 330⇓ *eS* S 18 15 57.9 +1.5
UPC AMS AMS 18 48 00.0
comp=Z,2μm,15.5s
I32A Karley and Nic 81.19 40 P P 18 05 46.7 -0.7
baz=315
ARR Arges 81.20 322⇑ *iP* P 18 05 50.1 +2.7
EYMN Ely 81.21 34 P P 18 05 47.0 -0.4
baz=318,SNR=6.8
EYMN Ely 81.21 34 *eP* P 18 05 47.0 -0.4
comp=Z,116nm,1.5s
EYMN LR LR
comp=Z,491nm,20.0s
KRLC Kraliky 81.22 329⇓ *eP* P 18 05 48.1 +0.7
KRLC Kraliky 81.22 329 *eP* P 18 05 48.1 +0.7
G34A Benson 81.25 38 P P 18 05 47.3 -0.3
baz=316,SNR=10
F35A Swanville 81.32 37 P P 18 05 47.7 -0.3
baz=317,SNR=7.4
URZ Urewera 81.33 155 P P 18 05 45.7 -2.1
comp=Z,6.8nm,0.8s,baz=266,slow=19,SNR=4.3
SULT Sultanhani-AKS 81.33 312 *eP* P 18 05 49.5 +1.2
ARNB Al Arnab 81.38 309 *i P* P 18 05 50.0 +1.4
D37A Cotton 81.38 35 P P 18 05 47.2 -1.0
baz=318
J32A Parkston 81.46 41 P P 18 05 48.0 -0.8
baz=315
E36A McGregor 81.47 36 P P 18 05 48.0 -0.8
baz=317,SNR=9.5
YESY Yesilyurt 81.47 311 *eP* P 18 05 48.8 -0.3
C38A Sawbill Land. 81.48 34 P P 18 05 48.2 -0.7
baz=318,SNR=10
K31A O'Neill 81.51 42 P P 18 05 48.9 -0.2
baz=314,SNR=8.5
I33A Coleman 81.52 40 P P 18 05 48.9 -0.2
baz=315,SNR=6.0
PSZ Piszkesteto 81.54 326⇓ *eP* P 18 05 50.1 +0.9
PSZ Piszkesteto 81.54 326 *eP* P 18 05 50.1 +0.9
PSZ pmax pmax
comp=Z,65nm,1.1s
PSZ MLR MLR
comp=Z,695nm,21.0s
PSZ Piszkesteto 81.54 326 *eP* P 18 05 50.1 +0.9
comp=Z,65nm,1.1s
PSZ LR LR
comp=Z,695nm,21.0s
LOT Lotru 81.56 322 *eP* P 18 05 45.3 -4.1
LOT Lotru 81.56 322⇑ *iP* P 18 05 50.5 +1.1
VYHS Vyhne 81.56 327 *eP* P 18 05 50.0 +0.8
VYHS pmax pmax
comp=Z,26nm,1.1s
VYHS Vyhne 81.56 327 *eP* P 18 05 50.0 +0.8
VYHS *ePP* PP 18 08 53.7 -1.3
VYHS *eL* L 18 45 51.4
H34A Spellman Lake, 81.59 39 P P 18 05 49.4 0.0
baz=316,SNR=5.6
HUMR Humele 81.63 321⇑ *iP* P 18 05 48.4 -1.2
ROOS tl_alroos 81.64 307 *i P* P 18 05 51.4 +1.4
SVRH Sivrihisar-ESK 81.65 314 *eP* P 18 05 49.4 -0.6
BRG Berggiesshubel 81.72 331 *i P* P 18 05 50.4 +0.4
comp=Z,44nm,1.1s
BRG *ePP* PP 18 09 07.5 +11
comp=Z,12nm,1.2s
BRG S S 18 16 02.0 +0.2
BRG SS SS 18 21 16.0 -2.1
comp=N,1μm,16.8s
comp=E,1μm,15.4s
comp=Z,1μm,14.3s
BRG Berggiesshubel 81.72 331 *i P* P 18 05 50.4 +0.4
BRG S S 18 16 02.0 +0.2
BRG SS SS 18 21 16.0 -2.1
BRG pmax pmax
comp=Z,45nm,1.3s
BRG MLR MLR
comp=N,12μm,16.8s
BRG MLR MLR
comp=E,1μm,15.4s
BRG MLR MLR
comp=Z,1μm,14.3s
CLL Collm 81.73 332⇓ *iP* P 18 05 50.0 0.0
comp=Z,63nm,1.1s
CLL *ePmax* 18 05 52.0
CLL *e* 18 08 31.0
CLL *ePP* PP 18 08 59.0 +2.8
CLL *e* 18 09 12.0
CLL *eS* S 18 15 54.0 -7.9
CLL *eSS* SS 18 21 12.0 -6.3
CLL *e* 18 22 06.0
CLL *eSSS* SSS 18 25 00.0
CLL *e* 18 26 24.0
CLL *eSSSS* 18 27 42.0
CLL Lmax 18 49 00.0
CLL Collm 81.73 332⇓ *iP* P 18 05 50.0 0.0
CLL *eS* S 18 15 54.0 -7.9
CLL pmax pmax
comp=Z,63nm,1.1s
CLL Collm 81.73 332 *eP* P 18 05 49.6 -0.4
comp=Z,67nm,1.0s
N29A Votaw Ranch, W 81.74 44 P P 18 05 49.8 -0.6
baz=313
PVCC Panska Ves 81.75 330⇓ *eP* P 18 05 51.0 +0.9
PVCC AMS AMS 18 46 10.0
comp=Z,2μm,16.6s
PVCC Panska Ves 81.75 330 *eP* P 18 05 51.0 +0.9
PVCC MLR MLR
comp=Z,2μm,16.6s
L31A Butterfield Fa 81.78 42 P P 18 05 50.2 -0.3
baz=314,SNR=28
KLYT Kilyos 81.81 317 *eP* P 18 05 49.1 -1.5
F36A Milaca 81.82 37 P P 18 05 49.8 -0.8
baz=317
G35A Watkins 81.83 38 P P 18 05 50.8 +0.1
baz=317,SNR=13
E37A Wrenshall 81.83 36 P P 18 05 50.0 -0.6
baz=318
KIZT Kizilcal 81.83 313 *eP* P 18 05 52.3 +1.3
ECSD EROS Data Cent 81.84 40 P P 18 05 50.5 -0.3
baz=316,SNR=42
ECSD EROS Data Cent 81.84 40 *eP* P 18 05 50.4 -0.3
comp=Z,50nm,0.8s
ECSD LR LR
comp=Z,530nm,20.0s
KSCO Kaye Shedlock' 81.84 46 P P 18 05 51.1 +0.1
baz=312
VRAC Vranov 81.89 329 P P 18 05 52.0 +1.1
comp=Z,33nm,0.8s,baz=43,slow=5.0,SNR=56
VRAC PP PP 18 08 58.9 +1.2
comp=Z,0.9nm,0.5s,baz=22,slow=17,SNR=2.0
VRAC Vranov 81.89 329⇓ *iP* P 18 05 52.1 +1.1
K32A Verdigre 81.89 41 P P 18 05 50.1 -1.0
baz=315
C39A Grand Marais 81.92 34 P P 18 05 50.2 -0.9
baz=319
ISK Istanbul-Kandi 81.93 316 *eP* P 18 05 50.5 -0.8
ISK Istanbul-Kandi 81.93 316 P P 18 05 51.1 -0.1
ISK Istanbul-Kandi 81.93 316 P P 18 05 51.1 -0.1
ISK Istanbul-Kandi 81.93 316 P P 18 05 51.1 -0.1
BKZ Black Stump Fm 81.94 155 *eP* P 18 05 50.5 -0.6
comp=Z,15nm,1.1s
J33A Davis 81.95 40 P P 18 05 50.8 -0.5
baz=315
SIRR Siria 81.96 324⇑ *iP* P 18 05 52.6 +1.2
ADVT Abdulvahap 81.99 316 *eP* P 18 05 52.6 +1.0
I34A Hadley 82.00 39 P P 18 05 51.3 -0.3
baz=316,SNR=6.5
BGKT Bogazkoy 82.00 317 *eP* P 18 05 50.7 -0.9
LADK Ladik-KONYA 82.00 313 *eP* P 18 05 52.6 +0.7
H35A Sunnyside Ranc 82.04 38 P P 18 05 51.9 +0.1
baz=316,SNR=10
SZH Strazhica 82.04 320 *eP* P 18 05 51.8 0.0
T25A Trinidad 82.05 49 P P 18 05 53.0 +0.7
baz=312,SNR=32
T25A Trinidad 82.05 49 *eP* P 18 05 52.9 +0.6
comp=Z,69nm,1.2s
CTYL Yalikoy Yolu 82.06 317 *eP* P 18 05 50.7 -1.2
GZR Gura Zlata 82.08 323⇑ *iP* P 18 05 53.1 +1.0
GZR Gura Zlata 82.08 323 ⇑P P 18 05 53.1 +1.0
CAVI Cavuskoy 82.09 315 *eP* P 18 05 53.3 +1.1
CTKS Kestanelik-??a 82.11 317 *eP* P 18 05 51.3 -0.9
GOPC GO Pecny, Ondr 82.15 330⇓ *iP* P 18 05 53.2 +0.9
GOPC *eS* S 18 16 05.4 -0.9
GOPC AMS AMS 18 47 40.0
comp=Z,1μm,15.4s
GOPC GO Pecny, Ondr 82.15 330⇓ *iP* P 18 05 53.2 +0.9

GOPC eS S 18 16 05.4 -0.9
GOPC MLR MLR
comp=Z,1μm,15.4s
SMOL Smolenice 82.15 328 eP P 18 05 54.0 +1.7
SMOL Smolenice 82.15 328 eP P 18 05 54.0 +1.7
PRA Prague 82.17 330⇓ eP P 18 05 53.6 +1.3
PRA epP pP 18 05 57.4 -0.7
PRA eS S 18 16 08.3 +1.9
PRA AMS AMS 18 50 30.0
comp=Z,1μm,15.1s
PRA Prague 82.17 330 eP P 18 05 53.6 +1.3
PRA e 18 05 57.4
PRA eS S 18 16 08.3 +1.9
PRA MLR MLR
comp=Z,1μm,15.1s
G36A St. Michael 82.17 37 P P 18 05 52.1 -0.4
baz=317
LAZ Ladron 82.17 52 eP P 18 05 54.1 +1.1
KONT Konya--Tatoy 82.18 312 eP P 18 05 53.7 +1.0
PRU Pruhonice 82.19 330⇓ iP P 18 05 52.9 +0.4
PRU epP pP 18 05 57.3 -0.9
PRU eS S 18 16 07.5 +0.9
PRU AMS AMS 18 48 00.0
comp=Z,1μm,17.0s
PRU Pruhonice 82.19 330⇓ iP P 18 05 52.9 +0.4
PRU e 18 05 57.3
PRU eS S 18 16 07.5 +0.9
PRU MLR MLR
comp=Z,1μm,17.0s
PMOR Pomariorio Ree 82.19 116 eP P 18 05 54.0 +1.2
comp=Z,179nm,1.2s
ANMO Albuquerque 82.24 52 P P 18 05 54.3 +1.0
baz=311
ANMO Albuquerque 82.24 52 eP P 18 05 54.2 +0.9
ANMO pmax pmax
comp=Z,72nm,1.3s
ANMO MLR MLR
comp=Z,454nm,19.0s
ANMO Albuquerque 82.24 52 eP P 18 05 54.2 +0.9
comp=Z,72nm,1.3s
ANMO LR LR
comp=Z,454nm,19.0s
BUD Budapest 82.25 326⇓ ePKKPdf P 18 05 53.4 +0.6
M31A Lambtecht Ranc 82.28 43 P P 18 05 52.5 -0.7
baz=314
L32A Elgin 82.34 42 P P 18 05 53.1 -0.3
baz=315,SNR=5.4
TREC Trest 82.35 329⇓ eP P 18 05 54.1 +0.7
TREC AMS AMS 18 48 10.0
comp=Z,2μm,15.4s
TREC Trest 82.35 329 eP P 18 05 54.1 +0.7
TREC MLR MLR
comp=Z,2μm,15.4s
PHSR Pinarhisar 82.36 318 eP P 18 05 53.7 +0.2
ARMT Armutlu 82.38 316 eP P 18 05 54.7 +1.0
PVL Pavlikeni 82.39 320 eP P 18 05 53.6 0.0
K33A Hardington 82.44 41 P P 18 05 53.5 -0.4
baz=315
BZS Buzias 82.47 324⇑ iP P 18 05 54.8 +0.8
BZS Buzias 82.47 324 ⇑P P 18 05 54.8 +0.8
J34A George 82.49 40 P P 18 05 53.4 -0.8
baz=316
MDNY Mudanya-Bursa 82.50 316 eP P 18 05 54.0 -0.3
PKS7 Kunszentmiklos 82.52 326⇑ ePKKPdf P 18 05 55.5 +1.3
Y22D IRIS PASSCAL I 82.52 53 P P 18 05 55.2 +0.5
baz=311
IKL Isikli 82.53 310 eP P 18 05 55.5 +1.0
VAH Vaihoa 82.54 116 eP P 18 05 55.4 +0.7
comp=Z,64nm,1.1s
LPM Los Pinos Moun 82.55 52 eP P 18 05 55.6 +0.7
H36A Jessenland, He 82.57 38 P P 18 05 54.6 +0.1
baz=317
I35A Creekview Farm 82.57 39 P P 18 05 54.2 -0.4
baz=316
PKSG 82.60 326⇓ ePKKPdf P 18 05 55.3 +0.7
L33A Hoskins 82.61 41 P P 18 05 54.4 -0.4
baz=315
EDRB Edirne 82.63 318 eP P 18 05 56.2 +1.3
SPMN Marine on St. 82.63 37 P P 18 05 54.5 -0.4
baz=318,SNR=5.6
SPMN Marine on St. 82.63 37 eP P 18 05 55.1 +0.2
comp=Z,77nm,1.4s
BNM Barren Site 82.66 52 eP P 18 05 56.2 +0.7
N31A Bailey Ranch, 82.66 43 P P 18 05 54.3 -0.8
baz=314
PKS6 Bocsa 82.68 325⇓ ePKKPdf P 18 05 54.6 -0.5
BGNE Belgrade 82.68 42 P P 18 05 54.7 -0.6
baz=315,SNR=5.2
BGNE Belgrade 82.68 42 eP P 18 05 54.9 -0.3
comp=Z,66nm,0.9s
RAYN Ar Rayn 82.69 294 eP P 18 05 55.8 +0.2
comp=Z,32nm,0.9s
RAYN LR LR
comp=Z,771nm,19.0s
TOTH TOTAH 82.71 307 iP P 18 05 56.8 +1.2
PPT2 Papeete2 82.75 119 eS S 18 16 05.6 -7.6
comp=Z,2μm,32.8s
PPT2 Papeete2 82.75 119 eLR LR 18 30 59.4
comp=Z,1μm,33.8s
NKC Novy Kostel 82.81 331⇓ eP P 18 05 56.7 +1.0
NKC epP PcP 18 06 00.3 -0.3
NKC Novy Kostel 82.81 331 eP P 18 05 56.7 +1.0
NKC e 18 06 00.3
J35A Milford 82.81 39 P P 18 05 55.1 -0.8
baz=316
SHUT Suhut-Afyon 82.82 314 eP P 18 05 57.6 +1.5
TVSB Tavsanli 82.82 315 eP P 18 05 56.2 +0.1
K34A Le Mars 82.85 40 P P 18 05 55.7 -0.4
baz=316,SNR=12
PKST T"s 82.86 327⇓ ePKKPdf P 18 05 56.2 +0.2
KCTX Karacabey (Bur 82.87 316 eP P 18 05 56.7 +0.5
TIAR Tiarei 82.89 118 eP P 18 05 57.5 +1.0
comp=Z,18nm,0.9s
O31A Woolen Ranch, 82.92 44 P P 18 05 55.7 -0.8
baz=314
I36A Fitzsimmons Fa 82.93 38 P P 18 05 56.3 -0.2
baz=317
121A Cookes Peak, D 82.97 54 P P 18 05 57.9 +0.8
baz=310,SNR=18
121A Cookes Peak, D 82.97 54 eP P 18 05 58.2 +1.1
comp=Z,41nm,0.8s
MRMT Marmara Adasi 83.05 317 eP P 18 05 57.3 +0.1
H37A Dierke Farm, C 83.05 37 P P 18 05 56.9 -0.2
baz=318,SNR=10
N32A Stulken Farm, 83.06 43 P P 18 05 56.2 -1.1
baz=315
M33A Taylor Creek F 83.07 42 P P 18 05 56.7 -0.6
baz=315
EDC Edincik 83.08 317 eP P 18 05 58.6 +1.3
HSIG 83.12 59 eP P 18 05 57.6 -0.1
comp=Z,49nm,1.2s
SOP Sopron 83.17 328⇓ ePKKPdf P 18 05 58.8 +1.2
THZ Tophouse 83.21 159 eP P 18 05 56.8 -0.9
comp=Z,32nm,1.1s
RKY Sarkoy-Tekirda 83.21 317 eP P 18 05 58.6 +0.6
L34A Svendsen Farm, 83.22 41 P P 18 05 57.6 -0.4
baz=316,SNR=5.4
BFZ Birch Farm 83.23 156 eP P 18 05 57.1 -0.6
comp=Z,31nm,0.8s
I37A Lemond, Waseca 83.24 38 P P 18 05 58.3 +0.2
baz=318,SNR=18
KHC Kasperske Hory 83.25 330⇓ iP P 18 05 58.6 +0.5
KHC ex x 18 06 33.5
KHC ex x 18 09 21.0
KHC eS S 18 16 19.6 +2.0
KHC AMS AMS 18 47 30.0
comp=Z,2μm,17.0s
KHC Kasperske Hory 83.25 330⇓ iP P 18 05 58.6 +0.5
KHC eS S 18 16 19.6 +2.0
KHC MLR MLR
comp=Z,2μm,17.0s
KHC Kasperske Hory 83.25 330 eP P 18 05 57.9 -0.2
comp=Z,16nm,1.0s
LFK Lefkose 83.26 310 eP P 18 05 58.3 0.0
PKS9 Tamasi 83.26 326⇓ ePKKPdf P 18 05 58.4 +0.3
K35A Storm Lake 83.27 40 P P 18 05 57.8 -0.4
baz=316
CONA Conrad Observa 83.27 328 iP P 18 05 59.4 +1.1
comp=Z,47nm,0.9s,SNR=33
J36A Seneca 1, Swea 83.28 39 P P 18 05 57.8 -0.4
baz=317,SNR=8.8
SNZO South Karori 83.32 158 PFAKE 18 06 10.0 +12
SNZO LR LR
comp=Z,558nm,19.0s
ISP Isparta 83.33 313 eP P 18 05 59.0 +0.2
ISP Isparta 83.33 313 P P 18 05 58.8 0.0
ISP Isparta 83.33 313 eP P 18 05 59.3 +0.5
ISP pmax pmax
comp=Z,39nm,0.9s
ISP MLR MLR
comp=Z,581nm,19.0s
ISP Isparta 83.33 313 eP P 18 05 59.3 +0.5
comp=Z,38nm,0.9s
ISP LR LR
comp=Z,581nm,19.0s
ESK Eskdalemuir 83.33 342 eP P 18 05 59.6 +1.3
ESK pmax pmax
comp=Z,195nm,1.8s
ESK Eskdalemuir 83.33 342 eP P 18 05 59.6 +1.3
comp=Z,195nm,1.8s
KRBG Karabiga-Canak 83.36 317 eP P 18 05 59.9 +1.2
WTSB Winterswijk 83.39 335 iP P 18 05 58.9 +0.3
comp=Z,254nm,2.4s
O32A Brockman Farm, 83.42 43 P P 18 05 57.8 -1.3
baz=315
GEC2 GERESS Array S 83.43 330 eP P 18 05 59.5 +0.4
GEC2 pmax pmax
comp=Z,21nm,1.0s
GEC2 GERESS Array S 83.43 330 eP P 18 05 59.5 +0.4
comp=Z,21nm,1.0s
GERES GERESS Array B 83.43 330 P P 18 05 59.7 +0.7
comp=Z,9.9nm,0.9s,baz=36,slow=5.0,SNR=61
GERES PP PP 18 09 13.2 +2.9
comp=Z,0.9nm,0.8s,baz=41,slow=9.1,SNR=3.5
M34A Aspy Farms, Fr 83.44 41 P P 18 05 58.6 -0.5
baz=316
PGB Panagyurishte 83.46 320 eP P 18 05 59.8 +0.5
MAMC Mammari 83.52 310 P P 18 06 01.6 +1.9
N33A J Bar K, Exete 83.53 42 P P 18 05 58.7 -0.9
baz=315
BCK Bucak 83.54 313 eP P 18 05 59.7 -0.1
BALB Balikesir 83.57 316 eP P 18 06 00.8 +1.1
ERIK Erikli-Kesan 83.58 317 eP P 18 06 01.1 +1.2
CSS Mathiatis 83.59 310 eP P 18 05 59.0 -1.1
CSS Mathiatis 83.59 310 P P 18 06 01.7 +1.6
CSS Mathiatis 83.59 310 P P 18 06 01.0 +0.9
CSS Mathiatis 83.59 310 eP P 18 06 00.6 +0.6
comp=Z,22nm,0.8s
CSS LR LR
comp=Z,111nm,19.0s
CBKS Cedar Bluff 83.62 45 P P 18 05 59.5 -0.7
baz=314
COWI Conover 83.67 34 PFAKE 18 06 10.0 +10
COWI LR LR
comp=Z,516nm,20.0s
ALN Alexandroupoli 83.67 318 eP P 18 06 01.8 +1.5
ALN Alexandroupoli 83.67 318 P P 18 05 59.0 -1.3
ALN Alexandroupoli 83.67 318 P P 18 05 59.0 -1.3
ALN Alexandroupoli 83.67 318 P P 18 05 59.0 -1.3
J37A Redenius Farm, 83.68 39 P P 18 05 59.9 -0.4
baz=318,SNR=10
P32A Huiting Farm, 83.69 44 P P 18 05 59.7 -0.8
baz=315,SNR=7.6
GRFO Grafenberg 83.71 332 eP P 18 06 01.5 +1.1
GRFO pmax pmax
comp=Z,376nm,2.0s
GRFO Grafenberg 83.71 332 eP P 18 06 01.5 +1.1
comp=Z,376nm,2.0s
K36A Gilmore City 83.72 40 P P 18 06 00.2 -0.4
baz=317
ENEZ Enez 83.73 318 eP P 18 06 00.2 -0.4
ENEZ Enez 83.73 318 P P 18 05 59.8 -0.8
I38A Scanlan Farm, 83.74 37 P P 18 06 00.4 -0.2
baz=318,SNR=13
LEF Lefka 83.75 310 eP P 18 05 59.4 -1.4
GELI Tayfur-Gelibol 83.80 317 eP P 18 06 02.0 +1.0
ALFC Alefka 83.91 310 P P 18 06 02.9 +1.2
KULA Kula-Manisa 83.92 315 eP P 18 06 01.3 -0.4
KULA Kula-Manisa 83.92 315 P P 18 06 02.0 +0.3
KULA Kula-Manisa 83.92 315 P P 18 06 02.0 +0.3
VTS Vitosha 83.92 321⇑ iP P 18 06 03.0 +1.2
VTS Vitosha 83.92 321 P P 18 06 02.0 +0.3
VTS Vitosha 83.92 321 eP P 18 06 02.4 +0.6
VTS pmax pmax
comp=Z,55nm,1.0s
VTS Vitosha 83.92 321 eP P 18 06 02.1 +0.3
VTS Vitosha 83.92 321 eP P 18 06 02.4 +0.6
comp=Z,55nm,1.0s
O33A Hebron 83.92 43 P P 18 06 00.1 -1.6
baz=315
M35A Neola 83.94 41 P P 18 06 01.4 -0.3
baz=316
TAOE Nuku Hiva Isla 83.94 106 eLR LR 18 31 44.7
comp=Z,867nm,35.3s
ARSA Arzberg 83.94 328 iP P 18 06 02.1 +0.5
comp=Z,18nm,0.8s,SNR=13
N34A Lincoln 83.96 42 P P 18 06 00.7 -1.2
baz=316
LTZ Lake Taylor 83.98 160 eP P 18 06 02.5 +0.9
comp=Z,157nm,1.9s
SCHQ Schefferville 83.99 18 P P 18 06 01.9 +0.2
comp=Z,25nm,0.9s,baz=352,slow=6.2,SNR=14
SCHQ Schefferville 83.99 18 eP P 18 06 02.0 +0.3
MOA Molln 83.99 329 iP P 18 06 02.3 +0.4
comp=Z,39nm,1.3s,SNR=18
SZAC Souni 84.00 310 P P 18 06 03.6 +1.4
L36A Harm Buss Farm 84.00 40 P P 18 06 01.6 -0.4
baz=317
BEHE Becsehely 84.02 327⇓ ePKKPdf P 18 06 02.6 +0.6
K37A Belmond 84.04 39 P P 18 06 01.5 -0.7
baz=317,SNR=10
AKS Akhisar 84.14 316 eP P 18 06 04.0 +1.3
Q32A Meitler Ranch, 84.16 44 P P 18 06 02.2 -0.7
baz=315,SNR=6.3
J38A Wedel Dairy, R 84.20 38 P P 18 06 02.5 -0.6
baz=318,SNR=7.1
DENT Denizli 84.23 314 eP P 18 06 01.3 -2.0
GADA Gvkgeada 84.25 317 P P 18 06 02.8 -0.5
GADA Gvkgeada 84.25 317 P P 18 06 02.8 -0.5
EZN Ezine 84.28 317 eP P 18 06 04.4 +0.9
EZN Ezine 84.28 317 P P 18 06 03.3 -0.1
EZN Ezine 84.28 317 P P 18 06 03.3 -0.1
EZN Ezine 84.28 317 P P 18 06 03.3 -0.1
P33A Williams Farm, 84.32 44 P P 18 06 02.9 -0.8
baz=315
O34A Beatrice 84.33 42 P P 18 06 02.7 -1.0
baz=316
N35A Tabor 84.40 41 P P 18 06 03.5 -0.5
baz=316,SNR=7.7
M36A Felix, Anita 84.41 41 P P 18 06 03.8 -0.3
baz=317,SNR=8.3
KAVA Kavala 84.41 319 P P 18 06 03.8 -0.3
KAVA Kavala 84.41 319 P P 18 06 03.8 -0.3
OXZ Oxford 84.42 160 eP P 18 06 03.2 -0.5
comp=Z,155nm,1.8s
ELL Elmali 84.42 313 eP P 18 06 04.3 -0.1
L37A Phoenix Point, 84.45 39 P P 18 06 03.9 -0.4
baz=317
R32A Long Quarter, 84.47 45 P P 18 06 03.7 -0.8
baz=315
NVR Nevrokopi 84.49 319 P P 18 06 04.6 +0.1
NVR Nevrokopi 84.49 319 P P 18 06 04.6 +0.1
KKB Krupnik 84.51 320 eP P 18 06 05.7 +1.1
RPZ Rata Peaks 84.53 161 P P 18 06 03.0 -1.3
comp=Z,5.6nm,0.4s,baz=66,slow=7.0,SNR=5.5
Q33A Connelly Farm, 84.55 44 P P 18 06 04.1 -0.8
baz=315,SNR=6.6
K38A Parkersburg 84.56 39 P P 18 06 04.6 -0.2
baz=318
PERS Pernice 84.60 328⇓ eP P 18 06 05.2 +0.2
comp=Z,100nm,1.1s
PERS eS S 18 16 31.8 +0.5
PERS e 18 17 20.4
SOKA Soboth 84.60 328 iP P 18 06 05.2 +0.2
comp=Z,50nm,0.9s,SNR=38
O35A Humboldt 84.69 42 P P 18 06 04.5 -1.0
baz=316
HGN Heimansgroeve 84.70 335 iP P 18 06 05.5 +0.2
comp=Z,198nm,1.8s
HGN Heimansgroeve 84.70 335 eS S 18 16 31.9 0.0
HGN eSS SS 18 22 09.3 +7.2
P34A Walnut Farm, R 84.71 43 P P 18 06 04.9 -0.8
baz=316,SNR=12
PRK Paraskevi 84.72 317 P P 18 06 05.6 -0.1
PRK Paraskevi 84.72 317 P P 18 06 05.6 -0.1
PRK Paraskevi 84.72 317 P P 18 06 05.6 -0.1
AYDB Zeytinkoy-Aydi 84.75 315 eP P 18 06 04.9 -1.2
BEBN Eben Emael 84.76 335 P P 18 06 06.5 +0.9
IZM Izmir 84.78 315 eP P 18 06 06.2 +0.1
N36A Muff Farm, Cla 84.79 41 P P 18 06 06.1 +0.1
baz=317,SNR=5.6
SRS Serrai 84.80 319 P P 18 06 04.4 -1.7
SRS Serrai 84.80 319 P P 18 06 04.4 -1.7
SRS Serrai 84.80 319 P P 18 06 04.4 -1.7
MEM Membach 84.81 335 P P 18 06 06.5 +0.7
M37A Trindle Farm, 84.83 40 P P 18 06 06.3 +0.1
baz=317
L38A Oak Wood Farm, 84.84 39 P P 18 06 05.6 -0.7
baz=318,SNR=5.3
LIA Limnos Island 84.85 318 P P 18 06 05.6 -0.7
LIA Limnos Island 84.85 318 P P 18 06 05.6 -0.7
S32A Newby Ranch, P 84.85 45 P P 18 06 06.2 -0.2
baz=315
GOLS Golise 84.87 327 eP P 18 06 06.3 -0.1
SCIA State Center 84.88 39 PFAKE 18 06 20.0 +14
SCIA LR LR
comp=Z,460nm,20.0s
LBZ Lake Benmore 84.93 162 eP P 18 06 06.4 +0.1
comp=Z,154nm,1.9s
OBKA Obir 84.94 328 iP P 18 06 06.6 -0.1
comp=Z,15nm,0.8s,SNR=9.7
OBKA ePP PP 18 09 23.5 +0.8
comp=Z,11nm,1.4s
R33A Olander Ranch, 84.96 44 P P 18 06 06.3 -0.7
baz=315
SIGR SIGRI 84.98 317 P P 18 06 06.6 -0.4
SIGR SIGRI 84.98 317 P P 18 06 06.6 -0.4
FETY Fethiye 84.98 313 P P 18 06 06.8 -0.3
FETY Fethiye 84.98 313 P P 18 06 06.8 -0.3
KBA Koelnbreinsper 84.99 329 iP P 18 06 07.1 0.0
comp=Z,28nm,0.9s,SNR=16
MNTX Cornudas Mount 85.05 53 P P 18 06 07.8 +0.2
baz=312,SNR=38
MNTX Cornudas Mount 85.05 53 eP P 18 06 07.6 0.0
comp=Z,35nm,1.1s
MNTX LR LR
comp=Z,413nm,19.0s
YER Yerkesik 85.09 314 P P 18 06 07.2 -0.5
YER Yerkesik 85.09 314 P P 18 06 07.2 -0.5
YER Yerkesik 85.09 314 P P 18 06 07.2 -0.5
Q34A Chapman 85.10 43 P P 18 06 07.2 -0.4
baz=316
KNT Kendrikon 85.12 320 P P 18 06 07.8 +0.1
KNT Kendrikon 85.12 320 P P 18 06 07.8 +0.1
KNT Kendrikon 85.12 320 P P 18 06 07.8 +0.1
SOH Sokhos 85.14 319 P P 18 06 07.8 0.0
SOH Sokhos 85.14 319 P P 18 06 07.8 0.0
SOH Sokhos 85.14 319 P P 18 06 07.8 0.0
KSU1 Kansas State U 85.15 43 P P 18 06 07.3 -0.5
baz=316
KSU1 Kansas State U 85.15 43 eP P 18 06 07.9 0.0
comp=Z,54nm,0.9s
KSU1 LR LR
comp=Z,436nm,19.0s
P35A Duane Minner, 85.16 43 P P 18 06 07.1 -0.8
baz=316,SNR=8.2
MSTX Muleshoe 85.16 50 P P 18 06 07.8 -0.4
baz=313,SNR=6.5
MSTX Muleshoe 85.16 50 eP P 18 06 08.7 +0.5
comp=Z,26nm,1.1s
OUR Ouranopolis 85.17 319 eP P 18 06 07.8 0.0
OUR Ouranopolis 85.17 319 P P 18 06 01.6 -6.3
OUR Ouranopolis 85.17 319 P P 18 06 01.6 -6.3
OUR Ouranopolis 85.17 319 P P 18 06 01.6 -6.3
CWF Charnwood Fore 85.17 340 eP P 18 06 08.7 +1.0
comp=Z,24nm,1.2s
VAY Valandovo 85.17 320 P P 18 06 08.0 +0.1
VAY Valandovo 85.17 320 iP P 18 06 09.1 +1.2
VAY Valandovo 85.17 320 P P 18 06 08.0 +0.1
VAY Valandovo 85.17 320 P P 18 06 08.0 +0.1
AMTX Amarillo 85.20 49 P P 18 06 08.9 +0.6
baz=313
AMTX Amarillo 85.20 49 eP P 18 06 09.0 +0.6
comp=Z,64nm,0.8s
BCLA Clavier 85.20 335 P P 18 06 08.2 +0.3
comp=Z,43nm,1.9s
N37A Lee Faris, Mou 85.22 41 P P 18 06 08.3 +0.1
baz=317,SNR=10
MYKA Terra Mystica 85.22 328 iP P 18 06 07.5 -0.7
comp=Z,20nm,1.0s,SNR=11
MYKA ePP PP 18 09 25.8 +0.8
comp=Z,7.1nm,1.0s
T32A Huddler Ranch, 85.22 46 P P 18 06 08.4 0.0
baz=315
STU Stuttgart 85.22 332 eP P 18 06 09.3 +1.2
STU pmax pmax
comp=Z,112nm,1.2s
STU Stuttgart 85.22 332 eP P 18 06 09.2 +1.2
comp=Z,112nm,1.2s
M38A Pleasantville 85.25 40 P P 18 06 08.0 -0.3
baz=318,SNR=13
SKO Skopje 85.26 321 P P 18 06 09.2 +0.8
SKO Skopje 85.26 321 iP P 18 06 09.9 +1.5
SKO Skopje 85.26 321 P P 18 06 09.2 +0.8
SKO Skopje 85.26 321 P P 18 06 09.2 +0.8
O36A Bolckow 85.28 42 P P 18 06 08.1 -0.4
baz=317,SNR=5.2
LJU Ljubljana 85.32 328⇓ iP P 18 06 08.3 -0.2
R34A Isabella, Hill 85.37 44 P P 18 06 08.6 -0.4
baz=316
PLG Polygyros 85.42 319 P P 18 06 08.8 -0.4
PLG Polygyros 85.42 319 P P 18 06 08.8 -0.4
PLG Polygyros 85.42 319 P P 18 06 08.8 -0.4
BOJS Bojanci 85.43 327⇓ eP P 18 06 09.1 0.0
comp=Z,369nm,3.3s
HORT Hortiatis 85.43 319 eP P 18 06 08.2 -1.1
HORT Hortiatis 85.43 319 P P 18 06 08.6 -0.8
HORT Hortiatis 85.43 319 P P 18 06 08.6 -0.8
S33A Kaszmaul Farm, 85.45 45 P P 18 06 09.2 -0.2
baz=315,SNR=8.6
SNF Seneffe 85.46 336 P P 18 06 10.0 +0.9
THE Thessaloniki 85.48 319 P P 18 06 08.2 -1.2
THE Thessaloniki 85.48 319 P P 18 06 08.2 -1.2
THE Thessaloniki 85.48 319 P P 18 06 08.2 -1.2
WATA Walderalm 85.49 330 iP P 18 06 09.7 +0.1
comp=Z,22nm,1.0s,SNR=8.0
WTTA Wattenberg 85.53 330 iPcP P 18 06 10.2 +0.4
comp=Z,21nm,1.2s,SNR=9.1
GRG Griva 85.53 320 eP P 18 06 08.8 -1.0
GRG Griva 85.53 320 P P 18 06 08.9 -0.9
GRG Griva 85.53 320 P P 18 06 08.9 -0.9
GRG Griva 85.53 320 P P 18 06 08.9 -0.9
P36A Good Intent, A 85.53 42 P P 18 06 08.8 -0.9
baz=317,SNR=14
LANF Langenberg 85.56 333 eP P 18 06 10.0 +0.3
WLF Walferdange 85.56 334 P P 18 06 10.9 +1.3
comp=Z,67nm,2.0s
WLF Walferdange 85.56 334 eP P 18 06 11.0 +1.3
WLF pmax pmax
comp=Z,223nm,1.8s
WLF MLR MLR
comp=Z,1μm,20.0s
WLF Walferdange 85.56 334 eP P 18 06 11.0 +1.3
comp=Z,223nm,1.8s
WLF LR LR
comp=Z,1μm,20.0s
JFWS Jewell Farm 85.58 37 PFAKE 18 06 20.0 +10
JFWS LR LR
comp=Z,622nm,21.0s
ABTA Abfaltersbach 85.59 329 iP P 18 06 09.1 -0.9
comp=Z,26nm,1.2s,SNR=11
PAIG Paliouri 85.62 319 P P 18 06 10.0 -0.2
PAIG Paliouri 85.62 319 P P 18 06 10.0 -0.2
PAIG Paliouri 85.62 319 P P 18 06 10.0 -0.2
JAVS Javornik 85.63 328⇓ eP P 18 06 09.3 -1.0
comp=Z,103nm,1.2s
JAVS eS S 18 16 40.8 -0.9
JAVS e 18 17 35.1
MOTA Moosalm 85.67 330 iPcP P 18 06 11.5 +1.0
comp=Z,31nm,0.9s,SNR=23
T33A Patterson Ranc 85.68 45 P P 18 06 10.4 -0.2
baz=315,SNR=6.8
O37A Wolven Farm, M 85.69 41 P P 18 06 10.6 +0.1
baz=317,SNR=10
RETA Reutte 85.69 331 iPcP P 18 06 11.0 +0.5
comp=Z,65nm,1.0s,SNR=30
N38A Joes South For 85.69 40 P P 18 06 10.1 -0.4
baz=318
DOU Dourbes 85.71 335 P P 18 06 10.9 +0.5
comp=Z,24nm,2.0s
DOU AP pP 18 06 14.7 -1.6
U32A Winter Ranch, 85.74 46 P P 18 06 11.1 +0.2
baz=315
HRFI Mount Harif 85.78 305 eP P 18 06 10.7 -0.5
ARG Arkhangelos 85.82 313 P P 18 06 12.2 +0.9

ARG **Arkhangelos** 85.82 313 P **P** 18 06 12.2 +0.9
ARG **Arkhangelos** 85.82 313 P **P** 18 06 12.2 +0.9
Q36A **Arnold C. Orve** 85.87 43 P **P** 18 06 10.5 -0.9
baz=317,SNR=7.0
S34A **Willow Spring** 85.87 44 P **P** 18 06 11.1 -0.4
baz=316,SNR=11
TRI **Trieste** 85.91 328 *e*P **P** 18 06 10.4 -1.1
TRI pmax pmax
comp=Z,29nm,1.0s
TRI **Trieste** 85.91 328 *e*P **P** 18 06 10.4 -1.1
comp=Z,29nm,1.0s
BFO **Black Forest** 85.91 332 *e*P **P** 18 06 10.8 -0.7
BFO MLR MLR
comp=Z,773nm,19.0s
BFO **Black Forest** 85.91 332 *e*P **P** 18 06 10.8 -0.7
BFO LR LR
comp=Z,773nm,19.0s
R35A **Emporia Munici** 85.93 43 P **P** 18 06 11.8 +0.1
baz=316,SNR=21
SKDS **Skadanscina** 85.93 328 *e*P **P** 18 06 10.5 -1.1
PDG **Podgorica** 85.98 323 P **P** 18 06 11.4 -0.5
TTG **Podgorica** 85.98 323 P **P** 18 06 11.4 -0.5
TTG **Podgorica** 85.98 323 P **P** 18 06 11.4 -0.5
P37A **Lathrop** 86.00 42 P **P** 18 06 11.6 -0.6
baz=317,SNR=9.3
N39A **Derby Farms, D** 86.00 40 P **P** 18 06 11.9 -0.2
baz=318,SNR=15
BIA **Bitola** 86.03 321 *i* P **P** 18 06 12.5 +0.2
AOS **Alonnisos** 86.07 318 P P 18 06 06.6 -5.8
AOS **Alonnisos** 86.07 318 P P 18 06 06.6 -5.8
O38A **Galt** 86.07 41 P **P** 18 06 12.2 -0.2
baz=318
EIL **Elat** 86.08 305 *e*P **P** 18 06 12.9 +0.3
FETA **Feichten** 86.08 330 *i* PcP **P** 18 06 12.6 0.0
comp=Z,32nm,1.0s,SNR=17
MENF **Mencas** 86.09 337 *e*P **P** 18 06 13.2 +0.9
LIT **Litokhoron** 86.11 319 P **P** 18 06 11.0 -1.7
LIT **Litokhoron** 86.11 319 P **P** 18 06 11.0 -1.7
LIT **Litokhoron** 86.11 319 P **P** 18 06 11.0 -1.7
FNA **Florina** 86.18 320 *e*P **P** 18 06 13.8 +0.8
FNA **Florina** 86.18 320 P **P** 18 06 11.6 -1.4
FNA **Florina** 86.18 320 P **P** 18 06 11.6 -1.4
FNA **Florina** 86.18 320 P **P** 18 06 11.6 -1.4
V32A **Arapaho** 86.18 47 P **P** 18 06 13.6 +0.5
baz=315,SNR=12
DAVA **Damuels** 86.19 331 *i* PcP **P** 18 06 13.3 +0.2
comp=Z,68nm,1.1s,SNR=27
WLS **Welschbruch** 86.19 333⇑ *e*P **P** 18 06 13.4 +0.5
U33A **Lingo Farm, Me** 86.21 46 P **P** 18 06 13.1 -0.1
baz=315,SNR=8.6
OHR **Ohrid** 86.22 321 *i* P **P** 18 06 13.7 +0.5
R36A **Gordon, Harris** 86.31 43 P **P** 18 06 13.4 -0.2
baz=317,SNR=20
T34A **McClaskey Farm** 86.31 45 P **P** 18 06 13.8 +0.1
baz=316,SNR=10
S35A **Otter Creek Ra** 86.32 44 P **P** 18 06 13.7 -0.1
baz=316,SNR=33
KZN **Kozani** 86.33 320 P **P** 18 06 13.0 -0.8
KZN **Kozani** 86.33 320 P **P** 18 06 13.0 -0.8
KZN **Kozani** 86.33 320 P **P** 18 06 13.0 -0.8
FYTO **Fytoko, Volos** 86.39 319 P **P** 18 06 13.1 -0.9
FYTO **Fytoko, Volos** 86.39 319 P **P** 18 06 13.1 -0.9
P38A **Dawn** 86.40 41 P **P** 18 06 14.0 -0.1
baz=318,SNR=12
ECH **Echery** 86.43 333 *e*P **P** 18 06 14.2 +0.1
O39A **Kirksville** 86.45 40 P **P** 18 06 14.0 -0.3
baz=318,SNR=5.1
Q37A **Longview Farm,** 86.47 42 P **P** 18 06 13.6 -0.8
baz=317
W32A **Sentinel** 86.48 47 P **P** 18 06 15.0 +0.4
baz=315,SNR=7.1
TIR **Tirane** 86.51 322 PFAKE 18 06 20.0 +5.5
TIR LR LR
comp=Z,776nm,19.0s
U34A **Anderson Ranch** 86.53 46 P **P** 18 06 14.7 -0.1
baz=316,SNR=18
U34A **Anderson Ranch** 86.53 46 *e*P **P** 18 06 15.7 +0.9
comp=Z,94nm,0.8s
V33A **Lossen Ranch,** 86.54 46 P **P** 18 06 14.8 -0.1
baz=315
FUORN **Ofenpass-Fuorn** 86.59 330 *e*P **P** 18 06 15.6 +0.4
comp=Z,73nm,1.0s
NEST **Nestorio** 86.62 320 P **P** 18 06 15.2 0.0
R37A **Teagarden Farm** 86.68 43 P **P** 18 06 14.6 -0.8
baz=317
S36A **Lake Cedric, C** 86.69 44 P **P** 18 06 15.0 -0.6
baz=317,SNR=9.0
VLDQ **Val d'Or** 86.74 27 *e*P **P** 18 06 14.6 -1.0
MOF **Molkenrain** 86.75 333 *e*P **P** 18 06 15.8 +0.1
THL **Klokotos Trika** 86.76 319 P **P** 18 06 13.4 -2.4
TBI **Tubuai** 86.76 123 *e*S **S** 18 16 47.1 -5.6
comp=Z,685nm,34.0s
TBI **Tubuai** 86.76 123 *e*LR LR 18 32 38.0
comp=Z,657nm,36.8s
T35A **Sooner Cattle** 86.77 45 P **P** 18 06 15.7 -0.2
baz=316,SNR=8.1
Q38A **Cooks Store, C** 86.85 42 P **P** 18 06 15.5 -0.8
baz=318,SNR=8.6
O40A **La Belle** 86.89 40 P **P** 18 06 16.1 -0.3
baz=319,SNR=11
P39A **Salisbury** 86.91 41 P **P** 18 06 16.4 -0.2
baz=318,SNR=7.5
W33A **Caddo, Fort Co** 86.91 47 P **P** 18 06 17.5 +0.8
baz=315,SNR=5.9
LKR **Lokris** 86.92 318 P **P** 18 06 15.2 -1.4
LKR **Lokris** 86.92 318 P **P** 18 06 15.2 -1.4
X32A **Elmer** 86.94 48 P **P** 18 06 16.8 -0.1
baz=315,SNR=6.4
V34A **Guthrie** 86.97 46 P **P** 18 06 17.1 +0.2
baz=316,SNR=15
V34A **Guthrie** 86.97 46 *e*P **P** 18 06 17.4 +0.4
comp=Z,77nm,0.8s
T36A **Boggs Farm, Ca** 87.01 44 P **P** 18 06 17.2 +0.1
baz=316,SNR=16
WMOK **Wichita Mounta** 87.02 47 *e*P **P** 18 06 17.3 +0.1
WMOK pmax pmax
comp=Z,96nm,1.8s
WMOK MLR MLR
comp=Z,437nm,19.0s
WMOK **Wichita Mounta** 87.02 47 *e*P **P** 18 06 17.3 +0.1
comp=Z,96nm,1.8s
WMOK LR LR
comp=Z,437nm,19.0s
U35A **Pawnee** 87.03 45 P **P** 18 06 16.8 -0.4
baz=316
TUE **Stuetta** 87.07 331 *e*P **P** 18 06 17.6 +0.1
comp=Z,42nm,1.2s
TUE LR LR
comp=Z,783nm,20.0s
S37A **Fort Scott** 87.08 43 P **P** 18 06 16.6 -0.8
baz=317,SNR=5.5
Q39A **Willow Grove F** 87.12 41 P **P** 18 06 17.2 -0.4
baz=318,SNR=19
SLBS **Sierra La Lagu** 87.21 62 *e*P **P** 18 06 19.9 +1.6
comp=Z,46nm,1.1s
SANT **Santorini** 87.23 315 PFAKE 18 06 30.0 +12
SANT LR LR
comp=Z,620nm,19.0s
P40A **Paris** 87.24 40 P **P** 18 06 18.1 -0.1
baz=319,SNR=16
W34A **Bridge Creek,** 87.25 47 P **P** 18 06 18.3 -0.1
baz=315,SNR=5.4
W34A **Bridge Creek,** 87.25 47 *e*P **P** 18 06 19.3 +0.9
comp=Z,64nm,1.0s
R38A **Fenwick Farm,** 87.27 42 P **P** 18 06 17.3 -1.0
baz=318,SNR=5.3
LOMF **Lomont** 87.28 333 *e*P **P** 18 06 18.4 +0.1
JAN **Janina** 87.29 320 P **P** 18 06 17.0 -1.4
JAN **Janina** 87.29 320 P **P** 18 06 17.0 -1.4
JAN **Janina** 87.29 320 P **P** 18 06 17.0 -1.4
X33A **Lawton** 87.32 47 P **P** 18 06 18.2 -0.4
baz=315
EVR **Evrytania** 87.34 319 P **P** 18 06 17.6 -1.2
EVR **Evrytania** 87.34 319 P **P** 18 06 17.6 -1.2
V35A **Meyer Ranch, C** 87.41 46 P **P** 18 06 18.9 -0.2
baz=316
T37A **Cheneyville 18** 87.50 44 P **P** 18 06 19.0 -0.4
baz=317
U36A **Oologah** 87.58 45 P **P** 18 06 19.3 -0.5
baz=316
Y33A **Hilltop Ranch,** 87.62 48 P **P** 18 06 19.7 -0.4
baz=315
Q40A **Laux Farm, Aux** 87.63 41 P **P** 18 06 19.6 -0.4
baz=319,SNR=8.5
R39A **Chumby, Stover** 87.63 42 P **P** 18 06 19.1 -0.9
baz=318,SNR=11
IGT **Igoumenitsa** 87.64 320 P **P** 18 06 19.6 -0.5
IGT **Igoumenitsa** 87.64 320 P **P** 18 06 19.6 -0.5
IGT **Igoumenitsa** 87.64 320 P **P** 18 06 19.6 -0.5
X34A **Smith Ranch, M** 87.67 47 P **P** 18 06 20.6 +0.3
baz=315
S38A **Stockton** 87.67 43 P **P** 18 06 19.0 -1.3
baz=318,SNR=6.1
TX31 **Lajitas Ar. Si** 87.73 54 *e*P **P** 18 06 20.3 -0.5
TXAR **Lajitas Array** 87.73 54 P **P** 18 06 21.3 +0.4
comp=Z,11nm,0.8s,baz=302,slow=3.5,SNR=95
TXAR PP **PP** 18 09 46.4 +0.5
comp=Z,1.0nm,0.8s,baz=291,slow=5.7,SNR=4.9
TXAR PKKPbc **PKKPbc** 18 24 04.6 -2.2
comp=Z,0.2nm,0.6s,baz=156,slow=2.5,SNR=2.5
LAKA **Lakka** 87.76 318 P **P** 18 06 19.6 -1.1
LAKA **Lakka** 87.76 318 P **P** 18 06 19.6 -1.1
W35A **Tecumseh** 87.83 46 P **P** 18 06 20.8 -0.3
baz=316
HDIL **Hopedale** 87.84 38 P **P** 18 06 21.0 -0.1
baz=320,SNR=9.8
HDIL **Hopedale** 87.84 38 *e*P **P** 18 06 21.5 +0.5
comp=Z,110nm,0.9s
HDIL LR LR
comp=Z,412nm,22.0s
TUL1 **Leonard** 87.89 45 P **P** 18 06 21.3 0.0
baz=316
TUL1 **Leonard** 87.89 45 *e*P **P** 18 06 22.0 +0.6
V36A **Jenks** 87.90 45 P **P** 18 06 21.3 0.0
baz=316,SNR=7.2
T38A **Diamond** 87.90 43 P **P** 18 06 20.8 -0.6
baz=317,SNR=16
PDO **Prodromos** 87.91 319 P **P** 18 06 20.6 -0.8
U37A **Salina** 87.91 44 P **P** 18 06 21.1 -0.3
baz=317,SNR=8.2
S39A **Bolivar** 87.94 42 P **P** 18 06 20.5 -1.1
baz=318,SNR=10
SENIN **Lac Senin/Sane** 87.94 332 *e*P **P** 18 06 22.1 +0.4
comp=Z,45nm,1.5s
ABTX **Abilene, Hawle** 87.99 49 P **P** 18 06 21.8 -0.1
baz=314
ABTX **Abilene, Hawle** 87.99 49 *e*P **P** 18 06 22.5 +0.6
comp=Z,27nm,1.1s
HPIG 88.02 57 *e*P **P** 18 06 23.2 +0.8
comp=Z,34nm,1.2s
Z33A **Whitaker Ranch** 88.05 48 P **P** 18 06 22.1 -0.1
baz=315
R40A **Maddies Statio** 88.05 41 P **P** 18 06 21.6 -0.4
baz=318,SNR=12
LAST **Lasithi** 88.09 314 *e*P **P** 18 06 21.5 -0.9
comp=Z,166nm,1.6s
Y34A **Reagan Ranch,** 88.17 47 P **P** 18 06 22.7 0.0
baz=316,SNR=5.8
OG01 **Vacheresse** 88.20 332⇑ *e*P **P** 18 06 23.0 +0.3
W36A **Wetumka** 88.20 46 P **P** 18 06 22.8 -0.1
baz=316,SNR=6.4
V37A **Hulbert** 88.28 45 P **P** 18 06 22.9 -0.3
baz=317,SNR=14
U38A **Gravette** 88.29 44 P **P** 18 06 22.5 -0.7
baz=317,SNR=9.0
X35A **Drake** 88.31 47 P **P** 18 06 22.8 -0.6
baz=316,SNR=8.0
T39A **Clever** 88.41 43 P **P** 18 06 23.1 -0.7
baz=318,SNR=7.0
AMT **Artemida-Makis** 88.43 318 P **P** 18 06 26.3 +2.4
133A **Hamilton Ranch** 88.43 49 P **P** 18 06 24.1 +0.1
baz=315
S40A **Lebanon** 88.45 42 P **P** 18 06 23.5 -0.5
baz=318,SNR=9.2
Z34A **Collier Ranch,** 88.49 48 P **P** 18 06 23.6 -0.7
baz=315
X36A **Centrahoma** 88.54 46 P **P** 18 06 24.3 -0.2
baz=316,SNR=14
VLC **Villacollemand** 88.57 329 PFAKE 18 06 30.0 +5.6
VLC LR LR
comp=Z,492nm,21.0s
ITM **Ithomi** 88.57 318 P **P** 18 06 22.9 -1.7
ITM **Ithomi** 88.57 318 P **P** 18 06 22.9 -1.7
Y35A **Marietta** 88.62 47 P **P** 18 06 24.4 -0.4
baz=316
HHAR **Hobbs** 88.65 44 *e*P **P** 18 06 24.9 -0.1
comp=Z,27nm,0.9s
W37B **Quinton** 88.65 45 P **P** 18 06 25.2 +0.2
baz=317,SNR=5.8
V38A **Canehill** 88.70 44 P **P** 18 06 24.9 -0.3
baz=317,SNR=21
T40A **Mansfield** 88.77 42 P **P** 18 06 24.7 -0.8
baz=318,SNR=12
ANKY **Antikythira Is** 88.80 316 P **P** 18 06 26.8 +1.2
ANKY **Antikythira Is** 88.80 316 P **P** 18 06 26.8 +1.2
U39A **Green Forest** 88.82 43 P **P** 18 06 25.3 -0.5
baz=318,SNR=25
SLM **Saint Louis** 88.84 40 *e*P **P** 18 06 25.9 +0.1
SLM pmax pmax
comp=Z,82nm,0.8s
SLM **Saint Louis** 88.84 40 *e*P **P** 18 06 25.9 +0.1
comp=Z,82nm,0.8s
233A **Rising Star** 88.86 49 P **P** 18 06 25.8 -0.2
baz=315,SNR=5.0
Z35A **Perchaen, San** 88.91 48 P **P** 18 06 25.8 -0.4
baz=316
134A **White-Moore Ra** 88.96 49 P **P** 18 06 26.7 +0.2
baz=315
DAMY **Dhamar** 89.03 288 *e*P **P** 18 06 28.9 +1.5
comp=Z,38nm,1.1s
SFIN **Lafayette** 89.04 37 P **P** 18 06 26.5 -0.2
baz=322,SNR=12
SFIN **Lafayette** 89.04 37 *e*P **P** 18 06 27.1 +0.5
AAM **Ann Arbor** 89.08 34 PFAKE 18 06 40.0 +13
AAM LR LR
comp=Z,365nm,19.0s
X37A **Clayton** 89.09 46 P **P** 18 06 26.6 -0.4
baz=317,SNR=6.6
V39A **Pettigrew** 89.14 44 P **P** 18 06 26.4 -0.9
baz=318,SNR=17
U40A **Yellville** 89.18 43 P **P** 18 06 26.7 -0.7
baz=318,SNR=34
W38A **Poteau** 89.22 45 P **P** 18 06 27.2 -0.4
baz=317,SNR=9.4
BNI **Bardonecchia** 89.28 332 PFAKE 18 06 40.0 +12
BNI LR LR
comp=Z,987nm,22.0s
333A **Richland Sprin** 89.29 50 P **P** 18 06 27.7 -0.4
baz=315,SNR=8.2
234A **Clairette** 89.33 49 P **P** 18 06 28.2 -0.1
baz=315,SNR=8.9
X38A **Whitesboro** 89.33 45 P **P** 18 06 28.4 +0.2
baz=317,SNR=14
135A **Vickery Place,** 89.37 48 P **P** 18 06 28.2 -0.2
baz=316
JCT **Junction City** 89.39 51 P **P** 18 06 27.9 -0.7
baz=314
JCT **Junction City** 89.39 51 *e*P **P** 18 06 28.8 +0.2
JCT pmax pmax
comp=Z,16nm,0.8s
JCT MLR MLR
comp=Z,440nm,20.0s
JCT **Junction City** 89.39 51 *e*P **P** 18 06 28.8 +0.2
comp=Z,16nm,0.8s
JCT LR LR
comp=Z,440nm,20.0s
Y37A **Hugo** 89.39 46 P **P** 18 06 28.1 -0.3
baz=317
Z36A **Blue Ridge** 89.43 47 P **P** 18 06 28.4 -0.3
baz=316,SNR=5.2
CUC **Castrocucco** 89.51 323 PFAKE 18 06 40.0 +11
CUC LR LR
comp=Z,407nm,19.0s
W39A **Magazine** 89.53 44 P **P** 18 06 28.8 -0.3
baz=318,SNR=6.4
LMQ **La Malbaie** 89.60 23 *e*P **P** 18 06 29.3 +0.1
PLDF **La Plantade** 89.61 334⇑ *e*P **P** 18 06 30.0 +0.7
433A **Art** 89.63 50 P **P** 18 06 29.0 -0.7
baz=315
TIP **Timpagrande** 89.69 322 P **P** 18 06 29.3 -0.6
TIP **Timpagrande** 89.69 322 *e*P **P** 18 06 30.3 +0.4
comp=Z,32nm,1.2s
TIP LR LR
comp=Z,691nm,20.0s
AGO **Saint Agoulin** 89.70 334 *e*P **P** 18 06 30.4 +0.7
334A **Lometa** 89.74 50 P **P** 18 06 30.0 -0.2
baz=315,SNR=23
WHTX **Lake Whitney,** 89.74 49 P **P** 18 06 30.0 -0.2
baz=316,SNR=5.3
WHTX **Lake Whitney,** 89.74 49 *e*P **P** 18 06 30.9 +0.8
OLIL **Olney** 89.83 38 *e*P **P** 18 06 31.1 +0.7
comp=Z,77nm,1.0s
X39A **Fountain Ranch** 89.85 45 P **P** 18 06 30.7 0.0
baz=318,SNR=20
SSB **Saint Sauveur** 89.88 333 *e*P **P** 18 06 31.4 +0.8
SSB MLR MLR
comp=Z,551nm,20.0s
SSB **Saint Sauveur** 89.88 333 *e*P **P** 18 06 31.4 +0.8
SSB LR LR
comp=Z,551nm,20.0s
W40A **Ferguson Farm,** 89.93 44 P **P** 18 06 30.5 -0.4
baz=318,SNR=9.6
Y38A **Idabel** 89.93 46 P **P** 18 06 30.3 -0.7
baz=317
136A **Ennis** 89.94 48 P **P** 18 06 30.5 -0.5
baz=316
Z37A **Pogue Cattle C** 89.95 47 P **P** 18 06 30.8 -0.3
baz=317,SNR=5.9
PYM **Petit Puy Mans** 90.01 334 *e*P **P** 18 06 32.0 +0.8
SIUC **Southern Illin** 90.06 40 *e*P **P** 18 06 32.1 +0.6
comp=Z,74nm,1.0s
434A **Burnet** 90.09 50 P **P** 18 06 31.0 -0.8
baz=315,SNR=7.1
MIAR **Mount Ida** 90.13 44 P **P** 18 06 31.8 -0.1
baz=318,SNR=21
MIAR **Mount Ida** 90.13 44 *e*P **P** 18 06 32.5 +0.6
MIAR pmax pmax
comp=Z,64nm,0.9s
MIAR MLR MLR
comp=Z,506nm,20.0s
MIAR **Mount Ida** 90.13 44 *e*P **P** 18 06 32.5 +0.6
comp=Z,64nm,0.9s
MIAR LR LR
comp=Z,506nm,20.0s
533A **Kerrville** 90.14 51 P **P** 18 06 31.9 -0.2
baz=315
PBMO **Poplar Bluff** 90.15 41 *e*P **P** 18 06 32.3 +0.3
comp=Z,69nm,1.0s
OG26 **St.-Nazaire-De** 90.20 332⇑ *e*P **P** 18 06 33.2 +1.1
BLO **Bloomington** 90.26 37 *e*P **P** 18 06 33.0 +0.6
BLO pmax pmax
comp=Z,78nm,1.5s
BLO **Bloomington** 90.26 37 *e*P **P** 18 06 33.0 +0.6
comp=Z,78nm,1.5s
335A **Moody** 90.27 49 P **P** 18 06 32.8 +0.2
baz=316
Z38A **Mt. Pleasant** 90.28 46 P **P** 18 06 32.3 -0.3
baz=317
WHAR **Wooly Hollow** 90.28 43 *e*P **P** 18 06 32.7 +0.1
comp=Z,61nm,0.9s
Y39A **Lockesburg** 90.28 45 P **P** 18 06 32.3 -0.3
baz=318,SNR=8.3
236A **Katherine and** 90.28 48 P **P** 18 06 32.5 -0.2
baz=316
137A **Heron Place, G** 90.31 47 P **P** 18 06 32.7 0.0
baz=317
LBL **Lubilhac** 90.38 334 *e*P **P** 18 06 33.8 +0.8
W41A **Tony Mavity, V** 90.39 43 P **P** 18 06 32.5 -0.6
baz=319,SNR=12
W41B **Gary Mavity, V** 90.39 43 P **P** 18 06 32.5 -0.6
baz=319,SNR=13
633A **Saathoff Ranch** 90.48 51 P **P** 18 06 33.5 -0.2
baz=315
534A **Blanco** 90.52 51 P **P** 18 06 33.3 -0.6
baz=315,SNR=6.3
435B **Jarrell** 90.53 50 P **P** 18 06 33.6 -0.2
baz=316
336A **Riesel** 90.54 49 P **P** 18 06 33.4 -0.4
baz=316
X40A **Basin Creek Fa** 90.58 44 P **P** 18 06 33.6 -0.4
baz=318,SNR=8.9
UALR **University of** 90.64 44 *e*P **P** 18 06 34.6 +0.4
comp=Z,18nm,0.8s
138A **Matatall Enter** 90.65 47 P **P** 18 06 34.8 +0.4
baz=317
Y40A **Okolona** 90.69 45 P **P** 18 06 34.2 -0.3
baz=318,SNR=9.7
237A **Washetta, Mont** 90.71 48 P **P** 18 06 34.6 0.0
baz=317
Z39A **Irene McRaven,** 90.74 46 P **P** 18 06 34.8 +0.1
baz=317
LONY **Lake Ozonia** 90.76 27 *e*P **P** 18 06 34.5 -0.1
comp=Z,74nm,1.8s
LONY LR LR
comp=Z,418nm,19.0s
832A **Faith Ranch, C** 90.81 53 P **P** 18 06 35.1 0.0
baz=314
CEL **Celeste** 90.83 322 PFAKE 18 06 50.0 +15
CEL LR LR
comp=Z,741nm,20.0s
733A **Divot King Ran** 90.93 52 P **P** 18 06 36.0 +0.2
baz=315
436A **Wall Ranch, Ga** 91.01 49 P **P** 18 06 36.3 +0.2
baz=316
WLAR **White Oak Lake** 91.02 45 *e*P **P** 18 06 37.0 +1.0
comp=Z,96nm,0.9s
139A **Bunkhouse Ranc** 91.04 46 P **P** 18 06 36.2 +0.1
baz=317
ACSO **Alum Creek Sta** 91.06 34 *e*P **P** 18 06 36.6 +0.5
comp=Z,45nm,0.8s
ACSO LR LR
comp=Z,405nm,20.0s
535A **Dale** 91.07 50 P **P** 18 06 36.4 +0.1
baz=316
238A **Jacksonville** 91.11 47 P **P** 18 06 36.8 +0.3
baz=317
WCI **Wyandotte Cave** 91.11 38 *e*P **P** 18 06 37.0 +0.6
WCI pmax pmax
comp=Z,54nm,1.1s
WCI **Wyandotte Cave** 91.11 38 *e*P **P** 18 06 37.0 +0.6
comp=Z,54nm,1.1s
833A **Chaparral WMA,** 91.14 52 P **P** 18 06 36.7 0.0
baz=315
Z40A **Long Farm, Mag** 91.17 45 P **P** 18 06 36.8 +0.1
baz=318,SNR=5.7
734A **La Parita Cree** 91.30 51 P **P** 18 06 37.5 +0.1
baz=315
536A **Bastrop** 91.34 50 P **P** 18 06 37.8 +0.2
baz=316
437A **Phantom Ranch,** 91.36 49 P **P** 18 06 38.1 +0.5
baz=316
635A **Leesville** 91.40 51 P **P** 18 06 38.0 +0.1
baz=316
M54A **Oil Creek Stat** 91.44 32 P **P** 18 06 37.7 -0.2
baz=326
NCB **Newcomb** 91.45 27 PFAKE 18 06 50.0 +12
NCB LR LR
comp=Z,3µm,21.0s
338A **Crockett** 91.47 48 P **P** 18 06 37.9 -0.3
baz=317
239A **Gary** 91.47 47 P **P** 18 06 37.9 -0.3
baz=317
Z41A **Richland Creek** 91.51 45 P **P** 18 06 38.0 -0.3
baz=318
140A **Cam and Jess,** 91.53 46 P **P** 18 06 38.5 +0.1
baz=318
NATX **Nacogdoches** 91.55 47 P **P** 18 06 38.5 -0.1
baz=317
NATX **Nacogdoches** 91.55 47 PFAKE 18 06 50.0 +11
NATX LR LR
comp=Z,642nm,19.0s
Y42A **Garnett, Star** 91.64 44 P **P** 18 06 39.0 +0.1
baz=319
933A **Laredo** 91.72 53 P **P** 18 06 40.1 +0.7
baz=315
735A **Kenedy** 91.76 51 P **P** 18 06 39.4 -0.2
baz=316
N54A **Moraine State** 91.76 32 P **P** 18 06 39.3 -0.1
baz=326
537A **Green Hill Far** 91.79 49 P **P** 18 06 39.6 0.0
baz=316
834A **Tilden** 91.81 52 P **P** 18 06 39.5 -0.3
baz=315
339A **Huntington** 91.92 47 P **P** 18 06 40.1 -0.2
baz=317
141A **Papa Simpson,** 91.94 45 P **P** 18 06 40.1 -0.2
baz=318
PKME **Peaks-Kenny Pk** 91.97 23 PFAKE 18 06 50.0 +10
PKME LR LR
comp=Z,465nm,20.0s
WVT **Waverly** 91.99 40 *e*P **P** 18 06 40.8 +0.3
WVT pmax pmax
comp=Z,20nm,0.8s
WVT **Waverly** 91.99 40 *e*P **P** 18 06 40.8 +0.3
comp=Z,20nm,0.8s
736A **Circle Diamond** 92.14 50 P **P** 18 06 42.0 +0.7
baz=316
HKT **Hockley** 92.17 49 *e*P **P** 18 06 42.3 +0.9
HKT **Hockley** 92.17 49 *e*P **P** 18 06 42.3 +0.9
439A **Center Grove,** 92.20 48 P **P** 18 06 41.1 -0.4
baz=317

934A	**Benavides**	**92.20**	**52**	P		**P**	**18 06 41.0**	**-0.7**
	baz=315							
340A	**Bronson**	**92.25**	**47**	P		**P**	**18 06 41.8**	**+0.1**
	baz=318							
KVTX	**Kingsville**	**92.63**	**52**	PFAKE			18 06 50.0	+6.4
KVTX				LR		LR		
	comp=Z,783nm,19.0s							
CLTB	**Caltabellotta**	**92.66**	**323**	PFAKE			18 06 50.0	+6.3
CLTB				LR		LR		
	comp=Z,300nm,19.0s							
737A	**Port Lavaca**	**92.66**	**50**	P		**P**	**18 06 44.5**	**+0.8**
	baz=316							
341A	**Kurthwood**	**92.73**	**46**	P		**P**	**18 06 44.7**	**+0.7**
	baz=318							
PLAL	**Pickwick Lake**	**92.75**	**41**	*e*P		**P**	**18 06 43.8**	**-0.2**
242A	**Grayson**	**92.77**	**45**	P		**P**	**18 06 44.2**	**0.0**
	baz=319							
638A	**Rosharon**	**92.79**	**49**	P		**P**	**18 06 44.5**	**+0.2**
	baz=317							
VSL	**Villasalto**	**92.84**	**327**	PFAKE			18 06 50.0	+5.6
VSL				LR		LR		
	comp=Z,573nm,20.0s							
ZAIG	**Zacatecas**	**92.90**	**58**	*e*P		**P**	**18 06 46.7**	**+1.4**
MCWV	**Mont Chateau**	**92.90**	**33**	*e*P		**P**	**18 06 45.4**	**+0.7**
SSPA	**Standing Stone**	**92.90**	**31**	*e*P		**P**	**18 06 44.9**	**+0.2**
035A	**Encino**	**92.93**	**53**	P		**P**	**18 06 45.3**	**+0.4**
	baz=315							
O56A	**Blue Knob Stat**	**92.93**	**32**	P		**P**	**18 06 44.4**	**-0.5**
	baz=327,SNR=7.8							
540A	**Vidor**	**93.08**	**48**	P		**P**	**18 06 46.1**	**+0.4**
	baz=318							
738A	**Farr-Stevens R**	**93.09**	**50**	P		**P**	**18 06 45.1**	**-0.5**
	baz=317							
441A	**DeRidder**	**93.15**	**47**	P		**P**	**18 06 46.8**	**+0.9**
	baz=318							
342A	**Flagon Creek P**	**93.18**	**46**	P		**P**	**18 06 46.4**	**+0.3**
	baz=318							
243A	**Waterproof**	**93.28**	**45**	P		**P**	**18 06 46.4**	**-0.1**
	baz=319							
035Z	**Hargill**	**93.29**	**53**	P		**P**	**18 06 47.1**	**+0.5**
	baz=315							
144A	**Alexander Plac**	**93.30**	**44**	P		**P**	**18 06 46.7**	**+0.1**
	baz=320							
WDD	**Wied Dalam**	**93.39**	**321**	PFAKE			18 07 00.0	+13
WDD				LR		LR		
	comp=Z,502nm,19.0s							
N59A	**State Game Lan**	**93.51**	**29**	P		**P**	**18 06 47.3**	**-0.1**
	baz=329							
VBMS	**Vicksburg**	**93.56**	**44**	P		**P**	**18 06 47.4**	**-0.3**
	baz=320							
145A	**Houston Renfro**	**93.59**	**43**	P		**P**	**18 06 48.0**	**0.0**
	baz=320							
244A	**Avery, Jackson**	**93.60**	**44**	P		**P**	**18 06 47.9**	**-0.1**
	baz=319							
SWET	**Sewanee**	**93.66**	**39**	*e*P		**P**	**18 06 47.5**	**-0.8**
TZTN	**Tazewell**	**93.77**	**37**	*e*P		**P**	**18 06 49.0**	**+0.3**
CPCT	**Cooper Cave**	**94.18**	**38**	*e*P		**P**	**18 06 50.7**	**0.0**
BLA	**Blacksburg**	**94.67**	**34**	PFAKE			18 07 00.0	+7.1
BLA				LR		LR		
	comp=Z,495nm,19.0s							
CBN	**Corbin Frederi**	**95.17**	**32**	PFAKE			18 07 10.0	+15
CBN				LR		LR		
	comp=Z,688nm,20.0s							
645A	**Chauvin**	**95.60**	**46**	P		**P**	**18 06 57.4**	**+0.2**
	baz=319							
447A	**Lucedale**	**95.67**	**44**	P		**P**	**18 06 57.1**	**-0.4**
	baz=320							
KMSC	**Kings Mountain**	**95.96**	**36**	P		**P**	**18 06 57.9**	**-0.9**
	baz=325							
KMSC	**Kings Mountain**	**95.96**	**36**	*e*P		**P**	**18 06 58.7**	**0.0**
KEST	**Kesra**	**95.96**	**325**	P		**P**	**18 06 58.9**	**0.0**
	comp=Z,5.2nm,0.9s,baz=312,slow=6.2,SNR=5.0							
BRAL	**Brewton**	**96.25**	**43**	PFAKE			18 07 10.0	+10
BRAL				LR		LR		
	comp=Z,481nm,19.0s							
GOGA	**Godfrey**	**96.33**	**39**	PFAKE			18 07 10.0	+10
GOGA				LR		LR		
	comp=Z,444nm,20.0s							
RKT	**Rikitea**	**96.72**	**114**	*e*PS		PS	18 19 38.4	-7.5
	comp=Z,383nm,29.2s							
RKT				*e*SS		SS	18 24 51.4	-7.3
	comp=Z,405nm,27.2s							
RKT	**Rikitea**	**96.72**	**114**	*e*LR		LR	18 38 01.0	
	comp=Z,466nm,22.2s							
ES19	**SONSECA Array**	**97.71**	**336**	*e*P		Pdif	18 07 06.9	+0.2
ESDC	**Sonseca Array**	**97.75**	**336**	P		Pdif	18 07 07.0	0.0
	comp=Z,0.9nm,0.6s,baz=17,slow=4.3,SNR=6.7							
ESDC				PP		**PP**	**18 11 02.8**	**-1.0**
	comp=Z,0.2nm,0.3s,baz=21,slow=7.3,SNR=4.0							
PAB	**San Pablo**	**97.99**	**336**	PFAKE			18 07 20.0	+12
PAB				LR		LR		
	comp=Z,943nm,20.0s							
NHSC	**New Hope**	**98.17**	**37**	PFAKE			18 07 20.0	+11
NHSC				LR		LR		
	comp=Z,551nm,22.0s							
MTE	**Manteigas**	**98.18**	**339**	PFAKE			18 07 20.0	+11
MTE				LR		LR		
	comp=Z,479nm,19.0s							
TEIG	**Tepich**	**103.94**	**50**	PFAKE			18 07 50.0	+15
TEIG				LR		LR		
	comp=Z,172nm,19.0s							
KMBO	**Kilima Mbogo**	**104.33**	**280**	PFAKE			18 07 50.0	+13
KMBO				LR		LR		
	comp=Z,323nm,19.0s							
BBSR	**BB Station**	**105.15**	**25**	PFAKE			18 12 00.0	
BBSR				LR		LR		
	comp=Z,269nm,19.0s							
TAM	**Tamanrasset**	**108.55**	**320**	PFAKE			18 12 10.0	
TAM				LR		LR		
	comp=Z,339nm,21.0s							
GTBY	**Guantanamo Bay**	**111.62**	**40**	PFAKE			18 12 20.0	
GTBY				LR		LR		
	comp=Z,387nm,19.0s							
MTDJ	**Mount Denham**	**111.74**	**43**	PFAKE			18 12 20.0	
MTDJ				LR		LR		
	comp=Z,315nm,20.0s							
GRTK	**Grand Turk**	**112.22**	**36**	PFAKE			18 12 20.0	
GRTK				LR		LR		
	comp=Z,1238μm,19.0s							
JTS	**JuntasAbangare**	**113.52**	**55**	PFAKE			18 12 20.0	
JTS				LR		LR		
	comp=Z,264nm,19.0s							
SDDR	**Presa de Saban**	**114.32**	**37**	PFAKE			18 12 20.0	+8.2
SDDR				LR		LR		
	comp=Z,341nm,19.0s							
VNDA	**Vanda**	**115.44**	**176**	PKP		**PKPdf**	**18 12 11.3**	**-0.8**
	comp=Z,0.9nm,0.7s,baz=313,slow=4.7,SNR=5.7							
VNDA				PP		**PP**	**18 13 11.9**	**-2.6**
	comp=Z,0.8nm,0.9s,baz=342,slow=7.5,SNR=2.6							
SJG	**San Juan**	**117.43**	**33**	PFAKE			18 12 30.0	+12
SJG				LR		LR		
	comp=Z,236nm,22.0s							
BCIP	**Isla Barro Col**	**117.61**	**51**	PFAKE			18 12 30.0	+12
BCIP				LR		LR		
	comp=Z,249nm,20.0s							
TORD	**Torodi Ar. Bea**	**118.57**	**318**	PKP		**PKPdf**	**18 12 19.1**	**-1.0**
	comp=Z,4.3nm,0.7s,baz=4.1,slow=2.3,SNR=28							
TORD				PP		**PP**	**18 13 32.6**	**-3.7**
	comp=Z,2.6nm,1.1s,baz=31,slow=8.6,SNR=4.1							
TORD				PKKPbc		**PKKPbc**	**18 22 35.6**	**+0.2**
	comp=Z,2.5nm,0.9s,baz=214,slow=3.6,SNR=12							
ANWB	**Willy Bob**	**119.62**	**29**	PFAKE			18 12 30.0	+8.0
ANWB				LR		LR		
	comp=Z,338nm,20.0s							
LSZ	**Lusaka**	**119.95**	**274**	PFAKE			18 12 30.0	+7.3
LSZ				LR		LR		
	comp=Z,443nm,19.0s							
MAW	**Mawson**	**121.22**	**206**	PKP		**PKPdf**	**18 12 23.2**	**-0.2**
	comp=Z,2.8nm,0.7s,baz=22,slow=5.4,SNR=3.2							
OCAC	**Ocana**	**122.23**	**46**	*e*P		**PKPdf**	**18 12 27.4**	**+0.1**
FDF	**Fort de France**	**122.53**	**30**	PFAKE			18 12 40.0	+12
FDF				LR		LR		
	comp=Z,297nm,21.0s							
SDV	**Santo Domingo**	**123.18**	**43**	*e*P		**PKPdf**	**18 12 28.8**	**-0.4**
SDV				LR		LR		
	comp=Z,266nm,21.0s							
SDV	**Santo Domingo**	**123.18**	**43**	*e*P		**PKPdf**	**18 12 28.8**	**-0.4**
BARC	**Barichara**	**123.64**	**47**	*e*P		**PKPdf**	**18 12 29.8**	**-0.3**
GRGR	**Grenville**	**124.68**	**32**	PFAKE			18 12 40.0	+8.2
GRGR				LR		LR		
	comp=Z,288nm,20.0s							
CHIC	**Chingaza**	**124.89**	**49**	*e*P		**PKPdf**	**18 12 31.7**	**-1.1**
OTAV	**Otavalo**	**125.29**	**57**	*e*P		**PKPdf**	**18 12 33.5**	**0.0**
OTAV				LR		LR		
	comp=Z,284nm,19.0s							
DBIC	**Dimbokro**	**127.44**	**320**	PKP		**PKPdf**	**18 12 37.0**	**-0.1**
	comp=Z,8.6nm,0.7s,baz=8.2,slow=1.2,SNR=17							
DBIC	**Dimbokro**	**127.44**	**320**	PKIKP		**PKPdf**	**18 12 37.0**	**-0.1**
DBIC				pmax		pmax		
	comp=Z,9.0nm,0.7s							
TIC	**Toumodi**	**127.55**	**321**	*e*PKP1		**PKPdf**	**18 12 36.3**	**-1.0**
KIC	**Kosan Boka**	**127.65**	**320**	*e*PKP1		**PKPdf**	**18 12 36.4**	**-1.1**
	comp=Z,51nm,1.1s							
LIC	**Lamto**	**127.91**	**320**	*e*PKP1		**PKPdf**	**18 12 37.0**	**-1.0**
	comp=Z,48nm,1.5s							
BOSA	**Boshof**	**129.14**	**261**	PKP		**PKPdf**	**18 12 40.6**	**+0.6**
	comp=Z,2.8nm,0.6s,baz=74,slow=2.2,SNR=7.8							
SYO	**Syowa Base**	**129.92**	**207**	*e*X		**Pdif**	**18 09 25.0**	**-3.8**
TSUM	**Tsumeb**	**130.52**	**277**	PFAKE			18 12 50.0	+7.1
TSUM				LR		LR		
	comp=Z,359nm,22.0s							
NNA	**Nana**	**135.08**	**66**	PFAKE			18 13 00.0	+8.5
NNA				LR		LR		
	comp=Z,199nm,19.0s							
PTGA	**Pitinga**	**136.84**	**37**	PFAKE			18 13 10.0	+15
PTGA				LR		LR		
	comp=Z,42μm,19.0s							
SAML	**Samuel**	**141.99**	**48**	PFAKE			18 13 10.0	+5.9
SAML				LR		LR		
	comp=Z,303nm,19.0s							
SNAA	**Sanae**	**142.09**	**196**	PKP		PKPpre	18 12 56.0	
VNA2	**Neumayer--Watz**	**143.62**	**195**	PKP		PKPab	18 13 02.1	+0.1
	baz=97,slow=1.9							
VNA3	**Neumayer Olymp**	**143.82**	**194**	PKP		PKPab	18 13 02.3	-0.5
VNA1	**Neumayer--Stat**	**144.02**	**195**	PKP		**PKPab**	**18 13 03.3**	**-0.2**
LPAZ	**La Paz**	**144.20**	**62**	PKP		**PKPab**	**18 13 06.5**	**+0.1**
	comp=Z,12nm,0.9s,baz=336,slow=3.9,SNR=29							
ASCN	**Ascension**	**144.74**	**322**	*e*P		**PKPab**	**18 13 07.5**	**-0.3**
ASCN				LR		LR		
	comp=Z,2μm,20.0s							
SHEL	**Horse Pasture**	**146.01**	**301**	*i* PKP2		**PKPab**	**18 13 13.4**	**+1.0**
RCBR	**Riachuelo**	**148.28**	**1**	*e*P		**PKPbc**	**18 13 18.6**	**+0.2**
RCBR				LR		LR		
	comp=Z,294nm,21.0s							
LCO	**Las Campanas**	**149.46**	**84**	PFAKE			18 13 30.0	+3.8
LCO				LR		LR		
	comp=Z,399nm,20.0s							
YJA	**Yavi**	**149.88**	**68**	↑*i*P		**PKPbc**	**18 13 25.0**	**+2.4**
ROC1	**El Roble**	**150.73**	**92**	*i* P		**PKPbc**	**18 13 23.5**	**-0.7**
VCA	**Vinchina**	**151.30**	**82**	*i* P		**PKPbc**	**18 13 25.8**	**+0.2**
SLA	**San Lorenzo**	**151.37**	**72**	*i* P		**PKPbc**	**18 13 25.3**	**-0.5**
AGUA	**GUANDACOL**	**151.41**	**83**	*i* P		**PKPbc**	**18 13 26.5**	**+0.8**
AZAP	**Zapla**	**151.42**	**71**	*i* P		**PKPbc**	**18 13 25.6**	**-0.5**
RTLS	**Leoncito**	**151.68**	**88**	*i* P		**PKPbc**	**18 13 27.0**	**+0.5**
ASTB	**Santa Barbara**	**151.72**	**69**	↓*i*P		**PKPbc**	**18 13 26.8**	**+0.1**
USHA	**Ushuaia**	**151.84**	**138**	PKP		**PKPdf**	**18 13 19.4**	**+0.1**
	comp=Z,18nm,0.7s,baz=243,slow=2.3,SNR=2.1							
USHA				PKPbc		**PKPbc**	**18 13 25.8**	**+0.1**
	comp=Z,68nm,0.9s,baz=284,slow=1.7,SNR=5.9							
USHA				PKPab		**PKPab**	**18 13 36.0**	**+1.1**
	comp=Z,46nm,0.8s,baz=200,slow=7.8,SNR=3.7							
ALOL	**LOMAS DE OLMED**	**151.99**	**69**	↓*i*P		**PKPbc**	**18 13 27.7**	**+0.7**
AMOG	**MOGNA**	**152.00**	**86**	*i* P		**PKPbc**	**18 13 27.4**	**+0.4**
RTCV	**Cerro Valdivia**	**152.31**	**88**	↓*i*P		**PKPbc**	**18 13 26.9**	**-0.7**
ASAL	**Salagasta**	**152.33**	**90**	*i* P		**PKPbc**	**18 13 28.3**	**+0.7**
ACLC	**CERRO LA CRUZ**	**152.59**	**82**	↓*i*P		**PKPbc**	**18 13 27.6**	**-0.9**
PLCA	**Paso Flores**	**152.75**	**107**	PKP		**PKPdf**	**18 13 21.1**	**-0.1**
	comp=Z,4.9nm,0.8s,baz=258,slow=4.2,SNR=7.1							
PLCA				PKPbc		**PKiKP**	**18 13 28.7**	**+0.1**
	comp=Z,14nm,0.8s,baz=276,slow=3.0,SNR=16							
PLCA				PKPab		**PKPab**	**18 13 40.4**	**+1.0**
	comp=Z,31nm,0.8s,baz=283,slow=3.7,SNR=23							
ACAN	**Cantantal**	**153.53**	**88**	*i* P		**PKPbc**	**18 13 28.7**	**-1.6**
TCA	**Tanti**	**155.23**	**84**	*i* P		**PKPdf**	**18 13 24.8**	**-0.2**
BDFB	**Brasilia**	**155.39**	**30**	PKP		**PKPdf**	**18 13 26.4**	**+0.7**
	comp=Z,1.8nm,0.5s,baz=90,slow=1.0,SNR=3.1							
BDFB				PKPbc		PKPbc	18 13 33.5	
	comp=Z,3.3nm,0.8s,baz=68,slow=1.9,SNR=4.8							
BDFB				PKPab		**PKPab**	**18 13 51.5**	**+0.5**
	comp=Z,8.2nm,0.8s,baz=299,slow=4.1,SNR=4.7							
SUCO	**SUCO**	**155.71**	**89**	↓*i*P		**PKPdf**	**18 13 24.7**	**-0.9**
CPUP	**Villa Florida**	**158.32**	**65**	PKP		**PKPdf**	**18 13 28.9**	**-0.1**
	comp=Z,9.2nm,1.0s,baz=16,slow=3.9,SNR=10							
CPUP				PKPab		**PKPab**	**18 14 02.5**	**-0.9**
	comp=Z,7.0nm,0.9s,baz=309,slow=4.9,SNR=5.4							
SPB	**Sao Paulo**	**162.60**	**40**	PFAKE			18 13 40.0	+6.2
SPB				LR		LR		
	comp=Z,261nm,20.0s							

*ISCJB **11** 17:54:02.9±3.2, 38.8N±0.4×144.3E±0.5, h19km, mb4.8/6, Error ellipse: s-maj=81.9km s-min=19.4km az=139.9*
*IDC **11** 17:54:02.9±4.0, 39.00N×144.28E, h0km, mb4.8/6, mb1 4.9/7, mb1mx4.4/65, mbtmp4.8/7, ML5.0/1, Error ellipse: s-maj=96.0km s-min=35.5km az=146.0*
ISC 11 17:54:05.1±3.3, 38.8N±0.5×144.3E±0.4, h19km, n7, σ1≥48/7, mb4.8/6, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MJAR	**Matsushiro Arr**	**5.36**	**247**	Pn	**Pn**	**17 55 23.9**	**-0.1**
	47nm,0.3s,baz=64,slow=12,SNR=4.5						
BVAR	**Borovoye Array**	**51.09**	**312**	P	**P**	**18 03 06.7**	**+0.6**
	23nm,0.4s,baz=75,slow=7.0,SNR=12						
INK	**Inuvik**	**51.74**	**28**	P	**P**	**18 03 10.5**	**-0.1**
	6.5nm,0.6s,baz=268,slow=4.8,SNR=4.1						
ARCES	**ARCESS Array B**	**63.12**	**340**	P	**P**	**18 04 29.1**	**-1.9**
	2.0nm,0.5s,baz=46,slow=6.4,SNR=5.4						
FINES	**FINESS Array B**	**68.29**	**333**	P	**P**	**18 05 02.7**	**-1.6**
	8.9nm,0.6s,baz=51,slow=5.7,SNR=7.4						
HFS	**Hagfors**	**73.38**	**337**	P	**P**	**18 05 36.4**	**+1.0**
	4.8nm,0.5s,baz=35,slow=6.0,SNR=6.2						
NOA	**NORSAR Array B**	**73.40**	**338**	P	**P**	**18 05 36.6**	**+1.1**
	6.1nm,0.8s,baz=37,slow=6.1,SNR=2.9						

*CSEM **11** 17:58:30.0, 38.57N×29.24W, h2km, ML3.1*
PDA 11 17:58:30.0±0.8, 38.57N×29.24W, h2km±6km, MD3.5, ML3.1, Error ellipse: s-maj=7.3km s-min=5.9km az=57.0, Azores Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CALA	**Caldeira**	**0.42**	**88**	*e*P	Pg	17 58 38.0	-0.2
CALA				*e*S	Sg	17 58 43.6	-0.1
CALA	**Caldeira**	**0.42**	**88**	*e*P	Pg	17 58 38.0	-0.2
CALA				*e*S	Sg	17 58 43.6	-0.1
PCED	**Cedros**	**0.43**	**81**	*e*P	Pg	17 58 37.7	-0.5
PCED				*e*S	Sg	17 58 43.4	-0.4
PCED	**Cedros**	**0.43**	**81**	*e*P	Pg	17 58 37.7	-0.5
PCED				*e*S	Sg	17 58 43.4	-0.4
PCED				A	A	17 58 44.4	
	689nm,0.6s						
HOR	**Horta**	**0.48**	**94**	*e*P	Pg	17 58 39.0	-0.2
HOR				*e*S	Sg	17 58 44.9	-0.6
HOR	**Horta**	**0.48**	**94**	*e*P	Pg	17 58 39.0	-0.2
HOR				*e*S	Sg	17 58 44.9	-0.6
HOR				A	A	17 58 46.5	
	1μm,0.3s						
PCAN	**Candelaria**	**0.60**	**99**	*e*P	Pg	17 58 40.4	-1.2
PCAN				*e*S	Sg	17 58 48.1	-1.3
PCAN	**Candelaria**	**0.60**	**99**	*e*P	Pg	17 58 40.4	-1.2
PCAN				*e*S	Sg	17 58 48.1	-1.3
PCAN				A	A	17 58 51.0	
	488nm,0.2s						
PICO	**Pico**	**0.64**	**95**	*e*P	Pg	17 58 41.2	-1.2
PICO				*e*S	Sg	17 58 50.0	-0.7
PICO	**Pico**	**0.64**	**95**	*e*P	Pg	17 58 41.2	-1.2
PICO				*e*S	Sg	17 58 50.0	-0.7
PICO				A	A	17 58 51.1	
	1μm,0.4s						
ROSA	**Rosais**	**0.80**	**79**	*e*P	Pg	17 58 43.2	-2.1
ROSA				*e*S	Sg	17 58 53.2	-2.5
ROSA	**Rosais**	**0.80**	**79**	*e*P	Pg	17 58 43.2	-2.1
ROSA				*e*S	Sg	17 58 53.2	-2.5
ROSA				A	A	17 58 56.3	
	594nm,0.6s						
PMAN	**Manadas**	**0.91**	**85**	*e*P	Pg	17 58 44.7	-2.7
PMAN				*e*S	Sg	17 58 55.8	-3.3
PMAN	**Manadas**	**0.91**	**85**	*e*P	Pg	17 58 44.7	-2.7
PMAN				*e*S	Sg	17 58 55.8	-3.3
PMAN				A	A	17 59 06.3	
	234nm,0.6s						
PGRA	**Graciosa**	**1.09**	**64**	*e*P	Pg	17 58 47.1	-3.8
PGRA				*e*S	Sg	17 59 00.6	-4.4
PGRA	**Graciosa**	**1.09**	**64**	*e*P	Pg	17 58 47.1	-3.8
PGRA				*e*S	Sg	17 59 00.6	-4.4
PGRA				A	A	17 59 00.9	
	107nm,0.4s						

DJA 11 17:58:42.0±0.7, 8.5S±0.5×107.6E±0.5, h22km±7km, M3.8/12, mb3.9/1, MLv3.8/12, Jawa

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SKJI	**Sukabumi**	**0.75**	**13**	P	Pb	17 58 56.4	0.0
CNJI	**Cibinong**	**0.85**	**60**	P	Pb	17 58 57.4	-0.7
DBJI	**Dramaga**	**1.23**	**17**	P	Pn	17 59 03.2	-0.7
CGJI	**Cibinong**	**1.32**	**328**	P	Pn	17 59 04.6	-0.5
CISI	**Cisompet, Garu**	**1.43**	**83**	P	Pn	17 59 05.8	-0.8
LEM	**Lembang**	**1.52**	**53**	P	Pb	17 59 13.9	+4.3
CMJI	**Cimerak**	**2.04**	**91**	P	Pn	17 59 14.5	-0.5
KPJI	**Karang Pucung**	**2.55**	**81**	P	Pn	17 59 22.5	+0.4
KASI	**Kota Agung**	**2.90**	**319**	P	Pn	17 59 26.9	+0.1
LWLI	**Liwa**	**3.56**	**319**	P	Pn	17 59 36.9	+0.8
MDSI	**Maura Dua**	**3.91**	**326**	P	Pn	17 59 41.0	+0.2
UGM	**Wanagama**	**4.10**	**93**	P	Pn	17 59 43.2	-0.2
PCJI	**Pacitan**	**4.76**	**96**	P	Pn	17 59 52.7	+0.2
MNAI	**Manna**	**4.79**	**314**	P	Pn	17 59 51.8	-1.1
PWJI	**Pagerwojo**	**5.37**	**93**	P	Pn	18 00 01.3	+0.4

JMA 11 18:01:14.6, 37.02N×140.63E, h9km±1km, M2.7, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.16**	**59**	P	Pg	18 01 18.3	+0.3
ONAJ				S	Sg	18 01 20.8	+0.4
JHO	**Hitachi**	**0.41**	**187**	P	Pg	18 01 22.5	-0.1
JHO				S	Sg	18 01 28.1	0.0
JFT	**Otama**	**0.55**	**335**	P	Pg	18 01 25.5	+0.2
JFT				S	Sg	18 01 32.9	+0.4
JMM	**Marumori**	**0.85**	**9**	P	Pg	18 01 30.7	-0.4
JMM				S	Sg	18 01 42.3	+0.1
MAT	**Matsushiro**	**2.00**	**257**	P	Pb	18 01 51.5	+0.3
MAT				S	Sb	18 02 16.4	+0.1

JMA 11 18:05:09.0, 37.03N×140.62E, h8km±1km, M2.5, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.16**	**63**	P	Pg	18 05 12.6	+0.2
ONAJ				S	Sg	18 05 15.3	+0.6
JHO	**Hitachi**	**0.42**	**186**	P	Pg	18 05 17.0	-0.2
JHO				S	Sg	18 05 22.8	+0.1
JFT	**Otama**	**0.54**	**335**	P	Pg	18 05 19.7	+0.3
JFT				S	Sg	18 05 27.2	+0.7
JMM	**Marumori**	**0.85**	**9**	P	Pg	18 05 25.2	-0.1
JMM				S	Sg	18 05 36.4	+0.1
MAT	**Matsushiro**	**2.00**	**257**	P	Pn	18 05 44.2	+1.1
MAT				S	Sb	18 06 10.7	+0.1

JMA 11 18:08:30.7, 36.98N×140.65E, h9km±1km, M2.5, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.17**	**44**	P	Pg	18 08 34.6	+0.3
JHO	**Hitachi**	**0.37**	**190**	P	Pg	18 08 38.0	-0.1
JHO				S	Sg	18 08 43.0	0.0
JFT	**Otama**	**0.59**	**335**	P	Pg	18 08 42.6	+0.4
JFT				S	Sg	18 08 50.3	+0.3
JMM	**Marumori**	**0.89**	**7**	P	Pg	18 08 47.5	-0.4
JMM				S	Sg	18 08 59.3	-0.2
MAT	**Matsushiro**	**2.01**	**258**	P	Pn	18 09 05.7	+0.9
MAT				S	Sb	18 09 32.5	-0.1

*NIED **11** 18:15:00, 37.10N×140.80E, h5km, Mw3.9 Best double couple: M0 7.86000×10^14 NP1:φs168.00000°, δ49.00000°, λ-158.00000°. NP2:φs63.00000°, δ73.00000°, λ-43.00000°.*
*ISCJB **11** 18:15:14.9±1.0, 37.15N±0.04×140.97E±0.06, h5km±5km, mb3.6/16, MS3.6/1, Error ellipse: s-maj=8.2km s-min=5.9km az=13.3*
*JMA **11** 18:15:17.2, 37.14N×140.79E, h6km±1km, M4.3*
JMA Felt III J1.
*IDC **11** 18:15:21.9±2.4, 37.16N×140.63E, h42km±24km, mb3.5/16, mb1 3.7/18, mb1mx3.6/47, mbtmp3.7/18, ML3.4/2, MS3.6/1, Ms1 3.6/1, ms1mx3.0/27, Error ellipse: s-maj=19.8km s-min=13.3km az=78.0*
ISC 11 18:15:16.5±1.0, 37.13N±0.04×140.71E±0.05, h6km±6km, n32, σ0≥77/29, mb3.7/16, 1C-1D, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.08**	**114**	↓P	**Pg**	**18 15 18.4**	**+0.1**
ONAJ				S	**Sg**	**18 15 19.4**	**-0.2**
JFT	**Otama**	**0.49**	**322**	↑P	**Pb**	**18 15 27.7**	**+0.2**
JFT				S	**Sb**	**18 15 34.9**	**-0.1**
JHO	**Hitachi**	**0.53**	**192**	P	**Pb**	**18 15 27.8**	**-0.5**
JHO				S	**Sb**	**18 15 35.4**	**-0.9**
MJAR	**Matsushiro Arr**	**2.09**	**254**	P	**Pb**	**18 15 54.6**	**-0.3**
	9.9nm,0.3s,baz=79,slow=16,SNR=45						
MJAR				S	**Sg**	**18 16 23.5**	**-0.2**
	20nm,0.3s,baz=131,slow=17,SNR=19						
MAT	**Matsushiro**	**2.09**	**254**	P	**Pb**	**18 15 54.9**	**0.0**
MAT				S	**Sg**	**18 16 24.7**	**+0

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.24**	**25**	S	Sg	18 16 55.4	+0.7
JHO	**Hitachi**	**0.28**	**197**	P	Pg	18 16 52.0	-0.1
JHO				S	Sg	18 16 56.0	+0.2
JFT	**Otama**	**0.69**	**337**	S	Sg	18 17 09.3	+0.5
JMM	**Marumori**	**0.99**	**6**	P	Pg	18 17 05.2	-0.3
JMM				S	Sg	18 17 17.9	-0.5
MAT	**Matsushiro**	**2.01**	**261**	P	Pn	18 17 21.8	+1.1
MAT				S	Sb	18 17 48.3	-0.1

NIED ***11*** *18:24:00, 35.60N×142.90E, h5km, Mw4.0 Best double couple: M0 1.31000×10^15 NP1:φ=202.00000°, δ=45.00000°, λ=-90.00000°. NP2:φ=22.00000°, δ=45.00000°, λ=-90.00000°.*
IDC ***11*** *18:24:01.0±0.8, 35.41N×143.03E, h0km, mb3.8/18, mb1 4.0/21, mb1mx3.9/66, mbtmp3.9/21, ML4.0/2, Error ellipse: s-maj=21.3km s-min=16.1km az=157.0*
ISCJB ***11*** *18:24:04.6±0.5, 35.48N±0.04×142.92E±0.05, h35km, mb3.8/18, Error ellipse: s-maj=6.9km s-min=4.9km az=143.3*
JMA ***11*** *18:24:04.2±0.3, 35.55N×142.95E, h56km, M3.9*
NEIC ***11*** *18:24:05.5±0.5, 35.20N×143.05E, h35km, mb4.6/1, Error ellipse: s-maj=11.2km s-min=8.7km az=93.0*

ISC 11 18:24:05.9±0.7, 35.52N±0.05×142.91E±0.07, h35km, n45, σ1=65/43, mb3.8/18, 1D, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**1.68**	**277**	*e*S	**Sn**	**18 24 53.4**	**+0.2**
BSO1	**Boso 1**	**1.81**	**242**	eS	**Sn**	**18 24 55.9**	**+0.4**
BSO3	**Boso 3**	**2.10**	**251**	P	**Pn**	**18 24 37.9**	**-0.4**
KTR	**Katsuura**	**2.16**	**261**	P	**Pn**	**18 24 39.6**	**+0.3**
KTR				*e*S	**Sn**	**18 25 05.0**	**+0.2**
BSO4	**Boso 4**	**2.17**	**257**	P	**Pn**	**18 24 39.7**	**+0.2**
JFT	**Otama**	**2.88**	**315**	P	**Pn**	**18 24 48.5**	**-0.8**
JFT				*e*S	**Sn**	**18 25 21.7**	**-1.0**
JAG	**Ashikaga**	**2.95**	**289**	P	**Pn**	**18 24 49.8**	**-0.4**
JOD2	**Odawara 2**	**3.13**	**266**	P	**Pn**	**18 24 52.4**	**-0.4**
JOD2				*e*S	**Sn**	**18 25 28.6**	**-0.5**
JRY	**Ryogami san**	**3.30**	**280**	P	**Pn**	**18 24 55.6**	**+0.5**
JHJ2	**Mitsune**	**3.51**	**228**	P	**Pn**	**18 24 56.0**	**-2.0**
JHJ2				*e*S	**Sn**	**18 25 36.6**	**-1.8**
JHJ2	**Mitsune**	**3.51**	**228**	*e*Pn	**Pn**	**18 24 56.4**	**-1.6**
JHJ	**Hachijo jima 2**	**3.53**	**228**	Pn	**Pn**	**18 24 56.4**	**-1.8**
	51nm,0.3s,baz=334,slow=19,SNR=29						
JHJ				S	**Sn**	**18 25 34.2**	**-4.5**
	53nm,0.3s,baz=95,slow=22,SNR=9.2						
JYN	**Shimob**	**3.56**	**271**	P	**Pn**	**18 24 59.0**	**+0.2**
JMK	**Ichinoseki**	**3.68**	**339**	P	**Pn**	**18 25 00.1**	**-0.2**
JMK				*e*S	**Sn**	**18 25 39.1**	**-3.3**
MJAR	**Matsushiro Arr**	**3.94**	**286**	Pn	**Pn**	**18 25 05.3**	**+1.3**
	7.5nm,0.3s,baz=94,slow=6.7,SNR=41						
MAJO	**Matsushiro**	**3.95**	**286**	*e*Pn	**Pn**	**18 25 04.7**	**+0.7**
MAT	**Matsushiro**	**3.95**	**286**	P	Pn	18 25 06.1	+2.1
MAT				*e*S	**Sn**	**18 25 43.9**	**-5.2**
JYK	**Kaneyama**	**3.96**	**330**	P	**Pn**	**18 25 03.2**	**-0.9**
JYK				*e*S	**Sn**	**18 25 48.1**	**-1.1**
JOM	**Ohasama**	**4.15**	**342**	P	**Pn**	**18 25 05.7**	**-1.0**
JOM				*e*S	**Sn**	**18 25 50.3**	**-3.7**
CBIJ	**Chichi jima**	**8.42**	**184**	Sn	Sn	18 27 29.0	-10
JCJ	**Chichijima**	**8.42**	**184**	Sn	Sn	18 27 29.0	-10
	baz=274,slow=19						
USRK	**Ussuriysk Ar.**	**12.05**	**319**	Pn	Pn	18 26 58.0	+2.9
	0.2nm,0.3s,baz=123,slow=16,SNR=4.2						
KSRS	**Korea Array**	**12.22**	**283**	Pn	Pn	18 27 01.2	+3.9
	0.1nm,0.3s,baz=92,slow=14,SNR=4.8						
KSAR	**Wonju Array Be**	**12.25**	**283**	Pn	Pn	18 27 01.2	+3.4
MDJ	**Mudanjiang**	**13.64**	**316**	*e*P	**P**	**18 27 22.9**	**-2.3**
SEY	**Seymchan**	**28.06**	**9**	P	P	18 29 55.4	+1.7
	1.0nm,0.5s,baz=82,slow=6.7,SNR=4.6						
SONM	**Songino Array**	**29.64**	**306**	P	P	18 30 10.3	+2.2
	0.7nm,0.6s,baz=110,slow=9.7,SNR=4.6						
CMAR	**Chiang Mai Arr**	**42.33**	**258**	P	P	18 31 58.5	+1.9
	0.3nm,0.7s,baz=34,slow=6.6,SNR=3.2						
ZALV	**Zalesovo Beam**	**43.83**	**314**	P	**P**	**18 32 08.9**	**+0.6**
	0.9nm,0.6s,baz=84,slow=6.7,SNR=5.6						
MKAR	**Makanchi Array**	**45.95**	**304**	P	**P**	**18 32 26.8**	**+1.4**
	0.7nm,0.7s,baz=90,slow=9.6,SNR=11						
KURBB	**Kurchatov Arra**	**47.89**	**309**	P	**P**	**18 32 41.5**	**+1.2**
	1.1nm,0.8s,baz=84,slow=8.0,SNR=18						
ILAR	**Eielson Array**	**50.13**	**32**	P	**P**	**18 32 57.8**	**+0.4**
	1.6nm,0.8s,baz=266,slow=6.3,SNR=18						
INK	**Inuvik**	**55.18**	**27**	P	P	18 33 36.5	+1.8
	1.5nm,0.7s,baz=294,slow=7.7,SNR=7.0						
WRAB	**Tennant Creek**	**55.75**	**190**	P	**P**	**18 33 38.7**	**-0.5**
	7.4nm,1.2s						
WRA	**Warramunga Arr**	**55.76**	**190**	P	**P**	**18 33 38.7**	**-0.6**
	1.9nm,0.9s,baz=11,slow=7.5,SNR=7.7						
AKTO	**Aktyubinsk**	**60.59**	**313**	P	**P**	**18 34 13.2**	**+0.3**
	1.5nm,0.7s,baz=96,slow=4.8,SNR=6.8						
AKTO	**Aktyubinsk**	**60.59**	**313**	⇓P	**P**	**18 34 13.5**	**+0.7**
	1.3nm,0.6s						
YKA	**Yellowknife Ar**	**64.50**	**30**	P	**P**	**18 34 39.7**	**+1.0**
	0.7nm,0.8s,baz=297,slow=6.4,SNR=9.8						
FINES	**FINESS Array B**	**70.71**	**333**	P	**P**	**18 35 18.2**	**+0.3**
	2.0nm,0.8s,baz=62,slow=8.9,SNR=5.7						
NB2	**NORSAR Subarra**	**76.04**	**338**	P	**P**	**18 35 50.6**	**+1.2**
	comp=Z,0.5nm,0.6s,baz=38,slow=5.9						
NOA	**NORSAR Array B**	**76.04**	**338**	P	**P**	**18 35 50.4**	**+1.0**
	comp=Z,1.1nm,0.8s,baz=39,slow=5.7,SNR=4.6						
AKASG	**Malin Array Be**	**76.23**	**323**	P	**P**	**18 35 51.5**	**+1.0**
	comp=Z,0.7nm,0.5s,baz=49,slow=5.9,SNR=10						
PDAR	**Pinedale Array**	**77.85**	**46**	P	**P**	**18 36 00.6**	**+0.4**
	comp=Z,0.3nm,0.6s,baz=242,slow=6.4,SNR=4.5						
BRTR	**Keskin Array B**	**80.76**	**312**	P	P	18 36 18.1	+2.1
	comp=Z,1.0nm,0.8s,baz=117,slow=4.3,SNR=3.7						
GERES	**GERESS Array B**	**84.63**	**329**	P	**P**	**18 36 36.6**	**+0.8**
	comp=Z,0.2nm,0.4s,baz=46,slow=5.8,SNR=4.4						

NIED ***11*** *18:27:00, 37.10N×140.70E, h5km, Mw4.0 Best double couple: M0 1.02000×10^15 NP1:φ=352.00000°, δ=50.00000°, λ=-127.00000°. NP2:φ=221.00000°, δ=52.00000°, λ=-55.00000°.*
ISCJB ***11*** *18:27:07.3±0.3, 37.08N±0.03×140.64E±0.05, h10km, mb4.0/23, Error ellipse: s-maj=5.7km s-min=4.3km az=0.8*
JMA ***11*** *18:27:08.4, 37.07N×140.65E, h7km±1km, M4.3*
JMA Felt III J1.
IDC ***11*** *18:27:14.8±2.1, 37.04N×140.39E, h54km±20km, mb3.7/22, mb1 3.9/24, mb1mx3.7/59, mbtmp4.0/24, ML3.7/2, MS3.1/2, Ms1 3.1/2, ms1mx2.8/36, Error ellipse: s-maj=16.4km s-min=10.9km az=77.0*

ISC 11 18:27:08.8±0.5, 37.07N±0.04×140.63E±0.05, h10km, n41, σ0=99/39, mb4.0/23, 1C, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.14**	**78**	⇑P	**Pg**	**18 27 11.1**	**-0.9**
ONAJ				S	**Sg**	**18 27 13.3**	**-0.9**
JHO	**Hitachi**	**0.46**	**186**	P	**Pg**	**18 27 17.4**	**-0.4**
JHO				S	**Sg**	**18 27 23.9**	**-0.1**
JFT	**Otama**	**0.50**	**332**	P	**Pg**	**18 27 18.6**	**0.0**
JFT				S	**Sg**	**18 27 25.5**	**+0.3**
MJAR	**Matsushiro Arr**	**2.01**	**255**	P	**Pn**	**18 27 43.0**	**+0.1**
	71nm,0.3s,baz=93,slow=16,SNR=63						
MJAR				S	**Sb**	**18 28 09.7**	**-0.9**
	130nm,0.3s,baz=250,slow=24,SNR=16						
JHJ	**Hachijo jima 2**	**4.00**	**190**	P	**Pn**	**18 28 10.8**	**+0.6**
	37nm,0.3s,baz=359,slow=23,SNR=8.0						
JHJ				S	**Sn**	**18 28 59.0**	**+1.9**
	52nm,0.3s,baz=245,slow=23,SNR=5.7						
JNU	**Nakatsue**	**9.91**	**247**	P	**Pn**	**18 29 19.8**	**+2.2**
	0.5nm,0.3s,baz=355,slow=7.0,SNR=7.0						
USRK	**Ussuriysk Ar.**	**9.68**	**320**	P	Pn	18 29 33.9	+5.8
	0.2nm,0.3s,baz=138,slow=12,SNR=11						
USRK				LR	LR	18 33 10.1	
	comp=Z,102nm,20.8s,baz=150,slow=37						
KSRS	**Korea Array**	**10.14**	**276**	P	Pn	18 29 41.1	+6.8
	0.3nm,0.3s,baz=92,slow=13,SNR=20						
KLR	**Kul'dur**	**13.76**	**335**	LR	LR	18 36 11.1	
	comp=Z,103nm,18.6s,baz=214,slow=39						
SEY	**Seymchan**	**26.88**	**12**	P	**P**	**18 32 51.5**	**+2.1**
	0.9nm,0.2s,baz=176,slow=9.3,SNR=4.6						
SONM	**Songino Array**	**27.24**	**304**	P	**P**	**18 32 53.3**	**+0.2**
	1.7nm,0.5s,baz=106,slow=9.4,SNR=12						
H11N2	**WAKE ISLAND Hy**	**28.71**	**120**	T	T	19 02 51.3	
	baz=313,slow=75,SNR=229						
H11N1	**WAKE ISLAND Hy**	**28.72**	**120**	T	T	19 02 57.1	
	baz=313,slow=75,SNR=190						
H11N3	**WAKE ISLAND Hy**	**28.73**	**120**	T	T	19 02 55.5	
	baz=313,slow=75,SNR=193						
H11S1	**WAKE ISLAND Hy**	**29.41**	**122**	T	T	19 03 49.4	
	baz=314,slow=75,SNR=408						
H11S3	**WAKE ISLAND Hy**	**29.41**	**122**	T	T	19 03 44.8	
	baz=314,slow=75,SNR=238						
H11S2	**WAKE ISLAND Hy**	**29.43**	**122**	T	T	19 03 49.8	
	baz=314,slow=75,SNR=268						
CMAR	**Chiang Mai Arr**	**40.90**	**255**	P	**P**	**18 34 50.0**	**-1.3**
	0.3nm,0.5s,baz=46,slow=7.7,SNR=3.3						
ZALV	**Zalesovo Beam**	**41.42**	**312**	PcP	**PcP**	**18 36 52.6**	**-0.5**
	0.4nm,0.3s,baz=93,slow=2.9,SNR=2.9						
MKAR	**Makanchi Array**	**43.57**	**302**	P	**P**	**18 35 12.8**	**-0.1**
	1.3nm,0.6s,baz=86,slow=9.9,SNR=14						
MKAR				PcP	**PcP**	**18 37 00.3**	**0.0**
	0.4nm,0.7s,baz=70,slow=5.3,SNR=2.8						
KURBB	**Kurchatov Arra**	**45.48**	**308**	P	**P**	**18 35 27.2**	**-0.8**
	2.1nm,0.6s,baz=82,slow=7.8,SNR=14						
ILAR	**Eielson Array**	**49.80**	**32**	P	**P**	**18 36 02.1**	**+0.8**
	1.3nm,0.8s,baz=273,slow=6.4,SNR=12						
BVAR	**Borovoye Array**	**50.08**	**312**	P	**P**	**18 36 03.1**	**-0.6**
	0.7nm,0.6s,baz=69,slow=8.3,SNR=4.2						
BVAR				PcP	**PcP**	**18 37 22.8**	**-0.4**
	0.8nm,0.6s,baz=97,slow=3.3,SNR=5.4						
INK	**Inuvik**	**54.64**	**27**	P	**P**	**18 36 37.4**	**+0.2**
	0.9nm,0.6s,baz=342,slow=3.7,SNR=3.1						
ARU	**Arti**	**55.92**	**318**	P	**P**	**18 36 46.0**	**-0.6**
	1.5nm,0.4s,baz=43,slow=5.3,SNR=4.0						
FITZ	**Fitzroy Crossi**	**56.67**	**197**	P	**P**	**18 36 52.6**	**+0.2**
	1.7nm,0.6s,baz=358,slow=7.1,SNR=5.5						
WRA	**Warramunga Arr**	**57.02**	**187**	P	**P**	**18 36 53.9**	**-0.9**
	10nm,0.6s,baz=3.2,slow=7.4,SNR=108						
AKTO	**Aktyubinsk**	**58.18**	**312**	P	**P**	**18 37 02.5**	**-0.3**
	0.5nm,0.5s,baz=74,slow=14,SNR=3.8						
ASAR	**Alice Springs**	**60.74**	**187**	P	**P**	**18 37 20.3**	**-0.4**
	1.6nm,0.6s,baz=19,slow=14,SNR=40						
GEYT	**Ailbeck**	**63.27**	**299**	P	**P**	**18 37 37.0**	**-0.7**
	0.6nm,0.4s,baz=8.5,slow=2.9,SNR=4.0						
ARCES	**ARCESS Array B**	**63.74**	**339**	P	**P**	**18 37 39.6**	**-0.6**
	1.6nm,0.8s,baz=34,slow=8.8,SNR=4.1						
YKA	**Yellowknife Ar**	**64.09**	**30**	P	**P**	**18 37 44.1**	**+1.5**
	0.4nm,0.8s,baz=305,slow=7.1,SNR=6.3						
FINES	**FINESS Array B**	**68.49**	**332**	P	**P**	**18 38 10.2**	**-0.6**
	2.2nm,0.8s,baz=52,slow=7.5,SNR=6.9						
STKA	**Stephens Creek**	**68.60**	**179**	P	**P**	**18 38 11.8**	**+0.1**
	2.5nm,0.8s,baz=12,slow=9.2,SNR=4.6						
AKASG	**Malin Array Be**	**73.88**	**322**	P	**P**	**18 38 42.0**	**-1.7**
	0.3nm,0.3s,baz=48,slow=5.9,SNR=7.9						
NB2	**NORSAR Subarra**	**73.91**	**337**	P	**P**	**18 38 43.6**	**-0.1**
	comp=Z,0.6nm,0.7s,baz=39,slow=5.9						
NOA	**NORSAR Array B**	**73.91**	**337**	P	**P**	**18 38 43.0**	**-0.7**
	comp=Z,1.2nm,0.8s,baz=39,slow=5.9,SNR=4.0						
NVAR	**Mina Array Bea**	**75.47**	**53**	P	**P**	**18 38 55.1**	**+1.7**
	comp=Z,0.8nm,0.7s,baz=295,slow=6.4,SNR=5.9						
GERES	**GERESS Array B**	**82.35**	**328**	P	**P**	**18 39 29.4**	**-1.4**
	comp=Z,0.3nm,0.5s,baz=56,slow=3.4,SNR=4.2						
TXAR	**Fujitas Array**	**90.59**	**52**	P	**P**	**18 40 13.4**	**+1.7**
	comp=Z,0.2nm,0.4s,baz=353,slow=5.0,SNR=3.9						
LPAZ	**La Paz**	**147.21**	**59**	PKPbc	**PKPbc**	**18 46 53.4**	**-0.1**
	comp=Z,2.0nm,0.7s,baz=14,slow=8.3,SNR=7.5						

JMA 11 18:29:19.8, 36.99N×140.61E, h12km±1km, M3.5, 4C, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.19**	**53**	⇑P	Pg	18 29 24.1	+0.1
ONAJ				S	Sg	18 29 27.1	+0.2
JHO	**Hitachi**	**0.38**	**185**	⇑P	Pg	18 29 27.4	0.0
JHO				S	Sg	18 29 33.0	+0.5
JFT	**Otama**	**0.57**	**338**	⇑P	Pg	18 29 31.0	0.0
JFT				S	Sg	18 29 38.7	+0.2
JMM	**Marumori**	**0.89**	**9**	⇑P	Pg	18 29 36.2	-0.7
JMM				S	Sg	18 29 48.1	-0.4
MAT	**Matsushiro**	**1.98**	**258**	P	Pb	18 29 54.5	-1.3
MAT				S	Sb	18 30 20.4	0.0

ISCJB ***11*** *18:30:19.6±0.8, 36.20N±0.05×70.92E±0.07, h100km, mb3.3/2, Error ellipse: s-maj=8.3km s-min=6.9km az=151.2*
IDC ***11*** *18:30:21.9±9.6, 36.27N×70.99E, h81km±64km, mb3.1/3, mb1 3.2/6, mb1mx2.9/52, mbtmp3.5/6, ML3.4/3, Error ellipse: s-maj=85.2km s-min=53.9km az=154.0*
NNC ***11*** *18:30:23.9±3.3, 36.48N×70.64E, h99km±91km, mb3.1, mpv3.7, Error ellipse: s-maj=40.6km s-min=26.3km az=95.0*

ISC 11 18:30:21.8±1.0, 36.24N±0.07×70.93E±0.08, h100km, n14, σ1=64/20, 2C-5D, Hindu Kush region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SFK	**Sufi-Kurgan**	**4.28**	**28**	⇓P	**Pn**	**18 31 26.1**	**+1.3**
	3.9nm,0.4s						
SFK				⇑S	**Sn**	**18 32 15.7**	**+1.9**
	6.6nm,0.4s						
THN	**Thein Dam**	**5.49**	**132**	*e*P	**Pn**	**18 31 40.6**	**-0.5**
THN				*e*S	**Sn**	**18 32 40.8**	**-2.1**
MNAS	**Manas**	**6.35**	**11**	⇓P	**Pn**	**18 31 52.1**	**-0.8**
	2.6nm,0.3s						
MNAS				⇓S	**Sn**	**18 33 02.1**	**-2.0**
	2.2nm,0.5s						
KK31	**Karatay Array**	**6.86**	**357**	P	**Pn**	**18 31 59.3**	**-0.4**
	2.4nm,0.3s,baz=176,slow=12,SNR=140						
KK31				S	**Sn**	**18 33 12.5**	**-3.7**
	3.7nm,0.5s,baz=181,slow=14,SNR=8.1						
AAK	**Ala-Archa**	**6.95**	**22**	P	**Pn**	**18 32 01.0**	**-0.1**
	3.1nm,0.3s,baz=156,slow=6.4,SNR=32						
AAK				S	**Sn**	**18 33 19.0**	**+0.3**
	0.2nm,0.3s,baz=330,slow=20,SNR=4.0						
AAK	**Ala-Archa**	**6.95**	**22**	⇑P	**Pn**	**18 32 00.6**	**-0.5**
	3.3nm,0.3s						
AAK				⇓S	**Sn**	**18 33 17.3**	**-1.4**
	4.7nm,0.8s						
TKM2	**Tokmak 2**	**7.58**	**27**	⇓P	**Pn**	**18 32 08.4**	**-1.3**
	2.2nm,0.6s						
GEYT	**Ailbeck**	**10.37**	**283**	S	**Sn**	**18 34 40.5**	**-1.3**
	1.0nm,0.3s,baz=113,slow=22,SNR=6.4						
AB31	**Akbulak array**	**15.28**	**332**	P	**Pn**	**18 33 51.1**	**-0.7**
	0.2nm,0.3s,baz=162,slow=12,SNR=12						
KURBB	**Kurchatov Arra**	**15.38**	**19**	P	**P**	**18 33 54.9**	**-0.7**
	0.0nm,0.3s,baz=208,slow=9.9,SNR=5.9						
BVAR	**Borovoye Array**	**16.78**	**359**	P	**P**	**18 34 11.1**	**+0.1**
	0.1nm,0.3s,baz=175,slow=11,SNR=3.4						
ZALV	**Zalesovo Beam**	**20.17**	**24**	P	**P**	**18 34 47.6**	**-0.4**
	0.5nm,0.3s,baz=224,slow=10.0,SNR=4.5						
FINES	**FINESS Array B**	**37.66**	**326**	P	**P**	**18 37 28.6**	**+1.7**
	0.3nm,0.4s,baz=125,slow=9.6,SNR=4.2						
YKA	**Yellowknife Ar**	**81.50**	**3**	P	**P**	**18 42 30.4**	**+2.8**
	0.2nm,0.7s,baz=343,slow=4.8,SNR=4.5						

IDC ***11*** *18:38:44.6±2.5, 37.23N×140.96E, h0km, mb3.6/3, mb1 3.7/6, mb1mx3.4/37, mbtmp3.7/6, ML3.2/3, Error ellipse: s-maj=53.4km s-min=26.7km az=49.0*
ISCJB ***11*** *18:38:47.8±0.5, 37.02N±0.03×140.63E±0.04, h10km±4km, mb3.5/3, Error ellipse: s-maj=5.9km s-min=4.3km az=7.3*
JMA ***11*** *18:38:48.0, 37.01N×140.61E, h9km±1km, M3.4*
Broadband fault plane solution: P waves. NP1: φ=34.00000°, δ=63.00000°, λ=-125.00000°. NP2: φ=270.00000°, δ=43.00000°, λ=-42.00000°. Principal axes: T Plg11.0000°, Azm148.0000°; N Plg31.0000°, Azm51.0000°; P Plg57.0000°, Azm256.0000°;
JMA Felt II J1.

ISC 11 18:38:47.8±1.3, 37.05N±0.03×140.54E±0.05, h1km±11km, n20, σ1=13/24, mb3.6/3, 4C-2D, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.21**	**77**	⇓P	**Pg**	**18 38 51.9**	**0.0**
ONAJ				S	**Sg**	**18 38 54.6**	**-0.1**
JHO	**Hitachi**	**0.44**	**177**	⇑P	**Pg**	**18 38 55.8**	**-0.5**
JHO				S	**Sg**	**18 39 01.3**	**-0.8**
JFT	**Otama**	**0.49**	**341**	⇑P	**Pb**	**18 38 58.8**	**-0.5**
JFT				S	**Sb**	**18 39 06.4**	**-0.6**
JSB	**Shiboa**	**0.50**	**260**	⇓P	**Pb**	**18 38 59.4**	**-0.1**
JSB				S	**Sb**	**18 39 07.0**	**-0.4**
JFY	**Yanaizu**	**0.75**	**298**	⇑P	**Pb**	**18 39 03.7**	**-0.1**
JFY				S	**Sb**	**18 39 14.3**	**-0.3**
JMM	**Marumori**	**0.83**	**14**	⇑P	**Pg**	**18 39 04.0**	**+0.1**
JMM				S	**Sb**	**18 39 16.2**	**-0.7**
JYT	**Yasato**	**0.87**	**199**	P	**Pg**	**18 39 04.0**	**-0.5**
JYT				S	**Sg**	**18 39 15.3**	**-0.5**
MJAR	**Matsushiro Arr**	**1.94**	**255**	Pn	**Pn**	**18 39 22.5**	**+0.5**
	12nm,0.3s,baz=79,slow=15,SNR=64						
MJAR				Sn	**Sb**	**18 39 48.9**	**+0.2**
	11nm,0.3s,baz=89,slow=25,SNR=12						
MAT	**Matsushiro**	**1.94**	**255**	P	**Pn**	**18 39 22.9**	**+0.9**
MAT				S	**Sb**	**18 39 49.0**	**+0.2**
JHJ	**Hachijo jima 2**	**3.98**	**189**	Pn	**Pn**	**18 39 52.0**	**+2.1**
	6.4nm,0.3s,baz=32,slow=12,SNR=4.5						
JHJ				Sn	**Sn**	**18 40 37.7**	**+0.5**
	6.9nm,0.3s,baz=54,slow=19,SNR=3.1						
KSRS	**Korea Array**	**10.07**	**276**	Pn	**Pn**	**18 41 16.4**	**+2.8**
	0.1nm,0.3s,baz=87,slow=14,SNR=2.9						
SONM	**Songino Array**	**27.20**	**304**	P	**P**	**18 44 31.9**	**-1.2**
	0.5nm,0.7s,baz=99,slow=8.9,SNR=3.8						
H11N2	**WAKE ISLAND Hy**	**28.76**	**120**	T	T	19 14 34.2	
	baz=312,slow=75,SNR=24						
H11N1	**WAKE ISLAND Hy**	**28.77**	**120**	T	T	19 14 34.8	
	baz=312,slow=75,SNR=29						
H11N3	**WAKE ISLAND Hy**	**28.78**	**120**	T	T	19 14 35.5	
	baz=312,slow=75,SNR=24						
H11S1	**WAKE ISLAND Hy**	**29.46**	**122**	T	T	19 15 27.4	
	baz=314,slow=76,SNR=50						
H11S3	**WAKE ISLAND Hy**	**29.46**	**122**	T	T	19 15 27.7	
	baz=314,slow=76,SNR=37						
H11S2	**WAKE ISLAND Hy**	**29.46**	**122**	T	T	19 15 28.9	
	baz=314,slow=76,SNR=60						
WRA	**Warramunga Arr**	**56.99**	**187**	P	**P**	**18 48 32.9**	**-2.2**
	0.8nm,0.7s,baz=3.8,slow=7.4,SNR=11						
ASAR	**Alice Springs**	**60.72**	**187**	P	**P**	**18 48 59.4**	**-1.7**
	0.4nm,0.8s,baz=8.5,slow=7.5,SNR=5.3						

IDC 11 18:40:05.6±10.0, 37.83N×143.38E, h0km, mb3.5/2, mb1 3.6/3, mb1mx3.2/34, mbtmp3.3/3, Error ellipse: s-maj=209.1km s-min=53.6km az=16.0, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MJAR	**Matsushiro Arr**	**4.33**	**254**	Pn	Pn	18 41 12.6	-0.1
	baz=72,slow=16,SNR=1.4						
WRA	**Warramunga Arr**	**58.09**	**190**	P	P	18 50 00.1	-0.6
	1.2nm,0.8s,baz=7.2,slow=6.9,SNR=6.4						
ASAR	**Alice Springs**	**61.81**	**190**	P	P	18 50 26.9	+0.5
	0.1nm,0.6s,baz=358,slow=6.0,SNR=4.4						

IDC ***11*** *18:45:59.1±1.4, 37.05N×140.76E, h0km, mb3.5/4, mb1 3.7/5, mb1mx3.4/31, mbtmp3.5/5, ML3.4/1, Error ellipse: s-maj=33.2km s-min=25.5km az=68.0*
ISCJB ***11*** *18:46:00.9±0.6, 37.02N±0.03×140.70E±0.06, h21km±4km, mb3.5/4, Error ellipse: s-maj=7.4km s-min=5.1km az=9.9*
JMA ***11*** *18:46:01.5, 37.03N×140.63E, h10km±1km, M3.4*
Broadband fault plane solution: P waves. NP1: φ=315.00000°, δ=47.00000°, λ=-82.00000°. NP2: φ=123.00000°, δ=43.00000°, λ=-98.00000°. Principal axes: T Plg2.0000°, Azm39.0000°; N Plg6.0000°, Azm129.0000°; P Plg84.0000°, Azm292.0000°;
JMA Felt I J1.

ISC 11 18:46:01.1±1.0, 37.04N±0.04×140.59E±0.06, h11km±9km, n18, σ0=31/20, mb3.7/4, 6C-1D, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.18**	**70**	⇑P	**Pg**	**18 46 05.0**	**0.0**
ONAJ				S	**Sg**	**18 46 07.8**	**+0.1**
JHO	**Hitachi**	**0.43**	**182**	⇑P	**Pg**	**18 46 09.7**	**+0.2**
JHO				S	**Sg**	**18 46 15.1**	**-0.1**
JFT	**Otama**	**0.52**	**337**	⇑P	**Pb**	**18 46 12.2**	**-0.1**
JFT				S	**Sb**	**18 46 19.3**	**-0.5**
JSB	**Shiboa**	**0.54**	**263**	⇑P	**Pb**	**18 46 13.1**	**+0.4**
JSB				S	**Sb**	**18 46 20.6**	**+0.1**
JFY	**Yanaizu**	**0.80**	**298**	⇓P	**Pb**	**18 46 17.4**	**+0.4**
JFY				S	**Sb**	**18 46 27.8**	**0.0**
JMM	**Marumori**	**0.84**	**11**	⇑P	**Pg**	**18 46 17.2**	**-0.1**
JMM				S	**Sb**	**18 46 29.0**	**0.0**
JYT	**Yasato**	**0.87**	**202**	⇑P	**Pg**	**18 46 17.8**	**-0.1**
JYT				S	**Sg**	**18 46 29.2**	**0.0**
MJAR	**Matsushiro Arr**	**1.98**	**256**	Pn	**Pb**	**18 46 36.4**

JEM	**Erimo**	**3.58**	**241**	P	**Pn**	**18 54 52.0**	**+2.4**
YSS	**Yuzh-Sakhalins**	**4.52**	**316**	*e*P	**Pn**	**18 55 02.9**	**+0.4**
TYV	**Tymovskoe**	**7.74**	**337**	*e*P	**Pn**	**18 55 48.5**	**+1.8**

JMA 11 19:00:09.4±0.3, 38°45'N×144°58'E, h33km, M3.9, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**2.36**	**286**	P	Pn	19 00 47.5	+1.7
OFUJ				S	Sn	19 01 15.9	+2.2
JIO	**Ouri**	**2.54**	**271**	P	Pn	19 00 48.6	+0.4
JIO				S	Sn	19 01 19.7	+1.7
JTH	**Tanohata**	**2.58**	**306**	P	Pn	19 00 49.9	+1.0
JMK	**Ichinoseki**	**2.68**	**282**	P	Pn	19 00 52.1	+2.0
JMK				*e*S	Sn	19 01 23.8	+2.4
JOM	**Ohasama**	**2.76**	**293**	P	Pn	19 00 53.2	+1.9
JOM				S	Sn	19 01 25.2	+1.7
JANG	**Nango**	**3.05**	**310**	S	Sn	19 01 32.0	+1.2
JOU	**Okura**	**3.08**	**270**	P	Pn	19 00 57.7	+2.0
JOU				S	Sn	19 01 34.1	+2.7
JRG	**Rokugo**	**3.22**	**288**	P	Pn	19 01 00.1	+2.5
JRG				*e*S	Sn	19 01 38.0	+3.2
JYK	**Kaneyama**	**3.34**	**279**	P	Pn	19 01 02.1	+2.9
JYK				*e*S	Sn	19 01 41.0	+3.3
JTM	**Tenmabayashi**	**3.58**	**312**	P	Pn	19 01 04.3	+1.8
JTM				*e*S	Sn	19 01 44.1	+0.4
JNBK	**Urakawa-nobuka**	**4.07**	**341**	*e*S	Sn	19 01 54.7	-1.1
JCH	**Churui**	**4.26**	**348**	*e*S	Sn	19 01 57.2	-3.3

*ISCJB **11** 19:00:20.9±0.7, 37°.00'N±0°.03×140°.72E±0°.07, h7km±5km, mb3.4/2, Error ellipse: s-maj=9.5km s-min=4.6km az=11.6*
*IDC **11** 19:00:20.7±2.6, 36°.70'N×140°.76E, h0km, mb3.4/2, mb1 3.7/2, mb1mx3.2/37, mbtmp3.4/2, ML2.4/1, Error ellipse: s-maj=49.3km s-min=31.5km az=39.0*
*JMA **11** 19:00:21.0, 37°.00'N×140°.70E, h7km±1km, M2.5*
ISC 11 19:00:21.0±1.1, 36°.99'N±0°.03×140°.71E±0°.05, h6km±9km, n11, σ0°.80/19, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.13**	**34**	P	**Pg**	**19 00 23.9**	**+0.1**
ONAJ				S	**Sg**	**19 00 26.1**	**+0.5**
JHO	**Hitachi**	**0.40**	**196**	P	**Pg**	**19 00 28.8**	**+0.1**
JHO				S	**Sg**	**19 00 34.4**	**+0.5**
JFT	**Otama**	**0.60**	**331**	P	**Pg**	**19 00 32.7**	**+0.1**
JFT				S	**Sg**	**19 00 40.6**	**+0.2**
JSB	**Shiboa**	**0.63**	**268**	P	**Pg**	**19 00 33.7**	**+0.6**
JYT	**Yasato**	**0.87**	**208**	P	**Pg**	**19 00 37.6**	**-0.1**
JYT				*e*S	**Sg**	**19 00 48.9**	**0.0**
JMM	**Marumori**	**0.87**	**5**	P	**Pg**	**19 00 37.4**	**-0.4**
JMM				S	**Sg**	**19 00 49.0**	**-0.2**
JFY	**Yanaizu**	**0.90**	**298**	P	**Pg**	**19 00 38.1**	**-0.2**
JFY				S	**Sg**	**19 00 49.6**	**-0.4**
MJAR	**Matsushiro Arr**	**2.06**	**258**	Pn	**Pn**	**19 00 56.8**	**+0.6**
	1.3nm,0.3s,baz=84,slow=16,SNR=6.8						
MJAR				Sn	**Sn**	**19 01 22.4**	**+0.3**
	1.5nm,0.3s,baz=78,slow=30,SNR=6.3						
MAT	**Matsushiro**	**2.06**	**258**	P	**Pb**	**19 00 57.5**	**-1.3**
MAT				S	**Sb**	**19 01 24.2**	**-0.4**
MKAR	**Makanchi Array**	**43.66**	**302**	P	**P**	**19 08 28.4**	**+2.0**
	0.2nm,0.5s,baz=90,slow=8.7,SNR=3.7						
WRA	**Warramunga Arr**	**56.95**	**187**	P	**P**	**19 10 05.7**	**-1.4**
	0.6nm,0.9s,baz=11,slow=7.2,SNR=4.9						

*IDC **11** 19:11:53.4±1.4, 38°.91N×142°.62E, h0km, mb3.3/3, mb1 3.6/4, mb1mx3.3/49, mbtmp3.3/4, ML3.1/1, MS3.3/1, Ms1 3.3/1, ms1mx2.7/17, Error ellipse: s-maj=40.4km s-min=28.8km az=118.0*
*JMA **11** 19:11:57.5±0.1, 38°.99N×142°.39E, h31km±2km, M3.5*
ISC 11 19:11:54.4±2.4, 39°.00N±0°.06×142°.44E±0°.08, h6km±13km, n14, σ0°.79/18, mb3.6/3, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**0.61**	**278**	P	**Pn**	**19 12 08.8**	**-0.7**
OFUJ				S	**Sb**	**19 12 16.9**	**+0.7**
MIYJ	**Miyakonagasawa**	**0.75**	**321**	P	**Pn**	**19 12 11.0**	**-0.6**
MIYJ				S	**Sb**	**19 12 20.8**	**+0.4**
JMK	**Ichinoseki**	**0.95**	**268**	P	**Pn**	**19 12 14.1**	**-0.2**
JMK				S	**Sb**	**19 12 26.3**	**+0.2**
JIO	**Ouri**	**1.01**	**238**	S	**Sg**	**19 12 25.9**	**-1.0**
JOM	**Ohasama**	**1.01**	**298**	*e*S	**Sb**	**19 12 28.5**	**+0.7**
JKZ	**Kuzumaki**	**1.31**	**319**	*e*S	**Sg**	**19 12 36.1**	**-0.4**
JRG	**Rokugo**	**1.46**	**286**	P	**Pg**	**19 12 22.6**	**+0.2**
JRG				S	**Sg**	**19 12 41.9**	**+0.9**
JOU	**Okura**	**1.53**	**246**	P	**Pb**	**19 12 22.8**	**-0.3**
JOU				*e*S	**Sn**	**19 12 41.2**	**-1.2**
JYK	**Kaneyama**	**1.62**	**268**	P	**Pb**	**19 12 24.6**	**-0.2**
MJAR	**Matsushiro Arr**	**4.15**	**235**	Pn	**Pn**	**19 12 59.9**	**+1.6**
	1.0nm,0.3s,baz=40,slow=9.9,SNR=15						
PETK	**Petropavlovsk-**	**17.59**	**32**	LR	LR	19 22 44.8	
	comp=Z,90nm,18.4s,baz=288,slow=37						
MKAR	**Makanchi Array**	**43.79**	**301**	P	**P**	**19 20 01.7**	**+0.9**
	0.4nm,0.9s,baz=90,slow=8.4,SNR=3.4						
ILAR	**Eielson Array**	**47.41**	**33**	P	**P**	**19 20 29.3**	**+0.1**
	0.3nm,0.6s,baz=262,slow=6.3,SNR=4.7						
WRA	**Warramunga Arr**	**59.12**	**189**	P	**P**	**19 21 55.0**	**-0.7**
	0.2nm,0.4s,baz=7.0,slow=6.9,SNR=6.5						

*ISCJB **11** 19:20:44.4±0.3, 51°.51N±0°.01×16°.23E±0°.03, h0km, mb3.2/1, MS3.4/1, Error ellipse: s-maj=2.6km s-min=2.1km az=164.4*
*IPEC **11** 19:20:45.9±0.3, 51°.54N×16°.24E, h0km, ML2.8/3, Error ellipse: s-maj=3.1km s-min=1.6km az=62.0*
*CSEM **11** 19:20:46.8±0.1, 51°.48N×16°.17E, h2km, ML3.7/12, Error ellipse: s-maj=3.2km s-min=2.6km az=69.0*
*IDC **11** 19:20:47.8±0.6, 51°.46N×16°.00E, h0km, mb3.1/1, mb1 3.3/10, mb1mx3.2/53, mbtmp3.2/10, ML3.2/9, MS3.3/2, Ms1 3.3/2, ms1mx2.5/31, Error ellipse: s-maj=13.5km s-min=6.8km az=103.0*
*UPP **11** 19:20:50.8±2.9, 51°.68N×15°.88E, h0km, ML2.4, Suspected explosion*
*VIE **11** 19:20:50.5±0.8, 51°.23N×16°.14E, h0km, mb2.5/6, ml3.0/6, Error ellipse: s-maj=7.5km s-min=5.3km az=81.0, Suspected Mining induced.*
ISC 11 19:20:46.2±0.6, 51°.53N±0°.03×16°.20E±0°.02, h0km, n79, σ1°.16/138, Poland

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KSP	**Ksiaz**	**0.69**	**175**	*i* Pg	**Pg**	**19 20 59.7**	**+0.4**
KSP				*e*Sg	**Sg**	**19 21 07.9**	**-0.3**
KSP	**Ksiaz**	**0.69**	**175**	*i* Pg	**Pg**	**19 20 59.7**	**+0.4**
KSP				*e*Sg	**Sg**	**19 21 07.9**	**-0.3**
UPC	**Upice**	**1.03**	**187**	*i* PG	**Pg**	**19 21 05.8**	**-0.1**
UPC				*e*SG	**Sg**	**19 21 19.6**	**+0.4**
	comp=Z,226nm,0.3s						
UPC	**Upice**	**1.03**	**187**	Pg	**Pg**	**19 21 05.8**	**-0.1**
UPC				Sg	**Sg**	**19 21 19.6**	**+0.4**
	226nm,0.3s						
DPC	**Dobruska-Polom**	**1.18**	**176**	*i* PG	**Pg**	**19 21 08.4**	**-0.4**
DPC				*e*SG	**Sg**	**19 21 23.8**	**-0.3**
	comp=Z,63nm,0.4s						
DPC	**Dobruska-Polom**	**1.18**	**176**	Pg	**Pg**	**19 21 08.4**	**-0.4**
DPC				Sg	**Sg**	**19 21 23.8**	**-0.3**
	63nm,0.4s						
PVCC	**Panska Ves**	**1.44**	**226**	*e*PG	**Pn**	**19 21 13.8**	**+0.4**
PVCC				*e*SG	**Sg**	**19 21 32.5**	**+0.3**
	comp=Z,449nm,0.4s						
PVCC	**Panska Ves**	**1.44**	**226**	Pg	**Pn**	**19 21 13.8**	**+0.4**
PVCC				Sg	**Sg**	**19 21 32.5**	**+0.3**
	449nm,0.4s						
KRLC	**Kraliky**	**1.50**	**166**	*i* PG	**Pn**	**19 21 14.0**	**-0.4**
KRLC				*e*SG	**Sg**	**19 21 33.4**	**-0.9**
KRLC	**Kraliky**	**1.50**	**166**	Pg	**Pn**	**19 21 14.0**	**-0.4**
KRLC				Sg	**Sg**	**19 21 33.4**	**-0.9**
BRG	**Berggiesshubel**	**1.56**	**246**	PN	**Pn**	**19 21 15.2**	**0.0**
BRG				PG	**Pg**	**19 21 17.2**	**+1.1**
BRG				SG	**Sg**	**19 21 37.1**	**+0.8**
	141nm,0.5s						
PRA	**Prague**	**1.84**	**218**	*e*PN	**Pn**	**19 21 19.2**	**+0.2**
PRA				*e*PG	**Pb**	**19 21 21.1**	**+0.4**
PRA				*e*SG	**Sb**	**19 21 43.8**	**-0.4**
	comp=Z,45nm,0.4s						
PRA	**Prague**	**1.84**	**218**	Pn	**Pn**	**19 21 19.2**	**+0.2**
GOPC	**GO Pecny, Ondr**	**1.85**	**210**	*e*PN	**Pn**	**19 21 19.8**	**+0.7**
GOPC				*e*PG	**Pb**	**19 21 21.1**	**+0.3**
GOPC				*e*SG	**Sn**	**19 21 43.5**	**+0.3**
	comp=Z,54nm,0.2s						
GOPC	**GO Pecny, Ondr**	**1.85**	**210**	Pn	**Pn**	**19 21 19.8**	**+0.7**
GOPC	**GO Pecny, Ondr**	**1.85**	**210**	Pg	**Pb**	**19 21 21.1**	**+0.3**
GOPC				Sg	**Sn**	**19 21 43.5**	**+0.3**
	54nm,0.2s						
PRU	**Pruhonice**	**1.87**	**215**	*e*PN	**Pn**	**19 21 19.7**	**+0.3**
PRU				*e*PG	**Pb**	**19 21 20.8**	**-0.3**
PRU				*e*SG	**Sn**	**19 21 44.3**	**+0.7**
	comp=Z,72nm,0.4s						
PRU	**Pruhonice**	**1.87**	**215**	Pn	**Pn**	**19 21 19.7**	**+0.3**
MORC	**Moravsky Berou**	**1.95**	**153**	*e*Pn	**Pn**	**19 21 20.2**	**-0.4**
MORC				*e*Sg	**Sb**	**19 21 46.9**	**-0.6**
	57nm,0.6s						
CLL	**Collm**	**2.01**	**265**	*e*Pn	**Pn**	**19 21 22.0**	**+0.6**
CLL				*e*Pg	**Pg**	**19 21 25.0**	**+0.3**
CLL				*e*Sg	**Sg**	**19 21 52.0**	**+1.2**
	comp=Z,54nm,0.6s						
OKC	**Ostrava-Krasne**	**2.10**	**143**	*e*PG	**Pb**	**19 21 25.7**	**+0.6**
OKC				*e*SG	**Sb**	**19 21 51.4**	**-0.2**
OKC	**Ostrava-Krasne**	**2.10**	**143**	Pg	**Pb**	**19 21 25.7**	**+0.6**
OKC				Sg	**Sb**	**19 21 51.4**	**-0.2**
VRAC	**Vranov**	**2.24**	**173**	Pn	**Pn**	**19 21 24.1**	**-0.4**
	comp=Z,3.2nm,0.3s,baz=340,slow=12,SNR=17						
VRAC				Lg	Lg	19 21 55.6	
	comp=Z,9.5nm,0.3s,baz=62,slow=15,SNR=8.9						
VRAC	**Vranov**	**2.24**	**173**	*e*Pn	**Pn**	**19 21 24.3**	**-0.2**
VRAC				*e*Sg	**Sb**	**19 21 56.1**	**+0.4**
	comp=Z,51nm,0.6s						
TREC	**Trest**	**2.28**	**192**	*e*PN	**Pn**	**19 21 25.6**	**+0.5**
TREC				*e*PG	**Pb**	**19 21 28.7**	**+0.5**
TREC				*e*SG	**Sb**	**19 21 57.3**	**+0.8**
TREC	**Trest**	**2.28**	**192**	Pn	**Pn**	**19 21 25.6**	**+0.5**
KRUC	**Moravsky**	**2.47**	**177**	*e*Pn	**Pn**	**19 21 27.6**	**-0.1**
OJC	**Ojcow**	**2.63**	**118**	*e*Pg	**Pg**	**19 21 36.8**	**+0.3**
OJC				*e*Sg	**Sg**	**19 22 11.5**	**+0.9**
OJC	**Ojcow**	**2.63**	**118**	*e*Pg	**Pg**	**19 21 36.8**	**+0.3**
OJC				*e*Sg	**Sg**	**19 22 11.5**	**+0.9**
NKC	**Novy Kostel**	**2.71**	**243**	*e*PG	**Pg**	**19 21 37.8**	**-0.2**
NKC				*e*SG	**Sg**	**19 22 12.6**	**-0.5**
NKC	**Novy Kostel**	**2.71**	**243**	Pg	**Pg**	**19 21 37.8**	**-0.2**
NKC				Sg	**Sg**	**19 22 12.6**	**-0.5**
KHC	**Kasperske Hory**	**2.93**	**216**	*e*PN	**Pn**	**19 21 34.7**	**+0.7**
KHC				*e*PG	**Pb**	**19 21 40.6**	**+1.4**
KHC				*e*SG	**Sb**	**19 22 17.2**	**+1.6**
	comp=Z,35nm,0.3s						
KHC	**Kasperske Hory**	**2.93**	**216**	Pn	**Pn**	**19 21 34.7**	**+0.7**
KHC	**Kasperske Hory**	**2.93**	**216**	Pg	**Pb**	**19 21 40.6**	**+1.4**
KHC				Sg	**Sb**	**19 22 17.2**	**+1.6**
	comp=Z,35nm,0.3s						
SMOL	**Smolenice**	**3.12**	**165**	*e*Pn	Pn	19 21 32.8	-3.8
SMOL	**Smolenice**	**3.12**	**165**	*e*PN	Pn	19 21 32.8	-3.8
SMOL				*e*PG	**Pg**	**19 21 46.2**	**+0.3**
SMOL				*e*SG	**Sg**	**19 22 26.2**	**-0.1**
GERES	**GERESS Array B**	**3.13**	**212**	Pn	**Pn**	**19 21 37.3**	**+0.5**
	comp=Z,1.0nm,0.3s,baz=33,slow=14,SNR=26						
GERES				Pg	**Pb**	**19 21 43.8**	**+1.1**
	comp=Z,8.0nm,0.3s,baz=31,slow=17,SNR=76						
GERES				Lg	Lg	19 22 23.1	
	comp=Z,12nm,0.3s,baz=37,slow=25,SNR=11						
LANS	**Liptovska Anna**	**3.17**	**137**	*e*Pg	**Pg**	**19 21 47.9**	**+1.0**
LANS				*e*Sg	**Sg**	**19 22 28.0**	**0.0**
LANS	**Liptovska Anna**	**3.17**	**137**	*e*PG	**Pg**	**19 21 47.8**	**+0.9**
LANS				*e*SG	**Sg**	**19 22 28.0**	**0.0**
VYHS	**Vyhne**	**3.48**	**150**	*e*Pn	**Pn**	**19 21 41.5**	**-0.1**
VYHS	**Vyhne**	**3.48**	**150**	*e*PN	**Pn**	**19 21 41.5**	**-0.1**
VYHS				*e*PG	**Pg**	**19 21 53.8**	**+1.0**
VYHS				*e*SG	**Sg**	**19 22 35.8**	**-2.1**
VYHS				*e*LG	Lg	19 22 58.4	
CONA	**Conrad Observa**	**3.61**	**184**	*i* Pn	**Pn**	**19 21 44.3**	**+0.9**
	comp=Z,0.8nm,0.1s						
CONA				*e*Sg	**Sg**	**19 22 39.9**	**-2.2**
	comp=Z,17nm,0.3s						
CONA	**Conrad Observa**	**3.61**	**184**	Pn	**Pn**	**19 21 44.3**	**+0.9**
	comp=Z,0.8nm,0.1s						
CONA				Sg	**Sg**	**19 22 39.9**	**-2.2**
	comp=Z,17nm,0.3s						
BSD	**Bornholm Skovb**	**3.67**	**348**	*i* P	**Pn**	**19 21 45.2**	**+1.0**
BSD				*e*S	**Sn**	**19 22 27.1**	**-1.0**
BSD	**Bornholm Skovb**	**3.67**	**348**	*i* P	**Pn**	**19 21 45.2**	**+1.0**
	SNR=49						
BSD				*e*S	**Sn**	**19 22 27.1**	**-1.0**
MOA	**Molln**	**3.89**	**200**	*i* Pn	**Pn**	**19 21 47.7**	**+0.5**
	comp=Z,2.1nm,0.2s						
MOA				*e*Sg	**Sg**	**19 22 48.5**	**-2.6**
	comp=Z,17nm,0.4s						
MOA	**Molln**	**3.89**	**200**	Pn	**Pn**	**19 21 47.7**	**+0.5**
	comp=Z,2.1nm,0.2s						
MOA				Sg	**Sg**	**19 22 48.5**	**-2.6**
	comp=Z,17nm,0.4s						
KECS	**Kecovo**	**4.12**	**136**	*e*Pg	**Pg**	**19 22 04.1**	**-0.9**
KECS				*e*Sg	**Sg**	**19 22 55.8**	**-2.5**
KECS	**Kecovo**	**4.12**	**136**	*e*PG	**Pg**	**19 22 04.1**	**-0.9**
KECS				*e*SG	**Sg**	**19 22 55.8**	**-2.5**
KECS				*e*LG	Lg	19 23 02.2	
CRVS	**Cervenica-Dubn**	**4.28**	**126**	*e*Sg	**Sg**	**19 23 05.4**	**+1.8**
CRVS	**Cervenica-Dubn**	**4.28**	**126**	*e*SG	**Sg**	**19 23 05.4**	**+1.8**
ARSA	**Arzberg**	**4.30**	**186**	*i* Pn	**Pn**	**19 21 54.1**	**+1.2**
	comp=Z,1.4nm,0.5s						
ARSA				Sg	**Sb**	**19 22 58.6**	**+3.4**
	comp=Z,29nm,0.6s						
ARSA	**Arzberg**	**4.30**	**186**	Pn	**Pn**	**19 21 54.1**	**+1.2**
	comp=Z,1.4nm,0.5s						
ARSA				Sg	**Sb**	**19 22 58.6**	**+3.4**
	comp=Z,29nm,0.6s						
LUNU	**Lund**	**4.43**	**339**	*i* P	**Pn**	**19 21 55.4**	**+0.9**
	SNR=49						
LUNU				*e*S	**Sn**	**19 22 45.8**	**-0.9**
	SNR=49						
KOLS	**Kolonicke sedl**	**4.69**	**121**	*e*Pg	**Pg**	**19 22 18.0**	**+2.1**
KOLS				*e*Sg	**Sg**	**19 23 15.3**	**-1.3**
KOLS	**Kolonicke sedl**	**4.69**	**121**	*e*PG	**Pg**	**19 22 18.0**	**+2.1**
KOLS				*e*SG	**Sg**	**19 23 15.3**	**-1.3**
BLEU	**Blekinge**	**4.79**	**357**	P	**Pn**	**19 22 00.9**	**+1.4**
BLEU				S	**Sn**	**19 22 53.7**	**-2.0**
KBA	**Koelnbreinsper**	**4.83**	**204**	*i* Pn	**Pn**	**19 22 00.7**	**+0.5**
	comp=Z,0.7nm,0.1s						
KBA				Sg	**Sg**	**19 23 19.4**	**-1.8**
	comp=Z,15nm,0.6s						
KBA	**Koelnbreinsper**	**4.83**	**204**	Pn	**Pn**	**19 22 00.7**	**+0.5**
	comp=Z,0.7nm,0.1s						
KBA				Sg	**Sg**	**19 23 19.4**	**-1.8**
	comp=Z,15nm,0.6s						
BJUU	**Bjuv**	**4.93**	**339**	P	**Pn**	**19 22 01.8**	**+0.4**
BJUU				S	**Sn**	**19 22 57.2**	**-1.8**
BJUU	**Bjuv**	**4.93**	**339**	P	**Pn**	**19 22 01.8**	**+0.4**
BJUU				S	**Sn**	**19 22 57.2**	**-1.8**
DEL	**Delary**	**5.14**	**345**	P	**Pn**	**19 22 05.3**	**+1.0**
DEL	**Delary**	**5.14**	**345**	P	**Pn**	**19 22 05.3**	**+1.0**
VXJU	**Vaexsjoe**	**5.45**	**353**	P	**Pn**	**19 22 10.0**	**+1.4**
OSKU	**Oskarshamn**	**5.68**	**359**	P	**Pn**	**19 22 13.0**	**+1.3**
BYXU	**Byxelkrok**	**5.79**	**4**	P	**Pn**	**19 22 14.9**	**+1.7**
FABU	**Falkenberg**	**5.85**	**341**	P	**Pn**	**19 22 14.9**	**+0.9**
FABU				S	**Sn**	**19 23 20.1**	**-1.6**
FABU	**Falkenberg**	**5.85**	**341**	P	**Pn**	**19 22 14.9**	**+0.9**
DAVOX	**Davos/Dischmat**	**6.30**	**224**	Pn	**Pn**	**19 22 20.3**	**-0.2**
	comp=Z,0.3nm,0.3s,baz=311,slow=20,SNR=3.0						
DAVOX				Sn	**Sn**	**19 23 31.7**	**-1.6**
	comp=Z,0.4nm,0.3s,baz=327,slow=17,SNR=2.8						
DAVOX				Lg	Lg	19 24 03.4	
	comp=Z,0.6nm,0.3s,baz=180,slow=20,SNR=2.7						
FKPU	**Falk**	**6.80**	**349**	P	**Pn**	**19 22 28.6**	**+1.6**
FKPU	**Falk**	**6.80**	**349**	P	**Pn**	**19 22 28.6**	**+1.6**
AKASG	**Malin Array Be**	**8.24**	**91**	Pn	**Pn**	**19 22 47.1**	**+0.3**
	comp=Z,0.6nm,0.3s,baz=279,slow=12,SNR=5.6						
HFS	**Hagfors**	**8.74**	**352**	Pn	**Pn**	**19 22 53.8**	**+0.1**
	comp=Z,0.2nm,0.3s,baz=168,slow=16,SNR=9.0						
HFS				Sn	**Sn**	**19 24 32.2**	**-0.6**
	comp=Z,0.2nm,0.3s,baz=168,slow=22,SNR=4.1						
HFS				LR	LR	19 26 36.2	
	comp=Z,102nm,19.6s,baz=1.0,slow=40						
NOA	**NORSAR Array B**	**9.93**	**346**	Pn	**Pn**	**19 23 07.7**	**-2.3**
	comp=Z,0.2nm,0.3s,baz=180,slow=11,SNR=4.5						
FINES	**FINESS Array B**	**11.32**	**25**	Pn	**Pn**	**19 23 28.5**	**-0.5**
	comp=Z,0.2nm,0.3s,baz=204,slow=11,SNR=11						
FINES				Sn	Sn	19 25 31.0	-5.1
	comp=Z,0.3nm,0.3s,baz=229,slow=17,SNR=7.6						
EKA	**Eskdalemuir Ar**	**12.15**	**296**	Pn	**Pn**	**19 23 38.6**	**-1.7**
	baz=102,slow=14,SNR=3.2						
ARCES	**ARCESS Array B**	**18.59**	**10**	Pn	**P**	**19 25 02.5**	**-2.1**
	comp=Z,0.2nm,0.3s,baz=192,slow=11,SNR=8.4						
ASF	**Jabal al Asfar**	**24.58**	**134**	LR	LR	19 38 06.1	
	comp=Z,140nm,21.8s,baz=232,slow=42						
YKA	**Yellowknife Ar**	**59.86**	**336**	P	**P**	**19 30 54.8**	**+1.8**
	comp=Z,0.1nm,0.4s,baz=46,slow=4.6,SNR=3.5						

*IDC **11** 19:22:03.7±2.1, 37°.01N×140°.85E, h0km, mb3.4/3, mb1 3.6/4, mb1mx3.3/53, mbtmp3.3/4, ML2.9/1, Error ellipse: s-maj=43.7km s-min=26.8km az=42.0*
*ISCJB **11** 19:22:05.2±0.8, 37°.01N±0°.03×140°.81E±0°.08, h19km±5km, mb3.3/3, Error ellipse: s-maj=10.1km s-min=5.4km az=6.3*
*JMA **11** 19:22:06.0, 37°.02N×140°.70E, h11km±1km, M3.0*
JMA Felt I J1.
ISC 11 19:22:05.7±0.9, 37°.03N±0°.04×140°.67E±0°.08, h12km±8km, n11, σ0°.39/18, mb3.5/3, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.12**	**54**	P	**Pg**	**19 22 09.0**	**+0.1**
ONAJ				S	**Sg**	**19 22 11.0**	**-0.2**
JHO	**Hitachi**	**0.43**	**191**	P	**Pg**	**19 22 14.2**	**+0.1**
JHO				S	**Sg**	**19 22 20.2**	**+0.4**
JFT	**Otama**	**0.56**	**331**	P	**Pb**	**19 22 17.3**	**-0.1**
JFT				S	**Sb**	**19 22 25.4**	**0.0**
JSB	**Shiboa**	**0.61**	**264**	P	**Pb**	**19 22 18.8**	**+0.5**
JMM	**Marumori**	**0.84**	**6**	P	**Pg**	**19 22 21.8**	**-0.1**
JMM				S	**Sb**	**19 22 33.3**	**-0.2**
JFY	**Yanaizu**	**0.86**	**296**	P	**Pb**	**19 22 22.9**	**+0.3**
JFY				S	**Sb**	**19 22 34.1**	**0.0**
JYT	**Yasato**	**0.89**	**206**	P	**Pg**	**19 22 22.6**	**-0.2**
JYT				S	**Sg**	**19 22 34.6**	**+0.2**
MJAR	**Matsushiro Arr**	**2.04**	**257**	Pn	**Pb**	**19 22 41.7**	**-1.0**
	3.5nm,0.3s,baz=80,slow=16,SNR=12						
MJAR				Sn	**Sb**	**19 23 07.6**	**-0.4**
	6.6nm,0.3s,baz=88,slow=27,SNR=14						
MKAR	**Makanchi Array**	**43.62**	**302**	P	**P**	**19 30 10.3**	**+0.5**
	0.1nm,0.6s,baz=88,slow=10,SNR=2.9						
WRA	**Warramunga Arr**	**56.98**	**187**	P	**P**	**19 31 51.0**	**-0.1**
	0.5nm,0.5s,baz=5.4,slow=7.3,SNR=8.1						
ASAR	**Alice Springs**	**60.71**	**187**	P	**P**	**19 32 16.8**	**-0.2**
	0.4nm,0.9s,baz=17,slow=6.8,SNR=3.6						

*IDC **11** 19:31:38.7±4.0, 12°.76N×88°.06W, h69km±38km, mb3.5/3, mb1 3.8/4, mb1mx3.3/32, mbtmp3.8/4, ML3.5/1, Error ellipse: s-maj=102.4km s-min=31.2km az=50.0*
*CASC **11** 19:31:40.4±1.2, 9°.10N×86°.75W, h422km±133km, MD4.3*
ISC 11 19:31:35.8±1.1, 12°.44N±0°.09×88°.5W±0°.1, h35km, n14, σ2°.43/15, mb3.8/3, 1C, Off coast of central America

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LCY	**Lacayo**	**1.01**	**14**	*e*P	**Pn**	**19 31 53.7**	**+0.2**
VSM	**San Miguel**	**1.02**	**15**	*e*P	**Pn**	**19 31 54.1**	**+0.3**
PACA	**Pacayal**	**1.05**	**11**	*e*P	**Pn**	**19 31 54.5**	**+0.4**
PACA				*e*S	**Sn**	**19 32 10.0**	**+2.5**
TECA	**Tecapa**	**1.05**	**2**	*e*P	**Pn**	**19 31 55.0**	**+0.7**
LFRS	**El Faro**	**1.29**	**337**	*e*P	**Pn**	**19 31 59.1**	**+1.7**
LFRS				*e*S	**Sn**	**19 32 16.6**	**+3.2**
LBRS	**Las Brisas**	**1.39**	**339**	*e*P	**Pn**	**19 32 01.4**	**+2.7**
JTS	**JuntasAbangare**	**4.11**	**121**	P	**Pn**	**19 32 36.4**	**+0.3**
	3.1nm,0.3s,baz=303,slow=17,SNR=4.8						
JTS				S	**Sn**	**19 33 27.9**	**+4.8**
	4.1nm,0.3s,baz=260,slow=18,SNR=2.3						
QCR	**Quepos**	**5.23**	**124**	*e*P	Pn	19 32 43.9	-7.6
URSC	**Urasca**	**5.34**	**118**	*e*P	Pn	19 32 47.6	-5.6
URSC				*e*S	Sn	19 33 41.7	-12
BUS	**Buena Vista**	**5.50**	**121**	*e*P	Pn	19 32 48.8	-6.8
BUS				*e*S	Sn	19 33 40.8	-17
TXAR	**Lajitas Array**	**21.92**	**322**	P	**P**	**19 36 26.9**	**+0.6**
	1.0nm,0.7s,baz=137,slow=9.7,SNR=9.5						
ULM	**Lac du Bonnet**	**38.18**	**352**	P	**P**	**19 38 49.0**	**-2.9**
	2.2nm,0.6s,baz=173,slow=4.6,SNR=3.8						
YKA	**Yellowknife Ar**	**53.35**	**345**	P	**

MAT S **Sb** **19 44 49.0 +0.6**
JHJ **Hachijo jima 2** **4.02 189** P **Pn** **19 44 50.8 +1.0**
25nm,0.3s,baz=98,slow=17,SNR=4.9
JHJ S **Sn** **19 45 34.6 -2.5**
7.2nm,0.3s,baz=235,slow=18,SNR=2.5
JNU **Nakatsue** **8.86 246** P Pn 19 46 00.2 +3.9
0.4nm,0.3s,baz=67,slow=9.0,SNR=5.2
JNU LR LR 19 50 06.9
comp=Z,89nm,18.4s,baz=121,slow=43
USRK **Ussuriysk Ar.** **9.62 320** P Pn 19 46 12.7 +6.1
0.2nm,0.3s,baz=128,slow=12,SNR=7.9
KSRS **Korea Array** **10.07 276** P Pn 19 46 18.6 +5.8
0.3nm,0.3s,baz=97,slow=14,SNR=11
KSRS LR LR 19 49 41.2
comp=Z,62nm,20.3s,baz=113,slow=35
KSAR **Wonju Array Be** **10.10 276** P Pn 19 46 18.6 +5.4
ENH **Enshi** **26.65 264** *eP* **P** **19 49 27.0 -0.3**
SONM **Songino Array** **27.17 304** P **P** **19 49 31.7 -0.3**
1.4nm,0.7s,baz=112,slow=8.3,SNR=11
SONM PcP **PcP** **19 52 52.5 +0.3**
0.2nm,0.4s,baz=123,slow=2.1,SNR=4.3
H11N2 **WAKE ISLAND Hy 28.78 120** T T 20 19 38.2
baz=313,slow=75,SNR=37
H11N1 **WAKE ISLAND Hy 28.79 120** T T 20 19 38.8
baz=313,slow=75,SNR=35
H11N3 **WAKE ISLAND Hy 28.80 120** T T 20 19 39.6
baz=313,slow=75,SNR=32
H11S1 **WAKE ISLAND Hy 29.48 122** T T 20 20 29.9
baz=314,slow=75,SNR=84
H11S3 **WAKE ISLAND Hy 29.48 122** T T 20 20 30.5
baz=314,slow=75,SNR=75
H11S2 **WAKE ISLAND Hy 29.50 122** T T 20 20 31.2
baz=314,slow=75,SNR=56
CMAR **Chiang Mai Arr** **40.84 255** LR LR 20 08 31.8
comp=Z,19nm,19.7s,baz=100,slow=36
ZALV **Zalesovo Beam** **41.36 312** P **P** **19 51 34.0 -0.3**
0.9nm,0.5s,baz=93,slow=8.8,SNR=5.5
ZALV PcP **PcP** **19 53 31.9 -0.5**
0.4nm,0.3s,baz=74,slow=3.2,SNR=4.0
MKAR **Makanchi Array** **43.50 302** P **P** **19 51 52.1 +0.3**
0.4nm,0.5s,baz=88,slow=9.7,SNR=9.8
KURK **Kurchatov** **45.35 308** *eP* **P** **19 52 05.4 -1.0**
4.7nm,0.6s
ILAR **Eielson Array** **49.81 32** P **P** **19 52 42.6 +1.6**
0.4nm,0.6s,baz=270,slow=6.1,SNR=6.6
BVAR **Borovoye Array** **50.02 312** P **P** **19 52 42.9 +0.1**
0.9nm,0.7s,baz=80,slow=5.0,SNR=5.0
BVAR PcP **PcP** **19 54 02.5 0.0**
0.7nm,0.5s,baz=116,slow=3.4,SNR=4.8
BRVK **Borovoye** **50.07 312** P **P** **19 52 43.9 +0.8**
INK **Inuvik** **54.65 27** P **P** **19 53 17.9 +1.1**
0.8nm,0.9s,baz=297,slow=14,SNR=5.3
INK LR LR 20 18 43.2
comp=Z,145nm,19.8s,baz=126,slow=38
WRA **Warramunga Arr** **57.03 187** P **P** **19 53 34.0 -0.5**
3.0nm,0.7s,baz=2.1,slow=7.5,SNR=43
ABKAR **Akbulak array** **57.37 310** *eP* **P** **19 53 36.5 -0.2**
0.9nm,0.5s
ASAR **Alice Springs** **60.76 187** P **P** **19 54 00.1 -0.2**
0.7nm,0.7s,baz=19,slow=13,SNR=17
MBWA **Marble Bar** **61.18 202** *eP* **P** **19 54 02.9 -0.2**
2.0nm,0.6s
GEYT **Alibeck** **63.20 299** P **P** **19 54 16.3 -0.5**
1.0nm,0.6s,baz=344,slow=2.2,SNR=4.7
ARCES **ARCESS Array B** **63.69 339** P **P** **19 54 18.9 -0.6**
3.1nm,0.8s,baz=59,slow=7.3,SNR=7.1
YKA **Yellowknife Ar** **64.10 30** P **P** **19 54 22.4 +0.2**
0.1nm,0.6s,baz=306,slow=7.4,SNR=3.3
FINES **FINESS Array B** **68.43 332** P **P** **19 54 49.7 -0.3**
1.6nm,0.6s,baz=54,slow=9.8,SNR=8.8
AKASG **Malin Array Be** **73.82 322** P **P** **19 55 21.1 -1.8**
0.6nm,0.4s,baz=47,slow=6.3,SNR=8.6
NOA **NORSAR Array B** **73.86 337** P **P** **19 55 22.3 -0.7**
0.6nm,0.7s,baz=56,slow=11,SNR=3.2
NVAR **Mina Array Bea** **75.51 53** P **P** **19 55 35.4 +2.2**
0.6nm,0.6s,baz=298,slow=4.9,SNR=5.1
PDAR **Pinedale Array** **78.12 45** P **P** **19 55 48.8 +0.9**
0.4nm,0.6s,baz=268,slow=4.5,SNR=5.3
BRTR **Keskin Array B** **78.29 311** P **P** **19 55 48.2 -0.6**
0.7nm,0.7s,baz=83,slow=4.3,SNR=3.1
ULM **Lac du Bonnet** **79.83 33** LR LR 20 34 06.1
comp=Z,28nm,18.1s,baz=300,slow=38
GERES **GERESS Array B** **82.29 328** P **P** **19 56 10.1 0.0**
0.4nm,0.5s,baz=40,slow=6.2,SNR=6.1
TXAR **Lajitas Array** **90.63 52** P **P** **19 56 52.4 +0.9**
0.3nm,0.6s,baz=313,slow=2.9,SNR=4.1
LPAZ **La Paz** **147.26 58** PKPbc **PKPbc** **20 03 33.8 +0.5**
0.8nm,0.6s,baz=257,slow=5.0,SNR=4.0

*IDC **11** 19:45:58.7±2.1,37.03N×140.81E,h0km,mb3.5/3, mb1 3.7/4,mb1mx3.3/36,mbtmp3.5/4,ML3.5/1,Error ellipse: s-maj=44.1km s-min=27.7km az=43.0*
*ISCJB **11** 19:46:00.3±0.7,37.00N±0.03×140.75E±0.06,h17km±5km, mb3.5/3,Error ellipse: s-maj=7.9km s-min=5.2km az=10.4*
*JMA **11** 19:46:01.0,37.01N×140.64E,h9km±1km,M3.5*
JMA Felt I J1.
ISC 11 19:46:00.6±0.9,37.02N±0.04×140.62E±0.07,h11km±9km, n12,σ0848/21,mb3.6/3,3C-3D,Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
					Op		h m s	ISC
ONAJ	**Iwakimizushiy**	**0.16**	**61**	⇓P		**Pg**	**19 46 04.5**	**+0.2**
ONAJ				S		**Sg**	**19 46 07.0**	**+0.1**
JHO	**Hitachi**	**0.41**	**186**	⇑P		**Pg**	**19 46 08.8**	**0.0**
JHO				S		**Sg**	**19 46 14.4**	**+0.1**
JFT	**Otama**	**0.54**	**335**	⇑P		**Pb**	**19 46 12.0**	**-0.2**
JFT				S		**Sb**	**19 46 19.6**	**-0.4**
JSB	**Shiboa**	**0.56**	**265**	⇓P		**Pb**	**19 46 12.9**	**+0.4**
JSB				S		**Sb**	**19 46 20.8**	**+0.2**
JFY	**Yanaizu**	**0.83**	**298**	⇓P		**Pb**	**19 46 17.2**	**+0.2**
JFY				S		**Sb**	**19 46 28.0**	**-0.2**
JMM	**Marumori**	**0.85**	**9**	⇑P		**Pg**	**19 46 16.9**	**-0.2**
JMM				S		**Sb**	**19 46 28.6**	**-0.3**
JYT	**Yasato**	**0.87**	**204**	P		**Pg**	**19 46 17.2**	**-0.1**
JYT				S		**Sg**	**19 46 28.0**	**-0.6**
MJAR	**Matsushiro Arr**	**2.00**	**257**	Pn		**Pb**	**19 46 36.0**	**-0.9**
	15nm,0.3s,baz=75,slow=15,SNR=6.3							
MJAR						Sn	**Sb**	**19 47 02.6**	**+0.8**
	17nm,0.3s,baz=333,slow=29,SNR=5.2							
MAT	**Matsushiro**	**2.00**	**257**	P		**Pb**	**19 46 36.1**	**-0.9**
MAT				S		**Sb**	**19 47 02.4**	**+0.5**
MKAR	**Makanchi Array**	**43.59**	**302**	P		**P**	**19 54 05.2**	**+0.6**
	0.1nm,0.5s,baz=92,slow=10.0,SNR=3.7							
WRA	**Warramunga Arr**	**56.97**	**187**	P		**P**	**19 55 46.1**	**0.0**
	1.1nm,0.6s,baz=3.6,slow=7.3,SNR=8.0							
ASAR	**Alice Springs**	**60.70**	**187**	P		**P**	**19 56 11.8**	**-0.2**
	0.5nm,0.9s,baz=19,slow=12,SNR=4.6							

JMA 11 19:49:55.4,37.04N×140.68E,h10km±2km,M2.6,Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
					Op		h m s	ISC
ONAJ	**Iwakimizushiy**	**0.11**	**57**	*e*S		Sg	19 50 00.4	+0.1
JFT	**Otama**	**0.55**	**330**	P		Pg	19 50 06.3	+0.2
JFT				S		Sg	19 50 13.8	+0.4
MAT	**Matsushiro**	**2.05**	**257**	P		Pb	19 50 31.4	-1.3
MAT				S		Sb	19 50 59.3	+1.1

*ISCJB **11** 19:55:50.5±1.3,43.00N±0.08×146.44E±0.07, h51km±17km,Error ellipse: s-maj=15.2km s-min=5.9km az=150.2*
*JMA **11** 19:55:50.7±0.1,42.98N×146.43E,h54km±2km,M3.2*
*SKHL **11** 19:55:51.1±0.3,42.97N×146.40E,h44km±3km,mb4.1/3*
ISC 11 19:55:50.3±2.5,42.96N±0.10×146.49E±0.07,h33km±4km, n13,σ0886/23,Off southeast coast of Hokkaido

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
					Op		h m s	ISC
NEM2	**Nemuro 2**	**0.68**	**307**	P		**Pb**	**19 56 03.8**	**0.0**
NEM2				*e*S		**Sb**	**19 56 13.4**	**+0.4**
SHO	**Shikotan**	**0.95**	**15**	*e*P		**Pn**	**19 56 07.2**	**0.0**
SHO				AMB		AMB	19 56 07.4	
	150nm,0.3s							
SHO				*e*S		**Sb**	**19 56 19.1**	**-1.4**
SHO				A		A	19 56 19.5	
	460nm,0.3s							
SHO				A		A	19 56 19.5	
	540nm,0.3s							
YUK	**Yuzh-Kuril'sk**	**1.17**	**337**	*i* P		**Pn**	**19 56 09.9**	**-0.4**
YUK				AMB		AMB	19 56 11.6	
	70nm,0.1s							
YUK				AMB		AMB	19 56 11.6	
	30nm,0.1s							
YUK				*i* S		**Sn**	**19 56 24.2**	**-0.9**
YUK				A		A	19 56 27.6	
	830nm,0.6s							
JAK	**Akkeshi**	**1.31**	**272**	P		**Pn**	**19 56 12.5**	**+0.2**
JAK				*e*S		**Sn**	**19 56 28.2**	**-0.4**
JRA	**Rausu**	**1.40**	**315**	P		**Pn**	**19 56 13.7**	**+0.3**
JRA				*e*S		**Sn**	**19 56 30.3**	**-0.4**
JNK	**Nakash**	**1.44**	**297**	P		**Pn**	**19 56 13.7**	**-0.3**
JNK				*e*S		**Sn**	**19 56 30.7**	**-1.0**
JOB	**Onbets**	**1.95**	**269**	P		**Pn**	**19 56 21.3**	**+0.3**
JOB				*e*S		**Sn**	**19 56 43.5**	**-0.8**
JAR	**Ashorobuto**	**2.02**	**281**	P		**Pn**	**19 56 22.4**	**+0.4**
JAR				*e*S		**Sn**	**19 56 45.8**	**-0.2**
JTKR	**Abashiri--Toko**	**2.13**	**299**	P		**Pn**	**19 56 24.5**	**+1.0**
JTKR				*e*S		**Sn**	**19 56 49.2**	**+0.3**
JCH	**Churui**	**2.33**	**263**	*e*S		**Sn**	**19 56 52.4**	**-1.2**
KUR	**Kuril'sk**	**2.48**	**23**	*i* P		**Pn**	**19 56 29.6**	**+1.2**
KUR				AMB		AMB	19 56 31.2	
	20nm,0.4s							
KUR				*e*S		**Sn**	**19 56 57.2**	**-0.3**
KUR				A		A	19 56 59.3	
	30nm,0.3s							
KUR				A		A	19 56 59.3	
	40nm,0.3s							
JMP	**Maruseppu**	**2.51**	**296**	P		**Pn**	**19 56 29.8**	**+1.1**
YSS	**Yuzh-Sakhalins**	**4.79**	**328**	*e*P		**Pn**	**19 57 01.9**	**+1.8**

*NIED **11** 20:00:00,37.10N×140.70E,h5km,Mw3.6 Best double couple: M₀3.24000×10¹⁴ NP1:φs331.00000°,δ16.00000°, λ-153.00000°. NP2:φs214.00000°,δ83.00000°, λ-76.00000°.*
*IDC **11** 20:00:02.5±0.9,37.05N×140.78E,h0km,mb3.6/8, mb1 3.8/9,mb1mx3.5/35,mbtmp3.6/9,ML3.6/1,Error ellipse: s-maj=24.0km s-min=18.5km az=93.0*
*ISCJB **11** 20:00:03.5±0.6,37.06N±0.03×140.80E±0.05,h17km±4km, mb3.6/8,Error ellipse: s-maj=7.5km s-min=5.0km az=16.0*
*JMA **11** 20:00:04.2,37.07N×140.68E,h10km±1km,M3.8 Broadband fault plane solution: P waves. NP1: φs206.00000°,δ58.00000°,λ-91.00000°. NP2:φs28.00000°, δ32.00000°,λ-88.00000°. Principal axes: T Plg13.0000°, Azm297.0000°; N Plg1.0000°, Azm207.0000°; P Plg77.0000°, Azm113.0000°;*
JMA Felt II J1.
ISC 11 20:00:04.2±0.9,37.06N±0.03×140.68E±0.04,h10km±6km, n18,σ0961/26,mb3.5/8,5C,Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
					Op		h m s	ISC
ONAJ	**Iwakimizushiy**	**0.10**	**67**	⇑P		**Pg**	**20 00 06.9**	**0.0**
ONAJ				S		**Sg**	**20 00 08.8**	**0.0**
JHO	**Hitachi**	**0.46**	**191**	P		**Pg**	**20 00 13.2**	**0.0**
JHO				S		**Sg**	**20 00 19.6**	**+0.4**
JFT	**Otama**	**0.53**	**329**	⇑P		**Pg**	**20 00 14.7**	**+0.1**
JFT				S		**Sg**	**20 00 21.8**	**+0.2**
JSB	**Shiboa**	**0.62**	**262**	⇑P		**Pb**	**20 00 16.8**	**-0.3**
JSB				S		**Sb**	**20 00 25.5**	**-0.4**
JMM	**Marumori**	**0.81**	**6**	⇑P		**Pg**	**20 00 19.3**	**-0.5**
JMM				S		**Sg**	**20 00 30.1**	**-0.3**
JFY	**Yanaizu**	**0.85**	**294**	⇑P		**Pg**	**20 00 20.5**	**-0.1**
JFY				S		**Sg**	**20 00 31.4**	**-0.3**
JYT	**Yasato**	**0.92**	**205**	P		**Pg**	**20 00 21.5**	**-0.4**
JYT				S		**Sg**	**20 00 33.2**	**-0.7**
MJAR	**Matsushiro Arr**	**2.05**	**256**	Pn		**Pn**	**20 00 39.8**	**+0.9**
	18nm,0.3s,baz=74,slow=16,SNR=58							
MJAR						Sn	**Sb**	**20 01 06.5**	**-0.6**
	19nm,0.3s,baz=124,slow=13,SNR=5.5							
MAT	**Matsushiro**	**2.05**	**256**	P		**Pn**	**20 00 40.0**	**+1.2**
MAT				S		**Sb**	**20 01 07.6**	**+0.4**
KSRS	**Korea Array**	**10.18**	**276**	Pn		Pn	20 02 35.9	+5.5
	0.2nm,0.3s,baz=96,slow=14,SNR=4.5							
SONM	**Songino Array**	**27.28**	**304**	P		**P**	**20 05 48.9**	**0.0**
	0.6nm,0.6s,baz=111,slow=9.9,SNR=5.1							
TIXI	**Tiksi**	**35.19**	**354**	P		**P**	**20 06 57.1**	**-1.0**
	0.2nm,0.4s,baz=94,slow=7.9,SNR=2.1							
MKAR	**Makanchi Array**	**43.61**	**302**	P		**P**	**20 08 08.7**	**0.0**
	0.4nm,0.6s,baz=89,slow=9.2,SNR=7.0							
ILAR	**Eielson Array**	**49.78**	**32**	P		**P**	**20 08 57.1**	**+0.4**
	0.3nm,0.8s,baz=277,slow=7.2,SNR=2.5							
BVAR	**Borovoye Array**	**50.12**	**312**	P		**P**	**20 09 00.9**	**+1.4**
	0.9nm,0.5s,baz=81,slow=4.5,SNR=3.4							
WRA	**Warramunga Arr**	**57.01**	**187**	P		**P**	**20 09 49.7**	**-0.5**
	1.9nm,0.5s,baz=2.9,slow=7.3,SNR=46							
ASAR	**Alice Springs**	**60.74**	**187**	P		**P**	**20 10 15.9**	**-0.2**
	0.7nm,0.7s,baz=16,slow=7.8,SNR=11							
FINES	**FINESS Array B**	**68.52**	**332**	P		**P**	**20 11 05.9**	**-0.6**
	0.4nm,0.6s,baz=19,slow=8.8,SNR=2.8							

*NIED **11** 20:03:00,36.90N×140.70E,h5km,Mw4.2 Best double couple: M₀2.04000×10¹⁵ NP1:φs43.00000°,δ39.00000°, λ-89.00000°. NP2:φs222.00000°,δ51.00000°, λ-91.00000°.*
*BJI **11** 20:03:37.8,36.37N×140.89E,h10km,mb4.4/16,mB4.9/5, Ms3.8/3,Ms7 3.7/2*
*IDC **11** 20:03:42.2±0.4,36.95N×140.59E,h0km,mb4.2/33, mb1 4.3/35,mb1mx4.3/42,mbtmp4.2/35,ML3.7/2,MS3.5/20, Ms1 3.5/20,ms1mx3.3/47,Error ellipse: s-maj=12.3km s-min=10.9km az=106.0*
*ISCJB **11** 20:03:42.9±0.5,36.94N±0.02×140.76E±0.04,h18km±3km, mb4.2/52,MS3.5/17,Error ellipse: s-maj=5.5km s-min=3.5km az=28.7*
*JMA **11** 20:03:43.4,36.94N×140.67E,h6km±1km,M4.4 Broadband fault plane solution: P waves. NP1: φs232.00000°,δ54.00000°,λ-85.00000°. NP2:φs43.00000°, δ36.00000°,λ-97.00000°. Principal axes: T Plg9.0000°, Azm318.0000°; N Plg4.0000°, Azm49.0000°; P Plg80.0000°, Azm162.0000°;*
JMA Felt III J1.
*MOS **11** 20:03:46.3±1.3,37.04N×140.68E,h42km,mb4.4/39 Error ellipse: s-maj=8.2km s-min=5.6km az=91.8*
*NEIC **11** 20:03:47.7±0.8,36.99N×140.58E,h37km±7km,mb4.5/9, Error ellipse: s-maj=7.7km s-min=5.2km az=127.0*
NEIC Recorded [3 JMA] in Fukushima.
ISC 11 20:03:43.4±0.9,36.95N±0.03×140.69E±0.04,h9km±5km, n131,σ1809/131,mb4.2/52,MS3.5/17,9C-4D,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
					Op		h m s	ISC
ONAJ	**Iwakimizushiy**	**0.17**	**31**	⇑P		**Pg**	**20 03 47.5**	**+0.4**
ONAJ				*e*S		**Sg**	**20 03 50.2**	**+0.5**
JHO	**Hitachi**	**0.35**	**195**	⇑P		**Pg**	**20 03 50.2**	**-0.1**
JHO				S		**Sg**	**20 03 54.9**	**-0.1**
JSB	**Shiboa**	**0.61**	**272**	⇑P		**Pb**	**20 03 55.8**	**-0.5**
JSB				S		**Sb**	**20 04 04.4**	**-0.6**
JFT	**Otama**	**0.63**	**334**	⇑P		**Pg**	**20 03 55.8**	**+0.2**
JFT				S		**Sb**	**20 04 04.5**	**-1.0**
JYT	**Yasato**	**0.82**	**209**	⇓P		**Pg**	**20 03 58.7**	**-0.5**
JYT				S		**Sg**	**20 04 09.2**	**-0.7**
JFY	**Yanaizu**	**0.91**	**300**	⇑P		**Pg**	**20 04 00.6**	**-0.2**
JFY				S		**Pg**	**20 04 12.3**	**-0.3**
JMM	**Marumori**	**0.92**	**5**	⇑P		**Pg**	**20 04 00.6**	**-0.4**
JMM				S		**Sg**	**20 04 13.0**	**+0.1**
MJAR	**Matsushiro Arr**	**2.03**	**259**	Pn		**Pn**	**20 04 18.5**	**+0.7**
	91nm,0.3s,baz=83,slow=7.8,SNR=107							
MJAR						Sn	**Sn**	**20 04 44.1**	**+0.8**
	191nm,0.3s,baz=130,slow=12,SNR=23							
MJAR						LR	LR	20 05 21.2	
	comp=Z,432nm,20.6s,baz=60,slow=51							
MAJO	**Matsushiro**	**2.03**	**259**	*i* P		**Pn**	**20 04 18.9**	**+1.1**
MAJO	**Matsushiro**	**2.03**	**259**	*e*Pn		**Pn**	**20 04 18.8**	**+1.0**
MAT	**Matsushiro**	**2.03**	**259**	P		**Pn**	**20 04 18.9**	**+1.1**
MAT				S		**Sb**	**20 04 45.8**	**0.0**
JHJ	**Hachijo jima 2**	**3.90**	**191**	Pn		**Pn**	**20 04 43.5**	**+0.2**
	60nm,0.3s,baz=44,slow=3.8,SNR=13							
JHJ						Sn	**Sn**	**20 05 30.3**	**+1.1**
	106nm,0.3s,baz=254,slow=22,SNR=9.9							
ERM	**Erimo**	**5.41**	**20**	*e*P		**Pn**	**20 05 05.6**	**+1.5**
YUK	**Yuzh-Kuril'sk**	**8.10**	**28**	*e*P		**Pn**	**20 05 42.1**	**+1.1**
YUK				*e*S		**Sn**	**20 07 08.6**	**-4.1**
YUK				pmax		pmax		
	comp=Z,69nm,0.3s							
YUK				pmax		pmax		
	comp=N,26nm,0.2s							
YUK				pmax		pmax		
	comp=E,39nm,0.4s							
SHO	**Shikotan**	**8.35**	**32**	*e*P		**Pn**	**20 05 43.4**	**-1.1**
SHO				*e*S		Sn	20 07 11.5	-7.3
SHO				pmax		pmax		
	comp=N,16nm,0.8s							
SHO				pmax		pmax		
	comp=Z,28nm,0.8s							
JNU	**Nakatsue**	**8.90**	**247**	Pn		**Pn**	**20 05 54.7**	**+2.5**
	comp=Z,0.5nm,0.3s,baz=48,slow=7.1,SNR=7.0							
JNU				LR		LR	20 09 37.2	
	comp=Z,67nm,18.8s,baz=120,slow=40							
USRK	**Ussuriysk Ar.**	**9.80**	**320**	Pn		Pn	20 06 08.4	+4.0
	comp=Z,0.6nm,0.3s,baz=131,slow=12,SNR=25							
USRK				LR		LR	20 09 33.9	
	comp=Z,271nm,21.5s,baz=109,slow=36							
KUR	**Kuril'sk**	**9.89**	**31**	P		**Pn**	**20 06 06.4**	**+0.9**
KUR				S		**Sn**	**20 07 51.2**	**-5.4**
KUR				pmax		pmax		
	comp=Z,16nm,0.6s							
KUR				smax		smax		
	comp=N,20nm,0.6s							
KUR				smax		smax		
	comp=E,11nm,0.6s							
CBIJ	**Chichi jima**	**9.91**	**172**	*e*P		Pn	20 06 02.4	-3.5
CBIJ				Sn		Sn	20 07 46.9	-10
JCJ	**Chichijima**	**9.91**	**172**	Pn		**Pn**	**20 06 03.2**	**-2.7**
	comp=E,13nm,0.3s,baz=330,slow=20,SNR=5.0							
JCJ				Sn		Sn	20 07 46.9	-10
	comp=E,6.7nm,0.3s,baz=288,slow=20,SNR=2.7							
JCJ				LR		LR	20 10 01.1	
	comp=E,227nm,19.0s,baz=321,slow=38							
YSS	**Yuzh-Sakhalins**	**10.11**	**8**	*e*P		**Pn**	**20 06 09.0**	**+0.4**
YSS	**Yuzh-Sakhalins**	**10.11**	**8**	*e*Pn		**Pn**	**20 06 08.5**	**-0.1**
	comp=E,12nm,0.6s							
KSRS	**Korea Array**	**10.19**	**277**	Pn		Pn	20 06 14.7	+4.8
	comp=E,0.5nm,0.3s,baz=91,slow=13,SNR=16							
KSRS				LR		LR	20 09 48.1	
	comp=E,218nm,19.8s,baz=86,slow=36							
KSAR	**Wonju Array Be**	**10.22**	**277**	P		Pn	20 06 14.7	+4.5
KSAR	**Wonju Array Be**	**10.22**	**277**	Pn		Pn	20 06 14.7	+4.4
KLR	**Kul'dur**	**13.89**	**335**	Pn		**Pn**	**20 06 60.0**	**-0.2**
	comp=E,0.1nm,0.3s,baz=153,slow=12,SNR=3.3							
KLR				LR		LR	20 12 12.5	
	comp=E,199nm,18.0s,baz=144,slow=37							
KLR	**Kul'dur**	**13.89**	**335**	P		**Pn**	**20 07 00.0**	**-0.2**
KLR				MLR		MLR		
	comp=Z,199nm,18.0s							
TYV	**Tymovskoe**	**13.98**	**5**	*e*P		**Pn**	**20 07 02.0**	**+0.5**
TYV				pmax		pmax		
	comp=Z,13nm,0.8s							
NKL	**Nikolayevsk**	**16.20**	**360**	*e*P		**P**	**20 07 36.2**	**+2.0**
PETK	**Petropavlovsk-**	**20.05**	**31**	P		Pn	20 08 18.4	0.0
	comp=Z,3.5nm,0.8s,baz=212,slow=15,SNR=3.1							
PETK				LR		LR	20 15 22.5	
	comp=Z,32nm,19.5s,baz=238,slow=35							
PET	**Petropavlovsk**	**20.39**	**32**	*e*P		Pn	20 08 22.8	+0.4
PET				pmax		pmax		
	comp=Z,80nm,2.5s							
MA2	**Magadan**	**23.56**	**13**	P		**P**	**20 08 54.7**	**+0.8**
	comp=Z,18nm,0.7s,baz=221,slow=10,SNR=4.3							
YAK	**Yakutsk**	**26.03**	**348**	P		**P**	**20 09 16.6**	**+0.1**
	comp=Z,9.8nm,0.3s,baz=78,slow=0.8,SNR=3.4							
YAK				LR		LR	20 18 52.8	
	comp=Z,64nm,19.6s,baz=200,slow=35							
ENH	**Enshi**	**26.74**	**265**	*e*P		**P**	**20 09 21.4**	**-1.9**
	comp=Z,8.2nm,0.6s							
ULN	**Ulaanbaatar**	**26.92**	**305**	*ce*P		**P**	**20 09 24.4**	**-0.5**
ULN				pmax		pmax		
	comp=Z,4.0nm,1.2s							
SEY	**Seymchan**	**26.99**	**12**	P		**P**	**20 09 26.4**	**+1.3**
	comp=Z,3.9nm,0.6s,baz=204,slow=7.4,SNR=16							
BOD	**Bodaibo**	**27.29**	**328**	*e*P		**P**	**20 09 26.3**	**-1.6**
BOD				pmax		pmax		
	comp=Z,2.0nm,1.1s							
SONM	**Songino Array**	**27.35**	**304**	P		**P**	**20 09 28.8**	**+0.1**
	comp=Z,1.5nm,0.5s,baz=108,slow=9.5,SNR=15							
SONM				PcP		**PcP**	**20 12 48.1**	**+0.4**
	comp=Z,0.3nm,0.4s,baz=129,slow=1.9,SNR=4.4							
SONM				LR		LR	20 20 30.6	
	comp=Z,65nm,18.7s,baz=99,slow=37							
H11N2	**WAKE ISLAND Hy 28.61 120**			T		T	20 39 27.3	
	baz=312,slow=75,SNR=701							
H11N1	**WAKE ISLAND Hy 28.62 120**			T		T	20 39 27.2	
	baz=312,slow=75,SNR=262							
H11N3	**WAKE ISLAND Hy 28.63 120**			T		T	20 39 27.9	
	baz=312,slow=75,SNR=282							
H11S1	**WAKE ISLAND Hy 29.31 122**			T		T	20 40 15.6	
	baz=314,slow=76,SNR=1040							
H11S3	**WAKE ISLAND Hy 29.31 122**			T		T	20 40 18.8	
	baz=314,slow=76,SNR=883							
H11S2	**WAKE ISLAND Hy 29.32 122**			T		T	20 40 20.0	
	baz=314,slow=76,SNR=901							
GTA	**Gaotai**	**32.03**	**287**	*e*P		**P**	**20 10 09.5**	**-0.8**
GTA				pP		sP	20 10 13.7	-0.6
GTA				sP		pP	20 10 17.1	+4.0
GTA				pmax		pmax		
	comp=Z,3.0nm,0.9s							
BILL	**Bilibino**	**34.27**	**17**	⇓*e*		**P**	**20 10 28.5**	**-0.9**
BILL							20 11 52.1	
BILL				pmax		pmax		
	comp=Z,6.0nm,1.7s							
BILL				MLR		MLR		
	comp=Z,79nm,16.0s							
TIXI	**Tiksi**	**35.30**	**354**	P		**P**	**20 10 37.6**	**-0.6**
	comp=Z,1.6nm,0.5s,baz=136,slow=8.5,SNR=10							
TIXI	**Tiksi**	**35.30**	**354**	*e*P		**P**	**20 10 37.7**	**-0.6**
TIXI				pmax		pmax		
	comp=Z,1.0nm,0.6s							
CMAR	**Chiang Mai Arr**	**40.91**	**255**	P		**P**	**20 11 26.1**	**0.0**
	comp=Z,0.4nm,0.4s,baz=45,slow=8.9,SNR=4.4							
CMAR				LR		LR	20 27 47.7	
	comp=Z,27nm,18.7s,baz=205,slow=35							
ZALV	**Zalesovo Beam**	**41.54**	**312**	P		**P**	**20 11 30.1**	**-0.8**
	comp=Z,2.6nm,0.6s,baz=97,slow=7.5,SNR=13							
ZALV				PcP		**PcP**	**20 13 27.9**	**-0.2**
	comp=Z,1.1nm,0.4s,baz=94,slow=3.1,SNR=5.9							
ZALV				LR		LR	20 29 30.2	
	comp=Z,53nm,19.0s,baz=70,slow=37							
LSA	**Lhasa**	**41.63**	**275**	*e*P		**P**	**20 11 33.0**	**+0.5**

OTUK				pmax	pmax		
	comp=Z,5.0nm,0.7s						
AAK	**Ala-Archa**	**50.02**	**298**	P	**P**	**20 12 38.3**	**+0.1**
	comp=Z,0.6nm,0.4s,baz=69,slow=4.9,SNR=6.0						
AAK	**Ala-Archa**	**50.02**	**298**	*eP*	**P**	**20 12 37.9**	**-0.3**
AAK				pmax	pmax		
	comp=Z,1.0nm,0.8s						
AAK	**Ala-Archa**	**50.02**	**298**	*eP*	**P**	**20 12 37.9**	**-0.3**
	comp=Z,1.5nm,0.8s						
BVAR	**Borovoye Array**	**50.20**	**312**	P	**P**	**20 12 39.0**	**-0.2**
	comp=Z,1.4nm,0.5s,baz=78,slow=8.1,SNR=12						
BVAR				PcP	**PcP**	**20 13 58.5**	**+0.1**
	comp=Z,1.5nm,0.6s,baz=104,slow=3.1,SNR=6.8						
BRVK	**Borovoye**	**50.25**	**312**	*eP*	**P**	**20 12 36.9**	**-2.7**
BRVK				pmax	pmax		
	comp=Z,3.0nm,1.0s						
MNAS	**Manas**	**51.46**	**299**	P	**P**	**20 12 49.9**	**+0.8**
MNAS				pmax	pmax		
	comp=Z,3.0nm,1.3s						
SFK	**Sufi-Kurgan**	**51.54**	**295**	P	**P**	**20 12 50.1**	**+0.2**
SFK				pmax	pmax		
	comp=Z,4.0nm,0.9s						
EGAK	**Eagle**	**52.32**	**32**	*eP*	**P**	**20 12 55.6**	**+0.6**
KKAR	**Karatay Array**	**52.66**	**300**	*eP*	**P**	**20 12 57.7**	**-0.2**
KKAR				pmax	pmax		
	comp=Z,2.0nm,0.8s						
KKAR	**Karatay Array**	**52.66**	**300**	*eP*	**P**	**20 12 57.7**	**-0.2**
	comp=Z,2.2nm,0.8s						
INK	**Inuvik**	**54.73**	**27**	P	**P**	**20 13 13.8**	**+1.2**
	comp=Z,2.2nm,0.8s,baz=286,slow=6.9,SNR=8.4						
ARU	**Arti**	**56.03**	**318**	P	**P**	**20 13 21.3**	**-0.9**
	comp=Z,1.5nm,0.4s,baz=84,slow=3.9,SNR=6.0						
ARU	**Arti**	**56.03**	**318**	*c iP*	**P**	**20 13 22.0**	**-0.2**
ARU						20 14 14.1	
ARU						20 15 26.1	
ARU				S	**S**	**20 21 11.6**	**+1.1**
ARU				pmax	pmax		
	comp=Z,18nm,2.5s						
WRAB	**Tennant Creek**	**56.89**	**187**	*ceP*	**P**	**20 13 28.7**	**+0.1**
WRAB				pmax	pmax		
	comp=Z,55nm,2.5s						
WRAB	**Tennant Creek**	**56.89**	**187**	*eP*	**P**	**20 13 27.9**	**-0.7**
	comp=Z,11nm,0.8s						
WRA	**Warramunga Arr**	**56.90**	**187**	P	**P**	**20 13 28.1**	**-0.6**
	comp=Z,7.8nm,0.5s,baz=3.3,slow=7.5,SNR=169						
WRA				PcP	**PcP**	**20 14 24.7**	**+0.6**
	comp=Z,2.2nm,0.6s,baz=1.1,slow=4.4,SNR=6.3						
ABKAR	**Akbulak array**	**57.55**	**310**	*eP*	**P**	**20 13 32.3**	**-0.7**
	comp=Z,2.6nm,0.5s						
AKTO	**Aktyubinsk**	**58.30**	**312**	P	**P**	**20 13 37.5**	**-0.8**
	comp=Z,1.1nm,0.5s,baz=68,slow=8.6,SNR=4.5						
ASAR	**Alice Springs**	**60.63**	**187**	P	**P**	**20 13 54.4**	**-0.3**
	comp=Z,4.2nm,0.7s,baz=11,slow=8.6,SNR=54						
RES	**Resolute Bay**	**62.82**	**14**	*eP*	**P**	**20 14 08.9**	**+0.1**
RES				pmax	pmax		
	comp=Z,4.0nm,0.5s						
RES	**Resolute Bay**	**62.82**	**14**	*eP*	**P**	**20 14 08.9**	**+0.1**
	comp=Z,4.0nm,0.5s						
GEYT	**Alibeck**	**63.36**	**299**	P	**P**	**20 14 13.3**	**+0.3**
	comp=Z,1.5nm,0.7s,baz=28,slow=3.5,SNR=4.5						
ARCES	**ARCESS Array B**	**63.87**	**339**	P	**P**	**20 14 16.1**	**+0.3**
	comp=Z,2.6nm,0.8s,baz=43,slow=9.0,SNR=5.8						
ARCES				LR	LR	20 45 22.0	
	comp=Z,36nm,18.3s,baz=312,slow=39						
YKA	**Yellowknife Ar**	**64.17**	**30**	P	**P**	**20 14 18.1**	**+0.3**
	comp=Z,0.9nm,0.6s,baz=304,slow=6.8,SNR=23						
YKA				PcP	**PcP**	**20 14 51.9**	**-0.9**
	comp=Z,0.6nm,0.7s,baz=299,slow=4.0,SNR=6.9						
DAG	**Danmarks Havn**	**65.80**	**355**	P	**P**	**20 14 28.6**	**+0.3**
DAG				pmax	pmax		
	comp=Z,7.0nm,0.7s						
OBN	**Obninsk**	**67.81**	**323**	*eP*	P	20 14 36.2	-5.2
OBN				pmax	pmax		
	comp=Z,3.0nm,0.9s						
OBN				MLR	MLR		
	comp=Z,79nm,17.0s						
STKA	**Stephens Creek**	**68.48**	**179**	P	**P**	**20 14 46.0**	**+0.3**
	comp=Z,1.8nm,0.5s,baz=344,slow=7.4,SNR=9.0						
STKA	**Stephens Creek**	**68.48**	**179**	P	**P**	**20 14 46.0**	**+0.3**
STKA				pmax	pmax		
	comp=Z,2.0nm,0.5s						
FINES	**FINESS Array B**	**68.61**	**332**	P	**P**	**20 14 46.1**	**-0.2**
	comp=Z,4.1nm,0.7s,baz=64,slow=8.7,SNR=14						
FINES				LR	LR	20 46 56.9	
	comp=Z,63nm,19.0s,baz=4.0,slow=38						
WSAR	**Wadi Sarin**	**70.32**	**285**	LR	LR	20 47 45.9	
	comp=Z,53nm,18.1s,slow=38						
KBZ	**Khabaz**	**70.51**	**310**	P	**P**	**20 14 58.1**	**-0.3**
	comp=Z,1.7nm,0.8s,baz=323,slow=2.3,SNR=5.2						
KIV	**Kislovodsk**	**70.52**	**311**	*eP*	P	20 15 05.6	+7.1
KIV				pmax	pmax		
	comp=Z,5.0nm,0.9s						
AKASG	**Malin Array Be**	**74.00**	**322**	P	**P**	**20 15 18.7**	**-0.4**
	comp=Z,1.0nm,0.4s,baz=48,slow=6.0,SNR=10						
AKASG				LR	LR	20 50 35.1	
	comp=Z,56nm,20.9s,baz=315,slow=38						
NB2	**NORSAR Subarra**	**74.03**	**337**	P	**P**	**20 15 18.9**	**-0.3**
	comp=Z,1.1nm,0.6s,baz=41,slow=6.2						
NOA	**NORSAR Array B**	**74.03**	**337**	P	**P**	**20 15 19.1**	**-0.1**
	comp=Z,1.3nm,0.7s,baz=40,slow=5.8,SNR=7.7						
NOA				LR	LR	20 50 26.9	
	comp=Z,21nm,18.2s,baz=305,slow=38						
FFC	**Flin Flon**	**74.09**	**32**	*i* P	**P**	**20 15 21.1**	**+1.6**
NVAR	**Mina Array Bea**	**75.50**	**53**	P	**P**	**20 15 30.2**	**+1.9**
	comp=Z,0.4nm,0.4s,baz=285,slow=7.0,SNR=6.0						
PDAR	**Pinedale Array**	**78.14**	**45**	P	**P**	**20 15 43.8**	**+0.6**
	comp=Z,0.6nm,0.6s,baz=306,slow=3.0,SNR=3.7						
BRTR	**Keskin Array B**	**78.47**	**311**	P	**P**	**20 15 45.5**	**+0.6**
	comp=Z,0.9nm,0.7s,baz=120,slow=4.2,SNR=4.8						
KOLS	**Kolonicke sedl**	**78.54**	**324**	*eP*	**P**	**20 15 46.8**	**+1.8**
KOLS	**Kolonicke sedl**	**78.54**	**324**	*eP*	**P**	**20 15 46.8**	**+1.8**
ULM	**Lac du Bonnet**	**79.89**	**33**	P	**P**	**20 15 52.2**	**-0.1**
	comp=Z,1.3nm,0.5s,baz=235,slow=8.8,SNR=2.8						
DPC	**Dobruska-Polom**	**80.22**	**328**	*eP*	**P**	**20 15 54.6**	**+0.5**
DPC	**Dobruska-Polom**	**80.22**	**328**	*eP*	**P**	**20 15 54.6**	**+0.5**
KRLC	**Kraliky**	**80.22**	**327**	*eP*	**P**	**20 15 56.6**	**+2.4**
KRLC	**Kraliky**	**80.22**	**327**	*eP*	**P**	**20 15 56.6**	**+2.4**
CLL	**Collm**	**80.88**	**330**	*e*(P)	P	20 15 54.0	-3.6
CLL	**Collm**	**80.88**	**330**	*eP*	P	20 15 54.0	-3.6
PRU	**Pruhonice**	**81.25**	**328**	*eP*	**P**	**20 16 00.9**	**+1.3**
PRU	**Pruhonice**	**81.25**	**328**	*eP*	**P**	**20 16 00.9**	**+1.3**
KHC	**Kasperske Hory**	**82.31**	**328**	*eP*	**P**	**20 16 05.5**	**+0.3**
KHC	**Kasperske Hory**	**82.31**	**328**	*eP*	**P**	**20 16 05.5**	**+0.3**
GERES	**GERESS Array B**	**82.47**	**328**	P	**P**	**20 16 05.8**	**-0.4**
	comp=Z,0.7nm,0.5s,baz=40,slow=5.9,SNR=10						
GERES				LR	LR	20 54 08.4	
	comp=Z,34nm,18.5s,baz=346,slow=37						
PPT	**Papeete**	**85.12**	**116**	LR	LR	20 49 53.8	
	comp=Z,61nm,19.3s,baz=354,slow=32						
SCHQ	**Schefferville**	**85.57**	**16**	LR	LR	20 59 25.1	
	comp=Z,32nm,18.5s,baz=38,slow=39						
TXAR	**Lajitas Array**	**90.63**	**52**	P	**P**	**20 16 47.8**	**+1.2**
	comp=Z,1.5nm,0.7s,baz=303,slow=3.7,SNR=12						
TXAR	**Lajitas Array**	**90.63**	**52**	P	**P**	**20 16 47.8**	**+1.2**
TXAR				pmax	pmax		
	comp=Z,1.0nm,0.7s						
VNDA	**Vanda**	**114.94**	**175**	PKP	PKPdf	20 22 23.7	+0.4
	comp=Z,0.4nm,0.7s,baz=327,slow=2.7,SNR=3.1						
SDV	**Santo Domingo**	**125.76**	**39**	PKP	**PKPdf**	**20 22 46.0**	**-0.2**
	comp=Z,4.9nm,0.7s,baz=284,slow=5.1,SNR=9.5						
SAML	**Samuel**	**144.71**	**44**	*e*PKPdf	**PKPab**	**20 23 20.1**	**+0.3**
LPAZ	**La Paz**	**147.24**	**59**	PKPbc	**PKPbc**	**20 23 28.2**	**-0.1**
	comp=Z,4.4nm,0.7s,baz=355,slow=0.8,SNR=19						
SIV	**San Ignacio**	**151.58**	**49**	PKP	**PKPdf**	**20 23 33.3**	**+1.0**
	comp=Z,2.3nm,0.8s,baz=251,slow=1.4,SNR=3.8						
SIV				PKPbc	**PKiKP**	**20 23 39.2**	**+0.3**
	comp=Z,5.9nm,0.7s,baz=266,slow=0.6,SNR=12						

JMA 11 20:09:07.8,36.93N×140.64E,h8km±1km, M2.8, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.21**	**36**	P		P	Pg	20 09 12.4	+0.3
ONAJ				S		S	Sg	20 09 15.3	+0.2
JHO	**Hitachi**	**0.32**	**190**	P		P	Pg	20 09 14.2	0.0
JFT	**Otama**	**0.64**	**338**	P		P	Pg	20 09 20.2	+0.1
JFT				S		S	Sg	20 09 28.7	+0.3
JMM	**Marumori**	**0.94**	**7**	P		P	Pg	20 09 25.5	-0.4
MAT	**Matsushiro**	**1.99**	**260**	P		P	Pn	20 09 42.6	+0.8
MAT				S		S	Sb	20 10 09.1	-0.2

*ISCJB **11** 20:11:18.3±1.2,38.15N±0.06×142.16E±0.10,h35km, mb3.2/3,Error ellipse: s-maj=10.9km s-min=9.1km az=171.1*

*JMA **11** 20:11:22.8±0.1,38.34N×141.90E,h59km±1km,M3.2*

*IDC **11** 20:11:26.3±7.5,37.61N×140.76E,h58km±60km,mb3.0/3, mb1 3.2/4,mb1mx2.9/47,mbtmp3.2/4,ML3.5/1,Error ellipse: s-maj=53.4km s-min=26.9km az=68.0*

ISC 11 20:11:19.5±1.5,38.19N±0.09×142.2E±0.1,h35km,n12, σ1s03/14,mb3.1/3,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**0.68**	**293**	P		P	**Pn**	**20 11 34.2**	**+1.6**
JIO				S		S	**Sn**	**20 11 42.2**	**+0.2**
OFUJ	**Ofunato**	**0.96**	**337**	P		P	**Pn**	**20 11 37.8**	**+1.3**
OFUJ				S		S	**Sn**	**20 11 48.8**	**-0.2**
JMK	**Ichinoseki**	**1.05**	**317**	P		P	**Pn**	**20 11 38.6**	**+0.9**
JMK				S		S	**Sn**	**20 11 50.1**	**-1.1**
JOU	**Okura**	**1.18**	**279**	S		S	**Sn**	**20 11 53.6**	**-0.8**
MIYJ	**Miyakonagasawa**	**1.41**	**350**	P		P	**Pn**	**20 11 43.9**	**+1.3**
MIYJ				S		S	**Sn**	**20 11 59.4**	**-0.6**
JOM	**Ohasama**	**1.44**	**333**	P		P	**Pn**	**20 11 44.2**	**+1.1**
JOM				S		S	**Sn**	**20 11 59.9**	**-1.0**
H11N2	**WAKE ISLAND Hy**	**28.27**	**124**	T		T		20 47 10.6	
	baz=313,slow=75,SNR=16								
H11N1	**WAKE ISLAND Hy**	**28.28**	**124**	T		T		20 47 11.3	
	baz=313,slow=75,SNR=7.4								
H11N3	**WAKE ISLAND Hy**	**28.29**	**124**	T		T		20 47 12.0	
	baz=313,slow=75,SNR=18								
MKAR	**Makanchi Array**	**44.01**	**301**	P		P	**PKPdf**	**20 19 22.5**	**-0.9**
	0.2nm,0.8s,baz=86,slow=5.9,SNR=2.5								
KURBB	**Kurchatov Arra**	**45.76**	**307**	P		P	**PKPbc**	**20 19 36.9**	**-0.4**
	0.1nm,0.3s,baz=77,slow=7.3,SNR=4.6								
WRA	**Warramunga Arr**	**58.29**	**189**	P		P	**PKPdf**	**20 21 10.5**	**-0.2**
	0.2nm,0.4s,baz=3.9,slow=7.3,SNR=7.2								

*ISCJB **11** 20:11:27.3±0.8,36.91N±0.03×140.68E±0.06,h8km±5km, Error ellipse: s-maj=8.4km s-min=5.2km az=23.0*

*JMA **11** 20:11:27.5,36.91N×140.65E,h6km±1km,M3.3*

JMA Felt I J1.

ISC 11 20:11:26.4±1.1,36.89N±0.04×140.60E±0.05,h15km±10km, n9,σ0s48/17,3C,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.27**	**37**	P		P	**Pg**	**20 11 32.3**	**+0.1**
ONAJ				S		S	**Sg**	**20 11 35.5**	**-0.7**
JHO	**Hitachi**	**0.28**	**185**	P		P	**Pb**	**20 11 33.7**	**+0.6**
JSB	**Shiboa**	**0.55**	**279**	*i*P		P	**Pn**	**20 11 39.6**	**-0.2**
JSB				S		S	**Sn**	**20 11 47.9**	**-0.8**
JFT	**Otama**	**0.66**	**342**	*i*P		P	**Pb**	**20 11 40.3**	**+0.5**
JFT				S		S	**Sb**	**20 11 49.1**	**+0.3**
JYT	**Yasato**	**0.73**	**206**	P		P	**Pn**	**20 11 42.2**	**-0.1**
JYT				S		S	**Sn**	**20 11 52.6**	**-0.6**
JFY	**Yanaizu**	**0.88**	**306**	*i*P		P	**Pn**	**20 11 44.6**	**+0.2**
JFY				S		S	**Sn**	**20 11 56.5**	**-0.4**
JMM	**Marumori**	**0.99**	**9**	P		P	**Pg**	**20 11 45.6**	**0.0**
JMM				S		S	**Sb**	**20 11 58.2**	**0.0**
MJAR	**Matsushiro Arr**	**1.95**	**261**	P		P	**Pb**	**20 12 01.7**	**0.0**
	14nm,0.3s,baz=75,slow=19,SNR=15								
MJAR				S		S	**Sg**	**20 12 29.2**	**0.0**
	16nm,0.3s,baz=80,slow=30,SNR=12								
MAT	**Matsushiro**	**1.95**	**261**	P		P	**Pb**	**20 12 02.4**	**+0.7**
MAT				S		S	**Sg**	**20 12 29.1**	**-0.1**

JMA 11 20:13:17.5,37.01N×140.67E,h9km±1km,M2.7,Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.14**	**48**	P		P	Pg	20 13 20.8	+0.2
ONAJ				S		S	Sg	20 13 23.0	+0.2
JHO	**Hitachi**	**0.41**	**192**	P		P	Pg	20 13 25.4	-0.1
JHO				S		eS	Sg	20 13 30.7	-0.1
JFT	**Otama**	**0.57**	**332**	P		P	Pg	20 13 28.8	+0.2
JFT				S		S	Sg	20 13 36.5	+0.4
JMM	**Marumori**	**0.86**	**6**	P		P	Pg	20 13 33.5	-0.6
JMM				S		S	Sg	20 13 45.0	-0.3
MAT	**Matsushiro**	**2.03**	**257**	P		P	Pn	20 13 53.0	+1.1
MAT				S		S	Sb	20 14 19.4	-0.6

CASC 11 20:14:36.3±2.0,8.64N×82.86W,h54km±19km,MD3.8, 3C-1D,Panama-Costa Rica border region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
BRU2	**Volcan**	**0.22**	**47**	*i*P		P	Pn	20 14 45.2	-0.1
BRU2				*e*S		S	Sn	20 14 52.4	+0.6
TBS2		**0.25**	**53**	*i*P		P	Pn	20 14 46.4	+0.8
TBS2				*e*S		S	Sn	20 14 53.9	+1.7
BRU	**Baru**	**0.33**	**61**	*i*P		P	Pn	20 14 47.3	+0.7
BUS	**Buena Vista**	**1.27**	**315**	*e*P		P	Pn	20 14 58.0	-0.2
BUS				*e*S		S	Sn	20 15 14.2	-0.2
URSC	**Urasca**	**1.49**	**322**	*e*P		P	Pn	20 15 01.6	+0.6
URSC				*e*S		S	Sn	20 15 21.4	+1.9
QCR	**Quepos**	**1.51**	**301**	*e*P		P	Pn	20 15 01.2	+0.2
QCR				*e*S		S	Sn	20 15 20.7	+1.2

*ISCJB **11** 20:14:44.8±0.7,55.43S±0.09×25.7W±0.3,h10km,mb4.3/7, Error ellipse: s-maj=21.9km s-min=10.3km az=158.8*

*IDC **11** 20:14:45.3±0.8,55.41S×25.78W,h0km,mb4.2/7, mb1 4.3/7,mb1mx3.9/31,mbtmp4.3/7,Error ellipse: s-maj=27.8km s-min=23.5km az=114.0*

*NEIC **11** 20:14:50.2±0.5,55.45S×25.71W,h35km,mb4.6/1,Error ellipse: s-maj=17.0km s-min=11.7km az=96.0*

ISC 11 20:14:46.5±0.7,55.5S±0.1×25.9W±0.2,h10km,n18, σ0s44/17,mb4.3/7,South Sandwich Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
VNA1	**Neumayer--Stat**	**17.06**	**160**	P		P	**Pn**	**20 18 45.2**	**+0.5**
VNA3	**Neumayer Olymp**	**17.29**	**162**	P		P	**Pn**	**20 18 47.2**	**-0.5**
VNA2	**Neumayer--Watz**	**17.45**	**160**	P		P	**Pn**	**20 18 49.6**	**0.0**
	baz=317,slow=15								
SNAA	**Sanae**	**18.97**	**158**	P		P	**Pn**	**20 19 08.9**	**+0.6**
PMSA	**Palmer Station**	**20.83**	**228**	P		P	Pn	20 19 30.6	+0.4
	9.7nm,0.6s,baz=38,slow=8.1,SNR=7.6								
QSPA	**South Pole Qui**	**34.77**	**180**	*eP*		P	**P**	**20 21 36.4**	**-0.3**
	4.5nm,0.6s								
CPUP	**Villa Florida**	**37.01**	**309**	P		P	**P**	**20 21 56.3**	**+0.2**
	3.0nm,0.6s,baz=154,slow=8.4,SNR=6.0								
VNDA	**Vanda**	**47.17**	**182**	P		P	**P**	**20 23 18.7**	**+0.3**
	0.8nm,0.8s,baz=184,slow=6.1,SNR=6.9								
LPAZ	**La Paz**	**50.67**	**303**	P		P	**P**	**20 23 47.0**	**+0.4**
	5.4nm,0.7s,baz=169,slow=4.2,SNR=10.0								
DBIC	**Dimbokro**	**64.35**	**23**	P		P	**P**	**20 25 22.2**	**0.0**
	2.2nm,0.9s,baz=180,slow=6.3,SNR=5.5								
TORD	**Torodi Ar. Bea**	**72.20**	**28**	P		P	**P**	**20 26 11.8**	**+0.3**
	3.1nm,0.7s,baz=198,slow=6.7,SNR=22								
SDV	**Santo Domingo**	**74.14**	**314**	P		P	**P**	**20 26 22.9**	**-0.3**
	0.9nm,0.4s,baz=254,slow=19,SNR=2.9								
ULM	**Lac du Bonnet**	**120.36**	**316**	PKP		PKP	**PKPdf**	**20 33 36.6**	**-0.2**
	1.7nm,0.6s,baz=202,slow=5.4,SNR=2.8								
YKA	**Yellowknife Ar**	**136.25**	**318**	PKP		PKP	**PKPdf**	**20 34 05.7**	**-0.9**
	0.1nm,0.5s,baz=120,slow=3.7,SNR=4.5								
INK	**Inuvik**	**145.83**	**321**	PKPbc		PKP	**PKPbc**	**20 34 24.3**	**0.0**
	1.1nm,0.8s,baz=82,slow=4.3,SNR=7.7								
NRIK	**Noril'sk**	**148.10**	**38**	PKPbc		PKP	**PKPbc**	**20 34 31.0**	**+0.3**
	1.2nm,0.3s,baz=90,slow=2.0,SNR=2.6								
SONM	**Songino Array**	**149.94**	**85**	PKPbc		PKP	**PKPbc**	**20 34 35.6**	**-0.6**
	0.5nm,0.6s,baz=199,slow=3.4,SNR=4.0								
ILAR	**Eielson Array**	**150.29**	**312**	PKPbc		PKP	**PKPbc**	**20 34 36.1**	**-0.2**
	2.1nm,1.0s,baz=129,slow=1.2,SNR=12								

*IDC **11** 20:19:03.2±3.2,9.86S×107.17E,h0km,mb3.6/6, mb1 3.8/7,mb1mx3.6/41,mbtmp3.6/7,ML3.4/1,Error ellipse: s-maj=137.6km s-min=18.0km az=51.0*

*ISCJB **11** 20:19:04.5±1.1,9.84S±0.09×107.2E±0.1,h23km,mb3.6/6, Error ellipse: s-maj=20.9km s-min=9.7km az=152.2*

*DJA **11** 20:19:04.9±0.6,10°S±½°×107°E±½°,h10km,M4.1/6, MLv4.1/6*

ISC 11 20:19:07.4±1.1,9.7S±0.1×107.3E±0.1,h23km,n15, σ1s20/15,mb3.5/6,South of Jawa

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
CISI	**Cisompet, Garu**	**2.14**	**13**	P		P	**Pn**	**20 19 42.4**	**+0.6**
CNJI	**Cibinong**	**2.34**	**355**	P		P	**Pn**	**20 19 43.8**	**-0.7**
KPJI	**Karang Pucung**	**2.80**	**35**	P		P	**Pn**	**20 19 51.7**	**+0.9**
LEM	**Lembang**	**2.83**	**6**	Pn		**Pb**		**20 19 57.4**	**+0.1**
	9.8nm,0.3s,baz=120,slow=1.8,SNR=26								
LEM	**Lembang**	**2.83**	**6**	P		**Pb**		**20 19 54.8**	**-2.5**
DBJI	**Dramaga**	**3.13**	**349**	P		**Pn**		**20 19 57.4**	**+2.0**
PWJI	**Pagerwojo**	**4.71**	**70**	P		**Pn**		**20 20 18.3**	**+1.2**
FITZ	**Fitzroy Crossi**	**19.64**	**117**	P		**P**		**20 23 34.8**	**+0.1**
	0.1nm,0.3s,baz=190,slow=6.1,SNR=3.8								
WRA	**Warramunga Arr**	**28.00**	**114**	P		**P**		**20 24 55.4**	**-1.5**
	0.4nm,0.5s,baz=285,slow=12,SNR=5.5								
ASAR	**Alice Springs**	**28.95**	**122**	P		**P**		**20 25 05.0**	**-0.2**
	1.6nm,1.3s,baz=299,slow=9.0,SNR=6.4								
CMAR	**Chiang Mai Arr**	**29.13**	**343**	P		**P**		**20 25 07.3**	**+0.4**
	0.3nm,0.5s,baz=180,slow=8.3,SNR=5.3								
STKA	**Stephens Creek**	**38.66**	**130**	P		**P**		**20 26 28.5**	**-1.0**
	1.6nm,0.9s,baz=325,slow=5.4,SNR=3.4								
SONM	**Songino Array**	**57.24**	**359**	P		**P**		**20 28 53.9**	**+0.9**
	0.2nm,0.5s,baz=168,slow=7.4,SNR=3.5								
MKAR	**Makanchi Array**	**60.48**	**340**	P		**P**		**20 29 15.5**	**0.0**
	0.7nm,0.5s,baz=143,slow=8.0,SNR=15								
TXAR	**Lajitas Array**	**145.01**	**52**	PKPbc		**PKPdf**		**20 38 43.8**	**+0.1**
	0.3nm,0.6s,baz=230,slow=2.2,SNR=2.4								

*CSEM **11** 20:23:32.5,38.55N×29.26W,h3km,ML2.3*

PDA 11 20:23:32.5±0.6,38.55N±29.26W,h3km±6km,MD3.6, ML2.3,2C,Error ellipse: s-maj=6.5km s-min=6.4km az=28.0,Azores Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
CALA	**Caldeira**	**0.44**	**86**	*e*S			Sg	20 23 46.3	-0.3
CALA	**Caldeira**	**0.44**	**86**	*e*S			Sg	20 23 46.3	-0.3
PCED	**Cedros**	**0.44**	**80**	*i*P			Pg	20 23 40.1	-0.9
PCED				*e*S			Sg	20 23 46.3	-0.4
PCED	**Cedros**	**0.44**	**80**	*i*P			Pg	20 23 40.1	-0.9
PCED				*e*S			Sg	20 23 46.3	-0.4
PCED				A		A		20 23 46.9	
	81nm,0.1s								
HOR	**Horta**	**0.49**	**93**	*e*S			Sg	20 23 47.7	-0.6
HOR	**Horta**	**0.49**	**93**	*e*S			Sg	20 23 47.7	-0.6
HOR				A		A		20 23 49.0	
	173nm,0.2s								
PCAN	**Candelaria**	**0.61**	**98**	*e*S			Sg	20 23 50.7	-1.5
PCAN	**Candelaria**	**0.61**	**98**	*e*S			Sg	20 23 50.7	-1.5
PCAN				A		A		20 23 53.8	
	93nm,0.3s								
PICO	**Pico**	**0.65**	**94**	*e*P			Pg	20 23 43.9	-1.1
PICO				*e*S			Sg	20 23 52.1	-1.4
PICO	**Pico**	**0.65**	**94**	*e*P			Pg	20 23 43.9	-1.1
PICO				*e*S			Sg	20 23 52.1	-1.4
PICO				A		A		20 23 53.8	
	131nm,0.3s								
ROSA	**Rosais**	**0.81**	**78**	*e*P			Pg	20 23 45.8	-2.3
ROSA				*e*S			Sg	20 23 55.8	-2.8
ROSA	**Rosais**	**0.81**	**78**	*e*P			Pg	20 23 45.8	-2.3
ROSA				*e*S			Sg	20 23 55.8	-2.8
ROSA				A		A		20 23 56.5	
	45nm,0.2s								

*NIED **11** 20:27:00,37.00N×140.60E,h8km,Mw3.8 Best double couple: M0 5.28000×10^14 NP1:φs314.00000°,δ41.00000°, λ-105.00000°. NP2:φs153.00000°,δ50.00000°, λ-77.00000°.*

*ISCJB **11** 20:27:21.0±0.5,36.95N±0.03×140.71E±0.05,h22km±3km, mb3.8/17,Error ellipse: s-maj=6.4km s-min=4.2km az=18.9*

*JMA **11** 20:27:21.8,36.97N×140.60E,h10km±1km,M3.9 Broadband fault plane solution: P waves. NP1: φs302.00000°,δ48.00000°,λ-109.00000°. NP2: φs149.00000°,δ46.00000°,λ-70.00000°. Principal axes: T Plg1.0000°, Azm45.0000°; N Plg14.0000°, Azm315.0000°; P Plg76.0000°, Azm139.0000°;*

JMA Felt III J1.

*IDC **11** 20:27:26.6±2.2,36.91N×140.63E,h57km±20km,mb3.6/17, mb1 3.7/20,mb1mx3.6/49,mbtmp3.8/20,ML3.2/3 Error ellipse: s-maj=15.7km s-min=12.8km az=93.0*

ISC 11 20:27:21.6±0.9,36.97N±0.03×140.61E±0.04,h16km±5km, n39,σ0s86/40,mb3.8/17,6C,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC

0.2nm,0.5s,baz=327,slow=1.5,SNR=2.5
TORD Torodi Ar. Bea 116.92 314 PKP **PKPdf 20 46 04.6 -1.4**
0.2nm,0.6s,baz=90,slow=0.7,SNR=3.0
LPAZ La Paz 147.28 59 PKPbc **PKPdf 20 47 02.6 -0.7**
0.5nm,0.5s,baz=180,slow=2.0,SNR=2.5

IDC 11 20:28:07.4±1.8, 7.69S×117.53E, h0km, mb2.8/3, mb1 3.1/4, mb1mx3.1/41, mbtmp3.0/4, ML2.6/1, Error ellipse: s-maj=53.0km s-min=25.1km az=57.0, Bali Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KAPI	**Kappang**	**3.46**	**40**	Pn	Pn	20 29 02.4	-0.1
	0.6nm,0.3s,baz=239,slow=5.2,SNR=11						
KAPI				Sn	Sb	20 29 52.8	+0.7
	2.9nm,0.3s,baz=100,slow=23,SNR=8.1						
WRA	**Warramunga Arr**	**20.34**	**128**	P	P	20 32 45.7	+0.3
	0.2nm,0.4s,baz=300,slow=13,SNR=3.2						
ASAR	**Alice Springs**	**22.34**	**137**	P	P	20 33 06.8	-0.2
	0.1nm,0.4s,baz=317,slow=9.3,SNR=3.8						
MKAR	**Makanchi Array**	**62.64**	**333**	P	P	20 38 33.7	0.0
	0.1nm,0.5s,baz=132,slow=6.0,SNR=2.9						

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*IDC **11** 20:28:51.4±0.9, 37.88N×143.98E, h0km, mb3.6/7, mb1 3.8/9, mb1mx3.5/45, mbtmp3.6/9, ML3.1/1, MS2.9/2, Ms1 2.9/2, ms1mx2.4/47, Error ellipse: s-maj=35.5km s-min=18.2km az=109.0*
*ISCJB **11** 20:28:54.1±0.8, 37.9N±0.1×143.9E±0.2, h33km, mb3.6/7, MS2.8/1, Error ellipse: s-maj=19.8km s-min=13.9km az=31.7*

ISC 11 20:28:56.6±1.0, 37.9N±0.1×143.9E±0.1, h35km, n11, σ0s47/9, mb3.6/7, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MJAR	**Matsushiro Arr**	**4.72**	**255**	Pn	**Pn**	**20 30 05.5**	**+0.2**
	baz=81,slow=16,SNR=1.9						
USRK	**Ussuriysk Ar.**	**10.93**	**309**	LR	LR	20 35 28.6	
	comp=Z,52nm,19.1s,baz=51,slow=36						
KLR	**Kul'dur**	**14.29**	**326**	Pn	**Pn**	**20 32 15.8**	**-0.4**
	0.1nm,0.3s,baz=134,slow=11,SNR=2.4						
GUMO	**Guam**	**24.25**	**178**	LR	LR	20 43 25.8	
	comp=Z,30nm,18.6s,baz=226,slow=36						
SEY	**Seymchan**	**25.57**	**9**	P	**P**	**20 34 22.8**	**+0.9**
	0.9nm,0.6s,baz=270,slow=20,SNR=2.8						
ILAR	**Eielson Array**	**47.70**	**33**	P	**P**	**20 37 29.4**	**0.0**
	0.7nm,0.8s,baz=270,slow=5.7,SNR=5.1						
INK	**Inuvik**	**52.70**	**28**	P	**P**	**20 38 06.8**	**-0.3**
	0.4nm,0.5s,baz=253,slow=2.9,SNR=2.0						
WRA	**Warramunga Arr**	**58.25**	**191**	P	**P**	**20 38 47.1**	**-0.4**
	1.4nm,0.8s,baz=12,slow=7.3,SNR=6.2						
ASAR	**Alice Springs**	**61.98**	**190**	P	**P**	**20 39 13.2**	**+0.1**
	0.3nm,0.7s,baz=19,slow=8.8,SNR=3.9						
YKA	**Yellowknife Ar**	**62.05**	**31**	P	**P**	**20 39 13.0**	**-0.2**
	0.1nm,0.5s,baz=304,slow=7.0,SNR=2.9						
FINES	**FINESS Array B**	**68.92**	**333**	P	**P**	**20 39 57.7**	**+0.2**
	0.6nm,0.7s,baz=13,slow=13,SNR=3.0						

JMA 11 20:30:08.7, 37.02N×140.62E, h9km±1km, M3.4, 3C, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizushiy**	**0.16**	**60**	⇑P	Pg	20 30 12.4	+0.2
ONAJ				S	Sg	20 30 15.0	+0.3
JHO	**Hitachi**	**0.41**	**186**	⇑P	Pg	20 30 16.6	-0.1
JHO				S	Sg	20 30 22.0	-0.1
JFT	**Otama**	**0.55**	**336**	⇑P	Pg	20 30 19.6	+0.3
JFT				S	Sg	20 30 27.0	+0.5
JMM	**Marumori**	**0.86**	**9**	P	Pg	20 30 24.8	-0.4
JMM				S	Sg	20 30 36.7	+0.4
MAT	**Matsushiro**	**2.00**	**257**	P	Pn	20 30 43.7	+1.1
MAT				S	Sb	20 31 10.3	+0.2

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*IDC **11** 20:31:01.0±0.8, 37.94N×144.13E, h0km, mb3.7/10, mb1 3.9/11, mb1mx3.7/43, mbtmp3.7/11, ML2.4/1, Error ellipse: s-maj=25.3km s-min=19.9km az=97.0*
*ISCJB **11** 20:31:04.0±0.8, 37.9N±0.1×144.1E±0.2, h33km, mb3.6/11, Error ellipse: s-maj=19.0km s-min=16.7km az=160.3*

ISC 11 20:31:06.4±0.9, 38.0N±0.2×144.1E±0.1, h35km, n12, σ1s04/12, mb3.6/11, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
USRK	**Ussuriysk Ar.**	**11.07**	**308**	Pn	**Pn**	**20 33 42.3**	**+0.3**
	0.3nm,0.3s,baz=124,slow=14,SNR=4.4						
SEY	**Seymchan**	**25.51**	**9**	P	**P**	**20 36 30.0**	**-1.1**
	0.4nm,0.3s,baz=125,slow=6.1,SNR=3.7						
SONM	**Songino Array**	**29.08**	**302**	P	**P**	**20 37 04.4**	**+0.8**
	0.5nm,0.7s,baz=101,slow=8.1,SNR=3.4						
ZALV	**Zalesovo Beam**	**42.89**	**312**	P	P	20 39 05.5	+4.3
	0.6nm,0.5s,baz=115,slow=8.9,SNR=3.7						
ZALV				PcP	**PcP**	**20 40 52.1**	**+0.6**
	0.4nm,0.4s,baz=73,slow=5.0,SNR=2.8						
MKAR	**Makanchi Array**	**45.45**	**302**	P	**P**	**20 39 21.0**	**-0.8**
	0.5nm,0.7s,baz=86,slow=11,SNR=5.5						
ILAR	**Eielson Array**	**47.56**	**33**	P	**P**	**20 39 39.0**	**+1.0**
	0.7nm,0.7s,baz=260,slow=6.4,SNR=8.2						
WRA	**Warramunga Arr**	**58.32**	**191**	P	**P**	**20 40 57.4**	**-0.4**
	1.9nm,0.8s,baz=12,slow=7.5,SNR=9.8						
YKA	**Yellowknife Ar**	**61.92**	**31**	P	**P**	**20 41 20.3**	**-1.7**
	0.2nm,0.7s,baz=301,slow=6.7,SNR=4.9						
ASAR	**Alice Springs**	**62.04**	**191**	P	**P**	**20 41 23.1**	**-0.2**
	0.4nm,0.7s,baz=10,slow=15,SNR=4.9						
FINES	**FINESS Array B**	**66.98**	**333**	P	**P**	**20 42 07.3**	**-0.4**
	0.9nm,0.7s,baz=50,slow=9.6,SNR=3.6						
AKASG	**Malin Array Be**	**74.86**	**323**	P	**P**	**20 42 43.4**	**+0.2**
	0.6nm,0.5s,baz=45,slow=5.9,SNR=4.7						
PDAR	**Pinedale Array**	**75.48**	**47**	P	**P**	**20 42 48.7**	**+1.5**
	0.4nm,0.6s,baz=222,slow=1.9,SNR=4.6						

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*JMA **11** 20:31:32.7, 36.91N×140.72E, h6km±1km, M3.6*
JMA Felt II J1.
*IDC **11** 20:31:33.0±7.5, 36.74N×141.00E, h74km±74km, mb3.6/2, mb1 3.9/3, mb1mx3.1/46, mbtmp3.9/3, ML3.4/1, Error ellipse: s-maj=85.7km s-min=60.8km az=165.0*

ISC 11 20:31:29.5±1.5, 36.85N±0.05×140.99E±0.10, h33km±5km, n11, σ1s99/19, 6C, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizushiy**	**0.29**	**329**	⇑P	**Pb**	**20 31 37.0**	**-0.3**
JHO	**Hitachi**	**0.41**	**235**	⇑P	**Pb**	**20 31 39.2**	**+0.4**
JHO				S	**Sb**	**20 31 43.8**	**-1.3**
JFT	**Otama**	**0.85**	**322**	⇑P	**Pn**	**20 31 45.8**	**+0.7**
JFT				S	**Sn**	**20 31 54.9**	**-1.5**
JSB	**Shiboa**	**0.86**	**278**	⇑P	**Pn**	**20 31 45.8**	**+0.4**
JSB				S	**Sn**	**20 31 54.6**	**-2.3**
JYT	**Yasato**	**0.89**	**226**	⇑P	**Pb**	**20 31 47.9**	**+1.4**
JYT				S	**Sb**	**20 31 59.3**	**+1.2**
JMM	**Marumori**	**1.03**	**351**	⇑P	**Pb**	**20 31 50.3**	**+1.5**
JMM				S	**Sb**	**20 32 03.5**	**+1.5**
JFY	**Yanaizu**	**1.17**	**299**	P	**Pn**	**20 31 50.8**	**+1.3**
JFY				S	**Sn**	**20 32 02.9**	**-1.5**
MJAR	**Matsushiro Arr**	**2.25**	**263**	P	**Pb**	**20 32 08.5**	**-1.1**
	12nm,0.3s,baz=83,slow=16,SNR=9.2						
MJAR				S	**Sn**	**20 32 34.9**	**+3.7**
	23nm,0.3s,baz=117,slow=23,SNR=11						
MAT	**Matsushiro**	**2.26**	**263**	P	**Pb**	**20 32 08.7**	**-0.9**
MAT				S	**Sn**	**20 32 35.1**	**+3.9**
WRA	**Warramunga Arr**	**56.83**	**187**	P	**P**	**20 41 08.9**	**-1.8**
	2.2nm,0.8s,baz=8.7,slow=7.0,SNR=9.0						
ASAR	**Alice Springs**	**60.56**	**187**	P	**P**	**20 41 34.9**	**-1.8**
	0.5nm,0.6s,baz=4.2,slow=6.6,SNR=6.6						

JMA 11 20:33:27.2, 37.03N×140.67E, h4km, M2.8, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizushiy**	**0.12**	**55**	P	Pg	20 33 29.9	+0.2
ONAJ				eS	Sg	20 33 31.9	+0.5
JHO	**Hitachi**	**0.43**	**191**	P	Pg	20 33 35.9	+0.5
JHO				eS	Sg	20 33 41.5	+0.6
JFT	**Otama**	**0.56**	**331**	S	Sg	20 33 45.7	+0.6
JMM	**Marumori**	**0.84**	**7**	S	Sg	20 33 54.6	+0.4
MAT	**Matsushiro**	**2.04**	**257**	P	Pn	20 34 00.6	-1.7
MAT				eS	Sn	20 34 10.0	-18

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*ISCJB **11** 20:38:03.9±0.7, 51.49N±0.03×176.14E±0.04, h0km, Error ellipse: s-maj=5.2km s-min=3.1km az=18.6*
*IPEC **11** 20:38:04.7±0.5, 51.54N×16.10E, h0km, 2km, ML2.2/1, Error ellipse: s-maj=3.5km s-min=2.5km az=59.0*
*CSEM **11** 20:38:05.5±0.4, 51.50N×16.15E, h2km, ML3.4/9, Error ellipse: s-maj=6.5km s-min=4.0km az=6.0*
*VIE **11** 20:38:09.0±1.0, 51.26N×16.19E, h0km, mb2.3/4, ml2.7/4, Error ellipse: s-maj=10.1km s-min=6.2km az=92.0, Suspected Mining induced.*

ISC 11 20:38:04.9±1.2, 51.55N±0.05×16.15E±0.03, h0km, n36, σ0s73/70, Poland

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KSP	**Ksiaz**	**0.71**	**173**	*i* Pg	**Pg**	**20 38 18.9**	**+0.4**
KSP				eSg	**Sg**	**20 38 28.3**	**+0.6**
KSP	**Ksiaz**	**0.71**	**173**	*i* Pg	**Pg**	**20 38 18.9**	**+0.4**
KSP				eSg	**Sg**	**20 38 28.3**	**+0.6**
UPC	**Upice**	**1.05**	**185**	*e*PG	**Pg**	**20 38 24.9**	**0.0**
UPC				*e*SG	**Sg**	**20 38 38.3**	**-0.1**
	comp=Z,55nm,0.4s						
UPC	**Upice**	**1.05**	**185**	Pg	**Pg**	**20 38 24.9**	**0.0**
UPC				Sg	**Sg**	**20 38 38.3**	**-0.1**
	55nm,0.4s						
DPC	**Dobruska-Polom**	**1.21**	**175**	*e*PG	**Pg**	**20 38 27.6**	**-0.4**
DPC				*e*SG	**Sg**	**20 38 43.3**	**-0.3**
	comp=Z,29nm,0.3s						
DPC	**Dobruska-Polom**	**1.21**	**175**	Pg	**Pg**	**20 38 27.6**	**-0.4**
DPC				Sg	**Sg**	**20 38 43.3**	**-0.3**
	29nm,0.3s						
PVCC	**Panska Ves**	**1.43**	**225**	*e*PG	**Pg**	**20 38 32.3**	**+0.1**
PVCC				*e*SG	**Sb**	**20 38 51.3**	**+0.2**
	comp=Z,162nm,0.3s						
PVCC	**Panska Ves**	**1.43**	**225**	Pg	**Pg**	**20 38 32.3**	**+0.1**
PVCC				Sg	**Sb**	**20 38 51.3**	**+0.2**
	162nm,0.3s						
KRLC	**Kraliky**	**1.53**	**164**	*e*PG	**Pn**	**20 38 32.8**	**-0.7**
KRLC				*e*SG	**Sg**	**20 38 52.9**	**-1.1**
KRLC	**Kraliky**	**1.53**	**164**	Pg	**Pn**	**20 38 32.8**	**-0.7**
KRLC				Sg	**Sg**	**20 38 52.9**	**-1.1**
BRG	**Berggiesshubel**	**1.54**	**245**	PG	**Pb**	**20 38 34.2**	**-0.1**
BRG				SG	**Sg**	**20 38 55.0**	**+0.6**
	82nm,0.6s						
PRU	**Pruhonice**	**1.86**	**214**	*e*PG	**Pb**	**20 38 39.3**	**-0.5**
PRU				*e*SG	**Sb**	**20 39 03.8**	**+0.1**
	comp=Z,39nm,0.3s						
PRU	**Pruhonice**	**1.86**	**214**	Pg	**Pb**	**20 38 39.3**	**-0.5**
PRU				Sg	**Sb**	**20 39 03.8**	**+0.1**
	39nm,0.3s						
CLL	**Collm**	**1.98**	**264**	*e*Pn	**Pn**	**20 38 39.0**	**-0.7**
CLL				*e*Pg	**Pb**	**20 38 42.0**	**+0.2**
CLL				*e*Sg	**Sb**	**20 39 08.0**	**+0.9**
	comp=Z,27nm,0.6s						
MORC	**Moravsky Berou**	**1.98**	**153**	*e*Pn	**Pn**	**20 38 39.1**	**-0.6**
MORC				*e*Sg	**Sb**	**20 39 07.2**	**+0.1**
VRAC	**Vranov**	**2.26**	**173**	*e*Pn	**Pn**	**20 38 43.2**	**-0.3**
VRAC				*e*Sg	**Sb**	**20 39 15.1**	**0.0**
TREC	**Trest**	**2.29**	**191**	*e*PN	**Pn**	**20 38 44.8**	**+0.8**
TREC				*e*PG	**Pb**	**20 38 47.7**	**+0.5**
TREC	**Trest**	**2.29**	**191**	Pn	**Pn**	**20 38 44.8**	**+0.8**
TREC	**Trest**	**2.29**	**191**	Pg	**Pb**	**20 38 47.7**	**+0.5**
KRUC	**Moravsky**	**2.50**	**176**	*e*Pn	**Pn**	**20 38 46.6**	**-0.1**
KRUC				*e*Sg	**Sb**	**20 39 22.4**	**+0.6**
	comp=Z,9.8nm,0.3s						
OJC	**Ojcow**	**2.67**	**118**	*e*Pg	**Pg**	**20 38 55.8**	**-0.2**
OJC				*e*Sg	**Sg**	**20 39 30.8**	**+0.2**
OJC	**Ojcow**	**2.67**	**118**	*e*Pg	**Pg**	**20 38 55.8**	**-0.2**
OJC				*e*Sg	**Sg**	**20 39 30.8**	**+0.2**
NKC	**Novy Kostel**	**2.69**	**242**	*e*PN	**Pn**	**20 38 49.6**	**+0.2**
NKC				*e*PG	**Pb**	**20 38 55.8**	**-0.6**
NKC				*e*SG	**Sg**	**20 39 32.3**	**+1.1**
	comp=Z,44nm,0.3s						
NKC	**Novy Kostel**	**2.69**	**242**	Pn	**Pn**	**20 38 49.6**	**+0.2**
KHC	**Kasperske Hory**	**2.93**	**215**	*e*PN	**Pn**	**20 38 52.7**	**0.0**
KHC				*e*PG	**Pb**	**20 38 58.4**	**+0.5**
KHC				*e*SN	**Sn**	**20 39 28.2**	**-0.4**
KHC				*e*SG	**Sg**	**20 39 37.8**	**-1.1**
	comp=Z,12nm,0.3s						
KHC	**Kasperske Hory**	**2.93**	**215**	Pn	**Pn**	**20 38 52.7**	**0.0**
KHC				Sn	**Sn**	**20 39 28.2**	**-0.4**
KHC				Sg	**Sg**	**20 39 37.8**	**-1.1**
	comp=Z,12nm,0.3s						
SMOL	**Smolenice**	**3.15**	**164**	*e*Pg	**Pg**	**20 39 06.1**	**+0.9**
SMOL				*e*Sg	**Sg**	**20 39 47.5**	**+1.5**
SMOL	**Smolenice**	**3.15**	**164**	*e*PG	**Pg**	**20 39 06.1**	**+0.9**
SMOL				*e*SG	**Sg**	**20 39 47.5**	**+1.5**
LANS	**Liptovska Anna**	**3.21**	**137**	*e*Pg	**Pg**	**20 39 05.4**	**-0.9**
LANS	**Liptovska Anna**	**3.21**	**137**	*e*PG	**Pg**	**20 39 05.4**	**-0.9**
LANS				*e*		20 39 39.2	
VYHS	**Vyhne**	**3.52**	**149**	*e*Pg	**Pg**	**20 39 12.7**	**+0.5**
VYHS	**Vyhne**	**3.52**	**149**	*e*PG	**Pg**	**20 39 12.7**	**+0.5**
VYHS				*e*		20 39 51.9	
VYHS				*e*LG	Lg	20 40 12.5	
CONA	**Conrad Observa**	**3.63**	**183**	*i* Pn	**Pn**	**20 39 03.6**	**+1.2**
	comp=Z,0.5nm,0.1s						
CONA				*e*Sg	**Sg**	**20 39 59.4**	**-2.0**
	comp=Z,7.4nm,0.3s						
CONA	**Conrad Observa**	**3.63**	**183**	Pn	**Pn**	**20 39 03.6**	**+1.2**
	comp=Z,0.5nm,0.1s						
CONA				Sg	**Sg**	**20 39 59.4**	**-2.0**
	comp=Z,7.4nm,0.3s						
MOA	**Molln**	**3.90**	**199**	*e*Pn	**Pn**	**20 39 06.1**	**+0.1**
	comp=Z,1.1nm,0.3s						
MOA				Sg	**Sg**	**20 40 09.1**	**-1.0**
	comp=Z,4.7nm,0.3s						
MOA	**Molln**	**3.90**	**199**	Pn	**Pn**	**20 39 06.1**	**+0.1**
	comp=Z,1.1nm,0.3s						
MOA				Sg	**Sg**	**20 40 09.1**	**-1.0**
	comp=Z,4.7nm,0.3s						

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*DJA **11** 20:42:05.0±0.4, 10°S±5°×10°E±°, h10km, M4.0/14, mb4.1/3, MLv3.9/14*
*IDC **11** 20:42:06.8±2.9, 9.58S×107.88E, h0km, mb3.5/4, mb1 3.6/4, mb1mx3.3/49, mbtmp3.5/4, Error ellipse: s-maj=150.8km s-min=25.8km az=50.0*
*ISCJB **11** 20:42:07.3±1.0, 9.82S±0.09×107.65E±0.09, h23km, mb3.4/4, Error ellipse: s-maj=14.6km s-min=9.4km az=42.3*

ISC 11 20:42:09.9±1.3, 9.7S±0.1×107.75E±0.10, h23km, n16, σ1s24/16, mb3.4/4, South of Jawa

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CMJI	**Cimerak**	**1.99**	**20**	P	**Pn**	**20 42 43.0**	**+0.8**
CISI	**Cisompet, Garu**	**2.10**	**2**	P	**Pn**	**20 42 44.2**	**+0.5**
CNJI	**Cibinong**	**2.42**	**345**	P	**Pn**	**20 42 47.7**	**-0.4**
KPJI	**Karang Pucung**	**2.59**	**27**	P	**Pb**	**20 42 53.0**	**-2.7**
LEM	**Lembang**	**2.82**	**357**	P	**Pb**	**20 43 01.4**	**+1.7**
UGM	**Wanagama**	**3.24**	**58**	P	**Pn**	**20 43 00.5**	**+1.0**
PCJI	**Pacitan**	**3.69**	**67**	P	**Pn**	**20 43 05.9**	**+0.4**
NGJI	**Ngawi**	**4.32**	**58**	P	**Pn**	**20 43 15.8**	**+1.6**
PWJI	**Pagerwojo**	**4.32**	**68**	P	**Pn**	**20 43 15.5**	**+1.2**
KASI	**Kota Agung**	**5.23**	**322**	P	**Pn**	**20 43 26.3**	**-0.4**
	23nm,1.6s,0.1nm						
GMJI	**Gumukmas**	**5.79**	**77**	P	**Pn**	**20 43 35.2**	**+0.8**
	25nm,1.2s,0.1nm						
JAGI	**Jajag, Banyuwa**	**6.43**	**80**	P	**Pn**	**20 43 44.0**	**+0.7**
WRA	**Warramunga Arr**	**27.62**	**115**	P	**P**	**20 47 56.8**	**+0.9**
	0.3nm,0.5s,baz=287,slow=11,SNR=4.1						
ASAR	**Alice Springs**	**28.59**	**122**	P	**P**	**20 48 04.5**	**-0.1**
	0.3nm,0.6s,baz=299,slow=8.8,SNR=5.4						
STKA	**Stephens Creek**	**38.34**	**130**	P	**P**	**20 49 28.1**	**-1.1**
	1.4nm,0.8s,baz=322,slow=12,SNR=2.6						
MKAR	**Makanchi Array**	**60.63**	**340**	P	**P**	**20 52 19.4**	**+0.4**
	0.2nm,0.4s,baz=160,slow=7.4,SNR=6.1						

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*NIED **11** 20:42:00, 37.00N×140.60E, h5km, Mw3.7 Best double couple: M0 3.83000×10^14 NP1:ϕs 69.00000°, δ 36.00000°, λ -89.00000°. NP2:ϕd 248.00000°, δ 54.00000°, λ -90.00000°.*
*IDC **11** 20:42:58.2±0.9, 37.00N×140.67E, h0km, mb3.7/9, mb1 3.8/11, mb1mx3.6/49, mbtmp3.7/11, ML2.9/2, Error ellipse: s-maj=21.3km s-min=18.6km az=81.0*
*ISCJB **11** 20:42:59.2±0.6, 37.01N±0.03×140.74E±0.05, h18km±4km, mb3.6/9, Error ellipse: s-maj=7.1km s-min=5.2km az=21.2*
*JMA **11** 20:42:59.7, 37.02N×140.63E, h8km±2km, M3.6*
JMA Felt II J1.

ISC 11 20:42:59.9±1.0, 37.01N±0.03×140.63E±0.05, h9km±7km, n26, σ0s68/26, mb3.5/9, 3C, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizushiy**	**0.16**	**56**	*e*S	**Sg**	**20 43 05.8**	**+0.1**
JHO	**Hitachi**	**0.41**	**187**	⇑P	**Pg**	**20 43 07.7**	**-0.1**
JHO				*e*S	**Sg**	**20 43 13.5**	**+0.3**
JFT	**Otama**	**0.56**	**335**	⇑P	**Pg**	**20 43 10.7**	**0.0**
JFT				S	**Sg**	**20 43 18.2**	**+0.2**
JSB	**Shiboa**	**0.57**	**266**	P	**Pb**	**20 43 11.6**	**-0.5**
JSB				S	**Sb**	**20 43 19.6**	**-0.8**
JFY	**Yanaizu**	**0.84**	**298**	⇑P	**Pg**	**20 43 15.8**	**-0.2**
JFY				S	**Sg**	**20 43 26.6**	**-0.4**
JMM	**Marumori**	**0.86**	**8**	P	**Pg**	**20 43 15.7**	**-0.7**
JMM				S	**Sg**	**20 43 27.3**	**-0.3**
JYT	**Yasato**	**0.86**	**204**	P	**Pg**	**20 43 16.0**	**-0.4**
MJAR	**Matsushiro Arr**	**2.00**	**257**	Pn	**Pn**	**20 43 34.6**	**+0.7**
	19nm,0.3s,baz=77,slow=15,SNR=102						
MJAR				Sn	**Sb**	**20 44 00.8**	**-0.8**
	6.9nm,0.3s,baz=82,slow=30,SNR=5.2						
MAT	**Matsushiro**	**2.00**	**257**	P	**Pn**	**20 43 35.0**	**+1.1**
MAT				S	**Sb**	**20 44 01.4**	**-0.2**
USRK	**Ussuriysk Ar.**	**9.73**	**320**	Pn	**Pn**	**20 45 21.9**	**+2.0**
	0.2nm,0.3s,baz=142,slow=16,SNR=3.3						
KSRS	**Korea Array**	**10.15**	**276**	Pn	Pn	20 45 30.1	+4.4
	0.1nm,0.3s,baz=95,slow=13,SNR=6.9						
SONM	**Songino Array**	**27.28**	**304**	P	**P**	**20 48 44.6**	**-0.1**
	0.9nm,0.8s,baz=108,slow=8.8,SNR=9.0						
H11N2	**WAKE ISLAND Hy**	**28.68**	**120**	T	T	21 18 46.0	
	baz=313,slow=75,SNR=14						
H11N1	**WAKE ISLAND Hy**	**28.68**	**120**	T	T	21 18 47.1	
	baz=313,slow=75,SNR=16						
H11N3	**WAKE ISLAND Hy**	**28.70**	**120**	T	T	21 18 46.3	
	baz=313,slow=75,SNR=12						
H11S1	**WAKE ISLAND Hy**	**29.38**	**122**	T	T	21 19 35.9	
	baz=314,slow=75,SNR=30						
H11S3	**WAKE ISLAND Hy**	**29.38**	**122**	T	T	21 19 41.8	
	baz=314,slow=75,SNR=9.9						
H11S2	**WAKE ISLAND Hy**	**29.39**	**122**	T	T	21 19 34.4	
	baz=314,slow=75,SNR=13						
ZALV	**Zalesovo Beam**	**41.47**	**312**	P	**P**	**20 50 46.4**	**-0.4**
	0.4nm,0.4s,baz=91,slow=7.2,SNR=3.2						
MKAR	**Makanchi Array**	**43.60**	**302**	P	**P**	**20 51 04.1**	**-0.2**
	0.4nm,0.6s,baz=88,slow=9.7,SNR=7.0						
KURBB	**Kurchatov Arra**	**45.52**	**308**	P	**P**	**20 51 18.8**	**-0.7**
	1.0nm,0.6s,baz=84,slow=7.9,SNR=7.8						
ILAR	**Eielson Array**	**49.84**	**32**	P	**P**	**20 51 53.1**	**+0.2**
	0.2nm,0.6s,baz=268,slow=5.4,SNR=5.4						
WRA	**Warramunga Arr**	**56.96**	**187**	P	**P**	**20 52 45.1**	**-0.5**
	2.3nm,0.8s,baz=3.8,slow=7.3,SNR=17						
ASAR	**Alice Springs**	**60.69**	**187**	P	**P**	**20 53 11.3**	**-0.2**
	0.8nm,0.7s,baz=9.9,slow=7.5,SNR=10						
YKA	**Yellowknife Ar**	**64.14**	**30**	P	**P**	**20 53 34.3**	**+0.2**
	0.2nm,0.6s,baz=301,slow=6.6,SNR=4.2						
FINES	**FINESS Array B**	**68.54**	**332**	P	**P**	**20 54 01.7**	**-0.7**
	1.2nm,0.8s,baz=28,slow=8.6,SNR=4.7						

IDC 11 20:43:37.8±67.0, 21.97S×176.65W, h0km, mb3.6/3, mb1 3.8/3, mb1mx3.5/34, mbtmp3.6/3, MS3.8/1, Ms1 3.8/1, ms1mx2.8/37, Error ellipse: s-maj=1233.0km s-min=163.9km az=86.0, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
STKA	**Stephens Creek**	**38.32**	**246**	P	P	20 51 00.8	+0.4
	0.8nm,0.7s,baz=80,slow=11,SNR=2.7						
ASAR	**Alice Springs**	**45.43**	**258**	P	P	20 51 57.7	-1.0
	0.3nm,0.4s,baz=88,slow=8.4,SNR=5.3						
WRA	**Warramunga Arr**	**45.66**	**263**	P	P	20 52 00.7	+0.1
	0.2nm,0.3s,baz=103,slow=8.3,SNR=21						
BATI	**Baumata**	**58.22**	**271**	LR	LR	21 18 16.8	
	comp=Z,80nm,18.1s,baz=126,slow=36						

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*IDC **11** 20:44:30.0±1.2, 34.37N×73.85E, h0km, mb3.5/5, mb1 3.6/9, mb1mx3.3/46, mbtmp3.4/9, ML3.2/4, Error ellipse: s-maj=31.6km s-min=20.9km az=77.0*
*ISCJB **11** 20:44:33.4±0.8, 34.64N±0.05×73.8E±0.1, h22km, mb3.3/4, Error ellipse: s-maj=16.4km s-min=4.6km az=157.8*
*NNC **11** 20:44:46.3±5.8, 35.36N×73.31E, h0km, mb3.9, mpv3.5, Error ellipse: s-maj=76.8km s-min=41.8km az=92.0*

ISC 11 20:44:34.6±1.0, 34.60N±0.07×73.6E±0.1, h22km, n23, σ1s94/24, mb3.4/4, 5C-5D, Pakistan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
THN	**Thein Dam**	**2.77**	**141**	*e*PN	**Pb**	**20 45 22.8**	**-0.7**
THN				*e*SN	**Sn**	**20 45 53.0**	**+2.5**
SDNR	**Sundarnagar**	**4.17**	**137**	*e*S	**Sn**	**20 46 24.0**	**-1.1**
SFK	**Sufi-Kurgan**	**5.40**	**359**	⇓Pn	Pn	20 45 59.6	+5.5
	3.5nm,0.3s						
SFK				⇑Sn	**Sn**	**20 46 55.9**	**+0.2**
	10nm,0.4s						
MNAS	**Manas**	**7.92**	**354**	⇓Pn	Pn	20 46 31.9	+3.3
	2.1nm,0.6s						
MNAS				⇑Sn	**Sn**	**20 47 53.0**

JMM				S	Sg	20 47 06.8	+0.1
JFY	**Yanaizu**	**0.86**	**292**	⇑P	Pg	20 46 58.3	+0.1
JFY				S	Sg	20 47 09.2	-0.3
MJAR	**Matsushiro Arr**	**2.08**	**255**	Pn	Pn	20 47 16.1	-0.3
	6.3nm,0.3s,baz=89,slow=7.8,SNR=16						
MJAR				Sn	Sb	20 47 44.9	-0.3
	10nm,0.3s,baz=86,slow=29,SNR=12						
MAT	**Matsushiro**	**2.08**	**255**	P	Pn	20 47 15.7	-0.7
MAT				eS	Sb	20 47 46.2	+0.9
MKAR	**Makanchi Array**	**43.61**	**302**	P	P	20 54 46.8	+1.0
	0.1nm,0.7s,baz=96,slow=5.8,SNR=3.0						
KURBB	**Kurchatov Arra**	**45.52**	**308**	P	P	20 55 00.7	-0.2
	0.2nm,0.4s,baz=84,slow=8.1,SNR=3.2						
WRA	**Warramunga Arr**	**57.05**	**187**	P	P	20 56 27.4	-0.2
	0.7nm,0.5s,baz=3.8,slow=7.3,SNR=12						

SKHL ***11*** *20:48:19.9±0.3, 44°.51N×149°.66E, h34km±4km, mb4.6/2*
JMA ***11*** *20:48:19.8±0.8, 44°.92N×149°.60E, h30km, M3.5*

ISC 11 20:48:22.8±3.8, 44°.56N±0°.09×149°.5E±0°.2, h36km, n13, σ0s92/20, Kuril Islands

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
KUR	**Kuril'sk**	**1.35**	**301**	*i* P	**Pn**	**20 48 43.3**	**-1.8**
KUR				AMB	AMB	20 48 44.1	
	150nm,0.3s						
KUR				*i* S	**Sn**	**20 49 01.1**	**-0.7**
KUR				A	A	20 49 02.0	
	170nm,0.2s						
KUR				A	A	20 49 02.0	
	90nm,0.2s						
SHO	**Shikotan**	**2.05**	**251**	*i* P	**Pn**	**20 48 53.2**	**-1.5**
SHO				*i* S	**Sn**	**20 49 18.0**	**-1.0**
SHO				A	A	20 49 23.8	
	150nm,0.3s						
SHO				A	A	20 49 23.8	
	130nm,0.3s						
NEM2	**Nemuro 2**	**2.97**	**248**	P	**Pn**	**20 49 06.8**	**-0.6**
NEM2				eS	**Sn**	**20 49 41.4**	**-0.4**
JRA	**Rausu**	**3.22**	**260**	P	**Pn**	**20 49 11.3**	**+0.6**
JNK	**Nakash**	**3.59**	**256**	P	**Pn**	**20 49 16.5**	**+0.6**
JNK				eS	**Sn**	**20 49 57.9**	**+0.9**
JAK	**Akkeshi**	**3.82**	**248**	P	**Pn**	**20 49 18.4**	**-0.7**
JAK				eS	**Sn**	**20 50 02.2**	**-0.5**
JAR	**Ashorobuto**	**4.34**	**255**	P	**Pn**	**20 49 26.9**	**+0.7**
JMP	**Maruseppu**	**4.45**	**265**	P	**Pn**	**20 49 28.7**	**+0.9**
JCH	**Churui**	**4.87**	**249**	P	**Pn**	**20 49 33.9**	**+0.4**
JCH				eS	**Sn**	**20 50 28.6**	**0.0**
JKK2	**Kamakawa 2**	**4.91**	**264**	P	**Pn**	**20 49 35.4**	**+1.3**
MYR	**Moyori**	**5.07**	**246**	eP	**Pn**	**20 49 36.7**	**+0.5**
MYR				eS	**Sn**	**20 50 34.1**	**+0.6**
YSS	**Yuzh-Sakhalins**	**5.30**	**299**	eP	**Pn**	**20 49 40.1**	**+0.7**
TYV	**Tymovskoe**	**7.82**	**326**	eP	**Pn**	**20 50 14.6**	**+0.7**

IDC ***11*** *20:52:05.2±1.8, 36°.14S×73°.32W, h0km, mb4.0/6, mb1 1.4/7, mb1mx3.9/32, mbtmp4.0/7, ML3.5/1, MS3.6/5, Ms1 3.6/5, ms1mx3.2/30, Error ellipse: s-maj=46.1km s-min=20.3km az=75.0*
ISCJB ***11*** *20:52:06.6±0.9, 36°.26S±0°.06×73°.80W±0°.08, h33km, mb4.0/5, MS3.6/4, Error ellipse: s-maj=10.4km s-min=8.3km az=142.8*
GUC ***11*** *20:52:06.0±0.3, 36°.24S×73°.71W, h22km±3km, ML4.0*

ISC 11 20:52:09.0±1.1, 36°.27S±0°.07×73°.7W±0°.1, h35km, n14, σ1s79/15, mb4.1/5, MS3.5/4, 1C, Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
COCH	**Cobquecura**	**0.71**	**79**	⇑*i* P	**Pn**	**20 52 20.6**	**-1.9**
COCH				*i* S	**Sn**	**20 52 31.8**	**-0.5**
COCH				IAML		20 52 33.8	
	comp=N,11μm,0.3s						
CCSP	**San Pedro de C**	**0.72**	**143**	*i* P	**Pn**	**20 52 21.1**	**-1.6**
CCSP				*i* S	**Sn**	**20 52 32.2**	**-0.2**
CCSP				IAML		20 52 36.8	
	comp=N,12μm,0.5s						
CCHI	**Chillan**	**1.31**	**105**	*e*P	**Pn**	**20 52 30.8**	**+0.1**
CCHI				*i* S	**Sn**	**20 52 49.5**	**+2.5**
CCHI				IAML		20 52 55.7	
	comp=E,6μm,0.7s						
TALC	**Talca**	**1.86**	**62**	*i* P	**Pn**	**20 52 38.8**	**+0.5**
TALC				*i* S	**Sn**	**20 53 04.0**	**+3.5**
PLCA	**Paso Flores**	**5.07**	**152**	Pn	**Pn**	**20 53 24.4**	**+1.8**
	comp=E,0.4nm,0.3s,baz=357,slow=13,SNR=23						
PLCA				Lg	Lg	20 54 45.4	
	comp=E,2.0nm,0.3s,baz=74,slow=18,SNR=3.7						
CPUP	**Villa Florida**	**17.09**	**59**	LR	LR	21 03 14.8	
	comp=E,232nm,18.7s,baz=238,slow=40						
LPAZ	**La Paz**	**20.50**	**15**	P	**P**	**20 56 44.8**	**0.0**
	comp=E,4.6nm,0.8s,baz=118,slow=3.7,SNR=4.4						
SIV	**San Ignacio**	**23.10**	**32**	P	**P**	**20 57 09.9**	**-2.0**
	comp=E,6.5nm,0.9s,baz=234,slow=2.4,SNR=14						
SIV				LR	LR	21 07 58.1	
	comp=E,158nm,19.3s,baz=194,slow=42						
BDFB	**Brasilia**	**30.71**	**55**	P	**P**	**20 58 19.3**	**-1.6**
	comp=E,3.1nm,0.8s,baz=190,slow=9.3,SNR=4.6						
BDFB				LR	LR	21 12 55.1	
	comp=E,60nm,18.5s,baz=224,slow=41						
PTGA	**Pitinga**	**37.58**	**23**	LR	LR	21 16 41.7	
	comp=E,61nm,19.2s,baz=123,slow=40						
TXAR	**Lajitas Array**	**71.10**	**333**	P	**P**	**21 03 25.3**	**+1.5**
	comp=E,0.3nm,0.6s,baz=153,slow=7.6,SNR=3.8						
DBIC	**Dimbokro**	**77.15**	**72**	P	**P**	**21 04 00.1**	**+0.8**
	comp=E,3.9nm,1.1s,baz=153,slow=9.0,SNR=2.6						
TORD	**Torodi Ar. Bea**	**86.22**	**71**	P	**P**	**21 04 46.1**	**-1.1**
	comp=E,0.7nm,1.0s,baz=250,slow=7.5,SNR=3.9						
MDT	**Midelt**	**94.26**	**52**	LR	LR	21 49 46.0	
	comp=E,58nm,18.5s,slow=37						

IDC ***11*** *20:53:35.6±2.3, 37°.02N×140°.79E, h0km, mb3.2/2, mb1 3.4/3, mb1mx3.1/54, mbtmp3.1/3, ML3.0/1, Error ellipse: s-maj=45.7km s-min=32.9km az=33.0*
ISCJB ***11*** *20:53:36.2±1.4, 37°.03N±0°.06×140°.9E±0°.1, h18km±8km, mb3.2/2, Error ellipse: s-maj=15.3km s-min=9.6km az=0.3*
JMA ***11*** *20:53:37.4, 37°.03N×140°.67E, h8km±2km, M3.0*

ISC 11 20:53:36.8±1.5, 37°.01N±0°.05×140°.64E±0°.08, h8km±13km, n7, σ0s81/10, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.15**	**54**	P	**Pg**	**20 53 40.4**	**+0.3**
JHO	**Hitachi**	**0.41**	**188**	S	**Sb**	**20 53 51.6**	**-0.9**
JFT	**Otama**	**0.56**	**334**	P	**Pb**	**20 53 48.4**	**-0.5**
JFT				S	**Sb**	**20 53 56.0**	**-1.0**
MJAR	**Matsushiro Arr**	**2.01**	**257**	Pn	**Pb**	**20 54 12.9**	**-0.7**
	4.5nm,0.3s,baz=85,slow=17,SNR=25						
MJAR				Sn	**Sb**	**20 54 38.9**	**+0.2**
	7.9nm,0.3s,baz=83,slow=26,SNR=15						
MAT	**Matsushiro**	**2.01**	**257**	P	**Pb**	**20 54 13.0**	**-0.6**
MAT				S	**Sb**	**20 54 39.4**	**+0.6**
MKAR	**Makanchi Array**	**43.61**	**302**	P	**P**	**21 01 42.1**	**+0.7**
	0.1nm,0.5s,baz=96,slow=7.8,SNR=2.7						
WRA	**Warramunga Arr**	**56.96**	**187**	P	**P**	**21 03 22.8**	**+0.2**
	0.3nm,0.5s,baz=1.9,slow=7.2,SNR=7.1						

NIED ***11*** *20:55:00, 37°.00N×140°.70E, h5km, Mw3.5 Best double couple: M0 1.76000×10^14 NP1:φs308.00000°, δ29.00000°, λ-145.00000°. NP2:φs186.00000°, δ74.00000°, λ-66.00000°.*
IDC ***11*** *20:55:08.2±1.8, 37°.05N×140°.84E, h0km, mb3.7/4, mb1 3.9/5, mb1mx3.5/52, mbtmp3.7/5, ML3.7/1, Error ellipse: s-maj=40.2km s-min=23.1km az=52.0*
ISCJB ***11*** *20:55:09.5±0.7, 37°.02N±0°.03×140°.81E±0°.06, h17km±4km, mb3.7/4, Error ellipse: s-maj=8.2km s-min=4.9km az=6.8*
JMA ***11*** *20:55:10.5, 37°.04N×140°.69E, h11km±1km, M3.6*
JMA Felt II J1.

ISC 11 20:55:10.3±1.0, 37°.00N±0°.05×140°.71E±0°.04, h9km±8km, n21, σ1s03/24, mb3.6/4, 5C, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.13**	**35**	⇑P	**Pg**	**20 55 13.4**	**+0.2**
ONAJ				S	**Sg**	**20 55 15.5**	**+0.2**
JHO	**Hitachi**	**0.40**	**196**	⇑P	**Pb**	**20 55 19.0**	**-0.6**
JHO				S	**Sb**	**20 55 25.1**	**-0.7**
JFT	**Otama**	**0.60**	**331**	P	**Pg**	**20 55 21.5**	**-0.4**
JFT				S	**Sg**	**20 55 28.7**	**-1.0**
JSB	**Shiboa**	**0.63**	**268**	⇑P	**Pb**	**20 55 23.0**	**-0.5**
JSB				S	**Sg**	**20 55 31.5**	**+0.8**
JMM	**Marumori**	**0.87**	**5**	⇑P	**Pg**	**20 55 26.0**	**-1.0**
JMM				S	**Sg**	**20 55 36.8**	**-1.6**
JYT	**Yasato**	**0.87**	**208**	P	**Pb**	**20 55 27.2**	**-0.4**
JYT				S	**Sb**	**20 55 38.9**	**-0.4**
JFY	**Yanaizu**	**0.90**	**297**	⇑P	**Pg**	**20 55 26.9**	**-0.7**
JFY				S	**Sg**	**20 55 37.9**	**-1.4**
MJAR	**Matsushiro Arr**	**2.06**	**258**	Pn	**Pn**	**20 55 46.1**	**+1.1**
	26nm,0.3s,baz=78,slow=19,SNR=30						
MJAR				Sn	**Sb**	**20 56 13.1**	**-0.4**
	33nm,0.3s,baz=87,slow=26,SNR=15						
MAT	**Matsushiro**	**2.06**	**258**	P	**Pn**	**20 55 45.9**	**+0.8**
MAT				S	**Sb**	**20 56 13.4**	**-0.1**
JHJ	**Hachijo jima 2**	**3.94**	**191**	Sn	**Sn**	**20 56 56.3**	**-1.0**
	11nm,0.3s,baz=40,slow=12,SNR=2.2						
USRK	**Ussuriysk Ar.**	**9.78**	**320**	Pn	**Pn**	**20 57 33.9**	**+2.9**
	0.1nm,0.3s,baz=144,slow=20,SNR=4.3						
SONM	**Songino Array**	**27.34**	**304**	P	**P**	**21 00 55.1**	**-0.4**
	0.5nm,0.5s,baz=104,slow=8.9,SNR=4.6						
H11N2	**WAKE ISLAND Hy**	**28.62**	**120**	T	T	21 30 55.6	
	baz=313,slow=75,SNR=22						
H11N1	**WAKE ISLAND Hy**	**28.63**	**120**	T	T	21 30 56.9	
	baz=313,slow=75,SNR=22						
H11N3	**WAKE ISLAND Hy**	**28.64**	**120**	T	T	21 30 57.6	
	baz=313,slow=75,SNR=16						
H11S1	**WAKE ISLAND Hy**	**29.32**	**122**	T	T	21 31 48.9	
	baz=314,slow=76,SNR=37						
H11S3	**WAKE ISLAND Hy**	**29.32**	**122**	T	T	21 31 48.4	
	baz=314,slow=76,SNR=25						
H11S2	**WAKE ISLAND Hy**	**29.33**	**122**	T	T	21 31 50.1	
	baz=314,slow=76,SNR=33						
MKAR	**Makanchi Array**	**43.66**	**302**	P	**P**	**21 03 14.8**	**-0.4**
	0.4nm,0.6s,baz=90,slow=10,SNR=7.0						
WRA	**Warramunga Arr**	**56.95**	**187**	P	**P**	**21 04 55.4**	**-0.6**
	1.6nm,0.5s,baz=2.6,slow=7.2,SNR=30						
ASAR	**Alice Springs**	**60.68**	**187**	P	**P**	**21 05 22.1**	**+0.2**
	0.5nm,0.6s,baz=10.0,slow=6.3,SNR=7.7						

JMA 11 20:57:13.0, 36°.89N×140°.69E, h8km±1km, M2.7, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.23**	**22**	P	Pg	20 57 17.7	+0.1
ONAJ				S	Sg	20 57 21.2	+0.4
JHO	**Hitachi**	**0.29**	**199**	P	Pg	20 57 18.9	+0.1
JHO				S	Sg	20 57 23.2	+0.4
JFT	**Otama**	**0.69**	**336**	P	Pg	20 57 26.3	0.0
JFT				S	Sg	20 57 35.4	+0.1
JMM	**Marumori**	**0.98**	**5**	P	Pg	20 57 31.2	-0.6
JMM				S	Sg	20 57 43.9	-0.6
MAT	**Matsushiro**	**2.02**	**261**	P	Pn	20 57 48.3	+0.8
MAT				S	Sb	20 58 15.2	-0.2

DJA 11 20:58:25.4±0.8, 7°S±7°×10°.5E±°, h10km, M3.9/11, MLv3.9/11, Sunda Strait

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
CGJI	**Cibinong**	**0.67**	**78**	P	Pg	20 58 37.9	-0.6
CGJI				S	Sg	20 58 47.4	+0.1
SBJI	**Serang**	**1.27**	**60**	P	Pn	20 58 48.3	-0.8
KASI	**Kota Agung**	**1.34**	**337**	P	Pn	20 58 48.1	-2.1
BLSI	**Bandar Lampung**	**1.40**	**9**	P	Pn	20 58 49.6	-1.4
SKJI	**Sukabumi**	**1.54**	**99**	P	Pn	20 58 52.8	-0.1
DBJI	**Dramaga**	**1.72**	**83**	P	Pn	20 58 54.8	-0.6
CBJI	**Citeko**	**1.84**	**80**	P	Pb	20 58 58.6	-0.6
KLJ	**Kotabumi**	**1.89**	**355**	P	Pn	20 58 58.4	+0.6
LWLI	**Liwa**	**1.98**	**331**	P	Pn	20 58 59.3	+0.2
CNJI	**Cibinong**	**2.15**	**105**	P	Pn	20 58 59.8	-1.6
MDSI	**Maura Dua**	**2.41**	**339**	P	Pn	20 59 04.7	-0.3

IDC ***11*** *21:01:27.3±1.2, 36°.85N×140°.71E, h0km, mb3.5/4, mb1 3.7/5, mb1mx3.4/50, mbtmp3.4/5, ML3.2/1, MS3.4/1, Ms1 3.4/1, ms1mx2.4/40, Error ellipse: s-maj=25.5km s-min=24.1km az=121.0*
ISCJB ***11*** *21:01:28.3±0.6, 37°.07N±0°.03×140°.69E±0°.06, h11km±5km, mb3.4/4, MS3.4/1, Error ellipse: s-maj=7.6km s-min=4.8km az=9.6*
JMA ***11*** *21:01:28.5, 37°.08N×140°.65E, h7km±1km, M3.3*
JMA Felt I J1.

ISC 11 21:01:28.2±1.1, 37°.10N±0°.05×140°.61E±0°.05, h6km±10km, n14, σ0s86/22, mb3.3/4, 3C-1D, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.15**	**87**	⇑P	**Pg**	**21 01 31.3**	**0.0**
ONAJ				S	**Sg**	**21 01 33.6**	**+0.2**
JFT	**Otama**	**0.47**	**333**	⇑P	**Pb**	**21 01 38.7**	**-0.3**
JFT				S	**Sb**	**21 01 45.7**	**-0.5**
JHO	**Hitachi**	**0.48**	**184**	P	**Pg**	**21 01 37.5**	**0.0**
JHO				S	**Sg**	**21 01 44.1**	**+0.3**
JSB	**Shiboa**	**0.56**	**257**	P	**Pb**	**21 01 40.7**	**+0.2**
JSB				S	**Sb**	**21 01 49.2**	**+0.4**
JMM	**Marumori**	**0.78**	**11**	P	**Pb**	**21 01 43.7**	**-0.5**
JMM				S	**Sb**	**21 01 54.0**	**-0.6**
JFY	**Yanaizu**	**0.79**	**294**	⇑P	**Pb**	**21 01 44.3**	**+0.1**
JFY				S	**Sb**	**21 01 54.9**	**-0.2**
JYT	**Yasato**	**0.93**	**201**	⇓P	**Pg**	**21 01 45.7**	**-0.3**
JYT				eS	**Sg**	**21 01 57.9**	**-0.1**
MJAR	**Matsushiro Arr**	**2.00**	**255**	Pn	**Pb**	**21 02 04.2**	**-0.7**
	8.1nm,0.3s,baz=85,slow=15,SNR=34						
MJAR				Sn	**Sb**	**21 02 30.0**	**-0.2**
	10nm,0.3s,baz=311,slow=16,SNR=5.2						
MAT	**Matsushiro**	**2.00**	**255**	P	**Pn**	**21 02 03.6**	**+1.0**
MAT				S	**Sg**	**21 02 32.0**	**-0.6**
SONM	**Songino Array**	**27.22**	**304**	P	**P**	**21 07 13.3**	**+0.5**
	0.2nm,0.5s,baz=94,slow=8.0,SNR=2.8						
NRIK	**Noril'sk**	**42.94**	**335**	LR	LR	21 30 10.4	
	comp=Z,51nm,19.5s,baz=42,slow=40						
ILAR	**Eielson Array**	**49.79**	**32**	P	**P**	**21 10 23.1**	**+1.9**
	0.2nm,0.7s,baz=282,slow=4.5,SNR=3.1						
WRA	**Warramunga Arr**	**57.04**	**187**	P	**P**	**21 11 13.5**	**-1.4**
	1.1nm,0.6s,baz=2.4,slow=7.5,SNR=20						
ASAR	**Alice Springs**	**60.77**	**187**	P	**P**	**21 11 38.8**	**-2.0**
	0.2nm,0.5s,baz=16,slow=13,SNR=5.0						

ISCJB ***11*** *21:03:04.4±0.7, 36°.21S±0°.05×73°.90W±0°.07, h33km, mb4.3/8, MS3.3/2, Error ellipse: s-maj=8.3km s-min=6.4km az=163.1*
NEIC ***11*** *21:03:05.0, 36°.22S×73°.79W, h20km, mb4.2/5, ML4.0(GUC), After GUC.*
NEIC Felt [III] at San Pedro de la Paz and [II] at Concepcion.
GUC ***11*** *21:03:05.2±0.5, 36°.22S×73°.79W, h20km±16km, ML4.0*
IDC ***11*** *21:03:09.1±1.6, 36°.01S×72°.29W, h0km, mb3.9/4, mb1 4.0/6, mb1mx3.8/28, mbtmp3.8/6, ML3.6/2, MS3.2/3, Ms1 3.2/3, ms1mx2.9/26, Error ellipse: s-maj=50.1km s-min=20.0km az=81.0*

ISC 11 21:03:06.6±0.9, 36°.26S±0°.05×73°.83W±0°.10, h35km, n28, σ1s53/30, mb4.1/8, 2C, Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
CCSP	**San Pedro de C**	**0.82**	**136**	*i* P	**Pn**	**21 03 20.5**	**-1.2**
CCSP				*i* S	**Sn**	**21 03 31.4**	**-1.2**
CCSP				IAML		21 03 34.6	
	comp=N,9μm,0.3s						
COCH	**Cobquecura**	**0.85**	**82**	*i* P	**Pn**	**21 03 19.9**	**-2.1**
COCH				*i* S	**Sn**	**21 03 31.2**	**-2.0**
CCHI	**Chillan**	**1.45**	**104**	*i* P	**Pn**	**21 03 29.8**	**-0.5**
CCHI				*i* S	**Sn**	**21 03 49.1**	**+1.0**
CCHI				IAML		21 04 05.0	
	comp=E,5μm,0.9s						
TALC	**Talca**	**1.98**	**65**	*i* P	**Pn**	**21 03 38.1**	**+0.6**
TALC				*i* S	**Sn**	**21 04 02.8**	**+1.8**
PLCA	**Paso Flores**	**5.16**	**151**	Pn	**Pn**	**21 04 23.8**	**+2.5**
	comp=E,0.4nm,0.3s,baz=344,slow=13,SNR=14						
PLCA				Lg	Lg	21 05 47.3	
	comp=E,1.4nm,0.3s,baz=268,slow=17,SNR=2.4						
PLCA				LR	LR	21 06 22.3	
	comp=E,176nm,19.8s,baz=334,slow=39						
PLCA	**Paso Flores**	**5.16**	**151**	*e*Pn	Pn	21 04 24.3	+3.0
PLCA				*e*Sn	**Sn**	**21 05 18.0**	**-1.6**
PLCA				Lg	Lg	21 05 47.3	
AAGR	**Agrelo**	**5.19**	**54**	*i* P	**Pn**	**21 04 22.7**	**+0.8**
AAGR				*i* S	Sn	21 05 26.0	+5.4

AUSP	**Uspallata**	**5.45**	**44**	*i* P	**Pn**	**21 04 25.9**	**+0.3**
ASAL	**Salagasta**	**5.51**	**50**	*i* P	**Pn**	**21 04 26.2**	**0.0**
RTLS	**Leoncito**	**5.82**	**42**	*i* P	**Pn**	**21 04 30.5**	**-0.2**
RTCV	**Cerro Valdivia**	**6.20**	**47**	*i* P	**Pn**	**21 04 34.8**	**-0.8**
AMOG	**MOGNA**	**6.92**	**42**	*i* P	**Pn**	**21 04 42.9**	**-2.7**
LCO	**Las Campanas**	**7.69**	**21**	*e*Pn	**Pn**	**21 04 54.0**	**-2.4**
LCO				*e*Sn	**Sn**	**21 06 20.4**	**-1.9**
TRQA	**Tornquist**	**9.63**	**104**	*e*Pn	**Pn**	**21 05 23.8**	**+1.2**
PB01	**IPOC Station P**	**15.62**	**15**	*e*Pn	**P**	**21 06 50.9**	**+2.8**
	comp=E,15nm,1.1s						
PB01				*e*S	**S**	**21 09 52.7**	**+2.0**
LPAZ	**La Paz**	**20.52**	**16**	P	Pn	21 07 44.9	0.0
	comp=E,0.1nm,0.3s,baz=179,slow=13,SNR=10						
LPAZ	**La Paz**	**20.52**	**16**	*e*P	Pn	21 07 45.8	+0.9
	comp=E,7.2nm,0.9s						
SIV	**San Ignacio**	**23.16**	**33**	P	**P**	**21 08 08.9**	**-1.1**
	comp=E,5.8nm,0.9s,baz=234,slow=14,SNR=12						
SIV				LR	LR	21 18 39.1	
	comp=E,72nm,20.1s,baz=190,slow=42						
SAML	**Samuel**	**28.86**	**22**	*e*P	**P**	**21 09 00.7**	**-1.1**
	comp=E,0.6nm,0.5s						
PTGA	**Pitinga**	**37.61**	**23**	*e*P	**P**	**21 10 18.6**	**+0.5**
	comp=E,9.9nm,1.3s						
RCBR	**Riachuelo**	**46.08**	**58**	P	**P**	**21 11 25.7**	**-1.6**
GRGR	**Grenville**	**49.48**	**16**	*e*P	**P**	**21 11 53.1**	**-0.4**
	comp=E,237nm,1.3s						
SNAA	**Sanae**	**50.07**	**157**	*e*P	**P**	**21 11 57.6**	**+0.1**
QSPA	**South Pole Qui**	**53.98**	**180**	*e*P	**P**	**21 12 27.6**	**+0.7**
	comp=E,20nm,1.0s						
TXAR	**Lajitas Array**	**71.02**	**333**	P	P	21 14 31.1	+10
	comp=E,0.3nm,0.6s,baz=154,slow=9.0,SNR=4.5						
DBIC	**Dimbokro**	**77.28**	**72**	P	**P**	**21 14 58.6**	**+1.0**
	comp=E,1.6nm,0.8s,baz=207,slow=4.5,SNR=1.7						
TORD	**Torodi Ar. Bea**	**86.34**	**71**	P	**P**	**21 15 45.9**	**+0.5**
	comp=E,0.8nm,1.0s,baz=238,slow=3.3,SNR=3.9						
SCHQ	**Schefferville**	**90.92**	**4**	LR	LR	21 58 36.2	
	comp=E,15nm,18.6s,baz=54,slow=37						

BJI ***11*** *21:02:58.7, 36°.40N×145°.80E, h10km, mb4.6/36, mB4.9/17, Ms4.5/7, Ms7 4.3/6*
NIED ***11*** *21:03:00, 38°.40N×141°.80E, h53km, Mw4.2 Best double couple: M0 2.06000×10^15 NP1:φs190.00000°, δ39.00000°, λ66.00000°. NP2:φs40.00000°, δ55.00000°, λ108.00000°.*
MOS ***11*** *21:03:35.4±1.2, 38°.43N×141°.93E, h57km, mb4.4/29, Error ellipse: s-maj=8.9km s-min=5.9km az=86.0*
ISCJB ***11*** *21:03:36.0±0.5, 38°.41N±0°.03×141°.88E±0°.05, h61km±3km, mb4.3/58, Error ellipse: s-maj=6.9km s-min=3.9km az=35.1*
JMA ***11*** *21:03:37.2±0.1, 38°.43N×141°.82E, h54km±1km, M4.1*
JMA Felt III J1.
IDC ***11*** *21:03:37.3±0.5, 38°.38N×141°.88E, h58km±4km, mb3.8/20, mb1 4.0/25, mb1mx3.9/50, mbtmp4.1/25, MS3.2/8, Ms1 3.2/8, ms1mx2.9/51, Error ellipse: s-maj=13.2km s-min=10.9km az=120.0*
NEIC ***11*** *21:03:38.8±0.7, 38°.38N×141°.81E, h72km±6km, mb4.7/27, Error ellipse: s-maj=6.4km s-min=4.6km az=129.0*
NEIC Recorded [3 JMA] in Iwate.

ISC 11 21:03:36.9±0.5, 38°.40N±0°.05×141°.94E±0°.04, h55km±4km, h55km:pP-P, n159, σ1s41/179, mb4.3/58, MS3.5/6, 2C, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**0.47**	**277**	P	**Pn**	**21 03 47.4**	**-0.8**
JIO				S	**Sn**	**21 03 54.4**	**-1.9**
OFUJ	**Ofunato**	**0.71**	**343**	P	**Pn**	**21 03 50.6**	**-0.5**
OFUJ				S	**Sn**	**21 04 00.1**	**-1.4**
JMK	**Ichinoseki**	**0.79**	**315**	P	**Pn**	**21 03 51.4**	**-0.7**
JMK				S	**Sn**	**21 04 01.5**	**-1.7**
JOU	**Okura**	**1.00**	**269**	P	**Pn**	**21 03 54.0**	**-0.9**
JOU				S	**Sn**	**21 04 06.5**	**-1.7**
JMM	**Marumori**	**1.05**	**240**	P	**Pn**	**21 03 54.7**	**-0.8**
JMM				S	**Sn**	**21 04 07.1**	**-2.1**
JOM	**Ohasama**	**1.19**	**335**	P	**Pn**	**21 03 56.9**	**-0.4**
JOM				S	**Sn**	**21 04 11.2**	**-1.3**
JYK	**Kaneyama**	**1.34**	**293**	P	**Pn**	**21 03 58.7**	**-0.7**
JYK				S	**Sn**	**21 04 14.6**	**-1.6**
JRG	**Rokugo**	**1.43**	**315**	P	**Pn**	**21 03 59.9**	**-0.6**
JYS	**Shirataka**	**1.49**	**264**	P	**Pn**	**21 04 00.8**	**-0.6**
JYS				S	**Sn**	**21 04 18.6**	**-1.1**
JFT	**Otama**	**1.54**	**236**	P	**Pn**	**21 04 02.1**	**0.0**
JFT				S	**Sn**	**21 04 20.3**	**-0.8**
MJAR	**Matsushiro Arr**	**3.50**	**239**	P	**Pn**	**21 04 29.9**	**+1.0**
	8.9nm,0.3s,baz=37,slow=12,SNR=24						
MJAR				LR	LR	21 06 09.1	
	comp=Z,246nm,19.9s,baz=75,slow=44						
MAJO	**Matsushiro**	**3.50**	**239**	*e*P	**Pn**	**21 04 29.8**	**+0.9**
MAJO	**Matsushiro**	**3.50**	**239**	*e*Pn	**Pn**	**21 04 29.8**	**+0.9**
MAT	**Matsushiro**	**3.50**	**239**	P	**Pn**	**21 04 30.2**	**+1.3**
MAT				*e*S	**Sn**	**21 05 12.3**	**+3.2**
ERM	**Erimo**	**3.73**	**14**	*e*P	**Pn**	**21 04 33.4**	**+1.4**
ERM				*e*		21 05 16.6	
ERM	**Erimo**	**3.73**	**14**	*e*Pn	**Pn**	**21 04 33.4**	**+1.4**
ERM				*e*Sn	**

NJ2	**Nanjing**	**19.87**	**258**	*e*P		**P**	**21 08 03.2**	**-0.3**
NJ2				pmax		pmax		
	comp=Z,11nm,0.7s							
BJI	**Beijing**	**20.01**	**283**	P		**Pn**	**21 08 09.3**	**+2.2**
BJI				pmax		pmax		
	comp=Z,6.0nm,0.9s							
MA2	**Magadan**	**21.93**	**12**	P		**P**	**21 08 26.6**	**+1.1**
	comp=Z,13nm,0.7s,baz=256,slow=9.0,SNR=5.0							
MA2				LR		LR	21 16 11.7	
	comp=Z,43nm,21.8s,baz=126,slow=34							
HHC	**Hu-ho-hao-te**	**23.47**	**286**	*e*P		**P**	**21 08 44.6**	**+2.9**
HHC				sP		pP	21 08 52.2	-2.6
HHC				S		Sn	21 13 20.3	+5.8
HHC				SS			21 14 35.1	
HHC				pmax		pmax		
	comp=Z,19nm,0.8s							
HHC				pmax		pmax		
	comp=Z,120nm,8.9s							
HHC				LR		LR		
	comp=Z,1μm,13.6s							
HHC				LR		LR		
	comp=Z,1μm,13.6s							
HHC				LR		LR		
	comp=Z,1μm,12.5s							
YAK	**Yakutsk**	**24.84**	**346**	*e*P		**P**	**21 08 53.9**	**+0.1**
YAK				pmax		pmax		
	comp=Z,11nm,0.8s							
SEY	**Seymchan**	**25.37**	**11**	P		**P**	**21 08 59.8**	**+1.1**
	comp=Z,5.3nm,1.0s,baz=176,slow=4.3,SNR=11							
BOD	**Bodaibo**	**26.62**	**326**	*e*P		**P**	**21 09 08.5**	**-1.4**
BOD				pmax		pmax		
	comp=Z,4.0nm,0.8s							
XAN	**Xi'an**	**26.91**	**271**	P		**P**	**21 09 14.4**	**+1.5**
XAN				pP		pP	21 09 20.9	-5.8
XAN				pmax		pmax		
	comp=Z,5.0nm,0.8s							
ULN	**Ulaanbaatar**	**26.96**	**302**	*e*P		**P**	**21 09 15.7**	**+2.3**
ULN				pmax		pmax		
	comp=Z,8.0nm,1.7s							
ULN	**Ulaanbaatar**	**26.96**	**302**	*e*P		**P**	**21 09 15.7**	**+2.3**
	comp=Z,7.8nm,1.7s							
SONA1	**Songino Array**	**27.39**	**302**	*e*P		**P**	**21 09 17.5**	**+0.3**
SONA0	**Songino Array**	**27.40**	**302**	*e*P		**P**	**21 09 17.4**	**+0.2**
	comp=Z,10nm,1.9s							
SONM	**Songino Array**	**27.40**	**302**	P		**P**	**21 09 17.4**	**+0.2**
	comp=Z,0.7nm,0.7s,baz=93,slow=8.5,SNR=6.5							
H11N2	**WAKE ISLAND Hy**	**28.52**	**124**	T		T	21 40 03.3	
	baz=317,slow=76,SNR=225							
H11N1	**WAKE ISLAND Hy**	**28.53**	**124**	T		T	21 40 03.8	
	baz=317,slow=76,SNR=112							
H11N3	**WAKE ISLAND Hy**	**28.54**	**124**	T		T	21 40 04.3	
	baz=317,slow=76,SNR=889							
H11S1	**WAKE ISLAND Hy**	**29.28**	**126**	T		T	21 41 03.6	
	baz=319,slow=76,SNR=219							
H11S3	**WAKE ISLAND Hy**	**29.28**	**126**	T		T	21 41 03.8	
	baz=319,slow=76,SNR=251							
H11S2	**WAKE ISLAND Hy**	**29.30**	**126**	T		T	21 41 02.1	
	baz=319,slow=76,SNR=184							
ZAK	**Zakamensk**	**29.78**	**306**	*e*P		**P**	**21 09 37.0**	**-1.3**
ZAK				pmax		pmax		
	comp=Z,2.0nm,1.0s							
TLY	**Talaya**	**29.78**	**309**	LR		LR	21 21 27.3	
	comp=Z,55nm,19.2s,baz=127,slow=36							
LZH	**Lanzhou**	**30.28**	**278**	*e*P		**P**	**21 09 45.1**	**+2.2**
LZH				pP		pP	21 09 49.5	-7.4
LZH				sP		sP	21 09 52.2	-11
LZH				PP		**PP**	**21 10 57.5**	**+5.6**
LZH				pmax		pmax		
	comp=Z,23nm,1.1s							
LZH				pmax		pmax		
	comp=Z,72nm,5.5s							
LZH				LR		LR		
	comp=Z,310nm,13.3s							
LZH				LR		LR		
	comp=Z,340nm,12.8s							
LZH				LR		LR		
	comp=Z,400nm,16.5s							
GYA	**Guiyang**	**31.88**	**259**	P		P	21 09 51.8	-5.3
GYA				pmax		pmax		
	comp=Z,10.0nm,0.8s							
CD2	**Chengdu**	**32.11**	**268**	P		P	21 09 54.8	-4.2
CD2				pmax		pmax		
	comp=Z,1.0nm,0.5s							
BILL	**Bilibino**	**32.60**	**17**⇑	*e*P		**P**	**21 10 03.4**	**+0.6**
BILL				*e*			21 11 12.9	
BILL				pmax		pmax		
	comp=Z,2.0nm,1.4s							
BILL				MLR		MLR		
	comp=Z,79nm,25.0s							
TIXI	**Tiksi**	**33.99**	**353**	P		**P**	**21 10 13.8**	**-1.1**
	comp=Z,0.7nm,0.3s,baz=149,slow=7.3,SNR=5.2							
TIXI	**Tiksi**	**33.99**	**353**	*e*P		**P**	**21 10 14.4**	**-0.4**
TIXI				pmax		pmax		
	comp=Z,1.0nm,0.7s							
KMI	**Kunming**	**35.60**	**260**	P		P	21 10 24.6	-4.9
KMI				pmax		pmax		
	comp=Z,8.0nm,0.7s							
KMI				pmax		pmax		
	comp=Z,100nm,4.5s							
WMQ	**Urumqi**	**40.62**	**296**	*e*P		**P**	**21 11 11.8**	**+0.5**
WMQ				pP		pP	21 11 17.2	-8.5
WMQ				sP		sP	21 11 19.6	-13
WMQ				pmax		pmax		
	comp=Z,4.0nm,0.8s							
WMQ				pmax		pmax		
	comp=Z,67nm,4.6s							
ZAA0	**Zalesovo Array**	**41.32**	**311**	*e*P		**P**	**21 11 16.7**	**-0.2**
ZAA1	**Zalesovo Array**	**41.32**	**311**	*e*P		**P**	**21 11 16.4**	**-0.5**
ZAA1				*e*PcP		**PcP**	**21 13 13.8**	**-0.6**
ZALV	**Zalesovo Beam**	**41.32**	**311**	P		**P**	**21 11 16.4**	**-0.5**
	comp=Z,2.6nm,0.5s,baz=85,slow=6.8,SNR=14							
ZALV				PcP		**PcP**	**21 13 13.8**	**-0.6**
	comp=Z,0.9nm,0.6s,baz=97,slow=3.4,SNR=4.1							
NVS	**Novosibirsk**	**42.21**	**313**	*e*P		**P**	**21 11 24.0**	**-0.2**
NVS				pmax		pmax		
	comp=Z,13nm,2.1s							
CMAR	**Chiang Mai Arr**	**42.26**	**254**	P		**P**	**21 11 25.1**	**+0.1**
	comp=Z,0.3nm,0.7s,baz=51,slow=7.2,SNR=3.6							
LSA	**Lhasa**	**42.52**	**274**	*e*P		**P**	**21 11 26.4**	**-1.1**
LSA				pmax		pmax		
	comp=Z,2.0nm,0.6s							
LSA	**Lhasa**	**42.52**	**274**	*e*P		**P**	**21 11 26.4**	**-1.1**
	comp=Z,2.1nm,0.6s							
MK32	**Makanchi Array**	**43.76**	**301**	*e*P		**P**	**21 11 36.4**	**-0.5**
MKAR	**Makanchi Array**	**43.76**	**301**	P		**P**	**21 11 36.4**	**-0.5**
	comp=Z,3.3nm,0.7s,baz=85,slow=9.3,SNR=19							
MAKZ	**Makanchi**	**43.97**	**301**	*e*P		**P**	**21 11 38.2**	**-0.3**
MAKZ				pmax		pmax		
	comp=Z,4.0nm,1.0s							
MAKZ	**Makanchi**	**43.97**	**301**	*e*P		**P**	**21 11 38.2**	**-0.3**
	comp=Z,4.3nm,1.0s							
SVW2	**Sparrevohn**	**44.19**	**38**	*e*P		**P**	**21 11 42.7**	**+2.7**
	comp=Z,21nm,1.5s							
KURK	**Kurchatov**	**45.43**	**307**	*e*P		**P**	**21 11 49.1**	**-1.0**
KURK				pmax		pmax		
	comp=Z,13nm,0.8s							
KURK	**Kurchatov**	**45.43**	**307**	*e*P		**P**	**21 11 49.1**	**-1.0**
	comp=Z,13nm,0.8s							
KTH	**Kantishna Hill**	**46.39**	**35**	*e*P		**P**	**21 11 58.9**	**+1.4**
	comp=Z,27nm,1.8s							
MLY	**Manley**	**46.48**	**33**	*e*P		**P**	**21 11 59.8**	**+1.6**
	comp=Z,15nm,1.9s							
TRF	**Thorofare Moun**	**46.67**	**35**	*e*P		**P**	**21 12 00.1**	**+0.2**
	comp=Z,38nm,1.9s							
ODAN	**Odare**	**46.76**	**273**	*e*P		**P**	**21 12 00.6**	**-0.5**
RND	**Reindeer**	**47.32**	**35**	*e*P		**P**	**21 12 04.8**	**0.0**
RND				pmax		pmax		
	comp=Z,20nm,1.8s							
RND	**Reindeer**	**47.32**	**35**	*e*P		**P**	**21 12 04.8**	**0.0**
	comp=Z,20nm,1.8s							
RAMN	**Ramite**	**47.34**	**273**	*e*P		**P**	**21 12 05.1**	**-0.5**
GUN	**Gumba**	**47.45**	**275**	*e*P		**P**	**21 12 06.3**	**-0.3**
	comp=Z,6.9nm,0.4s							
SML	**Sawmill**	**47.65**	**37**	*e*P		**P**	**21 12 07.7**	**+0.4**
SML				pmax		pmax		
	comp=Z,27nm,1.5s							
SML	**Sawmill**	**47.65**	**37**	*e*P		**P**	**21 12 07.7**	**+0.4**
	comp=Z,27nm,1.5s							
KKN	**Kakani**	**47.98**	**275**	*e*P		**P**	**21 12 10.3**	**-0.2**
	comp=Z,18nm,0.7s							
IL1	**Eielson Array**	**48.12**	**33**	*e*P		**P**	**21 12 10.7**	**-0.2**
ILAR	**Eielson Array**	**48.12**	**33**	P		**P**	**21 12 11.7**	**+0.8**
	comp=Z,1.1nm,0.7s,baz=264,slow=6.4,SNR=16							
ILAR				pP		**pP**	**21 12 26.4**	**+0.9**
	comp=Z,1.0nm,0.6s,baz=268,slow=6.8,SNR=7.4							
ILB	**Eielson Array**	**48.12**	**33**	*e*P		**P**	**21 12 11.7**	**+0.8**
ILB				*e*pP		**pP**	**21 12 26.4**	**+0.9**
SCM	**Sheep Creek Mo**	**48.12**	**37**	*e*P		**P**	**21 12 11.6**	**+0.6**
SCM				pmax		pmax		
	comp=Z,31nm,1.5s							
SCM	**Sheep Creek Mo**	**48.12**	**37**	*e*P		**P**	**21 12 11.6**	**+0.6**
	comp=Z,31nm,1.5s							
GKN	**Gorkha**	**48.38**	**275**	*e*P		**P**	**21 12 12.9**	**-0.7**
	comp=Z,12nm,0.6s							
EYAK	**Cordova Ski Ar**	**49.02**	**39**	*e*P		**P**	**21 12 18.6**	**+0.8**
	comp=Z,23nm,1.3s							
KOLN	**Koldanda**	**49.30**	**276**	*e*P		**P**	**21 12 20.2**	**-0.5**
	comp=Z,18nm,1.0s							
TKM2	**Tokmak 2**	**49.36**	**298**	*e*P		**P**	**21 12 18.9**	**-2.1**
TKM2				pmax		pmax		
	comp=Z,3.0nm,0.8s							
TKM2	**Tokmak 2**	**49.36**	**298**	*e*P		**P**	**21 12 18.9**	**-2.1**
	comp=Z,3.5nm,0.8s							
DOT	**Dot Lake**	**49.44**	**34**	*e*P		**P**	**21 12 20.7**	**-0.4**
	comp=Z,41nm,1.9s							
PYUN	**Piuthan**	**49.62**	**277**	*e*P		**P**	**21 12 22.9**	**-0.2**
	comp=Z,53nm,1.1s							
BRVK	**Borovoye**	**50.03**	**312**	*e*P		**P**	**21 12 25.5**	**-0.1**
BRVK				pmax		pmax		
	comp=Z,9.0nm,1.6s							
BRVK	**Borovoye**	**50.03**	**312**	*e*P		**P**	**21 12 25.4**	**-0.1**
	comp=Z,8.7nm,1.6s							
KKAR	**Karatay Array**	**52.81**	**299**	*e*P		**P**	**21 12 46.3**	**-0.3**
KKAR	**Karatay Array**	**52.81**	**299**	*e*P		**P**	**21 12 46.2**	**-0.3**
INK	**Inuvik**	**52.99**	**28**	*e*P		**P**	**21 12 48.6**	**+1.2**
INK				pmax		pmax		
	comp=Z,6.0nm,1.4s							
INK	**Inuvik**	**52.99**	**28**	*e*P		**P**	**21 12 48.6**	**+1.2**
	comp=Z,5.7nm,1.4s							
GSI	**Gunungsitoli**	**54.86**	**239**	*e*P		**P**	**21 12 59.3**	**-2.5**
	comp=Z,31nm,1.4s							
ARU	**Arti**	**55.62**	**318**	P		**P**	**21 13 05.5**	**-1.3**
ARU	**Arti**	**55.62**	**318**	*e*P		P	21 13 03.2	-3.6
	comp=Z,4.1nm,0.7s							
KBL	**Kabul**	**57.33**	**290**	*e*P		P	21 13 16.1	-3.4
KBL				pmax		pmax		
	comp=Z,4.0nm,1.0s							
KBL	**Kabul**	**57.33**	**290**	*e*P		P	21 13 16.1	-3.4
	comp=Z,3.7nm,1.0s							
ABKAR	**Akbulak array**	**57.39**	**310**	*e*P		**P**	**21 13 18.6**	**-0.9**
WRAB	**Tennant Creek**	**58.46**	**188**	*e*P		**P**	**21 13 26.0**	**-1.1**
WRAB				pmax		pmax		
	comp=Z,41nm,1.8s							
WRAB	**Tennant Creek**	**58.46**	**188**	*e*P		**P**	**21 13 26.0**	**-1.1**
	comp=Z,41nm,1.8s							
WB2	**Warramunga Arr**	**58.47**	**188**	*e*P		**P**	**21 13 27.1**	**-0.1**
	comp=Z,40nm,1.9s							
WR1	**Warramunga Arr**	**58.47**	**188**	*e*P		**P**	**21 13 26.6**	**-0.7**
WR1				*e*pP		**pP**	**21 13 41.5**	**-0.8**
WRA	**Warramunga Arr**	**58.47**	**188**	P		**P**	**21 13 26.6**	**-0.7**
	comp=Z,3.4nm,0.6s,baz=5.8,slow=7.0,SNR=39							
WRA				pP		**pP**	**21 13 41.5**	**-0.8**
	comp=Z,2.5nm,0.7s,baz=5.7,slow=7.2,SNR=8.0							
RES	**Resolute Bay**	**61.18**	**15**	*e*P		**P**	**21 13 45.4**	**+0.2**
RES				pmax		pmax		
	comp=Z,3.0nm,0.8s							
RES	**Resolute Bay**	**61.18**	**15**	*e*P		**P**	**21 13 45.4**	**+0.2**
	comp=Z,2.6nm,0.8s							
AS01	**Alice Springs**	**62.19**	**188**	*e*P		**P**	**21 13 52.8**	**+0.2**
AS31	**Alice Springs**	**62.19**	**188**	*e*P		**P**	**21 13 53.0**	**+0.3**
	comp=Z,0.8nm,0.6s							
ASAR	**Alice Springs**	**62.20**	**188**	P		**P**	**21 13 53.0**	**+0.3**
	comp=Z,1.8nm,0.7s,baz=11,slow=5.3,SNR=22							
YKA	**Yellowknife Ar**	**62.42**	**31**	P		**P**	**21 13 54.2**	**+0.5**
	comp=Z,0.8nm,0.6s,baz=302,slow=6.7,SNR=23							
YKA				pP		**pP**	**21 14 09.5**	**+0.7**
	comp=Z,0.2nm,0.6s,baz=300,slow=5.9,SNR=3.7							
YKB5	**Yellowknife Ar**	**62.42**	**31**	*e*P		**P**	**21 13 54.2**	**+0.4**
YKB5				*e*pP		**pP**	**21 14 09.6**	**+0.7**
DZM	**Mont Dzumac**	**64.40**	**155**	LR		LR	21 41 34.1	
	comp=Z,46nm,18.2s,baz=244,slow=35							
FIA1	**FINESS Array S**	**67.80**	**332**	*e*P		**P**	**21 14 28.6**	**0.0**
FIA0	**FINESS Array S**	**67.81**	**332**	*e*P		**P**	**21 14 28.0**	**-0.6**
FIA0	**FINESS Array S**	**67.81**	**332**	*e*P		**P**	**21 14 28.0**	**-0.6**
FINES	**FINESS Array B**	**67.81**	**332**	P		**P**	**21 14 28.0**	**-0.6**
	comp=Z,2.9nm,0.9s,baz=57,slow=7.7,SNR=7.4							
STKA	**Stephens Creek**	**69.92**	**180**	P		**P**	**21 14 41.6**	**-0.4**
	comp=Z,1.0nm,0.5s,baz=327,slow=10,SNR=3.3							
KIV	**Kislovodsk**	**70.33**	**311**	*e*P		**P**	**21 14 44.4**	**-0.4**
KIV				pmax		pmax		
	comp=Z,10.0nm,1.1s							
KBZ	**Khabaz**	**70.33**	**311**	P		**P**	**21 14 44.9**	**+0.3**
	comp=Z,1.6nm,0.8s,baz=42,slow=10.0,SNR=4.5							
KBZ				pP		**PcP**	**21 15 03.3**	**-2.6**
	comp=Z,2.7nm,0.9s,baz=245,slow=6.0,SNR=3.8							
FFC	**Flin Flon**	**72.33**	**33**	*i* P		**P**	**21 14 58.1**	**+1.6**
NC204	**NORSAR Array S**	**73.04**	**338**	*e*P		**P**	**21 15 01.1**	**+0.4**
NB2	**NORSAR Subarra**	**73.09**	**337**	P		**P**	**21 15 00.2**	**-0.8**
	comp=Z,3.9nm,0.8s,baz=39,slow=6.2							
NB200	**NORSAR Array S**	**73.09**	**337**	*e*P		**P**	**21 15 00.7**	**-0.3**
NB200				*e*pP		**PcP**	**21 15 18.0**	**+0.5**
NOA	**NORSAR Array B**	**73.09**	**337**	P		**P**	**21 15 00.7**	**-0.3**
	comp=Z,2.8nm,0.7s,baz=38,slow=5.9,SNR=13							
NOA				pP		**PcP**	**21 15 18.0**	**+0.5**
	comp=Z,1.3nm,0.7s,baz=38,slow=5.9,SNR=3.6							
AKASG	**Malin Array Be**	**73.48**	**322**	P		**P**	**21 15 02.8**	**-0.5**
	comp=Z,1.8nm,0.6s,baz=46,slow=6.0,SNR=14							
AKASG				pP		**PcP**	**21 15 21.4**	**+2.2**
	comp=Z,1.2nm,0.5s,baz=44,slow=6.0,SNR=3.3							
AKBB	**Malin Array Si**	**73.48**	**322**	*e*P		**P**	**21 15 02.8**	**-0.5**
AKBB				*e**PP		**PcP**	**21 15 21.4**	**+2.2**
AKBB	**Malin Array Si**	**73.48**	**322**	*e*P		**P**	**21 15 02.8**	**-0.5**
AKBB				*e*pP		**PcP**	**21 15 21.4**	**+2.2**
NV01	**Mina Array Sit**	**73.84**	**54**	*e*P		**P**	**21 15 07.0**	**+1.0**
NV01				*e*pP		**pP**	**21 15 22.0**	**+0.5**
NVAR	**Mina Array Bea**	**73.84**	**54**	P		**P**	**21 15 07.0**	**+1.0**
	comp=Z,0.6nm,0.7s,baz=286,slow=6.0,SNR=5.4							
NVAR				pP		**pP**	**21 15 22.0**	**+0.5**
	comp=Z,0.6nm,0.7s,baz=273,slow=7.6,SNR=3.5							
BW06	**Boulder Array**	**76.42**	**46**	*e*P		**P**	**21 15 20.7**	**-0.1**
PD31	**Pinedale Array**	**76.42**	**46**	*e*P		**P**	**21 15 21.9**	**+1.1**
PD31				*e*pP		**pP**	**21 15 36.9**	**+0.5**
PDAR	**Pinedale Array**	**76.42**	**46**	P		**P**	**21 15 21.9**	**+1.1**
	comp=Z,1.2nm,0.6s,baz=255,slow=2.1,SNR=17							
PDAR				pP		**pP**	**21 15 36.9**	**+0.5**
	comp=Z,0.8nm,0.7s,baz=223,slow=1.2,SNR=5.5							
KHC	**Kasperske Hory**	**81.60**	**329**	*e*P		**P**	**21 15 49.0**	**+0.2**
KHC	**Kasperske Hory**	**81.60**	**329**	*e*P		**P**	**21 15 49.0**	**+0.2**
GERES	**GERESS Array B**	**81.77**	**328**	P		**P**	**21 15 49.3**	**-0.5**
	comp=Z,1.1nm,0.9s,baz=34,slow=3.6,SNR=7.1							
GERES				pP		**pP**	**21 16 05.2**	**-0.3**
	comp=Z,0.2nm,0.3s,baz=266,slow=39,SNR=1.7							
BFO	**Black Forest**	**84.32**	**331**	*i* P		**P**	**21 16 03.9**	**+1.1**
FUORN	**Ofenpass-Fuorn**	**84.95**	**329**	*e*P		**P**	**21 16 06.7**	**+0.4**
	comp=Z,6.8nm,0.8s							
LTX	**Lajitas**	**88.96**	**53**	*e*P		**P**	**21 16 26.8**	**+0.9**
LTX				*e**PP		**pP**	**21 16 42.5**	**+0.7**
LTX	**Lajitas**	**88.96**	**53**	*e*P		**P**	**21 16 26.8**	**+0.9**
LTX				*e*pP		**pP**	**21 16 42.5**	**+0.7**
TXAR	**Lajitas Array**	**88.96**	**53**	P		**P**	**21 16 26.8**	**+0.9**
	comp=Z,1.0nm,0.7s,baz=304,slow=3.6,SNR=9.6							
TXAR				pP		**pP**	**21 16 42.5**	**+0.7**
	comp=Z,0.6nm,0.6s,baz=310,slow=3.2,SNR=4.6							
LPAZ	**La Paz**	**145.63**	**58**	PKPbc		**PKPdf**	**21 23 10.1**	**-0.2**
	comp=Z,2.2nm,0.6s,baz=358,slow=4.4,SNR=9.0							
LPAZ				pPKPbc		pPKPbc	21 23 26.6	-0.3
	comp=Z,1.6nm,0.4s,baz=348,slow=4.4,SNR=2.7							

*ISCJB **11** 21:03:47.2±0.5, 12°.21N±0°.09×86°.93W±0°.09, h113km±6km, mb3.2/3, Error ellipse: s-maj=20.4km s-min=4.8km az=41.9*

*CASC **11** 21:03:47.7±2.1, 12°.14N×86°.99W, h104km±11km, MD4.0, ML3.3*

*IDC **11** 21:03:49.1±3.2, 12°.39N×86°.36W, h141km±63km, mb2.9/3, mb1 3.3/4, mb1mx3.0/39, mbtmp3.3/4, Error ellipse: s-maj=105.0km s-min=54.3km az=46.0*

ISC 11 21:03:47.5±0.9, 12°.26N±0°.09×86°.90W±0°.08, h112km±7km, n24, σ0s98/31, mb3.2/3, 1D, Nicaragua

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
						h m s	ISC
CNGN	**Cerro Negro**	**0.31**	**40**	*e*P	**Pn**	**21 04 03.7**	**+0.2**
COPN	**Copaltepe**	**0.32**	**105**	*e*P	**Pn**	**21 04 03.4**	**-0.1**
COPN				*e*S	**Sn**	**21 04 15.9**	**+0.4**
COPN				AML	AML	21 04 18.5	
	comp=Z,1μm,0.2s						
MOMN	**Momotombo**	**0.38**	**68**	*e*P	**Pn**	**21 04 03.7**	**-0.2**
CRIN	**San Cristobal**	**0.46**	**342**	*e*P	**Pn**	**21 04 04.8**	**+0.4**
CRIN				*e*S	**Sn**	**21 04 17.6**	**+0.6**
APYN	**Apoyeque**	**0.54**	**93**	*e*P	**Pn**	**21 04 05.0**	**+0.2**
XAVN	**Gruta Xavier**	**0.57**	**101**	*e*P	**Pn**	**21 04 05.3**	**+0.3**
TISN	**Laguna Tiscapa**	**0.63**	**101**	*e*P	**Pn**	**21 04 04.8**	**-0.7**
MGAN	**Managua**	**0.65**	**100**	*e*P	**Pn**	**21 04 05.8**	**+0.2**
MGAN				*e*S	**Sn**	**21 04 19.9**	**+0.7**
MGAN				AML	AML	21 04 21.1	
	comp=N,467nm,0.3s						
CSGN	**Cosiguina Volc**	**0.95**	**318**	*e*S	**Sn**	**21 04 24.9**	**+0.6**
BOAB	**BOACO BROADBAN**	**1.22**	**81**	*e*P	**Pn**	**21 04 11.8**	**+0.6**
LCY	**Lacayo**	**1.78**	**310**	*e*P	**Pn**	**21 04 18.8**	**+0.8**
PACA	**Pacayal**	**1.83**	**311**	*i* P	**Pn**	**21 04 19.4**	**+0.8**
TECA	**Tecapa**	**1.98**	**308**	*e*P	**Pn**	**21 04 21.2**	**+0.6**
VCR	**Vista de Mar**	**2.46**	**149**	*i*P	**Pn**	**21 04 27.4**	**+0.7**
LFRS	**El Faro**	**2.50**	**303**	*i* P	**Pn**	**21 04 26.4**	**-0.7**
LFRS				*e*S	**Sn**	**21 04 57.4**	**-0.1**
JTS	**JuntasAbangare**	**2.74**	**136**	P	**Pn**	**21 04 31.1**	**+1.0**
	comp=N,18nm,0.3s,baz=326,slow=8.4,SNR=37						
JTS				S	**Sn**	**21 05 01.2**	**-1.7**
	comp=N,8.6nm,0.3s,baz=95,slow=23,SNR=3.9						
JCR	**Jicaral**	**2.97**	**144**	*e*P	**Pn**	**21 04 34.3**	**+1.0**
JCR				*e*S	**Sn**	**21 05 06.8**	**-1.8**
SBLS	**San Blas**	**3.08**	**301**	*e*P	**Pn**	**21 04 35.8**	**+1.0**
URSC	**Urasca**	**3.90**	**128**	*e*P	**Pn**	**21 04 47.4**	**+1.7**
BUS	**Buena Vista**	**4.10**	**131**	*e*P	**Pn**	**21 04 51.1**	**+2.4**
BUS				*e*S	**Sn**	**21 05 35.9**	**-0.1**
TXAR	**Lajitas Array**	**23.06**	**320**	P	**P**	**21 08 44.2**	**+0.8**
	comp=N,0.5nm,0.4s,baz=137,slow=9.7,SNR=11						
PDAR	**Pinedale Array**	**36.19**	**331**	P	**P**	**21 10 39.8**	**+0.2**
	comp=N,0.1nm,0.4s,baz=134,slow=13,SNR=2.2						
YKA	**Yellowknife Ar**	**53.93**	**345**	P	**P**	**21 12 57.8**	**-1.5**
	comp=N,0.3nm,0.7s,baz=140,slow=7.4,SNR=5.9						
WRA	**Warramunga Arr**	**139.73**	**254**	PKP	**PKPdf**	**21 23 02.7**	**-0.5**
	comp=N,0.1nm,0.4s,baz=89,slow=2.5,SNR=4.7						

*SOME **11** 21:05:52.6, 42°.37N×82°.32E, h10km*

*NNC **11** 21:05:53.7±2.7, 42°.09N×82°.10E, h0km, mb3.4, mpv2.9, Error ellipse: s-maj=20.4km s-min=10.2km az=149.0*

ISC 11 21:05:51.5±2.5, 41°.8N±0°.1×82°.02E±0°.07, h18km, n16, σ2s11/31, 5C-5D, Southern Xinjiang

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
						h m s	ISC
SHLS	**Shalkode**	**2.08**	**311**	*e*P	**Pg**	**21 06 32.0**	**+0.6**
	33nm,0.4s						
SHLS				*e*S	**Sg**	**21 06 60.0**	**+1.6**
	218nm,0.6s						
PDGK	**Podgornoye**	**2.41**	**310**	⇓Pg	**Pb**	**21 06 35.0**	**+0.7**
	7.2nm,0.5s						
PDGK				⇑Lg	Lg	21 07 07.8	
	54nm,0.7s						
UZB	**Uzynbulak**	**2.59**	**302**	*e*P	**Pg**	**21 06 39.5**	**-1.6**
	3.9nm,0.2s						
UZB				*e*S	**Sg**	**21 07 13.4**	**-1.3**
	44nm,0.3s						
SATY	**Saty**	**2.95**	**296**	⇓*i*P	**Pb**	**21 06 44.2**	**+0.6**
	12nm,0.2s						
SATY				*e*S	**Sb**	**21 07 21.8**	**+2.4**
	55nm,0.1s						
KPKS	**Kokpek**	**2.96**	**305**	*e*P	**Pb**	**21 06 44.6**	**+0.8**
	13nm,0.2s						
KPKS				*e*S	**Sb**	**21 07 21.9**	**+2.2**
	109nm,0.3s						
DJR	**Jarkent**	**3.00**	**328**	*e*P	**Pb**	**21 06 42.0**	**-2.5**
	8.6nm,0.3s						
DJR				*e*S	**Sb**	**21 07 18.0**	**-2.9**
	28nm,0.5s						
KURS	**Kuram**	**3.30**	**302**	*e*P	**Pg**	**21 06 52.7**	**-1.9**
	3.0nm,0.5s						
KURS				*e*S	**Sg**	**21 07 36.3**	**-1.1**
	7.4nm,0.7s						
ARXS	**Arharly**	**3.90**	**309**	*e*P	**Pb**	**21 06 58.7**	**-1.0**
	5.7nm,0.7s						
ARXS				*e*S	**Sb**	**21 07 46.5**	**-0.2**
	8.3nm,0.6s						
MDOK	**Medeo**	**3.92**	**292**	*e*P	**Pg**	**21 07 03.6**	**-2.8**
	1.1nm,0.3s						
MDOK				*e*S	**Sg**	**21 07 54.5**	**-2.7**
	11nm,1.1s						
TNSS	**

MJAR Matsushiro Arr 2.06 256 Pn **Pb 21 18 58.2 -1.0**
14nm,0.3s,baz=75,slow=16,SNR=74
MJAR Sn **Sb 21 19 25.5 +0.5**
29nm,0.3s,baz=88,slow=27,SNR=17
MAT Matsushiro 2.06 256 P **Pb 21 18 58.1 -1.2**
MAT *e*S **Sb 21 19 25.2 +0.1**
JHJ Hachijo jima 2 4.02 191 Pn **Pn 21 19 25.3 +1.8**
11nm,0.3s,baz=58,slow=17,SNR=5.0
JHJ Sn **Sn 21 20 11.7 +1.0**
22nm,0.3s,baz=272,slow=22,SNR=3.5
JHJ LR LR 21 21 06.1
comp=Z,140nm,20.3s,baz=260,slow=42
USRK Ussuriysk Ar. 9.71 320 Pn Pn 21 20 47.1 +5.6
0.1nm,0.3s,baz=136,slow=14,SNR=12
KSRS Korea Array 10.18 276 Pn Pn 21 20 54.1 +6.0
0.2nm,0.3s,baz=91,slow=14,SNR=5.6
SONM Songino Array 27.28 304 P **P 21 24 07.4 +0.8**
0.2nm,0.5s,baz=116,slow=8.5,SNR=3.0
H11N2 WAKE ISLAND Hy 28.67 120 T T 21 54 10.1
baz=313,slow=75,SNR=38
H11N1 WAKE ISLAND Hy 28.68 120 T T 21 54 07.7
baz=313,slow=75,SNR=54
H11N3 WAKE ISLAND Hy 28.69 120 T T 21 54 10.0
baz=313,slow=75,SNR=43
H11S1 WAKE ISLAND Hy 29.37 122 T T 21 55 00.9
baz=314,slow=76,SNR=132
H11S3 WAKE ISLAND Hy 29.38 122 T T 21 55 00.8
baz=314,slow=76,SNR=71
H11S2 WAKE ISLAND Hy 29.39 122 T T 21 55 02.1
baz=314,slow=76,SNR=110
ZALV Zalesovo Beam 41.45 312 P **P 21 26 08.7 0.0**
0.3nm,0.3s,baz=88,slow=8.8,SNR=2.9
MKAR Makanchi Array 43.60 302 P **P 21 26 26.7 +0.4**
0.6nm,0.8s,baz=89,slow=9.9,SNR=5.1
ILAR Eielson Array 49.77 32 P **P 21 27 14.2 -0.1**
0.5nm,0.5s,baz=264,slow=5.6,SNR=8.2
WRA Warramunga Arr 57.03 187 P **P 21 28 06.7 -1.4**
1.2nm,0.6s,baz=4.8,slow=7.3,SNR=18
ASAR Alice Springs 60.75 187 P **P 21 28 33.5 -0.5**
0.5nm,0.6s,baz=11,slow=5.7,SNR=6.6
RES Resolute Bay 62.70 14 P **P 21 28 46.5 0.0**
0.7nm,0.9s,baz=304,slow=10,SNR=4.3
YKA Yellowknife Ar 64.06 30 P **P 21 28 55.1 -0.5**
0.3nm,0.8s,baz=303,slow=6.5,SNR=4.8
FINES FINESS Array B 68.50 332 P **P 21 29 23.5 -0.7**
1.0nm,0.8s,baz=29,slow=3.2,SNR=3.2
AKASG Malin Array Be 73.91 322 P **P 21 29 57.4 +0.4**
0.2nm,0.3s,baz=49,slow=6.4,SNR=2.8
PDAR Pinedale Array 78.05 45 P **P 21 30 21.1 -0.1**
0.4nm,0.8s,baz=298,slow=3.2,SNR=3.5

*JMA **11** 21:18:40.7±0.2,24.37N×121.81E,h0km,M2.8*
*ISCJB **11** 21:18:41.3±0.4,24.38N±0.02×121.86E±0.02,h4km±4km, Error ellipse: s-maj=4.1km s-min=2.5km az=42.7*
*TAP **11** 21:18:41.4,24.40N×121.81E,h9km,ML3.2,B*
ISC 11 21:18:41.5±0.8,24.38N±0.02×121.83E±0.02,h12km±6km, n49,σ0.956/70,4C-6D,Taiwan

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ENA	**Nanau**	**0.09**	**299**	⇓*i*P	**Pg**	**21 18 43.6**	**-0.6**
	baz=299						
EHP	**Heping Village**	**0.11**	**227**	*e*P	**Pg**	**21 18 44.8**	**+0.4**
	baz=212						
EHP				*e*S	**Sg**	**21 18 46.9**	**+0.3**
	baz=212						
TWC	**Suao**	**0.23**	**5**	⇑*i*P	**Pg**	**21 18 46.3**	**0.0**
	baz=6.0						
TWC				*i* S	**Sg**	**21 18 49.2**	**-0.4**
	baz=6.0						
ENTT	**Nioudou**	**0.35**	**317**	⇓*i*P	**Pg**	**21 18 48.6**	**+0.1**
	baz=318						
ENTT				*e*S	**Sg**	**21 18 53.0**	**-0.2**
	baz=318						
TWE	**Neicheng**	**0.37**	**337**	⇓*i*P	**Pg**	**21 18 49.0**	**+0.1**
	baz=340						
TWE				*i* S	**Sg**	**21 18 53.6**	**-0.1**
	baz=340						
TWD	**Chiawan**	**0.37**	**215**	⇑*i*P	**Pg**	**21 18 48.9**	**0.0**
	baz=211						
TWD				*e*S	**Sg**	**21 18 53.8**	**0.0**
	baz=211						
ILA	**Ilan**	**0.39**	**349**	*e*P	**Pb**	**21 18 50.5**	**+0.2**
	baz=345						
ILA				*e*S	**Sg**	**21 18 55.0**	**+0.6**
	baz=345						
NNS	**Nan Shan**	**0.42**	**278**	⇓*i*P	**Pg**	**21 18 49.7**	**-0.1**
	baz=277						
NNS				S	**Sg**	**21 18 54.8**	**-0.6**
	baz=277						
HWA	**Hwalien**	**0.45**	**207**	*e*P	**Pb**	**21 18 51.0**	**-0.4**
	baz=212						
EGS		**0.47**	**12**	*e*P	**Pg**	**21 18 50.5**	**-0.3**
	baz=25						
NSK	**Sanguang**	**0.52**	**304**	⇓*i*P	**Pg**	**21 18 51.9**	**+0.2**
	baz=305						
NSK				*e*S	**Sg**	**21 18 58.2**	**-0.3**
	baz=305						
WHF	**Hehuan Shan**	**0.56**	**245**	⇑*i*P	**Pg**	**21 18 52.5**	**-0.1**
	baz=243						
WHF				*e*S	**Sg**	**21 18 59.8**	**-0.4**
	baz=243						
TWT	**Tachien**	**0.61**	**258**	*e*P	**Pb**	**21 18 54.5**	**+0.3**
	baz=257						
TWT				*e*S	**Sg**	**21 19 01.5**	**0.0**
	baz=257						
TWA	**Mucha**	**0.63**	**340**	*e*P	**Pn**	**21 18 56.2**	**-0.2**
	baz=341						
TWA				*e*S	**Sg**	**21 19 02.4**	**+0.2**
	baz=341						
TWB1	**Santiao Chiao**	**0.64**	**13**	*e*P	**Pg**	**21 18 53.8**	**-0.2**
	baz=15						
TWB1				S	**Sg**	**21 19 02.8**	**+0.4**
	baz=15						
ESL	**Shilin**	**0.67**	**212**	P	**Pg**	**21 18 54.2**	**-0.4**
	baz=210						
NWF	**Wu-fen Shan**	**0.69**	**357**	*e*P	**Pb**	**21 18 56.0**	**+0.5**
	baz=349						
NWF				S	**Sg**	**21 19 04.2**	**+0.3**
	baz=349						
TAP1	**Taipei**	**0.71**	**337**	*e*P	**Pb**	**21 18 55.8**	**0.0**
	baz=328						
TAP	**Taipei**	**0.71**	**336**	*e*P	**Pg**	**21 18 53.4**	**-2.0**
	baz=328						
NSTT	**Nanjuang**	**0.79**	**288**	⇓*i*P	**Pb**	**21 18 57.5**	**+0.3**
	baz=288						
NSTT				*e*S	**Sg**	**21 19 06.7**	**-0.5**
	baz=288						
TWS1	**Kuangyinshan**	**0.80**	**333**	*e*P	**Pn**	**21 18 58.2**	**-0.5**
	baz=334						
HSN	**Hsinchu**	**0.88**	**298**	*e*P	**Pn**	**21 18 59.9**	**+0.1**
	baz=293						
TWY	**Chenhua**	**0.91**	**347**	*e*P	**Pn**	**21 18 60.0**	**-0.2**
	baz=349						
TWQ1	**Liyutan**	**0.96**	**268**	*e*P	**Pn**	**21 19 01.0**	**+0.2**
	baz=268						
TWQ1				*e*S	**Sn**	**21 19 13.7**	**-0.8**
	baz=268						
NSY	**Sanyi**	**0.97**	**272**	*e*P	**Pn**	**21 19 00.5**	**-0.5**
	baz=271						
SMLT	**Sun Moon Lake**	**0.98**	**240**	⇑*i*P	**Pg**	**21 19 00.5**	**+0.1**
	baz=239						
SMLT				*e*S	**Sb**	**21 19 13.5**	**-0.1**
	baz=239						
EHY	**Hungye**	**0.99**	**208**	*e*P	**Pg**	**21 18 59.4**	**-1.2**
	baz=218						
TYC	**Yuchr**	**1.01**	**242**	*e*P	**Pg**	**21 19 00.7**	**-0.2**
	baz=240						
TCU	**Taichung**	**1.08**	**258**	*e*P	**Pn**	**21 19 04.1**	**+1.7**
	baz=246						
YOJ	**Yonaguni jima**	**1.08**	**86**	P	**Pb**	**21 19 02.4**	**+0.2**
YOJ				S	**Sb**	**21 19 16.5**	**+0.2**
YOJ	**Yonaguni jima**	**1.08**	**86**	*e*P	**Pb**	**21 19 02.3**	**+0.1**
	baz=74						
TWF1	**Yuli**	**1.14**	**205**	*e*P	**Pb**	**21 19 02.8**	**-0.3**
	baz=215						
WNT	**Mingjian**	**1.16**	**244**	*e*P	**Pg**	**21 19 04.6**	**+0.8**
	baz=238						
WNT				*e*S	**Sn**	**21 19 21.4**	**+2.0**
	baz=238						
YUS	**Yu-Shan**	**1.20**	**222**	*e*P	**Pn**	**21 19 04.3**	**-0.3**
	baz=206						
ALS	**Alishan**	**1.28**	**227**	*e*P	**Pb**	**21 19 05.7**	**0.0**
	baz=210						
CHN5	**Tsauling**	**1.31**	**234**	*e*P	**Pg**	**21 19 07.3**	**+0.6**
	baz=232						
ELDTW	**Lidau**	**1.40**	**212**	*e*P	**Pn**	**21 19 07.1**	**+0.1**
	baz=210						
CHN4	**Tsaushan**	**1.53**	**228**	*e*P	**Pg**	**21 19 10.5**	**-0.3**
	baz=211						
STYT	**Tauyuan**	**1.56**	**219**	*e*P	**Pg**	**21 19 11.0**	**-0.5**
	baz=217						
WTP	**Ta-pu**	**1.59**	**225**	*e*P	**Pg**	**21 19 11.8**	**-0.2**
	baz=208						
TWK	**Hsinying**	**1.66**	**228**	*e*P	**Pg**	**21 19 13.0**	**-0.3**
	baz=209						
CHN1	**Nanshi**	**1.69**	**225**	*e*P	**Pg**	**21 19 14.0**	**+0.1**
	baz=209						
TWG	**Pinlang**	**1.70**	**204**	*e*P	**Pn**	**21 19 11.3**	**+0.2**
	baz=186						
SGST	**Jiashian**	**1.73**	**222**	*e*P	**Pg**	**21 19 14.0**	**-0.7**
	baz=207						
IRIF	**Iriomote-Funau**	**1.74**	**91**	P	**Pn**	**21 19 11.5**	**0.0**
IRIF				*e*S	**Sn**	**21 19 33.6**	**0.0**
SSD	**Sandimen**	**1.96**	**214**	*e*P	**Pb**	**21 19 17.0**	**-0.2**
	baz=212						
JKRS	**Kuro-shima**	**2.00**	**94**	P	**Pn**	**21 19 15.7**	**+0.6**
JKRS				S	**Sn**	**21 19 39.8**	**-0.2**
JIJ	**Ishigaki jima**	**2.11**	**90**	P	**Pn**	**21 19 17.2**	**+0.5**
JIJ				S	**Sn**	**21 19 42.3**	**-0.6**
JISG	**Ishigakijimahi**	**2.27**	**84**	S	**Sn**	**21 19 47.0**	**+0.1**

*ISCJB **11** 21:20:05.2±0.6,18.6S±0.1×177.8W±0.1,h557km, mb3.9/10,Error ellipse: s-maj=16.3km s-min=13.0km az=151.3*
*IDC **11** 21:20:09.2±1.2,18.55S×177.80W,h596km±16km, mb3.2/10,mb1 3.5/13,mb1mx3.2/37,mbtmp4.3/13,Error ellipse: s-maj=15.5km s-min=10.3km az=149.0*
ISC 11 21:20:06.4±0.6,18.6S±0.1×177.8W±0.1,h557km,n19, σ1.879/20,mb3.7/10,Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
AFI	**Afiamalu**	**7.42**	**52**	P	P	21 22 03.7	+4.8
	6.0nm,0.3s,baz=226,slow=2.8,SNR=4.3						
AFI				S	**S**	**21 23 33.5**	**+2.6**
	1.8nm,0.3s,baz=91,slow=13,SNR=5.2						
DZM	**Mont Dzumac**	**15.17**	**254**	P	**P**	**21 23 20.8**	**+3.2**
	0.7nm,0.3s,baz=269,slow=21,SNR=7.1						
RAR	**Rarotonga**	**17.17**	**102**	P	**P**	**21 23 36.8**	**+0.4**
	5.3nm,0.3s,baz=218,slow=6.2,SNR=4.8						
URZ	**Urewera**	**20.11**	**192**	P	**P**	**21 24 02.3**	**-0.7**
	11nm,0.3s,baz=274,slow=2.7,SNR=23						
HNR	**Honiara**	**23.38**	**290**	P	**P**	**21 24 34.1**	**+1.5**
	67nm,0.4s,baz=212,slow=13,SNR=4.3						
RPZ	**Rata Peaks**	**26.77**	**198**	P	**P**	**21 25 03.4**	**+1.3**
	4.3nm,0.5s,baz=65,slow=4.0,SNR=6.8						
STKA	**Stephens Creek**	**38.81**	**242**	P	**P**	**21 26 45.2**	**+1.2**
	2.1nm,0.5s,baz=77,slow=5.2,SNR=6.7						
WRA	**Warramunga Arr**	**45.07**	**260**	P	**P**	**21 27 33.9**	**+0.4**
	0.3nm,0.3s,baz=98,slow=6.8,SNR=45						
ASAR	**Alice Springs**	**45.16**	**255**	P	**P**	**21 27 34.9**	**+0.8**
	1.5nm,0.6s,baz=90,slow=7.9,SNR=19						
ASAR				PcP	**PcP**	**21 29 01.1**	**-1.6**
	0.7nm,0.5s,baz=101,slow=4.0,SNR=7.1						
ASAR				S	**S**	**21 33 30.1**	**-3.6**
	1.8nm,0.8s,baz=91,slow=15,SNR=16						
VNDA	**Vanda**	**59.84**	**185**	P	**P**	**21 29 19.2**	**+1.2**
	1.3nm,0.5s,baz=353,slow=6.4,SNR=22						
NVAR	**Mina Array Bea**	**79.51**	**43**	P	**P**	**21 31 15.3**	**-0.7**
	1.1nm,0.7s,baz=226,slow=9.3,SNR=6.9						
TXAR	**Lajitas Array**	**85.87**	**57**	P	**P**	**21 31 48.2**	**+0.2**
	1.6nm,0.8s,baz=220,slow=5.8,SNR=16						
ILAR	**Eielson Array**	**86.40**	**13**	P	**P**	**21 31 47.5**	**-2.0**
	0.6nm,0.5s,baz=225,slow=4.9,SNR=6.8						
PDAR	**Pinedale Array**	**87.44**	**43**	P	**P**	**21 31 54.2**	**-1.1**
	0.6nm,0.6s,baz=210,slow=3.5,SNR=6.2						
SNAA	**Sanae**	**89.93**	**178**	P	**P**	**21 32 04.3**	**-1.9**
VNA3	**Neumayer Olymp**	**90.05**	**176**	P	**P**	**21 32 05.3**	**-1.4**
VNA2	**Neumayer-Watz**	**90.49**	**177**	P	**P**	**21 32 07.3**	**-1.4**
	baz=195,slow=4.0						
EKA	**Eskdalemuir Ar**	**143.07**	**5**	PKhKP	PKPpre	21 38 32.5	
	1.8nm,1.0s,baz=332,slow=2.7,SNR=4.5						
MMAI	**Mount Meron Ar**	**146.97**	**302**	PKPbc	**PKPbc**	**21 38 46.7**	**-0.7**
	6.1nm,1.0s,baz=300,slow=30,SNR=1.7						

*NIED **11** 21:21:00,38.90N×142.00E,h53km,Mw4.3 Best double couple: M0 2.86000×10^15 NP1:φs171.00000°,δ21.00000°, λ59.00000°. NP2:φs24.00000°,δ72.00000°,λ101.00000°.*
*IDC **11** 21:21:12.0±0.7,38.86N×141.90E,h0km,mb4.2/20, mb1 4.2/22,mb1mx4.1/50,mbtmp4.1/22,ML3.4/2,MS3.3/16, Ms1 3.3/16,ms1mx3.2/44,Error ellipse: s-maj=19.3km s-min=14.7km az=112.0*
*MOS **11** 21:21:15.0±1.0,38.89N×141.82E,h29km,mb4.6/41,Error ellipse: s-maj=8.8km s-min=5.8km az=99.1*
*ISCJB **11** 21:21:16.8±0.3,38.88N±0.04×142.06E±0.05,h51km, mb4.4/70,MS3.5/14,Error ellipse: s-maj=6.9km s-min=3.8km az=136.3*
*NEIC **11** 21:21:17.0±2.0,38.78N×141.86E,h34km±14km,mb4.7/25, Error ellipse: s-maj=8.4km s-min=5.7km az=136.0*
*BJI **11** 21:21:17.0,38.76N×142.03E,h64km,mb4.6/44,mB4.9/27, Ms4.5/12,Ms7 4.3/10*
*JMA **11** 21:21:18.7±0.1,38.89N×141.98E,h51km±2km,M4.2*
JMA Felt II J1.
ISC 11 21:21:19.1±0.5,38.88N±0.05×141.93E±0.06,h51km,n171, σ1.932/159,mb4.5/70,MS3.5/14,6C-1D,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
OFUJ	**Ofunato**	**0.28**	**315**	P	**Pn**	**21 21 28.0**	**-0.2**
OFUJ				S	**Sn**	**21 21 34.4**	**-0.3**
JMK	**Ichinoseki**	**0.56**	**278**	P	**Pn**	**21 21 31.2**	**+0.1**
JIO	**Ouri**	**0.62**	**227**	P	**Pn**	**21 21 31.7**	**-0.2**
JOU	**Okura**	**1.11**	**243**	P	**Pn**	**21 21 38.4**	**0.0**
JOU				S	**Sn**	**21 21 53.5**	**+0.8**
JRG	**Rokugo**	**1.13**	**298**	P	**Pn**	**21 21 38.7**	**+0.1**
JYK	**Kaneyama**	**1.23**	**272**	P	**Pn**	**21 21 40.1**	**+0.2**
JMM	**Marumori**	**1.35**	**222**	P	**Pn**	**21 21 41.1**	**-0.5**
JMM				S	**Sn**	**21 21 57.8**	**-0.5**
JANG	**Nango**	**1.52**	**348**	P	**Pn**	**21 21 43.6**	**-0.4**
JANG				S	**Sn**	**21 22 02.9**	**+0.2**
ERM	**Erimo**	**3.27**	**16**	*e*P	**Pn**	**21 22 08.9**	**+1.1**
ERM				*e*		21 22 48.6	
ERM	**Erimo**	**3.27**	**16**	*e*Pn	**Pn**	**21 22 08.9**	**+1.1**
ERM				*e*Sn	**Sn**	**21 22 48.6**	**+3.2**
MAJO	**Matsushiro**	**3.76**	**233**	*e*P	Pn	21 22 10.6	-4.0
MAJO	**Matsushiro**	**3.76**	**233**	*e*Pn	Pn	21 22 10.6	-4.0
MAT	**Matsushiro**	**3.76**	**233**	P	Pn	21 22 10.2	-4.4
MAT				S	Sn	21 22 37.9	-20
MJAR	**Matsushiro Arr**	**3.76**	**233**	Pn	Pn	21 22 10.3	-4.3
	4.7nm,0.3s,baz=82,slow=16,SNR=4.9						
INU	**Inuyama**	**5.27**	**230**	*e*Pn	**Pn**	**21 22 38.4**	**+3.1**
YUK	**Yuzh-Kuril'sk**	**5.94**	**29**	*e*P	**Pn**	**21 22 41.9**	**-2.5**
YUK				*e*S	Sn	21 23 43.8	-7.2
YUK				pmax	pmax		
	comp=Z,281nm,0.4s						
YUK				pmax	pmax		
	comp=N,90nm,0.2s						
YUK				pmax	pmax		
	comp=E,82nm,0.2s						
SHO	**Shikotan**	**6.20**	**35**	*e*P	**Pn**	**21 22 45.4**	**-2.6**
SHO				*e*S	Sn	21 23 49.3	-8.2
SHO				pmax	pmax		
	comp=Z,21nm,0.5s						
KUR	**Kuril'sk**	**7.73**	**33**	*e*P	**Pn**	**21 23 07.2**	**-1.8**
KUR				*e*S	Sn	21 24 28.0	-7.1
KUR				pmax	pmax		
	comp=Z,22nm,0.4s						
KUR				pmax	pmax		
	comp=N,22nm,0.1s						
KUR				pmax	pmax		
	comp=E,16nm,0.3s						
YSS	**Yuzh-Sakhalins**	**8.09**	**4**	*e*P	**Pn**	**21 23 13.2**	**-0.7**
YSS				pmax	pmax		
	comp=Z,37nm,1.7s						
USRK	**Ussuriysk Ar.**	**9.15**	**309**	Pn	**Pn**	**21 23 29.0**	**+0.6**
	comp=Z,1.6nm,0.3s,baz=120,slow=13,SNR=43						
USRK				LR	LR	21 26 43.5	
	comp=Z,241nm,21.5s,baz=142,slow=36						
JNU	**Nakatsue**	**10.63**	**241**	LR	LR	21 28 14.0	
	comp=Z,156nm,20.0s,baz=288,slow=40						
MDJ	**Mudanjiang**	**10.85**	**306**	P	Pn	21 23 55.8	+4.2
MDJ				pmax	pmax		
	comp=Z,10.0nm,1.4s						
MDJ				pmax	pmax		
	comp=Z,21nm,4.5s						
MDJ	**Mudanjiang**	**10.85**	**306**	*e*Pn	**Pn**	**21 23 49.7**	**-1.9**
	comp=Z,56nm,1.3s						
KSRS	**Korea Array**	**11.12**	**267**	Pn	Pn	21 23 59.1	+3.8
	comp=Z,0.4nm,0.3s,baz=80,slow=14,SNR=9.9						
KSRS				LR	LR	21 28 02.4	
	comp=Z,85nm,18.1s,baz=80,slow=37						
KSAR	**Wonju Array Be**	**11.15**	**267**	P	Pn	21 23 59.2	+3.4
KSAR	**Wonju Array Be**	**11.15**	**267**	Pn	Pn	21 23 59.1	+3.4
KLR	**Kul'dur**	**12.66**	**328**	Pn	**Pn**	**21 24 14.9**	**-1.4**
	comp=Z,0.1nm,0.3s,baz=132,slow=13,SNR=5.0						
KLR				LR	LR	21 29 07.0	
	comp=Z,152nm,19.2s,baz=147,slow=38						
PETK	**Petropavlovsk-**	**17.90**	**32**	LR	LR	21 31 35.1	
	comp=Z,64nm,21.3s,baz=222,slow=35						
PET	**Petropavlovsk**	**18.25**	**34**	P	**Pn**	**21 25 31.7**	**+3.3**
PET				pmax	pmax		
	comp=Z,38nm,1.7s						
PET	**Petropavlovsk**	**18.25**	**34**	*e*P	**P**	**21 25 24.8**	**-3.2**
	comp=Z,165nm,1.9s						
BJI	**Beijing**	**19.90**	**282**	P	**P**	**21 25 46.2**	**-0.1**
BJI				S	**S**	**21 29 25.7**	**-1.7**
BJI				pmax	pmax		
	comp=Z,6.0nm,0.5s						
BJI				pmax	pmax		
	comp=Z,98nm,4.5s						
BJI				LR	LR		
	comp=Z,140nm,5.9s						
BJI				LR	LR		
	comp=Z,89nm,7.6s						
NJ2	**Nanjing**	**19.96**	**257**	*e*P	**P**	**21 25 45.7**	**-1.3**
NJ2				pmax	pmax		
	comp=Z,11nm,0.7s						
MA2	**Magadan**	**21.47**	**12**	LR	LR	21 33 26.9	
	comp=Z,37nm,21.7s,baz=292,slow=34						
SSLB	**Suanglung**	**23.32**	**236**	*e*P	**P**	**21 26 20.5**	**-2.2**
	comp=Z,40nm,1.3s						
HHC	**Hu-ho-hao-te**	**23.34**	**285**	*e*P	**P**	**21 26 22.5**	**-0.4**
HHC				pP	pP	21 26 36.2	+1.1
HHC				sP	sP	21 26 43.6	+2.2
HHC				S	**S**	**21 30 28.0**	**-3.8**
HHC				pmax	pmax		
	comp=Z,21nm,0.8s						
HHC				pmax	pmax		
	comp=Z,87nm,8.1s						
HHC				LR	LR		
	comp=Z,1μm,12.3s						
HHC				LR	LR		
	comp=Z,1μm,13.6s						
HHC				LR	LR		
	comp=Z,1μm,12.3s						
YAK	**Yakutsk**	**24.37**	**346**	P	**P**	**21 26 30.1**	**-1.9**
	comp=Z,14nm,0.3s,baz=351,slow=4.0,SNR=4.7						
YAK	**Yakutsk**	**24.37**	**346**	*e*P	**P**	**21 26 28.3**	**-3.7**
YAK				pmax	pmax		
	comp=Z,24nm,1.3s						
YAK				pmax	pmax		
	comp=N,8.0nm,1.2s						
YAK				pmax	pmax		
	comp=E,5.0nm,1.1s						
YAK	**Yakutsk**	**24.37**	**346**	*e*P	P	21 26 27.1	-5.0
	comp=E,24nm,0.9s						
SEY	**Seymchan**	**24.90**	**11**	P	**P**	**21 26 37.1**	**+0.2**
	comp=E,5.2nm,0.8s,baz=219,slow=6.2,SNR=13						
GUMO	**Guam**	**25.32**	**173**	LR	LR	21 42 00.8	
	comp=E,16nm,18.6s,baz=54,slow=49						
BOD	**Bodaibo**	**26.21**	**325**	*e*P	**P**	**21 26 47.2**	**-1.6**
BOD				pmax	pmax		
	comp=Z,5.0nm,1.1s						
ULN	**Ulaanbaatar**	**26.70**	**301**	*ce*P	**P**	**21 26 52.4**	**-1.2**
ULN				pmax	pmax		
	comp=Z,5.0nm,1.7s						
ULN	**Ulaanbaatar**	**26.70**	**301**	*e*P	**P**	**21 26 54.8**	**+1.2**
	comp=Z,1.9nm,0.6s						
XAN	**Xi'an**	**26.89**	**270**	P	**P**	**21 26 55.4**	**+0.1**
XAN				pmax	pmax		
	comp=Z,4.0nm,0.6s						
SONA1	**Songino Array**	**27.14**	**301**	*e*P	**P**	**21 26 58.7**	**+1.3**
SONM	**Songino Array**	**27.14**	**301**	P	**P**	**21 26 57.7**	**+0.3**
	comp=Z,1.1nm,0.5s,baz=100,slow=8.9,SNR=8.9						
SONM				LR	LR	21 36 59.9	
	comp=Z,50nm,18.5s,baz=100,slow=35						
ENH	**Enshi**	**27.94**	**262**	*e*P	**P**	**21 27 03.5**	**-1.2**
	comp=Z,13nm,0.6s						
H11N2	**WAKE ISLAND Hy**	**28.80**	**124**	T	T	21 57 36.1	
	baz=317,slow=75,SNR=161						
H11N1	**WAKE ISLAND Hy**	**28.81**	**124**	T	T	21 57 37.8	
	baz=317,slow=75,SNR=223						
H11N3	**WAKE ISLAND Hy**	**28.82**	**124**	T	T	21 57 38.7	
	baz=317,slow=75,SNR=126						
TLY	**Talaya**	**29.47**	**308**	LR	LR	21 39 39.6	
	comp=Z,81nm,18.9s,baz=90,slow=38						
ZAK	**Zakamensk**	**29.48**	**306**	*e*P	**P**	**21 27 17.5**	**-0.8**
ZAK				pmax	pmax		
	comp=Z,3.0nm,1.1s						
H11S1	**WAKE ISLAND Hy**	**29.57**	**126**	T	T	21 58 33.6	
	baz=318,slow=76,SNR=196						
H11S3	**WAKE ISLAND Hy**	**29.57**	**126**	T	T	21 58 36.2	
	baz=318,slow=76,SNR=181						
H11S2	**WAKE ISLAND Hy**	**29.59**	**126**	T	T	21 58 38.8	
	baz=318,slow=76,SNR=187						
LZH	**Lanzhou**	**30.21**	**277**	*e*P	**P**	**21 27 28.0**	**+3.1**
LZH				pP	sP	21 27 42.5	-1.5
LZH				sP	pP	21 27 49.7	+12
LZH				PP	**PnPn**	**21 28 28.3**	**+4.3**
LZH				pmax	pmax		
	comp=Z,25nm,1.3s						
LZH				pmax	pmax		
	comp=Z,74nm,5.9s						
LZH				LR	LR		
	comp=Z,300nm,13.5s						
LZH				LR	LR		
	comp=Z,320nm,13.2s						
LZH				LR	LR		
	comp=Z,380nm,17.0s						
GYA	**Guiyang**	**31.97**	**258**	P	**P**	**21 27 40.3**	**-0.1**
GYA				pmax	pmax		
	comp=Z,10.0nm,0.9s						
CD2	**Chengdu**	**32.12**	**267**	P	**P**	**21 27 40.4**	**-1.2**
CD2				pmax	pmax		
	comp=Z,3.0nm,0.5s						
BILL	**Bilibino**	**32.15**	**17**	⇓*e*P	**P**	**21 27 41.3**	**-0.1**
BILL				*e*		21 28 50.9	
BILL				*e*PPP	PPP	21 29 03.5	
BILL				*e*S	**S**	**21 32 46.2**	**-3.9**
BILL				pmax	pmax		
	comp=Z,2.0nm,1.1s						
GTA	**Gaotai**	**32.45**	**284**	*e*P	**P**	**21 27 44.7**	**+0.1**
GTA				pmax	pmax		
	comp=Z,3.0nm,0.7s						
KMI	**Kunming**	**35.67**	**259**	P	**P**	**21 28 13.1**	**+0.4**
KMI				pmax	pmax		
	comp=Z,15nm,0.7s						
KMI				pmax	pmax		
	comp=Z,89nm,5.3s						
WMQ	**Urumqi**	**40.40**	**295**	P	**P**	**21 28 52.9**	**+0.7**
WMQ				pP	pP	21 29 04.8	-0.8
WMQ				sP	sP	21 29 13.6	+2.0
WMQ				pmax	pmax		
	comp=Z,9.0nm,0.6s						
WMQ				pmax	pmax		
	comp=Z,82nm,5.8s						
ZAA0	**Zalesovo Array**	**

	comp=Z,1.8nm,0.6s							
MKAR	**Makanchi Array**	**43.51**	**301**	P		**P**	**21 29 17.4**	**0.0**
	comp=Z,10.0nm,0.8s,baz=85,slow=9.7,SNR=93							
MKAR				LR		LR	21 48 01.3	
	comp=Z,32nm,19.9s,baz=56,slow=37							
MAKZ	**Makanchi**	**43.72**	**301**	*eP*		**P**	**21 29 19.2**	**+0.1**
MAKZ				pmax		pmax		
	comp=Z,11nm,1.0s							
MAKZ	**Makanchi**	**43.72**	**301**	*eP*		**P**	**21 29 19.2**	**+0.1**
	comp=Z,11nm,1.0s							
KURK	**Kurchatov**	**45.13**	**307**	*eP*		**P**	**21 29 30.1**	**-0.2**
KURK				pmax		pmax		
	comp=Z,24nm,1.0s							
KURK	**Kurchatov**	**45.13**	**307**	*eP*		**P**	**21 29 30.1**	**-0.2**
	comp=Z,24nm,1.0s							
TAPN	**Taplejung**	**46.24**	**273**	*eP*		**P**	**21 29 40.1**	**+0.4**
	comp=Z,4.0nm,0.5s							
PDGK	**Podgornoye**	**46.30**	**297**	P		**P**	**21 29 38.6**	**-0.9**
PDGK				pmax		pmax		
	comp=Z,4.0nm,0.7s							
ODAN	**Odare**	**46.73**	**272**	*eP*		**P**	**21 29 43.7**	**+0.2**
PMR	**Palmer**	**46.91**	**38**	*eP*		**P**	**21 29 45.8**	**+1.7**
PMR				pmax		pmax		
	comp=Z,21nm,1.1s							
PMR	**Palmer**	**46.91**	**38**	*eP*		**P**	**21 29 45.8**	**+1.7**
	comp=Z,21nm,1.1s							
RAMN	**Ramite**	**47.30**	**273**	*eP*		**P**	**21 29 47.9**	**0.0**
	comp=Z,30nm,0.9s							
GUN	**Gumba**	**47.40**	**274**	*eP*		**P**	**21 29 49.1**	**+0.3**
	comp=Z,14nm,0.4s							
HDA	**Harding Lake**	**47.72**	**34**	*eP*		**P**	**21 29 50.9**	**+0.5**
	comp=Z,36nm,1.5s							
ILAR	**Eielson Array**	**47.73**	**33**	P		**P**	**21 29 50.9**	**+0.4**
	comp=Z,0.9nm,0.7s,baz=264,slow=5.7,SNR=11							
KKN	**Kakani**	**47.92**	**274**	*eP*		**P**	**21 29 52.8**	**+0.1**
	comp=Z,7.0nm,0.5s							
PKIN	**Phulchoki**	**47.94**	**274**	*eP*		**P**	**21 29 52.8**	**-0.1**
	comp=Z,2.7nm,0.4s							
GKN	**Gorkha**	**48.32**	**275**	*eP*		**P**	**21 29 55.7**	**-0.1**
	comp=Z,21nm,1.0s							
TKM2	**Tokmak 2**	**49.13**	**297**	*eP*		**P**	**21 30 02.5**	**+0.7**
TKM2				pmax		pmax		
	comp=Z,9.0nm,1.0s							
TKM2	**Tokmak 2**	**49.13**	**297**	*eP*		**P**	**21 30 02.5**	**+0.7**
	comp=Z,9.1nm,1.0s							
KOLN	**Koldanda**	**49.24**	**275**	*eP*		**P**	**21 30 03.0**	**+0.2**
	comp=Z,12nm,0.8s							
PYUN	**Piuthan**	**49.56**	**276**	*eP*		**P**	**21 30 05.4**	**+0.1**
	comp=Z,16nm,0.7s							
OTUK	**Ortayu**	**49.69**	**305**	P		**P**	**21 30 05.6**	**-0.2**
OTUK				pmax		pmax		
	comp=Z,6.0nm,0.9s							
BRVK	**Borovoye**	**49.70**	**311**	*eP*		**P**	**21 30 05.7**	**0.0**
BRVK				pmax		pmax		
	comp=Z,9.0nm,1.1s							
BRVK	**Borovoye**	**49.70**	**311**	*eP*		**P**	**21 30 05.7**	**0.0**
	comp=Z,8.8nm,1.1s							
AAK	**Ala-Archa**	**49.99**	**297**	*eP*		**P**	**21 30 08.1**	**-0.3**
AAK				pmax		pmax		
	comp=Z,8.0nm,1.1s							
AAK	**Ala-Archa**	**49.99**	**297**	*eP*		**P**	**21 30 08.0**	**-0.3**
	comp=Z,4.4nm,1.2s							
KSH	**Kashi**	**50.05**	**293**	*eP*		P	21 30 12.9	+4.2
KSH				*ep*		sP	21 30 28.7	+0.3
KSH				*es*		pP	21 30 35.4	+13
KSH				*e*		**ScP**	**21 35 20.1**	**+0.8**
KSH				PcS		**PcS**	**21 35 28.1**	**+3.1**
KSH				S		**S**	**21 37 20.7**	**+4.5**
KSH				pmax		pmax		
	comp=Z,150nm,6.6s							
KSH				LR		LR		
	comp=Z,150nm,8.0s							
KSH				LR		LR		
	comp=Z,110nm,5.6s							
KSH				LR		LR		
	comp=Z,170nm,5.9s							
EKS2	**Erkin-Say**	**50.48**	**297**	*eP*		**P**	**21 30 12.2**	**+0.2**
EKS2				pmax		pmax		
	comp=Z,2.0nm,0.6s							
EKS2	**Erkin-Say**	**50.48**	**297**	*eP*		**P**	**21 30 12.2**	**+0.2**
	comp=Z,2.4nm,0.6s							
MNAS	**Manas**	**51.42**	**298**	P		**P**	**21 30 19.3**	**+0.2**
MNAS				pmax		pmax		
	comp=Z,9.0nm,1.3s							
SFK	**Sufi-Kurgan**	**51.63**	**294**	P		**P**	**21 30 20.5**	**-0.2**
SFK				pmax		pmax		
	comp=Z,4.0nm,1.3s							
INK	**Inuvik**	**52.56**	**28**	P		**P**	**21 30 27.8**	**+0.8**
	comp=Z,1.5nm,0.7s,baz=277,slow=8.5,SNR=5.8							
KKAR	**Karatay Array**	**52.57**	**299**	*eP*		**P**	**21 30 26.8**	**-0.7**
KKAR	**Karatay Array**	**52.57**	**299**	*eP*		**P**	**21 30 26.8**	**-0.7**
ARU	**Arti**	**55.26**	**318**	*c iP*		**P**	**21 30 46.6**	**-0.2**
ARU							21 32 49.6	
ARU				S		**S**	**21 38 29.9**	**+3.4**
ARU				SS		**SS**	**21 42 12.3**	**+1.6**
ARU				pmax		pmax		
	comp=Z,15nm,1.0s							
ARU	**Arti**	**55.26**	**318**	*eP*		**P**	**21 30 46.7**	**-0.2**
	comp=Z,12nm,0.8s							
ABKAR	**Akbulak array**	**57.07**	**309**	*eP*		**P**	**21 30 59.5**	**-0.3**
AKTO	**Aktyubinsk**	**57.76**	**311**	LR		LR	21 56 38.3	
	comp=Z,48nm,18.1s,baz=28,slow=37							
WRA	**Warramunga Arr**	**58.94**	**188**	P		**P**	**21 31 12.6**	**-0.6**
	comp=Z,1.6nm,0.5s,baz=5.6,slow=6.9,SNR=27							
WRA	**Warramunga Arr**	**58.94**	**188**	P		**P**	**21 31 12.6**	**-0.6**
WRA				pmax		pmax		
	comp=Z,1.0nm,0.5s							
LVZ	**Lovozero**	**60.60**	**335**	*ce*		**P**	**21 31 22.7**	**-1.4**
LVZ				pmax		pmax		
	comp=Z,40nm,2.5s							
RES	**Resolute Bay**	**60.72**	**15**	P		**P**	**21 31 24.6**	**-0.1**
	comp=Z,2.4nm,0.8s,baz=312,slow=6.9,SNR=9.5							
YKA	**Yellowknife Ar**	**62.01**	**31**	P		**P**	**21 31 33.9**	**+0.3**
	comp=Z,0.4nm,0.7s,baz=301,slow=6.3,SNR=7.1							
ARCES	**ARCESS Array B**	**62.42**	**339**	P		**P**	**21 31 36.1**	**-0.1**
	comp=Z,1.5nm,0.9s,baz=32,slow=7.1,SNR=4.4							
ASAR	**Alice Springs**	**62.67**	**188**	P		**P**	**21 31 38.4**	**-0.1**
	comp=Z,0.6nm,0.6s,baz=10,slow=5.8,SNR=9.1							
GEYT	**Alibeck**	**63.31**	**298**	P		**P**	**21 31 42.5**	**-0.2**
	comp=Z,3.2nm,0.8s,baz=40,slow=7.7,SNR=6.7							
GEYT				LR		LR	22 01 09.7	
	comp=Z,36nm,18.9s,baz=115,slow=38							
MSF	**Maaselka**	**63.55**	**335**	P		**P**	**21 31 43.9**	**+0.1**
MSF				pmax		pmax		
	comp=Z,11nm,1.1s							
VRH	**Novokhopyorsk**	**66.49**	**318**	*eP*		**P**	**21 32 01.4**	**-1.7**
VRH				pmax		pmax		
	comp=Z,7.0nm,0.7s							
OBN	**Obninsk**	**66.87**	**323**	*iP*		**P**	**21 32 05.0**	**-0.4**
OBN				*e*			21 34 30.9	
OBN				*ePPP*		PPP	21 36 07.1	
OBN				pmax		pmax		
	comp=Z,3.0nm,0.7s							
OBN				MLR		MLR		
	comp=Z,49nm,15.0s							
LPSR	**Galich'ya Gora**	**67.15**	**320**	*eP*		**P**	**21 32 06.6**	**-0.7**
LPSR				pmax		pmax		
	comp=Z,5.0nm,0.6s							
FIA1	**FINESS Array S**	**67.37**	**332**	*eP*		**P**	**21 32 07.9**	**-0.7**
FINES	**FINESS Array B**	**67.37**	**332**	P		**P**	**21 32 08.3**	**-0.3**
	comp=Z,4.0nm,0.7s,baz=32,slow=9.6,SNR=19							
FINES				LR		LR	22 02 15.2	
	comp=Z,66nm,18.7s,baz=337,slow=37							
VSR	**Storozhevoye**	**67.82**	**319**	*eP*		**P**	**21 32 10.2**	**-1.3**
VSR				pmax		pmax		
	comp=Z,4.0nm,0.5s							
VSU	**Vasula**	**69.07**	**329**	P		**P**	**21 32 18.7**	**-0.5**
VSU				pmax		pmax		
	comp=Z,24nm,1.0s							
GOF	**Gofitskoye**	**69.17**	**311**	*ce*		**P**	**21 32 19.0**	**-1.1**
KIV	**Kislovodsk**	**70.01**	**311**	*eP*		**P**	**21 32 26.5**	**+1.1**
KIV				pmax		pmax		
	comp=Z,16nm,0.9s							
KIV	**Kislovodsk**	**70.01**	**311**	*eP*		**P**	**21 32 26.0**	**+0.5**
	comp=Z,14nm,0.9s							
KBZ	**Khabaz**	**70.01**	**310**	P		**P**	**21 32 25.9**	**+0.6**
	comp=Z,4.6nm,0.9s,baz=49,slow=4.1,SNR=10							
NB2	**NORSAR Subarra**	**72.64**	**337**	P		**P**	**21 32 40.5**	**-0.5**
	comp=Z,1.0nm,0.7s,baz=37,slow=6.2							
NOA	**NORSAR Array B**	**72.64**	**337**	P		**P**	**21 32 40.6**	**-0.3**
	comp=Z,1.5nm,0.7s,baz=38,slow=6.0,SNR=6.3							
AKASG	**Malin Array Be**	**73.09**	**322**	P		**P**	**21 32 43.1**	**-0.6**
	comp=Z,1.7nm,0.5s,baz=44,slow=6.0,SNR=12							
KIEV	**Kiev**	**73.10**	**322**	P		**P**	**21 32 43.4**	**-0.4**
KIEV				pmax		pmax		
	comp=Z,8.0nm,0.9s							
YMR	**Madison River**	**74.09**	**45**	*eP*		**P**	**21 32 50.2**	**+0.2**
	comp=Z,3.9nm,0.5s							
DAC	**Darwin (Calif)**	**75.31**	**55**	*eP*		**P**	**21 33 00.0**	**+2.8**
DAC				pmax		pmax		
	comp=Z,3.0nm,0.9s							
DAC	**Darwin (Calif)**	**75.31**	**55**	*eP*		**P**	**21 33 00.0**	**+2.8**
	comp=Z,2.9nm,0.9s							
BW06	**Boulder Array**	**76.09**	**46**	*eP*		**P**	**21 33 00.6**	**-0.9**
PD31	**Pinedale Array**	**76.09**	**46**	*eP*		**P**	**21 33 00.4**	**-1.1**
KWP	**Kalwaria Pacla**	**76.87**	**324**	P		**P**	**21 33 05.7**	**+0.1**
KWP				pmax		pmax		
	comp=Z,73nm,1.7s							
BUR08	**Bucovina Ar. S**	**77.11**	**322**	*eP*		**P**	**21 33 07.5**	**+0.4**
LDFC	**Landfair**	**77.64**	**55**	*eP*		P	21 33 05.8	-4.5
	comp=Z,7.6nm,0.4s							
OJC	**Ojcow**	**77.73**	**326**	*eP*		**P**	**21 33 11.1**	**+0.7**
OJC	**Ojcow**	**77.73**	**326**	*eP*		**P**	**21 33 11.0**	**+0.7**
OJC				pmax		pmax		
	comp=Z,7.0nm,1.0s							
OJC	**Ojcow**	**77.73**	**326**	*eP*		**P**	**21 33 11.0**	**+0.7**
	comp=Z,7.4nm,1.0s							
BRTR	**Keskin Array B**	**77.93**	**312**	P		**P**	**21 33 11.9**	**+0.1**
	comp=Z,0.9nm,0.4s,baz=115,slow=3.8,SNR=9.8							
BRTR	**Keskin Array B**	**77.93**	**312**	P		**P**	**21 33 12.0**	**+0.1**
BRTR				pmax		pmax		
	comp=Z,1.0nm,0.4s							
NIE	**Niedzica**	**78.11**	**325**	*eP*		**P**	**21 33 13.3**	**+0.8**
NIE	**Niedzica**	**78.11**	**325**	*eP*		**P**	**21 33 13.3**	**+0.8**
BR231	**Keskin MP Arra**	**78.36**	**312**	*eP*		**P**	**21 33 12.8**	**-1.4**
DPC	**Dobruska-Polom**	**79.11**	**328**	*eP*		**P**	**21 33 18.9**	**+0.9**
DPC	**Dobruska-Polom**	**79.11**	**328**	*eP*		**P**	**21 33 18.9**	**+0.9**
KRLC	**Kraliky**	**79.13**	**328**	*eP*		**P**	**21 33 18.3**	**+0.2**
KRLC	**Kraliky**	**79.13**	**328**	*eP*		**P**	**21 33 18.3**	**+0.2**
BRG	**Berggiesshubel**	**79.67**	**329**	*e*(P)		P	21 33 25.1	+4.1
	comp=Z,1.1nm,0.8s							
BRG	**Berggiesshubel**	**79.67**	**329**	*eP*		P	21 33 25.1	+4.1
BRG				pmax		pmax		
	comp=Z,7.0nm,0.8s							
CLL	**Collm**	**79.70**	**330**	*i* P		**P**	**21 33 20.8**	**-0.3**
	comp=Z,6.0nm,0.9s							
CLL				LmH			22 08 00.0	
	comp=N,100nm,20.5s							
CLL				LmH			22 08 00.0	
	comp=E,100nm,20.1s							
CLL	**Collm**	**79.70**	**330**	*i* P		**P**	**21 33 20.8**	**-0.3**
CLL				pmax		pmax		
	comp=Z,6.0nm,0.9s							
PRU	**Pruhonice**	**80.12**	**329**	*eP*		**P**	**21 33 24.0**	**+0.6**
PRU	**Pruhonice**	**80.12**	**329**	*eP*		**P**	**21 33 24.0**	**+0.6**
KHC	**Kasperske Hory**	**81.18**	**329**	*eP*		**P**	**21 33 29.3**	**+0.1**
KHC	**Kasperske Hory**	**81.18**	**329**	*eP*		**P**	**21 33 29.4**	**+0.2**
KHC				pmax		pmax		
	comp=Z,1.0nm,0.9s							
KHC	**Kasperske Hory**	**81.18**	**329**	*eP*		**P**	**21 33 29.4**	**+0.2**
	comp=Z,1.2nm,0.9s							
GERES	**GERESS Array B**	**81.36**	**328**	P		**P**	**21 33 29.5**	**-0.7**
	comp=Z,0.6nm,0.5s,baz=34,slow=5.3,SNR=6.5							
VTS	**Vitosha**	**81.69**	**319**	*eP*		**P**	**21 33 32.9**	**+0.7**
VTS				pmax		pmax		
	comp=Z,4.0nm,1.0s							
VTS	**Vitosha**	**81.69**	**319**	*eP*		**P**	**21 33 32.9**	**+0.7**
	comp=Z,3.9nm,1.0s							
BFO	**Black Forest**	**83.89**	**331**	*ce*		**P**	**21 33 45.1**	**+1.8**
FUORN	**Ofenpass-Fuorn**	**84.53**	**329**	*eP*		**P**	**21 33 47.1**	**+0.2**
	comp=Z,7.6nm,0.9s							
PPT	**Papeete**	**85.10**	**117**	LR		LR	22 07 15.1	
	comp=Z,80nm,19.3s,baz=16,slow=32							
H06E1	**SOCORRO T-PHAS**	**91.03**	**65**	T		T	23 14 39.9	
	SNR=8.0							
WVT	**Waverly**	**92.36**	**38**	*eP*		**P**	**21 34 26.0**	**+1.9**
WVT				pmax		pmax		
	comp=Z,11nm,1.1s							
WVT	**Waverly**	**92.36**	**38**	*eP*		**P**	**21 34 26.0**	**+1.9**
	comp=Z,11nm,1.1s							
LPAZ	**La Paz**	**145.39**	**58**	PKPbc		**PKPdf**	**21 40 52.6**	**+0.1**
	comp=Z,0.8nm,0.7s,baz=348,slow=5.0,SNR=4.3							

NIED ***11*** *21:29:00,36.90N×140.70E,h8km,Mw3.4 Best double couple: M₀1.59000×10¹⁴ NP1:φₛ348.00000°,δ32.00000°, λ-105.00000°. NP2:φₛ185.00000°,δ60.00000°, λ-81.00000°.*

IDC ***11*** *21:29:25.4±1.6,36.82N×140.84E,h0km,mb3.4/5, mb1 3.6/6,mb1mx3.4/59,mbtmp3.4/6,ML3.7/1,Error ellipse: s-maj=40.4km s-min=21.3km az=56.0*

ISCJB ***11*** *21:29:27.1±0.7,36.87N±0.03×140.79E±0.06,h17km±5km, mb3.2/5,Error ellipse: s-maj=8.2km s-min=4.7km az=14.4*

JMA ***11*** *21:29:28.0,36.90N×140.68E,h9km±1km,M3.8 Broadband fault plane solution: P waves. NP1: φₛ180.00000°,δ55.00000°,λ-102.00000°. NP2: φₛ19.00000°,δ37.00000°,λ-74.00000°. Principal axes: T Plg9.0000°, Azm278.0000°; N Plg10.0000°, Azm186.0000°; P Plg77.0000°, Azm50.0000°;*

JMA Felt I J1.

ISC 11 21:29:27.9±0.9,36.89N±0.03×140.69E±0.05,h14km±7km, n22,σ1ᵗ18/25,mb3.3/5,4C-2D,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.23**	**23**	⇑P	**Pg**	**21 29 32.8**	**-0.1**
ONAJ				S	**Sg**	**21 29 36.4**	**0.0**
JHO	**Hitachi**	**0.30**	**199**	⇓P	**Pg**	**21 29 34.0**	**-0.1**
JHO				S	**Sg**	**21 29 38.1**	**-0.2**
JSB	**Shiboa**	**0.62**	**277**	⇑P	**Pb**	**21 29 40.4**	**-0.1**
JSB				S	**Sb**	**21 29 49.0**	**-0.1**
JFT	**Otama**	**0.69**	**336**	⇑P	**Pg**	**21 29 41.1**	**-0.2**
JFT				S	**Sg**	**21 29 50.2**	**-0.1**
JYT	**Yasato**	**0.77**	**211**	P	**Pb**	**21 29 42.4**	**-0.7**
JYT				S	**Sb**	**21 29 53.0**	**-0.5**
JFY	**Yanaizu**	**0.94**	**303**	⇑P	**Pb**	**21 29 45.4**	**-0.6**
JFY				S	**Sb**	**21 29 57.4**	**-0.9**
JMM	**Marumori**	**0.98**	**5**	⇓P	**Pb**	**21 29 45.9**	**-0.7**
JMM				S	**Sb**	**21 29 58.7**	**-0.6**
MJAR	**Matsushiro Arr**	**2.02**	**261**	Pn	**Pn**	**21 30 02.5**	**+0.9**
	23nm,0.3s,baz=93,slow=16,SNR=87						
MJAR				Sn	**Sb**	**21 30 28.3**	**-1.1**
	19nm,0.3s,baz=80,slow=27,SNR=13						
MAT	**Matsushiro**	**2.02**	**261**	P	**Pn**	**21 30 02.6**	**+1.0**
MAT				S	**Sb**	**21 30 30.1**	**+0.6**
JHJ	**Hachijo jima 2**	**3.84**	**191**	Pn	**Pn**	**21 30 29.0**	**+2.5**
	4.6nm,0.3s,baz=60,slow=20,SNR=2.2						
JHJ				Sn	**Sn**	**21 31 08.6**	**-2.8**
	8.4nm,0.3s,baz=63,slow=11,SNR=2.1						
USRK	**Ussuriysk Ar.**	**9.85**	**321**	Pn	Pn	21 31 55.3	+6.3
	0.3nm,0.3s,baz=123,slow=13,SNR=5.2						
SONM	**Songino Array**	**27.38**	**304**	P	**P**	**21 35 15.6**	**+2.7**
	0.3nm,0.6s,baz=99,slow=8.9,SNR=2.7						
H11N2	**WAKE ISLAND Hy**	**28.58**	**120**	T	T	22 05 10.4	
	baz=313,slow=75,SNR=40						
H11N1	**WAKE ISLAND Hy**	**28.59**	**120**	T	T	22 05 11.2	
	baz=313,slow=75,SNR=63						
H11N3	**WAKE ISLAND Hy**	**28.60**	**120**	T	T	22 05 11.9	
	baz=313,slow=75,SNR=33						
H11S1	**WAKE ISLAND Hy**	**29.27**	**122**	T	T	22 06 03.2	
	baz=314,slow=75,SNR=85						
H11S3	**WAKE ISLAND Hy**	**29.27**	**122**	T	T	22 06 02.9	
	baz=314,slow=75,SNR=78						
H11S2	**WAKE ISLAND Hy**	**29.29**	**122**	T	T	22 06 04.5	
	baz=314,slow=75,SNR=66						
ZALV	**Zalesovo Beam**	**41.58**	**313**	P	**P**	**21 37 14.9**	**-0.1**
	0.2nm,0.3s,baz=99,slow=8.9,SNR=2.5						
MKAR	**Makanchi Array**	**43.70**	**302**	P	**P**	**21 37 32.5**	**+0.1**
	0.1nm,0.6s,baz=84,slow=9.2,SNR=2.9						
WRA	**Warramunga Arr**	**56.84**	**187**	P	**P**	**21 39 10.9**	**-1.1**
	0.3nm,0.4s,baz=4.2,slow=7.3,SNR=15						
ASAR	**Alice Springs**	**60.57**	**187**	P	**P**	**21 39 37.7**	**-0.3**
	0.2nm,0.6s,baz=13,slow=8.6,SNR=3.9						

JMA 11 21:29:39.7±0.1,38.26N×141.89E,h59km±1km,M3.8, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**0.47**	**295**	P	Pn	21 29 51.3	+0.1
JIO				S	Sn	21 29 59.5	-0.1
OFUJ	**Ofunato**	**0.84**	**348**	P	Pn	21 29 55.8	+0.2
OFUJ				S	Sn	21 30 07.6	+0.3
JMK	**Ichinoseki**	**0.87**	**323**	P	Pn	21 29 56.3	+0.3
JMK				S	Sn	21 30 08.4	+0.4
JOM	**Ohasama**	**1.30**	**339**	P	Pn	21 30 02.0	+0.4
JOM				S	Sn	21 30 18.9	+0.8
MIYJ	**Miyakonagasawa**	**1.32**	**358**	P	Pn	21 30 01.9	0.0
MIYJ				S	Sn	21 30 18.4	-0.1
JYK	**Kaneyama**	**1.37**	**299**	P	Pn	21 30 02.8	+0.2
JYK				S	Sn	21 30 20.7	+1.0
JRG	**Rokugo**	**1.50**	**320**	P	Pn	21 30 05.0	+0.6
JRG				*e*S	Sn	21 30 24.5	+1.6
JKZ	**Kuzumaki**	**1.78**	**346**	P	Pn	21 30 08.7	+0.6
JKZ				*e*S	Sn	21 30 30.3	+0.6
JANG	**Nango**	**2.13**	**352**	P	Pn	21 30 12.6	-0.3

IDC 11 21:30:05.0±56.0,19.28S×177.58W,h0km,mb3.7/3, mb1 3.8/3,mb1mx3.5/35,mbtmp3.7/3,Error ellipse: s-maj=1034.0km s-min=168.0km az=81.0,Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
STKA	**Stephens Creek**	**38.68**	**243**	P	P	21 37 30.6	-0.1
	1.0nm,0.8s,baz=76,slow=8.3,SNR=1.4						
WRA	**Warramunga Arr**	**45.17**	**261**	P	P	21 38 24.2	+0.3
	0.3nm,0.3s,baz=96,slow=7.5,SNR=26						
ASAR	**Alice Springs**	**45.19**	**255**	P	P	21 38 23.4	-0.7
	0.6nm,0.5s,baz=96,slow=7.5,SNR=7.0						

CASC 11 21:34:28.3±2.8,9.74N×83.26W,h4km±9km,MD3.7,ML2.6, 3D,Costa Rica

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
URSC	**Urasca**	**0.52**	**280**	⇓*i*P	Pg	21 34 38.6	+0.3
URSC				*e*S	Sg	21 34 46.0	+1.0
BUS	**Buena Vista**	**0.52**	**249**	⇓*e*P	Pb	21 34 39.6	-0.8
BUS				*e*S	Sb	21 34 48.1	-0.3
QCR	**Quepos**	**0.94**	**251**	⇓*i*P	Pb	21 34 46.9	-0.3
QCR				*e*S	Sn	21 35 01.8	-0.5
BRU2	**Volcan**	**1.10**	**149**	*e*P	Pb	21 34 49.8	-0.1
BRU2				*e*S	Sb	21 35 04.6	-0.1
TBS2		**1.12**	**148**	*e*P	Pg	21 34 48.6	-1.1
TBS2				*e*S	Sg	21 35 04.2	0.0
JTS	**JuntasAbangare**	**1.75**	**288**	*e*P	Pn	21 34 59.0	-0.5
JTS				*e*S	Sb	21 35 23.4	0.0
JCR	**Jicaral**	**1.82**	**274**	*e*P	Pn	21 35 00.4	-0.1
JCR				*e*S	Sb	21 35 25.7	+0.1
VCR	**Vista de Mar**	**2.36**	**280**	*e*P	Pn	21 35 08.5	+0.5
VCR				*e*S	Sb	21 35 42.1	+1.0

ISCJB ***11*** *21:36:43.2±1.5,36.4N±0.1×68.57E±0.08,h24km,Error ellipse: s-maj=17.5km s-min=6.7km az=156.6*

NNC ***11*** *21:36:45.5±3.7,36.62N×68.45E,h0km,mb3.6,mpv3.3, Error ellipse: s-maj=31.7km s-min=24.0km az=161.0*

IDC ***11*** *21:36:48.1±14.0,37.09N×68.38E,h0km,mb3.5/1, mb1 3.3/3,mb1mx3.0/52,mbtmp3.3/3,ML2.9/2,Error ellipse: s-maj=293.8km s-min=28.0km az=164.0*

ISC 11 21:36:45.5±2.2,36.3N±0.2×68.60E±0.09,h24km,n9, σ1ᵗ65/15,7C-3D,Hindu Kush region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SFK	**Sufi-Kurgan**	**5.33**	**45**	⇑Pn	**Pn**	**21 38 04.7**	**+1.0**
	1.7nm,0.4s						
SFK				⇓Sn	**Sn**	**21 39 08.0**	**+3.6**
	5.1nm,0.4s						
MNAS	**Manas**	**6.84**	**25**	⇑Pn	**Pn**	**21 38 25.2**	**+0.8**
	0.8nm,0.4s						
MNAS				⇓Sn	**Sn**	**21 39 42.6**	**+1.0**
	1.8nm,0.4s						
KK31	**Karatay Array**	**6.91**	**12**	Pn	**Pn**	**21 38 26.9**	**+1.6**
	0.1nm,0.2s,baz=196,slow=15,SNR=9.1						
KK31				⇓Sn	**Sn**	**21 39 43.7**	**+0.6**
	0.9nm,0.5s,baz=198,slow=25,SNR=4.8						
AAK	**Ala-Archa**	**7.76**	**34**	⇑Pn	**Pn**	**21 38 37.5**	**+0.5**
	1.6nm,0.5s						
AAK				⇑Sn	**Sn**	**21 40 04.9**	**+0.6**
	6.6nm,0.8s						
TKM2	**Tokmak 2**	**8.50**	**37**	⇑Pn	**Pn**	**21 38 46.8**	**-0.4**
	1.8nm,0.4s						
TKM2				⇑Sn	**Sn**	**21 40 21.3**	**-1.2**
	1.8nm,0.7s						
GEYT	**Alibeck**	**8.52**	**284**	Pn	**Pn**	**21 38 48.4**	**+1.1**
	0.3nm,0.3s,baz=115,slow=13,SNR=1.5						
GEYT				Sn	**Sn**	**21 40 23.4**	**+0.7**
	0.5nm,0.3s,baz=128,slow=21,SNR=3.0						
AB31	**Akbulak array**	**14.37**	**337**	⇑Pn	**Pn**	**21 40 04.9**	**-2.4**
	0.4nm,0.5s,baz=155,slow=12,SNR=5.2						
MKAR	**Makanchi Array**	**14.61**	**40**	Pn	**Pn**	**21 40 08.7**	**-1.9**
	0.0nm,0.3s,baz=226,slow=7.2,SNR=2.7						
ZALV	**Zalesovo Beam**	**20.91**	**28**	P	**P**	**21 41 25.2**	**-0.8**
	1.0nm,0.3s,baz=222,slow=9.0,SNR=6.0						

NIED ***11*** *21:38:00,39.40N×142.70E,h62km,Mw4.3 Best double couple: M₀3.59000×10¹⁵ NP1:φₛ8.00000°,δ27.00000°, λ-169.00000°. NP2:φₛ268.00000°

JFT	**Otama**	**0.67**	**335**	P	Pg	21 59 13.9	+0.1
JFT				S	Sg	21 59 23.0	+0.5
JMM	**Marumori**	**0.96**	**5**	P	Pg	21 59 18.9	-0.4
JMM				S	Sg	21 59 31.5	-0.3
MAT	**Matsushiro**	**2.03**	**260**	P	Pn	21 59 36.4	+0.9
MAT				S	Sb	22 00 03.3	-0.2

NIED **11** *22:03:00,37.00N×140.70E,h5km,Mw4.2 Best double couple: M₀2.06000×10¹⁵ NP1:φs65.00000°,δ31.00000°, λ-113.00000°. NP2:φs271.00000°,δ62.00000°, λ-77.00000°.*

ISCJB **11** *22:03:17.1±0.4,37.02N±0.02×140.62E±0.04,h21km±2km, mb4.4/65,MS3.4/4,Error ellipse: s-maj=5.0km s-min=3.9km az=14.8*

JMA **11** *22:03:17.2,37.01N×140.61E,h9km±1km,M4.3 Broadband fault plane solution: P waves. NP1: φs283.00000°,δ67.00000°,λ-71.00000°. NP2:φs62.00000°, δ29.00000°,λ-128.00000°. Principal axes: T Plg20.0000°, Azm359.0000°; N Plg18.0000°, Azm96.0000°; P Plg63.0000°, Azm224.0000°;*

JMA Felt III J1.

BJI **11** *22:03:17.8,36.81N×140.39E,h29km,mb4.5/14,mB4.7/7, Ms4.4/3,Ms7 4.4/3*

MOS **11** *22:03:18.4±1.0,36.99N×140.54E,h31km,mb4.5/45,Error ellipse: s-maj=9.9km s-min=6.1km az=111.1*

IDC **11** *22:03:23.1±1.6,36.99N×140.43E,h54km±15km,mb4.0/33, mb1 4.1/36,mb1mx4.0/60,mbtmp4.2/36,ML3.6/3,MS3.1/6, Ms1 3.1/6,ms1mx2.9/45,Error ellipse: s-maj=13.2km s-min=8.7km az=81.0*

NEIC **11** *22:03:23.0±0.7,36.98N×140.40E,h54km±6km,mb4.5/11, Error ellipse: s-maj=6.5km s-min=4.8km az=86.0*

NEIC Recorded [3 JMA] in Fukushima.

ISC 11 22:03:17.7±0.9,**37.02N**±0.03×**140.54E**±0.04,**h13km**±5km, **n133,**σ1**20**/136,**mb4.4**/65,**MS3.2**/4,**11C-3D,Eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time	Res
ONAJ	**Iwakimizuishiy**	**0.22**	**69**	P			**Pg**	**22 03 21.0**	**-1.6**
ONAJ				S			**Sg**	**22 03 24.0**	**-1.9**
JHO	**Hitachi**	**0.41**	**177**	⇑P			**Pg**	**22 03 25.0**	**-0.9**
JHO				S			**Sg**	**22 03 30.5**	**-0.9**
JSB	**Shiboa**	**0.50**	**264**	⇓P			**Pb**	**22 03 28.7**	**+0.3**
JSB				S			**Sb**	**22 03 36.4**	**+0.8**
JFT	**Otama**	**0.52**	**342**	⇑P			**Pg**	**22 03 28.1**	**+0.1**
JFT				S			**Sb**	**22 03 35.8**	**-0.5**
JFY	**Yanaizu**	**0.77**	**300**	⇑P			**Pb**	**22 03 33.0**	**0.0**
JFY				S			**Sb**	**22 03 43.7**	**+0.3**
JYT	**Yasato**	**0.84**	**199**	⇑P			**Pg**	**22 03 33.7**	**-0.3**
JMM	**Marumori**	**0.87**	**13**	⇑P			**Pg**	**22 03 33.3**	**-1.2**
MJAR	**Matsushiro Arr**	**1.93**	**256**	P			**Pb**	**22 03 51.7**	**-1.1**
	112nm,0.3s,baz=79,slow=16,SNR=594								
MJAR				S			**Sb**	**22 04 17.4**	**+0.6**
	175nm,0.3s,baz=90,slow=26,SNR=25								
MAJO	**Matsushiro**	**1.93**	**256**	*e*P			**Pb**	**22 03 51.9**	**-1.0**
MAJO				*e*				22 04 13.1	
MAJO	**Matsushiro**	**1.93**	**256**	*e*Pn			**Pb**	**22 03 51.9**	**-1.0**
MAJO				*e*Sn			**Sn**	**22 04 13.1**	**-1.4**
MAT	**Matsushiro**	**1.93**	**256**	P			**Pb**	**22 03 52.0**	**-0.8**
MAT				S			**Sg**	**22 04 18.5**	**-1.4**
JHJ	**Hachijo jima 2**	**3.94**	**189**	P			**Pn**	**22 04 20.4**	**+2.5**
	31nm,0.3s,baz=294,slow=22,SNR=3.9								
JHJ				S			**Sn**	**22 05 05.4**	**+1.3**
	45nm,0.3s,baz=78,slow=23,SNR=4.3								
JHJ2	**Mitsune**	**3.94**	**189**	*e*Pn			**Pn**	**22 04 20.2**	**+2.2**
JHJ2				*e*Sn			**Sn**	**22 05 04.6**	**+0.5**
ERM	**Erimo**	**5.38**	**21**	*e*P			**Pn**	**22 04 39.4**	**+1.7**
JNU	**Nakatsue**	**8.82**	**247**	P			**Pn**	**22 05 27.9**	**+2.8**
	0.5nm,0.3s,baz=84,slow=6.2,SNR=8.8								
JNU				LR			LR	22 09 02.4	
	comp=Z,197nm,22.0s,baz=115,slow=39								
JNU	**Nakatsue**	**8.82**	**247**	*e*Pn			**Pn**	**22 05 26.7**	**+1.7**
	14nm,1.0s								
USRK	**Ussuriysk Ar.**	**9.67**	**320**	P			Pn	22 05 42.0	+5.4
	0.7nm,0.3s,baz=131,slow=12,SNR=32								
USRK				LR			LR	22 09 06.9	
	comp=Z,108nm,20.5s,baz=118,slow=36								
YSS	**Yuzh-Sakhalins**	**10.06**	**9**	⇑*e*P			**Pn**	**22 05 42.5**	**+0.6**
YSS				pmax		pmax			
	comp=Z,30nm,0.9s								
YSS				MLR		MLR			
	comp=Z,300nm,15.0s								
KSRS	**Korea Array**	**10.07**	**276**	P			Pn	22 05 49.0	+6.9
	comp=Z,0.3nm,0.3s,baz=94,slow=13,SNR=51								
KSRS				LR			LR	22 09 15.8	
	comp=Z,52nm,19.3s,baz=120,slow=35								
KSRS	**Korea Array**	**10.07**	**276**	P			Pn	22 05 49.0	+7.0
KSRS				MLR		MLR			
	comp=Z,52nm,19.3s								
KSAR	**Wonju Array Be**	**10.10**	**276**	P			Pn	22 05 49.0	+6.5
KSAR	**Wonju Array Be**	**10.10**	**276**	P			Pn	22 05 49.0	+6.5
KLR	**Kul'dur**	**13.77**	**335**	P			**Pn**	**22 06 35.1**	**+2.5**
	comp=Z,0.2nm,0.3s,baz=145,slow=12,SNR=4.7								
KLR				LR			LR	22 11 37.1	
	comp=Z,98nm,19.9s,baz=152,slow=36								
PETK	**Petropavlovsk-**	**20.05**	**31**	LR			LR	22 16 39.8	
	comp=Z,34nm,18.4s,baz=220,slow=40								
YAK	**Yakutsk**	**25.93**	**348**	LR			LR	22 20 05.5	
	comp=Z,64nm,18.1s,baz=210,slow=39								
YAK	**Yakutsk**	**25.93**	**348**	*e*P			**P**	**22 08 50.9**	**+1.5**
YAK				pmax		pmax			
	comp=Z,9.0nm,0.6s								
ENH	**Enshi**	**26.63**	**265**	*e*P			**P**	**22 08 54.5**	**-1.7**
	comp=Z,12nm,0.8s								
ULN	**Ulaanbaatar**	**26.78**	**304**	*ce*P			**P**	**22 08 57.7**	**+0.2**
ULN				pmax		pmax			
	comp=Z,5.0nm,1.2s								
ULN	**Ulaanbaatar**	**26.78**	**304**	*e*P			**P**	**22 08 57.1**	**-0.4**
	comp=Z,3.7nm,0.9s								
SEY	**Seymchan**	**26.94**	**12**	P			**P**	**22 09 01.4**	**+2.8**
	comp=Z,1.8nm,0.7s,baz=190,slow=5.8,SNR=6.9								
BOD	**Bodaibo**	**27.17**	**328**	*e*P			**P**	**22 08 59.0**	**-1.7**
BOD				pmax		pmax			
	comp=Z,3.0nm,0.8s								
SONM	**Songino Array**	**27.21**	**304**	P			**P**	**22 09 00.6**	**-0.7**
	comp=Z,4.7nm,0.8s,baz=105,slow=8.8,SNR=26								
SONM				PcP			**PcP**	**22 12 21.6**	**+0.4**
	comp=Z,0.5nm,0.5s,baz=182,slow=2.2,SNR=5.0								
H11N2	**WAKE ISLAND Hy**	**28.75**	**120**	T			T	22 39 01.1	
	baz=313,slow=75,SNR=235								
H11N1	**WAKE ISLAND Hy**	**28.75**	**120**	T			T	22 39 04.9	
	baz=313,slow=75,SNR=252								
H11N3	**WAKE ISLAND Hy**	**28.76**	**120**	T			T	22 39 02.5	
	baz=313,slow=75,SNR=185								
H11S1	**WAKE ISLAND Hy**	**29.44**	**122**	T			T	22 39 55.1	
	baz=314,slow=76,SNR=556								
H11S3	**WAKE ISLAND Hy**	**29.45**	**122**	T			T	22 39 54.0	
	baz=314,slow=76,SNR=361								
H11S2	**WAKE ISLAND Hy**	**29.46**	**122**	T			T	22 39 59.1	
	baz=314,slow=76,SNR=296								
ZAK	**Zakamensk**	**29.73**	**309**	*e*P			**P**	**22 09 22.3**	**-1.4**
ZAK				pmax		pmax			
	comp=Z,2.0nm,1.0s								
GTA	**Gaotai**	**31.90**	**287**	*e*P			**P**	**22 09 42.1**	**-0.9**
GTA				pP		pP		22 09 46.6	-0.3
GTA				pmax		pmax			
	comp=Z,2.0nm,0.7s								
BILL	**Bilibino**	**34.24**	**17**	⇑*e*P			**P**	**22 10 04.0**	**+1.1**
BILL				*e*				22 11 21.4	
BILL				pmax		pmax			
	comp=Z,6.0nm,1.7s								
BILL				MLR		MLR			
	comp=Z,62nm,22.0s								
TIXI	**Tiksi**	**35.22**	**354**	P			**P**	**22 10 12.0**	**+0.6**
	comp=Z,1.3nm,0.5s,baz=131,slow=4.5,SNR=3.0								
TIXI	**Tiksi**	**35.22**	**354**	*i* P			**P**	**22 10 11.9**	**+0.6**
TIXI				pmax		pmax			
	comp=Z,2.0nm,0.8s								
CMAR	**Chiang Mai Arr**	**40.82**	**255**	P			**P**	**22 10 58.6**	**-0.6**
	comp=Z,0.9nm,0.6s,baz=46,slow=8.0,SNR=11								
ZALV	**Zalesovo Beam**	**41.41**	**312**	P			**P**	**22 11 03.4**	**-0.2**
	comp=Z,3.2nm,0.6s,baz=86,slow=6.5,SNR=13								
ZALV				PcP			**PcP**	**22 13 00.9**	**-0.5**
	comp=Z,1.2nm,0.4s,baz=95,slow=3.4,SNR=6.1								
ZALV				ScP			**ScP**	**22 16 44.9**	**-6.2**
	comp=Z,0.2nm,0.3s,baz=170,slow=2.6,SNR=2.1								
LSA	**Lhasa**	**41.51**	**275**	*e*P			**P**	**22 11 04.6**	**-0.7**
LSA				pmax		pmax			
	comp=Z,3.0nm,0.8s								
LSA	**Lhasa**	**41.51**	**275**	*e*P			**P**	**22 11 04.6**	**-0.7**
	comp=Z,2.5nm,0.8s								

NRIK	**Noril'sk**	**42.99**	**335**	P			**P**	**22 11 16.7**	**+0.4**
	comp=Z,3.4nm,0.6s,baz=103,slow=7.4,SNR=5.1								
MKAR	**Makanchi Array**	**43.53**	**302**	P			**P**	**22 11 21.3**	**+0.3**
	comp=Z,1.6nm,0.6s,baz=88,slow=9.9,SNR=32								
MKAR				PcP			**PcP**	**22 13 08.5**	**-0.2**
	comp=Z,0.9nm,0.8s,baz=72,slow=7.8,SNR=4.2								
TAPN	**Taplejung**	**45.24**	**274**	*e*P			**P**	**22 11 35.2**	**-0.1**
	comp=Z,8.9nm,0.9s								
KURK	**Kurchatov**	**45.39**	**308**	*e*P			**P**	**22 11 35.4**	**-0.4**
KURK				pmax		pmax			
	comp=Z,23nm,0.8s								
KURK	**Kurchatov**	**45.39**	**308**	*e*P			**P**	**22 11 35.4**	**-0.4**
	comp=Z,23nm,0.8s								
KURBB	**Kurchatov Arra**	**45.46**	**308**	P			**P**	**22 11 36.0**	**-0.3**
	comp=Z,7.3nm,0.7s,baz=84,slow=8.0,SNR=43								
ODAN	**Odare**	**45.72**	**273**	*e*P			**P**	**22 11 38.9**	**-0.1**
PDGK	**Podgornoye**	**46.16**	**298**	P			**P**	**22 11 42.6**	**+0.6**
PDGK				pmax		pmax			
	comp=Z,5.0nm,1.0s								
RAMN	**Ramite**	**46.31**	**274**	*e*P			**P**	**22 11 43.4**	**-0.3**
	comp=Z,22nm,0.8s								
GUN	**Gumba**	**46.46**	**275**	*e*P			**P**	**22 11 44.7**	**-0.3**
	comp=Z,8.3nm,0.5s								
KKN	**Kakani**	**46.99**	**275**	*e*P			**P**	**22 11 48.8**	**-0.2**
	comp=Z,4.8nm,0.5s								
GKN	**Gorkha**	**47.41**	**276**	*e*P			**P**	**22 11 51.8**	**-0.4**
	comp=Z,21nm,0.7s								
KOLN	**Koldanda**	**48.34**	**276**	*e*P			**P**	**22 11 59.4**	**0.0**
PYUN	**Piuthan**	**48.68**	**277**	*e*P			**P**	**22 12 02.1**	**+0.1**
TKM2	**Tokmak 2**	**49.02**	**298**	*e*P			**P**	**22 12 05.3**	**+0.8**
TKM2				pmax		pmax			
	comp=Z,3.0nm,0.6s								
TKM2	**Tokmak 2**	**49.02**	**298**	*e*P			**P**	**22 12 05.3**	**+0.8**
	comp=Z,3.4nm,0.6s								
BATI	**Baumata**	**49.58**	**202**	P			**P**	**22 12 09.5**	**+0.8**
	comp=Z,7.1nm,0.5s,baz=133,slow=24,SNR=2.8								
OTUK	**Ortayu**	**49.87**	**306**	P			**P**	**22 12 10.6**	**0.0**
AAK	**Ala-Archa**	**49.88**	**298**	P			**P**	**22 12 11.4**	**+0.4**
	comp=Z,1.5nm,0.5s,baz=74,slow=3.3,SNR=7.4								
AAK	**Ala-Archa**	**49.88**	**298**	*i* P			**P**	**22 12 10.4**	**-0.6**
AAK				pmax		pmax			
	comp=Z,4.0nm,0.9s								
ILAR	**Eielson Array**	**49.88**	**32**	P			**P**	**22 12 10.8**	**+0.3**
	comp=Z,1.3nm,0.7s,baz=262,slow=4.7,SNR=12								
BVAR	**Borovoye Array**	**50.06**	**312**	P			**P**	**22 12 11.9**	**-0.1**
	comp=Z,1.5nm,0.6s,baz=76,slow=6.3,SNR=9.6								
BVAR				PcP			**PcP**	**22 13 31.5**	**-0.2**
	comp=Z,1.1nm,0.7s,baz=38,slow=2.6,SNR=3.9								
BRVK	**Borovoye**	**50.12**	**312**	*ce*P			**P**	**22 12 13.5**	**+1.1**
BRVK				pmax		pmax			
	comp=Z,5.0nm,1.2s								
MNAS	**Manas**	**51.33**	**299**	P			**P**	**22 12 22.6**	**+0.7**
MNAS				pmax		pmax			
	comp=Z,6.0nm,0.8s								
SFK	**Sufi-Kurgan**	**51.41**	**295**	P			**P**	**22 12 23.1**	**+0.4**
SFK				pmax		pmax			
	comp=Z,7.0nm,0.9s								
KKAR	**Karatay Array**	**52.52**	**300**	*e*P			**P**	**22 12 29.6**	**-1.1**
KKAR				pmax		pmax			
	comp=Z,1.0nm,0.6s								
KKAR	**Karatay Array**	**52.52**	**300**	*e*P			**P**	**22 12 29.6**	**-1.1**
	comp=Z,1.5nm,0.6s								
GSI	**Gunungsitoli**	**53.20**	**238**	*e*P			**P**	**22 12 34.8**	**-1.1**
	comp=Z,43nm,1.1s								
SVE	**Sverdlovsk**	**54.69**	**318**	⇓*i* P			**P**	**22 12 46.7**	**+0.4**
SVE				pmax		pmax			
	comp=Z,13nm,0.9s								
INK	**Inuvik**	**54.72**	**27**	P			**P**	**22 12 46.8**	**+0.5**
	comp=Z,1.2nm,0.8s,baz=60,slow=3.3,SNR=3.4								
ARU	**Arti**	**55.91**	**318**	P			**P**	**22 12 54.8**	**-0.3**
	comp=Z,5.9nm,0.7s,baz=87,slow=0.2,SNR=11								
ARU	**Arti**	**55.91**	**318**	*d* iP			**P**	**22 12 54.5**	**-0.6**
ARU								22 14 57.6	
ARU				S			**S**	**22 20 41.1**	**-1.1**
ARU				SS			**SS**	**22 24 25.5**	**-2.0**
ARU				pmax		pmax			
	comp=Z,12nm,1.2s								
FITZ	**Fitzroy Crossi**	**56.60**	**197**	P			**P**	**22 13 00.6**	**+0.3**
	comp=Z,3.8nm,0.8s,baz=355,slow=8.5,SNR=7.9								
FITZ	**Fitzroy Crossi**	**56.60**	**197**	*e*P			**P**	**22 13 00.5**	**+0.1**
	comp=Z,4.6nm,0.9s								
KBL	**Kabul**	**56.77**	**291**	P			**P**	**22 13 02.3**	**+0.5**
KBL				pmax		pmax			
	comp=Z,6.0nm,1.0s								
WRAB	**Tennant Creek**	**56.95**	**187**	*ce*P			**P**	**22 13 02.8**	**0.0**
WRAB				pmax		pmax			
	comp=Z,22nm,1.0s								
WRAB	**Tennant Creek**	**56.95**	**187**	*e*P			**P**	**22 13 01.9**	**-0.9**
	comp=Z,7.6nm,0.8s								
WRA	**Warramunga Arr**	**56.96**	**187**	P			**P**	**22 13 02.1**	**-0.8**
	comp=Z,1.0nm,0.7s,baz=4.6,slow=7.4,SNR=90								
CTA	**Charters Tower**	**57.06**	**174**	P			**P**	**22 13 02.8**	**-0.8**
	comp=Z,1.1nm,0.4s,baz=354,slow=10,SNR=3.6								
ABKAR	**Akbulak array**	**57.41**	**310**	*e*P			**P**	**22 13 05.9**	**0.0**
	comp=Z,4.6nm,0.6s								
AKTO	**Aktyubinsk**	**58.16**	**312**	P			**P**	**22 13 11.4**	**+0.3**
	comp=Z,2.7nm,0.8s,baz=58,slow=13,SNR=6.3								
ASAR	**Alice Springs**	**60.69**	**187**	P			**P**	**22 13 28.6**	**-0.2**
	comp=Z,3.7nm,0.7s,baz=11,slow=6.6,SNR=35								
RES	**Resolute Bay**	**62.79**	**14**	P			**P**	**22 13 42.1**	**-0.2**
	comp=Z,1.6nm,0.5s,baz=301,slow=8.6,SNR=7.3								
GEYT	**Alibeck**	**63.23**	**299**	P			**P**	**22 13 45.7**	**-0.2**
	comp=Z,4.2nm,0.8s,baz=29,slow=3.4,SNR=9.0								
ARCES	**ARCESS Array B**	**63.76**	**339**	P			**P**	**22 13 48.4**	**-0.5**
	comp=Z,2.9nm,0.7s,baz=54,slow=8.2,SNR=11								
YKA	**Yellowknife Ar**	**64.17**	**30**	P			**P**	**22 13 51.3**	**-0.3**
	comp=Z,0.6nm,0.7s,baz=304,slow=6.7,SNR=12								
VRH	**Novokhopyorsk**	**67.12**	**318**	*e*P			**P**	**22 14 11.2**	**+0.3**
VRH				pmax		pmax			
	comp=Z,9.0nm,0.6s								
OBN	**Obninsk**	**67.69**	**323**	⇑*e*P			**P**	**22 14 14.2**	**-0.2**
OBN				*e*				22 16 47.3	
OBN				pmax		pmax			
	comp=Z,8.0nm,1.1s								
OBN				MLR		MLR			
	comp=Z,125nm,16.0s								
LPSR	**Galich'ya Gora**	**67.86**	**320**	*e*P			**P**	**22 14 14.7**	**-0.8**
LPSR				pmax		pmax			
	comp=Z,3.0nm,0.6s								
VSR	**Storozhevoye**	**68.48**	**318**	*e*P			**P**	**22 14 17.7**	**-1.8**
VSR				pmax		pmax			
	comp=Z,5.0nm,0.5s								
FINES	**FINESS Array B**	**68.50**	**332**	P			**P**	**22 14 18.9**	**-0.5**
	comp=Z,5.1nm,0.7s,baz=64,slow=8.7,SNR=16								
STKA	**Stephens Creek**	**68.55**	**179**	P			**P**	**22 14 19.2**	**-0.7**
	comp=Z,3.5nm,0.8s,baz=351,slow=6.0,SNR=5.9								
KBZ	**Khabaz**	**70.38**	**310**	P			**P**	**22 14 31.4**	**+0.1**
	comp=Z,1.9nm,0.7s,baz=9.6,slow=3.1,SNR=6.7								
KIV	**Kislovodsk**	**70.38**	**311**	*e*P			**P**	**22 14 31.4**	**-0.1**
KIV				pmax		pmax			
	comp=Z,8.0nm,1.0s								
AKASG	**Malin Array Be**	**73.88**	**322**	P			**P**	**22 14 51.2**	**-1.0**
	comp=Z,1.7nm,0.6s,baz=47,slow=5.9,SNR=14								
KIEV	**Kiev**	**73.89**	**322**	*e*P			**P**	**22 14 50.7**	**-1.5**
KIEV				pmax		pmax			
	comp=Z,4.0nm,0.8s								
KIEV	**Kiev**	**73.89**	**322**	*e*P			**P**	**22 14 50.7**	**-1.5**
	comp=Z,3.6nm,0.8s								
NB2	**NORSAR Subarra**	**73.93**	**337**	P			**P**	**22 14 52.1**	**-0.2**
	comp=Z,2.8nm,0.8s,baz=41,slow=5.9								
NOA	**NORSAR Array B**	**73.93**	**337**	P			**P**	**22 14 52.2**	**-0.1**
	comp=Z,2.4nm,0.8s,baz=38,slow=5.8,SNR=8.6								
FFC	**Flin Flon**	**74.09**	**32**	P			**P**	**22 14 55.5**	**+2.1**
FFC				pmax		pmax			
	comp=Z,6.0nm,2.1s								
NVAR	**Mina Array Bea**	**75.55**	**53**	P			**P**	**22 15 03.4**	**+0.9**
	comp=Z,2.0nm,0.8s,baz=293,slow=5.5,SNR=10								
DUG	**Dugway, Tooele**	**77.89**	**49**	P			P	22 15 20.0	+4.5
DUG				pmax		pmax			
	comp=Z,7.0nm,2.6s								
PDAR	**Pinedale Array**	**78.17**	**45**	P			**P**	**22 15 17.6**	**+0.5**
	comp=Z,0.6nm,0.7s,baz=256,slow=3.7,SNR=6.7								
BRTR	**Keskin Array B**	**78.33**	**311**	P			**P**	**22 15 18.0**	**0.0**
	comp=Z,0.9nm,0.5s,baz=92,slow=4.2,SNR=6.6								
OJC	**Ojcow**	**78.66**	**326**	P			**P**	**22 15 22.1**	**+2.7**
OJC				pmax		pmax			
	comp=Z,10.0nm,0.9s								
CRVS	**Cervenica-Dubn**	**78.82**	**324**	*e*P			**P**	**22 15 23.0**	**+2.7**
CRVS	**Cervenica-Dubn**	**78.82**	**324**	*e*P			**P**	**22 15 23.0**	**+2.7**
DPC	**Dobruska-Polom**	**80.09**	**327**	*e*P			**P**	**22 15 28.0**	**+0.7**
DPC	**Dobruska-Polom**	**80.09**	**327**	*e*P			**P**	**22 15 28.0**	**+0.7**
KRLC	**Kraliky**	**80.10**	**327**	*e*P			**P**	**22 15 27.8**	**+0.5**
KRLC	**Kraliky**	**80.10**	**327**	*e*P			**P**	**22 15 27.8**	**+0.5**
BRG	**Berggiesshubel**	**80.70**	**329**	*e*(P)			**P**	**22 15 30.8**	**+0.3**
	comp=Z,1.7nm,0.9s								
BRG	**Berggiesshubel**	**80.70**	**329**	*e*P			**P**	**22 15 30.8**	**+0.3**
BRG				pmax		pmax			
	comp=Z,1.0nm,0.9s								
CLL	**Collm**	**80.76**	**330**	*i* P			**P**	**22 15 30.4**	**-0.3**
	comp=Z,5.0nm,0.8s								
CLL	**Collm**	**80.76**	**330**	*i* P			**P**	**22 15 30.4**	**-0.3**
CLL				pmax		pmax			
	comp=Z,5.0nm,0.8s								
PRU	**Pruhonice**	**81.12**	**328**	*e*P			**P**	**22 15 32.8**	**+0.1**
PRU	**Pruhonice**	**81.12**	**328**	*e*P			**P**	**22 15 32.8**	**+0.1**
PV01	**Paradox Valley**	**81.74**	**48**	*e*P			**P**	**22 15 37.0**	**+0.5**
	comp=Z,621nm,1.4s								
KHC	**Kasperske Hory**	**82.19**	**328**	*e*P			**P**	**22 15 40.5**	**+2.1**
KHC	**Kasperske Hory**	**82.19**	**328**	*e*P			**P**	**22 15 40.5**	**+2.1**
GERES	**GERESS Array B**	**82.35**	**328**	P			**P**	**22 15 39.1**	**-0.2**
	comp=Z,0.8nm,0.5s,baz=37,slow=5.9,SNR=9.4								
BFO	**Black Forest**	**84.97**	**330**	*i* P			**P**	**22 15 55.1**	**+2.4**
ANMO	**Albuquerque**	**85.13**	**49**	*e*P			**P**	**22 15 55.1**	**+1.1**
ANMO				pmax		pmax			
	comp=Z,5.0nm,1.2s								
TXAR	**Lajitas Array**	**90.68**	**52**	P			**P**	**22 16 20.8**	**+0.2**
	comp=Z,0.7nm,0.6s,baz=320,slow=3.3,SNR=5.8								
TORD	**Torodi Ar. Bea**	**116.84**	**314**	PKP			**PKPdf**	**22 22 01.2**	**-1.4**
	comp=Z,0.5nm,0.9s,baz=281,slow=1.5,SNR=6.5								
LPAZ	**La Paz**	**147.30**	**59**	PKPbc			**PKPbc**	**22 23 02.8**	**+0.5**
	comp=Z,2.1nm,0.5s,baz=307,slow=2.4,SNR=9.8								

CSEM **11** *22:06:14.2,45.77N×14.85E,h0km,ML0.5*

LJU 11 22:06:14.2,45.77N×14.85E,h2km,ML0.5,2D, Northwestern Balkan Peninsula

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time	Res
VISS	**Visnje**	**0.04**	**347**	⇓*i* P			Pg	22 06 15.0	0.0
VISS				*i* Sg			Sg	22 06 15.7	+0.2
	comp=Z,18nm,0.0s								
VISS	**Visnje**	**0.04**	**347**	⇓*i* Pg			Pg	22 06 15.0	0.0
VISS				*i* Sg			Sg	22 06 15.7	+0.2
	comp=Z,18nm,0.0s								
GBRS	**Gornja Briga**	**0.24**	**187**	*i* Pg			Pg	22 06 19.0	+0.2
	comp=Z,1.0nm,0.0s								
CEY	**Cerknica**	**0.30**	**264**	*i* Pg			Pg	22 06 20.3	+0.3
CEY	**Cerknica**	**0.30**	**264**	*i* Pg			Pg	22 06 20.3	+0.4
GBAS	**Gorenja Brezov**	**0.33**	**300**	*i* Pg			Pg	22 06 20.8	+0.2
GBAS	**Gorenja Brezov**	**0.33**	**300**	*i* Pg			Pg	22 06 20.8	+0.2
CRES	**Cresnjev**	**0.43**	**82**	*i* Pg			Pg	22 06 22.9	+0.5
CRES				*i* Sg			Sg	22 06 28.6	+0.7
CRES	**Cresnjev**	**0.43**	**82**	*i* Pg			Pg	22 06 22.9	+0.5
CRES				*i* Sg			Sg	22 06 28.6	+0.6

NIED **11** *22:15:00,37.00N×140.70E,h5km,Mw3.4 Best double couple: M₀1.39000×10¹⁴ NP1:φs57.00000°,δ37.00000°, λ-80.00000°. NP2:φs225.00000°,δ54.00000°, λ-97.00000°.*

IDC **11** *22:15:11.2±0.9,37.02N×140.72E,h0km,mb3.4/6, mb1 3.6/7,mb1mx3.5/48,mbtmp3.4/7,ML3.4/1,MS2.9/1, Ms1 2.9/1,ms1mx2.2/26,Error ellipse: s-maj=24.3km s-min=21.5km az=145.0*

ISCJB **11** *22:15:12.0±0.7,37.00N±0.03×140.79E±0.06,h15km±5km, mb3.4/6,Error ellipse: s-maj=7.9km s-min=5.6km az=10.5*

JMA **11** *22:15:12.8,37.00N×140.69E,h7km±2km,M3.5 Broadband fault plane solution: P waves. NP1: φs51.00000°,δ62.00000°,λ-93.00000°. NP2:φs237.00000°, δ28.00000°,λ-84.00000°. Principal axes: T Plg17.0000°, Azm143.0000°; N Plg3.0000°, Azm52.0000°; P Plg73.0000°, Azm313.0000°;*

JMA Felt I J1.

ISC 11 22:15:12.5±1.0,**37.02N

H11S1	**WAKE ISLAND Hy**	**28.77**	**125**	T	T	22 53 19.5	
	baz=317,slow=76,SNR=34						
H11S3	**WAKE ISLAND Hy**	**28.77**	**125**	T	T	22 53 19.0	
	baz=317,slow=76,SNR=37						
H11S2	**WAKE ISLAND Hy**	**28.79**	**125**	T	T	22 53 20.1	
	baz=317,slow=76,SNR=26						
MKAR	**Makanchi Array**	**44.23**	**302**	P	**P**	**22 25 60.0**	**-0.4**
	0.3nm,0.8s,baz=90,slow=8.3,SNR=3.6						
ILAR	**Eielson Array**	**48.77**	**33**	P	P	22 26 26.6	-9.0
	0.1nm,0.4s,baz=272,slow=7.8,SNR=2.6						
WRA	**Warramunga Arr**	**57.68**	**189**	P	P	22 27 35.6	-6.0
	0.4nm,1.0s,baz=6.9,slow=7.0,SNR=5.4						

IDC 11 22:19:14.9±4.3, 5.74S×149.29E, h0km, mb3.0/2, mb1 3.5/2, mb1mx3.2/34, mbtmp3.2/2, Error ellipse: s-maj=149.3km s-min=54.7km az=113.0, New Britain region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PMG	**Port Moresby**	**4.21**	**210**	Sn	Sn	22 21 07.5	-2.9
	3.8nm,0.3s,baz=158,slow=18,SNR=6.3						
WRA	**Warramunga Arr**	**20.26**	**224**	P	P	22 23 52.1	-0.1
	0.7nm,0.5s,baz=50,slow=11,SNR=4.2						
ASAR	**Alice Springs**	**23.18**	**218**	P	P	22 24 23.4	0.0
	0.3nm,0.7s,baz=50,slow=11,SNR=2.6						
TORD	**Torodi Ar. Bea**	**147.22**	**285**	PKPbc	PKPbc	22 39 00.5	-0.8
	0.6nm,1.0s,baz=93,slow=2.9,SNR=3.0						

IDC 11 22:22:44.8±2.3, 36.94N×140.73E, h0km, mb3.3/2, mb1 3.5/2, mb1mx3.2/34, mbtmp3.3/2, Error ellipse: s-maj=28.8km s-min=21.0km az=2.0

JMA 11 22:22:47.5, 36.97N×140.71E, h10km±1km, M3.9

JMA Felt II J1.

ISC 11 22:22:45.7±1.8, 36.93N±0.09×140.7E±0.1, h10km, n6, σ0.96/9, 1C, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JHO	**Hitachi**	**0.34**	**201**	⇑P	**Pn**	**22 22 55.0**	**-1.7**
JHO				S	**Sb**	**22 23 00.3**	**+1.0**
JSB	**Shiboa**	**0.64**	**274**	P	**Pn**	**22 23 00.5**	**-0.4**
JSB				*e*S	**Sb**	**22 23 08.4**	**+0.3**
JYT	**Yasato**	**0.82**	**211**	P	**Pn**	**22 23 03.1**	**-0.2**
JYT				S	**Sn**	**22 23 15.4**	**0.0**
MJAR	**Matsushiro Arr**	**2.06**	**260**	Pg	**Pb**	**22 23 22.8**	**-0.3**
	11nm,0.3s,baz=82,slow=17,SNR=12						
MJAR				Lg	Lg	22 23 49.3	
	41nm,0.3s,baz=78,slow=30,SNR=17						
MKAR	**Makanchi Array**	**43.70**	**302**	P	**P**	**22 30 50.7**	**-0.2**
	0.1nm,0.6s,baz=89,slow=7.9,SNR=1.4						
WRA	**Warramunga Arr**	**56.88**	**187**	P	**P**	**22 32 31.9**	**+1.1**
	0.3nm,0.5s,baz=4.2,slow=7.2,SNR=2.2						

NIED 11 22:26:00, 36.80N×138.60E, h8km, Mw5.4 Best double couple: M0 1.42000×10^17 NP1:φs 14.00000°, δ85.00000°, λ-2.00000°. NP2:φs 105.00000°, δ88.00000°, λ-175.00000°.

IDC 11 22:26:16.6±0.4, 36.88N×138.48E, h0km, mb4.6/25, mb1 4.8/27, mb1mx4.7/38, mbtmp4.7/27, ML3.9/2, MS5.1/25, Ms1 5.1/25, ms1mx4.8/52, Error ellipse: s-maj=13.7km s-min=5.7km az=111.0

JMA 11 22:26:16.8, 36.82N×138.61E, h0km, M5.6 Broadband fault plane solution: P waves. NP1:φs 109.00000°, δ89.00000°, λ-176.00000°. NP2:φs 19.00000°, δ86.00000°, λ-1.00000°. Principal axes: T Plg2.0000°, Azm244.0000°; N Plg86.0000°, Azm127.0000°; P Plg4.0000°, Azm334.0000°;

ISCJB 11 22:26:17.4±0.4, 36.87N±0.02×138.41E±0.02, h8km±2km, mb4.9/248, MS5.4/61 Error ellipse: s-maj=3.3km s-min=2.3km az=152.8

BJI 11 22:26:18.7, 36.90N×138.30E, h6km, mb4.8/73, mB5.2/63, Ms5.5/91, Ms7 5.3/83

MOS 11 22:26:19.3±1.1, 36.79N×138.33E, h25km, mb5.1/83, MS5.4/32, Error ellipse: s-maj=6.9km s-min=4.3km az=96.2

GCMT 11 22:26:20.0±0.1, 36.74N×138.56E, h12km, MW5.5/126, Moment Tensor Solution. s98,c175; s126,c246; Duration: 1s3 Moment tensor: Scale 10^17 Nm; Mrr-0.42±.02; Mθθ-0.71±.02; Mφφ 1.14±.02; Mrθ-0.60±.05; Mθφ-1.46±.02; Mφr-0.07±.05; Best double couple: M0 1.85900×10^17 NP1:φs 109.00000°, δ78.00000°, λ-159.00000°. NP2:φs 14.00000°, δ70.00000°, λ-13.00000°. Principal axes: T 1.9650, Plg6.0000°, Azm240.0000°; N -0.2110, Plg66.0000°, Azm137.0000°; P -1.7520, Plg23.0000°, Azm333.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.

NEIC 11 22:26:20.0±0.9, 36.81N×138.28E, h17km±5km, mb5.1/165 Error ellipse: s-maj=4.1km s-min=3.5km az=147.0

NEIC Felt at Nakano. Recorded [5L JMA] in Nagano.

ISC 11 22:26:18.3±0.3, 36.82N±0.02×138.55E±0.02, h10km±1km, h9km:pP-P, n819, σ1.9/85/885, mb5.0/243, MS5.4/63, 35C-35D, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JGK	**Kuni**	**0.27**	**164**	P	**Pg**	**22 26 22.6**	**-1.2**
JGK				*e*S	**Sg**	**22 26 27.0**	**-0.4**
MAJO	**Matsushiro**	**0.39**	**225**	*e*P	**Pg**	**22 26 24.9**	**-1.1**
MAJO				*e*		22 26 31.4	
MAJO	**Matsushiro**	**0.39**	**225**	*e*Pg	**Pg**	**22 26 24.9**	**-1.1**
MAJO				*e*Sg	**Sg**	**22 26 31.4**	**+0.3**
MAT	**Matsushiro**	**0.39**	**225**	P	**Pg**	**22 26 24.9**	**-1.1**
MAT				S	**Sg**	**22 26 30.7**	**-0.4**
MAT	**Matsushiro**	**0.39**	**225**	P	**Pg**	**22 26 24.9**	**-1.1**
MAT				S	**Sg**	**22 26 30.7**	**-0.4**
MJAR	**Matsushiro Arr**	**0.39**	**224**	Pg	**Pg**	**22 26 24.8**	**-1.2**
	5μm,0.3s,baz=43,slow=18,SNR=3380						
MJAR				Lg	Lg	22 26 30.4	
	4μm,0.3s,baz=40,slow=30,SNR=73						
JJN	**Nakama**	**0.42**	**313**	⇓P	**Pg**	**22 26 26.4**	**-0.1**
JJN				S	**Sb**	**22 26 33.4**	**-0.8**
JNG	**Nsakai**	**0.55**	**221**	⇑P	**Pg**	**22 26 27.8**	**-1.2**
JNG				S	**Sg**	**22 26 36.0**	**-0.2**
JKT	**Katashina**	**0.57**	**95**	⇑P	**Pg**	**22 26 26.9**	**-2.4**
JKT				S	**Sg**	**22 26 34.4**	**-2.4**
JHK	**Hiroka**	**0.57**	**41**	⇑P	**Pg**	**22 26 27.2**	**-2.2**
JHK				S	**Sg**	**22 26 34.8**	**-2.0**
JIZZ	**Izumozaki**	**0.72**	**10**	⇓P	**Pg**	**22 26 31.8**	**-0.4**
JIZZ				S	**Sb**	**22 26 43.3**	**+0.3**
JAG	**Ashikaga**	**0.83**	**118**	⇓P	**Pg**	**22 26 32.4**	**-1.9**
JAG				S	**Sg**	**22 26 43.5**	**-1.6**
JRY	**Ryogami san**	**0.85**	**160**	⇓P	**Pg**	**22 26 32.6**	**-2.1**
JRY				S	**Sg**	**22 26 45.1**	**-0.7**
INU	**Inuyama**	**1.92**	**221**	*e*Pn	**Pn**	**22 26 51.6**	**+0.5**
INU				*e*Sn	**Sb**	**22 27 17.1**	**-0.4**
JHJ	**Hachijo jima 2**	**3.83**	**164**	Pn	**Pn**	**22 27 19.6**	**+2.2**
	154nm,0.3s,baz=65,slow=2.9,SNR=11						
JHJ				LR	LR	22 29 01.4	
	comp=Z,29μm,18.4s,baz=40,slow=42						
JHJ2	**Mitsune**	**3.84**	**164**	*e*Pn	**Pn**	**22 27 20.3**	**+2.7**
ERM	**Erimo**	**6.29**	**33**	*d*iP	**Pn**	**22 27 53.3**	**+2.1**
ERM	**Erimo**	**6.29**	**33**	*e*Pn	**Pn**	**22 27 53.3**	**+2.1**
JNU	**Nakatsue**	**7.30**	**242**	Pn	**Pn**	**22 28 06.8**	**+1.7**
	4.2nm,0.3s,baz=59,slow=7.3,SNR=61						
JNU				LR	LR	22 31 17.4	
	comp=Z,30μm,19.0s,baz=58,slow=41						
VLA	**Vladivostok**	**8.11**	**323**	*d*iP	**Pn**	**22 28 15.2**	**-0.8**
KSRS	**Korea Array**	**8.51**	**277**	Pn	**Pn**	**22 28 23.8**	**+2.2**
	10nm,0.3s,baz=92,slow=14,SNR=152						
KSRS				LR	LR	22 31 30.7	
	comp=Z,7μm,20.0s,baz=94,slow=37						
KS01	**Wonju Array Si**	**8.53**	**278**	*e*Pn	**Pn**	**22 28 22.6**	**+0.7**
KS15	**Wonju Array Si**	**8.54**	**277**	*e*Pn	**Pn**	**22 28 23.8**	**+1.7**
USRK	**Ussuriysk Ar.**	**8.90**	**328**	Pn	**Pn**	**22 28 26.6**	**-0.3**
	2.0nm,0.3s,baz=143,slow=13,SNR=23						
USRK				LR	LR	22 31 39.5	
	comp=Z,14μm,18.3s,baz=125,slow=37						
YUK	**Yuzh-Kuril'sk**	**9.11**	**35**	*e*P	**Pn**	**22 28 34.2**	**+4.4**
YUK				*e*S	**Sn**	**22 30 18.8**	**+6.5**
YUK				pmax	pmax		
	comp=N,70nm,0.4s						
YUK				pmax	pmax		
	comp=Z,144nm,0.4s						
YUK				pmax	pmax		
	comp=E,115nm,0.5s						
YUK				MLR	MLR		
	comp=N,18μm,15.0s						
YUK				MLR	MLR		
	comp=E,13μm,15.0s						
YUK				MLR	MLR		
	comp=Z,6μm,15.0s						
SHO	**Shikotan**	**9.46**	**39**	*e*P	**Pn**	**22 28 34.0**	**-0.6**
SHO				S	**Sn**	**22 30 18.6**	**-2.3**
SHO				pmax	pmax		
	comp=Z,86nm,0.8s						
SHO				pmax	pmax		
	comp=E,36nm,0.6s						
SHO				pmax	pmax		
	comp=N,54nm,0.8s						
CBIJ	**Chichi jima**	**10.18**	**161**	*e*Pn	**Pn**	**22 28 45.4**	**+0.9**
JCJ	**Chichijima**	**10.18**	**161**	LR	LR	22 32 55.8	
	comp=N,4μm,18.9s,baz=334,slow=39						
MDJ	**Mudanjiang**	**10.33**	**322**	P	**Pn**	**22 28 45.6**	**-0.9**
MDJ				S	**Sn**	**22 30 40.5**	**-1.9**
MDJ				pmax	pmax		
	comp=N,7.0nm,0.5s						
MDJ				pmax	pmax		
	comp=N,670nm,5.2s						
MDJ				LR	LR		
	comp=N,13μm,11.6s						
MDJ				LR	LR		
	comp=N,14μm,12.4s						
MDJ				LR	LR		
	comp=N,21μm,14.0s						
MDJ	**Mudanjiang**	**10.33**	**322**	*e*Pn	**Pn**	**22 28 47.0**	**+0.5**
YSS	**Yuzh-Sakhalins**	**10.60**	**16**	⇑*e*P	**Pn**	**22 28 52.7**	**+2.5**
YSS				*e*S	**Sn**	**22 30 49.0**	**+0.1**
YSS				pmax	pmax		
	comp=Z,80nm,1.0s						
YSS				MLR	MLR		
	comp=Z,12μm,16.0s						
YSS				MLR	MLR		
	comp=N,9μm,17.0s						
YSS				MLR	MLR		
	comp=E,9μm,16.0s						
YSS	**Yuzh-Sakhalins**	**10.60**	**16**	*e*Pn	**Pn**	**22 28 51.3**	**+1.1**
KUR	**Kuril'sk**	**10.96**	**37**	*e*P	**Pn**	**22 28 58.5**	**+3.4**
KUR				S	**Sn**	**22 31 02.6**	**+5.0**
KUR				pmax	pmax		
	comp=Z,110nm,0.7s						
KUR				pmax	pmax		
	comp=N,49nm,0.2s						
KUR				pmax	pmax		
	comp=E,64nm,0.1s						
KUR				MLR	MLR		
	comp=N,8μm,19.0s						
KUR				MLR	MLR		
	comp=Z,4μm,19.0s						
KUR				MLR	MLR		
	comp=E,7μm,17.0s						
HABR	**Khabarovsk**	**11.92**	**349**	*ce*P	**Pn**	**22 29 06.3**	**-2.0**
HABR				*e*S	**Sn**	**22 31 17.9**	**-3.4**
HABR				pmax	pmax		
	comp=Z,45nm,1.1s						
HABR				MLR	MLR		
	comp=Z,6μm,16.0s						
CN2	**Changchun**	**12.18**	**309**	*e*P	**Pn**	**22 29 14.3**	**+2.4**
CN2				*e*PP	**PnPn**	**22 29 24.3**	**+4.7**
CN2				*e*S	**Sn**	**22 31 30.0**	**+2.3**
CN2				pmax	pmax		
	comp=Z,10.0nm,0.5s						
CN2				pmax	pmax		
	comp=Z,200nm,6.0s						
CN2				LR	LR		
	comp=Z,16μm,12.0s						
CN2				LR	LR		
	comp=Z,17μm,12.0s						
CN2				LR	LR		
	comp=Z,14μm,13.0s						
SNY	**Shenyang**	**12.62**	**298**	⇑P	**Pn**	**22 29 21.7**	**+3.9**
SNY				pmax	pmax		
	comp=Z,33nm,2.1s						
SNY				pmax	pmax		
	comp=Z,530nm,3.7s						
SNY				LR	LR		
	comp=Z,22μm,14.7s						
SNY				LR	LR		
	comp=Z,11μm,15.8s						
SNY				LR	LR		
	comp=Z,14μm,15.9s						
KLR	**Kul'dur**	**13.35**	**340**	Pn	**Pn**	**22 29 30.4**	**+2.6**
	comp=Z,2.1nm,0.3s,baz=143,slow=12,SNR=104						
KLR				LR	LR	22 34 20.0	
	comp=Z,9μm,19.6s,baz=148,slow=36						
DL2	**Dalian**	**13.53**	**284**	P	**Pn**	**22 29 34.3**	**+4.0**
DL2				S	**Sn**	**22 32 03.8**	**+3.1**
DL2				pmax	pmax		
	comp=Z,29nm,1.0s						
DL2				pmax	pmax		
	comp=Z,1μm,5.3s						
DL2				LR	LR		
	comp=Z,27μm,15.4s						
DL2				LR	LR		
	comp=Z,12μm,11.5s						
TYV	**Tymovskoe**	**14.34**	**11**	*e*P	**Pn**	**22 29 42.8**	**+1.5**
TYV				*e*S	**Sn**	**22 32 14.0**	**-6.4**
TYV				pmax	pmax		
	comp=N,2μm,4.0s						
TYV				pmax	pmax		
	comp=Z,2μm,3.0s						
TYV				pmax	pmax		
	comp=Z,16nm,1.0s						
TYV				smax	smax		
	comp=E,2μm,11.0s						
TYV				MLR	MLR		
	comp=N,5μm,17.0s						
TYV				MLR	MLR		
	comp=Z,7μm,16.0s						
SSE	**Sheshan**	**15.49**	**253**	P	**Pn**	**22 29 58.3**	**+1.4**
SSE				S	**Sn**	**22 32 49.5**	**+1.0**
SSE				pmax	pmax		
	comp=Z,55nm,0.7s						
SSE				pmax	pmax		
	comp=Z,840nm,6.3s						
SSE				LR	LR		
	comp=Z,16μm,19.5s						
SSE				LR	LR		
	comp=Z,7μm,19.5s						
SSE				LR	LR		
	comp=Z,15μm,15.7s						
NKL	**Nikolayevsk**	**16.40**	**5**	*e*P	**Pn**	**22 30 05.8**	**-2.6**
NKL				*e*S	**Sn**	**22 33 08.0**	**-2.3**
NKL				pmax	pmax		
	comp=N,43nm,1.1s						
NKL				pmax	pmax		
	comp=Z,55nm,1.1s						
NKL				pmax	pmax		
	comp=Z,300nm,5.0s						
NKL				smax	smax		
	comp=E,900nm,9.0s						
NKL				MLR	MLR		
	comp=N,4μm,17.0s						
NKL				MLR	MLR		
	comp=Z,6μm,16.0s						
NJ2	**Nanjing**	**16.92**	**259**	*e*P	**P**	**22 30 18.7**	**+1.5**
NJ2				S	**S**	**22 33 29.1**	**-4.6**
NJ2				pmax	pmax		
	comp=Z,19nm,0.9s						
NJ2				LR	LR		
	comp=Z,20μm,23.9s						
NJ2				LR	LR		
	comp=Z,7μm,16.3s						
NJ2				LR	LR		
	comp=Z,6μm,21.7s						
OKH	**Okha**	**17.01**	**9**	*e*P	P	22 30 28.0	+10
OKH				*e*S	**Sn**	**22 33 25.6**	**+0.6**
OKH				pmax	pmax		
	comp=Z,2μm,5.6s						
OKH				smax	smax		
	comp=E,3μm,8.0s						
OKH				MLR	MLR		
	comp=Z,6μm,16.0s						
TIA	**Tai'an**	**17.23**	**274**	⇓P	**P**	**22 30 22.9**	**+2.2**
TIA				pmax	pmax		
	comp=Z,20nm,0.9s						
TIA				pmax	pmax		
	comp=Z,1μm,5.4s						
TIA				LR	LR		
	comp=Z,6μm,12.8s						
TIA				LR	LR		
	comp=Z,7μm,15.0s						
TIA				LR	LR		
	comp=Z,8μm,14.2s						
BJI	**Beijing**	**17.81**	**287**	P	**P**	**22 30 27.9**	**+0.9**
BJI				S	**Sn**	**22 33 44.1**	**-0.7**
BJI				pmax	pmax		
	comp=Z,39nm,1.0s						
BJI				LR	LR		
	comp=Z,11μm,15.5s						
BJI				LR	LR		
	comp=Z,2μm,22.8s						
BJT	**Baijiatuan**	**17.82**	**287**	*e*P	**P**	**22 30 28.7**	**+1.6**
BJT				pmax	pmax		
	comp=Z,112nm,1.1s						
BJT	**Baijiatuan**	**17.82**	**287**	*e*Pn	**P**	**22 30 28.7**	**+1.6**
	comp=Z,112nm,1.1s						
HIA	**Hailar**	**18.48**	**318**	*e*P	**Pn**	**22 30 35.7**	**+1.3**
HIA				pmax	pmax		
	comp=Z,23nm,0.8s						
HIA	**Hailar**	**18.48**	**318**	*e*Pn	**Pn**	**22 30 35.6**	**+1.3**
	comp=Z,23nm,0.8s						
SKR	**Severo-Kuril's**	**18.72**	**37**	P	**P**	**22 30 34.0**	**-2.9**
SKR				*e*S	**Sn**	**22 34 06.0**	**-0.6**
SKR				MLR	MLR		
	comp=N,6μm,14.0s						
SKR				MLR	MLR		
	comp=E,8μm,14.0s						
SKR				MLR	MLR		
	comp=Z,8μm,14.0s						
TWG	**Pinlang**	**20.56**	**232**	*e*P	Pn	22 31 00.8	+1.4
	comp=Z,418nm,1.2s						
QZH	**Quanzhou**	**20.77**	**241**	⇑*i*P	Pn	22 31 05.0	+3.1
QZH				S	**S**	**22 34 53.8**	**+2.4**
QZH				LR	LR		
	comp=Z,9μm,13.5s						
QZH				LR	LR		
	comp=Z,12μm,15.8s						
QZH				LR	LR		
	comp=Z,17μm,19.4s						
TIY	**Taiyuan**	**20.79**	**280**	*e*P	Pn	22 31 05.3	+3.2
TIY				S	**S**	**22 34 52.9**	**+1.2**
TIY				pmax	pmax		
	comp=Z,33nm,0.5s						
TIY				pmax	pmax		
	comp=Z,550nm,5.2s						
TIY				LR	LR		
	comp=Z,6μm,13.1s						
TIY				LR	LR		
	comp=Z,9μm,14.9s						
TIY				LR	LR		
	comp=Z,8μm,13.5s						
WHN	**Wuhan**	**21.06**	**260**	P	**P**	**22 30 55.8**	**-6.8**
WHN				S	Sn	22 35 00.9	-2.4
WHN				LR	LR		
	comp=N,14μm,14.7s						
WHN				LR	LR		
	comp=E,17μm,15.3s						
WHN				LR	LR		
	comp=Z,20μm,16.5s						
PEA0	**Petropavlovsk-**	**21.08**	**33**	*e*P	**P**	**22 31 05.4**	**+2.8**
PETK	**Petropavlovsk-**	**21.08**	**33**	P	**P**	**22 31 04.3**	**+1.7**
	comp=Z,13nm,0.8s,baz=207,slow=8.0,SNR=11						
PETK				LR	LR	22 39 12.0	
	comp=Z,3μm,18.8s,baz=225,slow=37						
PEA1	**Petropavlovsk-**	**21.08**	**33**	*e*P	**P**	**22 31 04.3**	**+1.7**
HHC	**Hu-ho-hao-te**	**21.37**	**289**	*e*P	**P**	**22 31 04.4**	**-1.5**
HHC				sP	sP	22 31 12.0	+2.0
HHC				S	**S**	**22 34 54.8**	**-8.4**
HHC				sS	sS	22 35 02.1	-5.5
HHC				SS	**SnSn**	**22 35 31.8**	**+6.2**
HHC				pmax	pmax		
	comp=Z,16nm,0.7s						
HHC				pmax	pmax		
	comp=Z,410nm,6.5s						
HHC				LR	LR		
	comp=Z,4μm,12.3s						
HHC				LR	LR		
	comp=Z,5μm,13.6s						
HHC				LR	LR		
	comp=Z,5μm,13.5s						
PET	**Petropavlovsk**	**21.45**	**35**	*e*P	**P**	**22 31 06.9**	**+0.4**
PET				*e*S	**S**	**22 35 00.5**	**-3.8**
PET				pmax	pmax		
	comp=Z,300nm,12.7s						
PET				pmax	pmax		
	comp=Z,48nm,1.2s						
PET				MLR	MLR		
	comp=Z,3μm,16.0s						
PET				MLR	MLR		
	comp=Z,3μm,18.0s						
CLNS	**Chul'man**	**22.02**	**340**	*e*P	**P**	**22 31 10.7**	**-2.0**
CLNS				*e**PP	**sP**	**22 31 18.9**	**+2.2**
CLNS				*e*		22 31 33.8	
CLNS				*e*		22 35 07.1	
CLNS				*e*S	**S**	**22 35 13.8**	**-1.7**
CLNS				*e*SS	**SnSn**	**22 35 51.4**	**+10**
CLNS				*e*		22 42 23.7	
CLNS				pmax	pmax		
	comp=N,16nm,1.0s						
CLNS				pmax	pmax		
	comp=E,5.0nm,1.1s						
CLNS				pmax	pmax		
	comp=Z,23nm,1.0s						
CLNS				pmax	pmax		
	comp=E,16nm,1.2s						
CLNS				pmax	pmax		
	comp=Z,25nm,1.1s						
CLNS				pmax	pmax		
	comp=N,14nm,0.9s						
CLNS				smax	smax		
	comp=E,295nm,12.1s						
CLNS				smax	smax		
	comp=N,1μm,12.1s						
CLNS				MLR	MLR		
	comp=E,2μm,12.0s						
CLNS				MLR	MLR		
	comp=Z,6μm,15.0s						
CLNS				MLR	MLR		
	comp=N,4μm,14.0s						
BTO	**Baotou**	**22.53**	**288**	*e*P	**P**	**22 31 17.6**	**-0.9**
CIT	**Chita**	**23.28**	**319**	*e*P	**P**	**22 31 31.4**	**+5.3**
CIT				*e*		22 32 02.9	
GUMO	**Guam**	**23.82**	**165**	LR	LR	22 39 32.2	
	comp=N,7μm,21.7s,baz=356,slow=33						
MA2	**Magadan**	**24.10**	**15**	P	**P**	**22 31 33.4**	**-0.5**
	comp=N,20nm,0.7s,baz=204,slow=14,SNR=6.3						
MA2				LR	LR	22 41 01.6	
	comp=N,5μm,20.6s,baz=224,slow=37						
MA2	**Magadan**	**24.10**	**15**	P	**P**	**22 31 33.4**	**-0.5**
MA2				pmax	pmax		
	comp=Z,16nm,0.6s						
MA2				MLR	MLR		
	comp=Z,5μm,20.6s						
XAN	**Xi'an**	**24.26**	**272**	P	**P**	**22 31 34.4**	**-1.2**
XAN				pP	pP	22 31 36.3	-2.3
XAN				S	**S**	**22 35 48.4**	**-5.9**
XAN				pmax	pmax		
	comp=Z,6.0nm,0.6s						
XAN				LR	LR		
	comp=Z,7μm,17.8s						
XAN				LR	LR		
	comp=Z,5μm,19.5s						
XAN				LR	LR		
	comp=Z,7μm,17.8s						
ENH	**Enshi**	**25.03**	**263**	*e*P	**P**	**22 31 41.8**	**-0.8**
	comp=Z,61nm,0.9s						
ULN	**Ulaanbaatar**	**25.59**	**305**	*ce*P	**P**	**22 31 46.7**	**-1.0**
ULN				pmax	pmax		
	comp=Z,8.0nm,1.0s						
ULN	**Ulaanbaatar**	**25.59**	**305**	*e*P	**P**	**22 31 46.5**	**-1.3**
	comp=Z,40nm,1.3s						
GZH	**Guangzhou**	**25.68**	**245**	P	P	22 31 39.6	-8.9
GZH				PP	**PnPn**	**22 32 16.8**	**-7.9**
GZH				PcP	**PcP**	**22 35 14.7**	**-4.2**
GZH				S	S	22 36 00.6	-16
GZH				SS	**SnSn**	**22 37 00.1**	**-11**
GZH				pmax	pmax		
	comp=Z,560nm,6.7s						
YAK	**Yakutsk**	**25.84**	**350**	P	**P**	**22 31 48.5**	**-1.1**
	comp=Z,45nm,0.5s,baz=176,slow=3.1,SNR=11						
YAK				LR	LR	22 42 02.8	
	comp=Z,7μm,18.2s,baz=165,slow=37						
YAK	**Yakutsk**	**25.84**	**350**	*e*P	**P**	**22 31 48.4**	**-1.1**
YAK				*e**PP	**sP**	**22 31 55.9**	**+2.2**
YAK				*e*		22 32 28.8	
YAK				*e*PPP	PPP	22 32 37.2	
YAK				*e*S	**S**	**22 36 14.6**	**-4.3**

YAK eSS SnSn 22 37 20.4 +5.9
YAK eSSS SSS 22 37 40.2
YAK pmax pmax
comp=N,15nm,0.9s
YAK pmax pmax
comp=E,11nm,0.9s
YAK pmax pmax
comp=Z,48nm,0.8s
YAK smax smax
comp=E,728nm,5.7s
YAK smax smax
comp=N,1µm,4.0s
YAK MLR MLR
comp=E,2µm,14.0s
YAK MLR MLR
comp=Z,6µm,16.0s
YAK MLR MLR
comp=N,4µm,16.0s
YAK Yakutsk 25.84 350 eP **P 22 31 48.5 -1.1**
comp=N,73nm,0.8s
SONA1 Songino Array 26.01 305 eP **P 22 31 50.1 -1.5**
SONA1 eScP **ScP 22 38 59.4 +0.2**
SONA0 Songino Array 26.01 305 eP **P 22 31 51.3 -0.3**
comp=N,30nm,1.1s
SONA0 ePcP **PcP 22 35 19.1 -0.4**
SONM Songino Array 26.01 305 P **P 22 31 51.3 -0.3**
comp=N,10nm,1.0s,baz=105,slow=7.8,SNR=27
SONM PcP **PcP 22 35 19.1 -0.4**
comp=N,0.8nm,0.7s,baz=111,slow=2.4,SNR=4.8
SONM LR LR 22 42 05.0
comp=N,6µm,18.5s,baz=107,slow=37
BOD Bodaibo 26.53 330 eP **P 22 31 53.7 -2.2**
BOD pmax pmax
comp=Z,10.0nm,1.4s
SEY Seymchan 27.49 14 P **P 22 32 05.5 +0.9**
comp=Z,14nm,0.9s,baz=201,slow=7.3,SNR=27
SEY LR LR 22 43 32.1
comp=Z,5µm,21.7s,baz=165,slow=38
SEY Seymchan 27.49 14 P **P 22 32 05.5 +0.9**
SEY pmax pmax
comp=Z,14nm,1.0s
SEY MLR MLR
comp=Z,5µm,21.7s
LZH Lanzhou 27.84 279 eP **P 22 32 07.1 -1.0**
LZH PP **PnPn 22 32 56.0 +1.8**
LZH S **S 22 36 46.0 -5.4**
LZH pmax pmax
comp=Z,39nm,1.0s
LZH pmax pmax
comp=Z,420nm,7.6s
LZH LR LR
comp=Z,4µm,14.6s
LZH LR LR
comp=Z,6µm,13.5s
LZH LR LR
comp=Z,6µm,14.9s
ZAK Zakamensk 28.61 309 eP **P 22 32 13.8 -1.0**
ZAK pmax pmax
comp=Z,5.0nm,1.4s
TLY Talaya 28.75 312 LR LR 22 44 10.3
comp=Z,4µm,19.8s,baz=106,slow=37
TLY Talaya 28.75 312 eP **P 22 32 20.7 +4.7**
TLY e 22 33 10.6
TLY eS **S 22 37 08.9 +3.6**
TLY eSS **SnSn 22 38 32.8 +6.9**
TLY pmax pmax
comp=Z,23nm,1.9s
TLY MLR MLR
comp=Z,5µm,13.0s
TLY Talaya 28.75 312 eP **P 22 32 13.8 -2.2**
TLY esP **P 22 32 20.6 +4.7**
GYA Guiyang 28.93 258⇑ iP **P 22 32 15.9 -1.9**
GYA PP **PnPn 22 33 11.6 +2.5**
GYA PcP **PcP 22 35 29.4 +2.6**
GYA S **S 22 37 07.0 -1.6**
GYA SS **SnSn 22 38 32.2 +1.4**
GYA ScS **ScS 22 43 02.8 +0.5**
GYA pmax pmax
comp=Z,20nm,0.9s
GYA pmax pmax
comp=Z,180nm,5.4s
GYA LR LR
comp=Z,880nm,16.8s
GYA LR LR
comp=Z,770nm,17.4s
GYA LR LR
comp=Z,620nm,18.0s
CD2 Chengdu 29.38 269⇓ P **P 22 32 20.2 -1.5**
CD2 S **S 22 37 13.6 -1.9**
CD2 pmax pmax
comp=Z,40nm,0.8s
CD2 pmax pmax
comp=Z,210nm,5.9s
CD2 LR LR
comp=Z,16µm,19.0s
CD2 LR LR
comp=Z,6µm,15.5s
GTA Gaotai 30.43 287 eP **P 22 32 29.4 -1.7**
GTA pP pP 22 32 33.8 -0.2
GTA sP sP 22 32 36.6 +1.3
GTA S **S 22 37 29.5 -2.5**
GTA sS sS 22 37 37.8 +0.9
GTA SS **ScP 22 39 11.2 -1.8**
GTA pmax pmax
comp=Z,98nm,5.9s
GTA LR LR
comp=Z,7µm,15.2s
GTA LR LR
comp=Z,4µm,13.8s
GTA LR LR
comp=Z,3µm,12.4s
QIZ Qiongzhong 30.77 243 P **P 22 32 34.6 +0.5**
QIZ S **S 22 37 40.8 +3.4**
QIZ LR LR
comp=Z,6µm,13.7s
QIZ LR LR
comp=Z,6µm,14.7s
QIZ LR LR
comp=Z,3µm,9.5s
KMI Kunming 32.66 259 P **P 22 32 49.6 -1.3**
KMI pP pP 22 32 53.4 -0.5
KMI PP **PnPn 22 33 59.5 +0.8**
KMI S **S 22 38 01.7 -5.6**
KMI SS **SnSn 22 40 00.2 -1.7**
KMI pmax pmax
comp=Z,25nm,1.0s
KMI pmax pmax
comp=Z,160nm,4.1s
KMI LR LR
comp=Z,7µm,14.5s
KMI LR LR
comp=Z,6µm,15.2s
KMI LR LR
comp=Z,6µm,16.3s
PATS Pohnpei 34.87 144 eP **P 22 33 11.1 +1.1**
comp=Z,98nm,1.1s
BILL Bilibino 34.91 18⇑ eP **P 22 33 08.1 -1.6**
BILL e 22 34 26.8
BILL eS **S 22 38 39.4 -1.4**
BILL pmax pmax
comp=Z,22nm,1.5s
BILL MLR MLR
comp=Z,3µm,18.0s
BILL Bilibino 34.91 18 eP **P 22 33 08.2 -1.5**
BILL esP **P 22 33 08.6 -1.1**
TIXI Tiksi 35.26 355 eP **P 22 33 10.3 -2.4**
TIXI pmax pmax
comp=Z,8.0nm,1.0s
TIXI Tiksi 35.26 355 eP **P 22 33 11.1 -1.6**
TIXI epP **pP 22 33 11.9 -3.7**
NONG Nongkai 36.28 249 P **P 22 33 22.2 +0.2**
comp=Z,232nm,0.7s
SKNT Sakolnakorn 36.34 246 P **P 22 33 22.9 +0.3**
comp=Z,44nm,0.8s
CRAI Chiangrai 37.11 254 P **P 22 33 28.2 -0.9**
comp=Z,55nm,1.5s
KHON Khomkaen 37.60 247 P **P 22 33 33.6 +0.3**
comp=Z,16nm,0.8s,comp=Z,2µm
UTTA Uttaradit 38.42 251 P **P 22 33 42.8 +2.6**
comp=Z,2.8nm,0.9s
CHAI Chaiyaphum 38.49 247 P **P 22 33 40.7 -0.2**
comp=Z,8.8nm,1.2s,comp=Z,86nm
LAMP Lampang 38.66 253 P **P 22 33 44.4 +2.1**
comp=Z,4.1nm,0.8s
PBKT Sadao Pong 38.83 249 P **P 22 33 45.2 +1.6**
comp=Z,24nm,1.0s,comp=Z,632nm

WMQ Urumqi 38.88 297 eP **P 22 33 45.7 +1.7**
WMQ sP sP 22 33 49.6 +1.4
WMQ PcP **PcP 22 35 57.6 +2.8**
WMQ S **S 22 39 40.0 -2.1**
WMQ sS sS 22 39 49.4 +2.4
WMQ SS **SnSn 22 42 21.6 -10**
WMQ ScS **ScS 22 43 53.9 -0.1**
WMQ pmax pmax
comp=Z,5.0nm,1.4s
WMQ pmax pmax
comp=Z,74nm,4.6s
WMQ LR LR
comp=Z,5µm,18.0s
WMQ LR LR
comp=Z,1µm,15.0s
WMQ LR LR
comp=Z,1µm,18.0s
CMMT Chiang Mai 39.02 254 P **P 22 33 47.2 +1.9**
comp=Z,8.3nm,0.9s
CHTO Chiang Mai 39.02 254 P **P 22 33 47.3 +2.0**
comp=Z,37nm,1.0s
CHTO Chiang Mai 39.02 254 eP **P 22 33 43.8 -1.5**
CHTO Chiang Mai 39.02 254 eP **P 22 33 43.8 -1.5**
CHTO epP **pP 22 33 45.7 -2.6**
CM31 Chiang Mai Arr 39.23 253 eP **P 22 33 47.4 +0.3**
CM31 ePcP **PcP 22 35 55.5 -0.6**
CMAR Chiang Mai Arr 39.23 253 P **P 22 33 47.4 +0.3**
comp=Z,2.4nm,0.8s,baz=47,slow=8.1,SNR=19
CMAR PcP **PcP 22 35 55.5 -0.6**
comp=Z,1.3nm,0.3s,baz=13,slow=1.8,SNR=7.9
CMAR LR LR 22 50 37.6
comp=Z,2µm,19.4s,baz=36,slow=37
CM01 Chiang Mai Arr 39.24 253 eP **P 22 33 48.9 +1.8**
CM01 ePcP **PcP 22 35 56.7 +0.6**
SUKH Sukhothai 39.28 251 P **P 22 33 48.6 +1.2**
comp=Z,4.3nm,0.8s
MRSI Marisa 39.30 207 P **P 22 33 51.2 +3.7**
comp=Z,40nm,0.9s,comp=Z,2µm
NIKH Nikolski High 39.65 49 eP **P 22 33 47.7 -2.4**
comp=Z,98nm,1.0s
SRAK Srakaew 39.68 245 P **P 22 33 47.3 -3.5**
comp=Z,121nm,0.9s,comp=Z,831nm
LSA Lhasa 39.94 274 eP **P 22 33 55.7 +2.3**
LSA pmax pmax
comp=Z,4.0nm,0.8s
LSA Lhasa 39.94 274 eP **P 22 33 55.6 +2.3**
comp=Z,3.7nm,0.8s
FAKI Fak Fak 39.97 190 eP **P 22 33 53.0 -0.2**
comp=Z,56nm,1.4s
NAYO Nakonayok 40.01 246 P **P 22 33 54.1 +0.6**
comp=Z,58nm,1.0s,comp=Z,9µm
GAMB Gambell 40.10 32 eP **P 22 33 54.8 +1.1**
comp=Z,23nm,1.3s
CHBT CHBT 40.31 243 P **P 22 33 56.7 +0.7**
comp=Z,33nm,1.1s
ZAA0 Zalesovo Array 40.37 313 eP **P 22 33 54.7 -1.3**
ZAA0 ePcP **PcP 22 35 59.0 -0.1**
ZAA1 Zalesovo Array 40.37 313 eP **P 22 33 55.0 -1.1**
ZAA1 ePcP **PcP 22 35 58.6 -0.6**
ZALV Zalesovo Beam 40.37 313 P **P 22 33 55.0 -1.1**
comp=Z,1.0nm,0.5s,baz=79,slow=7.0,SNR=6.3
ZALV PcP **PcP 22 35 58.6 -0.6**
comp=Z,5.8nm,0.6s,baz=101,slow=2.4,SNR=13
ZALV LR LR 22 50 03.0
comp=Z,1µm,19.2s,baz=94,slow=35
SANI Sanana 40.40 200 P **P 22 33 58.8 +2.1**
comp=Z,38nm,0.7s
SHL Shillong 41.10 268 eP **P 22 34 02.5 -0.2**
SHL eS **S 22 40 15.0 -0.9**
NVS Novosibirsk 41.33 314 eP **P 22 34 06.5 +2.5**
NVS e 22 36 06.6
NVS pmax pmax
comp=Z,14nm,1.5s
SRDT SRDT 41.61 248 P **P 22 34 07.9 +1.2**
comp=Z,40nm,1.3s,comp=Z,3µm
PHET Kaeng Krachan 42.16 246 P **P 22 34 12.0 +0.7**
comp=Z,25nm,0.9s,comp=Z,188nm
MK32 Makanchi Array 42.28 302 eP **P 22 34 10.3 -1.6**
MK32 ePcP **PcP 22 36 04.4 -1.2**
MKAR Makanchi Array 42.28 302 P **P 22 34 10.3 -1.6**
comp=Z,2.0nm,0.7s,baz=89,slow=9.1,SNR=20
MKAR PcP **PcP 22 36 04.4 -1.2**
comp=Z,3.8nm,0.9s,baz=76,slow=5.1,SNR=6.5
MKAR LR LR 22 52 20.4
comp=Z,3µm,19.0s,baz=89,slow=37
MKAR Makanchi Array 42.28 302 eP **P 22 34 10.8 -1.2**
MAKZ Makanchi 42.49 302 eP **P 22 34 13.3 -0.4**
MAKZ pmax pmax
comp=Z,5.0nm,1.0s
MAKZ Makanchi 42.49 302 eP **P 22 34 13.3 -0.4**
comp=Z,5.2nm,1.0s
NRIK Noril'sk 42.51 336 P **P 22 34 12.1 -1.4**
comp=Z,12nm,1.1s,baz=117,slow=9.7,SNR=11
NRIK LR LR 22 52 45.6
comp=Z,4µm,18.5s,baz=111,slow=37
NRIK Noril'sk 42.51 336 P **P 22 34 12.1 -1.4**
NRIK pmax pmax
comp=Z,12nm,1.1s
NRIK MLR MLR
comp=Z,4µm,18.5s
TAPN Taplejung 43.66 273 eP **P 22 34 22.4 -1.3**
comp=Z,37nm,1.2s
KSM Kuching 43.78 223 eP **P 22 34 25.0 +0.6**
comp=Z,26nm,0.8s
ODAN Odare 44.13 272 eP **P 22 34 26.2 -1.2**
KURK Kurchatov 44.25 308 eP **P 22 34 26.1 -1.7**
KURK Kurchatov 44.25 308 eP **P 22 34 26.1 -1.7**
KURK esP **P 22 34 26.5 -1.3**
STKI Sintang 44.34 221 P **P 22 34 30.3 +1.5**
RAMN Ramite 44.72 273 eP **P 22 34 31.3 -0.9**
comp=Z,79nm,1.2s
PDGK Podgornoye 44.84 297 P **P 22 34 32.0 -0.6**
PDGK pmax pmax
comp=Z,12nm,1.0s
GUN Gumba 44.89 274 eP **P 22 34 33.3 -0.3**
comp=Z,52nm,1.0s
PKIN Phulchoki 45.41 274 eP **P 22 34 37.2 -0.5**
KKN Kakani 45.42 275 eP **P 22 34 37.2 -0.4**
comp=Z,29nm,0.8s
SURT Suratani 45.43 242 P **P 22 34 38.2 +0.7**
comp=Z,13nm,1.0s
GKN Gorkha 45.84 275 eP **P 22 34 39.9 -1.0**
PKDT Phuket 46.49 242 P **P 22 34 46.8 +0.9**
comp=Z,60nm,1.0s
PMG Port Moresby 46.69 168 LR LR 22 53 09.4
comp=Z,1µm,20.9s,baz=350,slow=34
KOLN Koldanda 46.77 275 eP **P 22 34 47.9 -0.4**
comp=Z,43nm,1.2s
TTA Tatalina 46.91 35 eP **P 22 34 49.7 +1.0**
TTA pmax pmax
comp=Z,10.0nm,1.0s
TTA Tatalina 46.91 35 eP **P 22 34 49.7 +1.0**
comp=Z,9.7nm,1.0s
SVW2 Sparrevohn 47.08 37 eP **P 22 34 52.0 +1.9**
comp=Z,29nm,1.2s
IPM Ipoh 47.09 236 eP **P 22 34 50.2 -0.4**
comp=Z,19nm,0.9s
PYUN Piuthan 47.11 276 eP **P 22 34 50.6 -0.4**
comp=Z,90nm,0.9s
TKM2 Tokmak 2 47.70 298 eP **P 22 34 56.5 +1.1**
TKM2 pmax pmax
comp=Z,50nm,1.4s
TKM2 Tokmak 2 47.70 298 eP **P 22 34 56.5 +1.1**
comp=Z,50nm,1.4s
KSH Kashi 48.39 293 P **P 22 35 04.9 +4.3**
KSH PcS **PcS 22 40 26.6 +3.5**
KSH S **S 22 42 06.1 +4.9**
KSH ScS **ScS 22 44 56.1 +2.3**
KSH pmax pmax
comp=Z,340nm,5.4s
KSH LR LR
comp=Z,2µm,13.6s
KSH LR LR
comp=Z,5µm,14.9s
KSH LR LR
comp=Z,2µm,17.5s
FRU Bishkek 48.42 298 eP **P 22 35 04.0 +3.3**
FRU pmax pmax
comp=Z,70nm,2.2s
AAK Ala-Archa 48.56 298 eP **P 22 35 02.4 +0.4**
AAK pmax pmax
comp=Z,12nm,1.3s
AAK Ala-Archa 48.56 298 eP **P 22 35 02.4 +0.4**
comp=Z,12nm,1.3s
PPLA Purkeypile 48.66 35 eP **P 22 35 04.3 +2.0**
comp=Z,46nm,1.3s

OTUK Ortayu 48.69 305 P **P 22 35 02.6 -0.1**
OTUK pmax pmax
comp=Z,9.0nm,1.4s
CAST Castle Rocks 48.69 34 eP **P 22 35 04.0 +1.5**
comp=Z,9.7nm,0.8s
KDAK Kodiak Island 48.79 42 iP **P 22 35 04.5 +1.3**
SPU Mount Spurr 48.79 37 eP **P 22 35 04.2 +0.9**
BVAR Borovoye Array 49.01 312 LR LR 22 56 40.7
comp=Z,2µm,18.7s,baz=84,slow=37
EKS2 Erkin-Say 49.06 298 eP **P 22 35 06.2 +0.4**
EKS2 pmax pmax
comp=Z,5.0nm,0.8s
EKS2 Erkin-Say 49.06 298 eP **P 22 35 06.2 +0.4**
comp=Z,4.6nm,0.8s
BRVK Borovoye 49.07 312 eP **P 22 35 05.1 -0.4**
BRVK pmax pmax
comp=Z,5.0nm,1.1s
BPAW Bear Paw Mtn. 49.16 33 eP **P 22 35 07.9 +1.9**
comp=Z,27nm,1.6s
KTH Kantishna Hill 49.21 34 eP **P 22 35 07.8 +1.3**
comp=Z,76nm,1.6s
MLY Manley 49.25 32 eP **P 22 35 07.7 +0.9**
comp=Z,13nm,0.9s
COLD Coldfoot 49.45 29 eP **P 22 35 09.6 +1.3**
comp=Z,10.0nm,1.0s
TRF Thorofare Moun 49.50 34 eP **P 22 35 09.0 +0.2**
comp=Z,8.8nm,0.8s
PSI Prapat 49.74 237 eP **P 22 35 11.0 -0.2**
PSI pmax pmax
comp=Z,10.0nm,0.8s
PSI Prapat 49.74 237 eP **P 22 35 11.0 -0.2**
comp=Z,9.9nm,0.8s
MNAS Manas 50.02 298 P **P 22 35 13.8 +0.7**
MNAS pmax pmax
comp=Z,12nm,1.6s
SFK Sufi-Kurgan 50.05 295 P **P 22 35 13.3 -0.1**
SFK pmax pmax
comp=Z,12nm,1.3s
MCK McKinley 50.08 34 eP **P 22 35 14.4 +1.3**
MCK pmax pmax
comp=Z,20nm,1.2s
MCK McKinley 50.08 34 eP **P 22 35 14.4 +1.3**
comp=Z,20nm,1.2s
RND Reindeer 50.14 34 eP **P 22 35 14.0 +0.4**
RND pmax pmax
comp=Z,30nm,1.2s
RND Reindeer 50.14 34 eP **P 22 35 14.0 +0.4**
comp=Z,30nm,1.2s
MDM Murphy Dome 50.31 32 eP **P 22 35 15.1 +0.3**
comp=Z,26nm,1.0s
WRH Wood River Hil 50.41 33 eP **P 22 35 17.1 +1.6**
WRH ePcP **PcP 22 36 34.6 +0.8**
CCB Clear Creek Bu 50.52 32 eP **P 22 35 17.4 +1.1**
comp=Z,10nm,1.0s
COEN Coen 50.69 174 eP **P 22 35 18.6 +0.5**
comp=Z,26nm,0.9s
DHY Denali Highway 50.84 34 eP **P 22 35 19.4 +0.4**
comp=Z,85nm,1.9s
IL1 Eielson Array 50.90 32 eP **P 22 35 18.2 -1.0**
ILAR Eielson Array 50.90 32 P **P 22 35 18.8 -0.5**
comp=Z,5.1nm,0.8s,baz=268,slow=4.9,SNR=29
ILAR LR LR 22 58 23.9
comp=Z,517nm,20.5s,baz=292,slow=38
ILB Eielson Array 50.90 32 eP **P 22 35 18.8 -0.5**
SCM Sheep Creek Mo 50.99 36 eP **P 22 35 21.8 +1.7**
SCM pmax pmax
comp=Z,73nm,1.5s
SCM Sheep Creek Mo 50.99 36 eP **P 22 35 21.8 +1.7**
comp=Z,73nm,1.5s
KKAR Karatay Array 51.24 299 eP **P 22 35 21.5 -0.6**
KKAR Karatay Array 51.24 299 eP **P 22 35 21.5 -0.6**
FYU Fort Yukon 51.44 30 eP sP 22 35 27.9 +0.4
comp=Z,103nm,1.8s
KLU Klutina 51.70 36 eP **P 22 35 27.3 +1.9**
comp=Z,33nm,1.2s
GSI Gunungsitoli 51.74 237 eP **P 22 35 24.7 -1.4**
comp=Z,98nm,1.1s
DIV Divide 51.83 37 eP **P 22 35 28.1 +1.8**
comp=Z,55nm,1.3s
EYAK Cordova Ski Ar 51.92 37 eP **P 22 35 29.4 +2.5**
comp=Z,30nm,1.1s
DOT Dot Lake 52.25 33 eP **P 22 35 29.7 +0.3**
comp=Z,19nm,0.8s
BMRM Bremner River 52.41 37 eP **P 22 35 31.7 +1.1**
comp=Z,99nm,1.6s
MENT Mentasta 52.51 34 eP **P 22 35 33.4 +2.1**
comp=Z,18nm,1.0s
EGAK Eagle 53.33 32 eP **P 22 35 37.2 -0.1**
comp=Z,8.9nm,0.9s
BALM Baldy 53.48 36 eP **P 22 35 40.7 +2.1**
BALM pmax pmax
comp=Z,22nm,1.1s
BALM Baldy 53.48 36 eP **P 22 35 40.7 +2.1**
comp=Z,22nm,1.1s
SVE Sverdlovsk 53.78 318⇓ iP **P 22 35 40.5 -0.2**
SVE pmax pmax
comp=Z,32nm,1.4s
SVE MLR MLR
comp=Z,5µm,16.0s
ARU Arti 54.99 318*d* iP **P 22 35 48.4 -1.1**
ARU PCP **PcP 22 36 52.0 +0.8**
ARU PP **PP 22 37 54.1 +1.8**
ARU S **S 22 43 29.0 -2.4**
ARU pmax pmax
comp=Z,15nm,1.0s
ARU Arti 54.99 318 eP **P 22 35 48.4 -1.1**
comp=Z,33nm,1.1s
KBL Kabul 55.34 290 eP **P 22 35 51.8 -0.8**
KBL pmax pmax
comp=Z,18nm,1.0s
KBL Kabul 55.34 290 eP **P 22 35 51.8 -0.8**
comp=Z,18nm,1.0s
INK Inuvik 55.62 27 eP **P 22 35 54.1 +0.3**
INK pmax pmax
comp=Z,15nm,1.0s
INK Inuvik 55.62 27 eP **P 22 35 54.1 +0.3**
comp=Z,15nm,1.0s
HYB Hyderabad 55.90 267 iP sP 22 36 00.0 -0.9
ABKAR Akbulak array 56.31 309 eP **P 22 35 58.1 -1.0**
WRAB Tennant Creek 56.59 185*ce* P **P 22 36 00.6 -0.7**
WRAB pmax pmax
comp=Z,119nm,1.2s
WRAB Tennant Creek 56.59 185 eP **P 22 36 00.8 -0.5**
comp=Z,31nm,0.8s
WB2 Warramunga Arr 56.59 185 eP **P 22 36 00.2 -1.1**
comp=Z,31nm,0.9s
WR1 Warramunga Arr 56.60 185 eP **P 22 36 00.2 -1.1**
comp=Z,29nm,0.9s
WRA Warramunga Arr 56.60 185 P **P 22 36 00.2 -1.1**
comp=Z,28nm,0.9s,baz=1.6,slow=7.5,SNR=83
DLBC Dease Lake 60.20 37 eP sP 22 36 29.4 -1.1
comp=Z,52nm,1.8s
AS01 Alice Springs 60.32 185 eP **P 22 36 26.1 -1.2**
AS31 Alice Springs 60.32 185 eP **P 22 36 26.6 -0.7**
comp=Z,2.7nm,0.6s
ASAR Alice Springs 60.32 185 P **P 22 36 26.6 -0.8**
comp=Z,7.7nm,0.9s,baz=13,slow=6.7,SNR=29
GEYT Alibeck 61.92 298 P **P 22 36 37.8 -0.5**
comp=Z,9.1nm,0.8s,baz=48,slow=2.4,SNR=14
GEYT LR LR 23 03 23.6
comp=Z,1µm,20.3s,baz=70,slow=36
APA Apatity 61.93 335⇓ iP **sP 22 36 43.0 +1.0**
APA MLR MLR
comp=Z,2µm,17.0s
COCO West Island 62.58 227 iP **P 22 36 44.2 +1.5**
KLMR Klimovskoe 62.70 327 eP **P 22 36 39.0 -4.0**
KLMR eSS SS 22 49 10.1 -4.9
KLMR pmax pmax
comp=Z,30nm,1.4s
KLMR MLR MLR
comp=Z,2µm,14.0s
EIDS Eidsvold 62.98 167 eP **P 22 36 45.6 +0.4**
comp=Z,16nm,1.0s
RES Resolute Bay 63.37 14 eP **P 22 36 46.1 -1.1**
RES pmax pmax
comp=Z,14nm,0.9s
RES Resolute Bay 63.37 14 eP **P 22 36 46.1 -1.1**
comp=Z,14nm,0.9s
ARA0 ARCESS Array S 63.38 339 eP **P 22 36 47.0 -0.4**
ARCES ARCESS Array B 63.38 339 P **P 22 36 47.0 -0.4**
comp=Z,5.9nm,0.9s,baz=50,slow=9.6,SNR=11
ARCES LR LR 23 07 27.9
comp=Z,3µm,20.4s,baz=79,slow=39
ARCES ARCESS Array B 63.38 339 P **P 22 36 47.0 -0.4**
ARCES pmax pmax
comp=Z,6.0nm,0.9s

ARCES MLR MLR
comp=Z,3µm,20.4s
YKW3 Yellowknife Ar 65.09 29 *eP* **P 22 37 00.5 +1.8**
comp=Z,6.9nm,1.1s
YKA Yellowknife Ar 65.13 29 P **P 22 36 58.5 -0.5**
comp=Z,2.0nm,0.7s,baz=304,slow=6.5,SNR=30
YKB5 Yellowknife Ar 65.13 29 *eP* **P 22 36 58.5 -0.5**
MSVF Nonsavu 65.83 138 *eP* **sP 22 37 09.2 +0.8**
MSVF pmax pmax
comp=Z,27nm,1.0s
MSVF Nonsavu 65.83 138 *eP* sP 22 37 09.2 +0.8
comp=Z,27nm,1.0s
MOS Moscow 66.04 323 *eP* **P 22 37 06.6 +1.7**
MOS pmax pmax
comp=Z,74nm,1.5s
MOS pmax pmax
comp=Z,300nm,2.5s
MOS MLR MLR
comp=N,3µm,14.0s
MOS MLR MLR
comp=E,3µm,14.0s
MOS MLR MLR
comp=Z,4µm,14.0s
VRH Novokhopyorsk 66.18 317 *eP* **P 22 37 05.0 -0.9**
VRH *e**PP **pP 22 37 09.7 +0.6**
VRH pmax pmax
comp=Z,10.0nm,0.8s
VRH MLR MLR
comp=Z,4µm,15.0s
OBN Obninsk 66.88 322 *deP* **P 22 37 09.3 -1.0**
OBN *e* 22 39 36.1
OBN *e*PPP PPP 22 41 10.7
OBN *e*S **S 22 46 03.1 +0.2**
OBN *e*SS **SS 22 50 18.5 -1.7**
OBN pmax pmax
comp=Z,23nm,1.2s
OBN MLR MLR
comp=Z,4µm,15.0s
OBN Obninsk 66.88 322 *eP* **P 22 37 09.3 -1.0**
comp=Z,58nm,1.5s
LPSR Galich'ya Gora 66.98 319 *eP* **P 22 37 09.8 -1.2**
LPSR *e**PP **sP 22 37 14.9 -0.4**
LPSR pmax pmax
comp=Z,10.0nm,0.6s
LPSR MLR MLR
comp=Z,2µm,16.0s
VSR Storozhevoye 67.56 318 *eP* **P 22 37 13.1 -1.7**
VSR *e**PP **pP 22 37 18.5 +0.6**
VSR pmax pmax
comp=Z,7.0nm,0.9s
VSR MLR MLR
comp=Z,3µm,13.0s
FIA1 FINESS Array S 67.92 331 *eP* **P 22 37 16.1 -0.7**
FIA0 FINESS Array S 67.92 331 *eP* **P 22 37 16.0 -0.8**
FIA0 FINESS Array S 67.92 331 *eP* **P 22 37 16.0 -0.8**
FINES FINESS Array B 67.92 331 P **P 22 37 16.0 -0.8**
comp=Z,10nm,0.7s,baz=74,slow=8.1,SNR=49
FINES LR LR 23 09 42.6
comp=Z,2µm,19.1s,baz=48,slow=38
FINES FINESS Array B 67.92 331 P **P 22 37 16.0 -0.8**
FINES pmax pmax
comp=Z,10.0nm,0.7s
FINES MLR MLR
comp=Z,2µm,19.1s
STKA Stephens Creek 68.40 177 P **P 22 37 20.0 -0.1**
comp=Z,7.0nm,0.8s,baz=353,slow=8.0,SNR=13
STKA Stephens Creek 68.40 177 P **P 22 37 20.0 -0.1**
STKA pmax pmax
comp=Z,7.0nm,0.8s
STKA Stephens Creek 68.40 177 *eP* **P 22 37 20.0 -0.1**
comp=Z,2.6nm,1.0s
GOF Gofitskoye 68.51 311 *ceP* **P 22 37 23.6 +2.8**
B05A Bryant 69.10 45 P **P 22 37 25.2 +0.8**
baz=302
ZEI Tsey 69.14 308 *eP* **P 22 37 25.4 +0.3**
ZEI pmax pmax
comp=Z,50nm,1.5s
TBLG Delisi 69.16 307 P sP 22 37 30.2 +0.8
TBLG Delisi 69.16 307 *eP* sP 22 37 30.1 +0.8
KBZ Khabaz 69.28 310 P **P 22 37 25.9 +0.3**
comp=Z,2.7nm,0.8s,baz=83,slow=8.1,SNR=5.4
KIV Kislovodsk 69.29 310 *eP* **P 22 37 25.3 -0.6**
KIV pmax pmax
comp=Z,22nm,1.0s
KIV MLR MLR
comp=Z,2µm,17.0s
KIV Kislovodsk 69.29 310 *eP* **P 22 37 25.6 -0.3**
comp=Z,54nm,1.3s
B06A Marblemount 69.31 44 *eP* **P 22 37 28.1 +2.5**
comp=Z,22nm,1.0s
VSU Vasula 69.46 329 *ceP* **P 22 37 26.1 -0.3**
VSU pmax pmax
comp=Z,105nm,1.7s
ONI Oni 69.53 308 P sP 22 37 31.5 -0.2
ONI Oni 69.53 308 *eP* sP 22 37 31.4 -0.2
NEY Neytrino 69.64 309 *eP* **P 22 37 28.6 +0.5**
NEY pmax pmax
comp=Z,4.0nm,2.2s
AKH Akhalkalaki 70.12 307 P sP 22 37 35.5 0.0
AKH Akhalkalaki 70.12 307 *eP* sP 22 37 35.4 0.0
F04A Amboy 70.16 47 *eP* **P 22 37 33.5 +2.5**
comp=Z,75nm,1.5s
CHVG Ch'k'valeri 70.32 309 P sP 22 37 36.9 +0.5
B08A Colville Reser 70.59 44 *eP* **P 22 37 35.5 +1.8**
comp=Z,29nm,1.4s
I03D Drain, OR 70.81 49 P **P 22 37 36.7 +1.6**
baz=303
SUMG Summit 70.88 359 *eP* **P 22 37 35.3 -0.1**
SUMG pmax pmax
comp=Z,24nm,1.0s
SUMG Summit 70.88 359 *eP* **P 22 37 35.3 -0.1**
comp=Z,24nm,1.0s
H04A Detroit Lake 70.97 48 *eP* **P 22 37 38.0 +1.9**
comp=Z,20nm,0.9s
G05D Wamic, OR 71.18 47 P **P 22 37 38.1 +0.8**
baz=304
I04A Tendick Farm, 71.32 49 P **P 22 37 38.5 +0.3**
baz=304
IZAR Zarasai 71.33 326 *eP* **P 22 37 38.2 +0.2**
IZAR IAmb IAmb 22 37 42.8
comp=Z,20nm,1.3s
MICGM Minsk 71.36 325⇑ *eP* **P 22 37 42.0 +3.8**
MICGM PM 22 37 44.0
comp=Z,0.1nm,1.0s
MICGM *eS* **S 22 47 04.0 +8.0**
MICGM *e*LR LR 23 07 30.0
MICGM LRM MLR 23 12 12.0
comp=N,4.1nm,12.0s
MICGM LRM MLR 23 12 28.0
comp=Z,7.0nm,12.0s
MICGM LRM MLR 23 12 32.0
comp=E,5.3nm,12.0s
MNK Minsk 71.36 325⇑ *eP* **P 22 37 42.0 +3.8**
MNK pmax pmax
comp=Z,110nm,1.0s
MNK MLR MLR
comp=N,4µm,12.0s
MNK MLR MLR
comp=Z,7µm,12.0s
MNK MLR MLR
comp=E,5µm,12.0s
IDID Didziasalis 71.39 326 *eP* **P 22 37 38.4 +0.1**
IDID IAmb IAmb 22 37 43.1
comp=Z,11nm,1.2s
L02D Cave Junction, 71.48 51 P **P 22 37 41.1 +1.9**
baz=303
C09A Chrisman Ranch 71.50 44 *eP* **P 22 37 40.6 +1.4**
comp=Z,48nm,1.5s
ISAL Salakas 71.50 326 *eP* **P 22 37 39.1 +0.1**
ISAL IAmb IAmb 22 37 40.4
comp=Z,11nm,0.7s
HAWA Hanford 71.58 46 *eP* **P 22 37 41.8 +2.1**
comp=Z,44nm,1.7s
IIGN Ignalina 71.59 326 *eP* **P 22 37 39.6 0.0**
IIGN IAmb IAmb 22 37 44.6
comp=Z,13nm,1.0s
NACGM Naroch 71.62 326 *e* **P 22 37 39.0 -0.7**
NACGM *e*LQ LQ 23 05 12.0
NACGM *e*LR LR 23 11 26.0
NACGM LRM MLR 23 13 24.0
comp=Z,7.9nm,12.0s
I05D Terrebonne, OR 71.67 48 P **P 22 37 40.8 +0.5**
baz=304
NEW Newport 71.86 43 P **P 22 37 42.3 +0.9**
baz=305
NEW Newport 71.86 43 *eP* **P 22 37 43.1 +1.7**

NEW pmax pmax
comp=Z,46nm,1.8s
NEW Newport 71.86 43 *eP* **P 22 37 43.1 +1.7**
comp=Z,46nm,1.8s
ANN Anapa 72.00 313 *eP* **P 22 37 40.2 -2.0**
ANN *eS* **S 22 46 59.3 -4.4**
ANN pmax pmax
comp=Z,75nm,1.2s
ANN MLR MLR
comp=Z,2µm,20.0s
YBH Yreka Blue Hor 72.28 51 *eP* **P 22 37 47.1 +3.1**
YBH pmax pmax
comp=Z,44nm,1.9s
YBH Yreka Blue Hor 72.28 51 *eP* **P 22 37 47.1 +3.1**
comp=Z,44nm,1.9s
J05D Fort Rock, OR 72.32 49 P **P 22 37 44.5 +0.1**
baz=304
M02C Callahan 72.37 51 P **P 22 37 44.9 +0.3**
baz=304
CAN Canberra 72.43 171 *eP* **sP 22 37 48.7 -0.4**
CAN pmax pmax
comp=Z,99nm,1.6s
CAN Canberra 72.43 171 *eP* sP 22 37 48.7 -0.4
comp=Z,99nm,1.6s
N02D Trinity Center 72.70 52 P **P 22 37 46.6 0.0**
baz=304
M04C Macdoel 72.79 51 P **P 22 37 48.4 +1.2**
baz=304,SNR=8.9
K05A Summer Lake 72.84 49 *eP* **P 22 37 49.8 +2.2**
comp=Z,21nm,0.9s
WDC Whiskeytown Da 73.02 52 *eP* **P 22 37 51.1 +2.7**
WDC pmax pmax
comp=Z,45nm,1.9s
WDC Whiskeytown Da 73.02 52 *eP* **P 22 37 51.1 +2.7**
comp=Z,45nm,1.9s
AKASG Malin Array Be 73.04 321 P **P 22 37 47.1 -1.1**
comp=Z,6.6nm,0.6s,baz=50,slow=6.2,SNR=38
AKASG LR LR 23 12 26.7
comp=Z,5µm,18.6s,baz=40,slow=38
AKBB Malin Array Si 73.04 321 *eP* **P 22 37 47.2 -1.1**
AKBB pmax pmax
comp=Z,54nm,1.6s
AKBB Malin Array Si 73.04 321 *eP* **P 22 37 47.1 -1.1**
comp=Z,54nm,1.6s
KIEV Kiev 73.05 321 *eP* **P 22 37 47.2 -1.2**
KIEV pmax pmax
comp=Z,49nm,1.6s
KIEV Kiev 73.05 321 *eP* **P 22 37 47.2 -1.2**
comp=Z,49nm,1.6s
AK11 Malin Array Si 73.08 321 *eP* **P 22 37 47.7 -0.8**
WALA Waterton Lakes 73.12 41 *eP* **P 22 37 50.2 +1.2**
comp=Z,18nm,1.1s
NC405 NORSAR Array S 73.26 336 *eP* **P 22 37 48.6 -0.9**
NC303 NORSAR Array S 73.28 336 *eP* **P 22 37 49.6 0.0**
NB201 NORSAR Array S 73.44 336 *eP* **P 22 37 50.4 -0.2**
NC204 NORSAR Array S 73.44 337 *eP* **P 22 37 50.3 -0.3**
NB2 NORSAR Subarra 73.47 336 P **P 22 37 49.7 -1.0**
comp=Z,52nm,1.4s,baz=41,slow=6.2
NB2 NORSAR Subarra 73.47 336 P **P 22 37 49.7 -1.0**
baz=41,slow=6.2
NB200 NORSAR Array S 73.47 336 *eP* **P 22 37 49.5 -1.2**
NOA NORSAR Array B 73.47 336 P **P 22 37 49.5 -1.2**
comp=Z,7.8nm,0.9s,baz=41,slow=5.9,SNR=19
NOA LR LR 23 15 05.6
comp=Z,1µm,18.2s,baz=40,slow=40
NBO02 NORSAR Array S 73.58 336 *eP* **P 22 37 50.5 -0.9**
NBO00 NORSAR Array S 73.62 336 *eP* **P 22 37 52.0 +0.4**
O03D Paynes Creek 73.65 52 P **P 22 37 53.4 +1.2**
baz=305,SNR=5.2
MOD Modoc Plateau 73.67 50 *eP* **P 22 37 53.9 +1.6**
comp=Z,31nm,1.7s
JTMT Jette 73.71 42 *eP* **P 22 37 55.0 +2.5**
BMO Blue Mountains 73.74 46 *eP* **P 22 37 53.5 +0.7**
comp=Z,12nm,1.0s
SUW Suwalki 73.81 326 *eP* **P 22 37 53.4 +0.7**
SUW *e* 22 37 56.3
SUW Suwalki 73.81 326 *eP* **P 22 37 53.5 +0.7**
SUW *e* 22 37 56.3
SWMT Swartz Lake 74.01 42 *eP* **P 22 37 56.1 +1.9**
ORV Oroville 74.26 52 *eP* **P 22 37 57.1 +1.4**
ORV pmax pmax
comp=Z,12nm,1.1s
ORV Oroville 74.26 52 *eP* **P 22 37 57.1 +1.4**
comp=Z,12nm,1.1s
WVOR Wild Horse Val 74.37 49 *eP* **P 22 37 59.1 +2.6**
WVOR pmax pmax
comp=Z,25nm,1.5s
WVOR Wild Horse Val 74.37 49 *eP* **P 22 37 59.1 +2.6**
comp=Z,25nm,1.5s
MSO Missoula 74.45 43 P **P 22 37 57.3 +0.5**
baz=308
MSO Missoula 74.45 43 *eP* **P 22 37 58.5 +1.6**
comp=Z,16nm,1.3s
CHMT Chamberlain Mo 74.77 42 *eP* **P 22 38 00.2 +1.4**
AFDM Forest Hills D 74.94 53 *eP* **P 22 38 02.1 +2.4**
comp=Z,25nm,1.7s
FFC Flin Flon 75.11 32 *eP* **P 22 38 00.8 +0.5**
FFC pmax pmax
comp=Z,34nm,1.5s
FFC Flin Flon 75.11 32 *eP* **P 22 38 00.8 +0.5**
comp=Z,34nm,1.5s
FCC Fort Churchill 75.20 25 *eP* **P 22 38 00.6 -0.1**
FCC pmax pmax
comp=Z,56nm,1.4s
FCC Fort Churchill 75.20 25 *eP* **P 22 38 00.6 -0.1**
comp=Z,56nm,1.4s
MFID Camas Ranch 75.45 46 *eP* **P 22 38 04.8 +2.1**
comp=Z,33nm,1.6s
KIS Kishinev 75.54 318 *eP* **sP 22 38 07.0 -0.3**
KIS LRM MLR 23 13 58.0
comp=Z,4µm,16.0s
KIS Kishinev 75.54 318 *eP* **sP 22 38 07.0 -0.3**
KIS *e* 22 47 45.0
KIS MLR MLR
KIS comp=Z,4µm,16.0s MLR MLR
KIS comp=N,2µm,15.0s MLR MLR
KIS comp=E,2µm,15.0s MLR MLR
HRY Holter Researc 75.67 42 *eP* **P 22 38 05.9 +2.1**
CMB Columbia Colle 75.85 53 *eP* **P 22 38 06.5 +1.5**
CMB pmax pmax
comp=Z,16nm,1.0s
CMB Columbia Colle 75.85 53 *eP* **P 22 38 06.5 +1.5**
comp=Z,16nm,1.0s
LRM Limekiln Ridge 75.89 43 *eP* **P 22 38 06.2 +0.9**
EGMT Eagleton 75.93 40 P **P 22 38 06.0 +0.7**
baz=310
EGMT Eagleton 75.93 40 *eP* **P 22 38 06.6 +1.3**
comp=Z,61nm,0.8s
DLMT Dillon 76.09 43 *eP* **P 22 38 08.3 +2.0**
comp=Z,6µm,0.8s
LVV L'vov 76.17 323 *eP* **P 22 38 06.0 -0.5**
LVV *e* 22 38 23.8
LVV *eS* **S 22 47 48.0 -2.5**
LVV MLR MLR
LVV comp=N,1µm,17.0s MLR MLR
LVV comp=Z,2µm,17.0s MLR MLR
LVV comp=E,2µm,16.0s MLR MLR
WAKR Walker 76.18 52 *eP* **P 22 38 09.3 +2.3**
HLID Hailey 76.18 46 P **P 22 38 06.9 0.0**
baz=308
HLID Hailey 76.18 46 *eP* **P 22 38 08.6 +1.7**
comp=E,5.8nm,0.9s
BMN Battle Mountai 76.41 50 *eP* **P 22 38 09.5 +1.2**
BMN pmax pmax
comp=Z,10.0nm,1.0s
BMN Battle Mountai 76.41 50 *eP* **P 22 38 09.5 +1.2**
comp=Z,10nm,1.0s
BOZ Bozeman (W) 76.44 43 P **P 22 38 08.5 +0.2**
baz=309
BOZ Bozeman (W) 76.44 43 *eP* **P 22 38 09.3 +1.0**
BOZ pmax pmax
comp=Z,39nm,1.4s
BOZ Bozeman (W) 76.44 43 *eP* **P 22 38 09.3 +1.0**
comp=Z,39nm,1.4s
GIRR Girov 76.80 319⇑ *iP* **P 22 38 09.9 -0.2**
NV01 Mina Array Sit 76.94 52 *eP* **P 22 38 11.9 +0.6**
NVAR Mina Array Bea 76.94 52 P **P 22 38 11.9 +0.6**
comp=Z,14nm,0.9s,baz=284,slow=4.7,SNR=45
KWP Kalwaria Pacla 76.94 323 *eP* **P 22 38 11.2 +0.4**
KWP *e* 22 38 14.9
KWP Kalwaria Pacla 76.94 323 *eP* **P 22 38 11.3 +0.4**
KWP *e* 22 38 15.0

TESR Tescani 77.00 319⇓ *iP* **P 22 38 11.3 0.0**
BUR08 Bucovina Ar. S 77.02 320 *eP* **P 22 38 11.4 -0.1**
NV11 Mina Array Sit 77.03 52 *eP* **P 22 38 14.5 +2.7**
comp=Z,9.1nm,0.8s
BURAR Bucovina Array 77.03 320⇓ *iP* **P 22 38 11.3 -0.3**
BURAR Bucovina Array 77.03 320 ⇓P **P 22 38 11.3 -0.3**
CFR Carcaliu 77.06 317⇓ *iP* **P 22 38 14.6 +3.0**
CFR Carcaliu 77.06 317 ⇓P **P 22 38 14.6 +3.0**
BR101 Keskin Array S 77.25 310 *eP* **P 22 38 13.1 +0.1**
BR131 Keskin Array S 77.25 310 *eP* **P 22 38 15.7 +2.7**
BRTR Keskin Array B 77.25 310 P **P 22 38 13.1 0.0**
comp=Z,2.2nm,0.9s,baz=99,slow=4.1,SNR=8.6
VRI Vrincioaia 77.38 318⇓ *iP* sP 22 38 18.8 +1.0
VRI Vrincioaia 77.38 318 ⇓P sP 22 38 18.8 +1.0
ELK Elko 77.42 48 *eP* **sP 22 38 17.1 -1.3**
ELK pmax pmax
comp=Z,11nm,1.4s
ELK Elko 77.42 48 *eP* sP 22 38 17.1 -1.3
comp=Z,10nm,1.4s
YMR Madison River 77.43 43 *eP* sP 22 38 17.1 -1.3
comp=Z,25nm,1.3s
PLOR Plostina 77.43 318⇓ *iP* sP 22 38 18.9 +0.8
PLOR Plostina 77.43 318 ⇓P sP 22 38 18.9 +0.8
KOLS Kolonicke sedl 77.62 323 *eP* **P 22 38 14.4 -0.3**
KOLS *e* 22 38 18.6
KOLS pmax pmax
comp=Z,20nm,1.5s
KOLS MLR MLR
comp=Z,2µm,20.6s
KOLS Kolonicke sedl 77.62 323 *eP* **P 22 38 14.4 -0.3**
KOLS *ep*P **sP 22 38 18.6 -0.5**
BR231 Keskin MP Arra 77.71 311 *eP* **P 22 38 13.5 -2.0**
H17A Grant Village 77.82 43 P **P 22 38 18.3 +2.1**
baz=310
H17A Grant Village 77.82 43 *eP* **P 22 38 18.8 +2.6**
comp=Z,24nm,0.9s
UZH Uzhgorod 77.82 323⇓ *dP* **P 22 38 18.0 +2.2**
UZH *e* 22 38 27.8
UZH *eS* **S 22 48 05.4 -3.0**
UZH *eSS* **SS 22 53 11.6 +4.0**
UZH MLR MLR
comp=N,6µm,15.5s
UZH MLR MLR
comp=E,5µm,15.5s
UZH MLR MLR
comp=Z,6µm,15.5s
OJC Ojcow 77.91 325 *eP* **P 22 38 16.2 -0.1**
OJC *e* 22 38 20.8
OJC Ojcow 77.91 325 *eP* **P 22 38 16.1 -0.2**
OJC pmax pmax
comp=Z,47nm,1.1s
OJC Ojcow 77.91 325 *eP* **P 22 38 16.1 -0.2**
comp=Z,47nm,1.1s
MSAB Monastry St. A 77.93 316⇑ *iP* sP 22 38 22.0 +1.2
IMW Indian Meadow 77.93 44 *eP* **P 22 38 19.2 +2.3**
comp=Z,9.4nm,0.8s
FLWY Flagg Ranch 77.95 44 *eP* sP 22 38 20.0 -1.2
comp=Z,74nm,1.8s
ISR Istrita 77.96 318⇑ *iP* sP 22 38 22.7 +1.6
ISR Istrita 77.96 318 ⇑P sP 22 38 22.7 +1.6
DOPR Dopca 78.02 319⇑ *iP* **P 22 38 17.8 +0.8**
TRPA Tarpa 78.03 322⇑ *eP* sP 22 38 21.7 +0.3
CRVS Cervenica-Dubn 78.04 323 *eP* **P 22 38 17.2 +0.2**
CRVS *e* 22 38 21.6
CRVS Cervenica-Dubn 78.04 323 *eP* **P 22 38 17.2 +0.2**
CRVS *ep*P **sP 22 38 21.6 +0.2**
MLR Muntele Rosu 78.04 318⇓ *iP* sP 22 38 21.6 0.0
MLR Muntele Rosu 78.04 318 *eP* **sP 22 38 21.3 -0.3**
MLR pmax pmax
comp=Z,55nm,1.8s
MLR Muntele Rosu 78.04 318 *eP* sP 22 38 21.3 -0.3
comp=Z,54nm,1.8s
FXWY Fox Creek 78.05 44 *eP* **P 22 38 19.6 +2.1**
comp=Z,14nm,1.3s
RLMT Red Lodge 78.06 42 P **P 22 38 17.6 +0.1**
baz=311
RLMT Red Lodge 78.06 42 *eP* **P 22 38 19.2 +1.7**
comp=Z,15nm,1.1s
PKM Mcpherson Peak 78.07 55 P **P 22 38 18.7 +1.0**
baz=307
MOOW Moose Ponds 78.14 44 *eP* **P 22 38 19.6 +1.6**
comp=Z,12nm,1.2s
NIE Niedzica 78.23 324 *eP* **P 22 38 18.4 +0.3**
NIE *e* 22 38 22.9
NIE Niedzica 78.23 324 *eP* **P 22 38 18.5 +0.3**
NIE *e* 22 38 23.0
LOHW Long Hollow 78.30 44 *eP* **P 22 38 20.4 +1.6**
comp=Z,6.9nm,1.1s
SNOW Snow King Moun 78.31 44 *eP* sP 22 38 22.1 -1.3
comp=Z,13nm,1.1s
REDW Red Top Meadow 78.33 44 *eP* **P 22 38 21.4 +2.4**
comp=Z,11nm,1.1s
GRAC Grapevine Rang 78.39 52 P **P 22 38 20.6 +1.3**
baz=308
DGMT Dagmar 78.41 37 P **P 22 38 19.1 -0.1**
baz=314
DGMT Dagmar 78.41 37 *eP* **P 22 38 21.8 +2.6**
comp=Z,17nm,1.0s
CJR Cluj-Napoca 78.46 320⇑ *iP* **P 22 38 20.5 +1.1**
CJR Cluj-Napoca 78.46 320 ⇑P **P 22 38 20.6 +1.1**
VOIR 78.55 319⇓ *iP* sP 22 38 23.4 -1.0
VOIR 78.55 319 ⇓P sP 22 38 23.4 -1.0
RAYN Ar Rayn 78.60 291 *eP* **P 22 38 20.0 -0.7**
comp=Z,48nm,1.5s
A25A Svangstu Ranch 78.61 36 P **P 22 38 21.2 +0.9**
baz=314
LAO LASA Array 78.62 39 P **P 22 38 21.1 +0.7**
baz=312
LAO LASA Array 78.62 39 *eP* **P 22 38 22.9 +2.6**
comp=Z,64nm,1.8s
DAC Darwin (Calif) 78.68 53 *eP* **P 22 38 22.4 +1.3**
DAC pmax pmax
comp=Z,7.0nm,0.8s
DAC Darwin (Calif) 78.68 53 *eP* **P 22 38 22.4 +1.3**
comp=Z,6.6nm,0.8s
R11A Troy Canyon, C 78.68 50 P **P 22 38 22.0 +1.0**
baz=308,SNR=22
R11A Troy Canyon, C 78.68 50 *eP* **P 22 38 21.4 +0.4**
comp=Z,19nm,1.4s
PRD Provadia 78.74 316 *eP* sP 22 38 24.2 -1.1
KECS Kecovo 78.79 323 *eP* **P 22 38 22.2 +1.0**
KECS *e* 22 38 25.3
KECS pmax pmax
comp=Z,6.0nm,1.3s
KECS Kecovo 78.79 323 *eP* **P 22 38 22.2 +1.0**
KECS *ep*P **sP 22 38 25.3 -0.3**
LANS Liptovska Anna 78.81 324 *eP* **P 22 38 22.0 +0.6**
LANS Liptovska Anna 78.81 324 *eP* **P 22 38 22.0 +0.6**
ARR Arges 78.82 319⇑ *iP* **P 22 38 22.2 +0.7**
DRGR 78.86 321⇓ *iP* **P 22 38 21.7 0.0**
DRGR 78.86 321 ⇓P **P 22 38 21.7 0.0**
MPMC Manual Prospec 78.88 53 P **P 22 38 23.4 +1.2**
baz=308,SNR=12
OKC Ostrava-Krasne 78.94 325 *eP* **P 22 38 21.1 -0.9**
OKC *ep*P **sP 22 38 26.1 -0.2**
OKC AMS AMS 23 17 00.0
comp=Z,4µm,13.9s
OKC Ostrava-Krasne 78.94 325 *eP* **P 22 38 21.1 -0.9**
OKC *e* 22 38 26.1
OKC MLR MLR
comp=Z,4µm,13.9s
HWUT Hardware Ranch 79.04 46 *eP* **P 22 38 24.7 +1.8**
comp=Z,27nm,1.4s
KSP Ksiaz 79.05 327 *eP* **P 22 38 22.9 +0.4**
KSP *e* 22 38 27.0
KSP Ksiaz 79.05 327 *eP* **P 22 38 23.0 +0.4**
KSP *e* 22 38 27.1
B25A Knox Farm, Ray 79.05 37 P **P 22 38 23.3 +0.7**
baz=314
LRMC Laurel Mtn Rad 79.11 54 P **P 22 38 23.8 +0.5**
baz=308
TPNV Topopah Spring 79.13 52 P **P 22 38 23.5 0.0**
baz=308,SNR=19
TPNV Topopah Spring 79.13 52 *eP* **P 22 38 24.0 +0.5**
TPNV pmax pmax
comp=Z,14nm,0.9s
TPNV Topopah Spring 79.13 52 *eP* **P 22 38 23.9 +0.5**
comp=Z,14nm,0.9s
A26A Wade Farm, Ken 79.15 36 P **P 22 38 24.3 +1.2**
baz=315
DUG Dugway, Tooele 79.21 48 P **P 22 38 24.4 +0.5**
baz=310,SNR=5.2
DUG Dugway, Tooele 79.21 48 *eP* **P 22 38 24.6 +0.7**
DUG pmax pmax
comp=Z,10.0nm,1.0s

DUG	Dugway, Tooele	79.21	48	eP		P	22 38 24.6	+0.7		
	comp=Z,10nm,1.0s									
LOT	Lotru	79.22	319⇓	iP		P	22 38 24.2	+0.5		
MORC	Moravsky Berou	79.26	326	eP		P	22 38 24.0	+0.2		
MORC				pmax		pmax				
	comp=Z,114nm,1.2s									
MORC	Moravsky Berou	79.26	326	eP		P	22 38 24.0	+0.2		
	comp=Z,114nm,1.2s									
EDW2	Edwards Air Fo	79.27	54	P		P	22 38 24.8	+0.7		
	baz=308,SNR=6.2									
KRLC	Kraliky	79.39	326	eP		P	22 38 23.9	-0.6		
KRLC				epP		pP	22 38 27.8	+0.1		
KRLC	Kraliky	79.39	326	eP		P	22 38 23.9	-0.6		
KRLC				e			22 38 27.8			
DPC	Dobruska-Polom	79.39	327	eP		P	22 38 24.5	0.0		
DPC				epP		sP	22 38 28.9	0.0		
DPC				esP		PcP	22 38 34.3	+1.7		
DPC				eS		S	22 48 23.7	-1.6		
DPC				AMS		AMS	23 17 30.0			
	comp=Z,4μm,14.0s									
DPC	Dobruska-Polom	79.39	327	eP		P	22 38 24.5	0.0		
DPC				e			22 38 28.9			
DPC				e			22 38 34.3			
DPC				eS		S	22 48 23.7	-1.6		
DPC				MLR		MLR				
	comp=Z,4μm,14.0s									
UPC	Upice	79.42	327	eP		P	22 38 24.9	+0.3		
UPC				epP		sP	22 38 29.0	0.0		
UPC				AMS		AMS	23 18 00.0			
	comp=Z,4μm,12.4s									
UPC	Upice	79.42	327	eP		P	22 38 24.9	+0.3		
UPC				e			22 38 29.0			
UPC				MLR		MLR				
	comp=Z,4μm,12.4s									
BW06	Boulder Array	79.43	44	P		P	22 38 25.6	+0.5		
	baz=311,SNR=8.9									
BW06	Boulder Array	79.43	44	eP		P	22 38 26.1	+1.0		
PD31	Pinedale Array	79.43	44	eP		P	22 38 25.2	+0.1		
PDAR	Pinedale Array	79.43	44	P		P	22 38 25.2	+0.1		
	comp=Z,4.1nm,0.8s,baz=281,slow=2.4,SNR=25									
TCUT	Toone Canyon	79.45	46	eP		P	22 38 27.4	+2.1		
	comp=Z,18nm,1.1s									
PSZ	Piszkesteto	79.47	323⇑	eP		P	22 38 29.7	+4.7		
PSZ	Piszkesteto	79.47	323	eP		P	22 38 25.2	+0.2		
PSZ				pmax		pmax				
	comp=Z,59nm,1.4s									
PSZ	Piszkesteto	79.47	323	eP		P	22 38 25.2	+0.2		
	comp=Z,59nm,1.4s									
VYHS	Vyhne	79.57	324	eP		P	22 38 25.9	+0.4		
VYHS				e			22 38 30.0			
VYHS				pmax		pmax				
	comp=Z,27nm,1.6s									
VYHS				MLR		MLR				
	comp=Z,3μm,15.6s									
VYHS	Vyhne	79.57	324	eP		P	22 38 25.9	+0.4		
VYHS				epP		sP	22 38 30.0	+0.1		
JMB	Yambol	79.67	316	eP		sP	22 38 29.8	-0.7		
JLU	Jordanelle	79.75	47	eP		P	22 38 29.6	+2.7		
	comp=Z,14nm,1.4s									
GZR	Gura Zlata	79.77	320⇓	iP		P	22 38 24.8	-1.9		
GZR	Gura Zlata	79.77	320	⇓P		P	22 38 24.8	-1.9		
GSC	Goldstone, Bar	79.78	54	P		P	22 38 27.9	+1.0		
	baz=308,SNR=7.3									
GSC	Goldstone, Bar	79.78	54	eP		P	22 38 28.6	+1.6		
GSC				pmax		pmax				
	comp=Z,10.0nm,1.1s									
GSC	Goldstone, Bar	79.78	54	eP		P	22 38 28.6	+1.6		
	comp=Z,10nm,1.1s									
NLU	North Lily Min	79.80	47	eP		P	22 38 28.9	+1.7		
	comp=Z,5.3nm,1.0s									
C26A	Wahner Farm, P	79.87	37	P		P	22 38 26.8	-0.4		
	baz=315									
BFSC	Mount Baldy Ra	79.88	55	P		P	22 38 27.6	0.0		
	baz=308									
A28A	Rude Farm, Bot	79.96	35	P		P	22 38 28.2	+0.6		
	baz=316									
MPU	Maple Canyon	80.02	47	eP		P	22 38 31.1	+2.7		
	comp=Z,15nm,1.4s									
VRAC	Vranov	80.03	326⇑	iP		P	22 38 28.5	+0.6		
VRAC	Vranov	80.03	326	⇑P		P	22 38 28.5	+0.6		
PVCC	Panska Ves	80.03	327	eP		P	22 38 28.1	+0.2		
PVCC				epP		sP	22 38 32.2	-0.1		
PVCC				AMS		AMS	23 18 10.0			
PVCC	Panska Ves	80.03	327	eP		P	22 38 28.1	+0.2		
PVCC				e			22 38 32.2			
BRG	Berggiesshubel	80.04	328	eP		P	22 38 27.6	-0.4		
	comp=Z,5.9nm,1.1s									
BRG				e			22 38 32.0			
	comp=Z,56nm,1.8s									
BRG	Berggiesshubel	80.04	328	eP		P	22 38 27.6	-0.4		
BRG				e			22 38 32.0			
BRG				pmax		pmax				
	comp=Z,2.0nm,1.1s									
BRG				pmax		pmax				
	comp=Z,6.0nm,1.8s									
BRG				MLR		MLR				
	comp=N,56μm,15.9s									
BRG				MLR		MLR				
	comp=E,26μm,14.5s									
BRG				MLR		MLR				
	comp=Z,12μm,15.1s									
CLL	Collm	80.11	329	eP		P	22 38 28.0	-0.3		
	comp=Z,39nm,1.3s									
CLL				i			22 38 31.9			
	comp=Z,39nm,1.3s									
CLL				i			22 38 35.4			
CLL				eS		S	22 48 29.0	-3.8		
CLL				ePS		PnS	22 49 14.0	-2.7		
CLL				eSS		SS	22 54 00.0	+18		
CLL				e			22 54 42.0			
CLL				e			22 58 12.0			
CLL	Collm	80.11	329	eP		P	22 38 28.0	-0.3		
CLL				i			22 38 35.4			
CLL				eS		S	22 48 29.0	-3.8		
CLL				pmax		pmax				
	comp=Z,39nm,1.3s									
CLL	Collm	80.11	329	eP		P	22 38 27.4	-0.9		
	comp=Z,43nm,1.3s									
E25A	Miller Ranch,	80.17	38	P		P	22 38 29.4	+0.6		
	baz=314									
BUD	Budapest	80.19	323⇓	eP		P	22 38 33.9	+5.1		
BZS	Buzias	80.21	321	⇑iP		P	22 38 28.7	-0.3		
BZS	Buzias	80.21	321	⇑P		P	22 38 28.7	-0.3		
SMOL	Smolenice	80.22	325	eP		P	22 38 30.4	+1.4		
SMOL	Smolenice	80.22	325	eP		P	22 38 30.3	+1.3		
C27A	Sayler Ranch,	80.24	36	P		P	22 38 29.0	-0.1		
	baz=315									
B28A	Dugan Ranch, T	80.25	35	P		P	22 38 29.8	+0.6		
	baz=316									
D26A	Manning	80.27	37	P		P	22 38 30.2	+0.9		
	baz=315									
TUQ	Turquoise Moun	80.27	53	P		P	22 38 30.5	+0.9		
	baz=309,SNR=12									
HEC	Hector,Ludlow	80.38	54	P		P	22 38 31.0	+0.8		
	baz=306									
GOPC	GO Pecny, Ondr	80.39	327	eP		P	22 38 29.1	-0.8		
GOPC				epP		sP	22 38 34.6	+0.4		
GOPC				ex		x	22 38 45.5			
GOPC				eSKS		S	22 48 41.9	+6.1		
GOPC				AMS		AMS	23 18 50.0			
	comp=Z,4μm,12.2s									
GOPC	GO Pecny, Ondr	80.39	327	eP		P	22 38 29.1	-0.8		
GOPC				e			22 38 34.6			
GOPC				eS		S	22 48 41.9	+6.1		
GOPC				MLR		MLR				
	comp=Z,4μm,12.2s									
A29A	Manning Farm,	80.42	34	P		P	22 38 30.3	+0.2		
	baz=317,SNR=14									
PRA	Prague	80.43	327	eP		P	22 38 30.2	+0.2		
PRA				epP		sP	22 38 34.3	-0.1		
PRA				AMS		AMS	23 19 00.0			
	comp=Z,4μm,12.6s									
PRA	Prague	80.43	327	eP		P	22 38 30.2	+0.2		
PRA				e			22 38 34.3			
PRA				MLR		MLR				
	comp=Z,4μm,12.6s									
PKS7	Kunszentmiklos	80.44	323⇓	eP		P	22 38 34.2	+4.1		
PRU	Pruhonice	80.44	327	eP		P	22 38 29.9	-0.2		
PRU				epP		sP	22 38 34.2	-0.3		
PRU				eS		S	22 48 29.7	-6.6		
PRU				AMS		AMS	23 19 00.0			
	comp=Z,4μm,12.6s									
PRU	Pruhonice	80.44	327	eP		P	22 38 29.9	-0.2		
PRU				e			22 38 34.2			
PRU				eS		S	22 48 29.7	-6.6		
PRU				MLR		MLR				
	comp=Z,4μm,12.6s									
TREC	Trest	80.53	326	AMS		AMS	23 18 10.0			
	comp=Z,4μm,13.8s									
F25A	Bowman	80.54	39	P		P	22 38 32.0	+1.2		
	baz=314									
PKS6	Bocsa	80.56	322⇓	eP		P	22 38 33.3	+2.5		
PKSG		80.56	323⇓	eP		sP	22 38 34.8	-0.4		
MURC	Murrieta	80.58	55	P		P	22 38 32.6	+1.4		
	baz=308									
CSKK	Cs˘tkako	80.65	323⇑	eP		P	22 38 31.4	+0.1		
D27A	Center	80.66	37	P		P	22 38 31.5	+0.1		
	baz=315									
MSU	Marysvale	80.66	49	eP		P	22 38 34.0	+2.2		
MSU	Marysvale	80.66	49	eP		P	22 38 34.0	+2.2		
B29A	Wagenman Farm,	80.70	35	P		P	22 38 32.7	+1.1		
	baz=317									
MDVR	Moldovita	80.74	320⇓	iP		P	22 38 31.8	-0.1		
TMUT	Trail Mountain	80.74	48	eP		P	22 38 35.0	+2.7		
	comp=Z,11nm,1.4s									
C28A	Hausauer Farms	80.76	36	P		P	22 38 33.1	+1.1		
	baz=316									
PKST	T˜˜s	80.83	324⇓	eP		sP	22 38 35.6	-1.1		
A30A	Hoffart Farm,	80.83	34	P		P	22 38 32.4	+0.1		
	baz=317									
GMRC	Granite Mounta	80.84	53	P		P	22 38 33.1	+0.3		
	baz=309,SNR=8.4									
P17A	Butcher Ranch,	80.90	47	eP		P	22 38 34.8	+1.8		
	comp=Z,12nm,1.0s									
ULM	Lac du Bonnet	80.92	32	P		P	22 38 32.9	+0.2		
	comp=Z,12nm,0.8s,baz=323,slow=7.0,SNR=12									
ULM	Lac du Bonnet	80.92	32	eP		P	22 38 32.9	+0.2		
	comp=Z,28nm,1.3s									
PGB	Panagyurishte	80.95	317	eP		sP	22 38 36.5	-1.0		
PLD	Plovdiv	80.95	316	eP		P	22 38 35.9	+2.9		
LCMT	Little Creek M	80.97	50	eP		P	22 38 35.8	+2.4		
	comp=Z,13nm,1.2s									
F26A	Lodgepole	80.98	38	P		P	22 38 33.8	+0.6		
	baz=315									
LDFC	Landfair	81.01	53	eP		P	22 38 35.9	+2.2		
	comp=Z,18nm,1.1s									
MDND	Maddock	81.03	35	P		P	22 38 33.8	+0.4		
	baz=317									
MDND	Maddock	81.03	35	eP		P	22 38 35.2	+1.8		
	comp=Z,44nm,1.1s									
PFO	Pinyon Flats O	81.05	55	P		P	22 38 35.4	+1.4		
	baz=309									
PFO	Pinyon Flats O	81.05	55	eP		P	22 38 35.3	+1.4		
PFO				pmax		pmax				
	comp=Z,39nm,1.7s									
PFO	Pinyon Flats O	81.05	55	eP		P	22 38 35.3	+1.4		
	comp=Z,39nm,1.7s									
D28A	Regan	81.05	36	P		P	22 38 33.9	+0.4		
	baz=316									
G25A	Newell	81.07	39	P		P	22 38 34.3	+0.7		
	baz=314									
P18A	Preston Nutter	81.09	47	eP		P	22 38 36.4	+2.2		
	comp=Z,18nm,1.3s									
BELC	Belle Mtn. Jos	81.11	54	P		P	22 38 33.9	-0.3		
	baz=309									
NKC	Novy Kostel	81.15	328	eP		P	22 38 33.5	-0.5		
NKC				epP		sP	22 38 38.0	-0.3		
NKC				eS		S	22 48 44.9	+1.1		
NKC				AMS		AMS	23 20 00.0			
	comp=Z,3μm,13.0s									
NKC	Novy Kostel	81.15	328	eP		P	22 38 33.5	-0.5		
NKC				e			22 38 38.0			
NKC				eS		S	22 48 44.9	+1.1		
NKC				MLR		MLR				
	comp=Z,3μm,13.0s									
B30A	Myrvik Farm, E	81.18	34	P		P	22 38 34.5	+0.3		
	baz=317,SNR=17									
K22A	Casper	81.18	43	P		P	22 38 33.8	-0.7		
	baz=313									
K22A	Casper	81.18	43	eP		P	22 38 36.4	+1.9		
	comp=Z,36nm,1.6s									
PKS9	Tamasi	81.19	323⇑	eP		sP	22 38 38.0	-0.6		
SOP	Sopron	81.22	325⇓	eP		sP	22 38 39.0	+0.3		
KNB	Kanab	81.23	50	eP		P	22 38 37.4	+2.6		
KNB				pmax		pmax				
	comp=Z,17nm,1.2s									
KNB	Kanab	81.23	50	eP		P	22 38 37.4	+2.6		
	comp=Z,17nm,1.2s									
SRU	San Rafael Swe	81.26	47	eP		P	22 38 36.4	+1.4		
SRU				pmax		pmax				
	comp=Z,12nm,0.8s									
SRU	San Rafael Swe	81.26	47	eP		P	22 38 36.4	+1.4		
	comp=Z,12nm,0.8s									
F27A	Lemmon	81.29	38	P		P	22 38 34.4	-0.4		
	baz=315									
CONA	Conrad Observa	81.36	325	eP		P	22 38 35.7	+0.5		
	comp=Z,30nm,1.4s,SNR=10									
H25A	Fruitdale	81.37	40	P		P	22 38 35.5	+0.1		
	baz=314									
G26A	Maurine	81.41	39	P		P	22 38 35.8	+0.4		
	baz=315,SNR=6.9									
E28A	Huff	81.44	37	P		P	22 38 35.4	-0.1		
	baz=316									
VTS	Vitosha	81.44	318⇑	iP		P	22 38 36.3	+0.5		
VTS	Vitosha	81.44	318	eP		P	22 38 36.1	+0.3		
VTS				pmax		pmax				
	comp=Z,22nm,1.3s									
VTS	Vitosha	81.44	318	eP		sP	22 38 39.3	-0.9		
VTS	Vitosha	81.44	318	eP		P	22 38 36.1	+0.3		
	comp=Z,22nm,1.3s									
RSSD	Black Hills	81.50	40	P		P	22 38 36.6	+0.5		
	baz=314									
RSSD	Black Hills	81.50	40	eP		P	22 38 37.5	+1.3		
RSSD				pmax		pmax				
	comp=Z,8.0nm,0.8s									
RSSD	Black Hills	81.50	40	eP		P	22 38 37.5	+1.3		
	comp=Z,7.7nm,0.8s									
KHC	Kasperske Hory	81.50	327	eP		P	22 38 35.1	-0.7		
KHC				epP		sP	22 38 39.9	-0.3		
KHC				eSKS		S	22 48 52.3	+4.9		
KHC				AMS		AMS	23 19 30.0			
	comp=Z,4μm,12.6s									
KHC	Kasperske Hory	81.50	327	eP		P	22 38 35.1	-0.7		
KHC				e			22 38 39.9			
KHC				eS		S	22 48 52.3	+4.9		
KHC				MLR		MLR				
	comp=Z,4μm,12.6s									
KHC	Kasperske Hory	81.50	327	eP		P	22 38 35.8	-0.1		
	comp=Z,7.9nm,1.2s									
MONP2	Monument Peak	81.52	55	P		P	22 38 37.1	+0.6		
	baz=309									
IRM	Iron Mountain	81.57	54	P		P	22 38 37.0	+0.5		
	baz=309,SNR=10									
D29A	Pettibone, Tap	81.61	36	P		P	22 38 36.3	-0.1		
	baz=317									
A32A	Rocking H Ranc	81.65	33	P		P	22 38 36.7	+0.1		
	baz=319									
GEC2	GERESS Array S	81.66	327	eP		P	22 38 36.9	+0.1		
GEC2				pmax		pmax				
	comp=Z,10.0nm,1.2s									
GEC2	GERESS Array S	81.66	327	eP		P	22 38 36.9	+0.1		
	comp=Z,9.9nm,1.2s									
GERES	GERESS Array B	81.66	327	P		P	22 38 36.5	-0.3		
	comp=Z,2.1nm,0.6s,baz=34,slow=5.5,SNR=20									
C30A	Mose, Pekin	81.66	35	P		P	22 38 37.1	+0.4		
	baz=317									
GEA0	GERESS Array S	81.66	327	eP		P	22 38 36.0	-0.8		
BC3	Big Chuckawall	81.68	54	P		P	22 38 38.0	+0.8		
	baz=309,SNR=6.2									
G27A	Dupree	81.68	38	P		P	22 38 37.8	+0.9		
	baz=315									
I25A	Rochford	81.72	40	P		P	22 38 37.6	+0.3		
	baz=314									
W13A	Hualapai Mount	81.78	52	eP		P	22 38 39.2	+1.3		
	comp=Z,7.4nm,1.1s									
IBP	Imperial Bould	81.88	55	P		P	22 38 39.5	+1.3		
	baz=309									
SWSC	Sam W. Stewart	81.90	55	P		P	22 38 39.9	+1.7		
	baz=309									
F28A	McLaughlin	81.91	37	P		P	22 38 39.2	+1.2		
	baz=316									
O20A	White River Ci	81.91	45	P		P	22 38 38.5	+0.1		
	baz=312,SNR=5.5									
O20A	White River Ci	81.91	45	eP		P	22 38 40.0	+1.6		
	comp=Z,12nm,1.1s									
U15A	North Rim	81.93	50	eP		P	22 38 41.7	+3.0		
	comp=Z,21nm,1.4s									
C31A	Landman Farms,	81.93	35	P		P	22 38 37.2	-0.9		
	baz=318									
D30A	Buchanan	81.97	35	P		P	22 38 38.7	+0.4		
	baz=317									
BEHE	Becsehely	82.00	324⇑	eP		sP	22 38 42.8	0.0		
B32A	Ashes, Strandq	82.02	33	P		P	22 38 38.9	+0.3		
	baz=319									
GRFO	Grafenberg	82.08	329	eP		sP	22 38 43.1	-0.2		
GRFO				pmax		pmax				
	comp=Z,72nm,1.4s									
GRFO	Grafenberg	82.08	329	eP		sP	22 38 43.0	-0.2		
	comp=Z,72nm,1.4s									
A33A	Warroad	82.12	33	P		P	22 38 38.8	-0.3		
	baz=319,SNR=8.5									
PDMCI	Parker Dam,Lak	82.12	53	P		P	22 38 39.7	+0.3		
	baz=310									
J25A	Sunshine Ranch	82.12	41	P		P	22 38 37.9	-1.4		
	baz=314									
H27A	Howes	82.14	39	P		P	22 38 40.0	+0.7		
	baz=315									
MOA	Molln	82.15	326	eP		P	22 38 39.4	+0.1		
	comp=Z,15nm,1.4s,SNR=5.1									
I26A	New Underwood	82.17	40	P		P	22 38 39.6	+0.1		
	baz=315									
Y12C	Blythe	82.22	54	P		P	22 38 41.0	+1.1		
	baz=310									
Y12C	Blythe	82.22	54	eP		P	22 38 41.5	+1.6		
	comp=Z,8.6nm,0.8s									
E30A	Jud	82.34	36	P		P	22 38 40.6	+0.3		
	baz=317,SNR=6.5									
F29A	Eureka	82.39	37	P		P	22 38 40.7	+0.1		
	baz=317									
AGMN	Agassiz Nation	82.39	33	P		P	22 38 40.3	-0.2		
	baz=319									
AGMN	Agassiz Nation	82.39	33	eP		P	22 38 40.6	+0.1		
	comp=Z,38nm,1.6s									
G28A	Parade	82.40	38	P		P	22 38 40.6	-0.1		
	baz=316									
GLA	Glamis	82.47	54	P		P	22 38 41.5	+0.3		
	baz=309									
PV09	Paradox Valley	82.48	47	eP		P	22 38 43.7	+2.2		
D31A	Mcclaflin, Tow	82.49	35	P		P	22 38 40.9	-0.1		
	baz=318									
I27A	Quinn	82.55	39	P		P	22 38 41.9	+0.4		
	baz=315									
J26A	Sides Ranch, S	82.56	40	P		P	22 38 41.5	-0.1		
	baz=315									
PV10	Paradox Valley	82.62	47	eP		P	22 38 44.2	+1.9		
H28A	Mission Ridge	82.64	38	P		P	22 38 42.5	+0.6		
	baz=316,SNR=12									
PERS	Pernice	82.66	325	eP		P	22 38 41.3	-0.7		
SOKA	Soboth	82.66	325	iP		P	22 38 42.1	+0.1		
	comp=Z,39nm,1.3s,SNR=22									
N23A	Red Feather La	82.69	44	P		P	22 38 43.7	+1.1		
	baz=313,SNR=7.5									
N23A	Red Feather La	82.69	44	eP		P	22 38 44.8	+2.2		
	comp=Z,26nm,1.3s									
D32A	Dogwood Acres,	82.75	35	P		P	22 38 43.0	+0.6		
	baz=318									
F30A	Leola	82.77	37	P		P	22 38 42.9	+0.4		
	baz=317									
E31A	Nome	82.78	35	P		P	22 38 43.2	+0.6		
	baz=318									
B34A	Aery, Baudette	82.78	32	P		P	22 38 42.8	+0.3		
	baz=320,SNR=6.3									
PV05	Paradox Valley	82.78	47	eP		P	22 38 44.9	+1.8		
G29A	Hoven	82.81	37	P		P	22 38 43.7	+0.9		
	baz=317									
C33A	Trail	82.84	34	P		P	22 38 43.4	+0.6		
	baz=319									
I28A	Midland	83.05	39	P		P	22 38 44.5	+0.4		
	baz=316									
PV01	Paradox Valley	83.06	47	eP		P	22 38 46.1	+1.6		
H29A	Onida	83.07	38	P		P	22 38 45.1	+0.9		
	baz=316									
Y14A	Wickenburg	83.08	53	eP		P	22 38 46.4	+2.0		
	comp=Z,36nm,1.0s									
WUAZ	Wupatki	83.08	51	P		P	22 38 45.4	+0.8		
	baz=311,SNR=5.7									
WUAZ	Wupatki	83.08	51	eP		P	22 38 46.7	+2.1		
	comp=Z,19nm,1.5s									
F31A	Hecla	83.12	36	P		P	22 38 45.0	+0.6		
	baz=318									
J27A	Elkhorn Farm,	83.15	40	P		P	22 38 45.3	+0.6		
	baz=316									
G30A	Faulkton	83.23	37	P		P	22 38 45.5	+0.6		
	baz=317,SNR=10									
B35A	Bob, Littlefor	83.27	32	P		P	22 38 44.9	-0.2		
	baz=320									
D33A	AnnSam, Waubun	83.27	34	P		P	22 38 45.7	+0.6		
	baz=319									
SMCO	Snowmass	83.28	45	eP		P	22 38 47.7	+1.9		
	comp=Z,7.4nm,1.0s									
C34A	RKJ Ranch, Bem	83.30	33	P		P	22 38 45.6	+0.3		
	baz=320									
J28A	Allard Ranch,	83.42	39	P		P	22 38 47.2	+1.1		
	baz=316									
I29A	Vivian Onida	83.47	38	P		P	22 38 47.4	+1.2		
	baz=316									
D34A	Park Rapids	83.61	34	P		P	22 38 46.6	-0.2		
	baz=320									
ISCO	Idaho Springs	83.63	44	P		P	22 38 47.4	-0.1		
	baz=314									
ISCO	Idaho Springs	83.63	44	eP		P	22 38 49.1	+1.6		
ISCO				pmax		pmax				
	comp=Z,15nm,1.4s									
ISCO	Idaho Springs	83.63	44	eP		P	22 38 49.1	+1.6		
	comp=Z,14nm,1.4s									
C35A	Jirik Farms, M	83.67	33	P		P	22 38 47.1	-0.1		
	baz=320,SNR=7.4									
E33A	Westby DABS, E	83.68	34	P		P	22 38 47.9	+0.6		
	baz=319,SNR=5.8									
JAVS	Javornik	83.70	325	eP		P	22 38 45.9	-1.5		
MVCO	Mesa Verde	83.71	48	P		P	22 38 48.9	+1.0		
	baz=312,SNR=5.6									
MVCO	Mesa Verde	83.71	48	eP		P	22 38 49.4	+1.5		
	comp=Z,16nm,1.2s									
X16A	Lo Mia Camp, P	83.76	51	eP		P	22 38 49.9	+1.8		
	comp=Z,17nm,1.2s									
ABTA	Abfaltersbach	83.76	326	eP		P	22 38 45.9	-1.8		
	comp=Z,9.5nm,1.2s									
SUSD	Miller	83.82	37	P		P	22 38 48.7	+0.6		
	baz=317									
J29A	Okreek	83.90	39	P		P	22 38 49.1	+0.

baz=319,SNR=9.1
OGNE Ogallala 84.78 41 P P 22 38 53.4 +0.4
baz=316
G34A Benson 84.80 35 P P 22 38 53.5 +0.5
baz=320,SNR=5.8
C38A Sawbill Land. 84.81 31 P P 22 38 53.5 +0.5
baz=322,SNR=8.3
F35A Swanville 84.82 34 P P 22 38 53.8 +0.8
baz=320
FUORN Ofenpass-Fuorn 84.86 327 eP P 22 38 53.4 -0.1
comp=Z,28nm,1.1s
E36A McGregor 84.90 33 P P 22 38 53.8 +0.4
baz=321,SNR=5.5
ECH Echery 84.91 330 eP sP 22 38 56.8 -1.0
SDCO Great Sand Dun 85.10 46 P P 22 38 55.7 +0.8
baz=314,SNR=7.3
SDCO Great Sand Dun 85.10 46 eP P 22 38 56.5 +1.5
comp=Z,6.2nm,1.0s
MOF Molkenrain 85.21 330 eP P 22 38 58.5 +3.5
F36A Milaca 85.29 34 P P 22 38 54.6 -0.7
baz=321
G35A Watkins 85.35 35 P P 22 38 56.3 +0.6
baz=320
THEF They Montfort 85.37 330 eP sP 22 38 58.9 -1.2
TUE Stuetta 85.37 327 eP P 22 38 57.5 +1.5
comp=Z,25nm,1.4s
ECSD EROS Data Cent 85.48 37 P P 22 38 56.6 +0.2
baz=319,SNR=6.9
ECSD EROS Data Cent 85.48 37 eP P 22 38 56.5 +0.2
comp=Z,46nm,1.8s
L31A Butterfield Fa 85.54 39 P P 22 38 56.9 +0.1
baz=318
TUC Tucson 85.55 53 P P 22 38 58.5 +1.4
baz=311
TUC Tucson 85.55 53 eP P 22 38 58.4 +1.4
TUC pmax pmax
comp=Z,12nm,1.3s
TUC Tucson 85.55 53 eP P 22 38 58.4 +1.4
comp=Z,12nm,1.3s
H35A Sunnyside Ranc 85.59 35 P P 22 38 57.5 +0.6
baz=320,SNR=10
LOMF Lomont 85.73 329 eP P 22 39 01.5 +3.8
M31A Lambtecht Ranc 86.08 40 P P 22 39 00.4 +0.9
baz=318
H36A Jessenland, He 86.09 35 P P 22 39 00.2 +0.8
baz=321
SPMN Marine on St. 86.10 34 P P 22 38 60.0 +0.5
baz=321
SPMN Marine on St. 86.10 34 eP P 22 39 00.5 +1.1
comp=Z,32nm,1.4s
T25A Trinidad 86.15 46 P P 22 39 00.9 +0.8
baz=314
T25A Trinidad 86.15 46 eP P 22 39 01.5 +1.4
comp=Z,8.4nm,0.8s
BGNE Belgrade 86.46 39 P P 22 39 01.4 +0.1
baz=318
ANMO Albuquerque 86.46 48 P P 22 39 02.8 +1.2
baz=314
ANMO Albuquerque 86.46 48 eP P 22 39 03.8 +2.2
ANMO pmax pmax
comp=Z,11nm,1.4s
ANMO Albuquerque 86.46 48 eP P 22 39 03.8 +2.2
comp=Z,11nm,1.4s
K34A Le Mars 86.52 37 P P 22 39 02.4 +0.9
baz=319
H37A Dierke Farm, C 86.55 34 P P 22 39 02.4 +0.8
baz=321
PPT2 Papeete2 86.63 115 eLR LR 23 06 13.1
comp=Z,660nm,25.5s
I37A Lemond, Waseca 86.77 35 P P 22 39 03.2 +0.5
baz=321,SNR=5.6
O31A Woolen Ranch, 86.78 41 P P 22 39 03.8 +0.9
baz=317
J36A Seneca 1, Swea 86.86 36 P P 22 39 03.3 +0.1
baz=320
K35A Storm Lake 86.91 37 P P 22 39 03.8 +0.3
baz=320
I38A Scanlan Farm, 87.23 34 P P 22 39 05.0 0.0
baz=322
J37A Redenius Farm, 87.25 35 P P 22 39 05.4 +0.3
baz=321
121A Cookes Peak, D 87.29 51 P P 22 39 06.2 +0.5
baz=313
P32A Huiting Farm, 87.55 40 P P 22 39 06.8 +0.1
baz=318
K37A Belmond 87.62 36 P P 22 39 07.7 +0.8
baz=321
J38A Wedel Dairy, R 87.73 35 P P 22 39 06.9 -0.5
baz=322
Q32A Meitler Ranch, 88.03 41 P P 22 39 09.9 +0.9
baz=318
L37A Phoenix Point, 88.07 36 P P 22 39 09.3 +0.3
baz=321
O34A Beatrice 88.11 39 P P 22 39 09.6 +0.4
baz=319
TAOE Nuku Hiva Isla 88.36 102 eLR LR 23 07 14.5
comp=Z,870nm,21.6s
TAOE Nuku Hiva Isla 88.36 102 eP sP 22 39 16.1 +0.9
comp=Z,110nm,1.0s
Q33A Connelly Farm, 88.41 40 P P 22 39 11.6 +0.9
baz=318
L38A Oak Wood Farm, 88.43 36 P P 22 39 11.3 +0.6
baz=321
M37A Trindle Farm, 88.48 37 P P 22 39 12.1 +1.1
baz=321
P34A Walnut Farm, R 88.52 40 P P 22 39 11.9 +0.6
baz=319
M38A Pleasantville 88.88 36 P P 22 39 13.2 +0.3
baz=321
N37A Lee Faris, Mou 88.90 37 P P 22 39 13.8 +0.8
baz=321
Q34A Chapman 88.93 40 P P 22 39 13.0 -0.1
baz=319
P35A Duane Minner, 88.94 39 P P 22 39 14.4 +1.1
baz=319
KSU1 Kansas State U 88.96 40 eP P 22 39 14.5 +1.1
comp=Z,14nm,0.7s
P36A Good Intent, A 89.28 39 P P 22 39 15.7 +0.9
baz=320
AMTX Amarillo 89.30 46 P P 22 39 16.0 +0.9
baz=316
AMTX Amarillo 89.30 46 eP P 22 39 16.8 +1.7
comp=Z,12nm,0.9s
MSTX Muleshoe 89.32 47 P P 22 39 15.9 +0.7
baz=316
N38A Joes South For 89.34 37 P P 22 39 15.9 +0.8
baz=321
N39A Derby Farms, D 89.63 36 P P 22 39 17.5 +1.1
baz=322
S34A Willow Spring 89.75 41 P P 22 39 18.2 +1.2
baz=319
R35A Emporia Munici 89.76 40 P P 22 39 18.7 +1.7
baz=319
P38A Dawn 90.10 38 P P 22 39 19.7 +1.1
baz=321
TBI Tubuai 90.41 119 eLR LR 23 07 56.4
comp=Z,639nm,21.2s
R37A Teagarden Farm 90.47 39 P P 22 39 21.7 +1.4
baz=320
U34A Anderson Ranch 90.47 42 P P 22 39 21.6 +1.2
baz=318
W32A Sentinel 90.50 44 P P 22 39 21.8 +1.2
baz=318
O40A La Belle 90.52 36 P P 22 39 21.1 +0.6
baz=322
P39A Salisbury 90.59 37 P P 22 39 21.5 +0.6
baz=322
Q39A Willow Grove F 90.83 38 P P 22 39 22.3 +0.3
baz=321
T36A Boggs Farm, Ca 90.88 41 P P 22 39 22.9 +0.6
baz=320
S37A Fort Scott 90.89 40 P P 22 39 22.7 +0.4
baz=320
P40A Paris 90.90 37 P P 22 39 22.4 +0.1
baz=322
W33A Caddo, Fort Co 90.91 43 P P 22 39 22.7 +0.2
baz=318
V34A Guthrie 90.93 42 P P 22 39 23.8 +1.2
baz=318
U35A Pawnee 90.95 42 P P 22 39 23.8 +1.2
baz=319
Q40A Laux Farm, Aux 91.30 37 P P 22 39 25.0 +0.8
baz=322
R39A Chumby, Stover 91.36 38 P P 22 39 25.1 +0.6
baz=321
HDIL Hopedale 91.37 34 P P 22 39 25.5 +1.0
baz=324
U36A Oologah 91.46 41 P P 22 39 25.2 +0.1
baz=320
Y33A Hilltop Ranch, 91.67 44 P P 22 39 27.3 +1.2
baz=318
X34A Smith Ranch, M 91.67 43 P P 22 39 26.5 +0.4
baz=318
S39A Bolivar 91.70 39 P P 22 39 26.4 +0.3
baz=321
T38A Diamond 91.72 40 P P 22 39 27.1 +0.8
baz=320
U37A Salina 91.77 41 P P 22 39 27.1 +0.6
baz=320
W35A Tecumseh 91.78 42 P P 22 39 27.0 +0.4
baz=319
TUL1 Leonard 91.79 41 P P 22 39 27.0 +0.4
baz=320
V36A Jenks 91.81 41 P P 22 39 26.8 +0.1
baz=320
LTX Lajitas 92.05 51 eP P 22 39 28.4 +0.4
LTX e 22 43 14.1
LTX Lajitas 92.05 51 eP P 22 39 28.4 +0.4
LTX ePP PP 22 43 14.1 +7.0
TXAR Lajitas Array 92.05 51 P P 22 39 28.4 +0.4
comp=Z,5.7nm,1.0s,baz=291,slow=3.5,SNR=24
TXAR PP PP 22 43 14.1 +7.0
comp=Z,2.3nm,1.1s,baz=305,slow=4.4,SNR=6.4
TXAR Lajitas Array 92.05 51 P P 22 39 28.4 +0.4
TXAR 22 43 14.1
TXAR pmax pmax
comp=Z,5.0nm,1.0s
TXAR pmax pmax
comp=Z,2.0nm,1.1s
ABTX Abilene, Hawle 92.11 46 P P 22 39 28.8 +0.7
baz=317
ABTX Abilene, Hawle 92.11 46 eP P 22 39 30.2 +2.1
comp=Z,22nm,1.3s
Z33A Whitaker Ranch 92.12 45 P P 22 39 28.4 +0.2
baz=318
W36A Wetumka 92.14 42 P P 22 39 29.6 +1.4
baz=319
V37A Hulbert 92.16 41 P P 22 39 28.6 +0.4
baz=320
T39A Clever 92.19 39 P P 22 39 28.5 +0.1
baz=321
X35A Drake 92.29 43 P P 22 39 28.6 -0.3
baz=319
HPIG 92.45 54 eP P 22 39 32.7 +2.6
comp=Z,16nm,1.3s
133A Hamilton Ranch 92.53 45 P P 22 39 30.3 +0.2
baz=318
Z34A Collier Ranch, 92.54 44 P P 22 39 30.8 +0.7
baz=318
V38A Canehill 92.56 40 P P 22 39 30.5 +0.3
baz=320
W37B Quinton 92.57 42 P P 22 39 30.0 -0.1
baz=320
U39A Green Forest 92.64 40 P P 22 39 31.3 +0.8
baz=321
V39A Pettigrew 92.97 40 P P 22 39 32.3 +0.3
baz=321
U40A Yellville 92.98 39 P P 22 39 31.6 -0.5
baz=321
233A Rising Star 92.98 46 P P 22 39 32.8 +0.7
baz=318
333A Richland Sprin 93.44 46 P P 22 39 35.0 +0.7
baz=318
334A Lomba 93.86 46 P P 22 39 37.7 +1.5
baz=318
137A Heron Place, G 94.32 43 P P 22 39 38.7 +0.4
baz=320
X40A Basin Creek Fa 94.44 40 P P 22 39 39.6 +0.8
baz=321
034A Hebbronville 96.73 49 P P 22 39 49.1 -0.3
baz=318
CPCT Cooper Cave 97.70 34 eP Pdif 22 39 58.1 +4.5
comp=Z,4.6nm,0.9s
RKT Rikitea 100.81 111 eLR LR 23 12 44.2
comp=Z,468nm,22.0s
VNDA Vanda 114.97 175 PKP PKPdf 22 44 57.8 -0.4
comp=Z,1.3nm,0.8s,baz=327,slow=3.4,SNR=4.7
TOA1 Torodi Ar. Sit 115.81 312 ePKPdf **PKPdf** **22 45 00.8 -0.9**
TOA0 Torodi Ar. Sit 115.81 312 ePKPdf **PKPdf** **22 45 00.5 -1.2**
TORD Torodi Ar. Bea 115.81 312 PKP **PKPdf** **22 45 00.8 -0.9**
comp=Z,1.0nm,0.9s,baz=94,slow=1.6,SNR=7.2
TORD PKKPab **PKKPab** **22 55 42.4 +2.3**
comp=Z,0.7nm,0.8s,baz=215,slow=4.6,SNR=4.9
LBTB Lobatse 122.33 261 PKP **PKPdf** **22 45 12.4 -1.6**
comp=Z,3.8nm,0.7s,baz=30,slow=0.9,SNR=6.4
BOSA Boshof 124.28 258 PKP **PKPdf** **22 45 15.9 -1.8**
comp=Z,2.0nm,0.8s,baz=72,slow=5.8,SNR=3.9
DBIC Dimbokro 124.83 314 PKP **PKPdf** **22 45 17.8 -1.3**
comp=Z,2.3nm,0.7s,baz=11,slow=4.7,SNR=8.1
TSUM Tsumeb 125.82 272 PKP **PKPdf** **22 45 20.3 -0.6**
comp=Z,2.3nm,0.9s,baz=52,slow=2.6,SNR=6.5
QSPA South Pole Sui 126.56 180 ePKPdf **PKPdf** **22 45 20.8 0.0**
SDV Santo Domingo 126.92 37 ePKPdf **PKPdf** **22 45 23.6 +0.3**
SNAA Sanae 139.86 198 PKP PKPpre 22 45 41.9
VNA2 Neumayer--Watz 141.46 197 PKP PKPpre 22 45 44.2
baz=103,slow=3.5
VNA3 Neumayer Olymp 141.75 196 PKP PKPpre 22 45 46.9
SAML Samuel 145.96 41 ePKPdf **PKPbc** **22 45 58.9 +0.1**
LPAZ La Paz 148.75 56 PKPbc **PKPbc** **22 46 07.8 +0.6**
comp=Z,7.4nm,0.9s,baz=9.7,slow=5.8,SNR=17
PB11 IPOC Station P 150.06 63 ePKPbc **PKPbc** **22 46 10.3 +0.5**
PB01 IPOC Station P 151.00 65 ePKPbc **PKPbc** **22 46 11.9 0.0**
PB04 IPOC Station P 151.30 68 ePKPbc **PKPbc** **22 46 14.0 +1.3**
PB10 IPOC Station P 151.68 70 ePKPbc **PKPbc** **22 46 14.6 +1.3**
LCO Las Campanas 154.31 81 ePKPbc **PKPbc** **22 46 20.5 +1.2**
PLCA Paso Flores 157.03 109 PKPab **PKPab** **22 46 45.2 +0.6**
comp=Z,4.9nm,1.1s,baz=221,slow=3.6,SNR=4.7
BDFB Brasilia 158.11 17 PKPab **PKPab** **22 46 49.9 +0.3**
comp=Z,2.9nm,0.9s,baz=25,slow=4.7,SNR=3.8

JMA 11 22:27:28.9, 36°.84N×138°.59E, h5km±3km, M3.8, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID Op	ID ISC	Time h m s	Res ISC
JGK	**Kuni**	**0.28**	**172**	P	Pg		22 27 34.8	+0.4
JGK				S	Sg		22 27 38.8	+0.7
MAT	**Matsushiro**	**0.43**	**226**	P	Pg		22 27 36.8	-0.3
MAT				S	Sg		22 27 42.1	-0.6
MAT	**Matsushiro**	**0.43**	**226**	P	Pg		22 27 36.8	-0.3
MAT				S	Sg		22 27 42.3	-0.4
JHK	**Hiroka**	**0.53**	**40**	S	Sg		22 27 46.5	+0.4
JKT	**Katashina**	**0.53**	**98**	S	Sg		22 27 46.5	+0.4
JNG	**Nsakai**	**0.58**	**222**	S	Sg		22 27 47.3	-0.5
JAG	**Ashikaga**	**0.81**	**121**	S	Sg		22 27 55.3	+0.4
JRY	**Ryogami san**	**0.86**	**163**	S	Sg		22 27 56.1	-0.4

JMA 11 22:28:33.0, 36°.84N×138°.56E, h5km±2km, M3.6, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID Op	ID ISC	Time h m s	Res ISC
JGK	**Kuni**	**0.28**	**167**	P	Pg		22 28 38.9	+0.4
JGK				S	Sg		22 28 43.0	+0.7
MAT	**Matsushiro**	**0.41**	**224**	P	Pg		22 28 40.7	-0.2
MAT				S	Sg		22 28 46.0	-0.3
MAT	**Matsushiro**	**0.41**	**224**	P	Pg		22 28 40.8	-0.1
MAT				S	Sg		22 28 46.0	-0.3
JHK	**Hiroka**	**0.55**	**42**	S	Sg		22 28 50.7	0.0
JKT	**Katashina**	**0.56**	**97**	S	Sg		22 28 50.9	-0.1
JRY	**Ryogami san**	**0.87**	**161**	P	Pg		22 28 49.5	-0.1

JMA 11 22:32:39.9±0.1, 24°.37N×121°.82E, h0km
ISCJB 11 22:32:40.4±0.5, 24°.38N±0°.02×121°.84E±0°.02, h1km±5km, Error ellipse: s-maj=4.0km s-min=2.5km az=138.8
TAP 11 22:32:40.4, 24°.41N×121°.79E, h10km, ML3.0, D
ISC 11 22:32:40.6±0.9, 24°.39N±0°.02×121°.82E±0°.02, h10km±7km, n37, σ0s52/63, Taiwan

Code	Station Name	Δ°	AZ°	Phase	ID Op	ID ISC	Time h m s	Res ISC
ENA	**Nanau**	**0.08**	**299**	*i* P		**Pg**	**22 32 42.7**	**-0.2**
baz=287								
TWC	**Suao**	**0.22**	**7**	*i* P		**Pg**	**22 32 45.3**	**+0.1**
baz=17								
TWC				*i* S		**Sg**	**22 32 48.4**	**+0.1**
baz=17								
ENTT	**Nioudou**	**0.34**	**317**	*i* P		**Pb**	**22 32 47.6**	**-1.1**
baz=318								
ENTT				S		**Sg**	**22 32 51.9**	**0.0**
baz=318								
TWE	**Neicheng**	**0.36**	**337**	P		**Pg**	**22 32 47.8**	**+0.2**
baz=341								
TWE				S		**Sg**	**22 32 52.8**	**+0.4**
baz=341								
TWD	**Chiawan**	**0.37**	**213**	*i* P		**Pg**	**22 32 47.8**	**0.0**
baz=207								
TWD				*e*S		**Sg**	**22 32 53.0**	**+0.3**
baz=207								
ILA	**Ilan**	**0.38**	**350**	*e*S		**Sb**	**22 32 54.3**	**-1.0**
baz=354								
NNS	**Nan Shan**	**0.41**	**277**	*i* P		**Pg**	**22 32 48.8**	**+0.1**
baz=273								
NNS				*i* S		**Sg**	**22 32 54.0**	**-0.1**
baz=273								
HWA	**Hwalien**	**0.45**	**205**	*e*P		**Pb**	**22 32 50.2**	**-0.4**
baz=200								
EGS		**0.47**	**13**	*e*P		**Pg**	**22 32 49.8**	**+0.1**
baz=17								
EGS				*e*S		**Sb**	**22 32 57.4**	**-0.5**
baz=17								
NSK	**Sanguang**	**0.51**	**304**	P		**Pb**	**22 32 50.9**	**-0.7**
baz=303								
NSK				S		**Sb**	**22 32 57.9**	**-1.2**
baz=303								
WHF	**Hehuan Shan**	**0.56**	**244**	*e*P		**Pg**	**22 32 51.6**	**0.0**
baz=240								
WHF				*e*S		**Sg**	**22 32 59.1**	**0.0**
baz=240								
TWT	**Tachien**	**0.60**	**257**	*e*P		**Pb**	**22 32 53.4**	**+0.1**
baz=254								
TWT				*e*S		**Sb**	**22 33 00.6**	**-1.3**
baz=254								
TWA	**Mucha**	**0.63**	**340**	*e*P		**Pg**	**22 32 52.6**	**-0.1**
baz=342								
TWA				*e*S		**Sg**	**22 33 01.1**	**+0.1**
baz=342								
TWB1	**Santiao Chiao**	**0.64**	**14**	P		**Pb**	**22 32 53.4**	**-0.4**
baz=17								
TWB1				S		**Sg**	**22 33 01.8**	**+0.6**
baz=17								
ESL	**Shilin**	**0.67**	**212**	P		**Pg**	**22 32 53.4**	**-0.2**
baz=208								
NWF	**Wu-fen Shan**	**0.68**	**357**	*e*P		**Pb**	**22 32 54.8**	**+0.2**
baz=359								
NWF				S		**Sb**	**22 33 03.2**	**-0.9**
baz=359								
NSTT	**Nanjuang**	**0.78**	**288**	*e*P		**Pb**	**22 32 56.4**	**+0.2**
baz=286								
NSTT				*e*S		**Sb**	**22 33 06.4**	**-0.5**
baz=286								
TWS1	**Kuangyinshan**	**0.80**	**333**	*e*P		**Pn**	**22 32 57.2**	**-0.6**
baz=333								
TWS1				*e*S		**Sb**	**22 33 08.0**	**+0.6**
baz=333								
TWY	**Chenhua**	**0.91**	**347**	*e*P		**Pn**	**22 33 00.0**	**+0.7**
baz=348								
TWY				*e*S		**Sb**	**22 33 10.6**	**+0.1**
baz=348								
TWQ1	**Liyutan**	**0.95**	**268**	*e*P		**Pn**	**22 33 00.8**	**+0.7**
baz=265								
TWQ1				*e*S		**Sb**	**22 33 12.5**	**+0.6**
baz=265								
SMLT	**Sun Moon Lake**	**0.98**	**239**	*e*P		**Pb**	**22 32 59.5**	**-0.2**
baz=236								
EHY	**Hungye**	**0.99**	**207**	*e*P		**Pg**	**22 32 59.3**	**-0.3**
baz=205								
TYC	**Yuchr**	**1.00**	**241**	*e*P		**Pb**	**22 32 59.9**	**-0.1**
baz=239								
JYNG	**Yonagunijimaku**	**1.03**	**86**	P		**Pg**	**22 32 59.7**	**-0.7**
JYNG				*e*S		**Sg**	**22 33 14.0**	**+0.2**
YOJ	**Yonaguni jima**	**1.09**	**86**	P		**Pg**	**22 33 01.3**	**-0.2**
YOJ				*e*S		**Sb**	**22 33 16.0**	**+0.2**
TWF1	**Yuli**	**1.14**	**205**	*e*P		**Pg**	**22 33 02.1**	**-0.3**
baz=202								
YUS	**Yu-Shan**	**1.20**	**222**	*e*P		**Pb**	**22 33 03.5**	**-0.1**
baz=219								
ALS	**Alishan**	**1.27**	**227**	*e*P		**Pn**	**22 33 05.0**	**+0.3**
baz=224								
ALS				*e*S		**Sn**	**22 33 23.0**	**+0.9**
baz=224								
CHN5	**Tsauling**	**1.31**	**233**	P		**Pb**	**22 33 05.9**	**+0.6**
baz=231								
CHN5				*e*S		**Sn**	**22 33 23.4**	**+0.8**
baz=231								
ELDTW	**Lidau**	**1.40**	**212**	*e*P		**Pb**	**22 33 06.8**	**-0.1**
baz=209								
CHN4	**Tsaushan**	**1.52**	**228**	*e*P		**Pg**	**22 33 09.1**	**-0.8**
baz=226								
CHN4				*e*S		**Sg**	**22 33 29.7**	**+0.1**
baz=226								
STYT	**Tauyuan**	**1.56**	**219**	*e*P		**Pb**	**22 33 09.1**	**-0.5**
baz=217								
STYT				*e*S		**Sg**	**22 33 30.8**	**0.0**
baz=217								
WTP	**Ta-pu**	**1.58**	**224**	*e*P		**Pb**	**22 33 09.7**	**-0.3**
baz=222								
WTP				*e*S		**Sg**	**22 33 31.9**	**+0.4**
baz=222								
TWK	**Hsinying**	**1.65**	**228**	*e*P		**Pb**	**22 33 11.1**	**-0.1**
baz=225								
TWK				*e*S		**Sb**	**22 33 32.3**	**+0.2**
baz=225								
CHN1	**Nanshi**	**1.68**	**225**	*e*P		**Pg**	**22 33 12.5**	**-0.4**
baz=223								
CHN1				*e*S		**Sg**	**22 33 33.9**	**-0.8**
baz=223								
IRIF	**Iriomote-Funau**	**1.74**	**91**	P		**Pn**	**22 33 11.1**	**+0.2**
JKRS	**Kuro-shima**	**2.00**	**94**	P		**Pn**	**22 33 15.1**	**+0.6**
JKRS				*e*S		**Sn**	**22 33 39.4**	**-0.2**

NIED 11 22:32:00, 36°.80N×138°.60E, h5km, Mw4.6 Best double couple: M0 8.78000×10^15 NP1:φs=294.00000°, δ61.00000°, λ=-170.00000°. NP2:φs=199.00000°, δ81.00000°, λ=-30.00000°.
ISCJB 11 22:32:51.1±0.5, 36°.83N±0°.02×138°.55E±0°.03, h10km±3km, mb4.1/27, Error ellipse: s-maj=4.5km s-min=3.9km az=38.7
JMA 11 22:32:51.4, 36°.83N×138°.58E, h0km, M4.7 Broadband fault plane solution: P waves. NP1:φs=26.00000°, δ80.00000°, λ20.00000°. NP2:φs=293.00000°, δ70.00000°, λ170.00000°. Principal axes: T Plg21.0000°, Azm251.0000°; N Plg68.0000°, Azm51.0000°; P Plg7.0000°, Azm158.0000°;
JMA Felt III J1.
IDC 11 22:32:51.1±0.5, 36°.86N×138°.53E, h0km, mb4.1/17, mb1 4.3/20, mb1mx4.2/46, mbtmp4.1/20, ML3.9/3 Error ellipse: s-maj=16.8km s-min=6.2km az=118.0
NEIC 11 22:32:55.9±0.3, 36°.72N×138°.49E, h35km, mb4.7/7, Error ellipse: s-maj=7.7km s-min=6.4km az=131.0
NEIC Recorded [3 JMA] in Gumma, Nagano and Niigata.
ISC 11 22:32:52.2±1.1, 36°.82N±0°.03×138°.57E±0°.03, h8km±7km, n49, σ1s12/58, mb4.4/27, 3C-4D, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID Op	ID ISC	Time h m s	Res ISC
JGK	**Kuni**	**0.26**	**168**	⇓P		**Pg**	**22 32 57.4**	**0.0**
JGK				S		**Sg**	**22 33 01.6**	**+0.8**
MAT	**Matsushiro**	**0.40**	**227**	P		**Pg**	**22 32 59.4**	**-0.6**
MAT				S		**Sg**	**22 33 04.8**	**-0.5**
MJAR	**Matsushiro Arr**	**0.40**	**227**	Pg		**Pg**	**22 32 59.3**	**-0.7**
1μm,0.3s,baz=41,slow=19,SNR=226								
MJAR				Lg		Lg	22 33 04.6	
4μm,0.3s,baz=42,slow=31,SNR=117								
JKT	**Katashina**	**0.55**	**95**	⇑P		**Pg**	**22 33 01.9**	**-0.8**
JKT				S		**Sg**	**22 33 09.2**	**-0.7**
JNG	**Nsakai**	**0.56**	**223**	⇑P		**Pg**	**22 33 02.3**	**-0.7**
JNG				S		**Sg**	**22 33 09.8**	**-0.5**
JHK	**Hiroka**	**0.56**	**39**	⇑P		**Pg**	**22 33 01.7**	**-1.3**
JHK				S		**Sg**	**22 33 09.1**	**-1.2**
JIZZ	**Izumozaki**	**0.72**	**9**	⇓P		**Pg**	**22 33 06.0**	**-0.1**
JAG	**Ashikaga**	**0.81**	**119**	⇓P		**Pg**	**22 33 07.1**	**-0.6**
JAG				S		**Sg**	**22 33 17.7**	**-0.5**
JRY	**Ryogami san**	**0.84**	**162**	⇓P		**Pg**	**22 33 07.5**	**-0.8**
JRY				S		**Sg**	**22 33 19.2**	**-0.1**
JHJ	**Hachijo jima 2**	**3.82**	**165**	Pn		**Pn**	**22 33 53.0**	**+1.7**
54nm,0.3s,baz=96,slow=15,SNR=5.6								
JHJ2	**Mitsune**	**3.83**	**164**	*e*Pn		**Pn**	**22 33 51.9**	**+0.4**
JHJ2				*e*Sn		**Sn**	**22 34 37.2**	**+0.5**
ERM	**Erimo**	**6.29**	**33**	*e*Pn		**Pn**	**22 34 26.2**	**+1.0**
JNU	**Nakatsue**	**7.31**	**242**	Pn		**Pn**	**22 34 41.1**	**+1.8**
1.0nm,0.3s,baz=344,slow=7.6,SNR=7.2								
JNU	**Nakatsue**	**7.31**	**242**	*e*Pn		**Pn**	**22 34 38.8**	**-0.5**
KSRS	**Korea Array**	**8.53**	**277**	Pn		**Pn**	**22 34 57.8**	**+1.8**

2.6nm,0.3s,baz=92,slow=14,SNR=16
KSAR Wonju Array Be 8.56 277 Pn **Pn 22 34 57.8 +1.4**
USRK Ussuriysk Ar. 8.91 328 Pn **Pn 22 35 03.7 +2.5**
0.4nm,0.3s,baz=225,slow=16,SNR=4.4
KLR Kul'dur 13.37 340 Pn **Pn 22 36 04.6 +2.5**
0.2nm,0.3s,baz=151,slow=11,SNR=8.8
PETK Petropavlovsk- 21.07 33 P **P 22 37 39.6 +3.0**
10nm,1.0s,baz=224,slow=4.1,SNR=5.8
ENH Enshi 25.05 263 *eP* **P 22 38 15.6 -1.3**
16nm,0.9s
SONM Songino Array 26.03 305 P **P 22 38 24.7 -1.2**
1.3nm,1.0s,baz=101,slow=6.0,SNR=3.9
SEY Seymchan 27.49 14 P **P 22 38 39.8 +1.2**
2.2nm,0.6s,baz=231,slow=5.9,SNR=7.1
CMAR Chiang Mai Arr 39.25 253 P **P 22 40 22.1 +0.8**
0.3nm,0.5s,baz=40,slow=7.1,SNR=4.1
ZALV Zalesovo Beam 40.38 312 P P 22 40 34.5 +4.2
0.3nm,0.5s,baz=87,slow=8.8,SNR=2.4
ZALV PcP **PcP 22 42 32.3 -1.1**
1.6nm,0.7s,baz=98,slow=3.3,SNR=5.5
MKAR Makanchi Array 42.30 302 P **P 22 40 46.4 +0.1**
0.5nm,0.8s,baz=90,slow=7.8,SNR=3.1
MKAR PcP **PcP 22 42 39.1 -0.8**
0.5nm,0.7s,baz=79,slow=6.3,SNR=3.6
KKAR Karatay Array 51.26 299 *eP* **P 22 41 55.5 -0.9**
ABKAR Akbulak array 56.33 309 *eP* **P 22 42 32.9 -0.5**
11nm,0.8s
WRAB Tennant Creek 56.58 185 *eP* **P 22 42 33.3 -2.1**
17nm,1.3s
WRA Warramunga Arr 56.59 185 P **P 22 42 33.9 -1.6**
4.1nm,0.7s,baz=360,slow=7.5,SNR=28
ASAR Alice Springs 60.32 185 P **P 22 43 00.6 -0.9**
1.2nm,0.8s,baz=12,slow=8.5,SNR=12
GEYT Alibeck 61.94 298 P **P 22 43 12.1 -0.4**
1.1nm,0.8s,baz=321,slow=1.8,SNR=3.7
YKA Yellowknife Ar 65.13 29 P **P 22 43 33.6 +0.5**
1.0nm,0.8s,baz=302,slow=6.4,SNR=13
FINES FINESS Array B 67.93 331 P **P 22 43 49.6 -1.4**
3.6nm,0.9s,baz=86,slow=7.8,SNR=9.4
AKASG Malin Array Be 73.06 321 P **P 22 44 21.8 -0.8**
1.8nm,0.6s,baz=49,slow=6.0,SNR=7.9
NB2 NORSAR Subarra 73.49 336 P **P 22 44 24.2 -0.8**
comp=Z,3.7nm,0.9s,baz=41,slow=6.2
NOA NORSAR Array B 73.49 336 P **P 22 44 24.7 -0.3**
comp=Z,1.4nm,0.7s,baz=41,slow=5.9,SNR=6.7
FCC Fort Churchill 75.19 25 *eP* **P 22 44 35.0 +0.2**
comp=Z,6.5nm,1.2s
CMB Columbia Colle 75.83 53 *eP* **P 22 44 38.9 -0.2**
comp=Z,33nm,1.0s
NVAR Mina Array Bea 76.92 52 P **P 22 44 46.5 +1.1**
comp=Z,5.5nm,1.0s,baz=285,slow=6.0,SNR=20
BRTR Keskin Array B 77.27 310 P **P 22 44 46.1 -1.2**
comp=Z,0.8nm,1.0s,baz=90,slow=4.3,SNR=3.0
PDAR Pinedale Array 79.42 41 P **P 22 45 00.7 +1.4**
comp=Z,1.1nm,0.8s,baz=292,slow=4.7,SNR=6.8
CLL Collm 80.13 329 *i* **P 22 45 02.9 +0.4**
comp=Z,4.0nm,0.8s
CLL *i* P 22 45 06.4 +3.9
comp=Z,4.0nm,0.8s
ULM Lac du Bonnet 80.91 32 P **P 22 45 07.3 +0.5**
comp=Z,3.2nm,0.9s,baz=306,slow=8.5,SNR=3.3
GERES GERESS Array B 81.67 327 P **P 22 45 11.3 +0.3**
comp=Z,0.9nm,0.8s,baz=30,slow=6.2,SNR=6.5
SMCO Snowmass 83.27 45 *eP* **P 22 45 19.6 -0.3**
comp=Z,2.4nm,1.0s
SDCO Great Sand Dun 85.09 46 *eP* **P 22 45 28.6 -0.4**
comp=Z,3.7nm,1.1s
TXAR Lajitas Array 92.04 51 P **P 22 46 02.6 +0.5**
comp=Z,1.8nm,1.1s,baz=306,slow=4.2,SNR=7.1
SAML Samuel 145.95 41 *e*PKPdf **PKPdf 22 52 31.7 -0.5**
LPAZ La Paz 148.74 56 PKPbc **PKPbc 22 52 41.3 -0.1**
comp=Z,2.2nm,0.8s,baz=16,slow=8.7,SNR=5.9

JMA 11 22:34:50.8, 37.00N×140.68E, h12km±1km, M2.6, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.14**	**43**	P		Pg	22 34 54.3	+0.1
ONAJ				eS		Sg	22 34 56.6	-0.1
JHO	**Hitachi**	**0.40**	**193**	P		Pg	22 34 58.0	-0.1
JHO				S		Sg	22 35 04.2	+0.2
JFT	**Otama**	**0.58**	**332**	S		Sg	22 35 10.1	+0.1
MAT	**Matsushiro**	**2.04**	**258**	P		Pg	22 35 34.9	+5.0
MAT				S		Sn	22 35 41.3	-9.0

IDC 11 22:39:40.3±42.0, 17.17S×165.60W, h0km, mb4.2/3, mb1 4.4/3, mb1mx3.7/49, mbtmp4.2/3, Error ellipse: s-maj=871.1km s-min=206.8km az=83.0, Cook Islands region

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
STKA	**Stephens Creek**	**49.77**	**243**	P		P	22 48 34.5	-0.4
ASAR	**Alice Springs**	**56.71**	**253**	P		P	22 49 26.7	+0.4
WRA	**Warramunga Arr**	**56.74**	**257**	P		P	22 49 26.1	-0.4
	3.3nm,0.6s,baz=89,slow=8.4,SNR=34							
	1.1nm,0.3s,baz=98,slow=6.0,SNR=18							

ISCJB ***11*** *22:44:11.8±0.9, 38.85N±0.05×142.1E±0.1, h51km±6km, mb4.0/18, Error ellipse: s-maj=14.1km s-min=7.0km az=17.6*
JMA ***11*** *22:44:12.4±0.1, 38.85N×142.09E, h45km±1km, M4.3*
JMA Felt I J1.
IDC ***11*** *22:44:17.1±2.7, 38.80N×142.01E, h86km±24km, mb3.7/18, mb1 3.8/21, mb1mx3.6/53, mbtmp4.0/21, Error ellipse: s-maj=18.5km s-min=15.6km az=93.0*
ISC 11 22:44:12.6±1.5, 38.85N±0.05×142.1E±0.1, h42km±12km, n39, σ0 65/35, mb4.0/18, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
OFUJ	**Ofunato**	**0.40**	**305**	P		**Pn**	**22 44 22.3**	**+0.2**
OFUJ				S		**Sn**	**22 44 29.1**	**+0.3**
JMK	**Ichinoseki**	**0.69**	**279**	P		**Pn**	**22 44 25.9**	**+0.1**
JMK				S		**Sn**	**22 44 35.3**	**-0.1**
JIO	**Ouri**	**0.70**	**236**	P		**Pn**	**22 44 25.8**	**-0.2**
JIO				S		**Sn**	**22 44 34.7**	**-1.0**
MIYJ	**Miyakonagasawa**	**0.75**	**344**	P		**Pn**	**22 44 26.5**	**-0.3**
MIYJ				S		**Sn**	**22 44 36.5**	**-0.5**
JOM	**Ohasama**	**0.88**	**315**	P		**Pn**	**22 44 28.7**	**+0.3**
JOM				S		**Sn**	**22 44 40.2**	**+0.2**
JTH	**Tanohata**	**1.10**	**351**	P		**Pn**	**22 44 31.7**	**+0.2**
JOU	**Okura**	**1.22**	**247**	P		**Pn**	**22 44 33.1**	**0.0**
JRG	**Rokugo**	**1.25**	**296**	P		**Pn**	**22 44 33.9**	**+0.3**
JKZ	**Kuzumaki**	**1.27**	**333**	P		**Pn**	**22 44 34.5**	**+0.6**
JYK	**Kaneyama**	**1.35**	**273**	P		**Pn**	**22 44 35.2**	**+0.3**
JMM	**Marumori**	**1.42**	**226**	P		**Pn**	**22 44 35.6**	**-0.2**
MJAR	**Matsushiro Arr**	**3.84**	**234**	P		Pn	22 45 12.4	+3.2
	baz=43,slow=11,SNR=5.1							
MAT	**Matsushiro**	**3.85**	**234**	P		**Pn**	**22 45 11.9**	**+2.7**
USRK	**Ussuriysk Ar.**	**9.27**	**308**	P		Pn	22 46 27.6	+4.2
	0.5nm,0.3s,baz=140,slow=15,SNR=16							
KSRS	**Korea Array**	**11.24**	**267**	P		Pn	22 46 55.4	+4.8
	0.2nm,0.3s,baz=86,slow=14,SNR=6.9							
SEY	**Seymchan**	**24.91**	**11**	P		**P**	**22 49 31.9**	**+0.6**
	2.8nm,0.2s,baz=117,slow=24,SNR=8.8							
SONM	**Songino Array**	**27.26**	**301**	P		**P**	**22 49 52.9**	**0.0**
	0.3nm,0.4s,baz=99,slow=8.8,SNR=5.2							
H11N2	**WAKE ISLAND Hy**	**28.68**	**125**	T		T	23 20 30.7	
	SNR=1125							
H11N1	**WAKE ISLAND Hy**	**28.69**	**125**	T		T	23 20 28.5	
H11N3	**WAKE ISLAND Hy**	**28.70**	**125**	T		T	23 20 28.5	
H11S1	**WAKE ISLAND Hy**	**29.45**	**127**	T		T	23 21 28.8	
H11S3	**WAKE ISLAND Hy**	**29.46**	**127**	T		T	23 21 26.7	
H11S2	**WAKE ISLAND Hy**	**29.47**	**127**	T		T	23 21 25.4	
ZALV	**Zalesovo Beam**	**41.11**	**311**	P		**P**	**22 51 52.0**	**-0.1**
	2.6nm,0.5s,baz=91,slow=7.6,SNR=13							
MKAR	**Makanchi Array**	**43.63**	**301**	P		**P**	**22 52 12.5**	**-0.2**
	2.7nm,0.6s,baz=81,slow=10.0,SNR=45							
KURBB	**Kurchatov Arra**	**45.33**	**307**	P		**P**	**22 52 25.8**	**-0.4**
	8.4nm,0.5s,baz=82,slow=8.3,SNR=56							
ILAR	**Eielson Array**	**47.68**	**33**	P		**P**	**22 52 45.1**	**+0.7**
	0.6nm,0.6s,baz=272,slow=5.8,SNR=7.7							
BVAR	**Borovoye Array**	**49.76**	**311**	P		**P**	**22 53 00.4**	**-0.2**
	2.5nm,0.4s,baz=67,slow=8.4,SNR=20							
INK	**Inuvik**	**52.53**	**28**	P		**P**	**22 53 21.7**	**+0.6**
	1.0nm,0.8s,baz=193,slow=7.1,SNR=4.0							
WRA	**Warramunga Arr**	**58.93**	**189**	P		**P**	**22 54 06.7**	**-0.8**
	1.1nm,0.6s,baz=5.9,slow=7.2,SNR=10							
YKA	**Yellowknife Ar**	**61.97**	**31**	P		**P**	**22 54 27.7**	**0.0**
	0.2nm,0.6s,baz=307,slow=7.2,SNR=4.6							
ARCES	**ARCESS Array B**	**62.49**	**339**	P		**P**	**22 54 30.8**	**-0.4**
	3.6nm,1.0s,baz=38,slow=8.0,SNR=3.8							
ASAR	**Alice Springs**	**62.66**	**188**	P		**P**	**22 54 32.1**	**-0.7**
	0.2nm,0.5s,baz=354,slow=5.0,SNR=4.7							
FINES	**FINESS Array B**	**67.46**	**332**	P		**P**	**22 55 03.2**	**-0.3**
	1.9nm,0.6s,baz=39,slow=7.3,SNR=8.8							
KBZ	**Khabaz**	**70.13**	**310**	P		**P**	**22 55 20.8**	**+0.4**
	1.6nm,0.9s,baz=78,slow=14,SNR=3.3							
NOA	**NORSAR Array B**	**72.72**	**337**	P		**P**	**22 55 35.6**	**-0.2**
	1.6nm,0.9s,baz=39,slow=5.8,SNR=3.2							
AKASG	**Malin Array Be**	**73.19**	**322**	P		**P**	**22 55 38.0**	**-0.7**
	0.5nm,0.4s,baz=47,slow=5.7,SNR=5.7							
BRTR	**Keskin Array B**	**78.05**	**312**	P		**P**	**22 56 06.8**	**-0.1**
	0.4nm,0.4s,baz=74,slow=3.7,SNR=5.2							
TXAR	**Lajitas Array**	**88.59**	**53**	P		**P**	**22 57 01.8**	**+0.5**
	0.1nm,0.6s,baz=285,slow=3.5,SNR=2.7							

NIED ***11*** *22:45:00, 38.60N×141.90E, h50km, Mw4.3 Best double couple: M0 3.70000×10^15 NP1:φs166.00000°, δ30.00000°, λ59.00000°. NP2:φs21.00000°, δ65.00000°, λ107.00000°.*
MOS ***11*** *22:45:28.8±1.2, 38.65N×141.98E, h33km, mb4.6/29, Error ellipse: s-maj=9.8km s-min=7.0km az=112.3*
JMA ***11*** *22:45:32.3±0.1, 38.62N×141.90E, h48km±1km, M4.2*
JMA Felt II J1.
IDC ***11*** *22:45:33.7±2.5, 38.59N×141.83E, h62km±21km, mb4.0/28, mb1 4.1/31, mb1mx4.0/51, mbtmp4.3/31, Error ellipse: s-maj=15.6km s-min=12.3km az=120.0*
NEIC ***11*** *22:45:34.0±0.9, 38.61N×141.86E, h66km±7km, mb4.7/9, Error ellipse: s-maj=9.0km s-min=6.2km az=115.0*
ISC 11 22:45:29.9±1.1, 38.55N±0.05×142.14E±0.05, h34km±3km, n101, σ1 34/106, mb4.5/41, 2C, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
JIO	**Ouri**	**0.63**	**261**	P		**Pb**	**22 45 42.9**	**+0.3**
JIO				S		**Sb**	**22 45 50.2**	**-1.1**
OFUJ	**Ofunato**	**0.64**	**325**	P		**Pb**	**22 45 43.4**	**+0.5**
OFUJ				S		**Sn**	**22 45 50.9**	**-0.6**
JMK	**Ichinoseki**	**0.82**	**299**	P		**Pn**	**22 45 45.2**	**+0.2**
JMK				S		**Sn**	**22 45 54.4**	**-1.5**
JOM	**Ohasama**	**1.13**	**325**	P		**Pn**	**22 45 50.0**	**+0.7**
JOU	**Okura**	**1.17**	**261**	P		**Pn**	**22 45 50.2**	**+0.3**
JOU				S		**Sn**	**22 46 03.3**	**-1.4**
JMM	**Marumori**	**1.26**	**237**	P		**Pn**	**22 45 51.8**	**+0.7**
JMM				S		**Sn**	**22 46 05.7**	**-1.2**
JYK	**Kaneyama**	**1.44**	**285**	P		**Pn**	**22 45 53.4**	**-0.1**
JRG	**Rokugo**	**1.44**	**306**	P		**Pn**	**22 45 53.8**	**+0.2**
MJAR	**Matsushiro Arr**	**3.71**	**238**	P		**Pn**	**22 46 26.3**	**+1.5**
	8.4nm,0.3s,baz=47,slow=11,SNR=8.8							
MAJO	**Matsushiro**	**3.71**	**238**	*eP*		**Pn**	**22 46 26.6**	**+1.7**
MAJO	**Matsushiro**	**3.71**	**238**	*eP*		**Pn**	**22 46 26.6**	**+1.7**
JHJ	**Hachijo jima 2**	**5.75**	**200**	S		**Sn**	**22 47 57.2**	**-0.4**
	43nm,0.3s,baz=112,slow=23,SNR=4.1							
YUK	**Yuzh-Kuril'sk**	**6.15**	**26**	*eP*		Pn	22 46 45.8	-12
YUK				*eS*		**Sn**	**22 48 05.3**	**-2.1**
SHO	**Shikotan**	**6.38**	**32**	*eP*		Pn	22 46 49.1	-12
SHO				*eS*		**Sn**	**22 48 09.2**	**-3.9**
KUR	**Kuril'sk**	**7.92**	**31**	*eP*		Pn	22 47 10.9	-12
KUR				*eS*		**Sn**	**22 48 47.7**	**-3.3**
YSS	**Yuzh-Sakhalins**	**8.41**	**3**	P		**Pn**	**22 47 31.8**	**+2.6**
USRK	**Ussuriysk Ar.**	**9.48**	**310**	P		**Pn**	**22 47 43.7**	**-0.3**
	0.8nm,0.3s,baz=125,slow=14,SNR=16							
JNU	**Nakatsue**	**10.62**	**243**	P		**Pn**	**22 48 01.6**	**+1.9**
	0.6nm,0.3s,baz=107,slow=9.0,SNR=9.2							
MDJ	**Mudanjiang**	**11.17**	**307**	*e*Pn		**Pn**	**22 48 09.2**	**+2.1**
	8.5nm,0.6s							
KSRS	**Korea Array**	**11.27**	**269**	P		**Pn**	**22 48 11.4**	**+2.9**
	0.4nm,0.3s,baz=84,slow=14,SNR=11							
KSAR	**Wonju Array Be**	**11.30**	**269**	P		**Pn**	**22 48 11.4**	**+2.4**
KSAR	**Wonju Array Be**	**11.30**	**269**	P		**Pn**	**22 48 11.4**	**+2.4**
KLR	**Kul'dur**	**13.02**	**328**	P		**Pn**	**22 48 31.4**	**-1.0**
	baz=145,slow=12,SNR=2.1							
MA2	**Magadan**	**21.75**	**12**	P		**P**	**22 50 19.2**	**+1.0**
	12nm,0.8s,baz=182,slow=7.0,SNR=4.2							
MA2	**Magadan**	**21.75**	**12**	P		**P**	**22 50 19.2**	**+1.0**
MA2				pmax		pmax		
	comp=Z,11nm,0.7s							
SEY	**Seymchan**	**25.19**	**11**	P		**P**	**22 50 54.1**	**+2.2**
	comp=Z,9.7nm,0.8s,baz=197,slow=7.3,SNR=19							
BOD	**Bodaibo**	**26.58**	**326**	*eP*		**P**	**22 51 02.8**	**-1.7**
BOD				*e*			22 51 19.9	
BOD				pmax		pmax		
	comp=Z,5.0nm,0.9s							
ULN	**Ulaanbaatar**	**27.01**	**302**	*eP*		**P**	**22 51 08.4**	**-0.4**
ULN				pmax		pmax		
	comp=Z,3.0nm,0.7s							
ULN	**Ulaanbaatar**	**27.01**	**302**	*eP*		**P**	**22 51 08.4**	**-0.4**
	comp=Z,2.8nm,0.7s							
SONM	**Songino Array**	**27.45**	**301**	P		**P**	**22 51 11.8**	**-0.9**
	comp=Z,1.4nm,0.6s,baz=109,slow=8.8,SNR=9.3							
SONM				PcP		**PcP**	**22 54 30.7**	**+0.2**
	comp=Z,0.2nm,0.3s,baz=136,slow=2.4,SNR=4.1							
ENH	**Enshi**	**28.06**	**263**	*eP*		**P**	**22 51 16.4**	**-1.7**
	comp=Z,31nm,0.8s							
H11N2	**WAKE ISLAND Hy**	**28.48**	**124**	T		T	23 21 53.5	
	baz=317,slow=76,SNR=25							
H11N1	**WAKE ISLAND Hy**	**28.49**	**124**	T		T	23 21 54.2	
	baz=317,slow=76,SNR=3032							
H11N3	**WAKE ISLAND Hy**	**28.50**	**124**	T		T	23 21 54.9	
	baz=317,slow=76,SNR=2316							
H11S1	**WAKE ISLAND Hy**	**29.25**	**126**	T		T	23 22 50.2	
	baz=318,slow=76,SNR=213							
H11S3	**WAKE ISLAND Hy**	**29.25**	**126**	T		T	23 22 40.4	
	baz=318,slow=76,SNR=33							
H11S2	**WAKE ISLAND Hy**	**29.26**	**126**	T		T	23 22 49.0	
	baz=318,slow=76,SNR=210							
TLY	**Talaya**	**29.80**	**309**	P		**P**	**22 51 32.0**	**-1.4**
	comp=Z,4.1nm,0.5s,baz=62,slow=16,SNR=3.3							
ZAK	**Zakamensk**	**29.81**	**306**	*eP*		**P**	**22 51 32.1**	**-1.5**
ZAK				pmax		pmax		
	comp=Z,7.0nm,0.9s							
MOY	**Mondy**	**31.42**	**308**	*eP*		**P**	**22 51 47.4**	**-0.4**
TIXI	**Tiksi**	**33.86**	**353**	P		**P**	**22 52 08.1**	**-0.6**
	comp=Z,2.2nm,0.7s,baz=136,slow=5.1,SNR=6.8							
ZALV	**Zalesovo Beam**	**41.33**	**311**	P		**P**	**22 53 11.6**	**-0.6**
	comp=Z,5.8nm,0.5s,baz=87,slow=7.4,SNR=25							
ZALV				PcP		**PcP**	**22 55 09.5**	**-0.4**
	comp=Z,1.8nm,0.4s,baz=95,slow=3.4,SNR=6.0							
NRIK	**Noril'sk**	**42.14**	**334**	P		**P**	**22 53 17.9**	**-0.6**
	comp=Z,1.5nm,0.4s,baz=136,slow=5.8,SNR=4.6							
NVS	**Novosibirsk**	**42.22**	**313**	*eP*		**P**	**22 53 18.7**	**-0.7**
CHTO	**Chiang Mai**	**42.23**	**255**	*eP*		**P**	**22 53 19.4**	**-0.5**
CHTO				pmax		pmax		
	comp=Z,4.0nm,0.6s							
CHTO	**Chiang Mai**	**42.23**	**255**	*eP*		**P**	**22 53 19.4**	**-0.5**
	comp=Z,3.9nm,0.6s							
CMAR	**Chiang Mai Arr**	**42.45**	**254**	P		**P**	**22 53 20.6**	**-1.0**
	comp=Z,0.5nm,0.4s,baz=47,slow=9.1,SNR=5.4							
MKAR	**Makanchi Array**	**43.81**	**301**	P		**P**	**22 53 31.6**	**-0.8**
	comp=Z,7.0nm,0.9s,baz=83,slow=9.9,SNR=20							
MKAR				PcP		**PcP**	**22 55 18.0**	**-0.5**
	comp=Z,0.6nm,0.7s,baz=83,slow=8.2,SNR=2.0							
KURK	**Kurchatov**	**45.46**	**307**	P		**P**	**22 53 45.2**	**-0.2**
KURK				pmax		pmax		
	comp=Z,28nm,0.6s							
KURK	**Kurchatov**	**45.46**	**307**	*eP*		**P**	**22 53 44.4**	**-1.0**
KURBB	**Kurchatov Arra**	**45.53**	**307**	P		**P**	**22 53 45.2**	**-0.8**
	comp=Z,28nm,0.6s,baz=82,slow=8.2,SNR=53							
TAPN	**Taplejung**	**46.42**	**273**	*eP*		**P**	**22 53 53.1**	**-0.6**
	comp=Z,7.2nm,0.5s							
ODAN	**Odare**	**46.91**	**273**	*eP*		**P**	**22 53 56.8**	**-0.6**
	comp=Z,20nm,0.8s							
RAMN	**Ramite**	**47.48**	**273**	*eP*		**P**	**22 54 01.3**	**-0.6**
	comp=Z,43nm,0.8s							
GUN	**Gumba**	**47.59**	**275**	*eP*		**P**	**22 54 02.2**	**-0.7**
	comp=Z,36nm,0.9s							
ILAR	**Eielson Array**	**47.91**	**33**	P		**P**	**22 54 06.2**	**+1.7**
	comp=Z,1.1nm,0.7s,baz=265,slow=6.1,SNR=9.0							
KKN	**Kakani**	**48.12**	**275**	*eP*		**P**	**22 54 06.2**	**-0.6**
	comp=Z,28nm,0.8s							
GKN	**Gorkha**	**48.52**	**275**	*eP*		**P**	**22 54 08.8**	**-1.0**
	comp=Z,33nm,1.1s							
TKM2	**Tokmak 2**	**49.43**	**297**	*eP*		**P**	**22 54 16.3**	**-0.3**
TKM2				pmax		pmax		
	comp=Z,11nm,1.0s							
TKM2	**Tokmak 2**	**49.43**	**297**	*eP*		**P**	**22 54 16.3**	**-0.3**
	comp=Z,11nm,1.0s							
KOLN	**Koldanda**	**49.44**	**276**	*eP*		**P**	**22 54 16.3**	**-0.6**
	comp=Z,9.3nm,0.6s							
PYUN	**Piuthan**	**49.76**	**276**	*eP*		**P**	**22 54 18.8**	**-0.6**
	comp=Z,20nm,0.7s							
BVAR	**Borovoye Array**	**49.99**	**311**	P		**P**	**22 54 19.9**	**-0.6**
	comp=Z,3.8nm,0.5s,baz=68,slow=8.5,SNR=16							
BVAR				PcP		**PcP**	**22 55 40.1**	**0.0**
	comp=Z,2.1nm,0.6s,baz=96,slow=2.5,SNR=5.4							
BRVK	**Borovoye**	**50.04**	**312**	*eP*		**P**	**22 54 20.3**	**-0.6**
BRVK				pmax		pmax		
	comp=Z,5.0nm,0.7s							
BRVK	**Borovoye**	**50.04**	**312**	*eP*		**P**	**22 54 20.3**	**-0.6**
	comp=Z,4.6nm,0.7s							
INK	**Inuvik**	**52.78**	**28**	P		**P**	**22 54 42.9**	**+1.7**
	comp=Z,1.2nm,0.5s,baz=305,slow=7.6,SNR=6.7							
KKAR	**Karatay Array**	**52.87**	**299**	*eP*		**P**	**22 54 41.3**	**-1.0**
KKAR				pmax		pmax		
	comp=Z,4.0nm,0.8s							
KKAR	**Karatay Array**	**52.87**	**299**	*eP*		**P**	**22 54 41.3**	**-1.0**
	comp=Z,4.0nm,0.8s							
PSI	**Prapat**	**53.07**	**239**	P		**P**	**22 54 43.9**	**-0.2**
	comp=Z,2.3nm,0.3s,baz=32,slow=3.1,SNR=3.9							
ARU	**Arti**	**55.61**	**318**	*c iP*		**P**	**22 55 01.2**	**-0.7**
ARU							22 55 58.8	
ARU							22 57 02.7	
ARU				S		**S**	**23 02 51.5**	**+6.3**
ARU				SS		**SS**	**23 06 31.8**	**+1.8**
ARU				pmax		pmax		
	comp=Z,11nm,1.0s							
ARU	**Arti**	**55.61**	**318**	*eP*		**P**	**22 55 01.2**	**-0.7**
	comp=Z,13nm,1.1s							
ABKAR	**Akbulak array**	**57.41**	**310**	*eP*		**P**	**22 55 13.2**	**-1.6**
	comp=Z,4.6nm,0.6s							
WRA	**Warramunga Arr**	**58.64**	**189**	P		**P**	**22 55 23.5**	**-0.3**
	comp=Z,2.7nm,0.8s,baz=5.4,slow=7.2,SNR=8.7							
YKA	**Yellowknife Ar**	**62.21**	**31**	P		**P**	**22 55 48.8**	**+1.2**
	comp=Z,0.7nm,0.7s,baz=301,slow=6.5,SNR=11							
ASAR	**Alice Springs**	**62.37**	**189**	P		**P**	**22 55 49.9**	**+0.7**
	comp=Z,0.8nm,0.7s,baz=11,slow=5.5,SNR=7.2							
ARCES	**ARCESS Array B**	**62.78**	**339**	P		**P**	**22 55 50.2**	**-1.2**
	comp=Z,1.4nm,0.8s,baz=66,slow=6.9,SNR=6.4							
GEYT	**Alibeck**	**63.61**	**299**	P		**P**	**22 55 56.6**	**-0.8**
	comp=Z,1.9nm,0.5s,baz=35,slow=5.4,SNR=6.2							
FINES	**FINESS Array B**	**67.74**	**332**	P		**P**	**22 56 23.0**	**-0.6**
	comp=Z,5.2nm,0.9s,baz=46,slow=11,SNR=13							
FINES	**FINESS Array B**	**67.74**	**332**	P		**P**	**22 56 23.0**	**-0.6**
FINES				pmax		pmax		
	comp=Z,6.0nm,0.9s							
GOF	**Gofitskoye**	**69.51**	**312**	*ceP*		**P**	**22 56 33.8**	**-1.1**
KIV	**Kislovodsk**	**70.35**	**311**	*eP*		**P**	**22 56 40.4**	**+0.2**
KIV				pmax		pmax		
	comp=Z,17nm,1.0s							
KIV	**Kislovodsk**	**70.35**	**311**	*eP*		**P**	**22 56 40.2**	**0.0**
	comp=Z,16nm,0.9s							
KBZ	**Khabaz**	**70.35**	**311**	P		**P**	**22 56 40.2**	**+0.2**
	comp=Z,5.8nm,0.9s,baz=42,slow=3.2,SNR=10							
NB2	**NORSAR Subarra**	**73.01**	**337**	P		**P**	**22 56 55.2**	**-0.6**
	comp=Z,3.5nm,0.7s,baz=40,slow=6.2							
NOA	**NORSAR Array B**	**73.01**	**337**	P		**P**	**22 56 55.8**	**-0.1**
	comp=Z,3.9nm,0.8s,baz=39,slow=6.0,SNR=13							
AKASG	**Malin Array Be**	**73.45**	**322**	P		**P**	**22 56 57.7**	**-0.8**
	comp=Z,3.3nm,0.7s,baz=45,slow=6.4,SNR=13							
PDAR	**Pinedale Array**	**76.20**	**46**	P		**P**	**22 57 16.6**	**+1.6**
	comp=Z,1.0nm,0.6s,baz=251,slow=2.7,SNR=10							
KOLS	**Kolonicke sedl**	**77.93**	**324**	*eP*		**P**	**22 57 23.9**	**-0.3**
KOLS	**Kolonicke sedl**	**77.93**	**324**	*eP*		**P**	**22 57 23.9**	**-0.3**
BRTR	**Keskin Array B**	**78.27**	**312**	P		**P**	**22 57 26.3**	**-0.2**
	comp=Z,0.8nm,0.5s,baz=128,slow=2.8,SNR=8.1							
VYHS	**Vyhne**	**79.80**	**326**	*eP*		**P**	**22 57 34.9**	**+0.4**
VYHS	**Vyhne**	**79.80**	**326**	*eP*		**P**	**22 57 34.9**	**+0.4**
CLL	**Collm**	**80.06**	**330**	*i* P		**P**	**22 57 35.5**	**-0.4**
	comp=Z,5.0nm,0.8s							
CLL	**Collm**	**80.06**	**330**	*i* P		**P**	**22 57 35.5**	**-0.4**
CLL				pmax		pmax		
	comp=Z,5.0nm,0.8s							
KHC	**Kasperske Hory**	**81.55**	**329**	*eP*		**P**	**22 57 43.5**	**-0.4**
KHC	**Kasperske Hory**	**81.55**	**329**	*eP*		**P**	**22 57 43.5**	**-0.4**
GERES	**GERESS Array B**	**81.72**	**328**	P		**P**	**22 57 44.2**	**-0.7**
	comp=

0.4nm,0.4s,baz=48,slow=6.1,SNR=3.9
NOA NORSAR Array B 74.06 337 P **P 23 13 36.6 -0.1**
1.0nm,0.7s,baz=43,slow=5.4,SNR=4.2
BRTR Keskin Array B 78.53 311 P **P 23 14 03.6 +1.0**
0.4nm,0.6s,baz=50,slow=7.6,SNR=2.3
GERES GERESS Array B 82.51 328 P **P 23 14 24.0 +0.2**
0.2nm,0.3s,baz=52,slow=6.4,SNR=2.8

IDC ***11*** *23:03:12.7±1.7, 36.87N×140.75E, h0km, mb3.4/3, mb1 3.6/3, mb1mx3.2/39, mbtmp3.4/3, Error ellipse: s-maj=25.2km s-min=20.3km az=179.0*
ISCJB ***11*** *23:03:13.8±0.8, 36.95N±0.03×140.77E±0.07, h15km±6km, mb3.4/3, Error ellipse: s-maj=9.6km s-min=5.0km az=12.6*
JMA ***11*** *23:03:14.3, 36.97N×140.70E, h11km±1km, M4.0*
JMA Felt II J1.

ISC 11 23:03:13.6±1.2, 36.93N±0.05×140.70E±0.06, h8km±11km, n12, σ0.50/18, mb3.6/3, 3C, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.19**	**25**	⇑P			**Pg**	**23 03 18.0**	**+0.4**
ONAJ				S			**Sg**	**23 03 20.5**	**+0.2**
JHO	**Hitachi**	**0.33**	**198**	⇑P			**Pb**	**23 03 21.6**	**-0.2**
JHO				S			**Sb**	**23 03 26.8**	**-0.5**
JSB	**Shiboa**	**0.62**	**274**	⇑P			**Pb**	**23 03 27.0**	**+0.2**
JSB				S			**Sb**	**23 03 35.5**	**-0.2**
JFT	**Otama**	**0.66**	**334**	P			**Pg**	**23 03 26.4**	**+0.1**
JFT				S			**Sg**	**23 03 34.7**	**-0.2**
JYT	**Yasato**	**0.81**	**210**	P			**Pb**	**23 03 30.1**	**+0.2**
JYT				S			**Sb**	**23 03 40.8**	**-0.1**
JFY	**Yanaizu**	**0.93**	**301**	P			**Pb**	**23 03 32.0**	**+0.1**
JFY				S			**Sg**	**23 03 43.1**	**-0.4**
JMM	**Marumori**	**0.94**	**5**	P			**Pg**	**23 03 31.0**	**-0.7**
JMM				S			**Sg**	**23 03 42.9**	**-1.0**
MJAR	**Matsushiro Arr**	**2.04**	**260**	Pg			**Pb**	**23 03 51.0**	**+0.1**
	22nm,0.3s,baz=81,slow=17,SNR=6.1								
MJAR				Lg			Lg	23 04 16.9	
	28nm,0.3s,baz=78,slow=31,SNR=6.7								
USRK	**Ussuriysk Ar.**	**9.83**	**320**	Pn			Pn	23 05 40.1	+4.9
	baz=131,slow=14,SNR=4.8								
MKAR	**Makanchi Array**	**43.69**	**302**	P			**P**	**23 11 19.2**	**+0.3**
	0.1nm,0.6s,baz=74,slow=11,SNR=1.8								
KURBB	**Kurchatov Arra**	**45.62**	**308**	P			**P**	**23 11 35.2**	**+1.0**
	0.5nm,0.7s,baz=84,slow=8.2,SNR=3.9								
WRA	**Warramunga Arr**	**56.88**	**187**	P			**P**	**23 12 58.7**	**-0.3**
	0.8nm,0.7s,baz=3.8,slow=7.6,SNR=5.6								

JMA 11 23:06:22.0±0.3, 37.60N×143.50E, h27km, M3.5, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**1.90**	**297**	P			Pn	23 06 54.1	+1.5
JIO				*e*S			Sn	23 07 16.9	+1.2
OFUJ	**Ofunato**	**2.06**	**316**	P			Pn	23 06 55.8	+0.9
JMM	**Marumori**	**2.16**	**278**	P			Pn	23 06 56.7	+0.5
JMM				S			Sn	23 07 22.2	+0.1
JMK	**Ichinoseki**	**2.25**	**308**	P			Pn	23 06 58.9	+1.5
JOU	**Okura**	**2.37**	**290**	P			Pn	23 07 00.7	+1.6
JOU				*e*S			Sn	23 07 29.1	+1.8
JFT	**Otama**	**2.52**	**269**	P			Pn	23 07 02.8	+1.7
JFT				*e*S			Sn	23 07 32.8	+1.9
JOM	**Ohasama**	**2.55**	**318**	P			Pn	23 07 03.0	+1.4
JOM				S			Sn	23 07 33.8	+2.1
JYK	**Kaneyama**	**2.80**	**299**	P			Pn	23 07 06.9	+1.9
JRG	**Rokugo**	**2.88**	**309**	P			Pn	23 07 08.7	+2.6
JRG				*e*S			Sb	23 07 44.7	-2.7
MAT	**Matsushiro**	**4.36**	**258**	P			Pn	23 07 25.3	-1.2
MAT	**Matsushiro**	**4.36**	**258**	S			Sb	23 08 28.5	-1.6

JMA 11 23:08:01.8, 37.04N×140.71E, h7km±1km, M2.6, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.09**	**49**	P			Pg	23 08 04.2	+0.2
ONAJ				S			Sg	23 08 06.0	+0.4
JHO	**Hitachi**	**0.44**	**195**	*e*S			Sg	23 08 16.4	+0.2
JFT	**Otama**	**0.56**	**328**	P			Pg	23 08 12.9	+0.2
JFT				*e*S			Sg	23 08 20.4	+0.4
JMM	**Marumori**	**0.83**	**5**	P			Pg	23 08 17.3	-0.4
JMM				S			Sg	23 08 28.6	+0.1
JFY	**Yanaizu**	**0.88**	**295**	P			Pg	23 08 18.6	-0.1
JFY				*e*S			Sg	23 08 30.0	-0.2

NIED ***11*** *23:08:00, 35.40N×141.00E, h26km, Mw6.3 Best double couple: M0 2.99000×10^18 NP1:φs38.00000°, δ72.00000°, λ13.00000°. NP2:φs304.00000°, δ77.00000°, λ162.00000°.*
BJI ***11*** *23:08:12.6, 35.35N×140.70E, h5km, mb5.5/75, mB6.1/68, Ms6.6/96, Ms7 6.6/70*
IDC ***11*** *23:08:14.0±0.3, 35.45N×140.76E, h0km, mb5.5/37, mb1 5.6/42, mb1mx5.6/43, mbtmp5.5/42, ML4.5/4, MS6.2/55, Ms1 6.2/55, ms1mx6.2/65, Error ellipse: s-maj=11.6km s-min=9.0km az=83.0*
ISCJB ***11*** *23:08:14.8±0.4, 35.37N±0.01×140.79E±0.01, h13km±2km, mb5.9/506, MS6.3/602, Error ellipse: s-maj=2.4km s-min=1.7km az=165.5*
JMA ***11*** *23:08:15.8±0.1, 35.48N×140.87E, h26km±1km, M6.4*
NEIC ***11*** *23:08:16.0±0.0, 35.21N×140.14E, h15km, Moment Tensor Solution. s14 Moment tensor: Scale 10^18Nm; Mrr-0.48; Mθθ-1.66; Mφφ2.14; Mrθ-1.61; Mrφ-1.16; Mθφ0.54; Best double couple: M0 2.80000×10^18 NP1:φs122.00000°, δ81.00000°, λ-142.00000°. NP2:φs26.00000°, δ53.00000°, λ-10.00000°. Principal axes: T 2.7900, Plg18.0000°, Azm248.0000°; N 0.0900, Plg51.0000°, Azm133.0000°; P -2.8700, Plg32.0000°, Azm350.0000°;*
NEIC ***11*** *23:08:16.9±0.1, 35.42N×140.58E, h15km, mb6.0/299, ME6.6, MS6.1/298, MW6.2, MW6.2 Error ellipse: s-maj=3.7km s-min=2.9km az=142.0, Moment Tensor Solution. s49 Moment tensor: Scale 10^18Nm; Mrr-0.02; Mθθ-1.76; Mφφ 1.79; Mrθ-1.08; Mφθ-0.81; Mφr-0.07; Best double couple: M0 2.20000×10^18 NP1:φs30.00000°, δ69.00000°, λ-14.00000°. NP2:φs125.00000°, δ77.00000°, λ-159.00000°. Principal axes: T 1.9800, Plg5.0000°, Azm256.0000°; N 0.4400, Plg65.0000°, Azm155.0000°; P -2.4200, Plg24.0000°, Azm349.0000°; Broadband fault plane solution: P waves. NP1:φs129.00000°, δ81.00000°, λ-155.00000°. NP2:φs35.00000°, δ65.00000°, λ-10.00000°. Principal axes: T Plg11.0000°, Azm260.0000°; N Plg0.0000°, Azm0.0000°; P Plg24.0000°, Azm355.0000°; Depth from synthetics of broadband displacement seismograms. Energy computed from BB mechanism.*
NEIC Felt [IV] at Narita, Tokyo and Yokosuka. Felt widely in southeastern Honshu. Recorded [5L JMA] in Chiba.
GCMT ***11*** *23:08:16.9±0.1, 35.42N×140.85E, h16km, MW6.2/130, Moment Tensor Solution. s121,c244; s130,c456; Duration: 3?1 Moment tensor: Scale 10^18Nm; Mrr-0.27±.01; Mθθ-1.88±.01; Mφφ2.15±.01; Mrθ-1.71±.06; Mθφ-0.48±.01; Mφr0.16±.04; Best double couple: M0 2.63100×10^18 NP1:φs131.00000°, δ76.00000°, λ-149.00000°. NP2:φs33.00000°, δ60.00000°, λ-16.00000°. Principal axes: T 2.2750, Plg11.0000°, Azm259.0000°; N 0.7090, Plg56.0000°, Azm153.0000°; P -2.9860, Plg32.0000°, Azm356.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface/mantle waves, cutoff=50s.*
MOS ***11*** *23:08:18.4±1.1, 35.87N×140.70E, h23km, mb6.1/147, MS6.3/144 Error ellipse: s-maj=5.4km s-min=3.3km az=109.7*

ISC 11 23:08:17.1±0.3, 35.44N±0.02×140.70E±0.02, h17km±1km, h16km:pP-P, n2152, σ1.99/2173, mb6.0/543, MS6.2/608, 95C-53D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.29**	**26**	⇓P			**Pg**	**23 08 21.8**	**-1.6**
CHOJ				S			**Sg**	**23 08 26.4**	**-1.3**
I30JP	**ISUMI INFRASON**	**0.34**	**248**	Pg			**Pb**	**23 08 25.0**	**+0.2**
	baz=99,slow=36,SNR=7.9								
JCN	**Nagara**	**0.41**	**267**	⇑P			**Pb**	**23 08 27.3**	**+1.4**
JCN				*e*S			**Sn**	**23 08 34.9**	**-0.6**
KTR	**Katsuura**	**0.43**	**228**	⇑P			**Pb**	**23 08 26.8**	**+0.6**
BSO4	**Boso 4**	**0.54**	**214**	⇑P			**Pn**	**23 08 29.4**	**-0.5**
BSO3	**Boso 3**	**0.66**	**194**	⇑P			**Pb**	**23 08 30.0**	**+0.1**
BSO1	**Boso 1**	**0.81**	**164**	⇓P			**Pb**	**23 08 30.5**	**-2.0**
JYT	**Yasato**	**0.89**	**332**	⇓P			**Pb**	**23 08 32.5**	**-1.6**
JYT				*e*S			**Sg**	**23 08 46.3**	**+0.2**
JHO	**Hitachi**	**1.18**	**355**	⇓P			**Pn**	**23 08 35.7**	**-3.1**
JHO				*e*S			**Sb**	**23 08 51.9**	**-2.0**
JIM2	**Oshima 3**	**1.27**	**236**	P			**Pn**	**23 08 38.6**	**-1.5**
JOD2	**Odawara 2**	**1.33**	**263**	⇑P			**Pn**	**23 08 40.8**	**-0.2**
AJI	**Ajiro2**	**1.38**	**254**	⇑P			**Pn**	**23 08 40.8**	**-0.7**
JIZS	**Izushimoda**	**1.66**	**245**	⇑P			**Pn**	**23 08 44.6**	**-0.9**
JYN	**Shimob**	**1.76**	**273**	⇑P			**Pn**	**23 08 46.9**	**-0.1**
SHZ3	**Shizuoka 3**	**2.07**	**260**	P			**Pn**	**23 08 51.9**	**+0.7**
JNT	**Takato**	**2.13**	**283**	P			**Pn**	**23 08 53.3**	**+1.2**
JHK	**Hiroka**	**2.26**	**323**	P			**Pn**	**23 08 53.3**	**-0.4**
MJAR	**Matsushiro Arr**	**2.30**	**299**	Pn			**Pn**	**23 08 54.9**	**+0.6**
	124nm,0.3s,baz=100,slow=13,SNR=158								
MJAR				LR			LR	23 09 50.9	
	comp=Z,96μm,19.8s,baz=130,slow=42								
MAJO	**Matsushiro**	**2.31**	**299**	*d*iP			**Pn**	**23 08 54.3**	**-0.1**
MAJO	**Matsushiro**	**2.31**	**299**	*e*Pn			**Pn**	**23 08 54.3**	**-0.1**
MAJO				*e*Sn			**Sb**	**23 09 26.0**	**-0.5**
JNY	**Yasuok**	**2.32**	**269**	P			**Pn**	**23 08 56.2**	**+1.5**
JHJ2	**Mitsune**	**2.44**	**198**	*e*Pn			**Pn**	**23 08 54.5**	**-1.6**
JHJ2				*e*Sn			**Sn**	**23 09 21.5**	**-4.0**
JHJ	**Hachijo jima 2**	**2.44**	**198**	Pn			**Pn**	**23 08 54.2**	**-1.9**
	574nm,0.3s,baz=180,slow=4.8,SNR=29								
JHJ				Sn			**Sn**	**23 09 24.5**	**-1.0**
	2μm,0.3s,baz=55,slow=20,SNR=6.7								
JHJ				LR			LR	23 10 04.4	
	comp=Z,428μm,19.2s,baz=34,slow=45								
JYZW	**Yoshizawa**	**2.47**	**261**	P			**Pn**	**23 08 57.4**	**+0.8**
JGF	**Kuroka**	**2.73**	**274**	P			**Pn**	**23 09 02.0**	**+1.7**
JGN	**Niukaw**	**2.86**	**287**	P			**Pn**	**23 09 03.7**	**+1.6**
INU	**Inuyama**	**3.01**	**269**	*e*Pn			**Pn**	**23 09 05.0**	**+1.0**
INU				*e*Sn			**Sn**	**23 09 35.0**	**-4.8**
JGM	**Miyama**	**3.26**	**276**	P			**Pn**	**23 09 09.2**	**+1.7**
JKY	**Yasaka**	**4.57**	**274**	P			**Pn**	**23 09 27.5**	**+2.0**
ERM	**Erimo**	**6.84**	**16**	*e*P			**Pn**	**23 09 52.8**	**-3.8**
ERM				*e*				23 11 09.6	
ERM	**Erimo**	**6.84**	**16**	*e*Pn			**Pn**	**23 09 52.8**	**-3.8**
ERM				*e*Sn			**Sn**	**23 11 09.6**	**-4.4**
CBIJ	**Chichi jima**	**8.41**	**171**	*e*Pn			**Pn**	**23 10 15.0**	**-3.3**
CBIJ				*e*Sn			**Sn**	**23 11 46.5**	**-6.4**
JCJ	**Chichijima**	**8.41**	**171**	Pn			**Pn**	**23 10 15.8**	**-2.5**
	364nm,0.3s,baz=341,slow=9.2,SNR=72								
JNU	**Nakatsue**	**8.45**	**257**	Pn			**Pn**	**23 10 20.5**	**+1.6**
	3.1nm,0.3s,baz=76,slow=5.9,SNR=24								
JNU	**Nakatsue**	**8.45**	**257**	*e*Pn			**Pn**	**23 10 16.4**	**-2.4**
JNU				*e*Sn			**Sn**	**23 11 56.5**	**+2.6**
YUK	**Yuzh-Kuril'sk**	**9.46**	**23**	*e*P			**Pn**	**23 10 29.2**	**-3.3**
YUK				*e*S			**Sn**	**23 12 10.7**	**-7.7**
YUK					pmax	pmax			
	comp=N,644nm,0.5s								
YUK					pmax	pmax			
	comp=E,889nm,0.5s								
YUK					pmax	pmax			
	comp=Z,1μm,0.5s								
YUK					MLR	MLR			
	comp=Z,141μm,15.0s								
YUK					MLR	MLR			
	comp=E,121μm,14.0s								
YUK					MLR	MLR			
	comp=N,146μm,16.0s								
SHO	**Shikotan**	**9.65**	**27**	*e*P			Pn	23 10 29.7	-5.5
SHO				*e*S			Sn	23 12 10.5	-13
SHO					pmax	pmax			
	comp=N,388nm,0.9s								
SHO					pmax	pmax			
	comp=E,698nm,0.9s								
SHO					pmax	pmax			
	comp=E,377nm,0.4s								
VLA	**Vladivostok**	**10.27**	**321**	*d*iP			**Pn**	**23 10 45.3**	**+1.7**
VLA					pmax	pmax			
	comp=Z,145nm,2.1s								
KSRS	**Korea Array**	**10.49**	**285**	Pn			**Pn**	**23 10 49.5**	**+2.8**
	comp=Z,1.7nm,0.3s,baz=100,slow=14,SNR=70								
KSRS				LR			LR	23 15 01.6	
	comp=Z,222μm,18.4s,baz=92,slow=39								
KSRS				PcP			**PcP**	**23 16 57.6**	**+6.5**
	comp=Z,0.1nm,0.3s,baz=167,slow=1.4,SNR=4.2								
KS01	**Wonju Array Si**	**10.52**	**285**	*e*Pn			**Pn**	**23 10 50.4**	**+3.4**
KS15	**Wonju Array Si**	**10.52**	**285**	*e*Pn			**Pn**	**23 10 49.5**	**+2.3**
KS15				*e*PcP			**PcP**	**23 16 57.6**	**+6.5**
KSAR	**Wonju Array Be**	**10.52**	**285**	P			**Pn**	**23 10 49.5**	**+2.4**
KSAR	**Wonju Array Be**	**10.52**	**285**	Pn			**Pn**	**23 10 49.5**	**+2.4**
USRK	**Ussuriysk Ar.**	**11.01**	**325**	Pn			**Pn**	**23 10 56.9**	**+3.1**
	comp=Z,3.2nm,0.3s,baz=135,slow=12,SNR=82								
USRK				LR			LR	23 15 06.1	
	comp=Z,186μm,18.2s,baz=127,slow=37								
KUR	**Kuril'sk**	**11.20**	**27**	*e*P			**Pn**	**23 10 54.5**	**-1.9**
KUR				*e*S			Sn	23 12 50.1	-11
KUR					pmax	pmax			
	comp=Z,440nm,0.7s								
KUR					pmax	pmax			
	comp=N,136nm,1.3s								
KUR					pmax	pmax			
	comp=E,101nm,0.6s								
KUR					MLR	MLR			
	comp=Z,84μm,18.0s								
KUR					MLR	MLR			
	comp=N,101μm,21.0s								
KUR					MLR	MLR			
	comp=E,93μm,15.0s								
INCN	**Inchon**	**11.51**	**284**	*e*Pn			Pn	23 11 05.8	+5.1
INCN	**Inchon**	**11.51**	**284**	P			Pn	23 11 06.1	+5.3
	SNR=38								
INCN				P			Pn	23 11 06.1	+5.3
	SNR=38								
YSS	**Yuzh-Sakhalins**	**11.61**	**7**	*d*iP			**Pn**	**23 10 58.4**	**-3.6**
YSS				*e*S			**Sn**	**23 13 03.9**	**-7.2**
YSS					pmax	pmax			
	comp=Z,320nm,0.9s								
YSS					pmax	pmax			
	comp=Z,3μm,7.0s								
YSS					MLR	MLR			
	comp=N,217μm,16.0s								
YSS					MLR	MLR			
	comp=Z,261μm,16.0s								
YSS	**Yuzh-Sakhalins**	**11.61**	**7**	*e*Pn			**Pn**	**23 10 58.3**	**-3.6**
MDJ	**Mudanjiang**	**12.50**	**321**	P			**Pn**	**23 11 16.8**	**+2.6**
MDJ				S			**Sn**	**23 13 39.0**	**+6.0**
MDJ				PcP			**PcP**	**23 16 52.5**	**-0.7**
MDJ				ScP			**ScP**	**23 20 26.4**	**+0.9**
MDJ				ScS			**ScS**	**23 24 01.7**	**+0.2**
MDJ					pmax	pmax			
	comp=Z,66nm,1.6s								
MDJ					LR	LR			
	comp=Z,104μm,15.3s								
MDJ					LR	LR			
	comp=Z,92μm,17.6s								
MDJ					LR	LR			
	comp=Z,124μm,14.7s								
MDJ	**Mudanjiang**	**12.50**	**321**	*e*Pn			P	23 11 20.1	-5.7
JOW	**Kunigami**	**13.66**	**235**	Pn			**Pn**	**23 11 33.3**	**+3.2**
	comp=Z,2.6nm,0.3s,baz=34,slow=20,SNR=4.7								
JOW	**Kunigami**	**13.66**	**235**	*e*Pn			Pn	23 11 25.2	-4.9
UGL	**Uglegorsk**	**13.67**	**4**	⇓*i*P			**Pn**	**23 11 25.5**	**-4.5**
UGL					pmax	pmax			
	comp=Z,360nm,1.2s								
UGL					pmax	pmax			
	comp=Z,5μm,12.0s								
UGL					pmax	pmax			
	comp=N,5μm,14.0s								
UGL					pmax	pmax			
	comp=E,1μm,14.0s								
UGL					MLR	MLR			
	comp=N,140μm,16.0s								
UGL					MLR	MLR			
	comp=E,140μm,16.0s								
UGL					MLR	MLR			
	comp=Z,140μm,16.0s								
HABR	**Khabarovsk**	**13.68**	**344**	*de*P			**Pn**	**23 11 27.5**	**-2.7**
HABR				*e*S			**Sn**	**23 13 57.9**	**-3.8**
HABR					pmax	pmax			
	comp=Z,48nm,0.5s								
HABR					MLR	MLR			
	comp=Z,82μm,14.0s								
CN2	**Changchun**	**14.40**	**310**	*e*P			**Pn**	**23 11 41.9**	**+1.7**
CN2				*e*S			**Sn**	**23 14 20.5**	**+1.0**
CN2					pmax	pmax			
	comp=Z,60nm,1.0s								
CN2					LR	LR			
	comp=Z,69μm,14.0s								
CN2					LR	LR			
	comp=Z,110μm,14.0s								
CN2					LR	LR			
	comp=Z,127μm,15.0s								
SNY	**Shenyang**	**14.82**	**301**	⇑P			**P**	**23 11 48.9**	**-2.7**
SNY				S			**Sn**	**23 14 34.3**	**+4.8**
SNY					pmax	pmax			
	comp=Z,61nm,1.5s								
SNY					pmax	pmax			
	comp=Z,17μm,10.4s								
SNY					LR	LR			
	comp=Z,179μm,20.6s								
SNY					LR	LR			
	comp=Z,70μm,21.6s								
SNY					LR	LR			
	comp=Z,145μm,18.1s								
KLR	**Kul'dur**	**15.27**	**337**	Pn			**Pn**	**23 11 50.9**	**-1.0**
	comp=Z,1.9nm,0.3s,baz=156,slow=12,SNR=19								
KLR				LR			LR	23 17 50.6	
	comp=Z,202μm,18.6s,baz=141,slow=38								
KLR	**Kul'dur**	**15.27**	**337**	P			**Pn**	**23 11 50.9**	**-1.0**
KLR					pmax	pmax			
	comp=Z,2.0nm,0.3s								
KLR					MLR	MLR			
	comp=Z,202μm,18.6s								
TYV	**Tymovskoe**	**15.48**	**5**	*e*P			**Pn**	**23 11 51.0**	**-3.6**
TYV				*e*S			**Sn**	**23 14 39.0**	**-6.6**
TYV					pmax	pmax			
	comp=E,396nm,1.0s								
TYV					pmax	pmax			
	comp=Z,638nm,1.0s								
TYV					pmax	pmax			
	comp=Z,7μm,6.0s								
TYV					smax	smax			
	comp=E,18μm,10.0s								
DL2	**Dalian**	**15.59**	**288**	P			**Pn**	**23 11 58.4**	**-1.8**
DL2				S			**Sn**	**23 14 53.0**	**+4.6**
DL2					pmax	pmax			
	comp=E,490nm,1.7s								
DL2					pmax	pmax			
	comp=E,21μm,9.1s								
DL2					LR	LR			
	comp=E,252μm,21.1s								
DL2					LR	LR			
	comp=E,256μm,17.6s								
SSE	**Sheshan**	**16.88**	**261**	P			**Pn**	**23 12 12.2**	**-0.4**
SSE				*s*P			**pP**	**23 12 20.0**	**+0.7**
SSE				S			**Sn**	**23 15 18.3**	**-1.6**
SSE					pmax	pmax			
	comp=E,41nm,0.6s								
SSE					pmax	pmax			
	comp=E,5μm,9.3s								
SSE					LR	LR			
	comp=E,228μm,18.6s								
SSE					LR	LR			
	comp=E,62μm,18.6s								
SSE					LR	LR			
	comp=E,205μm,13.8s								
NKL	**Nikolayevsk**	**17.71**	**360**	*e*P			**Pn**	**23 12 18.0**	**-4.7**
NKL				*e*S			**Sn**	**23 15 31.0**	**-8.5**
NKL					pmax	pmax			
	comp=N,17nm,0.9s								
NKL					pmax	pmax			
	comp=Z,20nm,0.9s								
NKL					pmax	pmax			
	comp=N,6μm,13.0s								
NKL					pmax	pmax			
	comp=Z,8μm,11.0s								
NKL					smax	smax			
	comp=N,3μm,11.0s								
NJ2	**Nanjing**	**18.48**	**266**	*e*P			**P**	**23 12 32.4**	**+0.2**
NJ2				*p*P			**pP**	**23 12 35.3**	**-1.6**
NJ2				*s*P			**sP**	**23 12 36.4**	**-2.7**
NJ2				S			**S**	**23 16 00.8**	**-1.7**
NJ2				*s*S			**sS**	**23 16 05.4**	**-4.6**
NJ2					pmax	pmax			
	comp=N,3μm,8.7s								
NJ2					LR	LR			
	comp=N,132μm,17.4s								
NJ2					LR	LR			
	comp=N,84μm,17.4s								
NJ2					LR	LR			
	comp=N,109μm,17.1s								
YOJ	**Yonaguni jima**	**18.80**	**239**	*e*P			**Pn**	**23 12 38.8**	**+2.4**
YOJ					pmax	pmax			
	comp=Z,462nm,1.1s								
YOJ	**Yonaguni jima**	**18.80**	**239**	*e*P			**Pn**	**23 12 38.8**	**+2.4**
	comp=Z,462nm,1.1s								
SKR	**Severo-Kuril's**	**18.89**	**31**	*d*iP			**P**	**23 12 32.7**	**-3.8**
SKR					pmax	pmax			
	comp=Z,9μm,12.6s								
SKR					MLR	MLR			
	comp=Z,73μm,18.0s								
TIA	**Tai'an**	**19.13**	**279**	*e*P			**P**	**23 12 37.4**	**-2.0**
TIA				*p*P			**pP**	**23 12 43.7**	**-0.4**
TIA				*s*P			**sP**	**23 12 46.9**	**+0.6**
TIA					pmax	pmax			
	comp=Z,50nm,1.1s								
TIA					pmax	pmax			
	comp=Z,5μm,5.4s								
TIA					LR	LR			
	comp=Z,94μm,14.4s								
TIA					LR	LR			
	comp=Z,121μm,16.6s								
TIA					LR	LR			
	comp=Z,170μm,16.3s								
YHNB	**Yeheng**	**19.84**	**243**	*e*P			**P**	**23 12 46.8**	**-0.5**
	comp=Z,183nm,1.2s								
BJI	**Beijing**	**19.91**	**291**	P			**P**	**23 12 46.0**	**-1.9**
BJI					pmax	pmax			
	comp=Z,280nm,1.4s								
BJI					pmax	pmax			
	comp=Z,6μm,3.9s								
BJI					LR	LR			
	comp=Z,134μm,22.2s								
BJI					LR	LR			
	comp=Z,37μm,24.6s								
BJT	**Baijiatuan**	**19.92**	**291**	*e*P			**P**	**23 12 47.0**	**-0.9**
BJT					pmax	pmax			
	comp=Z,1μm,1.1s								
BJT	**Baijiatuan**	**19.92**	**291**	*e*P			**P**	**23 12 47.0**	**-0.9**
	comp=Z,1μm,1.1s								
NACB	**Ninganchiao**	**19.99**	**241**	*e*P			**P**	**23 12 45.9**	**-2.9**
	comp=Z,167nm,1.1s								
HIA	**Hailar**	**20.67**	**318**	*e*P			**P**	**23 12 55.1**	**-1.0**
HIA				*e*S			**S**	**23 16 38.6**	**-7.7**
HIA					pmax	pmax			
	comp=Z,292nm,1.1s								
HIA					MLR	MLR			
	comp=Z,64μm,19.0s								
HIA	**Hailar**	**20.67**	**318**	*e*P			**P**	**23 12 55.0**	**-1.0**
	comp=Z,292nm,1.1s								
HIA				*e*S			**S**	**23 16 38.6**	**-7.7**
HIA					LR	LR			
	comp=Z,64μm,19.0s								
SSLB	**Suanglung**	**20.68**	**241**	*e*P			**P**	**23 12 54.8**	**-1.6**
	comp=Z,263nm,1.3s								
SSLB				*e*S			**S**	**23 16 46.5**	**-0.5**
SSLB					LR	LR			
	comp=Z,29μm,22.0s								
YULB	**Yu-li**	**20.69**	**240**	*e*P			**P**	**23 12 55.2**	**-1.2**
	comp=Z,144nm,1.0s

PEA1 **Petropavlovsk-** 21.36 29 *e*P P 23 13 01.7 -1.7
PET **Petropavlovsk** 21.68 30*d i*P P 23 13 06.7 -0.1
PET *e*S **S** 23 16 58.4 -7.6
PET pmax pmax
comp=Z,13μm,10.6s
PET pmax pmax
comp=Z,301nm,1.4s
PET pmax pmax
comp=Z,16μm,12.4s
PET smax smax
comp=E,68μm,20.1s
PET smax smax
comp=E,45μm,19.7s
PET MLR MLR
comp=Z,65μm,17.0s
PET MLR MLR
comp=Z,61μm,16.0s
PET **Petropavlovsk** 21.68 30 *e*P **P** 23 13 05.3 -1.5
comp=Z,1μm,1.3s
PET LR LR
comp=Z,75μm,19.0s
QZH **Quanzhou** 21.74 247⇓*i*P **P** 23 13 04.2 -3.5
QZH S **S** 23 16 58.4 -9.3
QZH pmax pmax
comp=Z,340nm,1.0s
QZH LR LR
comp=Z,136μm,15.1s
QZH LR LR
comp=Z,95μm,17.6s
QZH LR LR
comp=Z,195μm,16.1s
GUMO **Guam** 22.08 169 P **P** 23 13 11.5 +0.1
comp=Z,228nm,0.6s,baz=204,slow=20,SNR=4.7
GUMO LR LR 23 21 54.1
comp=Z,48μm,18.8s,baz=11,slow=37
GUMO **Guam** 22.08 169 *e*P **P** 23 13 12.9 +1.5
GUMO LR LR
comp=Z,75μm,21.0s
WHN **Wuhan** 22.61 265 ⇓P **P** 23 13 17.1 +0.1
WHN S **S** 23 17 19.9 -4.1
WHN LR LR
comp=Z,150μm,14.0s
WHN LR LR
comp=Z,279μm,15.0s
TIY **Taiyuan** 22.78 284 *e*P **P** 23 13 16.6 -2.3
TIY S **S** 23 17 28.5 +1.2
TIY pmax pmax
comp=Z,34nm,0.7s
TIY pmax pmax
comp=Z,3μm,6.9s
TIY LR LR
comp=Z,31μm,13.6s
TIY LR LR
comp=Z,135μm,15.9s
TIY LR LR
comp=Z,166μm,17.2s
HHC **Hu-ho-hao-te** 23.49 292 *e*P **P** 23 13 23.1 -3.0
HHC sP pP 23 13 30.5 -0.5
HHC S **S** 23 17 31.8 -7.3
HHC SS **SnSn** 23 18 17.4 +2.3
HHC pmax pmax
comp=Z,120nm,1.5s
HHC pmax pmax
comp=Z,4μm,10.6s
HHC LR LR
comp=Z,49μm,14.8s
HHC LR LR
comp=Z,45μm,14.8s
CLNS **Chul'man** 23.93 338 *e*P **P** 23 13 28.0 -2.1
CLNS *e**PP **sP** 23 13 39.8 +2.5
CLNS *e* 23 13 56.9
CLNS *e* 23 17 08.2
CLNS *e*S **S** 23 17 44.4 -1.3
CLNS *e*SS **SnSn** 23 18 28.8 +3.2
CLNS pmax pmax
comp=Z,868nm,1.2s
CLNS pmax pmax
comp=N,707nm,1.3s
CLNS pmax pmax
comp=E,342nm,1.2s
CLNS pmax pmax
comp=Z,312nm,1.0s
CLNS pmax pmax
comp=E,182nm,1.1s
CLNS pmax pmax
comp=N,215nm,0.9s
CLNS smax smax
comp=E,5μm,10.4s
CLNS smax smax
comp=N,36μm,12.5s
CLNS MLR MLR
comp=N,40μm,15.0s
CLNS MLR MLR
comp=Z,105μm,17.0s
CLNS MLR MLR
comp=N,74μm,15.0s
BTO **Baotou** 24.64 291 *e*P **P** 23 13 34.0 -2.9
MA2 **Magadan** 25.03 12 P **P** 23 13 38.8 -1.3
comp=N,292nm,0.7s,baz=217,slow=8.1,SNR=86
MA2 LR LR 23 25 18.9
comp=N,69μm,18.1s,baz=216,slow=41
CIT **Chita** 25.47 319 *e*P **P** 23 13 43.8 -0.4
CIT *e* 23 14 21.6
CIT pmax pmax
comp=Z,510nm,1.5s
XAN **Xi'an** 26.10 276 P **P** 23 13 48.0 -2.1
XAN pP pP 23 13 51.1 -4.1
XAN S **S** 23 18 19.2 -1.6
XAN SS **SnSn** 23 19 28.7 +10
XAN pmax pmax
comp=Z,3μm,6.4s
XAN LR LR
comp=Z,130μm,17.0s
XAN LR LR
comp=Z,123μm,17.8s
XAN LR LR
comp=Z,133μm,17.8s
HKC **Hong Kong Obse** 26.57 248⇓*i*P **P** 23 13 56.0 +1.7
ENH **Enshi** 26.66 268 *e*P **P** 23 13 52.8 -2.4
comp=Z,555nm,0.9s
ENH LR LR
comp=Z,57μm,21.0s
MCO **Taipa Grande** 27.14 248 P P 23 13 46.0 -13
YAK **Yakutsk** 27.51 349 P **P** 23 14 01.6 -0.8
comp=Z,96nm,0.5s,baz=168,slow=1.9,SNR=20
YAK LR LR 23 25 09.7
comp=Z,67μm,20.4s,baz=162,slow=37
YAK **Yakutsk** 27.51 349 *e*P **P** 23 14 00.8 -1.6
YAK *e**PP **sP** 23 14 09.4 -0.2
YAK *e* 23 14 45.8
YAK *e*S **S** 23 18 39.9 -2.5
YAK *e*SS **SnSn** 23 19 44.5 -8.3
YAK pmax pmax
comp=Z,647nm,1.5s
YAK pmax pmax
comp=N,648nm,1.5s
YAK pmax pmax
comp=E,207nm,1.6s
YAK pmax pmax
comp=E,501nm,1.5s
YAK pmax pmax
comp=Z,337nm,1.5s
YAK pmax pmax
comp=N,451nm,1.5s
YAK smax smax
comp=N,14μm,8.4s
YAK smax smax
comp=E,5μm,7.2s
YAK MLR MLR
comp=Z,72μm,23.0s
YAK MLR MLR
comp=N,105μm,22.0s
YAK MLR MLR
comp=E,129μm,25.0s
YAK **Yakutsk** 27.51 349 *e*P **P** 23 14 01.6 -0.8
comp=E,746nm,1.2s
YAK *e*S S 23 18 31.2 -11
YAK LR LR
comp=Z,65μm,20.0s
ULN **Ulaanbaatar** 27.81 307 *e*P **P** 23 14 06.1 +0.6
ULN pmax pmax
comp=Z,170nm,1.1s
ULN MLR MLR
comp=Z,62μm,20.0s
ULN **Ulaanbaatar** 27.81 307 *e*P **P** 23 14 06.1 +0.6
comp=Z,170nm,1.1s
ULN LR LR
comp=Z,62μm,20.0s
H11N2 **WAKE ISLAND Hy** 27.88 117 T T 23 42 59.7
baz=310,slow=76
H11N1 **WAKE ISLAND Hy** 27.89 117 T T 23 43 01.9
baz=310,slow=76
H11N3 **WAKE ISLAND Hy** 27.90 117 T T 23 43 01.1
baz=310,slow=76
SONA1 **Songino Array** 28.23 307 *e*P **P** 23 14 07.6 -1.6
SONA0 **Songino Array** 28.24 307 *e*P **P** 23 14 08.8 -0.5
comp=Z,124nm,1.0s
SONM **Songino Array** 28.24 307 P **P** 23 14 08.8 -0.5
comp=Z,12nm,0.6s,baz=106,slow=8.4,SNR=65
SONM LR LR 23 25 51.6
comp=Z,72μm,19.6s,baz=106,slow=37
SONM P3KPbc 23 46 32.5
comp=Z,0.6nm,0.6s,baz=250,slow=2.3,SNR=4.7
SEY **Seymchan** 28.46 11 P **P** 23 14 10.8 -0.1
comp=Z,45nm,0.8s,baz=206,slow=6.7,SNR=102
SEY LR LR 23 27 29.9
comp=Z,99μm,18.1s,baz=199,slow=41
H11S1 **WAKE ISLAND Hy** 28.53 119 T T 23 43 48.3
baz=312,slow=76
H11S3 **WAKE ISLAND Hy** 28.53 119 T T 23 43 48.3
baz=312,slow=76
H11S2 **WAKE ISLAND Hy** 28.54 119 T T 23 43 49.5
baz=312,slow=76
BOD **Bodaibo** 28.59 330 *e*P **P** 23 14 12.0 -0.2
BOD pmax pmax
comp=Z,204nm,1.2s
SMY **Shemya** 29.21 43 PFAKE 23 14 30.0 +12
SMY LR LR
comp=Z,40μm,19.0s
LZH **Lanzhou** 29.80 282 ⇑P **P** 23 14 22.1 -1.3
LZH pP pP 23 14 29.2 +0.7
LZH sP sP 23 14 32.7 +2.1
LZH PP **PnPn** 23 15 19.0 -0.1
LZH PcP **PcP** 23 17 26.5 -0.1
LZH S **S** 23 19 16.4 -3.0
LZH sS sS 23 19 27.0 -0.8
LZH SS **SnSn** 23 20 50.1 +0.5
LZH pmax pmax
comp=Z,470nm,1.0s
LZH pmax pmax
comp=Z,3μm,5.2s
LZH LR LR
comp=Z,102μm,16.2s
LZH LR LR
comp=Z,71μm,13.0s
LZH LR LR
comp=Z,121μm,18.2s
GYA **Guiyang** 30.41 262⇑*i*P **P** 23 14 26.3 -2.5
GYA PP **PnPn** 23 15 26.8 -0.5
GYA PcP **PcP** 23 17 29.4 +1.1
GYA S **S** 23 19 26.5 -2.5
GYA SS **SnSn** 23 21 05.6 +1.0
GYA ScP **ScP** 23 21 10.8 +0.8
GYA ScS **ScS** 23 25 04.2 -2.0
GYA pmax pmax
comp=Z,160nm,1.1s
GYA pmax pmax
comp=Z,950nm,10.2s
GYA LR LR
comp=Z,45μm,18.0s
GYA LR LR
comp=Z,73μm,18.9s
GYA LR LR
comp=Z,91μm,16.5s
IRK **Irkutsk** 30.77 314 *e*P **P** 23 14 30.7 -0.9
IRK pmax pmax
comp=Z,203nm,2.2s
ZAK **Zakamensk** 30.84 311 *e*P **P** 23 14 32.1 -0.2
ZAK pmax pmax
comp=Z,70nm,1.5s
TLY **Talaya** 30.97 313 P **P** 23 14 33.9 +0.6
comp=Z,26nm,1.0s,baz=120,slow=5.0,SNR=15
TLY LR LR 23 27 51.9
comp=Z,51μm,18.2s,baz=110,slow=38
TLY **Talaya** 30.97 313 *e*P **P** 23 14 33.2 -0.1
TLY *e* 23 15 33.7
TLY *e*PPP PPP 23 15 45.0
TLY *e*S **S** 23 19 35.5 -1.6
TLY *e*SS **SS** 23 21 37.3 -12
TLY pmax pmax
comp=Z,134nm,1.2s
TLY MLR MLR
comp=Z,53μm,12.0s
TLY **Talaya** 30.97 313 *e*P **P** 23 14 34.0 +0.7
TLY LR LR
comp=Z,52μm,18.0s
TLY **Talaya** 30.97 313 P **P** 23 14 34.4 +1.0
SNR=64
TLY P **P** 23 14 34.4 +1.0
SNR=64
CD2 **Chengdu** 31.13 272 P **P** 23 14 32.6 -2.4
CD2 sP pP 23 14 38.3 -1.8
CD2 PcP **PcP** 23 17 28.5 -1.5
CD2 S **S** 23 19 32.3 -7.8
CD2 sS sS 23 19 44.4 -4.1
CD2 pmax pmax
comp=Z,400nm,0.8s
CD2 pmax pmax
comp=Z,2μm,7.1s
CD2 LR LR
comp=Z,68μm,30.9s
DAV **Davao City (W)** 31.47 210 LR LR 23 25 52.6
comp=Z,31μm,21.2s,baz=40,slow=34
QIZ **Qiongzhong** 31.77 247 P **P** 23 14 40.5 -0.1
QIZ S **S** 23 19 42.0 -8.0
QIZ LR LR
comp=Z,6μm,10.4s
QIZ LR LR
comp=Z,34μm,12.5s
GTA **Gaotai** 32.52 289 P **P** 23 14 45.6 -1.6
GTA pP pP 23 14 50.2 -2.1
GTA sP sP 23 14 53.3 -1.1
GTA PcP **PcP** 23 17 36.6 +2.7
GTA S **S** 23 19 59.0 -2.7
GTA sS sS 23 20 06.4 -3.7
GTA SS **SnSn** 23 21 55.7 +0.3
GTA pmax pmax
comp=Z,1μm,5.9s
GTA LR LR
comp=Z,85μm,21.9s
GTA LR LR
comp=Z,36μm,15.7s
GTA LR LR
comp=Z,47μm,17.6s
MOY **Mondy** 32.56 312 *e*P **P** 23 14 49.2 +1.8
MOY pmax pmax
comp=Z,205nm,4.3s
PATS **Pohnpei** 32.74 146 *e*P **P** 23 14 50.2 +1.0
comp=Z,415nm,1.1s
PATS LR LR
comp=Z,37μm,20.0s
KMI **Kunming** 34.18 263 P **P** 23 15 01.2 -0.7
KMI pP pP 23 15 04.4 -2.6
KMI sP sP 23 15 06.4 -2.7
KMI PP **PnPn** 23 16 15.5 -0.3
KMI S **S** 23 20 23.0 -4.9
KMI SS **SnSn** 23 22 34.1 -2.1
KMI pmax pmax
comp=Z,100nm,0.8s
KMI pmax pmax
comp=Z,930nm,6.9s
KMI LR LR
comp=Z,88μm,18.4s
KMI LR LR
comp=Z,100μm,15.8s
BILL **Bilibino** 35.72 16*d i*P **P** 23 15 12.6 -1.8
BILL *e* 23 16 37.0
BILL *e*S **S** 23 20 46.4 -3.8
BILL pmax pmax
comp=Z,167nm,1.1s
BILL MLR MLR
comp=Z,53μm,17.0s
BILL **Bilibino** 35.72 16 *e*P **P** 23 15 12.5 -2.0
comp=Z,138nm,1.0s
BILL LR LR
comp=Z,49μm,19.0s
ATKA **Atka Island** 35.93 48 *e*P **P** 23 15 16.2 -0.3
comp=Z,521nm,1.6s
ATKA *e*PP **PP** 23 16 38.4 +0.3
ATKA LR LR
comp=Z,52μm,20.0s
MIDW **Midway** 36.13 90 *e*P **P** 23 15 20.8 +2.3
comp=Z,420nm,1.3s
MIDW LR LR
comp=Z,19μm,18.0s
KWAJ **Kwajalein Atol** 36.15 131 *i* P **P** 23 15 21.1 +2.4
KWAJ **Kwajalein Atol** 36.15 131 PFAKE 23 15 30.0 +11
KWAJ LR LR
comp=Z,12μm,20.0s
MYLDM **Lahad Datu** 36.41 219 *e*P **P** 23 15 19.7 -1.2
comp=Z,380nm,1.6s
MYLDM LR LR
comp=Z,38μm,19.0s
TNTI **Ternate** 36.66 203 *e*P **P** 23 15 19.8 -3.2
comp=Z,430nm,1.2s
TNTI LR LR
comp=Z,75μm,20.0s
TIXI **Tiksi** 36.81 354 P **P** 23 15 23.0 -0.7
comp=Z,43nm,0.7s,baz=145,slow=5.7,SNR=28
TIXI LR LR 23 31 18.1
comp=Z,43μm,19.9s,baz=159,slow=38
TIXI **Tiksi** 36.81 354*de*P **P** 23 15 22.3 -1.4
TIXI pmax pmax
comp=Z,73nm,0.8s
TIXI **Tiksi** 36.81 354 *e*P **P** 23 15 23.0 -0.7
comp=Z,13nm,1.4s
KKM **Kota Kinabalu** 36.92 223 ⇑P **P** 23 15 24.9 -0.5
KKM **Kota Kinabalu** 36.92 223 *e*P **P** 23 15 21.7 -3.7
comp=Z,95nm,1.1s
KKM *es*P **pP** 23 15 30.7 +0.1
KKM *e* 23 17 38.6
KKM LR LR
comp=Z,26μm,21.0s
SKNT **Sakolnakorn** 37.45 250 P **P** 23 15 29.0 -0.8
comp=Z,126nm,1.3s,comp=Z,3μm
NONG **Nongkai** 37.47 252 P **P** 23 15 28.1 -1.8
comp=Z,230nm,0.8s,comp=Z,13μm
JAY **Jayapura** 37.76 180 LR LR 23 28 26.9
comp=Z,943nm,21.6s,baz=320,slow=32
MANU **Manus Island** 37.80 169 *e*P **P** 23 15 32.8 +0.1
comp=Z,87nm,1.2s
MANU LR LR
comp=Z,14μm,21.0s
KRAR **Krasnoyarsk** 38.23 318*d i*P **P** 23 15 36.0 +0.1
KRAR pmax pmax
comp=Z,436nm,1.9s
KHON **Khomkaen** 38.72 250 P **P** 23 15 40.1 -0.4
comp=Z,41nm,1.0s
FAKI **Fak Fak** 38.97 194 *e*P **P** 23 15 41.1 -1.4
comp=Z,211nm,1.0s
FAKI LR LR
comp=Z,57μm,20.0s
NIKH **Nikolski High** 39.27 47 *e*P **P** 23 15 44.0 -0.7
comp=Z,244nm,0.9s
NIKH LR LR
comp=Z,50μm,21.0s
CHAI **Chaiyaphum** 39.62 251 P **P** 23 15 46.4 -1.7
comp=Z,46nm,0.6s,comp=Z,390nm
UTTA **Uttaradit** 39.67 254 P **P** 23 15 47.1 -1.3
comp=Z,36nm,1.1s,comp=Z,315nm
LUWI **Luwuk** 39.97 209 *e*P **P** 23 15 52.0 +1.1
comp=Z,147nm,0.9s
LUWI LR LR
comp=Z,17μm,21.0s
PBKT **Sadao Pong** 40.02 252 P **P** 23 15 49.8 -1.5
comp=Z,156nm,1.1s,comp=Z,2μm
PHIT **Phitsanulok** 40.10 254 P **P** 23 15 56.6 +4.7
CHTO **Chiang Mai** 40.36 257 PFAKE 23 16 00.0 +5.9
CHTO LR LR
comp=Z,25μm,19.0s
GAMB **Gambell** 40.38 30 *e*P **P** 23 15 54.2 +0.5
comp=Z,67nm,1.2s
GAMB LR LR
comp=Z,25μm,20.0s
SUKH **Sukhothai** 40.55 255 P **P** 23 15 54.7 -1.0
comp=Z,40nm,0.8s,comp=Z,299nm
CM31 **Chiang Mai Arr** 40.55 257 *e*P **P** 23 15 55.0 -0.8
CM31 *e*PcP **PcP** 23 17 59.9 +1.9
CMAR **Chiang Mai Arr** 40.55 257 P **P** 23 15 55.0 -0.8
comp=Z,8.0nm,0.6s,baz=47,slow=7.6,SNR=25
CMAR PcP **PcP** 23 17 59.9 +1.9
comp=Z,14nm,0.9s,baz=16,slow=3.0,SNR=4.6
CMAR LR LR 23 35 41.5
comp=Z,29μm,18.9s,baz=43,slow=41
CMAR PKPPKP P'P'df 23 47 48.1 -27
comp=Z,1.2nm,0.9s,baz=287,slow=4.7,SNR=6.1
SRAK **Srakaew** 40.73 248 P **P** 23 15 52.8 -4.4
comp=Z,320nm,0.8s,comp=Z,2μm
UNV **Unalaska Valle** 40.75 46 PFAKE 23 16 10.0 +13
UNV LR LR
comp=Z,18μm,20.0s
RABL **Rabaul** 40.86 162 PFAKE 23 16 10.0 +12
RABL LR LR
comp=Z,10μm,20.0s
WMQ **Urumqi** 41.07 298 P **P** 23 16 00.1 +0.3
WMQ pP pP 23 16 03.4 -1.6
WMQ ScP **ScP** 23 21 48.6 +0.2
WMQ S **S** 23 22 11.7 -0.1
WMQ sS sS 23 22 19.1 -1.3
WMQ SS **SS** 23 25 11.6 -2.5
WMQ pmax pmax
comp=Z,150nm,1.8s
WMQ pmax pmax
comp=Z,2μm,4.0s
WMQ LR LR
comp=Z,48μm,22.4s
WMQ LR LR
comp=Z,13μm,20.6s
WMQ LR LR
comp=Z,12μm,22.4s
NAYO **Nakonayok** 41.09 249 P **P** 23 15 59.7 -0.5
comp=Z,86nm,1.2s,comp=Z,13μm
AKUT **Akutan** 41.20 46 PFAKE 23 16 10.0 +9.3
AKUT LR LR
comp=Z,18μm,18.0s
CHBT **CHBT** 41.31 247 P **P** 23 16 01.4 -0.5
comp=Z,274nm,1.1s,comp=Z,3μm
LSA **Lhasa** 41.80 277 P **P** 23 16 06.9 +0.5
LSA S **S** 23 22 21.1 -2.7
LSA LR LR
comp=Z,12μm,18.5s
LSA LR LR
comp=Z,37μm,20.4s
LSA LR LR
comp=Z,66μm,21.0s
LSA **Lhasa** 41.80 277 *e*P **P** 23 16 07.0 +0.5
LSA pmax pmax
comp=Z,173nm,1.0s
LSA MLR MLR
comp=Z,70μm,20.0s
LSA **Lhasa** 41.80 277 *e*P **P** 23 16 07.0 +0.5
comp=Z,173nm,1.0s
LSA LR LR
comp=Z,70μm,20.0s
SBUM **Sibu** 42.13 225 ⇑P **P** 23 16 09.5 +0.8
SBUM **Sibu** 42.13 225 *e*P **P** 23 16 08.9 +0.2
comp=Z,77nm,1.1s
SBUM LR LR
comp=Z,12μm,22.0s
PATY **Pattaya** 42.30 248 P **P** 23 16 10.1 0.0
comp=Z,22nm,0.8s,comp=Z,2μm
ZAA0 **Zalesovo Array** 42.58 314 *e*P **P** 23 16 11.1 -0.9
ZAA1 **Zalesovo Array** 42.58 314 *e*P **P** 23 16 11.0 -0.9
ZAA1 *e*PcP **PcP** 23 18 02.1 -1.9
ZALV **Zalesovo Beam** 42.58 314 P **P** 23 16 11.0 -0.9
comp=Z,78nm,1.1s,baz=95,slow=5.1,SNR=115
ZALV PcP **PcP** 23 18 02.1 -1.9
comp=Z,43nm,1.1s,baz=76,slow=6.1,SNR=2.1
ZALV LR LR 23 34 43.3
comp=Z,24μm,18.9s,baz=92,slow=37
FALS **False Pass** 42.62 45 *e*P **P** 23 16 11.4 -0.8
comp=Z,118nm,0.8s
FALS LR LR
comp=Z,27μm,19.0s
BKB **Balikpapan** 42.75 216 P **P** 23 16 14.0 +0.3
comp=Z,408nm,1.1s,comp=Z,5μm
SRDT **SRDT** 42.77 251 P **P** 23 16 13.6 -0.3
comp=Z,274nm,1.2s,comp=Z,6μm
SHL **Shillong** 42.83 271 *e*P **P** 23 16 12.0 -2.6
SHL IAmb IAmb 23 16 23.9
comp=Z,104nm,0.3s
SHL *i* S **S** 23 22 37.0 -1.4
KHLT **Khaolaem Dam** 42.91 252 P **P** 23 16 15.2 +0.1
comp=Z,30nm,1.9s,comp=Z,688nm
ZSN **Zaisan** 42.99 304 *i* P **P** 23 16 14.4 -1.0
comp=Z,2μm,1.5s
ZSN *e*S **S** 23 22 38.2 -1.9
ZSN LQ LQ 23 31 05.5

ZSN LR LR 23 34 24.6
comp=Z,18µm,13.1s
PHET Kaeng Krachan 43.25 249 P **P** **23 16 17.1 -0.7**
comp=Z,56nm,1.0s,comp=Z,440nm
MTKI Muara Teweh, K 43.48 219 P P 23 16 28.9 +9.3
NVS Novosibirsk 43.54 315⇑ *i*P **P** **23 16 21.0 +1.3**
NVS *e*S **S** **23 22 54.5 +6.7**
NVS pmax pmax
comp=Z,576nm,1.5s
NVS pmax pmax
comp=N,136nm,1.6s
NVS pmax pmax
comp=E,398nm,1.5s
NVS smax smax
comp=E,151nm,2.2s
NVS smax smax
comp=N,82nm,2.8s
KSM Kuching 44.04 227⇑P **P** **23 16 25.7 +1.6**
KSM Kuching 44.04 227 *e*P **P** **23 16 23.1 -1.1**
comp=N,61nm,0.8s
KSM LR LR
comp=Z,8µm,20.0s
SAUI Saumlaki 44.09 193 *e*P **P** **23 16 24.5 0.0**
comp=Z,951nm,1.0s
SAUI LR LR
comp=Z,24µm,19.0s
SDPT Sand Point 44.33 44 *e*P **P** **23 16 25.5 -0.6**
comp=Z,132nm,0.8s
SDPT LR LR
comp=Z,23µm,20.0s
NRIK Noril'sk 44.48 336 P **P** **23 16 26.2 -0.9**
comp=Z,107nm,1.1s,baz=111,slow=9.1,SNR=55
NRIK LR LR 23 35 57.8
comp=Z,68µm,19.5s,baz=108,slow=37
MK31 Makanchi Array 44.50 303 *e*P **P** **23 16 28.3 +0.7**
MK31 pmax pmax
comp=Z,211nm,0.9s
MK32 Makanchi Array 44.50 303 *e*P **P** **23 16 26.9 -0.6**
MKAR Makanchi Array 44.50 303 P **P** **23 16 26.9 -0.6**
comp=Z,40nm,0.7s,baz=88,slow=8.9,SNR=132
MKAR LR LR 23 35 46.1
comp=Z,45µm,20.2s,baz=84,slow=37
MKAR PKPPKP P'P'df 23 48 00.8 -15
comp=Z,0.2nm,0.3s,baz=222,slow=1.9,SNR=3.7
MKAR Makanchi Array 44.50 303 P **P** **23 16 27.0 -0.6**
MKAR pmax pmax
comp=Z,40nm,0.7s
MKAR MLR MLR
comp=Z,45µm,20.2s
MKAR Makanchi Array 44.50 303 *e*P **P** **23 16 27.0 -0.6**
STKI Sintang 44.50 224 P **P** **23 16 28.8 +1.0**
comp=Z,108nm,0.9s,comp=Z,18µm
MAKZ Makanchi 44.71 303 *e*P **P** **23 16 28.8 -0.4**
MAKZ pmax pmax
comp=Z,201nm,0.9s
MAKZ MLR MLR
comp=Z,58µm,20.0s
MAKZ Makanchi 44.71 303 *e*P **P** **23 16 28.8 -0.4**
comp=Z,200nm,0.9s
MAKZ LR LR
comp=Z,58µm,20.0s
KAPI Kappang 44.80 210 P **P** **23 16 30.4 +0.3**
comp=Z,91nm,0.7s,baz=357,slow=1.5,SNR=16
KAPI LR LR 23 36 49.1
comp=Z,7µm,18.2s,baz=47,slow=38
KAPI Kappang 44.80 210 *e*P **P** **23 16 30.4 +0.3**
comp=Z,175nm,0.9s
KAPI LR LR
comp=Z,10µm,20.0s
KAPI Kappang 44.80 210 P **P** **23 16 31.3 +1.2**
SNR=22
KAPI P **P** **23 16 31.3 +1.2**
SNR=22
KAPI P **P** **23 16 31.3 +1.2**
SNR=22
KBKI Kotabaru 44.88 216 P **P** **23 16 33.7 +2.9**
comp=Z,87nm,1.2s,comp=Z,2µm
PMG Port Moresby 45.02 171*c**e*P **P** **23 16 30.9 -1.0**
PMG pmax pmax
comp=Z,633nm,1.2s
PMG Port Moresby 45.02 171 *e*P **P** **23 16 31.5 -0.3**
comp=Z,149nm,0.9s
TARA Tarawa 45.24 131 PFAKE 23 16 50.0 +16
TARA LR LR
comp=Z,18µm,21.0s
SEM Semipalatinsk 45.47 309 *i*P **P** **23 16 38.2 +3.0**
comp=Z,986nm,1.3s
SEM *i*S **S** **23 23 18.7 +2.8**
SEM LQ LQ 23 32 45.4
SEM LR LR 23 35 44.8
comp=Z,39µm,15.4s
TAPN Taplejung 45.49 275 *e*P **P** **23 16 35.5 -0.6**
comp=Z,92nm,0.4s
BBKI Banjar Baru 45.67 217 P **P** **23 16 37.6 +0.5**
comp=Z,216nm,0.9s,comp=Z,3µm
ODAN Odare 45.95 275 *e*P **P** **23 16 38.5 -1.1**
comp=Z,484nm,1.0s
SURT Suratani 46.40 246 P **P** **23 16 42.6 -0.3**
comp=Z,58nm,0.9s,comp=Z,919nm
TRTT Trang 46.48 244 P **P** **23 16 43.3 -0.2**
comp=Z,111nm,1.2s,comp=Z,2µm
KURK Kurchatov 46.48 309 *e*P **P** **23 16 42.1 -1.0**
KURK pmax pmax
comp=Z,882nm,1.1s
KURK MLR MLR
comp=Z,31µm,21.0s
KURK Kurchatov 46.48 309 *e*P **P** **23 16 42.1 -1.0**
comp=Z,882nm,1.1s
KURK LR LR
comp=Z,31µm,21.0s
KURK Kurchatov 46.48 309 P **P** **23 16 44.0 +0.9**
SNR=400
KURK P **P** **23 16 44.0 +0.9**
SNR=400
KURBB Kurchatov Arra 46.54 309 P **P** **23 16 42.2 -1.4**
comp=Z,132nm,0.9s,baz=85,slow=7.8,SNR=387
KURBB PKPPKP **P'P'df** **23 48 13.0 -0.6**
comp=Z,1.2nm,1.1s,baz=257,slow=2.4,SNR=5.2
RAMN Ramite 46.56 275 *e*P **P** **23 16 43.4 -1.0**
comp=Z,682nm,0.8s
GUN Gumba 46.76 277 *e*P **P** **23 16 45.1 -1.0**
comp=Z,601nm,0.9s
SHLS Shalkode 46.78 299⇑ *i*P **P** **23 16 47.3 +1.4**
comp=Z,790nm,1.5s
SHLS *e*S **S** **23 23 35.4 -0.1**
SHLS LQ LQ 23 33 22.8
SHLS LR LR 23 36 54.8
comp=Z,11µm,13.7s
PDGK Podgornoye 47.03 299 *i*P **P** **23 16 48.4 +0.8**
PDGK pmax pmax
comp=Z,897nm,1.4s
TT01 Tatalina 47.05 34 *e*P **P** **23 16 48.2 +0.8**
TTA Tatalina 47.06 34 *e*P **P** **23 16 48.3 +0.7**
TTA pmax pmax
comp=Z,87nm,1.2s
TTA MLR MLR
comp=Z,19µm,18.0s
TTA Tatalina 47.06 34 *e*P **P** **23 16 48.3 +0.7**
comp=Z,87nm,1.2s
TTA LR LR
comp=Z,19µm,18.0s
SVW2 Sparrevohn 47.14 36 *e*P **P** **23 16 49.4 +1.2**
comp=Z,150nm,1.0s
SVW2 *e*PP **PP** **23 18 33.8 -5.1**
SVW2 LR LR
comp=Z,17µm,19.0s
PKIN Phulchoki 47.28 277 *e*P **P** **23 16 49.2 -0.9**
comp=Z,158nm,0.6s
KKN Kakani 47.29 277 *e*P **P** **23 16 49.3 -0.8**
comp=Z,326nm,0.9s
UZB Uzynbulak 47.40 299 *i*P **P** **23 16 52.0 +1.3**
comp=Z,1µm,1.5s
UZB *e*S **S** **23 23 44.9 +0.7**
UZB LQ LQ 23 33 56.7
UZB LR LR 23 37 26.1
comp=Z,14µm,14.6s
PKDT Phuket 47.44 245 P **P** **23 16 50.9 -0.1**
comp=Z,210nm,0.8s,comp=Z,3µm
DMN Daman 47.51 277 *e*P **P** **23 16 51.4 -0.4**
comp=Z,231nm,1.0s
KULM Kulim 47.52 240 *e*P **P** **23 16 51.0 -0.7**
comp=Z,281nm,1.9s
KULM LR LR
comp=Z,22µm,18.0s
SOEI Soe 47.56 202 *e*P **P** **23 16 49.9 -2.1**
comp=Z,865nm,1.0s
SOEI LR LR
comp=Z,25µm,20.0s
GKN Gorkha 47.73 277 *e*P **P** **23 16 52.6 -0.8**
comp=Z,1µm,1.0s
IPM Ipoh 47.83 239⇓P **P** **23 16 54.0 -0.1**
IPM Ipoh 47.83 239 *e*P **P** **23 16 52.4 -1.7**
comp=Z,76nm,0.9s
IPM LR LR
comp=Z,12µm,21.0s
MYKOM Kota Tinggi 47.86 234⇓P **P** **23 16 57.3 +3.0**
MYKOM Kota Tinggi 47.86 234 *e*P **P** **23 16 58.9 +4.6**
comp=Z,78nm,1.2s
MYKOM LR LR
comp=Z,10µm,21.0s
SATY Saty 47.86 299⇑ *i*P **P** **23 16 56.0 +1.8**
comp=Z,1µm,0.7s
SATY *e*S **S** **23 23 52.0 +1.3**
SATY LR LR 23 37 41.2
comp=Z,23µm,15.5s
JOHN Johnston Islan 47.89 100 PFAKE
JOHN LR LR 23 17 10.0 +15
comp=Z,12µm,21.0s
TPRI Tanjung Pinang 48.07 232 P P 23 17 04.3 +8.4
HNR Honiara 48.19 154 P **P** **23 16 56.5 -0.2**
comp=Z,49nm,0.4s,baz=171,slow=14,SNR=6.9
HNR LR LR 23 37 00.3
comp=Z,25µm,19.7s,baz=332,slow=36
HNR Honiara 48.19 154 *e*P **P** **23 16 56.5 -0.2**
HNR *e*sP **pP** **23 17 02.5 +0.4**
HNR LR LR
comp=Z,29µm,18.0s
DGPR DIGLIPUR 48.30 255 *e*P **P** **23 16 56.6 -1.0**
FRIM Kepong 48.30 237⇑P **P** **23 16 57.9 +0.2**
OHAK Old Harbor 48.32 42 *e*P **P** **23 16 57.9 +0.6**
comp=Z,138nm,1.0s
OHAK LR LR
comp=Z,31µm,21.0s
BOK Bokaro 48.51 272 *e*P **P** **23 16 56.3 -3.0**
BOK IAmb IAmb 23 17 06.4
BOK IAMs_20 IAMs_20 23 39 45.8
comp=Z,32µm,15.4s
RSO Redoubt South 48.51 37 *e*P **P** **23 16 60.0 +0.9**
KOLN Koldanda 48.66 278 *e*P **P** **23 17 00.6 -0.1**
comp=Z,375nm,1.1s
KDAK Kodiak Island 48.67 41 P P 23 17 15.5 +16
comp=Z,89nm,0.7s,baz=272,slow=4.9,SNR=56
KDAK LR LR 23 37 12.0
comp=Z,31µm,20.8s,baz=253,slow=36
KDAK Kodiak Island 48.67 41 *e*P **P** **23 17 00.1 +0.1**
KDAK MLR MLR
comp=Z,40µm,20.0s
KDAK Kodiak Island 48.67 41 *e*P **P** **23 17 00.1 +0.1**
KDAK *e*sP sP 23 17 15.5 +8.2
KDAK LR LR
comp=Z,40µm,20.0s
CHKK Chushkaly 48.68 300 *i*P **P** **23 17 02.5 +2.1**
comp=Z,1µm,1.0s
CHKK *e*S **S** **23 24 03.3 +1.3**
CHKK LRM MLR 23 39 47.8
comp=Z,11µm,14.3s
MDOK Medeo 48.81 299 *i*P **P** **23 17 02.4 +0.9**
comp=Z,1µm,1.1s
MDOK *i*S **S** **23 24 04.2 +0.1**
MDOK LR LR 23 37 40.8
comp=Z,25µm,18.1s
PPLA Purkeypile 48.81 34 *e*P **P** **23 17 02.5 +1.3**
comp=Z,489nm,1.4s
PPLA LR LR
comp=Z,13µm,20.0s
SPU Mount Spurr 48.85 36 *e*P **P** **23 17 02.1 +0.6**
AAA Alma-Ata 48.85 300 *e*P **P** **23 17 02.0 +0.2**
AAA *e*S **S** **23 24 07.0 +2.5**
AAA pmax pmax
comp=Z,7µm,4.6s
AAA smax smax
comp=E,7µm,15.0s
AAA MLR MLR
comp=Z,69µm,18.0s
AAA Alma-Ata 48.85 300⇓ *i*P **P** **23 17 05.5 +3.7**
comp=Z,2µm,1.3s
AAA *e*S **S** **23 24 07.8 +3.3**
AAA LR LR 23 37 52.5
comp=Z,24µm,18.3s
MTN Manton Dam 48.87 192 *e*P **P** **23 16 59.7 -2.2**
comp=Z,639nm,1.1s
MTN LR LR
comp=Z,11µm,20.0s
CAST Castle Rocks 48.87 33 *e*P **P** **23 17 01.6 +0.1**
comp=Z,182nm,1.4s
CAST LR LR
comp=Z,16µm,20.0s
PYUN Piuthan 49.02 278 *e*P **P** **23 17 03.6 +0.2**
comp=Z,2µm,1.0s
HOM Homer 49.09 38 PFAKE 23 17 20.0 +17
HOM LR LR
comp=Z,23µm,20.0s
KUU Kurty 49.14 300 *i*P **P** **23 17 04.8 +0.9**
comp=Z,2µm,1.3s
KUU *i*S **S** **23 24 08.5 +0.1**
KUU LRM MLR 23 40 03.3
comp=Z,23µm,14.2s
COEN Coen 49.18 177 *e*P **P** **23 17 03.4 -1.0**
comp=Z,375nm,1.1s
COEN LR LR
comp=Z,21µm,20.0s
PBA Port Blair 49.34 254 *e*P P 23 17 03.5 -2.2
BPAW Bear Paw Mtn. 49.37 33 *e*P **P** **23 17 04.9 -0.5**
comp=Z,119nm,1.3s
BPAW LR LR
comp=Z,23µm,18.0s
KTH Kantishna Hill 49.39 33 *e*P **P** **23 17 06.4 +0.8**
comp=Z,154nm,1.1s
KTH LR LR
comp=Z,18µm,19.0s
PPBI Pangkal Pinang 49.43 228 P **P** **23 17 06.5 +0.1**
comp=Z,60nm,1.1s
BRLK Bradley Lake 49.46 38 *e*P **P** **23 17 08.2 +2.0**
comp=Z,132nm,1.1s
BRLK *e*PcP **PcP** **23 18 26.7 -1.4**
BRLK LR LR
comp=Z,19µm,19.0s
MLY Manley 49.51 31 *e*P **P** **23 17 05.8 -0.7**
comp=Z,148nm,1.1s
MLY *e*PcP **PcP** **23 18 27.6 -0.5**
MLY LR LR
comp=Z,19µm,19.0s
TRF Thorofare Moun 49.67 33 *e*P **P** **23 17 08.5 +0.6**
comp=Z,87nm,1.1s
TRF LR LR
comp=Z,16µm,20.0s
COLD Coldfoot 49.82 28 *e*P **P** **23 17 10.9 +2.2**
comp=Z,86nm,1.3s
COLD LR LR
comp=Z,14µm,18.0s
TKM2 Tokmak 2 49.90 299 *e*P **P** **23 17 10.2 +0.2**
TKM2 pmax pmax
comp=Z,1µm,1.4s
TKM2 MLR MLR
comp=Z,72µm,19.0s
TKM2 Tokmak 2 49.90 299 *e*P **P** **23 17 10.2 +0.2**
comp=Z,1µm,1.4s
TKM2 LR LR
comp=Z,72µm,19.0s
RC01 Rabbit Creek A 49.98 36 *e*P **P** **23 17 10.2 +0.2**
comp=Z,255nm,1.2s
RC01 LR LR
comp=Z,20µm,20.0s
SEW Seward 50.17 38 *e*P **P** **23 17 10.9 -0.5**
comp=Z,173nm,1.0s
SEW LR LR
comp=Z,22µm,21.0s
UWJI Ujung Watu 50.18 220 P **P** **23 17 14.2 +2.2**
comp=Z,230nm,2.0s,comp=Z,7µm
LHMI Lhok Sumawe 50.23 244 P **P** **23 17 13.3 +0.8**
comp=Z,117nm,0.7s,comp=Z,4µm
LHMI Lhok Sumawe 50.23 244 *e*P **P** **23 17 12.3 -0.2**
comp=Z,142nm,0.9s
PMR Palmer 50.25 36 *e*P **P** **23 17 11.2 -0.8**
PMR pmax pmax
comp=Z,127nm,1.0s
PMR MLR MLR
comp=Z,19µm,22.0s
PMR Palmer 50.25 36 *e*P **P** **23 17 11.2 -0.8**
comp=Z,127nm,1.0s
PMR LR LR
comp=Z,19µm,22.0s
MCK McKinley 50.28 33 *e*P **P** **23 17 12.3 0.0**
MCK pmax pmax
comp=Z,104nm,1.0s
MCK MLR MLR
comp=Z,23µm,20.0s
MCK McKinley 50.28 33 *e*P **P** **23 17 12.3 0.0**
comp=Z,104nm,1.0s
MCK LR LR
comp=Z,23µm,20.0s
RND Reindeer 50.32 33 *e*P **P** **23 17 11.2 -1.5**
RND pmax pmax
comp=Z,185nm,1.2s
RND MLR MLR
comp=Z,22µm,20.0s
RND Reindeer 50.32 33 *e*P **P** **23 17 11.2 -1.5**
comp=Z,185nm,1.2s
RND LR LR
comp=Z,22µm,20.0s
JAGI Jajag, Banyuwa 50.35 215 *e*P **P** **23 17 13.5 +0.2**
comp=Z,123nm,1.1s
JAGI LR LR
comp=Z,10µm,20.0s
PSI Prapat 50.49 240 *e*P **P** **23 17 12.2 -2.4**
PSI pmax pmax
comp=Z,62nm,1.0s
PSI MLR MLR
comp=Z,11µm,22.0s
PSI Prapat 50.49 240 *e*P **P** **23 17 12.2 -2.4**
comp=Z,62nm,1.0s
PSI LR LR
comp=Z,11µm,22.0s
KSH Kashi 50.55 295 P **P** **23 17 18.1 +3.3**
KSH *e*sP sP 23 17 25.7 +3.6
KSH *e*PP **PP** **23 19 15.6 +5.1**
KSH PcS **PcS** **23 22 31.5 +1.6**
KSH S **S** **23 24 32.2 +3.8**
KSH ScS **ScS** **23 27 07.9 +2.6**
KSH SS **SS** **23 28 03.5 +1.3**
KSH pmax pmax
comp=Z,96nm,0.8s
KSH pmax pmax
comp=Z,2µm,4.8s
KSH LR LR
comp=Z,36µm,18.1s
KSH LR LR
comp=Z,45µm,17.4s
KSH LR LR
comp=Z,50µm,16.1s
MDM Murphy Dome 50.57 31 *e*P **P** **23 17 13.7 -0.8**
comp=Z,302nm,1.1s
MDM LR LR
comp=Z,20µm,19.0s
FRU Bishkek 50.62 300⇓ *e*P **P** **23 17 15.5 +0.3**
FRU *i* 23 17 22.0
FRU *e*S **S** **23 24 32.0 +2.9**
FRU pmax pmax
comp=Z,970nm,1.9s
SML Sawmill 50.62 36 *e*P **P** **23 17 13.7 -1.2**
SML pmax pmax
comp=Z,166nm,1.0s
SML MLR MLR
comp=Z,19µm,21.0s
SML Sawmill 50.62 36 *e*P **P** **23 17 13.7 -1.2**
comp=Z,166nm,1.0s
SML LR LR
comp=Z,19µm,21.0s
WRH Wood River Hil 50.64 32 *e*P **P** **23 17 14.1 -0.9**
WRH *e*PcP **PcP** **23 18 32.7 +0.5**
WRH LR LR
comp=Z,18µm,19.0s
LGTI Lohaghat 50.69 281 *e*P **P** **23 17 19.1 +3.3**
NGJI Ngawi 50.72 219 P **P** **23 17 19.4 +3.3**
comp=Z,157nm,1.7s,comp=Z,6µm
COLA College 50.73 32 *e*P **P** **23 17 17.8 +2.2**
COLA pmax pmax
comp=Z,116nm,0.8s
COLA MLR MLR
comp=Z,21µm,18.0s
COLA College 50.73 32 *e*P **P** **23 17 17.8 +2.2**
comp=Z,116nm,0.8s
COLA LR LR
comp=Z,21µm,18.0s
AAK Ala-Archa 50.76 299 *e*P **P** **23 17 16.0 -0.4**
AAK pmax pmax
comp=Z,149nm,1.0s
AAK MLR MLR
comp=Z,48µm,19.0s
AAK Ala-Archa 50.76 299 *e*P **P** **23 17 16.0 -0.4**
comp=Z,149nm,1.0s
AAK LR LR
comp=Z,48µm,19.0s
AAK Ala-Archa 50.76 299 P **P** **23 17 16.5 +0.1**
SNR=127
AAK P **P** **23 17 16.5 +0.1**
SNR=127
AAK P **P** **23 17 16.5 +0.1**
SNR=127
CCB Clear Creek Bu 50.76 32 *e*P **P** **23 17 15.8 -0.1**
comp=Z,54nm,1.0s
CCB *e*PcP **PcP** **23 18 33.2 +0.6**
CCB LR LR
comp=Z,16µm,18.0s
KCSI Kotacane, Aceh 50.80 241 P **P** **23 17 18.0 +1.2**
comp=Z,35nm,0.6s,comp=Z,834nm
BKNI Bangkinang 50.81 235 P **P** **23 17 18.0 +1.1**
comp=Z,352nm,1.1s,comp=Z,4µm
BKNI Bangkinang 50.81 235 *e*P **P** **23 17 17.6 +0.7**
comp=Z,341nm,1.1s
OTUK Ortayu 50.91 307 *i*P **P** **23 17 16.6 -0.7**
OTUK pmax pmax
comp=Z,730nm,1.5s
VOSK Vostochnaya 50.93 313*c**e*P **P** **23 17 17.3 0.0**
VOSK pmax pmax
comp=Z,518nm,1.8s
CHKZ Chkalovo 50.99 314 *i*P **P** **23 17 16.2 -1.5**
CHKZ pmax pmax
comp=Z,484nm,1.4s
DHY Denali Highway 51.00 34 *e*P **P** **23 17 18.4 +0.5**
comp=Z,247nm,1.5s
DHY *e*PcP **PcP** **23 18 34.3 +0.5**
DHY LR LR
comp=Z,15µm,20.0s
SCM Sheep Creek Mo 51.09 35 *e*P **P** **23 17 16.6 -1.9**
SCM pmax pmax
comp=Z,166nm,0.9s
SCM MLR MLR
comp=Z,18µm,20.0s
SCM Sheep Creek Mo 51.09 35 *e*P **P** **23 17 16.6 -1.9**
comp=Z,166nm,0.9s
SCM LR LR
comp=Z,18µm,20.0s
PWJI Pagerwojo 51.10 218 P **P** **23 17 17.1 -1.9**
comp=Z,439nm,0.7s,comp=Z,4µm
HDA Harding Lake 51.13 32 *e*P **P** **23 17 18.4 -0.3**
comp=Z,166nm,1.1s
HDA LR LR
comp=Z,17µm,19.0s
ILAR Eielson Array 51.15 32 P **P** **23 17 17.1 -1.7**
comp=Z,55nm,0.7s,baz=265,slow=4.1,SNR=144
ILAR LR LR 23 39 39.6
comp=Z,14µm,20.2s,baz=276,slow=37
ILAR PKPPKP P'P'df 23 47 48.6 -20
comp=Z,0.9nm,1.0s,baz=23,slow=1.2,SNR=5.7
ILB Eielson Array 51.15 32 *e*P **P** **23 17 17.1 -1.7**
IL1 Eielson Array 51.15 32 *e*P **P** **23 17 16.7 -2.1**
IL1 *e*PcP **PcP** **23 18 32.5 -1.7**
BVAR Borovoye Array 51.23 313 P **P** **23 17 19.7 +0.1**
comp=Z,32nm,0.8s,baz=79,slow=7.7,SNR=89
BVAR PKPPKP P'P'df 23 47 51.9 -16
comp=Z,0.2nm,0.5s,baz=238,slow=2.8,SNR=3.5
BVAR P4KPbc 23 54 54.6
comp=Z,0.9nm,0.8s,baz=102,slow=2.1,SNR=5.0
EKS2 Erkin-Say 51.26 300 *e*P **P** **23 17 20.7 +0.6**
EKS2 pmax pmax
comp=Z,570nm,1.9s
EKS2 MLR MLR
comp=Z,62µm,18.0s
EKS2 Erkin-Say 51.26 300 *e*P **P** **23 17 20.7 +0.6**
comp=Z,570nm,1.9s
EKS2 LR LR
comp=Z,62µm,18.0s
BRVK Borovoye 51.29 313 *e*P **P** **23 17 19.3 -0.7**
BRVK pmax pmax
comp=Z,847nm,1.8s
BRVK MLR MLR
comp=Z,20µm,20.0s
BRVK Borovoye 51.29 313 *e*P **P** **23 17 19.3 -0.7**
comp=Z,848nm,1.8s
BRVK LR LR

comp=Z,20µm,20.0s
BRVK Borovoye 51.29 313 P P 23 17 19.9 -0.1
SNR=141
BRVK P P **23 17 19.9 -0.1**
SNR=141
CMBY CAMPBELL BAY 51.31 248 *eP* **P 23 17 21.1 +0.4**
WOJI Wonogiri, Jawa 51.39 219 P **P 23 17 24.4 +3.3**
comp=Z,156nm,1.6s,comp=Z,11µm
TPTI 51.41 242 P **P 23 17 25.1 +3.7**
comp=Z,52nm,1.0s
MNSI Mandailing Nat 51.46 237 P **P 23 17 21.2 -0.6**
comp=Z,91nm,0.7s,comp=Z,1µm
SDSI Sungai Dareh 51.49 234 P **P 23 17 22.6 +0.7**
comp=Z,469nm,1.2s
PCJI Pacitan 51.56 219 P **P 23 17 25.2 +2.8**
comp=Z,205nm,0.9s
UGM Wanagama 51.66 219 P **P 23 17 24.8 +1.6**
comp=Z,618nm,1.2s,comp=Z,8µm
UGM Wanagama 51.66 219 *eP* **P 23 17 22.7 -0.6**
comp=Z,867nm,1.3s
UGM LR LR
comp=Z,12µm,21.0s
JCJI Jatiwangi 51.68 223 P P 23 17 29.3 +6.0
comp=Z,255nm,1.3s,comp=Z,10µm
FYU Fort Yukon 51.78 29 *eP* **P 23 17 25.2 +1.7**
comp=Z,572nm,1.4s
FYU LR LR
comp=Z,17µm,18.0s
KLU Klutina 51.79 36 *eP* **P 23 17 22.8 -0.9**
comp=Z,186nm,1.2s
KLU LR LR
comp=Z,26µm,20.0s
PPI Padang Panjang 51.82 235 P P 23 17 35.2 +11
PAX Paxson 51.87 34 *eP* **P 23 17 24.6 +0.2**
PAX *e* 23 18 38.7
PAX MLR MLR
comp=Z,21µm,19.0s
PAX Paxson 51.87 34 *eP* **P 23 17 24.6 +0.2**
PAX *ePcP* **PcP 23 18 38.7 +1.7**
PAX LR LR
comp=Z,21µm,19.0s
DIV Divide 51.90 36 *eP* **P 23 17 25.1 +0.6**
comp=Z,220nm,1.0s
DIV LR LR
comp=Z,21µm,20.0s
EYAK Cordova Ski Ar 51.97 37 *eP* **P 23 17 26.1 +1.2**
comp=Z,113nm,1.0s
EYAK LR LR
comp=Z,28µm,20.0s
ZRNK Zerenda 52.07 313 *i* P **P 23 17 24.7 -1.1**
ZRNK pmax pmax
comp=Z,329nm,1.1s
DDI Dehra Dun 52.09 283 *eP* **P 23 17 25.8 -0.6**
DDI *eP* **pP 23 17 26.5 -5.2**
MNAS Manas 52.21 300 *i* P **P 23 17 28.8 +1.5**
MNAS pmax pmax
comp=Z,608nm,2.0s
SFK Sufi-Kurgan 52.21 296 *i* P **P 23 17 27.2 -0.2**
SFK pmax pmax
comp=Z,444nm,1.4s
LEM Lembang 52.32 223 P **P 23 17 32.7 +4.4**
comp=Z,4µm,1.0s,comp=Z,55µm
KLI Kotabumi 52.34 227 P **P 23 17 28.6 +0.3**
comp=Z,372nm,0.9s,comp=Z,6µm
LHSI Lahat 52.35 230 P **P 23 17 28.0 -0.3**
comp=Z,362nm,1.5s,comp=Z,6µm
DOT Dot Lake 52.45 33 *eP* **P 23 17 27.0 -1.5**
comp=Z,230nm,1.1s
DOT LR LR
comp=Z,62µm,19.0s
MDSI Maura Dua 52.46 228 P **P 23 17 27.0 -2.1**
comp=Z,180nm,1.1s,comp=Z,4µm
BMRM Bremner River 52.48 36 *eP* **P 23 17 28.1 -0.8**
comp=Z,214nm,1.1s
BMRM LR LR
comp=Z,23µm,21.0s
SMLA Simla 52.48 285 *i* P **P 23 17 28.5 -0.7**
GSI Gunungsitoli 52.49 239 P **P 23 17 28.3 -1.2**
comp=Z,373nm,1.5s,comp=Z,5µm
GSI Gunungsitoli 52.49 239 *eP* **P 23 17 26.9 -2.6**
comp=Z,569nm,1.1s
GSI LR LR
comp=Z,17µm,18.0s
BLSI Bandar Lampung 52.51 227 P **P 23 17 31.8 +2.3**
comp=Z,288nm,0.8s,comp=Z,5µm
RAGM Ragged Mountai 52.51 37 *eP* **P 23 17 30.8 +1.7**
comp=Z,228nm,1.1s
RAGM LR LR
comp=Z,19µm,20.0s
CHLP Challavanipeta 52.55 267 *eP* **P 23 17 30.7 +0.9**
CHLP IAmb IAmb 23 17 42.4
comp=Z,268nm,1.3s
CHLP *eS* **S 23 24 56.2 +0.1**
CHLP IVMs_BB IVMs_BB 23 39 27.0
comp=Z,8µm,22.4s
DBJI Dramaga 52.59 224 P **P 23 17 31.8 +1.7**
comp=Z,209nm,2.1s,comp=Z,6µm
MASI Maura Aman, Be 52.63 231 P **P 23 17 30.6 +0.1**
comp=Z,616nm,1.0s,comp=Z,7µm
MENT Mentasta 52.67 34 *eP* **P 23 17 29.6 -0.6**
comp=Z,106nm,0.8s
MENT LR LR
comp=Z,25µm,18.0s
DHRM DHARAMSHALA 52.74 286 *eP* **P 23 17 30.3 -1.1**
DHRM IAmb IAmb 23 17 39.0
comp=Z,12µm,3.6s
CISI Cisompet, Garu 52.81 223 P **P 23 17 32.3 +0.5**
comp=Z,176nm,0.7s
CISI Cisompet, Garu 52.81 223 *eP* **P 23 17 29.8 -2.0**
comp=Z,112nm,0.7s
CISI LR LR
comp=Z,10µm,20.0s
LWLI Liwa 52.95 228 P **P 23 17 33.9 +1.0**
comp=Z,217nm,0.8s,comp=Z,7µm
SKJI Sukabumi 53.07 224 P **P 23 17 34.3 +0.7**
comp=Z,158nm,0.6s,comp=Z,3µm
KASI Kota Agung 53.08 227 P **P 23 17 32.9 -0.8**
comp=Z,165nm,0.8s,comp=Z,2µm
MNAI Manna 53.11 230 PFAKE 23 17 50.0 +16
MNAI LR LR
comp=Z,11µm,19.0s
THN Thein Dam 53.12 287 *eP* **P 23 17 32.6 -1.3**
THN *ex* x 23 25 11.0
KKR Kurukshetra 53.22 283 *eP* **P 23 17 33.9 -0.8**
KEKH Kekaha 53.24 88 *eP* **P 23 17 38.2 +3.3**
comp=Z,1µm,2.0s
CGJI Cibinong 53.25 225 P **P 23 17 34.8 -0.1**
BISR Bishrakh 53.29 282 *eP* **P 23 17 33.3 -1.9**
NDI New Delhi 53.42 282 *eP* **P 23 17 32.0 -4.2**
NDI *eS* **S 23 25 03.0 -4.9**
KK31 Karatay Array 53.44 301 *eP* **P 23 17 36.8 +0.6**
KK31 pmax pmax
comp=Z,417nm,1.2s
KKAR Karatay Array 53.44 301 *eP* **P 23 17 35.3 -0.9**
KKAR Karatay Array 53.44 301 *eP* **P 23 17 35.3 -0.9**
VIS Vishakhapatnam 53.54 266 *eP* **P 23 17 37.0 -0.2**
VIS IAmb IAmb 23 17 45.6
comp=Z,257nm,1.3s
BALM Baldy 53.56 36 *eP* **P 23 17 37.0 +0.1**
BALM pmax pmax
comp=Z,89nm,1.0s
BALM MLR MLR
comp=Z,13µm,21.0s
BALM Baldy 53.56 36 *eP* **P 23 17 37.0 +0.1**
comp=Z,89nm,1.0s
BALM LR LR
comp=Z,13µm,21.0s
AYAN Aya Nagar 53.58 282 *eP* **P 23 17 36.6 -0.7**
AYAN IAmb IAmb 23 17 45.9
comp=Z,150nm,0.8s
EGAK Eagle 53.59 31 *eP* **P 23 17 35.0 -1.9**
comp=Z,209nm,1.5s
EGAK LR LR
comp=Z,16µm,18.0s
BHGR Bahadurgarh 53.64 282 *eP* **P 23 17 38.0 +0.2**
IUG luzhnay 54.06 300 *i* P **P 23 17 42.9 +2.1**
comp=Z,2µm,1.2s
IUG *i* S **S 23 25 17.8 +1.3**
IUG LR LR 23 41 10.6
comp=Z,15µm,15.0s
BRLS Borolday 54.11 301 *i* P **P 23 17 43.0 +1.9**
comp=Z,110nm,1.4s
BRLS *i* S **S 23 25 18.5 +1.5**
BRLS LQ LQ 23 37 37.1
BRLS LR LR 23 41 32.2
KUDL Kundal 54.23 281 *eP* **P 23 17 40.5 -1.6**
KUDL IAmb IAmb 23 17 50.7
comp=Z,201nm,1.1s
CHM Chimkent 54.31 300 *eP* **P 23 17 44.2 +1.6**
comp=Z,164nm,1.2s
CHM *eS* **S 23 25 20.8 +1.1**
CHM LQ LQ 23 37 17.0
CHM LR LR 23 41 00.8
comp=Z,15µm,15.8s
OPA Opana 54.76 87 *eP* **P 23 17 48.5 +2.4**
OPA pmax pmax
comp=Z,748nm,1.1s
OPA MLR MLR
comp=Z,11µm,20.0s
OPA Opana 54.76 87 *eP* **P 23 17 48.5 +2.4**
comp=Z,748nm,1.1s
OPA LR LR
comp=Z,11µm,20.0s
KHET Khetri 54.80 282 *eP* **P 23 17 45.0 -1.3**
KHET IAmb IAmb 23 17 54.0
comp=Z,126nm,0.8s
KIP Kipapa 54.89 87 *eP* **P 23 17 49.0 +2.0**
KIP pmax pmax
comp=Z,686nm,1.4s
KIP Kipapa 54.89 87 *eP* **P 23 17 49.0 +2.0**
comp=Z,686nm,1.4s
HON Honolulu 54.95 87 PFAKE 23 18 00.0 +13
HON LR LR
comp=Z,11µm,20.0s
FITZ Fitzroy Crossi 55.13 198 LR LR 23 40 55.7
comp=Z,10µm,19.6s,baz=23,slow=36
FITZ Fitzroy Crossi 55.13 198 *eP* **P 23 17 47.2 -1.3**
comp=Z,454nm,1.5s
FITZ LR LR
comp=Z,10µm,20.0s
YKU2 Yakutat 55.14 38 PFAKE 23 18 00.0 +12
YKU2 LR LR
comp=Z,13µm,20.0s
PVM Polavaram 55.17 267 *eP* **P 23 17 49.5 +0.5**
PVM IAmb IAmb 23 18 00.6
comp=Z,278nm,1.4s
PVM *eS* **S 23 25 29.9 -1.8**
PVM IVMs_BB IVMs_BB 23 41 48.1
comp=Z,6µm,21.3s
WB0 Warramunga Arr 55.23 187 PFAKE 23 18 00.0 +11
WB0 LR LR
comp=Z,14µm,21.0s
WB9 Warramunga Arr 55.25 187 PFAKE 23 18 00.0 +11
WB9 LR LR
comp=Z,30µm,21.0s
WB8 Warramunga Arr 55.27 187 PFAKE 23 18 00.0 +10
WB8 LR LR
comp=Z,15µm,22.0s
WB6 Warramunga Arr 55.32 187 PFAKE 23 18 00.0 +10
WB6 LR LR
comp=Z,15µm,21.0s
WB5 Warramunga Arr 55.34 187 PFAKE 23 18 00.0 +10
WB5 LR LR
comp=Z,15µm,22.0s
WB4 Warramunga Arr 55.37 187 PFAKE 23 18 00.0 +10
WB4 LR LR
comp=Z,15µm,21.0s
WB3 Warramunga Arr 55.39 187 PFAKE 23 18 00.0 +10
WB3 LR LR
comp=Z,16µm,21.0s
WC2 Warramunga Arr 55.39 187 PFAKE 23 18 00.0 +10
WC2 LR LR
comp=Z,18µm,22.0s
WC1 Warramunga Arr 55.39 187 PFAKE 23 18 00.0 +10
WC1 LR LR
comp=Z,12µm,21.0s
WRAB Tennant Creek 55.40 187*d* *iP* **P 23 17 48.2 -2.3**
WRAB pmax pmax
comp=Z,836nm,1.0s
WRAB Tennant Creek 55.40 187 *eP* **P 23 17 48.9 -1.6**
comp=Z,757nm,1.3s
WRAB LR LR
comp=Z,18µm,21.0s
WR0 Warramunga Arr 55.40 187 PFAKE 23 18 00.0 +9.5
WR0 LR LR
comp=Z,15µm,22.0s
WR8 Warramunga Arr 55.40 187 PFAKE 23 18 00.0 +9.5
WR8 LR LR
comp=Z,14µm,21.0s
WR9 Warramunga Arr 55.40 187 PFAKE 23 18 00.0 +9.5
WR9 LR LR
comp=Z,14µm,22.0s
WR7 Warramunga Arr 55.41 187 PFAKE 23 18 00.0 +9.5
WR7 LR LR
comp=Z,14µm,21.0s
WB2 Warramunga Arr 55.41 187 *eP* **P 23 17 48.0 -2.5**
comp=Z,458nm,0.9s
WB2 LR LR
comp=Z,19µm,22.0s
WR1 Warramunga Arr 55.41 187 *eP* **P 23 17 48.4 -2.2**
comp=Z,446nm,1.0s
WR1 ⇑*e* 23 47 58.6
WR1 LR LR
comp=Z,17µm,21.0s
WR4 Warramunga Arr 55.41 187 PFAKE 23 18 00.0 +9.4
WR4 LR LR
comp=Z,14µm,21.0s
WR5 Warramunga Arr 55.41 187 PFAKE 23 18 00.0 +9.4
WR5 LR LR
comp=Z,14µm,21.0s
WR6 Warramunga Arr 55.41 187 PFAKE 23 18 00.0 +9.4
WR6 LR LR
comp=Z,14µm,21.0s
WRA Warramunga Arr 55.41 187 P **P 23 17 48.3 -2.2**
comp=Z,240nm,0.8s,baz=3.2,slow=7.4,SNR=180
WRA LR LR 23 40 33.1
comp=Z,14µm,21.4s,baz=10.0,slow=35
WRA PKPPKP P'P'df 23 47 58.6 +11
comp=Z,2.3nm,1.0s,baz=176,slow=1.5,SNR=5.5
WRA Warramunga Arr 55.41 187 P **P 23 17 48.3 -2.2**
WRA pmax pmax
comp=Z,220nm,0.8s
WRA MLR MLR
comp=Z,14µm,21.4s
WR3 Warramunga Arr 55.41 187 PFAKE 23 18 00.0 +9.4
WR3 LR LR
comp=Z,15µm,21.0s
WR2 Warramunga Arr 55.41 187 PFAKE 23 18 00.0 +9.4
WR2 LR LR
comp=Z,15µm,21.0s
WC3 Warramunga Arr 55.42 187 PFAKE 23 18 00.0 +9.4
WC3 LR LR
comp=Z,16µm,21.0s
WC4 Warramunga Arr 55.43 187 PFAKE 23 18 00.0 +9.3
WC4 LR LR
comp=Z,16µm,21.0s
CTA Charters Tower 55.47 174 LR LR 23 40 01.4
comp=Z,14µm,22.0s,baz=352,slow=34
CTAO Charters Tower 55.47 174 *eP* **P 23 17 49.6 -1.4**
CTAO pmax pmax
comp=Z,172nm,1.4s
CTAO MLR MLR
comp=Z,15µm,21.0s
CTAO Charters Tower 55.47 174 *eP* **P 23 17 49.6 -1.4**
comp=Z,172nm,1.4s
CTAO LR LR
comp=Z,15µm,21.0s
BHPL Bhopal 55.65 276 *eP* **P 23 17 50.2 -2.3**
BHPL IAmb IAmb 23 18 00.2
comp=Z,192nm,1.1s
BHPL IAMs_20 IAMs_20 00 04 36.0
comp=Z,4µm,12.7s
SVE Sverdlovsk 55.97 319*c* *iP* **P 23 17 54.5 +0.2**
SVE *eS* **S 23 25 40.1 -1.3**
SVE *eSS* **SS 23 29 24.8 -2.1**
SVE *eSSS* SSS 23 31 29.9
SVE pmax pmax
comp=Z,341nm,1.1s
SVE pmax pmax
comp=Z,3µm,14.4s
SVE MLR MLR
comp=Z,52µm,16.0s
SVE MLR MLR
comp=N,48µm,17.0s
SVE MLR MLR
comp=E,42µm,16.0s
INK Inuvik 56.07 27 P **P 23 17 54.3 -0.4**
comp=E,31nm,0.5s,baz=302,slow=6.6,SNR=99
INK LR LR 23 44 39.1
comp=E,17µm,19.4s,baz=274,slow=39
INK PKP2bc 23 48 10.5
comp=E,3.2nm,1.0s,baz=24,slow=3.7,SNR=3.7
INK Inuvik 56.07 27 *eP* **P 23 17 54.3 -0.4**
comp=E,60nm,0.7s
INK LR LR
comp=Z,24µm,18.0s
RPR Rampur 56.25 270 *eP* **P 23 17 55.6 -1.3**
RPR IAmb IAmb 23 18 06.0
comp=Z,288nm,1.0s
RPR *eS* **S 23 25 45.9 -0.3**
RPR IVMs_BB IVMs_BB 23 44 35.5
comp=Z,7µm,15.3s
XMIS Christmas Isla 56.42 223 *eP* **P 23 17 58.7 +0.8**
comp=Z,381nm,1.6s
XMIS LR LR
comp=Z,5µm,20.0s
HLK Haleakala 56.65 87 *eP* **P 23 18 02.7 +2.8**
comp=Z,722nm,1.3s
HLK LR LR
comp=Z,12µm,21.0s
SRSP Sriramsagar 56.99 271 *eP* **P 23 18 00.8 -1.3**
SRSP IAmb IAmb 23 18 11.2
comp=Z,451nm,1.0s
SRSP *eS* **S 23 25 55.3 -0.7**
SRSP IVMs_BB IVMs_BB 23 45 17.6
comp=Z,6µm,17.5s
ARU Arti 57.18 319*d* *iP* **P 23 18 02.5 -0.4**
ARU 23 19 00.2
ARU 23 20 09.8
ARU *eS* **S 23 25 56.6 -0.8**
ARU SS **SS 23 29 39.6 -6.3**
ARU pmax pmax
comp=Z,170nm,1.0s
ARU pmax pmax
comp=Z,3µm,15.6s
ARU smax smax
comp=N,6µm,19.5s
ARU MLR MLR
comp=Z,48µm,20.0s
ARU Arti 57.18 319 *eP* **P 23 18 00.8 -2.1**
comp=Z,331nm,0.9s
ARU LR LR
comp=Z,24µm,19.0s
SOKR Solikamsk 57.24 323*d* *iP* **P 23 18 03.5 +0.3**
SOKR S **S 23 25 55.4 -2.7**
SOKR SS **SS 23 29 44.5 -2.2**
SOKR pmax pmax
comp=Z,112nm,1.4s
ADKI Addanki 57.26 267 *eP* **P 23 18 04.6 +0.6**
ADKI IAmb IAmb 23 18 16.4
comp=Z,298nm,1.7s
ADKI *eS* **S 23 25 59.0 -0.4**
ADKI IVMs_BB IVMs_BB 23 42 22.4
comp=Z,7µm,24.1s
SKAG Skagway 57.31 37 *eP* **P 23 18 05.7 +2.0**
comp=Z,86nm,1.1s
SKAG LR LR
comp=Z,17µm,18.0s
NJS Nagarjunasagar 57.43 268 *eP* **P 23 18 05.2 +0.1**
NJS IAmb IAmb 23 18 14.2
comp=Z,190nm,1.3s
NJS *eS* **S 23 26 02.6 +0.9**
NJS IVMs_BB IVMs_BB 23 47 12.8
comp=Z,6µm,16.0s
HPAH Hawaii Prepara 57.46 88 *eP* **P 23 18 08.9 +3.5**
comp=Z,1µm,1.9s
HPAH LR LR
comp=Z,9µm,19.0s
KBL Kabul 57.46 292 *eP* **P 23 18 04.3 -1.2**
KBL pmax pmax
comp=Z,214nm,1.1s
KBL MLR MLR
comp=Z,12µm,20.0s
KBL Kabul 57.46 292 *eP* **P 23 18 04.3 -1.2**
comp=Z,214nm,1.1s
KBL LR LR
comp=Z,12µm,20.0s
HYBB Hyderabad (bro 57.59 269 *eP* **P 23 18 06.5 +0.1**
HYBB IAmb IAmb 23 18 18.0
comp=Z,349nm,1.4s
HYBB *eS* **S 23 26 04.2 +0.3**
HYBB IVMs_BB IVMs_BB 23 45 44.0
comp=Z,5µm,15.7s
HYB Hyderabad 57.59 269 *i* P **P 23 18 07.0 +0.6**
comp=Z,250nm,1.0s
HYB *ePP* PP 23 20 22.0 +7.9
HYB *eS* **S 23 26 04.0 0.0**
HYB *eScS* **ScS 23 27 54.0 -1.6**
HYB LR LR 23 45 46.0
comp=Z,20nm,18.0s
HYB Hyderabad 57.59 269 *eP* **P 23 18 05.8 -0.6**
POHA Pohakuloa 57.73 88 *eP* **P 23 18 09.5 +2.0**
comp=Z,733nm,1.1s
POHA LR LR
comp=Z,10µm,18.0s
MLOA Mauna Loa Obse 57.80 88 *eP* **P 23 18 10.9 +2.6**
SRLM Srisailam 58.00 267 *eP* **P 23 18 09.2 -0.1**
SRLM IAmb IAmb 23 18 20.9
comp=Z,192nm,1.2s
SRLM *eS* **S 23 26 06.8 -2.5**
SRLM IVMs_BB IVMs_BB 23 47 30.2
comp=Z,5µm,16.0s
HPO Honuapo 58.04 88 *eP* **P 23 18 13.7 +4.3**
UWE Uwekahuna 58.09 88 *eP* **P 23 18 13.6 +3.6**
comp=Z,308nm,1.0s
UWE LR LR
comp=Z,9µm,19.0s
RCLA Racherla 58.29 267 *eP* **P 23 18 10.2 -1.1**
RCLA IAmb IAmb 23 18 20.5
comp=Z,226nm,1.2s
RCLA *eS* **S 23 26 13.8 +0.7**
RCLA IVMs_BB IVMs_BB 23 46 22.2
comp=Z,6µm,16.5s
MDRS Chennai 58.53 264 *eP* **P 23 18 12.9 0.0**
AB31 Akbulak array 58.53 311 *eP* **P 23 18 11.5 -1.0**
AB31 pmax pmax
comp=Z,141nm,0.8s
ABKAR Akbulak array 58.53 311 *eP* **P 23 18 11.0 -1.5**
SKHT Srikalahasti 58.60 265 *eP* **P 23 18 12.6 -0.8**
SKHT IAmb IAmb 23 18 24.9
comp=Z,157nm,0.9s
SKHT *eS* **S 23 26 17.4 +0.4**
SKHT IVMs_BB IVMs_BB 23 46 45.9
comp=Z,5µm,16.6s
KLRI Killari 58.86 271 *eP* **P 23 18 13.4 -1.8**
KLRI IAmb IAmb 23 18 23.9
comp=Z,428nm,1.0s
KLRI *eS* **S 23 26 20.0 -0.5**
KLRI IVMs_BB IVMs_BB 23 43 55.4
comp=Z,6µm,19.0s
AS01 Alice Springs 59.13 187 *eP* **P 23 18 14.1 -2.7**
AS31 Alice Springs 59.13 187 *eP* **P 23 18 14.7 -2.2**
comp=Z,29nm,0.6s
AS31 ⇑*e* 23 47 49.0
AS31 LR LR
comp=Z,200nm,19.0s
ASAR Alice Springs 59.13 187 P **P 23 18 14.7 -2.2**
comp=Z,32nm,0.8s,baz=358,slow=5.9,SNR=91
ASAR LR LR 23 43 58.1
comp=Z,9µm,18.1s,baz=2.5,slow=36
ASAR PKPPKP **P'P'df** **23 47 49.0 +6.8**
comp=Z,1.0nm,0.9s,baz=203,slow=3.4,SNR=4.9
ASAR P4KPbc 23 55 25.5
comp=Z,1.0nm,0.8s,baz=12,slow=5.2,SNR=7.9
AKTO Aktyubinsk 59.32 312 *i* P **P 23 18 16.9 -1.0**
AKTO pmax pmax
comp=Z,259nm,1.1s
CRAG Craig 59.63 41 *eP* **P 23 18 21.0 +1.1**
comp=Z,126nm,1.4s
CRAG *ePcP* **PcP 23 19 06.8 -0.2**
CRAG LR LR
comp=Z,16µm,21.0s
MBWA Marble Bar 59.70 203 *eP* **P 23 18 19.0 -1.8**
comp=Z,221nm,0.8s
MBWA LR LR
comp=Z,17µm,20.0s
WRAK Wrangell Islan 59.73 40 PFAKE 23 18 30.0 +9.4
WRAK LR LR
comp=Z,15µm,20.0s
URV Uravakonda 59.95 267 *eP* **P 23 18 21.2 -1.5**
URV IAmb IAmb 23 18 31.7
comp=Z,364nm,1.5s
URV *eS* **S 23 26 34.9 +0.3**
URV IVMs_BB IVMs_BB 23 46 53.0
comp=Z,7µm,17.8s
DLBC Dease Lake 60.24 37 LR LR 23 45 04.1
comp=Z,6µm,21.0s,baz=309,slow=37
DLBC Dease Lake 60.24 37 *eP* **P 23 18 25.6 +1.4**

DLBC LR LR
comp=Z,152nm,1.4s

POO Poona 60.86 273 *e*P **P** **23 18 27.0 -2.0**
EIDS Eidsvold 61.27 169 *e*P **P** **23 18 30.8 -0.7**
comp=Z,294nm,1.6s
EIDS LR LR
comp=Z,12µm,20.0s
HOPEN Hopen 61.45 346 *e*P **P** **23 18 34.3 +2.3**
HOPEN *e*S **S** **23 26 54.9 +2.9**
HOPEN IVMs_BB IVMs_BB 23 48 04.8
comp=Z,17µm,17.9s
BHJ Bhuj 61.93 280 *e*P **P** **23 18 36.4 +0.3**
BHJ IAmb IAmb 23 18 47.7
comp=Z,2µm,2.2s
BHJ IAMs_20 IAMs_20 23 47 28.3
comp=Z,22µm,17.5s
SPA0 Spitsbergen Ar 61.97 349 *e*P **P** **23 18 36.3 +0.7**
SPA0 *e*S **S** **23 26 60.0 +1.2**
SPA0 *e*SS **SS** **23 31 03.6 +3.2**
SPA0 IVMs_BB IVMs_BB 23 48 48.0
comp=Z,12µm,18.1s
SPA0 Spitsbergen Ar 61.97 349 *e*P **P** **23 18 38.5 +2.9**
KBS Kingsbay 62.13 350 *e*P **P** **23 18 39.7 +3.1**
KBS IAmb IAmb 23 18 41.6
comp=Z,285nm,1.2s
KBS *e*S **S** **23 27 02.1 +1.5**
KBS Kingsbay 62.13 350 *e*P **P** **23 18 40.1 +3.5**
KBS pmax pmax
comp=Z,213nm,1.1s
KBS MLR MLR
comp=Z,19µm,20.0s
KBS Kingsbay 62.13 350 *e*P **P** **23 18 40.1 +3.5**
comp=Z,212nm,1.1s
KBS LR LR
comp=Z,19µm,20.0s
DZM Mont Dzumac 62.18 153 LR LR 23 45 35.1
comp=Z,29µm,19.0s,baz=336,slow=36
GOA Goa 62.46 270 *e*P **P** **23 18 37.5 -2.3**
HSPB Hornsund (broa 62.88 348 *e*P **P** **23 18 42.8 +1.1**
HSPB *e*S **S** **23 27 10.3 +0.1**
HSPB IVMs_BB IVMs_BB 23 46 36.7
comp=Z,12µm,20.7s
HSPB Hornsund (broa 62.88 348 *e*P **P** **23 18 44.1 +2.4**
HSPB *e*S **S** **23 27 12.6 +2.5**
HSPB *e* 23 28 27.1
HSPB MLR MLR
comp=Z,41µm,23.7s
COCO West Island 62.97 230 *i* P P 23 18 49.3 +6.3
COCO West Island 62.97 230 PFAKE 23 18 50.0 +7.0
COCO LR LR
comp=Z,8µm,19.0s
LVZ Lovozero 63.33 336 *de*P **P** **23 18 45.8 +1.0**
LVZ pmax pmax
comp=Z,122nm,1.0s
LVZ Lovozero 63.33 336 *e*P **P** **23 18 46.6 +1.8**
comp=Z,319nm,1.5s
LVZ LR LR
comp=Z,68µm,19.0s
BBB Bella Bella 63.61 43 LR LR 23 43 00.9
comp=Z,14µm,20.9s,baz=296,slow=33
MSVF Nonsavu 63.64 140 *e*P **P** **23 18 50.2 +2.7**
MSVF pmax pmax
comp=Z,267nm,1.2s
MSVF MLR MLR
comp=Z,12µm,18.0s
MSVF Nonsavu 63.64 140 *e*P **P** **23 18 50.2 +2.7**
comp=Z,267nm,1.2s
MSVF LR LR
comp=Z,12µm,18.0s
TRD Trivandrum 63.76 262 *e*P **P** **23 18 46.9 -1.6**
BJO Bjornoya 63.82 345 *e*P **P** **23 18 46.6 -1.3**
BJO *e*S **S** **23 27 24.1 +2.3**
TMCR Tamitsa 63.87 332 *e*P **P** **23 18 48.1 -0.3**
TMCR *e*S **S** **23 27 24.2 +1.5**
TMCR pmax pmax
comp=Z,225nm,1.0s
APA Apatity 63.91 336 ‖ *i*P **P** **23 18 48.4 -0.2**
APA *i* 23 19 29.0
APA *i* S **S** **23 27 22.0 -1.1**
APA *i* SS **SS** **23 31 28.0 -2.7**
APA pmax pmax
comp=Z,135nm,1.0s
APA MLR MLR
comp=Z,67µm,18.0s
GEYT Alibeck 64.11 299 P **P** **23 18 50.4 -0.1**
comp=Z,151nm,1.4s,baz=50,slow=2.3,SNR=45
GEYT PKP2bc 23 47 51.1
comp=Z,0.8nm,0.6s,baz=251,slow=4.5,SNR=4.9
GEYT LR LR 23 48 45.9
comp=Z,35µm,19.7s,baz=75,slow=38
RES Resolute Bay 64.28 14 LR LR 23 50 34.4
comp=Z,16µm,18.9s,baz=306,slow=40
RES Resolute Bay 64.28 14 *e*P **P** **23 18 49.5 -1.5**
RES pmax pmax
comp=Z,207nm,1.1s
RES MLR MLR
comp=Z,17µm,19.0s
RES Resolute Bay 64.28 14 *e*P **P** **23 18 49.5 -1.5**
comp=Z,207nm,1.1s
RES LR LR
comp=Z,17µm,19.0s
KEV Kevo 64.73 339 *e*P **P** **23 18 55.8 +1.9**
KEV pmax pmax
comp=Z,123nm,0.9s
KEV MLR MLR
comp=Z,42µm,20.0s
KEV Kevo 64.73 339 *e*P **P** **23 18 55.8 +1.9**
comp=Z,123nm,0.9s
KEV LR LR
comp=Z,42µm,20.0s
KLMR Klimovskoe 64.80 328 *e*P **P** **23 18 52.6 -1.9**
KLMR *e* 23 19 24.6
KLMR *e* 23 21 14.4
KLMR *e*S **S** **23 27 31.9 -2.4**
KLMR *e*SS **SS** **23 31 44.7 -0.2**
KLMR pmax pmax
comp=Z,330nm,1.4s
KLMR MLR MLR
comp=Z,27µm,16.0s
HAMF Hammerfest 65.13 341 *e*P **P** **23 18 56.1 -0.4**
HAMF IAmb IAmb 23 19 00.6
comp=Z,84nm,1.0s
HAMF IVMs_BB IVMs_BB 23 54 06.0
comp=Z,13µm,18.2s
ARA0 ARCESS Array S 65.28 339 *e*P **P** **23 18 57.2 -0.4**
ARCES ARCESS Array B 65.28 339 P **P** **23 18 57.2 -0.4**
comp=Z,77nm,1.0s,baz=60,slow=6.8,SNR=53
ARCES PKP2bc 23 47 48.9
comp=Z,5.3nm,0.9s,baz=304,slow=7.2,SNR=4.8
ARCES LR LR 23 50 42.2
comp=Z,61µm,20.6s,baz=36,slow=39
ARE0 ARCESS Array S 65.28 339 *e*P **P** **23 18 57.5 -0.1**
ARE0 *e*S **S** **23 27 41.2 +1.1**
ARE0 *e*SS **SS** **23 31 54.9 +2.7**
ARE0 IVMs_BB IVMs_BB 23 50 29.6
comp=Z,19µm,18.2s
ARE0 ARCESS Array S 65.28 339 *e*P **P** **23 18 58.0 +0.4**
comp=Z,162nm,1.4s
ARE0 LR LR
comp=Z,62µm,20.0s
YKW3 Yellowknife Ar 65.44 30 *e*P **P** **23 18 58.0 -0.6**
comp=Z,69nm,1.0s
YKA Yellowknife Ar 65.47 30 P **P** **23 18 56.8 -2.1**
comp=Z,26nm,0.9s,baz=297,slow=6.1,SNR=96
YKA PKP2bc 23 47 35.6
comp=Z,3.3nm,1.1s,baz=124,slow=2.4,SNR=10
YKA P4KPbc 23 55 52.2
comp=Z,0.3nm,0.9s,baz=292,slow=3.9,SNR=4.0
YKB5 Yellowknife Ar 65.47 30 *e*P **P** **23 18 56.8 -2.1**
XMAS Kiritimati 66.08 105 PFAKE 23 19 20.0 +16
XMAS LR LR
comp=Z,9µm,18.0s
KTK1 Kautokeino 66.25 340 *e*P **P** **23 19 04.4 +0.6**
ARMA Armidale 66.31 170 *e*P **P** **23 19 06.2 +1.5**
comp=Z,72nm,1.0s
ARMA LR LR
comp=Z,12µm,20.0s
STKA Stephens Creek 66.97 179 P **P** **23 19 07.6 -1.1**
comp=Z,23nm,0.7s,baz=340,slow=6.8,SNR=36
STKA LR LR 23 47 33.1
comp=Z,16µm,20.2s,baz=2.2,slow=35
STKA PKPPKP P'P'df 23 47 45.6 +16
comp=Z,2.3nm,0.8s,baz=172,slow=2.6,SNR=3.5
STKA Stephens Creek 66.97 179 *e*P **P** **23 19 07.6 -1.1**
comp=Z,15nm,0.9s
STKA LR LR
comp=Z,3µm,20.0s
TRO Tromso 67.03 341 *e*P **P** **23 19 08.6 -0.1**
TRO *e*S **S** **23 28 03.0 +1.6**
TRO *e*SS **SS** **23 32 22.2 +3.0**
TRO IVMs_BB IVMs_BB 23 54 14.8
comp=Z,20µm,14.2s
DAG Danmarks Havn 67.31 355 *i* P **P** **23 19 11.3 +0.9**
comp=Z,94nm,0.9s
DAG Danmarks Havn 67.31 355 *i* P **P** **23 19 11.3 +0.9**
DAG pmax pmax
comp=Z,79nm,0.9s
DAG MLR MLR
comp=Z,17µm,22.0s
PGC Sidney 67.86 45 *e*P **P** **23 19 17.2 +2.9**
comp=Z,92nm,1.0s
PGC LR LR
comp=Z,7µm,19.0s
BBOO Buckleboo 68.03 184 *e*P **P** **23 19 16.1 +0.7**
comp=Z,127nm,1.1s
BBOO LR LR
comp=Z,10µm,20.0s
MOS Moscow 68.19 324 *e*P **P** **23 19 15.1 -1.2**
MOS *e* 23 19 48.4
MOS *e* 23 21 48.2
MOS *e*PPP PPP 23 23 24.5
MOS *e*S **S** **23 28 13.8 -1.8**
MOS *e* 23 29 13.2
MOS *e*SS **SS** **23 32 35.3 -2.3**
MOS pmax pmax
comp=Z,494nm,1.4s
MOS pmax pmax
comp=Z,2µm,3.2s
MOS smax smax
comp=E,3µm,5.0s
MOS smax smax
comp=N,1µm,3.5s
MOS MLR MLR
comp=E,34µm,16.0s
MOS MLR MLR
comp=Z,35µm,16.0s
NLWA Neilton Lookou 68.22 47 *e*P **P** **23 19 18.6 +1.9**
comp=Z,254nm,1.3s
NLWA LR LR
comp=Z,7µm,19.0s
A04D Lummi Island 68.26 45 P **P** **23 19 14.9 -1.9**
baz=299
VRH Novokhopyorsk 68.38 318 *e*P **P** **23 19 16.8 -0.7**
VRH *e*SP **sP** **23 19 25.2 +0.2**
VRH *e*S **S** **23 28 14.4 -3.6**
VRH pmax pmax
comp=Z,100nm,0.7s
VRH smax smax
comp=E,600nm,3.2s
VRH MLR MLR
comp=Z,31µm,15.0s
CMW Cultus Mountai 68.74 45 P **P** **23 19 21.0 +1.0**
LHI Lord Howe Isla 68.80 163 *e*P **P** **23 19 22.0 +1.8**
comp=Z,308nm,1.3s
LHI LR LR
comp=Z,6µm,19.0s
E03A Lebam 68.81 47 *e*P **P** **23 19 18.1 -2.2**
comp=Z,178nm,1.1s
E03A LR LR
comp=Z,8µm,22.0s
B05A Bryant 68.83 45 P **P** **23 19 19.5 -1.0**
baz=300
B05A S **S** **23 28 25.9 +2.3**
baz=300
TUM Tumwater 68.97 47 PFAKE 23 19 30.0 +8.7
TUM LR LR
comp=Z,6µm,19.0s
OBN Obninsk 69.03 323 LR LR 23 51 58.2
comp=Z,30µm,18.3s,baz=57,slow=38
OBN Obninsk 69.03 323 *de*P **P** **23 19 20.9 -0.6**
OBN *e* 23 21 56.5
OBN *e*S **S** **23 28 29.8 +4.3**
OBN *e*SS **SS** **23 32 53.4 +2.8**
OBN pmax pmax
comp=Z,128nm,1.2s
OBN MLR MLR
comp=Z,40µm,15.0s
OBN Obninsk 69.03 323 *e*P **P** **23 19 21.6 +0.1**
comp=Z,452nm,1.4s
OBN LR LR
comp=Z,30µm,18.0s
B06A Marblemount 69.06 45 *e*P **P** **23 19 23.2 +1.4**
comp=Z,310nm,1.5s
B06A LR LR
comp=Z,8µm,22.0s
F03A Seaside 69.12 48 *es*P **sP** **23 19 30.3 +0.5**
F03A LR LR
comp=Z,9µm,20.0s
LPSR Galich'ya Gora 69.16 320 *e*P **P** **23 19 21.6 -0.8**
LPSR *e*S **S** **23 28 22.6 -4.6**
LPSR *e*SS **SS** **23 32 51.9 -0.8**
LPSR pmax pmax
comp=Z,80nm,0.8s
LPSR smax smax
comp=N,510nm,4.6s
LPSR MLR MLR
comp=Z,37µm,15.0s
STEI Steigen 69.18 341 *e*P **P** **23 19 22.4 +0.2**
PUL Pulkovo 69.27 330 *ce*P **P** **23 19 24.6 +1.7**
PUL pmax pmax
comp=Z,178nm,1.0s
F04D Rainier, OR 69.38 48 P **P** **23 19 21.9 -1.9**
baz=300
D05A Enumclaw 69.43 46 *e*P **P** **23 19 26.9 +2.6**
comp=Z,316nm,1.3s
GPW Glacier Peak 69.46 45 *e*P **P** **23 19 26.2 +1.4**
LOF Lofoten 69.49 341 *e*P **P** **23 19 27.6 +3.5**
VORR Voronezh 69.49 319 *e*P **P** **23 19 25.0 +0.5**
VORR pmax pmax
comp=Z,250nm,1.0s
KULLO Kullorsuaq 69.61 5 ‖ *i*P **P** **23 19 26.2 +1.4**
KULLO Kullorsuaq 69.61 5 ‖ *i*P **P** **23 19 26.2 +1.4**
G03D McMinnville, O 69.66 49 P **P** **23 19 23.2 -2.4**
baz=300
C06D Leavenworth 69.70 45 P **P** **23 19 25.8 -0.1**
baz=301
TDL Tradedollar La 69.72 47 P **P** **23 19 27.9 +1.7**
RCS Mount Rainier- 69.75 46 P **P** **23 19 27.3 +0.8**
VSR Storozhevoye 69.75 319 *e*P **P** **23 19 25.5 -0.6**
VSR *e*SP **sP** **23 19 34.2 +0.6**
VSR *e*S **S** **23 28 27.2 -7.1**
VSR *e*SS **SS** **23 33 00.5 -1.4**
VSR pmax pmax
comp=Z,80nm,0.7s
VSR smax smax
comp=E,560nm,2.8s
VSR MLR MLR
comp=Z,33µm,14.0s
LON Longmire 69.76 47 *e*P **P** **23 19 28.3 +1.9**
LON pmax pmax
comp=Z,65nm,1.2s
LON Longmire 69.76 47 *e*P **P** **23 19 28.2 +1.9**
comp=Z,65nm,1.2s
SHW Mount Saint He 69.79 47 *e*P **P** **23 19 29.2 +2.6**
SHW Mount Saint He 69.79 47 *e*P **P** **23 19 29.2 +2.6**
F04A Amboy 69.81 48 *e*P **P** **23 19 28.9 +2.4**
comp=Z,336nm,1.5s
NLW Nelson Butte 69.94 45 P **P** **23 19 28.9 +1.4**
COR Corvallis 69.95 49 *e*P **P** **23 19 29.8 +2.4**
COR pmax pmax
comp=Z,294nm,1.3s
COR MLR MLR
comp=Z,13µm,20.0s
COR Corvallis 69.95 49 *e*P **P** **23 19 29.8 +2.4**
comp=Z,294nm,1.3s
COR LR LR
comp=Z,13µm,20.0s
FIA1 FINESS Array S 69.95 332 *e*P **P** **23 19 25.7 -1.4**
FIA0 FINESS Array S 69.96 332 *e*P **P** **23 19 27.1 -0.1**
FIA0 FINESS Array S 69.96 332 *e*P **P** **23 19 27.1 -0.1**
FINES FINESS Array B 69.96 332 P **P** **23 19 27.1 -0.1**
comp=Z,104nm,1.0s,baz=70,slow=6.3,SNR=70
FINES PKPPKP **P'P'df** **23 47 30.7 -7.3**
comp=Z,3.9nm,1.0s,baz=7.6,slow=5.8,SNR=5.5
FINES LR LR 23 55 06.7
comp=Z,38µm,18.3s,baz=25,slow=40
LTY Liberty 70.17 46 *e*P **P** **23 19 29.8 +0.9**
comp=Z,141nm,1.3s
LTY LR LR
comp=Z,8µm,19.0s
I03D Drain, OR 70.37 50 P **P** **23 19 30.3 +0.3**
baz=301,SNR=11
B08A Colville Reser 70.37 44 *e*P **P** **23 19 30.8 +0.8**
comp=Z,136nm,1.2s
B08A LR LR
comp=Z,7µm,20.0s
H04A Detroit Lake 70.58 49 *e*P **P** **23 19 33.0 +1.6**
comp=Z,388nm,1.8s
MOR8 Moi Rana 70.66 340 ⇑ *i*P **P** **23 19 30.4 -1.1**
MOR8 IAmb IAmb 23 19 36.4
comp=Z,129nm,0.7s
GOF Gofitskoye 70.73 312 ⇑ *i*P **P** **23 19 32.7 +0.5**
GOF *e*S S 23 28 36.8 -9.1
GOF pmax pmax
comp=Z,130nm,0.9s
KONS Konsvik 70.79 340 *e*P **P** **23 19 34.2 +2.1**
CAN Canberra 70.82 173 *e*P **P** **23 19 33.8 +1.1**
CAN pmax pmax
comp=Z,214nm,1.5s
CAN MLR MLR
comp=Z,12µm,19.0s
CAN Canberra 70.82 173 *e*P **P** **23 19 33.8 +1.1**
comp=Z,214nm,1.5s
CAN LR LR
comp=Z,12µm,19.0s
G05D Wamic, OR 70.83 48 P **P** **23 19 31.8 -1.1**
baz=301
I04A Tendick Farm, 70.90 50 P **P** **23 19 34.0 +0.6**
baz=301,SNR=12
STOK Stokkvaagen 70.94 340 *e*P **P** **23 19 36.5 +3.5**
BIDO Bidbid 70.98 286 P **P** **23 19 37.4 +3.4**
SNR=25
BIDO P **P** **23 19 37.4 +3.4**
SNR=25
L02D Cave Junction, 70.99 51 P **P** **23 19 31.9 -2.0**
baz=301
DGRG David-gareji 71.12 308 P **P** **23 19 36.1 +1.4**
DGRG David-gareji 71.12 308 *e*P **P** **23 19 36.1 +1.4**
HUMO Hull Mountain 71.17 51 *e*P **P** **23 19 37.5 +2.5**
comp=Z,47nm,1.0s
GUDG Gudauri 71.17 309 P **P** **23 19 37.1 +1.9**
BANOM Banah 71.17 289 P **P** **23 19 35.8 +0.5**
SNR=7.9
BANOM P **P** **23 19 35.8 +0.5**
SNR=7.9
NCK Nalchik 71.19 310 *d* *i*P **P** **23 19 34.9 -0.2**
NCK pmax pmax
comp=Z,90nm,1.0s
NCK MLR MLR
comp=Z,34µm,18.0s
DUS Dusheti 71.22 309 P **P** **23 19 37.8 +2.4**
DUS Dusheti 71.22 309 *e*P **P** **23 19 37.7 +2.4**
G06A Carlson Farm, 71.24 48 *e*P **P** **23 19 37.6 +2.2**
comp=Z,413nm,1.8s
G06A LR LR
comp=Z,6µm,20.0s
C09A Chrisman Ranch 71.27 44 *e*P **P** **23 19 36.4 +0.9**
comp=Z,148nm,1.1s
C09A LR LR
comp=Z,8µm,18.0s
SMDO Samad 71.28 285 P **P** **23 19 36.5 +0.5**
SNR=43
I05D Terrebonne, OR 71.28 49 P **P** **23 19 33.6 -2.0**
baz=302
HAWA Hanford 71.29 46 *e*P **P** **23 19 36.8 +1.2**
comp=Z,178nm,1.5s
D08A Wollman Farm, 71.30 45 *e*P **P** **23 19 36.4 +0.7**
comp=Z,273nm,1.7s
D08A LR LR
comp=Z,7µm,22.0s
ZEI Tsey 71.37 310 *e*P **P** **23 19 35.1 -1.3**
ZEI pmax pmax
comp=Z,535nm,1.0s
TBLG Delisi 71.38 308 *e*P **P** **23 19 40.1 +3.8**
TBLG Delisi 71.38 308 P **P** **23 19 38.3 +2.0**
TBLG Delisi 71.38 308 *e*P **P** **23 19 38.2 +2.0**
JCC Jacoby Creek, 71.40 53 PFAKE 23 19 50.0 +14
JCC LR LR
comp=Z,6µm,18.0s
NWAO Narrogin (SRO) 71.48 201 *e*P **P** **23 19 36.5 -0.2**
NWAO pmax pmax
comp=Z,110nm,0.9s
NWAO MLR MLR
comp=Z,10µm,20.0s
NWAO Narrogin (SRO) 71.48 201 *e*P **P** **23 19 36.5 -0.2**
comp=Z,110nm,0.9s
NWAO LR LR
comp=Z,10µm,20.0s
KBZ Khabaz 71.50 311 P **P** **23 19 37.7 +0.8**
comp=Z,104nm,0.9s,baz=67,slow=2.6,SNR=99
KBZ LR LR 23 52 38.7
comp=Z,27µm,20.4s,baz=43,slow=37
KVAR Kislovodsk Arr 71.51 311 LR LR 23 51 33.7
comp=Z,16µm,18.9s,slow=36
KIV Kislovodsk 71.52 311 *e*P **P** **23 19 38.4 +1.3**
KIV Kislovodsk 71.52 311 *i* P **P** **23 19 36.5 -0.6**
SNR=133
KIV Kislovodsk 71.52 311 *e*P **P** **23 19 36.8 -0.3**
KIV *e*S **S** **23 28 53.0 -2.3**
KIV *e*SS **SS** **23 33 28.7 -0.9**
KIV pmax pmax
comp=Z,530nm,1.0s
KIV pmax pmax
comp=Z,537nm,5.3s
KIV Kislovodsk 71.52 311 *e*P **P** **23 19 35.9 -1.2**
comp=Z,706nm,1.1s
KIV LR LR
comp=Z,21µm,18.0s
KIV Kislovodsk 71.52 311 P **P** **23 19 37.2 0.0**
SNR=186
KIV P **P** **23 19 37.2 0.0**
SNR=186
VSU Vasula 71.53 330 *ce*P **P** **23 19 36.2 -0.6**
VSU pmax pmax
comp=Z,486nm,1.2s
KHMM Horse Mountain 71.56 53 *e*P **P** **23 19 40.4 +2.9**
comp=Z,134nm,1.2s
KHMM LR LR
comp=Z,7µm,20.0s
JMIC Jan Mayen 71.61 350 *e*P **P** **23 19 41.4 +4.4**
JMIC *e*S **S** **23 28 57.2 +1.9**
NEW Newport 71.67 43 P **P** **23 19 35.4 -2.6**
baz=303
NEW Newport 71.67 43 *e*P **P** **23 19 38.3 +0.3**
NEW pmax pmax
comp=Z,295nm,1.8s
NEW MLR MLR
comp=Z,7µm,20.0s
NEW Newport 71.67 43 *e*P **P** **23 19 38.3 +0.3**
comp=Z,295nm,1.8s
NEW LR LR
comp=Z,7µm,20.0s
UOSS Minazif 71.75 288 *e*P **P** **23 19 39.2 +0.5**
comp=Z,9.9nm,1.1s
UOSS LR LR
comp=Z,11µm,20.0s
ONI Oni 71.75 310 P **P** **23 19 39.9 +1.3**
ONI Oni 71.75 310 *e*P **P** **23 19 39.8 +1.3**
YBH Yreka Blue Hor 71.78 52 *e*P **P** **23 19 40.2 +1.4**
YBH pmax pmax
comp=Z,62nm,1.0s
YBH Yreka Blue Hor 71.78 52 *e*P **P** **23 19 40.2 +1.4**
comp=Z,62nm,1.0s
M02C Callahan 71.86 52 P **P** **23 19 38.1 -1.2**
baz=302,SNR=18
NEY Neytrino 71.86 310 *d* *i*P **P** **23 19 38.9 -0.4**
NEY pmax pmax
comp=Z,11nm,0.8s
HATD Hatta, Dubai 71.87 288 *i* P **P** **23 19 39.8 +0.4**
SNR=21
HATD Hatta, Dubai 71.87 288 P **P** **23 19 40.0 +0.5**
SNR=14
J05D Fort Rock, OR 71.90 50 P **P** **23 19 39.0 -0.5**
baz=302,SNR=5.2
KMRM Mail Ridge 71.92 53 *e*P **P** **23 19 43.7 +4.1**
comp=Z,266nm,1.6s
KMRM LR LR
comp=Z,14µm,20.0s
K04D Chiloquin, OR 71.92 50 P **P** **23 19 36.5 -3.1**
baz=302
ASHO Ashiyiah 72.00 288 *i* P **P** **23 19 40.5 +0.2**
SNR=25
ASHO Ashiyiah 72.00 288 P **P** **23 19 42.3 +2.0**
SNR=21
LHEM Herd Peak 72.15 51 *e*P **P** **23 19 43.4 +2.2**
NAZ Nazwa, Dubai 72.15 288 *i* P **P** **23 19 41.8 +0.7**
SNR=21
NAZ Nazwa, Dubai 72.15 288 P **P** **23 19 43.1 +2.0**

SNR=24
NAZ P **P** **23 19 43.1 +2.0**
SNR=24
N02D Trinity Center 72.18 52 P **P** **23 19 41.6 +0.5**
baz=302,SNR=17
GNI Garni 72.20 307 LR LR 23 56 48.3
comp=Z,12µm,18.5s,baz=69,slow=40
GNI Garni 72.20 307 *i* P **P** **23 19 41.2 -0.1**
SNR=44
GNI Garni 72.20 307 *e*P **P** **23 19 42.2 +0.8**
GNI pmax pmax
comp=Z,628nm,1.1s
GNI MLR MLR
comp=Z,19µm,19.0s
GNI Garni 72.20 307 *e*P **P** **23 19 42.2 +0.8**
comp=Z,628nm,1.1s
GNI LR LR
comp=Z,19µm,19.0s
GNI Garni 72.20 307 P **P** **23 19 44.5 +3.1**
SNR=81
GNI P **P** **23 19 44.5 +3.1**
SNR=81
G08A Pilot Rock 72.22 47 PFAKE 23 19 50.0 +8.7
G08A LR LR
comp=Z,100nm,21.0s
SUMG Summit 72.28 360 *i* P **P** **23 19 43.4 +1.8**
SUMG Summit 72.28 360 *e*P **P** **23 19 42.1 +0.5**
SUMG pmax pmax
comp=Z,213nm,1.1s
SUMG MLR MLR
comp=Z,21µm,19.0s
SUMG Summit 72.28 360 *e*P **P** **23 19 42.1 +0.5**
comp=Z,213nm,1.1s
SUMG LR LR
comp=Z,21µm,19.0s
M04C Macdoel 72.31 51 P **P** **23 19 43.0 +1.0**
baz=302,SNR=30
FAQ Al Faqa, Dubai 72.33 288 *i* P **P** **23 19 42.1 -0.1**
SNR=16
FAQ Al Faqa, Dubai 72.33 288 P **P** **23 19 41.9 -0.3**
SNR=19
FAQ P **P** **23 19 41.9 -0.3**
SNR=19
ARQ Araqi 72.33 286 P **P** **23 19 42.6 +0.3**
SNR=46
AKH Akhalkalaki 72.34 308 P **P** **23 19 44.1 +1.9**
AKH Akhalkalaki 72.34 308⇑ *i*P **P** **23 19 42.8 +0.5**
AKH Akhalkalaki 72.34 308 *e*P **P** **23 19 44.1 +1.9**
K05A Summer Lake 72.40 50 *e*P **P** **23 19 43.2 +0.6**
comp=Z,293nm,1.1s
K05A LR LR
comp=Z,8µm,20.0s
WDC Whiskeytown Da 72.49 52 *e*P **P** **23 19 44.2 +1.3**
WDC pmax pmax
comp=Z,72nm,1.1s
WDC Whiskeytown Da 72.49 52 *e*P **P** **23 19 44.2 +1.3**
comp=Z,72nm,1.1s
CHVG Ch'k'valeri 72.54 310 *e*P **P** **23 19 45.8 +2.6**
CHVG Ch'k'valeri 72.54 310 P **P** **23 19 45.0 +1.8**
CHVG Ch'k'valeri 72.54 310⇑ *i*P **P** **23 19 44.7 +1.5**
NSS Namsos 72.57 339 *e*P **P** **23 19 42.7 -0.2**
NSS *e*S **S** **23 29 05.7 -0.7**
ASUD Al Ashush, Dub 72.59 288 *i* P **P** **23 19 43.5 -0.3**
SNR=24
ASUD Al Ashush, Dub 72.59 288 P **P** **23 19 44.0 +0.3**
SNR=20
F10A Beach Ranch, E 72.86 46 *e*P **P** **23 19 47.1 +1.9**
comp=Z,73nm,1.1s
F10A LR LR
comp=Z,8µm,21.0s
HOPS Hopland Field 72.98 54 PFAKE 23 20 00.0 +14
HOPS LR LR
comp=Z,20µm,19.0s
WALA Waterton Lakes 73.01 42 *e*P **P** **23 19 46.5 +0.6**
comp=Z,104nm,1.1s
WALA LR LR
comp=Z,12µm,20.0s
KARS Kars 73.03 308 *e*P **P** **23 19 48.4 +2.2**
O03D Paynes Creek 73.12 52 P **P** **23 19 46.7 -0.1**
baz=302,SNR=22
BSMT Bassoo Peak 73.21 43 *e*P **P** **23 19 49.1 +1.8**
MOD Modoc Plateau 73.21 50 *e*P **P** **23 19 47.0 -0.4**
comp=Z,87nm,1.0s
MOD LR LR
comp=Z,8µm,20.0s
BLMT Blacktail Moun 73.35 43 *e*pP pP 23 19 53.7 +0.1
BMO Blue Mountains 73.44 47 *e*P **P** **23 19 49.1 +0.6**
comp=Z,295nm,1.8s
BMO LR LR
comp=Z,7µm,21.0s
IZAR Zarasai 73.44 328 *e*P **P** **23 19 48.2 -0.1**
IZAR IAmb IAmb 23 19 59.2
comp=Z,119nm,1.1s
MICGM Minsk 73.49 326⇑ *e*P **P** **23 19 48.0 -0.5**
MICGM PM 23 19 49.0
comp=Z,0.3nm,1.0s
MICGM PM 23 19 50.0
comp=Z,2.0nm,1.0s
MICGM *e*PcP **sP** **23 19 57.0 +1.0**
MICGM *e*PP **PP** **23 22 34.0 +2.2**
MICGM *e*PPP PPP 23 24 14.0
MICGM *e*PsP 23 25 20.0
MICGM *e*S **S** **23 29 14.0 -3.3**
MICGM *e*PS **SKiKP** **23 29 20.0 +1.7**
MICGM *e*ScS **SKSac** **23 29 54.0 -0.1**
MICGM *e*SS **SS** **23 34 02.0 +3.1**
MICGM *e*SSS SSS 23 37 40.0
MICGM *e*LQ LQ 23 45 12.0
MICGM LQM 23 46 24.0
comp=E,33nm,28.0s
MICGM LQM 23 46 32.0
comp=E,18nm,28.0s
MICGM *e*LR LR 23 50 32.0
MICGM LRM MLR 23 55 00.0
comp=N,23nm,16.0s
MICGM LRM MLR 23 55 08.0
comp=N,20nm,16.0s
MICGM LRM MLR 23 55 14.0
comp=Z,67nm,16.0s
MICGM LRM MLR 23 55 16.0
comp=Z,58nm,16.0s
MICGM LRM MLR 23 55 28.0
comp=E,55nm,16.0s
MICGM LRM MLR 23 55 30.0
comp=E,46nm,16.0s
MNK Minsk 73.49 326⇑ *e*P **P** **23 19 48.0 -0.5**
MNK *e* 23 19 57.0
MNK *e* 23 22 34.0
MNK *e*PPP PPP 23 24 14.0
MNK *e*S **S** **23 29 14.0 -3.3**
MNK *e* 23 29 54.0
MNK *e*SS **SS** **23 34 02.0 +3.1**
MNK pmax pmax
comp=Z,270nm,1.0s
MNK pmax pmax
comp=Z,2µm,4.0s
MNK MLR MLR
comp=N,23µm,16.0s
MNK MLR MLR
comp=N,20µm,16.0s
MNK MLR MLR
comp=Z,67µm,16.0s
MNK MLR MLR
comp=Z,57µm,16.0s
MNK MLR MLR
comp=E,55µm,16.0s
MNK MLR MLR
comp=E,46µm,16.0s
IDID Didziasalis 73.50 327 *e*P **P** **23 19 48.5 -0.1**
IDID IAmb IAmb 23 19 59.6
comp=Z,64nm,0.9s
JTMT Jette 73.55 43 *e*P **P** **23 19 50.3 +1.1**
MCCM Marconi Confer 73.56 55 PFAKE 23 20 00.0 +11
MCCM LR LR
comp=Z,12µm,19.0s
ISAL Salakas 73.61 327 *e*P **P** **23 19 49.1 -0.1**
ISAL IAmb IAmb 23 20 00.3
comp=Z,108nm,1.1s
YBMT Yellow Bay 73.63 43 *e*P **P** **23 19 51.5 +1.8**
SCO Scoresbysund 73.64 354 *i* P **P** **23 19 51.6 +2.5**
comp=Z,201nm,1.5s
SCO Scoresbysund 73.64 354 *i* P **P** **23 19 51.6 +2.5**
SCO pmax pmax
comp=Z,200nm,1.5s
SCO MLR MLR
comp=Z,16µm,22.0s

AGRB Hanur-Agry 73.64 307 *e*P **P** **23 19 53.4 +3.4**
IIGN Ignalina 73.71 327 *e*P **P** **23 19 49.7 -0.1**
IIGN IAmb IAmb 23 20 00.8
comp=Z,123nm,1.3s
ORV Oroville 73.71 53 *e*P **P** **23 19 50.2 +0.1**
ORV pmax pmax
comp=Z,112nm,1.3s
ORV MLR MLR
comp=Z,9µm,20.0s
ORV Oroville 73.71 53 *e*P **P** **23 19 50.2 +0.1**
comp=Z,112nm,1.3s
ORV LR LR
comp=Z,9µm,20.0s
NACGM Naroch 73.74 327 *e*P **P** **23 19 49.0 -1.0**
NACGM *e*P **P** **23 19 49.0 -1.0**
NACGM PM 23 19 56.0
comp=Z,0.4nm,1.0s
NACGM *e*PcP **PcP** **23 20 10.0 +4.4**
NACGM *e*PP **PP** **23 22 28.0 -5.9**
NACGM *e*PPP PPP 23 24 20.0
NACGM *e*S **SKiKP** **23 29 18.0 -0.6**
NACGM *e*PS **PnS** **23 30 04.0 +11**
NACGM *e*SS **SS** **23 34 02.0 -0.7**
NACGM *e*SSS SSS 23 37 30.0
NACGM *e*LQ LQ 23 44 54.0
NACGM *e*LR LR 23 49 10.0
SWMT Swartz Lake 73.84 43 *e*P **P** **23 19 50.8 -0.2**
VANB Van 73.91 306 *e*P **P** **23 19 55.4 +3.9**
WVOR Wild Horse Val 73.96 49 *e*P **P** **23 19 52.8 +1.1**
WVOR pmax pmax
comp=Z,230nm,1.5s
WVOR MLR MLR
comp=Z,8µm,20.0s
WVOR Wild Horse Val 73.96 49 *e*P **P** **23 19 52.8 +1.1**
comp=Z,230nm,1.5s
WVOR LR LR
comp=Z,8µm,20.0s
TBLU Trondheim 74.03 339 *e*P **P** **23 19 51.6 +0.1**
TBLU IAmb IAmb 23 19 55.0
comp=Z,221nm,1.3s
TBLU IVMs_BB IVMs_BB 23 55 12.9
comp=Z,18µm,21.0s
ANN Anapa 74.22 314 *c i*P **P** **23 19 53.9 +0.9**
ANN *e**PP **sP** **23 20 01.0 +0.5**
ANN *e* 23 20 06.4
ANN *e* 23 22 35.5
ANN *e*S **S** **23 29 25.1 -0.7**
ANN pmax pmax
comp=Z,129nm,1.1s
ANN MLR MLR
comp=Z,20µm,20.0s
ANN MLR MLR
comp=N,29µm,20.0s
ANN MLR MLR
comp=E,28µm,20.0s
HKR Hakkari 74.22 305 *e*P **P** **23 19 53.6 +0.2**
MSO Missoula 74.27 43 P **P** **23 19 52.6 -0.8**
baz=305
MSO Missoula 74.27 43 *e*P **P** **23 19 53.6 +0.2**
comp=E,133nm,1.4s
MSO LR LR
comp=Z,8µm,22.0s
AFDM Forest Hills D 74.38 53 *e*P **P** **23 19 55.0 +0.9**
comp=Z,169nm,1.6s
AFDM LR LR
comp=Z,12µm,21.0s
EZM Erzurum 74.52 308 *e*P **P** **23 19 57.0 +1.7**
CHMT Chamberlain Mo 74.60 43 *e*P **P** **23 19 55.3 -0.2**
KTUT Trabzon 74.94 310 *e*P **P** **23 19 58.9 +1.7**
BAYT Ayd¨–ntepe-Bay 75.03 309 *e*P **P** **23 20 01.2 +3.1**
MFID Camas Ranch 75.12 47 *e*P **P** **23 19 58.8 +0.3**
comp=Z,112nm,1.0s
MFID LR LR
comp=Z,5µm,20.0s
AKASG Malin Array Be 75.20 322 P **P** **23 19 57.2 -1.4**
comp=Z,28nm,0.5s,baz=47,slow=6.1,SNR=81
AKASG LR 23 56 14.5
comp=Z,35µm,18.3s,baz=65,slow=38
AKBB Malin Array Si 75.20 322 *e*P **P** **23 19 57.2 -1.4**
AKBB pmax pmax
comp=Z,178nm,0.9s
AKBB MLR MLR
comp=Z,35µm,20.0s
AKBB Malin Array Si 75.20 322 *e*P **P** **23 19 57.2 -1.4**
comp=Z,178nm,0.9s
AKBB LR LR
comp=Z,35µm,20.0s
KIEV Kiev 75.22 322 *e*P **P** **23 19 57.2 -1.5**
KIEV pmax pmax
comp=Z,158nm,0.8s
KIEV MLR MLR
comp=Z,34µm,20.0s
KIEV Kiev 75.22 322 *e*P **P** **23 19 57.1 -1.5**
comp=Z,158nm,0.8s
KIEV LR LR
comp=Z,34µm,20.0s
NC405 NORSAR Array S 75.22 337 *e*P **P** **23 19 57.7 -0.8**
NC303 NORSAR Array S 75.24 337 *e*P **P** **23 19 58.8 +0.2**
AK11 Malin Array Si 75.25 322 *e*P **P** **23 19 57.8 -1.0**
SAO San Andreas Ge 75.26 55 *e*P P 23 20 06.2 +7.0
SAO MLR MLR
comp=Z,12µm,20.0s
SAO San Andreas Ge 75.26 55 *e*pP **pP** **23 20 06.2 +1.5**
SAO LR LR
comp=Z,12µm,20.0s
CMB Columbia Colle 75.27 54 *e*P **P** **23 19 59.8 +0.5**
CMB pmax pmax
comp=Z,289nm,1.7s
CMB MLR MLR
comp=Z,13µm,19.0s
CMB Columbia Colle 75.27 54 *e*P **P** **23 19 59.8 +0.5**
comp=Z,289nm,1.7s
CMB LR LR
comp=Z,13µm,19.0s
ILULI Ilulissat 75.29 4 *i* P **P** **23 19 59.7 +0.9**
ILULI pmax pmax
comp=Z,180nm,1.1s
ILULI MLR MLR
comp=Z,19µm,23.0s
HFS Hagfors 75.30 336 LR LR 23 55 36.3
comp=Z,60µm,20.4s,baz=28,slow=38
MOL Molde 75.35 340 *e*P **P** **23 20 01.1 +1.9**
MOL IAmb IAmb 23 20 06.0
comp=Z,109nm,0.8s
MOL *e*S **S** **23 29 38.5 +0.8**
MOL *e*SS **SS** **23 34 29.9 +3.2**
MOL IVMs_BB IVMs_BB 23 57 30.1
comp=Z,14µm,19.3s
FFC Flin Flon 75.36 32 *e*P **P** **23 19 57.8 -1.6**
FFC pmax pmax
comp=Z,123nm,0.9s
FFC MLR MLR
comp=Z,9µm,19.0s
FFC Flin Flon 75.36 32 *e*P **P** **23 19 57.8 -1.6**
comp=Z,123nm,0.9s
FFC LR LR
comp=Z,9µm,19.0s
NC204 NORSAR Array S 75.39 337 *e*P **P** **23 19 59.6 0.0**
NB201 NORSAR Array S 75.40 337 *e*P **P** **23 19 59.3 -0.3**
GUMT Gumushane 75.41 309 *e*P **P** **23 20 01.6 +1.4**
NB2 NORSAR Subarra 75.43 337 P **P** **23 19 59.9 +0.1**
comp=Z,38nm,0.6s,baz=38,slow=6.2
NB2 NORSAR Subarra 75.43 337 P **P** **23 19 59.9 +0.1**
baz=38,slow=6.2
NB200 NORSAR Array S 75.43 337 *e*P **P** **23 19 58.1 -1.7**
NOA NORSAR Array B 75.43 337 P **P** **23 19 58.1 -1.7**
comp=Z,68nm,0.9s,baz=40,slow=5.8,SNR=90
NOA LR LR 23 56 05.1
comp=Z,46µm,19.6s,baz=40,slow=38
BNGB Bing¨ll 75.47 308 *e*P **P** **23 20 02.1 +1.7**
NBO02 NORSAR Array S 75.54 337 *e*P **P** **23 19 59.9 -0.5**
NC602 NORSAR Array S 75.56 337 *e*P **P** **23 20 00.5 0.0**
NC602 IAmb IAmb 23 20 20.5
comp=Z,190nm,1.2s
NC602 *e*S **S** **23 29 40.8 +0.6**
NC602 IVMs_BB IVMs_BB 23 55 35.4
comp=Z,21µm,21.1s
NC602 NORSAR Array S 75.56 337 *e*P **P** **23 20 00.7 +0.3**
NBO00 NORSAR Array S 75.58 337 *e*P **P** **23 20 00.6 0.0**
SVAN Silvan-Diyarba 75.59 307 *e*P **P** **23 20 04.1 +2.9**
ESPY Espiye-Giresun 75.63 310 *e*P **P** **23 20 00.4 -0.8**
WAKR Walker 75.63 53 *e*P **P** **23 20 02.2 +0.7**
FCC Fort Churchill 75.68 26 *e*P **P** **23 19 58.9 -2.3**
FCC pmax pmax
comp=Z,193nm,1.2s
FCC MLR MLR
comp=Z,10µm,19.0s
FCC Fort Churchill 75.68 26 *e*P **P** **23 19 58.9 -2.3**
comp=Z,193nm,1.2s
FCC LR LR
comp=Z,10µm,19.0s
NAO01 NORSAR Array S 75.69 337 *e*P **P** **23 20 01.4 +0.3**
LRM Limekiln Ridge 75.69 44 *e*P **P** **23 20 00.8 -1.0**
AKN Aaknes 75.81 340 *e*P **P** **23 20 04.2 +2.2**
AKN IAmb IAmb 23 20 08.9
comp=Z,131nm,1.0s
EGMT Eagleton 75.85 41 P **P** **23 20 01.7 -0.8**
baz=308
EGMT Eagleton 75.85 41 *e*P **P** **23 20 02.8 +0.3**
comp=Z,230nm,1.0s
EGMT LR LR
comp=Z,12µm,21.0s
DLMT Dillon 75.88 44 *e*P **P** **23 20 03.9 +1.0**
comp=Z,174nm,1.1s
HLID Hailey 75.88 46 P **P** **23 20 02.4 -0.5**
baz=306,SNR=66
HLID Hailey 75.88 46 *e*P **P** **23 20 03.5 +0.6**
comp=Z,72nm,1.3s
HLID LR LR
comp=Z,7µm,21.0s
SUW Suwalki 75.92 327 *e*P **P** **23 20 03.0 +0.4**
SUW *e*PcP **sP** **23 20 10.6 +0.5**
SUW *e*S **S** **23 29 43.2 -1.2**
SUW *e*SS **SS** **23 34 34.7 -1.0**
SUW LMZ LR 23 54 13.5
SUW Suwalki 75.92 327 *e*P **P** **23 20 03.0 +0.4**
SUW *e* 23 20 10.7
SUW *e*S **S** **23 29 43.2 -1.2**
SUW *e*SS **SS** **23 34 34.8 -1.0**
SUW MLR MLR
comp=Z,18µm,21.1s
BMN Battle Mountai 75.97 50 *e*P **P** **23 20 03.1 -0.3**
BMN pmax pmax
comp=Z,82nm,0.9s
BMN MLR MLR
comp=Z,6µm,19.0s
BMN Battle Mountai 75.97 50 *e*P **P** **23 20 03.1 -0.3**
comp=Z,82nm,0.9s
BMN LR LR
comp=Z,6µm,19.0s
MCMT McKenzie Canyo 76.05 45 *e*P **P** **23 20 06.0 +2.1**
SIM Simferopol' 76.06 315 *de*P **P** **23 20 03.6 0.0**
SIM *e*S **S** **23 29 43.2 -3.1**
SIM pmax pmax
comp=Z,205nm,0.7s
SIM smax smax
comp=N,2µm,18.0s
SIM MLR MLR
comp=Z,10µm,14.0s
BOZ Bozeman (W) 76.26 43 P **P** **23 20 04.9 0.0**
baz=307,SNR=7.0
BOZ Bozeman (W) 76.26 43 *e*P **P** **23 20 07.0 +2.1**
BOZ pmax pmax
comp=Z,81nm,0.9s
BOZ MLR MLR
comp=Z,9µm,20.0s
BOZ Bozeman (W) 76.26 43 *e*P **P** **23 20 07.0 +2.1**
comp=Z,82nm,0.9s
BOZ LR LR
comp=Z,9µm,20.0s
PTK Pertek 76.35 308 *e*P **P** **23 20 05.6 -0.1**
DYBB Diyarbakir 76.40 307 *e*P **P** **23 20 04.7 -1.1**
NV01 Mina Array Sit 76.41 52 *e*P **P** **23 20 04.8 -1.2**
NV01 *e*P'P'df P'P'df 23 47 14.5 -12
NVAR Mina Array Bea 76.41 52 P **P** **23 20 04.8 -1.2**
comp=Z,21nm,0.6s,baz=289,slow=4.5,SNR=118
NVAR PKP2bc 23 47 14.5
comp=Z,0.4nm,0.6s,baz=236,slow=4.7,SNR=4.0
NVAR LR LR 23 50 37.0
comp=Z,12µm,19.0s,baz=307,slow=33
OSL Oslo 76.43 337 *e*P **P** **23 20 05.4 0.0**
MAZI Mazidag 76.47 306 *e*P **P** **23 20 06.0 -0.3**
NV11 Mina Array Sit 76.50 52 *e*P **P** **23 20 08.8 +2.4**
comp=Z,73nm,1.1s
NV11 LR LR
comp=Z,11µm,20.0s
MLAC Mammoth, Mammo 76.51 53 P **P** **23 20 06.8 +0.1**
baz=304
ILIC ilic-Erzincan 76.56 309 *e*P **P** **23 20 07.1 +0.3**
KBSD Kabsdagh 76.67 306 *i* P **P** **23 20 08.1 +0.9**
SVRC Sivrice-ELAZID 76.70 308 *e*P **P** **23 20 10.1 +2.5**
OUZ Omahuta 76.70 153 *e*P **P** **23 20 10.7 +3.6**
comp=Z,267nm,1.4s
OUZ LR LR
comp=Z,15µm,22.0s
KLNR Kaliningrad 76.80 329 *i* P **P** **23 20 08.8 +1.2**
KLNR pmax pmax
comp=Z,156nm,0.9s
RSDY Resadiye-TOKAT 76.80 310 *e*P **P** **23 20 10.9 +3.0**
FOO Floro 76.83 340 *e*P **P** **23 20 09.0 +1.4**
FOO IVMs_BB IVMs_BB 23 57 26.6
comp=Z,12µm,17.9s
HYA Hoyanger 76.86 339 *e*P **P** **23 20 09.4 +1.6**
HYA *e*S **S** **23 29 55.9 +1.5**
HYA *e*SS **SS** **23 34 52.3 +2.7**
QLMT Earthquake Lak 76.86 44 *e*P **P** **23 20 09.2 +0.8**
DGAR Diego Garcia 76.93 251 PFAKE 23 20 20.0 +11
DGAR LR LR
comp=Z,9µm,21.0s
RCTC Rector, Farmer 76.99 55 P **P** **23 20 08.5 -0.5**
baz=305
KONO Kongsberg 77.02 337 *e*P **P** **23 20 10.2 +1.4**
KONO IAmb IAmb 23 20 14.9
comp=Z,144nm,1.2s
KONO *e*S **S** **23 29 56.7 +0.5**
KONO *e*SS **SS** **23 34 56.4 +4.3**
KONO IVMs_BB IVMs_BB 23 56 39.2
comp=Z,17µm,19.3s
KONO Kongsberg 77.02 337 *e*P **P** **23 20 09.4 +0.7**
KONO pmax pmax
comp=Z,108nm,1.1s
KONO MLR MLR
comp=Z,53µm,20.0s
KONO Kongsberg 77.02 337 *e*P **P** **23 20 09.4 +0.7**
comp=Z,108nm,1.1s
KONO LR LR
comp=Z,53µm,20.0s
ELK Elko 77.02 49 *e*P **P** **23 20 09.5 0.0**
ELK pmax pmax
comp=Z,46nm,0.9s
ELK MLR MLR
comp=Z,7µm,19.0s
ELK Elko 77.02 49 *e*P **P** **23 20 09.5 0.0**
comp=Z,46nm,0.9s
ELK LR LR
comp=Z,7µm,19.0s
SMMC Simmler 77.04 56 P **P** **23 20 08.9 -0.6**
baz=304
SNOP Sinop 77.15 313 *e*P **P** **23 20 11.1 +1.3**
KVT Kavak 77.19 311 *e*P **P** **23 20 13.4 +3.3**
YMR Madison River 77.22 44 *e*P **P** **23 20 12.1 +1.5**
comp=Z,117nm,1.2s
YMR LR LR
comp=Z,7µm,21.0s
TIN Tinemaha, Big 77.23 54 P **P** **23 20 10.4 -0.2**
baz=305
MZRK Al-Mazaregh 77.26 305 *i* P **P** **23 20 11.4 +0.8**
SORM Soroca 77.26 321 ‖ *i*P **P** **23 20 10.2 -0.1**
SVSK Karacayir 77.28 310 *e*P **P** **23 20 12.2 +1.6**
RBK Rabkut 77.28 282 P **P** **23 20 10.6 -0.4**
SNR=17
SFNV Sufian 77.28 306 *i* P **P** **23 20 11.7 +0.9**
TOKT Tokat 77.33 311 *e*P **P** **23 20 11.6 +0.6**
DIKM Dikmen 77.34 312 *e*P **P** **23 20 11.4 +0.5**
SUE Sulen 77.36 340 *e*P **P** **23 20 12.5 +1.9**
SUE *e*S **S** **23 30 00.8 +0.9**
SUE *e*SS **SS** **23 35 02.1 +5.1**
SUE IVMs_BB IVMs_BB 23 57 23.8
comp=Z,13µm,20.6s
PKM Mcpherson Peak 77.40 56 P **P** **23 20 11.7 +0.1**
baz=305,SNR=25
YFT Old Faithful 77.43 44 *e*P **P** **23 20 14.4 +2.8**
comp=Z,114nm,1.0s
SFJD Kangerlussuaq 77.52 5 *e*P **P** **23 20 12.7 +1.3**
SFJD pmax pmax
comp=Z,186nm,1.4s
SFJD MLR MLR
comp=Z,12µm,22.0s
SFJD Kangerlussuaq 77.52 5 *e*P **P** **23 20 12.7 +1.3**
comp=Z,186nm,1.4s

SFJD LR LR
comp=Z,12µm,22.0s
H17A Grant Village 77.61 44 P **P 23 20 14.6 +1.9**
baz=308
H17A Grant Village 77.61 44 *e*P **P 23 20 13.8 +1.1**
comp=Z,170nm,1.1s
H17A LR LR
comp=Z,18µm,21.0s
ASK Askoy 77.70 339 *e*P **P 23 20 14.1 +1.5**
ASK IAmb IAmb 23 20 21.8
comp=Z,122nm,0.9s
IMW Indian Meadow 77.71 45 *e*P **P 23 20 13.7 +0.4**
comp=Z,98nm,1.0s
IMW LR LR
comp=Z,8µm,21.0s
SBC Santa Barbara 77.72 57 P **P 23 20 12.2 -1.0**
baz=305
FLWY Flagg Ranch 77.73 44 *e*P **P 23 20 14.9 +1.6**
comp=Z,341nm,1.6s
FLWY LR LR
comp=Z,6µm,19.0s
KIS Kishinev 77.73 319 *e*P **P 23 20 13.0 0.0**
comp=Z,2µm,14.0s
KIS Kishinev 77.73 319 *e*PP PP 23 23 05.0 -2.8
KIS Kishinev 77.73 319 *e*PPP PPP 23 25 00.0
KIS Kishinev 77.73 319 *e*PsP 23 25 50.0
KIS *e*S **S 23 30 04.0 -0.4**
comp=Z,2µm,10.0s
KIS Kishinev 77.73 319 *i* PS **SKSac 23 30 22.0 -3.9**
KIS *e*SS **SS 23 35 10.0 +6.5**
KIS LRM MLR 23 57 30.0
comp=Z,63µm,16.0s
KIS Kishinev 77.73 319 ⇓*i*P **P 23 20 13.3 +0.3**
KIS Kishinev 77.73 319 *e*P **P 23 20 13.0 0.0**
KIS *i* 23 20 22.0
KIS *e* 23 23 05.0
KIS *e*PPP PPP 23 25 00.0
KIS *e*S **S 23 30 04.0 -0.4**
KIS *i* PS **SKSac 23 30 22.0 -3.9**
KIS *e*SS **SS 23 35 10.0 +6.5**
KIS pmax pmax
comp=Z,2µm,14.0s
KIS smax smax
comp=E,2µm,10.0s
KIS MLR MLR
comp=Z,63µm,16.0s
KIS MLR MLR
comp=N,30µm,15.0s
KIS MLR MLR
comp=E,42µm,15.0s
ODD1 Odda 77.73 338 *e*P **P 23 20 14.7 +1.8**
ODD1 *e*S **S 23 30 04.0 -0.1**
BER Bergen 77.74 339 *e*P **P 23 20 15.0 +2.2**
BER IAmb IAmb 23 20 19.6
comp=Z,150nm,1.1s
BER *e*S **S 23 30 04.6 +0.6**
BER *e*SS **SS 23 35 05.2 +2.3**
DARE Darende-Malaty 77.76 309 *e*P **P 23 20 17.1 +3.6**
FXWY Fox Creek 77.81 45 *e*P **P 23 20 14.0 +0.2**
comp=Z,95nm,1.3s
FXWY LR LR
comp=Z,9µm,22.0s
GRAC Grapevine Rang 77.83 53 P **P 23 20 13.7 -0.2**
baz=305,SNR=20
ISA Isabella, Lake 77.87 55 P **P 23 20 14.5 +0.4**
baz=305,SNR=5.4
ISA Isabella, Lake 77.87 55 *e*P **P 23 20 15.3 +1.2**
ISA pmax pmax
comp=Z,45nm,1.1s
ISA MLR MLR
comp=Z,10µm,21.0s
ISA Isabella, Lake 77.87 55 *e*P **P 23 20 15.3 +1.2**
comp=Z,45nm,1.1s
ISA LR LR
comp=Z,10µm,21.0s
RLMT Red Lodge 77.90 43 P **P 23 20 10.9 -3.4**
baz=308
RLMT Red Lodge 77.90 43 *e*P **P 23 20 15.0 +0.7**
comp=Z,163nm,1.5s
RLMT LR LR
comp=Z,7µm,20.0s
BZK Bozkurt 77.91 313 *e*P **P 23 20 16.5 +2.5**
HVU Hansel Valley 77.91 47 *e*P **P 23 20 13.7 -0.6**
HVU pmax pmax
comp=Z,113nm,1.2s
HVU MLR MLR
comp=Z,7µm,18.0s
HVU Hansel Valley 77.91 47 *e*P **P 23 20 13.7 -0.6**
comp=Z,113nm,1.2s
HVU LR LR
comp=Z,7µm,18.0s
MOOW Moose Ponds 77.91 45 *e*P **P 23 20 15.1 +0.8**
comp=Z,231nm,1.6s
MOOW LR LR
comp=Z,9µm,21.0s
ARVC Arvin 77.93 56 P **P 23 20 14.8 +0.4**
baz=305,SNR=5.3
SCZ2 Santa Cruz Isl 78.03 57 P **P 23 20 13.9 -1.0**
baz=305
LOHW Long Hollow 78.07 45 *e*P **P 23 20 15.9 +0.6**
comp=Z,50nm,1.1s
LOHW LR LR
comp=Z,9µm,21.0s
SNOW Snow King Moun 78.08 45 *e*P **P 23 20 17.5 +2.2**
comp=Z,92nm,1.3s
SNOW LR LR
comp=Z,10µm,21.0s
REDW Red Top Meadow 78.08 45 *e*P **P 23 20 16.1 +0.7**
comp=Z,130nm,1.3s
REDW LR LR
comp=Z,6µm,20.0s
DAC Darwin (Calif) 78.10 54 *e*P **P 23 20 15.0 -0.5**
DAC pmax pmax
comp=Z,67nm,1.0s
DAC MLR MLR
comp=Z,10µm,19.0s
DAC Darwin (Calif) 78.10 54 *e*P **P 23 20 15.0 -0.5**
comp=Z,67nm,1.0s
DAC LR LR
comp=Z,10µm,19.0s
BLS5 Blasjo 78.18 338 *e*P **P 23 20 17.6 +2.4**
BLS5 IAmb IAmb 23 20 22.3
comp=Z,101nm,1.0s
BLS5 IVMs_BB IVMs_BB 23 57 22.8
comp=Z,10µm,20.3s
R11A Troy Canyon, C 78.20 51 P **P 23 20 16.2 +0.1**
baz=306,SNR=39
R11A Troy Canyon, C 78.20 51 *e*P **P 23 20 15.1 -0.9**
comp=Z,60nm,0.9s
R11A LR LR
comp=Z,8µm,20.0s
TAU Tasmania Unive 78.21 175 PFAKE 23 20 30.0 +15
TAU LR LR
comp=Z,10µm,20.0s
BGU Big Grassy Mou 78.27 48 *e*P **P 23 20 16.8 +0.5**
comp=Z,67nm,1.1s
BGU LR LR
comp=Z,6µm,21.0s
MPMC Manual Prospec 78.29 54 P **P 23 20 16.7 +0.1**
baz=305,SNR=41
OSI Osito Audit: C 78.30 56 P **P 23 20 15.4 -1.1**
baz=305
OSI Osito Audit: C 78.30 56 PFAKE 23 20 30.0 +14
OSI LR LR
comp=Z,24µm,20.0s
AHID Auburn Hatcher 78.30 46 *e*P **P 23 20 16.5 0.0**
comp=Z,80nm,1.1s
AHID LR LR
comp=Z,6µm,20.0s
LVV L'vov 78.33 324 *e*P **P 23 20 16.6 +0.4**
LVV *e* 23 23 14.0
LVV *e*S **S 23 30 06.6 -4.2**
LVV MLR MLR
comp=N,23µm,17.0s
LVV MLR MLR
comp=Z,32µm,17.0s
LVV MLR MLR
comp=E,14µm,16.0s
KSRV Kasrt alli 78.33 306 *i* P **P 23 20 19.2 +2.7**
BLG Laguna Peak, P 78.35 56 P **P 23 20 16.5 -0.2**
baz=305,SNR=6.8
SPUT South Promonto 78.39 47 *e*P **P 23 20 19.1 +2.1**
comp=E,140nm,1.5s
SPUT LR LR
comp=Z,9µm,18.0s
DGMT Dagmar 78.44 38 P **P 23 20 16.8 -0.2**
baz=311,SNR=20

DGMT Dagmar 78.44 38 *e*P **P 23 20 17.4 +0.4**
comp=Z,166nm,1.0s
DGMT LR LR
comp=Z,9µm,20.0s
TOS Tosya 78.45 312 *e*P **P 23 20 17.6 +0.3**
HOMB Homborsund 78.45 336 *e*P **P 23 20 19.1 +2.4**
HOMB IAmb IAmb 23 20 25.6
comp=Z,150nm,1.1s
HOMB *e*S **S 23 30 12.3 +0.6**
HOMB IVMs_BB IVMs_BB 23 57 22.4
comp=Z,15µm,20.5s
BEL Belsk 78.46 327 *e*P **P 23 20 16.9 0.0**
BEL *e* 23 20 25.5
BEL *e*S **S 23 30 17.8 +5.7**
BEL MLR MLR
comp=Z,28µm,22.7s
FURC Furnace Creek, 78.47 53 P **P 23 20 16.8 -0.5**
baz=306
LRMC Laurel Mtn Rad 78.50 55 P **P 23 20 16.9 -0.8**
baz=305,SNR=25
SNCC San Nicolas Is 78.53 57 P **P 23 20 15.3 -2.4**
baz=305
SNCC San Nicolas Is 78.53 57 PFAKE 23 20 30.0 +12
SNCC LR LR
comp=Z,22µm,20.0s
LAO LASA Array 78.56 40 P **P 23 20 16.4 -1.3**
baz=310
LAO LASA Array 78.56 40 *e*P **P 23 20 18.3 +0.6**
comp=Z,177nm,1.1s
LAO LR LR
comp=Z,11µm,21.0s
BSD Bornholm Skovb 78.57 332 ⇓*i*P **P 23 20 19.0 +1.5**
BSD pmax pmax
comp=Z,200nm,1.1s
BSD MLR MLR
comp=Z,36µm,16.0s
TPNV Topopah Spring 78.59 53 P **P 23 20 18.1 -0.1**
baz=306,SNR=64
TPNV Topopah Spring 78.59 53 *e*P **P 23 20 17.2 -1.0**
TPNV pmax pmax
comp=Z,176nm,1.2s
TPNV MLR MLR
comp=Z,12µm,21.0s
TPNV Topopah Spring 78.59 53 *e*P **P 23 20 17.2 -1.0**
comp=Z,176nm,1.2s
TPNV LR LR
comp=Z,12µm,21.0s
BNN Bunyan 78.63 310 *e*P **P 23 20 14.1 -4.2**
EDW2 Edwards Air Fo 78.64 55 P **P 23 20 18.0 -0.3**
baz=305,SNR=28
A25A Svangstu Ranch 78.67 37 P **P 23 20 17.4 -0.8**
baz=312,SNR=9.8
BMUT Black Mountain 78.72 46 *e*P **P 23 20 19.8 +0.9**
HWUT Hardware Ranch 78.73 47 *e*P **P 23 20 18.4 -0.6**
comp=Z,138nm,1.3s
HWUT LR LR
comp=Z,8µm,22.0s
GAZ Gaziantep 78.75 308 *e*P **P 23 20 15.9 -3.1**
KMRS Kahramanmaras 78.75 308 *e*P P 23 20 23.8 +4.9
DECC Green Verdugo 78.77 56 P **P 23 20 17.0 -2.0**
baz=305
STAV Stavanger 78.81 338 *e*P **P 23 20 20.9 +2.3**
STAV IVMs_BB IVMs_BB 23 57 41.5
comp=Z,10µm,19.8s
SNART Snartemo 78.81 337 *e*P **P 23 20 19.4 +0.6**
SNART IAmb IAmb 23 20 27.9
comp=Z,97nm,0.9s
SNART *e*S **S 23 30 16.8 +1.2**
DUG Dugway, Tooele 78.84 48 P **P 23 20 19.5 0.0**
baz=307,SNR=24
DUG Dugway, Tooele 78.84 48 *e*P **P 23 20 18.9 -0.5**
DUG pmax pmax
comp=Z,91nm,0.9s
DUG MLR MLR
comp=Z,8µm,19.0s
DUG Dugway, Tooele 78.84 48 *e*P **P 23 20 18.9 -0.5**
comp=Z,91nm,0.9s
DUG LR LR
comp=Z,8µm,19.0s
PRAR RASCA 78.85 321 ⇑*i*P **P 23 20 19.4 +0.2**
TLCR 78.88 318 ⇓*i*P **P 23 20 21.3 +1.9**
PASC Pasadena Art C 78.92 56 *e*P **P 23 20 21.5 +1.7**
comp=Z,271nm,1.5s
PASC LR LR
comp=Z,28µm,20.0s
CANT Cankiri 78.95 312 *e*P **P 23 20 22.1 +2.1**
MKAZ Moumakai 78.96 153 PN **P 23 20 21.5 +1.9**
MWC Mount Wilson 78.97 56 *e*P **P 23 20 21.2 +0.9**
MWC pmax pmax
comp=Z,250nm,1.4s
MWC MLR MLR
comp=Z,30µm,20.0s
MWC Mount Wilson 78.97 56 *e*P **P 23 20 21.2 +0.9**
comp=Z,250nm,1.4s
MWC LR LR
comp=Z,30µm,20.0s
GIRR Girov 78.98 320 ⇑*i*P **P 23 20 20.1 +0.2**
COP Copenhagen 79.09 333 ⇓*i*P **P 23 20 22.2 +1.9**
COP pmax pmax
comp=Z,150nm,1.0s
KWP Kalwaria Pacla 79.09 324 *e*P **P 23 20 21.6 +1.1**
KWP *e*S **S 23 30 24.1 +5.2**
KWP MLR MLR
comp=Z,49µm,17.0s
B25A Knox Farm, Ray 79.09 38 P **P 23 20 18.3 -2.2**
baz=312
FMP Fort Macarthur 79.11 56 P **P 23 20 19.4 -1.4**
baz=305
TCUT Toone Canyon 79.13 47 *e*P **P 23 20 21.9 +0.7**
comp=Z,386nm,1.5s
TCUT LR LR
comp=Z,11µm,19.0s
SAFT Safranbolu 79.13 313 *e*P **P 23 20 21.9 +1.0**
BORG Borgarnes 79.15 352 *i* P P 23 20 27.4 +6.9
BORG Borgarnes 79.15 352 PFAKE 23 20 30.0 +10
BORG LR LR
comp=Z,11µm,18.0s
CTU Camp Tracy 79.18 48 *e*P **P 23 20 22.1 +0.7**
comp=Z,325nm,2.0s
CTU LR LR
comp=Z,8µm,18.0s
GSC Goldstone, Bar 79.19 54 P **P 23 20 20.8 -0.6**
baz=306,SNR=29
GSC Goldstone, Bar 79.19 54 *e*P **P 23 20 21.6 +0.2**
GSC pmax pmax
comp=Z,203nm,1.4s
GSC MLR MLR
comp=Z,7µm,19.0s
GSC Goldstone, Bar 79.19 54 *e*P **P 23 20 21.6 +0.2**
comp=Z,203nm,1.4s
GSC LR LR
comp=Z,7µm,19.0s
SHOC Shoshone, Teco 79.19 54 P **P 23 20 21.2 -0.1**
baz=306
TESR Tescani 79.19 320 ⇓*i*P **P 23 20 20.9 -0.2**
BUR08 Bucovina Ar. S 79.19 322 *e*P **P 23 20 20.4 -0.8**
BW06 Boulder Array 79.20 45 P **P 23 20 20.7 -0.8**
baz=309,SNR=45
BW06 Boulder Array 79.20 45 *e*P **P 23 20 19.9 -1.6**
BW06 LR LR
comp=Z,7µm,22.0s
PD31 Pinedale Array 79.20 45 *e*P **P 23 20 19.8 -1.7**
PD31 *e*PKKPbc **PKKPbc 23 39 13.0 +1.4**
PD31 *e*P'P'df **P'P'df 23 47 16.1 -5.3**
PDAR Pinedale Array 79.20 45 P **P 23 20 19.8 -1.7**
comp=Z,19nm,0.6s,baz=268,slow=1.4,SNR=67
PDAR PKKPbc **PKKPbc 23 39 13.0 +1.4**
comp=Z,0.4nm,0.6s,baz=116,slow=3.4,SNR=3.7
PDAR PKPPKP **P'P'df 23 47 16.1 -5.3**
comp=Z,0.8nm,0.9s,baz=147,slow=3.5,SNR=4.3
PDAR LR LR 23 50 46.6
comp=Z,6µm,21.9s,baz=340,slow=32
BURAR Bucovina Array 79.20 322 ⇑*i*P **P 23 20 20.8 -0.5**
CIS Catalina Islan 79.20 57 P **P 23 20 20.5 -0.9**
baz=305
A26A Wade Farm, Ken 79.23 37 P **P 23 20 20.6 -0.7**
baz=312,SNR=11
BFSC Mount Baldy Ra 79.23 56 P **P 23 20 21.3 -0.4**
baz=306,SNR=57
RRX Edison Barstow 79.31 55 P **P 23 20 22.3 +0.4**
baz=306
SCI2 San Clemente I 79.36 57 P **P 23 20 20.8 -1.5**
baz=305
PETR Petresti 79.39 319 ⇑*i*P **P 23 20 23.9 +1.7**
JLU Jordanelle 79.42 48 *e*P **P 23 20 23.4 +0.6**
comp=Z,210nm,1.7s

JLU LR LR
comp=Z,8µm,18.0s
C25A Freed Ranch, W 79.42 38 P **P 23 20 22.0 -0.3**
baz=312
NLU North Lily Min 79.43 48 *e*P **P 23 20 22.7 -0.1**
comp=Z,108nm,1.2s
NLU LR LR
comp=Z,10µm,20.0s
ODBI Odobesti 79.46 319 ⇑*i*P **P 23 20 24.0 +1.5**
BR101 Keskin Array S 79.47 311 *e*P **P 23 20 23.4 +0.4**
BR101 *e*PP **PP 23 23 28.1 +5.3**
BR131 Keskin Array S 79.47 311 *e*P **P 23 20 22.6 -0.3**
BRTR Keskin Array B 79.48 311 P **P 23 20 23.4 +0.4**
comp=Z,58nm,1.1s,baz=88,slow=2.7,SNR=64
BRTR PP **PP 23 23 28.1 +5.3**
comp=Z,32nm,1.2s,baz=75,slow=7.0,SNR=4.6
BRTR LR LR 00 01 52.1
comp=Z,8µm,18.5s,baz=31,slow=40
B26A Jensen Ranch, 79.48 37 P **P 23 20 21.4 -1.3**
baz=312
TIRR Tirgusor 79.56 318 ⇓*i*P **P 23 20 24.8 +1.7**
TIRR Tirgusor 79.56 318 *e*P **P 23 20 25.0 +1.9**
TIRR pmax pmax
comp=Z,112nm,1.2s
TIRR MLR MLR
comp=Z,39µm,18.0s
TIRR Tirgusor 79.56 318 *e*P **P 23 20 25.0 +1.9**
comp=Z,112nm,1.2s
TIRR LR LR
comp=Z,39µm,18.0s
VRI Vrincioaia 79.57 320 ⇓*i*P **P 23 20 24.7 +1.5**
A27A Ledoux Ranch, 79.58 36 P **P 23 20 22.4 -0.8**
baz=313
RGN Rugen 79.61 332 *e*P **P 23 20 24.4 +1.2**
comp=Z,307nm,1.1s
RGN LR LR
comp=Z,35µm,19.0s
PLOR Plostina 79.62 320 ⇑*i*P **P 23 20 24.2 +0.7**
JOSR Joseni 79.65 321 ⇑*i*P **P 23 20 25.3 +1.7**
MUD Monsted U'grnd 79.66 335 *i* P **P 23 20 25.1 +1.7**
comp=Z,147nm,1.1s
MUD Monsted U'grnd 79.66 335 *i* P **P 23 20 25.1 +1.7**
MUD pmax pmax
comp=Z,150nm,1.1s
MUD MLR MLR
comp=Z,35µm,16.0s
MPU Maple Canyon 79.66 48 *e*P **P 23 20 24.7 +0.6**
comp=Z,87nm,1.0s
MPU LR LR
comp=Z,11µm,20.0s
HARR Harsova 79.68 318 ⇓*i*P **P 23 20 25.2 +1.4**
TUQ Turquoise Moun 79.69 54 P **P 23 20 24.3 +0.1**
baz=306,SNR=46
RAR Rarotonga 79.70 125 PFAKE 23 20 40.0 +16
RAR LR LR
comp=Z,14µm,20.0s
BBRC Big Bear Solar 79.72 55 P **P 23 20 24.1 -0.4**
baz=306
GRER 79.75 319 ⇑*i*P **P 23 20 26.4 +2.3**
D25A Fairfield 79.76 39 P **P 23 20 23.7 -0.5**
baz=312,SNR=10
KOLS Kolonicke sedl 79.77 324 *e*P **P 23 20 24.8 +0.6**
KOLS pmax pmax
comp=Z,83nm,1.1s
HEC Hector,Ludlow 79.78 55 P **P 23 20 24.7 +0.2**
baz=306,SNR=36
NIG Nigde 79.85 310 *e*P **P 23 20 24.9 -0.3**
CVDA Cernavoda 79.85 318 ⇓*i*P **P 23 20 27.3 +2.6**
MANR Mangalia 79.88 317 ⇑*i*P **P 23 20 26.8 +2.0**
ANTO Ankara 79.90 312 *e*P **P 23 20 24.7 -0.5**
ANTO pmax pmax
comp=Z,91nm,0.8s
ANTO MLR MLR
comp=Z,14µm,21.0s
ANTO Ankara 79.90 312 *e*P **P 23 20 24.7 -0.5**
comp=Z,91nm,0.8s
ANTO LR LR
comp=Z,14µm,21.0s
LOD Lodumlu 79.91 312 *e*P **P 23 20 27.2 +2.0**
MURC Murrieta 79.92 56 P **P 23 20 25.4 +0.1**
baz=306,SNR=27
C26A Wahner Farm, P 79.92 37 P **P 23 20 25.4 +0.3**
baz=313,SNR=9.8
STHS Stebnicka Huta 79.93 325 *e*P **P 23 20 26.1 +1.0**
STHS pmax pmax
comp=Z,115nm,1.1s
STHS Stebnicka Huta 79.93 325 *e*P **P 23 20 26.0 +1.0**
BR231 Keskin MP Arra 79.93 312 *e*P **P 23 20 26.6 +1.3**
B27A Peters Farms, 79.94 37 P **P 23 20 23.9 -1.3**
baz=313
UZH Uzhgorod 79.97 324 *e*P **P 23 20 24.5 -0.7**
UZH *e* 23 20 28.2
UZH *e* 23 20 37.5
UZH *e*S **S 23 30 23.9 -4.3**
UZH *e*PS **PnS 23 31 05.2 -7.7**
AFSR Af'ar-Bala (A 79.99 311 *e*P **P 23 20 28.9 +3.2**
ARCR ARCALIA 79.99 322 ⇑*i*P **P 23 20 27.0 +1.6**
BMR Baia Mare 80.03 322 ⇑*i*P **P 23 20 26.7 +1.1**
OJC Ojcow 80.04 326 *e*P **P 23 20 25.4 -0.2**
OJC *e* 23 20 33.9
OJC *e*S **S 23 30 25.3 -3.7**
OJC MLR MLR
comp=Z,46µm,17.8s
OJC Ojcow 80.04 326 *e*P **P 23 20 24.9 -0.8**
comp=Z,218nm,1.1s
AMRR Amara 80.06 318 ⇓*i*P **P 23 20 27.8 +2.0**
A28A Rude Farm, Bot 80.08 36 P **P 23 20 25.8 -0.1**
baz=314,SNR=15
CCUT Cedar City 80.09 51 PFAKE 23 20 40.0 +14
CCUT LR LR
comp=Z,11µm,20.0s
HIZ Hauiti 80.09 153 *e*PN **P 23 20 26.5 +0.7**
HIZ Hauiti 80.09 153 *e*P **P 23 20 26.4 +0.7**
comp=Z,425nm,1.3s
HIZ LR LR
comp=Z,8µm,18.0s
MSAB Monastry St. A 80.12 318 ⇓*i*P **P 23 20 27.3 +1.1**
E25A Miller Ranch, 80.15 39 P **P 23 20 26.3 -0.1**
baz=312,SNR=15
ISR Istrita 80.15 319 ⇓*i*P **P 23 20 27.5 +1.1**
CRVS Cervenica-Dubn 80.18 324 *e*P **P 23 20 27.1 +0.7**
CRVS *e* 23 20 36.8
CRVS *e*S **S 23 30 32.0 +1.4**
TRPA Tarpa 80.19 323 *e*SKKPbc **P 23 20 27.2 +0.8**
DOPR Dopca 80.20 320 ⇓*i*P **P 23 20 28.4 +1.8**
MLR Muntele Rosu 80.23 320 LR LR 23 58 24.5
comp=Z,10µm,20.2s,baz=30,slow=38
MLR Muntele Rosu 80.23 320 ⇑*i*P **P 23 20 28.4 +1.5**
MLR Muntele Rosu 80.23 320 *e*P **P 23 20 26.1 -0.8**
MLR pmax pmax
comp=Z,200nm,1.3s
MLR MLR MLR
comp=Z,42µm,19.0s
MLR Muntele Rosu 80.23 320 *e*P **P 23 20 26.1 -0.8**
comp=Z,200nm,1.3s
MLR LR LR
comp=Z,42µm,19.0s
MSU Marysvale 80.25 50 *e*P **P 23 20 27.8 +0.5**
MSU Marysvale 80.25 50 *e*P **P 23 20 27.8 +0.5**
GMRC Granite Mounta 80.25 54 P **P 23 20 27.2 0.0**
baz=306,SNR=50
D26A Manning 80.29 38 P **P 23 20 25.9 -1.2**
baz=312,SNR=15
C27A Sayler Ranch, 80.29 37 P **P 23 20 27.0 -0.1**
baz=313,SNR=7.7
ARNB Al Arnab 80.33 307 *i* P **P 23 20 27.0 -0.5**
B28A Dugan Ranch, T 80.35 36 P **P 23 20 26.7 -0.6**
baz=314,SNR=12
RABH Abou Rabah 80.36 305 *i* P **P 23 20 29.2 +1.5**
TMUT Trail Mountain 80.36 48 *e*P **P 23 20 28.6 +0.6**
comp=Z,66nm,1.2s
TMUT LR LR
comp=Z,7µm,19.0s
NIE Niedzica 80.37 325 *e*P **P 23 20 29.4 +1.9**
NIE *e* 23 20 36.4
NIE *e*S **S 23 30 29.7 -2.9**
NIE *e*SS **SS 23 35 43.9 +0.9**
NIE MLR MLR
comp=Z,21µm,20.7s
109C Camp Elliot, M 80.39 57 P **P 23 20 26.9 -0.9**
baz=306,SNR=11
PFO Pinyon Flats O 80.41 56 P **P 23 20 27.6 -0.5**
baz=306,SNR=47
PFO Pinyon Flats O 80.41 56 *e*P **P 23 20 28.2 +0.1**
PFO pmax pmax

comp=Z,246nm,1.3s
PFO MLR MLR
comp=Z,31µm,20.0s
PFO Pinyon Flats O 80.41 56 *e*P **P 23 20 28.2 +0.1**
comp=Z,246nm,1.3s
PFO LR LR
comp=Z,31µm,20.0s
LDFC Landfair 80.44 54 *e*P **P 23 20 29.0 +0.8**
comp=Z,222nm,1.1s
LDFC LR LR
comp=Z,8µm,19.0s
SECR 80.46 319⇑*i*P **P 23 20 30.5 +2.5**
ROOS tl_alroos 80.47 305 *i* P **P 23 20 28.8 +0.5**
SULT Sultanhani-AKS 80.48 310 *e*P **P 23 20 28.7 +0.4**
BELC Belle Mtn. Jos 80.49 55 P **P 23 20 27.7 -0.8**
baz=306,SNR=50
LCMT Little Creek M 80.49 51 *e*P **P 23 20 29.1 +0.6**
comp=Z,181nm,1.3s
LCMT LR LR
comp=Z,12µm,19.0s
MDUB Mudurnu 80.49 313 *e*P **P 23 20 29.4 +1.0**
F25A Bowman 80.51 40 P **P 23 20 27.5 -0.8**
baz=312
MTPU Mount Pierson 80.53 50 *e*P **P 23 20 31.9 +2.9**
comp=Z,475nm,2.0s
P17A Butcher Ranch, 80.54 48 *e*P **P 23 20 30.0 +1.3**
comp=Z,481nm,1.8s
P17A LR LR
comp=Z,9µm,20.0s
A29A Manning Farm, 80.56 35 P **P 23 20 27.4 -1.1**
baz=314,SNR=34
MXZ Matakaoa Point 80.58 151 PFAKE 23 20 40.0 +12
MXZ LR LR
comp=Z,10µm,20.0s
SULR 80.60 319⇑*i*P **P 23 20 29.6 +0.9**
MDB Medias 80.61 321⇑*i*P P 23 20 37.7 +8.9
CJR Cluj-Napoca 80.63 322⇑*i*P **P 23 20 30.3 +1.4**
CHBY Cihanbeyli 80.63 311 *e*P **P 23 20 31.6 +2.4**
E26A Carlson Angus 80.65 39 P **P 23 20 27.8 -1.3**
baz=313,SNR=10
D27A Center 80.69 38 P **P 23 20 28.3 -1.0**
baz=313,SNR=8.9
URZ Urewera 80.71 152 *e*P **P 23 20 27.9 -1.3**
comp=Z,81nm,1.2s
URZ LR LR
comp=Z,11µm,22.0s
RAYN Ar Rayn 80.73 292 *e*P **P 23 20 28.6 -1.3**
comp=Z,506nm,1.4s
RAYN LR LR
comp=Z,13µm,18.0s
VOIR 80.73 320‖*i*P **P 23 20 30.1 +0.5**
VOIR 80.73 320 P **P 23 20 30.1 +0.5**
P18A Preston Nutter 80.74 48 *e*P **P 23 20 30.8 +0.7**
comp=Z,105nm,1.0s
P18A LR LR
comp=Z,10µm,18.0s
KNB Kanab 80.75 51 *e*P **P 23 20 30.8 +0.8**
KNB pmax pmax
comp=Z,477nm,1.5s
KNB MLR MLR
comp=Z,13µm,20.0s
KNB Kanab 80.75 51 *e*P **P 23 20 30.8 +0.8**
comp=Z,476nm,1.5s
KNB LR LR
comp=Z,13µm,20.0s
BAR Barrett 80.81 56 *e*P **P 23 20 30.9 +0.8**
comp=Z,168nm,1.1s
BAR LR LR
comp=Z,16µm,20.0s
PKCU Pink Cliffs 80.82 50 *e*P **P 23 20 32.5 +2.0**
comp=Z,231nm,1.6s
B29A Wagenman Farm, 80.82 36 P **P 23 20 28.9 -1.0**
baz=314,SNR=17
C28A Hausauer Farms 80.84 37 P **P 23 20 29.2 -0.8**
baz=314
MONP2 Monument Peak 80.86 56 P **P 23 20 29.7 -0.9**
baz=306,SNR=31
RAC Raciborz 80.86 327 *e*P **P 23 20 30.3 +0.3**
RAC *e*S **S 23 30 35.9 -1.7**
RAC MLR MLR
comp=Z,58µm,18.1s
MTUR Matau 80.87 320⇑*i*P **P 23 20 31.6 +1.3**
SPNC Sapanca-Adapaz 80.88 314 *e*P **P 23 20 34.5 +4.2**
SRU San Rafael Swe 80.90 48 *e*P **P 23 20 30.3 -0.4**
SRU pmax pmax
comp=Z,96nm,0.8s
SRU MLR MLR
comp=Z,9µm,19.0s
SRU San Rafael Swe 80.90 48 *e*P **P 23 20 30.3 -0.4**
comp=Z,96nm,0.8s
SRU LR LR
comp=Z,9µm,19.0s
GULT Gulveren 80.92 313 *e*P **P 23 20 31.3 +0.6**
SVRH Sivrihisar-ESK 80.94 312 *e*P **P 23 20 32.4 +1.6**
KECS Kecovo 80.94 324 *e*P **P 23 20 31.5 +1.0**
KECS pmax pmax
comp=Z,25nm,1.0s
KECS Kecovo 80.94 324 *e*P **P 23 20 31.5 +1.0**
KECS *e*PP **PP 23 23 35.4 +1.0**
LANS Liptovska Anna 80.95 325 *e*P **P 23 20 32.4 +1.8**
LANS Liptovska Anna 80.95 325 *e*P **P 23 20 32.4 +1.8**
NEE2 Needles Airpor 80.95 54 P **P 23 20 28.3 -2.5**
baz=307
F26A Lodgepole 80.96 39 P **P 23 20 29.9 -0.9**
baz=312,SNR=14
IRM Iron Mountain 80.96 55 P **P 23 20 30.8 -0.2**
baz=307,SNR=101
SILT Sile 80.98 314 *e*P **P 23 20 31.5 +0.7**
A30A Hoffart Farm, 80.98 35 P **P 23 20 30.0 -0.7**
baz=315,SNR=22
MMU Miners Mountai 80.99 49 *e*P **P 23 20 30.6 -0.7**
K22A Casper 81.00 44 P **P 23 20 30.2 -0.9**
baz=310
K22A Casper 81.00 44 *e*P **P 23 20 32.0 +0.9**
comp=Z,206nm,1.4s
K22A LR LR
comp=Z,5µm,20.0s
ARR Arges 81.00 320⇑*i*P **P 23 20 32.5 +1.5**
G25A Newell 81.02 40 P **P 23 20 28.3 -2.8**
baz=312
DRGR 81.02 322‖*i*P **P 23 20 32.0 +0.9**
DRGR 81.02 322 P **P 23 20 31.9 +0.9**
BC3 Big Chuckawall 81.06 55 P **P 23 20 31.4 -0.1**
baz=307,SNR=57
OKC Ostrava-Krasne 81.06 326 *e*P **P 23 20 31.8 +0.7**
OKC *e*S **S 23 30 38.3 -1.4**
OKC AMS AMS 00 00 10.0
comp=Z,47µm,15.3s
OKC Ostrava-Krasne 81.06 326 *e*P **P 23 20 31.8 +0.7**
OKC *e*S **S 23 30 38.3 -1.4**
OKC MLR MLR
comp=Z,47µm,15.3s
KIZT Kizilcal 81.07 312 *e*P **P 23 20 35.4 +3.8**
D28A Regan 81.11 37 P **P 23 20 31.1 -0.4**
baz=314,SNR=16
MDND Maddock 81.13 36 P **P 23 20 30.7 -0.8**
baz=314
MDND Maddock 81.13 36 *e*P **P 23 20 34.8 +3.2**
comp=Z,182nm,0.9s
MDND LR LR
comp=Z,17µm,22.0s
E27A Carson 81.14 38 P **P 23 20 30.8 -0.9**
baz=313,SNR=15
KSP Ksiaz 81.15 328 *e*P **P 23 20 31.7 +0.2**
KSP *e*PcP **sP 23 20 40.0 +0.9**
KSP *e*S **S 23 30 44.4 +3.8**
KSP *e*SS **SS 23 36 04.5 +10**
KSP LMZ LR 23 57 12.5
KSP Ksiaz 81.15 328 *e*P **P 23 20 31.8 +0.2**
KSP *e* 23 20 40.0
KSP *e*S **S 23 30 44.4 +3.8**
KSP MLR MLR
comp=Z,20µm,21.1s
ULM Lac du Bonnet 81.15 33 P **P 23 20 30.9 -0.6**
comp=Z,19nm,0.7s,baz=311,slow=6.8,SNR=24
ULM PKKPbc **PKKPbc 23 39 06.5 -0.6**
comp=Z,2.6nm,0.8s,baz=184,slow=2.1,SNR=3.1
ULM LR LR 23 56 02.1
comp=Z,9µm,21.1s,baz=322,slow=35
ULM Lac du Bonnet 81.15 33 P **P 23 20 31.0 -0.6**
ULM pmax pmax
comp=Z,19nm,0.7s
ULM pmax pmax
comp=Z,3.0nm,0.8s
ULM MLR MLR
comp=Z,9µm,21.1s
ULM Lac du Bonnet 81.15 33 *e*P **P 23 20 30.9 -0.6**
comp=Z,84nm,0.9s
ULM LR LR
comp=Z,11µm,19.0s
HRT Hereke 81.17 314 *e*P **P 23 20 34.5 +2.6**
ZALF Zalf 81.17 304 *i* P **P 23 20 34.6 +2.5**
LADK Ladik-KONYA 81.19 311 *e*P **P 23 20 33.4 +1.2**
IBP Imperial Bould 81.22 56 P **P 23 20 32.0 -0.3**
baz=307,SNR=39
W13A Hualapai Mount 81.23 53 *e*P **P 23 20 33.0 +0.4**
comp=Z,114nm,1.4s
W13A LR LR
comp=Z,6µm,22.0s
SWSC Sam W. Stewart 81.25 56 P **P 23 20 31.7 -0.7**
baz=307,SNR=25
KLYT Kilyos 81.26 315 *e*P **P 23 20 34.1 +1.8**
BKZ Black Stump Fm 81.27 153 *e*P **P 23 20 32.2 0.0**
comp=Z,166nm,1.5s
BKZ LR LR
comp=Z,17µm,21.0s
F27A Lemmon 81.28 39 P **P 23 20 32.2 -0.3**
baz=313,SNR=16
H25A Fruitdale 81.30 41 P **P 23 20 31.4 -1.1**
baz=312,SNR=22
B30A Myrvik Farm, E 81.32 35 P **P 23 20 31.5 -1.0**
baz=315,SNR=32
QRZ Quartz Range 81.34 156 PN **P 23 20 31.7 -0.7**
KONT Konya--Tatoy 81.36 311 *e*P **P 23 20 33.9 +0.9**
ISK Istanbul-Kandi 81.37 315 *e*P **P 23 20 33.9 +1.0**
ISK Istanbul-Kandi 81.37 315 P **P 23 20 33.3 +0.4**
ISK Istanbul-Kandi 81.37 315 P **P 23 20 33.3 +0.4**
ISK Istanbul-Kandi 81.37 315 P **P 23 20 33.3 +0.4**
MORC Moravsky Berou 81.38 327 *e*P **P 23 20 32.7 -0.1**
MORC pmax pmax
comp=Z,443nm,1.1s
MORC MLR MLR
comp=Z,159µm,18.0s
MORC Moravsky Berou 81.38 327 *e*P **P 23 20 32.7 -0.1**
comp=Z,442nm,1.1s
MORC LR LR
comp=Z,159µm,18.0s
G26A Maurine 81.38 40 P **P 23 20 31.7 -1.3**
baz=313,SNR=20
ADVT Abdulvahap 81.38 314 *e*P **P 23 20 35.3 +2.3**
HUMR Humele 81.38 319⇑*i*P **P 23 20 34.9 +2.0**
LOT Lotru 81.39 321‖*i*P **P 23 20 35.1 +2.0**
RSSD Black Hills 81.40 41 P **P 23 20 32.3 -1.0**
baz=312
RSSD Black Hills 81.40 41 *e*P **P 23 20 33.5 +0.2**
RSSD pmax pmax
comp=Z,245nm,1.8s
RSSD MLR MLR
comp=Z,9µm,20.0s
RSSD Black Hills 81.40 41 *e*P **P 23 20 33.5 +0.2**
comp=Z,245nm,1.8s
RSSD LR LR
comp=Z,9µm,20.0s
U15A North Rim 81.45 51 *e*P **P 23 20 34.5 +0.7**
comp=Z,296nm,1.5s
U15A LR LR
comp=Z,12µm,19.0s
BGKT Bogazkoy 81.46 315 *e*P **P 23 20 29.8 -3.6**
CAVI Cavuskoy 81.46 314 *e*P **P 23 20 36.0 +2.5**
E28A Huff 81.48 38 P **P 23 20 32.4 -1.0**
baz=314,SNR=10
KRLC Kraliky 81.50 327 *e*P **P 23 20 33.9 +0.4**
KRLC Kraliky 81.50 327 *e*P **P 23 20 33.9 +0.4**
DPC Dobruska-Polom 81.50 328 *e*P **P 23 20 33.0 -0.5**
DPC *ex* x 23 20 44.3
DPC *e*S **S 23 30 41.1 -3.2**
DPC AMS AMS 00 01 30.0
comp=Z,32µm,17.2s
DPC Dobruska-Polom 81.50 328 *e*P **P 23 20 33.0 -0.5**
DPC *e* 23 20 44.3
DPC *e*S **S 23 30 41.1 -3.2**
DPC MLR MLR
comp=Z,32µm,17.2s
A31A Linda, St. Vin 81.50 34 P **P 23 20 31.7 -1.8**
baz=316
UPC Upice 81.52 328 *e*P **P 23 20 34.1 +0.6**
UPC *e*S **S 23 30 43.3 -1.1**
UPC AMS AMS 00 00 40.0
comp=Z,36µm,15.1s
UPC Upice 81.52 328 *e*P **P 23 20 34.1 +0.6**
UPC *e*S **S 23 30 43.3 -1.1**
UPC MLR MLR
comp=Z,36µm,15.1s
PDMCI Parker Dam,Lak 81.54 54 P **P 23 20 33.6 -0.4**
baz=307,SNR=50
DEV Deva 81.54 321‖*i*P **P 23 20 35.3 +1.6**
CTYL Yalikoy Yolu 81.55 315 *e*P **P 23 20 36.0 +2.2**
CTKS Kestanelik-??a 81.58 315 *e*P **P 23 20 34.1 +0.1**
IZI Iznik 81.60 314 *e*P **P 23 20 34.9 +0.6**
PSZ Piszkesteto 81.62 324 *e*P **P 23 20 34.8 +0.6**
PSZ Piszkesteto 81.62 324 *e*P **P 23 20 33.2 -1.0**
PSZ pmax pmax
comp=Z,287nm,1.3s
PSZ MLR MLR
comp=Z,37µm,18.0s
PSZ Piszkesteto 81.62 324 *e*P **P 23 20 33.2 -1.0**
comp=Z,287nm,1.3s
PSZ LR LR
comp=Z,37µm,18.0s
Y12C Blythe 81.62 55 P **P 23 20 34.1 -0.2**
baz=307,SNR=33
Y12C Blythe 81.62 55 *e*P **P 23 20 35.2 +0.8**
comp=Z,211nm,1.2s
Y12C LR LR
comp=Z,19µm,20.0s
O20A White River Ci 81.62 46 P **P 23 20 34.0 -0.5**
baz=310,SNR=26
O20A White River Ci 81.62 46 *e*P **P 23 20 34.6 +0.1**
comp=Z,126nm,1.1s
O20A LR LR
comp=Z,5µm,22.0s
I25A Rochford 81.63 41 P **P 23 20 33.6 -0.9**
baz=312,SNR=20
B31A Greenbush Farm 81.65 35 P **P 23 20 34.0 -0.3**
baz=316
G27A Dupree 81.67 39 P **P 23 20 33.7 -0.8**
baz=313,SNR=9.9
D29A Pettibone, Tap 81.68 37 P **P 23 20 33.6 -0.9**
baz=314,SNR=14
GEMT Gemlik 81.70 314 *e*P **P 23 20 36.0 +1.3**
SZH Strazhica 81.70 318 *e*P **P 23 20 34.8 +0.2**
VYHS Vyhne 81.71 325 *e*P **P 23 20 35.4 +0.8**
VYHS pmax pmax
comp=Z,96nm,1.4s
H26A Fairpoint 81.74 40 P **P 23 20 33.9 -1.0**
baz=313,SNR=15
C30A Mose, Pekin 81.77 36 P **P 23 20 33.9 -1.0**
baz=315,SNR=15
DUWZ D'Urville Isla 81.79 155 PN **P 23 20 33.1 -1.7**
ARMT Armutlu 81.81 314 *e*P **P 23 20 37.3 +2.1**
BRBR Barbar 81.81 305 *i* P **P 23 20 36.3 +0.7**
A32A Rocking H Ranc 81.83 34 P **P 23 20 33.4 -1.8**
baz=316
GLA Glamis 81.84 55 P **P 23 20 35.5 -0.1**
baz=307,SNR=43
GLA Glamis 81.84 55 *e*P **P 23 20 36.4 +0.8**
GLA pmax pmax
comp=Z,232nm,1.1s
GLA MLR MLR
comp=Z,21µm,20.0s
GLA Glamis 81.84 55 *e*P **P 23 20 36.4 +0.8**
comp=Z,232nm,1.1s
GLA LR LR
comp=Z,21µm,20.0s
TSZ Takapari Road 81.85 153 PN **P 23 20 33.3 -1.9**
MLA1 Latheron 81.88 342 *e*P **P 23 20 37.6 +2.3**
PHSR Pinarhisar 81.89 316 *e*P **P 23 20 37.9 +2.3**
MDNY Mudanya-Bursa 81.92 314 *e*P **P 23 20 38.0 +2.2**
F28A McLaughlin 81.92 38 P **P 23 20 34.5 -1.3**
baz=314
GZR Gura Zlata 81.94 321‖*i*P **P 23 20 36.6 +0.6**
E29A Napoleon 82.00 37 P **P 23 20 35.4 -0.8**
baz=314
J25A Sunshine Ranch 82.02 42 P **P 23 20 33.6 -2.8**
baz=312
D30A Buchanan 82.06 36 P **P 23 20 35.3 -1.1**
baz=315,SNR=17
PVL Pavlikeni 82.06 318 *e*P **P 23 20 37.4 +0.9**
C31A Landman Farms, 82.06 35 P **P 23 20 34.8 -1.6**
baz=316,SNR=12
SHUT Suhut-Afyon 82.08 312 *e*P **P 23 20 38.4 +1.5**
I26A New Underwood 82.09 41 P **P 23 20 36.0 -0.8**
baz=313,SNR=12
CRLT Corlu 82.09 315 *e*P **P 23 20 40.3 +3.6**
H27A Howes 82.10 40 P **P 23 20 35.7 -1.0**
baz=313,SNR=30
PVCC Panska Ves 82.12 329 *e*P **P 23 20 37.5 +0.8**
PVCC *e*S **S 23 30 50.4 -0.2**
PVCC AMS AMS 00 02 00.0
comp=Z,23µm,16.6s
PVCC Panska Ves 82.12 329 *e*P **P 23 20 37.5 +0.8**
PVCC *e*S **S 23 30 50.4 -0.2**
PVCC MLR MLR
comp=Z,23µm,16.6s
PV09 Paradox Valley 82.13 48 *e*P **P 23 20 37.9 +0.6**
BRG Berggiesshubel 82.13 329 P **P 23 20 37.4 +0.7**
VRAC Vranov 82.14 327 P **P 23 20 36.3 -0.6**
TVSB Tavsanli 82.17 313 *e*P **P 23 20 40.5 +3.2**
CLL Collm 82.19 330 *i* P **P 23 20 36.7 -0.3**
CLL *e*S **S 23 30 52.0 +0.7**
CLL pmax pmax
comp=Z,191nm,1.1s
CLL MLR MLR
comp=Z,30µm,19.4s
CLL Collm 82.19 330 *e*P **P 23 20 35.9 -1.1**
comp=Z,243nm,1.1s
CLL LR LR
comp=Z,36µm,19.0s
EDRB Edirne 82.19 316 *e*P **P 23 20 39.4 +2.2**
EDRB Edirne 82.19 316 P **P 23 20 36.6 -0.6**
EDRB Edirne 82.19 316 P **P 23 20 36.6 -0.6**
B32A Ashes, Strandq 82.19 34 P **P 23 20 35.7 -1.4**
baz=316,SNR=17
SRE Strehaia 82.22 320⇑*i*P **P 23 20 38.8 +1.5**
MRZ Mangatainoka R 82.24 154 PN **P 23 20 34.9 -2.3**
TCHB Talchebab 82.25 305 *i* P **P 23 20 39.0 +1.2**
PV10 Paradox Valley 82.26 48 *e*P **P 23 20 38.0 0.0**
PRWZ Pori Road 82.29 154 PN **P 23 20 36.2 -1.2**
KCTX Karacabey (Bur 82.30 314 *e*P **P 23 20 40.2 +2.3**
TKR Tekirdag 82.30 315 *e*P **P 23 20 40.3 +2.5**
THZ Tophouse 82.31 156 *e*PN **P 23 20 35.6 -1.9**
THZ Tophouse 82.31 156 *e*P **P 23 20 35.9 -1.7**
comp=Z,538nm,1.6s
THZ LR LR
comp=Z,6µm,20.0s
A33A Warroad 82.32 34 P **P 23 20 36.4 -1.4**
baz=317,SNR=14
SMOL Smolenice 82.34 326 *e*P **P 23 20 39.4 +1.5**
SMOL Smolenice 82.34 326 *e*P **P 23 20 39.3 +1.4**
BZS Buzias 82.38 322‖*i*P **P 23 20 38.6 +0.5**
ANWZ Angora Road 82.39 153 PN **P 23 20 36.5 -1.5**
G28A Parade 82.40 39 P **P 23 20 37.3 -1.0**
baz=314,SNR=11
E30A Jud 82.41 37 P **P 23 20 37.6 -0.8**
baz=315,SNR=17
PV05 Paradox Valley 82.41 48 *e*P **P 23 20 39.3 +0.5**
F29A Eureka 82.42 38 P **P 23 20 37.9 -0.5**
baz=314,SNR=22
MVH1 Achvaich 82.43 342 *e*P **P 23 20 39.9 +1.8**
J26A Sides Ranch, S 82.46 41 P **P 23 20 37.8 -0.9**
baz=312,SNR=15
N23A Red Feather La 82.47 45 P **P 23 20 38.8 -0.3**
baz=311,SNR=50
N23A Red Feather La 82.47 45 *e*P **P 23 20 39.9 +0.8**
comp=Z,220nm,1.1s
N23A LR LR
comp=Z,6µm,20.0s
PHWY Pilot Hill 82.48 44 *e*P **P 23 20 40.0 +0.8**
comp=Z,112nm,1.4s
PHWY LR LR
comp=Z,7µm,20.0s
GOPC GO Pecny, Ondr 82.49 328 *e*P **P 23 20 39.0 +0.3**
GOPC *e*PP **PP 23 23 50.5 +3.4**
GOPC *e*S **S 23 30 51.2 -3.3**
GOPC AMS AMS 00 01 30.0
comp=Z,36µm,15.5s
GOPC GO Pecny, Ondr 82.49 328 *e*P **P 23 20 39.0 +0.3**
GOPC *e* 23 23 50.5
GOPC *e*S **S 23 30 51.2 -3.3**
GOPC MLR MLR
comp=Z,36µm,15.5s
MCD Coleburn Disti 82.49 341 *e*P **P 23 20 40.4 +1.9**
I27A Quinn 82.49 40 P **P 23 20 38.2 -0.7**
baz=313,SNR=15
TIM Timisoara 82.50 322⇑*i*P P 23 20 33.4 -5.3
BFZ Birch Farm 82.50 154 PN **P 23 20 36.9 -1.6**
BFZ Birch Farm 82.50 154 *e*P **P 23 20 37.2 -1.3**
comp=Z,211nm,1.3s
BFZ LR LR
comp=Z,8µm,20.0s
SNZO South Karori 82.51 155 *e*P **P 23 20 38.0 -0.5**
SNZO LR LR
comp=Z,10µm,20.0s
Y14A Wickenburg 82.51 54 *e*P **P 23 20 39.5 +0.3**
comp=Z,1µm,1.8s
Y14A LR LR
comp=Z,22µm,20.0s
MRMT Marmara Adasi 82.52 315 *e*P **P 23 20 40.1 +1.0**
PRA Prague 82.52 328 *e*P **P 23 20 39.4 +0.6**
PRA AMS AMS 00 01 50.0
comp=Z,28µm,15.3s
PRA Prague 82.52 328 *e*P **P 23 20 39.4 +0.6**
PRA MLR MLR
comp=Z,28µm,15.3s
EDC Edincik 82.53 315 *e*P **P 23 20 41.6 +2.5**
PRU Pruhonice 82.54 328 *e*P **P 23 20 39.3 +0.4**
PRU *e*PP **PP 23 23 50.7 +3.2**
PRU *e*S **S 23 30 52.6 -2.3**
PRU AMS AMS 00 01 40.0
comp=Z,31µm,14.8s
PRU Pruhonice 82.54 328 *e*P **P 23 20 39.3 +0.4**
PRU *e* 23 23 50.7
PRU *e*S **S 23 30 52.6 -2.3**
PRU MLR MLR
comp=Z,31µm,14.8s
ISP Isparta 82.56 311 *e*P **P 23 20 37.8 -1.6**
ISP Isparta 82.56 311 P **P 23 20 39.8 +0.4**
ISP Isparta 82.56 311 *e*P **P 23 20 39.8 +0.4**
ISP MLR MLR
comp=Z,12µm,20.0s
ISP Isparta 82.56 311 *e*P **P 23 20 39.8 +0.4**
ISP LR LR
comp=Z,12µm,20.0s
DST Dursunbey 82.57 314 *e*P **P 23 20 38.6 -0.8**
AGMN Agassiz Nation 82.57 34 P **P 23 20 38.2 -0.9**
baz=317,SNR=17
AGMN Agassiz Nation 82.57 34 *e*P **P 23 20 37.3 -1.8**
comp=Z,66nm,1.0s
AGMN LR LR
comp=Z,15µm,22.0s
CSS Mathiatis 82.59 308 *e*P **P 23 20 39.7 +0.3**
CSS Mathiatis 82.59 308 P **P 23 20 41.1 +1.6**
CSS Mathiatis 82.59 308 P **P 23 20 39.3 -0.2**
CSS Mathiatis 82.59 308 *e*P **P 23 20 39.3 -0.2**
comp=Z,30nm,1.0s
CSS LR LR
comp=Z,4µm,20.0s
WUAZ Wupatki 82.60 52 P **P 23 20 39.7 0.0**
baz=309,SNR=30
WUAZ Wupatki 82.60 52 *e*P **P 23 20 40.0 +0.3**
comp=Z,264nm,1.5s
WUAZ LR LR
comp=Z,9µm,20.0s
D31A Mcclaflin, Tow 82.60 36 P **P 23 20 38.5 -0.7**
baz=316,SNR=21
C32A Crookston 82.61 35 P **P 23 20 38.0 -1.3**
baz=316
H28A Mission Ridge 82.62 39 P **P 23 20 38.7 -0.8**
baz=314,SNR=32
TREC Trest 82.64 327 *e*P **P 23 20 39.8 +0.3**
TREC AMS AMS 00 03 40.0
comp=Z,29µm,18.0s
MTW Mount Morrison 82.65 154 PN **P 23 20 38.4 -0.9**
PV01 Paradox Valley 82.70 48 *e*P **P 23 20 40.2 0.0**
RKY Sarkoy-Tekirda 82.70 315 *e*P **P 23 20 42.0 +2.0**
PKSG 82.70 325 *e*P **P 23 20 41.9 +2.1**
B33A Robert and Kas 82.72 34 P **P 23 20 37.1 -2.8**
baz=317
113A Mohawk Valley, 82.72 55 *e*P **P 23 20 41.0 +0.8**
comp=Z,312nm,1.6s
113A LR LR
comp=Z,21µm,20.0s
BANR Banloc 82.79 322⇑*i*P **P 23 20 40.6 +0.4**
CSKK Cs¨ákako 82.79 325 *e*P **P 23 20 41.2 +1.0**
G29A Hoven 82.82 38 P **P 23 20 39.6 -0.9**
baz=314,SNR=14
F30A Leola 82.82 37 P **P 23 20 39.3 -1.1**

baz=315,SNR=12
KRBG Karabiga-Canak 82.83 315 *e*P P 23 20 38.6 -2.0
E31A Nome 82.87 36 P P 23 20 39.8 -0.9
baz=316,SNR=21
D32A Dogwood Acres, 82.87 36 P P 23 20 39.7 -1.0
baz=316,SNR=11
MDO Dochfour 82.90 342 *e*P P 23 20 42.4 +1.8
MDVR Moldovita 82.91 321⇑ *i*P P 23 20 41.1 +0.1
ALFC Alefka 82.94 308 P P 23 20 48.3 +7.0
FOZ Fox Glacier 82.95 159 *e*P P 23 20 41.4 +0.6
comp=Z,74nm,1.0s
FOZ LR LR
comp=Z,9μm,20.0s
PKST T''s 82.97 325⇑ *e*P P 23 20 41.4 +0.2
B34A Aery, Baudette 82.99 33 P P 23 20 40.0 -1.3
baz=318,SNR=15
SMCO Snowmass 82.99 46 *e*P P 23 20 42.5 +0.5
comp=Z,92nm,1.1s
SMCO LR LR
comp=Z,8μm,20.0s
SZAC Souni 83.00 308 P P 23 20 49.7 +8.1
I28A Midland 83.00 40 P P 23 20 41.1 -0.4
baz=314,SNR=13
C33A Trail 83.01 35 P P 23 20 40.0 -1.4
baz=317,SNR=15
LTZ Lake Taylor 83.02 157 *e*P P 23 20 42.1 +0.9
comp=Z,94nm,1.4s
LTZ LR LR
comp=Z,14μm,22.0s
RRH Rhenigidale 83.05 343 *e*P P 23 20 44.0 +2.7
H29A Onida 83.07 39 P P 23 20 40.9 -0.9
baz=314,SNR=17
J27A Elkhorn Farm, 83.07 41 P P 23 20 41.2 -0.7
baz=313,SNR=17
KAC Achnashellach 83.08 342 *e*P P 23 20 42.0 +0.5
ERIK Erikli-Kesan 83.09 316 *e*P P 23 20 46.2 +4.3
KHZ Kahutara 83.10 156 *e*P P 23 20 39.5 -2.1
comp=Z,235nm,1.6s
KHZ LR LR
comp=Z,8μm,18.0s
PGB Panagyurishte 83.15 318 *e*P P 23 20 43.6 +1.3
JCZ Jackson Bay 83.16 160 *e*PN P 23 20 43.1 +1.1
F31A Hecla 83.19 37 P P 23 20 41.4 -1.0
baz=315,SNR=9.6
ALN Alexandroupoli 83.21 316 *e*P P 23 20 45.1 +2.5
ALN Alexandroupoli 83.21 316 P P 23 20 41.7 -0.8
ALN Alexandroupoli 83.21 316 P P 23 20 41.7 -0.8
ALN Alexandroupoli 83.21 316 P P 23 20 41.7 -0.8
X16A Lo Mia Camp, P 83.23 52 *e*P P 23 20 43.6 +0.6
comp=Z,238nm,1.4s
X16A LR LR
comp=Z,8μm,20.0s
NKC Novy Kostel 83.24 329 *e*P P 23 20 42.8 +0.3
NKC *e*S S 23 30 59.8 -2.3
NKC AMS AMS 00 01 30.0
comp=Z,43μm,16.2s
NKC Novy Kostel 83.24 329 *e*P P 23 20 42.8 +0.3
NKC *e*S S 23 30 59.8 -2.3
NKC MLR MLR
comp=Z,43μm,16.2s
E32A Braaten, Kindr 83.24 36 P P 23 20 42.2 -0.3
baz=316
KULA Kula-Manisa 83.25 313 *e*P P 23 20 44.6 +1.7
KULA Kula-Manisa 83.25 313 P P 23 20 44.9 +2.0
KULA Kula-Manisa 83.25 313 P P 23 20 44.9 +2.0
ENEZ Enez 83.26 316 *e*P P 23 20 47.0 +4.3
ENEZ Enez 83.26 316 P P 23 20 42.5 -0.3
G30A Faulkton 83.26 38 P P 23 20 41.7 -1.0
baz=315,SNR=20
GELI Tayfur-Gelibol 83.30 315 *e*P P 23 20 44.6 +1.6
KPL Plockton 83.31 342 *e*P P 23 20 44.9 +2.2
KPL AMS AMS 23 56 39.6
comp=Z,11μm,22.1s
MVCO Mesa Verde 83.33 49 P P 23 20 43.0 -0.6
baz=310,SNR=47
MVCO Mesa Verde 83.33 49 *e*P P 23 20 44.3 +0.7
comp=Z,157nm,1.3s
MVCO LR LR
comp=Z,6μm,20.0s
EDU Dundee 83.33 341 *e*P P 23 20 43.9 +1.0
PKS9 Tamasi 83.34 324 *e*P P 23 20 43.2 +0.1
SOP Sopron 83.35 326 *e*P P 23 20 43.6 +0.5
J28A Allard Ranch, 83.37 40 P P 23 20 42.0 -1.4
baz=314
KSB Sheil Bridge 83.37 342 *e*P P 23 20 45.3 +2.3
ISCO Idaho Springs 83.38 45 P P 23 20 43.2 -0.7
baz=311,SNR=24
ISCO Idaho Springs 83.38 45 *e*P P 23 20 44.2 +0.3
ISCO pmax pmax
comp=Z,103nm,1.4s
ISCO MLR MLR
comp=Z,6μm,20.0s
ISCO Idaho Springs 83.38 45 *e*P P 23 20 44.2 +0.3
comp=Z,103nm,1.4s
ISCO LR LR
comp=Z,6μm,20.0s
D33A AnnSam, Waubun 83.42 35 P P 23 20 40.8 -2.8
baz=317
OXZ Oxford 83.44 158 *e*P P 23 20 43.9 +0.6
comp=Z,121nm,1.1s
OXZ LR LR
comp=Z,11μm,20.0s
I29A Vivian Onida 83.44 39 P P 23 20 42.6 -1.1
baz=314,SNR=19
C34A RKJ Ranch, Bem 83.48 34 P P 23 20 41.5 -2.3
baz=317
CONA Conrad Observa 83.49 326 *i* P P 23 20 44.1 +0.2
comp=Z,189nm,1.7s,SNR=46
RPZ Rata Peaks 83.49 158 *e*P P 23 20 44.4 +0.8
comp=Z,72nm,1.2s
B35A Bob, Littlefor 83.49 33 P P 23 20 43.2 -0.7
baz=318,SNR=11
AKS Akhisar 83.52 314 *e*P P 23 20 43.1 -1.1
DENT Denizli 83.52 312 *e*P P 23 20 38.4 -5.9
KHC Kasperske Hory 83.60 328 *e*P P 23 20 43.6 -0.8
KHC *e*pP PcP 23 20 47.0 -1.7
KHC *e*sP sP 23 20 54.0 +2.0
KHC *ex* x 23 23 46.5
KHC *e*PP PP 23 24 00.0 +3.7
KHC *e*S S 23 31 04.1 -1.7
KHC AMS AMS 00 02 10.0
comp=Z,38μm,15.3s
KHC Kasperske Hory 83.60 328 *e*P P 23 20 43.6 -0.8
KHC *e* 23 20 47.0
KHC *e* 23 20 54.0
KHC *e* 23 24 00.0
KHC *e*S S 23 31 04.1 -1.7
KHC MLR MLR
comp=Z,38μm,15.3s
KHC Kasperske Hory 83.60 328 *e*P P 23 20 43.6 -0.8
comp=Z,44nm,1.0s
KHC LR LR
comp=Z,11μm,18.0s
NRS Narsarsuaq 83.62 3 *i* P P 23 20 45.0 +0.8
NRS pmax pmax
comp=Z,510nm,2.1s
ELL Elmali 83.62 311 *e*P P 23 20 45.6 +0.7
VTS Vitosha 83.64 319⇑ *i*P P 23 20 43.9 -1.0
VTS Vitosha 83.64 319 P P 23 20 44.8 -0.1
VTS Vitosha 83.64 319 *e*P P 23 20 44.8 -0.1
VTS MLR MLR
comp=Z,22μm,18.0s
VTS Vitosha 83.64 319 *e*P P 23 20 43.1 -1.8
VTS Vitosha 83.64 319 *e*P P 23 20 44.8 -0.1
VTS LR LR
comp=Z,22μm,18.0s
G31A Conde 83.66 38 P P 23 20 43.0 -1.8
baz=315
F32A Veblen 83.73 37 P P 23 20 44.3 -0.9
baz=316,SNR=10
GEC2 GERESS Array S 83.76 328 *e*P P 23 20 44.2 -1.2
GEC2 pmax pmax
comp=Z,73nm,1.1s
GEC2 MLR MLR
comp=Z,26μm,19.0s
GEC2 GERESS Array S 83.76 328 *e*P P 23 20 44.1 -1.2
comp=Z,72nm,1.1s
GEC2 LR LR
comp=Z,26μm,19.0s
GERES GERESS Array B 83.76 328 P P 23 20 45.2 -0.2
comp=Z,25nm,1.0s,baz=46,slow=5.8,SNR=36
GERES PKKPbc **PKKPbc** 23 39 02.5 +1.2
comp=Z,0.3nm,0.5s,baz=18,slow=0.4,SNR=4.0
GERES PKPPKP **P'P'df** 23 47 06.6 -6.5
comp=Z,0.4nm,0.7s,baz=123,slow=4.9,SNR=3.5
GERES LR LR 00 00 29.7
comp=Z,23μm,20.2s,baz=18,slow=37
EZN Ezine 83.76 315 *e*P P 23 20 45.6 +0.3
EZN Ezine 83.76 315 P P 23 20 45.9 +0.5
EZN Ezine 83.76 315 *e*P P 23 20 45.9 +0.5
EZN Ezine 83.76 315 *e*P P 23 20 45.9 +0.5
GADA Gvkgeada 83.76 316 *e*P P 23 20 48.0 +2.6
GADA Gvkgeada 83.76 316 P P 23 20 41.8 -3.6
GADA Gvkgeada 83.76 316 P P 23 20 41.8 -3.6
GEA0 GERESS Array S 83.77 328 *e*P P 23 20 43.5 -1.9
D34A Park Rapids 83.77 35 P P 23 20 43.6 -1.7
baz=317,SNR=10.0
ESY Stoneypath 83.78 340 *e*P P 23 20 47.1 +1.9
SMTH Samothraki Isl 83.79 316 P P 23 20 43.5 -2.0
SMTH Samothraki Isl 83.79 316 *e*P P 23 20 43.5 -2.0
E33A Westby DABS, E 83.81 36 P P 23 20 44.6 -0.9
baz=317,SNR=18
SUSD Miller 83.84 38 P P 23 20 44.7 -1.0
baz=315,SNR=9.5
LBZ Lake Benmore 83.84 159 *e*P P 23 20 45.0 -0.4
comp=Z,416nm,1.9s
LBZ LR LR
comp=Z,7μm,21.0s
CRLZ Canterbury Las 83.84 157 *e*P P 23 20 47.1 +1.7
comp=Z,143nm,1.3s
CRLZ LR LR
comp=Z,9μm,20.0s
214A Organ Pipe Nat 83.85 55 P P 23 20 45.9 -0.2
baz=308
J29A Okreek 83.86 40 P P 23 20 46.0 +0.1
baz=314
C35A Jirik Farms, M 83.87 34 P P 23 20 44.3 -1.6
baz=318,SNR=17
W18A Petrified Fore 83.89 51 P P 23 20 46.0 -0.4
baz=310
W18A Petrified Fore 83.89 51 *e*P P 23 20 47.8 +1.4
comp=Z,147nm,1.4s
W18A LR LR
comp=Z,11μm,21.0s
WKZ Wanaka 83.92 160 PFAKE 23 21 00.0 +14
WKZ LR LR
comp=Z,13μm,20.0s
DKL Dikili 83.92 314 *e*P P 23 20 46.3 +0.1
I30A Oacoma 83.97 39 P P 23 20 45.5 -0.9
baz=315,SNR=15
MQZ McQueen's Vall 83.97 157 *e*P P 23 20 48.2 +2.2
comp=Z,245nm,1.7s
MQZ LR LR
comp=Z,9μm,19.0s
G32A Webster 83.99 37 P P 23 20 45.7 -0.8
baz=316,SNR=15
S22A 4UR Ranch, Cre 84.00 47 P P 23 20 46.9 -0.2
baz=311,SNR=53
S22A 4UR Ranch, Cre 84.00 47 *e*P P 23 20 48.2 +1.2
comp=Z,203nm,1.4s
S22A LR LR
comp=Z,6μm,20.0s
EAB Aberfoyle 84.00 341 *e*P P 23 20 47.8 +1.5
KAVA Kavala 84.00 317 P P 23 20 46.3 -0.3
KAVA Kavala 84.00 317 *e*P P 23 20 46.3 -0.3
DCZ Deep Cove 84.01 162 PFAKE 23 21 00.0 +14
DCZ LR LR
comp=Z,7μm,22.0s
MMB Musomiste 84.04 318 *e*P P 23 20 46.9 +0.1
H31A Wolsey 84.05 38 P P 23 20 47.4 +0.6
baz=315
AYDB Zeytinkoy-Aydi 84.08 313 *e*P P 23 20 47.4 +0.1
PMOR Pomariorio Ree 84.08 113 *e*P P 23 20 49.3 +2.1
comp=Z,316nm,1.4s
PMOR Pomariorio Ree 84.08 113 *e*T T 00 53 05.6
comp=Z,327nm,0.2s
X18A Snowflake 84.12 52 PFAKE 23 21 00.0 +12
X18A LR LR
comp=Z,10μm,20.0s
NVR Nevrokopi 84.13 318 P P 23 20 46.9 -0.4
NVR Nevrokopi 84.13 318 P P 23 20 46.9 -0.4
BEHE Becsehely 84.14 325⇓ *e*P P 23 20 53.6 +6.4
ARSA Arzberg 84.14 326 *i* P P 23 20 46.8 -0.5
comp=Z,85nm,1.1s,SNR=33
F33A 5 Mile Ranch, 84.16 36 P P 23 20 46.2 -1.1
baz=317,SNR=34
IZM Izmir 84.16 314 *e*P P 23 20 46.7 -0.8
GRFO Grafenberg 84.16 330 *e*P P 23 20 46.7 -0.6
GRFO pmax pmax
comp=Z,455nm,1.4s
GRFO MLR MLR
comp=Z,23μm,20.0s
GRFO Grafenberg 84.16 330 *e*P P 23 20 46.6 -0.6
comp=Z,455nm,1.4s
GRFO LR LR
comp=Z,23μm,20.0s
MLZ Mavora Lakes 84.17 161 *e*P P 23 20 47.9 +0.8
comp=Z,87nm,1.4s
MLZ LR LR
comp=Z,10μm,19.0s
PRK Paraskevi 84.18 315 P P 23 20 47.2 -0.3
PRK Paraskevi 84.18 315 P P 23 20 47.2 -0.3
PRK Paraskevi 84.18 315 P P 23 20 47.2 -0.3
E34A Wadena 84.20 35 P P 23 20 46.2 -1.4
baz=317
Q24A Divide 84.20 46 P P 23 20 47.4 -0.7
baz=312,SNR=24
Q24A Divide 84.20 46 *e*P P 23 20 49.1 +1.0
comp=Z,50nm,0.9s
Q24A LR LR
comp=Z,8μm,19.0s
FETY Fethiye 84.20 311 *e*P P 23 20 49.1 +1.3
FETY Fethiye 84.20 311 P P 23 20 48.0 +0.2
FETY Fethiye 84.20 311 *e*P P 23 20 48.0 +0.2
MOA Molln 84.26 327 *i* P P 23 20 47.7 -0.1
comp=Z,105nm,1.1s,SNR=32
BLCB Balcova 84.29 314 *e*P P 23 20 50.4 +2.2
D35A Remer 84.30 34 P P 23 20 46.8 -1.2
baz=318,SNR=12
C36A Pine Crest Far 84.34 33 P P 23 20 46.9 -1.3
baz=319,SNR=11
I31A Royce, Wessing 84.34 39 P P 23 20 46.0 -2.3
baz=315
J30A Dallas 84.35 40 P P 23 20 48.0 -0.4
baz=315
LIA Limnos Island 84.37 316 P P 23 20 47.3 -1.2
LIA Limnos Island 84.37 316 P P 23 20 47.3 -1.2
YER Yerkesik 84.37 312 *e*P P 23 20 50.4 +1.7
YER Yerkesik 84.37 312 P P 23 20 49.2 +0.6
YER Yerkesik 84.37 312 *e*P P 23 20 49.2 +0.6
YER Yerkesik 84.37 312 *e*P P 23 20 49.2 +0.6
PGBU Glenifferbraes 84.37 341 *e*P P 23 20 49.3 +1.1
VAH Vaihoa 84.42 113 *e*P P 23 20 50.8 +1.8
comp=Z,156nm,1.4s
SRS Serrai 84.43 317 P P 23 20 48.0 -0.8
SRS Serrai 84.43 317 *e*P P 23 20 48.0 -0.8
SRS Serrai 84.43 317 *e*P P 23 20 48.0 -0.8
SIGR SIGRI 84.44 315 *e*P P 23 20 51.0 +2.1
SIGR SIGRI 84.44 315 P P 23 20 48.3 -0.6
SIGR SIGRI 84.44 315 *e*P P 23 20 48.3 -0.6
PPT Papeete 84.44 116 LR LR 23 59 51.5
comp=Z,6μm,18.1s,baz=301,slow=37
PPT2 Papeete2 84.46 116 *e*P P 23 20 51.5 +2.3
comp=Z,157nm,1.3s
PPT2 Papeete2 84.46 116 *e*S S 23 31 10.9 -4.3
comp=Z,10μm,34.5s
PPT2 Papeete2 84.46 116 *e*LQ LQ 23 43 13.5
comp=Z,25μm,29.8s
PPT2 *e*LR LR 23 45 53.7
comp=Z,15μm,30.5s,baz=315
PPT2 Papeete2 84.46 116 *e*T T 00 53 35.9
comp=Z,59nm,0.3s
ESK Eskdalemuir 84.47 340 *e*P P 23 20 51.0 +2.3
ESK pmax pmax
comp=Z,256nm,1.8s
ESK MLR MLR
comp=Z,35μm,18.0s
ESK Eskdalemuir 84.47 340 *e*P P 23 20 51.0 +2.3
comp=Z,256nm,1.8s
ESK LR LR
comp=Z,35μm,18.0s
HRFI Mount Harif 84.47 303 *e*P P 23 20 51.5 +2.2
PAE Paea 84.50 116 *e*T T 00 53 38.4
comp=Z,10nm,0.3s
E35A Pequot Lakes 84.52 35 P P 23 20 48.8 -0.4
baz=318
PYZ Puysegur Point 84.54 162 *e*P P 23 20 53.5 +4.6
comp=Z,135nm,1.1s
PYZ LR LR
comp=Z,6μm,21.0s
G33A Ortonville 84.55 37 P P 23 20 48.3 -1.0
baz=317,SNR=37
H32A Carlson Farm, 84.56 38 P P 23 20 48.5 -0.9
baz=316
ODZ Otahua Downs 84.58 159 *e*P P 23 20 48.9 -0.2
comp=Z,178nm,1.5s
ODZ LR LR
comp=Z,6μm,20.0s
TIAR Tiarei 84.61 116 *e*T T 00 53 46.3
comp=Z,47nm,0.3s
WHZ Wether Hill Ro 84.61 161 PFAKE 23 21 00.0 +11
WHZ LR LR
comp=Z,9μm,19.0s
D36A Goodland 84.63 34 P P 23 20 48.4 -1.3
baz=319,SNR=5.1
OGNE Ogallala 84.64 43 P P 23 20 50.0 0.0
baz=313
OGNE Ogallala 84.64 43 *e*P P 23 20 51.6 +1.6
comp=Z,359nm,1.5s
C37A Embarrass 84.65 33 P P 23 20 48.6 -1.2
baz=319,SNR=12
BHH Howats Hill 84.67 340 *e*P P 23 20 52.0 +2.3
F34A Alexandria 84.68 36 P P 23 20 49.1 -0.9
baz=317,SNR=10
BWH Wardlaw 84.71 340 *e*P P 23 20 52.1 +2.2
K30A Basset 84.74 40 P P 23 20 50.0 -0.4
baz=315
OUR Ouranopolis 84.75 317 *e*P P 23 20 53.4 +3.0
OUR Ouranopolis 84.75 317 P P 23 20 52.2 +1.8
OUR Ouranopolis 84.75 317 *e*P P 23 20 52.2 +1.8
OUR Ouranopolis 84.75 317 *e*P P 23 20 52.2 +1.8
EIL Elat 84.76 303 *e*P P 23 20 53.0 +2.4
J31A Geddes 84.76 39 P P 23 20 49.6 -0.9
baz=315
SOH Sokhos 84.77 317 P P 23 20 50.3 -0.3
SOH Sokhos 84.77 317 *e*P P 23 20 50.3 -0.3
SOH Sokhos 84.77 317 *e*P P 23 20 50.3 -0.3
H33A Prehn Over Nor 84.78 37 P P 23 20 49.9 -0.6
baz=316,SNR=40
KNT Kendrikon 84.78 318 *e*P P 23 20 54.3 +3.7
KNT Kendrikon 84.78 318 P P 23 20 49.8 -0.8
KNT Kendrikon 84.78 318 P P 23 20 49.8 -0.8
KNT Kendrikon 84.78 318 P P 23 20 49.8 -0.8
PERS Pernice 84.78 326 *e*P P 23 20 49.0 -1.6
comp=Z,716nm,1.8s
PERS *e*S S 23 31 09.4 -8.4
PERS *e* 23 32 05.2
EYMN Ely 84.79 32 P P 23 20 50.0 -0.4
baz=320
EYMN Ely 84.79 32 *e*P P 23 20 49.0 -1.5
comp=Z,105nm,1.0s
EYMN LR LR
comp=Z,9μm,18.0s
SOKA Soboth 84.79 326 *i* P P 23 20 49.8 -0.8
comp=Z,215nm,1.1s,SNR=157
SDCO Great Sand Dun 84.80 47 P P 23 20 50.2 -0.9
baz=312,SNR=94
SDCO Great Sand Dun 84.80 47 *e*P P 23 20 50.5 -0.6
comp=Z,102nm,1.1s
SDCO LR LR
comp=Z,7μm,20.0s
VAY Valandovo 84.85 318 P P 23 20 50.4 -0.5
VAY Valandovo 84.85 318 *i* P P 23 20 51.4 +0.5
VAY Valandovo 84.85 318 *e*P P 23 20 50.4 -0.5
VAY Valandovo 84.85 318 *e*P P 23 20 50.4 -0.5
SMG Samos 84.86 313 P P 23 20 52.9 +1.8
SMG Samos 84.86 313 P P 23 20 52.9 +1.8
I32A Karley and Nic 84.89 38 P P 23 20 47.8 -3.3
baz=316
G34A Benson 84.91 36 P P 23 20 50.3 -0.8
baz=317,SNR=28
F35A Swanville 84.96 35 P P 23 20 50.2 -1.2
baz=318,SNR=14
D37A Cotton 84.97 33 P P 23 20 50.5 -1.0
baz=319,SNR=9.2
TUC Tucson 84.98 54 P P 23 20 49.6 -2.2
baz=309
TUC Tucson 84.98 54 *e*P P 23 20 51.1 -0.8
TUC pmax pmax
comp=Z,158nm,1.4s
TUC MLR MLR
comp=Z,20μm,20.0s
TUC Tucson 84.98 54 *e*P P 23 20 51.1 -0.8
comp=Z,158nm,1.4s
TUC LR LR
comp=Z,20μm,20.0s
BODT Bodrum 85.00 313 *e*P P 23 20 52.9 +1.1
BODT Bodrum 85.00 313 P P 23 20 50.8 -1.0
BODT Bodrum 85.00 313 *e*P P 23 20 50.8 -1.0
SKO Skopje 85.01 319 P P 23 20 51.6 -0.1
SKO Skopje 85.01 319 *i* P P 23 20 52.8 +1.1
SKO Skopje 85.01 319 *e*P P 23 20 51.6 -0.1
SKO Skopje 85.01 319 *e*P P 23 20 51.6 -0.1
PLG Polygyros 85.02 317 P P 23 20 52.0 +0.2
PLG Polygyros 85.02 317 P P 23 20 52.0 +0.2
PLG Polygyros 85.02 317 P P 23 20 52.0 +0.2
C38A Sawbill Land. 85.06 32 P P 23 20 51.0 -0.9
baz=320,SNR=14
HORT Hortiatis 85.06 317 P P 23 20 52.6 +0.5
HORT Hortiatis 85.06 317 P P 23 20 52.6 +0.5
ARG Arkhangelos 85.06 311 P P 23 20 53.5 +1.4
ARG Arkhangelos 85.06 311 P P 23 20 53.5 +1.4
ARG Arkhangelos 85.06 311 P P 23 20 53.5 +1.4
KESW Keswick, Cumbr 85.08 340 *e*P P 23 20 54.3 +2.5
KESW AMB AMB 23 21 00.9
comp=Z,232nm,1.6s
E36A McGregor 85.08 34 P P 23 20 51.4 -0.6
baz=319,SNR=16
THE Thessaloniki 85.11 317 P P 23 20 51.4 -0.8
THE Thessaloniki 85.11 317 *e*P P 23 20 51.4 -0.8
THE Thessaloniki 85.11 317 *e*P P 23 20 51.4 -0.8
TUZ Tuzpeka 85.12 160 *e*PN P 23 20 51.6 -0.2
PLE Pljevlja 85.12 321⇑ *i*P P 23 20 52.7 +0.3
OBKA Obir 85.14 326 *i* P P 23 20 52.1 -0.3
comp=Z,44nm,1.0s,SNR=14
J32A Parkston 85.16 39 P P 23 20 50.2 -2.3
baz=316
IVA Berane 85.19 321⇑ *i*P P 23 20 53.2 +0.5
GRG Griva 85.20 318 P P 23 20 51.6 -1.1
GRG Griva 85.20 318 *e*P P 23 20 51.6 -1.1
GRG Griva 85.20 318 *e*P P 23 20 51.6 -1.1
HPK Haverah Park 85.20 339 *e*P P 23 20 52.8 +0.4
HPK AMS AMS 00 00 11.8
comp=Z,22μm,22.3s
PAIG Paliouri 85.20 317 P P 23 20 51.4 -1.3
PAIG Paliouri 85.20 317 *e*P P 23 20 51.4 -1.3
PAIG Paliouri 85.20 317 *e*P P 23 20 51.4 -1.3
I33A Coleman 85.20 38 P P 23 20 51.8 -0.9
baz=316
K31A O'Neill 85.23 40 P P 23 20 52.4 -0.4
baz=315
KBA Koelnbreinsper 85.25 327 *i* PcP P 23 20 53.0 -0.1
comp=Z,147nm,1.4s,SNR=20
H34A Spellman Lake, 85.26 37 P P 23 20 51.6 -1.3
baz=317
GAL1 Galloway 85.27 341 *e*P P 23 20 54.5 +1.8
PVY Plav 85.35 320⇑ *i*P P 23 20 53.5 -0.1
E37A Wrenshall 85.44 34 P P 23 20 50.9 -2.8
baz=319
BEBN Eben Emael 85.44 333 P P 23 20 53.8 +0.2
comp=Z,43nm,1.1s
F36A Milaca 85.45 35 P P 23 20 52.6 -1.2
baz=318,SNR=5.6
MYKA Terra Mystica 85.46 327 *i* P P 23 20 52.9 -1.1
comp=Z,43nm,0.7s,SNR=23
UPM Unac-Piva 85.46 321⇑ *i*P P 23 20 53.8 -0.4
MEM Membach 85.47 333 P P 23 20 53.6 -0.2
comp=Z,70nm,1.2s
G35A Watkins 85.47 36 P P 23 20 53.1 -0.9
baz=318
C39A Grand Marais 85.48 32 P P 23 20 51.6 -2.4
baz=321
LJU Ljubljana 85.50 326 *e*P P 23 20 53.9 -0.2
LJU *e*PP PP 23 24 15.6 +3.8
LJU *e*S S 23 31 15.3 -10
L31A Butterfield Fa 85.50 40 P P 23 20 53.3 -0.9
baz=315
ECSD EROS Data Cent 85.53 38 P P 23 20 53.2 -1.1
baz=317,SNR=34
ECSD EROS Data Cent 85.53 38 *e*P P 23 20 53.2 -1.1
comp=Z,70nm,0.9s
ECSD LR LR
comp=Z,10μm,18.0s
BOJS Bojanci 85.57 325 *e*P P 23 20 54.7 +0.3
comp=Z,817nm,2.9s
BOJS *e*S S 23 31 16.0 -10

BOJS eSS **SS** 23 37 07.7 +7.8
AOS Alonnisos 85.60 316 P **P** 23 20 53.0 -1.7
AOS Alonnisos 85.60 316 eP **P** 23 20 53.0 -1.7
K32A Verdigre 85.61 39 P **P** 23 20 53.8 -0.9
baz=316
KSCO Kaye Shedlock' 85.62 44 P **P** 23 20 54.5 -0.5
baz=313
KSCO Kaye Shedlock' 85.62 44 eP **P** 23 20 56.4 +1.4
comp=Z,278nm,1.2s
KSCO LR LR
comp=Z,7µm,21.0s
LHO Holmfirth 85.62 339 eP **P** 23 20 54.5 0.0
J33A Davis 85.65 38 P **P** 23 20 54.5 -0.4
baz=316
I34A Hadley 85.68 37 P **P** 23 20 54.0 -1.1
baz=317,SNR=14
H35A Sunnyside Ranc 85.69 36 P **P** 23 20 54.3 -0.8
baz=318,SNR=29
NKY Niksic 85.70 321⇑ iP **P** 23 20 54.9 -0.3
STU Stuttgart 85.71 330 eP **P** 23 20 55.4 +0.4
STU pmax pmax
comp=Z,200nm,1.0s
STU MLR MLR
comp=Z,24µm,22.0s
STU Stuttgart 85.71 330 eP **P** 23 20 55.4 +0.4
comp=Z,200nm,1.0s
STU LR LR
comp=Z,24µm,22.0s
BIA Bitola 85.74 319 P P 23 21 00.5 +5.1
BIA Bitola 85.74 319 eP **P** 23 20 56.3 +0.8
BIA Bitola 85.74 319 P P 23 21 00.5 +5.1
LIT Litokhoron 85.74 317 P **P** 23 20 55.2 -0.2
LIT Litokhoron 85.74 317 eP **P** 23 20 55.2 -0.2
LIT Litokhoron 85.74 317 eP **P** 23 20 55.2 -0.2
MEH Mehetia 85.75 115 eT T 00 55 12.0
comp=Z,492nm,0.2s
G36A St. Michael 85.81 35 P **P** 23 20 55.7 +0.1
baz=318
JAVS Javornik 85.83 326 i P **P** 23 20 53.0 -2.8
JAVS eS S 23 31 17.6 -11
WATA Walderalm 85.83 328 i P **P** 23 20 55.1 -0.8
comp=Z,33nm,0.8s,SNR=7.7
PDG Podgorica 85.83 321 P **P** 23 20 55.2 -0.6
TTG Podgorica 85.83 321⇑ iP **P** 23 20 55.8 0.0
TTG Podgorica 85.83 321 P **P** 23 20 55.2 -0.6
TTG Podgorica 85.83 321 P **P** 23 20 55.2 -0.6
SKIA Skiathos 85.84 316 P **P** 23 20 55.3 -0.6
T25A Trinidad 85.85 47 P **P** 23 20 55.8 -0.5
baz=312,SNR=57
T25A Trinidad 85.85 47 eP **P** 23 20 55.9 -0.4
comp=Z,219nm,1.3s
T25A LR LR
comp=Z,6µm,19.0s
XOR Xorichti 85.86 316 P P 23 20 50.3 -5.7
XOR Xorichti 85.86 316 P P 23 20 50.3 -5.7
WTTA Wattenberg 85.86 328 i PcP **P** 23 20 56.5 +0.4
comp=Z,38nm,1.0s
BRY Bratogost 85.86 321⇑ iP **P** 23 20 55.2 -0.9
ABTA Abfaltersbach 85.88 327 i P **P** 23 20 54.5 -1.5
comp=Z,55nm,1.1s,SNR=38
FNA Florina 85.88 318 P **P** 23 20 55.1 -1.0
FNA Florina 85.88 318 P **P** 23 20 55.1 -1.0
FNA Florina 85.88 318 P **P** 23 20 55.1 -1.0
NEO Neokhori 85.88 316 P P 23 21 01.1 +5.0
NEO Neokhori 85.88 316 P P 23 21 01.1 +5.0
BCLA Clavier 85.89 333 P **P** 23 20 56.0 +0.1
comp=Z,82nm,1.3s
WIM Isle of Man 85.90 340 eP **P** 23 20 57.6 +1.7
OHR Ohrid 85.96 319 i P **P** 23 20 58.8 +2.3
FYTO Fytoko, Volos 85.97 317 P **P** 23 20 55.2 -1.3
FYTO Fytoko, Volos 85.97 317 eP **P** 23 20 55.2 -1.3
LAZ Ladron 85.99 50 eP **P** 23 20 57.6 +0.7
KZN Kozani 86.00 318 P **P** 23 20 55.1 -1.6
KZN Kozani 86.00 318 P **P** 23 20 55.1 -1.6
KZN Kozani 86.00 318 P **P** 23 20 55.1 -1.6
M31A Lambtecht Ranc 86.02 41 P **P** 23 20 55.9 -0.9
baz=315
MOTA Moosalm 86.03 328 i PcP **P** 23 20 56.5 -0.3
comp=Z,49nm,1.2s,SNR=19
ANMO Albuquerque 86.06 49 P **P** 23 20 57.3 0.0
baz=311
ANMO Albuquerque 86.06 49 eP **P** 23 20 56.7 -0.6
ANMO pmax pmax
comp=Z,104nm,1.3s
ANMO MLR MLR
comp=Z,8µm,20.0s
ANMO Albuquerque 86.06 49 eP **P** 23 20 56.7 -0.6
comp=Z,104nm,1.3s
ANMO LR LR
comp=Z,8µm,20.0s
L32A Elgin 86.06 40 P **P** 23 20 56.6 -0.4
baz=316
RETA Reutte 86.06 329 i PcP **P** 23 20 57.7 +0.8
comp=Z,112nm,1.2s,SNR=56
KARP Karpathos 86.09 311 PFAKE 23 21 10.0 +13
KARP LR LR
comp=Z,4µm,19.0s
LANF Langenberg 86.10 331⇑ eP **P** 23 20 57.3 +0.3
TRI Trieste 86.10 326 eP **P** 23 20 56.2 -0.8
TRI pmax pmax
comp=Z,81nm,1.0s
TRI MLR MLR
comp=Z,37µm,18.0s
TRI Trieste 86.10 326 eP **P** 23 20 56.2 -0.8
comp=Z,81nm,1.0s
TRI LR LR
comp=Z,37µm,18.0s
BUM Brajici-Budva 86.11 321 eP **P** 23 20 57.9 +0.6
STNC Stoke 86.12 339 eP **P** 23 20 57.5 +0.5
STNC AMS AMS 00 01 27.0
comp=Z,22µm,21.9s
K33A Hardington 86.14 39 P **P** 23 20 56.0 -1.4
baz=316
CWF Charnwood Fore 86.16 338 eP **P** 23 20 56.7 -0.4
CWF AMS AMS 23 59 02.0
comp=Z,13µm,27.4s
CWF Charnwood Fore 86.16 338 eP **P** 23 20 57.4 +0.2
comp=Z,117nm,0.9s
CWF LR LR
comp=Z,14µm,18.0s
GMM Mts of Mourne 86.16 341 eP **P** 23 20 57.6 +0.5
ULC Ulcinj 86.17 320⇑ iP **P** 23 20 57.7 +0.2
J34A George 86.18 38 P **P** 23 20 56.6 -0.9
baz=317
SMIA Simia 86.18 316 P P 23 20 43.2 -14
SNF Seneffe 86.18 334 P **P** 23 20 57.4 0.0
WLF Walferdange 86.19 332 P **P** 23 20 56.5 -0.9
comp=Z,128nm,2.2s
WLF Walferdange 86.19 332 eP **P** 23 20 58.4 +1.0
WLF pmax pmax
comp=Z,229nm,1.3s
WLF MLR MLR
comp=Z,35µm,20.0s
WLF Walferdange 86.19 332 eP **P** 23 20 58.4 +1.0
comp=Z,229nm,1.3s
WLF LR LR
comp=Z,35µm,20.0s
HCY Herceg Novi 86.22 321⇑ iP **P** 23 20 57.5 -0.2
H36A Jessenland, He 86.22 36 P **P** 23 20 56.7 -0.9
baz=318,SNR=11
I35A Creekview Farm 86.24 37 P **P** 23 20 56.4 -1.4
baz=318
SPMN Marine on St. 86.26 35 P **P** 23 20 57.4 -0.4
baz=319
SPMN Marine on St. 86.26 35 eP **P** 23 20 58.0 +0.1
comp=Z,68nm,0.9s
SPMN LR LR
comp=Z,15µm,22.0s
TIR Tirane 86.29 320 PFAKE 23 21 10.0 +12
TIR LR LR
comp=Z,35µm,20.0s
NEST Nestorio 86.31 318 P **P** 23 20 59.5 +1.2
L33A Hoskins 86.32 39 P **P** 23 20 56.9 -1.4
baz=316
Y22D IRIS PASSCAL I 86.34 50 P **P** 23 20 59.2 +0.5
baz=311
Y22D IRIS PASSCAL I 86.34 50 PFAKE 23 21 10.0 +11
Y22D LR LR
comp=Z,14µm,19.0s
TAOE Nuku Hiva Isla 86.35 103 eS **S** 23 31 27.7 -6.5
comp=Z,6µm,26.2s
TAOE eSS **SS** 23 37 13.0 -1.2
comp=Z,2µm,24.0s
TAOE eLQ LQ 23 44 17.9
comp=Z,23µm,28.4s
TAOE eLR LR 23 47 44.6
comp=Z,19µm,32.6s,baz=314
LPM Los Pinos Moun 86.36 50 eP **P** 23 20 59.8 +1.0
THL Klokotos Trika 86.38 317 P **P** 23 21 00.3 +1.8
N31A Bailey Ranch, 86.40 41 P **P** 23 20 57.8 -0.9
baz=315
BFO Black Forest 86.41 330 eP **P** 23 20 56.6 -1.9
BFO pmax pmax
comp=Z,172nm,1.1s
BFO MLR MLR
comp=Z,24µm,18.0s
BFO Black Forest 86.41 330 eP **P** 23 20 56.6 -1.9
comp=Z,172nm,1.1s
BFO LR LR
comp=Z,24µm,18.0s
BGNE Belgrade 86.41 40 P **P** 23 20 57.3 -1.4
baz=316
BGNE Belgrade 86.41 40 eP **P** 23 20 58.5 -0.2
comp=Z,339nm,1.0s
BGNE LR LR
comp=Z,10µm,18.0s
DOU Dourbes 86.41 333 P **P** 23 20 58.4 0.0
STR Strasbourg 86.43 331⇑ eP **P** 23 21 01.2 +2.6
FETA Feichten 86.44 328 i PcP **P** 23 20 59.5 +0.6
comp=Z,58nm,1.5s,SNR=26
LKR Lokris 86.46 316 P **P** 23 20 57.4 -1.5
LKR Lokris 86.46 316 P **P** 23 20 57.4 -1.5
WME Myndd Eilian 86.46 340 eP **P** 23 20 58.6 0.0
KPRO Kipourio 86.46 318 P **P** 23 20 59.5 +0.4
BNM Barren Site 86.47 50 eP **P** 23 20 59.9 +0.5
WPM1 Penmaenmawr 86.47 340 eP **P** 23 21 00.9 +2.1
ATHU Athens Univers 86.48 315 P **P** 23 21 01.7 +2.6
ATHU Athens Univers 86.48 315 eP **P** 23 21 01.7 +2.6
J35A Milford 86.49 37 P **P** 23 20 58.2 -0.9
baz=318
K34A Le Mars 86.55 38 P **P** 23 20 58.4 -0.9
baz=317
319A Douglas 86.56 54 eP **P** 23 21 00.8 +1.1
comp=Z,86nm,0.9s
319A LR LR
comp=Z,22µm,20.0s
SANT Santorini 86.57 313 PFAKE 23 21 10.0 +10
SANT LR LR
comp=Z,16µm,20.0s
WLF1 Llynfaes 86.58 340 eP **P** 23 20 57.0 -2.2
WLF1 AMB AMB 23 21 04.0
comp=Z,106nm,1.3s
WLF1 AMS AMS 00 03 27.9
comp=Z,24µm,19.0s
I36A Fitzsimmons Fa 86.59 36 P **P** 23 20 59.1 -0.4
baz=318
DAVA Damuels 86.59 329 i PcP **P** 23 20 59.4 -0.3
comp=Z,114nm,1.2s,SNR=52
YRC Rhoscolyn 86.67 340 eP **P** 23 20 60.0 +0.3
O31A Woolen Ranch, 86.67 42 P **P** 23 20 58.2 -1.8
baz=315
H37A Dierke Farm, C 86.69 35 P **P** 23 20 58.3 -1.6
baz=319
DAMY Dhamar 86.71 285 eP **P** 23 21 05.1 +4.2
comp=Z,258nm,1.5s
DAMY LR LR
comp=Z,12µm,22.0s
WLS Welschbruch 86.73 331⇑ eP **P** 23 20 59.0 -1.2
121A Cookes Peak, D 86.79 52 P **P** 23 21 00.3 -0.6
baz=311
M33A Taylor Creek F 86.79 40 P **P** 23 20 58.7 -1.9
baz=316
N32A Stulken Farm, 86.79 41 P **P** 23 20 58.7 -1.9
baz=316
YRE Yr Eifl 86.86 340 eP **P** 23 21 00.3 -0.3
SKP1 Kophill 86.88 337 eP **P** 23 21 00.0 -0.7
I37A Lemond, Waseca 86.89 36 P **P** 23 21 00.1 -0.9
baz=319,SNR=28
MENF Mencas 86.89 335⇑ eP **P** 23 21 02.5 +1.7
LTK Loutraki 86.91 316 P **P** 23 21 02.9 +1.7
LTK Loutraki 86.91 316 eP **P** 23 21 02.9 +1.7
L34A Svendsen Farm, 86.93 39 P **P** 23 21 00.2 -1.0
baz=317
HSIG 86.94 56 eP **P** 23 21 04.3 +2.8
comp=Z,84nm,1.2s
HSIG LR LR
comp=Z,16µm,20.0s
J36A Seneca 1, Swea 86.95 37 P **P** 23 21 00.4 -0.9
baz=318
K35A Storm Lake 86.95 38 P **P** 23 21 00.9 -0.4
baz=318
FUORN Ofenpass-Fuorn 86.95 328 eP **P** 23 21 00.4 -1.2
comp=Z,139nm,1.0s
FUORN LR LR
comp=Z,43µm,18.0s
JAN Janina 86.95 318 P **P** 23 21 03.7 +2.3
JAN Janina 86.95 318 P **P** 23 21 03.7 +2.3
JAN Janina 86.95 318 P **P** 23 21 03.7 +2.3
ECH Echery 86.97 331⇑ eP **P** 23 21 01.1 -0.2
MHLO Agia Marina, M 86.99 314 P **P** 23 21 01.1 -0.5
DAVOX Davos/Dischmat 86.99 329 LR LR 00 03 41.7
comp=Z,31µm,18.4s,baz=15,slow=38
SSW Stow on the Wo 87.00 338 eP **P** 23 21 03.3 +2.0
SCHQ Schefferville 87.03 16 P **P** 23 21 01.8 +0.3
comp=Z,46nm,1.0s,baz=342,slow=5.8,SNR=26
SCHQ PKKPbc **PKKPbc** 23 38 53.0 -0.8
comp=Z,3.4nm,0.8s,baz=170,slow=3.0,SNR=4.0
SCHQ LR LR 00 01 53.6
comp=Z,13µm,20.7s,baz=344,slow=37
SCHQ Schefferville 87.03 16 eP **P** 23 21 01.8 +0.3
comp=Z,76nm,0.8s
SCHQ ePKKPbc **PKKPbc** 23 38 53.0 -0.8
SCHQ LR LR
comp=Z,14µm,20.0s
THAL Thalero 87.07 316 P **P** 23 20 59.2 -2.7
ANX Ano Chora 87.11 317 P **P** 23 21 03.8 +1.6
SRIG Santa Rosalia 87.11 58 PFAKE 23 21 10.0 +7.7
SRIG LR LR
comp=Z,12µm,20.0s
KALE Kalithea 87.12 316 P **P** 23 21 04.5 +2.2
KALE Kalithea 87.12 316 eP **P** 23 21 04.5 +2.2
M34A Aspy Farms, Fr 87.16 39 P **P** 23 21 00.2 -2.2
baz=317
O32A Brockman Farm, 87.16 41 P **P** 23 21 01.0 -1.4
baz=316
DSB Dublin 87.17 341 eP **P** 23 21 04.8 +2.7
comp=Z,248nm,1.8s
DSB LR LR
comp=Z,15µm,20.0s
DSL Palaion Diasel 87.19 317 P **P** 23 21 01.6 -0.9
DSL Palaion Diasel 87.19 317 eP **P** 23 21 01.6 -0.9
COWI Conover 87.24 32 eP **P** 23 21 03.2 +0.6
comp=Z,58nm,1.0s
COWI LR LR
comp=Z,10µm,22.0s
L35A Bielow Farm, R 87.24 38 P **P** 23 21 01.1 -1.6
baz=317
STRD Stroud 87.26 338 eP **P** 23 21 02.8 +0.3
STRD AMB AMB 23 21 11.4
comp=Z,391nm,1.0s
STRD AMS AMS 00 00 39.2
comp=Z,16µm,21.5s
MOF Molkenrain 87.27 331⇑ eP **P** 23 21 02.7 -0.2
MCH1 Michaelchurch 87.32 339 eP **P** 23 21 03.3 +0.4
MCH1 AMB AMB 23 21 11.6
comp=Z,185nm,2.0s
MCH1 AMS AMS 00 02 35.8
comp=Z,18µm,21.3s
LAKA Lakka 87.32 316 P **P** 23 21 06.3 +3.1
LAKA Lakka 87.32 316 P **P** 23 21 06.3 +3.1
SGD Sagiada 87.32 318 P **P** 23 21 03.8 +0.7
GUR Goura 87.32 316 P **P** 23 21 05.8 +2.5
GUR Goura 87.32 316 eP **P** 23 21 05.8 +2.5
J37A Reenius Farm, 87.34 36 P **P** 23 21 01.9 -1.3
baz=319,SNR=9.8
KLV Kalavryta, Ach 87.36 316 P **P** 23 21 03.6 +0.2
KLV Kalavryta, Ach 87.36 316 eP **P** 23 21 03.6 +0.2
WOL Wolverton 87.37 337 eP **P** 23 21 03.7 +0.6
WOL AMB AMB 23 21 11.5
comp=Z,254nm,1.4s
WOL AMS AMS 00 02 21.8
comp=Z,18µm,20.4s
SWN1 Swindon 87.37 338 eP **P** 23 21 04.4 +1.3
SWN1 AMB AMB 23 21 08.6
comp=Z,283nm,1.2s
SWN1 AMS AMS 00 04 03.1
comp=Z,17µm,18.4s
LAST Lasithi 87.38 312 P P 23 21 08.4 +4.8
LAST Lasithi 87.38 312 eP **P** 23 21 04.6 +1.0
comp=Z,138nm,1.0s
LAST LR LR
comp=Z,10µm,20.0s
I38A Scanlan Farm, 87.38 35 P **P** 23 21 01.5 -1.9
baz=319
CBKS Cedar Bluff 87.39 43 P **P** 23 21 01.2 -2.3
baz=315
CBKS Cedar Bluff 87.39 43 eP **P** 23 21 03.5 -0.1
CBKS pmax pmax
comp=Z,249nm,1.1s
CBKS Cedar Bluff 87.39 43 eP **P** 23 21 03.5 -0.1
comp=Z,249nm,1.1s
MONM Monmouth 87.40 338 eP **P** 23 21 04.2 +0.9
MONM AMS AMS 23 59 49.2
comp=Z,19µm,25.4s
K36A Gilmore City 87.40 37 P **P** 23 21 01.7 -1.8
baz=318
P32A Huiting Farm, 87.44 42 P **P** 23 21 01.4 -2.3
baz=316
TUE Stuetta 87.46 329 eP **P** 23 21 03.7 -0.3
comp=Z,182nm,1.6s
TUE LR LR
comp=Z,42µm,19.0s
OLDB Oldbury-Upon-S 87.48 338 eP **P** 23 21 05.3 +1.7
OLDB AMB AMB 23 21 12.1
comp=Z,192nm,3.3s
OLDB AMS AMS 23 59 40.2
comp=Z,18µm,23.3s
KEK Kerkira 87.49 319 P **P** 23 21 04.4 +0.5
KEK Kerkira 87.49 319 P **P** 23 21 04.4 +0.5
PDO Prodromos 87.51 317 P **P** 23 21 06.6 +2.5
BATH Bath 87.60 338 AMS AMS 00 00 37.2
comp=Z,16µm,23.5s
M35A Neola 87.64 39 P **P** 23 21 01.9 -2.8
baz=317
IDI Anoyia 87.64 313 eP **P** 23 21 07.7 +2.8
comp=Z,130nm,1.2s
IDI LR LR
comp=Z,6µm,18.0s
O33A Hebron 87.66 41 P **P** 23 21 02.1 -2.7
baz=316
N34A Lincoln 87.68 40 P **P** 23 21 02.6 -2.3
baz=317
L36A Harm Buss Farm 87.69 38 P **P** 23 21 03.5 -1.4
baz=318
K37A Belmond 87.71 37 P **P** 23 21 04.0 -1.0
baz=319,SNR=13
J38A Wedel Dairy, R 87.85 36 P **P** 23 21 03.8 -1.9
baz=319
Q32A Meitler Ranch, 87.91 42 P **P** 23 21 04.2 -1.8
baz=316
AMT Artemida-Makis 87.97 316 P **P** 23 21 10.9 +4.6
O34A Beatrice 88.06 40 P **P** 23 21 04.6 -2.1
baz=317,SNR=12
P33A Williams Farm, 88.06 41 P **P** 23 21 04.4 -2.3
baz=316
ITM Ithomi 88.09 316 P **P** 23 21 06.1 -0.8
ITM Ithomi 88.09 316 P **P** 23 21 06.1 -0.8
M36A Felix, Anita 88.10 38 P **P** 23 21 06.0 -0.8
baz=318,SNR=11
N35A Tabor 88.11 39 P **P** 23 21 05.7 -1.2
baz=317,SNR=15
L37A Phoenix Point, 88.13 37 P **P** 23 21 06.1 -0.9
baz=318
VLS Valsamata 88.14 317 P **P** 23 21 09.7 +2.6
VLS Valsamata 88.14 317 P **P** 23 21 09.7 +2.6
VLS Valsamata 88.14 317 P **P** 23 21 09.7 +2.6
ANKY Antikythira Is 88.20 314 P P 23 21 16.1 +8.7
ANKY Antikythira Is 88.20 314 P P 23 21 16.1 +8.7
TBI Tubuai 88.21 120 eS **S** 23 31 47.6 -3.8
comp=Z,5µm,30.0s
TBI Tubuai 88.21 120 eLQ LQ 23 44 58.9
comp=Z,18µm,32.0s
TBI eLR LR 23 48 47.4
comp=Z,10µm,27.2s,baz=313
TBI Tubuai 88.21 120 eT T 00 58 16.2
comp=Z,111nm,0.3s
K38A Parkersburg 88.22 36 P **P** 23 21 05.5 -1.9
baz=319
R32A Long Quarter, 88.23 43 P **P** 23 21 05.9 -1.6
baz=316
Q33A Connelly Farm, 88.30 42 P **P** 23 21 06.8 -1.1
baz=316,SNR=21
SENIN Lac Senin/Sane 88.40 330 eP **P** 23 21 07.8 -0.7
comp=Z,154nm,1.6s
SENIN LR LR
comp=Z,33µm,18.0s
O35A Humboldt 88.41 40 P **P** 23 21 07.3 -1.1
baz=317,SNR=9.7
P34A Walnut Farm, R 88.45 41 P **P** 23 21 06.9 -1.7
baz=317,SNR=36
N36A Muff Farm, Cla 88.49 39 P **P** 23 21 07.5 -1.3
baz=318
L38A Oak Wood Farm, 88.51 37 P **P** 23 21 07.8 -0.9
baz=319
M37A Trindle Farm, 88.52 38 P **P** 23 21 07.9 -0.9
baz=318
SCIA State Center 88.56 37 eP **P** 23 21 11.7 +2.7
comp=Z,188nm,1.0s
SCIA LR LR
comp=Z,8µm,19.0s
S32A Newby Ranch, P 88.62 43 P **P** 23 21 07.6 -1.9
baz=315
OG01 Vacheresse 88.68 330⇑ eP **P** 23 21 09.4 -0.2
R33A Olander Ranch, 88.71 42 P **P** 23 21 07.5 -2.3
baz=316
VLC Villacollemand 88.83 327 PFAKE 23 21 20.0 +10
VLC LR LR
comp=Z,15µm,21.0s
Q34A Chapman 88.84 41 P **P** 23 21 09.2 -1.2
baz=317,SNR=16
MNTX Cornudas Mount 88.87 51 P **P** 23 21 10.2 -0.5
baz=312
MNTX Cornudas Mount 88.87 51 eP **P** 23 21 10.7 0.0
comp=Z,73nm,1.6s
MNTX LR LR
comp=Z,6µm,20.0s
KSU1 Kansas State U 88.89 41 P **P** 23 21 09.5 -1.1
baz=317,SNR=12
KSU1 Kansas State U 88.89 41 eP **P** 23 21 10.8 +0.2
comp=Z,145nm,0.9s
KSU1 LR LR
comp=Z,9µm,19.0s
P35A Duane Minner, 88.89 40 P **P** 23 21 09.5 -1.1
baz=317,SNR=12
N37A Lee Faris, Mou 88.92 38 P **P** 23 21 09.6 -1.1
baz=318,SNR=13
M38A Pleasantville 88.94 37 P **P** 23 21 09.9 -0.8
baz=319,SNR=14
MSTX Muleshoe 88.97 48 P **P** 23 21 10.0 -1.3
baz=313
MSTX Muleshoe 88.97 48 eP **P** 23 21 13.4 +2.2
comp=Z,34nm,1.0s
MSTX LR LR
comp=Z,8µm,20.0s
DYA Yadsworthy 88.97 338 eP **P** 23 21 14.3 +3.6
comp=Z,111nm,1.1s
DYA LR LR
comp=Z,19µm,21.0s
T32A Huddler Ranch, 88.99 44 P **P** 23 21 10.3 -0.9
baz=315
O36A Bolckow 89.00 39 P **P** 23 21 10.3 -0.9
baz=318
AMTX Amarillo 89.00 47 P **P** 23 21 10.6 -0.7
baz=314
AMTX Amarillo 89.00 47 eP **P** 23 21 11.0 -0.3
comp=Z,98nm,1.0s
AMTX LR LR
comp=Z,8µm,19.0s
R34A Isabella, Hill 89.12 42 P **P** 23 21 10.7 -1.1
baz=316,SNR=9.4
S33A Kaszmaul Farm, 89.21 43 P **P** 23 21 11.4 -0.8
baz=316,SNR=18
JFWS Jewell Farm 89.21 35 eP **P** 23 21 12.9 +0.8
JFWS pmax pmax
comp=Z,52nm,0.8s
JFWS MLR MLR
comp=Z,16µm,21.0s
JFWS Jewell Farm 89.21 35 eP **P** 23 21 12.9 +0.8
comp=Z,52nm,0.8s
JFWS LR LR
comp=Z,16µm,21.0s
RSL Roselend 89.22 330⇑ eP **P** 23 21 12.0 -0.3
P36A Good Intent, A 89.25 40 P **P** 23 21 11.3 -0.9
baz=318,SNR=17
N38A Joes South For 89.39 38 P **P** 23 21 12.3 -0.6
baz=319,SNR=12
CUC Castrocucco 89.39 321 eP **P** 23 21 14.1 +1.1
comp=Z,39nm,1.2s

CUC LR LR
comp=Z,12µm,19.0s
O37A Wolven Farm, M 89.39 39 P **P** 23 21 12.1 -0.9
baz=318
T33A Patterson Ranc 89.44 43 P **P** 23 21 12.3 -1.0
baz=316
TIP Timpagrande 89.50 320 P **P** 23 21 12.0 -1.6
TIP Timpagrande 89.50 320 eP **P** 23 21 13.5 -0.1
TIP ePP PP 23 24 52.8 +8.6
TIP LR LR
comp=Z,26µm,22.0s
JSA Saint Aubin 89.51 337 eP **P** 23 21 14.7 +1.4
JSA AMB AMB 23 21 22.0
comp=Z,128nm,2.4s
U32A Winter Ranch, 89.52 44 P **P** 23 21 12.3 -1.4
baz=315
Q36A Arnold C. Orve 89.60 40 P **P** 23 21 12.6 -1.4
baz=318
S34A Willow Spring 89.63 42 P **P** 23 21 12.6 -1.5
baz=316,SNR=8.9
R35A Emporia Munici 89.67 41 P **P** 23 21 13.4 -1.0
baz=317,SNR=26
N39A Derby Farms, D 89.69 37 P **P** 23 21 12.9 -1.4
baz=319
P37A Lathrop 89.72 39 P **P** 23 21 13.4 -1.1
baz=318
BNI Bardonecchia 89.72 329 PFAKE 23 21 30.0 +15
BNI LR LR
comp=Z,24µm,21.0s
O38A Galt 89.77 38 P **P** 23 21 13.6 -1.1
baz=319
OG22 Abries 89.79 329⇑ eP **P** 23 21 14.4 -0.6
GDM Grand'Maison 89.83 330⇑ eP **P** 23 21 16.8 +1.7
GRN Grenoble 89.95 330⇑ eP **P** 23 21 16.1 +0.5
U33A Lingo Farm, Me 89.98 44 P **P** 23 21 14.7 -1.1
baz=316,SNR=12
R36A Gordon, Harris 90.04 41 P **P** 23 21 14.5 -1.5
baz=317,SNR=12
S35A Otter Creek Ra 90.07 42 P **P** 23 21 15.1 -1.1
baz=317,SNR=25
T34A McClaskey Farm 90.07 43 P **P** 23 21 15.7 -0.6
baz=316,SNR=16
VLDQ Val d'Or 90.11 24 eP **P** 23 21 15.6 -0.5
VLDQ LR LR
comp=Z,120nm,1.2s
comp=Z,23µm,20.0s
P38A Dawn 90.11 39 P **P** 23 21 15.1 -1.2
baz=319,SNR=18
O39A Kirksville 90.14 38 P **P** 23 21 15.4 -1.0
baz=319
Q37A Longview Farm, 90.19 40 P **P** 23 21 15.3 -1.4
baz=318
PLDF La Plantade 90.19 332 eP **P** 23 21 17.0 +0.3
W32A Sentinel 90.26 45 P **P** 23 21 16.8 -0.3
baz=315,SNR=18
U34A Anderson Ranch 90.30 43 P **P** 23 21 16.7 -0.6
baz=316,SNR=26
U34A Anderson Ranch 90.30 43 eP **P** 23 21 17.8 +0.5
comp=Z,208nm,1.0s
U34A LR LR
comp=Z,7µm,18.0s
AGO Saint Agoulin 90.31 332⇑ eP **P** 23 21 17.5 +0.3
V33A Lossen Ranch, 90.32 44 P **P** 23 21 16.4 -1.0
baz=316,SNR=9.5
LUCF Luceram 90.37 328 eP **P** 23 21 19.0 +1.4
SSB Saint Sauveur 90.40 331⇑ eP **P** 23 21 17.7 +0.1
SSB Saint Sauveur 90.40 331 eP **P** 23 21 18.0 +0.4
SSB pmax pmax
comp=Z,49nm,1.2s
SSB MLR MLR
comp=Z,26µm,19.0s
SSB Saint Sauveur 90.40 331 eP **P** 23 21 18.0 +0.4
comp=Z,49nm,1.2s
SSB LR LR
comp=Z,26µm,19.0s
R37A Teagarden Farm 90.41 40 P **P** 23 21 16.2 -1.5
baz=318,SNR=12
S36A Lake Cedric, C 90.44 41 P **P** 23 21 17.0 -0.8
baz=317,SNR=19
MVIF Mont Vial 90.45 328 eP **P** 23 21 19.7 +1.7
REVF Revere 90.48 328 eP **P** 23 21 19.5 +1.4
T35A Sooner Cattle 90.52 42 P **P** 23 21 17.5 -0.9
baz=317,SNR=22
O40A La Belle 90.57 38 P **P** 23 21 17.8 -0.6
baz=320
P39A Salisbury 90.61 38 P **P** 23 21 17.5 -1.1
baz=319
PYM Petit Puy Mans 90.61 332⇑ eP **P** 23 21 21.0 +2.3
CEL Celeste 90.63 320 eP **P** 23 21 20.8 +1.9
comp=Z,119nm,1.1s
CEL LR LR
comp=Z,26µm,18.0s
OG26 St.-Nazaire-De 90.67 330⇑ eP **P** 23 21 19.4 +0.5
CALN Calern 90.68 328⇑ eP **P** 23 21 21.6 +2.5
W33A Caddo, Fort Co 90.69 45 P **P** 23 21 18.9 -0.2
baz=316,SNR=16
X32A Elmer 90.73 46 P **P** 23 21 18.1 -1.2
baz=315,SNR=23
V34A Guthrie 90.74 44 P **P** 23 21 18.1 -1.2
baz=316,SNR=21
V34A Guthrie 90.74 44 eP **P** 23 21 18.9 -0.5
comp=Z,130nm,0.9s
V34A LR LR
comp=Z,8µm,20.0s
T36A Boggs Farm, Ca 90.77 42 P **P** 23 21 18.4 -1.1
baz=317,SNR=24
U35A Pawnee 90.80 43 P **P** 23 21 18.9 -0.7
baz=317,SNR=30
WMOK Wichita Mounta 90.80 45 eP **P** 23 21 20.1 +0.4
WMOK pmax pmax
comp=Z,266nm,1.8s
WMOK MLR MLR
comp=Z,10µm,20.0s
WMOK Wichita Mounta 90.80 45 eP **P** 23 21 20.1 +0.4
comp=Z,266nm,1.8s
WMOK LR LR
comp=Z,10µm,20.0s
S37A Fort Scott 90.82 41 P **P** 23 21 18.3 -1.3
baz=318,SNR=42
Q39A Willow Grove F 90.83 39 P **P** 23 21 17.9 -1.8
baz=319
P40A Paris 90.93 38 P **P** 23 21 18.7 -1.4
baz=320
LBL Lubilhac 90.95 331 eP **P** 23 21 20.1 -0.1
R38A Fenwick Farm, 90.99 40 P **P** 23 21 18.8 -1.6
baz=318,SNR=13
SLBS Sierra La Lagu 91.00 60 eP **P** 23 21 23.2 +2.4
comp=Z,138nm,1.4s
SLBS LR LR
comp=Z,6µm,20.0s
W34A Bridge Creek, 91.03 44 P **P** 23 21 20.6 -0.1
baz=316,SNR=16
W34A Bridge Creek, 91.03 44 eP **P** 23 21 21.7 +1.0
comp=Z,242nm,1.3s
W34A LR LR
comp=Z,11µm,18.0s
FRNF Fournols 91.09 332⇑ eP **P** 23 21 21.8 +1.0
X33A Lawton 91.11 45 P **P** 23 21 19.8 -1.2
baz=316
V35A Meyer Ranch, C 91.18 43 P **P** 23 21 19.7 -1.6
baz=317
T37A Cheneyville 18 91.24 41 P **P** 23 21 20.8 -0.8
baz=318,SNR=19
Q40A Laux Farm, Aux 91.33 38 P **P** 23 21 20.3 -1.7
baz=320
U36A Oologah 91.33 42 P **P** 23 21 20.9 -1.2
baz=317,SNR=15
R39A Chumby, Stover 91.35 39 P **P** 23 21 20.0 -2.1
baz=319
LEPF PUYLOUBIER 91.37 329⇑ eP **P** 23 21 23.3 +1.2
S38A Stockton 91.40 40 P **P** 23 21 20.5 -1.9
baz=318,SNR=20
Y33A Hilltop Ranch, 91.41 46 P **P** 23 21 21.2 -1.3
baz=316,SNR=19
X34A Smith Ranch, M 91.45 45 P **P** 23 21 22.1 -0.6
baz=316,SNR=16
HDIL Hopedale 91.49 36 P **P** 23 21 20.7 -2.0
baz=321
HDIL Hopedale 91.49 36 eP **P** 23 21 23.7 +1.0
comp=Z,76nm,0.9s
HDIL LR LR
comp=Z,11µm,19.0s
TX31 Lajitas Ar. Si 91.55 52 eP **P** 23 21 22.1 -1.2
LTX Lajitas 91.55 52 eP **P** 23 21 24.0 +0.7
LTX Lajitas 91.55 52 eP **P** 23 21 24.0 +0.7
TXAR Lajitas Array 91.55 52 P **P** 23 21 24.0 +0.7
comp=Z,21nm,0.9s,baz=297,slow=3.2,SNR=32

TXAR PKKPbc **PKKPbc** 23 38 45.4 +3.2
comp=Z,0.7nm,0.6s,baz=153,slow=4.5,SNR=5.1
TXAR LR LR 23 58 58.7
comp=Z,16µm,19.8s,baz=0.0,slow=33
W35A Tecumseh 91.60 44 P **P** 23 21 22.5 -0.8
baz=317,SNR=26
T38A Diamond 91.64 41 P **P** 23 21 22.4 -1.1
baz=318,SNR=59
TUL1 Leonard 91.65 43 P **P** 23 21 22.4 -1.1
baz=317,SNR=22
TUL1 Leonard 91.65 43 eP **P** 23 21 24.1 +0.5
comp=Z,183nm,1.4s
TUL1 LR LR
comp=Z,7µm,20.0s
V36A Jenks 91.66 43 P **P** 23 21 22.8 -0.8
baz=317,SNR=30
U37A Salina 91.66 42 P **P** 23 21 22.8 -0.8
baz=318,SNR=28
S39A Bolivar 91.67 40 P **P** 23 21 21.6 -2.0
baz=319
R40A Maddies Statio 91.76 39 P **P** 23 21 22.3 -1.7
baz=320
MATF Mathat 91.77 334⇑ eP **P** 23 21 24.8 +0.9
ABTX Abilene, Hawle 91.79 47 P **P** 23 21 23.1 -1.2
baz=315,SNR=27
ABTX Abilene, Hawle 91.79 47 eP **P** 23 21 24.7 +0.4
comp=Z,242nm,1.4s
ABTX LR LR
comp=Z,8µm,20.0s
HPIG 91.84 55 eP **P** 23 21 25.9 +1.0
comp=Z,48nm,1.0s
HPIG LR LR
comp=Z,16µm,20.0s
Z33A Whitaker Ranch 91.84 46 P **P** 23 21 23.1 -1.4
baz=316,SNR=21
Y34A Reagan Ranch, 91.95 45 P **P** 23 21 23.7 -1.3
baz=316,SNR=24
W36A Wetumka 91.97 43 P **P** 23 21 24.2 -0.8
baz=317,SNR=18
VAE Valguarnera 91.99 320 LR LR 00 06 37.7
comp=Z,17µm,20.4s,baz=359,slow=38
V37A Hulbert 92.03 42 P **P** 23 21 24.4 -1.0
baz=318,SNR=58
U38A Gravette 92.03 41 P **P** 23 21 24.5 -0.9
baz=318,SNR=31
X35A Drake 92.09 44 P **P** 23 21 24.5 -1.1
baz=316,SNR=14
T39A Clever 92.14 40 P **P** 23 21 24.8 -1.0
baz=319,SNR=23
S40A Lebanon 92.16 40 P **P** 23 21 24.2 -1.7
baz=319
133A Hamilton Ranch 92.23 47 P **P** 23 21 25.0 -1.3
baz=315,SNR=14
Z34A Collier Ranch, 92.28 46 P **P** 23 21 25.2 -1.4
baz=316,SNR=14
X36A Centrahoma 92.32 44 P **P** 23 21 25.1 -1.5
baz=317,SNR=28
SADO Sadowa 92.37 27 PFAKE 23 21 40.0 +13
SADO LR LR
comp=Z,10µm,20.0s
HHAR Hobbs 92.39 41 eP **P** 23 21 25.6 -1.4
comp=Z,48nm,0.8s
HHAR LR LR
comp=Z,7µm,20.0s
Y35A Marietta 92.41 45 P **P** 23 21 25.6 -1.4
baz=316,SNR=5.4
W37B Quinton 92.42 43 P **P** 23 21 26.1 -1.0
baz=317,SNR=12
V38A Canehill 92.45 42 P **P** 23 21 25.8 -1.4
baz=318,SNR=60
T40A Mansfield 92.49 40 P **P** 23 21 25.5 -2.0
baz=319
SLM Saint Louis 92.52 37 eP **P** 23 21 30.8 +3.3
SLM pmax pmax
comp=Z,65nm,1.0s
SLM MLR MLR
comp=Z,10µm,18.0s
SLM Saint Louis 92.52 37 eP **P** 23 21 30.8 +3.3
comp=Z,65nm,1.0s
SLM LR LR
comp=Z,10µm,18.0s
U39A Green Forest 92.56 41 P **P** 23 21 26.3 -1.5
baz=319
AAM Ann Arbor 92.64 31 PFAKE 23 21 40.0 +12
AAM LR LR
comp=Z,11µm,21.0s
233A Rising Star 92.66 47 P **P** 23 21 27.5 -0.8
baz=315,SNR=28
SFIN Lafayette 92.67 35 P **P** 23 21 26.6 -1.5
baz=323
SFIN Lafayette 92.67 35 eP **P** 23 21 29.0 +0.9
comp=Z,43nm,1.0s
SFIN LR LR
comp=Z,12µm,20.0s
Z35A Perchaven, San 92.69 45 P **P** 23 21 27.4 -1.1
baz=316,SNR=19
134A White-Moore Ra 92.75 46 P **P** 23 21 27.6 -1.1
baz=316,SNR=23
LMQ La Malbaie 92.83 20 eP **P** 23 21 29.3 +0.5
comp=Z,85nm,0.9s
LMQ LR LR
comp=Z,19µm,22.0s
Y36A Durant 92.84 44 P **P** 23 21 27.3 -1.8
baz=317,SNR=9.3
X37A Clayton 92.85 43 P **P** 23 21 26.9 -2.2
baz=318,SNR=14
V39A Pettigrew 92.88 41 P **P** 23 21 27.3 -2.0
baz=319
U40A Yellville 92.92 41 P **P** 23 21 27.8 -1.6
baz=319
VSL Villasalto 92.95 324 eP **P** 23 21 30.9 +1.4
comp=Z,34nm,1.1s
VSL LR LR
comp=Z,19µm,19.0s
W38A Poteau 92.97 42 P **P** 23 21 27.7 -1.9
baz=318
X38A Whitesboro 93.10 43 P **P** 23 21 27.8 -2.5
baz=318,SNR=44
333A Richland Sprin 93.10 48 P **P** 23 21 28.6 -1.8
baz=316,SNR=33
234A Clairette 93.12 47 P **P** 23 21 28.9 -1.6
baz=316,SNR=32
WDD Wied Dalam 93.14 319 PFAKE 23 21 40.0 +10
WDD LR LR
comp=Z,14µm,22.0s
LRDF Laroque-de-Fa 93.15 331 eP **P** 23 21 30.4 0.0
135A Vickery Place, 93.16 46 P **P** 23 21 29.3 -1.2
baz=316
Y37A Hugo 93.16 44 P **P** 23 21 29.0 -1.5
baz=317
JCT Junction City 93.19 49 P **P** 23 21 29.5 -1.3
baz=315,SNR=19
JCT Junction City 93.19 49 eP **P** 23 21 31.1 +0.3
JCT pmax pmax
comp=Z,363nm,1.9s
JCT MLR MLR
comp=Z,11µm,20.0s
JCT Junction City 93.19 49 eP **P** 23 21 31.1 +0.3
comp=Z,363nm,1.9s
JCT LR LR
comp=Z,11µm,20.0s
Z36A Blue Ridge 93.21 45 P **P** 23 21 29.8 -1.0
baz=317,SNR=13
W39A Magazine 93.28 42 P **P** 23 21 30.0 -1.1
baz=318,SNR=13
H06N1 SOCORRO T-PHAS 93.29 64 T T 01 05 09.4
SNR=43
H06E1 SOCORRO T-PHAS 93.39 64 T T 01 05 11.2
SNR=189
H06S1 SOCORRO T 93.39 64 T T 01 05 20.3
SNR=99
SJAF Saint Jean de 93.39 330⇑ eP **P** 23 21 32.2 +0.7
433A Art 93.44 48 P **P** 23 21 31.4 -0.5
baz=315,SNR=17
FILF Fillols 93.46 330⇑ eP **P** 23 21 31.6 -0.3
OLIL Olney 93.49 36 eP **P** 23 21 33.2 +1.2
comp=Z,70nm,1.0s
OLIL LR LR
comp=Z,10µm,18.0s
CARF Carcanieres 93.51 331⇑ eP **P** 23 21 32.4 +0.2
WHTX Lake Whitney, 93.54 46 P **P** 23 21 30.5 -1.9
baz=316,SNR=12
WHTX Lake Whitney, 93.54 46 eP **P** 23 21 34.9 +2.5
comp=Z,125nm,0.9s
WHTX LR LR
comp=Z,15µm,19.0s
334A Lometa 93.54 47 P **P** 23 21 30.5 -1.9
baz=316,SNR=45

X39A Fountain Ranch 93.61 43 P **P** 23 21 31.2 -1.4
baz=318
W40A Ferguson Farm, 93.67 41 P **P** 23 21 30.8 -2.1
baz=319
Y38A Idabel 93.70 43 P **P** 23 21 31.2 -1.8
baz=318
Z37A Pogue Cattle C 93.73 44 P **P** 23 21 31.8 -1.4
baz=317
136A Ennis 93.73 45 P **P** 23 21 32.0 -1.2
baz=317
SIUC Southern Illin 93.74 37 eP **P** 23 21 34.1 +1.0
comp=Z,39nm,0.8s
SIUC LR LR
comp=Z,10µm,20.0s
VALF Valcebollere 93.81 331⇑ eP **P** 23 21 34.1 +0.5
SALF Salau 93.84 331⇑ eP **P** 23 21 35.8 +2.2
PBMO Poplar Bluff 93.86 39 eP **P** 23 21 33.4 -0.3
comp=Z,88nm,1.3s
PBMO LR LR
comp=Z,7µm,20.0s
MIAR Mount Ida 93.88 42 P **P** 23 21 32.2 -1.7
baz=319
MIAR Mount Ida 93.88 42 eP **P** 23 21 34.0 +0.2
MIAR pmax pmax
comp=Z,338nm,1.6s
MIAR MLR MLR
comp=Z,8µm,20.0s
MIAR Mount Ida 93.88 42 eP **P** 23 21 34.0 +0.2
comp=Z,338nm,1.6s
MIAR LR LR
comp=Z,8µm,20.0s
434A Burnet 93.89 48 P **P** 23 21 32.7 -1.3
baz=316,SNR=16
BLO Bloomington 93.89 35 eP **P** 23 21 36.0 +2.2
BLO pmax pmax
comp=Z,28nm,0.9s
BLO MLR MLR
comp=Z,13µm,22.0s
BLO Bloomington 93.89 35 eP **P** 23 21 36.0 +2.2
comp=Z,28nm,0.9s
BLO LR LR
comp=Z,13µm,22.0s
533A Kerrville 93.95 49 P **P** 23 21 33.0 -1.4
baz=315,SNR=9.0
X201 Greenbrier Sit 93.98 41 eP **P** 23 21 36.2 +1.9
comp=Z,156nm,1.4s
X201 LR LR
comp=Z,11µm,18.0s
X301 Greenbrier Sit 94.00 41 eP **P** 23 21 34.5 +0.1
comp=Z,102nm,1.3s
X301 LR LR
comp=Z,11µm,18.0s
WHAR Wooly Hollow 94.02 41 eP **P** 23 21 35.1 +0.6
comp=Z,134nm,1.2s
WHAR LR LR
comp=Z,11µm,19.0s
Y39A Lockesburg 94.05 43 P **P** 23 21 32.8 -1.8
baz=318
Z38A Mt. Pleasant 94.05 44 P **P** 23 21 32.6 -2.1
baz=318
335A Moody 94.06 47 P **P** 23 21 33.4 -1.4
baz=316
236A Katherine and 94.08 46 P **P** 23 21 33.7 -1.1
baz=317
137A Heron Place, G 94.09 45 P **P** 23 21 33.7 -1.1
baz=317
LONY Lake Ozonia 94.12 24 PFAKE 23 21 50.0 +15
LONY LR LR
comp=Z,16µm,20.0s
W41A Tony Mavity, V 94.13 41 P **P** 23 21 32.3 -2.6
baz=319
W41B Gary Mavity, V 94.13 41 P **P** 23 21 32.9 -2.1
baz=319
DRLN Deer Lake 94.14 12 PFAKE 23 21 50.0 +15
DRLN LR LR
comp=Z,17µm,20.0s
REYF Montagne du Re 94.18 333⇑ eP **P** 23 21 36.2 +1.0
VIEF Viey 94.18 332⇑ eP **P** 23 21 37.9 +2.7
FRNY Flat Rock 94.27 24 PFAKE 23 21 50.0 +15
FRNY LR LR
comp=Z,14µm,19.0s
ATE Arette 94.28 333⇑ eP **P** 23 21 37.8 +2.2
633A Saathoff Ranch 94.30 49 P **P** 23 21 34.9 -1.0
baz=315,SNR=15
ERPA Erie 94.30 29 PFAKE 23 21 50.0 +14
ERPA LR LR
comp=Z,14µm,18.0s
USIN University of 94.31 36 PFAKE 23 21 50.0 +14
USIN LR LR
comp=Z,8µm,20.0s
534A Blanco 94.33 48 P **P** 23 21 33.6 -2.5
baz=316,SNR=20
435B Jarrell 94.33 47 P **P** 23 21 34.1 -1.9
baz=316
X40A Basin Creek Fa 94.33 42 P **P** 23 21 34.2 -1.7
baz=319
336A Riesel 94.33 46 P **P** 23 21 34.1 -1.9
baz=316
UALR University of 94.38 41 eP **P** 23 21 40.9 +4.8
comp=Z,111nm,1.7s
UALR LR LR
comp=Z,8µm,19.0s
138A Matatall Enter 94.43 44 P **P** 23 21 35.3 -1.1
baz=318
LARF Larrau 94.43 333 eP **P** 23 21 37.1 +0.8
Y40A Okolona 94.44 42 P **P** 23 21 34.5 -2.0
baz=319
237A Washetta, Mont 94.50 45 P **P** 23 21 33.0 -3.7
baz=317
PVMO Portageville 94.51 39 PFAKE 23 21 50.0 +13
PVMO LR LR
comp=Z,9µm,19.0s
Z39A Irene McRaven, 94.51 43 P **P** 23 21 33.6 -3.1
baz=318
FURI Furi 94.56 284 PFAKE 23 21 50.0 +12
FURI LR LR
comp=Z,9µm,20.0s
832A Faith Ranch, C 94.62 50 P **P** 23 21 36.4 -0.9
baz=315
ACSO Alum Creek Sta 94.63 32 eP **P** 23 21 37.3 +0.2
comp=Z,53nm,0.9s
ACSO LR LR
comp=Z,8µm,20.0s
ALLY Alegheny Colle 94.63 29 PFAKE 23 21 50.0 +13
ALLY LR LR
comp=Z,12µm,20.0s
733A Divot King Ran 94.74 50 P **P** 23 21 36.3 -1.6
baz=315
WCI Wyandotte Cave 94.75 35 eP **P** 23 21 38.6 +0.7
WCI pmax pmax
comp=Z,187nm,0.5s
WCI MLR MLR
comp=Z,9µm,19.0s
WCI Wyandotte Cave 94.75 35 eP **P** 23 21 38.6 +0.7
comp=Z,187nm,0.5s
WCI LR LR
comp=Z,9µm,19.0s
WLAR White Oak Lake 94.78 42 eP **P** 23 21 42.5 +4.5
comp=Z,75nm,1.0s
WLAR LR LR
comp=Z,7µm,18.0s
436A Wall Ranch, Ga 94.81 47 P **P** 23 21 35.7 -2.5
baz=316
139A Bunkhouse Ranc 94.81 44 P **P** 23 21 37.5 -0.6
baz=318
NCB Newcomb 94.82 25 PFAKE 23 21 50.0 +12
NCB LR LR
comp=Z,18µm,20.0s
535A Dale 94.87 48 P **P** 23 21 37.3 -1.2
baz=316
238A Jacksonville 94.89 45 P **P** 23 21 37.1 -1.4
baz=318
Z40A Long Farm, Mag 94.94 43 P **P** 23 21 36.7 -2.0
baz=319
M54A Oil Creek Stat 94.94 29 P **P** 23 21 37.0 -1.7
baz=328
337A Centerville 94.95 46 P **P** 23 21 37.8 -1.0
baz=317
833A Chaparral WMA, 94.96 50 P **P** 23 21 35.9 -3.1
baz=315
HALT Halls 95.08 39 PFAKE 23 21 50.0 +11
HALT LR LR
comp=Z,13039µm,18.0s
734A La Parita Cree 95.11 49 P **P** 23 21 37.1 -2.4
baz=315
536A Bastrop 95.14 47 P **P** 23 21 39.7 0.0
baz=316

437A Phantom Ranch, 95.15 46 P **P** 23 21 39.7 0.0
baz=317
PKME Peaks-Kenny Pk 95.21 21 *e*P **P** 23 21 41.9 +2.2
comp=Z,46nm,1.0s
PKME LR LR
comp=Z,18µm,19.0s
635A Leesville 95.21 48 P **P** 23 21 38.5 -1.5
baz=316
239A Gary 95.25 44 P **P** 23 21 40.8 +0.6
baz=318
Z41A Richland Creek 95.27 43 P **P** 23 21 39.0 -1.2
baz=319
N54A Moraine State 95.27 30 P **P** 23 21 38.6 -1.5
baz=328
NATX Nacogdoches 95.33 45 P **P** 23 21 38.0 -2.5
baz=318
NATX Nacogdoches 95.33 45 PFAKE 23 21 50.0 +9.4
NATX LR LR
comp=Z,9µm,18.0s
CCAR Cane Creek 95.34 41 PFAKE 23 21 50.0 +9.5
CCAR LR LR
comp=Z,11µm,18.0s
Y42A Garnett, Star 95.39 42 P **P** 23 21 39.4 -1.3
baz=320
MET Memphis--Engin 95.39 40 PFAKE 23 21 50.0 +9.3
MET LR LR
comp=Z,8µm,19.0s
ACCN Adirondack Com 95.53 24 PFAKE 23 21 50.0 +8.8
ACCN LR LR
comp=Z,17µm,21.0s
933A Laredo 95.53 51 P **P** 23 21 42.2 +0.6
baz=315
735A Kenedy 95.57 49 P **P** 23 21 40.4 -1.2
baz=316
636A Smothers Creek 95.58 48 P **P** 23 21 41.0 -0.7
baz=316,SNR=6.0
537A Green Hill Far 95.59 47 P **P** 23 21 41.7 0.0
baz=317
438A Sam Houston St 95.60 46 P **P** 23 21 38.1 -3.7
baz=317
834A Tilden 95.62 50 P **P** 23 21 39.9 -2.0
baz=315
WVT Waverly 95.67 38 *e*P **P** 23 21 42.7 +0.6
WVT pmax pmax
comp=Z,21nm,1.1s
WVT MLR MLR
comp=Z,10µm,20.0s
WVT Waverly 95.67 38 *e*P **P** 23 21 42.7 +0.6
comp=Z,21nm,1.1s
WVT LR LR
comp=Z,10µm,20.0s
141A Papa Simpson, 95.70 43 P **P** 23 21 44.6 +2.4
baz=319
BINY Binghamton 95.75 26 PFAKE 23 21 50.0 +7.7
BINY LR LR
comp=Z,18µm,20.0s
LMN Caledonia Moun 95.87 18 PFAKE 23 21 50.0 +7.3
LMN LR LR
comp=Z,12µm,22.0s
KEST Kesra 95.93 322 P **P** 23 21 42.9 -0.5
comp=Z,14nm,1.1s,baz=90,slow=2.7,SNR=5.4
KEST LR LR 00 10 13.4
comp=Z,21µm,19.3s,baz=336,slow=39
KEST Kesra 95.93 322 *e*P **P** 23 21 42.9 -0.5
comp=Z,46nm,1.1s
KEST LR LR
comp=Z,26µm,19.0s
736A Circle Diamond 95.95 48 P **P** 23 21 42.8 -0.6
baz=316
835A Beeville 95.96 49 P **P** 23 21 42.8 -0.6
baz=316
HKT Hockley 95.97 47 *e*P **P** 23 21 47.0 +3.6
HKT pmax pmax
comp=Z,117nm,1.9s
HKT MLR MLR
comp=Z,9µm,18.0s
HKT Hockley 95.97 47 *e*P **P** 23 21 47.0 +3.6
comp=Z,117nm,1.9s
HKT LR LR
comp=Z,9µm,18.0s
538A Harpers Horsep 95.98 46 P **P** 23 21 41.0 -2.5
baz=317
439A Center Grove, 95.98 45 P **P** 23 21 40.4 -3.1
baz=318
934A Benavides 96.01 50 P **P** 23 21 44.4 +0.6
baz=315
GGN Saint George 96.03 19 PFAKE 23 21 50.0 +6.6
GGN LR LR
comp=Z,14µm,19.0s
637A Eagle Lake 96.04 47 P **P** 23 21 45.0 +1.2
baz=317
OXF Oxford 96.13 40 *e*P **P** 23 21 47.1 +3.0
OXF pmax pmax
comp=Z,117nm,1.4s
OXF MLR MLR
comp=Z,7µm,19.0s
OXF Oxford 96.13 40 *e*P **P** 23 21 47.1 +3.0
comp=Z,117nm,1.4s
OXF LR LR
comp=Z,7µm,19.0s
034A Hebbronville 96.29 51 P **P** 23 21 45.6 +0.6
baz=315
SSPA Standing Stone 96.39 29 *e*P **P** 23 21 46.9 +1.7
comp=Z,31nm,1.1s
SSPA LR LR
comp=Z,10µm,19.0s
KSPA Keystone Colle 96.39 27 PFAKE 23 22 00.0 +15
KSPA LR LR
comp=Z,19µm,20.0s
MCWV Mont Chateau 96.43 30 *e*P **P** 23 21 47.4 +1.9
comp=Z,20nm,1.1s
MCWV LR LR
comp=Z,7µm,22.0s
O56A Blue Knob Stat 96.43 29 P **P** 23 21 43.9 -1.6
baz=329
KVTX Kingsville 96.44 50 PFAKE 23 22 00.0 +14
KVTX LR LR
comp=Z,11µm,20.0s
PLAL Pickwick Lake 96.45 38 *e*P **P** 23 21 49.8 +4.2
comp=Z,15nm,1.0s
PLAL LR LR
comp=Z,9µm,21.0s
440A Kirbyville 96.49 45 P **P** 23 21 43.9 -1.9
baz=318
ZAIG Zacatecas 96.71 56 *e*P **P** 23 21 51.5 +4.1
comp=Z,45nm,1.2s
ZAIG LR LR
comp=Z,14µm,21.0s
035A Encino 96.75 50 P **P** 23 21 48.3 +1.2
baz=316
N59A State Game Lan 96.95 27 P **P** 23 21 47.4 -0.4
baz=331
HRV Adam Dziewonsk 97.01 23 PFAKE 23 22 00.0 +12
HRV LR LR
comp=Z,13µm,18.0s
243A Waterproof 97.04 43 P **P** 23 21 47.5 -0.7
baz=320
035Z Hargill 97.10 51 P **P** 23 21 47.4 -1.2
baz=316
ODNJ Ogdensburg 97.23 26 PFAKE 23 22 00.0 +11
ODNJ LR LR
comp=Z,15µm,19.0s
VBMS Vicksburg 97.31 42 PFAKE 23 22 00.0 +10
VBMS LR LR
comp=Z,9µm,18.0s
145A Houston Renfro 97.33 41 P **P** 23 21 48.8 -0.8
baz=321
SWET Sewanee 97.34 37 *e*P Pdif 23 21 50.2 +0.5
comp=Z,8.0nm,1.1s
SWET LR LR
comp=Z,3µm,18.0s
244A Avery, Jackson 97.35 42 P Pdif 23 21 50.8 +1.0
baz=320
LUPA Lehigh Univers 97.37 27 PFAKE 23 22 00.0 +10
LUPA LR LR
comp=Z,22µm,20.0s
TZTN Tazewell 97.40 35 *e*P Pdif 23 21 51.9 +2.0
comp=Z,26nm,1.0s
TZTN LR LR
comp=Z,14µm,22.0s
PBRG Braganca 97.54 336 *e*P Pdif 23 21 52.2 +1.7
PBRG Braganca 97.54 336 *e*PP PP 23 25 52.4 +5.6
PBRG *e*SKS **SKSac 23 32 28.6 +1.3**
PAL Palisades 97.55 26 PFAKE 23 22 00.0 +10
PAL LR LR
comp=Z,16µm,20.0s
BRNJ Basking Ridge 97.59 26 PFAKE 23 22 00.0 +9.3
BRNJ LR LR
comp=Z,21µm,19.0s
CPNY Central Park 97.72 26 PFAKE 23 22 00.0 +8.8
CPNY LR LR
comp=Z,18µm,20.0s
146A Union 97.77 41 P Pdif 23 21 52.0 +0.4
baz=321
344A Westbrook Farm 97.78 42 P Pdif 23 21 52.7 +1.0
baz=320
245A Little AP, Sta 97.79 41 P **P** **23 21 51.5 -0.2**
baz=321
CPCT Cooper Cave 97.83 36 *e*P Pdif 23 21 53.6 +1.7
comp=Z,12nm,1.1s
CPCT LR LR
comp=Z,8µm,22.0s
SDMD Soldier's Deli 97.85 28 PFAKE 23 22 00.0 +8.1
SDMD LR LR
comp=Z,8µm,18.0s
PGAV Gavieira, Arco 97.89 337 *e*PP PP 23 25 58.8 +9.3
PGAV *e*SKS **SKSac 23 32 30.8 +1.6**
PGAV *e*SS **SS 23 40 06.7 +10**
PGAV Gavieira, Arco 97.89 337 *e*LR LR 23 55 52.0
comp=Z,16µm,20.0s
PCAB Cabril 98.04 337 *e*PP PP 23 25 51.9 +1.3
MVO Moncorvo 98.21 336 *e*P Pdif 23 21 56.8 +3.3
MVO Moncorvo 98.21 336 *e*PP PP 23 25 56.0 +4.0
MVO *e*SKS **SKSac 23 32 33.4 +2.6**
MVO Moncorvo 98.21 336 *e*LR LR 23 56 02.3
comp=Z,19µm,20.0s
BLA Blacksburg 98.25 32 *e*P Pdif 23 21 56.3 +2.5
BLA pmax pmax
comp=Z,19nm,0.9s
BLA MLR MLR
comp=Z,13µm,21.0s
BLA Blacksburg 98.25 32 *e*P Pdif 23 21 56.3 +2.5
comp=Z,19nm,0.9s
BLA LR LR
comp=Z,13µm,21.0s
POLO Lamas de Olo 98.27 337 *e*P Pdif 23 21 57.2 +3.4
POLO Lamas de Olo 98.27 337 *e*PP PP 23 25 56.2 +3.7
POLO Lamas de Olo 98.27 337 *e*SS SS 23 40 16.5 +14
PVRL Vila Real 98.34 336 *e*P Pdif 23 21 56.9 +2.8
PVRL Vila Real 98.34 336 *e*PP PP 23 25 55.8 +2.9
ES19 SONSECA Array 98.41 333 *e*P Pdif 23 21 54.6 +0.2
ESDC Sonseca Array 98.46 333 P **P** **23 21 54.3 -0.3**
comp=Z,4.0nm,1.0s,baz=21,slow=3.7,SNR=13
ESDC PKKPbc **PKKPdf 23 38 28.5 +2.7**
comp=Z,0.9nm,0.8s,baz=153,slow=1.3,SNR=4.3
ESDC LR LR 00 09 19.1
comp=Z,16µm,21.3s,baz=35,slow=37
ESLA Sonseca Array 98.46 333 PFAKE 23 22 10.0 +15
ESLA LR LR
comp=Z,22µm,18.0s
LRAL Lakeview Retre 98.54 39 PFAKE 23 22 10.0 +15
LRAL LR LR
comp=Z,10µm,18.0s
EMHD Djebel Mahouad 98.59 327 P PP 23 26 03.4 +8.2
CBN Corbin Frederi 98.68 29 PFAKE 23 22 10.0 +14
CBN LR LR
comp=Z,11µm,22.0s
RKT Rikitea 98.69 112 *e*SKSac **SKSac 23 32 30.9 -2.3**
comp=Z,1µm,28.9s
RKT Rikitea 98.69 112 *e*PS PS 23 34 48.7 -3.2
comp=Z,2µm,36.0s
RKT *e*SS SS 23 40 02.4 -8.7
comp=Z,6µm,30.8s
RKT *e*LQ LQ 23 49 18.4
comp=Z,8µm,33.8s
RKT *e*LR LR 23 53 28.2
comp=Z,8µm,35.5s,baz=305
RKT Rikitea 98.69 112 *e*T T 01 11 22.1
comp=Z,3.9nm,0.3s
PAB San Pablo 98.71 333 PFAKE 23 22 10.0 +14
PAB LR LR
comp=Z,27µm,21.0s
PVIS Viseu 98.90 336 *e*PP PP 23 26 00.7 +3.5
MTE Manteigas 99.07 336 *e*PP PP 23 26 03.0 +4.5
MTE *e*SKS **SKSac 23 32 38.0 +2.9**
MTE *e*SS **SS 23 40 19.3 +5.6**
MTE Manteigas 99.07 336 *e*LR LR 23 56 37.2
comp=Z,23µm,18.0s
MTE Manteigas 99.07 336 PFAKE 23 22 10.0 +13
MTE LR LR
comp=Z,23µm,20.0s
EBNR Beni Rached 99.15 328 P **PP** **23 26 05.8 +6.5**
ECHA Ech Chlef 99.34 328 P **PP** **23 26 07.2 +6.5**
PCBR Castelo Branco 99.55 336 *e*P **Pdif** **23 22 02.3 +2.9**
PCBR Castelo Branco 99.55 336 *e*PP PP 23 26 06.5 +4.4
KMSC Kings Mountain 99.57 34 PFAKE 23 22 10.0 +10
KMSC LR LR
comp=Z,14µm,21.0s
EANR 'Ain N'Sour 99.62 328 P PP 23 26 11.1 +8.1
PCAS Casmilo, Conde 99.69 337 *e*PP PP 23 26 05.7 +2.5
PCAS *e*SKS **SKSac 23 32 39.7 +1.6**
PCAS *e*SS **SS 23 40 28.7 +6.4**
MOIG Morelia 99.75 57 PFAKE 23 22 10.0 +9.0
MOIG LR LR
comp=Z,7µm,20.0s
PMRV Marv??o 99.89 335 *e*PP PP 23 26 06.6 +1.9
PMRV *e*SKS **SKSac 23 32 41.8 +2.7**
PMRV Marv??o 99.89 335 *e*LR LR 23 57 05.9
comp=Z,31µm,18.0s
BRAL Brewton 99.98 40 PFAKE 23 22 10.0 +8.5
BRAL LR LR
comp=Z,8µm,19.0s
GOGA Godfrey 99.99 36 *e*P **Pdif** **23 22 06.8 +5.3**
GOGA MLR MLR
comp=Z,8µm,21.0s
GOGA Godfrey 99.99 36 *e*Pdif **Pdif** **23 22 06.8 +5.3**
GOGA LR LR
comp=Z,8µm,21.0s
ETRT Tiaret 100.01 327 P PP 23 26 15.2 +9.2
PTOM Tomar 100.06 336 *e*PP PP 23 26 14.0 +8.0
JSC Jenkinsville 100.32 34 PFAKE 23 22 10.0 +7.1
JSC LR LR
comp=Z,12µm,21.0s
PESTR Estremoz 100.46 335 *e*PP PP 23 26 12.8 +3.7
PESTR *e*SKS **SKSac 23 32 45.5 +3.5**
PMTG Montargil 100.49 336 *e*PP PP 23 26 13.2 +3.9
PMTG *e*SKS **SKSac 23 32 45.4 +3.4**
PBAR Barrancos 100.89 335 *e*PP PP 23 26 16.1 +3.8
PBAR *e*SKS **SKSac 23 32 47.4 +3.4**
PBAR *e*SS **SS 23 40 49.3 +10**
EVO Evora 100.91 335 *e*P **Pdif** **23 22 09.0 +3.5**
EVO Evora 100.91 335 *e*PP PP 23 26 07.1 -5.5
PMAFR Mafra 100.94 337 *e*PP PP 23 26 18.1 +5.4
PMAFR *e*SKS **SKSac 23 32 47.2 +2.9**
PMAFR *e*SS **SS 23 40 49.7 +10**
PMST Lisbon--Monsan 101.11 336 *e*PP PP 23 26 18.4 +4.5
LIS Lisbon 101.12 336 *e*P **Pdif** **23 22 05.2 -1.3**
LIS *e*PP **PP 23 26 13.8 -0.2**
LIS AMS AMS 00 07 06.3
comp=E,24µm,19.5s
LIS Lisbon 101.12 336 *e*PP PP 23 26 18.7 +4.7
LIS Lisbon 101.12 336 *e*P **Pdif** **23 22 05.1 -1.3**
LIS *e* 23 26 13.8
PBEJ Beja 101.31 335 *e*PP PP 23 26 19.0 +3.5
UNM Universidad Na 101.36 56 PFAKE 23 22 20.0 +12
UNM LR LR
comp=Z,9µm,20.0s
PNCL Nicolau / Gran 101.46 336 *e*PP PP 23 26 20.1 +3.5
PNCL *e*SKS 23 32 48.9
PNCL *e*SS **SS 23 40 54.8 +8.0**
TIGA Tifton 101.53 38 PFAKE 23 22 20.0 +12
TIGA LR LR
comp=Z,9µm,20.0s
MESJ Messejana 101.60 335 *e*P **Pdif** **23 22 07.6 -1.0**
MESJ *e*PP **PP 23 26 17.4 -0.3**
MESJ AMS AMS 00 13 50.9
comp=Z,25µm,19.2s
MESJ Messejana 101.60 335 *e*P **Pdif** **23 22 11.2 +2.6**
MESJ Messejana 101.60 335 *e*PP PP 23 26 16.3 -1.3
MESJ Messejana 101.60 335 *e*P **Pdif** **23 22 07.5 -1.0**
MESJ *e* 23 26 17.3
KMBO Kilima Mbogo 101.61 277 PFAKE 23 22 20.0 +11
KMBO LR LR
comp=Z,7µm,19.0s
PCVE Castro Verde 101.72 335 *e*PP PP 23 26 24.4 +5.8
PCVE *e*SKS 23 32 50.1
PCVE *e*SS SS 23 41 02.0 +11
NHSC New Hope 101.79 34 PFAKE 23 22 20.0 +10
NHSC LR LR
comp=Z,15µm,21.0s
PVAQ Vaqueiros 101.82 335 *e*PP PP 23 26 22.6 +3.3
PVAQ *e*SKS 23 32 50.8
PVAQ Vaqueiros 101.82 335 *e*LR LR 23 57 38.7
comp=Z,27µm,18.0s
PTEO Sao Teotonio 102.04 336 *e*PP PP 23 26 18.7 -2.2
PBDV Barranco-do-Ve 102.04 335 *e*PP PP 23 26 24.9 +3.9
PBDV *e*SKS 23 32 52.2
PBDV *e*SS **SS 23 41 04.2 +9.2**
MORF Marmelete 102.23 335 *e*P **Pdif** **23 22 10.6 -0.9**
MORF *e*PP **PP 23 26 22.4 0.0**
MORF AMS AMS 00 10 56.7
comp=E,22µm,21.8s
MORF Marmelete 102.23 335 *e*PP PP 23 26 21.7 -0.8
MORF *e*SKS 23 32 52.5
MORF Marmelete 102.23 335 *e*P **Pdif** **23 22 10.5 -0.9**
MORF *e* 23 26 22.4
PFVI Vila Bisbo 102.44 335 *e*PP PP 23 26 27.0 +3.0
PFVI *e*SKS 23 32 53.4
PFVI Vila Bisbo 102.44 335 PFAKE 23 22 20.0 +7.7
PFVI LR LR
comp=Z,25µm,18.0s
TLIG Tlapa 103.00 57 PFAKE 23 22 30.0 +15
TLIG LR LR
comp=Z,7µm,19.0s
PTCN Pitcairn Islan 103.47 111 PFAKE 23 22 30.0 +13
PTCN LR LR
comp=Z,10µm,19.0s
CASY Casey 104.02 192 PFAKE 23 22 30.0 +12
CASY LR LR
comp=Z,4µm,20.0s
DWPF Disney Wildern 105.33 38 PFAKE 23 26 50.0
DWPF LR LR
comp=Z,8µm,19.0s
ROSA Rosais 105.50 351 PFAKE 23 26 50.0
ROSA LR LR
comp=Z,8µm,20.0s
CMLA Cha da Macela 106.05 349 PFAKE 23 26 50.0
CMLA LR LR
comp=Z,6µm,21.0s
TEIG Tepich 107.75 48 PFAKE 23 27 00.0
TEIG LR LR
comp=Z,6µm,20.0s
TAM Tamanrasset 108.19 317 PFAKE 23 27 00.0
TAM LR LR
comp=Z,8µm,21.0s
CCIG Comitan 108.23 54 PFAKE 23 27 00.0
CCIG LR LR
comp=Z,8µm,22.0s
BBSR BB Station 108.46 22 PFAKE 23 27 00.0
BBSR LR LR
comp=Z,6µm,22.0s
PMPS Porto Santo 108.54 340 *e*PP PP 23 27 06.7 -2.4
PMOZ Porto Moniz, M 109.00 340 *e*PP PP 23 27 18.9 +6.3
PMOZ Porto Moniz, M 109.00 340 *e*LR LR 00 00 51.6
comp=Z,10µm,20.0s
TGUH Tegucigalpa,Un 113.03 52 PFAKE 23 27 10.0
TGUH LR LR
comp=Z,5µm,20.0s
VNDA Vanda 113.44 175 PKKPbc PKKPbc 23 37 44.4 +5.1
comp=Z,1.7nm,0.8s,baz=214,slow=3.5,SNR=5.0
GTBY Guantanamo Bay 115.31 38 PFAKE 23 27 10.0 +12
GTBY LR LR
comp=Z,6µm,20.0s
MTDJ Mount Denham 115.48 41 PFAKE 23 27 10.0 +11
MTDJ LR LR
comp=Z,6µm,21.0s
LSZ Lusaka 116.93 270 PFAKE 23 27 10.0 +8.5
LSZ LR LR
comp=Z,6µm,19.0s
JTS JuntasAbangare 117.34 52 PFAKE 23 27 10.0 +7.7
JTS LR LR
comp=Z,4µm,20.0s
MAW Mawson 117.86 205 PKP **PKPdf** **23 27 02.0 +0.5**
comp=Z,5.1nm,0.8s,baz=145,slow=3.3,SNR=7.7
MAW PKKPbc **PKKPbc 23 37 27.4 +3.8**
comp=Z,6.2nm,1.0s,baz=268,slow=8.2,SNR=4.0
MAW Mawson 117.86 205 *e*PKPdf **PKPdf** **23 27 02.0 +0.5**
MAW *e*PKKPbc **PKKPbc 23 37 27.4 +3.8**
MAW LR LR
comp=Z,900nm,20.0s
PAPH Port-au-Prince 117.87 36 PFAKE 23 27 10.0 +6.8
PAPH LR LR
comp=Z,10µm,20.0s
SDDR Presa de Saban 117.95 35 PFAKE 23 27 20.0 +17
SDDR LR LR
comp=Z,20µm,19.0s
TOC1 Torodi Ar. Sit 118.01 314 PFAKE 23 27 10.0 +6.4
TOC1 LR LR
comp=Z,14µm,21.0s
TOC2 Torodi Ar. Sit 118.01 314 PFAKE 23 27 10.0 +6.4
TOC2 LR LR
comp=Z,13µm,20.0s
TOB2 Torodi Ar. Sit 118.02 314 PFAKE 23 27 20.0 +16
TOB2 LR LR
comp=Z,13µm,20.0s
TOB1 Torodi Ar. Sit 118.02 314 PFAKE 23 27 20.0 +16
TOB1 LR LR
comp=Z,14µm,21.0s
TOC3 Torodi Ar. Sit 118.02 314 PFAKE 23 27 20.0 +16
TOC3 LR LR
comp=Z,13µm,21.0s
TOA2 Torodi Ar. Sit 118.03 314 PFAKE 23 27 20.0 +16
TOA2 LR LR
comp=Z,100nm,18.0s
TOC7 Torodi Ar. Sit 118.03 314 PFAKE 23 27 20.0 +16
TOC7 LR LR
comp=Z,13µm,21.0s
TOA1 Torodi Ar. Sit 118.03 314 *e*PKPdf **PKPdf** **23 27 02.6 -1.0**
TOA1 *e*PKKPbc **PKKPbc 23 37 23.5 +1.4**
TOA1 LR LR
comp=Z,13µm,21.0s
TOA0 Torodi Ar. Sit 118.03 314 *e*PKPdf **PKPdf** **23 27 01.5 -2.2**
TOA0 *e*PKPdf **PKiKP 23 27 03.6 0.0**
TOA0 LR LR
comp=Z,13µm,21.0s
TORD Torodi Ar. Bea 118.03 314 PKP **PKPdf** **23 27 02.6 -1.0**
comp=Z,9.5nm,0.9s,baz=16,slow=2.2,SNR=27
TORD PKKPbc **PKKPbc 23 37 23.5 +1.4**
comp=Z,2.2nm,0.7s,baz=221,slow=2.9,SNR=11
TOB3 Torodi Ar. Sit 118.03 314 PFAKE 23 27 20.0 +16
TOB3 LR LR
comp=Z,13µm,21.0s
TOB5 Torodi Ar. Sit 118.03 314 PFAKE 23 27 20.0 +16
TOB5 LR LR
comp=Z,13µm,21.0s
TOA3 Torodi Ar. Sit 118.03 314 PFAKE 23 27 20.0 +16
TOA3 LR LR
comp=Z,100nm,18.0s
TOB4 Torodi Ar. Sit 118.04 314 PFAKE 23 27 20.0 +16
TOB4 LR LR
comp=Z,13µm,21.0s
TOC4 Torodi Ar. Sit 118.05 314 PFAKE 23 27 20.0 +16
TOC4 LR LR
comp=Z,13µm,20.0s
TOC5 Torodi Ar. Sit 118.06 314 PFAKE 23 27 20.0 +16
TOC5 LR LR
comp=Z,14µm,21.0s
SDD Santo Domingo 119.04 34 PFAKE 23 27 20.0 +15
SDD LR LR
comp=Z,12µm,21.0s
AGP Aguadilla 120.29 31 PFAKE 23 27 20.0 +12
AGP LR LR
comp=Z,7µm,22.0s
MPR Mayaguez 120.46 31 PFAKE 23 27 20.0 +12
MPR LR LR
comp=Z,6µm,22.0s
RPN Rapa Nui 120.68 103 PFAKE 23 27 20.0 +12
RPN LR LR
comp=Z,31µm,20.0s
CBYP Canovanas 120.94 30 PFAKE 23 27 20.0 +11
CBYP LR LR
comp=Z,12µm,21.0s
SJG San Juan 120.96 30 PFAKE 23 27 20.0 +11
SJG LR LR
comp=Z,8µm,20.0s
HUMP Col San Antoni 121.06 30 PFAKE 23 27 20.0 +11
HUMP LR LR
comp=Z,9µm,20.0s
ABVI Anegada Island 121.12 28 PFAKE 23 27 20.0 +11
ABVI LR LR
comp=Z,6µm,22.0s
STVI Saint Thomas 121.23 29 PFAKE 23 27 20.0 +10
STVI LR LR
comp=Z,11µm,22.0s
PAYG Puerto Ayora 121.38 66 PFAKE 23 27 20.0 +10
PAYG LR LR

comp=Z,8μm,19.0s
BCIP Isla Barro Col 121.42 49 PFAKE 23 27 20.0 +10
BCIP LR LR
comp=Z,4μm,20.0s
SMRT St. Maarten 122.22 27 PFAKE 23 27 20.0 +8.4
SMRT LR LR
comp=Z,9μm,21.0s
SABA Saba 122.55 27 PFAKE 23 27 20.0 +7.7
SABA LR LR
comp=Z,9μm,22.0s
SEUS St. Eustatius 122.76 27 PFAKE 23 27 20.0 +7.4
SEUS LR LR
comp=Z,9μm,22.0s
ANWB Willy Bob 123.04 26 PFAKE 23 27 20.0 +6.8
ANWB LR LR
comp=Z,6μm,22.0s
LBTB Lobatse 123.86 262 *e*PKIKP PKPdf 23 27 14.5 -0.1
LBTB Lobatse 123.86 262 *e*PKPdf PKPdf 23 27 14.5 -0.1
GDHS Morne Mazeau, 124.33 26 PFAKE 23 27 30.0 +14
GDHS LR LR
comp=Z,6μm,20.0s
QSPA South Pole Qui 125.19 180 *e*PKPdf PKPdf 23 27 14.2 -1.6
QSPA LR LR
comp=Z,11μm,22.0s
BOSA Boshof 125.70 258 PKP PKPdf 23 27 19.1 +1.1
comp=Z,9.2nm,0.8s,baz=35,slow=2.8,SNR=12
BOSA Boshof 125.70 258 *e*PKPdf PKPdf 23 27 19.1 +1.1
BOSA *e*PKPdf **PKiKP 23 27 19.8 +1.3**
CXM Morne La Croix 125.89 26 *e*P PKPdf 23 27 20.0 +1.2
FDF Fort de France 125.97 26 *e*P PKPdf 23 27 24.2 +5.3
FDF Fort de France 125.97 26 PFAKE 23 27 30.0 +11
FDF LR LR
comp=Z,9μm,20.0s
OCAC Ocana 126.00 43 *e*P PKPdf 23 27 23.9 +4.8
SYO Syowa Base 126.53 206 *e*P PKPpre 23 27 08.9
SYO Syowa Base 126.53 206 *e*X PKPdf 23 27 14.6 -3.6
BRRC Barranca, Sant 126.70 44 *e*P PKPdf 23 27 23.7 +3.4
SDV Santo Domingo 126.91 40 PKP PKPdf 23 27 22.1 +1.2
comp=Z,29nm,0.9s,baz=0.0,slow=3.0
SDV Santo Domingo 126.91 40 *e*PKPdf PKPdf 23 27 21.1 +0.1
SDV LR LR
comp=Z,10μm,20.0s
SDV Santo Domingo 126.91 40 *e*P PKPdf 23 27 20.9 -0.1
MALC Bahia Malaga 126.97 50 *e*P PKPdf 23 27 25.3 +4.5
DBIC Dimbokro 127.04 315 PKP PKPdf 23 27 19.5 -1.5
comp=Z,26nm,1.0s,baz=10,slow=2.3,SNR=20
DBIC PP **PP 23 29 22.3 +3.9**
comp=Z,14nm,0.9s,baz=18,slow=11,SNR=3.6
TIC Toumodi 127.15 315 *e*P PKPdf 23 27 20.3 -0.9
KIC Kosan Boka 127.22 315 *e*P PKPdf 23 27 22.4 +1.1
comp=Z,72nm,1.0s
GUYC Guyana, Colomb 127.22 47 *e*P PKPdf 23 27 24.7 +2.8
NORC Norcasia 127.27 47 *e*P PKPdf 23 27 25.6 +4.1
SVB Belmont 127.28 27 PFAKE 23 27 30.0 +8.6
SVB LR LR
comp=Z,7μm,21.0s
LIC Lamto 127.50 315 *e*P PKPdf 23 27 18.9 -2.9
comp=Z,64nm,1.6s
TSUM Tsumeb 127.62 272 *e*PKPdf PKPdf 23 27 23.4 +1.4
TSUM LR LR
comp=Z,6μm,21.0s
BBGH Gun Hill 128.01 25 PFAKE 23 27 30.0 +7.2
BBGH LR LR
comp=Z,9μm,20.0s
ROSC El Rosal 128.17 47 PKP PKPdf 23 27 24.7 +1.1
comp=Z,5.4nm,0.3s,baz=113,slow=7.3,SNR=6.4
GRGR Grenville 128.17 28 PFAKE 23 27 30.0 +6.9
GRGR LR LR
comp=Z,8μm,22.0s
CHIC Chingaza 128.68 46 *e*P PKPdf 23 27 25.3 +0.7
PRAC Prado 128.72 48 *e*PKPdf PKPdf 23 27 30.3 +6.1
PRAC LR LR
comp=Z,3μm,20.0s
CMBC Cumbal 129.00 53 *e*P PKPdf 23 27 27.0 +1.7
OTAV Otavalo 129.11 54 *e*PKPdf PKPdf 23 27 26.9 +1.5
OTAV LR LR
comp=Z,4μm,19.0s
OTAV Otavalo 129.11 54 *e*P PKPdf 23 27 28.4 +2.9
VILC Villavicencio, 129.12 47 *e*P PKPdf 23 27 26.5 +1.4
SUR Sutherland 130.69 255 PFAKE 23 27 40.0 +12
SUR LR LR
comp=Z,4μm,18.0s
ATAH Atahualpa 134.44 61 PKP PKPdf 23 27 35.9 +0.5
comp=Z,9.3nm,1.0s,baz=328,slow=5.2,SNR=5.7
NNA Nana 138.82 65 *i* PKIKP PKPdf 23 27 42.4 -0.7
NNA Nana 138.82 65 PFAKE 23 28 00.0 +17
NNA LR LR
comp=Z,13μm,20.0s
SNAA Sanae 139.06 197 PKP PKPpre 23 27 32.1
SNAA Sanae 139.06 197 *e*PKHKP PKPpre 23 27 33.5
SNAA Sanae 139.06 197 *e*PKPpre PKPpre 23 27 33.5
SNAA LR LR
comp=Z,318μm,22.0s
PTGA Pitinga 140.47 34 PKhKP PKPpre 23 27 38.4
comp=Z,14nm,1.0s,baz=295,slow=3.0,SNR=8.1
PTGA Pitinga 140.47 34 *e*PKPpre PKPpre 23 27 38.4
PTGA LR LR
comp=Z,5μm,20.0s
VNA2 Neumayer--Watz 140.63 196 PKP PKPpre 23 27 38.5
baz=111,slow=2.2
VNA3 Neumayer Olymp 140.88 195 PKP PKPpre 23 27 38.7
VNA1 Neumayer--Stat 141.03 196 PKP PKPpre 23 27 38.7
SHEL Horse Pasture 144.33 294 *i* PKIKP PKPdf 23 27 54.2 +1.3
SAML Samuel 145.78 45 *e*PKPdf PKPdf 23 27 53.9 -1.5
SAML LR LR
comp=Z,3μm,18.0s
PMSA Palmer Station 147.07 161 PFAKE 23 28 10.0 +10
PMSA LR LR
comp=Z,3μm,20.0s
LPAZ La Paz 147.98 61 PKPbc PKPdf 23 28 01.2 +1.5
comp=Z,101nm,1.1s,baz=259,slow=2.4,SNR=35
PB11 IPOC Station P 149.05 68 *e*PKPdf PKPdf 23 28 00.4 -0.5
PB11 LR LR
comp=Z,4μm,21.0s
PB01 IPOC Station P 149.93 70 *e*PKPdf PKPbc 23 28 04.8 -2.2
PB01 LR LR
comp=Z,6μm,19.0s
PB04 IPOC Station P 150.13 72 *e*PKPbc PKPbc 23 28 08.0 +0.4
PB04 LR LR
comp=Z,4μm,20.0s
RCBR Riachuelo 150.37 353 PKPbc PKPbc 23 28 06.7 -1.6
comp=Z,85nm,1.1s,baz=14,slow=1.0,SNR=14
RCBR Riachuelo 150.37 353 *e*PKPbc PKPbc 23 28 07.1 -1.1
RCBR LR LR
comp=Z,7μm,22.0s
PB10 IPOC Station P 150.43 75 PFAKE 23 28 10.0 +1.9
PB10 LR LR
comp=Z,6μm,20.0s
USHA Ushuaia 152.06 143 PKPbc PKPbc 23 28 12.4 +1.6
baz=237,slow=4.0
SIV San Ignacio 152.54 51 PKP PKPdf 23 28 06.8 +0.6
comp=Z,7.4nm,1.0s,baz=269,slow=2.8,SNR=4.2
SIV PKPbc **PKiKP 23 28 13.4 0.0**
comp=Z,54nm,1.0s,baz=299,slow=3.4,SNR=13
CHRN Cochrane 152.57 126 *e*PKPbc PKPbc 23 28 14.4 +2.2
LCO Las Campanas 152.75 85 *e*PKPdf PKPbc 23 28 10.4 -3.2
LCO LR LR
comp=Z,7μm,20.0s
ROC1 El Roble 153.71 94 *e*PKPbc PKPbc 23 28 15.7 +0.1
PLCA Paso Flores 154.92 112 PKP PKPdf 23 28 09.7 +0.7
comp=Z,2.8nm,1.0s,baz=38,slow=2.2,SNR=3.8
PLCA PKPbc **PKPbc 23 28 15.8 -1.8**
comp=Z,10nm,1.0s,baz=264,slow=1.6,SNR=8.3
PLCA PKPab **PKPab 23 28 32.6 -0.5**
comp=Z,5.1nm,0.7s,baz=40,slow=0.7,SNR=5.6
PLCA Paso Flores 154.92 112 PKIKP PKPdf 23 28 09.7 +0.7
PLCA 23 28 15.9
PLCA 23 28 32.7
PLCA pmax pmax
comp=Z,4.0nm,1.0s
PLCA pmax pmax
comp=Z,10.0nm,1.0s
PLCA pmax pmax
comp=Z,5.0nm,0.7s
TCA Tanti 158.50 86 *i* P PKPdf 23 28 15.1 +1.2
BDFB Brasilia 158.79 24 PKP PKPdf 23 28 14.9 +0.3
comp=Z,0.9nm,0.4s,baz=53,slow=5.2,SNR=2.7
BDFB PKPab **PKPab 23 28 51.7 +1.5**
comp=Z,15nm,0.8s,baz=43,slow=4.3,SNR=8.4
BDFB Brasilia 158.79 24 *e*PKPdf PKPdf 23 28 14.9 +0.3
BDFB *e*PKPab **PKPab 23 28 51.7 +1.5**
BDFB LR LR
comp=Z,9μm,22.0s
SUCO SUCO 158.80 92 *i* P PKPpre 23 28 04.2
EFI East Falkland 158.93 146 PFAKE 23 28 20.0 +6.5
EFI LR LR
comp=Z,6μm,20.0s
TRQA Tornquist 161.64 105 *e*PKPdf PKPdf 23 28 17.6 +0.5
TRQA *e*PKPab **PKPab 23 29 04.2 +2.0**
CPUP Villa Florida 162.08 65 PKP PKPdf 23 28 18.9 +1.0
comp=Z,3.6nm,1.1s,baz=187,slow=4.1,SNR=3.2
CPUP PKPab **PKPab 23 29 04.9 +0.6**
comp=Z,21nm,1.3s,baz=294,slow=6.0,SNR=3.1

MEX 11 23:08:47.5±0.5, 18.00°N×96.68°W, h84km±6km, MD3.7, Veracruz

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
TPIG	**Tehuac#an**	**0.77**	**303**	*i* P		Pn	23 09 03.4	-1.0
TPIG				*e*S		Sn	23 09 15.3	-1.7
VHO	**Vista Hermosa**	**0.92**	**183**	*e*P		Pn	23 09 04.8	-1.4
VHO				*e*S		Sn	23 09 18.3	-1.8
OXBJ	**Oaxaca**	**0.93**	**183**	*e*P		Pn	23 09 04.9	-1.3
OXBJ				*e*S		Sn	23 09 18.3	-1.9
LVIG	**Laguna Verde**	**1.73**	**8**	*e*P		Pn	23 09 13.3	-2.7
LVIG				*e*S		Sn	23 09 28.6	-9.0
HMTT	**Tlapaneco**	**1.80**	**264**	*i* P		Pn	23 09 15.9	-1.1
HMTT				*i* S		Sn	23 09 37.1	-2.3
TLIG	**Tlapa**	**1.85**	**257**	*i* P		Pn	23 09 16.3	-1.4
TLIG				*e*S		Sn	23 09 38.2	-2.4
PNIG	**Pinotepa**	**2.12**	**221**	*e*P		Pn	23 09 17.9	-3.2
PNIG				*e*S		Sn	23 09 44.9	-1.8
PPM	**Popocatepetl**	**2.13**	**300**	*e*P		Pn	23 09 20.5	-1.2
PPM				*e*P		Pn	23 09 21.0	-0.7
PPM				*e*S		Sn	23 09 46.3	-1.5
PPM				*e*S		Sn	23 09 46.7	-1.1
HUIG	**Huatulco**	**2.29**	**166**	*e*P		Pn	23 09 22.2	-1.1
HUIG				*e*S		Sn	23 09 47.4	-3.3
YAIG	**Yautepec**	**2.42**	**291**	*e*P		Pn	23 09 25.2	-0.1
YAIG				*e*S		Sn	23 09 52.4	-1.9
TGIG		**3.61**	**109**	*e*P		Pn	23 09 39.9	-1.3
TGIG				*e*S		Sn	23 10 20.5	-2.2

JMA 11 23:13:33.3±0.2, 35.49°N×140.86°E, h18km±2km, M3.5, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CHOJ	**Chosi**	**0.21**	**360**	P		Pg	23 13 38.3	-0.1
CHOJ				S		Sg	23 13 42.2	+0.3
JCN	**Nagara**	**0.54**	**263**	P		Pb	23 13 44.8	+0.6
JCN				S		Sn	23 13 53.7	-1.0
JHO	**Hitachi**	**1.14**	**348**	P		Pb	23 13 54.6	+0.1
JHO				S		Sb	23 14 08.9	-0.2

*CSEM **11** 23:13:47.8±0.2, 46.39N×15.09E, h1km, ML0.9, Error ellipse: s-maj=6.4km s-min=3.5km az=80.0, Suspected Mining induced.*

VIE 11 23:13:47.9±0.3, 46.39N×15.08E, h0km, mb0.3/1, ml0.9/2, Error ellipse: s-maj=2.5km s-min=1.4km az=5.0, Suspected Mining induced., Northwestern Balkan Peninsula

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SOKA	**Soboth**	**0.29**	**353**	*e*Pg		Pg	23 13 53.6	+0.1
	1.1nm,0.2s							
SOKA				*e*Sg		Sg	23 13 57.8	+0.5
	3.1nm,0.4s							
SOKA	**Soboth**	**0.29**	**353**	Pg		Pg	23 13 53.6	+0.1
	1.1nm,0.2s							
SOKA				Sg		Sg	23 13 57.8	+0.5
	3.1nm,0.4s							
OBKA	**Obir**	**0.39**	**289**	*i* Pg		Pg	23 13 55.4	+0.1
	1.7nm,0.3s							
OBKA				*e*Sg		Sg	23 14 01.0	+0.7
	5.7nm,0.3s							
OBKA	**Obir**	**0.39**	**289**	Pg		Pg	23 13 55.4	+0.1
	1.7nm,0.3s							
OBKA				Sg		Sg	23 14 01.0	+0.6
	5.7nm,0.3s							
NVLJ	**Novalja**	**1.83**	**185**	*e*Pn		Pn	23 14 20.2	-0.4
NVLJ				Sn		Sb	23 14 45.1	-0.6
NVLJ	**Novalja**	**1.83**	**185**	*e*Pn		Pn	23 14 20.2	-0.4
NVLJ				Sn		Sn	23 14 45.0	+0.6

JMA 11 23:15:46.2±0.2, 35.44°N×140.90°E, h20km±2km, M3.6, 1D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CHOJ	**Chosi**	**0.26**	**353**	↓P		Pb	23 15 52.2	-0.1
CHOJ				S		Sb	23 15 56.8	+0.3
JCN	**Nagara**	**0.57**	**268**	P		Pb	23 15 58.2	+0.7
JCN				*e*S		Sn	23 16 08.3	+0.3
JHO	**Hitachi**	**1.20**	**347**	P		Pb	23 16 08.3	+0.1
JHO				S		Sn	23 16 24.3	+0.8

IDC 11 23:22:11.2±999.0, 30.33N×131.21E, h0km, Error ellipse: s-maj=410.8km s-min=166.1km az=40.0, Kyushu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
I30JP	**ISUMI INFRASON**	**9.12**	**55**	*i*		00 18 55.0	
	baz=240,slow=333,SNR=5.6						
I45RU	**USSURIYSK INFR**	**13.86**	**2**	*i*		00 42 00.0	
	baz=182,slow=328,SNR=1.2						
I44RU	**PETROPAVLOVSK**	**29.84**	**33**	*i*		02 27 30.0	
	baz=229,slow=333,SNR=0.7						

*IDC **11** 23:22:20.7±2.5, 39.83N×144.29E, h0km, mb3.8/9, mb1 4.1/10, mb1mx3.7/63, mbtmpg3.9/10, ML2.4/1, Error ellipse: s-maj=68.6km s-min=27.6km az=180.0*
*JMA **11** 23:22:23.8±0.2, 39.92N×144.27E, h39km, M3.9*
*ISCJB **11** 23:22:24.8±0.7, 39.93N±0.05×144.25E±0.05, h34km, mb3.8/9, Error ellipse: s-maj=7.3km s-min=4.6km az=145.6*

ISC 11 23:22:26.0±1.0, 39.91N±0.07×144.28E±0.08, h34km, n23, σ0.97/33, mb3.8/9, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JTH	**Tanohata**	**1.86**	**272**	P		Pn	23 22 54.3	-1.1
JTH				S		Sn	23 23 16.7	-1.0
MIYJ	**Miyakonagasawa**	**1.92**	**261**	P		Pn	23 22 55.3	-1.0
MIYJ				*e*S		Sn	23 23 18.2	-1.1
JANG	**Nango**	**2.17**	**283**	P		Pn	23 22 58.4	-1.3
JANG				S		Sn	23 23 23.8	-1.5
OFUJ	**Ofunato**	**2.18**	**248**	P		Pn	23 22 58.6	-1.3
OFUJ				*e*S		Sn	23 23 23.9	-1.8
JOM	**Ohasama**	**2.34**	**260**	P		Pn	23 23 01.7	-0.4
JOM				S		Sn	23 23 29.5	-0.2
JMK	**Ichinoseki**	**2.55**	**249**	P		Pn	23 23 03.9	-1.1
JMK				*e*S		Sn	23 23 34.2	-0.7
JTM	**Tenmabayashi**	**2.60**	**291**	P		Pn	23 23 05.1	-0.6
JTM				*e*S		Sn	23 23 36.1	0.0
JNBK	**Urakawa-nobuka**	**2.63**	**335**	P		Pn	23 23 04.8	-1.2
JNBK				S		Sn	23 23 37.2	+0.4
JCH	**Churui**	**2.79**	**346**	P		Pn	23 23 06.8	-1.4
JCH				*e*S		Sn	23 23 38.4	-2.2
JAH	**Hinai**	**2.81**	**277**	P		Pn	23 23 08.5	0.0
JAH				S		Sn	23 23 41.6	+0.5
JRG	**Rokugo**	**2.86**	**261**	P		Pn	23 23 09.0	-0.2
JRG				*e*S		Sn	23 23 44.1	+1.7
JOT	**Ohata**	**2.86**	**302**	P		Pn	23 23 09.0	-0.2
JKB	**Kayabe**	**3.15**	**310**	P		Pn	23 23 13.4	+0.2
JKB				S		Sn	23 23 49.8	+0.2
USRK	**Ussuriysk Ar.**	**10.09**	**299**	Pn		Pn	23 24 49.7	+1.3
	0.3nm,0.3s,baz=111,slow=13,SNR=6.6							
SEY	**Seymchan**	**23.56**	**9**	P		P	**23 27 33.5**	**+0.5**
	0.8nm,0.3s,baz=227,slow=6.5,SNR=3.6							
MKAR	**Makanchi Array**	**44.56**	**300**	P		P	**23 30 34.5**	**0.0**
	1.2nm,0.9s,baz=87,slow=9.8,SNR=5.6							
RES	**Resolute Bay**	**59.25**	**15**	P		P	**23 32 23.5**	**+0.1**
	0.8nm,0.6s,baz=318,slow=3.2,SNR=4.3							
FINES	**FINESS Array B**	**67.31**	**333**	P		P	**23 33 17.4**	**+0.5**
	1.3nm,0.6s,baz=37,slow=9.8,SNR=6.0							
KBZ	**Khabaz**	**70.72**	**311**	P		P	**23 33 39.0**	**+0.6**
	1.8nm,1.1s,baz=349,slow=3.7,SNR=3.5							
AKASG	**Malin Array Be**	**73.38**	**323**	P		P	**23 33 53.9**	**-0.3**
	1.0nm,0.5s,baz=43,slow=5.9,SNR=9.3							
PDAR	**Pinedale Array**	**74.06**	**47**	P		P	**23 33 59.0**	**+0.2**
	0.3nm,0.5s,baz=64,slow=1.8,SNR=5.0							
GERES	**GERESS Array B**	**81.42**	**330**	P		P	**23 34 40.0**	**+0.6**
	0.3nm,0.6s,baz=200,slow=7.1,SNR=2.7							
TXAR	**Lajitas Array**	**86.60**	**54**	P		P	23 35 07.3	+1.1
	0.4nm,0.6s,baz=276,slow=2.9,SNR=4.3							

*IDC **11** 23:22:32.7±0.7, 37.00N×140.67E, h0km, mb3.9/12, mb1 4.2/12, mb1mx3.8/63, mbtmpg3.9/12, Error ellipse: s-maj=19.6km s-min=13.2km az=161.0*
*ISCJB **11** 23:22:34.0±0.6, 37.01N±0.04×140.77E±0.05, h20km±3km, mb3.9/14, Error ellipse: s-maj=7.6km s-min=5.7km az=26.6*
*JMA **11** 23:22:34.8, 37.03N×140.69E, h11km±1km, M3.9 Broadband fault plane solution: P waves. NP1: φ±38.00000°, δ48.00000°, λ-98.00000°. NP2:φ±231.00000°, δ42.00000°, λ-81.00000°. Principal axes: T Plg3.0000°, Azm134.0000°; N Plg6.0000°, Azm44.0000°; P Plg83.0000°, Azm250.0000°;*
JMA Felt II J1.
*NEIC **11** 23:22:37.8±0.4, 36.95N×140.55E, h35km, mb4.3/2 Error ellipse: s-maj=11.6km s-min=9.7km az=162.0*

ISC 11 23:22:33.8±1.1, 37.01N±0.04×140.62E±0.04, h8km±7km, n30, σ0.64/33, mb3.8/14, 5C-1D, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.17**	**58**	↓P		Pg	**23 22 37.7**	**+0.2**
ONAJ				S		Sg	**23 22 39.8**	**-0.1**
JHO	**Hitachi**	**0.40**	**186**	↑↑P		Pb	**23 22 43.1**	**-0.1**
JFT	**Otama**	**0.56**	**336**	↑↑P		Pb	**23 22 45.9**	**+0.1**
JFT				S		Sb	**23 22 53.7**	**-0.2**
JSB	**Shiboa**	**0.56**	**266**	↑↑P		Pn	**23 22 47.6**	**-0.5**
JFY	**Yanaizu**	**0.83**	**299**	↑↑P		Pn	**23 22 51.5**	**-0.3**
JFY				S		Sb	**23 23 02.7**	**+0.9**
JYT	**Yasato**	**0.85**	**204**	S		Sb	**23 23 03.0**	**+0.6**
JMM	**Marumori**	**0.87**	**9**	↑↑P		Pg	**23 22 50.5**	**0.0**
JMM				S		Sg	**23 23 01.7**	**-0.1**
MJAR	**Matsushiro Arr**	**1.99**	**257**	Pg		Pb	**23 23 09.9**	**-0.3**
	18nm,0.3s,baz=79,slow=16,SNR=31							
MJAR				Lg		Lg	23 23 37.4	
	46nm,0.3s,baz=92,slow=28,SNR=15							
MAJO	**Matsushiro**	**1.99**	**257**	*e*Pn		**Pn**	**23 23 07.2**	**-0.6**
MAJO				*e*Sn		**Sn**	**23 23 33.5**	**+0.7**
MAT	**Matsushiro**	**1.99**	**257**	P		**Pb**	**23 23 10.6**	**+0.3**
MAT				S		**Sg**	**23 23 38.0**	**+0.2**
USRK	**Ussuriysk Ar.**	**9.72**	**320**	Pn		Pn	23 25 00.1	+6.2
	0.3nm,0.3s,baz=135,slow=15,SNR=6.4							
KSRS	**Korea Array**	**10.13**	**276**	Pn		Pn	23 25 05.9	+6.3
	0.3nm,0.3s,baz=97,slow=14,SNR=6.8							
KSAR	**Wonju Array Be**	**10.16**	**276**	Pn		Pn	23 25 05.9	+5.9
SONM	**Songino Array**	**27.27**	**304**	P		**P**	**23 28 18.3**	**-0.4**
	1.9nm,0.7s,baz=101,slow=8.0,SNR=4.4							
ZALV	**Zalesovo Beam**	**41.46**	**312**	P		**P**	**23 30 20.6**	**-0.3**
	0.9nm,0.5s,baz=99,slow=9.0,SNR=3.7							
MKAR	**Makanchi Array**	**43.59**	**302**	P		**P**	**23 30 39.1**	**+0.8**
	0.9nm,0.5s,baz=85,slow=9.2,SNR=9.3							
KURK	**Kurchatov**	**45.45**	**308**	P		**P**	**23 30 52.6**	**-0.5**
WRAB	**Tennant Creek**	**56.94**	**187**	*e*P		**P**	**23 32 17.9**	**-1.7**
	2.3nm,0.5s							
WRA	**Warramunga Arr**	**56.95**	**187**	P		**P**	**23 32 19.1**	**-0.6**
	3.1nm,0.6s,baz=3.7,slow=7.3,SNR=19							
ABKAR	**Akbulak array**	**57.47**	**310**	*e*P		**P**	**23 32 22.3**	**-0.8**
	1.0nm,0.5s							
ASAR	**Alice Springs**	**60.68**	**187**	P		**P**	**23 32 45.8**	**+0.2**
	1.2nm,0.7s,baz=11,slow=7.6,SNR=8.5							
ARCES	**ARCESS Array B**	**63.79**	**339**	P		**P**	**23 33 05.8**	**-0.1**
	4.4nm,1.0s,baz=58,slow=12,SNR=4.9							
YKA	**Yellowknife Ar**	**64.15**	**30**	P		**P**	**23 33 09.9**	**+1.6**
	0.2nm,0.6s,baz=300,slow=6.6,SNR=2.2							
FINES	**FINESS Array B**	**68.54**	**332**	P		**P**	**23 33 36.3**	**-0.1**
	2.9nm,0.9s,baz=72,slow=6.2,SNR=5.7							
NVAR	**Mina Array Bea**	**75.51**	**53**	P		**P**	**23 34 18.6**	**-0.4**
	0.5nm,0.7s,baz=294,slow=6.8,SNR=2.8							
PDAR	**Pinedale Array**	**78.14**	**45**	P		**P**	**23 34 34.5**	**+0.7**
	0.3nm,0.6s,baz=285,slow=3.5,SNR=3.0							
GERES	**GERESS Array B**	**82.39**	**328**	P		**P**	**23 34 56.4**	**0.0**
	0.2nm,0.4s,baz=43,slow=7.3,SNR=2.2							
TXAR	**Lajitas Array**	**90.64**	**52**	P		**P**	**23 35 37.2**	**0.0**
	0.2nm,0.6s,baz=327,slow=4.4,SNR=2.4							
TORD	**Torodi Ar. Bea**	**116.89**	**314**	PKP		**PKPdf**	**23 41 19.0**	**-0.6**
	1.5nm,1.1s,baz=50,slow=1.8,SNR=1.8							
LPAZ	**La Paz**	**147.25**	**59**	PKPbc		**PKPbc**	**23 42 19.7**	**+0.7**
	0.8nm,0.6s,baz=68,slow=3.8,SNR=4.0							

*IDC **11** 23:24:20.6±0.8, 36.70N×138.72E, h0km, mb3.9/12, mb1 4.1/16, mb1mx3.8/72, mbtmpg3.9/16, ML3.6/3, Error ellipse: s-maj=22.8km s-min=6.9km az=149.0*
*ISCJB **11** 23:24:21.1±0.5, 36.81N±0.03×138.59E±0.03, h8km±4km, mb3.8/14, Error ellipse: s-maj=5.0km s-min=4.1km az=15.1*
*JMA **11** 23:24:21.2, 36.82N×138.61E, h0km, M3.9 Broadband fault plane solution: P waves. NP1:φ±13.00000°, δ89.00000°, λ25.00000°. NP2:φ±283.00000°, δ65.00000°, λ179.00000°. Principal axes: T Plg18.0000°, Azm241.0000°; N Plg65.0000°, Azm15.0000°; P Plg17.0000°, Azm145.0000°;*
JMA Felt III J1.
*NEIC **11** 23:24:25.4±0.6, 36.58N×138.48E, h35km, mb4.5/1 Error ellipse: s-maj=15.2km s-min=13.6km az=145.0*

ISC 11 23:24:22.1±1.1, 36.80N±0.03×138.60E±0.03, h6km±8km, n30, σ1.09/39, mb3.9/14, 2C-4D, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JGK	**Kuni**	**0.24**	**173**	↓P		**Pg**	**23 24 27.0**	**+0.2**
JGK				S		**Sg**	**23 24 31.0**	**+0.9**
MAT	**Matsushiro**	**0.41**	**231**	P		**Pg**	**23 24 29.2**	**-0.8**
MAT				S		**Sg**	**23 24 34.9**	**-0.5**
MAT	**Matsushiro**	**0.41**	**231**	P		**Pg**	**23 24 29.4**	**-0.6**
MAT				S		**Sg**	**23 24 34.9**	**-0.5**
MJAR	**Matsushiro Arr**	**0.41**	**230**	P		**Pg**	**23 24 29.2**	**-0.8**
	1μm,0.3s,baz=44,slow=19,SNR=226							
MJAR				Lg		Lg	23 24 34.3	
	2μm,0.3s,baz=21,slow=8.7,SNR=56							
JKT	**Katashina**	**0.52**	**94**	P		**Pg**	**23 24 31.6**	**-0.5**
JKT				S		**Sg**	**23 24 38.4**	**-0.5**
JHK	**Hiroka**	**0.55**	**37**	↑↑P		**Pg**	**23 24 31.6**	**-1.1**
JHK				S		**Sg**	**23 24 38.8**	**-1.2**
JNG	**Nsakai**	**0.57**	**226**	↑↑P		**Pg**	**23 24 32.3**	**-0.7**
JNG				S		**Sg**	**23 24 40.0**	**-0.4**
JIZZ	**Izumozaki**	**0.73**	**7**	↓P		**Pg**	**23 24 36.2**	**+0.1**
JIZZ				S		**Sb**	**23 24 47.5**	**0.0**
JAG	**Ashikaga**	**0.78**	**119**	↓P		**Pg**	**23 24 36.6**	**-0.5**
JAG				S		**Sg**	**23 24 47.6**	**+0.4**
JRY	**Ryogami san**	**0.82**	**163**	↓P		**Pg**	**23 24 37.1**	**-0.7**
JRY				S		**Sg**	**23 24 48.7**	**+0.2**
JNU	**Nakatsue**	**7.33**	**242**	Pn		**Pn**	**23 26 10.7**	**+1.0**
	0.7nm,0.3s,baz=46,slow=2.0,SNR=4.1							
JNU	**Nakatsue**	**7.33**	**242**	Pn		**Pn**	**23 26 10.5**	**+0.8**
KSRS	**Korea Array**	**8.55**	**278**	Pn		**Pn**	**23 26 28.1**	**+1.7**
	1.9nm,0.3s,baz=92,slow=14,SNR=9.8							
KSAR	**Wonju Array Be**	**8.59**	**277**	Pn		**Pn**	**23 26 28.1**	**+1.3**
USRK	**Ussuriysk Ar.**	**8.94**	**328**	Pn		**Pn**	**23 26 31.5**	**-0.1**
	0.3nm,0.3s,baz=114,slow=18,SNR=3.5							
KLR	**Kul'dur**	**13.38**	**340**	Pn		**Pn**	**23 27 35.5**	**+3.1**
	0.2nm,0.3s,baz=140,slow=12,SNR=8.6							
SEY	**Seymchan**	**27.50**	**14**	P		**P**	**23 30 10.6**	**+1.7**
	1.0nm,0.3s,baz=211,slow=8.0,SNR=4.4				

NVAR **Mina Array Bea** 76.91 52 P **P** 23 36 15.3 -0.3
1.2nm,0.7s,baz=299,slow=5.2,SNR=8.6
PDAR **Pinedale Array** 79.42 44 P **P** 23 36 30.0 +0.6
0.4nm,0.6s,baz=225,slow=1.9,SNR=4.0
GERES **GERESS Array B** 81.69 327 P **P** 23 36 41.0 -0.4
0.5nm,0.7s,baz=36,slow=5.6,SNR=3.7
TXAR **Lajitas Array** 92.03 51 P **P** 23 37 33.0 +0.7
0.4nm,0.7s,baz=315,slow=4.1,SNR=4.1

IDC 11 23:25:25.5±8.0, 15°.84S×173°.01W, h0km, mb3.7/3, mb1 4.0/4, mb1mx3.6/57, mbtmp3.8/4, ML4.5/1, Error ellipse: s-maj=349.1km s-min=24.9km az=138.0, Tonga Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
AFI	**Afiamalu**	**2.26**	**32**	Pn	Pn	23 26 03.3	-0.9
	117nm,0.3s,baz=88,slow=2.3,SNR=48						
AFI				Sn	Sn	23 26 23.4	-9.4
	299nm,0.3s,baz=244,slow=8.2,SNR=18						
WRA	**Warramunga Arr**	**50.11**	**257**	P	P	23 34 22.3	-0.7
	0.4nm,0.5s,baz=97,slow=6.1,SNR=4.5						
ASAR	**Alice Springs**	**50.34**	**252**	P	P	23 34 24.3	-0.3
	1.7nm,0.7s,baz=86,slow=8.1,SNR=16						
ILAR	**Eielson Array**	**82.80**	**11**	P	P	23 37 51.3	+0.1
	0.3nm,0.7s,baz=227,slow=6.7,SNR=4.1						
BRTR	**Keskin Array B**	**146.74**	**321**	PKPbc	PKPbc	23 45 10.5	+0.6
	1.0nm,1.0s,baz=94,slow=2.0,SNR=3.9						

IDC 11 23:29:48.8±1.9, 37°.07N×141°.18E, h0km, mb3.6/6, mb1 3.8/7, mb1mx3.5/66, mbtmp3.6/7, ML3.6/1, Error ellipse: s-maj=55.5km s-min=22.1km az=64.0
ISCJB 11 23:29:51.5±2.3, 36°.99N±0°.04×140°.90E±0°.09, h15km±16km, mb3.6/6, Error ellipse: s-maj=12.0km s-min=5.6km az=10.1
JMA 11 23:29:51.9, 37°.04N×140°.69E, h11km±1km, M3.5
JMA Felt II J1.

ISC 11 23:29:51.9±0.9, 37°.03N±0°.04×140°.69E±0°.06, h10km±7km, n14, σ0°78/18, mb3.6/6, 2C, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.11**	**51**	⇑P	**Pg**	**23 29 54.8**	**+0.1**
ONAJ				S	**Sg**	**23 29 56.7**	**0.0**
JHO	**Hitachi**	**0.43**	**193**	P	**Pg**	**23 30 00.4**	**0.0**
JHO				*e*S	**Sg**	**23 30 06.3**	**+0.2**
JSB	**Shiboa**	**0.62**	**264**	⇑P	**Pb**	**23 30 04.6**	**-0.3**
JMM	**Marumori**	**0.84**	**6**	P	**Pg**	**23 30 07.5**	**-0.5**
JMM				S	**Sg**	**23 30 18.8**	**-0.1**
JFY	**Yanaizu**	**0.87**	**296**	P	**Pb**	**23 30 09.0**	**-0.2**
JFY				S	**Sg**	**23 30 19.8**	**-0.3**
JYT	**Yasato**	**0.90**	**207**	S	**Sg**	**23 30 20.3**	**-0.6**
MJAR	**Matsushiro Arr**	**2.05**	**257**	Pn	**Pb**	**23 30 29.5**	**+0.2**
	13nm,0.3s,baz=74,slow=16,SNR=17						
MJAR				Sn	**Sb**	**23 30 55.1**	**+0.2**
	21nm,0.3s,baz=11,slow=32,SNR=12						
USRK	**Ussuriysk Ar.**	**9.74**	**320**	Pn	Pn	23 32 17.4	+5.3
	0.1nm,0.3s,baz=116,slow=12,SNR=5.1						
SONM	**Songino Array**	**27.31**	**304**	P	**P**	**23 35 38.8**	**+1.9**
	0.5nm,0.7s,baz=105,slow=8.6,SNR=3.6						
ZALV	**Zalesovo Beam**	**41.49**	**312**	P	**P**	**23 37 40.2**	**+1.3**
	0.8nm,0.4s,baz=95,slow=10,SNR=3.5						
MKAR	**Makanchi Array**	**43.63**	**302**	P	**P**	**23 37 56.4**	**-0.1**
	0.3nm,0.5s,baz=87,slow=9.8,SNR=5.1						
BVAR	**Borovoye Array**	**50.15**	**312**	P	**P**	**23 38 46.9**	**-0.4**
	0.2nm,0.5s						
WRA	**Warramunga Arr**	**56.98**	**187**	P	**P**	**23 39 36.8**	**-1.0**
	1.6nm,0.6s,baz=4.1,slow=7.3,SNR=9.2						
ASAR	**Alice Springs**	**60.71**	**187**	P	**P**	**23 40 02.6**	**-1.0**
	0.5nm,0.6s,baz=12,slow=7.8,SNR=5.7						

IDC 11 23:35:35.9±5.7, 3°.11S×101°.17E, h0km, mb3.4/5, mb1 3.5/5, mb1mx3.4/56, mbtmp3.4/5, Error ellipse: s-maj=301.6km s-min=21.0km az=51.0
ISCJB 11 23:35:43.2±0.8, 3°.05S±0°.1×101°.3E±0°.1, h46km, mb3.5/5, Error ellipse: s-maj=23.5km s-min=7.1km az=41.1
DJA 11 23:35:45.1±0.5, 3°.5S×10°.1E±°, h46km±35km, M3.5/5, MLv3.5/5

ISC 11 23:35:43.7±1.0, 3°.1S±0°.1×101°.34E±0°.09, h46km, n11, σ1°58/12, mb3.6/5, Southern Sumatera

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MASI	**Maura Aman, Be**	**0.90**	**96**	P	**Pn**	**23 36 01.3**	**+1.3**
PPSI	**Pulau Pagai**	**1.36**	**282**	P	**Pn**	**23 36 07.7**	**+1.5**
MNAI	**Manna**	**2.07**	**129**	P	**Pn**	**23 36 17.3**	**+1.3**
MNAI				S	**Sn**	**23 36 42.1**	**+1.5**
PDSI	**Padang**	**2.30**	**337**	P	**Pn**	**23 36 20.2**	**+1.1**
LHSI	**Lahat**	**2.31**	**110**	P	**Pn**	**23 36 20.5**	**+1.2**
MNSI	**Mandailing Nat**	**4.20**	**335**	P	**Pn**	**23 36 47.8**	**+2.5**
WRA	**Warramunga Arr**	**36.31**	**120**	P	**P**	**23 42 42.5**	**-0.8**
	0.1nm,0.3s,baz=302,slow=9.1,SNR=1.9						
ASAR	**Alice Springs**	**37.56**	**126**	P	**P**	**23 42 53.3**	**-0.6**
	0.2nm,0.7s,baz=303,slow=8.7,SNR=2.9						
MKAR	**Makanchi Array**	**52.40**	**344**	P	**P**	**23 44 50.7**	**-0.7**
	0.5nm,0.7s,baz=143,slow=8.0,SNR=6.0						
ZALV	**Zalesovo Beam**	**58.45**	**349**	P	**P**	**23 45 33.5**	**-1.1**
	0.5nm,0.3s,baz=171,slow=7.3,SNR=4.5						
BVAR	**Borovoye Array**	**61.63**	**339**	P	**P**	**23 45 54.8**	**-1.8**
	0.2nm,0.4s,baz=142,slow=7.2,SNR=2.6						

JMA 11 23:38:09.7±0.1, 39°.16N×142°.39E, h33km±1km, M3.5, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
OFUJ	**Ofunato**	**0.57**	**262**	P	Pb	23 38 21.0	-0.3
OFUJ				S	Sb	23 38 29.1	-0.2
MIYJ	**Miyakonagasawa**	**0.61**	**313**	P	Pn	23 38 21.3	-0.7
MIYJ				S	Sb	23 38 29.5	-0.9
JOM	**Ohasama**	**0.91**	**291**	P	Pn	23 38 26.4	+0.3
JOM				S	Sb	23 38 38.5	-0.3
JMK	**Ichinoseki**	**0.93**	**258**	P	Pn	23 38 26.6	+0.1
JMK				S	Sn	23 38 38.7	0.0
JIO	**Ouri**	**1.08**	**229**	P	Pn	23 38 28.0	-0.4
JIO				S	Sn	23 38 41.0	-1.2
JKZ	**Kuzumaki**	**1.16**	**315**	P	Pn	23 38 30.4	+0.7
JKZ				S	Sn	23 38 45.2	+0.8
JRG	**Rokugo**	**1.38**	**280**	P	Pb	23 39 34.2	-0.8
JRG				S	Sb	23 38 51.5	-0.8
JANG	**Nango**	**1.39**	**331**	P	Pn	23 38 33.5	+0.8

IDC 11 23:38:54.6±2.2, 1°.18N×126°.53E, h0km, mb3.8/3, mb1 4.0/3, mb1mx3.5/49, mbtmp3.8/3, Error ellipse: s-maj=174.8km s-min=28.0km az=66.0, Northern Molucca Sea

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
WRA	**Warramunga Arr**	**22.34**	**160**	P	P	23 43 53.3	-0.9
	2.6nm,0.6s,baz=339,slow=11,SNR=10						
ASAR	**Alice Springs**	**25.71**	**164**	P	P	23 44 27.6	+0.7
	0.9nm,0.5s,baz=343,slow=9.7,SNR=8.9						
MKAR	**Makanchi Array**	**59.54**	**326**	P	P	23 48 59.8	-0.1
	0.3nm,0.3s,baz=117,slow=8.1,SNR=1.7						

IDC 11 23:43:58.0±1.1, 35°.68N×141°.04E, h0km, mb3.6/5, mb1 3.7/6, mb1mx3.4/58, mbtmp3.5/6, ML3.1/1, Error ellipse: s-maj=32.8km s-min=22.5km az=71.0
ISCJB 11 23:43:59.4±1.0, 35°.48N±0°.05×141°.0E±0°.1, h33km, mb3.5/5, Error ellipse: s-maj=15.5km s-min=7.0km az=177.2
JMA 11 23:43:59.4±0.1, 35°.47N×140°.92E, h21km±2km, M3.7
JMA Felt I J1

ISC 11 23:44:01.1±1.0, 35°.53N±0°.05×140°.79E±0°.10, h33km, n18, σ1°57/12, mb3.5/5, 2C, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CHOJ	**Chosi**	**0.18**	**18**	⇑P	**Pn**	**23 44 05.0**	**-1.8**
CHOJ				S	**Sn**	**23 44 09.3**	**+0.1**
KTR	**Katsuura**	**0.55**	**225**	⇑P	**Pb**	**23 44 10.8**	**-1.5**
BSO4	**Boso 4**	**0.66**	**214**	P	**Pn**	**23 44 13.1**	**-0.8**
BSO3	**Boso 3**	**0.76**	**197**	P	**Pn**	**23 44 13.3**	**-2.0**
JYT	**Yasato**	**0.85**	**325**	*e*S	**Sb**	**23 44 29.2**	**+0.8**
JHO	**Hitachi**	**1.09**	**351**	*e*S	**Sb**	**23 44 35.8**	**+0.4**
MJAR	**Matsushiro Arr**	**2.32**	**296**	Pn	**Pb**	**23 44 40.4**	**-1.9**
	4.7nm,0.3s,baz=94,slow=12,SNR=6.3						
H11N2	**WAKE ISLAND Hy**	**27.86**	**117**	T	T	00 18 50.1	
	baz=310,slow=76,SNR=7.3						
H11N1	**WAKE ISLAND Hy**	**27.87**	**118**	T	T	00 18 45.6	
	baz=310,slow=76,SNR=14						
H11N3	**WAKE ISLAND Hy**	**27.88**	**117**	T	T	00 18 48.9	
	baz=310,slow=76,SNR=7.4						
H11S1	**WAKE ISLAND Hy**	**28.51**	**120**	T	T	00 19 35.8	
	baz=312,slow=75,SNR=52						
H11S3	**WAKE ISLAND Hy**	**28.51**	**120**	T	T	00 19 33.9	
	baz=312,slow=75,SNR=52						
H11S2	**WAKE ISLAND Hy**	**28.53**	**120**	T	T	00 19 38.3	
	baz=312,slow=75,SNR=31						
ZALV	**Zalesovo Beam**	**42.57**	**314**	P	**P**	**23 51 55.3**	**+1.8**
	0.2nm,0.3s,baz=79,slow=7.5,SNR=2.4						
MKAR	**Makanchi Array**	**44.50**	**303**	P	**P**	**23 52 11.0**	**+1.7**
	0.3nm,0.5s,baz=93,slow=7.5,SNR=3.5						
ILAR	**Eielson Array**	**51.03**	**32**	P	**P**	**23 52 59.9**	**+0.3**
	0.4nm,0.5s,baz=266,slow=6.0,SNR=8.7						
WRA	**Warramunga Arr**	**55.51**	**187**	P	**P**	**23 53 34.1**	**+1.2**
	0.5nm,0.4s,baz=2.0,slow=7.3,SNR=6.5						
ASAR	**Alice Springs**	**59.24**	**187**	P	P	23 54 04.0	+4.8
	0.2nm,0.5s,baz=13,slow=8.9,SNR=3.2						

IDC 11 23:46:36.3±1.2, 35°.33N×141°.20E, h0km, mb3.7/5, mb1 3.9/6, mb1mx3.5/60, mbtmp3.6/6, ML3.2/1, Error ellipse: s-maj=29.5km s-min=27.2km az=39.0
ISCJB 11 23:46:38.3±0.7, 35°.44N±0°.04×140°.91E±0°.07, h33km, mb3.6/5, Error ellipse: s-maj=8.7km s-min=5.8km az=0.2
JMA 11 23:46:38.0±0.1, 35°.45N×140°.91E, h23km±1km, M3.9
JMA Felt II J1.

ISC 11 23:46:39.9±0.9, 35°.47N±0°.04×140°.86E±0°.07, h33km, n21, σ1°69/17, mb3.5/5, 2D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CHOJ	**Chosi**	**0.23**	**360**	⇓P	**Pn**	**23 46 44.1**	**-2.6**
CHOJ				S	**Sn**	**23 46 48.7**	**-1.5**
JCN	**Nagara**	**0.54**	**264**	P	**Pb**	**23 46 49.9**	**-1.2**
KTR	**Katsuura**	**0.55**	**234**	S	**Sb**	**23 46 57.2**	**-1.9**
BSO4	**Boso 4**	**0.65**	**222**	P	**Pn**	**23 46 51.1**	**-1.5**
BSO3	**Boso 3**	**0.73**	**203**	⇓P	**Pn**	**23 46 52.0**	**-1.6**
BSO3				*e*X		23 47 01.4	
BSO1	**Boso 1**	**0.82**	**173**	P	**Pn**	**23 46 52.4**	**-2.3**
JYT	**Yasato**	**0.93**	**324**	P	**Pn**	**23 46 55.6**	**-1.0**
JYT				S	**Sn**	**23 47 08.4**	**-0.4**
JHO	**Hitachi**	**1.16**	**348**	*e*S	**Sn**	**23 47 15.5**	**+1.0**
MJAR	**Matsushiro Arr**	**2.40**	**297**	Pn	**Pb**	**23 47 21.1**	**-1.4**
	4.4nm,0.3s,baz=105,slow=16,SNR=8.6						
MAT	**Matsushiro**	**2.40**	**297**	P	**Pn**	**23 47 16.3**	**-0.6**
MAT				*e*S	**Sn**	**23 47 46.3**	**+1.1**
H11N2	**WAKE ISLAND Hy**	**27.78**	**117**	T	T	00 21 19.8	
	baz=310,slow=76,SNR=13						
H11N1	**WAKE ISLAND Hy**	**27.79**	**118**	T	T	00 21 21.9	
	baz=310,slow=76,SNR=32						
H11N3	**WAKE ISLAND Hy**	**27.80**	**117**	T	T	00 21 23.6	
	baz=310,slow=76,SNR=20						
SONM	**Songino Array**	**28.32**	**307**	P	P	23 52 35.8	+5.2
	0.2nm,0.4s,baz=99,slow=9.5,SNR=3.2						
H11S1	**WAKE ISLAND Hy**	**28.43**	**120**	T	T	00 22 15.8	
	baz=312,slow=75,SNR=32						
H11S3	**WAKE ISLAND Hy**	**28.43**	**120**	T	T	00 22 17.0	
	baz=312,slow=75,SNR=46						
H11S2	**WAKE ISLAND Hy**	**28.45**	**120**	T	T	00 22 18.2	
	baz=312,slow=75,SNR=38						
MKAR	**Makanchi Array**	**44.59**	**303**	P	**P**	**23 54 51.3**	**+2.5**
	0.2nm,0.5s,baz=91,slow=9.8,SNR=3.3						
ILAR	**Eielson Array**	**51.05**	**32**	P	**P**	**23 55 38.9**	**+0.3**
	0.4nm,0.8s,baz=269,slow=6.0,SNR=4.1						
WRA	**Warramunga Arr**	**55.46**	**187**	P	**P**	**23 56 12.0**	**+0.6**
	0.8nm,0.7s,baz=2.0,slow=7.4,SNR=3.6						
DLBC	**Dease Lake**	**60.13**	**37**	P	**P**	**23 56 45.7**	**+1.8**
	2.9nm,1.0s,baz=281,slow=9.7,SNR=3.4						

JMA 11 23:48:14.7, 37°.03N×140°.69E, h11km±1km, M4.7
Broadband fault plane solution: P waves. NP1: ϕs74.00000°, δ50.00000°, λ-100.00000°. NP2: ϕs269.00000°, δ41.00000°, λ-78.00000°. Principal axes: T Plg5.0000°, Azm171.0000°; N Plg8.0000°, Azm80.0000°; P Plg81.0000°, Azm293.0000°;
JMA Felt IV J1.
ISCJB 11 23:48:14.3±0.4, 37°.01N±0°.02×140°.71E±0°.04, h22km±2km, mb4.5/62, MS5.3/2 Error ellipse: s-maj=5.3km s-min=3.5km az=24.4
MOS 11 23:48:17.1±1.2, 36°.98N×140°.68E, h44km, mb4.7/47, Error ellipse: s-maj=8.3km s-min=5.4km az=110.9
BJI 11 23:48:17.0, 37°.20N×140°.40E, h10km, mb4.7/16, mB5.4/1, Ms5.1/2, Ms7 4.8/1
NEIC 11 23:48:19.3±1.0, 37°.00N×140°.52E, h47km±8km, mb4.8/12, Error ellipse: s-maj=7.0km s-min=5.9km az=92.0
NEIC Recorded [4 JMA] in Fukushima.
IDC 11 23:48:20.7±1.6, 36°.98N×140°.63E, h59km±14km, mb4.2/31, mb1 4.3/36, mb1mx4.2/63, mbtmp4.5/36, Error ellipse: s-maj=11.4km s-min=8.9km az=77.0

ISC 11 23:48:14.1±1.0, 37°.00N±0°.03×140°.61E±0°.03, h8km±6km, n159, σ1°01/165, mb4.6/62, 22C-2D, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.18**	**56**	⇑P	**Pg**	**23 48 17.6**	**-0.3**
ONAJ				S	**Sg**	**23 48 19.6**	**-0.9**
JHO	**Hitachi**	**0.39**	**184**	⇑P	**Pb**	**23 48 23.0**	**-0.3**
JHO				S	**Sb**	**23 48 29.0**	**-0.4**
JSB	**Shiboa**	**0.55**	**267**	P	**Pn**	**23 48 27.4**	**-0.9**
JSB				S	**Sb**	**23 48 35.5**	**+1.4**
JFT	**Otama**	**0.56**	**337**	⇑P	**Pb**	**23 48 25.7**	**-0.5**
JFT				S	**Sb**	**23 48 33.4**	**-1.0**
JFY	**Yanaizu**	**0.83**	**300**	⇑P	**Pb**	**23 48 31.3**	**+0.6**
JFY				S	**Sb**	**23 48 42.5**	**+0.5**
JYT	**Yasato**	**0.84**	**203**	⇑P	**Pb**	**23 48 31.3**	**+0.4**
JYT				S	**Sb**	**23 48 42.7**	**+0.4**
JMM	**Marumori**	**0.88**	**10**	⇑P	**Pg**	**23 48 30.3**	**-0.7**
JMM				S	**Sg**	**23 48 41.6**	**-0.8**
MJAR	**Matsushiro Arr**	**1.98**	**257**	P	**Pb**	**23 48 50.0**	**-0.4**
	130nm,0.3s,baz=77,slow=16,SNR=62						
MJAR				S	**Sg**	**23 49 17.1**	**-0.6**
	322nm,0.3s,baz=90,slow=27,SNR=17						
MAJO	**Matsushiro**	**1.98**	**257**	*e*P	**Pb**	**23 48 49.5**	**-0.9**
MAJO				*e*		23 49 11.6	
MAJO	**Matsushiro**	**1.98**	**257**	*e*Pn	**Pb**	**23 48 49.5**	**-0.9**
MAJO				*e*Sn	**Sn**	**23 49 11.6**	**-1.3**
MAT	**Matsushiro**	**1.98**	**257**	P	**Pb**	**23 48 50.2**	**-0.2**
MAT				S	**Sg**	**23 49 17.0**	**-0.8**
JHJ	**Hachijo jima 2**	**3.93**	**190**	P	**Pn**	**23 49 16.4**	**+1.6**
	45nm,0.3s,baz=74,slow=20,SNR=3.6						
JHJ				S	**Sn**	**23 50 01.3**	**+0.3**
	95nm,0.3s,baz=84,slow=21,SNR=4.1						
ERM	**Erimo**	**5.38**	**21**	*e*P	**Pn**	**23 49 36.3**	**+1.7**
ERM				*e*		23 50 37.2	
ERM				pmax	pmax		
	comp=Z,68nm,0.9s						
ERM	**Erimo**	**5.38**	**21**	*e*Pn	**Pn**	**23 49 36.3**	**+1.7**
	comp=Z,68nm,0.9s						
ERM				*e*Sn	**Sn**	**23 50 37.2**	**+0.5**
SHO	**Shikotan**	**8.34**	**33**	*e*P	**Pn**	**23 50 16.1**	**+0.9**
SHO				pmax	pmax		
	comp=Z,24nm,0.6s						
SHO				pmax	pmax		
	comp=N,16nm,0.4s						
SHO				pmax	pmax		
	comp=E,14nm,0.5s						
JNU	**Nakatsue**	**8.86**	**247**	P	Pn	23 50 27.3	+4.7
	comp=E,0.5nm,0.3s,baz=80,slow=10.0,SNR=5.7						
JNU	**Nakatsue**	**8.86**	**247**	*e*Pn	**Pn**	**23 50 23.4**	**+0.9**
	comp=E,13nm,0.9s						
USRK	**Ussuriysk Ar.**	**9.72**	**320**	P	Pn	23 50 39.6	+5.4
	comp=E,0.8nm,0.3s,baz=131,slow=13,SNR=42						
KUR	**Kuril'sk**	**9.88**	**31**	*e*P	Pn	23 50 40.1	+3.8
YSS	**Yuzh-Sakhalins**	**10.07**	**8**	*e*P	**Pn**	**23 50 41.2**	**+2.2**
YSS				pmax	pmax		
	comp=Z,53nm,1.0s						
YSS	**Yuzh-Sakhalins**	**10.07**	**8**	*e*Pn	**Pn**	**23 50 39.4**	**+0.4**
	comp=Z,34nm,0.8s						
KSRS	**Korea Array**	**10.13**	**276**	P	Pn	23 50 45.9	+6.1
	comp=Z,0.5nm,0.3s,baz=94,slow=13,SNR=63						
KSAR	**Wonju Array Be**	**10.16**	**276**	P	Pn	23 50 45.9	+5.7
KSAR	**Wonju Array Be**	**10.16**	**276**	P	Pn	23 50 45.9	+5.7
MDJ	**Mudanjiang**	**11.29**	**316**	*e*Pn	**Pn**	**23 50 58.5**	**+2.8**
	comp=Z,51nm,1.4s						
KLR	**Kul'dur**	**13.82**	**335**	P	P	23 51 35.2	-3.5
	comp=Z,0.2nm,0.3s,baz=141,slow=12,SNR=13						
NKL	**Nikolayevsk**	**16.15**	**0**	*e*P	**P**	**23 52 08.0**	**+3.5**
NKL				pmax	pmax		
	comp=Z,20nm,1.0s						
TIA	**Tai'an**	**18.86**	**275**	*e*P	**Pn**	**23 52 37.4**	**+2.2**
BJI	**Beijing**	**19.34**	**287**	P	**Pn**	**23 52 40.5**	**-0.4**
BJI				pmax	pmax		
	comp=Z,20nm,1.1s						
ENH	**Enshi**	**26.69**	**265**	*e*Pn	**P**	**23 53 51.9**	**-1.8**
	comp=Z,9.5nm,0.7s						
ULN	**Ulaanbaatar**	**26.84**	**304**	*ce*P	**P**	**23 53 55.0**	**-0.1**
ULN				pmax	pmax		
	comp=Z,12nm,1.2s						
ULN	**Ulaanbaatar**	**26.84**	**304**	*e*P	**P**	**23 53 54.4**	**-0.7**
	comp=Z,8.9nm,1.0s						
SEY	**Seymchan**	**26.95**	**12**	P	**P**	**23 53 56.9**	**+1.2**
	comp=Z,15nm,1.1s,baz=203,slow=7.2,SNR=11						
BOD	**Bodaibo**	**27.22**	**328**	*e*P	**P**	**23 53 55.8**	**-2.4**
BOD				pmax	pmax		
	comp=Z,4.0nm,0.9s						
SONM	**Songino Array**	**27.27**	**304**	P	**P**	**23 53 58.0**	**-1.0**
	comp=Z,7.4nm,0.8s,baz=104,slow=7.4,SNR=37						
SONM	**Songino Array**	**27.27**	**304**	P	**P**	**23 53 58.0**	**-1.0**
SONM				pmax	pmax		
	comp=Z,8.0nm,0.8s						
H11N2	**WAKE ISLAND Hy**	**28.69**	**120**	T	T	00 23 57.6	
	baz=313,slow=75,SNR=51						
H11N1	**WAKE ISLAND Hy**	**28.70**	**120**	T	T	00 24 01.8	
	baz=313,slow=75,SNR=50						
H11N3	**WAKE ISLAND Hy**	**28.71**	**120**	T	T	00 24 01.1	
	baz=313,slow=75,SNR=35						
H11S1	**WAKE ISLAND Hy**	**29.39**	**122**	T	T	00 24 52.4	
	baz=314,slow=76,SNR=266						
H11S3	**WAKE ISLAND Hy**	**29.39**	**122**	T	T	00 24 52.1	
	baz=314,slow=76,SNR=267						
H11S2	**WAKE ISLAND Hy**	**29.40**	**122**	T	T	00 24 55.4	
	baz=314,slow=76,SNR=79						
ZAK	**Zakamensk**	**29.79**	**309**	*e*P	**P**	**23 54 21.9**	**+0.6**
ZAK				pmax	pmax		
	comp=Z,2.0nm,1.2s						
TLY	**Talaya**	**29.87**	**311**	*e*P	**P**	**23 54 20.7**	**-1.2**
TLY				pmax	pmax		
	comp=Z,1.0nm,0.6s						
BILL	**Bilibino**	**34.24**	**17**	⇑*e*P	**P**	**23 54 59.7**	**-0.4**
BILL				*e*		23 56 13.1	
BILL				*e*S	**S**	**00 00 26.2**	**-0.6**
BILL				pmax	pmax		
	comp=Z,6.0nm,1.2s						
BILL				MLR	MLR		
	comp=Z,3μm,14.0s						
TIXI	**Tiksi**	**35.25**	**354**	P	**P**	**23 55 07.4**	**-1.3**
	comp=Z,2.7nm,0.7s,baz=157,slow=4.3,SNR=7.6						
TIXI	**Tiksi**	**35.25**	**354**	*ce*P	**P**	**23 55 08.4**	**-0.3**
TIXI				pmax	pmax		
	comp=Z,3.0nm,0.8s						
TIXI	**Tiksi**	**35.25**	**354**	*e*P	**P**	**23 55 07.2**	**-1.5**
	comp=Z,2.5nm,0.6s						
CMAR	**Chiang Mai Arr**	**40.86**	**255**	P	**P**	**23 55 57.8**	**+1.1**
	comp=Z,0.8nm,0.6s,baz=40,slow=8.5,SNR=3.7						
CMAR				PcP	**PcP**	**23 57 58.1**	**+0.6**
	comp=Z,1.0nm,0.8s,baz=25,slow=2.4,SNR=5.4						
ZALV	**Zalesovo Beam**	**41.46**	**312**	P	**P**	**23 56 00.7**	**-0.5**
	comp=Z,3.8nm,0.5s,baz=90,slow=6.1,SNR=21						
ZALV				PcP	**PcP**	**23 57 58.5**	**-0.3**
	comp=Z,3.5nm,0.7s,baz=100,slow=3.9,SNR=7.0						
NVS	**Novosibirsk**	**42.40**	**314**	*e*P	**P**	**23 56 08.3**	**-0.5**
NVS				*e*		23 58 02.0	
NVS				pmax	pmax		
	comp=Z,8.0nm,1.1s						
NVS				pmax	pmax		
	comp=E,5.0nm,0.8s						
NRIK	**Noril'sk**	**43.03**	**335**	P	**P**	**23 56 12.9**	**-0.9**
	comp=E,3.3nm,0.6s,baz=110,slow=13,SNR=9.0						
MKAR	**Makanchi Array**	**43.59**	**302**	P	**P**	**23 56 18.9**	**+0.2**
	comp=E,4.6nm,0.6s,baz=88,slow=10.0,SNR=48						
MKAR				PcP	**PcP**	**23 58 06.1**	**0.0**
	comp=E,1.3nm,0.7s,baz=76,slow=6.1,SNR=3.4						
KURK	**Kurchatov**	**45.44**	**308**	*e*P	**P**	**23 56 32.9**	**-0.4**
KURK				pmax	pmax		
	comp=Z,40nm,0.8s						
KURK	**Kurchatov**	**45.44**	**308**	*e*P	**P**	**23 56 32.9**	**-0.4**
	comp=Z,40nm,0.8s						
ODAN	**Odare**	**45.77**	**273**	*e*Pn	**P**	**23 56 36.6**	**+0.1**
	comp=Z,21nm,0.9s						
PDGK	**Podgornoye**	**46.22**	**298**	P	**P**	**23 56 39.9**	**+0.3**
PDGK				pmax	pmax		
	comp=Z,13nm,1.2s						
RAMN	**Ramite**	**46.36**	**274**	*e*P	**P**	**23 56 41.1**	**-0.1**
	comp=Z,50nm,1.0s						
GUN	**Gumba**	**46.52**	**275**	*e*P	**P**	**23 56 42.7**	**+0.2**
	comp=Z,18nm,0.7s						
KKN	**Kakani**	**47.05**	**275**	*e*P	**P**	**23 56 46.4**	**-0.1**
GKN	**Gorkha**	**47.47**	**276**	*e*P	**P**	**23 56 49.7**	**0.0**
	comp=Z,58nm,1.1s						
KTH	**Kantishna Hill**	**48.14**	**34**	*e*P	**P**	**23 56 53.8**	**-0.5**
	comp=Z,16nm,1.1s						
KOLN	**Koldanda**	**48.39**	**276**	*e*Pn	**P**	**23 56 57.0**	**0.0**
PYUN	**Piuthan**	**48.73**	**277**	*e*P	**P**	**23 56 59.7**	**+0.1**
	comp=Z,79nm,1.0s						
KSH	**Kashi**	**49.83**	**294**	P	P	23 57 12.1	+4.4
ILAR	**Eielson Array**	**49.87**	**32**	P	**P**	**23 57 07.3**	**-0.2**
	comp=Z,3.4nm,0.8s,baz=273,slow=6.0,SNR=26						
OTUK	**Ortayu**	**49.92**	**306**	P	**P**	**23 57 08.0**	**-0.2**
OTUK				pmax	pmax		
	comp=Z,12nm,1.1s						
AAK	**Ala-Archa**	**49.94**	**298**	*e*P	**P**	**23 57 08.6**	**0.0**
AAK				pmax	pmax	

comp=Z,3.5nm,0.7s,baz=75,slow=13,SNR=9.3
ASAR Alice Springs 60.67 187 P **P 23 58 25.9 +0.1**
comp=Z,8.0nm,0.8s,baz=11,slow=6.8,SNR=49
RES Resolute Bay 62.79 14 P **P 23 58 39.3 -0.2**
comp=Z,4.1nm,0.9s,baz=306,slow=7.2,SNR=11
GEYT Alibeck 63.28 299 P **P 23 58 43.4 0.0**
comp=Z,8.5nm,0.8s,baz=42,slow=2.4,SNR=22
KLMR Klimovskoe 63.44 328 *e*P **P 23 58 41.4 -2.6**
KLMR pmax pmax
comp=Z,4.0nm,0.7s
ARCES ARCESS Array B 63.80 339 P **P 23 58 46.1 -0.2**
comp=Z,5.6nm,1.0s,baz=62,slow=8.7,SNR=7.0
ARCES ARCESS Array B 63.80 339 P **P 23 58 46.1 -0.2**
ARCES pmax pmax
comp=Z,5.0nm,1.0s
YKA Yellowknife Ar 64.16 30 P **P 23 58 48.7 0.0**
comp=Z,1.2nm,0.8s,baz=303,slow=6.5,SNR=18
DAG Danmarks Havn 65.75 355 *i* P **P 23 58 58.6 -0.3**
comp=Z,6.9nm,0.9s
DAG Danmarks Havn 65.75 355 *i* P **P 23 58 58.6 -0.3**
DAG pmax pmax
comp=Z,6.0nm,0.9s
VRH Novokhopyorsk 67.17 318 *e*P **P 23 59 08.0 -0.3**
VRH pmax pmax
comp=Z,9.0nm,0.5s
OBN Obninsk 67.73 323⇑ *e*P **P 23 59 11.6 -0.2**
OBN *e* 00 01 40.6
OBN *e*PPP PPP 00 03 17.0
OBN *e*SS SS 00 12 33.7 +4.0
OBN pmax pmax
comp=Z,5.0nm,0.9s
OBN MLR MLR
comp=Z,2μm,16.0s
LPSR Galich'ya Gora 67.91 320 *e*P **P 23 59 11.8 -1.2**
LPSR pmax pmax
comp=Z,10.0nm,0.9s
STKA Stephens Creek 68.53 179 P **P 23 59 15.9 -1.0**
comp=Z,3.5nm,0.8s,baz=348,slow=9.8,SNR=6.4
STKA Stephens Creek 68.53 179 P **P 23 59 16.0 -1.0**
STKA pmax pmax
comp=Z,4.0nm,0.8s
VSR Storozhevoye 68.53 319 *e*P **P 23 59 16.0 -0.9**
VSR pmax pmax
comp=Z,9.0nm,0.8s
FINES FINESS Array B 68.54 332 P **P 23 59 16.4 -0.3**
comp=Z,8.9nm,0.8s,baz=60,slow=7.5,SNR=30
GOF Gofitskoye 69.63 311 *ce*P **P 23 59 23.4 -0.5**
VSU Vasula 70.15 329 *ce*P **P 23 59 27.3 +0.5**
VSU pmax pmax
comp=Z,24nm,0.8s
ZEI Tsey 70.32 309 *e*P **P 23 59 26.2 -2.2**
ZEI pmax pmax
comp=Z,23nm,1.5s
KBZ Khabaz 70.43 310 P **P 23 59 29.2 +0.4**
comp=Z,6.9nm,0.9s,baz=26,slow=3.0,SNR=10
KIV Kislovodsk 70.44 311 *e*P **P 23 59 29.8 +0.8**
KIV pmax pmax
comp=Z,13nm,0.9s
KIV Kislovodsk 70.44 311 *e*P **P 23 59 28.6 -0.3**
comp=Z,9.7nm,0.7s
SUMG Summit 70.72 360 *i* P **P 23 59 31.3 +0.7**
comp=Z,13nm,0.9s
SUMG Summit 70.72 360 *i* P **P 23 59 31.3 +0.7**
SUMG pmax pmax
comp=Z,13nm,0.9s
HFS Hagfors 73.85 335 P **P 23 59 48.7 -0.3**
comp=Z,4.9nm,0.8s,baz=76,slow=7.8,SNR=9.9
AKASG Malin Array Be 73.93 322 P **P 23 59 49.0 -0.6**
comp=Z,5.6nm,0.8s,baz=48,slow=6.0,SNR=22
AKASG Malin Array Be 73.93 322 P **P 23 59 49.0 -0.6**
AKASG pmax pmax
comp=Z,6.0nm,0.8s
KIEV Kiev 73.94 322 *e*P **P 23 59 48.9 -0.8**
KIEV pmax pmax
comp=Z,6.0nm,0.9s
NOA NORSAR Array B 73.97 337 P **P 23 59 49.3 -0.4**
comp=Z,6.1nm,0.9s,baz=39,slow=5.8,SNR=15
FFC Flin Flon 74.08 32 *e*P **P 23 59 51.3 +0.9**
NVAR Mina Array Bea 75.52 53 P **P 00 00 00.2 +0.8**
comp=Z,2.0nm,0.7s,baz=293,slow=5.8,SNR=14
BURAR Bucovina Array 77.94 321⇓P **P 00 00 13.0 +0.3**
PDAR Pinedale Array 78.15 45 P **P 00 00 14.4 +0.3**
comp=Z,2.0nm,0.7s,baz=255,slow=2.9,SNR=20
VRI Vrincioaia 78.33 319⇑P **P 00 00 16.5 +1.7**
TIRR Tirgusor 78.36 317⇑P **P 00 00 17.2 +2.3**
PLOR Plostina 78.38 319⇓P **P 00 00 16.6 +1.5**
BRTR Keskin Array B 78.39 311 P **P 00 00 15.0 -0.4**
comp=Z,1.8nm,0.6s,baz=98,slow=4.0,SNR=10
KOLS Kolonicke sedl 78.47 324 *e*P **P 00 00 15.8 +0.3**
CRVS Cervenica-Dubn 78.87 324 *e*P **P 00 00 20.0 +2.3**
ISR Istrita 78.93 319⇑P **P 00 00 19.9 +1.7**
MLR Muntele Rosu 78.99 319⇑P **P 00 00 16.0 -2.6**
DPC Dobruska-Polom 80.14 328 *e*P **P 00 00 23.6 -1.1**
DPC Dobruska-Polom 80.14 328 *e*P **P 00 00 23.6 -1.1**
VYHS Vyhne 80.38 325 *e*P **P 00 00 26.0 0.0**
BRG Berggiesshubel 80.75 329 *e*P **P 00 00 29.2 +1.4**
PVCC Panska Ves 80.75 328 *e*P **P 00 00 27.9 0.0**
PVCC Panska Ves 80.75 328 *e*P **P 00 00 27.9 0.0**
CLL Collm 80.80 330 *i* P **P 00 00 28.0 -0.1**
comp=Z,10.0nm,1.0s
CLL Collm 80.80 330 *i* P **P 00 00 28.0 -0.1**
CLL pmax pmax
comp=Z,4.0nm,1.0s
BZS Buzias 81.11 322⇑P **P 00 00 29.9 0.0**
GOPC GO Pecny, Ondr 81.12 328 *e*P **P 00 00 32.4 +2.5**
GOPC GO Pecny, Ondr 81.12 328 *e*P **P 00 00 32.4 +2.5**
PRA Prague 81.16 328 *e*P **P 00 00 30.1 +0.1**
PRA Prague 81.16 328 *e*P **P 00 00 30.1 +0.1**
PRU Pruhonice 81.17 328 *e*P **P 00 00 28.2 -1.9**
PRU Pruhonice 81.17 328 *e*P **P 00 00 28.2 -1.9**
KHC Kasperske Hory 82.23 328 *e*P **P 00 00 35.6 -0.2**
KHC *e*pP PcP 00 00 51.4 +10
KHC Kasperske Hory 82.23 328 *e*P **P 00 00 35.6 -0.2**
KHC *e* 00 00 51.4
GERES GERESS Array B 82.40 328 P **P 00 00 36.5 -0.2**
comp=Z,1.3nm,0.6s,baz=46,slow=5.8,SNR=9.9
VTS Vitosha 82.41 319⇑P **P 00 00 37.8 +0.8**
BFO Black Forest 85.02 330 *ce*P **P 00 00 50.1 0.0**
ANMO Albuquerque 85.10 49 *ce*P **P 00 00 52.9 +1.9**
ANMO pmax pmax
comp=Z,6.0nm,1.2s
TXAR Lajitas Array 90.65 52 P **P 00 01 18.3 +0.7**
comp=Z,1.4nm,0.8s,baz=296,slow=3.6,SNR=15
TORD Torodi Ar. Bea 116.89 314 PKP **PKPdf 00 06 58.9 -1.0**
comp=Z,0.7nm,0.9s,baz=14,slow=2.1,SNR=6.5
SDV Santo Domingo 125.76 39 PKP **PKPdf 00 07 17.3 +0.1**
comp=Z,6.6nm,0.7s,baz=214,slow=1.5,SNR=11
DBIC Dimbokro 125.87 316 PKP **PKPdf 00 07 16.9 -0.3**
comp=Z,1.2nm,0.6s,baz=262,slow=1.5,SNR=4.2
LPAZ La Paz 147.26 59 PKPbc **PKPbc 00 07 59.5 +0.2**
comp=Z,7.9nm,0.8s,baz=7.5,slow=6.4,SNR=24
SIV San Ignacio 151.59 48 PKPbc **PKPbc 00 08 09.0 -0.4**
comp=Z,7.4nm,1.0s,baz=12,slow=1.7,SNR=4.3
LCO Las Campanas 152.65 82 *e*PKPbc **PKPbc 00 08 11.4 -0.4**

JMA 11 23:55:12.2,37.08N×140.67E,h8km±2km,M2.7,Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.10**	**78**	P	Pg	23 55 14.8	+0.1
ONAJ				S	Sg	23 55 16.7	+0.3
JHO	**Hitachi**	**0.47**	**190**	P	Pg	23 55 21.0	-0.4
JHO				S	Sg	23 55 28.0	+0.4
JFT	**Otama**	**0.51**	**329**	P	Pg	23 55 22.5	+0.4
JFT				S	Sg	23 55 29.2	+0.3
JMM	**Marumori**	**0.79**	**7**	P	Pg	23 55 27.2	-0.2
JMM				S	Sg	23 55 37.7	0.0
MAT	**Matsushiro**	**2.05**	**256**	P	Pn	23 55 48.1	+1.1

JMA 11 23:59:08.6,36.93N×140.66E,h7km±1km,M3.5,3C-1D Broadband fault plane solution: P waves. NP1: ϕ_s355.00000°,δ68.00000°,λ-102.00000°. **NP2:** ϕ_s205.00000°,δ25.00000°,λ-62.00000°. **Principal axes:** T Plg22.0000°, Azm94.0000°; N Plg11.0000°, Azm359.0000°; P Plg65.0000°, Azm244.0000°; **Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.20**	**33**	P	Pg	23 59 13.0	+0.3
ONAJ				*e*S	Sg	23 59 16.0	+0.5
JHO	**Hitachi**	**0.33**	**193**	⇓P	Pg	23 59 15.1	+0.1
JSB	**Shiboa**	**0.59**	**274**	⇑P	Pb	23 59 20.8	-0.5
JSB				S	Sb	23 59 29.3	-0.7
JFT	**Otama**	**0.64**	**336**	⇑P	Pg	23 59 21.2	+0.2
JFT				S	Sg	23 59 30.0	+0.7
JYT	**Yasato**	**0.80**	**208**	P	Pg	23 59 23.6	-0.3
JYT				S	Sg	23 59 34.2	0.0
JFY	**Yanaizu**	**0.90**	**302**	⇑P	Pg	23 59 25.7	-0.2
JFY				S	Sg	23 59 37.4	-0.2
JMM	**Marumori**	**0.94**	**6**	P	Pg	23 59 26.3	-0.4
JMM				S	Sg	23 59 38.8	-0.1

*ISCJB **12** 00:02:41.0±0.3,5.58N±0.07×32.66W±0.05,h10km, mb4.3/34 Error ellipse: s-maj=9.6km s-min=6.8km az=179.8*
*IDC **12** 00:02:41.4±0.5,5.61N×32.69W,h0km,mb4.1/22, mb1 4.2/23,mb1mx4.1/41,mbtmp4.1/23,ML3.6/1,Error ellipse: s-maj=15.4km s-min=13.0km az=150.0*
*NEIC **12** 00:02:42.6±0.3,5.53N×32.71W,h10km,mb4.8/17,Error ellipse: s-maj=9.1km s-min=6.7km az=155.0*
ISC 12 00:02:42.6±0.4,5.54N±0.08×32.70W±0.07,h10km,n122, σ0s97/115,mb4.3/34,1C,Central Mid-Atlantic Ridge

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RCBR	**Riachuelo**	**11.73**	**196**	Pn	**Pn**	**00 05 29.3**	**-0.9**
	0.4nm,0.3s,baz=359,slow=16,SNR=4.4						
RCBR	**Riachuelo**	**11.73**	**196**	*e*Pn	**Pn**	**00 05 29.4**	**-0.8**
BBTS	**Babate**	**18.30**	**59**	P	**P**	**00 06 59.5**	**+2.6**
	7.8nm,0.3s,baz=36,slow=1.5,SNR=13						
H10N3	**ASCENSION HYDR**	**22.50**	**126**	T	T	00 30 55.7	
	baz=305,slow=75,SNR=145						
H10N2	**ASCENSION HYDR**	**22.50**	**126**	T	T	00 31 01.6	
	baz=305,slow=75,SNR=156						
H10N1	**ASCENSION HYDR**	**22.52**	**126**	T	T	00 31 04.4	
	baz=305,slow=75,SNR=133						
H10S3	**ASCENSION HYDR**	**23.04**	**129**	T	T	00 31 39.7	
	baz=308,slow=75,SNR=69						
H10S1	**ASCENSION HYDR**	**23.04**	**129**	T	T	00 31 40.1	
	baz=308,slow=75,SNR=146						
H10S2	**ASCENSION HYDR**	**23.05**	**129**	T	T	00 31 43.1	
	baz=308,slow=75,SNR=75						
BDFB	**Brasilia**	**25.94**	**216**	P	**P**	**00 08 18.0**	**+2.5**
	6.5nm,1.0s,baz=54,slow=13,SNR=4.1						
DBIC	**Dimbokro**	**27.71**	**86**	P	**P**	**00 08 31.8**	**+0.4**
	8.0nm,1.0s,baz=255,slow=8.9,SNR=6.0						
DBIC	**Dimbokro**	**27.71**	**86**	*e*P	**P**	**00 08 31.8**	**+0.4**
	9.1nm,1.0s						
PTGA	**Pitinga**	**27.93**	**258**	*e*P	**P**	**00 08 33.2**	**-0.2**
	13nm,1.4s						
H05S1	**Guadeloupe/Mar**	**29.05**	**290**	T	T	00 39 04.3	
	SNR=31						
GRGR	**Grenville**	**29.33**	**285**	*e*P	**P**	**00 08 44.4**	**-1.5**
	118nm,1.0s						
H05N1	**Guadeloupe/Mar**	**29.78**	**293**	T	T	00 39 55.0	
	SNR=4.9						
GDHS	**Morne Mazeau,**	**30.42**	**293**	*e*P	**P**	**00 08 53.5**	**-2.0**
	34nm,0.9s						
TOA1	**Torodi Ar. Sit**	**34.74**	**75**	*e*P	**P**	**00 09 33.0**	**-0.3**
	5.5nm,0.9s						
TOA0	**Torodi Ar. Sit**	**34.74**	**75**	*e*P	**P**	**00 09 33.5**	**+0.2**
	4.8nm,0.8s						
TORD	**Torodi Ar. Bea**	**34.74**	**75**	P	**P**	**00 09 33.0**	**-0.3**
	2.2nm,0.7s,baz=266,slow=7.1,SNR=23						
SIV	**San Ignacio**	**35.30**	**232**	P	**P**	**00 09 40.2**	**+2.0**
	2.8nm,0.9s,baz=75,slow=18,SNR=3.2						
SDV	**Santo Domingo**	**37.77**	**277**	P	**P**	**00 09 60.0**	**+0.5**
	2.2nm,0.5s,baz=65,slow=6.4,SNR=3.6						
CPUP	**Vila Florida**	**39.57**	**216**	P	**P**	**00 10 15.5**	**+0.5**
	1.5nm,1.0s,baz=17,slow=8.7,SNR=2.5						
CPUP				PcP	**PcP**	**00 12 21.8**	**-0.1**
	1.2nm,0.8s,baz=33,slow=2.5,SNR=5.0						
TAM	**Tamanrasset**	**40.66**	**61**	*e*P	**P**	**00 10 21.0**	**-2.6**
	14nm,2.0s						
LPAZ	**La Paz**	**41.22**	**238**	P	**P**	**00 10 29.6**	**+0.9**
	2.7nm,0.8s,baz=38,slow=5.9,SNR=5.4						
LPAZ	**La Paz**	**41.22**	**238**	*e*P	**P**	**00 10 28.2**	**-0.5**
	4.7nm,0.9s						
NCB	**Newcomb**	**52.81**	**323**	*e*P	**P**	**00 11 57.9**	**-0.4**
	47nm,0.8s						
ESK	**Eskdalemuir**	**54.98**	**20**	*e*P	**P**	**00 12 13.4**	**-0.5**
	44nm,1.4s						
TSUM	**Tsumeb**	**55.27**	**118**	P	**P**	**00 12 18.1**	**+1.4**
	4.1nm,0.9s,baz=277,slow=7.1,SNR=7.8						
TSUM	**Tsumeb**	**55.27**	**118**	*e*P	**P**	**00 12 16.1**	**-0.6**
	7.9nm,1.1s						
SCHQ	**Schefferville**	**56.30**	**337**	P	**P**	**00 12 23.4**	**0.0**
	3.1nm,0.7s,baz=142,slow=3.7,SNR=5.4						
SCHQ	**Schefferville**	**56.30**	**337**	*e*P	**P**	**00 12 23.4**	**0.0**
	18nm,1.4s						
GERES	**GERESS Array B**	**58.30**	**34**	P	**P**	**00 12 37.5**	**-0.3**
	1.0nm,0.9s,baz=265,slow=6.2,SNR=6.5						
GLAT	**Glass**	**60.04**	**309**	*e*P	**P**	**00 12 49.9**	**0.0**
T40A	**Mansfield**	**62.77**	**309**	P	**P**	**00 13 08.6**	**+0.2**
	baz=105						
U40A	**Yellville**	**62.84**	**308**	P	**P**	**00 13 08.1**	**-0.8**
	baz=104						
S40A	**Lebanon**	**62.87**	**310**	P	**P**	**00 13 07.7**	**-1.4**
	baz=105						
R40A	**Maddies Statio**	**62.88**	**310**	P	**P**	**00 13 08.4**	**-0.7**
	baz=105						
Q40A	**Laux Farm, Aux**	**62.92**	**311**	P	**P**	**00 13 09.2**	**-0.1**
	baz=106						
P40A	**Paris**	**63.05**	**312**	P	**P**	**00 13 09.7**	**-0.5**
	baz=106						
CHRN	**Cochrane**	**63.25**	**209**	*e*P	**P**	**00 13 09.9**	**-1.4**
	7.0nm,1.2s						
S39A	**Bolivar**	**63.53**	**309**	P	**P**	**00 13 13.7**	**+0.3**
	baz=104						
S38A	**Stockton**	**63.96**	**309**	P	**P**	**00 13 15.7**	**-0.6**
	baz=104						
LBTB	**Lobatse**	**64.26**	**121**	*e*P	**P**	**00 13 17.2**	**-1.4**
	42nm,1.9s						
NB2	**NORSAR Subarra**	**64.36**	**22**	P	**P**	**00 13 19.0**	**+0.5**
	comp=Z,5.2nm,1.0s,baz=229,slow=6.2						
NB200	**NORSAR Array S**	**64.36**	**22**	*e*P	**P**	**00 13 19.2**	**+0.7**
NOA	**NORSAR Array B**	**64.36**	**22**	P	**P**	**00 13 19.2**	**+0.7**
	comp=Z,3.6nm,1.0s,baz=229,slow=6.5,SNR=6.2						
I38A	**Scanlan Farm,**	**64.57**	**316**	P	**P**	**00 13 19.5**	**-0.7**
	baz=108						
U37A	**Salina**	**64.63**	**308**	P	**P**	**00 13 20.7**	**0.0**
	baz=102						
T37A	**Cheneyville 18**	**64.63**	**308**	P	**P**	**00 13 20.6**	**-0.1**
	baz=103						
S37A	**Fort Scott**	**64.70**	**309**	P	**P**	**00 13 20.5**	**-0.6**
	baz=103						
BOSA	**Boshof**	**65.25**	**125**	P	**P**	**00 13 24.6**	**-0.4**
	comp=Z,7.9nm,0.7s,baz=290,slow=5.9,SNR=17						
BOSA	**Boshof**	**65.25**	**125**	*e*P	**P**	**00 13 24.6**	**-0.4**
	comp=Z,8.8nm,0.8s						
C36A	**Pine Crest Far**	**66.10**	**320**	P	**P**	**00 13 29.5**	**-0.5**
	baz=109						
D36A	**Goodland**	**66.12**	**320**	P	**P**	**00 13 29.9**	**-0.2**
	baz=109						
H35A	**Sunnyside Ranc**	**66.48**	**317**	P	**P**	**00 13 32.2**	**-0.3**
	baz=106						
D35A	**Remer**	**66.66**	**319**	P	**P**	**00 13 33.0**	**-0.7**
	baz=108						
N34A	**Lincoln**	**66.68**	**312**	P	**P**	**00 13 34.2**	**+0.3**
	baz=104						
833A	**Chaparral WMA,**	**66.89**	**298**	P	**P**	**00 13 35.9**	**+0.4**
	baz=96						
333A	**Richland Sprin**	**66.91**	**302**	P	**P**	**00 13 35.6**	**0.0**
	baz=98						
H34A	**Spellman Lake,**	**67.12**	**316**	P	**P**	**00 13 36.2**	**-0.4**
	baz=106						
T33A	**Patterson Ranc**	**67.22**	**308**	P	**P**	**00 13 37.9**	**+0.5**
	baz=101						
ECSD	**EROS Data Cent**	**67.46**	**315**	P	**P**	**00 13 38.5**	**-0.3**
	baz=105						
BGNE	**Belgrade**	**68.02**	**312**	P	**P**	**00 13 42.4**	**0.0**
	baz=102						
AKASG	**Malin Array Be**	**68.17**	**37**	P	**P**	**00 13 42.3**	**-0.8**
	comp=Z,0.5nm,0.6s,baz=260,slow=5.5,SNR=4.1						
AKBB	**Malin Array Si**	**68.17**	**37**	*e*P	**P**	**00 13 42.3**	**-0.8**
	comp=Z,25nm,1.8s						
BR101	**Keskin Array S**	**68.34**	**49**	*e*P	**P**	**00 13 46.5**	**+1.9**
BRTR	**Keskin Array B**	**68.34**	**49**	P	**P**	**00 13 46.5**	**+1.9**
	comp=Z,0.8nm,0.8s,baz=257,slow=5.1,SNR=4.0						
A32A	**Rocking H Ranc**	**68.77**	**321**	P	**P**	**00 13 46.7**	**-0.2**
	baz=107						
ULM	**Lac du Bonnet**	**68.78**	**322**	P	**P**	**00 13 46.5**	**-0.4**
	comp=Z,1.6nm,0.6s,baz=170,slow=11,SNR=2.7						
C30A	**Mose, Pekin**	**69.72**	**319**	P	**P**	**00 13 52.3**	**-0.6**
	baz=105						
B30A	**Myrvik Farm, E**	**69.82**	**320**	P	**P**	**00 13 53.2**	**-0.2**
	baz=105						
F29A	**Eureka**	**70.18**	**317**	P	**P**	**00 13 55.4**	**-0.3**
	baz=103						
MDND	**Maddock**	**70.49**	**319**	P	**P**	**00 13 57.8**	**+0.2**
	baz=104						
FIA0	**FINESS Array S**	**70.61**	**26**	*e*P	**P**	**00 13 58.6**	**+0.7**
FINES	**FINESS Array B**	**70.61**	**26**	P	**P**	**00 13 58.6**	**+0.7**
	comp=Z,2.1nm,0.8s,baz=232,slow=4.6,SNR=10						
LTX	**Lajitas**	**70.72**	**299**	*e*P	**P**	**00 13 59.7**	**+0.3**
TXAR	**Lajitas Array**	**70.72**	**299**	P	**P**	**00 13 59.7**	**+0.3**
	comp=Z,0.8nm,0.8s,baz=113,slow=5.9,SNR=7.4						
I28A	**Midland**	**70.73**	**315**	P	**P**	**00 13 59.7**	**+0.6**
	baz=101						
OGNE	**Ogallala**	**70.81**	**311**	P	**P**	**00 13 59.8**	**0.0**
	baz=100						
H27A	**Howes**	**71.49**	**315**	P	**P**	**00 14 04.4**	**+0.7**
	baz=101						
G27A	**Dupree**	**71.53**	**316**	P	**P**	**00 14 04.8**	**+0.8**
	baz=101						
F27A	**Lemmon**	**71.69**	**316**	P	**P**	**00 14 05.7**	**+0.8**
	baz=101						
Q24A	**Divide**	**72.90**	**309**	P	**P**	**00 14 13.8**	**+1.1**
	baz=97						
SDCO	**Great Sand Dun**	**73.03**	**308**	P	**P**	**00 14 14.5**	**+1.1**
	baz=96						
ISCO	**Idaho Springs**	**73.35**	**310**	P	**P**	**00 14 16.6**	**+1.3**
	baz=97						
ANMO	**Albuquerque**	**73.54**	**305**	P	**P**	**00 14 17.2**	**+0.9**
	baz=95						
DGMT	**Dagmar**	**73.63**	**319**	P	**P**	**00 14 17.7**	**+1.2**
	baz=100						
N23A	**Red Feather La**	**73.73**	**311**	P	**P**	**00 14 19.2**	**+1.7**
	baz=97						
S22A	**4UR Ranch, Cre**	**74.08**	**308**	P	**P**	**00 14 20.8**	**+1.2**
	baz=95						
ARA0	**ARCESS Array S**	**74.08**	**18**	*e*P	**P**	**00 14 18.6**	**0.0**
ARCES	**ARCESS Array B**	**74.08**	**18**	P	**P**	**00 14 18.6**	**0.0**
	comp=Z,1.1nm,0.8s,baz=256,slow=7.3,SNR=3.8						
121A	**Cookes Peak, D**	**74.47**	**302**	P	**P**	**00 14 23.5**	**+1.7**
	baz=93						
MVCO	**Mesa Verde**	**75.36**	**307**	P	**P**	**00 14 28.0**	**+1.0**
	baz=94						
O20A	**White River Ci**	**75.40**	**310**	P	**P**	**00 14 28.0**	**+0.9**
	baz=95						
PDAR	**Pinedale Array**	**76.61**	**313**	P	**P**	**00 14 33.8**	**-0.2**
	comp=Z,1.3nm,0.8s,baz=97,slow=6.0,SNR=14						
BW06	**Boulder Array**	**76.61**	**313**	P	**P**	**00 14 34.3**	**+0.3**
	baz=95						
RLMT	**Red Lodge**	**76.62**	**315**	P	**P**	**00 14 34.8**	**+0.8**
	baz=96						
H17A	**Grant Village**	**77.48**	**314**	P	**P**	**00 14 40.1**	**+1.2**
	baz=94						
WUAZ	**Wupatki**	**77.59**	**305**	P	**P**	**00 14 41.2**	**+1.7**
	baz=92						
X16A	**Lo Mia Camp, P**	**77.61**	**304**	*e*P	**P**	**00 14 41.7**	**+2.0**
	comp=Z,3.2nm,1.1s						
DUG	**Dugway, Tooele**	**78.90**	**310**	P	**P**	**00 14 48.2**	**+1.5**
	baz=92						
HLID	**Hailey**	**80.20**	**313**	P	**P**	**00 14 55.0**	**+1.3**
	baz=92						
R11A	**Troy Canyon, C**	**81.01**	**308**	P	**P**	**00 14 58.9**	**+0.7**
	baz=90						
TUQ	**Turquoise Moun**	**81.30**	**305**	P	**P**	**00 15 01.6**	**+1.8**
	baz=89						
YKA	**Yellowknife Ar**	**81.37**	**332**	P	**P**	**00 14 58.8**	**-0.5**
	comp=Z,0.7nm,0.9s,baz=94,slow=5.4,SNR=9.7						
YKB5	**Yellowknife Ar**	**81.37**	**332**	*e*P	**P**	**00 14 58.9**	**-0.5**
TPNV	**Topopah Spring**	**81.55**	**306**	P	**P**	**00 15 03.1**	**+2.0**
	baz=89						
HEC	**Hector,Ludlow**	**81.64**	**304**	P	**P**	**00 15 03.1**	**+1.6**
	baz=89						
GSC	**Goldstone, Bar**	**82.02**	**305**	P	**P**	**00 15 04.5**	**+1.0**
	baz=89						
NV01	**Mina Array Sit**	**83.15**	**308**	*e*P	**P**	**00 15 10.3**	**+0.9**
NVAR	**Mina Array Bea**	**83.15**	**308**	P	**P**	**00 15 10.3**	**+0.9**
	comp=Z,1.8nm,1.0s,baz=98,slow=7.2,SNR=6.2						
SYO	**Syowa Base**	**88.88**	**160**⇑	*e*pP	pP	00 15 41.2	+1.2
ILAR	**Eielson Array**	**95.06**	**337**	P	**P**	**00 16 05.5**	**-0.1**
	comp=Z,0.4nm,0.7s,baz=70,slow=2.5,SNR=4.6						
ILB	**Eielson Array**	**95.06**	**337**	*e*P	**P**	**00 16 05.5**	**-0.1**
SONA0	**Songino Array**	**115.85**	**29**	*e*PKPdf	**PKPdf**	**00 21 26.1**	**+0.2**
SONM	**Songino Array**	**115.85**	**29**	PKP	**PKPdf**	**00 21 26.1**	**+0.2**
	comp=Z,0.5nm,0.9s,baz=339,slow=2.9,SNR=3.1						
KLR	**Kul'dur**	**123.80**	**12**	PKP	**PKPdf**	**00 21 40.3**	**-0.7**
	comp=Z,0.7nm,0.7s,baz=97,slow=0.7,SNR=3.6						
CM31	**Chiang Mai Arr**	**126.70**	**62**	*e*PKPdf	**PKPdf**	**00 21 48.1**	**+0.7**
CMAR	**Chiang Mai Arr**	**126.70**	**62**	PKP	**PKPdf**	**00 21 48.1**	**+0.7**
	comp=Z,1.3nm,1.0s,baz=306,slow=3.2,SNR=7.1						
ASAR	**Alice Springs**	**157.84**	**146**	PKP	**PKPdf**	**00 22 39.9**	**-0.6**
	comp=Z,1.7nm,1.1s,baz=178,slow=0.9,SNR=6.1						
ASAR				PKPab	**PKPab**	**00 23 12.6**	**-0.5**
	comp=Z,0.8nm,0.8s,baz=203,slow=4.1,SNR=4.4						
AS31	**Alice Springs**	**157.84**	**146**	*e*PKPdf	**PKPdf**	**00 22 39.9**	**-0.6**

*ISCJB **12** 00:04:47.4±0.6,36.96N±0.04×140.63E±0.05,h10km, mb3.6/7,Error ellipse: s-maj=6.4km s-min=4.6km az=40.4*
*JMA **12** 00:04:47.7,36.98N×140.61E,h10km±1km,M3.9 Broadband fault plane solution: P waves. NP1: ϕ_s62.00000°,δ51.00000°,λ-117.00000°. NP2: ϕ_s281.00000°,δ47.00000°,λ-61.00000°. Principal axes: T Plg2.0000°, Azm171.0000°; N Plg21.0000°, Azm80.0000°; P Plg69.0000°, Azm267.0000°;*
JMA Felt II J1.
*IDC **12** 00:04:56.4±3.0,36.84N×140.14E,h72km±26km,mb3.3/7, mb1 3.6/8,mb1mx3.3/37,mbtmp3.7/8 Error ellipse: s-maj=30.0km s-min=19.4km az=85.0*
ISC 12 00:04:48.1±0.7,36.98N±0.04×140.58E±0.05,h10km,n22, σ1s10/18,mb3.7/7,3C-1D,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.22**	**55**	⇑P	**Pg**	**00 04 52.0**	**-0.6**
ONAJ				S	**Sg**	**00 04 55.0**	**-0.7**
JHO	**Hitachi**	**0.37**	**181**	⇑P	**Pg**	**00 04 55.0**	**-0.4**
JHO				S	**Sg**	**00 05 00.2**	**0.0**
JSB	**Shiboa**	**0.53**	**269**	⇓P	**Pb**	**00 04 59.0**	**-0.5**
JSB				S	**Sb**	**00 05 06.8**	**-0.3**
JYT	**Yasato**	**0.81**	**202**	S	**Sg**	**00 05 13.8**	**-0.5**
JFY	**Yanaizu**	**0.82**	**302**	⇑P	**Pg**	**00 05 03.7**	**-0.2**
MJAR	**Matsushiro Arr**	**1.95**	**258**	P	**Pn**	**00 05 21.8**	**+0.5**
	20nm,0.3s,baz=75,slow=16,SNR=39						
MJAR				S	**Sn**	**00 05 47.1**	**+1.2**

ONAJ	**Iwakimizuishiy**	**0.14**	**45**	⇑P	Pg	00 07 21.2	+0.1
ONAJ				S	Sg	00 07 23.7	+0.3
JHO	**Hitachi**	**0.40**	**192**	⇑P	Pg	00 07 25.7	0.0
JHO				S	Sg	00 07 31.3	+0.4
JFT	**Otama**	**0.58**	**333**	⇑P	Pg	00 07 29.2	0.0
JFT				S	Sg	00 07 37.0	+0.2
JSB	**Shiboa**	**0.60**	**267**	⇑P	Pb	00 07 30.2	-0.4
JSB				S	Sg	00 07 38.1	+0.7
JYT	**Yasato**	**0.86**	**207**	⇑P	Pg	00 07 34.1	-0.4
JMM	**Marumori**	**0.87**	**6**	⇑P	Pg	00 07 34.0	-0.7

BJI ***12*** *00:09:24.4, 36°.25N×140°.75E, h20km, mb4.5/8, Ms4.6/1, Ms7 4.5/1*

JMA ***12*** *00:09:28.8, 37°.03N×140°.69E, h11km±1km, M4.2 Broadband fault plane solution: P waves. NP1: φs53.00000°, δ48.00000°, λ-76.00000°. NP2: φs212.00000°, δ44.00000°, λ-106.00000°. Principal axes: T Plg2.0000°, Azm133.0000°; N Plg11.0000°, Azm223.0000°; P Plg79.0000°, Azm30.0000°;*

JMA Felt III J1.

ISCJB ***12*** *00:09:28.4±0.5, 37°.03N±0°.02×140°.74E±0°.04, h20km±2km, mb4.3/36 Error ellipse: s-maj=6.1km s-min=4.0km az=15.3*

NEIC ***12*** *00:09:28.2±1.6, 37°.00N×140°.48E, h8km±9km, mb4.5/8, Error ellipse: s-maj=8.1km s-min=6.6km az=74.0*

NEIC Recorded [3 JMA] in Fukushima.

MOS ***12*** *00:09:30.1±1.2, 37°.03N×140°.66E, h32km, mb4.5/25, Error ellipse: s-maj=11.5km s-min=7.6km az=103.7*

IDC ***12*** *00:09:30.0±3.3, 37°.04N×140°.54E, h17km±20km, mb4.1/20, mb1 4.3/21, mb1mx4.2/33, mbtmp4.2/21, ML4.1/1, Error ellipse: s-maj=16.6km s-min=12.9km az=85.0*

ISC 12 00:09:28.4±1.0, 37°.07N±0°.03×140°.59E±0°.04, h7km±6km, n106, σ0s.87/106, mb4.3/36, 9C-2D, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.17**	**78**	⇑P		**Pg**		**00 09 31.7**	**-0.2**
ONAJ				S		**Sg**		**00 09 33.8**	**-0.5**
JHO	**Hitachi**	**0.46**	**182**	P		**Pg**		**00 09 37.1**	**-0.1**
JHO				S		**Sg**		**00 09 43.1**	**-0.1**
JFT	**Otama**	**0.49**	**336**	⇑P		**Pb**		**00 09 39.9**	**+0.6**
JFT				S		**Sb**		**00 09 47.5**	**+0.7**
JSB	**Shiboa**	**0.55**	**260**	⇑P		**Pb**		**00 09 41.4**	**+1.2**
JSB				S		**Sb**		**00 09 50.2**	**+1.9**
JFY	**Yanaizu**	**0.78**	**296**	⇑P		**Pn**		**00 09 45.4**	**-0.4**
JFY				S		**Sb**		**00 09 56.7**	**+1.6**
JMM	**Marumori**	**0.81**	**11**	⇑P		**Pb**		**00 09 44.6**	**-0.2**
JMM				S		**Sg**		**00 09 55.5**	**+0.9**
JYT	**Yasato**	**0.90**	**201**	P		**Pg**		**00 09 45.5**	**-0.1**
JYT				S		**Sg**		**00 09 57.0**	**-0.2**
MJAR	**Matsushiro Arr**	**1.98**	**255**	Pg		**Pb**		**00 10 04.2**	**-0.5**
	103nm,0.3s,baz=81,slow=16,SNR=64								
MJAR				Lg		Lg		00 10 32.1	
	230nm,0.3s,baz=201,slow=21,SNR=19								
MAJO	**Matsushiro**	**1.98**	**255**	*i* P		**Pb**		**00 10 04.5**	**-0.2**
MAT	**Matsushiro**	**1.98**	**255**	P		**Pb**		**00 10 04.5**	**-0.2**
MAT				S		**Sg**		**00 10 32.0**	**-0.1**
JHJ	**Hachijo jima 2**	**4.00**	**190**	Pn		**Pn**		**00 10 30.3**	**+0.4**
	37nm,0.3s,baz=340,slow=23,SNR=4.8								
JHJ				Sn		**Sn**		**00 11 18.4**	**+1.4**
	39nm,0.3s,baz=255,slow=22,SNR=3.3								
SHO	**Shikotan**	**8.29**	**33**	*e*P		**Pn**		**00 11 28.6**	**-0.3**
SHO				*e*S		Sn		00 12 54.6	-8.1
SHO				pmax	pmax				
	comp=Z,38nm,0.7s								
SHO				pmax	pmax				
	comp=N,20nm,0.5s								
SHO				pmax	pmax				
	comp=E,14nm,0.5s								
JNU	**Nakatsue**	**8.88**	**247**	Pn		Pn		00 11 41.0	+3.9
	comp=E,0.3nm,0.3s,baz=357,slow=2.7,SNR=4.0								
JNU	**Nakatsue**	**8.88**	**247**	*e*P		**Pn**		**00 11 36.4**	**-0.6**
USRK	**Ussuriysk Ar.**	**9.66**	**320**	Pn		Pn		00 11 54.5	+6.8
	comp=E,0.3nm,0.3s,baz=134,slow=12,SNR=21								
YSS	**Yuzh-Sakhalins**	**10.01**	**9**	*e*P		Pn		00 11 56.3	+3.9
YSS				pmax	pmax				
	comp=Z,13nm,0.7s								
KSRS	**Korea Array**	**10.11**	**276**	Pn		Pn		00 12 01.1	+7.3
	comp=Z,0.1nm,0.3s,baz=94,slow=13,SNR=31								
KSAR	**Wonju Array Be**	**10.14**	**276**	P		Pn		00 12 01.1	+6.9
KSAR	**Wonju Array Be**	**10.14**	**276**	Pn		Pn		00 12 01.1	+6.9
KLR	**Kul'dur**	**13.75**	**335**	Pn		**P**		**00 12 50.7**	**-1.5**
	comp=Z,0.1nm,0.3s,baz=141,slow=10,SNR=4.9								
ENH	**Enshi**	**26.68**	**264**	*e*P		**P**		**00 15 07.4**	**-0.6**
	comp=Z,6.2nm,0.6s								
ULN	**Ulaanbaatar**	**26.79**	**304**	*e*P		**P**		**00 15 08.3**	**-0.7**
ULN	**Ulaanbaatar**	**26.79**	**304**	*e*P		**P**		**00 15 08.3**	**-0.7**
SEY	**Seymchan**	**26.89**	**12**	P		**P**		**00 15 11.3**	**+1.8**
	comp=Z,4.0nm,0.9s,baz=203,slow=13,SNR=7.3								
SONM	**Songino Array**	**27.22**	**304**	P		**P**		**00 15 12.0**	**-0.8**
	comp=Z,2.8nm,0.6s,baz=106,slow=8.7,SNR=27								
SONM				PcP		**PcP**		**00 18 33.0**	**+0.2**
	comp=Z,0.9nm,0.5s,baz=124,slow=1.8,SNR=11								
SONM	**Songino Array**	**27.22**	**304**	P		**P**		**00 15 12.0**	**-0.8**
SONM								00 18 33.0	
SONM				pmax	pmax				
	comp=Z,3.0nm,0.6s								
SONM				pmax	pmax				
	comp=Z,1.0nm,0.5s								
H11N2	**WAKE ISLAND Hy**	**28.73**	**120**	T		T		00 45 10.8	
	baz=313,slow=75,SNR=25								
H11N1	**WAKE ISLAND Hy**	**28.74**	**120**	T		T		00 45 14.8	
	baz=313,slow=75,SNR=93								
H11N3	**WAKE ISLAND Hy**	**28.75**	**120**	T		T		00 45 14.5	
	baz=313,slow=75,SNR=83								
H11S1	**WAKE ISLAND Hy**	**29.43**	**122**	T		T		00 46 07.2	
	baz=314,slow=76,SNR=62								
H11S3	**WAKE ISLAND Hy**	**29.43**	**122**	T		T		00 46 07.7	
	baz=314,slow=76,SNR=56								
H11S2	**WAKE ISLAND Hy**	**29.45**	**122**	T		T		00 46 08.1	
	baz=314,slow=76,SNR=28								
BILL	**Bilibino**	**34.18**	**17**	*e*P		**P**		**00 16 14.7**	**+0.8**
BILL				pmax	pmax				
	comp=Z,3.0nm,1.1s								
TIXI	**Tiksi**	**35.18**	**354**	*e*P		**P**		**00 16 22.9**	**+0.5**
TIXI				pmax	pmax				
	comp=Z,4.0nm,2.1s								
ZALV	**Zalesovo Beam**	**41.41**	**312**	P		**P**		**00 17 14.8**	**-0.2**
	comp=Z,2.4nm,0.5s,baz=89,slow=6.6,SNR=13								
ZALV				PcP		**PcP**		**00 19 12.6**	**-0.4**
	comp=Z,3.1nm,0.8s,baz=83,slow=2.8,SNR=6.9								
ZALV	**Zalesovo Beam**	**41.41**	**312**	P		**P**		**00 17 14.8**	**-0.2**
ZALV								00 19 12.6	
ZALV				pmax	pmax				
	comp=Z,3.0nm,0.5s								
ZALV				pmax	pmax				
	comp=Z,3.0nm,0.8s								
NVS	**Novosibirsk**	**42.34**	**314**	*e*P		P		00 17 15.9	-6.8
NRIK	**Noril'sk**	**42.96**	**335**	P		**P**		**00 17 27.4**	**-0.1**
	comp=Z,1.2nm,0.4s,baz=83,slow=6.7,SNR=3.6								
NRIK				PcP		**PcP**		**00 19 18.3**	**+0.5**
	comp=Z,0.9nm,0.3s,baz=210,slow=1.3,SNR=3.6								
MKAR	**Makanchi Array**	**43.54**	**302**	P		**P**		**00 17 33.0**	**+0.4**
	comp=Z,2.5nm,0.6s,baz=88,slow=9.9,SNR=48								
MKAR				PcP		**PcP**		**00 19 20.0**	**-0.3**
	comp=Z,0.8nm,0.8s,baz=81,slow=3.2,SNR=4.2								
KURK	**Kurchatov**	**45.39**	**308**	*e*P		**P**		**00 17 46.4**	**-0.9**
KURK				pmax	pmax				
	comp=Z,15nm,0.6s								
KURK	**Kurchatov**	**45.39**	**308**	*e*P		**P**		**00 17 46.4**	**-0.9**
	comp=Z,15nm,0.6s								
RAMN	**Ramite**	**46.34**	**274**	*e*Pn		**P**		**00 17 55.3**	**-0.1**
	comp=Z,15nm,0.7s								
GUN	**Gumba**	**46.50**	**275**	*e*P		**P**		**00 17 56.8**	**+0.1**
	comp=Z,10nm,0.5s								
GKN	**Gorkha**	**47.45**	**276**	*e*P		**P**		**00 18 03.8**	**-0.1**
	comp=Z,14nm,0.8s								
KOLN	**Koldanda**	**48.37**	**276**	*e*Pn		**P**		**00 18 11.1**	**0.0**
	comp=Z,5.6nm,0.7s								
PYUN	**Piuthan**	**48.71**	**277**	*e*Pn		**P**		**00 18 13.9**	**+0.1**
	comp=Z,22nm,0.8s								
TKM2	**Tokmak 2**	**49.03**	**298**	*e*P		**P**		**00 18 16.2**	**+0.1**
TKM2				pmax	pmax				
	comp=Z,6.0nm,0.9s								
TKM2	**Tokmak 2**	**49.03**	**298**	*e*P		**P**		**00 18 16.1**	**+0.1**
	comp=Z,6.2nm,0.9s								
ILAR	**Eielson Array**	**49.82**	**32**	P		**P**		**00 18 21.4**	**-0.1**
	comp=Z,1.9nm,0.8s,baz=269,slow=6.4,SNR=20								
EKS2	**Erkin-Say**	**50.39**	**298**	*e*P		**P**		**00 18 26.0**	**-0.3**
EKS2				pmax	pmax				
	comp=Z,2.0nm,0.9s								
EKS2	**Erkin-Say**	**50.39**	**298**	*e*P		**P**		**00 18 26.0**	**-0.3**
	comp=Z,1.9nm,0.9s								
KKAR	**Karatay Array**	**52.54**	**300**	*e*P		**P**		**00 18 41.0**	**-1.2**
KKAR				pmax	pmax				
	comp=Z,2.0nm,0.6s								
KKAR	**Karatay Array**	**52.54**	**300**	*e*P		**P**		**00 18 41.0**	**-1.2**
	comp=Z,1.6nm,0.6s								
ARU	**Arti**	**55.90**	**318**	*c i*P		**P**		**00 19 06.3**	**-0.2**
ARU				S		**S**		**00 26 53.1**	**-1.0**
ARU				SS		**SS**		**00 30 38.5**	**-0.8**
ARU				pmax	pmax				
	comp=Z,7.0nm,0.8s								
FITZ	**Fitzroy Crossi**	**56.66**	**197**	*e*P		**P**		**00 19 11.7**	**-0.5**
	comp=Z,4.1nm,0.8s								
WRAB	**Tennant Creek**	**57.00**	**187**	*e*P		**P**		**00 19 13.3**	**-1.3**
WRAB				pmax	pmax				
	comp=Z,13nm,0.8s								
WRAB	**Tennant Creek**	**57.00**	**187**	*e*P		**P**		**00 19 13.3**	**-1.3**
	comp=Z,13nm,0.8s								
WRA	**Warramunga Arr**	**57.01**	**187**	P		**P**		**00 19 13.8**	**-0.9**
	comp=Z,16nm,0.6s,baz=3.3,slow=7.1,SNR=88								
ABKAR	**Akbulak array**	**57.41**	**310**	*e*P		**P**		**00 19 16.6**	**-0.7**
	comp=Z,3.7nm,0.6s								
ASAR	**Alice Springs**	**60.74**	**187**	P		**P**		**00 19 40.2**	**-0.4**
	comp=Z,5.0nm,0.7s,baz=13,slow=7.0,SNR=50								
GEYT	**Alibeck**	**63.24**	**299**	P		**P**		**00 19 58.2**	**+0.7**
	comp=Z,3.9nm,0.7s,baz=29,slow=3.4,SNR=10								
ARCES	**ARCESS Array B**	**63.73**	**339**	P		**P**		**00 20 00.1**	**-0.1**
	comp=Z,4.8nm,1.0s,baz=46,slow=8.7,SNR=12								
YKA	**Yellowknife Ar**	**64.11**	**30**	P		**P**		**00 20 02.9**	**+0.2**
	comp=Z,0.6nm,0.7s,baz=304,slow=6.6,SNR=13								
OBN	**Obninsk**	**67.67**	**323**	*e*P		**P**		**00 20 24.9**	**-0.9**
OBN				pmax	pmax				
	comp=Z,4.0nm,0.5s								
FINES	**FINESS Array B**	**68.48**	**332**	P		**P**		**00 20 30.5**	**-0.2**
	comp=Z,4.3nm,0.8s,baz=75,slow=8.1,SNR=11								
STKA	**Stephens Creek**	**68.59**	**179**	P		**P**		**00 20 31.7**	**0.0**
	comp=Z,2.3nm,0.7s,baz=318,slow=9.4,SNR=4.3								
GOF	**Gofitskoye**	**69.58**	**311**	*e*P		**P**		**00 20 37.6**	**-0.3**
KBZ	**Khabaz**	**70.38**	**310**	P		**P**		**00 20 43.3**	**+0.5**
	comp=Z,2.8nm,0.9s,baz=27,slow=11,SNR=5.3								
KIV	**Kislovodsk**	**70.39**	**311**	*e*P		**P**		**00 20 44.1**	**+1.1**
KIV				pmax	pmax				
	comp=Z,7.0nm,0.9s								
AKASG	**Malin Array Be**	**73.87**	**322**	P		**P**		**00 21 03.1**	**-0.5**
	comp=Z,1.6nm,0.6s,baz=47,slow=5.9,SNR=16								
KIEV	**Kiev**	**73.88**	**322**	*i* P		**P**		**00 21 03.6**	**0.0**
KIEV				pmax	pmax				
	comp=Z,4.0nm,0.9s								
NB2	**NORSAR Subarra**	**73.90**	**337**	P		**P**		**00 21 03.2**	**-0.5**
	comp=Z,2.7nm,0.8s,baz=40,slow=5.9								
NOA	**NORSAR Array B**	**73.90**	**337**	P		**P**		**00 21 03.4**	**-0.2**
	comp=Z,2.3nm,0.8s,baz=39,slow=5.8,SNR=8.5								
FFC	**Flin Flon**	**74.03**	**32**	*i* P		**P**		**00 21 05.5**	**+1.0**
NVAR	**Mina Array Bea**	**75.49**	**53**	P		**P**		**00 21 14.7**	**+1.1**
	comp=Z,1.1nm,0.7s,baz=295,slow=5.0,SNR=8.9								
BURAR	**Bucovina Array**	**77.87**	**321**	*i* P		**P**		**00 21 27.0**	**+0.3**
PDAR	**Pinedale Array**	**78.11**	**45**	P		**P**		**00 21 28.6**	**+0.4**
	comp=Z,1.1nm,0.7s,baz=267,slow=2.7,SNR=7.3								
BRTR	**Keskin Array B**	**78.33**	**311**	P		**P**		**00 21 30.4**	**+1.0**
	comp=Z,0.8nm,0.6s,baz=77,slow=5.5,SNR=5.8								
KOLS	**Kolonicke sedl**	**78.41**	**324**	*e*P		**P**		**00 21 30.6**	**+1.1**
KOLS	**Kolonicke sedl**	**78.41**	**324**	*e*P		**P**		**00 21 30.6**	**+1.1**
CRVS	**Cervenica-Dubn**	**78.81**	**324**	*e*P		**P**		**00 21 33.9**	**+2.2**
CRVS	**Cervenica-Dubn**	**78.81**	**324**	*e*P		**P**		**00 21 33.9**	**+2.2**
LANS	**Liptovska Anna**	**79.56**	**325**	*e*P		**P**		**00 21 37.1**	**+1.2**
LANS	**Liptovska Anna**	**79.56**	**325**	*e*P		**P**		**00 21 37.1**	**+1.2**
ARR	**Arges**	**79.69**	**320**	*i* P		**P**		**00 21 38.4**	**+1.7**
DPC	**Dobruska-Polom**	**80.08**	**327**	*e*P		**P**		**00 21 37.9**	**-0.7**
DPC	**Dobruska-Polom**	**80.08**	**327**	*e*P		**P**		**00 21 37.9**	**-0.7**
VYHS	**Vyhne**	**80.32**	**325**	*e*P		**P**		**00 21 40.6**	**+0.6**
VYHS	**Vyhne**	**80.32**	**325**	*e*P		**P**		**00 21 40.6**	**+0.6**
CLL	**Collm**	**80.74**	**330**	*e*P		**P**		**00 21 40.0**	**-2.1**
	comp=Z,5.0nm,1.0s								
CLL	**Collm**	**80.74**	**330**	*e*P		**P**		**00 21 40.0**	**-2.1**
CLL				pmax	pmax				
	comp=Z,10.0nm,1.0s								
BZS	**Buzias**	**81.05**	**322**	*i* P		P		00 21 38.8	-5.1
KHC	**Kasperske Hory**	**82.17**	**328**	*e*P		**P**		**00 21 49.8**	**0.0**
KHC	**Kasperske Hory**	**82.17**	**328**	*e*P		**P**		**00 21 49.8**	**0.0**
GERES	**GERESS Array B**	**82.33**	**328**	P		**P**		**00 21 50.6**	**-0.1**
	comp=Z,0.7nm,0.5s,baz=42,slow=6.0,SNR=6.3								
VTS	**Vitosha**	**82.35**	**319**	*i* P		**P**		**00 21 51.6**	**+0.6**
BFO	**Black Forest**	**84.95**	**330**	*i* P		**P**		**00 22 04.4**	**+0.3**
ANMO	**Albuquerque**	**85.07**	**49**	*e*P		**P**		**00 22 07.5**	**+2.3**
ANMO				pmax	pmax				
	comp=Z,7.0nm,2.5s								
TXAR	**Lajitas Array**	**90.62**	**52**	P		**P**		**00 22 32.4**	**+0.6**
	comp=Z,0.6nm,0.7s,baz=297,slow=3.1,SNR=8.7								
TORD	**Torodi Ar. Bea**	**116.84**	**314**	PKP		**PKPdf**		**00 28 13.2**	**-1.0**
	comp=Z,0.2nm,0.3s,baz=28,slow=1.5,SNR=7.6								
SDV	**Santo Domingo**	**125.72**	**39**	PKP		**PKPdf**		**00 28 31.3**	**-0.1**
	comp=Z,3.7nm,0.8s,baz=269,slow=6.4,SNR=5.7								
DBIC	**Dimbokro**	**125.81**	**316**	PKP		**PKPdf**		**00 28 30.9**	**-0.4**
	comp=Z,2.9nm,1.0s,baz=104,slow=3.9,SNR=4.4								
DBIC	**Dimbokro**	**125.81**	**316**	PKIKP		**PKPdf**		**00 28 31.0**	**-0.4**
DBIC				pmax	pmax				
	comp=Z,3.0nm,1.0s								
SHEL	**Horse Pasture**	**143.55**	**296**	*i* PKIKP		PKPdf		00 29 14.7	+10
LPAZ	**La Paz**	**147.24**	**59**	PKPbc		**PKPbc**		**00 29 13.5**	**-0.1**
	comp=Z,3.8nm,0.7s,baz=28,slow=6.0,SNR=14								
SIV	**San Ignacio**	**151.56**	**48**	PKPbc		**PKPbc**		**00 29 23.9**	**+0.2**
	comp=Z,4.8nm,0.7s,baz=288,slow=2.9,SNR=7.5								

JMA 12 00:12:11.1±0.1, 35°.47N×140°.97E, h21km±2km, M3.5, 1C, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.25**	**339**	⇑P		P	Pb	00 12 16.9	-0.3
CHOJ				S		S	Sb	00 12 21.4	-0.1
KTR	**Katsuura**	**0.62**	**239**	P		P	Pb	00 12 23.2	-0.2
KTR				S		S	Sb	00 12 31.8	+0.1
JCN	**Nagara**	**0.63**	**266**	P		P	Pb	00 12 23.9	+0.4
BSO4	**Boso 4**	**0.70**	**227**	P		P	Pn	00 12 25.2	-0.5
BSO3	**Boso 3**	**0.77**	**210**	P		P	Pb	00 12 25.6	+0.1
BSO1	**Boso 1**	**0.81**	**180**	P		P	Pb	00 12 25.7	-0.5
JYT	**Yasato**	**0.98**	**320**	P		P	Pb	00 12 28.9	-0.5
JYT				S		S	Sb	00 12 41.9	-0.1

IDC ***12*** *00:14:22.9±1.2, 35°.26N×141°.34E, h0km, mb3.4/5, mb1 3.7/6, mb1mx3.4/33, mbtmp3.4/6, ML3.2/1, Error ellipse: s-maj=28.5km s-min=27.5km az=40.0*

ISCJB ***12*** *00:14:25.0±0.8, 35°.50N±0°.05×140°.9E±0°.1, h33km, mb3.4/5, Error ellipse: s-maj=13.6km s-min=7.4km az=169.4*

JMA ***12*** *00:14:25.2±0.1, 35°.49N×140°.91E, h23km±1km, M3.6*

JMA Felt I J1.

ISC 12 00:14:26.6±1.0, 35°.51N±0°.04×140°.87E±0°.09, h33km, n12, σ1s.33/12, mb3.3/5, 1C, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.20**	**357**	⇑P		**Pn**		**00 14 30.8**	**-2.0**
CHOJ				*e*S		**Sn**		**00 14 35.0**	**-0.5**
JCN	**Nagara**	**0.55**	**261**	P		**Pb**		**00 14 37.4**	**-0.6**
BSO4	**Boso 4**	**0.67**	**220**	P		**Pn**		**00 14 38.8**	**-0.9**
BSO3	**Boso 3**	**0.76**	**203**	P		**Pn**		**00 14 39.6**	**-1.2**
BSO1	**Boso 1**	**0.85**	**174**	P		**Pn**		**00 14 39.8**	**-2.0**
JYT	**Yasato**	**0.91**	**323**	P		**Pn**		**00 14 42.0**	**-1.0**
JYT				S		**Sn**		**00 14 55.0**	**0.0**
MJAR	**Matsushiro Arr**	**2.39**	**296**	Pn		**Pb**		**00 15 09.5**	**+0.4**
	3.6nm,0.3s,baz=93,slow=8.5,SNR=3.3								
SONM	**Songino Array**	**28.31**	**306**	P		P		00 20 22.7	+5.5
	0.4nm,0.8s,baz=91,slow=6.9,SNR=3.0								
MKAR	**Makanchi Array**	**44.57**	**303**	P		P		00 22 39.5	+4.1
	0.2nm,0.6s,baz=92,slow=7.2,SNR=3.9								
ILAR	**Eielson Array**	**51.02**	**32**	P		**P**		**00 23 26.6**	**+1.6**
	0.6nm,0.8s,baz=267,slow=6.1,SNR=5.7								
WRA	**Warramunga Arr**	**55.49**	**187**	P		**P**		**00 23 58.2**	**-0.1**
	0.6nm,0.7s,baz=5.8,slow=7.3,SNR=4.7								
YKA	**Yellowknife Ar**	**65.35**	**30**	P		**P**		**00 25 06.3**	**+1.1**
	0.2nm,0.8s,baz=303,slow=6.4,SNR=5.7								

IDC ***12*** *00:20:02.9±1.8, 35°.42N×141°.69E, h0km, mb3.5/5, mb1 3.7/6, mb1mx3.5/33, mbtmp3.5/6, ML3.6/1, Error ellipse: s-maj=60.7km s-min=26.9km az=64.0*

ISCJB ***12*** *00:20:08.5±1.1, 35°.41N±0°.05×141°.1E±0°.1, h33km, mb3.5/5, Error ellipse: s-maj=16.3km s-min=7.2km az=171.3*

JMA ***12*** *00:20:09.6±0.1, 35°.42N×140°.99E, h23km±2km, M3.9*

JMA Felt II J1.

ISC 12 00:20:09.8±1.0, 35°.43N±0°.05×140°.97E±0°.09, h33km, n21, σ1s.05/16, mb3.6/5, 1D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.29**	**341**	⇓P		P	**Pb**	**00 20 16.4**	**-1.0**
CHOJ				*e*S		**Sn**		**00 20 21.6**	**-0.8**
KTR	**Katsuura**	**0.61**	**242**	P		P	**Pb**	**00 20 21.7**	**-0.4**
JCN	**Nagara**	**0.63**	**269**	P		P	**Pb**	**00 20 22.4**	**0.0**
BSO4	**Boso 4**	**0.68**	**230**	P		P	**Pb**	**00 20 23.2**	**0.0**
BSO3	**Boso 3**	**0.73**	**211**	P		P	**Pn**	**00 20 23.5**	**-0.1**
BSO1	**Boso 1**	**0.78**	**180**	P		P	**Pn**	**00 20 23.3**	**-0.6**
BSO1				*e*X				00 20 35.2	
JYT	**Yasato**	**1.01**	**322**	S		S	**Sb**	**00 20 41.8**	**-0.1**
JHO	**Hitachi**	**1.22**	**345**	P		P	**Pb**	**00 20 32.6**	**+0.2**
JIM2	**Oshima 3**	**1.45**	**241**	P		P	**Pn**	**00 20 32.9**	**-0.8**
MJAR	**Matsushiro Arr**	**2.50**	**297**	Pn		**Pb**		**00 20 52.7**	**-1.3**
	7.2nm,0.3s,baz=131,slow=11,SNR=13								
H11N2	**WAKE ISLAND Hy**	**27.68**	**118**	T		T		00 54 55.3	
	baz=310,slow=76,SNR=160								
H11N1	**WAKE ISLAND Hy**	**27.69**	**118**	T		T		00 54 55.3	
	baz=310,slow=76,SNR=196								
H11N3	**WAKE ISLAND Hy**	**27.70**	**118**	T		T		00 54 52.0	
	baz=310,slow=76,SNR=179								
H11S1	**WAKE ISLAND Hy**	**28.33**	**120**	T		T		00 55 36.1	
	baz=312,slow=76,SNR=340								
H11S3	**WAKE ISLAND Hy**	**28.33**	**120**	T		T		00 55 37.8	
	baz=312,slow=76,SNR=288								
H11S2	**WAKE ISLAND Hy**	**28.35**	**120**	T		T		00 55 37.3	
	baz=312,slow=76,SNR=185								
SONM	**Songino Array**	**28.42**	**307**	P		**P**		**00 26 02.3**	**+0.9**
	0.2nm,0.4s,baz=101,slow=7.5,SNR=2.5								
ZALV	**Zalesovo Beam**	**42.74**	**314**	P		**P**		**00 28 05.3**	**+1.6**
	0.5nm,0.4s,baz=104,slow=8.5,SNR=3.9								
MKAR	**Makanchi Array**	**44.68**	**303**	P		**P**		**00 28 21.5**	**+2.1**
	0.4nm,0.6s,baz=83,slow=10,SNR=4.5								
WRA	**Warramunga Arr**	**55.43**	**188**	P		**P**		**00 29 39.6**	**-1.5**
	0.4nm,0.4s,baz=5.7,slow=7.8,SNR=4.7								
NOA	**NORSAR Array B**	**75.52**	**337**	P		**P**		**00 31 50.5**	**-0.1**
	0.4nm,0.6s,baz=39,slow=5.7,SNR=2.7								

JMA 12 00:21:47.5, 37°.11N×140°.78E, h9km±1km, M3.6, 2C-2D, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.02**	**120**	⇓P		P	Pg	00 21 49.2	0.0
ONAJ				S		S	Sg	00 21 50.3	-0.1
JHO	**Hitachi**	**0.53**	**199**	⇓P		P	Pg	00 21 57.7	0.0
JHO				S		S	Sg	00 22 04.6	0.0
JFT	**Otama**	**0.54**	**319**	⇑P		P	Pg	00 21 58.1	+0.1
JFT				S		S	Sg	00 22 05.2	+0.1
JSB	**Shiboa**	**0.70**	**259**	⇑P		P	Pb	00 22 01.6	-0.3
JMM	**Marumori**	**0.76**	**1**	P		P	Pg	00 22 01.8	-0.3
MAT	**Matsushiro**	**2.14**	**255**	P		P	Pb	00 22 26.5	0.0
MAT				S		S	Sb	00 22 53.4	+0.3

**JMA 12 00:26:16.6±0.1, 36°.94

IDC **12** *00:46:44.1±4.2,36.95N×140.63E,h14km±25km,mb3.7/15, mb1 3.9/15,mb1mx3.7/45,mbtmp3.8/15 Error ellipse: s-maj=22.3km s-min=17.3km az=95.0*

ISC 12 00:46:43.6±0.9,**36°98**N±0°.03×**140°75E**±0°.05,**h12**km±5km, **n33**,σ0s**66**/34,**mb3.8**/15,**4C**,**Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.13**	**20**	⇑P	**Pg**	**00 46 46.8**	**-0.1**
ONAJ				S	**Sg**	**00 46 49.2**	**0.0**
JHO	**Hitachi**	**0.40**	**201**	⇑P	**Pg**	**00 46 51.5**	**0.0**
JHO				S	**Sg**	**00 46 57.0**	**+0.3**
JFT	**Otama**	**0.63**	**329**	⇑P	**Pg**	**00 46 56.0**	**+0.2**
JFT				S	**Sg**	**00 47 04.3**	**+0.2**
JSB	**Shiboa**	**0.66**	**269**	P	**Pb**	**00 46 57.2**	**+0.1**
JYT	**Yasato**	**0.87**	**211**	P	**Pg**	**00 47 00.3**	**-0.2**
JYT				S	**Sb**	**00 47 12.3**	**-0.1**
JMM	**Marumori**	**0.88**	**2**	⇑P	**Pg**	**00 47 00.1**	**-0.6**
JMM				S	**Sg**	**00 47 12.1**	**-0.1**
JFY	**Yanaizu**	**0.93**	**297**	P	**Pb**	**00 47 01.7**	**-0.1**
JFY				S	**Sg**	**00 47 13.5**	**-0.3**
MJAR	**Matsushiro Arr**	**2.08**	**259**	Pg	**Pn**	**00 47 19.5**	**+1.0**
	24nm,0.3s,baz=80,slow=18,SNR=7.4						
MJAR				Lg	Lg	00 47 47.1	
	29nm,0.3s,baz=88,slow=27,SNR=18						
MAT	**Matsushiro**	**2.08**	**259**	P	**Pb**	**00 47 20.1**	**-1.3**
MAT				S	**Sb**	**00 47 47.9**	**+0.6**
USRK	**Ussuriysk Ar.**	**9.81**	**320**	Pn	Pn	00 49 09.3	+4.8
	0.2nm,0.3s,baz=120,slow=14,SNR=5.9						
KSRS	**Korea Array**	**10.24**	**276**	Pn	Pn	00 49 17.2	+6.8
	0.3nm,0.3s,baz=93,slow=13,SNR=5.0						
SEY	**Seymchan**	**26.95**	**12**	P	**P**	**00 52 26.9**	**+2.3**
	1.2nm,0.6s,baz=234,slow=6.3,SNR=5.3						
SONM	**Songino Array**	**27.37**	**304**	P	**P**	**00 52 27.7**	**-1.1**
	0.8nm,0.6s,baz=106,slow=8.1,SNR=7.7						
H11N2	**WAKE ISLAND Hy**	**28.58**	**120**	T	T	01 22 28.1	
	baz=313,slow=75,SNR=27						
H11N1	**WAKE ISLAND Hy**	**28.59**	**120**	T	T	01 22 28.1	
	baz=313,slow=75,SNR=24						
H11N3	**WAKE ISLAND Hy**	**28.60**	**120**	T	T	01 22 29.7	
	baz=313,slow=75,SNR=65						
H11S1	**WAKE ISLAND Hy**	**29.28**	**122**	T	T	01 23 20.6	
	baz=314,slow=76,SNR=13						
H11S3	**WAKE ISLAND Hy**	**29.28**	**122**	T	T	01 23 20.6	
	baz=314,slow=76,SNR=46						
H11S2	**WAKE ISLAND Hy**	**29.30**	**122**	T	T	01 23 25.1	
	baz=314,slow=76,SNR=18						
ZALV	**Zalesovo Beam**	**41.55**	**312**	P	**P**	**00 54 30.8**	**-0.1**
	0.9nm,0.5s,baz=94,slow=6.9,SNR=4.3						
ZALV				PcP	**PcP**	**00 56 28.1**	**+0.1**
	0.8nm,0.5s,baz=166,slow=2.3,SNR=4.3						
MKAR	**Makanchi Array**	**43.69**	**302**	P	**P**	**00 54 48.5**	**+0.1**
	0.7nm,0.6s,baz=88,slow=10,SNR=12						
MKAR				PcP	**PcP**	**00 56 35.6**	**+0.3**
	0.4nm,0.8s,baz=110,slow=2.1,SNR=3.3						
ILAR	**Eielson Array**	**49.83**	**32**	P	**P**	**00 55 36.6**	**+0.5**
	0.5nm,0.6s,baz=262,slow=5.6,SNR=8.1						
WRA	**Warramunga Arr**	**56.94**	**187**	P	**P**	**00 56 28.6**	**-0.2**
	1.0nm,0.6s,baz=3.4,slow=7.1,SNR=18						
ASAR	**Alice Springs**	**60.67**	**187**	P	**P**	**00 56 54.2**	**-0.5**
	0.6nm,0.7s,baz=12,slow=9.5,SNR=3.9						
RES	**Resolute Bay**	**62.78**	**14**	P	**P**	**00 57 08.3**	**0.0**
	0.5nm,0.7s,baz=327,slow=5.1,SNR=5.0						
GEYT	**Alibeck**	**63.39**	**299**	P	**P**	**00 57 13.1**	**0.0**
	1.3nm,0.7s,baz=46,slow=6.4,SNR=3.5						
ARCES	**ARCESS Array B**	**63.86**	**339**	P	**P**	**00 57 15.6**	**0.0**
	1.5nm,0.7s,baz=68,slow=7.9,SNR=4.4						
YKA	**Yellowknife Ar**	**64.12**	**30**	P	**P**	**00 57 17.3**	**-0.1**
	0.2nm,0.8s,baz=300,slow=6.8,SNR=5.9						
FINES	**FINESS Array B**	**68.61**	**332**	P	**P**	**00 57 46.3**	**+0.1**
	1.7nm,0.7s,baz=57,slow=7.0,SNR=7.3						
AKASG	**Malin Array Be**	**74.01**	**322**	P	**P**	**00 58 18.3**	**-0.7**
	0.4nm,0.4s,baz=42,slow=6.0,SNR=4.9						
NOA	**NORSAR Array B**	**74.03**	**337**	P	**P**	**00 58 18.9**	**-0.1**
	0.9nm,0.7s,baz=39,slow=5.8,SNR=3.3						
GERES	**GERESS Array B**	**82.47**	**328**	P	**P**	**00 59 05.0**	**-1.0**
	0.4nm,0.5s,baz=26,slow=7.4,SNR=4.7						
LPAZ	**La Paz**	**147.18**	**59**	PKPbc	**PKPbc**	**01 06 28.6**	**+0.6**
	0.5nm,0.5s,baz=164,slow=9.2,SNR=3.3						

IDC **12** *00:49:50.0±0.9,36.92N×140.63E,h0km,mb3.6/10, mb1 3.8/10,mb1mx3.6/43,mbtmp3.6/10,Error ellipse: s-maj=20.7km s-min=13.4km az=155.0*

ISCJB **12** *00:49:51.1±0.5,37.00N±0.03×140.68E±0.06,h18km±4km, mb3.6/10,Error ellipse: s-maj=8.3km s-min=5.4km az=17.3*

JMA **12** *00:49:51.4,37.02N×140.61E,h10km±1km,M3.7*

JMA Felt II J1.

ISC 12 00:49:50.9±1.3,**36°96N**±0°.05×**140°59E**±0°.05,**h5**km±10km, **n24**,σ0s**50**/21,**mb3.7**/10,**3C-2D**,**Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.22**	**49**	⇓P	**Pg**	**00 49 55.3**	**+0.1**
ONAJ				S	**Sg**	**00 49 58.1**	**+0.1**
JHO	**Hitachi**	**0.35**	**183**	⇑P	**Pb**	**00 49 59.3**	**-0.3**
JHO				S	**Sb**	**00 50 04.9**	**-0.6**
JSB	**Shiboa**	**0.54**	**271**	⇓P	**Pb**	**00 50 02.8**	**-0.1**
JSB				S	**Sb**	**00 50 10.4**	**-0.6**
JFT	**Otama**	**0.59**	**340**	⇑P	**Pg**	**00 50 02.2**	**-0.1**
JFT				S	**Sg**	**00 50 09.8**	**-0.3**
JYT	**Yasato**	**0.80**	**204**	⇑P	**Pb**	**00 50 07.4**	**+0.1**
JYT				S	**Sb**	**00 50 18.6**	**+0.2**
MJAR	**Matsushiro Arr**	**1.96**	**258**	Pg	**Pn**	**00 50 25.6**	**+0.8**
	22nm,0.3s,baz=82,slow=16,SNR=16						
MJAR				Lg	Lg	00 50 51.9	
	23nm,0.3s,baz=92,slow=26,SNR=11						
USRK	**Ussuriysk Ar.**	**9.75**	**321**	Pn	Pn	00 52 17.8	+6.0
	0.2nm,0.3s,baz=118,slow=13,SNR=5.0						
KSRS	**Korea Array**	**10.12**	**277**	Pn	Pn	00 52 23.4	+6.5
	0.2nm,0.3s,baz=94,slow=13,SNR=5.4						
SONM	**Songino Array**	**27.28**	**304**	P	**P**	**00 55 36.4**	**0.0**
	0.7nm,0.7s,baz=110,slow=8.3,SNR=5.2						
H11N2	**WAKE ISLAND Hy**	**28.68**	**120**	T	T	01 25 37.7	
	baz=313,slow=75,SNR=37						
H11N1	**WAKE ISLAND Hy**	**28.69**	**120**	T	T	01 25 38.3	
	baz=313,slow=75,SNR=37						
H11N3	**WAKE ISLAND Hy**	**28.70**	**120**	T	T	01 25 39.1	
	baz=313,slow=75,SNR=29						
H11S1	**WAKE ISLAND Hy**	**29.38**	**122**	T	T	01 26 26.8	
	baz=314,slow=76,SNR=63						
H11S3	**WAKE ISLAND Hy**	**29.38**	**122**	T	T	01 26 31.2	
	baz=314,slow=76,SNR=70						
H11S2	**WAKE ISLAND Hy**	**29.39**	**122**	T	T	01 26 31.0	
	baz=314,slow=76,SNR=67						
ZALV	**Zalesovo Beam**	**41.48**	**312**	P	**P**	**00 57 39.2**	**+0.6**
	0.5nm,0.5s,baz=75,slow=11,SNR=3.1						
MKAR	**Makanchi Array**	**43.60**	**302**	P	**P**	**00 57 55.8**	**-0.3**
	0.3nm,0.5s,baz=88,slow=10.0,SNR=3.5						
ILAR	**Eielson Array**	**49.91**	**32**	P	**P**	**00 58 45.1**	**0.0**
	0.3nm,0.7s,baz=279,slow=6.0,SNR=4.1						
WRA	**Warramunga Arr**	**56.90**	**187**	P	**P**	**00 59 36.5**	**-0.4**
	1.2nm,0.7s,baz=4.1,slow=7.4,SNR=7.5						
ASAR	**Alice Springs**	**60.63**	**187**	P	**P**	**01 00 02.6**	**-0.3**
	0.6nm,0.7s,baz=10,slow=7.6,SNR=6.0						
RES	**Resolute Bay**	**62.84**	**14**	P	**P**	**01 00 16.3**	**-0.8**
	0.7nm,0.9s,baz=308,slow=7.3,SNR=3.4						
ARCES	**ARCESS Array B**	**63.83**	**339**	P	**P**	**01 00 24.8**	**+0.9**
	2.3nm,0.9s,baz=44,slow=11,SNR=4.1						
YKA	**Yellowknife Ar**	**64.20**	**30**	P	**P**	**01 00 26.2**	**-0.2**
	0.1nm,0.7s,baz=299,slow=6.3,SNR=3.0						
FINES	**FINESS Array B**	**68.57**	**332**	P	**P**	**01 00 55.0**	**+0.7**
	1.2nm,0.8s,baz=94,slow=5.7,SNR=4.3						

JMA 12 00:53:49.0±0.1,**37°41N**×**141°36E**,**h27**km±1km,**M3.5**, **Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.54**	**236**	P	Pb	00 53 59.6	-0.5
ONAJ				S	Sb	00 54 07.2	-0.4
JMM	**Marumori**	**0.64**	**315**	P	Pb	00 54 01.1	-0.5
JMM				S	Sb	00 54 09.6	-0.6
JFT	**Otama**	**0.82**	**278**	P	Pb	00 54 04.7	0.0
JFT				S	Sb	00 54 15.5	+0.1
JHO	**Hitachi**	**1.02**	**219**	P	Pn	00 54 06.8	-0.7
JIO	**Ouri**	**1.04**	**360**	P	Pn	00 54 07.0	-0.8
JIO				S	Sn	00 54 20.0	-1.5
JOU	**Okura**	**1.10**	**330**	P	Pn	00 54 08.8	+0.1
JOU				S	Sb	00 54 23.4	0.0
JYS	**Shirataka**	**1.31**	**309**	P	Pb	00 54 12.2	-0.7
JFY	**Yanaizu**	**1.32**	**270**	P	Pn	00 54 12.3	+0.6

IDC 12 00:54:11.5±2.5,**35°20N**×**139°25E**,**h83**km±22km,**mb3.5**/8, **mb1 3.7**/8,**mb1mx3.4**/40,**mbtmp3.8**/8,**MS4.1**/1,**Ms1 4.1**/1, **ms1mx3.3**/40,**Error ellipse: s-maj=25.8km s-min=17.9km az=91.0**,**Near south coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MJAR	**Matsushiro Arr**	**1.58**	**328**	P	Pn	00 54 37.5	-0.6
	16nm,0.3s,baz=92,slow=12,SNR=46						
KSRS	**Korea Array**	**9.41**	**287**	LR	LR	00 59 54.8	
	comp=Z,1μm,19.4s,baz=334,slow=36						
USRK	**Ussuriysk Ar.**	**10.58**	**330**	P	Pn	00 56 35.7	-4.4
	0.2nm,0.3s,baz=135,slow=13,SNR=5.7						
SONM	**Songino Array**	**27.43**	**307**	P	P	00 59 49.6	+0.1
	0.7nm,0.6s,baz=105,slow=9.0,SNR=7.6						
H11N2	**WAKE ISLAND Hy**	**28.84**	**115**	T	T	01 29 49.3	
	baz=314,slow=75,SNR=16						
H11N1	**WAKE ISLAND Hy**	**28.85**	**115**	T	T	01 29 50.1	
	baz=314,slow=75,SNR=18						
H11N3	**WAKE ISLAND Hy**	**28.86**	**115**	T	T	01 29 50.8	
	baz=314,slow=75,SNR=21						
H11S3	**WAKE ISLAND Hy**	**29.46**	**117**	T	T	01 30 52.5	
	baz=312,slow=76,SNR=6.0						
H11S1	**WAKE ISLAND Hy**	**29.46**	**117**	T	T	01 30 54.3	
	baz=312,slow=76,SNR=3.8						
H11S2	**WAKE ISLAND Hy**	**29.48**	**117**	T	T	01 30 53.9	
	baz=312,slow=76,SNR=6.1						
ZALV	**Zalesovo Beam**	**41.89**	**314**	P	P	01 01 52.2	-1.1
	0.7nm,0.4s,baz=87,slow=6.4,SNR=5.2						
MKAR	**Makanchi Array**	**43.64**	**303**	P	P	01 02 08.1	+0.4
	2.5nm,0.7s,baz=91,slow=10.0,SNR=30						
ILAR	**Eielson Array**	**51.98**	**32**	P	P	01 03 11.0	-0.8
	0.9nm,1.0s,baz=257,slow=6.3,SNR=6.0						
WRA	**Warramunga Arr**	**55.03**	**186**	P	P	01 03 34.4	-0.2
	1.8nm,0.8s,baz=1.2,slow=7.7,SNR=17						
INK	**Inuvik**	**56.81**	**26**	P	P	01 03 47.4	+0.6
	1.2nm,0.9s,baz=235,slow=6.3,SNR=4.4						
ASAR	**Alice Springs**	**58.76**	**186**	P	P	01 04 01.0	+0.1
	0.8nm,0.8s,baz=12,slow=5.8,SNR=7.8						
YKA	**Yellowknife Ar**	**66.27**	**29**	P	P	01 04 50.7	+0.2
	0.3nm,0.8s,baz=300,slow=7.1,SNR=4.4						

JMA 12 00:55:11.3,**36°84N**×**138°55E**,**h0**km,**M1.8**,**Eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JGK	**Kuni**	**0.29**	**165**	S	Sg	00 55 22.0	+1.5
MAT	**Matsushiro**	**0.41**	**223**	P	Pg	00 55 19.5	+0.4

JMA 12 01:08:46.9±0.3,**37°78N**×**142°34E**,**h3**km±4km,**M3.5**,**Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**1.03**	**311**	P	Pg	01 09 06.7	0.0
JIO				S	Sg	01 09 20.5	+0.4
JMM	**Marumori**	**1.23**	**274**	P	Pg	01 09 10.0	-0.4
JOU	**Okura**	**1.45**	**294**	P	Pn	01 09 13.7	-0.3

ISCJB **12** *01:08:50.8±1.1,39.98N±0.03×143.73E±0.03,h3km±7km, mb4.6/112,MS4.5/13,Error ellipse: s-maj=5.6km s-min=3.5km az=154.2*

IDC **12** *01:08:52.0±0.5,39.93N×143.68E,h0km,mb4.3/29, mb1 4.5/33,mb1mx4.3/57,mbtmp4.3/33,ML3.5/4,MS4.2/10, Ms1 4.2/10,ms1mx3.9/50,Error ellipse: s-maj=14.6km s-min=12.1km az=131.0*

JMA **12** *01:08:52.1±0.2,40.00N×143.71E,h10km,M4.6*

MOS **12** *01:08:53.7±1.2,39.98N×143.72E,h23km,mb4.8/55, MS4.1/8,Error ellipse: s-maj=8.0km s-min=4.9km az=107.3*

BJI **12** *01:08:54.3,39.96N×143.54E,h24km,mb4.7/59,mB5.2/26, Ms4.7/25,Ms7 4.5/24*

NEIC **12** *01:08:57.1±0.7,39.96N×143.66E,h36km±5km,mb4.7/41, Error ellipse: s-maj=6.2km s-min=4.5km az=135.0*

ISC 12 01:08:54.1±0.9,**39°96N**±0°.05×**143°74E**±0°.05,**h16**km±5km, **n294**,σ1s**25**/309,**mb4.6**/112,**MS4.5**/14,**15C-15D**,**Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JTH	**Tanohata**	**1.44**	**270**	P	**Pn**	**01 09 17.8**	**-1.8**
JTH				*e*S	**Sb**	**01 09 37.1**	**-1.7**
MIYJ	**Miyakonagasawa**	**1.53**	**256**	P	**Pn**	**01 09 19.8**	**-1.0**
MIYJ				*e*S	**Sn**	**01 09 38.8**	**-1.6**
JANG	**Nango**	**1.75**	**284**	P	**Pn**	**01 09 22.1**	**-1.8**
OFUJ	**Ofunato**	**1.83**	**242**	P	**Pn**	**01 09 23.7**	**-1.2**
JOM	**Ohasama**	**1.95**	**256**	P	**Pn**	**01 09 26.1**	**-0.5**
ERM	**Erimo**	**2.10**	**348**	*ce*P	**Pb**	**01 09 31.0**	**-0.7**
ERM				pmax	pmax		
	comp=Z,130nm,1.2s						
ERM	**Erimo**	**2.10**	**348**	*e*Pn	**Pn**	**01 09 29.1**	**+0.5**
JTM	**Tenmabayashi**	**2.20**	**293**	P	**Pn**	**01 09 29.4**	**-0.6**
JAH	**Hinai**	**2.39**	**276**	P	**Pn**	**01 09 31.9**	**-0.7**
JNBK	**Urakawa-nobuka**	**2.43**	**342**	P	**Pn**	**01 09 32.4**	**-0.8**
JRG	**Rokugo**	**2.46**	**258**	P	**Pn**	**01 09 33.8**	**+0.2**
JRG				*e*S	**Sn**	**01 10 04.6**	**+1.2**
JOT	**Ohata**	**2.49**	**306**	P	**Pn**	**01 09 33.5**	**-0.5**
JCH	**Churui**	**2.66**	**354**	P	**Pn**	**01 09 35.6**	**-0.8**
JCH				*e*S	**Sn**	**01 10 07.2**	**-1.1**
YUK	**Yuzh-Kuril'sk**	**4.37**	**21**	*e*P	**Pn**	**01 09 57.5**	**-2.2**
YUK				*e*S	**Sn**	**01 10 46.4**	**-3.8**
YUK				pmax	pmax		
	comp=N,63nm,0.2s						
YUK				pmax	pmax		
	comp=E,96nm,0.2s						
YUK				pmax	pmax		
	comp=Z,502nm,0.2s						
SHO	**Shikotan**	**4.53**	**30**	*e*P	**Pn**	**01 09 59.1**	**-2.9**
SHO				*e*S	Sn	01 10 48.4	-6.0
SHO				pmax	pmax		
	comp=E,53nm,0.4s						
SHO				pmax	pmax		
	comp=Z,100nm,0.4s						
SHO				pmax	pmax		
	comp=N,30nm,0.3s						
MJAR	**Matsushiro Arr**	**5.53**	**234**	Pn	**Pn**	**01 10 16.3**	**+0.4**
	comp=N,3.8nm,0.3s,baz=42,slow=12,SNR=52						
MJAR				LR	LR	01 12 41.6	
	comp=N,1μm,19.3s,baz=70,slow=42						
MAJO	**Matsushiro**	**5.53**	**234**	*e*P	**Pn**	**01 10 15.2**	**-0.7**
MAJO	**Matsushiro**	**5.53**	**234**	*e*Pn	**Pn**	**01 10 15.2**	**-0.7**
KUR	**Kuril'sk**	**6.08**	**29**	*e*P	**Pn**	**01 10 23.4**	**+0.1**
KUR				S	**Sn**	**01 11 29.8**	**-2.7**
KUR				pmax	pmax		
	comp=Z,52nm,0.4s						
KUR				smax	smax		
	comp=E,83nm,0.4s						
YSS	**Yuzh-Sakhalins**	**7.03**	**354**	⇑*e*P	**Pn**	**01 10 37.4**	**+1.2**
YSS				*e*S	**Sn**	**01 11 56.6**	**+0.9**
YSS				pmax	pmax		
	comp=Z,30nm,1.2s						
YSS				MLR	MLR		
	comp=Z,3μm,15.0s						
YSS				MLR	MLR		
	comp=N,2μm,14.0s						
YSS				MLR	MLR		
	comp=E,2μm,13.0s						
YSS	**Yuzh-Sakhalins**	**7.03**	**354**	*e*Pn	**Pn**	**01 10 36.9**	**+0.6**
INU	**Inuyama**	**7.05**	**231**	*e*Pn	**Pn**	**01 10 36.8**	**+0.2**
JHJ	**Hachijo jima 2**	**7.54**	**206**	Sn	**Sn**	**01 12 03.7**	**-4.7**
	comp=E,62nm,0.3s,baz=99,slow=20,SNR=2.7						
USRK	**Ussuriysk Ar.**	**9.71**	**300**	Pn	**Pn**	**01 11 14.5**	**+1.5**
	comp=E,0.8nm,0.3s,baz=98,slow=14,SNR=52						
USRK				LR	LR	01 14 01.4	
	comp=E,924nm,21.0s,baz=13,slow=32						
MDJ	**Mudanjiang**	**11.46**	**299**	P	**Pn**	**01 11 38.0**	**+0.9**
MDJ				pmax	pmax		
	comp=E,24nm,1.0s						
MDJ				pmax	pmax		
	comp=E,240nm,7.1s						
MDJ				LR	LR		
	comp=E,790nm,14.2s						
MDJ				LR	LR		
	comp=E,1μm,13.4s						
MDJ				LR	LR		
	comp=E,2μm,14.2s						
MDJ	**Mudanjiang**	**11.46**	**299**	*e*Pn	**Pn**	**01 11 38.7**	**+1.6**
JNU	**Nakatsue**	**12.39**	**241**	Pn	**Pn**	**01 11 49.4**	**-0.5**
	comp=E,0.5nm,0.3s,baz=47,slow=9.9,SNR=3.2						
JNU				LR	LR	01 16 51.9	
	comp=E,2μm,18.6s,baz=62,slow=39						
KLR	**Kul'dur**	**12.59**	**321**	Pn	**Pn**	**01 11 51.7**	**-0.8**
	comp=E,0.1nm,0.3s,baz=130,slow=12,SNR=21						
KLR				LR	LR	01 17 13.6	
	comp=E,1μm,19.3s,baz=345,slow=40						
KSRS	**Korea Array**	**12.61**	**264**	Pn	**Pn**	**01 11 55.0**	**+2.2**
	comp=E,0.3nm,0.3s,baz=81,slow=13,SNR=15						
KSRS				LR	LR	01 16 07.0	
	comp=E,1μm,18.8s,baz=13,slow=34						
KSRS	**Korea Array**	**12.61**	**264**	P	**Pn**	**01 11 55.0**	**+2.2**
KSRS				MLR	MLR		
	comp=Z,1μm,18.8s						
KS01	**Wonju Array Si**	**12.62**	**264**	*e*Pn	**Pn**	**01 11 54.2**	**+1.2**
KSAR	**Wonju Array Be**	**12.64**	**264**	P	**Pn**	**01 11 55.0**	**+1.8**
KSAR	**Wonju Array Be**	**12.64**	**264**	Pn	**Pn**	**01 11 55.0**	**+1.8**
NKL	**Nikolayevsk**	**13.36**	**352**	*e*P	**P**	**01 12 09.8**	**-2.6**
NKL				pmax	pmax		
	comp=Z,17nm,0.9s						
CN2	**Changchun**	**14.16**	**292**	*e*P	**Pn**	**01 12 15.3**	**+1.4**
CN2				pmax	pmax		
	comp=Z,10.0nm,0.6s						
DL2	**Dalian**	**17.11**	**274**	P	**P**	**01 12 53.6**	**-0.6**
DL2				pmax	pmax		
	comp=Z,59nm,1.1s						
BJI	**Beijing**	**21.09**	**279**	P	**P**	**01 13 35.4**	**-2.3**
BJI				S	**S**	**01 17 28.7**	**-3.2**
BJI				pmax	pmax		
	comp=Z,18nm,1.4s						
BJI				LR	LR		
	comp=Z,880nm,15.2s						
BJI				LR	LR		
	comp=Z,810nm,15.7s						
TIA	**Tai'an**	**21.25**	**268**	⇓P	**P**	**01 13 37.3**	**-2.2**
TIA				pmax	pmax		
	comp=Z,20nm,1.2s						
NJ2	**Nanjing**	**21.58**	**256**	*e*P	**P**	**01 13 43.0**	**0.0**
NJ2				pmax	pmax		
	comp=Z,9.0nm,0.7s						
SEY	**Seymchan**	**23.58**	**10**	P	**P**	**01 14 03.3**	**-0.4**
	comp=Z,20nm,0.9s,baz=184,slow=7.8,SNR=26						
YAK	**Yakutsk**	**23.70**	**343**	P	**P**	**01 14 04.5**	**-0.3**
	comp=Z,16nm,0.3s,baz=353,slow=3.7,SNR=4.1						
YAK	**Yakutsk**	**23.70**	**343**	*e*P	**P**	**01 14 04.8**	**0.0**
YAK				*e**PP	sP	01 14 17.1	+5.5
YAK				*e*S	**S**	**01 18 16.4**	**-2.6**
YAK				pmax	pmax		
	comp=Z,33nm,0.9s						
YAK				pmax	pmax		
	comp=N,14nm,1.3s						
YAK				pmax	pmax		
	comp=E,3.0nm,1.1s						
YAK				smax	smax		
	comp=N,103nm,1.9s						
YAK				smax	smax		
	comp=E,89nm,2.4s						
YAK				MLR	MLR		
	comp=Z,1μm,20.0s						
YAK				MLR	MLR		
	comp=N,629nm,19.0s						
YAK				MLR	MLR		
	comp=E,1μm,16.0s						
HHC	**Hu-ho-hao-te**	**24.45**	**283**	*e*P	**P**	**01 14 11.5**	**-0.8**
HHC				S	**S**	**01 18 26.8**	**-4.9**
HHC				pmax	pmax		
	comp=E,11nm,1.0s						
HHC				LR	LR		
	comp=E,660nm,14.8s						
HHC				LR	LR		
	comp=E,690nm,13.6s						
HHC				LR	LR		
	comp=E,1μm,13.6s						
WHN	**Wuhan**	**25.68**	**258**	⇓*i*P	**P**	**01 14 23.2**	**-0.1**
WHN				pmax	pmax		
	comp=E,150nm,1.2s						
BOD	**Bodaibo**	**26.16**	**323**	*e*P	**P**	**01 14 26.6**	**-0.8**
BOD				pmax	pmax		
	comp=Z,12nm,1.1s						
ULN	**Ulaanbaatar**	**27.38**	**299**	*e*P	**P**	**01 14 39.0**	**+0.3**
ULN				pmax	pmax		
	comp=Z,41nm,1.5s						
ULN	**Ulaanbaatar**	**27.38**	**299**	*e*P	**P**	**01 14 39.0**	**+0.3**
	comp=Z,41nm,1.5s						
SONA1	**Songino Array**	**27.82**	**299**	*e*P	**P**	**01 14 42.3**	**-0.3**
SONM	**Songino Array**	**27.82**	**299**	P	**P**	**01 14 42.9**	**+0.2**
	comp=Z,8.6nm,1.1s,baz=92,slow=7.5,SNR=37						
SONM				LR	LR	01 25 27.7	
	comp=Z,253nm,20.5s,baz=341,slow=36						
XAN	**Xi'an**	**28.31**	**269**	P	**P**	**01 14 46.8**	**-0.2**
XAN				pP	sP	01 14 54.4	+0.6
XAN				pmax	pmax		
	comp=Z,14nm,1.3s						
H11N2	**WAKE ISLAND Hy**	**28.31**	**129**	T	T	01 45 56.8	
	baz=318,slow=75,SNR=29						
H11N1	**WAKE ISLAND Hy**	**28.32**	**129**	T	T	01 45 53.8	
	baz=318,slow=75,SNR=23						
H11N3	**WAKE ISLAND Hy**	**28.33**	**129**	T	T	01 45 50.4	
	baz=318,slow=75,SNR=27						
ENH	**Enshi**	**29.49**	**262**	*e*P	**P**	**01 14 56.8**	**-0.8**
	comp=Z,47nm,1.1s						
TLY	**Talaya**	**29.93**	**307**	P	**P**	**01 15 01.9**	**+0.7**
	comp=Z,1.2nm,0.5s,baz=94,slow=10,SNR=4.2						
TLY	**Talaya**	**29.93**	**307**	*e*P	**P**	**01 15 01.5**	**+0.3**
TLY				pmax	pmax		
	comp=Z,8.0nm,1.2s						
TLY	**Talaya**	**29.93**	**307**	*e*P	**P**	**01 15 01.5**	**+0.3**
	comp=Z,8.1nm,1.2s						
ZAK	**Zakamensk**	**30.02**	**304**	*e*P	**P**	**01 15 01.

SKNT **Sakolnakorn** 41.32 248 P P 01 16 40.1 +1.0
comp=Z,34nm,1.0s,comp=Z,1µm
ZAA0 **Zalesovo Array** 41.36 310 eP P 01 16 38.9 -0.2
ZALV **Zalesovo Beam** 41.36 310 P P 01 16 38.8 -0.3
comp=Z,3.0nm,0.6s,baz=85,slow=6.6,SNR=23
ZALV PcP PcP 01 18 37.9 +0.8
comp=Z,2.2nm,0.6s,baz=101,slow=3.2,SNR=4.3
NRIK **Noril'sk** 41.42 334 P P 01 16 39.5 +0.1
comp=Z,1.3nm,0.3s,baz=113,slow=7.6,SNR=5.8
MYLDM **Lahad Datu** 41.43 220 eP P 01 16 40.7 +0.7
comp=Z,60nm,1.3s
CRAI **Chiangrai** 41.88 255 P P 01 16 43.6 -0.1
comp=Z,5.9nm,1.3s
NVS **Novosibirsk** 42.21 311 eP P 01 16 46.0 0.0
NVS pmax pmax
comp=Z,46nm,2.3s
NVS pmax pmax
comp=E,25nm,2.5s
CHAI **Chaiyaphum** 43.46 249 P P 01 16 57.0 +0.5
comp=E,4.1nm,1.0s,comp=E,167nm
PBKT **Sadao Pong** 43.75 250 P P 01 16 59.6 +0.7
comp=E,18nm,1.1s,comp=E,2µm
CMMT **Chiang Mai** 43.80 255 P P 01 17 02.0 +2.6
comp=E,22nm,0.7s
CHTO **Chiang Mai** 43.81 255 P P 01 17 02.0 +2.6
comp=E,27nm,1.4s
CHTO **Chiang Mai** 43.81 255 eP P 01 16 59.6 +0.2
CHTO pmax pmax
comp=Z,7.0nm,1.2s
CHTO **Chiang Mai** 43.81 255 eP P 01 16 59.6 +0.2
comp=Z,6.9nm,1.2s
CMAR **Chiang Mai Arr** 44.03 254 P P 01 17 01.7 +0.5
comp=Z,1.1nm,0.5s,baz=41,slow=6.3,SNR=8.5
CMAR LR LR 01 36 17.9
comp=Z,164nm,20.1s,baz=250,slow=37
MKAR **Makanchi Array** 44.18 300 P P 01 17 01.8 -0.3
comp=Z,2.2nm,0.8s,baz=82,slow=8.7,SNR=21
MKAR PcP PcP 01 18 47.8 +1.1
comp=Z,1.6nm,0.8s,baz=97,slow=5.8,SNR=2.8
MAKZ **Makanchi** 44.38 300 eP P 01 17 03.5 -0.2
MAKZ pmax pmax
comp=Z,9.0nm,1.0s
MAKZ **Makanchi** 44.38 300 eP P 01 17 03.5 -0.2
comp=Z,9.4nm,1.0s
MLY **Manley** 44.40 34 eP P 01 17 05.0 +1.4
comp=Z,11nm,1.4s
SRAK **Srakaew** 44.69 247 P P 01 17 04.2 -2.2
comp=Z,31nm,1.1s,comp=Z,1µm
CHBT **CHBT** 45.36 245 P P 01 17 13.8 +2.1
comp=Z,23nm,1.2s
MDM **Murphy Dome** 45.47 34 eP P 01 17 13.5 +1.4
comp=Z,9.3nm,1.2s
KURK **Kurchatov** 45.62 306 eP P 01 17 13.2 -0.2
KURK pmax pmax
comp=Z,40nm,1.1s
KURK **Kurchatov** 45.62 306 eP P 01 17 13.2 -0.2
comp=Z,40nm,1.1s
HDA **Harding Lake** 46.04 34 eP P 01 17 21.0 +4.4
comp=Z,39nm,1.1s
IL1 **Eielson Array** 46.05 34 eP P 01 17 17.5 +0.8
ILAR **Eielson Array** 46.05 34 P P 01 17 17.6 +0.9
comp=Z,1.5nm,0.7s,baz=264,slow=6.5,SNR=22
ILB **Eielson Array** 46.05 34 eP P 01 17 17.9 +1.2
PDGK **Podgornoye** 47.08 296 P P 01 17 25.2 +0.2
PDGK pmax pmax
comp=Z,12nm,1.1s
TAPN **Taplejung** 47.60 273 eP P 01 17 30.4 +0.8
ODAN **Odare** 48.09 272 eP P 01 17 33.6 +0.2
comp=Z,50nm,1.0s
EGAK **Eagle** 48.49 34 eP P 01 17 40.1 +4.4
comp=Z,16nm,1.5s
RAMN **Ramite** 48.65 273 eP P 01 17 37.7 0.0
comp=Z,64nm,1.0s
GUN **Gumba** 48.72 274 eP P 01 17 38.5 +0.1
comp=Z,38nm,0.7s
KKN **Kakani** 49.24 275 eP P 01 17 42.2 0.0
comp=Z,16nm,0.7s
PKIN **Phulchoki** 49.26 274 eP P 01 17 42.4 0.0
comp=Z,15nm,1.0s
GKN **Gorkha** 49.63 275 eP P 01 17 45.0 -0.1
comp=Z,61nm,1.3s
VOSK **Vostochnaya** 49.73 310 eP P 01 17 45.6 +0.2
VOSK pmax pmax
comp=Z,17nm,1.1s
VOSK **Vostochnaya** 49.73 310 eP P 01 17 45.6 +0.2
comp=Z,17nm,1.1s
TKM2 **Tokmak 2** 49.89 297 eP P 01 17 47.3 +0.3
TKM2 pmax pmax
comp=Z,25nm,1.0s
TKM2 **Tokmak 2** 49.89 297 eP P 01 17 47.3 +0.3
comp=Z,25nm,1.0s
BRVK **Borovoye** 50.05 311 eP P 01 17 48.0 +0.3
BRVK pmax pmax
comp=Z,15nm,1.2s
BRVK **Borovoye** 50.05 311 eP P 01 17 48.0 +0.3
comp=Z,15nm,1.2s
OTUK **Ortayu** 50.23 304 P P 01 17 49.8 +0.5
OTUK pmax pmax
comp=Z,7.0nm,1.3s
KOLN **Koldanda** 50.54 275 eP P 01 17 52.3 +0.2
comp=Z,30nm,1.1s
AAK **Ala-Archa** 50.75 297 eP P 01 17 53.8 +0.4
AAK pmax pmax
comp=Z,4.0nm,0.8s
AAK **Ala-Archa** 50.75 297 eP P 01 17 53.8 +0.4
comp=Z,4.4nm,0.8s
ZRNK **Zerenda** 50.82 311 eP P 01 17 53.9 +0.3
ZRNK pmax pmax
comp=Z,15nm,1.2s
ZRNK **Zerenda** 50.82 311 eP P 01 17 53.9 +0.3
comp=Z,15nm,1.2s
PYUN **Piuthan** 50.84 276 eP P 01 17 54.7 +0.4
comp=Z,58nm,1.0s
KSH **Kashi** 50.92 293 P P 01 17 59.0 +4.3
KSH epP sP 01 18 08.4 +6.7
KSH S S 01 25 13.3 +2.5
KSH ScS ScS 01 27 43.0 -1.9
KSH SS SS 01 28 47.1 +1.8
KSH pmax pmax
comp=Z,13nm,1.3s
KSH pmax pmax
comp=Z,540nm,11.6s
KSH LR LR
comp=Z,200nm,7.2s
KSH LR LR
comp=Z,260nm,10.9s
KSH LR LR
comp=Z,410nm,9.9s
INK **Inuvik** 50.95 28 P P 01 17 56.1 +1.9
comp=Z,2.7nm,0.7s,baz=306,slow=6.8,SNR=16
INK **Inuvik** 50.95 28 eP P 01 17 54.4 +0.1
INK pmax pmax
comp=Z,5.0nm,1.0s
INK **Inuvik** 50.95 28 eP P 01 17 54.4 +0.1
comp=Z,4.8nm,1.0s
EKS2 **Erkin-Say** 51.23 297 eP P 01 17 55.3 -1.7
EKS2 pmax pmax
comp=Z,5.0nm,0.9s
EKS2 **Erkin-Say** 51.23 297 eP P 01 17 55.3 -1.7
comp=Z,5.2nm,0.9s
MNAS **Manas** 52.17 298 P P 01 18 04.5 +0.5
MNAS pmax pmax
comp=Z,13nm,1.0s
SFK **Sufi-Kurgan** 52.46 294 P P 01 18 06.6 +0.3
SFK pmax pmax
comp=Z,12nm,1.0s
KKAR **Karatay Array** 53.27 299 eP P 01 18 11.8 -0.2
KKAR **Karatay Array** 53.27 299 eP P 01 18 11.8 -0.2
SOKR **Solikamsk** 55.14 322 eP P 01 18 24.7 -0.5
SOKR pmax pmax
comp=Z,9.0nm,0.8s
ARU **Arti** 55.40 318 c iP P 01 18 27.6 +0.3
ARU 01 19 30.2
ARU 01 20 28.6
ARU S S 01 26 13.2 +2.3
ARU SS SS 01 29 57.0 +2.0
ARU pmax pmax
comp=Z,20nm,1.2s
ARU MLR MLR
comp=Z,1µm,16.0s
ARU **Arti** 55.40 318 eP P 01 18 27.6 +0.3
comp=Z,18nm,1.1s
GSI **Gunungsitoli** 56.87 239 eP P 01 18 38.6 +0.3
comp=Z,40nm,0.5s
ABKAR **Akbulak array** 57.47 309 eP P 01 18 42.2 +0.1
KBL **Kabul** 58.09 290 eP P 01 18 45.7 -1.3
KBL pmax pmax
comp=Z,19nm,1.3s
KBL **Kabul** 58.09 290 eP P 01 18 45.7 -1.3
comp=Z,19nm,1.3s
RES **Resolute Bay** 59.31 15 P P 01 18 54.3 -0.2
comp=Z,4.1nm,0.8s,baz=316,slow=6.2,SNR=21
RES LR LR 01 46 20.1
comp=Z,374nm,19.3s,baz=128,slow=38
RES **Resolute Bay** 59.31 15 eP P 01 18 54.6 +0.1
comp=Z,11nm,1.2s
FITZ **Fitzroy Crossi** 60.18 200 P P 01 19 01.0 -0.1
comp=Z,5.1nm,0.9s,baz=21,slow=5.9,SNR=4.4
WRAB **Tennant Creek** 60.23 190 ceP P 01 19 02.9 +1.4
WRAB pmax pmax
comp=Z,27nm,1.2s
WRA **Warramunga Arr** 60.24 190 P P 01 19 00.5 -1.0
comp=Z,3.1nm,0.5s,baz=8.5,slow=6.9,SNR=26
YKA **Yellowknife Ar** 60.36 32 P P 01 19 02.6 +0.7
comp=Z,0.9nm,0.6s,baz=303,slow=6.3,SNR=22
ARCES **ARCESS Array B** 61.90 339 P P 01 19 13.4 +1.1
comp=Z,4.0nm,1.0s,baz=10,slow=7.4,SNR=5.5
KLMR **Klimovskoe** 62.26 328 eP P 01 19 13.5 -1.3
KLMR e*PP sP 01 19 22.3 +0.4
KLMR e 01 21 29.9
KLMR pmax pmax
comp=Z,19nm,1.2s
DAG **Danmarks Havn** 63.01 356 i P P 01 19 19.8 +0.2
comp=Z,3.9nm,0.8s
DAG **Danmarks Havn** 63.01 356 i P P 01 19 19.8 +0.2
DAG pmax pmax
comp=Z,3.0nm,0.8s
AS01 **Alice Springs** 63.95 190 eP P 01 19 25.1 -1.4
ASAR **Alice Springs** 63.96 190 P P 01 19 26.3 -0.2
comp=Z,1.8nm,0.8s,baz=4.8,slow=4.7,SNR=10
GEYT **Alibeck** 64.03 299 P P 01 19 27.3 +0.3
comp=Z,5.3nm,0.9s,baz=35,slow=3.6,SNR=13
MOS **Moscow** 65.99 324 eP P
MOS MLR MLR 01 19 46.8 +7.4
comp=Z,1µm,18.0s
VRH **Novokhopyorsk** 66.64 318 eP P 01 19 42.3 -1.3
VRH pmax pmax
comp=Z,8.0nm,0.7s
OBN **Obninsk** 66.84 323 i P P 01 19 44.3 -0.5
OBN i 01 19 52.8
OBN i 01 22 16.0
OBN pmax pmax
comp=Z,6.0nm,1.0s
FIA1 **FINESS Array S** 67.07 332 eP P 01 19 45.8 -0.4
comp=Z,19nm,1.3s
FINES **FINESS Array B** 67.07 332 P P 01 19 46.1 -0.1
comp=Z,4.4nm,0.7s,baz=52,slow=7.6,SNR=17
LPSR **Galich'ya Gora** 67.22 320 eP P 01 19 47.2 -0.1
LPSR pmax pmax
comp=Z,6.0nm,0.6s
SUMG **Summit** 67.75 1 i P P 01 19 52.3 +1.4
comp=Z,5.9nm,0.8s
SUMG **Summit** 67.75 1 i P P 01 19 52.3 +1.4
SUMG pmax pmax
comp=Z,6.0nm,0.8s
VSR **Storozhevoye** 67.93 319 eP P 01 19 51.6 -0.2
VSR pmax pmax
comp=Z,8.0nm,1.3s
VSU **Vasula** 68.85 330 ceP P 01 19 58.5 +1.1
VSU pmax pmax
comp=Z,32nm,1.2s
WVOR **Wild Horse Val** 69.23 52 eP P 01 20 01.6 +1.3
WVOR pmax pmax
comp=Z,24nm,1.4s
WVOR **Wild Horse Val** 69.23 52 eP P 01 20 01.6 +1.3
comp=Z,24nm,1.4s
MSO **Missoula** 69.36 46 P P 01 20 01.4 +0.4
baz=307
GOF **Gofitskoye** 69.50 312 ⇓iP P 01 20 02.7 +1.0
GOF pmax pmax
comp=Z,25nm,1.0s
ZEI **Tsey** 70.35 310 eP P 01 20 07.3 0.0
ZEI pmax pmax
comp=Z,21nm,1.1s
KIV **Kislovodsk** 70.36 311 eP P 01 20 08.2 +1.0
KIV pmax pmax
comp=Z,30nm,0.9s
KIV **Kislovodsk** 70.36 311 eP P 01 20 07.0 -0.2
comp=Z,37nm,1.1s
KBZ **Khabaz** 70.38 311 P P 01 20 08.2 +1.2
comp=Z,9.4nm,1.0s,baz=50,slow=1.8,SNR=14
LRM **Limekiln Ridge** 70.79 46 eP P 01 20 10.4 +0.5
HLID **Hailey** 71.06 49 P P 01 20 11.8 +0.3
baz=308
BOZ **Bozeman (W)** 71.35 46 eP P 01 20 09.5 -3.7
BOZ pmax pmax
comp=Z,12nm,0.7s
BOZ **Bozeman (W)** 71.35 46 eP P 01 20 09.5 -3.8
comp=Z,12nm,0.7s
NV01 **Mina Array Sit** 71.79 55 eP P 01 20 16.6 +0.5
NVAR **Mina Array Bea** 71.79 55 P P 01 20 18.0 +1.9
comp=Z,1.4nm,0.7s,baz=294,slow=6.5,SNR=11
NC204 **NORSAR Array S** 72.12 338 eP P 01 20 15.6 -1.9
NB2 **NORSAR Subarra** 72.18 338 P P 01 20 17.8 0.0
comp=Z,14nm,1.2s,baz=38,slow=6.2
NOA **NORSAR Array B** 72.18 338 P P 01 20 17.9 +0.1
comp=Z,6.7nm,0.9s,baz=38,slow=6.0,SNR=14
NOA LR LR 01 56 16.2
comp=Z,200nm,18.2s,baz=245,slow=39
NBO02 **NORSAR Array S** 72.28 338 eP P 01 20 18.5 +0.2
H17A **Grant Village** 72.72 46 P P 01 20 24.4 +2.8
baz=309
H17A **Grant Village** 72.72 46 eP P 01 20 23.3 +1.7
comp=Z,3.6nm,0.8s
IMW **Indian Meadow** 72.83 47 eP P 01 20 21.4 -0.9
comp=Z,5.4nm,1.1s
FXWY **Fox Creek** 72.94 47 eP P 01 20 23.4 +0.4
comp=Z,3.4nm,1.1s
AKASG **Malin Array Be** 73.09 323 P P 01 20 22.3 -1.0
comp=Z,2.5nm,0.5s,baz=44,slow=5.9,SNR=16
AKASG **Malin Array Be** 73.09 323 eP P 01 20 23.5 +0.2
AKASG pmax pmax
comp=Z,3.0nm,0.5s
KIEV **Kiev** 73.10 323 eP P 01 20 23.6 +0.2
KIEV pmax pmax
comp=Z,6.0nm,1.0s
GRAC **Grapevine Rang** 73.25 56 P P 01 20 25.1 +0.5
baz=308
R11A **Troy Canyon, C** 73.54 54 P P 01 20 27.1 +0.7
baz=308
R11A **Troy Canyon, C** 73.54 54 eP P 01 20 26.9 +0.5
comp=Z,8.4nm,1.7s
MPMC **Manual Prospec** 73.74 57 P P 01 20 28.0 +0.3
baz=308
TPNV **Topopah Spring** 73.98 55 P P 01 20 29.6 +0.5
baz=308
TPNV **Topopah Spring** 73.98 55 eP P 01 20 30.8 +1.7
TPNV pmax pmax
comp=Z,8.0nm,1.3s
TPNV **Topopah Spring** 73.98 55 eP P 01 20 30.8 +1.7
comp=Z,8.2nm,1.3s
DUG **Dugway, Tooele** 74.08 51 P P 01 20 30.7 +1.2
baz=309
EDW2 **Edwards Air Fo** 74.14 58 P P 01 20 30.5 +0.6
baz=308
BW06 **Boulder Array** 74.33 47 P P 01 20 31.4 +0.4
baz=310
BW06 **Boulder Array** 74.33 47 eP P 01 20 30.8 -0.2
PDAR **Pinedale Array** 74.33 47 P P 01 20 31.7 +0.6
comp=Z,1.4nm,0.6s,baz=264,slow=1.9,SNR=20
GSC **Goldstone, Bar** 74.64 57 P P 01 20 33.3 +0.5
baz=308
TUQ **Turquoise Moun** 75.13 56 P P 01 20 35.9 +0.2
baz=309
HEC **Hector,Ludlow** 75.24 57 P P 01 20 37.3 +1.0
baz=309
A29A **Manning Farm,** 75.49 37 P P 01 20 37.9 +0.5
baz=315
MSU **Marysvale** 75.52 52 eP P 01 20 37.3 -0.8
MSU **Marysvale** 75.52 52 eP P 01 20 37.3 -0.8
LCMT **Little Creek M** 75.82 54 eP P 01 20 40.5 +0.8
comp=Z,3.0nm,0.9s
ULM **Lac du Bonnet** 76.06 35 P P 01 20 41.1 +0.6
comp=Z,1.9nm,0.7s,baz=329,slow=8.6,SNR=3.0
ULM **Lac du Bonnet** 76.06 35 P P 01 20 41.2 +0.6
ULM pmax pmax
comp=Z,1.0nm,0.5s
IRM **Iron Mountain** 76.43 57 P P 01 20 43.8 +0.8
baz=309
BC3 **Big Chuckawall** 76.54 57 P P 01 20 44.1 +0.3
baz=309
I25A **Rochford** 76.67 43 P P 01 20 44.0 -0.4
baz=313
KWP **Kalwaria Pacla** 76.80 325 eP P 01 20 46.0 +1.2
KWP **Kalwaria Pacla** 76.80 325 eP P 01 20 46.1 +1.2
PDMCI **Parker Dam,Lak** 76.98 56 P P 01 20 46.3 +0.2
baz=310
BUR08 **Bucovina Ar. S** 77.11 322 eP P 01 20 46.4 -0.3
BURAR **Bucovina Array** 77.13 322 ⇓iP P 01 20 48.3 +1.5
BURAR **Bucovina Array** 77.13 322 ⇓P P 01 20 48.3 +1.5
A33A **Warroad** 77.23 35 P P 01 20 47.5 +0.2
baz=318
TESR **Tescani** 77.24 321 ⇑iP P 01 20 46.6 -0.7
CFR **Carcaliu** 77.45 319 ⇑iP P 01 20 45.4 -3.1
CFR **Carcaliu** 77.45 319 ⇑P P 01 20 45.4 -3.1
KOLS **Kolonicke sedl** 77.50 325 eP P 01 20 48.6 -0.2
KOLS pmax pmax
comp=Z,5.0nm,1.3s
KOLS **Kolonicke sedl** 77.50 325 eP P 01 20 48.6 -0.2
N23A **Red Feather La** 77.59 47 P P 01 20 49.6 -0.1
baz=313
OJC **Ojcow** 77.61 327 eP P 01 20 50.4 +1.1
OJC **Ojcow** 77.61 327 eP P 01 20 48.6 -0.8
OJC pmax pmax
comp=Z,13nm,1.0s
OJC **Ojcow** 77.61 327 eP P 01 20 48.5 -0.8
comp=Z,13nm,1.0s
CRVS **Cervenica-Dubn** 77.89 325 eP P 01 20 51.0 +0.1
CRVS **Cervenica-Dubn** 77.89 325 eP P 01 20 51.0 +0.1
WUAZ **Wupatki** 77.94 54 P P 01 20 51.6 -0.1
baz=311
WUAZ **Wupatki** 77.94 54 eP P 01 20 51.4 -0.2
comp=Z,3.3nm,0.8s
NIE **Niedzica** 78.00 326 eP P 01 20 51.3 -0.3
NIE **Niedzica** 78.00 326 eP P 01 20 51.3 -0.3
DOPR **Dopca** 78.24 321 ⇑iP P 01 20 54.9 +2.0
BRTR **Keskin Array B** 78.26 312 P P 01 20 54.2 +0.9
comp=Z,1.6nm,1.0s,baz=100,slow=5.1,SNR=5.8
ISR **Istrita** 78.28 320 ⇓iP P 01 20 55.6 +2.4
ISR **Istrita** 78.28 320 ⇓P P 01 20 55.6 +2.4
MSAB **Monastry St. A** 78.37 319 ⇓iP P 01 20 55.5 +1.8
B35A **Bob, Littlefor** 78.40 35 P P 01 20 53.7 -0.1
baz=319
I29A **Vivian Onida** 78.44 41 P P 01 20 54.9 +0.8
baz=315
KSP **Ksiaz** 78.55 329 eP P 01 20 55.7 +1.1
KSP **Ksiaz** 78.55 329 eP P 01 20 55.7 +1.1
LANS **Liptovska Anna** 78.56 326 eP P 01 20 56.5 +1.8
LANS **Liptovska Anna** 78.56 326 eP P 01 20 56.5 +1.8
X16A **Lo Mia Camp, P** 78.61 55 eP P 01 20 53.5 -1.9
comp=Z,4.4nm,1.1s
KECS **Kecovo** 78.63 325 eP P 01 20 56.8 +1.8
KECS pmax pmax
comp=Z,1.0nm,0.9s
KECS **Kecovo** 78.63 325 eP P 01 20 56.8 +1.8
BR231 **Keskin MP Arra** 78.67 313 eP P 01 20 54.0 -1.6
D34A **Park Rapids** 78.69 37 P P 01 20 55.0 -0.4
baz=318
VOIR 78.78 321 ⇑iP P 01 20 58.4 +2.4
VOIR 78.78 321 ⇑P P 01 20 58.4 +2.4
C35A **Jirik Farms, M** 78.79 36 P P 01 20 55.8 -0.2
baz=319
MORC **Moravsky Berou** 78.88 328 eP P 01 20 54.3 -2.1
MORC pmax pmax
comp=Z,30nm,1.2s
MORC **Moravsky Berou** 78.88 328 eP P 01 20 54.3 -2.1
comp=Z,30nm,1.2s
DPC **Dobruska-Polom** 78.93 329 i P P 01 20 58.0 +1.3
DPC epP PcP 01 21 06.8 +1.5
DPC **Dobruska-Polom** 78.93 329 i P P 01 20 58.0 +1.3
DPC e 01 21 06.8
G32A **Webster** 78.95 39 P P 01 20 57.2 +0.3
baz=317
KRLC **Kraliky** 78.96 328 i P P 01 20 57.4 +0.5
KRLC epP PcP 01 21 06.6 +1.1
KRLC **Kraliky** 78.96 328 i P P 01 20 57.4 +0.5
KRLC e 01 21 06.6
ARR **Arges** 79.04 321 ⇑iP P 01 20 59.7 +2.3
VYHS **Vyhne** 79.33 326 eP P 01 21 00.0 +1.1
VYHS e 01 21 06.1
VYHS pmax pmax
comp=Z,7.0nm,1.6s
VYHS **Vyhne** 79.33 326 eP P 01 21 00.0 +1.1
VYHS ePCP PcP 01 21 06.1 -1.0
BRG **Berggiesshubel** 79.44 330 eP P 01 21 00.1 +0.7
comp=Z,11nm,1.4s
BRG e 01 21 08.1
comp=Z,7.3nm,1.1s
BRG **Berggiesshubel** 79.44 330 eP P 01 21 00.1 +0.7
BRG e 01 21 08.1
BRG pmax pmax
comp=Z,33nm,1.4s
BRG pmax pmax
comp=Z,11nm,1.1s
CLL **Collm** 79.44 331 ⇓iP P 01 20 59.8 +0.4
comp=Z,8.0nm,1.1s
CLL i 01 21 08.1
comp=Z,11nm,1.2s
CLL LmV 01 57 00.0
comp=Z,500nm,18.4s
CLL **Collm** 79.44 331 ⇓iP P 01 20 59.8 +0.4
CLL i 01 21 08.1
CLL pmax pmax
comp=Z,5.0nm,1.1s
CLL MLR MLR
comp=Z,500nm,18.4s
PVCC **Panska Ves** 79.48 330 i P P 01 21 00.9 +1.3
PVCC **Panska Ves** 79.48 330 i P P 01 21 00.9 +1.3
VRAC **Vranov** 79.64 328 ⇓iP P 01 21 01.9 +1.4
VRAC **Vranov** 79.64 328 ⇓P P 01 21 01.9 +1.4
GOPC **GO Pecny, Ondr** 79.88 329 i P P 01 21 03.6 +1.7
GOPC **GO Pecny, Ondr** 79.88 329 i P P 01 21 03.6 +1.7
PRA **Prague** 79.89 330 i P P 01 21 02.9 +1.0
PRA epP PcP 01 21 11.2 +1.8
PRA **Prague** 79.89 330 i P P 01 21 02.9 +1.0
PRA e 01 21 11.2
GZR **Gura Zlata** 79.90 322 ⇓iP P 01 21 03.5 +1.4
GZR **Gura Zlata** 79.90 322 ⇓P P 01 21 03.5 +1.4
PRU **Pruhonice** 79.92 329 i P P 01 21 03.4 +1.4
PRU epP PcP 01 21 10.6 +1.0
PRU **Pruhonice** 79.92 329 i P P 01 21 03.4 +1.4
PRU e 01 21 10.6
TREC **Trest** 80.09 329 i P P 01 21 04.0 +1.0
TREC epP PcP 01 21 12.7 +2.3
TREC **Trest** 80.09 329 i P P 01 21 04.0 +1.0
TREC e 01 21 12.7
MDVR **Moldovita** 80.86 322 ⇑iP P 01 21 07.9 +0.6
KHC **Kasperske Hory** 80.98 329 i P P 01 21 08.6 +0.8
KHC epP PcP 01 21 17.4 +3.1
KHC **Kasperske Hory** 80.98 329 eP P 01 21 06.3 -1.5
KHC pmax pmax
comp=Z,3.0nm,1.1s
KHC **Kasperske Hory** 80.98 329 eP P 01 21 06.3 -1.5
comp=Z,2.6nm,1.1s
GERES **GERESS Array B** 81.16 329 P P 01 21 09.6 +0.7
comp=Z,0.8nm,0.7s,baz=54,slow=5.4,SNR=7.2
RAYN **Ar Rayn** 81.21 293 eP P 01 21 08.3 -1.2
comp=Z,7.7nm,1.2s
ANMO **Albuquerque** 81.32 51 ceP P 01 21 08.9 -1.2
ANMO pmax pmax
comp=Z,7.0nm,2.5s
VTS **Vitosha** 81.78 320 ⇓iP P 01 21 13.4 +1.1
VTS **Vitosha** 81.78 320 eP P 01 21 10.9 -1.4
VTS pmax pmax
comp=Z,5.0nm,0.9s
VTS **Vitosha** 81.78 320 eP P 01 21 10.9 -1.4
comp=Z,4.7nm,0.9s
SCHQ **Schefferville** 82.01 17 P P 01 21 14.1 +0.9
comp=Z,3.1nm,0.8s,baz=344,slow=7.4,SNR=2.6
MNTX **Cornudas Mount** 84.20 53 P P 01 21 24.8 -0.1
baz=314
FUORN **Ofenpass-Fuorn** 84.32 330 eP P 01 21 25.0 -0.5
comp=Z,20nm,1.4s
R39A **Chumby, Stover** 86.34 41 P P 01 21 35.1 -0.4
baz=320
R40A **Maddies Statio** 86.75 41 P P 01 21 37.4 -0.1
baz=320
TX31 **Lajitas Ar. Si** 86.90 54 eP P 01 21 39.3 +0.8
TXAR **Lajitas Array** 86.90 54 P P 01 21 39.8 +1.3
comp=Z,0.8nm,0.7s,baz=299,slow=4.1,SNR=12

*NEIC **12** 01:12:05.6$_S$ 1.9, 42.°34N$_K$ 126.°89W, h10^{km}, mb4.2/9, Error ellipse: s-maj=22.9km s-min=7.9km az=70.0*
*IDC **12** 01:12:14.5$_S$ 3.0, 42.°92N$_K$ 125.°40W, h0^{km}, mb3.2/2, mb1 3.6/6, mb1mx3.4/48, mbtmp3.2/6, ML3.0/4, MS3.2/1,*

Ms1 3.2/1,ms1mx3.1/18,Error ellipse: s-maj=51.5km s-min=17.1km az=62.0

ISC 12 01:12:11.0±1.1, 42°53N±0.06×126°26W±0.08, h10km, n74, σ1§42/65, mb4.5/7, Off coast of Oregon

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
KSXB	**Camp Six Broad**	**1.90**	**111**	P	**Pn**	**01 12 42.0**	**-1.6**
L02D	**Cave Junction,**	**2.00**	**100**	P	**Pn**	**01 12 44.3**	**-0.6**
	baz=277,SNR=102						
KTRM	**Thompson Ridge**	**2.23**	**105**	P	**Pn**	**01 12 47.2**	**-0.9**
RNO	**Roman Nose**	**2.30**	**52**	P	**Pn**	**01 12 49.6**	**+0.6**
JCC	**Jacoby Creek,**	**2.39**	**135**	*e*Pn	Pn	01 12 46.6	-3.7
I03D	**Drain, OR**	**2.42**	**60**	P	**Pn**	**01 12 50.5**	**-0.2**
	baz=241,SNR=34						
HUMO	**Hull Mountain**	**2.44**	**87**	*e*Pn	**Pn**	**01 12 50.8**	**-0.1**
HUMO				*e*S	**Sb**	**01 13 25.6**	**+0.5**
HSO	**Harness Mounta**	**2.52**	**66**	P	**Pn**	**01 12 52.4**	**+0.3**
YBH	**Yreka Blue Hor**	**2.76**	**106**	Pn	**Pn**	**01 12 55.6**	**+0.2**
	1.3nm,0.3s,baz=284,slow=12,SNR=26						
YBH				Sn	**Sb**	**01 13 33.7**	**-0.6**
	0.7nm,0.3s,baz=147,slow=12,SNR=2.9						
YBH				LR	LR	01 13 36.4	
	comp=Z,471nm,19.6s,baz=324,slow=35						
YBH	**Yreka Blue Hor**	**2.76**	**106**	*e*Pn	**Pn**	**01 12 55.5**	**+0.2**
YBH				*e*S	**Sb**	**01 13 31.9**	**-2.3**
M02C	**Callahan**	**2.78**	**113**	P	**Pn**	**01 12 55.0**	**-0.7**
	baz=291,SNR=10						
MPOR	**Mary's Peak**	**2.78**	**44**	P	**Pn**	**01 12 56.6**	**+0.8**
COR	**Corvallis**	**2.97**	**45**	*e*Pn	**Pn**	**01 12 58.9**	**+0.7**
COR				*e*S	**Sb**	**01 13 37.6**	**-2.7**
BUOR	**Burton Butte**	**2.98**	**94**	P	**Pn**	**01 13 00.3**	**+1.7**
KMRM	**Mail Ridge**	**3.00**	**139**	*e*Pn	Pn	01 12 54.0	-4.7
I04A	**Tendick Farm,**	**3.08**	**65**	P	**Pn**	**01 13 01.0**	**+1.2**
	baz=246,SNR=8.0						
M04C	**Macdoel**	**3.37**	**101**	P	**Pn**	**01 13 04.1**	**+0.4**
	baz=281						
WDC	**Whiskeytown Da**	**3.40**	**124**	*e*Pn	**Pn**	**01 13 04.2**	**+0.1**
H04A	**Detroit Lake**	**3.65**	**53**	*e*Pn	**Pn**	**01 13 08.7**	**+1.0**
J05D	**Fort Rock, OR**	**3.76**	**77**	P	**Pn**	**01 13 09.7**	**+0.4**
	baz=259						
G04A	**Mulino**	**3.82**	**44**	*e*Pn	**Pn**	**01 13 09.0**	**-0.8**
F03A	**Seaside**	**3.91**	**29**	*e*Pn	**Pn**	**01 13 10.7**	**-0.4**
K05A	**Summer Lake**	**3.96**	**85**	*e*Pn	**Pn**	**01 13 13.8**	**+1.8**
K05A				*e*Pg	**Pb**	**01 13 20.3**	**-0.7**
I05D	**Terrebonne, OR**	**4.01**	**62**	P	**Pn**	**01 13 13.1**	**+0.5**
	baz=244						
F04A	**Amboy**	**4.38**	**38**	*e*Pn	**Pn**	**01 13 17.3**	**-0.2**
E03A	**Lebam**	**4.45**	**25**	*e*Pn	**Pn**	**01 13 17.3**	**-1.2**
MOD	**Modoc Plateau**	**4.47**	**96**	*e*Pn	**Pn**	**01 13 19.9**	**+1.0**
MOD				*e*Pg	**Pb**	**01 13 29.0**	**-0.6**
G06A	**Carlson Farm,**	**4.88**	**54**	*e*Pn	**Pn**	**01 13 25.2**	**+0.7**
LON	**Longmire**	**5.28**	**35**	*e*Pn	**Pn**	**01 13 31.9**	**+2.0**
LTY	**Liberty**	**6.17**	**38**	*e*Pn	**Pn**	**01 13 43.3**	**+1.1**
NVAR	**Mina Array Bea**	**7.32**	**121**	Pn	**Pn**	**01 13 58.2**	**+0.1**
	0.1nm,0.3s,baz=320,slow=17,SNR=3.7						
MSO	**Missoula**	**9.76**	**60**	P	**Pn**	**01 14 32.1**	**+0.5**
	baz=248						
MSO	**Missoula**	**9.76**	**60**	*e*Pn	**Pn**	**01 14 33.9**	**+2.3**
MCMT	**McKenzie Canyo**	**9.98**	**72**	*e*Pn	Pn	01 14 38.0	+3.3
BGU	**Big Grassy Mou**	**10.02**	**95**	*e*Pn	**Pn**	**01 14 37.0**	**+1.9**
HWUT	**Hardware Ranch**	**10.96**	**90**	*e*Pn	**Pn**	**01 14 47.1**	**-1.0**
NLU	**North Lily Min**	**10.98**	**99**	*e*Pn	**Pn**	**01 14 49.5**	**+1.1**
FXWY	**Fox Creek**	**11.20**	**79**	*e*Pn	**Pn**	**01 14 51.0**	**-0.2**
JLU	**Jordanelle**	**11.26**	**95**	*e*Pn	Pn	01 14 42.8	-9.4
IMW	**Indian Meadow**	**11.26**	**78**	*e*Pn	Pn	01 14 58.6	+6.3
REDW	**Red Top Meadow**	**11.32**	**81**	*e*Pn	**Pn**	**01 14 55.1**	**+2.1**
MOOW	**Moose Ponds**	**11.40**	**79**	*e*Pn	**Pn**	**01 14 56.1**	**+2.0**
LDFC	**Landfair**	**11.44**	**127**	*e*Pn	**Pn**	**01 14 57.5**	**+2.9**
LOHW	**Long Hollow**	**11.50**	**79**	*e*Pn	**Pn**	**01 14 57.5**	**+2.1**
KNB	**Kanab**	**11.71**	**114**	*e*Pn	Pn	01 15 02.7	+4.4
PDAR	**Pinedale Array**	**12.30**	**83**	Pn	**Pn**	**01 15 05.7**	**-0.7**
	0.0nm,0.3s,baz=116,slow=6.8,SNR=2.6						
K22A	**Casper**	**14.54**	**83**	*e*Pn	**Pn**	**01 15 39.5**	**+2.6**
X18A	**Snowflake**	**15.04**	**117**	*e*Pn	**P**	**01 15 46.9**	**-2.3**
	26nm,1.8s						
DLBC	**Dease Lake**	**16.10**	**353**	Pn	**P**	**01 15 59.6**	**-1.1**
	0.0nm,0.3s,baz=164,slow=12,SNR=3.0						
DGMT	**Dagmar**	**16.54**	**61**	*e*Pn	**P**	**01 16 05.3**	**-0.2**
SDCO	**Great Sand Dun**	**16.57**	**100**	*e*Pn	**P**	**01 16 06.2**	**0.0**
	27nm,1.7s						
ANMO	**Albuquerque**	**17.18**	**110**	Pn	**P**	**01 16 13.1**	**+0.1**
	0.1nm,0.3s,baz=288,slow=9.1,SNR=5.3						
ANMO	**Albuquerque**	**17.18**	**110**	*e*Pn	**P**	**01 16 14.7**	**+1.8**
	15nm,1.8s						
BNM	**Barren Site**	**17.50**	**112**	*e*Pn	**P**	**01 16 18.7**	**+2.2**
MNTX	**Cornudas Mount**	**19.80**	**116**	*e*P	**Pn**	**01 16 44.5**	**+1.5**
	8.5nm,1.6s						
FFC	**Flin Flon**	**20.03**	**44**	*e*P	**P**	**01 16 44.5**	**+0.6**
	12nm,1.2s						
AMTX	**Amarillo**	**20.60**	**104**	*e*P	Pn	01 16 53.4	+0.9
	31nm,1.6s						
YKA	**Yellowknife Ar**	**21.15**	**15**	P	**P**	**01 16 53.6**	**-2.2**
	3.2nm,0.9s,baz=204,slow=11,SNR=33						
YKB5	**Yellowknife Ar**	**21.15**	**15**	*e*P	**P**	**01 16 53.3**	**-2.5**
YKW3	**Yellowknife Ar**	**21.21**	**15**	*e*P	**P**	**01 16 55.0**	**-1.5**
	4.9nm,0.9s						
ECSD	**EROS Data Cent**	**21.62**	**77**	*e*P	**P**	**01 17 03.0**	**+1.9**
	36nm,1.9s						
AGMN	**Agassiz Nation**	**22.01**	**64**	*e*P	**P**	**01 17 04.8**	**-0.5**
TX31	**Lajitas Ar. Si**	**22.45**	**119**	*e*P	**P**	**01 17 12.3**	**+2.0**
TXAR	**Lajitas Array**	**22.45**	**119**	*e*P	**P**	**01 17 12.6**	**+2.3**
	0.5nm,1.0s,baz=307,slow=6.4,SNR=5.2						
DHY	**Denali Highway**	**23.99**	**336**	*e*P	**P**	**01 17 26.4**	**+0.7**
	24nm,1.7s						
H11N3	**WAKE ISLAND Hy**	**60.01**	**270**	T	T	02 26 44.5	
	baz=51,slow=75,SNR=9.9						
H11N2	**WAKE ISLAND Hy**	**60.01**	**270**	T	T	02 26 40.7	
	baz=51,slow=75,SNR=9.4						
H11N1	**WAKE ISLAND Hy**	**60.03**	**270**	T	T	02 26 48.5	
	baz=51,slow=75,SNR=9.7						
H11S1	**WAKE ISLAND Hy**	**60.92**	**269**	T	T	02 27 49.6	
	baz=50,slow=75,SNR=11						
H11S2	**WAKE ISLAND Hy**	**60.92**	**269**	T	T	02 27 47.5	
	baz=50,slow=75,SNR=13						
H11S3	**WAKE ISLAND Hy**	**60.94**	**269**	T	T	02 27 51.5	
	baz=50,slow=75,SNR=9.4						
HHC	**Hu-ho-hao-te**	**81.94**	**320**	*e*P	P	01 24 27.6	-3.4
HHC				pmax	pmax		
	comp=Z,14nm,1.1s						
HHC				pmax	pmax		
	comp=Z,140nm,3.7s						
WMQ	**Urumqi**	**88.80**	**336**	*e*P	**P**	**01 25 03.9**	**-1.2**
CD2	**Chengdu**	**93.67**	**319**	P	P	01 25 23.4	-4.5
CD2				pmax	pmax		
	comp=Z,1.0nm,0.5s						

JMA 12 01:23:44.2, 36.88N×140.67E, h7km, M2.0, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.24**	**25**	*e*S	Sg	01 23 53.2	+0.8
JHO	**Hitachi**	**0.28**	**197**	P	Pg	01 23 49.7	0.0
JHO				S	Sg	01 23 53.9	+0.5
JFT	**Otama**	**0.69**	**337**	P	Pg	01 23 57.7	+0.2
JFT				*e*S	Sg	01 24 07.0	+0.5

NIED 12 01:23:00, 35.40N×141.00E, h23km, Mw4.2 Best double couple: M0=2.20000×10^15 NP1:φs=264.00000°, δ=11.00000°, λ=-83.00000°. NP2:φs=77.00000°, δ=79.00000°, λ=-91.00000°.

ISCJB 12 01:23:47.9±0.4, 35.41N±0.03×141.12E±0.06, h10km, mb4.2/28, Error ellipse: s-maj=6.8km s-min=4.3km az=170.4

JMA 12 01:23:50.8±0.1, 35.47N×140.86E, h24km±1km, M4.2

JMA Felt II J1.

NEIC 12 01:23:53.3±0.3, 35.31N×140.92E, h35km, mb4.5/8, Error ellipse: s-maj=9.4km s-min=7.6km az=61.0

NEIC Recorded [2 JMA] in Chiba and Ibaraki.

IDC 12 01:23:55.1±1.9, 35.33N×140.91E, h50km±18km, mb3.8/19, mb1 4.0/23,mb1mx3.9/42,mbtmp4.1/23,ML3.9/2,Error ellipse: s-maj=17.7km s-min=11.0km az=86.0.

ISC 12 01:23:50.3±0.5, 35.45N±0.03×140.97E±0.06, h10km, n56, σ1§61/53, mb4.2/28, 3C, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
CHOJ	**Chosi**	**0.27**	**341**	⇑P	**Pg**	**01 23 56.6**	**+0.8**
CHOJ				S	**Sg**	**01 24 00.9**	**+1.4**
KTR	**Katsuura**	**0.61**	**241**	P	**Pg**	**01 24 01.5**	**-0.6**
JCN	**Nagara**	**0.62**	**268**	P	**Pb**	**01 24 01.9**	**-1.3**
BSO3	**Boso 3**	**0.74**	**210**	⇑P	**Pg**	**01 24 04.9**	**+0.4**
BSO1	**Boso 1**	**0.79**	**179**	⇑P	**Pg**	**01 24 05.4**	**0.0**
JYT	**Yasato**	**1.00**	**322**	P	**Pg**	**01 24 07.7**	**-1.8**
JYT				S	**Sg**	**01 24 20.2**	**-2.4**
JHO	**Hitachi**	**1.21**	**345**	P	**Pb**	**01 24 11.9**	**-1.3**
MJAR	**Matsushiro Arr**	**2.49**	**297**	P	**Pb**	**01 24 33.0**	**-2.0**
	16nm,0.3s,baz=94,slow=12,SNR=38						
MAJO	**Matsushiro**	**2.49**	**297**	*e*Pn	**Pn**	**01 24 30.5**	**-0.4**
MAT	**Matsushiro**	**2.49**	**297**	P	**Pn**	**01 24 30.5**	**-0.4**
JHJ	**Hachijo jima 2**	**2.52**	**203**	P	**Pn**	**01 24 31.4**	**+0.2**
	93nm,0.3s,baz=74,slow=19,SNR=5.3						
JHJ				S	**Sn**	**01 25 01.0**	**-1.0**
	88nm,0.3s,baz=274,slow=13,SNR=3.6						
ERM	**Erimo**	**6.78**	**14**	*e*Pn	**Pn**	**01 25 27.5**	**-2.3**
ERM				*e*S	**Sn**	**01 26 44.4**	**-2.6**
CBIJ	**Chichi jima**	**8.39**	**173**	*e*Pn	**Pn**	**01 25 50.6**	**-1.3**
JCJ	**Chichijima**	**8.39**	**173**	P	**Pn**	**01 25 51.2**	**-0.7**
JNU	**Nakatsue**	**8.66**	**257**	P	Pn	01 26 01.6	+5.9
	0.3nm,0.3s,baz=87,slow=5.5,SNR=3.0						
KSRS	**Korea Array**	**10.70**	**285**	P	Pn	01 26 29.3	+5.9
	0.3nm,0.3s,baz=100,slow=13,SNR=8.4						
KSAR	**Wonju Array Be**	**10.72**	**285**	P	Pn	01 26 29.3	+5.4
USRK	**Ussuriysk Ar.**	**11.13**	**324**	P	**Pn**	**01 26 32.9**	**+3.4**
	baz=131,slow=13,SNR=6.5						
ENH	**Enshi**	**26.87**	**268**	*e*P	**P**	**01 29 29.1**	**-2.2**
	8.5nm,0.7s						
H11N2	**WAKE ISLAND Hy**	**27.69**	**118**	T	T	01 58 42.9	
	baz=310,slow=75,SNR=334						
H11N1	**WAKE ISLAND Hy**	**27.70**	**118**	T	T	01 58 41.8	
	baz=310,slow=75,SNR=283						
H11N3	**WAKE ISLAND Hy**	**27.71**	**118**	T	T	01 58 44.2	
	baz=310,slow=75,SNR=216						
H11S3	**WAKE ISLAND Hy**	**28.34**	**120**	T	T	01 59 25.9	
	baz=312,slow=76,SNR=904						
H11S1	**WAKE ISLAND Hy**	**28.34**	**120**	T	T	01 59 25.9	
	baz=312,slow=76,SNR=1081						
H11S2	**WAKE ISLAND Hy**	**28.36**	**120**	T	T	01 59 25.7	
	baz=312,slow=76,SNR=734						
SONM	**Songino Array**	**28.40**	**307**	P	**P**	**01 29 46.0**	**+1.0**
	1.3nm,0.7s,baz=106,slow=8.8,SNR=8.6						
SEY	**Seymchan**	**28.42**	**11**	P	**P**	**01 29 46.4**	**+1.7**
	2.3nm,0.3s,baz=254,slow=22,SNR=7.6						
TIXI	**Tiksi**	**36.82**	**354**	P	**P**	**01 30 57.6**	**-0.4**
	1.2nm,0.3s,baz=112,slow=6.1,SNR=3.0						
ZALV	**Zalesovo Beam**	**42.73**	**314**	P	**P**	**01 31 47.0**	**-0.4**
	1.2nm,0.5s,baz=76,slow=6.3,SNR=9.9						
ZALV				PcP	**PcP**	**01 33 43.7**	**+4.8**
	0.8nm,0.5s,baz=104,slow=3.6,SNR=3.8						
NRIK	**Noril'sk**	**44.56**	**336**	P	**P**	**01 32 02.6**	**+0.7**
	1.4nm,0.3s,baz=92,slow=7.3,SNR=3.7						
MKAR	**Makanchi Array**	**44.67**	**303**	P	**P**	**01 32 02.3**	**-0.9**
	0.9nm,0.6s,baz=93,slow=10,SNR=10						
MKAR				PcP	**PP**	**01 33 52.4**	**+5.1**
	0.5nm,0.7s,baz=79,slow=7.5,SNR=2.8						
KURK	**Kurchatov**	**46.64**	**309**	*e*P	**P**	**01 32 17.9**	**-0.7**
	14nm,0.6s						
TKM2	**Tokmak 2**	**50.08**	**299**	*e*P	**P**	**01 32 46.2**	**+0.7**
	5.7nm,0.8s						
AAK	**Ala-Archa**	**50.94**	**299**	*e*P	**P**	**01 32 51.6**	**-0.4**
	2.2nm,0.8s						
ILAR	**Eielson Array**	**51.03**	**32**	P	**P**	**01 32 52.2**	**+0.1**
	1.7nm,0.9s,baz=269,slow=6.4,SNR=13						
KKAR	**Karatay Array**	**53.62**	**301**	*e*P	**P**	**01 33 12.8**	**+1.1**
	1.6nm,0.7s						
WRAB	**Tennant Creek**	**55.43**	**188**	*e*P	**P**	**01 33 23.1**	**-1.9**
	6.7nm,0.8s						
WRA	**Warramunga Arr**	**55.44**	**188**	P	**P**	**01 33 23.1**	**-1.9**
	5.6nm,0.6s,baz=3.6,slow=7.7,SNR=43						
INK	**Inuvik**	**55.97**	**27**	P	**P**	**01 33 27.9**	**-0.4**
	0.8nm,0.7s,baz=309,slow=7.9,SNR=5.7						
ARU	**Arti**	**57.31**	**319**	*e*P	**P**	**01 33 38.2**	**+0.1**
	3.9nm,0.7s						
ABKAR	**Akbulak array**	**58.69**	**311**	*e*P	**P**	**01 33 48.5**	**+0.7**
	1.5nm,0.4s						
ASAR	**Alice Springs**	**59.17**	**188**	P	**P**	**01 33 50.0**	**-1.4**
	1.5nm,1.0s,baz=18,slow=13,SNR=9.6						
ASAR	**Alice Springs**	**59.17**	**188**	P	**P**	**01 33 50.0**	**-1.4**
RES	**Resolute Bay**	**64.23**	**14**	*e*P	**P**	**01 34 24.2**	**-0.6**
	10nm,1.4s						
ARCES	**ARCESS Array B**	**65.35**	**340**	P	**P**	**01 34 33.3**	**+1.0**
	2.3nm,0.9s,baz=48,slow=7.3,SNR=4.1						
YKA	**Yellowknife Ar**	**65.36**	**30**	P	**P**	**01 34 32.5**	**+0.1**
	0.7nm,0.8s,baz=301,slow=6.4,SNR=13						
FINES	**FINESS Array B**	**70.05**	**332**	P	**P**	**01 35 00.8**	**-1.2**
	1.5nm,0.9s,baz=46,slow=8.2,SNR=8.1						
KBZ	**Khabaz**	**71.66**	**311**	P	**P**	**01 35 13.2**	**+1.1**
	2.8nm,1.1s,baz=74,slow=6.1,SNR=3.4						
AKASG	**Malin Array Be**	**75.33**	**322**	P	**P**	**01 35 32.8**	**-0.8**
	0.9nm,0.6s,baz=49,slow=5.9,SNR=5.3						
NB2	**NORSAR Subarra**	**75.51**	**337**	P	**P**	**01 35 34.2**	**-0.3**
	comp=Z,2.5nm,0.8s,baz=40,slow=6.2						
NOA	**NORSAR Array B**	**75.51**	**337**	P	**P**	**01 35 33.4**	**-1.1**
	comp=Z,1.6nm,0.7s,baz=40,slow=5.8,SNR=6.9						
NVAR	**Mina Array Bea**	**76.23**	**53**	P	**P**	**01 35 39.8**	**+0.5**
	comp=Z,1.0nm,0.7s,baz=293,slow=4.8,SNR=8.1						
PDAR	**Pinedale Array**	**79.04**	**45**	P	**P**	**01 35 55.3**	**+0.4**
	comp=Z,0.5nm,0.6s,baz=250,slow=3.5,SNR=6.5						
BRTR	**Keskin Array B**	**79.63**	**312**	P	**P**	**01 35 58.0**	**-0.1**
	comp=Z,0.9nm,0.8s,baz=109,slow=4.2,SNR=4.6						
TORD	**Torodi Ar. Bea**	**118.18**	**314**	PKP	**PKPdf**	**01 42 36.6**	**-1.7**
	comp=Z,0.6nm,0.9s,baz=67,slow=0.9,SNR=4.2						
LPAZ	**La Paz**	**147.79**	**61**	PKPbc	**PKPbc**	**01 43 36.8**	**+0.2**
	comp=Z,2.1nm,0.9s,baz=25,slow=12,SNR=4.8						

ISCJB 12 01:33:03.7±0.5, 32.17N±0.03×115.14W±0.04, h23km±5km, Error ellipse: s-maj=6.3km s-min=4.2km az=151.1

MEX 12 01:33:05.6±0.5, 32.20N×115.07W, h10km±37km, MD3.6

ECX 12 01:33:05.5±0.4, 32.15N×115.24W, h6km, MD2.5, ML2.7

ISC 12 01:33:02.9±1.1, 32.16N±0.03×115.13W±0.04, h16km±11km, n21, σ0§55/32, 4C-1D, California-Baja California border region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
MBIG	**Mexicali**	**0.25**	**347**	*e*P	**Pb**	**01 33 10.3**	**+1.3**
MBIG	**Mexicali**	**0.25**	**347**	*e*P	**Pb**	**01 33 10.1**	**+1.0**
MBIG				*i* S	**Sb**	**01 33 12.8**	**-0.4**
CPBX	**Cerro Prieto**	**0.29**	**331**	⇑*e*P	**Pb**	**01 33 10.7**	**+0.9**
CPBX				⇑*e*		01 33 17.5	
CPBX				AML	AML	01 33 17.5	
	comp=N,3μm,0.1s						
ECBX	**El Chinero**	**0.69**	**174**	⇑*e*P	**Pg**	**01 33 16.3**	**-0.1**
ECBX				*e*S	**Sb**	**01 33 25.8**	**0.0**
WESC	**Westside Schoo**	**0.78**	**320**	*e*P	**Pn**	**01 33 18.7**	**-0.6**
RMX	**La Rumorosa**	**0.91**	**299**	*e*P	**Pb**	**01 33 19.9**	**-0.6**
GLA	**Glamis**	**0.93**	**16**	P	**Pb**	**01 33 20.6**	**0.0**
	baz=198						
GLA				S	**Sb**	**01 33 32.6**	**-0.1**
	baz=198						
IBP	**Imperial Bould**	**0.95**	**302**	⇑*e*P	**Pg**	**01 33 21.2**	**-0.2**
IBP				*e*S	**Sb**	**01 33 33.1**	**-0.4**
IBP	**Imperial Bould**	**0.95**	**302**	P	**Pb**	**01 33 21.0**	**-0.1**
	baz=123						
IBP				S	**Sb**	**01 33 33.1**	**-0.4**
	baz=123						
SWSC	**Sam W. Stewart**	**0.96**	**324**	P	**Pg**	**01 33 21.4**	**-0.1**
	baz=146						
SWSC				S	**Sg**	**01 33 34.5**	**+0.3**
	baz=146						
SPIG	**San Pedro Mart**	**1.15**	**194**	*e*Pn	**Pg**	**01 33 25.0**	**-0.1**
SPIG	**San Pedro Mart**	**1.15**	**194**	*e*P	**Pg**	**01 33 24.9**	**-0.1**
SPIG				*e*S	**Sb**	**01 33 39.8**	**+0.5**
SPX	**San Pedro Mart**	**1.15**	**194**	*e*Pn	**Pg**	**01 33 24.9**	**-0.1**
CBX	**Cerro Bola**	**1.31**	**277**	*e*P	**Pn**	**01 33 26.8**	**+0.2**
CBX				AML	AML	01 33 44.5	
	comp=N,243nm,0.4s						
CBX				⇓*e*		01 33 44.5	
CBX	**Cerro Bola**	**1.31**	**277**	*e*P	**Pn**	**01 33 26.7**	**+0.2**
CBX				*e*S	**Sn**	**01 33 43.9**	**+0.1**
MONP2	**Monument Peak**	**1.31**	**304**	P	**Pb**	**01 33 27.2**	**0.0**
	baz=124						
MONP2				S	**Sb**	**01 33 43.6**	**-0.3**
	baz=124						
TJIG	**Tijuana**	**1.33**	**282**	*e*P	**Pn**	**01 33 27.0**	**+0.1**
TJIG				*i* S	**Sn**	**01 33 43.9**	**-0.4**
BC3	**Big Chuckawall**	**1.52**	**350**	P	**Pn**	**01 33 28.9**	**-0.5**
	baz=171						
109C	**Camp Elliot, M**	**1.82**	**294**	Sb	**Sb**	**01 33 58.3**	**0.0**
	baz=114						
214A	**Organ Pipe Nat**	**1.98**	**95**	P	**Pn**	**01 33 35.6**	**-0.2**
	baz=276						
214A				Sb	**Sg**	**01 34 06.3**	**-0.4**
	baz=276						
MURC	**Murrieta**	**2.25**	**310**	Sb	**Sb**	**01 34 12.5**	**+1.6**
	baz=130						

NIED 12 01:33:00, 37.30N×141.50E, h44km, Mw4.4 Best double couple: M0=4.71000×10^15 NP1:φs=177.00000°, δ=19.00000°, λ=64.00000°. NP2:φs=24.00000°, δ=73.00000°, λ=99.00000°.

BJI 12 01:33:08.2, 36.83N×141.18E, h40km, mb4.7/21, mB5.2/10, Ms4.7/5, Ms7 4.4/5

MOS 12 01:33:09.0±1.0, 37.31N×141.49E, h48km, mb4.7/41, Error ellipse: s-maj=8.6km s-min=5.6km az=102.9

ISCJB 12 01:33:09.9±0.5, 37.30N±0.03×141.41E±0.05, h53km±3km, mb4.5/62, MS4.7/1, Error ellipse: s-maj=6.8km s-min=4.3km az=28.9

JMA 12 01:33:10.5±0.1, 37.28N×141.42E, h44km±1km, M4.2

JMA Felt III J1.

NEIC 12 01:33:11.8±0.8, 37.29N×141.37E, h56km±6km, mb4.6/11, Error ellipse: s-maj=7.6km s-min=5.3km az=127.0

NEIC Recorded [3 JMA] in Fukushima.

IDC 12 01:33:11.2±0.4, 37.28N×141.32E, h49km±3km, mb4.1/27, mb1 4.2/32,mb1mx4.2/50,mbtmp4.3/32,MS3.6/2, Ms1 3.6/2,ms1mx3.1/44,Error ellipse: s-maj=11.4km s-min=8.1km az=108.0

ISC 12 01:33:11.1±0.4, 37.31N±0.05, h50km±3km, h50km:pP-P, n168, σ1§01/186, mb4.5/62, 12C-12D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.56**	**248**	P	**Pn**	**01 33 21.8**	**-1.3**
ONAJ				S	**Sn**	**01 33 29.7**	**-2.0**
JMM	**Marumori**	**0.76**	**317**	P	**Pn**	**01 33 24.8**	**-0.7**
JMM				S	**Sn**	**01 33 34.9**	**-1.2**
JFT	**Otama**	**0.90**	**284**	P	**Pn**	**01 33 27.2**	**-0.3**
JFT				S	**Sn**	**01 33 39.1**	**-0.5**
JHO	**Hitachi**	**0.99**	**225**	P	**Pn**	**01 33 27.5**	**-1.1**
JIO	**Ouri**	**1.14**	**356**	P	**Pn**	**01 33 30.3**	**-0.4**
JIO				S	**Sn**	**01 33 44.2**	**-1.1**
JOU	**Okura**	**1.22**	**330**	P	**Pn**	**01 33 32.1**	**+0.3**
JOU				*e*S	**Sn**	**01 33 47.6**	**+0.4**
JFY	**Yanaizu**	**1.39**	**274**	P	**Pn**	**01 33 33.7**	**-0.4**
JYS	**Shirataka**	**1.42**	**310**	P	**Pn**	**01 33 34.5**	**0.0**
MJAR	**Matsushiro Arr**	**2.70**	**254**	P	**Pn**	**01 33 52.2**	**+0.2**
	16nm,0.3s,baz=80,slow=16,SNR=8.9						
MJAR				LR	LR	01 35 11.1	
	comp=Z,798nm,19.4s,baz=75,slow=46						
MAJO	**Matsushiro**	**2.70**	**254**	*d i*P	**Pn**	**01 33 52.5**	**+0.4**
MAJO	**Matsushiro**	**2.70**	**254**	*e*Pn	**Pn**	**01 33 52.3**	**+0.2**
MAT	**Matsushiro**	**2.70**	**254**	P	**Pn**	**01 33 52.6**	**+0.5**
MAT				*e*S	**Sn**	**01 34 26.9**	**+3.3**
JHJ	**Hachijo jima 2**	**4.40**	**198**	P	**Pn**	**01 34 14.9**	**-0.4**
	28nm,0.3s,baz=76,slow=22,SNR=6.1						
JHJ				S	**Sn**	**01 35 05.5**	**+0.3**
	124nm,0.3s,baz=72,slow=24,SNR=5.1						
ERM	**Erimo**	**4.88**	**15**	*e*P	**Pn**	**01 34 21.4**	**-0.5**
ERM	**Erimo**	**4.88**	**15**	*e*Pn	**Pn**	**01 34 21.4**	**-0.5**
ERM				*e*S	**Sn**	**01 35 15.9**	**-1.1**
YUK	**Yuzh-Kuril'sk**	**7.51**	**25**	*e*P	**Pn**	**01 34 59.1**	**+1.3**
YUK				*e*S	**Sn**	**01 36 16.4**	**-5.1**
YUK				pmax	pmax		
	comp=N,78nm,0.3s						
YUK				pmax	pmax		
	comp=Z,151nm,0.3s						
YUK				pmax	pmax		
	comp=E,27nm,0.2s						
SHO	**Shikotan**	**7.73**	**30**	*e*P	**Pn**	**01 35 00.0**	**-0.8**
SHO				pmax	pmax		
	comp=Z,17nm,0.5s						
SHO				pmax	pmax		
	comp=E,30nm,0.7s						
SHO				pmax	pmax		
	comp=N,18nm,0.6s						
KUR	**Kuril'sk**	**9.27**	**29**	*e*P	**Pn**	**01 35 22.7**	**+0.7**

comp=Z,2.4nm,0.8s,baz=49,slow=5.2,SNR=12
CMAR PcP **PcP** **01 42 51.4 +0.8**
comp=Z,0.3nm,0.4s,baz=40,slow=2.4,SNR=4.3
ZALV Zalesovo Beam 41.74 312 P **P** **01 40 55.1 +0.1**
comp=Z,15nm,0.7s,baz=90,slow=7.1,SNR=68
ZALV PcP **PcP** **01 42 51.0 +0.5**
comp=Z,0.8nm,0.6s,baz=77,slow=3.1,SNR=3.0
SRAK Srakaew 41.99 247 P **P** **01 40 54.9 -2.5**
comp=Z,30nm,0.9s
NVS Novosibirsk 42.66 313 ⇓*iP* **P** **01 41 02.7 +0.2**
NVS pmax pmax
comp=Z,15nm,1.0s
NVS pmax pmax
comp=E,10.0nm,1.1s
MKAR Makanchi Array 43.99 302 P **P** **01 41 13.3 0.0**
comp=E,7.2nm,0.7s,baz=85,slow=9.6,SNR=54
MKAR PcP **PcP** **01 42 58.4 +0.2**
comp=E,1.0nm,0.7s,baz=66,slow=7.0,SNR=2.6
KURK Kurchatov 45.78 308 *e*P **P** **01 41 26.9 -0.5**
KURK pmax pmax
comp=Z,46nm,0.6s
KURK Kurchatov 45.78 308 *e*P **P** **01 41 26.9 -0.5**
comp=Z,46nm,0.6s
KURBB Kurchatov Arra 45.85 308 P **P** **01 41 27.6 -0.3**
comp=Z,15nm,0.5s,baz=83,slow=8.2,SNR=152
RAMN Ramite 47.01 274 *e*P **P** **01 41 37.7 0.0**
comp=Z,47nm,0.8s
GUN Gumba 47.15 275 *e*P **P** **01 41 39.0 +0.1**
comp=Z,26nm,0.5s
KKN Kakani 47.68 276 *e*P **P** **01 41 42.9 0.0**
comp=Z,18nm,0.6s
PKIN Phulchoki 47.68 275 *e*P **P** **01 41 42.6 -0.4**
comp=Z,7.5nm,0.5s
GKN Gorkha 48.10 276 *e*P **P** **01 41 46.0 0.0**
comp=Z,56nm,0.8s
KOLN Koldanda 49.02 276 *e*P **P** **01 41 53.3 +0.1**
comp=Z,14nm,0.7s
ILAR Eielson Array 49.25 32 P **P** **01 41 55.1 +0.9**
comp=Z,3.2nm,0.7s,baz=270,slow=6.5,SNR=41
ILAR pP **pP** **01 42 08.6 +0.8**
comp=Z,3.1nm,0.8s,baz=271,slow=6.3,SNR=12
PYUN Piuthan 49.36 277 *e*P **P** **01 41 55.9 +0.1**
comp=Z,78nm,0.9s
TKM2 Tokmak 2 49.52 298 *e*P **P** **01 41 57.1 +0.3**
TKM2 pmax pmax
comp=Z,7.0nm,0.6s
TKM2 Tokmak 2 49.52 298 *e*P **P** **01 41 57.1 +0.3**
comp=Z,7.2nm,0.6s
KSH Kashi 50.31 294 P P 01 42 06.8 +4.0
KSH PcS PcS 01 47 23.7 +5.5
KSH pmax pmax
comp=Z,370nm,8.3s
KSH LR LR
comp=Z,180nm,5.8s
KSH LR LR
comp=Z,220nm,9.1s
KSH LR LR
comp=Z,480nm,13.6s
AAK Ala-Archa 50.38 298 *e*P **P** **01 42 03.2 -0.1**
AAK pmax pmax
comp=Z,3.0nm,0.6s
AAK Ala-Archa 50.38 298 *e*P **P** **01 42 03.2 -0.1**
comp=Z,3.2nm,0.6s
BVAR Borovoye Array 50.40 312 P **P** **01 42 02.9 -0.2**
comp=Z,3.6nm,0.6s,baz=74,slow=7.6,SNR=25
BRVK Borovoye 50.46 312 *ce*P **P** **01 42 02.6 -0.9**
BRVK pmax pmax
comp=Z,6.0nm,0.7s
KKAR Karatay Array 53.01 300 *e*P **P** **01 42 22.3 -0.4**
KKAR pmax pmax
comp=Z,3.0nm,0.5s
KKAR Karatay Array 53.01 300 *e*P **P** **01 42 22.3 -0.4**
comp=Z,3.3nm,0.5s
GSI Gunungsitoli 53.96 239 *e*P **P** **01 42 30.4 +0.4**
comp=Z,24nm,0.6s
INK Inuvik 54.13 27 P **P** **01 42 31.3 +0.8**
comp=Z,2.7nm,0.8s,baz=285,slow=6.5,SNR=9.7
ARU Arti 56.17 318 *c iP* **P** **01 42 45.1 -0.2**
ARU 01 44 47.9
ARU S **S** **01 50 26.9 -3.8**
ARU pmax pmax
comp=Z,14nm,0.8s
ARU Arti 56.17 318 *e*P **P** **01 42 45.2 -0.1**
comp=Z,16nm,1.0s
WRAB Tennant Creek 57.33 188 *e*P **P** **01 42 53.4 -0.5**
WRAB pmax pmax
comp=Z,2.0nm,0.6s
WRAB Tennant Creek 57.33 188 *e*P **P** **01 42 53.4 -0.5**
comp=Z,2.1nm,0.6s
WRA Warramunga Arr 57.34 188 P **P** **01 42 53.6 -0.4**
comp=Z,1.8nm,0.5s,baz=6.2,slow=7.4,SNR=26
WRA pP **pP** **01 43 07.0 -0.8**
comp=Z,4.2nm,0.7s,baz=5.3,slow=7.5,SNR=11
ABKAR Akbulak array 57.78 310 *e*P **P** **01 42 56.3 -0.6**
comp=Z,3.2nm,0.5s
ASAR Alice Springs 61.07 188 P **P** **01 43 19.5 -0.2**
comp=Z,1.2nm,0.8s,baz=14,slow=6.2,SNR=10
ASAR pP **pP** **01 43 32.3 -1.5**
comp=Z,2.3nm,0.8s,baz=10.0,slow=6.6,SNR=11
RES Resolute Bay 62.33 14 P **P** **01 43 28.0 +0.4**
comp=Z,2.1nm,0.8s,baz=307,slow=3.7,SNR=11
RES pP **pP** **01 43 42.1 +0.5**
comp=Z,3.2nm,0.8s,baz=328,slow=7.0,SNR=6.6
KLMR Klimovskoe 63.53 328 *e*P **P** **01 43 33.2 -2.6**
KLMR pmax pmax
comp=Z,11nm,1.0s
YKA Yellowknife Ar 63.56 30 P **P** **01 43 36.4 +0.5**
comp=Z,0.9nm,0.7s,baz=303,slow=6.6,SNR=25
YKA pP **pP** **01 43 50.9 +0.9**
comp=Z,1.4nm,0.6s,baz=303,slow=6.7,SNR=16
GEYT Alibeck 63.72 299 P **P** **01 43 37.9 +0.4**
comp=Z,5.8nm,0.9s,baz=48,slow=2.2,SNR=12
ARCES ARCESS Array B 63.74 339 P **P** **01 43 37.1 0.0**
comp=Z,3.0nm,0.7s,baz=56,slow=8.0,SNR=17
VRH Novokhopyorsk 67.39 318 *e*P **P** **01 43 59.7 -1.2**
VRH pmax pmax
comp=Z,7.0nm,0.6s
OBN Obninsk 67.89 323 *i*P **P** **01 44 02.8 -1.1**
OBN pmax pmax
comp=Z,4.0nm,0.9s
LPSR Galich'ya Gora 68.10 320 *e*P **P** **01 44 04.6 -0.7**
LPSR pmax pmax
comp=Z,5.0nm,0.7s
FINES FINESS Array B 68.58 332 P **P** **01 44 08.2 +0.1**
comp=Z,3.6nm,0.8s,baz=56,slow=7.1,SNR=9.9
VSR Storozhevoye 68.74 319 *e*P **P** **01 44 08.5 -0.8**
VSR pmax pmax
comp=Z,6.0nm,0.6s
STKA Stephens Creek 68.83 180 P **P** **01 44 09.8 -0.2**
comp=Z,1.9nm,0.8s,baz=24,slow=1.5,SNR=2.6
STKA pP **pP** **01 44 24.1 -0.1**
comp=Z,3.5nm,0.7s,baz=344,slow=8.3,SNR=4.8
ZEI Tsey 70.64 309 *e*P **P** **01 44 19.8 -1.7**
ZEI pmax pmax
comp=Z,8.0nm,1.0s
KBZ Khabaz 70.74 311 P **P** **01 44 22.2 +0.4**
comp=Z,3.9nm,0.8s,baz=174,slow=3.2,SNR=8.3
KIV Kislovodsk 70.74 311 *e*P **P** **01 44 22.9 +1.0**
KIV pmax pmax
comp=Z,12nm,0.9s
KIV Kislovodsk 70.74 311 *e*P **P** **01 44 22.4 +0.5**
comp=Z,10nm,0.8s
NB2 NORSAR Subarra 73.94 337 P **P** **01 44 40.3 -0.3**
comp=Z,2.8nm,0.7s,baz=39,slow=6.2
NOA NORSAR Array B 73.94 337 P **P** **01 44 40.5 0.0**
comp=Z,2.4nm,0.7s,baz=39,slow=5.9,SNR=10
NOA pP **pP** **01 44 54.5 -0.5**
comp=Z,2.4nm,0.9s,baz=39,slow=5.9,SNR=4.9
NOA NORSAR Array B 73.94 337 P **P** **01 44 40.6 0.0**
NOA *PP **pP** **01 44 54.5 -0.5**
NOA pmax pmax
comp=Z,2.0nm,0.7s
NOA pmax pmax
comp=Z,2.0nm,0.9s
AKASG Malin Array Be 74.09 322 P **P** **01 44 41.3 -0.3**
comp=Z,4.5nm,0.5s,baz=46,slow=6.0,SNR=25
AKASG pP **pP** **01 44 54.6 -1.4**
comp=Z,2.3nm,0.5s,baz=47,slow=6.1,SNR=5.0
KIEV Kiev 74.10 322 *e*P **P** **01 44 41.7 0.0**
KIEV pmax pmax
comp=Z,3.0nm,0.8s
BOZ Bozeman (W) 74.50 44 P **P** **01 44 45.7 +1.4**
baz=308
NVAR Mina Array Bea 74.80 53 P **P** **01 44 47.8 +1.5**
comp=Z,1.0nm,0.8s,baz=279,slow=4.5,SNR=5.6
NVAR pP **pP** **01 45 02.1 +1.4**
comp=Z,3.9nm,0.8s,baz=285,slow=6.4,SNR=18

H17A Grant Village 75.86 45 P P 01 44 55.5 +3.2
baz=309
R11A Troy Canyon, C 76.57 52 P **P** **01 44 57.6 +1.2**
baz=307
DUG Dugway, Tooele 77.16 49 P **P** **01 45 01.1 +1.5**
baz=308
BW06 Boulder Array 77.45 46 P **P** **01 45 01.7 +0.4**
baz=310
PDAR Pinedale Array 77.45 46 P **P** **01 45 02.3 +1.0**
comp=Z,0.9nm,0.7s,baz=257,slow=2.4,SNR=10
PDAR pP **pP** **01 45 16.4 +0.6**
comp=Z,1.7nm,0.6s,baz=268,slow=3.3,SNR=12
BURAR Bucovina Array 78.11 322 ⇑*iP* **P** **01 45 05.0 +0.3**
BURAR Bucovina Array 78.11 322 ⇑P **P** **01 45 05.0 +0.3**
TESR Tescani 78.14 320 ⇓*iP* **P** **01 45 04.7 0.0**
CFR Carcaliu 78.25 318 ⇓*iP* P 01 45 16.1 +11
CFR Carcaliu 78.25 318 ⇓P P 01 45 16.1 +11
VRI Vrincioaia 78.53 320 ⇑*iP* **P** **01 45 08.5 +1.6**
VRI Vrincioaia 78.53 320 ⇑P **P** **01 45 08.5 +1.6**
KOLS Kolonicke sedl 78.61 324 *e*P **P** **01 45 07.8 +0.5**
KOLS pmax pmax
comp=Z,7.0nm,1.7s
KOLS Kolonicke sedl 78.61 324 *e*P **P** **01 45 07.8 +0.5**
BRTR Keskin Array B 78.69 312 P **P** **01 45 08.2 +0.2**
comp=Z,0.9nm,0.7s,baz=115,slow=4.0,SNR=5.0
BRTR pP **pP** **01 45 21.7 -0.8**
comp=Z,1.9nm,1.0s,baz=48,slow=3.7,SNR=3.6
CRVS Cervenica-Dubn 79.01 324 *e*P **P** **01 45 09.6 +0.1**
CRVS Cervenica-Dubn 79.01 324 *e*P **P** **01 45 09.6 +0.1**
DOPR Dopca 79.15 320 ⇑*iP* **P** **01 45 12.2 +1.9**
VOIR 79.69 320 ⇑*iP* **P** **01 45 14.1 +0.8**
VOIR 79.69 320 ⇑P **P** **01 45 14.1 +0.8**
DRGR 79.91 322 ⇑*iP* **P** **01 45 14.0 -0.5**
DRGR 79.91 322 ⇑P **P** **01 45 14.0 -0.5**
ARR Arges 79.94 320 ⇑*iP* **P** **01 45 16.6 +1.9**
DPC Dobruska-Polom 80.23 328 *e*P **P** **01 45 16.9 +0.7**
DPC *e*pP **pP** **01 45 30.6 -0.1**
DPC Dobruska-Polom 80.23 328 *e*P **P** **01 45 16.9 +0.7**
DPC *e* 01 45 30.6
KRLC Kraliky 80.25 327 *e*P **P** **01 45 16.4 +0.2**
KRLC Kraliky 80.25 327 *e*P **P** **01 45 16.4 +0.2**
B32A Ashes, Strandq 80.32 35 P **P** **01 45 16.9 +0.3**
baz=317
AGMN Agassiz Nation 80.69 35 P **P** **01 45 18.7 +0.1**
baz=317
BRG Berggiesshubel 80.83 329 *e*P **P** **01 45 19.8 +0.5**
comp=Z,4.3nm,1.0s
BRG Berggiesshubel 80.83 329 *e*P **P** **01 45 19.8 +0.5**
BRG pmax pmax
comp=Z,7.0nm,1.0s
GZR Gura Zlata 80.86 321 ⇓*iP* **P** **01 45 20.1 +0.5**
GZR Gura Zlata 80.86 321 ⇓P **P** **01 45 20.1 +0.5**
CLL Collm 80.87 330 ⇓*iP* **P** **01 45 19.6 +0.2**
comp=Z,4.0nm,0.9s
CLL *i* 01 45 33.1
CLL Collm 80.87 330 ⇓*iP* **P** **01 45 19.6 +0.2**
CLL *i* 01 45 33.1
CLL pmax pmax
comp=Z,8.0nm,0.9s
B34A Aery, Baudette 81.10 34 P **P** **01 45 20.9 +0.1**
baz=318
PRU Pruhonice 81.26 329 *e*P **P** **01 45 22.3 +0.7**
PRU Pruhonice 81.26 329 *e*P **P** **01 45 22.3 +0.7**
G30A Faulkton 81.42 39 P **P** **01 45 23.1 +0.6**
baz=316
B35A Bob, Littlefor 81.60 34 P **P** **01 45 23.4 0.0**
baz=319
MDVR Moldovita 81.83 321 ⇓*iP* **P** **01 45 25.0 +0.3**
C35A Jirik Farms, M 81.99 34 P **P** **01 45 25.5 0.0**
Sb 01 49.2
S22A 4UR Ranch, Cre 82.30 48 P **P** **01 45 29.2 +1.5**
baz=312
KHC Kasperske Hory 82.32 328 *e*P **P** **01 45 27.6 +0.4**
KHC *e*pP **pP** **01 45 41.5 -0.3**
KHC Kasperske Hory 82.32 328 *e*P **P** **01 45 27.6 +0.4**
KHC *e* 01 45 41.5
GERES GERESS Array B 82.49 328 P **P** **01 45 28.3 +0.1**
comp=Z,1.2nm,0.5s,baz=38,slow=5.6,SNR=12
GERES pP **pP** **01 45 42.0 -0.8**
comp=Z,0.9nm,0.5s,baz=40,slow=6.7,SNR=4.5
VTS Vitosha 82.62 319 ⇓*iP* **P** **01 45 29.9 +0.8**
VTS Vitosha 82.62 319 ⇓P **P** **01 45 29.9 +0.8**
EYMN Ely 82.89 33 P **P** **01 45 30.6 +0.4**
baz=320
C38A Sawbill Land. 83.16 33 P **P** **01 45 31.8 +0.2**
baz=320
BFO Black Forest 85.07 331 *i* P **P** **01 45 42.3 +1.0**
TXAR Lajitas Array 89.93 52 P **P** **01 46 05.8 +0.6**
comp=Z,0.8nm,0.7s,baz=298,slow=3.2,SNR=9.5
TXAR pP **pP** **01 46 20.5 +0.6**
comp=Z,1.9nm,0.7s,baz=304,slow=3.4,SNR=16
U39A Green Forest 90.76 41 P **P** **01 46 09.3 +0.5**
baz=319
U40A Yellville 91.11 41 P **P** **01 46 10.9 +0.5**
baz=320
MIAR Mount Ida 92.10 43 P **P** **01 46 16.1 +1.1**
baz=319
TORD Torodi Ar. Bea 117.15 315 PKP **PKPdf** **01 51 50.0 -1.1**
comp=Z,0.1nm,0.5s,baz=18,slow=1.4,SNR=6.7
LPAZ La Paz 146.53 59 PKPbc **PKPbc** **01 52 48.4 +0.4**
comp=Z,1.9nm,0.5s,baz=344,slow=1.5,SNR=14
LPAZ pPKPbc pPKPbc 01 53 03.3 +0.2
comp=Z,4.1nm,0.7s,baz=359,slow=6.3,SNR=7.4

IDC **12** *01:38:58.2±1.4,* **28°.73S×177°.57W,** *h0km,* **mb3.8/3,**
mb1 4.0/3, mb1mx3.7/28, mbtmp3.8/3, Error ellipse:
s-maj=48.6km s-min=15.9km az=115.0, Kermadec
Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
RAO	**Raoul Island**	**0.60**	**211**	Pn	Pn	01 39 14.4	+0.4
	365nm,0.3s,baz=84,slow=21,SNR=11						
RAO				Sn	Sn	01 39 24.7	+0.2
	854nm,0.3s,baz=42,slow=20,SNR=18						
STKA	**Stephens Creek**	**35.25**	**255**	P	P	01 45 54.9	+0.2
	1.3nm,0.6s,baz=7.4,slow=7.3,SNR=3.4						
ASAR	**Alice Springs**	**43.60**	**265**	P	P	01 47 04.2	-0.2
	0.7nm,0.7s,baz=110,slow=7.5,SNR=6.3						
WRA	**Warramunga Arr**	**44.44**	**270**	P	P	01 47 11.2	0.0
	0.4nm,0.6s,baz=110,slow=7.8,SNR=5.1						
FINES	**FINESS Array B**	**143.70**	**341**	PKhKP	PKPpre	01 58 31.5	
	1.2nm,0.5s,baz=61,slow=3.3,SNR=11						
NOA	**NORSAR Array B**	**147.16**	**352**	PKPbc	PKPbc	01 58 43.2	+0.5
	1.4nm,0.9s,baz=356,slow=3.9,SNR=3.3						
HFS	**Hagfors**	**147.68**	**349**	PKPbc	PKPbc	01 58 43.2	-0.8
AKASG	**Malin Array Be**	**150.18**	**325**	PKPbc	PKPbc	01 58 50.2	-0.5
	1.2nm,0.6s,baz=43,slow=2.5,SNR=8.5						
MMAI	**Mount Meron Ar**	**151.45**	**287**	PKPbc	PKPbc	01 58 54.2	-0.2
	1.4nm,0.4s,baz=83,slow=6.8,SNR=4.9						
EIL	**Elat**	**151.65**	**280**	PKPbc	PKPbc	01 58 54.3	-0.6
	1.1nm,0.5s,baz=34,slow=3.1,SNR=3.7						
BRTR	**Keskin Array B**	**152.10**	**301**	PKPbc	PKPbc	01 58 54.6	-1.1
	0.5nm,0.4s,baz=160,slow=4.8,SNR=4.3						

GUC **12** *01:43:46.5±0.5,* **35°.53S×72°.54W,** *h40km±3km,* **ML3.9,**
3C-1D, Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
COCH	**Cobquecura**	**0.63**	**198**	⇑*iP*	Pn	01 43 59.0	-0.1
COCH				*i* S	Sn	01 44 08.1	+0.1
COCH				IAML		01 44 09.8	
	comp=N,10μm,0.5s						
TALC	**Talca**	**0.75**	**80**	⇓*iP*	Pn	01 44 00.8	+0.2
TALC				*i* S	Sn	01 44 11.2	+0.4
CCHI	**Chillan**	**1.13**	**161**	⇑*iP*	Pn	01 44 06.7	+0.8
CCHI				*i* S	Sn	01 44 21.8	+1.5
CCHI				IAML		01 44 28.7	
	comp=E,4μm,0.4s						
NICH	**Los Niches**	**1.20**	**64**	*e*P	Pn	01 44 07.8	+1.0
NICH				*i* S	Sn	01 44 23.6	+1.8
CCSP	**San Pedro de C**	**1.39**	**199**	⇑*iP*	Pn	01 44 10.1	+0.7
CCSP				*i* S	Sn	01 44 28.9	+2.4
CLCH	**Cerro Calan**	**2.70**	**38**	*e*P	Pn	01 44 29.0	+1.5
CLCH				*i* S	Sn	01 45 01.7	+2.8
CLCH				IAML		01 45 14.1	
	comp=N,577nm,0.2s						
PEL	**Peldehue**	**2.83**	**33**	*e*P	Pn	01 44 31.1	+1.8
PEL				*i* S	Sn	01 45 05.0	+2.8
PEL				IAML		01 45 15.0	
	comp=E,284nm,0.8s						

ISCJB **12** *01:48:14.7±1.4, 35°.96N×0°.07×141°.1E±0°.2, h35km,*
mb3.7/3, Error ellipse: s-maj=19.9km s-min=9.4km
az=166.0
JMA **12** *01:48:16.9±0.1, 35°.89N×140°.81E, h39km±1km, M3.1*
IDC **12** *01:48:21.3±1.4, 34°.82N×138°.09E, h0km, mb3.6/3,*
mb1 3.8/3, mb1mx3.3/49, mbtmp3.6/3, Error ellipse:
s-maj=57.9km s-min=18.4km az=88.0
ISC 12 01:48:16.8±1.4, 35°.93N±0°.08×140°.9E±0°.1, h35km, n16,
σ0s 81/11, mb3.8/3, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CHOJ	**Chosi**	**0.23**	**186**	P	Pn	**01 48 23.9**	**+0.1**
CHOJ				S	Sn	**01 48 28.5**	**-0.1**
JYT	**Yasato**	**0.64**	**298**	P	Pn	**01 48 28.9**	**-0.4**
JHO	**Hitachi**	**0.73**	**339**	P	Pn	**01 48 30.9**	**+0.3**
BSO3	**Boso 3**	**1.17**	**196**	P	Pn	**01 48 36.3**	**0.0**
JAG	**Ashikaga**	**1.26**	**294**	P	Pn	**01 48 37.5**	**-0.4**
MJAR	**Matsushiro Arr**	**2.25**	**287**	Pg	Pn	**01 48 52.3**	**+0.7**
	8.5nm,0.3s,baz=92,slow=12,SNR=20						
MAT	**Matsushiro**	**2.25**	**287**	P	Pn	**01 48 52.7**	**+1.1**
H11N2	**WAKE ISLAND Hy**	**27.97**	**118**	T	T	02 24 31.0	
	baz=310,slow=75,SNR=8.4						
H11N1	**WAKE ISLAND Hy**	**27.98**	**118**	T	T	02 24 29.5	
	baz=310,slow=75,SNR=11						
H11N3	**WAKE ISLAND Hy**	**27.99**	**118**	T	T	02 24 30.5	
	baz=310,slow=75,SNR=8.4						
H11S1	**WAKE ISLAND Hy**	**28.64**	**120**	T	T	02 25 20.3	
	baz=312,slow=76,SNR=31						
H11S3	**WAKE ISLAND Hy**	**28.64**	**120**	T	T	02 25 14.7	
	baz=312,slow=76,SNR=16						
H11S2	**WAKE ISLAND Hy**	**28.65**	**120**	T	T	02 25 19.7	
	baz=312,slow=76,SNR=16						
MKAR	**Makanchi Array**	**44.36**	**303**	P	**P**	**01 56 22.8**	**-0.7**
	0.8nm,0.7s,baz=88,slow=10.0,SNR=7.6						
WRA	**Warramunga Arr**	**55.91**	**187**	P	**P**	**01 57 50.6**	**-0.6**
	0.3nm,0.3s,baz=1.8,slow=7.7,SNR=13						
ASAR	**Alice Springs**	**59.64**	**187**	P	**P**	**01 58 18.8**	**+1.4**
	0.7nm,0.7s,baz=355,slow=13,SNR=5.3						

IDC **12** *01:58:35.0±1.2, 36°.06N×27°.56E, h0km, mb3.6/4,*
mb1 3.6/7, mb1mx3.4/50, mbtmp3.6/7, ML3.5/3, Error
ellipse: s-maj=35.4km s-min=17.9km az=169.0
ATH **12** *01:58:36.8, 36°.10N×27°.52E, h26km, ML3.3/11, Error*
ellipse: s-maj=1.0km s-min=0.5km az=106.0
THE **12** *01:58:37.6, 36°.09N×27°.53E, h4km±2km, ML3.6/9, Error*
ellipse: s-maj=2.2km s-min=0.8km az=93.0
CSEM **12** *01:58:37.9±0.1, 36°.09N×27°.52E, h10km, ML3.3, Error*
ellipse: s-maj=3.9km s-min=2.6km az=154.0
ISCJB **12** *01:58:38.6±0.5, 36°.11N±0°.02×27°.49E±0°.02, h23km±4km,*
mb3.5/4, Error ellipse: s-maj=3.8km s-min=2.4km
az=156.3
ISK **12** *01:58:38.1, 36°.09N×27°.51E, h23km, ML3.4*
DDA **12** *01:58:41.5, 36°.38N×27°.75E, h17km, Ml3.3*
ISC 12 01:58:37.4±1.0, 36°.09N±0°.02×27°.51E±0°.02, h12km±8km,
n197, σ1s 14/253, mb3.5/4, Dodecanese Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ARG	**Arkhangelos**	**0.52**	**76**	P	**Pg**	**01 58 46.9**	**-0.6**
ARG				S	**Sg**	**01 58 55.0**	**+0.7**
ARG	**Arkhangelos**	**0.52**	**76**	P	**Pg**	**01 58 46.9**	**-0.6**
ARG				S	**Sg**	**01 58 55.0**	**+0.7**
NIS1	**Nisyros Isl.**	**0.58**	**333**	*e*PG	**Pb**	**01 58 50.2**	**+0.7**
NIS1	**Nisyros Isl.**	**0.58**	**333**	P	**Pg**	**01 58 49.0**	**+0.4**
NIS1				S	**Sb**	**01 58 58.6**	**+0.9**
NIS1	**Nisyros Isl.**	**0.58**	**333**	P	**Pg**	**01 58 49.0**	**+0.4**
NIS1	**Nisyros Isl.**	**0.58**	**333**	*e*Pg	**Pb**	**01 58 50.2**	**+0.7**
NIS1				S	**Sb**	**01 58 58.3**	**+0.7**
NIS1	**Nisyros Isl.**	**0.58**	**333**	P	**Pb**	**01 58 49.5**	**0.0**
NIS1				S	**Sb**	**01 58 58.4**	**+0.7**
NIS1				AML	AML	01 59 02.6	
	comp=N,10125μm,0.4s						
NIS1				AML	AML	01 59 08.1	
	comp=E,13473μm,0.3s						
NISR	**Nisiros**	**0.60**	**330**	P	**Pb**	**01 58 49.8**	**-0.1**
NISR	**Nisiros**	**0.60**	**330**	P	**Pb**	**01 58 49.8**	**-0.1**
NISR				S	**Sg**	**01 58 56.9**	**-0.3**
NISR	**Nisiros**	**0.60**	**330**	P	**Pb**	**01 58 50.7**	**+0.8**
NISR				S	**Sg**	**01 58 56.9**	**-0.3**
NISR				AML	AML	01 59 01.0	
	comp=N,4245μm,0.4s						
NISR				AML	AML	01 59 03.1	
	comp=E,5576μm,0.4s						
KARP	**Karpathos**	**0.61**	**208**	*e*PG	**Pb**	**01 58 50.7**	**+0.7**
KARP	**Karpathos**	**0.61**	**208**	P	**Pb**	**01 58 49.5**	**-0.5**
KARP				S	**Sb**	**01 58 59.1**	**+0.6**
KARP	**Karpathos**	**0.61**	**208**	P	**Pb**	**01 58 49.5**	**-0.5**
KARP	**Karpathos**	**0.61**	**208**	*e*Pg	**Pb**	**01 58 50.7**	**+0.7**
KARP				S	**Sb**	**01 58 58.4**	**-0.1**
KARP	**Karpathos**	**0.61**	**208**	P	**Pb**	**01 58 49.8**	**-0.2**
KARP				S	**Sb**	**01 58 58.4**	**-0.1**
KARP				AML	AML	01 59 01.4	
	comp=N,14024μm,0.2s						
KARP				AML	AML	01 59 02.5	
	comp=E,13222μm,0.2s						
BDRM	**Kayabasi**	**0.98**	**357**	*i* P	**Pg**	**01 58 55.8**	**-0.4**
BDRM				*i* S	**Sg**	**01 59 09.0**	**+0.1**
BDRM	**Kayabasi**	**0.98**	**357**	P	**Pg**	**01 58 55.8**	**-0.4**
BDRM				S	**Sg**	**01 59 09.0**	**+0.1**
BODT	**Bodrum**	**0.98**	**351**	*e*PG	**Pb**	**01 58 56.9**	**+0.5**
BODT				*e*SG	**Sb**	**01 59 10.4**	**+1.1**
BODT	**Bodrum**	**0.98**	**351**	P	**Pb**	**01 58 56.6**	**+0.2**
BODT				S	**Sb**	**01 59 11.0**	**+1.6**
BODT	**Bodrum**	**0.98**	**351**	P	**Pb**	**01 58 56.6**	**+0.2**
BODT	**Bodrum**	**0.98**	**351**	*e*Pg	**Pb**	**01 58 56.9**	**+0.5**
BODT				*e*Sg	**Sb**	**01 59 10.5**	**+1.1**
BODT				S	**Sb**	**01 59 11.0**	**+1.6**
DALY	**Dalyan (Mu˘la**	**1.18**	**51**	*e*PN	**Pg**	**01 58 58.9**	**-1.1**
DALY	**Dalyan (Mu˘la**	**1.18**	**51**	*e*Pn	**Pg**	**01 58 58.9**	**-1.1**
TURN	**Turunc**	**1.18**	**48**	*i* P	Pg	01 58 53.6	-6.5
TURN				*i* S	Sg	01 59 05.0	-10
YER	**Yerkesik**	**1.22**	**31**	*e*PN	**Pg**	**01 58 59.8**	**-1.0**
YER	**Yerkesik**	**1.22**	**31**	P	**Pg**	**01 58 59.5**	**-1.3**
YER				S	**Sg**	**01 59 16.4**	**-0.2**
YER	**Yerkesik**	**1.22**	**31**	P	**Pg**	**01 58 59.5**	**-1.3**
YER	**Yerkesik**	**1.22**	**31**	*e*Pn	**Pg**	**01 58 59.8**	**-1.0**
YER				S	**Sg**	**01 59 16.4**	**-0.2**
FETY	**Fethiye**	**1.39**	**66**	*e*PN	**Pn**	**01 59 02.5**	**-0.1**
FETY	**Fethiye**	**1.39**	**66**	P	**Pn**	**01 59 02.1**	**-0.5**
FETY				S	**Sb**	**01 59 21.2**	**+0.3**
FETY	**Fethiye**	**1.39**	**66**	P	**Pn**	**01 59 02.1**	**-0.5**
FETY	**Fethiye**	**1.39**	**66**	*e*Pn	**Pn**	**01 59 02.5**	**-0.1**
FETY				S	**Sb**	**01 59 21.2**	**+0.3**
ZKR	**Zakros**	**1.43**	**228**	P	**Pg**	**01 59 04.2**	**-0.7**
ZKR				S	**Sb**	**01 59 21.9**	**-0.3**
ZKR	**Zakros**	**1.43**	**228**	P	**Pg**	**01 59 04.2**	**-0.7**
ZKR				S	**Sb**	**01 59 21.9**	**-0.3**
ZKR	**Zakros**	**1.43**	**228**	P	**Pg**	**01 59 05.2**	**+0.3**
ZKR				S	**Sb**	**01 59 21.3**	**-0.9**
ZKR				AML	AML	01 59 31.0	
	comp=E,2584μm,0.6s						
ZKR				AML	AML	01 59 33.8	
	comp=N,2973μm,0.6s						
AYDN	**Tasoluk**	**1.60**	**11**	*i* P	**Pn**	**01 59 04.8**	**-0.7**
AYDN				*i* S	**Sn**	**01 59 23.2**	**-2.9**
AYDN	**Tasoluk**	**1.60**	**11**	P	**Pn**	**01 59 04.8**	**-0.7**
AYDN				S	**Sn**	**01 59 23.2**	**-2.9**
GCAM	**G?zelcaml?**	**1.62**	**352**	*i* P	Pg	**01 59 08.4**	**-0.1**
GCAM				*i* S	Sg	**01 59 31.0**	**+1.4**
GCAM	**G?zelcaml?**	**1.62**	**352**	P	Pg	**01 59 08.4**	**-0.1**
GCAM				S	Sg	**01 59 31.0**	**+1.4**
SANT	**Santorini**	**1.68**	**280**	P	**Pb**	**01 59 07.8**	**-0.4**
SANT	**Santorini**	**1.68**	**280**	P	**Pb**	**01 59 07.8**	**-0.4**
KSL	**Kastellorizon**	**1.68**	**87**	P	**Pb**	**01 59 08.5**	**+0.2**
KSL				S	**Sn**	**01 59 29.2**	**+1.1**
KSL	**Kastellorizon**	**1.68**	**87**	P	**Pb**	**01 59 08.5**	**+0.2**
KSL				S	**Sn**	**01 59 29.2**	**+1.1**
KSL				AML	AML	01 59 31.5	
	comp=N,779μm,0.7s						
KSL				AML	AML	01 59 32.0	
	comp=E,

SMG	Samos	1.70	342	P	Pn	01 59 07.2 +0.3
THT1	Athinios (Pele	1.71	281	P	Pn	01 59 06.4 -0.5
THT1	Athinios (Pele	1.71	281	P	Pn	01 59 06.4 -0.5
THR2	Thira island,	1.71	283	P	Pn	01 59 06.7 -0.3
THR2	Thira island,	1.71	283	P	Pn	01 59 06.7 -0.3
THR7	Fira-Santorini	1.71	282	P	Pn	01 59 07.0 -0.1
THR7	Fira-Santorini	1.71	282	P	Pn	01 59 07.0 -0.1
THR6	Thira Island,	1.73	280	P	Pn	01 59 07.0 -0.2
THR6	Thira Island,	1.73	280	P	Pn	01 59 07.0 -0.2
THR3	Thira Island,	1.73	281	P	Pn	01 59 07.0 -0.3
THR3	Thira Island,	1.73	281	P	Pn	01 59 07.0 -0.3
CMBO	Columbo, Santo	1.74	283	P	Pn	01 59 07.2 -0.2
CMBO				S	Sg	01 59 32.7 -0.6
CMBO	Columbo, Santo	1.74	283	P	Pn	01 59 07.2 -0.2
CMBO				S	Sg	01 59 32.7 -0.6
CMBO	Columbo, Santo	1.74	283	P	Pn	01 59 06.8 -0.7
NPS	Neapolis	1.75	242	P	Pn	01 59 07.4 -0.2
NPS				S	Sn	01 59 29.8 0.0
NPS	Neapolis	1.75	242	P	Pn	01 59 07.4 -0.2
NPS				S	Sn	01 59 29.8 0.0
NPS	Neapolis	1.75	242	P	Pn	01 59 07.1 -0.4
NPS				S	Sn	01 59 28.7 -1.1
NPS				AML	AML	01 59 32.0
	comp=E,1797μm,0.4s					
NPS				AML	AML	01 59 35.2
	comp=N,1739μm,0.4s					
THR5	Thira Island,	1.78	281	ePN	Pn	01 59 08.4 +0.5
THR5	Thira Island,	1.78	281	P	Pn	01 59 08.1 +0.2
THR5	Thira Island,	1.78	281	P	Pn	01 59 08.1 +0.2
THR5	Thira Island,	1.78	281	ePn	Pn	01 59 08.4 +0.5
APE	Apeiranthos	1.87	302	ePN	Pn	01 59 09.4 +0.2
APE	Apeiranthos	1.87	302	P	Pn	01 59 08.6 -0.6
APE				S	Sn	01 59 31.7 -1.1
APE	Apeiranthos	1.87	302	P	Pn	01 59 08.6 -0.6
APE	Apeiranthos	1.87	302	ePn	Pn	01 59 09.4 +0.2
APE				S	Sn	01 59 31.7 -1.1
APE	Apeiranthos	1.87	302	P	Pn	01 59 08.2 -1.1
APE				S	Sn	01 59 30.4 -2.4
APE				AML	AML	01 59 32.6
	comp=E,420μm,0.2s					
APE				AML	AML	01 59 33.6
	comp=N,449μm,0.2s					
AYDB	Zeytinkoy-Aydi	1.88	9	ePN	Pn	01 59 09.9 +0.4
AYDB	Zeytinkoy-Aydi	1.88	9	ePn	Pn	01 59 09.9 +0.4
LAST	Lasithi	1.89	241	P	Pn	01 59 09.7 +0.1
LAST				S	Sn	01 59 34.1 +0.6
LAST	Lasithi	1.89	241	P	Pn	01 59 09.7 +0.1
LAST				S	Sn	01 59 34.1 +0.6
LAST	Lasithi	1.89	241	P	Pn	01 59 09.6 0.0
ELL	Elmali	2.05	71	ePN	Pn	01 59 12.7 +1.0
ELL	Elmali	2.05	71	ePn	Pn	01 59 12.7 +1.0
DENT	Denizli	2.06	36	ePN	Pn	01 59 12.5 +0.6
DENT	Denizli	2.06	36	ePn	Pn	01 59 12.5 +0.6
IDI	Anoyia	2.27	250	Pn	Pn	01 59 14.7 -0.1
	comp=N,5.2nm,0.3s,baz=50,slow=7.2,SNR=60					
IDI				Sn	Sn	01 59 44.3 +1.4
	comp=N,47nm,0.3s,baz=346,slow=17,SNR=14					
IDI	Anoyia	2.27	250	P	Pn	01 59 14.6 -0.2
IDI				S	Sn	01 59 43.9 +1.0
IDI	Anoyia	2.27	250	P	Pn	01 59 14.6 -0.2
IDI				S	Sn	01 59 42.5 -0.3
IDI	Anoyia	2.27	250	P	Pn	01 59 13.8 -1.1
IDI				S	Sn	01 59 42.5 -0.3
IDI				AML	AML	01 59 45.9
	comp=E,521μm,0.3s					
IDI				AML	AML	01 59 46.4
	comp=N,915μm,0.5s					
ZEY	˙zmir	2.29	340	*i* P	Pn	01 59 14.3 -0.7
IZM	Izmir	2.31	355	ePN	Pn	01 59 16.1 +0.7
IZM	Izmir	2.31	355	ePn	Pn	01 59 16.1 +0.7
BLCB	Balcova	2.32	351	ePN	Pn	01 59 16.1 +0.7
BLCB	Balcova	2.32	351	ePn	Pn	01 59 16.1 +0.7
UZP	Denizli	2.35	34	*i* P	Pb	01 59 18.9 -0.9
UZP				*i* S	Sn	01 59 44.7 -0.2
SIVA	Sivas	2.44	245	P	Pn	01 59 19.1 +2.0
SIVA	Sivas	2.44	245	P	Pn	01 59 19.1 +2.0
KORT	Korkueli	2.46	67	*i* P	Pn	01 59 19.4 +2.0
KORT	Korkueli	2.46	67	P	Pn	01 59 19.5 +2.0
CHOS	Chios island	2.57	334	P	Pn	01 59 18.2 -0.7
CHOS	Chios island	2.57	334	P	Pn	01 59 18.2 -0.7
MHLO	Agia Marina, M	2.58	284	P	Pn	01 59 20.9 +2.0
MHLO	Agia Marina, M	2.58	284	P	Pn	01 59 20.9 +2.0
KULA	Kula-Manisa	2.59	20	ePN	Pn	01 59 19.9 +0.7
KULA	Kula-Manisa	2.59	20	ePn	Pn	01 59 19.9 +0.7
SERI	Serifos	2.66	295	P	Pn	01 59 18.9 -1.2
SERI				S	Sn	01 59 50.8 -1.4
SERI	Serifos	2.66	295	P	Pn	01 59 18.9 -1.2
SERI				S	Sn	01 59 50.8 -1.4
SERI				AML	AML	01 59 51.7
	comp=N,129μm,0.3s					
SERI				AML	AML	01 59 52.0
	comp=E,132μm,0.4s					
ANTB	Antalya	2.66	71	ePN	Pn	01 59 21.1 +1.0
ANTB	Antalya	2.66	71	ePn	Pn	01 59 21.1 +1.0
KHL	Karahalli	2.75	35	ePN	Pn	01 59 22.5 +1.1
KHL	Karahalli	2.75	35	ePn	Pn	01 59 22.5 +1.1
KHAL	Karahalli	2.77	34	*i* P	Pn	01 59 22.7 +1.0
KHAL				*i* S	Sn	01 59 56.0 +0.7
KHAL	Karahalli	2.77	34	P	Pn	01 59 22.7 +1.0
KHAL				S	Sn	01 59 56.0 +0.7
VAM	Vamos	2.77	257	P	Pn	01 59 24.0 +2.3
VAM				S	Sn	01 59 57.6 +2.5
AKS	Akhisar	2.80	5	ePN	Pn	01 59 22.8 +0.8
AKS	Akhisar	2.80	5	ePn	Pn	01 59 22.8 +0.8
BCK	Bucak	2.83	60	ePN	Pn	01 59 23.2 +0.8
BCK	Bucak	2.83	60	ePn	Pn	01 59 23.2 +0.8
IMMV	Iera Moni Meta	2.94	259	P	Pn	01 59 24.1 +0.2
IMMV				S	Sn	02 00 00.2 +1.2
IMMV	Iera Moni Meta	2.94	259	P	Pn	01 59 24.4 +0.6
IMMV				S	Sn	02 00 00.2 +1.2
IMMV	Iera Moni Meta	2.94	259	P	Pn	01 59 24.4 +0.6
IMMV				S	Sn	02 00 01.6 +2.5
IMMV				AML	AML	02 00 02.0
	comp=N,482μm,0.4s					
IMMV				AML	AML	02 00 04.9
	comp=E,702μm,1.1s					
ISP	Isparta	2.97	53	ePN	Pn	01 59 25.8 +1.4
ISP	Isparta	2.97	53	ePn	Pn	01 59 25.8 +1.4
DKL	Dikili	3.02	351	ePN	Pn	01 59 25.9 +0.9
DKL	Dikili	3.02	351	ePn	Pn	01 59 25.9 +0.9
GVD	Gavdhos	3.06	247	P	Pn	01 59 27.9 +2.4
GVD	Gavdhos	3.06	247	P	Pn	01 59 27.9 +2.4
PRK	Paraskevi	3.30	343	P	Pn	01 59 28.0 -0.8
PRK	Paraskevi	3.30	343	P	Pn	01 59 28.1 -0.8
SIGR	SIGRI	3.38	338	ePN	Pn	01 59 31.2 +1.2
SIGR	SIGRI	3.38	338	P	Pn	01 59 29.1 -0.9
SIGR	SIGRI	3.38	338	ePn	Pn	01 59 31.2 +1.2
SIGR	SIGRI	3.38	338	P	Pn	01 59 29.1 -0.9
ANKY	Antikythira Is	3.42	268	P	Pn	01 59 30.7 +0.2
ANKY				S	Sn	02 00 11.8 +0.8
ANKY	Antikythira Is	3.42	268	P	Pn	01 59 30.7 +0.2
ANKY				S	Sn	02 00 11.8 +0.8
ANKY	Antikythira Is	3.42	268	P	Pn	01 59 31.5 +1.0
VLY	Voula,Athens	3.46	302	P	Pn	01 59 31.5 +0.5
VLY	Voula,Athens	3.46	302	P	Pn	01 59 31.5 +0.5
PTL	Penteli	3.51	305	P	Pn	01 59 31.7 -0.1
PTL	Penteli	3.51	305	P	Pn	01 59 31.7 -0.1
ATHU	Athens Univers	3.52	303	P	Pn	01 59 31.2 -0.7
ATHU	Athens Univers	3.52	303	P	Pn	01 59 31.2 -0.7
BALB	Balikesir	3.56	5	ePN	Pn	01 59 33.8 +1.4
BALB	Balikesir	3.56	5	ePn	Pn	01 59 33.8 +1.4
KYTH	Kithira	3.62	274	P	Pn	01 59 34.2 +0.9
KYTH	Kithira	3.62	274	P	Pn	01 59 34.2 +0.9
EREA	Eretria	3.68	310	P	Pn	01 59 33.9 -0.2
EREA	Eretria	3.68	310	P	Pn	01 59 33.9 -0.2
TVSB	Tavsanli	3.70	24	ePN	Pn	01 59 35.7 +1.3
TVSB	Tavsanli	3.70	24	ePn	Pn	01 59 35.7 +1.3
DID	Didima	3.71	294	P	Pn	01 59 34.9 +0.4
DID	Didima	3.71	294	P	Pn	01 59 34.9 +0.4
KRND	KRANIDI	3.73	292	P	Pn	01 59 35.1 +0.3
KRND	KRANIDI	3.73	292	P	Pn	01 59 35.1 +0.3
VLI	Veliai	3.74	281	P	Pn	01 59 35.6 +0.7
VLI	Veliai	3.74	281	P	Pn	01 59 35.6 +0.7
VLI				S	Sn	02 00 20.1 +1.2
VLI	Veliai	3.74	281	P	Pn	01 59 35.9 +1.0
VLI				S	Sn	02 00 20.1 +1.2
VLI				AML	AML	02 00 25.6
	comp=N,223μm,0.8s					
VLI				AML	AML	02 00 28.2
	comp=E,124μm,0.4s					
VILL	Villia	3.94	303	P	Pn	01 59 38.8 +1.1
VIL2	Platees	4.00	303	P	Pn	01 59 38.8 +0.4
LTK	Loutraki	4.11	299	P	Pn	01 59 41.2 +1.1
LTK	Loutraki	4.11	299	P	Pn	01 59 41.2 +1.1
LIA	Limnos Island	4.22	335	P	Pn	01 59 44.3 +2.8
PROD	Prodromos	4.27	302	P	Pn	01 59 44.0 +1.8
PROD	Prodromos	4.27	302	P	Pn	01 59 44.0 +1.8
VLX	Vlachokerasia	4.31	289	P	Pn	01 59 45.1 +2.2
VLX	Vlachokerasia	4.31	289	P	Pn	01 59 45.1 +2.2
LKR	Lokris	4.41	307	P	Pn	01 59 44.7 +0.6
LKR	Lokris	4.41	307	P	Pn	01 59 44.7 +0.6
SKIA	Skiathos	4.44	315	P	Pn	01 59 46.0 +1.4
SKIA	Skiathos	4.44	315	P	Pn	01 59 46.0 +1.4
GUR	Goura	4.53	296	P	Pn	01 59 47.9 +2.1
GUR	Goura	4.53	296	P	Pn	01 59 47.9 +2.1
DSF	Desfina	4.60	302	P	Pn	01 59 48.4 +1.6
DSF	Desfina	4.60	302	P	Pn	01 59 48.4 +1.6
ITM	Ithomi	4.62	285	P	Pn	01 59 51.7 +4.7
KLV	Kalavryta, Ach	4.71	296	P	Pn	01 59 50.0 +1.7
KLV	Kalavryta, Ach	4.71	296	P	Pn	01 59 50.0 +1.7
PYL	PYLOS	4.71	282	P	Pn	01 59 50.7 +2.4
PYL	PYLOS	4.71	282	P	Pn	01 59 50.7 +2.4
KALE	Kalithea	4.86	300	P	Pn	01 59 52.9 +2.5
KALE	Kalithea	4.86	300	P	Pn	01 59 52.9 +2.5
AMT	Artemida-Makis	4.87	289	P	Pn	01 59 51.7 +1.2
AMT	Artemida-Makis	4.87	289	P	Pn	01 59 51.7 +1.2
TRIZ	Trizonia	4.90	299	P	Pn	01 59 52.9 +2.1
LAKA	Lakka	4.91	298	P	Pn	01 59 53.2 +2.2
LAKA	Lakka	4.91	298	P	Pn	01 59 53.2 +2.2
ALN	Alexandroupoli	4.94	347	P	Pn	01 59 53.3 +2.0
ALN	Alexandroupoli	4.94	347	P	Pn	01 59 53.3 +2.0
DRO	Drossia	5.00	294	P	Pn	01 59 55.2 +3.0
DRO	Drossia	5.00	294	P	Pn	01 59 55.2 +3.0
EVR	Evrytania	5.34	304	P	Pn	01 59 59.8 +2.8
EVR	Evrytania	5.34	304	P	Pn	01 59 59.8 +2.8
PDO	Prodromos	5.63	298	P	Pn	02 00 00.2 -0.7
PDO	Prodromos	5.63	298	P	Pn	02 00 00.2 -0.7
MMAI	Mount Meron Ar	7.20	113	Pn	Pn	02 00 21.1 -1.4
	comp=E,2.1nm,0.3s,baz=312,slow=13,SNR=9.9					
EIL	Elat	8.95	134	Pn	Pn	02 00 44.8 -1.7
	comp=E,0.4nm,0.3s,baz=323,slow=4.1,SNR=7.4					
ESDC	Sonseca Array	25.03	288	P	P	02 04 01.3 -0.1
	comp=E,0.2nm,0.5s,baz=83,slow=9.6,SNR=4.4					
TORD	Torodi Ar. Bea	32.56	232	P	P	02 05 08.3 -0.3
	comp=E,6.7nm,1.2s,baz=41,slow=11,SNR=3.3					
DBIC	Dimbokro	41.65	233	P	P	02 06 24.8 -0.9
	comp=E,0.2nm,0.4s,baz=263,slow=6.5,SNR=2.9					
MKAR	Makanchi Array	41.67	58	P	P	02 06 24.9 -0.8

ISCJB ***12*** *01:59:28.8±1.6, 37.12N±0.08×141.28E±0.09, h18km±11km, mb3.6/11, Error ellipse: s-maj=13.8km s-min=11.5km az=143.8*
IDC ***12*** *01:59:33.2±7.5, 37.24N×141.80E, h33km±59km, mb3.5/11, mb1 3.8/12, mb1mx3.6/41, mbtmp3.8/12, ML4.2/1, Error ellipse: s-maj=24.0km s-min=19.7km az=103.0*
JMA ***12*** *01:59:35.0, 37.02N×140.70E, h11km±1km, M3.2*
JMA Felt I J1.

ISC 12 01:59:26.6±2.9, 37.00N±0.05×141.3E±0.1, h3km±18km, n23, σ1s40/19, mb3.7/11, 3C, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	Iwakimizuishiy	0.42	284	⇑P	Pb	01 59 38.1	+1.5
ONAJ				S	Sg	01 59 40.3	+0.2
JHO	Hitachi	0.71	237	⇑P	Pn	01 59 43.1	-0.4
JHO				S	Sg	01 59 48.7	-0.6
JFT	Otama	0.93	304	⇑P	Pb	01 59 46.3	+1.0
JFT				S	Sg	01 59 54.3	-2.1
JMM	Marumori	0.95	335	P	Pn	01 59 50.6	+3.7
JMM				S	Sn	02 00 02.3	+1.3
MJAR	Matsushiro Arr	2.53	260	Pn	Pn	02 00 10.4	+1.9
	2.4nm,0.3s,baz=80,slow=15,SNR=7.1						
MAT	Matsushiro	2.53	260	P	Pn	02 00 10.6	+2.1
MAT				eS	Sn	02 00 38.5	-1.4
JHJ	Hachijo jima 2	4.07	198	Pn	Pb	02 00 38.5	-0.4
	38nm,0.3s,baz=66,slow=22,SNR=3.1						
JHJ				Sn	Sb	02 01 27.6	-0.9
	28nm,0.3s,baz=118,slow=22,SNR=3.5						
SEY	Seymchan	26.84	11	P	P	02 05 07.6	-0.3
	0.9nm,0.4s,baz=112,slow=20,SNR=4.2						
SONM	Songino Array	27.73	304	P	P	02 05 20.7	+4.4
	0.9nm,0.6s,baz=101,slow=8.8,SNR=6.9						
H11N2	WAKE ISLAND Hy	28.21	121	T	T	02 34 59.5	
	baz=314,slow=75,SNR=13						
H11N1	WAKE ISLAND Hy	28.21	121	T	T	02 34 47.4	
	baz=314,slow=75,SNR=12						
H11N3	WAKE ISLAND Hy	28.23	121	T	T	02 34 52.8	
	baz=314,slow=75,SNR=11						
H11S3	WAKE ISLAND Hy	28.92	123	T	T	02 35 48.2	
	SNR=15						
ZALV	Zalesovo Beam	41.87	312	P	P	02 07 20.8	+3.0
	0.5nm,0.3s,baz=90,slow=7.4,SNR=4.2						
MKAR	Makanchi Array	44.06	302	P	P	02 07 39.4	+3.7
	1.0nm,0.6s,baz=83,slow=10,SNR=9.9						
ILAR	Eielson Array	49.57	32	P	P	02 08 17.0	-1.5
	0.9nm,0.7s,baz=265,slow=6.8,SNR=12						
INK	Inuvik	54.45	27	P	P	02 08 54.1	-0.6
	0.9nm,0.8s,baz=256,slow=6.9,SNR=4.6						
WRA	Warramunga Arr	57.02	188	P	P	02 09 17.2	+3.6
	0.2nm,0.4s,baz=5.7,slow=7.3,SNR=5.0						
YKA	Yellowknife Ar	63.88	30	P	P	02 09 58.8	-1.3
	0.3nm,0.6s,baz=305,slow=6.9,SNR=7.1						
NVAR	Mina Array Bea	75.08	53	P	P	02 11 10.0	-0.1
	0.1nm,0.5s,baz=299,slow=6.1,SNR=3.7						
GERES	GERESS Array B	82.69	328	P	P	02 11 53.0	+1.5
	0.3nm,0.4s,baz=40,slow=7.7,SNR=3.6						
TXAR	Lajitas Array	90.21	52	P	P	02 12 28.1	-0.7
	0.3nm,0.8s,baz=298,slow=2.7,SNR=3.6						
PLCA	Paso Flores	154.99	108	PKPbc	PKPbc	02 19 31.6	+2.0
	4.9nm,0.9s,baz=11,slow=6.5,SNR=10						

JMA 12 02:03:52.7±0.1, 40.36N×142.19E, h45km±1km, M3.7, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JTH	Tanohata	0.49	211	P	Pn	02 04 03.4	-0.1
JTH				S	Sn	02 04 10.8	-0.4
JANG	Nango	0.52	272	P	Pn	02 04 03.8	-0.1
JANG				S	Sn	02 04 11.5	-0.3
JKZ	Kuzumaki	0.76	241	P	Pn	02 04 07.3	+0.2
JKZ				S	Sn	02 04 17.5	0.0
MIYJ	Miyakonagasawa	0.83	200	P	Pn	02 04 07.9	-0.1
MIYJ				S	Sn	02 04 18.6	-0.6
JTM	Tenmabayashi	0.95	297	P	Pn	02 04 09.4	-0.3
JTM				S	Sn	02 04 21.2	-1.0
JOM	Ohasama	1.12	218	P	Pn	02 04 12.2	+0.2
JOM				S	Sn	02 04 26.3	0.0
JAH	Hinai	1.20	262	P	Pn	02 04 13.2	+0.2
JAH				S	Sn	02 04 28.2	0.0
JOT	Ohata	1.34	320	P	Pn	02 04 14.5	-0.4
OFUJ	Ofunato	1.34	198	P	Pn	02 04 14.7	-0.3
JRG	Rokugo	1.54	232	P	Pn	02 04 18.4	+0.8
JRG				S	Sn	02 04 38.2	+1.8

JMA 12 02:06:47.3, 37.10N×140.62E, h13km±1km, M3.7, 2C-4D, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	Iwakimizuishiy	0.14	89	⇓P	Pg	02 06 51.1	+0.2
ONAJ				S	Sg	02 06 53.7	+0.3
JFT	Otama	0.47	332	⇓P	Pg	02 06 56.9	+0.2
JFT				S	Sg	02 07 03.2	+0.2
JHO	Hitachi	0.49	185	⇑P	Pg	02 06 56.7	-0.2
JHO				S	Sg	02 07 03.3	-0.2
JSB	Shiboa	0.57	257	⇓P	Pg	02 06 58.9	+0.3
JSB				S	Sg	02 07 06.6	+0.4
JMM	Marumori	0.78	10	⇑P	Pg	02 07 01.7	-0.7
JMM				S	Sg	02 07 12.3	-0.3
JFY	Yanaizu	0.79	293	⇓P	Pg	02 07 02.3	-0.4
JFY				S	Sg	02 07 12.4	-0.7
MAT	Matsushiro	2.02	255	P	Pb	02 07 23.6	-0.2
MAT				S	Sb	02 07 49.7	+0.9

ISCJB ***12*** *02:10:20.4±0.4, 12.13N±0.04×73.40W±0.04, h33km, mb3.5/7, Error ellipse: s-maj=7.4km s-min=3.8km az=140.0*
FUNV ***12*** *02:10:22.3, 12.10N×73.52W, h36km, MW3.8*
IDC ***12*** *02:10:23.8±0.8, 12.14N×73.11W, h34km±6km, mb3.3/7, mb1 3.6/9, mb1mx3.5/32, mbtmp3.7/9, ML3.4/3, Error ellipse: s-maj=26.8km s-min=14.7km az=54.0*

ISC 12 02:10:23.4±0.6, 12.12N±0.05×73.34W±0.05, h35km, n38, σ1s85/48, mb3.4/7, Caribbean Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
VIRV	Villa del Rosa	1.85	150	eP	Pn	02 10 51.4	-1.2
VIRV				eS	Sn	02 11 13.8	-1.0
DABV	Dabajuro	2.90	114	eP	Pn	02 11 07.4	+0.3
DABV				eS	Sn	02 11 41.3	+0.5
MONV	Montecano	3.29	93	eP	Pn	02 11 12.3	-0.2
MONV				eS	Sn	02 11 49.9	-0.6
QARV	Quebrada Arrib	3.35	124	eP	Pn	02 11 13.6	+0.3
SIQV	Siquisique	3.76	113	eP	Pn	02 11 18.9	0.0
VIGV	El Vigia	3.79	149	eP	Pn	02 11 18.6	-0.8
VIGV				eS	Sn	02 11 59.1	-3.7
OCAC	Ocana	3.86	180	eP	Pn	02 11 18.1	-2.3
CURV	Curarigua	3.92	122	eP	Pn	02 11 20.8	-0.4
MOTC	Monteria, Cord	4.04	215	eP	Pn	02 11 22.1	-0.6
SDV	Santo Domingo	4.17	140	Pn	Pn	02 11 23.7	-1.1
	28nm,0.3s,baz=313,slow=5.6,SNR=186						
SDV				Sn	Sn	02 12 12.0	-0.4
	40nm,0.3s,baz=1.8,slow=22,SNR=13						
CAPV	Capacho	4.35	167	eP	Pn	02 11 25.1	-2.1
GRMC	Gramalote, San	4.41	173	eP	Pn	02 11 25.3	-2.7
SOCV	Socops	4.53	147	eP	Pn	02 11 28.6	-0.9
SANV	Sanarito	4.55	125	eP	Pn	02 11 29.8	-0.1
TEPV	Terepaima	4.60	117	eP	Pn	02 11 30.3	-0.2
BRRC	Barranca, Sant	5.00	184	eP	Pn	02 11 31.3	-4.6
BARC	Barichara	5.50	178	eP	Pn	02 11 41.3	-1.7
BAUV	El Baul	6.09	121	eP	Pn	02 11 49.5	-1.4
BNJ	Bonny Gate	7.08	331	eP	Pn	02 12 05.1	+0.5
BNJ				eS	Sn	02 13 20.2	-3.7
MCJ	Malvern	7.14	324	eP	Pn	02 12 04.1	-1.3
MCJ				eS	Sn	02 13 22.6	-2.8
BBJ	Bamboo Saint A	7.29	329	*i* P	Pn	02 12 07.1	-0.4
BBJ				eS	Sn	02 13 26.0	-3.1
CVJ	Coleyville	7.30	327	eP	Pn	02 12 08.1	+0.5
CVJ				eS	Sn	02 12 25.4	-3.9
ROSC	El Rosal	7.30	188	Pn	Pn	02 12 10.6	+2.6
	4.6nm,0.3s,baz=59,slow=17,SNR=10						
ROSC				Sn	Sn	02 13 34.8	+4.9
	2.2nm,0.3s,baz=27,slow=21,SNR=2.5						
MERV	Las Mercedes	7.48	112	eP	Pn	02 12 08.0	-2.1
PTGA	Pitinga	18.42	133	P	Pn	02 14 36.2	+0.1
	0.4nm,0.3s,baz=341,slow=14,SNR=3.5						
SIV	San Ignacio	30.45	156	pP	pP	02 16 43.0	0.0
	1.8nm,0.6s,baz=2.3,slow=4.8,SNR=3.1						
TXAR	Lajitas Array	32.99	306	pP	pP	02 17 07.2	+1.8
	0.3nm,0.6s,baz=126,slow=9.9,SNR=3.8						
RCBR	Riachuelo	41.27	114	P	P	02 18 04.8	-1.0
	4.5nm,0.6s,baz=252,slow=10.0,SNR=4.7						
ULM	Lac du Bonnet	42.28	339	pP	pP	02 18 24.4	+0.6
	2.0nm,0.6s,baz=142,slow=11,SNR=3.1						
PDAR	Pinedale Array	43.77	321	P	P	02 18 28.2	+2.3
	0.2nm,0.5s,baz=109,slow=12,SNR=2.7						
PDAR				pP	pP	02 18 37.2	+1.0
	0.6nm,0.7s,baz=104,slow=11,SNR=5.0						
PDAR				PcP	PcP	02 20 12.4	+0.1
	0.3nm,0.7s,baz=128,slow=5.8,SNR=3.2						
NVAR	Mina Array Bea	47.73	311	P	P	02 19 00.2	+2.9
	0.1nm,0.5s,baz=113,slow=9.8,SNR=2.5						
NVAR				pP	pP	02 19 09.3	+1.6
	0.4nm,0.6s,baz=108,slow=6.9,SNR=4.9						
YKA	Yellowknife Ar	58.26	339	P	P	02 20 14.7	+0.6
	0.2nm,0.5s,baz=126,slow=7.5,SNR=18						
YKA				pP	pP	02 20 25.1	+0.4
	1.1nm,0.7s,baz=128,slow=7.4,SNR=18						
INK	Inuvik	68.01	340	P	P	02 21 21.3	+2.6
	0.4nm,0.5s,baz=122,slow=7.2,SNR=3.3						
INK				pP	pP	02 21 30.0	+0.5
	1.0nm,0.6s,baz=94,slow=5.9,SNR=4.8						
ILAR	Eielson Array	72.11	334	pP	pP	02 21 54.8	0.0
	0.4nm,0.8s,baz=147,slow=3.9,SNR=4.0						
TORD	Torodi Ar. Bea	72.95	80	P	P	02 21 49.4	-0.5
	0.4nm,0.9s,baz=285,slow=5.7,SNR=4.2						
GERES	GERESS Array B	79.05	42	P	P	02 22 23.1	-1.1
	0.2nm,0.4s,baz=262,slow=6.8,SNR=2.7						
ASAR	Alice Springs	151.71	242	PKPbc	PKPbc	02 30 14.2	-0.9
	1.0nm,0.8s,baz=124,slow=1.8,SNR=8.3						
WRA	Warramunga Arr	152.32	250	PKPbc	PKPbc	02 30 15.6	-0.9
	0.7nm,0.7s,baz=80,slow=2.4,SNR=7.0						

NEIC ***12*** *02:11:24.1, 45.17S×167.35E, h120km, MG4.0(WEL), After WEL.*

**WEL 12 02:11:24.0±0.3, 45.18S×167.34E, h121km±2km, ML4.0/14, 11D, Error ellipse: s-maj=2.5km s-min

ODZ					AML	AML	02 12 28.1	
ODZ					AML	AML	02 12 28.8	
ODZ					AML	AML	02 12 28.8	
ODZ					AML	AML	02 12 28.8	
ODZ	**Otahua Downs**	**2.34**	**88**		Pn	Pn	02 12 00.4	-1.4
HHSZ	**Highcliff Hill**	**2.40**	**108**		PN	Pn	02 12 01.8	-0.6
FOZ	**Fox Glacier**	**2.42**	**48**	⇓PN	Pn	Pn	02 12 00.7	-2.0
FOZ					AML	AML	02 12 31.9	
FOZ					AML	AML	02 12 31.9	
FOZ					AML	AML	02 12 34.5	
FOZ	**Fox Glacier**	**2.42**	**48**		Pn	Pn	02 12 00.7	-2.0
RPZ	**Rata Peaks**	**3.04**	**62**	⇓PN	Pn	Pn	02 12 08.4	-2.4
RPZ					AML	AML	02 12 44.6	
RPZ					AML	AML	02 12 45.3	
RPZ	**Rata Peaks**	**3.04**	**62**	*e*Pn	Pn	Pn	02 12 08.2	-2.5
RPZ				*e*S	Sn	Pn	02 12 43.0	-3.8
WVZ	**Waitaha Valley**	**3.23**	**50**	PN	Pn	Pn	02 12 10.9	-2.3
WVZ	**Waitaha Valley**	**3.23**	**50**	Pn	Pn	Pn	02 12 10.9	-2.3
OXZ	**Oxford**	**3.85**	**63**	PN	Pn	Pn	02 12 18.4	-3.1
OXZ	**Oxford**	**3.85**	**63**	Pn	Pn	Pn	02 12 18.4	-3.1
MQZ	**McQueen's Vall**	**4.08**	**71**	PN	Pn	Pn	02 12 22.4	-2.2
MQZ	**McQueen's Vall**	**4.08**	**71**	Pn	Pn	Pn	02 12 22.4	-2.2
LTZ	**Lake Taylor**	**4.29**	**58**	PN	Pn	Pn	02 12 24.4	-3.1
LTZ	**Lake Taylor**	**4.29**	**58**	Pn	Pn	Pn	02 12 24.4	-3.1
THZ	**Tophouse**	**5.30**	**52**	PN	Pn	Pn	02 12 38.0	-2.9

NIED ***12*** *02:13:00,37˚.00N×140˚.70E,h8km,Mw4.2 Best double couple: M₀2.33000×10¹⁵ NP1:φs295.00000°,δ36.00000°, λ-104.00000°. NP2:φs132.00000°,δ56.00000°, λ-80.00000°.*

JMA ***12*** *02:13:50.0,37˚.02N×140˚.68E,h10km±1km,M4.2 Broadband fault plane solution: P waves. NP1: φs134.00000°,δ49.00000°,λ-75.00000°. NP2: φs291.00000°,δ43.00000°,λ-107.00000°. Principal axes: T Plg3.0000°, Azm213.0000°; N Plg12.0000°, Azm304.0000°; P Plg78.0000°, Azm109.0000°;*

JMA Felt III J1.

NEIC ***12*** *02:13:50.3±0.2,36˚.98N×140˚.40E,h10km,mb4.6/41 Error ellipse: s-maj=4.8km s-min=3.3km az=133.0*

NEIC Recorded [3 JMA] in Fukushima.

ISCJB ***12*** *02:13:51.0±0.5,37˚.00N±0˚.03×140˚.48E±0˚.04,h26km±3km, mb4.5/71,MS4.1/2,Error ellipse: s-maj=5.1km s-min=4.2km az=17.5*

BJI ***12*** *02:13:52.1,36˚.67N×140˚.59E,h50km,mb4.5/18,mB5.2/12, Ms4.5/8,Ms7 4.4/7*

IDC ***12*** *02:13:59.4±2.6,37˚.04N×140˚.50E,h84km±22km,mb3.8/26, mb1 3.9/30,mb1mx3.9/48,mbtmp4.1/30,Error ellipse: s-maj=14.4km s-min=13.5km az=104.0*

ISC 12 02:13:50.8±1.0,37˚.03N±0˚.03×140˚.54E±0˚.04,h15km±6km, n150,σ0°89/144,mb4.4/71,MS4.4/3,7C,Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.22**	**71**	⇑P		Pg	02 13 53.1	-2.6
JHO	**Hitachi**	**0.42**	**177**	⇑P		**Pg**	**02 13 58.2**	**-1.0**
JHO				S		**Sg**	**02 14 04.4**	**-0.6**
JSB	**Shiboa**	**0.50**	**263**	⇑P		**Pn**	**02 14 02.3**	**-1.2**
JSB				S		**Sn**	**02 14 10.5**	**-1.4**
JFT	**Otama**	**0.51**	**342**	⇑P		**Pg**	**02 14 01.2**	**+0.3**
JFT				S		**Sb**	**02 14 08.7**	**-0.1**
JFY	**Yanaizu**	**0.76**	**300**	⇑P		**Pn**	**02 14 06.7**	**-0.4**
JFY				S		**Sn**	**02 14 17.7**	**-0.7**
JYT	**Yasato**	**0.85**	**199**	⇑P		**Pg**	**02 14 06.5**	**-0.8**
JMM	**Marumori**	**0.86**	**14**	⇑P		**Pb**	**02 14 05.8**	**-1.6**
JMM				S		**Sg**	**02 14 16.8**	**-1.9**
MJAR	**Matsushiro Arr**	**1.93**	**256**	P		**Pb**	**02 14 25.4**	**-0.4**
	76nm,0.3s,baz=80,slow=16,SNR=66							
MJAR				S		**Sg**	**02 14 51.8**	**-1.2**
	60nm,0.3s,baz=154,slow=12,SNR=12							
MAJO	**Matsushiro**	**1.94**	**256**	*e*Pn		**Pb**	**02 14 25.3**	**-0.5**
INU	**Inuyama**	**3.31**	**241**	*e*Pn		Pb	02 14 45.1	-4.1
JHJ2	**Mitsune**	**3.96**	**189**	*e*Pn		Pn	02 14 54.1	+3.1
ERM	**Erimo**	**5.37**	**21**	*e*Pn		**Pn**	**02 15 10.1**	**-0.4**
ERM				*e*S		**Sn**	**02 16 10.4**	**-1.6**
JNU	**Nakatsue**	**8.83**	**247**	P		Pn	02 16 03.8	+5.9
	0.4nm,0.3s,baz=126,slow=12,SNR=2.9							
JNU	**Nakatsue**	**8.83**	**247**	*e*Pn		Pn	02 16 00.4	+2.4
USRK	**Ussuriysk Ar.**	**9.66**	**320**	P		Pn	02 16 15.9	+6.6
	0.4nm,0.3s,baz=136,slow=12,SNR=22							
CBIJ	**Chichi jima**	**10.01**	**172**	*e*Pn		Pn	02 16 17.9	+3.9
YSS	**Yuzh-Sakhalins**	**10.05**	**9**	*e*Pn		**Pn**	**02 16 16.6**	**+2.0**
KSRS	**Korea Array**	**10.07**	**276**	P		Pn	02 16 22.5	+7.6
	0.3nm,0.3s,baz=94,slow=13,SNR=21							
KSAR	**Wonju Array Be**	**10.10**	**276**	P		Pn	02 16 22.5	+7.2
CN2	**Changchun**	**13.33**	**305**	*e*P		Pn	02 17 03.6	+4.2
CN2				pmax		pmax		
	comp=Z,90nm,1.5s							
CN2				pmax		pmax		
	comp=Z,200nm,5.0s							
KLR	**Kul'dur**	**13.76**	**335**	P		**P**	**02 17 12.0**	**-1.8**
	0.1nm,0.3s,baz=120,slow=12,SNR=3.7							
NJ2	**Nanjing**	**18.53**	**261**	*e*P		**Pn**	**02 18 06.7**	**-0.3**
NJ2				pmax		pmax		
	comp=Z,12nm,0.8s							
PEA0	**Petropavlovsk-**	**20.05**	**31**	*e*P		Pn	02 18 26.1	+1.0
PET	**Petropavlovsk**	**20.39**	**33**	*e*P		Pn	02 18 30.0	+1.0
	78nm,1.7s							
YHNB	**Yeheng**	**20.51**	**238**	*e*P		**P**	**02 18 28.9**	**+0.3**
	109nm,1.6s							
NACB	**Ninganchiao**	**20.69**	**237**	*e*P		**P**	**02 18 30.3**	**-0.2**
	27nm,0.9s							
TPUB	**Ta-pu**	**21.93**	**237**	*e*P		**P**	**02 18 43.0**	**-0.8**
	62nm,1.3s							
HHC	**Hu-ho-hao-te**	**22.81**	**289**	*e*P		**P**	**02 18 53.3**	**+0.1**
HHC				S		S	02 22 53.4	-8.6
HHC				pmax		pmax		
	comp=Z,24nm,1.2s							
HHC				LR		LR		
	comp=N,1μm,12.3s							
HHC				LR		LR		
	comp=E,1μm,14.8s							
HHC				LR		LR		
	comp=Z,1μm,14.8s							
ULN	**Ulaanbaatar**	**26.78**	**304**	*e*P		**P**	**02 19 30.4**	**+0.2**
	6.5nm,1.4s							
SEY	**Seymchan**	**26.93**	**12**	P		**P**	**02 19 31.9**	**+0.6**
	3.0nm,0.6s,baz=204,slow=8.7,SNR=8.3							
SONA1	**Songino Array**	**27.20**	**304**	*e*P		**P**	**02 19 34.0**	**0.0**
SONM	**Songino Array**	**27.21**	**304**	P		**P**	**02 19 35.1**	**+1.0**
	1.9nm,0.6s,baz=97,slow=8.6,SNR=11							
H11N2	**WAKE ISLAND Hy**	**28.75**	**120**	T		T	02 49 38.5	
	baz=313,slow=75,SNR=40							
H11N1	**WAKE ISLAND Hy**	**28.76**	**120**	T		T	02 49 39.1	
	baz=313,slow=75,SNR=70							
H11N3	**WAKE ISLAND Hy**	**28.77**	**120**	T		T	02 49 38.6	
	baz=313,slow=75,SNR=64							
H11S1	**WAKE ISLAND Hy**	**29.45**	**122**	T		T	02 50 31.0	
	baz=314,slow=76,SNR=108							
H11S3	**WAKE ISLAND Hy**	**29.45**	**122**	T		T	02 50 25.7	
	baz=314,slow=76,SNR=63							
H11S2	**WAKE ISLAND Hy**	**29.47**	**122**	T		T	02 50 29.7	
	baz=314,slow=76,SNR=63							
GYA	**Guiyang**	**30.53**	**260**	P		**P**	**02 20 02.7**	**-1.1**
GYA				pP		sP	02 20 20.8	+11
GYA				PP		**PnPn**	**02 21 04.6**	**+1.8**
GYA				S		S	02 24 58.2	-6.9
GYA				pmax		pmax		
	comp=Z,10.0nm,0.8s							
CD2	**Chengdu**	**30.97**	**270**	P		**P**	**02 20 06.0**	**-1.6**
CD2				pmax		pmax		
	comp=Z,2.0nm,0.5s							
PATS	**Pohnpei**	**34.15**	**147**	*e*P		**P**	**02 20 36.2**	**+0.8**
	194nm,1.8s							
KMI	**Kunming**	**34.27**	**261**	P		**P**	**02 20 37.3**	**+0.6**
KMI				pP		sP	02 20 45.2	+2.2
KMI				pmax		pmax		
	comp=Z,6.0nm,1.4s							
TIXI	**Tiksi**	**35.21**	**354**	P		**P**	**02 20 43.6**	**-0.4**
	2.1nm,0.6s,baz=145,slow=8.0,SNR=5.2							
TIXI	**Tiksi**	**35.21**	**354**	*e*P		**P**	**02 20 45.4**	**+1.4**
KWAJ	**Kwajalein Atol**	**37.30**	**132**	*e*P		**P**	**02 21 03.8**	**+1.3**
	227nm,1.3s							
KKM	**Kota Kinabalu**	**38.01**	**222**	*e*P		**P**	**02 21 07.2**	**-1.4**
	23nm,1.3s							
GAMB	**Gambell**	**39.08**	**31**	*e*P		**P**	**02 21 18.8**	**+1.9**
	21nm,2.0s							
MANU	**Manus Island**	**39.39**	**169**	*e*P		**P**	**02 21 20.4**	**+0.4**
	8.5nm,0.9s							
AKUT	**Akutan**	**40.21**	**47**	*e*P		**P**	**02 21 28.4**	**+1.9**
	427nm,1.5s							
WMQ	**Urumqi**	**40.22**	**297**	*e*P		**P**	**02 21 27.6**	**+0.8**
WMQ				pP		sP	02 21 43.5	+10
WMQ				pmax		pmax		
	comp=Z,2.0nm,0.6s							
WMQ				LR		LR		
	comp=N,65nm,20.6s							
WMQ				LR		LR		
	comp=E,62nm,23.8s							
CHTO	**Chiang Mai**	**40.61**	**255**	*e*P		**P**	**02 21 29.1**	**-1.2**
	9.9nm,1.6s							
ZAA0	**Zalesovo Array**	**41.40**	**312**	*e*P		**P**	**02 21 36.1**	**-0.2**
ZALV	**Zalesovo Beam**	**41.40**	**312**	P		**P**	**02 21 35.6**	**-0.8**
	1.3nm,0.5s,baz=118,slow=5.7,SNR=6.6							
ZALV				PcP		**PcP**	**02 23 34.0**	**-0.1**
	1.2nm,0.5s,baz=127,slow=2.8,SNR=3.8							
MKAR	**Makanchi Array**	**43.53**	**302**	P		**P**	**02 21 54.5**	**+0.7**
	1.2nm,0.6s,baz=87,slow=9.6,SNR=16							
MKAR	**Makanchi Array**	**43.53**	**302**	*e*P		**P**	**02 21 54.0**	**+0.2**
MAKZ	**Makanchi**	**43.74**	**302**	*e*P		**P**	**02 21 55.5**	**0.0**
CHGN	**Chignik**	**44.45**	**44**	*e*P		**P**	**02 22 02.6**	**+1.6**
KSM	**Kuching**	**45.05**	**225**	*e*P		**P**	**02 22 05.6**	**-0.7**
	37nm,1.7s							
KURK	**Kurchatov**	**45.38**	**308**	*e*P		**P**	**02 22 08.4**	**-0.1**
	15nm,1.3s							
KURBB	**Kurchatov Arra**	**45.45**	**308**	P		**P**	**02 22 08.5**	**-0.6**
	2.6nm,0.6s,baz=84,slow=8.0,SNR=34							
KAPI	**Kappang**	**46.11**	**209**	*e*P		**P**	**02 22 14.2**	**-0.4**
	13nm,1.0s							
SPU	**Mount Spurr**	**47.66**	**37**	*e*P		**P**	**02 22 26.6**	**+0.3**
BPAW	**Beaw Paw Mtn.**	**48.11**	**33**	*e*P		**P**	**02 22 30.6**	**+0.9**
	12nm,1.6s							
MLY	**Manley**	**48.22**	**32**	*e*P		**P**	**02 22 31.9**	**+1.3**
	10nm,1.6s							
COLD	**Coldfoot**	**48.49**	**29**	*e*P		**P**	**02 22 34.1**	**+1.5**
	5.6nm,1.5s							
IPM	**Ipoh**	**48.55**	**238**	*e*P		**P**	**02 22 31.3**	**-2.3**
	9.4nm,0.9s							
RC01	**Rabbit Creek A**	**48.79**	**37**	*e*P		**P**	**02 22 36.0**	**+1.1**
	30nm,1.7s							
TKM2	**Tokmak 2**	**49.01**	**298**	*e*P		**P**	**02 22 37.1**	**-0.2**
	5.6nm,1.0s							
MDM	**Murphy Dome**	**49.29**	**32**	*e*P		**P**	**02 22 40.2**	**+1.4**
	4.8nm,0.9s							
COLA	**College**	**49.45**	**32**	*e*P		**P**	**02 22 41.4**	**+1.5**
	28nm,0.3s							
CCB	**Clear Creek Bu**	**49.48**	**33**	*e*P		**P**	**02 22 41.5**	**+1.3**
	8.2nm,1.7s							
KSH	**Kashi**	**49.77**	**294**	*e*P		P	02 22 47.1	+4.2
KSH				PcS		**PcS**	**02 28 00.4**	**-0.2**
KSH				S		**S**	**02 29 51.9**	**+0.1**
KSH				pmax		pmax		
	comp=Z,190nm,5.8s							
KSH				LR		LR		
	comp=N,150nm,6.1s							
KSH				LR		LR		
	comp=E,150nm,10.9s							
KSH				LR		LR		
	comp=Z,260nm,9.6s							
ILAR	**Eielson Array**	**49.87**	**32**	P		**P**	**02 22 43.0**	**-0.2**
	2.5nm,0.8s,baz=269,slow=7.0,SNR=17							
ILB	**Eielson Array**	**49.87**	**32**	*e*P		**P**	**02 22 43.4**	**+0.2**
AAK	**Ala-Archa**	**49.87**	**298**	P		**P**	**02 22 44.0**	**+0.3**
	0.8nm,0.5s,baz=174,slow=1.1,SNR=3.8							
AAK	**Ala-Archa**	**49.87**	**298**	*e*P		**P**	**02 22 43.1**	**-0.7**
	7.6nm,1.8s							
BVAR	**Borovoye Array**	**50.05**	**312**	P		**P**	**02 22 44.8**	**0.0**
	1.5nm,0.7s,baz=114,slow=4.5,SNR=9.3							
BVAR				PcP		**PcP**	**02 24 04.5**	**+0.1**
	1.0nm,0.6s,baz=116,slow=3.4,SNR=5.3							
BRVK	**Borovoye**	**50.11**	**312**	*e*P		**P**	**02 22 44.9**	**-0.3**
	3.5nm,1.0s							
EKS2	**Erkin-Say**	**50.37**	**298**	*e*P		**P**	**02 22 47.2**	**-0.2**
	11nm,1.9s							
FYU	**Fort Yukon**	**50.46**	**30**	*e*P		**P**	**02 22 49.0**	**+1.5**
	7.0nm,0.8s							
DIV	**Divide**	**50.70**	**37**	*e*P		**P**	**02 22 51.5**	**+1.9**
	23nm,1.6s							
PSI	**Prapat**	**51.19**	**238**	*e*P		**P**	**02 22 53.0**	**-1.0**
	6.3nm,1.1s							
KKAR	**Karatay Array**	**52.52**	**300**	*e*P		**P**	**02 23 03.1**	**-0.3**
GSI	**Gunungsitoli**	**53.20**	**238**	*e*P		**P**	**02 23 07.9**	**-0.8**
	14nm,1.0s							
CISI	**Cisompet, Garu**	**53.91**	**222**	*e*P		**P**	**02 23 13.1**	**-0.7**
	68nm,1.5s							
YKU2	**Yakutat**	**53.97**	**38**	*e*P		**P**	**02 23 14.9**	**+1.2**
	1μm,1.4s							
INK	**Inuvik**	**54.71**	**27**	P		**P**	**02 23 19.6**	**+0.6**
	1.6nm,0.9s,baz=239,slow=5.5,SNR=5.6							
INK	**Inuvik**	**54.71**	**27**	*e*P		**P**	**02 23 19.2**	**+0.2**
	0.7nm,0.6s							
ARU	**Arti**	**55.90**	**318**	P		**P**	**02 23 27.9**	**+0.1**
	1.1nm,0.3s,baz=116,slow=4.6,SNR=4.1							
ARU	**Arti**	**55.90**	**318**	*e*P		**P**	**02 23 27.2**	**-0.5**
	4.4nm,1.1s							
WRAB	**Tennant Creek**	**56.96**	**187**	*e*P		**P**	**02 23 34.9**	**-0.8**
	2.2nm,0.6s							
WB2	**Warramunga Arr**	**56.97**	**187**	*e*P		**P**	**02 23 35.8**	**0.0**
	6.1nm,0.7s							
WRA	**Warramunga Arr**	**56.97**	**187**	P		**P**	**02 23 35.3**	**-0.4**
	4.8nm,0.6s,baz=3.9,slow=7.3,SNR=46							
ABKAR	**Akbulak array**	**57.40**	**310**	*e*P		**P**	**02 23 38.6**	**0.0**
	2.8nm,0.6s							
AKTO	**Aktyubinsk**	**58.15**	**312**	P		**P**	**02 23 43.6**	**-0.2**
	1.7nm,0.8s,baz=216,slow=21,SNR=2.4							
AS01	**Alice Springs**	**60.69**	**187**	*e*P		**P**	**02 24 01.6**	**0.0**
ASAR	**Alice Springs**	**60.70**	**187**	P		**P**	**02 24 01.6**	**-0.1**
	2.0nm,0.7s,baz=14,slow=6.9,SNR=15							
RES	**Resolute Bay**	**62.77**	**14**	*e*P		**P**	**02 24 14.5**	**-0.5**
	0.6nm,0.6s							
GEYT	**Alibeck**	**63.22**	**299**	P		**P**	**02 24 19.4**	**+0.7**
	2.0nm,0.6s,baz=64,slow=7.4,SNR=3.7							
ARCES	**ARCESS Array B**	**63.75**	**339**	P		**P**	**02 24 21.5**	**-0.1**
	0.7nm,0.5s,baz=32,slow=7.5,SNR=7.6							
YKA	**Yellowknife Ar**	**64.16**	**30**	P		**P**	**02 24 24.1**	**-0.2**
	0.6nm,0.7s,baz=304,slow=6.6,SNR=13							
YKA				PcP		**PcP**	**02 24 59.9**	**+0.6**
	0.2nm,0.8s,baz=305,slow=4.3,SNR=4.8							
FIA1	**FINESS Array S**	**68.49**	**332**	*e*P		**P**	**02 24 51.9**	**-0.2**
FINES	**FINESS Array B**	**68.49**	**332**	P		**P**	**02 24 51.6**	**-0.5**
	3.0nm,0.8s,baz=57,slow=7.0,SNR=10							
KBZ	**Khabaz**	**70.37**	**310**	P		**P**	**02 25 04.5**	**+0.5**
	1.7nm,0.9s,baz=47,slow=2.1,SNR=3.6							
NEW	**Newport**	**70.62**	**44**	P		**P**	**02 25 06.1**	**+0.6**
	baz=304							
N02D	**Trinity Center**	**71.31**	**53**	P		**P**	**02 25 10.8**	**+0.9**
	baz=303							
AKASG	**Malin Array Be**	**73.87**	**322**	P		**P**	**02 25 24.3**	**-0.5**
	0.8nm,0.5s,baz=47,slow=5.8,SNR=8.0							
NB2	**NORSAR Subarra**	**73.92**	**337**	P		**P**	**02 25 24.5**	**-0.5**
	comp=Z,2.4nm,0.8s,baz=42,slow=6.2							
NOA	**NORSAR Array B**	**73.92**	**337**	P		**P**	**02 25 24.9**	**-0.1**
	comp=Z,2.0nm,0.8s,baz=39,slow=5.9,SNR=6.5							
FFC	**Flin Flon**	**74.08**	**32**	*e*P		**P**	**02 25 26.6**	**+0.6**
	comp=Z,18nm,1.9s							
LRM	**Limpkiln Ridge**	**74.64**	**44**	*e*P		**P**	**02 25 31.0**	**+1.2**
HLID	**Hailey**	**74.88**	**47**	P		**P**	**02 25 31.9**	**+0.8**
	baz=307							
BOZ	**Bozeman (W)**	**75.20**	**44**	P		**P**	**02 25 33.3**	**+0.4**
	baz=308							
BOZ	**Bozeman (W)**	**75.20**	**44**	*e*P		**P**	**02 25 33.7**	**+0.8**
	comp=Z,3.0nm,0.9s							
NVAR	**Mina Array Bea**	**75.55**	**53**	P		**P**	**02 25 35.8**	**+0.6**
	comp=Z,1.2nm,0.7s,baz=292,slow=6.1,SNR=11							
NV01	**Mina Array Sit**	**75.55**	**53**	*e*P		**P**	**02 25 35.8**	**+0.6**
H17A	**Grant Village**	**76.56**	**44**	P		**P**	**02 25 42.0**	**+1.1**
	baz=309							
H17A	**Grant Village**	**76.56**	**44**	*e*P		**P**	**02 25 43.3**	**+2.4**
	comp=Z,3.3nm,0.8s							
GRAC	**Grapevine Rang**	**76.99**	**53**	P		**P**	**02 25 44.2**	**+1.0**
	baz=307							
R11A	**Troy Canyon, C**	**77.31**	**51**	P		**P**	**02 25 45.8**	**+0.7**
	baz=307							
R11A	**Troy Canyon, C**	**77.31**	**51**	*e*P		**P**	**02 25 46.1**	**+1.0**
	comp=Z,2.2nm,1.0s							
TPNV	**Topopah Spring**	**77.74**	**53**	P		**P**	**02 25 47.9**	**+0.4**
	baz=307							
TPNV	**Topopah Spring**	**77.74**	**53**	*e*P		**P**	**02 25 48.4**	**+0.9**
	comp=Z,13nm,1.8s							
SNCC	**San Nicolas Is**	**77.79**	**58**	P		**P**	**02 25 48.5**	**+0.9**
	baz=306							
EDW2	**Edwards Air Fo**	**77.85**	**56**	P		**P**	**02 25 48.9**	**+0.9**
	baz=307							
BUR08	**Bucovina Ar. S**	**77.86**	**321**	*e*P		**P**	**02 25 48.7**	**+0.8**
DUG	**Dugway, Tooele**	**77.88**	**49**	P		**P**	**02 25 48.9**	**+0.7**
	baz=308							
BW06	**Boulder Array**	**78.16**	**45**	P		**P**	**02 25 49.6**	**-0.2**
	baz=310							
BW06	**Boulder Array**	**78.16**	**45**	*e*P		**P**	**02 25 49.6**	**-0.2**
PD31	**Pinedale Array**	**78.16**	**45**	*e*P		**P**	**02 25 50.2**	**+0.4**
PDAR	**Pinedale Array**	**78.16**	**45**	P		**P**	**02 25 50.0**	**+0.2**
	comp=Z,0.9nm,0.7s,baz=274,slow=2.9,SNR=9.6							
BRTR	**Keskin Array B**	**78.33**	**311**	P		**P**	**02 25 51.0**	**+0.4**
	comp=Z,0.8nm,0.8s,baz=104,slow=2.6,SNR=3.9							
TUQ	**Turquoise Moun**	**78.86**	**54**	P		**P**	**02 25 54.2**	**+0.5**
	baz=308							
LCMT	**Little Creek M**	**79.60**	**51**	*e*P		**P**	**02 25 59.4**	**+1.7**
	comp=Z,3.0nm,0.9s							
SRU	**San Rafael Swe**	**79.94**	**48**	*e*P		**P**	**02 26 00.5**	**+0.9**
	comp=Z,4.0nm,0.9s							
H27A	**Howes**	**80.96**	**40**	P		**P**	**02 26 05.0**	**+0.2**
	baz=314							
I27A	**Quinn**	**81.37**	**40**	P		**P**	**02 26 07.1**	**+0.2**
	baz=314							
WUAZ	**Wupatki**	**81.71**	**52**	P		**P**	**02 26 09.9**	**+0.8**
	baz=310							
GERES	**GERESS Array B**	**82.34**	**328**	P		**P**	**02 26 11.7**	**-0.4**
	comp=Z,0.4nm,0.4s,baz=39,slow=8.6,SNR=4.6							
C35A	**Jirik Farms, M**	**82.62**	**34**	P		**P**	**02 26 13.0**	**-0.4**
	baz=319							
S22A	**4UR Ranch, Cre**	**83.02**	**47**	P		**P**	**02 26 17.0**	**+0.9**
	baz=312							
H33A	**Prehn Over Nor**	**83.59**	**37**	P		**P**	**02 26 18.6**	**+0.1**
	baz=318							
C38A	**Sawbill Land.**	**83.79**	**32**	P		**P**	**02 26 19.0**	**-0.5**
	baz=321							
E36A	**McGregor**	**83.84**	**34**	P		**P**	**02 26 19.5**	**-0.2**
	baz=320							
TUC	**Tucson**	**84.15**	**54**	P		**P**	**02 26 21.9**	**+0.2**
	baz=310							
ECSD	**EROS Data Cent**	**84.35**	**38**	P		**P**	**02 26 21.7**	**-0.7**
	baz=318							
MNTX	**Cornudas Mount**	**87.98**	**51**	P		**P**	**02 26 40.8**	**+0.3**
	baz=313							
TX31	**Lajitas Ar. Si**	**90.67**	**52**	*e*P		**P**	**02 26 53.9**	**+0.6**
TXAR	**Lajitas Array**	**90.67**	**52**	P		**P**	**02 26 53.2**	**-0.1**
	comp=Z,0.8nm,0.8s,baz=297,slow=3.2,SNR=9.6							
LPAZ	**La Paz**	**147.29**	**59**	PKPbc		**PKPbc**	**02 33 34.7**	**-0.3**
	comp=Z,3.5nm,0.8s,baz=10.0,slow=5.6,SNR=15							

JMA 12 02:15:39.5,37˚.10N×140˚.63E,h13km±1km,M3.5,2C-3D, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.14**	**89**	⇓P		Pg	02 15 43.2	+0.2
ONAJ				S		Sg	02 15 45.6	+0.1
JFT	**Otama**	**0.48**	**331**	⇑P		Pg	02 15 49.1	+0.1
JFT				S		Sg	02 15 55.5	+0.1
JHO	**Hitachi**	**0.49**	**186**	⇑P		Pg	02 15 49.0	-0.2
JHO				S		Sg	02 15 55.5	-0.2
JSB	**Shiboa**	**0.58**	**257**	⇓P		Pb	02 15 51.4	-0.2
JSB				S		Sg	02 15 58.9	+0.2
JMM	**Marumori**	**0.78**	**10**	P		Pg	02 15 54.0	-0.6
JMM				S		Sg	02 16 04.5	-0.2
JFY	**Yanaizu**	**0.80**	**293**	⇓P		Pg	02 15 54.8	-0.2
JFY				S		Sg	02 16 04.9	-0.6

IDC ***12*** *02:18:29.6±3.0,35˚.60N×141˚.87E,h0km,mb3.6/3, mb1 3.7/4,mb1mx3.3/37,mbtmp3.5/4,ML3.3/1,Error ellipse: s-maj=90.4km s-min=29.6km az=61.0*

ISCJB ***12*** *02:18:33.7±1.4,35˚.41N±0˚.06×141˚.2E±0˚.1,h25km, mb3.6/3,Error ellipse: s-maj=16.4km s-min=6.8km az=159.5*

JMA ***12*** *02:18:35.8±0.1,35˚.41N×141˚.01E,h24km±2km,M3.5*

JMA Felt I J1.

ISC 12 02:18:34.4±2.1,35˚.44N±0˚.07×141˚.1E±0˚.1,h25km,n18, σ0°63/11,mb3.7/3,4D,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.33**	**322**	⇓P		**Pn**	**02 18 42.9**	**-0.6**
CHOJ				S		**Sb**	**02 18 48.2**	**+1.3**
KTR	**Katsuura**	**0.71**	**246**	⇓P		**Pn**	**02 18 48.3**	**-0.5**
JCN	**Nagara**	**0.74**	**268**	P		**Pn**	**02 18 48.8**	**-0.4**
BSO4	**Boso 4**	**0.77**	**234**	P		**Pn**	**02 18 49.3**	**-0.3**
BSO1	**Boso 1**	**

MAT				S	**Sb**	02 24 57.6	**+1.4**		
JHJ	**Hachijo jima 2**	**2.43**	**200**	Pn	Pn	02 24 19.1	-5.0		
	34nm,0.3s,baz=92,slow=17,SNR=2.9								
JHJ				Sn	**Sn**	**02 24 50.7**	**-3.2**		
	53nm,0.3s,baz=67,slow=21,SNR=2.5								
ERM	**Erimo**	**6.85**	**15**	*e*Pn	**Pn**	**02 25 23.6**	**-1.1**		
ERM				*e*S	**Sn**	**02 26 40.2**	**-2.5**		
KSRS	**Korea Array**	**10.55**	**285**	Pn	Pn	02 26 20.9	+5.4		
	0.1nm,0.3s,baz=286,slow=28,SNR=3.3								
KSRS				LR	LR	02 30 24.3			
	comp=Z,218nm,19.3s,baz=270,slow=38								
KSAR	**Wonju Array Be**	**10.58**	**285**	Pn	Pn	02 26 20.9	+5.0		
USRK	**Ussuriysk Ar.**	**11.06**	**325**	Pn	**Pn**	**02 26 25.3**	**+2.8**		
	0.1nm,0.3s,baz=145,slow=12,SNR=3.2								
KLR	**Kul'dur**	**15.32**	**337**	Pn	**Pn**	**02 27 20.4**	**0.0**		
	0.1nm,0.3s,baz=84,slow=11,SNR=2.2								
H11N2	**WAKE ISLAND Hy**	**27.82**	**117**	T	T	02 58 25.7			
	baz=310,slow=76,SNR=159								
H11N1	**WAKE ISLAND Hy**	**27.83**	**117**	T	T	02 58 30.1			
	baz=310,slow=76,SNR=204								
H11N3	**WAKE ISLAND Hy**	**27.84**	**117**	T	T	02 58 38.1			
	baz=310,slow=76,SNR=208								
SONM	**Songino Array**	**28.29**	**307**	P	**P**	**02 29 38.2**	**+0.3**		
	0.7nm,0.6s,baz=104,slow=10,SNR=2.5								
H11S1	**WAKE ISLAND Hy**	**28.47**	**119**	T	T	02 59 17.8			
	baz=312,slow=76,SNR=488								
H11S3	**WAKE ISLAND Hy**	**28.47**	**120**	T	T	02 59 23.9			
	baz=312,slow=76,SNR=421								
SEY	**Seymchan**	**28.48**	**11**	P	**P**	**02 29 39.2**	**0.0**		
	0.6nm,0.4s,baz=251,slow=3.9,SNR=3.0								
H11S2	**WAKE ISLAND Hy**	**28.48**	**120**	T	T	02 59 22.2			
	baz=312,slow=76,SNR=339								
ZALV	**Zalesovo Beam**	**42.64**	**314**	P	**P**	**02 31 40.6**	**0.0**		
	0.9nm,0.5s,baz=88,slow=4.7,SNR=3.5								
MKAR	**Makanchi Array**	**44.55**	**303**	P	**P**	**02 31 56.4**	**+0.1**		
	0.7nm,0.6s,baz=85,slow=10,SNR=7.0								
KURK	**Kurchatov**	**46.53**	**309**	*e*P	**P**	**02 32 10.9**	**-0.9**		
	9.6nm,0.8s								
ILAR	**Eielson Array**	**51.14**	**32**	P	**P**	**02 32 46.0**	**-0.9**		
	0.7nm,0.7s,baz=269,slow=6.2,SNR=8.2								
KKAR	**Karatay Array**	**53.50**	**301**	*e*P	**P**	**02 33 05.3**	**+0.5**		
	2.0nm,1.1s								
WRA	**Warramunga Arr**	**55.39**	**187**	P	**P**	**02 33 17.4**	**-1.3**		
	0.9nm,0.5s,baz=2.9,slow=7.5,SNR=11								
INK	**Inuvik**	**56.06**	**27**	P	**P**	**02 33 24.9**	**+2.0**		
	0.5nm,0.6s,baz=355,slow=3.7,SNR=5.0								
ABKAR	**Akbulak array**	**58.59**	**311**	*e*P	**P**	**02 33 40.8**	**-0.3**		
	0.4nm,0.2s								
ASAR	**Alice Springs**	**59.12**	**187**	P	**P**	**02 33 43.4**	**-1.6**		
	0.2nm,0.5s,baz=357,slow=6.5,SNR=3.1								
AKTO	**Aktyubinsk**	**59.38**	**313**	LR	LR	02 59 30.5			
	comp=Z,184nm,18.3s,slow=36								
RES	**Resolute Bay**	**64.30**	**14**	*e*P	**P**	**02 34 19.3**	**0.0**		
	2.0nm,1.0s								
YKA	**Yellowknife Ar**	**65.47**	**30**	P	**P**	**02 34 25.9**	**-1.2**		
	0.3nm,0.8s,baz=302,slow=6.6,SNR=5.0								
FINES	**FINESS Array B**	**70.00**	**332**	P	**P**	**02 34 56.1**	**+0.4**		
	0.6nm,0.7s,baz=67,slow=4.7,SNR=3.2								
AKASG	**Malin Array Be**	**75.26**	**322**	P	**P**	**02 35 27.1**	**-0.1**		
	0.2nm,0.3s,baz=46,slow=5.5,SNR=3.6								
NB2	**NORSAR Subarra**	**75.47**	**337**	P	**P**	**02 35 30.4**	**+2.1**		
	comp=Z,1.1nm,0.8s,baz=40,slow=5.6								
NOA	**NORSAR Array B**	**75.47**	**337**	P	**P**	**02 35 28.3**	**-0.1**		
	comp=Z,0.9nm,0.8s,baz=40,slow=5.8,SNR=4.6								
NVAR	**Mina Array Bea**	**76.38**	**53**	P	**P**	**02 35 34.6**	**+0.5**		
	comp=Z,0.4nm,0.7s,baz=290,slow=6.3,SNR=3.9								
PDAR	**Pinedale Array**	**79.17**	**45**	P	**P**	**02 35 50.6**	**+0.9**		
	comp=Z,0.3nm,0.6s,baz=273,slow=2.7,SNR=3.7								
TXAR	**Lajitas Array**	**91.52**	**52**	P	**P**	**02 36 52.6**	**+1.1**		
	comp=Z,0.3nm,0.7s,baz=286,slow=4.7,SNR=4.3								
LPAZ	**La Paz**	**147.95**	**61**	PKPbc	**PKPbc**	**02 43 30.7**	**-0.4**		
	comp=Z,0.6nm,0.7s,baz=11,slow=13,SNR=2.6								

JMA 12 02:28:50.4,36.89N×140.70E,h6km±1km,M2.8,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JHO	**Hitachi**	**0.30**	**201**	P	Pg	02 28 56.4	+0.2
JHO				S	Sg	02 29 00.7	+0.6
JFT	**Otama**	**0.69**	**335**	P	Pg	02 29 03.8	+0.1
JFT				S	Sg	02 29 12.9	+0.2
JMM	**Marumori**	**0.98**	**4**	P	Pg	02 29 08.0	-0.6
JMM				S	Sg	02 29 21.5	-0.4
MAT	**Matsushiro**	**2.03**	**261**	P	Pn	02 29 25.8	+0.6
MAT				S	Sb	02 29 53.3	0.0

ISK ***12*** *02:36:44.7,39.53N×25.96E,h2km,ML1.9*
ATH ***12*** *02:36:45.6,39.52N×26.05E,h4km±4km,ML1.7/3,Error ellipse: s-maj=4.9km s-min=0.8km az=100.0*
ISCJB ***12*** *02:36:45.6±0.5,39.51N±0.02×26.03E±0.04,h3km±5km, Error ellipse: s-maj=5.8km s-min=3.0km az=172.0*
CSEM ***12*** *02:36:45.7±0.1,39.52N×26.03E,h2km,ML1.7, Error ellipse: s-maj=3.4km s-min=2.0km az=79.0*
THE ***12*** *02:36:45.8,39.51N×26.03E,h3km±1km,ML1.8/3,Error ellipse: s-maj=1.6km s-min=0.4km az=230.0*
DDA ***12*** *02:36:46.3,39.54N×26.12E,h7km,Md2.6*
ISC 12 02:36:45.3±0.9,39.53N±0.02×26.03E±0.03,h14km±7km, n52,σ0°40/77,Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
BOZC	**Bozcaada**	**0.32**	**4**	*i* P	**Pb**	**02 36 52.4**	**-0.4**
BOZC				*i* S	**Sb**	**02 36 57.4**	**-0.4**
PRK	**Paraskevi**	**0.34**	**146**	P	**Pg**	**02 36 52.0**	**-0.2**
PRK				S	**Sg**	**02 36 57.0**	**0.0**
PRK	**Paraskevi**	**0.34**	**146**	P	**Pg**	**02 36 52.5**	**+0.3**
PRK				S	**Sg**	**02 36 56.9**	**0.0**
PRK	**Paraskevi**	**0.34**	**146**	P	**Pg**	**02 36 52.5**	**+0.3**
PRK				S	**Sg**	**02 36 56.9**	**0.0**
PRK				AML	AML	02 36 57.2	
	comp=N,403μm,0.2s						
PRK				AML	AML	02 36 57.3	
	comp=E,450μm,0.2s						
SIGR	**SIGRI**	**0.34**	**203**	*e*PG	**Pg**	**02 36 52.1**	**-0.2**
SIGR				*e*SG	**Sg**	**02 36 57.2**	**+0.2**
SIGR	**SIGRI**	**0.34**	**203**	P	**Pg**	**02 36 52.1**	**-0.2**
SIGR				S	**Sg**	**02 36 57.2**	**+0.2**
SIGR	**SIGRI**	**0.34**	**203**	P	**Pg**	**02 36 52.1**	**-0.2**
SIGR				S	**Sg**	**02 36 57.2**	**+0.2**
SIGR	**SIGRI**	**0.34**	**203**	P	**Pg**	**02 36 52.0**	**-0.3**
SIGR				S	**Sg**	**02 36 56.3**	**-0.7**
SIGR				AML	AML	02 36 57.6	
	comp=E,593μm,0.2s						
SIGR				AML	AML	02 36 57.9	
	comp=N,460μm,0.2s						
EZN	**Ezine**	**0.38**	**38**	*e*PG	**Pg**	**02 36 53.0**	**+0.1**
EZN	**Ezine**	**0.38**	**38**	*e*Pg	**Pg**	**02 36 53.0**	**+0.1**
AYVA	**Ayvalik**	**0.56**	**113**	*i* P	**Pg**	**02 36 56.3**	**0.0**
AYVA	**Ayvalik**	**0.56**	**113**	P	**Pg**	**02 36 56.3**	**0.0**
GADA	**Gvkgeada**	**0.67**	**352**	*e*PG	**Pg**	**02 36 58.6**	**+0.1**
GADA	**Gvkgeada**	**0.67**	**352**	P	**Pg**	**02 36 58.5**	**+0.1**
GADA				S	**Sb**	**02 37 08.1**	**+0.1**
GADA	**Gvkgeada**	**0.67**	**352**	*e*Pg	**Pg**	**02 36 58.6**	**+0.1**
GADA				S	**Sb**	**02 37 08.1**	**+0.1**
LIA	**Limnos Island**	**0.75**	**300**	P	**Pb**	**02 37 00.4**	**+0.3**
LIA				S	**Sn**	**02 37 11.7**	**-0.9**
LIA	**Limnos Island**	**0.75**	**300**	P	**Pb**	**02 37 00.4**	**+0.3**
LIA				S	**Sn**	**02 37 11.7**	**-0.9**
DKL	**Dikili**	**0.82**	**123**	*e*PG	**Pn**	**02 37 02.3**	**-0.1**
DKL	**Dikili**	**0.82**	**123**	*e*Pg	**Pn**	**02 37 02.3**	**-0.1**
GELI	**Tayfur-Gelibol**	**0.94**	**21**	*e*PG	**Pb**	**02 37 03.3**	**0.0**
GELI	**Tayfur-Gelibol**	**0.94**	**21**	*e*Pg	**Pb**	**02 37 03.3**	**0.0**
SMTH	**Samothraki Isl**	**1.02**	**338**	P	**Pn**	**02 37 05.3**	**+0.1**
SMTH				S	**Sn**	**02 37 19.9**	**+0.6**
SMTH	**Samothraki Isl**	**1.02**	**338**	P	**Pn**	**02 37 05.3**	**+0.1**
SMTH				S	**Sn**	**02 37 19.0**	**-0.3**
SMTH	**Samothraki Isl**	**1.02**	**338**	P	**Pn**	**02 37 05.6**	**+0.4**
SMTH				S	**Sn**	**02 37 18.9**	**-0.3**
CHOS	**Chios island**	**1.14**	**179**	P	**Pb**	**02 37 06.6**	**-0.2**
CHOS				S	**Sn**	**02 37 23.0**	**+0.7**
CHOS	**Chios island**	**1.14**	**179**	P	**Pb**	**02 37 06.6**	**-0.2**
CHOS				S	**Sn**	**02 37 23.0**	**+0.7**
CHOS	**Chios island**	**1.14**	**179**	P	**Pb**	**02 37 06.6**	**-0.2**
ERIK	**Erikli-Kesan**	**1.20**	**18**	*e*PN	**Pg**	**02 37 08.7**	**+0.2**
ERIK	**Erikli-Kesan**	**1.20**	**18**	*e*Pn	**Pg**	**02 37 08.7**	**+0.2**
ENEZ	**Enez**	**1.21**	**5**	*e*PN	**Pg**	**02 37 09.0**	**+0.3**
ENEZ	**Enez**	**1.21**	**5**	P	**Pg**	**02 37 09.0**	**+0.3**
ENEZ	**Enez**	**1.21**	**5**	P	**Pg**	**02 37 09.0**	**+0.3**
URLA	**Izmir**	**1.25**	**159**	*i* P	Pn	02 36 59.9	-8.5
URLA				*i* S	**Sb**	**02 37 23.9**	**-0.6**
ZEY	**˙zmir**	**1.34**	**164**	*i* P	**Pn**	**02 37 09.1**	**-0.5**
ALN	**Alexandroupoli**	**1.37**	**1**	*e*PN	**Pg**	**02 37 11.5**	**-0.1**
ALN	**Alexandroupoli**	**1.37**	**1**	P	**Pb**	**02 37 11.2**	**+0.5**
ALN				S	**Sg**	**02 37 30.1**	**+0.6**
ALN	**Alexandroupoli**	**1.37**	**1**	P	**Pb**	**02 37 11.2**	**+0.5**
ALN	**Alexandroupoli**	**1.37**	**1**	*e*Pn	**Pg**	**02 37 11.5**	**-0.1**
ALN				S	**Sg**	**02 37 29.3**	**-0.2**
ALN	**Alexandroupoli**	**1.37**	**1**	P	**Pb**	**02 37 11.1**	**+0.3**
ALN				S	**Sg**	**02 37 29.3**	**-0.2**
ALN				AML	AML	02 37 30.6	
	comp=E,29μm,0.3s						
ALN				AML	AML	02 37 30.9	
	comp=N,44μm,0.4s						
BLCB	**Balcova**	**1.39**	**145**	*e*PN	**Pg**	**02 37 12.5**	**+0.5**
BLCB	**Balcova**	**1.39**	**145**	*e*Pn	**Pg**	**02 37 12.5**	**+0.5**
KESN	**Edirne-Kesan**	**1.39**	**21**	*i* P	**Pg**	**02 37 12.2**	**+0.1**
KESN				*i* S	**Sg**	**02 37 30.3**	**0.0**
KESN	**Edirne-Kesan**	**1.39**	**21**	P	**Pg**	**02 37 12.2**	**+0.1**
KESN				S	**Sg**	**02 37 30.3**	**0.0**
RKY	**Sarkoy-Tekirda**	**1.46**	**37**	*e*PN	**Pg**	**02 37 13.3**	**-0.1**
RKY	**Sarkoy-Tekirda**	**1.46**	**37**	*e*Pn	**Pg**	**02 37 13.3**	**-0.1**
SART	**Tekirdag**	**1.46**	**37**	*i* P	**Pg**	**02 37 12.8**	**-0.5**
SART				*i* S	**Sg**	**02 37 32.8**	**+0.4**
SART	**Tekirdag**	**1.46**	**37**	P	**Pg**	**02 37 12.9**	**-0.5**
SART				S	**Sg**	**02 37 32.8**	**+0.4**
MRMT	**Marmara Adasi**	**1.61**	**48**	*e*PN	**Pg**	**02 37 15.7**	**-0.7**
MRMT	**Marmara Adasi**	**1.61**	**48**	*e*Pn	**Pg**	**02 37 15.7**	**-0.7**
EDC	**Edincik**	**1.63**	**59**	*e*PN	**Pg**	**02 37 16.5**	**-0.2**
EDC	**Edincik**	**1.63**	**59**	*e*Pn	**Pg**	**02 37 16.5**	**-0.2**
SMG	**Samos**	**1.92**	**160**	P	**Pg**	**02 37 22.5**	**+0.3**
SMG				S	**Sg**	**02 37 48.6**	**+1.4**

ISCJB ***12*** *02:50:51.5±0.7,36.93N±0.03×140.74E±0.06,h15km±6km, mb3.5/4,Error ellipse: s-maj=8.0km s-min=4.8km az=17.1*
IDC ***12*** *02:50:51.2±1.1,36.73N×140.68E,h0km,mb3.4/4, mb1 3.7/4,mb1mx3.4/48,mbtmp3.4/4,Error ellipse: s-maj=26.3km s-min=15.8km az=174.0*
JMA ***12*** *02:50:52.1,36.95N×140.65E,h9km±1km,M3.5 Broadband fault plane solution: P waves. NP1: ϕs198.00000°,δ51.00000°,λ-97.00000°. NP2:ϕs29.00000°, δ39.00000°,λ-82.00000°. Principal axes: T Plg6.0000°, Azm293.0000°; N Plg5.0000°, Azm202.0000°; P Plg82.0000°, Azm73.0000°;*
JMA Felt I J1.
ISC 12 02:50:51.8±1.0,36.97N±0.03×140.59E±0.05,h9km±9km, n18,σ0°58/20,mb3.6/4,5C,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.21**	**52**	⇑P	**Pg**	**02 50 56.3**	**+0.1**
ONAJ				S	**Sg**	**02 50 59.1**	**-0.1**
JHO	**Hitachi**	**0.36**	**182**	⇑P	**Pg**	**02 50 58.9**	**+0.1**
JHO				S	**Sg**	**02 51 03.5**	**0.0**
JSB	**Shiboa**	**0.53**	**270**	⇑P	**Pb**	**02 51 04.0**	**+0.7**
JSB				S	**Sb**	**02 51 12.1**	**+0.9**
JFT	**Otama**	**0.58**	**340**	⇑P	**Pb**	**02 51 04.1**	**-0.1**
JFT				S	**Sb**	**02 51 12.4**	**-0.2**
JYT	**Yasato**	**0.81**	**203**	P	**Pg**	**02 51 07.3**	**+0.1**
JYT				S	**Sg**	**02 51 16.5**	**+0.2**
JFY	**Yanaizu**	**0.83**	**302**	⇑P	**Pb**	**02 51 08.7**	**+0.3**
JFY				S	**Sb**	**02 51 20.1**	**+0.4**
JMM	**Marumori**	**0.91**	**10**	P	**Pg**	**02 51 09.2**	**-0.1**
JMM				S	**Sg**	**02 51 21.0**	**-0.1**
MJAR	**Matsushiro Arr**	**1.96**	**258**	Pg	**Pb**	**02 51 26.6**	**-1.0**
	15nm,0.3s,baz=82,slow=15,SNR=32						
MJAR				Lg	Lg	02 51 52.4	
	26nm,0.3s,baz=39,slow=45,SNR=17						
MAT	**Matsushiro**	**1.96**	**258**	P	**Pb**	**02 51 27.1**	**-0.5**
MAT				S	**Sg**	**02 51 53.9**	**-0.8**
USRK	**Ussuriysk Ar.**	**9.74**	**321**	Pn	Pn	02 53 18.9	+6.9
	0.2nm,0.3s,baz=79,slow=12,SNR=4.1						
H11N3	**WAKE ISLAND Hy**	**28.70**	**120**	T	T	03 27 01.5	
	SNR=42						
H11S1	**WAKE ISLAND Hy**	**29.39**	**122**	T	T	03 27 28.1	
	baz=314,slow=76,SNR=28						
H11S3	**WAKE ISLAND Hy**	**29.39**	**122**	T	T	03 27 28.4	
	baz=314,slow=76,SNR=25						
H11S2	**WAKE ISLAND Hy**	**29.40**	**122**	T	T	03 27 26.2	
	baz=314,slow=76,SNR=20						
MKAR	**Makanchi Array**	**43.59**	**302**	P	P	02 59 00.3	+4.1
	0.2nm,0.2s,baz=89,slow=11,SNR=2.1						
WRA	**Warramunga Arr**	**56.91**	**187**	P	**P**	**03 00 36.6**	**-0.6**
	1.1nm,0.8s,baz=3.3,slow=7.4,SNR=10						
ASAR	**Alice Springs**	**60.64**	**187**	P	**P**	**03 01 02.4**	**-0.8**
	0.5nm,0.7s,baz=15,slow=6.5,SNR=4.8						
YKA	**Yellowknife Ar**	**64.19**	**30**	P	**P**	**03 01 27.3**	**+0.8**
	0.1nm,0.7s,baz=297,slow=6.4,SNR=2.8						

JMA 12 02:51:26.8±0.1,39.16N×142.61E,h28km±2km,M3.8, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
OFUJ	**Ofunato**	**0.74**	**264**	P	Pb	02 51 40.8	-0.3
OFUJ				S	Sb	02 51 50.3	-0.5
MIYJ	**Miyakonagasawa**	**0.74**	**304**	P	Pb	02 51 40.5	-0.6
MIYJ				*e*S	Sb	02 51 50.6	-0.3
JOM	**Ohasama**	**1.07**	**287**	P	Pn	02 51 46.0	+0.1
JOM				S	Sn	02 51 59.9	+0.1
JMK	**Ichinoseki**	**1.10**	**260**	P	Pn	02 51 46.5	+0.2
JMK				S	Sn	02 52 00.9	+0.3
JIO	**Ouri**	**1.21**	**235**	P	Pn	02 51 47.5	-0.3
JIO				S	Sn	02 52 02.2	-1.1
JKZ	**Kuzumaki**	**1.29**	**310**	P	Pn	02 51 49.6	+0.6
JKZ				S	Sb	02 52 06.2	-0.4
JANG	**Nango**	**1.48**	**326**	P	Pn	02 51 51.8	+0.3
JANG				S	Sn	02 52 10.4	+0.5
JRG	**Rokugo**	**1.55**	**279**	P	Pb	02 51 54.2	-0.7
MAT	**Matsushiro**	**4.36**	**235**	P	Pn	02 52 33.0	+1.9

SIGU ***12*** *02:55:25.5±0.4,49.79N±0.02×18.41E±0.02,h3km, mb2.9/10*
CSEM ***12*** *02:55:26.9±0.2,49.92N×18.41E,h2km,ML3.4/10,Error ellipse: s-maj=4.6km s-min=2.4km az=13.0*
ISCJB ***12*** *02:55:26.3±0.3,49.86N±0.02×18.33E±0.02,h0km,Error ellipse: s-maj=3.4km s-min=1.7km az=17.2*
IPEC ***12*** *02:55:27.3±0.2,49.83N×18.52E,h0km,ML3.0/3,Error ellipse: s-maj=2.1km s-min=1.1km az=161.0*
BGR ***12*** *02:55:27.6±0.5,49.92N×18.49E,h1km,ML3.3/2,Error ellipse: s-maj=7.8km s-min=6.7km az=8.0*
VIE ***12*** *02:55:28.6±0.8,49.68N×18.42E,h0km,mb2.6/4,Error ellipse: s-maj=7.9km s-min=3.6km az=33.0,Suspected Mining induced.*
PRU ***12*** *02:55:28.6,49.87N×18.37E,h0km*
IDC ***12*** *02:55:29.4±1.1,49.79N×18.34E,h0km,mb1 3.4/6, mb1mx3.2/48,mbtmp3.3/6,ML3.1/6,Error ellipse: s-maj=18.2km s-min=7.5km az=140.0*
ISC 12 02:55:27.4±0.6,49.86N±0.02×18.37E±0.01,h0km,n105, σ1°24/175,5C-11D,Czech and Slovak Republics

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
OKC	**Ostrava-Krasne**	**0.14**	**262**	*i* PG	**Pg**	**02 55 32.6**	**+2.4**
OKC				*e*SG	**Sg**	**02 55 35.3**	**+3.2**
	comp=Z,711nm,0.4s						
OKC	**Ostrava-Krasne**	**0.14**	**262**	Pg	**Pg**	**02 55 32.3**	**+2.1**
OKC				Sg	**Sg**	**02 55 35.3**	**+3.2**
	711nm,0.4s						
OKC	**Ostrava-Krasne**	**0.14**	**262**	*e*Pg	**Pg**	**02 55 32.3**	**+2.1**
MORC	**Moravsky Berou**	**0.54**	**262**	Pg	**Pb**	**02 55 39.4**	**-0.5**
MORC				*e*Sg	**Sb**	**02 55 47.1**	**-1.1**
	306nm,0.8s						
MORC	**Moravsky Berou**	**0.54**	**262**	*e*Pg	**Pb**	**02 55 39.4**	**-0.5**
MORC				*e*Sg	**Sb**	**02 55 47.8**	**-0.4**
CHZP	**Chorzow**	**0.59**	**43**	*e*Pg	**Pg**	**02 55 38.4**	**-0.4**
CHZP				*e*Sg	Sg	02 55 39.9	-6.5
OJC	**Ojcow**	**0.99**	**68**	*e*Pg	**Pg**	**02 55 44.9**	**-1.4**
OJC				*e*Sg	**Sg**	**02 55 57.3**	**-1.9**
OJC	**Ojcow**	**0.99**	**68**	Pg	**Pg**	**02 55 45.0**	**-1.4**
OJC				*e*Sg	**Sg**	**02 55 57.3**	**-1.9**
OJC	**Ojcow**	**0.99**	**68**	*e*Pg	**Pg**	**02 55 45.0**	**-1.4**
LANS	**Liptovska Anna**	**1.01**	**134**	*e*Pg	**Pg**	**02 55 46.5**	**-0.2**
LANS				*e*Sg	**Sg**	**02 56 00.5**	**+0.7**
LANS	**Liptovska Anna**	**1.01**	**134**	*e*PG	**Pg**	**02 55 46.5**	**-0.2**
LANS				*e*SG	**Sg**	**02 56 00.5**	**+0.7**
KRLC	**Kraliky**	**1.05**	**283**	*e*PG	**Pg**	**02 55 47.8**	**+0.3**
KRLC				*e*SG	**Sb**	**02 56 02.9**	**+0.1**
KRLC	**Kraliky**	**1.05**	**283**	Pg	**Pg**	**02 55 47.8**	**+0.3**
KRLC				Sg	**Sb**	**02 56 02.9**	**+0.1**
JAVC	**Velka Javorina**	**1.10**	**205**	Pg	**Pn**	**02 55 50.2**	**0.0**
JAVC				Sg	**Sn**	**02 56 07.7**	**+1.6**
JAVC	**Velka Javorina**	**1.10**	**205**	*e*Pg	**Pn**	**02 55 50.2**	**0.0**
JAVC				*e*Sg	**Sn**	**02 56 07.7**	**+1.6**
VRAC	**Vranov**	**1.28**	**245**	Pg	**Pn**	**02 55 52.8**	**+0.1**
	35nm,0.3s,baz=66,slow=15,SNR=125						
VRAC				Lg	Lg	02 56 10.9	
	24nm,0.3s,baz=342,slow=23,SNR=14						
VRAC	**Vranov**	**1.28**	**245**	⇑*i* P	**Pn**	**02 55 52.7**	**+0.1**
VRAC				S	**Sn**	**02 56 11.3**	**+0.8**
VRAC	**Vranov**	**1.28**	**245**	*e*Pg	**Pb**	**02 55 52.6**	**+0.1**
NIE	**Niedzica**	**1.33**	**109**	*e*Pg	**Pg**	**02 55 51.8**	**-1.1**
NIE				*e*SG	**Sg**	**02 56 10.5**	**+0.4**
NIE	**Niedzica**	**1.33**	**109**	*e*Pg	**Pg**	**02 55 51.8**	**-1.1**
NIE				*e*SG	**Sg**	**02 56 10.5**	**+0.4**
VYHS	**Vyhne**	**1.40**	**167**	*e*Pn	**Pg**	**02 55 53.3**	**-1.0**
VYHS				*e*Sn	**Sb**	**02 56 12.7**	**-0.2**
VYHS	**Vyhne**	**1.40**	**167**	*e*PN	**Pg**	**02 55 53.2**	**-1.0**
VYHS				*e*SN	**Sb**	**02 56 12.7**	**-0.2**
VYHS				*e*LG	Lg	02 56 14.7	
DPC	**Dobruska-Polom**	**1.41**	**291**	*e*PG	**Pg**	**02 55 54.5**	**+0.1**
DPC				*e*SG	**Sn**	**02 56 14.1**	**+0.4**
	comp=Z,69nm,0.3s						
DPC	**Dobruska-Polom**	**1.41**	**291**	Pg	**Pg**	**02 55 54.5**	**+0.1**
DPC				Sg	**Sn**	**02 56 14.1**	**+0.4**
	69nm,0.3s						
DPC	**Dobruska-Polom**	**1.41**	**291**	*e*Pg	**Pg**	**02 55 54.5**	**+0.1**
DPC				*e*Sg	**Sn**	**02 56 15.1**	**+1.5**
SMOL	**Smolenice**	**1.48**	**205**	*e*Pn	**Pn**	**02 55 55.3**	**0.0**
SMOL				*e*Sn	**Sn**	**02 56 15.5**	**+0.1**
SMOL	**Smolenice**	**1.48**	**205**	*e*PN	**Pn**	**02 55 55.3**	**0.0**
SMOL				*e*SN	**Sn**	**02 56 15.5**	**+0.1**
KRUC	**Moravsky**	**1.52**	**239**	Pg	**Pg**	**02 55 56.5**	**0.0**
KRUC				Sg	**Sn**	**02 56 17.6**	**+1.4**
KRUC	**Moravsky**	**1.52**	**239**	*e*Pg	**Pg**	**02 55 56.5**	**0.0**
KRUC				*e*Sg	**Sn**	**02 56 17.6**	**+1.4**
UPC	**Upice**	**1.65**	**294**	⇓*e*PG	**Pb**	**02 55 58.8**	**+0.1**
UPC				*e*SG	**Sg**	**02 56 20.9**	**+0.5**
	comp=Z,68nm,0.7s						
UPC	**Upice**	**1.65**	**294**	Pg	**Pb**	**02 55 58.8**	**+0.1**
UPC				Sg	**Sg**	**02 56 20.9**	**+0.5**
	68nm,0.7s						
KSP	**Ksiaz**	**1.66**	**307**	*e*Pn	**Pn**	**02 55 57.7**	**0.0**
KSP				*e*Pg	**Pg**	**02 56 00.1**	**+1.0**
KSP				*e*Sg	**Sg**	**02 56 22.1**	**+1.5**
KSP	**Ksiaz**	**1.66**	**307**	*e*Pn	**Pn**	**02 55 57.7**	**0.0**
STHS	**Stebnicka Huta**	**1.92**	**102**	*e*Pn	**Pn**	**02 56 02.6**	**+1.2**
STHS				*e*Sn	**Sg**	**02 56 29.9**	**+0.8**
STHS	**Stebnicka Huta**	**1.92**	**102**	*e*PN	**Pn**	**02 56 02.6**	**+1.2**
STHS				*e*SN	**Sg**	**02 56 29.9**	**+0.8**
STHS				*e*LG	Lg	02 56 32.6	
KECS	**Kecovo**	**1.96**	**134**	*e*Pg	**Pb**	**02 56 03.5**	**-0.4**
KECS				*e*Sn	**Sb**	**02 56 28.7**	**-0.1**
KECS	**Kecovo**	**1.96**	**134**	*e*PN	**Pn**	**02 56 00.7**	**-1.2**
KECS				*e*		02 56 03.5	
KECS	**Kecovo**	**1.96**	**134**	*e*SN	**Sb**	**02 56 28.7**	**-0.1**
KECS				*e*LG	Lg	02 56 32.2	
TREC	**Trest**	**1.96**	**254**	⇓*e*PN	**Pn**	**02 56 02.2**	**+0.3**
TREC				*e*PG	**Pb**	**02 56 04.0**	**0.0**
TREC				*e*SG	**Sg**	**02 56 31.3**	**+1.0**
	comp=Z,57nm,0.5s						
TREC	**Trest**	**1.96**	**254**	Pn	**Pn**	**02 56 02.2**	**

MEZ				*e*Sn		**Sg**	02 57 24.1	**0.0**
MORU	**Morshyn**	**3.67**	**99**	*e*Pn		**Pb**	02 56 35.1	**+2.1**
MORU				*e*Sn		**Sg**	02 57 25.2	**+0.1**
CLL	**Collm**	**3.71**	**295**	*e*Pn		**Pn**	02 56 26.0	**0.0**
CLL				*e*Pg		**Pg**	02 56 38.0	**-0.6**
CLL				*e*Sg		**Sg**	02 57 28.0	**+1.3**
	comp=Z,44nm,1.1s							
STNU	**Starunia**	**4.17**	**104**	*e*Pn		**Pb**	02 56 43.7	**+2.0**
STNU				*e*Sn		**Sg**	02 57 42.1	**+0.6**
SIRR	**Siria**	**4.22**	**147**	⇓*i*P		**Pn**	02 56 32.5	**-0.5**
SIRR	**Siria**	**4.22**	**147**	⇓*i*P		**Pn**	02 56 32.5	**-0.5**
DRGR		**4.22**	**135**	⇓*i*P		**Pn**	02 56 32.4	**-0.7**
DRGR		**4.22**	**135**	⇓*i*P		**Pn**	02 56 32.4	**-0.7**
DRGR				S		**Sn**	02 57 24.5	**+1.4**
RAKU	**Rahkiv**	**4.24**	**113**	*e*Pn		**Pb**	02 56 45.2	**+2.4**
RAKU				*e*Sn		**Sg**	02 57 44.0	**+0.5**
NSLU	**Nyzhne Selyshc**	**4.34**	**110**	*e*Pn		**Pn**	02 56 37.1	**+2.5**
NSLU				*e*Sn		**Sn**	02 57 27.3	**+1.5**
KSV	**Kosov**	**4.67**	**107**	*e*Pn		**Pb**	02 56 52.0	**+1.9**
KSV				Pmn			02 57 09.7	
KSV				*e*Sn		**Sg**	02 57 57.9	**+0.7**
KSV				Smn			02 58 24.5	
BZS	**Buzias**	**4.78**	**151**	⇓*i*P		**Pn**	02 56 40.6	**0.0**
BZS	**Buzias**	**4.78**	**151**	⇓*i*P		**Pn**	02 56 40.6	**0.0**
BZS				S		**Sn**	02 57 38.1	**+1.5**
BURAR	**Bucovina Array**	**5.06**	**114**	⇑*i*P		**Pn**	02 56 44.2	**-0.4**
BURAR	**Bucovina Array**	**5.06**	**114**	⇑*i*P		**Pn**	02 56 44.2	**-0.4**
BURAR				S		**Sn**	02 57 43.8	**+0.1**
SUW	**Suwalki**	**5.11**	**34**	*e*Pg		**Pb**	02 57 01.7	+4.0
SUW	**Suwalki**	**5.11**	**34**	*e*Pg		**Pb**	02 57 01.7	+4.0
HORU	**Horodok**	**5.29**	**94**	*e*Pn		**Pb**	02 57 05.2	+4.5
HORU				*e*Sn		**Sg**	02 58 19.8	**+2.6**
GZR	**Gura Zlata**	**5.37**	**145**	⇑*i*P		**Pn**	02 56 49.3	**+0.5**
GZR	**Gura Zlata**	**5.37**	**145**	⇑*i*P		**Pn**	02 56 49.3	**+0.5**
GZR				S		**Sn**	02 57 53.3	**+1.9**
KMPD	**K-Podol'skiy**	**5.46**	**101**	*e*Pn		Pb	02 57 07.7	+4.1
KMPD				*e*Sn		**Sg**	02 58 22.1	**-0.6**
BSD	**Bornholm Skovb**	**5.67**	**339**	*i*P		**Pn**	02 56 52.1	**-0.8**
BSD				*i*S		**Sn**	02 57 54.8	**-3.8**
BSD	**Bornholm Skovb**	**5.67**	**339**	*i*P		**Pn**	02 56 52.1	**-0.8**
NDNU	**Novodnistrovsk**	**6.03**	**99**	*e*Pn		Pb	02 57 18.1	+4.8
NDNU				Pmn			02 57 30.3	
NDNU				*e*Sn		**Sg**	02 58 41.9	**+0.9**
NDNU				Smn			02 59 05.5	
DAVOX	**Davos/Dischmat**	**6.44**	**245**	Pn		**Pn**	02 57 04.6	**+0.9**
	comp=Z,0.5nm,0.3s,baz=66,slow=16,SNR=5.8							
DAVOX				Lg			02 58 57.3	
	comp=Z,0.4nm,0.3s,baz=257,slow=13,SNR=6.2							
AKASG	**Malin Array Be**	**7.01**	**79**	Pn		**Pn**	02 57 12.0	**+0.8**
	comp=Z,0.5nm,0.3s,baz=261,slow=13,SNR=3.0							
HFS	**Hagfors**	**10.64**	**347**	Pn		**Pn**	02 57 58.9	**-2.1**
	comp=Z,0.2nm,0.3s,baz=164,slow=16,SNR=4.2							
NOA	**NORSAR Array B**	**11.91**	**343**	Pn		**Pn**	02 58 15.9	**-2.4**
	comp=Z,0.3nm,0.3s,baz=159,slow=11,SNR=5.2							
FINES	**FINESS Array B**	**12.39**	**17**	Pn		Pn	02 58 20.6	-4.2
	comp=Z,0.5nm,0.3s,baz=192,slow=12,SNR=20							
FINES				Sn		Sn	03 00 36.6	-6.8
	comp=Z,0.1nm,0.3s,baz=206,slow=22,SNR=2.7							

JMA 12 03:01:41.3, 37.01N×140.63E, h9km±1km, M2.9, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.16**	**56**	P	Pg	03 01 45.0	+0.2
ONAJ				S	Sg	03 01 47.7	+0.4
JHO	**Hitachi**	**0.40**	**187**	P	Pg	03 01 49.0	-0.2
JHO				S	Sg	03 01 54.7	+0.2
JFT	**Otama**	**0.56**	**335**	P	Pg	03 01 52.3	+0.1
JFT				S	Sg	03 01 59.8	+0.3
JMM	**Marumori**	**0.86**	**9**	P	Pg	03 01 57.5	-0.4
JMM				S	Sg	03 02 09.1	-0.1
MAT	**Matsushiro**	**2.00**	**257**	P	Pn	03 02 16.3	+1.0
MAT				S	Sb	03 02 42.9	0.0

*CSEM **12** 03:02:47.5, 40.07N×25.86E, h14km, MD2.5*
ISK 12 03:02:47.5, 40.07N×25.86E, h14km, MD2.5, Aegean Sea

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
GADA	**Gvkgeada**	**0.13**	**13**	*e*PG	Pg	03 02 51.1	+0.1
GADA				*e*SG	Sb	03 02 54.1	-0.4
GADA	**Gvkgeada**	**0.13**	**13**	*e*Pg	Pg	03 02 51.1	+0.1
GADA				*e*Sg	Sb	03 02 54.2	-0.3
EZN	**Ezine**	**0.43**	**124**	*e*PG	Pg	03 02 56.3	+0.2
EZN				*e*SG	Sb	03 03 03.2	0.0
EZN	**Ezine**	**0.43**	**124**	*e*Pg	Pg	03 02 56.3	+0.2
EZN				*e*Sg	Sb	03 03 03.2	0.0
GELI	**Tayfur-Gelibol**	**0.57**	**55**	*e*PG	Pb	03 02 59.4	0.0
GELI	**Tayfur-Gelibol**	**0.57**	**55**	*e*Pg	Pb	03 02 59.4	0.0
ENEZ	**Enez**	**0.71**	**18**	*e*PG	Pb	03 03 01.7	+0.1
ENEZ	**Enez**	**0.71**	**18**	*e*Pg	Pb	03 03 01.7	+0.1
ERIK	**Erikli-Kesan**	**0.78**	**39**	*e*PG	Pb	03 03 03.1	+0.2
ERIK	**Erikli-Kesan**	**0.78**	**39**	*e*Pg	Pb	03 03 03.1	+0.2
ALN	**Alexandroupoli**	**0.84**	**10**	*e*PG	Pb	03 03 04.1	+0.2
ALN	**Alexandroupoli**	**0.84**	**10**	*e*Pg	Pb	03 03 04.1	+0.2
SIGR	**SIGRI**	**0.85**	**180**	*e*PG	Pn	03 03 04.7	-0.4
SIGR	**SIGRI**	**0.85**	**180**	*e*Pg	Pn	03 03 04.7	-0.4

*DDA **12** 03:03:16.8, 38.99N×29.83E, h7km, Md2.7*
*CSEM **12** 03:03:17.1±0.1, 38.95N×29.84E, h2km, MD2.7, Error ellipse: s-maj=2.7km s-min=2.1km az=152.0*
*ISK **12** 03:03:17.2, 38.93N×29.82E, h10km, MD3.0*
ISC 12 03:03:17.1±1.0, 38.97N±0.02×29.84E±0.02, h5km±10km, n65, σ0.48/91, Turkey

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
GDZ	**Gediz**	**0.30**	**293**	*i*P	**Pg**	**03 03 22.8**	**-0.2**
GDZ				*i*S	**Sg**	**03 03 27.1**	**+0.2**
GDZ	**Gediz**	**0.30**	**293**	P	**Pg**	**03 03 22.8**	**-0.2**
GDZ				S	**Sg**	**03 03 27.1**	**+0.2**
AUKIR	**K¨–rka- Seyitg**	**0.62**	**61**	*i*P	**Pg**	**03 03 29.2**	**+0.1**
AUKIR				*i*S	**Sg**	**03 03 37.7**	**+0.6**
AUKIR	**K¨–rka- Seyitg**	**0.62**	**61**	P	**Pg**	**03 03 29.2**	**+0.1**
AUKIR				S	**Sg**	**03 03 37.7**	**+0.6**
KHAL	**Karahalli**	**0.66**	**204**	*i*P	**Pg**	**03 03 28.8**	**0.0**
KHAL				*i*S	**Sg**	**03 03 39.1**	**0.7**
KHAL	**Karahalli**	**0.66**	**204**	P	**Pg**	**03 03 29.8**	**0.0**
KHAL				S	**Sg**	**03 03 39.1**	**+0.7**
KHL	**Karahalli**	**0.69**	**201**	*e*PG	**Pg**	**03 03 30.6**	**+0.1**
KHL				*e*SG	**Sg**	**03 03 39.5**	**+0.1**
KHL	**Karahalli**	**0.69**	**201**	*e*Pg	**Pg**	**03 03 30.6**	**+0.1**
KHL				*e*Sg	**Sg**	**03 03 39.5**	**+0.1**
DEMI	**Demirci**	**0.88**	**275**	*i*P	**Pg**	**03 03 34.1**	**+0.2**
DEMI				*i*S	**Sg**	**03 03 45.6**	**+0.3**
DEMI	**Demirci**	**0.88**	**275**	P	**Pg**	**03 03 34.1**	**+0.2**
DEMI				S	**Sg**	**03 03 45.6**	**+0.3**
BOLV	**Bolvadin**	**0.91**	**106**	*i*P	**Pg**	**03 03 34.4**	**-0.1**
BOLV				*i*S	**Sg**	**03 03 46.2**	**-0.1**
BOLV	**Bolvadin**	**0.91**	**106**	P	**Pg**	**03 03 34.4**	**-0.1**
BOLV				S	**Sg**	**03 03 46.2**	**-0.1**
ESKT	**Eskisehir**	**0.96**	**55**	*i*P	**Pg**	**03 03 35.0**	**-0.5**
ESKT				*i*S	**Sg**	**03 03 48.6**	**+0.7**
SEYT	**Eskypehyr**	**0.96**	**55**	P	**Pg**	**03 03 35.0**	**-0.5**
SEYT				S	**Sg**	**03 03 48.6**	**+0.7**
BORA	**Eskisehir**	**1.02**	**28**	*i*P	**Pg**	**03 03 36.1**	**-0.7**
BORA				*i*S	**Sg**	**03 03 49.3**	**-0.8**
BORA	**Eskisehir**	**1.02**	**28**	P	**Pg**	**03 03 36.1**	**-0.7**
BORA				S	**Sg**	**03 03 49.3**	**-0.8**
KULA	**Kula-Manisa**	**1.03**	**244**	*e*PG	**Pg**	**03 03 36.4**	**-0.4**
KULA				*e*SG	**Sb**	**03 03 50.7**	**-0.5**
KULA	**Kula-Manisa**	**1.03**	**244**	*e*Pg	**Pg**	**03 03 36.4**	**-0.4**
KULA				*e*Sg	**Sb**	**03 03 50.7**	**-0.5**
UZP	**Denizli**	**1.07**	**209**	*i*P	**Pg**	**03 03 37.4**	**-0.3**
UZP				*i*S	**Sg**	**03 03 51.8**	**+0.1**
CAVI	**Cavuskoy**	**1.23**	**0**	*e*PN	**Pn**	**03 03 40.9**	**0.0**
CAVI	**Cavuskoy**	**1.23**	**0**	*e*Pn	**Pn**	**03 03 40.9**	**0.0**
DURS	**Dursunbey**	**1.23**	**301**	*i*P	**Pg**	**03 03 40.3**	**-0.3**
DURS				*i*S	**Sg**	**03 03 56.7**	**+0.1**
DURS	**Dursunbey**	**1.23**	**301**	P	**Pg**	**03 03 40.3**	**-0.3**
DURS				S	**Sg**	**03 03 56.7**	**+0.1**
ISP	**Isparta**	**1.27**	**155**	*e*PN	**Pg**	**03 03 40.9**	**-0.6**
ISP	**Isparta**	**1.27**	**155**	*e*Pn	**Pg**	**03 03 40.9**	**-0.6**
ULDT	**Uludag**	**1.29**	**335**	*i*P	**Pn**	**03 03 41.3**	**-0.6**
ULDT				*i*S	**Sn**	**03 03 59.9**	**+0.3**
ULDT	**Uludag**	**1.29**	**335**	P	**Pn**	**03 03 41.3**	**-0.6**
ULDT				S	**Sn**	**03 03 59.9**	**+0.3**

IZI	**Iznik**	**1.39**	**348**	*e*PN		**Pg**	**03 03 44.1**	**+0.3**
IZI	**Iznik**	**1.39**	**348**	*e*Pn		**Pg**	**03 03 44.1**	**+0.3**
SVRH	**Sivrihisar-ESK**	**1.39**	**70**	*e*PN		**Pb**	**03 03 43.6**	**-0.1**
SVRH	**Sivrihisar-ESK**	**1.39**	**70**	*e*Pn		**Pb**	**03 03 43.6**	**-0.1**
ADVT	**Abdulvahap**	**1.46**	**357**	*e*PN		**Pb**	**03 03 44.9**	**+0.2**
ADVT	**Abdulvahap**	**1.46**	**357**	*e*Pn		**Pb**	**03 03 44.9**	**+0.2**
GULT	**Gulveren**	**1.55**	**20**	*e*PN		**Pb**	**03 03 46.1**	**-0.1**
GULT	**Gulveren**	**1.55**	**20**	*e*Pn		**Pb**	**03 03 46.2**	**-0.1**
AUMIH	**MIHALICIK**	**1.56**	**55**	*i*P		**Pb**	**03 03 46.4**	**-0.1**
AUMIH				*i*S		**Sg**	**03 04 07.4**	**+0.2**
AUMIH	**MIHALICIK**	**1.56**	**55**	P		**Pb**	**03 03 46.4**	**-0.1**
AUMIH				S		**Sg**	**03 04 07.4**	**+0.2**
MDNY	**Mudanya-Bursa**	**1.57**	**333**	*e*PN		**Pb**	**03 03 46.5**	**-0.2**
MDNY	**Mudanya-Bursa**	**1.57**	**333**	*e*Pn		**Pb**	**03 03 46.5**	**-0.2**
AKS	**Akhisar**	**1.58**	**267**	*e*PN		**Pn**	**03 03 45.7**	**-0.1**
AKS	**Akhisar**	**1.58**	**267**	*e*Pn		**Pn**	**03 03 45.7**	**-0.1**
KIZT	**Kizilcal**	**1.60**	**93**	*e*PN		**Pn**	**03 03 46.4**	**+0.3**
KIZT	**Kizilcal**	**1.60**	**93**	*e*Pn		**Pn**	**03 03 46.4**	**+0.3**
BALB	**Balikesir**	**1.66**	**294**	*e*PN		**Pn**	**03 03 47.0**	**+0.2**
BALB	**Balikesir**	**1.66**	**294**	*e*Pn		**Pn**	**03 03 47.0**	**+0.2**
KCTX	**Karacabey (Bur**	**1.72**	**319**	*e*PN		**Pb**	**03 03 48.9**	**-0.4**
KCTX	**Karacabey (Bur**	**1.72**	**319**	*e*Pn		**Pb**	**03 03 48.9**	**-0.4**
ARMT	**Armutlu**	**1.76**	**335**	*e*PN		**Pb**	**03 03 49.1**	**-0.7**
ARMT	**Armutlu**	**1.76**	**335**	*e*Pn		**Pb**	**03 03 49.2**	**-0.7**
MDUB	**Mudurnu**	**1.83**	**35**	*e*PN		**Pn**	**03 03 49.9**	**+0.7**
MDUB	**Mudurnu**	**1.83**	**35**	*e*Pn		**Pn**	**03 03 49.9**	**+0.7**
BTAS	**Taskesti**	**1.83**	**29**	*i*P		**Pg**	**03 03 51.8**	**-0.4**
BTAS	**Taskesti**	**1.83**	**29**	P		**Pg**	**03 03 51.8**	**-0.4**
AYDB	**Zeytinkoy-Aydi**	**1.84**	**237**	*e*PN		**Pn**	**03 03 48.9**	**-0.5**
AYDB	**Zeytinkoy-Aydi**	**1.84**	**237**	*e*Pn		**Pn**	**03 03 48.9**	**-0.5**
HRT	**Hereke**	**1.85**	**356**	*e*PN		**Pb**	**03 03 50.7**	**-0.7**
HRT	**Hereke**	**1.85**	**356**	*e*Pn		**Pb**	**03 03 50.7**	**-0.7**
GONE	**Gonen-Balikesi**	**1.98**	**303**	*e*PN		**Pn**	**03 03 51.9**	**+0.7**
GONE	**Gonen-Balikesi**	**1.98**	**303**	*e*Pn		**Pn**	**03 03 51.9**	**+0.7**
AYDN	**Tasoluk**	**2.02**	**230**	*i*P		**Pb**	**03 03 54.5**	**+0.1**
AYDN				*i*S		**Sg**	**03 04 22.3**	**+0.3**
AYDN	**Tasoluk**	**2.02**	**230**	P		**Pb**	**03 03 54.5**	**+0.1**
EDC	**Edincik**	**2.05**	**313**	*e*PN		**Pn**	**03 03 53.2**	**+1.0**
EDC	**Edincik**	**2.05**	**313**	*e*Pn		**Pn**	**03 03 53.2**	**+1.0**
CTKS	**Kestanelik-??a**	**2.48**	**336**	*e*PN		**Pn**	**03 03 59.5**	**+1.4**
CTKS	**Kestanelik-??a**	**2.48**	**336**	*e*Pn		**Pn**	**03 03 59.5**	**+1.4**

CASC 12 03:03:31.0±2.2, 9.06N×84.18W, h24km±10km, MD3.5, 2D, Costa Rica

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
QCR	**Quepos**	**0.37**	**3**	⇓*i*P	Pb	03 03 39.1	+0.1
QCR				*e*S	Sb	03 03 42.7	-1.7
BUS	**Buena Vista**	**0.65**	**40**	⇓*i*P	Pb	03 03 43.5	-0.5
BUS				*e*S	Sb	03 03 53.8	+1.0
URSC	**Urasca**	**0.87**	**27**	*e*P	Pb	03 03 47.5	-0.1
URSC				*e*S	Sn	03 04 01.4	+1.4
JTS	**JuntasAbangare**	**1.44**	**328**	*e*P	Pn	03 03 56.1	+0.4
JTS				*e*S	Sn	03 04 14.0	+0.1
BRU2	**Volcan**	**1.50**	**100**	*e*P	Pn	03 03 56.7	+0.2
BRU2				*e*S	Sn	03 04 16.0	+0.6
TBS2		**1.53**	**100**	*e*P	Pn	03 03 57.6	+0.6
TBS2				*e*S	Sb	03 04 18.1	+0.2

JMA 12 03:03:48.5, 36.78N×140.60E, h8km±1km, M2.8, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JHO	**Hitachi**	**0.17**	**188**	P	Pg	03 03 52.2	+0.2
JHO				S	Sg	03 03 54.0	-0.4
ONAJ	**Iwakimizuishiy**	**0.36**	**26**	S	Sg	03 04 00.6	+0.3

MEX 12 03:06:58.1±0.3, 18.99N×103.40W, h53km±7km, MD3.7, Near coast of Michoacan

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
EZ5V		**0.53**	**339**	*e*P	Pn	03 07 08.5	-1.7
EZ5V				*e*S	Sn	03 07 16.9	-1.9
EZ5V				*e*S	Sn	03 07 17.1	-1.7
R15V		**0.58**	**288**	*e*P	Pn	03 07 09.2	-1.4
R15V				*e*S	Sn	03 07 17.7	-1.9
MMIG	**Aquila**	**0.70**	**176**	*e*P	Pn	03 07 10.6	-1.4
MMIG				*e*S	Sn	03 07 20.0	-2.0
ARIG	**Puente Sto Nin**	**2.98**	**103**	*e*P	Pn	03 07 41.6	-1.3
ARIG				*i*S	Sn	03 08 15.6	-1.9

JMA 12 03:13:45.5, 37.03N×140.69E, h10km±1km, M3.5, 5C Broadband fault plane solution: P waves. NP1: ϕs307.00000°, δ48.00000°, λ-94.00000°. NP2: ϕs133.00000°, δ42.00000°, λ-86.00000°. Principal axes: T Plg3.0000°, Azm40.0000°; N Plg3.0000°, Azm310.0000°; P Plg86.0000°, Azm171.0000°; Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.11**	**50**	⇑P	Pg	03 13 48.4	+0.1
ONAJ				S	Sg	03 13 50.4	0.0
JHO	**Hitachi**	**0.43**	**193**	⇑P	Pg	03 13 53.7	-0.2
JHO				S	Sg	03 13 59.7	+0.1
JFT	**Otama**	**0.56**	**330**	⇑P	Pg	03 13 56.5	0.0
JFT				S	Sg	03 14 04.2	+0.3
JSB	**Shiboa**	**0.62**	**265**	⇑P	Pb	03 13 58.1	-0.3
JSB				S	Sg	03 14 06.2	+0.5
JMM	**Marumori**	**0.84**	**6**	⇑P	Pg	03 14 01.0	-0.7
JMM				S	Sg	03 14 12.2	-0.4
JFY	**Yanaizu**	**0.87**	**296**	P	Pg	03 14 02.1	-0.2
JFY				S	Sg	03 14 13.3	-0.4
JYT	**Yasato**	**0.90**	**207**	P	Pg	03 14 01.9	-0.8
JYT				S	Sg	03 14 13.7	-0.7
MAT	**Matsushiro**	**2.05**	**257**	P	Pn	03 14 21.4	+1.3
MAT				S	Sb	03 14 48.4	0.0

*NIED **12** 03:20:00, 35.50N×141.00E, h32km, Mw4.1 Best double couple: Ms1.53000×10^15 NP1:ϕs275.00000°, δ60.00000°, λ-2.00000°. NP2:ϕs6.00000°, δ88.00000°, λ-150.00000°.*
JMA 12 03:20:33.3±0.1, 35.51N×140.89E, h23km±1km, M3.8, 2C-2D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
CHOJ	**Chosi**	**0.19**	**352**	⇑P	Pb	03 20 38.6	-0.1
CHOJ				S	Sb	03 20 42.6	+0.3
JCN	**Nagara**	**0.57**	**261**	P	Pn	03 20 45.3	-0.7
JCN				S	Sn	03 20 54.7	+0.1
KTR	**Katsuura**	**0.59**	**233**	P	Pb	03 20 44.7	-0.3
BSO4	**Boso 4**	**0.69**	**221**	⇓P	Pb	03 20 47.0	+0.4
BSO4				*e*X		03 20 58.9	
BSO3	**Boso 3**	**0.77**	**204**	⇑P	Pb	03 20 47.9	0.0
BSO3				X		03 20 58.2	
BSO1	**Boso 1**	**0.86**	**175**	⇓P	Pb	03 20 48.3	-0.9
JYT	**Yasato**	**0.91**	**322**	P	Pb	03 20 49.8	-0.6
JYT				S	Sb	03 21 02.5	+0.3
JHO	**Hitachi**	**1.13**	**347**	P	Pb	03 20 54.4	+0.2
MAT	**Matsushiro**	**2.41**	**296**	P	Pb	03 21 15.3	-0.6

IDC 12 03:20:49.8±3.0, 30.18S×177.43W, h0km, mb3.8/2, mb1 4.0/2, mb1mx3.6/38, mbtmp3.8/2, MS3.9/1, Ms1 3.9/1, ms1mx2.8/34, Error ellipse: s-maj=61.2km s-min=26.3km az=89.0, Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
RAO	**Raoul Island**	**1.02**	**335**	Pn	Pn	03 21 11.5	+0.2
	175nm,0.3s,baz=106,slow=9.9,SNR=8.8						
RAO				Sn	Sn	03 21 26.8	+0.5
	547nm,0.3s,baz=37,slow=21,SNR=7.1						
HNR	**Honiara**	**29.54**	**310**	LR	LR	03 37 44.9	
	comp=Z,218nm,19.8s,baz=196,slow=34						
ASAR	**Alice Springs**	**43.61**	**266**	P	P	03 28 56.6	+0.5
	0.3nm,0.3s,baz=106,slow=7.3,SNR=5.2						
WRA	**Warramunga Arr**	**44.58**	**272**	P	P	03 29 03.2	-0.7
	0.9nm,0.4s,baz=110,slow=8.1,SNR=23						
FINES	**FINESS Array B**	**145.11**	**340**	PKPbc	PKPbc	03 40 27.0	-0.9
	1.0nm,0.5s,baz=49,slow=5.8,SNR=4.6						

*ISCJB **12** 03:20:55.2±0.6, 37.00N±0.03×140.74E±0.05, h15km±4km, mb3.7/11, MS3.8/2, Error ellipse: s-maj=7.3km s-min=5.3km az=17.8*
*JMA **12** 03:20:55.5, 37.01N×140.68E, h5km±1km, M3.9*
JMA Felt II J1.
*IDC **12** 03:20:57.5±4.3, 36.97N×140.52E, h19km±27km, mb3.7/11, mb1 3.9/12, mb1mx3.6/63, mbtmp3.8/12, ML2.8/1, MS3.5/3, Ms1 3.5/3, ms1mx2.8/64, Error ellipse: s-maj=24.6km s-min=18.4km az=81.0*
ISC 12 03:20:55.7±1.0, 37.01N±0.03×140.67E±0.04, h7km±7km, n30, σ0.68/28, mb3.6/11, 3C, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.14**	**48**	⇑P	**Pg**	**03 20 58.5**	**-0.2**
ONAJ				S	**Sg**	**03 21 00.7**	**-0.1**
JHO	**Hitachi**	**0.41**	**192**	P	**Pg**	**03 21 03.3**	**-0.3**
JHO				S	**Sg**	**03 21 09.3**	**+0.4**
JFT	**Otama**	**0.57**	**332**	⇑P	**Pg**	**03 21 06.8**	**-0.1**
JFT				S	**Sg**	**03 21 14.7**	**+0.3**
JSB	**Shiboa**	**0.60**	**266**	P	**Pb**	**03 21 08.3**	**-0.3**
JSB				S	**Sb**	**03 21 16.8**	**-0.5**
JMM	**Marumori**	**0.86**	**6**	⇑P	**Pg**	**03 21 11.5**	**-0.8**
JMM				S	**Sg**	**03 21 23.5**	**0.0**
JFY	**Yanaizu**	**0.87**	**298**	P	**Pg**	**03 21 12.2**	**-0.2**
JFY				S	**Sg**	**03 21 23.6**	**-0.1**
JYT	**Yasato**	**0.87**	**206**	P	**Pg**	**03 21 12.2**	**-0.2**
MJAR	**Matsushiro Arr**	**2.03**	**257**	Pg	**Pn**	**03 21 31.2**	**+0.9**
	13nm,0.3s,baz=72,slow=15,SNR=27						
MJAR				Lg	Lg	03 21 58.0	
	17nm,0.3s,baz=94,slow=14,SNR=7.5						
MJAR				LR	LR	03 22 33.4	
	comp=Z,107nm,19.9s,baz=170,slow=51						
USRK	**Ussuriysk Ar.**	**9.75**	**320**	Pn	Pn	03 23 22.0	+5.7
	0.2nm,0.3s,baz=144,slow=12,SNR=15						
KSRS	**Korea Array**	**10.18**	**276**	Pn	Pn	03 23 27.7	+5.6
	baz=94,slow=13,SNR=7.0						
KLR	**Kul'dur**	**13.83**	**335**	Pn	**Pn**	**03 24 13.9**	**+1.8**
	0.0nm,0.3s,baz=97,slow=22,SNR=2.3						
KLR				LR	LR	03 29 31.4	
	comp=Z,73nm,18.5s,baz=342,slow=37						
SONM	**Songino Array**	**27.31**	**304**	P	**P**	**03 26 40.8**	**-0.2**
	0.9nm,0.8s,baz=106,slow=7.8,SNR=6.0						
H11N2	**WAKE ISLAND Hy**	**28.65**	**120**	T	T	03 56 39.7	
	baz=313,slow=75,SNR=73						
H11N1	**WAKE ISLAND Hy**	**28.66**	**120**	T	T	03 56 40.3	
	baz=313,slow=75,SNR=77						
H11N3	**WAKE ISLAND Hy**	**28.67**	**120**	T	T	03 56 41.0	
	baz=313,slow=75,SNR=57						
H11S1	**WAKE ISLAND Hy**	**29.35**	**122**	T	T	03 57 32.1	
	baz=314,slow=76,SNR=21						
H11S3	**WAKE ISLAND Hy**	**29.35**	**122**	T	T	03 57 29.6	
	baz=314,slow=76,SNR=22						
H11S2	**WAKE ISLAND Hy**	**29.36**	**122**	T	T	03 57 32.2	
	baz=314,slow=76,SNR=20						
ZALV	**Zalesovo Beam**	**41.49**	**312**	P	**P**	**03 28 42.0**	**-1.1**
	0.6nm,0.5s,baz=96,slow=4.6,SNR=3.9						
MKAR	**Makanchi Array**	**43.63**	**302**	P	**P**	**03 29 00.1**	**-0.5**
	0.4nm,0.4s,baz=91,slow=9.4,SNR=5.0						
PSI	**Prapat**	**51.27**	**238**	LR	LR	03 52 36.8	
	comp=Z,74nm,18.1s,baz=67,slow=37						
WRA	**Warramunga Arr**	**56.96**	**187**	P	**P**	**03 30 40.9**	**-0.8**
	3.4nm,0.7s,baz=5.5,slow=7.4,SNR=18						
ASAR	**Alice Springs**	**60.69**	**187**	P	**P**	**03 31 07.3**	**-0.3**
	1.2nm,0.7s,baz=11,slow=7.0,SNR=12						
YKA	**Yellowknife Ar**	**64.13**	**30**	P	**P**	**03 31 30.6**	**+0.4**
	0.2nm,0.6s,baz=304,slow=6.6,SNR=6.8						
YKA				PcP	**PcP**	**03 32 05.5

MSAG	Monte S. Angel	0.12	5	⇓	*i*	Pg	Pg	03 32 59.9	+0.2
SGRT	San Giovanni R	0.20	326	⇓	*i*	Pg	Pb	03 33 01.4	-0.6
SGRT						Sg	Sb	03 33 05.1	-0.6
	14µm,0.3s								
SGRT	San Giovanni R	0.20	326	⇓	*i*	Pg	Pb	03 33 01.4	-0.6
SGRT						Sg	Sb	03 33 05.1	-0.6
	14µm,0.3s								
MRVN	Minervino Murg	0.57	157			Pg	Pg	03 33 06.6	-1.0
MRVN						Sg	Sg	03 33 15.6	+0.4
	7µm,0.4s								
MRVN	Minervino Murg	0.57	157			Pg	Pg	03 33 06.6	-1.0
MRVN						Sg	Sg	03 33 15.6	+0.4
	7µm,0.4s								
CDT	Castel del Mon	0.58	150		*i*	Pg	Pg	03 33 06.6	-1.1
CDT						Sg	Sg	03 33 16.1	+0.7
MOCO	Biccari - m.te	0.59	249			Pg	Pn	03 33 09.5	-1.1
MOCO						Sg	Sn	03 33 20.1	-0.1
	2µm,0.7s								
SGTA	Sant Agata di	0.60	221			Pg	Pb	03 33 08.6	-0.2
SGTA						Sg	Sn	03 33 19.9	-0.5
	5µm,0.4s								
SGTA	Sant Agata di	0.60	221			Pg	Pb	03 33 08.6	-0.2
PALZ	Palazzo San Ge	0.65	176			Pg	Pg	03 33 08.6	-0.3
PALZ						Sg	Sb	03 33 18.7	+0.3
	8µm,0.7s								
PALZ	Palazzo San Ge	0.65	176			Pg	Pg	03 33 08.6	-0.3
PALZ						Sg	Sb	03 33 18.7	+0.3
	8µm,0.7s								
VULT	Monte Vulture	0.67	198			Pg	Pb	03 33 09.7	-0.2
	7µm,0.4s								
VULT	Monte Vulture	0.67	198			Pg	Pb	03 33 09.7	-0.2
	7µm,0.4s								
GATE	Gambatesa	0.74	264			Pg	Pn	03 33 12.8	+0.2
	4µm,0.5s								
GATE	Gambatesa	0.74	264			Pg	Pn	03 33 12.8	+0.2
	4µm,0.5s								
CIGN	Sant'Elia a Pi	0.74	275			Pg	Pn	03 33 12.0	-0.6
	3µm,0.6s								
CIGN	Sant'Elia a Pi	0.74	275			Pg	Pn	03 33 12.0	-0.6
	3µm,0.6s								
CAFE	Carife	0.75	222			Pg	Pb	03 33 11.6	+0.3
CAFE	Carife	0.75	222			Pg	Pb	03 33 11.6	+0.3
ACER	Acerenza	0.80	177			Pg	Pg	03 33 11.7	-0.2
	8µm,0.5s								
ACER	Acerenza	0.80	177			Pg	Pg	03 33 11.7	-0.2
	8µm,0.5s								
MRB1	Monte Rocchett	0.83	237			Pg	Pn	03 33 13.5	-0.3
	5µm,0.6s								
MRB1	Monte Rocchett	0.83	237			Pg	Pn	03 33 13.5	-0.3
	5µm,0.6s								
SNAL	S. Angelo Dei	0.84	218			Pg	Pb	03 33 12.7	-0.1
	3µm,0.5s								
SNAL	S. Angelo Dei	0.84	218			Pg	Pb	03 33 12.7	-0.1
	3µm,0.5s								
AMUR	Altamura	0.87	142			Pg	Pg	03 33 11.7	-1.4
	4µm,0.3s								
AMUR	Altamura	0.87	142			Pg	Pg	03 33 11.7	-1.4
	4µm,0.3s								
BAI	Bari	0.88	123		*i*	Pg	Pb	03 33 11.9	-1.6
BAI						Sg	Sb	03 33 25.8	+0.6
MRLC	Muro Lucano	0.89	200			Pg	Pb	03 33 13.7	+0.1
	4µm,0.5s								
MRLC	Muro Lucano	0.89	200			Pg	Pb	03 33 13.7	+0.1
	4µm,0.5s								
PSB1	Pescosannita	0.89	246			Pg	Pn	03 33 14.3	-0.4
PSB1	Pescosannita	0.89	246			Pg	Pn	03 33 14.3	-0.4
SACR	S. Croce Del S	0.91	258			Pg	Pn	03 33 14.6	-0.4
	2µm,0.7s								
SACR	S. Croce Del S	0.91	258			Pg	Pn	03 33 14.6	-0.4
	2µm,0.7s								
PZUN	Potenza	0.94	184			Pg	Pn	03 33 15.1	-0.2
	4µm,0.3s								
PZUN	Potenza	0.94	184			Pg	Pn	03 33 15.1	-0.2
	4µm,0.3s								
SG1	Sgolgore (BA)	0.95	141		*e*	Pg	Pb	03 33 13.3	-1.5
SG1						Sg	Sg	03 33 27.9	+0.7
MCRV	Calabrutti - M	0.97	214			Pg	Pg	03 33 15.0	-0.1
	2µm,0.3s								
MCRV	Calabrutti - M	0.97	214			Pg	Pg	03 33 15.0	-0.1
	2µm,0.3s								
BSSO	Busso	0.98	268			Pg	Pn	03 33 16.5	+0.6
	2µm,0.7s								
BSSO	Busso	0.98	268			Pg	Pn	03 33 16.5	+0.6
	2µm,0.7s								
FRES	Fresagrandinar	0.99	293			Pg	Pn	03 33 15.7	-0.3
	6µm,0.6s								
FRES	Fresagrandinar	0.99	293			Pg	Pn	03 33 15.7	-0.3
	6µm,0.6s								
TRIV	Trivento	1.02	280			Pg	Pn	03 33 17.1	+0.7
	4µm,0.5s								
TRIV	Trivento	1.02	280			Pg	Pn	03 33 17.1	+0.7
	4µm,0.5s								
PTRJ	Pietraroja	1.05	258			Pg	Pn	03 33 16.6	-0.3
	7µm,0.6s								
PTRJ	Pietraroja	1.05	258			Pg	Pn	03 33 16.6	-0.3
	7µm,0.6s								
MATE	Matera	1.12	147			Pg	Pb	03 33 16.4	-1.2
	4µm,0.5s								
MATE	Matera	1.12	147			Pg	Pb	03 33 16.4	-1.2
	4µm,0.5s								
PAOL	Paolisi	1.15	241			Pg	Pg	03 33 19.3	+0.9
	2µm,0.7s								
PAOL	Paolisi	1.15	241			Pg	Pg	03 33 19.3	+0.9
	2µm,0.7s								
SGG	Gregorio Mates	1.16	260			Pg	Pg	03 33 18.5	-0.1
	3µm,0.5s								
SGG	Gregorio Mates	1.16	260			Pg	Pg	03 33 18.5	-0.1
	3µm,0.5s								
CDRU	Civita di Ruta	1.19	202			Pg	Pn	03 33 17.9	-0.8
	955nm,0.5s								
CDRU	Civita di Ruta	1.19	202			Pg	Pn	03 33 17.9	-0.8
	955nm,0.5s								
NOCI	Noci	1.19	132			Pg	Pn	03 33 17.5	-1.2
	4µm,0.3s								
NOCI	Noci	1.19	132			Pg	Pn	03 33 17.5	-1.2
	4µm,0.3s								
LTRZ	Laterza	1.21	144			Pg	Pn	03 33 17.9	-1.1
	3µm,0.4s								
LTRZ	Laterza	1.21	144			Pg	Pn	03 33 17.9	-1.1
	3µm,0.4s								
SLCN	Sala Consilina	1.21	189			Pg	Pn	03 33 18.5	-0.6
	2µm,0.4s								
SLCN	Sala Consilina	1.21	189			Pg	Pn	03 33 18.5	-0.6
	2µm,0.4s								
MIDA	Miranda	1.23	273			Pg	Pg	03 33 20.3	+0.3
MIDA	Miranda	1.23	273			Pg	Pg	03 33 20.3	+0.3
VAGA	Valle Agricola	1.26	263			Pg	Pg	03 33 20.8	+0.2
	2µm,0.5s								
VAGA	Valle Agricola	1.26	263			Pg	Pg	03 33 20.8	+0.2
	2µm,0.5s								
MCEL	Monticello	1.27	183			Pg	Pn	03 33 19.0	-0.8
	2µm,0.6s								
MCEL	Monticello	1.27	183			Pg	Pn	03 33 19.0	-0.8
	2µm,0.6s								
CRAC	Craco	1.29	161			Pg	Pn	03 33 19.9	-0.2
	7µm,0.5s								
CRAC	Craco	1.29	161			Pg	Pn	03 33 19.9	-0.2
	7µm,0.5s								
RNI2	Rionero Sannit	1.31	276			Pg	Pg	03 33 21.3	-0.2
	2µm,0.4s								
RNI2	Rionero Sannit	1.31	276			Pg	Pg	03 33 21.3	-0.2
	2µm,0.4s								
CAFR	Castel Frentan	1.32	299			Pg	Pg	03 33 21.0	-0.7
	8µm,0.4s								
CAFR	Castel Frentan	1.32	299			Pg	Pg	03 33 21.0	-0.7
	8µm,0.4s								
MTSN	Montesano sull	1.33	185			Pg	Pn	03 33 20.2	-0.5
	355nm,0.5s								
MTSN	Montesano sull	1.33	185			Pg	Pn	03 33 20.2	-0.5
	355nm,0.5s								
CMPR	Campora	1.35	200			Pg	Pn	03 33 20.4	-0.5
	910nm,0.4s								
CMPR	Campora	1.35	200			Pg	Pn	03 33 20.4	-0.5
	910nm,0.4s								
SCHR	S. Chirico Rap	1.40	174			Pg	Pn	03 33 21.3	-0.3
	695nm,0.7s								
SIRI	Monte Sirino -	1.41	181			Pg	Pn	03 33 21.5	-0.3
	1µm,0.4s								
SIRI	Monte Sirino -	1.41	181			Pg	Pn	03 33 21.5	-0.3
	1µm,0.4s								
CERA	Filignano	1.41	271			Pg	Pg	03 33 23.3	-0.1
	2µm,0.7s								
CERA	Filignano	1.41	271			Pg	Pg	03 33 23.3	-0.1
	2µm,0.7s								
TAR1	Taranto	1.49	135		*e*	Pn	Pn	03 33 23.0	+0.1
TAR1						Sn	Sg	03 33 45.0	+0.6
INTR	Introdacqua	1.55	286			Pg	Pb	03 33 24.6	-0.3
	2µm,0.5s								
INTR	Introdacqua	1.55	286			Pg	Pb	03 33 24.6	-0.3
	2µm,0.5s								
BULG	Bulgheria - Ca	1.56	195			Pg	Pn	03 33 23.8	0.0
	1µm,0.6s								
BULG	Bulgheria - Ca	1.56	195			Pg	Pn	03 33 23.8	0.0
	1µm,0.6s								
MODR	Mondragone	1.58	254			Pg	Pb	03 33 24.8	-0.6
	894nm,0.9s								
MODR	Mondragone	1.58	254			Pg	Pb	03 33 24.8	-0.6
	894nm,0.9s								
ORI	Oriolo Calabro	1.58	164			Pg	Pb	03 33 24.8	-0.6
	3µm,0.4s								
ORI	Oriolo Calabro	1.58	164			Pg	Pb	03 33 24.8	-0.6
	3µm,0.4s								
CUC	Castrocucco	1.60	182			Pg	Pn	03 33 24.3	0.0
	747nm,0.6s								
CUC	Castrocucco	1.60	182			Pg	Pn	03 33 24.3	0.0
	747nm,0.6s								
CUC						*e*	Sn	03 33 44.8	0.0
CUC	Castrocucco	1.60	182		*e*	Pn	Pn	03 33 24.4	+0.1
CUC						*e*	Sn	03 33 44.8	0.0
POFI	Posta Fibreno	1.64	275			Pg	Pb	03 33 26.3	-0.2
	442nm,0.6s								
POFI	Posta Fibreno	1.64	275			Pg	Pb	03 33 26.3	-0.2
	442nm,0.6s								
MMN	Mormanno	1.70	178			Pg	Pb	03 33 27.1	-0.3
	297nm,0.4s								
MMN	Mormanno	1.70	178			Pg	Pb	03 33 27.1	-0.3
	297nm,0.4s								
VVLD	Villa Vallelon	1.72	280			Pg	Pb	03 33 27.3	-0.6
	980nm,0.6s								
VVLD	Villa Vallelon	1.72	280			Pg	Pb	03 33 27.3	-0.6
	980nm,0.6s								
VCEL	Villa Celiera	1.73	298			Pg	Pb	03 33 27.9	-0.1
	2µm,0.5s								
VCEL	Villa Celiera	1.73	298			Pg	Pb	03 33 27.9	-0.1
	2µm,0.5s								
SALB	San Lorenzo Be	1.74	169			Pg	Pn	03 33 26.1	-0.3
	736nm,0.5s								
SALB	San Lorenzo Be	1.74	169			Pg	Pn	03 33 26.1	-0.3
	736nm,0.5s								
MESG	Mesagne	1.78	123			Pg	Pn	03 33 26.6	-0.2
	3µm,0.4s								
MESG	Mesagne	1.78	123			Pg	Pn	03 33 26.6	-0.2
	3µm,0.4s								
FAGN	Fagnano	1.85	292			Pg	Pg	03 33 30.7	-1.2
	2µm,0.5s								
FAGN	Fagnano	1.85	292			Pg	Pg	03 33 30.7	-1.2
	2µm,0.5s								
STON	Ston	1.85	46		*e*	Pn	Pn	03 33 26.7	-1.1
STON	Ston	1.85	46		*e*	Pn	Pn	03 33 26.7	-1.1
PTQR	Pietraquaria	1.91	284			Pg	Pb	03 33 31.3	+0.1
PTQR	Pietraquaria	1.91	284			Pg	Pb	03 33 31.3	+0.1
GUAR	Guarcino	1.94	277			Pg	Pb	03 33 30.5	-1.2
GUAR	Guarcino	1.94	277			Pg	Pb	03 33 30.5	-1.2
GIUL	Giuliano Di Ro	1.98	270			Pg	Pn	03 33 30.5	+0.9
	285nm,0.6s								
GIUL	Giuliano Di Ro	1.98	270			Pg	Pn	03 33 30.5	+0.9
	285nm,0.6s								
TERO	Teramo	1.99	302			Pg	Pn	03 33 31.5	-1.0
	779nm,0.5s								
TERO	Teramo	1.99	302			Pg	Pb	03 33 31.5	-1.0
	779nm,0.5s								
GUMA	Gualdo di Mace	2.07	316			Pg	Pg	03 33 36.9	+0.9
	2µm,0.5s								
HCY	Herceg Novi	2.12	65	⇑	*i*	Pn	Pn	03 33 31.0	-0.5
HCY						*e*	Sn	03 33 59.4	+1.7
HCY	Herceg Novi	2.12	65	⇑	*i*	Pn	Pn	03 33 31.0	-0.5
HCY						*e*	Sn	03 33 59.4	+1.7
OFFI	Offida	2.12	310			Pg	Pb	03 33 33.8	-0.8
	3µm,0.6s								
OFFI	Offida	2.12	310			Pg	Pb	03 33 33.8	-0.8
	3µm,0.6s								
TREB	Trebinje	2.15	58		*e*	Pn	Pn	03 33 31.2	-0.6
RM32	Poggio Cancell	2.17	298			Pg	Pb	03 33 34.3	-1.3
	996nm,0.8s								
RM32	Poggio Cancell	2.17	298			Pg	Pb	03 33 34.3	-1.3
	996nm,0.8s								
SMA1	SAN MARTINO	2.17	300			Pg	Pb	03 33 34.2	-1.3
	980nm,0.6s								
SMA1	SAN MARTINO	2.17	300			Pg	Pb	03 33 34.2	-1.3
	980nm,0.6s								
FIAM	Fiamignano	2.18	289			Pg	Pb	03 33 35.0	-0.7
	495nm,0.7s								
FIAM	Fiamignano	2.18	289			Pg	Pb	03 33 35.0	-0.7
	495nm,0.7s								
RM33	Pellescritta (	2.20	296			Pg	Pb	03 33 34.9	-1.1
	603nm,0.7s								
RM33	Pellescritta (	2.20	296			Pg	Pb	03 33 34.9	-1.1
	603nm,0.7s								
CERT	Cerreto	2.21	280			Pg	Pb	03 33 34.4	-1.8
	358nm,0.6s								
CERT	Cerreto	2.21	280			Pg	Pb	03 33 34.4	-1.8
	358nm,0.6s								
PIPA	Pietrapaola	2.22	161			Pg	Pn	03 33 33.3	+0.5
	395nm,0.6s								
PIPA	Pietrapaola	2.22	161			Pg	Pn	03 33 33.3	+0.5
	395nm,0.6s								
RM29	Verrico (Monte	2.23	297			Pg	Pb	03 33 35.4	-1.1
	843nm,0.6s								
RM29	Verrico (Monte	2.23	297			Pg	Pb	03 33 35.4	-1.1
	843nm,0.6s								
CAR1	CAROLEI	2.35	174			Pg	Pn	03 33 35.5	+0.9
	465nm,0.6s								
CAR1	CAROLEI	2.35	174			Pg	Pn	03 33 35.5	+0.9
	465nm,0.6s								
BUM	Brajici-Budva	2.35	71		*e*	Pn	Pn	03 33 34.4	-0.3
BUM						*e*	Sn	03 34 04.5	+1.1
BUM	Brajici-Budva	2.35	71		*e*	Pn	Pn	03 33 34.4	-0.3
BUM						*e*	Sn	03 34 04.5	+1.1
LNSS	Leonessa	2.35	296			Pg	Pb	03 33 37.1	-1.6
	925nm,0.9s								
LNSS	Leonessa	2.35	296			Pg	Pb	03 33 37.1	-1.6
	925nm,0.9s								
BRY	Bratogost	2.36	55	⇓	*i*	Pn	Pn	03 33 34.7	-0.2
BRY						*e*	Sn	03 34 05.0	+1.1
BRY	Bratogost	2.36	55	⇓	*i*	Pn	Pn	03 33 34.7	-0.2
BRY						*e*	Sn	03 34 05.0	+1.1
MTCE	Montecelio	2.40	281			Pg	Pb	03 33 37.2	-2.1
	295nm,0.8s								
MTCE	Montecelio	2.40	281			Pg	Pb	03 33 37.2	-2.1
	295nm,0.8s								
NRCA	Norcia	2.41	302			Pg	Pb	03 33 37.3	-2.3
	886nm,0.9s								
NRCA	Norcia	2.41	302			Pg	Pb	03 33 37.3	-2.3
	886nm,0.9s								
CEME	Cevo	2.45	66	⇑	*i*	Pn	Pn	03 33 35.8	-0.2
CEME						*e*	Sn	03 34 07.2	+1.4
CEME	Cevo	2.45	66	⇑	*i*	Pn	Pn	03 33 35.8	-0.2
CEME						*e*	Sn	03 34 07.2	+1.4
TIP	Timpagrande	2.50	164		P		Pn	03 33 37.8	+1.1
TIP	Timpagrande	2.50	164		*e*	Pn	Pn	03 33 37.4	+0.7
TIP	Timpagrande	2.50	164		P		Pn	03 33 37.8	+1.1
TIP						*e*	Sn	03 34 06.0	-1.1
TIP	Timpagrande	2.50	164		*e*	Pn	Pn	03 33 37.4	+0.7
TIP						*e*	Sn	03 34 06.0	-1.1
DRME	Dracevica, Mon	2.53	75	⇑	*i*	Pn	Pn	03 33 37.0	-0.1
DRME						*e*	Sn	03 34 09.1	+1.3
DRME	Dracevica, Mon	2.53	75	⇑	*i*	Pn	Pn	03 33 37.0	-0.1
DRME						*e*	Sn	03 34 09.1	+1.3
ULC	Ulcinj	2.53	80	⇓	*i*	Pn	Pn	03 33 36.7	-0.5
ULC						*e*	Sn	03 34 08.8	+0.9
ULC	Ulcinj	2.53	80		P		Pn	03 33 36.9	-0.3
ULC						*e*	Sn	03 34 08.8	+0.9
FDMO	Fiordimonte	2.54	306			Pg	Pn	03 33 38.7	+1.5
	554nm,0.6s								
FDMO	Fiordimonte	2.54	306			Pg	Pn	03 33 38.7	+1.5
	554nm,0.6s								
NKME	Niksic	2.56	62	⇓	*i*	Pn	Pn	03 33 37.6	0.0
NKME						*e*	Sn	03 34 09.5	+0.9
NKME	Niksic	2.56	62	⇓	*i*	Pn	Pn	03 33 37.6	0.0
NKME						*e*	Sn	03 34 09.5	+0.9
AOI	Ancona	2.59	320			Pg	Pn	03 33 38.3	+0.3
	926nm,1.0s								
AOI	Ancona	2.59	320			Pg	Pn	03 33 38.3	+0.3
	926nm,1.0s								
NKY	Niksic	2.61	61	⇓	*i*	Pn	Pn	03 33 38.1	-0.2
NKY						*e*	Sn	03 34 11.1	+1.2
NKY	Niksic	2.61	61	⇓	*i*	Pn	Pn	03 33 38.1	-0.2
NKY						*e*	Sn	03 34 11.1	+1.2
SERS	Sersale	2.62	166			Pg	Pn	03 33 39.4	+0.9
	188nm,0.6s								
SERS	Sersale	2.62	166			Pg	Pn	03 33 39.4	+0.9
	188nm,0.6s								
PDG	Podgorica	2.64	70		P		Pn	03 33 39.0	+0.4
PDG						*e*	Sn	03 34 12.2	+1.7
TTG	Podgorica	2.64	70	⇓	*i*	Pn	Pn	03 33 39.0	+0.4
TTG						*e*	Sn	03 34 12.2	+1.7
TTG	Podgorica	2.64	70		P		Pn	03 33 39.0	+0.4
TTG	Podgorica	2.64	70		P		Pn	03 33 39.0	+0.4
CING	Cingoli	2.68	313			Pg	Pn	03 33 40.0	+0.8
	418nm,0.6s								
CING	Cingoli	2.68	313			Pg	Pn	03 33 40.0	+0.8
	418nm,0.6s								
SNTG	Esanatoglia	2.75	308			Pg	Pn	03 33 41.3	+1.1
	305nm,0.6s								
SNTG	Esanatoglia	2.75	308			Pg	Pn	03 33 41.3	+1.1
	305nm,0.6s								
UPM	Unac-Piva	2.75	53	⇑	*i*	Pn	Pn	03 33 40.5	+0.1
UPM						*e*	Sn	03 34 14.5	+0.9
UPM	Unac-Piva	2.75	53	⇑	*i*	Pn	Pn	03 33 40.5	+0.1
UPM	Unac-Piva	2.75	53		P		Pn	03 33 41.0	+0.6
UPM						*e*	Sn	03 34 14.5	+0.9
ARVD	Arcevia	2.90	312			Pg	Pn	03 33 42.8	+0.6
	265nm,0.7s								
ARVD	Arcevia	2.90	312			Pg	Pn	03 33 42.8	+0.6
	265nm,0.7s								
SSFR	Montelago di S	2.95	310			Pg	Pn	03 33 44.1	+1.1
	316nm,0.3s								
SSFR	Montelago di S	2.95	310			Pg	Pn	03 33 44.1	+1.1
	316nm,0.3s								
TIR	Tirane	2.99	93		*i*	PN	Pn	03 33 43.2	-0.3
TIR	Tirane	2.99	93		*i*	Pn	Pn	03 33 43.2	-0.3
TIR	Tirane	2.99	93		*e*	Pn	Pn	03 33 41.5	-2.0
FRON	Frontone	3.03	311			Pg	Pn	03 33 45.1	+1.0
	316nm,0.6s								
FRON	Frontone	3.03	311			Pg	Pn	03 33 45.1	+1.0
	316nm,0.6s								
NVLJ	Novalja	3.07	346		*e*	Pn	Pn	03 33 44.6	+0.1
NVLJ						Sn	Sn	03 34 19.3	-1.7
NVLJ	Novalja	3.07	346		*e*	Pn	Pn	03 33 44.6	+0.1
NVLJ						Sn	Sn	03 34 19.3	-1.7
PLE	Pljevlja	3.12	55	⇑	*i*	Pn	Pn	03 33 46.2	+0.9
PLE						*e*	Sn	03 34 23.0	+0.5
PLE	Pljevlja	3.12	55	⇑	*i*	Pn	Pn	03 33 46.2	+0.9
PLE						*e*	Sn	03 34 23.0	+0.5
ATVO	AVT- Monte Val	3.14	306			Pg	Pn	03 33 47.7	+2.1
	309nm,1.1s								
ATVO	AVT- Monte Val	3.14	306			Pg	Pn	03 33 47.7	+2.1
	309nm,1.1s								
PIEI	Pieia	3.15	309			Pg	Pn	03 33 46.8	+1.1
	128nm,0.6s								
PIEI	Pieia	3.15	309			Pg	Pn	03 33 46.8	+1.1
	128nm,0.6s								
PLAC	Placanica	3.16	172			Pg	Pn	03 33 47.6	+1.7
PLAC	Placanica	3.16	172			Pg	Pn	03 33 47.6	+1.7
ATPC	Poggio Castell	3.17	308			Pg	Pn	03 33 47.5	+1.6
	276nm,0.5s								
ATPC	Poggio Castell	3.17	308			Pg	Pn	03 33 47.5	+1.6
	276nm,0.5s								
PVY	Plav	3.19	70	⇓	*i*	Pn	Pn	03 33 46.8	+0.5
PVY						*e*	Sn	03 34 29.4	+0.7
PVY	Plav	3.19	70	⇓	*i*	Pn	Pn	03 33 46.8	+0.5
PVY						*e*	Sn	03 34 29.4	+0.7
SACS	San Casciano d	3.22	294			Pg	Pn	03 33 49.4	+2.8
BEY	Berane	3.23	65	⇓	*i*	Pn	Pn	03 33 48.0	+1.1
BEY	Berane	3.23	65		P		Pn	03 33 48.8	+1.9
BEY						*e*	Sn	03 34 26.1	+0.8
IVA	Berane	3.23	65	⇓	*i*	Pn	Pn	03 33 48.0	+1.1
IVA						*e*	Sn	03 34 26.1	+0.8
PESA	Pesaro	3.25	317			Pg	Pn	03 33 47.8	+0.7
	302nm,0.6s								
PESA	Pesaro	3.25	317			Pg	Pn	03 33 47.8	+0.7
	302nm,0.6s								
BLY	Banja Luka	3.30	16			Pg	Pn	03 33 48.3	+0.6
	279nm,0.6s								
BLY	Banja Luka	3.30	16		*e*	Pn	Pn	03 33 48.4	+0.7
CEL	Celeste	3.33	180		*e*	Pn	Pn	03 33 48.7	+0.6
CEL	Celeste	3.33	180		*e*	Pn	Pn	03 33 48.7	+0.6
HAPS	Han Pijesak,Bl	3.36	41		*e*	Pn	Pn	03 33 49.0	+0.4
CAFI	Castiglion Fio	3.39	302			Pg	Pn	03 33 50.6	+1.7
	127nm,0.8s								
CAFI	Castiglion Fio	3.39	302			Pg	Pn	03 33 50.6	+1.7
	127nm,0.8s								
PEJK	Peje	3.43	71			P	Pn	03 33 51.3	+1.8
PEJK						S	Sn	03 34 30.0	0.0
BBLS	Lazići	3.44	47		*e*	Pn	Pn	03 33 50.2	+0.4
KEK	Kerkira	3.51	121			Pg	Pn	03 33 50.6	-0.1

GRG	Griva	4.94	95	P		Pn	03 34 10.2	-0.1	
GRG	Griva	4.94	95	P		Pn	03 34 10.2	-0.1	
VLS	Valsamata	4.96	132	P		Pn	03 34 10.5	-0.1	
VLS	Valsamata	4.96	132	P		Pn	03 34 10.5	-0.1	
VLS	Valsamata	4.96	132	P		Pn	03 34 10.5	-0.1	
BOLS	Boljevac	4.99	61	*e*Pn		Pn	03 34 10.2	-0.8	
OBKA	Obir	5.01	349	*i* Pn		Pn	03 34 11.8	+0.4	
	comp=Z,5.4nm,0.3s,SNR=25								
OBKA				*i* Sn		Sn	03 35 10.9	+1.7	
	comp=Z,37nm,0.3s								
OBKA	Obir	5.01	349	Pn		Pn	03 34 11.8	+0.4	
	comp=Z,5.4nm,0.3s,SNR=25								
OBKA				Sn		Sn	03 35 10.9	+1.7	
	comp=Z,37nm,0.3s								
VAY	Valandovo	5.02	91	*i* Pn		Pn	03 34 13.6	+2.2	
VAY				*e*Sn		Sn	03 35 05.3	-4.0	
VAY	Valandovo	5.02	91	*i* Pn		Pn	03 34 13.6	+2.2	
VAY				*e*Sn		Sn	03 35 05.3	-4.0	
PDO	Prodromos	5.04	125	P		Pn	03 34 12.2	+0.6	
PDO	Prodromos	5.04	125	P		Pn	03 34 12.2	+0.6	
THL	Klokotos Trika	5.08	111	P		Pn	03 34 13.3	+1.1	
THL	Klokotos Trika	5.08	111	P		Pn	03 34 13.3	+1.1	
KUBS	Kucevo	5.09	54	*e*Pn		Pn	03 34 11.8	-0.5	
GRAM	Graiana	5.16	306	P		Pn	03 34 15.9	+2.5	
LIT	Litokhoron	5.22	104	P		Pn	03 34 15.1	+1.0	
LIT	Litokhoron	5.22	104	P		Pn	03 34 15.1	+1.0	
LIT	Litokhoron	5.22	104	P		Pn	03 34 15.1	+1.0	
PGF	Pioggiola	5.22	283	*e*Pn		Pn	03 34 13.6	-0.6	
PGF				*e*Sn		Sn	03 35 11.0	-3.3	
	comp=Z,57nm,1.2s								
PGF	Pioggiola	5.22	283	*e*Pn		Pn	03 34 13.6	-0.6	
PGF				*e*Sn		Sn	03 35 11.0	-3.3	
	comp=Z,29nm,1.2s								
CODM	Codolo	5.24	304	P		Pn	03 34 16.5	+2.1	
EVR	Evrytania	5.25	119	P		Pn	03 34 16.3	+1.6	
EVR	Evrytania	5.25	119	P		Pn	03 34 16.3	+1.6	
EVR	Evrytania	5.25	119	P		Pn	03 34 16.3	+1.6	
ZAPS	Zavoj	5.26	69	⇑*i*Pn		Pn	03 34 16.6	+1.9	
MYKA	Terra Mystica	5.29	343	*i* Sn		Sn	03 35 18.8	+2.7	
	comp=Z,11nm,0.4s								
MYKA	Terra Mystica	5.29	343	Sn		Sn	03 35 18.8	+2.7	
	comp=Z,11nm,0.4s								
MDVR	Moldovita	5.32	51	⇑*i*P		Pn	03 34 15.3	-0.2	
MDVR	Moldovita	5.32	51	⇑*i*P		Pn	03 34 15.3	-0.2	
ANX	Ano Chora	5.50	121	P		Pn	03 34 19.6	+1.5	
ANX	Ano Chora	5.50	121	P		Pn	03 34 19.6	+1.5	
VTS	Vitosha	5.53	77	⇓*i*P		Pn	03 34 20.1	+1.6	
VTS	Vitosha	5.53	77	P		Pn	03 34 19.5	+1.0	
VTS	Vitosha	5.53	77	P		Pn	03 34 19.5	+1.0	
VTS	Vitosha	5.53	77	P		Pn	03 34 19.5	+1.0	
SERG	Sergoula	5.70	122	P		Pn	03 34 22.0	+1.3	
SERG	Sergoula	5.70	122	P		Pn	03 34 22.0	+1.3	
ABTA	Abfaltersbach	5.70	336	*i* Pn		Pn	03 34 21.1	+0.3	
	comp=Z,0.7nm,0.1s,SNR=6.1								
ABTA	Abfaltersbach	5.70	336	Pn		Pn	03 34 21.1	+0.3	
	comp=Z,0.7nm,0.1s,SNR=6.1								
KALE	Kalithea	5.76	122	P		Pn	03 34 22.9	+1.3	
KALE	Kalithea	5.76	122	P		Pn	03 34 22.9	+1.3	
KALE	Kalithea	5.76	122	P		Pn	03 34 22.9	+1.3	
DRO	Drossia	5.77	127	P		Pn	03 34 22.4	+0.8	
DRO	Drossia	5.77	127	P		Pn	03 34 22.4	+0.8	
BZS	Buzias	5.78	44	⇓*i*P		Pn	03 34 22.4	+0.6	
BZS	Buzias	5.78	44	⇓*i*P		Pn	03 34 22.4	+0.6	
KBA	Koelnbreinsper	5.78	342	*i* Pn		Pn	03 34 22.1	+0.1	
	comp=Z,1.7nm,0.2s,SNR=9.2								
KBA	Koelnbreinsper	5.78	342	Pn		Pn	03 34 22.1	+0.1	
	comp=Z,1.7nm,0.2s,SNR=9.2								
PLG	Polygyros	5.84	100	P		Pn	03 34 23.1	+0.4	
PLG	Polygyros	5.84	100	P		Pn	03 34 23.1	+0.4	
PLG	Polygyros	5.84	100	P		Pn	03 34 23.1	+0.4	
KLV	Kalavryta, Ach	5.98	124	P		Pn	03 34 25.5	+0.9	
KLV	Kalavryta, Ach	5.98	124	P		Pn	03 34 25.5	+0.9	
KLV	Kalavryta, Ach	5.98	124	P		Pn	03 34 25.5	+0.9	
NVR	Nevrokopi	5.99	90	P		Pn	03 34 25.4	+0.7	
NVR	Nevrokopi	5.99	90	P		Pn	03 34 25.4	+0.7	
NVR	Nevrokopi	5.99	90	P		Pn	03 34 25.4	+0.7	
DSF	Desfina	6.00	120	P		Pn	03 34 25.7	+0.8	
DSF	Desfina	6.00	120	P		Pn	03 34 25.7	+0.8	
DSF	Desfina	6.00	120	P		Pn	03 34 25.7	+0.8	
NEO	Neokhori	6.04	110	P		Pn	03 34 26.1	+0.7	
NEO	Neokhori	6.04	110	P		Pn	03 34 26.1	+0.7	
NEO	Neokhori	6.04	110	P		Pn	03 34 26.1	+0.7	
GUR	Goura	6.16	124	P		Pn	03 34 28.3	+1.1	
GUR	Goura	6.16	124	P		Pn	03 34 28.3	+1.1	
GUR	Goura	6.16	124	P		Pn	03 34 28.3	+1.1	
LKR	Lokris	6.19	116	P		Pn	03 34 27.8	+0.4	
LKR	Lokris	6.19	116	P		Pn	03 34 27.8	+0.4	
LKR	Lokris	6.19	116	P		Pn	03 34 27.8	+0.4	
SMIA	Simia	6.22	113	P		Pn	03 34 28.4	+0.6	
SMIA	Simia	6.22	113	P		Pn	03 34 28.4	+0.6	
GZR	Gura Zlata	6.29	50	⇓*i*P		Pn	03 34 28.1	-0.7	
GZR	Gura Zlata	6.29	50	⇓*i*P		Pn	03 34 28.1	-0.7	
CONA	Conrad Observa	6.34	360	*i* Pn		Pn	03 34 30.3	+0.8	
	comp=Z,2.0nm,0.2s								
CONA	Conrad Observa	6.34	360	Pn		Pn	03 34 30.3	+0.8	
	comp=Z,2.0nm,0.2s								
MOA	Molln	6.37	350	*i* Pn		Pn	03 34 30.1	+0.3	
	comp=Z,3.2nm,0.2s,SNR=15								
MOA	Molln	6.37	350	Pn		Pn	03 34 30.1	+0.3	
	comp=Z,3.2nm,0.2s,SNR=15								
WATA	Walderalm	6.52	333	*i* Pn		Pn	03 34 33.7	+1.6	
	comp=Z,3.3nm,0.2s								
WATA	Walderalm	6.52	333	Pn		Pn	03 34 33.7	+1.6	
	comp=Z,3.3nm,0.2s								
FETA	Feichten	6.57	327	*i* Pn		Pn	03 34 35.4	+2.6	
	comp=Z,1.2nm,0.2s,SNR=8.4								
FETA				*e*Sn		Sn	03 35 50.0	+2.3	
	comp=Z,7.1nm,0.4s								
FETA	Feichten	6.57	327	Pn		Pn	03 34 35.4	+2.6	
	comp=Z,1.2nm,0.2s,SNR=8.4								
SBF	Sospel	6.63	293	*e*Pn		Pn	03 34 32.3	-1.2	
SBF				*e*Sn		Sn	03 35 44.6	-4.4	
	comp=Z,15nm,0.5s								
SBF	Sospel	6.63	293	*e*Pn		Pn	03 34 32.3	-1.2	
DAVOX	Davos/Dischmat	6.75	322	Pn		Pn	03 34 37.0	+1.7	
	comp=Z,2.4nm,0.3s,baz=115,slow=12,SNR=22								
DAVOX				Sn		Sn	03 35 53.4	+1.2	
	comp=Z,3.1nm,0.3s,baz=344,slow=21,SNR=4.7								
TUE	Stuetta	6.79	318	*e*Pn		Pn	03 34 35.5	-0.3	
TUE	Stuetta	6.79	318	*e*Pn		Pn	03 34 35.5	-0.3	
TUE				*e*S		Sn	03 35 42.2	-11	
LOT	Lotru	6.90	53	⇑*i*P		Pn	03 34 39.5	+2.2	
LOT	Lotru	6.90	53	⇑*i*P		Pn	03 34 39.5	+2.2	
FRF	La Foret Royal	7.11	289	*e*Pn		Pn	03 34 38.2	-1.8	
FRF	La Foret Royal	7.11	289	*e*Pn		Pn	03 34 38.2	-1.8	
DAVA	Damuels	7.14	325	*i* Pn		Pn	03 34 42.5	+2.0	
	comp=Z,7.9nm,0.2s								
DAVA				*e*Sn		Sn	03 36 02.9	+1.3	
	comp=Z,34nm,0.6s								
DAVA	Damuels	7.14	325	Pn		Pn	03 34 42.5	+2.0	
	comp=Z,7.9nm,0.2s								
DAVA				Sn		Sn	03 36 02.9	+1.3	
	comp=Z,34nm,0.6s								
LMR	La Mourre	7.16	287	*e*Pn		Pn	03 34 39.0	-1.7	
LMR	La Mourre	7.16	287	*e*Pn		Pn	03 34 39.0	-1.7	
VYHS	Vyhne	7.21	16	*e*Pn		Pn	03 34 41.9	+0.5	
VYHS	Vyhne	7.21	16	*e*PN		Pn	03 34 41.9	+0.5	
VYHS				*e*SN		Sn	03 35 58.1	-5.1	
MBDF	Montbardon	7.37	298	*e*Pn		Pn	03 34 42.0	-1.8	
MBDF				*e*Sn		Sn	03 36 01.7	-5.6	
	comp=Z,15nm,0.7s								
MBDF	Montbardon	7.37	298	*e*Pn		Pn	03 34 42.0	-1.8	
ARR	Arges	7.39	56	⇓*i*P		Pn	03 34 47.0	+3.0	
ARR	Arges	7.39	56	⇓*i*P		Pn	03 34 47.0	+3.0	
GERES	GERESS Array B	7.42	349	Pn		Pn	03 34 44.3	-0.1	
	comp=Z,0.7nm,0.3s,baz=162,slow=14,SNR=15								
GERES				Sn		Sn	03 36 05.4	-3.0	
	comp=Z,2.3nm,0.3s,baz=176,slow=24,SNR=6.4								
KECS	Kecovo	7.62	24	*e*Pn		Pn	03 34 49.6	+2.6	
KECS	Kecovo	7.62	24	*e*PN		Pn	03 34 49.6	+2.6	
LPG	La Plagne	7.70	304	*e*Pn		Pn	03 34 46.9	-1.6	
LPG				*e*Sn		Sn	03 36 09.9	-5.8	
	comp=Z,19nm,0.5s								
LPG	La Plagne	7.70	304	*e*Pn		Pn	03 34 46.9	-1.6	
KHC	Kasperske Hory	7.72	349	*e*PN		Pn	03 34 48.9	+0.5	
KHC				*ex*		x	03 34 58.0		
KHC				*e*SN		Sn	03 36 13.2	-2.4	
KHC	Kasperske Hory	7.72	349	Pn		Pn	03 34 48.9	+0.5	
KHC	Kasperske Hory	7.72	349	*e*Pn		Pn	03 34 47.6	-0.8	
KHC				*e*S		Sn	03 36 07.6	-8.0	
LPL	La Plagne	7.72	304	*e*Pn		Pn	03 34 46.9	-1.8	
LPL				*e*Sn		Sn	03 36 10.4	-5.7	
	comp=Z,25nm,0.5s								
LPL	La Plagne	7.72	304	*e*Pn		Pn	03 34 46.9	-1.8	
KEST	Kesra	7.77	223	Pn		Pn	03 34 53.4	+4.2	
	comp=Z,0.5nm,0.3s,baz=163,slow=2.7,SNR=9.5								
SMRF	Simiane la Rot	7.96	291	*e*Pn		Pn	03 34 49.6	-2.1	
SMRF	Simiane la Rot	7.96	291	*e*Pn		Pn	03 34 49.6	-2.1	
ORIF	Oris-en-Rattie	8.03	298	*e*Pn		Pn	03 34 51.2	-1.6	
ORIF				*e*Sn		Sn	03 36 17.8	-5.7	
	comp=Z,9.1nm,0.7s								
ORIF	Oris-en-Rattie	8.03	298	*e*Pn		Pn	03 34 51.2	-1.6	
MLR	Muntele Rosu	8.28	59	Pn		Pn	03 34 56.0	-0.1	
	comp=Z,0.1nm,0.3s,baz=118,slow=17,SNR=8.7								
MLR	Muntele Rosu	8.28	59	⇑*i*P		Pn	03 34 59.4	+3.2	
MLR	Muntele Rosu	8.28	59	⇑*i*P		Pn	03 34 59.4	+3.2	
CABF	La Chapelle	8.66	309	*e*Pn		Pn	03 34 59.3	-2.0	
CABF				*e*Sn		Sn	03 36 32.5	-6.4	
	comp=Z,11nm,0.5s								
CABF	La Chapelle	8.66	309	*e*Pn		Pn	03 34 59.3	-2.0	
VIVF	Saint-Julien-l	8.82	295	*e*Pn		Pn	03 35 01.7	-1.8	
VIVF	Saint-Julien-l	8.82	295	*e*Pn		Pn	03 35 01.7	-1.8	
PLOR	Plostina	8.88	58	⇓*i*P		Pn	03 35 05.7	+1.4	
PLOR	Plostina	8.88	58	⇓*i*P		Pn	03 35 05.7	+1.4	
HINF	Hinteralfeld	8.95	317	*e*Pn		Pn	03 35 03.1	-2.2	
HINF				*e*Sn		Sn	03 36 39.4	-6.6	
	comp=Z,19nm,0.5s								
HINF	Hinteralfeld	8.95	317	*e*Pn		Pn	03 35 03.1	-2.2	
BURAR	Bucovina Array	8.97	45	⇓*i*P		Pn	03 35 08.8	+3.2	
BURAR	Bucovina Array	8.97	45	⇓*i*P		Pn	03 35 08.8	+3.2	
CDF	Champ du Feu	9.15	321	*e*Pn		Pn	03 35 07.2	-0.9	
CDF				*e*Sn		Sn	03 36 43.9	-7.0	
	comp=Z,17nm,0.6s								
CDF	Champ du Feu	9.15	321	*e*Pn		Pn	03 35 07.2	-0.9	
LASF	Ste Croix	9.19	290	*e*Pn		Pn	03 35 06.6	-2.0	
LASF	Ste Croix	9.19	290	*e*Pn		Pn	03 35 06.6	-2.0	
HAU	Haudompre	9.33	317	*e*Pn		Pn	03 35 08.4	-2.1	
HAU				*e*Sn		Sn	03 36 48.1	-7.3	
	comp=Z,67nm,0.8s								
HAU	Haudompre	9.33	317	*e*Pn		Pn	03 35 08.4	-2.1	
IDI	Anoyia	9.45	129	Pn		Pn	03 35 10.7	-1.5	
	comp=Z,1.2nm,0.3s,baz=236,slow=3.1,SNR=12								
IDI				Sn		Sn	03 36 54.8	-3.6	
	comp=Z,3.0nm,0.3s,baz=240,slow=23,SNR=5.7								
PAGF	Fort de Pagny	10.01	318	*e*Pn		Pn	03 35 17.3	-2.4	
PAGF				*e*Sn		Sn	03 37 04.5	-7.3	
	comp=Z,4.2nm,0.5s								
SMF	Signal de Mont	10.03	304	*e*Pn		Pn	03 35 18.0	-2.1	
SMF				*e*Sn		Sn	03 37 04.6	-7.8	
	comp=Z,7.4nm,0.5s								
SMF	Signal de Mont	10.03	304	*e*Pn		Pn	03 35 18.0	-2.1	
SFTF	Sexfontaines	10.15	314	*e*Pn		Pn	03 35 19.5	-2.2	
	baz=138								
SFTF				*e*Sn		Sn	03 37 07.8	-7.5	
	comp=Z,6.8nm,0.5s								
SFTF	Sexfontaines	10.15	314	*e*Pn		Pn	03 35 19.5	-2.2	
MTLF	Montolieu	10.26	284	*e*Pn		Pn	03 35 21.3	-1.9	
MTLF	Montolieu	10.26	284	*e*Pn		Pn	03 35 21.3	-1.9	
LOR	Lormes	10.31	307	*e*Pn		Pn	03 35 22.4	-1.5	
	baz=123								
LOR				*e*Sn		Sn	03 37 11.5	-7.7	
	comp=Z,7.2nm,0.3s								
LOR	Lormes	10.31	307	*e*Pn		Pn	03 35 22.4	-1.5	
MEZF	Maizieres J'vi	10.32	316	*e*Pn		Pn	03 35 21.7	-2.3	
MEZF				*e*Sn		Sn	03 37 11.9	-7.6	
	comp=Z,14nm,0.6s								
MEZF	Maizieres J'vi	10.32	316	*e*Pn		Pn	03 35 21.7	-2.3	
AVF	Avril sur Loir	10.40	304	*e*Pn		Pn	03 35 23.0	-2.1	
AVF				*e*Sn		Sn	03 37 13.9	-7.5	
	comp=Z,3.1nm,0.5s								
AVF	Avril sur Loir	10.40	304	*e*Pn		Pn	03 35 23.0	-2.1	
SSF	Saint Saulge	10.42	306	*e*Pn		Pn	03 35 23.3	-2.1	
SSF				*e*Sn		Sn	03 37 14.3	-7.7	
	comp=Z,7.9nm,0.6s								
SSF	Saint Saulge	10.42	306	*e*Pn		Pn	03 35 23.3	-2.1	
BGF	Bois d'Agland	10.62	302	*e*Pn		Pn	03 35 25.9	-2.2	
BGF				*e*Sn		Sn	03 37 19.2	-7.6	
	comp=Z,13nm,0.6s								
BGF	Bois d'Agland	10.62	302	*e*Pn		Pn	03 35 25.9	-2.2	
TCF	Toulx Ste Croi	10.93	300	*e*Pn		Pn	03 35 30.4	-2.0	
TCF				*e*Sn		Sn	03 37 26.8	-7.6	
	comp=Z,1.6nm,0.4s								
TCF	Toulx Ste Croi	10.93	300	*e*Pn		Pn	03 35 30.4	-2.0	
HYF	Humbligny	11.04	305	*e*Pn		Pn	03 35 32.0	-1.9	
HYF				*e*Sn		Sn	03 37 29.3	-8.0	
HYF	Humbligny	11.04	305	*e*Pn		Pn	03 35 32.0	-1.9	
MMAI	Mount Meron Ar	17.70	113	P		Pn	03 37 03.0	+0.4	
	comp=Z,0.7nm,0.3s,baz=300,slow=12,SNR=3.2								
MMAI	Mount Meron Ar	17.70	113	P		Pn	03 37 03.0	+0.4	
EKA	Eskdalemuir Ar	18.59	324	P		Pn	03 37 14.4	+1.1	
	baz=132,slow=13,SNR=2.9								
HFS	Hagfors	18.62	357	P		Pn	03 37 13.5	-0.1	
	comp=Z,0.1nm,0.3s,baz=198,slow=14,SNR=3.5								
OBN	Obninsk	19.18	38	P		Pn	03 37 20.7	+0.3	
	comp=Z,9.4nm,0.3s,baz=334,slow=8.5,SNR=4.2								
NOA	NORSAR Array B	19.63	353	P		Pn	03 37 26.5	0.0	
	comp=Z,0.1nm,0.3s,baz=172,slow=12,SNR=2.6								
KBZ	Khabaz	19.95	75	P		P	03 37 27.2	-0.7	
	comp=Z,0.1nm,0.3s,baz=278,slow=15,SNR=2.2								
FINES	FINESS Array B	20.82	14	P		P	03 37 36.1	-1.1	
	comp=Z,2.7nm,0.6s,baz=183,slow=9.5,SNR=9.5								
ARCES	ARCESS Array B	28.46	7	P		P	03 38 48.6	-2.1	
	comp=Z,0.9nm,0.7s,baz=186,slow=7.3,SNR=6.2								
TORD	Torodi Ar. Bea	30.92	208	P		P	03 39 14.5	+1.6	
	comp=Z,0.2nm,0.9s,baz=18,slow=7.5,SNR=3.4								
SPITS	Spitsbergen Ar	36.70	0	P		P	03 40 02.9	+0.4	
	comp=Z,7.8nm,0.9s,baz=171,slow=10,SNR=4.3								
KURBB	Kurchatov Arra	43.16	56	P		P	03 40 55.7	-0.8	
	comp=Z,0.5nm,0.5s,baz=288,slow=9.4,SNR=3.5								
KURK	Kurchatov	43.20	56	P		P	03 40 55.7	-1.1	
KURK	Kurchatov	43.20	56	P		P	03 40 55.7	-1.1	
MKAR	Makanchi Array	46.62	60	P		P	03 41 24.4	+0.2	
	comp=Z,1.2nm,0.7s,baz=288,slow=6.2,SNR=7.8								
SONM	Songino Array	61.04	50	P		P	03 43 11.3	+1.6	
	comp=Z,0.3nm,0.4s,baz=316,slow=46,SNR=3.4								
CMAR	Chiang Mai Arr	72.89	80	P		P	03 44 25.2	-0.1	
	comp=Z,0.8nm,0.4s,baz=301,slow=7.0,SNR=4.9								
PDAR	Pinedale Array	82.70	323	P		P	03 45 21.1	+1.2	
	comp=Z,0.3nm,0.7s,baz=68,slow=5.9,SNR=2.8								
TXAR	Lajitas Array	90.05	311	P		P	03 45 57.6	+1.5	
	comp=Z,0.5nm,0.9s,baz=72,slow=4.1,SNR=4.2								

NIED **12** *03:33:00,35°.50N×141°.10E,h29km,Mw4.1 Best double couple: M₀1.53000×10¹⁵ NP1:φs17.00000°,δ11.00000°, λ-130.00000°. NP2:φs237.00000°,δ81.00000°, λ-83.00000°.*

ISCJB **12** *03:33:18.3±0.8,35°.46N±0°.03×141°.04E±0°.06,h31km±4km, mb4.0/25, MS3.4/5, Error ellipse: s-maj=8.7km s-min=5.5km az=6.3*

JMA **12** *03:33:19.1±0.1,35°.53N×140°.98E,h27km±1km,M3.8*

JMA Felt II J1.

IDC **12** *03:33:23.1±3.0,35°.43N×140°.81E,h51km±26km, mb3.7/23, mb1 3.9/25, mb1mx3.7/58, mbtmp4.0/25, ML2.9/2, MS3.3/12, Ms1 3.3/12, ms1mx3.0/60, Error ellipse: s-maj=18.6km s-min=12.4km az=85.0*

ISC 12 03:33:18.9±1.6, 35°.47N±0°.04×140°.98E±0°.06, h19km±7km, n54, σ0s86/45, mb4.0/25, MS3.3/5, 4D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
CHOJ	Chosi	0.25	336	⇓P		Pb	03 33 25.0	+0.3
CHOJ				S		Sb	03 33 29.2	+0.7
KTR	Katsuura	0.63	240	P		Pn	03 33 32.2	+0.9
KTR				*e*S		Sb	03 33 40.2	+0.5
JCN	Nagara	0.64	266	P		Pn	03 33 32.8	-0.1
JCN				*e*S		Sn	03 33 42.1	-0.5
BSO4	Boso 4	0.71	228	⇓P		Pn	03 33 33.4	-0.5
BSO4				X			03 33 44.6	
BSO3	Boso 3	0.77	210	⇓P		Pb	03 33 33.8	+0.3
BSO3				X			03 33 45.6	
BSO1	Boso 1	0.81	180	⇓P		Pb	03 33 33.7	-0.4
BSO1				X			03 33 46.5	
JYT	Yasato	0.99	320	P		Pb	03 33 36.1	-1.4
JYT				S		Sb	03 33 49.5	-0.6
JHO	Hitachi	1.19	344	P		Pn	03 33 39.1	-1.4
JHO				S		Sb	03 33 55.3	-0.5
JIM2	Oshima 3	1.48	240	P		Pn	03 33 42.8	-1.7
JIM2				*e*S		Sn	03 34 02.1	-1.2
JAG	Ashikaga	1.56	308	P		Pn	03 33 45.0	-0.7
MJAR	Matsushiro Arr	2.49	296	P		Pn	03 33 59.6	+1.2
	10.0nm,0.3s,baz=89,slow=8.3,SNR=59							
MJAR				LR		LR	03 34 58.8	
	comp=Z,308nm,19.9s,baz=130,slow=41							
JHJ	Hachijo jima 2	2.55	203	LR		LR	03 35 07.1	
	comp=Z,298nm,19.9s,baz=243,slow=42							
JCJ	Chichijima	8.41	173	P		Pn	03 35 18.5	-1.3
JCJ				LR		LR	03 38 01.3	
	comp=Z,264nm,21.2s,baz=290,slow=33							
KSRS	Korea Array	10.70	284	P		Pn	03 35 56.6	+5.5
	0.3nm,0.3s,baz=101,slow=14,SNR=8.4							
KSRS				LR		LR	03 40 04.2	
	comp=Z,171nm,19.4s,baz=80,slow=38							
USRK	Ussuriysk Ar.	11.12	324	P		Pn	03 35 58.5	+1.7
	0.2nm,0.3s,baz=124,slow=11,SNR=4.3							
USRK				LR		LR	03 39 57.4	
	comp=Z,161nm,21.1s,baz=132,slow=36							
JOW	Kunigami	13.87	235	LR		LR	03 40 28.9	
	comp=Z,49nm,21.0s,baz=322,slow=31							
KLR	Kul'dur	15.33	337	LR		LR	03 42 40.9	
	comp=Z,152nm,18.3s,baz=132,slow=36							
YAK	Yakutsk	27.52	348	LR		LR	03 50 08.6	
	comp=Z,60nm,20.9s,baz=114,slow=36							
H11N2	WAKE ISLAND Hy	27.69	118	T		T	04 08 06.0	
	baz=310,slow=76,SNR=93							
H11N1	WAKE ISLAND Hy	27.70	118	T		T	04 08 09.1	
	baz=310,slow=76,SNR=74							
H11N3	WAKE ISLAND Hy	27.71	118	T		T	04 08 07.4	
	baz=310,slow=76,SNR=68							
H11S1	WAKE ISLAND Hy	28.34	120	T		T	04 08 57.0	
	baz=312,slow=75,SNR=422							
H11S3	WAKE ISLAND Hy	28.34	120	T		T	04 08 54.7	
	baz=312,slow=75,SNR=343							
H11S2	WAKE ISLAND Hy	28.36	120	T		T	04 08 53.2	
	baz=312,slow=75,SNR=328							
SEY	Seymchan	28.39	11	P		P	03 39 12.8	+1.1
	1.0nm,0.4s,baz=207,slow=4.9,SNR=4.7							
SONM	Songino Array	28.40	306	P		P	03 39 12.5	+0.3
	1.1nm,0.6s,baz=101,slow=9.0,SNR=7.9							
TLY	Talaya	31.12	313	LR		LR	03 51 47.8	
	comp=Z,47nm,19.7s,baz=110,slow=36							
TIXI	Tiksi	36.80	354	P		P	03 40 24.7	-0.3
	0.5nm,0.3s,baz=143,slow=4.1,SNR=4.4							
ZALV	Zalesovo Beam	42.73	314	P		P	03 41 13.8	-0.8
	0.9nm,0.4s,baz=101,slow=7.9,SNR=5.9							
ZALV				LR		LR	03 59 10.7	
	comp=Z,33nm,18.4s,baz=244,slow=36							
MKAR	Makanchi Array	44.67	303	P		P	03 41 30.0	-0.4
	1.1nm,0.7s,baz=96,slow=7.4,SNR=7.0							
MKAR				LR		LR	03 59 30.9	
	comp=Z,61nm,18.2s,baz=136,slow=35							
KURBB	Kurchatov Arra	46.70

ILAR				pP		**pP**	**03 51 24.7**	**-0.9**	
	0.5nm,0.6s,baz=260,slow=6.9,SNR=4.5								
RAMN	**Ramite**	**48.47 273**	*eP*	**P**		**P**	**03 51 30.2**	**-0.4**	
	15nm,0.9s								
RAMN	**Ramite**	**48.47 273**	*eP*	**P**		**P**	**03 51 30.5**	**-0.1**	
GUN	**Gumba**	**48.55 275**	*eP*	**P**		**P**	**03 51 27.9**	**-3.4**	
	15nm,0.4s								
GUN	**Gumba**	**48.55 275**	*eP*	**P**		**P**	**03 51 31.5**	**+0.2**	
KKN	**Kakani**	**49.07 275**	*eP*	**P**		**P**	**03 51 33.1**	**-2.1**	
KKN	**Kakani**	**49.07 275**	*eP*	**P**		**P**	**03 51 35.6**	**+0.4**	
BVAR	**Borovoye Array**	**50.17 311**	P	**P**		**P**	**03 51 43.2**	**+0.3**	
	1.9nm,0.8s,baz=82,slow=11,SNR=7.3								
BVAR				pP		**pP**	**03 51 52.6**	**-0.8**	
	2.0nm,0.6s,baz=78,slow=9.2,SNR=7.5								
KOLN	**Koldanda**	**50.38 276**	*eP*	**P**		**P**	**03 51 43.7**	**-1.4**	
	5.5nm,0.5s								
KOLN	**Koldanda**	**50.38 276**	*eP*	**P**		**P**	**03 51 45.3**	**+0.2**	
PYUN	**Piuthan**	**50.68 276**	*eP*	**P**		**P**	**03 51 47.1**	**-0.3**	
PYUN	**Piuthan**	**50.68 276**	*eP*	**P**		**P**	**03 51 47.5**	**+0.1**	
INK	**Inuvik**	**51.50 28**	P	**P**		**P**	**03 51 54.8**	**+2.1**	
	0.6nm,0.7s,baz=265,slow=4.5,SNR=3.3								
INK				pP		**pP**	**03 52 03.2**	**+0.1**	
	1.4nm,0.6s,baz=306,slow=6.3,SNR=5.0								
ARU	**Arti**	**55.64 318**	P	**P**		**P**	**03 52 24.0**	**+0.8**	
	3.6nm,0.2s,baz=31,slow=4.7,SNR=3.6								
ARU				pP		**pP**	**03 52 32.9**	**-0.8**	
	5.4nm,0.2s,baz=93,slow=5.6,SNR=1.4								
AKTO	**Aktyubinsk**	**58.27 311**	pP	pP			03 52 50.4	-2.2	
	1.2nm,0.7s,baz=69,slow=14,SNR=2.9								
WRA	**Warramunga Arr**	**59.70 190**	P	**P**		**P**	**03 52 49.9**	**-2.2**	
	0.7nm,0.7s,baz=8.5,slow=7.0,SNR=4.6								
YKA	**Yellowknife Ar**	**60.91 31**	P	**P**		**P**	**03 53 00.3**	**+0.5**	
	0.1nm,0.5s,baz=300,slow=6.0,SNR=5.7								
YKA				pP		**pP**	**03 53 09.4**	**-1.1**	
	0.5nm,0.6s,baz=301,slow=6.6,SNR=11								
FINES	**FINESS Array B**	**67.42 332**	P	**P**		**P**	**03 53 42.7**	**+0.1**	
	1.5nm,0.9s,baz=48,slow=6.2,SNR=3.5								
FINES				pP		**pP**	**03 53 52.2**	**-1.1**	
	1.3nm,0.7s,baz=25,slow=6.3,SNR=4.1								
KBZ	**Khabaz**	**70.55 311**	P	**P**		**P**	**03 54 03.8**	**+1.5**	
	1.7nm,0.9s,baz=34,slow=10,SNR=4.1								
KBZ				pP		**pP**	**03 54 12.7**	**-0.5**	
	2.9nm,0.8s,baz=34,slow=1.3,SNR=6.2								
NVAR	**Mina Array Bea**	**72.26 55**	P	**P**		**P**	**03 54 13.9**	**+0.8**	
	0.4nm,0.6s,baz=268,slow=8.9,SNR=4.0								
HFS	**Hagfors**	**72.54 336**	P	**P**		**P**	**03 54 14.3**	**+0.3**	
	0.5nm,0.3s,baz=46,slow=8.8,SNR=7.5								
HFS				pP		**pP**	**03 54 23.6**	**-1.3**	
	2.0nm,0.6s,baz=46,slow=6.4,SNR=3.6								
NB2	**NORSAR Subarra**	**72.57 338**	P	**P**		**P**	**03 54 14.5**	**+0.2**	
	comp=Z,1.7nm,0.8s,baz=36,slow=6.2								
NOA	**NORSAR Array B**	**72.57 338**	P	**P**		**P**	**03 54 14.4**	**+0.2**	
	comp=Z,0.6nm,0.8s,baz=33,slow=6.3,SNR=2.5								
NOA				pP		**pP**	**03 54 24.1**	**-1.1**	
	comp=Z,1.1nm,0.7s,baz=38,slow=6.0,SNR=3.4								
AKASG	**Malin Array Be**	**73.36 323**	P	**P**		**P**	**03 54 18.9**	**-0.2**	
	comp=Z,0.1nm,0.2s,baz=53,slow=0.7,SNR=3.4								
AKASG				pP		**pP**	**03 54 28.4**	**-1.6**	
	comp=Z,0.5nm,0.4s,baz=48,slow=5.8,SNR=2.6								
PDAR	**Pinedale Array**	**74.83 47**	P	**P**		**P**	**03 54 28.6**	**+0.5**	
	comp=Z,0.2nm,0.5s,baz=18,slow=0.5,SNR=3.5								
PDAR				pP		**pP**	**03 54 37.9**	**-1.1**	
	comp=Z,0.6nm,0.5s,baz=289,slow=2.2,SNR=6.2								
TXAR	**Lajitas Array**	**87.38 54**	P	**P**		**P**	**03 55 36.3**	**+1.4**	
	comp=Z,0.1nm,0.6s,baz=328,slow=3.2,SNR=3.1								
TXAR				pP		**pP**	**03 55 45.0**	**-1.0**	
	comp=Z,0.2nm,0.5s,baz=302,slow=2.9,SNR=3.4								

IDC ***12*** *03:52:26.4±9.0, 39.54N×142.73E, h66km±61km, mb3.4/9, mb1 3.6/10, mb1mx3.3/60, mbtmp3.7/10, ML2.1/1, Error ellipse: s-maj=91.2km s-min=21.8km az=169.0*

ISC 12 03:52:19.2±2.7, 39.2N±0.5×142.9E±0.1, h18km, n10, σ0.97/10, mb3.6/9, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
USRK	**Ussuriysk Ar.**	**9.57**	**305**	P		**Pn**	**03 54 37.1**	**+1.1**
	0.2nm,0.3s,baz=105,slow=14,SNR=6.2							
SEY	**Seymchan**	**24.42**	**10**	P		**P**	**03 57 36.2**	**-0.3**
	4.0nm,0.8s,baz=202,slow=8.3,SNR=9.0							
SONM	**Songino Array**	**27.63**	**300**	P		**P**	**03 58 05.8**	**0.0**
	0.4nm,0.6s,baz=104,slow=6.5,SNR=3.6							
ZALV	**Zalesovo Beam**	**41.36**	**311**	P		**P**	**04 00 02.8**	**-1.0**
	0.5nm,0.4s,baz=89,slow=11,SNR=3.2							
MKAR	**Makanchi Array**	**44.00**	**300**	P		**P**	**04 00 24.5**	**-0.9**
	0.3nm,0.4s,baz=86,slow=9.9,SNR=4.5							
KURBB	**Kurchatov Arra**	**45.63**	**307**	P		**P**	**04 00 37.1**	**-1.2**
	1.5nm,0.6s,baz=80,slow=8.5,SNR=14							
ILAR	**Eielson Array**	**47.02**	**33**	P		**P**	**04 00 48.7**	**-0.3**
	0.9nm,0.7s,baz=261,slow=6.1,SNR=10							
INK	**Inuvik**	**51.90**	**28**	P		**P**	**04 01 26.6**	**+0.4**
	1.0nm,0.9s,baz=287,slow=4.1,SNR=5.8							
YKA	**Yellowknife Ar**	**61.32**	**31**	P		**P**	**04 02 32.8**	**-0.5**
	0.3nm,0.5s,baz=300,slow=6.3,SNR=10							
TXAR	**Lajitas Array**	**87.85**	**53**	P		**P**	**04 05 09.0**	**+1.1**
	0.1nm,0.4s,baz=310,slow=4.2,SNR=4.2							

ISCJB ***12*** *03:55:13.9±0.6, 36.91N±0.04×140.69E±0.09, h10km, mb3.5/6, Error ellipse: s-maj=11.1km s-min=4.7km az=25.6*

IDC ***12*** *03:55:14.0±1.0, 36.98N×140.59E, h0km, mb3.5/6, mb1 3.7/6, mb1mx3.4/59, mbtmp3.5/6, MS3.5/1, Ms1 3.5/1, ms1mx2.6/27, Error ellipse: s-maj=25.8km s-min=21.7km az=27.0*

JMA ***12*** *03:55:14.4, 36.91N×140.65E, h5km±1km, M3.3*

ISC 12 03:55:14.7±0.8, 36.93N±0.05×140.60E±0.07, h10km, n12, σ0.61/15, mb3.5/6, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.23**	**42**	P		**Pg**	**03 55 19.1**	**-0.5**
ONAJ				S		**Sg**	**03 55 22.3**	**-0.6**
JHO	**Hitachi**	**0.32**	**185**	P		**Pg**	**03 55 20.5**	**-0.5**
JHO				S		**Sg**	**03 55 25.2**	**-0.1**
JYT	**Yasato**	**0.77**	**205**	P		**Pg**	**03 55 29.3**	**-0.3**
JYT				S		**Sb**	**03 55 40.0**	**-0.7**
MJAR	**Matsushiro Arr**	**1.96**	**259**	Pn		**Pb**	**03 55 50.2**	**-0.3**
	12nm,0.3s,baz=80,slow=16,SNR=31							
MJAR				Sn		**Sb**	**03 56 14.9**	**-0.1**
	11nm,0.3s,baz=79,slow=29,SNR=5.3							
JCJ	**Chichijima**	**9.89**	**172**	LR		LR	04 00 38.5	
	comp=Z,301nm,21.1s,baz=22,slow=33							
SONM	**Songino Array**	**27.31**	**304**	P		**P**	**04 00 59.7**	**+0.1**
	0.3nm,0.6s,baz=113,slow=11,SNR=2.4							
MKAR	**Makanchi Array**	**43.62**	**302**	P		**P**	**04 03 19.2**	**0.0**
	0.2nm,0.2s,baz=90,slow=7.2,SNR=2.0							
KURBB	**Kurchatov Arra**	**45.55**	**308**	P		**P**	**04 03 34.1**	**-0.4**
	0.3nm,0.4s,baz=82,slow=7.8,SNR=4.7							
WRA	**Warramunga Arr**	**56.87**	**187**	P		**P**	**04 04 59.8**	**+0.1**
	0.4nm,0.6s,baz=3.5,slow=7.2,SNR=4.6							
ASAR	**Alice Springs**	**60.60**	**187**	P		**P**	**04 05 26.6**	**+1.0**
	0.2nm,0.3s,baz=11,slow=11,SNR=3.2							
TXAR	**Lajitas Array**	**90.70**	**52**	P		**P**	**04 08 19.3**	**+1.2**
	0.1nm,0.4s,baz=316,slow=3.8,SNR=3.2							
LPAZ	**La Paz**	**147.31**	**59**	PKPbc		**PKPab**	**04 15 01.0**	**-0.5**
	0.5nm,0.5s,baz=310,slow=3.7,SNR=3.5							

DJA 12 04:00:54.7±0.6, 4°S±°, 10°2E±°, h159km±7km, M3.6/8, MLv3.6/8, Southern Sumatera

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
MASI	**Maura Aman, Be**	**0.55**	**335**	P		Pn	04 01 16.7	-0.7
MASI				S		Sn	04 01 38.0	+3.3
MNAI	**Manna**	**0.86**	**146**	P		Pn	04 01 16.1	-3.2
MNAI				S		Sn	04 01 25.5	-13
LHSI	**Lahat**	**1.07**	**100**	P		Pn	04 01 21.3	+0.4
LHSI				S		Sn	04 01 41.7	+0.8
MDSI	**Maura Dua**	**1.90**	**116**	P		Pn	04 01 30.3	+1.1
LWLI	**Liwa**	**2.09**	**131**	P		Pn	04 01 31.4	-0.2
PMBI	**Palembang**	**2.41**	**73**	P		Pn	04 01 35.2	+0.1
PPSI	**Pulau Pagai**	**2.61**	**289**	P		Pn	04 01 38.3	+0.7
KASI	**Kota Agung**	**2.75**	**133**	P		Pn	04 01 39.8	+0.4
CGJI	**Cibinong**	**4.36**	**133**	P		Pn	04 02 00.5	+0.6

ISCJB ***12*** *04:02:16.8±0.3, 36.33N±0.02×28.25E±0.02, h64km±5km, Error ellipse: s-maj=3.5km s-min=2.8km az=143.6*

ATH ***12*** *04:02:16.7, 36.37N×28.26E, h54km±1km, ML3.1/13, Error ellipse: s-maj=1.7km s-min=0.9km az=144.0*

DDA ***12*** *04:02:16.7, 36.35N×28.30E, h54km, Md3.4*

CSEM ***12*** *04:02:18.0±0.1, 36.32N×28.27E, h46km±4km, ML3.4, Error ellipse: s-maj=2.8km s-min=2.4km az=146.0*

THE ***12*** *04:02:18.6, 36.35N×28.26E, h48km±1km, ML3.4/6, Error ellipse: s-maj=1.8km s-min=0.6km az=119.0*

ISK ***12*** *04:02:18.0, 36.41N×28.19E, h29km, ML3.0*

HLW ***12*** *04:02:21.9, 35.86N×28.40E, h42km±20km, Ml3.3*

ISC 12 04:02:18.2±1.1, 36.37N±0.02×28.24E±0.02, h46km±7km, n147, σ0.94/208, Dodecanese Islands

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
ARG	**Arkhangelos**	**0.18**	**212**	P		**Pn**	**04 02 26.2**	**+0.3**
ARG				S		**Sn**	**04 02 32.1**	**+0.8**
ARG	**Arkhangelos**	**0.18**	**212**	P		**Pn**	**04 02 26.2**	**+0.3**
ARG				S		**Sn**	**04 02 32.1**	**+0.8**
DALY	**Dalyan (Mu˘la**	**0.56**	**36**	*e*PG		**Pn**	**04 02 30.1**	**+0.1**
DALY				*e*SG		**Sn**	**04 02 38.9**	**+0.6**
DALY	**Dalyan (Mu˘la**	**0.56**	**36**	*e*Pg		**Pn**	**04 02 30.1**	**+0.1**
DALY				*e*Sg		**Sn**	**04 02 38.9**	**+0.6**
TURN	**Turunc**	**0.58**	**30**	*i* P		**Pn**	**04 02 28.6**	**-1.7**
TURN				*i* S		**Sn**	**04 02 36.5**	**-2.4**
TURN	**Turunc**	**0.58**	**30**	P		**Pn**	**04 02 28.6**	**-1.7**
TURN				S		**Sn**	**04 02 36.5**	**-2.4**
FETY	**Fethiye**	**0.73**	**68**	*e*PG		**Pn**	**04 02 32.9**	**+0.7**
FETY	**Fethiye**	**0.73**	**68**	P		**Pn**	**04 02 32.0**	**-0.2**
FETY				S		**Sn**	**04 02 42.9**	**+0.6**
FETY	**Fethiye**	**0.73**	**68**	P		**Pn**	**04 02 32.0**	**-0.2**
FETY	**Fethiye**	**0.73**	**68**	*e*Pg		**Pn**	**04 02 32.9**	**+0.7**
FETY				S		**Sn**	**04 02 42.9**	**+0.6**
YER	**Yerkesik**	**0.77**	**2**	*e*PG		**Pn**	**04 02 32.5**	**-0.3**
YER	**Yerkesik**	**0.77**	**2**	P		**Pn**	**04 02 33.5**	**+0.7**
YER	**Yerkesik**	**0.77**	**2**	*e*Pg		**Pn**	**04 02 32.5**	**-0.3**
YER	**Yerkesik**	**0.77**	**2**	P		**Pn**	**04 02 33.5**	**+0.7**
NIS1	**Nisyros Isl.**	**0.89**	**286**	*e*PG		**Pn**	**04 02 34.3**	**0.0**
NIS1	**Nisyros Isl.**	**0.89**	**286**	P		**Pn**	**04 02 34.5**	**+0.2**
NIS1				S		**Sn**	**04 02 46.9**	**+0.8**
NIS1	**Nisyros Isl.**	**0.89**	**286**	P		**Pn**	**04 02 34.5**	**+0.2**
NIS1				S		**Sn**	**04 02 46.9**	**+0.8**
NIS1	**Nisyros Isl.**	**0.89**	**286**	P		**Pn**	**04 02 35.0**	**+0.6**
NIS1				S		**Sn**	**04 02 46.9**	**+0.8**
NIS1				AML	AML		04 02 52.5	
	comp=E,2809μm,0.3s							
NIS1				AML	AML		04 02 53.5	
	comp=N,3347μm,0.5s							
BDRM	**Kayabasi**	**0.95**	**318**	*i* P		**Pn**	**04 02 35.3**	**+0.2**
BDRM				*i* S		**Sn**	**04 02 48.1**	**+0.6**
BDRM	**Kayabasi**	**0.95**	**318**	P		**Pn**	**04 02 35.3**	**+0.2**
BDRM				S		**Sn**	**04 02 48.1**	**+0.6**
BODT	**Bodrum**	**1.02**	**313**	*e*PG		**Pn**	**04 02 36.4**	**+0.2**
BODT	**Bodrum**	**1.02**	**313**	P		**Pn**	**04 02 36.3**	**+0.2**
BODT	**Bodrum**	**1.02**	**313**	*e*Pg		**Pn**	**04 02 36.4**	**+0.2**
KSL	**Kastellorizon**	**1.11**	**101**	P		**Pn**	**04 02 36.8**	**-0.4**
KSL				S		**Sn**	**04 02 50.8**	**-0.6**
KSL	**Kastellorizon**	**1.11**	**101**	P		**Pn**	**04 02 36.8**	**-0.4**
KSL				S		**Sn**	**04 02 50.8**	**-0.6**
KSL	**Kastellorizon**	**1.11**	**101**	P		**Pn**	**04 02 36.9**	**-0.4**
KSL				S		**Sn**	**04 02 50.5**	**-0.9**
KSL				AML	AML		04 02 52.7	
	comp=E,1090μm,0.3s							
KSL				AML	AML		04 02 52.8	
	comp=N,529μm,0.3s							
AKAS	**Kas**	**1.11**	**97**	*i* P		**Pn**	**04 02 36.9**	**-0.6**
AKAS				*i* S		**Sn**	**04 02 51.3**	**-0.4**
AKAS	**Kas**	**1.11**	**97**	P		**Pn**	**04 02 36.8**	**-0.6**
AKAS				S		**Sn**	**04 02 51.3**	**-0.4**
KARP	**Karpathos**	**1.20**	**227**	*e*PN		**Pn**	**04 02 39.1**	**+0.5**
KARP	**Karpathos**	**1.20**	**227**	P		**Pn**	**04 02 38.7**	**+0.1**
KARP				S		**Sn**	**04 02 53.9**	**+0.2**
KARP	**Karpathos**	**1.20**	**227**	P		**Pn**	**04 02 38.7**	**+0.1**
KARP	**Karpathos**	**1.20**	**227**	*e*Pn		**Pn**	**04 02 39.1**	**+0.5**
KARP				S		**Sn**	**04 02 53.9**	**+0.2**
KARP	**Karpathos**	**1.20**	**227**	P		**Pn**	**04 02 39.4**	**+0.8**
KARP				S		**Sn**	**04 02 53.0**	**-0.7**
KARP				AML	AML		04 02 58.2	
	comp=N,2308μm,0.4s							
KARP				AML	AML		04 02 58.5	
	comp=E,2638μm,0.4s							
AYDN	**Tasoluk**	**1.32**	**347**	*i* P		**Pn**	**04 02 40.8**	**+0.5**
AYDN				*i* S		**Sn**	**04 02 58.3**	**+1.5**
AYDN	**Tasoluk**	**1.32**	**347**	P		**Pn**	**04 02 40.8**	**+0.5**
AYDN				S		**Sn**	**04 02 58.3**	**+1.5**
ELL	**Elmali**	**1.40**	**74**	*e*PN		**Pn**	**04 02 42.4**	**+1.1**
ELL	**Elmali**	**1.40**	**74**	*e*Pn		**Pn**	**04 02 42.4**	**+1.1**
GCAM	**G?zelcaml?**	**1.56**	**329**	*i* P		**Pn**	**04 02 43.6**	**+0.2**
GCAM				*i* S		**Sn**	**04 03 02.6**	**+0.2**
GCAM	**G?zelcaml?**	**1.56**	**329**	P		**Pn**	**04 02 43.6**	**+0.2**
GCAM				S		**Sn**	**04 03 02.6**	**+0.2**
AYDB	**Zeytinkoy-Aydi**	**1.60**	**350**	*e*PN		**Pn**	**04 02 44.5**	**+0.3**
AYDB	**Zeytinkoy-Aydi**	**1.60**	**350**	*e*Pn		**Pn**	**04 02 44.5**	**+0.3**
SMG	**Samos**	**1.75**	**320**	P		**Pn**	**04 02 46.3**	**-0.1**
SMG				S		**Sn**	**04 03 07.1**	**-0.1**
SMG	**Samos**	**1.75**	**320**	P		**Pn**	**04 02 46.3**	**+0.3**
SMG				S		**Sn**	**04 03 07.1**	**-0.1**
SMG	**Samos**	**1.75**	**320**	P		**Pn**	**04 02 46.4**	**+0.3**
SMG				S		**Sn**	**04 03 06.8**	**-0.4**
SMG				AML	AML		04 03 08.2	
	comp=N,642μm,0.3s							
SMG				AML	AML		04 03 08.6	
	comp=E,1028μm,0.3s							
KORT	**Korkueli**	**1.81**	**69**	*i* P		**Pn**	**04 02 47.9**	**+0.9**
KORT				*i* S		**Sn**	**04 03 11.0**	**+2.1**
KORT	**Korkueli**	**1.81**	**69**	P		**Pn**	**04 02 47.9**	**+0.9**
KORT				S		**Sn**	**04 03 11.0**	**+2.1**
ANTB	**Antalya**	**2.01**	**74**	*e*PN		**Pn**	**04 02 51.4**	**+1.8**
ANTB	**Antalya**	**2.01**	**74**	*e*Pn		**Pn**	**04 02 51.4**	**+1.8**
ZKR	**Zakros**	**2.07**	**233**	P		**Pn**	**04 02 49.9**	**-0.5**
ZKR				S		**Sn**	**04 03 15.3**	**+0.3**
ZKR	**Zakros**	**2.07**	**233**	P		**Pn**	**04 02 49.9**	**-0.5**
ZKR				S		**Sn**	**04 03 14.9**	**-0.1**
ZKR	**Zakros**	**2.07**	**233**	P		**Pn**	**04 02 49.8**	**-0.7**
ZKR				S		**Sn**	**04 03 14.8**	**-0.1**
ZKR				AML	AML		04 03 22.9	
	comp=N,316μm,0.8s							
ZKR				AML	AML		04 03 26.4	
	comp=E,309μm,0.5s							
KULA	**Kula-Manisa**	**2.17**	**9**	*e*PN		**Pn**	**04 02 52.5**	**+0.6**
KULA	**Kula-Manisa**	**2.17**	**9**	*e*Pn		**Pn**	**04 02 52.5**	**+0.6**
IZM	**Izmir**	**2.17**	**339**	*e*PN		**Pn**	**04 02 52.5**	**+0.6**
IZM	**Izmir**	**2.17**	**339**	*e*Pn		**Pn**	**04 02 52.5**	**+0.6**
BCK	**Bucak**	**2.17**	**59**	*e*PN		**Pn**	**04 02 53.2**	**+1.2**
BCK	**Bucak**	**2.17**	**59**	*e*Pn		**Pn**	**04 02 53.2**	**+1.2**
KHL	**Karahalli**	**2.20**	**27**	*e*PN		**Pn**	**04 02 53.3**	**+0.9**
KHL	**Karahalli**	**2.20**	**27**	*e*Pn		**Pn**	**04 02 53.3**	**+0.9**
BLCB	**Balcova**	**2.23**	**335**	*e*PN		**Pn**	**04 02 52.8**	**+0.1**
BLCB	**Balcova**	**2.23**	**335**	*e*Pn		**Pn**	**04 02 52.8**	**+0.1**
KHAL	**Karahalli**	**2.23**	**26**	*i* P		**Pn**	**04 02 52.2**	**-0.6**
KHAL				*i* S		**Sn**	**04 03 18.7**	**-0.6**
KHAL	**Karahalli**	**2.23**	**26**	P		**Pn**	**04 02 52.2**	**-0.6**
KHAL				S		**Sn**	**04 03 18.7**	**-0.6**
SANT	**Santorini**	**2.25**	**271**	P		**Pn**	**04 02 53.1**	**+0.2**
SANT	**Santorini**	**2.25**	**271**	P		**Pn**	**04 02 53.1**	**+0.2**
APE	**Apeiranthos**	**2.29**	**289**	*e*PN		**Pn**	**04 02 54.1**	**+0.6**
APE	**Apeiranthos**	**2.29**	**289**	P		**Pn**	**04 02 53.5**	**0.0**
APE	**Apeiranthos**	**2.29**	**289**	*e*Pn		**Pn**	**04 02 54.1**	**+0.6**
APE	**Apeiranthos**	**2.29**	**289**	P		**Pn**	**04 02 53.5**	**0.0**
ZEY	**˙zmir**	**2.33**	**324**	*i* P		**Pn**	**04 02 53.8**	**-0.1**
ZEY				*i* S		**Sn**	**04 03 19.8**	**-1.6**
THR5	**Thira Island,**	**2.33**	**272**	*e*PN		**Pn**	**04 02 54.5**	**+0.5**
THR5	**Thira Island,**	**2.33**	**272**	*e*Pn		**Pn**	**04 02 54.6**	**+0.5**
NPS	**Neapolis**	**2.40**	**243**	P		**Pn**	**04 02 55.0**	**-0.1**
NPS				S		**Sn**	**04 03 23.8**	**+0.5**
NPS	**Neapolis**	**2.40**	**243**	P		**Pn**	**04 02 55.0**	**-0.1**
NPS				S		**Sn**	**04 03 23.8**	**+0.5**
NPS	**Neapolis**	**2.40**	**243**	P		**Pn**	**04 02 55.3**	**+0.2**
NPS				S		**Sn**	**04 03 24.4**	**+1.1**
NPS				AML	AML		04 03 28.1	
	comp=N,910μm,0.3s							
NPS				AML	AML		04 03 29.5	
	comp=E,853μm,0.4s							
AKHS	**Akhisar**	**2.53**	**352**	*i* P		**Pn**	**04 02 56.9**	**+0.1**
AKHS				*i* S		**Sn**	**04 03 26.9**	**+0.5**
AKHS	**Akhisar**	**2.53**	**352**	P		**Pn**	**04 02 56.9**	**+0.1**
AKHS				S		**Sn**	**04 03 26.9**	**+0.5**
AKS	**Akhisar**	**2.53**	**352**	*e*PN		**Pn**	**04 02 57.2**	**+0.4**
AKS	**Akhisar**	**2.53**	**352**	*e*Pn		**Pn**	**04 02 57.2**	**+0.4**
LAST	**Lasithi**	**2.55**	**243**	P		**Pn**	**04 02 57.3**	**+0.2**
LAST				S		**Sn**	**04 03 26.6**	**-0.4**
LAST	**Lasithi**	**2.55**	**243**	P		**Pn**	**04 02 57.3**	**+0.2**
LAST				S		**Sn**	**04 03 26.6**	**-0.4**
LAST	**Lasithi**	**2.55**	**243**	P		**Pn**	**04 02 56.6**	**-0.6**
CHOS	**Chios island**	**2.66**	**320**	P		**Pn**	**04 02 58.3**	**-0.4**
CHOS				S		**Sn**	**04 03 31.0**	**+1.2**
CHOS	**Chios island**	**2.66**	**320**	P		**Pn**	**04 02 58.3**	**-0.4**
CHOS				S		**Sn**	**04 03 31.0**	**+1.2**
CHOS				AML	AML		04 03 32.3	
	comp=N,105μm,0.5s							
CHOS				AML	AML		04 03 32.6	
	comp=E,136μm,0.4s							
DEMI	**Demirci**	**2.70**	**8**	*i* P		**Pn**	**04 02 59.0**	**-0.2**
DEMI				*i* S		**Sn**	**04 03 31.4**	**+0.8**
DEMI	**Demirci**	**2.70**	**8**	P		**Pn**	**04 02 59.0**	**-0.2**
DEMI				S		**Sn**	**04 03 31.4**	**+0.8**
SHUT	**Suhut-Afyon**	**2.85**	**39**	*e*PN		**Pn**	**04 03 02.4**	**+1.1**
SHUT	**Suhut-Afyon**	**2.85**	**39**	*e*Pn		**Pn**	**04 03 02.4**	**+1.1**
GDZ	**Gediz**	**2.89**	**20**	*i* P		**Pn**	**04 03 01.8**	**-0.1**
GDZ	**Gediz**	**2.89**	**20**	P		**Pn**	**04 03 01.8**	**-0.1**
DKL	**Dikili**	**2.90**	**339**	*e*PN		**Pn**	**04 03 02.4**	**+0.6**
DKL	**Dikili**	**2.90**	**339**	*e*Pn		**Pn**	**04 03 02.4**	**+0.6**
IDI	**Anoyia**	**2.93**	**249**	P		**Pn**	**04 03 02.2**	**-0.1**
IDI				S		**Sn**	**04 03 34.9**	**-1.4**
IDI	**Anoyia**	**2.93**	**249**	P		**Pn**	**04 03 02.2**	**-0.1**
IDI				S		**Sn**	**04 03 34.9**	**-1.4**
IDI				AML	AML		04 03 39.0	
	comp=E,236μm,0.3s							
IDI				AML	AML		04 03 42.8	
	comp=N,206μm,0.3s							
SIVA	**Sivas**	**3.10**	**245**	P		**Pn**	**04 03 05.3**	**+0.7**
SIVA	**Sivas**	**3.10**	**245**	P		**Pn**	**04 03 05.3**	**+0.7**
MHLO	**Agia Marina, M**	**3.11**	**277**	P		**Pn**	**04 03 05.3**	**+0.6**
MHLO	**Agia Marina, M**	**3.11**	**277**	P		**Pn**	**04 03 05.3**	**+0.6**
SERI	**Serifos**	**3.12**	**286**	P		**Pn**	**04 03 05.0**	**+0.1**
SERI	**Serifos**	**3.12**	**286**	P		**Pn**	**04 03 05.0**	**+0.1**
TVSB	**Tavsanli**	**3.23**	**17**	*e*PN		**Pn**	**04 03 07.8**	**+1.4**
TVSB	**Tavsanli**	**3.23**	**17**	*e*Pn		**Pn**	**04 03 07.8**	**+1.4**
DURS	**Dursunbey**	**3.23**	**3**	*i* P		**Pn**	**04 03 06.2**	**-0.3**
DURS				*i* S		**Sn**	**04 03 43.4**	**-0.4**
DURS	**Dursunbey**	**3.23**	**3**	P		**Pn**	**04 03 06.2**	**-0.3**
DURS				S		**Sn**	**04 03 43.4**	**-0.4**
DST	**Dursunbey**	**3.25**	**5**	*e*PN		**Pn**	**04 03 07.8**	**+1.2**
DST	**Dursunbey**	**3.25**	**5**	*e*Pn		**Pn**	**04 03 07.8**	**+1.2**
PRK	**Paraskevi**	**3.27**	**332**	P		**Pn**	**04 03 07.3**	**+0.4**
PRK	**Paraskevi**	**3.27**	**332**	P		**Pn**	**04 03 07.3**	**+0.4**
BALB	**Balikesir**	**3.28**	**355**	*e*PN		**Pn**	**04 03 08.1**	**+1.0**
BALB	**Balikesir**	**3.28**	**355**	*e*Pn		**Pn**	**04 03 08.1**	**+1.0**
SIGR	**SIGRI**	**3.41**	**327**

DSF				AML	AML	04 03 20.6	
	comp=E,2887μm,0.2s						
LTK	**Loutraki**	**0.28**	**139**	P	Pg	04 03 15.0	-0.4
LTK				S	Sg	04 03 19.9	+0.6
LTK	**Loutraki**	**0.28**	**139**	P	Pg	04 03 15.1	-0.3
LTK				S	Sg	04 03 19.6	+0.3
LTK	**Loutraki**	**0.28**	**139**	P	Pg	04 03 15.0	-0.4
LTK				S	Sb	04 03 20.1	-0.8
LTK				AML	AML	04 03 21.1	
	comp=N,978μm,0.3s						
LTK				AML	AML	04 03 21.7	
	comp=E,911μm,0.4s						
VIL2	**Platees**	**0.42**	**93**	P	Pb	04 03 18.5	-0.2
VIL2				S	Sb	04 03 25.2	+0.3
VIL2				AML	AML	04 03 28.3	
	comp=E,400μm,0.3s						
VIL2				AML	AML	04 03 29.1	
	comp=N,653μm,0.3s						
GUR	**Goura**	**0.43**	**226**	P	Pg	04 03 17.8	-0.3
GUR				S	Sg	04 03 23.5	-0.4
GUR	**Goura**	**0.43**	**226**	P	Pg	04 03 17.9	-0.2
GUR				S	Sg	04 03 23.5	-0.4
GUR	**Goura**	**0.43**	**226**	P	Pg	04 03 17.9	-0.2
GUR				S	Sg	04 03 22.7	-1.2
GUR				AML	AML	04 03 24.8	
	comp=N,757μm,0.2s						
GUR				AML	AML	04 03 24.9	
	comp=E,1265μm,0.2s						
VILL	**Villia**	**0.46**	**99**	P	Pg	04 03 18.3	-0.3
VILL	**Villia**	**0.46**	**99**	P	Pg	04 03 18.4	-0.2
VILL				S	Sg	04 03 25.2	+0.4
LKR	**Lokris**	**0.46**	**27**	P	Pg	04 03 18.1	-0.6
LKR				S	Sb	04 03 26.2	0.0
LKR	**Lokris**	**0.46**	**27**	P	Pg	04 03 18.1	-0.6
LKR				S	Sg	04 03 24.8	-0.1
LKR	**Lokris**	**0.46**	**27**	P	Pg	04 03 17.8	-0.9
LKR				S	Sg	04 03 24.8	-0.1
LKR				AML	AML	04 03 28.6	
	comp=E,1121μm,0.2s						
LKR				AML	AML	04 03 28.7	
	comp=N,720μm,0.3s						
KALE	**Kalithea**	**0.49**	**289**	P	Pg	04 03 19.0	-0.2
KALE				S	Sb	04 03 27.0	-0.1
KALE	**Kalithea**	**0.49**	**289**	P	Pg	04 03 19.1	-0.1
KALE				S	Sb	04 03 26.5	-0.6
KALE	**Kalithea**	**0.49**	**289**	P	Pg	04 03 19.1	-0.1
KALE				S	Sb	04 03 26.5	-0.6
KALE				AML	AML	04 03 29.7	
	comp=N,771μm,0.3s						
KALE				AML	AML	04 03 30.1	
	comp=E,627μm,0.2s						
KLV	**Kalavryta, Ach**	**0.50**	**248**	P	Pg	04 03 19.0	-0.3
KLV				S	Sg	04 03 26.0	0.0
KLV	**Kalavryta, Ach**	**0.50**	**248**	P	Pg	04 03 19.0	-0.3
KLV				S	Sg	04 03 26.0	0.0
KLV	**Kalavryta, Ach**	**0.50**	**248**	P	Pg	04 03 18.9	-0.5
KLV				S	Sg	04 03 25.5	-0.5
KLV				AML	AML	04 03 26.6	
	comp=N,169μm,0.2s						
KLV				AML	AML	04 03 27.2	
	comp=E,235μm,0.3s						
TRIZ	**Trizonia**	**0.54**	**284**	P	Pg	04 03 20.0	0.0
TRIZ				S	Sg	04 03 27.6	+0.4
SERG	**Sergoula**	**0.56**	**289**	P	Pg	04 03 20.2	-0.3
SERG				S	Sb	04 03 29.3	+0.2
SERG	**Sergoula**	**0.56**	**289**	P	Pg	04 03 20.2	-0.3
SERG				S	Sb	04 03 28.6	-0.5
LAKA	**Lakka**	**0.59**	**271**	P	Pg	04 03 21.1	0.0
LAKA				S	Sg	04 03 29.4	+0.4
LAKA	**Lakka**	**0.59**	**271**	P	Pg	04 03 21.1	0.0
LAKA				S	Sg	04 03 29.4	+0.4
LAKA	**Lakka**	**0.59**	**271**	P	Pb	04 03 21.9	+0.2
LAKA				S	Sb	04 03 30.1	0.0
LAKA				AML	AML	04 03 31.7	
	comp=E,66μm,0.2s						
LAKA				AML	AML	04 03 32.1	
	comp=N,98μm,0.3s						
RODI	**Rodini**	**0.67**	**278**	P	Pg	04 03 21.9	-0.5
RODI	**Rodini**	**0.67**	**278**	P	Pg	04 03 21.9	-0.6
EFP	**Efpalio**	**0.68**	**287**	P	Pg	04 03 22.6	-0.1
EFP				S	Sb	04 03 32.4	0.0
EFP	**Efpalio**	**0.68**	**287**	P	Pg	04 03 22.6	-0.1
EFP				S	Sb	04 03 32.4	0.0
EFP				AML	AML	04 03 37.5	
	comp=E,415μm,0.2s						
EFP				AML	AML	04 03 39.0	
	comp=N,309μm,0.3s						
ANX	**Ano Chora**	**0.73**	**299**	P	Pg	04 03 23.4	-0.3
ANX				S	Sb	04 03 34.7	+0.7
ANX	**Ano Chora**	**0.73**	**299**	P	Pg	04 03 23.4	-0.3
ANX				S	Sg	04 03 33.3	-0.1
ANX	**Ano Chora**	**0.73**	**299**	S	Sg	04 03 33.3	-0.1
ANX				AML	AML	04 03 39.1	
	comp=N,771μm,0.4s						
ANX				AML	AML	04 03 39.4	
	comp=E,544μm,0.5s						
SMIA	**Simia**	**0.74**	**30**	P	Pg	04 03 23.6	-0.3
SMIA	**Simia**	**0.74**	**30**	P	Pg	04 03 23.6	-0.3
SMIA				S	Sb	04 03 34.5	+0.2
SMIA	**Simia**	**0.74**	**30**	P	Pg	04 03 23.0	-1.0
SMIA				S	Sb	04 03 34.5	+0.3
SMIA				AML	AML	04 03 39.6	
	comp=E,575μm,0.7s						
SMIA				AML	AML	04 03 42.6	
	comp=N,303μm,0.4s						
UPR	**University Cam**	**0.75**	**274**	P	Pb	04 03 24.5	+0.2
UPR	**University Cam**	**0.75**	**274**	P	Pb	04 03 24.5	+0.2
TRIP	**Tripoli**	**0.80**	**208**	P	Pg	04 03 25.0	+0.1
TRIP				S	Sb	04 03 36.5	+0.7
TRIP	**Tripoli**	**0.80**	**208**	P	Pg	04 03 25.0	0.0
TRIP				S	Sb	04 03 36.5	+0.7
TRIP				AML	AML	04 03 40.7	
	comp=E,232μm,0.6s						
TRIP				AML	AML	04 03 42.5	
	comp=N,160μm,0.6s						
ATH	**Athens Observa**	**0.82**	**108**	P	Pg	04 03 24.8	-0.5
ATH				S	Sg	04 03 36.1	0.0
DID	**Didima**	**0.83**	**151**	P	Pg	04 03 25.2	-0.4
DID				S	Sb	04 03 37.4	+0.6
DID	**Didima**	**0.83**	**151**	P	Pg	04 03 25.6	0.0
DID				S	Sg	04 03 36.0	-0.4
DID	**Didima**	**0.83**	**151**	P	Pg	04 03 25.6	0.0
DID				S	Sg	04 03 36.0	-0.4
DID				AML	AML	04 03 39.4	
	comp=E,177μm,0.3s						
DID				AML	AML	04 03 42.4	
	comp=N,211μm,0.3s						
DRO	**Drossia**	**0.86**	**251**	P	Pg	04 03 25.8	-0.3
DRO				S	Sb	04 03 38.4	+0.9
DRO	**Drossia**	**0.86**	**251**	P	Pg	04 03 25.9	-0.2
DRO				S	Sb	04 03 38.4	+0.9
DRO	**Drossia**	**0.86**	**251**	P	Pg	04 03 25.9	-0.1
DRO				S	Sn	04 03 38.9	-0.6
DRO				AML	AML	04 03 41.7	
	comp=E,282μm,0.3s						
DRO				AML	AML	04 03 44.4	
	comp=N,209μm,0.2s						
ATHU	**Athens Univers**	**0.87**	**108**	P	Pb	04 03 26.7	+0.3
ATHU				S	Sb	04 03 38.1	+0.2
ATHU	**Athens Univers**	**0.87**	**108**	P	Pb	04 03 26.7	+0.3
ATHU				S	Sb	04 03 38.1	+0.2
VLX	**Vlachokerasia**	**0.91**	**198**	P	Pg	04 03 26.4	-0.7
VLX				S	Sb	04 03 39.7	+0.6
VLX	**Vlachokerasia**	**0.91**	**198**	P	Pg	04 03 26.6	-0.5
VLX				S	Sb	04 03 39.7	+0.6
VLX	**Vlachokerasia**	**0.91**	**198**	P	Pg	04 03 26.6	-0.4
VLX				S	Sg	04 03 37.3	-1.7
VLX				AML	AML	04 03 42.2	
	comp=N,316μm,0.5s						
VLX				AML	AML	04 03 44.1	
	comp=E,463μm,0.5s						
PTL	**Penteli**	**0.91**	**101**	P	Pn	04 03 27.7	-0.2
PTL				S	Sn	04 03 40.6	-0.3
PTL	**Penteli**	**0.91**	**101**	P	Pn	04 03 27.7	-0.2
PTL				S	Sn	04 03 40.6	-0.3
PTL				AML	AML	04 03 41.4	
	comp=N,285μm,0.6s						
PTL				AML	AML	04 03 42.6	
	comp=E,175μm,0.6s						
KRND	**KRANIDI**	**0.91**	**159**	P	Pn	04 03 27.9	0.0
KRND				S	Sn	04 03 40.8	-0.1
KRND	**KRANIDI**	**0.91**	**159**	P	Pn	04 03 27.9	0.0
KRND				S	Sn	04 03 40.8	0.0
KRND				AML	AML	04 03 42.3	
	comp=N,320μm,0.7s						
KRND				AML	AML	04 03 42.8	
	comp=E,437μm,0.7s						
VLY	**Voula,Athens**	**0.92**	**114**	P	Pb	04 03 26.7	-0.5
VLY				S	Sb	04 03 40.0	+0.7
VLY	**Voula,Athens**	**0.92**	**114**	P	Pb	04 03 26.7	-0.5
VLY				S	Sb	04 03 40.0	+0.7
VLY				AML	AML	04 03 42.6	
	comp=E,229μm,0.2s						
VLY				AML	AML	04 03 44.5	
	comp=N,143μm,0.3s						
EREA	**Eretria**	**0.96**	**79**	P	Pb	04 03 27.3	-0.6
EREA	**Eretria**	**0.96**	**79**	P	Pb	04 03 27.3	-0.6
EREA				S	Sn	04 03 42.0	-0.1
EREA	**Eretria**	**0.96**	**79**	P	Pb	04 03 27.0	-0.9
EREA				S	Sn	04 03 42.0	-0.1
EREA				AML	AML	04 03 45.6	
	comp=N,181μm,0.2s						
EREA				AML	AML	04 03 47.5	
	comp=E,161μm,0.5s						
EVR	**Evrytania**	**0.99**	**313**	P	Pb	04 03 28.5	-0.1
EVR				S	Sn	04 03 43.1	0.0
EVR	**Evrytania**	**0.99**	**313**	P	Pn	04 03 29.0	-0.1
EVR				S	Sb	04 03 41.6	0.0
EVR	**Evrytania**	**0.99**	**313**	P	Pn	04 03 29.0	-0.2
EVR				S	Sb	04 03 41.6	0.0
EVR				AML	AML	04 03 46.7	
	comp=N,164μm,0.6s						
RLS	**Riolos of Patr**	**1.01**	**260**	P	Pb	04 03 28.8	0.0
RLS				S	Sn	04 03 42.9	-0.5
RLS	**Riolos of Patr**	**1.01**	**260**	S	Sn	04 03 42.9	-0.5
RLS				AML	AML	04 03 46.5	
	comp=N,78μm,0.2s						
RLS				AML	AML	04 03 48.6	
	comp=E,70μm,0.5s						
PVO	**Paravola**	**1.02**	**292**	P	Pn	04 03 30.0	+0.6
PVO	**Paravola**	**1.02**	**292**	P	Pn	04 03 30.0	+0.6
AMT	**Artemida-Makis**	**1.07**	**229**	P	Pg	04 03 30.2	0.0
AMT				S	Sn	04 03 45.0	+0.1
AMT	**Artemida-Makis**	**1.07**	**229**	P	Pg	04 03 30.2	+0.1
AMT				S	Sn	04 03 45.0	+0.2
AMT				AML	AML	04 03 48.4	
	comp=N,196μm,1.1s						
AMT				AML	AML	04 03 50.8	
	comp=E,124μm,0.4s						
SKIA	**Skiathos**	**1.09**	**31**	S	Sn	04 03 45.1	-0.2
SKIA	**Skiathos**	**1.09**	**31**	S	Sn	04 03 45.1	-0.3
SKIA				AML	AML	04 03 49.5	
	comp=E,68μm,0.4s						
SKIA				AML	AML	04 03 51.7	
	comp=N,118μm,0.9s						
NEO	**Neokhori**	**1.14**	**20**	P	Pb	04 03 30.6	-0.3
NEO	**Neokhori**	**1.14**	**20**	P	Pb	04 03 30.6	-0.4
FYTO	**Fytoko, Volos**	**1.18**	**8**	P	Pn	04 03 31.1	-0.5
FYTO	**Fytoko, Volos**	**1.18**	**8**	P	Pn	04 03 31.1	-0.5
XOR	**Xorichti**	**1.18**	**17**	P	Pn	04 03 31.6	-0.1
XOR	**Xorichti**	**1.18**	**17**	P	Pn	04 03 31.6	-0.1
PDO	**Prodromos**	**1.27**	**287**	S	Sn	04 03 50.1	+0.4
PDO	**Prodromos**	**1.27**	**287**	P	Pn	04 03 29.0	-3.8
PDO				S	Sn	04 03 50.1	+0.4
PDO				AML	AML	04 03 58.7	
	comp=E,122μm,0.6s						
PDO				AML	AML	04 03 59.7	
	comp=N,168μm,0.5s						
AOS	**Alonnisos**	**1.29**	**43**	P	Pn	04 03 32.0	-1.2
AOS	**Alonnisos**	**1.29**	**43**	P	Pn	04 03 32.0	-1.2
THL	**Klokotos Trika**	**1.44**	**337**	P	Pb	04 03 36.0	-0.1
THL				S	Sg	04 03 57.2	+1.3
DSL	**Palaion Diasel**	**1.56**	**305**	P	Pg	04 03 39.1	-0.4
DSL	**Palaion Diasel**	**1.56**	**305**	P	Pg	04 03 39.1	-0.5
LKD2	**Lefkada island**	**1.72**	**289**	P	Pg	04 03 42.0	-0.5
LKD2	**Lefkada island**	**1.72**	**289**	P	Pg	04 03 42.0	-0.5

ISK ***12*** *04:11:38.4, 34°.75N×33°.52E, h30km, MD3.0*
ISCJB ***12*** *04:11:40.5±1.0, 34°.83N±0°.07×33°.49E±0°.05, h43km±9km, Error ellipse: s-maj=11.5km s-min=6.0km az=165.4*
DDA ***12*** *04:11:40.7, 35°.12N×33°.40E, h7km, Md2.9*
CSEM ***12*** *04:11:40.7±0.4, 34°.83N×33°.48E, h34km±3km, MD3.0, Error ellipse: s-maj=11.2km s-min=5.6km az=169.0*
NIC ***12*** *04:11:41.7±0.2, 34°.74N×33°.51E, h18km, ML2.9*

ISC 12 04:11:40.8±1.2, 34°.83N±0°.06×33°.49E±0°.03, h30km±6km, n35, σ8°87/52, Cyprus region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CSS	**Mathiatis**	**0.18**	**315**	*e*PG	**Pb**	**04 11 46.0**	**-0.9**
CSS				*e*SG	**Sb**	**04 11 51.2**	**+0.2**
CSS	**Mathiatis**	**0.18**	**315**	P	**Pn**	**04 11 47.6**	**0.0**
	baz=146						
CSS				S	**Sb**	**04 11 52.6**	**+1.5**
CSS	**Mathiatis**	**0.18**	**315**	*e*Pg	**Pb**	**04 11 46.0**	**-0.9**
CSS	**Mathiatis**	**0.18**	**315**	P	**Pn**	**04 11 47.6**	**0.0**
CSS				*e*Sg	**Sb**	**04 11 51.2**	**+0.2**
CSS				S	**Sb**	**04 11 52.6**	**+1.5**
MAMC	**Mammari**	**0.41**	**327**	P	**Pn**	**04 11 51.3**	**+0.7**
	baz=150						
MAMC	**Mammari**	**0.41**	**327**	P	**Pn**	**04 11 51.3**	**+0.7**
LFK	**Lefkose**	**0.45**	**4**	*e*PG	**Pb**	**04 11 49.9**	**-0.6**
LFK				*e*SG	**Sn**	**04 11 58.5**	**+0.1**
LFK	**Lefkose**	**0.45**	**4**	*e*Pg	**Pb**	**04 11 49.9**	**-0.6**
LFK				*e*Sg	**Sn**	**04 11 58.5**	**+0.1**
PHNC	**Paralimni**	**0.48**	**69**	P	**Pn**	**04 11 52.0**	**+0.4**
	baz=239						
PHNC				S	**Sn**	**04 11 59.7**	**+0.7**
PHNC	**Paralimni**	**0.48**	**69**	P	**Pn**	**04 11 52.0**	**+0.4**
PHNC				S	**Sn**	**04 11 59.7**	**+0.7**
SZAC	**Souni**	**0.51**	**261**	P	**Pn**	**04 11 51.9**	**-0.1**
	baz=91						
SZAC				S	**Sn**	**04 12 00.1**	**+0.4**
SZAC	**Souni**	**0.51**	**261**	P	**Pn**	**04 11 51.9**	**-0.1**
SZAC				S	**Sn**	**04 12 00.1**	**+0.4**
LEF	**Lefka**	**0.57**	**300**	*e*PG	**Pb**	**04 11 51.9**	**-0.5**
LEF	**Lefka**	**0.57**	**300**	*e*Pg	**Pb**	**04 11 51.9**	**-0.5**
AKDN	**Akdeniz- K¯–br**	**0.63**	**317**	*e*PG	**Pb**	**04 11 52.6**	**-0.8**
AKDN	**Akdeniz- K¯–br**	**0.63**	**317**	*e*Pg	**Pb**	**04 11 52.6**	**-0.8**
ALFC	**Alefka**	**0.80**	**294**	P	**Pn**	**04 11 56.0**	**-0.1**
	baz=118						
ALFC				S	**Sn**	**04 12 07.8**	**+0.8**
ALFC	**Alefka**	**0.80**	**294**	P	**Pn**	**04 11 56.0**	**-0.1**
ALFC				S	**Sn**	**04 12 07.8**	**+0.8**
EREN	**Erenkoy**	**0.89**	**38**	*e*PG	**Pn**	**04 11 55.9**	**-1.4**
EREN	**Erenkoy**	**0.89**	**38**	*e*Pg	**Pn**	**04 11 55.9**	**-1.4**
IKL	**Isikli**	**1.41**	**6**	*e*PN	**Pn**	**04 12 03.7**	**-0.7**
IKL	**Isikli**	**1.41**	**6**	*e*Pn	**Pn**	**04 12 03.7**	**-0.7**
GAZI	**Gazipasa**	**1.69**	**326**	*i* P	**Pn**	**04 12 07.5**	**-0.9**
GAZI				*i* S	**Sn**	**04 12 27.8**	**-1.3**
GAZI	**Gazipasa**	**1.69**	**326**	P	**Pn**	**04 12 07.5**	**-0.9**
GAZI				S	**Sn**	**04 12 27.8**	**-1.3**
KIZK	**Mersin**	**1.73**	**18**	*i* P	**Pn**	**04 12 08.9**	**+0.1**
KIZK				*i* S	**Sn**	**04 12 29.8**	**-0.1**
KIZK	**Mersin**	**1.73**	**18**	P	**Pn**	**04 12 08.9**	**+0.1**
KIZK				S	**Sn**	**04 12 29.8**	**-0.1**
MERS	**Mersin**	**2.20**	**22**	*e*PN	**Pn**	**04 12 14.8**	**-0.6**
MERS	**Mersin**	**2.20**	**22**	*e*Pn	**Pn**	**04 12 14.8**	**-0.6**
YAYL	**Yayladag**	**2.45**	**60**	*i* P	Pn	04 12 10.9	-8.0
KERG	**Konya-Eregli**	**2.63**	**11**	*i* P	**Pn**	**04 12 22.3**	**+1.0**
KERG				*i* S	**Sn**	**04 12 54.4**	**+2.1**
KERG	**Konya-Eregli**	**2.63**	**11**	P	**Pn**	**04 12 22.3**	**+1.0**
KERG				S	**Sn**	**04 12 54.4**	**+2.1**
TAHT	**Tahtakopru-Hat**	**2.68**	**54**	*e*PN	**Pn**	**04 12 21.1**	**-0.9**
TAHT	**Tahtakopru-Hat**	**2.68**	**54**	*e*Pn	**Pn**	**04 12 21.1**	**-0.9**
KARA	**Karaisali**	**2.73**	**27**	*e*PN	**Pn**	**04 12 22.4**	**-0.3**
KARA	**Karaisali**	**2.73**	**27**	*e*Pn	**Pn**	**04 12 22.4**	**-0.3**

JMA 12 04:28:49.6, 37°.02N×140°.59E, h8km±1km, M2.9, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.19**	**64**	P	Pg	04 28 53.7	+0.3
ONAJ				S	Sg	04 28 56.5	+0.4
JHO	**Hitachi**	**0.41**	**182**	P	Pg	04 28 57.5	-0.1
JHO				S	Sg	04 29 03.2	+0.3
JFT	**Otama**	**0.54**	**338**	P	Pg	04 29 00.3	+0.3
JFT				S	Sg	04 29 07.6	+0.5
JMM	**Marumori**	**0.86**	**11**	P	Pg	04 29 05.6	-0.5
JMM				S	Sg	04 29 17.4	+0.1
MAT	**Matsushiro**	**1.97**	**257**	P	Pn	04 29 24.4	+1.1
MAT				S	Sb	04 29 49.5	-1.0

JMA 12 04:30:44.2±0.2, 30°.01N×131°.97E, h38km, M2.5, Kyushu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JTN	**Tanegashima 3**	**1.07**	**307**	P	Pn	04 31 03.2	+0.5
JTN				*e*S	Sn	04 31 17.5	+1.2
JYAK	**Yakushimahirau**	**1.28**	**281**	P	Pn	04 31 06.0	+0.4
JYAK				*e*S	Sn	04 31 22.1	+0.5
JTSR	**Tashiro 2**	**1.47**	**322**	P	Pn	04 31 08.9	+0.8
JTSR				*e*S	Sn	04 31 27.0	+0.9
JNAR	**Kushima--Naru**	**1.63**	**338**	P	Pn	04 31 11.7	+1.4
JNAR				*e*S	Sn	04 31 31.1	+1.1
JNN	**Nakanoshima**	**1.83**	**265**	P	Pn	04 31 15.1	+2.0
JTZ	**Takazaki**	**2.03**	**338**	P	Pn	04 31 17.2	+1.3
JTZ				*e*S	Sn	04 31 41.1	+1.1
JAMN	**Amaminishikomi**	**3.01**	**235**	P	Pn	04 31 30.1	+0.7

NIED ***12*** *04:31:00, 35°.40N×140°.90E, h11km, Mw3.7 Best double couple: M04.06000×10^14 NP1:φs302.00000°, δ40.00000°, λ-23.00000°. NP2:φs50.00000°, δ76.00000°, λ-128.00000°.*
IDC ***12*** *04:31:01.8±0.8, 35°.35N×140°.73E, h0km, mb3.6/10, mb1 3.7/11, mb1mx3.6/35, mbtmp3.6/11, ML3.0/1, Error ellipse: s-maj=24.0km s-min=18.7km az=83.0*
ISCJB ***12*** *04:31:04.7±0.6, 35°.41N±0°.04×140°.87E±0°.09, h33km, mb3.5/10, Error ellipse: s-maj=10.2km s-min=5.7km az=179.2*
JMA ***12*** *04:31:04.5±0.1, 35°.45N×140°.91E, h23km±2km, M3.5*

ISC 12 04:31:06.1±0.7, 35°.43N±0°.05×140°.84E±0°.08, h33km, n20, σ1°40/23, mb3.6/10, 4C, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CHOJ	**Chosi**	**0.28**	**3**	⇑P	**Pb**	**04 31 10.6**	**-2.9**
CHOJ				S	**Sn**	**04 31 15.3**	**-3.0**
JCN	**Nagara**	**0.52**	**269**	P	**Pn**	**04 31 16.7**	**-0.5**
BSO4	**Boso 4**	**0.60**	**224**	⇑P	**Pn**	**04 31 17.8**	**-0.4**
BSO3	**Boso 3**	**0.68**	**204**	⇑P	**Pn**	**04 31 18.3**	**-0.8**
BSO1	**Boso 1**	**0.78**	**172**	⇑P	**Pn**	**04 31 18.4**	**-1.9**
JYT	**Yasato**	**0.96**	**327**	P	**Pn**	**04 31 22.1**	**-1.1**
JYT				S	**Sn**	**04 31 34.9**	**-0.8**
JHO	**Hitachi**	**1.20**	**349**	P	**Pn**	**04 31 26.5**	**-0.1**
JHO				S	**Sn**	**04 31 42.4**	**+0.6**
JIM2	**Oshima 3**	**1.36**	**239**	P	**Pn**	**04 31 27.4**	**-1.3**
MJAR	**Matsushiro Arr**	**2.41**	**298**	Pn	**Pn**	**04 31 42.5**	**-0.7**
	4.0nm,0.3s,baz=122,slow=12,SNR=9.2						
MAT	**Matsushiro**	**2.41**	**298**	P	**Pn**	**04 31 42.7**	**-0.5**
MAT				S	Sn	04 31 48.6	-23
PETK	**Petropavlovsk-**	**21.31**	**29**	P	**P**	**04 35 52.3**	**+2.5**
	2.8nm,0.8s,baz=199,slow=7.6,SNR=3.1						
SONM	**Songino Array**	**28.34**	**307**	P	**P**	**04 36 56.0**	**-0.9**
	0.4nm,0.6s,baz=96,slow=8.8,SNR=2.9						
ZALV	**Zalesovo Beam**	**42.67**	**314**	P	**P**	**04 39 00.1**	**+0.7**
	0.6nm,0.3s,baz=103,slow=8.3,SNR=2.3						
MKAR	**Makanchi Array**	**44.60**	**303**	P	**P**	**04 39 15.7**	**+0.6**
	0.2nm,0.3s,baz=84,slow=8.8,SNR=3.5						
ILAR	**Eielson Array**	**51.10**	**32**	P	**P**	**04 40 05.7**	**+0.6**
	0.3nm,0.6s,baz=276,slow=5.6,SNR=4.8						
WRA	**Warramunga Arr**	**55.41**	**187**	P	**P**	**04 40 37.1**	**-0.1**
	0.8nm,0.6s,baz=3.2,slow=7.4,SNR=16						
ASAR	**Alice Springs**	**59.14**	**187**	P	**P**	**04 41 03.8**	**+0.3**
	0.2nm,0.5s,baz=15,slow=12,SNR=3.5						
YKA	**Yellowknife Ar**	**65.43**	**30**	P	**P**	**04 41 46.8**	**+1.6**
	0.2nm,0.8s,baz=301,slow=6.4,SNR=3.6						
FINES	**FINESS Array B**	**70.02**	**332**	P	**P**	**04 42 15.2**	**+1.1**
	1.4nm,1.0s,baz=56,slow=8.5,SNR=2.4						
AKASG	**Malin Array Be**	**75.28**	**322**	P	**P**	**04 42 45.9**	**+0.3**
	0.4nm,0.5s,baz=51,slow=6.8,SNR=3.5						

NIED ***12*** *04:32:00, 36°.90N×140°.60E, h8km, Mw3.7 Best double couple: M04.07000×10^14 NP1:φs277.00000°, δ41.00000°, λ-142.00000°. NP2:φs156.00000°, δ66.00000°, λ-55.00000°.*
IDC ***12*** *04:32:54.9±0.7, 36°.78N×140°.76E, h0km, mb3.7/16, mb1 3.9/19, mb1mx3.8/38, mbtmp3.7/19, ML3.6/2, Error ellipse: s-maj=18.6km s-min=16.3km az=160.0*
ISCJB ***12*** *04:32:56.0±0.8, 36°.91N±0°.03×140°.73E±0°.05, h15km±5km, mb3.7/16, Error ellipse: s-maj=7.6km s-min=5.5km az=22.5*
JMA ***12*** *04:32:56.6, 36°.94N×140°.65E, h11km±1km, M4.0 Broadband fault plane solution: P waves. NP1: φs289.00000°, δ58.00000°, λ-116.00000°. NP2: φs151.00000°, δ40.00000°, λ-55.00000°. Principal axes: T Plg10.0000°, Azm37.0000°; N Plg22.0000°, Azm303.0000°; P Plg66.0000°, Azm150.0000°;*
JMA Felt II J1.

ISC 12 04:32:55.6±1.7, 36°.86N±0°.06×140°.72E±0°.06, h3km±10km, n32, σ0°88/32, mb3.7/16, 5C, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.25**	**14**	⇑P	**Pg**	**04 33 01.1**	**+0.5**
JHO	**Hitachi**	**0.27**	**207**	⇑P	**Pb**	**04 33 03.2**	**0.0**
JHO				S	**Sb**	**04 33 07.8**	**-0.4**
JSB	**Shiboa**	**0.65**	**280**	⇑P	**Pg**	**04 33 08.5**	**+0.4**
JSB				S	**Sg**	**04 33 16.5**	**-0.1**
JYT	**Otama**	**0.73**	**335**	⇑P	**Pg**	**04 33 08.8**	**-0.8**
JFT				S	**Sg**	**04 33 17.1**	**-2.0**
JYT	**Yasato**	**0.76**	**214**	⇑P	**Pb**	**04 33 11.4**	**0.0**
JYT				S	**Sb**	**04 33 22.3**	**+0.2**
MJAR	**Matsushiro Arr**	**2.04**	**262**	Pn	**Pn**	**04 33 30.7**	**-0.3**
	44nm,0.3s,baz=80,slow=17,SNR=37						
MJAR				Sn	**Sn**	**04 33 56.1**	**-0.9**
	122nm,0.3s,baz=77,slow=27,SNR=21						
**

IDC ***12*** *04:37:46.7±1.1,37.94N×144.00E,h0km,mb3.4/6, mb1 3.6/7,mb1mx3.4/35,mbtmp3.3/7,ML3.2/1,Error ellipse: s-maj=33.5km s-min=22.9km az=135.0*

ISCJB ***12*** *04:37:55.0±0.9,39.44N±0.07×143.62E±0.07,h11km, mb3.3/5,Error ellipse: s-maj=10.3km s-min=6.5km az=149.0*

JMA ***12*** *04:37:56.5±0.2,39.43N×143.65E,h35km,M3.6*

ISC 12 04:37:56.6±1.2,39.43N±0.09×143.53E±0.09,h11km,n15, σ0§43/18,mb3.3/5,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MIYJ	**Miyakonagasawa**	**1.33**	**277**	P	**Pn**	**04 38 20.7**	**-0.4**
MIYJ				eS	**Sn**	**04 38 38.4**	**-0.5**
JTH	**Tanohata**	**1.38**	**292**	P	**Pn**	**04 38 21.4**	**-0.4**
OFUJ	**Ofunato**	**1.49**	**257**	P	**Pn**	**04 38 22.7**	**-0.6**
JOM	**Ohasama**	**1.73**	**272**	P	**Pn**	**04 38 26.8**	**+0.1**
JOM				eS	**Sn**	**04 38 49.1**	**+0.3**
JMK	**Ichinoseki**	**1.86**	**256**	P	**Pn**	**04 38 28.3**	**-0.1**
JTM	**Tenmabayashi**	**2.32**	**306**	P	**Pn**	**04 38 34.8**	**0.0**
JTM				eS	**Sn**	**04 39 03.5**	**+0.2**
JOU	**Okura**	**2.48**	**245**	eS	**Sn**	**04 39 07.4**	**+0.2**
JYK	**Kaneyama**	**2.52**	**259**	P	**Pn**	**04 38 38.0**	**+0.5**
JNBK	**Urakawa-nobuka**	**2.90**	**349**	P	**Pn**	**04 38 43.1**	**+0.4**
JNBK				S	**Sn**	**04 39 17.2**	**-0.4**
MJAR	**Matsushiro Arr**	**5.10**	**237**	Pn	Pn	04 39 02.5	-11
	1.0nm,0.3s,baz=104,slow=12,SNR=4.1						
SONM	**Songino Array**	**27.94**	**300**	P	**P**	**04 43 47.5**	**+0.6**
	0.2nm,0.4s,baz=106,slow=11,SNR=2.5						
MKAR	**Makanchi Array**	**44.30**	**300**	P	**P**	**04 46 06.3**	**-0.1**
	0.1nm,0.2s,baz=80,slow=8.9,SNR=3.9						
ILAR	**Eielson Array**	**46.58**	**34**	P	**P**	**04 46 23.4**	**-0.7**
	0.3nm,0.6s,baz=258,slow=6.3,SNR=4.3						
INK	**Inuvik**	**51.49**	**28**	P	**P**	**04 47 02.1**	**+0.5**
	0.5nm,0.6s,baz=273,slow=2.0,SNR=4.0						
YKA	**Yellowknife Ar**	**60.90**	**31**	P	**P**	**04 48 08.7**	**-0.2**
	0.1nm,0.6s,baz=301,slow=6.1,SNR=4.5						

JMA 12 04:38:06.2±0.1,35.47N×140.94E,h21km±2km,M2.9, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.24**	**344**	P	Pb	04 38 12.0	-0.3
CHOJ				S	Sb	04 38 16.3	-0.2
BSO4	**Boso 4**	**0.69**	**226**	P	Pn	04 38 20.2	-0.4
BSO3	**Boso 3**	**0.75**	**208**	P	Pb	04 38 20.7	+0.3
BSO1	**Boso 1**	**0.81**	**178**	P	Pb	04 38 20.7	-0.6
JYT	**Yasato**	**0.97**	**322**	S	Sb	04 38 36.8	+0.2
WRA	**Warramunga Arr**	**55.46**	**188**	P	P	04 47 42.8	+3.4
	0.3nm,0.9s,baz=6.5,slow=8.1,SNR=3.6						

CSEM ***12*** *04:38:35.7,39.02N×29.01W,h5km,ML2.9*

PDA 12 04:38:35.7±1.1,39.02N×29.01W,h5km,MD3.7,ML2.9, 10D,Error ellipse: s-maj=7.3km s-min=4.3km az=99.0, Azores Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PCED	**Cedros**	**0.46**	**148**	⇓*i*P	Pg	04 38 43.4	-1.1
PCED				eS	Sg	04 38 49.6	-0.9
PCED	**Cedros**	**0.46**	**148**	⇓*i*P	Pg	04 38 43.4	-1.1
PCED				eS	Sg	04 38 49.6	-0.9
PCED				A	A	04 38 55.2	
	392nm,0.6s						
CALA	**Caldeira**	**0.50**	**151**	*e*P	Pg	04 38 44.4	-0.9
CALA				eS	Sg	04 38 51.1	-0.7
CALA	**Caldeira**	**0.50**	**151**	*e*P	Pg	04 38 44.4	-0.9
CALA				eS	Sg	04 38 51.1	-0.7
HOR	**Horta**	**0.57**	**148**	⇓*i*P	Pn	04 39 00.1	+10
HOR				eS	Sn	04 39 07.5	+7.2
HOR	**Horta**	**0.57**	**148**	⇓*i*P	Pn	04 39 00.1	+10
HOR				eS	Sn	04 39 07.5	+7.2
HOR				A	A	04 39 08.6	
	467nm,0.1s						
ROSA	**Rosais**	**0.67**	**116**	⇓*i*P	Pg	04 38 46.6	-2.0
ROSA				eS	Sg	04 38 55.3	-2.0
ROSA	**Rosais**	**0.67**	**116**	⇓*i*P	Pg	04 38 46.6	-2.0
ROSA				eS	Sg	04 38 55.3	-2.0
ROSA				A	A	04 38 55.8	
	259nm,0.4s						
PCAN	**Candelaria**	**0.69**	**143**	⇓*i*P	Pg	04 38 46.9	-2.0
PCAN				eS	Sg	04 38 55.8	-2.1
PCAN	**Candelaria**	**0.69**	**143**	⇓*i*P	Pg	04 38 46.9	-2.0
PCAN				eS	Sg	04 38 55.8	-2.1
PCAN				A	A	04 38 58.9	
	434nm,0.3s						
PICO	**Pico**	**0.69**	**138**	⇓*i*P	Pg	04 38 47.1	-1.9
PICO				eS	Sg	04 38 56.1	-1.8
PICO	**Pico**	**0.69**	**138**	⇓*i*P	Pg	04 38 47.1	-1.9
PICO				eS	Sg	04 38 56.1	-1.8
PICO				A	A	04 39 00.5	
	342nm,0.4s						
PGRA	**Graciosa**	**0.80**	**89**	*e*P	Pg	04 38 48.6	-2.5
PGRA				eS	Sg	04 38 58.3	-3.3
PGRA	**Graciosa**	**0.80**	**89**	*e*P	Pg	04 38 48.6	-2.5
PGRA				eS	Sg	04 38 58.3	-3.3
PGRA				A	A	04 38 59.3	
	185nm,0.4s						
PMAN	**Manadas**	**0.82**	**118**	*e*P	Pg	04 38 48.6	-2.8
PMAN				eS	Sg	04 38 59.0	-3.0
PMAN	**Manadas**	**0.82**	**118**	*e*P	Pg	04 38 48.6	-2.8
PMAN				eS	Sg	04 38 59.0	-3.0
PMAN				A	A	04 39 00.5	
	108nm,0.3s						
ADH	**Angra Heroismo**	**1.44**	**104**	eS	Sb	04 39 14.0	-7.5
ADH	**Angra Heroismo**	**1.44**	**104**	eS	Sb	04 39 14.0	-7.5
ADH				A	A	04 39 16.5	
	24nm,0.3s						
PSET	**Sete Cidades**	**2.85**	**114**	*e*P	Pn	04 39 17.8	-4.0
PSET	**Sete Cidades**	**2.85**	**114**	*e*P	Pn	04 39 17.8	-4.0
PDA	**Ponta Delgada**	**2.92**	**115**	*e*P	Pn	04 39 18.6	-4.2
PDA				eS	Sn	04 39 50.0	-8.3
PDA	**Ponta Delgada**	**2.92**	**115**	*e*P	Pn	04 39 18.6	-4.2
PDA				eS	Sn	04 39 50.0	-8.3
PDA				A	A	04 39 51.4	
	8.7nm,0.2s						
CMLA	**Cha da Macela**	**3.01**	**113**	*e*P	Pn	04 39 20.2	-3.9
CMLA				eS	Sn	04 39 53.8	-6.8
CMLA	**Cha da Macela**	**3.01**	**113**	*e*P	Pn	04 39 20.2	-3.9
CMLA				eS	Sn	04 39 53.8	-6.8
BART	**Pico Bartolome**	**3.27**	**111**	*e*P	Pn	04 39 23.1	-4.5
BART	**Pico Bartolome**	**3.27**	**111**	*e*P	Pn	04 39 23.1	-4.5
PSMA	**Santa Maria**	**3.67**	**122**	*e*P	Pn	04 39 28.9	-4.2
PSMN	**Pico do Norte,**	**3.71**	**122**	*e*P	Pn	04 39 29.0	-4.7
PSMN	**Pico do Norte,**	**3.71**	**122**	*e*P	Pn	04 39 29.0	-4.7

ISCJB ***12*** *04:42:43.7±0.9,37.69N±0.06×141.90E±0.07,h24km, mb3.3/4,Error ellipse: s-maj=8.4km s-min=8.0km az=18.3*

JMA ***12*** *04:42:43.3±0.2,37.64N×141.87E,h22km±3km,M3.7*

JMA Felt I J1.

IDC ***12*** *04:42:47.3±5.4,37.49N×142.11E,h41km±47km,mb3.1/4, mb1 3.3/6,mb1mx3.1/35,mbtmp3.3/6,ML2.6/2,Error ellipse: s-maj=47.5km s-min=30.1km az=92.0*

ISC 12 04:42:45.2±1.0,37.69N±0.06×141.79E±0.07,h24km,n19, σ1§44/17,mb3.3/4,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JMM	**Marumori**	**0.81**	**283**	P	**Pb**	**04 42 59.8**	**-0.9**
JMM				eS	**Sb**	**04 43 11.1**	**-0.1**
JIO	**Ouri**	**0.84**	**335**	P	**Pb**	**04 43 00.1**	**-1.1**
JIO				eS	**Sb**	**04 43 11.9**	**-0.1**
JOU	**Okura**	**1.12**	**307**	P	**Pb**	**04 43 05.3**	**-0.6**
JOU				eS	**Sb**	**04 43 20.3**	**+0.2**
JFT	**Otama**	**1.17**	**262**	P	**Pn**	**04 43 05.4**	**-0.7**
JFT				eS	**Sn**	**04 43 21.1**	**-0.2**
JMK	**Ichinoseki**	**1.34**	**340**	P	**Pn**	**04 43 07.8**	**-0.6**
MJAR	**Matsushiro Arr**	**3.08**	**249**	P	**Pn**	**04 43 34.8**	**+2.3**
	2.3nm,0.3s,baz=80,slow=16,SNR=7.0						
MAT	**Matsushiro**	**3.09**	**249**	P	**Pn**	**04 43 33.9**	**+1.4**
MAT				eS	**Sb**	**04 44 13.7**	**-3.0**
USRK	**Ussuriysk Ar.**	**9.86**	**314**	P	Pn	04 45 12.2	+6.8
	0.2nm,0.3s,baz=126,slow=14,SNR=2.8						
H11N2	**WAKE ISLAND Hy**	**28.23**	**122**	T	T	05 18 02.1	
	baz=315,slow=75,SNR=14						
H11N1	**WAKE ISLAND Hy**	**28.24**	**122**	T	T	05 18 02.0	
	baz=315,slow=75,SNR=12						
H11N3	**WAKE ISLAND Hy**	**28.25**	**122**	T	T	05 18 04.3	
	baz=315,slow=75,SNR=12						
H11S1	**WAKE ISLAND Hy**	**28.97**	**124**	T	T	05 18 55.2	
	baz=317,slow=76,SNR=30						
H11S3	**WAKE ISLAND Hy**	**28.97**	**124**	T	T	05 18 56.7	
	baz=317,slow=76,SNR=27						
H11S2	**WAKE ISLAND Hy**	**28.99**	**124**	T	T	05 18 56.5	
	baz=317,slow=76,SNR=29						
MKAR	**Makanchi Array**	**44.03**	**302**	P	**P**	**04 50 53.1**	**+2.2**
	0.1nm,0.2s,baz=97,slow=6.1,SNR=2.7						
WRA	**Warramunga Arr**	**57.75**	**188**	P	**P**	**04 52 33.1**	**-1.2**
	0.2nm,0.5s,baz=5.7,slow=7.3,SNR=3.7						
YKA	**Yellowknife Ar**	**63.09**	**30**	P	**P**	**04 53 09.7**	**-0.6**
	0.2nm,0.9s,baz=306,slow=6.6,SNR=3.6						
AKASG	**Malin Array Be**	**73.96**	**322**	P	**P**	**04 54 19.9**	**+1.5**
	0.1nm,0.3s,baz=40,slow=7.0,SNR=3.2						
LPAZ	**La Paz**	**146.11**		PKPbc	**PKPbc**	**05 02 23.9**	**-0.6**
	0.4nm,0.6s,baz=0.0,slow=5.1,SNR=3.0						

MEX 12 04:45:26.4±0.2,16.98N×94.36W,h146km±7km,MD3.9, Oaxaca

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TGIG		**1.20**	**99**	*e*P	Pn	04 45 51.4	-1.3
TGIG				eS	Sn	04 46 10.9	-1.9
HUIG	**Huatulco**	**2.06**	**235**	*e*P	Pn	04 46 00.8	-1.3
HUIG				eS	Sn	04 46 27.6	-1.9
CCIG	**Comitan**	**2.24**	**108**	*e*P	Pn	04 46 03.0	-1.3
CCIG				eS	Sn	04 46 31.6	-1.8
VHO	**Vista Hermosa**	**2.27**	**273**	*e*P	Pn	04 46 03.4	-1.4
VHO				eS	Sn	04 46 33.0	-1.2

JMA 12 04:57:03.0,37.04N×140.62E,h8km±1km,M2.5,Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.15**	**67**	P	Pg	04 57 06.6	+0.3
JHO	**Hitachi**	**0.43**	**185**	P	Pg	04 57 11.3	-0.1
JHO				S	Sg	04 57 17.0	0.0
JFT	**Otama**	**0.53**	**335**	P	Pg	04 57 13.6	+0.4
JFT				S	Sg	04 57 20.8	+0.6
JMM	**Marumori**	**0.84**	**9**	P	Pg	04 57 18.8	-0.3
MAT	**Matsushiro**	**2.00**	**256**	P	Pb	04 57 40.1	+0.5
MAT				S	Sn	04 58 03.5	+1.2

ISCJB ***12*** *04:57:56.7±0.6,7.75S±0.08×127.4E±0.2,h150km, mb3.8/9,Error ellipse: s-maj=23.1km s-min=8.0km az=155.9*

IDC ***12*** *04:57:58.0±3.8,7.65S×127.47E,h144km±35km,mb3.6/9, mb1 3.9/11,mb1mx3.6/35,mbtmp4.2/11,MS2.9/1, Ms1 2.9/1,ms1mx2.4/41,Error ellipse: s-maj=31.2km s-min=13.3km az=59.0*

ISC 12 04:57:58.2±0.7,7.90S±0.08×127.5E±0.1,h150km,n15, σ2§53/19,mb3.9/9,Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**10.31**	**190**	P	**Pn**	**05 00 23.7**	**+1.4**
	3.1nm,0.3s,baz=9.1,slow=11,SNR=74						
FITZ				S	**Sn**	**05 02 13.4**	**-3.1**
	2.7nm,0.3s,baz=48,slow=17,SNR=5.5						
FITZ				LR	LR	05 05 15.5	
	comp=Z,60nm,19.9s,baz=341,slow=42						
WRA	**Warramunga Arr**	**13.67**	**152**	P	**Pn**	**05 01 06.5**	**+0.5**
	1.1nm,0.3s,baz=342,slow=12,SNR=71						
WRA				S	**Sn**	**05 03 31.8**	**-5.7**
	3.5nm,0.3s,baz=328,slow=22,SNR=12						
ASAR	**Alice Springs**	**16.83**	**159**	P	**Pn**	**05 01 48.4**	**+3.3**
	4.6nm,0.3s,baz=344,slow=12,SNR=190						
ASAR				S	**S**	**05 04 48.7**	**-3.6**
	0.8nm,0.3s,baz=333,slow=23,SNR=6.4						
CTA	**Charters Tower**	**21.81**	**126**	P	**P**	**05 02 41.5**	**+3.0**
	4.3nm,0.9s,baz=305,slow=16,SNR=4.3						
STKA	**Stephens Creek**	**27.22**	**153**	P	**P**	**05 03 30.5**	**+2.4**
	3.1nm,0.4s,baz=335,slow=7.9,SNR=10.0						
PSI	**Prapat**	**30.45**	**289**	P	**P**	**05 03 56.5**	**-0.6**
	2.4nm,0.3s,baz=133,slow=10,SNR=4.7						
CMAR	**Chiang Mai Arr**	**38.49**	**313**	P	**P**	**05 05 05.5**	**-0.5**
	0.3nm,0.3s,baz=144,slow=7.0,SNR=4.1						
SONM	**Songino Array**	**58.55**	**343**	P	**P**	**05 07 38.1**	**-0.9**
	0.5nm,0.8s,baz=165,slow=6.1,SNR=3.2						
MKAR	**Makanchi Array**	**67.66**	**328**	P	**P**	**05 08 38.2**	**-0.8**
	0.8nm,0.8s,baz=117,slow=7.7,SNR=3.6						
ZALV	**Zalesovo Beam**	**71.33**	**335**	P	**P**	**05 08 59.1**	**-2.2**
	0.8nm,0.4s,baz=140,slow=4.7,SNR=4.0						
VNDA	**Vanda**	**71.87**	**173**	P	**P**	**05 09 06.5**	**+2.2**
	0.7nm,0.4s,baz=323,slow=10,SNR=9.4						
SEY	**Seymchan**	**73.15**	**12**	P	**P**	**05 09 11.1**	**-0.9**
	0.7nm,0.3s,baz=167,slow=6.5,SNR=2.8						
TORD	**Torodi Ar. Bea**	**126.57**	**280**	PKP	**PKPdf**	**05 16 43.8**	**-0.7**
	1.1nm,0.9s,baz=67,slow=1.4,SNR=6.4						
TXAR	**Lajitas Array**	**127.48**	**59**	PKP	**PKPdf**	**05 16 45.2**	**-1.0**
	0.2nm,0.8s,baz=248,slow=2.4,SNR=2.7						
LPAZ	**La Paz**	**151.41**	**147**	PKPbc	**PKPbc**	**05 17 37.1**	**+1.1**
	1.1nm,0.4s,baz=295,slow=1.6,SNR=12						
LPAZ				PKPab	**PKPab**	**05 17 46.8**	**+2.2**
	2.3nm,0.8s,baz=212,slow=5.6,SNR=8.3						

NIED ***12*** *04:59:00,35.50N×140.80E,h20km,Mw4.2 Best double couple: M0 1.93000×10¹⁵ NP1:φ=209.00000°,δ33.00000°, λ104.00000°. NP2:φ=12.00000°,δ58.00000°,λ81.00000°.*

ISCJB ***12*** *04:59:37.7±0.4,35.39N±0.03×140.80E±0.06,h33km, mb3.9/21,Error ellipse: s-maj=7.4km s-min=4.5km az=173.2*

JMA ***12*** *04:59:37.1±0.1,35.49N×140.81E,h25km±2km,M4.1*

JMA Felt II J1.

NEIC ***12*** *04:59:39.9±0.3,35.31N×140.76E,h35km,mb4.0/1,Error ellipse: s-maj=9.0km s-min=7.3km az=71.0*

NEIC Recorded [2 JMA] in Chiba.

IDC ***12*** *04:59:40.2±3.2,35.31N×140.71E,h35km±26km,mb3.7/19, mb1 3.9/24,mb1mx3.8/47,mbtmp3.9/24,ML3.2/4,MS2.7/2, Ms1 2.7/2,ms1mx2.7/49,Error ellipse: s-maj=17.7km s-min=13.3km az=83.0*

ISC 12 04:59:39.4±0.5,35.36N±0.04×140.79E±0.07,h33km,n47, σ1§41/45,mb3.9/21,3C-2D,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.34**	**10**	⇑P	Pb	04 59 42.9	-4.9
CHOJ				S	Sb	04 59 47.0	-6.5
JCN	**Nagara**	**0.48**	**277**	⇓P	**Pb**	**04 59 47.9**	**-1.9**
BSO4	**Boso 4**	**0.52**	**225**	⇑P	**Pb**	**04 59 49.8**	**-0.5**
BSO3	**Boso 3**	**0.60**	**202**	⇑P	**Pn**	**04 59 51.0**	**-0.4**
BSO1	**Boso 1**	**0.72**	**168**	P	**Pn**	**04 59 51.8**	**-1.0**
JYT	**Yasato**	**0.99**	**331**	⇓P	Pn	04 59 53.0	-4.0
JYT				eS	**Sn**	**05 00 05.7**	**-4.2**
JHO	**Hitachi**	**1.26**	**352**	S	**Sn**	**05 00 13.5**	**-3.0**
JHJ	**Hachijo jima 2**	**2.39**	**201**	P	**Pn**	**05 00 16.2**	**0.0**
	57nm,0.3s,baz=44,slow=17,SNR=3.8						
JHJ				Sn	**Sn**	**05 00 43.5**	**-0.9**
	98nm,0.3s,baz=233,slow=20,SNR=4.2						
JHJ				LR	LR	05 00 46.4	
	comp=Z,176nm,21.2s,baz=268,slow=29						
MJAR	**Matsushiro Arr**	**2.40**	**300**	Pn	**Pn**	**05 00 17.0**	**+0.5**
	24nm,0.3s,baz=90,slow=13,SNR=29						
MAJO	**Matsushiro**	**2.40**	**300**	*e*Pn	**Pn**	**05 00 17.3**	**+0.8**
MAT	**Matsushiro**	**2.40**	**300**	P	**Pn**	**05 00 17.0**	**+0.5**
MAT				eS	**Sn**	**05 00 43.9**	**-0.9**
ERM	**Erimo**	**6.90**	**15**	*e*Pn	**Pn**	**05 01 17.1**	**-1.0**
ERM				eS	**Sn**	**05 02 31.8**	**-3.6**
CBIJ	**Chichi jima**	**8.33**	**171**	*e*Pn	**Pn**	**05 01 35.7**	**-2.1**
CBIJ				eS	**Sn**	**05 03 09.2**	**-1.6**
JCJ	**Chichijima**	**8.33**	**171**	Pn	**Pn**	**05 01 36.2**	**-1.7**
JCJ				Sn	**Sn**	**05 03 07.6**	**-3.1**
	6.0nm,0.3s,baz=342,slow=20,SNR=1.9						
JNU	**Nakatsue**	**8.50**	**258**	LR	LR	05 04 41.1	
	comp=Z,64nm,21.6s,baz=308,slow=36						
KSRS	**Korea Array**	**10.58**	**285**	Pn	**Pn**	**05 02 09.5**	**+0.8**
	0.1nm,0.3s,baz=98,slow=13,SNR=3.6						
USRK	**Ussuriysk Ar.**	**11.12**	**325**	Pn	**Pn**	**05 02 17.2**	**+1.2**
	0.2nm,0.3s,baz=119,slow=14,SNR=6.3						
H11N2	**WAKE ISLAND Hy**	**27.78**	**117**	T	T	05 34 20.3	
	baz=310,slow=75,SNR=97						
H11N1	**WAKE ISLAND Hy**	**27.79**	**117**	T	T	05 34 24.1	
	baz=310,slow=75,SNR=148						
H11N3	**WAKE ISLAND Hy**	**27.80**	**117**	T	T	05 34 27.3	
	baz=310,slow=75,SNR=126						
SONM	**Songino Array**	**28.34**	**307**	P	**P**	**05 05 29.8**	**-0.6**
	0.5nm,0.5s,baz=110,slow=9.4,SNR=4.4						
H11S3	**WAKE ISLAND Hy**	**28.43**	**119**	T	T	05 35 10.2	
	baz=312,slow=76,SNR=588						
H11S1	**WAKE ISLAND Hy**	**28.43**	**119**	T	T	05 35 09.1	
	baz=312,slow=76,SNR=577						
H11S2	**WAKE ISLAND Hy**	**28.44**	**119**	T	T	05 35 17.6	
	baz=312,slow=76,SNR=378						
CMAR	**Chiang Mai Arr**	**40.60**	**257**	P	**P**	**05 07 16.4**	**+0.1**
	0.3nm,0.4s,baz=64,slow=6.3,SNR=3.1						
ZALV	**Zalesovo Beam**	**42.68**	**314**	P	**P**	**05 07 33.7**	**+0.8**
	1.3nm,0.5s,baz=94,slow=7.4,SNR=4.8						
MKAR	**Makanchi Array**	**44.60**	**303**	P	**P**	**05 07 48.5**	**+0.1**
	1.3nm,0.7s,baz=88,slow=9.8,SNR=13						
KURK	**Kurchatov**	**46.58**	**309**	*e*P	**P**	**05 08 03.8**	**-0.2**
	15nm,0.8s						
ILAR	**Eielson Array**	**51.18**	**32**	P	**P**	**05 08 40.3**	**+1.2**
	1.1nm,0.6s,baz=268,slow=5.8,SNR=14						
ILAR				PcP	**PcP**	**05 09 54.9**	**+0.8**
	0.3nm,0.5s,baz=267,slow=3.8,SNR=3.0						
FITZ	**Fitzroy Crossi**	**55.08**	**198**	P	**P**	**05 09 08.5**	**+0.3**
	1.8nm,0.7s,baz=7.1,slow=8.1,SNR=2.9						
WRA	**Warramunga Arr**	**55.34**	**187**	P	**P**	**05 09 09.7**	**-0.4**
	2.8nm,0.6s,baz=2.2,slow=7.5,SNR=10						
INK	**Inuvik**	**56.10**	**27**	P	**P**	**05 09 15.5**	**+0.5**
	0.6nm,0.5s,baz=315,slow=6.2,SNR=7.0						
ABKAR	**Akbulak array**	**58.64**	**311**	*e*P	**P**	**05 09 32.5**	**-0.7**
	0.6nm,0.4s						
ASAR	**Alice Springs**	**59.07**	**187**	P	**P**	**05 09 36.2**	**-0.2**
	0.3nm,0.6s,baz=21,slow=11,SNR=4.8						
ARCES	**ARCESS Array B**	**65.38**	**340**	P	**P**	**05 10 18.1**	**-0.1**
	1.8nm,0.8s,baz=51,slow=7.1,SNR=3.0						
YKA	**Yellowknife Ar**	**65.51**	**30**	P	**P**	**05 10 19.9**	**+0.8**
	0.3nm,0.7s,baz=300,slow=6.6,SNR=8.5						
FINES	**FINESS Array B**	**70.06**	**332**	P	**P**	**05 10 47.7**	**0.0**
	0.5nm,0.5s,baz=67,slow=6.4,SNR=4.4						
KBZ	**Khabaz**	**71.61**	**311**	P	**P**	**05 10 58.1**	**+0.7**
	1.9nm,0.9s,baz=71,slow=8.8,SNR=2.7						
AKASG	**Malin Array Be**	**75.31**	**322**	P	**P**	**05 11 19.2**	**+0.1**
	0.9nm,0.5s,baz=48,slow=6.0,SNR=7.7						
NB2	**NORSAR Subarra**	**75.53**	**337**	P	**P**	**05 11 20.4**	**+0.2**
	comp=Z,1.1nm,0.6s,baz=41,slow=5.9						
NOA	**NORSAR Array B**	**75.53**	**337**	P	**P**	**05 11 20.5**	**+0.2**
	comp=Z,1.7nm,0.7s,baz=40,slow=5.8,SNR=6.3						
NVAR	**Mina Array Bea**	**76.40**	**53**	P	**P**	**05 11 27.2**	**+1.3**
	comp=Z,1.0nm,0.7s,baz=295,slow=5.7,SNR=10						
PDAR	**Pinedale Array**	**79.20**	**45**	P	**P**	**05 11 42.7**	**+1.3**
	comp=Z,0.5nm,0.6s,baz=211,slow=0.7,SNR=8.6						
BRTR	**Keskin Array B**	**79.58**	**311**	P	**P**	**05 11 44.8**	**+1.4**
	comp=Z,0.5nm,0.6s,baz=62,slow=3.4,SNR=2.8						
TXAR	**Lajitas Array**	**91.54**	**52**	P	**P**	**05 12 44.7**	**+1.5**
	comp=Z,0.3nm,0.7s,baz=306,slow=4.3,SNR=4.8						
TORD	**Torodi Ar. Bea**	**118.13**	**314**	PKP	**PKPdf**	**05 18 24.6**	**+1.0**
	comp=Z,0.4nm,1.0s,baz=55,slow=2.0,SNR=3.7						
LPAZ	**La Paz**	**147.96**	**61**	PKPbc	**PKPbc**	**05 19 22.9**	**+0.3**
	comp=Z,1.1nm,0.8s,baz=333,slow=2.3,SNR=3.3						

CSEM ***12*** *05:03:52.0,42.36N×13.36E,h9km±1km,Md1.7/9,*

ROM 12 05:03:52.0±0.2,42.36N×13.36E,h9km±1km,Md1.7/9, Ml1.1/5,Error ellipse: s-maj=2.7km s-min=1.8km az=58.0,Central Italy

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
T0104	**Madonna delle**	**0.02**	**270**	Pg	Pg	05 03 53.9	+0.2
T0104				Sg	Sg	05 03 55.2	+0.3
CAMP	**Campotosto**	**0.18**	**11**	Pg	Pg	05 03 56.2	+0.4
CAMP				Sg	Sg	05 03 59.5	+1.0
	22nm,0.3s						
CAMP	**Campotosto**	**0.18**	**11**	Pg	Pg	05 03 56.2	+0.4
CAMP				Sg	Sg	05 03 59.5	+1.0
	22nm,0.3s						
RM33	**Pellescritta (**	**0.19**	**323**	Pg	Pg	05 03 56.4	+0.5
RM33				Sg	Sg	05 03 59.8	+1.2
RM33	**Pellescritta (**	**0.19**	**323**	Pg	Pg	05 03 56.4	+0.5
RM33				Sg	Sg	05 03 59.8	+1.2
RM32	**Poggio Cancell**	**0.22**	**346**	Pg	Pg	05 03 56.8	+0.3
RM32				Sg	Sg	05 04 01.4	+1.8
RM32	**Poggio Cancell**	**0.22**	**346**	Pg	Pg	05 03 56.8	+0.3
RM32				Sg	Sg	05 04 01.4	+1.8
RM29	**Verrico (Monte**	**0.23**	**329**	Pg	Pg	05 03 57.8	+1.0
RM29				Sg	Sg	05 04 02.4	+2.4
	24nm,0.3s						
RM29	**Verrico (Monte**	**0.23**	**329**	Pg	Pg	05 03 57.8	+1.0
RM29				Sg	Sg	05 04 02.4	+2.4
	24nm,0.3s						
SMA1	**SAN MARTINO**	**0.27**	**356**	Pg	Pg	05 03 58.3	+0.8
SMA1				Sg	Sb	04 02.8	-1.1
	24nm,0.6s						
SMA1	**SAN MARTINO**	**0

M_{rr}0.24±.01; $M_{\theta\theta}$0.22±.01; $M_{\phi\phi}$-0.46±.01; $M_{r\theta}$0.55±.02; $M_{\theta\phi}$-0.73±.01; $M_{r\phi}$0.11±.01; Best double couple: M_o1.00400×10^{18} NP1:ϕ_s73.00000°,δ81.00000°, λ143.00000°. NP2:ϕ_s170.00000°,δ53.00000°,λ12.00000°. Principal axes: T 0.9530, Plg33.0000°, Azm25.0000°; N 0.1020, Plg52.0000°, Azm241.0000°; P -1.0550, Plg18.0000°, Azm127.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface/mantle waves, cutoff=50s.

NEIC **12** *05:07:42.0±0.0, 37°.00N×140°.90E, h15km, Moment Tensor Solution. s7 Moment tensor: Scale 10^{17}Nm; M_{rr}4.19; $M_{\theta\theta}$-0.19; $M_{\phi\phi}$-4.00; $M_{r\theta}$4.92; $M_{\theta\phi}$-4.31; $M_{r\phi}$2.49; Best double couple: M_o8.10000×10^{17} NP1:ϕ_s58.00000°, δ71.00000°,λ116.00000°. NP2:ϕ_s182.00000°,δ32.00000°, λ38.00000°. Principal axes: T 7.3900, Plg56.0000°, Azm2.0000°; N 1.2800, Plg24.0000°, Azm228.0000°; P -8.6800, Plg21.0000°, Azm128.0000°;*

JMA **12** *05:07:42.2, 37°.05N×140°.64E, h15km±1km, M6.4 Broadband fault plane solution: P waves. NP1: ϕ_s51.00000°,δ58.00000°,λ107.00000°. NP2: ϕ_s202.00000°,δ36.00000°,λ66.00000°. Principal axes: T Plg72.0000°, Azm2.0000°; N Plg14.0000°, Azm222.0000°; P Plg11.0000°, Azm129.0000°;*

MOS **12** *05:07:44.4±0.9, 37°.44N×140°.38E, h28km, mb6.3/117, MS5.9/93 Error ellipse: s-maj=5.3km s-min=3.5km az=106.6*

MOS Felt (II) at Yuzhno-Kuril'sk.

ISC 12 05:07:42.2±0.3, 37°.12N±0°.02×140°.58E±0°.02, h14km±1km, h14km:pP-P,n2125,σ1s70/2277, mb6.2/483, MS5.9/259, 165C-28D, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	Op	ID	Time h m s	Res
ONAJ	**Iwakimizuishiy**	**0.18**	**96**	⇑P		**Pg**	**05 07 46.0**	**-0.5**
JFT	**Otama**	**0.44**	**334**	⇓P		**Pn**	**05 07 52.7**	**-1.4**
JFT				S		**Sn**	**05 08 00.1**	**-1.7**
JHO	**Hitachi**	**0.51**	**181**	⇓P		**Pg**	**05 07 50.9**	**-1.4**
JHO				S		**Sg**	**05 07 57.3**	**-1.8**
JSB	**Shiboa**	**0.55**	**254**	⇓P		**Pb**	**05 07 54.1**	**+0.6**
JSB				*e*S		**Sb**	**05 08 02.2**	**+1.0**
JFY	**Yanaizu**	**0.75**	**293**	⇓P		**Pn**	**05 07 57.8**	**-0.5**
JFY				S		**Sn**	**05 08 09.2**	**-0.3**
JMM	**Marumori**	**0.76**	**13**	⇑P		**Pb**	**05 07 57.4**	**+0.2**
JMM				S		**Sn**	**05 08 09.0**	**-0.8**
JYT	**Yasato**	**0.94**	**199**	⇓P		**Pb**	**05 07 58.9**	**-1.4**
JYT				S		**Sb**	**05 08 10.6**	**-2.0**
I30JP	**ISUMI INFRASON**	**1.82**	**187**	Pg		**Pb**	**05 08 15.0**	**-0.3**
	baz=22,slow=21,SNR=4.0							
I30JP				*i*			05 17 40.0	
	baz=16,slow=321,SNR=0.9							
MJAR	**Matsushiro Arr**	**1.98**	**254**	Pn		**Pb**	**05 08 16.7**	**-1.4**
	545nm,0.3s,baz=72,slow=14,SNR=911							
MJAR				Sn		**Sb**	**05 08 43.6**	**+0.9**
	660nm,0.3s,baz=68,slow=26,SNR=8.5							
MJAR				LR		LR	05 09 09.0	
	comp=Z,220μm,18.1s,baz=100,slow=47							
MAJO	**Matsushiro**	**1.98**	**254**	*e*P		**Pb**	**05 08 18.0**	**-0.1**
MAJO				*e*			05 08 45.1	
MAJO	**Matsushiro**	**1.98**	**254**	*e*Pn		**Pb**	**05 08 18.0**	**-0.1**
MAJO				*e*Sn		**Sg**	**05 08 45.1**	**-1.0**
MAT	**Matsushiro**	**1.98**	**254**	P		**Pb**	**05 08 17.0**	**-1.1**
MAT				S		**Sg**	**05 08 45.2**	**-0.9**
INU	**Inuyama**	**3.38**	**239**	*e*Pn		**Pn**	**05 08 37.7**	**+3.3**
JHJ	**Hachijo jima 2**	**4.05**	**189**	Pn		**Pn**	**05 08 44.0**	**+0.3**
	821nm,0.3s,baz=203,slow=7.3,SNR=36							
JHJ				Sn		**Sn**	**05 09 31.1**	**+0.3**
	1μm,0.3s,baz=30,slow=21,SNR=8.5							
JHJ				LR		LR	05 10 26.6	
	comp=Z,144μm,19.0s,baz=48,slow=41							
JHJ2	**Mitsune**	**4.05**	**189**	*e*Pn		**Pn**	**05 08 43.2**	**-0.4**
ERM	**Erimo**	**5.28**	**21**	*de*P		**Pn**	**05 09 00.8**	**+0.3**
ERM				pmax		pmax		
	comp=Z,975nm,0.7s							
ERM	**Erimo**	**5.28**	**21**	*e*Pn		**Pn**	**05 09 01.0**	**+0.4**
YUK	**Yuzh-Kuril'sk**	**7.99**	**29**	*c i*P		**Pn**	**05 09 35.8**	**-1.9**
YUK				*e*S		**Sn**	**05 11 02.1**	**-5.7**
YUK				pmax		pmax		
	comp=Z,1μm,0.7s							
YUK				pmax		pmax		
	comp=E,968nm,0.4s							
YUK				pmax		pmax		
	comp=N,475nm,0.2s							
YUK				MLR		MLR		
	comp=Z,51μm,18.0s							
YUK				MLR		MLR		
	comp=N,78μm,14.0s							
YUK				MLR		MLR		
	comp=E,32μm,14.0s							
SHO	**Shikotan**	**8.25**	**33**	*c i*P		**Pn**	**05 09 38.6**	**-2.8**
SHO				*i* S		**Sn**	**05 11 06.7**	**-7.6**
SHO				pmax		pmax		
	comp=Z,1μm,0.7s							
SHO				pmax		pmax		
	comp=E,506nm,0.4s							
SHO				pmax		pmax		
	comp=N,617nm,0.8s							
JNU	**Nakatsue**	**8.89**	**246**	Pn		**Pn**	**05 09 50.0**	**-0.1**
	comp=N,0.4nm,0.3s,baz=66,slow=14,SNR=14							
JNU				Sn		**Sn**	**05 11 29.1**	**-1.0**
	baz=60,slow=17,SNR=2.9							
JNU				LR		LR	05 13 30.9	
	comp=N,60μm,18.8s,baz=56,slow=40							
JNU	**Nakatsue**	**8.89**	**246**	*e*Pn		**Pn**	**05 09 52.6**	**+2.5**
JNU				Sn		**Sn**	**05 11 29.1**	**-1.0**
VLA	**Vladivostok**	**8.95**	**315**	*c i*P		Pn	05 09 56.2	+5.3
USRK	**Ussuriysk Ar.**	**9.62**	**320**	Pn		**Pn**	**05 10 02.3**	**+2.3**
	comp=N,1.0nm,0.3s,baz=128,slow=14,SNR=12							
USRK				LR		LR	05 13 26.5	
	comp=N,75μm,19.6s,baz=122,slow=36							
KUR	**Kuril'sk**	**9.79**	**32**	*c i*P		**Pn**	**05 10 01.0**	**-1.4**
KUR				*i* S		**Sn**	**05 11 46.5**	**-5.5**
KUR				pmax		pmax		
	comp=Z,792nm,0.7s							
KUR				pmax		pmax		
	comp=E,205nm,0.3s							
KUR				pmax		pmax		
	comp=N,329nm,0.7s							
KUR				MLR		MLR		
	comp=Z,26μm,15.0s							
KUR				MLR		MLR		
	comp=N,26μm,18.0s							
KUR				MLR		MLR		
	comp=E,27μm,16.0s							
YSS	**Yuzh-Sakhalins**	**9.96**	**9**	⇑*e*P		**Pn**	**05 10 04.9**	**+0.2**
YSS				*e*S		**Sn**	**05 11 54.8**	**-1.4**
YSS				pmax		pmax		
	comp=Z,610nm,0.8s							
YSS				MLR		MLR		
	comp=Z,49μm,12.0s							
YSS				MLR		MLR		
	comp=N,88μm,14.0s							
YSS				MLR		MLR		
	comp=E,99μm,15.0s							
YSS	**Yuzh-Sakhalins**	**9.96**	**9**	*e*Pn		**Pn**	**05 10 05.2**	**+0.5**
KSRS	**Korea Array**	**10.09**	**276**	Pn		**Pn**	**05 10 09.9**	**+3.4**
	comp=E,4.7nm,0.3s,baz=93,slow=13,SNR=228							
KSRS				LR		LR	05 13 53.4	
	comp=E,62μm,18.1s,baz=94,slow=37							
CBIJ	**Chichi jima**	**10.09**	**172**	*e*Pn		**Pn**	**05 10 02.5**	**-4.1**
JCJ	**Chichijima**	**10.09**	**172**	Pn		Pn	05 10 01.6	-5.1
KS01	**Wonju Array Si**	**10.11**	**276**	*e*Pn		Pn	05 10 12.8	+5.9
KS15	**Wonju Array Si**	**10.12**	**276**	*e*Pn		Pn	05 10 12.2	+5.2
KSAR	**Wonju Array Be**	**10.12**	**276**	P		**Pn**	**05 10 09.9**	**+2.9**
KSAR	**Wonju Array Be**	**10.12**	**276**	Pn		**Pn**	**05 10 09.9**	**+2.9**
INCN	**Inchon**	**11.11**	**276**	*e*Pn		Pn	05 10 27.2	+6.6
INCN	**Inchon**	**11.11**	**276**	P		Pn	05 10 26.5	+5.9
	SNR=66							
MDJ	**Mudanjiang**	**11.18**	**315**	P		Pn	05 10 26.8	+5.3
MDJ				S		Sn	05 12 36.4	+10
MDJ				PcP		**PcP**	**05 16 18.0**	**+0.8**
MDJ				ScP		**ScP**	**05 19 50.8**	**+1.5**
MDJ				PcS		**PcS**	**05 19 52.3**	**+1.4**
MDJ				ScS		**ScS**	**05 23 25.8**	**+1.3**
MDJ				pmax		pmax		
	comp=E,300nm,1.7s							
MDJ				LR		LR		
	comp=E,28μm,13.6s							
MDJ				LR		LR		
	comp=E,66μm,13.6s							
MDJ				LR		LR		
	comp=E,82μm,14.1s							
MDJ	**Mudanjiang**	**11.18**	**315**	*e*Pn		Pn	05 10 27.2	+5.7
	comp=E,6μm,2.0s							
UGL	**Uglegorsk**	**12.00**	**5**	*i* P		**Pn**	**05 10 31.7**	**-0.9**
UGL				S		**Sn**	**05 12 40.0**	**-6.2**
UGL				pmax		pmax		
	comp=Z,110nm,0.6s							
UGL				pmax		pmax		
	comp=N,4μm,10.0s							
UGL				pmax		pmax		
	comp=E,2μm,10.0s							
UGL				pmax		pmax		
	comp=Z,4μm,10.0s							
UGL				smax		smax		
	comp=E,3μm,8.0s							
UGL				smax		smax		
	comp=N,2μm,6.0s							
UGL				MLR		MLR		
	comp=Z,64μm,16.0s							
UGL				MLR		MLR		
	comp=N,26μm,14.0s							
UGL				MLR		MLR		
	comp=E,86μm,16.0s							
HABR	**Khabarovsk**	**12.04**	**342**	*de*P		**Pn**	**05 10 31.1**	**-2.1**
HABR				*e*S		**Sn**	**05 12 44.7**	**-2.5**
HABR				pmax		pmax		
	comp=Z,16nm,0.3s							
HABR				MLR		MLR		
	comp=E,65μm,11.0s							
KLR	**Kul'dur**	**13.70**	**335**	Pn		**Pn**	**05 10 56.8**	**+1.0**
	comp=Z,1.1nm,0.3s,baz=144,slow=11,SNR=31							
KLR				LR		LR	05 16 06.3	
	comp=Z,61μm,19.2s,baz=150,slow=37							
TYV	**Tymovskoe**	**13.82**	**6**	*e*P		**Pn**	**05 10 57.8**	**+0.3**
TYV				*e*S		**Sn**	**05 13 25.0**	**-5.6**
TYV				pmax		pmax		
	comp=E,220nm,0.8s							
TYV				pmax		pmax		
	comp=Z,337nm,0.8s							
TYV				pmax		pmax		
	comp=Z,8μm,9.0s							
TYV				smax		smax		
	comp=E,8μm,11.0s							
SNY	**Shenyang**	**13.94**	**295**	⇑P		**Pn**	**05 11 02.8**	**+3.6**
SNY				pmax		pmax		
	comp=E,670nm,2.5s							
SNY				LR		LR		
	comp=E,60μm,12.5s							
SNY				LR		LR		
	comp=E,56μm,16.3s							
SNY				LR		LR		
	comp=E,75μm,17.5s							
JOW	**Kunigami**	**14.62**	**229**	Pn		**Pn**	**05 11 10.0**	**+1.4**
	comp=E,2.2nm,0.3s,baz=37,slow=9.0,SNR=13							
JOW				LR		LR	05 16 37.3	
	comp=E,18μm,21.3s,baz=44,slow=37							
JOW	**Kunigami**	**14.62**	**229**	*e*Pn		**P**	**05 11 12.6**	**-2.3**
DL2	**Dalian**	**15.04**	**283**	⇑*i*P		**P**	**05 11 17.3**	**-2.2**
DL2				S		**Sn**	**05 14 08.2**	**+7.6**
DL2				ScS		**ScS**	**05 23 31.8**	**-1.6**
DL2				pmax		pmax		
	comp=E,640nm,1.0s							
DL2				pmax		pmax		
	comp=E,15μm,6.9s							
DL2				LR		LR		
	comp=E,43μm,12.4s							
DL2				LR		LR		
	comp=E,55μm,13.0s							
DL2				LR		LR		
	comp=E,60μm,12.9s							
NKL	**Nikolayevsk**	**16.03**	**0**	*i* P		**Pn**	**05 11 23.0**	**-4.0**
NKL				*e*			05 14 27.0	
NKL				pmax		pmax		
	comp=N,2μm,7.0s							
NKL				pmax		pmax		
	comp=Z,3μm,6.0s							
NKL				pmax		pmax		
	comp=N,440nm,2.0s							
NKL				pmax		pmax		
	comp=E,150nm,2.0s							
NKL				pmax		pmax		
	comp=Z,990nm,2.0s							
OKH	**Okha**	**16.51**	**5**	⇑*i*P		**Pn**	**05 11 31.8**	**-1.3**
OKH				*e*S		Sn	05 14 22.6	-13
OKH				pmax		pmax		
	comp=Z,5μm,12.0s							
OKH				smax		smax		
	comp=N,5μm,10.0s							
OKH				MLR		MLR		
	comp=Z,39μm,16.0s							
SSE	**Sheshan**	**17.13**	**255**	P		**Pn**	**05 11 41.2**	**+0.1**
SSE				sP		**sP**	**05 11 47.5**	**-1.2**
SSE				S		**Sn**	**05 14 53.1**	**+1.7**
SSE				pmax		pmax		
	comp=Z,3μm,6.2s							
SSE				LR		LR		
	comp=Z,90μm,19.0s							
SSE				LR		LR		
	comp=Z,42μm,19.0s							
SSE				LR		LR		
	comp=Z,46μm,13.7s							
SKR	**Severo-Kuril's**	**17.53**	**34**	P		**Pn**	**05 11 45.1**	**-0.9**
SKR				MLR		MLR		
	comp=Z,26μm,14.0s							
NJ2	**Nanjing**	**18.57**	**261**	*e*P		**P**	**05 11 57.8**	**-0.9**
NJ2				S		**S**	**05 15 31.7**	**+1.6**
NJ2				pmax		pmax		
	comp=Z,3μm,5.4s							
NJ2				LR		LR		
	comp=Z,86μm,20.6s							
NJ2				LR		LR		
	comp=Z,69μm,14.6s							
NJ2				LR		LR		
	comp=Z,74μm,15.7s							
TIA	**Tai'an**	**18.83**	**274**	⇑P		**P**	**05 12 00.6**	**-0.9**
TIA				pP		**pP**	**05 12 05.8**	**+0.2**
TIA				sP		**sP**	**05 12 09.6**	**+2.2**
TIA				PP		**PnPn**	**05 12 18.6**	**+4.4**
TIA				S		**Sn**	**05 15 33.1**	**+0.6**
TIA				sS		**sS**	**05 15 42.0**	**+0.3**
TIA				pmax		pmax		
	comp=Z,7μm,4.9s							
TIA				LR		LR		
	comp=Z,38μm,13.8s							
TIA				LR		LR		
	comp=Z,70μm,14.4s							
TIA				LR		LR		
	comp=Z,89μm,14.8s							
BJI	**Beijing**	**19.28**	**286**	P		**P**	**05 12 05.5**	**-0.9**
BJI				S		**S**	**05 15 45.6**	**+1.3**
BJI				pmax		pmax		
	comp=Z,320nm,1.8s							
BJI				pmax		pmax		
	comp=Z,9μm,6.8s							
BJI				LR		LR		
	comp=Z,12μm,16.0s							
BJI				LR		LR		
	comp=Z,37μm,11.0s							
BJT	**Baijiatuau**	**19.29**	**286**	*e*P		**P**	**05 12 05.6**	**-0.8**
BJT				pmax		pmax		
	comp=Z,379nm,1.0s							
BJT	**Baijiatuau**	**19.29**	**286**	*e*P		**P**	**05 12 05.6**	**-0.8**
	comp=Z,379nm,1.0s							
HIA	**Hailar**	**19.37**	**315**	*e*P		**P**	**05 12 06.2**	**-1.1**
HIA				pmax		pmax		
	comp=Z,282nm,1.4s							
HIA	**Hailar**	**19.37**	**315**	*e*P		**P**	**05 12 06.2**	**-1.1**
	comp=Z,282nm,1.4s							
YOJ	**Yonaguni jima**	**19.63**	**235**	*e*P		**Pn**	**05 12 13.3**	**+1.7**
YOJ				pmax		pmax		
	comp=Z,221nm,0.9s							
YOJ	**Yonaguni jima**	**19.63**	**235**	*e*P		**Pn**	**05 12 13.3**	**+1.7**
	comp=Z,221nm,0.9s							
PEA0	**Petropavlovsk-**	**19.95**	**31**	*e*P		**Pn**	**05 12 14.6**	**-0.8**
PEA0B	**Petropavlovsk-**	**19.95**	**31**	*e*P		**P**	**05 12 13.8**	**+0.2**
	comp=Z,988nm,1.2s							
PETK	**Petropavlovsk-**	**19.95**	**31**	P		**Pn**	**05 12 14.9**	**-0.5**
	comp=Z,1.8nm,0.3s,baz=212,slow=10.0,SNR=24							
PETK				LR		LR	05 19 30.3	
	comp=Z,15μm,21.5s,baz=222,slow=36							
PET	**Petropavlovsk**	**20.30**	**33**	*c i*P		**P**	**05 12 17.3**	**0.0**
PET				*e*S		**S**	**05 16 00.9**	**-3.5**
PET				pmax		pmax		
	comp=Z,14μm,9.4s							
PET				pmax		pmax		
	comp=Z,10μm,10.4s							
PET				pmax		pmax		
	comp=Z,888nm,1.5s							
PET				MLR		MLR		
	comp=Z,21μm,16.0s							
PET				MLR		MLR		
	comp=Z,20μm,16.0s							
PET	**Petropavlovsk**	**20.30**	**33**	*e*P		**P**	**05 12 18.1**	**+0.7**
	comp=Z,2μm,1.5s							
PET				LR		LR		
	comp=Z,17μm,20.0s							
TATO	**Taipei**	**20.30**	**239**	*e*P		**P**	**05 12 18.2**	**+0.6**
	comp=Z,191nm,0.9s							
TATO				LR		LR		
	comp=Z,16μm,18.0s							
YHNB	**Yeheng**	**20.58**	**238**	*e*P		**P**	**05 12 19.9**	**-0.8**
	comp=Z,138nm,0.9s							
YHNB				LR		LR		
	comp=Z,17μm,19.0s							
NACB	**Ninganchiao**	**20.76**	**237**	*e*P		**P**	**05 12 16.1**	**-6.5**
	comp=Z,134nm,1.1s							
NACB				LR		LR		
	comp=Z,12μm,20.0s							
SSLB	**Suanglung**	**21.45**	**237**	*e*P		**P**	**05 12 27.5**	**-2.6**
	comp=Z,88nm,0.9s							
SSLB				LR		LR		
	comp=Z,11μm,22.0s							
YULB	**Yu-li**	**21.50**	**236**	*e*P		**P**	**05 12 28.4**	**-2.2**
	comp=Z,71nm,0.8s							
YULB				LR		LR		
	comp=Z,9μm,20.0s							
TPUB	**Ta-pu**	**22.00**	**237**	*e*P		**P**	**05 12 32.5**	**-3.5**
	comp=Z,488nm,1.3s							
TPUB				LR		LR		
	comp=Z,19μm,20.0s							
TWG	**Pinlang**	**22.04**	**235**	*e*P		**P**	**05 12 35.4**	**-1.0**
	comp=Z,2μm,1.3s							
TWG				LR		LR		
	comp=Z,38μm,19.0s							
TIY	**Taiyuan**	**22.33**	**280**	*e*P		**P**	**05 12 36.5**	**-3.0**
TIY				S		**S**	**05 16 45.7**	**+1.1**
TIY				pmax		pmax		
	comp=Z,65nm,0.7s							
TIY				pmax		pmax		
	comp=Z,2μm,4.5s							
TIY				LR		LR		
	comp=Z,14μm,10.5s							
TIY				LR		LR		
	comp=Z,60μm,14.6s							
TIY				LR		LR		
	comp=Z,61μm,14.9s							
CLNS	**Chul'man**	**22.34**	**337**	*e*P		**P**	**05 12 37.1**	**-2.2**
CLNS				*e**PP		**sP**	**05 12 46.6**	**+1.3**
CLNS				*e*			05 13 00.1	
CLNS				*e*			05 16 29.7	
CLNS				*e*S		**S**	**05 16 42.0**	**-2.3**
CLNS				*e*SS		**SnSn**	**05 17 20.3**	**+8.2**
CLNS				*e*			05 23 51.4	
CLNS				pmax		pmax		
	comp=Z,134nm,1.0s							
CLNS				pmax		pmax		
	comp=E,32nm,0.9s							
CLNS				pmax		pmax		
	comp=N,131nm,1.1s							
CLNS				pmax		pmax		
	comp=E,56nm,0.9s							
CLNS				pmax		pmax		
	comp=N,81nm,1.3s							
CLNS				pmax		pmax		
	comp=Z,131nm,1.1s							
CLNS				smax		smax		
	comp=N,5μm,9.8s							
CLNS				smax		smax		
	comp=E,4μm,10.1s							
CLNS				MLR		MLR		
	comp=Z,60μm,15.0s							
CLNS				MLR		MLR		
	comp=N,45μm,14.0s							
CLNS				MLR		MLR		
	comp=E,17μm,11.0s							
QZH	**Quanzhou**	**22.35**	**243**	⇑*i*P		**P**	**05 12 37.2**	**-2.5**
QZH				S		S	05 16 34.0	-11
QZH				pmax		pmax		
	comp=E,360nm,0.8s							
QZH				pmax		pmax		
	comp=E,5μm,4.3s							
QZH				LR		LR		
	comp=E,53μm,12.9s							
QZH				LR		LR		
	comp=E,14μm,10.6s							
QZH				LR		LR		
	comp=E,42μm,15.4s							
WHN	**Wuhan**	**22.71**	**261**	P		**P**	**05 12 41.5**	**-2.0**
WHN				S		**S**	**05 16 46.1**	**-5.4**
WHN				pmax		pmax		
	comp=E,3μm,8.3s							
WHN				pmax		pmax		
	comp=E,3μm,9.4s							
WHN				LR		LR		
	comp=E,85μm,13.4s							
WHN				LR		LR		
	comp=E,142μm,15.4s							
WHN				LR		LR		
	comp=E,153μm,15.0s							
HHC	**Hu-ho-hao-te**	**22.81**	**288**	*e*P		**P**	**05 12 41.3**	**-3.3**
HHC				sP		*s*P	05 12 49.7	-0.9
HHC				S		**S**	**05 16 50.2**	**-3.1**
HHC				pmax		pmax		
	comp=E,460nm,3.9s							
HHC				LR		LR		
	comp=E,26μm,13.3s							
HHC				LR		LR		
	comp=E,18μm,10.7s							
HHC				LR		LR		
	comp=E,18μm,13.6s							
MA2	**Magadan**	**23.41**	**13**	P		**P**	**05 12 50.3**	**-0.2**
	comp=E,111nm,0.7s,baz=221,slow=9.5,SNR=35							
MA2				LR		LR	05 22 24.7	
	comp=E,11μm,20.0s,baz=226,slow=38							
GUMO	**Guam**	**23.75**	**170**	P		**P**	**05 12 53.9**	**-0.1**
	comp=E,103nm,0.6s,baz=0.0,slow=9.1,SNR=4.6							
GUMO	**Guam**	**23.75**	**170**	*e*P		**P**	**05 12 52.9**	**-1.1**
GUMO				*e**PP		**pP**	**05 12 56.7**	**-1.7**
GUMO				MLR		MLR		
	comp=Z,21μm,22.0s							
GUMO	**Guam**	**23.75**	**170**	*e*P		**P**	**05 12 52.9**	**-1.1**
GUMO				*e*pP		**pP**	**05 12 56.7**	**-1.7**
GUMO				*e*Sn		Sn	05 17 33.4	+2.7
GUMO				LR		LR		
	comp=Z,21μm,22.0s							
BTO	**Baotou**	**23.98**	**288**	*e*P		**P**	**05 12 52.3**	**-4.0**
CIT	**Chita**	**24.15**	**317**	*e*P		**P**	**05 12 54.2**	**-3.5**
CIT				*e*			05 13 31.0	
CIT				*e*			05 13 34.2	
CIT				pmax		pmax		
	comp=Z,1μm,1.9s							
CVP	**Callao Caves**	**25.43**	**226**	⇓*e*P		**P**	**05 13 08.7**	**-0.8**
APYP	**Conner**	**25.64**	**227**	*e*P		**P**	**05 13 12.7**	**+1.4**
YAK	**Yakutsk**	**25.84**	**348**	P		**P**	**05 13 12.2**	**-0.6**
	comp=Z,151nm,0.7s,baz=158,slow=2.7,SNR=18							
YAK				LR		LR	05 23 19.5	
	comp=Z,33μm,19.5s,baz=156,slow=36							
YAK	**Yakutsk**	**25.84**	**348**	*c i*P		**P**	**05 13 11.7**	**-1.1**
YAK				*e**PP		**sP**	**05 13 18.7**	**-0.3**
YAK				*e*S		**S**	**05 17 39.0**	**-2.7**
YAK				*e**SS		sS	05 17 57.3	+8.3
YAK				*e*SS		**SnSn**	**05 18 42.2**	**+4.6**
YAK				pmax		pmax		
	comp=Z,213nm,1.0s							
YAK				pmax		pmax		
	comp=N,192nm,1.4s							
YAK				pmax		pmax		
	comp=E,94nm,1.5s							
YAK				pmax		pmax		
	comp=Z,833nm,1.9s							
YAK				pmax		pmax		
	comp=N,2μm,2.2s							
YAK				pmax		pmax		
	comp=E,2μm,2.5s							
YAK				smax		smax		
	comp=N,3μm,3.7s							
YAK				smax		smax		
	comp=E,4μm,4.2s							
YAK				MLR		MLR		
	comp=Z,61μm,15.0s							
YAK				MLR		MLR		
	comp=E,24μm,13.0s							
YAK				MLR		MLR		
	comp=N,40μm,14.0s							

YAK Yakutsk 25.84 348 eP P 05 13 12.0 -0.8
comp=N,870nm,1.1s
XAN Xi'an 25.86 273 P P 05 13 11.4 -2.0
XAN pP pP 05 13 14.9 -2.9
XAN PP PnPn 05 13 55.0 +4.5
XAN S S 05 17 42.2 -0.6
XAN SS SnSn 05 18 49.8 +11
XAN pmax pmax
comp=N,34nm,0.7s
XAN pmax pmax
comp=N,2µm,5.3s
CAUP Cauayan 26.04 224 eP P 05 13 17.9 +2.9
ABRA Dolores 26.12 227 eP P 05 13 16.5 +0.8
ENH Enshi 26.67 264 eP P 05 13 18.9 -1.8
comp=N,321nm,0.8s
ULN Ulaanbaatar 26.75 304 eP P 05 13 20.9 -0.5
ULN pmax pmax
comp=Z,307nm,1.2s
ULN MLR MLR
comp=Z,9µm,22.0s
ULN Ulaanbaatar 26.75 304 eP P 05 13 20.9 -0.5
comp=Z,307nm,1.2s
ULN LR LR
comp=Z,9µm,22.0s
ULN Ulaanbaatar 26.75 304 P P 05 13 20.4 -1.0
SNR=176
ULN P P 05 13 20.4 -1.0
SNR=176
ULN Ulaanbaatar 26.75 304 P P 05 13 20.4 -1.0
SNR=176
SEY Seymchan 26.84 12 P P 05 13 22.3 +0.5
comp=Z,108nm,1.0s,baz=202,slow=6.7,SNR=102
SEY LR LR 05 25 34.6
comp=Z,32µm,18.0s,baz=190,slow=40
BOD Bodaibo 27.10 328⇑ iP P 05 13 22.8 -1.4
BOD pmax pmax
comp=Z,213nm,1.9s
HKC Hong Kong Obse 27.16 244⇓ iP P 05 13 31.0 +6.0
SONA1 Songino Array 27.18 304 eP P 05 13 24.6 -0.6
SONM Songino Array 27.18 304 P P 05 13 24.4 -0.9
comp=Z,87nm,0.8s,baz=111,slow=7.3,SNR=195
SONM PcP PcP 05 16 45.7 +0.4
comp=Z,19nm,0.6s,baz=117,slow=2.2,SNR=12
SONM ScP ScP 05 20 25.6 +0.5
comp=Z,4.5nm,1.0s,baz=117,slow=1.6,SNR=3.3
SONM LR LR 05 24 25.3
comp=Z,14µm,18.3s,baz=102,slow=37
SONM P3KPbc 05 46 05.0
comp=Z,1.5nm,0.9s,baz=277,slow=3.6,SNR=9.3
SONM PKP2bc 05 48 26.7
comp=Z,0.4nm,0.3s,baz=304,slow=3.7,SNR=5.1
BCPH Baguio City Da 27.20 226⇓ eP P 05 13 25.0 -0.6
GZH Guangzhou 27.28 247 P P 05 13 20.8 -5.4
GZH PP PnPn 05 14 06.4 -3.5
GZH S S 05 17 55.4 -10
GZH pmax pmax
comp=Z,3µm,6.0s
BOLP Bolinao 27.58 227 eP P 05 13 29.7 +0.8
SMY Shemya 28.08 46 eP P 05 13 31.8 -1.3
SMY e*PP pP 05 13 36.5 -1.0
SMY Shemya 28.08 46 eP P 05 13 31.8 -1.3
SMY epP pP 05 13 36.5 -1.0
H11N2 WAKE ISLAND Hy 28.77 120 T T 05 43 29.4
baz=313,slow=75
H11N1 WAKE ISLAND Hy 28.78 120 T T 05 43 28.9
baz=313,slow=75,SNR=8839
H11N3 WAKE ISLAND Hy 28.79 120 T T 05 43 28.5
baz=313,slow=75,SNR=9334
LZH Lanzhou 29.39 279 ⇑P P 05 13 43.6 -1.5
LZH pP pP 05 13 48.0 -1.5
LZH sP sP 05 13 51.3 0.0
LZH PP PnPn 05 14 41.4 +2.6
LZH S S 05 18 34.4 -4.1
LZH pmax pmax
comp=Z,360nm,1.0s
LZH pmax pmax
comp=Z,2µm,4.4s
LZH LR LR
comp=Z,30µm,12.9s
LZH LR LR
comp=Z,64µm,14.7s
LZH LR LR
comp=Z,80µm,15.8s
H11S1 WAKE ISLAND Hy 29.47 122 T T 05 44 26.2
baz=314,slow=76
H11S3 WAKE ISLAND Hy 29.47 122 T T 05 44 25.4
baz=314,slow=76
H11S2 WAKE ISLAND Hy 29.49 122 T T 05 44 23.8
baz=314,slow=76
IRK Irkutsk 29.54 312 eP P 05 13 45.8 -0.3
IRK pmax pmax
comp=Z,173nm,2.4s
ZAK Zakamensk 29.69 308 eP P 05 13 46.1 -1.4
ZAK pmax pmax
comp=Z,80nm,1.6s
TLY Talaya 29.77 311 P P 05 13 47.5 -0.6
comp=Z,18nm,0.8s,baz=134,slow=2.4,SNR=15
TLY PcP PcP 05 16 52.7 +1.2
comp=Z,13nm,0.8s,baz=235,slow=2.7,SNR=3.9
TLY LR LR 05 26 16.3
comp=Z,24µm,19.3s,baz=110,slow=38
TLY Talaya 29.77 311 c iP P 05 13 46.3 -1.8
TLY e 05 14 44.4
TLY ePPP PPP 05 14 51.1
TLY e 05 16 55.9
TLY pmax pmax
comp=Z,157nm,2.0s
TLY MLR MLR
comp=Z,38µm,15.0s
TLY Talaya 29.77 311 eP P 05 13 48.3 +0.2
comp=Z,80nm,1.1s
TLY PcP PcP 05 16 52.7 +1.2
TLY Talaya 29.77 311 P P 05 13 47.3 -0.8
SNR=66
TLY P P 05 13 47.3 -0.8
SNR=66
TLY Talaya 29.77 311 P P 05 13 47.3 -0.8
SNR=66
GYA Guiyang 30.57 259⇑ iP P 05 13 53.4 -2.2
GYA PP PnPn 05 14 56.2 +1.4
GYA PcP PcP 05 16 55.8 +1.6
GYA S S 05 18 59.6 +2.4
GYA SS ScP 05 20 40.0 +3.8
GYA ScS ScS 05 24 32.4 -0.3
GYA pmax pmax
comp=Z,190nm,0.9s
GYA pmax pmax
comp=Z,630nm,7.8s
GYA LR LR
comp=Z,20µm,13.7s
GYA LR LR
comp=Z,17µm,13.7s
GYA LR LR
comp=Z,28µm,13.4s
CD2 Chengdu 31.00 269 P P 05 13 58.0 -1.3
CD2 sP pP 05 14 02.6 -1.1
CD2 S S 05 18 59.2 -4.5
CD2 sS sS 05 19 08.8 -2.2
CD2 pmax pmax
comp=Z,120nm,0.9s
CD2 pmax pmax
comp=Z,2µm,8.8s
CD2 LR LR
comp=Z,41µm,18.4s
CD2 LR LR
comp=Z,56µm,14.3s
MOY Mondy 31.37 310 eP P 05 14 01.2 -1.2
MOY pmax pmax
comp=Z,15nm,2.7s
GTA Gaotai 31.90 287 P P 05 14 05.5 -1.7
GTA pP pP 05 14 09.7 -1.9
GTA sP sP 05 14 12.5 -0.9
GTA PP PnPn 05 15 10.6 -1.2
GTA PcP PcP 05 16 58.0 +0.5
GTA S S 05 19 12.9 -4.8
GTA pmax pmax
comp=Z,650nm,6.2s
GTA LR LR
comp=Z,18µm,14.0s
GTA LR LR
comp=Z,14µm,14.5s
GTA LR LR
comp=Z,14µm,14.5s
QIZ Qiongzhong 32.36 245 P P 05 14 15.9 +4.7
QIZ S S 05 19 27.4 +2.5
QIZ LR LR
comp=N,13µm,12.5s
QIZ LR LR
comp=E,21µm,15.6s
DAV Davao City (W) 32.88 208 LR LR 05 27 24.5
comp=E,15µm,20.3s,baz=56,slow=36
DAV Davao City (W) 32.88 208⇑ eP P 05 14 16.8 +1.0
BILL Bilibino 34.13 17 c iP P 05 14 25.8 -0.4
BILL i 05 14 30.2
BILL i 05 17 04.2
BILL eS S 05 19 48.8 -2.7
BILL pmax pmax
comp=Z,46nm,1.2s
BILL MLR MLR
comp=Z,19µm,16.0s
BILL Bilibino 34.13 17 eP P 05 14 25.9 -0.3
comp=Z,780nm,1.7s
BILL LR LR
comp=Z,11µm,21.0s
PATS Pohnpei 34.21 147 eP P 05 14 26.5 -0.8
comp=Z,959nm,1.6s
KMI Kunming 34.31 261 P P 05 14 27.0 -1.5
KMI pP pP 05 14 32.2 -0.7
KMI sP sP 05 14 34.5 -0.2
KMI PP PnPn 05 15 39.7 -3.1
KMI S S 05 19 54.2 -1.4
KMI pmax pmax
comp=Z,46nm,0.8s
KMI pmax pmax
comp=Z,930nm,5.5s
KMI LR LR
comp=Z,36µm,19.7s
KMI LR LR
comp=Z,16µm,20.9s
KMI LR LR
comp=Z,28µm,16.9s
ATKA Atka Island 34.91 50 eP P 05 14 33.5 +0.5
comp=Z,718nm,1.3s
TIXI Tiksi 35.12 354 ceP P 05 14 33.5 -1.2
TIXI pmax pmax
comp=Z,183nm,2.5s
TIXI MLR MLR
comp=Z,14µm,13.0s
TIXI Tiksi 35.12 354 eP P 05 14 34.2 -0.5
comp=Z,177nm,1.1s
TIXI LR LR
comp=Z,16µm,19.0s
MIDW Midway 36.26 92 PFAKE 05 15 00.0 +15
MIDW LR LR
comp=Z,8µm,19.0s
KRAR Krasnoyarsk 36.94 316 c iP P 05 14 50.2 -0.2
KRAR pmax pmax
comp=Z,263nm,3.0s
KRAR MLR MLR
comp=Z,32µm,14.0s
KDM Kudat 37.03 222 ⇓P P 05 14 53.9 +2.3
KWAJ Kwajalein Atol 37.34 132 i P P 05 14 55.7 +1.5
MYLDM Lahad Datu 37.66 218 ⇓P P 05 14 58.0 +1.1
MYLDM Lahad Datu 37.66 218 eP P 05 14 56.9 0.0
comp=Z,564nm,1.4s
SDKM Sandakan 37.92 220 ⇓P P 05 14 59.4 +0.2
SKNT Sakolnakorn 37.95 248 P P 05 14 58.8 -0.7
comp=Z,190nm,1.4s,comp=Z,4µm
KKM Kota Kinabalu 38.09 222 ⇓P P 05 15 01.6 +0.9
KKM Kota Kinabalu 38.09 222 eP P 05 15 06.7 +5.9
comp=Z,128nm,1.2s
KKM LR LR
comp=Z,10µm,19.0s
TNTI Ternate 38.17 202 P P 05 15 04.3 +3.0
comp=Z,2µm,2.2s,comp=Z,21µm
TNTI Ternate 38.17 202 eP P 05 15 00.6 -0.7
comp=Z,1µm,1.2s
NIKH Nikolski High 38.23 49 eP P 05 15 02.5 +1.2
comp=Z,181nm,1.0s
CRAI Chiangrai 38.75 256 P P 05 15 05.1 -1.1
comp=Z,153nm,1.1s,comp=Z,2µm
SWI Sorong 38.77 195 P P 05 15 06.0 -0.2
comp=Z,998nm,1.5s,comp=Z,15µm
RKPI Ransiki, Papua 38.89 190 P P 05 15 12.2 +4.9
KHON Khomkaen 39.21 248 P P 05 15 09.5 -0.5
comp=Z,72nm,1.2s,comp=Z,721nm
JAY Jayapura 39.44 180 P P 05 15 12.0 +0.2
comp=Z,9.3nm,0.8s,baz=304,slow=21,SNR=28
JAY LR LR 05 29 39.1
comp=Z,240nm,20.3s,baz=319,slow=33
JAY Jayapura 39.44 180 P P 05 15 12.5 +0.6
comp=Z,229nm,1.4s,comp=Z,5µm
KMSI Cibinong 39.47 207 P P 05 15 17.2 +5.1
MANU Manus Island 39.47 169 eP P 05 15 11.6 -0.5
comp=Z,123nm,1.3s
LBMI Labuha 39.48 201 P P 05 15 17.1 +4.9
GENI Genyem 39.51 181 P P 05 15 13.5 +1.0
comp=Z,644nm,1.4s,comp=Z,13µm
CMAI Chiengmai2 39.95 256 P P 05 15 15.7 -0.7
comp=Z,120nm,1.1s,comp=Z,2µm
UTTA Uttaradit 40.06 252 P P 05 15 16.4 -0.6
comp=Z,26nm,0.9s,comp=Z,234nm
WMQ Urumqi 40.20 297 P P 05 15 19.7 +1.6
WMQ pP sP 05 15 23.9 -0.5
WMQ sP pP 05 15 28.5 +5.9
WMQ ScP ScP 05 21 09.6 -1.1
WMQ S S 05 21 24.0 -0.5
WMQ SS SS 05 24 15.1 -7.3
WMQ pmax pmax
comp=Z,110nm,0.8s
WMQ pmax pmax
comp=Z,1µm,3.6s
WMQ LR LR
comp=Z,6µm,12.0s
WMQ LR LR
comp=Z,7µm,17.2s
WMQ LR LR
comp=Z,5µm,20.6s
LAMP Lampang 40.30 254 P P 05 15 18.9 -0.2
comp=Z,38nm,1.0s,comp=Z,290nm
MRSI Marisa 40.33 210 P P 05 15 19.1 -0.2
comp=Z,924nm,1.3s,comp=Z,16µm
PBKT Sadao Pong 40.46 250 P P 05 15 19.6 -0.7
comp=Z,156nm,1.2s,comp=Z,2µm
PHIT Phitsanulok 40.50 252 P P 05 15 24.7 +4.0
comp=Z,57nm,1.0s
FAKI Fak Fak 40.58 193 P P 05 15 21.9 +0.5
comp=Z,2µm,1.5s,comp=Z,26µm comp=Z,18µm
FAKI Fak Fak 40.58 193 eP P 05 15 21.5 +0.2
comp=Z,1µm,1.0s
CMMT Chiang Mai 40.66 255 P P 05 15 21.1 -1.0
comp=Z,80nm,1.1s,comp=Z,1µm
CHTO Chiang Mai 40.66 255 P P 05 15 21.2 -0.8
comp=Z,352nm,1.2s,comp=Z,6µm
CHTO Chiang Mai 40.66 255 eP P 05 15 21.3 -0.8
CHTO pmax pmax
comp=Z,52nm,0.8s
CHTO MLR MLR
comp=Z,12µm,19.0s
CHTO Chiang Mai 40.66 255 eP P 05 15 21.3 -0.8
comp=Z,52nm,0.8s
CHTO LR LR
comp=Z,12µm,19.0s
CHTO Chiang Mai 40.66 255 P P 05 15 21.4 -0.7
SNR=31
CHTO P P 05 15 21.4 -0.7
SNR=31
CHTO Chiang Mai 40.66 255 P P 05 15 21.4 -0.7
SNR=31
CM31 Chiang Mai Arr 40.87 255 eP P 05 15 24.6 +0.8
CMAR Chiang Mai Arr 40.87 255 P P 05 15 23.0 -0.8
comp=Z,8.1nm,0.8s,baz=45,slow=7.9,SNR=42
CMAR PcP PcP 05 17 25.2 +0.8
comp=Z,9.9nm,0.8s,baz=32,slow=1.7,SNR=4.5
CMAR ScP ScP 05 21 15.2 +1.6
comp=Z,5.6nm,1.2s,baz=54,slow=4.6,SNR=4.1
CMAR LR LR 05 34 19.3
comp=Z,14µm,18.8s,baz=44,slow=39
CM01 Chiang Mai Arr 40.88 254 eP P 05 15 23.6 -0.3
KMPI Kaimana, Papua 41.08 190 P P 05 15 28.5 +3.1
comp=Z,524nm,1.8s,comp=Z,11µm comp=Z,30µm
SANI Sanana 41.26 202 P P 05 15 27.0 0.0
comp=Z,1µm,0.8s,comp=Z,17µm
ZAA0 Zalesovo Array 41.36 312 eP P 05 15 25.8 -1.6
ZAA0 eP P 05 15 26.8 -0.6
ZALV Zalesovo Beam 41.36 312 P P 05 15 27.2 -0.2
comp=Z,52nm,0.7s,baz=90,slow=6.2,SNR=173
ZALV PcP PcP 05 17 25.6 +0.1
comp=Z,69nm,0.8s,baz=103,slow=2.7,SNR=5.4
ZALV ScP ScP 05 21 15.9 +1.0
comp=Z,22nm,0.9s,baz=85,slow=3.7,SNR=9.1
ZALV LR LR 05 32 53.8
comp=Z,7µm,19.7s,baz=88,slow=37
ZALV PKPPKP P'P'df 05 47 36.0 -10
comp=Z,1.1nm,0.7s,baz=307,slow=2.0,SNR=3.6
ZALV Zalesovo Beam 41.36 312 P P 05 15 27.2 -0.2
ZALV 05 17 25.6
ZALV pmax pmax
comp=Z,58nm,0.8s
ZALV pmax pmax
comp=Z,69nm,0.9s
ZALV pmax pmax
comp=N,22nm,0.9s
ZALV MLR MLR
comp=Z,7µm,19.7s
LUWI Luwuk 41.41 208 P P 05 15 27.7 -0.5
comp=Z,902nm,1.4s,comp=Z,12µm
LUWI Luwuk 41.41 208 eP P 05 15 27.6 -0.5
comp=Z,1µm,1.1s
LSA Lhasa 41.53 275 P P 05 15 29.7 0.0
LSA S S 05 21 44.2 -1.2
LSA pmax pmax
comp=Z,31nm,1.1s
LSA LR LR
comp=Z,5µm,15.1s
LSA LR LR
comp=Z,11µm,14.5s
LSA LR LR
comp=Z,21µm,14.5s
LSA Lhasa 41.53 275 eP P 05 15 29.9 +0.2
LSA pmax pmax
comp=Z,123nm,0.9s
LSA Lhasa 41.53 275 eP P 05 15 29.9 +0.2
comp=Z,123nm,0.9s
MSAI Masohi 41.70 198 P P 05 15 32.2 +1.7
comp=Z,613nm,1.4s,comp=Z,11µm comp=Z,8µm
CHBT CHBT 41.90 245 P P 05 15 31.9 -0.4
comp=Z,264nm,1.2s,comp=Z,5µm
ZSN Zaisan 41.98 303⇑ iP P 05 15 30.2 -2.5
comp=Z,1µm,0.8s
ZSN eS S 05 21 47.2 -3.7
ZSN LR LR 05 33 17.5
comp=Z,14µm,12.6s
BTM Bintulu 42.16 223 ⇑P P 05 15 37.4 +3.1
NVS Novosibirsk 42.29 314 eP P 05 15 35.0 0.0
NVS e 05 17 30.2
NVS e 05 25 34.9
NVS pmax pmax
comp=Z,665nm,1.9s
NVS pmax pmax
comp=N,106nm,1.8s
NVS pmax pmax
comp=E,437nm,1.8s
BNDI Bandanaira 42.61 196 P P 05 15 38.5 +0.6
comp=E,8µm,1.3s,comp=E,86µm
SHL Shillong 42.74 269 i P P 05 15 38.0 -1.2
SHL IAmb IAmb 05 15 45.8
comp=Z,335nm,1.8s
SHL eS S 05 22 00.0 -2.7
PATY Pattaya 42.86 246 P P 05 15 44.8 +4.8
comp=Z,29nm,1.1s
NRIK Noril'sk 42.91 335 P P 05 15 39.3 -0.6
comp=Z,45nm,0.6s,baz=109,slow=9.1,SNR=46
NRIK PcP PcP 05 17 31.2 +0.9
comp=Z,38nm,0.9s,baz=112,slow=5.2,SNR=2.0
NRIK LR LR 05 34 31.3
comp=Z,31µm,18.2s,baz=112,slow=38
SDPT Sand Point 43.22 46 eP P 05 15 42.5 0.0
comp=Z,137nm,0.8s
SRDT SRDT 43.23 250 P P 05 15 42.5 -0.6
comp=Z,373nm,1.7s,comp=Z,15µm
SBUM Sibu 43.26 224 ⇓P P 05 15 43.8 +0.5
SBUM Sibu 43.26 224 eP P 05 15 43.0 -0.3
comp=Z,107nm,1.0s
KHLT Khaolaem Dam 43.35 250 P P 05 15 43.9 -0.1
comp=Z,76nm,1.2s,comp=Z,848nm
MK31 Makanchi Array 43.50 302 i P P 05 15 44.4 -0.6
MK31 pmax pmax
comp=Z,82nm,0.7s
MKAR Makanchi Array 43.50 302 P P 05 15 44.4 -0.6
comp=Z,53nm,0.6s,baz=87,slow=9.0,SNR=424
MKAR PcP PcP 05 17 33.3 +0.5
comp=Z,37nm,0.9s,baz=50,slow=4.5,SNR=1.8
MKAR ScP ScP 05 21 24.9 +1.1
comp=Z,4.0nm,0.8s,baz=67,slow=3.7,SNR=3.7
MKAR LR LR 05 34 00.1
comp=Z,8µm,21.1s,baz=86,slow=36
MKAR PKPPKP P'P'df 05 47 30.9 -12
comp=Z,0.3nm,0.5s,baz=264,slow=2.4,SNR=4.3
MAKZ Makanchi 43.71 302 eP P 05 15 46.2 -0.5
MAKZ pmax pmax
comp=Z,106nm,0.8s
MAKZ Makanchi 43.71 302 eP P 05 15 46.2 -0.5
comp=Z,106nm,0.8s
SEM Semipalatinsk 44.35 307⇑ iP P 05 15 51.2 -0.6
comp=Z,594nm,2.1s
SEM eS S 05 22 23.9 -1.6
SEM LR LR 05 34 37.9
comp=Z,25µm,15.2s
TTSI Tana Toraja 44.38 210 P P 05 15 55.0 +2.7
comp=Z,146nm,1.7s,comp=Z,5µm
MTKI Muara Teweh, K 44.73 218 P P 05 15 55.8 +0.7
comp=Z,573nm,1.8s,comp=Z,16µm
KSM Kuching 45.13 225 ⇑P P 05 15 58.8 +0.5
KSM Kuching 45.13 225 eP P 05 15 58.8 +0.5
comp=Z,482nm,1.3s
KSM LR LR
comp=Z,4µm,19.0s
SPSI Sidrap Palu 45.24 210 P P 05 15 58.8 -0.3
comp=Z,333nm,1.5s,comp=Z,7µm
TAPN Taplejung 45.27 273 eP P 05 15 59.6 -0.1
comp=Z,249nm,0.8s
KURK Kurchatov 45.35 308 eP P 05 15 59.6 0.0
KURK pmax pmax
comp=Z,1µm,1.4s
KURK MLR MLR
comp=Z,43µm,19.0s
KURK Kurchatov 45.35 308 eP P 05 15 59.6 0.0
comp=Z,1µm,1.4s
KURK LR LR
comp=Z,43µm,19.0s
KURK Kurchatov 45.35 308 P P 05 15 59.4 -0.3
SNR=481
KURK P P 05 15 59.4 -0.3
SNR=481
KURK Kurchatov 45.35 308 P P 05 15 59.4 -0.3
SNR=481
STKI Sintang 45.65 223 P P 05 16 02.8 +0.4
comp=Z,323nm,1.2s
SAUI Saumlaki 45.70 193 P P 05 16 08.4 +5.7
SAUI Saumlaki 45.70 193 eP P 05 16 03.8 +1.1
comp=Z,3µm,1.3s
ODAN Odare 45.74 273 eP P 05 16 03.0 -0.3
comp=Z,687nm,1.1s
SVW2 Sparrevohn 45.86 37 eP P 05 16 05.4 +1.8
comp=Z,469nm,1.1s
SHLS Shalkode 45.90 297⇑ iP P 05 16 04.1 -0.3
comp=Z,514nm,1.1s
SHLS eS S 05 22 47.0 -1.5
SHLS LRM MLR 05 37 21.5
comp=Z,6µm,13.6s
PDGK Podgornoye 46.14 298 P P 05 16 03.4 -2.6
KBKI Kotabaru 46.19 215 P P 05 16 10.0 +3.4
comp=Z,331nm,2.8s,comp=Z,9µm
KAPI Kappang 46.20 209 P P 05 16 06.6 -0.2
comp=Z,168nm,0.9s,baz=26,slow=5.4,SNR=31
KAPI LR LR 05 37 50.0
comp=Z,3µm,18.1s,baz=40,slow=39
KAPI Kappang 46.20 209 eP P 05 16 06.4 -0.3
comp=Z,2µm,1.6s
KAPI Kappang 46.20 209 P P 05 16 06.5 -0.2
SNR=118
KAPI P P 05 16 06.5 -0.2
SNR=118
KAPI Kappang 46.20 209 P P 05 16 06.5 -0.2
SNR=118
RAMN Ramite 46.33 274 eP P 05 16 08.0 0.0
comp=Z,1µm,0.9s
TARA Tarawa 46.43 132 eP P 05 16 08.9 +0.3
comp=Z,1µm,1.5s
TARA LR LR
comp=Z,659nm,21.0s
GUN Gumba 46.48 275 eP P 05 16 09.3 0.0
comp=Z,1µm,1.1s
UZB Uzunbulak 46.52 298⇑ iP P 05 16 09.1 -0.1
comp=Z,673nm,2.0s
UZB eS S 05 22 55.8 -1.4
UZB LRM MLR 05 37 44.7
comp=Z,6µm,13.8s

KTGM **Kuala Trenggan** 46.58 236 ⇓P P 05 16 10.3 +0.6
PMG **Port Moresby** 46.69 171 P P 05 16 10.5 -0.1
comp=Z,91nm,1.0s,baz=357,slow=9.6,SNR=9.7
PMG LR LR 05 34 39.7
comp=Z,3μm,21.3s,baz=14,slow=35
PMG **Port Moresby** 46.69 171 *de*P P 05 16 10.1 -0.4
PMG pmax pmax
comp=Z,976nm,1.7s
PMG MLR MLR
comp=Z,11μm,18.0s
PMG **Port Moresby** 46.69 171 *e*P P 05 16 10.4 -0.1
comp=Z,725nm,1.9s
BBKI **Banjar Baru** 46.95 216 P P 05 16 11.7 -0.9
comp=Z,810nm,1.1s,comp=Z,18μm
BSSI **Bau Bau, Buton** 46.96 208 P P 05 16 16.7 +4.1
SATY **Saty** 46.98 298 ⇑*i*P P 05 16 12.8 0.0
comp=Z,933nm,2.7s
SATY *e*S S 05 23 03.0 -0.7
SATY LRM MLR 05 37 58.9
comp=Z,8μm,13.7s
KKN **Kakani** 47.01 275 *e*P P 05 16 13.3 0.0
comp=Z,859nm,1.2s
PKIN **Phulchoki** 47.01 275 *e*P P 05 16 12.8 -0.6
comp=Z,175nm,0.9s
SURT **Suratani** 47.01 244 P P 05 16 12.9 -0.2
comp=Z,92nm,1.2s,comp=Z,1μm
OHAK **Old Harbor** 47.15 43 *e*P P 05 16 13.9 +0.3
comp=Z,2μm,1.8s
TRTT **Trang** 47.15 242 P P 05 16 13.9 -0.3
comp=Z,145nm,1.3s,comp=Z,3μm
DMN **Daman** 47.23 275 *e*P P 05 16 14.8 -0.3
comp=Z,1μm,1.6s
RSO **Redoubt South** 47.25 38 *e*P P 05 16 15.8 +1.1
GKN **Gorkha** 47.43 276 *e*P P 05 16 16.4 -0.1
comp=Z,2μm,1.2s
PPLA **Purkeypile** 47.48 35 *e*P P 05 16 18.2 +1.8
comp=Z,2μm,1.7s
KDAK **Kodiak Island** 47.48 42 *e*P P 05 16 16.7 +0.4
KDAK pmax pmax
comp=Z,569nm,1.2s
KDAK MLR MLR
comp=Z,6μm,19.0s
KDAK **Kodiak Island** 47.48 42 *e*P P 05 16 16.7 +0.4
comp=Z,570nm,1.2s
KDAK LR LR
comp=Z,6μm,19.0s
CAST **Castle Rocks** 47.53 34 *e*P P 05 16 12.7 -3.9
CAST *e*pP pP 05 16 18.6 -2.6
CHKK **Chushkaly** 47.76 299 ⇑*i*P P 05 16 18.8 +0.1
comp=Z,580nm,1.0s
PBKI **Pangkalan Bun** 47.87 221 P P 05 16 24.9 +5.1
MDOK **Medeo** 47.91 298 ⇓*i*P P 05 16 20.5 +0.5
comp=Z,611nm,0.7s
MDOK *e*S S 05 23 16.2 -0.8
MDOK LR LR 05 36 32.9
comp=Z,16μm,17.5s
AAA **Alma-Ata** 47.95 298 *e*P P 05 16 20.2 0.0
AAA *e*S S 05 23 20.9 +3.5
AAA pmax pmax
comp=Z,7μm,5.0s
AAA smax smax
comp=E,5μm,12.3s
AAA MLR MLR
comp=Z,37μm,18.0s
BPAW **Bear Paw Mtn.** 48.02 33 *e*P P 05 16 21.9 +1.5
comp=Z,784nm,1.8s
PKDT **Phuket** 48.07 244 P P 05 16 21.3 -0.1
comp=Z,623nm,1.0s,comp=Z,6μm
KUU **Kurly** 48.21 299 ⇑*i*P P 05 16 22.0 -0.3
comp=Z,957nm,0.8s
KUU *e*S S 05 23 19.7 -1.4
KUU LR LR 05 37 03.7
comp=Z,12μm,14.0s
BRLK **Bradley Lake** 48.22 39 *e*P P 05 16 24.4 +2.4
comp=Z,256nm,1.0s
KULM **Kulim** 48.28 239 *e*P P 05 16 22.6 -0.4
comp=Z,167nm,1.2s
KULM LR LR
comp=Z,6μm,20.0s
JOHN **Johnston Islan** 48.29 101 *e*P P 05 16 24.4 +1.4
comp=Z,160nm,1.0s
JOHN LR LR
comp=Z,641nm,21.0s
KOLN **Koldanda** 48.35 276 *e*P P 05 16 23.6 -0.1
comp=Z,559nm,1.2s
BOK **Bokaro** 48.37 270 *e*P P 05 16 22.5 -1.1
BOK IAmb IAmb 05 16 31.3
comp=Z,8μm,3.7s
BOK IAMs_20 IAMs_20 05 38 09.0
comp=Z,10μm,14.9s
COLD **Coldfoot** 48.40 29 *e*P P 05 16 24.6 +1.3
comp=Z,495nm,1.7s
IPM **Ipoh** 48.62 238 ⇑P P 05 16 24.7 -1.0
IPM **Ipoh** 48.62 238 *e*P P 05 16 24.6 -1.0
comp=Z,218nm,1.1s
DGPR **DIGLIPUR** 48.65 253 *e*P P 05 16 24.5 -1.4
DGPR IAmb IAmb 05 16 31.2
DGPR IAMs_20 IAMs_20 05 40 31.5
comp=Z,15μm,17.7s
PYUN **Piuthan** 48.69 277 *e*P P 05 16 26.5 +0.2
comp=Z,2μm,1.2s
MYKOM **Kota Tinggi** 48.78 233 *e*P P 05 16 26.8 0.0
SEW **Seward** 48.91 39 *e*P P 05 16 28.0 +0.7
comp=Z,89nm,1.1s
PMR **Palmer** 48.95 37 *e*P P 05 16 27.9 +0.3
comp=Z,1μm,1.8s
PMR pmax pmax
comp=Z,426nm,1.3s
PMR **Palmer** 48.95 37 *e*P P 05 16 27.9 +0.3
comp=Z,426nm,1.3s
TKM2 **Tokmak 2** 49.00 298 *e*P P 05 16 29.2 +0.7
TKM2 pmax pmax
comp=Z,765nm,1.3s
TKM2 MLR MLR
comp=Z,26μm,19.0s
TKM2 **Tokmak 2** 49.00 298 *e*P P 05 16 29.2 +0.7
comp=Z,765nm,1.3s
TKM2 LR LR
comp=Z,26μm,19.0s
TPRI **Tanjung Pinang** 49.02 231 P P 05 16 29.2 +0.5
comp=Z,183nm,1.1s,comp=Z,16μm
SOEI **Soe** 49.08 201 P P 05 16 28.7 -0.5
comp=Z,1μm,1.6s,comp=Z,28μm
SOEI **Soe** 49.08 201 *e*P P 05 16 28.5 -0.7
comp=Z,2μm,1.1s
BRZS **Berezniki** 49.23 308 ⇑*i*P P 05 16 29.4 -0.5
comp=Z,173nm,0.6s
BRZS *e*S S 05 23 32.8 -2.3
BRZS LR LR 05 37 21.7
comp=Z,427nm,14.1s
SML **Sawmill** 49.32 36 *e*P P 05 16 31.3 +0.8
SML pmax pmax
comp=Z,1μm,1.9s
SML **Sawmill** 49.32 36 *e*P P 05 16 31.3 +0.8
comp=Z,1μm,1.9s
COLA **College** 49.36 32 *e*P P 05 16 31.6 +0.9
COLA pmax pmax
comp=Z,1μm,1.8s
COLA MLR MLR
comp=Z,5μm,21.0s
COLA **College** 49.36 32 *e*P P 05 16 31.6 +0.9
comp=Z,1μm,1.8s
COLA LR LR
comp=Z,5μm,21.0s
CCB **Clear Creek Bu** 49.39 33 *e*P P 05 16 32.0 +1.1
comp=Z,295nm,1.5s
BATI **Baumata** 49.68 202 P P 05 16 33.5 -0.2
comp=Z,149nm,0.9s
BATI **Baumata** 49.68 202 P P 05 16 35.6 +1.9
comp=Z,342nm,1.1s
FRU **Bishkek** 49.71 298 ⇑*i*P P 05 16 34.0 +0.2
FRU *e*S S 05 23 42.0 -0.2
FRU pmax pmax
comp=Z,2μm,2.2s
FRU smax smax
comp=E,3μm,7.5s
PBA **Port Blair** 49.74 252 *e*P P 05 16 33.1 -1.0
PBA IAmb IAmb 05 16 42.5
comp=Z,86nm,0.8s
HNR **Honiara** 49.75 155 P P 05 16 35.9 +1.7
comp=Z,51nm,0.3s,baz=331,slow=13,SNR=4.0
HNR LR LR 05 35 40.4
comp=Z,11μm,21.7s,baz=327,slow=34
HNR **Honiara** 49.75 155 *e*P P 05 16 39.0 +4.9
KSH **Kashi** 49.76 294 ⇑*i*P P 05 16 38.1 +3.9
KSH *e*pP sP 05 16 42.4 +1.8
KSH *e*PcP PcP 05 17 58.1 +3.0
KSH PP PP 05 18 33.4 +4.7
KSH PcS PcS 05 21 54.7 +2.7
KSH S S 05 23 46.8 +3.7
KSH ScS ScS 05 26 26.5 +0.9
KSH pmax pmax
comp=Z,420nm,1.5s
KSH pmax pmax
comp=Z,4μm,3.7s
KSH LR LR
comp=Z,19μm,15.5s
KSH LR LR
comp=Z,18μm,14.2s
KSH LR LR
comp=Z,27μm,15.5s
CHKZ **Chkalovo** 49.76 313 P P 05 16 32.8 -1.1
CHKZ pmax pmax
comp=Z,568nm,1.5s
HDA **Harding Lake** 49.77 33 *e*P P 05 16 34.7 +0.8
comp=Z,450nm,1.2s
ILAR **Eielson Array** 49.78 32 P P 05 16 33.6 -0.3
comp=Z,30nm,0.8s,baz=264,slow=5.2,SNR=107
ILAR LR LR 05 41 19.3
comp=Z,3μm,18.1s,baz=292,slow=40
ILAR P4KPbc 05 54 04.9
comp=Z,0.3nm,0.6s,baz=228,slow=5.9,SNR=5.4
SCM **Sheep Creek Mo** 49.79 36 *e*P P 05 16 35.3 +1.2
SCM pmax pmax
comp=Z,465nm,1.2s
SCM **Sheep Creek Mo** 49.79 36 *e*P P 05 16 35.3 +1.2
comp=Z,465nm,1.2s
OTUK **Ortayu** 49.83 306 P P 05 16 32.4 -2.2
OTUK pmax pmax
comp=Z,251nm,1.1s
AAK **Ala-Archa** 49.86 298 *e*P P 05 16 35.2 +0.2
AAK pmax pmax
comp=Z,237nm,1.2s
AAK MLR MLR
comp=Z,19μm,20.0s
AAK **Ala-Archa** 49.86 298 *e*P P 05 16 35.1 +0.2
comp=Z,237nm,1.2s
AAK LR LR
comp=Z,19μm,20.0s
AAK **Ala-Archa** 49.86 298 P P 05 16 35.3 +0.3
SNR=166
AAK **Ala-Archa** 49.86 298 P P 05 16 35.3 +0.3
SNR=166
BVA0 **Borovoye Array** 50.02 312 P P 05 16 33.1 -2.8
BVA0 pmax pmax
comp=Z,307nm,1.5s
BVAR **Borovoye Array** 50.02 312 LR LR 05 38 35.0
comp=Z,12μm,18.5s,baz=76,slow=37
BVAR P4KPbc 05 54 10.2
comp=Z,1.5nm,0.7s,baz=94,slow=5.9,SNR=5.8
BRVK **Borovoye** 50.07 312 *ce*P P 05 16 36.1 -0.2
BRVK pmax pmax
comp=Z,356nm,2.5s
BRVK MLR MLR
comp=Z,25μm,15.0s
BRVK **Borovoye** 50.07 312 *e*P P 05 16 36.3 0.0
comp=Z,808nm,1.8s
BRVK LR LR
comp=Z,17μm,19.0s
BRVK **Borovoye** 50.07 312 P P 05 16 36.6 +0.3
SNR=169
BRVK P P 05 16 36.6 +0.3
SNR=169
BRVK **Borovoye** 50.07 312 P P 05 16 36.6 +0.3
SNR=169
DSRI **Dabo** 50.08 230 P P 05 16 42.2 +5.4
WSI **Waingapu** 50.28 206 P P 05 16 40.9 +2.7
comp=Z,455nm,1.4s,comp=Z,18μm
EKS2 **Erkin-Say** 50.35 298 *e*P P 05 16 39.0 +0.2
EKS2 pmax pmax
comp=Z,266nm,1.6s
EKS2 MLR MLR
comp=Z,15μm,19.0s
EKS2 **Erkin-Say** 50.35 298 *e*P P 05 16 39.0 +0.2
comp=Z,266nm,1.6s
EKS2 LR LR
comp=Z,15μm,19.0s
FYU **Fort Yukon** 50.37 30 *e*P P 05 16 40.4 +2.1
comp=Z,2μm,1.7s
PLAI **Plampang** 50.46 210 P P 05 16 37.3 -2.3
MTN **Manton Dam** 50.49 192 *e*P P 05 16 39.1 -0.6
comp=Z,598nm,1.0s
PPBI **Pangkal Pinang** 50.49 227 P P 05 16 39.6 -0.2
comp=Z,170nm,1.1s,comp=Z,14μm
DIV **Divide** 50.61 37 *e*P P 05 16 41.7 +1.3
comp=Z,1μm,1.4s
BASI **Baing, Sumba** 50.70 206 P P 05 16 43.5 +2.2
comp=Z,1μm,1.1s,comp=Z,16μm
EYAK **Cordova Ski Ar** 50.70 38 *e*P P 05 16 42.7 +1.8
comp=Z,447nm,1.3s
TWSI **Taliwang, Sumb** 50.74 211 P P 05 16 40.0 -1.7
ZRNK **Zerenda** 50.85 312 *e*P P 05 16 42.0 -0.2
ZRNK pmax pmax
comp=Z,602nm,1.4s
ZRNK **Zerenda** 50.85 312 *e*P P 05 16 42.0 -0.2
comp=Z,602nm,1.4s
COEN **Coen** 50.86 177 *e*P P 05 16 42.8 +0.2
comp=Z,708nm,1.3s
LHMI **Lhok Sumawe** 50.91 242 P P 05 16 45.1 +2.1
comp=Z,400nm,1.2s,comp=Z,7μm
LHMI **Lhok Sumawe** 50.91 242 *e*P P 05 16 43.7 +0.7
comp=Z,338nm,1.0s
TSI **Tuntungan** 51.01 239 P P 05 16 46.2 +2.5
comp=Z,316nm,0.9s,comp=Z,6μm
ABJI **Asem Bagus** 51.04 214 P P 05 16 44.1 +0.2
comp=Z,862nm,1.8s,comp=Z,18μm
BMRM **Bremner River** 51.20 37 *e*P P 05 16 46.1 +1.4
comp=Z,708nm,1.4s
RAGM **Ragged Mountai** 51.24 38 *e*P P 05 16 47.2 +2.1
comp=Z,604nm,1.4s
PSI **Prapat** 51.27 238 *e*P P 05 16 43.2 -2.7
PSI pmax pmax
comp=Z,147nm,0.9s
PSI **Prapat** 51.27 238 *e*P P 05 16 43.2 -2.7
comp=Z,147nm,0.9s
MNAS **Manas** 51.30 298 P P 05 16 44.6 -1.3
MNAS pmax pmax
comp=Z,199nm,1.0s
RGRI **Rengat** 51.38 232 P P 05 16 47.0 +0.4
comp=Z,2μm,0.5s,comp=Z,63μm
DNP **Denpasar** 51.39 213 P P 05 16 50.6 +4.1
SFK **Sufi-Kurgan** 51.39 295 P P 05 16 45.6 -1.1
SFK pmax pmax
comp=Z,185nm,1.0s
UWJI **Ujung Watu** 51.41 219 P P 05 16 51.5 +4.8
KCSI **Kotacane, Aceh** 51.54 240 P P 05 16 45.7 -2.1
JMBI **JAMBI** 51.56 230 P P 05 16 54.9 +7.0
DDI **Dehra Dun** 51.63 282 *e*P P 05 16 47.8 -0.6
DDI IAmb IAmb 05 16 54.5
comp=Z,255nm,0.8s
DDI IAMs_20 IAMs_20 05 40 30.5
comp=Z,11μm,13.9s
JAGI **Jajag, Banyuwa** 51.67 214 P P 05 16 50.1 +1.4
comp=Z,352nm,1.2s,comp=Z,5μm
JAGI **Jajag, Banyuwa** 51.67 214 *e*P P 05 16 46.8 -1.9
comp=Z,332nm,1.0s
BKNI **Bangkinang** 51.70 234 P P 05 16 54.0 +5.1
BKNI **Bangkinang** 51.70 234 *e*P P 05 16 49.2 +0.3
comp=Z,1μm,1.1s
GMJI **Gumukmas** 51.82 215 P P 05 16 48.9 -0.9
comp=Z,369nm,1.6s,comp=Z,6μm
CMBY **CAMPBELL BAY** 51.87 247 *e*P P 05 16 47.6 -2.6
CMBY IAmb IAmb 05 16 56.7
comp=Z,250nm,0.6s
CMBY IAMs_20 IAMs_20 05 41 23.4
comp=Z,10μm,16.4s
PMBI **Palembang** 51.91 228 P P 05 16 56.7 +6.2
NGJI **Ngawi** 51.97 218 P P 05 16 54.3 +3.4
comp=Z,793nm,1.8s,comp=Z,15μm
SDNR **Sundarnagar** 51.98 284 *e*P P 05 16 51.0 0.0
SMLA **Simla** 51.98 283 *i* P P 05 16 50.5 -0.4
SMLA AMB AMB 05 16 51.7
comp=Z,1μm,0.6s
SMLA *i* x x 05 24 05.7
TPTI 52.13 240 P P 05 16 49.9 -2.3
DHRM **DHARAMSHALA** 52.19 285 *e*P P 05 16 52.0 -0.7
DHRM IAmb IAmb 05 16 57.1
comp=Z,239nm,0.4s
SMRI **Semarang** 52.20 219 *e*P P 05 16 52.0 -0.7
comp=Z,745nm,1.4s
EGAK **Eagle** 52.22 32 *e*P P 05 16 52.8 +0.5
comp=Z,634nm,1.7s
MNSI **Mandailing Nat** 52.30 236 P P 05 16 52.4 -1.0
comp=Z,174nm,0.7s,comp=Z,8μm
PWJI **Pagerwojo** 52.37 217 P P 05 16 52.2 -1.7
SDSI **Sungai Dareh** 52.40 233 P P 05 16 53.8 -0.4
comp=Z,464nm,1.1s,comp=Z,39μm
KK31 **Karatay Array** 52.50 300 *i* P P 05 16 53.5 -1.2
KK31 pmax pmax
comp=Z,275nm,1.3s
KKAR **Karatay Array** 52.50 300 *e*P P 05 16 54.5 -0.1
KKAR **Karatay Array** 52.50 300 *e*P P 05 16 54.5 -0.1
CHLP **Challavanipeta** 52.55 265 *e*P P 05 16 55.3 0.0
CHLP IAmb IAmb 05 17 01.2
comp=Z,195nm,1.1s
CHLP *e*S S 05 24 21.3 -0.5
CHLP IVMs_BB IVMs_BB 05 40 57.1
comp=Z,3μm,17.2s
WOJI **Wonogiri, Jawa** 52.64 218 P P 05 16 59.8 +3.9
PPI **Padang Panjang** 52.70 234 P P 05 16 55.4 -1.0
comp=Z,85nm,2.2s,comp=Z,3μm
KKR **Kurukshetra** 52.75 282 *e*P P 05 16 56.4 -0.3
PCJI **Pacitan** 52.82 218 P P 05 17 05.3 +8.1
BISR **Bishrakh** 52.87 280 *e*P P 05 16 54.4 -3.2
UGM **Wanagama** 52.90 218 P P 05 16 56.8 -1.1
comp=Z,1μm,0.7s,comp=Z,18μm
UGM **Wanagama** 52.90 218 *e*P P 05 16 56.6 -1.3
comp=Z,1μm,1.2s
NDI **New Delhi** 53.00 280 *ex* S 05 24 24.0 -3.8
PDSI **Padang** 53.01 234 P P 05 17 01.9 +3.2
comp=Z,44nm,1.3s
IUG **Iuzhnay** 53.15 299 ⇑*i*P P 05 17 00.1 +0.5
comp=Z,834nm,0.6s
IUG *e*S S 05 24 28.7 -1.0
IUG LR LR 05 40 05.3
comp=Z,7μm,15.4s
AYAN **Aya Nagar** 53.16 280 *e*P P 05 16 58.6 -1.1
AYAN *e*P P 05 16 58.6 -1.1
AYAN IAmb IAmb 05 17 05.7
comp=Z,444nm,1.2s
BHGR **Bahadurgarh** 53.21 281 *e*P P 05 16 59.9 -0.2
KPJI **Karang Pucung** 53.22 221 P P 05 16 58.9 -1.2
comp=Z,479nm,1.0s,comp=Z,10μm
GSI **Gunungsitoli** 53.27 238 P P 05 16 59.9 -0.7
comp=Z,1μm,1.1s,comp=Z,15μm
GSI **Gunungsitoli** 53.27 238 *e*P P 05 17 00.4 -0.2
comp=Z,1μm,1.0s
SONA **Sohna** 53.30 280 *e*P P 05 17 01.1 +0.4
LHSI **Lahat** 53.37 229 P P 05 17 01.0 -0.3
comp=Z,634nm,1.1s,comp=Z,12μm
KLI **Kotabumi** 53.41 226 P P 05 17 00.8 -0.8
comp=Z,504nm,0.9s,comp=Z,9μm
LEM **Lembang** 53.49 222 LR LR 05 40 55.6
comp=Z,2μm,19.4s,baz=38,slow=37
LEM **Lembang** 53.49 222 P P 05 17 07.4 +5.1
MDSI **Maura Dua** 53.51 227 P P 05 17 01.0 -1.3
comp=Z,321nm,1.1s,comp=Z,8μm
VIS **Vishakhapatnam** 53.56 265 *e*P P 05 17 02.7 -0.1
CBJI **Citeko** 53.56 223 P P 05 17 07.8 +5.1
BLSI **Bandar Lampung** 53.60 226 P P 05 17 06.8 +3.8
MASI **Maura Aman, Be** 53.61 230 P P 05 17 02.8 -0.3
comp=Z,1μm,1.0s,comp=Z,14μm
SBJI **Serang** 53.71 224 P P 05 17 09.5 +5.7
DBJI **Dramaga** 53.73 223 P P 05 17 07.2 +3.2
comp=Z,359nm,1.6s,comp=Z,11μm
PBSI **Pulau Batu** 53.80 237 P P 05 17 08.4 +3.9
KUDL **Kundal** 53.81 280 *e*P P 05 17 03.5 -1.0
KUDL IAmb IAmb 05 17 09.4
comp=Z,152nm,0.8s
CMJI **Cimerak** 53.85 221 P P 05 17 09.3 +4.5
CISI **Cisompet, Garu** 53.99 222 P P 05 17 08.0 +2.1
comp=Z,374nm,0.9s,comp=Z,7μm
CISI **Cisompet, Garu** 53.99 222 *e*P P 05 17 04.9 -1.0
comp=Z,194nm,1.0s
LWLI **Liwa** 54.00 227 P P 05 17 09.9 +3.8
CNJI **Cibinong** 54.15 222 P P 05 17 10.2 +3.2
comp=Z,210nm,1.5s,comp=Z,4μm
KASI **Kota Agung** 54.16 226 P P 05 17 08.6 +1.6
comp=Z,258nm,0.9s,comp=Z,3μm
CGJI **Cibinong** 54.36 224 P P 05 17 10.4 +1.8
comp=Z,97nm,0.7s,comp=Z,3μm
KHET **Khetri** 54.38 280 *e*P P 05 17 07.8 -0.8
KHET *e*P P 05 17 07.8 -0.8
KHET IAmb IAmb 05 17 14.1
comp=Z,380nm,1.2s
INK **Inuvik** 54.61 27 PKPPKP P'P'df 05 47 19.9 -9.1
comp=Z,3.5nm,1.1s,baz=101,slow=5.2,SNR=4.0
INK PKP2bc 05 47 34.9
comp=Z,4.0nm,1.1s,baz=50,slow=3.0,SNR=4.3
INK **Inuvik** 54.61 27 *e*P P 05 17 10.7 +1.0
INK pmax pmax
comp=Z,344nm,1.3s
INK **Inuvik** 54.61 27 *e*P P 05 17 10.7 +1.0
comp=Z,344nm,1.3s
SVE **Sverdlovsk** 54.64 318 *d*i P P 05 17 10.4 +0.3
SVE *e*PPP PPP 05 20 27.1
SVE *e*S S 05 24 49.5 +0.3
SVE *e*SS SS 05 28 27.9 -3.6
SVE pmax pmax
comp=Z,500nm,1.7s
SVE pmax pmax
comp=Z,2μm,12.1s
SVE MLR MLR
comp=Z,27μm,15.0s
SVE MLR MLR
comp=E,19μm,14.0s
PPSI **Pulau Pagai** 54.71 233 P P 05 17 15.3 +4.2
OPA **Opana** 54.80 88 *e*P P 05 17 14.7 +3.0
OPA pmax pmax
comp=Z,505nm,1.4s
OPA **Opana** 54.80 88 *e*P P 05 17 14.7 +3.0
comp=Z,505nm,1.4s
KIP **Kipapa** 54.93 88 *e*P P 05 17 15.3 +2.6
KIP pmax pmax
comp=Z,1μm,1.9s
KIP **Kipapa** 54.93 88 *e*P P 05 17 15.3 +2.6
comp=Z,1μm,1.9s
PVM **Polavaram** 55.18 266 *e*P P 05 17 13.9 -0.6
PVM IAmb IAmb 05 17 20.1
comp=Z,169nm,1.0s
PVM *e*S S 05 24 54.5 -2.9
PVM IVMs_BB IVMs_BB 05 44 22.9
comp=Z,3μm,17.8s
BHPL **Bhopal** 55.40 274 *e*P P 05 17 14.8 -1.3
BHPL IAmb IAmb 05 17 21.5
comp=Z,259nm,1.2s
BHPL IAMs_20 IAMs_20 05 45 60.0
comp=Z,6μm,16.6s
SOKR **Solikamsk** 55.85 322 *c*i P P 05 17 16.5 -2.2
SOKR PPP PPP 05 20 44.3
SOKR S S 05 25 03.5 -1.7
SOKR SS SS 05 28 43.9 -6.4
SOKR SSS SSS 05 30 49.7
SOKR pmax pmax
comp=Z,35nm,0.6s
SOKR MLR MLR
comp=Z,13μm,17.0s
ARU **Arti** 55.85 318 PKP2bc P'P'df 05 47 27.3 +0.6
comp=Z,1.9nm,0.3s,baz=265,slow=4.5,SNR=4.5
ARU **Arti** 55.85 318 *c*i P P 05 17 18.6 -0.2
ARU 05 18 17.4
ARU 05 19 18.7
ARU PPP PPP 05 20 35.8
ARU S S 05 25 04.9 -0.6
ARU 05 27 03.0
ARU pmax pmax
comp=Z,434nm,2.5s
ARU MLR MLR
comp=Z,19μm,16.0s
ARU **Arti** 55.85 318 *e*P P 05 17 18.2 -0.6
comp=Z,438nm,1.1s
ARU LR LR
comp=Z,14μm,19.0s
SKAG **Skagway** 56.04 38 *e*P P 05 17 22.1 +2.0
comp=Z,677nm,1.8s
RPR **Rampur** 56.17 269 *e*P P 05 17 20.9 -0.8
RPR IAmb IAmb 05 17 27.5
comp=Z,337nm,1.1s
RPR *e*S S 05 25 06.7 -3.9
RPR IVMs_BB IVMs_BB 05 46 27.2
comp=Z,2μm,14.1s
FITZ **Fitzroy Crossi** 56.70 197 *e*P P 05 17 25.0 -0.2
comp=Z,303nm,0.9s
KBL **Kabul** 56.76 291 *e*P P 05 17 25.3 -0.6
KBL pmax pmax
comp=Z,301nm,1.1s
KBL **Kabul** 56.76 291 *e*P P 05 17 25.3 -0.6
comp=Z,301nm,1.1s
SRSP **Sriramsagar** 56.89 270 *e*P P 05 17 25.5 -1.3

SRSP IAmb IAmb 05 17 32.6
comp=Z,653nm,1.1s
SRSP eS S 05 25 16.1 -4.2
SRSP IVMs_BB IVMs_BB 05 46 34.5
comp=Z,3µm,15.0s
WRAB Tennant Creek 57.05 187 eP P 05 17 26.7 -1.0
WRAB pmax pmax
comp=Z,430nm,0.8s
WRAB MLR MLR
comp=Z,6µm,20.0s
WRAB Tennant Creek 57.05 187 eP P 05 17 26.7 -1.0
comp=Z,430nm,0.8s
WRAB LR LR
comp=Z,6µm,20.0s
WB2 Warramunga Arr 57.06 187 eP P 05 17 26.8 -1.0
comp=Z,476nm,0.8s
WRA Warramunga Arr 57.06 187 P P 05 17 26.8 -1.0
comp=Z,161nm,0.6s,baz=5.1,slow=7.4,SNR=315
WRA LR LR 05 41 04.4
comp=Z,5µm,19.8s,baz=0.0,slow=35
WRA PKPPKP P'P'df 05 47 16.4 +5.9
comp=Z,1.8nm,0.8s,baz=160,slow=2.2,SNR=5.0
WRA Warramunga Arr 57.06 187 P P 05 17 26.8 -1.0
WRA pmax pmax
comp=Z,146nm,0.7s
CTAO Charters Tower 57.15 174 eP P 05 17 27.7 -0.7
CTAO pmax pmax
comp=Z,398nm,1.5s
CTAO MLR MLR
comp=Z,4µm,22.0s
CTAO Charters Tower 57.15 174 eP P 05 17 27.7 -0.7
comp=Z,398nm,1.5s
CTAO LR LR
comp=Z,4µm,22.0s
ADKI Addanki 57.27 265 eP P 05 17 29.4 0.0
ADKI IAmb IAmb 05 17 35.3
comp=Z,123nm,1.1s
ADKI eS S 05 25 22.9 -2.4
ADKI IVMs_BB IVMs_BB 05 45 36.5
comp=Z,3µm,18.2s
AB31 Akbulak array 57.37 310 i P P 05 17 28.9 -0.9
AB31 pmax pmax
comp=Z,250nm,1.1s
ABKAR Akbulak array 57.37 310 eP P 05 17 29.4 -0.3
NJS Nagarjunasagar 57.41 267 eP P 05 17 29.4 -1.1
NJS IAmb IAmb 05 17 36.2
comp=Z,134nm,1.0s
NJS eS S 05 25 24.8 -2.3
NJS IVMs_BB IVMs_BB 05 41 39.0
comp=Z,3µm,22.0s
HYB Hyderabad 57.53 268 i P P 05 17 30.0 -1.4
comp=Z,300nm,1.0s
HYB e 05 17 34.0
HYB ePcP PcP 05 18 29.0 +4.2
HYB eS S 05 25 28.0 -0.8
HYB eScS ScS 05 27 22.0 +1.2
HYB eSS SS 05 29 14.0 -4.7
HYB Hyderabad 57.53 268 eP P 05 17 30.1 -1.3
HYB IAmb IAmb 05 17 36.8
comp=Z,7µm,3.6s
HYBB Hyderabad (bro 57.53 268 eP P 05 17 30.3 -1.1
HYBB IAmb IAmb 05 17 37.0
comp=Z,291nm,1.1s
HYBB eS S 05 25 25.9 -2.9
HYBB IVMs_BB IVMs_BB 05 46 01.1
comp=Z,3µm,15.2s
XMIS Christmas Isla 57.59 222 eP P 05 17 32.7 +1.1
comp=Z,150nm,0.9s
POHA Pohakuloa 57.78 89 eP P 05 17 36.0 +2.7
comp=Z,1000nm,1.8s
POHA LR LR
comp=Z,4µm,19.0s
SRLM Srisailam 57.99 266 eP P 05 17 33.6 -1.0
SRLM IAmb IAmb 05 17 40.1
comp=Z,169nm,1.2s
SRLM eS S 05 25 32.0 -2.8
SRLM IVMs_BB IVMs_BB 05 46 18.0
comp=Z,3µm,17.3s
FUNA Funafuti 58.05 133 PFAKE 05 17 50.0 +15
FUNA LR LR
comp=Z,7µm,20.0s
AKTO Aktyubinsk 58.12 312 P4KPbc 05 54 49.4
comp=Z,2.8nm,0.8s,baz=22,slow=3.5,SNR=8.9
RCLA Racherla 58.30 266 eP P 05 17 35.7 -1.0
RCLA IAmb IAmb 05 17 42.0
comp=Z,181nm,1.1s
RCLA eS S 05 25 38.6 -0.1
RCLA IVMs_BB IVMs_BB 05 46 07.3
comp=Z,3µm,15.7s
CRAG Craig 58.44 42 eP P 05 17 39.5 +2.3
comp=Z,693nm,1.8s
WRAK Wrangell Islan 58.52 41 eP P 05 17 41.5 +3.8
comp=Z,584nm,1.6s
MDRS Chennai 58.63 263 eP P 05 17 39.5 +0.5
MDRS IAmb IAmb 05 17 45.7
comp=Z,180nm,0.4s
SKHT Srikalahasti 58.67 264 eP P 05 17 39.3 0.0
SKHT IAmb IAmb 05 17 45.2
comp=Z,249nm,1.0s
SKHT eS S 05 25 42.6 -0.9
SKHT IVMs_BB IVMs_BB 05 46 24.0
comp=Z,2µm,16.2s
KLRI Killari 58.74 270 eP P 05 17 38.9 -1.0
KLRI IAmb IAmb 05 17 44.6
comp=Z,289nm,0.8s
KLRI eS S 05 25 42.0 -2.7
KLRI IVMs_BB IVMs_BB 05 45 11.5
comp=Z,3µm,17.2s
JASL Jaisalmer 58.76 282 eP P 05 17 39.8 0.0
DLBC Dease Lake 58.97 38 eP P 05 17 43.0 +2.0
comp=Z,943nm,1.7s
HOPEN Hopen 59.79 346 eP P 05 17 46.8 +0.6
HOPEN IVMs_BB IVMs_BB 05 46 42.6
comp=Z,11µm,15.9s
URV Uravakonda 59.94 266 eP P 05 17 47.4 -0.8
URV IAmb IAmb 05 17 53.1
comp=Z,195nm,1.3s
URV eS S 05 25 56.1 -4.0
URV IVMsBB 05 48 05.7
comp=Z,2µm,12.6s
SPA0 Spitsbergen Ar 60.31 349 eP P 05 17 49.9 +0.1
SPA0 eS S 05 26 05.5 +2.3
SPA0 Spitsbergen Ar 60.31 349 eP P 05 17 50.4 +0.7
KBS Kingsbay 60.45 350 eP P 05 17 51.2 +0.5
KBS eS S 05 26 07.2 +2.2
KBS Kingsbay 60.45 350 eP P 05 17 52.0 +1.3
KBS pmax pmax
comp=Z,145nm,0.9s
KBS MLR MLR
comp=Z,7µm,19.0s
KBS Kingsbay 60.45 350 eP P 05 17 52.0 +1.3
comp=Z,145nm,0.9s
KBS LR LR
comp=Z,7µm,19.0s
POO Poona 60.69 272 eP P 05 17 52.3 -1.0
POO IAmb IAmb 05 17 57.4
comp=Z,510nm,1.4s
POO ePP PP 05 20 05.0 -2.0
AS01 Alice Springs 60.78 187 eP P 05 17 52.5 -1.1
AS31 Alice Springs 60.79 187 eP P 05 17 52.9 -0.8
comp=Z,64nm,0.8s
ASAR Alice Springs 60.79 187 P P 05 17 52.9 -0.8
comp=Z,55nm,0.7s,baz=11,slow=6.2,SNR=426
ASAR LR LR 05 43 19.4
comp=Z,7µm,20.2s,baz=14,slow=35
ASAR PKP2bc 05 47 21.4
comp=Z,2.8nm,0.8s,baz=176,slow=2.1,SNR=8.7
ASAR P4KPbc 05 55 01.9
comp=Z,1.6nm,1.0s,baz=13,slow=4.3,SNR=8.4
MBWA Marble Bar 61.21 202 eP P 05 17 55.8 -0.7
comp=Z,458nm,1.0s
MBWA LR LR
comp=Z,2µm,21.0s
MBWA Marble Bar 61.21 202 P P 05 17 56.1 -0.4
SNR=49
MBWA Marble Bar 61.21 202 P P 05 17 56.1 -0.4
SNR=49
HSPB Hornsund (broa 61.22 348 eP P 05 17 56.4 +0.4
HSPB IAmb IAmb 05 18 04.0
comp=Z,2µm,1.9s
HSPB eS S 05 26 17.6 +2.8
HSPB Hornsund (broa 61.22 348 eP P 05 17 56.6 +0.7
HSPB eS S 05 26 18.5 +3.7
HSPB eSS SS 05 30 19.0 +4.9
BHJ Bhuj 61.56 279 eP P 05 17 58.1 -1.0
BHJ IAmb IAmb 05 18 06.0
comp=Z,2µm,2.6s
BHJ IAMs_20 IAMs_20 05 46 29.9
comp=Z,13µm,20.4s
LVZ Lovozero 61.75 336 c iP P 05 17 57.3 -2.5
LVZ pmax pmax
comp=Z,107nm,1.6s
LVZ MLR MLR
comp=Z,22µm,18.0s
LVZ Lovozero 61.75 336 eP P 05 17 58.6 -1.1
comp=Z,443nm,1.7s
LVZ LR LR
comp=Z,22µm,19.0s
BJO Bjornoya 62.17 345 eP P 05 18 04.1 +1.8
BJO eS S 05 26 29.4 +2.6
BJO IVMs_BB IVMs_BB 05 48 46.6
comp=Z,9µm,17.7s
APA Apatity 62.33 336 ↓ i P P 05 18 03.0 -0.6
APA i 05 18 44.4
APA i 05 20 21.0
APA i S S 05 26 26.0 -3.1
APA i 05 27 55.0
APA pmax pmax
comp=Z,324nm,1.4s
APA MLR MLR
comp=Z,24µm,18.0s
TMCR Tamitsa 62.35 331 eP P 05 18 03.1 -0.6
TMCR eS S 05 26 29.1 -0.2
TMCR pmax pmax
comp=Z,235nm,0.8s
GOA Goa 62.37 269 eP P 05 18 04.1 -0.5
GOA IAmb IAmb 05 18 09.5
comp=Z,410nm,1.2s
RES Resolute Bay 62.68 14 PKPPKP P'P'df 05 47 07.4 -9.0
comp=Z,4.3nm,1.1s,baz=105,slow=4.7,SNR=6.2
RES Resolute Bay 62.68 14 eP P 05 18 05.8 0.0
RES pmax pmax
comp=Z,456nm,1.4s
RES Resolute Bay 62.68 14 eP P 05 18 05.8 0.0
comp=Z,456nm,1.4s
EIDS Eidsvold 62.94 169 eP P 05 18 08.2 +0.2
comp=Z,474nm,1.6s
KEV Kevo 63.12 339 eP P 05 18 08.9 +0.1
KEV pmax pmax
comp=Z,639nm,1.8s
KEV MLR MLR
comp=Z,8µm,21.0s
KEV Kevo 63.12 339 eP P 05 18 08.9 +0.1
comp=Z,638nm,1.8s
KEV LR LR
comp=Z,8µm,21.0s
GEYT Alibeck 63.20 299 P P 05 18 10.2 +0.2
comp=Z,83nm,0.7s,baz=33,slow=3.5,SNR=112
GEYT LR LR 05 47 14.8
comp=Z,5µm,18.8s,baz=50,slow=38
KLMR Klimovskoe 63.32 327 eP P 05 18 08.4 -1.9
KLMR e 05 18 45.2
KLMR eS S 05 26 36.6 -5.1
KLMR pmax pmax
comp=Z,415nm,1.2s
KLMR MLR MLR
comp=Z,11µm,14.0s
HAMF Hammerfest 63.51 341 eP P 05 18 10.9 -0.4
HAMF IAmb IAmb 05 18 16.8
comp=Z,797nm,2.0s
HAMF IVMs_BB IVMs_BB 05 51 10.6
comp=Z,7µm,15.0s
ARA0 ARCESS Array S 63.68 339 eP P 05 18 12.0 -0.5
ARCES ARCESS Array B 63.68 339 P P 05 18 12.5 0.0
comp=Z,47nm,0.9s,baz=50,slow=7.0,SNR=108
ARCES PKP2bc 05 47 11.7
comp=Z,5.6nm,0.9s,baz=212,slow=4.3,SNR=5.7
ARCES LR LR 05 49 24.9
comp=Z,9µm,19.0s,baz=52,slow=39
ARE0 ARCESS Array S 63.68 339 ↑ iP P 05 18 12.7 +0.2
ARE0 eS S 05 26 48.9 +2.9
ARE0 eSS SS 05 30 56.9 +4.1
ARE0 IVMs_BB IVMs_BB 05 51 23.3
comp=Z,7µm,15.4s
ARE0 ARCESS Array S 63.68 339 eP P 05 18 12.6 +0.1
comp=Z,146nm,1.1s
TRD Trivandrum 63.92 261 eP P 05 18 13.5 -1.4
COCO West Island 63.99 229 i P P 05 18 21.7 +6.5
COCO West Island 63.99 229 PFAKE 05 18 30.0 +15
COCO LR LR
comp=Z,2µm,19.0s
YKW3 Yellowknife Ar 64.03 30 eP P 05 18 14.9 0.0
comp=Z,571nm,1.9s
YKA Yellowknife Ar 64.07 30 P P 05 18 15.2 0.0
comp=Z,19nm,0.8s,baz=302,slow=6.8,SNR=278
YKA PKPPKP P'P'df 05 47 05.6 -8.3
comp=Z,1.8nm,0.8s,baz=124,slow=2.5,SNR=8.7
YKB5 Yellowknife Ar 64.07 30 eP P 05 18 13.9 -1.3
KTK1 Kautokeino 64.64 339 ↑ iP P 05 18 18.8 0.0
KTK1 eS S 05 27 01.1 +3.3
KTK1 IVMs_BB IVMs_BB 05 52 05.7
comp=Z,7µm,10.7s
MSVF Nonsavu 65.00 140 eP P 05 18 24.1 +2.2
MSVF pmax pmax
comp=Z,517nm,1.5s
MSVF MLR MLR
comp=Z,6µm,19.0s
MSVF Nonsavu 65.00 140 eP P 05 18 24.1 +2.2
comp=Z,517nm,1.5s
MSVF LR LR
comp=Z,6µm,19.0s
TRO Tromso 65.41 341 eP P 05 18 23.7 -0.1
TRO IAmb IAmb 05 18 29.4
comp=Z,1µm,2.2s
TRO IVMs_BB IVMs_BB 05 51 29.6
comp=Z,8µm,16.2s
DAG Danmarks Havn 65.63 355 ↑ iP P 05 18 25.1 0.0
comp=Z,60nm,0.8s
comp=Z,5µm,16.0s
DAG Danmarks Havn 65.63 355 ↑ iP P 05 18 25.1 0.0
DAG pmax pmax
comp=Z,45nm,0.8s
DAG MLR MLR
comp=Z,5µm,16.0s
XMAS Kiritimati 66.64 106 eP P 05 18 32.3 -0.2
PGC Sidney 66.76 46 eP P 05 18 34.3 +1.5
comp=Z,401nm,1.8s
MOS Moscow 66.78 323 eP P 05 18 30.8 -2.0
MOS e 05 18 56.9
MOS e 05 20 56.2
MOS eS S 05 27 23.6 -0.7
MOS e 05 27 51.1
MOS e 05 28 27.1
MOS eSS SS 05 31 44.2 +2.8
MOS pmax pmax
comp=Z,795nm,1.7s
MOS pmax pmax
comp=N,270nm,1.3s
MOS pmax pmax
comp=E,161nm,1.2s
MOS pmax pmax
comp=Z,3µm,2.5s
MOS pmax pmax
comp=N,2µm,3.3s
MOS pmax pmax
comp=E,2µm,3.3s
MOS smax smax
comp=E,900nm,3.6s
MOS smax smax
comp=N,2µm,4.0s
MOS MLR MLR
comp=Z,21µm,14.0s
MOS MLR MLR
comp=E,17µm,15.0s
VRH Novokhopyorsk 67.06 318 eP P 05 18 33.6 -1.1
VRH e*PP pP 05 18 38.7 -0.7
VRH e 05 21 01.2
VRH eS S 05 27 19.9 -8.0
VRH eSS SS 05 31 47.2 +1.2
VRH pmax pmax
comp=Z,100nm,0.6s
VRH smax smax
comp=N,600nm,8.9s
VRH MLR MLR
comp=Z,23µm,15.0s
A04D Lummi Island 67.15 46 P P 05 18 36.6 +1.3
baz=301
NLWA Neilton Lookou 67.15 47 eP P 05 18 37.3 +1.9
comp=Z,1µm,1.9s
NLWA LR LR
comp=Z,3µm,21.0s
STEI Steigen 67.56 341 eP P 05 18 37.7 +0.2
STEI IAmb IAmb 05 18 43.2
comp=Z,78nm,0.7s
OBN Obninsk 67.62 323 c iP P 05 18 37.6 -0.5
OBN i 05 18 41.9
OBN i 05 21 08.7
OBN eS S 05 27 28.3 -6.2
OBN i SS SS 05 31 58.3 +3.9
OBN pmax pmax
comp=Z,47nm,0.8s
OBN MLR MLR
comp=Z,16µm,16.0s
OBN Obninsk 67.62 323 eP P 05 18 37.9 -0.2
comp=Z,330nm,1.1s
OBN LR LR
comp=Z,7µm,20.0s
CMW Cultus Mountai 67.64 46 P P 05 18 39.9 +1.3
B05A Bryant 67.73 46 P P 05 18 40.3 +1.3
baz=301,SNR=22
E03A Lebam 67.76 48 eP P 05 18 41.4 +2.2
comp=Z,530nm,1.8s
PUL Pulkovo 67.77 329 eP P 05 18 38.8 -0.2
PUL pmax pmax
comp=Z,157nm,0.7s
PUL MLR MLR
comp=Z,11µm,14.0s
LPSR Galich'ya Gora 67.80 320 eP P 05 18 38.8 -0.5
LPSR e*PP pP 05 18 44.3 +0.3
LPSR eS S 05 27 31.7 -5.0
LPSR pmax pmax
comp=Z,80nm,0.7s
LPSR smax smax
comp=N,650nm,3.9s
LPSR MLR MLR
comp=Z,20µm,16.0s
JCW Jim Creek 67.86 46 P P 05 18 41.1 +1.2
LOF Lofoten 67.86 341 eP P 05 18 40.4 +0.9
B06A Marblemount 67.95 45 eP P 05 18 41.4 +1.1
KULLO Kullorsuaq 67.95 5 ↑ iP P 05 18 39.9 0.0
comp=Z,71nm,0.9s
comp=Z,8µm,16.0s
KULLO Kullorsuaq 67.95 5 ↑ iP P 05 18 39.9 0.0
KULLO pmax pmax
comp=Z,71nm,0.9s
KULLO MLR MLR
comp=Z,8µm,16.0s
RPW Rockport 67.97 45 P P 05 18 41.4 +0.8
ARMA Armidale 67.98 170 eP P 05 18 41.2 +0.5
comp=Z,553nm,1.5s
F03A Seaside 68.08 48 eP P 05 18 44.9 +3.7
F04D Rainier, OR 68.33 48 P P 05 18 44.3 +1.6
baz=302
FIA1 FINESS Array S 68.42 332 eP P 05 18 41.9 -1.2
FIA1 eP pP 05 18 42.6 -5.1
VSR Storozhevoye 68.42 318 eP P 05 18 42.4 -0.9
VSR e*PP pP 05 18 47.7 -0.3
VSR e 05 21 08.8
VSR eS S 05 27 37.9 -6.3
VSR eSS SS 05 32 06.2 -0.8
VSR pmax pmax
comp=Z,100nm,0.8s
VSR smax smax
comp=N,480nm,8.6s
VSR MLR MLR
comp=Z,22µm,15.0s
FINES FINESS Array B 68.42 332 P P 05 18 42.8 -0.3
comp=Z,104nm,0.7s,baz=60,slow=7.5,SNR=338
FINES PKPPKP P'P'df 05 46 55.5 -11
comp=Z,1.9nm,0.9s,baz=132,slow=2.1,SNR=4.1
FINES LR LR 05 50 42.7
comp=Z,9µm,18.4s,baz=37,slow=38
C06D Leavenworth 68.60 46 P P 05 18 45.5 +1.0
baz=302
G03D McMinnville, O 68.63 49 P P 05 18 46.2 +1.6
baz=302
STKA Stephens Creek 68.65 179 P P 05 18 44.4 -0.3
comp=Z,32nm,0.6s,baz=342,slow=7.3,SNR=62
STKA PKP2ab 05 47 03.5
comp=Z,1.6nm,0.6s,baz=211,slow=5.3,SNR=4.8
STKA LR LR 05 48 27.8
comp=Z,5µm,20.6s,baz=360,slow=36
STKA Stephens Creek 68.65 179 eP P 05 18 44.4 -0.3
comp=Z,77nm,1.5s
TDL Tradedollar La 68.66 48 P P 05 18 46.4 +1.4
LON Longmire 68.69 47 eP P 05 18 46.0 +0.9
LON pmax pmax
comp=Z,200nm,1.9s
LON Longmire 68.69 47 eP P 05 18 46.0 +0.9
comp=Z,200nm,1.9s
F04A Amboy 68.76 48 eP P 05 18 46.7 +1.3
NLW Nelson Butte 68.83 45 P P 05 18 47.1 +1.1
COR Corvallis 68.93 50 eP P 05 18 48.8 +2.3
COR pmax pmax
comp=Z,564nm,1.5s
COR Corvallis 68.93 50 eP P 05 18 48.8 +2.3
comp=Z,564nm,1.5s
MOR8 Moi Rana 69.05 339 ↑ iP P 05 18 45.5 -1.5
MOR8 IAmb IAmb 05 18 51.4
comp=Z,306nm,1.3s
LTY Liberty 69.08 46 eP P 05 18 48.4 +0.8
comp=Z,370nm,1.7s
KONS Konsvik 69.17 340 eP P 05 18 48.0 +0.3
B08A Colville Reser 69.25 45 eP P 05 18 49.4 +0.9
comp=Z,613nm,1.9s
WTV Waterville 69.25 45 P P 05 18 49.3 +0.6
NAC Naches 69.27 47 P P 05 18 49.9 +1.2
STOK Stokkvaagen 69.32 340 eP P 05 18 50.6 +2.1
I03D Drain, OR 69.37 50 P P 05 18 51.2 +1.9
baz=302,SNR=21
GOF Gofitskoye 69.53 311 ↑ iP P 05 18 50.3 0.0
GOF eS S 05 27 59.2 +1.6
GOF pmax pmax
comp=Z,738nm,1.6s
GOF pmax pmax
comp=E,83nm,1.5s
GOF smax smax
comp=N,29nm,0.6s
H04A Detroit Lake 69.56 49 eP P 05 18 51.8 +1.2
BBOO Buckleboo 69.70 184 eP P 05 18 49.5 -1.8
comp=N,198nm,0.8s
G05D Wamic, OR 69.78 48 P P 05 18 53.3 +1.4
baz=303,SNR=15
I04A Tendick Farm, 69.89 50 P P 05 18 53.7 +1.1
baz=303,SNR=28
JMIC Jan Mayen 69.94 350 eP P 05 18 55.4 +3.1
DGRG David-gareji 70.01 307 P P 05 18 53.5 0.0
DGRG David-gareji 70.01 307 eP P 05 18 53.4 0.0
L02D Cave Junction, 70.03 52 P P 05 18 54.6 +1.2
baz=302,SNR=14
NCK Nalchik 70.03 310 eP P 05 18 53.2 -0.3
NCK pmax pmax
comp=Z,26nm,0.4s
NCK MLR MLR
comp=Z,8µm,16.0s
VSU Vasula 70.04 329 c iP P 05 18 53.1 0.0
VSU MLR MLR
comp=Z,23µm,16.0s
GUDG Gudauri 70.04 308 P P 05 18 54.6 +0.8
DUS Dusheti 70.10 308 P P 05 18 53.9 -0.1
DUS Dusheti 70.10 308 eP P 05 18 53.8 -0.1
CROR Criterion Ridg 70.11 48 P P 05 18 55.2 +1.2
C09A Chrisman Ranch 70.15 45 eP P 05 18 55.0 +0.9
comp=Z,576nm,1.8s
G06A Carlson Farm, 70.19 48 eP P 05 18 55.7 +1.3
D08A Wollman Farm, 70.19 46 eP P 05 18 55.2 +0.9
HUMO Hull Mountain 70.19 51 eP P 05 18 55.9 +1.5
comp=Z,125nm,1.4s
HAWA Hanford 70.20 46 eP P 05 18 55.5 +1.0
comp=Z,440nm,1.8s
ZEI Tsey 70.22 309 eP P 05 18 53.8 -1.1
ZEI pmax pmax
comp=Z,825nm,1.8s
I05D Terrebonne, OR 70.25 49 P P 05 18 55.8 +1.0
baz=303,SNR=27
VTHM Trough 70.26 48 P P 05 18 56.2 +1.4
TBLG Delisi 70.27 308 eP P 05 18 56.2 +1.3
TBLG Delisi 70.27 308 P P 05 18 56.6 +1.7
TBLG Delisi 70.27 308 eP P 05 18 56.6 +1.7
WBK Wadi Bani Khal 70.27 284 P P 05 18 55.5 +0.3
SNR=13
WBK Wadi Bani Khal 70.27 284 P P 05 18 55.5 +0.3
SNR=13
KBZ Khabaz 70.33 310 P P 05 18 55.2 0.0
comp=Z,47nm,0.8s,baz=46,slow=3.7,SNR=90
KBZ PKP2bc 05 46 55.0
comp=Z,2.0nm,1.0s,baz=215,slow=3.3,SNR=12

KBZ LR LR 05 51 25.0
comp=Z,7μm,20.6s,baz=44,slow=37
KIV Kislovodsk 70.34 311 *e*P **P 05 18 56.2 +0.8**
KIV Kislovodsk 70.34 311 *i* P **P 05 18 55.5 +0.1**
SNR=29
KIV Kislovodsk 70.34 311 *e*P **P 05 18 55.5 +0.1**
KIV *e*S **S 05 28 05.5 -1.8**
KIV *e*SS **SS 05 32 37.4 +0.3**
KIV pmax pmax
comp=Z,330nm,1.1s
KIV pmax pmax
comp=Z,547nm,4.8s
KIV Kislovodsk 70.34 311 *e*P **P 05 18 55.6 +0.2**
comp=Z,1μm,1.8s
KIV LR LR
comp=Z,6μm,20.0s
KIV Kislovodsk 70.34 311 P **P 05 18 55.7 +0.2**
SNR=112
KIV Kislovodsk 70.34 311 P **P 05 18 55.7 +0.2**
SNR=112
NEW Newport 70.53 44 P **P 05 18 57.3 +0.8**
baz=304,SNR=50
NEW Newport 70.53 44 *e*P **P 05 18 57.2 +0.8**
NEW pmax pmax
comp=Z,388nm,1.8s
NEW Newport 70.53 44 *e*P **P 05 18 57.2 +0.8**
comp=Z,388nm,1.8s
BANOM Banah 70.54 288 *i* P **P 05 18 57.0 +0.1**
SNR=20
BANOM Banah 70.54 288 P **P 05 18 56.3 -0.6**
SNR=16
BANOM Banah 70.54 288 P **P 05 18 56.3 -0.6**
SNR=16
SUMG Summit 70.59 360⇑ *i*P **P 05 18 57.7 +0.8**
comp=Z,89nm,0.8s
comp=Z,11μm,20.0s
SUMG Summit 70.59 360⇑ *i*P **P 05 18 57.7 +0.8**
SUMG pmax pmax
comp=Z,89nm,0.8s
SUMG MLR MLR
comp=Z,11μm,20.0s
SUMG Summit 70.59 360 *e*P **P 05 18 57.4 +0.6**
comp=Z,428nm,1.1s
ONI Oni 70.61 309 P **P 05 18 57.9 +0.9**
ONI Oni 70.61 309 *e*P **P 05 18 57.9 +0.9**
KHMM Horse Mountain 70.63 53 *e*P **P 05 18 59.7 +2.3**
comp=Z,517nm,1.8s
NEY Neytrino 70.70 310*c i*P **P 05 18 57.6 -0.1**
NEY MLR MLR
comp=Z,9μm,14.0s
SMDO Samad 70.74 285 P **P 05 18 58.0 -0.2**
SNR=29
SMDO Samad 70.74 285 P **P 05 18 58.0 -0.2**
SNR=29
YBH Yreka Blue Hor 70.82 52 *e*P **P 05 19 00.0 +1.6**
YBH pmax pmax
comp=Z,254nm,1.5s
YBH Yreka Blue Hor 70.82 52 *e*P **P 05 19 00.0 +1.6**
comp=Z,254nm,1.5s
J05D Fort Rock, OR 70.89 50 P **P 05 19 00.5 +1.6**
baz=303,SNR=54
M02C Callahan 70.91 52 P **P 05 19 00.6 +1.6**
baz=303,SNR=22
K04D Chiloquin, OR 70.93 51 P **P 05 19 00.5 +1.4**
baz=303,SNR=14
NSS Namsos 70.96 339 *e*P **P 05 18 58.8 +0.1**
NSS *e*S S **05 28 16.2 +2.6**
NSS IVMs_BB IVMs_BB 05 55 14.3
comp=Z,5μm,10.1s
KMRM Mail Ridge 71.00 54 *e*P **P 05 19 01.8 +2.3**
comp=Z,435nm,1.9s
JMDO Jabal Madar 71.08 284 P **P 05 18 59.6 -0.5**
SNR=21
JMDO Jabal Madar 71.08 284 P **P 05 18 59.6 -0.5**
SNR=21
GNI Garni 71.11 306 *i* P **P 05 19 00.7 +0.4**
SNR=27
GNI Garni 71.11 306 *e*P **P 05 19 01.0 +0.7**
GNI pmax pmax
comp=Z,422nm,1.6s
GNI MLR MLR
comp=Z,8μm,19.0s
GNI Garni 71.11 306 *e*P **P 05 19 01.0 +0.7**
comp=Z,422nm,1.6s
GNI LR LR
comp=Z,8μm,19.0s
GNI Garni 71.11 306 P **P 05 19 00.9 +0.7**
SNR=24
GNI Garni 71.11 306 P **P 05 19 00.9 +0.7**
SNR=24
UOSS Minazif 71.14 287 *e*P **P 05 19 00.6 +0.1**
comp=Z,10nm,0.9s
AKH Akhalkalaki 71.22 308 P **P 05 19 01.5 +0.6**
AKH Akhalkalaki 71.22 308⇑ *i*P **P 05 19 01.6 +0.6**
AKH Akhalkalaki 71.22 308 *e*P **P 05 19 01.5 +0.6**
N02D Trinity Center 71.23 53 P **P 05 19 02.4 +1.6**
baz=303,SNR=20
HATD Hatta, Dubai 71.26 287 *i* P **P 05 19 02.0 +0.7**
SNR=27
HATD Hatta, Dubai 71.26 287 P **P 05 19 01.0 -0.2**
SNR=26
HATD Hatta, Dubai 71.26 287 P **P 05 19 01.0 -0.2**
SNR=26
M04C Macdoel 71.34 51 P **P 05 19 03.1 +1.5**
baz=303,SNR=40
CHVG Ch'k'valeri 71.38 310 *e*P **P 05 19 01.5 -0.1**
CHVG Ch'k'valeri 71.38 310 P **P 05 19 02.5 +0.8**
CHVG Ch'k'valeri 71.38 310⇑ *i*P **P 05 19 02.0 +0.3**
ASHO Ashiyiah 71.39 287 *i* P **P 05 19 01.3 -0.8**
SNR=23
ASHO Ashiyiah 71.39 287 P **P 05 19 01.7 -0.3**
SNR=34
ASHO Ashiyiah 71.39 287 P **P 05 19 01.7 -0.3**
SNR=34
K05A Summer Lake 71.41 50 *e*P **P 05 19 03.8 +1.7**
comp=Z,556nm,1.4s
NAZ Nazwa, Dubai 71.53 288 *i* P **P 05 19 02.6 -0.2**
SNR=35
NAZ Nazwa, Dubai 71.53 288 P **P 05 19 03.0 +0.2**
SNR=36
NAZ Nazwa, Dubai 71.53 288 P **P 05 19 03.0 +0.2**
SNR=36
WDC Whiskeytown Da 71.55 53 *e*P **P 05 19 04.0 +1.3**
WDC pmax pmax
comp=Z,322nm,1.7s
WDC Whiskeytown Da 71.55 53 *e*P **P 05 19 04.0 +1.3**
comp=Z,322nm,1.7s
BSY Bisya 71.57 285 P **P 05 19 03.0 -0.2**
SNR=45
BSY Bisya 71.57 285 P **P 05 19 03.0 -0.2**
SNR=45
EPOS Posof 71.65 308 *i* P **P 05 19 03.9 +0.4**
FAQ Al Faqa, Dubai 71.72 287 *i* P **P 05 19 03.5 -0.4**
SNR=20
FAQ Al Faqa, Dubai 71.72 287 P **P 05 19 03.6 -0.3**
SNR=37
FAQ Al Faqa, Dubai 71.72 287 P **P 05 19 03.6 -0.3**
SNR=37
F10A Beach Ranch, E 71.77 46 *e*P **P 05 19 04.9 +0.9**
comp=Z,270nm,1.7s
ARQ Araqi 71.77 286 P **P 05 19 04.3 0.0**
SNR=44
ARQ Araqi 71.77 286 P **P 05 19 04.3 0.0**
SNR=44
WALA Waterton Lakes 71.82 42 *e*P **P 05 19 04.5 +0.1**
comp=Z,250nm,1.4s
KARS Kars 71.92 307 *e*P **P 05 19 04.9 -0.2**
SCO Scoresbysund 71.96 354⇑ *i*P **P 05 19 05.4 +0.8**
comp=Z,4μm,21.0s
SCO Scoresbysund 71.96 354⇑ *i*P **P 05 19 05.4 +0.8**
SCO MLR MLR
comp=Z,4μm,21.0s
IZAR Zarasai 71.97 327 *e*P **P 05 19 05.2 +0.3**
IZAR IAmb IAmb 05 19 12.2
comp=Z,50nm,0.8s
ASUD Al Ashush, Dub 71.98 287 *i* P **P 05 19 05.4 -0.1**
SNR=33
ASUD Al Ashush, Dub 71.98 287 P **P 05 19 05.4 -0.1**
SNR=31
ASUD Al Ashush, Dub 71.98 287 P **P 05 19 05.4 -0.1**
SNR=31
IDID Didziasalis 72.04 327 *e*P **P 05 19 05.7 +0.3**
IDID IAmb IAmb 05 19 12.7
comp=Z,52nm,0.8s
MICGM Minsk 72.04 326⇑ *e*P **P 05 19 06.0 +0.6**
MICGM PM 05 19 10.0
comp=Z,1.0nm,1.0s

MICGM PM 05 19 11.0
comp=E,0.7nm,1.6s
MICGM PM 05 19 12.0
comp=N,0.8nm,1.4s
MICGM *e*PcP **PcP 05 19 20.0 -3.9**
MICGM *e*PP **PP 05 21 44.0 -0.9**
MICGM *e*PPP PPP 05 23 18.0
MICGM *e*S **S 05 28 24.0 -2.4**
MICGM *e*PS **PnS 05 29 00.0 +3.8**
MICGM *e*SS **SS 05 33 12.0 +10**
MICGM *e*SSS SSS 05 36 18.0
MICGM *e*LQ LQ 05 40 16.0
MICGM LQM 05 46 56.0
comp=E,8.1nm,14.0s
MICGM *e*LR LR 05 47 50.0
MICGM LRM MLR 05 53 24.0
comp=Z,31nm,14.0s
MICGM LRM MLR 05 53 28.0
comp=Z,23nm,16.0s
MICGM LRM MLR 05 53 28.0
comp=N,9.5nm,14.0s
MICGM LRM MLR 05 53 28.0
comp=E,19nm,14.0s
MNK Minsk 72.04 326⇓ *i*P **P 05 19 06.0 +0.6**
MNK *e*S **S 05 28 29.0 +2.6**
BSMT Bassoo Peak 72.05 43 *e*P **P 05 19 06.9 +1.1**
HOPS Hopland Field 72.08 54 *e*P **P 05 19 08.6 +2.7**
comp=E,251nm,1.6s
ISAL Salakas 72.14 327 *e*P **P 05 19 06.4 +0.4**
ISAL IAmb IAmb 05 19 12.9
comp=Z,96nm,0.9s
O03D Paynes Creek 72.18 53 P **P 05 19 07.1 +0.5**
baz=304,SNR=57
BLMT Blacktail Moun 72.19 43 *e*P **P 05 19 07.8 +1.1**
MOD Modoc Plateau 72.23 51 *e*P **P 05 19 07.8 +0.9**
comp=Z,515nm,1.9s
IIGN Ignalina 72.24 327 *e*P **P 05 19 07.0 +0.4**
IIGN IAmb IAmb 05 19 11.9
comp=Z,59nm,0.7s
NACGM Naroch 72.28 326 *e*P **P 05 19 06.0 -0.8**
NACGM *e*P **P 05 19 06.0 -0.8**
NACGM PM 05 19 08.0
comp=Z,0.5nm,1.0s
NACGM *e*PcP **pP 05 19 10.0 -1.5**
NACGM *e*PP **PP 05 21 52.0 +5.1**
NACGM *e*PPP PPP 05 23 32.0
NACGM *e*S **S 05 28 28.0 -1.1**
NACGM *e*PS **PnS 05 29 09.0 +10**
NACGM *e*SS **SS 05 33 14.0 +7.9**
NACGM *e*SSS SSS 05 36 14.0
NACGM *e*LQ LQ 05 42 36.0
NACGM *e*LR LR 05 47 56.0
NACGM LRM MLR 05 53 43.0
comp=Z,33nm,16.0s
ARTV Artvin 72.33 308 *i* P **P 05 19 07.5 -0.1**
SOC Sochi 72.34 311*c i*P **P 05 19 06.8 -0.6**
SOC *e*'PP **sP 05 19 16.4 +2.6**
SOC *e* 05 19 22.2
SOC *e* 05 21 46.4
SOC *e*PPP PPP 05 23 33.2
SOC *e*S **S 05 28 28.3 -1.9**
SOC *e* 05 29 10.7
SOC pmax pmax
comp=Z,230nm,1.1s
SOC MLR MLR
comp=Z,8μm,16.0s
BMO Blue Mountains 72.36 47 *e*P **P 05 19 08.7 +1.1**
comp=Z,636nm,1.9s
BMO LR LR
comp=Z,2μm,20.0s
JTMT Jette 72.39 43 *e*P **P 05 19 09.0 +1.2**
DAGI Agillar 72.40 308 *i* P **P 05 19 07.7 -0.2**
DBOC Borcka 72.41 309 *i* P **P 05 19 07.7 -0.2**
TBLU Trondheim 72.43 339 *e*P **P 05 19 05.2 -2.3**
TBLU IVMs_BB IVMs_BB 05 53 58.3
comp=Z,6μm,19.7s
YBMT Yellow Bay 72.47 43 *e*P **P 05 19 09.4 +1.1**
CAN Canberra 72.50 173 *e*P **P 05 19 08.8 +0.5**
CAN pmax pmax
comp=Z,373nm,1.3s
CAN MLR MLR
comp=Z,4μm,19.0s
CAN Canberra 72.50 173 *e*P **P 05 19 08.8 +0.5**
comp=Z,373nm,1.3s
CAN LR LR
comp=Z,4μm,19.0s
AGRB Hanur-Agry 72.55 307 *e*P **P 05 19 09.9 +0.9**
SWMT Swartz Lake 72.69 43 *e*P **P 05 19 10.4 +0.8**
ORV Oroville 72.78 53 *e*P **P 05 19 10.7 +0.6**
ORV pmax pmax
comp=Z,361nm,1.5s
ORV Oroville 72.78 53 *e*P **P 05 19 10.7 +0.6**
comp=Z,361nm,1.5s
VANB Van 72.84 306 *e*P **P 05 19 10.4 -0.3**
WVOR Wild Horse Val 72.95 50 *e*P **P 05 19 12.4 +1.2**
WVOR pmax pmax
comp=Z,486nm,1.6s
WVOR Wild Horse Val 72.95 50 *e*P **P 05 19 12.4 +1.2**
comp=Z,486nm,1.6s
ANN Anapa 72.98 314 *e*P **P 05 19 10.5 -0.7**
ANN *e* 05 21 59.9
ANN *e*S **S 05 28 35.9 -1.6**
ANN *e* 05 29 12.3
ANN pmax pmax
comp=Z,570nm,1.6s
ANN pmax pmax
comp=N,133nm,1.5s
ANN pmax pmax
comp=E,147nm,1.5s
ANN smax smax
comp=E,1μm,9.8s
ANN smax smax
comp=N,1μm,9.8s
ANN MLR MLR
comp=N,6μm,15.0s
ANN MLR MLR
comp=Z,10μm,15.0s
ANN MLR MLR
comp=E,4μm,15.0s
HOMI Horasan 72.98 307 *i* P **P 05 19 11.7 +0.1**
NWAO Narrogin (SRO) 73.02 200 *e*P **P 05 19 11.2 -0.1**
NWAO pmax pmax
comp=Z,348nm,1.1s
NWAO MLR MLR
comp=Z,2μm,20.0s
NWAO Narrogin (SRO) 73.02 200 *e*P **P 05 19 11.2 -0.1**
comp=Z,348nm,1.1s
NWAO LR LR
comp=Z,2μm,20.0s
NWAO Narrogin (SRO) 73.02 200 P **P 05 19 11.6 +0.3**
SNR=13
NWAO Narrogin (SRO) 73.02 200 P **P 05 19 11.6 +0.3**
SNR=13
MSO Missoula 73.12 44 P **P 05 19 12.6 +0.4**
baz=307,SNR=69
MSO Missoula 73.12 44 *e*P **P 05 19 12.5 +0.4**
comp=Z,518nm,1.9s
HKR Hakkari 73.18 305 *e*P **P 05 19 10.8 -1.9**
HAKT HAKKARI 73.21 304 *i* P **P 05 19 12.3 -0.7**
EKAR Karacoban 73.33 307 *i* P **P 05 19 15.3 +1.6**
EZM Erzurum 73.41 308 *e*P **P 05 19 15.4 +1.2**
CHMT Chamberlain Mo 73.45 43 *e*P **P 05 19 14.4 +0.2**
AFDM Forest Hills D 73.47 54 *e*P **P 05 19 15.0 +0.8**
comp=Z,282nm,1.6s
ILULI Ilulissat 73.63 4⇑ *i*P **P 05 19 14.9 +0.4**
comp=Z,62nm,0.8s
comp=Z,7μm,18.0s
ILULI Ilulissat 73.63 4⇑ *i*P **P 05 19 14.9 +0.4**
ILULI pmax pmax
comp=Z,62nm,0.8s
ILULI MLR MLR
comp=Z,7μm,18.0s
NC405 NORSAR Array S 73.63 337 *e*P **P 05 19 14.7 -0.1**
NC303 NORSAR Array S 73.65 337 *e*P **P 05 19 15.1 +0.2**
MOL Molde 73.74 339 *e*P **P 05 19 15.9 +0.6**
VRTB Varto-Mus 73.77 307 *e*P **P 05 19 16.9 +0.8**
KTUT Trabzon 73.79 309 *e*P **P 05 19 15.2 -0.8**
NC204 NORSAR Array S 73.80 337 *e*P **P 05 19 16.0 +0.2**
NB201 NORSAR Array S 73.81 337 *e*P **P 05 19 15.8 0.0**
AKASG Malin Array Be 73.82 322 P **P 05 19 15.3 -0.6**
comp=Z,58nm,0.7s,baz=47,slow=6.0,SNR=312
AKASG PKPPKP **P'P'df 05 46 55.2 -1.4**
comp=Z,0.4nm,0.4s,baz=242,slow=4.0,SNR=5.7
AKASG LR LR 05 54 27.8
comp=Z,15μm,18.5s,baz=35,slow=38

AKASG Malin Array Be 73.82 322 P **P 05 19 15.4 -0.6**
AKASG pmax pmax
comp=Z,59nm,0.7s
AKBB Malin Array Si 73.82 322 *e*P **P 05 19 15.5 -0.5**
AKBB pmax pmax
comp=Z,933nm,1.9s
AKBB Malin Array Si 73.82 322 *e*P **P 05 19 15.4 -0.5**
comp=Z,933nm,1.9s
KIEV Kiev 73.83 322 *e*P **P 05 19 15.4 -0.6**
KIEV pmax pmax
comp=Z,997nm,2.0s
KIEV MLR MLR
comp=Z,16μm,19.0s
KIEV Kiev 73.83 322 *e*P **P 05 19 15.4 -0.6**
comp=Z,997nm,2.0s
KIEV LR LR
comp=Z,16μm,19.0s
NB2 NORSAR Subarra 73.84 337 P **P 05 19 15.7 -0.3**
comp=Z,200nm,1.1s,baz=40,slow=6.2
NB2 NORSAR Subarra 73.84 337 P **P 05 19 15.7 -0.3**
baz=40,slow=6.2
NOA NORSAR Array B 73.84 337 P **P 05 19 15.8 -0.3**
comp=Z,56nm,0.8s,baz=39,slow=5.8,SNR=108
NOA LR LR 05 54 48.4
comp=Z,13μm,18.8s,baz=40,slow=38
AK11 Malin Array Si 73.86 322 *e*P **P 05 19 15.4 -0.8**
BAYT Ayd¨–ntepe-Bay 73.90 309 *e*P **P 05 19 17.6 +0.7**
NBO02 NORSAR Array S 73.95 337 *e*P **P 05 19 15.9 -0.7**
NC602 NORSAR Array S 73.97 337 *e*P **P 05 19 16.9 +0.2**
NC602 *e*S **S 05 28 50.3 +2.1**
NC602 NORSAR Array S 73.97 337 *e*P **P 05 19 16.7 -0.1**
NBO00 NORSAR Array S 73.99 337 *e*P **P 05 19 16.8 -0.1**
FFC Flin Flon 73.99 32 *e*P **P 05 19 17.1 +0.1**
FFC pmax pmax
comp=Z,610nm,1.8s
FFC MLR MLR
comp=Z,3μm,19.0s
FFC Flin Flon 73.99 32 *e*P **P 05 19 17.1 +0.1**
comp=Z,610nm,1.8s
FFC LR LR
comp=Z,3μm,19.0s
MFID Camas Ranch 74.06 47 *e*P **P 05 19 18.8 +1.1**
comp=Z,787nm,1.9s
NAO01 NORSAR Array S 74.10 337 *e*P **P 05 19 17.6 +0.1**
AKN Aaknes 74.21 339 *e*P **P 05 19 20.1 +2.0**
AKN IAmb IAmb 05 19 24.5
comp=Z,629nm,2.0s
FCC Fort Churchill 74.22 26 *e*P **P 05 19 18.2 +0.1**
FCC pmax pmax
comp=Z,1μm,2.0s
FCC Fort Churchill 74.22 26 *e*P **P 05 19 18.2 +0.1**
comp=Z,1μm,2.0s
GUMT Gumushane 74.27 309 *e*P **P 05 19 19.6 +0.6**
CMB Columbia Colle 74.36 54 *e*P **P 05 19 20.5 +1.0**
CMB pmax pmax
comp=Z,250nm,1.4s
CMB Columbia Colle 74.36 54 *e*P **P 05 19 20.5 +1.0**
comp=Z,250nm,1.4s
BNGB Bing¶‖ 74.36 307 *e*P **P 05 19 17.4 -2.2**
SAO San Andreas Ge 74.39 56 *e*P **P 05 19 21.0 +1.4**
SAO pmax pmax
comp=Z,143nm,1.4s
SAO San Andreas Ge 74.39 56 *e*P **P 05 19 21.0 +1.4**
comp=Z,143nm,1.4s
SUW Suwalki 74.45 327 *e*P **P 05 19 19.2 -0.4**
SUW *e*PP **PP 05 22 08.0 +2.6**
SUW *e*S **S 05 28 53.7 0.0**
SUW LMZ LR 05 55 13.3
SUW Suwalki 74.45 327⇑ *e*P **P 05 19 19.2 -0.4**
SUW *e* 05 22 08.1
SUW *e*S **S 05 28 53.8 0.0**
SUW MLR MLR
comp=Z,10μm,16.7s
SVAN Silvan-Diyarba 74.51 306 *e*P **P 05 19 21.1 +0.7**
LRM Limekiln Ridge 74.55 44 *e*P **P 05 19 21.7 +1.0**
KELT Kelkit 74.59 309 *i* P **P 05 19 20.9 -0.1**
BTMN Batman 74.62 306 *i* P **P 05 19 21.4 +0.3**
EGMT Eagleton 74.65 41 P **P 05 19 21.7 +0.7**
baz=309,SNR=37
EGMT Eagleton 74.65 41 *e*P **P 05 19 21.9 +0.9**
comp=Z,282nm,1.0s
WAKR Walker 74.70 53 *e*P **P 05 19 22.9 +1.2**
DLMT Dillon 74.75 44 *e*P **P 05 19 23.3 +1.6**
comp=Z,282nm,1.3s
SIM Simferopol' 74.79 315*ce*P **P 05 19 21.5 -0.3**
SIM *e*S **S 05 28 55.0 -2.9**
SIM pmax pmax
comp=Z,131nm,0.9s
SIM MLR MLR
comp=Z,6μm,16.0s
HLID Hailey 74.80 47 P **P 05 19 23.3 +1.2**
baz=307,SNR=90
HLID Hailey 74.80 47 *e*P **P 05 19 23.2 +1.2**
comp=Z,329nm,1.8s
OSL Oslo 74.85 336 *e*P **P 05 19 21.7 -0.1**
LCCM Lewis and Clar 74.86 44 *e*P **P 05 19 23.4 +1.0**
MCMT McKenzie Cayo 74.93 45 *e*P **P 05 19 23.4 +0.4**
ORDU Ordu-Boztepe 74.96 310 *i* P **P 05 19 23.1 +0.2**
BMN Battle Mountai 74.97 51 *e*P **P 05 19 24.5 +1.4**
BMN pmax pmax
comp=Z,272nm,1.5s
BMN Battle Mountai 74.97 51 *e*P **P 05 19 24.5 +1.4**
comp=Z,272nm,1.5s
TNCL Tunceli-Merkez 75.01 308 *i* P **P 05 19 23.2 -0.1**
BOZ Bozeman (W) 75.11 44 P **P 05 19 24.9 +1.0**
baz=308,SNR=165
BOZ Bozeman (W) 75.11 44 *e*P **P 05 19 25.0 +1.2**
BOZ pmax pmax
comp=Z,636nm,1.9s
BOZ MLR MLR
comp=Z,2μm,19.0s
BOZ Bozeman (W) 75.11 44 *e*P **P 05 19 25.0 +1.2**
comp=Z,636nm,1.9s
BOZ LR LR
comp=Z,2μm,19.0s
BGMT Barton Gulch 75.14 44 *e*P **P 05 19 25.1 +1.0**
SUSE Susehri 75.21 309 *i* P **P 05 19 23.4 -1.1**
FOO Floro 75.22 340 *e*P **P 05 19 24.4 +0.5**
PTK Pertek 75.24 308 *e*P **P 05 19 26.7 +2.0**
HYA Hayanger 75.25 339 *e*P **P 05 19 24.9 +0.8**
MARD Mardin 75.27 306 *i* P **P 05 19 24.7 -0.1**
KLNR Kaliningrad 75.31 329 *i* P **P 05 19 23.7 -0.8**
KLNR pmax pmax
comp=Z,392nm,2.1s
DYBB Diyarbakir 75.31 307 *e*P **P 05 19 26.5 +1.5**
REFA Refahiye_ERZ¨ 75.34 308 *i* P **P 05 19 23.4 -1.9**
MAZI Mazidag 75.40 306 *e*P **P 05 19 25.6 +0.1**
ILIC ilic-Erzincan 75.43 309 *e*P **P 05 19 26.5 +0.8**
KONO Kongsberg 75.43 337 *e*P **P 05 19 25.0 -0.1**
KONO *e*S **S 05 29 07.0 +2.5**
KONO Kongsberg 75.43 337 *e*P **P 05 19 25.5 +0.3**
KONO pmax pmax
comp=Z,484nm,1.9s
KONO MLR MLR
comp=Z,18μm,19.0s
KONO Kongsberg 75.43 337 *e*P **P 05 19 25.5 +0.3**
comp=Z,484nm,1.9s
KONO LR LR
comp=Z,18μm,19.0s
NV01 Mina Array Sit 75.47 53 *e*P **P 05 19 26.4 +0.3**
NVAR Mina Array Bea 75.47 53 P **P 05 19 27.3 +1.2**
comp=Z,34nm,0.8s,baz=300,slow=5.5,SNR=229
NV11 Mina Array Sit 75.56 53 *e*P **P 05 19 27.6 +1.1**
comp=Z,305nm,1.7s
KEMA Kemaliye 75.58 308 *i* P **P 05 19 26.8 +0.2**
SVRC Sivrice-ELAZID 75.59 307 *e*P **P 05 19 27.8 +1.0**
MLAC Mammoth, Mammo 75.60 54 P **P 05 19 28.4 +1.5**
baz=306,SNR=21
KBSD Kabsdagh 75.60 306 *i* P **P 05 19 26.5 -0.1**
KBSD Kabsdagh 75.60 306 *e*P **P 05 19 26.5 -0.1**
RSDY Resadiye-TOKAT 75.64 310 *e*P **P 05 19 27.5 +0.7**
CUZAR Zara_SİVAS 75.67 309 *i* P **P 05 19 26.2 -0.9**
QLMT Earthquake Lak 75.73 44 *e*P **P 05 19 28.6 +1.1**
SUE Sulen 75.75 340 *e*P **P 05 19 28.0 +1.1**
SFJD Kangerlussuaq 75.85 5⇑ *i*P **P 05 19 27.7 +0.3**
comp=Z,60nm,0.9s
SFJD Kangerlussuaq 75.85 5 *e*P **P 05 19 27.8 +0.3**
SFJD pmax pmax
comp=Z,248nm,1.2s
SFJD MLR MLR
comp=Z,4μm,22.0s
SFJD Kangerlussuaq 75.85 5 *e*P **P 05 19 27.8 +0.4**
comp=Z,248nm,1.2s
SFJD LR LR
comp=Z,4μm,22.0s

SORM Soroca 75.90 320⇑ *i*P P 05 19 27.5 -0.5
YHB Horse Butte 75.91 44 *e*P P 05 19 30.0 +1.4
SNOP Sinop 75.94 312 *e*P P 05 19 27.4 -1.0
ELK Elko 76.00 49 *e*P P 05 19 30.5 +1.4
ELK pmax pmax
comp=Z,240nm,1.6s
ELK Elko 76.00 49 *e*P P 05 19 30.5 +1.4
comp=Z,240nm,1.6s
KVT Kavak 76.01 311 *e*P P 05 19 29.8 +0.9
YMC Maple Creek 76.01 44 *e*P P 05 19 30.4 +1.4
CRMT Chrome Mountai 76.05 43 *e*P P 05 19 30.3 +0.9
YHH Holmes Hill 76.08 44 *e*P P 05 19 30.3 +0.7
YMR Madison River 76.09 44 *e*P P 05 19 31.0 +1.5
comp=Z,775nm,2.0s
ASK Askoy 76.09 339 *e*P P 05 19 29.5 +0.6
GCMT Greycliff 76.10 43 *e*P P 05 19 30.7 +1.2
RCTC Rector, Farmer 76.11 55 P P 05 19 29.9 +0.4
baz=306,SNR=8.4
SVSK Karacayir 76.13 310 *e*P P 05 19 30.6 +1.1
BER Bergen 76.13 339 *e*S S 05 29 07.9 -4.3
DIKM Dikmen 76.14 312 *e*P P 05 19 30.2 +0.7
ODD1 Odda 76.14 338 *e*P P 05 19 29.5 +0.2
YPM Purple Mountai 76.15 44 *e*P P 05 19 31.9 +1.9
TOKT Tokat 76.16 310 *e*P P 05 19 36.0 +6.2
SMMC Simmler 76.19 56 P P 05 19 31.4 +1.4
baz=306,SNR=19
CUKAN kangal_SIVAS 76.20 309 *i* P P 05 19 30.3 +0.1
HAVZ Havza 76.21 311 *i* P P 05 19 30.4 +0.4
MZRK Al-Mazaregh 76.22 304 *i* P P 05 19 29.9 -0.3
MZRK Al-Mazaregh 76.22 304 *e*P P 05 19 29.8 -0.3
SFNV Sufian 76.22 305 *i* P P 05 19 30.8 +0.6
SFNV Sufian 76.22 305 *e*P P 05 19 31.2 +0.9
MCID Moose Creek 76.27 45 *e*P P 05 19 32.5 +1.9
YFT Old Faithful 76.30 44 *e*P P 05 19 33.5 +2.8
comp=Z,1µm,2.0s
TIN Tinemaha, Big 76.33 54 P P 05 19 32.0 +1.1
baz=306,SNR=8.0
KIS Kishinev 76.39 319⇑ *i*P P 05 19 30.0 -0.9
comp=Z,500nm,3.0s
KIS Kishinev 76.39 319 *e*PP PP 05 22 26.0 +4.0
KIS Kishinev 76.39 319 *e*PPP PPP 05 24 12.0
KIS *e*S S 05 29 14.0 -1.5
KIS Kishinev 76.39 319 *e*PS 05 29 45.0
KIS LRM MLR 05 56 00.0
comp=Z,21µm,16.0s
KIS Kishinev 76.39 319α *i*P P 05 19 30.0 -0.9
KIS *i* 05 19 36.0
KIS *e* 05 22 26.0
KIS *e*PPP PPP 05 24 12.0
KIS *e*S S 05 29 14.0 -1.5
KIS *e*PS PnS 05 29 45.0 -8.0
KIS pmax pmax
comp=Z,2.0nm,3.0s
KIS pmax pmax
comp=Z,2µm,8.0s
KIS MLR MLR
comp=E,22µm,16.0s
KIS MLR MLR
comp=Z,19µm,16.0s
LKWY Lake 76.47 44 *e*P P 05 19 34.0 +2.2
LKWY pmax pmax
comp=Z,601nm,1.8s
LKWY MLR MLR
comp=Z,5µm,20.0s
LKWY Lake 76.47 44 *e*P P 05 19 34.0 +2.2
comp=Z,601nm,1.8s
LKWY LR LR
comp=Z,5µm,20.0s
H17A Grant Village 76.48 44 P P 05 19 34.6 +2.8
baz=309,SNR=114
H17A Grant Village 76.48 44 *e*P P 05 19 34.6 +2.8
comp=Z,597nm,1.7s
BOYT Boyabat 76.49 312 *i* P P 05 19 32.0 +0.4
AKCD Akcadag 76.52 308 *i* P P 05 19 32.5 +0.6
BYBT Boyabat 76.54 312 *e*P P 05 19 31.8 0.0
PKM Mcpherson Peak 76.56 56 P P 05 19 33.8 +1.5
baz=306,SNR=19
BLS5 Blasjo 76.58 338 *e*P P 05 19 32.8 +1.0
BLS5 *e*S S 05 29 19.6 +2.3
BLS5 IVMs_BB IVMs_BB 05 56 08.0
comp=Z,5µm,17.5s
IMW Indian Meadow 76.59 45 *e*P P 05 19 34.3 +1.8
comp=Z,89nm,0.9s
FLWY Flagg Ranch 76.60 45 *e*P P 05 19 34.5 +2.1
comp=Z,600nm,1.5s
YTP The Promontory 76.64 44 *e*P P 05 19 34.9 +2.2
BZK Bozkurt 76.69 313 *e*P P 05 19 33.1 +0.4
RLMT Red Lodge 76.74 43 P P 05 19 34.3 +1.1
baz=310,SNR=76
RLMT Red Lodge 76.74 43 *e*P P 05 19 34.4 +1.1
comp=Z,492nm,1.8s
RLMT LR LR
comp=Z,3µm,21.0s
NPI North Pocatell 76.77 47 *e*P P 05 19 34.8 +1.4
MOOW Moose Ponds 76.79 45 *e*P P 05 19 35.0 +1.5
comp=Z,259nm,1.5s
RBK Rabkut 76.83 282 P P 05 19 33.9 0.0
SNR=11
RBK Rabkut 76.83 282 P P 05 19 33.9 0.0
SNR=11
HVU Hansel Valley 76.84 47 *e*P P 05 19 35.1 +1.3
HVU pmax pmax
comp=Z,486nm,1.9s
HVU Hansel Valley 76.84 47 *e*P P 05 19 35.1 +1.3
comp=Z,486nm,1.9s
HOMB Homborsund 76.87 336 *e*P P 05 19 33.6 +0.3
HOMB *e*S S 05 29 23.2 +2.9
SBC Santa Barbara 76.89 57 P P 05 19 35.4 +1.4
baz=306
CUSAR Sarkisla-SIVAS 76.89 310 *i* P P 05 19 34.3 +0.3
LVV L'vov 76.91 323 *e*P P 05 19 33.0 -0.8
LVV *e* 05 22 28.2
LVV *e*S S 05 29 15.6 -5.5
LVV *i* 05 30 04.6
LVV MLR MLR
comp=Z,13µm,15.0s
LVV MLR MLR
comp=N,9µm,14.0s
LVV MLR MLR
comp=E,9µm,15.0s
GRAC Grapevine Rang 76.92 53 P P 05 19 35.3 +1.1
baz=307,SNR=66
SURC SANLIURFA_SURC 76.92 306 *i* P P 05 19 33.7 -0.5
LOHW Long Hollow 76.95 45 *e*P P 05 19 35.9 +1.4
comp=E,208nm,1.8s
SNOW Snow King Moun 76.96 45 *e*P P 05 19 36.0 +1.5
comp=E,78nm,1.1s
REDW Red Top Meadow 76.97 45 *e*P P 05 19 36.0 +1.4
comp=E,205nm,1.4s
ISA Isabella, Lake 76.99 55 P P 05 19 34.5 -0.1
baz=307,SNR=12
ISA Isabella, Lake 76.99 55 *e*P P 05 19 34.8 +0.2
ISA pmax pmax
comp=Z,196nm,1.8s
ISA Isabella, Lake 76.99 55 *e*P P 05 19 34.8 +0.2
comp=Z,196nm,1.8s
BEL Belsk 77.00 326 *e*P P 05 19 34.7 +0.5
BEL *e*PP PP 05 22 27.3 +0.4
BEL LMZ LR 05 55 30.0
BEL Belsk 77.00 326⇑ *e*P P 05 19 34.8 +0.5
BEL *e* 05 22 27.4
BEL MLR MLR
comp=Z,8µm,19.2s
BSD Bornholm Skovb 77.05 331 *i*P P 05 19 34.0 -0.4
comp=Z,7.6nm,0.9s
comp=Z,12µm,15.0s
BSD Bornholm Skovb 77.05 331⇑ *i*P P 05 19 34.0 -0.4
BSD pmax pmax
comp=Z,1µm,1.5s
MNKR ALMNKUR 77.05 305 *e*P P 05 19 39.3 +4.5
ARVC Arvin 77.07 56 P P 05 19 35.6 +0.7
baz=306,SNR=17
MLI Malad Range 77.07 47 *e*P P 05 19 36.4 +1.3
MTUT Morton Thiokol 77.08 47 *e*P P 05 19 36.6 +1.6
COAL Corum-Alaca 77.15 311 *i* P P 05 19 35.6 +0.1
DGMT Dagmar 77.19 38 P P 05 19 35.8 +0.4
baz=312,SNR=25
DGMT Dagmar 77.19 38 *e*P P 05 19 36.0 +0.6
comp=Z,629nm,1.6s
DGMT LR LR
comp=Z,3µm,21.0s
DAC Darwin (Calif) 77.20 54 *e*P P 05 19 36.2 +0.3
DAC pmax pmax
comp=Z,341nm,1.8s
DAC Darwin (Calif) 77.20 54 *e*P P 05 19 36.1 +0.3
comp=Z,341nm,1.8s
SCZ2 Santa Cruz Isl 77.20 57 P P 05 19 36.8 +1.0
baz=306
AHID Auburn Hatcher 77.20 46 *e*P P 05 19 36.8 +0.9
comp=Z,305nm,1.8s
AHID LR LR
comp=Z,2µm,20.0s
BEI Bear River Ran 77.22 47 *e*P P 05 19 36.5 +0.6
BGU Big Grassy Mou 77.22 48 *e*P P 05 19 37.2 +1.3
comp=Z,147nm,1.2s
SNART Snartemo 77.23 337 *e*P P 05 19 35.9 +0.5
SNART IAmb IAmb 05 19 41.7
comp=Z,222nm,1.4s
R11A Troy Canyon, C 77.23 52 P P 05 19 36.9 +0.8
baz=308,SNR=233
R11A Troy Canyon, C 77.23 52 *e*P P 05 19 37.2 +1.1
comp=Z,419nm,1.6s
TOS Tosya 77.25 312 *e*P P 05 19 36.8 +0.8
LTU Little Mountai 77.27 47 *e*P P 05 19 37.4 +1.2
KSRV Kasrt alli 77.28 305 *i* P P 05 19 36.4 +0.3
KSRV Kasrt alli 77.28 305 *e*P P 05 19 41.2 +5.1
GZT Gaziantep 77.31 307 *i* P P 05 19 37.2 +0.8
SPUT South Promonto 77.33 48 *e*P P 05 19 39.6 +3.1
comp=Z,509nm,2.0s
LAO LASA Array 77.34 40 P P 05 19 37.3 +0.9
baz=311,SNR=80
LAO LASA Array 77.34 40 *e*P P 05 19 37.5 +1.1
comp=Z,860nm,1.8s
LAO LR LR
comp=Z,3µm,20.0s
DGAR Diego Garcia 77.39 251 *e*P P 05 19 40.8 +3.9
DGAR pmax pmax
comp=Z,300nm,1.0s
DGAR MLR MLR
comp=Z,4µm,21.0s
DGAR Diego Garcia 77.39 251 *e*P P 05 19 40.8 +3.9
comp=Z,300nm,1.0s
DGAR LR LR
comp=Z,4µm,21.0s
MPMC Manual Prospec 77.40 54 P P 05 19 37.7 +0.7
baz=307,SNR=86
A25A Svangstu Ranch 77.40 37 P P 05 19 37.4 +0.8
baz=313,SNR=26
ILGA Ilgaz 77.42 312 *i* P P 05 19 37.1 0.0
HDU Hyde Park 77.42 47 *e*P P 05 19 38.4 +1.3
OSI Osito Audit: C 77.44 56 P P 05 19 38.0 +0.9
baz=307,SNR=8.5
OSI Osito Audit: C 77.44 56 *e*P P 05 19 38.7 +1.6
comp=Z,520nm,1.8s
BORG Borgarnes 77.47 352 PFAKE 05 19 50.0 +13
BORG LR LR
comp=Z,3µm,20.0s
BLG Laguna Peak, P 77.52 57 P P 05 19 38.0 +0.5
baz=307
GZU Grizzly Peak 77.53 47 *e*P P 05 19 39.1 +1.2
COP Copenhagen 77.54 333⇑ *i*P P 05 19 36.9 -0.3
comp=Z,40nm,0.7s
comp=Z,8µm,15.0s
COP Copenhagen 77.54 333⇑ *i*P P 05 19 36.9 -0.3
COP pmax pmax
comp=Z,40nm,0.7s
COP MLR MLR
comp=Z,8µm,15.0s
FURC Furnace Creek, 77.56 54 P P 05 19 38.8 +1.2
baz=307,SNR=105
LRMC Laurel Mtn Rad 77.62 55 P P 05 19 38.9 +0.7
baz=307,SNR=36
ABTO Aybut 77.62 282 P P 05 19 37.6 -0.7
SNR=21
ABTO Aybut 77.62 282 P P 05 19 37.6 -0.7
SNR=21
BMUT Black Mountain 77.63 47 *e*P P 05 19 39.6 +1.3
KMRS Kahramanmaras 77.64 308 *e*P P 05 19 37.4 -0.7
NAIU Northern Antel 77.64 48 *e*P P 05 19 39.5 +1.2
GAZ Gaziantep 77.64 307 *e*P P 05 19 39.3 +1.1
TPNV Topopah Spring 77.66 53 P P 05 19 39.5 +1.1
baz=307,SNR=166
TPNV Topopah Spring 77.66 53 *e*P P 05 19 39.5 +1.1
TPNV pmax pmax
comp=Z,952nm,1.9s
TPNV Topopah Spring 77.66 53 *e*P P 05 19 39.5 +1.1
comp=Z,952nm,1.9s
HWUT Hardware Ranch 77.66 47 *e*P P 05 19 39.5 +1.1
comp=Z,547nm,1.6s
HWUT LR LR
comp=Z,2µm,20.0s
KWP Kalwaria Pacla 77.67 324 *e*P P 05 19 38.5 +0.5
KWP *e*PP PP 05 22 33.5 +0.9
KWP *e*S S 05 29 29.9 +0.6
KWP LMZ LR 05 56 55.2
KWP Kalwaria Pacla 77.67 324⇓ *e*P P 05 19 38.6 +0.5
KWP *e* 05 22 33.5
KWP *e*S S 05 29 30.0 +0.6
KWP MLR MLR
comp=Z,25µm,16.2s
SNCC San Nicolas Is 77.72 58 P P 05 19 39.9 +1.3
baz=306
RSUT Red Spur Mount 77.73 47 *e*P P 05 19 40.3 +1.3
FSU Fish Springs 77.75 49 *e*P P 05 19 40.2 +1.3
CANT Cankiri 77.75 312 *e*P P 05 19 39.0 +0.2
EDW2 Edwards Air Fo 77.77 56 P P 05 19 40.0 +1.0
baz=307,SNR=47
SAIU Southern Antel 77.77 48 *e*P P 05 19 40.1 +1.2
MCU Monte Cristo P 77.79 47 *e*P P 05 19 40.4 +1.2
DUG Dugway, Tooele 77.80 49 P P 05 19 40.4 +1.2
baz=309,SNR=100
DUG Dugway, Tooele 77.80 49 *e*P P 05 19 40.4 +1.2
DUG pmax pmax
comp=Z,143nm,1.0s
DUG MLR MLR
comp=Z,2µm,19.0s
DUG Dugway, Tooele 77.80 49 *e*P P 05 19 40.4 +1.2
comp=Z,143nm,1.0s
DUG *e*P P 05 19 40.6 +1.4
DUG LR LR
comp=Z,2µm,19.0s
BUR08 Bucovina Ar. S 77.81 321 *e*P P 05 19 39.1 +0.1
BURAR Bucovina Array 77.83 321⇑ *i*P P 05 19 39.0 -0.1
B25A Knox Farm, Ray 77.83 38 P P 05 19 40.0 +1.0
baz=313
TESR Tescani 77.83 320⇑ *i*P P 05 19 39.0 0.0
FPU Francis Peak 77.86 48 *e*P P 05 19 40.7 +0.9
SAFT Safranbolu 77.91 313 *e*P P 05 19 39.3 -0.2
CDAG Cicekdag 77.91 311 *i* P P 05 19 39.2 -0.5
DECC Green Verdugo 77.92 56 P P 05 19 40.4 +0.7
baz=307
CFR Carcaliu 77.93 318⇑ *i*P P 05 19 39.0 -0.6
ELDT Eldivan 77.94 312 *i* P P 05 19 40.3 +0.3
A26A Wade Farm, Ken 77.94 37 P P 05 19 40.1 +0.5
baz=314,SNR=37
ANDN Andirin 77.94 308 *i* P P 05 19 40.6 +0.7
KUZU Kuzuini 77.97 307 *i* P P 05 19 39.5 -0.6
KAMA Osmaniye 77.98 308 *i* P P 05 19 39.5 -0.6
PETR Petresti 78.06 319⇑ *i*P P 05 19 40.4 +0.2
TCUT Toone Canyon 78.06 47 *e*P P 05 19 42.0 +1.2
comp=Z,342nm,1.1s
PASC Pasadena Art C 78.06 56 *e*P P 05 19 41.7 +1.1
comp=Z,422nm,1.8s
BW06 Boulder Array 78.08 45 P P 05 19 41.2 +0.4
baz=310,SNR=107
BW06 Boulder Array 78.08 45 *e*P P 05 19 39.8 -0.9
BW06 *e*P P 05 19 41.0 +0.3
BW06 LR LR
comp=Z,2µm,19.0s
PD31 Pinedale Array 78.08 45 *e*P P 05 19 41.1 +0.4
PDAR Pinedale Array 78.08 45 P P 05 19 41.1 +0.4
comp=Z,21nm,0.8s,baz=262,slow=2.5,SNR=169
PDAR PP PP 05 22 38.9 +2.3
comp=Z,3.4nm,0.9s,baz=271,slow=8.7,SNR=2.5
MUD Monsted U'grnd 78.09 335 *i* P P 05 19 39.9 -0.3
comp=Z,22µm,16.0s
MUD Monsted U'grnd 78.09 335 *e*P P 05 19 39.9 -0.3
MUD MLR MLR
comp=Z,22µm,16.0s
MWC Mount Wilson 78.12 56 *e*P P 05 19 41.9 +0.8
MWC pmax pmax
comp=Z,454nm,1.7s
MWC Mount Wilson 78.12 56 *e*P P 05 19 41.9 +0.8
comp=Z,454nm,1.7s
ODBI Odobesti 78.12 319⇓ *i*P P 05 19 39.9 -0.7
CTU Camp Tracy 78.13 48 *e*P P 05 19 42.1 +1.1
comp=Z,385nm,1.9s
C25A Freed Ranch, W 78.16 38 P P 05 19 41.8 +0.9
baz=313,SNR=16
GMU Granite Mounta 78.19 48 *e*P P 05 19 42.6 +1.2
B26A Jensen Ranch, 78.21 37 P P 05 19 42.0 +0.9
baz=314
VRI Vrincioaia 78.22 319⇓ *i*P P 05 19 41.5 +0.3
OUZ Omahuta 78.25 153 *e*P P 05 19 44.0 +2.8
comp=Z,345nm,1.8s
TIRR Tirgusor 78.26 317⇑ *i*P P 05 19 41.2 -0.2
TIRR Tirgusor 78.26 317 *e*P P 05 19 41.2 -0.2
TIRR pmax pmax
comp=Z,202nm,1.4s
TIRR Tirgusor 78.26 317 *e*P P 05 19 41.2 -0.2
comp=Z,202nm,1.4s
FMP Fort Macarthur 78.27 57 P P 05 19 42.4 +0.8
baz=307
PLOR Plostina 78.27 319⇑ *i*P P 05 19 41.7 +0.2
SHOC Shoshone, Teco 78.28 54 P P 05 19 42.7 +1.0
baz=308,SNR=23
A27A Ledoux Ranch, 78.28 36 P P 05 19 42.1 +0.6
baz=314
BR131 Keskin Array S 78.29 311 *e*P P 05 19 41.8 -0.1
BRTR Keskin Array B 78.29 311 P P 05 19 41.7 -0.2
comp=Z,20nm,0.7s,baz=90,slow=4.0,SNR=70
BRTR PP PP 05 22 39.4 +1.1
comp=Z,11nm,1.1s,baz=45,slow=6.5,SNR=3.6
BRTR LR LR 06 00 10.9
comp=Z,3µm,18.2s,baz=36,slow=40
GSC Goldstone, Bar 78.30 55 P P 05 19 42.7 +0.8
baz=307,SNR=41
GSC Goldstone, Bar 78.30 55 *e*P P 05 19 42.7 +0.8
GSC pmax pmax
comp=Z,327nm,1.6s
GSC Goldstone, Bar 78.30 55 *e*P P 05 19 42.7 +0.8
comp=Z,327nm,1.6s
DRWC Darouich 78.33 307 *e*P P 05 19 42.8 +0.8
KOZT Kozan 78.33 308 *e*P P 05 19 41.2 -0.8
KOLS Kolonicke sedl 78.36 324 *e*P P 05 19 41.9 0.0
KOLS *e* 05 19 46.7
KOLS *e*S S 05 29 25.9 -11
KOLS pmax pmax
comp=Z,113nm,1.3s
KOLS MLR MLR
comp=Z,15µm,16.1s
KOLS Kolonicke sedl 78.36 324 *e*P P 05 19 41.9 0.0
KOLS *e* 05 19 46.7
KOLS *e*S S 05 29 25.9 -11
KOLS *e*L L 05 57 27.6
JLU Jordanelle 78.36 48 *e*P P 05 19 43.6 +1.2
comp=Z,209nm,1.4s
HARR Harsova 78.36 318⇑ *i*P P 05 19 41.8 -0.2
CIS Catalina Islan 78.37 57 P P 05 19 42.7 +0.4
baz=307
BFSC Mount Baldy Ra 78.37 56 P P 05 19 42.8 +0.4
baz=307,SNR=34
NLU North Lily Min 78.39 49 *e*P P 05 19 43.6 +1.1
comp=Z,116nm,1.1s
RRX Edison Barstow 78.43 55 P P 05 19 43.4 +0.9
baz=307
WMUT West Mountain 78.46 48 *e*P P 05 19 44.1 +1.2
STHS Stebnicka Huta 78.50 324 *e*P P 05 19 43.0 +0.3
STHS pmax pmax
comp=Z,125nm,1.4s
STHS Stebnicka Huta 78.50 324 *e*P P 05 19 43.0 +0.3
STHS *e* 05 19 49.2
STHS *e* 05 38 37.6
STHS *e* 06 00 03.3
STHS *e* 06 00 42.5
D25A Fairfield 78.51 39 P P 05 19 43.7 +0.9
baz=313,SNR=25
SCI2 San Clemente I 78.53 57 P P 05 19 44.3 +1.1
baz=307
BCAM Yenicaga 78.54 313 *i* P P 05 19 40.5 -2.7
UZH Uzhgorod 78.56 323 *e*P P 05 19 39.8 -3.2
UZH *e* 05 19 47.4
UZH *e* 05 19 54.0
UZH *e* 05 22 39.0
UZH *e*S S 05 29 30.2 -8.7
UZH *e*PS PnS 05 30 32.2 +12
UZH *e*SS SS 05 34 43.8 +2.4
UZH MLR MLR
comp=N,16µm,14.0s
UZH MLR MLR
comp=E,22µm,14.0s
UZH MLR MLR
comp=Z,17µm,14.0s
OJC Ojcow 78.59 326 *e*P P 05 19 43.5 +0.3
OJC *e*PP PP 05 22 34.6 -5.7
OJC *e*S S 05 29 38.1 -1.2
OJC *e*SS SS 05 34 57.4 +16
OJC LMZ LR 05 57 30.5
OJC Ojcow 78.59 326⇑ *e*P P 05 19 43.5 +0.3
OJC *e* 05 22 34.7
OJC *e*S S 05 29 38.1 -1.2
OJC MLR MLR
comp=Z,10µm,16.4s
OJC Ojcow 78.59 326 *e*P P 05 19 43.3 +0.1
comp=Z,469nm,1.3s
DAU Daniels Canyon 78.59 48 *e*P P 05 19 45.1 +1.3
DAU Daniels Canyon 78.59 48 *e*P P 05 19 45.1 +1.3
ARCR ARCALIA 78.61 321⇑ *i*P P 05 19 44.0 +0.6
MPU Maple Canyon 78.62 48 *e*P P 05 19 45.0 +1.2
comp=Z,477nm,1.7s
C26A Wahner Farm, P 78.66 38 P P 05 19 44.4 +0.8
baz=314,SNR=41
B27A Peters Farms, 78.66 37 P P 05 19 44.2 +0.6
baz=314
FLU Fool Peak 78.70 49 *e*P P 05 19 45.6 +1.4
ANTO Ankara 78.71 312 *e*P P 05 19 44.3 +0.2
ANTO pmax pmax
comp=Z,221nm,1.2s
ANTO MLR MLR
comp=Z,68nm,20.0s
ANTO Ankara 78.71 312 *e*P P 05 19 44.3 +0.2
comp=Z,221nm,1.2s
ANTO LR LR
comp=Z,68nm,20.0s
LOD Lodumlu 78.71 312 *e*P P 05 19 43.8 -0.3
BR231 Keskin MP Arra 78.73 312 *e*P P 05 19 41.9 -2.3
BR231 *e*P P 05 19 45.1 +0.8
CRVS Cervenica-Dubn 78.76 324 *e*P P 05 19 44.4 +0.3
CRVS *e* 05 19 49.1
CRVS *e*S S 05 29 40.2 -1.0
CRVS Cervenica-Dubn 78.76 324 *e*P P 05 19 44.4 +0.3
CRVS *e* 05 19 49.1
CRVS *e*S S 05 29 40.2 -1.0
A28A Rude Farm, Bot 78.78 36 P P 05 19 44.9 +0.6
baz=315,SNR=32
TRPA Tarpa 78.79 323⇑ *e*P P 05 19 44.8 +0.6
TUQ Turquoise Moun 78.79 54 P P 05 19 45.6 +0.9
baz=308,SNR=126
AFSR Af˙ar-Bala (A 78.81 311 *e*P P 05 19 44.6 0.0
MSAB Monastry St. A 78.82 317⇓ *i*P P 05 19 45.1 +0.6
ISR Istrita 78.82 319⇑ *i*P P 05 19 45.3 +0.7
LEVU Levan 78.83 49 *e*P P 05 19 46.3 +1.4
BBRC Big Bear Solar 78.85 56 P P 05 19 45.6 +0.4
baz=308,SNR=17
DOPR Dopca 78.85 320⇑ *i*P P 05 19 45.8 +1.1
MLR Muntele Rosu 78.88 319⇓ *i*P P 05 19 45.0 -0.1
MLR Muntele Rosu 78.88 319 *e*P P 05 19 44.9 -0.1
MLR pmax pmax
comp=Z,383nm,1.6s
MLR Muntele Rosu 78.88 319 *e*P P 05 19 44.9 -0.1
comp=Z,383nm,1.6s
AKSY AKSARAY - Alti 78.89 310 *i* P P 05 19 45.4 +0.2
HEC Hector,Ludlow 78.89 55 P P 05 19 46.2 +1.0
baz=308,SNR=48
E25A Miller Ranch, 78.92 39 P P 05 19 45.7 +0.6
baz=313,SNR=46
NIE Niedzica 78.93 325 *e*P P 05 19 45.8 +0.7
NIE *e*PP PP 05 22 50.6 +7.4
NIE *e*S S 05 29 26.5 -17
NIE LMZ LR 05 58 55.3
NIE Niedzica 78.93 325⇑ *e*P P 05 19 45.9 +0.8
NIE *e* 05 22 50.6
NIE MLR MLR
comp=Z,5µm,17.9s
DWU Dry Willow Pea 78.99 50 *e*P P 05 19 47.3 +1.4
WCU Willow Creek 79.01 49 *e*P P 05 19 47.5 +1.5
C27A Sayler Ranch, 79.02 37 P P 05 19 46.4 +0.8
baz=314,SNR=22
D26A Manning 79.04 38 P P 05 19 46.3 +0.5
baz=314,SNR=23
YAYL Yayladag 79.04 307 *i* P P 05 19 44.2 -1.8
B28A Dugan Ranch, T 79.06 36 P P 05 19 46.1 +0.4
baz=315,SNR=52
MURC Murrieta 79.07 56 P P 05 19 46.8 +0.7
baz=308,SNR=22

SNO **Snow College** 79.12 49 *e*P P 05 19 48.3 +1.7
SGU **Sterling** 79.14 49 *e*P P 05 19 48.4 +1.7
ARNB **Al Arnab** 79.23 307 *i* P P 05 19 46.8 -0.3
ARNB **Al Arnab** 79.23 307 *e*P P 05 19 51.9 +4.8
SLNF **Slenfeh** 79.24 307 *e*P P 05 19 49.1 +2.0
MSU **Marysvale** 79.24 50 *e*P P 05 19 45.5 -1.7
MSU **Marysvale** 79.24 50 *e*P P 05 19 45.5 -1.7
CJR **Cluj-Napoca** 79.25 321⇑ *i*P P 05 19 47.2 +0.3
A29A **Manning Farm,** 79.25 35 P P 05 19 47.2 +0.4
baz=316,SNR=95
MDUB **Mudurnu** 79.27 313 *e*P P 05 19 47.5 +0.3
F25A **Bowman** 79.28 40 P P 05 19 47.7 +0.6
baz=313,SNR=23
SULT **Sultanhani-AKS** 79.32 310 *e*P P 05 19 50.1 +2.6
TMUT **Trail Mountain** 79.33 49 *e*P P 05 19 48.9 +1.1
comp=Z,225nm,1.6s
GMRC **Granite Mounta** 79.36 54 P P 05 19 48.7 +0.8
baz=308,SNR=44
RAC **Raciborz** 79.41 326 *e*P P 05 19 48.5 +0.9
RAC *e*S S 05 29 49.0 +1.1
RAC MLR MLR
comp=Z,12µm,17.2s
E26A **Carlson Angus** 79.41 39 P P 05 19 48.2 +0.5
baz=314,SNR=41
ROOS **tl_alroos** 79.42 305 *i* P P 05 19 48.0 -0.1
ROOS **tl_alroos** 79.42 305 *e*P P 05 19 53.2 +5.1
D27A **Center** 79.43 38 P P 05 19 48.7 +0.8
baz=314,SNR=11
KERG **Konya-Eregli** 79.44 309 *i* P P 05 19 47.5 -0.7
KAND **Kocaeli-Kandir** 79.45 314 *i* P P 05 19 47.1 -0.9
AUMIH **MIHALICIK** 79.49 312 *i* P P 05 19 48.0 -0.4
P17A **Butcher Ranch,** 79.50 48 *e*P P 05 19 49.8 +1.2
comp=Z,356nm,1.3s
LANS **Liptovska Anna** 79.51 325 *e*P P 05 19 49.1 +0.8
LANS *e* 05 19 54.9
LANS *e* 05 22 48.2
LANS **Liptovska Anna** 79.51 325 *e*P P 05 19 49.1 +0.8
LANS *e* 05 19 54.9
LANS *e*PP PP 05 22 48.2 +0.2
KECS **Kecovo** 79.51 324 *e*P P 05 19 48.5 +0.3
KECS *e* 05 19 54.4
KECS *e* 05 22 47.6
KECS pmax pmax
comp=Z,117nm,1.9s
KECS **Kecovo** 79.51 324 *e*P P 05 19 48.5 +0.3
KECS *e* 05 19 54.4
KECS *e*PP PP 05 22 47.6 -0.4
B29A **Wagenman Farm,** 79.52 36 P P 05 19 48.7 +0.4
baz=316,SNR=29
LCMT **Little Creek M** 79.52 51 *e*P P 05 19 50.1 +1.4
comp=Z,371nm,1.4s
MERS **Mersin** 79.53 308 *e*P P 05 19 50.3 +1.7
MTPU **Mount Pierson** 79.53 50 *e*P P 05 19 50.8 +1.8
comp=Z,678nm,1.9s
LDFC **Landfair** 79.53 54 *e*P P 05 19 49.6 +0.8
comp=Z,720nm,1.5s
PFO **Pinyon Flats O** 79.55 56 P P 05 19 49.4 +0.5
baz=308,SNR=45
PFO **Pinyon Flats O** 79.55 56 *e*P P 05 19 49.6 +0.7
PFO pmax pmax
comp=Z,420nm,1.6s
PFO MLR MLR
comp=Z,2µm,20.0s
PFO **Pinyon Flats O** 79.55 56 *e*P P 05 19 49.6 +0.7
comp=Z,420nm,1.6s
PFO LR LR
comp=Z,2µm,20.0s
109C **Camp Elliot, M** 79.56 57 P P 05 19 49.5 +0.7
baz=308
C28A **Hausauer Farms** 79.56 37 P P 05 19 49.2 +0.6
baz=315,SNR=17
OKC **Ostrava-Krasne** 79.61 326⇑ *e*P P 05 19 49.0 +0.3
OKC *ep*P sP 05 19 54.1 -1.1
OKC *e*PP PP 05 22 41.0 -7.7
OKC *e*S S 05 29 47.3 -2.7
OKC AMS AMS 05 59 00.0
comp=Z,12µm,13.8s
OKC **Ostrava-Krasne** 79.61 326 *e*P P 05 19 49.0 +0.3
OKC *e* 05 19 54.1
OKC *e*S S 05 29 47.3 -2.7
OKC MLR MLR
comp=Z,12µm,13.8s
BELC **Belle Mtn. Jos** 79.61 55 P P 05 19 49.7 +0.4
baz=308,SNR=49
DRGR 79.63 322⇑ *i*P P 05 19 49.4 +0.4
PRD **Provadia** 79.64 317 *i* P P 05 19 48.7 -0.3
ARR **Arges** 79.65 320⇑ *i*P P 05 19 49.8 +0.7
SPNC **Sapanca-Adapaz** 79.65 314 *e*P P 05 19 50.1 +1.0
A30A **Hoffart Farm,** 79.67 35 P P 05 19 49.4 +0.3
baz=316,SNR=47
KSP **Ksiaz** 79.67 328 *e*P P 05 19 49.4 +0.3
KSP *e*PP PP 05 22 49.9 +0.6
KSP *e*S S 05 29 48.5 -2.2
KSP LMZ LR 05 58 09.9
KSP **Ksiaz** 79.67 328⇑ *e*P P 05 19 49.4 +0.3
KSP *e* 05 22 50.0
KSP *e*S S 05 29 48.6 -2.2
KSP MLR MLR
comp=Z,6µm,20.9s
GULT **Gulveren** 79.69 313 *e*P P 05 19 48.4 -1.1
P18A **Preston Nutter** 79.69 48 *e*P P 05 19 50.9 +1.2
comp=Z,204nm,1.2s
F26A **Lodgepole** 79.73 39 P P 05 19 50.1 +0.5
baz=314,SNR=20
SVRH **Sivrihisar-ESK** 79.73 312 *e*P P 05 19 49.8 +0.1
KNB **Kanab** 79.78 51 *e*P P 05 19 51.7 +1.6
KNB pmax pmax
comp=Z,832nm,1.6s
KNB **Kanab** 79.78 51 *e*P P 05 19 51.7 +1.6
comp=Z,832nm,1.6s
ULM **Lac du Bonnet** 79.80 33 P P 05 19 49.5 -0.2
comp=Z,41nm,0.8s,baz=318,slow=6.2,SNR=27
ULM LR LR 05 57 54.8
comp=Z,2µm,18.8s,baz=346,slow=38
ULM **Lac du Bonnet** 79.80 33 P P 05 19 49.5 -0.2
ULM pmax pmax
comp=Z,41nm,0.8s
ULM MLR MLR
comp=Z,2µm,18.8s
ULM **Lac du Bonnet** 79.80 33 *e*P P 05 19 49.6 -0.1
G25A **Newell** 79.80 40 P P 05 19 50.1 +0.2
baz=313,SNR=25
PKCU **Pink Cliffs** 79.83 51 *e*P P 05 19 52.5 +1.9
comp=Z,573nm,2.0s
D28A **Regan** 79.84 37 P P 05 19 50.6 +0.5
baz=315
MDND **Maddock** 79.84 36 P P 05 19 50.5 +0.5
baz=315,SNR=22
MDND **Maddock** 79.84 36 *e*P P 05 19 50.7 +0.6
comp=Z,2µm,2.0s
K22A **Casper** 79.85 44 P P 05 19 50.7 +0.3
baz=312,SNR=36
K22A **Casper** 79.85 44 *e*P P 05 19 50.7 +0.3
comp=Z,388nm,1.6s
SRU **San Rafael Swe** 79.86 48 *e*P P 05 19 51.5 +1.0
SRU pmax pmax
comp=Z,536nm,1.8s
SRU **San Rafael Swe** 79.86 48 *e*P P 05 19 51.5 +1.0
comp=Z,536nm,1.8s
KIZT **Kizilcal** 79.88 311 *e*P P 05 19 51.0 +0.4
E27A **Carson** 79.88 38 P P 05 19 50.9 +0.5
baz=314,SNR=56
TAU **Tasmania Unive** 79.89 175 PFAKE 05 20 00.0 +10
TAU LR LR
comp=Z,5µm,20.0s
BTU **Barney Top** 79.90 50 *e*P P 05 19 52.9 +1.8
MORC **Moravsky Berou** 79.92 326 *e*P P 05 19 50.7 +0.2
MORC pmax pmax
comp=Z,1µm,1.2s
MORC **Moravsky Berou** 79.92 326 *e*P P 05 19 50.7 +0.2
comp=Z,1µm,1.2s
HRT **Hereke** 79.93 314 *e*P P 05 19 50.9 +0.2
EKU **East Kanab** 79.95 51 *e*P P 05 19 52.6 +1.5
KDHN **Kadinhani** 79.97 311 *i* P P 05 19 49.0 -2.1
BAR **Barrett** 79.97 57 *e*P P 05 19 51.8 +0.7
comp=Z,454nm,1.7s
MMU **Miners Mountai** 79.97 49 *e*P P 05 19 52.8 +1.5
RAYN **Ar Rayn** 80.00 292 *e*P P 05 19 51.1 -0.3
comp=Z,960nm,2.0s
RAYN LR LR
comp=Z,6µm,19.0s
B30A **Myrvik Farm, E** 80.01 35 P P 05 19 51.2 +0.3
baz=316,SNR=48
KLYT **Kilyos** 80.01 315 *e*P P 05 19 50.8 -0.2
MONP2 **Monument Peak** 80.01 56 P P 05 19 52.0 +0.5
baz=308,SNR=32
DPC **Dobruska-Polom** 80.03 327⇑ *e*P P 05 19 51.7 +0.7
DPC *ep*P sP 05 19 57.2 -0.3
DPC *e*PP PP 05 22 48.8 -3.5
DPC *e*S S 05 29 55.0 +0.4
DPC AMS AMS 05 59 40.0
comp=Z,23µm,15.0s
DPC **Dobruska-Polom** 80.03 327⇑ *e*P P 05 19 51.7 +0.7
DPC *e* 05 19 57.2
DPC *e* 05 22 48.8
DPC *e*S S 05 29 55.0 +0.4
DPC MLR MLR
comp=Z,23µm,15.0s
KRLC **Kraliky** 80.03 327⇑ *e*P P 05 19 51.5 +0.4
KRLC *ep*P sP 05 19 56.8 -0.8
KRLC **Kraliky** 80.03 327 *e*P P 05 19 51.5 +0.4
KRLC *e* 05 19 56.8
LOT **Lotru** 80.03 320⇑ *i*P P 05 19 51.3 0.0
NEE2 **Needles Airpor** 80.04 54 P P 05 19 52.0 +0.6
baz=308
UPC **Upice** 80.04 328⇑ *e*P P 05 19 51.4 +0.3
UPC *ep*P sP 05 19 56.7 -0.9
UPC *e*S S 05 29 54.8 +0.1
UPC AMS AMS 05 59 10.0
comp=Z,18µm,14.1s
UPC **Upice** 80.04 328⇑ *e*P P 05 19 51.4 +0.3
UPC *e* 05 19 56.7
UPC *e*S S 05 29 54.8 +0.1
UPC MLR MLR
comp=Z,18µm,14.1s
F27A **Lemmon** 80.04 39 P P 05 19 51.6 +0.3
baz=314,SNR=56
IRM **Iron Mountain** 80.08 55 P P 05 19 52.4 +0.8
baz=308,SNR=74
BORA **Eskisehir** 80.08 313 *i* P P 05 19 51.0 -0.6
ESKT **Eskisehir** 80.08 312 *i* P P 05 19 51.3 -0.4
H25A **Fruitdale** 80.10 41 P P 05 19 51.9 +0.3
baz=313,SNR=61
ISK **Istanbul-Kandi** 80.12 314 *e*P P 05 19 50.5 -1.1
ADVT **Abdulvahap** 80.14 314 *e*P P 05 19 51.9 +0.1
G26A **Maurine** 80.15 40 P P 05 19 52.2 +0.4
baz=314,SNR=88
A31A **Linda, St. Vin** 80.18 34 P P 05 19 51.6 -0.3
baz=317
BC3 **Big Chuckawall** 80.18 55 P P 05 19 53.0 +0.7
baz=308,SNR=66
KONT **Konya--Tatoy** 80.19 310 *e*P P 05 19 51.4 -0.7
PSZ **Piszkesteto** 80.19 324⇑ *e*P P 05 19 52.4 +0.4
PSZ **Piszkesteto** 80.19 324 *e*P P 05 19 52.4 +0.4
PSZ pmax pmax
comp=Z,384nm,1.3s
PSZ MLR MLR
comp=Z,7µm,19.0s
PSZ **Piszkesteto** 80.19 324 *e*P P 05 19 52.4 +0.4
comp=Z,384nm,1.3s
PSZ LR LR
comp=Z,7µm,19.0s
BGKT **Bogazkoy** 80.21 315 *e*P P 05 19 51.6 -0.5
RSSD **Black Hills** 80.21 41 P P 05 19 52.6 +0.1
baz=313
RSSD **Black Hills** 80.21 41 *e*P P 05 19 52.5 +0.1
RSSD pmax pmax
comp=Z,478nm,1.8s
RSSD **Black Hills** 80.21 41 *e*P P 05 19 52.5 +0.1
comp=Z,478nm,1.8s
E28A **Huff** 80.21 38 P P 05 19 52.4 +0.3
baz=315,SNR=27
CAVI **Cavuskoy** 80.23 313 *e*P P 05 19 52.6 +0.3
MLA1 **Latheron** 80.26 342 *e*P P 05 19 51.9 -0.2
VYHS **Vyhne** 80.27 325 *e*P P 05 19 52.7 +0.3
VYHS *e* 05 19 57.7
VYHS *e* 05 22 53.5
VYHS *e*S S 05 29 55.9 -1.3
VYHS pmax pmax
comp=Z,313nm,1.9s
VYHS MLR MLR
comp=Z,17µm,14.4s
VYHS **Vyhne** 80.27 325 *e*P P 05 19 52.7 +0.3
VYHS *e* 05 19 57.7
VYHS *e*PP PP 05 22 53.5 -0.8
VYHS *e*S S 05 29 55.9 -1.3
VYHS *e*L L 05 59 07.6
CTYL **Yalikoy Yolu** 80.29 315 *e*P P 05 19 51.2 -1.3
W13A **Hualapai Mount** 80.31 53 *e*P P 05 19 53.6 +0.5
CTKS **Kestanelik-??a** 80.32 315 *e*P P 05 19 51.4 -1.3
B31A **Greenbush Farm** 80.34 35 P P 05 19 52.8 +0.1
baz=317,SNR=19
IZI **Iznik** 80.36 314 *e*P P 05 19 53.2 +0.1
IBP **Imperial Bould** 80.37 56 P P 05 19 54.1 +0.8
baz=308
SZH **Strazhica** 80.39 318 *i* P P 05 19 52.6 -0.5
SWSC **Sam W. Stewart** 80.39 56 P P 05 19 53.8 +0.5
baz=308,SNR=29
D29A **Pettibone, Tap** 80.40 37 P P 05 19 53.2 +0.1
baz=316
G27A **Dupree** 80.43 39 P P 05 19 53.7 +0.4
baz=314,SNR=62
I25A **Rochford** 80.44 41 P P 05 19 53.7 +0.1
baz=313,SNR=29
IKL **Isikli** 80.45 308 *e*P P 05 19 56.4 +2.9
GEMT **Gemlik** 80.46 314 *e*P P 05 19 52.5 -1.0
C30A **Mose, Pekin** 80.47 36 P P 05 19 53.4 0.0
baz=316,SNR=23
TOTH **TOTAH** 80.48 305 *i* P P 05 19 52.9 -0.9
TOTH **TOTAH** 80.48 305 *e*P P 05 19 56.8 +2.9
A32A **Rocking H Ranc** 80.50 34 P P 05 19 53.3 -0.3
baz=317,SNR=48
SIRR **Siria** 80.52 322⇑ *i*P P 05 19 52.9 -0.8
H26A **Fairpoint** 80.53 40 P P 05 19 54.3 +0.4
baz=314,SNR=62
O20A **White River Ci** 80.54 46 P P 05 19 54.7 +0.5
baz=311,SNR=42
O20A **White River Ci** 80.54 46 *e*P P 05 19 54.8 +0.6
comp=Z,734nm,2.0s
BOLV **Bolvadin** 80.54 312 *i* P P 05 19 53.6 -0.5
GZR **Gura Zlata** 80.58 321⇑ *i*P P 05 19 54.2 +0.1
PHSR **Pinarhisar** 80.61 316 *e*P P 05 19 54.0 -0.3
BRG **Berggiesshubel** 80.63 329⇑ *i*P P 05 19 54.2 0.0
comp=Z,45nm,0.9s
BRG *i* PCP sP 05 19 59.8 -0.9
comp=Z,659nm,1.9s
BRG PP PP 05 22 56.0 -1.3
comp=Z,34nm,1.1s
BRG S S 05 30 03.0 +2.2
BRG SS SS 05 35 10.0 -2.3
BRG *e*PKKP PKKPbc 05 38 33.0 -0.6
comp=Z,18nm,1.9s
comp=N,19µm,15.2s
comp=E,9µm,15.0s
comp=Z,18µm,14.3s
BRG **Berggiesshubel** 80.63 329⇑ *i*P P 05 19 54.2 0.0
BRG *i* 05 19 59.8
BRG 05 22 56.0
BRG S S 05 30 03.0 +2.2
BRG SS SS 05 35 10.0 -2.3
BRG *e* 05 38 33.0
BRG pmax pmax
comp=Z,7.0nm,0.9s
BRG pmax pmax
comp=Z,45nm,2.0s
BRG pmax pmax
comp=Z,659nm,1.1s
BRG pmax pmax
comp=Z,34nm,1.9s
BRG MLR MLR
comp=N,18µm,15.2s
BRG MLR MLR
comp=E,19µm,15.0s
BRG MLR MLR
comp=Z,9µm,14.3s
PVCC **Panska Ves** 80.64 328⇑ *e*P P 05 19 54.8 +0.5
PVCC AMS AMS 06 00 00.0
comp=Z,14µm,13.6s
PVCC **Panska Ves** 80.64 328⇑ *e*P P 05 19 54.8 +0.5
PVCC MLR MLR
comp=Z,14µm,13.6s
PDMCI **Parker Dam,Lak** 80.64 54 P P 05 19 55.3 +0.8
baz=309,SNR=44
F28A **McLaughlin** 80.67 38 P P 05 19 55.0 +0.4
baz=315,SNR=32
MDNY **Mudanya-Bursa** 80.68 314 *e*P P 05 19 54.0 -0.6
VRAC **Vranov** 80.68 327⇑ *i*P P 05 19 55.2 +0.7
ULDT **Uludag** 80.68 314 *i* P P 05 19 54.0 -0.9
CLL **Collm** 80.68 330⇑ *i*P P 05 19 54.2 -0.3
comp=Z,75nm,0.9s
CLL *e*Pmax 05 19 57.0
CLL *i* 05 19 58.9
comp=Z,326nm,1.2s
CLL *i* 05 20 05.7
CLL *e*PP PP 05 22 46.0 -12
CLL *e*PPP PPP 05 24 52.0
CLL *e*S S 05 30 03.0 +1.7
CLL *e*SS SS 05 35 12.0 -1.0
CLL *e* 05 36 12.0
CLL *e*SSS SSS 05 38 54.0
CLL *e* 05 39 48.0
CLL Lmax 06 00 00.0
CLL **Collm** 80.68 330⇑ *i*P P 05 19 54.2 -0.3
CLL *i* 05 19 58.9
CLL *e*S S 05 30 03.0 +1.7
CLL pmax pmax
comp=Z,4.0nm,0.9s
CLL **Collm** 80.68 330 *e*P P 05 19 54.3 -0.3
comp=Z,256nm,1.0s
E29A **Napoleon** 80.73 37 P P 05 19 54.9 0.0
baz=316,SNR=21
Y12C **Blythe** 80.73 55 P P 05 19 56.0 +1.0
baz=309,SNR=27
Y12C **Blythe** 80.73 55 *e*P P 05 19 56.2 +1.1
comp=Z,195nm,1.2s
PVL **Pavlikeni** 80.74 318 *i* P P 05 19 55.1 +0.2
C31A **Landman Farms,** 80.76 36 P P 05 19 54.9 0.0
baz=317,SNR=41
D30A **Buchanan** 80.77 37 P P 05 19 55.1 0.0
baz=316,SNR=17
CRLT **Corlu** 80.83 315 *e*P P 05 19 55.6 +0.1
J25A **Sunshine Ranch** 80.83 42 P P 05 19 55.2 -0.4
baz=313
MCD **Coleburn Disti** 80.87 341 *e*P P 05 19 54.9 -0.4
B32A **Ashes, Strandq** 80.87 35 P P 05 19 55.1 -0.4
baz=317,SNR=71
H27A **Howes** 80.88 40 P P 05 19 56.1 +0.4
baz=314,SNR=102
SHUT **Suhut-Afyon** 80.89 312 *e*P P 05 19 55.8 -0.2
I26A **New Underwood** 80.89 41 P P 05 19 56.5 +0.6
baz=314,SNR=42
EDRB **Edirne** 80.90 316 *e*P P 05 19 56.7 +0.8
EDRB **Edirne** 80.90 316 P P 05 19 56.1 +0.3
EDRB **Edirne** 80.90 316 P P 05 19 56.1 +0.3
BUD **Budapest** 80.92 324⇑ *e*P P 05 19 56.0 +0.2
TVSB **Tavsanli** 80.94 313 *e*P P 05 19 56.0 -0.3
GLA **Glamis** 80.97 55 P P 05 19 57.4 +1.0
baz=309,SNR=55
GLA **Glamis** 80.97 55 *e*P P 05 19 57.5 +1.0
GLA pmax pmax
comp=Z,774nm,2.0s
GLA **Glamis** 80.97 55 *e*P P 05 19 57.5 +1.0
comp=Z,774nm,2.0s
A33A **Warroad** 80.98 34 P P 05 19 55.9 -0.2
baz=318,SNR=48
BZS **Buzias** 81.00 322⇑ *i*P P 05 19 56.0 -0.3
GOPC **GO Pecny, Ondr** 81.01 328⇑ *e*P P 05 19 56.6 +0.3
GOPC *ep*P sP 05 20 02.1 -0.7
GOPC *e*S S 05 30 03.0 -1.9
GOPC AMS AMS 05 59 30.0
comp=Z,14µm,13.8s
GOPC **GO Pecny, Ondr** 81.01 328⇑ *e*P P 05 19 56.6 +0.3
GOPC *e* 05 20 02.1
GOPC *e*S S 05 30 03.0 -1.9
GOPC MLR MLR
comp=Z,14µm,13.8s
TKR **Tekirdag** 81.03 315 *e*P P 05 19 56.7 +0.1
PRA **Prague** 81.04 328⇑ *e*P P 05 19 56.9 +0.5
PRA *ep*P sP 05 20 02.3 -0.6
PRA *e*S S 05 30 04.1 -1.0
PRA AMS AMS 05 59 50.0
comp=Z,19µm,14.1s
PRA **Prague** 81.04 328⇑ *e*P P 05 19 56.9 +0.5
PRA *e* 05 20 02.3
PRA *e*S S 05 30 04.1 -1.0
PRA MLR MLR
comp=Z,19µm,14.1s
KCTX **Karacabey (Bur** 81.05 314 *e*P P 05 19 56.9 +0.2
PRU **Pruhonice** 81.06 328⇑ *e*P P 05 19 56.7 +0.2
PRU *ep*P sP 05 20 02.3 -0.7
PRU *ex* x 05 22 48.3
PRU *e*S S 05 30 03.8 -1.5
PRU AMS AMS 05 59 40.0
comp=Z,18µm,13.8s
PRU **Pruhonice** 81.06 328⇑ *e*P P 05 19 56.7 +0.2
PRU *e* 05 20 02.3
PRU *e*S S 05 30 03.8 -1.5
PRU MLR MLR
comp=Z,18µm,13.8s
PV09 **Paradox Valley** 81.08 48 *e*P P 05 19 58.4 +1.2
BAGO **Egridir - ISPA** 81.11 311 *i* P P 05 19 56.2 -0.9
E30A **Jud** 81.13 37 P P 05 19 57.2 +0.1
baz=316,SNR=28
G28A **Parade** 81.16 39 P P 05 19 57.7 +0.5
baz=315,SNR=30
F29A **Eureka** 81.16 38 P P 05 19 57.5 +0.3
baz=316,SNR=38
PKS7 **Kunszentmiklos** 81.17 324⇑ *e*P P 05 19 57.6 +0.5
GDZ **Gediz** 81.17 313 *i* P P 05 19 56.6 -0.9
TREC **Trest** 81.17 327⇑ *e*P P 05 19 57.5 +0.3
TREC AMS AMS 06 00 00.0
comp=Z,17µm,15.0s
TREC **Trest** 81.17 327⇑ *e*P P 05 19 57.5 +0.3
TREC MLR MLR
comp=Z,17µm,15.0s
PV10 **Paradox Valley** 81.22 48 *e*P P 05 19 59.4 +1.5
AGMN **Agassiz Nation** 81.24 34 P P 05 19 57.0 -0.6
baz=318,SNR=52
AGMN **Agassiz Nation** 81.24 34 *e*P P 05 19 57.0 -0.6
comp=Z,300nm,1.7s
AGMN LR LR
comp=Z,3µm,19.0s
MRMT **Marmara Adasi** 81.26 315 *e*P P 05 19 57.9 +0.1
J26A **Sides Ranch, S** 81.27 41 P P 05 19 58.2 +0.3
baz=314,SNR=51
EDC **Edincik** 81.28 314 *e*P P 05 19 57.3 -0.6
PKSG **Trest** 81.28 324⇑ *e*P P 05 19 58.1 +0.4
I27A **Quinn** 81.28 40 P P 05 19 58.5 +0.6
baz=314,SNR=81
PV04 **Paradox Valley** 81.29 48 *e*P P 05 19 59.4 +1.2
C32A **Crookston** 81.29 35 P P 05 19 57.6 -0.2
baz=318
PKS6 **Bocsa** 81.30 323⇑ *e*P P 05 19 58.1 +0.3
D31A **Mcclaflin, Tow** 81.30 36 P P 05 19 58.0 +0.1
baz=317
PHWY **Pilot Hill** 81.34 44 *e*P P 05 19 59.1 +0.5
comp=Z,548nm,2.0s
N23A **Red Feather La** 81.35 45 P P 05 19 59.7 +1.1
baz=312,SNR=70
N23A **Red Feather La** 81.35 45 *e*P P 05 19 59.8 +1.1
comp=Z,542nm,1.6s
CSKK **Cs˙ákako** 81.36 324⇑ *e*P P 05 19 58.6 +0.4
PV05 **Paradox Valley** 81.38 48 *e*P P 05 19 60.0 +1.2
ISP **Isparta** 81.38 311 *e*P P 05 19 59.7 +1.1
ISP **Isparta** 81.38 311 *e*P P 05 20 03.3 +4.7
ISP pmax pmax
comp=Z,71nm,1.0s
ISP MLR MLR
comp=Z,3µm,20.0s
ISP **Isparta** 81.38 311 *e*P P 05 20 03.2 +4.7
comp=Z,71nm,1.0s
ISP LR LR
comp=Z,3µm,20.0s
B33A **Robert and Kas** 81.39 34 P P 05 19 57.7 -0.6
baz=318,SNR=20
H28A **Mission Ridge** 81.39 39 P P 05 19 59.0 +0.6
baz=315,SNR=85
RKY **Sarkoy-Tekirda** 81.44 315 *e*P P 05 19 58.2 -0.6
KAC **Achnashellach** 81.45 342 *e*P P 05 19 58.6 +0.1
CSS **Mathiatis** 81.48 308 *e*P P 05 19 59.1 0.0
comp=Z,26nm,0.9s
CSS LR LR
comp=Z,2µm,20.0s
MPEP **Malo Peshtene** 81.49 319 *i* P P 05 19 58.9 -0.1
PKST **T˙'s** 81.54 325⇑ *e*P P 05 19 58.9 -0.3
MDVR **Moldovita** 81.54 321⇑ *i*P P 05 19 59.2 -0.1
F30A **Leola** 81.55 38 P P 05 19 59.2 -0.1
baz=316
KRBG **Karabiga-Canak** 81.57 315 *e*P P 05 19 58.8 -0.5
D32A **Dogwood Acres,** 81.57 36 P P 05 19 58.9 -0.4
baz=317
G29A **Hoven** 81.57 38 P P 05 19 59.5 +0.1
baz=316
E31A **Nome** 81.58 36 P P 05 19 59.4 0.0
baz=317,SNR=20

Y14A Wickenburg 81.60 54 eP P 05 20 00.9 +1.1
KESN Edirne-Kesan 81.62 315 i P P 05 19 58.9 -1.3
WUAZ Wupatki 81.63 52 P P 05 20 01.2 +1.2
baz=310,SNR=74
WUAZ Wupatki 81.63 52 eP P 05 20 01.4 +1.3
comp=Z,402nm,1.6s
KHAL Karahalli 81.64 312 i P P 05 19 58.7 -1.2
HIZ Hauiti 81.64 153 eP P 05 20 01.2 +1.8
comp=Z,315nm,1.2s
B34A Aery, Baudette 81.64 34 P P 05 19 59.0 -0.6
baz=319,SNR=42
KHL Karahalli 81.65 312 eP P 05 20 04.7 +4.8
PV01 Paradox Valley 81.66 48 eP P 05 20 01.1 +0.9
C33A Trail 81.68 35 P P 05 19 59.5 -0.4
baz=318,SNR=40
KPL Plockton 81.68 342 eP P 05 19 59.9 +0.2
KPL AMB AMB 05 20 07.4
comp=Z,293nm,1.6s
BALB Balikesir 81.74 314 eP P 05 19 59.7 -0.6
NKC Novy Kostel 81.74 329⇑eP P 05 20 00.3 +0.1
NKC eS S 05 30 13.3 +0.9
NKC AMS AMS 05 59 50.0
comp=Z,14µm,13.9s
NKC Novy Kostel 81.74 329⇑eP P 05 20 00.3 +0.1
NKC eS S 05 30 13.3 +0.9
NKC MLR MLR
comp=Z,14µm,13.9s
I28A Midland 81.78 40 P P 05 20 00.9 +0.3
baz=315,SNR=72
ERIK Erikli-Kesan 81.82 315 eP P 05 20 01.1 +0.4
PGB Panagyurishte 81.83 318 i P P 05 20 00.7 -0.1
H29A Onida 81.83 39 P P 05 20 01.0 +0.2
baz=315,SNR=38
113A Mohawk Valley, 81.84 55 eP P 05 20 01.7 +0.7
J27A Elkhorn Farm, 81.87 41 P P 05 20 01.9 +0.8
baz=314,SNR=62
ANTB Antalya 81.90 310 eP P 05 19 57.3 -3.9
SOP Sopron 81.90 326⇑eP P 05 20 01.8 +0.8
SMCO Snowmass 81.90 47 eP P 05 20 02.7 +1.0
comp=Z,348nm,1.6s
F31A Hecla 81.91 37 P P 05 20 01.0 -0.1
baz=316,SNR=19
PKS9 Tamasi 81.92 324⇑eP P 05 20 01.1 0.0
ALN Alexandroupoli 81.93 316 eP P 05 20 02.3 +1.0
ALN Alexandroupoli 81.93 316 P P 05 20 01.1 -0.2
ALN Alexandroupoli 81.93 316 P P 05 20 01.1 -0.2
ALN Alexandroupoli 81.93 316 P P 05 20 01.1 -0.2
E32A Braaten, Kindr 81.94 36 P P 05 20 01.2 -0.1
baz=317
ENEZ Enez 81.98 316 eP P 05 20 02.1 +0.6
G30A Faulkton 82.00 38 P P 05 20 01.8 +0.1
baz=316,SNR=44
KORT Korkueli 82.02 311 i P P 05 20 00.8 -1.2
GELI Tayfur-Gelibol 82.03 315 eP P 05 20 02.1 +0.3
KULA Kula-Manisa 82.03 313 eP P 05 20 02.8 +0.8
CONA Conrad Observa 82.03 326 i pP P 05 20 02.5 +0.7
comp=Z,236nm,1.6s,SNR=38
D33A AnnSam, Waubun 82.05 35 P P 05 20 01.8 -0.4
baz=318,SNR=20
KHC Kasperske Hory 82.11 328⇑eP P 05 20 02.4 +0.2
KHC epP PcP 05 20 07.6 0.0
KHC ePP PP 05 23 04.8 -4.7
KHC eS S 05 30 15.5 -0.9
KHC AMS AMS 06 00 20.0
comp=Z,15µm,14.7s
KHC Kasperske Hory 82.11 328⇑eP P 05 20 02.4 +0.2
KHC e 05 20 07.6
KHC e 05 23 04.8
KHC eS S 05 30 15.5 -0.9
KHC MLR MLR
comp=Z,15µm,14.7s
KHC Kasperske Hory 82.11 328 eP P 05 20 02.3 +0.1
comp=Z,149nm,1.5s
RZN Rozhen 82.12 317 i P P 05 20 03.2 +0.6
B35A Bob, Littlefor 82.14 33 P P 05 20 02.0 -0.3
baz=319,SNR=50
C34A RKJ Ranch, Bem 82.15 34 P P 05 20 01.8 -0.6
baz=319,SNR=37
J28A Allard Ranch, 82.15 40 P P 05 20 03.2 +0.6
baz=315,SNR=49
ESY Stoneypath 82.16 340 eP P 05 20 02.2 0.0
I29A Vivian Onida 82.21 40 P P 05 20 03.0 +0.2
baz=315,SNR=43
URZ Urewera 82.24 152 eP P 05 20 01.8 -0.9
comp=Z,117nm,1.2s
ISCO Idaho Springs 82.27 45 P P 05 20 04.5 +1.0
baz=313,SNR=60
ISCO Idaho Springs 82.27 45 eP P 05 20 04.5 +1.0
ISCO pmax pmax
comp=Z,552nm,1.9s
ISCO Idaho Springs 82.27 45 eP P 05 20 04.5 +1.0
comp=Z,552nm,1.9s
GEC2 GERESS Array S 82.28 328 eP P 05 20 03.0 -0.2
GEC2 pmax pmax
comp=Z,258nm,1.7s
GEC2 GERESS Array S 82.28 328 eP P 05 20 03.0 -0.2
comp=Z,258nm,1.7s
GERES GERESS Array B 82.28 328 P P 05 20 02.9 -0.2
comp=Z,12nm,0.6s,baz=35,slow=5.1,SNR=76
GERES PKKPbc PKKPbc 05 38 29.7 -0.3
comp=Z,1.9nm,0.6s,baz=194,slow=2.8,SNR=7.8
GERES PKPPKP P'P'df 05 46 33.1 -8.4
comp=Z,0.3nm,0.4s,baz=290,slow=4.0,SNR=5.0
GERES LR LR 06 01 56.2
comp=Z,7µm,18.6s,baz=28,slow=40
AKS Akhisar 82.28 313 eP P 05 20 02.6 -0.7
X16A Lo Mia Camp, P 82.29 53 eP P 05 20 04.9 +1.3
MVCO Mesa Verde 82.30 49 P P 05 20 04.5 +0.9
baz=311,SNR=84
MVCO Mesa Verde 82.30 49 eP P 05 20 04.6 +0.9
comp=Z,470nm,1.8s
VTS Vitosha 82.31 319⇓iP P 05 20 03.6 +0.1
VTS Vitosha 82.31 319 P P 05 20 03.5 +0.1
VTS Vitosha 82.31 319 eP P 05 20 03.7 +0.2
VTS Vitosha 82.31 319 i P P 05 20 03.6 +0.1
VTS Vitosha 82.31 319 eP P 05 20 03.6 +0.1
DENT Denizli 82.31 312 eP P 05 20 02.3 -1.1
EAB Aberfoyle 82.38 341 eP P 05 20 03.2 -0.1
G31A Conde 82.39 38 P P 05 20 03.8 +0.1
baz=317
F32A Veblen 82.44 37 P P 05 20 03.8 -0.1
baz=317,SNR=13
D34A Park Rapids 82.44 35 P P 05 20 03.5 -0.5
baz=318,SNR=52
ELL Elmali 82.45 311 eP P 05 20 02.8 -1.5
GADA Gvkgeada 82.49 315 eP P 05 20 03.6 -0.6
EZN Ezine 82.50 315 eP P 05 20 04.4 +0.1
E33A Westby DABS, E 82.50 36 P P 05 20 04.3 0.0
baz=318,SNR=55
C35A Jirik Farms, M 82.53 34 P P 05 20 04.0 -0.4
baz=319,SNR=69
WTSB Winterswijk 82.53 333 eP P 05 20 03.7 -0.5
comp=Z,2µm,3.7s
SUSD Miller 82.59 39 P P 05 20 04.8 +0.1
baz=316,SNR=10
J29A Okreek 82.64 40 P P 05 20 05.2 +0.2
baz=316,SNR=34
BOZC Bozcaada 82.64 315 i P P 05 20 04.5 -0.5
GRFO Grafenberg 82.66 330 eP P 05 20 05.0 0.0
GRFO pmax pmax
comp=Z,600nm,1.4s
GRFO Grafenberg 82.66 330 eP P 05 20 05.0 0.0
comp=Z,600nm,1.4s
DKL Dikili 82.68 314 eP P 05 20 05.2 -0.1
ARSA Arzberg 82.69 326 i P P 05 20 05.4 +0.2
comp=Z,139nm,1.5s,SNR=37
BEHE Becsehely 82.70 325⇑eP P 05 20 05.1 -0.2
KAVA Kavala 82.71 317 P P 05 20 05.3 -0.1
KAVA Kavala 82.71 317 P P 05 20 05.3 -0.1
G32A Webster 82.71 37 P P 05 20 05.6 +0.2
baz=317,SNR=24
MMB Musomiste 82.73 318 i P P 05 20 05.8 +0.3
I30A Oacoma 82.73 39 P P 05 20 05.6 +0.1
baz=316,SNR=43
PGBU Glenifferbraes 82.75 341 eP P 05 20 04.9 -0.4
PGBU AMS AMS 06 00 03.4
comp=Z,5µm,18.2s
MOA Molln 82.80 327 i pP P 05 20 06.0 +0.3
comp=Z,168nm,1.5s,SNR=34
H31A Wolsey 82.80 38 P P 05 20 05.6 -0.2
baz=316,SNR=8.5
BKZ Black Stump Fm 82.81 153 eP P 05 20 05.8 +0.1
comp=Z,96nm,1.1s
BKZ ePP PP 05 23 20.7 +4.3
NVR Nevrokopi 82.82 317 P P 05 20 05.8 -0.2
NVR Nevrokopi 82.82 317 P P 05 20 05.8 -0.2
ESK Eskdalemuir 82.85 340 eP P 05 20 05.4 -0.4
ESK AMB AMB 05 20 12.3
comp=Z,170nm,4.0s
ESK AMS AMS 06 00 11.7
comp=Z,7µm,18.2s
ESK Eskdalemuir 82.85 340 eP P 05 20 06.4 +0.6
ESK pmax pmax
comp=Z,286nm,1.8s
ESK MLR MLR
comp=Z,9µm,19.0s
ESK Eskdalemuir 82.85 340 eP P 05 20 06.4 +0.6
comp=Z,286nm,1.8s
ESK LR LR
comp=Z,9µm,19.0s
AYDB Zeytinkoy-Aydi 82.86 313 eP P 05 20 06.7 +0.3
F33A 5 Mile Ranch, 82.86 36 P P 05 20 06.1 0.0
baz=318,SNR=66
KKB Krupnik 82.88 318 i P P 05 20 06.6 +0.3
E34A Wadena 82.88 35 P P 05 20 05.9 -0.3
baz=318,SNR=22
W18A Petrified Fore 82.91 51 P P 05 20 07.9 +1.1
baz=311
W18A Petrified Fore 82.91 51 eP P 05 20 08.6 +1.8
comp=Z,473nm,2.0s
PRK Paraskevi 82.92 315 P P 05 20 05.9 -0.6
PRK Paraskevi 82.92 315 P P 05 20 05.9 -0.6
PRK Paraskevi 82.92 315 P P 05 20 05.9 -0.6
IZM Izmir 82.92 313 eP P 05 20 06.5 -0.1
S22A 4UR Ranch, Cre 82.94 48 P P 05 20 08.5 +1.4
baz=312,SNR=103
S22A 4UR Ranch, Cre 82.94 48 eP P 05 20 08.3 +1.2
ECK Cauldkaine Hil 82.95 340 eP P 05 20 06.2 -0.1
D35A Remer 82.97 34 P P 05 20 06.0 -0.6
baz=319,SNR=27
AKAS Kas 82.97 310 i P P 05 20 05.1 -1.9
214A Organ Pipe Nat 82.98 55 P P 05 20 07.9 +0.9
baz=310,SNR=52
C36A Pine Crest Far 82.99 33 P P 05 20 06.4 -0.3
baz=320,SNR=56
FETY Fethiye 83.02 311 eP P 05 20 06.3 -0.9
BHH Howats Hill 83.05 340 eP P 05 20 06.7 -0.2
AYDN Tasoluk 83.06 312 i P P 05 20 07.5 +0.2
BLCB Balcova 83.06 313 eP P 05 20 05.8 -1.4
LIA Limnos Island 83.09 316 P P 05 20 06.7 -0.7
LIA Limnos Island 83.09 316 P P 05 20 06.7 -0.7
I31A Royce, Wessing 83.09 39 P P 05 20 07.3 -0.1
baz=316
BWH Wardlaw 83.10 340 eP P 05 20 07.3 +0.2
Q24A Divide 83.10 46 P P 05 20 08.5 +0.6
baz=313,SNR=18
Q24A Divide 83.10 46 eP P 05 20 08.7 +0.8
comp=Z,248nm,1.8s
J30A Dallas 83.12 40 P P 05 20 07.7 +0.2
baz=316,SNR=31
SRS Serrai 83.13 317 P P 05 20 07.2 -0.4
SRS Serrai 83.13 317 P P 05 20 07.2 -0.4
SRS Serrai 83.13 317 P P 05 20 07.2 -0.4
DALY Dalyan (Mu¯la 83.16 311 eP P 05 20 07.1 -0.6
X18A Snowflake 83.16 52 eP P 05 20 09.2 +1.1
YER Yerkesik 83.17 312 eP P 05 20 08.7 +0.8
YER Yerkesik 83.17 312 P P 05 20 08.2 +0.3
YER Yerkesik 83.17 312 P P 05 20 08.2 +0.3
YER Yerkesik 83.17 312 P P 05 20 08.2 +0.3
SIGR SIGRI 83.18 315 eP P 05 20 07.2 -0.6
SIGR SIGRI 83.18 315 P P 05 20 07.2 -0.6
SIGR SIGRI 83.18 315 P P 05 20 07.2 -0.6
E35A Pequot Lakes 83.20 35 P P 05 20 07.3 -0.5
baz=319,SNR=34
G33A Ortonville 83.27 37 P P 05 20 08.2 0.0
baz=318,SNR=43
D36A Goodland 83.29 34 P P 05 20 07.7 -0.6
baz=320,SNR=30
H32A Carlson Farm, 83.29 38 P P 05 20 08.1 -0.3
baz=317,SNR=28
C37A Embarrass 83.30 33 P P 05 20 07.9 -0.4
baz=320,SNR=45
URLA Izmir 83.34 314 i P P 05 20 06.0 -2.7
PERS Pernice 83.34 326 i P P 05 20 08.5 -0.1
PERS eS S 05 30 23.2 -5.8
SOKA Soboth 83.34 326 i P P 05 20 08.6 -0.1
comp=Z,358nm,1.5s,SNR=74
DUWZ D'Urville Isla 83.36 155 P* P 05 20 08.9 +0.5
F34A Alexandria 83.38 36 P P 05 20 08.7 -0.1
baz=318,SNR=25
GCAM G?zelcaml? 83.41 313 i P P 05 20 07.6 -1.4
EYMN Ely 83.42 32 P P 05 20 08.7 -0.3
baz=321,SNR=66
EYMN Ely 83.42 32 eP P 05 20 08.8 -0.1
comp=Z,375nm,1.6s
GMK Mull of Kintyr 83.45 341 eP P 05 20 09.0 +0.1
OUR Ouranopolis 83.46 317 eP P 05 20 08.8 -0.5
OUR Ouranopolis 83.46 317 P P 05 20 08.3 -0.9
OUR Ouranopolis 83.46 317 P P 05 20 08.3 -0.9
OUR Ouranopolis 83.46 317 P P 05 20 08.3 -0.9
SOH Sokhos 83.46 317 P P 05 20 08.6 -0.8
SOH Sokhos 83.46 317 P P 05 20 08.6 -0.8
SOH Sokhos 83.46 317 P P 05 20 08.6 -0.8
KESW Keswick, Cumbr 83.46 340 eP P 05 20 09.0 0.0
KESW AMB AMB 05 20 17.4
comp=Z,285nm,2.6s
OGNE Ogallala 83.47 43 P P 05 20 09.6 +0.1
baz=315,SNR=5.8
OGNE Ogallala 83.47 43 eP P 05 20 11.1 +1.7
comp=Z,1µm,1.9s
OGNE LR LR
comp=Z,3µm,22.0s
KNT Kendrikon 83.47 318 eP P 05 20 09.3 -0.1
KNT Kendrikon 83.47 318 P P 05 20 08.8 -0.5
KNT Kendrikon 83.47 318 P P 05 20 08.8 -0.5
KNT Kendrikon 83.47 318 P P 05 20 08.8 -0.5
H33A Prehn Over Nor 83.50 37 P P 05 20 09.5 +0.1
baz=318,SNR=89
K30A Basset 83.52 40 P P 05 20 10.1 +0.4
baz=316,SNR=31
J31A Geddes 83.53 39 P P 05 20 09.5 -0.1
baz=316
VAY Valandovo 83.53 318 P P 05 20 09.5 -0.1
VAY Valandovo 83.53 318 i P P 05 20 09.8 +0.2
VAY Valandovo 83.53 318 P P 05 20 09.5 -0.1
VAY Valandovo 83.53 318 P P 05 20 09.5 -0.1
DOBS Dobrina 83.55 325 eP P 05 20 09.0 -0.6
NNZ Nelson 83.55 156 P* P 05 20 09.0 -0.4
HPK Haverah Park 83.60 339 eP P 05 20 09.4 -0.3
HPK AMS AMS 06 00 59.0
comp=Z,9µm,19.4s
G34A Benson 83.61 36 P P 05 20 10.1 +0.2
baz=318,SNR=29
I32A Karley and Nic 83.63 38 P P 05 20 09.9 -0.2
baz=317
D37A Cotton 83.63 33 P P 05 20 09.5 -0.5
baz=320
CHOS Chios island 83.63 314 P P 05 20 09.9 -0.4
CHOS Chios island 83.63 314 P P 05 20 09.9 -0.4
F35A Swanville 83.65 35 P P 05 20 10.1 -0.1
baz=319,SNR=24
GAL1 Galloway 83.65 341 eP P 05 20 09.9 0.0
SKO Skopje 83.67 319 P P 05 20 10.9 +0.5
SKO Skopje 83.67 319 i P P 05 20 11.1 +0.7
SKO Skopje 83.67 319 P P 05 20 10.9 +0.5
SKO Skopje 83.67 319 P P 05 20 10.9 +0.5
OBKA Obir 83.69 326 i P P 05 20 10.2 -0.3
comp=Z,60nm,1.2s,SNR=22
C38A Sawbill Land. 83.70 32 P P 05 20 10.0 -0.3
baz=321,SNR=77
BDRM Kayabasi 83.71 312 i P P 05 20 10.5 -0.1
SDCO Great Sand Dun 83.72 47 P P 05 20 12.0 +0.9
baz=313,SNR=90
SDCO Great Sand Dun 83.72 47 eP P 05 20 11.9 +0.9
comp=Z,312nm,1.8s
SDCO LR LR
comp=Z,1µm,19.0s
E36A McGregor 83.75 34 P P 05 20 10.5 -0.2
baz=320,SNR=53
PLE Pljevlja 83.75 321⇑iP P 05 20 10.5 -0.4
HORT Hortiatis 83.76 317 eP P 05 20 09.9 -1.1
HORT Hortiatis 83.76 317 P P 05 20 10.0 -0.9
HORT Hortiatis 83.76 317 P P 05 20 10.0 -0.9
EIL Elat 83.77 303 eP P 05 20 11.0 0.0
KBA Koelnbreinsper 83.79 327 i P P 05 20 10.8 -0.3
comp=Z,104nm,1.0s,SNR=36
BODT Bodrum 83.80 312 eP P 05 20 10.6 -0.4
BODT Bodrum 83.80 312 P P 05 20 10.7 -0.4
BODT Bodrum 83.80 312 P P 05 20 10.7 -0.4
IVA Berane 83.83 321⇑iP P 05 20 11.5 +0.3
HGN Heimansgroeve 83.83 333 eP P 05 20 10.3 -0.7
comp=Z,611nm,2.0s
HGN Heimansgroeve 83.83 333 eS S 05 30 46.5 +13
HGN eSS SS 05 36 31.5 +32
GRG Griva 83.88 318 eP P 05 20 11.0 -0.6
GRG Griva 83.88 318 P P 05 20 10.9 -0.6
GRG Griva 83.88 318 P P 05 20 10.9 -0.6
GRG Griva 83.88 318 P P 05 20 10.9 -0.6
THZ Tophouse 83.89 156 eP P 05 20 10.9 -0.2
comp=Z,548nm,1.6s
THZ ePP PP 05 23 29.1 +3.9
BEBN Eben Emael 83.89 333 P P 05 20 10.9 -0.4
BEBN AP pP 05 20 16.4 +0.4
PAIG Paliouri 83.91 316 P P 05 20 10.9 -0.7
PAIG Paliouri 83.91 316 P P 05 20 10.9 -0.7
PAIG Paliouri 83.91 316 P P 05 20 10.9 -0.7
J32A Parkston 83.92 39 P P 05 20 11.4 -0.2
baz=317,SNR=14
MEM Membach 83.93 333 P P 05 20 11.1 -0.3
MEM AP pP 05 20 16.5 +0.2
I33A Coleman 83.94 38 P P 05 20 11.6 -0.1
baz=318,SNR=23
H34A Spellman Lake, 83.97 37 P P 05 20 11.9 0.0
baz=318,SNR=18
PVY Plav 83.99 320⇑iP P 05 20 12.0 -0.1
K31A O'Neill 84.00 40 P P 05 20 12.2 +0.1
baz=316,SNR=36
MYKA Terra Mystica 84.00 326 i P P 05 20 11.3 -0.8
comp=Z,190nm,1.8s,SNR=33
LHO Holmfirth 84.02 339 eP P 05 20 11.9 -0.1
BFZ Birch Farm 84.05 154 P* P 05 20 11.9 -0.1
BFZ Birch Farm 84.05 154 eP P 05 20 12.1 +0.1
comp=Z,326nm,1.7s
LJU Ljubljana 84.06 326 i P P 05 20 11.5 -0.7
LJU i PP PP 05 23 27.8 +2.4
LJU eS S 05 30 33.1 -3.0
TUC Tucson 84.07 54 P P 05 20 13.4 +0.7
baz=311
TUC Tucson 84.07 54 eP P 05 20 13.6 +0.9
TUC pmax pmax
comp=Z,517nm,1.9s
TUC MLR MLR
comp=Z,2µm,21.0s
TUC Tucson 84.07 54 eP P 05 20 13.6 +0.9
comp=Z,517nm,1.9s
TUC LR LR
comp=Z,2µm,21.0s
SNZO South Karori 84.07 155 eP P 05 20 11.7 -0.3
comp=Z,371nm,1.6s
SNZO LR LR
comp=Z,4µm,20.0s
UPM Unac-Piva 84.08 321⇑iP P 05 20 12.2 -0.5
E37A Wrenshall 84.09 34 P P 05 20 12.0 -0.5
baz=320
C39A Grand Marais 84.10 32 P P 05 20 11.8 -0.6
baz=322,SNR=19
F36A Milaca 84.13 35 P P 05 20 11.9 -0.7
baz=320,SNR=7.4
BOJS Bojanci 84.13 325 i P P 05 20 12.3 -0.4
BOJS eS S 05 30 33.1 -3.8
G35A Watkins 84.17 36 P P 05 20 13.0 +0.1
baz=319
STU Stuttgart 84.20 330 eP P 05 20 13.0 +0.1
STU pmax pmax
comp=Z,331nm,1.2s
STU Stuttgart 84.20 330 eP P 05 20 13.0 +0.1
comp=Z,330nm,1.2s
ECSD EROS Data Cent 84.26 38 P P 05 20 13.2 -0.1
baz=318,SNR=74
ECSD EROS Data Cent 84.26 38 eP P 05 20 13.3 -0.1
comp=Z,180nm,1.1s
ECSD LR LR
comp=Z,3µm,21.0s
L31A Butterfield Fa 84.28 40 P P 05 20 13.6 +0.1
baz=316,SNR=77
WIM Isle of Man 84.28 340 eP P 05 20 13.7 +0.5
AOS Alonnisos 84.32 316 P P 05 20 16.0 +2.3
AOS Alonnisos 84.32 316 P P 05 20 16.0 +2.3
NKY Niksic 84.33 321⇑iP P 05 20 13.3 -0.5
BCLA Clavier 84.34 333 P P 05 20 13.1 -0.5
comp=Z,97nm,1.9s
BCLA AP pP 05 20 18.6 +0.2
K32A Verdigre 84.37 39 P P 05 20 13.4 -0.5
baz=317
JAVS Javornik 84.38 326 i P P 05 20 12.8 -1.2
JAVS eS S 05 30 33.4 -6.1
NKME Niksic 84.38 321 eP P 05 20 13.1 -0.9
WTTA Wattenberg 84.38 328 i P P 05 20 13.9 -0.2
comp=Z,94nm,1.6s,SNR=24
J33A Davis 84.39 38 P P 05 20 13.8 -0.2
baz=318,SNR=16
H35A Sunnyside Ranc 84.40 36 P P 05 20 14.4 +0.3
baz=319,SNR=124
I34A Hadley 84.40 37 P P 05 20 14.0 0.0
baz=318,SNR=31
ABTA Abfaltersbach 84.41 327 i P P 05 20 13.0 -1.2
comp=Z,91nm,1.4s,SNR=27
BIA Bitola 84.41 318 i P P 05 20 13.7 -0.6
LIT Litokhoron 84.44 317 P P 05 20 13.2 -1.1
LIT Litokhoron 84.44 317 P P 05 20 13.2 -1.1
LIT Litokhoron 84.44 317 P P 05 20 13.2 -1.1
PDG Podgorica 84.47 321 P P 05 20 14.0 -0.4
TTG Podgorica 84.47 321⇑iP P 05 20 14.1 -0.4
TTG Podgorica 84.47 321 P P 05 20 14.0 -0.4
TTG Podgorica 84.47 321 P P 05 20 14.0 -0.4
BRY Bratogost 84.49 321⇑iP P 05 20 13.8 -0.9
KSCO Kaye Shedlock' 84.49 44 P P 05 20 15.1 +0.3
baz=314,SNR=33
KSCO Kaye Shedlock' 84.49 44 eP P 05 20 15.1 +0.3
G36A St. Michael 84.50 35 P P 05 20 14.4 -0.1
baz=320,SNR=5.5
GMM Mts of Mourne 84.54 341 eP P 05 20 14.2 -0.3
MOTA Moosalm 84.55 328 i PcP P 05 20 15.5 +0.6
comp=Z,109nm,1.3s,SNR=17
FNA Florina 84.55 318 eP P 05 20 13.7 -1.2
FNA Florina 84.55 318 P P 05 20 13.2 -1.7
FNA Florina 84.55 318 P P 05 20 13.2 -1.7
FNA Florina 84.55 318 P P 05 20 13.2 -1.7
CEME Cevo 84.56 321⇑iP P 05 20 14.5 -0.4
FOZ Fox Glacier 84.56 159 eP P 05 20 15.0 +0.6
comp=Z,297nm,1.7s
FOZ ePP PP 05 23 41.6 +11
CWF Charnwood Fore 84.56 338 eP P 05 20 14.2 -0.5
CWF AMS AMS 05 58 55.1
comp=Z,9µm,21.8s
CWF Charnwood Fore 84.56 338 eP P 05 20 14.9 +0.3
comp=Z,400nm,1.7s
XOR Xorichti 84.57 316 P P 05 20 13.6 -1.4
XOR Xorichti 84.57 316 P P 05 20 13.6 -1.4
RETA Reutte 84.58 328 i P P 05 20 15.0 0.0
comp=Z,278nm,1.6s,SNR=45
LANF Langenberg 84.58 331⇑eP P 05 20 14.8 -0.1
LTZ Lake Taylor 84.61 157 eP P 05 20 16.2 +1.5
comp=Z,264nm,1.9s
LTZ ePP PP 05 23 35.0 +4.0
OHR Ohrid 84.62 319 i P P 05 20 15.1 -0.2
SNF Seneffe 84.63 334 P P 05 20 15.2 +0.2
SNF AP pP 05 20 19.7 -0.1
WLF Walferdange 84.65 332 P P 05 20 15.5 +0.3
comp=Z,229nm,2.2s
WLF AP sP 05 20 20.5 -1.2
WLF Walferdange 84.65 332 eP P 05 20 15.8 +0.6
WLF pmax pmax
comp=Z,639nm,1.8s
WLF MLR MLR
comp=Z,11µm,21.0s
WLF Walferdange 84.65 332 eP P 05 20 15.8 +0.6
comp=Z,639nm,1.8s
WLF LR LR
comp=Z,11µm,21.0s
TRI Trieste 84.66 326 eP P 05 20 13.9 -1.4
TRI pmax pmax
comp=Z,167nm,1.3s
TRI Trieste 84.66 326 eP P 05 20 13.9 -1.4
comp=Z,167nm,1.3s
KHZ Kahutara 84.68 156 eP P 05 20 14.5 -0.5
comp=Z,136nm,1.2s
FYTO Fytoko, Volos 84.68 316 P P 05 20 14.5 -1.0
FYTO Fytoko, Volos 84.68 316 P P 05 20 14.5 -1.0
KZN Kozani 84.68 318 P P 05 20 14.3 -1.3
KZN Kozani 84.68 318 P P 05 20 14.3 -1.3
KZN Kozani 84.68 318 P P 05 20 14.3 -1.3
DRME Dracevica, Mon 84.68 320⇑iP P 05 20 15.0 -0.5

BUM Brajici-Budva 84.75 321⇑ *i*P P 05 20 14.6 -1.3
T25A Trinidad 84.77 47 P P 05 20 17.1 +0.8
baz=314,SNR=33
T25A Trinidad 84.77 47 *e*P P 05 20 17.2 +0.9
comp=Z,216nm,1.1s
JCZ Jackson Bay 84.77 160 P* P 05 20 16.2 +0.6
M31A Lambtecht Ranc 84.81 41 P P 05 20 16.0 -0.2
baz=316,SNR=22
ULC Ulcinj 84.82 320⇑ *i*P P 05 20 15.8 -0.4
EREA Eretria 84.82 315 P P 05 20 15.3 -1.0
L32A Elgin 84.83 40 P P 05 20 16.2 -0.1
baz=317,SNR=29
PMOR Pomariorio Ree 84.83 113 *e*P P 05 20 17.3 +0.8
comp=Z,369nm,1.4s
PMOR Pomariorio Ree 84.83 113 *e*T T 06 53 17.9
comp=Z,110nm,0.2s
HCY Herceg Novi 84.84 321⇑ *i*P P 05 20 15.5 -0.8
DOU Dourbes 84.86 333 P P 05 20 15.8 -0.4
comp=Z,85nm,2.0s
DOU AP pP 05 20 21.1 +0.1
WPM1 Penmaenmawr 84.86 339 *e*P P 05 20 16.1 -0.1
BFO Black Forest 84.90 330 *e*P P 05 20 15.9 -0.6
BFO pmax pmax
comp=Z,262nm,1.1s
BFO MLR MLR
comp=Z,5μm,20.0s
BFO Black Forest 84.90 330 *e*P P 05 20 15.9 -0.6
comp=Z,262nm,1.1s
BFO LR LR
comp=Z,5μm,20.0s
K33A Hardington 84.90 39 P P 05 20 16.5 -0.1
baz=316,SNR=15
KARP Karpathos 84.91 311 *e*P P 05 20 17.1 +0.4
KARP Karpathos 84.91 311 P P 05 20 15.8 -1.0
KARP Karpathos 84.91 311 *e*P P 05 20 16.5 -0.2
comp=Z,176nm,1.1s
STR Strasbourg 84.91 331⇑ *e*P P 05 20 16.8 +0.3
H36A Jessenland, He 84.91 36 P P 05 20 17.2 +0.6
baz=319,SNR=14
J34A George 84.91 38 P P 05 20 16.6 0.0
baz=318,SNR=7.5
STON Ston 84.93 322 P P 05 20 15.2 -1.5
SPMN Marine on St. 84.94 35 P P 05 20 16.5 -0.2
baz=320,SNR=25
SPMN Marine on St. 84.94 35 *e*P P 05 20 16.6 -0.2
TIR Tirane 84.94 319 *e*P P 05 20 16.8 0.0
TIR pmax pmax
comp=Z,382nm,1.4s
TIR MLR MLR
comp=Z,25μm,19.0s
TIR Tirane 84.94 319 *e*P P 05 20 16.8 0.0
comp=Z,382nm,1.4s
TIR LR LR
comp=Z,25μm,19.0s
FETA Feichten 84.96 328 *i* P P 05 20 16.7 -0.3
comp=Z,81nm,1.2s,SNR=28
I35A Creekview Farm 84.96 37 P P 05 20 16.6 -0.3
baz=319,SNR=30
WLF1 Llynfaes 84.97 340 *e*P P 05 20 15.8 -0.9
WLF1 AMS AMS 06 01 33.4
comp=Z,7μm,19.4s
FOEL Foel Wylfa 84.99 339 *e*P P 05 20 16.9 0.0
FOEL AMB AMB 05 20 22.9
comp=Z,281nm,1.6s
FOEL AMS AMS 06 02 38.4
comp=Z,7μm,16.9s
LAZ Ladron 84.99 50 *e*P P 05 20 18.6 +1.1
NEST Nestorio 84.99 318 P P 05 20 16.5 -0.7
NVLJ Novalja 85.02 324 P P 05 20 15.8 -1.3
OXZ Oxford 85.03 158 *e*P P 05 20 16.9 0.0
comp=Z,181nm,1.2s
ANMO Albuquerque 85.04 49 P P 05 20 18.6 +0.9
baz=313
ANMO Albuquerque 85.04 49 *e*P P 05 20 18.7 +1.0
ANMO pmax pmax
comp=Z,313nm,1.6s
ANMO MLR MLR
comp=Z,2μm,20.0s
ANMO Albuquerque 85.04 49 *e*P P 05 20 18.7 +1.0
comp=Z,313nm,1.6s
ANMO LR LR
comp=Z,2μm,20.0s
THL Klokotos Trika 85.08 317 P P 05 20 15.7 -1.8
L33A Hoskins 85.09 39 P P 05 20 17.3 -0.3
baz=317,SNR=13
RPZ Rata Peaks 85.09 158 *e*P P 05 20 17.4 +0.3
comp=Z,63nm,1.0s
DAVA Damuels 85.10 329 *i* P P 05 20 17.5 -0.2
comp=Z,186nm,1.0s,SNR=50
LKR Lokris 85.18 316 P P 05 20 16.4 -1.6
LKR Lokris 85.18 316 P P 05 20 16.4 -1.6
VAH Vaihoa 85.18 113 *e*P P 05 20 18.8 +0.6
comp=Z,155nm,1.2s
BGNE Belgrade 85.19 40 P P 05 20 17.9 -0.2
baz=317,SNR=29
BGNE Belgrade 85.19 40 *e*P P 05 20 18.0 -0.1
comp=Z,610nm,1.5s
N31A Bailey Ranch, 85.20 41 P P 05 20 17.8 -0.4
baz=316
WLS Welschbruch 85.21 331 *e*P P 05 20 17.5 -0.6
J35A Milford 85.22 37 P P 05 20 18.0 -0.2
baz=319,SNR=10
YRE Yr Eifl 85.25 340 *e*P P 05 20 18.1 0.0
PPT Papeete 85.27 116 P P 05 20 19.3 +0.6
comp=Z,24nm,0.8s,baz=221,slow=20,SNR=2.5
PPT LR LR 05 50 56.8
comp=Z,3μm,20.9s,baz=300,slow=30
PPT2 Papeete2 85.29 116 *e*P P 05 20 19.6 +0.8
comp=Z,127nm,1.2s
PPT2 Papeete2 85.29 116 *e*S S 05 30 43.6 -5.5
comp=Z,8μm,37.2s
PPT2 *e*SS SS 05 36 20.2 -3.9
comp=Z,1μm,24.2s
PPT2 *e*LQ LQ 05 42 55.1
comp=Z,4μm,29.2s
PPT2 *e*LR LR 05 47 02.4
comp=Z,8μm,24.0s,baz=314
PPT2 Papeete2 85.29 116 *e*T T 06 53 51.8
comp=Z,23nm,0.3s
K34A Le Mars 85.29 38 P P 05 20 18.3 -0.3
baz=318,SNR=37
SKP1 Kophill 85.30 337 *e*P P 05 20 17.3 -1.0
I36A Fitzsimmons Fa 85.30 36 P P 05 20 18.6 +0.1
baz=319,SNR=27
MENF Mencas 85.33 335⇑ *e*P P 05 20 18.2 -0.3
PAE Paea 85.33 116 *e*P P 05 20 19.5 +0.6
comp=Z,30nm,1.1s
PAE Paea 85.33 116 *e*T T 06 53 54.4
comp=Z,4.7nm,0.3s
Y22D IRIS PASSCAL I 85.34 50 P P 05 20 20.2 +1.1
baz=312
VILL Villia 85.34 315 P P 05 20 16.0 -2.9
SANT Santorini 85.35 313 *e*P P 05 20 17.4 -1.6
comp=Z,624nm,1.6s
SANT LR LR
comp=Z,3μm,21.0s
LPM Los Pinos Moun 85.36 50 *e*P P 05 20 20.2 +0.9
H37A Dierke Farm, C 85.38 35 P P 05 20 19.0 +0.1
baz=320,SNR=22
SSW Stow on the Wo 85.40 338 *e*P P 05 20 18.8 -0.1
TIAR Tiarei 85.43 116 *e*P P 05 20 20.0 +0.5
comp=Z,59nm,1.2s
TIAR Tiarei 85.43 116 *e*T T 06 54 01.9
comp=Z,15nm,0.3s
SCHQ Schefferville 85.43 15 P P 05 20 19.3 +0.3
comp=Z,18nm,0.7s,baz=359,slow=5.0,SNR=27
SCHQ PKKPbc PKKPbc 05 38 21.3 -1.5
comp=Z,8.7nm,0.8s,baz=188,slow=1.1,SNR=4.3
SCHQ LR LR 06 02 53.8
comp=Z,3μm,18.0s,baz=350,slow=39
LBZ Lake Benmore 85.45 159 P* P 05 20 19.5 +0.5
LBZ Lake Benmore 85.45 159 *e*P P 05 20 19.7 +0.7
comp=Z,172nm,1.1s
ECH Echery 85.45 331⇑ *e*P P 05 20 18.9 -0.4
FUORN Ofenpass-Fuorn 85.47 328 *e*P P 05 20 19.7 0.0
comp=Z,259nm,1.2s
BNM Barren Site 85.47 50 *e*P P 05 20 20.8 +0.9
O31A Woolen Ranch, 85.48 42 P P 05 20 19.0 -0.6
baz=316,SNR=21
DSB Dublin 85.55 341 *e*P P 05 20 19.5 -0.1
comp=Z,468nm,1.9s
M33A Taylor Creek F 85.56 40 P P 05 20 19.7 -0.3
baz=318,SNR=14
MQZ McQueen's Vall 85.56 157 *e*P P 05 20 20.6 +1.2
comp=Z,320nm,1.6s
N32A Stulken Farm, 85.58 41 P P 05 20 19.6 -0.5
baz=317

I37A Lemond, Waseca 85.59 36 P P 05 20 20.5 +0.5
baz=320,SNR=64
DSF Desfina 85.61 316 P P 05 20 17.9 -2.4
DSF Desfina 85.61 316 P P 05 20 17.9 -2.4
TVO Taravao 85.65 116 *e*P P 05 20 21.6 +1.0
comp=Z,46nm,1.1s
STRD Stroud 85.66 338 *e*P P 05 20 19.6 -0.6
STRD AMS AMS 05 58 36.6
comp=Z,8μm,27.3s
J36A Seneca 1, Swea 85.66 37 P P 05 20 20.2 -0.1
baz=319,SNR=44
HMNX Herstmonceux 85.67 336 *e*P P 05 20 20.0 -0.2
HMNX AMS AMS 06 03 58.9
comp=Z,9μm,16.7s
L34A Svendsen Farm, 85.68 39 P P 05 20 20.3 -0.2
baz=318,SNR=37
K35A Storm Lake 85.69 38 P P 05 20 20.1 -0.4
baz=319,SNR=31
MCH1 Michaelchurch 85.72 338 *e*P P 05 20 20.4 -0.1
MCH1 AMB AMB 05 20 26.9
comp=Z,364nm,2.3s
MCH1 AMS AMS 05 57 00.6
comp=Z,7μm,27.1s
MOF Molkenrain 85.76 331⇑ *e*P P 05 20 20.4 -0.5
WOL Wolverton 85.78 337 *e*P P 05 20 20.5 -0.3
WOL AMS AMS 06 02 38.4
comp=Z,6μm,20.2s
SWN1 Swindon 85.78 338 *e*P P 05 20 20.6 -0.2
SWN1 AMS AMS 05 59 07.7
comp=Z,7μm,23.7s
MLZ Mavora Lakes 85.79 161 *e*P P 05 20 21.8 +1.2
comp=Z,45nm,1.0s
MONM Monmouth 85.80 338 *e*P P 05 20 20.5 -0.4
MONM AMB AMB 05 20 27.3
comp=Z,302nm,2.4s
MONM AMS AMS 05 57 30.1
comp=Z,7μm,28.9s
121A Cookes Peak, D 85.83 52 P P 05 20 22.7 +1.1
baz=312,SNR=56
KALE Kalithea 85.84 316 P P 05 20 19.4 -2.0
KALE Kalithea 85.84 316 P P 05 20 19.4 -2.0
SERG Sergoula 85.87 316 P P 05 20 19.6 -1.9
COWI Conover 85.87 32 *e*P P 05 20 21.3 -0.1
comp=Z,66nm,1.1s
COWI LR LR
comp=Z,3μm,20.0s
OLDB Oldbury-Upon-S 85.88 338 *e*P P 05 20 20.6 -0.6
OLDB AMS AMS 05 58 54.1
comp=Z,8μm,25.2s
DSL Palaion Diasel 85.88 317 P P 05 20 19.4 -2.2
DSL Palaion Diasel 85.88 317 P P 05 20 19.4 -2.2
THEF They Montfort 85.89 331⇑ *e*P P 05 20 20.8 -0.6
M34A Aspy Farms, Fr 85.92 39 P P 05 20 21.4 -0.3
baz=318,SNR=28
LPW Lampeter 85.92 339 *e*P P 05 20 21.5 0.0
LPW AMS AMS 06 03 06.6
comp=Z,7μm,17.0s
O32A Brockman Farm, 85.96 41 P P 05 20 21.1 -0.9
baz=317
TUE Stuetta 85.97 329 *e*P P 05 20 21.6 -0.5
comp=Z,236nm,1.5s
TUE LR LR
comp=Z,10μm,20.0s
L35A Bielow Farm, R 85.99 38 P P 05 20 21.7 -0.3
baz=318,SNR=7.8
SGD Sagiada 86.00 318 P P 05 20 20.1 -2.0
IGT Igoumenitsa 86.01 318 *e*P P 05 20 20.9 -1.2
LAKA Lakka 86.03 316 P P 05 20 20.3 -2.1
LAKA Lakka 86.03 316 P P 05 20 20.3 -2.1
N33A J Bar K, Exete 86.04 40 P P 05 20 21.5 -0.8
baz=317
GUR Goura 86.05 316 P P 05 20 21.0 -1.5
GUR Goura 86.05 316 P P 05 20 21.0 -1.5
J37A Redenius Farm, 86.05 36 P P 05 20 22.2 -0.1
baz=320,SNR=35
I38A Scanlan Farm, 86.06 35 P P 05 20 22.2 -0.2
baz=320,SNR=26
KLV Kalavryta, Ach 86.08 316 P P 05 20 20.9 -1.7
KLV Kalavryta, Ach 86.08 316 P P 05 20 20.9 -1.7
HSIG 86.09 56 *e*P P 05 20 23.8 +1.0
comp=Z,209nm,1.6s
K36A Gilmore City 86.13 37 P P 05 20 22.7 0.0
baz=319,SNR=39
DAMY Dhamar 86.16 285 *e*P P 05 20 24.2 +0.6
LAST Lasithi 86.17 312 P P 05 20 20.3 -2.9
LAST Lasithi 86.17 312 *e*P P 05 20 22.4 -0.8
comp=Z,367nm,0.9s
ODZ Otahua Downs 86.18 159 P* P 05 20 23.0 +0.5
ODZ Otahua Downs 86.18 159 *e*P P 05 20 23.9 +1.4
comp=Z,260nm,1.7s
PDO Prodromos 86.22 317 P P 05 20 19.6 -3.6
CBKS Cedar Bluff 86.22 43 P P 05 20 22.7 -0.6
baz=316,SNR=27
CBKS Cedar Bluff 86.22 43 *e*P P 05 20 23.3 0.0
CBKS pmax pmax
comp=Z,537nm,1.9s
CBKS MLR MLR
comp=Z,2μm,20.0s
CBKS Cedar Bluff 86.22 43 *e*P P 05 20 23.3 0.0
comp=Z,537nm,1.9s
CBKS LR LR
comp=Z,2μm,20.0s
P32A Huiting Farm, 86.25 42 P P 05 20 22.9 -0.5
baz=317,SNR=40
LOMF Lomont 86.28 331⇑ *e*P P 05 20 23.0 -0.5
M35A Neola 86.40 39 P P 05 20 24.3 +0.3
baz=318,SNR=18
K37A Belmond 86.42 37 P P 05 20 24.1 -0.1
baz=320,SNR=60
L36A Harm Buss Farm 86.43 38 P P 05 20 24.2 0.0
baz=319
IDI Anoyia 86.44 312 P P 05 20 23.6 -0.8
IDI Anoyia 86.44 312 *e*P P 05 20 23.3 -1.1
comp=Z,122nm,0.7s
N34A Lincoln 86.46 40 P P 05 20 23.7 -0.7
baz=318,SNR=22
O33A Hebron 86.46 41 P P 05 20 23.5 -0.9
baz=317,SNR=21
J38A Wedel Dairy, R 86.55 36 P P 05 20 24.5 -0.3
baz=320,SNR=38
MEH Mehetia 86.56 115 *e*P P 05 20 25.8 +0.7
comp=Z,42nm,1.2s
MEH Mehetia 86.56 115 *e*T T 06 55 26.4
comp=Z,241nm,0.3s
Q32A Meitler Ranch, 86.73 42 P P 05 20 25.2 -0.5
baz=317,SNR=33
ITM Ithomi 86.82 315 P P 05 20 24.1 -2.1
ITM Ithomi 86.82 315 P P 05 20 24.1 -2.1
O34A Beatrice 86.84 40 P P 05 20 25.5 -0.7
baz=318,SNR=14
TAOE Nuku Hiva Isla 86.84 103 *e*LR LR 05 47 34.1
comp=Z,6μm,22.7s,baz=316
TAOE Nuku Hiva Isla 86.84 103 *e*T T 06 55 52.6
comp=Z,46nm,0.2s
IMMV Moni Meta 86.85 313 P P 05 20 25.9 -0.5
M36A Felix, Anita 86.85 38 P P 05 20 26.5 +0.2
baz=319,SNR=16
L37A Phoenix Point, 86.86 37 P P 05 20 26.3 0.0
baz=320,SNR=24
P33A Williams Farm, 86.87 41 P P 05 20 25.9 -0.5
baz=317,SNR=24
N35A Tabor 86.87 39 P P 05 20 26.7 +0.3
baz=318,SNR=27
SENIN Lac Senin/Sane 86.90 330 *e*P P 05 20 26.0 -0.7
K38A Parkersburg 86.93 36 P P 05 20 26.6 -0.1
baz=320,SNR=16
HTL Hartland 87.04 339 *e*P P 05 20 27.1 +0.2
HTL AMB AMB 05 20 33.5
comp=Z,143nm,3.6s
HTL AMS AMS 06 03 59.9
comp=Z,3μm,18.4s
R32A Long Quarter, 87.06 43 P P 05 20 26.8 -0.6
baz=317,SNR=15
Q33A Connelly Farm, 87.11 42 P P 05 20 27.2 -0.4
baz=317,SNR=40
PYL PYLOS 87.12 315 P P 05 20 25.5 -2.2
PYL PYLOS 87.12 315 P P 05 20 25.5 -2.2
OG01 Vacheresse 87.17 330⇑ *e*P P 05 20 27.3 -0.6
O35A Humboldt 87.18 40 P P 05 20 27.5 -0.4
baz=318,SNR=22
L38A Oak Wood Farm, 87.23 37 P P 05 20 28.2 +0.1
baz=320,SNR=21
P34A Walnut Farm, R 87.24 41 P P 05 20 27.6 -0.6
baz=318,SNR=31
N36A Muff Farm, Cla 87.25 39 P P 05 20 28.7 +0.5
baz=319,SNR=14

M37A Trindle Farm, 87.26 38 P P 05 20 28.8 +0.5
baz=320,SNR=19
SCIA State Center 87.28 37 *e*P P 05 20 29.5 +1.1
comp=Z,439nm,1.4s
VLC Villacollemand 87.37 327 *e*P P 05 20 33.7 +4.9
comp=Z,76nm,1.5s
VLC LR LR
comp=Z,4μm,20.0s
DYA Yadsworthy 87.37 338 *e*P P 05 20 28.1 -0.5
DYA AMB AMB 05 20 34.8
comp=Z,242nm,2.0s
DYA AMS AMS 06 04 02.1
comp=Z,7μm,18.1s
DYA Yadsworthy 87.37 338 *e*P P 05 20 28.8 +0.1
comp=Z,444nm,1.6s
S32A Newby Ranch, P 87.46 43 P P 05 20 29.3 0.0
baz=317,SNR=16
R33A Olander Ranch, 87.54 42 P P 05 20 29.3 -0.4
baz=317,SNR=13
Q34A Chapman 87.64 41 P P 05 20 30.0 -0.1
baz=318,SNR=32
M38A Pleasantville 87.67 37 P P 05 20 30.5 +0.3
baz=320,SNR=33
N37A Lee Faris, Mou 87.67 38 P P 05 20 30.5 +0.3
baz=319,SNR=45
P35A Duane Minner, 87.67 40 P P 05 20 29.8 -0.5
baz=318,SNR=17
KSU1 Kansas State U 87.68 41 P P 05 20 30.1 -0.2
baz=318,SNR=19
KSU1 Kansas State U 87.68 41 *e*P P 05 20 30.2 -0.2
comp=Z,147nm,1.0s
KSU1 LR LR
comp=Z,3μm,20.0s
RSL Roselend 87.72 330⇑ *e*P P 05 20 29.7 -0.9
O36A Bolckow 87.76 39 P P 05 20 30.8 +0.1
baz=319,SNR=24
T32A Huddler Ranch, 87.85 44 P P 05 20 31.4 +0.2
baz=317,SNR=19
JFWS Jewell Farm 87.89 35 *e*P P 05 20 31.1 -0.2
JFWS pmax pmax
comp=Z,411nm,1.9s
JFWS MLR MLR
comp=Z,3μm,19.0s
JFWS Jewell Farm 87.89 35 *e*P P 05 20 31.1 -0.2
comp=Z,411nm,1.9s
JFWS LR LR
comp=Z,3μm,19.0s
MNTX Cornudas Mount 87.90 51 P P 05 20 31.7 +0.2
baz=313,SNR=73
MNTX Cornudas Mount 87.90 51 *e*P P 05 20 31.9 +0.4
comp=Z,149nm,1.5s
MNTX LR LR
comp=Z,2μm,20.0s
MSTX Muleshoe 87.92 48 P P 05 20 31.7 0.0
baz=315,SNR=9.8
MSTX Muleshoe 87.92 48 *e*P P 05 20 31.9 +0.1
AMTX Amarillo 87.92 47 P P 05 20 32.3 +0.6
baz=315
AMTX Amarillo 87.92 47 *e*P P 05 20 32.4 +0.7
comp=Z,193nm,1.4s
JSA Saint Aubin 87.93 337 *e*P P 05 20 30.6 -0.7
R34A Isabella, Hill 87.94 42 P P 05 20 31.5 -0.1
baz=318,SNR=19
CUC Castrocucco 88.02 321 *e*P P 05 20 30.7 -1.3
comp=Z,31nm,1.0s
CUC LR LR
comp=Z,8μm,19.0s
P36A Good Intent, A 88.02 40 P P 05 20 31.9 -0.1
baz=319,SNR=30
S33A Kaszmaul Farm, 88.05 43 P P 05 20 32.3 +0.2
baz=317,SNR=24
N38A Joes South For 88.12 38 P P 05 20 32.6 +0.2
baz=320,SNR=28
TIP Timpagrande 88.15 320 P P 05 20 32.1 -0.5
TIP Timpagrande 88.15 320 *e*P P 05 20 31.6 -1.0
comp=Z,117nm,1.2s
TIP LR LR
comp=Z,10μm,20.0s
O37A Wolven Farm, M 88.15 39 P P 05 20 32.9 +0.3
baz=320,SNR=25
Q35A Mercer Eighty, 88.16 41 P P 05 20 32.6 0.0
baz=318,SNR=35
BNI Bardonecchia 88.22 329 PFAKE 05 20 40.0 +7.0
BNI LR LR
comp=Z,6μm,20.0s
T33A Patterson Ranc 88.29 43 P P 05 20 33.5 +0.2
baz=317,SNR=19
GDM Grand'Maison 88.33 330⇑ *e*P P 05 20 33.1 -0.4
U32A Winter Ranch, 88.38 44 P P 05 20 34.1 +0.3
baz=317,SNR=14
Q36A Arnold C. Orve 88.39 40 P P 05 20 33.3 -0.4
baz=319
N39A Derby Farms, D 88.42 37 P P 05 20 34.0 +0.2
baz=320,SNR=24
GRN Grenoble 88.44 330⇑ *e*P P 05 20 33.7 -0.2
S34A Willow Spring 88.45 42 P P 05 20 34.0 0.0
baz=318,SNR=18
R35A Emporia Munici 88.48 41 P P 05 20 34.6 +0.5
baz=318,SNR=22
P37A Lathrop 88.48 39 P P 05 20 34.1 -0.1
baz=319,SNR=24
O38A Galt 88.52 38 P P 05 20 34.4 +0.1
baz=320
VLDQ Val d'Or 88.62 24 *e*P P 05 20 33.9 -0.7
PLDF La Plantade 88.67 332 *e*P P 05 20 34.7 -0.3
AGO Saint Agoulin 88.78 332 *e*P P 05 20 35.6 +0.1
U33A Lingo Farm, Me 88.83 44 P P 05 20 36.0 +0.1
baz=317,SNR=18
V32A Arapaho 88.83 45 P P 05 20 36.7 +0.8
baz=317,SNR=31
R36A Gordon, Harris 88.84 41 P P 05 20 35.8 0.0
baz=319,SNR=33
P38A Dawn 88.87 39 P P 05 20 36.1 +0.1
baz=320,SNR=32
O39A Kirkeville 88.87 38 P P 05 20 36.1 +0.1
baz=320,SNR=24
S35A Otter Creek Ra 88.89 42 P P 05 20 36.3 +0.2
baz=318,SNR=26
LUCF Luceram 88.89 328 *e*P P 05 20 34.2 -1.9
SSB Saint Sauveur 88.89 331⇑ *e*P P 05 20 35.9 -0.1
SSB Saint Sauveur 88.89 331 *e*P P 05 20 35.5 -0.5
SSB MLR MLR
comp=Z,9μm,19.0s
SSB Saint Sauveur 88.89 331 *e*P P 05 20 35.5 -0.5
SSB LR LR
comp=Z,9μm,19.0s
T34A McClaskey Farm 88.91 43 P P 05 20 36.3 +0.1
baz=318,SNR=20
MVIF Mont Vial 88.97 328 *e*P P 05 20 35.4 -1.1
Q37A Longview Farm, 88.97 40 P P 05 20 35.8 -0.7
baz=319
REVF Revere 89.00 328 *e*P P 05 20 35.6 -1.0
PYM Petit Puy Mans 89.08 332 *e*P P 05 20 36.6 -0.3
TBI Tubuai 89.15 120 *e*PP PP 05 24 05.1 -2.8
comp=Z,221nm,27.0s
TBI *e*S S 05 31 20.3 -5.6
comp=Z,3μm,33.2s
TBI *e*SS SS 05 37 16.6 -3.8
comp=Z,842nm,27.2s
TBI Tubuai 89.15 120 *e*LR LR 05 48 53.9
comp=Z,9μm,23.2s,baz=309
TBI Tubuai 89.15 120 *e*T T 06 58 38.8
comp=Z,272nm,0.3s
U34A Anderson Ranch 89.15 43 P P 05 20 37.7 +0.3
baz=318
U34A Anderson Ranch 89.15 43 *e*P P 05 20 38.0 +0.7
W32A Sentinel 89.15 45 P P 05 20 38.1 +0.7
baz=316,SNR=24
OG26 St.-Nazaire-De 89.17 330⇑ *e*P P 05 20 37.1 -0.2
V33A Lossen Ranch, 89.19 44 P P 05 20 37.6 +0.1
baz=317
R37A Teagarden Farm 89.20 40 P P 05 20 37.0 -0.5
baz=319
S36A Lake Cedric, C 89.24 41 P P 05 20 37.7 -0.1
baz=319,SNR=19
CEL Celeste 89.28 320 *e*P P 05 20 37.0 -1.0
comp=Z,144nm,1.0s
CEL LR LR
comp=Z,7μm,20.0s
O40A La Belle 89.30 37 P P 05 20 38.2 +0.2
baz=321,SNR=24
Q38A Cooks Store, C 89.33 39 P P 05 20 37.8 -0.3
baz=320,SNR=19
T35A Sooner Cattle 89.35 42 P P 05 20 38.5 +0.2
baz=318,SNR=16
P39A Salisbury 89.36 38 P P 05 20 38.2 -0.1
baz=320,SNR=6.5

LBL Lubilhac 89.43 331 eP P 05 20 38.4 -0.2
FRNF Fournols 89.56 332⇑ eP P 05 20 39.5 +0.4
W33A Caddo, Fort Co 89.57 45 P P 05 20 40.3 +0.9
baz=317,SNR=33
T36A Boggs Farm, Ca 89.58 42 P P 05 20 39.5 +0.1
baz=318,SNR=29
Q39A Willow Grove F 89.59 39 P P 05 20 39.3 0.0
baz=320,SNR=40
V34A Guthrie 89.60 44 P P 05 20 39.7 +0.3
baz=318,SNR=11
V34A Guthrie 89.60 44 eP P 05 20 40.0 +0.5
S37A Fort Scott 89.61 41 P P 05 20 39.2 -0.3
baz=319,SNR=25
X32A Elmer 89.64 46 P P 05 20 39.8 +0.1
baz=316,SNR=30
U35A Pawnee 89.64 43 P P 05 20 39.9 +0.3
baz=318,SNR=27
P40A Paris 89.67 38 P P 05 20 39.8 +0.1
baz=321,SNR=54
WMOK Wichita Mounta 89.69 45 eP P 05 20 40.2 +0.2
WMOK pmax pmax
comp=Z,249nm,1.7s
WMOK MLR MLR
comp=Z,2µm,19.0s
WMOK Wichita Mounta 89.69 45 eP P 05 20 40.2 +0.2
comp=Z,249nm,1.7s
WMOK LR LR
comp=Z,2µm,19.0s
R38A Fenwick Farm, 89.77 40 P P 05 20 39.4 -0.8
baz=320,SNR=6.0
W34A Bridge Creek, 89.90 44 P P 05 20 41.5 +0.6
baz=317,SNR=16
W34A Bridge Creek, 89.90 44 eP P 05 20 41.7 +0.8
X33A Lawton 90.00 45 P P 05 20 41.4 +0.1
baz=317,SNR=22
V35A Meyer Ranch, C 90.03 43 P P 05 20 41.6 +0.1
baz=318
T37A Cheneyville 18 90.05 41 P P 05 20 41.3 -0.2
baz=319,SNR=26
Q40A Laux Farm, Aux 90.07 38 P P 05 20 41.6 0.0
baz=321,SNR=37
R39A Chumby, Stover 90.11 39 P P 05 20 41.3 -0.5
baz=320,SNR=36
U36A Oologah 90.16 42 P P 05 20 42.3 +0.3
baz=319
S38A Stockton 90.19 40 P P 05 20 41.2 -1.0
baz=320,SNR=24
HDIL Hopedale 90.19 36 P P 05 20 42.1 0.0
baz=323,SNR=19
HDIL Hopedale 90.19 36 eP P 05 20 42.1 0.0
comp=Z,208nm,1.1s
SLBS Sierra La Lagu 90.25 60 eP P 05 20 44.9 +2.1
Y33A Hilltop Ranch, 90.31 46 P P 05 20 42.6 -0.2
baz=317,SNR=21
X34A Smith Ranch, M 90.33 45 P P 05 20 43.4 +0.5
baz=317,SNR=34
T38A Diamond 90.44 41 P P 05 20 43.1 -0.2
baz=319,SNR=38
S39A Bolivar 90.44 40 P P 05 20 42.7 -0.6
baz=320,SNR=30
W35A Tecumseh 90.46 44 P P 05 20 43.7 +0.3
baz=318,SNR=20
U37A Salina 90.48 42 P P 05 20 43.7 +0.1
baz=319,SNR=28
TUL1 Leonard 90.49 43 P P 05 20 43.9 +0.3
baz=318,SNR=24
TUL1 Leonard 90.49 43 eP P 05 20 43.9 +0.3
V36A Jenks 90.50 43 P P 05 20 43.8 +0.2
baz=318
R40A Maddies Statio 90.52 39 P P 05 20 43.4 -0.3
baz=321,SNR=38
TX31 Lajitas Ar. Si 90.60 52 eP P 05 20 44.2 -0.1
TX31 eP PcP 05 20 44.9 -0.5
TXAR Lajitas Array 90.60 52 P P 05 20 44.9 +0.6
comp=Z,13nm,0.7s,baz=302,slow=2.9,SNR=161
TXAR PKPPKP P'P'df 05 46 21.6 -3.5
comp=Z,1.1nm,1.1s,baz=174,slow=1.3,SNR=6.0
TXAR LR LR 05 56 48.9
comp=Z,1µm,21.0s,baz=0.0,slow=32
ABTX Abilene, Hawle 90.72 47 P P 05 20 45.2 +0.4
baz=316,SNR=35
ABTX Abilene, Hawle 90.72 47 eP P 05 20 45.4 +0.6
Z33A Whitaker Ranch 90.75 46 P P 05 20 45.1 +0.2
baz=317,SNR=23
W36A Wetumka 90.82 43 P P 05 20 45.2 0.0
baz=318,SNR=20
U38A Gravette 90.84 41 P P 05 20 45.2 0.0
baz=319,SNR=22
Y34A Reagan Ranch, 90.84 45 P P 05 20 45.5 +0.2
baz=317,SNR=22
V37A Hulbert 90.86 42 P P 05 20 45.4 +0.1
baz=319,SNR=50
T39A Clever 90.92 40 P P 05 20 45.2 -0.4
baz=320,SNR=19
SADO Sadowa 90.93 27 eP P 05 20 49.4 +3.9
S40A Lebanon 90.93 39 P P 05 20 45.3 -0.4
baz=320,SNR=29
X35A Drake 90.96 44 P P 05 20 45.7 -0.1
baz=318,SNR=20
HPIG 90.96 55 eP P 05 20 46.2 0.0
133A Hamilton Ranch 91.16 47 P P 05 20 47.1 +0.3
baz=317,SNR=27
CLTB Caltabellotta 91.17 321 PFAKE 05 21 00.0 +13
CLTB LR LR
comp=Z,6µm,19.0s
X36A Centrahoma 91.18 44 P P 05 20 46.9 +0.1
baz=318,SNR=19
Z34A Collier Ranch, 91.18 46 P P 05 20 46.9 +0.1
baz=317,SNR=13
HHAR Hobbs 91.19 41 eP P 05 20 46.7 -0.2
SLM Saint Louis 91.25 37 eP P 05 20 49.6 +2.5
SLM Saint Louis 91.25 37 eP P 05 20 49.6 +2.5
AAM Ann Arbor 91.26 31 eP P 05 20 51.7 +4.7
AAM MLR MLR
comp=Z,3µm,20.0s
AAM Ann Arbor 91.26 31 eP P 05 20 51.7 +4.7
AAM LR LR
comp=Z,3µm,20.0s
W37B Quinton 91.26 43 P P 05 20 47.5 +0.3
baz=319,SNR=25
V38A Canehill 91.26 42 P P 05 20 47.1 -0.1
baz=319,SNR=47
T40A Mansfield 91.27 40 P P 05 20 46.6 -0.6
baz=320,SNR=24
Y35A Marietta 91.28 45 P P 05 20 47.1 -0.3
baz=318,SNR=9.1
LMQ La Malbaie 91.29 20 eP P 05 20 47.8 +0.7
SFIN Lafayette 91.34 34 P P 05 20 47.5 0.0
baz=324
SFIN Lafayette 91.34 34 eP P 05 20 48.2 +0.8
U39A Green Forest 91.36 41 P P 05 20 47.3 -0.3
baz=320,SNR=42
VSL Villasalto 91.53 324 eP P 05 20 51.8 +3.4
VSL LR LR
comp=Z,5µm,21.0s
Z35A Perchaven, San 91.58 45 P P 05 20 48.7 -0.1
baz=318,SNR=42
233A Rising Star 91.59 47 P P 05 20 49.3 +0.5
baz=317,SNR=55
LRDF Laroque-de-Fa 91.64 331⇑ eP P 05 20 48.6 -0.2
134A White-Moore Ra 91.67 46 P P 05 20 49.5 +0.3
baz=317,SNR=33
V39A Pettigrew 91.69 41 P P 05 20 48.8 -0.4
baz=320,SNR=33
X37A Clayton 91.70 43 P P 05 20 49.4 +0.1
baz=319,SNR=16
U40A Yellville 91.71 40 P P 05 20 48.9 -0.3
baz=320,SNR=46
Y36A Durant 91.71 44 P P 05 20 49.4 +0.1
baz=318
W38A Poteau 91.80 42 P P 05 20 49.9 +0.3
baz=319,SNR=20
WDD Wied Dalam 91.81 319 PFAKE 05 21 00.0 +10
WDD LR LR
comp=Z,7µm,19.0s
SJAF Saint Jean de 91.88 330⇑ eP P 05 20 48.0 -2.0
X38A Whitesboro 91.94 43 P P 05 20 50.6 +0.2
baz=319,SNR=35
CARF Carcanieres 92.00 331⇑ eP P 05 20 50.0 -0.6
Y37A Hugo 92.02 44 P P 05 20 50.8 +0.1
baz=319
333A Richland Sprin 92.05 48 P P 05 20 51.3 +0.4
baz=317,SNR=76
234A Clairette 92.05 47 P P 05 20 51.4 +0.5
baz=317,SNR=51
135A Vickery Place, 92.06 46 P P 05 20 51.2 +0.2
baz=318
Z36A Blue Ridge 92.09 45 P P 05 20 51.1 0.0
baz=318,SNR=32
W39A Magazine 92.10 42 P P 05 20 50.7 -0.4
baz=320,SNR=7.7
V40A Witts Springs 92.14 41 P P 05 20 50.8 -0.5
baz=320
JCT Junction City 92.17 49 P P 05 20 51.6 +0.1
baz=316,SNR=22
JCT Junction City 92.17 49 eP P 05 20 51.7 +0.1
JCT Junction City 92.17 49 eP P 05 20 51.7 +0.1
OLIL Olney 92.20 36 eP P 05 20 52.3 +0.8
VALF Valcebollere 92.30 331⇑ eP P 05 20 51.1 -1.0
433A Art 92.39 48 P P 05 20 52.4 -0.2
baz=317,SNR=31
X39A Fountain Ranch 92.44 42 P P 05 20 52.8 +0.2
baz=320,SNR=41
WHTX Lake Whitney, 92.45 46 P P 05 20 53.2 +0.5
baz=318,SNR=25
WHTX Lake Whitney, 92.45 46 eP P 05 20 53.5 +0.7
SIUC Southern Illin 92.47 37 eP P 05 20 53.4 +0.7
334A Lometa 92.48 47 P P 05 20 53.0 +0.1
baz=317,SNR=43
W40A Ferguson Farm, 92.48 41 P P 05 20 52.5 -0.3
baz=320,SNR=5.6
Y38A Idabel 92.55 43 P P 05 20 52.5 -0.6
baz=319
BLO Bloomington 92.58 35 eP P 05 20 53.8 +0.6
BLO Bloomington 92.58 35 eP P 05 20 53.8 +0.6
Z37A Pogue Cattle C 92.60 44 P P 05 20 53.6 +0.2
baz=319
PBMO Poplar Bluff 92.61 39 eP P 05 20 53.9 +0.5
136A Ennis 92.63 45 P P 05 20 53.4 -0.1
baz=318
LONY Lake Ozonia 92.64 24 eP P 05 20 53.2 -0.2
comp=Z,151nm,1.6s
LONY LR LR
comp=Z,5µm,20.0s
REYF Montagne du Re 92.64 332⇑ eP P 05 20 52.2 -1.3
VIEF Viey 92.65 332⇑ eP P 05 20 54.2 +0.6
MIAR Mount Ida 92.70 42 P P 05 20 53.9 0.0
baz=320,SNR=29
MIAR Mount Ida 92.70 42 eP P 05 20 54.3 +0.4
MIAR Mount Ida 92.70 42 eP P 05 20 54.3 +0.4
WHAR Wooly Hollow 92.82 41 eP P 05 20 54.7 +0.3
434A Burnet 92.84 47 P P 05 20 54.2 -0.4
baz=317,SNR=12
Y39A Lockesburg 92.89 43 P P 05 20 54.7 0.0
baz=320,SNR=22
LARF Larrau 92.89 333⇑ eP P 05 20 54.4 -0.2
Z38A Mt. Pleasant 92.92 44 P P 05 20 55.1 +0.2
baz=319
533A Kerrville 92.92 48 P P 05 20 55.2 +0.2
baz=317,SNR=26
W41A Tony Mavity, V 92.93 41 P P 05 20 54.7 -0.2
baz=321,SNR=15
137A Heron Place, G 92.97 45 P P 05 20 55.5 +0.4
baz=318
236A Katherine and 92.98 46 P P 05 20 55.0 -0.2
baz=318
335A Moody 92.99 47 P P 05 20 55.3 +0.1
baz=318,SNR=10
USIN University of 93.02 36 eP P 05 21 01.4 +6.2
X40A Basin Creek Fa 93.14 42 P P 05 20 55.6 -0.3
baz=320,SNR=22
UALR University of 93.18 41 eP P 05 20 58.7 +2.6
ACSO Alum Creek Sta 93.26 32 eP P 05 20 56.9 +0.6
ACSO LR LR
comp=Z,3µm,19.0s
435B Jarrell 93.26 47 P P 05 20 56.6 +0.1
baz=317
Y40A Okolona 93.27 42 P P 05 20 56.6 +0.1
baz=320,SNR=6.4
633A Saathoff Ranch 93.28 49 P P 05 20 56.9 +0.3
baz=316,SNR=27
534A Blanco 93.28 48 P P 05 20 56.8 +0.1
baz=317,SNR=48
138A Matatall Enter 93.30 44 P P 05 20 57.2 +0.5
baz=319
NCB Newcomb 93.33 24 PFAKE 05 21 10.0 +13
NCB LR LR
comp=Z,5µm,19.0s
Z39A Irene McRaven, 93.36 43 P P 05 20 57.4 +0.4
baz=319
237A Washetta, Mont 93.39 45 P P 05 20 57.4 +0.3
baz=318
WCI Wyandotte Cave 93.44 35 eP P 05 20 57.5 +0.2
WCI Wyandotte Cave 93.44 35 eP P 05 20 57.5 +0.2
M54A Oil Creek Stat 93.53 29 P P 05 20 57.3 -0.3
baz=329
WLAR White Oak Lake 93.61 42 eP P 05 20 59.0 +0.9
832A Faith Ranch, C 93.63 50 P P 05 20 58.8 +0.5
baz=316,SNR=24
PKME Peaks-Kenny Pk 93.67 21 PFAKE 05 21 10.0 +12
PKME LR LR
comp=Z,7µm,19.0s
436A Wall Ranch, Ga 93.73 47 P P 05 20 59.3 +0.6
baz=318
733A Divot King Ran 93.74 50 P P 05 20 59.2 +0.5
baz=316
Z40A Long Farm, Mag 93.78 43 P P 05 20 59.4 +0.6
baz=320
535A Dale 93.82 48 P P 05 20 59.5 +0.4
baz=317
634A China Grove, S 93.83 49 P P 05 20 59.7 +0.6
baz=317
337A Centerville 93.85 46 P P 05 20 59.8 +0.6
baz=318
N54A Moraine State 93.87 30 P P 05 20 59.5 +0.4
baz=329
833A Chaparral WMA, 93.96 50 P P 05 21 00.4 +0.6
baz=316,SNR=12
ACCN Adirondack Com 94.04 24 eP P 05 21 00.6 +0.7
536A Bastrop 94.08 47 P P 05 21 01.0 +0.7
baz=318
734A La Parita Cree 94.09 49 P P 05 21 01.2 +0.8
baz=317
Z41A Richland Creek 94.10 42 P P 05 21 00.4 +0.1
baz=320
239A Gary 94.13 44 P P 05 21 01.1 +0.6
baz=319
338A Crockett 94.15 45 P P 05 21 01.0 +0.4
baz=319
140A Cam and Jess, 94.15 43 P P 05 21 00.8 +0.3
baz=320
635A Leesville 94.17 48 P P 05 21 01.1 +0.4
baz=317
Y42A Garnett, Star 94.20 41 P P 05 21 01.1 +0.3
baz=321,SNR=5.8
NATX Nacogdoches 94.21 45 P P 05 21 01.2 +0.3
baz=319
NATX Nacogdoches 94.21 45 eP P 05 21 03.1 +2.3
BINY Binghamton 94.30 26 eP P 05 21 02.8 +1.7
BINY LR LR
comp=Z,8µm,19.0s
WVT Waverly 94.41 37 eP P 05 21 01.5 -0.1
WVT Waverly 94.41 37 eP P 05 21 01.5 -0.1
438A Sam Houston St 94.51 46 P P 05 21 03.0 +0.8
baz=319
537A Green Hill Far 94.52 47 P P 05 21 03.0 +0.7
baz=318
636A Smothers Creek 94.52 48 P P 05 21 02.8 +0.5
baz=318,SNR=15
735A Kenedy 94.53 49 P P 05 21 03.2 +0.9
baz=317
933A Laredo 94.54 50 P P 05 21 03.8 +1.3
baz=316,SNR=31
141A Papa Simpson, 94.54 43 P P 05 21 02.9 +0.5
baz=320
KEST Kesra 94.54 322 P P 05 21 01.8 -0.6
comp=Z,4.7nm,0.8s,baz=305,slow=4.9,SNR=8.2
KEST PP PP 05 24 50.2 +0.8
comp=Z,7.8nm,1.1s,baz=34,slow=7.3,SNR=3.3
KEST LR LR 06 07 19.6
comp=Z,9µm,19.8s,baz=344,slow=38
834A Tilden 94.61 50 P P 05 21 04.0 +1.2
baz=317
CMAH Djebel Manchou 94.75 324 P P 05 21 04.0 +0.6
HKT Hockley 94.89 47 eP P 05 21 06.0 +2.0
HKT Hockley 94.89 47 eP P 05 21 06.0 +2.0
340A Bronson 94.90 44 P P 05 21 04.4 +0.4
baz=320
736A Circle Diamond 94.90 48 P P 05 21 05.8 +1.7
baz=318
OXF Oxford 94.90 39 eP P 05 21 04.2 +0.2
OXF Oxford 94.90 39 eP P 05 21 04.2 +0.2
835A Beeville 94.94 49 P P 05 21 05.8 +1.6
baz=317,SNR=6.2
SSPA Standing Stone 94.96 28 eP P 05 21 07.0 +2.8
241A Mo Tay, Goldon 94.98 43 P P 05 21 05.2 +0.8
baz=320
ABSA Djebel Ababsia 95.01 324 P P 05 21 07.7 +3.1
934A Benavides 95.01 50 P P 05 21 06.3 +1.7
baz=317
O56A Blue Knob Stat 95.02 29 P P 05 21 04.5 0.0
baz=330
MCWV Mont Chateau 95.03 30 eP P 05 21 05.5 +1.0
PLAL Pickwick Lake 95.20 38 eP P 05 21 06.4 +1.1
CKFL Kef-Lekhel 95.26 324 P P 05 21 09.6 +3.8
143A Socs Landing, 95.28 42 P P 05 21 06.3 +0.6
baz=321
034A Hebbronville 95.30 50 P P 05 21 07.6 +1.7
baz=317,SNR=26
341A Kurthwood 95.37 44 P P 05 21 08.8 +2.7
baz=320
KVTX Kingsville 95.44 49 PFAKE 05 21 20.0 +13
KVTX LR LR
comp=Z,2µm,20.0s
N59A State Game Lan 95.50 27 P P 05 21 10.5 +3.9
baz=332,SNR=7.6
035A Encino 95.75 50 P P 05 21 11.9 +4.0
baz=317
ZAIG Zacatecas 95.86 56 eP P 05 21 10.1 +1.2
PBRG Braganca 95.96 336 eP P 05 21 15.1 +6.3
PBRG Braganca 95.96 336 ePP PP 05 25 03.2 +3.1
PBRG eSKS SKSac 05 31 51.9 +7.1
SET Setif 96.04 325 P P 05 21 13.0 +3.7
SWET Sewanee 96.05 37 eP P 05 21 09.1 -0.2
TZTN Tazewell 96.07 34 eP P 05 21 13.2 +3.9
035Z Hargill 96.11 50 P P 05 21 14.0 +4.4
baz=317
CKHR Kef el Ahmar 96.14 325 P P 05 21 14.4 +4.6
244A Avery, Jackson 96.17 42 P P 05 21 13.6 +3.8
baz=321
PGAV Gavieira, Arco 96.30 337 eP P 05 21 17.0 +6.6
PGAV Gavieira, Arco 96.30 337 ePP PP 05 25 05.4 +2.7
PGAV eSKS SKSac 05 31 52.2 +5.5
PGAV Gavieira, Arco 96.30 337 eLR LR 05 54 57.5
comp=Z,5µm,18.0s
CPCT Cooper Cave 96.53 36 eP P 05 21 11.6 +0.2
MVO Moncorvo 96.63 336 eP P 05 21 15.2 +3.4
MVO Moncorvo 96.63 336 ePP PP 05 25 08.0 +2.7
MVO eSKS SKSac 05 31 52.0 +3.6
MVO Moncorvo 96.63 336 eLQ LQ 05 50 30.0
MVO eLR LR 05 54 49.3
comp=Z,7µm,18.0s
POLO Lamas de Olo 96.69 337 eP P 05 21 17.1 +5.0
POLO Lamas de Olo 96.69 337 ePP PP 05 25 08.2 +2.5
POLO eSKS SKSac 05 31 54.3 +5.6
PVRL Vila Real 96.75 336 ePP PP 05 25 09.1 +2.9
ES19 SONSECA Array 96.86 333 eP P 05 21 12.2 -0.7
BLA Blacksburg 96.88 32 eP P 05 21 15.3 +2.3
BLA MLR MLR
comp=Z,7µm,20.0s
BLA Blacksburg 96.88 32 eP P 05 21 15.3 +2.3
BLA LR LR
comp=Z,7µm,20.0s
ESDC Sonseca Array 96.91 333 P P 05 21 12.8 -0.3
comp=Z,2.6nm,0.7s,baz=12,slow=4.4,SNR=16
ESDC PKKPbc PKKPdf 05 37 55.8 +2.0
comp=Z,0.2nm,0.3s,baz=180,slow=1.5,SNR=4.4
ESDC LR LR 06 09 22.0
comp=Z,7µm,19.3s,baz=35,slow=38
ESLA Sonseca Array 96.91 333 eP P 05 21 12.7 -0.4
EMHD Djebel Mahouad 97.14 327 P Pdif 05 21 17.0 +2.6
PAB San Pablo 97.16 333 PFAKE 05 21 30.0 +16
PAB LR LR
comp=Z,10µm,19.0s
CBN Corbin Frederi 97.27 29 PFAKE 05 21 30.0 +15
CBN LR LR
comp=Z,2µm,19.0s
MTE Manteigas 97.49 336 eP Pdif 05 21 21.4 +5.6
MTE Manteigas 97.49 336 ePP PP 05 25 14.2 +2.3
MTE eSKS SKSac 05 31 56.1 +3.3
MTE Manteigas 97.49 336 eLQ LQ 05 50 44.1
MTE eLR LR 05 55 04.1
comp=Z,7µm,18.0s
MTE Manteigas 97.49 336 PFAKE 05 21 30.0 +14
MTE LR LR
comp=Z,6µm,19.0s
EBNR Beni Rached 97.68 328 P Pdif 05 21 19.2 +2.5
347A Saraland 97.80 41 P Pdif 05 21 20.5 +3.3
baz=323
ECHA Ech Chlef 97.86 328 P Pdif 05 21 22.0 +4.6
PCBR Castelo Branco 97.97 336 ePP PP 05 25 19.4 +3.9
PCAS Casmilo, Conde 98.11 337 eP Pdif 05 21 24.4 +5.9
PCAS Casmilo, Conde 98.11 337 ePP PP 05 25 16.5 -0.1
PCAS eSKS SKSac 05 32 02.4 +6.5
EANR 'Ain N'Sour 98.15 328 P Pdif 05 21 24.8 +6.0
KMSC Kings Mountain 98.23 34 P Pdif 05 21 21.7 +2.6
baz=328
PMRV Marv??o 98.32 335 eP Pdif 05 21 24.1 +4.7
PMRV Marv??o 98.32 335 ePP PP 05 25 19.7 +1.5
PMRV eSKS SKSac 05 32 03.5 +6.5
PMRV Marv??o 98.32 335 eLQ LQ 05 51 12.3
PMRV eLR LR 05 56 10.4
comp=Z,7µm,20.0s
PTOM Tomar 98.48 336 ePP PP 05 25 23.1 +3.7
GOGA Godfrey 98.70 36 eP Pdif 05 21 23.7 +2.5
GOGA MLR MLR
comp=Z,2µm,19.0s
GOGA Godfrey 98.70 36 eP Pdif 05 21 23.7 +2.5
GOGA LR LR
comp=Z,2µm,19.0s
BRAL Brewton 98.76 40 PFAKE 05 21 30.0 +8.5
BRAL LR LR
comp=Z,2µm,21.0s
PESTR Estremoz 98.89 335 ePdif Pdif 05 21 28.8 +6.8
PESTR Estremoz 98.89 335 ePP PP 05 25 23.9 +1.3
PESTR eSKS SKSac 05 32 03.4 +3.5
PMTG Montargil 98.92 336 ePdif Pdif 05 21 27.1 +5.0
PMTG Montargil 98.92 336 ePP PP 05 25 24.6 +1.9
PMTG eSKS SKSac 05 32 04.6 +4.7
PBAR Barrancos 99.33 335 ePdif Pdif 05 21 30.8 +6.9
PBAR Barrancos 99.33 335 ePP PP 05 25 30.8 +4.9
PBAR eSKS SKSac 05 32 07.8 +5.8
EVO Evora 99.33 336 ePP PP 05 25 28.1 +2.2
PMAFR Mafra 99.36 337 ePdif Pdif 05 21 31.0 +6.9
PMAFR Mafra 99.36 337 ePP PP 05 25 28.6 +2.5
PMAFR eSKS SKSac 05 33 06.9 +4.7
PACT Alcochete 99.39 336 ePP PP 05 25 25.7 -0.6
RKT Rikitea 99.41 112 eSKSac SKSac 05 31 58.7 -3.8
comp=Z,750nm,27.3s
RKT eSP SP 05 34 21.8 -1.6
comp=Z,909nm,35.5s
RKT eSS SS 05 39 42.0 -4.8
comp=Z,2µm,30.2s
RKT Rikitea 99.41 112 eLR LR 05 53 38.2
comp=Z,7µm,25.0s,baz=307
RKT Rikitea 99.41 112 eT T 07 11 30.9
comp=Z,5.8nm,0.3s
PMST Lisbon--Monsan 99.53 336 ePP PP 05 25 29.3 +1.9
LIS Lisbon 99.54 336 eP Pdif 05 21 25.6 +0.8
LIS ePP PP 05 25 29.7 +2.3
LIS AMS AMS 06 11 04.5
comp=Z,8µm,20.7s
LIS Lisbon 99.54 336 ePP PP 05 25 29.5 +2.1
LIS Lisbon 99.54 336 eP Pdif 05 21 25.6 +0.8
LIS e 05 25 29.7
PBEJ Beja 99.74 335 ePP PP 05 25 29.7 +0.7
PNCL Nicolau / Gran 99.89 336 ePdif Pdif 05 21 32.4 +6.0
PNCL Nicolau / Gran 99.89 336 ePP PP 05 25 32.6 +2.5
PNCL eSKS SKSac 05 32 07.8 +3.0
MESJ Messejana 100.03 335 eP Pdif 05 21 27.8 +0.7
MESJ ePP PP 05 25 33.5 +2.3
MESJ AMS AMS 06 12 15.0
comp=Z,7µm,17.6s
MESJ Messejana 100.03 335 ePP PP 05 25 38.1 +6.9
MESJ Messejana 100.03 335 eP Pdif 05 21 27.7 +0.7
MESJ e 05 25 33.5
PCVE Castro Verde 100.16 335 ePdif Pdif 05 21 35.4 +7.8
PCVE Castro Verde 100.16 335 ePP PP 05 25 37.1 +4.9
PCVE eSKS SKSac 05 32 14.5 +8.3
PVAQ Vaqueiros 100.25 335 ePdif Pdif 05 21 34.1 +6.1
PVAQ Vaqueiros 100.25 335 ePP PP 05 25 35.0 +2.1
PVAQ eSKS SKSac 05 32 13.8 +7.2
PVAQ Vaqueiros 100.25 335 eLQ LQ 05 51 35.8
PVAQ eLR LR 05 54 49.3
comp=Z,9µm,18.0s
NHSC New Hope 100.46 34 PFAKE 05 21 40.0 +11
NHSC LR LR

comp=Z,5μm,20.0s
PTEO Sao Teotonio 100.46 336 *e*PP PP 05 25 36.9 +2.4
PBDV Barranco-do-Ve 100.47 335 *e*Pdif **Pdif** 05 21 35.0 +5.9
PBDV Barranco-do-Ve 100.47 335 *e*PP PP 05 25 37.7 +3.1
PBDV *e*SKS **SKSac** 05 32 14.3 +6.5
MORF Marmelete 100.66 335 *e*P **Pdif** 05 21 30.6 +0.7
MORF *e*PP **PP** 05 25 38.3 +2.3
MORF AMS AMS 06 12 42.2
comp=Z,6μm,19.3s
MORF Marmelete 100.66 335 *e*Pdif **Pdif** 05 21 34.6 +4.7
MORF Marmelete 100.66 335 *e*PP PP 05 25 38.0 +2.0
MORF *e*SKS **SKSac** 05 32 15.1 +6.4
MORF Marmelete 100.66 335 *e*P **Pdif** 05 21 30.6 +0.7
MORF *e* 05 25 38.2
PFVI Vila Bisbo 100.87 336 *e*Pdif **Pdif** 05 21 38.1 +7.3
PFVI Vila Bisbo 100.87 336 *e*PP PP 05 25 40.1 +2.5
PFVI *e*SKS **SKSac** 05 32 11.8 +2.2
KMBO Kilima Mbogo 101.30 277 P **Pdif** 05 21 32.6 -0.8
comp=Z,1.4nm,0.4s,baz=72,slow=10.0,SNR=5.0
KMBO Kilima Mbogo 101.30 277 *e*Pdif **Pdif** 05 21 33.0 -0.4
KMBO LR LR
comp=Z,2μm,20.0s
PTCN Pitcairn Islan 104.17 111 PFAKE 05 22 00.0 +15
PTCN LR LR
comp=Z,3μm,21.0s
CMLA Cha da Macela 104.39 349 PFAKE 05 22 00.0 +14
CMLA LR LR
comp=Z,2μm,19.0s
CASY Casey 105.64 192 PFAKE 05 26 20.0
CASY LR LR
comp=Z,467nm,22.0s
TEIG Tepich 106.70 48 PFAKE 05 26 20.0
TEIG LR LR
comp=Z,737nm,19.0s
TAM Tamanrasset 106.89 317 PFAKE 05 26 20.0
TAM LR LR
comp=Z,3μm,19.0s
BBSR BB Station 106.94 22 PFAKE 05 26 20.0
BBSR LR LR
comp=Z,2μm,21.0s
PMOZ Porto Moniz, M 107.39 341 *e*PP PP 05 26 27.1 +0.9
PMOZ Porto Moniz, M 107.39 341 *e*LR LR 05 59 50.3
comp=Z,3μm,18.0s
GTBY Guantanamo Bay 114.03 37 PFAKE 05 26 30.0 +8.8
GTBY LR LR
comp=Z,3μm,21.0s
MTDJ Mount Denham 114.26 40 PFAKE 05 26 30.0 +8.1
MTDJ LR LR
comp=Z,3μm,20.0s
GRTK Grand Turk 114.46 33 PFAKE 05 26 30.0 +8.0
GRTK LR LR
comp=Z,4μm,20.0s
VNDA Vanda 115.12 175 PKP **PKPdf** **05 26 21.6 0.0**
comp=Z,8.4nm,0.6s,baz=318,slow=4.2,SNR=16
SBA Scott Base 115.81 174 *e*PKIKP **PKPdf** **05 26 23.3 +0.4**
SBA MLR MLR
comp=Z,2μm,19.0s
SBA Scott Base 115.81 174 *e*PKPdf **PKPdf** **05 26 23.2 +0.4**
SBA LR LR
comp=Z,2μm,19.0s
JTS JuntasAbangare 116.39 52 PFAKE 05 26 40.0 +14
JTS LR LR
comp=Z,1μm,19.0s
SDDR Presa de Saban 116.62 34 PFAKE 05 26 40.0 +14
SDDR LR LR
comp=Z,6μm,19.0s
TORD Torodi Ar. Bea 116.79 314 PKP **PKPdf** **05 26 25.6 -1.1**
comp=Z,3.0nm,0.6s,baz=20,slow=2.6,SNR=24
TORD PP PP 05 27 25.4 -8.7
comp=Z,5.7nm,0.9s,baz=32,slow=6.5,SNR=6.6
TORD PKKPbc **PKKPbc** **05 36 53.7 +1.9**
comp=Z,3.4nm,0.7s,baz=217,slow=1.9,SNR=21
MAW Mawson 119.33 205 PKP **PKPdf** **05 26 30.0 +0.2**
comp=Z,21nm,0.7s,baz=348,slow=1.4,SNR=19
MAW Mawson 119.33 205 PKIKP **PKPdf** **05 26 30.0 +0.2**
MAW pmax pmax
comp=Z,21nm,0.7s
MATP Matopo 119.36 266 *i* P **PKPdf** **05 26 30.8 -0.7**
SJG San Juan 119.56 29 PFAKE 05 26 40.0 +8.1
SJG LR LR
comp=Z,3μm,20.0s
BCIP Isla Barro Col 120.39 48 PFAKE 05 26 50.0 +16
BCIP LR LR
comp=Z,2μm,19.0s
PAYG Puerto Ayora 120.77 64 PFAKE 05 26 50.0 +16
PAYG LR LR
comp=Z,1μm,20.0s
ANWB Willy Bob 121.57 25 PFAKE 05 26 50.0 +14
ANWB LR LR
comp=Z,2μm,22.0s
MOTC Monteria, Cord 123.10 44 *e*P **PKPdf** **05 26 39.3 +0.5**
FDF Fort de France 124.51 26 *e*P **PP** **05 28 23.5 -3.0**
FDF Fort de France 124.51 26 PFAKE 05 26 50.0 +8.5
FDF LR LR
comp=Z,2μm,21.0s
OCAC Ocana 124.83 42 *e*P **PKPdf** **05 26 41.6 -0.8**
SDV Santo Domingo 125.68 39 PKP **PKPdf** **05 26 43.7 -0.3**
comp=Z,48nm,0.8s,baz=74,slow=0.6,SNR=79
SDV Santo Domingo 125.68 39 PKP **PKPdf** **05 26 43.7 -0.3**
SDV LR LR
comp=Z,3μm,20.0s
SDV Santo Domingo 125.68 39 *e*P **PKPdf** **05 26 42.1 -1.9**
DBIC Dimbokro 125.76 316 PKP **PKPdf** **05 26 43.1 -0.8**
comp=Z,12nm,0.7s,baz=24,slow=2.6,SNR=32
DBIC PP **PP** **05 28 32.5 -2.8**
comp=Z,7.3nm,0.8s,baz=15,slow=6.8,SNR=3.3
TIC Toumodi 125.88 316 *e*P **PKPdf** **05 26 43.2 -1.0**
BOSA Boshof 125.93 259 *i* P PKPpre 05 26 36.9
BOSA Boshof 125.93 259 PKP **PKPdf** **05 26 43.5 -0.5**
comp=Z,15nm,0.8s,baz=87,slow=1.1,SNR=21
KIC Kosan Boka 125.95 316 *e*P **PKPdf** **05 26 43.5 -0.8**
comp=Z,210nm,1.5s
LIC Lamto 126.23 316 *e*P **PKPdf** **05 26 44.9 +0.1**
comp=Z,1.0nm,0.2s
BBGH Gun Hill 126.53 25 PFAKE 05 27 00.0 +15
BBGH LR LR
comp=Z,2μm,20.0s
TOLC Tolima 126.71 47 *e*P **PKPdf** **05 26 41.6 -4.6**
GRGR Grenville 126.73 27 *e*P PP 05 28 32.8 -8.5
GRGR Grenville 126.73 27 PFAKE 05 27 00.0 +14
GRGR LR LR
comp=Z,2μm,22.0s
QSPA South Pole Qui 126.86 180 *e*PKPdf **PKPdf** **05 26 43.7 -0.7**
ROSC El Rosal 127.08 46 *e*P **PKPdf** **05 26 47.5 +0.5**
comp=Z,7.2nm,0.4s,baz=30,slow=3.2,SNR=11
ROSC El Rosal 127.08 46 *e*P **PKPdf** **05 26 41.0 -5.9**
TSUM Tsumeb 127.43 273 *e*PKPdf **PKPdf** **05 26 46.1 -0.9**
TSUM LR LR
comp=Z,2μm,20.0s
CHIC Chingaza 127.59 45 *e*P **PKPdf** **05 26 45.0 -3.0**
YOPC Yopal, Colombi 127.72 43 *e*P **PKPdf** **05 26 45.0 -2.9**
SYO Syowa Base 127.98 207 *e*X **PKPdf** **05 26 43.4 -3.0**
CMBC Cumbal 128.06 52 *e*P **PKPdf** **05 26 48.9 0.0**
OTAV Otavalo 128.20 53 *e*PKPdf **PKPdf** **05 26 49.6 +0.5**
OTAV LR LR
comp=Z,1μm,20.0s
OTAV Otavalo 128.20 53 *e*P **PKPdf** **05 26 48.9 -0.3**
FLOC Florencia 128.91 49 *e*P **PKPdf** **05 26 48.9 -1.1**
SUR Sutherland 131.00 257 PFAKE 05 27 10.0 +16
SUR LR LR
comp=Z,3μm,19.0s
ATAH Atahualpa 133.70 60 PKP **PKPdf** **05 27 00.0 +0.5**
comp=Z,16nm,0.9s,baz=212,slow=1.0,SNR=12
NVL N'lazarevskaya 137.12 202 *e*PKHKP PKPpre 05 26 56.9
NVL MLR MLR
comp=Z,3μm,24.0s
NNA Nana 138.18 63 PKhKP PKPpre 05 26 56.8
comp=Z,4.0nm,0.4s,baz=301,slow=5.9,SNR=3.3
NNA PKP **PKPdf** **05 27 08.0 +0.7**
comp=Z,43nm,0.7s,baz=301,slow=3.7,SNR=11
NNA Nana 138.18 63 PKP **PKPdf** **05 27 08.0 +0.7**
NNA LR LR
comp=Z,855nm,21.0s
PTGA Pitinga 139.12 32 PKhKP PKPpre 05 26 59.5
comp=Z,5.3nm,0.9s,baz=309,slow=0.9,SNR=6.1
PTGA PKP **PKPdf** **05 27 09.8 +0.8**
comp=Z,8.1nm,0.6s,baz=352,slow=3.1,SNR=7.9
PTGA PP **PP** **05 30 01.3 +0.5**
comp=Z,6.8nm,0.9s,baz=339,slow=7.5,SNR=4.5
ASCN Ascension 143.09 316 PFAKE 05 27 30.0 +14
ASCN LR LR
comp=Z,2μm,21.0s
SHEL Horse Pasture 143.52 296 *i* PKIKP **PKPdf** **05 27 20.1 +3.2**
SHEL Horse Pasture 143.52 296 PFAKE 05 27 30.0 +13
SHEL LR LR
comp=Z,2μm,20.0s
LPAZ La Paz 147.22 58 *i* P **PKPbc** **05 27 25.8 -0.4**
LPAZ La Paz 147.22 58 PKPbc **PKPdf** **05 27 24.9 +0.9**
comp=Z,52nm,0.7s,baz=346,slow=2.9,SNR=196
RCBR Riachuelo 148.69 353 PKP **PKPdf** **05 27 25.9 +0.1**
comp=Z,28nm,0.7s,baz=353,slow=1.8,SNR=18
RCBR PKPbc **PKPbc** **05 27 28.9 -0.6**
comp=Z,40nm,0.8s,baz=330,slow=1.8,SNR=22
RCBR Riachuelo 148.69 353 PKP **PKPdf** **05 27 25.9 +0.1**
RCBR PKPbc **PKPbc** **05 27 28.9 -0.6**
RCBR LR LR
comp=Z,2μm,20.0s
PMSA Palmer Station 148.69 160 PFAKE 05 27 40.0 +8.4
PMSA LR LR
comp=Z,2μm,22.0s
SIV San Ignacio 151.53 48 PKP **PKPdf** **05 27 30.8 +0.7**
comp=Z,12nm,0.7s,baz=286,slow=0.4,SNR=22
SIV PKPbc **PKPbc** **05 27 35.5 -0.8**
comp=Z,98nm,0.8s,baz=284,slow=1.3,SNR=73
LCO Las Campanas 152.66 82 PFAKE 05 27 40.0 +1.2
LCO LR LR
comp=Z,2μm,20.0s
HJA Humahuaca 153.70 65 *i* P **PKPbc** **05 27 39.7 -1.7**
ROC1 El Roble 153.88 90 *i* P **PKPdf** **05 27 33.6 +0.2**
ROC1 *i* P **PKPbc** **05 27 34.0 -7.4**
ROC1 *i* P **PKiKP** **05 27 34.7 -6.7**
VCA Vinchina 154.51 79 *i* P **PKPdf** **05 27 34.0 -0.3**
SLA San Lorenzo 154.53 68 *i* P **PKPdf** **05 27 34.0 -0.5**
AZAP Zapla 154.56 67 *i* P **PKPdf** **05 27 35.8 +1.2**
AGUA GUANDACOL 154.61 81 *i* P **PKPdf** **05 27 34.7 +0.4**
ASTB Santa Barbara 154.85 66 *i* P **PKPdf** **05 27 35.8 +0.9**
RTLS Leoncito 154.86 87 *i* P **PKPdf** **05 27 34.7 -0.2**
AUSP Uspallata 154.94 88 *i* P **PKPdf** **05 27 36.5 +1.5**
FSA Cafayete 154.94 72 *i* P **PKPdf** **05 27 35.0 +0.1**
ALOL LOMAS DE OLMED 155.11 65 *i* P **PKPdf** **05 27 40.4 +5.3**
SJA San Juan 155.35 86 *i* P **PKPdf** **05 27 35.0 -0.2**
ASAL Salagasta 155.50 88 *i* P **PKPdf** **05 27 36.1 +0.7**
PLCA Paso Flores 155.59 108 PKP **PKPdf** **05 27 36.1 +0.9**
comp=Z,7.1nm,0.9s,baz=7.7,slow=1.9,SNR=6.9
PLCA PKPab **PKPab** **05 28 02.7 +1.3**
comp=Z,36nm,1.1s,baz=294,slow=4.0,SNR=7.8
AHML Horco Molle 155.79 72 *i* P **PKPdf** **05 27 33.6 -2.3**
AHML *i* P **PKPdf** **05 27 36.1 +0.2**
ACLC CERRO LA CRUZ 155.80 80 ⇓*i* P **PKPdf** **05 27 34.3 -1.7**
AVFE Valle Fertil 155.91 83 *i* P **PKPdf** **05 27 35.8 -0.3**
BDFB Brasilia 157.29 22 PKP **PKPdf** **05 27 39.0 +0.8**
comp=Z,8.9nm,1.1s,baz=331,slow=1.8,SNR=7.2
BDFB PKPab **PKPab** **05 28 09.3 +0.2**
comp=Z,34nm,1.2s,baz=299,slow=4.8,SNR=6.7
MRA San Martin 157.93 86 *i* P **PKPdf** **05 27 39.0 +0.4**
EFI East Falkland 160.36 144 PFAKE 05 27 50.0 +9.4
EFI LR LR
comp=Z,3μm,20.0s
CPUP Villa Florida 161.38 60 PKP **PKPdf** **05 27 42.5 0.0**
comp=Z,4.3nm,0.7s,baz=253,slow=1.8,SNR=12
CPUP PKPab **PKPab** **05 28 26.9 +0.2**
comp=Z,24nm,0.9s,baz=315,slow=4.0,SNR=7.6
CPUP Villa Florida 161.38 60 PKIKP **PKPdf** **05 27 42.5 0.0**
CPUP 05 28 26.9
CPUP pmax pmax
comp=Z,13nm,1.0s
CPUP pmax pmax
comp=Z,24nm,0.9s
HOPE Hope Point 162.72 186 PFAKE 05 27 50.0 +7.0
HOPE LR LR
comp=Z,2μm,22.0s
SPB Sao Paulo 164.86 29 PFAKE 05 28 00.0 +14
SPB LR LR
comp=Z,2μm,20.0s
LPA La Plata 164.86 87 *ce*PKIKP **PKPdf** **05 27 46.0 +0.4**
LPA La Plata 164.86 87 PKP **PKPab** **05 28 40.0 -1.8**
LPA PPP PPP 05 36 16.0

JMA 12 05:10:43.8, 37°03N×140°68E, h11km±1km, M4.3, 1C, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.12**	**53**	P	**Pg**	05 10 47.0	+0.2
ONAJ				S	Sg	05 10 49.2	+0.2
JHO	**Hitachi**	**0.43**	**192**	⇑P	**Pg**	05 10 52.1	-0.1
JHO				S	Sg	05 10 57.9	0.0
JFT	**Otama**	**0.56**	**331**	P	**Pg**	05 10 54.9	+0.2
JFT				S	Sg	05 11 02.4	+0.3
JSB	**Shiboa**	**0.61**	**264**	P	**Pg**	05 10 56.1	+0.4
JSB				S	Sb	05 11 04.7	-0.5
JMM	**Marumori**	**0.84**	**6**	P	**Pg**	05 10 59.5	-0.5
JMM				S	Sg	05 11 10.5	-0.5
JFY	**Yanaizu**	**0.86**	**296**	P	**Pg**	05 11 00.3	-0.2
JFY				S	Sg	05 11 11.2	-0.6
JYT	**Yasato**	**0.89**	**206**	P	**Pg**	05 11 00.5	-0.5
JYT				S	Sg	05 11 11.9	-0.7

JMA 12 05:12:11.6±0.3, 36°80N×138°59E, h0km±3km, M3.7, 2C-2D, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JGK	**Kuni**	**0.24**	**170**	⇓P	**Pg**	05 12 17.1	+0.9
JGK				S	Sg	05 12 20.6	+1.3
MAT	**Matsushiro**	**0.40**	**230**	P	**Pg**	05 12 19.3	0.0
MAT				S	Sg	05 12 24.5	0.0
MAT	**Matsushiro**	**0.40**	**230**	P	**Pg**	05 12 19.3	0.0
MAT				S	Sg	05 12 24.4	-0.1
JKT	**Katashina**	**0.53**	**93**	P	**Pg**	05 12 22.0	+0.2
JKT				S	Sg	05 12 29.2	+0.6
JNG	**Nsakai**	**0.56**	**225**	⇑P	**Pg**	05 12 22.3	0.0
JNG				S	Sg	05 12 29.4	-0.1
JHK	**Hiroka**	**0.56**	**37**	⇑P	**Pg**	05 12 22.3	-0.1
JHK				S	Sg	05 12 29.7	0.0
JIZZ	**Izumozaki**	**0.74**	**7**	⇓P	**Pb**	05 12 26.9	-0.4
JIZZ				S	Sb	05 12 38.5	+0.6
JAG	**Ashikaga**	**0.79**	**118**	S	**Sg**	05 12 36.5	-0.4
JRY	**Ryogami san**	**0.82**	**162**	P	**Pg**	05 12 27.2	-0.1
JRY				S	Sg	05 12 38.3	+0.3

JMA 12 05:14:17.1, 37°04N×140°68E, h12km±1km, M3.2, 1C-1D, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.11**	**57**	⇑P	**Pg**	05 14 20.1	-0.1
ONAJ				S	Sg	05 14 22.3	-0.1
JHO	**Hitachi**	**0.44**	**192**	P	**Pg**	05 14 25.6	-0.1
JHO				S	Sg	05 14 31.3	-0.3
JFT	**Otama**	**0.55**	**330**	⇓P	**Pg**	05 14 27.9	0.0
JFT				S	Sg	05 14 35.5	+0.3
JMM	**Marumori**	**0.83**	**6**	S	**Sg**	05 14 43.3	-0.7
JFY	**Yanaizu**	**0.86**	**295**	P	**Pg**	05 14 33.7	0.0
JFY				S	Sg	05 14 44.4	-0.6

JMA 12 05:14:37.9, 37°07N×140°65E, h15km±1km, M3.8, 2D, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.12**	**75**	P	**Pg**	05 14 41.5	0.0
ONAJ				S	Sg	05 14 43.9	0.0
JHO	**Hitachi**	**0.46**	**188**	⇓P	**Pg**	05 14 46.9	-0.2
JHO				S	Sg	05 14 53.1	-0.3
JFT	**Otama**	**0.51**	**331**	⇓P	**Pg**	05 14 48.1	0.0
JFT				S	Sg	05 14 55.0	0.0
JSB	**Shiboa**	**0.59**	**260**	S	**Sg**	05 14 57.8	+0.3

*ISCJB **12** 05:15:05.9±0.6, 37°06N±0°03×140°77E±0°05, h19km±4km, mb3.9/8, Error ellipse: s-maj=7.5km s-min=5.0km az=19.9*
*JMA **12** 05:15:06.5, 37°05N×140°67E, h13km±1km, M4.5*
JMA Felt III J1.
*IDC **12** 05:15:11.5±3.8, 36°67N×140°63E, h72km±33km, mb3.6/8, mb1 3.7/9, mb1mx3.5/50, mbtmp3.8/9, ML3.4/1, Error ellipse: s-maj=36.3km s-min=22.3km az=87.0*
ISC 12 05:15:06.2±0.9, 37°07N±0°03×140°63E±0°06, h11km±8km, n18, σ0°58/24, mb4.0/8, 4C-1D, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.14**	**76**	⇑P	**Pg**	**05 15 09.7**	**+0.1**
ONAJ				S	**Sg**	**05 15 11.9**	**-0.1**
JHO	**Hitachi**	**0.46**	**186**	⇑P	**Pg**	**05 15 15.3**	**+0.1**
JHO				S	**Sg**	**05 15 21.3**	**+0.1**
JFT	**Otama**	**0.51**	**333**	⇓P	**Pb**	**05 15 17.1**	**-0.1**
JFT				S	**Sb**	**05 15 24.3**	**-0.3**
JSB	**Shiboa**	**0.57**	**260**	⇑P	**Pb**	**05 15 18.9**	**+0.6**
JSB				S	**Sb**	**05 15 26.8**	**+0.3**
JFY	**Yanaizu**	**0.81**	**295**	P	**Pb**	**05 15 22.7**	**+0.4**
JFY				S	**Sb**	**05 15 33.5**	**+0.2**
JMM	**Marumori**	**0.81**	**9**	⇑P	**Pg**	**05 15 21.6**	**-0.3**
JMM				S	**Sg**	**05 15 32.6**	**+0.2**
JYT	**Yasato**	**0.91**	**203**	P	**Pg**	**05 15 23.4**	**-0.3**
JYT				S	**Sb**	**05 15 36.1**	**+0.1**
MJAR	**Matsushiro Arr**	**2.01**	**256**	P	**Pb**	**05 15 41.6**	**-1.2**
	109nm,0.3s,baz=78,slow=18,SNR=23						
MJAR				S	**Sb**	**05 16 08.4**	**+0.6**
	66nm,0.3s,baz=87,slow=26,SNR=7.9						
MAT	**Matsushiro**	**2.01**	**256**	P	**Pn**	**05 15 39.6**	**-0.5**
MAT				S	**Sb**	**05 16 08.8**	**+1.0**
KSRS	**Korea Array**	**10.13**	**276**	P	Pn	05 17 36.8	+5.1
	0.3nm,0.3s,baz=84,slow=14,SNR=2.8						
ZALV	**Zalesovo Beam**	**41.43**	**312**	P	**P**	**05 22 53.8**	**+1.2**
	1.2nm,0.6s,baz=110,slow=8.1,SNR=2.1						
MKAR	**Makanchi Array**	**43.57**	**302**	P	**P**	**05 23 09.4**	**-0.7**
	0.8nm,0.7s,baz=99,slow=5.9,SNR=1.8						
ILAR	**Eielson Array**	**49.80**	**32**	P	**P**	**05 23 59.3**	**+0.6**
	0.6nm,0.7s,baz=272,slow=6.8,SNR=3.9						
WRA	**Warramunga Arr**	**57.01**	**187**	P	P	05 24 46.1	-5.9
	2.4nm,0.9s,baz=3.9,slow=7.2,SNR=2.3						
ASAR	**Alice Springs**	**60.74**	**187**	P	P	05 25 13.9	-4.0
	0.4nm,0.7s,baz=322,slow=24,SNR=2.5						
RES	**Resolute Bay**	**62.73**	**14**	P	**P**	**05 25 30.7**	**0.0**
	0.8nm,0.5s,baz=297,slow=4.5,SNR=3.7						
ARCES	**ARCESS Array B**	**63.74**	**339**	P	**P**	**05 25 37.5**	**-0.1**
	1.3nm,0.8s,baz=56,slow=5.6,SNR=3.6						
FINES	**FINESS Array B**	**68.49**	**332**	P	**P**	**05 26 07.4**	**-0.8**
	1.2nm,0.6s,baz=64,slow=3.2,SNR=3.0						

JMA 12 05:20:54.5, 36°88N×140°71E, h6km±1km, M3.0, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.23**	**18**	P	Pg	05 20 59.4	+0.3
ONAJ				S	Sg	05 21 02.9	+0.7
JHO	**Hitachi**	**0.29**	**203**	P	Pg	05 21 00.0	-0.2
JHO				S	Sg	05 21 04.7	+0.7
JFT	**Otama**	**0.70**	**335**	S	Sg	05 21 17.5	+0.3
JMM	**Marumori**	**0.99**	**4**	P	Pg	05 21 13.0	-0.4
JMM				S	Sg	05 21 26.1	-0.2
MAT	**Matsushiro**	**2.04**	**261**	P	Pn	05 21 30.5	+1.1
MAT				S	Sb	05 21 57.1	-0.5

*BJI **12** 05:26:26.8, 36°97N×141°22E, h5km, mb4.7/27, mB5.3/4, Ms5.3/7, Ms7 5.0/8*
*ISCJB **12** 05:26:32.8±0.4, 37°06N±0°02×140°67E±0°03, h24km±2km, mb4.6/101, MS4.9/2, Error ellipse: s-maj=4.1km s-min=3.4km az=41.7*
*JMA **12** 05:26:33.2, 37°04N×140°65E, h14km±1km, M4.8 Broadband fault plane solution: P waves. NP1: ϕs=274.00000°, δ69.00000°, λ-119.00000°. NP2: ϕs=152.00000°, δ35.00000°, λ-38.00000°. Principal axes: T Plg19.0000°, Azm26.0000°; N Plg27.0000°, Azm286.0000°; P Plg56.0000°, Azm146.0000°;*
JMA Felt IV J1.
*IDC **12** 05:26:33.4±4.0, 37°06N×140°57E, h16km±24km, mb4.4/31, mb1 4.5/33, mb1mx4.5/42, mbtmp4.5/33, ML3.9/2 Error ellipse: s-maj=13.9km s-min=9.8km az=98.0*
*MOS **12** 05:26:34.1±1.3, 37°16N×140°62E, h33km, mb4.8/62, Error ellipse: s-maj=7.3km s-min=5.0km az=98.8*
*NEIC **12** 05:26:36.4±0.2, 37°06N×140°65E, h35km, mb4.7/40, Error ellipse: s-maj=5.5km s-min=4.2km az=125.0*
NEIC Recorded [4 JMA] in Fukushima.
ISC 12 05:26:33.5±0.7, 37°07N±0°03×140°67E±0°03, h18km±4km, n261, σ1°06/259, mb4.7/101, 8C-8D, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.11**	**72**	⇓P	**Pg**	**05 26 36.7**	**-0.5**
ONAJ				S	**Sg**	**05 26 39.2**	**-0.6**
JHO	**Hitachi**	**0.46**	**190**	⇑P	**Pg**	**05 26 41.6**	**-1.3**
JHO				S	**Sg**	**05 26 47.7**	**-1.5**
JFT	**Otama**	**0.52**	**329**	⇑P	**Pg**	**05 26 43.9**	**-0.1**
JFT				S	**Sg**	**05 26 51.0**	**0.0**
JSB	**Shiboa**	**0.61**	**261**	⇑P	**Pb**	**05 26 45.2**	**-0.4**
JSB				S	**Sg**	**05 26 52.9**	**-0.8**
JMM	**Marumori**	**0.80**	**7**	⇑P	**Pb**	**05 26 48.4**	**-0.5**
JMM				S	**Sb**	**05 26 59.5**	**+0.1**
JFY	**Yanaizu**	**0.84**	**294**	⇓P	**Pb**	**05 26 49.0**	**-0.6**
JFY				S	**Sb**	**05 26 59.7**	**-0.9**
MJAR	**Matsushiro Arr**	**2.04**	**256**	Pn	**Pn**	**05 27 07.9**	**+0.9**
	163nm,0.3s,baz=80,slow=16,SNR=70						
MJAR				Sn	**Sb**	**05 27 35.1**	**-0.1**
	183nm,0.3s,baz=66,slow=24,SNR=11						
MAJO	**Matsushiro**	**2.05**	**256**	*e*P	**Pb**	**05 27 09.2**	**-0.9**
MAJO				*e*		05 27 33.9	
MAJO	**Matsushiro**	**2.05**	**256**	*e*Pn	**Pb**	**05 27 09.2**	**-0.9**
MAJO				*e*Sn	**Sb**	**05 27 33.9**	**-1.3**
MAT	**Matsushiro**	**2.05**	**256**	P	**Pn**	**05 27 08.0**	**+0.9**
MAT				S	**Sb**	**05 27 34.4**	**-0.9**
INU	**Inuyama**	**3.42**	**241**	*e*Pn	**Pn**	**05 27 28.1**	**+2.2**
JHJ	**Hachijo jima 2**	**4.01**	**191**	Pn	**Pn**	**05 27 34.4**	**+0.4**
	101nm,0.3s,baz=84,slow=22,SNR=2.8						
JHJ				Sn	**Sn**	**05 28 20.5**	**0.0**
	159nm,0.3s,baz=64,slow=22,SNR=3.1						
JHJ2	**Mitsune**	**4.01**	**190**	*e*Pn	**Pn**	**05 27 36.3**	**+2.3**
ERM	**Erimo**	**5.30**	**20**	*e*P	**Pn**	**05 27 52.4**	**+0.7**
ERM				pmax	pmax		
	comp=Z,51nm,0.7s						
ERM	**Erimo**	**5.30**	**20**	*e*Pn	**Pn**	**05 27 51.1**	**-0.7**
YUK	**Yuzh-Kuril'sk**	**8.00**	**28**	*e*P	**Pn**	**05 28 26.8**	**-2.0**
YUK				*e*S	**Sn**	**05 29 54.8**	**-4.0**
YUK				pmax	pmax		
	comp=Z,244nm,0.4s						
YUK				pmax	pmax		
	comp=N,107nm,0.3s						
YUK				pmax	pmax		
	comp=E,104nm,0.2s						
SHO	**Shikotan**	**8.26**	**33**	*e*P	Pn	05 28 29.3	-3.0
SHO				*e*S	Sn	05 29 57.7	-7.4
SHO				pmax	pmax		
	comp=N,24nm,0.4s						
SHO				pmax	pmax		
	comp=Z,101nm,0.4s						
SHO				pmax	pmax		
	comp=E,62nm,0.3s						
JNU	**Nakatsue**	**8.94**	**247**	Pn	**Pn**	**05 28 44.2**	**+2.5**
	comp=E,1.7nm,0.3s,baz=267,slow=6.2,SNR=10						
JNU	**Nakatsue**	**8.94**	**247**	*e*Pn	Pn	05 28 45.3	+3.6
VLA	**Vladivostok**	**9.04**	**315**	*e*P	**Pn**	**05 28 42.3**	**-0.8**
USRK	**Ussuriysk Ar.**	**9.71**	**320**	Pn	Pn	05 28 56.3	+4.1
	comp=E,1.7nm,0.3s,baz=133,slow=13,SNR=72						
KUR	**Kuril'sk**	**9.79**	**31**	*e*P	**Pn**	**05 28 51.9**	**-1.4**
KUR				*e*S	Sn	05 30 37.1	-5.7
KUR				pmax	pmax		
	comp=N,26nm,0.4s						
KUR				pmax	pmax		
	comp=E,25nm,0.4s						
KUR				pmax	pmax		
	comp=Z,93nm,0.4s						
KUR				smax	smax		
	comp=N,63nm,0.6s						
KUR				smax	smax		
	comp=E,58nm,0.5s						
YSS	**Yuzh-Sakhalins**	**10.00**	**8**	⇑*e*P	**Pn**	**05 28 57.0**	**+0.8**
YSS				pmax	pmax		
	comp=Z,70nm,0.9s						
YSS	**Yuzh-Sakhalins**	**10.00**	**8**	*e*Pn	**Pn**	**05 28 57.1**	**+0.9**
JCJ	**Chichijima**	**10.03**	**172**	Sn	Sn	05 30 38.5	-10
	baz=286,slow=20						
KSRS	**Korea Array**	**10.17**	**276**	Pn	Pn	05 29 02.9	+4.3
	comp=Z,2.5nm,0.3s,baz=89,slow=14,SNR=4.6						
KSAR	**Wonju Array Be**	**10.20**	**276**	P	Pn	05 29 02.9	+3.9
KSAR	**Wonju Array Be**	**10.20**	**276**	Pn	Pn	05 29 02.9	+3.9
MDJ	**Mudanjiang**	**11.27**	**315**	P	Pn	05 29 18.7	+5.1
MDJ				pmax	pmax		
	comp=Z,20nm,1.1s						
MDJ	**Mudanjiang**	**11.27**	**315**	*e*Pn	Pn	05 29 17.7	+4.1
KLR	**Kul'dur**	**13.78**	**335**	Pn	**Pn**	**05 29 48.8**	**+1.0**
	comp=Z,0.2nm,0.3s,baz=30,slow=23,SNR=3.6						
TYV	**Tymovskoe**	**13.86**	**5**	*e*P	**

TYV pmax pmax
comp=Z,22nm,0.8s
SKR Severo-Kuril's 17.53 34 *e*P **P 05 30 37.8 -0.1**
NJ2 Nanjing 18.64 261 *e*P **Pn 05 30 54.0 +3.4**
NJ2 pmax pmax
comp=Z,13nm,1.0s
BJI Beijing 19.37 286 P **Pn 05 31 01.0 +1.7**
BJI pmax pmax
comp=Z,8.0nm,1.1s
BJI LR LR
comp=Z,2µm,15.6s
PETK Petropavlovsk- 19.96 31 P **P 05 31 05.2 +0.7**
comp=Z,8.5nm,0.7s,baz=203,slow=13,SNR=7.8
PET Petropavlovsk 20.30 33 *e*P **P 05 31 08.9 +0.7**
PET pmax pmax
comp=Z,14nm,1.1s
HHC Hu-ho-hao-te 22.90 288 *e*P **P 05 31 35.3 -1.0**
HHC pmax pmax
comp=Z,38nm,1.1s
MA2 Magadan 23.45 13 P **P 05 31 42.2 +0.6**
comp=Z,16nm,0.7s,baz=223,slow=9.8,SNR=6.5
YAK Yakutsk 25.91 348 *e*P **P 05 32 02.3 -1.9**
YAK *e**PP **pP 05 32 10.3 +0.7**
YAK *e* 05 32 18.8
YAK *e*S **S 05 36 30.6 -2.7**
YAK *e*SS **SnSn 05 37 33.0 +3.0**
YAK *e*SSS SSS 05 37 53.7
YAK pmax pmax
comp=Z,21nm,1.0s
YAK pmax pmax
comp=E,5.0nm,1.1s
YAK pmax pmax
comp=N,6.0nm,1.0s
YAK pmax pmax
comp=Z,41nm,0.6s
YAK pmax pmax
comp=N,8.0nm,0.5s
YAK pmax pmax
comp=E,10.0nm,0.6s
YAK smax smax
comp=N,1µm,9.8s
YAK smax smax
comp=E,3µm,10.6s
YAK MLR MLR
comp=Z,3µm,14.0s
YAK MLR MLR
comp=N,3µm,17.0s
YAK MLR MLR
comp=E,2µm,14.0s
ENH Enshi 26.74 265 *e*P **P 05 32 12.8 +0.6**
comp=E,12nm,0.6s
ULN Ulaanbaatar 26.84 304⇓ *i*P **P 05 32 11.7 -1.3**
ULN pmax pmax
comp=Z,73nm,6.4s
ULN Ulaanbaatar 26.84 304 *e*P **P 05 32 13.8 +0.7**
comp=Z,6.9nm,0.8s
SEY Seymchan 26.88 12 P **P 05 32 13.7 +0.8**
comp=Z,9.5nm,0.7s,baz=203,slow=6.4,SNR=22
BOD Bodaibo 27.19 328 *e*P **P 05 32 13.2 -2.6**
BOD pmax pmax
comp=Z,6.0nm,0.8s
SONA1 Songino Array 27.27 304 *e*P **P 05 32 16.9 +0.1**
SONM Songino Array 27.27 304 P **P 05 32 16.8 -0.1**
comp=Z,7.2nm,0.6s,baz=100,slow=8.8,SNR=17
SONM PcP **PcP 05 35 37.1 +0.8**
comp=Z,0.8nm,0.5s,baz=116,slow=3.4,SNR=7.0
H11N2 WAKE ISLAND Hy 28.68 120 T T 06 02 18.9
baz=313,slow=75,SNR=133
H11N1 WAKE ISLAND Hy 28.68 120 T T 06 02 21.8
baz=313,slow=75,SNR=248
H11N3 WAKE ISLAND Hy 28.70 120 T T 06 02 23.0
baz=313,slow=75,SNR=208
H11S1 WAKE ISLAND Hy 29.38 122 T T 06 03 16.8
baz=314,slow=76,SNR=361
H11S3 WAKE ISLAND Hy 29.38 122 T T 06 03 16.1
baz=314,slow=76,SNR=296
H11S2 WAKE ISLAND Hy 29.39 122 T T 06 03 12.3
baz=314,slow=76,SNR=184
LZH Lanzhou 29.48 279 *e*P **P 05 32 36.2 -0.5**
LZH pP pP 05 32 39.4 -2.6
LZH sP sP 05 32 43.1 -1.1
LZH pmax pmax
comp=Z,18nm,1.0s
ZAK Zakamensk 29.78 308 *e*P **P 05 32 37.0 -2.1**
ZAK pmax pmax
comp=Z,3.0nm,1.3s
TLY Talaya 29.86 311 *e*P **P 05 32 38.3 -1.4**
TLY pmax pmax
comp=Z,2.0nm,0.5s
GYA Guiyang 30.64 260 P **P 05 32 49.8 +2.8**
GYA pmax pmax
comp=Z,10.0nm,0.8s
CD2 Chengdu 31.08 270 P **P 05 32 50.4 -0.3**
CD2 pmax pmax
comp=Z,1.0nm,0.5s
BILL Bilibino 34.16 17 *i*P **P 05 33 16.3 -0.9**
BILL *i* 05 33 21.5
BILL pmax pmax
comp=Z,9.0nm,1.2s
BILL Bilibino 34.16 17 *e*P **P 05 33 16.9 -0.4**
comp=Z,7.2nm,0.8s
KMI Kunming 34.38 261 P P 05 33 25.0 +5.1
KMI pmax pmax
comp=Z,17nm,0.5s
TIXI Tiksi 35.19 354⇑ *i*P **P 05 33 25.0 -1.0**
TIXI pmax pmax
comp=Z,4.0nm,0.8s
TIXI Tiksi 35.19 354 *e*P **P 05 33 25.1 -1.0**
comp=Z,7.0nm,1.0s
MANU Manus Island 39.41 169 *e*P **P 05 34 01.2 -1.1**
comp=Z,8.7nm,0.5s
WMQ Urumqi 40.29 297 *e*P **P 05 34 11.8 +2.2**
WMQ pmax pmax
comp=Z,7.0nm,1.0s
WMQ LR LR
comp=Z,2µm,14.0s
WMQ LR LR
comp=Z,1µm,14.0s
WMQ LR LR
comp=Z,460nm,12.6s
FAKI Fak Fak 40.55 193 *e*P **P 05 34 12.0 +0.2**
comp=Z,21nm,0.8s
CMAR Chiang Mai Arr 40.93 255 P **P 05 34 15.1 0.0**
comp=Z,0.6nm,0.3s,baz=48,slow=7.4,SNR=2.7
LUWI Luwuk 41.39 208 *e*P **P 05 34 19.4 +0.6**
comp=Z,22nm,0.7s
ZAA0 Zalesovo Array 41.45 312 *e*P **P 05 34 18.1 -0.8**
ZAA0 *e*P pP 05 34 18.5 -5.9
ZALV Zalesovo Beam 41.45 312 P **P 05 34 18.2 -0.7**
comp=Z,4.4nm,0.5s,baz=89,slow=6.4,SNR=16
ZALV PcP **PcP 05 36 15.8 -0.7**
comp=Z,1.2nm,0.5s,baz=91,slow=4.4,SNR=3.2
ZALV ScP **ScP 05 40 06.1 +0.4**
comp=Z,1.2nm,0.4s,baz=101,slow=3.8,SNR=7.4
ZALV Zalesovo Beam 41.45 312 P **P 05 34 18.2 -0.7**
ZALV 05 36 15.8
ZALV pmax pmax
comp=Z,4.0nm,0.5s
ZALV pmax pmax
comp=Z,1.0nm,0.5s
ZALV pmax pmax
comp=N,1.0nm,0.4s
NRIK Noril'sk 42.99 335 P **P 05 34 30.5 -0.8**
comp=N,3.5nm,0.5s,baz=122,slow=7.9,SNR=5.3
MK31 Makanchi Array 43.60 302 P **P 05 34 35.7 -0.8**
MK31 pmax pmax
comp=Z,3.0nm,0.6s
MKAR Makanchi Array 43.60 302 P **P 05 34 35.9 -0.6**
comp=Z,3.4nm,0.6s,baz=87,slow=11,SNR=14
MAKZ Makanchi 43.81 302 *e*P **P 05 34 38.4 +0.2**
MAKZ pmax pmax
comp=Z,5.0nm,0.7s
MAKZ Makanchi 43.81 302 *e*P **P 05 34 38.4 +0.2**
comp=Z,5.2nm,0.7s
CHGN Chignik 44.35 44 *e*P **P 05 34 42.1 -0.3**
KURK Kurchatov 45.44 308 P **P 05 34 49.4 -1.8**
KURK pmax pmax
comp=Z,23nm,0.7s
KURK Kurchatov 45.44 308 *e*P **P 05 34 50.4 -0.8**
comp=Z,12nm,0.6s
KAPI Kappang 46.20 210 P **P 05 34 57.8 +0.3**
comp=Z,16nm,0.6s,baz=49,slow=11,SNR=3.0
PDGK Podgornoye 46.24 298 P **P 05 34 57.2 -0.3**
PDGK pmax pmax
comp=Z,9.0nm,0.9s
KDAK Kodiak Island 47.47 42*c**e*P **P 05 35 07.7 +0.8**
SPU Mount Spurr 47.57 37 *e*P **P 05 35 10.1 +2.4**
KTH Kantishna Hill 48.05 34 *e*P **P 05 35 12.9 +1.4**
comp=Z,10.0nm,1.0s
MLY Manley 48.13 32 *e*P **P 05 35 14.2 +2.0**
comp=Z,6.1nm,0.9s
TKM2 Tokmak 2 49.09 298 *e*P **P 05 35 20.7 +0.7**
TKM2 pmax pmax
comp=Z,20nm,1.4s
TKM2 Tokmak 2 49.09 298 *e*P **P 05 35 20.7 +0.7**
comp=Z,20nm,1.4s
MDM Murphy Dome 49.20 32 *e*P **P 05 35 22.1 +1.8**
comp=Z,5.5nm,0.7s
COLA College 49.37 32 *e*P **P 05 35 23.2 +1.7**
COLA pmax pmax
comp=Z,13nm,2.5s
BATI Baumata 49.66 202 P **P 05 35 24.9 +0.6**
comp=Z,14nm,0.5s,baz=112,slow=24,SNR=2.6
IL1 Eielson Array 49.78 32 *e*P **P 05 35 25.0 +0.3**
ILAR Eielson Array 49.78 32 P **P 05 35 25.3 +0.6**
comp=Z,3.6nm,0.7s,baz=269,slow=6.2,SNR=36
ILB Eielson Array 49.78 32 *e*P **P 05 35 24.5 -0.2**
FRU Bishkek 49.81 298 *e*P P 05 35 29.0 +3.8
KSH Kashi 49.85 294 *e*P P 05 35 33.2 +7.5
KSH *e*pP sP 05 35 37.8 +4.3
CHKZ Chkalovo 49.85 313 P **P 05 35 24.5 -0.8**
CHKZ pmax pmax
comp=Z,19nm,1.4s
OTUK Ortayu 49.92 306 P **P 05 35 25.1 -0.9**
OTUK pmax pmax
comp=Z,5.0nm,0.8s
AAK Ala-Archa 49.95 298⇓ *i*P **P 05 35 26.5 0.0**
AAK pmax pmax
comp=Z,17nm,1.8s
BVA0 Borovoye Array 50.11 312 *i*P **P 05 35 26.2 -1.1**
BVA0 pmax pmax
comp=Z,7.0nm,0.9s
BVAR Borovoye Array 50.11 312 P **P 05 35 27.1 -0.3**
comp=Z,4.7nm,0.7s,baz=78,slow=7.7,SNR=10.0
BVAR PcP **PcP 05 36 46.7 0.0**
comp=Z,1.5nm,0.6s,baz=70,slow=4.7,SNR=3.5
BRVK Borovoye 50.17 312 *e*P **P 05 35 27.7 -0.1**
BRVK pmax pmax
comp=Z,15nm,1.2s
BRVK Borovoye 50.17 312 *e*P **P 05 35 27.6 -0.1**
comp=Z,15nm,1.2s
COEN Coen 50.81 177 *e*P **P 05 35 32.8 -0.1**
comp=Z,16nm,0.9s
ZRNK Zerenda 50.94 312 *e*P **P 05 35 33.4 -0.3**
ZRNK pmax pmax
comp=Z,12nm,0.8s
ZRNK Zerenda 50.94 312 *e*P **P 05 35 33.4 -0.3**
comp=Z,12nm,0.8s
MNAS Manas 51.40 299 P **P 05 35 34.5 -2.9**
MNAS pmax pmax
comp=Z,7.0nm,0.9s
SFK Sufi-Kurgan 51.48 295 P **P 05 35 39.1 +0.9**
SFK pmax pmax
comp=Z,6.0nm,0.7s
EGAK Eagle 52.23 32 *e*P **P 05 35 43.7 +0.7**
comp=Z,5.2nm,1.2s
KK31 Karatay Array 52.59 300 *i*P **P 05 35 44.4 -1.7**
KK31 pmax pmax
comp=Z,4.0nm,0.9s
KKAR Karatay Array 52.59 300 *e*P **P 05 35 46.3 +0.2**
KKAR Karatay Array 52.59 300 *e*P **P 05 35 46.3 +0.2**
INK Inuvik 54.63 27 *e*P **P 05 36 01.5 +0.9**
INK pmax pmax
comp=Z,5.0nm,1.1s
INK Inuvik 54.63 27 *e*P **P 05 36 01.5 +0.9**
comp=Z,5.0nm,1.1s
ARU Arti 55.94 318*d* *i*P **P 05 36 09.9 -0.4**
ARU 05 38 12.2
ARU S **S 05 43 56.4 -0.7**
ARU SS **SS 05 47 40.4 -2.1**
ARU pmax pmax
comp=Z,21nm,1.2s
ARU Arti 55.94 318 *e*P **P 05 36 09.8 -0.5**
comp=Z,18nm,1.0s
FITZ Fitzroy Crossi 56.68 197 P **P 05 36 15.4 -0.4**
comp=Z,6.8nm,0.7s,baz=359,slow=9.6,SNR=7.9
WRAB Tennant Creek 57.01 187*d* *i*P **P 05 36 17.4 -0.8**
WRAB pmax pmax
comp=Z,55nm,0.8s
WRAB Tennant Creek 57.01 187 *e*P **P 05 36 17.5 -0.7**
comp=Z,23nm,0.8s
WB2 Warramunga Arr 57.02 187 *e*P **P 05 36 17.6 -0.7**
comp=Z,24nm,0.7s
WRA Warramunga Arr 57.02 187 P **P 05 36 17.4 -0.8**
comp=Z,21nm,0.5s,baz=2.1,slow=7.1,SNR=142
CTA Charters Tower 57.09 174 P **P 05 36 18.1 -0.6**
comp=Z,3.5nm,0.6s,baz=7.4,slow=9.2,SNR=7.6
AB31 Akbulak array 57.46 310 *i*P **P 05 36 20.4 -0.8**
AB31 pmax pmax
comp=Z,5.0nm,0.6s
ABKAR Akbulak array 57.46 310 *e*P **P 05 36 20.7 -0.5**
AKTO Aktyubinsk 58.21 312 P **P 05 36 25.5 -0.9**
AKTO pmax pmax
comp=Z,8.0nm,1.2s
AS01 Alice Springs 60.74 187 *e*P **P 05 36 43.4 -0.7**
AS31 Alice Springs 60.74 187 *e*P **P 05 36 43.8 -0.3**
comp=Z,2.8nm,0.6s
ASAR Alice Springs 60.74 187 P **P 05 36 43.6 -0.5**
comp=Z,7.0nm,0.7s,baz=13,slow=6.4,SNR=59
MBWA Marble Bar 61.19 202 *e*P **P 05 36 46.9 -0.2**
comp=Z,10nm,0.7s
RES Resolute Bay 62.72 14 *e*P **P 05 36 57.1 +0.3**
RES pmax pmax
comp=Z,11nm,1.4s
RES Resolute Bay 62.72 14 *e*P **P 05 36 57.1 +0.3**
comp=Z,12nm,1.4s
GEYT Alibeck 63.30 299 P **P 05 37 01.0 -0.3**
comp=Z,3.9nm,0.5s,baz=76,slow=6.1,SNR=3.8
ARCES ARCESS Array B 63.76 339 P **P 05 37 03.5 -0.3**
comp=Z,2.1nm,0.5s,baz=57,slow=8.3,SNR=34
YKA Yellowknife Ar 64.08 30 P **P 05 37 06.2 +0.2**
comp=Z,1.2nm,0.7s,baz=303,slow=6.5,SNR=22
YKB5 Yellowknife Ar 64.08 30 *e*P **P 05 37 07.3 +1.4**
DAG Danmarks Havn 65.69 355 *i*P **P 05 37 16.0 -0.2**
comp=Z,7.2nm,0.7s
DAG Danmarks Havn 65.69 355 *i*P **P 05 37 16.0 -0.2**
DAG pmax pmax
comp=Z,5.0nm,0.7s
VRH Novokhopyorsk 67.16 318 *e*P **P 05 37 23.9 -2.1**
VRH pmax pmax
comp=Z,10.0nm,0.8s
LPSR Galich'ya Gora 67.89 320 *e*P **P 05 37 29.1 -1.6**
LPSR pmax pmax
comp=Z,9.0nm,0.8s
FIA1 FINESS Array S 68.50 332 *e*P **P 05 37 33.8 -0.5**
FIA1 *e*P pP 05 37 34.2 -5.9
FINES FINESS Array B 68.51 332 P **P 05 37 34.0 -0.3**
comp=Z,7.4nm,0.7s,baz=60,slow=7.5,SNR=26
VSR Storozhevoye 68.51 319 *e*P **P 05 37 33.6 -1.0**
VSR pmax pmax
comp=Z,7.0nm,0.6s
STKA Stephens Creek 68.59 179 P **P 05 37 35.4 +0.2**
comp=Z,4.3nm,0.7s,baz=336,slow=10,SNR=7.9
VSU Vasula 70.12 329*d* *i*P **P 05 37 44.3 -0.1**
VSU pmax pmax
comp=Z,25nm,0.9s
KBZ Khabaz 70.43 310 P **P 05 37 46.9 +0.3**
comp=Z,4.0nm,0.8s,baz=69,slow=8.9,SNR=7.8
KIV Kislovodsk 70.43 311 *e*P **P 05 37 46.7 0.0**
KIV pmax pmax
comp=Z,9.0nm,0.9s
NEW Newport 70.52 44 P **P 05 37 48.1 +1.0**
baz=304
SUMG Summit 70.65 360 *i*P **P 05 37 49.0 +1.1**
comp=Z,14nm,0.9s
SUMG Summit 70.65 360 *i*P **P 05 37 49.0 +1.1**
SUMG pmax pmax
comp=Z,14nm,0.9s
SUMG Summit 70.65 360 *e*P **P 05 37 48.5 +0.6**
comp=Z,13nm,0.9s
J05D Fort Rock, OR 70.86 50 P **P 05 37 50.6 +1.2**
baz=303
SCO Scoresbysund 72.02 354 *i*P **P 05 37 56.7 +1.0**
comp=Z,3.3nm,0.8s
SCO Scoresbysund 72.02 354 *i*P **P 05 37 56.7 +1.0**
SCO pmax pmax
comp=Z,3.0nm,0.8s
O03D Paynes Creek 72.15 53 P **P 05 37 57.9 +0.7**
baz=304
NC204 NORSAR Array S 73.88 337 *e*P **P 05 38 06.6 -0.4**
AKASG Malin Array Be 73.91 322 P **P 05 38 06.4 -0.9**
comp=Z,3.3nm,0.6s,baz=46,slow=6.0,SNR=11
AKASG Malin Array Be 73.91 322 P **P 05 38 06.4 -0.9**
AKASG pmax pmax
comp=Z,4.0nm,0.6s
KIEV Kiev 73.92 322*d* *i*P **P 05 38 06.8 -0.5**
KIEV pmax pmax
comp=Z,5.0nm,0.6s
KIEV Kiev 73.92 322 *e*P **P 05 38 06.8 -0.5**
comp=Z,6.4nm,0.6s
NB2 NORSAR Subarra 73.92 337 P **P 05 38 06.8 -0.5**
comp=Z,6.4nm,0.9s,baz=38,slow=6.5
NOA NORSAR Array B 73.92 337 P **P 05 38 06.7 -0.5**
comp=Z,3.1nm,0.8s,baz=40,slow=5.9,SNR=8.7
NBO02 NORSAR Array S 74.03 337 *e*P **P 05 38 08.0 +0.1**
FCC Fort Churchill 74.23 26 *e*P **P 05 38 08.9 -0.1**
FCC pmax pmax
comp=Z,7.0nm,1.1s
FCC Fort Churchill 74.23 26 *e*P **P 05 38 08.9 -0.1**
comp=Z,6.9nm,1.1s
LRM Limekiln Ridge 74.53 44 *e*P **P 05 38 12.3 +0.9**
HLID Hailey 74.78 47 P **P 05 38 12.9 +0.2**
baz=307
BOZ Bozeman (W) 75.10 44 P **P 05 38 15.4 +0.9**
baz=308
BOZ Bozeman (W) 75.10 44 *e*P **P 05 38 15.6 +1.1**
BOZ pmax pmax
comp=Z,4.0nm,0.8s
BOZ Bozeman (W) 75.10 44 *e*P **P 05 38 15.6 +1.1**
comp=Z,3.7nm,0.8s
NV01 Mina Array Sit 75.44 53 *e*P **P 05 38 18.1 +1.4**
NVAR Mina Array Bea 75.44 53 P **P 05 38 18.1 +1.4**
comp=Z,1.7nm,0.7s,baz=298,slow=6.0,SNR=12
SFJD Kangerlussuaq 75.90 5 P **P 05 38 18.9 +0.4**
comp=Z,5.2nm,0.7s,baz=304,slow=3.6,SNR=3.3
H17A Grant Village 76.46 44 P **P 05 38 25.0 +2.6**
baz=309
H17A Grant Village 76.46 44 *e*P **P 05 38 25.2 +2.8**
comp=Z,3.9nm,0.8s
IMW Indian Meadow 76.57 45 *e*P **P 05 38 25.4 +2.3**
comp=Z,2.9nm,0.7s
GRAC Grapevine Rang 76.88 54 P **P 05 38 25.2 +0.5**
baz=307
R11A Troy Canyon, C 77.21 52 P **P 05 38 27.0 +0.3**
baz=307
R11A Troy Canyon, C 77.21 52 *e*P **P 05 38 28.0 +1.4**
comp=Z,4.8nm,1.3s
MPMC Manual Prospec 77.36 54 P **P 05 38 27.9 +0.3**
baz=307
FURC Furnace Creek, 77.53 54 P **P 05 38 28.8 +0.6**
baz=307
TPNV Topopah Spring 77.63 53 P **P 05 38 29.3 +0.2**
baz=307
TPNV Topopah Spring 77.63 53 *e*P **P 05 38 30.4 +1.3**
TPNV pmax pmax
comp=Z,6.0nm,0.9s
TPNV Topopah Spring 77.63 53 *e*P **P 05 38 30.4 +1.3**
comp=Z,6.3nm,0.9s
DUG Dugway, Tooele 77.78 49 P **P 05 38 30.2 +0.4**
baz=308
BUR08 Bucovina Ar. S 77.90 321 *e*P **P 05 38 30.4 +0.1**
BW06 Boulder Array 78.06 45 P **P 05 38 31.5 0.0**
baz=310
BW06 Boulder Array 78.06 45 *e*P **P 05 38 31.9 +0.4**
PD31 Pinedale Array 78.06 45 *e*P **P 05 38 32.7 +1.3**
PDAR Pinedale Array 78.06 45 P **P 05 38 32.1 +0.6**
comp=Z,1.2nm,0.7s,baz=235,slow=1.8,SNR=11
BRTR Keskin Array B 78.38 311 P **P 05 38 33.1 -0.1**
comp=Z,1.6nm,0.7s,baz=57,slow=9.0,SNR=3.6
C26A Wahner Farm, P 78.65 38 P **P 05 38 35.4 +1.1**
baz=314
A28A Rude Farm, Bot 78.77 36 P **P 05 38 35.0 +0.1**
baz=315
BR231 Keskin MP Arra 78.83 312 *e*P **P 05 38 37.8 +2.3**
CRVS Cervenica-Dubn 78.85 324 *e*P **P 05 38 34.8 -0.6**
CRVS Cervenica-Dubn 78.85 324 *e*P **P 05 38 34.8 -0.6**
E25A Miller Ranch, 78.91 39 P **P 05 38 36.2 +0.4**
baz=313
MLR Muntele Rosu 78.97 319 *e*P P 05 38 39.9 +3.6
MLR pmax pmax
comp=Z,15nm,1.3s
MLR Muntele Rosu 78.97 319 *e*P P 05 38 39.9 +3.6
comp=Z,15nm,1.3s
D26A Manning 79.03 38 P **P 05 38 36.4 0.0**
baz=314
B28A Dugan Ranch, T 79.05 36 P **P 05 38 36.6 +0.1**
baz=315
A29A Manning Farm, 79.25 36 P **P 05 38 37.7 +0.2**
baz=315
GMRC Granite Mounta 79.33 54 P **P 05 38 38.4 0.0**
baz=308
E26A Carlson Angus 79.40 39 P **P 05 38 39.0 +0.5**
baz=314
LCMT Little Creek M 79.49 51 *e*P **P 05 38 41.1 +1.8**
comp=Z,3.5nm,1.0s
KECS Kecovo 79.60 324 *e*P **P 05 38 40.2 +0.7**
KECS Kecovo 79.60 324 *e*P **P 05 38 40.2 +0.7**
P18A Preston Nutter 79.67 48 *e*P **P 05 38 41.7 +1.3**
comp=Z,3.6nm,0.7s
F26A Lodgepole 79.72 39 P **P 05 38 40.3 0.0**
baz=314
KNB Kanab 79.75 51 *e*P **P 05 38 42.8 +2.0**
KNB pmax pmax
comp=Z,16nm,1.6s
KNB Kanab 79.75 51 *e*P **P 05 38 42.8 +2.0**
comp=Z,16nm,1.6s
G25A Newell 79.79 40 P **P 05 38 40.1 -0.5**
baz=313
ULM Lac du Bonnet 79.80 33 P **P 05 38 41.5 +1.0**
comp=Z,2.7nm,0.6s,baz=326,slow=3.1,SNR=4.1
SRU San Rafael Swe 79.83 48 *e*P **P 05 38 41.8 +0.6**
SRU pmax pmax
comp=Z,3.0nm,0.6s
SRU San Rafael Swe 79.83 48 *e*P **P 05 38 41.8 +0.6**
comp=Z,3.3nm,0.6s
E27A Carson 79.88 38 P **P 05 38 40.4 -0.7**
baz=314
B30A Myrvik Farm, E 80.00 35 P **P 05 38 41.4 -0.3**
baz=316
F27A Lemmon 80.04 39 P **P 05 38 41.7 -0.2**
baz=314
IRM Iron Mountain 80.04 55 P **P 05 38 41.7 -0.4**
baz=308
H25A Fruitdale 80.09 41 P **P 05 38 42.2 -0.1**
baz=313
G26A Maurine 80.14 40 P **P 05 38 42.1 -0.4**
baz=314
CLL Collm 80.77 330 *e*P P 05 38 38.0 -7.7
comp=Z,6.0nm,0.8s
CLL *e* 05 38 45.0
CLL Collm 80.77 330 *e*P P 05 38 38.0 -7.7
CLL *e* 05 38 45.0
CLL pmax pmax
comp=Z,75nm,0.8s
B32A Ashes, Strandq 80.87 35 P **P 05 38 45.3 -0.9**
baz=317
Y14A Wickenburg 81.57 54 *e*P **P 05 38 51.7 +1.3**
comp=Z,13nm,0.8s
WUAZ Wupatki 81.61 52 *e*P **P 05 38 51.1 +0.5**
comp=Z,4.2nm,0.9s
C33A Trail 81.68 35 P **P 05 38 50.4 -0.3**
baz=318
H29A Onida 81.82 39 P **P 05 38 51.3 -0.2**
baz=315
G30A Faulkton 82.00 38 P **P 05 38 52.4 +0.1**
baz=316
B35A Bob, Littlefor 82.15 33 P **P 05 38 52.6 -0.4**
baz=319
C34A RKJ Rach, Bem 82.15 34 P **P 05 38 52.6 -0.5**
baz=318
KHC Kasperske Hory 82.20 328 *e*P **P 05 38 53.0 -0.4**
KHC Kasperske Hory 82.20 328 *e*P **P 05 38 53.0 -0.4**
ISCO Idaho Springs 82.25 45 P **P 05 38 54.1 -0.1**
baz=312
GERES GERESS Array B 82.37 328 P **P 05 38 54.1 -0.3**
comp=Z,1.3nm,0.6s,baz=38,slow=6.8,SNR=5.7
D34A Park Rapids 82.44 35 P **P 05 38 54.1 -0.5**
baz=318
E33A Westby DABS, E 82.50 36 P **P 05 38 54.7 -0.3**
baz=318
C35A Jirik Farms, M 82.53 34 P **P 05 38 54.5 -0.6**
baz=319
G32A Webster 82.71 37 P **P 05 38 55.8 -0.3**
baz=317
I30A Oacoma 82.72 39 P **P 05 38 55.7 -0.5**
baz=316
C37A Embarrass 83.30 33 P **P 05 38 58.6 -0.5**
baz=320
H33A Prehn Over Nor 83.50 37 P **P 05 39 00.1 -0.1**

baz=317
K30A Basset 83.52 40 P P 05 39 00.1 -0.2
baz=316
C38A Sawbill Land. 83.70 32 P P 05 39 01.1 0.0
baz=321
H35A Sunnyside Ranc 84.40 36 P P 05 39 05.2 +0.4
baz=319
ANMO Albuquerque 85.02 49 ⇑*i*P P 05 39 08.8 +0.5
ANMO pmax pmax
comp=Z,5.0nm,1.6s
SCHQ Schefferville 85.47 16 P P 05 39 10.6 +0.7
comp=Z,3.9nm,0.8s,baz=288,slow=6.4,SNR=2.4
I37A Lemond, Waseca 85.59 36 P P 05 39 10.6 -0.1
baz=320
L34A Svendsen Farm, 85.68 39 P P 05 39 10.6 -0.6
baz=318
CBKS Cedar Bluff 86.21 43 P P 05 39 13.9 -0.1
baz=316
K37A Belmond 86.42 37 P P 05 39 14.5 -0.4
baz=320
T38A Diamond 90.43 41 P P 05 39 33.5 -0.6
baz=319
TX31 Lajitas Ar. Si 90.57 52 *e*P P 05 39 35.5 +0.5
TXAR Lajitas Array 90.57 52 P P 05 39 35.5 +0.5
comp=Z,1.5nm,0.7s,baz=300,slow=2.5,SNR=8.4
V38A Canehill 91.25 42 P P 05 39 37.3 -0.6
baz=319
U39A Green Forest 91.35 41 P P 05 39 37.8 -0.6
baz=320
BLO Bloomington 92.58 35 *e*P P 05 39 43.0 -0.9
BLO pmax pmax
comp=Z,8.0nm,0.6s
BLO Bloomington 92.58 35 *e*P P 05 39 43.0 -0.9
comp=Z,8.0nm,0.6s
TORD Torodi Ar. Bea 116.88 314 PKP PKPdf 05 45 17.9 +0.3
comp=Z,0.2nm,0.4s,baz=42,slow=3.5,SNR=3.3
SDV Santo Domingo 125.68 39 PKP PKPdf 05 45 35.3 +0.5
comp=Z,2.3nm,0.6s,baz=68,slow=5.4,SNR=2.7
DBIC Dimbokro 125.86 316 PKP PKPdf 05 45 37.4 +2.6
comp=Z,2.4nm,0.9s,baz=212,slow=2.0,SNR=4.1
LPAZ La Paz 147.19 59 PKPbc PKPbc 05 46 17.7 +0.9
comp=Z,6.0nm,0.7s,baz=343,slow=2.0,SNR=16
SIV San Ignacio 151.51 48 PKPbc PKPbc 05 46 26.5 -0.5
comp=Z,2.8nm,0.7s,baz=299,slow=3.5,SNR=4.9

*ISCJB **12** 05:32:17.7±0.5, 31°.27N±0°.04×115°.66W±0°.03, h0km±6km, Error ellipse: s-maj=7.3km s-min=3.8km az=31.4*
*MEX **12** 05:32:18.8±0.4, 30°.94N×115°.71W, h16km±477km, MD3.7*
*ECX **12** 05:32:18.9±0.5, 31°.23N×115°.65W, h5km±2km, MD2.9, ML3.1*

ISC 12 05:32:17.6±1.1, 31°.28N±0°.03×115°.67W±0°.04, h6km±12km, n21, σ0°60/34, 6C-6D, Baja California

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
SPIG	**San Pedro Mart**	**0.29**	**144**	⇑*e*P		**Pg**	**05 32 23.3**	**-0.2**
SPIG				*e*S		**Sg**	**05 32 27.3**	**-0.2**
SPIG	**San Pedro Mart**	**0.29**	**144**	*e*P		**Pg**	**05 32 23.7**	**+0.2**
SPIG				*e*S		**Sg**	**05 32 27.3**	**-0.2**
SPX	**San Pedro Mart**	**0.30**	**143**	⇓*i*P		**Pg**	**05 32 23.7**	**+0.2**
SPX				*e*S		**Sg**	**05 32 27.4**	**-0.1**
SPX				AML	AML		05 32 28.3	
	comp=N,3μm,0.2s							
SPX				*e*			05 32 28.3	
SPX				⇓*e*			05 32 28.3	
SPX				AML	AML		05 32 28.3	
	comp=E,2μm,0.2s							
ECBX	**El Chinero**	**0.56**	**70**	⇑*e*P		**Pg**	**05 32 28.9**	**+0.5**
ECBX				*e*S		**Sg**	**05 32 36.4**	**+0.6**
ECBX				⇑*e*			05 32 37.1	
ECBX				AML	AML		05 32 37.1	
	comp=E,733nm,0.5s							
ZAX	**El Zacaton**	**0.56**	**294**	⇑*e*P		**Pg**	**05 32 29.2**	**+0.7**
ZAX				*e*S		**Sb**	**05 32 38.0**	**-0.3**
ZAX				AML	AML		05 32 39.6	
	comp=N,1μm,0.6s							
ZAX				⇑*e*			05 32 39.6	
ECNX	**Esteban Cantu**	**0.88**	**295**	⇓*e*P		**Pg**	**05 32 34.9**	**+0.5**
ECNX				*e*S		**Sb**	**05 32 47.5**	**+0.1**
PBX	**Punta Banda**	**1.01**	**297**	⇓*e*P		**Pg**	**05 32 37.2**	**+0.2**
PBX				*e*S		**Sb**	**05 32 51.2**	**+0.1**
CBX	**Cerro Bola**	**1.33**	**321**	⇓*e*P		**Pn**	**05 32 42.9**	**0.0**
CBX				AML	AML		05 33 07.1	
	comp=N,332nm,0.5s							
CBX				⇑*e*			05 33 07.1	
CBX	**Cerro Bola**	**1.33**	**321**	*e*P		**Pn**	**05 32 42.9**	**0.0**
CBX				*e*S		**Sn**	**05 33 01.1**	**+0.2**
RMX	**La Rumorosa**	**1.36**	**345**	⇓*e*P		**Pb**	**05 32 43.6**	**0.0**
IBP	**Imperial Bould**	**1.42**	**345**	P		**Pg**	**05 32 44.9**	**+0.1**
	baz=159							
IBP				S		**Sg**	**05 33 03.7**	**+0.4**
	baz=159							
TJIG	**Tijuana**	**1.43**	**324**	*e*P		**Pb**	**05 32 44.6**	**-0.1**
TJIG				*i* SG		**Sg**	**05 33 03.9**	**+0.2**
SWSC	**Sam W. Stewart**	**1.66**	**356**	Pb		**Pg**	**05 32 49.5**	**+0.1**
	baz=171							
MONP2	**Monument Peak**	**1.72**	**339**	P		**Pb**	**05 32 49.8**	**-0.1**
	baz=153							
MONP2				S		**Sb**	**05 33 12.4**	**+0.6**
	baz=153							
GLA	**Glamis**	**1.90**	**22**	P		**Pn**	**05 32 50.7**	**0.0**
	baz=199							
109C	**Camp Elliot, M**	**2.01**	**323**	P		**Pb**	**05 32 53.8**	**-0.8**
	baz=138							
109C				S		**Sb**	**05 33 20.2**	**+0.3**
	baz=138							
PFO	**Pinyon Flats O**	**2.41**	**344**	Pb		**Pg**	**05 33 03.0**	**-0.8**
	baz=160							
PFO				Sb		**Sg**	**05 33 34.3**	**-0.9**
	baz=160							
214A	**Organ Pipe Nat**	**2.53**	**74**	P		**Pn**	**05 32 58.6**	**-0.7**
	baz=256							
MURC	**Murrieta**	**2.65**	**331**	Sb		**Sb**	**05 33 39.1**	**+0.9**
	baz=147							
BELC	**Belle Mtn. Jos**	**2.72**	**354**	P		**Pn**	**05 33 03.2**	**+1.2**
	baz=171							
BBRC	**Big Bear Solar**	**3.15**	**341**	Sb		**Sg**	**05 33 57.0**	**-1.9**
	baz=157							

*ISK **12** 05:32:26.7, 39°.41N×40°.72E, h8km, MD2.7*
*ISCJB **12** 05:32:27.3±0.5, 39°.40N±0°.03×40°.80E±0°.05, h9km±7km, Error ellipse: s-maj=7.5km s-min=4.4km az=23.0*
*DDA **12** 05:32:27.4, 39°.39N×40°.78E, h7km, Md2.7*
*CSEM **12** 05:32:27.4±0.2, 39°.40N×40°.76E, h10km, MD2.7, Error ellipse: s-maj=5.7km s-min=4.7km az=130.0*

ISC 12 05:32:26.3±1.2, 39°.38N±0°.03×40°.88E±0°.03, h18km±4km, n23, σ0°73/32, Turkey

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
BNGB	**Bing˜¶‖**	**0.42**	**202**	*e*PG		**Pg**	**05 32 35.3**	**+0.4**
BNGB				*e*SG		**Sb**	**05 32 41.5**	**+0.2**
BGOL	**Bingol**	**0.42**	**203**	*i* P		**Pg**	**05 32 35.3**	**+0.3**
BGOL				*i* S		**Sb**	**05 32 41.9**	**+0.5**
BGOL	**Bingol**	**0.42**	**203**	P		**Pg**	**05 32 35.3**	**+0.3**
BGOL				S		**Sb**	**05 32 41.9**	**+0.5**
VRTB	**Varto-Mus**	**0.50**	**116**	*e*PG		**Pn**	**05 32 39.1**	**+0.5**
VRTB	**Varto-Mus**	**0.50**	**116**	*e*Pg		**Pn**	**05 32 39.1**	**+0.5**
BINT	**Bingol**	**0.59**	**211**	*e*Pg		**Pg**	**05 32 35.3**	**-2.7**
EZM	**Erzurum**	**0.65**	**35**	*e*PG		**Pn**	**05 32 40.7**	**-0.1**
ERZM	**Erzurum**	**0.65**	**35**	*i* P		**Pn**	**05 32 40.8**	**0.0**
ERZM				*i* S		**Sn**	**05 32 49.8**	**-0.9**
ERZM	**Erzurum**	**0.65**	**35**	P		**Pn**	**05 32 40.8**	**0.0**
ERZM				S		**Sn**	**05 32 49.8**	**-0.9**
KOPT	**Kop Dagi**	**0.70**	**335**	*i* P		**Pg**	**05 32 40.7**	**+0.5**
KOPT				*i* S		**Sb**	**05 32 50.0**	**+0.4**
KOPT	**Kop Dagi**	**0.70**	**335**	P		**Pg**	**05 32 40.7**	**+0.5**
KOPT				S		**Sb**	**05 32 50.0**	**+0.4**
TNCL	**Tunceli-Merkez**	**1.07**	**256**	*i* P		**Pn**	**05 32 46.8**	**+0.3**
TNCL				*i* S		**Sg**	**05 33 01.4**	**+0.3**
TNCL	**Tunceli-Merkez**	**1.07**	**256**	P		**Pn**	**05 32 46.8**	**+0.3**
TNCL				S		**Sg**	**05 33 01.4**	**+0.3**
BAYT	**Ayd¯–ntepe-Bay**	**1.16**	**331**	*e*PN		**Pn**	**05 32 47.6**	**-0.1**
BAYT	**Ayd¯–ntepe-Bay**	**1.16**	**331**	*e*Pn		**Pn**	**05 32 47.7**	**-0.1**
PTK	**Pertek**	**1.25**	**248**	*e*PN		**Pn**	**05 32 49.5**	**+0.4**
PTK	**Pertek**	**1.25**	**248**	*e*Pn		**Pn**	**05 32 49.5**	**+0.4**
KELT	**Kelkit**	**1.47**	**302**	*i* P		**Pb**	**05 32 53.3**	**+0.1**
KELT	**Kelkit**	**1.47**	**302**	P		**Pb**	**05 32 53.3**	**+0.1**
AGRB	**Hanur-Agry**	**1.65**	**82**	*e*PN		**Pg**	**05 32 58.4**	**+0.4**
AGRB	**Hanur-Agry**	**1.65**	**82**	*e*Pn		**Pg**	**05 32 58.4**	**+0.4**
DBAD	**Bademkaya**	**1.75**	**21**	*i* P		**Pn**	**05 32 54.6**	**-1.2**
DBAD	**Bademkaya**	**1.75**	**21**	P		**Pn**	**05 32 54.7**	**-1.2**

*ISCJB **12** 05:32:46.7±0.5, 37°.09N±0°.03×140°.71E±0°.05, h20km±4km, mb3.4/7, Error ellipse: s-maj=6.5km s-min=4.9km az=15.2*
*JMA **12** 05:32:47.1, 37°.10N×140°.65E, h15km±1km, M4.0*
Broadband fault plane solution: P waves. NP1: ϕs75.00000°, δ85.00000°, λ151.00000°. NP2: ϕs168.00000°, δ61.00000°, λ6.00000°. Principal axes: T Plg24.0000°, Azm27.0000°; N Plg60.0000°, Azm245.0000°; P Plg16.0000°, Azm125.0000°;
JMA Felt IV J1.
*IDC **12** 05:32:54.2±2.9, 36°.98N×140°.46E, h71km±26km, mb3.1/7, mb1 3.4/9, mb1mx3.2/44, mbtmp3.5/9 Error ellipse: s-maj=25.2km s-min=17.5km az=101.0*

ISC 12 05:32:46.8±1.0, 37°.11N±0°.03×140°.58E±0°.05, h9km±8km, n24, σ0°66/25, mb3.5/7, 3C-4D, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.17**	**92**	⇓P		**Pg**	**05 32 50.7**	**+0.2**
ONAJ						**Sg**	**05 32 53.0**	**-0.1**
JFT	**Otama**	**0.45**	**335**	⇓P		**Pb**	**05 32 56.9**	**-0.1**
JFT						**Sb**	**05 33 03.5**	**-0.3**
JHO	**Hitachi**	**0.50**	**181**	⇑P		**Pg**	**05 32 56.6**	**+0.2**
JHO						**Sg**	**05 33 03.1**	**+0.1**
JSB	**Shiboa**	**0.55**	**255**	⇓P		**Pb**	**05 32 59.3**	**+0.7**
JSB						**Sb**	**05 33 07.2**	**+0.7**
JFY	**Yanaizu**	**0.76**	**293**	⇓P		**Pb**	**05 33 02.6**	**+0.4**
JFY						**Sb**	**05 33 13.0**	**+0.3**
JMM	**Marumori**	**0.77**	**13**	⇑P		**Pg**	**05 33 01.4**	**-0.3**
JMM						**Sg**	**05 33 11.8**	**0.0**
JYT	**Yasato**	**0.93**	**199**	⇑P		**Pg**	**05 33 04.4**	**-0.3**
JYT						**Sg**	**05 33 16.9**	**+0.1**
MJAR	**Matsushiro Arr**	**1.98**	**254**	P		**Pb**	**05 33 22.5**	**-0.6**
	12nm,0.3s,baz=79,slow=17,SNR=18							
MJAR						**Sn**	**05 33 46.5**	**+0.9**
	27nm,0.3s,baz=65,slow=30,SNR=14							
MAT	**Matsushiro**	**1.98**	**254**	P		**Pb**	**05 33 22.6**	**-0.5**
MAT						**Sb**	**05 33 47.3**	**-0.7**
USRK	**Ussuriysk Ar.**	**9.63**	**320**	P		Pn	05 35 11.4	+5.9
	0.2nm,0.3s,baz=132,slow=14,SNR=5.4							
KSRS	**Korea Array**	**10.09**	**276**	P		Pn	05 35 16.4	+4.5
	0.7nm,0.3s,baz=292,slow=13,SNR=3.6							
SONM	**Songino Array**	**27.19**	**304**	P		**P**	**05 38 31.2**	**+0.4**
	0.5nm,0.8s,baz=96,slow=4.3,SNR=3.1							
H11N2	**WAKE ISLAND Hy**	**28.76**	**120**	T		T	06 08 37.1	
	baz=313,slow=75,SNR=15							
H11N1	**WAKE ISLAND Hy**	**28.77**	**120**	T		T	06 08 36.7	
	baz=313,slow=75,SNR=17							
H11N3	**WAKE ISLAND Hy**	**28.78**	**120**	T		T	06 08 37.5	
	baz=313,slow=75,SNR=14							
H11S1	**WAKE ISLAND Hy**	**29.46**	**122**	T		T	06 09 29.4	
	baz=314,slow=76,SNR=41							
H11S3	**WAKE ISLAND Hy**	**29.46**	**122**	T		T	06 09 30.0	
	baz=314,slow=76,SNR=41							
H11S2	**WAKE ISLAND Hy**	**29.48**	**122**	T		T	06 09 31.7	
	baz=314,slow=76,SNR=25							
MKAR	**Makanchi Array**	**43.51**	**302**	P		**P**	**05 40 50.6**	**0.0**
	0.2nm,0.3s,baz=87,slow=11,SNR=2.5							
KURBB	**Kurchatov Arra**	**45.43**	**308**	P		**P**	**05 41 05.0**	**-0.8**
	0.2nm,0.3s,baz=82,slow=8.2,SNR=4.0							
ILAR	**Eielson Array**	**49.79**	**32**	P		**P**	**05 41 39.9**	**+0.4**
	0.5nm,0.8s,baz=263,slow=5.4,SNR=3.3							
WRA	**Warramunga Arr**	**57.05**	**187**	P		**P**	**05 42 31.9**	**-1.4**
	1.0nm,0.7s,baz=3.3,slow=7.1,SNR=7.1							
ASAR	**Alice Springs**	**60.78**	**187**	P		**P**	**05 42 58.0**	**-1.1**
	0.3nm,0.6s,baz=17,slow=6.8,SNR=3.3							
YKA	**Yellowknife Ar**	**64.08**	**30**	P		**P**	**05 43 22.0**	**+1.2**
	0.1nm,0.7s,baz=288,slow=6.2,SNR=2.6							

*ISCJB **12** 05:33:51.1±0.7, 19°.11S±0°.04×69°.44W±0°.10, h121km±5km, mb3.3/2, Error ellipse: s-maj=15.4km s-min=7.1km az=176.7*
*GUC **12** 05:33:51.0±0.7, 19°.09S×69°.37W, h111km±3km, ML3.4*
*IDC **12** 05:34:11.5±3.5, 16°.63S×68°.07W, h204km±9km, mb3.0/2, mb1 3.1/3, mb1mx2.9/33, mbtmp3.5/3, Error ellipse: s-maj=159.9km s-min=28.8km az=9.0*

ISC 12 05:33:51.4±1.0, 19°.09S±0°.05×69°.34W±0°.10, h111km±8km, n13, σ0°96/21, 8C-1D, Northern Chile

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
MNMC	**Minye Minye**	**0.24**	**260**	⇑*i*P		**Pn**	**05 34 07.3**	**-0.1**
MNMC				*i* S		**Sn**	**05 34 19.6**	**+0.2**
PB11	**IPOC Station P**	**0.73**	**204**	⇑*i*P		**Pn**	**05 34 10.5**	**+0.2**
PB11				*i* S		**Sn**	**05 34 25.0**	**+0.4**
PB13	**IPOC Station P**	**0.76**	**348**	⇓*i*P		**Pn**	**05 34 11.8**	**+0.6**
PB13				*i* S		**Sn**	**05 34 26.8**	**+1.0**
PSGC	**Pisagua**	**0.90**	**235**	⇑*i*P		**Pn**	**05 34 11.7**	**0.0**
PSGC				*i* S		**Sn**	**05 34 27.1**	**0.0**
PB12	**IPOC Station P**	**1.05**	**297**	⇑*i*P		**Pn**	**05 34 13.2**	**0.0**
PB12				*i* S		**Sn**	**05 34 29.5**	**-0.3**
PB08	**IPOC Station P**	**1.06**	**170**	⇑*i*P		**Pn**	**05 34 14.3**	**+0.6**
PB08				*i* S		**Sn**	**05 34 31.4**	**+0.8**
HMBC	**Humberstone**	**1.29**	**203**	⇑*i*P		**Pn**	**05 34 15.9**	**-0.1**
HMBC				*i* S		**Sn**	**05 34 35.0**	**+0.5**
HMBC				IAML			05 34 37.1	
	comp=N,584nm,0.2s							
PB01	**IPOC Station P**	**1.95**	**184**	⇑*i*P		**Pn**	**05 34 24.3**	**+0.4**
PB01				*i* S		**Sn**	**05 34 49.3**	**+0.6**
PB01				IAML			05 34 53.0	
	comp=N,311nm,0.3s							
PB07	**IPOC Station P**	**2.67**	**191**	⇑*i*P		**Pn**	**05 34 34.0**	**+0.6**
PB07				IAML			05 35 13.4	
	comp=E,197nm,0.7s							
LPAZ	**La Paz**	**3.02**	**23**	P		**Pn**	**05 34 39.9**	**+1.6**
	comp=E,1.6nm,0.3s,baz=171,slow=6.9,SNR=45							
SIV	**San Ignacio**	**8.47**	**70**	P		**Pn**	**05 35 48.5**	**-2.8**
	comp=E,1.4nm,0.3s,baz=262,slow=12,SNR=11							
TORD	**Torodi Ar. Bea**	**76.94**	**71**	P		**P**	**05 45 31.2**	**-1.1**
	comp=E,0.4nm,0.5s,baz=263,slow=4.4,SNR=5.3							
YKA	**Yellowknife Ar**	**88.79**	**341**	P		**P**	**05 46 32.7**	**+0.4**
	comp=E,0.1nm,0.3s,baz=130,slow=4.7,SNR=5.4							

IDC 12 05:41:37.3±2.0, 14°.57S×175°.74W, h0km, mb3.7/6, mb1 4.1/6, mb1mx3.8/35, mbtmp3.7/6, Error ellipse: s-maj=140.3km s-min=24.3km az=151.0, Samoa Islands region

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**47.84**	**256**	P		P	05 50 18.0	+0.7
	0.6nm,0.9s,baz=79,slow=8.3,SNR=3.6							
ASAR	**Alice Springs**	**48.23**	**251**	P		P	05 50 19.6	-0.7
	2.6nm,0.8s,baz=85,slow=8.5,SNR=16							
NVAR	**Mina Array Bea**	**75.25**	**43**	P		P	05 53 21.5	-1.0
	0.5nm,0.7s,baz=221,slow=8.1,SNR=3.5							
TXAR	**Lajitas Array**	**82.04**	**57**	P		P	05 54 01.1	+1.0
	0.3nm,0.7s,baz=214,slow=9.5,SNR=3.8							
ILAR	**Eielson Array**	**82.09**	**12**	P		P	05 53 59.8	+0.5
	0.2nm,0.5s,baz=211,slow=6.9,SNR=2.9							
PDAR	**Pinedale Array**	**83.17**	**43**	P		P	05 54 05.6	-0.2
	0.6nm,0.8s,baz=238,slow=2.8,SNR=5.2							

*ISCJB **12** 05:42:20.0±0.9, 37°.07N±0°.03×140°.68E±0°.04, h14km±6km, mb3.6/11, Error ellipse: s-maj=5.8km s-min=4.7km az=24.4*
*IDC **12** 05:42:19.4±0.8, 37°.03N×140°.55E, h0km, mb3.7/11, mb1 3.8/12, mb1mx3.6/47, mbtmp3.7/12, ML3.2/1, Error ellipse: s-maj=19.7km s-min=18.1km az=155.0*
*JMA **12** 05:42:20.4, 37°.08N×140°.64E, h6km±2km, M4.1*
Broadband fault plane solution: P waves. NP1: ϕs233.00000°, δ64.00000°, λ-95.00000°. NP2: ϕs65.00000°, δ26.00000°, λ-79.00000°. Principal axes: T Plg19.0000°, Azm327.0000°; N Plg5.0000°, Azm235.0000°; P Plg70.0000°, Azm132.0000°;
JMA Felt II J1.

ISC 12 05:42:20.1±1.2, 37°.09N±0°.03×140°.59E±0°.04, h4km±8km, n28, σ0°69/30, mb3.7/11, 4C, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.16**	**87**	⇑P		**Pg**	**05 42 23.2**	**-0.1**
ONAJ						**Sg**	**05 42 25.5**	**0.0**
JFT	**Otama**	**0.47**	**334**	⇑P		**Pb**	**05 42 30.4**	**-0.6**
JFT						**Sb**	**05 42 37.3**	**-1.0**
JHO	**Hitachi**	**0.48**	**182**	P		**Pg**	**05 42 29.4**	**+0.1**
JHO						**Sg**	**05 42 36.1**	**+0.5**
JSB	**Shiboa**	**0.55**	**257**	⇑P		**Pb**	**05 42 32.5**	**+0.1**
JSB				S		**Sb**	**05 42 41.0**	**+0.3**
JFY	**Yanaizu**	**0.78**	**294**	⇑P		**Pb**	**05 42 36.1**	**-0.1**
JFY				S		**Sb**	**05 42 46.7**	**-0.4**
JMM	**Marumori**	**0.79**	**12**	P		**Pg**	**05 42 35.4**	**+0.2**
JMM				S		**Sg**	**05 42 46.0**	**+0.6**
JYT	**Yasato**	**0.92**	**201**	P		**Pg**	**05 42 37.7**	**-0.1**
JYT				S		**Sg**	**05 42 49.7**	**0.0**
MJAR	**Matsushiro Arr**	**1.99**	**255**	Pn		**Pn**	**05 42 53.3**	**-1.3**
	10nm,0.3s,baz=73,slow=15,SNR=30							
MJAR						**Sn**	**05 43 20.9**	**+0.9**
	35nm,0.3s,baz=85,slow=26,SNR=18							
USRK	**Ussuriysk Ar.**	**9.65**	**320**	Pn		Pn	05 44 43.7	+4.1
	0.1nm,0.3s,baz=131,slow=10,SNR=5.6							
KSRS	**Korea Array**	**10.11**	**276**	Pn		**Pn**	**05 44 46.7**	**+0.8**
	0.2nm,0.3s,baz=181,slow=17,SNR=2.4							
SONM	**Songino Array**	**27.21**	**304**	P		**P**	**05 48 05.2**	**+0.2**
	0.7nm,0.5s,baz=105,slow=8.6,SNR=4.1							
H11N2	**WAKE ISLAND Hy**	**28.74**	**120**	T		T	06 18 06.1	
	baz=312,slow=75,SNR=3.6							
H11N1	**WAKE ISLAND Hy**	**28.75**	**120**	T		T	06 18 10.2	
	baz=312,slow=75,SNR=11							
H11N3	**WAKE ISLAND Hy**	**28.76**	**120**	T		T	06 18 07.2	
	baz=312,slow=75,SNR=3.1							
H11S1	**WAKE ISLAND Hy**	**29.45**	**122**	T		T	06 19 00.5	
	baz=314,slow=76,SNR=18							
H11S3	**WAKE ISLAND Hy**	**29.45**	**122**	T		T	06 19 01.0	
	baz=314,slow=76,SNR=7.7							
H11S2	**WAKE ISLAND Hy**	**29.46**	**122**	T		T	06 19 02.3	
	baz=314,slow=76,SNR=18							
ZALV	**Zalesovo Beam**	**41.39**	**312**	P		**P**	**05 50 07.7**	**+0.5**
	0.5nm,0.5s,baz=85,slow=8.3,SNR=2.8							
ZALV				PcP		**PcP**	**05 52 03.8**	**-1.5**
	0.3nm,0.3s,baz=132,slow=4.3,SNR=2.3							
MKAR	**Makanchi Array**	**43.53**	**302**	P		**P**	**05 50 24.9**	**+0.2**
	0.9nm,0.7s,baz=86,slow=11,SNR=6.6							
KURBB	**Kurchatov Arra**	**45.45**	**308**	P		**P**	**05 50 39.1**	**-0.9**
	0.7nm,0.4s,baz=85,slow=8.4,SNR=7.7							
WRA	**Warramunga Arr**	**57.03**	**187**	P		**P**	**05 52 06.3**	**-0.9**
	2.5nm,0.6s,baz=4.5,slow=7.4,SNR=42							
ASAR	**Alice Springs**	**60.76**	**187**	P		**P**	**05 52 32.5**	**-0.6**
	0.6nm,0.6s,baz=18,slow=6.0,SNR=8.1							
RES	**Resolute Bay**	**62.70**	**14**	P		**P**	**05 52 45.5**	**-0.1**
	0.2nm,0.4s,baz=304,slow=7.3,SNR=4.1							
YKA	**Yellowknife Ar**	**64.08**	**30**	P		**P**	**05 52 55.3**	**+0.4**
	0.1nm,0.7s,baz=306,slow=7.6,SNR=3.9							
FINES	**FINESS Array B**	**68.45**	**332**	P		**P**	**05 53 22.5**	**-0.5**
	0.9nm,0.7s,baz=66,slow=11,SNR=3.8							
NVAR	**Mina Array Bea**	**75.47**	**53**	P		**P**	**05 54 06.9**	**+1.1**
	0.2nm,0.4s,baz=316,slow=5.0,SNR=2.0							
TXAR	**Lajitas Array**	**90.60**	**52**	P		**P**	**05 55 25.0**	**+1.0**
	0.3nm,0.9s,baz=316,slow=5.0,SNR=2.9							
LPAZ	**La Paz**	**147.22**	**58**	PKPbc		**PKPbc**	**06 02 06.0**	**0.0**
	0.5nm,0.7s,baz=0.0,slow=4.0,SNR=3.7							

JMA 12 05:45:44.6, 37°.07N×140°.63E, h15km±1km, M2.5, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.14**	**77**	P		Pg	05 45 48.4	0.0
ONAJ						S	05 45 51.0	+0.1
JHO	**Hitachi**	**0.46**	**186**	P		Pg	05 45 53.5	-0.3
JHO						S	05 45 59.7	-0.3
JFT	**Otama**	**0.51**	**332**	P		Pg	05 45 54.9	+0.3
JFT						S	05 46 01.8	+0.4
JMM	**Marumori**	**0.81**	**9**	P		Pg	05 45 59.9	-0.7
JMM						S	05 46 10.2	-0.7
JFY	**Yanaizu**	**0.81**	**295**	P		Pg	05 46 00.2	-0.2
JFY						S	05 46 10.6	-0.5

*ISCJB **12** 05:49:48.0±0.7, 36°.99N±0°.03×140°.71E±0°.06, h17km±5km, mb3.5/8, MS4.4/1, Error ellipse: s-maj=7.6km s-min=4.9km az=10.4*
*IDC **12** 05:49:47.1±1.0, 36°.92N×140°.70E, h0km, mb3.6/8, mb1 3.7/10, mb1mx3.5/45, mbtmp3.5/10, ML3.5/1, MS4.2/2, Ms1 4.2/2, ms1mx3.7/46, Error ellipse: s-maj=22.5km s-min=20.5km az=97.0*
*JMA **12** 05:49:48.4, 37°.00N×140°.63E, h6km±1km, M3.8*
JMA Felt II J1.

ISC 12 05:49:48.6±1.1, 37°.00N±0°.03×140°.65E±0°.04, h8km±8km, n26, σ0°88/24, mb3.5/8, 4C-1D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.16**	**49**	⇑P		**Pg**	**05 49 52.2**	**+0.2**
JHO	**Hitachi**	**0.39**	**190**	⇑P		**Pg**	**05 49 56.1**	**-0.2**
JHO				S		**Sg**	**05 50 01.4**	**-0.1**
JFT	**Otama**	**0.58**	**334**	⇑P		**Pg**	**05 49 59.5**	**-0.3**
JFT				S		**Sg**	**05 50 07.1**	**-0.2**
JSB	**Shiboa**	**0.59**	**267**	⇓P		**Pg**	**05 50 00.2**	**+0.2**
JSB				S		**Sg**	**05 50 07.9**	**+0.3**
JYT	**Yasato**	**0.85**	**206**	P		**Pg**	**05 50 04.9**	**-0.1**
JYT				S		**Sg**	**05 50 15.3**	**-0.8**
JFY	**Yanaizu**	**0.86**	**299**	⇑P		**Pg**	**05 50 04.7**	**-0.4**
JFY				S		**Sg**	**05 50 15.4**	**-0.9**
JMM	**Marumori**	**0.87**	**7**	P		**Pg**	**05 50 04.4**	**-1.0**
JMM				S		**Sg**	**05 50 16.4**	**-0.4**

ISC 12 05:51:24.5±0.9, 37°.5N±0°.2×144°.33E±0°.09, h35km, n12, σ1°.21/14, mb3.7/8, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MJAR	**Matsushiro Arr**	**4.98**	**261**	Pn	**Pn**	**05 52 36.3**	**-0.6**
	baz=90,slow=15,SNR=2.1						
MJAR				Sn	**Sn**	**05 53 30.0**	**-3.2**
	0.7nm,0.3s,baz=92,slow=8.2,SNR=4.0						
MAT	**Matsushiro**	**4.98**	**261**	P	**Pn**	**05 52 37.9**	**+1.0**
MAT				S	**Sn**	**05 53 33.8**	**+0.5**
MAT	**Matsushiro**	**4.98**	**261**	P	**Sn**	**05 53 34.5**	**+1.2**
USRK	**Ussuriysk Ar.**	**11.51**	**310**	Pn	**Pn**	**05 54 06.5**	**+0.3**
	0.2nm,0.3s,baz=122,slow=10,SNR=3.3						
MKAR	**Makanchi Array**	**45.85**	**302**	P	**P**	**05 59 43.5**	**+0.3**
	0.2nm,0.3s,baz=84,slow=11,SNR=5.0						
ILAR	**Eielson Array**	**47.88**	**33**	P	**P**	**05 59 58.0**	**-0.8**
	1.0nm,0.7s,baz=266,slow=6.5,SNR=12						
INK	**Inuvik**	**52.93**	**27**	P	**P**	**06 00 36.9**	**+0.1**
	0.4nm,0.6s,baz=243,slow=4.5,SNR=3.7						
WRA	**Warramunga Arr**	**57.88**	**191**	P	**P**	**06 01 12.4**	**-0.5**
	2.8nm,0.9s,baz=13,slow=7.3,SNR=8.3						
ASAR	**Alice Springs**	**61.60**	**191**	P	**P**	**06 01 39.1**	**+0.6**
	0.6nm,0.8s,baz=12,slow=8.1,SNR=5.8						
YKA	**Yellowknife Ar**	**62.25**	**31**	P	**P**	**06 01 42.0**	**-0.4**
	0.2nm,0.6s,baz=297,slow=6.7,SNR=3.4						
NVAR	**Mina Array Bea**	**72.85**	**55**	P	**P**	**06 02 51.0**	**+1.0**
	1.1nm,0.7s,baz=282,slow=6.3,SNR=8.3						
PDAR	**Pinedale Array**	**75.69**	**47**	P	**P**	**06 03 05.9**	**-0.6**
	0.2nm,0.6s,baz=349,slow=3.0,SNR=3.7						

IDC 12 05:53:11.8±6.4, 41°.49N×139°.29E, h0km, mb3.6/3, mb1 3.6/5, mb1mx3.3/42, mbtmp3.6/5, ML1.5/1, Error ellipse: s-maj=148.0km s-min=35.0km az=71.0, Hokkaido region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MAT	**Matsushiro**	**5.01**	**190**	P	Pn	05 54 28.2	0.0
MAT	**Matsushiro**	**5.01**	**190**	S	Pn	05 54 28.6	+0.4
MJAR	**Matsushiro Arr**	**5.01**	**190**	Pn	Pn	05 54 28.8	+0.5
	3.8nm,0.3s,baz=83,slow=18,SNR=6.0						
MJAR				Sn	Sn	05 55 31.0	+4.2
	4.3nm,0.3s,baz=83,slow=27,SNR=4.6						
USRK	**Ussuriysk Ar.**	**6.01**	**299**	Pn	Pn	05 54 42.4	+0.5
	0.1nm,0.3s,baz=121,slow=11,SNR=2.9						
SONM	**Songino Array**	**24.11**	**296**	P	P	05 58 30.1	+0.9
	1.6nm,0.8s,baz=97,slow=10,SNR=6.2						
ZALV	**Zalesovo Beam**	**37.78**	**308**	P	P	06 00 29.8	+0.5
	0.9nm,0.6s,baz=77,slow=6.7,SNR=4.1						
MKAR	**Makanchi Array**	**40.48**	**297**	P	P	06 00 50.2	-1.9
	0.2nm,0.3s,baz=83,slow=9.9,SNR=3.9						

BEO ***12*** *05:58:23.2±0.9, 46°.24N×16°.17E, h0km, M3.1/6*
ISCJB ***12*** *05:58:29.1±0.5, 46°.07N±0°.02×16°.98E±0°.03, h4km±3km, Error ellipse: s-maj=4.0km s-min=2.7km az=135.5*
LJU ***12*** *05:58:30.3, 46°.05N×16°.94E, h27km, ML2.4*
CSEM ***12*** *05:58:30.2±0.2, 46°.05N×16°.95E, h5km, ML3.3/11, Error ellipse: s-maj=3.8km s-min=2.6km az=30.0*
PRU ***12*** *05:58:33.2, 46°.30N×17°.11E, h4km*

ISC 12 05:58:30.8±1.1, 46°.04N±0°.02×16°.92E±0°.02, h11km±9km, n66, σ0°.66/113, 2C, Northwestern Balkan Peninsula

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
BEHE	**Becsehely**	**0.44**	**347**	*e*Pg	**Pg**	**05 58 39.4**	**-0.1**
BEHE				*e*Sg	**Sb**	**05 58 46.7**	**-0.4**
KOGS	**Kog**	**0.62**	**311**	*i* Pg	**Pb**	**05 58 43.3**	**-0.3**
KOGS				*i*		05 58 44.6	
KOGS				*i* Sg	**Sb**	**05 58 52.1**	**-0.2**
KOGS				*i*		05 58 54.7	
	comp=Z,353nm,0.2s						
KOGS	**Kog**	**0.62**	**311**	Pg	**Pb**	**05 58 43.3**	**-0.3**
KOGS				*i* Sg	**Sb**	**05 58 52.1**	**-0.2**
	comp=Z,353nm,0.2s						
ZAG	**Zagreb**	**0.69**	**252**	*e*Pg	**Pb**	**05 58 44.5**	**-0.3**
ZAG				*e*Sg	**Sb**	**05 58 54.6**	**+0.4**
SISC	**Sisak**	**0.69**	**214**	*e*Pg	**Pb**	**05 58 45.4**	**+0.5**
SISC				Sg	**Sb**	**05 58 54.4**	**0.0**
SISC	**Sisak**	**0.69**	**214**	*e*Pg	**Pb**	**05 58 45.3**	**+0.5**
SISC				Sg	**Sb**	**05 58 54.3**	**0.0**
GOLS	**Golise**	**0.90**	**268**	*i* Pg	**Pg**	**05 58 48.4**	**+0.1**
GOLS				*e*Sg	**Sn**	**05 59 01.9**	**-0.6**
	comp=Z,124nm,0.4s						
GOLS	**Golise**	**0.90**	**268**	*i* Pg	**Pg**	**05 58 48.4**	**+0.1**
GOLS				*e*Sg	**Sn**	**05 59 01.9**	**-0.6**
	comp=Z,124nm,0.4s						
GCIS	**Gornji Cirnik**	**0.92**	**259**	*i* Pg	**Pb**	**05 58 48.8**	**0.0**
GCIS				*e*Sg	**Sn**	**05 59 02.2**	**-0.6**
	comp=Z,66nm,0.2s						
GCIS	**Gornji Cirnik**	**0.92**	**259**	*i* Pg	**Pb**	**05 58 48.8**	**0.0**
GCIS				*e*Sg	**Sn**	**05 59 02.2**	**-0.6**
	comp=Z,66nm,0.2s						
DOBS	**Dobrina**	**1.02**	**276**	*i* Pg	**Pb**	**05 58 50.2**	**-0.2**
DOBS				*e*Sg	**Sn**	**05 59 04.9**	**-0.3**
	comp=Z,39nm,0.2s						
DOBS	**Dobrina**	**1.02**	**276**	*i* Pg	**Pb**	**05 58 50.2**	**-0.2**
DOBS				*e*Sg	**Sn**	**05 59 04.9**	**-0.3**
	comp=Z,39nm,0.2s						
CESS	**Cesta pri Krsk**	**1.02**	**267**	*i* Pg	**Pn**	**05 58 50.9**	**-0.1**
CESS				*i* Sg	**Sn**	**05 59 05.0**	**-0.3**
	comp=Z,94nm,0.2s						
CESS	**Cesta pri Krsk**	**1.02**	**267**	*i* Pg	**Pn**	**05 58 50.9**	**-0.1**
CESS				*i* Sg	**Sn**	**05 59 05.0**	**-0.3**
	comp=Z,94nm,0.2s						
MRAK	**Mrakovica**	**1.03**	**181**	*e*Sg	**Sg**	**05 59 03.3**	**-0.8**
CRES	**Cresnjev**	**1.04**	**258**	*i* Pg	**Pb**	**05 58 50.4**	**-0.5**
CRES				*e*Sg	**Sn**	**05 59 05.6**	**-0.3**
	comp=Z,60nm,0.2s						
CRES	**Cresnjev**	**1.04**	**258**	↑*i* Pg	**Pb**	**05 58 50.6**	**-0.3**
CRES				*e*Sg	**Sn**	**05 59 06.2**	**+0.3**
GROS	**Grobnik**	**1.07**	**293**	*e*Pg	**Pb**	**05 58 50.9**	**-0.5**
GROS				*i* Sg	**Sg**	**05 59 05.4**	**+0.1**
	comp=Z,31nm,0.2s						
GROS	**Grobnik**	**1.07**	**293**	*e*Pg	**Pb**	**05 58 50.9**	**-0.5**
GROS				*i* Sg	**Sg**	**05 59 05.4**	**+0.1**
	comp=Z,31nm,0.2s						
LEGS	**Legarje**	**1.12**	**266**	*i* Pg	**Pb**	**05 58 51.8**	**-0.4**
LEGS				*e*Sg	**Sn**	**05 59 07.5**	**-0.3**
LEGS	**Legarje**	**1.12**	**266**	*i* Pg	**Pb**	**05 58 51.8**	**-0.4**
LEGS				*e*Sg	**Sn**	**05 59 07.5**	**-0.3**
BOJS	**Bojanci**	**1.29**	**246**	*e*Pg	**Pn**	**05 58 54.1**	**-0.6**
BOJS				*e*Sg	**Sb**	**05 59 11.2**	**-0.3**
	comp=Z,44nm,0.3s						
BOJS	**Bojanci**	**1.29**	**246**	*e*Pg	**Pn**	**05 58 54.1**	**-0.6**
BOJS				*e*Sg	**Sb**	**05 59 11.2**	**-0.3**
	comp=Z,44nm,0.3s						
BLY	**Banja Luka**	**1.31**	**172**	*e*Pg	**Pn**	**05 58 52.3**	**-2.7**
BLY				*e*Sg	**Sg**	**05 59 13.8**	**+0.9**
BLY	**Banja Luka**	**1.31**	**172**	↑*i* Pg	**Pn**	**05 58 53.8**	**-1.2**
BLY				*e*Sg	**Sg**	**05 59 13.8**	**+0.9**
SOKA	**Soboth**	**1.45**	**297**	*e*Pn	**Pn**	**05 58 56.6**	**-0.5**
	comp=Z,3.2nm,0.2s						
SOKA				Sn	**Sn**	**05 59 15.9**	**-0.2**
	comp=Z,6.4nm,0.2s						
SOKA	**Soboth**	**1.45**	**297**	Pg	**Pn**	**05 58 56.6**	**-0.5**
	comp=Z,3.2nm,0.2s						
SOKA				Sg	**Sn**	**05 59 15.9**	**-0.2**
	comp=Z,6.4nm,0.2s						
VISS	**Visnje**	**1.47**	**261**	*e*Pg	**Pn**	**05 58 57.1**	**-0.2**
	comp=Z,26nm,0.2s						
VISS	**Visnje**	**1.47**	**261**	*e*Pg	**Pn**	**05 58 57.1**	**-0.2**
	comp=Z,26nm,0.2s						
ARSA	**Arzberg**	**1.54**	**322**	*e*Pn	**Pn**	**05 58 58.2**	**-0.1**
	comp=Z,6.3nm,0.4s						
ARSA				Sn	**Sn**	**05 59 18.4**	**+0.1**
	comp=Z,17nm,0.4s						
ARSA	**Arzberg**	**1.54**	**322**	Pg	**Pn**	**05 58 58.2**	**-0.1**
	comp=Z,6.3nm,0.4s						
ARSA				Sg	**Sn**	**05 59 18.4**	**+0.1**
	comp=Z,17nm,0.4s						
GBRS	**Gornja Briga**	**1.56**	**252**	*i* Pn	**Pn**	**05 58 58.3**	**-0.2**
LJU	**Ljubljana**	**1.67**	**271**	*e*Pn	**Pb**	**05 59 00.8**	**-0.7**
LJU				*e*Sn	**Sg**	**05 59 23.7**	**-0.7**
OBKA	**Obir**	**1.71**	**287**	*e*Pg	**Pb**	**05 59 02.2**	**-0.1**
	comp=Z,1.3nm,0.1s						
OBKA				Sg	**Sg**	**05 59 25.7**	**-0.1**
	comp=Z,26nm,0.4s						
OBKA	**Obir**	**1.71**	**287**	Pg	**Pb**	**05 59 02.2**	**-0.1**
	comp=Z,1.3nm,0.1s						
OBKA				Sg	**Sg**	**05 59 25.7**	**-0.1**
	comp=Z,26nm,0.4s						
UDBI	**Udbina**	**1.72**	**209**	*e*Pn	**Pn**	**05 59 00.8**	**0.0**
UDBI				Sn	**Sb**	**05 59 25.1**	**+1.0**
UDBI	**Udbina**	**1.72**	**209**	*e*Pn	**Pn**	**05 59 00.7**	**0.0**
UDBI				Sn	**Sb**	**05 59 25.1**	**+1.0**
GBAS	**Gorenja Brezov**	**1.73**	**267**	*i* Pn	**Pn**	**05 59 00.7**	**-0.1**
	comp=Z,31nm,0.5s						
GBAS	**Gorenja Brezov**	**1.73**	**267**	*i* Pn	**Pn**	**05 59 00.7**	**-0.1**
CEY	**Cerknica**	**1.77**	**261**	*e*Pn	**Pb**	**05 59 02.9**	**-0.3**
CEY				*e*Sn	**Sb**	**05 59 26.4**	**+1.0**
NVLJ	**Novalja**	**2.07**	**225**	*e*Pn	**Pn**	**05 59 06.4**	**+1.0**
NVLJ				Sn	**Sn**	**05 59 32.0**	**+0.9**
NVLJ	**Novalja**	**2.07**	**225**	*e*Pn	**Pn**	**05 59 06.4**	**+1.0**
NVLJ				Sn	**Sn**	**05 59 32.0**	**+0.9**
TEKS	**Tekeris**	**2.37**	**128**	*e*Pn	**Pn**	**05 59 09.8**	**+0.2**
TEKS				*e*Sn	**Sg**	**05 59 45.9**	**-1.1**
TEKS	**Tekeris**	**2.37**	**128**	*e*Pn	**Pb**	**05 59 09.6**	**0.0**
TEKS				*e*Sn	**Sn**	**05 59 38.3**	**-0.4**
HAPS	**Han Pijesak,BI**	**2.43**	**143**	*e*Pn	**Pn**	**05 59 10.0**	**-0.5**
HAPS				*e*Sn	**Sn**	**05 59 39.4**	**-0.8**
MOA	**Molln**	**2.56**	**316**	*e*Pn	**Pn**	**05 59 13.7**	**+1.4**
	comp=Z,2.5nm,0.1s						
MOA				*e*Sn	**Sn**	**05 59 42.9**	**-0.5**
	comp=Z,2.9nm,0.1s						
MOA	**Molln**	**2.56**	**316**	Pn	**Pn**	**05 59 13.7**	**+1.4**
	comp=Z,2.5nm,0.1s						
MOA				Sn	**Sn**	**05 59 42.9**	**-0.5**
	comp=Z,2.9nm,0.1s						
VYHS	**Vyhne**	**2.78**	**27**	*e*Pn	**Pn**	**05 59 14.8**	**-0.4**
VYHS	**Vyhne**	**2.78**	**27**	*e*PN	**Pn**	**05 59 14.8**	**-0.4**
VYHS				*e*		05 59 22.3	
BBLS	**Lazići**	**2.80**	**140**	*e*Pn	**Pn**	**05 59 16.1**	**+0.5**
BBLS				*e*Sn	**Sb**	**05 59 56.7**	**+1.5**
BBLS	**Lazići**	**2.80**	**140**	*e*Pn	**Pn**	**05 59 15.6**	**0.0**
BBLS				*e*Sn	**Sn**	**05 59 48.8**	**-0.6**
DIVS	**Divibare**	**2.92**	**131**	*e*Pn	**Pn**	**05 59 18.1**	**+0.9**
DIVS				*e*Sn	**Sb**	**05 59 59.1**	**+0.5**
DIVS	**Divibare**	**2.92**	**131**	*e*Pn	**Pn**	**05 59 18.1**	**+0.9**
STON	**Ston**	**3.22**	**170**	*e*Pn	**Pn**	**05 59 20.4**	**-0.8**
STON	**Ston**	**3.22**	**170**	*e*Pn	**Pn**	**05 59 20.4**	**-0.8**
BRY	**Bratogost**	**3.35**	**159**	*e*Pn	**Pn**	**05 59 23.6**	**+0.4**
IVAS	**Ivanjica**	**3.37**	**136**	*e*Pn	**Pn**	**05 59 23.8**	**+0.4**
IVAS	**Ivanjica**	**3.37**	**136**	*e*Pn	**Pn**	**05 59 23.8**	**+0.4**
KECS	**Kecovo**	**3.44**	**44**	*e*Pn	**Pn**	**05 59 25.4**	**+1.1**
KECS	**Kecovo**	**3.44**	**44**	*e*PN	**Pn**	**05 59 25.4**	**+1.1**
KECS				*e*		05 59 35.0	
GRUS	**Gruza**	**3.45**	**127**	*e*Pn	**Pn**	**05 59 24.8**	**+0.4**
GRUS				*e*Sn	**Sb**	**06 00 12.5**	**-1.2**
GRUS	**Gruza**	**3.45**	**127**	*e*Pn	**Pn**	**05 59 24.8**	**+0.4**
KHC	**Kasperske Hory**	**3.83**	**325**	*e*PN	**Pn**	**05 59 31.2**	**+1.5**
KHC				*e*SN	**Sn**	**06 00 14.1**	**-0.5**
KHC	**Kasperske Hory**	**3.83**	**325**	Pn	**Pn**	**05 59 31.2**	**+1.5**
KHC				Sn	**Sn**	**06 00 14.1**	**-0.5**
SELS	**Selova**	**4.12**	**132**	*e*Pn	**Pn**	**05 59 33.7**	**+0.1**
ZAPS	**Zavoj**	**4.93**	**122**	*e*Pn	**Pn**	**05 59 45.2**	**+0.4**

CASC 12 06:11:33.4±2.7, 9°.45N×84°.85W, h13km±11km, MD3.9, 2C-3D, Costa Rica

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JCR	**Jicaral**	**0.47**	**327**	↓*e*P	Pg	06 11 42.2	-0.6
JCR				*e*S	Sg	06 11 49.0	-0.3
QCR	**Quepos**	**0.68**	**92**	↑*i* P	Pg	06 11 46.7	+0.1
QCR				*e*S	Sb	06 11 57.0	+0.6
CGA2	**Cerro Gallo 2**	**0.68**	**34**	*e*P	Pg	06 11 46.7	0.0
JTS	**JuntasAbangare**	**0.84**	**353**	↓*i* P	Pg	06 11 48.0	-1.7
JTS				*e*S	Sg	06 11 58.8	-2.0
VCR	**Vista de Mar**	**1.02**	**311**	*e*P	Pb	06 11 52.3	-0.8
VCR				*e*S	Sg	06 12 06.7	+0.1
BUS	**Buena Vista**	**1.08**	**84**	↓*e*P	Pb	06 11 53.6	-0.7
BUS				*e*S	Sn	06 12 09.8	0.0
URSC	**Urasca**	**1.12**	**70**	↓*e*P	Pb	06 11 53.8	-1.0
URSC				*e*S	Sg	06 12 09.7	-0.1
BRU2	**Volcan**	**2.23**	**107**	*e*P	Pn	06 12 10.9	+0.7
BRU2				*e*S	Sn	06 12 37.3	-0.4
TBS2		**2.26**	**107**	*e*P	Pn	06 12 10.1	-0.6
TBS2				*e*S	Sn	06 12 38.1	-0.4

IDC 12 06:14:54.9±3.8, 30°.38S×138°.41E, h0km, mb1 3.0/3, mb1mx2.9/35, mbtmp2.7/3, ML2.6/3, Error ellipse: s-maj=102.0km s-min=21.0km az=44.0, South Australia

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
STKA	**Stephens Creek**	**3.11**	**120**	Pn	Pn	06 15 44.4	-0.8
	0.2nm,0.3s,baz=294,slow=10,SNR=5.9						
STKA				Pg	Pb	06 15 52.7	+1.7
	1.0nm,0.3s,baz=296,slow=14,SNR=11						
STKA				Sn	Sn	06 16 22.9	-0.2
	1.5nm,0.3s,baz=3.5,slow=19,SNR=5.0						
STKA				Lg	Lg	06 16 31.2	
	1.6nm,0.3s,baz=19,slow=22,SNR=7.3						
ASAR	**Alice Springs**	**7.80**	**328**	Pn	Pn	06 16 50.9	+1.2
	0.1nm,0.3s,baz=149,slow=12,SNR=3.7						
ASAR				Sn	Sn	06 18 16.1	-2.6
	0.1nm,0.3s,baz=152,slow=22,SNR=3.5						
WRA	**Warramunga Arr**	**11.02**	**340**	Pn	Pn	06 17 32.4	-1.5
	0.1nm,0.3s,baz=162,slow=12,SNR=4.9						

IDC ***12*** *06:15:16.2±1.0, 39°.51N×143°.14E, h0km, mb3.6/11, mb1 3.8/12, mb1mx3.6/64, mbtmp3.6/12, ML2.6/1, Error ellipse: s-maj=24.3km s-min=19.6km az=140.0*
ISCJB ***12*** *06:15:17.1±0.8, 39°.5N±0°.1×143°.2E±0°.1, h18km, mb3.6/10, Error ellipse: s-maj=17.4km s-min=12.5km az=140.6*

ISC 12 06:15:19.0±0.9, 39°.5N±0°.1×143°.2E±0°.1, h18km, n19, σ1°.04/13, mb3.6/10, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MJAR	**Matsushiro Arr**	**4.94**	**235**	Pn	**Pn**	**06 16 32.7**	**+0.5**
	0.3nm,0.3s,baz=49,slow=14,SNR=8.8						
USRK	**Ussuriysk Ar.**	**9.63**	**303**	Pn	**Pn**	**06 17 37.9**	**+1.2**
	0.3nm,0.3s,baz=108,slow=14,SNR=3.4						
MA2	**Magadan**	**20.68**	**11**	P	**P**	**06 19 57.6**	**-0.2**
	14nm,1.0s,baz=221,slow=19,SNR=3.9						
SEY	**Seymchan**	**24.13**	**10**	P	**P**	**06 20 33.3**	**-0.3**
	1.9nm,0.8s,baz=205,slow=7.7,SNR=7.6						
SONM	**Songino Array**	**27.73**	**300**	P	**P**	**06 21 05.4**	**-0.9**
	0.5nm,0.5s,baz=93,slow=8.1,SNR=3.5						
H11N2	**WAKE ISLAND Hy**	**28.31**	**127**	T	T	06 51 01.2	
	baz=319,slow=75						
H11N1	**WAKE ISLAND Hy**	**28.32**	**127**	T	T	06 51 04.5	
	baz=319,slow=75						
H11N3	**WAKE ISLAND Hy**	**28.33**	**127**	T	T	06 51 03.0	
	baz=319,slow=75						
H11S1	**WAKE ISLAND Hy**	**29.12**	**129**	T	T	06 52 06.1	
	baz=318,slow=76						
H11S3	**WAKE ISLAND Hy**	**29.13**	**129**	T	T	06 52 06.2	
	baz=318,slow=76						
H11S2	**WAKE ISLAND Hy**	**29.14**	**129**	T	T	06 52 07.3	
	baz=318,slow=76						
ZALV	**Zalesovo Beam**	**41.39**	**310**	P	**P**	**06 23 02.9**	**-0.9**
	0.9nm,0.5s,baz=86,slow=9.0,SNR=3.9						
MKAR	**Makanchi Array**	**44.09**	**300**	P	**P**	**06 23 24.9**	**-1.1**
	0.6nm,0.5s,baz=89,slow=10.0,SNR=8.5						
KURBB	**Kurchatov Arra**	**45.68**	**306**	P	**P**	**06 23 37.3**	**-1.2**
	1.3nm,0.4s,baz=79,slow=8.5,SNR=11						
ILAR	**Eielson Array**	**46.67**	**34**	P	**P**	**06 23 47.1**	**+1.0**
	0.3nm,0.6s,baz=258,slow=6.5,SNR=4.6						
BVAR	**Borovoye Array**	**50.03**	**311**	P	**P**	**06 24 11.6**	**-0.6**
	0.6nm,0.8s,baz=76,slow=6.1,SNR=3.3						
WRA	**Warramunga Arr**	**59.69**	**190**	P	**P**	**06 25 22.5**	**+0.2**
	0.5nm,1.0s,baz=6.5,slow=7.0,SNR=3.0						
YKA	**Yellowknife Ar**	**60.98**	**31**	P	**P**	**06 25 31.9**	**+1.2**
	0.2nm,0.5s,baz=299,slow=6.5,SNR=3.8						
TXAR	**Lajitas Array**	**87.50**	**54**	P	**P**	**06 28 04.5**	**-1.4**
	0.1nm,0.6s,baz=309,slow=5.7,SNR=2.2						

JMA 12 06:16:46.7±0.1, 37°.57N×141°.71E, h21km±2km, M3.7, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JMM	**Marumori**	**0.79**	**292**	P	Pb	06 17 01.6	0.0
JMM				S	Sb	06 17 11.4	-0.4
ONAJ	**Iwakimizuishiy**	**0.86**	**238**	P	Pb	06 17 02.3	-0.7
ONAJ				*e*S	Sb	06 17 13.9	-0.3
JIO	**Ouri**	**0.93**	**342**	P	Pb	06 17 03.5	-0.6
JIO				S	Sb	06 17 14.8	-1.1
JFT	**Otama**	**1.09**	**268**	P	Pb	06 17 06.9	0.0
JFT				S	Sn	06 17 21.9	+0.6
JOU	**Okura**	**1.15**	**314**	P	Pb	06 17 07.7	-0.1
JOU				S	Sb	06 17 22.2	-0.1
JMK	**Ichinoseki**	**1.43**	**345**	P	Pn	06 17 11.5	+0.1
JYS	**Shirataka**	**1.45**	**297**	P	Pb	06 17 12.7	-0.4
JFY	**Yanaizu**	**1.60**	**265**	P	Pb	06 17 14.9	-0.7
JFY				S	Sb	06 17 35.0	-0.4
MAT	**Matsushiro**	**2.98**	**251**	P	Pn	06 17 34.5	+1.7
MAT				S	Sb	06 18 12.2	-2.9

IDC ***12*** *06:23:16.8±0.7, 37°.02N×140°.70E, h0km, mb3.7/11, mb1 3.9/12, mb1mx3.7/60, mbtmp3.7/12, ML3.7/1, Error ellipse: s-maj=19.4km s-min=17.7km az=151.0*
ISCJB ***12*** *06:23:17.7±0.7, 36°.99N±0°.03×140°.82E±0°.07, h18km±4km, mb3.7/11, Error ellipse: s-maj=9.1km s-min=4.9km az=19.0*
JMA ***12*** *06:23:18.6, 37°.01N×140°.67E, h8km±1km, M3.9 Broadband fault plane solution: P waves. NP1: φ=44.00000°, δ=46.00000°, λ=-90.00000°. NP2: φ=224.00000°, δ=44.00000°, λ=-90.00000°. Principal axes: T Plg1.0000°, Azm134.0000°; N Plg0.0000°, Azm44.0000°; P Plg89.0000°, Azm314.0000°;*
JMA Felt II J1.

ISC 12 06:23:18.3±0.9, 37°.01N±0°.03×140°.66E±0°.05, h11km±6km, n27, σ0°.56/26, mb3.5/11, 2C, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.14**	**51**	P	**Pg**	**06 23 21.8**	**+0.1**
ONAJ				S	**Sg**	**06 23 24.1**	**0.0**
JHO	**Hitachi**	**0.41**	**190**	⇑P	**Pg**	**06 23 26.5**	**+0.2**
JHO				*e*S	**Sg**	**06 23 32.2**	**+0.5**
JFT	**Otama**	**0.57**	**333**	P	**Pg**	**06 23 29.6**	**+0.2**
JFT				S	**Sg**	**06 23 37.5**	**+0.6**
JMM	**Marumori**	**0.86**	**7**	⇑P	**Pg**	**06 23 34.5**	**-0.5**
JMM				S	**Sg**	**06 23 46.0**	**-0.2**
JYT	**Yasato**	**0.87**	**206**	P	**Pg**	**06 23 34.8**	**-0.2**
JYT				S	**Sg**	**06 23 45.8**	**-0.5**
MJAR	**Matsushiro Arr**	**2.02**	**257**	Pn	**Pn**	**06 23 53.7**	**+1.3**
	27nm,0.3s,baz=77,slow=16,SNR=39						
MJAR				Sn	**Sb**	**06 24 19.3**	**-1.0**
	35nm,0.3s,baz=90,slow=16,SNR=5.3						
MAT	**Matsushiro**	**2.02**	**257**	P	**Pb**	**06 23 54.2**	**-0.9**
MAT				S	**Sb**	**06 24 20.5**	**+0.2**
USRK	**Ussuriysk Ar.**	**9.74**	**320**	Pn	Pn	06 25 43.5	+5.2
	0.1nm,0.3s,baz=133,slow=15,SNR=6.3						
KSRS	**Korea Array**	**10.17**	**276**	Pn	Pn	06 25 50.4	+6.2
	0.3nm,0.3s,baz=97,slow=13,SNR=7.2						
SONM	**Songino Array**	**27.30**	**304**	P	**P**	**06 29 03.5**	**+0.5**
	0.4nm,0.4s,baz=99,slow=9.1,SNR=3.0						
H11N2	**WAKE ISLAND Hy**	**28.66**	**120**	T	T	06 59 04.3	
	baz=313,slow=75,SNR=18						
H11N1	**WAKE ISLAND Hy**	**28.67**	**120**	T	T	06 59 06.5	
	baz=313,slow=75,SNR=35						
H11N3	**WAKE ISLAND Hy**	**28.68**	**120**	T	T	06 59 07.2	
	baz=313,slow=75,SNR=18						
H11S1	**WAKE ISLAND Hy**	**29.36**	**122**	T	T	06 59 54.9	
	baz=314,slow=76,SNR=76						
H11S3	**WAKE ISLAND Hy**	**29.36**	**122**	T	T	06 59 55.4	
	baz=314,slow=76,SNR=47						
H11S2	**WAKE ISLAND Hy**	**29.37**	**122**	T	T	06 59 55.7	
	baz=314,slow=76,SNR=34						
MKAR	**Makanchi Array**	**43.62**	**302**	P	**P**	**06 31 23.0**	**+0.3**
	0.4nm,0.5s,baz=86,slow=9.3,SNR=5.4						
KURBB	**Kurchatov Arra**	**45.54**	**308**	P	**P**	**06 31 37.5**	**-0.4**
	1.2nm,0.7s,baz=84,slow=8.0,SNR=13						
ILAR	**Eielson Array**	**49.84**	**32**	P	**P**	**06 32 10.6**	**-0.5**
	0.2nm,0.6s,baz=276,slow=6.9,SNR=4.7						
BVAR	**Borovoye Array**	**50.14**	**312**	P	**P**	**06 32 13.5**	**0.0**
	0.4nm,0.6s,baz=78,slow=9.0,SNR=3.2						
WRA	**Warramunga Arr**	**56.96**	**187**	P	**P**	**06 33 03.6**	**-0.2**
	2.8nm,0.6s,baz=3.8,slow=7.3,SNR=21						

DALY	**Dalyan (Mu˘la**	**0.64**	**135**	*e*PG	**Pg**	**06 37 48.8**	**-0.2**
DALY	**Dalyan (Mu˘la**	**0.64**	**135**	*e*Pg	**Pg**	**06 37 48.8**	**-0.2**
BODT	**Bodrum**	**0.66**	**251**	*e*PG	**Pg**	**06 37 49.1**	**-0.2**
BODT				*e*SG	**Sg**	**06 37 58.9**	**+1.1**
BODT	**Bodrum**	**0.66**	**251**	*e*Pg	**Pg**	**06 37 49.1**	**-0.2**
BODT				*e*Sg	**Sg**	**06 37 58.9**	**+1.1**
AYDB	**Zeytinkoy-Aydi**	**0.69**	**347**	*e*PG	**Pg**	**06 37 49.9**	**-0.1**
AYDB	**Zeytinkoy-Aydi**	**0.69**	**347**	*e*Pg	**Pg**	**06 37 49.9**	**-0.1**

IDC 12 06:39:06.1±2.1, 1°.85N×126°.00E, h0km, mb3.3/3, mb1 3.5/3, mb1mx3.3/35, mbtmp3.3/3, Error ellipse: s-maj=192.0km s-min=24.9km az=65.0, Northern Molucca Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**23.16**	**160**	P	P	06 44 14.0	-0.3
	0.4nm,0.3s,baz=338,slow=11,SNR=13						
ASAR	**Alice Springs**	**26.51**	**164**	P	P	06 44 45.9	+0.4
	0.2nm,0.4s,baz=354,slow=7.4,SNR=4.3						
MKAR	**Makanchi Array**	**58.69**	**326**	P	P	06 49 05.4	-0.1
	0.1nm,0.3s,baz=118,slow=6.7,SNR=2.6						

IDC ***12*** *06:41:00.0±2.2, 36°.98N×141°.70E, h0km, mb3.3/3, mb1 3.3/4, mb1mx3.2/40, mbtmp3.2/4, ML2.8/1, Error ellipse: s-maj=45.3km s-min=27.4km az=59.0*
ISCJB ***12*** *06:41:01.8±1.9, 36°.92N±0°.08×141°.7E±0°.1, h21km±10km, mb3.2/3, Error ellipse: s-maj=14.4km s-min=12.4km az=41.3*
JMA ***12*** *06:41:03.7±0.2, 36°.92N×141°.54E, h33km±2km, M3.4*
ISC 12 06:41:03.1±4.1, 36°.95N±0°.07×141°.54E±0°.10, h17km±26km, n15, σ1°.912/14, mb3.3/3, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.61**	**285**	P	**Pb**	**06 41 16.0**	**+0.6**
ONAJ				S	**Sb**	**06 41 24.5**	**+0.7**
JHO	**Hitachi**	**0.85**	**247**	P	**Pb**	**06 41 19.0**	**-0.4**
JHO				S	**Sb**	**06 41 30.1**	**-0.4**
JMM	**Marumori**	**1.09**	**327**	P	**Pb**	**06 41 22.9**	**-0.7**
JFT	**Otama**	**1.12**	**301**	P	**Pn**	**06 41 24.2**	**+0.2**
JFT				S	**Sb**	**06 41 38.3**	**0.0**
MJAR	**Matsushiro Arr**	**2.71**	**262**	Pn	**Pn**	**06 41 46.8**	**+0.9**
	1.6nm,0.3s,baz=81,slow=15,SNR=5.4						
MJAR				Sn	**Sb**	**06 42 21.4**	**-2.7**
	2.6nm,0.3s,baz=80,slow=29,SNR=6.3						
MAT	**Matsushiro**	**2.71**	**262**	P	**Pn**	**06 41 47.4**	**+1.5**
MAT				S	**Sn**	**06 42 18.3**	**0.0**
SONM	**Songino Array**	**27.92**	**304**	P	**P**	**06 46 53.1**	**+0.7**
	0.2nm,0.3s,baz=99,slow=7.4,SNR=2.4						
H11N2	**WAKE ISLAND Hy**	**28.02**	**121**	T	T	07 16 12.7	
	baz=314,slow=75,SNR=9.2						
H11N1	**WAKE ISLAND Hy**	**28.02**	**121**	T	T	07 16 11.0	
	baz=314,slow=75,SNR=11						
H11N3	**WAKE ISLAND Hy**	**28.03**	**121**	T	T	07 16 11.0	
	baz=314,slow=75,SNR=12						
H11S1	**WAKE ISLAND Hy**	**28.73**	**123**	T	T	07 16 58.4	
	baz=316,slow=76,SNR=6.6						
H11S3	**WAKE ISLAND Hy**	**28.73**	**123**	T	T	07 17 06.4	
	baz=316,slow=76,SNR=4.2						
H11S2	**WAKE ISLAND Hy**	**28.74**	**123**	T	T	07 17 02.2	
	baz=316,slow=76,SNR=5.1						
MKAR	**Makanchi Array**	**44.25**	**302**	P	**P**	**06 49 11.1**	**-0.5**
	0.2nm,0.6s,baz=84,slow=9.5,SNR=3.6						
WRA	**Warramunga Arr**	**56.99**	**188**	P	**P**	**06 50 47.7**	**-0.1**
	0.4nm,0.9s,baz=4.6,slow=6.9,SNR=2.7						

JMA 12 06:43:13.4, 37°.04N×140°.67E, h7km±1km, M2.7, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.12**	**59**	P	Pg	06 43 16.3	+0.3
ONAJ				S	Sg	06 43 18.1	+0.2
JHO	**Hitachi**	**0.44**	**191**	P	Pg	06 43 21.8	0.0
JFT	**Otama**	**0.55**	**331**	P	Pg	06 43 24.1	+0.1
JFT				S	Sg	06 43 31.6	+0.5
JMM	**Marumori**	**0.83**	**7**	P	Pg	06 43 29.0	-0.4
MAT	**Matsushiro**	**2.04**	**257**	P	Pb	06 43 50.8	0.0
MAT				S	Sb	06 44 17.0	+0.7

CASC 12 06:44:05.3±2.8, 9°.46N×84°.83W, h3km±10km, MD3.7, 2C-1D, Costa Rica

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JCR	**Jicaral**	**0.48**	**325**⇓	*e*P	Pg	06 44 14.8	+0.3
JCR				*e*S	Sg	06 44 20.5	-0.2
QCR	**Quepos**	**0.66**	**93**⇑	*i*P	Pb	06 44 19.1	-0.4
QCR				*e*S	Sb	06 44 29.8	+0.7
VCR	**Vista de Mar**	**1.03**	**310**	*e*P	Pb	06 44 25.9	+0.1
VCR				*e*S	Sn	06 44 41.4	-0.4
BUS	**Buena Vista**	**1.07**	**85**⇑	*e*P	Pg	06 44 25.7	-0.1
BUS				*e*S	Sn	06 44 42.2	-0.9
URSC	**Urasca**	**1.11**	**70**	*e*P	Pg	06 44 26.4	-0.1
URSC				*e*S	Sb	06 44 42.9	+0.8
BRU2	**Volcan**	**2.22**	**107**	*e*P	Pn	06 44 43.8	+0.7
BRU2				*e*S	Sb	06 45 13.3	-0.7
TBS2		**2.25**	**107**	*e*P	Pn	06 44 43.0	-0.6
TBS2				*e*S	Sn	06 45 13.1	+1.2

ISCJB ***12*** *06:45:22.3±0.4, 38°.91N±0°.02×27°.95E±0°.03, h5km±4km, Error ellipse: s-maj=4.3km s-min=3.1km az=156.9*
CSEM ***12*** *06:45:22.4±0.1, 38°.90N×27°.95E, h8km, MD2.8, Error ellipse: s-maj=2.0km s-min=1.5km az=148.0*
DDA ***12*** *06:45:22.0, 38°.90N×27°.95E, h9km, Md2.8*
ISK ***12*** *06:45:22.0, 38°.89N×27°.95E, h12km, MD2.9*
ISC 12 06:45:22.2±0.8, 38°.91N±0°.02×27°.94E±0°.02, h10km±6km, n48, σ0°.926/70, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AKHS	**Akhisar**	**0.10**	**256**	*i*P	**Pg**	**06 45 24.7**	**-0.2**
AKHS				*i*S	**Sg**	**06 45 27.0**	**+0.2**
AKHS	**Akhisar**	**0.10**	**256**	P	**Pg**	**06 45 24.7**	**-0.2**
AKHS				S	**Sg**	**06 45 27.0**	**+0.2**
AKS	**Akhisar**	**0.10**	**256**	PG	**Pg**	**06 45 24.7**	**-0.2**
AKS	**Akhisar**	**0.10**	**256**	*i*Pg	**Pg**	**06 45 24.7**	**-0.2**
DEMI	**Demirci**	**0.62**	**77**	*i*P	**Pg**	**06 45 34.5**	**+0.3**
DEMI				*i*S	**Sg**	**06 45 42.4**	**0.0**
DEMI	**Demirci**	**0.62**	**77**	P	**Pg**	**06 45 34.5**	**+0.3**
DEMI				S	**Sg**	**06 45 42.4**	**0.0**
KULA	**Kula-Manisa**	**0.68**	**125**	PG	**Pb**	**06 45 36.0**	**-0.3**
KULA				*e*SG	**Sg**	**06 45 44.6**	**+0.2**
KULA	**Kula-Manisa**	**0.68**	**125**	*i*Pg	**Pb**	**06 45 36.0**	**-0.3**
KULA				*e*Sg	**Sg**	**06 45 44.6**	**+0.2**
BALB	**Balikesir**	**0.74**	**356**	*e*PG	**Pb**	**06 45 37.2**	**+0.2**
BALB	**Balikesir**	**0.74**	**356**	*e*Pg	**Pb**	**06 45 37.3**	**+0.2**
IZM	**Izmir**	**0.74**	**227**	PG	**Pg**	**06 45 36.1**	**-0.2**
IZM				*e*SG	**Sb**	**06 45 47.4**	**+0.1**
IZM	**Izmir**	**0.74**	**227**	*i*Pg	**Pg**	**06 45 36.2**	**-0.2**
IZM				*e*Sg	**Sb**	**06 45 47.4**	**+0.1**
DURS	**Dursunbey**	**0.81**	**30**	*i*P	**Pb**	**06 45 38.1**	**-0.3**
DURS				*i*S	**Sb**	**06 45 49.4**	**0.0**
DURS	**Dursunbey**	**0.81**	**30**	P	**Pb**	**06 45 38.1**	**-0.3**
DURS				S	**Sb**	**06 45 49.4**	**0.0**
DKL	**Dikili**	**0.83**	**282**	*e*PG	**Pb**	**06 45 39.1**	**+0.5**
DKL	**Dikili**	**0.83**	**282**	*e*Pg	**Pb**	**06 45 39.1**	**+0.5**
DST	**Dursunbey**	**0.87**	**37**	*e*PG	**Pb**	**06 45 39.9**	**+0.4**
DST	**Dursunbey**	**0.87**	**37**	*e*Pg	**Pb**	**06 45 39.9**	**+0.4**
BLCB	**Balcova**	**0.88**	**234**	*e*PG	**Pb**	**06 45 39.6**	**+0.1**
BLCB	**Balcova**	**0.88**	**234**	*e*Pg	**Pb**	**06 45 39.6**	**+0.1**
AYDB	**Zeytinkoy-Aydi**	**0.96**	**182**	*e*PG	**Pb**	**06 45 40.8**	**-0.2**
AYDB	**Zeytinkoy-Aydi**	**0.96**	**182**	*e*Pg	**Pb**	**06 45 40.8**	**-0.2**
AYVA	**Ayvalik**	**1.05**	**293**	*i*P	**Pb**	**06 45 42.6**	**0.0**
AYVA				*i*S	**Sb**	**06 45 56.8**	**+0.4**
AYVA	**Ayvalik**	**1.05**	**293**	P	**Pb**	**06 45 42.6**	**0.0**
AYVA				S	**Sb**	**06 45 56.8**	**+0.4**
GONE	**Gonen-Balikesi**	**1.16**	**350**	*e*PN	**Pn**	**06 45 44.6**	**+0.2**
GONE	**Gonen-Balikesi**	**1.16**	**350**	*e*Pn	**Pn**	**06 45 44.6**	**+0.2**
URLA	**Izmir**	**1.19**	**243**	*i*P	**Pn**	**06 45 44.9**	**0.0**
URLA				*i*S	**Sn**	**06 46 01.1**	**0.0**
URLA	**Izmir**	**1.19**	**243**	P	**Pn**	**06 45 44.9**	**0.0**
URLA				S	**Sn**	**06 46 01.1**	**0.0**
GDZ	**Gediz**	**1.21**	**81**	*i*P	**Pn**	**06 45 45.9**	**+0.6**
GDZ				*i*S	**Sn**	**06 46 01.6**	**-0.3**
GDZ	**Gediz**	**1.21**	**81**	P	**Pn**	**06 45 45.9**	**+0.6**
GDZ				S	**Sn**	**06 46 01.6**	**-0.3**
AYDN	**Tasoluk**	**1.24**	**182**	*i*P	**Pg**	**06 45 46.0**	**-0.1**
AYDN				*i*S	**Sn**	**06 46 02.8**	**+0.3**
AYDN	**Tasoluk**	**1.24**	**182**	P	**Pg**	**06 45 46.0**	**-0.1**
AYDN				S	**Sn**	**06 46 02.8**	**+0.3**
TVSB	**Tavsanli**	**1.30**	**65**	*e*PN	**Pb**	**06 45 46.8**	**0.0**
TVSB	**Tavsanli**	**1.30**	**65**	*e*Pn	**Pb**	**06 45 46.8**	**0.0**
KHAL	**Karahalli**	**1.32**	**113**	*i*P	**Pg**	**06 45 47.4**	**-0.2**
KHAL				*i*S	**Sb**	**06 46 04.1**	**-0.2**
KHAL	**Karahalli**	**1.32**	**113**	P	**Pg**	**06 45 47.4**	**-0.2**
KHAL				S	**Sb**	**06 46 04.1**	**-0.2**
ORLT	**Orhaneli**	**1.36**	**33**	*e*PN	**Pg**	**06 45 48.0**	**-0.3**
ORLT	**Orhaneli**	**1.36**	**33**	*e*Pn	**Pg**	**06 45 48.0**	**-0.3**
KCTX	**Karacabey (Bur**	**1.40**	**13**	*e*PN	**Pn**	**06 45 47.7**	**-0.1**
KCTX	**Karacabey (Bur**	**1.40**	**13**	*e*Pn	**Pn**	**06 45 47.7**	**-0.1**
EDC	**Edincik**	**1.44**	**358**	*e*PN	**Pn**	**06 45 48.3**	**-0.1**
EDC	**Edincik**	**1.44**	**358**	*e*Pn	**Pn**	**06 45 48.3**	**-0.1**
ULDT	**Uludag**	**1.54**	**36**	*i*P	**Pb**	**06 45 50.8**	**-0.2**
ULDT				*i*S	**Sb**	**06 46 10.6**	**-0.1**
ULDT	**Uludag**	**1.54**	**36**	P	**Pb**	**06 45 50.8**	**-0.2**
ULDT				S	**Sb**	**06 46 10.6**	**-0.1**
SIGR	**SIGRI**	**1.65**	**281**	*e*PN	**Pb**	**06 45 52.1**	**-0.7**
SIGR	**SIGRI**	**1.65**	**281**	*e*Pn	**Pb**	**06 45 52.1**	**-0.7**
MRMT	**Marmara Adasi**	**1.72**	**351**	*e*PN	**Pn**	**06 45 52.0**	**-0.2**
MRMT	**Marmara Adasi**	**1.72**	**351**	*e*Pn	**Pn**	**06 45 52.0**	**-0.2**

BEO ***12*** *06:50:55.9±0.8, 46°.37N×15°.75E, h0km, M3.3/6*
CSEM ***12*** *06:51:06.9±0.1, 46°.06N×16°.95E, h5km, ML3.0, Error ellipse: s-maj=2.7km s-min=2.1km az=23.0*
LJU ***12*** *06:51:07.4, 46°.06N×16°.91E, h27km, ML2.6*
ISCJB ***12*** *06:51:08.1±0.4, 46°.05N±0°.02×16°.96E±0°.02, h19km±4km, Error ellipse: s-maj=3.1km s-min=2.5km az=137.1*
PRU ***12*** *06:51:09.3, 46°.28N×17°.02E, h0km*
ISC 12 06:51:08.0±1.0, 46°.04N±0°.01×16°.92E±0°.01, h18km±3km, n125, σ1°.908/190, 9C-4D, Northwestern Balkan Peninsula

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BEHE	**Becsehely**	**0.44**	**347**⇓	*e*Pg	**Pg**	**06 51 16.9**	**-0.1**
BEHE				*e*Sg	**Sb**	**06 51 24.3**	**+0.7**
BEHE	**Becsehely**	**0.44**	**347**	*e*Pg	**Pg**	**06 51 16.8**	**-0.2**
BEHE				*e*Sg	**Sb**	**06 51 23.7**	**+0.1**
BEHE				*e*Sn	Sn	06 51 24.3	-2.6
KOGS	**Kog**	**0.62**	**311**	*i*Pg	**Pg**	**06 51 20.0**	**-0.3**
KOGS				*i*		06 51 21.4	
KOGS				*i*Sg	**Sb**	**06 51 28.8**	**+0.3**
KOGS				*i*		06 51 31.5	
	comp=Z,630nm,0.2s						
KOGS	**Kog**	**0.62**	**311**	*i*Pg	**Pg**	**06 51 20.0**	**-0.3**
KOGS				*i*Sg	**Sb**	**06 51 28.8**	**+0.3**
SISC	**Sisak**	**0.69**	**214**	*e*Pg	**Pg**	**06 51 21.3**	**-0.2**
SISC				*e*Sg	**Sb**	**06 51 30.9**	**+0.4**
SISC	**Sisak**	**0.69**	**214**	*e*Pg	**Pg**	**06 51 21.3**	**-0.2**
SISC				*e*Sg	**Sb**	**06 51 30.8**	**+0.4**
ZAG	**Zagreb**	**0.69**	**252**	*e*Pg	**Pg**	**06 51 21.1**	**-0.4**
ZAG				*e*Sg	**Sn**	**06 51 32.9**	**0.0**
GOLS	**Golise**	**0.91**	**269**	*e*Pg	**Pb**	**06 51 24.9**	**-0.2**
GOLS				*e*Sg	**Sn**	**06 51 37.9**	**-0.5**
	comp=Z,104nm,0.2s						
GOLS	**Golise**	**0.91**	**269**	*e*Pg	**Pb**	**06 51 24.9**	**-0.2**
GOLS				*e*Sg	**Sn**	**06 51 37.9**	**-0.5**
GCIS	**Gornji Cirnik**	**0.92**	**260**	*i*Pg	**Pb**	**06 51 25.2**	**-0.1**
GCIS				*e*Sg	**Sn**	**06 51 38.4**	**-0.3**
	comp=Z,48nm,0.1s						
GCIS	**Gornji Cirnik**	**0.92**	**260**	*i*Pg	**Pb**	**06 51 25.2**	**-0.1**
GCIS				*e*Sg	**Sn**	**06 51 38.4**	**-0.3**
DOBS	**Dobrina**	**1.02**	**277**	*i*Pg	**Pb**	**06 51 27.0**	**0.0**
DOBS				*i*Sg	**Sn**	**06 51 41.6**	**+0.5**
	comp=Z,44nm,0.1s						
DOBS	**Dobrina**	**1.02**	**277**	*i*Pb	**Pb**	**06 51 27.0**	**0.0**
DOBS				*i*Sb	**Sn**	**06 51 41.6**	**+0.5**
CESS	**Cesta pri Krsk**	**1.02**	**267**	*i*Pg	**Pn**	**06 51 27.5**	**+0.1**
CESS				*e*Sg	**Sn**	**06 51 41.7**	**+0.5**
	comp=Z,182nm,0.3s						
CESS	**Cesta pri Krsk**	**1.02**	**267**	*i*Pb	**Pn**	**06 51 27.4**	**+0.1**
CESS				*e*Sb	**Sn**	**06 51 41.7**	**+0.5**
MRAK	**Mrakovica**	**1.03**	**181**	*e*Pg	**Pb**	**06 51 26.9**	**-0.3**
MRAK				*e*Sg	**Sb**	**06 51 41.1**	**+0.7**
CRES	**Cresnjev**	**1.05**	**259**	*i*Pg	**Pb**	**06 51 27.3**	**-0.2**
CRES				*e*Sg	**Sn**	**06 51 42.0**	**+0.2**
	comp=Z,82nm,0.2s						
CRES	**Cresnjev**	**1.05**	**259**⇓	*i*Pg	**Pb**	**06 51 27.4**	**-0.1**
CRES				*e*Sn	**Sn**	**06 51 42.0**	**+0.2**
CRES				*e*Sg	**Sg**	**06 51 43.1**	**+1.1**
GROS	**Grobnik**	**1.07**	**294**	*i*Pg	**Pb**	**06 51 27.7**	**-0.3**
GROS				*e*Sg	**Sb**	**06 51 41.4**	**-0.3**
GROS	**Grobnik**	**1.07**	**294**	*i*Pg	**Pb**	**06 51 27.7**	**-0.3**
GROS				*e*Sg	**Sb**	**06 51 41.4**	**-0.3**
PKS9	**Tamasi**	**1.09**	**59**	*e*Pn	**Pg**	**06 51 29.1**	**+0.1**
PKS9				*e*Sn	**Sg**	**06 51 43.7**	**+0.4**
PKS9	**Tamasi**	**1.09**	**59**	*e*Pn	**Pg**	**06 51 29.1**	**+0.1**
PKS9				*e*Sn	**Sg**	**06 51 43.7**	**+0.4**
LEGS	**Legarje**	**1.12**	**266**	*i*Pg	**Pb**	**06 51 28.4**	**-0.4**
LEGS				*i*		06 51 29.3	
LEGS				*e*Sg	**Sg**	**06 51 44.4**	**-0.1**
LEGS	**Legarje**	**1.12**	**266**	*i*Pg	**Pb**	**06 51 28.4**	**-0.4**
LEGS				*e*Sg	**Sg**	**06 51 44.4**	**-0.1**
BOJS	**Bojanci**	**1.29**	**246**	*e*Pg	**Pn**	**06 51 30.9**	**-0.1**
	comp=Z,77nm,0.3s						
BOJS	**Bojanci**	**1.29**	**246**	*e*Pn	**Pn**	**06 51 30.9**	**-0.1**
BLY	**Banja Luka**	**1.30**	**172**	*e*Pg	**Pn**	**06 51 30.8**	**-0.4**
BLY				*e*Sg	**Sg**	**06 51 52.9**	**+2.7**
BLY	**Banja Luka**	**1.30**	**172**	*e*Pg	**Pn**	**06 51 30.8**	**-0.4**
BLY				*e*Sg	**Sn**	**06 51 48.6**	**+0.5**
BISS	**Bistriski jare**	**1.39**	**297**	*i*Pn	**Pn**	**06 51 32.3**	**-0.1**
BISS	**Bistriski jare**	**1.39**	**297**	*i*Pn	**Pn**	**06 51 32.3**	**-0.1**
PKST	**T˘˘s**	**1.44**	**32**	*e*Pn	**Pn**	**06 51 33.2**	**+0.1**
PKST				*e*Sn	**Sg**	**06 51 54.3**	**-0.2**
PKST	**T˘˘s**	**1.44**	**32**	*e*Pn	**Pn**	**06 51 33.2**	**+0.1**
PKST				*e*Sn	**Sg**	**06 51 54.3**	**-0.2**
SOKA	**Soboth**	**1.46**	**297**	*e*Pn	**Pn**	**06 51 33.1**	**-0.3**
	comp=Z,6.3nm,0.2s,SNR=8.9						
SOKA				Sn	**Sb**	**06 51 52.4**	**-0.4**
	comp=Z,36nm,0.5s						
SOKA	**Soboth**	**1.46**	**297**	Pg	**Pn**	**06 51 33.1**	**-0.3**
	comp=Z,6.3nm,0.2s,SNR=8.9						
SOKA				Sg	**Sb**	**06 51 52.4**	**-0.4**
	comp=Z,36nm,0.5s						
VISS	**Visnje**	**1.47**	**262**	*i*Pg	**Pn**	**06 51 33.9**	**+0.3**
VISS	**Visnje**	**1.47**	**262**	*i*Pn	**Pn**	**06 51 33.8**	**+0.3**
ARSA	**Arzberg**	**1.55**	**322**	*e*Pn	**Pn**	**06 51 34.7**	**+0.1**
	comp=Z,8.2nm,0.4s,SNR=5.9						
ARSA				Sn	**Sn**	**06 51 53.5**	**-0.7**
	comp=Z,36nm,0.3s						
ARSA	**Arzberg**	**1.55**	**322**	Pg	**Pn**	**06 51 34.7**	**+0.1**
	comp=Z,8.2nm,0.4s,SNR=5.9						
ARSA				Sg	**Sn**	**06 51 53.5**	**-0.7**
	comp=Z,36nm,0.3s						
DOB	**Doboj**	**1.55**	**147**	*e*Sg	**Sb**	**06 51 56.3**	**+1.0**
VNDS	**Vrh nad Dolski**	**1.55**	**273**	*i*Pn	**Pn**	**06 51 34.5**	**-0.2**
VNDS	**Vrh nad Dolski**	**1.55**	**273**	*i*Pn	**Pn**	**06 51 34.4**	**-0.2**
GBRS	**Gornja Briga**	**1.56**	**252**	*e*Pn	**Pn**	**06 51 35.3**	**+0.5**
	comp=Z,52nm,0.3s						
CSKK	**Cs˘‡kako**	**1.61**	**34**	*e*Pn	**Pb**	**06 51 37.1**	**-0.1**
CSKK				*e*Sn	**Sg**	**06 52 00.1**	**+0.1**
CSKK	**Cs˘‡kako**	**1.61**	**34**	*e*Pn	**Pb**	**06 51 37.1**	**-0.1**
CSKK				*e*Sn	**Sg**	**06 52 00.1**	**+0.1**
PKS2	**Kecel**	**1.65**	**73**⇓	*e*Pn	**Pg**	**06 51 40.4**	**+0.7**
PKS2				*e*Sn	**Sg**	**06 52 03.1**	**+1.9**
PKS2	**Kecel**	**1.65**	**73**⇓	*e*Pn	**Pg**	**06 51 40.4**	**+0.7**
SOP	**Sopron**	**1.66**	**351**	*e*Pn	**Pn**	**06 51 37.1**	**+0.9**
SOP				*e*Sn	**Sb**	**06 51 59.6**	**+1.0**
SOP	**Sopron**	**1.66**	**351**	*e*Pn	**Pn**	**06 51 37.1**	**+0.9**
SOP				*e*Sn	**Sb**	**06 51 59.6**	**+1.0**
LJU	**Ljubljana**	**1.67**	**271**	*e*Pn	**Pg**	**06 51 39.0**	**-1.1**
LJU				*e*Sn	**Sg**	**06 52 01.8**	**0.0**
PKSG		**1.69**	**36**	*e*Pn	**Pb**	**06 51 38.2**	**-0.2**
PKSG				*e*Sn	**Sg**	**06 52 03.3**	**+0.9**
PKSG		**1.69**	**36**	*e*Pn	**Pb**	**06 51 38.2**	**-0.2**
PKSG				*e*Sn	**Sg**	**06 52 03.3**	**+0.9**
OBKA	**Obir**	**1.71**	**287**	*e*Pn	**Pn**	**06 51 36.8**	**-0.2**
	comp=Z,1.1nm,0.1s						
OBKA				Sg	**Sg**	**06 52 03.0**	**-0.2**
	comp=Z,25nm,0.4s						
OBKA	**Obir**	**1.71**	**287**	Pn	**Pn**	**06 51 36.7**	**-0.2**
OBKA				Sg	**Sg**	**06 52 03.0**	**-0.2**
	comp=Z,25nm,0.4s						
UDBI	**Udbina**	**1.72**	**209**	*e*Pn	**Pn**	**06 51 37.9**	**+0.9**
UDBI				Sn	**Sb**	**06 52 01.3**	**+1.0**
UDBI	**Udbina**	**1.72**	**209**	*e*Pn	**Pn**	**06 51 37.9**	**+0.9**
UDBI				Sn	**Sb**	**06 52 01.3**	**+1.0**
GBAS	**Gorenja Brezov**	**1.73**	**267**	*e*Pn	**Pn**	**06 51 37.4**	**+0.2**
GBAS	**Gorenja Brezov**	**1.73**	**267**	*e*Pn	**Pn**	**06 51 37.4**	**+0.2**
CEY	**Cerknica**	**1.77**	**261**	*e*Pn	**Pb**	**06 51 39.9**	**0.0**
CEY				*e*Sn	**Sg**	**06 52 03.4**	**-1.6**
PKS7	**Kunszentmiklos**	**1.84**	**56**	*e*Sn	**Sb**	**06 52 05.7**	**+1.9**
PKS7	**Kunszentmiklos**	**1.84**	**56**	*e*Sn	**Sb**	**06 52 05.7**	**+1.9**
CRNS	**Crni Vrh**	**1.85**	**272**	*i*Pn	**Pn**	**06 51 39.3**	**+0.5**
CRNS	**Crni Vrh**	**1.85**	**272**	*i*Pn	**Pn**	**06 51 39.3**	**+0.5**
PKS6	**Bocsa**	**1.91**	**72**	*e*Pn	Pg	06 51 49.2	+4.5
PKS6				*e*Sn	**Sg**	**06 52 10.9**	**+1.3**
JAVS	**Javornik**	**2.00**	**267**	*i*Pn	**Pn**	**06 51 41.4**	**+0.5**
JAVS				*e*		06 51 44.6	
JAVS	**Javornik**	**2.00**	**267**	*i*Pn	**Pn**	**06 51 41.3**	**+0.5**
CONA	**Conrad Observa**	**2.02**	**339**	*e*Pn	**Pn**	**06 51 40.8**	**-0.4**
	comp=Z,0.6nm,0.1s						
CONA	**Conrad Observa**	**2.02**	**339**	Pn	**Pn**	**06 51 40.8**	**-0.4**
BUD	**Budapest**	**2.04**	**44**	*e*Pn	**Pb**	**06 51 44.8**	**+0.3**
BUD				*e*Sn	**Sg**	**06 52 13.2**	**-0.5**
BUD	**Budapest**	**2.04**	**44**	*e*Pn	**Pb**	**06 51 44.8**	**+0.3**
NVLJ	**Novalja**	**2.07**	**225**	*e*Pn	**Pn**	**06 51 43.1**	**+1.3**
NVLJ				Sn	**Sb**	**06 52 09.8**	**-0.5**
NVLJ	**Novalja**	**2.07**	**225**	*e*Pn	**Pn**	**06 51 43.0**	**+1.3**
NVLJ				Sn	**Sb**	**06 52 09.7**	**-0.5**
TEKS	**Tekeris**	**2.37**	**128**	*e*Pn	**Pn**	**06 51 46.6**	**+0.7**
TEKS	**Tekeris**	**2.37**	**128**	*e*Pn	**Pn**	**06 51 46.5**	**+0.7**
TEKS				*e*Sn	**Sn**	**06 52 14.3**	**-0.1**
HAPS	**Han Pijesak,Bl**	**2.42**	**143**	*e*Pn	**Pn**	**06 51 46.8**	**+0.1**
HAPS				*e*Sn	**Sn**	**06 52 15.8**	**-0.2**
MOA	**Molln**	**2.57**	**316**	*e*Pn	**Pn**	**06 51 50.0**	**+1.3**
	comp=Z,3.9nm,0.2s,SNR=15						
MOA				*e*Sn	**Sn**	**06 52 21.0**	**+1.6**
	comp=Z,32nm,0.4s,SNR=8.5						
MOA	**Molln**	**2.57**	**316**	Pn	**Pn**	**06 51 49.9**	**+1.3**
MOA				Sn	**Sn**	**06 52 21.0**	**+1.6**
KBA	**Koelnbreinsper**	**2.68**	**294**	*e*Pn	**Pn**	**06 51 50.6**	**+0.2**
	comp=Z,0.9nm,0.1s						
KBA	**Koelnbreinsper**	**2.68**	**294**	Pn	**Pn**	**06 51 50.5**	**+0.2**
PSZ	**Piszkesteto**	**2.77**	**46**	*e*Pn	**Pn**	**06 51 50.0**	**-1.4**
PSZ				*e*Sn	**Sn**	**06 52 25.0**	**+0.6**
PSZ	**Piszkesteto**	**2.77**	**46**	*e*Pn	**Pn**	**06 51 50.0**	**-1.4**
PSZ				*e*Sn	**Sn**	**06 52 25.0**	**+0.6**
VYHS	**Vyhne**	**2.78**	**27**	*e*Pg	**Pb**	**06 51 59.0**	**+1.9**
VYHS	**Vyhne**	**2.78**	**27**	*e*	**Pn**	**06 51 51.5**	**0.0**
VYHS	**Vyhne**	**2.78**	**27**	*e*PG	**Pb**	**06 51 59.0**	**+1.9**
VYHS				*e*LG	Lg	06 52 39.0	
BBLS	**Lazići**	**2.80**	**140**	*e*Pn	**Pn**	**06 51 52.9**	**+1.1**
BBLS				*e*Sn	**Sg**	**06 52 35.7**	**-2.2**
BBLS	**Lazići**	**2.80**	**140**⇑	*i*

B009				Sn	Sn	06 55 19.6	-3.6
B010	**North Saanich**	**3.59**	**98**	Pn	Pn	06 54 39.8	-0.9
B010				Sn	Sn	06 55 19.5	-3.6
PGC	**Sidney**	**3.59**	**98**	Pn	Pn	06 54 39.8	-0.9
PGC				Sn	Sn	06 55 20.2	-3.0
B011	**North Saanich**	**3.59**	**98**	Pn	Pn	06 54 39.9	-0.9
B011				Sn	Sn	06 55 19.5	-3.7
BIB	**Bowen Island**	**3.60**	**86**	Pn	Pn	06 54 40.4	-0.5
WPB	**Watts Point**	**3.67**	**82**	Pn	Pn	06 54 41.9	0.0
WSLR	**Whistler**	**3.91**	**76**	Pn	Pn	06 54 45.5	+0.3
MCW	**Mount Constitu**	**3.99**	**97**	Pn	Pn	06 54 45.8	-0.5
CMW	**Cultus Mountai**	**4.51**	**99**	Pn	Pn	06 54 53.7	+0.3
MBW	**Mount Baker**	**4.58**	**94**	Pn	Pn	06 54 54.5	+0.1
LLLB	**Lillooet**	**4.66**	**71**	Pn	Pn	06 54 55.4	-0.1
UBRB	**Upper Baezaeko**	**4.67**	**38**	Pn	Pn	06 54 56.7	+1.0
HOPB	**Hope**	**4.83**	**86**	Pn	Pn	06 54 57.9	+0.1
RPW	**Rockport**	**4.89**	**97**	Pn	Pn	06 54 57.6	-1.0
B06A	**Marblemount**	**4.90**	**96**	Pn	Pn	06 54 58.9	+0.2
PNT	**Penticton**	**6.01**	**86**	Pn	Pn	06 55 13.4	-0.6
BLBC	**Blue River**	**6.67**	**62**	Pn	Pn	06 55 23.2	-0.1
DOWB	**Downie Slide**	**6.95**	**67**	Pn	Pn	06 55 26.8	0.0
MNB	**Mounoet Dainar**	**7.22**	**62**	Pn	Pn	06 55 31.1	+0.3

IDC ***12*** *06:57:23.6±0.9, 35˚.32N×141˚.24E, h0km, mb3.5/7, mb1 3.7/8, mb1mx3.6/34, mbtmp3.5/8, ML3.1/1, Error ellipse: s-maj=26.0km s-min=21.0km az=91.0*
JMA ***12*** *06:57:25.9±0.1, 35˚.46N×140˚.88E, h23km±1km, M3.5*
JMA Felt I J1.
ISCJB ***12*** *06:57:26.1±0.7, 35˚.44N±0˚.06×141˚.0E±0˚.1, h33km, mb3.5/7, Error ellipse: s-maj=12.8km s-min=7.8km az=164.2*

ISC 12 06:57:27.5±0.8**, 35˚.50N**±0˚.04×**140˚.85E**±0˚.08**, h33**km**, n20,** σ1§**79**/15**, mb3.5/7, 3C, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.21**	**1**	⇑P	**Pn**	**06 57 31.8**	**-2.1**
CHOJ				*e*S	**Sn**	**06 57 36.3**	**-0.6**
BSO4	**Boso 4**	**0.66**	**220**	P	**Pn**	**06 57 39.1**	**-1.3**
BSO3	**Boso 3**	**0.75**	**202**	⇑P	**Pn**	**06 57 39.8**	**-1.7**
BSO1	**Boso 1**	**0.84**	**173**	⇑P	**Pn**	**06 57 40.0**	**-2.6**
JYT	**Yasato**	**0.91**	**324**	*e*S	**Sn**	**06 57 55.8**	**0.0**
MJAR	**Matsushiro Arr**	**2.38**	**297**	Pn	**Pb**	**06 58 07.5**	**-2.2**
	3.3nm,0.3s,baz=101,slow=14,SNR=21						
MAT	**Matsushiro**	**2.39**	**297**	P	**Pb**	**06 58 07.7**	**-2.1**
MAT				S	**Sb**	**06 58 40.2**	**+1.4**
H11N2	**WAKE ISLAND Hy 27.80**		**118**	T	T	07 32 08.6	
	baz=310,slow=76,SNR=68						
H11N1	**WAKE ISLAND Hy 27.80**		**118**	T	T	07 32 12.5	
	baz=310,slow=76,SNR=57						
H11N3	**WAKE ISLAND Hy 27.81**		**118**	T	T	07 32 20.1	
	baz=310,slow=76,SNR=79						
H11S1	**WAKE ISLAND Hy 28.45**		**120**	T	T	07 32 58.6	
	baz=312,slow=76,SNR=144						
H11S3	**WAKE ISLAND Hy 28.45**		**120**	T	T	07 32 56.6	
	baz=312,slow=76,SNR=104						
H11S2	**WAKE ISLAND Hy 28.46**		**120**	T	T	07 33 00.2	
	baz=312,slow=76,SNR=104						
ZALV	**Zalesovo Beam**	**42.63**	**314**	P	P	07 05 25.6	+5.2
	0.3nm,0.4s,baz=100,slow=7.9,SNR=2.3						
MKAR	**Makanchi Array**	**44.57**	**303**	P	**P**	**07 05 38.9**	**+2.7**
	0.4nm,0.6s,baz=79,slow=9.2,SNR=4.0						
ILAR	**Eielson Array**	**51.04**	**32**	P	**P**	**07 06 26.9**	**+0.9**
	0.4nm,0.7s,baz=262,slow=6.1,SNR=6.7						
WRA	**Warramunga Arr**	**55.48**	**187**	P	**P**	**07 06 58.3**	**-0.8**
	1.0nm,0.8s,baz=4.9,slow=7.5,SNR=12						
ASAR	**Alice Springs**	**59.20**	**187**	P	**P**	**07 07 26.5**	**+1.1**
	0.4nm,0.6s,baz=16,slow=11,SNR=3.3						
YKA	**Yellowknife Ar**	**65.36**	**30**	P	**P**	**07 08 06.1**	**-0.1**
	0.2nm,0.7s,baz=303,slow=6.8,SNR=3.7						
PDAR	**Pinedale Array**	**79.07**	**45**	P	**P**	**07 09 30.1**	**+1.3**
	0.2nm,0.6s,baz=350,slow=3.0,SNR=2.7						

IDC ***12*** *07:03:21.5±1.1, 35˚.21N×141˚.16E, h0km, mb3.2/5, mb1 3.5/6, mb1mx3.3/36, mbtmp3.2/6, ML3.1/1, Error ellipse: s-maj=29.4km s-min=25.8km az=22.0*
ISCJB ***12*** *07:03:24.7±0.8, 35˚.40N±0˚.06×141˚.04E±0˚.1, h33km, mb3.2/5, Error ellipse: s-maj=12.4km s-min=7.8km az=150.4*
JMA ***12*** *07:03:24.0±0.1, 35˚.46N×140˚.96E, h22km±2km, M3.4*
JMA Felt I J1.

ISC 12 07:03:25.8±0.9**, 35˚.41N**±0˚.07×**140˚.78E**±0˚.09**, h33**km**, n18,** σ1§**29**/12**, mb3.3/5, 4C, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.30**	**12**	⇑P	Pb	07 03 29.9	-3.6
BSO4	**Boso 4**	**0.55**	**221**	⇑P	**Pn**	**07 03 38.1**	**+0.9**
BSO3	**Boso 3**	**0.65**	**200**	⇑P	**Pn**	**07 03 38.3**	**0.0**
BSO1	**Boso 1**	**0.77**	**168**	⇑P	**Pn**	**07 03 38.3**	**-1.5**
JYT	**Yasato**	**0.95**	**330**	P	**Pn**	**07 03 42.5**	**-0.2**
JYT				*e*S	**Sn**	**07 03 54.9**	**-0.2**
MJAR	**Matsushiro Arr**	**2.38**	**299**	Pn	**Pb**	**07 04 06.6**	**-1.3**
	3.0nm,0.3s,baz=106,slow=6.8,SNR=10						
MAT	**Matsushiro**	**2.38**	**299**	P	**Pb**	**07 04 06.6**	**-1.3**
MAT				*e*S	**Sb**	**07 04 35.5**	**-1.4**
H11N2	**WAKE ISLAND Hy 27.80**		**117**	T	T	07 38 09.8	
	baz=310,slow=75,SNR=69						
H11N1	**WAKE ISLAND Hy 27.81**		**117**	T	T	07 38 09.6	
	baz=310,slow=75,SNR=56						
H11N3	**WAKE ISLAND Hy 27.82**		**117**	T	T	07 38 12.0	
	baz=310,slow=75,SNR=50						
H11S1	**WAKE ISLAND Hy 28.45**		**119**	T	T	07 38 58.4	
	baz=312,slow=75,SNR=205						
H11S3	**WAKE ISLAND Hy 28.45**		**120**	T	T	07 38 56.0	
	baz=312,slow=75,SNR=190						
H11S2	**WAKE ISLAND Hy 28.47**		**120**	T	T	07 38 57.1	
	baz=312,slow=75,SNR=141						
MKAR	**Makanchi Array**	**44.57**	**303**	P	**P**	**07 11 36.9**	**+2.4**
	0.2nm,0.7s,baz=93,slow=7.2,SNR=2.7						
KURBB	**Kurchatov Arra**	**46.62**	**309**	P	P	07 11 55.2	+4.6
	0.2nm,0.5s,baz=82,slow=7.9,SNR=2.9						
ILAR	**Eielson Array**	**51.14**	**32**	P	**P**	**07 12 25.2**	**+0.1**
	0.2nm,0.6s,baz=270,slow=6.3,SNR=3.2						
WRA	**Warramunga Arr**	**55.38**	**187**	P	**P**	**07 12 56.2**	**-0.5**
	0.1nm,0.3s,baz=3.9,slow=7.4,SNR=4.9						
NVAR	**Mina Array Bea**	**76.37**	**53**	P	**P**	**07 15 12.8**	**+0.7**
	0.2nm,0.7s,baz=307,slow=5.1,SNR=2.5						

NEIC ***12*** *07:04:32.2, 15˚.74N×94˚.95W, h20km, MD4.0(MEX), After MEX.*

MEX 12 07:04:32.2±0.5**, 15˚.74N×94˚.95W, h20**km±10km**, MD4.0, Near coast of Oaxaca**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HUIG	**Huatulco**	**1.11**	**272**	*e*P	Pn	07 04 49.7	-3.0
HUIG				*e*S	Sb	07 05 03.1	-3.8
HUIG	**Huatulco**	**1.11**	**272**	*e*P	Pn	07 04 49.7	-3.0
HUIG				*e*S	Sb	07 05 03.1	-3.8
PANG	**Puerto Angel**	**1.47**	**267**	*i* P	Pn	07 04 54.2	-3.3
PANG				*i* S	Sn	07 05 11.4	-4.8
TGIG		**2.04**	**59**	*e*P	Pn	07 05 02.3	-3.1
TGIG				*e*S	Sn	07 05 25.9	-4.4
TGIG		**2.04**	**59**	*e*P	Pn	07 05 02.3	-3.1
TGIG				*e*S	Sn	07 05 25.9	-4.4
VHO	**Vista Hermosa**	**2.16**	**308**	*e*P	Pn	07 05 05.4	-1.9
VHO				*e*S	Sn	07 05 29.7	-3.9
VHO	**Vista Hermosa**	**2.16**	**308**	*e*P	Pn	07 05 05.4	-1.9
VHO				*e*S	Sn	07 05 29.7	-3.9
CCIG	**Comitan**	**2.76**	**78**	*e*P	Pn	07 05 14.1	-1.4
CCIG				*e*S	Sn	07 05 45.7	-2.6
CCIG	**Comitan**	**2.76**	**78**	*e*P	Pn	07 05 14.1	-1.4
CCIG				*e*S	Sn	07 05 45.7	-2.6

IDC ***12*** *07:14:17.0±1.9, 37˚.09N×141˚.14E, h0km, mb3.6/4, mb1 3.6/6, mb1mx3.4/55, mbtmp3.5/6, ML2.4/2, Error ellipse: s-maj=48.0km s-min=26.2km az=72.0*
ISCJB ***12*** *07:14:17.6±1.9, 37˚.10N±0˚.04×141˚.0E±0˚.1, h9km±9km, mb3.6/4, Error ellipse: s-maj=18.1km s-min=6.7km az=9.6*
JMA ***12*** *07:14:19.4, 37˚.10N×140˚.86E, h7km±1km, M3.1*
JMA Felt II J1.

ISC 12 07:14:19.2±1.4**, 37˚.10N**±0˚.04×**140˚.9E**±0˚.1**, h8**km±6km**, n18,** σ0§**69**/15**, mb3.6/4, Eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.04**	**269**	P	**Pg**	**07 14 20.9**	**0.0**
ONAJ				S	**Sg**	**07 14 22.1**	**0.0**
JHO	**Hitachi**	**0.54**	**205**	P	**Pg**	**07 14 30.0**	**+0.3**
JHO				*e*S	**Sg**	**07 14 37.5**	**+0.8**
JFT	**Otama**	**0.58**	**315**	P	**Pb**	**07 14 31.1**	**-0.6**
JMM	**Marumori**	**0.76**	**357**	P	**Pg**	**07 14 33.8**	**-0.1**
JMM				*e*S	**Sg**	**07 14 44.3**	**+0.4**
JFY	**Yanaizu**	**0.96**	**289**	P	**Pg**	**07 14 37.9**	**+0.2**
MJAR	**Matsushiro Arr**	**2.19**	**256**	Pn	**Pb**	**07 14 57.9**	**-1.2**
	2.8nm,0.3s,baz=80,slow=16,SNR=14						
MAT	**Matsushiro**	**2.19**	**256**	P	**Pb**	**07 14 58.5**	**-0.7**
USRK	**Ussuriysk Ar.**	**9.77**	**319**	Pn	**Pn**	**07 16 41.0**	**+1.0**
	0.1nm,0.3s,baz=128,slow=16,SNR=2.2						
H11N2	**WAKE ISLAND Hy 28.57**		**120**	T	T	07 50 01.2	
	baz=313,slow=75						
H11N1	**WAKE ISLAND Hy 28.58**		**120**	T	T	07 50 02.3	
	baz=313,slow=75						
H11N3	**WAKE ISLAND Hy 28.59**		**120**	T	T	07 50 03.2	
	baz=313,slow=75						
H11S1	**WAKE ISLAND Hy 29.27**		**122**	T	T	07 50 53.8	
	baz=314,slow=75,SNR=16						
H11S3	**WAKE ISLAND Hy 29.28**		**122**	T	T	07 50 53.7	
	baz=314,slow=75,SNR=15						
H11S2	**WAKE ISLAND Hy 29.29**		**122**	T	T	07 50 54.9	
	baz=314,slow=75,SNR=13						
MKAR	**Makanchi Array**	**43.70**	**302**	P	**P**	**07 22 25.0**	**+0.4**
	0.3nm,0.6s,baz=81,slow=8.9,SNR=2.3						
KURBB	**Kurchatov Arra**	**45.60**	**308**	P	**P**	**07 22 39.7**	**0.0**
	0.8nm,0.7s,baz=83,slow=7.8,SNR=5.8						
WRA	**Warramunga Arr**	**57.07**	**187**	P	**P**	**07 24 05.1**	**-0.8**
	0.4nm,1.0s,baz=3.5,slow=7.1,SNR=7.2						
FINES	**FINESS Array B**	**68.54**	**332**	P	**P**	**07 25 22.1**	**+0.2**
	1.5nm,0.8s,baz=60,slow=5.6,SNR=4.1						

NIED ***12*** *07:14:00, 36˚.80N×138˚.60E, h5km, Mw4.5 Best double couple: M◎6.39000×10^15 NP1:φ◎358.00000°, δ61.00000°, λ10.00000°. NP2:φ◎263.00000°, δ81.00000°, λ151.00000°.*
BJI ***12*** *07:14:54.3, 36˚.59N×139˚.14E, h10km, mb4.5/41, mB4.9/24, Ms4.5/28, Ms7 4.2/28*
IDC ***12*** *07:14:58.4±0.4, 36˚.88N×138˚.47E, h0km, mb4.1/30, mb1 4.2/33, mb1mx4.2/58, mbtmp4.1/33, ML2.9/2, MS3.8/4, Ms1 3.8/4, ms1mx3.4/35, Error ellipse: s-maj=13.1km s-min=5.9km az=110.0*
JMA ***12*** *07:14:59.5±0.3, 36˚.83N×138˚.57E, h1km±3km, M4.6 Broadband fault plane solution: P waves. NP1:φ◎9.00000°, δ87.00000°, λ20.00000°. NP2:φ◎278.00000°, δ70.00000°, λ177.00000°. Principal axes: T Plg16.0000°, Azm235.0000°; N Plg70.0000°, Azm17.0000°; P Plg12.0000°, Azm142.0000°;*
JMA Felt IV J1.
ISCJB ***12*** *07:14:59.3±0.5, 36˚.86N±0˚.02×138˚.42E±0˚.03, h4km±3km, mb4.5/96, MS3.9/7 Error ellipse: s-maj=4.4km s-min=3.6km az=151.7*
MOS ***12*** *07:15:01.1±1.6, 36˚.78N×138˚.34E, h26km, mb4.6/35, Error ellipse: s-maj=9.7km s-min=5.8km az=87.6*
NEIC ***12*** *07:15:02.3±1.0, 36˚.76N×138˚.33E, h17km±6km, mb4.7/53, Error ellipse: s-maj=7.1km s-min=6.2km az=155.0*
NEIC Recorded [4 JMA] in Nagano.

ISC 12 07:15:00.2±1.0**, 36˚.82N**±0˚.03×**138˚.53E**±0˚.03**, h6**km±6km**, n301,** σ1§**52**/305**, mb4.6**/96**, MS3.7**/7**, 2C-5D, Eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JGK	**Kuni**	**0.27**	**160**	⇓P	**Pg**	**07 15 05.5**	**0.0**
JGK				*e*S	**Sg**	**07 15 09.6**	**+0.5**
MAJO	**Matsushiro**	**0.38**	**223**	*e*P	**Pg**	**07 15 07.3**	**-0.2**
MAJO				*e*		07 15 12.9	
MAJO	**Matsushiro**	**0.38**	**223**	*e*Pg	**Pg**	**07 15 07.3**	**-0.2**
MAJO				*e*Sg	**Sg**	**07 15 12.9**	**+0.5**
MAT	**Matsushiro**	**0.38**	**223**	P	**Pg**	**07 15 07.4**	**-0.1**
MAT				S	**Sg**	**07 15 12.8**	**+0.4**
MAT	**Matsushiro**	**0.38**	**223**	P	**Pg**	**07 15 07.3**	**-0.2**
MAT				*e*S	**Sg**	**07 15 12.8**	**+0.4**
MJAR	**Matsushiro Arr**	**0.38**	**223**	Pg	**Pg**	**07 15 06.7**	**-0.8**
	942nm,0.3s,baz=37,slow=18,SNR=3286						
MJAR				Lg	Lg	07 15 12.0	
	4µm,0.3s,baz=30,slow=25,SNR=118						
JNG	**Nsakai**	**0.54**	**220**	⇑P	**Pg**	**07 15 10.3**	**-0.2**
JNG				*e*S	**Sg**	**07 15 17.4**	**-0.1**
JHK	**Hiroka**	**0.58**	**42**	⇑P	**Pg**	**07 15 10.0**	**-1.4**
JHK				*e*S	**Sg**	**07 15 17.2**	**-1.8**
JKT	**Katashina**	**0.58**	**95**	*e*S	**Sg**	**07 15 17.5**	**-1.5**
JIZZ	**Izumozaki**	**0.73**	**12**	⇓P	**Pg**	**07 15 14.1**	**-0.1**
JAG	**Ashikaga**	**0.84**	**117**	⇓P	**Pg**	**07 15 15.5**	**-0.9**
JAG				S	**Sg**	**07 15 26.4**	**-0.9**
JRY	**Ryogami san**	**0.85**	**159**	⇓P	**Pg**	**07 15 15.8**	**-0.8**
JRY				S	**Sg**	**07 15 27.5**	**-0.2**
INU	**Inuyama**	**1.91**	**220**	*e*Pn	**Pn**	**07 15 33.6**	**+0.4**
JHJ	**Hachijo jima 2**	**3.83**	**164**	Pn	**Pn**	**07 16 00.5**	**+0.8**
	84nm,0.3s,baz=51,slow=18,SNR=3.4						
JHJ				LR	LR	07 17 30.2	
	comp=Z,1µm,18.0s,baz=329,slow=39						
JHJ2	**Mitsune**	**3.85**	**164**	*e*Pn	**Pn**	**07 15 59.4**	**-0.5**
ERM	**Erimo**	**6.31**	**33**	*e*P	**Pn**	**07 16 36.2**	**+2.5**
ERM	**Erimo**	**6.31**	**33**	*e*Pn	**Pn**	**07 16 36.2**	**+2.5**
JNU	**Nakatsue**	**7.28**	**242**	Pn	**Pn**	**07 16 49.1**	**+2.0**
	2.2nm,0.3s,baz=61,slow=9.9,SNR=19						
JNU	**Nakatsue**	**7.28**	**242**	*e*Pn	**Pn**	**07 16 49.3**	**+2.2**
KSRS	**Korea Array**	**8.49**	**277**	Pn	**Pn**	**07 17 05.7**	**+2.0**
	4.7nm,0.3s,baz=92,slow=15,SNR=23						
KS01	**Wonju Array Si**	**8.52**	**278**	*e*Pn	**Pn**	**07 17 05.1**	**+1.1**
KS15	**Wonju Array Si**	**8.52**	**277**	*e*Pn	**Pn**	**07 17 05.9**	**+1.8**
KSAR	**Wonju Array Be**	**8.52**	**277**	P	**Pn**	**07 17 05.7**	**+1.6**
KSAR	**Wonju Array Be**	**8.52**	**277**	Pn	**Pn**	**07 17 05.7**	**+1.6**
USRK	**Ussuriysk Ar.**	**8.89**	**328**	Pn	**Pn**	**07 17 07.3**	**-1.9**
	0.7nm,0.3s,baz=142,slow=13,SNR=6.7						
MDJ	**Mudanjiang**	**10.32**	**322**	P	Pn	07 17 33.4	+4.7
MDJ				pmax	pmax		
	comp=Z,20nm,0.7s						
MDJ				pmax	pmax		
	comp=Z,230nm,10.4s						
MDJ				LR	LR		
	comp=N,910nm,11.8s						
MDJ				LR	LR		
	comp=E,280nm,9.6s						
MDJ				LR	LR		
	comp=Z,950nm,11.8s						
YSS	**Yuzh-Sakhalins**	**10.61**	**16**	⇓*e*P	**Pn**	**07 17 35.3**	**+2.7**
YSS				pmax	pmax		
	comp=Z,20nm,0.6s						
CN2	**Changchun**	**12.17**	**309**	*e*P	**Pn**	**07 17 56.9**	**+2.9**
CN2				pmax	pmax		
	comp=Z,10.0nm,0.6s						
CN2				LR	LR		
	comp=Z,400nm,12.0s						
CN2				LR	LR		
	comp=Z,600nm,12.0s						
CN2				LR	LR		
	comp=Z,600nm,13.0s						
KLR	**Kul'dur**	**13.35**	**340**	Pn	**Pn**	**07 18 09.1**	**-1.0**
	comp=Z,0.1nm,0.3s,baz=145,slow=13,SNR=4.1						
TYV	**Tymovskoe**	**14.35**	**11**	*e*P	**Pn**	**07 18 25.2**	**+1.5**
NKL	**Nikolayevsk**	**16.40**	**5**	*e*P	Pn	07 18 45.7	-5.1
NKL				pmax	pmax		
	comp=Z,15nm,1.0s						
NJ2	**Nanjing**	**16.91**	**259**	*e*P	**Pn**	**07 18 56.5**	**-0.8**
NJ2				pmax	pmax		
	comp=Z,14nm,0.6s						
TIA	**Tai'an**	**17.22**	**274**	*e*P	P	07 19 08.1	+5.2
TIA				pmax	pmax		
	comp=Z,10.0nm,0.9s						
BJI	**Beijing**	**17.80**	**287**	P	**P**	**07 19 11.1**	**+1.9**
BJI				S	**Sn**	**07 22 23.8**	**-3.2**
BJI				pmax	pmax		
	comp=Z,11nm,0.9s						
BJI				LR	LR		
	comp=Z,490nm,11.7s						
BJI				LR	LR		
	comp=Z,530nm,13.4s						
BJI				LR	LR		
	comp=Z,260nm,22.8s						
PEA0	**Petropavlovsk-**	**21.09**	**33**	*e*P	**P**	**07 19 48.2**	**+3.0**
PEA0B	**Petropavlovsk-**	**21.09**	**33**	*e*P	**P**	**07 19 48.8**	**+3.6**
	comp=Z,58nm,1.5s						
PETK	**Petropavlovsk-**	**21.09**	**33**	P	**P**	**07 19 44.0**	**-1.1**
	comp=Z,2.6nm,0.9s,baz=202,slow=7.3,SNR=2.9						
PETK				LR	LR	07 27 34.3	
	comp=Z,190nm,19.0s,baz=235,slow=36						
PETK	**Petropavlovsk-**	**21.09**	**33**	P	**P**	**07 19 44.0**	**-1.1**
PETK				pmax	pmax		
	comp=Z,1.0nm,0.5s						
PETK				MLR	MLR		
	comp=Z,190nm,19.0s						
HHC	**Hu-ho-hao-te**	**21.35**	**289**	*e*P	**P**	**07 19 49.0**	**+0.8**
HHC				sP	sP	07 20 02.2	+11
HHC				S	**S**	**07 23 40.1**	**-5.5**
HHC				pmax	pmax		
	comp=Z,25nm,1.4s						
HHC				LR	LR		
	comp=Z,890nm,11.1s						
HHC				LR	LR		
	comp=Z,850nm,11.1s						
HHC				LR	LR		
	comp=Z,860nm,12.3s						
GUMO	**Guam**	**23.82**	**165**	LR	LR	07 28 12.5	
	comp=Z,288nm,20.9s,baz=350,slow=33						
MA2	**Magadan**	**24.11**	**15**	P	**P**	**07 20 13.5**	**-2.9**
	comp=Z,9.1nm,0.8s,baz=291,slow=3.6,SNR=3.6						
ULN	**Ulaanbaatar**	**25.58**	**305**	*e*P	**P**	**07 20 29.0**	**-1.0**
ULN				pmax	pmax		
	comp=Z,6.0nm,1.1s						
ULN	**Ulaanbaatar**	**25.58**	**305**	*e*P	**P**	**07 20 29.0**	**-1.0**
	comp=Z,6.2nm,1.1s						
YAK	**Yakutsk**	**25.84**	**350**	*e*P	**P**	**07 20 31.9**	**-0.1**
YAK				*e**PP	sP	07 20 42.0	+7.3
YAK				*e*S	**S**	**07 25 01.6**	**-0.1**
YAK				*e**SS	sS	07 25 18.5	+14
YAK				*e*SS	**SnSn**	**07 26 05.3**	**+8.3**
YAK				*e*SSS	SSS	07 26 24.8	
YAK				*e*		07 31 31.0	
YAK				pmax	pmax		
	comp=Z,31nm,1.4s						
YAK				pmax	pmax		
	comp=N,24nm,1.8s						
YAK				pmax	pmax		
	comp=E,10.0nm,1.3s						
YAK				pmax	pmax		
	comp=Z,14nm,0.4s						
YAK				pmax	pmax		
	comp=E,4.0nm,0.6s						
YAK				pmax	pmax		
	comp=N,6.0nm,0.8s						
YAK				smax	smax		
	comp=N,56nm,3.0s						
YAK				smax	smax		
	comp=E,38nm,2.7s						
YAK				MLR	MLR		
	comp=Z,192nm,16.0s						
YAK				MLR	MLR		
	comp=N,175nm,14.0s						
YAK				MLR	MLR		
	comp=E,235nm,15.0s						
SONA1	**Songino Array**	**26.00**	**305**	*e*P	**P**	**07 20 32.0**	**-1.8**
SONM	**Songino Array**	**26.00**	**305**	P	**P**	**07 20 31.9**	**-1.9**
	comp=E,2.6nm,0.8s,baz=108,slow=9.6,SNR=9.6						
SEY	**Seymchan**	**27.50**	**14**	P	**P**	**07 20 47.4**	**+0.4**
	comp=E,5.2nm,0.8s,baz=210,slow=6.5,SNR=17						
LZH	**Lanzhou**	**27.82**	**279**	*e*P	**P**	**07 20 51.7**	**+1.3**
LZH				pP	sP	07 20 54.5	+1.4
LZH				sP	pP	07 20 56.9	+4.6
LZH				pmax	pmax		
	comp=E,14nm,1.0s						
ZAK	**Zakamensk**	**28.60**	**309**	*e*P	P	07 21 01.1	+3.9
ZAK				pmax	pmax		
	comp=Z,2.0nm,1.2s						
GYA	**Guiyang**	**28.91**	**258**	P	**P**	**07 21 00.2**	**+0.1**
GYA				pmax	pmax		
	comp=Z,10.0nm,0.8s						
CD2	**Chengdu**	**29.36**	**269**	P	**P**	**07 21 02.2**	**-1.8**
CD2				pmax	pmax		
	comp=Z,1.0nm,0.5s						
H11N2	**WAKE ISLAND Hy 30.07**		**117**	T	T	07 51 38.9	
	baz=310,slow=76,SNR=5.7						
H11N1	**WAKE ISLAND Hy 30.08**		**117**	T	T	07 51 39.6	
	baz=310,slow=76,SNR=6.9						
H11N3	**WAKE ISLAND Hy 30.09**		**117**	T	T	07 51 40.9	
	baz=310,slow=76,SNR=6.8						
GTA	**Gaotai**	**30.41**	**287**	*e*P	**P**	**07 21 13.7**	**+0.3**
GTA				pP	sP	07 21 18.1	+2.0
GTA				sP	pP	07 21 21.2	+5.9
GTA				pmax	pmax		
	comp=Z,4.0nm,0.7s						
H11S1	**WAKE ISLAND Hy 30.74**		**119**	T	T	07 52 26.1	
	baz=312,slow=76,SNR=8.1						
H11S3	**WAKE ISLAND Hy 30.74**		**119**	T	T	07 52 29.6	
	baz=312,slow=76,SNR=9.0						
H11S2	**WAKE ISLAND Hy 30.75**		**119**	T	T	07 52 28.7	
	baz=312,slow=76,SNR=8.2						
KMI	**Kunming**	**32.64**	**259**	P	**P**	**07 21 31.9**	**-1.3**
KMI				pP	sP	07 21 38.2	+2.3
KMI				sP	pP	07 21 40.4	+5.3
KMI				pmax	pmax		
	comp=Z,13nm,0.9s						
KMI				pmax	pmax		
	comp=Z,110nm,4.0s						
KMI				LR	LR		
	comp=Z,260nm,13.7s						
KMI				LR	LR		
	comp=Z,470nm,14.7s						
KMI				LR	LR		
	comp=Z,520nm,13.8s						
BILL	**Bilibino**	**34.91**	**18**	*i* P	**P**	**07 21 52.6**	**+0.4**
BILL				pmax	pmax		
	comp=Z,4.0nm,1.0s						
TIXI	**Tiksi**	**35.26**	**355**	P	**P**	**07 21 52.3**	**-2.8**
	comp=Z,1.1nm,0.4s,baz=150,slow=3.9,SNR=4.2						
WMQ	**Urumqi**	**38.87**	**297**	*e*P	**P**	**07 22 27.0**	**+0.7**
WMQ				sP	sP	07 22 33.5	+4.5
WMQ				PcP	**PcP**	**07 24 38.2**	**+1.0**
WMQ				pmax	pmax		
	comp=Z,3.0nm,0.6s						
WMQ				LR	LR		
	comp=Z,64nm,16.2s						
WMQ				LR	LR		

	comp=Z,5.0nm,1.4s							
CAST	**Castle Rocks**	48.70	34	*e*P		P	07 23 47.3	+2.3
	comp=Z,28nm,1.9s							
BVAR	**Borovoye Array**	49.00	312	P		P	07 23 46.0	-1.4
	comp=Z,0.3nm,0.5s,baz=87,slow=8.3,SNR=3.3							
BVAR	**Borovoye Array**	49.00	312	P		P	07 23 46.0	-1.4
KTH	**Kantishna Hill**	49.22	34	*e*P		P	07 23 51.2	+2.2
	comp=Z,21nm,1.4s							
MLY	**Manley**	49.26	32	*e*P		P	07 23 51.5	+2.2
	comp=Z,4.4nm,1.0s							
BRLK	**Bradley Lake**	49.49	39	*e*P		P	07 23 53.1	+2.1
	comp=Z,150nm,1.9s							
TRF	**Thorofare Moun**	49.51	34	*e*P		P	07 23 54.1	+2.8
	comp=Z,27nm,1.8s							
ZRNK	**Zerenda**	49.84	312	*e*P		P	07 23 53.7	-0.1
ZRNK				pmax		pmax		
	comp=Z,5.0nm,1.3s							
ZRNK	**Zerenda**	49.84	312	*e*P		P	07 23 53.7	-0.1
	comp=Z,4.8nm,1.3s							
RND	**Reindeer**	50.15	34	*e*P		P	07 23 57.4	+1.2
RND				pmax		pmax		
	comp=Z,14nm,1.2s							
RND	**Reindeer**	50.15	34	*e*P		P	07 23 57.4	+1.2
	comp=Z,14nm,1.2s							
MDM	**Murphy Dome**	50.33	32	*e*P		P	07 23 59.1	+1.7
	comp=Z,7.0nm,1.0s							
WRH	**Wood River Hil**	50.42	33	*e*P		P	07 23 59.7	+1.7
	comp=Z,21nm,2.0s							
IL1	**Eielson Array**	50.91	32	*e*P		P	07 24 02.2	+0.5
ILAR	**Eielson Array**	50.91	32	P		P	07 24 00.6	-1.2
	comp=Z,2.1nm,0.8s,baz=278,slow=6.7,SNR=21							
ILB	**Eielson Array**	50.91	32	*e*P		P	07 24 02.7	+1.0
SCM	**Sheep Creek Mo**	51.00	36	*e*P		P	07 24 02.9	+0.3
SCM				pmax		pmax		
	comp=Z,43nm,1.6s							
SCM	**Sheep Creek Mo**	51.00	36	*e*P		P	07 24 02.9	+0.3
	comp=Z,43nm,1.6s							
KLU	**Klutina**	51.71	36	*e*P		P	07 24 09.2	+1.3
	comp=Z,9.1nm,1.1s							
DOT	**Dot Lake**	52.26	33	*e*P		P	07 24 13.2	+1.3
	comp=Z,59nm,2.0s							
BMRM	**Bremner River**	52.42	37	*e*P		P	07 24 15.0	+1.9
	comp=Z,24nm,1.3s							
MENT	**Mentasta**	52.52	34	*e*P		P	07 24 15.8	+1.9
	comp=Z,8.9nm,1.2s							
EGAK	**Eagle**	53.35	32	*e*P		P	07 24 21.6	+1.7
	comp=Z,16nm,1.8s							
ARU	**Arti**	54.98	318	P		P	07 24 30.6	-1.3
	comp=Z,1.4nm,0.4s,baz=102,slow=11,SNR=5.2							
INK	**Inuvik**	55.63	27	P		P	07 24 36.9	+0.6
	comp=Z,2.4nm,0.9s,baz=256,slow=7.0,SNR=7.9							
INK	**Inuvik**	55.63	27	*e*P		P	07 24 38.5	+2.1
ABKAR	**Akbulak array**	56.30	309	*e*P		P	07 24 40.0	-1.5
WB2	**Warramunga Arr**	56.59	185	*e*P		P	07 24 42.4	-1.4
	comp=Z,24nm,1.4s							
WRA	**Warramunga Arr**	56.59	185	P		P	07 24 41.8	-2.0
	comp=Z,4.4nm,0.7s,baz=0.3,slow=7.5,SNR=41							
AKTO	**Aktyubinsk**	57.09	311	P		P	07 24 46.1	-1.0
	comp=Z,0.9nm,0.7s,baz=78,slow=17,SNR=4.0							
AS01	**Alice Springs**	60.31	185	*e*P		P	07 25 08.0	-1.7
AS31	**Alice Springs**	60.31	185	*e*P		P	07 25 10.2	+0.4
	comp=Z,1.0nm,0.8s							
ASAR	**Alice Springs**	60.32	185	P		P	07 25 08.3	-1.4
	comp=Z,1.5nm,0.8s,baz=11,slow=8.1,SNR=15							
GEYT	**Alibeck**	61.90	298	P		P	07 25 19.5	-1.1
	comp=Z,1.5nm,0.3s,baz=119,slow=5.1,SNR=3.0							
ARCES	**ARCESS Array B**	63.37	339	P		P	07 25 28.5	-1.3
	comp=Z,2.0nm,1.0s,baz=49,slow=8.2,SNR=4.4							
RES	**Resolute Bay**	63.37	14	*e*P		P	07 25 28.9	-0.8
RES	**Resolute Bay**	63.37	14	*e*P		P	07 25 28.9	-0.8
DZM	**Mont Dzumac**	64.23	151	P		P	07 25 34.2	-1.9
	comp=Z,5.3nm,0.8s,baz=21,slow=12,SNR=4.7							
YKA	**Yellowknife Ar**	65.14	29	P		P	07 25 40.6	-0.9
	comp=Z,0.7nm,0.7s,baz=304,slow=6.5,SNR=17							
DAG	**Danmarks Havn**	65.78	354	*i* P		P	07 25 44.4	-1.0
	comp=Z,2.2nm,0.9s							
DAG	**Danmarks Havn**	65.78	354	*e*P		P	07 25 44.4	-1.0
DAG				pmax		pmax		
	comp=Z,2.0nm,0.9s							
FIA1	**FINESS Array S**	67.91	331	*e*P		P	07 25 58.0	-1.3
FINES	**FINESS Array B**	67.91	331	P		P	07 25 57.5	-1.7
	comp=Z,1.9nm,0.7s,baz=47,slow=6.5,SNR=8.1							
SUMG	**Summit**	70.88	359	*i* P		P	07 26 16.8	-1.1
	comp=Z,9.2nm,1.0s							
SUMG	**Summit**	70.88	359	*e*P		P	07 26 17.2	-0.7
SUMG				pmax		pmax		
	comp=Z,58nm,2.0s							
SUMG	**Summit**	70.88	359	*e*P		P	07 26 17.2	-0.7
	comp=Z,58nm,2.0s							
I04A	**Tendick Farm,**	71.34	49	P		P	07 26 22.6	+1.8
	baz=303							
L02D	**Cave Junction,**	71.50	51	P		P	07 26 22.8	+1.0
	baz=303							
NEW	**Newport**	71.88	43	P		P	07 26 25.1	+1.1
	baz=305							
J05D	**Fort Rock, OR**	72.33	49	P		P	07 26 28.1	+1.2
	baz=304							
M04C	**Macdoel**	72.80	51	P		P	07 26 30.6	+0.9
	baz=304							
K05A	**Summer Lake**	72.85	49	*e*P		P	07 26 32.5	+2.4
	comp=Z,87nm,2.0s							
AKASG	**Malin Array Be**	73.03	321	P		P	07 26 29.0	-1.7
	comp=Z,2.5nm,0.6s,baz=44,slow=6.5,SNR=14							
AK11	**Malin Array Si**	73.08	321	*e*P		P	07 26 31.5	+0.6
NB2	**NORSAR Subarra**	73.47	336	P		P	07 26 32.0	-1.2
	comp=Z,19nm,1.4s,baz=43,slow=6.5							
NOA	**NORSAR Array B**	73.47	336	P		P	07 26 32.0	-1.2
	comp=Z,2.9nm,0.9s,baz=42,slow=5.9,SNR=4.3							
JTMT	**Jette**	73.72	42	*e*P		P	07 26 37.1	+2.0
SWMT	**Swartz Lake**	74.02	42	*e*P		P	07 26 37.8	+1.0
WVOR	**Wild Horse Val**	74.39	49	*e*P		P	07 26 40.0	+1.0
WVOR				pmax		pmax		
	comp=Z,19nm,1.8s							
WVOR	**Wild Horse Val**	74.39	49	*e*P		P	07 26 40.0	+1.0
	comp=Z,19nm,1.8s							
MSO	**Missoula**	74.47	43	P		P	07 26 40.5	+1.1
	baz=308							
FFC	**Flin Flon**	75.12	31	*e*P		P	07 26 43.4	+0.6
FFC				pmax		pmax		
	comp=Z,20nm,1.8s							
FFC	**Flin Flon**	75.12	31	*e*P		P	07 26 43.4	+0.6
	comp=Z,20nm,1.8s							
FCC	**Fort Churchill**	75.21	25	*e*P		P	07 26 44.3	+1.1
FCC				pmax		pmax		
	comp=Z,6.0nm,1.0s							
FCC	**Fort Churchill**	75.21	25	*e*P		P	07 26 44.3	+1.1
	comp=Z,5.5nm,1.0s							
MFID	**Camas Ranch**	75.47	46	*e*P		P	07 26 46.4	+1.2
	comp=Z,3.0nm,0.9s							
HRY	**Holter Researc**	75.68	42	*e*P		P	07 26 48.0	+1.7
CMB	**Columbia Colle**	75.86	53	*e*P		P	07 26 49.2	+1.7
CMB				pmax		pmax		
	comp=Z,25nm,1.8s							
CMB	**Columbia Colle**	75.86	53	*e*P		P	07 26 49.2	+1.7
	comp=Z,25nm,1.8s							
LRM	**Limekiln Ridge**	75.90	43	*e*P		P	07 26 49.6	+1.7
EGMT	**Eagleton**	75.94	40	*e*P		P	07 26 49.6	+1.8
	comp=Z,28nm,0.8s							
DLMT	**Dillon**	76.11	43	*e*P		P	07 26 51.0	+2.2
	comp=Z,6.9nm,0.9s							
WAKR	**Walker**	76.19	52	*e*P		P	07 26 51.6	+2.1
HLID	**Hailey**	76.19	46	P		P	07 26 50.3	+0.8
	baz=308							
SFJD	**Kangerlussuaq**	76.27	4	*e*P		P	07 26 52.2	+3.0
SFJD				pmax		pmax		
	comp=Z,68nm,2.0s							
SFJD	**Kangerlussuaq**	76.27	4	*e*P		P	07 26 52.1	+3.0
	comp=Z,68nm,2.0s							
BMN	**Battle Mountai**	76.43	50	*e*P		P	07 26 52.7	+1.9
BMN				pmax		pmax		
	comp=Z,5.0nm,1.0s							
BMN	**Battle Mountai**	76.43	50	*e*P		P	07 26 52.7	+1.9
	comp=Z,4.7nm,1.0s							
BOZ	**Bozeman (W)**	76.46	43	P		P	07 26 52.1	+1.2
	baz=309							
BOZ	**Bozeman (W)**	76.46	43	*e*P		P	07 26 52.8	+1.9
BOZ				pmax		pmax		
	comp=Z,28nm,2.0s							
BOZ	**Bozeman (W)**	76.46	43	*e*P		P	07 26 52.8	+1.9
	comp=Z,28nm,2.0s							
NV01	**Mina Array Sit**	76.95	52	*e*P		P	07 26 54.5	+0.6
NVAR	**Mina Array Bea**	76.95	52	P		P	07 26 53.5	-0.4
	comp=Z,4.0nm,0.8s,baz=300,slow=3.2,SNR=31							
BUR08	**Bucovina Ar. S**	77.01	320	*e*P		P	07 26 53.0	-0.9
BRTR	**Keskin Array B**	77.24	310	P		P	07 26 54.5	-0.9
	comp=Z,0.4nm,0.5s,baz=72,slow=5.1,SNR=3.7							
KOLS	**Kolonicke sedl**	77.61	323	*e*P		P	07 26 58.2	+1.1
KOLS	**Kolonicke sedl**	77.61	323	*e*P		P	07 26 58.2	+1.1
STHS	**Stebnicka Huta**	77.78	324	*e*P		P	07 26 58.6	+0.5
STHS				pmax		pmax		
	comp=Z,3.0nm,0.7s							
STHS	**Stebnicka Huta**	77.78	324	*e*P		P	07 26 58.6	+0.5
H17A	**Grant Village**	77.83	43	P		P	07 27 01.5	+2.7
	baz=310							
IMW	**Indian Meadow**	77.95	44	*e*P		P	07 27 02.1	+2.6
	comp=Z,3.7nm,0.9s							
CRVS	**Cervenica-Dubn**	78.03	323	*e*P		P	07 27 00.6	+1.1
CRVS	**Cervenica-Dubn**	78.03	323	*e*P		P	07 27 00.5	+1.1
RLMT	**Red Lodge**	78.07	42	P		P	07 27 01.7	+1.6
	baz=311							
RLMT	**Red Lodge**	78.07	42	*e*P		P	07 27 00.6	+0.5
	comp=Z,20nm,1.8s							
MOOW	**Moose Ponds**	78.15	44	*e*P		P	07 27 02.8	+2.3
	comp=Z,7.8nm,1.6s							
HVU	**Hansel Valley**	78.25	46	*e*P		P	07 27 04.1	+3.1
HVU				pmax		pmax		
	comp=Z,11nm,1.8s							
HVU	**Hansel Valley**	78.25	46	*e*P		P	07 27 04.1	+3.1
	comp=Z,10nm,1.8s							
REDW	**Red Top Meadow**	78.34	44	*e*P		P	07 27 04.2	+2.6
	comp=Z,20nm,1.9s							
GRAC	**Grapevine Rang**	78.41	52	P		P	07 27 03.3	+1.4
	baz=308							
LAO	**LASA Array**	78.63	39	P		P	07 27 04.6	+1.7
	baz=312							
R11A	**Troy Canyon, C**	78.70	50	P		P	07 27 04.8	+1.2
	baz=308							
R11A	**Troy Canyon, C**	78.70	50	*e*P		P	07 27 05.1	+1.5
	comp=Z,3.0nm,1.0s							
KECS	**Kecovo**	78.79	323	*e*P		P	07 27 04.7	+1.1
KECS	**Kecovo**	78.79	323	*e*P		P	07 27 04.7	+1.1
MPMC	**Manual Prospec**	78.90	53	P		P	07 27 05.8	+1.0
	baz=308							
FURC	**Furnace Creek,**	79.05	53	P		P	07 27 06.8	+1.5
	baz=308							
HWUT	**Haware Ranch**	79.06	46	*e*P		P	07 27 08.0	+2.5
	comp=Z,5.1nm,1.1s							
TPNV	**Topopah Spring**	79.14	52	P		P	07 27 06.6	+0.5
	baz=308							
TPNV	**Topopah Spring**	79.14	52	*e*P		P	07 27 06.2	+0.2
TPNV				pmax		pmax		
	comp=Z,6.0nm,0.9s							
TPNV	**Topopah Spring**	79.14	52	*e*P		P	07 27 06.2	+0.2
	comp=Z,5.8nm,0.9s							
DUG	**Dugway, Tooele**	79.23	48	P		P	07 27 07.7	+1.4
	baz=310							
DUG	**Dugway, Tooele**	79.23	48	*e*P		P	07 27 08.5	+2.1
DUG				pmax		pmax		
	comp=Z,5.0nm,1.3s							
DUG	**Dugway, Tooele**	79.23	48	*e*P		P	07 27 08.5	+2.1
	comp=Z,4.7nm,1.3s							
EDW2	**Edwards Air Fo**	79.29	54	P		P	07 27 07.7	+1.0
	baz=308							
BW06	**Boulder Array**	79.45	44	P		P	07 27 08.3	+0.7
	baz=311							
BW06	**Boulder Array**	79.45	44	*e*P		P	07 27 09.2	+1.6
	comp=Z,3.5nm,1.1s							
PD31	**Pinedale Array**	79.45	44	*e*P		P	07 27 09.2	+1.5
PDAR	**Pinedale Array**	79.45	44	P		P	07 27 07.8	+0.1
	comp=Z,1.4nm,0.8s,baz=248,slow=1.6,SNR=14							
VYHS	**Vyhne**	79.56	324	*e*P		P	07 27 09.3	+1.4
VYHS				pmax		pmax		
	comp=Z,12nm,2.1s							
VYHS	**Vyhne**	79.56	324	*e*P		P	07 27 09.3	+1.4
GSC	**Goldstone, Bar**	79.80	54	P		P	07 27 10.5	+1.0
	baz=308							
B28A	**Dugan Ranch, T**	80.26	35	P		P	07 27 12.6	+0.9
	baz=316							
TUQ	**Turquoise Moun**	80.28	53	P		P	07 27 13.5	+1.3
	baz=308							
MSU	**Marysvale**	80.68	49	*e*P		P	07 27 16.5	+2.1
MSU	**Marysvale**	80.68	49	*e*P		P	07 27 16.4	+2.1
A30A	**Hoffart Farm,**	80.84	34	P		P	07 27 15.8	+1.0
	baz=317							
GMRC	**Granite Mounta**	80.86	53	P		P	07 27 16.5	+1.2
	baz=309							
P17A	**Butcher Ranch,**	80.91	47	*e*P		P	07 27 17.2	+1.6
	comp=Z,4.2nm,0.7s							
ULM	**Lac du Bonnet**	80.93	32	P		P	07 27 14.3	-0.9
	comp=Z,3.9nm,0.9s,baz=324,slow=8.5,SNR=3.9							
LCMT	**Little Creek M**	80.98	50	*e*P		P	07 27 18.0	+2.1
	comp=Z,15nm,2.0s							
PFO	**Pinyon Flats O**	81.07	55	P		P	07 27 17.5	+1.1
	baz=308							
P18A	**Preston Nutter**	81.10	47	*e*P		P	07 27 19.3	+2.6
	comp=Z,11nm,1.5s							
BELC	**Belle Mtn. Jos**	81.13	54	P		P	07 27 17.6	+0.9
	baz=309							
B30A	**Myrvik Farm, E**	81.19	34	P		P	07 27 17.6	+1.0
	baz=317							
SRU	**San Rafael Swe**	81.28	47	*e*P		P	07 27 19.2	+1.7
SRU				pmax		pmax		
	comp=Z,4.0nm,1.0s							
SRU	**San Rafael Swe**	81.28	47	*e*P		P	07 27 19.2	+1.7
	comp=Z,3.6nm,1.0s							
G26A	**Maurine**	81.42	39	P		P	07 27 18.7	+0.7
	baz=315							
MONP2	**Monument Peak**	81.54	55	P		P	07 27 20.2	+1.2
	baz=309							
IRM	**Iron Mountain**	81.58	54	P		P	07 27 20.1	+1.1
	baz=309							
GEC2	**GERESS Array S**	81.65	327	*e*P		P	07 27 19.5	+0.3
GEC2	**GERESS Array S**	81.65	327	*e*P		P	07 27 19.5	+0.3
GERES	**GERESS Array B**	81.65	327	P		P	07 27 18.0	-1.2
	comp=Z,0.5nm,0.5s,baz=23,slow=5.3,SNR=4.3							
A32A	**Rocking H Ranc**	81.66	33	P		P	07 27 19.8	+0.7
	baz=318							
BC3	**Big Chuckawall**	81.70	54	P		P	07 27 20.7	+1.0
	baz=309							
G27A	**Dupree**	81.70	38	P		P	07 27 20.3	+0.8
	baz=315							
I25A	**Rochford**	81.74	40	P		P	07 27 21.2	+1.4
	baz=314							
H26A	**Fairpoint**	81.81	39	P		P	07 27 20.9	+0.8
	baz=315							
F28A	**McLaughlin**	81.92	37	P		P	07 27 21.6	+1.0
	baz=316							
O20A	**White River Ci**	81.93	45	P		P	07 27 22.1	+1.1
	baz=312							
C31A	**Landman Farms,**	81.95	34	P		P	07 27 21.7	+1.1
	baz=318							
D30A	**Buchanan**	81.98	35	P		P	07 27 21.9	+1.1
	baz=317							
A33A	**Harroad**	82.13	33	P		P	07 27 22.3	+0.7
	baz=319							
PDMCI	**Parker Dam,Lak**	82.14	53	P		P	07 27 23.2	+1.4
	baz=310							
H27A	**Howes**	82.15	39	P		P	07 27 23.1	+1.2
	baz=315							
I26A	**New Underwood**	82.18	40	P		P	07 27 23.5	+1.4
	baz=315							
G28A	**Parade**	82.42	38	P		P	07 27 24.8	+1.5
	baz=316							
I27A	**Quinn**	82.56	39	P		P	07 27 24.8	+0.8
	baz=315							
J26A	**Sides Ranch, S**	82.57	40	P		P	07 27 25.4	+1.3
	baz=315							
PV10	**Paradox Valley**	82.63	47	*e*P		P	07 27 27.2	+2.4
H28A	**Mission Ridge**	82.65	38	P		P	07 27 26.0	+1.5
	baz=316							
N23A	**Red Feather La**	82.71	44	P		P	07 27 26.8	+1.7
	baz=313							
B34A	**Aery, Baudette**	82.79	32	P		P	07 27 25.5	+0.4
	baz=320							
C33A	**Trail**	82.85	34	P		P	07 27 25.9	+0.5
	baz=319							
I28A	**Midland**	83.06	39	P		P	07 27 27.2	+0.6
	baz=316							
B35A	**Bob, Littlefor**	83.28	32	P		P	07 27 28.0	+0.4
	baz=320							
D34A	**Park Rapids**	83.62	34	P		P	07 27 30.2	+0.8
	baz=320							
C35A	**Jirik Farms, M**	83.68	33	P		P	07 27 30.3	+0.6
	baz=320							
E33A	**Westby DABS, E**	83.69	34	P		P	07 27 30.4	+0.6
	baz=319							
MVCO	**Mesa Verde**	83.73	48	P		P	07 27 31.8	+1.4
	baz=312							
X16A	**Lo Mia Camp, P**	83.77	51	*e*P		P	07 27 32.8	+2.1
	comp=Z,5.3nm,1.2s							
G32A	**Webster**	83.94	36	P		P	07 27 32.0	+1.0
	baz=318							
I30A	**Oacoma**	83.99	38	P		P	07 27 32.6	+1.2
	baz=317							
F33A	**5 Mile Ranch,**	84.06	35	P		P	07 27 32.9	+1.2
	baz=319							
D35A	**Remer**	84.12	33	P		P	07 27 32.9	+1.0
	baz=320							
C36A	**Pine Crest Far**	84.13	32	P		P	07 27 32.9	+1.0
	baz=321							
S22A	**4UR Ranch, Cre**	84.35	46	P		P	07 27 35.2	+1.6
	baz=313							
J30A	**Dallas**	84.39	38	P		P	07 27 34.2	+0.8
	baz=317							
C37A	**Embarrass**	84.43	32	P		P	07 27 34.3	+0.9
	baz=322							
G33A	**Ortonville**	84.48	36	P		P	07 27 34.3	+0.5
	baz=319							
214A	**Organ Pipe Nat**	84.49	54	P		P	07 27 35.2	+1.1
	baz=310							
EYMN	**Ely**	84.54	31	P		P	07 27 35.1	+1.1
	baz=322							
EYMN	**Ely**	84.54	31	*e*P		P	07 27 35.0	+0.9
	comp=Z,11nm,1.0s							
H33A	**Prehn Over Nor**	84.72	36	P		P	07 27 35.9	+0.9
	baz=319							
C38A	**Sawbill Land.**	84.82	31	P		P	07 27 35.6	+0.1
	baz=322							
E36A	**McGregor**	84.91	33	P		P	07 27 36.2	+0.2
	baz=321							
SDCO	**Great Sand Dun**	85.12	46	P		P	07 27 38.5	+1.0
	baz=314							
H34A	**Spellman Lake,**	85.19	36	P		P	07 27 38.5	+1.2
	baz=319							
C39A	**Grand Marais**	85.21	31	P		P	07 27 38.1	+0.7
	baz=323							
ECSD	**EROS Data Cent**	85.49	37	P		P	07 27 39.3	+0.4
	baz=319							
ECSD	**EROS Data Cent**	85.49	37	*e*P		P	07 27 40.2	+1.3
	comp=Z,15nm,1.6s							
TUC	**Tucson**	85.56	53	P		P	07 27 40.4	+0.9
	baz=311							
H35A	**Sunnyside Ranc**	85.60	35	P		P	07 27 40.2	+0.8
	baz=320							
SPMN	**Marine on St.**	86.11	34	P		P	07 27 42.8	+0.9
	baz=321							
T25A	**Trinidad**	86.16	45	P		P	07 27 43.5	+0.9
	baz=314							
H37A	**Dierke Farm, C**	86.56	34	P		P	07 27 44.9	+0.7
	baz=321							
I37A	**Lemond, Waseca**	86.78	35	P		P	07 27 46.5	+1.3
	baz=321							
J36A	**Seneca 1, Swea**	86.88	36	P		P	07 27 46.9	+1.2
	baz=320							
I38A	**Scanlan Farm,**	87.25	34	P		P	07 27 47.8	+0.3
	baz=322							
K36A	**Gilmore City**	87.36	36	P		P	07 27 48.8	+0.7
	baz=320							
P32A	**Huiting Farm,**	87.56	40	P		P	07 27 49.7	+0.5
	baz=318							
K37A	**Belmond**	87.64	36	P		P	07 27 50.5	+1.0
	baz=321							
J38A	**Wedel Dairy, R**	87.75	35	P		P	07 27 50.9	+0.9
	baz=322							
Q33A	**Connelly Farm,**	88.42	40	P		P	07 27 54.1	+0.8
	baz=318							
M38A	**Pleasantville**	88.89	36	P		P	07 27 56.6	+1.2
	baz=321							
R34A	**Isabella, Hill**	89.25	41	P		P	07 27 57.5	+0.3
	baz=319							
WMOK	**Wichita Mounta**	91.06	44	*e*P		P	07 28 07.3	+1.6
WMOK				pmax		pmax		
	comp=Z,15nm,1.8s							
WMOK	**Wichita Mounta**	91.06	44	*e*P		P	07 28 07.3	+1.6
	comp=Z,15nm,1.8s							
T38A	**Diamond**	91.73	40	P		P	07 28 09.1	+0.4
	baz=320							
TX31	**Lajitas Ar. Si**	92.06	51	*e*P		P	07 28 11.6	+1.0
TXAR	**Lajitas Array**	92.07	51	P		P	07 28 09.8	-0.7
	comp=Z,1.0nm,0.7s,baz=304,slow=3.3,SNR=15							
Z33A	**Whitaker Ranch**	92.14	45	P		P	07 28 11.4	+0.7
	baz=318							
V38A	**Canehill**	92.57	40	P		P	07 28 13.7	+1.1
	baz=320							
U39A	**Green Forest**	92.65	40	P		P	07 28 13.6	+0.5
	baz=321							
V39A	**Pettigrew**	92.98	40	P		P	07 28 15.3	+0.7
	baz=321							
U40A	**Yellville**	92.99	39	P		P	07 28 15.3	+0.7
	baz=321							
233A	**Rising Star**	92.99	46	P		P	07 28 16.5	+1.8
	baz=318							
X37A	**Clayton**	93.03	42	P		P	07 28 15.6	+0.8
	baz=320							
X38A	**Whitesboro**	93.26	41	P		P	07 28 16.9	+1.1
	baz=320							
333A	**Richland Sprin**	93.45	46	P		P	07 28 17.7	+0.9
	baz=318							
JCT	**Junction City**	93.59	47	P		P	07 28 18.0	+0.5
	baz=317							
SAML	**Samuel**	145.98	41	*e*PKPdf		PKPab	07 34 41.6	-0.1
LPAZ	**La Paz**	148.77	56	PKPbc		PKPbc	07 34 49.3	-0.5
	comp=Z,1.9nm,0.7s,baz=19,slow=11,SNR=7.6							
LPAZ	**La Paz**	148.77	56	*e*PKPbc		PKPbc	07 34 50.4	+0.7

IDC 12 07:15:22.4±2.7, 54°.02N×86°.55E, h0km, mb1 2.9/2, mb1mx2.8/50, mbtmp2.9/2, ML2.7/2, Error ellipse: s-maj=23.1km s-min=13.7km az=55.0, Southwestern Siberia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
I46RU	**ZALESOVO INFRA**	**1.03**	**267**	*i*		07 22 40.0	
	baz=84,slow=

DDA ***12*** *07:19:27.8, 39°.81N × 38°.68E, h6km, Md2.9*

ISC 12 07:18:41.2±1.4, 39°.81N±0°.02×38°.59E±0°.05, h5km±15km, n27, σ1§18/43, Turkey

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
ILIC	**ilic-Erzincan**	**0.36**	**183**	*e*PG		**Pn**		**07 18 51.3**	**-1.9**
ILIC				*e*SG		**Sb**		**07 18 57.8**	**+1.6**
ILIC	**ilic-Erzincan**	**0.36**	**183**	*e*Pg		**Pn**		**07 18 51.3**	**-1.9**
REFA	**Refahiye_ERZ**	**0.44**	**162**	*i* P		Pg		07 18 45.1	-4.6
REFA				*i* S		Sg		07 18 47.0	-8.4
SUSE	**Susehri**	**0.49**	**323**	*i* P		**Pb**		**07 18 52.9**	**+0.4**
SUSE				*i* S		**Sb**		**07 19 00.6**	**+0.4**
SUSE	**Susehri**	**0.49**	**323**	P		**Pb**		**07 18 52.9**	**+0.4**
SUSE				S		**Sb**		**07 19 00.6**	**+0.4**
KEMA	**Kemaliye**	**0.55**	**188**	*i* P		**Pb**		**07 18 53.6**	**+0.2**
KEMA				*i* S		**Sb**		**07 19 02.6**	**+1.1**
KEMA	**Kemaliye**	**0.55**	**188**	P		**Pb**		**07 18 53.6**	**+0.2**
KEMA				S		**Sb**		**07 19 02.6**	**+1.1**
KELT	**Kelkit**	**0.61**	**57**	*i* P		**Pg**		**07 18 52.8**	**-0.2**
KELT				*i* S		**Sg**		**07 19 00.0**	**-1.0**
KELT	**Kelkit**	**0.61**	**57**	P		**Pg**		**07 18 52.8**	**-0.2**
KELT				S		**Sg**		**07 19 00.0**	**-1.0**
CUZAR	**Zara_SIVAS**	**0.63**	**277**	*i* P		**Pb**		**07 18 55.4**	**+0.5**
CUZAR				*i* S		**Sn**		**07 19 05.2**	**-2.4**
CUZAR	**Zara_SIVAS**	**0.63**	**277**	P		**Pb**		**07 18 55.4**	**+0.5**
CUZAR				S		**Sn**		**07 19 05.2**	**-2.4**
GUMT	**Gumushane**	**0.94**	**46**	*e*PG		**Pg**		**07 18 59.1**	**-0.2**
GUMT				*e*SG		**Sg**		**07 19 11.3**	**-0.2**
GUMT	**Gumushane**	**0.94**	**46**	*e*Pg		**Pg**		**07 18 59.1**	**-0.2**
GUMT				*e*Sg		**Sg**		**07 19 11.3**	**-0.2**
CUKAN	**kangal_SIVAS**	**1.00**	**241**	*i* P		**Pn**		**07 19 02.3**	**+0.3**
CUKAN				*i* S		**Sn**		**07 19 17.1**	**+0.5**
CUKAN	**kangal_SIVAS**	**1.00**	**241**	P		**Pn**		**07 19 02.3**	**+0.3**
CUKAN				S		**Sn**		**07 19 17.1**	**+0.5**
TNCL	**Tunceli-Merkez**	**1.01**	**133**	*i* P		**Pg**		**07 18 58.8**	**-1.9**
TNCL				*i* S		**Sg**		**07 19 12.5**	**-1.3**
TNCL	**Tunceli-Merkez**	**1.01**	**133**	P		**Pg**		**07 18 58.8**	**-1.9**
TNCL				S		**Sg**		**07 19 12.5**	**-1.3**
ESPY	**Espiye-Giresun**	**1.11**	**5**	*e*PG		**Pg**		**07 19 02.6**	**+0.1**
ESPY	**Espiye-Giresun**	**1.11**	**5**	*e*Pg		**Pg**		**07 19 02.6**	**+0.1**
PTK	**Pertek**	**1.11**	**146**	*e*PN		**Pn**		**07 19 04.4**	**+0.8**
PTK	**Pertek**	**1.11**	**146**	*e*Pn		**Pn**		**07 19 04.4**	**+0.8**
BAYT	**Ayd¨–ntepe-Bay**	**1.32**	**64**	*e*PN		**Pg**		**07 19 06.8**	**+0.1**
BAYT	**Ayd¨–ntepe-Bay**	**1.32**	**64**	*e*Pn		**Pg**		**07 19 06.8**	**+0.1**
KOPT	**Kop Dagi**	**1.48**	**81**	*i* P		**Pg**		**07 19 09.4**	**-0.3**
KOPT				*i* S		**Sg**		**07 19 31.2**	**+2.3**
KOPT	**Kop Dagi**	**1.48**	**81**	P		**Pg**		**07 19 09.4**	**-0.3**
KOPT				S		**Sg**		**07 19 31.2**	**+2.3**
SVRC	**Sivrice-ELAZID**	**1.54**	**158**	*e*PN		**Pg**		**07 19 12.0**	**+1.3**
SVRC	**Sivrice-ELAZID**	**1.54**	**158**	*e*Pn		**Pg**		**07 19 12.0**	**+1.3**

ISCJB ***12*** *07:20:06.7±0.5, 5°.20S±0°.04×76°.08W±0°.06, h33km, mb3.4/2, Error ellipse: s-maj=9.5km s-min=5.9km az=17.3*
IDC ***12*** *07:20:10.1±2.1, 5°.33S×76°.16W, h59km±24km, mb3.1/2, mb1 3.7/9, mb1mx3.5/36, mbtmp3.8/9, ML3.7/6, Error ellipse: s-maj=27.3km s-min=23.0km az=89.0*

ISC 12 07:20:07.5±0.7, 5°.22S±0°.06×76°.02W±0°.08, h35km, n16, σ1§51/20, Northern Peru

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
ATAH	**Atahualpa**	**3.03**	**231**	P		**Pn**		**07 20 54.2**	**+0.8**
	9.6nm,0.3s,baz=26,slow=8.8,SNR=33								
ATAH				S		**Sn**		**07 21 28.9**	**+0.1**
	9.3nm,0.3s,baz=71,slow=23,SNR=8.0								
OTAV	**Otavalo**	**5.93**	**336**	*e*P		**Pn**		**07 21 32.7**	**-0.7**
CMBC	**Cumbal**	**6.37**	**344**	*e*P		**Pn**		**07 21 39.7**	**+0.2**
FLOC	**Florencia**	**6.76**	**3**	*e*P		**Pn**		**07 21 44.9**	**+0.5**
NNA	**Nana**	**6.78**	**187**	P		**Pn**		**07 21 44.8**	**+0.2**
	2.7nm,0.3s,baz=16,slow=8.3,SNR=11								
NNA				S		**Sn**		**07 22 58.3**	**-2.4**
	12nm,0.3s,baz=250,slow=18,SNR=10								
CRUC	**La Cruz**	**6.80**	**352**	*e*P		**Pn**		**07 21 45.8**	**+0.6**
POPC	**Popayan, Colom**	**7.73**	**355**	*e*P		**Pn**		**07 21 59.7**	**+1.8**
ROSC	**El Rosal**	**10.13**	**10**	P		Pn		07 22 35.7	+4.7
	0.6nm,0.3s,baz=163,slow=20,SNR=2.7								
LPAZ	**La Paz**	**13.46**	**145**	P		**Pn**		**07 23 18.2**	**+1.5**
	0.3nm,0.3s,baz=334,slow=13,SNR=11								
SDV	**Santo Domingo**	**15.00**	**21**	P		**P**		**07 23 40.9**	**-1.5**
	0.3nm,0.3s,baz=252,slow=20,SNR=2.8								
SDV				S		**Sn**		**07 26 23.6**	**+1.1**
	0.2nm,0.3s,baz=55,slow=19,SNR=2.3								
PTGA	**Pitinga**	**16.64**	**75**	P		**P**		**07 24 01.0**	**+0.7**
	0.3nm,0.3s,baz=270,slow=20,SNR=2.7								
PTGA				S		**Sn**		**07 26 59.1**	**-2.9**
	1.4nm,0.3s,baz=157,slow=21,SNR=4.2								
SIV	**San Ignacio**	**18.17**	**127**	P		**P**		**07 24 18.2**	**+1.0**
	0.4nm,0.3s,baz=326,slow=12,SNR=11								
YKA	**Yellowknife Ar**	**72.65**	**342**	P		**P**		**07 31 37.3**	**+0.1**
	0.2nm,0.5s,baz=138,slow=6.2,SNR=5.9								
YKA				pP		**sP**		**07 31 50.9**	**-1.2**
	0.4nm,0.5s,baz=141,slow=6.2,SNR=8.0								
TORD	**Torodi Ar. Bea**	**79.28**	**76**	P		**P**		**07 32 11.7**	**+1.6**
	0.2nm,0.3s,baz=279,slow=6.0,SNR=6.8								
TORD				pP		**sP**		**07 32 24.2**	**-0.9**
	0.4nm,0.3s,baz=274,slow=5.3,SNR=4.9								
SONM	**Songino Array**	**137.49**	**358**	PKP		**PKPdf**		**07 39 25.3**	**-2.7**
	0.3nm,0.5s,baz=339,slow=1.2,SNR=2.6								
WRA	**Warramunga Arr**	**141.06**	**229**	PKhKP		PKPpre		07 39 31.0	
	0.4nm,0.9s,baz=122,slow=2.8,SNR=3.0								

JMA 12 07:25:04.3, 37°.01N×140°.67E, h7km±1km, M2.5, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.14**	**48**	P		Pg		07 25 07.4	+0.2
ONAJ				S		Sg		07 25 09.6	+0.3
JHO	**Hitachi**	**0.41**	**192**	P		Pg		07 25 12.1	-0.1
JHO				S		Sg		07 25 18.0	+0.5
JFT	**Otama**	**0.57**	**332**	P		Pg		07 25 15.7	+0.3
JMM	**Marumori**	**0.86**	**6**	P		Pg		07 25 20.4	-0.4
JMM				S		Sg		07 25 32.0	0.0
MAT	**Matsushiro**	**2.03**	**257**	P		Pn		07 25 34.4	-4.6
MAT				*e*S		Sg		07 26 11.2	+1.6

JMA 12 07:25:11.4, 37°.03N×140°.67E, h13km±1km, M2.8, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.12**	**55**	P		Pg		07 25 14.8	0.0
ONAJ				S		Sg		07 25 17.0	-0.2
JHO	**Hitachi**	**0.43**	**191**	*e*S		Sg		07 25 25.5	-0.1
JFT	**Otama**	**0.56**	**331**	S		Sg		07 25 29.9	+0.2

IDC 12 07:30:26.9±2.5, 54°.13N×86°.48E, h0km, mb1 3.3/2, mb1mx3.0/63, mbtmp3.3/2, ML3.0/2, Error ellipse: s-maj=20.8km s-min=12.7km az=58.0, Southwestern Siberia

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
I46RU	**ZALESOVO INFRA**	**0.99**	**260**	*i*				07 38 00.0	
	baz=80,slow=314,SNR=5.0								
ZALV	**Zalesovo Beam**	**0.99**	**260**	Pg		Pg		07 30 44.7	-1.3
	2.0nm,0.3s,baz=77,slow=16,SNR=14								
ZALV				Lg		Lg		07 30 59.7	
	1.6nm,0.3s,baz=79,slow=30,SNR=5.7								
ZALV				Rg		Rg		07 31 02.4	
	12nm,0.4s,baz=85,slow=31,SNR=24								
KURBB	**Kurchatov Arra**	**6.00**	**237**	Pn		Pn		07 31 58.0	+1.2
	0.3nm,0.3s,baz=55,slow=14,SNR=16								
KURBB				Lg		Lg		07 33 36.5	
	0.0nm,0.3s,baz=56,slow=32,SNR=4.8								
MKAR	**Makanchi Array**	**7.81**	**202**	Pn		Pn		07 32 22.4	+0.6
	0.3nm,0.3s,baz=22,slow=13,SNR=12								
MKAR				Sn		Sn		07 33 52.0	+1.0
	0.1nm,0.3s,baz=26,slow=30,SNR=5.5								
MKAR				Lg		Lg		07 34 32.1	
	0.1nm,0.3s,baz=21,slow=28,SNR=4.3								

IDC ***12*** *07:30:43.0±1.4, 38°.82N×142°.32E, h0km, mb3.4/4, mb1 3.6/4, mb1mx3.3/57, mbtmp3.4/4, Error ellipse: s-maj=39.3km s-min=30.4km az=79.0*
ISCJB ***12*** *07:30:45.6±1.5, 38°.94N±0°.06×142°.49E±0°.09, h26km±8km, mb3.4/4, Error ellipse: s-maj=12.2km s-min=8.5km az=30.8*
JMA ***12*** *07:30:47.9±0.1, 38°.98N×142°.37E, h37km±2km, M3.3*

ISC 12 07:30:46.6±2.2, 38°.92N±0°.06×142°.36E±0°.09, h23km±14km, n19, σ0§47/20, mb3.3/4, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**0.56**	**287**	P		**Pn**		**07 30 59.2**	**0.0**
OFUJ				S		**Sn**		**07 31 07.2**	**-0.6**
MIYJ	**Miyakonagasawa**	**0.78**	**328**	P		**Pb**		**07 31 01.5**	**0.0**
MIYJ				S		**Sb**		**07 31 11.4**	**-0.3**
JMK	**Ichinoseki**	**0.89**	**273**	P		**Pn**		**07 31 04.2**	**+0.5**
JMK				S		**Sn**		**07 31 15.9**	**+0.1**
JIO	**Ouri**	**0.92**	**240**	P		**Pn**		**07 31 04.2**	**+0.2**
JOM	**Ohasama**	**1.00**	**304**	P		**Pn**		**07 31 05.4**	**+0.2**
JOM				*e*S		**Sb**		**07 31 17.4**	**-0.5**
JRG	**Rokugo**	**1.42**	**290**	P		**Pb**		**07 31 12.5**	**0.0**
JOU	**Okura**	**1.44**	**248**	P		**Pb**		**07 31 12.5**	**-0.2**
JOU				*e*S		**Sb**		**07 31 30.9**	**+0.3**
JYK	**Kaneyama**	**1.56**	**271**	P		**Pb**		**07 31 14.3**	**-0.5**
JYK				*e*S		**Sb**		**07 31 35.1**	**+1.0**
JANG	**Nango**	**1.59**	**336**	P		**Pn**		**07 31 13.6**	**+0.2**
JANG				*e*S		**Sn**		**07 31 33.1**	**-0.1**
H11N2	**WAKE ISLAND Hy**	**28.54**	**125**	T		T		08 07 07.2	
	baz=317,slow=75,SNR=23								
H11N1	**WAKE ISLAND Hy**	**28.55**	**125**	T		T		08 07 07.9	
	baz=317,slow=75,SNR=25								
H11N3	**WAKE ISLAND Hy**	**28.56**	**125**	T		T		08 07 08.5	
	baz=317,slow=75,SNR=19								
H11S1	**WAKE ISLAND Hy**	**29.32**	**127**	T		T		08 08 06.2	
	baz=318,slow=76,SNR=5.8								
H11S3	**WAKE ISLAND Hy**	**29.33**	**127**	T		T		08 08 04.7	
	baz=318,slow=76,SNR=9.2								
H11S2	**WAKE ISLAND Hy**	**29.34**	**127**	T		T		08 08 03.8	
	baz=318,slow=76,SNR=6.5								
MKAR	**Makanchi Array**	**43.78**	**301**	P		**P**		**07 38 50.5**	**+0.2**
	0.4nm,0.6s,baz=75,slow=7.6,SNR=2.1								
KURBB	**Kurchatov Arra**	**45.45**	**307**	P		**P**		**07 39 03.5**	**0.0**
	0.5nm,0.5s,baz=80,slow=8.1,SNR=7.3								
ILAR	**Eielson Array**	**47.51**	**33**	P		**P**		**07 39 20.1**	**+0.6**
	0.2nm,0.7s,baz=262,slow=6.3,SNR=4.7								
WRA	**Warramunga Arr**	**59.03**	**189**	P		**P**		**07 40 43.9**	**-0.8**
	0.1nm,0.4s,baz=5.9,slow=7.0,SNR=3.9								

ISCJB ***12*** *07:34:06.0±0.8, 37°.05N±0°.07×142°.46E±0°.08, h9km, mb3.6/8, Error ellipse: s-maj=10.5km s-min=9.1km az=22.9*
JMA ***12*** *07:34:05.4±0.4, 37°.10N×142°.38E, h0km±4km, M4.0*
IDC ***12*** *07:34:06.6±1.1, 36°.99N×142°.39E, h0km, mb3.7/8, mb1 3.7/10, mb1mx3.5/62, mbtmp3.6/10, ML2.5/2, Error ellipse: s-maj=31.1km s-min=20.0km az=70.0*

ISC 12 07:34:08.4±1.1, 37°.09N±0°.09×142°.36E±0°.09, h9km, n22, σ1§50/18, mb3.6/8, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**1.25**	**271**	P		**Pn**		**07 34 30.3**	**-1.7**
ONAJ				S		**Sb**		**07 34 47.8**	**-0.5**
JMM	**Marumori**	**1.46**	**302**	P		**Pn**		**07 34 33.0**	**-2.0**
JIO	**Ouri**	**1.58**	**330**	P		**Pn**		**07 34 35.2**	**-1.3**
JIO				S		**Sn**		**07 34 56.3**	**-0.7**
JFT	**Otama**	**1.67**	**285**	P		**Pn**		**07 34 36.7**	**-1.1**
JOU	**Okura**	**1.85**	**314**	P		**Pn**		**07 34 39.6**	**-0.7**
MJAR	**Matsushiro Arr**	**3.37**	**262**	Pn		**Pn**		**07 35 02.5**	**+1.3**
	3.4nm,0.3s,baz=81,slow=16,SNR=10								
USRK	**Ussuriysk Ar.**	**10.60**	**315**	Pn		**Pn**		**07 36 43.0**	**+2.7**
	0.1nm,0.3s,baz=127,slow=16,SNR=2.8								
KSRS	**Korea Array**	**11.51**	**276**	Pn		**Pn**		**07 36 55.9**	**+3.0**
	0.4nm,0.3s,baz=99,slow=13,SNR=3.9								
H11N2	**WAKE ISLAND Hy**	**27.54**	**122**	T		T		08 08 38.8	
	baz=315								
H11N1	**WAKE ISLAND Hy**	**27.54**	**122**	T		T		08 08 42.3	
	baz=315								
H11N3	**WAKE ISLAND Hy**	**27.55**	**122**	T		T		08 08 49.4	
	baz=315								
H11S1	**WAKE ISLAND Hy**	**28.26**	**124**	T		T		08 09 48.4	
	baz=316,slow=74								
H11S3	**WAKE ISLAND Hy**	**28.27**	**124**	T		T		08 09 53.5	
	baz=316,slow=74								
H11S2	**WAKE ISLAND Hy**	**28.28**	**124**	T		T		08 09 40.8	
	baz=316								
SONM	**Songino Array**	**28.38**	**304**	P		**P**		**07 40 03.2**	**+0.2**
	0.8nm,0.7s,baz=107,slow=7.7,SNR=5.2								
ZALV	**Zalesovo Beam**	**42.43**	**312**	P		**P**		**07 42 02.6**	**-0.6**
	0.4nm,0.3s,baz=86,slow=9.1,SNR=3.7								
MKAR	**Makanchi Array**	**44.73**	**302**	P		**P**		**07 42 21.9**	**+0.1**
	0.4nm,0.7s,baz=91,slow=9.1,SNR=6.7								
KURBB	**Kurchatov Arra**	**46.56**	**308**	P		**P**		**07 42 36.0**	**-0.2**
	1.2nm,0.4s,baz=82,slow=8.2,SNR=13								
ILAR	**Eielson Array**	**49.04**	**32**	P		**P**		**07 42 56.5**	**+1.2**
	0.3nm,0.8s,baz=269,slow=5.9,SNR=4.2								
WRA	**Warramunga Arr**	**57.23**	**189**	P		**P**		**07 43 54.5**	**-1.5**
	0.7nm,0.9s,baz=7.2,slow=7.1,SNR=3.7								
ASAR	**Alice Springs**	**60.96**	**189**	P		**P**		**07 44 21.1**	**-0.8**
	0.2nm,0.7s,baz=25,slow=7.1,SNR=3.0								
FINES	**FINESS Array B**	**69.11**	**333**	P		**P**		**07 45 14.4**	**-0.1**
	1.6nm,0.7s,baz=79,slow=4.1,SNR=5.5								

IDC 12 07:39:07.4±1.4, 38°.41N×142°.43E, h0km, mb3.4/4, mb1 3.7/4, mb1mx3.3/50, mbtmp3.4/4, Error ellipse: s-maj=35.6km s-min=31.7km az=80.0, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
SONM	**Songino Array**	**27.72**	**302**	P		P		07 44 56.2	-1.2
	0.2nm,0.4s,baz=106,slow=8.9,SNR=2.7								
H11N2	**WAKE ISLAND Hy**	**28.21**	**124**	T		T		08 13 52.8	
	baz=319,slow=74,SNR=8.0								
H11N1	**WAKE ISLAND Hy**	**28.22**	**124**	T		T		08 13 55.7	
	baz=319,slow=74,SNR=7.6								
H11N3	**WAKE ISLAND Hy**	**28.23**	**124**	T		T		08 13 57.5	
	baz=319,slow=74,SNR=6.8								
MKAR	**Makanchi Array**	**44.08**	**301**	P		P		07 47 18.2	+1.0
	0.4nm,0.6s,baz=91,slow=9.0,SNR=5.0								
ILAR	**Eielson Array**	**47.90**	**33**	P		P		07 47 46.8	-0.2
	0.3nm,0.7s,baz=266,slow=6.7,SNR=3.9								
WRA	**Warramunga Arr**	**58.54**	**189**	P		P		07 49 05.6	-0.1
	0.6nm,0.7s,baz=6.8,slow=7.0,SNR=5.5								

JMA 12 07:39:55.6, 37°.05N×140°.68E, h11km±1km, M2.0, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.11**	**61**	P		Pg		07 39 58.5	0.0
ONAJ				S		Sg		07 40 00.5	-0.1
JHO	**Hitachi**	**0.45**	**192**	P		Pg		07 40 04.3	-0.1
JHO				S		Sg		07 40 10.5	+0.2
JFT	**Otama**	**0.54**	**330**	P		Pg		07 40 06.3	+0.1
JFT				S		Sg		07 40 13.4	0.0
JMM	**Marumori**	**0.82**	**6**	P		Pg		07 40 10.8	-0.6

IDC ***12*** *07:41:04.7±2.8, 37°.20N×140°.81E, h0km, mb3.6/1, mb1 3.6/3, mb1mx3.2/48, mbtmp3.3/3, ML2.5/2, Error ellipse: s-maj=44.8km s-min=32.6km az=39.0*
ISCJB ***12*** *07:41:07.0±1.0, 37°.06N±0°.05×140°.78E±0°.09, h17km±6km, mb3.7/1, Error ellipse: s-maj=11.7km s-min=7.9km az=168.1*
JMA ***12*** *07:41:07.7, 37°.05N×140°.65E, h6km±1km, M2.9*

ISC 12 07:41:07.0±1.0, 37°.07N±0°.04×140°.68E±0°.08, h16km±9km, n15, σ0§83/15, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.10**	**69**	P		**Pg**		**07 41 10.7**	**+0.1**
ONAJ				S		**Sg**		**07 41 12.9**	**0.0**
JHO	**Hitachi**	**0.46**	**191**	P		**Pg**		**07 41 16.4**	**+0.1**
JHO				S		**Sg**		**07 41 22.4**	**-0.2**
JFT	**Otama**	**0.53**	**329**	P		**Pb**		**07 41 18.1**	**+0.1**
JFT				S		**Sg**		**07 41 25.3**	**+0.6**
JSB	**Shiboa**	**0.61**	**261**	P		**Pb**		**07 41 19.9**	**+0.5**
JSB				S		**Sb**		**07 41 28.4**	**+0.5**
JFY	**Yanaizu**	**0.85**	**294**	P		**Pb**		**07 41 23.8**	**+0.4**
MJAR	**Matsushiro Arr**	**2.05**	**256**	Pn		**Pb**		**07 41 43.1**	**-0.8**
	3.8nm,0.3s,baz=76,slow=16,SNR=15								
MJAR				Sn		**Sb**		**07 42 09.0**	**-0.1**
	7.4nm,0.3s,baz=89,slow=26,SNR=11								
MAT	**Matsushiro**	**2.05**	**256**	P		**Pb**		**07 41 43.6**	**-0.3**
MAT				S		**Sb**		**07 42 10.1**	**+0.9**
USRK	**Ussuriysk Ar.**	**9.71**	**320**	Pn		**Pn**		**07 43 24.1**	**-1.9**
	0.2nm,0.3s,baz=133,slow=14,SNR=2.8								
H11N2	**WAKE ISLAND Hy**	**28.67**	**120**	T		T		08 16 57.9	
	baz=310								
H11N1	**WAKE ISLAND Hy**	**28.68**	**120**	T		T		08 16 58.5	
	baz=310								
H11N3	**WAKE ISLAND Hy**	**28.69**	**120**	T		T		08 16 59.2	
	baz=310								
H11S1	**WAKE ISLAND Hy**	**29.37**	**122**	T		T		08 17 41.6	
	baz=312								
H11S3	**WAKE ISLAND Hy**	**29.37**	**122**	T		T		08 17 42.8	
	baz=312								
H11S2	**WAKE ISLAND Hy**	**29.39**	**122**	T		T		08 17 42.8	
	baz=312								
WRA	**Warramunga Arr**	**57.02**	**187**	P		**P**		**07 50 53.2**	**+1.2**
	0.6nm,0.8s,baz=2.5,slow=7.3,SNR=6.4								

NIED ***12*** *07:42:00, 36°.70N×141°.50E, h29km, Mw4.2 Best double couple: Mo2.22000×10^15 NP1:φ§7.00000°, δ31.00000°, λ90.00000°. NP2:φ§188.00000°, δ59.00000°, λ90.00000°.*
BJI ***12*** *07:42:40.8, 36°.86N×141°.22E, h5km, mb4.5/28, mB4.8/12, Ms4.8/9, Ms7 4.6/7*
JMA ***12*** *07:42:43.6±0.1, 36°.74N×141°.50E, h38km±3km, M4.4*
JMA Felt I J1.
ISCJB ***12*** *07:42:44.1±0.6, 36°.72N±0°.04×141°.47E±0°.04, h45km±5km, mb4.4/60, MS3.9/4, Error ellipse: s-maj=6.3km s-min=5.1km az=141.7*
MOS ***12*** *07:42:45.5±1.0, 37°.00N×141°.43E, h47km, mb4.4/29, Error ellipse: s-maj=9.1km s-min=7.1km az=78.4*
IDC ***12*** *07:42:45.4±2.0, 36°.68N×141°.53E, h47km±20km, mb3.8/21, mb1 4.1/25, mb1mx4.0/48, mbtmp4.1/25, ML4.0/4, MS3.4/1, Ms1 3.4/1, ms1mx2.8/43, Error ellipse: s-maj=15.5km s-min=13.5km az=92.0*
NEIC ***12*** *07:42:47.8±0.7, 36°.72N×141°.40E, h63km±7km, mb4.6/31, Error ellipse: s-maj=6.6km s-min=5.8km az=190.0*

ISC 12 07:42:45.3±1.0, 36°.75N±0°.04×141°.50E±0°.05, h43km±8km, n196, σ1§10/197, mb4.4/60, MS3.7/4, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.66**	**302**	P		P		**07 42 56.6**	**-1.7**
JHO	**Hitachi**	**0.76**	**259**	P		P		**07 42 57.8**	**-1.8**
JHO				*e*S		**Sn**		**07 43 08.0**	**-1.9**
JFT	**Otama**	**1.20**	**310**	P		**Pn**		**07 43 05.4**	**-0.3**
JFT				S		**Sn**		**07 43 18.9**	**-1.9**
JMM	**Marumori**	**1.24**	**333**	P		**Pn**		**07 43 04.6**	**-1.6**
JMM				*e*S		**Sn**		**07 43 20.2**	**-1.6**
JFY	**Yanaizu**	**1.57**	**295**	P		**Pn**		**07 43 10.8**	**0.0**
JFY				*e*S		**Sn**		**07 43 31.7**	**+1.7**
JAG	**Ashikaga**	**1.68**	**259**	P		**Pn**		**07 43 11.3**	**-0.9**
JAG				*e*S		**Sn**		**07 43 31.4**	**-1.0**
MJAR	**Matsushiro Arr**	**2.65**	**266**	P		**Pn**		**07 43 25.8**	**+0.2**
	56nm,0.3s,baz=87,slow=9.6,SNR=67								
MJAR				S		**Sn**		**07 43 55.7**	**-0.8**
	24nm,0.3s,baz=94,slow=29,SNR=5.2								
MJAR				LR		LR		07 44 49.7	
	comp=Z,609nm,18.3s,baz=100,slow=47								
MAJO	**Matsushiro**	**2.65**	**266**	*e*P		**Pn**		**07 43 26.6**	**+1.0**
MAJO	**Matsushiro**	**2.65**	**266**	*e*Pn		**Pn**		**07 43 26.6**	**+1.0**
MAT	**Matsushiro**	**2.65**	**266**	P		**Pn**		**07 43 26.4**	**+0.8**
MAT				S		**Sn**		**07 44 00.9**	**+4.4**
JHJ2	**Mitsune**	**3.89**	**201**	*e*Pn		**Pn**		**07 43 44.8**	**+2.3**
JHJ	**Hachijo jima 2**	**3.89**	**202**	P		**Pn**		**07 43 41.8**	**-0.8**
	14nm,0.3s,baz=66,slow=20,SNR=1.6								
JHJ				S		**Sn**		**07 44 23.6**	**-3.3**
	101nm,0.3s,baz=73,slow=19,SNR=3.6								
INU	**Inuyama**	**3.89**	**250**	*e*Pn		**Pn**		**07 43 44.0**	**+1.4**
ERM	**Erimo**	**5.41**	**13**	*e*P		Pn		07 44 00.4	-3.0
ERM	**Erimo**	**5.41**	**13**	*e*Pn		Pn		07 44 00.4	-3.0
YUK	**Yuzh-Kuril'sk**	**8.00**	**23**	P		**Pn**		**07 44 41.7**	**+2.8**
YUK				*e*S		Sn		07 46 01.7	-6.3
SHO	**Shikotan**	**8.19**	**28**	*e*P		**Pn**		**07 44 41.9**	**+0.4**
JNU	**Nakatsue**	**9.44**	**251**

H11S2	WAKE ISLAND Hy	28.67	123		T		T	08 18 44.6	
	baz=314								
ZAK	Zakamensk	30.50	309		eP		P	07 48 53.7	-0.5
ZAK					pmax		pmax		
	comp=Z,2.0nm,1.1s								
TLY	Talaya	30.56	311		P		P	07 48 55.7	+1.0
	comp=Z,1.4nm,0.5s,baz=188,slow=7.1,SNR=3.3								
CD2	Chengdu	31.74	271		P		P	07 49 05.2	-0.2
CD2					pmax		pmax		
	comp=Z,1.0nm,0.5s								
GTA	Gaotai	32.71	288		eP		P	07 49 14.1	+0.2
GTA					pP		pP	07 49 18.8	-6.6
GTA					sP		sP	07 49 22.1	-8.4
GTA					pmax		pmax		
	comp=Z,3.0nm,0.6s								
BILL	Bilibino	34.28	16		i P		P	07 49 25.0	-2.0
BILL					pmax		pmax		
	comp=Z,3.0nm,1.1s								
KMI	Kunming	34.98	262		P		P	07 49 31.9	-2.0
KMI					pmax		pmax		
	comp=Z,14nm,1.0s								
KWAJ	Kwajalein Atol	36.55	133		eP		P	07 49 49.4	+2.3
KWAJ					pmax		pmax		
	comp=Z,111nm,0.9s								
KWAJ	Kwajalein Atol	36.55	133		eP		P	07 49 49.4	+2.3
	comp=Z,111nm,0.9s								
WMQ	Urumqi	41.02	297		eP		P	07 50 26.4	+2.0
WMQ					pP		pP	07 50 33.8	-2.4
WMQ					sP		sP	07 50 37.5	-3.7
WMQ					pmax		pmax		
	comp=Z,4.0nm,0.6s								
WMQ					LR		LR		
	comp=Z,68nm,19.8s								
WMQ					LR		LR		
	comp=Z,88nm,21.8s								
CMAR	Chiang Mai Arp	41.49	256		P		P	07 50 29.1	+0.7
	comp=Z,0.8nm,0.5s,baz=46,slow=6.0,SNR=5.1								
ZAA0	Zalesovo Array	42.15	313		eP		P	07 50 33.9	+0.5
ZALV	Zalesovo Beam	42.15	313		P		P	07 50 33.6	+0.2
	comp=Z,3.4nm,0.7s,baz=104,slow=6.3,SNR=12								
ZALV					PcP		PcP	07 52 25.8	-1.3
	comp=Z,1.3nm,0.6s,baz=93,slow=3.5,SNR=3.1								
MKAR	Makanchi Array	44.32	302		P		P	07 50 50.9	-0.1
	comp=Z,1.4nm,0.7s,baz=88,slow=10.0,SNR=16								
KURK	Kurchatov	46.16	308		eP		P	07 51 04.7	-0.8
KURK					pmax		pmax		
	comp=Z,7.0nm,0.6s								
KURK	Kurchatov	46.16	308		eP		P	07 51 04.7	-0.8
	comp=Z,7.1nm,0.6s								
MLY	Manley	48.05	32		eP		P	07 51 21.3	+1.2
	comp=Z,4.4nm,1.0s								
MCK	McKinley	48.83	34		eP		P	07 51 27.1	+1.0
MCK					pmax		pmax		
	comp=Z,19nm,1.7s								
MCK	McKinley	48.83	34		eP		P	07 51 27.1	+1.0
	comp=Z,18nm,1.7s								
MDM	Murphy Dome	49.12	32		eP		P	07 51 29.4	+1.1
	comp=Z,7.2nm,1.1s								
SML	Sawmill	49.18	36		eP		P	07 51 29.8	+1.0
SML					pmax		pmax		
	comp=Z,49nm,1.9s								
SML	Sawmill	49.18	36		eP		P	07 51 29.8	+1.0
	comp=Z,49nm,1.9s								
IL1	Eielson Array	49.70	32		eP		P	07 51 33.0	+0.3
ILAR	Eielson Array	49.70	32		P		P	07 51 32.1	-0.5
	comp=Z,1.6nm,0.8s,baz=266,slow=6.8,SNR=19								
ILB	Eielson Array	49.70	32		eP		P	07 51 32.7	0.0
TKM2	Tokmak 2	49.82	299		eP		P	07 51 35.4	+1.2
TKM2					pmax		pmax		
	comp=Z,4.0nm,0.8s								
TKM2	Tokmak 2	49.82	299		eP		P	07 51 35.4	+1.2
	comp=Z,3.8nm,0.8s								
FYU	Fort Yukon	50.32	30		eP		P	07 51 39.0	+1.7
	comp=Z,9.1nm,1.0s								
KSH	Kashi	50.58	294		eP		P	07 51 43.7	+3.8
KSH					epP		pP	07 51 52.1	+0.2
KSH					S		S	07 58 56.3	+4.9
KSH					ScS		ScS	08 01 27.4	+0.1
KSH					pmax		pmax		
	comp=Z,110nm,6.4s								
KSH					LR		LR		
	comp=Z,230nm,8.6s								
KSH					LR		LR		
	comp=Z,140nm,7.2s								
KSH					LR		LR		
	comp=Z,220nm,6.4s								
DOT	Dot Lake	51.00	34		eP		P	07 51 43.0	+0.4
	comp=Z,32nm,1.9s								
ZRNK	Zerenda	51.64	313		eP		P	07 51 48.3	+0.8
ZRNK					pmax		pmax		
	comp=Z,7.0nm,1.3s								
ZRNK	Zerenda	51.64	313		eP		P	07 51 48.3	+0.8
	comp=Z,7.2nm,1.3s								
INK	Inuvik	54.61	27		P		P	07 52 09.2	+0.2
	comp=Z,0.9nm,0.6s,baz=267,slow=4.7,SNR=8.6								
INK	Inuvik	54.61	27		eP		P	07 52 09.6	+0.6
	comp=Z,6.0nm,1.4s								
WRA	Warramunga Arr	56.79	188		P		P	07 52 23.9	-1.4
	comp=Z,1.7nm,0.8s,baz=6.4,slow=7.4,SNR=15								
WRA					PcP		PcP	07 53 20.6	-0.1
	comp=Z,0.6nm,0.4s,baz=3.0,slow=4.9,SNR=4.9								
ABKAR	Akbulak array	58.17	310		eP		P	07 52 34.6	-0.1
AS01	Alice Springs	60.51	188		eP		P	07 52 51.0	-0.1
ASAR	Alice Springs	60.52	188		P		P	07 52 50.0	-1.1
	comp=Z,1.2nm,0.8s,baz=9.8,slow=6.5,SNR=12								
MBWA	Marble Bar	61.16	203		eP		P	07 52 55.2	-0.3
	comp=Z,36nm,1.7s								
RES	Resolute Bay	62.85	14		P		P	07 53 05.6	-0.7
	comp=Z,1.8nm,0.8s,baz=305,slow=6.7,SNR=8.4								
RES	Resolute Bay	62.85	14		eP		P	07 53 06.3	+0.1
RES					pmax		pmax		
	comp=Z,11nm,1.1s								
RES	Resolute Bay	62.85	14		eP		P	07 53 06.3	+0.1
	comp=Z,10nm,1.1s								
YKA	Yellowknife Ar	64.02	30		P		P	07 53 13.5	-0.6
	comp=Z,1.3nm,0.9s,baz=302,slow=6.5,SNR=19								
ARCES	ARCESS Array B	64.28	339		P		P	07 53 15.8	0.0
	comp=Z,1.3nm,0.8s,baz=46,slow=8.8,SNR=5.3								
B08A	Colville Reser	68.99	45		eP		P	07 53 47.6	+1.4
	comp=Z,18nm,1.8s								
FIA1	FINESS Array S	69.09	332		eP		P	07 53 46.7	+0.2
	comp=Z,25nm,1.7s								
FINES	FINESS Array B	69.09	332		P		P	07 53 46.1	-0.4
	comp=Z,1.9nm,0.7s,baz=45,slow=5.7,SNR=7.2								
H04A	Detroit Lake	69.24	49		eP		P	07 53 48.8	+1.0
	comp=Z,24nm,1.3s								
HUMO	Hull Mountain	69.85	52		eP		P	07 53 52.6	+1.1
	comp=Z,28nm,1.8s								
J05D	Fort Rock, OR	70.56	50		P		P	07 53 56.7	+0.6
	baz=302								
N02D	Trinity Center	70.87	53		P		P	07 53 58.4	+0.5
	baz=302								
M04C	Macdoel	70.99	52		P		P	07 53 58.8	+0.2
	baz=303								
K05A	Summer Lake	71.07	51		eP		P	07 54 00.5	+1.2
	comp=Z,13nm,1.3s								
WALA	Waterton Lakes	71.60	42		eP		P	07 54 02.9	+0.6
	comp=Z,15nm,1.6s								
O03D	Paynes Creek	71.81	53		P		P	07 54 03.8	+0.2
	baz=303								
FFC	Flin Flon	73.91	33		eP		P	07 54 15.9	+0.3
FFC					pmax		pmax		
	comp=Z,5.0nm,0.9s								
FFC	Flin Flon	73.91	33		eP		P	07 54 15.9	+0.3
	comp=Z,4.5nm,0.9s								
CMB	Columbia Colle	73.98	54		eP		P	07 54 17.5	+1.0
CMB					pmax		pmax		
	comp=Z,5.0nm,1.2s								
CMB	Columbia Colle	73.98	54		eP		P	07 54 17.5	+1.0
	comp=Z,5.4nm,1.2s								
FCC	Fort Churchill	74.22	27		eP		P	07 54 17.3	-0.1
FCC					pmax		pmax		
	comp=Z,16nm,1.6s								
FCC	Fort Churchill	74.22	27		eP		P	07 54 17.3	-0.1
	comp=Z,16nm,1.6s								
LRM	Limekiln Ridge	74.30	44		eP		P	07 54 18.7	+0.3
WAKR	Walker	74.33	54		eP		P	07 54 19.9	+1.2
NC204	NORSAR Array S	74.42	338		eP		P	07 54 19.5	+0.8
EGMT	Eagleton	74.44	41		P		P	07 54 19.3	+0.4
	baz=308								
NB2	NORSAR Subarra	74.47	337		P		P	07 54 19.0	+0.1
	comp=Z,3.4nm,0.9s,baz=39,slow=6.2								
NOA	NORSAR Array B	74.47	337		P		P	07 54 18.5	-0.3
	comp=Z,1.8nm,0.8s,baz=39,slow=5.8,SNR=6.3								
HLID	Hailey	74.51	47		P		P	07 54 19.6	0.0
	baz=306								
AKASG	Malin Array Be	74.56	322		P		P	07 54 19.1	-0.4
	comp=Z,1.2nm,0.5s,baz=47,slow=6.1,SNR=8.3								
BOZ	Bozeman (W)	74.87	44		P		P	07 54 21.7	+0.1
	baz=307								
BOZ	Bozeman (W)	74.87	44		eP		P	07 54 22.5	+0.9
BOZ					pmax		pmax		
	comp=Z,4.0nm,0.9s								
BOZ	Bozeman (W)	74.87	44		eP		P	07 54 22.5	+0.9
	comp=Z,3.9nm,0.9s								
NV01	Mina Array Sit	75.10	53		eP		P	07 54 24.1	+0.9
NVAR	Mina Array Bea	75.10	53		P		P	07 54 23.8	+0.6
	comp=Z,3.3nm,0.8s,baz=286,slow=6.2,SNR=15								
H17A	Grant Village	76.22	45		eP		P	07 54 32.2	+2.7
	comp=Z,4.1nm,0.8s								
GRAC	Grapevine Rang	76.54	54		P		P	07 54 31.7	+0.5
	baz=306								
R11A	Troy Canyon, C	76.88	52		P		P	07 54 33.1	-0.2
	baz=307								
R11A	Troy Canyon, C	76.88	52		eP		P	07 54 34.1	+0.9
	comp=Z,3.7nm,1.0s								
MPMC	Manual Prospec	77.01	55		P		P	07 54 34.2	+0.1
	baz=306								
BLG	Laguna Peak, P	77.10	57		P		P	07 54 34.7	+0.3
	baz=306								
FURC	Furnace Creek,	77.18	54		P		P	07 54 35.6	+0.9
	baz=306								
LRMC	Laurel Mtn Rad	77.22	55		P		P	07 54 35.3	+0.1
	baz=306								
TPNV	Topopah Spring	77.29	53		P		P	07 54 35.8	+0.2
	baz=307								
TPNV	Topopah Spring	77.29	53		eP		P	07 54 35.7	+0.2
TPNV					pmax		pmax		
	comp=Z,5.0nm,1.2s								
TPNV	Topopah Spring	77.29	53		eP		P	07 54 35.7	+0.2
	comp=Z,4.7nm,1.2s								
DUG	Dugway, Tooele	77.49	49		P		P	07 54 37.0	+0.4
	baz=308								
DUG	Dugway, Tooele	77.49	49		eP		P	07 54 37.8	+1.2
DUG					pmax		pmax		
	comp=Z,4.0nm,0.9s								
DUG	Dugway, Tooele	77.49	49		eP		P	07 54 37.8	+1.2
	comp=Z,3.8nm,0.9s								
BW06	Boulder Array	77.81	45		eP		P	07 54 38.5	+0.1
PDAR	Pinedale Array	77.82	45		P		P	07 54 38.1	-0.3
	comp=Z,1.0nm,0.7s,baz=264,slow=1.5,SNR=4.8								
MPU	Maple Canyon	78.31	49		eP		P	07 54 42.3	+1.0
	comp=Z,2.5nm,0.8s								
E25A	Miller Ranch,	78.73	40		P		P	07 54 43.4	+0.2
	baz=312								
MSU	Marysvale	78.91	50		eP		P	07 54 45.3	+0.7
MSU	Marysvale	78.91	50		eP		P	07 54 45.3	+0.7
BRTR	Keskin Array B	79.09	312		P		P	07 54 45.8	+0.4
	comp=Z,0.9nm,0.8s,baz=30,slow=6.7,SNR=3.2								
F25A	Bowman	79.09	40		P		P	07 54 45.5	+0.2
	baz=312								
A29A	Manning Farm,	79.12	36		P		P	07 54 45.4	+0.2
	baz=315								
E26A	Carlson Angus	79.23	39		P		P	07 54 45.8	-0.1
	baz=313								
KNB	Kanab	79.43	52		eP		P	07 54 48.1	+0.7
KNB					pmax		pmax		
	comp=Z,12nm,1.4s								
KNB	Kanab	79.43	52		eP		P	07 54 48.1	+0.7
	comp=Z,12nm,1.4s								
F26A	Lodgepole	79.54	40		P		P	07 54 47.8	+0.1
	baz=313								
SRU	San Rafael Swe	79.55	49		eP		P	07 54 48.3	+0.3
SRU					pmax		pmax		
	comp=Z,4.0nm,0.8s								
SRU	San Rafael Swe	79.55	49		eP		P	07 54 48.3	+0.3
	comp=Z,4.1nm,0.8s								
F27A	Lemmon	79.86	39		P		P	07 54 50.0	+0.6
	baz=313								
G26A	Maurine	79.96	40		P		P	07 54 50.0	0.0
	baz=313								
RSSD	Black Hills	79.99	42		P		P	07 54 50.4	+0.1
	baz=312								
I25A	Rochford	80.22	42		P		P	07 54 51.5	-0.1
	baz=312								
O20A	White River Ci	80.25	47		P		P	07 54 52.1	+0.3
	baz=310								
H26A	Fairpoint	80.33	41		P		P	07 54 52.3	+0.3
	baz=313								
F28A	McLaughlin	80.50	39		P		P	07 54 53.2	+0.4
	baz=314								
H27A	Howes	80.68	40		P		P	07 54 53.8	0.0
	baz=313								
I26A	New Underwood	80.68	41		P		P	07 54 54.0	+0.1
	baz=313								
B32A	Ashes, Strandq	80.75	35		P		P	07 54 54.0	-0.1
	baz=316								
A33A	Warroad	80.87	34		P		P	07 54 54.5	-0.3
	baz=317								
G28A	Parade	80.97	39		P		P	07 54 55.4	0.0
	baz=314								
I27A	Quinn	81.08	41		P		P	07 54 56.3	+0.2
	baz=313								
H28A	Mission Ridge	81.20	40		P		P	07 54 56.8	+0.2
	baz=314								
WUAZ	Wupatki	81.28	52		P		P	07 54 57.5	+0.1
	baz=309								
I28A	Midland	81.59	40		P		P	07 54 58.7	+0.1
	baz=314								
G30A	Faulkton	81.83	39		P		P	07 54 59.8	-0.1
	baz=315								
ISCO	Idaho Springs	82.00	46		P		P	07 55 01.3	+0.1
	baz=312								
D34A	Park Rapids	82.32	35		P		P	07 55 02.7	+0.3
	baz=318								
E33A	Westby DABS, E	82.37	36		P		P	07 55 02.6	-0.1
	baz=317								
C35A	Jirik Farms, M	82.42	34		P		P	07 55 02.6	-0.4
	baz=318								
I30A	Oacoma	82.55	40		P		P	07 55 03.7	0.0
	baz=315								
GERES	GERESS Array B	82.98	328		P		P	07 55 04.5	-1.5
	comp=Z,0.7nm,0.6s,baz=29,slow=3.0,SNR=5.1								
G33A	Ortonville	83.12	37		P		P	07 55 06.5	-0.1
	baz=317								
C37A	Embarrass	83.20	33		P		P	07 55 06.4	-0.6
	baz=320								
EYMN	Ely	83.34	33		P		P	07 55 07.2	-0.5
	baz=320								
H33A	Prehn Over Nor	83.34	38		P		P	07 55 07.8	0.0
	baz=317								
C38A	Sawbill Land.	83.61	33		P		P	07 55 08.8	-0.3
	baz=320								
TUC	Tucson	83.69	54		P		P	07 55 10.2	+0.4
	baz=310								
ECSD	EROS Data Cent	84.10	38		P		P	07 55 11.2	-0.5
	baz=317								
H35A	Sunnyside Ranc	84.26	37		P		P	07 55 12.3	-0.1
	baz=318								
ANMO	Albuquerque	84.72	50		P		P	07 55 15.0	-0.2
	baz=312								
ANMO	Albuquerque	84.72	50		eP		P	07 55 15.7	+0.5
ANMO					pmax		pmax		
	comp=Z,3.0nm,1.1s								
ANMO	Albuquerque	84.72	50		eP		P	07 55 15.7	+0.5
	comp=Z,3.4nm,1.1s								
BNM	Barren Site	85.14	51		eP		P	07 55 17.5	+0.1
I37A	Lemond, Waseca	85.45	36		P		P	07 55 18.3	-0.1
	baz=319								
J36A	Seneca 1, Swea	85.51	37		P		P	07 55 18.3	-0.5
	baz=318								
N35A	Tabor	86.69	40		P		P	07 55 24.8	+0.2
	baz=318								
N39A	Derby Farms, D	88.26	38		P		P	07 55 31.9	-0.2
	baz=320								
P37A	Lathrop	88.30	40		P		P	07 55 32.3	0.0
	baz=316								
Q39A	Willow Grove F	89.41	39		P		P	07 55 37.7	+0.1
	baz=319								
T38A	Diamond	90.23	41		P		P	07 55 41.4	-0.1
	baz=318								
TX31	Lajitas Ar. Si	90.24	52		eP		P	07 55 41.3	-0.5
TXAR	Lajitas Array	90.24	52		P		P	07 55 41.7	-0.1
	comp=Z,0.6nm,0.8s,baz=300,slow=3.6,SNR=7.9								
U39A	Green Forest	91.15	41		P		P	07 55 45.4	-0.4
	baz=319								
U40A	Yellville	91.50	41		P		P	07 55 47.3	-0.1
	baz=319								
LRS	Lares	119.06	31		ePKPdf		PKPdf	08 01 28.0	-2.0
LPAZ	La Paz	146.78	60		PKPbc		PKPbc	08 02 23.4	-0.6
	comp=Z,3.8nm,0.8s,baz=359,slow=5.4,SNR=6.4								
LPAZ	La Paz	146.78	60		ePKPdf		PKPbc	08 02 23.6	-0.4
PMSA	Palmer Station	148.09	160		ePKPbc		PKPab	08 02 28.8	+0.6
PB10	IPOC Station P	149.46	73		ePKPdf		PKPbc	08 02 28.8	-1.3

IDC **12** *07:44:00.1±0.6,5.19N×82.64W,h0km,mb4.4/19, mb1 4.7/22,mb1mx4.5/34,mbtmp4.5/22,ML5.0/2,MS4.0/23, Ms1 4.1/23,ms1mx4.0/28,Error ellipse: s-maj=23.4km s-min=11.1km az=55.0*

BJI **12** *07:44:00.5,5.30N×82.50W,h10km,mB5.4/3,Ms5.5/1, Ms7 5.5/1*

ISCJB **12** *07:44:01.0±0.2,5.42N±0.02×82.47W±0.02,h10km, mb4.8/197,MS4.1/18,Error ellipse: s-maj=3.8km s-min=2.6km az=36.6*

GCMT **12** *07:44:02.4±0.3,5.15N×82.63W,h31km±1km,MW5.2/95, Moment Tensor Solution. s36,c40; s95,c134; Duration: 1s0 Moment tensor: Scale 10¹⁶Nm; Mrr0.32±.33; Mθθ 1.50±.24; Mϕϕ-1.82±.30; Mrθ-0.01±.32; Mϕϕ 7.52±.20; Mϕr-0.62±.34; Best double couple: Mo7.72500×10¹⁶ NP1:ϕs6.00000°,δ90.00000°,λ-175.00000°. NP2: ϕs276.00000°,δ85.00000°,λ0.00000°. Principal axes: T 7.5620, Plg3.0000°, Azm141.0000°; N 0.3250, Plg85.0000°, Azm8.0000°; P -7.8890, Plg3.0000°, Azm231.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

NEIC **12** *07:44:02.4±0.2,5.30N×82.46W,h10km,mb4.8/190, MW4.7 Error ellipse: s-maj=4.7km s-min=3.3km az=48.0, Moment Tensor Solution. s9 Moment tensor: Scale 10¹⁶ Nm; Mrr0.07; Mθθ0.29; Mϕϕ-0.36; Mrθ0.48; Mϕθ 1.26; Mϕr0.24; Best double couple: Mo1.40000×10¹⁶ NP1: ϕs5.00000°,δ72.00000°,λ168.00000°. NP2:ϕs99.00000°, δ79.00000°,λ18.00000°. Principal axes: T 1.4700, Plg21.0000°, Azm323.0000°; N -0.1200, Plg69.0000°, Azm130.0000°; P -1.3500, Plg4.0000°, Azm231.0000°;*

CASC **12** *07:44:03.4±3.1,5.29N×82.58W,h35km±31km,MD4.6, ML4.0,mb4.8(NEIC)*

ISC 12 07:44:02.6±0.3,5.35N±0.04×82.58W±0.03,h10km,n668, σ1ϑ10/642,**mb4.8**/197,**MS4.1**/18,**3C,South of Panama**

Code	Station Name	Δ°	AZ°	Phase ID		Time		Res
				Op	ISC	h m s		ISC
AZU	Azuero	3.33	43	eP	Pn	07 44 53.0		-1.8
AZU				eS	Sn	07 45 34.3		-0.3
TBS2		3.42	359	eP	Pn	07 44 56.0		-0.2
TBS2				eS	Sn	07 45 37.4		+0.4
BRU2	Volcan	3.42	358	i P	Pn	07 44 54.7		-1.6
BRU2				eS	Sn	07 45 37.0		-0.1
BRU	Baru	3.43	0	eP	Pn	07 44 57.0		+0.3
BRU				eS	Sn	07 45 39.9		+2.2
BUS	Buena Vista	4.34	344↑	eP	Pn	07 45 07.9		-1.3
BUS				eS	Sn	07 45 59.3		-0.8
QCR	Quepos	4.34	339↑	eP	Pn	07 45 06.5		-2.3
QCR				eS	Sn	07 45 55.9		-3.7
ZANG	Zanguenga, Cho	4.48	37	eP	Pn	07 45 11.3		+0.7
PINA	Piqa, Costa Ab	4.61	33	eP	Pn	07 45 12.4		0.0
URSC	Urasca	4.61	345↑	eP	Pn	07 45 11.3		-1.4
URSC				eS	Sn	07 46 04.8		-1.6
BCIP	Isla Barro Col	4.66	35	eP	Pn	07 45 13.6		+0.4
BCIP				eS	Sn	07 46 06.0		-1.4
BCIP	Isla Barro Col	4.66	35	ePn	Pn	07 45 13.4		+0.2
UPA	Univ. de Panam	4.70	40	eP	Pn	07 45 14.4		+0.7
UPA				eS	Sn	07 46 10.3		+2.0
HDC	Heredia	4.87	342	ePn	Pn	07 45 14.4		-1.7
GRGC	Isla de Gorgon	4.98	118	eP	Pn	07 45 13.6		-3.8
CGA2	Cerro Gallo 2	5.00	338	eP	Pn	07 45 16.8		-1.1
CGA2				eS	Sn	07 46 14.2		-1.7
JCR	Jicaral	5.13	331	eP	Pn	07 45 17.5		-2.1
SOLC	Bahia Solano	5.21	80	eP	Pn	07 45 22.9		+2.2
MALC	Bahia Malaga	5.39	104	eP	Pn	07 45 21.6		-1.5
JTS	JuntasAbangare	5.44	335	Pn	Pn	07 45 22.3		-1.6
	88nm,0.3s,baz=122,slow=13,SNR=413							
JTS				Sn	Sn	07 46 26.0		-0.7
	74nm,0.3s,baz=175,slow=22,SNR=18							
JTS	JuntasAbangare	5.44	335	eP	Pn	07 45 23.0		-1.0
JTS				eS	Sn	07 46 25.8		-0.9
JTS	JuntasAbangare	5.44	335	ePn	Pn	07 45 22.6		-1.3
JTS				eSn	Sn	07 46 25.9		-0.9
UPD2	Meteti	5.53	55	eP	Pn	07 45 28.8		+3.7
VCR	Vista de Mar	5.63	328	eP	Pn	07 45 24.4		-2.2
POPC	Popayan, Colom	6.51	115	eP	Pn	07 45 36.2		-2.6
OTAV	Otavalo	6.54	141	eP	Pn	07 45 36.4		-3.0
OTAV	Otavalo	6.54	141	ePn	Pn	07 45 36.3		-3.1
DBBC	Dabeiba	6.54	75	eP	Pn	07 45 44.2		+5.1
ESPN	Las Esperanzas	7.01	346	eP	Pn	07 45 45.3		-0.2
GUYC	Guyana, Colomb	7.16	91	eP	Pn	07 45 49.5		+1.7
MOTC	Monteria, Cord	7.66	63	eP	Pn	07 45 54.8		+0.5
NORC	Norcasia	7.67	88	eP	Pn	07 45 54.8		+0.2
BOAB	BOACO BROADBAN	7.69	337	eS	Sn	07 47 22.2		+0.2
COPN	Copaltepe	7.86	330	eP	Pn	07 45 57.1		0.0
MOMN	Momotombo	8.03	331	eP	Pn	07 45 59.9		+0.3
ROSC	El Rosal	8.24	93	Pn	Pn	07 46 06.0		+3.3
	15nm,0.3s,baz=12,slow=6.9,SNR=22							
ROSC				Sn	Sn	07 47 40.2		+4.1
	1.8nm,0.3s,baz=311,slow=19,SNR=3.0							
ROSC				LR	LR	07 49 05.1		
	comp=Z,239nm,21.2s,baz=69,slow=37							
TEL3	Telica 3	8.32	330	eP	Pn	07 46 03.8		+0.3
ESTN	Estel	8.56	334	eP	Pn	07 46 07.5		+0.7
CHIC	Chingaza	8.84	94	eP	Pn	07 46 10.8		-0.2
BRRC	Barranca, Sant	8.98	78	eP	Pn	07 46 13.4		+0.9
BARC	Barichara	9.42	82	eP	Pn	07 46 14.8		-4.0
OCAC	Ocana	9.63	72	eP	Pn	07 46 25.4		+3.9
PAYG	Puerto Ayora	9.75	232	ePn	Pn	07 46 23.2		+0.1
VSM	San Miguel	9.80	325	eP	Pn	07 46 27.2		+3.2
LCY	Lacayo	9.80	325	eP	Pn	07 46 26.1		+2.1
TGUH	Tegucigalpa,Un	9.81	332	ePn	Pn	07 46 25.9		+2.0

SJG LR LR 07 55 13.6
comp=Z,272nm,21.3s,baz=230,slow=33
SJG San Juan 20.45 50 eP P 07 48 38.6 -1.9
96nm,1.1s
HUMP Col San Antoni 20.70 51 eP P 07 48 42.8 -0.5
117nm,1.1s
CBYP Canovanas 20.77 50 eP P 07 48 44.5 +0.4
118nm,1.1s
CDVI St. Croix 21.33 53 eP P 07 48 50.4 +0.3
128nm,1.0s
DWPF Disney Wildern 22.66 3 eP P 07 49 07.3 +3.1
67nm,1.0s
FDF Fort de France 23.04 65 eP P 07 49 07.7 -0.7
153nm,1.4s
MOIG Morelia 23.05 310 eP P 07 49 09.4 +0.8
31nm,0.9s
PTGA Pitinga 23.37 104 P P 07 49 11.4 -0.4
2.8nm,0.5s,baz=304,slow=10,SNR=4.2
PTGA LR LR 07 58 23.7
comp=Z,372nm,19.0s,baz=284,slow=37
PTGA Pitinga 23.37 104 eP P 07 49 10.9 -0.8
34nm,1.4s
SAML Samuel 23.99 126 eP P 07 49 15.0 -2.7
59nm,1.1s
LPAZ La Paz 25.82 147 P P 07 49 33.4 -1.6
1.7nm,0.5s,baz=342,slow=6.0,SNR=13
LPAZ LR LR 08 00 51.5
comp=Z,1µm,20.8s,baz=306,slow=39
LPAZ La Paz 25.82 147 eP P 07 49 34.1 -0.9
47nm,1.7s
ZAIG Zacatecas 25.93 314 eP P 07 49 37.5 +1.8
18nm,1.2s
035A Encino 26.08 327 P P 07 49 38.6 +2.0
baz=143
034A Hebbronville 26.50 326 P P 07 49 42.6 +2.2
baz=142,SNR=18
347A Saraland 26.51 349 P P 07 49 41.7 +1.2
baz=166
346A Big Creek Wild 26.70 347 P P 07 49 44.6 +2.4
baz=164
345A Thompson Farm, 26.75 346 P P 07 49 44.2 +1.5
baz=163
934A Benavides 26.83 327 P P 07 49 44.5 +1.2
baz=143
248A Dixon Mills 27.04 350 P P 07 49 46.2 +1.0
baz=168
344A Westbrook Farm 27.07 345 P P 07 49 46.4 +1.0
baz=162,SNR=9.2
247A Quitman 27.16 349 P P 07 49 47.0 +0.7
baz=167
539A Cross D Ranch, 27.16 336 P P 07 49 48.2 +1.9
baz=153
736A Circle Diamond 27.20 331 P P 07 49 48.1 +1.4
baz=147
933A Laredo 27.25 326 P P 07 49 47.9 +0.7
baz=141
637A Eagle Lake 27.26 333 P P 07 49 48.3 +1.0
baz=149
834A Tilden 27.27 328 P P 07 49 48.3 +1.0
baz=143
245A Little AP, Sta 27.41 346 P P 07 49 49.1 +0.6
baz=164
244A Avery, Jackson 27.62 345 P P 07 49 51.4 +1.0
baz=162
636A Smothers Creek 27.63 332 P P 07 49 52.0 +1.5
baz=148
341A Kurthwood 27.70 340 P P 07 49 51.7 +0.6
baz=157
439A Center Grove, 27.79 337 P P 07 49 52.3 +0.4
baz=153
537A Green Hill Far 27.80 334 P P 07 49 52.6 +0.5
baz=150
146A Union 27.81 348 P P 07 49 52.7 +0.6
baz=166,SNR=7.1
LRAL Lakeview Retre 27.85 352 eP P 07 49 53.2 +0.7
31nm,0.9s
833A Chaparral WMA, 27.87 327 P P 07 49 53.8 +1.0
baz=142
635A Leesville 27.90 331 P P 07 49 53.0 0.0
baz=146
145A Houston Renfro 27.97 347 P P 07 49 53.6 0.0
baz=164
PB11 IPOC Station P 28.00 153 eP P 07 49 55.1 +0.9
24nm,1.1s
242A Grayson 28.05 343 P P 07 49 54.1 -0.1
baz=159
832A Faith Ranch, C 28.16 326 P P 07 49 55.6 +0.3
baz=141
535A Dale 28.33 332 P P 07 49 56.5 -0.3
baz=147
338A Crockett 28.50 337 P P 07 49 59.0 +0.7
baz=152,SNR=5.7
NATX Nacogdoches 28.61 338 P P 07 49 59.5 +0.2
baz=154
NATX Nacogdoches 28.61 338 eP P 07 49 59.0 -0.3
32nm,1.1s
337A Centerville 28.69 336 P P 07 49 59.9 -0.2
baz=151
534A Blanco 28.77 330 P P 07 50 00.1 -0.6
baz=145
JSC Jenkinsville 28.81 2 eP P 07 50 01.8 +0.8
20nm,1.0s
JSC Jenkinsville 28.81 2 eScS ScS 08 00 47.4 +1.2
435B Jarrell 28.97 333 P P 07 50 02.6 +0.1
baz=148
140A Cam and Jess, 29.03 341 P P 07 50 02.7 -0.3
baz=157
533A Kerrville 29.08 330 P P 07 50 03.5 -0.1
baz=144
PB01 IPOC Station P 29.21 154 eP P 07 50 04.0 -0.8
22nm,1.5s
237A Washetta, Mont 29.27 337 P P 07 50 04.7 -0.3
baz=152
335A Moody 29.32 333 P P 07 50 05.6 0.0
baz=149
Z41A Richland Creek 29.36 342 P P 07 50 05.7 -0.2
baz=159
Z40A Long Farm, Mag 29.54 341 P P 07 50 07.5 0.0
baz=158
236A Katherine and 29.56 335 P P 07 50 07.5 -0.2
baz=151
138A Matatall Enter 29.58 338 P P 07 50 08.3 +0.5
baz=154
433A Art 29.66 330 P P 07 50 08.3 -0.4
baz=145,SNR=11
KMSC Kings Mountain 29.67 2 P P 07 50 08.7 +0.1
baz=182
KMSC Kings Mountain 29.67 2 eP P 07 50 10.0 +1.3
16nm,0.9s
CCAR Cane Creek 29.68 344 eP P 07 50 09.3 +0.6
31nm,0.5s
OXF Oxford 29.70 349 eP P 07 50 08.5 -0.4
47nm,0.9s
334A Lometa 29.74 332 P P 07 50 08.7 -0.6
baz=147,SNR=9.1
JCT Junction City 29.80 329 P P 07 50 10.0 0.0
baz=144
JCT Junction City 29.80 329 eP P 07 50 10.6 +0.6
7.1nm,1.0s
WLAR White Oak Lake 29.85 342 eP P 07 50 09.9 -0.3
8.9nm,0.8s
SWET Sewanee 29.88 354 eP P 07 50 10.6 0.0
5.4nm,0.9s
PLAL Pickwick Lake 29.92 351 eP P 07 50 10.4 -0.4
16nm,0.9s
WHTX Lake Whitney, 29.94 334 P P 07 50 10.9 -0.2
baz=149,SNR=5.9
WHTX Lake Whitney, 29.94 334 eP P 07 50 11.4 +0.3
23nm,1.3s
136A Ennis 29.97 336 P P 07 50 11.2 -0.1
baz=151,SNR=5.8
CPCT Cooper Cave 30.01 357 eP P 07 50 12.5 +0.9
16nm,1.2s
SIV San Ignacio 30.04 135 P P 07 50 10.7 -1.5
2.5nm,0.8s,baz=317,slow=11,SNR=4.1
SIV LR LR 08 02 29.6
comp=Z,1µm,18.1s,baz=338,slow=37
333A Richland Sprin 30.08 331 P P 07 50 12.5 +0.1
baz=146
TKL Tuckaleechee C 30.18 358 P P 07 50 13.4 +0.2
4.7nm,0.8s,baz=168,slow=16,SNR=3.5
Y40A Okolona 30.20 342 P P 07 50 12.7 -0.7
baz=158
234A Clairette 30.25 333 P P 07 50 13.6 -0.3
baz=148,SNR=6.5
Y39A Lockesburg 30.39 341 P P 07 50 14.8 -0.2
baz=157,SNR=5.1
X40A Basin Creek Fa 30.51 343 P P 07 50 15.9 -0.2
baz=159
233A Rising Star 30.62 332 P P 07 50 18.0 +0.9
baz=147,SNR=6.6
Z36A Blue Ridge 30.63 337 P P 07 50 17.4 +0.2
baz=152
UALR University of 30.64 344 eP P 07 50 17.0 -0.3
24nm,1.1s
H06E1 SOCORRO T-PHAS 30.70 298 T T 08 22 27.1
SNR=50
134A White-Moore Ra 30.71 334 P P 07 50 17.7 -0.2
baz=149,SNR=5.4
H06S1 SOCORRO T 30.71 298 T T 08 22 28.5
SNR=9.0
HPIG 30.75 317 eP P 07 50 19.5 +0.9
4.6nm,0.8s
MIAR Mount Ida 30.79 342 P P 07 50 18.1 -0.4
baz=158
MIAR Mount Ida 30.79 342 eP P 07 50 18.1 -0.4
11nm,1.0s
X39A Fountain Ranch 30.92 341 P P 07 50 19.3 -0.5
baz=157
Y37A Hugo 30.95 339 P P 07 50 20.1 +0.1
baz=154,SNR=8.9
HBAR Harrisburg 30.97 347 eP P 07 50 19.8 -0.3
99µm,0.8s
W41A Tony Mavity, V 30.99 344 P P 07 50 19.8 -0.5
baz=161,SNR=8.3
WVT Waverly 31.01 352 eP P 07 50 19.7 -0.7
26nm,0.8s
Z35A Perchaven, San 31.01 336 P P 07 50 20.6 0.0
baz=151
HALT Halls 31.04 349 eP P 07 50 20.2 -0.6
86µm,1.0s
TZTN Tazewell 31.06 358 eP P 07 50 20.9 0.0
19nm,1.2s
TX31 Lajitas Ar. Si 31.09 323 eP P 07 50 21.9 +0.5
TXAR Lajitas Array 31.09 323 P P 07 50 21.6 +0.2
1.0nm,0.8s,baz=144,slow=7.8,SNR=8.9
X301 Greenbrier Sit 31.09 344 eP P 07 50 20.9 -0.3
14nm,0.9s
WHAR Wooly Hollow 31.11 345 eP P 07 50 21.0 -0.4
19nm,0.8s
133A Hamilton Ranch 31.12 333 P P 07 50 21.2 -0.3
baz=147
X201 Greenbrier Sit 31.14 344 eP P 07 50 21.5 -0.1
18nm,0.9s
GNAR Gosnell 31.23 348 eP P 07 50 22.0 -0.4
Z34A Collier Ranch, 31.32 335 P P 07 50 22.9 -0.4
baz=150
UTMT University of 31.38 350 eP P 07 50 23.9 +0.2
118nm,1.0s
Y35A Marietta 31.43 337 P P 07 50 24.6 +0.4
baz=152,SNR=8.3
ABTX Abilene, Hawle 31.47 332 P P 07 50 24.4 -0.2
baz=146
ABTX Abilene, Hawle 31.47 332 eP P 07 50 24.3 -0.2
6.5nm,1.0s
W38A Poteau 31.57 341 P P 07 50 25.7 +0.3
baz=157
PVMO Portageville 31.60 349 eP P 07 50 26.1 +0.5
158nm,0.4s
Z33A Whitaker Ranch 31.62 334 P P 07 50 25.5 -0.4
baz=148,SNR=12
V40A Wise Springs 31.74 344 P P 07 50 26.1 -0.9
baz=160
Y34A Reagan Ranch, 31.76 336 P P 07 50 26.7 -0.4
baz=150,SNR=8.7
BLA Blacksburg 31.77 3 eP P 07 50 27.2 0.0
15nm,0.9s
X35A Drake 31.84 337 P P 07 50 27.1 -0.7
baz=152
PARMO Parma 31.85 349 eP P 07 50 28.4 +0.5
W37B Quinton 31.93 340 P P 07 50 28.3 -0.4
baz=155
V39A Pettigrew 32.01 343 P P 07 50 28.9 -0.5
baz=159
SLBS Sierra La Lagu 32.05 307 eP P 07 50 31.4 +1.5
14nm,1.0s
PBMO Poplar Bluff 32.10 348 eP P 07 50 29.0 -1.0
15nm,1.1s
Y33A Hilltop Ranch, 32.17 334 P P 07 50 30.4 -0.3
baz=149,SNR=9.7
V38A Canehill 32.26 342 P P 07 50 30.4 -1.1
baz=157,SNR=7.0
U40A Yellville 32.27 344 P P 07 50 30.6 -0.9
baz=160,SNR=10
X34A Smith Ranch, M 32.35 336 P P 07 50 32.3 0.0
baz=151,SNR=13
W35A Tecumseh 32.46 338 P P 07 50 32.4 -0.9
baz=153
U39A Green Forest 32.47 343 P P 07 50 32.3 -1.0
baz=159
HHAR Hobbs 32.51 343 eP P 07 50 33.5 -0.2
6.6nm,0.9s
V37A Hulbert 32.51 341 P P 07 50 32.6 -1.2
baz=156
X33A Lawton 32.58 335 P P 07 50 33.5 -0.8
baz=150,SNR=14
V36A Jenks 32.70 340 P P 07 50 34.6 -0.8
baz=155
TUL1 Leonard 32.76 340 P P 07 50 34.9 -0.9
baz=155
TUL1 Leonard 32.76 340 eP P 07 50 35.4 -0.5
12nm,1.0s
SIUC Southern Illin 32.78 350 eP P 07 50 35.7 -0.3
51nm,1.0s
U38A Gravette 32.79 342 P P 07 50 35.4 -0.7
baz=158
USIN University of 32.79 353 eP P 07 50 35.7 -0.5
54nm,0.8s
X32A Elmer 32.81 334 P P 07 50 36.4 +0.1
baz=148,SNR=7.3
WMOK Wichita Mounta 32.86 335 eP P 07 50 36.3 -0.5
9.6nm,0.9s
W34A Bridge Creek, 32.88 337 P P 07 50 36.8 -0.2
baz=151
W34A Bridge Creek, 32.88 337 eP P 07 50 36.8 -0.2
27nm,1.0s
WCI Wyandotte Cave 32.90 355 eP P 07 50 36.9 -0.2
33nm,1.0s
T40A Mansfield 32.93 345 P P 07 50 36.9 -0.5
baz=161,SNR=9.3
U37A Salina 32.98 341 P P 07 50 37.3 -0.5
baz=156
V35A Meyer Ranch, C 32.99 338 P P 07 50 37.0 -0.9
baz=153
T39A Clever 33.04 344 P P 07 50 37.8 -0.5
baz=160
W33A Caddo, Fort Co 33.09 336 P P 07 50 39.0 +0.2
baz=150,SNR=10
T38A Diamond 33.31 343 P P 07 50 39.8 -0.9
baz=158
V34A Guthrie 33.31 338 P P 07 50 39.6 -1.1
baz=152
V34A Guthrie 33.31 338 eP P 07 50 39.8 -0.9
56nm,1.8s
S40A Lebanon 33.35 346 P P 07 50 40.1 -0.9
baz=162,SNR=9.6
W32A Sentinel 33.39 335 P P 07 50 41.0 -0.5
baz=149,SNR=10
U35A Pawnee 33.50 339 P P 07 50 41.2 -1.1
baz=154
T37A Cheneyville 18 33.58 342 P P 07 50 42.2 -0.8
baz=157,SNR=13
V33A Lossen Ranch, 33.60 337 P P 07 50 42.5 -0.7
baz=151
OLIL Olney 33.61 352 eP P 07 50 43.0 -0.3
67nm,0.9s
S39A Bolivar 33.65 345 P P 07 50 42.6 -1.1
baz=160,SNR=18
S38A Stockton 33.75 344 P P 07 50 43.6 -1.0
baz=159
V32A Arapaho 33.82 336 P P 07 50 45.1 0.0
baz=150,SNR=10
MNTX Cornudas Mount 33.82 324 P P 07 50 45.5 +0.3
baz=136,SNR=9.3
MNTX Cornudas Mount 33.82 324 eP P 07 50 45.5 +0.3
16nm,1.4s
T36A Boggs Farm, Ca 33.83 341 P P 07 50 44.4 -0.8
baz=156,SNR=5.6
U34A Anderson Ranch 33.85 338 P P 07 50 44.4 -1.0
baz=152
U34A Anderson Ranch 33.85 338 eP P 07 50 44.6 -0.8
20nm,1.4s
SLM Saint Louis 33.86 349 eP P 07 50 44.6 -0.8
50nm,0.9s
BLO Bloomington 33.86 354 eP P 07 50 45.1 -0.3
22nm,0.8s
T35A Sooner Cattle 33.91 340 P P 07 50 45.0 -0.9
baz=154,SNR=8.2
R40A Maddies Statio 33.95 346 P P 07 50 45.4 -0.9
baz=162,SNR=6.9
MSTX Muleshoe 34.09 329 P P 07 50 47.2 -0.5
baz=142
MSTX Muleshoe 34.09 329 eP P 07 50 47.0 -0.7
8.1nm,1.0s
S37A Fort Scott 34.14 343 P P 07 50 47.0 -0.9
baz=158,SNR=17
R39A Chumby, Stover 34.16 345 P P 07 50 46.9 -1.2
baz=161,SNR=8.5
T34A McClaskey Farm 34.24 339 P P 07 50 48.0 -0.8
baz=153
R38A Fenwick Farm, 34.27 344 P P 07 50 48.1 -0.9
baz=160,SNR=7.9
AMTX Amarillo 34.29 331 P P 07 50 48.9 -0.4
baz=145
AMTX Amarillo 34.29 331 eP P 07 50 49.5 +0.2
17nm,1.3s
S36A Lake Cedric, C 34.34 342 P P 07 50 48.7 -0.9
baz=156,SNR=9.1
U32A Winter Ranch, 34.37 336 P P 07 50 49.1 -0.8
baz=150,SNR=6.2
S35A Otter Creek Ra 34.54 341 P P 07 50 50.6 -0.7
baz=155
Q40A Laux Farm, Aux 34.58 347 P P 07 50 50.7 -1.0
baz=163,SNR=13
R37A Teagarden Farm 34.65 343 P P 07 50 51.4 -0.9
baz=158
T33A Patterson Ranc 34.69 338 P P 07 50 51.8 -0.9
baz=152
S34A Willow Spring 34.82 340 P P 07 50 53.0 -0.9
baz=154
Q39A Willow Grove F 34.84 346 P P 07 50 52.8 -1.1
baz=162
R36A Gordon, Harris 34.87 342 P P 07 50 53.3 -0.9
baz=157
Q38A Cooks Store, C 34.92 345 P P 07 50 53.8 -0.9
baz=160,SNR=8.7
T32A Huddler Ranch, 35.03 337 P P 07 50 54.6 -1.1
baz=151
P40A Paris 35.09 347 P P 07 50 54.8 -1.2
baz=163,SNR=11
SFIN Lafayette 35.11 354 P P 07 50 55.1 -1.1
baz=172,SNR=5.9
SFIN Lafayette 35.11 354 eP P 07 50 55.1 -1.1
29nm,1.0s
P39A Salisbury 35.21 346 P P 07 50 56.0 -1.1
baz=162,SNR=19
SSPA Standing Stone 35.38 6 eP P 07 50 59.9 +1.3
20nm,1.2s
R34A Isabella, Hill 35.41 340 P P 07 50 58.5 -0.3
baz=154,SNR=10
Q36A Arnold C. Orve 35.44 343 P P 07 50 58.0 -1.1
baz=157,SNR=5.3
S32A Newby Ranch, P 35.49 337 P P 07 50 59.6 0.0
baz=151
Q35A Mercer Eighty, 35.52 342 P P 07 50 59.1 -0.7
baz=156
P38A Dawn 35.53 345 P P 07 50 59.4 -0.5
baz=161
HDIL Hopedale 35.57 351 P P 07 50 58.9 -1.3
baz=168,SNR=9.7
HDIL Hopedale 35.57 351 eP P 07 50 59.2 -0.9
47nm,0.8s
O40A La Belle 35.62 348 P P 07 50 59.6 -1.0
baz=164
R33A Olander Ranch, 35.67 339 P P 07 51 00.7 -0.5
baz=153,SNR=11
SRIG Santa Rosalia 35.70 311 eP P 07 51 02.5 +1.0
38nm,1.1s
P37A Lathrop 35.71 344 P P 07 51 00.1 -1.3
baz=160,SNR=5.9
121A Cookes Peak, D 35.85 322 P P 07 51 04.6 +1.6
baz=134,SNR=11
Q34A Chapman 35.87 341 P P 07 51 02.4 -0.4
baz=155
O39A Kirksville 35.89 347 P P 07 51 01.9 -1.0
baz=163,SNR=18
KSU1 Kansas State U 35.92 341 P P 07 51 02.4 -0.8
baz=156,SNR=5.6
KSU1 Kansas State U 35.92 341 eP P 07 51 02.8 -0.4
17nm,0.9s
N59A State Game Lan 35.93 9 P P 07 51 03.8 +0.4
baz=191
P36A Good Intent, A 35.97 343 P P 07 51 02.8 -0.9
baz=158,SNR=7.7
O38A Galt 35.98 346 P P 07 51 02.5 -1.2
baz=161
319A Douglas 36.02 319 eP P 07 51 05.2 +0.9
20nm,1.4s
R32A Long Quarter, 36.04 338 P P 07 51 04.4 0.0
baz=152,SNR=16
P35A Duane Minner, 36.13 342 P P 07 51 04.2 -0.8
baz=157,SNR=5.3
O37A Wolven Farm, M 36.20 345 P P 07 51 04.5 -1.1
baz=160,SNR=5.4
Q33A Connelly Farm, 36.24 340 P P 07 51 05.6 -0.4
baz=154,SNR=8.9
BNM Barren Site 36.31 325 eP P 07 51 08.5 +1.5
O36A Bolckow 36.38 344 P P 07 51 06.5 -0.6
baz=159
P34A Walnut Farm, R 36.40 341 P P 07 51 06.4 -0.9
baz=156
Y22D IRIS PASSCAL I 36.42 325 eP P 07 51 09.4 +1.6
32nm,1.2s
LPM Los Pinos Moun 36.43 325 eP P 07 51 08.6 +0.7
N39A Derby Farms, D 36.48 347 P P 07 51 06.8 -1.1
baz=163
Q32A Meitler Ranch, 36.49 339 P P 07 51 07.8 -0.3
baz=152,SNR=10
N38A Joes South For 36.56 346 P P 07 51 07.7 -1.0
baz=162,SNR=28
P33A Williams Farm, 36.58 340 P P 07 51 09.1 +0.1
baz=154
CBKS Cedar Bluff 36.77 337 P P 07 51 10.5 -0.1
baz=151,SNR=8.2
CBKS Cedar Bluff 36.77 337 eP P 07 51 11.0 +0.4
24nm,0.9s
N37A Lee Faris, Mou 36.77 345 P P 07 51 09.1 -1.4
baz=160,SNR=8.6
O35A Humboldt 36.78 343 P P 07 51 09.4 -1.2
baz=157
LAZ Ladron 36.78 325 eP P 07 51 13.0 +2.0
ANMO Albuquerque 36.80 326 P P 07 51 12.3 +1.3
10nm,1.0s,baz=155,slow=6.6,SNR=22
ANMO Albuquerque 36.80 326 P P 07 51 12.3 +1.3
baz=136
ANMO Albuquerque 36.80 326 eP P 07 51 12.4 +1.3
14nm,1.1s
O34A Beatrice 36.94 342 P P 07 51 11.2 -0.7
baz=156,SNR=5.9
N36A Muff Farm, Cla 37.02 344 P P 07 51 14.3 +1.7
baz=159,SNR=6.5
P32A Huiting Farm, 37.06 339 P P 07 51 12.6 -0.4
baz=153,SNR=9.3
O33A Hebron 37.12 341 P P 07 51 13.0 -0.5
baz=155,SNR=6.7
M38A Pleasantville 37.15 347 P P 07 51 12.7 -1.0
baz=162
N35A Tabor 37.25 344 P P 07 51 13.6 -1.0
baz=158
M37A Trindle Farm, 37.34 346 P P 07 51 13.9 -1.4
baz=161
T25A Trinidad 37.41 331 P P 07 51 18.0 +1.8
baz=142,SNR=9.6
T25A Trinidad 37.41 331 eP P 07 51 16.6 +0.3
21nm,1.1s
N34A Lincoln 37.48 343 P P 07 51 15.9 -0.6
baz=157
O32A Brockman Farm, 37.52 340 P P 07 51 16.8 -0.1
baz=154
M36A Felix, Anita 37.57 345 P P 07 51 16.1 -1.3
baz=160
TUC Tucson 37.60 319 P P 07 51 18.8 +1.0
baz=130
TUC Tucson 37.60 319 eP P 07 51 19.1 +1.3
9.6nm,1.1s
SCIA State Center 37.62 347 eP P 07 51 17.0 -0.7
26nm,0.9s
N33A J Bar K, Exete 37.68 341 P P 07 51 17.8 -0.4
baz=155
L38A Oak Wood Farm, 37.78 347 P P 07 51 17.8 -1.3
baz=163,SNR=11
O31A Woolen Ranch, 37.79 339 P P 07 51 18.8 -0.4
baz=152,SNR=7.6
M35A Neola 37.83 344 P P 07 51 18.5 -0.9

	baz=158							
L37A	**Phoenix Point,** baz=162	37.95 346	P	P	07 51 19.5	-1.0		
JFWS	**Jewell Farm** 18nm,1.0s	38.02 351	eP	P	07 51 19.7	-1.4		
KSCO	**Kaye Shedlock'** baz=146,SNR=5.1	38.11 334	P	P	07 51 22.6	+0.6		
KSCO	**Kaye Shedlock'** 23nm,1.0s	38.11 334	eP	P	07 51 23.3	+1.2		
L36A	**Harm Buss Farm** baz=160	38.15 345	P	P	07 51 20.9	-1.2		
K38A	**Parkersburg** baz=163	38.23 348	P	P	07 51 21.9	-0.9		
L35A	**Bielow Farm, R** baz=159	38.38 344	P	P	07 51 22.9	-1.3		
SDCO	**Great Sand Dun** baz=141,SNR=32	38.42 330	P	P	07 51 26.5	+1.6		
SDCO	**Great Sand Dun** 21nm,1.1s	38.42 330	eP	P	07 51 26.4	+1.5		
BGNE	**Belgrade** 15nm,0.8s	38.51 341	eP	P	07 51 24.4	-0.8		
K37A	**Belmond** baz=162	38.53 347	P	P	07 51 23.6	-1.7		
X18A	**Snowflake** 8.7nm,0.9s	38.53 322	eP	P	07 51 27.6	+1.9		
K36A	**Gilmore City** baz=161,SNR=9.2	38.60 346	P	P	07 51 24.9	-1.0		
M31A	**Lambtecht Ranc** baz=153,SNR=5.3	38.73 340	P	P	07 51 26.9	-0.1		
214A	**Organ Pipe Nat** baz=127,SNR=13	38.74 317	P	P	07 51 28.4	+1.1		
W18A	**Petrified Fore** baz=134,SNR=16	38.80 323	P	P	07 51 29.7	+1.6		
W18A	**Petrified Fore** 28nm,1.0s	38.80 323	eP	P	07 51 30.1	+2.1		
K35A	**Storm Lake** baz=160	38.87 345	P	P	07 51 27.2	-1.0		
L33A	**Hoskins** baz=156	38.92 343	P	P	07 51 27.8	-0.9		
L32A	**Elgin** baz=155	39.00 342	P	P	07 51 28.4	-1.0		
J37A	**Redenius Farm,** baz=162	39.03 347	P	P	07 51 28.4	-1.2		
K34A	**Le Mars** baz=158	39.07 344	P	P	07 51 28.6	-1.3		
S22A	**4UR Ranch, Cre** baz=140,SNR=21	39.09 329	P	P	07 51 31.9	+1.4		
S22A	**4UR Ranch, Cre** 8.5nm,0.9s	39.09 329	eP	P	07 51 31.6	+1.1		
Q24A	**Divide** 11nm,1.3s	39.21 332	eP	P	07 51 31.9	+0.4		
J36A	**Seneca 1, Swea** baz=161,SNR=14	39.23 346	P	P	07 51 29.7	-1.5		
K33A	**Hardington** baz=157	39.25 343	P	P	07 51 30.7	-0.7		
X16A	**Lo Mia Camp, P** 6.8nm,1.0s	39.38 321	eP	P	07 51 34.4	+1.6		
L31A	**Butterfield Fa** baz=154,SNR=14	39.42 341	P	P	07 51 32.4	-0.5		
J35A	**Milford** baz=160	39.47 345	P	P	07 51 31.7	-1.5		
OGNE	**Ogallala** baz=148,SNR=9.0	39.50 337	P	P	07 51 34.4	+0.8		
OGNE	**Ogallala** 49nm,0.9s	39.50 337	eP	P	07 51 34.8	+1.1		
MVCO	**Mesa Verde** baz=137,SNR=17	39.58 327	P	P	07 51 35.6	+1.1		
MVCO	**Mesa Verde** 21nm,0.9s	39.58 327	eP	P	07 51 35.8	+1.2		
K32A	**Verdigre** baz=155	39.59 342	P	P	07 51 33.3	-1.0		
K31A	**O'Neill** baz=154,SNR=5.3	39.80 341	P	P	07 51 35.6	-0.4		
I36A	**Fitzsimmons Fa** baz=162	39.81 347	P	P	07 51 34.6	-1.4		
113A	**Mohawk Valley,** 17nm,1.1s	39.87 317	eP	P	07 51 38.1	+1.5		
I35A	**Creekview Farm** baz=160,SNR=6.6	39.88 346	P	P	07 51 35.3	-1.3		
CPUP	**Villa Florida** 2.5nm,0.8s,baz=326,slow=3.6,SNR=2.9	39.88 143	P	P	07 51 34.3	-2.6		
CPUP			LR	LR	08 09 08.8			
	comp=Z,274nm,20.6s,baz=325,slow=38							
J33A	**Davis** baz=157	39.90 344	P	P	07 51 35.4	-1.3		
WUAZ	**Wupatki** baz=132,SNR=13	40.06 322	P	P	07 51 39.9	+1.5		
WUAZ	**Wupatki** 13nm,0.9s	40.06 322	eP	P	07 51 40.1	+1.7		
Y14A	**Wickenburg** 44nm,1.2s	40.07 319	eP	P	07 51 39.9	+1.4		
BDFB	**Brasilia** comp=Z,371nm,21.5s,baz=283,slow=36	40.08 122	LR	LR	08 08 08.3			
ISCO	**Idaho Springs** baz=143,SNR=9.0	40.10 332	P	P	07 51 39.9	+1.0		
ISCO	**Idaho Springs** 6.6nm,0.9s	40.10 332	eP	P	07 51 40.3	+1.4		
K30A	**Basset** baz=153,SNR=10	40.12 340	P	P	07 51 38.5	-0.3		
ECSD	**EROS Data Cent** baz=158,SNR=5.8	40.18 344	P	P	07 51 37.6	-1.5		
ECSD	**EROS Data Cent** 8.3nm,1.1s	40.18 344	eP	P	07 51 37.9	-1.2		
J32A	**Parkston** baz=156	40.20 343	P	P	07 51 38.2	-1.1		
SMCO	**Snowmass** 15nm,1.0s	40.26 330	eP	P	07 51 41.8	+1.4		
I34A	**Hadley** baz=159	40.27 345	P	P	07 51 39.0	-0.8		
PV01	**Paradox Valley**	40.30 328	eP	P	07 51 42.2	+1.7		
H36A	**Jessenland, He** baz=162,SNR=6.4	40.32 347	P	P	07 51 38.7	-1.6		
PV05	**Paradox Valley**	40.54 327	eP	P	07 51 43.8	+1.3		
H35A	**Sunnyside Ranc** baz=161,SNR=9.5	40.64 347	P	P	07 51 41.1	-1.7		
PV04	**Paradox Valley**	40.66 328	eP	P	07 51 44.2	+0.8		
J30A	**Dallas** baz=154,SNR=17	40.67 341	P	P	07 51 42.4	-0.8		
SPMN	**Marine on St.** baz=164,SNR=8.9	40.71 349	P	P	07 51 41.3	-2.1		
SPMN	**Marine on St.** 19nm,0.8s	40.71 349	eP	P	07 51 41.4	-2.1		
PV10	**Paradox Valley**	40.72 328	eP	P	07 51 45.2	+1.2		
GLA	**Glamis** baz=126,SNR=8.2	40.76 317	P	P	07 51 45.2	+1.1		
GLA	**Glamis** 17nm,1.1s	40.76 317	eP	P	07 51 45.6	+1.5		
H34A	**Spellman Lake,** baz=160	40.83 346	P	P	07 51 42.9	-1.6		
PV09	**Paradox Valley**	40.86 328	eP	P	07 51 46.6	+1.4		
J29A	**Okreek** baz=152,SNR=11	41.01 340	P	P	07 51 45.8	-0.3		
H33A	**Prehn Over Nor** baz=158,SNR=9.0	41.09 345	P	P	07 51 44.9	-1.8		
H32A	**Carlson Farm,** baz=157,SNR=8.7	41.12 344	P	P	07 51 45.4	-1.5		
N23A	**Red Feather La** baz=143,SNR=9.8	41.12 333	P	P	07 51 47.9	+0.7		
N23A	**Red Feather La** 24nm,1.4s	41.12 333	eP	P	07 51 48.7	+1.4		
I30A	**Oacoma** baz=154	41.17 341	P	P	07 51 46.0	-1.4		
U15A	**North Rim** 14nm,1.1s	41.22 323	eP	P	07 51 50.3	+2.1		
PHWY	**Pilot Hill** 11nm,1.4s	41.23 334	eP	P	07 51 50.1	+1.9		
J28A	**Allard Ranch,** baz=151,SNR=5.8	41.34 339	P	P	07 51 48.9	0.0		
W13A	**Hualapai Mount** 15nm,1.0s	41.36 320	eP	P	07 51 51.2	+1.9		
F36A	**Milaca** baz=163,SNR=6.5	41.46 348	P	P	07 51 47.8	-1.9		
J27A	**Elkhorn Farm,** baz=150,SNR=14	41.47 338	P	P	07 51 50.5	+0.6		
G33A	**Ortonville** baz=159	41.49 345	P	P	07 51 48.6	-1.4		
SUSD	**Miller** baz=155	41.51 342	P	P	07 51 49.0	-1.0		
BC3	**Big Chuckawall** baz=125,SNR=9.2	41.53 317	P	P	07 51 51.5	+0.9		
I29A	**Vivian Onida** baz=153,SNR=11	41.55 341	P	P	07 51 49.6	-0.9		
IRM	**Iron Mountain** baz=126,SNR=11	41.62 318	P	P	07 51 52.3	+1.1		
O20A	**White River Ci** baz=140,SNR=8.9	41.62 330	P	P	07 51 52.6	+1.2		
O20A	**White River Ci** 15nm,1.0s	41.62 330	eP	P	07 51 53.0	+1.6		
F35A	**Swanville** baz=162	41.68 347	P	P	07 51 49.9	-1.5		
I28A	**Midland** baz=152,SNR=11	41.83 340	P	P	07 51 52.5	-0.3		
G32A	**Webster** baz=157	41.83 344	P	P	07 51 51.3	-1.4		
PKCU	**Pink Cliffs** 13nm,1.0s	41.91 324	eP	P	07 51 56.1	+2.2		
J26A	**Sides Ranch, S** baz=148,SNR=10	41.92 338	P	P	07 51 54.5	+0.9		
KNB	**Kanab** 12nm,1.0s	41.93 323	eP	P	07 51 55.4	+1.5		
G31A	**Conde** baz=156	42.00 343	P	P	07 51 52.8	-1.3		
E36A	**McGregor** baz=164	42.04 349	P	P	07 51 52.8	-1.6		
SRU	**San Rafael Swe** 20nm,1.0s	42.06 327	eP	P	07 51 56.1	+1.2		
H29A	**Onida** baz=153	42.06 341	P	P	07 51 53.5	-1.2		
BELC	**Belle Mtn. Jos** baz=125,SNR=10	42.10 317	P	P	07 51 56.4	+1.1		
LDFC	**Landfair** 16nm,1.0s	42.14 319	eP	P	07 51 56.5	+0.9		
LCMT	**Little Creek M** 9.5nm,1.5s	42.18 323	eP	P	07 51 57.6	+1.8		
G30A	**Faulkton** baz=155	42.18 343	P	P	07 51 54.7	-0.9		
I27A	**Quinn** baz=150,SNR=14	42.20 339	P	P	07 51 56.0	+0.2		
PFO	**Pinyon Flats O** 11nm,1.1s,baz=100,slow=4.0,SNR=6.8	42.20 316	P	P	07 51 56.1	+0.1		
PFO	**Pinyon Flats O** baz=124,SNR=5.8	42.20 316	P	P	07 51 57.2	+1.1		
PFO	**Pinyon Flats O** 14nm,1.1s	42.20 316	eP	P	07 51 57.4	+1.4		
J25A	**Sunshine Ranch** baz=148,SNR=7.4	42.27 337	P	P	07 51 57.3	+0.9		
P18A	**Preston Nutter** 8.8nm,1.1s	42.28 328	eP	P	07 51 58.2	+1.4		
E35A	**Pequot Lakes** baz=162	42.31 348	P	P	07 51 55.1	-1.5		
GMRC	**Granite Mounta** baz=126,SNR=5.3	42.33 318	P	P	07 51 58.4	+1.2		
E34A	**Wadena** baz=161	42.43 347	P	P	07 51 55.6	-2.0		
P17A	**Butcher Ranch,** 8.7nm,0.9s	42.43 327	eP	P	07 51 59.2	+1.3		
I26A	**New Underwood** baz=149,SNR=8.1	42.45 338	P	P	07 51 58.3	+0.4		
D37A	**Cotton** baz=165,SNR=9.7	42.51 350	P	P	07 51 56.7	-1.5		
MSU	**Marysvale**	42.56 325	eP	P	07 52 00.6	+1.6		
TMUT	**Trail Mountain** 8.4nm,1.2s	42.56 327	eP	P	07 52 00.4	+1.3		
D36A	**Goodland** baz=164	42.66 349	P	P	07 51 57.9	-1.5		
H27A	**Howes** baz=151,SNR=29	42.70 339	P	P	07 51 59.8	0.0		
D35A	**Remer** baz=163	42.74 348	P	P	07 51 58.0	-2.1		
I25A	**Rochford** baz=148,SNR=19	42.77 337	P	P	07 52 01.9	+1.3		
K22A	**Casper** baz=144,SNR=7.0	42.79 334	P	P	07 52 01.4	+0.6		
K22A	**Casper** 20nm,1.3s	42.79 334	eP	P	07 52 02.0	+1.3		
C39A	**Grand Marais** baz=169	42.80 353	P	P	07 51 58.7	-1.9		
C38A	**Sawbill Land.** baz=167	42.87 351	P	P	07 51 58.8	-2.3		
BBRC	**Big Bear Solar** baz=123,SNR=7.4	42.88 317	P	P	07 52 03.1	+1.4		
TUQ	**Turquoise Moun** baz=126,SNR=12	42.89 319	P	P	07 52 02.5	+0.8		
H26A	**Fairpoint** baz=150,SNR=8.0	42.93 339	P	P	07 52 01.9	+0.1		
RSSD	**Black Hills** baz=148	42.98 337	P	P	07 52 03.2	+0.9		
RSSD	**Black Hills** 15nm,0.9s	42.98 337	eP	P	07 52 03.8	+1.5		
D34A	**Park Rapids** baz=161,SNR=5.2	42.98 347	P	P	07 51 59.9	-2.1		
C37A	**Embarrass** baz=166,SNR=6.8	43.02 350	P	P	07 52 01.0	-1.4		
EYMN	**Ely** baz=167	43.12 351	P	P	07 52 01.5	-1.7		
C36A	**Pine Crest Far** baz=165,SNR=9.7	43.16 350	P	P	07 52 01.9	-1.6		
D33A	**AnnSam, Waubun** baz=160,SNR=6.0	43.18 347	P	P	07 52 01.8	-1.8		
H25A	**Fruitdale** baz=148,SNR=17	43.23 338	P	P	07 52 05.0	+0.8		
G27A	**Dupree** baz=151	43.30 340	P	P	07 52 04.5	-0.2		
MPU	**Maple Canyon** 7.5nm,1.0s	43.30 327	eP	P	07 52 06.2	+1.2		
C35A	**Jirik Farms, M** baz=163,SNR=5.4	43.31 349	P	P	07 52 02.8	-1.9		
F28A	**McLaughlin** baz=153,SNR=7.3	43.34 341	P	P	07 52 04.1	-0.9		
SHOC	**Shoshone, Teco** baz=126,SNR=8.8	43.39 319	P	P	07 52 06.7	+1.1		
GSC	**Goldstone, Bar** baz=125,SNR=9.5	43.40 318	P	P	07 52 07.0	+1.3		
GSC	**Goldstone, Bar** 18nm,1.3s	43.40 318	eP	P	07 52 07.2	+1.5		
CIS	**Catalina Islan** baz=122	43.45 315	P	P	07 52 07.2	+1.1		
G26A	**Maurine** baz=150,SNR=7.0	43.45 339	P	P	07 52 05.8	-0.2		
C34A	**RKJ Ranch, Bem** baz=162	43.45 348	P	P	07 52 03.9	-2.0		
NLU	**North Lily Min** 4.6nm,1.2s	43.50 327	eP	P	07 52 07.8	+1.2		
JLU	**Jordanelle** 19nm,1.8s	43.62 328	eP	P	07 52 08.9	+1.3		
E29A	**Napoleon** baz=155	43.63 343	P	P	07 52 06.6	-0.8		
MWC	**Mount Wilson** 12nm,1.0s	43.64 316	eP	P	07 52 07.3	-0.6		
G25A	**Newell** baz=149,SNR=6.7	43.66 339	P	P	07 52 08.1	+0.5		
PASC	**Pasadena Art C** 15nm,1.1s	43.70 316	eP	P	07 52 08.8	+0.7		
F27A	**Lemmon** baz=151,SNR=5.6	43.76 340	P	P	07 52 08.1	-0.3		
CTU	**Camp Tracy** 12nm,1.1s	43.84 328	eP	P	07 52 10.6	+1.3		
D30A	**Buchanan** baz=156	43.88 344	P	P	07 52 08.0	-1.3		
E28A	**Huff** baz=153	43.96 342	P	P	07 52 09.3	-0.6		
EDW2	**Edwards Air Fo** baz=124,SNR=6.0	43.96 317	P	P	07 52 10.8	+0.6		
F26A	**Lodgepole** baz=153,SNR=7.1	43.96 340	P	P	07 52 09.8	-0.2		
TCUT	**Toone Canyon** 20nm,1.1s	43.97 328	eP	P	07 52 11.9	+1.5		
TPNV	**Topopah Spring** baz=127,SNR=7.9	44.01 320	P	P	07 52 12.3	+1.5		
TPNV	**Topopah Spring** 9.9nm,1.0s	44.01 320	eP	P	07 52 12.5	+1.8		
DUG	**Dugway, Tooele** baz=134	44.07 326	P	P	07 52 12.1	+0.9		
DUG	**Dugway, Tooele** 6.9nm,1.1s	44.07 326	eP	P	07 52 12.5	+1.3		
LRMC	**Laurel Mtn Rad** baz=125,SNR=6.3	44.08 318	P	P	07 52 12.6	+1.3		
E27A	**Carson** baz=152,SNR=10	44.10 341	P	P	07 52 11.1	0.0		
FURC	**Furnace Creek,** baz=126,SNR=11	44.11 319	P	P	07 52 12.7	+1.3		
B34A	**Aery, Baudette** baz=162,SNR=8.1	44.20 348	P	P	07 52 10.2	-1.6		
C31A	**Landman Farms,** baz=158	44.24 345	P	P	07 52 11.0	-1.2		
PD31	**Pinedale Array**	44.27 331	eP	P	07 52 13.3	+0.5		
PDAR	**Pinedale Array** 5.2nm,1.1s,baz=128,slow=9.6,SNR=22	44.27 331	P	P	07 52 12.8	+0.1		
PDAR			PcP	PP	07 53 56.1	+0.1		
	1.2nm,1.0s,baz=80,slow=5.0,SNR=3.4							
PDAR			LR	LR	08 13 04.7			
	comp=Z,232nm,19.0s,baz=153,slow=39							
BW06	**Boulder Array** baz=140,SNR=9.5	44.27 331	P	P	07 52 13.1	+0.3		
BW06	**Boulder Array** 7.0nm,1.1s	44.27 331	eP	P	07 52 13.2	+0.5		
AGMN	**Agassiz Nation** baz=161	44.27 347	P	P	07 52 11.0	-1.4		
AGMN	**Agassiz Nation** 6.0nm,0.8s	44.27 347	eP	P	07 52 11.3	-1.2		
MPMC	**Manual Prospec** baz=125,SNR=5.1	44.28 318	P	P	07 52 13.4	+0.4		
F25A	**Bowman** baz=149	44.30 339	P	P	07 52 13.3	+0.5		
HWUT	**Hardware Ranch** 14nm,0.9s	44.40 329	eP	P	07 52 14.4	+0.5		
E26A	**Carlson Angus** baz=151,SNR=7.2	44.43 340	P	P	07 52 13.7	-0.1		
R11A	**Troy Canyon, C** baz=129,SNR=10.0	44.46 322	P	P	07 52 15.4	+1.1		
R11A	**Troy Canyon, C** 5.6nm,1.0s	44.46 322	eP	P	07 52 15.3	+1.1		
DAC	**Darwin (Calif)** 4.7nm,1.0s	44.48 319	eP	P	07 52 15.6	+1.1		
B32A	**Ashes, Strandq** baz=160,SNR=6.8	44.52 347	P	P	07 52 13.1	-1.3		
ARVC	**Arvin** baz=123	44.67 316	P	P	07 52 17.0	+1.2		
BGU	**Big Grassy Mou** 9.2nm,1.0s	44.70 327	eP	P	07 52 17.2	+1.1		
ISA	**Isabella, Lake** baz=124	44.72 317	P	P	07 52 17.4	+1.1		
ISA	**Isabella, Lake**	44.72 317	eP	P	07 52 17.5	+1.2		
ISA			epP	pP	07 52 18.3	-1.2		
GRAC	**Grapevine Rang** baz=126,SNR=11	44.75 320	P	P	07 52 17.8	+1.3		
A33A	**Warroad** baz=162,SNR=8.1	44.78 348	P	P	07 52 15.2	-1.3		
E25A	**Miller Ranch,** baz=150,SNR=10	44.78 340	P	P	07 52 16.7	+0.1		
MDND	**Maddock** baz=156	44.79 344	P	P	07 52 15.8	-0.7		
MDND	**Maddock** 42nm,1.1s	44.79 344	eP	P	07 52 16.5	-0.1		
B31A	**Greenbush Farm** baz=158	44.80 346	P	P	07 52 16.0	-0.6		
D26A	**Manning** baz=151,SNR=5.3	44.91 341	P	P	07 52 17.3	-0.3		
A32A	**Rocking H Ranc** baz=160	45.00 347	P	P	07 52 17.0	-1.2		
B30A	**Myrvik Farm, E** baz=157	45.00 345	P	P	07 52 17.5	-0.8		
AHID	**Auburn Hatcher** 6.4nm,0.8s	45.02 330	eP	P	07 52 18.9	+0.2		
HVU	**Hansel Valley** 17nm,1.6s	45.16 328	eP	P	07 52 20.5	+0.7		
PKM	**Mcpherson Peak** baz=122	45.22 316	P	P	07 52 21.1	+0.7		
B29A	**Wagenman Farm,** baz=156	45.28 344	P	P	07 52 19.7	-0.8		
D25A	**Fairfield** baz=150	45.31 340	P	P	07 52 20.8	0.0		
REDW	**Red Top Meadow** 21nm,1.2s	45.34 331	eP	P	07 52 21.8	+0.5		
SNOW	**Snow King Moun** 28nm,1.4s	45.37 331	eP	P	07 52 22.5	+0.9		
LOHW	**Long Hollow** 22nm,1.9s	45.41 331	eP	P	07 52 22.6	+0.7		
A30A	**Hoffart Farm,** baz=158	45.45 345	P	P	07 52 21.0	-0.8		
C26A	**Wahner Farm, P** baz=152	45.51 342	P	P	07 52 22.2	-0.1		
B28A	**Dugan Ranch, T** baz=155	45.55 343	P	P	07 52 22.2	-0.4		
SMMC	**Simmler** baz=122	45.57 316	P	P	07 52 23.0	0.0		
MOOW	**Moose Ponds** 6.9nm,1.1s	45.58 331	eP	P	07 52 23.6	+0.5		
A29A	**Manning Farm,** baz=156	45.67 345	P	P	07 52 22.6	-0.9		
C25A	**Freed Ranch, W** baz=151	45.78 341	P	P	07 52 25.0	+0.5		
IMW	**Indian Meadow** 6.1nm,1.2s	45.78 331	eP	P	07 52 25.2	+0.3		
ELK	**Elko** 5.9nm,0.9s	45.80 325	eP	P	07 52 26.1	+1.0		
FLWY	**Flagg Ranch** 12nm,1.1s	45.81 332	eP	P	07 52 26.1	+1.0		
A28A	**Rude Farm, Bot** baz=155	45.94 344	P	P	07 52 24.8	-0.9		
RLMT	**Red Lodge** baz=142,SNR=7.9	45.95 334	P	P	07 52 26.4	+0.2		
RLMT	**Red Lodge** 8.8nm,1.1s	45.95 334	eP	P	07 52 26.3	+0.2		
LAO	**LASA Array** baz=146,SNR=9.8	45.97 337	P	P	07 52 26.3	+0.3		
LAO	**LASA Array** 23nm,1.1s	45.97 337	eP	P	07 52 26.6	+0.6		
H17A	**Grant Village** 4.8nm,1.0s	45.99 332	eP	P	07 52 28.2	+1.8		
LKWY	**Lake** 7.7nm,1.0s	46.03 332	eP	P	07 52 28.6	+1.8		
MLAC	**Mammoth, Mammo** baz=125	46.07 319	P	P	07 52 28.2	+1.0		
NV11	**Mina Array Sit** 15nm,1.0s	46.10 321	eP	P	07 52 28.4	+1.1		
ULM	**Lac du Bonnet** 6.7nm,0.7s,baz=156,slow=7.2,SNR=9.4	46.12 348	P	P	07 52 25.3	-1.8		
ULM	**Lac du Bonnet** 10nm,0.8s	46.12 348	eP	P	07 52 25.8	-1.4		
YFT	**Old Faithful**	46.15 332	eP	P	07 52 30.0	+2.2		
NV01	**Mina Array Sit**	46.20 321	eP	P	07 52 28.6	+0.4		
NVAR	**Mina Array Bea** 13nm,0.9s,baz=134,slow=7.2,SNR=64	46.20 321	P	P	07 52 29.2	+1.0		
NVAR			PcP	PcP	07 54 03.6	-0.4		
	0.7nm,0.9s,baz=92,slow=2.7,SNR=2.4							
NVAR			LR	LR	08 12 06.3			
	comp=Z,566nm,18.3s,baz=142,slow=36							
YMR	**Madison River** 11nm,1.0s	46.38 332	eP	P	07 52 30.9	+1.4		
QLMT	**Earthquake Lak**	46.72 332	eP	P	07 52 33.9	+1.8		
DGMT	**Dagmar** baz=150,SNR=6.8	46.75 340	P	P	07 52 32.4	+0.3		
DGMT	**Dagmar** 28nm,0.8s	46.75 340	eP	P	07 52 32.8	+0.6		
BMN	**Battle Mountai** 16nm,1.1s	46.76 323	eP	P	07 52 33.5	+1.0		
A25A	**Svangstu Ranch** baz=151	46.81 342	P	P	07 52 32.9	+0.4		
WAKR	**Walker**	46.96 320	eP	P	07 52 35.6	+1.4		
PLCA	**Paso Flores** 2.3nm,0.7s,baz=351,slow=9.3,SNR=12	47.17 168	P	P	07 52 32.9	-2.7		
PLCA	**Paso Flores** 24nm,1.4s	47.17 168	eP	P	07 52 33.3	-2.2		
TRQA	**Tornquist** 36nm,2.0s	47.24 158	eP	P	07 52 34.9	-1.1		
HLID	**Hailey** baz=134,SNR=9.0	47.27 329	P	P	07 52 36.9	+0.5		
HLID	**Hailey** 4.3nm,0.9s	47.27 329	eP	P	07 52 37.0	+0.5		
MCMT	**McKenzie Canyo**	47.39 331	eP	P	07 52 38.7	+1.3		
BOZ	**Bozeman (W)** baz=139,SNR=15	47.42 332	P	P	07 52 37.9	+0.4		
BOZ	**Bozeman (W)** 10nm,1.0s	47.42 332	eP	P	07 52 38.0	+0.4		
MFID	**Camas Ranch** 8.4nm,1.3s	47.92 327	eP	P	07 52 42.3	+0.9		
LRM	**Limekiln Ridge**	47.94 332	eP	P	07 52 42.1	+0.4		
HRY	**Holter Researc**	48.32 333	eP	P	07 52 45.0	+0.5		
EGMT	**Eagleton** baz=142	48.45 336	P	P	07 52 46.8	+1.4		
EGMT	**Eagleton** 27nm,1.0s	48.45 336	eP	P	07 52 45.5	+0.1		
WVOR	**Wild Horse Val** 22nm,1.1s	48.84 325	eP	P	07 52 48.5	0.0		
ORV	**Oroville** 15nm,1.1s	48.88 320	eP	P	07 52 50.0	+1.2		
MSO	**Missoula** baz=137,SNR=7.7	49.38 332	P	P	07 52 52.9	+0.3		
MSO	**Missoula** 10nm,1.2s	49.38 332	eP	P	07 52 53.0	+0.3		
BSMT	**Bassoo Peak**	50.52 332	eP	P	07 53 02.1	+0.8		
KMRM	**Mail Ridge** 59nm,1.4s	50.67 319	eP	P	07 53 03.6	+1.1		
SCHQ	**Schefferville** 11nm,1.1s,baz=198,slow=6.4,SNR=4.0	50.95 12	P	P	07 53 03.0	-1.3		
SCHQ			LR	LR	08 14 10.9			
	comp=Z,118nm,22.0s,baz=88,slow=35							
WALA	**Waterton Lakes** 10.0nm,1.0s	51.01 334	eP	P	07 53 05.5	+0.6		
FFC	**Flin Flon** 8.2nm,1.1s	51.67 346	eP	P	07 53 09.7	+0.1		
G06A	**Carlson Farm,** 50nm,1.9s	51.72 326	eP	P	07 53 10.6	+0.4		

H04A	**Detroit Lake**	**52.26**	**325**	*e*P	**P**	**07 53 14.8**	**+0.5**
	24nm,1.3s						
LON	**Longmire**	**53.30**	**327**	*e*P	**P**	**07 53 22.8**	**+0.9**
	25nm,1.7s						
D05A	**Enumclaw**	**53.67**	**327**	*e*P	**P**	**07 53 25.8**	**+1.2**
	17nm,0.9s						
FCC	**Fort Churchill**	**54.02**	**353**	*e*P	**P**	**07 53 26.2**	**-0.7**
	16nm,1.3s						
RKT	**Rikitea**	**58.45**	**239**	*e*LR	LR	08 11 11.3	
	449nm,27.5s						
TAOE	**Nuku Hiva Isla**	**59.10**	**256**	*e*LR	LR	08 11 29.7	
	215nm,25.1s						
YKA	**Yellowknife Ar**	**61.71**	**344**	P	**P**	**07 54 20.3**	**-0.5**
	6.2nm,1.0s,baz=137,slow=6.8,SNR=59						
YKB5	**Yellowknife Ar**	**61.71**	**344**	*e*P	**P**	**07 54 19.8**	**-1.0**
YKW3	**Yellowknife Ar**	**61.77**	**344**	*e*P	**P**	**07 54 21.2**	**0.0**
	13nm,1.2s						
CRAG	**Craig**	**64.12**	**331**	*e*P	**P**	**07 54 39.0**	**+1.9**
	216nm,1.9s						
DLBC	**Dease Lake**	**64.35**	**335**	*e*P	**P**	**07 54 39.8**	**+1.2**
	9.3nm,0.8s						
SKAG	**Skagway**	**67.21**	**334**	*e*P	**P**	**07 54 57.8**	**+0.9**
	13nm,1.4s						
YKU2	**Yakutat**	**69.18**	**333**	*e*P	**P**	**07 55 09.7**	**+0.5**
	590nm,1.1s						
RES	**Resolute Bay**	**69.65**	**357**	*e*P	**P**	**07 55 11.5**	**-0.3**
PPT2	**Papeete2**	**69.92**	**249**	*e*LR	LR	08 16 30.0	
	184nm,24.2s						
TBI	**Tubuai**	**71.17**	**243**	*e*LR	LR	08 17 04.7	
	418nm,29.2s						
INK	**Inuvik**	**71.38**	**342**	P	**P**	**07 55 22.7**	**+0.1**
	7.5nm,1.1s,baz=125,slow=7.1,SNR=14						
INK	**Inuvik**	**71.38**	**342**	*e*P	**P**	**07 55 23.2**	**+0.6**
	8.0nm,1.0s						
RAGM	**Ragged Mountai**	**71.83**	**332**	*e*P	**P**	**07 55 25.6**	**+0.1**
	20nm,1.1s						
BMRM	**Bremner River**	**72.02**	**333**	*e*P	**P**	**07 55 28.1**	**+1.5**
	24nm,1.1s						
EGAK	**Eagle**	**72.18**	**337**	*e*P	**P**	**07 55 28.0**	**+0.6**
	9.9nm,1.1s						
SUMG	**Summit**	**72.32**	**13**	*i* P	**P**	**07 55 26.9**	**-1.8**
	17nm,1.0s						
SUMG	**Summit**	**72.32**	**13**	*e*P	**P**	**07 55 27.9**	**-0.7**
	20nm,1.1s						
EYAK	**Cordova Ski Ar**	**72.39**	**332**	*e*P	**P**	**07 55 30.8**	**+2.1**
	34nm,1.5s						
MENT	**Mentasta**	**72.41**	**335**	*e*P	**P**	**07 55 29.3**	**+0.3**
	8.6nm,1.2s						
KLU	**Klutina**	**72.81**	**333**	*e*P	**P**	**07 55 32.5**	**+1.1**
	15nm,1.2s						
DOT	**Dot Lake**	**72.84**	**336**	*e*P	**P**	**07 55 32.3**	**+0.8**
	20nm,0.9s						
HLK	**Haleakala**	**72.87**	**290**	*e*P	**P**	**07 55 32.6**	**-0.2**
	1µm,2.0s						
PAX	**Paxson**	**73.16**	**335**	*e*P	**P**	**07 55 34.1**	**+0.6**
	8.5nm,1.2s						
SCM	**Sheep Creek Mo**	**73.56**	**333**	*e*P	**P**	**07 55 36.6**	**+0.8**
	15nm,0.7s						
SEW	**Seward**	**73.97**	**331**	*e*P	**P**	**07 55 38.7**	**+0.6**
	56nm,1.5s						
SML	**Sawmill**	**74.00**	**333**	*e*P	**P**	**07 55 38.8**	**+0.4**
	29nm,1.2s						
IL1	**Eielson Array**	**74.42**	**336**	*e*P	**P**	**07 55 40.6**	**-0.1**
ILAR	**Eielson Array**	**74.42**	**336**	P	**P**	**07 55 40.0**	**-0.7**
	5.8nm,1.1s,baz=116,slow=4.1,SNR=30						
ILAR				LR	LR	08 31 18.3	
	comp=Z,128nm,21.6s,baz=134,slow=38						
ILB	**Eielson Array**	**74.42**	**336**	*e*P	**P**	**07 55 41.1**	**+0.4**
FYU	**Fort Yukon**	**74.47**	**338**	*e*P	**P**	**07 55 42.1**	**+1.2**
	17nm,1.1s						
RND	**Reindeer**	**74.75**	**335**	*e*P	**P**	**07 55 43.4**	**+0.6**
	17nm,0.9s						
MCK	**McKinley**	**74.89**	**335**	*e*P	**P**	**07 55 43.9**	**+0.4**
	13nm,1.0s						
TRF	**Thorofare Moun**	**75.38**	**335**	*e*P	**P**	**07 55 47.0**	**+0.5**
	9.9nm,1.0s						
KTH	**Kantishna Hill**	**75.68**	**335**	*e*P	**P**	**07 55 48.0**	**-0.1**
	7.8nm,0.9s						
BPAW	**Bear Paw Mtn.**	**75.87**	**335**	*e*P	**P**	**07 55 48.8**	**-0.3**
	8.0nm,0.8s						
PPLA	**Purkeypile**	**76.04**	**334**	*e*P	**P**	**07 55 50.2**	**0.0**
	40nm,1.6s						
MLY	**Manley**	**76.05**	**336**	*e*P	**P**	**07 55 50.2**	**0.0**
	6.6nm,1.0s						
CAST	**Castle Rocks**	**76.14**	**334**	*e*P	**P**	**07 55 50.3**	**-0.3**
	7.2nm,1.0s						
COLD	**Coldfoot**	**76.53**	**338**	*e*P	**P**	**07 55 54.2**	**+1.4**
	7.6nm,1.0s						
DBIC	**Dimbokro**	**77.23**	**84**	P	P	07 56 01.0	+3.3
	5.2nm,0.9s,baz=268,slow=4.4,SNR=5.2						
TTA	**Tatalina**	**77.75**	**333**	*e*P	**P**	**07 55 59.3**	**-0.5**
	9.9nm,1.1s						
ESDC	**Sonseca Array**	**77.84**	**51**	P	**P**	**07 56 02.0**	**+1.2**
	1.0nm,0.4s,baz=274,slow=5.7,SNR=8.1						
ESDC				LR	LR	08 24 38.5	
	comp=Z,44nm,21.9s,baz=355,slow=31						
ES19	**SONSECA Array**	**77.89**	**51**	*e*P	**P**	**07 56 01.5**	**+0.5**
DAG	**Danmarks Havn**	**78.99**	**12**	*i* P	P	07 56 03.7	-2.6
	2.4nm,1.0s						
TOA0	**Torodi Ar. Sit**	**83.24**	**77**	*e*P	**P**	**07 56 30.1**	**0.0**
	7.8nm,1.4s						
TORD	**Torodi Ar. Bea**	**83.24**	**77**	P	**P**	**07 56 29.4**	**-0.7**
	1.6nm,0.7s,baz=295,slow=5.8,SNR=7.1						
TORD				LR	LR	08 32 33.7	
	comp=Z,60nm,20.6s,baz=290,slow=35						
GAMB	**Gambell**	**84.85**	**334**	*e*P	**P**	**07 56 37.6**	**+0.3**
	26nm,2.0s						
SPA3	**Spitsbergen Ar**	**86.63**	**12**	*e*P	**P**	**07 56 45.3**	**-0.8**
SPB3	**Spitsbergen Ar**	**86.63**	**12**	*e*P	**P**	**07 56 44.9**	**-1.1**
SPB5	**Spitsbergen Ar**	**86.63**	**12**	*e*P	**P**	**07 56 44.6**	**-1.4**
SPA1	**Spitsbergen Ar**	**86.64**	**12**	*e*P	**P**	**07 56 44.7**	**-1.4**
SPA2	**Spitsbergen Ar**	**86.64**	**12**	*e*P	**P**	**07 56 44.9**	**-1.1**
SPB1	**Spitsbergen Ar**	**86.64**	**12**	*e*P	**P**	**07 56 45.0**	**-1.1**
NOA	**NORSAR Array B**	**87.20**	**29**	LR	LR	08 34 48.2	
	comp=Z,22nm,19.4s,baz=315,slow=35						
KEST	**Kesra**	**88.47**	**54**	LR	LR	08 31 47.9	
	comp=Z,60nm,20.8s,baz=264,slow=32						
GERES	**GERESS Array B**	**90.14**	**41**	LR	LR	08 34 07.2	
	comp=Z,76nm,18.8s,baz=292,slow=33						
ARCES	**ARCESS Array B**	**91.26**	**20**	LR	LR	08 32 36.5	
	comp=Z,62nm,21.1s,baz=0.5,slow=32						
FINES	**FINESS Array B**	**94.12**	**27**	LR	LR	08 33 20.4	
	comp=Z,190nm,21.8s,baz=330,slow=31						
QSPA	**South Pole Qui**	**95.36**	**180**	*e*P	**P**	**07 57 27.5**	**+0.4**
AKASG	**Malin Array Be**	**99.42**	**37**	LR	LR	08 37 58.0	
	comp=Z,58nm,22.0s,baz=90,slow=32						
H11N3	**WAKE ISLAND Hyl**	**107.32**	**292**	T	T	09 58 22.4	
	baz=76						
H11N2	**WAKE ISLAND Hyl**	**107.33**	**292**	T	T	09 58 22.7	
	baz=76						
H11N1	**WAKE ISLAND Hyl**	**107.34**	**292**	T	T	09 58 23.6	
	baz=76						
MKAR	**Makanchi Array**	**126.38**	**13**	PKP	**PKPdf**	**08 03 04.8**	**-1.3**
	0.3nm,0.7s,baz=64,slow=2.8,SNR=3.9						
SONM	**Songino Array**	**126.45**	**352**	PKP	**PKPdf**	**08 03 04.7**	**-1.7**
	0.3nm,0.7s,baz=63,slow=1.4,SNR=3.3						
WMQ	**Urumqi**	**130.27**	**9**	*e*PKP	**PKPdf**	**08 03 14.0**	**+0.3**
KSH	**Kashi**	**131.16**	**22**	*e*PKP	**PKPdf**	**08 03 14.1**	**-1.5**
KSH				AMB	AMB		
	comp=Z,49nm,3.9s						
HHC	**Hu-ho-hao-te**	**132.23**	**346**	*e*PKP	**PKPdf**	**08 03 19.1**	**+1.6**
COEN	**Coen**	**134.17**	**256**	*e*PKPdf	**PKPdf**	**08 03 19.7**	**-2.0**
AS01	**Alice Springs**	**140.41**	**239**	*e*PKPdf	**PKPdf**	**08 03 31.8**	**-1.3**
ASAR	**Alice Springs**	**140.45**	**239**	PKhKP	PKPpre	08 03 24.2	
	0.2nm,0.7s,baz=110,slow=2.4,SNR=3.2						
WRAB	**Tennant Creek**	**141.28**	**245**	*e*PKPdf	**PKPdf**	**08 03 35.1**	**+0.4**
WRA	**Warramunga Arr**	**141.29**	**245**	PKhKP	PKPpre	08 03 29.0	
	0.7nm,0.9s,baz=102,slow=2.0,SNR=6.1						
NACB	**Ninganchiao**	**142.37**	**322**	*e*PKPdf	**PKPdf**	**08 03 35.8**	**-0.8**
ENH	**Enshi**	**142.74**	**343**	*e*PKPdf	**PKPdf**	**08 03 37.6**	**+0.6**
CD2	**Chengdu**	**143.44**	**351**	PKP	PKPbc	08 03 36.9	+1.5
KMI	**Kunming**	**149.27**	**351**	PKPbc	**PKPdf**	**08 03 48.7**	**+0.1**
DGAR	**Diego Garcia**	**155.10**	**96**	*e*PKPdf	**PKPdf**	**08 03 56.4**	**-0.8**
CMAR	**Chiang Mai Arr**	**156.30**	**356**	PKPab	**PKPab**	**08 04 25.2**	**-1.2**
	0.7nm,0.4s,baz=338,slow=4.9,SNR=10						

NIED ***12*** *07:47:00, 37.˚10N×140.˚80E, h5km, Mw4.3 Best double couple: M0 2.95000×10^15 NP1:ϕs 243.00000°, δ49.00000°, λ-40.00000°. NP2:ϕs 2.00000°, δ61.00000°, λ-131.00000°.*

ISCJB ***12*** *07:47:15.7±0.6, 37.˚02N±0.˚03×140.˚87E±0.˚05, h19km±3km, mb4.1/31, MS3.6/1, Error ellipse: s-maj=6.7km s-min=4.1km az=30.2*

JMA ***12*** *07:47:16.4, 37.˚05N×140.˚78E, h11km±1km, M4.4 Broadband fault plane solution: P waves. NP1: ϕs 240.00000°, δ54.00000°, λ-54.00000°. NP2:ϕs 8.00000°, δ49.00000°, λ-130.00000°. Principal axes: T Plg3.000°, Azm305.000°; N Plg29.000°, Azm37.000°; P Plg61.000°, Azm210.000°;*

JMA Felt III J1.

MOS ***12*** *07:47:17.1±1.1, 36.˚95N×140.˚89E, h33km, mb4.4/25 Error ellipse: s-maj=10.1km s-min=6.5km az=79.8*

NEIC ***12*** *07:47:22.4±0.8, 37.˚09N×140.˚67E, h59km±7km, mb4.5/9, Error ellipse: s-maj=10.3km s-min=6.8km az=121.0*

NEIC Recorded [3 JMA] in Fukushima.

IDC ***12*** *07:47:22.5±2.1, 36.˚99N×140.˚71E, h62km±18km, mb3.8/23, mb1 4.0/25, mb1mx3.9/39, mbtmp4.1/25, MS3.4/4, Ms1 3.4/4, ms1mx3.0/42, Error ellipse: s-maj=16.5km s-min=11.7km az=123.0*

ISC 12 07:47:15.7±1.0, 37.˚02N±0.˚03×140.˚69E±0.˚04, h9km±6km, n86, σ0 s87/88, mb4.2/31, 5C-3D, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.12**	**47**	⇓P	**Pg**	**07 47 18.5**	**0.0**
ONAJ				S	**Sg**	**07 47 20.1**	**-0.4**
JHO	**Hitachi**	**0.42**	**193**	⇓P	**Pb**	**07 47 25.4**	**+0.1**
JHO				S	**Sb**	**07 47 31.8**	**0.0**
JFT	**Otama**	**0.57**	**331**	⇑P	**Pb**	**07 47 28.0**	**0.0**
JFT				S	**Sb**	**07 47 36.0**	**-0.2**
JSB	**Shiboa**	**0.62**	**265**	⇑P	**Pn**	**07 47 30.3**	**-0.4**
JSB				S	**Sn**	**07 47 40.0**	**-0.8**
JMM	**Marumori**	**0.85**	**6**	⇑P	**Pg**	**07 47 31.7**	**-0.4**
JMM				S	**Sg**	**07 47 42.5**	**-0.6**
JFY	**Yanaizu**	**0.88**	**296**	⇑P	**Pn**	**07 47 34.0**	**-0.3**
JFY				S	**Sn**	**07 47 46.3**	**-0.9**
JYT	**Yasato**	**0.89**	**207**	⇓P	**Pb**	**07 47 33.8**	**+0.5**
JYT				S	**Sn**	**07 47 46.9**	**-0.4**
MJAR	**Matsushiro Arr**	**2.05**	**257**	P	**Pb**	**07 47 52.6**	**-0.6**
	18nm,0.3s,baz=100,slow=16,SNR=25						
MJAR				S	**Sb**	**07 48 19.9**	**+1.2**
	60nm,0.3s,baz=84,slow=27,SNR=12						
MAJO	**Matsushiro**	**2.05**	**257**	*e*P	**Pb**	**07 47 53.2**	**0.0**
MAJO	**Matsushiro**	**2.05**	**257**	*e*Pn	**Pb**	**07 47 53.1**	**0.0**
MAT	**Matsushiro**	**2.05**	**257**	P	**Pb**	**07 47 53.0**	**-0.1**
MAT				S	**Sg**	**07 48 21.8**	**+0.2**
JHJ2	**Mitsune**	**3.96**	**191**	*e*Pn	**Pb**	**07 48 24.4**	**-1.4**
ERM	**Erimo**	**5.34**	**20**	*e*P	**Pn**	**07 48 37.2**	**+1.6**
ERM	**Erimo**	**5.34**	**20**	*e*Pn	**Pn**	**07 48 37.2**	**+1.6**
YUK	**Yuzh-Kuril'sk**	**8.04**	**28**	*e*P	**Pn**	**07 49 15.6**	**+3.0**
YUK				*e*S	Sn	07 50 37.0	-6.6
YUK				pmax	pmax		
	comp=N,42nm,0.3s						
YUK				pmax	pmax		
	comp=E,22nm,0.3s						
YUK				pmax	pmax		
	comp=Z,56nm,0.3s						
SHO	**Shikotan**	**8.29**	**32**	*e*P	**Pn**	**07 49 16.6**	**+0.5**
USRK	**Ussuriysk Ar.**	**9.75**	**320**	P	Pn	07 49 41.5	+5.4
	comp=Z,0.3nm,0.3s,baz=130,slow=13,SNR=18						
USRK				LR	LR	07 53 08.6	
	comp=Z,128nm,21.8s,baz=124,slow=35						
KUR	**Kuril'sk**	**9.83**	**31**	*e*P	**Pn**	**07 49 38.9**	**+1.8**
KUR				*e*S	Sn	07 51 18.9	-8.6
YSS	**Yuzh-Sakhalins**	**10.04**	**8**	*e*P	**Pn**	**07 49 43.0**	**+2.9**
YSS				pmax	pmax		
	comp=Z,30nm,0.6s						
YSS				MLR	MLR		
	comp=Z,500nm,16.0s						
YSS	**Yuzh-Sakhalins**	**10.04**	**8**	*e*Pn	**Pn**	**07 49 42.7**	**+2.6**
	comp=Z,25nm,0.8s						
KSRS	**Korea Array**	**10.19**	**276**	P	Pn	07 49 48.7	+6.5
	comp=Z,0.2nm,0.3s,baz=94,slow=13,SNR=15						
KSRS				LR	LR	07 53 22.4	
	comp=Z,161nm,20.9s,baz=74,slow=35						
KSAR	**Wonju Array Be**	**10.22**	**276**	P	Pn	07 49 48.7	+6.1
KSAR	**Wonju Array Be**	**10.22**	**276**	P	Pn	07 49 48.7	+6.1
KLR	**Kul'dur**	**13.83**	**335**	P	**P**	**07 50 38.7**	**-1.6**
	comp=Z,0.1nm,0.3s,baz=174,slow=10,SNR=4.4						
KLR				LR	LR	07 55 46.5	
	comp=Z,131nm,18.3s,baz=150,slow=36						
TYV	**Tymovskoe**	**13.91**	**5**	*e*P	**Pn**	**07 50 34.0**	**+1.1**
TYV				pmax	pmax		
	comp=Z,11nm,0.8s						
NKL	**Nikolayevsk**	**16.13**	**360**	*e*P	**Pn**	**07 51 03.7**	**+1.2**
MA2	**Magadan**	**23.49**	**13**	P	**P**	**07 52 26.2**	**+0.6**
	comp=Z,11nm,0.7s,baz=219,slow=7.4,SNR=4.0						
GUMO	**Guam**	**23.63**	**170**	LR	LR	07 59 41.8	
	comp=Z,241nm,20.6s,baz=175,slow=31						
SEY	**Seymchan**	**26.92**	**12**	P	**P**	**07 52 58.8**	**+1.9**
	comp=Z,3.4nm,0.5s,baz=193,slow=7.9,SNR=9.4						
SONM	**Songino Array**	**27.31**	**304**	P	**P**	**07 53 01.1**	**+0.3**
	comp=Z,1.6nm,0.6s,baz=104,slow=9.2,SNR=7.9						
SONM				PcP	**PcP**	**07 56 20.4**	**+0.3**
	comp=Z,0.8nm,0.7s,baz=116,slow=2.4,SNR=5.2						
H11N2	**WAKE ISLAND Hy**	**28.64**	**120**	T	T	08 23 00.6	
	baz=314,slow=75,SNR=112						
H11N1	**WAKE ISLAND Hy**	**28.65**	**120**	T	T	08 23 09.1	
	baz=314,slow=75,SNR=196						
H11N3	**WAKE ISLAND Hy**	**28.66**	**120**	T	T	08 23 14.5	
	baz=314,slow=75,SNR=161						
H11S1	**WAKE ISLAND Hy**	**29.34**	**122**	T	T	08 23 56.0	
	baz=314,slow=76,SNR=157						
H11S3	**WAKE ISLAND Hy**	**29.34**	**122**	T	T	08 23 54.8	
	baz=314,slow=76,SNR=127						
H11S2	**WAKE ISLAND Hy**	**29.36**	**122**	T	T	08 23 51.3	
	baz=314,slow=76,SNR=98						
CMAR	**Chiang Mai Arr**	**40.93**	**255**	P	**P**	**07 54 59.0**	**+0.3**
	comp=Z,0.7nm,0.9s,baz=61,slow=4.5,SNR=3.9						
CMAR				PcP	**PcP**	**07 56 58.8**	**-0.4**
	comp=Z,0.4nm,0.3s,baz=35,slow=2.7,SNR=5.7						
ZALV	**Zalesovo Beam**	**41.50**	**312**	P	**P**	**07 55 02.3**	**-0.7**
	comp=Z,1.9nm,0.6s,baz=99,slow=7.0,SNR=6.8						
ZALV				PcP	**PcP**	**07 57 00.1**	**-0.3**
	comp=Z,1.3nm,0.5s,baz=112,slow=4.1,SNR=5.0						
NRIK	**Noril'sk**	**43.04**	**335**	P	**P**	**07 55 15.3**	**0.0**
	comp=Z,0.9nm,0.4s,baz=126,slow=19,SNR=3.0						
MKAR	**Makanchi Array**	**43.63**	**302**	P	**P**	**07 55 20.8**	**+0.3**
	comp=Z,1.6nm,0.6s,baz=89,slow=9.8,SNR=19						
MKAR				PcP	**PcP**	**07 57 07.6**	**-0.1**
	comp=Z,0.8nm,0.7s,baz=66,slow=4.9,SNR=4.1						
KSM	**Kuching**	**45.13**	**226**	*e*P	**P**	**07 55 34.0**	**+1.4**
	comp=Z,12nm,0.8s						
KURK	**Kurchatov**	**45.48**	**308**	*e*P	**P**	**07 55 34.8**	**-0.3**
KURK	**Kurchatov**	**45.48**	**308**	*e*P	**P**	**07 55 34.8**	**-0.3**
RAMN	**Ramite**	**46.43**	**274**	*e*P	**P**	**07 55 43.5**	**+0.3**
	comp=Z,22nm,0.9s						
GUN	**Gumba**	**46.58**	**275**	*e*P	**P**	**07 55 45.0**	**+0.5**
GKN	**Gorkha**	**47.53**	**276**	*e*P	**P**	**07 55 52.2**	**+0.5**
KOLN	**Koldanda**	**48.46**	**276**	*e*P	**P**	**07 55 59.3**	**+0.3**
PYUN	**Piuthan**	**48.80**	**277**	*e*P	**P**	**07 56 02.2**	**+0.6**
	comp=Z,48nm,1.1s						
TKM2	**Tokmak 2**	**49.13**	**298**	*e*P	**P**	**07 56 05.2**	**+1.3**
TKM2				pmax	pmax		
	comp=Z,3.0nm,0.6s						
TKM2	**Tokmak 2**	**49.13**	**298**	*e*P	**P**	**07 56 05.2**	**+1.3**
	comp=Z,3.0nm,0.6s						
ILAR	**Eielson Array**	**49.82**	**32**	P	**P**	**07 56 08.5**	**-0.1**
	comp=Z,1.9nm,0.7s,baz=272,slow=6.6,SNR=17						
AAK	**Ala-Archa**	**49.99**	**298**	*e*P	**P**	**07 56 10.6**	**+0.1**
AAK				pmax	pmax		
	comp=Z,1.0nm,0.6s						
AAK	**Ala-Archa**	**49.99**	**298**	*e*P	**P**	**07 56 10.6**	**+0.1**
	comp=Z,1.3nm,0.6s						
PSI	**Prapat**	**51.29**	**238**	P	**P**	**07 56 20.6**	**+0.2**
	comp=Z,4.3nm,0.8s,baz=324,slow=17,SNR=3.9						
INK	**Inuvik**	**54.66**	**27**	P	**P**	**07 56 45.0**	**+0.5**
	comp=Z,1.2nm,0.6s,baz=285,slow=5.5,SNR=6.2						
INK	**Inuvik**	**54.66**	**27**	*e*P	**P**	**07 56 44.6**	**+0.1**
	comp=Z,1.1nm,0.5s						
WRAB	**Tennant Creek**	**56.96**	**187**	*e*P	**P**	**07 57 01.7**	**+0.2**
WRAB				pmax	pmax		
	comp=Z,3.0nm,0.6s						
WRAB	**Tennant Creek**	**56.96**	**187**	*e*P	**P**	**07 57 01.7**	**+0.2**
	comp=Z,3.1nm,0.6s						
WRA	**Warramunga Arr**	**56.97**	**187**	P	**P**	**07 57 01.2**	**-0.4**
	comp=Z,3.6nm,0.8s,baz=3.7,slow=7.4,SNR=27						
ABKAR	**Akbulak array**	**57.51**	**310**	*e*P	**P**	**07 57 05.1**	**0.0**
	comp=Z,9.3nm,0.7s						
ASAR	**Alice Springs**	**60.70**	**187**	P	**P**	**07 57 26.5**	**-1.0**
	comp=Z,1.9nm,0.9s,baz=9.2,slow=5.6,SNR=12						
RES	**Resolute Bay**	**62.76**	**14**	*e*P	**P**	**07 57 40.4**	**-0.4**
RES				pmax	pmax		
	comp=Z,4.0nm,1.1s						
RES	**Resolute Bay**	**62.76**	**14**	*e*P	**P**	**07 57 40.4**	**-0.4**
	comp=Z,4.4nm,1.1s						
GEYT	**Albeck**	**63.33**	**299**	P	**P**	**07 57 45.1**	**-0.1**
	comp=Z,2.7nm,0.7s,baz=90,slow=5.9,SNR=4.4						
ARCES	**ARCESS Array B**	**63.80**	**339**	P	**P**	**07 57 47.2**	**-0.6**
	comp=Z,1.5nm,0.8s,baz=56,slow=8.1,SNR=6.0						
YKA	**Yellowknife Ar**	**64.11**	**30**	P	**P**	**07 57 49.0**	**-0.9**
	comp=Z,0.7nm,0.8s,baz=303,slow=6.4,SNR=9.1						
YKA	**Yellowknife Ar**	**64.11**	**30**	P	**P**	**07 57 49.0**	**-0.9**
YKA				pmax	pmax		
	comp=Z,1.0nm,0.8s						
DAG	**Danmarks Havn**	**65.74**	**355**	*i* P	**P**	**07 58 00.2**	**-0.1**
DAG	**Danmarks Havn**	**65.74**	**355**	*i* P	**P**	**07 58 00.2**	**-0.1**
FINES	**FINESS Array B**	**68.56**	**332**	P	**P**	**07 58 18.3**	**-0.1**
	comp=Z,3.3nm,0.7s,baz=54,slow=9.7,SNR=13						
SUMG	**Summit**	**70.70**	**360**	*i* P	**P**	**07 58 32.1**	**+0.2**
	comp=Z,8.4nm,1.0s						
SUMG	**Summit**	**70.70**	**360**	*e*P	**P**	**07 58 32.5**	**+0.6**
SUMG				pmax	pmax		
	comp=Z,10.0nm,1.0s						
SUMG	**Summit**	**70.70**	**360**	*e*P	**P**	**07 58 32.5**	**+0.6**
	comp=Z,9.9nm,1.0s						
AKASG	**Malin Array Be**	**73.95**	**322**	P	**P**	**07 58 50.9**	**-0.4**
	comp=Z,0.7nm,0.4s,baz=47,slow=5.9,SNR=8.9						
NB2	**NORSAR Subarra**	**73.97**	**337**	P	**P**	**07 58 51.0**	**-0.2**
	comp=Z,1.0nm,0.6s,baz=40,slow=6.2						
NOA	**NORSAR Array B**	**73.97**	**337**	P	**P**	**07 58 51.0**	**-0.2**
	comp=Z,1.8nm,0.8s,baz=39,slow=5.9,SNR=4.8						
FCC	**Fort Churchill**	**74.27**	**26**	*e*P	**P**	**07 58 52.4**	**-0.5**
FCC				pmax	pmax		
	comp=Z,8.0nm,1.4s						
FCC	**Fort Churchill**	**74.27**	**26**	*e*P	**P**	**07 58 52.4**	**-0.5**
	comp=Z,8.4nm,1.4s						
NVAR	**Mina Array Bea**	**75.46**	**53**	P	**P**	**07 59 01.1**	**+0.5**
	comp=Z,1.1nm,0.8s,baz=282,slow=5.6,SNR=7.7						
PDAR	**Pinedale Array**	**78.09**	**45**	P	**P**	**07 59 14.7**	**-0.6**
	comp=Z,0.4nm,0.8s,baz=298,slow=1.9,SNR=5.7						
BRTR	**Keskin Array B**	**78.43**	**311**	P	**P**	**07 59 16.9**	**-0.2**
	comp=Z,0.7nm,0.6s,baz=62,slow=3.4,SNR=3.8						
GERES	**GERESS Array B**	**82.42**	**328**	P	**P**	**07 59 37.6**	**-0.8**
	comp=Z,0.6nm,0.5s,baz=29,slow=3.0,SNR=5.1						
TXAR	**Lajitas Array**	**90.59**	**52**	P	**P**	**08 00 18.8**	**0.0**
	comp=Z,0.7nm,1.0s,baz=302,slow=1.7,SNR=4.6						
DBIC	**Dimbokro**	**125.90**	**316**	PKP	**PKPdf**	**08 06 18.6**	**-0.1**
	comp=Z,3.7nm,1.1s,baz=79,slow=5.2,SNR=3.8						
QSPA	**South Pole Qui**	**126.76**	**180**	*e*PKPdf	**PKPdf**	**08 06 19.3**	**+0.5**
LPAZ	**La Paz**	**147.20**	**59**	PKPbc	**PKPdf**	**08 06 59.0**	**+0.6**
	comp=Z,2.0nm,1.0s,baz=31,slow=8.1,SNR=6.2						

ISCJB ***12*** *07:49:19.4±0.6, 37.˚04N±0.˚03×140.˚76E±0.˚06, h19km±4km, mb3.8/7, Error ellipse: s-maj=7.6km s-min=5.7km az=7.5*

JMA ***12*** *07:49:20.1, 37.˚04N×140.˚67E, h8km±1km, M3.9*

JMA Felt II J1.

IDC ***12*** *07:49:28.2±3.9, 36.˚97N×140.˚46E, h76km±32km, mb3.5/7, mb1 3.7/8, mb1mx3.4/38, mbtmp3.8/8, Error ellipse: s-maj=31.8km s-min=17.8km az=82.0*

ISC 12 07:49:19.8±1.0, 37.˚06N±0.˚04×140.˚62E±0.˚06, h8km±8km, n17, σ0 s55/23, mb4.0/7, 5C, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.15**	**72**	⇑P	**Pg**	**07 49 23.1**	**+0.1**
ONAJ				S	**Sg**	**07 49 25.0**	**-0.2**
JHO	**Hitachi**	**0.45**	**185**	⇑P	**Pg**	**07 49 28.6**	**+0.2**
JHO				S	**Sg**	**07 49 34.6**	**+0.3**
JFT	**Otama**	**0.51**	**334**	⇑P	**Pb**	**07 49 31.0**	**0.0**
JFT				S	**Sb**	**07 49 38.1**	**-0.6**
JSB	**Shiboa**	**0.57**	**261**	⇑P	**Pb**	**07 49 32.5**

JMA 12 08:01:21.2, 37°.06N×140°.67E, h13km±1km, M2.8, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.11**	**68**	P	Pg	08 01 24.5	+0.1
ONAJ				S	Sg	08 01 26.7	+0.1
JHO	**Hitachi**	**0.46**	**190**	P	Pg	08 01 29.9	-0.3
JHO				S	Sg	08 01 36.2	-0.1
JFT	**Otama**	**0.53**	**330**	P	Pg	08 01 31.7	+0.1
JFT				S	Sg	08 01 38.8	+0.1
JMM	**Marumori**	**0.81**	**7**	P	Pg	08 01 36.3	-0.6
JMM				S	Sg	08 01 47.2	-0.4
MAT	**Matsushiro**	**2.04**	**256**	P	Pb	08 01 57.4	-0.8
MAT				S	Sb	08 02 24.7	+1.2

*IDC **12** 08:02:31.0±0.8, 20°.38N×120°.21E, h0km, mb3.7/10, mb1 4.0/11, mb1mx3.7/47, mbtmp3.8/11, ML3.7/1, MS3.6/4, Ms1 3.6/4, ms1mx3.2/37, Error ellipse: s-maj=31.1km s-min=15.6km az=67.0*
*ISCJB **12** 08:02:34.4±0.5, 20°.36N±0°.05×120°.1E±0°.1, h35km, mb3.8/9, MS3.7/2, Error ellipse: s-maj=15.5km s-min=5.4km az=157.0*
*MAN **12** 08:02:34, 20°.27N×119°.98E, h40km, mb4.4, ML3.2, MS3.0*

ISC 12 08:02:35.9±0.8, 20°.34N±0°.08×120°.0E±0°.2, h35km, n19, σ0s93/17, mb3.7/9, 1C, Philippine Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PIP	**Pasuquin**	**2.07**	**165**	⇑*iP*	**Pn**	**08 03 06.7**	**-1.5**
PIP				*eS*	**Sn**	**08 03 31.4**	**-1.4**
APYP	**Conner**	**2.71**	**155**	*eP*	**Pn**	**08 03 17.2**	**+0.3**
APYP				*eS*	**Sn**	**08 03 49.2**	**+0.7**
ABRA	**Dolores**	**2.75**	**167**	*eP*	Pn	08 03 19.6	+2.2
SGCP	**Mt. Cagua**	**2.81**	**137**	*eP*	**Pn**	**08 03 17.5**	**-0.9**
CVP	**Callao Caves**	**3.11**	**147**	*eP*	**Pn**	**08 03 23.7**	**+1.2**
CVP				*iS*	**Sn**	**08 03 59.7**	**+1.2**
CAUP	**Cauayan**	**3.77**	**153**	*eP*	Pn	08 03 34.2	+2.6
JNU	**Nakatsue**	**15.98**	**35**	Pn	**Pn**	**08 06 17.4**	**-0.7**
	0.2nm,0.3s,baz=201,slow=8.9,SNR=3.2						
JNU				LR	LR	08 12 46.2	
	comp=Z,118nm,19.2s,baz=294,slow=39						
KSRS	**Korea Array**	**18.39**	**20**	LR	LR	08 14 19.3	
	comp=Z,134nm,20.8s,baz=230,slow=39						
CMAR	**Chiang Mai Arr**	**19.99**	**268**	P	Pn	08 07 06.3	-1.1
	0.3nm,0.3s,baz=74,slow=6.7,SNR=3.8						
CMAR				LR	LR	08 15 42.4	
	comp=Z,178nm,20.5s,baz=120,slow=39						
SONM	**Songino Array**	**29.58**	**341**	P	**P**	**08 08 37.6**	**0.0**
	0.6nm,0.9s,baz=159,slow=8.5,SNR=2.7						
MKAR	**Makanchi Array**	**40.47**	**320**	P	**P**	**08 10 12.1**	**+1.0**
	0.2nm,0.5s,baz=106,slow=11,SNR=3.3						
WRA	**Warramunga Arr**	**42.41**	**160**	P	**P**	**08 10 27.1**	**-0.2**
	6.6nm,1.0s,baz=342,slow=9.1,SNR=30						
ZALV	**Zalesovo Beam**	**42.96**	**330**	P	**P**	**08 10 31.9**	**+0.5**
	0.6nm,0.4s,baz=138,slow=6.3,SNR=2.4						
KURBB	**Kurchatov Array**	**44.45**	**323**	P	**P**	**08 10 44.3**	**+0.9**
	0.8nm,0.8s,baz=124,slow=7.6,SNR=7.8						
ASAR	**Alice Springs**	**45.77**	**162**	P	**P**	**08 10 54.9**	**+0.6**
	3.3nm,1.0s,baz=332,slow=6.5,SNR=23						
STKA	**Stephens Creek**	**55.87**	**158**	P	**P**	**08 12 10.3**	**+0.2**
	3.6nm,1.0s,baz=348,slow=9.3,SNR=4.4						
KBZ	**Khabaz**	**67.09**	**310**	LR	LR	08 45 19.3	
	comp=Z,73nm,18.2s,baz=20,slow=38						
ILAR	**Eielson Array**	**73.11**	**27**	P	**P**	**08 14 01.6**	**-0.8**
	0.2nm,0.5s,baz=273,slow=4.1,SNR=4.5						
YKA	**Yellowknife Ar**	**86.91**	**22**	P	**P**	**08 15 16.7**	**-0.2**
	0.7nm,0.8s,baz=313,slow=5.0,SNR=12						

*JMA **12** 08:05:01.2±0.3, 39°.67N×143°.82E, h7km±4km, M3.9*
*IDC **12** 08:05:01.8±3.9, 39°.58N×143°.90E, h0km, mb3.7/7, mb1 3.7/9, mb1mx3.5/42, mbtmp3.6/9, ML2.6/2, Error ellipse: s-maj=74.2km s-min=32.7km az=138.0*
*ISCJB **12** 08:05:04.0±2.1, 39°.65N±0°.06×143°.72E±0°.09, h19km±17km, mb3.6/7, Error ellipse: s-maj=13.1km s-min=7.7km az=36.9*

ISC 12 08:05:06.3±3.7, 39°.64N±0°.08×143°.7E±0°.1, h23km±24km, n21, σ1s09/26, mb3.6/7, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JTH	**Tanohata**	**1.41**	**283**	P	**Pn**	**08 05 29.2**	**-1.4**
MIYJ	**Miyakonagasawa**	**1.42**	**268**	P	**Pn**	**08 05 29.4**	**-1.3**
MIYJ				*eS*	**Sb**	**08 05 50.1**	**+0.3**
OFUJ	**Ofunato**	**1.64**	**251**	P	**Pn**	**08 05 32.5**	**-1.2**
JANG	**Nango**	**1.80**	**295**	P	**Pn**	**08 05 34.2**	**-1.7**
JOM	**Ohasama**	**1.83**	**266**	P	**Pn**	**08 05 35.8**	**-0.6**
JOM				*eS*	**Sn**	**08 05 59.1**	**+0.2**
JMK	**Ichinoseki**	**2.01**	**251**	P	**Pn**	**08 05 38.2**	**-0.6**
JTM	**Tenmabayashi**	**2.29**	**301**	P	**Pn**	**08 05 41.9**	**-0.7**
JTM				*eS*	**Sn**	**08 06 09.5**	**-0.6**
JRG	**Rokugo**	**2.35**	**265**	P	**Pn**	**08 05 43.2**	**-0.3**
JAH	**Hinai**	**2.39**	**284**	P	**Pn**	**08 05 43.7**	**-0.3**
JYK	**Kaneyama**	**2.66**	**255**	P	**Pn**	**08 05 47.6**	**-0.1**
JNBK	**Urakawa-nobuka**	**2.73**	**346**	P	**Pn**	**08 05 48.9**	**+0.2**
JNBK				S	**Sn**	**08 06 21.9**	**+1.0**
JCH	**Churui**	**2.98**	**356**	P	**Pn**	**08 05 51.1**	**-1.1**
JCH				*eS*	**Sn**	**08 06 25.0**	**-2.2**
MJAR	**Matsushiro Arr**	**5.29**	**236**	Pn	**Pn**	**08 06 24.7**	**+0.7**
	0.8nm,0.3s,baz=43,slow=11,SNR=9.5						
USRK	**Ussuriysk Ar.**	**9.82**	**301**	Pn	**Pn**	**08 07 28.8**	**+2.9**
	0.1nm,0.3s,baz=103,slow=13,SNR=2.9						
SEY	**Seymchan**	**23.91**	**10**	P	**P**	**08 10 18.1**	**0.0**
	0.6nm,0.5s,baz=170,slow=7.6,SNR=4.3						
SONM	**Songino Array**	**27.92**	**299**	P	**P**	**08 10 55.3**	**+0.6**
	0.6nm,0.7s,baz=100,slow=7.9,SNR=3.7						
ZALV	**Zalesovo Beam**	**41.52**	**310**	P	**P**	**08 12 51.8**	**+0.2**
	0.5nm,0.4s,baz=95,slow=9.8,SNR=2.3						
MKAR	**Makanchi Array**	**44.28**	**300**	P	**P**	**08 13 14.4**	**+0.4**
	0.3nm,0.5s,baz=89,slow=9.5,SNR=5.3						
KURBB	**Kurchatov Arra**	**45.84**	**306**	P	**P**	**08 13 26.4**	**+0.2**
	1.1nm,0.8s,baz=82,slow=8.7,SNR=8.3						
BVAR	**Borovoye Array**	**50.16**	**311**	P	**P**	**08 13 59.4**	**-0.3**
	0.3nm,0.3s,baz=60,slow=8.5,SNR=3.3						
FINES	**FINESS Array B**	**67.33**	**333**	P	**P**	**08 15 59.1**	**+0.2**
	1.2nm,0.8s,baz=7.6,slow=4.2,SNR=2.6						

JMA 12 08:05:50.7, 37°.02N×140°.65E, h7km±1km, M2.7, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.14**	**55**	P	Pg	08 05 54.1	+0.3
ONAJ				S	Sg	08 05 56.3	+0.5
JHO	**Hitachi**	**0.41**	**189**	P	Pg	08 05 58.8	+0.1
JHO				S	Sg	08 06 04.5	+0.4
JFT	**Otama**	**0.56**	**333**	P	Pg	08 06 01.4	-0.1
JFT				S	Sg	08 06 09.2	+0.5
JMM	**Marumori**	**0.85**	**8**	P	Pg	08 06 06.7	-0.4
JMM				S	Sg	08 06 17.9	-0.3
MAT	**Matsushiro**	**2.02**	**257**	P	Pn	08 06 25.3	+0.1
MAT				S	Sb	08 06 52.8	-0.3

JMA 12 08:10:26.7±0.1, 38°.43N×142°.17E, h36km±2km, M3.8, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**0.65**	**272**	P	Pn	08 10 39.3	-0.1
JIO				S	Sn	08 10 47.6	-0.7
OFUJ	**Ofunato**	**0.76**	**329**	P	Pn	08 10 40.9	0.0
OFUJ				S	Sn	08 10 50.9	-0.2
JMK	**Ichinoseki**	**0.91**	**305**	P	Pn	08 10 43.4	+0.5
JMK				S	Sn	08 10 55.1	+0.3
MIYJ	**Miyakonagasawa**	**1.18**	**347**	P	Pn	08 10 46.7	+0.1
MIYJ				S	Sn	08 11 01.0	-0.4
JOU	**Okura**	**1.19**	**267**	P	Pn	08 10 47.4	+0.7
JOU				S	Sn	08 11 03.0	+1.4
JMM	**Marumori**	**1.22**	**243**	P	Pn	08 10 47.1	-0.1
JMM				S	Sn	08 11 02.4	-0.1
JOM	**Ohasama**	**1.25**	**327**	P	Pn	08 10 48.5	+0.9
JOM				S	Sn	08 11 04.5	+1.4
JYK	**Kaneyama**	**1.50**	**290**	P	Pn	08 10 52.1	+1.1
JYK				*eS*	Sn	08 11 11.7	+2.4
JRG	**Rokugo**	**1.54**	**309**	P	Pn	08 10 52.9	+1.3
JYS	**Shirataka**	**1.67**	**263**	P	Pn	08 10 54.6	+1.2
JYS				*eS*	Sn	08 11 15.4	+1.9

JMA 12 08:14:28.3, 40°.26N×140°.37E, h12km±1km, M3.5, 3C-1D Broadband fault plane solution: P waves. NP1: φs108.00000°, δ78.00000°, λ17.00000°. **NP2:** φs15.00000°, δ74.00000°, λ168.00000°. **Principal axes:** T Plg20.0000°, Azm332.0000°; N Plg70.0000°, Azm143.0000°; P Plg3.0000°, Azm241.0000°; **Eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JAH	**Hinai**	**0.22**	**109**	⇑P	Pg	08 14 33.1	+0.2
JAH				S	Sg	08 14 36.3	+0.2
JIW	**Iwasaki**	**0.43**	**320**	⇑P	Pg	08 14 36.9	0.0
JIW				S	Sg	08 14 42.8	+0.1
JTM	**Tenmabayashi**	**0.75**	**45**	P	Pg	08 14 42.8	0.0
JANG	**Nango**	**0.88**	**82**	⇓P	Pg	08 14 44.7	-0.6
JANG				S	Sg	08 14 56.3	-0.6
JRG	**Rokugo**	**0.89**	**167**	⇑P	Pg	08 14 45.1	-0.3
JRG				S	Sg	08 14 57.1	+0.1
JOM	**Ohasama**	**1.06**	**138**	P	Pb	08 14 47.8	-0.8

*ISCJB **12** 08:15:08.0±0.4, 45°.80N±0°.05×143°.40E±0°.09, h332km, mb3.1/8 Error ellipse: s-maj=8.9km s-min=6.6km az=178.0*
*JMA **12** 08:15:08.3±0.2, 45°.80N×143°.41E, h337km, M3.4*
*IDC **12** 08:15:09.7±2.1, 45°.94N×143°.20E, h334km±25km, mb2.8/8, mb1 3.1/12, mb1mx2.9/34, mbtmp3.5/12, Error ellipse: s-maj=26.1km s-min=17.4km az=165.0*

ISC 12 08:15:08.5±0.6, 45°.70N±0°.07×143°.36E±0°.08, h332km, n28, σ1s34/34, mb3.2/8, Hokkaido region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JSE	**Soyaes**	**0.92**	**217**	P	**Pn**	**08 15 52.8**	**+0.8**
JWK2	**Keihoku**	**1.09**	**250**	P	**Pn**	**08 15 53.7**	**+1.0**
JWK2				*eS*	**S**	**08 16 28.3**	**+0.2**
JRR	**Rishiri**	**1.55**	**249**	P	**Pn**	**08 15 55.8**	**+0.7**
JMP	**Maruseppu**	**1.69**	**180**	P	**Pn**	**08 15 57.4**	**+1.2**
JTKR	**Abashiri--Toko**	**1.77**	**167**	P	**Pn**	**08 15 58.2**	**+1.6**
JTKR				*eS*	**S**	**08 16 37.5**	**+2.4**
JKK2	**Kamakawa 2**	**1.88**	**194**	P	**Pn**	**08 15 59.0**	**+1.6**
JAR	**Ashorobuto**	**2.42**	**173**	P	**Pn**	**08 16 03.3**	**+1.8**
JAK	**Akkeshi**	**2.87**	**160**	P	**Pn**	**08 16 05.8**	**+0.4**
JAK				*eS*	**S**	**08 16 50.0**	**-1.0**
NEM2	**Nemuro 2**	**2.89**	**143**	P	**Pn**	**08 16 05.0**	**-0.6**
NEM2				*eS*	**S**	**08 16 48.9**	**-2.4**
JCH	**Churui**	**3.09**	**180**	P	**Pn**	**08 16 07.8**	**+0.4**
JCH				*eS*	**S**	**08 16 52.1**	**-2.5**
JEW	**Eniwo**	**3.17**	**206**	P	**Pn**	**08 16 10.3**	**+2.1**
JNBK	**Urakawa-nobuka**	**3.45**	**187**	P	**Pn**	**08 16 12.3**	**+1.4**
JKB	**Kayabe**	**4.17**	**205**	P	**Pn**	**08 16 18.7**	**+0.4**
JKB				*eS*	**S**	**08 17 12.3**	**-2.1**
JOSM	**Okushiri--Mats**	**4.58**	**219**	P	**Pn**	**08 16 23.5**	**+0.8**
JOT	**Ohata**	**4.63**	**202**	P	**Pn**	**08 16 23.8**	**+0.5**
USRK	**Ussuriysk Ar.**	**8.20**	**264**	P	**Pn**	**08 17 05.5**	**+0.7**
	0.5nm,0.3s,baz=75,slow=13,SNR=6.9						
KLR	**Kul'dur**	**8.62**	**298**	P	**Pn**	**08 17 09.3**	**-0.4**
	0.2nm,0.3s,baz=90,slow=15,SNR=3.5						
MAT	**Matsushiro**	**9.94**	**205**	P	**P**	**08 17 29.8**	**+1.7**
MJAR	**Matsushiro Arr**	**9.94**	**205**	P	**P**	**08 17 28.0**	**-0.1**
	0.3nm,0.3s,baz=7.9,slow=13,SNR=3.5						
SEY	**Seymchan**	**18.02**	**13**	P	**P**	**08 18 55.2**	**-1.0**
	0.5nm,0.3s,baz=198,slow=13,SNR=14						
SONM	**Songino Array**	**25.25**	**288**	P	**P**	**08 20 05.7**	**+0.3**
	0.4nm,0.5s,baz=77,slow=9.3,SNR=3.6						
MKAR	**Makanchi Array**	**41.30**	**294**	P	**P**	**08 22 21.3**	**-1.0**
	0.2nm,0.4s,baz=83,slow=9.4,SNR=2.9						
ILAR	**Eielson Array**	**41.55**	**37**	P	**P**	**08 22 23.5**	**-0.6**
	0.2nm,0.4s,baz=263,slow=6.3,SNR=4.7						
YKA	**Yellowknife Ar**	**55.67**	**33**	P	**P**	**08 24 10.3**	**-0.3**
	0.6nm,0.5s,baz=307,slow=7.3,SNR=20						
FINES	**FINESS Array B**	**61.88**	**331**	P	**P**	**08 24 51.6**	**-1.3**
	0.5nm,0.6s,baz=38,slow=7.5,SNR=4.1						
NVAR	**Mina Array Bea**	**68.79**	**56**	P	**P**	**08 25 39.2**	**+1.6**
	0.4nm,0.7s,baz=280,slow=5.3,SNR=3.4						
PDAR	**Pinedale Array**	**70.67**	**48**	P	**P**	**08 25 49.5**	**+0.5**
	0.3nm,0.6s,baz=274,slow=2.5,SNR=3.7						
TXAR	**Lajitas Array**	**83.75**	**54**	P	**P**	**08 27 02.3**	**+1.2**
	0.3nm,0.6s,baz=304,slow=4.1,SNR=8.9						

JMA 12 08:20:52.1, 36°.90N×140°.68E, h8km, M2.5, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHO	**Hitachi**	**0.30**	**197**	S	Sg	08 21 02.2	+0.1
JFT	**Otama**	**0.68**	**336**	S	Sg	08 21 14.4	+0.4
JMM	**Marumori**	**0.97**	**5**	S	Sg	08 21 22.7	-0.6

*DDA **12** 08:21:09.6, 37°.28N×28°.11E, h8km, Md2.6*
*ISCJB **12** 08:21:10.3±0.8, 37°.29N±0°.04×28°.03E±0°.06, h11km, Error ellipse: s-maj=7.2km s-min=6.3km az=173.4*
*CSEM **12** 08:21:10.6±0.3, 37°.30N×28°.02E, h10km, MD2.8, Error ellipse: s-maj=10.0km s-min=7.4km az=61.0*
*ISK **12** 08:21:10.5, 37°.25N×28°.01E, h4km, MD2.8*

ISC 12 08:21:10.5±1.1, 37°.34N±0°.04×28°.02E±0°.04, h11km, n12, σ0s52/16, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
YER	**Yerkesik**	**0.29**	**135**	PG	**Pg**	**08 21 15.9**	**-0.5**
YER	**Yerkesik**	**0.29**	**135**	*i* Pg	**Pg**	**08 21 15.9**	**-0.5**
AYDN	**Tasoluk**	**0.34**	**340**	*i* P	**Pg**	**08 21 16.9**	**-0.4**
AYDN				*i* S	**Sb**	**08 21 24.0**	**0.0**
AYDN	**Tasoluk**	**0.34**	**340**	P	**Pg**	**08 21 16.9**	**-0.4**
AYDN				S	**Sb**	**08 21 24.0**	**0.0**
AYDB	**Zeytinkoy-Aydi**	**0.61**	**350**	*e*PG	**Pn**	**08 21 24.7**	**-0.5**
AYDB	**Zeytinkoy-Aydi**	**0.61**	**350**	*e*Pg	**Pn**	**08 21 24.7**	**-0.5**
BODT	**Bodrum**	**0.63**	**244**	*e*PG	**Pg**	**08 21 22.5**	**-0.3**
BODT				*e*SG	**Sg**	**08 21 31.4**	**+0.3**
BODT	**Bodrum**	**0.63**	**244**	*e*Pg	**Pg**	**08 21 22.5**	**-0.3**
BODT				*e*Sg	**Sg**	**08 21 31.4**	**+0.3**
DALY	**Dalyan (Mu¨la**	**0.73**	**136**	*e*PG	**Pg**	**08 21 24.4**	**-0.1**
DALY	**Dalyan (Mu¨la**	**0.73**	**136**	*e*Pg	**Pg**	**08 21 24.4**	**-0.1**
DURS	**Dursunbey**	**2.28**	**9**	*i* P	**Pn**	**08 21 49.1**	**+0.9**
DURS				*i* S	Sn	08 22 07.5	-8.9
DURS	**Dursunbey**	**2.28**	**9**	P	**Pn**	**08 21 49.1**	**+0.9**

JMA 12 08:27:48.8, 36°.98N×140°.76E, h9km±1km, M2.5, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.12**	**14**	P	Pg	08 27 51.9	+0.2
ONAJ				S	Sg	08 27 54.0	+0.2
JHO	**Hitachi**	**0.40**	**203**	P	Pg	08 27 56.6	0.0
JHO				S	Sg	08 28 02.0	+0.1
JFT	**Otama**	**0.64**	**328**	P	Pg	08 28 01.1	0.0
JFT				S	Sg	08 28 09.8	+0.4
JMM	**Marumori**	**0.89**	**2**	P	Pg	08 28 05.2	-0.6
JMM				S	Sg	08 28 17.1	-0.3
MAT	**Matsushiro**	**2.10**	**259**	P	Pb	08 28 26.0	-1.0
MAT				S	Sb	08 28 53.3	+0.2

IDC 12 08:35:42.8±2.6, 53°.73N×86°.77E, h0km, mb1 2.9/2, mb1mx2.8/38, mbtmp2.9/2, ML2.3/2, Error ellipse: s-maj=22.8km s-min=13.7km az=69.0, Southwestern Siberia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
I46RU	**ZALESOVO INFRA**	**1.17**	**281**	*i*		08 44 42.1	
	baz=100,slow=325,SNR=8.0						
ZALV	**Zalesovo Beam**	**1.17**	**281**	Pg	Pg	08 36 04.2	-1.1
	1.0nm,0.3s,baz=100,slow=16,SNR=15						
ZALV				Lg	Lg	08 36 21.6	
	1.6nm,0.3s,baz=99,slow=27,SNR=12						
KURBB	**Kurchatov Arra**	**5.95**	**242**	Pn	Pn	08 37 13.0	+1.0
	0.0nm,0.3s,baz=58,slow=14,SNR=9.5						
KURBB				Lg	Lg	08 38 50.1	
	0.0nm,0.3s,baz=49,slow=24,SNR=3.8						
MKAR	**Makanchi Array**	**7.51**	**204**	Pn	Pn	08 37 34.7	+1.1
	0.1nm,0.3s,baz=15,slow=12,SNR=4.9						
MKAR				Sn	Sn	08 38 55.1	-4.3
	0.1nm,0.3s,baz=26,slow=25,SNR=2.6						
MKAR				Lg	Lg	08 39 40.8	
	baz=19,slow=34,SNR=2.5						

*ZUR **12** 08:45:06.6, 47°.39N×7°.86E, h12km, ML2.4/21*
*LDG **12** 08:45:06.9±0.1, 47°.39N×7°.85E, h12km, Md2.9/3, Ml2.9/24, Error ellipse: s-maj=1.0km s-min=0.8km az=140.0*
*STR **12** 08:45:06.5±0.2, 47°.40N×7°.86E, h5km, Ml2.5, Error ellipse: s-maj=0.6km s-min=0.6km az=0.0*
*BGR **12** 08:45:06.7±0.3, 47°.40N×7°.83E, h10km, ML2.4/10, Error ellipse: s-maj=2.2km s-min=2.2km az=27.0*
*CSEM **12** 08:45:06.1±0.1, 47°.39N×7°.83E, h15km, ML2.9/27, Error ellipse: s-maj=1.5km s-min=1.3km az=163.0*
*GEN **12** 08:45:12.1, 47°.06N×7°.75E, h0km, ML2.0*

ISC 12 08:45:06.6±0.7, 47°.39N±0°.01×7°.851E±0°.010, h18km±3km, n211, σ1s14/344, 34C-28D, Switzerland

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BALST	**Balsthal**	**0.12**	**242**	Pb	**Pg**	**08 45 09.9**	**-0.7**
BALST				Sb	**Sg**	**08 45 12.2**	**-1.1**
BALST	**Balsthal**	**0.12**	**242**	⇑*iP*	**Pg**	**08 45 09.9**	**-0.7**
	2µm,0.1s						
BALST				*e*Sg	**Sg**	**08 45 11.9**	**-1.4**
	2µm,0.1s						
BALST	**Balsthal**	**0.12**	**242**	⇑*iP**	**Pg**	**08 45 09.9**	**-0.7**
BALST				S*	**Sg**	**08 45 12.2**	**-1.1**
SFRA	**Frenkendorf**	**0.15**	**319**	⇓*iPg*	**Pg**	**08 45 10.6**	**-0.2**
	467µm,0.1s						
SFRA				*i* Sg	**Sg**	**08 45 13.2**	**-0.5**
	467µm,0.1s						
SFRA	**Frenkendorf**	**0.15**	**319**	⇓*iPg*	**Pg**	**08 45 10.6**	**-0.2**
	467µm,0.1s						
SFRA				*i* Sg	**Sg**	**08 45 13.2**	**-0.5**
	467µm,0.1s						
SKAF	**Kaiseraugst-Fr**	**0.17**	**329**	⇓*iPg*	**Pg**	**08 45 10.8**	**-0.3**
SKAF				*i* Sg	**Sg**	**08 45 13.5**	**-0.7**
SKAF	**Kaiseraugst-Fr**	**0.17**	**329**	⇓*iPg*	**Pg**	**08 45 10.8**	**-0.3**
SKAF				*i* Sg	**Sg**	**08 45 13.5**	**-0.7**
SBIS2	**Binningen**	**0.19**	**288**	⇓*iPg*	**Pb**	**08 45 11.9**	**+1.0**
SBIS2	**Binningen**	**0.19**	**288**	⇓*iPg*	**Pb**	**08 45 11.9**	**+1.0**
SMZW	**Muttenz-Waldha**	**0.21**	**318**	⇓*iPg*	**Pg**	**08 45 11.5**	**-0.2**
SMZW	**Muttenz-Waldha**	**0.21**	**318**	⇓*iPg*	**Pg**	**08 45 11.5**	**-0.2**
SULZ	**Cheisacher**	**0.22**	**53**	Pb	**Pg**	**08 45 11.6**	**-0.3**
SULZ				*e*Sg	**Sg**	**08 45 15.0**	**-0.6**
	2µm,0.2s						
SULZ	**Cheisacher**	**0.22**	**53**	⇑*iPg*	**Pg**	**08 45 11.6**	**-0.3**
	2µm,0.2s						
SULZ				*e*Sg	**Sg**	**08 45 15.0**	**-0.6**
	2µm,0.2s						
SULZ	**Cheisacher**	**0.22**	**53**	⇑*iP**	**Pg**	**08 45 11.6**	**-0.3**
SULZ				S*	**Sg**	**08 45 15.1**	**-0.6**
BBS	**Basel-Blauen**	**0.24**	**287**	Pg	**Pg**	**08 45 11.6**	**-0.6**
BBS	**Basel-Blauen**	**0.24**	**287**	Pb	**Pg**	**08 45 12.1**	**-0.1**
BBS				Sg	**Sg**	**08 45 15.6**	**-0.5**
BBS	**Basel-Blauen**	**0.24**	**287**	⇓P*	**Pg**	**08 45 12.1**	**-0.1**
BBS				S*	**Sg**	**08 45 15.8**	**-0.3**
MATTE	**Schuetzenmatte**	**0.25**	**310**	*i* Sg	**Sg**	**08 45 12.1**	**-4.1**
MATTE	**Schuetzenmatte**	**0.25**	**310**	⇑*iPg*	Pb	08 45 15.3	+3.0
MATTE	**Schuetzenmatte**	**0.25**	**310**	*i* Sg	**Sg**	**08 45 12.1**	**-4.1**
MATTE	**Schuetzenmatte**	**0.25**	**310**	⇑*iPg*	Pb	08 45 15.3	+3.0
OTER1	**Otterbach 1 (B**	**0.25**	**318**	⇑*iPg*	**Pg**	**08 45 12.2**	**-0.1**
OTER1	**Otterbach 1 (B**	**0.25**	**318**	⇑*iPg*	**Pg**	**08 45 12.2**	**-0.1**
OTER2	**Otterbach 2 (B**	**0.25**	**318**	⇓*iPg*	**Pg**	**08 45 12.2**	**-0.1**
OTER2				*i* Sg	**Sg**	**08 45 16.0**	**-0.2**
OTER2	**Otterbach 2 (B**	**0.25**	**318**	⇓*iPg*	**Pg**	**08 45 12.2**	**-0.1**
OTER2				*i* Sg	**Sg**	**08 45 16.0**	**-0.2**
ACHB	**Acheberg**	**0.34**	**54**	⇑*iPg*	**Pg**	**08 45 13.5**	**-0.3**
	187nm,0.3s						
ACHB				*i* Sg	**Sg**	**08 45 18.1**	**-0.5**
	187nm,0.3s						
ACHB	**Acheberg**	**0.34**	**54**	⇑*iPg*	**Pg**	**08 45 13.5**	**-0.3**
	187nm,0.3s						
ACHB				*i* Sg	**Sg**	**08 45 18.1**	**-0.5**
	187nm,0.3s						
BOURR	**Bourrignon**	**0.42**	**270**	Pb	**Pg**	**08 45 15.3**	**0.0**
BOURR				Sb	**Sg**	**08 45 21.3**	**+0.2**
BOURR	**Bourrignon**	**0.42**	**270**	⇑*iPg*	**Pg**	**08 45 15.3**	**0.0**
	361nm,0.2s						
BOURR				*i* Sg	**Sg**	**08 45 21.3**	**+0.2**
	361nm,0.2s						
BOURR	**Bourrignon**	**0.42**	**270**	⇑P*	**Pg**	**08 45 15.3**	**0.0**
BOURR				S*	**Sg**	**08 45 21.3**	**+0.2**
EWZT2	**Wettswil, ZR**	**0.44**	**97**	⇑*iPg*	**Pg**	**08 45 15.4**	**-0.2**
	2µm,0.6s						
EWZT2	**Wettswil, ZR**	**0.44**	**97**	⇑*iPg*	**Pg**	**08 45 15.4**	**-0.2**
FELD	**Feldberg im Sc**	**0.49**	**12**	Pb	**Pg**	**08 45 16.5**	**-0.1**
FELD				Sg	**Sg**	**08 45 23.1**	**-0.2**
FELD	**Feldberg im Sc**	**0.49**	**12**	⇓P*	**Pg**	**08 45 16.5**	**-0.1**
FELD				PmP		08 45 18.1	
FELD				S*	**Sg**	**08 45 23.2**	**-0.2**
FELD				Sm

HINF	**Hinteralfeld**	0.80	302	*e*Pn		**Pb**	08 45 22.4	+0.5
HINF				*e*Sg		**Sg**	08 45 32.3	-0.5
	95nm,0.2s							
HINF	**Hinteralfeld**	0.80	302	*e*Pg		**Pg**	08 45 21.8	-0.4
HINF	**Hinteralfeld**	0.80	302	*e*Pn		**Pb**	08 45 22.4	+0.5
HINF				*e*Sg		**Sg**	08 45 32.3	-0.5
	48nm,0.2s							
SISB	**Singen-Schiene**	0.81	68	P*		**Pg**	08 45 22.3	-0.1
SISB				S*		**Sb**	08 45 33.3	+0.6
ECH	**Echery**	0.95	331	Pg		**Pg**	08 45 24.6	-0.4
ECH				Sg		**Sg**	08 45 37.1	-0.4
ECH	**Echery**	0.95	331	Pg		**Pg**	08 45 24.6	-0.4
ECH				Sg		**Sg**	08 45 37.1	-0.4
ECH	**Echery**	0.95	331	P		**Pg**	08 45 24.4	-0.6
ECH				PmP			08 45 25.5	
ECH				S		**Sg**	08 45 36.4	-1.1
ECH				SmS			08 45 37.9	
SPAK	**Spaichingen-Ko**	0.95	41	Pg		**Pg**	08 45 23.6	-1.4
SPAK				Sg		**Sg**	08 45 37.3	-0.3
FIESA	**Fiescheralp**	0.97	169	⇓*i*P		**Pg**	08 45 25.1	-0.4
	121nm,0.5s							
FIESA	**Fiescheralp**	0.97	169	⇓*i*Pn		**Pg**	08 45 25.1	-0.4
	121nm,0.5s							
BFO	**Black Forest**	0.99	19	⇑P		**Pg**	08 45 24.4	-1.4
BFO				S		**Sg**	08 45 37.6	-1.3
BFO				Sg		**Sb**	08 45 38.8	+0.9
LKBD2	**Leukerbad 2**	1.03	188	*e*P		**Pg**	08 45 25.9	-0.7
LKBD2	**Leukerbad 2**	1.03	188	*e*Pn		**Pg**	08 45 25.9	-0.7
PIORA	**Tunnel**	1.07	143	*i* P		**Pb**	08 45 26.3	-0.2
	51nm,0.2s							
PIORA	**Tunnel**	1.07	143	*i* Pn		**Pb**	08 45 26.3	-0.2
	51nm,0.2s							
WLS	**Welschbruch**	1.07	342	Pg		**Pb**	08 45 27.0	+0.4
WLS				Sg		**Sn**	08 45 42.3	+1.1
WLS	**Welschbruch**	1.07	342	Pg		**Pb**	08 45 27.0	+0.4
WLS				Sg		**Sn**	08 45 42.3	+1.1
GUT	**Gutenstein**	1.09	51	⇑*i*P		**Pb**	08 45 27.2	+0.3
GUT	**Gutenstein**	1.09	51	⇑*i*Pn		**Pb**	08 45 27.2	+0.3
GUT	**Gutenstein**	1.09	51	⇑P		**Pb**	08 45 25.9	-1.0
GUT				Pg		**Pb**	08 45 27.2	+0.3
GUT				Sg		**Sg**	08 45 42.3	+0.3
CDF	**Champ du Feu**	1.09	339	*e*Pn		**Pb**	08 45 27.0	+0.1
CDF	**Champ du Feu**	1.09	339	*e*Pg		**Pb**	08 45 27.3	+0.4
CDF				*e*Sg		**Sb**	08 45 41.5	+0.7
	31nm,0.2s							
CDF	**Champ du Feu**	1.09	339	*e*Pn		**Pb**	08 45 27.0	+0.1
CDF	**Champ du Feu**	1.09	339	*e*Pg		**Pb**	08 45 27.3	+0.4
CDF				*e*Sg		**Sb**	08 45 41.5	+0.7
	15nm,0.2s							
FUSIO	**Fusio**	1.09	149	⇓*i*P		**Pb**	08 45 26.8	-0.2
	71nm,0.1s							
FUSIO	**Fusio**	1.09	149	⇓*i*Pn		**Pb**	08 45 26.8	-0.2
	71nm,0.1s							
PLONS	**Plons/SG**	1.10	108	*e*Pg		**Pb**	08 45 27.6	+0.5
PLONS				*e*Sg		**Sb**	08 45 41.6	+0.6
LIENZ	**Kamor/St.Gall**	1.12	94	⇑*i*P		**Pb**	08 45 27.7	+0.2
	131nm,0.4s							
LIENZ	**Kamor/St.Gall**	1.12	94	⇑*i*Pn		**Pb**	08 45 27.7	+0.2
	131nm,0.4s							
LIENZ	**Kamor/St.Gall**	1.12	94	⇑P		**Pb**	08 45 27.7	+0.2
LIENZ				Pg		**Pg**	08 45 28.2	-0.1
LIENZ				PmP			08 45 28.8	
LIENZ				S		**Sb**	08 45 42.6	+0.8
LIENZ				SmS			08 45 44.0	
OPP	**Oppenau**	1.13	11	P		**Pb**	08 45 26.5	-1.0
OPP				Pg		**Pn**	08 45 28.2	+0.8
OPP				S		**Sb**	08 45 40.8	-1.1
OPP				Sg		**Sg**	08 45 42.5	-0.7
SIMPL	**Simplonpass**	1.16	174	⇓*i*P		**Pb**	08 45 28.5	+0.3
	266nm,0.2s							
SIMPL	**Simplonpass**	1.16	174	⇓*i*Pn		**Pb**	08 45 28.5	+0.3
	266nm,0.2s							
EMBD	**Embd, Matterta**	1.18	181	⇓*i*P		**Pb**	08 45 28.7	+0.3
	131nm,10.0s							
EMBD	**Embd, Matterta**	1.18	181	⇓*i*Pn		**Pb**	08 45 28.7	+0.3
	131nm,10.0s							
HAU	**Haudompre**	1.19	302	*e*Pn		**Pn**	08 45 28.6	+0.4
HAU	**Haudompre**	1.19	302	*e*Pg		**Pb**	08 45 29.2	+0.7
HAU				*e*Sg		**Sb**	08 45 44.4	+0.9
	211nm,0.3s							
HAU	**Haudompre**	1.19	302	*e*Pn		**Pn**	08 45 28.6	+0.4
HAU	**Haudompre**	1.19	302	*e*Pg		**Pb**	08 45 29.2	+0.7
HAU				*e*Sg		**Sb**	08 45 44.4	+0.9
	105nm,0.3s							
OG01	**Vacheresse**	1.33	217	Pg		**Pg**	08 45 32.0	-0.3
OG01				Sg		**Sg**	08 45 50.1	+0.4
OG01	**Vacheresse**	1.33	217	Pg		**Pg**	08 45 32.0	-0.3
OG01				Sg		**Sg**	08 45 50.1	+0.4
DAVA	**Damuels**	1.38	94	*i* Pg		**Pg**	08 45 33.1	-0.2
	4.8nm,0.1s							
DAVA				*e*Sn		**Sb**	08 45 50.0	+0.7
	55nm,0.2s							
DAVA	**Damuels**	1.38	94	*i* Pn		**Pn**	08 45 31.4	+0.3
	509nm,0.3s							
DAVA	**Damuels**	1.38	94	Pg		**Pg**	08 45 33.1	-0.2
	4.8nm,0.1s							
DAVA				Sg		**Sb**	08 45 50.0	+0.7
	55nm,0.2s							
DAVA	**Damuels**	1.38	94	*i* Pn		**Pn**	08 45 31.4	+0.3
	509nm,0.3s							
DAVA	**Damuels**	1.38	94	*e*Pg		**Pg**	08 45 33.0	-0.2
DAVA				*e*Sg		**Sg**	08 45 51.6	+0.2
TUBL	**Tuebingen-Lenn**	1.40	36	P		**Pn**	08 45 29.7	-1.5
TUBL				Pg		**Pb**	08 45 33.1	+0.9
TUBL				Sg		**Sb**	08 45 50.7	+1.0
LBG	**Lerchenberg**	1.42	26	Pg		**Pg**	08 45 33.6	-0.3
LBG				Sg		**Sb**	08 45 51.7	+1.5
CABF	**La Chapelle**	1.44	238	*e*Pg		**Pb**	08 45 33.7	+0.9
CABF				*e*Sg		**Sb**	08 45 52.3	+1.5
	15nm,0.3s							
CABF	**La Chapelle**	1.44	238	*e*Pg		**Pb**	08 45 33.7	+0.9
CABF				*e*Sg		**Sb**	08 45 52.3	+1.5
	7.6nm,0.3s							
BUCH	**Bad Urach**	1.46	43	Sg		**Sg**	08 45 53.8	0.0
BUCH	**Bad Urach**	1.46	43	⇑P		**Pn**	08 45 30.8	-1.3
BUCH				*i* Pg		**Pg**	08 45 34.6	-0.1
BUCH				S		**Sn**	08 45 47.7	-3.0
BUCH				Sg		**Sg**	08 45 53.8	0.0
THEF	**They Montfort**	1.51	304	Pg		**Pb**	08 45 34.6	+0.6
THEF				Sg		**Sg**	08 45 55.0	-0.3
THEF	**They Montfort**	1.51	304	Pg		**Pb**	08 45 35.0	+1.0
THEF				Sg		**Sg**	08 45 54.8	-0.5
THEF	**They Montfort**	1.51	304	Pg		**Pb**	08 45 35.0	+1.0
THEF				Sg		**Sg**	08 45 54.8	-0.5
SATI	**Passo dei Sala**	1.52	180	P		**Pb**	08 45 34.7	+0.3
SATI				S		**Sn**	08 45 49.9	-2.6
UBR	**Ueberruh**	1.56	79	P		**Pn**	08 45 33.7	+0.3
UBR	**Ueberruh**	1.56	79	Pg		**Pg**	08 45 36.5	0.0
UBR				S		**Sn**	08 45 52.1	-1.0
UBR				Sg		**Sg**	08 45 56.5	-0.3
UBR	**Ueberruh**	1.56	79	⇑P		**Pn**	08 45 33.6	+0.3
UBR				*i* Pg		**Pg**	08 45 36.5	0.0
UBR				S		**Sn**	08 45 52.1	-1.0
UBR				Sg		**Sg**	08 45 56.5	-0.3
LANF	**Langenberg**	1.59	359	Pn		**Pn**	08 45 33.7	-0.1
LANF				Sg		**Sg**	08 45 57.9	+0.1
LANF	**Langenberg**	1.59	359	Pn		**Pn**	08 45 33.7	-0.1
LANF				Sg		**Sg**	08 45 57.9	+0.1
STU	**Stuttgart**	1.65	33	Sg		**Sg**	08 45 59.0	-0.7
STU	**Stuttgart**	1.65	33	Sg		**Sg**	08 45 59.0	-0.7
OBER	**Oberstdorf**	1.66	89	Pg		**Pb**	08 45 37.8	+1.2
OBER				Sg		**Sg**	08 46 00.1	0.0
OBER	**Oberstdorf**	1.66	89	Pg		**Pb**	08 45 37.9	+1.2
OBER				Sg		**Sg**	08 46 00.1	0.0
PEB	**Petersbachel**	1.68	357	Pg		**Pg**	08 45 38.4	-0.4
PEB				Sg		**Sg**	08 46 00.4	-0.3
PEB	**Petersbachel**	1.68	357	Pg		**Pg**	08 45 38.4	-0.4
PEB				Sg		**Sg**	08 46 00.4	-0.3
MUGIO	**Muggio**	1.69	150	*e*Pn		**Pn**	08 45 35.7	+0.6
	62nm,0.3s							
MUGIO	**Muggio**	1.69	150	*e*Pn		**Pn**	08 45 35.7	+0.6
	62nm,0.3s							
CIRO	**Champorcher**	1.80	186	P		**Pb**	08 45 39.1	-0.1
CIRO				S		**Sn**	08 45 58.0	-1.5
PAGF	**Fort de Pagny**	1.84	310	*e*Pg		**Pb**	08 45 41.0	+1.3
PAGF				*e*Sg		**Sg**	08 46 04.8	-1.1
	3.6nm,0.2s							
PAGF	**Fort de Pagny**	1.84	310	*e*Pg		**Pb**	08 45 41.0	+1.3
PAGF				*e*Sg		**Sg**	08 46 04.8	-1.1
	1.8nm,0.2s							
TRAV	**Traversella**	1.88	182	P		**Pn**	08 45 39.4	+1.5
TRAV				S		**Sn**	08 45 58.1	-3.0
KTD	**Kalmit**	1.94	5	Pg		**Pg**	08 45 43.1	-0.6
KTD				Sg		**Sg**	08 46 08.7	-0.2
RETA	**Reutte**	1.98	86	*e*Pg		**Pb**	08 45 43.4	+1.4
	7.5nm,0.2s							
RETA				*e*Sg		**Sg**	08 46 09.2	-1.1
	5.4nm,0.1s							
RETA	**Reutte**	1.98	86	Pg		**Pb**	08 45 43.4	+1.4
	7.5nm,0.2s							
RETA				Sg		**Sg**	08 46 09.2	-1.1
	5.4nm,0.1s							
HDH	**Heidenheim-Cha**	1.98	52	Pg		**Pg**	08 45 44.1	-0.5
HDH				Sg		**Sg**	08 46 09.1	-1.2
HDH	**Heidenheim-Cha**	1.98	52	Pg		**Pg**	08 45 44.1	-0.5
HDH				Sg		**Sg**	08 46 09.1	-1.2
FETA	**Feichten**	2.00	100	*e*Pg		**Pg**	08 45 44.5	-0.4
	0.7nm,0.1s							
FETA				*e*Sg		**Sg**	08 46 09.9	-1.0
	2.5nm,0.2s							
FETA	**Feichten**	2.00	100	Pg		**Pg**	08 45 44.5	-0.4
	0.7nm,0.1s							
FETA				Sg		**Sg**	08 46 09.9	-1.0
	2.5nm,0.2s							
LPL	**La Plagne**	2.03	203	*e*Pn		**Pn**	08 45 40.5	+0.5
LPL	**La Plagne**	2.03	203	*e*Pg		**Pg**	08 45 44.7	-0.9
LPL				*e*Sg		**Sg**	08 46 10.8	-1.2
	9.5nm,0.4s							
LPL	**La Plagne**	2.03	203	*e*Pn		**Pn**	08 45 40.5	+0.5
LPL	**La Plagne**	2.03	203	*e*Pg		**Pg**	08 45 44.7	-0.9
LPL				*e*Sg		**Sg**	08 46 10.8	-1.2
	4.8nm,0.4s							
LPG	**La Plagne**	2.04	202	*e*Pn		**Pn**	08 45 40.5	+0.3
LPG	**La Plagne**	2.04	202	*e*Pg		**Pg**	08 45 44.9	-0.9
LPG				*e*Sg		**Sg**	08 46 11.3	-1.1
	10nm,0.3s							
LPG	**La Plagne**	2.04	202	*e*Pn		**Pn**	08 45 40.5	+0.3
LPG	**La Plagne**	2.04	202	*e*Pg		**Pg**	08 45 44.9	-0.9
LPG				*e*Sg		**Sg**	08 46 11.3	-1.1
	5.2nm,0.3s							
SFTF	**Sexfontaines**	2.06	294	*e*Pg		**Pg**	08 45 45.2	-1.0
	baz=114							
SFTF				*e*Sg		**Sg**	08 46 12.0	-0.9
	17nm,0.2s							
SFTF	**Sexfontaines**	2.06	294	*e*Pg		**Pg**	08 45 45.2	-1.0
SFTF				*e*Sg		**Sg**	08 46 12.0	-0.9
	8.6nm,0.2s							
SWS	**Schriesheim-Wi**	2.17	15	Sg		**Sg**	08 46 15.5	-0.8
SWS	**Schriesheim-Wi**	2.17	15	Sg		**Sg**	08 46 15.5	-0.8
MEZF	**Maizieres J'vi**	2.18	302	*e*Pg		**Pg**	08 45 47.4	-1.1
MEZF				*e*Sg		**Sg**	08 46 15.6	-1.2
	27nm,0.3s							
MEZF	**Maizieres J'vi**	2.18	302	*e*Pg		**Pg**	08 45 47.4	-1.1
MEZF				*e*Sg		**Sg**	08 46 15.6	-1.2
	13nm,0.3s							
MOTA	**Moosalm**	2.21	90	*e*Pn		**Pn**	08 45 43.9	+1.5
	1.6nm,0.1s							
MOTA	**Moosalm**	2.21	90	Pn		**Pn**	08 45 43.9	+1.5
	1.6nm,0.1s							
SIND	**Sindeldorf**	2.28	30	Pg		**Pg**	08 45 49.1	-1.2
SIND				Sg		**Sg**	08 46 18.3	-1.6
SIND	**Sindeldorf**	2.28	30	Pg		**Pg**	08 45 49.1	-1.2
SIND				Sg		**Sg**	08 46 18.3	-1.6
ABH	**Alteburg**	2.50	355	Pg		**Pg**	08 45 54.0	-0.5
ABH				Sg		**Sg**	08 46 26.2	-0.7
ABH	**Alteburg**	2.50	355	Pg		**Pg**	08 45 54.0	-0.5
ABH				Sg		**Sg**	08 46 26.2	-0.7
WTTA	**Wattenberg**	2.58	91	Sg		**Sg**	08 46 28.9	-0.5
WTTA	**Wattenberg**	2.58	91	*e*Sg		**Sg**	08 46 28.9	-0.5
LOR	**Lormes**	2.72	269	*e*Pn		**Pn**	08 45 49.5	+0.2
	baz=97							
LOR	**Lormes**	2.72	269	*e*Pg		**Pg**	08 45 57.1	-1.6
	baz=95							
LOR				*e*Sg		**Sb**	08 46 30.8	+3.2
	11nm,0.2s,baz=96							
LOR	**Lormes**	2.72	269	*e*Pn		**Pn**	08 45 49.5	+0.2
LOR	**Lormes**	2.72	269	*e*Pg		**Pg**	08 45 57.1	-1.6
LOR				*e*Sg		**Sb**	08 46 30.8	+3.2
	5.4nm,0.2s							
MBDF	**Montbardon**	2.77	196	*e*Pn		**Pn**	08 45 50.5	+0.4
MBDF	**Montbardon**	2.77	196	*e*Pg		**Pg**	08 45 58.2	-1.5
MBDF				*e*Sg		**Sg**	08 46 33.4	-2.2
	2.1nm,0.2s							
MBDF	**Montbardon**	2.77	196	*e*Pn		**Pn**	08 45 50.5	+0.4
MBDF	**Montbardon**	2.77	196	*e*Pg		**Pg**	08 45 58.2	-1.5
MBDF				*e*Sg		**Sg**	08 46 33.4	-2.2
	1.0nm,0.2s							
ORIF	**Oris-en-Rattie**	2.83	210	*e*Pn		**Pn**	08 45 51.2	+0.3
ORIF	**Oris-en-Rattie**	2.83	210	*e*Pg		**Pg**	08 45 59.2	-1.6
ORIF				*e*Sg		**Sb**	08 46 34.3	+3.5
	9.4nm,0.4s							
ORIF	**Oris-en-Rattie**	2.83	210	*e*Pn		**Pn**	08 45 51.2	+0.3
ORIF	**Oris-en-Rattie**	2.83	210	*e*Pg		**Pg**	08 45 59.2	-1.6
ORIF				*e*Sg		**Sb**	08 46 34.3	+3.5
	4.7nm,0.4s							
SMF	**Signal de Mont**	2.84	256	*e*Pn		**Pn**	08 45 51.3	+0.3
SMF	**Signal de Mont**	2.84	256	*e*Pg		**Pg**	08 45 59.4	-1.6
SMF				*e*Sg		**Sg**	08 46 36.3	-1.6
	17nm,0.4s							
SMF	**Signal de Mont**	2.84	256	*e*Pn		**Pn**	08 45 51.3	+0.3
SMF	**Signal de Mont**	2.84	256	*e*Pg		**Pg**	08 45 59.4	-1.6
SMF				*e*Sg		**Sg**	08 46 36.3	-1.6
	8.6nm,0.4s							
TNS	**Taunus Mts**	2.86	8	Sg		**Sg**	08 46 37.7	-0.7
TNS	**Taunus Mts**	2.86	8	*e*Sg		**Sg**	08 46 37.7	-0.7
SSF	**Saint Saulge**	2.98	265	*e*Pn		**Pn**	08 45 53.1	+0.2
SSF	**Saint Saulge**	2.98	265	*e*Pg		**Pg**	08 46 01.9	-1.7
SSF				*e*Sg		**Sg**	08 46 40.2	-2.1
	6.8nm,0.4s							
SSF	**Saint Saulge**	2.98	265	*e*Pn		**Pn**	08 45 53.1	+0.2
SSF	**Saint Saulge**	2.98	265	*e*Pg		**Pg**	08 46 01.9	-1.7
SSF				*e*Sg		**Sg**	08 46 40.2	-2.1
	3.4nm,0.4s							
AVF	**Avril sur Loir**	3.13	261	*e*Pn		**Pn**	08 45 55.2	+0.3
AVF	**Avril sur Loir**	3.13	261	*e*Pg		**Pg**	08 46 04.7	-1.9
AVF				*e*Sg		**Sg**	08 46 45.2	-1.9
	2.7nm,0.2s							
AVF	**Avril sur Loir**	3.13	261	*e*Pn		**Pn**	08 45 55.2	+0.3
AVF	**Avril sur Loir**	3.13	261	*e*Pg		**Pg**	08 46 04.7	-1.9
AVF				*e*Sg		**Sg**	08 46 45.2	-1.9
	1.4nm,0.2s							
VIVF	**Saint-Julien-l**	3.37	222	*e*Pn		**Pn**	08 45 58.4	+0.2
VIVF	**Saint-Julien-l**	3.37	222	*e*Pg		**Pg**	08 46 09.1	-1.9
VIVF				*e*Sg		**Sb**	08 46 50.8	+4.6
	7.1nm,0.3s							
VIVF	**Saint-Julien-l**	3.37	222	*e*Pn		**Pn**	08 45 58.4	+0.2
VIVF	**Saint-Julien-l**	3.37	222	*e*Pg		**Pg**	08 46 09.1	-1.9
VIVF				*e*Sg		**Sb**	08 46 50.8	+4.6
	3.5nm,0.3s							
GIVF	**Givet**	3.37	325	*e*Pn		**Pn**	08 45 58.5	+0.3
GIVF				*e*Sg		**Sg**	08 46 52.8	-2.0
	5.8nm,0.4s							
GIVF	**Givet**	3.37	325	*e*Pn		**Pn**	08 45 58.5	+0.3
GIVF				*e*Sg		**Sg**	08 46 52.8	-2.0
	2.9nm,0.4s							
BGF	**Bois d'Agland**	3.53	258	*e*Pn		**Pn**	08 46 00.4	0.0
BGF	**Bois d'Agland**	3.53	258	*e*Pg		**Pb**	08 46 11.1	+2.7
BGF				*e*Sg		**Sg**	08 46 57.4	-2.4
	9.9nm,0.3s							
BGF	**Bois d'Agland**	3.53	258	*e*Pn		**Pn**	08 46 00.4	0.0
BGF	**Bois d'Agland**	3.53	258	*e*Pg		**Pb**	08 46 11.1	+2.7
BGF				*e*Sg		**Sg**	08 46 57.4	-2.4
	4.9nm,0.3s							
HYF	**Humbligny**	3.55	270	*e*Pn		**Pn**	08 46 00.9	+0.2
HYF				*e*Sg		**Sg**	08 46 58.2	-2.2
HYF	**Humbligny**	3.55	270	*e*Pn		**Pn**	08 46 00.9	+0.2
HYF				*e*Sg		**Sg**	08 46 58.2	-2.2
BAIF	**Baives**	3.60	319	*e*Pn		**Pn**	08 46 01.0	-0.3
BAIF				*e*Sg		**Sg**	08 46 59.6	-2.4
	2.9nm,0.2s							
BAIF	**Baives**	3.60	319	*e*Pn		**Pn**	08 46 01.0	-0.3
BAIF				*e*Sg		**Sg**	08 46 59.6	-2.4
	1.5nm,0.2s							
WET	**Wettzell**	3.79	61	Sg		**Sg**	08 47 06.8	-1.3
WET	**Wettzell**	3.79	61	*e*Sg		**Sg**	08 47 06.8	-1.3
TCF	**Toulx Ste Croi**	4.03	256	*e*Pg		**Pg**	08 46 20.8	-2.8
TCF				*e*Sg		**Sg**	08 47 13.1	-2.7
	3.1nm,0.4s							
TCF	**Toulx Ste Croi**	4.03	256	*e*Pg		**Pg**	08 46 20.8	-2.8
TCF				*e*Sg		**Sg**	08 47 13.1	-2.7
	1.5nm,0.4s							
MOX	**Moxa**	4.09	36	Sg		**Sg**	08 47 15.6	-2.2
MOX	**Moxa**	4.09	36	*e*Sg		**Sg**	08 47 15.6	-2.2

NIED ***12*** *08:48:00,37.00N×140.70E,h5km,Mw4.5 Best double couple: M0 6.98000×10^15 NP1:φs255.00000°,δ37.00000°, λ-89.00000°. NP2:φs73.00000°,δ53.00000°,λ-91.00000°.*

BJI ***12*** *08:48:19.1,36.82N×141.04E,h5km,mb4.7/57,mB4.9/40, Ms4.3/41,Ms7 4.1/40*

IDC ***12*** *08:48:23.6±0.4,37.06N×140.56E,h0km,mb4.7/42, mb1 4.8/43,mb1mx4.8/53,mbtmp4.7/43,ML3.8/2,MS3.7/23, Ms1 3.8/23,ms1mx3.6/51,Error ellipse: s-maj=11.1km s-min=9.0km az=142.0*

JMA ***12*** *08:48:25.4,37.03N×140.69E,h10km±1km,M4.9 Broadband fault plane solution: P waves. NP1: φs75.00000°,δ51.00000°,λ-100.00000°. NP2: φs270.00000°,δ40.00000°,λ-79.00000°. Principal axes: T Plg5.0000°, Azm172.0000°; N Plg7.0000°, Azm81.0000°; P Plg81.0000°, Azm297.0000°;*

JMA Felt IV J1.

ISCJB ***12*** *08:48:26.3±0.5,37.03N±0.02×140.49E±0.02,h24km±3km, mb4.8/266,MS3.9/26 Error ellipse: s-maj=3.6km s-min=2.8km az=44.8*

MOS ***12*** *08:48:29.2±0.8,37.36N×140.39E,h34km,mb5.0/110, Error ellipse: s-maj=6.4km s-min=4.4km az=101.7*

NEIC ***12*** *08:48:30.3±0.5,37.08N×140.43E,h41km±4km,mb4.8/186, Error ellipse: s-maj=3.4km s-min=2.4km az=136.0*

NEIC Recorded [4 JMA] in Fukushima.

ISC 12 08:48:26.0±0.6,37.06N±0.02×140.64E±0.03,h14km±3km, n721,σ1$15/727,mb4.9/266,MS3.9/25,12C-11D,Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
					Op ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	0.13	70	⇑P	**Pg**	08 48 28.4	-1.2
ONAJ				S	**Sg**	08 48 30.5	-1.6
JHO	**Hitachi**	0.45	188	⇑P	**Pg**	08 48 33.7	-1.2
JHO				S	**Sg**	08 48 39.8	-1.1
JFT	**Otama**	0.52	332	⇑P	**Pg**	08 48 36.5	+0.2
JFT				S	**Sg**	08 48 44.4	+1.1
JSB	**Shiboa**	0.59	262	⇓P	**Pb**	08 48 38.1	+0.1
JMM	**Marumori**	0.82	8	⇑P	**Pg**	08 48 41.0	-0.8
JMM				S	**Sg**	08 48 52.6	0.0
JFY	**Yanaizu**	0.83	295	⇑P	**Pg**	08 48 42.1	+0.1
JFY				S	**Sg**	08 48 53.2	+0.3
MJAR	**Matsushiro Arr**	2.02	256	Pg	**Pn**	08 49 00.4	+0.8
	139nm,0.3s,baz=74,slow=15,SNR=714						
MJAR				LR	LR	08 49 26.5	
	comp=Z,256nm,21.8s,baz=80,slow=33						
MJAR				Lg	Lg	08 49 26.8	
	343nm,0.3s,baz=88,slow=25,SNR=20						
MAJO	**Matsushiro**	2.02	256	*e*P	**Pn**	08 49 01.2	+1.6
MAJO				*e*		08 49 28.0	
MAJO	**Matsushiro**	2.02	256	*e*Pn	**Pn**	08 49 01.2	+1.6
MAJO				*e*Sn	**Sb**	08 49 28.0	+0.5
MAT	**Matsushiro**	2.02	256	P	**Pn**	08 49 01.1	+1.5
MAT				S	**Sb**	08 49 28.3	+0.8
INU	**Inuyama**	3.39	241	*e*Pn	**Pn**	08 49 20.6	+2.2
JHJ	**Hachijo jima 2**	3.99	190	Pn	**Pn**	08 49 26.1	-0.5
	64nm,0.3s,baz=329,slow=23,SNR=17						
JHJ				Sn	**Sn**	08 50 13.7	+0.5
	151nm,0.3s,baz=136,slow=23,SNR=5.9						
JHJ			

comp=Z,1μm,16.5s
SNY LR LR
comp=Z,570nm,12.4s
SNY LR LR
comp=Z,740nm,13.7s
DL2 Dalian 15.11 283 P **P** **08 52 02.5 -1.6**
DL2 S Sn 08 54 54.1 +8.1
DL2 pmax pmax
comp=Z,63nm,0.8s
DL2 LR LR
comp=Z,450nm,13.1s
DL2 LR LR
comp=Z,490nm,14.4s
DL2 LR LR
comp=Z,470nm,10.1s
NKL Nikolayevsk 16.09 0 *e*P Pn 08 52 07.0 -4.6
NKL pmax pmax
comp=Z,13nm,1.0s
NKL MLR MLR
comp=N,400nm,15.0s
NKL MLR MLR
comp=E,400nm,15.0s
NKL MLR MLR
comp=Z,60nm,15.0s
NJ2 Nanjing 18.62 261 *e*P **Pn** **08 52 44.4 +1.2**
NJ2 pmax pmax
comp=Z,12nm,0.6s
TIA Tai'an 18.89 275 ⇑P **Pn** **08 52 48.3 +1.8**
TIA pmax pmax
comp=Z,20nm,1.1s
BJI Beijing 19.35 286 P **P** **08 52 51.0 0.0**
BJI S **S** **08 56 32.4 +2.9**
BJI pmax pmax
comp=Z,14nm,0.9s
BJI LR LR
comp=Z,240nm,13.8s
BJI LR LR
comp=Z,330nm,10.4s
BJT Baijiatuau 19.36 286 *e*P **P** **08 52 51.2 +0.2**
BJT pmax pmax
comp=Z,29nm,0.9s
BJT Baijiatuau 19.36 286 *e*P **P** **08 52 51.2 +0.2**
comp=Z,29nm,0.9s
PEA0 Petropavlovsk- 19.98 31 *e*P **Pn** **08 52 59.0 -0.5**
PEA0B Petropavlovsk- 19.98 31 *e*P **Pn** **08 53 00.6 +1.1**
comp=Z,55nm,1.3s
PETK Petropavlovsk- 19.98 31 P **P** **08 52 57.8 +0.1**
comp=Z,16nm,0.9s,baz=209,slow=12,SNR=11
PETK LR LR 08 59 41.3
comp=Z,128nm,20.5s,baz=220,slow=34
PET Petropavlovsk 20.32 33 *e*P Pn 08 53 05.5 +2.0
PET Petropavlovsk 20.32 33 *e*P Pn 08 53 03.8 +0.3
comp=Z,34nm,0.9s
WHN Wuhan 22.75 261 P **P** **08 53 27.6 -0.1**
MA2 Magadan 23.47 13 P **P** **08 53 33.7 -1.0**
comp=Z,27nm,0.8s,baz=212,slow=13,SNR=5.9
MA2 LR LR 09 02 52.7
comp=Z,158nm,19.9s,baz=125,slow=37
MA2 Magadan 23.47 13 *e*P **P** **08 53 33.3 -1.5**
MA2 pmax pmax
comp=Z,250nm,1.2s
MA2 Magadan 23.47 13 *e*P **P** **08 53 33.3 -1.5**
comp=Z,250nm,1.2s
YAK Yakutsk 25.92 348 P **P** **08 53 55.8 -1.4**
comp=Z,14nm,0.3s,baz=170,slow=3.0,SNR=6.1
YAK LR LR 09 03 45.2
comp=Z,168nm,21.6s,baz=250,slow=36
YAK Yakutsk 25.92 348 *e*P **P** **08 53 56.5 -0.8**
YAK *e*'PP **sP** **08 54 03.9 +0.5**
YAK *e*S **S** **08 58 22.2 -4.5**
YAK *e*'SS sS 08 58 39.0 +5.1
YAK pmax pmax
comp=Z,29nm,1.3s
YAK pmax pmax
comp=N,15nm,1.3s
YAK pmax pmax
comp=E,8.0nm,1.2s
YAK pmax pmax
comp=Z,20nm,0.9s
YAK pmax pmax
comp=N,8.0nm,0.9s
YAK pmax pmax
comp=E,20nm,1.3s
YAK smax smax
comp=N,56nm,3.2s
YAK smax smax
comp=E,95nm,3.5s
YAK MLR MLR
comp=Z,231nm,12.0s
YAK MLR MLR
comp=N,270nm,15.0s
YAK MLR MLR
comp=E,313nm,23.0s
YAK Yakutsk 25.92 348 *e*P **P** **08 53 56.5 -0.8**
comp=E,49nm,0.4s
ENH Enshi 26.72 265 *e*P **P** **08 54 04.3 -0.7**
comp=E,15nm,0.8s
ULN Ulaanbaatar 26.83 304⇓ *e*P **P** **08 54 05.3 -0.6**
ULN pmax pmax
comp=Z,20nm,1.2s
ULN Ulaanbaatar 26.83 304 *e*P **P** **08 54 05.4 -0.6**
comp=Z,16nm,1.1s
SEY Seymchan 26.89 12 P **P** **08 54 06.8 +0.7**
comp=Z,35nm,1.1s,baz=196,slow=7.7,SNR=26
BOD Bodaibo 27.18 328 *e*P **P** **08 54 07.2 -1.6**
BOD pmax pmax
comp=Z,8.0nm,1.0s
SONA1 Songino Array 27.26 304 *e*P **P** **08 54 08.2 -1.5**
SONM Songino Array 27.26 304 P **P** **08 54 08.4 -1.4**
comp=Z,10nm,0.8s,baz=106,slow=8.1,SNR=50
SONM PcP **PcP** **08 57 29.3 +0.1**
comp=Z,2.2nm,0.5s,baz=120,slow=2.5,SNR=9.8
H11N2 WAKE ISLAND Hy 28.69 120 T T 09 24 10.9
baz=313,slow=75,SNR=4669
H11N1 WAKE ISLAND Hy 28.70 120 T T 09 24 11.5
baz=313,slow=75,SNR=5915
H11N3 WAKE ISLAND Hy 28.71 120 T T 09 24 12.2
baz=313,slow=75,SNR=5969
H11S1 WAKE ISLAND Hy 29.39 122 T T 09 25 03.8
baz=314,slow=76,SNR=9074
H11S3 WAKE ISLAND Hy 29.39 122 T T 09 25 04.9
baz=314,slow=76,SNR=5042
H11S2 WAKE ISLAND Hy 29.41 122 T T 09 25 02.0
baz=314,slow=76,SNR=4702
LZH Lanzhou 29.46 279 *e*P **P** **08 54 29.6 +0.1**
LZH pP sP 08 54 35.2 -0.5
LZH sP pP 08 54 38.3 +4.4
LZH PP **PnPn** **08 55 30.0 +6.6**
LZH pmax pmax
comp=Z,27nm,1.0s
LZH pmax pmax
comp=Z,120nm,4.5s
LZH LR LR
comp=Z,590nm,12.2s
LZH LR LR
comp=Z,780nm,14.0s
LZH LR LR
comp=Z,910nm,15.0s
ZAK Zakamensk 29.77 309 *e*P **P** **08 54 31.5 -0.6**
ZAK *e* 08 57 35.8
ZAK pmax pmax
comp=Z,3.0nm,1.2s
ZAK pmax pmax
comp=Z,4.0nm,1.2s
TLY Talaya 29.85 311 P **P** **08 54 32.9 +0.2**
comp=Z,2.7nm,0.6s,baz=111,slow=14,SNR=2.3
TLY PcP **PcP** **08 57 36.0 +0.5**
comp=Z,1.5nm,0.4s,baz=186,slow=5.6,SNR=3.2
TLY Talaya 29.85 311 *e*P **P** **08 54 33.4 +0.7**
TLY pmax pmax
comp=Z,2.0nm,0.6s
TLY MLR MLR
comp=Z,183nm,16.0s
GYA Guiyang 30.62 260 P **P** **08 54 40.2 +0.4**
GYA PP **PnPn** **08 55 40.8 +1.7**
GYA PcP **PcP** **08 57 39.7 +1.6**
GYA S **S** **08 59 40.0 -1.7**
GYA ScS **ScS** **09 05 15.2 -1.5**
GYA pmax pmax
comp=Z,20nm,0.9s
GYA pmax pmax
comp=Z,120nm,5.4s
GYA LR LR
comp=Z,550nm,16.8s
GYA LR LR
comp=Z,540nm,17.4s
GYA LR LR
comp=Z,520nm,18.0s
CD2 Chengdu 31.06 270 P **P** **08 54 41.6 -2.0**
CD2 sP sP 08 54 48.3 -1.4
CD2 PP **PP** **08 55 51.3 -2.3**
CD2 S **S** **08 59 45.8 -2.5**
CD2 pmax pmax
comp=Z,20nm,0.5s
CD2 pmax pmax
comp=Z,120nm,4.5s
CD2 LR LR
comp=Z,550nm,11.9s
CD2 LR LR
comp=Z,320nm,14.9s
GTA Gaotai 31.97 287 *e*P **P** **08 54 50.3 -1.3**
GTA pP pP 08 54 54.9 -1.1
GTA sP sP 08 54 58.2 +0.4
GTA PcP **PcP** **08 57 41.9 +0.4**
GTA S **S** **09 00 00.6 -2.0**
GTA pmax pmax
comp=Z,4.0nm,0.7s
GTA pmax pmax
comp=Z,75nm,5.2s
GTA LR LR
comp=Z,180nm,8.8s
GTA LR LR
comp=Z,140nm,13.3s
GTA LR LR
comp=Z,220nm,13.1s
PATS Pohnpei 34.12 148 *e*P **P** **08 55 12.6 +2.2**
comp=Z,56nm,1.2s
BILL Bilibino 34.18 17 *c i*P **P** **08 55 10.3 -0.1**
BILL *i* 08 57 47.6
BILL pmax pmax
comp=Z,19nm,1.2s
BILL MLR MLR
comp=Z,94nm,16.0s
BILL Bilibino 34.18 17 *e*P **P** **08 55 10.3 -0.1**
comp=Z,13nm,1.0s
KMI Kunming 34.36 261 P **P** **08 55 14.3 +1.6**
KMI pP sP 08 55 17.8 -1.1
KMI sP pP 08 55 20.1 +3.0
KMI pmax pmax
comp=Z,17nm,0.8s
KMI LR LR
comp=Z,220nm,12.8s
KMI LR LR
comp=Z,140nm,17.6s
KMI LR LR
comp=Z,190nm,12.8s
TIXI Tiksi 35.20 354 P **P** **08 55 17.9 -1.2**
comp=Z,3.6nm,0.6s,baz=152,slow=6.7,SNR=10
TIXI PcP **PcP** **08 57 50.0 +0.2**
comp=Z,1.1nm,0.4s,baz=63,slow=3.2,SNR=2.9
TIXI Tiksi 35.20 354⇓ *i*P **P** **08 55 18.2 -0.9**
TIXI pmax pmax
comp=Z,5.0nm,0.8s
TIXI Tiksi 35.20 354 *e*P **P** **08 55 18.2 -0.9**
comp=Z,6.4nm,1.1s
TIXI PcP **PcP** **08 57 50.0 +0.2**
SKNT Sakolnakorn 37.98 248 P P 08 55 47.5 +4.0
comp=Z,14nm,2.4s,comp=Z,3μm
NIKH Nikolski High 38.23 49 *e*P **P** **08 55 46.9 +1.8**
comp=Z,74nm,0.7s
CRAI Chiangrai 38.79 256 P **P** **08 55 49.4 -0.9**
comp=Z,9.0nm,0.8s,comp=Z,6μm
GAMB Gambell 39.02 31 *e*P **P** **08 55 53.9 +2.3**
comp=Z,4.3nm,0.9s
JAY Jayapura 39.37 180 P **P** **08 55 55.3 +0.2**
LBMI Labuha 39.44 201 P **P** **08 55 55.3 -0.3**
CMAI Chiengmai2 39.99 256 P **P** **08 56 00.6 +0.1**
comp=Z,8.8nm,0.9s,comp=Z,720nm
CHAI Chaiyaphum 40.14 249 P **P** **08 56 02.9 +1.4**
comp=Z,4.2nm,1.1s
WMQ Urumqi 40.28 297 P **P** **08 56 03.3 +0.8**
WMQ pP pP 08 56 06.7 -0.3
WMQ sP sP 08 56 09.9 +1.1
WMQ PcP **PcP** **08 58 06.8 +0.7**
WMQ pmax pmax
comp=Z,10.0nm,0.8s
WMQ pmax pmax
comp=Z,45nm,4.0s
WMQ LR LR
comp=Z,170nm,24.2s
WMQ LR LR
comp=Z,160nm,24.2s
WMQ LR LR
comp=Z,61nm,21.0s
MRSI Marisa 40.30 210 P **P** **08 56 03.9 +1.1**
PBKT Sadao Pong 40.49 251 P **P** **08 56 04.8 +0.4**
comp=Z,13nm,1.2s,comp=Z,821nm
FAKI Fak Fak 40.53 193 *e*P **P** **08 56 05.0 +0.2**
comp=Z,26nm,0.7s
CMMT Chiang Mai 40.70 255 P P 08 56 09.5 +3.3
comp=Z,4.4nm,0.8s
CHTO Chiang Mai 40.70 255 P P 08 56 09.6 +3.4
comp=Z,20nm,0.8s
CHTO Chiang Mai 40.70 255 *e*P **P** **08 56 05.7 -0.5**
CHTO pmax pmax
comp=Z,3.0nm,0.8s
CHTO Chiang Mai 40.70 255 *e*P **P** **08 56 05.7 -0.5**
comp=Z,3.2nm,0.8s
CMAR Chiang Mai Arr 40.91 255 P **P** **08 56 06.5 -1.4**
comp=Z,1.2nm,0.6s,baz=46,slow=7.1,SNR=8.5
CMAR PcP **PcP** **08 58 08.6 +0.2**
comp=Z,1.3nm,0.8s,baz=9.4,slow=2.1,SNR=7.3
CM01 Chiang Mai Arr 40.92 255 *e*P **P** **08 56 07.2 -0.8**
SANI Sanana 41.22 203 P **P** **08 56 09.6 -0.8**
SRAK Srakaew 41.31 247 P P 08 56 19.2 +8.0
LUWI Luwuk 41.37 208 P **P** **08 56 09.6 -2.1**
LUWI Luwuk 41.37 208 *e*P **P** **08 56 09.8 -1.9**
comp=Z,35nm,0.6s
ZAA0 Zalesovo Array 41.45 312 *e*P **P** **08 56 11.4 -0.5**
ZALV Zalesovo Beam 41.45 312 P **P** **08 56 11.0 -0.9**
comp=Z,8.9nm,0.7s,baz=94,slow=6.2,SNR=32
ZALV PcP **PcP** **08 58 09.2 -0.3**
comp=Z,7.7nm,0.8s,baz=106,slow=2.6,SNR=7.4
ZALV ScP **ScP** **09 01 59.2 +0.1**
comp=Z,2.9nm,0.9s,baz=85,slow=3.4,SNR=4.1
ZALV LR LR 09 13 15.5
comp=Z,68nm,18.1s,baz=70,slow=36
NVS Novosibirsk 42.38 314 *e*P **P** **08 56 18.3 -1.2**
NVS *e* 08 58 12.8
NVS pmax pmax
comp=Z,14nm,1.2s
NVS pmax pmax
comp=E,13nm,0.9s
BNDI Bandanaira 42.56 196 P **P** **08 56 22.0 +0.7**
NRIK Noril'sk 42.99 335 P **P** **08 56 23.2 -1.1**
comp=E,4.6nm,0.5s,baz=117,slow=8.4,SNR=7.8
NRIK PcP **PcP** **08 58 14.6 +0.2**
comp=E,7.5nm,0.8s,baz=82,slow=3.2,SNR=3.8
NRIK LR LR 09 15 50.5
comp=E,162nm,18.4s,baz=98,slow=38
NRIK Noril'sk 42.99 335 P **P** **08 56 23.2 -1.1**
NRIK 08 58 14.6
NRIK pmax pmax
comp=Z,6.0nm,0.8s
NRIK pmax pmax
comp=Z,8.0nm,0.8s
NRIK MLR MLR
comp=Z,163nm,18.4s
MK31 Makanchi Array 43.59 302 P **P** **08 56 29.3 -0.2**
MK31 pmax pmax
comp=Z,4.0nm,0.5s
MKAR Makanchi Array 43.59 302 P **P** **08 56 28.8 -0.7**
comp=Z,7.1nm,0.5s,baz=88,slow=9.9,SNR=61
MKAR PcP **PcP** **08 58 16.6 -0.3**
comp=Z,2.8nm,0.7s,baz=72,slow=4.2,SNR=4.3
MKAR Makanchi Array 43.59 302 *e*P **P** **08 56 29.2 -0.3**
MKAR PcP **PcP** **08 58 16.6 -0.3**
MAKZ Makanchi 43.80 302 *e*P **P** **08 56 31.0 -0.2**
MAKZ pmax pmax
comp=Z,9.0nm,0.6s
MAKZ Makanchi 43.80 302 *e*P **P** **08 56 31.0 -0.2**
comp=Z,9.4nm,0.6s
BKB Balikpapan 44.03 215 P **P** **08 56 30.8 -2.5**
KSM Kuching 45.13 225 *e*P **P** **08 56 42.6 +0.6**
comp=Z,15nm,0.9s
SPSI Sidrap Palu 45.21 210 P P 08 56 38.4 -4.3
KURK Kurchatov 45.43 308 *e*P **P** **08 56 43.5 -0.6**
KURK pmax pmax
comp=Z,39nm,0.9s
KURK Kurchatov 45.43 308 *e*P **P** **08 56 43.5 -0.6**
comp=Z,39nm,0.9s
KURK ScP **ScP** **09 02 15.7 +0.3**
KURBB Kurchatov Arra 45.50 308 ScP **ScP** **09 02 15.7 0.0**
comp=Z,1.2nm,1.0s,baz=91,slow=3.6,SNR=2.4
STKI Sintang 45.63 223 P P 08 56 39.4 -6.7
SAUI Saumlaki 45.65 193 P **P** **08 56 43.2 -2.9**
TTA Tatalina 45.75 35 *e*P **P** **08 56 47.8 +1.2**
TTA pmax pmax
comp=Z,18nm,1.5s
TTA Tatalina 45.75 35 *e*P **P** **08 56 47.8 +1.2**
comp=Z,18nm,1.5s
SVW2 Sparrevohn 45.88 37 *e*P **P** **08 56 50.1 +2.6**
comp=Z,19nm,1.0s
KAPI Kappang 46.17 210 *e*P **P** **08 56 51.0 +0.7**
comp=Z,44nm,0.9s
PDGK Podgornoye 46.22 298 P **P** **08 56 49.5 -0.9**
PDGK pmax pmax
comp=Z,27nm,1.1s
RAMN Ramite 46.39 274 *e*P **P** **08 56 52.0 -0.3**
comp=Z,74nm,1.0s
GUN Gumba 46.54 275 *e*P **P** **08 56 53.4 -0.2**
BBKI Banjar Baru 46.93 216 P **P** **08 56 57.6 +1.4**
SURT Suratani 47.03 244 P **P** **08 57 00.2 +3.1**
comp=Z,5.7nm,1.0s
KKN Kakani 47.07 275 *e*P **P** **08 56 57.4 -0.2**
RSO Redoubt South 47.27 38 *e*P **P** **08 56 58.6 0.0**
GKN Gorkha 47.49 276 *e*P **P** **08 57 00.6 -0.2**
comp=Z,102nm,1.2s
KDAK Kodiak Island 47.49 42 P P 08 57 15.1 +15
comp=Z,19nm,0.8s,baz=270,slow=4.8,SNR=9.8
KDAK Kodiak Island 47.49 42 *i* P **P** **08 57 01.4 +1.2**
PPLA Purkeypile 47.50 35 *e*P **P** **08 57 02.2 +1.8**
comp=Z,15nm,1.0s
CAST Castle Rocks 47.55 34 *e*P **P** **08 57 02.6 +1.9**
comp=Z,6.9nm,0.9s
SPU Mount Spurr 47.59 37 *e*P **P** **08 57 02.6 +1.6**
PBKI Pangkalan Bun 47.86 221 P **P** **08 57 04.2 +0.7**
BPAW Bear Paw Mtn. 48.05 33 *e*P **P** **08 57 06.0 +1.6**
comp=Z,11nm,1.2s
KTH Kantishna Hill 48.07 34 *e*P **P** **08 57 06.4 +1.6**
comp=Z,19nm,1.0s
MLY Manley 48.16 32 *e*P **P** **08 57 06.7 +1.4**
comp=Z,11nm,0.8s
TRF Thorofare Moun 48.36 34 *e*P **P** **08 57 08.7 +1.6**
comp=Z,8.0nm,0.9s
KOLN Koldanda 48.42 276 *e*P **P** **08 57 07.8 -0.2**
comp=Z,16nm,0.7s
COLD Coldfoot 48.43 29 *e*P **P** **08 57 09.0 +1.7**
comp=Z,5.3nm,1.0s
RC01 Rabbit Creek A 48.72 37 *e*P **P** **08 57 12.3 +2.7**
comp=Z,25nm,1.2s
PYUN Piuthan 48.76 277 *e*P **P** **08 57 10.6 0.0**
comp=Z,140nm,1.0s
SEW Seward 48.93 39 *e*P **P** **08 57 11.9 +0.6**
comp=Z,149nm,2.0s
MCK McKinley 48.96 34 *e*P **P** **08 57 12.4 +1.0**
MCK pmax pmax
comp=Z,12nm,1.0s
MCK McKinley 48.96 34 *e*P **P** **08 57 12.4 +1.0**
comp=Z,12nm,1.0s
PMR Palmer 48.98 37 *e*P **P** **08 57 11.8 +0.2**
PMR pmax pmax
comp=Z,8.0nm,0.8s
PMR Palmer 48.98 37 *e*P **P** **08 57 11.8 +0.2**
comp=Z,8.3nm,0.8s
RND Reindeer 49.01 34 *e*P **P** **08 57 12.7 +0.8**
RND pmax pmax
comp=Z,21nm,1.2s
RND Reindeer 49.01 34 *e*P **P** **08 57 12.7 +0.8**
comp=Z,21nm,1.2s
TPRI Tanjung Pinang 49.03 231 P **P** **08 57 12.0 -0.5**
SOEI Soe 49.04 202 *e*P **P** **08 57 14.5 +1.8**
comp=Z,126nm,1.1s
TKM2 Tokmak 2 49.08 298 *e*P **P** **08 57 13.6 +0.7**
TKM2 pmax pmax
comp=Z,29nm,1.0s
TKM2 Tokmak 2 49.08 298 *e*P **P** **08 57 13.6 +0.7**
comp=Z,29nm,1.0s
MDM Murphy Dome 49.22 32 *e*P **P** **08 57 15.1 +1.6**
comp=Z,17nm,0.9s
WRH Wood River Hil 49.30 33 *e*P **P** **08 57 15.5 +1.4**
comp=Z,11nm,0.8s
SML Sawmill 49.34 36 *e*P P 08 57 17.6 +3.2
SML pmax pmax
comp=Z,15nm,1.0s
SML Sawmill 49.34 36 *e*P P 08 57 17.6 +3.2
comp=Z,15nm,1.0s
COLA College 49.39 32⇑ *i*P **P** **08 57 15.9 +1.3**
COLA pmax pmax
comp=Z,7.0nm,0.9s
COLA College 49.39 32 *e*P **P** **08 57 15.9 +1.3**
comp=Z,5.8nm,0.8s
CCB Clear Creek Bu 49.42 33 *e*P **P** **08 57 16.4 +1.5**
comp=Z,6.7nm,1.1s
BATI Baumata 49.64 202 P **P** **08 57 16.8 -0.4**
FRU Bishkek 49.79 298 *i* P **P** **08 57 18.0 -0.2**
FRU pmax pmax
comp=Z,34nm,1.8s
IL1 Eielson Array 49.80 32 *e*P **P** **08 57 17.9 0.0**
ILAR Eielson Array 49.80 32 P **P** **08 57 18.0 +0.1**
comp=Z,8.4nm,0.8s,baz=268,slow=5.9,SNR=55
ILAR Eielson Array 49.80 32 P **P** **08 57 18.0 +0.1**
ILAR pmax pmax
comp=Z,8.0nm,0.8s
ILB Eielson Array 49.80 32 *e*P **P** **08 57 18.3 +0.4**
SCM Sheep Creek Mo 49.81 36 *e*P **P** **08 57 19.4 +1.3**
SCM pmax pmax
comp=Z,20nm,1.1s
SCM Sheep Creek Mo 49.81 36 *e*P **P** **08 57 19.4 +1.3**
comp=Z,20nm,1.1s
KSH Kashi 49.83 294 P P 08 57 22.7 +4.1
KSH *e*pP sP 08 57 27.5 +2.6
KSH *e*PP PP 08 59 19.3 +6.1
KSH *e*ScP **ScP** **09 02 36.6 +2.3**
KSH S **S** **09 04 31.9 +3.9**
KSH pmax pmax
comp=Z,12nm,1.1s
KSH pmax pmax
comp=Z,120nm,4.6s
KSH LR LR
comp=Z,160nm,6.2s
KSH LR LR
comp=Z,170nm,9.0s
KSH LR LR
comp=Z,220nm,8.1s
CHKZ Chkalovo 49.85 313 P **P** **08 57 17.0 -1.3**
CHKZ pmax pmax
comp=Z,19nm,0.8s
OTUK Ortayu 49.91 306 P **P** **08 57 18.1 -0.9**
OTUK pmax pmax
comp=Z,19nm,0.8s
AAK Ala-Archa 49.94 298 P **P** **08 57 19.1 -0.3**
comp=Z,5.4nm,0.8s,baz=116,slow=4.0,SNR=15
AAK Ala-Archa 49.94 298 *e*P **P** **08 57 19.5 +0.1**
AAK pmax pmax
comp=Z,9.0nm,0.9s
AAK Ala-Archa 49.94 298 *e*P **P** **08 57 19.5 +0.1**
comp=Z,8.6nm,0.9s
BVA0 Borovoye Array 50.10 312 P **P** **08 57 19.2 -1.1**
BVA0 pmax pmax
comp=Z,16nm,1.1s
BVAR Borovoye Array 50.10 312 P **P** **08 57 19.9 -0.4**
comp=Z,14nm,0.9s,baz=77,slow=7.8,SNR=36
BVAR PcP **PcP** **08 58 39.4 -0.3**
comp=Z,5.2nm,0.7s,baz=103,slow=3.3,SNR=7.1
BRVK Borovoye 50.16 312 *d i*P **P** **08 57 20.3 -0.4**
BRVK pmax pmax
comp=Z,17nm,0.8s
BRVK Borovoye 50.16 312 *e*P **P** **08 57 19.8 -1.0**
comp=Z,17nm,0.9s
FYU Fort Yukon 50.40 30 *e*P P 08 57 26.8 +4.5
comp=Z,47nm,1.8s
MTN Manton Dam 50.43 192 *e*P **P** **08 57 24.9 +1.8**
comp=Z,41nm,1.0s
EKS2 Erkin-Say 50.43 298 *e*P **P** **08 57 23.3 +0.1**
EKS2 pmax pmax
comp=Z,6.0nm,0.8s
EKS2 Erkin-Say 50.43 298 *e*P **P** **08 57 23.3 +0.1**
comp=Z,5.8nm,0.8s
KLU Klutina 50.52 37 *e*P **P** **08 57 25.2 +1.8**
comp=Z,20nm,1.4s
DIV Divide 50.63 37 *e*P **P** **08 57 26.5 +2.2**
comp=Z,34nm,1.4s
EYAK Cordova Ski Ar 50.71 38 *e*P **P** **08 57 26.4 +1.6**
comp=Z,22nm,1.2s
COEN Coen 50.80 177 *e*P **P** **08 57 26.4 +0.5**
comp=Z,48nm,1.3s
ZRNK Zerenda 50.94 312 P **P** **08 57 26.0 -0.6**
ZRNK pmax pmax

comp=Z,30nm,1.1s
ZRNK Zerenda 50.94 312 *e*P P 08 57 26.5 -0.1
comp=Z,25nm,0.9s
DOT Dot Lake 51.13 34 *e*P P 08 57 28.5 +0.6
comp=Z,17nm,0.9s
BMRM Bremner River 51.21 37 *e*P P 08 57 30.2 +1.5
comp=Z,21nm,1.1s
RAGM Ragged Mountai 51.26 38 *e*P P 08 57 31.5 +2.5
comp=Z,108nm,2.0s
PSI Prapat 51.28 238 LR LR 09 20 54.8
comp=Z,86nm,18.7s,baz=21,slow=38
PSI Prapat 51.28 238 *e*P P 08 57 28.9 -0.9
PSI pmax pmax
comp=Z,13nm,1.1s
PSI Prapat 51.28 238 *e*P P 08 57 28.9 -0.9
comp=Z,13nm,1.1s
MENT Mentasta 51.37 35 *e*P P 08 57 31.7 +1.9
comp=Z,8.6nm,0.9s
MNAS Manas 51.38 299 P P 08 57 29.9 -0.4
MNAS pmax pmax
comp=Z,16nm,0.8s
SFK Sufi-Kurgan 51.47 295 P P 08 57 30.8 -0.3
SFK pmax pmax
comp=Z,6.0nm,0.5s
JAGI Jajag, Banyuwa 51.65 214 *e*P P 08 57 33.5 +1.1
comp=Z,58nm,1.3s
EGAK Eagle 52.25 32 *e*P P 08 57 36.9 +0.7
comp=Z,5.9nm,0.9s
PWJI Pagerwojo 52.35 217 P P 08 57 35.0 -2.5
KK31 Karatay Array 52.58 300 *i* P P 08 57 38.6 -0.5
KK31 pmax pmax
comp=Z,7.0nm,0.8s
KKAR Karatay Array 52.58 300 *e*P P 08 57 39.1 0.0
KKAR Karatay Array 52.58 300 *e*P P 08 57 39.1 0.0
KPJI Karang Pucung 53.20 221 P P 08 57 42.9 -0.9
GSI Gunungsitoli 53.28 238 *e*P P 08 57 44.3 -0.2
comp=Z,44nm,0.8s
MDSI Maura Dua 53.50 227 P P 08 57 45.5 -0.6
comp=Z,22nm,0.9s,comp=Z,950nm
INK Inuvik 54.65 27 P P 08 57 54.5 +0.7
comp=Z,3.0nm,0.5s,baz=291,slow=5.4,SNR=24
SVE Sverdlovsk 54.72 318 *e*P P 08 57 54.9 +0.4
SVE pmax pmax
comp=Z,32nm,1.0s
ARU Arti 55.94 318 P P 08 58 02.9 -0.4
comp=Z,14nm,0.8s,baz=82,slow=3.1,SNR=23
ARU Arti 55.94 318 *d i* P P 08 58 02.8 -0.4
ARU 09 00 02.1
ARU S S 09 05 49.9 -0.5
ARU SS SS 09 09 31.4 -4.4
ARU pmax pmax
comp=Z,36nm,1.2s
ARU Arti 55.94 318 *e*P P 08 58 02.9 -0.4
comp=Z,22nm,0.9s
FITZ Fitzroy Crossi 56.66 197 *e*P P 08 58 09.6 +0.8
comp=Z,15nm,0.8s
KBL Kabul 56.83 291 *e*P P 08 58 09.9 -0.4
KBL pmax pmax
comp=Z,14nm,0.9s
KBL Kabul 56.83 291 *e*P P 08 58 09.9 -0.4
comp=Z,14nm,0.9s
WRAB Tennant Creek 56.99 187 *d i* P P 08 58 10.3 -0.8
WRAB pmax pmax
comp=Z,109nm,0.8s
WRAB Tennant Creek 56.99 187 *e*P P 08 58 10.3 -0.8
comp=Z,42nm,0.8s
WB2 Warramunga Arr 57.00 187 *e*P P 08 58 10.4 -0.8
comp=Z,46nm,0.8s
WRA Warramunga Arr 57.00 187 P P 08 58 10.3 -0.9
comp=Z,50nm,0.9s,baz=3.1,slow=7.3,SNR=256
WRA PcP **PcP** 08 59 07.0 +0.8
comp=Z,8.3nm,0.7s,baz=3.5,slow=4.4,SNR=6.5
WC3 Warramunga Arr 57.02 187 *e*P P 08 58 10.6 -0.7
comp=Z,45nm,0.8s
AB31 Akbulak array 57.45 310 P P 08 58 13.3 -0.9
AB31 pmax pmax
comp=Z,13nm,0.7s
ABKAR Akbulak array 57.45 310 *e*P P 08 58 13.7 -0.5
HYB Hyderabad 57.59 268 *i* P P 08 58 15.0 -0.6
AKTO Aktyubinsk 58.20 312 P P 08 58 19.0 -0.4
comp=Z,8.1nm,0.9s,baz=71,slow=10,SNR=16
AKTO LR LR 09 22 09.3
comp=Z,55nm,18.8s,baz=61,slow=35
DLBC Dease Lake 58.99 38 P P 08 58 26.5 +1.6
comp=Z,5.3nm,0.9s,baz=309,slow=8.0,SNR=7.0
DLBC Dease Lake 58.99 38 *e*P P 08 58 27.8 +3.0
comp=Z,12nm,1.2s
SPB1 Spitsbergen Ar 60.38 349 *e*P P 08 58 35.1 +1.0
SPB5 Spitsbergen Ar 60.38 349 *e*P P 08 58 35.2 +1.1
SPA1 Spitsbergen Ar 60.38 349 *e*P P 08 58 35.2 +1.1
SPA2 Spitsbergen Ar 60.38 349 *e*P P 08 58 34.8 +0.7
SPITS Spitsbergen Ar 60.38 349 P P 08 58 34.6 +0.5
comp=Z,9.0nm,0.8s,baz=82,slow=7.0
AS01 Alice Springs 60.72 187 *e*P P 08 58 36.7 -0.3
AS31 Alice Springs 60.73 187 *e*P P 08 58 36.8 -0.3
comp=Z,4.8nm,0.8s
ASAR Alice Springs 60.73 187 P P 08 58 36.5 -0.5
comp=Z,16nm,0.8s,baz=9.2,slow=6.0,SNR=76
ASAR LR LR 09 21 57.0
comp=Z,62nm,21.4s,baz=303,slow=33
POO Poona 60.75 272 *ex* P 08 58 35.0 -2.5
MBWA Marble Bar 61.17 202 *e*P P 08 58 40.0 -0.1
comp=Z,26nm,0.7s
TMCR Tamitsa 62.43 331 *e*P P 08 58 48.1 +0.1
TMCR pmax pmax
comp=Z,14nm,0.9s
RES Resolute Bay 62.73 14 P P 08 58 49.8 -0.1
comp=Z,7.9nm,0.8s,baz=318,slow=7.2,SNR=21
EIDS Eidsvold 62.87 169 *e*P P 08 58 51.8 +0.4
comp=Z,27nm,1.6s
KEV Kevo 63.20 339 *e*P P 08 58 53.5 +0.4
KEV pmax pmax
comp=Z,63nm,1.5s
KEV Kevo 63.20 339 *e*P P 08 58 53.5 +0.4
comp=Z,63nm,1.5s
GEYT Alibeck 63.28 299 P P 08 58 53.7 -0.6
comp=Z,13nm,0.8s,baz=24,slow=4.0,SNR=13
KLMR Klimovskoe 63.41 328 *e*P P 08 58 51.4 -3.2
KLMR *e**SP sP 08 59 02.7 +1.7
KLMR pmax pmax
comp=Z,10.0nm,0.8s
ARA0 ARCESS Array S 63.76 339 *e*P P 08 58 57.1 +0.2
ARCES ARCESS Array B 63.76 339 P P 08 58 56.8 0.0
comp=Z,8.5nm,0.8s,baz=62,slow=7.9,SNR=14
ARCES LR LR 09 30 52.8
comp=Z,57nm,18.0s,baz=52,slow=40
ARE0 ARCESS Array S 63.76 339 *e*P P 08 58 57.4 +0.5
comp=Z,130nm,2.0s
YKW3 Yellowknife Ar 64.06 30 *e*P P 08 58 58.9 0.0
comp=Z,20nm,1.8s
YKA Yellowknife Ar 64.10 30 P P 08 58 59.4 +0.3
comp=Z,2.6nm,0.7s,baz=302,slow=6.6,SNR=48
YKA PKP2bc 09 27 55.0
comp=Z,0.2nm,0.8s,baz=120,slow=2.0,SNR=4.3
YKB5 Yellowknife Ar 64.10 30 *e*P P 08 58 58.7 -0.5
DAG Danmarks Havn 65.70 355 *i* P P 08 59 09.1 -0.3
comp=Z,15nm,0.8s
DAG Danmarks Havn 65.70 355 *i* P P 08 59 09.1 -0.3
DAG pmax pmax
comp=Z,11nm,0.8s
VRH Novokhopyorsk 67.15 318 *e*P P 08 59 17.4 -1.6
VRH pmax pmax
comp=Z,10.0nm,0.6s
OBN Obninsk 67.71 323 *i* P P 08 59 21.7 -0.8
OBN *i* 08 59 49.5
OBN *i* 09 01 50.4
OBN pmax pmax
comp=Z,27nm,1.2s
B05A Bryant 67.74 46 P P 08 59 24.4 +1.6
baz=301
LPSR Galich'ya Gora 67.89 320 *e*P P 08 59 22.8 -0.9
LPSR pmax pmax
comp=Z,10.0nm,0.7s
ARMA Armidale 67.91 170 *e*P P 08 59 24.4 +0.4
comp=Z,15nm,1.0s
FIA1 FINESS Array S 68.50 332 *e*P P 08 59 27.1 -0.3
comp=Z,27nm,0.9s
FINES FINESS Array B 68.51 332 P P 08 59 27.3 -0.1
comp=Z,18nm,0.8s,baz=58,slow=7.6,SNR=57
FINES LR LR 09 32 07.9
comp=Z,134nm,18.4s,baz=26,slow=38
VSR Storozhevoye 68.51 319 *e*P P 08 59 26.6 -1.0
VSR pmax pmax
comp=Z,10.0nm,0.8s
STKA Stephens Creek 68.58 179 P P 08 59 27.7 -0.4
comp=Z,6.9nm,0.9s,baz=348,slow=9.2,SNR=11
STKA Stephens Creek 68.58 179 *e*P P 08 59 28.4 +0.3
comp=Z,2.2nm,1.1s
LON Longmire 68.69 47 *e*P P 08 59 32.3 +3.4
LON pmax pmax
comp=Z,17nm,1.8s
LON Longmire 68.69 47 *e*P P 08 59 32.3 +3.4
comp=Z,17nm,1.8s
F04A Amboy 68.76 48 *e*P P 08 59 31.3 +2.1
comp=Z,58nm,1.7s
COR Corvallis 68.93 50 *e*P P 08 59 33.0 +2.6
COR pmax pmax
comp=Z,259nm,1.8s
COR Corvallis 68.93 50 *e*P P 08 59 33.0 +2.6
comp=Z,258nm,1.8s
B08A Colville Reser 69.25 45 *e*P P 08 59 33.5 +1.1
comp=Z,4.9nm,0.8s
I03D Drain, OR 69.37 50 P P 08 59 34.7 +1.6
baz=302
H04A Detroit Lake 69.56 49 *e*P P 08 59 35.9 +1.6
comp=Z,22nm,1.2s
GOF Gofitskoye 69.62 311 *e*P P 08 59 34.7 +0.1
GOF pmax pmax
comp=Z,29nm,0.9s
BBOO Buckleboo 69.64 184 *e*P P 08 59 34.9 +0.2
comp=Z,16nm,0.8s
I04A Tendick Farm, 69.89 50 P P 08 59 37.7 +1.2
baz=302
VSU Vasula 70.12 329 *d i* P P 08 59 37.0 -0.4
VSU pmax pmax
comp=Z,43nm,0.8s
I05D Terrebonne, OR 70.25 49 P P 08 59 39.5 +0.9
baz=303
ZEI Tsey 70.31 309 *e*P P 08 59 37.5 -1.7
ZEI pmax pmax
comp=Z,6.0nm,0.7s
KBZ Khabaz 70.42 310 P P 08 59 39.6 +0.1
comp=Z,12nm,0.9s,baz=71,slow=3.6,SNR=17
KBZ LR LR 09 31 22.5
comp=Z,96nm,19.2s,baz=20,slow=37
KVAR Kislovodsk Arr 70.42 311 P P 08 59 38.8 -1.0
comp=Z,24nm,1.0s,baz=251,slow=1.7,SNR=9.9
KVAR LR LR 09 31 07.0
comp=Z,74nm,18.6s,baz=12,slow=36
KIV Kislovodsk 70.42 311 *e*P P 08 59 39.5 -0.2
KIV pmax pmax
comp=Z,32nm,0.9s
KIV Kislovodsk 70.42 311 *e*P P 08 59 40.2 +0.5
comp=Z,28nm,0.9s
NEW Newport 70.54 44 P P 08 59 41.4 +1.1
comp=Z,6.3nm,0.9s,baz=315,slow=4.1,SNR=9.9
NEW Newport 70.54 44 P P 08 59 41.2 +0.9
baz=304
NEW Newport 70.54 44 *e*P P 08 59 41.4 +1.1
comp=Z,8.2nm,0.9s
SUMG Summit 70.66 360 *i* P P 08 59 42.2 +1.1
comp=Z,28nm,0.9s
SUMG Summit 70.66 360 *e*P P 08 59 41.8 +0.7
SUMG pmax pmax
comp=Z,33nm,1.0s
SUMG Summit 70.66 360 *e*P P 08 59 41.8 +0.7
comp=Z,33nm,1.0s
NEY Neytrino 70.79 310 *e*P P 08 59 42.1 0.0
NEY pmax pmax
comp=Z,1.0nm,0.9s
YBH Yreka Blue Hor 70.82 52 *e*P P 08 59 44.1 +2.0
YBH pmax pmax
comp=Z,12nm,1.3s
YBH Yreka Blue Hor 70.82 52 *e*P P 08 59 44.1 +2.0
comp=Z,12nm,1.3s
J05D Fort Rock, OR 70.89 50 P P 08 59 43.9 +1.2
baz=303
M04C Macdoel 71.33 52 P P 08 59 46.2 +0.8
baz=303
K05A Summer Lake 71.41 50 *e*P P 08 59 48.0 +2.1
comp=Z,11nm,0.9s
WALA Waterton Lakes 71.83 42 *e*P P 08 59 49.6 +1.3
comp=Z,9.7nm,0.9s
SCO Scoresbysund 72.03 354 *i* P P 08 59 49.4 +0.6
comp=Z,6.9nm,0.9s
SCO Scoresbysund 72.03 354 *i* P P 08 59 49.4 +0.6
SCO pmax pmax
comp=Z,7.0nm,0.9s
O03D Paynes Creek 72.18 53 P P 08 59 51.1 +0.7
baz=304
MOD Modoc Plateau 72.23 51 *e*P P 08 59 52.2 +1.4
comp=Z,25nm,1.9s
BMO Blue Mountains 72.36 47 *e*P P 08 59 52.9 +1.4
comp=Z,6.6nm,0.9s
NACGM Naroch 72.37 326 *e* P 08 59 50.0 -1.1
JTMT Jette 72.40 43 *e*P P 08 59 53.2 +1.5
SWMT Swartz Lake 72.69 43 *e*P P 08 59 54.7 +1.3
ORV Oroville 72.78 53 *e*P P 08 59 54.9 +1.0
ORV pmax pmax
comp=Z,16nm,1.7s
ORV Oroville 72.78 53 *e*P P 08 59 54.9 +1.0
comp=Z,16nm,1.7s
WVOR Wild Horse Val 72.95 50 *e*P P 08 59 56.5 +1.5
WVOR pmax pmax
comp=Z,7.0nm,1.3s
WVOR Wild Horse Val 72.95 50 *e*P P 08 59 56.5 +1.5
comp=Z,7.3nm,1.3s
NWAO Narrogin (SRO) 72.97 200 *e*P P 08 59 57.2 +2.3
NWAO pmax pmax
comp=Z,80nm,1.5s
NWAO Narrogin (SRO) 72.97 200 *e*P P 08 59 57.1 +2.3
comp=Z,80nm,1.5s
MSO Missoula 73.13 44 P P 08 59 56.5 +0.5
baz=306
MSO Missoula 73.13 44 *e*P P 08 59 57.0 +1.0
comp=Z,4.7nm,1.0s
NC405 NORSAR Array S 73.71 337 *e*P P 08 59 59.2 +0.2
HFS Hagfors 73.81 335 P P 08 59 59.2 -0.4
comp=Z,9.7nm,0.9s,baz=306,slow=3.5,SNR=14
NC204 NORSAR Array S 73.89 337 *e*P P 09 00 00.5 +0.4
NB201 NORSAR Array S 73.89 337 *e*P P 09 00 00.6 +0.5
AKASG Malin Array Be 73.90 322 P P 08 59 59.5 -0.7
comp=Z,9.0nm,0.7s,baz=47,slow=6.1,SNR=50
AKASG LR LR 09 35 02.5
comp=Z,94nm,19.1s,baz=80,slow=38
AKBB Malin Array Si 73.90 322 *e*P P 09 00 00.0 -0.3
AKBB pmax pmax
comp=Z,16nm,0.9s
AKBB Malin Array Si 73.90 322 *e*P P 08 59 60.0 -0.3
comp=Z,16nm,0.9s
KIEV Kiev 73.91 322 *e*P P 08 59 59.6 -0.8
KIEV pmax pmax
comp=Z,16nm,0.9s
KIEV Kiev 73.91 322 *e*P P 08 59 59.5 -0.8
comp=Z,16nm,0.9s
NB2 NORSAR Subarra 73.93 337 P P 09 00 00.0 -0.3
comp=Z,17nm,1.1s,baz=40,slow=6.2
NOA NORSAR Array B 73.93 337 P P 09 00 00.1 -0.3
comp=Z,14nm,1.0s,baz=39,slow=5.8,SNR=20
NOA LR LR 09 35 32.9
comp=Z,68nm,18.1s,baz=55,slow=38
AK11 Malin Array Si 73.94 322 *e*P P 08 59 59.8 -0.7
FFC Flin Flon 74.02 32 *e*P P 09 00 01.5 +0.6
FFC pmax pmax
comp=Z,9.0nm,0.8s
FFC Flin Flon 74.02 32 *e*P P 09 00 01.5 +0.6
comp=Z,9.3nm,0.8s
NBO02 NORSAR Array S 74.03 337 *e*P P 09 00 00.7 -0.2
MFID Camas Ranch 74.06 47 *e*P P 09 00 03.0 +1.4
comp=Z,9.8nm,1.3s
NBO00 NORSAR Array S 74.07 337 *e*P P 09 00 01.3 +0.2
NAO01 NORSAR Array S 74.18 337 *e*P P 09 00 02.1 +0.4
FCC Fort Churchill 74.25 26 *e*P P 09 00 02.5 +0.4
FCC pmax pmax
comp=Z,17nm,1.0s
FCC Fort Churchill 74.25 26 *e*P P 09 00 02.5 +0.4
comp=Z,16nm,1.0s
CMB Columbia Colle 74.36 54 *e*P P 09 00 04.7 +1.4
CMB pmax pmax
comp=Z,10.0nm,1.2s
CMB Columbia Colle 74.36 54 *e*P P 09 00 04.7 +1.4
comp=Z,10nm,1.2s
HRY Holter Researc 74.36 43 *e*P P 09 00 05.2 +1.9
LRM Limekiln Ridge 74.56 44 *e*P P 09 00 05.9 +1.3
EGMT Eagleton 74.66 41 P P 09 00 05.4 +0.5
baz=309
EGMT Eagleton 74.66 41 *e*P P 09 00 05.9 +1.0
comp=Z,21nm,0.8s
DLMT Dillon 74.76 44 *e*P P 09 00 06.9 +1.3
comp=Z,10nm,0.8s
HLID Hailey 74.81 47 P P 09 00 06.6 +0.7
baz=307
HLID Hailey 74.81 47 *e*P P 09 00 07.2 +1.3
comp=Z,5.3nm,1.0s
SIM Simferopol' 74.88 315 *e*P P 09 00 06.1 0.0
SIM pmax pmax
comp=Z,17nm,0.8s
MCMT McKenzie Canyo 74.94 45 *e*P P 09 00 09.0 +2.2
BMN Battle Mountai 74.97 51 *e*P P 09 00 08.7 +1.8
BMN pmax pmax
comp=Z,7.0nm,1.0s
BMN Battle Mountai 74.97 51 *e*P P 09 00 08.7 +1.8
comp=Z,7.4nm,1.0s
BOZ Bozeman (W) 75.12 44 P P 09 00 08.7 +1.1
baz=308
BOZ Bozeman (W) 75.12 44 *e*P P 09 00 08.8 +1.1
BOZ pmax pmax
comp=Z,8.0nm,0.8s
BOZ Bozeman (W) 75.12 44 *e*P P 09 00 08.8 +1.1
comp=Z,8.5nm,0.8s
KLNR Kaliningrad 75.39 329 *e*P P 09 00 08.7 -0.1
KLNR pmax pmax
comp=Z,29nm,0.9s
NV01 Mina Array Sit 75.47 53 *e*P P 09 00 11.0 +1.1
NVAR Mina Array Bea 75.47 53 P P 09 00 11.1 +1.2
comp=Z,3.7nm,0.7s,baz=292,slow=5.7,SNR=31
NV11 Mina Array Sit 75.56 53 *e*P P 09 00 11.4 +1.1
comp=Z,24nm,1.8s
MLAC Mammoth, Mammo 75.59 54 P P 09 00 11.8 +1.2
baz=306
ELK Elko 76.00 49 *e*P P 09 00 14.6 +1.7
ELK pmax pmax
comp=Z,3.0nm,0.8s
ELK Elko 76.00 49 *e*P P 09 00 14.6 +1.7
comp=Z,2.9nm,0.8s
YMR Madison River 76.10 44 *e*P P 09 00 15.1 +1.8
comp=Z,4.9nm,0.7s
YFT Old Faithful 76.31 44 *e*P P 09 00 16.7 +2.1
comp=Z,8.9nm,0.8s
LKWY Lake 76.48 44 *e*P P 09 00 18.2 +2.6
LKWY pmax pmax
comp=Z,6.0nm,0.9s
LKWY Lake 76.48 44 *e*P P 09 00 18.2 +2.6
comp=Z,6.3nm,0.9s
H17A Grant Village 76.48 44 P P 09 00 18.4 +2.7
baz=309
H17A Grant Village 76.48 44 *e*P P 09 00 18.6 +3.0
comp=Z,12nm,0.9s
IMW Indian Meadow 76.59 45 *e*P P 09 00 18.4 +2.1
comp=Z,8.0nm,0.9s
FLWY Flagg Ranch 76.61 45 *e*P P 09 00 18.6 +2.3
comp=Z,21nm,1.4s
RLMT Red Lodge 76.75 43 P P 09 00 18.1 +1.0
baz=310
RLMT Red Lodge 76.75 43 *e*P P 09 00 18.6 +1.6
comp=Z,4.7nm,0.8s
MOOW Moose Ponds 76.80 45 *e*P P 09 00 19.3 +1.9
comp=Z,5.8nm,1.1s
HVU Hansel Valley 76.85 47 *e*P P 09 00 19.3 +1.7
HVU pmax pmax
comp=Z,6.0nm,0.8s
HVU Hansel Valley 76.85 47 *e*P P 09 00 19.3 +1.7
comp=Z,5.7nm,0.8s
GRAC Grapevine Rang 76.91 54 P P 09 00 18.6 +0.7
baz=307
LOHW Long Hollow 76.96 45 *e*P P 09 00 20.0 +1.7
comp=Z,2.6nm,0.8s
SNOW Snow King Moun 76.97 45 *e*P P 09 00 20.4 +2.0
comp=Z,4.8nm,0.8s
REDW Red Top Meadow 76.98 45 *e*P P 09 00 20.1 +1.7
comp=Z,10nm,1.4s
DAC Darwin (Calif) 77.19 54 *e*P P 09 00 20.8 +1.1
DAC pmax pmax
comp=Z,7.0nm,1.2s
DAC Darwin (Calif) 77.19 54 *e*P P 09 00 20.8 +1.1
comp=Z,6.6nm,1.2s
DGMT Dagmar 77.20 38 P P 09 00 20.0 +0.7
baz=312
DGMT Dagmar 77.20 38 *e*P P 09 00 20.1 +0.8
comp=Z,13nm,0.9s
AHID Auburn Hatcher 77.21 46 *e*P P 09 00 20.9 +1.3
comp=Z,5.6nm,0.8s
BGU Big Grassy Mou 77.22 48 *e*P P 09 00 21.4 +1.6
comp=Z,4.6nm,0.9s
R11A Troy Canyon, C 77.23 52 P P 09 00 20.9 +1.1
baz=307,SNR=13
R11A Troy Canyon, C 77.23 52 *e*P P 09 00 21.0 +1.1
comp=Z,8.4nm,1.0s
LAO LASA Array 77.36 40 P P 09 00 21.0 +0.7
baz=311,SNR=5.5
LAO LASA Array 77.36 40 *e*P P 09 00 21.7 +1.4
comp=Z,15nm,1.0s
MPMC Manual Prospec 77.39 54 P P 09 00 21.4 +0.6
baz=307,SNR=6.2
FURC Furnace Creek, 77.55 54 P P 09 00 22.0 +0.6
baz=307,SNR=7.5
LRMC Laurel Mtn Rad 77.61 55 P P 09 00 22.5 +0.6
baz=307
TPNV Topopah Spring 77.66 53 P P 09 00 23.2 +1.0
baz=307,SNR=11
TPNV Topopah Spring 77.66 53 *e*P P 09 00 23.6 +1.4
TPNV pmax pmax
comp=Z,9.0nm,0.8s
TPNV Topopah Spring 77.66 53 *e*P P 09 00 23.6 +1.4
comp=Z,9.4nm,0.8s
HWUT Hardware Ranch 77.67 47 *e*P P 09 00 23.8 +1.6
comp=Z,8.2nm,1.0s
KWP Kalwaria Pacla 77.75 324 *e*P P 09 00 22.9 +0.6
KWP Kalwaria Pacla 77.75 324 *e*P P 09 00 23.0 +0.6
DUG Dugway, Tooele 77.81 49 P P 09 00 24.3 +1.3
baz=309,SNR=7.5
DUG Dugway, Tooele 77.81 49 *e*P P 09 00 24.4 +1.4
DUG pmax pmax
comp=Z,7.0nm,0.9s
DUG Dugway, Tooele 77.81 49 *e*P P 09 00 24.4 +1.4
comp=Z,7.1nm,0.9s
BUR08 Bucovina Ar. S 77.90 321 *e*P P 09 00 23.7 +0.4
TCUT Toone Canyon 78.06 47 *e*P P 09 00 26.3 +1.7
comp=Z,18nm,1.1s
BW06 Boulder Array 78.09 45 P P 09 00 24.9 +0.2
baz=310,SNR=8.5
BW06 Boulder Array 78.09 45 *e*P P 09 00 25.3 +0.7
comp=Z,4.7nm,0.8s
PD31 Pinedale Array 78.09 45 *e*P P 09 00 25.4 +0.7
PDAR Pinedale Array 78.09 45 P P 09 00 25.1 +0.4
comp=Z,4.2nm,0.7s,baz=264,slow=2.6,SNR=27
CTU Camp Tracy 78.13 48 *e*P P 09 00 26.7 +1.9
comp=Z,3.7nm,0.9s
SHOC Shoshone, Teco 78.27 54 P P 09 00 26.2 +0.7
baz=308
GSC Goldstone, Bar 78.29 55 P P 09 00 26.5 +0.8
baz=307
JLU Jordanelle 78.36 48 *e*P P 09 00 27.8 +1.5
comp=Z,6.4nm,1.1s
BR131 Keskin Array S 78.37 311 *e*P P 09 00 27.2 +1.0
BRTR Keskin Array B 78.37 311 P P 09 00 25.8 -0.3
comp=Z,4.7nm,0.9s,baz=87,slow=5.3,SNR=16
BRTR LR LR 09 40 00.5
comp=Z,52nm,18.1s,baz=42,slow=40
BRTR Keskin Array B 78.37 311 P P 09 00 25.8 -0.3
BRTR pmax pmax
comp=Z,4.0nm,0.9s
NLU North Lily Min 78.40 49 *e*P P 09 00 27.9 +1.5
comp=Z,6.0nm,0.9s
KOLS Kolonicke sedl 78.44 324 *e*P P 09 00 26.6 +0.4
KOLS pmax pmax
comp=Z,9.0nm,1.3s
KOLS Kolonicke sedl 78.44 324 *e*P P 09 00 26.6 +0.4
D25A Fairfield 78.53 39 P P 09 00 27.5 +0.7
baz=313
STHS Stebnicka Huta 78.58 325 *e*P P 09 00 28.6 +1.6
STHS pmax pmax
comp=Z,8.0nm,0.9s
STHS Stebnicka Huta 78.58 325 *e*P P 09 00 28.6 +1.6
MPU Maple Canyon 78.62 48 *e*P P 09 00 29.2 +1.6
comp=Z,7.1nm,0.9s
C26A Wahner Farm, P 78.67 38 P P 09 00 28.2 +0.7
baz=314
OJC Ojcow 78.68 326 *e*P P 09 00 27.8 +0.4
OJC Ojcow 78.68 326 *e*P P 09 00 28.0 +0.6
OJC pmax pmax
comp=Z,25nm,1.1s
OJC Ojcow 78.68 326 *e*P P 09 00 28.0 +0.6
comp=Z,25nm,1.1s
TUQ Turquoise Moun 78.78 54 P P 09 00 29.1 +0.7
baz=308,SNR=6.1
BR231 Keskin MP Arra 78.82 312 *e*P P 09 00 27.0 -1.6
CRVS Cervenica-Dubn 78.84 324 *e*P P 09 00 28.9 +0.5
CRVS Cervenica-Dubn 78.84 324 *e*P P 09 00 28.9 +0.5
E25A Miller Ranch, 78.93 39 P P 09 00 29.6 +0.6

	baz=313								
NIE	**Niedzica**	79.02	325	*e*P		P		09 00 30.2	+0.9
NIE	**Niedzica**	79.02	325	*e*P		P		09 00 30.3	+0.9
D26A	**Manning**	79.05	38	P		P		09 00 30.0	+0.4
	baz=314								
B28A	**Dugan Ranch, T**	79.08	36	P		P		09 00 29.9	+0.3
	baz=315								
MSU	**Marysvale**	79.24	50	*e*P		P		09 00 32.8	+1.7
MSU	**Marysvale**	79.24	50	*e*P		P		09 00 32.8	+1.7
A29A	**Manning Farm,**	79.27	35	P		P		09 00 31.1	+0.3
	baz=316,SNR=12								
TMUT	**Trail Mountain**	79.33	49	*e*P		P		09 00 33.2	+1.6
	comp=Z,3.4nm,0.8s								
GMRC	**Granite Mounta**	79.35	54	P		P		09 00 32.0	+0.4
	baz=308								
D27A	**Center**	79.45	38	P		P		09 00 32.0	+0.2
	baz=314								
P17A	**Butcher Ranch,**	79.50	48	*e*P		P		09 00 34.0	+1.7
	comp=Z,12nm,1.0s								
LCMT	**Little Creek M**	79.52	51	*e*P		P		09 00 34.3	+1.8
	comp=Z,9.7nm,1.0s								
MTPU	**Mount Pierson**	79.53	50	*e*P		P		09 00 33.5	+0.7
	comp=Z,6.9nm,0.7s								
PFO	**Pinyon Flats O**	79.54	56	P		P		09 00 33.2	+0.6
	baz=308								
B29A	**Wagenman Farm,**	79.54	36	P		P		09 00 32.5	+0.3
	baz=315								
LANS	**Liptovska Anna**	79.59	325	*e*P		P		09 00 33.7	+1.2
LANS	**Liptovska Anna**	79.59	325	*e*P		P		09 00 33.7	+1.2
BELC	**Belle Mtn. Jos**	79.61	55	P		P		09 00 33.5	+0.5
	baz=308								
A30A	**Hoffart Farm,**	79.69	35	P		P		09 00 33.2	+0.2
	baz=316								
P18A	**Preston Nutter**	79.69	48	*e*P		P		09 00 35.1	+1.5
	comp=Z,11nm,1.0s								
F26A	**Lodgepole**	79.75	39	P		P		09 00 33.8	+0.4
	baz=314,SNR=6.2								
KSP	**Ksiaz**	79.76	328	*e*P		P		09 00 33.4	+0.1
KSP	**Ksiaz**	79.76	328	*e*P		P		09 00 33.4	+0.1
KNB	**Kanab**	79.78	51	*e*P		P		09 00 36.0	+2.0
KNB				pmax		pmax			
	comp=Z,17nm,1.2s								
KNB	**Kanab**	79.78	51	*e*P		P		09 00 36.0	+2.0
	comp=Z,17nm,1.2s								
ULM	**Lac du Bonnet**	79.82	33	P		P		09 00 33.2	-0.5
	comp=Z,5.4nm,0.9s,baz=316,slow=7.8,SNR=6.0								
ULM	**Lac du Bonnet**	79.82	33	*e*P		P		09 00 33.9	+0.2
ULM				pmax		pmax			
	comp=Z,10.0nm,1.0s								
ULM	**Lac du Bonnet**	79.82	33	*e*P		P		09 00 33.9	+0.2
	comp=Z,9.8nm,1.0s								
SRU	**San Rafael Swe**	79.86	48	*e*P		P		09 00 35.7	+1.4
SRU				pmax		pmax			
	comp=Z,11nm,0.7s								
SRU	**San Rafael Swe**	79.86	48	*e*P		P		09 00 35.7	+1.4
	comp=Z,11nm,0.7s								
K22A	**Casper**	79.86	44	P		P		09 00 34.8	+0.5
	baz=312								
K22A	**Casper**	79.86	44	*e*P		P		09 00 35.5	+1.2
	comp=Z,7.3nm,0.9s								
E27A	**Carson**	79.90	38	P		P		09 00 34.6	+0.3
	baz=314								
MORC	**Moravsky Berou**	80.00	327	*e*P		P		09 00 35.3	+0.6
MORC				pmax		pmax			
	comp=Z,38nm,1.0s								
MORC	**Moravsky Berou**	80.00	327	*e*P		P		09 00 35.3	+0.6
	comp=Z,38nm,1.0s								
B30A	**Myrvik Farm, E**	80.03	35	P		P		09 00 35.4	+0.6
	baz=316,SNR=7.2								
F27A	**Lemmon**	80.06	39	P		P		09 00 35.6	+0.4
	baz=314,SNR=5.7								
IRM	**Iron Mountain**	80.07	55	P		P		09 00 35.9	+0.5
	baz=308								
RAYN	**Ar Rayn**	80.08	292	*e*P		P		09 00 35.6	0.0
	comp=Z,9.3nm,1.0s								
DPC	**Dobruska-Polom**	80.11	328	*e*P		P		09 00 35.8	+0.5
DPC	**Dobruska-Polom**	80.11	328	*e*P		P		09 00 35.8	+0.5
UPC	**Upice**	80.13	328	*e*P		P		09 00 36.1	+0.8
UPC	**Upice**	80.13	328	*e*P		P		09 00 36.1	+0.8
G26A	**Maurine**	80.17	40	P		P		09 00 35.9	+0.2
	baz=314,SNR=5.7								
BC3	**Big Chuckawall**	80.17	55	P		P		09 00 36.4	+0.3
	baz=308								
RSSD	**Black Hills**	80.22	41	P		P		09 00 36.6	+0.3
	baz=313								
RSSD	**Black Hills**	80.22	41	*e*P		P		09 00 36.9	+0.7
RSSD				pmax		pmax			
	comp=Z,4.0nm,0.6s								
RSSD	**Black Hills**	80.22	41	*e*P		P		09 00 36.9	+0.7
	comp=Z,3.6nm,0.6s								
PSZ	**Piszkesteto**	80.28	324	*e*P		P		09 00 36.7	+0.4
PSZ				pmax		pmax			
	comp=Z,13nm,1.1s								
PSZ	**Piszkesteto**	80.28	324	*e*P		P		09 00 36.7	+0.4
	comp=Z,14nm,1.1s								
W13A	**Hualapai Mount**	80.30	53	*e*P		P		09 00 37.9	+1.1
	comp=Z,6.6nm,1.2s								
VYHS	**Vyhne**	80.36	325	*e*P		P		09 00 37.3	+0.7
VYHS				pmax		pmax			
	comp=Z,5.0nm,1.2s								
VYHS	**Vyhne**	80.36	325	*e*P		P		09 00 37.3	+0.7
B31A	**Greenbush Farm**	80.36	35	P		P		09 00 37.1	+0.5
	baz=317								
G27A	**Dupree**	80.45	39	P		P		09 00 37.4	+0.2
	baz=314,SNR=7.5								
U15A	**North Rim**	80.48	51	*e*P		P		09 00 39.8	+2.0
	comp=Z,12nm,1.0s								
A32A	**Rocking H Ranc**	80.53	34	P		P		09 00 37.2	-0.3
	baz=317,SNR=7.0								
H26A	**Fairpoint**	80.54	40	P		P		09 00 38.0	+0.3
	baz=314,SNR=5.5								
O20A	**White River Ci**	80.54	46	P		P		09 00 38.3	+0.3
	baz=311								
O20A	**White River Ci**	80.54	46	*e*P		P		09 00 38.7	+0.7
	comp=Z,9.3nm,1.0s								
PDMCI	**Parker Dam,Lak**	80.63	54	P		P		09 00 39.1	+0.8
	baz=309								
F28A	**McLaughlin**	80.69	38	P		P		09 00 39.3	+0.8
	baz=315								
BRG	**Berggiesshubel**	80.72	329	*e*P		P		09 00 38.5	0.0
	comp=Z,6.0nm,0.9s								
BRG	**Berggiesshubel**	80.72	329	*e*P		P		09 00 38.5	0.0
BRG				pmax		pmax			
	comp=Z,5.0nm,0.9s								
Y12C	**Blythe**	80.72	55	P		P		09 00 39.5	+0.7
	baz=309								
Y12C	**Blythe**	80.72	55	*e*P		P		09 00 40.4	+1.6
	comp=Z,10nm,1.1s								
VRAC	**Vranov**	80.77	327	P		P		09 00 38.8	0.0
	comp=Z,4.7nm,0.5s,baz=30,slow=6.1,SNR=7.8								
VRAC	**Vranov**	80.77	327	P		P		09 00 38.8	0.0
VRAC				pmax		pmax			
	comp=Z,3.0nm,0.5s								
CLL	**Collm**	80.77	330	⇓*i*P		P		09 00 38.3	-0.4
	comp=Z,21nm,1.1s								
CLL				*i*				09 00 54.9	
CLL	**Collm**	80.77	330	⇓*i*P		P		09 00 38.3	-0.4
CLL				*i*				09 00 54.9	
CLL				pmax		pmax			
	comp=Z,6.0nm,1.1s								
CLL	**Collm**	80.77	330	*e*P		P		09 00 38.8	0.0
	comp=Z,20nm,1.0s								
C31A	**Landman Farms,**	80.78	36	P		P		09 00 39.3	+0.4
	baz=317								
D30A	**Buchanan**	80.79	37	P		P		09 00 39.0	+0.1
	baz=316,SNR=6.1								
J25A	**Sunshine Ranch**	80.84	42	P		P		09 00 39.3	-0.2
	baz=313								
B32A	**Ashes, Strandq**	80.89	35	P		P		09 00 39.4	-0.1
	baz=317,SNR=8.9								
H27A	**Howes**	80.89	40	P		P		09 00 40.0	+0.4
	baz=314,SNR=11								
I26A	**New Underwood**	80.90	41	P		P		09 00 40.3	+0.6
	baz=314								
GLA	**Glamis**	80.96	55	P		P		09 00 41.1	+0.9
	baz=309								
A33A	**Warroad**	81.00	34	P		P		09 00 40.0	-0.1
	baz=318,SNR=11								
PV09	**Paradox Valley**	81.08	48	*e*P		P		09 00 42.6	+1.6
GOPC	**GO Pecny, Ondr**	81.09	328	*e*P		P		09 00 41.1	+0.6
GOPC	**GO Pecny, Ondr**	81.09	328	*e*P		P		09 00 41.1	+0.6
PRU	**Pruhonice**	81.14	328	*e*P		P		09 00 41.0	+0.2
PRU	**Pruhonice**	81.14	328	*e*P		P		09 00 41.0	+0.2
G28A	**Parade**	81.17	39	P		P		09 00 41.8	+0.7
	baz=315								
F29A	**Eureka**	81.18	38	P		P		09 00 41.3	+0.2
	baz=316								
AGMN	**Agassiz Nation**	81.27	34	P		P		09 00 41.1	-0.3
	baz=318								
AGMN	**Agassiz Nation**	81.27	34	*e*P		P		09 00 41.4	-0.1
	comp=Z,5.3nm,0.7s								
J26A	**Sides Ranch, S**	81.28	41	P		P		09 00 42.0	+0.3
	baz=314								
PV04	**Paradox Valley**	81.29	48	*e*P		P		09 00 42.9	+0.8
I27A	**Quinn**	81.29	40	P		P		09 00 42.3	+0.5
	baz=314,SNR=10								
N23A	**Red Feather La**	81.35	45	P		P		09 00 43.6	+1.1
	baz=312,SNR=6.8								
N23A	**Red Feather La**	81.35	45	*e*P		P		09 00 44.0	+1.6
	comp=Z,12nm,1.1s								
H28A	**Mission Ridge**	81.40	39	P		P		09 00 42.7	+0.4
	baz=315,SNR=11								
Y14A	**Wickenburg**	81.59	54	*e*P		P		09 00 44.5	+1.0
	comp=Z,30nm,1.0s								
E31A	**Nome**	81.60	37	P		P		09 00 43.5	+0.2
	baz=317								
WUAZ	**Wupatki**	81.63	52	P		P		09 00 45.3	+1.4
	baz=310,SNR=6.9								
WUAZ	**Wupatki**	81.63	52	*e*P		P		09 00 45.6	+1.7
	comp=Z,12nm,1.0s								
PV01	**Paradox Valley**	81.66	48	*e*P		P		09 00 45.4	+1.4
B34A	**Aery, Baudette**	81.67	34	P		P		09 00 43.2	-0.4
	baz=319								
C33A	**Trail**	81.70	35	P		P		09 00 43.7	-0.1
	baz=318								
I28A	**Midland**	81.80	40	P		P		09 00 44.7	+0.3
	baz=315								
NKC	**Novy Kostel**	81.82	329	*e*P		P		09 00 44.7	+0.3
NKC	**Novy Kostel**	81.82	329	*e*P		P		09 00 44.7	+0.3
113A	**Mohawk Valley,**	81.83	55	*e*P		P		09 00 45.9	+1.1
	comp=Z,4.4nm,1.0s								
H29A	**Onida**	81.84	39	P		P		09 00 45.1	+0.4
	baz=315								
J27A	**Elkhorn Farm,**	81.89	41	P		P		09 00 45.8	+0.8
	baz=314								
SMCO	**Snowmass**	81.91	47	*e*P		P		09 00 46.9	+1.3
	comp=Z,5.0nm,1.0s								
F31A	**Hecla**	81.93	37	P		P		09 00 45.4	+0.3
	baz=316								
G30A	**Faulkton**	82.02	38	P		P		09 00 45.8	+0.3
	baz=316								
D33A	**AnnSam, Waubun**	82.13	35	P		P		09 00 46.1	+0.1
	baz=318								
B35A	**Bob, Littlefor**	82.17	33	P		P		09 00 45.9	-0.4
	baz=319,SNR=6.7								
C34A	**RKJ Ranch, Bem**	82.17	34	P		P		09 00 46.2	-0.1
	baz=318								
KHC	**Kasperske Hory**	82.20	328	*e*P		P		09 00 46.3	-0.1
KHC	**Kasperske Hory**	82.20	328	*e*P		P		09 00 46.5	0.0
KHC				pmax		pmax			
	comp=Z,5.0nm,1.1s								
KHC	**Kasperske Hory**	82.20	328	*e*P		P		09 00 46.5	0.0
	comp=Z,4.9nm,1.1s								
I29A	**Vivian Onida**	82.23	40	P		P		09 00 46.6	-0.1
	baz=315								
ISCO	**Idaho Springs**	82.28	45	P		P		09 00 48.1	+0.7
	baz=313								
ISCO	**Idaho Springs**	82.28	45	*e*P		P		09 00 48.9	+1.5
ISCO				pmax		pmax			
	comp=Z,3.0nm,0.8s								
ISCO	**Idaho Springs**	82.28	45	*e*P		P		09 00 48.9	+1.5
	comp=Z,3.3nm,0.8s								
X16A	**Lo Mia Camp, P**	82.29	53	*e*P		P		09 00 49.1	+1.8
	comp=Z,8.1nm,1.0s								
MVCO	**Mesa Verde**	82.31	49	P		P		09 00 48.4	+0.9
	baz=311,SNR=7.8								
MVCO	**Mesa Verde**	82.31	49	*e*P		P		09 00 48.8	+1.3
	comp=Z,11nm,1.1s								
GEC2	**GERESS Array S**	82.37	328	*e*P		P		09 00 47.5	+0.1
GEC2				pmax		pmax			
	comp=Z,5.0nm,1.0s								
GEC2	**GERESS Array S**	82.37	328	*e*P		P		09 00 47.5	+0.1
	comp=Z,4.9nm,1.0s								
GERES	**GERESS Array B**	82.37	328	P		P		09 00 47.1	-0.3
	comp=Z,2.1nm,0.6s,baz=34,slow=5.5,SNR=14								
GERES				LR		LR		09 41 05.1	
	comp=Z,54nm,19.1s,baz=299,slow=38								
VTS	**Vitosha**	82.39	319	*e*P		P		09 00 48.4	+0.7
VTS				pmax		pmax			
	comp=Z,5.0nm,0.9s								
VTS	**Vitosha**	82.39	319	*e*P		P		09 00 48.4	+0.7
	comp=Z,5.4nm,0.9s								
D34A	**Park Rapids**	82.47	35	P		P		09 00 47.8	0.0
	baz=318								
E33A	**Westby DABS, E**	82.53	36	P		P		09 00 48.2	+0.1
	baz=318,SNR=7.4								
C35A	**Jirik Farms, M**	82.56	34	P		P		09 00 48.1	-0.2
	baz=319,SNR=9.8								
G32A	**Webster**	82.73	37	P		P		09 00 49.4	+0.1
	baz=317								
I30A	**Oacoma**	82.75	39	P		P		09 00 49.6	+0.2
	baz=316								
F33A	**5 Mile Ranch,**	82.88	36	P		P		09 00 50.2	+0.2
	baz=318								
EKA	**Eskdalemuir Ar**	82.90	340	P		P		09 00 49.4	-0.5
	comp=Z,1.9nm,0.7s,baz=33,slow=5.3,SNR=3.4								
E34A	**Wadena**	82.91	35	P		P		09 00 50.0	-0.1
	baz=318								
S22A	**4UR Ranch, Cre**	82.95	48	P		P		09 00 52.0	+1.2
	baz=312,SNR=7.6								
S22A	**4UR Ranch, Cre**	82.95	48	*e*P		P		09 00 52.7	+1.8
	comp=Z,6.0nm,1.0s								
D35A	**Remer**	82.99	34	P		P		09 00 50.0	-0.5
	baz=319								
C36A	**Pine Crest Far**	83.01	33	P		P		09 00 50.8	+0.1
	baz=320,SNR=8.9								
E35A	**Pequot Lakes**	83.22	35	P		P		09 00 51.6	-0.2
	baz=319								
G33A	**Ortonville**	83.29	37	P		P		09 00 52.2	+0.1
	baz=318								
D36A	**Goodland**	83.31	34	P		P		09 00 51.6	-0.6
	baz=320								
C37A	**Embarrass**	83.32	33	P		P		09 00 52.0	-0.2
	baz=320,SNR=7.3								
EYMN	**Ely**	83.45	32	P		P		09 00 52.7	-0.2
	baz=321,SNR=5.9								
EYMN	**Ely**	83.45	32	*e*P		P		09 00 53.1	+0.1
	comp=Z,10nm,0.9s								
H33A	**Prehn Over Nor**	83.52	37	P		P		09 00 53.6	+0.2
	baz=318,SNR=18								
K30A	**Basset**	83.54	40	P		P		09 00 53.8	+0.3
	baz=316								
G34A	**Benson**	83.63	36	P		P		09 00 54.1	+0.2
	baz=318,SNR=7.7								
F35A	**Swanville**	83.67	35	P		P		09 00 54.1	0.0
	baz=319								
C38A	**Sawbill Land.**	83.72	32	P		P		09 00 53.9	-0.4
	baz=321,SNR=12								
SDCO	**Great Sand Dun**	83.73	47	P		P		09 00 55.8	+0.9
	baz=313,SNR=6.8								
SDCO	**Great Sand Dun**	83.73	47	*e*P		P		09 00 56.3	+1.4
	comp=Z,5.5nm,1.1s								
E36A	**McGregor**	83.77	34	P		P		09 00 54.7	+0.1
	baz=320								
H34A	**Spellman Lake,**	83.99	37	P		P		09 00 56.2	+0.4
	baz=318								
K31A	**O'Neill**	84.02	40	P		P		09 00 55.9	0.0
	baz=316								
TUC	**Tucson**	84.06	54	P		P		09 00 57.1	+0.6
	baz=311								
TUC	**Tucson**	84.06	54	*e*P		P		09 00 57.8	+1.4
TUC				pmax		pmax			
	comp=Z,6.0nm,0.9s								
TUC	**Tucson**	84.06	54	*e*P		P		09 00 57.8	+1.4
	comp=Z,5.7nm,0.9s								
C39A	**Grand Marais**	84.13	32	P		P		09 00 56.2	-0.1
	baz=322								
F36A	**Milnica**	84.15	35	P		P		09 00 55.8	-0.7
	baz=320								
G35A	**Watkins**	84.19	36	P		P		09 00 57.0	+0.3
	baz=319								
ECSD	**EROS Data Cent**	84.28	38	P		P		09 00 57.2	0.0
	baz=318,SNR=10								
ECSD	**EROS Data Cent**	84.28	38	*e*P		P		09 00 57.5	+0.3
	comp=Z,12nm,0.9s								
L31A	**Butterfield Fa**	84.30	40	P		P		09 00 57.5	+0.1
	baz=316,SNR=5.8								
H35A	**Sunnyside Ranc**	84.42	36	P		P		09 00 58.1	+0.2
	baz=319,SNR=18								
T25A	**Trinidad**	84.77	47	P		P		09 01 00.9	+0.8
	baz=314								
T25A	**Trinidad**	84.77	47	*e*P		P		09 01 01.4	+1.3
	comp=Z,8.3nm,0.9s								
H36A	**Jessenland, He**	84.94	36	P		P		09 01 00.9	+0.4
	baz=319								
SPMN	**Marine on St.**	84.96	35	*e*P		P		09 01 01.0	+0.4
	comp=Z,6.0nm,0.8s								
BFO	**Black Forest**	84.98	330	*e*P		P		09 01 00.6	-0.1
BFO				pmax		pmax			
	comp=Z,14nm,0.9s								
BFO	**Black Forest**	84.98	330	*e*P		P		09 01 00.6	-0.1
	comp=Z,14nm,0.9s								
LAZ	**Ladron**	84.99	50	*e*P		P		09 01 02.9	+1.6
ANMO	**Albuquerque**	85.04	49	P		P		09 01 02.5	+1.0
	baz=313								
ANMO	**Albuquerque**	85.04	49	*c*eP		P		09 01 03.1	+1.6
ANMO				pmax		pmax			
	comp=Z,10.0nm,1.2s								
ANMO	**Albuquerque**	85.04	49	*e*P		P		09 01 03.0	+1.5
	comp=Z,9.0nm,1.1s								
J35A	**Milford**	85.24	37	P		P		09 01 02.4	+0.3
	baz=319								
K34A	**Le Mars**	85.31	38	P		P		09 01 02.6	+0.2
	baz=318								
H37A	**Dierke Farm, C**	85.40	35	P		P		09 01 03.2	+0.4
	baz=320								
BNM	**Barren Site**	85.47	50	*e*P		P		09 01 05.1	+1.4
SCHQ	**Schefferville**	85.48	16	P		P		09 01 03.4	+0.3
	comp=Z,4.3nm,0.8s,baz=30,slow=14,SNR=3.5								
FUORN	**Ofenpass-Fuorn**	85.56	328	*e*P		P		09 01 04.2	+0.2
	comp=Z,15nm,1.0s								
M33A	**Taylor Creek F**	85.58	40	P		P		09 01 03.8	-0.1
	baz=318								
DAVOX	**Davos/Dischmat**	85.59	329	P		P		09 01 03.8	-0.2
	comp=Z,5.0nm,0.8s,baz=329,slow=5.9,SNR=4.7								
I37A	**Lemond, Waseca**	85.61	36	P		P		09 01 04.4	+0.5
	baz=320,SNR=8.3								
319A	**Douglas**	85.64	54	*e*P		P		09 01 05.8	+1.4
	comp=Z,14nm,1.2s								
J36A	**Seneca 1, Swea**	85.68	37	P		P		09 01 04.7	+0.4
	baz=319								
L34A	**Svendsen Farm,**	85.70	39	P		P		09 01 04.7	+0.3
	baz=318								
K35A	**Storm Lake**	85.70	38	P		P		09 01 04.6	+0.1
	baz=319								
121A	**Cookes Peak, D**	85.83	52	P		P		09 01 06.4	+1.0
	baz=312								
121A	**Cookes Peak, D**	85.83	52	*e*P		P		09 01 06.3	+0.8
	comp=Z,5.6nm,0.9s								
TUE	**Stuetta**	86.06	329	*e*P		P		09 01 06.4	+0.1
	comp=Z,10nm,1.1s								
J37A	**Redenius Farm,**	86.07	36	P		P		09 01 06.2	0.0
	baz=320								
I38A	**Scanlan Farm,**	86.09	35	P		P		09 01 06.5	+0.2
	baz=320								
K36A	**Gilmore City**	86.15	37	P		P		09 01 06.7	+0.1
	baz=319								
CBKS	**Cedar Bluff**	86.23	43	P		P		09 01 07.2	0.0
	baz=316								
LAST	**Lasithi**	86.26	312	*e*P		P		09 01 07.4	0.0
	comp=Z,104nm,1.6s								
P32A	**Hulting Farm,**	86.26	42	P		P		09 01 07.1	-0.2
	baz=317								
M35A	**Neola**	86.41	39	P		P		09 01 07.9	-0.1
	baz=318								
K37A	**Belmond**	86.44	37	P		P		09 01 08.0	0.0
	baz=320,SNR=7.0								
IDI	**Anoyia**	86.52	312	*e*P		P		09 01 07.9	-0.8
	comp=Z,167nm,1.9s								
Q32A	**Meitler Ranch,**	86.74	42	P		P		09 01 09.6	0.0
	baz=317								
M36A	**Felix, Anita**	86.87	38	P		P		09 01 10.7	+0.5
	baz=319								
P33A	**Williams Farm,**	86.88	41	P		P		09 01 10.2	-0.1
	baz=317								
N35A	**Tabor**	86.89	39	P		P		09 01 10.8	+0.6
	baz=318								
Q33A	**Connelly Farm,**	87.13	42	P		P		09 01 11.7	+0.2
	baz=317								
P34A	**Walnut Farm, R**	87.25	41	P		P		09 01 11.9	-0.2
	baz=318								
SCIA	**State Center**	87.30	37	*e*P		P		09 01 13.7	+1.5
	comp=Z,11nm,0.9s								
R33A	**Olander Ranch,**	87.55	42	P		P		09 01 13.9	+0.3
	baz=317								
Q34A	**Chapman**	87.66	41	P		P		09 01 14.2	+0.2
	baz=318								
M38A	**Pleasantville**	87.68	37	P		P		09 01 14.3	+0.2
	baz=320								
N37A	**Lee Faris, Mou**	87.69	38	P		P		09 01 14.7	+0.5
	baz=319								
KSU1	**Kansas State U**	87.70	41	P		P		09 01 14.0	-0.2
	baz=318								
KSU1	**Kansas State U**	87.70	41	*e*P		P		09 01 14.5	+0.3
	comp=Z,12nm,1.0s								
O36A	**Bolckow**	87.78	39	P		P		09 01 15.0	+0.4
	baz=319								
MNTX	**Cornudas Mount**	87.90	51	P		P		09 01 16.3	+1.0
	baz=313								
MNTX	**Cornudas Mount**	87.90	51	*e*P		P		09 01 16.2	+1.0
	comp=Z,3.5nm,1.1s								
MSTX	**Muleshoe**	87.93	48	P		P		09 01 16.0	+0.4
	baz=315								
R34A	**Isabella, Hill**	87.95	42	P		P		09 01 16.0	+0.6
	baz=318								
P36A	**Good Intent, A**	88.04	40	P		P		09 01 15.9	0.0
	baz=319								
O37A	**Wolven Farm, M**	88.16	39	P		P		09 01 16.4	0.0
	baz=319								
N39A	**Derby Farms, D**	88.43	37	P		P		09 01 18.0	+0.4
	baz=320								
R35A	**Emporia Munici**	88.49	41	P		P		09 01 18.7	+0.7
	baz=318								
O38A

X35A	**Drake**	90.97	44	P	P	09 01 29.4	-0.2
	baz=318						
133A	**Hamilton Ranch**	91.16	47	P	P	09 01 31.2	+0.5
	baz=317						
X36A	**Centrahoma**	91.19	44	P	P	09 01 31.1	+0.5
	baz=318						
Z34A	**Collier Ranch,**	91.19	46	P	P	09 01 30.9	+0.2
	baz=317						
V38A	**Canehill**	91.28	42	P	P	09 01 31.2	+0.1
	baz=319						
T40A	**Mansfield**	91.28	40	P	P	09 01 31.0	-0.1
	baz=320						
U39A	**Green Forest**	91.37	41	P	P	09 01 31.4	-0.1
	baz=320						
Z35A	**Perchaven, San**	91.59	45	P	P	09 01 32.6	0.0
	baz=318						
233A	**Rising Star**	91.60	47	P	P	09 01 32.6	-0.1
	baz=317						
X37A	**Clayton**	91.71	43	P	P	09 01 32.9	-0.2
	baz=319						
Y36A	**Durant**	91.72	44	P	P	09 01 33.8	+0.6
	baz=318						
U40A	**Yellville**	91.72	40	P	P	09 01 33.3	+0.2
	baz=320						
W38A	**Poteau**	91.81	42	P	P	09 01 34.3	+0.8
	baz=319						
X38A	**Whitesboro**	91.95	43	P	P	09 01 34.9	+0.7
	baz=319						
333A	**Richland Sprin**	92.05	48	P	P	09 01 35.2	+0.5
	baz=317						
234A	**Clairette**	92.05	47	P	P	09 01 35.6	+0.9
	baz=317						
Z36A	**Blue Ridge**	92.10	45	P	P	09 01 35.3	+0.4
	baz=318						
JCT	**Junction City**	92.17	49	P	P	09 01 35.6	+0.3
	baz=316						
JCT	**Junction City**	92.17	49	*e*P	P	09 01 36.0	+0.7
JCT				pmax	pmax		
	comp=Z,32nm,1.8s						
JCT	**Junction City**	92.17	49	*e*P	P	09 01 36.0	+0.7
	comp=Z,32nm,1.8s						
WHTX	**Lake Whitney,**	92.46	46	P	P	09 01 37.6	+1.0
	baz=317						
WHTX	**Lake Whitney,**	92.46	46	*e*P	P	09 01 38.1	+1.5
	comp=Z,10nm,0.9s						
334A	**Lometa**	92.48	47	P	P	09 01 36.9	+0.2
	baz=317						
MIAR	**Mount Ida**	92.72	42	P	P	09 01 38.3	+0.6
	baz=320						
MIAR	**Mount Ida**	92.72	42	*e*P	P	09 01 38.9	+1.2
MIAR				pmax	pmax		
	comp=Z,8.0nm,1.0s						
MIAR	**Mount Ida**	92.72	42	*e*P	P	09 01 38.9	+1.2
	comp=Z,8.0nm,1.0s						
534A	**Blanco**	93.29	48	P	P	09 01 40.6	+0.1
	baz=317						
ESDC	**Sonseca Array**	97.00	333	LR	LR	09 49 49.0	
	comp=Z,59nm,18.2s,baz=230,slow=38						
TOA0	**Torodi Ar. Sit**	116.88	314	*e*PKPdf	PKPdf	09 07 08.8	-1.9
TOA0				*e*PKPdf	PKiKP	09 07 09.9	-0.7
TORD	**Torodi Ar. Bea**	116.88	314	PKP	PKPdf	09 07 09.3	-1.3
	comp=Z,1.0nm,0.8s,baz=31,slow=2.9,SNR=5.6						
TORD				PP	PP	09 08 17.4	-1.1
	comp=Z,1.7nm,1.1s,baz=29,slow=6.3,SNR=5.9						
MAW	**Mawson**	119.29	205	PKP	PKPdf	09 07 14.0	+0.4
	comp=Z,3.5nm,0.7s,baz=84,slow=4.9,SNR=7.7						
MAW	**Mawson**	119.29	205	PKIKP	PKPdf	09 07 14.0	+0.4
MAW				pmax	pmax		
	comp=Z,4.0nm,0.7s						
LBTB	**Lobatse**	124.03	263	*e*PKIKP	PKPdf	09 07 24.8	+0.6
LBTB	**Lobatse**	124.03	263	*e*PKPdf	PKPdf	09 07 24.8	+0.6
SDV	**Santo Domingo**	125.70	39	*e*PKPdf	PKPdf	09 07 28.1	+0.2
DBIC	**Dimbokro**	125.85	316	PKP	PKPdf	09 07 27.3	-0.6
	comp=Z,1.5nm,0.5s,baz=39,slow=3.5,SNR=5.3						
BOSA	**Boshof**	125.97	259	PKP	PKPdf	09 07 26.9	-0.9
	comp=Z,2.1nm,0.7s,baz=34,slow=3.6,SNR=3.4						
ROSC	**El Rosal**	127.09	46	PKP	PKPdf	09 07 31.0	+0.3
	comp=Z,3.7nm,0.7s,baz=287,slow=20,SNR=5.2						
SAML	**Samuel**	144.66	44	*e*PKPdf	PKPab	09 08 01.4	0.0
LPAZ	**La Paz**	147.21	59	PKPbc	PKPdf	09 08 08.6	+0.8
	comp=Z,18nm,0.8s,baz=330,slow=3.0,SNR=40						
LPAZ	**La Paz**	147.21	59	*e*PKPdf	PKPdf	09 08 08.9	+1.2
PB04	**IPOC Station P**	149.65	70	*e*PKPbc	PKPbc	09 08 16.1	+0.4

JMA 12 09:00:04.5, 37.°04N×140.°67E, h6km±3km, M1.7, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHO	**Hitachi**	0.44	191	P	Pg	09 00 13.0	+0.1
JHO				S	Sg	09 00 19.5	+0.9
JFT	**Otama**	0.55	331	P	Pg	09 00 15.3	+0.3
JFT				S	Sg	09 00 22.8	+0.6

NIED **12** *09:00:00, 37.°30N×141.°90E, h8km, Mw3.9 Best double couple: M₀8.68000×10¹⁴ NP1:φ₉224.00000°, δ26.00000°, λ-82.00000°. NP2:φ₉35.00000°, δ65.00000°, λ-94.00000°.*
IDC **12** *09:00:47.6±0.6, 37.°29N×141.°82E, h0km, mb3.9/21, mb1 4.1/24, mb1mx4.0/49, mbtmp3.9/24, ML3.9/2, MS3.1/3, Ms1 3.1/3, ms1mx2.6/45, Error ellipse: s-maj=16.3km s-min=14.5km az=125.0*
ISCJB **12** *09:00:48.9±1.3, 37.°28N±0.°03×141.°87E±0.°07, h21km±8km, mb4.0/27, MS3.2/1, Error ellipse: s-maj=9.9km s-min=4.8km az=12.8*
JMA **12** *09:00:49.2±0.2, 37.°29N×141.°89E, h27km±3km, M4.4*
JMA Felt I J1.
NEIC **12** *09:00:53.2±0.7, 37.°28N×141.°82E, h38km±6km, mb4.3/5, Error ellipse: s-maj=7.7km s-min=5.9km az=119.0*

ISC 12 09:00:49.0±2.2, 37.°30N±0.°04×141.°84E±0.°08, h9km±12km, n49, σ1s14/54, mb4.0/27, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	0.85	257	P	Pg	09 01 05.8	+0.3
ONAJ				S	Sg	09 01 17.5	+0.9
JMM	**Marumori**	1.01	305	P	Pg	09 01 07.8	-0.6
JMM				S	Sg	09 01 20.8	-0.7
JFT	**Otama**	1.22	281	P	Pb	09 01 12.1	-0.1
JIO	**Ouri**	1.22	342	P	Pb	09 01 10.6	-1.6
JIO				S	Sb	09 01 25.5	-2.6
JHO	**Hitachi**	1.23	236	P	Pb	09 01 10.9	-1.5
JHO				S	Sb	09 01 26.4	-1.9
JOU	**Okura**	1.42	319	P	Pn	09 01 14.8	-0.2
JOU				S	Sb	09 01 33.0	-0.8
MJAR	**Matsushiro Arr**	3.01	257	Pn	Pn	09 01 37.7	+0.9
	9.4nm,0.3s,baz=78,slow=17,SNR=10						
MJAR				Sn	Sb	09 02 18.3	-1.2
	15nm,0.3s,baz=108,slow=12,SNR=5.4						
MAJO	**Matsushiro**	3.01	257	*e*Pn	Pn	09 01 37.9	+1.1
JHJ2	**Mitsune**	4.49	202	*e*Pn	Pn	09 01 58.1	+0.9
JHJ2				*e*Sn	Sn	09 02 46.8	-2.7
JHJ	**Hachijo jima 2**	4.50	203	Pn	Pn	09 01 57.9	+0.6
	31nm,0.3s,baz=236,slow=18,SNR=5.1						
JHJ				Sn	Sn	09 02 48.4	-1.3
	45nm,0.3s,baz=95,slow=22,SNR=7.5						
ERM	**Erimo**	4.82	12	*e*Pn	Pn	09 02 02.8	+1.1
ERM				*e*Sn	Sn	09 02 58.0	+0.4
USRK	**Ussuriysk Ar.**	10.16	316	Pn	Pn	09 03 16.6	+1.6
	0.1nm,0.3s,baz=130,slow=13,SNR=4.0						
USRK				LR	LR	09 06 37.9	
	comp=Z,95nm,18.6s,baz=171,slow=34						
KSRS	**Korea Array**	11.08	275	Pn	Pn	09 03 30.8	+3.2
	0.2nm,0.3s,baz=90,slow=14,SNR=4.7						
KSRS				LR	LR	09 07 27.7	
	comp=Z,84nm,18.8s,baz=65,slow=36						
KSAR	**Wonju Array Be**	11.11	275	Pn	Pn	09 03 30.8	+2.8
SEY	**Seymchan**	26.47	11	P	P	09 06 26.7	+0.6
	1.7nm,0.5s,baz=162,slow=6.0,SNR=8.0						
SONM	**Songino Array**	27.92	303	P	P	09 06 40.1	+0.5
	1.8nm,0.7s,baz=98,slow=8.0,SNR=5.5						
H11N2	**WAKE ISLAND Hy**	27.99	122	T	T	09 35 59.7	
	baz=314,slow=75,SNR=55						
H11N1	**WAKE ISLAND Hy**	28.00	122	T	T	09 36 05.7	
	baz=314,slow=75,SNR=50						
H11N3	**WAKE ISLAND Hy**	28.01	122	T	T	09 36 07.1	
	baz=314,slow=75,SNR=28						
H11S1	**WAKE ISLAND Hy**	28.72	124	T	T	09 37 00.9	
	baz=316,slow=76,SNR=13						
H11S3	**WAKE ISLAND Hy**	28.72	124	T	T	09 36 52.5	
	baz=316,slow=76,SNR=10						
H11S2	**WAKE ISLAND Hy**	28.73	124	T	T	09 36 43.3	
	baz=316,slow=76,SNR=12						
CMAR	**Chiang Mai Arr**	41.89	255	P	P	09 08 40.3	+0.5
	0.5nm,0.5s,baz=50,slow=5.8,SNR=4.2						
ZALV	**Zalesovo Beam**	41.99	312	P	P	09 08 40.2	0.0
	3.2nm,0.9s,baz=86,slow=6.1,SNR=10						
ZALV				PcP	PcP	09 10 34.6	-0.7
	0.3nm,0.3s,baz=107,slow=1.5,SNR=3.5						
MKAR	**Makanchi Array**	44.27	302	P	P	09 08 59.0	+0.1
	1.1nm,0.6s,baz=88,slow=9.7,SNR=11						
KURK	**Kurchatov**	46.04	308	*e*P	P	09 09 12.7	0.0
	20nm,1.0s						
KURBB	**Kurchatov Arra**	46.11	308	P	P	09 09 12.8	-0.5
	2.6nm,0.6s,baz=83,slow=8.2,SNR=9.7						
ILAR	**Eielson Array**	49.09	32	P	P	09 09 36.7	+0.4
	1.1nm,0.6s,baz=266,slow=6.5,SNR=16						
TKM2	**Tokmak 2**	49.81	298	*e*P	P	09 09 43.0	+0.7
	2.6nm,0.6s						
BVAR	**Borovoye Array**	50.65	312	P	P	09 09 46.4	-1.9
	0.9nm,0.7s,baz=68,slow=8.1,SNR=4.1						
BVAR				PcP	PcP	09 11 04.5	-1.2
	0.7nm,0.6s,baz=101,slow=6.0,SNR=3.8						
INK	**Inuvik**	54.00	27	P	P	09 10 13.4	+0.5
	0.7nm,0.6s,baz=310,slow=4.3,SNR=6.1						
INK				LR	LR	09 34 53.9	
	comp=Z,21nm,18.2s,baz=121,slow=38						
ARU	**Arti**	56.39	319	P	P	09 10 30.2	-0.2
	6.8nm,0.2s,baz=77,slow=2.2,SNR=6.2						
WRAB	**Tennant Creek**	57.36	188	*e*P	P	09 10 37.2	-0.4
	2.1nm,0.7s						
WRA	**Warramunga Arr**	57.37	188	P	P	09 10 37.1	-0.5
	0.7nm,0.5s,baz=7.3,slow=7.1,SNR=15						
ABKAR	**Akbulak array**	58.03	310	*e*P	P	09 10 41.7	-0.4
	1.0nm,0.5s						
AKTO	**Aktyubinsk**	58.75	312	P	P	09 10 47.9	+0.7
	1.4nm,0.8s,baz=58,slow=9.5,SNR=3.0						
ASAR	**Alice Springs**	61.10	188	P	P	09 11 03.5	+0.1
	0.5nm,0.7s,baz=12,slow=7.6,SNR=8.9						
YKA	**Yellowknife Ar**	63.41	30	P	P	09 11 18.7	+0.3
	0.5nm,0.7s,baz=304,slow=6.7,SNR=11						
ARCES	**ARCESS Array B**	63.87	339	P	P	09 11 21.6	+0.2
	1.2nm,0.7s,baz=57,slow=8.8,SNR=4.8						
FINES	**FINESS Array B**	68.74	332	P	P	09 11 52.8	+0.1
	2.4nm,0.7s,baz=46,slow=8.2,SNR=10.0						
FFC	**Flin Flon**	73.30	33	*e*P	P	09 12 20.9	+0.3
	0.4nm,0.3s						
NB2	**NORSAR Subarra**	74.08	337	P	P	09 12 24.9	-0.2
	comp=Z,1.1nm,0.6s,baz=39,slow=6.2						
NOA	**NORSAR Array B**	74.08	337	P	P	09 12 25.2	+0.2
	comp=Z,1.4nm,0.7s,baz=39,slow=5.8,SNR=5.7						
AKASG	**Malin Array Be**	74.30	322	P	P	09 12 26.4	-0.1
	comp=Z,0.7nm,0.4s,baz=45,slow=5.8,SNR=3.4						
NVAR	**Mina Array Bea**	74.56	53	P	P	09 12 29.1	+0.6
	comp=Z,0.5nm,0.7s,baz=310,slow=7.0,SNR=6.9						
PDAR	**Pinedale Array**	77.24	46	P	P	09 12 44.0	+0.2
	comp=Z,0.3nm,0.6s,baz=277,slow=1.2,SNR=3.9						
GERES	**GERESS Array B**	82.67	328	P	P	09 13 12.0	-0.8
	comp=Z,0.3nm,0.4s,baz=15,slow=4.2,SNR=2.4						
TXAR	**Lajitas Array**	89.69	53	P	P	09 13 48.5	+0.7
	comp=Z,0.2nm,0.6s,baz=282,slow=2.7,SNR=6.3						
TORD	**Torodi Ar. Bea**	117.39	315	PKP	PKPdf	09 19 34.9	-0.7
	comp=Z,0.1nm,0.3s,baz=24,slow=3.2,SNR=2.6						

NIED **12** *09:14:00, 36.°80N×138.°60E, h8km, Mw3.8 Best double couple: M₀4.74000×10¹⁴ NP1:φ₉101.00000°, δ76.00000°, λ-177.00000°. NP2:φ₉10.00000°, δ87.00000°, λ-14.00000°.*
IDC **12** *09:14:26.4±2.1, 36.°85N×138.°63E, h0km, mb3.7/1, mb1 3.9/3, mb1mx3.3/58, mbtmp3.8/3, ML3.2/2, MS3.2/3, Ms1 3.2/3, ms1mx2.6/42, Error ellipse: s-maj=14.0km s-min=8.1km az=42.0*
ISCJB **12** *09:14:27.1±0.6, 36.°83N±0.°04×138.°60E±0.°04, h9km±5km, mb3.9/1, MS3.3/2, Error ellipse: s-maj=7.0km s-min=4.0km az=146.8*
JMA **12** *09:14:27.8, 36.°83N×138.°61E, h5km±3km, M3.6 Broadband fault plane solution: P waves. NP1: φ₉104.00000°, δ87.00000°, λ176.00000°. NP2: φ₉194.00000°, δ86.00000°, λ3.00000°. Principal axes: T Plg5.0000°, Azm59.0000°; N Plg85.0000°, Azm250.0000°; P Plg1.0000°, Azm149.0000°;*
JMA Felt II J1.

ISC 12 09:14:27.7±1.1, 36.°82N±0.°04×138.°62E±0.°03, h7km±10km, n16, σ0s86/22, 4C-3D, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JGK	**Kuni**	0.26	176	⇓P	Pg	09 14 33.4	+0.6
MJAR	**Matsushiro Arr**	0.43	230	Pg	Pg	09 14 35.2	-0.8
	656nm,0.3s,baz=42,slow=18,SNR=1841						
MJAR				Lg	Lg	09 14 40.7	
	842nm,0.3s,baz=42,slow=30,SNR=83						
MAT	**Matsushiro**	0.43	230	P	Pg	09 14 35.8	-0.2
MAT				S	Sg	09 14 41.3	-0.4
MAT	**Matsushiro**	0.43	230	P	Pg	09 14 35.8	-0.2
MAT				S	Sg	09 14 41.3	-0.4
JKT	**Katashina**	0.51	96	⇑P	Pg	09 14 37.8	+0.3
JKT				S	Sg	09 14 44.7	+0.5
JHK	**Hiroka**	0.53	36	⇑P	Pg	09 14 37.8	-0.2
JHK				S	Sg	09 14 45.0	0.0
JNG	**Nsakai**	0.59	226	⇑P	Pg	09 14 38.7	-0.3
JNG				S	Sg	09 14 46.3	-0.4
JAG	**Ashikaga**	0.78	120	⇓P	Pb	09 14 42.9	-0.6
JAG				S	Sb	09 14 53.5	-0.8
JRY	**Ryogami san**	0.83	164	⇓P	Pg	09 14 43.4	-0.3
JRY				S	Sg	09 14 54.8	+0.3
JFY	**Yanaizu**	1.05	56	⇑P	Pb	09 14 47.5	-0.7
JFY				S	Sg	09 15 00.9	-0.5
JTT	**Ttatey**	1.05	259	P	Pb	09 14 48.0	-0.3
JNU	**Nakatsue**	7.35	242	Pn	Pn	09 16 17.2	+1.8
	0.2nm,0.3s,baz=56,slow=3.6,SNR=3.0						
JNU				LR	LR	09 19 19.4	
	comp=Z,86nm,18.7s,baz=119,slow=40						
KSRS	**Korea Array**	8.57	277	Pn	Pn	09 16 34.2	+2.1
	0.7nm,0.3s,baz=93,slow=14,SNR=7.4						
PETK	**Petropavlovsk-**	21.05	33	LR	LR	09 27 22.8	
	comp=Z,34nm,19.4s,baz=168,slow=37						
WRA	**Warramunga Arr**	56.60	185	P	P	09 24 10.0	-1.2
	0.7nm,0.6s,baz=0.2,slow=7.6,SNR=10						
RPZ	**Rata Peaks**	85.40	157	LR	LR	10 00 36.9	
	comp=Z,44nm,19.6s,baz=308,slow=32						

NIED **12** *09:16:00, 37.°00N×140.°70E, h5km, Mw3.3 Best double couple: M₀8.72000×10¹³ NP1:φ₉83.00000°, δ54.00000°, λ-138.00000°. NP2:φ₉326.00000°, δ57.00000°, λ-44.00000°.*

JMA 12 09:16:51.8, 37.°02N×140.°70E, h10km±1km, M3.6, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	0.11	44	P	Pg	09 16 54.9	+0.2
ONAJ				S	Sg	09 16 56.9	+0.2
JHO	**Hitachi**	0.42	194	P	Pg	09 17 00.1	0.0
JHO				*e*S	Sg	09 17 06.0	+0.4
JFT	**Otama**	0.58	330	P	Pg	09 17 03.1	+0.1
JFT				*e*S	Sg	09 17 10.8	+0.2
JSB	**Shiboa**	0.63	266	S	Sb	09 17 13.3	-0.4
MAT	**Matsushiro**	2.06	257	P	Pb	09 17 28.6	-0.7
MAT				S	Sb	09 17 54.5	-0.4

ISK **12** *09:20:57.8, 37.°16N×28.°36E, h19km, MD2.8*
ISCJB **12** *09:20:59.8±0.7, 37.°21N±0.°04×28.°23E±0.°06, h3km±8km, Error ellipse: s-maj=8.9km s-min=5.4km az=143.7*
CSEM **12** *09:20:59.6±0.4, 37.°23N×28.°29E, h10km, MD2.8, Error ellipse: s-maj=11.1km s-min=6.1km az=56.0*
DDA **12** *09:21:00.0, 37.°20N×28.°19E, h7km, Md2.5*

ISC 12 09:20:57.2±1.5, 37.°30N±0.°04×28.°36E±0.°05, h2km±12km, n17, σ0s84/27, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
YER	**Yerkesik**	0.17	200	*e*PG	Pg	09 21 01.7	+1.1
YER	**Yerkesik**	0.17	200	*e*Pg	Pg	09 21 01.7	+1.1
TURN	**Turunc**	0.47	155	*i* P	Pb	09 21 08.0	-0.1
TURN				*i* S	Sb	09 21 15.8	+0.3
TUR	**Turunc**	0.47	155	P	Pb	09 21 08.0	-0.1
TURN				S	Sb	09 21 15.8	+0.3
AYDN	**Tasoluk**	0.52	314	*i* P	Pb	09 21 09.1	0.0
AYDN				*i* S	Sb	09 21 16.5	-0.6
AYDN	**Tasoluk**	0.52	314	P	Pb	09 21 09.1	0.0
AYDN				S	Sb	09 21 16.5	-0.6
AYDB	**Zeytinkoy-Aydi**	0.74	330	*e*PG	Pn	09 21 15.1	+0.3
AYDB				*e*SG	Sn	09 21 27.7	+1.0
AYDB	**Zeytinkoy-Aydi**	0.74	330	*e*Pg	Pn	09 21 15.1	+0.3
AYDB				*e*Sg	Sn	09 21 27.7	+1.0
BDRM	**Kayabasi**	0.77	252	*i* P	Pn	09 21 14.1	-0.8
BDRM				*i* S	Sg	09 21 20.6	-1.2
BDRM	**Kayabasi**	0.77	252	P	Pn	09 21 14.1	-0.8
BDRM				S	Sg	09 21 20.6	-1.2
BODT	**Bodrum**	0.87	254	*e*PG	Pg	09 21 14.6	+0.8
BODT	**Bodrum**	0.87	254	*e*Pg	Pg	09 21 14.6	+0.8
FETY	**Fethiye**	0.88	139	*e*PG	Pg	09 21 13.4	-0.7
GCAM	**G?zelcaml?**	0.98	294	*i* P	Pn	09 21 19.2	+1.4
GCAM				*i* S	Sn	09 21 31.6	-0.7
GCAM	**G?zelcaml?**	0.98	294	P	Pn	09 21 19.2	+1.4
GCAM				S	Sn	09 21 31.6	-0.7
BLCB	**Balcova**	1.50	317	*e*PN	Pg	09 21 25.9	0.0
BLCB	**Balcova**	1.50	317	*e*Pn	Pg	09 21 26.0	0.0

JMA **12** *09:24:48.4±0.2, 36.°03N×141.°88E, h53km, M3.2*
IDC **12** *09:24:51.9±2.7, 36.°69N×141.°23E, h0km, mb3.5/3, mb1 3.5/4, mb1mx3.3/44, mbtmp3.4/4, ML2.9/1, Error ellipse: s-maj=67.7km s-min=30.2km az=57.0*

ISC 12 09:24:49.3±2.2, 36.°0N±0.°2×141.°7E±0.°1, h23km, n9, σ2s02/9, mb3.5/3, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	0.76	245	S	Sn	09 25 17.2	+1.8
JHO	**Hitachi**	1.09	303	S	Sb	09 25 25.4	+2.2
JYT	**Yasato**	1.24	280	*e*S	Sb	09 25 29.0	+1.4
JAG	**Ashikaga**	1.87	283	P	Pb	09 25 20.4	-2.2
MJAR	**Matsushiro Arr**	2.87	281	Pn	Pn	09 25 32.6	-1.0
	2.6nm,0.3s,baz=84,slow=9.7,SNR=19						
MAT	**Matsushiro**	2.88	281	P	Pn	09 25 35.4	+1.7
MAT				*e*S	Sb	09 26 12.4	-2.2
SONM	**Songino Array**	28.55	305	P	P	09 30 43.3	-0.1
	0.7nm,0.7s,baz=110,slow=8.4,SNR=4.1						
MKAR	**Makanchi Array**	44.86	303	P	P	09 33 02.1	+0.5
	0.3nm,0.4s,baz=95,slow=8.7,SNR=4.1						
WRA	**Warramunga Arr**	56.10	188	P	P	09 34 37.2	+10
	0.2nm,0.6s,baz=6.9,slow=7.8,SNR=3.3						

SCB **12** *09:29:51.8±0.9, 15.°87S×74.°62W, h42km, Ml3.9/1, Error ellipse: s-maj=23.0km s-min=17.4km az=130.0*
ISCJB **12** *09:30:06.3±0.8, 16.°5S±0.°1×73.°83W±0.°09, h39km, mb4.0/7, MS3.6/4, Error ellipse: s-maj=17.3km s-min=9.1km az=32.7*
NEIC **12** *09:30:08.5±1.3, 16.°43S×73.°56W, h45km±11km, MG4.4(ARE), Error ellipse: s-maj=15.3km s-min=9.9km az=213.0*
NEIC Felt [II] at Atico.
IDC **12** *09:30:09.0±2.5, 16.°45S×73.°53W, h48km±22km, mb3.8/8, mb1 4.0/11, mb1mx3.7/39, mbtmp4.1/11, ML3.6/3, MS3.6/8, Ms1 3.6/8, ms1mx3.3/28, Error ellipse: s-maj=25.3km s-min=18.0km az=44.0*

ISC 12 09:30:08.1±0.8, 16.°5S±0.°1×73.°65W±0.°09, h39km, n35, σ1s78/25, mb4.0/7, MS3.7/4, 8C, Near coast of Peru

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BBOD	**La Paz, Gloria**	4.85	93	⇑*i*Pn	Pn	09 31 23.4	+4.3
BBOD				⇑*i*Sn	Sn	09 32 28.4	+14
	50nm,0.7s						
BBOJ	**La Paz, Jacaqu**	5.26	96	⇑*i*Pn	Pn	09 31 28.3	+3.6
LPAZ	**La Paz**	5.30	89	P	Pn	09 31 26.3	+0.9
	0.4nm,0.3s,baz=263,slow=13,SNR=17						
LPAZ				S	Sn	09 32 36.6	+11
	baz=52,slow=17,SNR=1.6						
LPAZ				LR	LR	09 33 56.8	
	comp=Z,573nm,21.6s,baz=257,slow=44						
LPAZ	**La Paz**	5.30	89	⇑*i*Pn	Pn	09 31 28.5	+3.1
BBOB	**La Paz, Bander**	5.31	87	⇑*i*Pn	Pn	09 31 28.6	+3.2
NNA	**Nana**	5.41	325	P	Pn	09 31 27.9	+1.6
	5.3nm,0.3s,baz=112,slow=12,SNR=8.8						
NNA				S	Sn	09 32 43.4	+16
	33nm,0.3s,baz=238,slow=16,SNR=4.7						
NNA				LR	LR	09 33 33.5	
	comp=Z,150nm,18.5s,baz=150,slow=37						
NNA	**Nana**	5.41	325	*e*Pn	Pn	09 31 27.3	+1.0
	147nm,0.6s						
NNA				S	Sn	09 32 43.4	+16
BBOE	**La Paz, Chanca**	5.45	95	⇑*i*Pn	Pn	09 31 30.5	+3.2
MOCB	**Mochara**	8.96	123	⇑*i*P	Pn	09 32 17.4	+1.9
ATAH	**Atahualpa**	10.35	333	P	Pn	09 32 43.2	+8.6
	0.4nm,0.3s,baz=112,slow=19,SNR=2.9						
SIV	**San Ignacio**	12.09	90	P	Pn	09 32 57.0	-1.0
	1.4nm,0.3s,baz=273,slow=19,SNR=17						
SIV				LR	LR	09 38 09.0	
	comp=Z,385nm,19.4s,baz=326,slow=40						
SIV	**San Ignacio**	12.09	90	⇑*i*P	Pn	09 32 56.6	-1.4
SIV	**San Ignacio**	12.09	90	P	Pn	09 32 57.0	-1.0
SAML	**Samuel**	12.64	55	*e*Pn	Pn	09 33 02.9	-2.5
	2.1nm,0.6s						
SAML				*e*Sn	Sn	09 35 26.0	+1.0
CPUP	**Villa Florida**	18.09	126	LR	LR	09 42 34.2	
	comp=Z,130nm,19.2s,baz=296,slow=41						
PTGA	**Pitinga**	20.64	42	P	P	09 34 44.4	-0.1
	3.8nm,0.6s,baz=198,slow=20,SNR=3.5						
PLCA	**Paso Flores**	24.35	174	P	P	09 35 21.8	-0.6
	4.1nm,0.9s,baz=15,slow=12,SNR=8.3						
BDFB	**Brasilia**	24.65	92	P	P	09 35 24.2	-1.3
	1.9nm,0.4s,baz=268,slow=6.2,SNR=3.1						
BDFB				LR	LR

TUWZ					AML	AML	09 37 00.7		
TUWZ					AML	AML	09 37 01.2		
NNZ	**Nelson**	**1.23**	**354**	⇑PN	Pn	Pn	09 36 49.1	-0.7	
CRLZ	**Canterbury Las**	**1.32**	**211**	PN	Pn	Pn	09 36 50.7	-0.3	
TCW	**Tory Channel**	**1.35**	**24**	PN	Pn	Pn	09 36 50.6	-0.7	
TCW					AML	AML	09 37 07.6		
TCW					AML	AML	09 37 08.0		
OXZ	**Oxford**	**1.42**	**231**	⇑PN	Pn	Pn	09 36 51.9	-0.4	
MQZ	**McQueen's Vall**	**1.42**	**207**	⇑PN	Pn	Pn	09 36 51.7	-0.7	
DSZ	**Denniston Nort**	**1.47**	**298**	⇓PN	Pn	Pn	09 36 52.9	-0.2	
WEL	**Wellington**	**1.47**	**39**	⇑PN	Pn	Pn	09 36 52.7	-0.4	
WEL					AML	AML	09 37 10.2		
WEL					AML	AML	09 37 10.2		
PLWZ	**Palliser**	**1.54**	**56**	PN	Pn	Pn	09 36 53.3	-0.7	
INZ	**Inchbonnie**	**1.58**	**259**	⇑PN	Pn	Pn	09 36 54.6	+0.1	
MSWZ	**Moikau Station**	**1.63**	**52**	PN	Pn	Pn	09 36 54.5	-0.8	
MSWZ					AML	AML	09 37 13.4		
MSWZ					AML	AML	09 37 13.7		
DUWZ	**D'Urville Isla**	**1.66**	**10**	PN	Pn	Pn	09 36 54.9	-0.7	
CAW	**Cannon Point**	**1.75**	**41**	⇑PN	Pn	Pn	09 36 56.2	-0.7	
CAW					AML	AML	09 37 16.4		
CAW					AML	AML	09 37 16.8		
PAWZ	**Paruwai Farm**	**1.76**	**54**	PN	Pn	Pn	09 36 56.1	-0.9	
PAWZ					AML	AML	09 37 17.8		
PAWZ					AML	AML	09 37 17.9		
QRZ	**Quartz Range**	**1.79**	**334**	⇓PN	Pn	Pn	09 36 57.5	+0.1	
KIW	**Kapiti Island**	**1.88**	**33**	⇑PN	Pn	Pn	09 36 58.2	-0.5	
KIW					AML	AML	09 37 19.6		
KIW					AML	AML	09 37 20.8		
TRWZ	**Traveller**	**1.91**	**58**	PN	Pn	Pn	09 36 58.0	-1.0	
MTW	**Mount Morrison**	**1.94**	**49**	⇓PN	Pn	Pn	09 36 58.4	-1.1	
MTW					AML	AML	09 37 21.4		
MTW					AML	AML	09 37 21.7		
OGWZ	**Otaki Gorge**	**2.03**	**37**	⇑PN	Pn	Pn	09 36 59.9	-0.7	
HOWZ	**Holdsworth Sta**	**2.13**	**44**	PN	Pn	Pn	09 37 01.0	-1.2	
WVZ	**Waitaha Valley**	**2.16**	**252**	PN	Pn	Pn	09 37 02.8	+0.3	
RPZ	**Rata Peaks**	**2.23**	**234**	PN	Pn	Pn	09 37 02.8	-0.5	
MRZ	**Mangatainoka R**	**2.34**	**41**	AML	AML	AML	09 37 30.3		
MRZ					AML	AML	09 37 31.4		
TIWZ	**Tintock**	**2.42**	**47**	PN	Pn	Pn	09 37 04.4	-1.6	
TIWZ					AML	AML	09 37 32.6		
TIWZ					AML	AML	09 37 33.8		
PRWZ	**Pori Road**	**2.62**	**45**	PN	Pn	Pn	09 37 07.4	-1.4	
POWZ	**Post Office Ro**	**2.64**	**40**	PN	Pn	Pn	09 37 07.7	-1.3	
BFZ	**Birch Farm**	**2.68**	**50**	PN	Pn	Pn	09 37 07.7	-1.9	
WAZ	**Wanganui**	**2.90**	**23**	PN	Pn	Pn	09 37 13.1	+0.6	
DVHZ	**Dannevirke**	**2.91**	**43**	⇓PN	Pn	Pn	09 37 10.8	-2.0	
FOZ	**Fox Glacier**	**2.95**	**247**	⇓PN	Pn	Pn	09 37 13.5	+0.4	
ANWZ	**Angora Road**	**2.96**	**49**	PN	Pn	Pn	09 37 11.7	-1.7	
TSZ	**Takapari Road**	**3.00**	**38**	⇑PN	Pn	Pn	09 37 12.4	-1.5	
LREZ	**Lake Rotokare**	**3.05**	**13**	PN	Pn	Pn	09 37 16.9	+1.2	
LBZ	**Lake Benmore**	**3.13**	**230**	PN	Pn	Pn	09 37 15.3	-0.4	
PREZ	**Palmer Road**	**3.13**	**9**	PN	Pn	Pn	09 37 18.1	+2.3	
KHEZ	**Kahui Hut**	**3.17**	**7**	PN	Pn	Pn	09 37 17.5	+1.2	
PRHZ	**Porangahau**	**3.18**	**48**	PN	Pn	Pn	09 37 14.6	-1.9	
NEZ	**North Egmont**	**3.20**	**8**	PN	Pn	Pn	09 37 17.8	+1.1	
PNHZ	**Pukenui**	**3.22**	**39**	PN	Pn	Pn	09 37 15.2	-1.8	
PKE	**Pukeiti**	**3.26**	**6**	PN	Pn	Pn	09 37 18.7	+1.1	
DREZ	**Durham Road**	**3.29**	**9**	PN	Pn	Pn	09 37 19.0	+1.1	
ODZ	**Otahua Downs**	**3.34**	**218**	⇑PN	Pn	Pn	09 37 18.0	-0.6	
MTVZ	**Mangateitei**	**3.38**	**26**	PN	Pn	Pn	09 37 19.4	+0.1	
MHEZ	**Mangahewa**	**3.42**	**10**	PN	Pn	Pn	09 37 20.9	+1.3	
PKVZ	**Pokaka**	**3.43**	**24**	PN	Pn	Pn	09 37 20.3	+0.3	
VRZ	**Vera Road**	**3.44**	**16**	PN	Pn	Pn	09 37 20.4	+0.4	
MOVZ	**Moawhango**	**3.46**	**30**	PN	Pn	Pn	09 37 19.4	-0.9	
WNVZ	**Wahianoa**	**3.48**	**27**	PN	Pn	Pn	09 37 20.5	-0.2	
TRVZ	**Turoa**	**3.49**	**26**	⇓PN	Pn	Pn	09 37 20.8	-0.1	
BHHZ	**Black Hill Sta**	**3.51**	**34**	PN	Pn	Pn	09 37 19.9	-1.1	
WHVZ	**Whangaehu Hut**	**3.52**	**27**	⇑PN	Pn	Pn	09 37 21.3	+0.1	
KRHZ	**Kereru**	**3.52**	**38**	PN	Pn	Pn	09 37 19.0	-2.0	
FWVZ	**Far West T-bar**	**3.53**	**26**	PN	Pn	Pn	09 37 21.2	-0.2	
TUVZ	**Tukino**	**3.55**	**27**	PN	Pn	Pn	09 37 21.4	-0.3	
NGZ	**Ngauruhoe**	**3.62**	**26**	PN	Pn	Pn	09 37 22.3	-0.3	
OTVZ	**Oturere**	**3.65**	**27**	PN	Pn	Pn	09 37 22.7	-0.3	
KAHZ	**Kahuranaki**	**3.65**	**45**	PN	Pn	Pn	09 37 20.3	-2.6	
TWVZ	**Taurewa**	**3.66**	**24**	PN	Pn	Pn	09 37 22.8	-0.3	
WTVZ	**West Tongariro**	**3.67**	**26**	PN	Pn	Pn	09 37 22.9	-0.4	
KRVZ	**Karewarewa**	**3.70**	**26**	PN	Pn	Pn	09 37 23.2	-0.5	
KWHZ	**Kaweka Forest**	**3.72**	**37**	PN	Pn	Pn	09 37 21.9	-2.0	
MCHZ	**McNeill Hill**	**3.83**	**40**	PN	Pn	Pn	09 37 23.1	-2.2	
KATZ	**Kakaramea**	**3.83**	**26**	PN	Pn	Pn	09 37 25.6	+0.2	
JCZ	**Jackson Bay**	**3.84**	**243**	PN	Pn	Pn	09 37 25.1	-0.4	
BKZ	**Black Stump Fm**	**3.96**	**35**	PN	Pn	Pn	09 37 24.9	-2.3	
HIZ	**Hauiti**	**4.05**	**15**	PN	Pn	Pn	09 37 28.6	+0.3	
WKZ	**Wanaka**	**4.06**	**233**	PN	Pn	Pn	09 37 27.5	-1.0	
EAZ	**Earnscleugh**	**4.14**	**226**	PN	Pn	Pn	09 37 28.8	-0.8	
MRHZ	**Matea Rd**	**4.21**	**32**	⇓PN	Pn	Pn	09 37 28.3	-2.3	
TLZ	**Tolley Road**	**4.38**	**21**	PN	Pn	Pn	09 37 32.1	-0.8	
TUZ	**Tuapeka**	**4.50**	**217**	⇑PN	Pn	Pn	09 37 33.9	-0.6	
MLZ	**Mavora Lakes**	**4.89**	**231**	PN	Pn	Pn	09 37 38.6	-1.3	
RIGZ	**Rimuhau**	**4.92**	**42**	PN	Pn	Pn	09 37 36.7	-3.7	
RAGZ	**Rawiri**	**4.92**	**38**	PN	Pn	Pn	09 37 36.9	-3.4	
TOZ	**Tahuroa Road**	**4.94**	**18**	PN	Pn	Pn	09 37 39.8	-0.7	
URZ	**Urewera**	**4.99**	**34**	PN	Pn	Pn	09 37 37.6	-3.6	
MWZ	**Matawai**	**5.11**	**38**	PN	Pn	Pn	09 37 39.1	-3.8	
SYZ	**Scrubby Hill**	**5.17**	**216**	PN	Pn	Pn	09 37 43.6	+0.1	
TKGZ	**Te Karaka**	**5.17**	**41**	SN	Sn	Sn	09 38 36.4	-5.6	
WHZ	**Wether Hill Ro**	**5.30**	**228**	PN	Pn	Pn	09 37 43.6	-1.9	
AWAZ	**Awhitu Peninsu**	**5.44**	**9**	⇑PN	Pn	Pn	09 37 47.7	+0.3	
TWGZ	**Tauwhareparae**	**5.44**	**40**	PN	Pn	Pn	09 37 44.4	-3.1	
MKAZ	**Moumakai**	**5.47**	**14**	PN	Pn	Pn	09 37 47.4	-0.4	
HAZ	**Te Kaha**	**5.70**	**36**	PN	Pn	Pn	09 37 47.8	-3.1	

NIED **12** *10:15:00, 37˚.20N× 140˚.90E, h5km, Mw4.1 Best double couple: M0 1.42000×10^15 NP1:φ=240.00000°, δ52.00000°, λ-36.00000°. NP2:φ=354.00000°, δ62.00000°, λ-136.00000°.*

BJI **12** *10:15:31.4, 37˚.16N× 140˚.83E, h5km, mb4.5/27, mB4.9/15, Ms4.6/9, Ms7 4.5/8*

IDC **12** *10:15:32.9±0.4, 37˚.15N× 140˚.70E, h0km, mb4.3/34, mb1 4.4/36, mb1mx4.3/69, mbtmp4.3/36, ML4.3/2, MS3.3/7, Ms1 3.3/7, ms1mx2.9/34, Error ellipse: s-maj=13.5km s-min=11.0km az=111.0*

JMA **12** *10:15:34.7, 37˚.15N× 140˚.82E, h10km, M4.5 Broadband fault plane solution: P waves. NP1:φ=239.00000°, δ54.00000°, λ-59.00000°. NP2:φ=13.00000°, δ46.00000°, λ-125.00000°. Principal axes: T Plg4.0000°, Azm307.0000°; N Plg25.0000°, Azm39.0000°; P Plg65.0000°, Azm209.0000°;*

JMA Felt IV J1.

ISCJB **12** *10:15:34.6±0.4, 37˚.14N±0˚.02× 140˚.78E±0˚.03, h19km±2km, mb4.4/77, MS3.6/6 Error ellipse: s-maj=4.6km s-min=3.5km az=25.5*

MOS **12** *10:15:37.0±1.1, 37˚.20N× 140˚.70E, h39km, mb4.6/46, Error ellipse: s-maj=8.5km s-min=5.7km az=89.7*

NEIC **12** *10:15:40.3±0.6, 37˚.12N× 140˚.66E, h52km±5km, mb4.5/29, Error ellipse: s-maj=6.6km s-min=4.7km az=123.0*

NEIC Recorded [4 JMA] in Fukushima.

ISC 12 10:15:34.5±0.8, 37˚.16N±0˚.03× 140˚.70E±0˚.03, h8km±5km, n191, σ1§03/196, mb4.4/77, MS3.5/6, 11C-8D, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.10**	**125**	⇓P		**Pg**		**10 15 36.7**	**-0.1**
ONAJ					S	**Sg**		**10 15 38.0**	**-0.5**
JFT	**Otama**	**0.46**	**322**	⇑P		**Pb**		**10 15 45.3**	**+0.4**
JFT					S	**Sb**		**10 15 52.6**	**+0.7**
JHO	**Hitachi**	**0.56**	**191**	⇓P		**Pg**		**10 15 45.6**	**+0.4**
JHO					S	**Sg**		**10 15 52.2**	**+0.7**
JSB	**Shiboa**	**0.65**	**253**	⇑P		**Pn**		**10 15 49.5**	**-0.6**
JSB					S	**Sn**		**10 15 59.6**	**-1.0**
JMM	**Marumori**	**0.71**	**6**	⇑P		**Pg**		**10 15 48.2**	**0.0**
JMM					S	**Sg**		**10 15 57.6**	**+0.2**
JFY	**Yanaizu**	**0.83**	**288**	⇑P		**Pn**		**10 15 52.3**	**-0.2**
JFY					S	**Sn**		**10 16 04.2**	**-0.8**
MJAR	**Matsushiro Arr**	**2.09**	**254**	Pn		**Pn**		**10 16 11.1**	**+1.2**
	126nm,0.3s,baz=98,slow=16,SNR=140								
MJAR					Sn	**Sg**		**10 16 40.8**	**-0.8**
	134nm,0.3s,baz=79,slow=28,SNR=7.9								
MAJO	**Matsushiro**	**2.09**	**254**	*e*P		**Pb**		**10 16 12.3**	**-0.4**
MAJO				*e*				10 16 42.0	
MAJO	**Matsushiro**	**2.09**	**254**	*e*Pn		**Pb**		**10 16 12.3**	**-0.4**
MAJO				*e*Sn		**Sg**		**10 16 42.0**	**+0.4**
INU	**Inuyama**	**3.48**	**240**	*e*Pn		**Pn**		**10 16 31.9**	**+3.0**
JHJ	**Hachijo jima 2**	**4.10**	**191**	Pn		**Pn**		**10 16 36.9**	**-0.6**
	52nm,0.3s,baz=109,slow=23,SNR=11								
JHJ					Sn	**Sn**		**10 17 25.8**	**+0.2**
	80nm,0.3s,baz=58,slow=22,SNR=8.3								
JHJ2	**Mitsune**	**4.10**	**190**	*e*Pn		**Pn**		**10 16 37.3**	**-0.2**
JHJ2				*e*Sn		**Sn**		**10 17 27.5**	**+1.8**
ERM	**Erimo**	**5.21**	**21**	*e*P		**Pn**		**10 16 55.6**	**+2.9**
ERM				*e*				10 17 55.3	
ERM	**Erimo**	**5.21**	**21**	*e*Pn		**Pn**		**10 16 55.6**	**+2.9**
ERM				*e*Sn		**Sn**		**10 17 55.3**	**+2.3**
YUK	**Yuzh-Kuril'sk**	**7.91**	**28**	*e*P		**Pn**		**10 17 30.6**	**+0.8**
YUK				*e*S		Sn		10 18 52.8	-6.7
YUK					pmax	pmax			
	comp=Z,56nm,0.8s								
YUK					pmax	pmax			
	comp=E,31nm,0.3s								
YUK					pmax	pmax			
	comp=N,60nm,0.4s								
SHO	**Shikotan**	**8.17**	**33**	*e*P		**Pn**		**10 17 31.0**	**-2.3**
SHO					pmax	pmax			
	comp=Z,17nm,0.5s								
JNU	**Nakatsue**	**8.99**	**246**	Pn		**Pn**		**10 17 47.8**	**+3.1**
	comp=Z,0.4nm,0.3s,baz=61,slow=16,SNR=4.4								
JNU	**Nakatsue**	**8.99**	**246**	*e*Pn		Pn		10 17 48.7	+4.0
VLA	**Vladivostok**	**9.00**	**314**	*de*P		**Pn**		**10 17 44.3**	**-0.4**
USRK	**Ussuriysk Ar.**	**9.65**	**319**	Pn		Pn		10 17 57.3	+3.7
	comp=Z,0.3nm,0.3s,baz=138,slow=14,SNR=10								
USRK					LR	LR		10 21 23.4	
	comp=Z,102nm,19.5s,baz=153,slow=36								
KUR	**Kuril'sk**	**9.71**	**32**	P		**Pn**		**10 17 54.7**	**+0.3**
KUR				S		Sn		10 19 36.9	-6.6
KUR					smax	smax			
	comp=N,16nm,0.6s								
KUR					smax	smax			
	comp=E,13nm,0.6s								
YSS	**Yuzh-Sakhalins**	**9.91**	**8**	*e*P		**Pn**		**10 17 59.7**	**+2.6**
YSS					pmax	pmax			
	comp=Z,30nm,0.9s								
YSS					MLR	MLR			
	comp=Z,200nm,13.0s								
YSS					MLR	MLR			
	comp=N,200nm,17.0s								
YSS	**Yuzh-Sakhalins**	**9.91**	**8**	*e*Pn		**Pn**		**10 18 00.0**	**+2.9**
JCJ	**Chichijima**	**10.11**	**172**	Pn		Pn		10 17 53.6	-6.4
	baz=270,slow=17								
JCJ					Sn	Sn		10 19 43.5	-10
	comp=N,11nm,0.3s,baz=307,slow=20,SNR=4.4								
KSRS	**Korea Array**	**10.18**	**276**	Pn		Pn		10 18 05.8	+4.9
	comp=N,0.6nm,0.3s,baz=96,slow=14,SNR=16								
KSRS					LR	LR		10 21 40.9	
	comp=N,123nm,20.4s,baz=85,slow=36								
KS15	**Wonju Array Si**	**10.21**	**275**	*e*Pn		Pn		10 18 06.5	+5.1
KSAR	**Wonju Array Be**	**10.21**	**275**	P		Pn		10 18 05.8	+4.4
KSAR	**Wonju Array Be**	**10.21**	**275**	Pn		Pn		10 18 05.8	+4.4
CN2	**Changchun**	**13.36**	**305**	*e*P		Pn		10 18 35.7	-8.7
KLR	**Kul'dur**	**13.70**	**335**	Pn		**P**		**10 18 58.4**	**+0.6**
	comp=N,0.2nm,0.3s,baz=147,slow=14,SNR=4.2								
KLR					LR	LR		10 23 59.8	
	comp=N,96nm,18.1s,baz=147,slow=37								
TYV	**Tymovskoe**	**13.77**	**5**	*e*P		**Pn**		**10 18 50.0**	**0.0**
JOW	**Kunigami**	**14.72**	**229**	Pn		**P**		**10 19 08.5**	**-0.8**
	comp=N,0.6nm,0.3s,baz=20,slow=7.9,SNR=3.9								
NKL	**Nikolayevsk**	**15.99**	**360**	*e*P		Pn		10 19 10.5	-9.2
NJ2	**Nanjing**	**18.68**	**261**	*e*P		**Pn**		**10 19 53.4**	**+0.1**
NJ2					pmax	pmax			
	comp=N,14nm,0.8s								
BJI	**Beijing**	**19.37**	**286**	P		**P**		**10 19 59.9**	**-0.7**
BJI					pmax	pmax			
	comp=N,6.0nm,0.6s								
BJI					LR	LR			
	comp=N,120nm,8.8s								
BJI					LR	LR			
	comp=N,110nm,10.5s								
MA2	**Magadan**	**23.36**	**13**	P		**P**		**10 20 42.2**	**-1.0**
	comp=N,11nm,0.7s,baz=208,slow=10,SNR=6.0								
YAK	**Yakutsk**	**25.83**	**348**	*e*P		**P**		**10 21 04.3**	**-1.7**
YAK					pmax	pmax			
	comp=Z,12nm,0.7s								
SEY	**Seymchan**	**26.78**	**12**	P		**P**		**10 21 13.8**	**-0.8**
	comp=Z,6.0nm,0.9s,baz=223,slow=19,SNR=4.8								
ULN	**Ulaanbaatar**	**26.81**	**304**	⇓*e*P		**P**		**10 21 15.8**	**+0.5**
ULN					pmax	pmax			
	comp=Z,3.0nm,0.9s								
SONM	**Songino Array**	**27.24**	**304**	P		**P**		**10 21 19.0**	**-0.1**
	comp=Z,2.2nm,0.6s,baz=102,slow=8.6,SNR=9.0								
SONM					PcP	**PcP**		**10 24 38.8**	**-0.1**
	comp=Z,1.0nm,0.5s,baz=138,slow=2.2,SNR=6.7								
SONM					LR	LR		10 32 00.3	
	comp=Z,61nm,18.7s,baz=46,slow=36								
H11N2	**WAKE ISLAND Hy**	**28.70**	**120**	T		T		10 51 18.6	
	baz=313,slow=75,SNR=386								
H11N1	**WAKE ISLAND Hy**	**28.71**	**120**	T		T		10 51 19.5	
	baz=313,slow=75,SNR=530								
H11N3	**WAKE ISLAND Hy**	**28.72**	**120**	T		T		10 51 24.0	
	baz=313,slow=75,SNR=451								
H11S1	**WAKE ISLAND Hy**	**29.41**	**122**	T		T		10 52 16.3	
	baz=314,slow=76,SNR=2030								
H11S3	**WAKE ISLAND Hy**	**29.41**	**122**	T		T		10 52 16.1	
	baz=314,slow=76,SNR=1315								
H11S2	**WAKE ISLAND Hy**	**29.43**	**122**	T		T		10 52 15.5	
	baz=314,slow=76,SNR=799								
LZH	**Lanzhou**	**29.48**	**279**	*e*P		**P**		**10 21 40.7**	**+1.4**
LZH					pP	sP		10 21 43.2	+0.7
LZH					sP	pP		10 21 45.6	+4.0
LZH					pmax	pmax			
	comp=Z,14nm,1.0s								
TLY	**Talaya**	**29.82**	**311**	LR		LR		10 32 38.5	
	comp=Z,40nm,18.4s,baz=76,slow=34								
GYA	**Guiyang**	**30.68**	**260**	P		**P**		**10 21 51.8**	**+1.9**
GYA				PP		**PnPn**		**10 22 51.5**	**+2.3**
GYA				PcP		**PcP**		**10 24 50.0**	**+2.1**
GYA				S		**S**		**10 26 52.3**	**-0.5**
GYA				SS		**ScP**		**10 28 33.8**	**+3.0**
GYA				ScS		**ScS**		**10 32 27.7**	**+0.2**
GYA					pmax	pmax			
	comp=Z,20nm,0.9s								
GYA					pmax	pmax			
	comp=Z,120nm,5.4s								
GYA					LR	LR			
	comp=Z,540nm,16.5s								
GYA					LR	LR			
	comp=Z,490nm,17.0s								
GYA					LR	LR			
	comp=Z,520nm,17.6s								
CD2	**Chengdu**	**31.10**	**269**	P		**P**		**10 21 52.4**	**-1.1**
CD2				sP		sP		10 21 56.9	+0.2
CD2				S		**S**		**10 26 58.1**	**-1.1**
CD2				sS		sS		10 27 03.4	+0.3
CD2					pmax	pmax			
	comp=Z,10.0nm,0.5s								
CD2					pmax	pmax			
	comp=Z,80nm,3.9s								
CD2					LR	LR			
	comp=Z,230nm,6.0s								
CD2					LR	LR			
	comp=Z,210nm,15.5s								
BILL	**Bilibino**	**34.07**	**17**	*i* P		**P**		**10 22 19.6**	**+0.6**
BILL				*i*				10 24 54.9	
BILL					pmax	pmax			
	comp=Z,2.0nm,1.0s								
KMI	**Kunming**	**34.41**	**261**	P		**P**		**10 22 25.0**	**+2.3**
KMI					pmax	pmax			
	comp=Z,9.0nm,0.9s								
TIXI	**Tiksi**	**35.10**	**354**	P		**P**		**10 22 26.9**	**-1.0**
	comp=Z,2.8nm,0.6s,baz=146,slow=6.3,SNR=8.5								
TIXI	**Tiksi**	**35.10**	**354**	⇓*e*P		**P**		**10 22 26.5**	**-1.3**
TIXI					pmax	pmax			
	comp=Z,4.0nm,1.0s								
TIXI	**Tiksi**	**35.10**	**354**	*e*P		**P**		**10 22 26.7**	**-1.1**
	comp=Z,9.9nm,1.5s								
WMQ	**Urumqi**	**40.27**	**297**	*e*P		**P**		**10 23 12.5**	**+0.5**
WMQ					pP	sP		10 23 16.4	+1.1
WMQ					pmax	pmax			
	comp=Z,4.0nm,0.6s								
WMQ					pmax	pmax			
	comp=Z,20nm,3.8s								
FAKI	**Fak Fak**	**40.64**	**193**	*e*P		**P**		**10 23 16.1**	**+0.9**
	comp=Z,20nm,0.7s								
CMAR	**Chiang Mai Arr**	**40.98**	**255**	P		**P**		**10 23 16.8**	**-1.2**
	comp=Z,0.9nm,0.6s,baz=48,slow=6.9,SNR=6.0								
CMAR					PcP	**PcP**		**10 25 18.7**	**+0.4**
	comp=Z,0.5nm,0.7s,baz=341,slow=2.4,SNR=5.6								
ZAA0	**Zalesovo Array**	**41.41**	**312**	*e*P		**P**		**10 23 20.4**	**-0.8**
ZALV	**Zalesovo Beam**	**41.41**	**312**	P		**P**		**10 23 20.9**	**-0.3**
	comp=Z,3.2nm,0.6s,baz=98,slow=7.2,SNR=12								
ZALV					PcP	**PcP**		**10 25 18.4**	**-0.7**
	comp=Z,1.2nm,0.3s,baz=120,slow=3.2,SNR=5.1								
NRIK	**Noril'sk**	**42.91**	**335**	P		**P**		**10 23 31.3**	**-1.9**
	comp=Z,3.1nm,0.6s,baz=110,slow=3.8,SNR=4.0								
MKAR	**Makanchi Array**	**43.57**	**302**	P		**P**		**10 23 38.9**	**0.0**
	comp=Z,2.6nm,0.7s,baz=89,slow=10,SNR=19								
MKAR					PcP	**PcP**		**10 25 26.2**	**-0.2**
	comp=Z,0.4nm,0.4s,baz=70,slow=4.7,SNR=3.7								
MKAR					LR	LR		10 41 43.3	
	comp=Z,39nm,18.7s,baz=44,slow=36								
KSM	**Kuching**	**45.23**	**225**	*e*P		**P**		**10 23 53.2**	**+0.8**
	comp=Z,16nm,1.0s								
KURK	**Kurchatov**	**45.40**	**308**	*e*P		**P**		**10 23 52.9**	**-0.6**
KURK					pmax	pmax			
	comp=Z,10.0nm,0.9s								
KURK	**Kurchatov**	**45.40**	**308**	*e*P		**P**		**10 23 52.9**	**-0.6**
	comp=Z,10nm,0.9s								
KURBB	**Kurchatov Arra**	**45.47**	**308**	P		**P**		**10 23 53.3**	**-0.7**
	comp=Z,3.4nm,0.4s,baz=83,slow=8.1,SNR=66								
RAMN	**Ramite**	**46.42**	**274**	*e*P		**P**		**10 24 02.1**	**0.0**
	comp=Z,13nm,0.6s								
GUN	**Gumba**	**46.57**	**275**	*e*P		**P**		**10 24 03.6**	**+0.2**
	comp=Z,12nm,0.4s								
KKN	**Kakani**	**47.10**	**275**	*e*P		**P**		**10 24 07.3**	**-0.1**
	comp=Z,14nm,0.5s								
KDAK	**Kodiak Island**	**47.39**	**42**	P		P		10 24 23.3	+14
	comp=Z,9.1nm,0.8s,baz=289,slow=8.8,SNR=6.2								
GKN	**Gorkha**	**47.52**	**276**	*e*P		**P**		**10 24 10.5**	**-0.1**
MLY	**Manley**	**48.05**	**32**	*e*P		**P**		**10 24 15.0**	**+1.0**
	comp=Z,25nm,2.0s								
KOLN	**Koldanda**	**48.45**	**276**	*e*P		**P**		**10 24 17.3**	**-0.5**
	comp=Z,12nm,0.8s								
PYUN	**Piuthan**	**48.79**	**277**	*e*P		**P**		**10 24 20.5**	**+0.1**
TKM2	**Tokmak 2**	**49.07**	**298**	*e*P		**P**		**10 24 22.8**	**+0.4**
TKM2					pmax	pmax			
	comp=Z,6.0nm,0.6s								
TKM2	**Tokmak 2**	**49.07**	**298**	*e*P		**P**		**10 24 22.8**	**+0.4**
	comp=Z,5.9nm,0.6s								
MDM	**Murphy Dome**	**49.12**	**32**	*e*P		**P**		**10 24 23.0**	**+0.8**
	comp=Z,4.7nm,0.8s								
SML	**Sawmill**	**49.23**	**36**	*e*P		**P**		**10 24 23.8**	**+0.6**
SML					pmax	pmax			
	comp=Z,8.0nm,0.8s								
SML	**Sawmill**	**49.23**	**36**	*e*P		**P**		**10 24 23.8**	**+0.6**
	comp=Z,7.8nm,0.8s								
COLA	**College**	**49.28**	**32**	⇑*e*P		**P**		**10 24 24.0**	**+0.6**
COLA					pmax	pmax			
	comp=Z,2.0nm,0.9s								
HDA	**Harding Lake**	**49.69**	**33**	*e*P		**P**		**10 24 28.9**	**+2.3**
	comp=Z,21nm,1.3s								
ILAR	**Eielson Array**	**49.70**	**32**	P		**P**		**10 24 26.4**	**-0.2**
	comp=Z,2.3nm,0.7s,baz=271,slow=6.4,SNR=20								
ILB	**Eielson Array**	**49.70**	**32**	*e*P		**P**		**10 24 26.6**	**0.0**
KSH	**Kashi**	**49.83**	**294**	P		P		10 24 32.7	+4.5
KSH				*e*pP		sP		10 24 37.3	+5.8
KSH				*e*sP		pP		10 24 39.7	+9.1
KSH				S		**S**		**10 31 41.7**	**+3.5**
KSH					pmax	pmax			
	comp=Z,170nm,7.4s								
KSH					LR	LR			
	comp=

HFS	**Hagfors**	**73.74**	**335**	P	**P**	**10 27 09.1**	**+0.3**
	comp=Z,1.6nm,0.4s,baz=73,slow=5.1,SNR=12						
AKASG	**Malin Array Be**	**73.85**	**322**	P	**P**	**10 27 08.9**	**-0.7**
	comp=Z,0.5nm,0.3s,baz=48,slow=5.9,SNR=7.9						
AKASG				LR	LR	11 02 01.6	
	comp=Z,37nm,18.9s,baz=325,slow=38						
NB2	**NORSAR Subarra**	**73.85**	**337**	P	**P**	**10 27 08.8**	**-0.7**
	comp=Z,0.9nm,0.5s,baz=39,slow=5.9						
NOA	**NORSAR Array B**	**73.85**	**337**	P	**P**	**10 27 09.1**	**-0.3**
	comp=Z,2.8nm,0.8s,baz=39,slow=5.8,SNR=6.6						
KIEV	**Kiev**	**73.86**	**322**↑	*eP*	**P**	**10 27 08.6**	**-1.0**
KIEV				pmax	pmax		
	comp=Z,5.0nm,0.9s						
FFC	**Flin Flon**	**73.91**	**32**	*eP*	**P**	**10 27 09.5**	**-0.4**
FFC				pmax	pmax		
	comp=Z,1.0nm,0.2s						
FFC	**Flin Flon**	**73.91**	**32**	*eP*	**P**	**10 27 09.5**	**-0.4**
	comp=Z,0.6nm,0.2s						
FCC	**Fort Churchill**	**74.14**	**26**	*eP*	**P**	**10 27 10.6**	**-0.5**
FCC				pmax	pmax		
	comp=Z,2.0nm,0.6s						
FCC	**Fort Churchill**	**74.14**	**26**	*eP*	**P**	**10 27 10.6**	**-0.5**
	comp=Z,1.9nm,0.6s						
EGMT	**Eagleton**	**74.55**	**41**	P	**P**	**10 27 13.5**	**-0.4**
	baz=309						
HLID	**Hailey**	**74.70**	**47**	P	**P**	**10 27 14.7**	**-0.3**
	baz=307						
HLID	**Hailey**	**74.70**	**47**	*eP*	**P**	**10 27 15.1**	**+0.1**
	comp=Z,1.0nm,0.8s						
BOZ	**Bozeman (W)**	**75.02**	**44**	P	**P**	**10 27 16.7**	**0.0**
	baz=308						
NV01	**Mina Array Sit**	**75.37**	**53**	*eP*	**P**	**10 27 19.6**	**+0.6**
NVAR	**Mina Array Bea**	**75.37**	**53**	P	**P**	**10 27 19.2**	**+0.2**
	comp=Z,1.5nm,0.7s,baz=295,slow=4.8,SNR=13						
H17A	**Grant Village**	**76.38**	**44**	*eP*	**P**	**10 27 27.0**	**+2.3**
PKM	**Mcpherson Peak**	**76.46**	**57**	P	**P**	**10 27 26.9**	**+1.7**
	baz=306						
IMW	**Indian Meadow**	**76.49**	**45**	*eP*	**P**	**10 27 26.4**	**+1.1**
	comp=Z,1.4nm,0.9s						
GRAC	**Grapevine Rang**	**76.82**	**54**	P	**P**	**10 27 27.6**	**+0.6**
	baz=307						
R11A	**Troy Canyon, C**	**77.14**	**52**	P	**P**	**10 27 29.1**	**+0.1**
	baz=307						
TPNV	**Topopah Spring**	**77.56**	**53**	P	**P**	**10 27 31.4**	**+0.1**
	baz=307						
DUG	**Dugway, Tooele**	**77.70**	**49**	P	**P**	**10 27 32.0**	**0.0**
	baz=308						
DUG	**Dugway, Tooele**	**77.70**	**49**	*eP*	**P**	**10 27 32.8**	**+0.8**
DUG				pmax	pmax		
	comp=Z,2.0nm,0.6s						
DUG	**Dugway, Tooele**	**77.70**	**49**	*eP*	**P**	**10 27 32.8**	**+0.8**
	comp=Z,1.7nm,0.6s						
BUR08	**Bucovina Ar. S**	**77.85**	**321**	*eP*	**P**	**10 27 32.8**	**+0.2**
BW06	**Boulder Array**	**77.99**	**45**	P	**P**	**10 27 33.0**	**-0.7**
	baz=310						
BW06	**Boulder Array**	**77.99**	**45**	*eP*	**P**	**10 27 33.2**	**-0.4**
PDAR	**Pinedale Array**	**77.99**	**45**	P	**P**	**10 27 33.5**	**-0.1**
	comp=Z,0.8nm,0.7s,baz=275,slow=1.8,SNR=7.5						
BRTR	**Keskin Array B**	**78.34**	**311**	P	**P**	**10 27 35.9**	**+0.3**
	comp=Z,0.6nm,0.6s,baz=50,slow=4.5,SNR=2.9						
C26A	**Wahner Farm, P**	**78.57**	**38**	P	**P**	**10 27 36.1**	**-0.4**
	baz=314						
TUQ	**Turquoise Moun**	**78.69**	**54**	P	**P**	**10 27 37.7**	**+0.2**
	baz=308						
KNB	**Kanab**	**79.68**	**51**	*eP*	P	10 27 47.0	+4.0
KNB				pmax	pmax		
	comp=Z,11nm,1.6s						
KNB	**Kanab**	**79.68**	**51**	*eP*	P	10 27 47.0	+4.0
	comp=Z,11nm,1.6s						
ULM	**Lac du Bonnet**	**79.71**	**33**	P	**P**	**10 27 42.1**	**-0.6**
	comp=Z,1.4nm,0.6s,baz=115,slow=1.2,SNR=3.0						
SRU	**San Rafael Swe**	**79.76**	**48**	*eP*	**P**	**10 27 43.9**	**+0.5**
SRU				pmax	pmax		
	comp=Z,3.0nm,0.8s						
SRU	**San Rafael Swe**	**79.76**	**48**	*eP*	**P**	**10 27 43.9**	**+0.5**
	comp=Z,2.7nm,0.8s						
VYHS	**Vyhne**	**80.30**	**325**	*eP*	**P**	**10 27 46.3**	**+0.3**
VYHS	**Vyhne**	**80.30**	**325**	*eP*	**P**	**10 27 46.2**	**+0.3**
CLL	**Collm**	**80.70**	**330**↓	*iP*	**P**	**10 27 47.4**	**-0.6**
	comp=Z,8.0nm,0.8s						
CLL	**Collm**	**80.70**	**330**↓	*iP*	**P**	**10 27 47.4**	**-0.6**
CLL				pmax	pmax		
	comp=Z,21nm,0.8s						
H28A	**Mission Ridge**	**81.30**	**39**	P	**P**	**10 27 51.0**	**-0.4**
	baz=315						
WUAZ	**Wupatki**	**81.53**	**52**	*eP*	**P**	**10 27 53.8**	**+0.9**
	comp=Z,2.0nm,0.8s						
I28A	**Midland**	**81.69**	**40**	P	**P**	**10 27 53.1**	**-0.4**
	baz=315						
C34A	**RKJ Ranch, Bem**	**82.07**	**34**	P	**P**	**10 27 55.1**	**-0.2**
	baz=318						
ISCO	**Idaho Springs**	**82.17**	**45**	P	**P**	**10 27 55.9**	**-0.5**
	baz=312						
GERES	**GERESS Array B**	**82.30**	**328**	P	**P**	**10 27 56.1**	**-0.5**
	comp=Z,0.4nm,0.5s,baz=51,slow=5.2,SNR=4.7						
J30A	**Dallas**	**83.03**	**40**	P	**P**	**10 28 00.1**	**-0.4**
	baz=316						
C38A	**Sawbill Land.**	**83.61**	**32**	P	**P**	**10 28 02.7**	**-0.7**
	baz=321						
E36A	**McGregor**	**83.66**	**34**	P	**P**	**10 28 03.2**	**-0.5**
	baz=320						
H35A	**Sunnyside Ranc**	**84.31**	**36**	P	**P**	**10 28 06.6**	**-0.4**
	baz=319						
BFO	**Black Forest**	**84.91**	**330**	*i* P	**P**	**10 28 10.5**	**+0.5**
ANMO	**Albuquerque**	**84.94**	**49**↑	*eP*	**P**	**10 28 11.2**	**+0.6**
ANMO				pmax	pmax		
	comp=Z,1.0nm,1.1s						
DAVOX	**Davos/Dischmat**	**85.53**	**329**	P	**P**	**10 28 13.5**	**+0.2**
	comp=Z,2.6nm,0.8s,baz=345,slow=9.0,SNR=4.4						
TX31	**Lajitas Ar. Si**	**90.50**	**52**	*eP*	**P**	**10 28 37.4**	**+0.1**
TXAR	**Lajitas Array**	**90.50**	**52**	P	**P**	**10 28 37.3**	**-0.1**
	comp=Z,0.7nm,0.7s,baz=304,slow=3.2,SNR=11						
TKL	**Tuckaleechee C**	**96.62**	**35**	P	**P**	**10 29 05.2**	**0.0**
	comp=Z,1.7nm,0.5s,baz=153,slow=4.5,SNR=2.2						
TORD	**Torodi Ar. Bea**	**116.84**	**314**	PKP	**PKPdf**	**10 34 18.9**	**-1.3**
	comp=Z,0.3nm,0.5s,baz=54,slow=1.7,SNR=4.4						
SDV	**Santo Domingo**	**125.59**	**39**	PKP	**PKPdf**	**10 34 36.9**	**-0.5**
	comp=Z,2.6nm,0.6s,baz=247,slow=7.7,SNR=4.4						
DBIC	**Dimbokro**	**125.81**	**316**	PKP	**PKPdf**	**10 34 36.7**	**-0.8**
	comp=Z,1.7nm,0.7s,baz=102,slow=1.9,SNR=4.6						
BOSA	**Boshof**	**126.03**	**259**	PKP	**PKPdf**	**10 34 37.1**	**-0.5**
	comp=Z,1.7nm,0.8s,baz=99,slow=10,SNR=2.9						
LPAZ	**La Paz**	**147.12**	**59**	PKPbc	**PKPbc**	**10 35 19.3**	**0.0**
	comp=Z,3.7nm,0.4s,baz=19,slow=18,SNR=24						
SIV	**San Ignacio**	**151.43**	**48**	PKPbc	**PKPbc**	**10 35 29.2**	**-0.3**
	comp=Z,4.9nm,0.7s,baz=279,slow=3.6,SNR=10						

JMA **12** *10:22:37.0±0.2, 38°.04N×143°.76E, h31km, M3.6*
IDC **12** *10:22:38.3±7.7, 37°.09N×143°.05E, h0km, mb3.5/2, mb1 3.6/3, mb1mx3.2/50, mbtmp3.3/3, ML3.0/1, Error ellipse: s-maj=161.3km s-min=49.1km az=26.0*

ISC 12 10:22:34.2±3.0, 37°.81N±0°.08×143°.4E±0°.1, h11km±15km, n15, σ09°92/21, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**1.77**	**292**	P	**Pg**	**10 23 08.8**	**+0.7**
JIO				S	**Sg**	**10 23 32.1**	**+1.0**
OFUJ	**Ofunato**	**1.88**	**313**	P	**Pb**	**10 23 09.0**	**+0.4**
OFUJ				*eS*	**Sb**	**10 23 33.2**	**+1.0**
JMK	**Ichinoseki**	**2.09**	**304**	P	**Pb**	**10 23 12.9**	**+0.9**
JMK				*eS*	**Sb**	**10 23 39.4**	**+1.4**
JMM	**Marumori**	**2.10**	**272**	P	**Pg**	**10 23 14.4**	**0.0**
JOU	**Okura**	**2.26**	**285**	P	**Pg**	**10 23 16.8**	**-0.7**
JOU				S	**Sg**	**10 23 46.5**	**-0.3**
JOM	**Ohasama**	**2.37**	**315**	P	**Pb**	**10 23 15.7**	**-1.1**
JOM				*eS*	**Sb**	**10 23 44.8**	**-1.2**
JTH	**Tanohata**	**2.46**	**330**	*eS*	**Sn**	**10 23 44.9**	**+0.6**
JFT	**Otama**	**2.48**	**264**	*eS*	**Sg**	**10 23 53.4**	**-0.4**
JYK	**Kaneyama**	**2.66**	**296**	P	**Pb**	**10 23 21.7**	**-0.2**
JYK				*eS*	**Sb**	**10 23 55.2**	**+0.6**
JRG	**Rokugo**	**2.71**	**307**	S	**Sb**	**10 23 55.7**	**-0.3**
JTM	**Tenmabayashi**	**3.50**	**329**	*eS*	**Sn**	**10 24 08.6**	**-1.3**
MJAR	**Matsushiro Arr**	**4.37**	**255**	P	**Pn**	**10 23 39.4**	**-1.1**
	1.1nm,0.3s,baz=81,slow=17,SNR=5.7						
MAT	**Matsushiro**	**4.37**	**255**	P	**Pn**	**10 23 40.0**	**-0.5**
WRA	**Warramunga Arr**	**58.08**	**190**	P	**P**	**10 32 28.7**	**+1.2**
	0.9nm,0.8s,baz=12,slow=7.3,SNR=5.6						
ASAR	**Alice Springs**	**61.80**	**190**	P	**P**	**10 32 53.1**	**0.0**
	0.1nm,0.5s,baz=21,slow=8.0,SNR=3.7						

JMA 12 10:33:21.7, 36°.89N×140°.63E, h6km±1km, M2.7, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.25**	**32**	P	**Pg**	**10 33 27.1**	**+0.5**
ONAJ				S	**Sg**	**10 33 30.2**	**+0.2**
JHO	**Hitachi**	**0.28**	**190**	P	**Pg**	**10 33 27.3**	**+0.1**
JHO				S	**Sg**	**10 33 31.2**	**+0.2**
JFT	**Otama**	**0.67**	**340**	P	**Pg**	**10 33 34.7**	**+0.1**
JFT				S	**Sg**	**10 33 43.6**	**+0.3**
JMM	**Marumori**	**0.98**	**8**	P	**Pg**	**10 33 39.8**	**-0.8**
JMM				*eS*	**Sg**	**10 33 52.7**	**-0.6**
MAT	**Matsushiro**	**1.98**	**261**	P	**Pn**	**10 33 56.9**	**+1.2**
MAT				S	**Sb**	**10 34 22.7**	**-0.3**

ISCJB **12** *10:34:04.6±1.0, 5°.34N±0°.07×82°.61W±0°.09, h10km, Error ellipse: s-maj=15.8km s-min=4.9km az=145.8*
CASC **12** *10:34:07.3±1.7, 5°.52N×82°.53W, h3km±40km, MD4.3*

ISC 12 10:34:05.8±1.3, 5°.38N±0°.08×82°.47W±0°.08, h10km, n14, σ28°02/17, 1C-1D, South of Panama

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
AZU	**Azuero**	**3.24**	**42**	*eP*	**Pn**	**10 34 58.1**	**+1.3**
AZU				*eS*	**Sn**	**10 35 31.0**	**-4.4**
TBS2		**3.39**	**357**	*eS*	**Sn**	**10 35 40.3**	**+0.9**
BRU2	**Volcan**	**3.40**	**356**↑	*iP*	**Pn**	**10 34 59.8**	**+0.7**
BRU2				*eS*	**Sn**	**10 35 39.6**	**+0.1**
BUS	**Buena Vista**	**4.34**	**343**	*eP*	**Pn**	**10 35 12.9**	**+0.6**
BUS				*eS*	**Sn**	**10 36 02.7**	**-0.4**
URSC	**Urasca**	**4.61**	**344**	*eP*	**Pn**	**10 35 16.8**	**+1.1**
URSC				*eS*	**Sn**	**10 36 11.0**	**+1.6**
GRGC	**Isla de Gorgon**	**4.90**	**119**	*eP*	**Pn**	**10 35 20.5**	**+0.8**
SOLC	**Bahia Solano**	**5.11**	**80**	*eP*	**Pn**	**10 35 24.1**	**+1.7**
JCR	**Jicaral**	**5.15**	**330**↓	*iP*	**Pn**	**10 35 22.9**	**-0.2**
JCR				*eS*	**Sn**	**10 36 18.3**	**-4.4**
MALC	**Bahia Malaga**	**5.30**	**105**	*eP*	Pn	10 35 28.7	+3.6
MALC				*i*		10 35 30.6	
	comp=Z,28nm,0.3s						
JTS	**JuntasAbangare**	**5.46**	**333**	*eS*	**Sn**	**10 36 31.8**	**+1.6**
VCR	**Vista de Mar**	**5.66**	**327**	*eP*	**Pn**	**10 35 29.8**	**-0.3**
VCR				*eS*	Sn	10 36 24.7	-11
POPC	**Popayan, Colom**	**6.43**	**116**	*eP*	**Pn**	**10 35 43.2**	**+2.3**
OTAV	**Otavalo**	**6.50**	**142**	*eP*	**Pn**	**10 35 42.6**	**+0.6**
TOLC	**Tolima**	**7.17**	**96**	*eP*	Pn	10 35 56.2	+5.1

JMA 12 10:35:47.2, 36°.94N×140°.77E, h12km±1km, M2.8, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.16**	**8**	P	**Pg**	**10 35 51.1**	**+0.1**
ONAJ				S	**Sg**	**10 35 53.6**	**-0.1**
JHO	**Hitachi**	**0.37**	**206**	P	**Pg**	**10 35 54.0**	**-0.5**
JHO				S	**Sg**	**10 35 59.5**	**+0.1**
JFT	**Otama**	**0.67**	**329**	P	**Pg**	**10 36 00.3**	**0.0**
JFT				S	**Sg**	**10 36 09.1**	**-0.1**
JMM	**Marumori**	**0.93**	**1**	P	**Pg**	**10 36 04.2**	**-0.9**
JMM				S	**Sg**	**10 36 16.3**	**-0.8**
MAT	**Matsushiro**	**2.10**	**260**	P	**Pb**	**10 36 23.8**	**-1.4**
MAT				S	**Sb**	**10 36 51.5**	**+0.3**

MAN 12 10:42:00, 15°.43N×122°.22E, h32km, mb4.2, ML3.0, MS2.8, 1D, Philippine Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
BALP	**Baler**	**0.69**	**297**	*eP*	Pb	10 42 14.9	+1.2
BALP				*eS*	Sn	10 42 23.6	+0.3
GQP	**Guinayangan**	**1.53**	**172**↓	*eP*	Pn	10 42 25.1	0.0
GQP				*eS*	Sb	10 43 07.1	+20
CAUP	**Cauayan**	**1.56**	**346**	*eP*	Pn	10 42 24.5	-0.9
CAUP				*eS*	Sn	10 42 40.6	-4.0

MEX 12 10:44:06.4±0.6, 16°.01N×97°.12W, h16km±999km, MD3.7, Oaxaca

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PANG	**Puerto Angel**	**0.71**	**119**	*eP*	Pg	10 44 17.8	-2.4
PANG				*eS*	Sg	10 44 26.4	-3.2
HUIG	**Huatulco**	**1.00**	**104**	*eP*	Pb	10 44 21.9	-3.5
HUIG				*eS*	Sb	10 44 34.2	-4.0
PNIG	**Pinotepa**	**1.04**	**291**	*eP*	Pb	10 44 22.1	-4.0
PNIG				*eS*	Sb	10 44 35.0	-4.5
OXBJ	**Oaxaca**	**1.11**	**20**	*eP*	Pb	10 44 23.1	-4.3
OXBJ				*eS*	Sb	10 44 36.9	-4.8
VHO	**Vista Hermosa**	**1.12**	**19**	*eP*	Pb	10 44 23.1	-4.3
VHO				*eS*	Sb	10 44 36.8	-5.0
TLIG	**Tlapa**	**2.08**	**318**	*eP*	Pn	10 44 37.9	-2.7
TLIG				*eS*	Sn	10 45 01.8	-4.5
ACX	**Acapulco**	**2.77**	**288**	*eP*	Pb	10 44 54.0	-1.5
ACX				*eS*	Sn	10 45 26.0	+2.8

IDC 12 10:47:06.2±8.7, 9°.42S×116°.47E, h85km±104km, mb2.9/3, mb1 3.1/4, mb1mx3.0/35, mbtmp3.3/4, ML3.7/1, Error ellipse: s-maj=118.2km s-min=55.8km az=112.0, Sumbawa region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
KAPI	**Kappang**	**5.46**	**37**	P	Pn	10 48 25.4	+0.4
	2.4nm,0.3s,baz=256,slow=5.5,SNR=7.2						
KAPI				S	Sn	10 49 26.6	+0.2
	1.9nm,0.3s,baz=252,slow=23,SNR=8.1						
WRA	**Warramunga Arr**	**20.18**	**123**	P	P	10 51 33.5	-0.6
	0.3nm,0.5s,baz=297,slow=12,SNR=4.3						
ASAR	**Alice Springs**	**21.86**	**132**	P	P	10 51 52.6	+0.4
	0.4nm,0.7s,baz=306,slow=9.4,SNR=5.1						
STKA	**Stephens Creek**	**32.27**	**137**	P	P	10 53 27.0	+0.1
	1.0nm,0.8s,baz=309,slow=13,SNR=2.7						

NIED **12** *10:47:00, 35°.90N×141°.10E, h5km, Mw3.5 Best double couple: Mo1.81000×10^14 NP1:φs183.00000°, δ50.00000°, λ-142.00000°. NP2:φs66.00000°, δ62.00000°, λ-47.00000°*
IDC **12** *10:47:40.0±1.4, 35°.67N×141°.17E, h0km, mb3.3/4, mb1 3.6/5, mb1mx3.4/37, mbtmp3.3/5, ML3.2/1, MS2.5/1, Ms1 2.5/1, ms1mx2.0/20, Error ellipse: s-maj=34.8km s-min=29.9km az=152.0*
ISCJB **12** *10:47:42.4±1.2, 35°.91N±0°.06×141°.14E±0°.08, h22km±7km, mb3.4/4, Error ellipse: s-maj=11.2km s-min=9.4km az=155.2*
JMA **12** *10:47:43.2±0.1, 35°.93N×141°.09E, h20km±2km, M3.7*
JMA Felt I J1.

ISC 12 10:47:41.5±3.7, 35°.91N±0°.05×141°.11E±0°.08, h5km±24km, n16, σ19°00/14, mb3.5/4, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CHOJ	**Chosi**	**0.29**	**224**	P	**Pb**	**10 47 49.6**	**+0.4**
CHOJ				S	**Sb**	**10 47 54.4**	**+0.1**
JYT	**Yasato**	**0.80**	**293**	P	**Pb**	**10 47 57.8**	**-0.1**
JYT				S	**Sb**	**10 48 08.4**	**-0.6**
JHO	**Hitachi**	**0.82**	**328**	P	**Pb**	**10 47 57.9**	**-0.3**
JHO				S	**Sb**	**10 48 09.4**	**-0.1**
MJAR	**Matsushiro Arr**	**2.42**	**286**	Pn	**Pn**	**10 48 21.8**	**0.0**
	4.7nm,0.3s,baz=105,slow=7.9,SNR=20						
MJAR				Sn	**Sn**	**10 48 52.7**	**+0.9**
	5.0nm,0.3s,baz=301,slow=43,SNR=5.8						
MAT	**Matsushiro**	**2.43**	**286**	P	**Pn**	**10 48 21.9**	**+0.1**
MAT				*eS*	**Sn**	**10 48 51.2**	**-0.6**
JNU	**Nakatsue**	**8.89**	**255**	LR	LR	10 52 36.5	
	comp=Z,27nm,18.9s,baz=125,slow=33						
H11N2	**WAKE ISLAND Hy**	**27.81**	**119**	T	T	11 22 34.1	
	baz=311,slow=75,SNR=125						
H11N1	**WAKE ISLAND Hy**	**27.82**	**119**	T	T	11 22 33.2	
	baz=311,slow=75,SNR=65						
H11N3	**WAKE ISLAND Hy**	**27.83**	**119**	T	T	11 22 35.0	
	baz=311,slow=75,SNR=104						
H11S1	**WAKE ISLAND Hy**	**28.48**	**121**	T	T	11 23 21.4	
	baz=313,slow=76,SNR=39						
H11S3	**WAKE ISLAND Hy**	**28.48**	**121**	T	T	11 23 21.5	
	baz=313,slow=76,SNR=36						
H11S2	**WAKE ISLAND Hy**	**28.50**	**121**	T	T	11 23 22.7	
	baz=313,slow=76,SNR=30						
MKAR	**Makanchi Array**	**44.51**	**303**	P	**P**	**10 55 55.0**	**+1.1**
	0.2nm,0.3s,baz=87,slow=7.4,SNR=2.6						
ILAR	**Eielson Array**	**50.57**	**32**	P	**P**	**10 56 41.1**	**+0.5**
	0.2nm,0.7s,baz=261,slow=5.2,SNR=4.3						
WRA	**Warramunga Arr**	**55.92**	**188**	P	**P**	**10 57 18.0**	**-2.4**
	0.2nm,0.5s,baz=6.3,slow=7.4,SNR=3.0						
YKA	**Yellowknife Ar**	**64.90**	**30**	P	**P**	**10 58 22.1**	**+0.7**
	0.2nm,0.6s,baz=303,slow=6.6,SNR=6.0						

JMA 12 10:53:21.6, 36°.98N×140°.63E, h9km±1km, M2.3, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.18**	**48**	P	**Pg**	**10 53 25.6**	**+0.2**
ONAJ				S	**Sg**	**10 53 28.4**	**+0.3**
JHO	**Hitachi**	**0.37**	**188**	P	**Pg**	**10 53 28.9**	**0.0**
JHO				S	**Sg**	**10 53 34.7**	**+0.9**
JFT	**Otama**	**0.59**	**337**	P	**Pg**	**10 53 33.1**	**+0.1**
JFT				S	**Sg**	**10 53 40.9**	**+0.2**
JMM	**Marumori**	**0.89**	**8**	P	**Pg**	**10 53 38.1**	**-0.7**
JMM				S	**Sg**	**10 53 50.1**	**-0.4**

JMA 12 10:53:47.6±0.2, 36°.84N×138°.58E, h1km±3km, M1.6, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JGK	**Kuni**	**0.28**	**170**	P	**Pg**	**10 53 53.6**	**+0.6**
JGK				S	**Sg**	**10 53 57.8**	**+1.2**
MAT	**Matsushiro**	**0.42**	**225**	P	**Pg**	**10 53 55.5**	**-0.2**
MAT				S	**Sg**	**10 54 00.9**	**-0.2**
MAT	**Matsushiro**	**0.42**	**225**	P	**Pg**	**10 53 55.5**	**-0.2**
MAT				S	**Sg**	**10 54 00.6**	**-0.5**
JHK	**Hiroka**	**0.54**	**40**	P	**Pg**	**10 53 57.9**	**0.0**
JHK				S	**Sg**	**10 54 05.1**	**+0.2**
JKT	**Katashina**	**0.54**	**98**	S	**Sg**	**10 54 05.4**	**+0.4**
JNG	**Nsakai**	**0.58**	**222**	P	**Pg**	**10 53 58.5**	**-0.2**
JNG				S	**Sg**	**10 54 05.5**	**-0.7**

NIED **12** *11:00:00, 37°.10N×140°.70E, h14km, Mw3.5 Best double couple: Mo2.33000×10^14 NP1:φs263.00000°, δ38.00000°, λ122.00000°. NP2:φs45.00000°, δ59.00000°, λ68.00000°.*
IDC **12** *11:00:50.6±0.8, 37°.08N×140°.62E, h0km, mb3.8/13, mb1 4.0/14, mb1mx3.8/37, mbtmp3.8/14, ML3.0/1, MS2.6/2, Ms1 2.6/2, ms1mx2.3/61, Error ellipse: s-maj=23.2km s-min=16.3km az=89.0*
ISCJB **12** *11:00:52.6±0.5, 37°.06N±0°.03×140°.73E±0°.06, h25km±3km, mb3.7/13, Error ellipse: s-maj=7.9km s-min=5.2km az=0.5*
JMA **12** *11:00:53.5, 37°.06N×140°.64E, h15km±1km, M3.8 Broadband fault plane solution: P waves. NP1: φs253.00000°, δ47.00000°, λ101.00000°. NP2: φs58.00000°, δ44.00000°, λ79.00000°. Principal axes: T Plg82.0000°, Azm232.0000°; N Plg8.0000°, Azm66.0000°; P Plg2.0000°, Azm336.0000°;*
JMA Felt III J1.

ISC 12 11:00:53.0±1.3, 37°.07N±0°.05×140°.64E±0°.04, h16km±9km, n29, σ05°75/27, mb3.7/13, 1C-4D, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.13**	**76**	↑P	**Pb**	**11 00 57.2**	**0.0**
ONAJ				S	**Sb**	**11 00 59.8**	**-0.1**
JHO	**Hitachi**	**0.46**	**187**	↓P	**Pg**	**11 01 02.3**	**0.0**
JHO				S	**Sg**	**11 01 08.6**	**0.0**
JFT	**Otama**	**0.51**	**331**	↓P	**Pb**	**11 01 03.8**	**+0.1**
JFT				S	**Sb**	**11 01 10.8**	**-0.1**
JMM	**Marumori**	**0.80**	**9**	↓P	**Pb**	**11 01 08.5**	**-0.2**
JMM				S	**Sb**	**11 01 19.4**	**+0.1**
JFY	**Yanaizu**	**0.82**	**294**	↓P	**Pb**	**11 01 09.0**	**0.0**
JFY				S	**Sb**	**11 01 19.6**	**-0.2**
MJAR	**Matsushiro Arr**	**2.02**	**256**	Pn	**Pn**	**11 01 27.3**	**+0.8**
	13nm,0.3s,baz=94,slow=16,SNR=78						
MJAR				Sn	**Sb**	**11 01 54.3**	**-0.2**
	27nm,0.3s,baz=35,slow=19,SNR=9.6						
JHJ	**Hachijo jima 2**	**4.00**	**190**	Pn	**Pn**	**11 01 53.3**	**-0.5**
	2.6nm,0.3s,baz=159,slow=14,SNR=3.1						
JHJ				Sn	**Sn**	**11 02 41.2**	**+0.8**
	9.4nm,0.3s,baz=78,slow=22,SNR=3.2						
JNU	**Nakatsue**	**8.92**	**247**	LR	LR	11 06 35.6	
	comp=Z,50nm,19.0s,baz=127,slow=39						
USRK	**Ussuriysk Ar.**	**9.69**	**320**	Pn	Pn	11 03 18.3	+6.5
	0.2nm,0.3s,baz=155,slow=13,SNR=5.9						
KSRS	**Korea Array**	**10.15**	**276**	Pn	Pn	11 03 22.9	+4.8
	0.1nm,0.3s,baz=96,slow=13,SNR=6.0						
KSRS				LR	LR	11 07 00.9	
	comp=Z,20nm,18.8s,baz=105,slow=36						
SONM	**Songino Array**	**27.25**	**304**	P	**P**	**11 06 37.0**	**+0.4**
	0.8nm,0.6s,baz=100,slow=7.5,SNR=5.9						
H11N2	**WAKE ISLAND Hy**	**28.70**	**120**	T	T	11 36 42.5	
	baz=313,slow=75,SNR=28						
H11N1	**WAKE ISLAND Hy**	**28.71**	**120**	T	T	11 36 41.9	
	baz=313,slow=75,SNR=33						
H11N3	**WAKE ISLAND Hy**	**28.72**	**120**	T	T	11 36 42.8	
	baz=313,slow=75,SNR=25						
H11S1	**WAKE ISLAND Hy**	**29.40**	**122**	T	T	11 37 35.5	
	baz=314,

MAN 12 11:04:32,16°.57N×120°.40E,h19km,mb4.2,ML3.0,MS2.8, 1C,Luzon

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
BCPH	**Baguio City Da**	**0.26**	**136**	⇑*i*P	Pg	11 04 39.1	+1.1
BCPH				*i* S	Sn	11 04 44.6	-1.9
BOLP	**Bolinao**	**0.50**	**248**	*e*P	Pn	11 04 43.5	-0.7
BOLP				*e*S	Sn	11 04 53.6	+1.4
BALP	**Baler**	**1.40**	**126**	*e*P	Pn	11 04 56.9	+0.4
CAUP	**Cauayan**	**1.42**	**74**	*e*P	Pn	11 04 56.6	-0.2

JMA 12 11:06:39.3,36°.96N×140°.68E,h10km±1km,M2.6,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.17**	**34**	P	Pg	11 06 43.2	+0.2
ONAJ				S	Sg	11 06 46.0	+0.4
JHO	**Hitachi**	**0.36**	**194**	P	Pg	11 06 46.4	0.0
JHO				S	Sg	11 06 51.2	0.0
JFT	**Otama**	**0.62**	**334**	P	Pg	11 06 51.6	+0.2
JFT				S	Sg	11 06 59.8	+0.3
JMM	**Marumori**	**0.91**	**6**	P	Pg	11 06 56.3	-0.5
JMM				S	Sg	11 07 08.1	-0.6
JOU	**Okura**	**1.40**	**359**	S	Sn	11 07 23.3	-0.3
JIO	**Ouri**	**1.58**	**19**	S	Sn	11 07 27.4	-0.5
MAT	**Matsushiro**	**2.03**	**259**	P	Pb	11 07 15.3	-1.0
MAT				S	Sb	11 07 41.3	-0.3

*ISCJB **12** 11:18:58.6±0.6,39°.08N±0°.03×27°.60E±0°.05,h0km, Error ellipse: s-maj=5.3km s-min=4.1km az=176.2*
*CSEM **12** 11:18:59.1±0.3,39°.07N×27°.63E,h1km, MD3.4, Error ellipse: s-maj=6.6km s-min=5.4km az=126.0, Suspected Mining explosion.*
*ISK **12** 11:18:59.2,39°.01N×27°.65E,h8km, MD3.4*
*DDA **12** 11:18:59.1,39°.11N×27°.62E,h7km, Md2.6, Suspected Mining explosion.*

ISC 12 11:18:59.0±0.8,39°.09N±0°.03×27°.63E±0°.03,h0km,n24, σ0s71/34,Turkey

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
AKHS	**Akhisar**	**0.25**	**146**	*i* P	**Pg**	**11 19 03.7**	**-0.1**
AKHS				*i* S	**Sg**	**11 19 09.0**	**+1.9**
AKHS	**Akhisar**	**0.25**	**146**	P	**Pg**	**11 19 03.7**	**-0.1**
AKHS				S	**Sg**	**11 19 09.0**	**+1.9**
AKS	**Akhisar**	**0.25**	**146**	PG	**Pg**	**11 19 03.4**	**-0.4**
AKS				*e*SG	**Sg**	**11 19 06.7**	**-0.4**
AKS	**Akhisar**	**0.25**	**146**	*i* Pg	**Pg**	**11 19 03.4**	**-0.4**
AKS				*e*Sg	**Sg**	**11 19 06.7**	**-0.4**
BALY	**Balya**	**0.65**	**359**	*i* P	**Pg**	**11 19 11.0**	**-0.4**
BALY				*i* S	**Sg**	**11 19 20.2**	**+0.3**
BALY	**Balya**	**0.65**	**359**	P	**Pg**	**11 19 11.0**	**-0.4**
IZM	**Izmir**	**0.75**	**203**	*e*PG	**Pg**	**11 19 12.8**	**-0.6**
IZM	**Izmir**	**0.75**	**203**	*e*Pg	**Pg**	**11 19 12.8**	**-0.6**
DURS	**Dursunbey**	**0.83**	**52**	*i* P	**Pg**	**11 19 14.6**	**-0.3**
DURS				*i* S	**Sb**	**11 19 27.5**	**-0.6**
DURS	**Dursunbey**	**0.83**	**52**	P	**Pg**	**11 19 14.6**	**-0.3**
DURS				S	**Sb**	**11 19 27.5**	**-0.6**
DEMI	**Demirci**	**0.84**	**93**	*i* P	**Pb**	**11 19 16.2**	**-0.4**
DEMI				*i* S	**Sb**	**11 19 28.7**	**+0.2**
DEMI	**Demirci**	**0.84**	**93**	P	**Pb**	**11 19 16.2**	**-0.4**
DEMI				S	**Sb**	**11 19 28.7**	**+0.2**
DST	**Dursunbey**	**0.92**	**56**	*e*PG	**Pb**	**11 19 18.1**	**+0.2**
DST	**Dursunbey**	**0.92**	**56**	*e*Pg	**Pb**	**11 19 18.1**	**+0.2**
KULA	**Kula-Manisa**	**0.99**	**125**	*e*PG	**Pg**	**11 19 17.3**	**-0.6**
KULA	**Kula-Manisa**	**0.99**	**125**	*e*Pg	**Pg**	**11 19 17.3**	**-0.6**
URLA	**Izmir**	**1.09**	**228**	*i* P	**Pn**	**11 19 21.3**	**-0.3**
URLA				*i* S	**Sn**	**11 19 39.0**	**+1.6**
URLA	**Izmir**	**1.09**	**228**	P	**Pn**	**11 19 21.3**	**-0.3**
AYDB	**Zeytinkoy-Aydi**	**1.16**	**170**	*e*PG	**Pg**	**11 19 20.2**	**-1.0**
AYDB	**Zeytinkoy-Aydi**	**1.16**	**170**	*e*Pg	**Pg**	**11 19 20.2**	**-1.0**
SIGR	**SIGRI**	**1.39**	**276**	*e*PN	**Pb**	**11 19 25.8**	**0.0**
SIGR	**SIGRI**	**1.39**	**276**	*e*Pn	**Pb**	**11 19 25.8**	**0.0**
TVSB	**Tavsanli**	**1.46**	**75**	*e*PN	**Pn**	**11 19 26.6**	**-0.2**
TVSB	**Tavsanli**	**1.46**	**75**	*e*Pn	**Pn**	**11 19 26.6**	**-0.2**

*IDC **12** 11:20:33.9±0.9,0°.38N×125°.20E,h0km,mb3.9/5, mb1 4.1/5,mb1mx3.7/47,mbtmp4.0/5, Error ellipse: s-maj=75.0km s-min=18.5km az=70.0*
*ISCJB **12** 11:20:41.1±0.5,0°.44N±0°.07×125°.56E±0°.05,h73km, mb4.0/7, Error ellipse: s-maj=10.3km s-min=6.3km az=18.0*
*DJA **12** 11:20:41.4±0.5,0°.N±6°×12°.6E±°,h10km,M3.8/2,mB5.0/1, mb4.3/1,MLv3.5/2,Mw(mB)4.3/1*
*NEIC **12** 11:20:43.4±1.1,0°.43N×125°.62E,h81km±11km,mb4.3/2, Error ellipse: s-maj=14.8km s-min=13.3km az=46.0*

ISC 12 11:20:43.1±0.8,0°.40N±0°.08×125°.53E±0°.04,h73km,n20, σ1s38/25,mb3.9/7,Northern Molucca Sea

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
KMSI	**Cibinong**	**1.56**	**276**	P	**Pn**	**11 21 07.1**	**-1.9**
KMSI				S	**Sn**	**11 21 27.9**	**-0.7**
TNTI	**Ternate**	**1.87**	**79**	P	**Pn**	**11 21 14.1**	**+1.0**
TNTI	**Ternate**	**1.87**	**79**	*e*Pn	**Pn**	**11 21 12.6**	**-0.5**
TNTI				*e*Sn	**Sn**	**11 21 38.3**	**+2.3**
LBMI	**Labuha**	**2.22**	**118**	P	**Pn**	**11 21 16.9**	**-1.0**
SANI	**Sanana**	**2.48**	**169**	P	**Pn**	**11 21 19.4**	**-1.9**
LUWI	**Luwuk**	**3.11**	**243**	P	**Pn**	**11 21 30.5**	**+0.6**
LUWI	**Luwuk**	**3.11**	**243**	*e*Pn	**Pn**	**11 21 31.6**	**+1.7**
LUWI				*e*Sn	**Sn**	**11 22 09.6**	**+3.6**
MRSI	**Marisa**	**3.59**	**271**	P	**Pn**	**11 21 37.3**	**+0.8**
MSAI	**Masohi**	**5.04**	**138**	P	**Pn**	**11 21 56.3**	**+0.1**
BNDI	**Bandanaira**	**6.56**	**138**	P	**Pn**	**11 22 17.0**	**0.0**
TTSI	**Tana Toraja**	**6.66**	**239**	P	**Pn**	**11 22 17.9**	**-0.5**
SPSI	**Sidrap Palu**	**7.21**	**233**	P	**Pn**	**11 22 26.7**	**+0.8**
WRAB	**Tennant Creek** 2.8nm,0.6s	**21.98**	**157**	*e*P	**P**	**11 25 29.8**	**-1.4**
WRA	**Warramunga Arr** 2.9nm,0.5s,baz=334,slow=11,SNR=27	**21.98**	**157**	P	**P**	**11 25 29.9**	**-1.4**
ASAR	**Alice Springs** 2.2nm,0.7s,baz=351,slow=16,SNR=30	**25.27**	**162**	P	**P**	**11 26 03.8**	**+1.0**
ASAR				PcP	**PcP**	**11 29 35.4**	**+0.9**
	0.2nm,0.4s,baz=352,slow=2.1,SNR=5.4						
USRK	**Ussuriysk Ar.** 0.7nm,0.6s,baz=182,slow=7.2,SNR=3.7	**43.99**	**7**	P	**P**	**11 28 43.4**	**+0.2**
MKAR	**Makanchi Array** 0.8nm,0.3s,baz=121,slow=8.0,SNR=14	**59.63**	**327**	P	**P**	**11 30 38.7**	**-1.0**
MKAR				PcP	**PcP**	**11 31 25.6**	**-0.6**
	0.5nm,0.6s,baz=132,slow=4.9,SNR=3.5						
ZALV	**Zalesovo Beam** 0.6nm,0.4s,baz=131,slow=5.9,SNR=3.1	**63.02**	**334**	P	**P**	**11 31 01.8**	**-0.6**
KURK	**Kurchatov** 4.4nm,0.3s	**63.92**	**329**	*e*P	**P**	**11 31 07.1**	**-1.2**
TORD	**Torodi Ar. Bea** 0.3nm,0.7s,baz=90,slow=1.4,SNR=2.7	**122.74**	**286**	PKP	**PKPdf**	**11 39 32.1**	**+0.4**

*KRSC **12** 11:24:05.0±0.5,56°.09N×161°.00E,h156km±3km, ML3.8*
*ISCJB **12** 11:24:05.8±0.4,56°.10N±0°.05×161°.00E±0°.09, h154km±3km,mb3.3/6, Error ellipse: s-maj=9.8km s-min=5.4km az=40.9*
*MOS **12** 11:24:05.6±0.6,56°.15N×160°.90E,h154km,mb4.1/1, Error ellipse: s-maj=25.1km s-min=6.7km az=73.0*
*IDC **12** 11:24:06.9±2.9,56°.17N×160°.63E,h157km±27km,mb3.0/6, mb1 3.4/7,mb1mx3.0/63,mbtmp3.4/7, Error ellipse: s-maj=101.6km s-min=20.1km az=131.0*

ISC 12 11:24:06.9±0.8,56°.10N±0°.05×160°.97E±0°.05,h151km±5km, n64,σ0s51/84,mb3.4/6,Kamchatka Peninsula

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
ZLN	**Zelenaya**	**0.12**	**231**	*e*P	**Pn**	**11 24 27.3**	**+0.1**
ZLN	**Zelenaya**	**0.12**	**231**	PN	**Pn**	**11 24 27.3**	**+0.1**
CIRR	**Tsirk**	**0.13**	**279**	*i* P	**Pn**	**11 24 27.2**	**0.0**
CIRR				*e*S	**Sn**	**11 24 43.2**	**+0.5**
CIRR	**Tsirk**	**0.13**	**279**	PN	**Pn**	**11 24 27.2**	**0.0**
CIRR				S	**Sn**	**11 24 43.2**	**+0.5**
LGNR	**Loginova**	**0.16**	**266**	*i* P	**Pn**	**11 24 27.4**	**-0.1**
LGNR	**Loginova**	**0.16**	**266**	PN	**Pn**	**11 24 27.4**	**-0.1**
KLY	**Klyuchi**	**0.28**	**321**	*i* P	**Pn**	**11 24 26.9**	**-0.4**
KLY				*e*S	**Sn**	**11 24 43.2**	**+0.2**
KLY	**Klyuchi**	**0.28**	**321**	PN	**Pn**	**11 24 26.9**	**-0.4**
KLY				S	**Sn**	**11 24 43.2**	**+0.2**
BZMR	**Bezymyannaya**	**0.32**	**240**	*i* P	**Pn**	**11 24 27.3**	**-0.4**
BZMR	**Bezymyannaya**	**0.32**	**240**	PN	**Pn**	**11 24 27.3**	**-0.4**
KIRR	**Kirishev**	**0.38**	**248**	*i* P	**Pn**	**11 24 27.3**	**-0.6**
KIRR				*e*S	**Sn**	**11 24 44.3**	**+0.4**
KIRR	**Kirishev**	**0.38**	**248**	PN	**Pn**	**11 24 27.3**	**-0.6**
KIRR				S	**Sn**	**11 24 44.3**	**+0.4**
KPT	**Kopyto**	**0.44**	**253**	*i* P	**Pn**	**11 24 27.5**	**-0.6**
KPT	**Kopyto**	**0.44**	**253**	PN	**Pn**	**11 24 27.5**	**-0.6**
BDR	**Baidarnaya**	**0.49**	**15**	*e*P	**Pn**	**11 24 28.2**	**-0.1**
BDR				*e*S	**Sn**	**11 24 45.4**	**+0.7**
BDR	**Baidarnaya**	**0.49**	**15**	PN	**Pn**	**11 24 28.2**	**-0.1**
BDR				S	**Sn**	**11 24 45.4**	**+0.7**
KMNR	**Kamenistaya**	**0.54**	**231**	*e*P	**Pn**	**11 24 28.2**	**-0.4**
KMNR	**Kamenistaya**	**0.54**	**231**	PN	**Pn**	**11 24 28.2**	**-0.4**
SMKR	**Semkarok**	**0.56**	**29**	*i* P	**Pn**	**11 24 28.5**	**-0.1**
SMKR				*e*S	**Sn**	**11 24 45.2**	**-0.1**
SMKR	**Semkarok**	**0.56**	**29**	PN	**Pn**	**11 24 28.5**	**-0.1**
SMKR				S	**Sn**	**11 24 45.2**	**-0.1**
SRKR	**Sorokina**	**0.57**	**11**	*e*P	**Pn**	**11 24 28.4**	**-0.3**
SRKR				*e*S	**Sn**	**11 24 45.4**	**0.0**
SRKR	**Sorokina**	**0.57**	**11**	PN	**Pn**	**11 24 28.4**	**-0.3**
SRKR				S	**Sn**	**11 24 45.4**	**0.0**
KOZ	**Kozyrevsk**	**0.62**	**267**	*i* P	**Pn**	**11 24 28.4**	**-0.5**
KOZ				*e*S	**Sn**	**11 24 45.6**	**-0.1**
KOZ	**Kozyrevsk**	**0.62**	**267**	PN	**Pn**	**11 24 28.4**	**-0.5**
KOZ				S	**Sn**	**11 24 45.6**	**-0.1**
TUMR	**Tumrok**	**0.94**	**210**	*i* P	**Pn**	**11 24 31.5**	**+0.2**
TUMR				*e*S	**Sn**	**11 24 50.6**	**+0.7**
TUMR	**Tumrok**	**0.94**	**210**	PN	**Pn**	**11 24 31.5**	**+0.2**
TUMR				S	**Sn**	**11 24 50.6**	**+0.7**
KBTR	**Krutoberegovo**	**1.04**	**83**	*i* P	**Pn**	**11 24 31.5**	**-0.5**
KBTR				*e*S	**Sn**	**11 24 50.6**	**-0.5**
KBTR	**Krutoberegovo**	**1.04**	**83**	PN	**Pn**	**11 24 31.5**	**-0.5**
KBTR				S	**Sn**	**11 24 50.6**	**-0.5**
KZV	**Kizimen**	**1.06**	**202**	P	**Pn**	**11 24 33.0**	**+0.7**
KZV	**Kizimen**	**1.06**	**202**	PN	**Pn**	**11 24 33.0**	**+0.7**
ESO	**Esso**	**1.29**	**263**	*e*P	**Pn**	**11 24 33.4**	**-0.9**
ESO	**Esso**	**1.29**	**263**	PN	**Pn**	**11 24 33.4**	**-0.9**
BKI	**Bering**	**2.97**	**105**	*e*P	**Pn**	**11 24 53.8**	**0.0**
BKI				*e*S	**Sn**	**11 25 29.4**	**-0.6**
BKI	**Bering**	**2.97**	**105**	PN	**Pn**	**11 24 53.8**	**0.0**
BKI				S	**Sn**	**11 25 29.4**	**-0.6**
GNL	**Ganaly**	**2.97**	**217**	*i* P	**Pn**	**11 24 53.8**	**-0.2**
GNL	**Ganaly**	**2.97**	**217**	PN	**Pn**	**11 24 53.8**	**-0.2**
KRX	**Arik**	**3.06**	**207**	*e*P	**Pn**	**11 24 55.3**	**+0.3**
KRX	**Arik**	**3.06**	**207**	PN	**Pn**	**11 24 55.3**	**+0.3**
SDLR	**Sedlovina**	**3.07**	**204**	*e*P	**Pn**	**11 24 55.2**	**0.0**
SDLR	**Sedlovina**	**3.07**	**204**	PN	**Pn**	**11 24 55.2**	**0.0**
NLC	**Nalytchevo**	**3.08**	**199**	*e*S	**Sn**	**11 25 31.7**	**-0.8**
SMAR	**Somma**	**3.10**	**205**	*e*P	**Pn**	**11 24 56.3**	**+0.6**
SMAR	**Somma**	**3.10**	**205**	PN	**Pn**	**11 24 56.3**	**+0.6**
AVH	**Avacha**	**3.12**	**205**	*e*P	**Pn**	**11 24 55.1**	**-0.7**
AVH	**Avacha**	**3.12**	**205**	PN	**Pn**	**11 24 55.1**	**-0.7**
KOK	**Koryaka**	**3.12**	**207**	*e*P	**Pn**	**11 24 55.0**	**-0.8**
KOK	**Koryaka**	**3.12**	**207**	PN	**Pn**	**11 24 55.0**	**-0.8**
UGLR	**Uglovaya**	**3.15**	**204**	*e*P	**Pn**	**11 24 55.9**	**-0.3**
UGLR	**Uglovaya**	**3.15**	**204**	PN	**Pn**	**11 24 55.9**	**-0.3**
OSSR	**Ossora**	**3.36**	**19**	*e*P	**Pn**	**11 24 59.1**	**+0.5**
OSSR	**Ossora**	**3.36**	**19**	PN	**Pn**	**11 24 59.1**	**+0.5**
PETK	**Petropavlovsk-** 1.3nm,0.3s,baz=71,slow=14,SNR=15	**3.55**	**214**	P	**Pn**	**11 25 01.0**	**-0.2**
APC	**Apacha**	**3.88**	**217**	*e*P	**Pn**	**11 25 05.8**	**+0.4**
APC	**Apacha**	**3.88**	**217**	PN	**Pn**	**11 25 05.8**	**+0.4**
RUS	**Russkaya**	**3.94**	**202**	*e*P	**Pn**	**11 25 07.6**	**+1.3**
RUS	**Russkaya**	**3.94**	**202**	PN	**Pn**	**11 25 07.6**	**+1.3**
ASAK	**Asacha**	**4.13**	**207**	*e*P	**Pn**	**11 25 08.1**	**-0.8**
ASAK	**Asacha**	**4.13**	**207**	PN	**Pn**	**11 25 08.1**	**-0.8**
ILAR	**Eielson Array** 0.3nm,0.5s,baz=260,slow=6.8,SNR=6.5	**26.40**	**50**	P	**P**	**11 29 28.6**	**-0.3**
YKA	**Yellowknife Ar** 0.7nm,0.6s,baz=302,slow=8.1,SNR=12	**40.64**	**45**	P	**P**	**11 31 31.7**	**+0.2**
NVAR	**Mina Array Bea** 0.4nm,0.6s,baz=298,slow=8.0,SNR=4.3	**54.30**	**73**	P	**P**	**11 33 17.9**	**+0.4**
PDAR	**Pinedale Array** 0.3nm,0.4s,baz=305,slow=1.5,SNR=4.9	**55.66**	**63**	P	**P**	**11 33 28.1**	**+0.9**
TXAR	**Lajitas Array** 0.4nm,0.7s,baz=300,slow=5.2,SNR=7.1	**69.03**	**69**	P	**P**	**11 34 56.0**	**0.0**
ASAR	**Alice Springs** 0.2nm,0.7s,baz=15,slow=4.7,SNR=4.2	**82.71**	**205**	P	**P**	**11 36 12.5**	**-0.8**

IDC 12 11:24:53.3±14.0,24°.36S×179°.92E,h555km±169km, mb3.2/6,mb1 3.4/6,mb1mx3.0/33,mbtmp4.2/6,Error ellipse: s-maj=87.3km s-min=58.1km az=164.0,South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
CTA	**Charters Tower** 7.1nm,0.3s,baz=92,slow=9.7,SNR=16	**31.41**	**271**	P	P	11 30 29.9	+0.2
STKA	**Stephens Creek** 1.0nm,0.4s,baz=100,slow=12,SNR=8.6	**34.48**	**249**	P	P	11 30 55.4	-0.1
ASAR	**Alice Springs** 0.5nm,0.3s,baz=96,slow=7.3,SNR=36	**41.89**	**261**	P	P	11 31 55.5	-0.3
WRA	**Warramunga Arr** 2.1nm,0.5s,baz=104,slow=8.2,SNR=83	**42.30**	**267**	P	P	11 31 58.3	-0.7
FITZ	**Fitzroy Crossi** 3.5nm,0.8s,baz=121,slow=5.9,SNR=4.1	**50.72**	**266**	P	P	11 33 02.9	+0.3
TXAR	**Lajitas Array** 0.3nm,0.8s,baz=200,slow=6.7,SNR=3.6	**90.74**	**58**	P	P	11 36 57.6	-0.1

JMA 12 11:36:36.3,36°.99N×140°.60E,h7km±1km,M2.8,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.19**	**55**	P	Pg	11 36 40.6	+0.4
ONAJ				S	Sg	11 36 43.2	+0.3
JHO	**Hitachi**	**0.38**	**184**	P	Pg	11 36 43.8	+0.1
JHO				S	Sg	11 36 48.6	-0.1
JFT	**Otama**	**0.57**	**338**	P	Pg	11 36 47.5	+0.2
JFT				S	Sg	11 36 55.1	+0.4
JOU	**Okura**	**1.37**	**2**	S	Sb	11 37 19.7	-0.4
JIO	**Ouri**	**1.58**	**22**	S	Sn	11 37 24.7	-0.7
MAT	**Matsushiro**	**1.97**	**258**	P	Pn	11 37 11.3	+1.1
MAT				S	Sb	11 37 37.2	-0.1

*NIED **12** 11:47:00,36°.10N×140°.10E,h62km,Mw3.7 Best double couple: Mo3.37000×10^14 NP1:φs285.00000°,δ29.00000°, λ145.00000°. NP2:φs47.00000°,δ74.00000°,λ66.00000°.*
*ISCJB **12** 11:47:01.9±0.5,36°.12N±0°.04×140°.12E±0°.06,h60km±4km, mb3.5/8, Error ellipse: s-maj=8.3km s-min=6.4km az=169.0*
*IDC **12** 11:47:01.1±3.6,36°.14N×139°.91E,h34km±27km,mb3.4/8, mb1 3.6/9,mb1mx3.4/48,mbtmp3.6/9,ML3.6/1,MS2.7/1, Ms1 2.7/1,ms1mx2.2/30, Error ellipse: s-maj=32.4km s-min=16.1km az=70.0*
*JMA **12** 11:47:03.4±0.1,36°.13N×140°.05E,h49km±1km,M3.7 Broadband fault plane solution: P waves. NP1: φs45.00000°,δ75.00000°,λ91.00000°. NP2:φs221.00000°, δ15.00000°,λ87.00000°. Principal axes: T Plg60.0000°, Azm316.0000°; N Plg1.0000°, Azm224.0000°; P Plg30.0000°, Azm134.0000°;*
JMA Felt II J1.

ISC 12 11:47:02.9±0.8,36°.13N±0°.05×140°.10E±0°.06,h53km±7km, n21,σ0s76/28,mb3.6/8,1C-4D,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JYT	**Yasato**	**0.12**	**39**	⇑P	**Pn**	**11 47 11.4**	**+0.2**
JYT				S	**Sn**	**11 47 16.9**	**-0.2**
JAG	**Ashikaga**	**0.60**	**299**	⇓P	**Pn**	**11 47 15.4**	**-0.1**
JAG				S	**Sn**	**11 47 23.8**	**-0.8**
JKT	**Katashina**	**0.93**	**313**	⇓P	**Pn**	**11 47 19.8**	**-0.1**
JKT				S	**Sn**	**11 47 32.0**	**-0.4**
JRY	**Ryogami san**	**0.98**	**263**	⇓P	**Pn**	**11 47 20.3**	**-0.1**
JRY				S	**Sn**	**11 47 32.4**	**-0.9**
JOD2	**Odawara 2**	**1.20**	**224**	P	**Pn**	**11 47 23.6**	**+0.3**
JOD2				S	**Sn**	**11 47 38.1**	**-0.5**
JFY	**Yanaizu**	**1.31**	**346**	⇓P	**Pn**	**11 47 25.7**	**+0.8**
BSO3	**Boso 3**	**1.37**	**166**	P	**Pn**	**11 47 26.1**	**+0.7**
JYN	**Shimob**	**1.41**	**244**	P	**Pn**	**11 47 27.5**	**+1.2**
JYN				S	**Sn**	**11 47 45.4**	**+1.5**
MJAR	**Matsushiro Arr** 30nm,0.3s,baz=92,slow=8.9,SNR=165	**1.58**	**285**	Pg	**Pn**	**11 47 28.4**	**-0.2**
MJAR				Lg	Lg	11 47 45.1	
	16nm,0.3s,baz=275,slow=28,SNR=8.9						
MAT	**Matsushiro**	**1.58**	**286**	P	**Pn**	**11 47 29.0**	**+0.5**
MAT				*e*S	**Sn**	**11 47 48.4**	**+0.5**
JHJ	**Hachijo jima 2** 22nm,0.3s,baz=114,slow=23,SNR=11	**3.02**	**185**	Pn	**Pn**	**11 47 47.4**	**-0.8**
JHJ				Sn	**Sn**	**11 48 22.3**	**-0.8**
	23nm,0.3s,baz=72,slow=20,SNR=3.8						
KSRS	**Korea Array** 0.2nm,0.3s,baz=95,slow=14,SNR=3.4	**9.86**	**281**	Pn	Pn	11 49 26.1	+4.3
KSRS				LR	LR	11 52 50.4	
	comp=Z,39nm,18.6s,baz=113,slow=36						
USRK	**Ussuriysk Ar.** 0.1nm,0.3s,baz=132,slow=13,SNR=3.1	**10.16**	**325**	Pn	**Pn**	**11 49 26.5**	**+0.5**
SONM	**Songino Array** 0.2nm,0.4s,baz=106,slow=8.8,SNR=2.8	**27.43**	**306**	P	**P**	**11 52 42.4**	**-1.2**
ZALV	**Zalesovo Beam** 0.6nm,0.4s,baz=102,slow=6.3,SNR=2.3	**41.75**	**313**	P	**P**	**11 54 46.5**	**0.0**
MKAR	**Makanchi Array** 0.9nm,0.7s,baz=97,slow=9.1,SNR=7.7	**43.71**	**303**	P	**P**	**11 55 02.9**	**+0.4**
ILAR	**Eielson Array** 0.3nm,0.8s,baz=263,slow=5.8,SNR=3.4	**50.82**	**32**	P	**P**	**11 55 58.3**	**+0.8**
WRA	**Warramunga Arr** 0.7nm,0.5s,baz=0.4,slow=7.5,SNR=13	**56.04**	**187**	P	**P**	**11 56 36.3**	**0.0**
ASAR	**Alice Springs** 0.3nm,0.7s,baz=6.9,slow=6.6,SNR=5.0	**59.76**	**187**	P	**P**	**11 57 01.9**	**-0.5**
NOA	**NORSAR Array B** 0.7nm,0.5s,baz=52,slow=2.1,SNR=2.8	**74.60**	**337**	P	**P**	**11 58 34.7**	**-1.3**
TXAR	**Lajitas Array** 0.2nm,0.8s,baz=292,slow=2.8,SNR=2.7	**91.51**	**52**	P	**P**	**12 00 04.8**	**+0.9**

JMA 12 11:49:03.6±0.1,36°.96N×141°.18E,h27km±1km,M3.0, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.34**	**295**	P	Pb	11 49 11.3	-0.1
ONAJ				S	Sb	11 49 16.7	0.0
JHO	**Hitachi**	**0.60**	**235**	P	Pb	11 49 15.3	-0.3
JHO				S	Sb	11 49 23.3	-0.4
JFT	**Otama**	**0.87**	**310**	P	Pn	11 49 20.1	0.0
JFT				*e*S	Sb	11 49 30.8	-0.7
JMM	**Marumori**	**0.95**	**341**	P	Pn	11 49 20.3	-0.9
JMM				*e*S	Sb	11 49 32.9	-0.9
JOU	**Okura**	**1.46**	**344**	P	Pn	11 49 28.8	+0.6
JOU				S	Sn	11 49 47.1	+0.6
MAT	**Matsushiro**	**2.42**	**261**	P	Pb	11 49 44.6	-1.9
MAT				*e*S	Sb	11 50 17.0	+1.0

*ISCJB **12** 12:03:06.2±0.3,29°.99N±0°.04×96°.91E±0°.04,h10km, mb4.2/36,MS3.5/5, Error ellipse: s-maj=6.3km s-min=4.4km az=147.7*
*IDC **12** 12:03:06.4±0.6,30°.03N×96°.96E,h0km,mb4.1/24, mb1 4.2/26,mb1mx4.1/68,mbtmp4.1/26,ML3.7/2,MS3.3/6, Ms1 3.3/6,ms1mx2.9/50, Error ellipse: s-maj=19.2km s-min=12.2km az=46.0*
*BJI **12** 12:03:09.9,29°.97N×96°.93E,h23km,mb4.4/14,ML3.7/10, Ms3.8/15,Ms7 3.7/15*
*NEIC **12** 12:03:13.3±0.9,30°.04N×96°.96E,h49km±9km,mb4.2/15, Error ellipse: s-maj=8.1km s-min=5.3km az=52.0*

ISC 12 12:03:08.0±0.5,30°.05N±0°.06×96°.97E±0°.04,h10km,n75, σ1s70/69,mb4.3/36,MS3.3/5,1C,Xizang

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
LSA	**Lhasa**	**5.07**	**268**	Pn	Pn	12 04 27.3	+2.8
LSA	**Lhasa** 49nm,0.9s	**5.07**	**268**	*e*Pn	Pn	12 04 27.5	+3.0
LSA				*e*Sn	**Sn**	**12 05 23.5**	**+0.2**
CD2	**Chengdu**	**5.92**	**80**	Pn	Pn	12 04 41.7	+5.9
CD2				Pg	**Pg**	**12 04 59.4**	**-2.0**
CD2				Sg	**Sg**	**12 06 20.3**	**+2.2**
CD2	comp=N,40nm,1.6s			smax	smax		
CD2	comp=E,90nm,1.3s			smax	smax		
CD2	comp=N,1μm,7.2s			LR	LR		
CD2	comp=Z,590nm,9.0s			LR	LR		
SHL	**Shillong**	**6.34**	**226**	*e*P	**Pn**	**12 04 42.0**	**+0.3**
SHL				*e*S	**Sn**	**12 05 53.0**	**-1.3**
KMI	**Kunming**	**7.09**	**132**	Pg	Pg	12 05 17.9	-5.8
KMI	comp=N,37nm,1.3s			smax	smax		
KMI	comp=E,31nm,1.4s			smax	smax		
KMI	comp=N,460nm,7.9s			LR	LR		
KMI	comp=E,280nm,9.4s			LR	LR		
KMI	comp=Z,560nm,10.0s			LR	LR		
LZH	**Lanzhou**	**8.34**	**42**	*e*P	**Pn**	**12 05 10.6**	**+1.5**
LZH	comp=Z,16nm,1.0s			pmax	pmax		
TAPN	**Taplejung** 23nm,0.3s	**8.57**	**254**	*e*P	**Pn**	**12 05 13.0**	**+0.6**
ODAN	**Odare** 48nm,0.4s	**9.01**	**252**	*e*P	**Pn**	**12 05 18.6**	**+0.2**
GYA	**Guiyang**	**9.26**	**110**	⇑*i*P	Pn	12

Code	Station Name	Δ°	AZ°	Op	ISC	Time	Res
	comp=N,150nm,9.6s						
KSH				LR	LR		
	comp=E,220nm,6.5s						
KSH				LR	LR		
	comp=Z,310nm,7.0s						
MKAR	Makanchi Array	20.24	330	P	Pn	12 07 43.5	-1.7
	1.4nm,0.7s,baz=129,slow=11,SNR=12						
TKM2	Tokmak 2	21.39	313	eP	P	12 07 57.1	+1.2
	5.2nm,0.8s						
AAK	Ala-Archa	21.96	311	P	P	12 08 03.4	+1.4
	9.9nm,1.0s,baz=106,slow=11,SNR=11						
AAK	Ala-Archa	21.96	311	eP	P	12 08 03.6	+1.6
	10nm,1.0s						
EKS2	Erkin-Say	22.44	310	eP	P	12 08 10.2	+3.0
	6.2nm,0.9s						
KURBB	Kurchatov Arra	24.77	331	P	P	12 08 30.3	+0.6
	2.1nm,0.6s,baz=139,slow=11,SNR=44						
KURK	Kurchatov	24.80	332	eP	P	12 08 30.7	+0.7
	4.4nm,0.7s						
KKAR	Karatay Array	24.81	309	eP	P	12 08 32.2	+2.0
	0.8nm,0.2s						
KULM	Kulim	24.87	171	eP	P	12 08 31.6	+0.8
ZAA0	Zalesovo Array	25.46	343	eP	P	12 08 36.2	+0.3
ZALV	Zalesovo Beam	25.46	343	P	P	12 08 36.4	+0.4
	7.4nm,0.6s,baz=160,slow=9.9,SNR=31						
CN2	Changchun	26.43	51	eP	P	12 08 47.7	+2.8
CN2				pmax	pmax		
	comp=Z,10.0nm,0.6s						
KSAR	Wonju Array Be	26.66	66	P	P	12 08 47.9	+0.9
KSRS	Korea Array	26.69	66	P	P	12 08 47.9	+0.6
	0.6nm,0.4s,baz=246,slow=8.9,SNR=3.1						
KSRS				LR	LR	12 19 36.3	
	comp=Z,26nm,18.5s,baz=290,slow=37						
BVAR	Borovoye Array	30.07	327	P	P	12 09 17.4	+0.1
	1.9nm,0.7s,baz=122,slow=11,SNR=14						
BRVK	Borovoye	30.14	327	eP	P	12 09 18.5	+0.6
	5.5nm,0.9s						
ZRNK	Zerenda	30.68	326	eP	P	12 09 23.2	+0.6
	5.4nm,1.4s						
KLR	Kul'dur	32.53	44	P	P	12 09 39.5	+0.6
	1.3nm,0.7s,baz=270,slow=12,SNR=4.9						
GEYT	Alibeck	32.98	294	P	P	12 09 44.2	+1.2
	6.3nm,0.7s,baz=100,slow=7.7,SNR=10						
ABKAR	Akbulak array	33.91	315	eP	P	12 09 51.1	0.0
	1.1nm,0.5s						
MJAR	Matsushiro Arr	34.87	68	LR	LR	12 22 50.2	
	comp=Z,37nm,21.7s,baz=40,slow=34						
AKTO	Aktyubinsk	35.49	316	P	P	12 10 05.3	+0.6
	3.0nm,0.7s						
AKTO				LR	LR	12 27 55.2	
	comp=Z,56nm,19.1s,baz=87,slow=42						
ARU	Arti	37.66	326	P	P	12 10 23.5	+0.5
	3.4nm,0.5s,baz=129,slow=5.0,SNR=7.0						
ARU	Arti	37.66	326	eP	P	12 10 23.7	+0.7
	8.2nm,1.0s						
TIXI	Tiksi	45.11	14	eP	P	12 11 23.8	-0.3
	3.0nm,0.7s						
GUMO	Guam	47.03	100	LR	LR	12 32 21.3	
	comp=Z,69nm,19.4s,baz=154,slow=37						
BRTR	Keskin Array B	51.88	299	P	P	12 12 16.6	-0.3
	0.5nm,0.5s,baz=101,slow=6.4,SNR=3.3						
AKASG	Malin Array Be	53.61	313	P	P	12 12 28.2	-1.0
	2.4nm,0.7s,baz=77,slow=6.5,SNR=13						
FINES	FINESS Array B	55.02	326	P	P	12 12 39.2	-0.1
	2.7nm,0.8s,baz=90,slow=9.9,SNR=7.2						
ARCES	ARCESS Array B	55.72	336	P	P	12 12 44.5	+0.2
	2.9nm,0.8s,baz=82,slow=8.7,SNR=7.9						
MLR	Muntele Rosu	56.47	307	P	P	12 12 50.8	+0.6
	0.7nm,0.6s,baz=153,slow=5.1,SNR=3.9						
WRAB	Tennant Creek	61.35	139	eP	P	12 13 24.4	+0.2
	3.2nm,0.7s						
WRA	Warramunga Arr	61.35	139	P	P	12 13 24.1	-0.1
	3.1nm,0.9s,baz=327,slow=7.7,SNR=20						
PMG	Port Moresby	62.17	121	eP	P	12 13 29.9	+0.1
	3.2nm,0.5s						
NB2	NORSAR Subarra	62.20	327	P	P	12 13 28.7	-0.7
	comp=Z,1.2nm,0.7s,baz=78,slow=6.9						
NOA	NORSAR Array B	62.20	327	P	P	12 13 28.1	-1.3
	comp=Z,2.2nm,0.8s,baz=79,slow=6.6,SNR=6.2						
GERES	GERESS Array B	63.82	313	P	P	12 13 40.5	-0.1
	comp=Z,1.5nm,0.7s,baz=81,slow=12,SNR=6.4						
ASAR	Alice Springs	64.11	142	P	P	12 13 42.8	+0.2
	comp=Z,1.6nm,0.8s,baz=325,slow=6.5,SNR=26						
DAVOX	Davos/Dischmat	66.91	312	P	P	12 13 60.0	-0.7
	comp=Z,6.2nm,0.6s,baz=88,slow=10,SNR=8.8						
MLY	Manley	71.85	24	eP	P	12 14 32.0	+1.2
CAST	Castle Rocks	72.21	26	eP	P	12 14 32.1	-0.8
BPAW	Bear Paw Mtn.	72.26	25	eP	P	12 14 35.8	+2.6
	comp=Z,10nm,0.6s						
MDM	Murphy Dome	72.78	24	eP	P	12 14 37.6	+1.3
COLA	College	72.96	24	eP	P	12 14 38.0	+0.7
	comp=Z,8.1nm,1.3s						
ILAR	Eielson Array	73.36	24	P	P	12 14 39.6	-0.1
	comp=Z,1.3nm,0.9s,baz=295,slow=5.9,SNR=16						
INK	Inuvik	75.08	17	P	P	12 14 50.0	+0.4
	comp=Z,2.1nm,0.8s						
INK				LR	LR	12 51 07.7	
	comp=Z,388nm,21.7s,baz=120,slow=38						
INK	Inuvik	75.08	17	eP	P	12 14 50.2	+0.6
YKA	Yellowknife Ar	84.36	14	P	P	12 15 39.7	-0.4
	comp=Z,1.3nm,0.9s,baz=329,slow=4.6,SNR=18						
TORD	Torodi Ar. Bea	88.00	284	P	P	12 15 58.4	-0.5
	comp=Z,0.7nm,0.8s,baz=56,slow=5.0,SNR=4.0						

JMA 12 12:07:47.5±0.1, 35°.85N×140°.86E, h30km±1km, M2.9, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
CHOJ	Chosi	0.15	180	P	Pb	12 07 52.8	-0.4
CHOJ				S	Sb	12 07 56.8	-0.2
JCN	Nagara	0.69	231	P	Pn	12 08 01.8	+0.6
JHO	Hitachi	0.80	343	P	Pn	12 08 01.9	-0.8
JHO				eS	Sb	12 08 13.2	-0.1
BSO4	Boso 4	0.96	207	P	Pn	12 08 05.0	+0.2
BSO3	Boso 3	1.08	195	P	Pn	12 08 06.7	+0.3
MAT	Matsushiro	2.25	289	P	Pb	12 08 25.4	-2.1
MAT				S	Sn	12 08 30.8	-19

*NIED **12** 12:11:00, 38°.20N×142°.80E, h5km, Mw3.6 Best double couple: $M_0$3.00000×10^14 NP1:ϕ_s237.00000°, δ64.00000°, λ-153.00000°. NP2:ϕ_s135.00000°, δ66.00000°, λ-29.00000°.*
*IDC **12** 12:11:01.6±0.8, 38°.02N×143°.17E, h0km, mb3.6/11, mb1 3.7/15, mb1mx3.6/50, mbtmp3.6/15, ML2.6/3, MS4.0/2, Ms1 4.0/2, ms1mx2.6/50, Error ellipse: s-maj=19.8km s-min=16.7km az=105.0*
*JMA **12** 12:11:04.0±0.2, 38°.20N×142°.84E, h0km, M4.0*
ISC 12 12:11:03.0±3.7, 38°.06N±0°.05×143°.05E±0°.07, h9km±23km, n35, σ1s.66/33, mb3.6/11, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
JIO	Ouri	1.39	287	P	Pn	12 11 27.4	-1.2
OFUJ	Ofunato	1.48	314	P	Pn	12 11 28.2	-1.7
OFUJ				eS	Sn	12 11 46.2	-3.2
JMK	Ichinoseki	1.69	303	P	Pn	12 11 31.3	-1.4
JMM	Marumori	1.79	265	P	Pn	12 11 33.7	-0.4
JMM				eS	Sn	12 11 55.1	-1.8
JOU	Okura	1.90	280	P	Pn	12 11 35.8	+0.2
JOU				S	Sn	12 11 58.5	-1.2
JOM	Ohasama	1.97	316	P	Pn	12 11 35.9	-0.6
JOM				S	Sn	12 11 59.5	-1.9
JFT	Otama	2.21	257	P	Pb	12 11 41.8	-1.4
JFT				S	Sn	12 12 07.4	0.0
JYK	Kaneyama	2.28	293	P	Pn	12 11 41.0	+0.2
JRG	Rokugo	2.31	306	P	Pn	12 11 41.8	+0.6
JYS	Shirataka	2.35	275	P	Pn	12 11 42.5	+0.6
JANG	Nango	2.60	333	P	Pn	12 11 46.6	+1.4
MJAR	Matsushiro Arr	4.14	250	Pn	Pn	12 12 07.7	+1.3
	0.6nm,0.3s,baz=69,slow=12,SNR=5.1						
MAT	Matsushiro	4.14	250	P	Pn	12 12 08.8	+2.3
MAT				eS	Sn	12 12 57.9	+2.9
JHJ	Hachijo jima 2	5.60	209	Pn	Pn	12 12 25.7	-0.7
	12nm,0.3s,baz=252,slow=19,SNR=2.8						
JHJ				Sn	Sn	12 13 26.6	-4.3
	30nm,0.3s,baz=252,slow=20,SNR=3.8						
USRK	Ussuriysk Ar.	10.35	310	Pn	Pn	12 13 33.9	+2.4
	0.1nm,0.3s,baz=129,slow=13,SNR=2.4						
KSRS	Korea Array	11.99	272	Pn	Pn	12 13 57.7	+3.7
	0.1nm,0.3s,baz=82,slow=13,SNR=2.7						
SEY	Seymchan	25.55	10	P	P	12 16 33.3	+1.5
	2.2nm,0.8s,baz=103,slow=23,SNR=8.5						

Code	Station Name	Δ°	AZ°	Op	ISC	Time	Res
H11N2	WAKE ISLAND Hy	27.61	125	T	T	12 45 48.3	
	baz=317,slow=75,SNR=51						
H11N1	WAKE ISLAND Hy	27.62	125	T	T	12 45 46.6	
	baz=317,slow=75,SNR=39						
H11N3	WAKE ISLAND Hy	27.63	125	T	T	12 45 50.5	
	baz=317,slow=75,SNR=49						
SONM	Songino Array	28.32	302	P	P	12 16 59.1	+2.1
	0.5nm,0.8s,baz=108,slow=9.4,SNR=2.7						
H11S1	WAKE ISLAND Hy	28.38	127	T	T	12 46 41.8	
	baz=318,slow=76,SNR=17						
H11S3	WAKE ISLAND Hy	28.38	127	T	T	12 46 48.2	
	baz=318,slow=76,SNR=19						
H11S2	WAKE ISLAND Hy	28.39	127	T	T	12 46 46.5	
	baz=318,slow=76,SNR=12						
TLY	Talaya	30.66	309	LR	LR	12 29 44.0	
	comp=Z,570nm,21.0s,baz=127,slow=36						
ZALV	Zalesovo Beam	42.20	312	P	P	12 18 56.1	+0.2
	0.6nm,0.4s,baz=81,slow=7.7,SNR=2.5						
MKAR	Makanchi Array	44.68	302	P	P	12 19 15.9	-0.3
	0.2nm,0.3s,baz=99,slow=10,SNR=1.8						
KURBB	Kurchatov Arra	46.40	307	P	P	12 19 29.4	-0.2
	1.1nm,0.5s,baz=81,slow=8.1,SNR=7.1						
ILAR	Eielson Array	47.93	33	P	P	12 19 41.5	+0.1
	0.3nm,0.7s,baz=243,slow=6.8,SNR=4.3						
BVAR	Borovoye Array	50.85	312	P	P	12 20 04.1	+0.2
	0.4nm,0.5s,baz=63,slow=7.8,SNR=2.9						
WRA	Warramunga Arr	58.27	190	P	P	12 20 57.8	-0.1
	1.4nm,0.8s,baz=7.5,slow=7.0,SNR=14						
ASAR	Alice Springs	61.99	189	P	P	12 21 23.5	0.0
	0.5nm,0.8s,baz=12,slow=12,SNR=8.4						
YKA	Yellowknife Ar	62.27	31	P	P	12 21 23.3	-1.6
	0.2nm,0.8s,baz=305,slow=7.1,SNR=5.3						
PDAR	Pinedale Array	76.02	46	P	P	12 22 51.7	+0.8
	0.3nm,0.5s,baz=283,slow=3.9,SNR=4.7						
RPZ	Rata Peaks	85.26	160	LR	LR	13 03 04.4	
	comp=Z,34nm,18.1s,baz=214,slow=37						

*IDC **12** 12:12:03.0±0.7, 30°.08N×97°.10E, h0km, mb3.8/14, mb1 4.0/16, mb1mx3.8/52, mbtmp3.8/16, ML3.5/2, Error ellipse: s-maj=24.5km s-min=13.5km az=55.0*
*ISCJB **12** 12:12:05.5±0.5, 29°.91N±0°.05×96°.91E±0°.06, h33km, mb3.9/17, Error ellipse: s-maj=8.3km s-min=6.9km az=138.0*
*BJI **12** 12:12:05.7, 30°.01N×96°.91E, h7km, ML3.3/5, Ms3.4/3, Ms7 3.3/4*
*NEIC **12** 12:12:06.8±2.9, 30°.01N×97°.00E, h26km±21km, mb4.1/5, Error ellipse: s-maj=11.6km s-min=6.3km az=55.0*
ISC 12 12:12:07.9±0.6, 29°.95N±0°.08×97°.03E±0°.07, h35km, n33, σ1s.24/30, mb4.0/17, Xizang

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
LSA	Lhasa	5.12	269	Pn	Pn	12 13 25.1	+2.7
LSA	Lhasa	5.12	269	ePn	Pn	12 13 20.8	-1.6
	13nm,0.6s						
LSA				eSn	Sn	12 14 22.9	+2.4
SHL	Shillong	6.32	227	eS	Sn	12 14 48.8	-0.9
ODAN	Odare	9.03	252	eP	Pn	12 14 06.5	-9.5
ODAN				eS	Sn	12 15 52.8	-3.8
RAMN	Ramite	9.65	254	eP	Pn	12 14 16.9	-7.7
KKN	Kakani	10.52	261	eP	Pn	12 14 31.4	-5.0
CMAR	Chiang Mai Arr	11.58	171	Pn	Pn	12 14 51.2	+0.6
	0.1nm,0.3s,baz=342,slow=12,SNR=6.2						
CMAR				Lg	Lg	12 18 17.9	
	0.1nm,0.3s,baz=9.3,slow=28,SNR=2.9						
KOLN	Koldanda	11.97	263	eP	Pn	12 14 52.4	-3.8
PYUN	Piuthan	12.43	265	eP	Pn	12 14 58.5	-3.9
WMQ	Urumqi	15.71	334	eP	Pn	12 15 47.5	+1.0
WMQ				pmax	pmax		
	comp=Z,4.0nm,0.6s						
WMQ				pmax	pmax		
	comp=Z,120nm,3.8s						
SONM	Songino Array	19.26	19	P	P	12 16 29.2	-0.2
	comp=Z,0.2nm,0.3s,baz=208,slow=10,SNR=8.5						
MKAR	Makanchi Array	20.34	330	P	P	12 16 40.1	-1.0
	comp=Z,0.8nm,0.6s,baz=141,slow=12,SNR=5.3						
TKM2	Tokmak 2	21.48	313	eP	P	12 16 53.9	+0.2
	comp=Z,8.0nm,1.3s						
AAK	Ala-Archa	22.06	311	P	P	12 17 00.3	+0.6
	comp=Z,2.9nm,0.9s,baz=109,slow=9.7,SNR=4.9						
AAK	Ala-Archa	22.06	311	eP	P	12 17 00.2	+0.6
	comp=Z,6.6nm,1.0s						
KURBB	Kurchatov Arra	24.88	331	P	P	12 17 26.7	-0.4
	comp=Z,1.1nm,0.6s,baz=138,slow=11,SNR=12						
KURK	Kurchatov	24.91	332	eP	P	12 17 27.3	-0.1
ZALV	Zalesovo Beam	25.57	343	P	P	12 17 33.1	-0.2
	comp=Z,3.4nm,0.6s,baz=162,slow=11,SNR=16						
KSAR	Wonju Array Be	26.65	66	P	P	12 17 42.5	-0.8
KSRS	Korea Array	26.68	65	P	P	12 17 42.5	-1.0
	comp=Z,0.6nm,0.5s,baz=256,slow=9.4,SNR=2.8						
BVAR	Borovoye Array	30.18	327	P	P	12 18 14.4	-0.2
	comp=Z,0.8nm,0.6s,baz=131,slow=8.1,SNR=4.8						
GEYT	Alibeck	33.06	294	P	P	12 18 40.8	+0.6
	comp=Z,3.5nm,0.6s,baz=123,slow=5.5,SNR=5.6						
ABKAR	Akbulak array	34.01	315	eP	P	12 18 48.2	-0.1
	comp=Z,0.9nm,0.8s						
AKTO	Aktyubinsk	35.59	316	P	P	12 19 01.2	-0.7
	comp=Z,1.0nm,0.5s,baz=106,slow=8.0,SNR=4.4						
AKASG	Malin Array Be	53.71	313	P	P	12 21 25.2	-0.9
	comp=Z,0.8nm,0.4s,baz=77,slow=6.6,SNR=5.7						
WRAB	Tennant Creek	61.25	139	eP	P	12 22 20.9	+1.3
	comp=Z,1.5nm,0.6s						
WRA	Warramunga Arr	61.25	139	P	P	12 22 20.8	+1.1
	comp=Z,1.8nm,0.8s,baz=326,slow=7.8,SNR=12						
ASAR	Alice Springs	64.01	142	P	P	12 22 38.9	+0.9
	comp=Z,1.0nm,0.8s,baz=324,slow=6.4,SNR=17						
ILAR	Eielson Array	73.42	24	P	P	12 23 35.9	-0.3
	comp=Z,0.7nm,0.9s,baz=309,slow=5.2,SNR=6.5						
INK	Inuvik	75.16	17	P	P	12 23 46.2	+0.1
	comp=Z,1.1nm,0.7s,baz=351,slow=6.0,SNR=4.3						
YKA	Yellowknife Ar	84.44	14	P	P	12 24 35.9	-0.5
	comp=Z,0.6nm,0.8s,baz=328,slow=4.9,SNR=11						
FFC	Flin Flon	94.09	11	eP	P	12 25 22.5	0.0
	comp=Z,0.7nm,0.3s						
TXAR	Lajitas Array	117.83	20	PKP	PKPdf	12 30 50.6	-0.5
	comp=Z,0.1nm,0.5s,baz=80,slow=2.0,SNR=2.9						

JMA 12 12:13:11.0, 36°.98N×140°.60E, h8km±1km, M3.0, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
ONAJ	Iwakimizuishiy	0.20	53	P	Pg	12 13 15.3	+0.2
ONAJ				S	Sg	12 13 18.3	+0.4
JHO	Hitachi	0.37	184	P	Pg	12 13 18.1	-0.1
JHO				S	Sg	12 13 23.4	+0.3
JFT	Otama	0.58	339	P	Pg	12 13 22.4	+0.2
JFT				S	Sg	12 13 30.1	+0.4
JMM	Marumori	0.90	10	P	Pg	12 13 27.8	-0.5
JMM				S	Sg	12 13 39.9	0.0
JOU	Okura	1.38	2	P	Pn	12 13 36.8	+0.2
JOU				S	Sb	12 13 54.9	-0.1
MAT	Matsushiro	1.97	258	P	Pn	12 13 45.5	+0.8
MAT				eS	Sn	12 14 10.3	+0.7

*IDC **12** 12:19:06.1±2.7, 37°.86N×144°.67E, h0km, mb3.4/3, mb1 3.6/5, mb1mx3.3/43, mbtmp3.5/5, ML3.0/2, Error ellipse: s-maj=68.5km s-min=29.1km az=63.0*
*ISCJB **12** 12:19:11.8±1.1, 38°.17N±0°.05×144°.35E±0°.08, h33km, mb3.5/3, Error ellipse: s-maj=9.7km s-min=7.2km az=27.6*
*JMA **12** 12:19:11.4±0.2, 38°.08N×144°.29E, h32km, M3.5*
ISC 12 12:19:11.5±1.5, 38°.05N±0°.08×144°.46E±0°.09, h35km, n19, σ1s.23/28, mb3.6/3, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
OFUJ	Ofunato	2.42	296	P	Pn	12 19 48.3	-0.2
JIO	Ouri	2.48	280	P	Pn	12 19 49.1	-0.3
JIO				eS	Sn	12 20 16.7	-1.7
JMK	Ichinoseki	2.69	290	P	Pn	12 19 52.5	+0.2
JTH	Tanohata	2.76	314	P	Pn	12 19 53.9	+0.6
JTH				eS	Sn	12 20 24.7	-0.7
JOM	Ohasama	2.85	301	P	Pn	12 19 54.6	+0.1
JOM				eS	Sn	12 20 26.7	-0.9
JOU	Okura	3.00	277	P	Pn	12 19 56.2	-0.4
JOU				eS	Sn	12 20 30.4	-1.0
JANG	Nango	3.26	316	P	Pn	12 20 00.5	+0.5
JRG	Rokugo	3.28	295	P	Pn	12 20 01.7	+1.4
JRG				eS	Sn	12 20 37.6	-0.5
JYK	Kaneyama	3.33	286	P	Pn	12 20 02.0	+0.9
JTM	Tenmabayashi	3.79	317	P	Pn	12 20 07.7	+0.4
JTM				eS	Sn	12 20 49.3	-1.4
JNBK	Urakawa-nobuka	4.42	343	P	Pn	12 20 16.5	+0.5
JNBK				S	Sn	12 21 05.9	-0.4
JCH	Churui	4.63	350	P	Pn	12 20 18.8	-0.2
JCH				S	Sn	12 21 09.0	-2.5
JKB	Kayabe	4.65	327	P	Pn	12 20 20.1	+1.0
JKB				S	Sn	12 21 09.6	-2.2
MJAR	Matsushiro Arr	5.21	255	Pn	Pn	12 20 26.7	-0.2
	3.6nm,0.3s,baz=80,slow=15,SNR=24						
MAT	Matsushiro	5.21	255	P	Pn	12 20 27.5	+0.6
USRK	Ussuriysk Ar.	11.23	307	Pn	Pn	12 21 52.2	+2.8
	0.2nm,0.3s,baz=121,slow=12,SNR=3.2						
MKAR	Makanchi Array	45.63	302	P	P	12 27 29.4	+0.9
	0.1nm,0.3s,baz=81,slow=9.5,SNR=3.1						
KURBB	Kurchatov Arra	47.29	308	P	P	12 27 43.1	+1.9
	0.4nm,0.5s,baz=82,slow=7.8,SNR=4.1						
WRA	Warramunga Arr	58.46	191	P	P	12 29 02.8	-1.1
	0.3nm,0.6s,baz=11,slow=7.0,SNR=2.8						

DJA 12 12:27:41.1±0.3, 3°S±3°×129°E±°, h15km±4km, M4.0/15, mB5.0/1, mb4.3/9, MLv3.8/15, Mw(mB)4.3/1, Seram

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
MSAI	Masohi	0.36	135	P	Pb	12 27 49.2	-0.1
MSAI				S	Sb	12 27 55.4	+0.6
BNDI	Bandanaira	1.88	139	P	Pn	12 28 13.1	+0.3
LBMI	Labuha	2.70	334	P	Pn	12 28 24.7	+0.7
SANI	Sanana	2.87	291	P	Pn	12 28 26.7	+0.3
SWI	Sorong	3.41	50	P	Pn	12 28 33.9	+0.2
TNTI	Ternate	4.05	341	P	Pn	12 28 41.8	-0.8
KMPI	Kaimana, Papua	5.06	97	P	Pn	12 28 55.6	-0.9
	96nm,0.8s,0.4nm						
SAUI	Saumlaki	5.52	152	P	Pn	12 29 01.8	-1.0
	65nm,1.9s,0.4nm						
LUWI	Luwuk	6.24	289	P	Pn	12 29 12.1	-0.6
	17nm,1.2s,1μm0.7nm						
SGSI	Sangihe	7.43	335	P	Pn	12 29 28.5	-0.5
	690nm,0.9s,3.2nm						
MRSI	Marisa	7.60	298	P	Pn	12 29 31.0	-0.4
	7.6nm,1.4s,0.1nm						
SOEI	Soe	7.94	213	P	Pn	12 29 35.5	-0.6
	26nm,1.8s,0.2nm						
BATI	Baumata	8.64	215	P	Pn	12 29 45.8	0.0

*NIED **12** 12:33:00, 37°.00N×140°.60E, h5km, Mw3.5 Best double couple: $M_0$1.73000×10^14 NP1:ϕ_s233.00000°, δ43.00000°, λ-92.00000°. NP2:ϕ_s56.00000°, δ47.00000°, λ-88.00000°.*
*ISCJB **12** 12:33:50.0±0.6, 37°.02N±0°.04×140°.69E±0°.06, h20km±5km, mb3.6/4, Error ellipse: s-maj=7.8km s-min=6.0km az=5.8*
*IDC **12** 12:33:49.0±1.4, 36°.96N×140°.64E, h0km, mb3.6/4, mb1 3.8/4, mb1mx3.4/52, mbtmp3.6/4, MS2.5/1, Ms1 2.5/1, ms1mx2.1/48, Error ellipse: s-maj=27.0km s-min=17.6km az=8.0*
*JMA **12** 12:33:50.6, 37°.03N×140°.62E, h6km±1km, M3.8 Broadband fault plane solution: P waves. NP1: ϕ_s49.00000°, δ50.00000°, λ-103.00000°. NP2: ϕ_s249.00000°, δ42.00000°, λ-75.00000°. Principal axes: T Plg4.0000°, Azm148.0000°; N Plg10.0000°, Azm57.0000°; P Plg79.0000°, Azm260.0000°;*
JMA Felt II J1.
ISC 12 12:33:50.6±0.9, 37°.03N±0°.03×140°.64E±0°.04, h11km±8km, n18, σ0s.46/17, mb3.6/4, 5C-1D, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
ONAJ	Iwakimizuishiy	0.14	62	⇓P	Pg	12 33 54.1	+0.1
ONAJ				S	Sg	12 33 56.5	+0.1
JHO	Hitachi	0.43	188	⇑P	Pg	12 33 58.7	-0.3
JHO				S	Sg	12 34 04.5	-0.1
JFT	Otama	0.54	333	⇑P	Pg	12 34 01.2	0.0
JFT				S	Sg	12 34 08.4	+0.1
JSB	Shiboa	0.58	264	⇑P	Pb	12 34 02.3	-0.5
JSB				S	Sg	12 34 10.1	+0.5
JFY	Yanaizu	0.83	297	⇑P	Pg	12 34 06.4	-0.3
JFY				S	Sg	12 34 17.1	-0.5
JMM	Marumori	0.84	8	⇑P	Pg	12 34 06.2	-0.6
JMM				S	Sg	12 34 17.7	-0.1
MJAR	Matsushiro Arr	2.01	257	Pg	Pn	12 34 25.4	+0.9
	20nm,0.3s,baz=79,slow=15,SNR=56						
MJAR				Lg	Lg	12 34 51.3	
	23nm,0.3s,baz=93,slow=25,SNR=21						
KSRS	Korea Array	10.15	276	LR	LR	12 40 03.4	
	comp=Z,24nm,18.7s,baz=155,slow=37						
SONM	Songino Array	27.27	304	P	P	12 39 34.9	-0.1
	0.4nm,0.7s,baz=103,slow=9.4,SNR=4.4						
H11N2	WAKE ISLAND Hy	28.68	120	T	T	13 09 36.4	
	baz=313,slow=75,SNR=23						
H11N1	WAKE ISLAND Hy	28.69	120	T	T	13 09 37.0	
	baz=313,slow=75,SNR=21						
H11N3	WAKE ISLAND Hy	28.70	120	T	T	13 09 37.8	
	baz=313,slow=75,SNR=25						
H11S1	WAKE ISLAND Hy	29.38	122	T	T	13 10 27.2	
	baz=314,slow=76,SNR=60						
H11S3	WAKE ISLAND Hy	29.38	122	T	T	13 10 31.2	
	baz=314,slow=76,SNR=38						
H11S2	WAKE ISLAND Hy	29.40	122	T	T	13 10 28.4	
	baz=314,slow=76,SNR=41						
MKAR	Makanchi Array	43.59	302	P	P	12 41 55.2	+0.5
	0.2nm,0.2s,baz=91,slow=9.0,SNR=2.9						
WRA	Warramunga Arr	56.98	187	P	P	12 43 35.8	-0.4
	1.2nm,0.7s,baz=4.3,slow=7.4,SNR=15						
ASAR	Alice Springs	60.71	187	P	P	12 44 01.8	-0.3
	0.4nm,0.7s,baz=17,slow=6.5,SNR=7.7						

DJA 12 12:35:05.0±0.2, 8°S±4°×116°E±°, h10km, M4.1/20, mB5.6/1, mb4.5/2, MLv3.9/20, Mw(mB)5.1/1, Sumbawa region

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
DNP	Denpasar	0.97	240	P	Pg	12 35 23.7	-0.1
DNP				S	Sn	12 35 39.7	+1.0
TWSI	Taliwang, Sumb	0.98	124	P	Pg	12 35 21.9	-2.1
TWSI				S	Sb	12 35 37.2	0.0
PLAI	Plampang	1.82	111	P	Pn	12 35 35.8	-0.5
ABJI	Asem Bagus	1.85	282	P	Pn	12 35 36.8	0.0
JAGI	Jajag, Banyuwa	1.91	261	P	Pn	12 35 35.7	-1.9
GMJI	Gumukmas	2.59	268	P	Pn	12 35 46.9	-0.1
PWJI	Pagerwojo	4.22	272	P	Pn	12 36 09.0	-0.4
TBJI	Tambak Boyo	4.39	288	P	Pn	12 36 12.4	+0.6
NGJI	Ngawi	4.63	280	P	Pn	12 36 13.8	-1.2
PCJI	Pacitan	4.83	269	P	Pn	12 36 16.5	-1.4
BSSI	Bau Bau, Buton	4.84	66	P	Pn	12 36 16.7	-1.3
BBKI	Banjar Baru	4.84	345	P	Pn	12 36 18.7	+0.7
BASI	Baing, Sumba	4.90	115	P	Pn	12 36 18.7	-0.1
WOJI	Wonogiri, Jawa	5.10	273	P	Pn	12 36 22.0	+0.5
	48nm,0.9s,6μm0.7nm						
UWJI	Ujung Watu	5.37	289	P	Pn	12 36 25.3	+0.1

*NIED **12** 12:43:00, 37°.00N×143°.80E, h8km, Mw3.6 Best double couple: $M_0$2.57000×10^14 NP1:ϕ_s23.00000°, δ21.00000°, λ-101.00000°. NP2:ϕ_s214.00000°, δ70.00000°, λ-86.00000°.*
*IDC **12** 12:43:27.9±1.1, 36°.55N×144°.22E, h0km, mb3.6/7, mb1 3.9/8, mb1mx3.6/37, mbtmp3.6/8, ML3.9/1, MS2.4/2, Ms1 2.4/2, ms1mx2.2/41, Error ellipse: s-maj=30.8km s-min=25.1km az=29.0*
*ISCJB **12** 12:43:32.6±0.9, 37°.01N±0°.09×143°.8E±0°.1, h33km, mb3.6/7, MS4.5/1, Error ellipse: s-maj=15.2km s-min=8.4km az=42.2*
*JMA **12** 12:43:32.8±0.4, 37°.03N×143°.77E, h43km, M3.8*
ISC 12 12:43:33.0±1.1, 36°.94N±0°.10×143°.8E±0°.1, h35km, n22, σ1s.05/15, mb3.6/7, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
JIO	Ouri	2.47	308	P	Pn	12 44 10.8	+0.1
JIO				S	Sn	12 44 39.1	-0.6
OFUJ	Ofunato	2.72	322	P	Pn	12 44 13.8	-0.5
OFUJ				S	Sn	12 44 44.6	-1.4
JMK	Ichinoseki	2.87	315	P	Pn	12 44 16.5	+0.3
JMK				eS	Sn	12 44 49.0	-0.5
JOM	Ohasama	3.21	323	P	Pn	12 44 21.4	+0.4
JOM				S	Sn	12 44 57.4	-0.6
JYK	Kaneyama	3.37	307	P	Pn	12 44 23.9	+0.8
MJAR	Matsushiro Arr	4.52	267	Pn	Pn	12 44 39.8	+0.9
	4.6nm,0.3s,baz=81,slow=8.8,SNR=10						

MJAR			LR	LR	12 47 15.0	
	comp=Z,50nm,19.3s,baz=10.0,slow=47					
MAT	**Matsushiro**	**4.52 267**	P	**Pn**	**12 44 39.6**	**+0.6**
MAT			*e*S	Sn	12 45 22.9	-7.4
KSRS	**Korea Array**	**12.68 277**	LR	LR	12 51 09.0	
	comp=Z,16nm,20.3s,baz=115,slow=35					
H11N2	**WAKE ISLAND Hy**	**26.48 124**	T	T	13 16 19.9	
	baz=316,slow=76,SNR=12					
H11N1	**WAKE ISLAND Hy**	**26.49 124**	T	T	13 16 19.3	
	baz=316,slow=76,SNR=6.7					
H11N3	**WAKE ISLAND Hy**	**26.50 124**	T	T	13 16 22.5	
	baz=316,slow=76,SNR=7.5					
H11S1	**WAKE ISLAND Hy**	**27.23 126**	T	T	13 17 21.0	
	baz=317					
H11S3	**WAKE ISLAND Hy**	**27.23 126**	T	T	13 17 19.9	
	baz=317					
H11S2	**WAKE ISLAND Hy**	**27.24 126**	T	T	13 17 22.1	
	baz=317					
SONM	**Songino Array**	**29.43 304**	P	P	12 49 38.1	+4.8
	0.7nm,0.8s,baz=100,slow=7.8,SNR=5.9					
ZALV	**Zalesovo Beam**	**43.39 312**	P	P	12 51 36.7	+4.8
	0.3nm,0.3s,baz=75,slow=7.6,SNR=2.2					
MKAR	**Makanchi Array**	**45.79 303**	P	P	12 51 55.8	+4.6
	0.2nm,0.2s,baz=83,slow=10,SNR=3.5					
WRA	**Warramunga Arr**	**57.28 191**	P	**P**	**12 53 15.1**	**-2.2**
	0.3nm,0.4s,baz=10,slow=7.1,SNR=8.1					
DZM	**Mont Dzumac**	**62.46 156**	LR	LR	13 19 25.2	
	comp=Z,328nm,19.6s,baz=222,slow=35					
FINES	**FINESS Array B**	**69.78 333**	P	**P**	**12 54 41.0**	**+1.7**
	0.9nm,0.8s,baz=20,slow=4.4,SNR=2.2					
NVAR	**Mina Array Bea**	**73.50 54**	P	**P**	**12 55 03.0**	**+0.6**
	0.4nm,0.7s,baz=283,slow=5.1,SNR=3.8					
TXAR	**Lajitas Array**	**88.64 54**	P	**P**	**12 56 22.9**	**0.0**
	0.2nm,0.6s,baz=283,slow=2.2,SNR=3.9					

JMA 12 12:43:48.4, 37°.02N×140°.60E, h11km±1km, M2.6, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.18**	**63**	P	Pg	12 43 52.5	+0.1
ONAJ				S	Sg	12 43 55.2	+0.1
JHO	**Hitachi**	**0.41**	**183**	P	Pg	12 43 56.4	-0.1
JHO				S	Sg	12 44 01.9	0.0
JFT	**Otama**	**0.54**	**337**	P	Pg	12 43 59.2	+0.2
JFT				S	Sg	12 44 06.5	+0.4
JMM	**Marumori**	**0.86**	**10**	P	Pg	12 44 04.5	-0.5
JMM				S	Sg	12 44 15.6	-0.6

MAN 12 12:57:50, 8°.19N×124°.84E, h11km, MS3.9, 1D, Mindanao

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CGP	**Cagayan de Oro**	**0.30**	**331**	↓*e*P	Pb	12 57 57.6	+0.2
CGP				*e*S	Sb	12 58 07.9	+5.5

NIED **12** *13:04:00, 37°.00N×140°.70E, h8km, Mw3.4 Best double couple: M₀1.43000×10¹⁴ NP1:φs193.00000°, δ41.00000°, λ-46.00000°. NP2:φs291.00000°, δ62.00000°, λ-121.00000°.*

ISCJB **12** *13:04:18.7±0.9, 36°.96N±0°.04×140°.82E±0°.09, h23km±6km, mb3.9/2, Error ellipse: s-maj=12.2km s-min=6.7km az=6.9*

IDC **12** *13:04:19.0±2.5, 36°.67N×140°.71E, h0km, mb3.8/2, mb1 4.0/2, mb1mx3.3/54, mbtmp3.8/2, Error ellipse: s-maj=42.5km s-min=17.1km az=14.0*

JMA **12** *13:04:20.1, 36°.97N×140°.69E, h10km±1km, M3.6 Broadband fault plane solution: P waves. NP1: φs151.00000°, δ58.00000°, λ-58.00000°. NP2: φs281.00000°, δ44.00000°, λ-130.00000°. Principal axes: T Plg8.0000°, Azm219.0000°; N Plg27.0000°, Azm313.0000°; P Plg62.0000°, Azm114.0000°;*

JMA Felt II J1.

ISC 12 13:04:19.7±1.0, 36°.96N±0°.04×140°.74E±0°.07, h15km±8km, n14, σ0°55/13, 4C-1D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.15**	**18**	↓P	**Pg**	**13 04 23.9**	**+0.1**
ONAJ				S	**Sg**	**13 04 26.6**	**+0.1**
JHO	**Hitachi**	**0.37**	**202**	↑P	**Pg**	**13 04 27.3**	**0.0**
JHO				S	**Sg**	**13 04 32.3**	**-0.2**
JFT	**Otama**	**0.65**	**330**	↑P	**Pg**	**13 04 32.1**	**-0.3**
JFT				S	**Sg**	**13 04 40.5**	**-0.5**
JSB	**Shiboa**	**0.66**	**271**	↑P	**Pg**	**13 04 32.6**	**0.0**
JSB				S	**Sg**	**13 04 41.2**	**-0.1**
JYT	**Yasato**	**0.85**	**211**	↑P	**Pb**	**13 04 35.7**	**-0.4**
JYT				S	**Sb**	**13 04 47.0**	**-0.3**
MJAR	**Matsushiro Arr**	**2.07**	**259**	P*g*	**Pn**	**13 04 55.3**	**+1.3**
	15nm,0.3s,baz=80,slow=16,SNR=50						
MJAR				Lg	Lg	13 05 22.4	
	27nm,0.3s,baz=87,slow=27,SNR=17						
H11N2	**WAKE ISLAND Hy**	**28.58 120**		T	T	13 40 04.0	
	baz=313,slow=75,SNR=44						
H11N1	**WAKE ISLAND Hy**	**28.58 120**		T	T	13 40 07.3	
	baz=313,slow=75,SNR=26						
H11N3	**WAKE ISLAND Hy**	**28.59 120**		T	T	13 40 06.3	
	baz=313,slow=75,SNR=36						
H11S1	**WAKE ISLAND Hy**	**29.27 122**		T	T	13 40 56.3	
	baz=314,slow=76,SNR=174						
H11S3	**WAKE ISLAND Hy**	**29.27 122**		T	T	13 40 58.7	
	baz=314,slow=76,SNR=102						
H11S2	**WAKE ISLAND Hy**	**29.29 122**		T	T	13 40 58.1	
	baz=314,slow=76,SNR=90						
WRA	**Warramunga Arr**	**56.91 187**		P	**P**	**13 14 04.1**	**-0.1**
	1.0nm,0.6s,baz=3.9,slow=7.2,SNR=16						
ASAR	**Alice Springs**	**60.64 187**		P	**P**	**13 14 29.5**	**-0.5**
	0.4nm,0.6s,baz=15,slow=6.5,SNR=6.3						

IDC 12 13:06:00.9±5.1, 16°.79S×168°.47E, h230km±54km, mb3.0/4, mb1 3.2/5, mb1mx3.0/43, mbtmp3.6/5, MS3.0/1, Ms1 3.0/1, ms1mx2.4/9, Error ellipse: s-maj=67.5km s-min=37.2km az=147.0, Vanuatu Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**5.59**	**200**	P	Pn	13 07 24.1	+0.5
	1.2nm,0.3s,baz=57,slow=12,SNR=17						
DZM				S	S	13 08 29.3	-0.1
	0.6nm,0.3s,baz=135,slow=19,SNR=4.1						
STKA	**Stephens Creek**	**28.62**	**233**	P	P	13 11 36.0	-0.1
	0.9nm,0.4s,baz=64,slow=12,SNR=6.1						
WRA	**Warramunga Arr**	**32.51**	**259**	P	P	13 12 10.3	-0.1
	0.6nm,1.0s,baz=84,slow=8.4,SNR=4.0						
ASAR	**Alice Springs**	**33.09**	**252**	P	P	13 12 15.2	-0.1
	0.3nm,0.4s,baz=79,slow=9.3,SNR=9.3						
GUMO	**Guam**	**38.14**	**321**	LR	LR	13 29 13.4	
	comp=Z,20nm,18.9s,baz=310,slow=36						
SONM	**Songino Array**	**84.83**	**323**	P	P	13 18 10.6	+1.0
	0.2nm,0.6s,baz=138,slow=6.0,SNR=3.7						
ARCES	**ARCESS Array B**	**122.52**	**345**	PKP	PKPdf	13 24 26.8	-1.4
	4.1nm,1.0s,baz=42,slow=3.9,SNR=3.6						

NIED **12** *13:07:00, 36°.80N×138°.60E, h5km, Mw3.8 Best double couple: M₀4.83000×10¹⁴ NP1:φs103.00000°, δ59.00000°, λ-179.00000°. NP2:φs12.00000°, δ89.00000°, λ-31.00000°.*

IDC **12** *13:07:30.6±1.6, 36°.83N×138°.62E, h0km, mb3.5/2, mb1 3.7/4, mb1mx3.3/57, mbtmp3.5/4, ML2.8/2, MS2.8/4, Ms1 2.8/4, ms1mx2.5/38, Error ellipse: s-maj=12.0km s-min=9.3km az=42.0*

ISCJB **12** *13:07:31.7±0.5, 36°.76N±0°.04×138°.61E±0°.04, h24km±6km, mb3.6/2, Error ellipse: s-maj=7.1km s-min=5.2km az=152.1*

JMA **12** *13:07:31.6, 36°.81N×138°.62E, h0km, M3.5 Broadband fault plane solution: P waves. NP1:φs16.00000°, δ89.00000°, λ-18.00000°. NP2:φs107.00000°, δ72.00000°, λ-179.00000°. Principal axes: T Plg12.0000°, Azm63.0000°; N Plg72.0000°, Azm194.0000°; P Plg13.0000°, Azm330.0000°;*

JMA Felt II J1.

ISC 12 13:07:31.8±1.1, 36°.82N±0°.05×138°.61E±0°.03, h8km±10km, n16, σ0°82/20, 3C-3D, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JGK	**Kuni**	**0.26**	**175**	↓P	**Pg**	**13 07 37.2**	**+0.2**
JGK				S	**Sg**	**13 07 41.1**	**+0.5**
MJAR	**Matsushiro Arr**	**0.43**	**229**	P*g*	**Pg**	**13 07 39.2**	**-0.9**
	465nm,0.3s,baz=45,slow=19,SNR=600						
MJAR				Lg	Lg	13 07 44.6	
	698nm,0.3s,baz=40,slow=21,SNR=85						
MAT	**Matsushiro**	**0.43**	**229**	P	**Pg**	**13 07 39.8**	**-0.4**
MAT				S	**Sg**	**13 07 45.4**	**-0.4**
MAT	**Matsushiro**	**0.43**	**229**	P	**Pg**	**13 07 39.8**	**-0.4**
MAT				S	**Sg**	**13 07 45.4**	**-0.4**
JKT	**Katashina**	**0.52**	**96**	↑P	**Pg**	**13 07 41.5**	**-0.3**
JKT				S	**Sg**	**13 07 48.5**	**-0.3**
JHK	**Hiroka**	**0.53**	**37**	↑P	**Pg**	**13 07 41.9**	**-0.3**
JNG	**Nsakai**	**0.58**	**225**	↑P	**Pg**	**13 07 42.7**	**-0.4**
JNG				S	**Sg**	**13 07 50.4**	**-0.4**
JIZZ	**Izumozaki**	**0.71**	**6**	↓P	**Pb**	**13 07 46.7**	**+0.2**
JIZZ				*i*S	**Sn**	**13 07 58.0**	**-1.4**
JAG	**Ashikaga**	**0.79**	**120**	↓P	**Pg**	**13 07 46.7**	**-0.2**
JAG				S	**Sg**	**13 07 56.7**	**-0.5**
JHJ	**Hachijo jima 2**	**3.82**	**165**	LR	LR	13 09 57.7	
	comp=Z,65nm,18.4s,baz=66,slow=38						
JNU	**Nakatsue**	**7.34**	**242**	LR	LR	13 12 20.8	
	comp=Z,85nm,19.8s,baz=128,slow=40						
KSRS	**Korea Array**	**8.56**	**277**	P*n*	**Pn**	**13 09 37.9**	**+1.8**
	0.5nm,0.3s,baz=92,slow=14,SNR=5.9						
USRK	**Ussuriysk Ar.**	**8.93**	**328**	P*n*	**Pn**	**13 09 42.4**	**+1.4**
	0.2nm,0.3s,baz=152,slow=12,SNR=3.0						
USRK				LR	LR	13 12 53.8	
	comp=Z,59nm,19.8s,baz=162,slow=36						
KLR	**Kul'dur**	**13.37**	**340**	LR	LR	13 15 23.9	
	comp=Z,37nm,18.2s,baz=143,slow=35						
WRA	**Warramunga Arr**	**56.60**	**185**	P	**P**	**13 17 14.6**	**-0.7**
	1.2nm,1.0s,baz=0.9,slow=7.6,SNR=8.5						
ASAR	**Alice Springs**	**60.33**	**185**	P	**P**	**13 17 40.6**	**-0.6**
	0.3nm,0.8s,baz=359,slow=5.6,SNR=2.7						

IDC **12** *13:18:09.3±1.1, 37°.80N×144°.98E, h0km, mb3.5/7, mb1 3.8/8, mb1mx3.5/52, mbtmp3.5/8, ML2.2/1, MS3.1/4, Ms1 3.1/4, ms1mx2.5/33, Error ellipse: s-maj=27.3km s-min=25.0km az=165.0*

ISCJB **12** *13:18:14.1±0.8, 38°.21N±0°.05×144°.70E±0°.05, h26km, mb3.4/7, MS3.2/2, Error ellipse: s-maj=7.9km s-min=5.9km az=5.8*

JMA **12** *13:18:14.7±0.2, 38°.07N×144°.60E, h33km, M4.2*

ISC 12 13:18:13.8±0.9, 38°.04N±0°.08×144°.77E±0°.07, h26km, n24, σ1°58/32, mb3.5/7, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**2.65**	**294**	P	**Pn**	**13 18 54.6**	**-0.2**
OFUJ				S	**Sn**	**13 19 24.9**	**-1.2**
JIO	**Ouri**	**2.73**	**280**	P	**Pn**	**13 18 55.5**	**-0.4**
JIO				S	**Sn**	**13 19 25.7**	**-2.3**
JMK	**Ichinoseki**	**2.93**	**289**	P	**Pn**	**13 18 58.8**	**+0.1**
JMK				*e*S	**Sn**	**13 19 31.8**	**-1.3**
JTH	**Tanohata**	**2.96**	**311**	P	**Pn**	**13 18 59.3**	**+0.2**
JTH				*e*S	**Sn**	**13 19 32.0**	**-1.7**
JOM	**Ohasama**	**3.08**	**299**	P	**Pn**	**13 19 00.9**	**+0.2**
JOM				*e*S	**Sn**	**13 19 35.3**	**-1.4**
JANG	**Nango**	**3.44**	**314**	S	**Sn**	**13 19 44.4**	**-1.3**
JRG	**Rokugo**	**3.51**	**294**	P	**Pn**	**13 19 07.9**	**+1.2**
JRG				S	**Sn**	**13 19 47.5**	**+0.1**
JYK	**Kaneyama**	**3.57**	**286**	P	**Pn**	**13 19 08.1**	**+0.5**
JYK				*e*S	**Sn**	**13 19 47.7**	**-1.2**
JTM	**Tenmabayashi**	**3.97**	**315**	P	**Pn**	**13 19 13.7**	**+0.7**
JTM				S	**Sn**	**13 19 57.0**	**-1.7**
JOT	**Ohata**	**4.41**	**320**	*e*S	**Sn**	**13 20 07.1**	**-2.3**
JNBK	**Urakawa-nobuka**	**4.51**	**341**	P	**Pn**	**13 19 21.1**	**+0.6**
JNBK				S	**Sn**	**13 20 10.9**	**-1.2**
JCH	**Churui**	**4.70**	**347**	P	**Pn**	**13 19 22.6**	**-0.4**
JCH				*e*S	**Sn**	**13 20 14.4**	**-2.2**
JKB	**Kayabe**	**4.80**	**324**	P	**Pn**	**13 19 25.5**	**+1.1**
JKB				*e*S	**Sn**	**13 20 16.6**	**-2.6**
JCJ	**Chichijima**	**11.12**	**192**	LR	LR	13 23 48.3	
	comp=Z,212nm,21.7s,baz=282,slow=31						
USRK	**Ussuriysk Ar.**	**11.44**	**307**	P*n*	**Pn**	**13 20 59.5**	**+4.1**
	0.1nm,0.3s,baz=107,slow=14,SNR=3.2						
KLR	**Kul'dur**	**14.61**	**324**	LR	LR	13 27 06.3	
	comp=Z,43nm,18.1s,baz=151,slow=36						
SEY	**Seymchan**	**25.36**	**8**	P	**P**	**13 23 39.3**	**+0.9**
	1.3nm,0.8s,baz=203,slow=9.2,SNR=5.9						
SONM	**Songino Array**	**29.49**	**302**	P	**P**	**13 24 17.7**	**+1.9**
	0.2nm,0.4s,baz=96,slow=9.4,SNR=3.3						
NRIK	**Noril'sk**	**43.50**	**334**	LR	LR	13 47 41.8	
	comp=Z,28nm,19.7s,baz=16,slow=40						
MKAR	**Makanchi Array**	**45.85**	**302**	P	**P**	**13 26 34.5**	**+0.8**
	0.3nm,0.6s,baz=84,slow=11,SNR=3.6						
ILAR	**Eielson Array**	**47.21**	**33**	P	**P**	**13 26 43.0**	**-1.0**
	0.5nm,0.7s,baz=260,slow=6.8,SNR=8.1						
WRA	**Warramunga Arr**	**58.50**	**192**	P	**P**	**13 28 05.5**	**-2.3**
	0.2nm,0.3s,baz=9.2,slow=7.0,SNR=6.0						
NVAR	**Mina Array Bea**	**72.24**	**55**	P	**P**	**13 29 36.8**	**-0.2**
	0.2nm,0.5s,baz=297,slow=6.0,SNR=2.5						
TXAR	**Lajitas Array**	**87.38**	**54**	P	**P**	**13 31 00.3**	**+1.3**
	0.2nm,0.6s,baz=316,slow=5.0,SNR=2.8						
TXAR				LR	LR	14 03 42.9	
	comp=Z,10.0nm,21.5s,baz=0.0,slow=31						

BJI **12** *13:21:13.1, 9°.70N×104°.00W, h10km, mB5.1/1, Ms5.3/1, Ms7 5.0/1*

IDC **12** *13:21:15.2±2.4, 9°.97N×104°.45W, h0km, mb3.8/6, mb1 4.1/7, mb1mx3.9/42, mbtmp3.8/7, ML3.3/1, MS3.7/19, Ms1 3.7/19, ms1mx3.6/31, Error ellipse: s-maj=106.9km s-min=24.5km az=58.0*

NEIC **12** *13:21:17.1±0.9, 9°.93N×104°.21W, h10km, mb4.5/20, Error ellipse: s-maj=17.9km s-min=15.1km az=67.0*

ISC 12 13:21:15.5±1.0, 9°.8N±0°.1×104°.4W±0°.2, h10km, n110, σ1°22/86, mb4.4/26, MS3.6/16, 1D, Northern East Pacific Rise

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TLIG	**Tlapa**	**9.58**	**35**	*e*P*n*	**Pn**	**13 23 31.3**	**-2.4**
ZAIG	**Zacatecas**	**13.04**	**7**	*e*P*n*	**Pn**	**13 24 21.8**	**+0.6**
LPIG	**La Paz**	**15.33**	**339**	LR	LR	13 29 11.7	
	comp=Z,532nm,18.7s,baz=163,slow=32						
034A	**Hebbronville**	**18.02**	**17**	P	**P**	**13 25 29.4**	**+2.8**
	baz=198						
934A	**Benavides**	**18.57**	**17**	P	**Pn**	**13 25 34.0**	**+1.0**
	baz=198						
832A	**Faith Ranch, C**	**18.87**	**12**	P	**Pn**	**13 25 37.9**	**+1.2**
	baz=193						
833A	**Chaparral WMA,**	**19.04**	**14**	P	**Pn**	**13 25 40.0**	**+1.4**
	baz=195						
JTS	**JuntasAbangare**	**19.13**	**87**	LR	LR	13 31 05.0	
	comp=Z,185nm,19.1s,baz=270,slow=31						
733A	**Divot King Ran**	**19.44**	**14**	P	**Pn**	**13 25 45.1**	**+1.7**
	baz=195						
TX31	**Lajitas Ar. Si**	**19.47**	**2**	*e*P	**Pn**	**13 25 43.7**	**-0.2**
TXAR	**Lajitas Array**	**19.47**	**2**	P	**P**	**13 25 42.3**	**-0.4**
	0.0nm,0.3s,baz=174,slow=14,SNR=20						
TXAR				LR	LR	13 32 01.1	
	comp=Z,202nm,20.9s,baz=0.0,slow=34						
633A	**Saathoff Ranch**	**20.18**	**13**	P	P*n*	13 25 52.2	-0.1
	baz=195						
533A	**Kerrville**	**20.80**	**13**	P	P*n*	13 25 58.7	-0.9
	baz=195						
534A	**Blanco**	**20.89**	**14**	P	**P**	**13 25 59.2**	**+1.1**
	baz=196						
JCT	**Junction City**	**21.04**	**11**	P	**P**	**13 26 00.9**	**+1.2**
	baz=192						
JCT	**Junction City**	**21.04**	**11**	*e*P	**P**	**13 26 00.8**	**+1.1**
	20nm,1.0s						
433A	**Art**	**21.45**	**13**	P	**P**	**13 26 03.9**	**-0.2**
	baz=194						
HKT	**Hockley**	**21.60**	**20**	*e*P	**P**	**13 26 05.0**	**-0.6**
	54nm,1.8s						
434A	**Burnet**	**21.69**	**14**	P	**P**	**13 26 06.6**	**-0.2**
	baz=196						
MNTX	**Cornudas Mount**	**21.84**	**358**	P	**P**	**13 26 08.2**	**-0.1**
	baz=177						
MNTX	**Cornudas Mount**	**21.84**	**358**	*e*P	**P**	**13 26 08.0**	**-0.2**
	60nm,1.9s						
319A	**Douglas**	**21.97**	**349**	*e*P	**P**	**13 26 09.5**	**-0.3**
	9.7nm,1.0s						
333A	**Richland Sprin**	**22.02**	**12**	P	**P**	**13 26 09.1**	**-1.2**
	baz=194						
233A	**Rising Star**	**22.71**	**12**	P	**P**	**13 26 17.0**	**-0.6**
	baz=194						
ABTX	**Abilene, Hawle**	**23.16**	**10**	*e*P	**P**	**13 26 21.7**	**-0.5**
	26nm,1.1s						
TUC	**Tucson**	**23.20**	**346**	*e*P	**P**	**13 26 23.8**	**+1.1**
	20nm,1.9s						
Z33A	**Whitaker Ranch**	**23.96**	**12**	P	**P**	**13 26 29.3**	**-0.8**
	baz=193						
MSTX	**Muleshoe**	**24.13**	**3**	P	**P**	**13 26 31.7**	**-0.1**
	baz=184						
MSTX	**Muleshoe**	**24.13**	**3**	*e*P	**P**	**13 26 32.1**	**+0.3**
	44nm,1.4s						
113A	**Mohawk Valley,**	**24.47**	**341**	*e*P	**P**	**13 26 37.4**	**+2.6**
	18nm,1.7s						
LAZ	**Ladron**	**24.64**	**355**	*e*P	**P**	**13 26 36.1**	**-0.5**
Y34A	**Reagan Ranch,**	**24.82**	**13**	P	**P**	**13 26 37.2**	**-0.8**
	baz=195						
X32A	**Elmer**	**24.97**	**10**	P	**P**	**13 26 39.1**	**-0.2**
	baz=192						
AMTX	**Amarillo**	**25.11**	**5**	P	**P**	**13 26 40.7**	**0.0**
	baz=186						
AMTX	**Amarillo**	**25.11**	**5**	*e*P	**P**	**13 26 40.3**	**-0.5**
	14nm,0.9s						
ANMO	**Albuquerque**	**25.13**	**356**	LR	LR	13 35 01.8	
	comp=Z,63nm,18.4s,baz=180,slow=33						
WMOK	**Wichita Mounta**	**25.37**	**11**	*e*P	**P**	**13 26 44.0**	**+1.0**
	19nm,1.8s						
X16A	**Lo Mia Camp, P**	**25.37**	**346**	*e*P	**P**	**13 26 43.9**	**+0.7**
	3.3nm,0.9s						
X34A	**Smith Ranch, M**	**25.43**	**13**	P	**P**	**13 26 45.1**	**+1.6**
	baz=195						
X35A	**Drake**	**25.43**	**14**	P	**P**	**13 26 43.2**	**-0.3**
	baz=197						
W32A	**Sentinel**	**25.66**	**10**	P	**P**	**13 26 45.7**	**+0.1**
	baz=191						
X36A	**Centrahoma**	**25.75**	**15**	P	**P**	**13 26 45.6**	**-0.8**
	baz=198						
W33A	**Caddo, Fort Co**	**25.83**	**11**	P	**P**	**13 26 47.0**	**-0.2**
	baz=193						
PFO	**Pinyon Flats O**	**26.20**	**337**	LR	LR	13 35 53.0	
	comp=Z,205nm,18.2s,baz=152,slow=34						
X38A	**Whitesboro**	**26.27**	**18**	P	**P**	**13 26 50.8**	**-0.4**
	baz=201						
X39A	**Fountain Ranch**	**26.35**	**19**	P	**P**	**13 26 51.3**	**-0.6**
	baz=203						
WUAZ	**Wupatki**	**26.41**	**347**	P	**P**	**13 26 53.3**	**+0.7**
	baz=164						
V33A	**Lossen Ranch,**	**26.51**	**11**	P	**P**	**13 26 52.9**	**-0.5**
	baz=193						
W37B	**Quinton**	**26.54**	**17**	P	**P**	**13 26 53.8**	**+0.2**
	baz=200						
MIAR	**Mount Ida**	**26.57**	**20**	P	**P**	**13 26 52.9**	**-0.9**
	baz=204						
MIAR	**Mount Ida**	**26.57**	**20**	*e*P	**P**	**13 26 52.3**	**-1.4**
	12nm,1.3s						
GMRC	**Granite Mounta**	**26.95**	**339**	P	**P**	**13 26 59.4**	**+2.0**
	baz=154						
T32A	**Huddler Ranch,**	**27.73**	**9**	P	**P**	**13 27 04.1**	**-0.2**
	baz=191						
SDCO	**Great Sand Dun**	**27.87**	**358**	P	**P**	**13 27 06.2**	**+0.4**
	baz=177						
PV10	**Paradox Valley**	**28.79**	**352**	*e*P	**P**	**13 27 14.3**	**+0.4**
ROSC	**El Rosal**	**30.20**	**97**	LR	LR	13 36 50.2	
	comp=Z,82nm,21.6s,baz=234,slow=31						
ATAH	**Atahualpa**	**30.85**	**122**	LR	LR	13 37 28.6	
	comp=Z,542nm,19.4s,baz=307,slow=31						
NVAR	**Mina Array Bea**	**31.15**	**339**	P	**P**	**13 27 35.2**	**+0.3**
	0.2nm,0.4s,baz=166,slow=8.4,SNR=3.2						
NVAR				LR	LR	13 37 49.9	
	comp=Z,196nm,21.7s,baz=174,slow=32						
BW06	**Boulder Array**	**33.18**	**353**	*e*P	**P**	**13 27 53.0**	**+0.4**
PDAR	**Pinedale Array**	**33.18**	**353**	P	**P**	**13 27 52.9**	**+0.2**
	0.6nm,0.9s,baz=177,slow=5.9,SNR=6.0						
PDAR				LR	LR	13 39 50.0	
	comp=Z,61nm,19.0s,baz=190,slow=34						
SDV	**Santo Domingo**	**33.30**	**89**	LR	LR	13 39 59.8	
	comp=Z,103nm,18.8s,baz=250,slow=34						
ORV	**Oroville**	**33.36**	**336**	*e*P	**P**	**13 27 57.1**	**+3.1**
	11nm,1.4s						
O03D	**Paynes Creek**	**34.11**	**336**	P	**P**	**13 28 02.4**	**+1.7**
	baz=148						
LOHW	**Long Hollow**	**34.15**	**352**	*e*P	**P**	**13 28 01.7**	**+0.7**
	4.0nm,1.2s						
I29A	**Vivian Onida**	**34.30**	**5**	P	**P**	**13 28 03.3**	**+1.2**
	baz=187						
ECSD	**EROS Data Cent**	**34.50**	**10**	P	**P**	**13 28 05.0**	**+1.1**
	baz=193						
J37A	**Redenius Farm,**	**34.72**	**14**	P	**P**	**13 28 04.7**	**-1.0**
	baz=199						
NNA	**Nana**	**34.87**	**128**	LR	LR	13 39 04.2	
	comp=Z,108nm,21.6s,baz=318,slow=30						
J38A	**Wedel Dairy, R**	**34.99**	**15**	P	**P**	**13 28 06.9**	**-1.2**
	baz=200						
M04C	**Macdoel**	**35.40**	**337**	P	**P**	**13 28 11.8**	**0.0**
	baz=149						
G26A	**Maurine**	**35.42**	**2**	P	**P**	**13 28 12.3**	**+0.5**
	baz=183						
I38A	**Scanlan Farm,**	**35.70**	**15**	P	**P**	**13 28 12.5**	**-1.7**
	baz=200						
EGMT	**Eagleton**	**38.39**	**354**	P	**P**	**13 28 38.5**	**+1.4**
	baz=171						
EGMT	**Eagleton**	**38.39**	**354**	*e*P	**P**	**13 28 38.3**	**+1.2**
	14nm,1.4s						
DGMT	**Dagmar**	**38.57**	**0**	P	**P**	**13 28 38.4**	**-0.1**
	baz=180						
DGMT	**Dagmar**	**38.57**	**0**	*e*P	**P**	**13 28 39.4**	**+0.9**
	19nm,1.3s						
D37A	**Cotton**	**38.61**	**13**	P	**P**	**13 28 38.2**	**-0.6**
	baz=199						
AGMN	**Agassiz Nation**	**39.06**	**9**	*e*P	**P**	**13 28 43.0**	**+0.4**
	12nm,1.1s						
C36A	**Pine Crest Far**	**39.09**	**12**	P	**P**	**13 28 42.3**	**-0.6**
	baz=198						
B35A	**Bob, Littlefor**	**39.49**	**11**	P	**P**	**13 28 45.6**	**-0.6**
	baz=196						
EYMN	**Ely**	**39.57**	**14**	P	**P**	**13 28 45.7**	**-1.1**
	baz=200						
EYMN	**Ely**	**39.57**	**14**	*e*P	**P**	**13 28 45.8**	**-1.1**
	9.4nm,1.1s						
A33A	**Warroad**	**39.76**	**9**	P	**P**	**13 28 47.8**	**-0.6**
	baz=194						
C39A	**Grand Marais**	**39.78**	**15**	P	**P**	**13 28 47.2**	**-1.4**
	baz=202						
TAOE

couple: $M_{0}1.69000\times10^{14}$ NP1:$\phi_{s}171.00000°$,$\delta21.00000°$, $\lambda22.00000°$. NP2:$\phi_{s}60.00000°$,$\delta82.00000°$,$\lambda109.00000°$.

JMA 12 13:25:59.2, 37.05N×140.67E, h12km±1km, M3.7, 3C-3D Broadband fault plane solution: P waves. NP1: $\phi_{s}260.00000°$,$\delta75.00000°$,$\lambda-135.00000°$. **NP2:** $\phi_{s}156.00000°$,$\delta47.00000°$,$\lambda-21.00000°$. **Principal axes:** T Plg17.0000°, Azm22.0000°; N Plg43.0000°, Azm275.0000°; P Plg42.0000°, Azm128.0000°; **Eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.12**	**63**	⇑P	Pg	13 26 02.3	0.0
ONAJ				S	Sg	13 26 04.7	+0.1
JHO	**Hitachi**	**0.45**	**191**	⇑P	Pg	13 26 07.9	-0.1
JHO				eS	Sg	13 26 14.1	+0.2
JFT	**Otama**	**0.54**	**330**	⇓P	Pg	13 26 09.8	+0.1
JFT				S	Sg	13 26 16.9	0.0
JSB	**Shiboa**	**0.61**	**262**	⇓P	Pb	13 26 11.6	-0.2
JSB				S	Sb	13 26 19.8	-0.5
JMM	**Marumori**	**0.82**	**7**	⇑P	Pg	13 26 14.3	-0.8
JMM				S	Sg	13 26 25.3	-0.5
JFY	**Yanaizu**	**0.85**	**295**	⇓P	Pg	13 26 15.2	-0.4
JFY				S	Sg	13 26 26.1	-0.6
MAT	**Matsushiro**	**2.04**	**256**	P	Pn	13 26 28.5	-4.9
MAT				S	Sn	13 26 35.2	-24

ISCJB 12 13:29:48.2±0.9, 39.38N±0.06×143.84E±0.08, h11km, mb3.5/9 Error ellipse: s-maj=9.7km s-min=8.1km az=142.4
JMA 12 13:29:48.5±0.2, 39.38N×143.81E, h12km±4km, M3.9
IDC 12 13:29:52.8±0.9, 38.89N×142.63E, h0km, mb3.6/9, mb1 3.7/10, mb1mx3.6/40, mbtmp3.5/10, ML1.6/1, Error ellipse: s-maj=24.3km s-min=20.4km az=97.0

ISC 12 13:29:50.4±1.3, 39.41N±0.08×143.72E±0.09, h11km, n26, σ0.88/20, mb3.6/9, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MIYJ	**Miyakonagasawa**	**1.48**	**277**	P	**Pn**	**13 30 16.2**	**-0.8**
MIYJ				eS	**Sn**	**13 30 35.6**	**-0.7**
JTH	**Tanohata**	**1.52**	**291**	P	**Pn**	**13 30 17.0**	**-0.6**
OFUJ	**Ofunato**	**1.63**	**259**	P	**Pn**	**13 30 18.1**	**-0.9**
JOM	**Ohasama**	**1.88**	**273**	P	**Pn**	**13 30 22.3**	**-0.2**
JOM				eS	**Sb**	**13 30 47.5**	**-0.7**
JMK	**Ichinoseki**	**2.00**	**257**	P	**Pn**	**13 30 23.6**	**-0.5**
JRG	**Rokugo**	**2.39**	**271**	P	**Pn**	**13 30 30.0**	**+0.5**
JTM	**Tenmabayashi**	**2.45**	**305**	P	**Pn**	**13 30 30.5**	**+0.1**
JAH	**Hinai**	**2.50**	**289**	P	**Pn**	**13 30 31.0**	**0.0**
JYK	**Kaneyama**	**2.66**	**260**	P	**Pn**	**13 30 33.5**	**+0.3**
JYK				S	**Sn**	**13 31 06.8**	**+1.4**
JNBK	**Urakawa-nobuka**	**2.96**	**346**	P	**Pn**	**13 30 36.9**	**-0.4**
JNBK				eS	**Sn**	**13 31 13.0**	**+0.2**
USRK	**Ussuriysk Ar.**	**9.98**	**302**	Pn	**Pn**	**13 32 11.9**	**-1.8**
	0.1nm,0.3s,baz=106,slow=14,SNR=2.1						
SEY	**Seymchan**	**24.13**	**10**	P	P	13 35 14.5	+8.5
	1.2nm,0.6s,baz=193,slow=12,SNR=7.2						
H11N2	**WAKE ISLAND Hy**	**27.98**	**128**	T	T	14 05 53.1	
	baz=313,slow=75,SNR=9.5						
H11N1	**WAKE ISLAND Hy**	**28.00**	**128**	T	T	14 05 53.6	
	baz=313,slow=75,SNR=13						
H11N3	**WAKE ISLAND Hy**	**29.00**	**128**	T	T	14 05 54.4	
	baz=313,slow=75,SNR=11						
SONM	**Songino Array**	**28.07**	**300**	P	**P**	**13 35 43.1**	**+1.1**
	0.5nm,0.7s,baz=80,slow=9.0,SNR=4.3						
H11S1	**WAKE ISLAND Hy**	**28.80**	**130**	T	T	14 06 47.3	
	baz=314,slow=76,SNR=14						
H11S3	**WAKE ISLAND Hy**	**28.80**	**130**	T	T	14 06 46.4	
	baz=314,slow=76,SNR=11						
H11S2	**WAKE ISLAND Hy**	**28.82**	**130**	T	T	14 06 47.1	
	baz=314,slow=76,SNR=14						
ZALV	**Zalesovo Beam**	**41.70**	**310**	P	**P**	**13 37 39.6**	**+0.6**
	1.2nm,0.5s,baz=77,slow=7.8,SNR=4.5						
MKAR	**Makanchi Array**	**44.44**	**300**	P	**P**	**13 38 01.9**	**+0.6**
	0.8nm,0.8s,baz=83,slow=10.0,SNR=5.7						
ILAR	**Eielson Array**	**46.51**	**34**	P	P	13 38 28.0	+11
	0.4nm,0.6s,baz=261,slow=6.6,SNR=6.0						
WRA	**Warramunga Arr**	**59.69**	**190**	P	**P**	**13 39 53.4**	**-1.5**
	0.5nm,0.7s,baz=6.7,slow=7.3,SNR=4.9						
YKA	**Yellowknife Ar**	**60.84**	**31**	P	P	13 40 12.6	+10
	0.2nm,0.6s,baz=302,slow=6.6,SNR=4.7						
ASAR	**Alice Springs**	**63.42**	**190**	P	**P**	**13 40 20.1**	**0.0**
	0.3nm,0.8s,baz=16,slow=4.0,SNR=4.0						
NVAR	**Mina Array Bea**	**72.12**	**55**	P	P	13 41 27.2	+12
	0.3nm,0.7s,baz=273,slow=7.5,SNR=3.7						

JMA 12 13:30:08.6, 37.01N×140.67E, h10km±1km, M3.5, 3C, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.14**	**48**	⇑P	Pg	13 30 11.9	+0.1
ONAJ				S	Sg	13 30 14.1	0.0
JHO	**Hitachi**	**0.41**	**192**	⇑P	Pg	13 30 16.5	-0.1
JHO				S	Sg	13 30 22.4	+0.4
JFT	**Otama**	**0.57**	**332**	P	Pg	13 30 19.9	+0.2
JFT				S	Sg	13 30 27.2	-0.1
JSB	**Shiboa**	**0.60**	**266**	P	Pb	13 30 20.9	-0.3
JSB				S	Sb	13 30 29.1	-0.7
JMM	**Marumori**	**0.86**	**6**	⇑P	Pg	13 30 24.0	-0.8
JMM				S	Sg	13 30 36.0	-0.4
JFY	**Yanaizu**	**0.87**	**297**	P	Pg	13 30 25.0	-0.3
JFY				S	Sg	13 30 36.2	-0.4
MAT	**Matsushiro**	**2.03**	**257**	P	Pn	13 30 43.9	+1.0
MAT				S	Sb	13 31 09.7	-1.3

ISCJB 12 13:31:04.5±0.7, 17.20S±0.06×72.24W±0.06, h66km, mb3.6/2, Error ellipse: s-maj=10.7km s-min=5.0km az=139.7
GUC 12 13:31:08.2±0.3, 17.29S×71.81W, h132km±24km, ML4.7
IDC 12 13:31:09.6±4.3, 16.79S×72.03W, h100km±24km, mb3.5/2, mb1 3.7/5, mb1mx3.4/33, mbtmp4.0/5, Error ellipse: s-maj=66.4km s-min=13.3km az=19.0

ISC 12 13:31:05.5±0.9, 17.18S±0.07×72.18W±0.08, h66km, n11, σ1.45/19, 1C-5D, Near coast of Peru

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PB13	**IPOC Station P**	**2.80**	**115**	⇑*i*P	**Pn**	**13 31 50.0**	**+1.5**
PB13				*i* S	**Sn**	**13 32 21.5**	**0.0**
PB13				IAML		13 32 23.6	
	comp=E,4μm,0.3s						
PSGC	**Pisagua**	**3.10**	**141**	⇓*i*P	**Pn**	**13 31 53.6**	**+1.4**
PSGC				*i* S	**Sn**	**13 32 28.3**	**+0.1**
PB11	**IPOC Station P**	**3.52**	**137**	⇓*i*P	**Pn**	**13 31 59.1**	**+1.3**
PB11				*i* S	**Sn**	**13 32 38.0**	**-0.3**
HMBC	**Humberstone**	**3.77**	**145**	⇓*i*P	**Pn**	**13 32 03.0**	**+1.6**
HMBC				*i* S	**Sn**	**13 32 44.8**	**+0.1**
LPAZ	**La Paz**	**3.98**	**78**	P	**Pn**	**13 32 06.8**	**+2.2**
	comp=E,4.5nm,0.3s,baz=268,slow=9.4,SNR=101						
LPAZ				S	**Sn**	**13 32 50.8**	**+0.4**
	comp=E,1.4nm,0.3s,baz=114,slow=21,SNR=6.6						
PB08	**IPOC Station P**	**4.12**	**136**	⇓*i*P	**Pn**	**13 32 07.8**	**+1.5**
PB08				*i* S	**Sn**	**13 32 53.1**	**-0.2**
PB08				IAML		13 32 55.7	
	comp=E,279nm,0.2s						
PB01	**IPOC Station P**	**4.61**	**147**	⇓*i*P	**Pn**	**13 32 14.2**	**+1.4**
PB01				*i* S	**Sn**	**13 33 04.2**	**-1.0**
PB01				IAML		13 33 06.6	
	comp=N,331nm,0.3s						
NNA	**Nana**	**6.85**	**318**	P	**Pn**	**13 32 45.4**	**+1.9**
	comp=N,1.7nm,0.3s,baz=313,slow=6.4,SNR=4.1						
NNA				S	**Sn**	**13 33 59.4**	**-0.7**
	comp=N,1.5nm,0.3s,baz=256,slow=19,SNR=2.0						
PTGA	**Pitinga**	**20.29**	**38**	P	**P**	**13 35 33.5**	**-2.5**
	comp=N,1.8nm,0.3s,baz=218,slow=12,SNR=8.9						
TORD	**Torodi Ar. Bea**	**78.91**	**72**	P	**P**	**13 43 00.4**	**-2.1**
	comp=N,0.9nm,0.6s,baz=253,slow=4.6,SNR=7.4						
YKA	**Yellowknife Ar**	**86.12**	**342**	P	**P**	**13 43 38.6**	**-0.3**
	comp=N,0.2nm,0.5s,baz=134,slow=5.1,SNR=7.2						

IDC 12 14:01:38.8±1.6, 37.12N×140.65E, h0km, mb3.4/3, mb1 3.6/3, mb1mx3.2/48, mbtmp3.4/3, Error ellipse: s-maj=29.0km s-min=18.6km az=177.0
ISCJB 12 14:01:39.7±1.9, 37.03N±0.03×140.74E±0.05, h14km±14km, mb3.4/3, Error ellipse: s-maj=7.4km s-min=5.0km az=27.3

JMA 12 14:01:40.0, 37.04N×140.67E, h6km±1km, M3.3
ISC 12 14:01:39.5±1.2, 37.08N±0.05×140.61E±0.04, h4km±11km, n18, σ0.55/20, mb3.4/3, 2C, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.15**	**82**	P	**Pg**	**14 01 42.9**	**+0.3**
ONAJ				S	**Sg**	**14 01 44.8**	**+0.1**
JHO	**Hitachi**	**0.47**	**184**	⇑P	**Pg**	**14 01 48.5**	**-0.1**
JHO				S	**Sg**	**14 01 54.6**	**0.0**
JFT	**Otama**	**0.49**	**334**	⇑P	**Pb**	**14 01 50.8**	**+0.1**
JFT				S	**Sb**	**14 01 58.3**	**+0.1**
JSB	**Shiboa**	**0.56**	**259**	P	**Pb**	**14 01 52.6**	**+0.6**
JSB				S	**Sb**	**14 02 00.5**	**+0.2**
JFY	**Yanaizu**	**0.79**	**295**	P	**Pb**	**14 01 56.4**	**+0.5**
JFY				S	**Sb**	**14 02 07.5**	**+0.6**
JMM	**Marumori**	**0.80**	**11**	P	**Pb**	**14 01 55.5**	**-0.5**
JMM				S	**Sb**	**14 02 06.5**	**-0.6**
JKT	**Katashina**	**1.13**	**254**	P	**Pn**	**14 02 02.6**	**+0.4**
JAG	**Ashikaga**	**1.13**	**235**	P	**Pg**	**14 02 01.3**	**0.0**
MJAR	**Matsushiro Arr**	**2.00**	**255**	Pg	**Pb**	**14 02 15.4**	**-1.1**
	6.2nm,0.3s,baz=77,slow=15,SNR=21						
MJAR				Lg	Lg	14 02 43.2	
	5.8nm,0.3s,baz=91,slow=28,SNR=12						
MAT	**Matsushiro**	**2.00**	**255**	P	**Pb**	**14 02 15.8**	**-0.7**
MAT				S	**Sg**	**14 02 43.1**	**-0.7**
H11N1	**WAKE ISLAND Hy**	**28.73**	**120**	T	T	14 37 23.2	
	baz=312,slow=74,SNR=13						
H11N3	**WAKE ISLAND Hy**	**28.75**	**120**	T	T	14 37 26.0	
	baz=201,slow=74,SNR=10.0						
H11S1	**WAKE ISLAND Hy**	**29.43**	**122**	T	T	14 38 17.3	
	baz=314,slow=75,SNR=15						
H11S3	**WAKE ISLAND Hy**	**29.43**	**122**	T	T	14 38 19.9	
	baz=314,slow=75,SNR=10						
H11S2	**WAKE ISLAND Hy**	**29.44**	**122**	T	T	14 38 17.8	
	baz=314,slow=75,SNR=10.0						
ZALV	**Zalesovo Beam**	**41.41**	**312**	P	**P**	**14 09 26.4**	**-0.4**
	0.7nm,0.5s,baz=85,slow=7.8,SNR=5.2						
WRA	**Warramunga Arr**	**57.02**	**187**	P	**P**	**14 11 26.2**	**-0.3**
	0.2nm,0.5s,baz=2.8,slow=7.1,SNR=6.8						
ASAR	**Alice Springs**	**60.75**	**187**	P	**P**	**14 11 53.2**	**+0.8**
	0.2nm,0.8s,baz=15,slow=11,SNR=3.1						

NIED 12 14:03:00, 45.40N×151.00E, h32km, Mw4.1 Best double couple: $M_{0}1.60000\times10^{15}$ NP1:$\phi_{s}127.00000°$,$\delta75.00000°$, $\lambda3.00000°$. NP2:$\phi_{s}36.00000°$,$\delta88.00000°$,$\lambda165.00000°$.
JMA 12 14:03:37.8±0.5, 45.42N×150.99E, h30km, M4.8
ISCJB 12 14:03:39.6±0.3, 45.32N±0.04×150.71E±0.04, h42km, mb4.1/38, MS3.7/3, Error ellipse: s-maj=6.2km s-min=2.9km az=143.0
SKHL 12 14:03:39.2±0.8, 45.26N×150.95E, h48km±5km, mb4.9/7
MOS 12 14:03:39.1±1.6, 45.26N×150.91E, h45km, mb4.3/20, Error ellipse: s-maj=8.9km s-min=6.3km az=103.4
BJI 12 14:03:41.9, 45.28N×150.74E, h69km, mb4.3/15, mB4.9/11, Ms4.6/4, Ms7 4.3/3
IDC 12 14:03:42.1±2.7, 45.40N×150.72E, h49km±24km, mb3.7/21, mb1 3.9/26, mb1mx3.8/53, mbtmp3.9/26, ML3.1/4, MS3.3/6, Ms1 3.3/6, ms1mx2.9/37, Error ellipse: s-maj=18.6km s-min=13.7km az=150.0
NEIC 12 14:03:43.8±1.0, 45.22N×150.75E, h75km±8km, mb4.6/8, Error ellipse: s-maj=18.2km s-min=7.7km az=132.0

ISC 12 14:03:40.8±0.5, 45.28N±0.06×150.81E±0.06, h42km, n136, σ1.31/147, mb4.1/38, MS3.5/3, 7C-3D, Kuril Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
KUR	**Kuril'sk**	**2.08**	**270**	*e*P	**Pn**	**14 04 12.8**	**-0.3**
KUR				AMB	AMB	14 04 14.7	
	100nm,0.3s						
KUR				*e*S	**Sn**	**14 04 37.8**	**0.0**
KUR				A	A	14 04 41.7	
	200nm,0.2s						
KUR				A	A	14 04 41.7	
	1μm,0.2s						
KUR	**Kuril'sk**	**2.08**	**270**	*c i*PN	**Pn**	**14 04 12.9**	**-0.2**
KUR				*i* S	**Sn**	**14 04 39.6**	**+1.8**
KUR				pmax	pmax		
	comp=Z,189nm,0.2s						
KUR				pmax	pmax		
	comp=N,128nm,0.1s						
KUR				pmax	pmax		
	comp=E,106nm,0.2s						
KUR				smax	smax		
	comp=N,1μm,0.3s						
KUR				smax	smax		
	comp=E,520nm,0.3s						
SHO	**Shikotan**	**3.17**	**245**	*e*P	**Pn**	**14 04 27.4**	**-0.8**
SHO				AMB	AMB	14 04 30.2	
	comp=E,220nm,0.4s						
SHO				*e*S	**Sn**	**14 05 04.3**	**-0.5**
SHO				A	A	14 05 18.3	
	comp=E,590nm,0.4s						
SHO				A	A	14 05 18.3	
	comp=E,917nm,0.4s						
SHO	**Shikotan**	**3.17**	**245**	*c i*PN	**Pn**	**14 04 27.2**	**-1.0**
SHO				*i* S	**Sn**	**14 05 06.1**	**+1.3**
SHO				pmax	pmax		
	comp=Z,215nm,0.4s						
SHO				pmax	pmax		
	comp=N,58nm,0.3s						
SHO				pmax	pmax		
	comp=E,96nm,0.4s						
SHO				smax	smax		
	comp=N,525nm,0.4s						
SHO				smax	smax		
	comp=E,917nm,0.5s						
YUK	**Yuzh-Kuril'sk**	**3.75**	**252**	*e*P	**Pn**	**14 04 36.2**	**+0.2**
YUK				AMB	AMB	14 04 44.2	
YUK				AMB	AMB	14 04 44.2	
	comp=E,100nm,0.3s						
YUK				AMB	AMB	14 04 44.2	
	comp=E,110nm,0.3s						
YUK				AMB	AMB	14 04 44.2	
	comp=E,300nm,0.3s						
YUK				*i* S	**Sn**	**14 05 18.5**	**-0.3**
YUK				A	A	14 05 34.9	
	comp=E,350nm,0.4s						
YUK				A	A	14 05 34.9	
	comp=E,710nm,0.4s						
YUK	**Yuzh-Kuril'sk**	**3.75**	**252**	*e*PN	**Pn**	**14 04 36.2**	**+0.2**
YUK				*i* S	**Sn**	**14 05 20.8**	**+2.0**
YUK				pmax	pmax		
	comp=N,96nm,0.3s						
YUK				pmax	pmax		
	comp=Z,301nm,0.3s						
YUK				pmax	pmax		
	comp=E,107nm,0.2s						
YUK				smax	smax		
	comp=E,710nm,0.4s						
YUK				smax	smax		
	comp=N,345nm,0.3s						
NEM2	**Nemuro 2**	**4.11**	**244**	P	**Pn**	**14 04 39.9**	**-1.1**
NEM2				eS	**Sn**	**14 05 26.6**	**-1.2**
JRA	**Rausu**	**4.28**	**254**	P	**Pn**	**14 04 44.6**	**+1.3**
JRA				eS	**Sn**	**14 05 34.6**	**+2.7**
JNK	**Nakash**	**4.68**	**251**	P	**Pn**	**14 04 49.6**	**+0.7**
JNK				eS	**Sn**	**14 05 42.0**	**+0.1**
JAK	**Akkeshi**	**4.96**	**245**	P	**Pn**	**14 04 51.7**	**-0.9**
JAK				eS	**Sn**	**14 05 46.0**	**-2.7**
JTKR	**Abashiri--Toko**	**5.10**	**258**	P	**Pn**	**14 04 56.1**	**+1.5**
JAR	**Ashorobuto**	**5.43**	**251**	P	**Pn**	**14 05 00.6**	**+1.5**
JAR				eS	**Sn**	**14 06 00.8**	**+0.5**
JMP	**Maruseppu**	**5.47**	**259**	P	**Pn**	**14 05 01.8**	**+2.1**
JOB	**Onbets**	**5.56**	**247**	P	**Pn**	**14 05 00.9**	**0.0**
JOB				eS	**Sn**	**14 06 02.4**	**-1.0**
HRK	**Horoka**	**5.80**	**255**	*e*P	**Pn**	**14 05 06.7**	**+2.4**
YSS	**Yuzh-Sakhalins**	**5.85**	**290**	*e*P	**Pn**	**14 05 05.9**	**+1.1**
YSS				eS	**Sn**	**14 06 10.7**	**+0.1**
YSS	**Yuzh-Sakhalins**	**5.85**	**290**	*e*PN	Pn	14 05 11.1	+6.3
YSS				pmax	pmax		
	comp=Z,10.0nm,0.9s						
YSS				MLR	MLR		
	comp=Z,300nm,12.0s						
YSS				MLR	MLR		
	comp=E,200nm,14.0s						
YSS	**Yuzh-Sakhalins**	**5.85**	**290**	*e*Pn	Pn	14 05 08.0	+3.2
JKK2	**Kamakawa 2**	**5.93**	**259**	P	**Pn**	**14 05 09.0**	**+3.0**
ASAJ	**Asahikawa**	**5.97**	**262**	P	Pn	14 05 09.9	+3.3
JCH	**Churui**	**6.00**	**246**	P	**Pn**	**14 05 06.3**	**-0.7**
JCH				eS	**Sn**	**14 06 12.1**	**-2.3**
MYR	**Moyori**	**6.21**	**244**	*e*P	**Pn**	**14 05 09.8**	**-0.1**
MYR				eS	**Sn**	**14 06 18.0**	**-1.6**
JFR	**Furan**	**6.27**	**253**	P	**Pn**	**14 05 13.2**	**+2.5**
ERM	**Erimo**	**6.44**	**242**	*c i*PN	**Pn**	**14 05 14.7**	**+1.7**
ERM	**Erimo**	**6.44**	**242**	*e*Pn	**Pn**	**14 05 14.3**	**+1.3**
SKR	**Severo-Kuril's**	**6.47**	**31**	*e*P	**Pn**	**14 05 11.1**	**-2.3**
SKR				AMB	AMB	14 05 12.5	
	comp=E,80nm,0.5s						
SKR				*e*S	**Sn**	**14 06 22.0**	**-3.9**
SKR				A	A	14 06 30.5	
	comp=E,80nm,0.5s						
SKR				A	A	14 06 30.5	
	comp=E,70nm,0.5s						
SKR	**Severo-Kuril's**	**6.47**	**31**	*e*PN	**Pn**	**14 05 10.5**	**-2.9**
SKR				pmax	pmax		
	comp=Z,80nm,0.5s						
JNBK	**Urakawa-nobuka**	**6.56**	**246**	P	**Pn**	**14 05 13.8**	**-0.8**
JBT2	**Biratori 2**	**6.58**	**251**	P	**Pn**	**14 05 15.0**	**0.0**
UGL	**Uglegorsk**	**7.07**	**306**	*e*P	**Pn**	**14 05 23.0**	**+1.4**
UGL				AMB	AMB	14 05 25.5	
	comp=Z,80nm,0.6s						
UGL				*e*S	**Sn**	**14 06 40.3**	**-0.2**
UGL	**Uglegorsk**	**7.07**	**306**	PN	Pn	14 05 26.5	+4.9
UGL				pmax	pmax		
	comp=Z,24nm,0.6s						
UGL				MLR	MLR		
	comp=Z,300nm,16.0s						
UGL				MLR	MLR		
	comp=E,200nm,15.0s						
JEW	**Eniwo**	**7.17**	**253**	P	**Pn**	**14 05 25.4**	**+2.4**
PAU	**Pauzhetka**	**7.37**	**31**	*e*P	**Pn**	**14 05 25.9**	**+0.2**
PAU				AMB	AMB	14 05 27.8	
	comp=E,80nm,0.7s						
PAU				*e*S	**Sn**	**14 06 44.9**	**-3.0**
PAU				A	A	14 06 50.7	
	comp=E,220nm,1.0s						
PAU				A	A	14 06 50.7	
	comp=E,320nm,1.0s						
JNB	**Noboribetsu**	**7.60**	**252**	P	**Pn**	**14 05 30.3**	**+1.4**
JNB				eS	**Sn**	**14 06 52.5**	**-1.2**
TYV	**Tymovskoe**	**7.81**	**319**	*e*P	**Pn**	**14 05 32.5**	**+0.7**
TYV				eS	**Sn**	**14 06 57.3**	**-1.5**
TYV	**Tymovskoe**	**7.81**	**319**	*e*PN	Pn	14 05 36.8	+5.0
TYV				pmax	pmax		
	comp=Z,11nm,0.8s						
JKB	**Kayabe**	**7.87**	**248**	P	**Pn**	**14 05 32.0**	**-0.5**
JKB				eS	**Sn**	**14 06 55.5**	**-4.7**
JYM2	**Yakumo 2**	**8.20**	**251**	P	**Pn**	**14 05 37.5**	**+0.4**
JTM	**Tenmabayashi**	**8.43**	**241**	P	**Pn**	**14 05 38.6**	**-1.7**
PEA0	**Petropavlovsk-**	**9.04**	**27**	*e*Pn	Pn	14 05 52.8	+4.3
PEA0B	**Petropavlovsk-**	**9.04**	**27**	*e*Pn	Pn	14 05 52.1	+3.6
PETK	**Petropavlovsk-**	**9.04**	**27**	P	**Pn**	**14 05 49.2**	**+0.7**
	comp=Z,1.0nm,0.3s,baz=201,slow=13,SNR=12						
PETK				LR	LR	14 09 23.7	
	comp=Z,103nm,18.8s,baz=210,slow=38						
NKL	**Nikolayevsk**	**10.29**	**324**	*e*P	**Pn**	**14 06 07.8**	**+2.2**
NKL	**Nikolayevsk**	**10.29**	**324**	*e*PN	**Pn**	**14 06 08.0**	**+2.4**
HABR	**Khabarovsk**	**11.25**	**292**	PN	**Pn**	**14 06 18.7**	**-0.2**
HABR				pmax	pmax		
	comp=E,10.0nm,1.5s						
HABR				pmax	pmax		
	comp=N,3.0nm,0.7s						
HABR				pmax	pmax		
	comp=Z,14nm,1.5s						
HABR				MLR	MLR		
	comp=Z,48nm,12.0s						
MJAR	**Matsushiro Arr**	**12.91**	**232**	LR	LR	14 12 08.4	
	comp=Z,76nm,21.2s,baz=80,slow=39						
USRK	**Ussuriysk Ar.**	**13.43**	**272**	P	**Pn**	**14 06 47.9**	**-0.7**
	comp=Z,0.2nm,0.3s,baz=76,slow=14,SNR=4.4						
KLR	**Kul'dur**	**13.53**	**294**	LR	LR	14 12 22.0	
	comp=Z,126nm,18.1s,baz=116,slow=39						
EKMR	**Ekimchan**	**14.02**	**310**	*e*P	**Pn**	**14 06 56.1**	**-0.5**
MA2	**Magadan**	**14.32**	**360**	P	**Pn**	**14 07 00.9**	**+0.3**
	comp=Z,0.4nm,0.3s,baz=190,slow=18,SNR=4.1						
JHJ2	**Mitsune**	**14.82**	**219**	*e*P	**Pn**	**14 07 08.5**	**+1.0**
BMKR	**Bomnak**	**16.93**	**312**	*e*P	**Pn**	**14 07 33.5**	**-0.8**
ZEA	**Zeya**	**17.42**	**308**	*e*P	**Pn**	**14 07 38.4**	**-2.1**
ZEA				AMB	AMB	14 07 45.0	
	comp=Z,10.0nm,1.0s						
ZEA				AMB	AMB	14 07 45.0	
	comp=Z,20nm,1.0s						
SEY	**Seymchan**	**17.71**	**2**	P	**Pn**	**14 07 43.9**	**-0.1**
	comp=Z,0.2nm,0.3s,baz=174,slow=9.2,SNR=14						
KSRS	**Korea Array**	**18.83**	**254**	P	**Pn**	**14 07 58.0**	**+0.2**
	comp=Z,0.1nm,0.3s,baz=55,slow=12,SNR=3.0						
KSRS	**Korea Array**	**18.83**	**254**	P	Pn	14 07 58.0	+0.2
JCJ	**Chichijima**	**19.41**	**204**	LR	LR	14 13 37.6	
	comp=Z,128nm,21.9s,baz=49,slow=30						
YAK	**Yakutsk**	**20.77**	**331**	P	**P**	**14 08 17.5**	**-0.3**
	comp=Z,23nm,0.9s,baz=18,slow=4.4,SNR=5.9						
YAK	**Yakutsk**	**20.77**	**331**	*e*P	**P**	**14 08 18.6**	**+0.8**
YAK	**Yakutsk**	**20.77**	**331**	*e*P	**P**	**14 08 18.6**	**+0.8**
YAK				pmax	pmax		
	comp=Z,7.0nm,0.8s						
YAK	**Yakutsk**	**20.77**	**331**	*e*P	**P**	**14 08 18.4**	**+0.6**
	comp=Z,54nm,0.8s						
BILL	**Bilibino**	**24.20**	**14**	*e*P	**P**	**14 08 53.7**	**+0.7**
BILL	**Bilibino**	**24.20**	**14**	*e*P	**P**	**14 08 53.7**	**+0.7**
BILL				pmax	pmax		
	comp=Z,2.0nm,1.0s						
NJ2	**Nanjing**	**28.03**	**253**	*e*P	**P**	**14 09 28.6**	**+0.7**
NJ2				pmax	pmax		
	comp=Z,11nm,0.6s						
TIXI	**Tiksi**	**28.46**	**346**	P	**P**	**14 09 29.6**	**-1.7**
	comp=Z,1.0nm,0.4s,baz=129,slow=6.2,SNR=6.5						
TIXI	**Tiksi**	**28.46**	**346**	*e*P	**P**	**14 09 31.8**	**+0.5**
TIXI	**Tiksi**	**28.46**	**346**	⇓*e*P	**P**	**14 09 31.8**	**+0.5**
TIXI				pmax	pmax		
	comp=Z,2.0nm,0.8s						
TIXI	**Tiksi**	**28.46**	**346**	*e*P	**P**	**14 09 30.0**	**-1.3**
	comp=Z,2.0nm,0.8s						
H11N2	**WAKE ISLAND Hy**	**28.75**	**147**	T	T	14 40 26.8	
	baz=

comp=Z,0.5nm,0.6s,baz=62,slow=3.9,SNR=3.5
MKAR LR LR 14 32 31.5
comp=Z,41nm,20.5s,baz=22,slow=38
MKAR Makanchi Array 46.20 298 *e*P **P 14 12 01.8 +0.5**
KURK Kurchatov 46.85 304 *e*P **P 14 12 06.5 +0.2**
KURK Kurchatov 46.85 304 P **P 14 12 06.5 +0.2**
KURK pmax pmax
comp=Z,2.0nm,0.4s
KURK Kurchatov 46.85 304 P **P 14 12 06.5 +0.2**
comp=Z,2.0nm,0.4s
RES Resolute Bay 52.73 18 P **P 14 12 50.4 -0.3**
comp=Z,1.4nm,0.5s,baz=172,slow=2.8,SNR=12
RES Resolute Bay 52.73 18 *e*P **P 14 12 50.4 -0.3**
comp=Z,3.7nm,1.1s
AAK Ala-Archa 53.05 296⇑ *e*P **P 14 12 52.9 -0.8**
AAK pmax pmax
comp=Z,4.0nm,0.9s
YKA Yellowknife Ar 53.06 35 P **P 14 12 53.5 +0.3**
comp=Z,0.5nm,0.6s,baz=298,slow=7.0,SNR=6.0
YKA Yellowknife Ar 53.06 35 *e*P **P 14 12 53.8 +0.6**
ARU Arti 55.01 317 *e*P **P 14 13 08.4 +0.8**
ARU Arti 55.01 317 *d i*P **P 14 13 08.4 +0.8**
ARU 14 15 10.7
ARU S **S 14 20 48.5 +2.1**
ARU SS **SS 14 24 26.0 -3.8**
ARU pmax pmax
comp=Z,4.0nm,1.2s
ABKAR Akbulak array 58.13 310 *e*P **P 14 13 29.3 -0.6**
ARCES ARCESS Array B 58.71 340 P **P 14 13 32.6 -1.0**
comp=Z,1.6nm,0.8s,baz=56,slow=8.8,SNR=3.0
SUMG Summit 62.27 3 *i*P **P 14 13 58.4 +0.1**
comp=Z,10nm,0.8s
SUMG Summit 62.27 3 *i*P **P 14 13 58.4 +0.1**
SUMG pmax pmax
comp=Z,10.0nm,0.8s
SUMG Summit 62.27 3 *e*P **P 14 13 57.9 -0.4**
comp=Z,10nm,0.8s
NVAR Mina Array Bea 64.55 60 P **P 14 14 14.5 +0.9**
comp=Z,0.3nm,0.7s,baz=291,slow=5.6,SNR=2.9
FINES FINESS Array B 64.68 334 P **P 14 14 12.3 -1.5**
comp=Z,1.1nm,0.6s,baz=17,slow=8.0,SNR=8.2
GEYT Alibeck 65.97 300 P **P 14 14 23.3 +0.6**
comp=Z,1.8nm,0.5s,baz=25,slow=4.9,SNR=4.5
WRA Warramunga Arr 66.62 197 P **P 14 14 26.7 -0.1**
comp=Z,1.1nm,1.1s,baz=13,slow=6.6,SNR=3.4
PDAR Pinedale Array 66.91 52 P **P 14 14 29.6 +0.7**
comp=Z,0.3nm,0.6s,baz=321,slow=1.9,SNR=4.3
NB2 NORSAR Subarra 69.09 340 P **P 14 14 40.8 -1.2**
comp=Z,3.0nm,0.7s,baz=30,slow=6.5
NOA NORSAR Array B 69.09 340 P **P 14 14 40.7 -1.2**
comp=Z,1.9nm,0.5s,baz=29,slow=6.6,SNR=6.8
NOA NORSAR Array B 69.09 340 *e*P **P 14 14 41.7 -0.2**
NOA NORSAR Array B 69.09 340 *e*P **P 14 14 41.7 -0.2**
NOA pmax pmax
comp=Z,1.0nm,0.5s
ASAR Alice Springs 70.32 196 P **P 14 14 52.1 +2.3**
comp=Z,0.8nm,1.0s,baz=23,slow=5.1,SNR=4.1
KIV Kislovodsk 70.66 313 *e*P **P 14 14 51.2 -0.8**
KIV Kislovodsk 70.66 313 *e*P **P 14 14 51.2 -0.8**
KIV pmax pmax
comp=Z,12nm,1.1s
KBZ Khabaz 70.71 313 P **P 14 14 53.0 +0.9**
comp=Z,6.5nm,0.9s,baz=61,slow=2.5,SNR=15
KBZ Khabaz 70.71 313 P **P 14 14 53.0 +0.9**
KBZ pmax pmax
comp=Z,7.0nm,0.9s
AKASG Malin Array Be 71.86 325 P **P 14 14 58.4 -0.5**
comp=Z,1.2nm,0.4s,baz=38,slow=6.0,SNR=6.1
AKASG LR LR 14 47 18.3
comp=Z,22nm,18.4s,baz=290,slow=36
BUR08 Bucovina Ar. S 75.90 325 *e*P **P 14 15 22.7 -0.1**
DPC Dobruska-Polom 76.89 332 *e*P **P 14 15 29.6 +1.3**
DPC Dobruska-Polom 76.89 332 *e*P **P 14 15 29.6 +1.3**
MORC Moravsky Berou 76.97 331 *e*P **P 14 15 28.9 +0.2**
MORC pmax pmax
comp=Z,23nm,1.0s
MORC Moravsky Berou 76.97 331 *e*P **P 14 15 28.9 +0.2**
comp=Z,23nm,1.0s
CLL Collm 77.12 334 *e*P **P 14 15 29.3 -0.2**
CLL Collm 77.12 334⇑ *i*P **P 14 15 29.3 -0.2**
comp=Z,5.0nm,0.5s
CLL *e*P **sP 14 15 48.0 +1.2**
CLL *i* sP pP 14 15 55.9 +14
CLL Collm 77.12 334⇑ *i*P **P 14 15 29.3 -0.2**
CLL *e**PP **sP 14 15 48.0 +1.2**
CLL pmax pmax
comp=Z,8.0nm,0.5s
BRTR Keskin Array B 78.34 316 P **P 14 15 36.4 -0.3**
comp=Z,1.4nm,0.8s,baz=80,slow=2.9,SNR=6.1
BRTR Keskin Array B 78.34 316 *e*P **P 14 15 38.8 +2.1**
BRTR pmax pmax
comp=Z,1.0nm,0.7s
BR231 Keskin MP Arra 78.67 316 *e*P **P 14 15 37.3 -1.2**
KHC Kasperske Hory 78.84 333 *e*P **P 14 15 38.8 -0.4**
KHC Kasperske Hory 78.84 333 *e*P **P 14 15 38.2 -0.9**
KHC pmax pmax
comp=Z,2.0nm,0.8s
KHC Kasperske Hory 78.84 333 *e*P **P 14 15 38.2 -0.9**
comp=Z,1.9nm,0.8s
GERES GERESS Array B 79.05 333 P **P 14 15 40.1 -0.2**
comp=Z,1.3nm,0.5s,baz=32,slow=5.2,SNR=7.1
TXAR Lajitas Array 79.62 59 P **P 14 15 44.1 +0.3**
comp=Z,0.4nm,0.6s,baz=311,slow=6.0,SNR=4.4
VTS Vitosha 80.83 324 *e*P **P 14 15 50.6 +0.4**
VTS pmax pmax
comp=Z,9.0nm,1.1s
VTS Vitosha 80.83 324 *e*P **P 14 15 50.6 +0.4**
comp=Z,9.2nm,1.1s

NIED ***12*** *14:04:00,35.70N×141.00E,h5km,Mw3.7 Best double couple: M₀3.97000×10¹⁴ NP1:φ₉7.00000°,δ30.00000°, λ-57.00000°. NP2:φ₉150.00000°,δ65.00000°, λ-108.00000°.*

JMA 12 14:04:23.4±0.2,35.69N×140.96E,h8km±1km,M3.5,1C, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CHOJ	**Chosi**	**0.08**	**279**	⇑P	Pg	14 04 25.7	+0.2
CHOJ				S	Sg	14 04 27.5	+0.5
JCN	**Nagara**	**0.68**	**247**	P	Pb	14 04 37.3	-0.1
JCN				S	Sb	14 04 48.2	+1.3
KTR	**Katsuura**	**0.76**	**224**	P	Pg	14 04 38.2	+0.3
KTR				S	Sb	14 04 48.9	-0.3
JYT	**Yasato**	**0.82**	**311**	P	Pg	14 04 38.8	-0.4
JYT				S	Sg	14 04 49.7	-0.2
BSO3	**Boso 3**	**0.96**	**203**	P	Pg	14 04 41.9	+0.1
MAT	**Matsushiro**	**2.39**	**292**	P	Pn	14 05 02.2	-0.6
MAT				*e*S	Sn	14 05 30.2	-2.1

DJA 12 14:09:05.4±0.5,4°S±5°×12°9E±°,h177km±5km,M4.0/9, mb4.4/2,MLv3.8/9,Seram

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MSAI	**Masohi**	**0.20**	**340**	P	Pn	14 09 28.3	-0.7
MSAI				S	Sn	14 09 48.4	+1.2
BNDI	**Bandanaira**	**1.33**	**137**	P	Pn	14 09 35.5	0.0
BNDI				S	Sn	14 10 01.2	+2.4
SANI	**Sanana**	**3.35**	**296**	P	Pn	14 09 59.4	+1.1
KMPI	**Kaimana, Papua**	**4.70**	**92**	P	Pn	14 10 15.2	-0.2
SAUI	**Saumlaki**	**4.97**	**153**	P	Pn	14 10 17.7	-1.3
RKPI	**Ransiki, Papua**	**5.55**	**69**	P	Pn	14 10 26.2	-0.3
	118nm,0.9s,0.6nm						

ISK ***12*** *14:35:04.9,39.51N×33.33E,h4km,MD2.8*
ISCJB ***12*** *14:35:06.0±0.6,39.56N±0.04×33.28E±0.04,h5km±6km, Error ellipse: s-maj=7.5km s-min=5.2km az=158.5*
CSEM ***12*** *14:35:05.8±0.2,39.54N×33.28E,h5km,MD2.8,Error ellipse: s-maj=6.7km s-min=5.2km az=144.0*
DDA ***12*** *14:35:06.3,39.55N×33.27E,h7km,Md2.8*

ISC 12 14:35:05.7±1.2,39.52N±0.03×33.30E±0.03,h2km±13km, n31,σ0.58/38,Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
BBAL	**Bala**	**0.14**	**279**	*i*P	**Pg**	**14 35 07.7**	**-0.7**
BBAL				*i* S	**Sg**	**14 35 09.9**	**-0.3**
BBAL	**Bala**	**0.14**	**279**	P	**Pg**	**14 35 07.7**	**-0.7**
BBAL				S	**Sg**	**14 35 09.9**	**-0.3**
AFSR	**Af ar-Bala (A**	**0.19**	**247**	*e*PG	**Pg**	**14 35 09.7**	**+0.3**
AFSR				*e*SG	**Sg**	**14 35 13.2**	**+1.3**
AFSR	**Af ar-Bala (A**	**0.19**	**247**	*e*Pg	**Pg**	**14 35 09.7**	**+0.3**
AFSR				*e*Sg	**Sg**	**14 35 13.2**	**+1.3**
KKUL	**Konya-Kulu**	**0.46**	**220**	*i*P	**Pb**	**14 35 15.6**	**-1.0**
KKUL				*i* S	**Sb**	**14 35 24.3**	**+0.5**
KKUL	**Konya-Kulu**	**0.46**	**220**	P	**Pb**	**14 35 15.6**	**-1.0**
LOD	**Lodumlu**	**0.55**	**312**	*e*PG	**Pg**	**14 35 16.6**	**+0.3**
LOD	**Lodumlu**	**0.55**	**312**	*e*Pg	**Pg**	**14 35 16.6**	**+0.3**
SERE	**Sereflikochisa**	**0.61**	**160**	*e*PG	**Pg**	**14 35 16.8**	**-0.6**
SERE	**Sereflikochisa**	**0.61**	**160**	*e*Pg	**Pg**	**14 35 16.8**	**-0.6**
CDAG	**Cicekdag**	**0.84**	**83**	*i*P	**Pb**	**14 35 22.6**	**-0.4**
CDAG				*i* S	**Sb**	**14 35 35.3**	**+0.6**
CDAG	**Cicekdag**	**0.84**	**83**	P	**Pb**	**14 35 22.6**	**-0.4**
CDAG				S	**Sb**	**14 35 35.3**	**+0.6**
AKSY	**AKSARAY - Alti**	**0.94**	**157**	*i*P	**Pb**	**14 35 25.0**	**+0.2**
AKSY	**AKSARAY - Alti**	**0.94**	**157**	P	**Pb**	**14 35 25.0**	**+0.2**
CANT	**Cankiri**	**1.11**	**13**	*e*PN	**Pg**	**14 35 26.9**	**-0.1**
CORM	**Corum**	**1.22**	**57**	*e*PN	**Pg**	**14 35 28.5**	**-0.5**
CORM	**Corum**	**1.22**	**57**	*e*Pn	**Pg**	**14 35 28.5**	**-0.5**
KIZT	**Kizilcal**	**1.27**	**240**	*e*PN	**Pg**	**14 35 29.9**	**-0.2**
KIZT	**Kizilcal**	**1.27**	**240**	*e*Pn	**Pg**	**14 35 29.9**	**-0.2**
KDHN	**Kadinhani**	**1.36**	**223**	*i*P	**Pb**	**14 35 32.4**	**+0.5**
KDHN	**Kadinhani**	**1.36**	**223**	P	**Pb**	**14 35 32.4**	**+0.5**
SVRH	**Sivrihisar-ESK**	**1.38**	**267**	*e*PN	**Pn**	**14 35 31.7**	**-0.3**
SVRH	**Sivrihisar-ESK**	**1.38**	**267**	*e*Pn	**Pn**	**14 35 31.7**	**-0.3**
COAL	**Corum-Alaca**	**1.49**	**60**	*i*P	**Pg**	**14 35 34.9**	**+0.6**
COAL	**Corum-Alaca**	**1.49**	**60**	P	**Pg**	**14 35 34.9**	**+0.6**
LADK	**Ladik-KONYA**	**1.51**	**209**	*e*PN	**Pn**	**14 35 33.3**	**-0.5**
LADK	**Ladik-KONYA**	**1.51**	**209**	*e*Pn	**Pn**	**14 35 33.3**	**-0.5**
BCAM	**Yenicaga**	**1.60**	**324**	*i*P	**Pb**	**14 35 35.8**	**-0.3**
BCAM	**Yenicaga**	**1.60**	**324**	P	**Pb**	**14 35 35.8**	**-0.3**
TOS	**Tosya**	**1.61**	**20**	*e*PN	**Pn**	**14 35 34.9**	**-0.3**
TOS	**Tosya**	**1.61**	**20**	*e*Pn	**Pn**	**14 35 34.9**	**-0.3**

NIED ***12*** *14:55:00,35.50N×141.00E,h20km,Mw4.2 Best double couple: M₀2.47000×10¹⁵ NP1:φ₉56.00000°,δ50.00000°, λ-34.00000°. NP2:φ₉170.00000°,δ65.00000°, λ-134.00000°.*
ISCJB ***12*** *14:55:18.1±0.7,35.51N±0.03×140.98E±0.06,h23km±4km, mb3.9/21,MS3.4/12, Error ellipse: s-maj=7.7km s-min=5.8km az=6.1*
JMA ***12*** *14:55:18.9±0.1,35.52N×140.88E,h24km±1km,M4.4*
JMA Felt II J1.
IDC ***12*** *14:55:22.6±1.9,35.51N×140.94E,h45km±18km,mb3.7/21, mb1 3.9/27,mb1mx3.8/44,mbtmp3.9/27,ML3.0/5,MS3.4/18, Ms1 3.4/18,ms1mx3.2/60,Error ellipse: s-maj=16.5km s-min=12.8km az=109.0*

ISC 12 14:55:18.1±1.2,35.46N±0.04×140.98E±0.06,h14km±7km, n50,σ1.918/43,mb4.0/21,MS3.3/12,4C-1D,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CHOJ	**Chosi**	**0.27**	**338**	⇑P	**Pg**	**14 55 24.1**	**+0.3**
CHOJ				S	**Sg**	**14 55 28.0**	**+0.3**
KTR	**Katsuura**	**0.62**	**241**	⇑P	**Pg**	**14 55 30.2**	**-0.2**
KTR				S	**Sg**	**14 55 37.8**	**-0.8**
JCN	**Nagara**	**0.64**	**267**	⇑P	**Pg**	**14 55 30.6**	**0.0**
JCN				S	**Sb**	**14 55 40.1**	**+0.3**
BSO4	**Boso 4**	**0.70**	**229**	P	**Pb**	**14 55 32.5**	**+0.4**
BSO3	**Boso 3**	**0.76**	**211**	⇑P	**Pn**	**14 55 33.6**	**-0.5**
BSO3				X		14 55 43.5	
BSO1	**Boso 1**	**0.80**	**180**	P	**Pn**	**14 55 34.1**	**-0.4**
JYT	**Yasato**	**1.00**	**321**	⇓P	**Pb**	**14 55 35.2**	**-2.1**
JYT				S	**Sb**	**14 55 47.2**	**-3.1**
MJAR	**Matsushiro Arr**	**2.50**	**297**	P	**Pn**	**14 55 59.1**	**+0.8**
	22nm,0.3s,baz=133,slow=15,SNR=36						
MJAR				LR	LR	14 56 27.2	
	comp=Z,159nm,20.8s,baz=100,slow=27						
MAT	**Matsushiro**	**2.50**	**297**	P	**Pn**	**14 55 57.7**	**-0.7**
MAT				*e*S	**Sn**	**14 56 28.2**	**-0.5**
JHJ	**Hachijo jima 2**	**2.53**	**203**	P	**Pb**	**14 56 02.0**	**-1.4**
	144nm,0.3s,baz=270,slow=24,SNR=26						
JHJ				S	**Sn**	**14 56 26.4**	**-3.0**
	86nm,0.3s,baz=72,slow=19,SNR=5.0						
JHJ				LR	LR	14 56 57.0	
	comp=Z,450nm,18.4s,baz=52,slow=37						
JNU	**Nakatsue**	**8.68**	**257**	P	**Pn**	**14 57 25.6**	**+2.3**
	0.1nm,0.3s,baz=94,slow=14,SNR=1.9						
JNU				LR	LR	15 00 56.3	
	comp=Z,170nm,20.1s,baz=121,slow=39						
KSRS	**Korea Array**	**10.71**	**285**	P	**Pn**	**14 57 53.5**	**+2.5**
	0.1nm,0.3s,baz=99,slow=14,SNR=4.7						
KSRS				LR	LR	15 02 03.8	
	comp=Z,287nm,18.6s,baz=89,slow=38						
USRK	**Ussuriysk Ar.**	**11.13**	**324**	P	**Pn**	**14 57 57.6**	**+0.8**
	0.1nm,0.3s,baz=124,slow=13,SNR=6.0						
USRK				LR	LR	15 02 00.2	
	comp=Z,182nm,18.4s,baz=135,slow=36						
KLR	**Kul'dur**	**15.35**	**337**	P	**Pn**	**14 58 55.7**	**+1.5**
	0.1nm,0.3s,baz=142,slow=8.6,SNR=3.8						
KLR				LR	LR	15 04 35.2	
	comp=Z,161nm,18.4s,baz=151,slow=36						
PETK	**Petropavlovsk-**	**21.23**	**29**	P	**P**	**15 00 02.7**	**-0.8**
	6.6nm,0.9s,baz=203,slow=10,SNR=4.2						
PETK				LR	LR	15 08 13.0	
	comp=Z,56nm,20.7s,baz=212,slow=36						
MA2	**Magadan**	**24.97**	**12**	P	**P**	**15 00 40.3**	**-0.7**
	16nm,0.8s,baz=226,slow=10,SNR=10						
MA2				LR	LR	15 12 05.5	
	comp=Z,60nm,18.1s,baz=253,slow=40						
YAK	**Yakutsk**	**27.54**	**348**	LR	LR	15 13 30.4	
	comp=Z,56nm,19.1s,baz=243,slow=40						
H11N2	**WAKE ISLAND Hy**	**27.68**	**118**	T	T	15 30 11.2	
	baz=310,slow=75,SNR=985						
H11N1	**WAKE ISLAND Hy**	**27.69**	**118**	T	T	15 30 07.0	
	baz=310,slow=75,SNR=1274						
H11N3	**WAKE ISLAND Hy**	**27.70**	**118**	T	T	15 30 07.4	
	baz=310,slow=75,SNR=975						
H11S1	**WAKE ISLAND Hy**	**28.34**	**120**	T	T	15 30 54.9	
	baz=312,slow=76,SNR=4683						
H11S3	**WAKE ISLAND Hy**	**28.34**	**120**	T	T	15 30 56.4	
	baz=312,slow=76,SNR=4256						
H11S2	**WAKE ISLAND Hy**	**28.35**	**120**	T	T	15 30 53.7	
	baz=312,slow=76,SNR=2439						
SEY	**Seymchan**	**28.40**	**11**	P	**P**	**15 01 12.5**	**+0.7**
	2.3nm,0.7s,baz=211,slow=6.0,SNR=7.1						
SONM	**Songino Array**	**28.41**	**306**	P	**P**	**15 01 13.9**	**+1.7**
	1.2nm,0.9s,baz=115,slow=10,SNR=4.9						
TLY	**Talaya**	**31.13**	**313**	LR	LR	15 13 27.0	
	comp=Z,58nm,18.0s,baz=109,slow=35						
TIXI	**Tiksi**	**36.81**	**354**	P	**P**	**15 02 24.8**	**-0.4**
	1.4nm,0.6s,baz=157,slow=6.4,SNR=7.2						
CMAR	**Chiang Mai Arr**	**40.78**	**257**	P	**P**	**15 03 00.5**	**+1.5**
	0.3nm,0.5s,baz=50,slow=8.4,SNR=2.5						
CMAR				LR	LR	15 21 30.4	
	comp=Z,54nm,20.4s,baz=100,slow=38						
ZALV	**Zalesovo Beam**	**42.73**	**314**	P	**P**	**15 03 14.3**	**-0.3**
	0.9nm,0.3s,baz=86,slow=6.1,SNR=3.7						
MKAR	**Makanchi Array**	**44.68**	**303**	P	**P**	**15 03 29.2**	**-1.2**
	1.5nm,0.7s,baz=87,slow=11,SNR=10						
MKAR				LR	LR	15 22 47.8	
	comp=Z,34nm,20.4s,baz=78,slow=37						
PMG	**Port Moresby**	**45.00**	**171**	LR	LR	15 20 54.5	
	comp=Z,30nm,21.7s,baz=128,slow=34						
KURBB	**Kurchatov Arra**	**46.71**	**309**	P	**P**	**15 03 46.1**	**-0.3**
	2.9nm,0.5s,baz=84,slow=8.3,SNR=12						
AAK	**Ala-Archa**	**50.95**	**299**	LR	LR	15 26 43.8	
	comp=Z,72nm,18.9s,baz=36,slow=37						
ILAR	**Eielson Array**	**51.02**	**32**	P	**P**	**15 04 20.2**	**+1.0**
	2.5nm,0.8s,baz=270,slow=6.5,SNR=26						
WRA	**Warramunga Arr**	**55.45**	**188**	P	**P**	**15 04 52.1**	**-0.2**
	1.9nm,0.8s,baz=2.1,slow=7.0,SNR=15						
INK	**Inuvik**	**55.95**	**27**	P	**P**	**15 04 55.4**	**+0.1**
	1.0nm,0.7s,baz=282,slow=4.9,SNR=4.5						
ARU	**Arti**	**57.32**	**319**	LR	LR	15 34 16.8	
	comp=Z,42nm,18.6s,baz=28,slow=41						
ASAR	**Alice Springs**	**59.18**	**188**	P	**P**	**15 05 19.1**	**+0.4**
	0.3nm,0.5s,baz=9.2,slow=5.8,SNR=7.0						
AKTO	**Aktyubinsk**	**59.48**	**313**	LR	LR	15 30 10.1	
	comp=Z,30nm,19.6s,baz=45,slow=35						
YKA	**Yellowknife Ar**	**65.35**	**30**	P	**P**	**15 05 59.8**	**+0.2**
	1.0nm,0.8s,baz=302,slow=6.6,SNR=16						
ARCES	**ARCESS Array B**	**65.35**	**340**	LR	LR	15 36 39.8	
	comp=Z,44nm,18.9s,baz=340,slow=38						
KBZ	**Khabaz**	**71.67**	**311**	P	**P**	**15 06 38.4**	**-0.9**
	1.9nm,0.9s,baz=183,slow=2.1,SNR=4.2						
AKASG	**Malin Array Be**	**75.33**	**322**	P	**P**	**15 07 00.1**	**-0.6**
	0.4nm,0.3s,baz=47,slow=6.0,SNR=4.5						
NB2	**NORSAR Subarra**	**75.50**	**337**	P	**P**	**15 07 01.4**	**-0.3**
	comp=Z,0.8nm,0.7s,baz=39,slow=5.9						
NOA	**NORSAR Array B**	**75.50**	**337**	P	**P**	**15 07 01.7**	**0.0**
	comp=Z,1.7nm,0.8s,baz=39,slow=5.9,SNR=4.5						
NOA				LR	LR	15 43 06.9	
	comp=Z,35nm,18.9s,baz=35,slow=38						
NVAR	**Mina Array Bea**	**76.22**	**53**	P	**P**	**15 07 06.6**	**+0.2**
	comp=Z,0.6nm,0.6s,baz=275,slow=7.3,SNR=5.0						
PDAR	**Pinedale Array**	**79.02**	**45**	P	**P**	**15 07 22.9**	**+0.9**
	comp=Z,0.5nm,0.7s,baz=259,slow=0.8,SNR=4.8						
BRTR	**Keskin Array B**	**79.64**	**312**	P	**P**	**15 07 25.3**	**0.0**
	comp=Z,0.6nm,0.7s,baz=77,slow=6.4,SNR=3.3						
TXAR	**Lajitas Array**	**91.36**	**52**	P	**P**	**15 08 24.0**	**+0.1**
	comp=Z,0.4nm,0.7s,baz=349,slow=2.8,SNR=3.6						
LPAZ	**La Paz**	**147.78**	**61**	PKPbc	**PKPbc**	**15 15 03.0**	**-0.8**
	comp=Z,1.4nm,0.7s,baz=14,slow=3.6,SNR=5.2						

JMA 12 15:07:11.6±0.1,36.38N×140.96E,h40km±1km,M3.0, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JHO	**Hitachi**	**0.39**	**306**	P	Pn	15 07 20.7	-0.2
JHO				S	Sn	15 07 27.0	-0.5
CHOJ	**Chosi**	**0.68**	**187**	P	Pn	15 07 24.1	-0.7
ONAJ	**Iwakimizuishiy**	**0.73**	**350**	P	Pn	15 07 25.0	-0.6
ONAJ				S	Sn	15 07 34.4	-1.2
MAT	**Matsushiro**	**2.23**	**275**	P	Pn	15 07 47.3	+1.3
MAT				*e*S	Sn	15 08 10.6	-1.7

NIED ***12*** *15:09:00,37.00N×140.70E,h5km,Mw3.7 Best double couple: M₀4.00000×10¹⁴ NP1:φ₉67.00000°,δ35.00000°, λ-65.00000°. NP2:φ₉217.00000°,δ59.00000°, λ-106.00000°.*
IDC ***12*** *15:09:48.6±0.6,36.99N×140.76E,h0km,mb3.7/13, mb1 3.8/15,mb1mx3.7/66,mbtmp3.7/15,ML2.6/2,MS2.7/1, Ms1 2.7/1,ms1mx2.0/51,Error ellipse: s-maj=15.4km s-min=12.0km az=137.0*
ISCJB ***12*** *15:09:49.4±0.7,37.02N±0.03×140.86E±0.07,h15km±4km, mb3.6/13,Error ellipse: s-maj=9.0km s-min=4.6km az=13.9*
JMA ***12*** *15:09:50.4,37.04N×140.74E,h9km±1km,M3.7 Broadband fault plane solution: P waves. NP1: φ₉100.00000°,δ63.00000°,λ-32.00000°. NP2: φ₉206.00000°,δ62.00000°,λ-149.00000°. Principal axes: T Plg1.0000°, Azm153.0000°; N Plg49.0000°, Azm244.0000°; P Plg41.0000°, Azm62.0000°;*
JMA Felt II J1.

ISC 12 15:09:49.7±1.0,37.02N±0.03×140.68E±0.05,h7km±7km, n30,σ0.964/31,mb3.6/13,5C,Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.12**	**51**	⇑P	**Pg**	**15 09 52.7**	**+0.3**
ONAJ				S	**Sg**	**15 09 53.9**	**-0.3**
JHO	**Hitachi**	**0.42**	**192**	⇑P	**Pb**	**15 09 59.1**	**-0.3**
JHO				S	**Sb**	**15 10 05.5**	**-0.5**
JFT	**Otama**	**0.56**	**331**	⇑P	**Pb**	**15 10 01.8**	**-0.1**
JFT				S	**Sb**	**15 10 09.8**	**-0.4**
JSB	**Shiboa**	**0.61**	**265**	⇑P	**Pn**	**15 10 03.9**	**-0.9**
JSB				S	**Sb**	**15 10 12.7**	**+1.2**
JMM	**Marumori**	**0.85**	**6**	⇑P	**Pg**	**15 10 05.9**	**0.0**
JMM				S	**Sg**	**15 10 17.2**	**+0.3**
JYT	**Yasato**	**0.88**	**206**	P	**Pb**	**15 10 07.5**	**+0.2**
JYT				S	**Sb**	**15 10 19.5**	**+0.2**
MJAR	**Matsushiro Arr**	**2.04**	**257**	Pg	**Pb**	**15 10 26.7**	**-0.3**
	10nm,0.3s,baz=81,slow=16,SNR=38						
MJAR				Lg	Lg	15 10 54.1	
	17nm,0.3s,baz=88,slow=25,SNR=13						
MAT	**Matsushiro**	**2.04**	**257**	P	**Pb**	**15 10 26.3**	**-0.8**
MAT				S	**Sg**	**15 10 55.2**	**0.0**
JHJ	**Hachijo jima 2**	**3.96**	**191**	Pn	**Pn**	**15 10 51.3**	**+0.4**
	6.2nm,0.3s,baz=73,slow=20,SNR=2.3						
JHJ				Sn	**Sn**	**15 11 38.2**	**+0.5**
	5.7nm,0.3s,baz=233,slow=20,SNR=2.4						
USRK	**Ussuriysk Ar.**	**9.74**	**320**	Pn	**Pn**	**15 12 10.5**	**+0.3**
	0.1nm,0.3s,baz=156,slow=15,SNR=3.0						
KLR	**Kul'dur**	**13.82**	**335**	LR	LR	15 17 59.2	
	comp=Z,299nm,20.5s,baz=138,slow=35						
MA2	**Magadan**	**23.49**	**13**	P	**P**	**15 15 00.1**	**+0.2**
	5.1nm,0.8s,baz=225,slow=7.1,SNR=3.7						
SONM	**Songino Array**	**27.30**	**304**	P	**P**	**15 15 34.8**	**-0.2**
	0.2nm,0.5s,baz=96,slow=8.8,SNR=2.8						
H11N2	**WAKE ISLAND Hy**	**28.65**	**120**	T	T	15 45 31.9	
	baz=313,slow=75,SNR=36						
H11N1	**WAKE ISLAND Hy**	**28.66**	**120**	T	T	15 45 27.4	
	baz=313,slow=75,SNR=32						
H11N3	**WAKE ISLAND Hy**	**28.67**	**120**	T	T	15 45 32.7	
	baz=313,slow=75,SNR=22						
H11S1	**WAKE ISLAND Hy**	**29.35**	**122**	T	T	15 46 29.1	
	baz=314,slow=76,SNR=40						
H11S3	**WAKE ISLAND Hy**	**29.35**	**122**	T	T	15 46 27.9	
	baz=314,slow=76,SNR=33						
H11S2	**WAKE ISLAND Hy**	**29.37**	**122**	T	T	15 46 30.3	
	baz=314,slow=76,SNR=29						
ZALV	**Zalesovo Beam**	**41.49**	**312**	P	**P**	**15 17 37.5**	**+0.3**
	0.5nm,0.5s,baz=104,slow=9.2,SNR=2.8						
MKAR	**Makanchi Array**	**43.62**	**302**	P	**P**	**15 17 54.7**	**+0.1**
	0.2nm,0.3s,baz=94,slow=9.6,SNR=3.2						
ILAR	**Eielson Array**	**49.82**	**32**	P	**P**	**15 18 43.0**	**+0.1**
	0.5nm,0.6s,baz=265,slow=6.5,SNR=7.3						
FITZ	**Fitzroy Crossi**	**56.63**	**197**	P	**P**	**15 19 32.5**	**-1.0**
	1.2nm,0.6s,baz=9.5,slow=6.1,SNR=3.3						
WRA	**Warramunga Arr**	**56.97**	**187**	P	**P**	**15 19 35.5**	**-0.4**
	0.8nm,0.5s,baz=3.5,slow=7.2,SNR=23						
ASAR	**Alice Springs**	**60.70**	**187**	P	**P**	**15 20 01.9**	**+0.2**
	0.3nm,0.6s,baz=6.1,slow=8.7,SNR=11						
RES	**Resolute B

BCAM S Sn 15 16 59.6 +0.9
KKUL Konya-Kulu 0.91 153 *i* P Pb 15 16 44.3 -0.2
KKUL *i* S Sn 15 17 00.8 +1.3
KKUL Konya-Kulu 0.91 153 P Pb 15 16 44.3 -0.2
MDUB Mudurnu 1.04 299 *e*PG Pb 15 16 46.0 -0.6
MDUB Mudurnu 1.04 299 *e*Pg Pb 15 16 46.1 -0.6
CANT Cankiri 1.13 56 *e*PN Pb 15 16 47.3 -0.9
KIZT Kizilcal 1.17 200 *e*PN Pb 15 16 48.1 -0.8
KIZT Kizilcal 1.17 200 *e*Pn Pb 15 16 48.1 -0.8
BTAS Taskesti 1.22 299 *i* P Pg 15 16 49.3 0.0
BTAS Taskesti 1.22 299 P Pg 15 16 49.3 0.0
ESKT Eskisehir 1.27 249 *i* P Pn 15 16 49.8 -1.1
ESKT *i* S Sn 15 17 09.4 +0.8
SEYT Eskypehyr 1.27 249 P Pn 15 16 49.8 -1.1
SEYT S Sn 15 17 09.4 +0.8
BORA Eskisehir 1.49 267 *i* P Pb 15 16 53.4 -1.1
BORA *i* S Sg 15 17 15.2 +1.3
BORA Eskisehir 1.49 267 P Pb 15 16 53.4 -1.1
BORA S Sg 15 17 15.2 +1.3
GULT Gulveren 1.50 288 *e*PN Pb 15 16 53.8 -0.9
GULT Gulveren 1.50 288 *e*Pn Pb 15 16 53.8 -0.9
CORM Corum 1.73 83 *e*PN Pn 15 16 56.6 -0.6
CORM Corum 1.73 83 *e*Pn Pn 15 16 56.6 -0.6

IDC 12 15:16:57.7±6.4, 5°20S×147°40E, h140km±67km, mb3.2/3, mb1 3.4/5, mb1mx3.0/50, mbtmp3.6/5, MS3.9/2, Ms1 3.9/2, ms1mx2.9/19, Error ellipse: s-maj=101.1km s-min=27.0km az=137.0, Eastern New Guinea region

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time	Res
PMG	**Port Moresby**	**4.19**	**183**	P	P	Pn	15 18 00.8	+0.7
	4.5nm,0.3s,baz=302,slow=2.0,SNR=22							
PMG				S		Sn	15 18 43.0	-5.7
	7.8nm,0.3s,baz=215,slow=23,SNR=11							
WRA	**Warramunga Arr**	**19.40**	**220**	P	P	P	15 21 12.3	-0.7
	0.3nm,0.3s,baz=44,slow=11,SNR=25							
ASAR	**Alice Springs**	**22.50**	**214**	P	P	P	15 21 44.8	-1.0
	1.0nm,0.7s,baz=39,slow=8.8,SNR=14							
BATI	**Baumata**	**24.03**	**257**	LR	LR		15 32 47.4	
	comp=Z,248nm,18.1s,baz=19,slow=40							
FITZ	**Fitzroy Crossi**	**24.83**	**237**	P	P	P	15 22 08.4	+1.2
	2.0nm,0.8s,baz=62,slow=13,SNR=4.8							
RPZ	**Rata Peaks**	**43.66**	**155**	LR	LR		15 39 58.1	
	comp=Z,157nm,20.1s,baz=203,slow=32							
ILAR	**Eielson Array**	**84.59**	**23**	P	P	P	15 29 14.9	-0.2
	0.2nm,0.6s,baz=255,slow=5.3,SNR=3.0							
TORD	**Torodi Ar. Bea**	**145.27**	**286**	PKPbc	PKPdf		15 36 19.1	-0.8
	0.5nm,0.6s,baz=84,slow=3.3,SNR=5.2							

IDC 12 15:33:25.9±10.0, 5°63N×94°90E, h267km±96km, mb2.5/4, mb1 2.7/5, mb1mx2.6/43, mbtmp3.2/5, Error ellipse: s-maj=113.0km s-min=18.8km az=63.0, Northern Sumatera

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time	Res
CMAR	**Chiang Mai Arr**	**13.34**	**17**	P	P	Pn	15 36 25.4	-0.2
	0.1nm,0.3s,baz=217,slow=12,SNR=9.1							
MKAR	**Makanchi Array**	**42.43**	**347**	P	P	P	15 40 54.4	-0.3
	0.2nm,0.6s,baz=165,slow=8.4,SNR=4.1							
SONM	**Songino Array**	**43.18**	**11**	P	P	P	15 41 01.0	+0.1
	0.1nm,0.4s,baz=191,slow=6.8,SNR=2.9							
WRA	**Warramunga Arr**	**46.37**	**124**	P	P	P	15 41 24.2	-1.9
	0.4nm,0.9s,baz=304,slow=9.1,SNR=3.6							
ASAR	**Alice Springs**	**47.22**	**129**	P	P	P	15 41 39.6	+1.6
	0.2nm,1.0s,baz=306,slow=8.0,SNR=3.2							

NIED **12** *15:41:00, 37.20N×142.50E, h8km, Mw3.9 Best double couple: M0 7.38000×10^14 NP1:φs337.00000°, δ46.00000°, λ-130.00000°. NP2:φs207.00000°, δ57.00000°, λ-56.00000°.*
IDC **12** *15:41:35.9±0.7, 37.03N×142.59E, h0km, mb3.9/13, mb1 4.0/18, mb1mx3.9/46, mbtmp3.9/18, ML3.6/4, MS3.1/4, Ms1 3.1/4, ms1mx2.6/47, Error ellipse: s-maj=18.9km s-min=14.6km az=100.0*
JMA **12** *15:41:35.2±0.3, 37.15N×142.51E, h0km, M4.1*
ISCJB **12** *15:41:37.2±2.0, 37.06N±0.04×142.54E±0.07, h22km±14km, mb4.0/17, MS3.5/1, Error ellipse: s-maj=9.4km s-min=6.7km az=149.1*
NEIC **12** *15:41:41.9±1.3, 37.02N×142.49E, h42km±11km, mb4.5/4, Error ellipse: s-maj=12.8km s-min=7.6km az=82.0*
ISC 12 15:41:38.1±3.1, 37°07N±0°05×142°48E±0°08, h14km±18km, n40, σ1°20/39, mb3.9/17, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time	Res
ONAJ	**Iwakimizuishiy**	**1.35**	**272**	P	P	Pn	15 42 01.9	-0.7
ONAJ				*e*S	S	Sg	15 42 20.2	-1.3
JMM	**Marumori**	**1.56**	**301**	P	P	Pn	15 42 03.8	-1.7
JMM				*e*S	S	Sn	15 42 24.8	-0.7
JIO	**Ouri**	**1.65**	**327**	P	P	Pn	15 42 04.9	-1.8
JIO				*e*S	S	Sn	15 42 25.9	-1.8
JFT	**Otama**	**1.77**	**285**	P	P	Pn	15 42 07.6	-0.7
JFT				*e*S	S	Sn	15 42 31.4	+0.7
JOU	**Okura**	**1.94**	**313**	P	P	Pn	15 42 09.8	-0.9
JOU				S	S	Sn	15 42 33.1	-1.8
JYS	**Shirataka**	**2.24**	**302**	P	P	Pn	15 42 14.9	+0.1
JFY	**Yanaizu**	**2.24**	**280**	P	P	Pn	15 42 15.2	+0.4
JYK	**Kaneyama**	**2.50**	**318**	P	P	Pn	15 42 18.2	-0.1
MJAR	**Matsushiro Arr**	**3.47**	**263**	Pn	P	Pn	15 42 33.8	+2.1
	5.1nm,0.3s,baz=64,slow=9.0,SNR=8.6							
MJAR				LR	LR	LR	15 43 58.9	
	comp=Z,144nm,18.8s,baz=75,slow=41							
MAJO	**Matsushiro**	**3.47**	**263**	*e*Pn	P	Pn	15 42 34.4	+2.7
JHJ2	**Mitsune**	**4.51**	**210**	*e*Pn	P	Pn	15 42 46.4	+0.4
JHJ	**Hachijo jima 2**	**4.52**	**210**	Pn	P	Pn	15 42 45.7	-0.4
	30nm,0.3s,baz=317,slow=17,SNR=11							
JHJ				Sn	S	Sn	15 43 35.5	-3.0
	27nm,0.3s,baz=84,slow=21,SNR=6.2							
JNU	**Nakatsue**	**10.29**	**251**	Pn	P	Pn	15 44 07.3	+2.0
	0.4nm,0.3s,baz=22,slow=7.7,SNR=4.1							
JNU				LR	LR		15 48 20.3	
	comp=Z,84nm,18.6s,baz=122,slow=39							
USRK	**Ussuriysk Ar.**	**10.69**	**315**	Pn	P	Pn	15 44 11.8	+1.0
	0.2nm,0.3s,baz=120,slow=14,SNR=3.0							
KSRS	**Korea Array**	**11.61**	**276**	Pn	P	Pn	15 44 24.4	+1.0
	0.2nm,0.3s,baz=90,slow=13,SNR=2.6							
KSRS				LR	LR		15 48 13.4	
	comp=Z,61nm,18.6s,baz=100,slow=34							
KSAR	**Wonju Array Be**	**11.64**	**276**	Pn	P	Pn	15 44 24.4	+0.5
SEY	**Seymchan**	**26.60**	**10**	P	P	P	15 47 16.6	+0.9
	1.4nm,0.6s,baz=69,slow=23,SNR=10							
H11N2	**WAKE ISLAND Hy**	**27.44**	**122**	T	T	T	16 16 11.0	
	baz=314,slow=75							
H11N1	**WAKE ISLAND Hy**	**27.45**	**122**	T	T	T	16 16 19.5	
	baz=314,slow=75							
H11N3	**WAKE ISLAND Hy**	**27.45**	**122**	T	T	T	16 16 20.5	
	baz=314,slow=75							
H11S1	**WAKE ISLAND Hy**	**28.17**	**124**	T	T	T	16 17 08.3	
	baz=317,slow=76							
H11S3	**WAKE ISLAND Hy**	**28.17**	**124**	T	T	T	16 17 08.8	
	baz=317,slow=76							
H11S2	**WAKE ISLAND Hy**	**28.18**	**124**	T	T	T	16 17 07.6	
	baz=317,slow=76							
SONM	**Songino Array**	**28.48**	**304**	P	P	P	15 47 33.6	+0.8
	0.5nm,0.4s,baz=106,slow=8.8,SNR=6.3							
ZALV	**Zalesovo Beam**	**42.52**	**312**	P	P	P	15 49 32.9	-0.1
	0.4nm,0.4s,baz=81,slow=8.9,SNR=3.0							
MKAR	**Makanchi Array**	**44.82**	**302**	P	P	P	15 49 52.4	+0.8
	1.0nm,0.6s,baz=85,slow=8.7,SNR=11							
KURK	**Kurchatov**	**46.58**	**308**	*e*P	P	P	15 50 05.5	+0.1
	5.8nm,0.6s							
ILAR	**Eielson Array**	**49.01**	**32**	P	P	P	15 50 24.5	+0.4
	0.8nm,0.8s,baz=260,slow=6.1,SNR=8.6							
AAK	**Ala-Archa**	**51.23**	**299**	LR	LR		16 12 39.6	
	comp=Z,41nm,18.1s,baz=15,slow=36							
WRAB	**Tennant Creek**	**57.21**	**189**	*e*P	P	P	15 51 24.9	0.0
	3.7nm,0.8s							
WRA	**Warramunga Arr**	**57.22**	**189**	P	P	P	15 51 24.9	0.0
	2.1nm,0.4s,baz=7.0,slow=7.0,SNR=55							
ABKAR	**Akbulak array**	**58.57**	**310**	*e*P	P	P	15 51 34.2	-0.1
	0.5nm,0.6s							
ASAR	**Alice Springs**	**60.95**	**189**	P	P	P	15 51 51.1	+0.3
	1.1nm,0.5s,baz=1.8,slow=6.7,SNR=57							
MBWA	**Marble Bar**	**61.76**	**204**	*e*P	P	P	15 51 56.5	+0.2
	2.8nm,0.8s							
YKA	**Yellowknife Ar**	**63.35**	**30**	P	P	P	15 52 06.6	+0.1
	0.3nm,0.7s,baz=299,slow=6.7,SNR=4.7							
ARCES	**ARCESS Array B**	**64.26**	**340**	P	P	P	15 52 12.4	0.0
	5.9nm,1.1s,baz=60,slow=6.3,SNR=2.8							
STKA	**Stephens Creek**	**68.59**	**181**	P	P	P	15 52 38.5	-2.0
	1.7nm,0.9s,baz=331,slow=12,SNR=3.5							
FINES	**FINESS Array B**	**69.18**	**333**	P	P	P	15 52 43.6	-0.2
	1.9nm,0.8s,baz=46,slow=11,SNR=5.1							
AKASG	**Malin Array Be**	**74.79**	**323**	P	P	P	15 53 17.6	-0.1
	0.6nm,0.5s,baz=45,slow=6.2,SNR=2.4							
PDAR	**Pinedale Array**	**77.03**	**46**	P	P	P	15 53 31.1	+0.2
	0.3nm,0.7s,baz=270,slow=2.7,SNR=3.6							

NIED **12** *15:45:00, 36.90N×143.10E, h5km, Mw3.5 Best double couple: M0 2.33000×10^14 NP1:φs40.00000°, δ16.00000°, λ-99.00000°. NP2:φs229.00000°, δ74.00000°, λ-88.00000°.*
IDC **12** *15:45:44.2±1.0, 36.69N×143.28E, h0km, mb3.6/8, mb1 3.7/11, mb1mx3.5/48, mbtmp3.6/11, ML2.9/3, Error ellipse: s-maj=25.9km s-min=18.1km az=90.0*
ISCJB **12** *15:45:46.5±0.7, 36.83N±0.04×143.16E±0.06, h25km, mb3.5/8, Error ellipse: s-maj=7.4km s-min=5.3km az=20.2*
JMA **12** *15:45:47.7±0.2, 36.86N×143.14E, h46km, M3.5*
ISC 12 15:45:48.0±0.9, 36°80N±0°05×143°18E±0°08, h25km, n31, σ1°48/33, mb3.5/8, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time	Res
JHO	**Hitachi**	**2.11**	**266**	P	P	Pn	15 46 21.0	-0.7
CHOJ	**Chosi**	**2.17**	**240**	P	P	Pn	15 46 22.4	-0.2
CHOJ				*e*S	S	Sn	15 46 48.4	-0.3
JMM	**Marumori**	**2.18**	**300**	P	P	Pn	15 46 21.6	-1.0
JMM				*e*S	S	Sn	15 46 46.9	-1.9
JFT	**Otama**	**2.38**	**288**	P	P	Pn	15 46 25.5	+0.1
JFT				*e*S	S	Sn	15 46 52.8	-1.1
JOU	**Okura**	**2.54**	**309**	P	P	Pn	15 46 27.3	-0.3
JMK	**Ichinoseki**	**2.65**	**325**	P	P	Pn	15 46 27.9	-1.2
JMK				*e*S	S	Sn	15 46 59.4	-1.0
BSO1	**Boso 1**	**2.79**	**221**	P	P	Pn	15 46 32.7	+2.1
JAG	**Ashikaga**	**3.02**	**264**	P	P	Pn	15 46 34.3	+0.1
JOM	**Ohasama**	**3.06**	**331**	P	P	Pn	15 46 33.8	-0.9
JYK	**Kaneyama**	**3.07**	**314**	P	P	Pn	15 46 34.5	-0.4
JRY	**Ryogami san**	**3.54**	**258**	P	P	Pn	15 46 41.5	+0.1
JRY				*e*S	S	Sn	15 47 21.2	-1.2
JOD2	**Odawara 2**	**3.66**	**246**	P	P	Pn	15 46 42.7	-0.3
JOD2				*e*S	S	Sn	15 47 24.2	-1.1
JANG	**Nango**	**3.80**	**340**	P	P	Pn	15 46 42.7	-2.2
JANG				*e*S	S	Sn	15 47 26.1	-2.7
MJAR	**Matsushiro Arr**	**4.01**	**268**	Pn	P	Pn	15 46 48.7	+1.0
	1.4nm,0.3s,baz=96,slow=11,SNR=21							
MAT	**Matsushiro**	**4.01**	**268**	P	P	Pn	15 46 48.7	+0.9
MAT				*e*S	S	Sn	15 47 23.5	-10
JHJ	**Hachijo jima 2**	**4.61**	**218**	Pn	P	Pn	15 46 54.4	-1.7
	6.8nm,0.3s,baz=162,slow=20,SNR=5.3							
JHJ				Sn	S	Sn	15 47 44.2	-4.6
	12nm,0.3s,baz=131,slow=19,SNR=3.3							
USRK	**Ussuriysk Ar.**	**11.27**	**314**	Pn	P	Pn	15 48 28.8	+1.4
	0.1nm,0.3s,baz=153,slow=11,SNR=2.7							
SEY	**Seymchan**	**26.77**	**9**	P	P	P	15 51 26.7	+1.2
	0.4nm,0.5s,baz=163,slow=19,SNR=3.3							
H11N2	**WAKE ISLAND Hy**	**26.82**	**123**	T	T	T	16 19 43.5	
	baz=312							
H11N1	**WAKE ISLAND Hy**	**26.83**	**123**	T	T	T	16 19 44.4	
	baz=312							
H11N3	**WAKE ISLAND Hy**	**26.84**	**123**	T	T	T	16 19 45.3	
	baz=312							
H11S1	**WAKE ISLAND Hy**	**27.55**	**125**	T	T	T	16 20 34.9	
	baz=314,slow=74							
H11S3	**WAKE ISLAND Hy**	**27.56**	**125**	T	T	T	16 20 35.0	
	baz=314,slow=74							
H11S2	**WAKE ISLAND Hy**	**27.57**	**125**	T	T	T	16 20 35.6	
	baz=314							
SONM	**Songino Array**	**29.09**	**304**	P	P	P	15 51 48.6	+2.0
	0.4nm,0.5s,baz=103,slow=11,SNR=4.0							
ZALV	**Zalesovo Beam**	**43.12**	**313**	P	P	P	15 53 46.0	0.0
	0.4nm,0.2s,baz=77,slow=7.6,SNR=2.1							
MKAR	**Makanchi Array**	**45.44**	**303**	P	P	P	15 54 06.0	+1.2
	0.3nm,0.7s,baz=88,slow=8.7,SNR=3.7							
KURBB	**Kurchatov Arra**	**47.26**	**308**	P	P	P	15 54 18.6	-0.3
	0.3nm,0.3s,baz=82,slow=7.9,SNR=5.4							
ILAR	**Eielson Array**	**48.93**	**32**	P	P	P	15 54 32.1	+0.5
	0.3nm,0.8s,baz=280,slow=5.4,SNR=3.6							
WRA	**Warramunga Arr**	**57.05**	**190**	P	P	P	15 55 31.0	-0.9
	1.0nm,0.7s,baz=8.0,slow=6.9,SNR=11							
ASAR	**Alice Springs**	**60.78**	**190**	P	P	P	15 55 57.5	-0.3
	0.3nm,0.6s,baz=16,slow=14,SNR=8.4							

IDC 12 15:47:32.6±1.9, 13°20N×125°78E, h0km, mb3.3/4, mb1 3.4/4, mb1mx3.1/55, mbtmp3.3/4, MS2.8/1, Ms1 2.8/1, ms1mx2.3/26, Error ellipse: s-maj=80.9km s-min=25.8km az=62.0, Philippine Islands region

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time	Res
MJAR	**Matsushiro Arr**	**25.78**	**23**	LR	LR		16 02 07.3	
	comp=Z,22nm,18.6s,baz=35,slow=34							
CMAR	**Chiang Mai Arr**	**26.32**	**285**	P	P	P	15 53 10.4	0.0
	0.4nm,0.6s,baz=101,slow=8.2,SNR=5.6							
ASAR	**Alice Springs**	**37.49**	**168**	P	P	P	15 54 48.2	-0.1
	0.2nm,0.7s,baz=342,slow=7.0,SNR=3.7							
MKAR	**Makanchi Array**	**49.43**	**322**	P	P	P	15 56 25.6	+1.2
	0.4nm,0.7s,baz=126,slow=6.2,SNR=5.7							
KURBB	**Kurchatov Arra**	**53.41**	**324**	P	P	P	15 56 52.9	-1.2
	0.3nm,0.6s,baz=125,slow=7.2,SNR=3.4							

ISCJB **12** *15:52:05.8±0.5, 31.88N±0.03×114.92W±0.05, h30km±4km, Error ellipse: s-maj=6.5km s-min=4.3km az=178.5*
NEIC **12** *15:52:08.6, 31.85N×115.15W, h8km, MD3.7(MEX), ML3.4(PAS), ML3.5(ECX), After ECX.*
ECX **12** *15:52:08.6±0.6, 31.85N×115.15W, h8km, MD3.3, ML3.5*
MEX **12** *15:52:09.5±0.5, 31.90N×115.04W, h16km±11km, MD3.7*
ISC 12 15:52:04.6±1.1, 31°91N±0°02×114°96W±0°03, h18km±4km, n33, σ1°00/51, 4C-5D, Gulf of California

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time	Res
ECBX	**El Chinero**	**0.44**	**191**	⇓*e*P	P	Pb	15 52 14.2	+0.3
ECBX				*e*S	S	Sg	15 52 20.1	+0.4
ECBX				⇓*e*			15 52 21.2	
ECBX				AML	AML		15 52 21.2	
	comp=E,3μm,0.2s							
MBIG	**Mexicali**	**0.54**	**338**	⇓*e*P	P	Pn	15 52 18.1	+0.7
MBIG	**Mexicali**	**0.54**	**338**	*e*P	P	Pn	15 52 18.3	+0.9
MBIG				*i* S	S	Sn	15 52 25.3	-0.7
CPBX	**Cerro Prieto**	**0.59**	**330**	*e*P	P	Pn	15 52 18.6	+0.5
CPBX				*e*S	S	Sn	15 52 27.3	+0.1
CPBX				AML	AML		15 52 29.4	
	comp=N,9μm,0.4s							
CPBX				⇑*e*			15 52 29.4	
CPBX	**Cerro Prieto**	**0.59**	**330**	*e*P	P	Pn	15 52 18.3	+0.2
CPBX				*i* S	S	Sg	15 52 24.3	0.0
SPIG	**San Pedro Mart**	**0.96**	**207**	⇑*e*P	P	Pg	15 52 23.6	+0.2
SPIG	**San Pedro Mart**	**0.96**	**207**	*e*P	P	Pn	15 52 23.9	+0.3
SPIG				*e*S	S	Sb	15 52 35.9	+0.4
SPIG	**San Pedro Mart**	**0.96**	**207**	*e*P	P	Pn	15 52 23.9	+0.3
SPIG				*e*S	S	Sb	15 52 35.9	+0.4
SPX	**San Pedro Mart**	**0.96**	**207**	⇑*e*P	P	Pg	15 52 23.6	+0.2
SPX	**San Pedro Mart**	**0.96**	**207**	*e*P	P	Pn	15 52 23.9	+0.3
SPX				*i* S	S	Sb	15 52 35.8	+0.3
SGL	**Mount Signal**	**0.99**	**319**	⇑*i*P	P	Pg	15 52 24.9	+1.2
WESC	**Westside Schoo**	**1.07**	**323**	*e*P	P	Pg	15 52 26.6	+1.2
GLA	**Glamis**	**1.15**	**5**	P	P	Pn	15 52 26.0	+0.1
	baz=183,SNR=306							
GLA				S	S	Sb	15 52 39.8	-0.8
	baz=183							
RMX	**La Rumorosa**	**1.18**	**306**	⇓*e*P	P	Pg	15 52 27.5	+0.1
ZAX	**El Zacaton**	**1.19**	**251**	⇓*e*P	P	Pn	15 52 26.5	+0.1
IBP	**Imperial Bould**	**1.22**	**308**	P	P	Pg	15 52 28.7	+0.5
	baz=127,SNR=16							
IBP				S	S	Sg	15 52 44.4	+0.2
	baz=127							
CBX	**Cerro Bola**	**1.50**	**286**	*e*P	P	Pb	15 52 32.5	+0.5
CBX				*e*S	S	Sn	15 52 50.4	+0.3
CBX				AML	AML		15 52 55.9	
	comp=N,917nm,0.5s							
CBX	**Cerro Bola**	**1.50**	**286**	*e*P	P	Pn	15 52 31.4	+0.6
CBX				*i* S	S	Sn	15 52 47.9	-2.1
CBX	**Cerro Bola**	**1.50**	**286**	*e*P	P	Pn	15 52 31.4	+0.6
CBX				*i* S	S	Sn	15 52 47.9	-2.1
TJIG	**Tijuana**	**1.55**	**290**	*e*P	P	Pn	15 52 31.9	+0.6
TJIG				*i* S	S	Sn	15 52 49.4	-1.6
MONP2	**Monument Peak**	**1.58**	**309**	Pg	Pg		15 52 35.1	+0.1
	baz=127,SNR=65							
MONP2				S	S	Sg	15 52 55.1	-0.6
	baz=127							
BC3	**Big Chuckawall**	**1.79**	**347**	P	P	Pn	15 52 35.2	+0.4
	baz=165,SNR=13							
BC3				S	S	Sn	15 52 56.7	-0.4
	baz=165							
214A	**Organ Pipe Nat**	**1.82**	**88**	P	P	Pn	15 52 35.8	+0.7
	baz=269,SNR=50							
214A	**Organ Pipe Nat**	**1.82**	**88**	*e*Pn	P	Pn	15 52 35.6	+0.5
214A				*e*Pg	P	Pg	15 52 40.0	+0.3
Y12C	**Blythe**	**1.87**	**11**	P	P	Pn	15 52 36.7	+0.9
	baz=190,SNR=18							
109C	**Camp Elliot, M**	**2.06**	**299**	Pb	P	Pg	15 52 43.3	-0.9
	baz=117							
109C				S	S	Sn	15 53 04.8	+1.2
	baz=117							
PFO	**Pinyon Flats O**	**2.12**	**324**	*e*Pn	P	Pn	15 52 39.4	+0.2
IRM	**Iron Mountain**	**2.25**	**356**	P	P	Pn	15 52 41.9	+0.8
	baz=175							
MURC	**Murrieta**	**2.54**	**312**	Sb	Sg		15 53 23.8	-2.3
	baz=131							
TUC	**Tucson**	**3.56**	**82**	*e*Pn	P	Pn	15 52 59.6	+0.5
TUC				*e*Pg	P	Pg	15 53 12.8	-0.1
TUC				*e*Sg	S	Sg	15 53 56.3	-2.8
WUAZ	**Wupatki**	**4.68**	**39**	*e*Pn	P	Pn	15 53 17.1	+2.6
WUAZ				*e*Sg	S	Sg	15 54 33.8	-1.0
DAC	**Darwin (Calif)**	**4.88**	**334**	*e*Pg	Pg		15 53 41.5	+3.5
MNTX	**Cornudas Mount**	**8.15**	**89**	*e*Pn	Pn		15 54 09.4	+7.3

IDC 12 15:54:30.5±78.0, 14°30S×170°05E, h0km, mb3.5/3, mb1 3.7/3, mb1mx3.4/42, mbtmp3.5/3, Error ellipse: s-maj=1326.0km s-min=132.3km az=66.0, Vanuatu Islands region

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time	Res
STKA	**Stephens Creek**	**31.34**	**231**	P	P		16 00 52.6	-0.3
	1.1nm,0.8s,baz=59,slow=13,SNR=3.9							
WRA	**Warramunga Arr**	**34.54**	**256**	P	P		16 01 20.9	-0.1
	0.2nm,0.4s,baz=88,slow=8.6,SNR=6.6							
ASAR	**Alice Springs**	**35.34**	**249**	P	P		16 01 28.1	+0.1
	0.3nm,0.5s,baz=75,slow=9.5,SNR=14							

ISCJB **12** *16:02:02.3±1.8, 37.02N±0.03×140.77E±0.06, h12km±14km, mb3.2, MS3.0/1, Error ellipse: s-maj=8.5km s-min=4.6km az=13.5*
JMA **12** *16:02:03.1, 37.03N×140.67E, h7km±1km, M3.4 Broadband fault plane solution: P waves. NP1: φs197.00000°, δ54.00000°, λ-115.00000°. NP2: φs55.00000°, δ43.00000°, λ-60.00000°. Principal axes: T Plg6.0000°, Azm304.0000°; N Plg20.0000°, Azm212.0000°; P Plg69.0000°, Azm50.0000°;*
JMA Felt I J1.
IDC **12** *16:02:03.9±2.1, 36.66N×140.72E, h0km, mb3.3/2, mb1 3.5/2, mb1mx3.0/64, mbtmp3.3/2, MS3.1/1, Ms1 3.1/1, ms1mx2.3/23 Error ellipse: s-maj=42.4km s-min=6.3km az=15.0*
ISC 12 16:02:02.7±1.1, 37°00N±0°06×140°69E±0°05, h8km±12km, n18, σ0°63/20, 6C-1D, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time	Res
ONAJ	**Iwakimizuishiy**	**0.13**	**42**	⇑P	P	Pg	16 02 06.0	+0.3
ONAJ				S	S	Sg	16 02 07.9	+0.2
JHO	**Hitachi**	**0.40**	**193**	⇑P	P	Pb	16 02 11.5	-0.6
JHO				S	S	Sb	16 02 17.5	-0.9
JFT	**Otama**	**0.58**	**332**	⇑P	P	Pg	16 02 14.0	0.0
JFT				S	S	Sg	16 02 21.4	-0.3
JSB	**Shiboa**	**0.61**	**267**	⇑P	P	Pb	16 02 15.6	-0.1
JSB				S	S	Sb	16 02 24.1	-0.5
JMM	**Marumori**	**0.87**	**6**	⇓P	P	Pg	16 02 18.7	-0.7
JMM				S	S	Sg	16 02 29.9	-0.8
JYT	**Yasato**	**0.87**	**207**	⇑P	P	Pb	16 02 19.8	-0.2
JYT				S	S	Sb	16 02 31.4	-0.4
JFY	**Yanaizu**	**0.88**	**298**	⇑P	P	Pg	16 02 19.6	-0.1
JFY				S	S	Sg	16 02 30.6	-0.5
MJAR	**Matsushiro Arr**	**2.04**	**258**	Pn	P	Pn	16 02 38.6	+1.2
	4.6nm,0.3s,baz=81,slow=15,SNR=4.4							
MJAR				Sn	S	Sb	16 03 05.7	+0.1
	7.6nm,0.3s,baz=90,slow=24,SNR=12							
MAT	**Matsushiro**	**2.04**	**258**	P	P	Pn	16 02 38.6	+1.2
MAT				S	S	Sb	16 03 05.3	-0.4
H11N2	**WAKE ISLAND Hy**	**28.64**	**120**	T	T	T	16 37 49.9	
	baz=313,slow=75,SNR=18							
H11N1	**WAKE ISLAND Hy**	**28.64**	**120**	T	T	T	16 37 50.8	
	baz=313,slow=75,SNR=12							
H11N3	**WAKE ISLAND Hy**	**28.65**	**120**	T	T	T	16 37 51.4	
	baz=313,slow=75,SNR=16							
H11S1	**WAKE ISLAND Hy**	**29.34**	**122**	T	T	T	16 38 41.3	
	baz=312							
H11S3	**WAKE ISLAND Hy**	**29.34**	**122**	T	T	T	16 38 41.3	
	baz=312,slow=74,SNR=35							
H11S2	**WAKE ISLAND Hy**	**29.35**	**122**	T	T	T	16 38 43.1	

WRA	**Warramunga Arr**	**56.91**	**187**	P		**P**	**16 13 23.0**	**-0.7**
	1.2nm,0.7s,baz=2.8,slow=7.3,SNR=14							
ASAR	**Alice Springs**	**60.64**	**187**	P		**P**	**16 13 49.1**	**-0.5**
	0.3nm,0.7s,baz=21,slow=8.1,SNR=5.2							

NIED ***12*** *16:04:00.39°.10N×142°.40E,h35km,Mw3.6 Best double couple: M₀3.34000×10¹⁴ NP1:φ₁34.00000°,δ29.00000°, λ-46.00000°. NP2:φ₂265.00000°,δ70.00000°, λ-111.00000°.*

JMA 12 16:04:16.8±0.1,39°.10N×142°.39E,h33km±1km,M3.5, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID			Time	Res
				Op		ISC	h m s	ISC
OFUJ	**Ofunato**	**0.56**	**268**	P		Pb	16 04 28.1	-0.3
OFUJ				S		Sb	16 04 36.1	-0.2
MIYJ	**Miyakonagasawa**	**0.65**	**317**	P		Pn	16 04 29.1	-0.6
MIYJ				S		Sb	16 04 38.1	-0.6
JMK	**Ichinoseki**	**0.92**	**261**	P		Pn	16 04 33.5	+0.1
JMK				S		Sn	16 04 45.7	+0.2
JOM	**Ohasama**	**0.93**	**294**	P		Pn	16 04 33.9	+0.4
JOM				S		Sb	16 04 46.4	-0.1
JIO	**Ouri**	**1.04**	**232**	S		Sn	16 04 46.7	-1.7
JKZ	**Kuzumaki**	**1.21**	**317**	P		Pb	16 04 38.3	-0.8
JKZ				S		Sn	16 04 53.5	+0.9
JRG	**Rokugo**	**1.40**	**283**	P		Pb	16 04 41.4	-0.9
JANG	**Nango**	**1.44**	**332**	P		Pn	16 04 41.4	+0.8
JANG				*eS*		Sn	16 04 58.9	+0.6

MAN 12 16:04:39,18°.97N×121°.28E,h1km,mb4.4,ML3.2,MS3.0, 1C-2D,Luzon

Code	Station Name	Δ°	AZ°	Phase ID			Time	Res
				Op		ISC	h m s	ISC
PIP	**Pasuquin**	**0.90**	**224**	⇓*i*	P	Pb	16 04 57.1	-0.3
PIP				*eS*		Sn	16 05 12.3	-0.1
SGCP	**Mt. Cagua**	**1.03**	**135**	*eP*		Pn	16 05 00.3	-0.2
SGCP				*eS*		Sn	16 05 16.4	+0.9
APYP	**Conner**	**1.10**	**182**	*eP*		Pn	16 05 01.9	+0.3
APYP				*eS*		Sn	16 05 19.6	+2.1
SIPP	**Brgy, Tapao**	**1.30**	**217**	⇓*i*	P	Pn	16 05 04.5	+0.2
SIPP				*eS*		Sn	16 05 28.2	+5.8
CVP	**Callao Caves**	**1.36**	**158**	*eP*		Pb	16 05 06.1	+0.8
CVP				*i* S		Sn	16 05 26.0	+2.1
ABRA	**Dolores**	**1.42**	**202**	*eP*		Pb	16 05 06.4	+0.1
CAUP	**Cauayan**	**2.08**	**165**	*eP*		Pg	16 05 18.3	-0.6
BCPH	**Baguio City Da**	**2.66**	**195**	⇑*i*	P	Pb	16 05 27.3	-0.2
BCPH				*i* S		Sb	16 06 02.3	+1.5

TRN 12 16:36:30.9,17°.31N×61°.57W,h22km,MD3.7,2C, Leeward Islands

Code	Station Name	Δ°	AZ°	Phase ID			Time	Res
				Op		ISC	h m s	ISC
BPA	**Boggy Peak**	**0.38**	**227**	⇑*eP*		Pn	16 36 42.0	+0.8
BPA				*eS*		Sn	16 36 47.6	-0.3
ANWB	**Willy Bob**	**0.41**	**330**	*i* P		Pn	16 36 41.8	+0.3
ANWB				*eS*		Sn	16 36 48.1	-0.5
MLYT	**Lee's Yard**	**0.84**	**226**	*i* P		Pn	16 36 48.7	+1.2
MLYT				*eS*		Sn	16 37 02.8	+3.7
SEG	**Port Louis**	**0.91**	**176**	*eP*		Pn	16 36 49.0	+0.7
NEV	**Hard Times**	**0.98**	**260**	*eP*		Pn	16 36 51.6	+2.3
NEV				*eS*		Sn	16 37 05.0	+2.5
DEG	**La Desirade**	**1.10**	**154**	*eP*		Pb	16 36 52.4	+1.0
LZG	**Guadaloupe-1**	**1.18**	**190**	⇑*iP*		Pb	16 36 53.7	+1.0
SEUS	**St. Eustatius**	**1.36**	**278**	*eP*		Pb	16 36 55.5	-0.3
SEUS				*eS*		Sb	16 37 15.9	+3.1
MGG	**Marie-Galante**	**1.41**	**170**	*eP*		Pb	16 36 57.0	+0.5
TBG	**Guadaloupe-3**	**1.45**	**183**	*eP*		Pb	16 36 57.7	+0.4
TBG				*eS*		Sb	16 37 16.4	+1.1
SMRT	**St. Maarten**	**1.61**	**297**	*eP*		Pb	16 37 00.4	+0.3
SMRT				*eS*		Sb	16 37 21.4	+1.3
BBL	**Barber's Block**	**1.78**	**177**	*eP*		Pb	16 37 02.1	-0.8
BBL				*eS*		Sb	16 37 24.1	-0.6

ISCJB ***12*** *16:41:12.4±0.8,50°.0N±0°.1×155°.5E±0°.2,h123km,mb3.5/8, Error ellipse: s-maj=20.0km s-min=5.9km az=42.7*
MOS ***12*** *16:41:12.3±1.3,49°.97N×155°.41E,h132km,mb4.0/1, Error ellipse: s-maj=28.3km s-min=7.0km az=70.0*
KRSC ***12*** *16:41:13.4±1.9,49°.68N×156°.70E,h101km±37km,ML4.1*
IDC ***12*** *16:41:16.4±2.9,50°.20N×155°.30E,h144km±24km,mb3.2/8, mb1 3.4/10,mb1mx3.1/54,mbtmp3.6/10, Error ellipse: s-maj=32.1km s-min=16.6km az=162.0*

ISC 12 16:41:12.5±1.1,49°.8N±0°.1×155°.7E±0°.1,h123km,n43, σ1§64/54,mb3.5/8,Kuril Islands

Code	Station Name	Δ°	AZ°	Phase ID			Time	Res
				Op		ISC	h m s	ISC
SKR	**Severo-Kuril's**	**0.89**	**16**	*i* P		**Pn**	**16 41 35.8**	**+2.1**
SKR				*eS*		**Sn**	**16 41 51.6**	**+1.8**
SKR	**Severo-Kuril's**	**0.89**	**16**	*e*PN		**Pn**	**16 41 32.4**	**-1.3**
SKR				*i* S		**Sn**	**16 41 48.0**	**-1.8**
SKR				pmax	pmax			
	comp=N,80nm,0.4s							
SKR				pmax	pmax			
	comp=E,70nm,0.4s							
SKR				pmax	pmax			
	comp=Z,150nm,0.4s							
SKR				smax	smax			
	comp=N,460nm,0.5s							
SKR				smax	smax			
	comp=E,830nm,0.2s							
PAU	**Pauzhetka**	**1.78**	**22**	*eP*		**Pn**	**16 41 44.7**	**+1.4**
PAU				*eS*		**Sn**	**16 42 08.3**	**+1.4**
PAU	**Pauzhetka**	**1.78**	**22**	PN		**Pn**	**16 41 44.7**	**+1.4**
PAU				S		**Sn**	**16 42 08.3**	**+1.4**
ASAK	**Asacha**	**2.90**	**27**	*eP*		**Pn**	**16 41 59.4**	**+1.8**
MTVR	**Mutnovka**	**3.08**	**29**	*eP*		**Pn**	**16 42 01.7**	**+1.8**
MTVR				*eS*		**Sn**	**16 42 36.9**	**+0.4**
RUS	**Russkaya**	**3.15**	**33**	*eP*		**Pn**	**16 42 01.1**	**+0.5**
RUS				*eS*		**Sn**	**16 42 36.2**	**-1.6**
RUS	**Russkaya**	**3.15**	**33**	PN		**Pn**	**16 42 01.1**	**+0.5**
RUS				S		**Sn**	**16 42 36.2**	**-1.6**
APC	**Apacha**	**3.23**	**16**	*eP*		**Pn**	**16 42 03.5**	**+1.8**
APC	**Apacha**	**3.23**	**16**	PN		**Pn**	**16 42 03.5**	**+1.8**
PETK	**Petropavlovsk-**	**3.51**	**20**	P		**Pn**	**16 42 07.2**	**+1.7**
	comp=E,14nm,0.3s,baz=181,slow=14,SNR=247							
PET	**Petropavlovsk**	**3.69**	**29**	*e*PN		**Pn**	**16 42 09.7**	**+1.9**
PET				*eS*		**Sn**	**16 42 50.3**	**-0.4**
PET				smax	smax			
	comp=N,42nm,0.4s							
PET				smax	smax			
	comp=E,34nm,0.4s							
DALK	**Dalny**	**3.73**	**29**	*eP*		**Pn**	**16 42 09.7**	**+1.4**
DALK				*eS*		**Sn**	**16 42 50.5**	**-1.1**
UGLR	**Uglovaya**	**3.90**	**29**	*eP*		**Pn**	**16 42 12.7**	**+2.0**
AVH	**Avacha**	**3.92**	**28**	*eP*		**Pn**	**16 42 13.4**	**+2.4**
AVH				*eS*		**Sn**	**16 42 57.1**	**+0.7**
AVH	**Avacha**	**3.92**	**28**	PN		**Pn**	**16 42 13.4**	**+2.4**
AVH				S		**Sn**	**16 42 57.1**	**+0.7**
SMAR	**Somma**	**3.94**	**28**	*eP*		**Pn**	**16 42 13.2**	**+1.8**
SMAR	**Somma**	**3.94**	**28**	PN		**Pn**	**16 42 13.2**	**+1.8**
KRX	**Arik**	**3.98**	**26**	*eP*		**Pn**	**16 42 13.7**	**+1.9**
KRX				*eS*		**Sn**	**16 42 58.0**	**+0.2**
SDLR	**Sedlovina**	**3.98**	**29**	*eP*		**Pn**	**16 42 13.4**	**+1.6**
SDLR	**Sedlovina**	**3.98**	**29**	PN		**Pn**	**16 42 13.4**	**+1.6**
NLC	**Nalytchevo**	**4.04**	**33**	*eP*		**Pn**	**16 42 12.4**	**-0.1**
NLC				*eS*		**Sn**	**16 42 55.3**	**-3.7**
NLC	**Nalytchevo**	**4.04**	**33**	PN		**Pn**	**16 42 12.4**	**-0.1**
NLC				S		**Sn**	**16 42 55.3**	**-3.7**
GNL	**Ganaly**	**4.11**	**19**	*eP*		**Pn**	**16 42 14.6**	**+1.1**
GNL	**Ganaly**	**4.11**	**19**	PN		**Pn**	**16 42 14.6**	**+1.1**
KBTR	**Krutoberegovo**	**7.69**	**31**	*eP*		**Pn**	**16 43 01.2**	**-0.3**
KBTR	**Krutoberegovo**	**7.69**	**31**	PN		**Pn**	**16 43 01.2**	**-0.3**
BKI	**Bering**	**8.24**	**45**	*eP*		**Pn**	**16 43 08.8**	**-0.2**
BKI				*eS*		Sn	16 44 31.5	-8.9
BKI	**Bering**	**8.24**	**45**	PN		**Pn**	**16 43 08.8**	**-0.2**
MJAR	**Matsushiro Arr**	**18.36**	**230**	P		**Pn**	**16 45 19.6**	**+0.6**
	baz=35,slow=14,SNR=3.0							
TIXI	**Tiksi**	**25.08**	**340**	P		**P**	**16 46 22.0**	**-3.0**
	comp=E,0.6nm,0.4s,baz=133,slow=4.4,SNR=5.1							
H11S1	**WAKE ISLAND Hy**	**32.47**	**160**	T		T	17 22 05.5	
	baz=347,slow=76,SNR=7.8							
H11S3	**WAKE ISLAND Hy**	**32.48**	**160**	T		T	17 22 06.0	
	baz=347,slow=76,SNR=13							
H11S2	**WAKE ISLAND Hy**	**32.48**	**160**	T		T	17 22 07.1	
	baz=347,slow=76,SNR=4.6							
ILAR	**Eielson Array**	**33.07**	**41**	P		**P**	**16 47 36.8**	**+1.0**
	comp=E,0.5nm,0.6s,baz=257,slow=7.1,SNR=7.6							
INK	**Inuvik**	**38.12**	**35**	P		**P**	**16 48 19.6**	**+0.6**
	comp=E,0.5nm,0.4s,baz=279,slow=7.6							
MKAR	**Makanchi Array**	**47.12**	**296**	P		**P**	**16 49 30.8**	**-1.1**
	comp=E,0.2nm,0.5s,baz=38,slow=7.7,SNR=4.3							
KURK	**Kurchatov**	**47.15**	**302**	P		**P**	**16 49 31.9**	**-0.1**
KURBB	**Kurchatov Arra**	**47.25**	**302**	P		**P**	**16 49 31.9**	**-0.8**
	comp=E,0.5nm,0.5s,baz=64,slow=10,SNR=2.9							
YKA	**Yellowknife Ar**	**47.42**	**39**	P		**P**	**16 49 35.1**	**+1.2**
	comp=E,0.3nm,0.6s,baz=297,slow=7.4,SNR=6.2							
FINES	**FINESS Array B**	**61.98**	**335**	P		**P**	**16 51 17.0**	**-1.9**
	comp=E,2.0nm,1.0s,baz=336,slow=6.1,SNR=3.4							
FINES	**FINESS Array B**	**61.98**	**335**	P		**P**	**16 51 17.0**	**-1.9**
FINES				pmax	pmax			
	comp=Z,2.0nm,1.0s							
TXAR	**Lajitas Array**	**74.50**	**63**	P		**P**	**16 52 39.6**	**+2.1**
	comp=Z,0.2nm,0.4s,baz=309,slow=2.9,SNR=2.6							

JMA 12 16:59:57.0,37°.10N×140°.66E,h12km±1km,M3.6,1C-2D, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID			Time	Res
				Op		ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.11**	**89**	P		Pg	17 00 00.2	+0.2
ONAJ				S		Sg	17 00 02.2	0.0
JFT	**Otama**	**0.49**	**328**	⇓P		Pg	17 00 06.7	+0.1
JFT				S		Sg	17 00 13.3	+0.1
JHO	**Hitachi**	**0.49**	**189**	P		Pg	17 00 06.5	-0.2
JHO				S		Sg	17 00 13.1	-0.1
JSB	**Shiboa**	**0.61**	**258**	⇑P		Pb	17 00 09.3	-0.3
JSB				S		Sb	17 00 17.7	-0.4
JMM	**Marumori**	**0.77**	**8**	P		Pg	17 00 11.5	-0.5
JMM				S		Sg	17 00 21.8	-0.3
JFY	**Yanaizu**	**0.82**	**292**	⇓P		Pg	17 00 12.7	-0.2
JFY				S		Sg	17 00 23.1	-0.5
MAT	**Matsushiro**	**2.04**	**255**	P		Pn	17 00 32.6	+1.3
MAT				*eS*		Sn	17 00 57.1	+0.4

IDC ***12*** *16:59:57.3±3.3,35°.15N×141°.07E,h11km±19km,mb3.3/7, mb1 3.4/8,mb1mx3.3/57,mbtmp3.4/8,ML3.0/1,MS2.8/2, Ms1 2.8/2,ms1mx2.4/24, Error ellipse: s-maj=23.3km s-min=18.2km az=65.0*
ISCJB ***12*** *16:59:59.1±0.8,35°.35N±0°.04×140°.96E±0°.09,h33km, mb3.4/6,MS3.1/1, Error ellipse: s-maj=10.9km s-min=5.9km az=11.1*
JMA ***12*** *16:59:59.0±0.1,35°.45N×140°.93E,h24km±2km,M4.0*
JMA Felt II J1.

ISC 12 16:59:58.7±1.1,35°.41N±0°.04×141°.03E±0°.10,h33km,n25, σ1§56/17,mb3.5/6,4C-1D,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID			Time	Res
				Op		ISC	h m s	ISC
CHOJ	**Chosi**	**0.33**	**335**	⇑P		**Pb**	**17 00 05.3**	**-1.5**
CHOJ				S		**Sb**	**17 00 09.7**	**-2.6**
I30JP	**ISUMI INFRASON**	**0.60**	**261**	Pg		**Pn**	**17 00 09.8**	**-1.0**
I30JP				Lg		Lg	17 00 18.7	
KTR	**Katsuura**	**0.64**	**247**	P		**Pn**	**17 00 10.5**	**-0.9**
KTR				S		**Sb**	**17 00 18.8**	**-1.5**
JCN	**Nagara**	**0.68**	**271**	⇓P		**Pn**	**17 00 11.3**	**-0.6**
BSO4	**Boso 4**	**0.70**	**234**	⇑P		**Pb**	**17 00 12.7**	**+0.2**
BSO3	**Boso 3**	**0.74**	**216**	⇑P		**Pb**	**17 00 13.1**	**+0.1**
BSO1	**Boso 1**	**0.75**	**183**	⇑P		**Pb**	**17 00 13.1**	**+0.1**
JHO	**Hitachi**	**1.26**	**343**	S		**Sn**	**17 00 37.0**	**+1.2**
JIM2	**Oshima 3**	**1.48**	**243**	P		**Pn**	**17 00 22.3**	**-0.7**
JHJ	**Hachijo jima 2**	**2.50**	**205**	Pn		**Pn**	**17 00 35.0**	**-2.1**
	10nm,0.3s,baz=63,slow=16,SNR=1.4							
JHJ				Sn		**Sn**	**17 01 05.4**	**-1.1**
	28nm,0.3s,baz=73,slow=23,SNR=2.9							
JHJ				LR		LR	17 01 26.3	
	comp=Z,98nm,19.1s,baz=132,slow=39							
USRK	**Ussuriysk Ar.**	**11.20**	**324**	Pn		Pn	17 02 49.1	+13
	0.0nm,0.3s,baz=153,slow=13,SNR=2.2							
H11N2	**WAKE ISLAND Hy**	**27.62**	**118**	T		T	17 34 48.5	
	baz=310,slow=75,SNR=137							
H11N1	**WAKE ISLAND Hy**	**27.63**	**118**	T		T	17 34 48.3	
	baz=310,slow=75,SNR=110							
H11N3	**WAKE ISLAND Hy**	**27.64**	**118**	T		T	17 34 48.9	
	baz=310,slow=75,SNR=112							
H11S1	**WAKE ISLAND Hy**	**28.28**	**120**	T		T	17 35 36.1	
	baz=312,slow=75,SNR=243							
H11S3	**WAKE ISLAND Hy**	**28.28**	**120**	T		T	17 35 36.5	
	baz=312,slow=75,SNR=182							
H11S2	**WAKE ISLAND Hy**	**28.29**	**120**	T		T	17 35 37.1	
	baz=312,slow=75,SNR=133							
SONM	**Songino Array**	**28.47**	**307**	P		**P**	**17 05 52.5**	**+1.8**
	0.2nm,0.4s,baz=106,slow=11,SNR=2.6							
ZALV	**Zalesovo Beam**	**42.80**	**314**	P		P	17 07 57.2	+4.2
	0.4nm,0.4s,baz=80,slow=7.9,SNR=2.6							
MKAR	**Makanchi Array**	**44.74**	**303**	P		**P**	**17 08 10.8**	**+2.0**
	0.4nm,0.6s,baz=88,slow=9.1,SNR=3.7							
AAK	**Ala-Archa**	**51.01**	**299**	LR		LR	17 30 47.0	
	comp=Z,19nm,20.8s,baz=252,slow=36							
BVAR	**Borovoye Array**	**51.45**	**313**	P		P	17 09 05.0	+4.5
	0.3nm,0.8s,baz=60,slow=8.5,SNR=2.9							
WRA	**Warramunga Arr**	**55.41**	**188**	P		**P**	**17 09 28.1**	**-1.7**
	0.4nm,0.5s,baz=6.0,slow=7.2,SNR=6.9							
ASAR	**Alice Springs**	**59.14**	**188**	P		**P**	**17 09 57.8**	**+1.7**
	0.2nm,0.7s,baz=3.0,slow=6.7,SNR=3.7							
YKA	**Yellowknife Ar**	**65.37**	**30**	P		P	17 10 40.9	+3.5
	0.0nm,0.3s,baz=287,slow=6.6,SNR=4.2							

ISCJB ***12*** *17:01:40.3±0.4,67°.08N±0°.02×21°.02E±0°.08,h0km, Error ellipse: s-maj=4.4km s-min=3.1km az=4.1*
HEL ***12*** *17:01:41.7±0.2,67°.09N×20°.92E,h0km,ML2.1, ML1.8(UPP), Explosion*
CSEM ***12*** *17:01:41.7±0.3,67°.07N×21°.33E,h2km,ML1.8, Error ellipse: s-maj=8.9km s-min=6.2km az=99.0,Mining explosion.*
UPP ***12*** *17:01:41.0±0.1,67°.08N×20°.95E,h0km,ML1.8, Explosion*
IDC ***12*** *17:01:42.9±0.9,67°.12N×21°.49E,h0km,mb1 3.0/4, mb1mx2.9/57,mbtmp3.0/4,ML2.5/4, Error ellipse: s-maj=19.0km s-min=6.8km az=110.0*
NAO ***12*** *17:01:43.4±0.7,67°.11N×21°.26E,ML2.4*
KOLA ***12*** *17:01:44.1,66°.74N×21°.29E,h0km*
BER ***12*** *17:01:45.1±4.1,67°.13N×20°.95E,h0km,ML1.8, ML2.4(NAO),Suspected explosion*

ISC 12 17:01:41.7±0.7,67°.08N±0°.02×20°.95E±0°.03,h0km,n78, σ1§35/106,Sweden

Code	Station Name	Δ°	AZ°	Phase ID			Time	Res
				Op		ISC	h m s	ISC
ERTU	**Ertsjaerv**	**0.72**	**137**	P		**Pg**	**17 01 54.6**	**-1.0**
ERTU	**Ertsjaerv**	**0.72**	**137**	*i* P		**Pg**	**17 01 54.6**	**-1.0**
PAJU	**Pajala**	**0.85**	**93**	P		**Pg**	**17 01 56.9**	**-1.0**
PAJU	**Pajala**	**0.85**	**93**	*i* P		**Pg**	**17 01 56.9**	**-1.0**
KUA	**Kurravaara**	**0.91**	**345**	P		**Pg**	**17 01 58.0**	**-0.9**
KUA	**Kurravaara**	**0.91**	**345**	*eP*		**Pg**	**17 01 58.0**	**-0.9**
HARU	**Harads**	**0.93**	**179**	P		**Pg**	**17 01 58.2**	**-1.1**
HARU	**Harads**	**0.93**	**179**	*eP*		**Pg**	**17 01 58.2**	**-1.1**
SALU	**Saltoluokta**	**1.00**	**288**	P		**Pg**	**17 01 59.5**	**-1.2**
SALU	**Saltoluokta**	**1.00**	**288**	*eP*		**Pg**	**17 01 59.5**	**-1.2**
LANU	**Lannavaara**	**1.05**	**22**	P		**Pg**	**17 02 00.8**	**-1.0**
LANU	**Lannavaara**	**1.05**	**22**	*eP*		**Pg**	**17 01 59.2**	**-2.5**
LANU				*eS*		**Sn**	**17 02 19.5**	**+0.6**
NIKU	**Nikkaluokta**	**1.08**	**318**	P		**Pg**	**17 02 01.0**	**-1.3**
NIKU	**Nikkaluokta**	**1.08**	**318**	*eP*		**Pg**	**17 02 01.0**	**-1.3**
SJUU	**Sjulsmark**	**1.61**	**170**	P		**Pn**	**17 02 10.1**	**-1.1**
SJUU	**Sjulsmark**	**1.61**	**170**	*eP*		**Pn**	**17 02 10.1**	**-1.1**
HEF	**Hetta**	**1.68**	**37**	*eP*		**Pn**	**17 02 11.5**	**-0.8**
	baz=220							
HEF				MSG			17 02 32.6	
	comp=Z,23nm,0.2s							
HEF				*e*SN		**Sg**	**17 02 36.7**	**+1.0**
HEF	**Hetta**	**1.68**	**37**	Pg		**Pn**	**17 02 11.5**	**-0.8**
HEF				Sn		**Sg**	**17 02 36.7**	**+1.0**
TOF	**Tornio**	**1.68**	**125**	*eP*		**Pn**	**17 02 11.7**	**-0.6**
TOF				*e*SN		**Sg**	**17 02 37.2**	**+1.5**
TOF	**Tornio**	**1.68**	**125**	Pg		**Pn**	**17 02 11.7**	**-0.6**
TOF				Sn		**Sg**	**17 02 37.2**	**+1.5**
LILU	**Lilltraesk**	**1.86**	**194**	P		**Pn**	**17 02 14.7**	**-0.1**
LILU	**Lilltraesk**	**1.86**	**194**	*eP*		**Pn**	**17 02 14.7**	**-0.1**
LILU	**Lilltraesk**	**1.86**	**194**	P		**Pn**	**17 02 14.7**	**-0.1**
KIF	**Kilpisjarvi**	**1.93**	**358**	Pn		**Pn**	**17 02 16.7**	**+1.0**
KIF				Pg		**Pg**	**17 02 19.4**	**+0.8**
KIF				Lg		Lg	17 02 46.0	
KIF	**Kilpisjarvi**	**1.93**	**358**	Pn		**Pn**	**17 02 16.7**	**+1.0**
KIF				Pg		**Pg**	**17 02 19.4**	**+0.8**
KIF				Lg		Lg	17 02 46.0	
KIF	**Kilpisjarvi**	**1.93**	**358**	*e*PB		**Pn**	**17 02 16.4**	**+0.7**
KIF				MSG			17 02 39.4	
	comp=Z,10nm,0.2s							
KIF	**Kilpisjarvi**	**1.93**	**358**	Pg		**Pn**	**17 02 16.4**	**+0.7**
KIF	**Kilpisjarvi**	**1.93**	**358**	Pn		**Pn**	**17 02 16.7**	**+1.0**
	SNR=50							
KIF				Lg		Lg	17 02 46.0	
	SNR=21							
RNF	**Rovaniemi**	**2.06**	**101**	*e*PB		**Pn**	**17 02 17.8**	**+0.4**
RNF				*e*SG		**Sg**	**17 02 48.0**	**+0.3**
RNF	**Rovaniemi**	**2.06**	**101**	Pg		**Pn**	**17 02 17.8**	**+0.4**
RNF				Sg		**Sg**	**17 02 48.0**	**+0.3**
KTK1	**Kautokeino**	**2.12**	**23**	*e*SG		**Sg**	**17 02 51.0**	**+1.3**
KTK1				IAML			17 02 52.3	
	comp=Z,13nm,0.1s							
SGF	**Sodankyl**	**2.20**	**78**	*e*PG		**Pb**	**17 02 21.8**	**-0.5**
SGF	**Sodankyl**	**2.20**	**78**	Pg		**Pb**	**17 02 21.7**	**-0.5**
BURU	**Burvik**	**2.52**	**176**	P		**Pn**	**17 02 24.0**	**+0.2**
BURU	**Burvik**	**2.52**	**176**	*eP*		**Pn**	**17 02 24.0**	**+0.2**
BURU	**Burvik**	**2.52**	**176**	P		**Pn**	**17 02 24.0**	**+0.2**
MOR8	**Moi Rana**	**2.75**	**254**	*e*SG		**Sb**	**17 03 05.9**	**0.0**
MOR8				IAML			17 03 10.6	
	comp=Z,10.0nm,0.2s							
OUL	**Oulu**	**2.84**	**133**	*e*PG		**Pb**	**17 02 33.5**	**+0.3**
OUL	**Oulu**	**2.84**	**133**	Pg		**Pb**	**17 02 33.5**	**+0.3**
ARA0	**ARCESS Array S**	**2.99**	**32**	Pn		**Pn**	**17 02 29.8**	**-0.4**
	baz=210,slow=14							
ARA0				Sn		**Sn**	**17 03 08.6**	**+1.9**
	baz=218,slow=28							
ARA0				Lg		Lg	17 03 14.5	
	baz=215,slow=28							
ARA0	**ARCESS Array S**	**2.99**	**32**	Pn		**Pn**	**17 02 29.8**	**-0.4**
	baz=210,slow=14							
ARA0				Sn		**Sn**	**17 03 08.6**	**+1.9**
	baz=218,slow=28							
ARA0				Lg		Lg	17 03 14.5	
	baz=215,slow=28							
ARA0	**ARCESS Array S**	**2.99**	**32**	Pn		**Pn**	**17 02 29.8**	**-0.4**
	SNR=50							
ARA0				Sn		**Sn**	**17 03 08.6**	**+1.9**
	SNR=50							
ARA0				Lg		Lg	17 03 14.5	
	SNR=6.1							
ARCES	**ARCESS Array B**	**2.99**	**32**	Pn		**Pn**	**17 02 30.0**	**-0.2**
	comp=Z,0.6nm,0.3s,baz=210,slow=14,SNR=31							
ARCES				Pg		Pb	17 02 32.8	-2.9
	comp=Z,0.6nm,0.3s,baz=205,slow=14,SNR=66							
ARCES				Lg		Lg	17 03 12.2	
	comp=Z,1.7nm,0.3s,baz=210,slow=25,SNR=12							
OUFX	**Oulainen**	**3.14**	**149**	*e*PB		**Pn**	**17 02 35.0**	**+2.7**
OUFX	**Oulainen**	**3.14**	**149**	Pb		**Pn**	**17 02 35.0**	**+2.7**
UMAU	**Umeaa**	**3.22**	**182**	*e*P		**Pn**	**17 02 34.1**	**+0.8**
UMAU	**Umeaa**	**3.22**	**182**	Pb		**Pn**	**17 02 34.1**	**+0.8**
VRF	**Varrio**	**3.41**	**75**	*e*PB		**Pn**	**17 02 38.6**	**+2.6**
VRF				*e*SG		**Sg**	**17 03 29.1**	**-1.8**
VRF	**Varrio**	**3.41**	**75**	Pb		**Pn**	**17 02 38.6**	**+2.6**
MSF	**Maaselka**	**3.45**	**106**	*e*PB		**Pb**	**17 02 40.6**	**-2.9**
MSF				*e*SG		**Sg**	**17 03 29.2**	**-3.1**
MSF	**Maaselka**	**3.45**	**106**	Pb		**Pb**	**17 02 40.6**	**-2.9**
KEV	**Kevo**	**3.49**	**37**	Pn		**Pn**	**17 02 37.6**	**+0.4**
KEV				Sn		**Sn**	**17 03 19.4**	**+0.3**
KEV	**Kevo**	**3.49**	**37**	Pn		**Pn**	**17 02 37.6**	**+0.4**
KEV				Sn		**Sn**	**17 03 19.4**	**+0.3**
KEV	**Kevo**	**3.49**	**37**	*eP*		**Pn**	**17 02 38.4**	**+1.3**
KEV	**Kevo**	**3.49**	**37**	Pn		**Pn**	**17 02 37.6**	**+0.4**
	SNR=50							
KEV	**Kevo**	**3.49**	**37**	Pb		**Pn**	**17 02 38.4**	**+1.3**
KEV				Sn		**Sn**	**17 03 19.4**	**+0.3**
	SNR=50							
KU6	**Riekki**	**3.73**	**102**	*eP*		**Pn**	**17 02 42.6**	**+2.2**
VAF	**Ylistaro**	**4.12**	**169**	*eP*		**Pn**	**17 02 47.2**	**+1.3**
VAF	**Ylistaro**	**4.12**	**169**	Pn		**Pn**	**17 02 47.1**	**+1.3**
APA0	**Apatity Array**	**

ECNX				*e*S		**Sg**	**17 02 20.4 +0.2**
PBX	**Punta Banda**	**1.06**	**298**↓	*e*P		**Pg**	**17 02 09.8 -0.9**
PBX				*e*S		**Sg**	**17 02 24.4 -0.1**
CBX	**Cerro Bola**	**1.39**	**320**↑	*e*P		**Pn**	**17 02 15.3 -1.2**
CBX				*e*S		**Sb**	**17 02 34.4 -0.5**
CBX				AML	AML		17 02 43.3
	comp=E,1μm,0.7s						
CBX	**Cerro Bola**	**1.39**	**320**	*e*P		**Pn**	**17 02 15.3 -1.2**
CBX				*e*S		**Sb**	**17 02 32.5 -2.4**
RMX	**La Rumorosa**	**1.41**	**344**↑	*e*P		**Pn**	**17 02 16.1 -0.8**
IBP	**Imperial Bould**	**1.47**	**344**	P		**Pn**	**17 02 17.2 -0.3**
	baz=164,SNR=66						
IBP				S		**Sn**	**17 02 36.3 -1.0**
	baz=164						
TJIG	**Tijuana**	**1.48**	**323**	*e*P		**Pn**	**17 02 16.9 -0.8**
TJIG				*e*S		**Sn**	**17 02 35.1 -2.5**
SWSC	**Sam W. Stewart**	**1.70**	**355**	P		**Pn**	**17 02 19.6 -1.1**
	baz=175,SNR=20						
MONP2	**Monument Peak**	**1.78**	**338**	P		**Pn**	**17 02 22.2 +0.2**
	baz=158,SNR=122						
MONP2				S		**Sn**	**17 02 44.3 -0.8**
	baz=158						
GLA	**Glamis**	**1.92**	**20**	P		**Pn**	**17 02 22.5 -1.2**
	baz=200						
109C	**Camp Elliot, M**	**2.06**	**323**	P		**Pn**	**17 02 26.5 +0.8**
	baz=143,SNR=23						
109C				S		**Sn**	**17 02 52.6 +0.7**
	baz=143						
BC3	**Big Chuckawall**	**2.40**	**3**	P		**Pn**	**17 02 29.9 -0.6**
	baz=183						
PFO	**Pinyon Flats O**	**2.46**	**343**	Pn		**Pb**	**17 02 35.7 +0.6**
	comp=E,9.7nm,0.3s,baz=174,slow=14,SNR=34						
PFO				Lg	Lg		17 03 07.1
	comp=E,23nm,0.3s,baz=102,slow=2.8,SNR=20						
PFO				LR	LR		17 03 22.5
	comp=E,20nm,19.4s,baz=294,slow=37						
PFO	**Pinyon Flats O**	**2.46**	**343**	P		**Pn**	**17 02 30.8 -0.5**
	baz=163						
PFO				Sb		**Sb**	**17 03 06.5 +0.6**
	baz=163						
214A	**Organ Pipe Nat**	**2.50**	**73**	P		**Pn**	**17 02 30.5 -1.3**
	baz=254						
214A				S		**Sn**	**17 02 59.8 -2.8**
	baz=254						
MURC	**Murrieta**	**2.70**	**331**	Sb		**Sb**	**17 03 12.1 -0.5**
	baz=150						
BELC	**Belle Mtn. Jos**	**2.76**	**353**	P		**Pn**	**17 02 35.5 +0.1**
	baz=173						
IRM	**Iron Mountain**	**2.93**	**8**	P		**Pn**	**17 02 37.5 -0.1**
	baz=188,SNR=6.4						
BBRC	**Big Bear Solar**	**3.20**	**340**	Sb		**Sb**	**17 03 29.0 +1.8**
	baz=160						
NVAR	**Mina Array Bea**	**7.50**	**344**	Pn		Pn	17 03 44.8 +4.3
	baz=153,slow=13,SNR=1.9						
NVAR				Pg		Pb	17 04 04.9 +3.9
	comp=E,0.1nm,0.3s,baz=163,slow=16,SNR=2.9						
TXAR	**Lajitas Array**	**10.51**	**97**	Pn		Pn	17 04 26.0 +4.2
	comp=E,0.1nm,0.3s,baz=282,slow=12,SNR=4.6						
PDAR	**Pinedale Array**	**12.47**	**21**	Pn		Pn	17 04 55.0 +6.3
	comp=E,0.0nm,0.3s,baz=180,slow=7.2,SNR=2.3						
ILAR	**Eielson Array**	**38.73**	**339**	P		**P**	**17 09 17.9 +2.7**
	comp=E,0.3nm,0.7s,baz=153,slow=8.9,SNR=4.8						

JMA 12 17:03:28.7±0.3, 38°19N×142°45E, h30km±4km, M3.5, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**0.91**	**287**	P		Pn	17 03 45.2 -0.2
JIO				*e*S		Sn	17 03 56.9 -0.5
OFUJ	**Ofunato**	**1.08**	**326**	P		Pn	17 03 47.6 -0.2
OFUJ				S		Sn	17 04 01.1 -0.6
JMK	**Ichinoseki**	**1.23**	**309**	P		Pn	17 03 50.3 +0.5
JMM	**Marumori**	**1.35**	**257**	P		Pn	17 03 51.5 0.0
JOU	**Okura**	**1.42**	**278**	P		Pn	17 03 53.4 +1.0
JOU				*e*S		Sb	17 04 11.3 -0.9
MIYJ	**Miyakonagasawa**	**1.47**	**341**	P		Pn	17 03 53.9 +0.8
JOM	**Ohasama**	**1.57**	**325**	P		Pn	17 03 55.6 +1.1
JYK	**Kaneyama**	**1.79**	**295**	P		Pn	17 03 59.2 +1.6
JFT	**Otama**	**1.80**	**249**	P		Pn	17 03 57.8 +0.1
JRG	**Rokugo**	**1.86**	**311**	P		Pb	17 04 01.2 -0.8
JYS	**Shirataka**	**1.88**	**272**	P		Pb	17 04 01.1 -1.2
JKZ	**Kuzumaki**	**1.99**	**334**	P		Pb	17 04 02.4 -1.9
JKZ				*e*S		Sb	17 04 26.9 -1.8
JANG	**Nango**	**2.30**	**342**	P		Pb	17 04 07.6 -1.9
JANG				*e*S		Sn	17 04 34.6 +2.8

CASC 12 17:08:14.2±2.4, 8°70N×83°05W, h24km±11km, MD3.9, 3C, Costa Rica

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
BRU2	**Volcan**	**0.37**	**76**	*e*P		Pb	17 08 22.5 +0.2
BRU2				*e*S		Sn	17 08 30.0 -0.8
TBS2		**0.40**	**77**	*e*P		Pb	17 08 23.4 +0.6
TBS2				*e*S		Sn	17 08 30.9 -0.8
BRU	**Baru**	**0.50**	**78**	*e*P		Pb	17 08 24.8 +0.2
BRU				*e*S		Sn	17 08 33.2 -1.2
BUS	**Buena Vista**	**1.10**	**321**↑	*e*P		Pn	17 08 33.0 -1.6
QCR	**Quepos**	**1.31**	**303**↑	*e*P		Pn	17 08 36.3 -0.8
QCR				*e*S		Sn	17 08 54.2 +0.4
URSC	**Urasca**	**1.33**	**328**↑	*e*P		Pn	17 08 36.6 -0.9
URSC				*e*S		Sb	17 08 55.6 +0.2
JCR	**Jicaral**	**2.33**	**299**	*e*P		Pn	17 08 52.6 +1.4
JTS	**JuntasAbangare**	**2.45**	**310**	*e*P		Pn	17 08 53.7 +0.9
JTS				*e*S		Sn	17 09 23.3 +1.3
AZU	**Azuero**	**2.90**	**108**	*e*P		Pn	17 09 00.1 +1.2
AZU				*e*S		Sn	17 09 32.9 -0.1
VCR	**Vista de Mar**	**2.91**	**299**	*e*P		Pn	17 09 01.2 +2.0

IDC ***12*** *17:14:56.9±5.2, 7°92S×116°21E, h0km, mb3.2/3, mb1 3.6/4, mb1mx3.3/50, mbtmp3.4/4, ML3.4/1, MS2.4/1, Ms1 2.4/1, ms1mx2.2/19, Error ellipse: s-maj=245.7km s-min=24.5km az=58.0*

ISCJB ***12*** *17:14:59.6±0.5, 7°99S±0°07×116°14E±0°04, h33km, mb3.4/3, MS2.2/1, Error ellipse: s-maj=9.5km s-min=5.5km az=3.0*

DJA ***12*** *17:14:59.4±0.3, 8°S±3°×11°6E±°, h10km, M3.9/16, mB5.7/1, mb4.0/1, MLv3.9/16, Mw(mB)5.2/1*

ISC 12 17:15:01.2±0.9, 8°11S±0°07×116°11E±0°05, h35km, n19, σ1§60/20, mb3.4/3, Sumbawa region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
TWSI	**Taliwang, Sumb**	**0.99**	**129**	P		**Pn**	**17 15 18.1 -0.5**
DNP	**Denpasar**	**1.05**	**237**	P		**Pn**	**17 15 18.7 -0.7**
DNP				S		**Sn**	**17 15 34.9 +2.0**
PLAI	**Plampang**	**1.80**	**114**	P		**Pn**	**17 15 32.1 +2.4**
ABJI	**Asem Bagus**	**1.88**	**279**	P		**Pn**	**17 15 31.7 +0.9**
JAGI	**Jajag, Banyuwa**	**1.97**	**259**	P		**Pn**	**17 15 32.4 +0.4**
GMJI	**Gumukmas**	**2.64**	**266**	P		**Pn**	**17 15 40.7 -0.6**
PWJI	**Pagerwojo**	**4.26**	**271**	P		**Pn**	**17 16 03.3 -0.3**
TBJI	**Tambak Boyo**	**4.41**	**287**	P		**Pn**	**17 16 04.8 -0.9**
WSI	**Waingapu**	**4.42**	**111**	P		**Pn**	**17 16 05.5 -0.3**
BSSI	**Bau Bau, Buton**	**4.77**	**66**	P		**Pn**	**17 16 09.4 -1.2**
KBKI	**Kotabaru**	**4.78**	**1**	P		**Pn**	**17 16 10.6 -0.1**
PCJI	**Pacitan**	**4.88**	**269**	P		**Pn**	**17 16 13.3 +1.2**
BASI	**Baing, Sumba**	**4.89**	**116**	P		**Pn**	**17 16 14.3 +2.1**
WOJI	**Wonogiri, Jawa**	**5.14**	**273**	P		**Pn**	**17 16 16.4 +0.7**
FITZ	**Fitzroy Crossi**	**13.59**	**138**	Pn		**Pn**	**17 18 11.7 +0.1**
	0.2nm,0.3s,baz=325,slow=14,SNR=4.6						
FITZ				Sn		**Sn**	**17 20 36.8 -4.6**
	0.1nm,0.3s,baz=319,slow=24,SNR=2.7						
WRA	**Warramunga Arr**	**21.22**	**126**	P		**P**	**17 19 45.3 +1.1**
	0.6nm,0.4s,baz=301,slow=12,SNR=12						
ASAR	**Alice Springs**	**23.03**	**134**	P		**P**	**17 20 04.2 +0.8**
	0.5nm,0.6s,baz=312,slow=9.5,SNR=17						
JAY	**Jayapura**	**25.10**	**79**	LR		LR	17 31 19.5
	comp=Z,8.9nm,21.5s,baz=16,slow=39						
SONM	**Songino Array**	**56.35**	**352**	P		**P**	**17 24 38.6 -0.3**
	0.4nm,0.7s,baz=168,slow=8.1,SNR=2.3						

ISCJB ***12*** *17:23:58.7±0.5, 31°26N×105°15E, 62W±0°05, h10km±9km, Error ellipse: s-maj=8.8km s-min=6.9km az=7.5*

ECX ***12*** *17:23:59.6±0.5, 31°23N×115°61W, h4km, MD2.4, ML2.6*

MEX ***12*** *17:24:01.0±0.5, 31°16N×115°58W, h14km±25km, MD3.5*

ISC 12 17:23:58.2±1.0, 31°25N±0°05×115°61W±0°04, h16km±9km, n12, σ0§28/20, 2C-4D, Baja California

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
SPIG	**San Pedro Mart**	**0.23**	**149**↑	*e*P		**Pg**	**17 24 04.1 +0.3**
SPIG				*e*S		**Sg**	**17 24 07.4 -0.2**
SPIG	**San Pedro Mart**	**0.23**	**149**	*e*P		**Pb**	**17 24 04.3 0.0**
SPIG				*e*S		**Sg**	**17 24 07.1 -0.5**
SPX	**San Pedro Mart**	**0.24**	**149**↓	*e*P		**Pb**	**17 24 04.3 0.0**
SPX				*e*S		**Sg**	**17 24 07.7 0.0**
SPX				AML	AML		17 24 08.7
	comp=N,680nm,0.3s						
SPX				↓*e*			17 24 08.7
ECBX	**El Chinero**	**0.53**	**65**↑	*e*P		**Pb**	**17 24 09.1 0.0**
ECBX				*e*S		**Sb**	**17 24 16.4 0.0**
ZAX	**El Zacaton**	**0.63**	**295**	*e*P		**Pg**	**17 24 10.7 0.0**
ZAX				*e*S		**Sb**	**17 24 19.8 +0.3**
ECNX	**Esteban Cantu**	**0.94**	**296**↓	*e*P		**Pb**	**17 24 16.2 0.0**
PBX	**Punta Banda**	**1.07**	**298**↓	*e*P		**Pb**	**17 24 18.4 -0.1**
PBX				*e*S		**Sb**	**17 24 32.8 +0.6**
CBX	**Cerro Bola**	**1.39**	**320**	*e*P		**Pb**	**17 24 23.9 -0.1**
CBX				AML	AML		17 24 45.0
	comp=N,146nm,0.3s						
CBX	**Cerro Bola**	**1.39**	**320**	*e*P		**Pb**	**17 24 23.8 -0.1**
CBX				*i* S		**Sn**	**17 24 40.8 -0.4**
RMX	**La Rumorosa**	**1.41**	**344**	*e*P		**Pb**	**17 24 24.6 +0.4**
IBP	**Imperial Bould**	**1.47**	**344**	*e*P		**Pg**	**17 24 26.5 0.0**
TJIG	**Tijuana**	**1.49**	**323**	*e*P		**Pb**	**17 24 25.7 +0.2**
TJIG				*e*S		**Sb**	**17 24 44.0 -0.2**

NIED ***12*** *17:43:00, 36°90N×143°30E, h5km, Mw3.6 Best double couple: M0 2.53000×10^14 NP1:φs237.00000°, δ47.00000°, λ-67.00000°. NP2:φs26.00000°, δ48.00000°, λ-112.00000°.*

IDC ***12*** *17:43:50.8±1.0, 36°73N×143°52E, h0km, mb3.5/8, mb1 3.7/11, mb1mx3.6/45, mbtmp3.6/11, ML3.7/2, MS2.5/3, Ms1 2.5/3, ms1mx2.2/42, Error ellipse: s-maj=24.6km s-min=18.8km az=103.0*

ISCJB ***12*** *17:43:53.8±0.6, 36°85N±0°03×143°26E±0°05, h33km, mb3.5/8, Error ellipse: s-maj=6.3km s-min=4.5km az=23.4*

JMA ***12*** *17:43:54.4±0.3, 36°86N×143°26E, h58km, M3.8*

ISC 12 17:43:55.4±0.8, 36°85N±0°04×143°30E±0°07, h35km, n32, σ1§74/38, mb3.5/8, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JHO	**Hitachi**	**2.20**	**265**	P		**Pn**	**17 44 28.8 -0.7**
JHO				*e*S		**Sn**	**17 44 54.2 -1.3**
JFT	**Otama**	**2.46**	**287**	P		**Pn**	**17 44 33.8 +0.8**
JFT				S		**Sn**	**17 45 02.2 +0.5**
JMK	**Ichinoseki**	**2.67**	**323**	P		**Pn**	**17 44 35.2 -0.6**
JMK				S		**Sn**	**17 45 05.6 -1.3**
BSO1	**Boso 1**	**2.89**	**221**	P		**Pn**	**17 44 38.8 +0.4**
BSO1				*e*S		**Sn**	**17 45 12.8 +1.2**
JOM	**Ohasama**	**3.06**	**330**	P		**Pn**	**17 44 41.1 -0.1**
JOM				*e*S		**Sn**	**17 45 15.3 -1.3**
JYK	**Kaneyama**	**3.11**	**313**	P		**Pn**	**17 44 42.0 +0.1**
JYK				*e*S		**Sn**	**17 45 17.3 -0.5**
JAG	**Ashikaga**	**3.12**	**263**	P		**Pn**	**17 44 42.2 +0.1**
JAG				*e*S		**Sn**	**17 45 17.4 -0.7**
JRY	**Ryogami san**	**3.64**	**258**	P		**Pn**	**17 44 48.9 -0.3**
JRY				*e*S		**Sn**	**17 45 29.4 -1.6**
JOD2	**Odawara 2**	**3.76**	**246**	P		**Pn**	**17 44 51.2 +0.3**
JOD2				*e*S		**Sn**	**17 45 32.8 -1.1**
JANG	**Nango**	**3.79**	**339**	P		**Pn**	**17 44 49.4 -1.8**
JANG				*e*S		**Sn**	**17 45 30.7 -3.8**
JYN	**Shimob**	**4.07**	**252**	P		**Pn**	**17 44 55.9 +0.7**
JYN				*e*S		**Sn**	**17 45 40.1 -1.6**
MJAR	**Matsushiro Arr**	**4.10**	**267**	Pn		**Pn**	**17 44 56.6 +1.1**
	3.0nm,0.3s,baz=95,slow=11,SNR=15						
MJAR				LR	LR		17 46 46.3
	comp=Z,55nm,19.0s,baz=70,slow=41						
JHJ2	**Mitsune**	**4.70**	**218**	P		**Pn**	**17 45 03.3 -0.4**
JHJ2				*e*S		**Sn**	**17 45 53.8 -3.2**
JHJ	**Hachijo jima 2**	**4.71**	**219**	Pn		**Pn**	**17 45 03.7 -0.2**
	12nm,0.3s,baz=73,slow=19,SNR=4.8						
JHJ				Sn		**Sn**	**17 45 52.8 -4.5**
	22nm,0.3s,baz=83,slow=22,SNR=1.8						
JKB	**Kayabe**	**5.33**	**341**	P		**Pn**	**17 45 11.4 -1.0**
JKB				*e*S		**Sn**	**17 46 08.1 -4.4**
USRK	**Ussuriysk Ar.**	**11.30**	**314**	Pn		**Pn**	**17 46 37.2 +2.9**
	0.1nm,0.3s,baz=95,slow=18,SNR=3.8						
KSRS	**Korea Array**	**12.28**	**277**	LR		LR	17 51 48.5
	comp=Z,27nm,18.5s,baz=85,slow=38						
KLR	**Kul'dur**	**14.96**	**329**	Pn		**Pn**	**17 47 21.8 -2.3**
	0.1nm,0.3s,baz=131,slow=13,SNR=4.7						
KLR				LR	LR		17 52 34.5
	comp=Z,17nm,19.4s,baz=173,slow=34						
SEY	**Seymchan**	**26.71**	**9**	P		**P**	**17 49 32.4 +1.4**
	1.2nm,0.2s,baz=203,slow=6.5,SNR=3.7						
H11N2	**WAKE ISLAND Hy**	**26.77**	**123**	T		T	18 17 30.9
	baz=315,slow=75,SNR=5.0						
H11N1	**WAKE ISLAND Hy**	**26.78**	**123**	T		T	18 17 28.4
	baz=315,slow=75,SNR=3.6						
H11N3	**WAKE ISLAND Hy**	**26.79**	**123**	T		T	18 17 32.9
	baz=315,slow=75,SNR=2.8						
H11S1	**WAKE ISLAND Hy**	**27.51**	**125**	T		T	18 18 27.2
	baz=316,slow=74,SNR=5.4						
H11S3	**WAKE ISLAND Hy**	**27.51**	**125**	T		T	18 18 27.9
	baz=316,slow=74						
H11S2	**WAKE ISLAND Hy**	**27.52**	**125**	T		T	18 18 34.1
	baz=316						
SONM	**Songino Array**	**29.14**	**304**	P		P	17 49 57.0 +3.9
	0.9nm,0.8s,baz=102,slow=11,SNR=6.8						
ZALV	**Zalesovo Beam**	**43.15**	**313**	P		**P**	**17 51 53.5 +1.2**
	0.3nm,0.4s,baz=79,slow=7.5,SNR=2.6						
MKAR	**Makanchi Array**	**45.49**	**303**	P		**P**	**17 52 12.6 +1.4**
	0.3nm,0.7s,baz=64,slow=11,SNR=3.7						
ILAR	**Eielson Array**	**48.84**	**32**	P		**P**	**17 52 37.5 +0.5**
	0.6nm,0.9s,baz=274,slow=6.6,SNR=6.2						
WRA	**Warramunga Arr**	**57.11**	**190**	P		**P**	**17 53 38.2 -0.2**
	0.5nm,0.6s,baz=12,slow=7.5,SNR=4.6						
ASAR	**Alice Springs**	**60.84**	**190**	P		**P**	**17 54 04.4 +0.2**
	0.2nm,0.6s,baz=6.0,slow=7.6,SNR=4.4						
YKA	**Yellowknife Ar**	**63.21**	**31**	P		**P**	**17 54 20.6 +1.0**
	0.2nm,0.7s,baz=304,slow=7.2,SNR=4.2						

KRSC 12 17:43:56.8±1.2, 53°37N×156°94E, h309km±13km, ML3.6, Kamchatka Peninsula

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
APC	**Apacha**	**0.46**	**164**	*e*P		Pn	17 44 37.3 +0.9
GNL	**Ganaly**	**0.68**	**61**	*e*P		Pn	17 44 38.8 +1.8
AVH	**Avacha**	**1.08**	**95**	*e*P		Pn	17 44 40.0 +1.4
DALK	**Dalny**	**1.14**	**106**	*e*P		Pn	17 44 39.9 +1.1
DALK				*e*S		S	17 45 12.6 +0.4
ASAK	**Asacha**	**1.14**	**149**	*e*P		Pn	17 44 40.2 +1.2
SDLR	**Sedlovina**	**1.17**	**94**	*e*P		Pn	17 44 40.3 +1.2
RUS	**Russkaya**	**1.33**	**134**	*e*P		Pn	17 44 40.5 +0.6
RUS				*e*S		S	17 45 13.7 -0.5
NLC	**Nalytchevo**	**1.46**	**97**	*e*S		S	17 45 14.7 -0.7
SKR	**Severo-Kuril's**	**2.74**	**191**	*e*P		Pn	17 44 52.6 +1.9
SKR				*e*S		S	17 45 35.2 +1.4
KBTR	**Krutoberegovo**	**4.43**	**48**	*e*P		Pn	17 45 09.2 +1.1
KBTR				*e*S		S	17 46 03.4 -2.0

IDC ***12*** *17:54:21.1±1.7, 16°83S×178°80W, h462km±18km, mb3.3/7, mb1 3.5/9, mb1mx3.1/42, mbtmp4.2/9, Error ellipse: s-maj=64.0km s-min=16.1km az=149.0*

ISC 12 17:54:22.7±1.2, 17°1S±0°5×178°6W±0°3, h500km, n10, σ1§92/11, mb3.9/7, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
AFI	**Afiamalu**	**7.26**	**65**	P		**P**	**17 56 10.7 -0.9**
	7.0nm,0.3s,baz=297,slow=14,SNR=10						
DZM	**Mont Dzumac**	**14.98**	**248**	P		**P**	**17 57 31.8 -1.0**
	0.4nm,0.3s,baz=94,slow=20,SNR=9.9						
CTA	**Charters Tower**	**33.45**	**259**	P		**P**	**18 00 19.6 -0.2**
	1.8nm,0.5s,baz=85,slow=9.2,SNR=5.2						
STKA	**Stephens Creek**	**38.91**	**240**	P		**P**	**18 01 05.2 +0.3**
	4.1nm,0.4s,baz=91,slow=10,SNR=21						
WRA	**Warramunga Arr**	**44.64**	**259**	P		**P**	**18 01 49.6 -0.9**
	1.0nm,0.2s,baz=86,slow=7.0,SNR=77						
WRA				PcP		**PcP**	**18 03 24.4 +1.7**
	0.6nm,0.8s,baz=86,slow=3.5,SNR=3.9						
WRA				ScP		ScP	18 06 32.3 +5.2
	0.3nm,0.8s,baz=90,slow=4.8,SNR=3.2						
ASAR	**Alice Springs**	**44.88**	**253**	P		**P**	**18 01 51.9 -0.4**
	10.0nm,0.7s,baz=89,slow=7.9,SNR=281						
ASAR				PcP		**pP**	**18 03 24.8 -0.6**
	0.4nm,0.4s,baz=100,slow=4.2,SNR=5.6						
ASAR				ScP		**ScP**	**18 06 32.9 +4.8**
	0.3nm,0.8s,baz=106,slow=5.2,SNR=4.2						
ILAR	**Eielson Array**	**85.10**	**13**	P		**P**	**18 06 05.4 +0.5**
	0.2nm,0.3s,baz=210,slow=5.2,SNR=8.1						
CMAR	**Chiang Mai Arr**	**88.46**	**290**	P		P	18 06 23.9 +2.1
	0.4nm,0.7s,baz=106,slow=2.7,SNR=5.1						
YKA	**Yellowknife Ar**	**93.63**	**25**	P		P	18 06 46.5 +1.8
	0.1nm,0.4s,baz=237,slow=4.7,SNR=3.4						
BRTR	**Keskin Array B**	**144.08**	**316**	PKP		**PKPdf**	**18 13 01.0 -0.6**
	0.6nm,0.8s,baz=28,slow=6.5,SNR=3.6						

NIED ***12*** *17:57:00, 38°30N×141°87E, h62km, Mw3.6 Best double couple: M0 3.07000×10^14 NP1:φs282.00000°, δ60.00000°, λ-178.00000°. NP2:φs191.00000°, δ88.00000°, λ-30.00000°.*

JMA 12 17:57:15.1±0.1, 38°26N×141°87E, h47km±1km, M3.6, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**0.45**	**296**	P		Pn	17 57 25.6 0.0
JIO				S		Sn	17 57 32.6 -0.5
OFUJ	**Ofunato**	**0.83**	**349**	P		Pn	17 57 30.5 0.0
OFUJ				S		Sn	17 57 41.3 -0.5
JMK	**Ichinoseki**	**0.86**	**324**	P		Pn	17 57 31.2 +0.4
JMK				S		Sn	17 57 42.4 +0.1
JMM	**Marumori**	**0.94**	**246**	P		Pn	17 57 31.6 -0.3
JMM				*e*S		Sn	17 57 43.5 -0.7
JOU	**Okura**	**0.95**	**277**	P		Pn	17 57 32.5 +0.3
JOU				S		Sn	17 57 45.0 +0.3
JOM	**Ohasama**	**1.29**	**340**	P		Pn	17 57 37.6 +0.9
MIYJ	**Miyakonagasawa**	**1.31**	**358**	P		Pn	17 57 37.1 0.0
MIYJ				S		Sn	17 57 52.5 -0.9
JYK	**Kaneyama**	**1.35**	**299**	P		Pn	17 57 38.2 +0.6
JFT	**Otama**	**1.42**	**239**	P		Pn	17 57 39.2 +0.7
JYS	**Shirataka**	**1.42**	**269**	P		Pn	17 57 39.1 +0.6
JRG	**Rokugo**	**1.49**	**320**	P		Pn	17 57 40.7 +1.3
JRG				S		Sn	17 58 00.4 +2.7
JKZ	**Kuzumaki**	**1.77**	**346**	P		Pn	17 57 44.7 +1.4

ISCJB ***12*** *17:57:18.0±1.3, 32°22N±0°08×115°2W±0°1, h27km±11km, Error ellipse: s-maj=22.0km s-min=6.4km az=144.1*

ECX ***12*** *17:57:19.6±0.5, 32°19N×115°28W, h6km, MD2.4, ML2.6*

MEX ***12*** *17:57:20.2±0.7, 32°25N×115°20W, h16km±999km, MD3.6*

ISC 12 17:57:17.5±1.3, 32°2N±0°06×115°23W±0°07, h30km±10km, n9, σ0§32/16, 1D, California-Baja California border region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
CPBX	**Cerro Prieto**	**0.20**	**342**	*e*P		**Pb**	**17 57 24.0 +0.2**
CPBX				*e*S		**Sb**	**17 57 27.5 -0.5**
CPBX				↓*e*			17 57 29.8
CPBX				AML	AML		17 57 29.8
	comp=N,3μm,0.2s						
ECBX	**El Chinero**	**0.77**	**168**	*e*P		**Pn**	**17 57 32.2 -0.1**
ECBX				*e*S		**Sn**	**17 57 43.1 +0.3**
RMX	**La Rumorosa**	**0.81**	**298**	*e*P		**Pb**	**17 57 33.3 +0.2**
RMX				*e*S		**Sn**	**17 57 44.3 +0.1**
ZAX	**El Zacaton**	**1.14**	**232**	*e*P		**Pb**	**17 57 38.5 0.0**
ZAX				*e*S		**Sb**	**17 57 53.2 +0.2**
SPIG	**San Pedro Mart**	**1.19**	**190**	*e*P		**Pb**	**17 57 39.6 0.0**
SPIG	**San Pedro Mart**	**1.19**	**190**	*i* P		**Pb**	**17 57 39.7 0.0**
SPIG				*e*S		**Sn**	**17 57 53.7 -0.1**
SPX	**San Pedro Mart**	**1.19**	**190**	*e*P		**Pb**	**17 57 39.6 -0.1**
CBX	**Cerro Bola**	**1.22**	**275**	*e*P		**Pb**	**17 57 40.2 +0.2**
CBX				*e*S		**Sb**	**17 57 59.5 +0.5**
CBX	**Cerro Bola**	**1.22**	**275**	*e*P		**Pb**	**17 57 39.5 -0.5**
CBX				*e*S		**Sn**	**17 57 53.7 -0.4**

IDC ***12*** *18:02:24.8±0.9, 37°53N×143°15E, h0km, mb3.9/14, mb1 4.0/16, mb1mx3.8/49, mbtmp3.9/16, ML3.8/2, MS2.9/3, Ms1 2.9/3, ms1mx2.4/57, Error ellipse: s-maj=24.6km s-min=17.0km az=98.0*

ISCJB ***12*** *18:02:26.6±0.4, 37°49N±0°05×143°04E±0°06, h24km, mb4.2/26, Error ellipse: s-maj=7.3km s-min=6.0km az=139.0*

NEIC ***12*** *18:02:28.5±1.9, 37°49N×143°11E, h25km±13km, mb4.5/12, Error ellipse: s-maj=7.6km s-min=5.6km az=114.0*

JMA ***12*** *18:02:29.0±0.3, 37°50N×142°62E, h8km, M4.1*

ISC 12 18:02:28.3±0.6, 37°46N±0°06×143°03E±0°08, h24km, n72, σ1§42/67, mb4.1/26, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**1.66**	**307**	P		**Pn**	**18 02 54.4 -1.5**
JIO				*e*S		**Sn**	**18 03 13.0 -3.4**
ONAJ	**Iwakimizuishiy**	**1.82**	**259**	P		**Pn**	**18 02 56.5 -1.6**
JMM	**Marumori**	**1.82**	**283**	P		**Pn**	**18 02

ILAR	**Eielson Array**	**48.44**	**33**	P	**P**	**18 11 08.0**	**-0.4**
	1.0nm,1.2s,baz=253,slow=5.7,SNR=2.9							
ILB	**Eielson Array**	**48.44**	**33**	*eP*	**P**	**18 11 07.8**	**-0.6**
IL1	**Eielson Array**	**48.44**	**33**	*eP*	**P**	**18 11 07.8**	**-0.6**
KKN	**Kakani**	**48.92**	**276**	*eP*	**P**	**18 11 13.4**	**+0.6**
GKN	**Gorkha**	**49.34**	**277**	*eP*	**P**	**18 11 16.1**	**+0.2**
TKM2	**Tokmak 2**	**50.56**	**299**	*eP*	**P**	**18 11 26.5**	**+1.4**
	3.2nm,0.8s							
PYUN	**Piuthan**	**50.59**	**278**	*eP*	**P**	**18 11 25.9**	**+0.4**
VOSK	**Vostochnaya**	**50.96**	**312**	*eP*	**P**	**18 11 28.3**	**+0.7**
	2.7nm,0.5s							
BRVK	**Borovoye**	**51.29**	**312**	*eP*	**P**	**18 11 30.6**	**+0.4**
	1.8nm,0.9s							
ZRNK	**Zerenda**	**52.07**	**312**	*eP*	**P**	**18 11 36.9**	**+0.9**
	1.6nm,0.7s							
KKAR	**Karatay Array**	**54.02**	**300**	*eP*	**P**	**18 11 51.0**	**+0.4**
ARU	**Arti**	**56.89**	**319**	*eP*	**P**	**18 12 11.1**	**+0.1**
	17nm,2.0s							
WRAB	**Tennant Creek**	**57.67**	**190**	*eP*	**P**	**18 12 17.8**	**+1.0**
	29nm,1.9s							
WR1	**Warramunga Arr**	**57.68**	**190**	*eP*	**P**	**18 12 17.9**	**+1.0**
	26nm,1.8s							
WRA	**Warramunga Arr**	**57.68**	**190**	P	**P**	**18 12 17.9**	**+1.0**
	1.2nm,0.8s,baz=10,slow=7.6,SNR=7.6							
KBL	**Kabul**	**58.46**	**291**	*eP*	**P**	**18 12 22.1**	**-0.5**
	4.4nm,1.0s							
ABKAR	**Akbulak array**	**58.65**	**310**	*eP*	**P**	**18 12 23.6**	**+0.2**
ASAR	**Alice Springs**	**61.41**	**190**	P	**P**	**18 12 43.5**	**+1.0**
	0.3nm,0.8s,baz=17,slow=10,SNR=6.3							
YKA	**Yellowknife Ar**	**62.79**	**31**	P	**P**	**18 12 49.2**	**-2.2**
	0.0nm,0.4s,baz=296,slow=6.5,SNR=2.4							
YKB5	**Yellowknife Ar**	**62.79**	**31**	*eP*	**P**	**18 12 49.8**	**-1.6**
GEYT	**Alibeck**	**64.75**	**299**	P	**P**	**18 13 05.1**	**+0.3**
	1.8nm,0.8s,baz=18,slow=5.2,SNR=4.7							
FIA1	**FINESS Array S**	**69.03**	**333**	*eP*	**P**	**18 13 30.4**	**-1.1**
FIA0	**FINESS Array S**	**69.03**	**333**	*eP*	**P**	**18 13 32.4**	**+0.9**
FINES	**FINESS Array B**	**69.03**	**333**	P	**P**	**18 13 32.4**	**+0.9**
	0.6nm,0.4s,baz=31,slow=8.9,SNR=5.3							
KBZ	**Khabaz**		**71.60 311**	P	**P**	**18 13 47.6**	**+0.1**
	3.2nm,0.9s,baz=214,slow=2.5,SNR=5.0							
NB200	**NORSAR Array S**	**74.28**	**338**	*eP*	**P**	**18 14 03.4**	**+0.2**
NOA	**NORSAR Array B**	**74.28**	**338**	P	**P**	**18 14 03.4**	**+0.2**
	0.7nm,0.7s,baz=41,slow=5.9,SNR=3.6							
AKASG	**Malin Array Be**	**74.74**	**323**	P	**P**	**18 14 06.5**	**+0.6**
	0.6nm,0.4s,baz=45,slow=6.5,SNR=4.7							
BUR08	**Bucovina Ar. S**	**78.75**	**322**	*eP*	**P**	**18 14 29.5**	**+0.7**
AMTX	**Amarillo**	**86.25**	**48**	*eP*	**P**	**18 15 07.3**	**-0.8**
	19nm,0.6s							

NIED ***12*** *18:04:00, 36.˚30N×140.˚90E, h56km, Mw3.6 Best double couple: M0 3.30000×10^14 NP1:φ=249.00000°, δ=8.00000°, λ=112.00000°. NP2:φ=46.00000°, δ=82.00000°, λ=87.00000°.*

JMA 12 18:04:10.6±0.1, 36.˚29N×140.˚94E, h46km±1km, M3.5, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JHO	**Hitachi**	**0.44**	**317**	P	Pn	18 04 20.4	-0.5
CHOJ	**Chosi**	**0.59**	**186**	P	Pn	18 04 22.7	0.0
CHOJ				S	Sn	18 04 30.8	-0.6
JYT	**Yasato**	**0.61**	**264**	P	Pn	18 04 23.1	+0.2
JYT				S	Sn	18 04 31.4	-0.4
ONAJ	**Iwakimizuishiy**	**0.82**	**352**	P	Pn	18 04 25.3	-0.5
ONAJ				S	Sn	18 04 35.3	-1.6
JAG	**Ashikaga**	**1.21**	**277**	P	Pn	18 04 31.6	+0.5
JAG				S	Sn	18 04 45.9	-0.4
JFT	**Otama**	**1.32**	**339**	P	Pn	18 04 33.6	+1.0
JFT				S	Sn	18 04 49.5	+0.5
JKT	**Katashina**	**1.44**	**290**	P	Pn	18 04 35.6	+1.2
JKT				S	Sn	18 04 53.7	+1.5
JFY	**Yanaizu**	**1.49**	**319**	P	Pn	18 04 36.3	+1.3
MAT	**Matsushiro**	**2.22**	**277**	P	Pn	18 04 46.9	+2.0
MAT				*eS*	Sn	18 05 13.6	+2.5

JMA 12 18:06:33.8, 37.˚01N×140.˚66E, h7km±1km, M3.0, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.14**	**50**	P	Pg	18 06 37.1	+0.3
ONAJ				S	Sg	18 06 39.4	+0.5
JHO	**Hitachi**	**0.41**	**190**	P	Pg	18 06 41.5	-0.2
JHO				S	Sg	18 06 47.0	0.0
JFT	**Otama**	**0.57**	**333**	P	Pg	18 06 45.0	+0.2
JFT				S	Sg	18 06 52.8	+0.6
JSB	**Shiboa**	**0.59**	**266**	P	Pg	18 06 45.9	+0.6
JSB				S	Sb	18 06 54.3	-0.9
JFY	**Yanaizu**	**0.86**	**298**	P	Pg	18 06 50.2	-0.1
JFY				S	Sg	18 07 01.3	-0.2
JMM	**Marumori**	**0.86**	**7**	P	Pg	18 06 49.9	-0.5
JMM				S	Sg	18 07 01.6	0.0
JYT	**Yasato**	**0.87**	**206**	P	Pg	18 06 49.9	-0.5
JYT				S	Sg	18 07 01.1	-0.6
MAT	**Matsushiro**	**2.02**	**257**	P	Pg	18 07 11.9	-0.7
MAT				S	Sb	18 07 36.7	+0.4

TAP ***12*** *18:08:36.8, 23.˚35N×121.˚98E, h31km, ML3.1, C*
JMA ***12*** *18:08:36.0±0.1, 23.˚35N×121.˚92E, h49km, M2.5*

ISC 12 18:08:35.9±1.2, 23.˚36N±0.˚03×121.˚97E±0.˚03, h24km±13km, n47, σ=0.80/82, 8C-1D, Taiwan

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
EHY	**Hungye**	**0.61**	**284**	P	**Pn**	**18 08 48.4**	**-0.8**
	baz=284						
EHY				*e*S	**Sn**	**18 08 57.1**	**-1.2**
	baz=284						
CHKT	**Chengkung**	**0.62**	**245**	P	**Pb**	**18 08 47.9**	**-0.1**
	baz=238						
CHKT				S	**Sb**	**18 08 55.6**	**-0.7**
	baz=238						
TWF1	**Yuli**	**0.62**	**269**	⇑*i*P	**Pn**	**18 08 48.4**	**-0.8**
	baz=265						
TWF1				S	**Sn**	**18 08 57.7**	**-0.8**
	baz=265						
ESL	**Shilin**	**0.67**	**312**	⇑*i*P	**Pb**	**18 08 48.9**	**0.0**
	baz=313						
ESL				*i* S	**Sb**	**18 08 57.6**	**-0.2**
	baz=313						
TWD	**Chiawan**	**0.79**	**334**	⇓P	**Pn**	**18 08 51.1**	**-0.5**
	baz=334						
TWD				*i* S	**Sb**	**18 09 01.2**	**-0.2**
	baz=334						
ELDTW	**Lidau**	**0.90**	**259**	⇑*i*P	**Pb**	**18 08 52.1**	**-0.7**
	baz=249						
ELDTW				S	**Sb**	**18 09 03.4**	**-1.0**
	baz=249						
YUS	**Yu-Shan**	**0.95**	**278**	⇑*i*P	**Pn**	**18 08 54.1**	**0.0**
	baz=288						
YUS				S	**Sn**	**18 09 06.0**	**-1.1**
	baz=288						
TWG	**Pinlang**	**0.99**	**237**	P	**Pb**	**18 08 53.6**	**-0.8**
	baz=231						
TWG				S	**Sb**	**18 09 05.7**	**-1.2**
	baz=231						
WHF	**Hehuan Shan**	**1.01**	**320**	*e*P	**Pb**	**18 08 54.6**	**-0.5**
	baz=320						
WHF				*e*S	**Sb**	**18 09 07.5**	**-0.6**
	baz=320						
ENA	**Nanau**	**1.08**	**349**	*e*P	**Pn**	**18 08 55.5**	**-0.1**
	baz=348						
ENA				*e*S	**Sb**	**18 09 09.5**	**-0.2**
	baz=348						
ALS	**Alishan**	**1.08**	**278**	⇑*i*P	**Pn**	**18 08 56.4**	**+0.6**
	baz=288						
ALS				S	**Sn**	**18 09 10.3**	**+0.1**
	baz=288						
SMLT	**Sun Moon Lake**	**1.11**	**298**	⇑*i*P	**Pb**	**18 08 56.4**	**-0.1**
	baz=305						
SMLT				S	**Sn**	**18 09 11.6**	**+0.8**
	baz=305						
STYT	**Tauyuan**	**1.14**	**260**	*e*P	**Pb**	**18 08 56.2**	**-0.6**
	baz=254						
STYT				*e*S	**Sn**	**18 09 10.6**	**-0.6**
	baz=254						
TWT	**Tachien**	**1.15**	**321**	*e*P	**Pb**	**18 08 57.9**	**+0.7**
	baz=320						
TWT				*e*S	**Sb**	**18 09 11.3**	**-0.5**
	baz=320						
TYC	**Yuchr**	**1.16**	**298**	*e*P	**Pb**	**18 08 57.1**	**0.0**
	baz=298						
TYC				*e*S	**Sn**	**18 09 12.5**	**+0.9**
	baz=298						
NNS	**Nan Shan**	**1.21**	**333**	*e*S	**Sb**	**18 09 12.6**	**-0.7**
	baz=333						
ECL	**Taimali**	**1.21**	**231**	*e*P	**Pn**	**18 08 56.2**	**-1.1**
	baz=231						
CHN5	**Tsauling**	**1.21**	**281**	P	**Pb**	**18 08 58.7**	**+0.5**
	baz=281						
TWC	**Suao**	**1.25**	**355**	*e*S	**Sb**	**18 09 14.6**	**+0.3**
	baz=354						
WTP	**Ta-pu**	**1.25**	**265**	⇑*i*P	**Pb**	**18 08 59.0**	**+0.1**
	baz=258						
WTP				S	**Sb**	**18 09 15.6**	**+1.0**
	baz=258						
CHN4	**Tsaushan**	**1.27**	**270**	*e*P	**Pb**	**18 08 59.8**	**+0.7**
	baz=270						
CHN4				*e*S	**Sb**	**18 09 17.1**	**+2.2**
	baz=270						
WNT	**Mingjian**	**1.29**	**294**	P	**Pb**	**18 09 00.5**	**+1.0**
	baz=294						
SGST	**Jiashian**	**1.31**	**258**	P	**Pb**	**18 09 00.1**	**+0.3**
	baz=251						
SGST				S	**Sb**	**18 09 16.8**	**+0.6**
	baz=251						
ENTT	**Nioudou**	**1.32**	**344**	*e*P	**Pb**	**18 08 59.8**	**-0.3**
	baz=343						
ENTT				*e*S	**Sn**	**18 09 16.0**	**+0.1**
	baz=343						
WGK	**Gukeng**	**1.33**	**284**	*e*P	**Pb**	**18 09 00.7**	**+0.5**
	baz=284						
WGK				*e*S	**Sb**	**18 09 18.1**	**+1.3**
	baz=284						
CHN1	**Nanshi**	**1.34**	**263**	P	**Pb**	**18 09 00.7**	**+0.3**
	baz=263						
CHN1				S	**Sb**	**18 09 18.4**	**+1.3**
	baz=263						
TWK	**Hsinying**	**1.37**	**266**	*e*P	**Pb**	**18 09 01.1**	**+0.3**
	baz=266						
TWK				S	**Sb**	**18 09 19.2**	**+1.3**
	baz=266						
LAY	**Lan-yu**	**1.37**	**197**	*e*P	**Pn**	**18 08 59.9**	**+0.3**
	baz=196						
SSD	**Sandimen**	**1.38**	**244**	*e*P	**Pb**	**18 09 00.1**	**-0.9**
	baz=238						
TWE	**Neicheng**	**1.38**	**348**	*e*P	**Pb**	**18 09 00.7**	**-0.3**
	baz=348						
TWE				*e*S	**Sn**	**18 09 17.4**	**+0.2**
	baz=348						
JYNG	**Yonagunijimaku**	**1.40**	**39**	P	**Pn**	**18 09 00.7**	**+0.7**
JYNG				*e*S	**Sn**	**18 09 17.9**	**+0.2**
EAST	**Anshuo**	**1.42**	**227**	*e*P	**Pb**	**18 09 01.8**	**+0.1**
	baz=236						
NSK	**Sanguang**	**1.42**	**337**	*e*P	**Pb**	**18 09 01.3**	**-0.5**
	baz=336						
NSK				*e*S	**Sn**	**18 09 18.1**	**-0.2**
	baz=336						
YOJ	**Yonaguni jima**	**1.45**	**41**	P	**Pn**	**18 09 01.4**	**+0.8**
YOJ				*e*S	**Sn**	**18 09 19.4**	**+0.5**
TWQ1	**Liyutan**	**1.47**	**312**	⇑P	**Pb**	**18 09 03.0**	**+0.4**
	baz=312						
TWQ1				*e*S	**Sb**	**18 09 21.9**	**+1.0**
	baz=312						
SGLT	**Jiouru**	**1.50**	**245**	*e*P	**Pb**	**18 09 04.2**	**+1.1**
	baz=244						
SGLT				*e*S	**Sb**	**18 09 24.7**	**+2.9**
	baz=244						
NSTT	**Nanjuang**	**1.54**	**325**	*e*P	**Pb**	**18 09 03.6**	**-0.2**
	baz=334						
NSTT				*e*S	**Sb**	**18 09 22.9**	**0.0**
	baz=334						
SCZT	**Fangliau**	**1.59**	**232**	*e*P	**Pb**	**18 09 04.5**	**-0.1**
	baz=226						
SCZT				*e*S	**Sb**	**18 09 24.2**	**0.0**
	baz=226						
TWA	**Mucha**	**1.65**	**348**	*e*S	**Sb**	**18 09 26.0**	**0.0**
	baz=336						
NWF	**Wu-fen Shan**	**1.71**	**354**	*e*S	**Sb**	**18 09 27.6**	**-0.2**
	baz=353						
TWS1	**Kuangyinshan**	**1.80**	**344**	*e*S	**Sb**	**18 09 29.1**	**-1.2**
	baz=343						
HATJ	**Hateruma jima**	**1.82**	**67**	*e*S	**Sn**	**18 09 26.8**	**-1.2**
IRIF	**Iriomote-Funau**	**1.88**	**59**	P	**Pn**	**18 09 07.2**	**+0.7**
IRIF				*e*S	**Sn**	**18 09 30.1**	**+0.6**
JKRS	**Kuro-shima**	**2.06**	**65**	P	**Pn**	**18 09 09.7**	**+0.7**
JKRS				*e*S	**Sn**	**18 09 33.9**	**0.0**
JIJ	**Ishigaki jima**	**2.22**	**63**	P	**Pn**	**18 09 11.6**	**+0.3**
JIJ				S	**Sn**	**18 09 36.7**	**-1.3**
JISG	**Ishigakijimahi**	**2.46**	**60**	P	**Pn**	**18 09 14.4**	**-0.1**
JISG				S	**Sn**	**18 09 42.7**	**-1.2**
JTJ	**Tarama**	**2.80**	**62**	P	**Pn**	**18 09 19.8**	**+0.6**
JTJ				*e*S	**Sn**	**18 09 52.0**	**-0.3**

JMA 12 18:10:51.8, 37.˚03N×140.˚68E, h12km±1km, M3.1, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.12**	**53**	P	Pg	18 10 55.1	+0.1
ONAJ				S	Sg	18 10 57.4	+0.2
JHO	**Hitachi**	**0.43**	**192**	P	Pg	18 11 00.1	-0.2
JHO				S	Sg	18 11 05.6	-0.4
JFT	**Otama**	**0.56**	**331**	P	Pg	18 11 02.9	+0.2
JFT				S	Sg	18 11 10.5	+0.3
JMM	**Marumori**	**0.84**	**6**	P	Pg	18 11 07.4	-0.6
JMM				S	Sg	18 11 18.2	-0.8
JOU	**Okura**	**1.33**	**359**	P	Pb	18 11 16.6	-0.2
JOU				S	Sn	18 11 34.0	0.0
JIO	**Ouri**	**1.52**	**20**	P	Pn	18 11 18.5	-0.3
JIO				S	Sn	18 11 37.9	-0.5
MAT	**Matsushiro**	**2.04**	**257**	P	Pb	18 11 28.1	-0.8
MAT				S	Sb	18 11 54.9	+0.6

IDC ***12*** *18:21:31.7±2.3, 38.˚97N×143.˚51E, h0km, mb3.5/4, mb1 3.6/5, mb1mx3.3/45, mbtmp3.5/5, ML3.1/1, MS2.8/1, Ms1 2.8/1, ms1mx2.3/45, Error ellipse: s-maj=66.3km s-min=25.3km az=65.0*
ISCJB ***12*** *18:21:40.3±1.6, 39.˚03N±0.˚04×142.˚4E±0.˚1, h23km±7km, mb3.5/4, MS2.7/1, Error ellipse: s-maj=13.6km s-min=6.0km az=8.7*
JMA ***12*** *18:21:40.7±0.1, 39.˚05N×142.˚42E, h31km±2km, M3.2*

ISC 12 18:21:37.5±2.6, 39.˚00N±0.˚05×142.˚57E±0.˚09, h16km±14km, n18, σ=1.43/25, mb3.7/4, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
OFUJ	**Ofunato**	**0.71**	**277**	P	**Pb**	**18 21 52.3**	**+0.9**
OFUJ				S	**Sg**	**18 22 00.4**	**-0.3**
MIYJ	**Miyakonagasawa**	**0.82**	**315**	P	**Pb**	**18 21 53.7**	**+0.3**
MIYJ				S	**Sg**	**18 22 03.1**	**-1.2**
JMK	**Ichinoseki**	**1.05**	**268**	P	**Pn**	**18 21 57.9**	**+0.3**
JMK				S	**Sb**	**18 22 10.2**	**-0.7**
JIO	**Ouri**	**1.10**	**241**	P	**Pb**	**18 21 58.4**	**+0.3**
JIO				S	**Sb**	**18 22 11.2**	**-1.0**
JOM	**Ohasama**	**1.10**	**296**	P	**Pb**	**18 21 58.3**	**+0.2**
JOM				S	**Sb**	**18 22 11.1**	**-1.1**
JKZ	**Kuzumaki**	**1.38**	**316**	P	**Pb**	**18 22 03.2**	**+0.4**
JKZ				S	**Sn**	**18 22 19.6**	**-0.4**
JANG	**Nango**	**1.60**	**330**	P	**Pb**	**18 22 06.7**	**+0.1**
JANG				*e*S	**Sn**	**18 22 25.1**	**-0.2**
JOU	**Okura**	**1.62**	**248**	P	**Pb**	**18 22 07.0**	**0.0**
JOU				*e*S	**Sn**	**18 22 26.2**	**+0.2**
JYK	**Kaneyama**	**1.73**	**268**	P	**Pb**	**18 22 09.0**	**+0.2**
JMM	**Marumori**	**1.80**	**232**	P	**Pn**	**18 22 09.0**	**+1.2**
JMM				*e*S	**Sn**	**18 22 29.4**	**-0.8**
JYS	**Shirataka**	**2.11**	**249**	P	**Pb**	**18 22 14.6**	**-0.8**
MJAR	**Matsushiro Arr**	**4.24**	**236**	Pn	**Pn**	**18 22 45.5**	**+4.1**
	0.9nm,0.3s,baz=44,slow=11,SNR=7.6						
MAT	**Matsushiro**	**4.24**	**236**	P	Pn	18 22 46.6	+5.2
YAK	**Yakutsk**	**24.38**	**345**	LR	LR	18 37 09.6	
	comp=Z,24nm,19.7s,baz=169,slow=38						
MKAR	**Makanchi Array**	**43.88**	**301**	P	**P**	**18 29 44.8**	**+1.8**
	0.1nm,0.3s,baz=79,slow=10,SNR=2.9						
KURBB	**Kurchatov Arra**	**45.54**	**307**	P	**P**	**18 29 57.5**	**+1.4**
	0.7nm,0.4s,baz=80,slow=8.3,SNR=15						
WRA	**Warramunga Arr**	**59.14**	**189**	P	**P**	**18 31 34.4**	**-2.9**
	0.7nm,0.5s,baz=9.1,slow=7.0,SNR=10						
ASAR	**Alice Springs**	**62.86**	**189**	P	**P**	**18 32 00.5**	**-2.1**
	0.2nm,0.7s,baz=6.0,slow=7.6,SNR=6.7						

IDC 12 18:22:36.8±0.9, 37.˚18N×137.˚72E, h134km±11km, mb2.9/4, mb1 3.0/4, mb1mx2.8/46, mbtmp3.3/4, Error ellipse: s-maj=34.5km s-min=23.5km az=64.0, Near west coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MJAR	**Matsushiro Arr**	**0.75**	**148**	P	Pn	18 22 57.2	-0.8
	2.9nm,0.3s,baz=327,slow=14,SNR=9.8						
MJAR				S	Sn	18 23 16.0	+2.0
	2.1nm,0.3s,baz=28,slow=27,SNR=4.7						
SONM	**Songino Array**	**25.26**	**305**	P	P	18 27 51.7	+1.1
	0.2nm,0.7s,baz=98,slow=8.9,SNR=2.3						
MKAR	**Makanchi Array**	**41.53**	**301**	P	P	18 30 09.0	-1.9
	0.2nm,0.4s,baz=81,slow=9.3,SNR=3.4						
KURBB	**Kurchatov Arra**	**43.57**	**307**	P	P	18 30 28.1	+0.9
	0.6nm,0.6s,baz=82,slow=8.2,SNR=3.0						
WRA	**Warramunga Arr**	**56.91**	**184**	P	P	18 32 08.0	+0.1
	0.1nm,0.3s,baz=2.9,slow=7.8,SNR=5.0						

JMA 12 18:23:01.2±0.1, 36.˚89N×138.˚56E, h0km, M1.0, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MAT	**Matsushiro**	**0.45**	**219**	P	Pg	18 23 10.5	+0.7
MAT				S	Sg	18 23 16.5	+0.9
MAT	**Matsushiro**	**0.45**	**219**	P	Pg	18 23 10.8	+1.0
MAT				S	Sg	18 23 16.5	+0.9

JMA 12 18:26:42.5, 37.˚01N×140.˚68E, h8km±1km, M2.7, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.13**	**46**	P	Pg	18 26 45.4	0.0
ONAJ				S	Sg	18 26 47.4	-0.1
JHO	**Hitachi**	**0.41**	**193**	P	Pg	18 26 50.6	+0.1
JHO				S	Sg	18 26 56.3	+0.5
JFT	**Otama**	**0.58**	**332**	P	Pg	18 26 53.9	+0.2
JFT				S	Sg	18 27 01.7	+0.5
JMM	**Marumori**	**0.86**	**6**	P	Pg	18 26 58.5	-0.5
JMM				S	Sg	18 27 09.9	-0.3
JOU	**Okura**	**1.35**	**359**	P	Pn	18 27 07.9	+0.2
JOU				S	Sb	18 27 25.5	-0.1
JIO	**Ouri**	**1.54**	**20**	S	Sn	18 27 29.7	-0.6
MAT	**Matsushiro**	**2.04**	**258**	P	Pb	18 27 19.9	+0.1
MAT				S	Sb	18 27 46.3	+1.0

IDC 12 18:28:14.3±51.0, 16.˚35S×172.˚06W, h0km, mb4.1/3, mb1 4.3/3, mb1mx3.6/38, mbtmp4.1/3, Error ellipse: s-maj=984.4km s-min=179.9km az=80.0, Samoa Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
STKA	**Stephens Creek**	**44.70**	**241**	P	P	18 36 29.2	-0.1
	1.1nm,0.5s,baz=100,slow=11,SNR=5.8						
WRA	**Warramunga Arr**	**50.89**	**257**	P	P	18 37 16.2	-1.5
	0.5nm,0.5s,baz=97,slow=6.9,SNR=17						
ASAR	**Alice Springs**	**51.05**	**253**	P	P	18 37 20.1	+1.2
	4.6nm,0.5s,baz=90,slow=7.8,SNR=209						

NIED ***12*** *18:39:00, 31.˚70N×140.˚80E, h65km, Mw3.9 Best double couple: M0 7.01000×10^14 NP1:φ=282.00000°, δ=29.00000°, λ=-131.00000°. NP2:φ=146.00000°, δ=68.00000°, λ=-70.00000°.*

JMA 12 18:39:27.7±0.2, 31.˚74N×140.˚80E, h27km, M3.9, Southeast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JHCJ	**Hachijojimakas**	**1.58**	**328**	P	Pn	18 39 54.2	+0.3
JHCJ				S	Sn	18 40 14.0	+0.6
JHJ2	**Mitsune**	**1.60**	**329**	P	Pn	18 39 54.9	+0.7
JHJ2				S	Sn	18 40 14.6	+0.6
BSO1	**Boso 1**	**2.91**	**3**	P	Pn	18 40 13.7	+2.0
TK02	**Tokai 2**	**3.38**	**311**	P	Pn	18 40 19.4	+1.0
JOD2	**Odawara 2**	**3.79**	**338**	P	Pn	18 40 26.7	+2.3
JOD2				S	Sn	18 41 09.6	+1.4
JYN	**Shimob**	**4.19**	**334**	P	Pn	18 40 33.5	+3.5
JIE	**Ise**	**4.34**	**309**	P	Pn	18 40 32.3	+0.5
JRY	**Ryogami san**	**4.55**	**340**	P	Pn	18 40 38.0	+3.2
JRY				S	Sn	18 41 30.5	+3.7
JWZ	**Kozaga**	**4.65**	**294**	P	Pn	18 40 35.1	-1.0
JAG	**Ashikaga**	**4.80**	**347**	P	Pn	18 40 41.1	+2.8

IDC 12 18:41:11.9±10.0, 34.˚93N×70.˚21E, h0km, mb3.2/1, mb1 3.2/6, mb1mx3.1/65, mbtmp3.2/6, ML3.1/5, MS3.6/1, Ms1 3.7/1, ms1mx2.6/29, Error ellipse: s-maj=155.1km s-min=37.3km az=160.0, Southeastern Afghanistan

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
AAK	**Ala-Archa**	**8.39**	**22**	Pn	Pn	18 43 16.9	+2.1
	0.6nm,0.3s,baz=203,slow=7.7,SNR=11						
GEYT	**Alibeck**	**10.19**	**291**	Pn	Pn	18 43 39.3	-0.2
	0.4nm,0.3s,baz=97,slow=12,SNR=3.7						
MKAR	**Makanchi Array**	**14.94**	**34**	Pn	Pn	18 44 46.0	+1.7
	0.1nm,0.3s,baz=217,slow=9.6,SNR=4.6						
KURBB	**Kurchatov Arra**	**16.81**	**19**	Pn	Pn	18 45 06.7	-1.8
	0.0nm,0.3s,baz=207,slow=12,SNR=3.6						
BVAR	**Borovoye Array**	**18.09**	**0**	P	P	18 45 25.3	+0.3
	0.1nm,0.3s,baz=187,slow=5.8,SNR=3.1						
ZALV	**Zalesovo Beam**	**21.61**	**24**	P	P	18 46 01.4	-1.8
	0.4nm,0.3s,baz=214,slow=11,SNR=2.8						
NOA	**NORSAR Array B**	**45.26**	**324**	LR	LR	19 12 21.5	
	comp=Z,67nm,19.6s,baz=275,slow=41						

KRNET ***12*** *18:44:13.8±0.1, 39.˚38N×74.˚03E, mb4.3*
NNC ***12*** *18:44:13.3±2.0, 39.˚71N×74.˚54E, h0km, mb4.2, mpv3.8, Error ellipse: s-maj=16.5km s-min=7.3km az=171.0*
BJI ***12*** *18:44:14.9, 39.˚82N×74.˚19E, h6km, ML3.5/7*
SOME ***12*** *18:44:15.0, 39.˚70N×74.˚32E, h10km*
IDC ***12*** *18:44:18.6±3.6, 39.˚55N×74.˚51E, h34km±27km, mb3.5/11, mb1 3.6/17, mb1mx3.4/70, mbtmp3.6/17, ML3.1/6, MS3.5/1, Ms1 3.5/1, ms1mx2.6/38, Error ellipse: s-maj=20.2km s-min=15.6km az=5.0*

ISC 12 18:44:15.6±1.7, 39.˚54N±0.˚05×74.˚20E±0.˚04, h3km±10km, n59, σ=1.72/85, mb3.8/11, 28C-15D, Southern Xinjiang

| Code |

ARK	**Arkit**	**2.83**	**324**	⇓*i*P	**Pn**	**18 45 03.5**	**+1.7**
	baz=328							
ARK				⇓*i*S	**Sn**	**18 45 37.9**	**+1.5**
	baz=328							
AAK	**Ala-Archa**	**3.10**	**4**	Pn	**Pn**	**18 45 06.7**	**+1.1**
	41nm,0.3s,baz=148,slow=9.4,SNR=120							
AAK				Sn	**Sn**	**18 45 44.4**	**+1.2**
	0.9nm,0.3s,baz=275,slow=21,SNR=2.0							
AAK	**Ala-Archa**	**3.10**	**4**	⇑*i*P	**Pn**	**18 45 07.3**	**+1.8**
	baz=6.0							
AAK				⇑*i*S	**Sn**	**18 45 43.6**	**+0.4**
	baz=6.0							
AAK	**Ala-Archa**	**3.10**	**4**	⇓Pg	**Pn**	**18 45 07.3**	**+1.8**
	95nm,0.4s							
AAK				⇓Lg	Lg	18 45 48.9		
	163nm,0.6s							
ULHL	**Ulahol**	**3.12**	**29**	⇑*i*P	**Pn**	**18 45 06.9**	**+1.1**
	baz=30							
ULHL				⇑*i*S	**Sn**	**18 45 43.9**	**+0.2**
	baz=30							
EKS2	**Erkin-Say**	**3.14**	**354**	⇑*i*P	**Pn**	**18 45 07.6**	**+1.6**
	baz=357							
EKS2				⇑*i*S	**Sn**	**18 45 43.9**	**-0.2**
	baz=357							
KBK	**Karagaybulak**	**3.17**	**10**	⇑*i*P	**Pn**	**18 45 08.3**	**+1.8**
	baz=12							
KBK				⇑*i*S	**Sn**	**18 45 46.0**	**+1.1**
	baz=12							
MNAS	**Manas**	**3.21**	**337**	⇓*i*P	**Pn**	**18 45 08.5**	**+1.4**
	baz=340							
MNAS				⇓*i*S	**Sn**	**18 45 47.8**	**+1.8**
	baz=340							
MNAS	**Manas**	**3.21**	**337**	⇓Pg	**Pn**	**18 45 08.7**	**+1.7**
	28nm,0.8s							
MNAS				⇑Lg	Lg	18 45 52.4		
	96nm,0.5s							
BOOM	**Boomskoye usch**	**3.23**	**24**	⇑*i*P	**Pn**	**18 45 08.5**	**+1.2**
	baz=24							
BOOM				⇑*i*S	**Sn**	**18 45 47.1**	**+0.7**
	baz=24							
MRKS	**Merke**	**3.29**	**347**	*e*P	**Pb**	**18 45 14.0**	**-0.6**
	64nm,0.2s							
MRKS				*e*S	**Sb**	**18 45 54.9**	**-0.1**
	132nm,0.4s							
KDJ	**Kajisay**	**3.44**	**40**	⇑*i*P	**Pn**	**18 45 11.3**	**+1.1**
	baz=40							
KDJ				⇑*e*S	**Sn**	**18 45 52.2**	**+0.6**
	baz=40							
TKM2	**Tokmak 2**	**3.54**	**17**	⇓Pg	**Pn**	**18 45 12.9**	**+1.3**
	22nm,0.3s							
TKM2				⇓Lg	Lg	18 45 55.5		
	37nm,0.5s							
BMNS	**Besmoynak**	**3.73**	**17**	*e*P	**Pn**	**18 45 16.1**	**+1.8**
	233nm,0.4s							
BMNS				*e*S	**Sn**	**18 45 58.6**	**-0.2**
	306nm,0.7s							
KST	**Kastek**	**3.74**	**20**	*e*P	**Pn**	**18 45 16.9**	**+2.5**
	26nm,0.4s							
KST				*e*S	**Sn**	**18 46 01.0**	**+2.0**
	252nm,0.6s							
DGS	**Degeres**	**3.88**	**17**	*e*P	**Pb**	**18 45 24.8**	**0.0**
	76nm,0.5s							
DGS				*e*S	**Sb**	**18 46 14.0**	**+1.8**
	141nm,0.4s							
IZV	**Izvestkoviy**	**3.94**	**27**	*e*P	**Pb**	**18 45 25.6**	**-0.2**
	154nm,0.4s							
IZV				*e*S	**Sb**	**18 46 16.0**	**+2.1**
	125nm,0.4s							
MTBS	**Maitube**	**3.96**	**24**	*e*P	**Pb**	**18 45 25.5**	**-0.5**
	55nm,0.4s							
MTBS				*e*S	**Sb**	**18 46 15.2**	**+0.8**
	56nm,0.3s							
TNSS	**Tian-Shan**	**4.07**	**30**	*e*P	**Pb**	**18 45 28.2**	**+0.1**
	99nm,0.3s							
TNSS				*e*S	**Sb**	**18 46 20.2**	**+2.5**
	66nm,0.4s							
ANVS	**Anan'yevo**	**4.17**	**38**	⇓*i*P	**Pn**	**18 45 21.4**	**+1.2**
	baz=38							
ANVS				⇓*i*S	**Sn**	**18 46 11.5**	**+2.0**
	baz=38							
KK31	**Karatay Array**	**4.51**	**323**	Pn	**Pn**	**18 45 26.3**	**+1.4**
	2.3nm,0.5s,baz=122,slow=12,SNR=26							
KK31				⇑Pg	**Pb**	**18 45 36.8**	**+1.3**
	2.3nm,0.3s,baz=144,slow=16,SNR=12							
KK31				Sn	**Sn**	**18 46 19.7**	**+1.8**
	15nm,0.6s,baz=137,slow=17,SNR=3.8							
KK31				⇓Lg	Lg	18 46 35.8		
	8.6nm,0.3s,baz=128,slow=28,SNR=3.8							
KTBS	**Karatobe**	**4.57**	**23**	*e*P	**Pb**	**18 45 36.7**	**+0.3**
	33nm,0.3s							
KTBS				*e*S	**Sb**	**18 46 35.2**	**+3.4**
	23nm,0.4s							
CHKK	**Chushkaly**	**4.81**	**25**	*e*P	**Pb**	**18 45 40.5**	**0.0**
	42nm,0.5s							
CHKK				*e*S	**Sb**	**18 46 41.1**	**+2.3**
	50nm,0.4s							
KURS	**Kuram**	**4.94**	**36**	*e*P	**Pb**	**18 45 43.5**	**+0.7**
	17nm,0.5s							
KURS				*e*S	**Sb**	**18 46 47.2**	**+4.5**
	15nm,0.9s							
ARXS	**Arharly**	**5.40**	**29**	*e*P	**Pb**	**18 45 50.9**	**+0.4**
	54nm,0.4s							
ARXS				*e*S	**Sb**	**18 46 59.5**	**+3.7**
	28nm,0.3s							
CHCP	**Chirah Chowk**	**5.92**	**188**	P	Pb	18 45 52.8	-6.6
CEP	**Cherat**	**5.99**	**199**	P	Pb	18 45 53.5	-7.3
THN	**Thein Dam**	**7.20**	**170**	*e*P	Pn	18 46 07.0	+5.3
THN				*e*S	**Sn**	**18 47 29.0**	**+5.1**
OTUK	**Ortayu**	**8.81**	**352**	⇑Lg	Lg	18 48 46.9	
	19nm,0.8s							
MKAR	**Makanchi Array**	**9.35**	**37**	Pn	**Pn**	**18 46 31.6**	**+0.3**
	0.1nm,0.3s,baz=224,slow=12,SNR=7.8							
MKAR				Lg	Lg	18 49 11.2		
	0.1nm,0.3s,baz=213,slow=25,SNR=3.4							
WMQ	**Urumqi**	**10.96**	**63**	*e*P	**Pn**	**18 46 55.2**	**+1.9**
KURBB	**Kurchatov Arra**	**11.49**	**14**	Pn	**Pn**	**18 46 58.5**	**-2.0**
	0.0nm,0.3s,baz=202,slow=12,SNR=5.2							
KURBB				Lg	Lg	18 50 12.3		
	0.0nm,0.3s,baz=201,slow=32,SNR=10							
GEYT	**Alibeck**	**12.66**	**268**	Pn	**Pn**	**18 47 19.6**	**+3.0**
	0.4nm,0.3s,baz=86,slow=6.1,SNR=3.0							
GEYT				Sn	**Sn**	**18 49 39.3**	**+1.1**
	0.3nm,0.3s,baz=52,slow=22,SNR=3.7							
BVAR	**Borovoye Array**	**13.74**	**350**	Pn	**Pn**	**18 47 28.7**	**-2.5**
	0.1nm,0.3s,baz=164,slow=12,SNR=5.0							
BVAR				Lg	Lg	18 51 31.6		
	0.3nm,0.3s,baz=159,slow=21,SNR=3.6							
AKTO	**Aktyubinsk**	**15.77**	**319**	Pn	**Pn**	**18 47 58.9**	**+0.4**
	0.2nm,0.3s,baz=132,slow=14,SNR=6.5							
ZALV	**Zalesovo Beam**	**16.12**	**23**	Pn	**Pn**	**18 48 01.1**	**-1.9**
	0.3nm,0.3s,baz=212,slow=12,SNR=5.4							
ARU	**Arti**	**19.80**	**334**	P	Pn	**18 48 48.9**	**+0.5**
	0.0nm,0.3s,baz=120,slow=6.1,SNR=4.9							
SONM	**Songino Array**	**24.57**	**60**	P	**P**	**18 49 32.6**	**-4.2**
	0.1nm,0.4s,baz=256,slow=10,SNR=2.8							
BRTR	**Keskin Array B**	**31.05**	**284**	P	**P**	**18 50 35.6**	**+0.7**
	0.4nm,0.5s,baz=63,slow=9.9,SNR=2.4							
FINES	**FINESS Array B**	**36.48**	**323**	P	**P**	**18 51 21.1**	**-0.5**
	0.8nm,0.3s,baz=113,slow=9.7,SNR=14							
ARCES	**ARCESS Array B**	**39.37**	**335**	P	**P**	**18 51 45.5**	**-0.4**
	2.6nm,0.9s,baz=46,slow=6.5,SNR=2.3							
TIXI	**Tiksi**	**42.01**	**23**	P	**P**	**18 52 05.1**	**-2.6**
	0.8nm,0.3s,baz=351,slow=0.3,SNR=5.1							
GERES	**GERESS Array B**	**43.32**	**303**	P	**P**	**18 52 18.2**	**-0.5**
	0.2nm,0.3s,baz=64,slow=10.0,SNR=3.4							
NB2	**NORSAR Subarra**	**43.54**	**321**	P	**P**	**18 52 21.4**	**+1.1**
	comp=Z,1.6nm,0.8s,baz=89,slow=8.6							
NOA	**NORSAR Array B**	**43.54**	**321**	P	**P**	**18 52 19.9**	**-0.4**
	comp=Z,1.1nm,0.7s,baz=90,slow=8.0,SNR=3.8							
KMBO	**Kilima Mbogo**	**52.73**	**229**	LR	LR	19 18 00.2		
	comp=Z,50nm,21.8s,baz=91,slow=38							
TORD	**Torodi Ar. Bea**	**68.30**	**269**	P	**P**	**18 55 17.8**	**-0.5**
	comp=Z,1.1nm,0.8s,baz=52,slow=5.0,SNR=10							
YKA	**Yellowknife Ar**	**78.07**	**4**	P	**P**	**18 56 12.5**	**-2.7**
	comp=Z,0.2nm,0.4s,baz=347,slow=5.7,SNR=5.8							
WRA	**Warramunga Arr**	**81.53**	**124**	P	P	18 56 30.4	-4.3
	comp=Z,0.6nm,0.3s,baz=319,slow=3.7,SNR=7.5							
ASAR	**Alice Springs**	**84.00**	**127**	P	**P**	**18 56 46.1**	**-1.3**
	comp=Z,0.3nm,0.7s,baz=301,slow=5.5,SNR=5.4							

NIED ***12*** *18:47:00, 37.˚10N×140.˚70E, h8km, Mw3.6 Best double couple: M₀2.86000×10¹⁴ NP1:φs185.00000°, δ76.00000°, λ-9.00000°. NP2:φs277.00000°, δ81.00000°, λ-166.00000°.*

IDC ***12*** *18:47:52.3±1.0, 36.˚84N×140.˚86E, h0km, mb3.7/10, mb1 3.8/12, mb1mx3.6/59, mbtmp3.7/12, ML3.7/2, Error ellipse: s-maj=24.8km s-min=16.9km az=82.0*

ISCJB ***12*** *18:47:53.2±0.5, 37.˚03N±0.˚03×140.˚75E±0.˚05, h15km±4km, mb3.6/10, Error ellipse: s-maj=6.8km s-min=4.5km az=15.2*

JMA ***12*** *18:47:53.7, 37.˚07N×140.˚67E, h13km±1km, M4.0 Broadband fault plane solution: P waves. NP1: φs284.00000°, δ80.00000°, λ-152.00000°. NP2: φs189.00000°, δ62.00000°, λ-11.00000°. Principal axes: T Plg12.0000°, Azm54.0000°; N Plg60.0000°, Azm302.0000°; P Plg27.0000°, Azm150.0000°;*

JMA Felt III J1.

ISC 12 18:47:52.7±1.3, 36.˚99N±0.˚04×140.˚63E±0.˚04, h2km±10km, n27, σ1$12/28, mb3.6/10, 4C-2D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.18**	**49**	⇑P	**Pg**	**18 47 56.9**	**+0.8**
ONAJ				S	**Sg**	**18 47 59.1**	**+0.7**
JHO	**Hitachi**	**0.38**	**188**	⇑P	**Pb**	**18 48 02.6**	**+0.5**
JHO				S	**Sb**	**18 48 09.0**	**+0.5**
JSB	**Shiboa**	**0.57**	**268**	⇑P	**Pb**	**18 48 06.0**	**+0.5**
JSB				S	**Sb**	**18 48 14.0**	**-0.1**
JFT	**Otama**	**0.58**	**336**	⇓P	**Pg**	**18 48 04.1**	**+0.3**
JFT				S	**Sg**	**18 48 11.1**	**-0.3**
JYT	**Yasato**	**0.83**	**205**	P	**Pn**	**18 48 10.5**	**-1.0**
JYT				S	**Sn**	**18 48 22.4**	**-2.0**
JFY	**Yanaizu**	**0.85**	**300**	⇓P	**Pg**	**18 48 09.6**	**+0.6**
JFY				S	**Sg**	**18 48 20.4**	**+0.3**
JMM	**Marumori**	**0.89**	**8**	⇑P	**Pg**	**18 48 08.6**	**-1.1**
JMM				S	**Sg**	**18 48 19.0**	**-2.2**
MJAR	**Matsushiro Arr**	**2.00**	**258**	Pn	**Pb**	**18 48 28.6**	**-1.2**
	39nm,0.3s,baz=77,slow=16,SNR=130						
MJAR				Sn	**Sb**	**18 48 55.6**	**+0.5**
	42nm,0.3s,baz=101,slow=18,SNR=12						
MAT	**Matsushiro**	**2.00**	**258**	P	**Pb**	**18 48 28.9**	**-0.9**
MAT				S	**Sg**	**18 48 56.5**	**-0.4**
JHJ	**Hachijo jima 2**	**3.92**	**190**	Pn	**Pn**	**18 48 54.1**	**+0.2**
	11nm,0.3s,baz=138,slow=23,SNR=12						
JHJ				Sn	**Sn**	**18 49 39.8**	**-0.8**
	8.8nm,0.3s,baz=90,slow=20,SNR=3.0						
USRK	**Ussuriysk Ar.**	**9.75**	**320**	Pn	Pn	18 50 19.7	+5.8
	0.1nm,0.3s,baz=98,slow=15,SNR=3.7						
SONM	**Songino Array**	**27.29**	**304**	P	**P**	**18 53 39.9**	**+1.2**
	0.4nm,0.6s,baz=104,slow=9.0,SNR=4.3						
H11N2	**WAKE ISLAND Hy**	**28.66**	**120**	T	T	19 23 41.7	
	baz=313,slow=75,SNR=340						
H11N1	**WAKE ISLAND Hy**	**28.67**	**120**	T	T	19 23 42.3	
	baz=313,slow=75,SNR=429						
H11N3	**WAKE ISLAND Hy**	**28.68**	**120**	T	T	19 23 43.0	
	baz=313,slow=75,SNR=363						
H11S1	**WAKE ISLAND Hy**	**29.36**	**122**	T	T	19 24 35.0	
	baz=314,slow=76,SNR=564						
H11S3	**WAKE ISLAND Hy**	**29.36**	**122**	T	T	19 24 34.5	
	baz=314,slow=76,SNR=356						
H11S2	**WAKE ISLAND Hy**	**29.38**	**122**	T	T	19 24 33.3	
	baz=314,slow=76,SNR=247						
ZALV	**Zalesovo Beam**	**41.48**	**312**	P	P	18 55 44.1	+3.2
	0.2nm,0.3s,baz=81,slow=12,SNR=2.2						
MKAR	**Makanchi Array**	**43.61**	**302**	P	**P**	**18 56 00.1**	**+1.7**
	0.3nm,0.7s,baz=86,slow=9.0,SNR=3.8						
KURBB	**Kurchatov Arra**	**45.54**	**308**	P	**P**	**18 56 14.3**	**+0.6**
	0.6nm,0.7s,baz=84,slow=8.2,SNR=8.1						
ILAR	**Eielson Array**	**49.87**	**32**	P	**P**	**18 56 46.0**	**-1.1**
	0.4nm,0.7s,baz=286,slow=6.5,SNR=3.9						
BVAR	**Borovoye Array**	**50.14**	**312**	P	**P**	**18 56 51.1**	**+1.7**
	0.3nm,0.7s,baz=74,slow=12,SNR=3.3						
WRA	**Warramunga Arr**	**56.93**	**187**	P	**P**	**18 57 37.8**	**-1.6**
	1.8nm,0.7s,baz=3.7,slow=7.3,SNR=12						
ASAR	**Alice Springs**	**60.66**	**187**	P	**P**	**18 58 04.2**	**-1.2**
	0.4nm,0.7s,baz=17,slow=4.9,SNR=7.2						
ARCES	**ARCESS Array B**	**63.82**	**339**	P	P	18 58 29.1	+3.1
	4.0nm,1.0s,baz=39,slow=7.4,SNR=2.7						
FINES	**FINESS Array B**	**68.56**	**332**	P	**P**	**18 58 57.3**	**+0.8**
	1.4nm,0.9s,baz=25,slow=11,SNR=3.3						

JMA 12 18:52:02.2±0.5, 37.˚48N×142.˚59E, h0km, M3.7, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**1.38**	**315**	P	Pb	18 52 28.9	0.0
JMM	**Marumori**	**1.48**	**286**	P	Pn	18 52 28.9	-1.1
JMM				S	Sg	18 52 48.6	-1.1
ONAJ	**Iwakimizuishiy**	**1.48**	**256**	*e*S	Sg	18 52 49.8	+0.1
JOU	**Okura**	**1.76**	**301**	P	Pb	18 52 34.7	-0.7
JFT	**Otama**	**1.79**	**272**	P	Pb	18 52 35.2	-0.7
JFT				*e*S	Sb	18 52 58.6	-0.3

JMA 12 18:56:43.9, 37.˚03N×140.˚67E, h13km±1km, M3.0, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.12**	**55**	P	Pg	18 56 47.3	0.0
ONAJ				S	Sg	18 56 49.7	0.0
JHO	**Hitachi**	**0.43**	**191**	P	Pg	18 56 52.1	-0.3
JHO				S	Sg	18 56 58.0	-0.1
JFT	**Otama**	**0.56**	**331**	P	Pg	18 56 54.9	+0.1
JFT				S	Sg	18 57 02.2	0.0
JMM	**Marumori**	**0.84**	**7**	P	Pg	18 56 59.4	-0.8
JMM				S	Sg	18 57 10.4	-0.8
MAT	**Matsushiro**	**2.04**	**257**	P	Pg	18 57 22.1	-0.9
MAT				S	Sb	18 57 46.2	+0.2

JMA 12 18:58:01.5, 36.˚96N×140.˚69E, h9km±1km, M2.7, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.17**	**31**	P	Pg	18 58 05.2	+0.1
ONAJ				S	Sg	18 58 07.8	+0.3
JHO	**Hitachi**	**0.36**	**196**	P	Pg	18 58 08.6	0.0
JHO				S	Sg	18 58 13.8	+0.4
JFT	**Otama**	**0.62**	**333**	P	Pg	18 58 13.7	+0.1
JMM	**Marumori**	**0.91**	**5**	P	Pg	18 58 18.3	-0.7
JMM				S	Sg	18 58 29.9	-0.9
JOU	**Okura**	**1.40**	**359**	P	Pb	18 58 27.6	-0.3
JOU				S	Sb	18 58 45.8	-0.1
MAT	**Matsushiro**	**2.04**	**259**	P	Pb	18 58 38.1	-0.6
MAT				S	Sb	18 59 04.2	+0.1

NIED ***12*** *19:02:00, 36.˚90N×140.˚70E, h5km, Mw4.1 Best double couple: M₀1.84000×10¹⁵ NP1:φs213.00000°, δ34.00000°, λ-103.00000°. NP2:φs49.00000°, δ57.00000°, λ-81.00000°.*

IDC ***12*** *19:02:13.8±0.5, 37.˚00N×140.˚48E, h0km, mb4.3/27, mb1 4.5/29, mb1mx4.4/36, mbtmp4.3/29, ML3.1/2, MS3.3/10, Ms1 3.3/10, ms1mx3.1/45, Error ellipse: s-maj=15.0km s-min=11.6km az=108.0*

ISCJB ***12*** *19:02:15.3±0.4, 36.˚95N±0.˚02×140.˚63E±0.˚03, h21km±2km, mb4.5/88, MS3.3/9, Error ellipse: s-maj=4.1km s-min=3.2km az=30.1*

JMA ***12*** *19:02:15.5, 36.˚95N×140.˚63E, h7km±1km, M4.5 Broadband fault plane solution: P waves. NP1: φs52.00000°, δ61.00000°, λ-83.00000°. NP2:φs218.00000°, δ30.00000°, λ-102.00000°. Principal axes: T Plg16.0000°, Azm137.0000°; N Plg6.0000°, Azm229.0000°; P Plg73.0000°, Azm339.0000°;*

JMA Felt III J1.

BJI ***12*** *19:02:17.0, 36.˚70N×140.˚63E, h41km, mb4.5/37, mB4.7/9, Ms4.2/13, Ms7 3.9/12*

MOS ***12*** *19:02:17.4±1.2, 37.˚07N×140.˚61E, h33km, mb4.7/49, Error ellipse: s-maj=7.9km s-min=5.5km az=100.0*

NEIC ***12*** *19:02:20.1±0.6, 36.˚98N×140.˚46E, h43km±5km, mb4.6/41, Error ellipse: s-maj=5.7km s-min=4.2km az=127.0*

NEIC Recorded [3 JMA] in Fukushima.

ISC 12 19:02:15.9±0.8, 36.˚96N±0.˚03×140.˚61E±0.˚03, h17km±5km, n220, σ1$48/231, mb4.6/88, MS3.2/9, 11C-7D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.20**	**47**	⇑P	**Pg**	**19 02 19.9**	**-0.9**
ONAJ				S	**Sg**	**19 02 23.0**	**-1.2**
JHO	**Hitachi**	**0.35**	**185**	⇑P	**Pg**	**19 02 22.1**	**-1.1**
JHO				S	**Sg**	**19 02 26.9**	**-1.3**
JSB	**Shiboa**	**0.55**	**271**	⇑P	**Pb**	**19 02 27.2**	**0.0**
JSB				S	**Sb**	**19 02 35.0**	**+0.2**
JFT	**Otama**	**0.60**	**339**	⇑P	**Pg**	**19 02 27.6**	**-0.1**
JFT				S	**Sg**	**19 02 35.7**	**0.0**
JYT	**Yasato**	**0.81**	**205**	⇑P	**Pg**	**19 02 30.4**	**-1.2**
JYT				S	**Sg**	**19 02 40.8**	**-1.4**
JFY	**Yanaizu**	**0.85**	**302**	⇑P	**Pb**	**19 02 31.9**	**-0.3**
JFY				S	**Sg**	**19 02 43.3**	**-0.3**
JMM	**Marumori**	**0.91**	**9**	⇓P	**Pb**	**19 02 32.7**	**-0.6**
JMM				S	**Sb**	**19 02 44.6**	**-0.6**
MJAR	**Matsushiro Arr**	**1.97**	**258**	Pn	**Pn**	**19 02 49.0**	**+0.4**
	56nm,0.3s,baz=79,slow=17,SNR=253						
MJAR				Sn	**Sb**	**19 03 15.3**	**-0.5**
	104nm,0.3s,baz=80,slow=27,SNR=23						
MJAR				LR	LR	19 03 52.2	
	comp=Z,271nm,18.9s,baz=65,slow=53						
MAJO	**Matsushiro**	**1.97**	**258**	*e*P	**Pb**	**19 02 50.3**	**-1.1**
MAJO				*e*		19 03 14.0	
MAJO	**Matsushiro**	**1.97**	**258**	*e*Pn	**Pb**	**19 02 50.2**	**-1.1**
MAJO				*e*Sn	**Sn**	**19 03 14.0**	**+1.0**
MAT	**Matsushiro**	**1.97**	**258**	P	**Pb**	**19 02 50.4**	**-1.0**
MAT				S	**Sb**	**19 03 17.2**	**+1.4**
INU	**Inuyama**	**3.32**	**242**	*e*Pn	**Pn**	**19 03 09.5**	**+2.4**
INU				*e*Sn	**Sn**	**19 03 43.4**	**-2.9**
JHJ	**Hachijo jima 2**	**3.89**	**190**	Pn	**Pn**	**19 03 15.5**	**+0.5**
	14nm,0.3s,baz=138,slow=22,SNR=10						
JHJ				Sn	**Sn**	**19 04 00.7**	**+0.4**
	35nm,0.3s,baz=72,slow=20,SNR=3.8						
JHJ2	**Mitsune**	**3.90**	**190**	*e*Pn	**Pn**	**19 03 15.8**	**+0.7**
JHJ2				*e*Sn	**Sn**	**19 03 58.2**	**-2.2**
ERM	**Erimo**	**5.42**	**21**	*e*P	**Pn**	**19 03 36.1**	**+0.2**
ERM				*e*		19 04 28.8	
ERM	**Erimo**	**5.42**	**21**	*e*Pn	**Pn**	**19 03 36.1**	**+0.2**
ERM				*e*Sn	Sn	19 04 28.8	-9.0
YUK	**Yuzh-Kuril'sk**	**8.12**	**28**	*e*P	**Pn**	**19 04 12.4**	**-0.5**
YUK				*i* S	**Sn**	**19 05 40.6**	**-3.7**
YUK				pmax	pmax		
	comp=Z,96nm,0.6s						
YUK				pmax	pmax		
	comp=E,44nm,0.4s						
YUK				pmax	pmax		
	comp=N,39nm,0.3s						
SHO	**Shikotan**	**8.37**	**33**	*e*P	**Pn**	**19 04 13.7**	**-2.7**
SHO				*i* S	Sn	19 05 42.9	-7.6
SHO				pmax	pmax		
	comp=N,16nm,0.7s						
SHO				pmax	pmax		
	comp=Z,35nm,0.7s						
SHO				pmax	pmax		
	comp=E,26nm,0.8s						
JNU	**Nakatsue**	**8.85**	**247**	Pn	**Pn**	**19 04 21.6**	**-1.5**
	comp=E,0.1nm,0.3s,baz=36,slow=18,SNR=3.0						
JNU				LR	LR	19 08 16.4	
	comp=E,94nm,18.7s,baz=300,slow=41						
JNU	**Nakatsue**	**8.85**	**247**	*e*Pn	**Pn**	**19 04 24.0**	**+0.9**
USRK	**Ussuriysk Ar.**	**9.76**	**320**	Pn	Pn	19 04 40.9	+5.5
	comp=E,0.8nm,0.3s,baz=133,slow=12,SNR=34						
USRK				LR	LR	19 08 03.4	
	comp=E,225nm,19.7s,baz=136,slow=36						
KUR	**Kuril'sk**	**9.91**	**31**	⇓*i*P	**Pn**	**19 04 36.5**	**-1.0**
KUR				*i* S	**Sn**	**19 06 22.7**	**-5.6**
KUR				pmax	pmax		
	comp=Z,14nm,0.5s						
KUR				pmax	pmax		
	comp=E,5.0nm,0.4s						
KUR				pmax	pmax		
	comp=N,4.0nm,0.5s						
KUR				smax	smax		
	comp=N,13nm,0.6s						
KUR				smax	smax		
	comp=E,10.0nm,0.3s						
CBIJ	**Chichi jima**	**9.93**	**172**	*e*Pn	**Pn**	**19 04 35.5**	**-2.3**
CBIJ				*e*Sn	Sn	19 06 19.0	-10
YSS	**Yuzh-Sakhalins**	**10.11**	**8**	*e*P	**Pn**	**19 04 41.3**	**+1.1**
YSS				*e*S	**Sn**	**19 06 31.8**	**-1.4**
YSS				pmax	pmax		
	comp=Z,30nm,0.9s						
YSS				MLR	MLR		
	comp=Z,200nm,10.0s						
YSS				MLR	MLR		
	comp=N,200nm,16.0s						
YSS				MLR	MLR		
	comp=E,300nm,16.0s						
YSS	**Yuzh-Sakhalins**	**10.11**	**8**	*e*Pn	**Pn**	**19 04 40.9**	**+0.7**
KSRS	**Korea Array**	**10.13**	**277**	Pn	Pn	19 04 46.0	+5.4
	comp=E,0.4nm,0.3s,baz=95,slow=14,SNR=29						
KSRS				LR	LR	19 08 18.5	
	comp=E,201nm,19.4s,baz=93,slow=36						
KSRS	**Korea Array**	**10.13**	**277**	P	Pn	19 04 46.0	+5.4
KSRS				MLR	MLR		
	comp=Z,201nm,19.4s						
KS01	**Wonju Array Si**	**10.16**	**277**	*e*Pn	Pn	19 04 44.5	+3.6
KS15	**Wonju Array Si**	**10.16**	**277**	*e*Pn	**Pn**	**19 04 43.8**	**+2.7**
KSAR	**Wonju Array Be**	**10.16**	**277**	P	Pn	19 04 46.0	+5.0
KSAR	**Wonju Array Be**	**10.16**	**277**	Pn	Pn	19 04 46.0	+4.9
MDJ	**Mudanjiang**	**11.31**	**316**	P	Pn	19 05 02.6	+5.8
MDJ				pmax	pmax		
	comp=Z,16nm,1.4s						
MDJ				pmax	pmax		
	comp=Z,130nm,6.7s						
MDJ	**Mudanjiang**	**11.31**	**316**	*e*Pn	Pn	19 05 02.0	+5.2
CN2	**Changchun**	**13.41**	**305**	*e*P	Pn	19 05 29.3	+3.8
CN2				pmax	pmax		
	comp=Z,10.0nm,0.7s						
KLR	**Kul'dur**	**13.85**	**335**	Pn	Pn	19 05 34.8	+3.4
	comp=Z,0.3nm,0.3s,baz=136,slow=10.0,SNR=14						
TYV	**Tymovskoe**

ULN pmax pmax
comp=Z,4.0nm,1.0s
ULN Ulaanbaatar 26.86 305 *e*P **P 19 07 54.0 -1.8**
comp=Z,3.2nm,0.9s
SEY Seymchan 26.99 12 P **P 19 07 57.2 +0.6**
comp=Z,10nm,0.9s,baz=202,slow=7.4,SNR=23
BOD Bodaibo 27.25 328 *e*P **P 19 07 56.3 -2.6**
BOD pmax pmax
comp=Z,2.0nm,1.0s
SONA1 Songino Array 27.29 304 *e*P **P 19 07 58.8 -0.8**
SONA1 *e*PcP **PcP 19 11 19.0 +0.1**
SONA0 Songino Array 27.29 304 *e*P **P 19 07 59.1 -0.5**
comp=Z,4.6nm,0.7s
SONA0 *e*PcP **PcP 19 11 18.8 -0.1**
SONM Songino Array 27.29 304 P **P 19 07 59.1 -0.5**
comp=Z,4.1nm,0.6s,baz=100,slow=7.3,SNR=35
SONM PcP **PcP 19 11 18.8 -0.1**
comp=Z,0.8nm,0.6s,baz=140,slow=2.6,SNR=7.0
SONM LR LR 19 19 00.8
comp=Z,61nm,18.6s,baz=90,slow=37
H11N2 WAKE ISLAND Hy 28.67 120 T T 19 37 59.7
baz=313,slow=75,SNR=752
H11N1 WAKE ISLAND Hy 28.68 120 T T 19 38 00.3
baz=313,slow=75,SNR=731
H11N3 WAKE ISLAND Hy 28.69 120 T T 19 38 01.0
baz=313,slow=75,SNR=562
H11S1 WAKE ISLAND Hy 29.37 122 T T 19 38 52.8
baz=314,slow=75,SNR=536
H11S3 WAKE ISLAND Hy 29.37 122 T T 19 38 52.2
baz=314,slow=75,SNR=615
H11S2 WAKE ISLAND Hy 29.38 122 T T 19 38 53.3
baz=314,slow=75,SNR=465
LZH Lanzhou 29.44 280 *e*P P 19 08 22.5 +3.5
LZH pP sP 19 08 32.3 +6.2
LZH sP pP 19 08 37.3 +13
LZH pmax pmax
comp=Z,10.0nm,1.0s
TLY Talaya 29.89 311 LR LR 19 20 42.9
comp=Z,60nm,19.6s,baz=115,slow=37
CD2 Chengdu 31.03 270 P **P 19 08 32.7 -0.2**
CD2 pmax pmax
comp=Z,1.0nm,0.5s
GTA Gaotai 31.97 287 *e*P **P 19 08 40.2 -1.0**
GTA pmax pmax
comp=Z,3.0nm,0.8s
BILL Bilibino 34.28 17 *e*P **P 19 09 00.3 -0.5**
BILL *i* 19 09 10.6
BILL *i* 19 11 38.1
BILL pmax pmax
comp=Z,8.0nm,1.0s
BILL Bilibino 34.28 17 *e*P **P 19 09 01.0 +0.2**
comp=Z,8.3nm,1.0s
TIXI Tiksi 35.29 354 P **P 19 09 08.4 -1.0**
comp=Z,3.8nm,0.6s,baz=141,slow=6.3,SNR=10
TIXI Tiksi 35.29 354 *de*P **P 19 09 09.1 -0.3**
TIXI pmax pmax
comp=Z,4.0nm,1.2s
WMQ Urumqi 40.30 297 *e*P **P 19 09 53.8 +1.5**
WMQ pP sP 19 10 05.2 +5.7
WMQ pmax pmax
comp=Z,5.0nm,0.6s
WMQ pmax pmax
comp=Z,33nm,4.2s
WMQ LR LR
comp=Z,33nm,17.2s
WMQ LR LR
comp=Z,28nm,14.4s
WMQ LR LR
comp=Z,19nm,15.8s
CM31 Chiang Mai Arr 40.86 255 *e*PcP **PcP 19 11 57.5 -0.2**
CMAR Chiang Mai Arr 40.86 255 P **P 19 09 56.3 -0.7**
comp=Z,0.4nm,0.6s,baz=43,slow=8.9,SNR=6.5
CMAR PcP **PcP 19 11 57.5 -0.2**
comp=Z,0.4nm,0.8s,baz=25,slow=3.1,SNR=4.5
CMAR LR LR 19 27 41.1
comp=Z,29nm,18.3s,baz=75,slow=38
ZAA0 Zalesovo Array 41.49 312 *e*P **P 19 10 01.3 -0.6**
ZAA0 *e*PcP **PcP 19 11 58.5 -0.7**
ZAA1 Zalesovo Array 41.49 312 *e*P **P 19 10 01.2 -0.6**
ZAA1 *e*PcP **PcP 19 11 59.0 -0.2**
ZALV Zalesovo Beam 41.49 312 P **P 19 10 01.2 -0.6**
comp=Z,2.8nm,0.7s,baz=93,slow=7.5,SNR=13
ZALV PcP **PcP 19 11 59.0 -0.2**
comp=Z,2.2nm,0.6s,baz=100,slow=2.8,SNR=7.2
ZALV LR LR 19 27 07.0
comp=Z,30nm,19.5s,baz=70,slow=36
LSA Lhasa 41.57 275 *e*P **P 19 10 04.3 +0.9**
LSA pmax pmax
comp=Z,6.0nm,0.3s
LSA Lhasa 41.57 275 *e*P **P 19 10 04.3 +0.9**
comp=Z,5.5nm,0.3s
NRIK Norilʹsk 43.06 335 P **P 19 10 14.1 -0.3**
comp=Z,2.8nm,0.5s,baz=158,slow=5.4,SNR=4.1
MK32 Makanchi Array 43.61 302 *e*P **P 19 10 19.6 +0.4**
MK32 *e*PP **PcP 19 12 06.0 -0.5**
MKAR Makanchi Array 43.61 302 P **P 19 10 19.6 +0.4**
comp=Z,1.8nm,0.6s,baz=88,slow=10.0,SNR=33
MKAR PcP **PcP 19 12 06.0 -0.5**
comp=Z,0.9nm,0.8s,baz=74,slow=4.3,SNR=3.7
MKAR LR LR 19 28 48.7
comp=Z,45nm,20.4s,baz=70,slow=37
TAPN Taplejung 45.30 274 *e*P **P 19 10 33.6 +0.3**
KURK Kurchatov 45.47 308 *e*P **P 19 10 33.6 -0.4**
KURK pmax pmax
comp=Z,8.0nm,0.8s
KURK Kurchatov 45.47 308 *e*P **P 19 10 33.6 -0.4**
comp=Z,7.6nm,0.8s
ODAN Odare 45.77 273 *e*P **P 19 10 37.3 +0.3**
PDGK Podgornoye 46.24 298 P **P 19 10 40.8 +0.7**
PDGK pmax pmax
comp=Z,7.0nm,1.2s
RAMN Ramite 46.37 274 *e*P **P 19 10 42.0 +0.3**
comp=Z,26nm,1.0s
GUN Gumba 46.52 275 *e*P **P 19 10 43.5 +0.5**
comp=Z,6.0nm,0.4s
KKN Kakani 47.05 275 *e*P **P 19 10 47.2 +0.2**
GKN Gorkha 47.47 276 *e*P **P 19 10 50.6 +0.4**
comp=Z,27nm,0.9s
KDAK Kodiak Island 47.58 42 *i* P **P 19 10 51.9 +1.5**
MLY Manley 48.25 32 *e*P **P 19 10 57.8 +2.2**
comp=Z,4.4nm,1.0s
MLY *e*PcP **PcP 19 12 24.3 +1.9**
PYUN Piuthan 48.74 277 *e*P **P 19 11 00.6 +0.5**
comp=Z,34nm,1.0s
TKM2 Tokmak 2 49.10 298 *e*P **P 19 11 03.4 +0.8**
TKM2 pmax pmax
comp=Z,6.0nm,0.8s
TKM2 Tokmak 2 49.10 298 *e*P **P 19 11 03.4 +0.8**
comp=Z,5.8nm,0.8s
MDM Murphy Dome 49.32 32 *e*P **P 19 11 05.9 +2.1**
comp=Z,11nm,1.2s
KSH Kashi 49.85 294 P P 19 11 13.0 +4.7
KSH *es*P sP 19 11 30.7 +15
KSH S **S 19 18 19.2 +1.7**
VOSK Vostochnaya 49.85 312 *e*P **P 19 11 07.9 -0.1**
VOSK pmax pmax
comp=Z,7.0nm,0.8s
VOSK Vostochnaya 49.85 312 *e*P **P 19 11 07.9 -0.1**
comp=Z,7.1nm,0.8s
HDA Harding Lake 49.89 33 *e*P **P 19 11 09.2 +1.1**
comp=Z,18nm,1.1s
ILAR Eielson Array 49.90 32 P **P 19 11 09.2 +1.0**
comp=Z,1.9nm,0.7s,baz=268,slow=6.0,SNR=21
ILB Eielson Array 49.90 32 *e*P **P 19 11 08.8 +0.7**
OTUK Ortayu 49.95 306 P **P 19 11 09.3 +0.5**
OTUK pmax pmax
comp=Z,7.0nm,1.7s
AAK Ala-Archa 49.96 298 ⇓ *e*P **P 19 11 09.3 +0.2**
AAK pmax pmax
comp=Z,5.0nm,0.9s
AAK Ala-Archa 49.96 298 *e*P **P 19 11 09.6 +0.4**
comp=Z,2.3nm,0.9s
BRVK Borovoye 50.20 312 ⇓ *e*P **P 19 11 10.8 +0.2**
BRVK pmax pmax
comp=Z,5.0nm,1.0s
BRVK Borovoye 50.20 312 *e*P **P 19 11 10.7 +0.1**
comp=Z,4.9nm,1.0s
EKS2 Erkin-Say 50.45 298 *e*P **P 19 11 12.1 -0.8**
EKS2 pmax pmax
comp=Z,2.0nm,0.8s
EKS2 Erkin-Say 50.45 298 *e*P **P 19 11 12.1 -0.8**
comp=Z,2.1nm,0.8s
MNAS Manas 51.40 299 P **P 19 11 21.2 +1.2**
MNAS pmax pmax
comp=Z,7.0nm,1.7s
SFK Sufi-Kurgan 51.48 295 P **P 19 11 21.7 +0.9**
SFK pmax pmax
comp=Z,9.0nm,1.0s
KKAR Karatay Array 52.60 300 *e*P **P 19 11 29.0 +0.2**
KKAR Karatay Array 52.60 300 *e*P **P 19 11 29.0 +0.2**
GSI Gunungsitoli 53.21 238 *e*P **P 19 11 33.4 -0.1**
comp=Z,29nm,1.1s
SVE Sverdlovsk 54.77 318 *e*P **P 19 11 45.2 +0.8**
SVE pmax pmax
comp=Z,9.0nm,0.7s
ARU Arti 55.99 318 *d* iP **P 19 11 53.4 +0.2**
ARU S **S 19 19 38.5 -1.9**
ARU SS **SS 19 23 19.9 -6.0**
ARU pmax pmax
comp=Z,10.0nm,1.0s
ARU Arti 55.99 318 *e*P **P 19 11 53.1 -0.1**
comp=Z,8.6nm,0.9s
WRAB Tennant Creek 56.90 187 *ce*P **P 19 12 00.3 +0.3**
WRAB pmax pmax
comp=Z,25nm,0.8s
WRAB Tennant Creek 56.90 187 *e*P **P 19 11 60.0 0.0**
comp=Z,13nm,1.0s
WB2 Warramunga Arr 56.91 187 *e*P **P 19 11 59.6 -0.4**
comp=Z,14nm,1.0s
WR1 Warramunga Arr 56.91 187 *e*P **P 19 12 00.1 0.0**
comp=Z,21nm,1.1s
WRA Warramunga Arr 56.91 187 P **P 19 12 00.1 0.0**
comp=Z,9.4nm,0.6s,baz=3.7,slow=7.3,SNR=62
ABKAR Akbulak array 57.49 310 *e*P **P 19 12 04.0 0.0**
AS01 Alice Springs 60.63 187 *e*P **P 19 12 26.1 +0.2**
AS31 Alice Springs 60.63 187 *e*P **P 19 12 26.2 +0.2**
comp=Z,1.6nm,0.8s
ASAR Alice Springs 60.63 187 P **P 19 12 26.6 +0.6**
comp=Z,4.8nm,0.8s,baz=13,slow=7.2,SNR=51
MBWA Marble Bar 61.07 202 *e*P **P 19 12 28.9 0.0**
comp=Z,10nm,0.9s
RES Resolute Bay 62.83 14 *e*P **P 19 12 40.5 +0.4**
RES pmax pmax
comp=Z,3.0nm,0.6s
RES Resolute Bay 62.83 14 *e*P **P 19 12 40.5 +0.4**
comp=Z,2.9nm,0.6s
GEYT Alibeck 63.30 299 P **P 19 12 44.6 +0.6**
comp=Z,3.1nm,0.7s,baz=22,slow=1.6,SNR=9.1
KLMR Klimovskoe 63.47 328 *e*P **P 19 12 43.1 -1.5**
KLMR pmax pmax
comp=Z,5.0nm,0.7s
ARA0 ARCESS Array S 63.84 339 *e*P **P 19 12 46.9 0.0**
ARCES ARCESS Array B 63.84 339 P **P 19 12 46.9 0.0**
comp=Z,4.9nm,0.8s,baz=62,slow=8.8,SNR=6.5
YKA Yellowknife Ar 64.19 30 P **P 19 12 50.2 +0.9**
comp=Z,1.2nm,0.7s,baz=302,slow=6.7,SNR=24
YKB5 Yellowknife Ar 64.19 30 *e*P **P 19 12 49.4 +0.1**
DAG Danmarks Havn 65.79 355 *i* P **P 19 12 59.8 +0.3**
comp=Z,5.3nm,0.8s
DAG Danmarks Havn 65.79 355 *i* P **P 19 12 59.8 +0.3**
DAG pmax pmax
comp=Z,4.0nm,0.8s
VRH Novokhopyorsk 67.20 318 *e*P **P 19 13 07.7 -1.2**
VRH pmax pmax
comp=Z,7.0nm,0.6s
OBN Obninsk 67.77 323 *i* P **P 19 13 12.6 +0.2**
OBN pmax pmax
comp=Z,5.0nm,1.0s
STKA Stephens Creek 68.49 179 P **P 19 13 17.6 +0.6**
comp=Z,3.0nm,0.6s,baz=342,slow=7.4,SNR=11
STKA Stephens Creek 68.49 179 *e*P **P 19 13 18.4 +1.3**
STKA pmax pmax
comp=Z,5.0nm,1.8s
STKA Stephens Creek 68.49 179 *e*P **P 19 13 18.4 +1.3**
comp=Z,5.2nm,1.8s
VSR Storozhevoye 68.56 319 *e*P **P 19 13 16.6 -0.9**
VSR pmax pmax
comp=Z,5.0nm,0.5s
FIA1 FINESS Array S 68.57 332 *e*P **P 19 13 17.2 -0.1**
FIA0 FINESS Array S 68.58 332 *e*P **P 19 13 17.1 -0.3**
FIA0 FINESS Array S 68.58 332 *e*P **P 19 13 17.1 -0.3**
FINES FINESS Array B 68.58 332 P **P 19 13 17.1 -0.3**
comp=Z,4.7nm,0.7s,baz=64,slow=8.7,SNR=17
ALVY Alvey 69.50 50 *e*P **P 19 13 24.0 +0.6**
GOF Gofitskoye 69.66 311 ⇑ *e*P **P 19 13 25.0 +0.6**
GOF pmax pmax
comp=Z,8.0nm,0.6s
VSU Vasula 70.19 329 ⇓ *e*P **P 19 13 28.5 +1.1**
VSU pmax pmax
comp=Z,17nm,0.8s
KBZ Khabaz 70.46 310 P **P 19 13 29.9 +0.6**
comp=Z,2.9nm,0.8s,baz=165,slow=2.4,SNR=4.1
KIV Kislovodsk 70.47 311 *e*P **P 19 13 30.6 +1.1**
KIV pmax pmax
comp=Z,14nm,1.1s
KIV Kislovodsk 70.47 311 *e*P **P 19 13 30.2 +0.7**
comp=Z,27nm,1.4s
SUMG Summit 70.75 360 *i* P **P 19 13 32.3 +1.1**
comp=Z,9.4nm,1.0s
SUMG Summit 70.75 360 *e*P **P 19 13 32.6 +1.4**
SUMG pmax pmax
comp=Z,67nm,2.0s
SUMG Summit 70.75 360 *e*P **P 19 13 32.5 +1.4**
comp=Z,67nm,2.0s
ANN Anapa 73.11 314 *e*P **P 19 13 46.0 +0.7**
ANN pmax pmax
comp=Z,26nm,1.1s
AKASG Malin Array Be 73.96 322 P **P 19 13 49.9 -0.3**
comp=Z,2.1nm,0.6s,baz=44,slow=6.0,SNR=10
AKASG Malin Array Be 73.96 322 P **P 19 13 49.9 -0.3**
AKASG pmax pmax
comp=Z,1.0nm,0.5s
KIEV Kiev 73.97 322 ⇑ *e*P **P 19 13 50.4 +0.2**
KIEV pmax pmax
comp=Z,5.0nm,1.0s
NB2 NORSAR Subarra 74.00 337 P **P 19 13 50.6 +0.3**
comp=Z,2.8nm,0.7s,baz=40,slow=6.2
NB200 NORSAR Array S 74.00 337 *e*P **P 19 13 50.9 +0.6**
NOA NORSAR Array B 74.00 337 P **P 19 13 50.9 +0.6**
comp=Z,3.0nm,0.8s,baz=39,slow=5.8,SNR=7.6
FFC Flin Flon 74.11 32 *e*P **P 19 13 52.0 +1.0**
FFC pmax pmax
comp=Z,12nm,1.5s
FFC Flin Flon 74.11 32 *e*P **P 19 13 52.0 +1.0**
comp=Z,12nm,1.5s
FCC Fort Churchill 74.35 26 *e*P **P 19 13 52.9 +0.6**
FCC pmax pmax
comp=Z,8.0nm,1.1s
FCC Fort Churchill 74.35 26 *e*P **P 19 13 52.9 +0.6**
comp=Z,8.2nm,1.1s
LRM Limekiln Ridge 74.65 44 *e*P **P 19 13 56.0 +1.4**
EGMT Eagleton 74.75 41 *e*P **P 19 13 56.5 +1.6**
comp=Z,9.3nm,0.9s
DLMT Dillon 74.84 44 *e*P **P 19 13 57.1 +1.5**
comp=Z,5.4nm,0.8s
BMN Battle Mountai 75.06 51 *e*P **P 19 13 58.4 +1.5**
BMN pmax pmax
comp=Z,6.0nm,1.2s
BMN Battle Mountai 75.06 51 *e*P **P 19 13 58.4 +1.5**
comp=Z,6.0nm,1.2s
BOZ Bozeman (W) 75.21 44 *e*P **P 19 13 59.1 +1.4**
BOZ pmax pmax
comp=Z,3.0nm,0.7s
BOZ Bozeman (W) 75.21 44 *e*P **P 19 13 59.1 +1.4**
comp=Z,2.7nm,0.7s
KLNR Kaliningrad 75.45 329 *e*P **P 19 14 01.0 +2.3**
KLNR pmax pmax
comp=Z,41nm,0.9s
NV01 Mina Array Sit 75.55 53 *e*P **P 19 14 02.1 +2.2**
NVAR Mina Array Bea 75.55 53 P **P 19 14 02.1 +2.2**
comp=Z,2.1nm,0.7s,baz=302,slow=5.6,SNR=4.2
H17A Grant Village 76.57 44 *e*P **P 19 14 08.8 +3.1**
comp=Z,5.0nm,0.9s
IMW Indian Meadow 76.68 45 *e*P **P 19 14 08.6 +2.2**
comp=Z,2.4nm,0.8s
R11A Troy Canyon, C 77.31 52 *e*P **P 19 14 11.6 +1.7**
comp=Z,5.8nm,1.1s
TPNV Topopah Spring 77.73 53 *e*P **P 19 14 13.9 +1.7**
TPNV pmax pmax
comp=Z,6.0nm,1.0s
TPNV Topopah Spring 77.73 53 *e*P **P 19 14 13.8 +1.7**
comp=Z,6.3nm,1.0s
HWUT Hardware Ranch 77.75 47 *e*P **P 19 14 13.9 +1.6**
comp=Z,4.1nm,1.0s
BUR08 Bucovina Ar. S 77.95 321 *e*P **P 19 14 13.6 +0.5**
BW06 Boulder Array 78.17 45 *e*P **P 19 14 15.7 +1.1**
PD31 Pinedale Array 78.17 45 *e*P **P 19 14 15.1 +0.4**
PDAR Pinedale Array 78.17 45 P **P 19 14 15.8 +1.1**
comp=Z,1.1nm,0.7s,baz=263,slow=1.8,SNR=8.3
BR101 Keskin Array S 78.42 311 *e*P **P 19 14 15.9 0.0**
BRTR Keskin Array B 78.42 311 P **P 19 14 15.9 0.0**
comp=Z,0.9nm,0.5s,baz=116,slow=5.1,SNR=5.7
KOLS Kolonicke sedl 78.50 324 *e*P **P 19 14 16.9 +0.9**
KOLS Kolonicke sedl 78.50 324 *e*P **P 19 14 16.9 +0.9**
BR231 Keskin MP Arra 78.86 312 *e*P **P 19 14 17.2 -1.2**
LCMT Little Creek M 79.60 51 *e*P **P 19 14 24.2 +1.8**
comp=Z,11nm,1.4s
PFO Pinyon Flats O 79.61 56 *i* P P 19 14 26.4 +3.8
EKU East Kanab 80.02 51 *e*P **P 19 14 27.3 +2.5**
RAYN Ar Rayn 80.09 292 *e*P **P 19 14 25.8 +0.6**
comp=Z,2.3nm,0.8s
DPC Dobruska-Polom 80.17 328 *e*P **P 19 14 26.5 +1.3**
DPC Dobruska-Polom 80.17 328 *e*P **P 19 14 26.5 +1.3**
CLL Collm 80.83 330 *i* **P 19 14 29.0 +0.4**
comp=Z,7.0nm,1.1s
CLL *i* 19 14 34.3
GOPC GO Pecny, Ondr 81.16 328 *e*P **P 19 14 31.2 +0.8**
GOPC GO Pecny, Ondr 81.16 328 *e*P **P 19 14 31.2 +0.8**
PV05 Paradox Valley 81.46 48 *e*P **P 19 14 34.7 +2.2**
KHC Kasperske Hory 82.27 328 *e*P **P 19 14 37.2 +0.9**
KHC Kasperske Hory 82.27 328 *e*P **P 19 14 37.2 +0.9**
GERES GERESS Array B 82.43 328 P **P 19 14 36.7 -0.6**
comp=Z,1.1nm,0.7s,baz=38,slow=6.9,SNR=6.8
BFO Black Forest 85.05 330 *i* P **P 19 14 51.6 +1.0**
ANMO Albuquerque 85.12 49 ⇑ *e*P **P 19 14 53.7 +2.3**
ANMO pmax pmax
comp=Z,9.0nm,1.7s
TX31 Lajitas Ar. Si 90.67 52 *e*P **P 19 15 18.9 +0.9**
LTX Lajitas 90.67 52 *e*P **P 19 15 19.1 +1.0**
LTX Lajitas 90.67 52 *e*P **P 19 15 19.1 +1.0**
TXAR Lajitas Array 90.67 52 P **P 19 15 19.1 +1.0**
comp=Z,1.5nm,0.7s,baz=296,slow=2.8,SNR=14
ESDC Sonseca Array 97.07 333 P **P 19 15 46.8 -0.4**
comp=Z,0.4nm,0.6s,baz=30,slow=4.8,SNR=2.8
TOA1 Torodi Ar. Sit 116.92 314 *e*PKPdf **PKPdf 19 20 59.5 -0.8**
TORD Torodi Ar. Bea 116.92 314 PKP **PKPdf 19 20 59.4 -0.8**
comp=Z,0.6nm,1.0s,baz=139,slow=1.1,SNR=2.4
SDV Santo Domingo 125.79 39 *e*PKPdf **PKPdf 19 21 18.1 +0.6**
SAML Samuel 144.75 44 *e*PKPdf **PKPab 19 21 51.2 +0.1**
LPAZ La Paz 147.28 59 PKPbc **PKPab 19 22 01.2 -0.2**
comp=Z,4.6nm,0.6s,baz=341,slow=4.4,SNR=14
PB11 IPOC Station P 148.51 65 *e*PKPbc **PKPbc 19 22 02.6 +0.2**

NIED ***12*** *19:04:00,36˚.90N×140˚.80E,h5km,Mw3.6 Best double couple: M₀3.26000×10¹⁴ NP1:φs33.00000°,δ62.00000°, λ-2.00000°. NP2:φs124.00000°,δ88.00000°, λ-152.00000°.*

JMA 12 19:04:50.5,36˚.88N×140˚.81E,h7km±1km,M4.0,1C-3D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.22**	**358**	⇓P		Pg 19 04 55.3	+0.3
ONAJ				eS		Sg 19 04 58.5	+0.5
JHO	**Hitachi**	**0.33**	**216**	⇓P		Pg 19 04 57.0	0.0
JHO				S		Sg 19 05 01.5	+0.1
JSB	**Shiboa**	**0.72**	**277**	⇑P		Pb 19 05 05.2	-0.2
JSB				S		Sb 19 05 15.3	-0.2
JFT	**Otama**	**0.74**	**329**	P		Pg 19 05 04.9	+0.1
JFT				S		Sb 19 05 15.3	-0.8
JYT	**Yasato**	**0.82**	**217**	P		Pg 19 05 06.0	-0.2
JYT				S		Sg 19 05 17.1	+0.3
JMM	**Marumori**	**0.98**	**359**	⇓P		Pg 19 05 08.9	-0.5
JMM				S		Sg 19 05 22.2	0.0
JFY	**Yanaizu**	**1.03**	**301**	P		Pg 19 05 10.2	0.0
JFY				S		Sg 19 05 23.4	-0.2
MAT	**Matsushiro**	**2.12**	**262**	P		Pn 19 05 27.6	+1.2
MAT				S		Sb 19 05 56.4	+0.7

IDC ***12*** *19:29:30.9±1.2,37˚.20N×141˚.08E,h0km,mb3.4/6, mb1 3.6/8,mb1mx3.4/51,mbtmp3.5/8,ML3.3/2,Error ellipse: s-maj=31.9km s-min=21.9km az=91.0*

ISCJB ***12*** *19:29:33.7±1.7,37˚.04N±0˚.03×140˚.68E±0˚.04, h11km±12km,mb3.4/6,Error ellipse: s-maj=5.9km s-min=4.4km az=17.1*

JMA ***12*** *19:29:34.3,37˚.04N×140˚.63E,h8km±1km,M3.4 Broadband fault plane solution: P waves. NP1: φs140.00000°,δ49.00000°,λ-68.00000°. NP2: φs287.00000°,δ45.00000°,λ-114.00000°. Principal axes: T Plg2.0000°, Azm214.0000°; N Plg17.0000°, Azm305.0000°; P Plg73.0000°, Azm117.0000°;*

JMA Felt I J1.

ISC 12 19:29:34.3±1.0,37˚.05N±0˚.03×140˚.61E±0˚.04,h9km±7km, n22,σ0˚.83/25,mb3.5/6,6C,Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.16**	**69**	⇑P		**Pg 19 29 37.6**	**-0.2**
ONAJ				S		**Sg 19 29 40.4**	**+0.3**
JHO	**Hitachi**	**0.43**	**185**	⇑P		**Pg 19 29 42.6**	**-0.2**
JHO				S		**Sg 19 29 48.6**	**+0.1**
JFT	**Otama**	**0.52**	**335**	⇑P		**Pg 19 29 44.7**	**+0.2**
JFT				S		**Sg 19 29 51.8**	**+0.4**
JSB	**Shiboa**	**0.56**	**262**	⇑P		**Pb 19 29 45.9**	**-0.5**
JSB				S		**Sb 19 29 54.0**	**-0.5**
JFY	**Yanaizu**	**0.81**	**297**	P		**Pg 19 29 50.2**	**+0.2**
JFY				S		**Sg 19 30 00.6**	**+0.1**
JMM	**Marumori**	**0.83**	**10**	⇑P		**Pg 19 29 49.8**	**-0.6**
JMM				S		**Sg 19 30 01.5**	**+0.3**
JYT	**Yasato**	**0.88**	**203**	⇑P		**Pg 19 29 50.7**	**-0.6**
JYT				S		**Sg 19 30 02.4**	**-0.4**
MJAR	**Matsushiro Arr**	**2.00**	**256**	Pn		**Pn 19 30 09.3**	**+1.1**
	10nm,0.3s,baz=83,slow=17,SNR=20						
MJAR				Sn		**Sb 19 30 35.3**	**-0.5**
	18nm,0.3s,baz=86,slow=27,SNR=5.8						
MAT	**Matsushiro**	**2.00**	**256**	P		**Pn 19 30 09.1**	**+0.8**
MAT				S		**Sb 19 30 35.9**	**+0.1**
JHJ	**Hachijo jima 2**	**3.98**	**190**	Pn		**Pn 19 30 37.2**	**+1.7**
	4.0nm,0.3s,baz=2.8,slow=21,SNR=2.6						
JHJ				Sn		**Sn 19 31 24.3**	**+2.0**
	8.9nm,0.3s,baz=77,slow=23,SNR=3.5						
SONM	**Songino Array**	**27.25**	**304**	P		**P 19 35 19.2**	**+0.3**
	0.3nm,0.7s,baz=100,slow=7.5,SNR=3.0						
H11N2	**WAKE ISLAND Hy**	**28.70**	**120**	T		T 20 05 23.0	
	baz=313,slow=75,SNR=15						
H11N1	**WAKE ISLAND Hy**	**28.71**	**120**	T		T 20 05 22.9	
	baz=313,slow=75,SNR=20						
H11N3	**WAKE ISLAND Hy**	**28.72**	**120**	T		T 20 05 23.7	
	baz=313,slow=75,SNR=20						
H11S1	**WAKE ISLAND Hy**	**29.41**	**122**	T		T 20 06 15.2	
	baz=314,slow=75,SNR=30						
H11S3	**WAKE ISLAND Hy**	**29.41**	**122**	T		T 20 06 15.3	
	baz=314,slow=75,SNR=30						
H11S2	**WAKE ISLAND Hy**	**29.42**	**122**	T		T 20 06 13.2	
	baz=314,slow=75,SNR=20						
MKAR	**Makanchi Array**	**43.57**	**302**	P		**P 19 37 38.5**	**-0.1**
	0.2nm,0.6s,baz=90,slow=7.2,SNR=3.2						
ILAR	**Eielson Array**	**49.83**	**32**	P		P 19 38 21.6	-5.7
	0.5nm,1.0s,baz=268,slow=11,SNR=3.5						
WRA	**Warramunga Arr**	**56.99**	**187**	P		**P 19 39 18.9**	**-1.4**
	0.4nm,0.5s,baz=5.5,slow=7.5,SNR=3.8						
ASAR	**Alice Springs**	**60.72**	**187**	P		**P 19 39 46.4**	**+0.1**
	0.3nm,0.8s,baz=17,slow=13,SNR=3.3						
FINES	**FINESS Array B**	**68.50**	**332**	P		**P 19 40 35.5**	**-1.2**
	0.8nm,0.8s,baz=60,slow=8.2,SNR=2.2						

IDC 12 19:32:27.3±2.6,14˚.60N×54˚.70E,h0km,mb3.6/5, mb1 3.7/5,mb1mx3.3/48,mbtmp3.6/5,Error ellipse: s-maj=70.5km s-min=37.3km az=68.0,Owen Fracture Zone region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
GEYT	**Alibeck**	**23.44**	**7**	P		P 19 37 38.5	+0.2
	0.8nm,0.5s,baz=200,slow=11,SNR=3.1						
H08N2	**Diego Garcia H**	**26.34**	**141**	T		T 20 05 41.7	
	baz=322,slow=76,SNR=18						
H08N3	**Diego Garcia H**	**26.35**	**141**	T		T 20 05 47.7	
	baz=322,slow=76,SNR=19						
H08N1	**Diego Carcia H**	**26.36**	**141**	T		T 20 05 47.0	
	baz=322,slow=76,SNR=17						
MKAR	**Makanchi Array**	**39.51**	**30**	P		P 19 39 59.9	+0.1
	0.2nm,0.5s,baz=206,slow=9.6,SNR=3.5						
ZALV	**Zalesovo Beam**	**45.81**	**24**	P		P 19 40 50.2	-0.7
	0.3nm,0.3s,baz=214,slow=10,SNR=2.6						
FINES	**FINESS Array B**	**51.10**	**343**	P		P 19 41 31.6	+0.1
	1.3nm,1.0s,baz=153,slow=4.2,SNR=3.4						
H01W3	**Cape Leeuwin H**	**74.81**	**133**	T		T 21 05 56.6	
	baz=300						
H01W2	**Cape Leeuwin H**	**74.81**	**133**	T		T 21 05 58.1	
	baz=300						

H01W1	**Cape Leeuwin H**	**74.82**	**133**	T	T	21 05 57.6	
	baz=300						
ASAR	**Alice Springs**	**86.20**	**115**	P	P	19 45 11.1	-0.1
	0.3nm,0.6s,baz=305,slow=4.4,SNR=4.2						

CSEM ***12*** *19:34:35.9±0.5,37.44N×38.55E,h2km,MD2.8,Error ellipse: s-maj=18.5km s-min=10.5km az=155.0*
ISK ***12*** *19:34:35.5,37.49N×38.47E,h5km,MD2.8*
ISCJB ***12*** *19:34:36.8±0.6,37.41N±0.08×38.54E±0.05,h9km,Error ellipse: s-maj=11.9km s-min=4.6km az=159.8*
DDA ***12*** *19:34:36.1,37.33N×38.53E,h7km,Md2.8*
ISC 12 19:34:36.9±0.9,37.5N±0.1×38.50E±0.04,h9km,n16, σ0.60/19,Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SURC	**SANLIURFA_SURC**	**0.64**	**172**	*i* P	Pg	19 34 45.2	-4.2
SURC	**SANLIURFA_SURC**	**0.64**	**172**	P	Pg	19 34 45.2	-4.2
GZT	**Gaziantep**	**0.76**	**258**	*i* P	**Pb**	**19 34 52.4**	**0.0**
SVRC	**Sivrice-ELAZID**	**1.07**	**36**	*e*PN	**Pn**	**19 34 57.7**	**-0.5**
SVRC				*e*SN	**Sn**	**19 35 14.2**	**+0.9**
SVRC	**Sivrice-ELAZID**	**1.07**	**36**	*e*Pn	**Pn**	**19 34 57.7**	**-0.5**
SVRC				*e*Sn	**Sn**	**19 35 14.2**	**+0.9**
GAZ	**Gaziantep**	**1.08**	**252**	*e*PG	**Pg**	**19 34 56.9**	**-0.8**
GAZ				*e*SG	**Sb**	**19 35 12.4**	**+0.3**
GAZ	**Gaziantep**	**1.08**	**252**	*e*Pg	**Pg**	**19 34 56.9**	**-0.8**
GAZ				*e*Sg	**Sb**	**19 35 12.4**	**+0.3**
KMRS	**Kahramanmaras**	**1.27**	**270**	*e*PN	**Pn**	**19 35 00.4**	**-0.5**
KMRS	**Kahramanmaras**	**1.27**	**270**	*e*Pn	**Pn**	**19 35 00.4**	**-0.5**
AYKD	**Aykdinkavak**	**1.35**	**266**	*i* P	**Pg**	**19 35 02.3**	**-0.5**
AYKD				*i* S	**Sg**	**19 35 21.5**	**+1.1**
KUZU	**Kuzuini**	**1.36**	**237**	*i* P	**Pg**	**19 35 03.0**	**0.0**
KUZU	**Kuzuini**	**1.36**	**237**	P	**Pg**	**19 35 03.0**	**0.0**
DYBB	**Diyarbakir**	**1.37**	**71**	*e*PN	**Pg**	**19 35 03.1**	**-0.1**
DIY	**Diyarbakir**	**1.42**	**74**	*e*Pn	**Pb**	**19 35 03.1**	**-0.5**
MAZI	**Mazidag**	**1.55**	**92**	*e*PN	**Pb**	**19 35 05.8**	**-0.1**
MAZI	**Mazidag**	**1.55**	**92**	*e*Pn	**Pb**	**19 35 05.8**	**-0.1**

NIED ***12*** *19:34:00,37.10N×140.70E,h14km,Mw3.5 Best double couple: M0 2.25000×10^14 NP1:φs276.00000°,δ26.00000°, λ136.00000°. NP2:φs47.00000°,δ72.00000°,λ71.00000°.*
ISCJB ***12*** *19:34:38.7±0.5,37.08N±0.03×140.76E±0.05,h27km±3km, mb3.8/14,Error ellipse: s-maj=6.3km s-min=4.4km az=16.8*
JMA ***12*** *19:34:39.9,37.07N×140.65E,h15km±1km,M3.8 Broadband fault plane solution: P waves. NP1: φs41.00000°,δ62.00000°,λ69.00000°. NP2:φs260.00000°, δ34.00000°,λ124.00000°. Principal axes: T Plg66.0000°, Azm273.0000°; N Plg18.0000°, Azm51.0000°; P Plg15.0000°, Azm146.0000°;*
JMA Felt III J1.
IDC ***12*** *19:34:43.1±2.2,37.07N×140.71E,h49km±21km,mb3.5/14, mb1 3.6/18,mb1mx3.5/55,mbtmp3.8/18,ML3.4/3 Error ellipse: s-maj=19.0km s-min=12.0km az=61.0*
ISC 12 19:34:39.6±0.9,37.08N±0.03×140.67E±0.05,h19km±3km, n32,σ0.78/35,mb3.8/14,2C-5D,Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.11**	**76**	⇑P	**Pg**	**19 34 43.5**	**0.0**
ONAJ				S	**Sg**	**19 34 46.0**	**-0.2**
JHO	**Hitachi**	**0.47**	**190**	⇓P	**Pg**	**19 34 48.8**	**-0.4**
JHO				S	**Sg**	**19 34 55.1**	**-0.5**
JFT	**Otama**	**0.51**	**329**	⇓P	**Pb**	**19 34 50.1**	**0.0**
JFT				S	**Sb**	**19 34 56.9**	**-0.3**
JSB	**Shiboa**	**0.61**	**260**	⇑P	**Pg**	**19 34 51.9**	**+0.2**
JSB				S	**Sb**	**19 35 00.0**	**+0.2**
JMM	**Marumori**	**0.80**	**7**	⇓P	**Pb**	**19 34 54.6**	**-0.3**
JMM				S	**Sg**	**19 35 05.2**	**-0.6**
JFY	**Yanaizu**	**0.84**	**294**	⇓P	**Pb**	**19 34 55.4**	**-0.2**
JFY				S	**Sb**	**19 35 06.0**	**-0.5**
JYT	**Yasato**	**0.93**	**204**	⇓P	**Pb**	**19 34 56.5**	**-0.6**
JYT				S	**Sb**	**19 35 09.0**	**-0.1**
MJAR	**Matsushiro Arr**	**2.04**	**256**	P	**Pn**	**19 35 13.6**	**+0.5**
	18nm,0.3s,baz=77,slow=16,SNR=49						
MJAR				S	**Sb**	**19 35 40.6**	**-0.7**
	33nm,0.3s,baz=51,slow=25,SNR=16						
MAT	**Matsushiro**	**2.04**	**256**	P	**Pn**	**19 35 14.5**	**+1.4**
MAT				S	**Sb**	**19 35 41.4**	**+0.1**
JHJ	**Hachijo jima 2**	**4.01**	**191**	P	**Pn**	**19 35 41.8**	**+1.7**
	11nm,0.3s,baz=342,slow=20,SNR=6.2						
JHJ				S	**Sn**	**19 36 27.2**	**+0.5**
	18nm,0.3s,baz=307,slow=20,SNR=3.9						
USRK	**Ussuriysk Ar.**	**9.70**	**320**	P	**Pn**	**19 37 00.2**	**+2.1**
	0.1nm,0.3s,baz=141,slow=16,SNR=2.3						
KSRS	**Korea Array**	**10.17**	**276**	P	Pn	19 37 08.1	+3.5
	0.2nm,0.3s,baz=94,slow=14,SNR=6.3						
SONM	**Songino Array**	**27.27**	**304**	P	**P**	**19 40 21.9**	**-1.0**
	0.8nm,0.6s,baz=103,slow=8.8,SNR=7.3						
H11N2	**WAKE ISLAND Hy**	**28.68**	**120**	T	T	20 10 26.3	
	baz=317						
H11N1	**WAKE ISLAND Hy**	**28.69**	**120**	T	T	20 10 29.5	
	baz=317,slow=74,SNR=50						
H11N3	**WAKE ISLAND Hy**	**28.70**	**120**	T	T	20 10 30.3	
	baz=317,slow=74,SNR=50						
H11S1	**WAKE ISLAND Hy**	**29.39**	**122**	T	T	20 11 18.1	
	baz=314,slow=76,SNR=66						
H11S3	**WAKE ISLAND Hy**	**29.39**	**122**	T	T	20 11 19.7	
	baz=314,slow=76,SNR=53						
H11S2	**WAKE ISLAND Hy**	**29.40**	**122**	T	T	20 11 17.6	
	baz=314,slow=76,SNR=41						
TIXI	**Tiksi**	**35.18**	**354**	P	**P**	**19 41 31.2**	**-0.7**
	0.6nm,0.3s,baz=124,slow=7.6,SNR=4.3						
ZALV	**Zalesovo Beam**	**41.45**	**312**	P	**P**	**19 42 24.2**	**-0.7**
	0.5nm,0.4s,baz=98,slow=4.5,SNR=4.0						
MKAR	**Makanchi Array**	**43.59**	**302**	P	**P**	**19 42 42.6**	**+0.1**
	0.6nm,0.6s,baz=88,slow=9.8,SNR=13						
KURBB	**Kurchatov Arra**	**45.51**	**308**	P	**P**	**19 42 57.3**	**-0.4**
	0.7nm,0.5s,baz=83,slow=8.0,SNR=7.6						
ILAR	**Eielson Array**	**49.78**	**32**	P	**P**	**19 43 31.9**	**+1.3**
	0.4nm,0.6s,baz=260,slow=5.4,SNR=3.7						
BVAR	**Borovoye Array**	**50.10**	**312**	P	**P**	**19 43 33.5**	**+0.2**
	0.3nm,0.4s,baz=86,slow=7.4,SNR=3.5						
WRA	**Warramunga Arr**	**57.02**	**187**	P	**P**	**19 44 24.4**	**0.0**
	1.4nm,0.5s,baz=2.6,slow=7.2,SNR=14						
ASAR	**Alice Springs**	**60.75**	**187**	P	**P**	**19 44 50.5**	**+0.3**
	0.6nm,0.7s,baz=15,slow=7.7,SNR=3.6						
GEYT	**Alibeck**	**63.29**	**299**	P	**P**	**19 45 06.5**	**-0.8**
	0.9nm,0.5s,baz=7.4,slow=4.6,SNR=3.6						
ARCES	**ARCESS Array B**	**63.75**	**339**	P	**P**	**19 45 09.4**	**-0.4**
	2.5nm,1.0s,baz=54,slow=9.1,SNR=3.7						
YKA	**Yellowknife Ar**	**64.07**	**30**	P	**P**	**19 45 12.2**	**+0.3**
	0.3nm,1.0s,baz=263,slow=7.9,SNR=3.6						
FINES	**FINESS Array B**	**68.50**	**332**	P	**P**	**19 45 39.8**	**-0.5**
	1.7nm,0.8s,baz=54,slow=7.1,SNR=4.0						
AKASG	**Malin Array Be**	**73.90**	**322**	P	**P**	**19 46 11.7**	**-1.5**
	0.2nm,0.3s,baz=54,slow=5.9,SNR=3.0						

NIED ***12*** *19:37:00,39.40N×142.00E,h47km,Mw5.6 Best double couple: M0 2.64000×10^17 NP1:φs173.00000°,δ21.00000°, λ59.00000°. NP2:φs26.00000°,δ72.00000°,λ101.00000°.*
BJI ***12*** *19:37:44.8,39.40N×142.00E,h50km,mb5.0/59,mB5.4/64, Ms5.2/89,Ms7 5.1/82*
MOS ***12*** *19:37:46.9±0.8,39.49N×141.89E,h42km,mb5.7/88, MS5.2/64,Error ellipse: s-maj=5.7km s-min=3.6km az=94.7*
ISCJB ***12*** *19:37:48.0±0.2,39.33N±0.02×141.92E±0.02,h56km±2km, mb5.4/343,MS5.1/215,Error ellipse: s-maj=3.0km s-min=2.0km az=153.7*
NEIC ***12*** *19:37:48.3±0.1,39.37N×141.90E,h45km,mb5.6/242, ME5.1,MS5.0/137,MW5.6,MW5.6,Error ellipse: s-maj=3.5km s-min=2.3km az=146.0,Moment Tensor Solution. s70 Moment tensor: Scale 10^17Nm; Mrr2.62; Mθθ-0.30; Mφφ-2.32; Mrθ1.35; Mθφ-0.67; Mφr2.32; Best double couple: M0 3.70000×10^17 NP1:φs189.00000°, δ23.00000°,λ74.00000°. NP2:φs26.00000°,δ68.00000°, λ97.00000°. Principal axes: T 3.8000, Plg66.0000°, Azm308.0000°; N -0.1600, Plg6.0000°, Azm204.0000°; P -3.6400, Plg23.0000°, Azm111.0000°; Depth from synthetics of broadband displacement seismograms. Energy computed from CMT mechanism.*
NEIC Felt at Kesennuma. Recorded [4 JMA] in Iwate.
JMA ***12*** *19:37:48.4±0.1,39.34N×142.06E,h48km±1km,M5.5 Broadband fault plane solution: P waves. NP1: φs14.00000°,δ61.00000°,λ94.00000°. NP2:φs186.00000°, δ29.00000°,λ82.00000°. Principal axes: T Plg74.0000°, Azm295.0000°; N Plg4.0000°, Azm192.0000°; P Plg16.0000°, Azm101.0000°;*
JMA Felt IV J1.
GCMT ***12*** *19:37:48.3±0.1,39.39N×142.13E,h52km,MW5.6/123, Moment Tensor Solution. s107,c208; s123,c296; Duration: 1!6 Moment tensor: Scale 10^17Nm; Mrr2.45±.04; Mθθ-0.18±.03; Mφφ-2.26±.03; Mrθ1.04±.03; Mθφ-0.64±.02; Mφr1.88±.03; Best double couple: M0 3.25400×10^17 NP1:φs24.00000°,δ66.00000°, λ97.00000°. NP2:φs188.00000°,δ25.00000°,λ75.00000°. Principal axes: T 3.2870, Plg68.0000°, Azm308.0000°; N -0.0590, Plg6.0000°, Azm201.0000°; P -3.2210, Plg20.0000°, Azm109.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface/mantle waves, cutoff=50s.*
NEIC ***12*** *19:37:49.0±0.0,39.43N×142.02E,h44km,Moment Tensor Solution. s12 Moment tensor: Scale 10^17Nm; Mrr1.80; Mθθ-0.52; Mφφ-1.28; Mrθ0.89; Mθφ-0.19; Mφr2.56; Best double couple: M0 3.20000×10^17 NP1:φs18.00000°, δ75.00000°,λ91.00000°. NP2:φs192.00000°,δ15.00000°, λ84.00000°. Principal axes: T 3.3700, Plg59.0000°, Azm290.0000°; N -0.4900, Plg1.0000°, Azm198.0000°; P -2.8800, Plg30.0000°, Azm107.0000°;*
IDC ***12*** *19:37:51.2±2.1,39.38N×141.90E,h72km±18km,mb4.4/38, mb1 4.5/42,mb1mx4.5/51,mbtmp4.7/42,MS5.0/41, Ms1 5.0/41,ms1mx4.8/52 Error ellipse: s-maj=11.7km s-min=8.2km az=91.0*
ISC 12 19:37:48.3±0.3,39.38N±0.03×141.98E±0.03,h48km±2km, h47km:pP-P,n1335,σ1.20/1315,mb5.5/364,MS5.1/219, 68C-34D,Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MIYJ	**Miyakonagasawa**	**0.23**	**328**	⇓P	**Pn**	**19 37 57.3**	**+0.7**
MIYJ				S	**Sn**	**19 38 03.4**	**+0.9**
OFUJ	**Ofunato**	**0.39**	**218**	⇓P	**Pn**	**19 37 58.4**	**+0.3**
OFUJ				S	**Sn**	**19 38 05.3**	**+0.3**
JOM	**Ohasama**	**0.54**	**280**	⇓P	**Pn**	**19 38 00.8**	**+0.9**
JTH	**Tanohata**	**0.56**	**351**	⇓P	**Pn**	**19 38 00.9**	**+0.7**
JMK	**Ichinoseki**	**0.73**	**234**	⇓P	**Pn**	**19 38 02.7**	**+0.4**
JMK				S	**Sn**	**19 38 13.0**	**+0.5**
JKZ	**Kuzumaki**	**0.78**	**320**	⇓P	**Pn**	**19 38 04.5**	**+1.4**
JKZ				S	**Sn**	**19 38 16.3**	**+2.5**
JRG	**Rokugo**	**1.04**	**271**	⇓P	**Pn**	**19 38 07.5**	**+1.0**
JRG				*e*S	**Sn**	**19 38 22.5**	**+2.5**
JIO	**Ouri**	**1.05**	**208**	⇓P	**Pn**	**19 38 06.4**	**-0.2**
JIO				S	**Sn**	**19 38 19.6**	**-0.5**
JANG	**Nango**	**1.05**	**340**	⇓P	**Pn**	**19 38 07.4**	**+0.7**
JAH	**Hinai**	**1.31**	**308**	⇓P	**Pn**	**19 38 11.5**	**+1.3**
ERM	**Erimo**	**2.78**	**18**	*e*P	**Pn**	**19 38 31.0**	**+0.7**
ERM	**Erimo**	**2.78**	**18**	*e*Pn	**Pn**	**19 38 31.0**	**+0.7**
MAJO	**Matsushiro**	**4.11**	**228**	*i* P	**Pn**	**19 38 50.8**	**+2.1**
MAJO	**Matsushiro**	**4.11**	**228**	*e*Pn	**Pn**	**19 38 50.5**	**+1.9**
MJAR	**Matsushiro Arr**	**4.11**	**228**	P	**Pn**	**19 38 50.5**	**+1.8**
	30nm,0.3s,baz=42,slow=11,SNR=97						
MJAR					LR	LR	19 40 37.2
	comp=Z,16μm,21.8s,baz=60,slow=41						
YUK	**Yuzh-Kuril'sk**	**5.48**	**31**	*e*P	**Pn**	**19 39 07.2**	**-0.2**
YUK				*i* S	**Sn**	**19 40 05.5**	**-3.5**
YUK					pmax	pmax	
	comp=Z,2μm,0.3s						
YUK					pmax	pmax	
	comp=N,526nm,0.4s						
YUK					pmax	pmax	
	comp=E,720nm,0.2s						
YUK					MLR	MLR	
	comp=Z,10μm,17.0s						
INU	**Inuyama**	**5.64**	**226**	*e*Pn	**Pn**	**19 39 11.1**	**+1.5**
SHO	**Shikotan**	**5.77**	**37**	*e*P	**Pn**	**19 39 09.4**	**-1.9**
SHO				*i* S	Sn	19 40 09.2	-7.0
SHO					pmax	pmax	
	comp=Z,2μm,0.6s						
SHO					pmax	pmax	
	comp=N,483nm,0.5s						
SHO					pmax	pmax	
	comp=E,1μm,0.6s						
JHJ	**Hachijo jima 2**	**6.50**	**196**	P	**Pn**	**19 39 20.5**	**-0.8**
	comp=E,48nm,0.3s,baz=323,slow=21,SNR=20						
JHJ					S	**Sn**	**19 40 31.7**	**-2.4**
	comp=E,191nm,0.3s,baz=72,slow=23,SNR=7.3						
JHJ					LR	LR	19 42 30.1
	comp=E,4μm,19.4s,baz=16,slow=43						
KUR	**Kuril'sk**	**7.29**	**35**	*i* P	**Pn**	**19 39 32.3**	**+0.1**
KUR				*i* S	**Sn**	**19 40 49.6**	**-4.0**
KUR					pmax	pmax	
	comp=Z,795nm,0.9s						
KUR					pmax	pmax	
	comp=N,225nm,0.4s						
KUR					pmax	pmax	
	comp=E,295nm,0.4s						
YSS	**Yuzh-Sakhalins**	**7.59**	**4**	⇑*e*P	**Pn**	**19 39 36.8**	**+0.6**
YSS				*e*S	**Sn**	**19 40 57.6**	**-3.2**
YSS					pmax	pmax	
	comp=Z,270nm,0.9s						
YSS					MLR	MLR	
	comp=Z,8μm,14.0s						
YSS					MLR	MLR	
	comp=N,5μm,12.0s						
YSS					MLR	MLR	
	comp=E,4μm,17.0s						
YSS	**Yuzh-Sakhalins**	**7.59**	**4**	*e*Pn	**Pn**	**19 39 36.0**	**-0.3**
VLA	**Vladivostok**	**8.47**	**299**	⇓*e*P	**Pn**	**19 39 46.6**	**-1.7**
USRK	**Ussuriysk Ar.**	**8.88**	**306**	P	**Pn**	**19 39 56.7**	**+2.8**
	comp=E,2.7nm,0.3s,baz=118,slow=14,SNR=36						
USRK					LR	LR	19 43 18.2
	comp=E,20μm,19.2s,baz=111,slow=37						
UGL	**Uglegorsk**	**9.69**	**0**	*e*P	**Pn**	**19 40 04.0**	**-1.0**
UGL					pmax	pmax	
	comp=Z,550nm,6.0s						
UGL					pmax	pmax	
	comp=Z,110nm,1.0s						
UGL					MLR	MLR	
	comp=Z,4μm,14.0s						
UGL					MLR	MLR	
	comp=N,2μm,18.0s						
UGL					MLR	MLR	
	comp=E,5μm,14.0s						
HABR	**Khabarovsk**	**10.36**	**334**	*de*P	Pn	19 40 10.9	-3.3
HABR				*e*S	**Sn**	**19 42 05.9**	**-2.9**
HABR					MLR	MLR	
	comp=Z,6μm,12.0s						
MDJ	**Mudanjiang**	**10.59**	**304**	P	**Pn**	**19 40 18.6**	**+1.2**
MDJ				S	**Sn**	**19 42 12.7**	**-1.8**
MDJ				PcP	**PcP**	**19 46 19.8**	**+1.9**
MDJ				ScP	**ScP**	**19 49 46.9**	**+0.7**
MDJ				PcS	**PcS**	**19 49 52.9**	**+1.5**
MDJ				ScS	**ScS**	**19 53 22.6**	**+1.5**
MDJ					pmax	pmax	
	comp=Z,31nm,1.2s						
MDJ					pmax	pmax	
	comp=Z,1μm,4.3s						
MDJ					LR	LR	
	comp=Z,8μm,15.9s						
MDJ					LR	LR	
	comp=Z,11μm,16.9s						
MDJ					LR	LR	
	comp=Z,18μm,17.8s						
MDJ	**Mudanjiang**	**10.59**	**304**	*e*Pn	**Pn**	**19 40 19.7**	**+2.3**
JNU	**Nakatsue**	**10.92**	**239**	P	**Pn**	**19 40 24.8**	**+2.9**
	comp=Z,1.5nm,0.3s,baz=74,slow=5.3,SNR=12						
JNU					LR	LR	19 44 53.0
	comp=Z,7μm,20.9s,baz=40,slow=39						
JNU	**Nakatsue**	**10.92**	**239**	*e*Pn	**Pn**	**19 40 23.4**	**+1.4**
KSRS	**Korea Array**	**11.19**	**265**	P	Pn	19 40 31.4	+5.8
	comp=Z,2.2nm,0.3s,baz=71,slow=13,SNR=23						
KSRS					LR	LR	19 44 26.7
	comp=Z,8μm,20.3s,baz=78,slow=35						
KS01	**Wonju Array Si**	**11.21**	**265**	*e*Pn	Pn	19 40 29.3	+3.5
KS15	**Wonju Array Si**	**11.23**	**264**	*e*Pn	Pn	19 40 29.8	+3.8
KSAR	**Wonju Array Be**	**11.23**	**264**	P	Pn	19 40 31.4	+5.3
KSAR	**Wonju Array Be**	**11.23**	**264**	P	Pn	19 40 31.4	+5.3
TYV	**Tymovskoe**	**11.49**	**2**	*e*P	**Pn**	**19 40 30.0**	**+0.4**
TYV				*e*S	**Sn**	**19 42 36.0**	**-0.4**
TYV					pmax	pmax	
	comp=N,1μm,5.0s						
TYV					pmax	pmax	
	comp=Z,1μm,7.0s						
TYV					pmax	pmax	
	comp=Z,55nm,0.8s						
TYV					smax	smax	
	comp=E,2μm,9.0s						
TYV					MLR	MLR	
	comp=N,8μm,19.0s						
TYV					MLR	MLR	
	comp=Z,9μm,19.0s						
INCN	**Inchon**	**12.18**	**266**	*e*Pn	**Pn**	**19 40 41.8**	**+2.6**
CBIJ	**Chichi jima**	**12.26**	**179**	*e*Pn	Pn	19 40 35.7	-4.5
JCJ	**Chichijima**	**12.26**	**179**	LR	LR	19 46 15.0	
	comp=Z,1μm,21.3s,baz=358,slow=41						
KLR	**Kul'dur**	**12.26**	**327**	P	**Pn**	**19 40 42.6**	**+2.5**
	comp=Z,0.3nm,0.3s,baz=143,slow=11,SNR=26						
KLR					LR	LR	19 45 28.2
	comp=Z,13μm,18.7s,baz=139,slow=37						
CN2	**Changchun**	**13.13**	**295**	*e*P	Pn	19 40 55.6	+3.5
CN2				*e*pP	P	19 41 04.0	+3.0
CN2				*e*S	**Sn**	**19 43 20.2**	**+3.6**
CN2					pmax	pmax	
	comp=Z,20nm,1.5s						
CN2					pmax	pmax	
	comp=Z,200nm,4.0s						
CN2					LR	LR	
	comp=Z,5μm,15.0s						
CN2					LR	LR	
	comp=Z,7μm,15.0s						
CN2					LR	LR	
	comp=Z,7μm,19.0s						
NKL	**Nikolayevsk**	**13.80**	**357**	*i* P	**Pn**	**19 41 00.0**	**-1.1**
NKL				*e*S	**Sn**	**19 43 30.0**	**-2.6**
NKL					pmax	pmax	
	comp=N,900nm,8.0s						
NKL					pmax	pmax	
	comp=Z,2μm,8.0s						
NKL					pmax	pmax	
	comp=N,13nm,1.0s						
NKL					pmax	pmax	
	comp=Z,22nm,1.0s						
NKL					smax	smax	
	comp=E,2μm,10.0s						
NKL					MLR	MLR	
	comp=E,6μm,18.0s						
NKL					MLR	MLR	
	comp=N,3μm,16.0s						
NKL					MLR	MLR	
	comp=Z,4μm,16.0s						
OKH	**Okha**	**14.19**	**2**	*e*P	**Pn**	**19 41 04.0**	**-2.3**
OKH				*e*S	**Sn**	**19 43 43.8**	**+1.7**
OKH					smax	smax	
	comp=E,1μm,12.0s						
OKH					MLR	MLR	
	comp=Z,6μm,16.0s						
SNY	**Shenyang**	**14.19**	**286**	⇓P	**Pn**	**19 41 09.1**	**+2.7**
SNY					pmax	pmax	
	comp=Z,20nm,2.0s						
SNY					pmax	pmax	
	comp=Z,810nm,4.9s						
SNY					LR	LR	
	comp=Z,4μm,20.0s						
SNY					LR	LR	
	comp=Z,5μm,27.5s						
SNY					LR	LR	
	comp=Z,12μm,28.2s						
SKR	**Severo-Kuril's**	**15.05**	**37**	*e*P	**Pn**	**19 41 17.2**	**-0.6**
DL2	**Dalian**	**15.80**	**275**	⇑*i*P	**Pn**	**19 41 27.9**	**+0.5**
DL2				sP	**pP**	**19 41 43.5**	**+2.0**
DL2				S	**Sn**	**19 44 24.5**	**+3.1**
DL2					pmax	pmax	
	comp=Z,170nm,1.3s						
DL2					pmax	pmax	
	comp=Z,1μm,6.4s						
DL2					LR	LR	
	comp=Z,2μm,15.3s						
DL2					LR	LR	
	comp=Z,5μm,22.9s						
DL2					LR	LR	
	comp=Z,9μm,26.4s						
PEA0	**Petropavlovsk-**	**17.46**	**33**	*e*Pn	**Pn**	**19 41 44.9**	**-3.3**
PEA0B	**Petropavlovsk-**	**17.46**	**33**	*e*Pn	**Pn**	**19 41 46.3**	**-1.8**
	comp=Z,137nm,1.1s						
PETK	**Petropavlovsk-**	**17.46**	**33**	P	**Pn**	**19 41 45.6**	**-2.6**
	comp=Z,0.8nm,0.3s,baz=205,slow=11,SNR=24						
PETK					LR	LR	19 49 26.7
	comp=Z,2μm,18.5s,baz=218,slow=40						
PEA1	**Petropavlovsk-**	**17.46**	**33**	*e*Pn	**Pn**	**19 41 45.6**	**-2.6**
PET	**Petropavlovsk**	**17.81**	**35**	*e*P	**Pn**	**19 41 49.0**	**-3.5**
PET				*e*S	Sn	19 45 02.8	-7.1
PET					pmax	pmax	
	comp=Z,71nm,1.1s						
PET					MLR	MLR	
	comp=Z,2μm,16.0s						
PET					MLR	MLR	
	comp=Z,3μm,16.0s						
PET	**Petropavlovsk**	**17.81**	**35**	*e*Pn	**Pn**	**19 41 48.9**	**-3.5**
	comp=Z,374nm,1.4s						
HIA	**Hailar**	**18.66**	**309**	*e*P	**P**	**19 41 59.8**	**-2.4**
HIA					pmax	pmax	
	comp=Z,155nm,1.3s						
HIA	**Hailar**	**18.66**	**309**	*e*P	**P**	**19 41 59.8**	**-2.4**
	comp=Z,155nm,1.3s						
SSE	**Sheshan**	**18.86**	**250**	P	**P**	**19 42 03.9**	**-0.5**
SSE				sP	**sP**	**19 42 19.9**	**-1.6**
SSE				S	**Sn**	**19 45 32.7**	**-2.9**
SSE					pmax	pmax	
	comp=Z,29nm,0.7s						
SSE					pmax	pmax	
	comp=Z,630nm,8.7s						
SSE					LR	LR	
	comp=Z,3μm,21.2s						
SSE					LR	LR	
	comp=Z,900nm,21.1s						
SSE					LR	LR	
	comp=Z,3μm,23.7s						
BJI	**Beijing**	**19.84**	**280**	P	**P**	**19 42 13.6**	**-1.5**
BJI				sP	**pP**	**19 42 29.3**	**+3.1**
BJI				S	**S**	**19 45 50.4**	**-5.5**
BJI				sS	**Sn**	**19 46 05.9**	**+6.7**
BJI				PcP	**PcP**	**19 46 31.5**	**+0.5**
BJI				ScP	**ScP**	**19 50 04.6**	**+1.4**
BJI				ScS	**ScS**	**19 53 46.0**	**+0.5**
BJI					pmax	pmax	
	comp=Z,52nm,1.6s						
BJI					pmax	pmax	
	comp=Z,870nm,3.5s						
BJI					LR	LR	
	comp=Z,1μm,15.0s						
BJI					LR	LR	
	comp=Z,3μm,25.6s						
BJI					LR	LR	
	comp=Z,7μm,29.6s						
BJT	**Baijiatuau**	**19.85**	**280**	*e*P	**P**	**19 42 13.0**	**-2.2**
BJT					pmax	pmax	
	comp=Z,395nm,1.5s						
BJT	**Baijiatuau**	**19.85**	**280**	*e*P	**P**	**19 42 13.0**	**-2.2**
	comp=Z,395nm,1.5s						
TIA	**Tai'an**	**19.88**	**269**	⇓P	**P**	**19 42 15.2**	**-0.3**
TIA				S	S	19 45 48.4	-8.3
TIA					pmax	pmax	
	comp=Z,1μm,3.8s						
TIA					LR	LR	
	comp=Z,3μm,11.8s						
TIA					LR	LR	
	comp=Z,5μm,15.6s						
TIA					LR	LR	
	comp=Z,5μm,17.8s						
NJ2	**Nanjing**	**20.12**	**256**	*e*P	**P**	**19 42 18.9**	**+0.8**
NJ2				pP	**pP**	**19 42 28.2**	**-1.1**
NJ2				sP	**sP**	**19 42 33.5**	**-1.8**
NJ2				S	Sn	19 46 04.4	-1.4
NJ2					pmax	pmax	

comp=Z,4μm,19.0s
YHNB Yeheng 22.73 236 *e*P **P** **19 42 46.9 +0.5**
comp=Z,291nm,1.8s
YHNB LR LR
comp=Z,5μm,19.0s
NACB Ninganchiao 22.95 235 *e*P **P** **19 42 46.8 -1.7**
comp=Z,39nm,0.8s
HHC Hu-ho-hao-te 23.25 283 *e*P **P** **19 42 49.9 -1.7**
HHC pP pP 19 43 01.4 -1.8
HHC S **S** **19 46 55.2 -5.0**
HHC sS Sn 19 47 12.5 -8.5
HHC SS **SnSn** **19 47 42.4 +4.9**
HHC LR LR
comp=Z,10μm,13.7s
HHC LR LR
comp=Z,9μm,18.7s
HHC LR LR
comp=Z,10μm,19.9s
CIT Chita 23.36 312 *e*P **P** **19 42 52.0 -0.4**
CIT *e* 19 43 07.2
CIT *e* 19 43 19.4
CIT *e* 19 43 30.7
CIT pmax pmax
comp=Z,327nm,1.2s
SSLB Suanglung 23.63 235 *e*P **P** **19 42 52.5 -2.7**
comp=Z,99nm,1.2s
YULB Yu-li 23.70 234 *e*P **P** **19 42 53.5 -2.4**
comp=Z,50nm,0.8s
YAK Yakutsk 23.89 346 P **P** **19 42 56.3 -1.0**
comp=Z,165nm,0.7s,baz=173,slow=3.1,SNR=26
YAK LR LR 19 52 52.8
comp=Z,4μm,18.5s,baz=160,slow=38
YAK Yakutsk 23.89 346*c i*P **P** **19 42 55.3 -2.0**
YAK *e**PP **pP** **19 43 07.5 -1.9**
YAK *e* 19 43 13.0
YAK *e*S **S** **19 47 05.9 -4.0**
YAK *e**SS sS 19 47 23.3 -7.2
YAK *e* 19 53 57.4
YAK pmax pmax
comp=Z,135nm,0.9s
YAK pmax pmax
comp=N,77nm,1.2s
YAK pmax pmax
comp=E,22nm,1.1s
YAK pmax pmax
comp=Z,534nm,1.2s
YAK pmax pmax
comp=N,270nm,1.3s
YAK pmax pmax
comp=E,125nm,1.1s
YAK smax smax
comp=E,1μm,2.9s
YAK smax smax
comp=N,3μm,4.8s
YAK MLR MLR
comp=Z,4μm,17.0s
YAK MLR MLR
comp=N,4μm,18.0s
YAK MLR MLR
comp=E,2μm,17.0s
YAK Yakutsk 23.89 346 *e*P **P** **19 42 55.2 -2.0**
comp=E,321nm,0.9s
YAK *e*S **S** **19 47 06.5 -3.4**
TPUB Ta-pu 24.19 235 *e*P **P** **19 42 58.4 -1.9**
comp=E,104nm,1.0s
WHN Wuhan 24.22 257⇑ *i*P **P** **19 42 58.6 -2.0**
WHN S **S** **19 47 11.4 -4.4**
WHN pmax pmax
comp=E,1μm,11.0s
WHN LR LR
comp=E,2μm,8.1s
WHN LR LR
comp=E,8μm,14.1s
WHN LR LR
comp=E,12μm,22.0s
TWG Pinlang 24.26 233 *e*P **P** **19 43 01.2 +0.3**
comp=E,872nm,1.2s
QZH Quanzhou 24.38 241⇑ *i*P **P** **19 42 58.2 -3.9**
QZH S **S** **19 47 16.0 -2.4**
QZH pmax pmax
comp=E,2μm,4.5s
QZH LR LR
comp=E,9μm,22.2s
QZH LR LR
comp=E,3μm,17.4s
QZH LR LR
comp=E,8μm,18.9s
SEY Seymchan 24.40 12 P **P** **19 43 03.1 +1.2**
comp=E,24nm,0.6s,baz=205,slow=7.2,SNR=87
BTO Baotou 24.45 283 *e*P **P** **19 42 58.5 -4.2**
SMY Shemya 25.73 48 *e*P **P** **19 43 15.2 +1.1**
SMY pmax pmax
comp=Z,434nm,1.5s
SMY Shemya 25.73 48 *e*P **P** **19 43 15.2 +1.1**
comp=Z,434nm,1.5s
GUMO Guam 25.82 174 PFAKE 19 43 30.0 +15
GUMO LR LR
comp=Z,2μm,20.0s
BOD Bodaibo 25.82 325⇓ *i*P **P** **19 43 14.3 -0.5**
BOD pmax pmax
comp=Z,161nm,1.3s
ULN Ulaanbaatar 26.48 300 *e*P **P** **19 43 20.2 -0.9**
ULN pmax pmax
comp=Z,44nm,1.2s
ULN MLR MLR
comp=Z,7μm,19.0s
ULN Ulaanbaatar 26.48 300 *e*P **P** **19 43 20.2 -0.9**
comp=Z,44nm,1.2s
ULN LR LR
comp=Z,7μm,19.0s
ULN Ulaanbaatar 26.48 300 P **P** **19 43 21.9 +0.8**
SNR=16
ULN Ulaanbaatar 26.48 300 P **P** **19 43 21.9 +0.8**
SNR=16
SONA1 Songino Array 26.91 300 *e*P **P** **19 43 22.8 -2.2**
SONA0 Songino Array 26.92 300 *e*P **P** **19 43 25.3 +0.3**
comp=Z,62nm,1.4s
SONM Songino Array 26.92 300 P **P** **19 43 25.3 +0.3**
comp=Z,2.8nm,0.4s,baz=100,slow=8.9,SNR=23
SONM LR LR 19 54 39.6
comp=Z,7μm,18.6s,baz=92,slow=38
XAN Xi'an 26.94 269 P **P** **19 43 24.9 -0.3**
XAN pP pP 19 43 36.6 -1.0
XAN S **S** **19 47 55.1 -3.9**
XAN pmax pmax
comp=Z,23nm,0.6s
XAN pmax pmax
comp=Z,570nm,7.8s
XAN LR LR
comp=Z,3μm,31.5s
XAN LR LR
comp=Z,4μm,25.2s
ENH Enshi 28.05 261 *e*P **P** **19 43 34.2 -1.0**
comp=Z,273nm,1.2s
ENH LR LR
comp=Z,2μm,22.0s
IRK Irkutsk 28.91 309 *e*P **P** **19 43 42.4 -0.2**
IRK *e* 19 43 59.7
IRK pmax pmax
comp=E,81nm,2.1s
H11N2 WAKE ISLAND Hy 29.05 125 T T 20 14 10.3
baz=318,slow=75,SNR=5150
H11N1 WAKE ISLAND Hy 29.06 125 T T 20 14 11.0
baz=318,slow=75,SNR=3715
H11N3 WAKE ISLAND Hy 29.07 125 T T 20 14 11.6
baz=318,slow=75,SNR=4423
HKC Hong Kong Obse 29.15 242 P **P** **19 43 48.0 +3.0**
TLY Talaya 29.19 308 P **P** **19 43 46.0 +0.9**
comp=Z,7.6nm,0.8s,baz=108,slow=5.4,SNR=16
TLY Talaya 29.19 308*c i*P **P** **19 43 44.1 -1.0**
TLY *e* 19 44 55.7
TLY *e*S **S** **19 48 34.2 +0.2**
TLY pmax pmax
comp=Z,92nm,1.6s
TLY MLR MLR
comp=Z,6μm,17.0s
TLY Talaya 29.19 308 *e*P **P** **19 43 44.3 -0.8**
comp=Z,84nm,1.3s
TLY LR LR
comp=Z,7μm,20.0s
TLY Talaya 29.19 308 P **P** **19 43 45.8 +0.7**
SNR=27
TLY Talaya 29.19 308 P **P** **19 43 45.8 +0.7**
SNR=27
GZH Guangzhou 29.21 245 P P 19 43 39.1 -6.4
GZH S S 19 48 26.2 -8.6
GZH pmax pmax
comp=Z,1μm,8.2s
ZAK Zakamensk 29.23 305 *e*P **P** **19 43 45.6 +0.1**
ZAK pmax pmax
comp=Z,46nm,1.1s
H11S1 WAKE ISLAND Hy 29.84 127 T T 20 15 06.4
baz=319,slow=76,SNR=860
H11S3 WAKE ISLAND Hy 29.84 127 T T 20 15 07.5
baz=319,slow=76,SNR=1159
H11S2 WAKE ISLAND Hy 29.86 127 T T 20 15 08.7
baz=319,slow=76,SNR=1132
LZH Lanzhou 30.19 276 *e*P **P** **19 43 55.6 +1.3**
LZH pP pP 19 44 06.8 +0.1
LZH sP sP 19 44 12.7 +0.3
LZH PP **PnPn** **19 44 56.4 +3.3**
LZH S **S** **19 48 47.0 -3.3**
LZH sS sS 19 49 08.0 -3.3
LZH pmax pmax
comp=Z,68nm,1.0s
LZH pmax pmax
comp=Z,410nm,5.0s
LZH LR LR
comp=Z,3μm,11.8s
LZH LR LR
comp=Z,4μm,12.7s
LZH LR LR
comp=Z,5μm,14.6s
MOY Mondy 30.82 307 *e*P **P** **19 43 59.7 +0.1**
MOY pmax pmax
comp=Z,101nm,3.9s
BILL Bilibino 31.65 17*c i*P **P** **19 44 07.1 +0.5**
BILL *i* 19 44 19.4
BILL *i* 19 45 06.0
BILL *i*S S 19 49 05.0 -7.2
BILL pmax pmax
comp=Z,17nm,1.2s
BILL MLR MLR
comp=Z,1μm,22.0s
BILL Bilibino 31.65 17 *e*P **P** **19 44 06.5 -0.1**
comp=Z,132nm,1.3s
BILL LR LR
comp=Z,1μm,22.0s
GYA Guiyang 32.12 257⇑ *i*P **P** **19 44 10.5 -0.8**
GYA pP pP 19 44 24.5 +0.7
GYA PP **PnPn** **19 45 19.0 +0.8**
GYA PcP **PcP** **19 47 01.6 +2.0**
GYA S **S** **19 49 15.0 -5.5**
GYA sS sS 19 49 40.2 -1.3
GYA ScP **ScP** **19 50 40.4 +1.3**
GYA SS **SnSn** **19 51 12.3 -1.6**
GYA ScS **ScS** **19 54 37.7 -0.5**
GYA pmax pmax
comp=Z,160nm,1.0s
GYA pmax pmax
comp=Z,410nm,8.4s
GYA LR LR
comp=Z,2μm,18.4s
GYA LR LR
comp=Z,2μm,18.1s
GYA LR LR
comp=Z,3μm,19.7s
CD2 Chengdu 32.18 267 P **P** **19 44 10.9 -0.8**
CD2 pP pP 19 44 22.3 -1.9
CD2 sP sP 19 44 27.1 -2.8
CD2 S **S** **19 49 20.2 -1.1**
CD2 sS sS 19 49 40.9 -1.5
CD2 pmax pmax
comp=Z,20nm,0.5s
CD2 pmax pmax
comp=Z,480nm,8.3s
CD2 LR LR
comp=Z,4μm,15.6s
CD2 LR LR
comp=Z,5μm,15.6s
GTA Gaotai 32.37 284 *e*P **P** **19 44 14.3 +0.9**
GTA pP pP 19 44 26.3 +0.4
GTA sP sP 19 44 31.6 +0.1
GTA PP **PP** **19 45 25.0 -2.0**
GTA S **S** **19 49 26.7 +2.5**
GTA sS sS 19 49 49.0 +3.8
GTA pmax pmax
comp=Z,530nm,6.4s
GTA LR LR
comp=Z,3μm,20.9s
GTA LR LR
comp=Z,6μm,19.2s
GTA LR LR
comp=Z,8μm,18.1s
ATKA Atka Island 32.63 52 *e*P **P** **19 44 17.3 +2.0**
comp=Z,140nm,1.2s
TIXI Tiksi 33.02 352 P **P** **19 44 18.1 -0.4**
comp=Z,3.6nm,0.4s,baz=145,slow=6.6,SNR=19
TIXI Tiksi 33.02 352*c i*P **P** **19 44 18.0 -0.5**
TIXI pmax pmax
comp=Z,22nm,1.7s
TIXI MLR MLR
comp=Z,2μm,17.0s
TIXI Tiksi 33.02 352 *e*P **P** **19 44 17.7 -0.8**
comp=Z,50nm,1.0s
TIXI LR LR
comp=Z,2μm,20.0s
QIZ Qiongzhong 34.34 243 P **P** **19 44 31.3 +0.7**
QIZ S **S** **19 49 57.6 +2.7**
QIZ LR LR
comp=Z,730nm,19.3s
QIZ LR LR
comp=Z,860nm,19.3s
MIDW Midway 35.30 96 PFAKE 19 44 50.0 +11
MIDW LR LR
comp=Z,3μm,19.0s
DAV Davao City (W) 35.40 209 PFAKE 19 44 50.0 +10
DAV LR LR
comp=Z,1μm,21.0s
KMI Kunming 35.81 259 P **P** **19 44 43.5 +0.1**
KMI pP pP 19 44 56.1 +0.1
KMI sP sP 19 45 00.7 -1.0
KMI PP **PP** **19 46 06.8 +1.4**
KMI S S 19 50 11.7 -6.1
KMI sS sS 19 50 35.7 -3.3
KMI pmax pmax
comp=Z,26nm,1.9s
KMI pmax pmax
comp=Z,790nm,4.7s
KMI LR LR
comp=Z,810nm,25.4s
KMI LR LR
comp=Z,2μm,20.5s
KMI LR LR
comp=Z,3μm,23.1s
SGSI Sangihe 38.54 207 P **P** **19 45 05.9 -0.5**
KDM Kudat 39.45 222⇑ P **P** **19 45 15.6 +1.6**
NONG Nongkai 39.73 249 P **P** **19 45 16.8 +0.5**
comp=Z,86nm,1.2s,comp=Z,5μm
SKNT Sakolnakorn 39.84 247 P **P** **19 45 17.7 +0.5**
comp=Z,50nm,1.7s
MYLDM Lahad Datu 40.12 218⇑ P **P** **19 45 21.5 +2.0**
MYLDM Lahad Datu 40.12 218 *e*P **P** **19 45 20.8 +1.3**
comp=Z,94nm,1.2s
WMQ Urumqi 40.22 294 P **P** **19 45 21.2 +0.9**
WMQ pP pP 19 45 30.3 -2.7
WMQ sP sP 19 45 37.8 -0.8
WMQ PP **PnPn** **19 46 58.1 +0.9**
WMQ PcP **PcP** **19 47 25.2 +1.8**
WMQ S **S** **19 51 24.8 +0.9**
WMQ SS **SS** **19 54 17.8 -5.3**
WMQ ScS **ScS** **19 55 22.5 +0.2**
WMQ pmax pmax
comp=Z,15nm,1.6s
WMQ pmax pmax
comp=Z,650nm,4.2s
WMQ LR LR
comp=Z,530nm,24.8s
WMQ LR LR
comp=Z,860nm,29.2s
WMQ LR LR
comp=Z,1μm,29.2s
SDKM Sandakan 40.36 220⇑ P **P** **19 45 24.0 +2.4**
CRAI Chiangrai 40.41 254 P P 19 45 31.5 +10
KKM Kota Kinabalu 40.51 222⇑ P **P** **19 45 25.1 +2.1**
KKM Kota Kinabalu 40.51 222 *e*P **P** **19 45 23.2 +0.3**
comp=Z,63nm,1.3s
KKM LR LR
comp=Z,1μm,19.0s
TNTI Ternate 40.68 203 P **P** **19 45 24.3 +0.1**
ZAA0 Zalesovo Array 40.70 310 *e*P **P** **19 45 23.1 -0.8**
ZAA1 Zalesovo Array 40.70 310 *e*P **P** **19 45 24.0 +0.1**
ZAA1 *e*PcP **PcP** **19 47 24.6 0.0**
ZALV Zalesovo Beam 40.70 310 P **P** **19 45 24.0 +0.1**
comp=Z,17nm,0.5s,baz=94,slow=8.6,SNR=63
ZALV PcP **PcP** **19 47 24.6 0.0**
comp=Z,5.2nm,0.5s,baz=102,slow=3.0,SNR=4.2
ZALV LR LR 20 03 08.0
comp=Z,7μm,18.3s,baz=71,slow=37
KHON Khomkaen 41.09 247 P **P** **19 45 28.0 +0.5**
comp=Z,27nm,0.8s,comp=Z,681nm
TSM Tawau 41.20 218⇑ P **P** **19 45 30.4 +2.0**
RKPI Ransiki, Papua 41.32 192 P P 19 45 25.5 -3.9
NRIK Noril'sk 41.34 334 P **P** **19 45 28.7 -0.3**
comp=Z,4.8nm,0.5s,baz=113,slow=7.0,SNR=18
NRIK LR LR 20 03 41.7
comp=Z,6μm,20.1s,baz=108,slow=38
MANU Manus Island 41.52 172 *e*P **P** **19 45 31.6 +0.5**
comp=Z,27nm,1.0s
NVS Novosibirsk 41.57 312 *e*P **P** **19 45 31.6 +0.5**
NVS pmax pmax
comp=Z,228nm,1.2s
NVS pmax pmax
comp=N,9.0nm,0.3s
NVS pmax pmax
comp=E,98nm,0.7s
JAY Jayapura 41.71 182 P **P** **19 45 32.5 -0.1**
comp=E,1.7nm,1.0s,baz=134,slow=23,SNR=5.5
ZSN Zaisan 41.74 301⇑ *i*P **P** **19 45 31.0 -1.7**
comp=E,375nm,2.1s
ZSN *i* sP **pP** **19 45 47.5 +2.0**
ZSN LR LR 20 03 01.9
comp=E,1μm,17.9s
GENI Genyem 41.80 183 P **P** **19 45 35.7 +2.4**
UTTA Uttaradit 41.82 251 P **P** **19 45 34.2 +0.7**
comp=E,11nm,0.9s,comp=E,96nm
LBMI Labuha 41.98 202 P **P** **19 45 34.1 -0.7**
LAMP Lampang 42.01 253 P **P** **19 45 37.1 +2.0**
comp=E,16nm,0.7s,comp=E,162nm
PBKT Sadao Pong 42.27 249 P **P** **19 45 37.6 +0.4**
comp=E,47nm,1.0s,comp=E,916nm
CMMT Chiang Mai 42.34 254 P **P** **19 45 37.9 +0.1**
comp=E,59nm,1.1s,comp=E,836nm
CHTO Chiang Mai 42.34 254 P **P** **19 45 37.9 +0.1**
comp=E,150nm,0.8s,comp=E,4μm
CHTO Chiang Mai 42.34 254 *e*P **P** **19 45 37.9 +0.1**
CHTO pmax pmax
comp=Z,56nm,1.0s
CHTO MLR MLR
comp=Z,1μm,22.0s
CHTO Chiang Mai 42.34 254 *e*P **P** **19 45 37.9 +0.1**
comp=Z,56nm,1.0s
CHTO LR LR
comp=Z,1μm,22.0s
CHTO Chiang Mai 42.34 254 P **P** **19 45 38.3 +0.5**
SNR=22
CHTO Chiang Mai 42.34 254 P **P** **19 45 38.3 +0.5**
SNR=22
LSA Lhasa 42.48 273 P **P** **19 45 40.4 +1.0**
LSA pmax pmax
comp=Z,22nm,2.2s
LSA Lhasa 42.48 273 *e*P **P** **19 45 40.2 +0.8**
LSA pmax pmax
comp=Z,95nm,1.1s
LSA MLR MLR
comp=Z,4μm,22.0s
LSA Lhasa 42.48 273 *e*P **P** **19 45 40.2 +0.8**
comp=Z,95nm,1.1s
LSA LR LR
comp=Z,4μm,22.0s
CM31 Chiang Mai Arr 42.56 253 *e*P **P** **19 45 39.5 0.0**
CMAR Chiang Mai Arr 42.56 253 P **P** **19 45 39.9 +0.3**
comp=Z,3.1nm,0.6s,baz=45,slow=6.4,SNR=36
CMAR LR LR 20 04 59.3
comp=Z,884nm,18.4s,baz=54,slow=38
CM01 Chiang Mai Arr 42.57 253 *e*P **P** **19 45 38.7 -1.0**
SUKH Sukhothai 42.66 252 P **P** **19 45 41.2 +0.8**
comp=Z,14nm,1.0s,comp=Z,122nm
MRSI Marisa 42.84 210 P **P** **19 45 41.9 +0.1**
FAKI Fak Fak 43.04 194 P **P** **19 45 42.5 -0.9**
FAKI Fak Fak 43.04 194 *e*P **P** **19 45 42.7 -0.7**
comp=Z,311nm,2.0s
SRAK Srakaew 43.21 246 P **P** **19 45 42.2 -2.6**
comp=Z,167nm,1.2s,comp=Z,2μm
TT01 Tatalina 43.25 36 *e*P **P** **19 45 46.2 +1.6**
TTA Tatalina 43.25 36 *e*P **P** **19 45 45.9 +1.1**
TTA pmax pmax
comp=Z,73nm,1.4s
TTA Tatalina 43.25 36 *e*P **P** **19 45 45.9 +1.1**
comp=Z,73nm,1.4s
MK01 Makanchi Array 43.28 300 *e*P **P** **19 45 44.2 -0.9**
MK31 Makanchi Array 43.29 300 *e*P **P** **19 45 45.1 -0.1**
MK31 Makanchi Array 43.29 300 *e*P **P** **19 45 45.0 -0.1**
MK32 Makanchi Array 43.29 300 *e*P **P** **19 45 45.5 +0.3**
MKAR Makanchi Array 43.29 300 P **P** **19 45 45.5 +0.3**
comp=Z,13nm,0.7s,baz=86,slow=11,SNR=55
MKAR LR LR 20 04 28.6
comp=Z,4μm,21.1s,baz=70,slow=37
MKAR Makanchi Array 43.29 300 P **P** **19 45 45.5 +0.3**
MKAR pmax pmax
comp=Z,13nm,0.7s
MKAR MLR MLR
comp=Z,4μm,21.1s
MKAR Makanchi Array 43.29 300 *e*P **P** **19 45 44.9 -0.3**
SVW2 Sparrevohn 43.40 39 *e*P **P** **19 45 47.8 +1.9**
comp=Z,116nm,1.4s
MAKZ Makanchi 43.49 300 *e*P **P** **19 45 47.1 +0.3**
MAKZ pmax pmax
comp=Z,282nm,1.3s
MAKZ Makanchi 43.49 300 *e*P **P** **19 45 47.1 +0.3**
comp=Z,282nm,1.3s
KMPI Kaimana, Papua 43.51 192 P **P** **19 45 47.0 -0.1**
SANI Sanana 43.77 203 P **P** **19 45 48.9 -0.4**
CHBT CHBT 43.88 244 P **P** **19 45 52.5 +2.3**
comp=Z,79nm,1.3s,comp=Z,1μm
LUWI Luwuk 43.92 208 P **P** **19 45 49.5 -1.0**
SHL Shillong 43.92 267 *e*P **P** **19 45 52.0 +1.3**
SHL *e*S **S** **19 52 16.0 -3.1**
MSAI Masohi 44.19 199 P **P** **19 45 52.1 -0.5**
RABL Rabaul 44.37 165 *e*P **P** **19 45 53.4 -0.7**
comp=Z,140nm,1.3s
PATY Pattaya 44.78 246 P P 19 46 03.1 +5.6
comp=Z,16nm,1.1s,comp=Z,1μm
RSO Redoubt South 44.80 40 *e*P **P** **19 45 58.6 +1.2**
KURK Kurchatov 44.87 306 *e*P **P** **19 45 57.6 -0.1**
KURK pmax pmax
comp=Z,382nm,1.1s
KURK MLR MLR
comp=Z,6μm,21.0s
KURK Kurchatov 44.87 306 *e*P **P** **19 45 57.6 -0.1**
comp=Z,382nm,1.1s
KURK LR LR
comp=Z,6μm,21.0s
KURK Kurchatov 44.87 306 P **P** **19 45 58.1 +0.3**
SNR=27
KURK Kurchatov 44.87 306 P **P** **19 45 58.1 +0.3**
SNR=27
PCI Palu 44.94 212 P **P** **19 45 57.8 -0.9**
comp=Z,127nm,1.2s,comp=Z,1μm
KURBB Kurchatov Arra 44.94 306 P **P** **19 45 58.3 0.0**
comp=Z,21nm,0.4s,baz=81,slow=8.0,SNR=88
PPLA Purkeypile 45.00 36 *e*P **P** **19 46 00.8 +1.9**
comp=Z,239nm,1.4s
CAST Castle Rocks 45.05 35 *e*P **P** **19 46 00.7 +1.7**
comp=Z,89nm,1.1s
SRDT SRDT 45.07 249 P **P** **19 46 01.0 +1.3**
comp=Z,171nm,2.0s,comp=Z,3μm
KDAK Kodiak Island 45.07 43 LR LR 20 06 53.7
comp=Z,546nm,19.9s,baz=247,slow=39
KDAK Kodiak Island 45.07 43 *e*P **P** **19 46 00.0 +0.7**
KDAK pmax pmax
comp=Z,72nm,0.9s
KDAK Kodiak Island 45.07 43 *e*P **P** **19 45 60.0 +0.7**
comp=Z,72nm,0.9s
BNDI Bandanaira 45.09 197 P **P** **19 45 59.0 -0.8**
SPU Mount Spurr 45.11 39 *e*P **P** **19 46 01.3 +1.7**
KHLT Khaolaem Dam 45.16 250 P **P** **19 46 02.5 +2.1**
comp=Z,25nm,1.2s,comp=Z,387nm
BPAW Bear Paw Mtn. 45.53 35 *e*P **P** **19 46 04.5 +1.7**
comp=Z,158nm,1.6s
KTH Kantishna Hill 45.57 35 *e*P **P** **19 46 05.0 +1.8**
comp=Z,230nm,1.2s
MLY Manley 45.63 33 *e*P **P** **19 46 05.2 +1.5**
comp=Z,120nm,1.3s
SBUM Sibu 45.65 224⇑ P **P** **19 46 05.6 +1.3**
SBUM Sibu 45.65 224 *e*P **P** **19 46 04.2 -0.1**
comp=Z,48nm,1.4s

BRLK Bradley Lake 45.78 41 *e*P P 19 46 05.3 +0.4
comp=Z,47nm,1.0s
TRF Thorofare Moun 45.85 35 *e*P P 19 46 07.2 +1.6
comp=Z,74nm,1.3s
SHLS Shalkode 45.88 296⇓ *i*P P 19 46 06.4 +0.2
comp=Z,108nm,2.0s
SHLS *i* sP **sP** 19 46 22.5 -2.2
SHLS *e*S **S** 19 52 47.6 +0.4
SHLS LR LR 20 05 32.0
comp=Z,645nm,17.0s
COLD Coldfoot 45.89 30 *e*P P 19 46 07.2 +1.6
comp=Z,142nm,1.3s
RC01 Rabbit Creek A 46.24 39 *e*P P 19 46 09.0 +0.5
comp=Z,146nm,1.2s
TAPN Taplejung 46.26 272 *e*P P 19 46 09.8 +0.4
comp=Z,182nm,1.1s
MCK McKinley 46.45 35 *e*P P 19 46 11.4 +1.3
MCK pmax pmax
comp=Z,87nm,1.2s
MCK McKinley 46.45 35 *e*P P 19 46 11.4 +1.3
comp=Z,87nm,1.2s
SEW Seward 46.47 40 *e*P P 19 46 11.1 +0.9
comp=Z,60nm,1.0s
UZB Uzynbulak 46.48 296⇓ *i*P P 19 46 10.9 +0.1
comp=Z,252nm,2.2s
PMR Palmer 46.49 38 *e*P P 19 46 11.2 +0.8
PMR pmax pmax
comp=Z,76nm,1.1s
PMR Palmer 46.49 38 *e*P P 19 46 11.2 +0.8
comp=Z,76nm,1.1s
RND Reindeer 46.50 35 *e*P P 19 46 11.4 +0.8
RND pmax pmax
comp=Z,179nm,1.2s
RND Reindeer 46.50 35 *e*P P 19 46 11.4 +0.8
comp=Z,179nm,1.2s
BKB Balikpapan 46.53 216 P P 19 46 08.1 -3.1
KPKS Kokpek 46.62 297⇑ *i*P P 19 46 12.2 +0.3
comp=Z,470nm,2.1s
KPKS *i* sP **sP** 19 46 28.5 -1.9
KPKS *e*S **S** 19 52 58.0 +0.5
KPKS LR LR 20 06 31.3
comp=Z,2µm,19.3s
MDM Murphy Dome 46.70 33 *e*P P 19 46 13.5 +1.4
comp=Z,292nm,1.5s
ODAN Odare 46.75 272 *e*P P 19 46 13.5 +0.3
comp=Z,464nm,1.3s
WRH Wood River Hil 46.78 34 *e*P P 19 46 13.4 +0.8
comp=Z,52nm,1.2s
SML Sawmill 46.85 38 *e*P P 19 46 14.3 +1.0
SML pmax pmax
comp=Z,154nm,1.1s
SML Sawmill 46.85 38 *e*P P 19 46 14.3 +1.0
comp=Z,154nm,1.1s
COLA College 46.87 33 *e*P P 19 46 14.3 +1.1
COLA pmax pmax
comp=Z,245nm,1.6s
COLA MLR MLR
comp=Z,643nm,19.0s
COLA College 46.87 33 *e*P P 19 46 14.3 +1.1
comp=Z,245nm,1.6s
COLA LR LR
comp=Z,643nm,19.0s
TTSI Tana Toraja 46.89 211 P P 19 46 12.1 -1.9
CCB Clear Creek Bu 46.90 34 *e*P P 19 46 14.5 +1.0
comp=Z,46nm,1.2s
SATY Saty 46.94 296⇑ *i*P P 19 46 14.7 +0.4
comp=Z,450nm,2.0s
SATY *i* sP **sP** 19 46 31.9 -1.0
SATY *e*S **S** 19 53 03.0 +0.8
SATY LR LR 20 06 15.7
comp=Z,926nm,16.3s
MTKI Muara Teweh, K 47.19 218 P P 19 46 15.0 -1.3
TARA Tarawa 47.21 136 PFAKE 19 46 30.0 +13
TARA LR LR
comp=Z,347nm,20.0s
HDA Harding Lake 47.28 34 *e*P P 19 46 17.1 +0.5
comp=Z,98nm,1.2s
IL1 Eielson Array 47.28 34 *e*P P 19 46 16.6 +0.1
ILAR Eielson Array 47.28 34 P P 19 46 17.1 +0.5
comp=Z,15nm,0.7s,baz=266,slow=5.3,SNR=118
ILAR LR LR 20 09 13.1
comp=Z,536nm,18.2s,baz=287,slow=40
ILAR Eielson Array 47.28 34 P P 19 46 17.1 +0.5
ILAR pmax pmax
comp=Z,13nm,0.7s
ILAR MLR MLR
comp=Z,537nm,18.2s
ILB Eielson Array 47.28 34 *e*P P 19 46 17.0 +0.5
RAMN Ramite 47.32 272 *e*P P 19 46 17.7 +0.1
comp=Z,613nm,1.3s
SCM Sheep Creek Mo 47.32 38 *e*P P 19 46 18.3 +1.3
SCM pmax pmax
comp=Z,115nm,1.1s
SCM Sheep Creek Mo 47.32 38 *e*P P 19 46 18.3 +1.3
comp=Z,115nm,1.1s
GUN Gumba 47.40 274 *e*P P 19 46 18.4 0.0
comp=Z,253nm,0.9s
KSM Kuching 47.50 225 ⇑P P 19 46 19.4 +0.6
KSM Kuching 47.50 225 *e*P P 19 46 19.3 +0.5
comp=Z,81nm,1.1s
KSM LR LR
comp=Z,587nm,20.0s
MMPI Merauke 47.63 182 P P 19 46 13.8 -5.9
JOHN Johnston Islan 47.70 104 PFAKE 19 46 30.0 +10
JOHN LR LR
comp=Z,292nm,21.0s
SPSI Sidrap Palu 47.75 211 P P 19 46 17.8 -2.9
MDOK Medeo 47.85 297⇓ *i*P P 19 46 22.0 +0.5
comp=Z,228nm,2.0s
MDOK LR LR 20 06 08.7
comp=Z,1µm,19.3s
FYU Fort Yukon 47.86 31 *e*P P 19 46 22.7 +1.7
comp=Z,560nm,1.9s
KKN Kakani 47.93 274 *e*P P 19 46 22.6 +0.3
comp=Z,174nm,0.8s
PKIN Phulchoki 47.94 274 *e*P P 19 46 22.3 -0.2
KLU Klutina 48.03 38 *e*P P 19 46 23.7 +1.2
comp=Z,134nm,1.2s
STKI Sintang 48.05 223 P P 19 46 23.5 +0.4
PAX Paxson 48.06 36 *e*P P 19 46 23.6 +0.8
PAX pmax pmax
comp=Z,73nm,1.5s
PAX Paxson 48.06 36 *e*P P 19 46 23.6 +0.8
comp=Z,73nm,1.5s
KUU Kurty 48.11 298⇑ *i*P P 19 46 23.2 -0.1
comp=Z,363nm,2.2s
KUU *i* sP **sP** 19 46 40.3 -1.6
KUU *e*S **S** 19 53 19.9 +1.4
KUU LR LR 20 07 04.6
comp=Z,758nm,13.6s
DIV Divide 48.15 38 *e*P P 19 46 24.6 +1.2
comp=Z,174nm,1.2s
DMN Daman 48.15 274 *e*P P 19 46 24.2 +0.1
comp=Z,774nm,1.7s
SAUI Saumlaki 48.16 194 P P 19 46 23.2 -0.6
EYAK Cordova Ski Ar 48.24 39 *e*P P 19 46 25.3 +1.3
comp=Z,87nm,1.0s
GKN Gorkha 48.32 275 *e*P P 19 46 25.2 -0.1
DOT Dot Lake 48.62 35 *e*P P 19 46 27.8 +0.9
comp=Z,200nm,1.3s
KBKI Kotabaru 48.67 215 P P 19 46 26.5 -1.3
KAPI Kappang 48.71 210 *e*P P 19 46 28.0 -0.1
comp=Z,218nm,1.8s
KAPI LR LR
comp=Z,473nm,19.0s
KAPI Kappang 48.71 210 P P 19 46 29.4 +1.3
SNR=11
KAPI Kappang 48.71 210 P P 19 46 29.4 +1.3
SNR=11
BMRM Bremner River 48.73 38 *e*P P 19 46 29.5 +1.6
comp=Z,153nm,1.2s
BRZS Berezniki 48.74 307 *i*P P 19 46 28.5 +0.5
comp=Z,36nm,0.9s
BRZS *e*S **S** 19 53 28.6 +1.4
BRZS LR LR 20 07 33.0
comp=Z,211nm,13.9s
KTGM Kuala Trenggan 48.75 236 ⇑P P 19 46 29.2 +0.7
PMG Port Moresby 48.78 173 P P 19 46 30.1 +1.6
comp=Z,7.4nm,0.8s,baz=263,slow=18,SNR=2.3
PMG LR LR 20 04 37.5
comp=Z,573nm,22.0s,baz=348,slow=33
RAGM Ragged Mountai 48.79 39 *e*P P 19 46 30.0 +1.6
comp=Z,99nm,1.2s
BMNS Besmoynak 48.82 297⇑ *i*P P 19 46 29.6 +0.7
comp=Z,635nm,1.6s
BMNS *e*S **S** 19 53 30.9 +2.0

BMNS LR LR 20 07 26.5
comp=Z,900nm,15.4s
MENT Mentasta 48.86 36 *e*P P 19 46 30.5 +1.7
comp=Z,141nm,1.2s
TKM2 Tokmak 2 48.94 297 *e*P P 19 46 30.8 +0.9
TKM2 pmax pmax
comp=Z,375nm,1.2s
TKM2 MLR MLR
comp=Z,2µm,20.0s
TKM2 Tokmak 2 48.94 297 *e*P P 19 46 30.8 +0.9
comp=Z,375nm,1.2s
TKM2 LR LR
comp=Z,2µm,20.0s
SURT Suratani 49.00 244 P P 19 46 34.1 +3.7
comp=Z,30nm,1.2s,comp=Z,416nm
VOSK Vostochnaya 49.07 310 *e*P P 19 46 29.9 -0.6
VOSK pmax pmax
comp=Z,241nm,1.4s
VOSK Vostochnaya 49.07 310 *e*P P 19 46 29.9 -0.6
comp=Z,241nm,1.4s
TRTT Trang 49.18 242 P P 19 46 37.2 +5.4
comp=Z,59nm,1.2s,comp=Z,926nm
KOLN Koldanda 49.23 275 *e*P P 19 46 32.6 +0.2
BVAR Borovoye Array 49.35 311 P P 19 46 32.8 +0.2
comp=Z,9.7nm,0.5s,baz=83,slow=9.4,SNR=75
BVAR LR LR 20 08 26.5
comp=Z,4µm,19.5s,baz=80,slow=37
BRVK Borovoye 49.40 311 *e*P P 19 46 33.2 +0.2
BRVK pmax pmax
comp=Z,221nm,1.6s
BRVK MLR MLR
comp=Z,4µm,19.0s
BRVK Borovoye 49.40 311 *e*P P 19 46 33.2 +0.2
comp=Z,221nm,1.6s
BRVK LR LR
comp=Z,4µm,19.0s
BRVK Borovoye 49.40 311 P P 19 46 33.7 +0.7
SNR=14
BRVK Borovoye 49.40 311 P P 19 46 33.7 +0.7
SNR=14
BBKI Banjar Baru 49.42 217 P P 19 46 31.9 -1.6
OTUK Ortayu 49.44 304 P P 19 46 33.6 +0.2
OTUK pmax pmax
comp=Z,103nm,1.4s
BSSI Bau Bau, Buton 49.47 209 P P 19 46 32.0 -1.9
PYUN Piuthan 49.54 276 *e*P P 19 46 35.0 +0.3
comp=Z,576nm,1.1s
FRU Bishkek 49.64 297 *e*P P 19 46 36.0 +0.9
FRU *i* 19 46 53.5
FRU *e*S **S** 19 53 40.0 -0.1
FRU *i* 19 53 56.0
FRU pmax pmax
comp=Z,220nm,2.2s
FRU smax smax
comp=E,150nm,3.0s
EGAK Eagle 49.72 33 *e*P P 19 46 36.0 +0.7
comp=E,117nm,1.5s
EGAK LR LR
comp=Z,617nm,20.0s
AAK Ala-Archa 49.80 297 *e*P P 19 46 36.6 +0.2
AAK pmax pmax
comp=Z,323nm,1.8s
AAK MLR MLR
comp=Z,2µm,19.0s
AAK Ala-Archa 49.80 297 *e*P P 19 46 36.6 +0.2
comp=Z,323nm,1.8s
AAK LR LR
comp=Z,2µm,19.0s
AAK Ala-Archa 49.80 297 P P 19 46 37.0 +0.6
SNR=15
AAK Ala-Archa 49.80 297 P P 19 46 37.0 +0.6
SNR=15
BALM Baldy 49.81 38 *e*P P 19 46 37.8 +1.6
BALM pmax pmax
comp=Z,144nm,1.4s
BALM Baldy 49.81 38 *e*P P 19 46 37.8 +1.6
comp=Z,144nm,1.4s
KSH Kashi 49.89 292 P P 19 46 41.5 +4.4
KSH epP sP 19 46 53.9 -1.8
KSH esP pP 19 46 59.4 +9.2
KSH *e*PP PP 19 48 39.0 +7.0
KSH PcS **PcS** **19 51 56.7 +2.7**
KSH S **S** **19 53 47.7 +3.9**
KSH SS **SS** **19 57 17.7 +1.1**
KSH pmax pmax
comp=Z,140nm,1.3s
KSH pmax pmax
comp=Z,830nm,4.0s
KSH LR LR
comp=Z,2µm,17.4s
KSH LR LR
comp=Z,1µm,13.7s
KSH LR LR
comp=Z,2µm,17.2s
PKDT Phuket 50.07 243 P P 19 46 41.6 +3.0
comp=Z,175nm,1.1s,comp=Z,2µm
EKS2 Erkin-Say 50.28 297 *e*P P 19 46 40.3 +0.3
EKS2 pmax pmax
comp=Z,79nm,1.1s
EKS2 MLR MLR
comp=Z,2µm,21.0s
EKS2 Erkin-Say 50.28 297 *e*P P 19 46 40.3 +0.3
comp=Z,79nm,1.1s
EKS2 LR LR
comp=Z,2µm,21.0s
PBKI Pangkalan Bun 50.30 221 P P 19 46 36.8 -3.5
KULM Kulim 50.40 239 ⇑P P 19 46 41.9 +0.9
KULM Kulim 50.40 239 *e*P P 19 46 41.2 +0.2
comp=Z,58nm,1.2s
KULM LR LR
comp=Z,713nm,22.0s
IPM Ipoh 50.76 238 ⇑P P 19 46 44.2 +0.4
IPM Ipoh 50.76 238 *e*P P 19 46 43.3 -0.5
comp=Z,69nm,1.1s
LGTI Lohaghat 51.00 279 *e*P P 19 46 48.1 +2.7
MYKOM Kota Tinggi 51.03 233 ⇑P P 19 46 47.1 +1.4
MYKOM Kota Tinggi 51.03 233 *e*P P 19 46 46.3 +0.6
comp=Z,32nm,1.0s
MMRI Maumere 51.17 205 P P 19 46 40.9 -5.8
MMRI Maumere 51.17 205 *e*P P 19 46 45.2 -1.6
comp=Z,61nm,0.8s
KGM Kluang 51.18 233 ⇑P P 19 46 48.4 +1.5
FRIM Kepong 51.31 236 ⇑P P 19 46 49.3 +1.4
HNR Honiara 51.36 157 PFAKE 19 47 00.0 +12
HNR LR LR
comp=Z,2µm,21.0s
SOEI Soe 51.58 203 P P 19 46 49.0 -1.0
SOEI Soe 51.58 203 *e*P P 19 46 49.1 -0.8
comp=Z,101nm,0.9s
INK Inuvik 52.10 28 P P 19 46 54.3 +1.2
comp=Z,13nm,0.7s,baz=296,slow=7.6,SNR=35
INK LR LR 20 10 18.1
comp=Z,640nm,21.7s,baz=278,slow=37
INK Inuvik 52.10 28 *e*P P 19 46 54.3 +1.2
comp=Z,87nm,1.0s
BATI Baumata 52.19 203 P P 19 46 53.2 -1.2
KKAR Karatay Array 52.36 299 *e*P P 19 46 55.4 -0.1
KKAR Karatay Array 52.36 299 *e*P P 19 46 55.4 -0.1
DSRI Dabo 52.38 230 P P 19 46 54.1 -1.7
PPBI Pangkal Pinang 52.83 227 P P 19 46 55.9 -3.3
MTN Manton Dam 52.93 193 *e*P P 19 46 59.2 -0.6
comp=Z,84nm,1.3s
PLAI Plampang 52.97 210 P P 19 46 56.2 -3.9
IUG Iuzhnay 53.05 298⇑ *i*P P 19 47 01.0 +0.4
comp=Z,429nm,2.0s
IUG LR LR 20 10 11.6
comp=Z,1µm,15.6s
COEN Coen 53.07 179 *e*P P 19 47 01.9 +1.1
comp=Z,69nm,1.1s
BASI Baing, Sumba 53.21 207 P P 19 46 58.6 -3.3
TWSI Taliwang, Sumb 53.24 212 P P 19 46 58.4 -3.7
PSI Prapat 53.39 238 LR LR 20 11 03.0
comp=Z,699nm,19.6s,baz=35,slow=37
PSI Prapat 53.39 238 *e*P P 19 47 03.3 -0.2
PSI pmax pmax
comp=Z,42nm,1.1s
PSI Prapat 53.39 238 *e*P P 19 47 03.3 -0.2
comp=Z,42nm,1.1s
SKAG Skagway 53.58 39 *e*P P 19 47 06.1 +2.0
comp=Z,70nm,1.2s
KCSI Kotacane, Aceh 53.62 240 P P 19 47 03.3 -1.7
SVE Sverdlovsk 53.70 318*d* *i*P P 19 47 05.7 +0.7
SVE *e*S **S** 19 54 35.5 +0.1
SVE pmax pmax
comp=Z,210nm,1.5s
SVE MLR MLR
comp=Z,6µm,16.0s
SVE MLR MLR
comp=E,5µm,16.0s
KIP Kipapa 53.81 91*d* *i*P P 19 47 07.0 +0.6
KIP pmax pmax
comp=Z,941nm,1.7s
CHLP Challavanipeta 53.84 265 *e*P P 19 47 07.0 +0.4
CHLP IAmb IAmb 19 47 21.5
comp=Z,85nm,1.7s
CHLP *e*S **S** 19 54 37.6 -0.7
CHLP IVMs_BB IVMs_BB 20 10 25.0
comp=Z,516nm,21.2s
DNP Denpasar 53.88 213 P P 19 47 03.4 -3.4
BKNI Bangkinang 53.91 234 P P **19 47 05.0 -2.1**
BKNI Bangkinang 53.91 234 *e*P P **19 47 07.5 +0.4**
comp=Z,152nm,1.0s
SOKR Solikamsk 54.75 322*c* *i*P P **19 47 10.8 -1.8**
SOKR 19 49 17.4
SOKR S S 19 55 12.8 +23
SOKR pmax pmax
comp=Z,41nm,1.7s
SOKR MLR MLR
comp=Z,1µm,15.0s
PWJI Pagerwojo 54.84 218 P P **19 47 11.2 -2.6**
ARU Arti 54.91 318 LR LR 20 13 13.9
comp=Z,6µm,19.1s,baz=67,slow=39
ARU Arti 54.91 318*c* *i*P P **19 47 14.1 +0.2**
ARU 19 48 15.9
ARU 19 49 13.8
ARU PPP PPP 19 50 29.1
ARU S **S** **19 54 55.8 +4.1**
ARU 19 56 53.8
ARU SS **SS** **19 58 36.1 +1.1**
ARU pmax pmax
comp=Z,74nm,1.7s
ARU MLR MLR
comp=Z,7µm,19.0s
ARU Arti 54.91 318 *e*P P **19 47 14.1 +0.2**
comp=Z,577nm,1.8s
WOJI Wonogiri, Jawa 55.09 219 P P **19 47 12.9 -2.7**
PDSI Padang 55.23 234 P P **19 47 13.8 -2.9**
PCJI Pacitan 55.28 218 P P **19 47 15.2 -1.8**
UGM Wanagama 55.35 219 P P 19 47 14.2 -3.4
UGM Wanagama 55.35 219 *e*P P **19 47 16.7 -0.8**
comp=Z,326nm,1.4s
GSI Gunungsitoli 55.40 238 P P **19 47 15.3 -2.6**
GSI Gunungsitoli 55.40 238 *e*P P **19 47 17.8 -0.1**
comp=Z,264nm,1.4s
KPJI Karang Pucung 55.65 221 P P 19 47 15.6 -4.0
LHSI Lahat 55.69 229 P P 19 47 24.6 +4.7
MDSI Maura Dua 55.84 228 P P **19 47 20.5 -0.6**
LEM Lembang 55.90 223 P P 19 47 26.9 +5.3
MASI Maura Aman, Be 55.90 230 P P **19 47 19.6 -1.9**
WRAK Wrangell Islan 56.09 42 PFAKE 19 47 40.0 +18
WRAK LR LR
comp=Z,529nm,19.0s
PVM Polavaram 56.46 265 *e*P P **19 47 25.4 -0.1**
PVM IAmb IAmb 19 47 30.3
comp=Z,14nm,0.9s
PVM *e*S **S** **19 55 11.8 -1.4**
PVM IVMs_BB IVMs_BB 20 11 54.7
comp=Z,408nm,21.3s
DLBC Dease Lake 56.52 39 *e*P P **19 47 27.8 +2.4**
comp=Z,206nm,2.0s
CNJI Cibinong 56.56 223 P P **19 47 23.2 -2.9**
CGJI Cibinong 56.75 225 P P **19 47 24.7 -2.8**
ABKAR Akbulak array 56.78 309 *e*P P **19 47 27.3 -0.1**
KBL Kabul 57.01 290 *e*P P **19 47 29.1 -0.4**
KBL pmax pmax
comp=Z,183nm,1.4s
KBL Kabul 57.01 290 *e*P P **19 47 29.1 -0.4**
comp=Z,183nm,1.4s
RPR Rampur 57.33 268 *e*P P **19 47 31.3 -0.4**
RPR IAmb IAmb 19 47 36.2
comp=Z,20nm,0.8s
RPR IVMs_BB IVMs_BB 20 13 45.9
comp=Z,338nm,19.9s
AKTO Aktyubinsk 57.45 311 LR LR 20 13 43.2
comp=Z,3µm,18.8s,baz=64,slow=38
SRSP Sriramsagar 58.02 269 *e*P P **19 47 36.0 -0.5**
SRSP IAmb IAmb 19 47 41.3
comp=Z,39nm,1.0s
SRSP *e*S **S** **19 55 32.6 -1.3**
SRSP IVMs_BB IVMs_BB 20 14 46.5
comp=Z,488nm,19.8s
SPA0 Spitsbergen Ar 58.31 349 *e*P P **19 47 38.3 +0.6**
KBS Kingsbay 58.42 350 *e*P P **19 47 38.8 +0.3**
KBS pmax pmax
comp=Z,192nm,1.6s
KBS Kingsbay 58.42 350 PFAKE 19 47 50.0 +12
KBS LR LR
comp=Z,773nm,20.0s
ADKI Addanki 58.56 265 *e*P P **19 47 40.5 +0.3**
ADKI IAmb IAmb 19 47 45.4
comp=Z,17nm,1.1s
ADKI *e*S **S** **19 55 41.3 +0.4**
ADKI IVMs_BB IVMs_BB 20 13 06.1
comp=Z,474nm,26.2s
NJS Nagarjunasagar 58.66 266 *e*P P **19 47 40.2 -0.8**
NJS IAmb IAmb 19 47 45.3
comp=Z,13nm,0.9s
NJS IVMs_BB IVMs_BB 20 13 13.2
comp=Z,520nm,21.7s
HYB Hyderabad 58.73 267 *i*P P **19 47 41.0 -0.5**
HYB *e*S **S** **19 55 42.0 -1.2**
HYBB Hyderabad (bro 58.73 267 *e*P P **19 47 40.8 -0.8**
HYBB IAmb IAmb 19 47 55.1
comp=Z,23nm,0.8s
HYBB *e*S **S** **19 55 43.2 0.0**
HYBB IVMs_BB IVMs_BB 20 13 00.0
comp=Z,336nm,18.8s
FUNA Funafuti 58.85 136 PFAKE 19 47 50.0 +7.8
FUNA LR LR
comp=Z,7µm,19.0s
FITZ Fitzroy Crossi 59.19 198 P P **19 47 44.2 -0.3**
comp=Z,8.5nm,0.8s,baz=20,slow=5.5,SNR=13
FITZ Fitzroy Crossi 59.19 198 *e*P P **19 47 43.8 -0.7**
comp=Z,32nm,1.3s
SRLM Srisailam 59.24 266 *e*P P **19 47 44.2 -0.9**
SRLM IAmb IAmb 19 47 49.7
comp=Z,21nm,0.9s
SRLM *e*S **S** **19 55 49.2 -0.6**
SRLM IVMs_BB IVMs_BB 20 13 30.7
comp=Z,415nm,20.4s
CTA Charters Tower 59.29 175 P P **19 47 45.4 +0.2**
comp=Z,2.4nm,0.6s,baz=315,slow=5.7,SNR=5.1
CTAO Charters Tower 59.29 175 *e*P P **19 47 45.8 +0.6**
CTAO pmax pmax
comp=Z,33nm,1.4s
CTAO MLR MLR
comp=Z,544nm,21.0s
CTAO Charters Tower 59.29 175 *e*P P **19 47 45.8 +0.6**
comp=Z,33nm,1.4s
CTAO LR LR
comp=Z,544nm,21.0s
WRAB Tennant Creek 59.44 188*c* *i*P P **19 47 44.6 -1.5**
WRAB pmax pmax
comp=Z,79nm,1.7s
WRAB Tennant Creek 59.44 188 *e*P P **19 47 44.7 -1.4**
comp=Z,42nm,0.9s
WRAB LR LR
comp=Z,589nm,21.0s
WB2 Warramunga Arr 59.44 188 *e*P P **19 47 45.0 -1.2**
comp=Z,56nm,1.0s
WR1 Warramunga Arr 59.45 188 *e*P P **19 47 44.9 -1.3**
comp=Z,72nm,1.2s
WRA Warramunga Arr 59.45 188 P P **19 47 44.9 -1.3**
comp=Z,9.2nm,0.6s,baz=6.9,slow=6.9,SNR=60
WRA LR LR 20 10 47.7
comp=Z,376nm,21.9s,baz=30,slow=33
RCLA Racherla 59.58 265 *e*P P **19 47 46.9 -0.5**
RCLA IAmb IAmb 19 47 52.3
comp=Z,26nm,0.9s
RCLA IVMs_BB IVMs_BB 20 13 46.9
comp=Z,485nm,28.0s
KLRI Killari 59.87 269 *e*P P **19 47 48.6 -0.8**
KLRI IAmb IAmb 19 47 53.7
comp=Z,44nm,0.9s
KLRI IVMs_BB IVMs_BB 20 14 47.1
comp=Z,669nm,22.0s
SKHT Srikalahasti 60.02 263 *e*P P **19 47 50.8 +0.4**
SKHT IAmb IAmb 19 47 55.5
comp=Z,27nm,0.9s
LVZ Lovozero 60.16 335 PFAKE 19 48 00.0 +9.4
LVZ LR LR

comp=Z,1µm,20.0s
RES Resolute Bay 60.22 15 P **P 19 47 50.6 -0.3**
comp=Z,16nm,0.8s,baz=307,slow=6.9,SNR=44
RES Resolute Bay 60.22 15 *e*P **P 19 47 51.1 +0.2**
RES pmax pmax
comp=Z,67nm,1.2s
RES Resolute Bay 60.22 15 *e*P **P 19 47 51.1 +0.2**
comp=Z,67nm,1.2s
APA Apatity 60.73 335⇑ *i*P **P 19 47 55.0 +0.5**
APA MLR MLR
comp=Z,2µm,20.0s
TMCR Tamitsa 60.91 331 *e*P **P 19 47 56.6 +0.9**
TMCR pmax pmax
comp=Z,53nm,0.9s
URV Uravakonda 61.19 266 *e*P **P 19 47 57.7 -0.7**
URV IAmb IAmb 19 48 03.0
comp=Z,14nm,1.0s
KEV Kevo 61.41 339 PFAKE 19 48 10.0 +11
KEV LR LR
comp=Z,1µm,19.0s
YKW3 Yellowknife Ar 61.52 31 *e*P **P 19 48 00.1 +0.1**
comp=Z,48nm,1.4s
YKA Yellowknife Ar 61.56 31 P **P 19 48 00.4 +0.3**
comp=Z,2.6nm,0.7s,baz=302,slow=6.6,SNR=42
YKB5 Yellowknife Ar 61.56 31 *e*P **P 19 47 59.7 -0.5**
POO Poona 61.73 271 *ex* **P 19 48 00.0 -2.1**
HAMF Hammerfest 61.75 341 *e*P **P 19 48 01.9 +0.5**
ARA0 ARCESS Array S 61.96 339 *e*P **P 19 48 03.0 +0.2**
ARCES ARCESS Array B 61.96 339 P **P 19 48 03.0 +0.2**
comp=Z,4.6nm,0.6s,baz=54,slow=6.9,SNR=21
ARCES LR LR 20 19 29.0
comp=Z,993nm,19.7s,baz=50,slow=40
ARCES ARCESS Array B 61.96 339 P **P 19 48 03.0 +0.2**
ARCES pmax pmax
comp=Z,5.0nm,0.6s
ARCES MLR MLR
comp=Z,993nm,19.7s
ARE0 ARCESS Array S 61.96 339 *e*P **P 19 48 03.4 +0.6**
KLMR Klimovskoe 62.02 327 *e*P **P 19 48 01.2 -2.1**
KLMR *e* 19 50 19.5
KLMR *e*S **S 19 56 26.6 +2.6**
KLMR *e* 19 57 50.8
KLMR pmax pmax
comp=Z,61nm,1.6s
KLMR MLR MLR
comp=Z,2µm,15.0s
KTK1 Kautokeino 62.92 339 *e*P **P 19 48 10.1 +0.9**
KTK1 IAmb IAmb 19 48 15.1
comp=Z,42nm,1.3s
GEYT Alibeck 63.10 298 P **P 19 48 10.8 -0.2**
comp=Z,12nm,0.9s,baz=27,slow=3.6,SNR=16
GEYT LR LR 20 17 27.4
comp=Z,2µm,18.6s,baz=70,slow=38
AS01 Alice Springs 63.17 188 *e*P **P 19 48 10.3 -1.1**
AS31 Alice Springs 63.17 188 *e*P **P 19 48 10.8 -0.6**
comp=Z,5.3nm,0.8s
ASAR Alice Springs 63.17 188 P **P 19 48 10.6 -0.8**
comp=Z,6.9nm,0.7s,baz=3.4,slow=6.2,SNR=25
ASAR LR LR 20 15 36.5
comp=Z,590nm,21.9s,baz=8.0,slow=36
HEF Hetta 63.19 339 *e*P **P 19 48 11.5 +0.5**
HEF *es*P **sP 19 48 30.1 +0.2**
DAG Danmarks Havn 63.48 355 *i* P **P 19 48 12.5 -0.2**
DAG Danmarks Havn 63.48 355 *i* P **P 19 48 12.5 -0.2**
TRO Tromso 63.64 341 *e*P **P 19 48 14.1 +0.1**
MBWA Marble Bar 63.72 203 *e*P **P 19 48 14.6 -0.4**
comp=Z,16nm,0.8s
NLWA Neilton Lookou 64.81 48 *e*P **P 19 48 23.1 +1.0**
comp=Z,157nm,1.6s
NLWA LR LR
comp=Z,654nm,19.0s
EIDS Eidsvold 64.97 171 *e*P **P 19 48 23.9 +0.8**
comp=Z,31nm,1.4s
MBW Mount Baker 65.21 46 P **P 19 48 26.4 +1.6**
B05A Bryant 65.37 47 P **P 19 48 27.7 +2.1**
baz=302
E03A Lebam 65.44 49 *e*P **P 19 48 27.5 +1.5**
comp=Z,116nm,1.3s
RPW Rockport 65.61 47 *e*P **P 19 48 28.0 +0.8**
MOS Moscow 65.64 323 *e*P **P 19 48 26.0 -1.1**
MOS *i* 19 48 45.2
MOS *e* 19 51 02.2
MOS *e*S S 19 57 23.2 +14
MOS pmax pmax
comp=Z,139nm,1.8s
MOS pmax pmax
comp=Z,500nm,2.5s
MOS MLR MLR
comp=E,2µm,17.0s
MOS MLR MLR
comp=Z,3µm,17.0s
MOS MLR MLR
comp=N,2µm,16.0s
F03A Seaside 65.77 50 *e*P **P 19 48 29.8 +1.6**
comp=N,251nm,1.5s
STEI Steigen 65.80 341 *e*P **P 19 48 29.1 +1.1**
D05A Enumclaw 66.01 48 *e*P **P 19 48 31.3 +1.6**
comp=N,276nm,1.8s
MSVF Nonsavu 66.06 142 PFAKE 19 48 40.0 +10
MSVF LR LR
comp=Z,1µm,21.0s
GSM Grass Mountain 66.11 48 P **P 19 48 32.5 +1.9**
GSM Grass Mountain 66.11 48 P **P 19 48 32.5 +1.9**
VRH Novokhopyorsk 66.14 317 *e*P **P 19 48 29.7 -0.8**
VRH pmax pmax
comp=Z,20nm,1.5s
VRH MLR MLR
comp=Z,4µm,17.0s
XMAS Kiritimati 66.24 108 PFAKE 19 48 40.0 +8.4
XMAS LR LR
comp=Z,4.0nm,22.0s
TDL Tradedollar La 66.33 49 P **P 19 48 33.5 +1.6**
LON Longmire 66.35 48 *e*P **P 19 48 33.4 +1.4**
LON pmax pmax
comp=Z,20nm,1.0s
LON Longmire 66.35 48 *e*P **P 19 48 33.4 +1.4**
comp=Z,20nm,1.0s
PUL Pulkovo 66.40 329⇑ *e*P **P 19 48 32.1 +0.1**
PUL pmax pmax
comp=Z,30nm,0.6s
PUL MLR MLR
comp=Z,3µm,19.0s
F04A Amboy 66.44 49 *e*P **P 19 48 34.0 +1.6**
comp=Z,88nm,1.3s
OBN Obninsk 66.49 323*c i*P **P 19 48 32.1 -0.5**
OBN *i* 19 48 48.8
OBN *i* 19 49 04.0
OBN pmax pmax
comp=Z,22nm,1.0s
OBN MLR MLR
comp=Z,3µm,16.0s
OBN Obninsk 66.49 323 *e*P **P 19 48 32.2 -0.4**
comp=Z,136nm,1.2s
OBN LR LR
comp=Z,957nm,21.0s
MTMW Mount Mitchell 66.51 49 P **P 19 48 34.6 +1.5**
LPSR Galich'ya Gora 66.79 320 *e*P **P 19 48 34.5 -0.1**
LPSR pmax pmax
comp=Z,10.0nm,0.7s
LPSR MLR MLR
comp=Z,2µm,21.0s
B08A Colville Reser 66.87 46 *e*P **P 19 48 36.0 +0.7**
comp=Z,92nm,1.4s
FIA1 FINESS Array S 66.95 332 *e*P **P 19 48 34.8 -0.6**
comp=Z,243nm,1.6s
FIA0 FINESS Array S 66.95 332 *e*P **P 19 48 35.3 -0.2**
FIA0 FINESS Array S 66.95 332 *e*P **P 19 48 35.3 -0.2**
FINES FINESS Array B 66.95 332 P **P 19 48 35.3 -0.2**
comp=Z,10nm,0.6s,baz=32,slow=9.3,SNR=64
FINES LR LR 20 20 07.9
comp=Z,3µm,18.8s,baz=45,slow=38
I03D Drain, OR 67.09 52 P **P 19 48 38.3 +1.6**
baz=303
H04A Detroit Lake 67.25 50 *e*P **P 19 48 39.0 +1.2**
comp=Z,130nm,1.4s
MOR8 Moi Rana 67.32 340 *e*P **P 19 48 36.5 -1.3**
MOR8 IAmb IAmb 19 48 37.7
comp=Z,18nm,0.6s
G05D Wamic, OR 67.46 49 P **P 19 48 40.9 +1.8**
baz=304
VSR Storozhevoye 67.47 318 *e*P **P 19 48 38.5 -0.4**
VSR pmax pmax
comp=Z,50nm,1.8s
VSR MLR MLR
comp=Z,4µm,16.0s
I04A Tendick Farm, 67.61 51 P **P 19 48 41.3 +1.2**
baz=304,SNR=8.9
C09A Chrisman Ranch 67.77 46 *e*P **P 19 48 41.3 +0.3**
comp=Z,152nm,1.5s
D08A Wollman Farm, 67.83 47 *e*P **P 19 48 41.8 +0.5**
comp=Z,95nm,1.5s
HAWA Hanford 67.86 48 *e*P **P 19 48 42.5 +1.0**
comp=Z,92nm,1.5s
HAWA LR LR
comp=Z,499nm,21.0s
G06A Carlson Farm, 67.87 49 *e*P **P 19 48 43.0 +1.3**
comp=Z,66nm,1.4s
HUMO Hull Mountain 67.93 53 *e*P **P 19 48 43.3 +1.2**
comp=Z,64nm,1.5s
VTHM Trough 67.94 49 P **P 19 48 43.9 +1.8**
I05D Terrebonne, OR 67.95 50 P **P 19 48 43.8 +1.6**
baz=304
KTRM Thompson Ridge 68.06 53 *e*P **P 19 48 45.1 +2.1**
NEW Newport 68.15 45 LR LR 20 14 28.1
comp=Z,392nm,21.9s,baz=304,slow=32
NEW Newport 68.15 45 P **P 19 48 44.6 +1.3**
baz=305,SNR=8.8
NEW Newport 68.15 45 *e*P **P 19 48 44.2 +0.8**
NEW pmax pmax
comp=Z,101nm,1.4s
NEW Newport 68.15 45 *e*P **P 19 48 44.1 +0.8**
comp=Z,101nm,1.4s
SUMG Summit 68.34 0 *i* P **P 19 48 45.1 +0.5**
SUMG Summit 68.34 0 *e*P **P 19 48 44.6 +0.1**
SUMG pmax pmax
comp=Z,86nm,1.1s
SUMG Summit 68.34 0 *e*P **P 19 48 44.6 +0.1**
comp=Z,86nm,1.1s
KHMM Horse Mountain 68.41 54 *e*P **P 19 48 46.0 +0.8**
comp=Z,105nm,1.2s
YBH Yreka Blue Hor 68.57 53 *e*P **P 19 48 46.5 +0.3**
YBH pmax pmax
comp=Z,65nm,1.3s
YBH Yreka Blue Hor 68.57 53 *e*P **P 19 48 46.5 +0.3**
comp=Z,64nm,1.3s
J05D Fort Rock, OR 68.60 51 P **P 19 48 48.0 +1.6**
baz=304,SNR=9.6
VSU Vasula 68.66 329⇓ *e*P **P 19 48 46.7 +0.5**
VSU pmax pmax
comp=Z,37nm,0.9s
VSU MLR MLR
comp=Z,7µm,18.0s
KMRM Mail Ridge 68.79 55 *e*P **P 19 48 48.0 +0.5**
comp=Z,68nm,1.3s
GOF Gofitskoye 68.87 311⇑ *e*P **P 19 48 48.3 +0.5**
GOF *e*S S 19 58 05.5 +17
GOF pmax pmax
comp=Z,85nm,0.9s
GOF smax smax
comp=E,66nm,1.3s
N02D Trinity Center 69.00 54 P **P 19 48 50.3 +1.5**
baz=304
M04C Macdoel 69.08 53 P **P 19 48 50.6 +1.3**
baz=305,SNR=10
K05A Summer Lake 69.12 51 *e*P **P 19 48 51.5 +1.8**
comp=E,198nm,1.3s
WDC Whiskeytown Da 69.32 54 *e*P **P 19 48 52.0 +1.3**
WDC pmax pmax
comp=Z,53nm,1.3s
WDC Whiskeytown Da 69.32 54 *e*P **P 19 48 52.0 +1.3**
comp=Z,53nm,1.3s
WALA Waterton Lakes 69.41 43 *e*P **P 19 48 51.9 +0.6**
comp=Z,127nm,1.6s
F10A Beach Ranch, E 69.41 47 *e*P **P 19 48 53.2 +1.9**
comp=Z,19nm,1.0s
NCK Nalchik 69.44 310⇓ *e*P **P 19 48 52.2 +0.8**
NCK MLR MLR
comp=Z,1µm,18.0s
GUDG Gudauri 69.50 308 P **P 19 48 52.7 +0.7**
DGRG David-gareji 69.53 307 P P 19 48 42.6 -9.4
DGRG David-gareji 69.53 307 *e*P P 19 48 42.6 -9.4
BSMT Bassoo Peak 69.66 44 *e*P **P 19 48 53.7 +0.7**
ZEI Tsey 69.66 309 *e*P **P 19 48 52.5 -0.5**
ZEI pmax pmax
comp=Z,109nm,1.3s
KVAR Kislovodsk Arr 69.71 311 LR LR 20 22 20.3
comp=Z,1µm,18.8s,baz=25,slow=38
KIV Kislovodsk 69.71 311 *e*P **P 19 48 54.0 +0.8**
KIV Kislovodsk 69.71 311 *i* P **P 19 48 53.5 +0.3**
SNR=17
KIV Kislovodsk 69.71 311 *e*P **P 19 48 53.8 +0.6**
KIV *e* 19 49 12.9
KIV *e*S **S 19 58 00.3 +1.8**
KIV *e*SS **SS 20 02 30.8 +4.2**
KIV pmax pmax
comp=Z,141nm,1.1s
KIV pmax pmax
comp=Z,173nm,3.5s
KIV MLR MLR
comp=Z,1µm,17.0s
KIV Kislovodsk 69.71 311 *e*P **P 19 48 53.1 -0.1**
comp=Z,290nm,1.4s
KIV LR LR
comp=Z,1µm,19.0s
KIV Kislovodsk 69.71 311 P **P 19 48 54.9 +1.8**
SNR=20
KIV Kislovodsk 69.71 311 P **P 19 48 54.9 +1.8**
SNR=20
KBZ Khabaz 69.72 310 P **P 19 48 53.6 +0.6**
comp=Z,16nm,0.9s,baz=86,slow=7.6,SNR=16
KBZ LR LR 20 24 35.8
comp=Z,1µm,18.0s,baz=44,slow=40
TBLG Delisi 69.76 308 *e*P **P 19 48 55.1 +1.6**
TBLG Delisi 69.76 308 P **P 19 48 55.3 +1.8**
TBLG Delisi 69.76 308 *e*P **P 19 48 55.2 +1.8**
BLMT Blacktail Moun 69.79 44 *e*P **P 19 48 54.4 +0.6**
O03D Paynes Creek 69.95 54 P **P 19 48 55.3 +0.6**
baz=305
MOD Modoc Plateau 69.95 52 *e*P **P 19 48 55.4 +0.6**
comp=Z,71nm,1.3s
JTMT Jette 70.00 44 *e*P **P 19 48 55.9 +0.9**
BMO Blue Mountains 70.02 48 *e*P **P 19 48 56.2 +1.1**
comp=Z,82nm,1.6s
BMO LR LR
comp=Z,556nm,20.0s
ARMA Armidale 70.02 171 *e*P **P 19 48 55.6 +0.5**
comp=Z,52nm,1.4s
YBMT Yellow Bay 70.07 44 *e*P **P 19 48 55.9 +0.6**
NEY Neytrino 70.10 310*de*P **P 19 48 56.9 +1.2**
NEY pmax pmax
comp=Z,2.0nm,1.0s
NEY MLR MLR
comp=Z,590nm,16.0s
SWMT Swartz Lake 70.29 44 *e*P **P 19 48 57.5 +0.8**
ORV Oroville 70.56 55 *e*P **P 19 48 59.2 +0.8**
ORV pmax pmax
comp=Z,55nm,1.3s
ORV Oroville 70.56 55 *e*P **P 19 48 59.2 +0.8**
comp=Z,55nm,1.3s
WVOR Wild Horse Val 70.65 51 *e*P **P 19 49 00.2 +1.2**
WVOR pmax pmax
comp=Z,101nm,1.4s
WVOR MLR MLR
comp=Z,640nm,22.0s
WVOR Wild Horse Val 70.65 51 *e*P **P 19 49 00.2 +1.2**
comp=Z,100nm,1.4s
WVOR LR LR
comp=Z,640nm,22.0s
GNI Garni 70.67 306 *i* P **P 19 48 59.6 +0.4**
SNR=5.3
GNI Garni 70.67 306*c i*P **P 19 49 00.2 +1.0**
GNI pmax pmax
comp=Z,261nm,1.7s
GNI MLR MLR
comp=Z,6µm,18.0s
GNI Garni 70.67 306 *e*P **P 19 48 59.9 +0.7**
comp=Z,78nm,1.2s
GNI LR LR
comp=Z,3µm,19.0s
IZAR Zarasai 70.67 327 *e*P **P 19 48 59.0 +0.4**
IZAR IAmb IAmb 19 49 21.6
comp=Z,15nm,0.8s
AKH Akhalkalaki 70.71 308 P **P 19 49 00.1 +0.6**
AKH Akhalkalaki 70.71 308 *e*P **P 19 49 00.0 +0.6**
MSO Missoula 70.73 45 P **P 19 48 60.0 +0.6**
baz=307,SNR=5.2
MSO Missoula 70.73 45 *e*P **P 19 49 00.1 +0.7**
comp=Z,74nm,1.4s
IDID Didziasalis 70.75 327 *e*P **P 19 48 59.6 +0.4**
IDID IAmb IAmb 19 49 18.7
comp=Z,15nm,0.9s
CHVG Ch'k'valeri 70.79 310 P **P 19 48 58.7 -1.0**
MICGM Minsk 70.80 326 *e* **P 19 49 01.0 +1.5**
MICGM *e*LR LR 20 20 16.0
MICGM LRM MLR 20 22 44.0
comp=Z,6.3nm,18.0s
MNK Minsk 70.80 326 *e*P **P 19 49 01.0 +1.5**
MNK MLR MLR
comp=Z,6µm,18.0s
ISAL Salakas 70.84 327 *e*P **P 19 49 00.1 +0.4**
ISAL IAmb IAmb 19 49 20.9
comp=Z,73nm,1.4s
STKA Stephens Creek 70.90 180 P **P 19 48 59.8 -0.4**
comp=Z,2.5nm,0.8s,baz=339,slow=7.5,SNR=5.5
STKA Stephens Creek 70.90 180 *e*P **P 19 49 01.8 +1.6**
STKA pmax pmax
comp=Z,3.0nm,1.1s
STKA Stephens Creek 70.90 180 *e*P **P 19 49 01.8 +1.6**
comp=Z,3.0nm,1.1s
IIGN Ignalina 70.95 327 *e*P **P 19 49 00.8 +0.4**
IIGN IAmb IAmb 19 49 20.3
comp=Z,24nm,0.9s
NACGM Naroch 71.01 326 *e* **P 19 49 01.0 +0.2**
NACGM *e*LQ LQ 20 14 36.0
NACGM *e*LR LR 20 18 00.0
NACGM LRM MLR 20 22 42.0
comp=Z,5.3nm,15.0s
CHMT Chamberlain Mo 71.06 44 *e*P **P 19 49 00.7 -0.8**
AFDM Forest Hills D 71.25 55 *e*P **P 19 49 03.5 +0.9**
comp=Z,62nm,1.4s
KARS Kars 71.42 308 *e*P **P 19 49 02.5 -1.2**
FFC Flin Flon 71.50 33 *e*P **P 19 49 03.8 +0.1**
FFC pmax pmax
comp=Z,66nm,1.1s
FFC MLR MLR
comp=Z,620nm,20.0s
FFC Flin Flon 71.50 33 *e*P **P 19 49 03.8 +0.1**
comp=Z,66nm,1.1s
FFC LR LR
comp=Z,620nm,20.0s
UOSS Minazif 71.52 287 *e*P **P 19 49 04.2 -0.2**
comp=Z,9.3nm,1.4s
HATD Hatta, Dubai 71.64 287 *i* P **P 19 49 05.3 +0.2**
SNR=11
SOC Sochi 71.67 312*c i*P **P 19 49 04.6 -0.3**
SOC *i* 19 49 22.7
SOC *e* 19 51 39.9
SOC *e*S **S 19 58 21.8 +0.8**
SOC *e* 19 59 01.7
SOC *e*SS **SS 20 02 52.7 -3.7**
SOC pmax pmax
comp=Z,63nm,1.0s
SOC MLR MLR
comp=Z,1µm,17.0s
FCC Fort Churchill 71.71 27 *e*P **P 19 49 04.8 -0.1**
FCC pmax pmax
comp=Z,43nm,1.1s
FCC Fort Churchill 71.71 27 *e*P **P 19 49 04.8 -0.1**
comp=Z,43nm,1.1s
MFID Camas Ranch 71.73 49 *e*P **P 19 49 06.6 +1.0**
comp=Z,94nm,1.5s
ASHO Ashiyiah 71.78 287 *i* P **P 19 49 06.1 0.0**
SNR=12
ASHO Ashiyiah 71.78 287 P **P 19 49 07.7 +1.7**
SNR=11
ASHO Ashiyiah 71.78 287 P **P 19 49 07.7 +1.7**
SNR=11
NAZ Nazwa, Dubai 71.90 288 *i* P **P 19 49 06.5 -0.2**
SNR=8.6
NC405 NORSAR Array S 71.99 337 *e*P **P 19 49 06.1 -0.5**
NC303 NORSAR Array S 72.00 337 *e*P **P 19 49 06.6 0.0**
FAQ Al Faqa, Dubai 72.09 288 *i* P **P 19 49 07.3 -0.6**
SNR=6.6
AGRB Hanur-Agry 72.09 307 *e*P **P 19 49 05.5 -2.4**
NC204 NORSAR Array S 72.14 338 *e*P **P 19 49 07.6 0.0**
CMB Columbia Colle 72.16 55 *e*P **P 19 49 08.8 +0.7**
CMB pmax pmax
comp=Z,80nm,1.2s
CMB Columbia Colle 72.16 55 *e*P **P 19 49 08.8 +0.7**
comp=Z,80nm,1.2s
NB201 NORSAR Array S 72.16 337 *e*P **P 19 49 07.7 +0.1**
LRM Limekiln Ridge 72.17 45 *e*P **P 19 49 08.6 +0.4**
NB2 NORSAR Subarra 72.19 337 P **P 19 49 07.5 -0.4**
comp=Z,237nm,2.5s,baz=39,slow=6.2
NB2 NORSAR Subarra 72.19 337 P **P 19 49 07.5 -0.4**
baz=39,slow=6.2
NB200 NORSAR Array S 72.19 337 *e*P **P 19 49 06.9 -1.0**
NOA NORSAR Array B 72.19 337 P **P 19 49 06.9 -1.0**
comp=Z,5.4nm,0.6s,baz=38,slow=6.1,SNR=7.6
NOA LR LR 20 23 35.1
comp=Z,2µm,21.8s,baz=30,slow=38
NOA NORSAR Array B 72.19 337 P **P 19 49 06.9 -1.0**
NOA pmax pmax
comp=Z,6.0nm,0.6s
NOA MLR MLR
comp=Z,2µm,21.8s
ARQ Araqi 72.22 286 P **P 19 49 11.6 +2.9**
SNR=14
ARQ Araqi 72.22 286 P **P 19 49 11.6 +2.9**
SNR=14
EGMT Eagleton 72.22 42 P **P 19 49 09.2 +0.8**
baz=310,SNR=12
EGMT Eagleton 72.22 42 *e*P **P 19 49 08.9 +0.6**
comp=Z,149nm,1.4s
EGMT LR LR
comp=Z,505nm,21.0s
ANN Anapa 72.23 314 *e*P **P 19 49 08.2 -0.1**
ANN *e* 19 49 26.1
ANN *e* 19 59 17.9
ANN pmax pmax
comp=Z,58nm,1.4s
ANN MLR MLR
comp=N,849nm,16.0s
ANN MLR MLR
comp=Z,1µm,16.0s
ANN MLR MLR
comp=E,1µm,16.0s
NBO02 NORSAR Array S 72.29 337 *e*P **P 19 49 08.2 -0.2**
NBO00 NORSAR Array S 72.33 337 *e*P **P 19 49 08.9 +0.2**
HLID Hailey 72.46 48 P **P 19 49 11.0 +1.1**
baz=308,SNR=11
HLID Hailey 72.46 48 *e*P **P 19 49 11.2 +1.2**
comp=E,33nm,1.3s
HLID LR LR
comp=Z,510nm,21.0s
WAKR Walker 72.48 54 *e*P **P 19 49 11.1 +0.9**
MCMT McKenzie Canyo 72.56 46 *e*P **P 19 49 10.4 -0.2**
BMN Battle Mountai 72.70 52 *e*P **P 19 49 12.4 +1.0**
BMN pmax pmax
comp=Z,81nm,1.3s
BMN Battle Mountai 72.70 52 *e*P **P 19 49 12.4 +1.0**
comp=Z,81nm,1.3s
AKASG Malin Array Be 72.72 322 P **P 19 49 10.8 -0.2**
comp=Z,4.0nm,0.4s,baz=42,slow=5.9,SNR=38
AKASG LR LR 20 24 09.7
comp=Z,1µm,19.8s,baz=45,slow=38
AKBB Malin Array Si 72.72 322 *e*P **P 19 49 10.4 -0.7**
AKBB pmax pmax
comp=Z,239nm,1.9s
AKBB Malin Array Si 72.72 322 *e*P **P 19 49 10.4 -0.7**
comp=Z,239nm,1.9s
BOZ Bozeman (W) 72.72 45 P **P 19 49 12.6 +1.1**
baz=309,SNR=16
BOZ Bozeman (W) 72.72 45 *e*P **P 19 49 12.1 +0.6**
BOZ pmax pmax
comp=Z,108nm,1.5s
BOZ MLR MLR
comp=Z,596nm,19.0s
BOZ Bozeman (W) 72.72 45 *e*P **P 19 49 12.1 +0.6**
comp=Z,108nm,1.5s
BOZ LR LR
comp=Z,596nm,19.0s
KIEV Kiev 72.73 322 *e*P **P 19 49 10.0 -1.2**
KIEV pmax pmax
comp=Z,218nm,1.9s
KIEV MLR MLR
comp=Z,2µm,20.0s
KIEV Kiev 72.73 322 *e*P **P 19 49 10.0 -1.2**
comp=Z,218nm,1.9s
KIEV LR LR
comp=Z,2µm,20.0s
AK11 Malin Array Si 72.76 322 *e*P **P 19 49 10.5 -0.8**
EZM Erzurum 72.90 308 *e*P **P 19 49 14.3 +1.6**
SUW Suwalki 73.15 327 *e*P **P 19 49 13.9 +0.3**
SUW Suwalki 73.15 327 *e*P **P 19 49 13.9 +0.3**
KTUT Trabzon 73.21 309 *e*P **P 19 49 13.6 -0.7**
NV01 Mina Array Sit 73.24 54 *e*P **P 19 49 15.6 +0.9**
NVAR Mina Array Bea 73.24 54 P **P 19 49 15.2 +0.5**

comp=Z,6.8nm,0.8s,baz=292,slow=5.3,SNR=35
NV11 Mina Array Sit 73.33 54 *e*P **P 19 49 15.7 +0.6**
comp=Z,65nm,1.3s
QLMT Earthquake Lak 73.35 45 *e*P **P 19 49 16.2 +0.9**
BAYT Ayd¯ıntepe-Bay 73.35 309 *e*P **P 19 49 15.4 +0.2**
SFJD Kangerlussuaq 73.51 5 *i*P **P 19 49 16.0 +0.5**
SFJD Kangerlussuaq 73.51 5 *e*P **P 19 49 15.5 0.0**
SFJD pmax pmax
comp=Z,40nm,1.1s
SFJD MLR MLR
comp=Z,2µm,20.0s
SFJD Kangerlussuaq 73.51 5 *e*P **P 19 49 15.5 0.0**
comp=Z,40nm,1.1s
SFJD LR LR
comp=Z,2µm,20.0s
GCMT Greycliff 73.70 44 *e*P **P 19 49 17.6 +0.5**
ELK Elko 73.70 51 *e*P **P 19 49 18.3 +0.9**
ELK pmax pmax
comp=Z,113nm,1.9s
ELK Elko 73.70 51 *e*P **P 19 49 18.3 +0.9**
comp=Z,113nm,1.9s
GUMT Gumushane 73.71 309 *e*P **P 19 49 15.2 -2.2**
YMR Madison River 73.71 45 *e*P **P 19 49 18.7 +1.3**
comp=Z,118nm,1.7s
KONO Kongsberg 73.79 337 PFAKE 19 49 30.0 +13
KONO LR LR
comp=Z,3µm,22.0s
YFT Old Faithful 73.92 45 *e*P **P 19 49 20.0 +1.4**
comp=Z,169nm,1.9s
KLNR Kaliningrad 73.94 329 *e*P **P 19 49 18.1 -0.1**
KLNR pmax pmax
comp=Z,41nm,1.0s
SIM Simferopol' 73.97 315 *de*P **P 19 49 19.1 +0.5**
SIM pmax pmax
comp=Z,20nm,1.4s
LKWY Lake 74.08 45 *e*P **P 19 49 20.1 +0.5**
LKWY pmax pmax
comp=Z,77nm,1.5s
LKWY Lake 74.08 45 *e*P **P 19 49 20.1 +0.5**
comp=Z,77nm,1.5s
H17A Grant Village 74.10 45 P **P 19 49 22.1 +2.4**
baz=310,SNR=14
H17A Grant Village 74.10 45 *e*P **P 19 49 22.0 +2.3**
comp=Z,105nm,1.3s
IMW Indian Meadow 74.21 46 *e*P **P 19 49 22.0 +1.6**
comp=Z,73nm,1.4s
FLWY Flagg Ranch 74.23 46 *e*P **P 19 49 21.3 +0.9**
comp=Z,167nm,1.7s
FXWY Fox Creek 74.33 46 *e*P **P 19 49 22.3 +1.3**
comp=Z,93nm,1.5s
FXWY *ep*P **PcP 19 49 35.6 0.0**
RLMT Red Lodge 74.34 44 P **P 19 49 22.4 +1.4**
baz=310,SNR=9.5
RLMT Red Lodge 74.34 44 *e*P **P 19 49 21.9 +0.9**
comp=Z,97nm,1.5s
RLMT LR LR
comp=Z,722nm,19.0s
MOOW Moose Ponds 74.42 46 *e*P **P 19 49 22.9 +1.4**
comp=Z,67nm,1.4s
MOOW *ep*P **PcP 19 49 36.2 +0.3**
HVU Hansel Valley 74.51 48 *e*P **P 19 49 23.8 +1.8**
HVU pmax pmax
comp=Z,56nm,1.3s
HVU Hansel Valley 74.51 48 *e*P **P 19 49 23.8 +1.8**
comp=Z,56nm,1.3s
LOHW Long Hollow 74.58 46 *e*P **P 19 49 24.0 +1.5**
comp=Z,84nm,1.9s
LOHW *ep*P **PcP 19 49 37.2 +0.5**
REDW Red Top Meadow 74.60 46 *e*P **P 19 49 23.5 +0.9**
comp=Z,122nm,1.6s
CAN Canberra 74.62 174 PFAKE 19 49 30.0 +7.7
CAN LR LR
comp=Z,759nm,19.0s
GRAC Grapevine Rang 74.70 55 P **P 19 49 24.2 +1.2**
baz=308,SNR=5.3
PTK Pertek 74.73 308 *e*P **P 19 49 24.7 +1.4**
DGMT Dagmar 74.73 39 P **P 19 49 23.6 +0.6**
baz=313
DGMT Dagmar 74.73 39 PFAKE 19 49 40.0 +17
DGMT LR LR
comp=Z,779nm,22.0s
AHID Auburn Hatcher 74.85 47 *e*P **P 19 49 24.9 +0.9**
comp=Z,39nm,1.2s
AHID *ep*P **PcP 19 49 37.8 0.0**
DYBB Diyarbakir 74.85 307 *e*P **P 19 49 24.0 +0.1**
BGU Big Grassy Mou 74.90 49 *e*P **P 19 49 25.3 +1.0**
comp=Z,59nm,1.5s
LAO LASA Array 74.92 41 P **P 19 49 25.1 +1.0**
baz=312
LAO LASA Array 74.92 41 *e*P **P 19 49 25.2 +1.1**
LAO LR LR
comp=Z,238nm,19.0s
A25A Svangstu Ranch 74.94 38 P **P 19 49 25.7 +1.5**
baz=313
MAZI Mazidag 74.96 306 *e*P **P 19 49 25.4 +0.7**
R11A Troy Canyon, C 74.98 53 P **P 19 49 25.8 +1.0**
baz=309,SNR=6.1
DAC Darwin (Calif) 74.99 55 *e*P **P 19 49 26.4 +1.4**
DAC Darwin (Calif) 74.99 55 *e*P **P 19 49 26.4 +1.4**
SPUT South Promonto 75.00 49 *e*P **P 19 49 26.5 +1.6**
comp=Z,86nm,1.5s
SPUT *ep*P **pP 19 49 39.1 +0.5**
RSDY Resadiye-TOKAT 75.03 310 *e*P **P 19 49 25.1 +0.2**
SVRC Sivrice-ELAZID 75.10 307 *e*P **P 19 49 26.4 +0.9**
MPMC Manual Prospec 75.19 55 P **P 19 49 27.1 +1.0**
baz=308,SNR=7.8
HWUT Hardware Ranch 75.32 48 *e*P **P 19 49 27.6 +0.9**
HWUT LR LR
comp=Z,436nm,21.0s
FURC Furnace Creek, 75.34 55 P **P 19 49 27.6 +1.0**
baz=308,SNR=5.7
KVT Kavak 75.35 311 *e*P **P 19 49 27.5 +0.8**
KIS Kishinev 75.40 319 *e*P **P 19 49 27.0 +0.2**
KIS Kishinev 75.40 319 *e*PP PP 19 52 20.0 +4.4
KIS LRM MLR 20 25 05.0
comp=Z,2µm,17.0s
KIS Kishinev 75.40 319 *e*P **P 19 49 27.0 +0.2**
KIS *e* 19 49 45.0
KIS *e* 19 52 20.0
KIS *e* 19 59 10.0
KIS MLR MLR
comp=N,2µm,18.0s
KIS MLR MLR
comp=Z,4µm,18.0s
KIS MLR MLR
comp=E,2µm,17.0s
KIS MLR MLR
comp=Z,4µm,20.0s
LRMC Laurel Mtn Rad 75.43 56 P **P 19 49 28.7 +1.3**
baz=308,SNR=5.9
TPNV Topopah Spring 75.43 54 P **P 19 49 28.5 +1.1**
baz=308
TPNV Topopah Spring 75.43 54 *e*P **P 19 49 27.8 +0.4**
TPNV Topopah Spring 75.43 54 *e*P **P 19 49 27.8 +0.4**
DIKM Dikmen 75.44 312 *e*P **P 19 49 27.5 +0.3**
A26A Wade Farm, Ken 75.48 38 P **P 19 49 27.9 +0.6**
baz=314
DUG Dugway, Tooele 75.49 50 P **P 19 49 28.9 +1.2**
baz=310,SNR=7.1
DUG Dugway, Tooele 75.49 50 *e*P **P 19 49 28.6 +0.9**
DUG MLR MLR
comp=Z,471nm,20.0s
DUG Dugway, Tooele 75.49 50 *e*P **P 19 49 28.6 +0.9**
DUG LR LR
comp=Z,471nm,20.0s
SVSK Karacayir 75.53 310 *e*P **P 19 49 29.3 +1.6**
EDW2 Edwards Air Fo 75.59 57 P **P 19 49 29.0 +0.7**
baz=308,SNR=5.9
BW06 Boulder Array 75.71 46 P **P 19 49 29.4 +0.3**
baz=311,SNR=11
BW06 Boulder Array 75.71 46 *e*P **P 19 49 29.2 +0.2**
BW06 LR LR
comp=Z,612nm,21.0s
PD31 Pinedale Array 75.71 46 *e*P **P 19 49 29.2 +0.2**
PDAR Pinedale Array 75.71 46 P **P 19 49 29.4 +0.3**
comp=Z,3.8nm,0.6s,baz=266,slow=1.6,SNR=35
PDAR LR LR 20 19 24.8
comp=Z,316nm,22.0s,baz=330,slow=33
BEL Belsk 75.72 327 *e*P **P 19 49 29.4 +0.8**
BEL Belsk 75.72 327 *e*P **P 19 49 29.4 +0.8**
TCUT Toone Canyon 75.73 48 *e*P **P 19 49 30.2 +1.1**
LVV L'vov 75.75 324 *e*P **P 19 49 28.6 -0.2**
LVV *eS* **S 19 59 02.0 -4.8**
LVV *e* 19 59 32.4
LVV MLR MLR
comp=N,1µm,15.0s
LVV MLR MLR
comp=E,2µm,15.0s
LVV MLR MLR
comp=Z,2µm,15.0s
CTU Camp Tracy 75.80 49 *e*P **P 19 49 30.4 +0.9**
BYBT Boyabat 75.84 312 *e*P P 19 49 32.6 +3.2
MWC Mount Wilson 75.96 57 *e*P **P 19 49 30.5 0.0**
MWC pmax pmax
comp=Z,84nm,1.3s
MWC Mount Wilson 75.96 57 *e*P **P 19 49 30.5 0.0**
comp=Z,84nm,1.3s
JLU Jordanelle 76.03 49 *e*P **P 19 49 32.4 +1.5**
comp=Z,92nm,1.4s
D25A Fairfield 76.06 40 P P **P 19 49 31.7 +1.0**
baz=314
NLU North Lily Min 76.08 50 *e*P **P 19 49 32.4 +1.3**
comp=Z,64nm,1.2s
DARE Darende-Malaty 76.09 309 *e*P **P 19 49 32.8 +1.7**
GSC Goldstone, Bar 76.10 56 P **P 19 49 32.0 +0.8**
baz=309,SNR=5.9
GSC Goldstone, Bar 76.10 56 *e*P **P 19 49 32.2 +1.0**
GSC Goldstone, Bar 76.10 56 *e*P **P 19 49 32.1 +1.0**
C26A Wahner Farm, P 76.20 39 P **P 19 49 32.1 +0.7**
baz=314
MPU Maple Canyon 76.30 49 *e*P **P 19 49 33.7 +1.3**
A28A Rude Farm, Bot 76.30 37 P **P 19 49 32.5 +0.4**
baz=315
E25A Miller Ranch, 76.47 40 P **P 19 49 33.8 +0.8**
baz=314
KWP Kalwaria Pacla 76.48 324 *e*P **P 19 49 33.8 +0.8**
KWP Kalwaria Pacla 76.48 324 *e*P **P 19 49 33.8 +0.8**
C27A Sayler Ranch, 76.56 38 P **P 19 49 34.3 +0.8**
baz=315
TUQ Turquoise Moun 76.58 55 P **P 19 49 34.6 +0.7**
baz=309,SNR=6.6
D26A Manning 76.58 39 P **P 19 49 34.2 +0.5**
baz=314
B28A Dugan Ranch, T 76.59 37 P **P 19 49 34.5 +0.9**
baz=315
TLCR 76.63 318 ⇓*i*P **P 19 49 34.3 +0.5**
HEC Hector,Ludlow 76.69 56 P **P 19 49 35.7 +1.1**
baz=309,SNR=6.8
BUR08 Bucovina Ar. S 76.73 322 *e*P **P 19 49 34.6 0.0**
BURAR Bucovina Array 76.75 322 ⇑*i*P **P 19 49 35.7 +1.1**
BURAR Bucovina Array 76.75 322 P **P 19 49 35.6 +1.0**
CORM Corum 76.76 311 *e*P **P 19 49 36.1 +1.3**
A29A Manning Farm, 76.77 36 P **P 19 49 35.2 +0.6**
baz=316,SNR=9.0
TESR Tescani 76.82 320 ⇑*i*P **P 19 49 35.0 +0.1**
F25A Bowman 76.84 41 P **P 19 49 35.6 +0.5**
baz=314
BNN Bunyan 76.90 310 *e*P **P 19 49 36.8 +1.1**
MURC Murrieta 76.91 57 P **P 19 49 36.1 +0.4**
baz=309
MSU Marysvale 76.95 51 *e*P **P 19 49 37.2 +1.1**
MSU Marysvale 76.95 51 *e*P **P 19 49 37.2 +1.1**
E26A Carlson Angus 76.96 40 P **P 19 49 36.2 +0.4**
baz=314
D27A Center 76.98 39 P **P 19 49 36.5 +0.7**
baz=315
CFR Carcaliu 76.99 318 ⇓*i*P **P 19 49 35.9 +0.1**
TMUT Trail Mountain 77.02 50 *e*P **P 19 49 37.2 +0.6**
comp=Z,81nm,1.4s
B29A Wagenman Farm, 77.05 37 P **P 19 49 36.6 +0.4**
baz=316
CANT Cankiri 77.06 312 *e*P **P 19 49 35.9 -0.6**
C28A Hausauer Farms 77.09 38 P **P 19 49 36.9 +0.5**
baz=315
KMRS Kahramanmaras 77.13 308 *e*P **P 19 49 36.9 +0.1**
GAZ Gaziantep 77.15 308 *e*P **P 19 49 37.5 +0.4**
GMRC Granite Mounta 77.16 56 P **P 19 49 37.7 +0.5**
baz=309
SAFT Safranbolu 77.18 313 *e*P **P 19 49 36.9 -0.1**
P17A Butcher Ranch, 77.18 49 *e*P **P 19 49 38.1 +0.8**
comp=Z,178nm,1.4s
KOLS Kolonicke sedl 77.18 324 *e*P **P 19 49 37.7 +0.8**
KOLS *e* 19 49 46.0
KOLS *e* 19 52 37.8
KOLS pmax pmax
comp=Z,42nm,1.6s
KOLS MLR MLR
comp=Z,2µm,16.0s
KOLS Kolonicke sedl 77.18 324 *e*P **P 19 49 37.7 +0.8**
KOLS *e*PCP **PcP 19 49 46.0 -1.5**
KOLS *e*PP PP 19 52 37.8 +7.3
KOLS eL L 20 26 58.3
A30A Hoffart Farm, 77.19 36 P **P 19 49 37.2 +0.2**
baz=316
VRI Vrincioaia 77.23 320 ⇓*i*P **P 19 49 39.0 +1.7**
VRI Vrincioaia 77.23 320 P **P 19 49 38.9 +1.7**
MTPU Mount Pierson 77.24 51 *e*P **P 19 49 37.6 -0.3**
comp=Z,104nm,1.3s
LCMT Little Creek M 77.26 53 *e*P **P 19 49 38.5 +0.8**
PLOR Plostina 77.28 320 ⇓*i*P **P 19 49 38.6 +1.1**
PLOR Plostina 77.28 320 P **P 19 49 38.6 +1.1**
F26A Lodgepole 77.29 40 P **P 19 49 38.1 +0.5**
baz=314
STHS Stebnicka Huta 77.30 325 *e*P **P 19 49 39.4 +1.8**
STHS *e* 19 49 47.3
STHS pmax pmax
comp=Z,22nm,1.0s
STHS Stebnicka Huta 77.30 325 *e*P **P 19 49 39.4 +1.8**
STHS *e*PCP **PcP 19 49 47.3 -0.7**
ULM Lac du Bonnet 77.30 34 P **P 19 49 38.0 +0.5**
comp=Z,10.0nm,0.7s,baz=310,slow=6.1,SNR=11
ULM LR LR 20 27 37.3
comp=Z,225nm,18.4s,baz=310,slow=39
ULM Lac du Bonnet 77.30 34 *e*P **P 19 49 37.2 -0.4**
comp=Z,56nm,1.2s
TIRR Tirgusor 77.34 318 ⇓*i*P **P 19 49 37.6 -0.2**
TIRR Tirgusor 77.34 318 P **P 19 49 37.6 -0.2**
OJC Ojcow 77.34 326 *e*P **P 19 49 38.4 +0.6**
OJC Ojcow 77.34 326 *e*P **P 19 49 37.6 -0.2**
OJC pmax pmax
comp=Z,74nm,1.3s
OJC Ojcow 77.34 326 *e*P **P 19 49 37.6 -0.2**
comp=Z,74nm,1.3s
P18A Preston Nutter 77.37 49 *e*P **P 19 49 39.1 +0.6**
G25A Newell 77.37 41 P **P 19 49 38.1 0.0**
baz=314
MDND Maddock 77.37 37 P **P 19 49 38.2 +0.2**
baz=316
PFO Pinyon Flats O 77.38 57 P **P 19 49 38.8 +0.4**
baz=309,SNR=5.2
PFO Pinyon Flats O 77.38 57 *e*P **P 19 49 38.3 -0.1**
PFO pmax pmax
comp=Z,50nm,1.3s
PFO MLR MLR
comp=Z,864nm,22.0s
PFO Pinyon Flats O 77.38 57 *e*P **P 19 49 38.3 -0.1**
comp=Z,50nm,1.3s
PFO LR LR
comp=Z,864nm,22.0s
D28A Regan 77.38 38 P **P 19 49 38.6 +0.5**
baz=315
UZH Uzhgorod 77.39 324 *e*P **P 19 49 38.2 +0.1**
UZH *e* 19 49 47.2
UZH *eS* **S 19 59 21.6 -3.2**
UZH MLR MLR
comp=N,2µm,15.0s
UZH MLR MLR
comp=E,4µm,15.0s
UZH MLR MLR
comp=Z,2µm,15.0s
BELC Belle Mtn. Jos 77.43 56 P **P 19 49 39.3 +0.5**
baz=309,SNR=5.2
E27A Carson 77.43 39 P **P 19 49 39.0 +0.6**
baz=315
K22A Casper 77.46 45 P **P 19 49 39.2 +0.4**
baz=312,SNR=8.2
K22A Casper 77.46 45 *e*P **P 19 49 38.8 0.0**
KNB Kanab 77.52 52 *e*P **P 19 49 41.5 +2.3**
KNB pmax pmax
comp=Z,121nm,1.2s
KNB Kanab 77.52 52 *e*P **P 19 49 41.5 +2.3**
comp=Z,121nm,1.2s
B30A Myrvik Farm, E 77.53 36 P **P 19 49 39.1 +0.3**
baz=316
ARCR ARCALIA 77.54 322 ⇑*i*P **P 19 49 40.9 +2.0**
SRU San Rafael Swe 77.54 49 *e*P **P 19 49 40.2 +0.9**
SRU pmax pmax
comp=Z,72nm,1.0s
SRU San Rafael Swe 77.54 49 *e*P **P 19 49 40.2 +0.9**
comp=Z,72nm,1.0s
PKCU Pink Cliffs 77.55 52 *e*P **P 19 49 40.9 +1.3**
comp=Z,41nm,1.0s
CRVS Cervenica-Dubn 77.57 324 *e*P **P 19 49 39.7 +0.6**
CRVS *e* 19 49 48.4
CRVS Cervenica-Dubn 77.57 324 *e*P **P 19 49 39.7 +0.6**
CRVS *e*PCP **PcP 19 49 48.4 -0.8**
F27A Lemmon 77.60 40 P **P 19 49 39.7 +0.3**
baz=315,SNR=6.0
BR101 Keskin Array S 77.63 311 *e*P **P 19 49 40.5 +0.7**
BR131 Keskin Array S 77.63 311 *e*P **P 19 49 39.9 +0.1**
BRTR Keskin Array B 77.63 311 P **P 19 49 40.5 +0.7**
comp=Z,3.4nm,0.8s,baz=107,slow=3.4,SNR=15
TRPA Tarpa 77.64 323 ⇑*e*P **P 19 49 40.2 +0.7**
H25A Fruitdale 77.67 42 P **P 19 49 40.1 +0.3**
baz=314
MMU Miners Mountai 77.68 51 *e*P **P 19 49 41.7 +1.5**
NIE Niedzica 77.71 325 *e*P **P 19 49 40.9 +1.0**
NIE Niedzica 77.71 325 *e*P **P 19 49 40.9 +1.0**
G26A Maurine 77.71 41 P **P 19 49 40.7 +0.7**
baz=314,SNR=10
E28A Huff 77.76 39 P **P 19 49 40.4 +0.2**
baz=315
RSSD Black Hills 77.79 42 P **P 19 49 41.1 +0.4**
baz=314
RSSD Black Hills 77.79 42 *e*P **P 19 49 40.9 +0.2**
RSSD pmax pmax
comp=Z,205nm,1.9s
RSSD Black Hills 77.79 42 *e*P **P 19 49 40.9 +0.2**
comp=Z,205nm,1.9s
KOZT Kozan 77.79 309 *e*P **P 19 49 40.1 -0.4**
BAR Barrett 77.82 58 *e*P **P 19 49 39.9 -1.0**
comp=Z,34nm,1.1s
DOPR Dopca 77.82 320 ⇑*i*P **P 19 49 42.2 +1.6**
ISR Istrita 77.84 319 ⇑*i*P **P 19 49 41.7 +1.0**
MONP2 Monument Peak 77.85 57 P **P 19 49 42.0 +0.8**
baz=309,SNR=5.4
B31A Greenbush Farm 77.86 36 P **P 19 49 41.1 +0.4**
baz=317
IRM Iron Mountain 77.88 56 P **P 19 49 41.9 +0.8**
baz=310,SNR=6.3
MLR Muntele Rosu 77.88 320 ⇓*i*P **P 19 49 41.4 +0.4**
MLR Muntele Rosu 77.88 320 *e*P **P 19 49 41.6 +0.5**
MLR pmax pmax
comp=Z,71nm,1.5s
MLR Muntele Rosu 77.88 320 *e*P **P 19 49 41.6 +0.5**
comp=Z,71nm,1.5s
MSAB Monastry St. A 77.89 318 ⇑*i*P **P 19 49 41.8 +0.9**
D29A Pettibone, Tap 77.94 38 P **P 19 49 41.3 +0.1**
baz=316
PSN Preselentsi 77.99 317 P **P 19 49 42.1 +0.6**
G27A Dupree 77.99 40 P **P 19 49 41.8 +0.2**
baz=315,SNR=5.7
BC3 Big Chuckawall 78.00 56 P **P 19 49 42.5 +0.6**
baz=310,SNR=6.3
C30A Mose, Pekin 78.00 37 P **P 19 49 41.3 -0.3**
baz=317
I25A Rochford 78.02 42 P **P 19 49 41.9 0.0**
baz=314,SNR=6.8
A32A Rocking H Ranc 78.02 35 P **P 19 49 41.4 -0.1**
baz=318
ANTO Ankara 78.02 312 *e*P **P 19 49 42.1 +0.2**
ANTO pmax pmax
comp=Z,133nm,1.6s
ANTO MLR MLR
comp=Z,91nm,19.0s
ANTO Ankara 78.02 312 *e*P **P 19 49 42.1 +0.2**
comp=Z,133nm,1.6s
ANTO LR LR
comp=Z,91nm,19.0s
LOD Lodumlu 78.03 312 *e*P **P 19 49 42.0 +0.1**
BR231 Keskin MP Arra 78.05 312 *e*P **P 19 49 40.1 -2.0**
W13A Hualapai Mount 78.08 54 *e*P **P 19 49 42.5 0.0**
H26A Fairpoint 78.10 41 P **P 19 49 42.7 +0.5**
baz=314
AFSR Af ar-Bala (A 78.14 312 *e*P **P 19 49 41.5 -1.1**
O20A White River Ci 78.19 47 P **P 19 49 43.3 +0.3**
baz=312
O20A White River Ci 78.19 47 *e*P **P 19 49 43.0 +0.1**
U15A North Rim 78.22 52 *e*P **P 19 49 44.8 +1.6**
F28A McLaughlin 78.22 39 P **P 19 49 43.3 +0.5**
baz=315
E29A Napoleon 78.27 38 P **P 19 49 43.3 +0.2**
baz=316
LANS Liptovska Anna 78.28 326 *e*P **P 19 49 44.7 +1.6**
LANS *e* 19 49 52.2
LANS Liptovska Anna 78.28 326 *e*P **P 19 49 44.7 +1.6**
LANS *e*PCP **PcP 19 49 52.2 -0.1**
C31A Landman Farms, 78.28 36 P **P 19 49 43.0 0.0**
baz=317
TAHT Tahtakopru-Hat 78.29 308 *e*P **P 19 49 42.8 -0.5**
D30A Buchanan 78.30 37 P **P 19 49 43.3 +0.1**
baz=316,SNR=6.0
KECS Kecovo 78.32 325 *e*P **P 19 49 46.2 +2.9**
KECS *e* 19 49 53.6
KECS pmax pmax
comp=Z,4.0nm,1.1s
KECS Kecovo 78.32 325 *e*P **P 19 49 46.2 +2.9**
KECS *e*PCP **PcP 19 49 53.6 +1.1**
OKC Ostrava-Krasne 78.33 327 ⇑*e*P **P 19 49 44.1 +0.8**
OKC *e*PCP **PcP 19 49 52.4 -0.1**
OKC AMS AMS 20 26 50.0
comp=Z,2µm,17.5s
OKC Ostrava-Krasne 78.33 327 *e*P **P 19 49 44.1 +0.8**
OKC *e* 19 49 52.4
OKC MLR MLR
comp=Z,2µm,17.5s
KSP Ksiaz 78.34 328 *e*P **P 19 49 44.2 +0.9**
KSP Ksiaz 78.34 328 *e*P **P 19 49 44.2 +0.9**
B32A Ashes, Strandq 78.38 35 P **P 19 49 43.8 +0.2**
baz=318,SNR=6.6
J25A Sunshine Ranch 78.42 43 P **P 19 49 43.8 -0.2**
baz=314
PDMCI Parker Dam,Lak 78.43 55 P **P 19 49 44.6 +0.5**
baz=310,SNR=5.9
H27A Howes 78.44 41 P **P 19 49 44.4 +0.4**
baz=315,SNR=6.8
I26A New Underwood 78.46 42 P **P 19 49 44.9 +0.6**
baz=314
A33A Warroad 78.49 35 P **P 19 49 44.3 +0.1**
baz=318
Y12C Blythe 78.54 56 P **P 19 49 45.8 +1.1**
baz=310,SNR=6.0
Y12C Blythe 78.54 56 *e*P **P 19 49 45.0 +0.3**
comp=Z,78nm,1.2s
ARR Arges 78.62 320 ⇓*i*P **P 19 49 46.7 +1.6**
MORC Moravsky Berou 78.64 327 *e*P **P 19 49 45.1 +0.1**
MORC pmax pmax
comp=Z,148nm,1.1s
MORC Moravsky Berou 78.64 327 *e*P **P 19 49 45.1 +0.1**
comp=Z,148nm,1.1s
E30A Jud 78.67 38 P **P 19 49 45.4 +0.1**
baz=316,SNR=6.8
DPC Dobruska-Polom 78.71 328 ⇑*i*P **P 19 49 46.3 +0.9**
DPC AMS AMS 20 27 00.0
comp=Z,2µm,18.3s
DPC Dobruska-Polom 78.71 328 ⇑*i*P **P 19 49 46.3 +0.9**
DPC MLR MLR
comp=Z,2µm,18.3s
F29A Eureka 78.71 39 P **P 19 49 45.8 +0.3**
baz=316
UPC Upice 78.71 328 ⇑*e*P **P 19 49 46.6 +1.2**
UPC AMS AMS 20 27 00.0
comp=Z,3µm,17.8s
UPC Upice 78.71 328 *e*P **P 19 49 46.6 +1.2**
UPC MLR MLR
comp=Z,3µm,17.8s
G28A Parade 78.71 40 P **P 19 49 45.8 +0.2**
baz=315
KRLC Kraliky 78.73 328 ⇑*e*P **P 19 49 46.2 +0.7**
KRLC Kraliky 78.73 328 *e*P **P 19 49 46.2 +0.7**
AGMN Agassiz Nation 78.76 35 P **P 19 49 45.7 0.0**
baz=318,SNR=6.6
AGMN Agassiz Nation 78.76 35 *e*P **P 19 49 45.0 -0.7**
comp=Z,71nm,1.4s
AGMN LR LR
comp=Z,490nm,22.0s
PV09 Paradox Valley 78.76 49 *e*P **P 19 49 47.3 +1.0**
GLA Glamis 78.79 56 P **P 19 49 46.9 +0.7**
baz=310
GLA Glamis 78.79 56 *e*P **P 19 49 46.5 +0.3**
GLA Glamis 78.79 56 *e*P **P 19 49 46.5 +0.3**
C32A Crookston 78.81 36 P **P 19 49 46.3 +0.3**
baz=318
CHBY Cihanbeyli 78.82 311 *e*P **P 19 49 45.8 -0.5**
D31A Mcclaflin, Tow 78.83 37 P **P 19 49 46.2 +0.1**
baz=317

YESY Yesilyurt 78.85 310 *e*P P 19 49 46.6 +0.1
I27A Quinn 78.85 41 P P 19 49 47.0 +0.7
baz=315,SNR=10
B33A Robert and Kas 78.90 35 P P 19 49 47.3 +0.9
baz=318
GULT Gulveren 78.94 314 *e*P P 19 49 45.8 -1.1
H28A Mission Ridge 78.94 40 P P 19 49 47.3 +0.4
baz=315
PHWY Pilot Hill 78.96 45 *e*P P 19 49 48.0 +0.7
comp=Z,89nm,1.4s
N23A Red Feather La 78.97 46 P P 19 49 48.2 +0.8
baz=313,SNR=7.0
N23A Red Feather La 78.97 46 *e*P P 19 49 48.5 +1.2
comp=Z,150nm,1.4s
MERS Mersin 78.98 309 *e*P P 19 49 46.6 -0.6
PSZ Piszkesteto 79.00 325⇑*e*P P 19 49 48.0 +0.9
PSZ Piszkesteto 79.00 325 *e*P P 19 49 47.3 +0.1
PSZ MLR MLR
comp=Z,1μm,20.0s
PSZ Piszkesteto 79.00 325 *e*P P 19 49 47.2 +0.1
PSZ LR LR
comp=Z,1μm,20.0s
SVRH Sivrihisar-ESK 79.03 312 *e*P P 19 49 46.6 -0.9
HUMR Humele 79.05 320⇓ *i*P P 19 49 47.9 +0.6
VYHS Vyhne 79.05 325 *e*P P 19 49 47.9 +0.6
VYHS pmax pmax
comp=Z,50nm,2.3s
VYHS Vyhne 79.05 325 *e*P P 19 49 47.9 +0.6
VYHS *e*PP PP 19 52 55.3 +9.2
VYHS *e*L L 20 27 55.2
PV05 Paradox Valley 79.06 49 *e*P P 19 49 48.8 +1.0
F30A Leola 79.09 39 P P 19 49 47.4 -0.2
baz=316
E31A Nome 79.11 37 P P 19 49 47.6 -0.1
baz=317
HRT Hereke 79.15 314 *e*P P 19 49 47.4 -0.6
B34A Aery, Baudette 79.15 34 P P 19 49 47.7 -0.1
baz=319
DGAR Diego Garcia 79.17 251 PFAKE 19 50 00.0 +12
DGAR LR LR
comp=Z,606nm,21.0s
KLYT Kilyos 79.20 315 *e*P P 19 49 47.9 -0.2
KIZT Kizilcal 79.21 312 *e*P P 19 49 47.9 -0.5
BRG Berggiesshubel 79.26 329 *e*P P 19 49 48.5 +0.2
comp=Z,51nm,1.8s
comp=N,3μm,18.4s
comp=E,1μm,20.4s
comp=Z,3μm,18.4s
BRG Berggiesshubel 79.26 329 *e*P P 19 49 48.5 +0.2
BRG pmax pmax
comp=Z,3.0nm,1.8s
BRG MLR MLR
comp=N,51μm,18.4s
BRG MLR MLR
comp=E,3μm,20.4s
BRG MLR MLR
comp=Z,1μm,18.4s
PVCC Panska Ves 79.28 329⇑*e*P P 19 49 49.7 +1.2
PVCC *epP* pP 19 50 03.5 +1.2
PVCC AMS AMS 20 27 20.0
comp=Z,2μm,18.2s
PVCC Panska Ves 79.28 329 *e*P P 19 49 49.7 +1.2
PVCC *e* 19 50 03.5
PVCC MLR MLR
comp=Z,2μm,18.2s
CLL Collm 79.28 330⇑ *i*P P 19 49 48.5 0.0
comp=Z,46nm,1.6s
CLL *i* 19 49 57.8
CLL *i* 19 50 02.1
CLL *i* 19 50 06.4
CLL *e*PP PP 19 52 57.0 +9.1
CLL *e*PPP PPP 19 54 18.0
CLL *e*S S 19 59 52.0 +7.1
CLL *e*PS PnS 20 00 22.0 -11
CLL *e*SS SS 20 05 12.0 +21
CLL *e*SSS SSS 20 09 00.0
CLL Lm MLR 20 29 00.0
comp=N,1μm,20.9s
CLL Lm MLR 20 29 00.0
comp=E,1μm,18.0s
CLL Lm MLR 20 29 00.0
comp=Z,1μm,19.0s
CLL Collm 79.28 330⇑ *i*P P 19 49 48.5 0.0
CLL *i* 19 50 02.1
CLL *i* 19 50 06.4
CLL *e*S S 19 59 52.0 +7.1
CLL pmax pmax
comp=Z,5.0nm,1.6s
CLL MLR MLR
comp=Z,1μm,19.0s
CLL Collm 79.28 330 *e*P P 19 49 48.0 -0.5
comp=Z,38nm,1.1s
ISK Istanbul-Kandi 79.32 315 *e*P P 19 49 47.1 -1.7
PV01 Paradox Valley 79.33 49 *e*P P 19 49 51.5 +2.1
I28A Midland 79.35 41 P P 19 49 49.4 +0.3
baz=315,SNR=9.0
ADVT Abdulvahap 79.38 314 *e*P P 19 49 49.7 +0.5
WUAZ Wupatki 79.38 53 P P 19 49 50.8 +1.3
baz=311,SNR=7.8
WUAZ Wupatki 79.38 53 *e*P P 19 49 50.2 +0.7
comp=Z,93nm,1.2s
WUAZ LR LR
comp=Z,846nm,22.0s
LADK Ladik-KONYA 79.38 311 *e*P P 19 49 49.5 +0.1
H29A Onida 79.38 40 P P 19 49 49.5 +0.3
baz=316
Y14A Wickenburg 79.38 55 *e*P P 19 49 50.3 +0.9
comp=Z,234nm,1.1s
VRAC Vranov 79.39 327⇓ *i*P P 19 49 51.7 +2.6
VRAC Vranov 79.39 327 P P 19 49 51.7 +2.6
BGKT Bogazkoy 79.39 315 *e*P P 19 49 49.3 0.0
F31A Hecla 79.45 38 P P 19 49 49.3 -0.2
baz=317
J27A Elkhorn Farm, 79.45 42 P P 19 49 50.3 +0.6
baz=315
SZH Strazhica 79.45 318 P P 19 49 49.1 -0.5
CAVI Cavuskoy 79.47 314 *e*P P 19 49 49.3 -0.5
CTKS Kestanelik-??a 79.50 315 *e*P P 19 49 49.0 -0.8
G30A Faulkton 79.55 39 P P 19 49 50.1 0.0
baz=316,SNR=8.9
KONT Konya--Tatoy 79.56 311 *e*P P 19 49 49.8 -0.4
SMCO Snowmass 79.56 48 *e*P P 19 49 51.2 +0.5
IZI Iznik 79.59 314 *e*P P 19 49 50.9 +0.4
D33A AnnSam, Waubun 79.63 36 P P 19 49 50.0 -0.4
baz=318
B35A Bob, Littlefor 79.65 34 P P 19 49 50.3 -0.2
baz=320,SNR=6.1
113A Mohawk Valley, 79.65 56 *e*P P 19 49 50.7 -0.1
C34A RKJ Ranch, Bem 79.67 35 P P 19 49 50.3 -0.4
baz=319
GOPC GO Pecny, Ondr 79.67 328⇑*e*P P 19 49 51.8 +1.2
GOPC AMS AMS 20 27 30.0
comp=Z,3μm,21.0s
GOPC GO Pecny, Ondr 79.67 328 *e*P P 19 49 51.8 +1.2
GOPC MLR MLR
comp=Z,3μm,21.0s
JMB Yambol 79.68 317 P P 19 49 51.4 +0.6
PRA Prague 79.69 329 ⇑AMS AMS 20 27 20.0
comp=Z,3μm,21.7s
PRU Pruhonice 79.71 329⇑*e*P P 19 49 51.4 +0.6
PRU *epP* pP 19 50 05.8 +1.1
PRU AMS AMS 20 27 20.0
comp=Z,2μm,20.1s
PRU Pruhonice 79.71 329 *e*P P 19 49 51.4 +0.6
PRU *e* 19 50 05.8
PRU MLR MLR
comp=Z,2μm,20.1s
BUD Budapest 79.72 325⇑*e*P P 19 49 51.3 +0.4
J28A Allard Ranch, 79.72 41 P P 19 49 51.7 +0.6
baz=316,SNR=5.7
PHSR Pinarhisar 79.76 316 *e*P P 19 49 51.7 +0.4
ARMT Armutlu 79.77 315 *e*P P 19 49 51.7 +0.3
I29A Vivian Onida 79.77 40 P P 19 49 51.4 +0.1
baz=316
PVL Pavlikeni 79.80 318 P P 19 49 52.2 +0.8
TREC Trest 79.86 328 ⇑AMS AMS 20 27 20.0
comp=Z,2μm,19.6s
ISCO Idaho Springs 79.90 46 P P 19 49 52.7 +0.2
baz=313,SNR=7.5
ISCO Idaho Springs 79.90 46 *e*P P 19 49 54.1 +1.6
ISCO pmax pmax
comp=Z,93nm,1.4s
ISCO MLR MLR
comp=Z,536nm,20.0s
ISCO Idaho Springs 79.90 46 *e*P P 19 49 54.1 +1.6
comp=Z,93nm,1.4s
ISCO LR LR
comp=Z,536nm,20.0s
BZS Buzias 79.91 322⇓ *i*P P 19 49 52.0 0.0
D34A Park Rapids 79.96 36 P P 19 49 51.8 -0.5
baz=319
MVCO Mesa Verde 79.99 50 P P 19 49 53.5 +0.6
baz=316
MVCO Mesa Verde 79.99 50 *e*P P 19 49 54.5 +1.6
comp=Z,113nm,1.4s
MVCO LR LR
comp=Z,418nm,19.0s
CRLT Corlu 80.00 316 *e*P P 19 49 53.0 +0.5
EDRB Edirne 80.03 317 *e*P P 19 49 53.6 +0.9
EDRB Edirne 80.03 317 P P 19 49 53.3 +0.6
EDRB Edirne 80.03 317 P P 19 49 53.3 +0.6
E33A Westby DABS, E 80.03 36 P P 19 49 52.6 0.0
baz=318,SNR=7.7
C35A Jirik Farms, M 80.04 35 P P 19 49 52.2 -0.5
baz=319
X16A Lo Mia Camp, P 80.05 54 *e*P P 19 49 54.5 +1.2
SUSD Miller 80.14 39 P P 19 49 52.9 -0.4
baz=317
RAYN Ar Rayn 80.18 292 *e*P P 19 49 52.9 -1.0
comp=Z,123nm,1.8s
RAYN LR LR
comp=Z,761nm,19.0s
SHUT Suhut-Afyon 80.20 312 *e*P P 19 49 53.9 0.0
J29A Okreek 80.20 41 P P 19 49 53.8 +0.2
baz=316
TVSB Tavsanli 80.20 313 *e*P P 19 49 51.2 -2.7
G32A Webster 80.25 38 P P 19 49 53.8 -0.1
baz=318
KCTX Karacabey (Bur 80.26 315 *e*P P 19 49 53.6 -0.4
I30A Oacoma 80.29 40 P P 19 49 54.4 +0.3
baz=316
H31A Wolsey 80.35 39 P P 19 49 54.1 -0.3
baz=317
NKC Novy Kostel 80.35 330⇑*e*P P 19 49 55.3 +1.0
NKC AMS AMS 20 28 30.0
comp=Z,2μm,17.9s
NKC Novy Kostel 80.35 330 *e*P P 19 49 55.3 +1.0
NKC MLR MLR
comp=Z,2μm,17.9s
F33A 5 Mile Ranch, 80.39 37 P P 19 49 54.6 0.0
baz=318,SNR=6.8
EDC Edincik 80.47 315 *e*P P 19 49 54.9 -0.2
MDVR Moldovita 80.47 321⇑ *i*P P 19 49 55.0 -0.1
D35A Remer 80.48 35 P P 19 49 55.2 +0.1
baz=320
C36A Pine Crest Far 80.50 34 P P 19 49 54.9 -0.2
baz=320,SNR=6.6
MPEP Malo Peshtene 80.51 319 P P 19 49 56.3 +1.0
DIM Dimitrovgrad 80.52 317 P P 19 49 56.8 +1.5
RKY Sarkoy-Tekirda 80.61 316 *e*P P 19 49 55.5 -0.4
J30A Dallas 80.68 41 P P 19 49 56.6 +0.3
baz=316
ISP Isparta 80.71 312 *e*P P 19 49 53.5 -3.1
ISP Isparta 80.71 312 *e*P P 19 49 56.9 +0.3
ISP pmax pmax
comp=Z,9.0nm,0.8s
ISP Isparta 80.71 312 PFAKE 19 50 10.0 +13
ISP LR LR
comp=Z,769nm,20.0s
KRBG Karabiga-Canak 80.75 315 *e*P P 19 49 56.3 -0.3
CONA Conrad Observa 80.77 327 *i*P P 19 49 57.7 +1.1
comp=Z,28nm,1.4s,SNR=10
KHC Kasperske Hory 80.77 329⇑ *i*P P 19 49 57.0 +0.4
KHC *e*PCP PcP 19 50 05.3 +2.1
KHC AMS AMS 20 28 30.0
comp=Z,3μm,19.2s
KHC Kasperske Hory 80.77 329 *e*P P 19 49 56.7 +0.1
KHC pmax pmax
comp=Z,10.0nm,1.0s
KHC Kasperske Hory 80.77 329 *e*P P 19 49 56.7 +0.1
comp=Z,9.8nm,1.0s
214A Organ Pipe Nat 80.79 56 P P 19 49 57.8 +0.7
baz=311,SNR=7.4
C37A Embarrass 80.80 34 P P 19 49 57.1 +0.4
baz=321
H32A Carlson Farm, 80.83 39 P P 19 49 57.4 +0.3
baz=318
PKSM Mezgay 80.85 324⇑*e*P P 19 49 57.2 +0.2
KDZ Kurdzhali 80.87 317 P P 19 49 58.1 +0.9
PGB Panagyurishte 80.87 319 P P 19 49 58.4 +1.1
X18A Snowflake 80.91 53 *e*P P 19 49 58.7 +1.0
comp=Z,47nm,1.1s
PLD Plovdiv 80.92 318 P P 19 49 57.8 +0.4
EYMN Ely 80.93 33 P P 19 49 57.4 -0.1
baz=321,SNR=8.8
EYMN Ely 80.93 33 *e*P P 19 49 57.2 -0.2
comp=Z,72nm,1.2s
EYMN LR LR
comp=Z,521nm,21.0s
GEC2 GERESS Array S 80.95 328 *e*P P 19 49 57.7 0.0
GEC2 pmax pmax
comp=Z,11nm,1.0s
GEC2 GERESS Array S 80.95 328 *e*P P 19 49 57.7 0.0
comp=Z,11nm,1.0s
GERES GERESS Array B 80.95 328 P P 19 49 57.2 -0.4
comp=Z,2.4nm,0.7s,baz=39,slow=6.0,SNR=16
GERES LR LR 20 29 00.4
comp=Z,3μm,19.1s,baz=31,slow=38
BALB Balikesir 80.95 314 *e*P P 19 49 56.0 -1.7
GEA0 GERESS Array S 80.96 328 *e*P P 19 49 57.4 -0.2
CSS Mathiatis 80.97 308 *e*P P 19 49 48.5 -9.4
CSS Mathiatis 80.97 308 PFAKE 19 50 10.0 +12
CSS LR LR
comp=Z,200nm,22.0s
ERIK Erikli-Kesan 80.98 316 *e*P P 19 49 56.5 -1.2
H33A Prehn Over Nor 81.04 38 P P 19 49 58.4 +0.3
baz=318
OGNE Ogallala 81.07 44 P P 19 49 58.7 +0.3
baz=315,SNR=6.0
OGNE Ogallala 81.07 44 *e*P P 19 49 57.9 -0.5
comp=Z,322nm,1.4s
OGNE LR LR
comp=Z,499nm,21.0s
J31A Geddes 81.08 40 P P 19 49 58.4 0.0
baz=317
D37A Cotton 81.14 34 P P 19 49 58.3 -0.3
baz=320
I32A Karley and Nic 81.17 39 P P 19 49 58.7 -0.1
baz=318
GELI Tayfur-Gelibol 81.19 316 *e*P P 19 49 59.6 +0.7
C38A Sawbill Land. 81.20 33 P P 19 49 58.6 -0.2
baz=321,SNR=9.5
RZN Rozhen 81.21 318 P P 19 50 00.2 +0.9
GRFO Grafenberg 81.26 330 *e*P P 19 49 59.7 +0.6
GRFO pmax pmax
comp=Z,63nm,1.1s
GRFO Grafenberg 81.26 330 *e*P P 19 49 59.7 +0.6
comp=Z,63nm,1.1s
E36A McGregor 81.26 35 P P 19 49 59.1 -0.1
baz=320
VTS Vitosha 81.33 319⇑ *i*P P 19 50 00.4 +0.6
VTS Vitosha 81.33 319 P P 19 50 00.5 +0.6
VTS Vitosha 81.33 319 *e*P P 19 50 00.2 +0.3
VTS pmax pmax
comp=Z,68nm,1.4s
VTS Vitosha 81.33 319 P P 19 50 00.6 +0.7
VTS Vitosha 81.33 319 *e*P P 19 50 00.1 +0.3
comp=Z,68nm,1.4s
SDCO Great Sand Dun 81.38 48 P P 19 50 01.0 +0.7
baz=314,SNR=7.6
SDCO Great Sand Dun 81.38 48 *e*P P 19 50 01.5 +1.1
comp=Z,50nm,1.3s
SDCO LR LR
comp=Z,443nm,19.0s
ARSA Arzberg 81.44 326 *i*P P 19 50 01.3 +1.1
comp=Z,12nm,1.1s
I33A Coleman 81.48 39 P P 19 50 00.4 -0.1
baz=318
BEHE Becsehely 81.49 325⇑*e*P P 19 50 01.3 +0.9
MOA Molln 81.50 327 *i*P P 19 50 01.4 +0.9
comp=Z,16nm,1.5s,SNR=5.3
H34A Spellman Lake, 81.51 38 P P 19 50 00.9 +0.3
baz=319
K31A O'Neill 81.56 41 P P 19 50 01.1 +0.2
baz=317
C39A Grand Marais 81.60 33 P P 19 50 01.4 +0.4
baz=322
E37A Wrenshall 81.61 35 P P 19 50 00.9 -0.1
baz=321
MMB Musoniste 81.79 318 P P 19 50 03.0 +0.8
ECSD EROS Data Cent 81.80 39 P P 19 50 02.3 +0.2
comp=Z,93nm,1.4s
ECSD LR LR
comp=Z,536nm,20.0s
ECSD EROS Data Cent 81.80 39 *e*P P 19 50 01.9 -0.2
comp=Z,71nm,1.2s
ECSD LR LR
comp=Z,590nm,21.0s
L31A Butterfield Fa 81.85 41 P P 19 50 02.8 +0.3
baz=317
TUC Tucson 81.86 55 P P 19 50 03.4 +0.7
baz=312
TUC Tucson 81.86 55 *e*P P 19 50 03.5 +0.8
TUC pmax pmax
comp=Z,52nm,1.3s
TUC MLR MLR
comp=Z,657nm,22.0s
TUC Tucson 81.86 55 *e*P P 19 50 03.5 +0.8
comp=Z,52nm,1.3s
TUC LR LR
comp=Z,657nm,22.0s
NVR Nevrokopi 81.90 318 P P 19 50 02.5 -0.2
NVR Nevrokopi 81.90 318 P P 19 50 02.5 -0.2
KKB Krupnik 81.92 319 P P 19 50 03.8 +1.0
H35A Sunnyside Ranc 81.93 37 P P 19 50 03.1 +0.3
baz=319,SNR=7.4
I34A Hadley 81.94 38 P P 19 50 03.0 +0.2
baz=319
PERS Pernice 82.09 326 *i*P P 19 50 03.9 +0.2
SOKA Soboth 82.09 326 *i*P P 19 50 04.5 +0.8
comp=Z,22nm,1.0s,SNR=12
KSCO Kaye Shedlock' 82.11 45 P P 19 50 04.6 +0.6
baz=315
PRK Paraskevi 82.12 315 P P 19 50 03.6 -0.2
PRK Paraskevi 82.12 315 P P 19 50 03.6 -0.2
PRK Paraskevi 82.12 315 P P 19 50 03.6 -0.2
AYDB Zeytinkoy-Aydi 82.13 313 *e*P P 19 50 03.0 -1.1
SRS Serrai 82.20 318 P P 19 50 04.5 +0.2
MEM Membach 82.41 333 P P 19 50 04.9 -0.3
T25A Trinidad 82.42 48 P P 19 50 06.4 +0.6
baz=314,SNR=7.4
T25A Trinidad 82.42 48 *e*P P 19 50 05.2 -0.6
OBKA Obir 82.43 326 *i*PcP P 19 50 06.9 +1.4
comp=Z,5.2nm,0.6s
H36A Jessenland, He 82.44 37 P P 19 50 06.0 +0.6
baz=320
SPMN Marine on St. 82.46 36 *e*P P 19 50 05.3 -0.2
comp=Z,48nm,1.4s
I35A Creekview Farm 82.49 38 P P 19 50 05.2 -0.5
baz=319
KBA Koelnbreinsper 82.49 327 *i*PcP P 19 50 07.0 +1.1
comp=Z,23nm,1.2s
KNT Kendrikon 82.53 318 P P 19 50 05.9 -0.1
KNT Kendrikon 82.53 318 P P 19 50 05.9 -0.1
KNT Kendrikon 82.53 318 P P 19 50 05.9 -0.1
SOH Sokhos 82.54 318 P P 19 50 05.7 -0.4
OUR Ouranopolis 82.57 317 P P 19 50 06.2 0.0
VAY Valandovo 82.58 319 P P 19 50 06.5 +0.3
VAY Valandovo 82.58 319⇑ *i*P P 19 50 06.7 +0.4
SKO Skopje 82.68 320 P P 19 50 07.6 +0.8
SKO Skopje 82.68 320⇑ *i*P P 19 50 07.8 +1.0
LAZ Ladron 82.70 51 *e*P P 19 50 09.0 +1.7
MYKA Terra Mystica 82.72 327 *i*P P 19 50 07.2 +0.2
comp=Z,6.3nm,0.6s
ANMO Albuquerque 82.74 50 *e*P P 19 50 08.1 +0.6
ANMO pmax pmax
comp=Z,76nm,1.3s
ANMO MLR MLR
comp=Z,562nm,22.0s
ANMO Albuquerque 82.74 50 *e*P P 19 50 08.1 +0.6
comp=Z,76nm,1.3s
ANMO LR LR
comp=Z,562nm,22.0s
BGNE Belgrade 82.76 41 P P 19 50 06.9 -0.3
baz=318
N31A Bailey Ranch, 82.77 42 P P 19 50 07.2 -0.1
baz=317
STU Stuttgart 82.78 331 *e*P P 19 50 06.9 -0.2
STU pmax pmax
comp=Z,31nm,1.0s
STU Stuttgart 82.78 331 *e*P P 19 50 06.9 -0.2
comp=Z,31nm,1.0s
BCLA Clavier 82.81 334 P P 19 50 07.1 -0.2
PLG Polygyros 82.82 317 P P 19 50 07.4 -0.2
PLG Polygyros 82.82 317 P P 19 50 07.4 -0.2
PLG Polygyros 82.82 317 P P 19 50 07.4 -0.2
VISS Visnje 82.86 326 *i*P P 19 50 07.8 +0.2
CWF Charnwood Fore 82.88 339 *e*P P 19 50 06.4 -1.2
comp=Z,38nm,1.3s
BOJS Bojanci 82.91 325 *i*P P 19 50 07.7 -0.2
GRG Griva 82.94 318 *e*P P 19 50 06.8 -1.4
GRG Griva 82.94 318 P P 19 50 07.8 -0.3
GRG Griva 82.94 318 *e*P P 19 50 07.8 -0.3
GRG Griva 82.94 318 *e*P P 19 50 07.8 -0.3
SCHQ Schefferville 82.96 16 P P 19 50 08.0 0.0
comp=Z,5.0nm,0.6s,baz=0.0,slow=9.1,SNR=3.3
SCHQ LR LR 20 32 31.4
comp=Z,400nm,18.0s,baz=318,slow=40
PAIG Paliouri 83.02 317 P P 19 50 08.3 -0.2
PAIG Paliouri 83.02 317 *e*P P 19 50 08.3 -0.2
PAIG Paliouri 83.02 317 *e*P P 19 50 08.3 -0.2
LPM Los Pinos Moun 83.07 51 *e*P P 19 50 10.1 +0.9
BODT Bodrum 83.08 313 *e*P P 19 50 07.0 -1.9
ABTA Abfaltersbach 83.10 328 *i*P P 19 50 09.1 +0.2
comp=Z,10nm,1.0s
I37A Lemond, Waseca 83.11 37 P P 19 50 09.2 +0.2
baz=320,SNR=6.1
JAVS Javornik 83.12 326 *i*P P 19 50 08.6 -0.5
LANF Langenberg 83.13 332 *e*P P 19 50 09.0 0.0
WLF Walferdange 83.16 333 P P 19 50 09.2 +0.2
comp=Z,36nm,2.4s
WLF Walferdange 83.16 333 PFAKE 19 50 20.0 +11
WLF LR LR
comp=Z,2μm,21.0s
BNM Barren Site 83.19 51 *e*P P 19 50 09.5 -0.3
J36A Seneca 1, Swea 83.20 38 P P 19 50 09.2 -0.2
baz=320
RETA Reutte 83.22 329 *i*P P 19 50 10.0 +0.5
comp=Z,30nm,1.4s,SNR=10
K35A Storm Lake 83.23 39 P P 19 50 09.4 -0.2
baz=319
DOU Dourbes 83.33 334 P P 19 50 10.1 +0.2
COWI Conover 83.38 33 *e*P P 19 50 10.2 -0.1
comp=Z,38nm,1.3s
COWI LR LR
comp=Z,601nm,19.0s
PDG Podgorica 83.42 321 P P 19 50 10.4 -0.1
TTG Podgorica 83.42 321 P P 19 50 10.4 -0.1
TTG Podgorica 83.42 321 P P 19 50 10.4 -0.1
319A Douglas 83.43 55 *e*P P 19 50 11.7 +0.7
comp=Z,87nm,1.0s
BFO Black Forest 83.47 331 *e*P P 19 50 10.6 -0.2
BFO pmax pmax
comp=Z,47nm,1.3s
BFO MLR MLR
comp=Z,1μm,19.0s
BFO Black Forest 83.47 331 *e*P P 19 50 10.6 -0.2
comp=Z,48nm,1.3s
BFO LR LR
comp=Z,1μm,19.0s
LIT Litokhoron 83.52 318 P P 19 50 09.9 -1.3
121A Cookes Peak, D 83.58 53 P P 19 50 12.8 +1.0
baz=313
J37A Redenius Farm, 83.58 37 P P 19 50 11.5 +0.1
baz=320
I38A Scanlan Farm, 83.59 36 P P 19 50 11.4 0.0
baz=321
FETA Feichten 83.61 329 *i*PcP P 19 50 12.3 +0.7
comp=Z,26nm,1.1s
OHR Ohrid 83.64 319⇑ *i*P P 19 50 11.7 -0.1
NEO Neokhori 83.72 317 P P 19 50 11.2 -1.0
NEO Neokhori 83.72 317 P P 19 50 11.2 -1.0
URZ Urewera 83.73 153 P P 19 50 13.5 +1.6
comp=Z,3.4nm,0.7s,baz=338,slow=19,SNR=2.8
URZ Urewera 83.73 153 *e*P P 19 50 12.0 +0.1
comp=Z,20nm,1.0s
DAVA Damuels 83.73 329 *i*PcP P 19 50 13.0 +0.7
comp=Z,29nm,1.0s,SNR=10.0
WLS Welschbruch 83.77 332 *e*P P 19 50 11.9 -0.4
CBKS Cedar Bluff 83.82 44 P P 19 50 12.9 +0.1
baz=317
CBKS Cedar Bluff 83.82 44 *e*P P 19 50 12.7 -0.1
CBKS pmax pmax
comp=Z,139nm,1.4s
CBKS MLR MLR
comp=Z,459nm,20.0s
CBKS Cedar Bluff 83.82 44 *e*P P 19 50 12.7 -0.1
comp=Z,139nm,1.4s

CBKS LR LR
comp=Z,459nm,20.0s
P32A Huiting Farm, 83.84 43 P **P 19 50 12.5 -0.3**
baz=317
TIR Tirane 83.93 320 *e*P **P 19 50 12.8 -0.4**
TIR pmax pmax
comp=Z,88nm,1.3s
TIR MLR MLR
comp=Z,3µm,20.0s
TIR Tirane 83.93 320 *e*P **P 19 50 12.8 -0.4**
comp=Z,88nm,1.3s
TIR LR LR
comp=Z,3µm,20.0s
HSIG 83.93 57 *e*P **P 19 50 14.3 +0.9**
comp=Z,57nm,1.2s
K37A Belmond 83.96 38 P **P 19 50 13.1 -0.2**
baz=320
L36A Harm Buss Farm 83.97 39 P **P 19 50 13.4 -0.1**
baz=320
ECH Echery 84.00 332 *e*P **P 19 50 13.7 +0.2**
N34A Lincoln 84.02 41 P **P 19 50 13.7 +0.1**
baz=318
NEST Nestorio 84.03 319 P **P 19 50 12.5 -1.4**
FUORN Ofenpass-Fuorn 84.12 329 *e*P **P 19 50 14.6 +0.2**
comp=Z,71nm,1.0s
THL Klokotos Trika 84.16 318 P **P 19 50 12.9 -1.5**
SRIG Santa Rosalia 84.20 59 *e*P **P 19 50 15.4 +0.6**
comp=Z,70nm,1.3s
MOF Molkerain 84.32 331 *e*P **P 19 50 15.0 -0.2**
Q32A Meitler Ranch, 84.32 43 P **P 19 50 15.1 -0.2**
baz=318
L37A Phoenix Point, 84.39 38 P **P 19 50 15.7 +0.1**
baz=320
M36A Felix, Anita 84.40 39 P **P 19 50 15.5 -0.1**
baz=320
O34A Beatrice 84.41 41 P **P 19 50 15.6 -0.1**
baz=318
THEF They Mntfort 84.42 332 *e*P **P 19 50 14.5 -1.1**
P33A Williams Farm, 84.45 42 P **P 19 50 15.8 -0.1**
baz=318
TUE Stuetta 84.61 329 *e*P **P 19 50 16.5 -0.3**
comp=Z,30nm,1.0s
TUE LR LR
comp=Z,1µm,20.0s
SANT Santorini 84.61 313 PFAKE 19 50 30.0 +13
SANT LR LR
comp=Z,893nm,20.0s
PMOR Pomariorio Ree 84.72 114 *e*T T 21 23 27.3
comp=Z,71nm,0.2s
P34A Walnut Farm, R 84.81 42 P **P 19 50 17.3 -0.4**
baz=318
SCIA State Center 84.82 38 PFAKE 19 50 30.0 +12
SCIA LR LR
comp=Z,823nm,21.0s
LOMF Lomont 84.85 331 *e*P **P 19 50 17.6 -0.2**
M38A Pleasantville 85.20 38 P **P 19 50 19.8 +0.2**
baz=320
P35A Duane Minner, 85.24 41 P **P 19 50 19.8 -0.1**
baz=319
KSU1 Kansas State U 85.26 42 *e*P **P 19 50 19.0 -1.0**
comp=Z,130nm,1.5s
KSU1 LR LR
comp=Z,880nm,20.0s
PPT Papeete 85.30 117 LR LR 20 21 08.9
comp=Z,1µm,21.1s,baz=284,slow=30
PPT2 Papeete2 85.31 117 *e*S **S 20 00 48.2 +0.6**
comp=Z,413nm,26.0s
PPT2 *e*SS **SS 20 06 21.7 -1.8**
comp=Z,199nm,25.8s
PPT2 Papeete2 85.31 117 *e*LR LR 20 16 59.4
comp=Z,3µm,22.5s,baz=315
PPT2 Papeete2 85.31 117 *e*T T 21 24 14.0
comp=Z,18nm,0.3s
JFWS Jewell Farm 85.41 36 *e*P **P 19 50 18.9 -1.7**
JFWS pmax pmax
comp=Z,30nm,1.0s
JFWS MLR MLR
comp=Z,796nm,22.0s
JFWS Jewell Farm 85.41 36 *e*P **P 19 50 18.9 -1.7**
comp=Z,30nm,1.0s
JFWS LR LR
comp=Z,796nm,22.0s
TIAR Tiarei 85.45 117 *e*T T 21 24 23.3
comp=Z,8.9nm,0.3s
T32A Huddler Ranch, 85.45 44 P **P 19 50 21.3 +0.3**
baz=317
LAST Lasithi 85.47 313 P **P 19 50 20.8 -0.4**
LAST Lasithi 85.47 313 *e*P **P 19 50 20.9 -0.2**
comp=Z,73nm,1.0s
SENIN Lac Senin/Sane 85.50 330 *e*P **P 19 50 20.9 -0.4**
comp=Z,31nm,1.1s
R34A Isabella, Hill 85.52 43 P **P 19 50 21.8 +0.5**
baz=318
THZ Tophouse 85.53 157 *e*P **P 19 50 21.2 +0.3**
comp=Z,42nm,1.4s
THZ *e*pP **PcP 19 50 28.8 +5.0**
AMTX Amarillo 85.58 48 *e*P **P 19 50 21.8 0.0**
comp=Z,77nm,1.2s
P36A Good Intent, A 85.59 41 P **P 19 50 21.5 -0.1**
baz=319
MSTX Muleshoe 85.60 49 P **P 19 50 22.7 +0.8**
baz=316,SNR=5.3
MSTX Muleshoe 85.60 49 *e*P **P 19 50 21.8 -0.1**
comp=Z,69nm,1.1s
MNTX Cornudas Mount 85.63 52 P **P 19 50 22.4 +0.4**
baz=314,SNR=6.8
MNTX Cornudas Mount 85.63 52 *e*P **P 19 50 21.7 -0.2**
comp=Z,55nm,1.3s
MNTX LR LR
comp=Z,400nm,20.0s
N38A Joes South For 85.67 39 P **P 19 50 22.3 +0.4**
baz=320
SNZO South Karori 85.67 156 PFAKE 19 50 30.0 +8.5
SNZO LR LR
comp=Z,2µm,20.0s
O37A Wolven Farm, M 85.70 40 P **P 19 50 22.4 +0.3**
baz=320
IDI Anoyia 85.71 313 *e*P **P 19 50 22.5 +0.2**
comp=Z,26nm,1.0s
Q35A Mercer Eighty, 85.74 42 P **P 19 50 22.6 +0.2**
baz=319
N39A Derby Farms, D 85.95 38 P **P 19 50 23.4 +0.1**
baz=321
ITM Ithomi 85.97 316 P **P 19 50 22.2 -1.3**
ITM Ithomi 85.97 316 P **P 19 50 22.2 -1.3**
P37A Lathrop 86.04 40 P **P 19 50 24.0 +0.2**
baz=320
S34A Willow Spring 86.04 43 P **P 19 50 24.2 +0.3**
baz=318
R35A Emporia Munici 86.05 42 P **P 19 50 24.1 +0.2**
baz=319,SNR=9.4
VLC Villacollemand 86.07 327 PFAKE 19 50 40.0 +16
VLC LR LR
comp=Z,1µm,22.0s
IMMV Iera Moni Meta 86.10 314 P **P 19 50 23.1 -1.1**
VLDQ Val d'Or 86.11 25 *e*P **P 19 50 22.9 -1.0**
comp=Z,42nm,1.0s
TAOE Nuku Hiva Isla 86.32 104 *e*S **S 20 00 54.7 -3.0**
comp=Z,413nm,28.3s
TAOE Nuku Hiva Isla 86.32 104 *e*LR LR 20 17 36.0
comp=Z,4µm,32.4s,baz=320
TAOE Nuku Hiva Isla 86.32 104 *e*T T 21 25 09.3
comp=Z,32nm,0.2s
R36A Gordon, Harris 86.41 42 P **P 19 50 25.7 0.0**
baz=319
O39A Kirksville 86.42 39 P **P 19 50 25.9 +0.2**
baz=321
P38A Dawn 86.42 40 P **P 19 50 25.8 +0.1**
baz=320
U33A Lingo Farm, Me 86.44 44 P **P 19 50 26.2 +0.3**
baz=318
S35A Otter Creek Ra 86.47 43 P **P 19 50 26.3 +0.3**
baz=319,SNR=9.7
T34A McClaskey Farm 86.50 44 P **P 19 50 26.5 +0.3**
baz=318
MEH Mehetia 86.55 116 *e*T T 21 25 46.1
comp=Z,147nm,0.2s
DAMY Dhamar 86.62 286 *e*P **P 19 50 25.8 -1.6**
comp=Z,110nm,1.4s
U34A Anderson Ranch 86.75 44 *e*P **P 19 50 25.8 -1.6**
comp=Z,234nm,1.7s
R37A Teagarden Farm 86.77 41 P **P 19 50 27.1 -0.3**
baz=320
S36A Lake Cedric, C 86.82 42 P **P 19 50 28.1 +0.4**
baz=319
BNI Bardonecchia 86.83 330 PFAKE 19 50 40.0 +12
BNI LR LR
comp=Z,3µm,21.0s
Q38A Cooks Store, C 86.89 40 P **P 19 50 28.4 +0.4**
baz=320
P39A Salisbury 86.91 39 P **P 19 50 28.2 +0.1**
baz=321
T35A Sooner Cattle 86.94 43 P **P 19 50 28.7 +0.4**
baz=319
CUC Castrocucco 86.95 322 PFAKE 19 50 40.0 +12
CUC LR LR
comp=Z,845nm,22.0s
TIP Timpagrande 87.12 321 *e*P **P 19 50 28.8 -0.4**
comp=Z,38nm,1.4s
TIP LR LR
comp=Z,2µm,20.0s
Q39A Willow Grove F 87.14 40 P **P 19 50 29.3 +0.1**
baz=321,SNR=6.5
T36A Boggs Farm, Ca 87.17 43 P **P 19 50 29.7 +0.4**
baz=319
LBZ Lake Benmore 87.18 160 *e*P **P 19 50 29.3 +0.3**
comp=Z,43nm,1.2s
S37A Fort Scott 87.19 42 P **P 19 50 29.1 -0.3**
baz=320
PLDF La Plantade 87.19 332 *e*P **P 19 50 29.6 +0.2**
P40A Paris 87.22 39 P **P 19 50 29.8 +0.3**
baz=321
AGO Saint Agoulin 87.30 333 *e*P **P 19 50 31.2 +1.3**
WMOK Wichita Mounta 87.33 46 *e*P **P 19 50 30.2 0.0**
WMOK pmax pmax
comp=Z,48nm,1.4s
WMOK MLR MLR
comp=Z,445nm,22.0s
WMOK Wichita Mounta 87.33 46 *e*P **P 19 50 30.2 0.0**
comp=Z,48nm,1.4s
WMOK LR LR
comp=Z,445nm,22.0s
SSB Saint Sauveur 87.45 331 PFAKE 19 50 40.0 +9.4
SSB LR LR
comp=Z,1µm,22.0s
PYM Petit Puy Mans 87.60 333 *e*P **P 19 50 33.1 +1.7**
Q40A Laux Farm, Aux 87.62 39 P **P 19 50 31.9 +0.3**
baz=321
T37A Cheneyville 18 87.62 42 P **P 19 50 31.5 -0.1**
baz=320
R39A Chumby, Stover 87.67 40 P **P 19 50 31.9 +0.1**
baz=321,SNR=7.1
HDIL Hopedale 87.72 37 P **P 19 50 31.9 0.0**
baz=323
HDIL Hopedale 87.72 37 PFAKE 19 50 40.0 +8.1
HDIL LR LR
comp=Z,462nm,21.0s
S38A Stockton 87.76 41 P **P 19 50 32.3 +0.1**
baz=320
Y33A Hilltop Ranch, 87.95 46 P **P 19 50 33.2 0.0**
baz=318
LBL Lubilhac 87.96 332 *e*P **P 19 50 33.4 +0.3**
S39A Bolivar 88.01 41 P **P 19 50 32.8 -0.6**
baz=321
T38A Diamond 88.02 42 P **P 19 50 33.6 +0.2**
baz=320,SNR=7.7
U37A Salina 88.06 43 P **P 19 50 33.8 +0.1**
baz=320
W35A Tecumseh 88.07 45 P **P 19 50 34.5 +0.8**
baz=319
R40A Maddies Statio 88.07 40 P **P 19 50 33.5 -0.2**
baz=321
TUL1 Leonard 88.08 43 P **P 19 50 34.2 +0.5**
baz=319
V36A Jenks 88.09 44 P **P 19 50 34.1 +0.2**
baz=319
SLBS Sierra La Lagu 88.17 61 *e*P **P 19 50 32.7 -1.7**
comp=Z,32nm,1.3s
CEL Celeste 88.26 320 PFAKE 19 50 50.0 +15
CEL LR LR
comp=Z,2µm,20.0s
LTX Lajitas 88.34 53 *e*P **P 19 50 35.8 +0.5**
LTX Lajitas 88.34 53 *e*P **P 19 50 35.8 +0.5**
TX31 Lajitas Ar. Si 88.34 53 *e*P **P 19 50 34.9 -0.4**
TXAR Lajitas Array 88.34 53 P **P 19 50 35.8 +0.5**
comp=Z,2.0nm,0.7s,baz=294,slow=3.3,SNR=17
TXAR LR LR 20 26 18.8
comp=Z,249nm,21.2s,baz=0.0,slow=33
ABTX Abilene, Hawle 88.38 48 *e*P **P 19 50 35.8 +0.5**
comp=Z,90nm,1.4s
SADO Sadowa 88.42 28 *e*P **P 19 50 33.7 -1.5**
comp=Z,58nm,1.6s
U38A Gravette 88.42 42 P **P 19 50 35.5 +0.1**
baz=319
W36A Wetumka 88.43 44 P **P 19 50 35.7 +0.2**
baz=319
V37A Hulbert 88.45 43 P **P 19 50 35.8 +0.3**
baz=320
Y34A Reagan Ranch, 88.47 46 P **P 19 50 35.9 +0.3**
baz=318
S40A Lebanon 88.49 40 P **P 19 50 36.0 +0.3**
baz=321,SNR=6.7
T39A Clever 88.49 41 P **P 19 50 35.8 0.0**
baz=320
AAM Ann Arbor 88.75 32 PFAKE 19 50 50.0 +13
AAM LR LR
comp=Z,414nm,21.0s
HPIG 88.77 56 *e*P **P 19 50 38.0 +0.6**
comp=Z,43nm,1.3s
HHAR Hobbs 88.77 42 *e*P **P 19 50 36.5 -0.5**
comp=Z,247nm,0.4s
T40A Mansfield 88.83 41 P **P 19 50 37.3 0.0**
baz=321
V38A Canehill 88.85 43 P **P 19 50 38.0 +0.5**
baz=320
SFIN Lafayette 88.86 35 P **P 19 50 37.5 +0.1**
baz=324
SFIN Lafayette 88.86 35 *e*P **P 19 50 37.4 +0.1**
W37B Quinton 88.86 44 P **P 19 50 37.5 +0.1**
baz=319
U39A Green Forest 88.93 42 P **P 19 50 37.8 0.0**
baz=320
233A Rising Star 89.25 48 P **P 19 50 39.6 +0.2**
baz=318
V39A Pettigrew 89.27 42 P **P 19 50 39.6 +0.1**
baz=320
U40A Yellville 89.28 41 P **P 19 50 39.4 0.0**
baz=321
X37A Clayton 89.30 44 P **P 19 50 39.7 +0.2**
baz=319
134A White-Moore Ra 89.31 47 P **P 19 50 39.9 +0.3**
baz=318
TBI Tubuai 89.35 121 *e*S **S 20 01 26.8 +0.8**
comp=Z,572nm,26.5s
TBI Tubuai 89.35 121 *e*LR LR 20 18 20.6
comp=Z,2µm,22.5s,baz=310
TBI Tubuai 89.35 121 *e*T T 21 29 18.8
comp=Z,93nm,0.3s
W38A Poteau 89.39 43 P **P 19 50 40.4 +0.5**
baz=320
X38A Whitesboro 89.53 44 P **P 19 50 41.3 +0.6**
baz=320
234A Clairette 89.70 47 P **P 19 50 42.2 +0.7**
baz=318
333A Richland Sprin 89.71 48 P **P 19 50 42.2 +0.6**
baz=318
Z36A Blue Ridge 89.72 46 P **P 19 50 42.0 +0.5**
baz=319
OLIL Olney 89.72 37 *e*P **P 19 50 41.7 +0.2**
comp=Z,112nm,1.4s
JCT Junction City 89.85 50 P **P 19 50 42.6 +0.4**
baz=317
JCT Junction City 89.85 50 *e*P **P 19 50 42.1 -0.2**
JCT pmax pmax
comp=Z,90nm,1.6s
JCT MLR MLR
comp=Z,558nm,21.0s
JCT Junction City 89.85 50 *e*P **P 19 50 42.0 -0.2**
comp=Z,90nm,1.6s
JCT LR LR
comp=Z,558nm,21.0s
SIUC Southern Illin 90.01 38 *e*P **P 19 50 42.5 -0.3**
comp=Z,71nm,1.1s
X39A Fountain Ranch 90.04 43 P **P 19 50 43.5 +0.5**
baz=320
433A Art 90.07 49 P **P 19 50 43.7 +0.5**
baz=318
WHTX Lake Whitney, 90.10 47 P **P 19 50 43.8 +0.5**
baz=318
WHTX Lake Whitney, 90.10 47 *e*P **P 19 50 42.6 -0.7**
CLTB Caltabellotta 90.10 322 PFAKE 19 50 50.0 +6.7
CLTB LR LR
comp=Z,815nm,21.0s
LONY Lake Ozonia 90.13 25 PFAKE 19 51 00.0 +17
LONY LR LR
comp=Z,763nm,22.0s
334A Lometa 90.14 48 P **P 19 50 43.7 +0.2**
baz=318
PBMO Poplar Bluff 90.16 40 *e*P **P 19 50 43.4 -0.1**
136A Ennis 90.26 46 P **P 19 50 44.2 +0.2**
baz=319
MIAR Mount Ida 90.29 43 P **P 19 50 44.6 +0.4**
baz=320
MIAR Mount Ida 90.29 43 *e*P **P 19 50 44.1 -0.1**
MIAR pmax pmax
comp=Z,98nm,1.6s
MIAR MLR MLR
comp=Z,678nm,19.0s
MIAR Mount Ida 90.29 43 *e*P **P 19 50 44.1 -0.1**
comp=Z,98nm,1.6s
MIAR LR LR
comp=Z,678nm,19.0s
VSL Villasalto 90.32 325 PFAKE 19 51 00.0 +16
VSL LR LR
comp=Z,1µm,19.0s
X201 Greenbrier Sit 90.35 42 *e*P **P 19 50 43.9 -0.5**
comp=Z,114nm,1.6s
X301 Greenbrier Sit 90.37 42 *e*P **P 19 50 44.4 -0.1**
comp=Z,53nm,1.4s
WHAR Wooly Hollow 90.39 42 *e*P **P 19 50 44.5 -0.1**
434A Burnet 90.50 48 P **P 19 50 45.4 +0.2**
baz=318
MMNY Mt. Morris Dam 90.62 28 *e*P **P 19 50 45.5 0.0**
comp=Z,103nm,1.1s
335A Moody 90.64 47 P **P 19 50 46.1 +0.2**
baz=318
ACSO Alum Creek Sta 90.76 33 *e*P **P 19 50 46.2 -0.1**
comp=Z,35nm,0.9s
ACSO LR LR
comp=Z,531nm,21.0s
WDD Wied Dalam 90.81 320 PFAKE 19 51 00.0 +13
WDD LR LR
comp=Z,1µm,20.0s
NCB Newcomb 90.82 25 PFAKE 19 51 00.0 +14
NCB LR LR
comp=Z,955nm,21.0s
534A Blanco 90.96 49 P **P 19 50 47.6 +0.2**
baz=318,SNR=5.1
633A Saathoff Ranch 90.97 50 P **P 19 50 47.6 +0.2**
baz=317
WLAR White Oak Lake 91.20 43 *e*P **P 19 50 47.5 -0.9**
comp=Z,78nm,1.3s
ACCN Adirondack Com 91.53 25 *e*P **P 19 50 49.9 +0.2**
comp=Z,53nm,1.3s
BINY Binghamton 91.78 27 PFAKE 19 51 00.0 +9.0
BINY LR LR
comp=Z,588nm,22.0s
NATX Nacogdoches 91.84 45 PFAKE 19 51 00.0 +8.6
NATX LR LR
comp=Z,675nm,20.0s
WVT Waverly 91.94 38 *e*P **P 19 50 51.4 -0.4**
WVT pmax pmax
comp=Z,20nm,1.3s
WVT Waverly 91.94 38 *e*P **P 19 50 51.4 -0.4**
comp=Z,20nm,1.3s
636A Smothers Creek 92.19 48 P **P 19 50 54.4 +1.3**
baz=318
933A Laredo 92.26 51 P **P 19 50 54.4 +1.0**
baz=317
OXF Oxford 92.46 40 *e*P **P 19 50 53.8 -0.4**
OXF pmax pmax
comp=Z,85nm,1.3s
OXF Oxford 92.46 40 *e*P **P 19 50 53.8 -0.4**
comp=Z,85nm,1.3s
HKT Hockley 92.55 47 *e*P **P 19 50 54.9 +0.3**
HKT pmax pmax
comp=Z,35nm,1.4s
HKT Hockley 92.55 47 *e*P **P 19 50 54.9 +0.3**
comp=Z,35nm,1.4s
KVTX Kingsville 93.14 50 PFAKE 19 51 10.0 +13
KVTX LR LR
comp=Z,379nm,20.0s
KEST Kesra 93.42 323 P **P 19 50 58.0 -0.8**
comp=Z,1.6nm,0.6s,baz=50,slow=7.9,SNR=3.8
KEST LR LR 20 36 37.0
comp=Z,624nm,21.4s,baz=346,slow=38
ZAIG Zacatecas 93.69 57 *e*P **P 19 50 59.0 -1.4**
comp=Z,34nm,1.4s
BLA Blacksburg 94.38 33 PFAKE 19 51 10.0 +6.9
BLA LR LR
comp=Z,534nm,22.0s
PGAV Gavieira, Arco 94.63 338 *e*LR LR 20 24 49.9
comp=Z,727nm,22.0s
CBN Corbin Frederi 94.76 30 PFAKE 19 51 20.0 +15
CBN LR LR
comp=Z,615nm,19.0s
MVO Moncorvo 95.00 337 *e*LR LR 20 25 36.3
comp=Z,1µm,22.0s
ES19 SONSECA Array 95.33 334 *e*P **P 19 51 06.2 -1.2**
ESDC Sonseca Array 95.38 334 P **P 19 51 06.8 -0.8**
comp=Z,0.2nm,0.4s,baz=18,slow=4.6,SNR=4.0
ESDC LR LR 20 39 29.3
comp=Z,1µm,18.9s,baz=20,slow=39
PAB San Pablo 95.62 334 PFAKE 19 51 20.0 +11
PAB LR LR
comp=Z,1µm,21.0s
MTE Manteigas 95.86 337 *e*LR LR 20 24 23.0
comp=Z,977nm,20.0s
MTE Manteigas 95.86 337 PFAKE 19 51 20.0 +10
MTE LR LR
comp=Z,1µm,21.0s
GOGA Godfrey 96.23 37 PFAKE 19 51 20.0 +8.5
GOGA LR LR
comp=Z,585nm,22.0s
BRAL Brewton 96.32 41 PFAKE 19 51 20.0 +8.0
BRAL LR LR
comp=Z,468nm,21.0s
PMRV Marv??o 96.70 337 *e*LR LR 20 27 46.4
comp=Z,861nm,22.0s
CNNC Cliffs of the 97.12 32 PFAKE 19 51 30.0 +14
CNNC LR LR
comp=Z,820nm,20.0s
NHSC New Hope 97.97 35 PFAKE 19 51 30.0 +11
NHSC LR LR
comp=Z,673nm,20.0s
PVAQ Vaqueiros 98.66 336 *e*LR LR 20 27 34.7
comp=Z,2µm,22.0s
RKT Rikitea 99.23 112 *e*SKSac **SKSac 20 02 01.5 +2.1**
comp=Z,384nm,31.4s
RKT *e*SP **SP 20 04 21.5 +1.7**
comp=Z,425nm,29.8s
RKT *e*SS **SS 20 09 40.7 -2.5**
comp=Z,370nm,29.8s
RKT Rikitea 99.23 112 *e*LR LR 20 23 18.9
comp=Z,2µm,24.8s,baz=308
KMBO Kilima Mbogo 102.08 279 PFAKE 19 51 50.0 +12
KMBO LR LR
comp=Z,443nm,21.0s
TEIG Tepich 104.37 48 PFAKE 19 52 00.0 +12
TEIG LR LR
comp=Z,236nm,21.0s
BBSR BB Station 104.44 23 PFAKE 19 52 00.0 +12
BBSR LR LR
comp=Z,419nm,22.0s
TAM Tamanrasset 105.96 319 PFAKE 19 56 20.0
TAM LR LR
comp=Z,838nm,19.0s
GTBY Guantanamo Bay 111.56 38 PFAKE 19 56 30.0
GTBY LR LR
comp=Z,384nm,22.0s
MTDJ Mount Denham 111.83 41 PFAKE 19 56 30.0
MTDJ LR LR
comp=Z,286nm,20.0s
GRTK Grand Turk 111.97 33 PFAKE 19 56 30.0
GRTK LR LR
comp=Z,12348µm,22.0s
JTS JuntasAbangare 114.12 52 PFAKE 19 56 30.0 +7.2
JTS LR LR
comp=Z,299nm,19.0s
SDDR Presa de Saban 114.14 35 PFAKE 19 56 30.0 +7.2
SDDR LR LR
comp=Z,400nm,20.0s
TOA1 Torodi Ar. Sit 115.97 316 *e*PKPdf **PKPdf 19 56 26.1 -0.2**
TOA0 Torodi Ar. Sit 115.97 316 *e*PKPdf **PKPdf 19 56 25.0 -1.3**
TORD Torodi Ar. Bea 115.97 316 PKP **PKPdf 19 56 26.1 -0.2**
comp=Z,1.4nm,0.9s,baz=33,slow=2.4,SNR=6.0
SJG San Juan 117.05 30 PFAKE 19 56 40.0 +12
SJG LR LR
comp=Z,387nm,22.0s
LSZ Lusaka 117.85 273 PFAKE 19 56 40.0 +10

LSZ					LR	LR			
	comp=Z,379nm,21.0s								
BCIP	**Isla Barro Col**	**118.06**	**48**		PFAKE			19 56 40.0	+10
BCIP					LR	LR			
	comp=Z,344nm,21.0s								
PAYG	**Puerto Ayora**	**118.80**	**64**		PFAKE			19 56 40.0	+8.2
PAYG					LR	LR			
	comp=Z,647nm,19.0s								
ANWB	**Willy Bob**	**119.05**	**26**		PFAKE			19 56 40.0	+7.8
ANWB					LR	LR			
	comp=Z,404nm,22.0s								
FDF	**Fort de France**	**122.00**	**27**		PFAKE			19 56 50.0	+12
FDF					LR	LR			
	comp=Z,421nm,22.0s								
SDV	**Santo Domingo**	**123.24**	**40**	*e*PKPdf		**PKPdf**		**19 56 39.2**	**-1.4**
SDV					LR	LR			
	comp=Z,218nm,20.0s								
GRGR	**Grenville**	**124.22**	**28**		PFAKE			19 56 50.0	+7.8
GRGR					LR	LR			
	comp=Z,255nm,21.0s								
DBIC	**Dimbokro**	**124.85**	**319**	PKP		**PKPdf**		**19 56 41.8**	**-1.7**
	comp=Z,1.4nm,0.5s,baz=337,slow=4.1,SNR=5.1								
LBTB	**Lobatse**	**125.32**	**265**	*e*PKIKP		**PKPdf**		**19 56 45.5**	**+1.4**
LBTB	**Lobatse**	**125.32**	**265**	*e*PKPdf		**PKPdf**		**19 56 45.5**	**+1.4**
OTAV	**Otavalo**	**125.97**	**53**	PFAKE				19 57 00.0	+14
OTAV					LR	LR			
	comp=Z,322nm,20.0s								
BOSA	**Boshof**	**127.41**	**261**	PKP		**PKPdf**		**19 56 48.3**	**+0.3**
	comp=Z,3.9nm,1.0s,baz=56,slow=1.8,SNR=3.7								
TSUM	**Tsumeb**	**128.34**	**276**	PFAKE				19 57 00.0	+10
TSUM					LR	LR			
	comp=Z,556nm,22.0s								
QSPA	**South Pole Qui**	**129.12**	**180**	*e*PKPdf		**PKPdf**		**19 56 50.1**	**+0.1**
QSPA					LR	LR			
	comp=Z,942nm,22.0s								
SUR	**Sutherland**	**132.54**	**259**	PFAKE				19 57 10.0	+12
SUR					LR	LR			
	comp=Z,768nm,21.0s								
NNA	**Nana**	**136.16**	**62**	PFAKE				19 57 20.0	+15
NNA					LR	LR			
	comp=Z,307nm,20.0s								
PTGA	**Pitinga**	**136.62**	**33**	PFAKE				19 57 20.0	+14
PTGA					LR	LR			
	comp=Z,37µm,20.0s								
SAML	**Samuel**	**142.25**	**43**	*e*PKPdf		**PKPdf**		**19 57 16.0**	**+0.1**
SAML					LR	LR			
	comp=Z,344nm,20.0s								
SNAA	**Sanae**	**143.12**	**198**	*e*PKIKP		**PKPdf**		**19 57 15.1**	**-0.7**
SNAA	**Sanae**	**143.12**	**198**	*e*PKPdf		**PKPdf**		**19 57 15.1**	**-0.7**
SHEL	**Horse Pasture**	**143.42**	**300**	PFAKE				19 57 30.0	+12
SHEL					LR	LR			
	comp=Z,431nm,19.0s								
LPAZ	**La Paz**	**145.09**	**57**	PKPbc		**PKPab**		**19 57 21.3**	**+0.1**
	comp=Z,3.7nm,0.7s,baz=354,slow=4.7,SNR=17								
LPAZ	**La Paz**	**145.09**	**57**	*e*PKPbc		**PKPbc**		**19 57 20.1**	**-1.0**
PB11	**IPOC Station P**	**146.50**	**63**	*e*PKPdf		**PKPdf**		**19 57 23.0**	**-0.3**
RCBR	**Riachuelo**	**146.54**	**356**	*e*PKPdf		**PKPbc**		**19 57 24.8**	**-0.1**
RCBR					LR	LR			
	comp=Z,429nm,20.0s								
PB01	**IPOC Station P**	**147.47**	**65**	*e*PKPdf		**PKPdf**		**19 57 24.8**	**0.0**
LCO	**Las Campanas**	**151.20**	**79**	*e*PKPbc		**PKPbc**		**19 57 36.4**	**-0.4**
LCO					LR	LR			
	comp=Z,784nm,22.0s								
BDFB	**Brasilia**	**154.78**	**23**	PKPab		**PKPab**		**19 57 58.9**	**-0.9**
	comp=Z,4.0nm,0.7s,baz=294,slow=4.8,SNR=4.6								
CPUP	**Villa Florida**	**159.26**	**57**	PKPab		**PKPab**		**19 58 20.1**	**+1.2**
	comp=Z,2.5nm,0.9s,baz=337,slow=5.7,SNR=3.1								
CPUP	**Villa Florida**	**159.26**	**57**	*e*PKIKP		**PKPdf**		**19 57 43.2**	**+1.7**
CPUP	**Villa Florida**	**159.26**	**57**	*e*PKPdf		**PKPdf**		**19 57 43.1**	**+1.7**
CPUP					PKPab	**PKPab**		**19 58 20.1**	**+1.2**
TRQA	**Tornquist**	**161.27**	**94**	PFAKE				19 57 50.0	+6.6
TRQA					LR	LR			
	comp=Z,794nm,22.0s								
SPB	**Sao Paulo**	**162.35**	**30**	PFAKE				19 58 00.0	+15
SPB					LR	LR			
	comp=Z,483nm,20.0s								

*ISCJB **12** 19:40:46.8±0.2,46˚21N±0˚01×7˚24E±0˚02,h12km±2km, Error ellipse: s-maj=2.5km s-min=2.1km az=173.9*
*CSEM **12** 19:40:47.5±0.1,46˚19N×7˚29E,h10km, ML2.3/26, Error ellipse: s-maj=1.6km s-min=1.4km az=85.0*
*ZUR **12** 19:40:48.1,46˚21N×7˚33E,h6km±1km, ML1.8/13*
*GEN **12** 19:40:48.6,46˚16N×7˚36E,h12km,ML1.5*
*IASPEI **12** 19:40:48.5±0.9,46˚20N±0˚02×7˚32E±0˚02,h6km±5km, Error ellipse: s-maj=2.5km s-min=2.3km az=4.8, GT5 selection from ISC bulletin GT5 identified by Bond˚ jr and McLaughlin (2009) selection criteria Bond˚ jr and McLaughlin, A new ground truth data set for seismic studies, Seism. Res. Let., 80, 465-472, 2009*
*STR **12** 19:40:48.3±0.3,46˚17N×7˚33E,h5km,MI2.2, Error ellipse: s-maj=0.0km s-min=0.0km az=0.0*
*LDG **12** 19:40:48.3±0.0,46˚20N×7˚32E,h6km,Md2.4/3,MI2.3/23, Error ellipse: s-maj=0.9km s-min=0.7km az=95.0*
*ROM **12** 19:40:49.0±0.2,46˚17N×7˚43E,h10km±2km,Md1.9/3, MI1.7/1, Error ellipse: s-maj=4.1km s-min=2.1km az=83.0*

ISC 12 19:40:48.3±0.8, 46˚20N±0˚01×7˚32E±0˚01, h11km±4km, n124, σ1§18/189, 11C-14D, Switzerland

Code	Station Name	Δ°	AZ°	Phase ID			Time		Res
				Op		ISC	h	m	s	ISC
SIOM	**Sion-Mayennets**	**0.04**	**40**	⇑*i*Pg		**Pg**	**19**	**40**	**49.7**	**-0.7**
SIOM	**Sion-Mayennets**	**0.04**	**40**	⇑*i*Pg		**Pg**	**19**	**40**	**49.7**	**-0.7**
SIOO	**Sion-Ophtalmol**	**0.06**	**49**	⇑*i*Pg		**Pg**	**19**	**40**	**50.0**	**-0.5**
SIOO	**Sion-Ophtalmol**	**0.06**	**49**	⇑*i*Pg		**Pg**	**19**	**40**	**50.0**	**-0.5**
DIX	**Grande Dixence**	**0.13**	**153**	Pg		**Pg**	**19**	**40**	**51.7**	**+0.1**
DIX				Sg		**Sg**	**19**	**40**	**53.8**	**-0.3**
DIX	**Grande Dixence**	**0.13**	**153**	⇑*i*Pg		**Pg**	**19**	**40**	**51.5**	**-0.1**
	1µm,0.3s									
DIX				*i* Sg		**Sg**	**19**	**40**	**53.7**	**-0.3**
	1µm,0.3s									
DIX	**Grande Dixence**	**0.13**	**153**	⇑*i*Pg		**Pg**	**19**	**40**	**51.5**	**-0.1**
	1µm,0.3s									
DIX				*i* Sg		**Sg**	**19**	**40**	**53.7**	**-0.3**
	1µm,0.3s									
GRYON	**Gryon**	**0.16**	**290**	⇓*i*Pg		**Pg**	**19**	**40**	**51.7**	**-0.2**
	219nm,0.1s									
GRYON				*e*Sg		**Sg**	**19**	**40**	**53.7**	**-0.8**
	219nm,0.1s									
GRYON	**Gryon**	**0.16**	**290**	⇓*i*Pg		**Pg**	**19**	**40**	**51.7**	**-0.2**
	219nm,0.1s									
GRYON				*e*Sg		**Sg**	**19**	**40**	**53.7**	**-0.8**
	219nm,0.1s									
SENIN	**Lac Senin/Sane**	**0.17**	**354**	⇑*i*Pg		**Pg**	**19**	**40**	**51.6**	**-0.6**
	562nm,0.2s									
SENIN				*i* Sg		**Sg**	**19**	**40**	**53.9**	**-1.0**
	562nm,0.2s									
SENIN	**Lac Senin/Sane**	**0.17**	**354**	⇑*i*Pg		**Pg**	**19**	**40**	**51.6**	**-0.6**
	562nm,0.2s									
SENIN				*i* Sg		**Sg**	**19**	**40**	**53.9**	**-1.0**
	562nm,0.2s									
VANNI	**Vissoie, Val d**	**0.19**	**86**	⇓*i*Pg		**Pg**	**19**	**40**	**52.4**	**-0.1**
	425nm,0.4s									
VANNI	**Vissoie, Val d**	**0.19**	**86**	⇓*i*Pg		**Pg**	**19**	**40**	**52.4**	**-0.1**
	425nm,0.4s									
SALAN	**Lac Salanfe**	**0.25**	**258**	⇓*i*Pg		**Pg**	**19**	**40**	**53.5**	**0.0**
	67nm,0.2s									
SALAN				*i* Sg		**Sg**	**19**	**40**	**56.9**	**-0.2**
	67nm,0.2s									
SALAN	**Lac Salanfe**	**0.25**	**258**	⇓*i*Pg		**Pg**	**19**	**40**	**53.5**	**0.0**
	67nm,0.2s									
SALAN				*i* Sg		**Sg**	**19**	**40**	**56.9**	**-0.2**
	67nm,0.2s									
LKBD	**Leukerbad**	**0.28**	**48**	*e*Pg		**Pg**	**19**	**40**	**53.8**	**-0.4**
	116nm,0.2s									
LKBD				*i* Sg		**Sg**	**19**	**40**	**57.5**	**-0.5**
	116nm,0.2s									
LKBD	**Leukerbad**	**0.28**	**48**	*e*Pg		**Pg**	**19**	**40**	**53.8**	**-0.4**
	116nm,0.2s									
LKBD				*i* Sg		**Sg**	**19**	**40**	**57.5**	**-0.5**
	116nm,0.2s									
LKBD2	**Leukerbad 2**	**0.28**	**51**	⇓*i*Pg		**Pg**	**19**	**40**	**53.8**	**-0.4**
LKBD2				*e*Sg		**Sg**	**19**	**40**	**57.7**	**-0.4**
LKBD2	**Leukerbad 2**	**0.28**	**51**	⇓*i*Pg		**Pg**	**19**	**40**	**53.8**	**-0.4**
LKBD2				*e*Sg		**Sg**	**19**	**40**	**57.7**	**-0.4**
AIGLE	**Aigle**	**0.29**	**299**	*i* Pg		**Pg**	**19**	**40**	**54.0**	**-0.3**
	156nm,0.1s									
AIGLE	**Aigle**	**0.29**	**299**	*i* Pg		**Pg**	**19**	**40**	**54.0**	**-0.3**
	156nm,0.1s									
EMBD	**Embd, Matterta**	**0.35**	**87**	⇓*i*Pg		**Pg**	**19**	**40**	**55.2**	**-0.2**
	117nm,0.2s									
EMBD	**Embd, Matterta**	**0.35**	**87**	⇓*i*Pg		**Pg**	**19**	**40**	**55.2**	**-0.2**
	117nm,0.2s									
LAUCH	**Lauchernalp**	**0.38**	**55**	*e*Sg		**Sg**	**19**	**40**	**57.6**	**-3.4**
	387nm,0.2s									
OG01	**Vacheresse**	**0.46**	**287**	Pg		**Pg**	**19**	**40**	**57.5**	**+0.1**
OG01				Sg		**Sg**	**19**	**41**	**04.4**	**+0.8**
OG01	**Vacheresse**	**0.46**	**287**	Pg		**Pg**	**19**	**40**	**57.5**	**+0.1**
OG01				Sg		**Sg**	**19**	**41**	**04.4**	**+0.8**
MMK	**Mattmark**	**0.47**	**108**	Pg		**Pg**	**19**	**40**	**57.1**	**-0.5**
MMK				Sg		**Sg**	**19**	**41**	**03.3**	**-0.5**
MMK	**Mattmark**	**0.47**	**108**	Pg		**Pg**	**19**	**40**	**57.1**	**-0.5**
MMK				Sg		**Sg**	**19**	**41**	**03.3**	**-0.5**
SIMPL	**Simplonpass**	**0.48**	**85**	⇓*i*Pg		**Pg**	**19**	**40**	**57.9**	**+0.1**
	98nm,0.4s									
SIMPL	**Simplonpass**	**0.48**	**85**	⇓*i*Pg		**Pg**	**19**	**40**	**57.9**	**+0.1**
	98nm,0.4s									
SATI	**Passo dei Sala**	**0.50**	**130**	Pg		**Pg**	**19**	**40**	**57.9**	**-0.2**
SATI				Sg		**Pn**	**19**	**41**	**04.1**	**+2.3**
	53nm,0.2s									
SATI	**Passo dei Sala**	**0.50**	**130**	P		**Pg**	**19**	**40**	**57.7**	**-0.4**
SATI	**Passo dei Sala**	**0.50**	**130**	Pg		**Pg**	**19**	**40**	**57.9**	**-0.2**
SATI				Sg		**Pn**	**19**	**41**	**04.1**	**+2.3**
	53nm,0.2s									
SATI	**Passo dei Sala**	**0.50**	**130**	*e*Sg		**Pg**	**19**	**40**	**58.0**	**-0.2**
	521nm,0.2s									
SATI	**Passo dei Sala**	**0.50**	**130**	⇑*i*Pg		**Pn**	**19**	**41**	**04.1**	**+2.3**
	521nm,0.2s									
WIMIS	**Wimmis**	**0.51**	**24**	⇑*i*Pg		**Pb**	**19**	**40**	**59.6**	**+0.2**
	125nm,0.1s									
WIMIS	**Wimmis**	**0.51**	**24**	⇑*i*Pg		**Pb**	**19**	**40**	**59.6**	**+0.2**
	125nm,0.1s									
FIESA	**Fiescheralp**	**0.59**	**66**	⇓*i*Pg		**Pb**	**19**	**41**	**00.7**	**-0.2**
	47nm,0.2s									
FIESA	**Fiescheralp**	**0.59**	**66**	⇓*i*Pg		**Pb**	**19**	**41**	**00.7**	**-0.2**
	47nm,0.2s									
CIRO	**Champorcher**	**0.62**	**164**	P		**Pg**	**19**	**40**	**59.2**	**-1.2**
RSL	**Roselend**	**0.70**	**224**	Pg		**Pg**	**19**	**41**	**02.0**	**0.0**
RSL				Sg		**Sg**	**19**	**41**	**10.5**	**-0.7**
RSL	**Roselend**	**0.70**	**224**	Pg		**Pg**	**19**	**41**	**02.0**	**0.0**
RSL				Sg		**Sg**	**19**	**41**	**10.5**	**-0.7**
LSD	**Lago del Serru**	**0.75**	**190**	P		**Pg**	**19**	**41**	**02.3**	**-0.5**
LSD				S		**Sg**	**19**	**41**	**11.6**	**-1.1**
LSD	**Lago del Serru**	**0.75**	**190**	*e*Pn		**Pg**	**19**	**41**	**02.6**	**-0.2**
	47nm,0.4s									
LPL	**La Plagne**	**0.80**	**211**	*e*Pg		**Pg**	**19**	**41**	**03.7**	**0.0**
LPL				*e*Sg		**Sg**	**19**	**41**	**14.0**	**-0.1**
	5.4nm,0.2s									
LPL	**La Plagne**	**0.80**	**211**	*e*Pg		**Pg**	**19**	**41**	**03.7**	**0.0**
LPL				*e*Sg		**Sg**	**19**	**41**	**14.0**	**-0.1**
	2.7nm,0.2s									
LPG	**La Plagne**	**0.81**	**210**	*e*Pg		**Pg**	**19**	**41**	**03.8**	**-0.1**
LPG				*e*Sg		**Sg**	**19**	**41**	**14.3**	**-0.2**
	6.3nm,0.2s									
LPG	**La Plagne**	**0.81**	**210**	*e*Pg		**Pg**	**19**	**41**	**03.8**	**-0.1**
LPG				*e*Sg		**Sg**	**19**	**41**	**14.3**	**-0.2**
	3.2nm,0.2s									
CABF	**La Chapelle**	**0.95**	**296**	*e*Pg		**Pg**	**19**	**41**	**06.0**	**-0.6**
CABF	**La Chapelle**	**0.95**	**296**	*e*Pn		**Pb**	**19**	**41**	**06.9**	**0.0**
CABF				*e*Sg		**Sg**	**19**	**41**	**18.2**	**-0.8**
	9.4nm,0.2s									
CABF	**La Chapelle**	**0.95**	**296**	*e*Pg		**Pg**	**19**	**41**	**06.0**	**-0.6**
CABF	**La Chapelle**	**0.95**	**296**	*e*Pn		**Pb**	**19**	**41**	**06.9**	**0.0**
CABF				*e*Sg		**Sg**	**19**	**41**	**18.2**	**-0.8**
	4.7nm,0.2s									
LOMF	**Lomont**	**1.20**	**344**	Pg		**Pg**	**19**	**41**	**11.8**	**+0.3**
LOMF				Sg		**Sn**	**19**	**41**	**28.4**	**+0.8**
LOMF	**Lomont**	**1.20**	**344**	Pg		**Pg**	**19**	**41**	**11.8**	**+0.3**
LOMF				Sg		**Sn**	**19**	**41**	**28.4**	**+0.8**
BBS	**Basel-Blauen**	**1.27**	**6**	Pg		**Pg**	**19**	**41**	**13.3**	**+0.5**
BBS				Sg		**Sn**	**19**	**41**	**30.7**	**+1.4**
MBDF	**Montbardon**	**1.52**	**195**	*e*Pn		**Pn**	**19**	**41**	**15.1**	**-0.6**
MBDF	**Montbardon**	**1.52**	**195**	*e*Pg		**Pb**	**19**	**41**	**16.8**	**+0.1**
MBDF				*e*Sg		**Sb**	**19**	**41**	**36.5**	**+0.5**
	3.2nm,0.3s									
MBDF	**Montbardon**	**1.52**	**195**	*e*Pn		**Pn**	**19**	**41**	**15.1**	**-0.6**
MBDF	**Montbardon**	**1.52**	**195**	*e*Pg		**Pb**	**19**	**41**	**16.8**	**+0.1**
MBDF				*e*Sg		**Sb**	**19**	**41**	**36.5**	**+0.5**
	1.6nm,0.3s									
ORIF	**Oris-en-Rattie**	**1.63**	**219**	*e*Pn		**Pn**	**19**	**41**	**16.4**	**-0.7**
ORIF	**Oris-en-Rattie**	**1.63**	**219**	*e*Pg		**Pb**	**19**	**41**	**18.9**	**+0.4**
ORIF				*e*Sg		**Sb**	**19**	**41**	**39.7**	**+0.5**
	5.5nm,0.4s									
ORIF	**Oris-en-Rattie**	**1.63**	**219**	*e*Pn		**Pn**	**19**	**41**	**16.4**	**-0.7**
ORIF	**Oris-en-Rattie**	**1.63**	**219**	*e*Pg		**Pb**	**19**	**41**	**18.9**	**+0.4**
ORIF				*e*Sg		**Sb**	**19**	**41**	**39.7**	**+0.5**
	2.8nm,0.4s									
HINF	**Hinteralfeld**	**1.65**	**349**	*e*Pn		**Pn**	**19**	**41**	**16.2**	**-1.2**
HINF	**Hinteralfeld**	**1.65**	**349**	*e*Pg		**Pb**	**19**	**41**	**18.9**	**+0.1**
HINF				*e*Sg		**Sb**	**19**	**41**	**40.2**	**+0.5**
	4.6nm,0.2s									
HINF	**Hinteralfeld**	**1.65**	**349**	*e*Pn		**Pn**	**19**	**41**	**16.2**	**-1.2**
HINF	**Hinteralfeld**	**1.65**	**349**	*e*Pg		**Pb**	**19**	**41**	**18.9**	**+0.1**
HINF				*e*Sg		**Sb**	**19**	**41**	**40.2**	**+0.5**
	2.3nm,0.2s									
MOF	**Molkenrain**	**1.66**	**356**	Pn		**Pn**	**19**	**41**	**17.5**	**0.0**
MOF	**Molkenrain**	**1.66**	**356**	Pg		**Pn**	**19**	**41**	**17.5**	**0.0**
FELD	**Feldberg im Sc**	**1.74**	**15**	Pg		**Pb**	**19**	**41**	**20.8**	**+0.3**
HAU	**Haudompre**	**1.93**	**340**	*e*Pn		**Pn**	**19**	**41**	**20.2**	**-0.9**
HAU	**Haudompre**	**1.93**	**340**	*e*Pg		**Pb**	**19**	**41**	**23.7**	**+0.2**
HAU				*e*Sg		**Sb**	**19**	**41**	**48.7**	**+1.1**
	6.5nm,0.3s									
HAU	**Haudompre**	**1.93**	**340**	*e*Pn		**Pn**	**19**	**41**	**20.2**	**-0.9**
HAU	**Haudompre**	**1.93**	**340**	*e*Pg		**Pb**	**19**	**41**	**23.7**	**+0.2**
HAU				*e*Sg		**Sb**	**19**	**41**	**48.7**	**+1.1**
	3.2nm,0.3s									
CDF	**Champ du Feu**	**2.22**	**359**	*e*Pn		**Pn**	**19**	**41**	**24.2**	**-1.0**
CDF	**Champ du Feu**	**2.22**	**359**	*e*Pg		**Pb**	**19**	**41**	**29.3**	**+0.8**
CDF				*e*Sg		**Sb**	**19**	**41**	**57.9**	**+1.9**
	2.1nm,0.2s									
CDF	**Champ du Feu**	**2.22**	**359**	*e*Pn		**Pn**	**19**	**41**	**24.2**	**-1.0**
CDF	**Champ du Feu**	**2.22**	**359**	*e*Pg		**Pb**	**19**	**41**	**29.3**	**+0.8**
CDF				*e*Sg		**Sb**	**19**	**41**	**57.9**	**+1.9**
	1.0nm,0.2s									
SBF	**Sospel**	**2.33**	**178**	*e*Pn		**Pn**	**19**	**41**	**25.8**	**-1.0**
SBF	**Sospel**	**2.33**	**178**	*e*Pg		**Pg**	**19**	**41**	**31.8**	**-1.3**
SBF				*e*Sg		**Sg**	**19**	**42**	**01.8**	**-1.5**
	4.4nm,0.3s									
SBF	**Sospel**	**2.33**	**178**	*e*Pn		**Pn**	**19**	**41**	**25.8**	**-1.0**
SBF	**Sospel**	**2.33**	**178**	*e*Pg		**Pg**	**19**	**41**	**31.8**	**-1.3**
SBF				*e*Sg		**Sg**	**19**	**42**	**01.8**	**-1.5**
	2.2nm,0.3s									
SMF	**Signal de Mont**	**2.45**	**282**	*e*Pn		**Pn**	**19**	**41**	**27.3**	**-1.0**
SMF	**Signal de Mont**	**2.45**	**282**	*e*Pg		**Pb**	**19**	**41**	**33.7**	**+1.3**
SMF				*e*Sg		**Sg**	**19**	**42**	**05.1**	**-1.9**
	2.9nm,0.2s									
SMF	**Signal de Mont**	**2.45**	**282**	*e*Pn		**Pn**	**19**	**41**	**27.3**	**-1.0**
SMF	**Signal de Mont**	**2.45**	**282**	*e*Pg		**Pb**	**19**	**41**	**33.7**	**+1.3**
SMF				*e*Sg		**Sg**	**19**	**42**	**05.1**	**-1.9**
	1.5nm,0.2s									
SFTF	**Sexfontaines**	**2.54**	**323**	*e*Pn		**Pn**	**19**	**41**	**28.5**	**-1.1**
	baz=142									
SFTF	**Sexfontaines**	**2.54**	**323**	*e*Pg		**Pb**	**19**	**41**	**35.1**	**+1.1**
	baz=142									
SFTF				*e*Sg		**Sb**	**19**	**42**	**07.8**	**+2.5**
	5.1nm,0.3s,baz=139									
SFTF	**Sexfontaines**	**2.54**	**323**	*e*Pn		**Pn**	**19**	**41**	**28.5**	**-1.1**
SFTF	**Sexfontaines**	**2.54**	**323**	*e*Pg		**Pb**	**19**	**41**	**35.1**	**+1.1**
SFTF				*e*Sg		**Sb**	**19**	**42**	**07.8**	**+2.5**
	2.5nm,0.3s									
SMRF	**Simiane la Rot**	**2.54**	**210**	*e*Pn		**Pn**	**19**	**41**	**28.8**	**-0.8**
SMRF	**Simiane la Rot**	**2.54**	**210**	*e*Pg		**Pb**	**19**	**41**	**35.5**	**+1.5**
SMRF				*e*Sg		**Sg**	**19**	**42**	**08.3**	**-1.7**
	1.0nm,0.3s									
SMRF	**Simiane la Rot**	**2.54**	**210**	*e*Pn		**Pn**	**19**	**41**	**28.8**	**-0.8**
SMRF	**Simiane la Rot**	**2.54**	**210**	*e*Pg		**Pb**	**19**	**41**	**35.5**	**+1.5**
SMRF				*e*Sg		**Sg**	**19**	**42**	**08.3**	**-1.7**
	0.5nm,0.3s									
PAGF	**Fort de Pagny**	**2.60**	**336**	*e*Pn		**Pn**	**19**	**41**	**29.4**	**-0.9**
PAGF	**Fort de Pagny**	**2.60**	**336**	*e*Pg		**Pb**	**19**	**41**	**36.3**	**+1.4**
PAGF				*e*Sg		**Sg**	**19**	**42**	**09.6**	**-2.1**
	1.6nm,0.3s,baz=160									
PAGF	**Fort de Pagny**	**2.60**	**336**	*e*Pn		**Pn**	**19**	**41**	**29.4**	**-0.9**
PAGF	**Fort de Pagny**	**2.60**	**336**	*e*Pg		**Pb**	**19**	**41**	**36.3**	**+1.4**
PAGF				*e*Sg		**Sg**	**19**	**42**	**09.6**	**-2.1**
	0.8nm,0.3s									
LOR	**Lormes**	**2.61**	**295**	*e*Pn		**Pn**	**19**	**41**	**29.6**	**-0.9**
	baz=121									
LOR	**Lormes**	**2.61**	**295**	*e*Pg		**Pb**	**19**	**41**	**36.7**	**+1.5**
	baz=120									
LOR				*e*Sg		**Sb**	**19**	**42**	**09.6**	**+2.3**
	3.0nm,0.3s,baz=127									
LOR	**Lormes**	**2.61**	**295**	*e*Pn		**Pn**	**19**	**41**	**29.6**	**-0.9**
LOR	**Lormes**	**2.61**	**295**	*e*Pg		**Pb**	**19**	**41**	**36.7**	**+1.5**
LOR				*e*Sg		**Sb**	**19**	**42**	**09.6**	**+2.3**
	1.5nm,0.3s									
FRF	**La Foret Royal**	**2.68**	**191**	*e*Pn		**Pn**	**19**	**41**	**30.6**	**-0.8**
FRF	**La Foret Royal**	**2.68**	**191**	*e*Pg		**Pb**	**19**	**41**	**37.9**	**+1.6**
FRF				*e*Sg		**Sg**	**19**	**42**	**12.6**	**-1.8**
	0.9nm,0.3s									
FRF	**La Foret Royal**	**2.68**	**191**	*e*Pn		**Pn**	**19**	**41**	**30.6**	**-0.8**
FRF	**La Foret Royal**	**2.68**	**191**	*e*Pg		**Pb**	**19**	**41**	**37.9**	**+1.6**
FRF				*e*Sg		**Sg**	**19**	**42**	**12.6**	**-1.8**
	0.4nm,0.3s									
SSF	**Saint Saulge**	**2.77**	**290**	*e*Pn		**Pn**	**19**	**41**	**31.6**	**-1.1**
SSF	**Saint Saulge**	**2.77**	**290**	*e*Pg		**Pb**	**19**	**41**	**39.4**	**+1.6**
SSF				*e*Sg		**Sg**	**19**	**42**	**15.0**	**-2.2**
	1.7nm,0.3s									
SSF	**Saint Saulge**	**2.77**	**290**	*e*Pn		**Pn**	**19**	**41**	**31.6**	**-1.1**
SSF	**Saint Saulge**	**2.77**	**290**	*e*Pg		**Pb**	**19**	**41**	**39.4**	**+1.6**
SSF				*e*Sg		**Sg**	**19**	**42**	**15.0**	**-2.2**
	0.9nm,0.3s									
MEZF	**Maizieres J'vi**	**2.77**	**327**	*e*Pn		**Pn**	**19**	**41**	**31.7**	**-1.0**
MEZF				*e*Sg		**Sg**	**19**	**42**	**15.1**	**-2.3**
	6.3nm,0.6s,baz=147									
MEZF	**Maizieres J'vi**	**2.77**	**327**	*e*Pn		**Pn**	**19**	**41**	**31.7**	**-1.0**
MEZF				*e*Sg		**Sg**	**19**	**42**	**15.1**	**-2.3**
	3.2nm,0.6s									
AVF	**Avril sur Loir**	**2.81**	**284**	*e*Pn		**Pn**	**19**	**41**	**32.1**	**-1.1**
AVF	**Avril sur Loir**	**2.81**	**284**	*e*Pg		**Pb**	**19**	**41**	**40.2**	**+1.7**
AVF				*e*Sg		**Sg**	**19**	**42**	**16.1**	**-2.3**
	2.2nm,0.3s									
AVF	**Avril sur Loir**	**2.81**	**284**	*e*Pn		**Pn**	**19**	**41**	**32.1**	**-1.1**
AVF	**Avril sur Loir**	**2.81**	**284**	*e*Pg		**Pb**	**19**	**41**	**40.2**	**+1.7**
AVF				*e*Sg		**Sg**	**19**	**42**	**16.1**	**-2.3**
	1.1nm,0.3s									
LMR	**La Mourre**	**2.92**	**192**	*e*Pn		**Pn**	**19**	**41**	**33.8**	**-0.9**
LMR	**La Mourre**	**2.92**	**192**	*e*Pg		**Pg**	**19**	**41**	**42.5**	**-1.8**
LMR				*e*Sg		**Sg**	**19**	**42**	**19.9**	**-2.2**
	1.1nm,0.3s									
LMR	**La Mourre**	**2.92**	**192**	*e*Pn		**Pn**	**19**	**41**	**33.8**	**-0.9**
**L

NPS	**Neapolis**	**1.14**	**14**	P	**Pg**	**20 01 57.7**	**-0.4**
NPS				S	**Sg**	**20 02 12.9**	**0.0**
NPS	**Neapolis**	**1.14**	**14**	P	**Pg**	**20 01 57.7**	**-0.4**
NPS				S	**Sg**	**20 02 12.9**	**0.0**
NPS	**Neapolis**	**1.14**	**14**	P	**Pg**	**20 01 57.5**	**-0.6**
NPS				AML	AML	20 02 23.0	
	comp=N,793µm,0.5s						
NPS				AML	AML	20 02 28.2	
	comp=E,1054µm,0.7s						
IACM	**Heraklion**	**1.16**	**351**	P	**Pb**	**20 01 59.0**	**+0.1**
IACM				S	**Sb**	**20 02 14.6**	**+0.3**
IACM	**Heraklion**	**1.16**	**351**	P	**Pb**	**20 01 59.0**	**+0.1**
IACM				S	**Sb**	**20 02 14.6**	**+0.3**
IDI	**Anoyia**	**1.18**	**344**	Pn	**Pg**	**20 01 58.1**	**-0.8**
	comp=E,9.4nm,0.3s,baz=157,slow=17,SNR=86						
IDI				Sn	**Sg**	**20 02 13.1**	**-1.1**
	comp=E,54nm,0.3s,baz=237,slow=17,SNR=51						
IDI	**Anoyia**	**1.18**	**344**	P	**Pg**	**20 01 58.1**	**-0.8**
IDI				S	**Sb**	**20 02 14.6**	**-0.3**
IDI	**Anoyia**	**1.18**	**344**	P	**Pg**	**20 01 58.1**	**-0.8**
IDI				S	**Sb**	**20 02 14.9**	**0.0**
IDI	**Anoyia**	**1.18**	**344**	P	**Pg**	**20 01 58.0**	**-0.9**
IDI				S	**Sb**	**20 02 14.9**	**0.0**
IDI				AML	AML	20 02 16.7	
	comp=E,1576µm,0.4s						
IDI				AML	AML	20 02 19.3	
	comp=N,969µm,0.4s						
GVD	**Gavdhos**	**1.20**	**305**	P	**Pg**	**20 01 59.1**	**-0.3**
GVD				S	**Sn**	**20 02 17.3**	**+0.7**
GVD	**Gavdhos**	**1.20**	**305**	P	**Pg**	**20 01 59.2**	**-0.2**
GVD				S	**Sn**	**20 02 17.0**	**+0.4**
GVD	**Gavdhos**	**1.20**	**305**	P	**Pg**	**20 01 59.2**	**-0.2**
GVD				S	**Sn**	**20 02 17.0**	**+0.4**
GVD				AML	AML	20 02 20.4	
	comp=E,5354µm,0.4s						
GVD				AML	AML	20 02 21.6	
	comp=N,5180µm,0.4s						
ZKR	**Zakros**	**1.23**	**38**	P	**Pg**	**20 01 59.8**	**0.0**
ZKR				S	**Sb**	**20 02 16.2**	**0.0**
ZKR	**Zakros**	**1.23**	**38**	P	**Pg**	**20 01 59.8**	**0.0**
ZKR				S	**Sb**	**20 02 16.2**	**0.0**
ZKR	**Zakros**	**1.23**	**38**	P	**Pb**	**20 02 00.2**	**+0.2**
ZKR				S	**Sb**	**20 02 16.8**	**+0.6**
ZKR				AML	AML	20 02 25.8	
	comp=E,1100µm,0.6s						
ZKR				AML	AML	20 02 30.1	
	comp=N,878µm,0.7s						
VAM	**Vamos**	**1.54**	**325**	P	**Pn**	**20 02 04.4**	**-0.1**
VAM				S	**Sn**	**20 02 25.9**	**+1.0**
VAM	**Vamos**	**1.54**	**325**	P	**Pn**	**20 02 04.4**	**-0.1**
VAM				S	**Sn**	**20 02 25.9**	**+1.0**
IMMV	**Iera Moni Meta**	**1.69**	**321**	P	**Pn**	**20 02 07.1**	**+0.5**
IMMV				S	**Sn**	**20 02 28.8**	**+0.2**
IMMV	**Iera Moni Meta**	**1.69**	**321**	P	**Pb**	**20 02 07.8**	**-0.1**
IMMV				S	**Sg**	**20 02 30.6**	**0.0**
IMMV	**Iera Moni Meta**	**1.69**	**321**	P	**Pb**	**20 02 07.8**	**-0.1**
IMMV				S	**Sg**	**20 02 30.6**	**0.0**
IMMV				AML	AML	20 02 38.1	
	comp=E,1457µm,0.7s						
IMMV				AML	AML	20 02 47.0	
	comp=N,1224µm,0.8s						
ANKY	**Antikythira Is**	**2.36**	**317**	P	**Pn**	**20 02 15.6**	**-0.2**
ANKY	**Antikythira Is**	**2.36**	**317**	P	**Pn**	**20 02 15.6**	**-0.2**
MHLO	**Agia Marina, M**	**2.63**	**344**	P	**Pn**	**20 02 20.3**	**+0.8**
MHLO	**Agia Marina, M**	**2.63**	**344**	P	**Pn**	**20 02 20.3**	**+0.8**
KYTH	**Kithira**	**2.81**	**320**	P	**Pn**	**20 02 23.3**	**+1.3**
VLI	**Veliai**	**3.20**	**324**	P	**Pn**	**20 02 28.3**	**+1.0**
VLI	**Veliai**	**3.20**	**324**	P	**Pn**	**20 02 28.3**	**+1.0**
KRND	**KRANIDI**	**3.66**	**332**	P	**Pn**	**20 02 36.2**	**+2.5**
KRND	**KRANIDI**	**3.66**	**332**	P	**Pn**	**20 02 36.2**	**+2.5**
DID	**Didima**	**3.74**	**334**	P	**Pn**	**20 02 36.3**	**+1.6**
DID	**Didima**	**3.74**	**334**	P	**Pn**	**20 02 36.3**	**+1.6**
VLY	**Voula,Athens**	**3.88**	**342**	P	**Pn**	**20 02 39.0**	**+2.3**
VLY	**Voula,Athens**	**3.88**	**342**	P	**Pn**	**20 02 39.0**	**+2.3**
PYL	**PYLOS**	**3.98**	**314**	P	**Pn**	**20 02 40.4**	**+2.4**
PYL	**PYLOS**	**3.98**	**314**	P	**Pn**	**20 02 40.4**	**+2.4**
ITM	**Ithomi**	**4.08**	**319**	P	**Pn**	**20 02 40.1**	**+0.7**
ITM	**Ithomi**	**4.08**	**319**	P	**Pn**	**20 02 40.1**	**+0.7**
TRIP	**Tripoli**	**4.16**	**325**	P	**Pn**	**20 02 43.0**	**+2.4**
TRIP	**Tripoli**	**4.16**	**325**	P	**Pn**	**20 02 43.0**	**+2.4**
GUR	**Goura**	**4.47**	**329**	P	**Pn**	**20 02 46.5**	**+1.7**
GUR	**Goura**	**4.47**	**329**	P	**Pn**	**20 02 46.5**	**+1.7**
KLV	**Kalavryta, Ach**	**4.64**	**328**	P	**Pn**	**20 02 48.0**	**+0.8**
KLV	**Kalavryta, Ach**	**4.64**	**328**	P	**Pn**	**20 02 48.0**	**+0.8**
MMAI	**Mount Meron Ar**	**8.52**	**95**	Pn	**Pn**	**20 03 40.6**	**+0.2**
	comp=N,0.5nm,0.3s,baz=269,slow=11,SNR=2.9						
MMAI				Sn	**Sn**	**20 05 13.0**	**-4.0**
	comp=N,0.6nm,0.3s,baz=340,slow=7.1,SNR=2.0						
BRTR	**Keskin Array B**	**8.69**	**48**	Pn	**Pn**	**20 03 44.0**	**+1.1**
	comp=N,0.1nm,0.3s,baz=235,slow=10.0,SNR=3.0						
EIL	**Elat**	**9.35**	**116**	Pn	**Pn**	**20 03 52.5**	**+0.7**
	comp=N,1.2nm,0.3s,baz=349,slow=20,SNR=12						
AKASG	**Malin Array Be**	**16.79**	**9**	Pn	**Pn**	**20 05 30.6**	**-1.4**
	comp=N,0.4nm,0.3s,baz=202,slow=11,SNR=5.7						
GERES	**GERESS Array B**	**17.02**	**333**	Pn	**Pn**	**20 05 34.6**	**-0.5**
	comp=N,0.1nm,0.3s,baz=165,slow=7.9,SNR=3.4						
ESDC	**Sonseca Array**	**23.97**	**292**	P	**P**	**20 06 50.3**	**-1.5**
	comp=N,0.8nm,0.6s,baz=86,slow=9.1,SNR=9.0						
TORD	**Torodi Ar. Bea**	**29.93**	**231**	P	**P**	**20 07 46.6**	**+1.1**
	comp=N,1.1nm,0.6s,baz=40,slow=9.0,SNR=7.3						
MKAR	**Makanchi Array**	**44.25**	**56**	P	**P**	**20 09 47.8**	**+1.1**
	comp=N,0.8nm,0.6s,baz=286,slow=5.7,SNR=11						
ZALV	**Zalesovo Beam**	**45.63**	**45**	P	**P**	**20 09 58.0**	**+0.5**
	comp=N,0.5nm,0.6s,baz=271,slow=9.5,SNR=3.1						
SONM	**Songino Array**	**60.04**	**50**	P	**P**	**20 11 45.5**	**+1.2**
	comp=N,0.5nm,0.7s,baz=280,slow=8.2,SNR=7.0						
YKA	**Yellowknife Ar**	**78.44**	**342**	P	**P**	**20 13 36.2**	**-1.7**
	comp=N,0.1nm,0.6s,baz=33,slow=5.3,SNR=2.9						

*IDC **12** 20:06:26.9±1.4, 43°.62N×105°.48W, h0km, mb4.4/1, mb1 4.3/4, mb1mx3.5/49, mbtmp4.1/4, ML3.5/4, MS4.0/2, Ms1 4.1/2, ms1mx3.2/56, Error ellipse: s-maj=34.1km s-min=9.3km az=154.0*

*ISCJB **12** 20:06:27.8±0.2, 43°.60N±0°.02×105°.28W±0°.03, h0km, mb4.6/1, MS4.7/1, Error ellipse: s-maj=3.8km s-min=2.4km az=154.6*

*NEIC **12** 20:06:28.3±0.4, 43°.63N×105°.16W, h0km, ML3.5, Error ellipse: s-maj=5.0km s-min=4.6km az=57.0, Suspected Mining explosion.*

NEIC 78 km [49 miles] SSE of Gillette.

ISC 12 20:06:27.8±0.7, **43°.63N**±0°.04×**105°.27W**±0°.03, **h0**km, **n78,** σ1**44**/80, **Wyoming**

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
RSSD	**Black Hills**	**1.02**	**61**	P		**Pg**	**20 06 47.6**	**+0.3**
	baz=239							
RSSD	**Black Hills**	**1.02**	**61**	*e*Pg		**Pg**	**20 06 47.4**	**+0.1**
J25A	**Sunshine Ranch**	**1.10**	**102**	P		**Pb**	**20 06 49.5**	**-0.2**
	baz=284							
I25A	**Rochford**	**1.18**	**70**	P		**Pg**	**20 06 50.3**	**-0.1**
	baz=250							
K22A	**Casper**	**1.34**	**223**	P		**Pg**	**20 06 53.0**	**-0.6**
	baz=45							
K22A	**Casper**	**1.34**	**223**	*e*Pn		**Pg**	**20 06 52.8**	**-0.8**
H25A	**Fruitdale**	**1.56**	**50**	Pb		**Pn**	**20 06 57.2**	**+0.3**
	baz=229,SNR=52							
J26A	**Sides Ranch, S**	**1.63**	**101**	Pg		**Pg**	**20 06 59.4**	**+0.4**
	baz=283							
J26A				S		**Sg**	**20 07 21.5**	**+1.3**
	baz=283							
I26A	**New Underwood**	**1.79**	**76**	Pb		**Pb**	**20 07 01.2**	**-0.4**
	baz=257							
G25A	**Newell**	**2.05**	**40**	Pb		**Pn**	**20 07 05.2**	**+1.6**
	baz=219							
G25A				Sb		**Sb**	**20 07 33.6**	**+1.6**
	baz=219							
H26A	**Fairpoint**	**2.05**	**60**	Pb		**Pb**	**20 07 05.8**	**-0.2**
	baz=241							
PHWY	**Pilot Hill**	**2.33**	**183**	*e*Pn		**Pn**	**20 07 09.2**	**+1.4**
I27A	**Quinn**	**2.37**	**78**	Pb		**Pb**	**20 07 11.0**	**-0.4**
	baz=260							
I27A				Sb		**Sg**	**20 07 43.4**	**-0.5**
	baz=260							
H27A	**Howes**	**2.51**	**65**	Pb		**Pb**	**20 07 13.4**	**-0.3**
	baz=247,SNR=15							
G26A	**Maurine**	**2.53**	**48**	P		**Pn**	**20 07 11.9**	**+1.6**
	baz=229,SNR=85							
G26A				Sb		**Sb**	**20 07 47.5**	**+1.6**
	baz=229							
F25A	**Bowman**	**2.63**	**29**	P		**Pn**	**20 07 13.2**	**+1.6**
	baz=208,SNR=40							
N23A	**Red Feather La**	**2.78**	**191**	*e*Pn		**Pn**	**20 07 15.7**	**+1.8**
G27A	**Dupree**	**2.96**	**53**	P		**Pn**	**20 07 17.2**	**+1.1**
	baz=234,SNR=11							
LAO	**LASA Array**	**3.13**	**348**	*e*Pn		**Pn**	**20 07 20.3**	**+1.9**
E25A	**Miller Ranch,**	**3.16**	**24**	P		**Pn**	**20 07 20.4**	**+1.6**
	baz=204,SNR=8.4							
RLMT	**Red Lodge**	**3.23**	**299**	*e*Pn		**Pn**	**20 07 20.6**	**+0.6**
PD31	**Pinedale Array**	**3.25**	**256**	*e*Pn		**Pn**	**20 07 21.1**	**+0.8**
PDAR	**Pinedale Array**	**3.25**	**256**	Pn		**Pn**	**20 07 21.2**	**+0.9**
	4.2nm,0.3s,baz=78,slow=18,SNR=83							
PDAR				Lg		Lg	20 08 02.5	
	3.3nm,0.3s,baz=73,slow=31,SNR=4.5							
BW06	**Boulder Array**	**3.25**	**256**	*e*Pn		**Pn**	**20 07 21.0**	**+0.7**
E26A	**Carlson Angus**	**3.46**	**34**	P		**Pn**	**20 07 24.1**	**+1.1**
	baz=215,SNR=6.3							
OGNE	**Ogallala**	**3.60**	**137**	*e*Pn		**Pn**	**20 07 27.5**	**+2.4**
D25A	**Fairfield**	**3.77**	**21**	P		**Pn**	**20 07 29.1**	**+1.8**
	baz=201,SNR=11							
GCMT	**Greycliff**	**3.80**	**306**	*e*Pn		**Pn**	**20 07 28.4**	**+0.5**
LKWY	**Lake**	**3.81**	**286**	*e*Pn		Pn	20 07 31.4	+3.4
ISCO	**Idaho Springs**	**3.84**	**184**	*e*Pn		**Pn**	**20 07 31.5**	**+3.0**
LOHW	**Long Hollow**	**3.87**	**272**	*e*Pn		**Pn**	**20 07 30.8**	**+2.0**
H17A	**Grant Village**	**3.90**	**283**	*e*Pn		**Pn**	**20 07 31.5**	**+2.2**
FLWY	**Flagg Ranch**	**3.95**	**278**	*e*Pn		**Pn**	**20 07 31.3**	**+1.4**
MOOW	**Moose Ponds**	**3.97**	**274**	*e*Pn		**Pn**	**20 07 31.9**	**+1.7**
SNOW	**Snow King Moun**	**3.99**	**269**	*e*Pn		**Pn**	**20 07 32.2**	**+1.7**
REDW	**Red Top Meadow**	**4.07**	**268**	*e*Pn		**Pn**	**20 07 33.7**	**+2.1**
YFT	**Old Faithful**	**4.09**	**283**	*e*Pn		**Pn**	**20 07 33.8**	**+1.9**
IMW	**Indian Meadow**	**4.11**	**276**	*e*Pn		**Pn**	**20 07 34.4**	**+2.2**
O20A	**White River Ci**	**4.14**	**213**	*e*Pn		**Pn**	**20 07 34.0**	**+1.5**
FXWY	**Fox Creek**	**4.18**	**272**	*e*Pn		**Pn**	**20 07 34.7**	**+1.6**
YMR	**Madison River**	**4.23**	**286**	*e*Pn		**Pn**	**20 07 34.7**	**+1.0**
YMC	**Maple Creek**	**4.28**	**287**	*e*Pn		**Pn**	**20 07 35.3**	**+1.0**
AHID	**Auburn Hatcher**	**4.35**	**260**	*e*Pn		**Pn**	**20 07 37.3**	**+1.9**
QLMT	**Earthquake Lak**	**4.58**	**287**	*e*Pn		Pn	20 07 42.6	+4.0
SMCO	**Snowmass**	**4.63**	**197**	*e*Pn		**Pn**	**20 07 41.1**	**+1.6**
Q24A	**Divide**	**4.67**	**179**	*e*Pn		**Pn**	**20 07 39.8**	**-0.1**
DGMT	**Dagmar**	**4.89**	**8**	*e*Pn		**Pn**	**20 07 44.4**	**+1.7**
BOZ	**Bozeman (W)**	**4.96**	**296**	*e*Pn		**Pn**	**20 07 45.9**	**+2.2**
KSCO	**Kaye Shedlock'**	**5.03**	**156**	*e*Pn		**Pn**	**20 07 44.6**	**0.0**
HWUT	**Hardware Ranch**	**5.07**	**249**	*e*Pn		**Pn**	**20 07 46.1**	**+0.9**
TCUT	**Toone Canyon**	**5.20**	**243**	*e*Pn		**Pn**	**20 07 49.4**	**+2.3**
EGMT	**Eagleton**	**5.39**	**326**	*e*Pn		Pn	20 07 53.3	+3.7
P18A	**Preston Nutter**	**5.47**	**225**	*e*Pn		**Pn**	**20 07 52.6**	**+1.8**
JLU	**Jordanelle**	**5.50**	**239**	*e*Pn		**Pn**	**20 07 52.4**	**+1.1**
LRM	**Limekiln Ridge**	**5.56**	**296**	*e*Pn		**Pn**	**20 07 53.6**	**+1.5**
HRY	**Holter Researc**	**5.56**	**306**	*e*Pn		**Pn**	**20 07 52.7**	**+0.8**
MCMT	**McKenzie Canyo**	**5.58**	**285**	*e*Pn		**Pn**	**20 07 51.4**	**-0.8**
SPUT	**South Promonto**	**5.79**	**249**	*e*Pn		**Pn**	**20 07 56.2**	**+1.0**
P17A	**Butcher Ranch,**	**5.84**	**226**	*e*Pn		**Pn**	**20 07 56.6**	**+0.7**
SDCO	**Great Sand Dun**	**5.88**	**182**	*e*Pn		**Pn**	**20 07 58.0**	**+1.5**
SDCO				*e*Pg		**Pg**	**20 08 21.7**	**+1.1**
SDCO				*e*Sg		**Sg**	**20 09 36.2**	**-0.7**
PV09	**Paradox Valley**	**5.90**	**211**	*e*Pn		**Pn**	**20 07 55.0**	**-1.8**
MPU	**Maple Canyon**	**5.97**	**235**	*e*Pn		**Pn**	**20 07 58.8**	**+1.2**
S22A	**4UR Ranch, Cre**	**6.00**	**192**	*e*Pn		**Pn**	**20 07 55.9**	**-2.3**
SRU	**San Rafael Swe**	**6.00**	**223**	*e*Pn		**Pn**	**20 07 58.9**	**-0.9**
PV01	**Paradox Valley**	**6.04**	**206**	*e*Pn		**Pn**	**20 07 59.6**	**+1.0**
TMUT	**Trail Mountain**	**6.22**	**228**	*e*Pn		**Pn**	**20 08 02.4**	**+1.3**
ECSD	**EROS Data Cent**	**6.28**	**86**	*e*Pg		Pg	20 08 24.5	-3.6
ECSD				*e*Sg		**Sg**	**20 09 46.0**	**-3.4**
CHMT	**Chamberlain Mo**	**6.52**	**303**	*e*Pn		**Pn**	**20 08 05.2**	**+0.1**
T25A	**Trinidad**	**6.52**	**174**	*e*Pn		**Pn**	**20 08 03.6**	**-1.6**
DUG	**Dugway, Tooele**	**6.59**	**241**	*e*Pn		**Pn**	**20 08 07.9**	**+1.8**
SWMT	**Swartz Lake**	**7.25**	**305**	*e*Pn		**Pn**	**20 08 15.3**	**+0.3**
MSU	**Marysvale**	**7.31**	**228**	*e*Pn		**Pn**	**20 08 17.7**	**+1.7**
YBMT	**Yellow Bay**	**7.43**	**308**	*e*Pn		**Pn**	**20 08 18.1**	**+0.5**
ULM	**Lac du Bonnet**	**9.22**	**41**	Pn		**Pn**	**20 08 40.2**	**-1.7**
	1.4nm,0.3s,baz=231,slow=12,SNR=12							
TKL	**Tuckaleechee C**	**18.34**	**108**	P		**Pn**	**20 10 43.1**	**-0.5**
	1.2nm,0.3s,baz=294,slow=12,SNR=6.6							
TKL				LR		LR	20 17 57.0	
	comp=Z,128nm,21.8s,baz=198,slow=37							
YKA	**Yellowknife Ar**	**19.67**	**347**	P		**P**	**20 10 57.3**	**-0.7**
	0.1nm,0.3s,baz=156,slow=10.0,SNR=6.0							
ARCES	**ARCESS Array B**	**61.52**	**18**	P		**P**	**20 16 45.3**	**-0.6**
	4.1nm,0.9s,baz=335,slow=7.9,SNR=3.8							
PLCA	**Paso Flores**	**89.62**	**154**	LR		LR	20 58 42.7	
	comp=Z,284nm,18.7s,baz=345,slow=35							

*CSEM **12** 20:07:08.7, 39°.03N×29°.03W, h5km, ML2.6*

PDA 12 20:07:08.7±0.8, **39°.03N**×**29°.03W, h5**km, **MD3.5, ML2.6, Error ellipse: s-maj=6.4km s-min=3.6km az=100.0, Azores Islands**

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
PCED	**Cedros**	**0.47**	**147**	*e*P		Pg	20 07 16.9	-0.9
PCED				*e*S		Sg	20 07 22.9	-1.1
PCED	**Cedros**	**0.47**	**147**	*e*P		Pg	20 07 16.9	-0.9
PCED				*e*S		Sg	20 07 22.9	-1.1
PCED				A		A	20 07 24.2	
	215nm,0.5s							
CALA	**Caldeira**	**0.51**	**150**	*e*P		Pg	20 07 18.1	-0.5
CALA				*e*S		Sg	20 07 24.6	-0.7
CALA	**Caldeira**	**0.51**	**150**	*e*P		Pg	20 07 18.1	-0.5
CALA				*e*S		Sg	20 07 24.6	-0.7
HOR	**Horta**	**0.59**	**148**	*e*S		Sg	20 07 25.9	-1.8
HOR	**Horta**	**0.59**	**148**	*e*S		Sg	20 07 25.9	-1.8
HOR				A		A	20 07 27.8	
	272nm,0.1s							
ROSA	**Rosais**	**0.69**	**116**	*e*P		Pg	20 07 19.9	-2.0
ROSA				*e*S		Sg	20 07 28.7	-2.2
ROSA	**Rosais**	**0.69**	**116**	*e*P		Pg	20 07 19.9	-2.0
ROSA				*e*S		Sg	20 07 28.7	-2.2
ROSA				A		A	20 07 29.4	
	92nm,0.2s							
PCAN	**Candelaria**	**0.71**	**142**	*e*P		Pg	20 07 20.2	-2.1
PCAN				*e*S		Sg	20 07 29.2	-2.2
PCAN	**Candelaria**	**0.71**	**142**	*e*P		Pg	20 07 20.2	-2.1
PCAN				*e*S		Sg	20 07 29.2	-2.2
PCAN				A		A	20 07 32.0	
	227nm,0.4s							
PICO	**Pico**	**0.71**	**138**	*e*P		Pg	20 07 20.5	-1.8
PICO				*e*S		Sg	20 07 29.3	-2.2
PICO	**Pico**	**0.71**	**138**	*e*P		Pg	20 07 20.5	-1.8
PICO				*e*S		Sg	20 07 29.3	-2.2
PICO				A		A	20 07 31.7	
	202nm,0.2s							
PGRA	**Graciosa**	**0.82**	**89**	*e*S		Sg	20 07 32.0	-3.1
PGRA	**Graciosa**	**0.82**	**89**	*e*S		Sg	20 07 32.0	-3.1
PGRA				A		A	20 07 32.7	
	80nm,0.4s							
PMAN	**Manadas**	**0.84**	**118**	*e*P		Pg	20 07 21.9	-2.8
PMAN				*e*S		Sg	20 07 32.3	-3.3
PMAN	**Manadas**	**0.84**	**118**	*e*P		Pg	20 07 21.9	-2.8
PMAN				*e*S		Sg	20 07 32.3	-3.3
PMAN				A		A	20 07 32.8	
	63nm,0.2s							

JMA 12 20:13:10.9, 36°.90N×140°.72E, h9km±1km, **M2.7, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.21**	**17**	P		Pg	20 13 15.0	-0.3
ONAJ				S		Sg	20 13 18.6	+0.4
JHO	**Hitachi**	**0.31**	**203**	P		Pg	20 13 17.2	+0.1
JHO				S		Sg	20 13 21.3	0.0
JSB	**Shiboa**	**0.65**	**276**	P		Pb	20 13 23.9	-0.5
JFT	**Otama**	**0.69**	**334**	S		Sg	20 13 32.4	-0.8
JYT	**Yasato**	**0.79**	**212**	P		Pg	20 13 25.8	-0.4
JFY	**Yanaizu**	**0.96**	**302**	S		Sg	20 13 41.1	-0.6
JMM	**Marumori**	**0.97**	**3**	S		Sg	20 13 41.7	-0.4

*IDC **12** 20:13:13.6±1.2, 36°.02N×141°.11E, h0km, mb3.5/6, mb1 3.7/8, mb1mx3.5/37, mbtmp3.5/8, ML3.7/2, Error ellipse: s-maj=32.6km s-min=20.4km az=65.0*

*ISCJB **12** 20:13:24.7±0.6, 35°.64N±0°.03×140°.13E±0°.06, h78km±4km, mb3.3/6, Error ellipse: s-maj=8.9km s-min=5.4km az=164.3*

*JMA **12** 20:13:26.0±0.2, 35°.70N×140°.13E, h67km±2km, M3.2*

JMA Felt I J1.

ISC 12 20:13:25.5±0.9, **35°.65N**±0°.04×**140°.13E**±0°.06, **h74**km±7km, **n27,** σ0**°78**/30, **mb3.4**/6, **2C-5D, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC

JCN	**Nagara**	**0.23**	**166**	⇑P		**Pn**	**20 13 37.5**	**+0.8**
JCN				*e*S		**Sn**	**20 13 45.4**	**+0.5**
TOK	**Tokyo**	**0.31**	**278**	P		**Pn**	**20 13 37.7**	**+0.6**
TOK				S		**Sn**	**20 13 45.2**	**-0.3**
JYT	**Yasato**	**0.58**	**5**	*e*S		**Sn**	**20 13 47.7**	**-2.0**
BSO3	**Boso 3**	**0.90**	**160**	⇑P		**Pn**	**20 13 43.2**	**+0.5**
JOD2	**Odawara 2**	**0.93**	**246**	⇓P		**Pn**	**20 13 43.5**	**+0.1**
JOD2				S		**Sn**	**20 13 55.9**	**-0.8**
JAG	**Ashikaga**	**0.95**	**325**	⇓P		**Pn**	**20 13 43.6**	**0.0**
JAG				S		**Sn**	**20 13 56.4**	**-0.7**
JRY	**Ryogami san**	**1.06**	**291**	⇓P		**Pn**	**20 13 45.6**	**+0.6**
JIM2	**Oshima 3**	**1.09**	**212**	P		**Pn**	**20 13 45.0**	**-0.4**
JIM2				S		**Sn**	**20 13 58.9**	**-1.2**
BSO1	**Boso 1**	**1.21**	**145**	P		**Pn**	**20 13 46.8**	**+0.5**
JYN	**Shimob**	**1.30**	**264**	⇓P		**Pn**	**20 13 48.5**	**+0.4**
JYN				S		**Sn**	**20 14 05.1**	**+0.1**
JKT	**Katashina**	**1.33**	**328**	P		**Pn**	**20 13 48.6**	**+0.2**
JKT				S		**Sn**	**20 14 05.5**	**-0.1**
JIZS	**Izushimoda**	**1.38**	**228**	⇓P		**Pn**	**20 13 49.3**	**+0.2**
JIZS				S		**Sn**	**20 14 06.2**	**-0.6**
MJAR	**Matsushiro Arr**	**1.79**	**300**	Pn		**Pn**	**20 13 55.0**	**+0.5**
	23nm,0.3s,baz=98,slow=14,SNR=67							
MAT	**Matsushiro**	**1.80**	**300**	P		**Pn**	**20 13 55.2**	**+0.7**
MAT				S		**Sn**	**20 14 17.1**	**+0.5**
JHJ	**Hachijo jima 2**	**2.54**	**187**	Pn		**Pn**	**20 14 05.1**	**+0.6**
	19nm,0.3s,baz=360,slow=19,SNR=12							
JHJ				Sn		**Sn**	**20 14 33.3**	**-1.1**
	37nm,0.3s,baz=279,slow=21,SNR=7.4							
SONM	**Songino Array**	**27.74**	**306**	P		**P**	**20 19 06.3**	**-0.8**
	0.3nm,0.8s,baz=95,slow=10,SNR=2.6							
H11N2	**WAKE ISLAND Hy**	**28.39**	**117**	T		T	20 48 51.3	
	baz=316,slow=76,SNR=14							
H11N1	**WAKE ISLAND Hy**	**28.39**	**117**	T		T	20 48 52.0	
	baz=316,slow=76,SNR=3.5							
H11N3	**WAKE ISLAND Hy**	**28.41**	**117**	T		T	20 48 53.7	
	baz=316,slow=76,SNR=20							
H11S3	**WAKE ISLAND Hy**	**29.04**	**119**	T		T	20 49 44.9	
	baz=318,slow=76,SNR=26							
H11S1	**WAKE ISLAND Hy**	**29.04**	**119**	T		T	20 49 46.6	
	baz=318,slow=76,SNR=22							
H11S2	**WAKE ISLAND Hy**	**29.05**	**119**	T		T	20 49 46.0	
	baz=318,slow=76,SNR=25							
ZALV	**Zalesovo Beam**	**42.10**	**314**	P		**P**	**20 21 09.3**	**-0.8**
	0.3nm,0.3s,baz=102,slow=7.4,SNR=2.6							
MKAR	**Makanchi Array**	**43.99**	**303**	P		**P**	**20 21 26.9**	**+1.4**
	0.5nm,0.6s,baz=88,slow=9.7,SNR=8.4							
WRA	**Warramunga Arr**	**55.56**	**187**	P		**P**	**20 22 53.9**	**+0.6**
	0.6nm,0.6s,baz=0.8,slow=7.5,SNR=18							
ASAR	**Alice Springs**	**59.28**	**187**	P		**P**	**20 23 19.3**	**-0.2**
	0.2nm,0.7s,baz=20,slow=11,SNR=3.7							
NVAR	**Mina Array Bea**	**76.65**	**52**	P		P	20 25 02.6	-6.1
	0.2nm,0.5s,baz=285,slow=7.0,SNR=2.5							

*ISCJB **12** 20:24:17.6±0.6, 37°.95N±0°.04×27°.47E±0°.05, h10km, Error ellipse: s-maj=6.2km s-min=5.1km az=41.6*

*CSEM **12** 20:24:17.6±0.1, 37°.95N×27°.47E, h15km, MD2.3, Error ellipse: s-maj=2.9km s-min=2.2km az=71.0*

*ISK **12** 20:24:17.4, 37°.96N×27°.48E, h17km, MD2.3*

*DDA **12**

region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
STKA	**Stephens Creek**	**40.92**	**247**	P	P	20 42 49.0	+0.2
	0.6nm,0.4s,baz=99,slow=11,SNR=5.8						
ASAR	**Alice Springs**	**48.34**	**258**	P	P	20 43 48.1	-0.1
	0.6nm,0.8s,baz=105,slow=6.5,SNR=6.2						
WRA	**Warramunga Arr**	**48.67**	**263**	P	P	20 43 50.5	-0.4
	0.4nm,0.5s,baz=90,slow=6.0,SNR=10						
ILAR	**Eielson Array**	**89.44**	**11**	P	P	20 48 02.8	0.0
	0.4nm,0.9s,baz=213,slow=6.5,SNR=3.1						

DJA 12 20:42:03.1±0.3, 8°S±4°×11°6E±°, h25km±4km, M4.0/31, mb4.2/12, mB5.1/3, MLv3.9/31, Mw(mB)4.5/3, Sumbawa region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DNP	**Denpasar**	**0.91**	**242**	P	Pb	20 42 20.1	-0.1
TWSI	**Taliwang, Sumb**	**0.98**	**120**	P	Pn	20 42 20.8	-0.5
ABJI	**Asem Bagus**	**1.82**	**284**	P	Pn	20 42 34.1	+1.2
PLAI	**Plampang**	**1.83**	**108**	P	Pn	20 42 33.8	+0.8
JAGI	**Jajag, Banyuwa**	**1.86**	**263**	P	Pn	20 42 34.3	+0.9
JAGI				S	Sb	20 42 58.1	-1.2
GMJI	**Gumukmas**	**2.55**	**269**	P	Pn	20 42 43.3	+0.4
GRJI	**Gresik**	**3.75**	**290**	P	Pn	20 42 59.3	-0.1
PWJI	**Pagerwojo**	**4.18**	**273**	P	Pn	20 43 04.6	-0.7
TBJI	**Tambak Boyo**	**4.37**	**289**	P	Pn	20 43 07.4	-0.6
WSI	**Waingapu**	**4.46**	**109**	P	Pn	20 43 09.9	+0.8
NGJI	**Ngawi**	**4.60**	**281**	P	Pn	20 43 11.9	+0.8
PCJI	**Pacitan**	**4.79**	**270**	P	Pn	20 43 13.5	-0.3
BSSI	**Bau Bau, Buton**	**4.91**	**65**	P	Pn	20 43 14.3	-1.0
BASI	**Baing, Sumba**	**4.91**	**114**	P	Pn	20 43 14.7	-0.6
KBKI	**Kotabaru**	**4.92**	**2**	P	Pn	20 43 17.0	+1.5
WOJI	**Wonogiri, Jawa** 36nm,1.9s,5um/0.6nm	**5.06**	**274**	P	Pn	20 43 18.0	+0.5
UWJI	**Ujung Watu** 45nm,1.4s,0.2nm	**5.35**	**290**	P	Pn	20 43 21.5	+0.1
UGM	**Wanagama** 80nm,1.8s,0.5nm	**5.45**	**273**	P	Pn	20 43 22.5	-0.4
SPSI	**Sidrap Palu** 10nm,0.5s,0.1nm	**5.66**	**41**	P	Pn	20 43 25.9	+0.2
MMRI	**Maumere** 31nm,0.8s,0.2nm	**6.16**	**94**	P	Pn	20 43 32.4	-0.2
TTSI	**Tana Toraja** 8.8nm,1.4s,0.0nm	**6.41**	**36**	P	Pn	20 43 35.3	-0.6
PBKI	**Pangkalan Bun**	**7.01**	**322**	P	Pn	20 43 45.2	+1.0

IDC 12 20:44:45.6±2.1, 36°26N×140°92E, h0km, mb3.4/3, mb1 3.6/3, mb1mx3.2/51, mbtmp3.4/3, ML2.2/1, MS3.5/1, Ms1 3.6/1, ms1mx2.6/41, Error ellipse: s-maj=52.1km s-min=24.4km az=49.0, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MJAR	**Matsushiro Arr**	**2.21**	**278**	Pn	Pn	20 45 22.0	-1.5
	0.7nm,0.3s,baz=95,slow=10,SNR=4.1						
MJAR					Sn	20 45 52.5	+0.9
	0.8nm,0.3s,baz=94,slow=16,SNR=5.0						
KURBB	**Kurchatov Arra**	**46.17**	**309**	P	P	20 53 12.1	+0.3
	0.6nm,0.5s,baz=83,slow=7.7,SNR=7.3						
ILAR	**Eielson Array**	**50.36**	**32**	LR	LR	21 15 12.5	
	comp=Z,48nm,19.8s,baz=354,slow=36						
WRA	**Warramunga Arr**	**56.24**	**187**	P	P	20 54 28.0	+0.2
	0.4nm,0.7s,baz=8.8,slow=6.9,SNR=3.2						
ASAR	**Alice Springs**	**59.97**	**187**	P	P	20 54 53.4	-0.4
	0.2nm,0.9s,baz=22,slow=7.5,SNR=2.6						

NIED ***12*** *20:47:00, 37.00N×140.60E, h5km, Mw3.7 Best double couple: M₀4.00000×10¹⁴ NP1:φs85.00000°, δ41.00000°, λ-95.00000°. NP2:φs272.00000°, δ49.00000°, λ-85.00000°.*

IDC ***12*** *20:47:34.3±0.7, 37.04N×140.60E, h0km, mb3.7/11, mb1 3.9/12, mb1mx3.6/58, mbtmp3.7/12, ML3.5/1, Error ellipse: s-maj=19.1km s-min=16.2km az=105.0*

ISCJB ***12*** *20:47:35.6±0.5, 36.97N±0.03×140.71E±0.05, h21km±3km, mb3.6/11, Error ellipse: s-maj=6.4km s-min=4.4km az=15.8*

JMA ***12*** *20:47:36.2, 36.98N×140.60E, h8km±1km, M3.9 Broadband fault plane solution: P waves. NP1: φs272.00000°, δ55.00000°, λ-83.00000°. NP2:φs79.00000°, δ35.00000°, λ-101.00000°. Principal axes: T Plg10.0000°, Azm357.0000°; N Plg6.0000°, Azm88.0000°; P Plg78.0000°, Azm208.0000°;*

JMA Felt II J1.

ISC 12 20:47:35.9±1.0, 36°99N±0.04×140°60E±0.04, h13km±7km, n30, σ0§66/33, mb3.6/11, 6C-1D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.19**	**54**	⇑P	**Pb**	**20 47 40.5**	**-0.9**
ONAJ				S	**Sg**	**20 47 43.6**	**+0.3**
JHO	**Hitachi**	**0.38**	**184**	⇑P	**Pg**	**20 47 43.4**	**-0.1**
JHO				S	**Sg**	**20 47 48.6**	**0.0**
JSB	**Shiboa**	**0.55**	**268**	⇓P	**Pb**	**20 47 47.6**	**+0.2**
JSB				S	**Sb**	**20 47 55.4**	**+0.2**
JFT	**Otama**	**0.57**	**338**	⇑P	**Pb**	**20 47 47.6**	**-0.2**
JFT				S	**Sb**	**20 47 55.3**	**-0.5**
JYT	**Yasato**	**0.83**	**204**	⇑P	**Pg**	**20 47 51.5**	**-0.4**
JYT				S	**Sg**	**20 48 02.9**	**+0.1**
JFY	**Yanaizu**	**0.83**	**301**	⇑P	**Pb**	**20 47 52.2**	**0.0**
JFY				S	**Sb**	**20 48 02.9**	**-0.4**
JMM	**Marumori**	**0.89**	**10**	⇑P	**Pb**	**20 47 52.8**	**-0.4**
JMM				S	**Sb**	**20 48 05.2**	**+0.2**
MJAR	**Matsushiro Arr**	**1.97**	**258**	Pn	**Pb**	**20 48 10.5**	**-1.2**
	28nm,0.3s,baz=80,slow=16,SNR=89						
MJAR				Sn	**Sb**	**20 48 36.0**	**-0.2**
	27nm,0.3s,baz=86,slow=27,SNR=19						
MAT	**Matsushiro**	**1.97**	**258**	P	**Pb**	**20 48 10.6**	**-1.1**
MAT				S	**Sb**	**20 48 36.3**	**+0.1**
JHJ	**Hachijo jima 2**	**3.92**	**190**	Pn	**Pn**	**20 48 37.4**	**+1.6**
	8.5nm,0.3s,baz=54,slow=19,SNR=3.8						
JHJ				Sn	**Sn**	**20 49 20.6**	**-1.0**
	7.2nm,0.3s,baz=72,slow=18,SNR=2.1						
USRK	**Ussuriysk Ar.**	**9.73**	**320**	Pn	Pn	20 50 01.9	+6.3
	0.2nm,0.3s,baz=137,slow=14,SNR=10						
KSRS	**Korea Array**	**10.12**	**276**	Pn	Pn	20 50 05.9	+5.0
	0.1nm,0.3s,baz=91,slow=14,SNR=5.7						
SONM	**Songino Array**	**27.27**	**304**	P	**P**	**20 53 20.9**	**+0.9**
	0.8nm,0.6s,baz=107,slow=9.7,SNR=7.1						
H11N2	**WAKE ISLAND Hy**	**28.69**	**120**	T	T	21 23 22.2	
	baz=313,slow=75,SNR=27						
H11N1	**WAKE ISLAND Hy**	**28.69**	**120**	T	T	21 23 21.7	
	baz=313,slow=75,SNR=38						
H11N3	**WAKE ISLAND Hy**	**28.70**	**120**	T	T	21 23 23.6	
	baz=313,slow=75,SNR=29						
H11S1	**WAKE ISLAND Hy**	**29.38**	**122**	T	T	21 24 12.2	
	baz=314,slow=76,SNR=44						
H11S3	**WAKE ISLAND Hy**	**29.38**	**122**	T	T	21 24 12.2	
	baz=314,slow=76,SNR=37						
H11S2	**WAKE ISLAND Hy**	**29.40**	**122**	T	T	21 24 13.9	
	baz=314,slow=76,SNR=32						
TIXI	**Tiksi**	**35.26**	**354**	P	**P**	**20 54 29.8**	**0.0**
	0.3nm,0.2s,baz=108,slow=9.6,SNR=3.7						
ZALV	**Zalesovo Beam**	**41.47**	**312**	P	**P**	**20 55 21.5**	**-0.7**
	0.7nm,0.6s,baz=101,slow=7.5,SNR=3.3						
ZALV				PcP	**PcP**	**20 57 19.0**	**-0.7**
	0.4nm,0.3s,baz=72,slow=4.7,SNR=2.6						
MKAR	**Makanchi Array**	**43.59**	**302**	P	**P**	**20 55 39.5**	**-0.2**
	0.3nm,0.6s,baz=91,slow=9.7,SNR=4.8						
KURBB	**Kurchatov Arra**	**45.52**	**308**	P	**P**	**20 55 54.7**	**-0.2**
	0.8nm,0.5s,baz=81,slow=7.4,SNR=11						
ILAR	**Eielson Array**	**49.88**	**32**	P	**P**	**20 56 29.4**	**+0.8**
	0.6nm,0.9s,baz=278,slow=6.1,SNR=7.0						
WRA	**Warramunga Arr**	**56.93**	**187**	P	**P**	**20 57 20.8**	**-0.1**
	1.2nm,0.5s,baz=2.3,slow=7.6,SNR=21						
ASAR	**Alice Springs**	**60.66**	**187**	P	**P**	**20 57 47.4**	**+0.7**
	1.0nm,0.8s,baz=20,slow=13,SNR=9.5						
YKA	**Yellowknife Ar**	**64.17**	**30**	P	**P**	**20 58 09.8**	**0.0**
	0.2nm,0.7s,baz=298,slow=6.3,SNR=5.6						
FINES	**FINESS Array B**	**68.55**	**332**	P	**P**	**20 58 37.1**	**-0.8**
	0.6nm,0.5s,baz=72,slow=6.0,SNR=4.4						
PDAR	**Pinedale Array**	**78.16**	**45**	P	**P**	**20 59 35.6**	**+0.4**
	0.3nm,0.6s,baz=254,slow=4.3,SNR=4.1						
LPAZ	**La Paz**	**147.27**	**59**	PKPbc	**PKPab**	**21 07 21.5**	**-0.6**
	0.7nm,0.6s,baz=14,slow=3.6,SNR=3.5						

NIED ***12*** *20:52:00, 37.10N×140.70E, h62km, Mw3.8 Best double couple: M₀5.05000×10¹⁴ NP1:φs328.00000°, δ33.00000°, λ-124.00000°. NP2:φs186.00000°, δ63.00000°, λ-70.00000°.*

IDC ***12*** *20:52:08.1±1.2, 37.15N×140.80E, h0km, mb3.4/5, mb1 3.6/7, mb1mx3.4/61, mbtmp3.5/7, ML3.2/2, Error ellipse: s-maj=29.4km s-min=20.5km az=61.0*

ISCJB ***12*** *20:52:09.9±0.6, 37.05N±0.03×140.78E±0.06, h22km±4km, mb3.4/5, Error ellipse: s-maj=7.9km s-min=4.9km az=2.2*

JMA ***12*** *20:52:10.9, 37.06N×140.68E, h11km±1km, M3.8*

JMA Felt I J1.

ISC 12 20:52:09.7±1.2, 37°05N±0.03×140°55E±0.05, h6km±10km, n21, σ0§49/24, mb3.5/5, 3C-2D, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.20**	**74**	⇑P	**Pg**	**20 52 13.8**	**0.0**
ONAJ				S	**Sg**	**20 52 16.0**	**-0.5**
JHO	**Hitachi**	**0.43**	**178**	P	**Pb**	**20 52 19.6**	**-0.2**
JHO				S	**Sb**	**20 52 26.1**	**-0.5**
JFT	**Otama**	**0.50**	**340**	⇓P	**Pb**	**20 52 21.4**	**+0.4**
JFT				S	**Sb**	**20 52 28.7**	**+0.1**
JSB	**Shiboa**	**0.51**	**262**	⇑P	**Pn**	**20 52 23.4**	**-0.2**
JSB				S	**Sn**	**20 52 32.0**	**-0.7**
JFY	**Yanaizu**	**0.77**	**298**	⇑P	**Pn**	**20 52 27.0**	**-0.1**
JFY				S	**Sn**	**20 52 37.9**	**-1.1**
JMM	**Marumori**	**0.84**	**13**	⇓P	**Pg**	**20 52 25.9**	**0.0**
JMM				S	**Sg**	**20 52 36.6**	**-0.2**
JYT	**Yasato**	**0.86**	**200**	P	**Pn**	**20 52 28.0**	**-0.4**
JYT				S	**Sb**	**20 52 39.6**	**+0.6**
MJAR	**Matsushiro Arr**	**1.95**	**256**	Pn	**Pb**	**20 52 46.0**	**+0.4**
	10nm,0.3s,baz=78,slow=16,SNR=36						
MJAR				Sn	**Sg**	**20 53 12.1**	**-0.1**
	13nm,0.3s,baz=87,slow=29,SNR=16						
JHJ	**Hachijo jima 2**	**3.97**	**189**	Pn	**Pn**	**20 53 12.0**	**+0.9**
	3.1nm,0.3s,baz=78,slow=18,SNR=3.4						
JHJ				Sn	**Sn**	**20 53 57.7**	**-0.3**
	3.3nm,0.3s,baz=323,slow=20,SNR=2.3						
SONM	**Songino Array**	**27.21**	**304**	P	**P**	**20 57 54.6**	**+0.2**
	0.2nm,0.6s,baz=101,slow=7.7,SNR=3.1						
H11N2	**WAKE ISLAND Hy**	**28.75**	**120**	T	T	21 27 54.3	
	baz=313						
H11N1	**WAKE ISLAND Hy**	**28.76**	**120**	T	T	21 27 55.4	
	baz=319						
H11N3	**WAKE ISLAND Hy**	**28.77**	**120**	T	T	21 27 56.3	
	baz=313						
H11S1	**WAKE ISLAND Hy**	**29.45**	**122**	T	T	21 28 47.3	
	baz=314,slow=75,SNR=46						
H11S3	**WAKE ISLAND Hy**	**29.45**	**122**	T	T	21 28 46.4	
	baz=314,slow=75,SNR=57						
H11S2	**WAKE ISLAND Hy**	**29.46**	**122**	T	T	21 28 47.5	
	baz=314,slow=75,SNR=31						
MKAR	**Makanchi Array**	**43.53**	**302**	P	**P**	**21 00 14.2**	**+0.1**
	0.2nm,0.6s,baz=78,slow=7.8,SNR=1.9						
KURBB	**Kurchatov Arra**	**45.45**	**308**	P	**P**	**21 00 29.1**	**-0.3**
	0.6nm,0.7s,baz=88,slow=8.3,SNR=3.9						
WRA	**Warramunga Arr**	**56.98**	**187**	P	**P**	**21 01 55.9**	**-0.2**
	0.7nm,0.6s,baz=2.1,slow=7.1,SNR=12						
ASAR	**Alice Springs**	**60.71**	**187**	P	**P**	**21 02 22.4**	**+0.3**
	0.2nm,0.6s,baz=15,slow=7.7,SNR=3.5						
LPAZ	**La Paz**	**147.28**	**59**	PKPbc	**PKPdf**	**21 11 53.5**	**+0.4**
	1.5nm,0.3s,baz=324,slow=7.9,SNR=5.8						

NIED ***12*** *20:53:00, 39.20N×142.40E, h80km, Mw4.1 Best double couple: M₀1.36000×10¹⁵ NP1:φs305.00000°, δ23.00000°, λ-151.00000°. NP2:φs187.00000°, δ79.00000°, λ-69.00000°.*

IDC ***12*** *20:53:32.1±0.9, 39.20N×142.55E, h0km, mb3.5/10, mb1 3.7/12, mb1mx3.6/60, mbtmp3.5/12, ML3.5/2, Error ellipse: s-maj=23.3km s-min=19.1km az=136.0*

ISCJB ***12*** *20:53:34.9±1.2, 39.17N±0.05×142.52E±0.07, h30km±6km, mb3.5/10, Error ellipse: s-maj=9.4km s-min=8.1km az=17.9*

JMA ***12*** *20:53:36.8±0.1, 39.20N×142.40E, h27km±1km, M4.0*

JMA Felt I J1.

ISC 12 20:53:35.4±1.0, 39°18N±0.06×142°5E±0.1, h20km±6km, n28, σ1§09/28, mb3.6/10, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**0.65**	**262**	P	**Pb**	**20 53 48.0**	**0.0**
OFUJ				S	**Sb**	**20 53 56.3**	**-0.3**
MIYJ	**Miyakonagasawa**	**0.66**	**308**	P	**Pb**	**20 53 48.1**	**-0.1**
MIYJ				S	**Sb**	**20 53 56.1**	**-0.8**
JTH	**Tanohata**	**0.90**	**328**	P	**Pb**	**20 53 52.9**	**+0.5**
JTH				eS	**Sb**	**20 54 04.3**	**+0.3**
JOM	**Ohasama**	**0.97**	**288**	P	**Pb**	**20 53 53.3**	**-0.3**
JOM				S	**Sb**	**20 54 05.3**	**-0.7**
JMK	**Ichinoseki**	**1.01**	**258**	P	**Pb**	**20 53 53.8**	**-0.4**
JMK				eS	**Sb**	**20 54 06.9**	**-0.2**
JKZ	**Kuzumaki**	**1.21**	**312**	P	**Pn**	**20 53 57.3**	**+0.2**
JKZ				S	**Sn**	**20 54 12.1**	**-0.8**
JANG	**Nango**	**1.41**	**328**	P	**Pn**	**20 54 00.3**	**+0.4**
JRG	**Rokugo**	**1.46**	**279**	P	**Pn**	**20 54 01.1**	**+0.6**
MAT	**Matsushiro**	**4.29**	**234**	P	**Pn**	**20 54 42.0**	**+2.5**
MJAR	**Matsushiro Arr**	**4.29**	**234**	Pn	**Pn**	**20 54 40.9**	**+1.4**
	4.1nm,0.3s,baz=41,slow=11,SNR=11						
USRK	**Ussuriysk Ar.**	**9.32**	**306**	Pn	**Pn**	**20 55 51.4**	**+2.9**
	0.1nm,0.3s,baz=110,slow=17,SNR=3.6						
KSRS	**Korea Array**	**11.57**	**266**	Pn	**Pn**	**20 56 20.0**	**+0.6**
	0.2nm,0.3s,baz=72,slow=14,SNR=2.9						
SONM	**Songino Array**	**27.37**	**300**	P	**P**	**20 59 20.3**	**+1.1**
	0.1nm,0.3s,baz=93,slow=6.8,SNR=2.8						
H11N2	**WAKE ISLAND Hy**	**28.61**	**126**	T	T	21 29 54.3	
	baz=318,slow=76,SNR=14						
H11N1	**WAKE ISLAND Hy**	**28.62**	**126**	T	T	21 29 53.2	
	baz=318,slow=76,SNR=15						
H11N3	**WAKE ISLAND Hy**	**28.63**	**126**	T	T	21 29 54.9	
	baz=318,slow=76,SNR=16						
H11S1	**WAKE ISLAND Hy**	**29.40**	**128**	T	T	21 30 53.8	
	baz=319,slow=76,SNR=11						
H11S3	**WAKE ISLAND Hy**	**29.40**	**128**	T	T	21 30 52.7	
	baz=319,slow=76,SNR=21						
H11S2	**WAKE ISLAND Hy**	**29.42**	**128**	T	T	21 30 53.3	
	baz=319,slow=76,SNR=17						
ZALV	**Zalesovo Beam**	**41.13**	**311**	P	**P**	**21 01 16.9**	**-0.9**
	0.6nm,0.4s,baz=92,slow=6.4,SNR=3.8						
CMAR	**Chiang Mai Arr**	**42.88**	**254**	P	**P**	**21 01 32.9**	**+0.4**
	0.2nm,0.6s,baz=40,slow=4.9,SNR=3.9						
MKAR	**Makanchi Array**	**43.73**	**300**	P	**P**	**21 01 39.2**	**+0.1**
	0.7nm,0.9s,baz=83,slow=9.9,SNR=5.0						
ILAR	**Eielson Array**	**47.24**	**33**	P	**P**	**21 02 07.2**	**+0.6**
	0.4nm,0.8s,baz=273,slow=5.3,SNR=4.4						
AAK	**Ala-Archa**	**50.25**	**297**	P	**P**	**21 02 28.3**	**-1.9**
	0.5nm,0.4s,baz=143,slow=5.1,SNR=2.3						
WRA	**Warramunga Arr**	**59.30**	**189**	P	**P**	**21 03 35.2**	**-0.5**
	0.7nm,0.6s,baz=7.2,slow=7.0,SNR=8.0						
YKA	**Yellowknife Ar**	**61.53**	**31**	P	**P**	**21 03 49.4**	**-1.1**
	0.1nm,0.4s,baz=296,slow=6.6,SNR=2.8						
ASAR	**Alice Springs**	**63.03**	**189**	P	**P**	**21 04 01.1**	**+0.2**
	0.3nm,0.8s,baz=14,slow=7.8,SNR=4.3						
NEW	**Newport**	**68.01**	**45**	P	**P**	**21 04 33.0**	**0.0**
	3.2nm,0.8s,baz=286,slow=8.4,SNR=5.9						

ISCJB ***12*** *21:04:56.9±0.4, 43.74N±0.03×105.28W±0.04, h0km, Error ellipse: s-maj=4.2km s-min=3.9km az=23.3*

IDC ***12*** *21:04:57.1±2.4, 43.64N±105.46W, h0km, mb1 3.5/3, mb1mx3.2/51, mbtmp3.2/3, ML3.3/3, Error ellipse: s-maj=58.4km s-min=11.1km az=147.0*

NEIC ***12*** *21:04:58.1±0.4, 43.73N×105.23W, h0km, ML3.3, Error ellipse: s-maj=5.9km s-min=5.0km az=182.0, Suspected Mining explosion.*

NEIC 66 km [41 miles] SSE of Gillette.

ISC 12 21:04:57.9±0.8, 43.71N±0.03×105.28W±0.03, h0km, n29, σ1§11/48, Wyoming

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RSSD	**Black Hills**	**0.99**	**65**	eP	**Pg**	**21 05 16.3**	**-0.5**
RSSD				eS	**Sn**	**21 05 33.9**	**-0.1**
K22A	**Casper**	**1.40**	**221**	ePn	**Pg**	**21 05 23.8**	**-0.9**
K22A				eS	**Sg**	**21 05 43.1**	**+0.3**
PHWY	**Pilot Hill**	**2.42**	**183**	ePn	**Pn**	**21 05 39.0**	**+0.1**
PHWY				eSn	**Sn**	**21 06 09.7**	**+0.4**
LAO	**LASA Array**	**3.05**	**348**	ePn	**Pn**	**21 05 47.4**	**0.0**
LAO				eSn	**Sn**	**21 06 25.6**	**+1.0**
RLMT	**Red Lodge**	**3.18**	**298**	ePn	**Pn**	**21 05 48.9**	**-0.5**
RLMT				ePg	**Pg**	**21 06 00.6**	**+1.7**
RLMT				eSn	**Sn**	**21 06 28.1**	**0.0**
BW06	**Boulder Array**	**3.27**	**255**	ePn	**Pn**	**21 05 51.7**	**+1.2**
BW06				eSn	**Sn**	**21 06 30.5**	**+0.3**
PDAR	**Pinedale Array**	**3.27**	**255**	Pn	**Pn**	**21 05 50.9**	**+0.3**
	2.8nm,0.3s,baz=79,slow=17,SNR=60						
PDAR				Sn	**Sn**	**21 06 30.9**	**+0.7**
	4.3nm,0.3s,baz=79,slow=29,SNR=4.0						
OGNE	**Ogallala**	**3.67**	**138**	ePn	**Pn**	**21 05 57.4**	**+1.5**
LKWY	**Lake**	**3.78**	**285**	Pn	**Pn**	**21 05 58.5**	**+0.9**
LOHW	**Long Hollow**	**3.86**	**270**	ePn	**Pn**	**21 06 00.9**	**+2.2**
LOHW				S	**Sb**	**21 06 54.9**	**+0.5**
H17A	**Grant Village**	**3.88**	**282**	ePn	**Pn**	**21 05 59.5**	**+0.5**
H17A				eSg	**Sg**	**21 07 00.5**	**-2.0**
ISCO	**Idaho Springs**	**3.92**	**184**	ePn	**Pn**	**21 06 00.4**	**+0.8**
ISCO				eSg	**Sg**	**21 07 02.9**	**-0.9**
FLWY	**Flagg Ranch**	**3.93**	**277**	ePn	**Pn**	**21 06 00.6**	**+0.9**
FLWY				eSg	**Sg**	**21 07 05.7**	**+1.5**
MOOW	**Moose Ponds**	**3.96**	**272**	ePn	**Pn**	**21 06 00.8**	**+0.8**
SNOW	**Snow King Moun**	**3.98**	**268**	ePn	**Pn**	**21 06 00.6**	**+0.1**
REDW	**Red Top Meadow**	**4.07**	**267**	ePn	**Pn**	**21 06 03.1**	**+1.6**
REDW				eSg	**Sg**	**21 07 07.9**	**-0.5**
IMW	**Indian Meadow**	**4.10**	**275**	ePn	**Pn**	**21 06 03.7**	**+1.7**
IMW				ePg	**Pg**	**21 06 15.2**	**-1.2**
IMW				eSg	**Sg**	**21 07 09.7**	**+0.1**
O20A	**White River Ci**	**4.20**	**213**	ePn	**Pn**	**21 06 04.5**	**+1.1**
O20A				ePg	**Pg**	**21 06 17.8**	**-0.7**
O20A				eSg	**Sg**	**21 07 15.3**	**+2.4**
AHID	**Auburn Hatcher**	**4.36**	**259**	ePn	**Pn**	**21 06 05.6**	**+0.1**
AHID				eSn	**Sn**	**21 06 54.4**	**-2.7**
SMCO	**Snowmass**	**4.71**	**196**	ePn	**Pn**	**21 06 11.3**	**+0.8**
DGMT	**Dagmar**	**4.82**	**9**	ePn	**Pn**	**21 06 11.1**	**-0.6**
BOZ	**Bozeman (W)**	**4.92**	**295**	ePn	**Pn**	**21 06 13.8**	**+0.5**
HWUT	**Hardware Ranch** 9.5nm,0.6s	**5.09**	**248**	ePn	**Pn**	**21 06 16.3**	**+0.8**
HWUT				eSg	**Sg**	**21 07 39.4**	**-2.0**
KSCO	**Kaye Shedlock'**	**5.11**	**156**	Pn	**Pn**	**21 06 15.1**	**-0.7**
EGMT	**Eagleton** 38nm,1.0s	**5.32**	**326**	ePn	**Pn**	**21 06 18.6**	**-0.1**
ECSD	**EROS Data Cent** 3.9nm,0.5s	**6.28**	**87**	ePn	**Pn**	**21 06 32.6**	**+0.8**
AGMN	**Agassiz Nation** 7.0nm,0.4s	**8.00**	**52**	Pn	**Pn**	**21 06 54.2**	**-1.1**
ULM	**Lac du Bonnet**	**9.16**	**41**	Pn	**Pn**	**21 07 10.3**	**-0.9**
	1.0nm,0.3s,baz=234,slow=12,SNR=5.9						
ULM				Lg	Lg	21 09 42.6	
	0.3nm,0.3s,baz=125,slow=22,SNR=2.9						
YKA	**Yellowknife Ar**	**19.59**	**347**	P	**P**	**21 09 27.3**	**+0.1**
	0.1nm,0.3s,baz=164,slow=12,SNR=4.4						

NIED ***12*** *21:07:00, 36.60N×140.90E, h53km, Mw3.9 Best double couple: M₀7.96000×10¹⁴ NP1:φs238.00000°, δ7.00000°, λ100.00000°. NP2:φs48.00000°, δ83.00000°, λ89.00000°.*

IDC ***12*** *21:07:37.5±1.3, 36.79N×141.54E, h0km, mb3.7/6, mb1 3.8/8, mb1mx3.5/52, mbtmp3.7/8, ML3.6/2, MS4.0/1, Ms1 4.0/1, ms1mx2.7/46, Error ellipse: s-maj=36.3km s-min=19.9km az=65.0*

ISCJB ***12*** *21:07:45.5±0.7, 36.55N±0.04×140.94E±0.07, h56km±5km, mb3.6/6, MS4.0/1, Error ellipse: s-maj=9.2km s-min=6.3km az=13.3*

JMA ***12*** *21:07:46.5±0.1, 36.55N×140.90E, h49km±1km, M3.8*

JMA Felt II J1.

ISC 12 21:07:46.3±1.1, 36°56N±0.04×140°95E±0.07, h47km±8km, n26, σ0§94/29, mb3.7/6, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHO	**Hitachi**	**0.31**	**279**	P	**Pn**	**21 07 55.3**	**0.0**
JHO				S	**Sn**	**21 08 01.2**	**-0.4**
ONAJ	**Iwakimizuishiy**	**0.55**	**348**	P	**Pn**	**21 07 57.9**	**-0.2**
ONAJ				S	**Sn**	**21 08 05.7**	**-0.8**
JYT	**Yasato**	**0.69**	**241**	P	**Pn**	**21 07 59.5**	**-0.4**
JYT				S	**Sn**	**21 08 08.9**	**-0.7**
JFT	**Otama**	**1.07**	**333**	P	**Pn**	**21 08 06.0**	**+1.0**
JFT				S	**Sn**	**21 08 19.4**	**+0.7**
JAG	**Ashikaga**	**1.21**	**264**	P	**Pn**	**21 08 06.9**	**0.0**
JAG				S	**Sn**	**21 08 21.3**	**-0.8**
JFY	**Yanaizu**	**1.30**	**311**	P	**Pn**	**21 08 08.8**	**+0.7**
JFY				S	**Sn**	**21 08 24.9**	**+0.5**
JMM	**Marumori**	**1.31**	**355**	P	**Pn**	**21 08 08.6**	**+0.5**
JKT	**Katashina**	**1.38**	**279**	P	**Pn**	**21 08 09.9**	**+0.7**
JKT				S	**Sn**	**21 08 26.4**	**0.0**
MJAR	**Matsushiro Arr**	**2.21**	**270**	Pn	**Pn**	**21 08 21.3**	**+0.9**
	7.6nm,0.3s,baz=99,slow=9.2,SNR=32						
MJAR				Sn	**Sn**	**21 08 47.7**	**+1.2**
	17nm,0.3s,baz=98,slow=22,SNR=17						
MAT	**Matsushiro**	**2.21**	**270**	P	**Pn**	**21 08 21.4**	**+0.9**
MAT				S	**Sn**	**21 08 44.9**	**-1.7**
JHJ	**Hachijo jima 2**	**3.

393nm,0.3s,baz=140,slow=8.3,SNR=198
GUMO Sn **Sn** **21 08 29.1 +0.9**
617nm,0.3s,baz=30,slow=20,SNR=20
MANU Manus Island 15.44 174 *e*Pn **Pn** **21 11 33.5 +0.5**
34nm,0.9s
JAY Jayapura 16.65 198 P **P** **21 11 50.1 -0.7**
23nm,1.3s
GENI Genyem 16.89 200 P **P** **21 11 56.9 +3.5**
WAMI Wamena 18.61 203 P **Pn** **21 12 16.6 +3.8**
1.1nm,0.9s
RKPI Ransiki, Papua 18.83 219 P **Pn** **21 12 18.8 +3.3**
107nm,0.8s
SWI Sorong 20.28 227 P Pn 21 12 33.1 +0.3
52nm,1.3s
KMPI Kaimana, Papua 20.83 216 P Pn 21 12 39.0 -0.2
103nm,1.2s,1µm
DAV Davao City (W) 20.93 254 LR LR 21 20 26.0
comp=Z,560nm,21.5s,baz=100,slow=36
FAKI Fak Fak 21.13 221 P **P** **21 12 41.5 +1.6**
144nm,1.2s,2µm
FAKI Fak Fak 21.13 221 *e*P **P** **21 12 40.6 +0.7**
148nm,1.1s
TNTI Ternate 22.22 237 P **P** **21 12 53.2 +1.5**
53nm,1.2s
SGSI Sangihe 22.30 246 P **P** **21 12 53.6 +1.1**
858nm,0.8s
PMG Port Moresby 22.72 177⇑ *e*P **P** **21 12 53.8 -3.1**
PMG pmax pmax
comp=Z,84nm,1.5s
LBMI Labuha 22.95 234 P **P** **21 12 58.9 -0.5**
comp=Z,40nm,1.5s,comp=Z,1µm
INU Inuyama 23.25 341 *e*P **P** **21 13 02.1 -0.1**
comp=Z,35nm,1.0s
MSAI Masohi 23.67 226 P **P** **21 13 07.2 +0.7**
comp=Z,9.4nm,1.3s,comp=Z,1µm
BNDI Bandanaira 23.86 223 P **P** **21 13 05.3 -3.0**
JNU Nakatsue 23.91 328 P **P** **21 13 08.2 -0.5**
comp=Z,17nm,0.8s,baz=98,slow=1.7,SNR=7.6
JNU LR LR 21 21 20.8
comp=Z,183nm,20.6s,baz=127,slow=34
JNU Nakatsue 23.91 328 *e*P **P** **21 13 08.5 -0.2**
comp=Z,56nm,1.2s
MJAR Matsushiro Arr 24.02 345 P **P** **21 13 08.1 -1.6**
comp=Z,8.2nm,0.9s,baz=165,slow=11,SNR=7.9
MJAR LR LR 21 22 01.3
comp=Z,509nm,20.0s,baz=165,slow=35
MAJO Matsushiro 24.03 345⇑ *e*P **P** **21 13 08.7 -1.0**
MAJO pmax pmax
comp=Z,85nm,1.1s
MAJO Matsushiro 24.03 345 *e*P **P** **21 13 09.0 -0.7**
comp=Z,18nm,0.8s
MAT Matsushiro 24.03 345 P **P** **21 13 07.0 -2.7**
SANI Sanana 25.01 234 P **P** **21 13 21.3 +2.5**
SAUI Saumlaki 25.73 215 P **P** **21 13 26.7 +1.4**
comp=Z,167nm,1.3s
SAUI Saumlaki 25.73 215 *e*P **P** **21 13 24.0 -1.3**
comp=Z,131nm,0.9s
SSLB Suanglung 25.73 297 *e*P **P** **21 13 29.2 +3.9**
comp=Z,144nm,1.8s
MRSI Marisa 26.97 243 P **P** **21 13 35.8 -0.8**
comp=Z,100nm,0.9s,comp=Z,1µm
LUWI Luwuk 27.04 240 P **P** **21 13 36.7 -0.5**
comp=Z,205nm,1.0s,comp=Z,2µm
LUWI Luwuk 27.04 240 *e*P **P** **21 13 34.9 -2.3**
comp=Z,205nm,1.0s
QZH Quanzhou 28.14 298 P P 21 13 50.9 +3.9
QZH S S 21 18 39.8 +9.0
MYLDM Lahad Datu 28.20 256 *e*P **P** **21 13 46.0 -1.6**
comp=Z,63nm,1.3s
KSRS Korea Array 28.80 329 P **P** **21 13 52.5 -0.1**
comp=Z,4.4nm,0.8s,baz=144,slow=11,SNR=13
KSRS LR LR 21 23 58.4
comp=Z,296nm,19.8s,baz=134,slow=34
KS15 Wonju Array Si 28.80 329 *e*P **P** **21 13 53.3 +0.5**
KSAR Wonju Array Be 28.80 329 P **P** **21 13 52.6 -0.2**
KSAR Wonju Array Be 28.80 329 P **P** **21 13 52.5 -0.2**
MTN Manton Dam 29.91 210 *e*P **P** **21 14 02.5 -0.3**
comp=Z,18nm,1.0s
TTSI Tana Toraja 30.60 240 P **P** **21 14 06.7 -2.2**
comp=Z,14nm,1.3s
NJ2 Nanjing 30.92 311 *e*P **P** **21 14 11.5 0.0**
NJ2 pmax pmax
comp=Z,13nm,0.7s
NJ2 LR LR
comp=Z,2µm,21.2s
NJ2 LR LR
comp=Z,2µm,27.7s
SPSI Sidrap Palu 31.14 238 P **P** **21 14 13.2 -0.5**
comp=Z,15nm,1.0s
SOEI Soe 31.47 224 P **P** **21 14 16.1 -0.6**
comp=Z,57nm,1.0s
SOEI Soe 31.47 224 *e*P **P** **21 14 15.8 -1.0**
comp=Z,56nm,1.0s
KAPI Kappang 31.75 236 P **P** **21 14 18.6 -0.5**
comp=Z,11nm,0.9s,baz=79,slow=4.9,SNR=3.9
BSSI Bau Bau, Buton 31.83 234 P **P** **21 14 17.9 -1.9**
comp=Z,50nm,0.8s
USRK Ussuriysk Ar. 32.89 341 P **P** **21 14 27.9 -0.9**
comp=Z,4.7nm,0.8s,baz=158,slow=9.6,SNR=11
KBKI Kotabaru 33.84 243 P **P** **21 14 36.4 -1.0**
comp=Z,19nm,1.2s
MDJ Mudanjiang 34.05 339 P **P** **21 14 39.5 +0.6**
MDJ pP pP 21 14 45.0 -1.7
MDJ sP sP 21 14 48.2 -1.7
MDJ PP **PnPn** **21 15 54.8 +2.2**
MDJ PcP **PcP** **21 17 16.6 +0.4**
MDJ S **S** **21 20 05.9 +3.0**
MDJ sS sS 21 20 15.0 -0.7
MDJ pmax pmax
comp=Z,8.0nm,0.7s
MDJ pmax pmax
comp=Z,100nm,7.0s
MDJ LR LR
comp=Z,310nm,19.5s
MDJ LR LR
comp=Z,190nm,21.9s
MDJ LR LR
comp=Z,590nm,17.1s
CN2 Changchun 34.98 334 *e*P **P** **21 14 45.5 -1.4**
CN2 pmax pmax
comp=Z,10.0nm,0.7s
CN2 pmax pmax
comp=Z,200nm,7.0s
CN2 LR LR
comp=Z,400nm,17.0s
CN2 LR LR
comp=Z,200nm,17.0s
CN2 LR LR
comp=Z,300nm,18.0s
QIZ Qiongzhong 35.00 284 P **P** **21 14 45.2 -2.2**
QIZ S **S** **21 20 18.2 +0.1**
QIZ pmax pmax
comp=Z,10.0nm,1.3s
QIZ LR LR
comp=Z,170nm,16.5s
QIZ LR LR
comp=Z,100nm,15.1s
SBUM Sibu 35.01 255 *e*P **P** **21 14 47.7 +0.2**
comp=Z,29nm,1.3s
WRAB Tennant Creek 35.03 199⇓ *e*P **P** **21 14 47.2 -0.4**
WRAB pmax pmax
comp=Z,33nm,1.2s
WRAB Tennant Creek 35.03 199 *e*P **P** **21 14 47.2 -0.4**
comp=Z,16nm,0.9s
WB2 Warramunga Arr 35.04 199 *e*P **P** **21 14 47.4 -0.3**
comp=Z,17nm,0.9s
WRA Warramunga Arr 35.05 199 P **P** **21 14 46.9 -0.8**
comp=Z,7.1nm,0.9s,baz=20,slow=9.6,SNR=20
WRA PcP **PcP** **21 17 18.8 -0.7**
comp=Z,1.4nm,0.8s,baz=17,slow=3.5,SNR=4.4
WRA LR LR 21 30 59.9
comp=Z,363nm,18.9s,baz=5.0,slow=40
PLAI Plampang 35.59 233 P **P** **21 14 52.9 +0.4**
comp=Z,20nm,1.1s
KSM Kuching 37.14 254 *e*P **P** **21 15 04.8 -0.9**
comp=Z,16nm,0.9s
FITZ Fitzroy Crossi 37.15 213 P **P** **21 15 05.4 -0.3**
comp=Z,13nm,0.8s,baz=42,slow=11,SNR=16
FITZ Fitzroy Crossi 37.15 213 *e*P **P** **21 15 05.5 -0.2**
comp=Z,15nm,0.9s
BJI Beijing 37.18 321 P **P** **21 15 05.7 -0.1**
BJI PP **PP** **21 16 28.1 -2.7**
BJI S **S** **21 20 50.0 -1.0**
BJI SS **SnSn** **21 23 29.6 +2.7**
BJI pmax pmax
comp=Z,7.0nm,1.3s
BJI pmax pmax
comp=Z,160nm,5.3s
BJI LR LR
comp=Z,360nm,20.0s
BJI LR LR
comp=Z,270nm,18.4s
BJI LR LR
comp=Z,300nm,20.0s
KLR Kul'dur 37.55 345 P **P** **21 15 07.7 -1.1**
comp=Z,3.4nm,0.7s,baz=144,slow=9.3,SNR=12
JAGI Jajag, Banyuwa 38.28 237 *e*P **P** **21 15 13.4 -2.0**
comp=Z,26nm,0.8s
AS01 Alice Springs 38.66 198 *e*P **P** **21 15 17.6 -0.8**
AS31 Alice Springs 38.68 198 *e*P **P** **21 15 19.5 +0.9**
comp=Z,2.7nm,1.1s
ASAR Alice Springs 38.68 198 P **P** **21 15 17.9 -0.6**
comp=Z,2.6nm,0.8s,baz=15,slow=7.0,SNR=19
ASAR LR LR 21 33 04.8
comp=Z,243nm,19.4s,baz=18,slow=39
ASAR Alice Springs 38.68 198 P **P** **21 15 18.0 -0.6**
ASAR pmax pmax
comp=Z,3.0nm,0.9s
ASAR MLR MLR
comp=Z,243nm,19.4s
GYA Guiyang 38.91 296 P **P** **21 15 21.0 +0.2**
GYA pP pP 21 15 27.8 -0.8
GYA PP **PnPn** **21 16 52.2 -0.4**
GYA S **S** **21 21 16.5 -1.3**
GYA SS SnSn 21 23 58.0 -11
GYA ScS **ScS** **21 25 27.6 -1.8**
GYA pmax pmax
comp=Z,20nm,0.9s
GYA pmax pmax
comp=Z,120nm,5.4s
GYA LR LR
comp=Z,540nm,16.5s
GYA LR LR
comp=Z,490nm,17.0s
GYA LR LR
comp=Z,520nm,17.6s
NKL Nikolayevsk 39.84 355 *e*P P 21 15 24.0 -3.9
SKNT Sakolnakorn 40.53 280 P **P** **21 15 35.3 +1.1**
comp=Z,10nm,1.3s
HHC Hu-ho-hao-te 40.53 319 *e*P **P** **21 15 34.7 +0.7**
HHC pP pP 21 15 42.7 +0.8
HHC S **S** **21 21 44.2 +2.4**
HHC sS sS 21 21 55.5 +0.7
HHC SS **SS** **21 24 41.1 -0.8**
HHC pmax pmax
comp=Z,18nm,1.2s
HHC pmax pmax
comp=Z,57nm,3.7s
HHC LR LR
comp=Z,990nm,16.2s
HHC LR LR
comp=Z,960nm,16.2s
HHC LR LR
comp=Z,990nm,13.7s
UGM Wanagama 41.01 241 *e*P **P** **21 15 38.1 -0.1**
comp=Z,207nm,1.4s
HIA Hailar 41.71 334 *e*P **P** **21 15 43.5 0.0**
HIA pmax pmax
comp=Z,5.0nm,0.3s
HIA Hailar 41.71 334 *e*P **P** **21 15 43.5 0.0**
comp=Z,5.2nm,0.3s
KMI Kunming 42.17 293 P **P** **21 15 46.6 -1.3**
KMI sP pP 21 15 55.7 -0.1
KMI PP PP 21 17 30.8 +5.0
KMI S **S** **21 22 11.0 +4.2**
KMI pmax pmax
comp=Z,8.0nm,1.1s
KMI pmax pmax
comp=Z,63nm,5.2s
KMI LR LR
comp=Z,190nm,19.6s
KMI LR LR
comp=Z,250nm,20.2s
KMI LR LR
comp=Z,360nm,20.2s
CHBT CHBT 42.38 274 P **P** **21 15 50.5 +1.2**
comp=Z,26nm,1.1s
CD2 Chengdu 42.41 301 P **P** **21 15 48.4 -1.1**
CD2 sP pP 21 15 58.5 +1.0
CD2 PP **PP** **21 17 26.5 -1.6**
CD2 S **S** **21 22 08.3 -1.5**
CD2 sS sS 21 22 20.4 -2.5
CD2 SS **SS** **21 25 18.3 -1.1**
CD2 pmax pmax
comp=Z,40nm,0.6s
CD2 pmax pmax
comp=Z,190nm,6.6s
CD2 LR LR
comp=Z,350nm,20.4s
CD2 LR LR
comp=Z,480nm,16.8s
SRAK Srakaew 42.54 276 P P 21 15 47.6 -3.1
comp=Z,23nm,1.1s
MBWA Marble Bar 42.90 217 *e*P **P** **21 15 53.3 -0.2**
comp=Z,17nm,0.8s
MYKOM Kota Tinggi 43.14 258 *e*P **P** **21 15 55.3 -0.3**
comp=Z,21nm,0.9s
PBKT Sadao Pong 43.42 280 P **P** **21 15 58.5 +0.7**
comp=Z,19nm,1.0s
UTTA Uttaradit 43.79 282 P **P** **21 16 01.6 +0.9**
comp=Z,2.3nm,1.0s
LZH Lanzhou 43.88 309 *e*P **P** **21 16 01.4 -0.1**
LZH pP pP 21 16 09.0 -0.5
LZH sP sP 21 16 11.8 -0.9
LZH PP **PcP** **21 17 46.6 -0.9**
LZH pmax pmax
comp=Z,25nm,1.0s
LZH pmax pmax
comp=Z,81nm,4.6s
LZH LR LR
comp=Z,660nm,14.7s
LZH LR LR
comp=Z,400nm,13.8s
LZH LR LR
comp=Z,710nm,16.6s
SUKH Sukhothai 44.67 281 P **P** **21 16 09.2 +1.4**
comp=Z,2.8nm,0.9s,comp=Z,233nm
IPM Ipoh 45.12 263 *e*P **P** **21 16 11.2 -0.2**
comp=Z,15nm,1.1s
STKA Stephens Creek 45.23 185 P **P** **21 16 11.1 -0.8**
comp=Z,4.2nm,0.8s,baz=335,slow=6.6,SNR=7.7
STKA LR LR 21 36 42.4
comp=Z,272nm,18.3s,baz=10,slow=38
STKA Stephens Creek 45.23 185 *e*P **P** **21 16 11.2 -0.7**
comp=Z,1.1nm,0.8s
KULM Kulim 45.28 264 *e*P **P** **21 16 12.8 +0.1**
comp=Z,21nm,1.0s
CM01 Chiang Mai Arr 45.29 283 *e*P **P** **21 16 12.5 -0.3**
CMMT Chiang Mai 45.30 283 P **P** **21 16 14.0 +1.1**
comp=Z,2.9nm,0.8s
CHTO Chiang Mai 45.30 283 P **P** **21 16 14.1 +1.2**
comp=Z,49nm,1.6s
CHTO Chiang Mai 45.30 283 *e*P **P** **21 16 13.2 +0.3**
CHTO pmax pmax
comp=Z,8.0nm,1.1s
CHTO Chiang Mai 45.30 283 *e*P **P** **21 16 13.2 +0.3**
comp=Z,8.3nm,1.1s
CMAR Chiang Mai Arr 45.31 283 P **P** **21 16 13.4 +0.5**
comp=Z,6.3nm,0.8s,baz=83,slow=5.9,SNR=61
CMAR PcP **PcP** **21 17 54.5 +2.0**
comp=Z,7.7nm,0.8s,baz=90,slow=2.0,SNR=18
CMAR LR LR 21 33 55.2
comp=Z,160nm,19.4s,baz=82,slow=34
KHLT Khaolaem Dam 45.81 278 P P 21 16 21.5 +4.6
comp=Z,4.9nm,1.1s
MA2 Magadan 46.21 3 P **P** **21 16 19.1 -0.3**
comp=Z,6.0nm,0.6s,baz=217,slow=20,SNR=3.4
SURT Suratani 46.34 270 P **P** **21 16 23.1 +2.0**
comp=Z,6.5nm,1.0s
ULN Ulaanbaatar 47.08 325 *e*P **P** **21 16 26.7 +0.1**
ULN pmax pmax
comp=Z,10.0nm,1.2s
ULN Ulaanbaatar 47.08 325 *e*P **P** **21 16 26.7 +0.1**
comp=Z,9.7nm,1.2s
SONM Songino Array 47.43 324 P **P** **21 16 29.4 0.0**
comp=Z,2.6nm,0.9s,baz=138,slow=7.6,SNR=20
SONM LR LR 21 36 43.5
comp=Z,274nm,19.7s,baz=122,slow=36
SONA1 Songino Array 47.43 324 *e*P **P** **21 16 29.4 0.0**
PSI Prapat 47.57 261 P **P** **21 16 30.1 -0.7**
comp=Z,11nm,1.0s,baz=55,slow=4.6,SNR=12
PSI Prapat 47.57 261 *e*P **P** **21 16 29.6 -1.3**
comp=Z,9.7nm,0.8s
GTA Gaotai 48.01 311 *e*P **P** **21 16 34.0 0.0**
GTA pP pP 21 16 41.2 -0.8
GTA sP sP 21 16 44.4 -0.8
GTA PcP **PcP** **21 18 03.3 +1.5**
GTA S **S** **21 23 29.7 -1.0**
GTA sS sS 21 23 42.1 -1.8
GTA SS SS 21 26 52.1 -7.7
GTA pmax pmax
comp=Z,4.0nm,0.9s
GTA pmax pmax
comp=Z,110nm,5.7s
GTA LR LR
comp=Z,210nm,16.9s
GTA LR LR
comp=Z,160nm,16.9s
GTA LR LR
comp=Z,210nm,19.7s
GSI Gunungsitoli 49.28 260 *e*P **P** **21 16 42.9 -1.0**
comp=Z,22nm,1.0s
SEY Seymchan 49.66 4 P **P** **21 16 46.1 +0.2**
comp=Z,2.7nm,0.7s,baz=191,slow=7.0,SNR=11
YAK Yakutsk 49.91 350 P **P** **21 16 47.0 -0.9**
comp=Z,14nm,0.4s,baz=186,slow=1.3,SNR=5.7
YAK Yakutsk 49.91 350 *e*P **P** **21 16 46.1 -1.8**
YAK pmax pmax
comp=Z,18nm,0.9s
YAK pmax pmax
comp=N,6.0nm,1.0s
YAK pmax pmax
comp=E,2.0nm,1.1s
ATKA Atka Island 50.13 31 *e*P **P** **21 16 49.5 -0.2**
comp=E,23nm,0.9s
BOD Bodaibo 50.42 338 *e*P **P** **21 16 51.2 -0.7**
BOD pmax pmax
comp=Z,9.0nm,1.2s
ZAK Zakamensk 50.52 326 *e*P **P** **21 16 51.8 -1.1**
ZAK *e* 21 18 11.4
ZAK pmax pmax
comp=Z,4.0nm,1.2s
ZAK pmax pmax
comp=Z,5.0nm,1.3s
TLY Talaya 51.02 327 P **P** **21 16 56.2 -0.3**
comp=Z,4.5nm,0.9s,baz=140,slow=5.0,SNR=6.8
TLY Talaya 51.02 327 *e*P **P** **21 16 57.0 +0.5**
TLY pmax pmax
comp=Z,6.0nm,0.9s
TLY Talaya 51.02 327 *e*P **P** **21 16 56.8 +0.3**
comp=Z,4.8nm,0.8s
LSA Lhasa 52.94 297 P **P** **21 17 12.5 +0.7**
LSA pmax pmax
comp=Z,6.0nm,1.0s
LSA Lhasa 52.94 297 *e*P **P** **21 17 11.4 -0.4**
LSA pmax pmax
comp=Z,6.0nm,0.8s
LSA Lhasa 52.94 297 *e*P **P** **21 17 11.4 -0.4**
comp=Z,5.8nm,0.8s
NWAO Narrogin (SRO) 53.60 210 P **P** **21 17 15.0 -0.9**
comp=Z,11nm,0.8s,baz=76,slow=0.0,SNR=3.9
TAPN Taplejung 55.81 294 *e*P **P** **21 17 32.0 -0.5**
ODAN Odare 56.08 293 *e*P **P** **21 17 33.5 -0.9**
comp=Z,18nm,1.1s
BILL Bilibino 56.16 9 *e*P **P** **21 17 33.8 -0.2**
BILL *i* 21 17 44.2
BILL pmax pmax
comp=Z,7.0nm,1.2s
BILL Bilibino 56.16 9 *e*P **P** **21 17 33.3 -0.7**
comp=Z,18nm,1.3s
RAMN Ramite 56.78 293 *e*P **P** **21 17 38.9 -0.5**
comp=Z,15nm,1.1s
GUN Gumba 57.45 295 *e*P **P** **21 17 43.6 -0.6**
WMQ Urumqi 57.96 313 P **P** **21 17 49.0 +1.8**
WMQ pP pP 21 17 56.6 +1.2
WMQ sP sP 21 17 58.2 -0.3
WMQ PcP **PcP** **21 18 40.1 +0.9**
WMQ S **S** **21 25 41.3 -4.7**
WMQ pmax pmax
comp=Z,7.0nm,0.6s
WMQ pmax pmax
comp=Z,110nm,5.4s
WMQ LR LR
comp=Z,60nm,22.4s
WMQ LR LR
comp=Z,74nm,20.4s
WMQ LR LR
comp=Z,94nm,22.4s
KKN Kakani 57.98 294 *e*P **P** **21 17 46.8 -1.0**
GAMB Gambell 58.28 21 *e*P **P** **21 17 50.7 +1.8**
comp=Z,9.7nm,1.0s
GKN Gorkha 58.55 295 *e*P **P** **21 17 51.0 -0.7**
TIXI Tiksi 59.10 354 P **P** **21 17 53.1 -1.5**
comp=Z,1.3nm,0.5s,baz=139,slow=3.9,SNR=7.1
TIXI Tiksi 59.10 354 *e*P **P** **21 17 53.2 -1.3**
TIXI pmax pmax
comp=Z,5.0nm,1.3s
TIXI Tiksi 59.10 354 *e*P **P** **21 17 55.9 +1.3**
comp=Z,4.7nm,1.1s
URZ Urewera 59.16 152 P **P** **21 17 54.9 -0.5**
comp=Z,3.6nm,0.6s,baz=315,slow=5.7,SNR=2.9
KOLN Koldanda 59.46 294 *e*P **P** **21 17 57.5 -0.6**
comp=Z,7.4nm,0.5s
PYUN Piuthan 60.01 295 *e*P **P** **21 18 01.0 -0.9**
MKAR Makanchi Array 62.29 316 P **P** **21 18 16.8 0.0**
comp=Z,3.0nm,0.6s,baz=92,slow=9.0,SNR=39
MKAR LR LR 21 46 42.1
comp=Z,145nm,18.4s,baz=84,slow=37
ZAA0 Zalesovo Array 62.33 324 *e*P **P** **21 18 16.3 -0.5**
ZALV Zalesovo Beam 62.33 324 P **P** **21 18 16.0 -0.8**
comp=Z,1.9nm,0.6s,baz=94,slow=6.7,SNR=9.6
ZALV LR LR 21 46 27.0
comp=Z,190nm,18.4s,baz=70,slow=37
MAKZ Makanchi 62.50 316 *e*P **P** **21 18 18.4 +0.2**
MAKZ pmax pmax
comp=Z,6.0nm,0.6s
MAKZ Makanchi 62.50 316 *e*P **P** **21 18 18.4 +0.2**
comp=Z,5.9nm,0.6s
NVS Novosibirsk 63.46 325 *e*P **P** **21 18 24.1 -0.2**
TT01 Tatalina 63.87 26 *e*P P **21 18 29.9 +3.0**
HYB Hyderabad 64.73 283 *i* P **P** **21 18 34.0 +0.6**
KURK Kurchatov 65.34 320 *e*P **P** **21 18 36.3 -0.4**
KURK pmax pmax
comp=Z,15nm,1.1s
KURK Kurchatov 65.34 320 *e*P **P** **21 18 36.3 -0.4**
comp=Z,15nm,1.1s
KURBB Kurchatov Arra 65.38 320 P **P** **21 18 36.5 -0.6**
comp=Z,6.4nm,0.8s,baz=101,slow=6.7,SNR=55
PPLA Purkeypile 65.50 26 *e*P **P** **21 18 39.1 +1.3**
comp=Z,16nm,0.9s
CAST Castle Rocks 65.72 26 *e*P **P** **21 18 40.4 +1.4**
comp=Z,16nm,1.0s
RC01 Rabbit Creek A 66.05 29 *e*P **P** **21 18 39.8 -1.3**
comp=Z,42nm,1.3s
KSH Kashi 66.12 307 P P 21 18 44.8 +2.6
KSH *e*pP pP 21 18 52.8 +2.3
KSH *e*sP sP 21 18 56.1 +2.5
KSH PcS 21 23 17.0
KSH S **S** **21 27 29.9 +0.6**
KSH ScS **ScS** **21 28 37.1 -0.1**
KSH SS **SS** **21 31 48.2 +3.1**
KSH pmax pmax
comp=Z,200nm,7.4s
KSH LR LR
comp=Z,200nm,7.1s
KSH LR LR
comp=Z,180nm,10.5s
KSH LR LR
comp=Z,270nm,14.7s
KTH Kantishna Hill 66.25 26 *e*P **P** **21 18 43.3 +0.8**
comp=Z,20nm,0.9s
BPAW Bear Paw Mtn. 66.40 25 *e*P **P** **21 18 44.5 +1.1**
comp=Z,16nm,1.1s
PMR Palmer 66.47 28 *e*P **P** **21 18 43.7 -0.1**
PMR pmax pmax
comp=Z,10.0nm,0.8s
PMR Palmer 66.47 28 *e*P **P** **21 18 43.7 -0.1**
comp=Z,10nm,0.8s
TRF Thorofare Moun 66.49 26 *e*P **P** **21 18 44.6 +0.4**
comp=Z,15nm,1.1s
TKM2 Tokmak 2 66.56 311 *e*P **P** **21 18 45.2 +0.1**
TKM2 pmax pmax
comp=Z,4.0nm,0.9s
TKM2 Tokmak 2 66.56 311 *e*P **P** **21 18 45.2 +0.1**
comp=Z,3.6nm,0.9s
NRIK Noril'sk 66.61 341 P **P** **21 18 43.8 -0.8**
comp=Z,5.8nm,0.6s,baz=116,slow=7.7,SNR=8.9
NRIK LR LR 21 46 52.5
comp=Z,227nm,21.5s,baz=115,slow=35
MLY Manley 66.80 24 *e*P **P** **21 18 47.0 +1.0**

	comp=Z,12nm,1.0s							
SML	**Sawmill**	**66.89**	**28**	*e*P		**P**	**21 18 47.7**	**+1.1**
SML				pmax		pmax		
	comp=Z,24nm,0.9s							
SML	**Sawmill**	**66.89**	**28**	*e*P		**P**	**21 18 47.6**	**+1.1**
	comp=Z,24nm,0.9s							
RND	**Reindeer**	**67.10**	**26**	*e*P		**P**	**21 18 50.1**	**+2.2**
RND				pmax		pmax		
	comp=Z,11nm,1.0s							
RND	**Reindeer**	**67.10**	**26**	*e*P		**P**	**21 18 50.1**	**+2.2**
	comp=Z,11nm,1.0s							
AAK	**Ala-Archa**	**67.36**	**311**	*e*P		**P**	**21 18 50.4**	**+0.3**
AAK				pmax		pmax		
	comp=Z,7.0nm,1.3s							
AAK	**Ala-Archa**	**67.36**	**311**	*e*P		**P**	**21 18 50.4**	**+0.3**
	comp=Z,6.6nm,1.3s							
SCM	**Sheep Creek Mo**	**67.36**	**28**	*e*P		**P**	**21 18 51.0**	**+1.4**
SCM				pmax		pmax		
	comp=Z,35nm,1.1s							
SCM	**Sheep Creek Mo**	**67.36**	**28**	*e*P		**P**	**21 18 51.0**	**+1.4**
	comp=Z,35nm,1.1s							
WRH	**Wood River Hil**	**67.72**	**25**	*e*P		**P**	**21 18 52.0**	**+0.3**
	comp=Z,12nm,1.0s							
COLD	**Coldfoot**	**67.73**	**22**	*e*P		**P**	**21 18 53.5**	**+1.8**
	comp=Z,9.2nm,0.9s							
MDM	**Murphy Dome**	**67.80**	**25**	*e*P		**P**	**21 18 54.0**	**+1.8**
	comp=Z,5.8nm,0.7s							
CCB	**Clear Creek Bu**	**67.89**	**25**	*e*P		**P**	**21 18 54.4**	**+1.6**
	comp=Z,31nm,2.0s							
EKS2	**Erkin-Say**	**67.89**	**311**	*e*P		**P**	**21 18 54.3**	**+0.9**
EKS2				pmax		pmax		
	comp=Z,8.0nm,1.4s							
EKS2	**Erkin-Say**	**67.89**	**311**	*e*P		**P**	**21 18 54.3**	**+0.9**
	comp=Z,8.1nm,1.4s							
DIV	**Divide**	**67.92**	**29**	*e*P		P	21 18 57.2	+4.0
	comp=Z,22nm,1.2s							
COLA	**College**	**67.93**	**25**	*de*P		**P**	**21 18 53.5**	**+0.5**
COLA				pmax		pmax		
	comp=Z,4.0nm,0.9s							
KLU	**Klutina**	**67.93**	**29**	*e*P		P	21 18 56.6	+3.4
	comp=Z,17nm,1.0s							
IL1	**Eielson Array**	**68.30**	**25**	*e*P		**P**	**21 18 54.5**	**-0.9**
ILAR	**Eielson Array**	**68.30**	**25**	P		**P**	**21 18 54.6**	**-0.7**
	comp=Z,2.1nm,0.7s,baz=254,slow=4.5,SNR=22							
ILB	**Eielson Array**	**68.30**	**25**	*e*P		**P**	**21 18 55.0**	**-0.4**
BMRM	**Bremner River**	**68.44**	**29**	*e*P		P	21 19 00.5	+4.0
	comp=Z,27nm,1.2s							
PAX	**Paxson**	**68.47**	**27**	*e*P		**P**	**21 18 57.6**	**+1.0**
PAX				pmax		pmax		
	comp=Z,28nm,1.6s							
PAX	**Paxson**	**68.47**	**27**	*e*P		**P**	**21 18 57.6**	**+1.0**
	comp=Z,28nm,1.6s							
DOT	**Dot Lake**	**69.24**	**27**	*e*P		**P**	**21 19 02.1**	**+0.8**
	comp=Z,30nm,0.9s							
FYU	**Fort Yukon**	**69.42**	**23**	*e*P		**P**	**21 19 04.1**	**+1.8**
	comp=Z,26nm,1.1s							
KKAR	**Karatay Array**	**70.30**	**311**	*e*P		**P**	**21 19 08.3**	**+0.1**
KKAR	**Karatay Array**	**70.30**	**311**	*e*P		**P**	**21 19 08.3**	**+0.1**
EGAK	**Eagle**	**70.70**	**26**	*e*P		**P**	**21 19 12.1**	**+1.9**
BRVK	**Borovoye**	**70.73**	**322**	*ce*P		**P**	**21 19 10.1**	**-0.5**
BRVK				pmax		pmax		
	comp=Z,11nm,1.2s							
PPT	**Papeete**	**70.75**	**114**	LR		LR	21 43 53.4	
	comp=Z,412nm,20.6s,baz=287,slow=30							
PPT2	**Papeete2**	**70.76**	**114**	*e*LR		LR	21 40 13.5	
	comp=Z,447nm,21.8s,baz=295							
KBL	**Kabul**	**71.75**	**302**	*e*P		**P**	**21 19 17.3**	**-0.1**
KBL				pmax		pmax		
	comp=Z,11nm,1.1s							
KBL	**Kabul**	**71.75**	**302**	*e*P		**P**	**21 19 17.3**	**-0.1**
	comp=Z,11nm,1.1s							
TBI	**Tubuai**	**73.04**	**120**	*e*LR		LR	21 41 22.8	
	comp=Z,242nm,22.2s							
INK	**Inuvik**	**74.14**	**22**	P		**P**	**21 19 31.2**	**+0.6**
	comp=Z,4.8nm,0.9s,baz=266,slow=4.2,SNR=13							
INK	**Inuvik**	**74.14**	**22**	*e*P		**P**	**21 19 31.1**	**+0.4**
INK				pmax		pmax		
	comp=Z,37nm,1.6s							
INK	**Inuvik**	**74.14**	**22**	*e*P		**P**	**21 19 31.1**	**+0.4**
	comp=Z,37nm,1.6s							
DLBC	**Dease Lake**	**75.59**	**33**	*e*P		**P**	**21 19 41.6**	**+2.3**
	comp=Z,15nm,0.9s							
SVE	**Sverdlovsk**	**76.28**	**326**	⇑*i*P		**P**	**21 19 43.5**	**+0.3**
SVE				pmax		pmax		
	comp=Z,15nm,1.4s							
TAOE	**Nuku Hiva Isla**	**76.70**	**103**	*e*LR		LR	21 43 07.6	
	comp=Z,353nm,22.5s							
ABKAR	**Akbulak array**	**77.32**	**318**	*e*P		**P**	**21 19 48.6**	**-0.6**
ARU	**Arti**	**77.46**	**325**	LR		LR	21 55 46.1	
	comp=Z,209nm,18.2s,baz=342,slow=37							
ARU	**Arti**	**77.46**	**325**	*d*P		**P**	**21 19 49.1**	**-0.7**
ARU							21 22 40.5	
ARU				S		**S**	**21 29 39.8**	**+0.9**
ARU				SS		**SS**	**21 34 37.8**	**+0.2**
ARU				pmax		pmax		
	comp=Z,12nm,1.7s							
ARU	**Arti**	**77.46**	**325**	*e*P		**P**	**21 19 49.5**	**-0.3**
	comp=Z,4.7nm,0.8s							
AKTO	**Aktyubinsk**	**78.43**	**319**	LR		LR	21 55 02.9	
	comp=Z,228nm,20.9s,slow=36							
GEYT	**Alibeck**	**80.13**	**307**	P		**P**	**21 20 05.6**	**+0.6**
	comp=Z,11nm,1.0s,baz=70,slow=1.7,SNR=18							
GEYT				LR		LR	21 58 16.3	
	comp=Z,116nm,20.2s,baz=350,slow=38							
YBH	**Yreka Blue Hor**	**82.24**	**49**	LR		LR	21 50 06.4	
	comp=Z,214nm,21.0s,baz=293,slow=31							
YKW3	**Yellowknife Ar**	**82.53**	**27**	*e*P		**P**	**21 20 17.9**	**+0.8**
	comp=Z,5.5nm,0.8s							
YKA	**Yellowknife Ar**	**82.55**	**28**	P		**P**	**21 20 17.7**	**+0.5**
	comp=Z,1.6nm,0.5s,baz=287,slow=5.4,SNR=24							
YKB5	**Yellowknife Ar**	**82.55**	**28**	*e*P		**P**	**21 20 17.6**	**+0.4**
B08A	**Colville Reser**	**83.24**	**42**	*e*P		P	21 20 27.3	+6.1
	comp=Z,14nm,1.3s							
MOD	**Modoc Plateau**	**83.97**	**49**	*e*P		**P**	**21 20 27.0**	**+1.8**
RES	**Resolute Bay**	**84.48**	**13**	*e*P		**P**	**21 20 27.8**	**+0.9**
RES	**Resolute Bay**	**84.48**	**13**	*e*P		**P**	**21 20 27.8**	**+0.9**
NEW	**Newport**	**84.70**	**42**	*e*P		**P**	**21 20 29.3**	**+0.6**
NEW				pmax		pmax		
	comp=Z,27nm,1.8s							
NEW	**Newport**	**84.70**	**42**	*e*P		**P**	**21 20 29.2**	**+0.6**
	comp=Z,27nm,1.8s							
RKT	**Rikitea**	**85.50**	**115**	*e*LR		LR	21 47 06.6	
	comp=Z,443nm,25.8s,baz=294							
TMCR	**Tamitsa**	**85.60**	**335**	*e*P		**P**	**21 20 31.3**	**-1.4**
TMCR				pmax		pmax		
	comp=Z,14nm,1.1s							
APA	**Apatity**	**85.97**	**339**	⇑*i*P		**P**	**21 20 33.0**	**-1.5**
APA				MLR		MLR		
	comp=Z,800nm,23.0s							
KLMR	**Klimovskoe**	**86.16**	**332**	*e*P		**P**	**21 20 33.0**	**-2.5**
KLMR				*e*PP		**pP**	**21 20 43.5**	**-0.5**
KLMR				pmax		pmax		
	comp=Z,13nm,1.3s							
NVAR	**Mina Array Bea**	**86.26**	**52**	P		**P**	**21 20 38.4**	**+1.5**
	comp=Z,0.6nm,0.5s,baz=274,slow=6.2,SNR=3.5							
BSMT	**Bassoo Peak**	**86.32**	**42**	*e*P		**P**	**21 20 38.7**	**+1.8**
WALA	**Waterton Lakes**	**86.55**	**40**	*e*P		**P**	**21 20 39.2**	**+1.3**
BLMT	**Blacktail Moun**	**86.55**	**42**	*e*P		P	21 20 44.0	+5.9
ARCES	**ARCESS Array B**	**87.54**	**342**	P		**P**	**21 20 42.3**	**+0.2**
	comp=Z,9.0nm,0.8s,baz=60,slow=7.2,SNR=13							
HLID	**Hailey**	**87.76**	**46**	*e*P		**P**	**21 20 43.4**	**-0.6**
	comp=Z,7.6nm,1.2s							
ELK	**Elko**	**87.95**	**49**	LR		LR	21 53 30.6	
	comp=Z,177nm,20.9s,baz=136,slow=31							
VRH	**Novokhopyorsk**	**88.30**	**322**	*e*P		**P**	**21 20 44.0**	**-2.1**
VRH				pmax		pmax		
	comp=Z,7.0nm,0.6s							
LRM	**Limekiln Ridge**	**88.44**	**43**	*e*P		P	21 20 52.2	+5.0
HVU	**Hansel Valley**	**89.43**	**47**	*e*P		P	21 20 54.8	+2.9
HVU				pmax		pmax		
	comp=Z,29nm,0.8s							
HVU	**Hansel Valley**	**89.43**	**47**	*e*P		P	21 20 54.8	+2.9
	comp=Z,29nm,0.8s							
LPSR	**Galich'ya Gora**	**89.44**	**324**	*e*P		**P**	**21 20 49.8**	**-1.6**
LPSR				pmax		pmax		
	comp=Z,6.0nm,0.8s							
FSU	**Fish Springs**	**89.60**	**49**	*e*P		**P**	**21 20 52.1**	**-0.6**
GNI	**Garni**	**89.76**	**311**	LR		LR	22 04 59.5	
	comp=Z,109nm,18.5s,baz=133,slow=38							
VSR	**Storozhevoye**	**89.80**	**323**	*e*P		**P**	**21 20 50.6**	**-2.6**
VSR				pmax		pmax		
	comp=Z,7.0nm,0.5s							
SPUT	**South Promonto**	**89.81**	**48**	*e*P		**P**	**21 20 53.7**	**+0.1**
	comp=Z,18nm,0.5s							
SNUT	**Stansbury Nort**	**89.89**	**48**	*e*P		**P**	**21 20 51.6**	**-2.4**
KBZ	**Khabaz**	**89.97**	**315**	P		**P**	**21 20 52.5**	**-1.6**
	comp=Z,2.5nm,0.9s,baz=28,slow=12,SNR=3.2							
KVAR	**Kislovodsk Arr**	**90.04**	**315**	LR		LR	22 03 24.0	
	comp=Z,78nm,19.8s,slow=37							
HWUT	**Hardware Ranch**	**90.35**	**47**	*e*P		**P**	**21 20 56.6**	**+0.3**
	comp=Z,7.1nm,0.8s							
NLU	**North Lily Min**	**90.49**	**49**	*e*P		P	21 21 01.9	+4.9
	comp=Z,34nm,2.0s							
BW06	**Boulder Array**	**91.39**	**45**	*e*P		P	21 21 07.2	+6.1
PDAR	**Pinedale Array**	**91.39**	**45**	P		**P**	**21 21 01.0**	**-0.1**
	comp=Z,0.2nm,0.6s,baz=219,slow=1.2,SNR=2.8							
FFC	**Flin Flon**	**91.43**	**33**	*i*P		**P**	**21 21 03.3**	**+2.6**
FIA1	**FINESS Array S**	**91.72**	**335**	*e*P		**P**	**21 21 00.2**	**-1.7**
FIA1				*e*PcP		**PcP**	**21 21 06.0**	**+3.3**
FINES	**FINESS Array B**	**91.72**	**335**	P		**P**	**21 21 00.2**	**-1.6**
	comp=Z,1.6nm,0.5s,baz=59,slow=4.4,SNR=17							
VSU	**Vasula**	**93.03**	**333**	⇑*e*P		**P**	**21 21 07.4**	**-0.5**
VSU				pmax		pmax		
	comp=Z,77nm,2.5s							
RAYN	**Ar Rayn**	**93.97**	**295**	*e*P		**P**	**21 21 12.5**	**-0.7**
KIEV	**Kiev**	**95.72**	**325**	⇑*e*P		**P**	**21 21 18.3**	**-2.2**
KIEV				pmax		pmax		
	comp=Z,2.0nm,0.9s							
ULM	**Lac du Bonnet**	**96.82**	**35**	LR		LR	22 06 55.4	
	comp=Z,208nm,18.0s,baz=340,slow=37							
NOA	**NORSAR Array B**	**97.55**	**340**	P		**P**	**21 21 26.6**	**-2.1**
	comp=Z,1.8nm,0.8s,baz=48,slow=4.8,SNR=3.7							
BRTR	**Keskin Array B**	**97.88**	**314**	P		**P**	**21 21 29.4**	**-1.4**
	comp=Z,2.3nm,1.1s,baz=60,slow=3.0,SNR=6.1							
BR231	**Keskin MP Arra**	**98.43**	**314**	*e*P		**P**	**21 21 30.3**	**-2.8**
MAW	**Mawson**	**99.65**	**203**	*e*P		**Pdif**	**21 21 40.7**	**+3.1**
MAW	**Mawson**	**99.65**	**203**	*e*P		**Pdif**	**21 21 40.7**	**+3.1**
ESDC	**Sonseca Array**	**120.17**	**333**	PP		PP	21 28 07.0	-3.2
	comp=Z,0.2nm,0.3s,baz=28,slow=8.3,SNR=4.1							
TORD	**Torodi Ar. Bea**	**135.76**	**305**	PKP		**PKPdf**	**21 27 15.9**	**-0.2**
	comp=Z,1.2nm,0.8s,baz=12,slow=2.0,SNR=5.7							
DBIC	**Dimbokro**	**144.74**	**303**	PKP		PKPbc	21 27 31.7	+0.4
	comp=Z,20nm,0.7s,baz=35,slow=3.3,SNR=38							
KIC	**Kosan Boka**	**144.81**	**302**	*e*PKP1		PKPbc	21 27 31.9	+0.3
	comp=Z,54nm,0.9s							
TIC	**Toumodi**	**144.88**	**303**	*e*PKP1		PKPbc	21 27 32.0	+0.2
LIC	**Lamto**	**145.13**	**302**	*e*PKP1		**PKPbc**	**21 27 32.7**	**+0.1**
	comp=Z,76nm,1.2s							
LPAZ	**La Paz**	**147.03**	**99**	PKPbc		**PKPbc**	**21 27 39.6**	**+0.6**
	comp=Z,1.9nm,0.5s,baz=354,slow=5.0,SNR=8.6							
SAML	**Samuel**	**151.16**	**84**	*e*PKPdf		**PKPdf**	**21 27 43.7**	**+0.8**
PTGA	**Pitinga**	**151.47**	**66**	PKPbc		**PKPbc**	**21 27 50.1**	**+0.5**
	comp=Z,3.6nm,0.6s,baz=285,slow=20,SNR=3.3							
SIV	**San Ignacio**	**153.82**	**99**	PKPab		**PKPab**	**21 28 08.3**	**+0.5**
	comp=Z,0.4nm,0.3s,baz=304,slow=3.3,SNR=1.5							

ECX **12** *21:09:22.7±0.5, 31°.25N×115°.64W, h5km, MD2.8, ML3.0*
MEX **12** *21:09:23.5±0.3, 31°.06N×115°.69W, h11km±19km, MD3.6*
ISC 12 21:09:20.7±1.2, 31°.19N±0°.07×115°.63W±0°.05, h28km±12km, n12, σ1°09/22, 4C-3D, Baja California

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
SPIG	**San Pedro Mart**	**0.20**	**134**	*e*P		**Pb**		**21 09 27.3**	**+0.2**
SPIG				*e*S		**Sb**		**21 09 31.0**	**-0.4**
SPIG	**San Pedro Mart**	**0.20**	**134**	*e*P		**Pb**		**21 09 27.5**	**+0.4**
SPIG				*e*S		**Sb**		**21 09 30.4**	**-1.0**
SPX	**San Pedro Mart**	**0.20**	**134**	⇓*e*P		**Pb**		**21 09 27.5**	**+0.4**
SPX				*e*S		**Sb**		**21 09 31.4**	**+0.1**
SPX				⇓*e*				21 09 32.1	
SPX	comp=N,2μm,0.5s			AML		AML		21 09 32.1	
SPX	comp=E,2μm,0.3s			AML		AML		21 09 32.5	
SPX				⇑*e*				21 09 32.5	
ECBX	**El Chinero**	**0.57**	**60**	⇑*e*P		**Pb**		**21 09 32.8**	**+0.6**
ECBX				*e*S		**Sb**		**21 09 39.9**	**-0.2**
ECBX				⇑*e*				21 09 40.9	
ECBX	comp=E,765nm,0.4s			AML		AML		21 09 40.9	
ZAX	**El Zacaton**	**0.64**	**301**	*e*P		**Pb**		**21 09 33.2**	**-0.2**
ZAX				*e*S		**Sb**		**21 09 42.0**	**0.0**
ZAX	comp=N,772nm,0.2s			AML		AML		21 09 43.8	
ZAX				*e*				21 09 43.8	
ECNX	**Esteban Cantu**	**0.95**	**300**	*e*P		**Pn**		**21 09 39.0**	**+0.7**
ECNX				*e*S		**Sn**		**21 09 51.1**	**0.0**
PBX	**Punta Banda**	**1.08**	**301**	*e*P		**Pb**		**21 09 41.1**	**+0.2**
PBX				*e*S		**Sn**		**21 09 55.2**	**+0.9**
CBX	**Cerro Bola**	**1.43**	**322**	*e*P		**Pb**		**21 09 46.9**	**+0.2**
CBX				*e*S		**Sb**		**21 10 04.9**	**+0.4**
CBX	comp=N,272nm,0.3s			AML		AML		21 10 06.2	
CBX				⇓*e*				21 10 06.2	
CBX	**Cerro Bola**	**1.43**	**322**	*e*P		**Pb**		**21 09 46.7**	**0.0**
CBX				*i*S		**Sb**		**21 10 04.9**	**+0.4**
RMX	**La Rumorosa**	**1.46**	**345**	*e*P		**Pb**		**21 09 47.6**	**+0.3**
RMX				*e*S		**Sb**		**21 10 06.6**	**+1.0**
RMX	comp=N,154nm,0.2s			AML		AML		21 10 08.6	
RMX				⇑*e*				21 10 08.6	
TJIG	**Tijuana**	**1.53**	**325**	*e*P		Pn		21 09 40.8	-5.4
TJIG				*i*S		**Sn**		**21 10 01.1**	**-4.1**
BAR	**Barrett**	**1.73**	**330**	*e*P		**Pb**		**21 09 51.8**	**0.0**

IDC **12** *21:12:54.0±1.0, 30°.89N×103°.01E, h0km, mb3.4/5, mb1 3.7/6, mb1mx3.4/49, mbtmp3.4/6, ML3.7/1, Error ellipse: s-maj=35.7km s-min=22.5km az=67.0*
ISCJB **12** *21:12:55.2±0.7, 30°.81N±0°.06×103°.09E±0°.08, h15km, mb3.5/5, Error ellipse: s-maj=9.6km s-min=8.6km az=26.3*
BJI **12** *21:12:59.4, 30°.61N×103°.26E, h24km, mb3.9/2, ML3.4/11, Ms3.4/3, Ms7 3.5/3*
ISC 12 21:12:56.8±0.9, 30°.84N±0°.06×103°.25E±0°.07, h15km, n11, σ1°82/15, mb3.6/5, Sichuan

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
CD2	**Chengdu**	**0.44**	**81**	Pg		**Pn**		**21 13 08.7**	**+0.1**
CD2				Sg		**Sn**		**21 13 17.2**	**+0.9**
CD2				smax		smax			
CD2	comp=N,3μm,0.6s			smax		smax			
GYA	**Guiyang**	**5.30**	**145**	Pn		Pn		21 14 10.5	-5.0
GYA				Sn		**Sn**		**21 15 19.1**	**+2.7**
GYA				Sg		**Sg**		**21 15 44.4**	**-2.5**
GYA				smax		smax			
GYA	comp=N,60nm,0.7s			smax		smax			
XAN	**Xi'an**	**5.75**	**55**	Pn		Pn		21 14 26.9	+5.2
XAN				Pg		**Pg**		**21 14 46.5**	**-0.4**
XAN				Sn		**Sn**		**21 15 30.3**	**+2.8**
XAN				Sg		**Sg**		**21 15 59.1**	**-2.4**
XAN				smax		smax			
XAN	comp=N,67nm,1.0s			smax		smax			
CMAR	**Chiang Mai Arr**	**12.94**	**199**	Pn		**Pn**		**21 15 59.9**	**-0.3**
	comp=Z,E,8nm,0.8s								
WMQ	**Urumqi**	**17.87**	**321**	*e*P		**P**		**21 17 07.3**	**+1.8**
WMQ				pmax		pmax			
	comp=Z,5.0nm,0.5s								
KSRS	**Korea Array**	**21.42**	**65**	P		**P**		**21 17 45.6**	**+1.5**
	0.1nm,0.3s,baz=13,slow=13,SNR=5.1								
MKAR	**Makanchi Array**	**22.70**	**320**	P		**P**		**21 17 56.2**	**-1.7**
	1.7nm,0.7s,baz=242,slow=10,SNR=5.4								
WRA	**Warramunga Arr**	**58.67**	**145**	P		**P**		**21 22 54.4**	**+0.7**
	0.2nm,0.4s,baz=325,slow=2.9,SNR=2.9								
ASAR	**Alice Springs**	**61.66**	**148**	P		**P**		**21 23 14.6**	**+0.4**
	2.2nm,0.7s,baz=338,slow=7.6,SNR=17								
YKA	**Yellowknife Ar**	**82.15**	**17**	P		**P**		**21 25 16.1**	**-0.5**
	0.3nm,0.3s,baz=340,slow=6.9,SNR=5.3								
PTGA	**Pitinga**	**146.08**	**329**	PKPbc		**PKPdf**		**21 32 34.6**	**-1.4**
	0.1nm,0.5s,baz=322,slow=5.1,SNR=2.2								
	2.4nm,0.4s,baz=48,slow=14,SNR=4.2								

IDC **12** *21:22:43.9±9.1, 21°.37S×67°.95W, h80km±71km, mb3.4/1, mb1 3.4/2, mb1mx3.1/23, mbtmp3.6/2, ML3.5/1, Error ellipse: s-maj=131.3km s-min=62.1km az=79.0*
ISCJB **12** *21:22:46.4±0.9, 21°.15S±0°.05×68°.8W±0°.2, h138km±11km, mb3.3/1, Error ellipse: s-maj=26.5km s-min=7.7km az=6.0*
GUC **12** *21:22:47.1±0.5, 21°.12S×68°.78W, h126km±4km, ML3.5*
ISC 12 21:22:47.1±1.1, 21°.13S±0°.05×68°.8W±0°.2, h131km±12km, n9, σ0°54/16, 5C-1D, Chile-Bolivia border region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
PB01	**IPOC Station P**	**0.67**	**278**	⇑*i*P		**Pn**		**21 23 07.3**	**-0.2**
PB01				*i*S		**Sn**		**21 23 22.4**	**-0.5**
PB01				IAML				21 23 24.1	
PB09	comp=E,1μm,0.1s **IPOC Station P**	**0.79**	**213**	⇑*i*P		**Pn**		**21 23 08.7**	**+0.2**
PB09				*i*S		**Sn**		**21 23 24.9**	**+0.2**
PB09				IAML				21 23 25.5	
PB08	comp=N,2μm,0.5s **IPOC Station P**	**1.05**	**340**	⇓*i*P		**Pn**		**21 23 11.1**	**+0.1**
PB08				*i*S		**Sn**		**21 23 29.2**	**+0.1**
PB07	**IPOC Station P**	**1.19**	**240**	⇑*i*P		**Pn**		**21 23 12.6**	**+0.4**
PB07				*i*S		**Sn**		**21 23 31.5**	**+0.3**
PB07				IAML				21 23 33.1	
HMBC	comp=N,642nm,0.1s **Humberstone**	**1.34**	**309**	⇑*i*P		**Pn**		**21 23 13.8**	**0.0**
HMBC				*i*S		**Sn**		**21 23 34.0**	**0.0**
HMBC				IAML				21 23 34.4	
PB06	comp=N,1μm,0.3s **IPOC Station P**	**1.73**	**205**	⇑*i*P		**Pn**		**21 23 18.4**	**+0.3**
PB06				*i*S		**Sn**		**21 23 41.9**	**+0.1**
LPAZ	**La Paz**	**4.86**	**7**	P		**Pn**		**21 23 59.3**	**+0.3**
	comp=N,1.0nm,0.3s,baz=180,slow=3.0,SNR=19								
LPAZ				S		**Sn**		**21 24 55.4**	**+0.7**
	baz=26,slow=21,SNR=1.8								
TORD	**Torodi Ar. Bea**	**77.11**	**70**	P		**P**		**21 34 25.5**	**-1.1**
	comp=N,0.4nm,0.5s,baz=254,slow=5.7,SNR=8.2								
MKAR	**Makanchi Array**	**145.26**	**36**	PKPbc		**PKPab**		**21 42 10.5**	**+1.0**
	comp=N,0.2nm,0.6s,baz=329,slow=1.7,SNR=3.7								

IDC **12** *21:32:00.9±0.8, 57°.94N×32°.38W, h0km, mb3.9/20, mb1 4.0/21, mb1mx3.8/59, mbtmp3.8/21, ML3.8/1, MS3.9/11, Ms1 3.9/11, ms1mx3.4/63, Error ellipse: s-maj=22.9km s-min=13.9km az=9.0*
ISCJB **12** *21:32:02.1±0.6, 58°.0N±0°.1×32°.4W±0°.1, h18km, mb3.9/23, MS3.8/8, Error ellipse: s-maj=15.7km s-min=10.6km az=14.3*
NEIC **12** *21:32:02.5±0.5, 57°.99N×32°.40W, h10km, mb4.2/4, Error ellipse: s-maj=12.4km s-min=8.8km az=191.0*
ISC 12 21:32:03.9±0.7, 58°.0N±0°.1×32°.30W±0°.09, h18km, n41, σ0°73/30, mb4.0/23, MS3.7/8, Reykjanes Ridge

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
BORG	**Borgarnes**	**8.57**	**33**	LR		LR		21 36 39.4	
	comp=Z,653nm,20.4s,baz=295,slow=32								
BORG	**Borgarnes**	**8.57**	**33**	Pn		**Pn**		**21 34 05.5**	**-1.4**
EKA	**Eskdalemuir Ar**	**16.18**	**87**	Pn		**P**		**21 35 52.0**	**-1.1**
	baz=304,slow=10,SNR=3.1								
FRB	**Frobisher Bay**	**18.36**	**303**	LR		LR		21 42 24.9	
	comp=Z,387nm,18.7s,baz=56,slow=34								
SCHQ	**Schefferville**	**19.24**	**275**	LR		LR		21 42 40.2	
	comp=Z,300nm,19.3s,baz=81,slow=33								
NOA	**NORSAR Array B**	**21.97**	**64**	P		**P**		**21 36 57.3**	**+0.9**
	2.8nm,1.0s,baz=285,slow=10,SNR=3.4								
NOA				LR		LR		21 44 01.1	
	comp=Z,124nm,18.5s,baz=290,slow=33								
ESDC	**Sonseca Array**	**25.84**	**123**	P		**P**		**21 37 34.1**	**+0.1**
	1.2nm,0.8s,baz=311,slow=9.2,SNR=4.5								
DAVOX	**Davos/Dischmat**	**27.61**	**95**	LR		LR		21 48 15.6	
	comp=Z,157nm,18.6s,baz=263,slow=35								
GERES	**GERESS Array B**	**28.38**	**89**	LR		LR		21 48 16.2	
	comp=Z,113nm,18.7s,baz=276,slow=34								
FINES	**FINESS Array B**	**28.78**	**58**	P		**P**		**21 38 00.9**	**+0.7**
	1.7nm,1.0s,baz=306,slow=4.8,SNR=2.3								
VRAC	**Vranov**	**29.64**	**86**	LR		LR		21 49 38.6	
	comp=Z,193nm,18.1s,baz=287,slow=36								
AKASG	**Malin Array Be**	**35.44**	**75**	P		**P**		**21 38 58.6**	**0.0**
	0.3nm,0.3s,baz=304,slow=8.6,SNR=10								
YKA	**Yellowknife Ar**	**38.49**	**312**	P		**P**		**21 39 24.1**	**-0.3**
	0.6nm,0.9s,baz=61,slow=9.1,SNR=7.7								
YKA				PcP		**PcP**		**21 41 36.2**	**-0.7**
	0.3nm,0.8s,baz=55,slow=3.5,SNR=4.0								
TAM	**Tamanrasset**	**44.42**	**126**	*e*P		**P**		**21 40 13.5**	**-0.1**
	2.5nm,1.1s								
BRTR	**Keskin Array B**	**45.07**	**84**	P		**P**		**21 40 19.1**	**+0.5**
	1.7nm,0.9s,baz=316,slow=5.2,SNR=7.1								
ARU	**Arti**	**45.63**	**51**	P

0.6nm,0.8s,baz=21,slow=5.6,SNR=5.6
NVAR Mina Array Bea 72.89 55 P P 21 44 35.3 +0.7
0.3nm,0.7s,baz=264,slow=4.5,SNR=3.9

JMA 12 21:33:38.5±0.2, 38.79N×142.45E, h29km±3km, M2.8, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
OFUJ	**Ofunato**	**0.68**	**296**	P	Pb	21 33 51.5	-0.3
OFUJ				S	Sb	21 34 00.9	+0.1
JIO	**Ouri**	**0.93**	**249**	P	Pn	21 33 55.2	-0.3
MIYJ	**Miyakonagasawa**	**0.93**	**328**	P	Pn	21 33 55.1	-0.5
MIYJ				S	Sn	21 34 06.6	-1.3
JMK	**Ichinoseki**	**0.97**	**280**	P	Pn	21 33 56.4	+0.2
JMK				S	Sn	21 34 08.9	-0.1
JOM	**Ohasama**	**1.13**	**308**	P	Pb	21 33 58.9	-0.5
JOM				eS	Sb	21 34 13.8	+0.1
JOU	**Okura**	**1.46**	**254**	eS	Sb	21 34 22.6	-0.7
JKZ	**Kuzumaki**	**1.48**	**324**	P	Pn	21 34 04.1	+0.9
JKZ				eS	Sn	21 34 22.1	+0.6

ISCJB ***12*** *21:37:11.4±0.5, 32.29N×0.04×105.09E±0.08, h15km, mb3.8/11, Error ellipse: s-maj=10.5km s-min=5.5km az=22.4*
IDC ***12*** *21:37:11.1±0.8, 32.32N×105.07E, h0km, mb3.8/11, mb1 3.9/13, mb1mx3.6/54, mbtmp3.7/13, ML3.2/2, Error ellipse: s-maj=42.4km s-min=16.5km az=60.0*
BJI ***12*** *21:37:13.8, 32.34N×104.93E, h16km, ML3.5/16, Ms3.4/3, Ms7 3.0/3*
ISC 12 21:37:13.4±0.6, 32.38N±0.04×105.04E±0.06, h15km, n17, σ1§62/23, mb3.9/11, Sichuan

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CD2	**Chengdu**	**1.83**	**217**	Pn	**Pn**	**21 37 44.6**	**+0.3**
CD2				Pg	**Pb**	**21 37 46.4**	**-0.1**
CD2				Sn	**Sb**	**21 38 08.8**	**-0.4**
CD2				Sg	**Sg**	**21 38 10.7**	**-1.4**
CD2				smax	smax		
	comp=N,2μm,0.5s						
CD2				smax	smax		
	comp=E,2μm,0.7s						
XAN	**Xi'an**	**3.65**	**62**	Pg	**Pg**	**21 38 24.1**	**+0.7**
XAN				Sg	**Sg**	**21 39 06.9**	**-3.8**
XAN				smax	smax		
	comp=N,180nm,0.8s						
XAN				smax	smax		
	comp=E,130nm,0.7s						
LZH	**Lanzhou**	**3.83**	**345**	*e*Pg	**Pg**	**21 38 25.0**	**-1.7**
LZH				Sn	**Sn**	**21 39 00.1**	**+3.3**
LZH				Sg	**Sg**	**21 39 13.8**	**-2.5**
LZH				smax	smax		
	comp=E,220nm,0.9s						
LZH				smax	smax		
	comp=E,210nm,0.6s						
LZH				LR	LR		
	comp=E,430nm,5.2s						
LZH				LR	LR		
	comp=E,320nm,6.2s						
LZH				LR	LR		
	comp=E,500nm,7.0s						
CMAR	**Chiang Mai Arr**	**14.91**	**203**	Pn	**Pn**	**21 40 42.7**	**-1.0**
	comp=E,0.1nm,0.3s,baz=17,slow=12,SNR=5.5						
SONM	**Songino Array**	**15.47**	**3**	Pn	**Pn**	**21 40 53.1**	**+2.0**
	comp=E,0.1nm,0.3s,baz=173,slow=13,SNR=3.1						
WMQ	**Urumqi**	**17.76**	**315**	*e*P	**Pn**	**21 41 18.4**	**-1.7**
MKAR	**Makanchi Array**	**22.57**	**316**	P	**P**	**21 42 14.9**	**+1.9**
	comp=E,0.6nm,0.6s,baz=116,slow=11,SNR=8.2						
ZALV	**Zalesovo Beam**	**25.95**	**332**	P	**P**	**21 42 45.9**	**+1.0**
	comp=E,0.5nm,0.5s,baz=299,slow=18,SNR=3.0						
KURBB	**Kurchatov Arra**	**26.73**	**321**	P	**P**	**21 42 53.3**	**+1.3**
	comp=E,0.7nm,0.7s,baz=130,slow=8.5,SNR=8.4						
ARCES	**ARCESS Array B**	**56.43**	**335**	P	**P**	**21 46 54.2**	**+0.3**
	comp=E,5.7nm,1.0s,baz=69,slow=6.6,SNR=6.4						
BRTR	**Keskin Array B**	**56.81**	**299**	P	**P**	**21 46 57.5**	**+0.2**
	comp=E,0.6nm,0.7s,baz=79,slow=6.9,SNR=4.1						
FINES	**FINESS Array B**	**56.96**	**326**	P	**P**	**21 46 58.1**	**+0.3**
	comp=E,0.8nm,0.5s,baz=87,slow=8.3,SNR=9.7						
WRA	**Warramunga Arr**	**59.10**	**148**	P	**P**	**21 47 13.1**	**-0.2**
	comp=E,1.0nm,0.6s,baz=339,slow=7.5,SNR=9.6						
ASAR	**Alice Springs**	**62.18**	**150**	P	**P**	**21 47 34.2**	**0.0**
	comp=E,0.7nm,0.8s,baz=342,slow=6.6,SNR=5.7						
HFS	**Hagfors**	**63.16**	**326**	P	**P**	**21 47 40.1**	**-0.2**
	comp=E,1.7nm,0.7s,baz=87,slow=9.5,SNR=5.2						
NOA	**NORSAR Array B**	**64.02**	**327**	P	**P**	**21 47 45.8**	**-0.3**
	comp=E,0.7nm,0.6s,baz=74,slow=4.3,SNR=3.0						
YKA	**Yellowknife Ar**	**80.24**	**17**	P	**P**	**21 49 23.4**	**+0.4**
	comp=E,0.3nm,0.5s,baz=327,slow=5.0,SNR=6.8						

SCB ***12*** *21:44:34.3±0.6, 23.92S×67.07W, h171km, Ml4.5/2, Error ellipse: s-maj=13.5km s-min=7.8km az=35.0*
NEIC ***12*** *21:44:38.9±0.5, 23.86S×66.65W, h188km±4km, mb4.8/114, MD4.4(SJA), Error ellipse: s-maj=6.3km s-min=4.1km az=54.0*
ISCJB ***12*** *21:44:38.6±0.2, 23.84S±0.03×66.74W±0.04, h203km±2km, mb4.7/125, Error ellipse: s-maj=6.0km s-min=3.7km az=147.6*
BJI ***12*** *21:44:40.4, 23.90S×66.70W, h191km, mB5.1/9*
SJA ***12*** *21:44:40.7±0.7, 23.95S×66.78W, h187km±9km, ML4.1, MW4.2*
IDC ***12*** *21:44:41.4±0.6, 23.75S×66.58W, h213km±4km, mb4.1/18, mb1 4.3/24, mb1mx4.2/31, mbtmp4.7/24, Error ellipse: s-maj=12.3km s-min=8.8km az=51.0*
GCMT ***12*** *21:44:42.1±0.4, 23.88S×66.89W, h220km±3km, MW5.1/64, Moment Tensor Solution. s21,c23; s64,c80; Duration: 0 Moment tensor: Scale 10^{16}Nm; M_{rr}-2.54±.23; $M_{\theta\theta}$-1.49±.28; $M_{\phi\phi}$4.03±.31; $M_{r\theta}$-1.20±.17; $M_{r\phi}$-2.60±.26; $M_{\theta\phi}$-4.29±.20; Best double couple: M0 6.22000×10^{16} NP1:ϕs10.00000°, δ75.00000°, λ-57.00000°. NP2: ϕs122.00000°, δ36.00000°, λ-154.00000°. Principal axes: T 6.5730, Plg23.0000°, Azm76.0000°; N -0.7070, Plg32.0000°, Azm181.0000°; P -5.8660, Plg49.0000°, Azm316.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
ISC 12 21:44:40.9±0.4, 23.88S±0.04×66.79W±0.04, h210km±3km, h210km:pP-P, n480, σ1§37/537, mb4.8/125, 8C-1D, Jujuy Province

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SLA	**San Lorenzo**	**1.44**	**126**	*i* P	**Pn**	**21 45 13.7**	**-1.4**
SLA				*i* S	**S**	**21 45 36.7**	**-5.0**
SLA				IAML		21 45 43.4	
	comp=Z,2μm,0.8s						
AZAP	**Zapla**	**1.61**	**103**	*i* P	**Pn**	**21 45 15.3**	**-1.5**
AZAP				IAML		21 45 47.4	
	comp=Z,867nm,0.7s						
ASTB	**Santa Barbara**	**2.14**	**92**	*i* P	**Pn**	**21 45 20.6**	**-1.1**
ASTB				*i* S	**S**	**21 45 50.1**	**-3.1**
FSA	**Cafayete**	**2.34**	**162**	*i* P	**Pn**	**21 45 22.6**	**-1.3**
FSA				*i* S	**S**	**21 45 53.1**	**-4.0**
ALOL	**LOMAS DE OLMED**	**2.57**	**89**	*i* P	**Pn**	**21 45 25.3**	**-1.0**
ALOL				*i* S	**S**	**21 45 57.9**	**-3.3**
MOCB	**Mochara**	**2.83**	**22**	↑*i* Pn	**Pn**	**21 45 28.1**	**-1.5**
MOCB				*e*Sn	**S**	**21 46 06.5**	**-0.7**
	comp=Z,1μm,0.9s						
AHML	**Horco Molle**	**3.17**	**156**	*i* P	**Pn**	**21 45 31.6**	**-1.5**
AHML				*i* S	**S**	**21 46 09.9**	**-3.9**
AHML				IAML		21 46 14.4	
	comp=Z,208nm,0.7s						
PB04	**IPOC Station P**	**3.46**	**296**	*e*Pn	**Pn**	**21 45 34.1**	**-2.6**
PB04				*e*Sn	**S**	**21 46 16.0**	**-3.9**
PB10	**IPOC Station P**	**3.47**	**275**	*e*Pn	**Pn**	**21 45 34.7**	**-2.0**
PB10				*e*Sn	**S**	**21 46 14.8**	**-5.2**
PB01	**IPOC Station P**	**3.77**	**318**	*e*Pn	**Pn**	**21 45 38.0**	**-2.4**
PB01				*e*Sn	**S**	**21 46 22.0**	**-4.7**
AGUA	**GUANDACOL**	**5.79**	**195**	*i* P	**Pn**	**21 46 04.8**	**-0.8**
AGUA				*i* S	**S**	**21 47 06.8**	**-5.9**
LCO	**Las Campanas**	**6.20**	**214**	*e*Pn	**Pn**	**21 46 07.6**	**-3.5**
LCO				*e*Sn	S	21 47 06.2	-16
BBOJ	**La Paz, Jacaqu**	**7.00**	**349**	↑*i* Pn	**Pn**	**21 46 20.8**	**-0.9**
BBOE	**La Paz, Chanca**	**7.12**	**351**	↓*i* Pn	**Pn**	**21 46 22.9**	**-0.5**
BBOD	**La Paz, Gloria**	**7.41**	**346**	↑*i* Pn	**Pn**	**21 46 25.9**	**-1.1**
BBOD				↑*i* Sn	**S**	**21 47 47.2**	**-4.2**
	comp=Z,155nm,0.9s						
LPAZ	**La Paz**	**7.66**	**350**	P	**Pn**	**21 46 28.7**	**-1.8**
	comp=Z,7.4nm,0.3s,baz=132,slow=2.3,SNR=149						
LPAZ				S	**S**	**21 47 53.6**	**-4.0**
	comp=Z,1.2nm,0.3s,baz=84,slow=19,SNR=2.3						
LPAZ	**La Paz**	**7.66**	**350**	↑*i* Pn	**Pn**	**21 46 28.6**	**-1.8**
LPAZ				*e*Sn	**S**	**21 47 53.8**	**-3.7**
BBOB	**La Paz, Bander**	**7.80**	**350**	↑*i* Pn	**Pn**	**21 46 30.2**	**-2.0**
BBOB				↑*i* Sn	**S**	**21 47 57.5**	**-3.3**
ARE	**Arequipa**	**8.60**	**328**	*e*P	**Pn**	**21 46 39.0**	**-3.3**
ARE				*e*S	S	21 48 09.0	-10
CPUP	**Villa Florida**	**8.91**	**108**	P	**Pn**	**21 46 43.7**	**-2.2**
	comp=Z,0.7nm,0.3s,baz=292,slow=12,SNR=61						
SIV	**San Ignacio**	**9.51**	**35**	P	**Pn**	**21 46 50.7**	**-3.1**
	comp=Z,3.1nm,0.3s,baz=226,slow=13,SNR=185						
SIV				S	S	21 48 22.8	-18
	comp=Z,0.3nm,0.3s,baz=236,slow=16,SNR=3.8						
SIV	**San Ignacio**	**9.51**	**35**	↑*i* P	**Pn**	**21 46 50.3**	**-3.5**
TRQA	**Tornquist**	**14.71**	**165**	*e*Pn	**Pn**	**21 47 56.8**	**-2.4**
NNA	**Nana**	**15.20**	**319**	P	**Pn**	**21 48 05.3**	**0.0**
	comp=Z,2.7nm,0.3s,baz=173,slow=9.6,SNR=11						
NNA	**Nana**	**15.20**	**319**	*e*Pn	**Pn**	**21 48 05.3**	**0.0**
	comp=Z,385nm,1.3s						
SAML	**Samuel**	**15.24**	**14**	*e*Pn	**Pn**	**21 48 03.8**	**-2.0**
	comp=Z,15nm,0.7s						
PLCA	**Paso Flores**	**17.10**	**190**	P	**P**	**21 48 26.4**	**+0.3**
	comp=Z,0.5nm,0.3s,baz=30,slow=12,SNR=16						
PLCA	**Paso Flores**	**17.10**	**190**	*e*P	**P**	**21 48 26.6**	**+0.4**
	comp=Z,22nm,0.9s						
SPB	**Sao Paulo**	**17.72**	**93**	*e*P	**P**	**21 48 31.7**	**-1.3**
	comp=Z,246nm,1.4s						
BDFB	**Brasilia**	**19.46**	**69**	P	**P**	**21 48 50.8**	**-1.3**
	comp=Z,13nm,0.3s,baz=240,slow=11,SNR=156						
BDFB	**Brasilia**	**19.46**	**69**	*e*P	**P**	**21 48 50.8**	**-1.3**
	comp=Z,981nm,1.4s						
ATAH	**Atahualpa**	**20.04**	**324**	P	**P**	**21 49 00.1**	**+1.6**
	comp=Z,18nm,0.9s,baz=154,slow=9.2,SNR=18						
PTGA	**Pitinga**	**23.95**	**17**	P	**P**	**21 49 34.4**	**-1.7**
	comp=Z,13nm,0.8s,baz=190,slow=9.9,SNR=11						
OTAV	**Otavalo**	**26.52**	**333**	*e*P	**P**	**21 50 00.3**	**+0.6**
	comp=Z,24nm,1.4s						
EFI	**East Falkland**	**28.55**	**169**	*e*P	**P**	**21 50 16.8**	**-0.1**
	comp=Z,209nm,1.6s						
SDV	**Santo Domingo**	**32.78**	**353**	P	**P**	**21 50 52.5**	**-2.1**
	comp=Z,4.3nm,0.3s,baz=192,slow=4.5,SNR=11						
SDV	**Santo Domingo**	**32.78**	**353**	*e*P	**P**	**21 50 52.6**	**-2.1**
	comp=Z,17nm,1.1s						
RCBR	**Riachuelo**	**34.70**	**64**	*e*P	**P**	**21 51 10.1**	**-1.0**
	comp=Z,69nm,1.3s						
GRGR	**Grenville**	**36.14**	**9**	*e*P	**P**	**21 51 22.5**	**-0.7**
	comp=Z,237nm,1.2s						
HOPE	**Hope Point**	**37.86**	**151**	*e*P	**P**	**21 51 37.9**	**+0.7**
	comp=Z,733nm,1.9s						
JTS	**JuntasAbangare**	**38.33**	**330**	P	**P**	**21 51 42.9**	**+1.3**
	comp=Z,19nm,0.8s,baz=244,slow=1.0,SNR=9.3						
JTS	**JuntasAbangare**	**38.33**	**330**	*e*P	**P**	**21 51 43.5**	**+1.9**
	comp=Z,41nm,1.0s						
TGUH	**Tegucigalpa,Un**	**42.70**	**330**	*e*P	**P**	**21 52 18.2**	**+0.9**
	comp=Z,84nm,1.2s						
CCIG	**Comitan**	**46.98**	**326**	*e*P	**P**	**21 52 51.5**	**+0.3**
	comp=Z,42nm,1.2s						
TEIG	**Tepich**	**48.59**	**333**	*e*P	**P**	**21 53 02.7**	**-0.6**
	comp=Z,13nm,0.6s						
ZAIG	**Zacatecas**	**57.96**	**320**	*e*P	**P**	**21 54 12.9**	**+1.0**
	comp=Z,24nm,1.0s						
NHSC	**New Hope**	**58.09**	**347**	*e*P	**P**	**21 54 12.9**	**+0.7**
	comp=Z,98nm,0.9s						
SNAA	**Sanae**	**59.40**	**161**	*e*P	**P**	**21 54 21.4**	**+0.5**
	comp=Z,611nm,0.9s						
LRAL	**Lakeview Retre**	**59.79**	**340**	*e*P	**P**	**21 54 22.9**	**-1.0**
	comp=Z,12nm,0.7s						
933A	**Laredo**	**60.03**	**327**	P	**P**	**21 54 25.8**	**+0.2**
	baz=145						
736A	**Circle Diamond**	**60.08**	**329**	P	**P**	**21 54 26.3**	**+0.4**
	baz=148						
244A	**Avery, Jackson**	**60.12**	**337**	P	**P**	**21 54 26.3**	**+0.1**
	baz=155						
342A	**Flagon Creek P**	**60.14**	**335**	P	**P**	**21 54 26.7**	**+0.4**
	baz=153						
KMSC	**Kings Mountain**	**60.30**	**346**	P	**P**	**21 54 27.7**	**+0.4**
	baz=165						
HKT	**Hockley**	**60.36**	**331**	*e*P	**P**	**21 54 28.1**	**+0.3**
	comp=Z,28nm,1.4s						
341A	**Kurthwood**	**60.44**	**334**	P	**P**	**21 54 29.5**	**+1.2**
	baz=152						
636A	**Smothers Creek**	**60.52**	**330**	P	**P**	**21 54 29.5**	**+0.6**
	baz=148						
144A	**Alexander Plac**	**60.56**	**337**	P	**P**	**21 54 29.7**	**+0.6**
	baz=155						
439A	**Center Grove,**	**60.62**	**332**	P	**P**	**21 54 30.4**	**+0.8**
	baz=150						
833A	**Chaparral WMA,**	**60.67**	**327**	P	**P**	**21 54 30.3**	**+0.3**
	baz=146,SNR=15						
242A	**Grayson**	**60.69**	**335**	P	**P**	**21 54 30.0**	**0.0**
	baz=153						
734A	**La Parita Cree**	**60.69**	**328**	P	**P**	**21 54 30.2**	**+0.1**
	baz=146,SNR=6.5						
635A	**Leesville**	**60.77**	**329**	P	**P**	**21 54 30.4**	**-0.2**
	baz=147						
340A	**Bronson**	**60.80**	**333**	P	**P**	**21 54 31.1**	**+0.3**
	baz=151,SNR=5.8						
438A	**Sam Houston St**	**60.89**	**332**	P	**P**	**21 54 31.9**	**+0.6**
	baz=150						
832A	**Faith Ranch, C**	**60.93**	**326**	P	**P**	**21 54 31.9**	**+0.1**
	baz=145,SNR=6.3						
733A	**Divot King Ran**	**60.95**	**327**	P	**P**	**21 54 31.9**	**+0.1**
	baz=146						
143A	**Socs Landing,**	**60.98**	**336**	P	**P**	**21 54 32.2**	**+0.3**
	baz=154						
339A	**Huntington**	**61.00**	**333**	P	**P**	**21 54 32.7**	**+0.5**
	baz=151						
NATX	**Nacogdoches**	**61.42**	**333**	P	**P**	**21 54 34.8**	**-0.1**
	baz=151						
141A	**Papa Simpson,**	**61.46**	**335**	P	**P**	**21 54 35.6**	**+0.4**
	baz=153						
633A	**Saathoff Ranch**	**61.50**	**328**	P	**P**	**21 54 35.3**	**-0.2**
	baz=146,SNR=5.8						
SWET	**Sewanee**	**61.51**	**342**	*e*P	**P**	**21 54 34.7**	**-0.8**
	comp=Z,20nm,1.5s						
337A	**Centerville**	**61.55**	**332**	P	**P**	**21 54 37.1**	**+1.2**
	baz=150						
239A	**Gary**	**61.56**	**333**	P	**P**	**21 54 36.4**	**+0.5**
	baz=151						
534A	**Blanco**	**61.64**	**329**	P	**P**	**21 54 35.7**	**-0.8**
	baz=147						
OXF	**Oxford**	**61.92**	**339**	*e*P	**P**	**21 54 37.1**	**-1.1**
	comp=Z,114nm,1.4s						
PLAL	**Pickwick Lake**	**61.93**	**340**	*e*P	**P**	**21 54 37.0**	**-1.3**
	comp=Z,13nm,0.8s						
533A	**Kerrville**	**61.94**	**328**	P	**P**	**21 54 37.8**	**-0.8**
	baz=146						
336A	**Riesel**	**62.04**	**331**	P	**P**	**21 54 38.9**	**-0.1**
	baz=149						
237A	**Washetta, Mont**	**62.11**	**332**	P	**P**	**21 54 40.1**	**+0.5**
	baz=150						
434A	**Burnet**	**62.20**	**329**	P	**P**	**21 54 40.0**	**-0.2**
	baz=147,SNR=5.5						
335A	**Moody**	**62.21**	**330**	P	**P**	**21 54 40.1**	**-0.1**
	baz=148						
Z40A	**Long Farm, Mag**	**62.23**	**335**	P	**P**	**21 54 40.8**	**+0.6**
	baz=152,SNR=6.2						
236A	**Katherine and**	**62.42**	**332**	P	**P**	**21 54 41.6**	**0.0**
	baz=149						
WLAR	**White Oak Lake**	**62.50**	**335**	*e*P	**P**	**21 54 43.0**	**+1.0**
	comp=Z,160nm,1.4s						
WLAR				*e*pP	**pP**	**21 55 34.3**	**+3.9**
433A	**Art**	**62.53**	**329**	P	**P**	**21 54 42.0**	**-0.4**
	baz=146,SNR=17						
137A	**Heron Place, G**	**62.60**	**333**	P	**P**	**21 54 43.1**	**+0.3**
	baz=150						
334A	**Lometa**	**62.62**	**330**	P	**P**	**21 54 42.6**	**-0.4**
	baz=147						
JCT	**Junction City**	**62.65**	**328**	P	**P**	**21 54 42.7**	**-0.5**
	baz=146,SNR=5.4						
JCT	**Junction City**	**62.65**	**328**	*e*P	**P**	**21 54 43.5**	**+0.3**
	comp=Z,44nm,1.4s						
WHTX	**Lake Whitney,**	**62.82**	**331**	P	**P**	**21 54 43.9**	**-0.3**
	baz=148						
136A	**Ennis**	**62.83**	**332**	P	**P**	**21 54 44.3**	**+0.1**
	baz=149						
Y40A	**Okolona**	**62.85**	**335**	P	**P**	**21 54 44.1**	**-0.2**
	baz=153						
WVT	**Waverly**	**62.92**	**341**	*e*P	**P**	**21 54 43.4**	**-1.4**
	comp=Z,82nm,1.4s						
333A	**Richland Sprin**	**62.96**	**329**	P	**P**	**21 54 44.7**	**-0.5**
	baz=147,SNR=12						
Y39A	**Lockesburg**	**63.10**	**335**	P	**P**	**21 54 46.0**	**0.0**
	baz=152						
234A	**Clairette**	**63.14**	**330**	P	**P**	**21 54 46.0**	**-0.4**
	baz=148,SNR=9.1						
Y38A	**Idabel**	**63.34**	**334**	P	**P**	**21 54 47.3**	**-0.3**
	baz=151						
MIAR	**Mount Ida**	**63.43**	**335**	P	**P**	**21 54 47.4**	**-0.8**
	baz=152,SNR=9.2						
MIAR	**Mount Ida**	**63.43**	**335**	*e*P	**P**	**21 54 47.9**	**-0.3**
	comp=Z,14nm,0.8s						
Z36A	**Blue Ridge**	**63.47**	**332**	P	**P**	**21 54 48.3**	**-0.1**
	baz=150,SNR=6.0						
233A	**Rising Star**	**63.50**	**330**	P	**P**	**21 54 48.3**	**-0.5**
	baz=147,SNR=6.6						
W41A	**Tony Mavity, V**	**63.50**	**337**	P	**P**	**21 54 47.8**	**-0.8**
	baz=154						
X39A	**Fountain Ranch**	**63.61**	**335**	P	**P**	**21 54 49.5**	**+0.1**
	baz=152,SNR=11						
TXAR	**Lajitas Array**	**63.70**	**324**	P	**P**	**21 54 50.3**	**+0.1**
	comp=Z,1.5nm,0.5s,baz=152,slow=7.3,SNR=21						
TX31	**Lajitas Ar. Si**	**63.70**	**324**	*e*P	**P**	**21 54 50.4**	**+0.2**
Y37A	**Hugo**	**63.74**	**333**	P	**P**	**21 54 50.7**	**+0.5**
	baz=150,SNR=5.9						
W40A	**Ferguson Farm,**	**63.82**	**336**	P	**P**	**21 54 50.7**	**0.0**
	baz=153,SNR=5.1						
Z35A	**Perchaven, San**	**63.87**	**332**	P	**P**	**21 54 51.0**	**-0.1**
	baz=149						
Y36A	**Durant**	**63.95**	**333**	P	**P**	**21 54 52.2**	**+0.6**
	baz=150						
133A	**Hamilton Ranch**	**64.00**	**330**	P	**P**	**21 54 52.1**	**+0.1**
	baz=147						
PARMO	**Parma**	**64.00**	**340**	*e*P	**P**	**21 54 51.9**	**0.0**
X38A	**Whitesboro**	**64.03**	**334**	P	**P**	**21 54 52.2**	**+0.1**
	baz=151,SNR=10						
W39A	**Magazine**	**64.09**	**336**	P	**P**	**21 54 52.5**	**0.0**
	baz=152,SNR=7.3						
X37A	**Clayton**	**64.17**	**334**	P	**P**	**21 54 53.2**	**+0.1**
	baz=151,SNR=8.7						
Z34A	**Collier Ranch,**	**64.20**	**331**	P	**P**	**21 54 52.9**	**-0.3**
	baz=148,SNR=5.6						
W38A	**Poteau**	**64.26**	**335**	P	**P**	**21 54 53.9**	**+0.3**
	baz=152,SNR=9.6						
Y35A	**Marietta**	**64.27**	**332**	P	**P**	**21 54 54.2**	**+0.5**
	baz=149						
ABTX	**Abilene, Hawle**	**64.35**	**329**	P	**P**	**21 54 53.9**	**-0.4**
	baz=147,SNR=5.3						
WCI	**Wyandotte Cave**	**64.44**	**343**	*e*P	**P**	**21 54 53.3**	**-1.5**
	comp=Z,14nm,0.6s						
Z33A	**Whitaker Ranch**	**64.50**	**331**	P	**P**	**21 54 55.0**	**-0.2**
	baz=148,SNR=8.8						
X36A	**Centrahoma**	**64.56**	**333**	P	**P**	**21 54 55.3**	**-0.2**
	baz=150,SNR=5.4						
V39A	**Pettigrew**	**64.61**	**336**	P	**P**	**21 54 55.4**	**-0.5**
	baz=153,SNR=13						
Y34A	**Reagan Ranch,**	**64.62**	**332**	P	**P**	**21 54 55.5**	**-0.5**
	baz=149,SNR=7.1						
X35A	**Drake**	**64.67**	**333**	P	**P**	**21 54 55.5**	**-0.7**
	baz=149,SNR=6.0						
W37B	**Quinton**	**64.68**	**334**	P	**P**	**21 54 56.1**	**-0.2**
	baz=151,SNR=11						
O56A	**Blue Knob Stat**	**64.76**	**350**	P	**P**	**21 54 56.6**	**-0.2**
	baz=168						
U40A	**Yellville**	**64.78**	**337**	P	**P**	**21 54 56.0**	**-0.9**
	baz=154,SNR=7.5						
V38A	**Canehill**	**64.91**	**335**	P	**P**	**21 54 57.2**	**-0.6**
	baz=152,SNR=15						
W36A	**Wetumka**	**65.00**	**334**	P	**P**	**21 54 57.4**	**-1.0**
	baz=150,SNR=6.8						
U39A	**Green Forest**	**65.03**	**336**	P	**P**	**21 54 57.6**	**-1.0**
	baz=153,SNR=11						
Y33A	**Hilltop Ranch,**	**65.05**	**331**	P	**P**	**21 54 58.2**	**-0.5**
	baz=148						
HHAR	**Hobbs**	**65.11**	**336**	*e*P	**P**	**21 54 58.8**	**-0.3**
	comp=Z,53nm,1.4s						
X34A	**Smith Ranch, M**	**65.21**	**332**	P	**P**	**21 54 59.6**	**-0.1**
	baz=149,SNR=5.1						
V37A	**Hulbert**	**65.21**	**335**	P	**P**	**21 54 59.5**	**-0.2**
	baz=151,SNR=11						
W35A	**Tecumseh**	**65.28**	**333**	P	**P**	**21 54 59.6**	**-0.6**
	baz=150						
T40A	**Mansfield**	**65.37**	**338**	P	**P**	**21 54 59.7**	**-1.0**
	baz=154,SNR=7.0						
U38A	**Gravette**	**65.41**	**336**	P	**P**	**21 55 00.1**	**-0.9**
	baz=152						
V36A	**Jenks**	**65.44**	**334**	P	**P**	**21 55 00.7**	**-0.5**
	baz=151,SNR=10						
TUL1	**Leonard**	**65.49**	**334**	P	**P**	**21 55 00.9**	**-0.7**
	baz=151						
ACSO	**Alum Creek Sta**	**65.55**	**346**	*e*P	**P**	**21 55 01.7**	**-0.1**
	comp=Z,36nm,1.4s						
T39A	**Clever**	**65.56**	**337**	P	**P**	**21 55 01.4**	**-0.6**
	baz=153,SNR=8.1						
U37A	**Salina**	**65.66**	**335**	P	**P**	**21 55 02.7**	**+0.1**
	baz=152,SNR=8.4						
S40A	**Lebanon**	**65.77**	**338**	P	**P**	**21 55 02.5**	**-0.8**
	baz=154,SNR=13						
V35A	**Meyer Ranch, C**	**65.78**	**333**	P	**P**	**21 55 02.7**	**-0.8**
	baz=150,SNR=5.3						
T38A	**Diamond**	**65.91**	**336**	P	**P**	**21 55 03.7**	**-0.4**
	baz=152,SNR=22						
W33A	**Caddo, Port Co**	**65.95**	**332**	P	**P**	**21 55 04.9**	**+0.5**
	baz=148						
S39A	**Bolivar**	**66.14**	**337**	P	**P**	**21 55 05.1**	**-0.5**
	baz=153,SNR=28						
M54A	**Oil Creek Stat**	**66.14**	**349**	P	**P**	**21 55 05.4**	**-0.2**
	baz=167						
T37A	**Cheneyville 18**	**66.22**	**336**	P	**P**	**21 55 05.6**	**-0.5**
	baz=152,SNR=18						
W32A	**Sentinel**	**66.26**	**331**	P	**P**	**21 55 06.1**	**-0.4**
	baz=148,SNR=12						
U35A	**Pawnee**	**66.27**

comp=Z,17nm,0.5s
P39A **Salisbury** 67.55 338 P P 21 55 13.4 -1.1
baz=154,SNR=6.0
DBIC **Dimbokro** 67.58 71 P P 21 55 13.9 -1.3
comp=Z,4.8nm,0.4s,baz=212,slow=8.4,SNR=24
DBIC **Dimbokro** 67.58 71 eP P 21 55 13.8 -1.4
comp=Z,18nm,1.0s
Q37A **Longview Farm,** 67.59 337 P P 21 55 13.9 -0.8
baz=153,SNR=5.2
O40A **La Belle** 67.83 339 P P 21 55 15.2 -1.0
baz=155,SNR=5.5
P38A **Dawn** 67.94 338 P P 21 55 16.2 -0.7
baz=154,SNR=26
R34A **Isabella, Hill** 68.14 335 P P 21 55 17.8 -0.4
baz=150,SNR=5.6
Q35A **Mercer Eighty,** 68.16 336 P P 21 55 17.5 -0.8
baz=151
O39A **Kirksville** 68.17 339 P P 21 55 17.3 -1.1
baz=155
P37A **Lathrop** 68.19 337 P P 21 55 17.6 -0.9
baz=153
319A **Douglas** 68.36 322 eP P 21 55 21.3 +1.4
comp=Z,46nm,1.4s
121A **Cookes Peak, D** 68.40 323 P P 21 55 21.3 +1.1
baz=140,SNR=12
121A **Cookes Peak, D** 68.40 323 eP P 21 55 21.4 +1.3
comp=Z,23nm,1.0s
Q34A **Chapman** 68.56 335 P P 21 55 20.4 -0.4
baz=150
KSU1 **Kansas State U** 68.59 335 P P 21 55 21.0 +0.1
baz=151
O37A **Wolven Farm, M** 68.63 338 P P 21 55 20.1 -1.1
baz=153
N39A **Derby Farms, D** 68.72 339 P P 21 55 20.1 -1.6
baz=155
P35A **Duane Minner,** 68.74 336 P P 21 55 20.8 -1.1
baz=151
R32A **Long Quarter,** 68.83 334 P P 21 55 22.9 +0.4
baz=149
N38A **Joes South For** 68.89 339 P P 21 55 21.9 -0.8
baz=154
BNM **Barren Site** 69.03 325 eP P 21 55 25.7 +1.7
P34A **Walnut Farm, R** 69.06 336 P P 21 55 23.5 -0.4
baz=151,SNR=11
LPM **Los Pinos Moun** 69.16 325 eP P 21 55 26.4 +1.6
N37A **Lee Faris, Mou** 69.18 338 P P 21 55 24.4 -0.2
baz=153
Q32A **Meitler Ranch,** 69.26 334 P P 21 55 24.7 -0.4
baz=149
M38A **Pleasantville** 69.43 339 P P 21 55 25.0 -1.1
baz=154,SNR=8.5
LAZ **Ladron** 69.49 325 eP P 21 55 28.5 +1.6
ANMO **Albuquerque** 69.56 326 P P 21 55 28.0 +0.7
baz=141
ANMO **Albuquerque** 69.56 326 eP P 21 55 28.1 +0.9
comp=Z,14nm,0.9s
O34A **Beatrice** 69.56 336 P P 21 55 26.5 -0.5
baz=151
CBKS **Cedar Bluff** 69.59 333 P P 21 55 27.3 +0.2
baz=148
CBKS **Cedar Bluff** 69.59 333 eP P 21 55 28.1 +0.9
comp=Z,63nm,1.2s
M37A **Trindle Farm,** 69.71 338 P P 21 55 27.1 -0.6
baz=153,SNR=6.6
P32A **Huiting Farm,** 69.81 334 P P 21 55 28.1 -0.4
baz=149
SCIA **State Center** 69.88 339 eP P 21 55 28.6 -0.2
comp=Z,66nm,1.4s
JFWS **Jewell Farm** 69.89 342 eP P 21 55 28.3 -0.6
comp=Z,67nm,1.5s
TUC **Tucson** 69.91 321 P P 21 55 30.2 +0.9
baz=137
TUC **Tucson** 69.91 321 eP P 21 55 30.8 +1.5
comp=Z,26nm,1.3s
TUC eP pP 21 56 22.9 +4.2
N34A **Lincoln** 70.06 336 P P 21 55 28.8 -1.1
baz=151
O32A **Brockman Farm,** 70.23 335 P P 21 55 30.5 -0.5
baz=149
L37A **Phoenix Point,** 70.25 339 P P 21 55 30.5 -0.5
baz=154
T25A **Trinidad** 70.28 329 P P 21 55 32.4 +0.8
baz=144,SNR=6.5
214A **Organ Pipe Nat** 70.84 320 P P 21 55 35.9 +1.0
baz=136,SNR=11
214A **Organ Pipe Nat** 70.84 320 eP P 21 55 35.5 +0.6
comp=Z,76nm,1.2s
214A eP pP 21 56 26.7 +2.3
J38A **Wedel Dairy, R** 70.92 340 P P 21 55 34.3 -0.8
baz=155
L34A **Svendsen Farm,** 71.01 337 P P 21 55 35.0 -0.7
baz=151
X18A **Snowflake** 71.09 323 eP P 21 55 38.4 +1.8
comp=Z,13nm,1.1s
BGNE **Belgrade** 71.17 336 P P 21 55 36.3 -0.3
baz=150,SNR=7.7
BGNE **Belgrade** 71.17 336 eP P 21 55 36.4 -0.3
comp=Z,105nm,0.6s
J37A **Redenius Farm,** 71.25 340 P P 21 55 36.0 -1.1
baz=154,SNR=6.9
SDCO **Great Sand Dun** 71.29 328 P P 21 55 38.4 +0.7
baz=143,SNR=9.4
SDCO **Great Sand Dun** 71.29 328 eP P 21 55 38.8 +1.0
comp=Z,20nm,1.2s
SDCO eP pP 21 56 29.6 +2.2
W18A **Petrified Fore** 71.42 324 P P 21 55 39.7 +1.2
baz=139
W18A **Petrified Fore** 71.42 324 eP P 21 55 39.1 +0.6
comp=Z,28nm,1.4s
J36A **Seneca 1, Swea** 71.52 339 P P 21 55 37.8 -0.9
baz=153,SNR=6.5
I38A **Scanlan Farm,** 71.53 341 P P 21 55 37.8 -1.0
baz=155,SNR=7.2
X16A **Lo Mia Camp, P** 71.83 322 eP P 21 55 42.5 +1.5
comp=Z,13nm,1.0s
I37A **Lemond, Waseca** 71.84 340 P P 21 55 40.0 -0.6
baz=154,SNR=6.1
S22A **4UR Ranch, Cre** 71.94 328 P P 21 55 42.4 +0.8
baz=142
113A **Mohawk Valley,** 71.98 320 eP P 21 55 43.1 +1.5
comp=Z,4.6nm,0.9s
Q24A **Divide** 72.10 329 P P 21 55 43.5 +0.9
baz=143,SNR=5.9
L31A **Butterfield Fa** 72.10 336 P P 21 55 42.4 +0.2
baz=149
I35A **Creekview Farm** 72.20 339 P P 21 55 41.7 -1.1
baz=153,SNR=5.2
MVCO **Mesa Verde** 72.36 326 P P 21 55 44.7 +0.6
baz=140,SNR=8.7
MVCO **Mesa Verde** 72.36 326 eP P 21 55 45.5 +1.4
comp=Z,27nm,1.2s
MVCO eP pP 21 56 36.6 +2.8
J33A **Davis** 72.40 337 P P 21 55 43.5 -0.4
baz=151
H36A **Jessenland, He** 72.51 340 P P 21 55 44.0 -0.5
baz=154,SNR=5.8
WUAZ **Wupatki** 72.60 323 P P 21 55 46.8 +1.3
baz=138,SNR=6.3
WUAZ **Wupatki** 72.60 323 eP P 21 55 47.4 +1.9
comp=Z,18nm,1.1s
ECSD **EROS Data Cent** 72.64 338 P P 21 55 44.6 -0.7
baz=152,SNR=12
ECSD **EROS Data Cent** 72.64 338 eP P 21 55 45.0 -0.4
comp=Z,19nm,0.9s
SPMN **Marine on St.** 72.75 341 P P 21 55 45.3 -0.6
baz=155
SPMN **Marine on St.** 72.75 341 eP P 21 55 44.9 -1.0
comp=Z,39nm,1.3s
J32A **Parkston** 72.76 337 P P 21 55 45.8 -0.2
baz=150
GLA **Glamis** 72.81 319 P P 21 55 48.3 +1.7
baz=135
GLA **Glamis** 72.81 319 eP P 21 55 48.3 +1.7
comp=Z,13nm,1.1s
K30A **Basset** 72.82 335 P P 21 55 47.6 +1.1
baz=149
H35A **Sunnyside Ranc** 72.91 339 P P 21 55 46.4 -0.5
baz=153,SNR=7.9
ISCO **Idaho Springs** 72.98 330 P P 21 55 48.0 +0.2
baz=143,SNR=8.6
ISCO **Idaho Springs** 72.98 330 eP P 21 55 48.8 +1.0
comp=Z,20nm,1.3s
I33A **Coleman** 72.98 338 P P 21 55 46.6 -0.7
baz=151
G36A **St. Michael** 73.05 340 P P 21 55 47.6 -0.1
baz=154
PV01 **Paradox Valley** 73.10 327 eP P 21 55 50.1 +1.7
Y12C **Blythe** 73.12 320 P P 21 55 50.2 +1.8
baz=135
SMCO **Snowmass** 73.13 328 eP P 21 55 50.2 +1.4
comp=Z,42nm,1.6s
SMCO eP pP 21 56 41.6 +3.0
H34A **Spellman Lake,** 73.19 339 P P 21 55 48.2 -0.3
baz=152
I32A **Karley and Nic** 73.20 337 P P 21 55 48.2 -0.4
baz=151
SWSC **Sam W. Stewart** 73.33 319 P P 21 55 50.5 +0.9
baz=134
J30A **Dallas** 73.33 336 P P 21 55 49.2 -0.2
baz=149
H33A **Prehn Over Nor** 73.52 338 P P 21 55 50.2 -0.3
baz=152,SNR=14
F36A **Milaca** 73.54 341 P P 21 55 49.7 -0.9
baz=154,SNR=8.5
BC3 **Big Chuckawall** 73.61 319 P P 21 55 52.0 +0.6
baz=134,SNR=8.1
PV09 **Paradox Valley** 73.66 327 eP P 21 55 54.0 +2.2
MONP2 **Monument Peak** 73.67 318 P P 21 55 52.9 +1.0
baz=133
BAR **Barrett** 73.68 318 eP P 21 55 53.3 +1.7
comp=Z,33nm,1.4s
W13A **Hualapai Mount** 73.71 321 eP P 21 55 53.6 +1.5
comp=Z,11nm,1.3s
IRM **Iron Mountain** 73.78 320 P P 21 55 53.3 +1.1
baz=135,SNR=8.3
U15A **North Rim** 73.78 323 eP P 21 55 54.7 +2.2
comp=Z,14nm,1.1s
G33A **Ortonville** 73.87 339 P P 21 55 51.5 -0.9
baz=152
N23A **Red Feather La** 74.01 330 P P 21 55 54.0 +0.4
baz=143,SNR=6.6
E36A **McGregor** 74.06 341 P P 21 55 53.0 -0.5
baz=155,SNR=5.7
PHWY **Pilot Hill** 74.11 331 eP P 21 55 55.1 +0.8
comp=Z,28nm,1.4s
PHWY eP pP 21 56 49.0 +4.7
BELC **Belle Mtn. Jos** 74.17 319 P P 21 55 55.7 +1.0
baz=134
PFO **Pinyon Flats O** 74.19 319 P P 21 55 55.8 +1.1
baz=134
PFO **Pinyon Flats O** 74.19 319 eP P 21 55 56.4 +1.7
comp=Z,14nm,1.2s
J27A **Elkhorn Farm,** 74.25 334 P P 21 55 55.9 +1.1
baz=147,SNR=7.8
F33A **5 Mile Ranch,** 74.39 339 P P 21 55 54.6 -0.8
baz=152
C39A **Grand Marais** 74.39 344 P P 21 55 54.4 -1.0
baz=158
D37A **Cotton** 74.40 342 P P 21 55 55.3 -0.2
baz=156,SNR=6.0
O20A **White River Ci** 74.49 328 P P 21 55 57.4 +1.0
baz=141,SNR=6.0
O20A **White River Ci** 74.49 328 eP P 21 55 56.5 +0.1
comp=Z,92nm,1.8s
KNB **Kanab** 74.50 323 eP P 21 55 58.4 +1.9
comp=Z,49nm,1.2s
KNB eP pP 21 56 50.2 +3.7
GMRC **Granite Mounta** 74.52 320 P P 21 55 57.8 +1.1
baz=134,SNR=14
I28A **Midland** 74.54 335 P P 21 55 56.8 +0.4
baz=148
C38A **Sawbill Land.** 74.60 343 P P 21 55 55.6 -1.0
baz=157
LCMT **Little Creek M** 74.72 323 eP P 21 55 59.2 +1.5
comp=Z,8.6nm,1.0s
J26A **Sides Ranch, S** 74.73 333 P P 21 55 58.9 +1.3
baz=146,SNR=7.7
D35A **Remer** 74.80 341 P P 21 55 57.6 -0.1
baz=154
SRU **San Rafael Swe** 74.83 326 eP P 21 55 59.4 +1.0
comp=Z,37nm,1.6s
SRU eP pP 21 56 50.6 +2.2
VNDA **Vanda** 74.85 190 P P 21 55 59.0 +1.2
comp=Z,1.7nm,0.9s,baz=146,slow=2.4,SNR=6.6
C37A **Embarrass** 74.86 343 P P 21 55 57.5 -0.6
baz=156
EYMN **Ely** 74.87 343 P P 21 55 57.1 -1.0
baz=157,SNR=5.2
EYMN **Ely** 74.87 343 eP P 21 55 57.3 -0.8
comp=Z,25nm,1.3s
HEC **Hector,Ludlow** 74.95 320 P P 21 55 59.3 +0.3
baz=134
C36A **Pine Crest Far** 75.06 342 P P 21 55 58.6 -0.6
baz=155
F31A **Hecla** 75.07 338 P P 21 55 58.9 -0.4
baz=150,SNR=6.0
P18A **Preston Nutter** 75.08 327 eP P 21 56 01.4 +1.4
comp=Z,14nm,1.0s
P17A **Butcher Ranch,** 75.22 326 eP P 21 56 02.0 +1.5
comp=Z,26nm,1.2s
I26A **New Underwood** 75.24 334 P P 21 56 01.3 +0.8
baz=146
MSU **Marysvale** 75.25 325 eP P 21 56 02.3 +1.5
MSU eP pP 21 56 53.5 +2.6
F30A **Leola** 75.32 337 P P 21 56 00.6 -0.2
baz=150
TMUT **Trail Mountain** 75.32 326 eP P 21 56 03.1 +1.7
comp=Z,18nm,1.6s
C35A **Jirik Farms, M** 75.34 341 P P 21 56 00.2 -0.7
baz=154
BFSC **Mount Baldy Ra** 75.34 318 P P 21 56 02.3 +1.0
baz=133
G28A **Parade** 75.36 336 P P 21 56 00.6 -0.5
baz=148
H27A **Howes** 75.43 335 P P 21 56 01.8 +0.3
baz=147,SNR=12
E31A **Nome** 75.55 338 P P 21 56 02.1 0.0
baz=151
GSC **Goldstone, Bar** 75.55 320 P P 21 56 03.7 +1.3
baz=134,SNR=5.6
GSC **Goldstone, Bar** 75.55 320 eP P 21 56 04.3 +1.8
comp=Z,12nm,1.0s
I25A **Rochford** 75.58 333 P P 21 56 03.5 +1.0
baz=145,SNR=10
F29A **Eureka** 75.60 337 P P 21 56 02.1 -0.3
baz=149,SNR=5.1
K22A **Casper** 75.67 331 P P 21 56 04.4 +1.3
baz=143
RSSD **Black Hills** 75.79 333 P P 21 56 04.5 +0.8
baz=145
RSSD **Black Hills** 75.79 333 eP P 21 56 04.7 +0.9
comp=Z,112nm,1.8s
E30A **Jud** 75.85 338 P P 21 56 03.6 -0.2
baz=150,SNR=5.7
B35A **Bob, Littlefor** 75.86 342 P P 21 56 03.2 -0.6
baz=155,SNR=9.5
C33A **Trail** 75.93 340 P P 21 56 03.7 -0.4
baz=153
EDW2 **Edwards Air Fo** 75.98 319 P P 21 56 05.3 +0.4
baz=133
G27A **Dupree** 76.00 335 P P 21 56 04.8 +0.2
baz=147,SNR=8.2
H25A **Fruitdale** 76.02 334 P P 21 56 05.2 +0.3
baz=146
MPU **Maple Canyon** 76.08 326 eP P 21 56 07.1 +1.6
comp=Z,16nm,1.3s
G26A **Maurine** 76.19 335 P P 21 56 05.7 0.0
baz=146,SNR=11
B34A **Aery, Baudette** 76.24 341 P P 21 56 05.3 -0.6
baz=154,SNR=5.4
NLU **North Lily Min** 76.26 326 eP P 21 56 08.1 +1.6
comp=Z,19nm,1.5s
NLU eP pP 21 57 01.0 +4.3
D30A **Buchanan** 76.33 338 P P 21 56 06.5 +0.1
baz=150,SNR=6.3
B33A **Robert and Kas** 76.33 341 P P 21 56 06.1 -0.4
baz=153
TOA0 **Torodi Ar. Sit** 76.34 69 eP P 21 56 06.3 -1.0
comp=Z,97nm,1.8s
TOA0 eP pP 21 56 57.7 +0.2
TORD **Torodi Ar. Bea** 76.34 69 P P 21 56 06.2 -1.1
comp=Z,7.1nm,0.4s,baz=258,slow=6.0,SNR=163
TORD pP pP 21 56 56.9 -0.5
comp=Z,6.5nm,0.8s,baz=237,slow=5.4,SNR=4.2
TPNV **Topopah Spring** 76.37 321 P P 21 56 08.4 +1.3
baz=134,SNR=11
TPNV **Topopah Spring** 76.37 321 eP P 21 56 08.9 +1.8
comp=Z,14nm,0.9s
FURC **Furnace Creek,** 76.39 321 P P 21 56 08.9 +1.9
baz=134
G25A **Newell** 76.42 334 P P 21 56 07.6 +0.5
baz=146,SNR=6.1
JLU **Jordanelle** 76.42 327 eP P 21 56 09.0 +1.5
comp=Z,23nm,1.3s
AGMN **Agassiz Nation** 76.44 340 P P 21 56 06.4 -0.6
baz=153,SNR=5.9
AGMN **Agassiz Nation** 76.44 340 eP P 21 56 06.7 -0.3
comp=Z,8.7nm,0.8s
MPMC **Manual Prospec** 76.48 320 P P 21 56 08.5 +0.7
baz=133
D29A **Pettibone, Tap** 76.57 338 P P 21 56 08.0 +0.2
baz=149
C31A **Landman Farms,** 76.58 339 P P 21 56 07.5 -0.3
baz=151
F26A **Lodgepole** 76.68 335 P P 21 56 08.6 +0.1
baz=146,SNR=6.9
DAC **Darwin (Calif)** 76.69 320 eP P 21 56 08.8 -0.2
comp=Z,15nm,1.2s
DAC eP pP 21 56 59.9 +0.7
B32A **Ashes, Strandq** 76.73 340 P P 21 56 08.0 -0.7
baz=152,SNR=16
C30A **Mose, Pekin** 76.75 339 P P 21 56 08.8 0.0
baz=150,SNR=5.9
TCUT **Toone Canyon** 76.79 327 eP P 21 56 11.0 +1.5
comp=Z,28nm,1.4s
ISA **Isabella, Lake** 76.80 319 P P 21 56 10.7 +1.3
baz=132
DUG **Dugway, Tooele** 76.82 326 P P 21 56 10.6 +1.1
baz=137,SNR=7.3
DUG **Dugway, Tooele** 76.82 326 eP P 21 56 10.9 +1.3
comp=Z,17nm,1.3s
DUG eP pP 21 57 01.5 +1.7
A33A **Warroad** 76.86 341 P P 21 56 09.3 -0.1
baz=153,SNR=8.0
R11A **Troy Canyon, C** 76.98 323 P P 21 56 12.0 +1.5
baz=135,SNR=18
R11A **Troy Canyon, C** 76.98 323 eP P 21 56 10.6 +0.1
comp=Z,18nm,1.4s
D28A **Regan** 77.03 337 P P 21 56 10.8 +0.4
baz=148
F25A **Bowman** 77.05 335 P P 21 56 10.8 +0.2
baz=146
PKM **Mcpherson Peak** 77.09 318 P P 21 56 12.3 +1.1
baz=131,SNR=5.1
BW06 **Boulder Array** 77.15 329 P P 21 56 11.6 +0.2
baz=140,SNR=7.7
BW06 **Boulder Array** 77.15 329 eP P 21 56 11.8 +0.3
BW06 eP pP 21 57 03.1 +1.4
PD31 **Pinedale Array** 77.15 329 eP P 21 56 11.8 +0.3
PD31 eP pP 21 57 02.1 +0.3
PDAR **Pinedale Array** 77.15 329 P P 21 56 11.7 +0.3
comp=Z,1.8nm,0.5s,baz=129,slow=7.0,SNR=30
HWUT **Hardware Ranch** 77.23 327 eP P 21 56 12.6 +0.8
comp=Z,25nm,1.4s
HWUT eP pP 21 57 04.2 +2.0
MDND **Maddock** 77.25 338 P P 21 56 12.0 +0.4
baz=149,SNR=8.5
MDND **Maddock** 77.25 338 eP P 21 56 10.9 -0.7
comp=Z,193nm,1.3s
B30A **Myrvik Farm, E** 77.35 339 P P 21 56 11.8 -0.3
baz=151,SNR=6.3
SPUT **South Promonto** 77.45 326 eP P 21 56 14.4 +1.3
comp=Z,12nm,0.9s
BGU **Big Grassy Mou** 77.47 326 eP P 21 56 14.3 +1.2
comp=Z,15nm,1.2s
SMMC **Simmler** 77.49 318 P P 21 56 14.7 +1.5
baz=131
TSUM **Tsumeb** 77.50 106 eP P 21 56 13.4 -0.5
comp=Z,34nm,1.6s
TSUM eP pP 21 57 05.6 +1.4
E25A **Miller Ranch,** 77.50 335 P P 21 56 13.5 +0.4
baz=146
D26A **Manning** 77.57 336 P P 21 56 13.8 +0.3
baz=147
B29A **Wagenman Farm,** 77.70 338 P P 21 56 14.9 +0.8
baz=150
A30A **Hoffart Farm,** 77.77 339 P P 21 56 14.5 +0.1
baz=151
C27A **Sayler Ranch,** 77.81 337 P P 21 56 15.3 +0.6
baz=148
AHID **Auburn Hatcher** 77.88 328 eP P 21 56 16.3 +0.8
comp=Z,15nm,0.7s
D25A **Fairfield** 78.01 335 P P 21 56 16.4 +0.6
baz=146,SNR=5.5
B28A **Dugan Ranch, T** 78.03 338 P P 21 56 16.0 +0.1
baz=149,SNR=6.7
A29A **Manning Farm,** 78.06 339 P P 21 56 15.7 -0.3
baz=150,SNR=11
C26A **Wahner Farm, P** 78.12 337 P P 21 56 17.3 +0.8
baz=147,SNR=6.1
ULM **Lac du Bonnet** 78.18 341 P P 21 56 16.4 -0.2
comp=Z,12nm,0.5s,baz=159,slow=7.0,SNR=21
ULM **Lac du Bonnet** 78.18 341 eP P 21 56 16.5 -0.2
comp=Z,15nm,0.6s
REDW **Red Top Meadow** 78.21 329 eP P 21 56 17.9 +0.6
comp=Z,16nm,1.2s
LOHW **Long Hollow** 78.29 329 eP P 21 56 18.6 +0.9
comp=Z,46nm,1.8s
SCHQ **Schefferville** 78.39 360 P P 21 56 16.9 -0.8
comp=Z,3.8nm,0.6s,baz=187,slow=8.1,SNR=3.6
MOOW **Moose Ponds** 78.46 329 eP P 21 56 19.4 +0.8
comp=Z,23nm,1.6s
MOOW eP pP 21 57 11.8 +2.7
ELK **Elko** 78.49 325 eP P 21 56 19.9 +1.0
comp=Z,7.2nm,1.0s
FXWY **Fox Creek** 78.51 329 eP P 21 56 19.8 +0.9
comp=Z,7.6nm,1.1s
NV01 **Mina Array Sit** 78.57 321 eP P 21 56 20.2 +0.9
NV01 eP pP 21 57 13.8 +3.9
NVAR **Mina Array Bea** 78.57 321 P P 21 56 20.4 +1.0
comp=Z,1.8nm,0.6s,baz=148,slow=6.1,SNR=18
NVAR pP pP 21 57 10.7 +0.8
comp=Z,0.8nm,0.8s,baz=198,slow=5.7,SNR=2.5
IMW **Indian Meadow** 78.66 329 eP P 21 56 20.9 +1.1
comp=Z,20nm,1.1s
LAO **LASA Array** 78.78 334 P P 21 56 20.3 +0.2
baz=144,SNR=7.8
LAO **LASA Array** 78.78 334 eP P 21 56 20.7 +0.6
comp=Z,19nm,0.9s
RLMT **Red Lodge** 78.84 331 P P 21 56 21.3 +0.7
baz=141,SNR=9.9
RLMT **Red Lodge** 78.84 331 eP P 21 56 21.5 +0.9
comp=Z,43nm,1.5s
RLMT eP pP 21 57 04.7 -6.5
LKWY **Lake** 78.92 330 eP P 21 56 23.7 +2.5
comp=Z,22nm,1.0s
YMR **Madison River** 79.26 330 eP P 21 56 25.0 +2.0
comp=Z,53nm,1.4s
DGMT **Dagmar** 79.43 336 P P 21 56 23.8 +0.3
baz=146,SNR=5.7
GCMT **Greycliff** 79.53 331 eP P 21 56 25.3 +1.0
QLMT **Earthquake Lak** 79.60 329 eP P 21 56 26.8 +2.0
HLID **Hailey** 80.10 327 P P 21 56 28.5 +1.1
baz=137,SNR=20
HLID **Hailey** 80.10 327 eP P 21 56 28.9 +1.5
comp=Z,19nm,1.0s
HLID eP pP 21 57 20.9 +2.7
MCMT **McKenzie Canyo** 80.26 329 eP P 21 56 29.8 +1.4
MCMT eP pP 21 57 22.5 +3.4
BOZ **Bozeman (W)** 80.31 330 P P 21 56 28.8 +0.3
baz=139,SNR=5.6
BOZ **Bozeman (W)** 80.31 330 eP P 21 56 29.4 +0.9
comp=Z,12nm,1.3s
AFDM **Forest Hills D** 80.47 320 eP P 21 56 30.4 +1.0
comp=Z,12nm,1.3s
BOSA **Boshof** 80.61 117 P P 21 56 30.2 -0.4
comp=Z,3.5nm,0.3s,baz=241,slow=4.0,SNR=29
BOSA **Boshof** 80.61 117 eP P 21 56 30.4 -0.2
comp=Z,44nm,1.7s
MFID **Camas Ranch** 80.70 326 eP P 21 56 32.1 +1.5
comp=Z,18nm,1.4s
LRM **Limekiln Ridge** 80.82 330 eP P 21 56 32.6 +1.3
ORV **Oroville** 81.17 320 eP P 21 56 33.8 +0.8
comp=Z,27nm,1.3s
ORV eP pP 21 57 26.2 +2.4
EGMT **Eagleton** 81.30 332 P P 21 56 33.5 -0.1
baz=141,SNR=9.0
MAW **Mawson** 81.49 163 P P 21 56 35.4 +1.1
comp=Z,3.4nm,0.7s,baz=258,slow=5.7,SNR=5.3
CHMT **Chamberlain Mo** 82.00 330 eP P 21 56 38.6 +1.1
LBTB **Lobatse** 82.25 114 eP P 21 56 39.2 -0.1
comp=Z,26nm,1.3s
MSO **Missoula** 82.26 329 P P 21 56 39.2 +0.6
baz=137
BMO **Blue Mountains** 82.47 326 eP P 21 56 40.8 +1.0
comp=Z,40nm,1.8s
BMO eP pP 21 57 32.9 +2.1
SWMT **Swartz Lake** 82.78 330 eP P 21 56 42.3 +1.0
M04C **Macdoel** 82.82 322 P P 21 56 41.8 +0.1
baz=131
K05A **Summer Lake** 82.92 323 eP P 21 56 43.5 +1.2
comp=Z,44nm,1.4s
K05A eP pP 21 57 35.7 +2.4

YBMT	**Yellow Bay**	**83.05**	**330**	*e*P		**P**	**21 56 43.4**	**+0.7**
JTMT	**Jette**	**83.09**	**330**	*e*P		**P**	**21 56 43.6**	**+0.7**
F10A	**Beach Ranch, E**	**83.22**	**327**	*e*P		**P**	**21 56 44.7**	**+1.1**
	comp=Z,8.6nm,0.8s							
YBH	**Yreka Blue Hor**	**83.29**	**321**	P		**P**	**21 56 42.6**	**-1.4**
	comp=Z,1.0nm,0.4s,baz=104,slow=19,SNR=3.4							
BSMT	**Bassoo Peak**	**83.40**	**330**	*e*P		**P**	**21 56 45.3**	**+0.7**
WALA	**Waterton Lakes**	**83.89**	**331**	*e*P		**P**	**21 56 47.1**	**+0.1**
	comp=Z,15nm,1.4s							
FFC	**Flin Flon**	**83.91**	**340**	*e*P		**P**	**21 56 46.9**	**+0.1**
	comp=Z,6.3nm,1.0s							
FFC				*e*pP		**pP**	**21 57 41.2**	**+3.3**
TAM	**Tamanrasset**	**84.17**	**62**	*e*P		**P**	**21 56 49.4**	**+0.4**
	comp=Z,40nm,1.4s							
I04A	**Tendick Farm,**	**84.46**	**323**	P		**P**	**21 56 49.5**	**-0.3**
	baz=131							
HAWA	**Hanford**	**84.67**	**326**	*e*P		**P**	**21 56 52.0**	**+1.2**
	comp=Z,18nm,1.3s							
NEW	**Newport**	**84.79**	**329**	P		**P**	**21 56 51.0**	**-0.3**
	comp=Z,1.9nm,0.6s,baz=46,slow=7.0,SNR=3.9							
NEW	**Newport**	**84.79**	**329**	P		**P**	**21 56 50.4**	**-1.0**
	baz=135							
NEW	**Newport**	**84.79**	**329**	*e*P		**P**	**21 56 51.4**	**0.0**
	comp=Z,16nm,1.5s							
C09A	**Chrisman Ranch**	**85.01**	**328**	*e*P		**P**	**21 56 53.5**	**+1.0**
	comp=Z,25nm,1.1s							
FCC	**Fort Churchill**	**85.39**	**346**	*e*P		**P**	**21 56 54.1**	**+0.1**
	comp=Z,13nm,0.9s							
B08A	**Colville Reser**	**85.91**	**328**	*e*P		**P**	**21 56 57.3**	**+0.3**
	comp=Z,12nm,1.3s							
ESDC	**Sonseca Array**	**86.18**	**43**	P		**P**	**21 56 59.1**	**+0.6**
	comp=Z,2.2nm,0.8s,baz=247,slow=4.6,SNR=9.7							
ESDC				pP		**pP**	**21 57 49.7**	**-0.2**
	comp=Z,1.4nm,0.8s,baz=230,slow=4.9,SNR=4.3							
ES19	**SONSECA Array**	**86.23**	**43**	*e*P		**P**	**21 56 59.3**	**+0.6**
ES19				*e*pP		**pP**	**21 57 51.5**	**+1.3**
B05A	**Bryant**	**87.22**	**327**	P		**P**	**21 57 03.4**	**+0.3**
	baz=131							
LSZ	**Lusaka**	**88.35**	**106**	*e*P		**P**	**21 57 11.2**	**+1.6**
	comp=Z,35nm,1.3s							
YKA	**Yellowknife Ar**	**94.08**	**340**	P		**P**	**21 57 34.6**	**-0.1**
	comp=Z,2.7nm,0.5s,baz=137,slow=4.6,SNR=94							
YKA				pP		**pP**	**21 58 27.1**	**+0.5**
	comp=Z,1.7nm,0.8s,baz=135,slow=4.5,SNR=6.3							
YKB5	**Yellowknife Ar**	**94.08**	**340**	*e*P		**P**	**21 57 33.7**	**-1.1**
YKB5				*e*pP		**pP**	**21 58 28.9**	**+2.3**
YKW3	**Yellowknife Ar**	**94.14**	**340**	*e*P		**P**	**21 57 34.8**	**-0.2**
	comp=Z,4.5nm,0.7s							
MENT	**Mentasta**	**105.27**	**332**	*e*PKKPab	PKKPab		22 14 23.9	+3.3
TAU	**Tasmania Unive**	**106.48**	**205**	*e*Pdif		**Pdif**	**21 58 34.1**	**+3.2**
ASAR	**Alice Springs**	**128.64**	**205**	PKP		**PKPdf**	**22 03 23.8**	**+0.1**
	comp=Z,1.6nm,0.5s,baz=134,slow=1.4,SNR=6.2							
ASAR				pPKP		**pPKPdf**	**22 04 19.4**	**+1.4**
	comp=Z,1.5nm,0.7s,baz=133,slow=1.4,SNR=4.4							
ASAR				SKPbc	SKPbc		22 06 23.2	
	comp=Z,0.5nm,0.5s,baz=148,slow=3.5,SNR=5.5							
ABKAR	**Akbulak array**	**131.51**	**45**	*e*SKPbc		**SKPab**	**22 06 36.5**	**+2.0**
WB2	**Warramunga Arr**	**131.81**	**207**	*e*SKPbc		**SKPab**	**22 06 37.2**	**+0.5**
WRA	**Warramunga Arr**	**131.82**	**207**	PKP		**PKPdf**	**22 03 29.8**	**+0.1**
	comp=Z,1.8nm,0.5s,baz=153,slow=2.0,SNR=9.2							
WRA				SKPbc		**SKPab**	**22 06 36.8**	**+0.1**
	comp=Z,5.0nm,0.7s,baz=156,slow=3.6,SNR=27							
WRAB	**Tennant Creek**	**131.82**	**207**	*e*SKPbc		**SKPab**	**22 06 37.2**	**+0.5**
SEY	**Seymchan**	**133.05**	**337**	PKP		**PKPdf**	**22 03 30.5**	**-0.1**
	comp=Z,2.0nm,0.6s,baz=71,slow=0.6,SNR=3.8							
ZAA0	**Zalesovo Array**	**143.20**	**28**	*e*PKPpre	PKPpre		22 03 47.4	
ZAA0				*e*PKPdf		**PKPdf**	**22 03 48.6**	**-0.9**
ZALV	**Zalesovo Beam**	**143.20**	**28**	PKP	PKPbc		22 03 47.6	+0.5
	comp=Z,1.0nm,0.3s,baz=309,slow=5.0,SNR=5.9							
KSH	**Kashi**	**144.97**	**55**	PKP		**PKPab**	**22 03 53.2**	**0.0**
KSH				AMB	AMB			
	comp=Z,110nm,5.9s							
MAKZ	**Makanchi**	**146.12**	**40**	*e*PKPdf		**PKPbc**	**22 03 55.8**	**-0.3**
MKAR	**Makanchi Array**	**146.31**	**40**	PKPbc		**PKPdf**	**22 03 55.9**	**+0.7**
	comp=Z,2.1nm,0.5s,baz=15,slow=3.2,SNR=14							
MKAR				pPKPbc	pPKPbc		22 04 50.9	+0.6
	comp=Z,7.4nm,1.0s,baz=304,slow=2.6,SNR=6.6							
MKAR	**Makanchi Array**	**146.31**	**40**	*e*PKPdf		**PKPab**	**22 03 57.5**	**-0.4**
MKAR				pPKPbc	pPKPbc		22 04 50.9	+0.6
HYB	**Hyderabad**	**146.99**	**95**	*i* PKP		**PKPab**	**22 04 02.0**	**+0.5**
HYB				*e*			22 04 53.0	
WMQ	**Urumqi**	**151.13**	**40**	*e*PKPbc		**PKPdf**	**22 04 02.9**	**-0.2**
TLY	**Talaya**	**151.29**	**12**	PKPbc		**PKPbc**	**22 04 08.3**	**-0.9**
	comp=Z,1.3nm,0.4s,baz=354,slow=9.2,SNR=3.0							
USRK	**Ussuriysk Ar.**	**154.56**	**327**	PKPbc		**PKPbc**	**22 04 16.5**	**-0.1**
	comp=Z,1.4nm,0.7s,baz=52,slow=2.4,SNR=4.3							
USRK				PKPab		**PKPab**	**22 04 33.0**	**+1.0**
	comp=Z,0.9nm,0.6s,baz=34,slow=4.7,SNR=4.5							
MJAR	**Matsushiro Arr**	**155.07**	**306**	PKPab		**PKPab**	**22 04 34.2**	**-0.3**
	comp=Z,1.5nm,0.5s,baz=61,slow=1.8,SNR=5.2							
SONA1	**Songino Array**	**155.48**	**11**	*e*PKPdf		**PKPdf**	**22 04 10.2**	**+0.9**
SONA1				*e*PKPab		**PKPab**	**22 04 35.8**	**-0.1**
SONM	**Songino Array**	**155.49**	**11**	PKP		**PKPdf**	**22 04 09.1**	**-0.2**
	comp=Z,1.0nm,1.0s,baz=45,slow=2.3,SNR=5.2							
SONM				PKPbc	PKPbc		22 04 18.6	
	comp=Z,0.2nm,0.4s,baz=290,slow=1.6,SNR=4.3							
SONM				PKPab		**PKPab**	**22 04 36.1**	**+0.1**
	comp=Z,1.0nm,0.6s,baz=322,slow=3.6,SNR=6.4							
ULN	**Ulaanbaatar**	**155.57**	**10**	*e*PKPab		**PKPab**	**22 04 37.3**	**+1.0**
KS01	**Wonju Array Si**	**161.51**	**321**	*e*PKPab		**PKPab**	**22 05 02.5**	**+0.2**
HHC	**Hu-ho-hao-te**	**163.02**	**4**	*e*PKP		**PKPdf**	**22 04 21.4**	**+3.2**
HHC				AMB	AMB			
	comp=Z,29nm,2.4s							
CM01	**Chiang Mai Arr**	**165.64**	**110**	*e*PKPdf		**PKPdf**	**22 04 22.1**	**+1.2**
CM01				*e*PKPab		**PKPab**	**22 05 19.7**	**-1.4**
CMAR	**Chiang Mai Arr**	**165.64**	**109**	PKPab		**PKPab**	**22 05 21.3**	**+0.2**
	comp=Z,2.8nm,0.7s,baz=255,slow=4.3,SNR=19							
CHTO	**Chiang Mai**	**165.78**	**108**	*e*PKPab		**PKPab**	**22 05 21.6**	**-0.1**
CD2	**Chengdu**	**169.07**	**48**	PKP		**PKPdf**	**22 04 22.5**	**-0.7**
NJ2	**Nanjing**	**170.46**	**330**	*e*PKP		**PKPdf**	**22 04 23.8**	**-0.1**
GYA	**Guiyang**	**173.53**	**65**	*e*PKP		**PKPdf**	**22 04 24.0**	**-1.6**
GYA				pPKP		**pPKPdf**	**22 05 15.4**	**-5.0**
GYA				sPKP			22 05 33.8	
GYA				PKPab		**PKPab**	**22 05 56.0**	**-0.1**
GYA				PKS		**PKSdf**	**22 07 55.5**	**-2.6**
GYA				PP		**PP**	**22 09 49.2**	**+0.8**
GYA				AMB	AMB			
	comp=Z,120nm,8.4s							

ISCJB ***12*** *21:47:57.5±0.8, 38.°9N±0.°1×142.°5E±0.°2, h27km, mb3.8/11, Error ellipse: s-maj=17.1km s-min=14.8km az=20.2*
IDC ***12*** *21:48:07.5±3.0, 39.°09N×142.°37E, h97km±28km, mb3.4/10, mb1 3.5/12, mb1mx3.3/51, mbtmp3.7/12, Error ellipse: s-maj=22.5km s-min=14.3km az=105.0*

ISC 12 21:47:59.4±1.0, 38.°8N±0.°1×142.°4E±0.°1, h27km, n14, σ2s04/15, mb3.8/11, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MJAR	**Matsushiro Arr**	**4.03**	**237**	P	**Pb**	**21 49 10.2**	**+0.4**
	18nm,0.3s,baz=88,slow=9.4,SNR=74						
MAT	**Matsushiro**	**4.04**	**237**	P	**Pb**	**21 49 10.9**	**+1.1**
MAT				S	**Sn**	**21 49 41.0**	**-4.8**
USRK	**Ussuriysk Ar.**	**9.48**	**308**	P	**Pn**	**21 50 17.1**	**+2.9**
	0.1nm,0.3s,baz=130,slow=19,SNR=3.0						
MA2	**Magadan**	**21.45**	**12**	P	**P**	**21 52 43.2**	**-2.1**
	2.6nm,0.3s,baz=185,slow=12,SNR=3.6						
SEY	**Seymchan**	**24.89**	**11**	P	**P**	**21 53 18.7**	**-1.0**
	1.1nm,0.3s,baz=201,slow=11,SNR=4.5						
SONM	**Songino Array**	**27.50**	**301**	P	**P**	**21 53 43.5**	**-0.1**
	0.1nm,0.5s,baz=123,slow=10,SNR=2.5						
ZALV	**Zalesovo Beam**	**41.32**	**311**	P	**P**	**21 55 40.8**	**-1.7**
	0.5nm,0.4s,baz=81,slow=8.9,SNR=3.1						
CMAR	**Chiang Mai Arr**	**42.73**	**254**	P	**P**	**21 55 55.1**	**+0.7**
	0.2nm,0.6s,baz=79,slow=6.4,SNR=3.9						
KURBB	**Kurchatov Arra**	**45.55**	**307**	P	**P**	**21 56 16.4**	**-0.2**
	4.2nm,0.2s,baz=81,slow=8.3,SNR=4.9						
ILAR	**Eielson Array**	**47.57**	**33**	P	**P**	**21 56 31.6**	**-0.6**
	0.7nm,0.8s,baz=261,slow=6.4,SNR=9.6						
BVAR	**Borovoye Array**	**49.97**	**311**	P	**P**	**21 56 50.2**	**-0.7**
	0.6nm,0.6s,baz=65,slow=12,SNR=1.9						
WRA	**Warramunga Arr**	**58.94**	**189**	P	**P**	**21 57 57.6**	**+1.3**
	2.5nm,0.8s,baz=6.5,slow=7.0,SNR=17						
YKA	**Yellowknife Ar**	**61.87**	**31**	P	**P**	**21 58 15.1**	**-0.8**
	0.2nm,0.7s,baz=300,slow=6.2,SNR=4.1						
ASAR	**Alice Springs**	**62.66**	**189**	P	**P**	**21 58 23.9**	**+2.3**
	0.9nm,0.8s,baz=9.8,slow=6.6,SNR=9.5						

NIED ***12*** *21:48:00, 36.°50N×141.°20E, h59km, Mw3.7 Best double couple: M0=4.24000×10^14 NP1:φs=237.00000°, δ41.00000°, λ30.00000°. NP2:φs=123.00000°, δ71.00000°, λ126.00000°.*

JMA 12 21:48:32.1±0.1, 36.°46N×141.°19E, h44km±2km, M3.6,

Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHO	**Hitachi**	**0.52**	**287**	P	Pn	21 48 43.1	-0.2
JHO				S	Sn	21 48 50.8	-0.5
ONAJ	**Iwakimizuishiy**	**0.71**	**334**	P	Pn	21 48 45.2	-0.7
ONAJ				S	Sn	21 48 54.9	-0.9
JYT	**Yasato**	**0.84**	**254**	P	Pn	21 48 47.5	0.0
JYT				*e*S	Sn	21 48 56.8	-1.8
JFT	**Otama**	**1.26**	**327**	P	Pn	21 48 54.5	+1.3
JFT				S	Sn	21 49 10.2	+1.2
JAG	**Ashikaga**	**1.40**	**269**	P	Pn	21 48 55.8	+0.6
JAG				S	Sn	21 49 12.9	+0.4
JMM	**Marumori**	**1.44**	**347**	S	Sn	21 49 13.3	-0.1
JFY	**Yanaizu**	**1.52**	**309**	P	Pn	21 48 58.3	+1.5
JKT	**Katashina**	**1.59**	**282**	P	Pn	21 48 59.0	+1.1
JKT				S	Sn	21 49 18.8	+1.5

ISCJB ***12*** *21:49:09.6±0.8, 40.°06N±0.°06×41.°43E±0.°06, h7km±8km, Error ellipse: s-maj=9.5km s-min=7.2km az=15.5*
CSEM ***12*** *21:49:09.2±0.5, 40.°05N×41.°51E, h10km, MD2.8, Error ellipse: s-maj=13.1km s-min=12.2km az=131.0*
ISK ***12*** *21:49:09.5, 39.°99N×41.°40E, h18km, MD2.8*
DDA ***12*** *21:49:10.5, 40.°16N×41.°38E, h8km, Md2.8*

ISC 12 21:49:09.3±1.2, 40.°06N±0.°05×41.°43E±0.°03, h12km±10km, n21, σ0s44/23, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ERZM	**Erzurum**	**0.16**	**197**	*i* P	**Pg**	**21 49 13.2**	**-0.1**
ERZM	**Erzurum**	**0.16**	**197**	P	**Pg**	**21 49 13.2**	**-0.1**
EZM	**Erzurum**	**0.16**	**198**	*e*PG	**Pg**	**21 49 13.3**	**0.0**
HOMI	**Horasan**	**0.37**	**92**	*i* P	**Pb**	**21 49 19.1**	**+1.1**
KOPT	**Kop Dagi**	**0.71**	**267**	*i* P	**Pb**	**21 49 24.3**	**+0.4**
KOPT	**Kop Dagi**	**0.71**	**267**	P	**Pb**	**21 49 24.3**	**+0.4**
VRTB	**Varto-Mus**	**0.90**	**179**	*e*PG	**Pg**	**21 49 26.0**	**-0.7**
VRTB	**Varto-Mus**	**0.90**	**179**	*e*Pg	**Pg**	**21 49 26.0**	**-0.7**
BAYT	**Ayd¨–ntepe-Bay**	**1.04**	**289**	*e*PG	**Pn**	**21 49 29.7**	**-0.2**
BAYT				*e*SG	**Sn**	**21 49 44.5**	**+0.1**
BAYT	**Ayd¨–ntepe-Bay**	**1.04**	**289**	*e*Pg	**Pn**	**21 49 29.7**	**-0.2**
BAYT				*e*Sg	**Sn**	**21 49 44.5**	**+0.1**
ARTV	**Artvin**	**1.19**	**19**	*i* P	**Pb**	**21 49 31.8**	**-0.1**
ARTV	**Artvin**	**1.19**	**19**	P	**Pb**	**21 49 31.8**	**-0.1**
DBOC	**Borcka**	**1.30**	**8**	*i* P	**Pn**	**21 49 33.1**	**-0.2**
DBOC	**Borcka**	**1.30**	**8**	P	**Pn**	**21 49 33.1**	**-0.2**
AGRB	**Hanur-Agry**	**1.30**	**111**	*e*PN	**Pn**	**21 49 33.3**	**-0.2**
AGRB	**Hanur-Agry**	**1.30**	**111**	*e*Pn	**Pn**	**21 49 33.3**	**-0.2**
ERZN	**Erzincan**	**1.40**	**251**	*e*PN	**Pn**	**21 49 34.0**	**-0.7**
KELT	**Kelkit**	**1.67**	**274**	*i* P	**Pg**	**21 49 41.3**	**-0.1**
KELT	**Kelkit**	**1.67**	**274**	P	**Pg**	**21 49 41.3**	**-0.1**
TNCL	**Tunceli-Merkez**	**1.74**	**238**	*i* P	**Pg**	**21 49 43.0**	**+0.3**
TNCL	**Tunceli-Merkez**	**1.74**	**238**	P	**Pg**	**21 49 43.0**	**+0.3**

JMA 12 21:51:54.0, 36.°95N×140.°69E, h12km±1km, M2.9, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.17**	**30**	P	Pg	21 51 58.0	0.0
ONAJ				S	Sg	21 52 00.8	0.0
JHO	**Hitachi**	**0.35**	**196**	P	Pg	21 52 01.0	-0.1
JHO				S	Sg	21 52 05.8	0.0
JFT	**Otama**	**0.63**	**334**	P	Pg	21 52 06.4	+0.1
JFT				S	Sg	21 52 14.8	+0.1
JMM	**Marumori**	**0.92**	**5**	S	Sg	21 52 22.9	-0.8
MAT	**Matsushiro**	**2.04**	**259**	P	Pn	21 52 29.1	+1.0

NIED ***12*** *21:52:00, 36.°40N×141.°80E, h26km, Mw4.7 Best double couple: M0=1.29000×10^16 NP1:φs=349.00000°, δ16.00000°, λ-132.00000°. NP2:φs=213.00000°, δ79.00000°, λ-79.00000°.*
IDC ***12*** *21:52:04.7±0.5, 36.°34N×141.°87E, h0km, mb4.6/35, mb1 4.7/38, mb1mx4.7/51, mbtmp4.7/38, ML4.9/3, MS4.2/30, Ms1 4.2/30, ms1mx4.0/47, Error ellipse: s-maj=12.8km s-min=11.2km az=99.0*
ISCJB ***12*** *21:52:07.9±0.8, 36.°36N±0.°02×141.°79E±0.°02, h27km±5km, mb4.9/225, MS4.3/36, Error ellipse: s-maj=3.1km s-min=2.7km az=143.1*
JMA ***12*** *21:52:08.8±0.1, 36.°41N×141.°82E, h53km±4km, M4.6*
JMA Felt I J1.
NEIC ***12*** *21:52:08.8±2.0, 36.°34N×141.°76E, h23km±14km, mb4.9/112, Error ellipse: s-maj=4.9km s-min=3.8km az=143.0*
BJI ***12*** *21:52:08.3, 36.°37N×141.°65E, h31km, mb4.9/69, mB4.9/51, Ms4.5/62, Ms7 4.4/49*
MOS ***12*** *21:52:11.3±0.8, 36.°76N×141.°70E, h43km, mb5.1/81, MS4.2/23, Error ellipse: s-maj=6.5km s-min=4.7km az=102.4*

ISC 12 21:52:09.0±0.5, 36.°36N±0.°03×141.°86E±0.°04, h26km±2km, h26km:pP-P,n466, σ1s68/492, mb4.9/229, MS4.4/40, 22C-12D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**1.04**	**231**	P	**Pn**	**21 52 27.8**	**-0.1**
CHOJ				S	**Sn**	**21 52 41.8**	**+0.3**
JHO	**Hitachi**	**1.07**	**284**	P	**Pn**	**21 52 27.2**	**-1.0**
JHO				S	**Sn**	**21 52 40.9**	**-1.3**
ONAJ	**Iwakimizuishiy**	**1.13**	**311**	P	**Pn**	**21 52 28.0**	**-1.1**
ONAJ				S	**Sn**	**21 52 42.1**	**-1.7**
JFT	**Otama**	**1.68**	**314**	P	**Pn**	**21 52 36.5**	**-0.2**
JFT				*e*S	**Sn**	**21 52 56.4**	**-1.0**
JMM	**Marumori**	**1.73**	**331**	P	**Pn**	**21 52 36.3**	**-1.0**
JMM				S	**Sn**	**21 52 57.1**	**-1.4**
BSO1	**Boso 1**	**1.85**	**203**	P	**Pn**	**21 52 38.8**	**+0.3**
BSO1				*e*S	**Sb**	**21 53 02.5**	**-1.7**
BSO3	**Boso 3**	**1.90**	**216**	P	**Pn**	**21 52 39.8**	**+0.3**
BSO3				S	**Sn**	**21 53 02.3**	**-0.1**
JAG	**Ashikaga**	**1.94**	**273**	P	**Pn**	**21 52 39.9**	**-0.3**
JAG				S	**Sn**	**21 53 02.6**	**-1.2**
JFY	**Yanaizu**	**2.02**	**302**	P	**Pn**	**21 52 41.3**	**0.0**
JRY	**Ryogami san**	**2.41**	**263**	P	**Pn**	**21 52 46.6**	**-0.2**
JRY				S	**Sn**	**21 53 15.3**	**-0.2**
JNS	**Sasagawa**	**2.50**	**306**	P	**Pn**	**21 52 49.0**	**+1.1**
JOD2	**Odawara 2**	**2.50**	**245**	P	**Pn**	**21 52 48.5**	**+0.5**
JMK	**Ichinoseki**	**2.64**	**349**	P	**Pn**	**21 52 50.4**	**+0.6**
MJAR	**Matsushiro Arr**	**2.94**	**275**	Pn	**Pn**	**21 52 54.7**	**+0.6**
	136nm,0.3s,baz=100,slow=9.5,SNR=567						
MJAR				Sn	**Sn**	**21 53 31.7**	**+3.1**
	43nm,0.3s,baz=83,slow=21,SNR=5.1						
MJAR				LR	LR	21 54 20.8	
	comp=Z,3μm,19.6s,baz=95,slow=46						
MAJO	**Matsushiro**	**2.95**	**275**	*e*P	**Pn**	**21 52 55.3**	**+1.2**
MAJO				*e*		21 53 26.6	
MAJO	**Matsushiro**	**2.95**	**275**	*e*Pn	**Pn**	**21 52 55.3**	**+1.2**
MAJO				*e*Sn	**Sn**	**21 53 26.6**	**-2.1**
JHJ2	**Mitsune**	**3.65**	**208**	*e*Pn	**Pn**	**21 53 03.4**	**-0.4**
JHJ2				*e*Sn	**Sn**	**21 53 40.6**	**-5.3**
JHJ	**Hachijo jima 2**	**3.66**	**208**	Pn	**Pn**	**21 53 03.3**	**-0.5**
	278nm,0.3s,baz=330,slow=20,SNR=50						
JHJ				Sn	**Sn**	**21 53 43.0**	**-3.0**
	475nm,0.3s,baz=36,slow=19,SNR=12						
JHJ				LR	LR	21 54 44.1	
	comp=Z,940nm,20.4s,baz=54,slow=44						
INU	**Inuyama**	**4.06**	**257**	*e*Pn	**Pn**	**21 53 10.7**	**+1.4**
ERM	**Erimo**	**5.74**	**10**	*e*P	**Pn**	**21 53 29.9**	**-2.5**
ERM				*e*		21 54 35.1	
ERM	**Erimo**	**5.74**	**10**	*e*Pn	**Pn**	**21 53 29.9**	**-2.5**
ERM				*e*Sn	**Sn**	**21 54 35.1**	**-2.3**
YUK	**Yuzh-Kuril'sk**	**8.26**	**21**	P	**Pn**	**21 54 06.6**	**-0.4**
YUK				*i* S	Sn	21 55 30.3	-9.0
YUK				pmax	pmax		
	comp=Z,231nm,0.3s						
YUK				pmax	pmax		
	comp=N,101nm,0.2s						
YUK				pmax	pmax		
	comp=E,53nm,0.3s						
YUK				MLR	MLR		
	comp=Z,676nm,15.0s						
YUK				MLR	MLR		
	comp=E,673nm,12.0s						
YUK				MLR	MLR		
	comp=N,868nm,15.0s						
SHO	**Shikotan**	**8.41**	**25**	*e*P	**Pn**	**21 54 06.9**	**-2.2**
SHO				*i* S	Sn	21 55 31.2	-12
SHO				pmax	pmax		
	comp=Z,82nm,0.7s						
SHO				pmax	pmax		
	comp=E,65nm,0.6s						
CBIJ	**Chichi jima**	**9.24**	**178**	*e*Pn	**Pn**	**21 54 18.1**	**-2.4**
CBIJ				Sn	Sn	21 55 53.0	-11
JCJ	**Chichijima**	**9.24**	**178**	Pn	**Pn**	**21 54 17.9**	**-2.7**
	comp=E,10nm,0.3s,baz=97,slow=22,SNR=7.3						
JCJ				Sn	Sn	21 55 53.0	-11
	baz=303,slow=16						
JNU	**Nakatsue**	**9.59**	**254**	Pn	**Pn**	**21 54 26.9**	**+1.5**
	comp=E,0.6nm,0.3s,baz=54,slow=7.4,SNR=13						
JNU				LR	LR	21 58 25.3	
	comp=E,1μm,19.4s,baz=74,slow=40						
JNU	**Nakatsue**	**9.59**	**254**	*e*Pn	**Pn**	**21 54 27.7**	**+2.3**
KUR	**Kuril'sk**	**9.96**	**25**	*e*P	**Pn**	**21 54 31.1**	**+0.7**
KUR				*i* S	Sn	21 56 12.2	-9.0
KUR				pmax	pmax		
	comp=N,20nm,0.4s						
KUR				pmax	pmax		
	comp=Z,42nm,0.4s						
KUR				pmax	pmax		
	comp=E,35nm,0.1s						
VLA	**Vladivostok**	**10.22**	**314**	*e*P	**Pn**	**21 54 32.8**	**-1.1**
YSS	**Yuzh-Sakhalins**	**10.61**	**3**	*e*P	**Pn**	**21 54 38.1**	**-1.1**
YSS				pmax	pmax		
	comp=Z,30nm,1.2s						
YSS				MLR	MLR		
	comp=Z,700nm,12.0s						
YSS	**Yuzh-Sakhalins**	**10.61**	**3**	*e*Pn	**Pn**	**21 54 38.2**	**-1.0**
USRK	**Ussuriysk Ar.**	**10.86**	**319**	Pn	**Pn**	**21 54 44.1**	**+1.4**
	comp=Z,0.7nm,0.3s,baz=136,slow=12,SNR=23						
USRK				LR	LR	21 58 47.8	
	comp=Z,2μm,18.8s,baz=122,slow=37						
KSRS	**Korea Array**	**11.21**	**280**	Pn	**Pn**	**21 54 51.2**	**+3.8**
	comp=Z,1.0nm,0.3s,baz=100,slow=14,SNR=39						
KSRS				LR	LR	21 59 13.6	
	comp=Z,1μm,18.5s,baz=78,slow=38						
KS01	**Wonju Array Si**	**11.23**	**280**	*e*Pn	**Pn**	**21 54 49.7**	**+1.9**
KS15	**Wonju Array Si**	**11.24**	**280**	*e*Pn	**Pn**	**21 54 51.4**	**+3.4**
KSAR	**Wonju Array Be**	**11.24**	**280**	P	**Pn**	**21 54 51.3**	**+3.4**
KSAR	**Wonju Array Be**	**11.24**	**280**	Pn	**Pn**	**21 54 51.2**	**+3.4**
MDJ	**Mudanjiang**	**12.45**	**315**	P	**Pn**	**21 55 04.9**	**+0.6**
MDJ				S	**Sn**	**21 57 25.7**	**+3.6**
MDJ				PcP	**PcP**	**22 00 45.4**	**+1.9**
MDJ				ScP	**ScP**	**22 04 16.3**	**+1.6**
MDJ				PcS	**PcS**	**22 04 19.3**	**+1.7**
MDJ				ScS	**ScS**	**22 07 52.1**	**+1.4**
MDJ				pmax	pmax		
	comp=Z,8.0nm,0.9s						
MDJ				pmax	pmax		
	comp=Z,100nm,5.2s						
MDJ				LR	LR		
	comp=Z,680nm,17.6s						
MDJ				LR	LR		
	comp=Z,810nm,16.3s						
MDJ	**Mudanjiang**	**12.45**	**315**	*e*Pn	**Pn**	**21 55 05.0**	**+0.6**
	comp=Z,36nm,1.1s						
TYV	**Tymovskoe**	**14.51**	**2**	*e*P	**Pn**	**21 55 32.8**	**+0.3**
TYV				pmax	pmax		
	comp=Z,22nm,0.8s						
CN2	**Changchun**	**14.58**	**306**	*e*P	**Pn**	**21 55 32.7**	**-0.8**
CN2				*e*pP	P	21 55 40.5	+0.8
CN2				*e*S	**Sn**	**21 58 14.3**	**+0.1**
CN2				pmax	pmax		
	comp=Z,10.0nm,0.7s						
CN2				pmax	pmax		
	comp=Z,200nm,3.0s						
CN2				LR	LR		
	comp=Z,900nm,14.0s						
CN2				LR	LR		
	comp=Z,1μm,14.0s						
CN2				LR	LR		
	comp=Z,1μm,15.0s						
KLR	**Kul'dur**	**14.83**	**333**	LR	LR	22 01 15.0	
	comp=Z,988nm,19.3s,slow=37						
KLR	**Kul'dur**	**14.83**	**333**	*e*P	**Pn**	**21 55 33.4**	**-3.4**
SNY	**Shenyang**	**15.20**

HHC pmax pmax
comp=E,27nm,1.2s
HHC pmax pmax
comp=E,91nm,3.3s
HHC LR LR
comp=E,2µm,14.9s
HHC LR LR
comp=E,2µm,14.9s
HHC LR LR
comp=E,2µm,14.9s
YAK Yakutsk 26.80 347 P P 21 57 46.0 -0.6
comp=E,38nm,0.6s,baz=166,slow=1.7,SNR=13
YAK LR LR 22 08 52.9
comp=E,872nm,20.1s,baz=90,slow=38
YAK Yakutsk 26.80 347 *c i*P **P 21 57 45.6 -1.0**
YAK *e**PP **sP 21 57 56.8 -0.9**
YAK *e* 21 58 27.0
YAK *e*S **S 22 02 20.1 -0.8**
YAK *e*SS **SnSn 22 03 21.0 -5.1**
YAK *e* 22 08 27.5
YAK pmax pmax
comp=Z,57nm,1.1s
YAK pmax pmax
comp=N,39nm,1.4s
YAK pmax pmax
comp=E,19nm,1.4s
YAK pmax pmax
comp=Z,29nm,0.9s
YAK pmax pmax
comp=N,27nm,1.3s
YAK pmax pmax
comp=E,15nm,1.2s
YAK smax smax
comp=E,145nm,3.1s
YAK smax smax
comp=N,281nm,2.9s
YAK MLR MLR
comp=Z,751nm,16.0s
YAK MLR MLR
comp=N,544nm,16.0s
YAK MLR MLR
comp=E,191nm,14.0s
YAK Yakutsk 26.80 347 *e*P **P 21 57 45.8 -0.8**
comp=E,57nm,0.8s
XAN Xi'an 26.94 275 P **P 21 57 47.0 -1.3**
XAN pP pP 21 57 54.5 -1.5
XAN S **S 22 02 23.2 -0.6**
XAN SS **SnSn 22 03 36.2 +6.2**
XAN pmax pmax
comp=E,22nm,0.7s
XAN LR LR
comp=E,390nm,17.1s
SEY Seymchan 27.39 10 P **P 21 57 51.0 -0.9**
comp=E,1.1nm,0.4s,baz=178,slow=5.2,SNR=11
SEY Seymchan 27.39 10 P **P 21 57 51.0 -0.9**
SEY pmax pmax
comp=Z,1.0nm,0.4s
H11N2 WAKE ISLAND Hy 27.50 120 T T 22 26 36.9
baz=314,slow=74,SNR=47
H11N1 WAKE ISLAND Hy 27.51 120 T T 22 26 36.9
baz=314,slow=74,SNR=40
H11N3 WAKE ISLAND Hy 27.52 120 T T 22 26 36.3
baz=314,SNR=57
ENH Enshi 27.64 267 *e*P **P 21 57 53.4 -1.2**
comp=Z,70nm,0.6s
ULN Ulaanbaatar 28.03 305 *c i*P **P 21 57 57.6 -0.4**
ULN pmax pmax
comp=Z,45nm,1.2s
ULN Ulaanbaatar 28.03 305 *e*P **P 21 57 58.5 +0.5**
comp=Z,29nm,0.9s
H11S1 WAKE ISLAND Hy 28.20 122 T T 22 27 29.0
baz=313,SNR=56
H11S3 WAKE ISLAND Hy 28.20 122 T T 22 27 23.9
baz=313
H11S2 WAKE ISLAND Hy 28.21 122 T T 22 27 27.3
baz=313,SNR=22
BOD Bodaibo 28.29 328 *e*P **P 21 57 58.4 -1.6**
BOD pmax pmax
comp=Z,23nm,1.0s
SONA1 Songino Array 28.46 305 *e*P **P 21 58 00.8 -1.0**
SONM Songino Array 28.46 305 P **P 21 58 01.4 -0.4**
comp=Z,24nm,0.6s,baz=106,slow=8.3,SNR=136
SONM PcP **PcP 22 01 12.9 -0.4**
comp=Z,0.8nm,0.7s,baz=116,slow=3.4,SNR=3.8
SONM LR LR 22 09 56.0
comp=Z,324nm,18.0s,baz=94,slow=38
LZH Lanzhou 30.54 281 *e*P **P 21 58 20.3 -0.1**
LZH pP sP 21 58 31.1 -0.3
LZH sP pP 21 58 34.2 +6.0
LZH PP **PnPn 21 59 17.0 -2.7**
LZH *e*S **S 22 03 17.8 -2.8**
LZH sS sS 22 03 35.1 +1.6
LZH *e*SS **ScP 22 05 01.2 +1.6**
LZH pmax pmax
comp=Z,28nm,1.0s
LZH pmax pmax
comp=Z,120nm,4.7s
LZH LR LR
comp=Z,910nm,15.8s
LZH LR LR
comp=Z,690nm,13.6s
LZH LR LR
comp=Z,1µm,17.2s
IRK Irkutsk 30.82 313 *e*P **P 21 58 21.0 -1.5**
IRK *e* 21 58 39.2
IRK pmax pmax
comp=Z,25nm,1.3s
ZAK Zakamensk 30.97 309 *e*P **P 21 58 23.3 -0.7**
ZAK pmax pmax
comp=Z,17nm,1.1s
TLY Talaya 31.04 312 P **P 21 58 23.7 -0.8**
comp=Z,6.9nm,0.6s,baz=109,slow=9.8,SNR=7.1
TLY Talaya 31.04 312 *e*P **P 21 58 25.1 +0.6**
TLY pmax pmax
comp=Z,18nm,0.9s
TLY MLR MLR
comp=Z,508nm,12.0s
TLY Talaya 31.04 312 *e*P **P 21 58 25.0 +0.6**
comp=Z,14nm,0.8s
GYA Guiyang 31.47 262 P **P 21 58 30.2 +1.6**
GYA pP sP 21 58 38.8 -0.9
GYA PP **PnPn 21 59 35.4 +3.5**
GYA PcP **PcP 22 01 23.0 +1.6**
GYA S **S 22 03 34.5 -0.7**
GYA sS sS 22 03 50.8 +2.7
GYA SS **SnSn 22 05 24.2 +3.6**
GYA ScS **ScS 22 08 59.3 -1.4**
GYA pmax pmax
comp=Z,20nm,0.9s
GYA pmax pmax
comp=Z,120nm,5.2s
GYA LR LR
comp=Z,540nm,16.8s
GYA LR LR
comp=Z,490nm,17.0s
GYA LR LR
comp=Z,520nm,17.2s
CD2 Chengdu 32.04 271 P **P 21 58 33.5 0.0**
CD2 sP sP 21 58 46.2 +1.6
CD2 S **S 22 03 44.1 +0.2**
CD2 sS sS 22 03 59.1 +2.3
CD2 pmax pmax
comp=Z,40nm,0.8s
CD2 pmax pmax
comp=Z,120nm,4.6s
CD2 LR LR
comp=Z,570nm,14.4s
CD2 LR LR
comp=Z,600nm,19.2s
MOY Mondy 32.65 311 *e*P **P 21 58 38.1 -0.6**
GTA Gaotai 33.11 288 *e*P **P 21 58 42.3 -0.6**
GTA pP pP 21 58 49.3 -1.4
GTA sP sP 21 58 52.4 -1.6
GTA S **S 22 03 57.7 -2.8**
GTA sS sS 22 04 10.8 -2.7
GTA SS **SnSn 22 05 59.3 -0.8**
GTA pmax pmax
comp=Z,21nm,1.1s
GTA pmax pmax
comp=Z,120nm,4.8s
GTA LR LR
comp=Z,200nm,16.6s
GTA LR LR
comp=Z,390nm,15.2s
GTA LR LR
comp=Z,370nm,16.2s

BILL Bilibino 34.58 16 *i*P **P 21 58 53.8 -1.3**
BILL *i* 22 01 28.1
BILL pmax pmax
comp=Z,1.0nm,1.0s
BILL MLR MLR
comp=Z,135nm,17.0s
KMI Kunming 35.22 263 P **P 21 58 59.1 -2.4**
KMI pP pP 21 59 09.9 +0.6
KMI sP sP 21 59 15.9 +3.4
KMI S **S 22 04 31.2 -2.4**
KMI pmax pmax
comp=Z,21nm,1.1s
KMI pmax pmax
comp=Z,96nm,3.1s
KMI LR LR
comp=Z,240nm,15.4s
KMI LR LR
comp=Z,480nm,14.7s
KMI LR LR
comp=Z,400nm,15.8s
TIXI Tiksi 36.00 353 P **P 21 59 06.3 -1.0**
comp=Z,3.7nm,0.8s,baz=137,slow=6.5,SNR=8.8
TIXI Tiksi 36.00 353⇓ *e*P **P 21 59 06.9 -0.4**
TIXI pmax pmax
comp=Z,4.0nm,0.8s
TIXI Tiksi 36.00 353 *e*P **P 21 59 06.3 -1.0**
comp=Z,33nm,1.8s
MYLDM Lahad Datu 37.72 220 *e*P **P 21 59 25.1 +2.6**
comp=Z,24nm,1.2s
TNTI Ternate 37.87 204 P **P 21 59 23.4 -0.4**
comp=Z,59nm,1.2s
SWI Sorong 38.32 197 P **P 21 59 27.7 +0.1**
comp=Z,16nm,0.9s
RKPI Ransiki, Papua 38.35 192 P **P 21 59 26.3 -1.5**
comp=Z,108nm,0.8s
SKNT Sakolnakorn 38.64 250 P P 21 59 36.8 +6.4
comp=Z,17nm,1.1s
JAY Jayapura 38.69 182 P **P 21 59 29.4 -1.3**
comp=Z,139nm,0.9s
GENI Genyem 38.78 183 P **P 21 59 31.5 0.0**
comp=Z,36nm,1.4s
LBMI Labuha 39.16 203 P **P 21 59 35.1 +0.5**
comp=Z,39nm,0.9s,comp=Z,700nm
UNV Unalaska Valle 39.44 47 *e*P **P 21 59 34.6 -2.0**
comp=Z,104nm,1.4s
CRAI Chiangrai 39.58 258 P **P 21 59 34.4 -3.8**
comp=Z,87nm,1.2s,comp=Z,19µm
KHON Khomkaen 39.91 250 P **P 21 59 42.4 +1.5**
comp=Z,6.6nm,0.9s,comp=Z,254nm
FAKI Fak Fak 40.09 195 P **P 21 59 40.6 -1.8**
comp=Z,22nm,1.2s
MRSI Marisa 40.20 212 P **P 21 59 42.1 -1.2**
comp=Z,45nm,1.3s,comp=Z,1µm
KMPI Kaimana, Papua 40.53 193 P **P 21 59 46.6 +0.6**
comp=Z,67nm,0.8s
UTTA Uttaradit 40.82 254 P **P 21 59 48.6 +0.1**
comp=Z,4.3nm,0.8s,comp=Z,141nm
SANI Sanga 40.98 205 P **P 21 59 50.3 +0.6**
comp=Z,34nm,0.8s,comp=Z,685nm
LAMP Lampang 41.10 256 P **P 21 59 51.4 +0.6**
comp=Z,5.0nm,0.6s
PBKT Sadao Pong 41.19 252 P **P 21 59 51.5 0.0**
comp=Z,20nm,0.8s
LUWI Luwuk 41.23 210 P **P 21 59 52.1 +0.3**
comp=Z,51nm,1.1s,comp=Z,6µm
MSAI Masohi 41.30 200 P **P 21 59 52.0 -0.4**
comp=Z,9.1nm,1.5s,comp=Z,594nm
WMQ Urumqi 41.46 298 P **P 21 59 54.3 +0.7**
WMQ pP sP 22 00 06.2 +1.4
WMQ sP pP 22 00 07.8 +6.2
WMQ pmax pmax
comp=Z,19nm,0.6s
WMQ pmax pmax
comp=Z,120nm,3.6s
CMMT Chiang Mai 41.47 257 P **P 21 59 53.6 -0.3**
comp=Z,8.1nm,0.9s
CHTO Chiang Mai 41.48 257 P **P 21 59 53.7 -0.2**
comp=Z,46nm,1.0s
CHTO Chiang Mai 41.48 257 *e*P **P 21 59 53.6 -0.3**
CHTO pmax pmax
comp=Z,26nm,1.8s
CHTO Chiang Mai 41.48 257 *e*P **P 21 59 53.6 -0.3**
comp=Z,26nm,1.8s
CM31 Chiang Mai Arr 41.68 256 *e*P **P 21 59 55.9 +0.3**
CMAR Chiang Mai Arr 41.68 256 P **P 21 59 55.5 0.0**
comp=Z,3.2nm,0.7s,baz=46,slow=7.6,SNR=40
CMAR LR LR 22 17 50.2
comp=Z,129nm,20.3s,baz=42,slow=37
CM01 Chiang Mai Arr 41.69 256 *e*P **P 21 59 54.8 -0.8**
SUKH Sukhothai 41.69 255 P **P 21 59 56.0 +0.4**
comp=Z,5.3nm,0.7s,comp=Z,41nm
AAI Ambon 41.84 201 P **P 21 59 58.5 +1.7**
comp=Z,0.9nm,0.4s
SRAK Srakaew 41.94 248 P **P 21 59 55.8 -1.9**
BNDI Bandanaira 42.18 198 P **P 22 00 00.9 +1.4**
comp=Z,131nm,1.4s
CHBT CHBT 42.53 247 P P 22 00 07.9 +5.4
LSA Lhasa 42.63 276 P **P 22 00 04.6 +0.8**
LSA pmax pmax
comp=Z,13nm,0.9s
LSA Lhasa 42.63 276 *e*P **P 22 00 03.2 -0.6**
LSA pmax pmax
comp=Z,14nm,0.9s
LSA Lhasa 42.63 276 *e*P **P 22 00 03.2 -0.6**
comp=Z,14nm,0.9s
ZAA0 Zalesovo Array 42.63 313 *e*P **P 22 00 02.7 -0.2**
ZALV Zalesovo Beam 42.63 313 P **P 22 00 02.9 0.0**
comp=Z,10.0nm,0.5s,baz=92,slow=6.7,SNR=56
ZALV PcP **PcP 22 01 54.1 -0.4**
comp=Z,0.7nm,0.3s,baz=67,slow=4.8,SNR=3.3
ZALV LR LR 22 18 37.1
comp=Z,460nm,18.7s,baz=70,slow=37
NVS Novosibirsk 43.56 314⇑ *i*P **P 22 00 09.6 -0.8**
NVS pmax pmax
comp=Z,15nm,0.7s
NVS pmax pmax
comp=N,1.0nm,0.2s
NVS pmax pmax
comp=E,9.0nm,0.4s
SRDT SRDT 43.94 251 P **P 22 00 15.8 +1.9**
comp=E,56nm,0.9s,comp=E,3µm
KDI Kendari 43.95 208 P **P 22 00 14.8 +0.9**
comp=E,16nm,0.8s
NRIK Noril'sk 44.03 336 P **P 22 00 13.6 -0.3**
comp=E,2.0nm,0.5s,baz=142,slow=5.3,SNR=5.7
NRIK LR LR 22 19 40.8
comp=E,312nm,18.1s,baz=63,slow=38
BKB Balikpapan 44.05 217 P **P 22 00 14.6 -0.1**
comp=E,58nm,0.8s
TTSI Tana Toraja 44.27 212 P **P 22 00 18.3 +1.8**
comp=E,7.9nm,1.2s,comp=E,2µm
MMPI Merauke 44.61 182 P **P 22 00 19.9 +0.8**
comp=E,275nm,0.7s,comp=E,17µm
MK01 Makanchi Array 44.78 303 *e*P **P 22 00 19.9 -0.4**
MK31 Makanchi Array 44.78 303 *e*P **P 22 00 20.1 -0.2**
MK31 Makanchi Arrarr 44.78 303 *e*P **P 22 00 20.1 -0.2**
MKAR Makanchi Array 44.78 303 P **P 22 00 20.1 -0.3**
comp=E,9.7nm,0.6s,baz=89,slow=10.0,SNR=72
MKAR LR LR 22 19 24.1
comp=E,266nm,21.2s,baz=111,slow=37
MTKI Muara Teweh, K 44.78 220 P **P 22 00 22.6 +2.0**
comp=E,56nm,0.3s,comp=E,4µm
MAKZ Makanchi 44.99 303 *e*P **P 22 00 21.7 -0.3**
MAKZ pmax pmax
comp=Z,15nm,0.8s
MAKZ Makanchi 44.99 303 *e*P **P 22 00 21.7 -0.3**
comp=Z,15nm,0.8s
SPSI Sidrap Palu 45.12 212 P **P 22 00 24.9 +1.7**
comp=Z,13nm,1.4s
SAUI Saumlaki 45.21 195 P **P 22 00 24.9 +1.0**
comp=Z,70nm,0.8s
KSM Kuching 45.35 227 *e*P **P 22 00 27.4 +2.3**
comp=Z,14nm,1.1s
PMG Port Moresby 45.79 173⇑ *e*P **P 22 00 30.1 +1.6**
PMG pmax pmax
comp=Z,85nm,1.0s
STKI Sintang 45.81 225 P **P 22 00 29.7 +1.0**
comp=Z,20nm,1.1s,comp=Z,13µm
KBKI Kotabaru 46.17 217 P **P 22 00 32.0 +0.4**
comp=Z,12nm,1.0s
TAPN Taplejung 46.35 275 *e*P **P 22 00 33.4 +0.1**
comp=Z,36nm,0.8s
KURK Kurchatov 46.63 309 *e*P **P 22 00 34.4 -0.4**
KURK pmax pmax
comp=Z,29nm,0.8s
KURK Kurchatov 46.63 309 *e*P **P 22 00 34.4 -0.4**
comp=Z,29nm,0.8s
KURBB Kurchatov Arra 46.70 309 P **P 22 00 34.8 -0.6**
comp=Z,17nm,0.6s,baz=84,slow=7.8,SNR=98
BSSI Bau Bau, Buton 46.78 210 P **P 22 00 32.8 -3.6**
ODAN Odare 46.81 274 *e*P **P 22 00 37.0 +0.1**
comp=Z,45nm,0.8s
KDAK Kodiak Island 47.37 42 *ce*P **P 22 00 40.2 -0.2**
PDGK Podgornoye 47.41 299 P **P 22 00 40.8 -0.2**
PDGK pmax pmax
comp=Z,53nm,1.0s
RAMN Ramite 47.41 275 *e*P **P 22 00 41.7 +0.1**
comp=Z,106nm,0.8s
GUN Gumba 47.58 277 *e*P **P 22 00 43.2 +0.2**
comp=Z,62nm,0.8s
CAST Castle Rocks 47.59 34 *e*P **P 22 00 43.6 +1.4**
comp=Z,5.5nm,1.0s
PKIN Phulchoki 48.11 276 *e*P **P 22 00 47.4 +0.4**
comp=Z,22nm,0.7s
KKN Kakani 48.11 277 *e*P **P 22 00 46.8 -0.2**
comp=Z,30nm,0.8s
MLY Manley 48.23 32 *e*P **P 22 00 48.5 +1.4**
comp=Z,6.3nm,1.0s
DMN Daman 48.33 277 *e*P **P 22 00 48.5 -0.2**
MMRI Maumere 48.41 206 P **P 22 00 49.4 +0.4**
comp=Z,34nm,0.8s,comp=Z,3µm
GKN Gorkha 48.54 277 *e*P **P 22 00 50.2 0.0**
comp=Z,172nm,1.3s
SOEI Soe 48.77 203 P **P 22 00 51.1 -0.8**
comp=Z,62nm,1.1s
RND Reindeer 49.04 34 *e*P **P 22 00 53.6 +0.2**
RND pmax pmax
comp=Z,49nm,1.9s
RND Reindeer 49.04 34 *e*P **P 22 00 53.6 +0.2**
comp=Z,49nm,1.9s
MDM Murphy Dome 49.30 32 *e*P **P 22 00 56.5 +1.2**
comp=Z,13nm,1.1s
SML Sawmill 49.33 36 *e*P **P 22 00 56.0 +0.4**
SML Sawmill 49.33 36 *e*P **P 22 00 56.0 +0.4**
TPRI Tanjung Pinang 49.37 233 P **P 22 00 57.1 +0.7**
comp=Z,26nm,0.9s,comp=Z,3µm
BATI Baumata 49.38 204 P **P 22 00 55.2 -1.3**
comp=Z,22nm,1.4s
KOLN Koldanda 49.47 277 *e*P **P 22 00 57.3 0.0**
PYUN Piuthan 49.81 278 *e*P **P 22 01 00.0 0.0**
comp=Z,136nm,1.0s
IL1 Eielson Array 49.88 32 *e*P **P 22 00 59.3 -0.4**
ILAR Eielson Array 49.88 32 P **P 22 00 59.7 0.0**
comp=Z,3.9nm,0.8s,baz=267,slow=6.4,SNR=43
ILB Eielson Array 49.88 32 *e*P **P 22 00 59.7 0.0**
MTN Manton Dam 49.97 194 *e*P **P 22 01 00.8 -0.1**
comp=Z,19nm,0.8s
TKM2 Tokmak 2 50.27 299 *e*P **P 22 01 03.1 -0.2**
TKM2 pmax pmax
comp=Z,14nm,0.6s
TKM2 Tokmak 2 50.27 299 *e*P **P 22 01 03.1 -0.2**
comp=Z,14nm,0.6s
PLAI Plampang 50.33 212 P **P 22 01 00.8 -2.8**
BASI Baing, Sumba 50.48 208 P **P 22 01 01.8 -2.9**
TWSI Taliwang, Sumb 50.63 213 P **P 22 01 05.5 -0.4**
comp=Z,17nm,1.1s
PPBI Pangkal Pinang 50.74 229 P **P 22 01 08.2 +1.4**
comp=Z,12nm,1.0s,comp=Z,1µm
FRU Bishkek 50.98 299 *e*P **P 22 01 08.0 -0.4**
FRU *e* 22 01 18.5
FRU pmax pmax
comp=Z,33nm,1.4s
KSH Kashi 51.01 295 P **P 22 01 12.8 +4.0**
KSH *es*P sP 22 01 26.9 +6.8
KSH *e*PP **PP 22 03 10.5 +5.3**
KSH PcS **PcS 22 06 25.3 +3.0**
KSH S **S 22 08 27.1 +2.7**
KSH ScS **ScS 22 10 57.9 +0.1**
KSH pmax pmax
comp=Z,7.0nm,0.7s
KSH pmax pmax
comp=Z,160nm,5.0s
KSH LR LR
comp=Z,340nm,9.4s
KSH LR LR
comp=Z,190nm,7.0s
KSH LR LR
comp=Z,660nm,19.2s
ABJI Asem Bagus 51.01 216 P **P 22 01 10.3 +1.5**
comp=Z,43nm,1.3s,comp=Z,2µm
OTUK Ortayu 51.11 306 P **P 22 01 09.4 +0.1**
OTUK pmax pmax
comp=Z,10.0nm,0.8s
GRJI Gresik 51.11 219 P **P 22 01 10.8 +1.2**
comp=Z,36nm,0.9s
AAK Ala-Archa 51.12 299 P **P 22 01 09.6 0.0**
comp=Z,7.7nm,0.6s,baz=113,slow=6.9,SNR=13
AAK LR LR 22 24 15.7
comp=Z,872nm,18.6s,baz=68,slow=38
AAK Ala-Archa 51.12 299⇑ *e*P **P 22 01 09.3 -0.4**
AAK pmax pmax
comp=Z,19nm,0.9s
AAK Ala-Archa 51.12 299 *e*P **P 22 01 09.5 -0.2**
comp=Z,10nm,0.8s
DOT Dot Lake 51.17 33 *e*P **P 22 01 09.6 0.0**
comp=Z,54nm,1.8s
BVAR Borovoye Array 51.29 313 P **P 22 01 09.8 -0.8**
comp=Z,6.0nm,0.8s,baz=79,slow=8.5,SNR=36
BVAR LR LR 22 24 06.1
comp=Z,488nm,18.3s,baz=74,slow=37
BRVK Borovoye 51.34 313 *e*P **P 22 01 10.7 -0.2**
BRVK pmax pmax
comp=Z,12nm,0.9s
BRVK Borovoye 51.34 313 *e*P **P 22 01 10.7 -0.2**
comp=Z,12nm,0.9s
LHMI Lhok Sumawe 51.48 244 P **P 22 01 13.4 +1.0**
comp=Z,51nm,1.0s
EKS2 Erkin-Say 51.62 299 *e*P **P 22 01 13.7 +0.3**
EKS2 pmax pmax
comp=Z,7.0nm,0.8s
EKS2 Erkin-Say 51.62 299 *e*P **P 22 01 13.7 +0.3**
comp=Z,7.0nm,0.8s
JAGI Jajag, Banyuwa 51.64 216 P **P 22 01 14.0 +0.5**
comp=Z,28nm,1.2s,comp=Z,2µm
RGRI Rengat 51.75 234 P **P 22 01 14.3 -0.1**
comp=Z,56nm,0.5s,comp=Z,13µm
GMJI Gummas 51.81 217 P **P 22 01 14.8 +0.1**
comp=Z,20nm,1.9s
PWJI Pagerwojo 52.40 219 P **P 22 01 17.8 -1.4**
MNAS Manas 52.57 299 P **P 22 01 20.8 +0.4**
MNAS pmax pmax
comp=Z,24nm,1.0s
SFK Sufi-Kurgan 52.65 296 P **P 22 01 21.5 +0.4**
SFK pmax pmax
comp=Z,19nm,0.9s
PCJI Pacitan 52.87 219 P **P 22 01 19.0 -3.6**
UGM Wanagama 52.97 220 P **P 22 01 22.8 -0.6**
comp=Z,91nm,1.4s
UGM Wanagama 52.97 220 *e*P **P 22 01 22.8 -0.6**
comp=Z,212nm,1.5s
KPJI Karang Pucung 53.33 222 P **P 22 01 25.4 -0.6**
comp=Z,35nm,1.0s
LEM Lembang 53.63 224 P **P 22 01 31.9 +3.4**
KLI Kotabumi 53.65 228 P **P 22 01 28.3 -0.1**
comp=Z,52nm,1.0s,comp=Z,4µm
LHSI Lahat 53.65 230 P **P 22 01 29.0 +0.6**
comp=Z,30nm,0.9s,comp=Z,2µm
THN Thein Dam 53.76 286 *e*P **P 22 01 27.6 -1.5**
GSI Gunungsitoli 53.76 240 P **P 22 01 31.5 +2.2**
comp=Z,44nm,1.5s
MDSI Maura Dua 53.77 229 P **P 22 01 28.5 -0.8**
comp=Z,18nm,1.0s
KKAR Karatay Array 53.77 301 *e*P **P 22 01 28.8 -0.3**
KKAR Karatay Array 53.77 301 *e*P **P 22 01 28.8 -0.3**
MASI Maura Aman, Be 53.93 232 P **P 22 01 31.7 +1.2**
comp=Z,58nm,2.0s,comp=Z,4µm
CMJI Cimerak 53.96 222 P **P 22 01 29.6 -1.1**
comp=Z,41nm,1.0s
CISI Cisompet, Garu 54.12 223 P **P 22 01 31.1 -0.8**
comp=Z,27nm,1.1s
LWLI Liwa 54.26 229 P **P 22 01 33.1 +0.1**
comp=Z,29nm,0.8s
CNJI Cibinong 54.30 224 P **P 22 01 32.0 -1.2**
comp=Z,34nm,1.3s
CGJI Cibinong 54.56 226 P **P 22 01 32.3 -2.7**
INK Inuvik 54.83 27 P **P 22 01 36.4 +0.1**
comp=Z,6.3nm,0.8s,baz=295,slow=6.7,SNR=22
INK LR LR 22 26 57.2
comp=Z,110nm,20.2s,baz=120,slow=38
INK Inuvik 54.83 27 *e*P **P 22 01 36.9 +0.6**
comp=Z,8.9nm,0.9s
SVE Sverdlovsk 55.89 319⇓ *e*P **P 22 01 44.2 0.0**

SVE pmax pmax
comp=Z,36nm,1.2s
SVE MLR MLR
comp=Z,589nm,16.0s
FITZ Fitzroy Crossi 56.30 199 *eP* **P 22 01 47.6 +0.2**
comp=Z,46nm,1.6s
WRAB Tennant Creek 56.43 188 *de*P **P 22 01 47.5 -0.9**
WRAB pmax pmax
comp=Z,134nm,1.7s
WRAB Tennant Creek 56.43 188 *eP* **P 22 01 47.5 -0.9**
comp=Z,40nm,1.2s
WB2 Warramunga Arr 56.44 188 *eP* **P 22 01 47.8 -0.7**
comp=Z,53nm,1.3s
WRA Warramunga Arr 56.45 188 P **P 22 01 47.5 -0.9**
comp=Z,12nm,0.6s,baz=6.2,slow=6.9,SNR=110
ARU Arti 57.10 319 P **P 22 01 52.5 -0.3**
comp=Z,12nm,0.8s,baz=75,slow=2.6,SNR=25
ARU LR LR 22 28 36.0
comp=Z,371nm,18.7s,baz=70,slow=38
ARU Arti 57.10 319 *c iP* **P 22 01 52.2 -0.6**
ARU 22 02 45.3
ARU 22 03 53.6
ARU S **S 22 09 47.5 +1.6**
ARU 22 11 34.1
ARU SS **SS 22 13 28.5 -5.8**
ARU pmax pmax
comp=Z,15nm,0.7s
ARU Arti 57.10 319 *eP* **P 22 01 52.4 -0.3**
comp=Z,62nm,1.6s
KBL Kabul 57.99 292 *eP* **P 22 01 59.4 -0.3**
KBL pmax pmax
comp=Z,9.0nm,1.0s
KBL Kabul 57.99 292 *eP* **P 22 01 59.4 -0.3**
comp=Z,8.8nm,1.0s
HYB Hyderabad 58.54 269 *i* P **P 22 02 07.0 +3.5**
ABKAR Akbulak array 58.65 311 *eP* **P 22 02 02.5 -1.2**
DLBC Dease Lake 58.94 38 *eP* **P 22 02 07.8 +2.0**
comp=Z,7.1nm,0.8s
AKTO Aktyubinsk 59.39 312 P **P 22 02 08.4 -0.5**
comp=Z,4.6nm,0.7s,baz=76,slow=14,SNR=14
AKTO LR LR 22 28 54.7
comp=Z,286nm,19.4s,slow=37
AS01 Alice Springs 60.16 188 *eP* **P 22 02 13.1 -1.4**
AS31 Alice Springs 60.17 188 *eP* **P 22 02 14.2 -0.3**
comp=Z,3.2nm,0.8s
ASAR Alice Springs 60.17 188 P **P 22 02 13.9 -0.6**
comp=Z,9.4nm,0.8s,baz=12,slow=6.5,SNR=103
ASAR LR LR 22 27 07.0
comp=Z,55nm,21.5s,baz=244,slow=35
MBWA Marble Bar 60.91 204 *eP* **P 22 02 19.4 -0.1**
comp=Z,11nm,0.8s
POO Poona 61.75 273 *ex* **P 22 02 24.0 -1.5**
EIDS Eidsvold 62.01 171 *eP* **P 22 02 25.7 -1.2**
RES Resolute Bay 63.16 14 P **P 22 02 34.0 0.0**
comp=Z,3.7nm,0.6s,baz=303,slow=8.1,SNR=16
RES Resolute Bay 63.16 14 *eP* **P 22 02 34.3 +0.3**
RES pmax pmax
comp=Z,7.0nm,0.9s
RES Resolute Bay 63.16 14 *eP* **P 22 02 34.3 +0.3**
comp=Z,7.1nm,0.9s
TMCR Tamitsa 63.51 332 *eP* **P 22 02 36.1 -0.3**
TMCR pmax pmax
comp=Z,20nm,1.0s
YKW3 Yellowknife Ar 64.17 30 *eP* **P 22 02 40.8 0.0**
comp=Z,6.8nm,0.8s
YKA Yellowknife Ar 64.21 30 P **P 22 02 41.1 0.0**
comp=Z,6.1nm,0.7s,baz=301,slow=6.7,SNR=115
YKB5 Yellowknife Ar 64.21 30 *eP* **P 22 02 40.3 -0.8**
GEYT Alibeck 64.47 299 P **P 22 02 43.4 +0.1**
comp=Z,4.3nm,0.8s,baz=18,slow=5.2,SNR=7.8
GEYT LR LR 22 32 46.1
comp=Z,181nm,18.4s,baz=35,slow=38
KLMR Klimovskoe 64.52 328 *eP* **P 22 02 41.5 -1.6**
KLMR pmax pmax
comp=Z,24nm,1.4s
ARCES ARCESS Array B 64.75 340 P **P 22 02 45.0 +0.4**
comp=Z,4.3nm,0.9s,baz=54,slow=7.9,SNR=6.9
ARCES LR LR 22 37 17.1
comp=Z,211nm,18.3s,baz=50,slow=42
ARCES ARCESS Array B 64.75 340 P **P 22 02 45.0 +0.4**
ARCES pmax pmax
comp=Z,4.0nm,0.9s
ARCES MLR MLR
comp=Z,211nm,18.3s
DAG Danmarks Havn 66.47 355 *i* P sP 22 03 07.1 +0.1
DAG Danmarks Havn 66.47 355 *eP* sP 22 03 07.1 +0.1
STKA Stephens Creek 67.88 180 P **P 22 03 04.3 -0.6**
comp=Z,7.9nm,0.8s,baz=351,slow=6.7,SNR=18
STKA Stephens Creek 67.88 180 *eP* **P 22 03 05.0 +0.1**
comp=Z,1.8nm,0.8s
MOS Moscow 68.00 324 *eP* **sP 22 03 16.8 -0.2**
MOS pmax pmax
comp=Z,56nm,1.5s
VRH Novokhopyorsk 68.32 318 *eP* **P 22 03 05.7 -1.9**
VRH pmax pmax
comp=Z,8.0nm,0.9s
TDL Tradedollar La 68.41 48 P **P 22 03 09.7 +1.2**
F04A Amboy 68.50 48 *eP* **P 22 03 10.2 +1.3**
comp=Z,24nm,0.8s
NLW Nelson Butte 68.63 46 P **P 22 03 10.9 +1.0**
OBN Obninsk 68.85 324 LR LR 22 36 13.9
comp=Z,211nm,18.0s,baz=86,slow=38
OBN Obninsk 68.85 324 ⇓*iP* **P 22 03 09.4 -1.4**
OBN *i* 22 03 19.3
OBN pmax pmax
comp=Z,9.0nm,1.1s
OBN MLR MLR
comp=Z,320nm,17.0s
LTY Liberty 68.86 46 *eP* **P 22 03 10.6 -0.7**
comp=Z,55nm,2.0s
TBM Table Mountain 68.95 46 P **P 22 03 12.7 +0.9**
BBOO Buckleboo 69.02 185 *eP* **P 22 03 12.2 +0.1**
comp=Z,20nm,0.8s
NAC Naches 69.04 47 P **P 22 03 13.6 +1.3**
LPSR Galich'ya Gora 69.05 320 *eP* **P 22 03 11.3 -0.8**
LPSR *e**SP **sP 22 03 22.9 -0.7**
LPSR pmax pmax
comp=Z,6.0nm,0.8s
B08A Colville Reser 69.06 45 *eP* **P 22 03 13.2 +0.8**
comp=Z,15nm,1.2s
H04A Detroit Lake 69.28 49 *eP* **P 22 03 14.7 +0.9**
comp=Z,12nm,0.8s
SAW Saint Andrews 69.37 46 P **P 22 03 14.9 +0.6**
FIA1 FINESS Array S 69.57 333 *eP* **P 22 03 14.8 -0.4**
FINES FINESS Array B 69.58 333 P **P 22 03 15.0 -0.2**
comp=Z,5.5nm,0.7s,baz=44,slow=5.7,SNR=16
FINES LR LR 22 35 50.8
comp=Z,212nm,18.4s,baz=38,slow=38
VSR Storozhevoye 69.67 319 *eP* **P 22 03 15.3 -0.7**
VSR *e**SP **sP 22 03 27.4 -0.1**
VSR pmax pmax
comp=Z,4.0nm,0.5s
C09A Chrisman Ranch 69.96 45 *eP* **P 22 03 18.6 +0.7**
comp=Z,15nm,0.8s
D08A Wollman Farm, 69.98 46 *eP* **P 22 03 18.9 +0.9**
comp=Z,12nm,0.8s
VTHM Trough 70.00 48 P **P 22 03 19.6 +1.3**
NEW Newport 70.36 44 *eP* **P 22 03 21.3 +0.8**
NEW pmax pmax
comp=Z,8.0nm,0.9s
NEW Newport 70.36 44 *eP* **P 22 03 21.3 +0.8**
comp=Z,8.2nm,0.9s
GOF Gofitskoye 70.81 312⇑*eP* **P 22 03 23.0 -0.1**
GOF pmax pmax
comp=Z,9.0nm,0.7s
K05A Summer Lake 71.10 51 *eP* **P 22 03 26.6 +1.4**
comp=Z,25nm,0.9s
WDC Whiskeytown Da 71.19 53 *eP* **P 22 03 26.4 +0.9**
WDC pmax pmax
comp=Z,10.0nm,1.0s
WDC Whiskeytown Da 71.19 53 *eP* **P 22 03 26.4 +0.9**
comp=Z,10nm,1.0s
SUMG Summit 71.36 0 *i* P **P 22 03 28.4 +1.9**
SUMG Summit 71.36 0 *eP* **P 22 03 28.4 +1.9**
F10A Beach Ranch, E 71.55 46 *eP* **P 22 03 28.6 +0.9**
comp=Z,6.3nm,0.9s
KBZ Khabaz 71.61 311 P **P 22 03 28.4 +0.4**
comp=Z,7.7nm,1.0s,baz=56,slow=7.3,SNR=4.2
KBZ LR LR 22 39 30.7
comp=Z,180nm,18.2s,baz=54,slow=40
KVAR Kislovodsk Arr 71.61 311 P **P 22 03 28.6 +0.5**
comp=Z,4.7nm,0.9s,baz=17,slow=4.2,SNR=4.7
KVAR LR LR 22 36 13.4
comp=Z,127nm,21.8s,slow=37
KIV Kislovodsk 71.62 311 *eP* **P 22 03 28.8 +0.6**
KIV pmax pmax
comp=Z,10.0nm,1.0s
KIV MLR MLR
comp=Z,177nm,17.0s
KIV Kislovodsk 71.62 311 *eP* **P 22 03 28.4 +0.2**
comp=Z,75nm,1.8s
WALA Waterton Lakes 71.70 42 *eP* **P 22 03 29.4 +0.7**
comp=Z,8.0nm,0.9s
MOD Modoc Plateau 71.91 51 *eP* **P 22 03 31.1 +1.1**
comp=Z,6.9nm,0.8s
BMO Blue Mountains 72.13 47 *eP* **P 22 03 32.3 +1.1**
comp=Z,12nm,1.0s
JTMT Jette 72.24 43 *eP* **P 22 03 33.0 +1.1**
YBMT Yellow Bay 72.32 43 *eP* **P 22 03 33.3 +0.9**
GNI Garni 72.39 307 LR LR 22 37 53.8
comp=Z,83nm,19.1s,baz=54,slow=38
ORV Oroville 72.41 54 *eP* **P 22 03 33.1 +0.2**
ORV pmax pmax
comp=Z,12nm,1.0s
ORV Oroville 72.41 54 *eP* **P 22 03 33.1 +0.2**
comp=Z,12nm,1.0s
SWMT Swartz Lake 72.53 44 *eP* **P 22 03 34.5 +0.9**
WVOR Wild Horse Val 72.66 50 *eP* **P 22 03 35.3 +0.8**
WVOR pmax pmax
comp=Z,5.0nm,0.8s
WVOR Wild Horse Val 72.66 50 *eP* **P 22 03 35.3 +0.8**
comp=Z,4.9nm,0.8s
MSO Missoula 72.95 44 *eP* **P 22 03 36.6 +0.5**
comp=Z,8.3nm,1.1s
IZAR Zarasai 73.17 328 *eP* **P 22 03 41.0 +4.0**
IZAR IAmb IAmb 22 03 52.2
comp=Z,6.9nm,1.2s
IDID Didziasalis 73.23 327 *eP* **P 22 03 41.5 +4.0**
IDID IAmb IAmb 22 03 50.9
comp=Z,7.6nm,0.8s
ISAL Salakas 73.33 328 *eP* **P 22 03 42.2 +4.2**
ISAL IAmb IAmb 22 03 51.7
comp=Z,13nm,0.9s
IIGN Ignalina 73.44 328 *eP* **P 22 03 42.6 +3.9**
IIGN IAmb IAmb 22 03 52.3
comp=Z,8.5nm,1.0s
MFID Camas Ranch 73.81 48 *eP* **P 22 03 42.1 +0.8**
comp=Z,6.4nm,0.9s
CMB Columbia Colle 73.97 54 *eP* **P 22 03 42.8 +0.6**
CMB pmax pmax
comp=Z,8.0nm,0.6s
CMB Columbia Colle 73.97 54 *eP* **P 22 03 42.8 +0.6**
comp=Z,7.9nm,0.6s
FFC Flin Flon 74.08 33 *eP* **P 22 03 42.8 +0.3**
FFC pmax pmax
comp=Z,14nm,1.1s
FFC Flin Flon 74.08 33 *eP* **P 22 03 42.8 +0.3**
comp=Z,14nm,1.1s
LRM Limekiln Ridge 74.38 44 *eP* **P 22 03 45.3 +0.6**
FCC Fort Churchill 74.44 27 *eP* **P 22 03 44.2 -0.2**
FCC pmax pmax
comp=Z,18nm,1.3s
FCC Fort Churchill 74.44 27 *eP* **P 22 03 44.2 -0.2**
comp=Z,18nm,1.3s
EGMT Eagleton 74.54 41 *eP* **P 22 03 45.6 +0.2**
comp=Z,15nm,1.0s
DLMT Dillon 74.57 45 *eP* **P 22 03 46.4 +0.7**
comp=Z,14nm,0.9s
HLID Hailey 74.57 47 *eP* **P 22 03 46.5 +0.7**
comp=Z,6.1nm,1.1s
BMN Battle Mountai 74.66 51 *eP* **P 22 03 47.3 +1.0**
BMN pmax pmax
comp=Z,55nm,1.7s
BMN Battle Mountai 74.66 51 *eP* **P 22 03 47.3 +1.0**
comp=Z,55nm,1.7s
NC405 NORSAR Array S 74.73 337 *eP* **P 22 03 48.6 +2.4**
NC204 NORSAR Array S 74.90 338 *eP* **P 22 03 48.1 +1.0**
NB201 NORSAR Array S 74.91 337 *eP* **P 22 03 49.7 +2.5**
NB2 NORSAR Subarra 74.94 338 P **P 22 03 47.8 +0.4**
comp=Z,10nm,0.7s,baz=39,slow=6.2
NOA NORSAR Array B 74.94 338 P **P 22 03 47.8 +0.4**
comp=Z,3.6nm,0.8s,baz=39,slow=5.8,SNR=12
NOA LR LR 22 40 15.0
comp=Z,200nm,19.2s,baz=260,slow=39
BOZ Bozeman (W) 74.95 44 *eP* **P 22 03 48.6 +0.7**
BOZ pmax pmax
comp=Z,8.0nm,0.8s
BOZ Bozeman (W) 74.95 44 *eP* **P 22 03 48.6 +0.7**
comp=Z,7.9nm,0.8s
AKASG Malin Array Be 75.05 323 P **P 22 03 47.8 -0.4**
AKASG comp=Z,4.1nm,0.6s,baz=46,slow=6.0,SNR=18
LR LR 22 39 07.2
comp=Z,264nm,20.4s,baz=35,slow=38
AKBB Malin Array Si 75.05 323 *eP* **P 22 03 52.3 +4.2**
AKBB pmax pmax
comp=Z,14nm,0.9s
AKBB Malin Array Si 75.05 323 *eP* **P 22 03 52.3 +4.2**
comp=Z,14nm,0.9s
KIEV Kiev 75.06 323 *eP* **P 22 03 47.7 -0.5**
KIEV pmax pmax
comp=Z,17nm,1.0s
KIEV Kiev 75.06 323 *eP* **P 22 03 47.6 -0.5**
comp=Z,16nm,1.0s
AK11 Malin Array Si 75.09 323 *eP* **P 22 03 52.3 +3.9**
NV01 Mina Array Sit 75.11 53 *eP* **P 22 03 49.8 +0.7**
NVAR Mina Array Bea 75.11 53 P **P 22 03 49.9 +0.9**
comp=Z,9.9nm,0.7s,baz=286,slow=6.0,SNR=56
QLMT Earthquake Lak 75.55 45 *eP* **P 22 03 52.5 +1.1**
ELK Elko 75.71 50 *eP* **P 22 03 53.8 +1.3**
ELK pmax pmax
comp=Z,5.0nm,0.8s
ELK Elko 75.71 50 *eP* **P 22 03 53.8 +1.3**
comp=Z,4.8nm,0.8s
YMR Madison River 75.91 45 *eP* **P 22 03 55.0 +1.5**
comp=Z,29nm,1.6s
SIM Simferopol' 76.06 316 *ce*P **sP 22 04 06.2 +0.6**
SIM pmax pmax
comp=Z,14nm,0.8s
SIM MLR MLR
comp=Z,140nm,18.0s
YFT Old Faithful 76.12 45 *eP* **P 22 03 57.9 +3.2**
comp=Z,8.2nm,0.9s
YLT Little Thumb C 76.27 45 *eP* P 22 04 00.5 +4.9
H17A Grant Village 76.30 45 *eP* **P 22 03 58.4 +2.6**
comp=Z,19nm,1.0s
IMW Indian Meadow 76.39 45 *eP* **P 22 03 58.1 +1.8**
comp=Z,9.4nm,0.9s
FLWY Flagg Ranch 76.42 45 *eP* **P 22 03 58.4 +2.0**
comp=Z,17nm,1.3s
FXWY Fox Creek 76.50 46 *eP* **P 22 03 58.5 +1.5**
comp=Z,8.2nm,1.1s
MOOW Moose Ponds 76.60 45 *eP* **P 22 03 59.0 +1.6**
comp=Z,18nm,1.5s
HVU Hansel Valley 76.60 48 *eP* **P 22 03 58.8 +1.4**
HVU pmax pmax
comp=Z,9.0nm,0.9s
HVU Hansel Valley 76.60 48 *eP* **P 22 03 58.8 +1.4**
comp=Z,9.2nm,0.9s
REDW Red Top Meadow 76.77 46 *eP* **P 22 03 59.8 +1.3**
comp=Z,12nm,1.1s
R11A Troy Canyon, C 76.90 52 *eP* **P 22 03 59.6 +0.4**
comp=Z,5.1nm,0.9s
BGU Big Grassy Mou 76.96 49 *eP* **P 22 04 00.7 +1.3**
comp=Z,3.9nm,0.7s
TPNV Topopah Spring 77.29 53 *eP* **P 22 04 02.0 +0.6**
TPNV pmax pmax
comp=Z,11nm,1.0s
TPNV Topopah Spring 77.29 53 *eP* **P 22 04 02.0 +0.6**
comp=Z,11nm,1.0s
DUG Dugway, Tooele 77.53 49 *eP* **P 22 04 03.1 +0.5**
DUG pmax pmax
comp=Z,17nm,0.9s
DUG Dugway, Tooele 77.53 49 *eP* **P 22 04 03.1 +0.5**
comp=Z,17nm,0.9s
TCUT Toone Canyon 77.82 48 *eP* **P 22 04 05.7 +1.3**
comp=Z,79nm,1.9s
JLU Jordanelle 78.11 48 *eP* **P 22 04 07.7 +1.7**
comp=Z,9.8nm,1.0s
NLU North Lily Min 78.12 49 *eP* **P 22 04 07.2 +1.2**
comp=Z,9.6nm,0.9s
MPU Maple Canyon 78.36 49 *eP* **P 22 04 08.6 +1.3**
comp=Z,18nm,1.2s
KWP Kalwaria Pacla 78.88 325 *eP* sP 22 04 22.7 +1.3
MSU Marysvale 78.94 50 *eP* **P 22 04 11.8 +1.2**
MSU Marysvale 78.94 50 *eP* **P 22 04 11.8 +1.2**
BUR08 Bucovina Ar. S 79.05 322 *eP* **P 22 04 11.6 +0.8**
TMUT Trail Mountain 79.06 49 *eP* **P 22 04 12.5 +1.2**
comp=Z,29nm,2.0s
BURAR Bucovina Array 79.06 322 ⇓*iP* **P 22 04 10.7 -0.2**
BURAR Bucovina Array 79.06 322 ⇓*eP* **P 22 04 10.7 -0.2**
TESR Tescani 79.08 320⇑*iP* **P 22 04 13.4 +2.5**
PFO Pinyon Flats O 79.12 56 *eP* **P 22 04 12.7 +1.2**
PFO pmax pmax
comp=Z,30nm,1.5s
PFO Pinyon Flats O 79.12 56 *eP* **P 22 04 12.7 +1.2**
comp=Z,30nm,1.5s
LCMT Little Creek M 79.18 52 *eP* **P 22 04 13.2 +1.4**
comp=Z,12nm,0.9s
P17A Butcher Ranch, 79.23 49 *eP* **P 22 04 13.1 +1.1**
comp=Z,20nm,1.0s
P18A Preston Nutter 79.43 48 *eP* **P 22 04 14.5 +1.1**
comp=Z,28nm,1.6s
KNB Kanab 79.45 52 *eP* **P 22 04 14.9 +1.6**
KNB pmax pmax
comp=Z,18nm,1.0s
KNB Kanab 79.45 52 *eP* **P 22 04 14.9 +1.6**
comp=Z,18nm,1.0s
VRI Vrincioaia 79.47 320⇑*iP* **P 22 04 17.2 +4.1**
VRI Vrincioaia 79.47 320 ⇑P **P 22 04 17.2 +4.1**
PLOR Plostina 79.52 320 ⇓*iP* P 22 04 18.6 +5.2
PLOR Plostina 79.52 320 ⇓P P 22 04 18.6 +5.2
BR131 Keskin Array S 79.56 312 *eP* **P 22 04 14.7 +0.8**
BRTR Keskin Array B 79.56 312 P **P 22 04 14.0 +0.1**
comp=Z,3.1nm,0.9s,baz=97,slow=3.0,SNR=10
BRTR LR LR 22 44 05.2
comp=Z,72nm,18.4s,baz=49,slow=39
KOLS Kolonicke sedl 79.58 324 *eP* sP 22 04 23.5 -1.7
KOLS Kolonicke sedl 79.58 324 *e* sP 22 04 23.5 -1.7
SRU San Rafael Swe 79.59 49 *eP* **P 22 04 14.9 +0.8**
SRU pmax pmax
comp=Z,18nm,0.8s
SRU San Rafael Swe 79.59 49 *eP* **P 22 04 14.8 +0.8**
comp=Z,18nm,0.8s
OJC Ojcow 79.80 326 *eP* **P 22 04 19.5 +4.8**
OJC Ojcow 79.80 326 *eP* **P 22 04 19.0 +4.3**
OJC pmax pmax
comp=Z,18nm,1.1s
OJC Ojcow 79.80 326 *eP* **P 22 04 19.0 +4.3**
comp=Z,18nm,1.1s
ULM Lac du Bonnet 79.87 33 P **P 22 04 13.4 -1.7**
comp=Z,3.3nm,0.8s,baz=339,slow=6.8,SNR=3.5
W13A Hualapai Mount 79.93 54 *eP* **P 22 04 16.4 +0.4**
comp=Z,3.3nm,0.8s
CRVS Cervenica-Dubn 79.98 325 *eP* sP 22 04 27.3 0.0
CRVS Cervenica-Dubn 79.98 325 *e* sP 22 04 27.3 0.0
BR231 Keskin MP Arra 80.01 312 *eP* **P 22 04 14.9 -1.3**
MSAB Monastry St. A 80.07 318 ⇓*iP* P 22 04 22.1 +5.8
DOPR Dopca 80.09 321 ⇓*iP* **P 22 04 19.9 +3.5**
U15A North Rim 80.15 52 *eP* **P 22 04 18.6 +1.4**
comp=Z,7.6nm,0.8s
GLA Glamis 80.55 56 *eP* **P 22 04 20.2 +1.1**
GLA pmax pmax
comp=Z,14nm,1.1s
GLA Glamis 80.55 56 *eP* **P 22 04 20.2 +1.1**
comp=Z,14nm,1.1s
PV09 Paradox Valley 80.82 49 *eP* **P 22 04 22.0 +1.1**
DRGR 80.87 323⇑*iP* **P 22 04 20.9 +0.3**
DRGR 80.87 323 ⇑P **P 22 04 20.9 +0.3**
ARR Arges 80.89 321⇑*iP* **P 22 04 22.4 +1.6**
PV10 Paradox Valley 80.95 49 *eP* **P 22 04 22.9 +1.4**
PV05 Paradox Valley 81.10 49 *eP* **P 22 04 23.2 +0.9**
MORC Moravsky Berou 81.12 327 *eP* P 22 04 26.8 +4.9
MORC pmax pmax
comp=Z,30nm,1.1s
MORC Moravsky Berou 81.12 327 *eP* P 22 04 26.8 +4.9
comp=Z,30nm,1.1s
Y14A Wickenburg 81.21 54 *eP* **P 22 04 23.6 +0.9**
comp=Z,35nm,0.9s
DPC Dobruska-Polom 81.22 328 *eP* **P 22 04 26.8 +4.4**
DPC *es*P **sP 22 04 35.3 +1.3**
DPC Dobruska-Polom 81.22 328 *eP* **P 22 04 26.8 +4.4**
DPC *e* 22 04 35.3
RAYN Ar Rayn 81.24 293 *eP* **P 22 04 24.8 +1.8**
comp=Z,5.1nm,0.9s
WUAZ Wupatki 81.29 52 *eP* **P 22 04 24.6 +1.3**
comp=Z,13nm,0.9s
PV01 Paradox Valley 81.39 49 *eP* **P 22 04 24.9 +1.1**
VYHS Vyhne 81.48 326 *eP* **P 22 04 28.3 +4.5**
VYHS *e* 22 04 36.3
VYHS Vyhne 81.48 326 *eP* **P 22 04 28.3 +4.5**
VYHS *e* 22 04 36.3
SMCO Snowmass 81.67 47 *eP* **P 22 04 26.5 +1.0**
comp=Z,4.9nm,0.9s
BRG Berggiesshubel 81.81 330 *eP* **P 22 04 27.9 +2.5**
comp=Z,6.9nm,1.4s
BRG *e* 22 04 37.5
comp=Z,8.3nm,1.1s
BRG Berggiesshubel 81.81 330 *eP* **P 22 04 28.0 +2.5**
BRG *e* 22 04 37.5
BRG pmax pmax
comp=Z,3.0nm,1.4s
BRG pmax pmax
comp=Z,7.0nm,1.1s
GZR Gura Zlata 81.81 322⇑*iP* **P 22 04 29.9 +4.2**
GZR Gura Zlata 81.81 322 ⇑P **P 22 04 29.9 +4.2**
CLL Collm 81.86 330 *eP* **P 22 04 28.0 +2.3**
comp=Z,6.0nm,0.9s
CLL *i* 22 04 37.7
CLL Lm MLR 22 11 00.0
comp=Z,300nm,19.4s
CLL Collm 81.86 330 *eP* **P 22 04 28.0 +2.3**
CLL *i* 22 04 37.7
CLL pmax pmax
comp=Z,46nm,0.9s
X16A Lo Mia Camp, P 81.94 53 *eP* **P 22 04 27.9 +1.2**
comp=Z,8.8nm,1.0s
MVCO Mesa Verde 82.02 49 *eP* **P 22 04 28.2 +1.0**
comp=Z,12nm,1.1s
ISCO Idaho Springs 82.07 46 *eP* **P 22 04 28.3 +0.9**
ISCO pmax pmax
comp=Z,4.0nm,0.9s
ISCO Idaho Spngs 82.07 46 *eP* **P 22 04 28.3 +0.9**
comp=Z,4.3nm,0.9s
PRU Pruhonice 82.24 329 *eP* **P 22 04 32.5 +4.7**
PRU *es*P **sP 22 04 40.1 +0.7**
PRU Pruhonice 82.24 329 *eP* **P 22 04 32.5 +4.7**
PRU *e* 22 04 40.1
KHC Kasperske Hory 83.30 329 *eP* **P 22 04 35.1 +1.8**
KHC *es*P **sP 22 04 45.5 +0.5**
KHC Kasperske Hory 83.30 329 *eP* P 22 04 38.6 +5.3
KHC pmax pmax
comp=Z,2.0nm,0.8s
KHC Kasperske Hory 83.30 329 *eP* P 22 04 38.5 +5.2
comp=Z,2.4nm,0.8s
GERES GERESS Array B 83.47 328 P **P 22 04 34.5 +0.2**
comp=Z,0.8nm,0.5s,baz=23,slow=7.2,SNR=8.4
GERES LR LR 22 45 08.9
comp=Z,205nm,19.0s,baz=22,slow=38
VTS Vitosha 83.56 319⇑*iP* **P 22 04 37.4 +2.5**
VTS Vitosha 83.56 319 *eP* **P 22 04 36.8 +1.9**
VTS pmax pmax
comp=Z,6.0nm,0.8s
VTS Vitosha 83.56 319 *eP* **P 22 04 36.8 +1.9**
comp=Z,5.8nm,0.8s
PMOR Pomariorio Ree 83.58 114 *eT* T 23 36 32.9
comp=Z,4.2nm,0.2s
TUC Tucson 83.68 54 *eP* **P 22 04 36.0 +0.3**
TUC pmax pmax
comp=Z,23nm,1.8s
TUC Tucson 83.68 54 *eP* **P 22 04 36.0 +0.3**
comp=Z,22nm,1.8s
PPT2 Papeete2 84.03 117 *e*LR LR 22 30 44.2
comp=Z,188nm,21.8s,baz=300
ANMO Albuquerque 84.75 50⇑*eP* **P 22 04 42.2 +1.0**
ANMO pmax pmax
comp=Z,10.0nm,1.2s
ANMO Albuquerque 84.75 50 *eP* **P 22 04 42.2 +1.0**
comp=Z,7.4nm,1.0s
319A Douglas 85.26 54 *eP* **P 22 04 44.7 +1.0**
comp=Z,10nm,0.8s
121A Cookes Peak, D 85.49 53 *eP* **P 22 04 45.1 +0.2**
comp=Z,11nm,1.0s
TAOE Nuku Hiva Isla 85.66 104 *e*LR LR 22 31 38.0
comp=Z,260nm,23.2s
BFO Black Forest 86.06 331 *eP* **P 22 04 46.5 -0.8**
BFO pmax pmax
comp=Z,7.0nm,0.8s
BFO Black Forest 86.06 331 *eP* **P 22 04 46.5 -0.8**
comp=Z,7.0nm,0.8s
TBI Tubuai 87.88 121 *e*LR LR 22 32 39.9
comp=Z,227nm,23.2s
TX31 Lajitas Ar. Si 90.25 53 *eP* **P 22 05 08.2 +0.5**
TXAR Lajitas Array 90.25 53 P **P 22 05 07.9 +0.2**
comp=Z,4.2nm,0.8s,baz=298,slow=3.8,SNR=48
MIAR Mount Ida 92.57 43 *eP* **P 22 05 18.3 0.0**
MIAR pmax pmax
comp=Z,41nm,1.9s

MIAR	**Mount Ida**	**92.57**	**43**	*e*P		**P**	**22 05 18.2**	**0.0**
	comp=Z,41nm,1.9s							
WHAR	**Wooly Hollow**	**92.71**	**42**	*e*P		**P**	**22 05 19.3**	**+0.4**
	comp=Z,14nm,0.9s							
ESDC	**Sonseca Array**	**98.05**	**334**	LR		LR	22 54 29.5	
	comp=Z,214nm,19.4s,baz=0.0,slow=38							
RKT	**Rikitea**	**98.17**	**113**	eLR		LR	22 37 38.5	
	comp=Z,185nm,27.2s							
TORD	**Torodi Ar. Bea**	**118.06**	**315**	PKP		**PKPdf**	**22 10 53.1**	**-1.0**
	comp=Z,0.4nm,0.7s,baz=344,slow=2.1,SNR=2.3							
SAML	**Samuel**	**144.47**	**46**	*e*PKPdf		**PKPdf**	**22 11 44.2**	**+0.7**
LPAZ	**La Paz**	**146.72**	**61**	PKPbc		**PKPbc**	**22 11 49.6**	**-0.1**
	comp=Z,14nm,0.6s,baz=348,slow=3.0,SNR=50							
LPAZ	**La Paz**	**146.72**	**61**	*e*PKPdf		**PKPbc**	**22 11 49.2**	**-0.5**
LCO	**Las Campanas**	**151.73**	**84**	*e*PKPbc		**PKPbc**	**22 12 01.8**	**+0.2**
PLCA	**Paso Flores**	**154.37**	**110**	PKPab		**PKPab**	**22 12 20.9**	**-0.2**
	comp=Z,2.6nm,0.8s,baz=328,slow=4.1,SNR=3.4							

ISCJB ***12*** *21:57:14.2±0.3,22.˝73S±0.˝03×69.˝45W±0.˝05,h90km±3km, mb4.0/13, Error ellipse: s-maj=7.6km s-min=5.0km az=162.5*

IDC ***12*** *21:57:14.5±0.7,22.˝78S×69.˝28W,h79km±5km,mb3.7/9, mb1 3.9/13,mb1mx3.8/24,mbtmp4.0/13,MS3.0/3, Ms1 3.0/3,ms1mx2.7/31, Error ellipse: s-maj=20.5km s-min=17.2km az=35.0*

NEIC ***12*** *21:57:16.0, 22.˝70S×69.˝48W,h73km, mb4.4/3, After GUC. NEIC Felt [III] at Sierra Gorda and Tocopilla; [II] at Quillagua.*

GUC ***12*** *21:57:16.0±0.7,22.˝70S×69.˝48W,h73km±5km, ML4.4*

SJA ***12*** *21:57:20.1±0.6,23.˝00S×68.˝99W,h178km±44km, ML3.0, MW3.4*

ISC 12 21:57:14.2±0.5**, 22.˝75S**±0.˝04×**69.˝43W**±0.˝05**, h79**km±4**km**, n48**, σ1§42/55**, mb3.8**/13**, Northern Chile**

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
PB06	**IPOC Station P**	**0.14**	**289**	*i* P		**Pn**	**21 57 26.7**	**+0.8**
PB06				*i* S		**Sn**	**21 57 35.4**	**+1.0**
PB06				IAML			21 57 35.6	
	comp=E,25μm,0.4s							
PB04	**IPOC Station P**	**0.78**	**302**	*i* P		**Pn**	**21 57 31.7**	**+0.8**
PB04				*i* S		**Sn**	**21 57 44.1**	**+0.8**
PB04	**IPOC Station P**	**0.78**	**302**	*e*Pn		**Pn**	**21 57 31.1**	**+0.2**
PB09	**IPOC Station P**	**0.97**	**10**	*i* P		**Pn**	**21 57 34.9**	**+1.9**
PB09				*i* S		**Sn**	**21 57 48.3**	**+1.3**
PB09				IAML			21 57 52.2	
	comp=N,35μm,0.3s							
PB07	**IPOC Station P**	**1.10**	**337**	*i* P		**Pn**	**21 57 35.7**	**+1.1**
PB07				*i* S		**Sn**	**21 57 50.8**	**+0.9**
PB07				IAML			21 57 52.4	
	comp=E,13μm,0.2s							
PB10	**IPOC Station P**	**1.28**	**234**	*e*Pn		**Pn**	**21 57 35.6**	**-1.1**
PB01	**IPOC Station P**	**1.70**	**358**	*i* P		**Pn**	**21 57 43.8**	**+1.6**
PB01				*i* S		**Sn**	**21 58 04.5**	**+1.1**
PB01				IAML			21 58 08.1	
	comp=E,6μm,0.1s							
PB01	**IPOC Station P**	**1.70**	**358**	*e*Pn		**Pn**	**21 57 43.6**	**+1.3**
PB11	**IPOC Station P**	**2.98**	**356**	*e*Pn		**Pn**	**21 57 59.4**	**-0.1**
HJA	**Humahuaca**	**3.73**	**98**	*i* P		Pn	21 58 13.8	+3.9
SLA	**San Lorenzo**	**4.10**	**119**	*i* P		**Pn**	**21 58 17.9**	**+3.2**
SLA				*i* S		**Sn**	**21 58 60.0**	**-1.5**
SLA				IAML			21 59 09.2	
	comp=Z,18nm,0.6s							
AZAP	**Zapla**	**4.27**	**111**	*i* P		Pn	21 58 20.3	+3.3
AZAP				IAML			21 58 58.9	
	comp=Z,33nm,0.6s							
AZAP				*i* S		**Sn**	**21 59 04.4**	**-1.4**
FSA	**Cafayete**	**4.59**	**137**	*i* P		**Pn**	**21 58 24.0**	**+2.6**
FSA				*i* S		**Sn**	**21 59 11.2**	**-2.3**
FSA				IAML			21 59 12.0	
	comp=Z,9.4nm,0.7s							
ASTB	**Santa Barbara**	**4.73**	**106**	*i* P		**Pn**	**21 58 25.6**	**+2.4**
ALOL	**LOMAS DE OLMED**	**5.12**	**103**	*i* P		**Pn**	**21 58 30.3**	**+1.8**
AHML	**Horco Molle**	**5.48**	**138**	*i* P		**Pn**	**21 58 35.3**	**+2.0**
LCO	**Las Campanas**	**6.34**	**190**	*e*Pn		**Pn**	**21 58 47.8**	**+2.5**
	comp=Z,29nm,0.3s							
LCO				*e*Sn		**Sn**	**21 59 59.3**	**+3.0**
LPAZ	**La Paz**	**6.55**	**11**	P		**Pn**	**21 58 50.7**	**+2.2**
	comp=Z,1.2nm,0.3s,baz=192,slow=5.5,SNR=19							
LPAZ				LR		LR	22 01 18.3	
	comp=Z,33nm,19.1s,baz=216,slow=37							
LPAZ	**La Paz**	**6.55**	**11**	*e*Pn		Pn	21 58 52.5	+4.0
ARE	**Arequipa**	**6.55**	**342**	*e*P		**Pn**	**21 58 47.0**	**-1.3**
ARE				*e*S		**Sn**	**21 59 59.0**	**-2.7**
SIV	**San Ignacio**	**10.36**	**51**	P		**Pn**	**21 59 39.0**	**-1.0**
	comp=Z,1.1nm,0.3s,baz=243,slow=11,SNR=9.5							
CPUP	**Villa Florida**	**11.58**	**110**	P		**Pn**	**21 59 55.9**	**-0.7**
	comp=Z,0.2nm,0.3s,baz=291,slow=12,SNR=11							
CPUP	**Villa Florida**	**11.58**	**110**	*e*Pn		**Pn**	**21 59 59.0**	**+2.5**
NNA	**Nana**	**12.82**	**325**	LR		LR	22 05 06.5	
	comp=Z,26nm,18.1s,baz=159,slow=36							
SAML	**Samuel**	**14.98**	**25**	*e*Pn		**Pn**	**22 00 41.8**	**+0.1**
TRQA	**Tornquist**	**16.54**	**159**	*e*Pn		**P**	**22 01 03.1**	**+0.5**
	comp=Z,46nm,1.8s							
PLCA	**Paso Flores**	**17.95**	**183**	P		**Pn**	**22 01 18.1**	**-0.5**
	comp=Z,0.1nm,0.3s,baz=18,slow=8.5,SNR=3.9							
BDFB	**Brasilia**	**21.41**	**75**	P		**P**	**22 01 54.9**	**-1.0**
	comp=Z,2.1nm,0.4s,baz=261,slow=10,SNR=4.5							
PTGA	**Pitinga**	**23.75**	**24**	P		**P**	**22 02 18.7**	**-0.8**
	comp=Z,1.7nm,0.4s,baz=194,slow=19,SNR=3.8							
OTAV	**Otavalo**	**24.48**	**338**	*e*P		**P**	**22 02 27.0**	**+0.4**
	comp=Z,1.5nm,0.4s							
SNAA	**Sanae**	**61.26**	**161**	*e*P		**P**	**22 07 21.1**	**+0.2**
	comp=Z,156nm,0.7s							
TXAR	**Lajitas Array**	**61.38**	**326**	P		**P**	**22 07 22.7**	**+0.5**
	comp=Z,0.4nm,0.7s,baz=145,slow=4.9,SNR=4.0							
QSPA	**South Pole Qui**	**67.44**	**180**	*e*P		**P**	**22 08 02.3**	**+0.9**
	comp=Z,10nm,0.5s							
DBIC	**Dimbokro**	**69.56**	**73**	P		**P**	**22 08 15.1**	**-0.1**
	comp=Z,3.0nm,0.8s,baz=228,slow=7.2,SNR=3.9							
DBIC				pP		**pP**	**22 08 35.3**	**-0.5**
	comp=Z,2.3nm,0.8s,baz=207,slow=2.3,SNR=1.5							
PDAR	**Pinedale Array**	**74.95**	**331**	P		**P**	**22 08 48.0**	**+1.0**
	comp=Z,0.2nm,0.6s,baz=122,slow=4.5,SNR=2.8							
NVAR	**Mina Array Bea**	**76.18**	**322**	P		**P**	**22 08 55.7**	**+1.6**
	comp=Z,0.3nm,0.4s,baz=160,slow=5.5,SNR=4.5							
TORD	**Torodi Ar. Bea**	**78.23**	**70**	P		**P**	**22 09 05.6**	**-0.2**
	comp=Z,4.1nm,0.7s,baz=256,slow=5.0,SNR=56							
TORD				pP		**pP**	**22 09 25.3**	**-1.4**
	comp=Z,1.6nm,0.5s,baz=248,slow=5.2,SNR=4.7							
RAR	**Rarotonga**	**82.35**	**250**	LR		LR	22 34 22.6	
	comp=Z,69nm,21.3s,baz=251,slow=27							
BOSA	**Boshof**	**83.29**	**118**	P		**P**	**22 09 32.5**	**-0.3**
	comp=Z,1.1nm,0.4s,baz=239,slow=4.4,SNR=8.4							
BOSA				pP		**pP**	**22 09 53.5**	**-0.6**
	comp=Z,1.7nm,0.7s,baz=252,slow=4.6,SNR=2.1							
ESDC	**Sonseca Array**	**87.06**	**45**	P		P	22 09 47.8	-3.4
	comp=Z,0.1nm,0.3s,baz=227,slow=5.1,SNR=4.0							
YKA	**Yellowknife Ar**	**92.20**	**341**	P		**P**	**22 10 15.1**	**+0.5**
	comp=Z,1.1nm,0.6s,baz=140,slow=4.5,SNR=24							
YKA				pP		**pP**	**22 10 36.7**	**+0.7**
	comp=Z,0.2nm,0.5s,baz=141,slow=4.4,SNR=3.0							
ASAR	**Alice Springs**	**128.59**	**208**	PKP		**PKPdf**	**22 16 13.0**	**+0.1**
	comp=Z,1.1nm,0.7s,baz=126,slow=2.0,SNR=13							
ASAR				pPKP		**pPKPdf**	**22 16 34.4**	**-0.8**
	comp=Z,0.8nm,0.9s,baz=147,slow=2.5,SNR=3.1							
WRA	**Warramunga Arr**	**131.63**	**210**	PKP		**PKPdf**	**22 16 19.4**	**+0.7**
	comp=Z,0.8nm,0.6s,baz=151,slow=1.7,SNR=19							
WRA				pPKP		**pPKPdf**	**22 16 41.8**	**+0.8**
	comp=Z,0.5nm,0.7s,baz=151,slow=1.6,SNR=2.3							
KURBB	**Kurchatov Arra**	**142.64**	**34**	PKP		**PKPdf**	**22 16 35.6**	**-2.4**
	comp=Z,0.2nm,0.3s,baz=290,slow=3.2,SNR=3.5							
ZALV	**Zalesovo Beam**	**143.29**	**25**	PKP		PKPbc	22 16 36.7	+0.4
	comp=Z,1.2nm,0.6s,baz=338,slow=3.1,SNR=5.8							
AAK	**Ala-Archa**	**144.11**	**48**	PKP		PKPbc	22 16 39.5	+0.2
	comp=Z,1.5nm,0.8s,baz=204,slow=12,SNR=4.2							
MKAR	**Makanchi Array**	**146.92**	**37**	PKPbc		**PKPbc**	**22 16 46.7**	**-0.9**
	comp=Z,5.0nm,1.0s,baz=9.6,slow=1.5,SNR=28							
MKAR				pPKPbc	pPKPbc		22 17 09.7	0.0
	comp=Z,1.5nm,0.8s,baz=307,slow=2.7,SNR=7.3							
KLR	**Kul'dur**	**148.72**	**333**	PKPbc		**PKPbc**	**22 16 51.8**	**-0.5**
	comp=Z,0.8nm,0.5s,baz=54,slow=3.5,SNR=3.9							

IDC ***12*** *22:09:06.8±1.6,36.˝82N×140.˝62E,h0km, mb3.5/3, mb1 3.7/3, mb1mx3.2/49, mbtmp3.5/3, Error ellipse: s-maj=24.8km s-min=19.0km az=2.0*

ISCJB ***12*** *22:09:08.1±0.6,36.˝85N±0.˝03×140.˝63E±0.˝06,h20km±6km, mb3.4/3, Error ellipse: s-maj=7.8km s-min=4.5km az=17.9*

JMA ***12*** *22:09:08.5, 36.˝87N×140.˝58E,h6km±1km, M3.3 Broadband fault plane solution: P waves. NP1: φs177.00000°,δ75.00000°,λ-80.00000°. NP2: φs323.00000°,δ18.00000°,λ-123.00000°. Principal axes: T Plg29.0000°, Azm259.0000°; N Plg10.0000°, Azm354.0000°; P Plg59.0000°, Azm101.0000°;*

JMA Felt I J1.

ISC 12 22:09:08.5±1.0**, 36.˝86N**±0.˝03×**140.˝59E**±0.˝04**, h12**km±8**km**, n18**, σ0§59/20**, mb3.5/3**, 5C-1D, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
JHO	**Hitachi**	**0.25**	**184**	⇓P		**Pg**	**22 09 13.7**	**0.0**
JHO				*i* S		**Pg**	**22 09 17.4**	**+0.3**
ONAJ	**Iwakimizuishiy**	**0.29**	**34**	⇑P		**Pg**	**22 09 14.4**	**-0.1**
ONAJ				*i* S		**Sg**	**22 09 18.8**	**+0.3**
JSB	**Shiboa**	**0.55**	**282**	⇑P		**Pg**	**22 09 19.4**	**+0.2**
JSB				*i* S		**Sg**	**22 09 27.1**	**+0.6**
JFT	**Otama**	**0.69**	**343**	P		**Pg**	**22 09 21.8**	**0.0**
JFT				*i* S		**Sg**	**22 09 31.0**	**+0.1**
JYT	**Yasato**	**0.71**	**207**	⇑P		**Pg**	**22 09 21.9**	**-0.3**
JYT				*i* S		**Sb**	**22 09 32.0**	**-0.4**
JFY	**Yanaizu**	**0.90**	**308**	⇑P		**Pb**	**22 09 25.2**	**-0.8**
JFY				*i* S		**Sb**	**22 09 36.9**	**-1.0**
JAG	**Ashikaga**	**1.01**	**245**	⇑P		**Pb**	**22 09 27.0**	**-0.9**
JAG				*i* S		**Sb**	**22 09 40.5**	**-0.7**
JMM	**Marumori**	**1.02**	**9**	P		**Pb**	**22 09 27.5**	**-0.5**
JMM				*i* S		**Sb**	**22 09 40.8**	**-0.6**
MJAR	**Matsushiro Arr**	**1.94**	**261**	Pg		**Pn**	**22 09 42.3**	**+1.0**
	19nm,0.3s,baz=78,slow=16,SNR=90							
MJAR				Lg		Lg	22 10 08.1	
	18nm,0.3s,baz=73,slow=14,SNR=12							
SONM	**Songino Array**	**27.34**	**304**	P		**P**	**22 14 53.7**	**+0.3**
	0.2nm,0.3s,baz=103,slow=8.7,SNR=3.2							
H11N2	**WAKE ISLAND Hy**	**28.63**	**119**	T		T	22 44 52.5	
	baz=312,slow=75,SNR=35							
H11N1	**WAKE ISLAND Hy**	**28.64**	**119**	T		T	22 44 53.1	
	baz=312,slow=75,SNR=47							
H11N3	**WAKE ISLAND Hy**	**28.65**	**119**	T		T	22 44 53.8	
	baz=312,slow=75,SNR=39							
H11S1	**WAKE ISLAND Hy**	**29.32**	**121**	T		T	22 45 44.7	
	baz=314,slow=76,SNR=79							
H11S3	**WAKE ISLAND Hy**	**29.32**	**122**	T		T	22 45 46.0	
	baz=314,slow=76,SNR=90							
H11S2	**WAKE ISLAND Hy**	**29.34**	**122**	T		T	22 45 47.1	
	baz=314,slow=76,SNR=58							
KURBB	**Kurchatov Arra**	**45.59**	**308**	P		**P**	**22 17 28.6**	**+0.4**
	0.2nm,0.3s,baz=80,slow=8.2,SNR=3.1							
WRA	**Warramunga Arr**	**56.80**	**187**	P		**P**	**22 18 52.6**	**-0.1**
	0.4nm,0.6s,baz=3.2,slow=7.3,SNR=7.7							

NIED ***12*** *22:11:00,37.˝90N×142.˝10E,h38km,Mw4.1 Best double couple: Mo1.34000×1015 NP1:φs343.00000°,δ34.00000°, λ-34.00000°. NP2:φs101.00000°,δ72.00000°, λ-119.00000°.*

ISCJB ***12*** *22:11:38.1±0.4,37.˝91N±0.˝04×142.˝23E±0.˝05,h30km, mb4.0/31,MS3.5/2, Error ellipse: s-maj=6.2km s-min=4.7km az=146.9*

JMA ***12*** *22:11:39.4±0.2,37.˝93N×142.˝12E,h26km±3km,M3.9*

JMA Felt I J1.

NEIC ***12*** *22:11:41.3±0.9,37.˝94N×142.˝16E,h39km±7km, mb4.2/3, Error ellipse: s-maj=8.1km s-min=6.2km az=123.0*

IDC ***12*** *22:11:41.3±2.7,37.˝90N×142.˝18E,h39km±23km, mb3.8/25, mb1 3.9/29,mb1mx3.8/52,mbtmp4.0/29,ML3.1/3,MS3.3/4, Ms1 3.3/4,ms1mx2.8/53, Error ellipse: s-maj=15.8km s-min=13.6km az=101.0*

ISC 12 22:11:40.1±0.6**, 37.˝93N**±0.˝05×**142.˝09E**±0.˝06**, h30**km**, n56, σ1§07/50**, mb4.0/31**, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
JIO	**Ouri**	**0.78**	**312**	P		**Pb**	**22 11 54.5**	**-0.7**
JIO				S		**Sn**	**22 12 05.1**	**-0.7**
JMM	**Marumori**	**1.02**	**267**	P		**Pb**	**22 11 58.3**	**-1.0**
JMM				S		**Sb**	**22 12 11.8**	**-0.6**
JOU	**Okura**	**1.20**	**292**	P		**Pb**	**22 12 01.5**	**-0.8**
JMK	**Ichinoseki**	**1.23**	**327**	P		**Pb**	**22 12 00.9**	**-1.8**
JFT	**Otama**	**1.45**	**254**	P		**Pb**	**22 12 05.2**	**-1.2**
JFT				S		**Sb**	**22 12 23.9**	**-0.6**
JYS	**Shirataka**	**1.62**	**281**	P		**Pb**	**22 12 07.7**	**-1.7**
JYS				*e*S		**Sb**	**22 12 28.2**	**-1.2**
JYK	**Kaneyama**	**1.68**	**307**	P		**Pb**	**22 12 08.1**	**-2.2**
MJAR	**Matsushiro Arr**	**3.39**	**247**	Pn		**Pn**	**22 12 32.7**	**+1.7**
	6.8nm,0.3s,baz=73,slow=14,SNR=12							
MJAR				Sn		**Sb**	**22 13 19.1**	**-1.2**
	5.3nm,0.3s,baz=360,slow=31,SNR=4.4							
MAJO	**Matsushiro**	**3.39**	**247**	*e*Pn		**Pn**	**22 12 32.4**	**+1.4**
MAJO				*e*Sn		**Sn**	**22 13 12.2**	**+2.0**
MAT	**Matsushiro**	**3.39**	**247**	P		Pb	22 12 34.1	-5.4
MAT				S		**Sb**	**22 13 16.2**	**-4.1**
JHJ	**Hachijo jima 2**	**5.16**	**202**	Pn		**Pn**	**22 12 54.5**	**-0.8**
	65nm,0.3s,baz=332,slow=20,SNR=20							
JHJ				Sn		**Sn**	**22 13 54.0**	**+0.2**
	28nm,0.3s,baz=257,slow=23,SNR=3.7							
JHJ				LR		LR	22 15 14.0	
	comp=Z,225nm,18.8s,baz=42,slow=41							
USRK	**Ussuriysk Ar.**	**9.86**	**313**	Pn		Pn	22 14 02.4	+2.6
	0.4nm,0.3s,baz=123,slow=13,SNR=6.7							
USRK				LR		LR	22 17 54.6	
	comp=Z,115nm,20.1s,baz=5.9,slow=38							
JNU	**Nakatsue**	**10.31**	**246**	Pn		Pn	22 14 10.3	+4.3
	0.7nm,0.3s,baz=75,slow=2.8,SNR=5.6							
JNU	**Nakatsue**	**10.31**	**246**	*e*Pn		Pn	22 14 08.0	+1.9
KSRS	**Korea Array**	**11.23**	**272**	Pn		Pn	22 14 27.8	+9.2
	0.3nm,0.3s,baz=87,slow=14,SNR=4.4							
KSAR	**Wonju Array Be**	**11.27**	**272**	Pn		Pn	22 14 27.8	+8.8
KLR	**Kul'dur**	**13.54**	**330**	Pn		**Pn**	**22 14 50.1**	**+0.2**
	0.1nm,0.3s,baz=143,slow=9.8,SNR=3.4							
MA2	**Magadan**	**22.37**	**12**	P		**P**	**22 16 35.7**	**+0.2**
	4.9nm,0.5s,baz=251,slow=6.4,SNR=4.1							
SEY	**Seymchan**	**25.81**	**11**	P		**P**	**22 17 09.7**	**+1.4**
	6.2nm,0.9s,baz=168,slow=5.5,SNR=10							
ULN	**Ulaanbaatar**	**27.31**	**303**	*e*P		**P**	**22 17 22.8**	**+0.6**
	0.7nm,0.4s							
SONM	**Songino Array**	**27.74**	**302**	P		**P**	**22 17 27.2**	**+1.2**
	1.5nm,0.8s,baz=107,slow=8.5,SNR=11							
SONM				LR		LR	22 28 31.5	
	comp=Z,71nm,19.4s,baz=292,slow=36							
ENH	**Enshi**	**27.95**	**264**	*e*P		**P**	**22 17 28.5**	**+0.5**
	6.5nm,0.7s							
H11N2	**WAKE ISLAND Hy**	**28.17**	**123**	T		T	22 46 46.5	
	baz=316,slow=75,SNR=260							
H11N1	**WAKE ISLAND Hy**	**28.18**	**123**	T		T	22 47 03.1	
	baz=316,slow=75,SNR=263							
H11N3	**WAKE ISLAND Hy**	**28.19**	**123**	T		T	22 46 56.3	
	baz=316,slow=75,SNR=259							
H11S1	**WAKE ISLAND Hy**	**28.92**	**125**	T		T	22 47 58.0	
	baz=317,slow=76,SNR=199							
H11S3	**WAKE ISLAND Hy**	**28.92**	**125**	T		T	22 47 58.0	
	baz=317,slow=76,SNR=237							
H11S2	**WAKE ISLAND Hy**	**28.93**	**125**	T		T	22 47 51.0	
	baz=317,slow=76,SNR=208							
ZALV	**Zalesovo Beam**	**41.71**	**312**	P		**P**	**22 19 26.6**	**+0.6**
	1.9nm,0.4s,baz=88,slow=7.7,SNR=12							
MKAR	**Makanchi Array**	**44.10**	**301**	P		**P**	**22 19 46.1**	**+0.6**
	0.6nm,0.4s,baz=83,slow=9.7,SNR=13							
KURK	**Kurchatov**	**45.80**	**308**	*e*P		**P**	**22 19 59.1**	**+0.1**
	855nm,0.6s							
KURBB	**Kurchatov Arra**	**45.88**	**307**	P		**P**	**22 19 59.6**	**+0.1**
	4.3nm,0.5s,baz=82,slow=7.9,SNR=47							
ILAR	**Eielson Array**	**48.45**	**33**	P		**P**	**22 20 19.1**	**-0.2**
	1.2nm,0.7s,baz=265,slow=6.5,SNR=13							
TKM2	**Tokmak 2**	**49.68**	**298**	*e*P		**P**	**22 20 29.3**	**0.0**
	1.5nm,0.7s							
BVAR	**Borovoye Array**	**50.37**	**312**	P		**P**	**22 20 34.6**	**+0.4**
	1.0nm,0.6s,baz=74,slow=7.5,SNR=7.7							
AAK	**Ala-Archa**	**50.54**	**298**	P		**P**	**22 20 36.6**	**+0.8**
	0.4nm,0.3s,baz=352,slow=3.3,SNR=2.6							
KKAR	**Kaniy Array**	**53.14**	**300**	*e*P		**P**	**22 20 55.5**	**+0.5**
	0.4nm,0.6s							
INK	**Inuvik**	**53.34**	**27**	P		**P**	**22 20 56.5**	**+0.4**
	1.1nm,0.7s,baz=256,slow=1.3,SNR=2.9							
ARU	**Arti**	**56.05**	**318**	P		**P**	**22 21 16.1**	**+0.2**
	2.6nm,0.6s,baz=44,slow=3.4,SNR=6.2							
ABKAR	**Akbulak array**	**57.77**	**310**	*e*P		**P**	**22 21 28.7**	**+0.5**
	0.6nm,0.4s							
WRA	**Warramunga Arr**	**58.02**	**189**	P		**P**	**22 21 29.6**	**-0.6**
	1.1nm,0.6s,baz=7.0,slow=7.2,SNR=15							
AKTO	**Aktyubinsk**	**58.48**	**312**	P		P	22 21 34.9	+1.8
	1.8nm,0.8s,baz=61,slow=11,SNR=6.0							
ASAR	**Alice Springs**	**61.75**	**189**	P		**P**	**22 21 56.2**	**+0.4**
	0.4nm,0.6s,baz=17,slow=6.8,SNR=3.7							
YKA	**Yellowknife Ar**	**62.76**	**31**	P		**P**	**22 22 01.9**	**-0.2**
	0.6nm,0.6s,baz=304,slow=6.7,SNR=14							
ARCES	**ARCESS Array B**	**63.35**	**339**	P		**P**	**22 22 05.2**	**-0.7**
	3.2nm,0.9s,baz=31,slow=7.2,SNR=3.8							
GEYT	**Alibeck**	**63.87**	**299**	P		**P**	**22 22 10.6**	**+0.7**
	0.7nm,0.6s,baz=29,slow=3.3,SNR=2.2							
FINES	**FINESS Array B**	**68.27**	**332**	P		**P**	**22 22 37.5**	**-0.2**
	1.0nm,0.4s,baz=26,slow=9.5,SNR=9.1							
NOA	**NORSAR Array B**	**73.56**	**337**	P		**P**	**22 23 09.6**	**-0.3**
	0.9nm,0.7s,baz=40,slow=5.9,SNR=4.0							
AKASG	**Malin Array Be**	**73.91**	**322**	P		**P**	**22 23 11.9**	**-0.2**
	0.3nm,0.3s,baz=45,slow=6.1,SNR=4.2							
FRB	**Frobisher Bay**	**75.78**	**14**	P		**P**	**22 23 22.1**	**-0.6**
	3.5nm,0.8s,baz=329,slow=5.3,SNR=5.8							
PDAR	**Pinedale Array**	**76.66**	**46**	P		**P**	**22 23 27.9**	**-0.4**
	0.6nm,0.6s,baz=286,slow=0.5,SNR=4.6							
BRTR	**Keskin Array B**	**78.66**	**312**	P		**P**	**22 23 40.2**	**+0.7**
	0.5nm,0.7s,baz=53,slow=4.8,SNR=3.3							
GERES	**GERESS Array B**	**82.23**	**328**	P		**P**	**22 23 58.3**	**-0.1**
	0.3nm,0.4s,baz=59,slow=6.4,SNR=3.7							
RPZ	**Rata Peaks**	**85.41**	**159**	LR		LR	23 00 45.1	
	comp=Z,30nm,18.7s,baz=6.5,slow=34							
TXAR	**Lajitas Array**	**89.15**	**53**	P		**P**	**22 24 32.9**	**-0.2**
	0.3nm,0.7s,baz=278,slow=3.5,SNR=4.3							
LPAZ	**La Paz**	**145.78**	**59**	PKPbc		**PKPab**	**22 31 17.1**	**-0.7**
	2.2nm,0.8s,baz=12,slow=9.5,SNR=8.2							

SJA ***12*** *22:17:56.9±1.1,28.˝78S×67.˝15W,h22km±5km,ML3.3, MW3.2*

ISCJB ***12*** *22:17:57.9±2.1,28.˝78S±0.˝08×67.˝17W±0.˝07,h11km±19km, mb4.3/4,1,Error ellipse: s-maj=16.2km s-min=5.8km az=147.7*

IDC ***12*** *22:17:57.6±0.9,29.˝42S×66.˝80W,h18km±4km,mb3.4/1, mb1 3.5/2,mb1mx3.2/33,mbtmp3.5/2,ML3.8/1,Error ellipse: s-maj=93.7km s-min=28.1km az=155.0*

ISC 12 22:17:57.3±1.1**, 28.˝73S**±0.˝08×**67.˝13W**±0.˝06**, h13**km±7**km**, n14**, σ1§34/24**, La Rioja Province**

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
VCA	**Vinchina**	**0.95**	**269**	*i* P		**Pg**	**22 18 14.4**	**-1.3**
VCA				*i* S		**Sb**	**22 18 28.7**	**+0.4**
CYA	**Choya**	**1.20**	**76**	*i* P		**Pn**	**22 18 20.9**	**+1.0**
CYA				*i* S		**Sn**	**22 18 37.6**	**+1.6**
AVFE	**Valle Fertil**	**1.94**	**188**	*i* P		**Pn**	**22 18 29.7**	**-0.4**
AVFE				*i* S		**Sn**	**22 18 54.4**	**-0.1**
AVFE				IAML			22 19 01.8	
	comp=Z,241nm,0.3s							
AMOG	**MOGNA**	**2.50**	**208**	*i* P		**Pn**	**22 18 38.5**	**+0.7**
AMOG				*i* S		**Sn**	**22 19 08.8**	**+0.6**
FSA	**Cafayete**	**2.80**	**22**	*i* P		**Pn**	**22 18 44.2**	**+2.2**
RTLL	**Cerro Villicun**	**2.84**	**204**	*i* P		**Pn**	**22 18 43.0**	**+0.5**
RTLL				*i* S		**Sn**	**22 19 17.0**	**+0.5**
RTCV	**Cerro Valdivia**	**3.35**	**201**	*i* P		**Pn**	**22 18 51.0**	**+1.6**
RTCV				*i* S		**Sn**	**22 19

ZRNK	**Zerenda**	**5.91**	**304**	⇑Pn	**Pn**	**22 21 21.9**	**+0.4**
	1.6nm,0.3s							
ZRNK				⇑Sn	**Sn**	**22 22 28.1**	**-1.6**
	17nm,0.7s							
ZRNK				⇑Lg	Lg	22 22 56.1		
	74nm,0.9s							
CHKK	**Chushkaly**	**6.07**	**181**	*e*P	**Pg**	**22 21 48.7**	**-0.9**
	8.6nm,0.2s							
CHKK				*e*S	**Sg**	**22 23 06.6**	**-1.6**
	185nm,0.3s							
ZALV	**Zalesovo Beam**	**6.22**	**47**	Pn	**Pn**	**22 21 26.3**	**+0.5**
	8.8nm,0.3s,baz=240,slow=15,SNR=83							
ZALV				Sn	**Sn**	**22 22 33.1**	**-4.1**
	4.3nm,0.3s,baz=233,slow=25,SNR=5.1							
ZALV				Lg	Lg	22 23 07.3		
	5.9nm,0.3s,baz=236,slow=28,SNR=7.1							
KTBS	**Karatobe**	**6.24**	**183**	*e*P	**Pg**	**22 21 52.4**	**-0.3**
KTBS				*e*S	**Sg**	**22 23 13.7**	**+0.3**
KURS	**Kuram**	**6.49**	**173**	*e*P	**Pg**	**22 21 55.4**	**-2.3**
	7.2nm,0.2s							
KURS				*e*S	**Sg**	**22 23 18.9**	**-2.8**
	32nm,0.3s							
DGS	**Degeres**	**6.76**	**188**	*e*P	**Pg**	**22 22 01.3**	**-1.5**
	12nm,0.2s							
DGS				*e*S	**Sg**	**22 23 28.7**	**-1.7**
	148nm,0.3s							
MDOK	**Medeo**	**6.78**	**181**	*e*P	**Pg**	**22 22 00.6**	**-2.5**
	3.1nm,0.3s							
MDOK				*e*S	**Sg**	**22 23 27.7**	**-3.1**
	43nm,0.8s							
PDGK	**Podgornoye**	**6.81**	**165**	⇓Pn	**Pn**	**22 21 35.9**	**+2.1**
	2.5nm,0.6s							
PDGK				⇓Lg	Lg	22 23 29.2		
	33nm,0.5s							
TNSS	**Tian-Shan**	**6.90**	**181**	*e*P	**Pg**	**22 22 04.9**	**-0.5**
	5.8nm,0.3s							
TNSS				*e*S	**Sg**	**22 23 34.9**	**+0.1**
	35nm,0.5s							
AAK	**Ala-Archa**	**7.53**	**195**	Pn	Pn	22 21 47.1	+3.1
	0.2nm,0.3s,baz=312,slow=4.7,SNR=3.5							
AAK				Sn	**Sn**	**22 23 10.0**	**+0.1**
	1.0nm,0.3s,baz=245,slow=21,SNR=3.8							
AAK				Lg	Lg	22 23 55.3		
	2.3nm,0.3s,baz=280,slow=21,SNR=21							
AAK	**Ala-Archa**	**7.53**	**195**	⇓Pn	Pn	22 21 50.7	+6.7
	1.6nm,0.8s							
AAK				⇑Lg	Lg	22 23 51.7		
	54nm,0.9s							
MNAS	**Manas**	**8.11**	**205**	⇑Pn	Pn	22 21 57.3	+5.3
	0.5nm,0.6s							
MNAS				⇓Lg	Lg	22 24 13.0		
	24nm,0.7s							
KK31	**Karatay Array**	**8.22**	**216**	⇑Pn	**Pn**	**22 21 54.2**	**+0.9**
	1.1nm,0.3s							
KK31				⇑Sn	**Sn**	**22 23 26.0**	**-0.5**
	1.7nm,0.3s							
KK31				⇓Lg	Lg	22 24 14.6		
	11nm,0.5s							
AB31	**Akbulak array**	**11.18**	**273**	⇑Pn	**Pn**	**22 22 32.5**	**-1.3**
	1.3nm,0.6s,baz=82,slow=7.8,SNR=26							
AB31				⇑Sn	**Sn**	**22 24 33.9**	**-5.2**
	0.6nm,0.3s,baz=79,slow=24,SNR=4.7							
AB31				⇑Lg	Lg	22 25 46.5		
	2.6nm,0.6s							
AKTO	**Aktyubinsk**	**12.27**	**280**	Pn	**Pn**	**22 22 48.6**	**0.0**
	0.3nm,0.3s,baz=94,slow=13,SNR=6.1							
AKTO				Sn	Sn	22 24 58.5	-7.2	
	0.5nm,0.3s,baz=274,slow=18,SNR=4.2							
AKTO				Lg	Lg	22 26 22.1		
	0.2nm,0.3s,baz=205,slow=14,SNR=4.0							
SONM	**Songino Array**	**19.30**	**85**	P	**P**	**22 24 18.2**	**-1.1**
	baz=306,slow=10,SNR=2.7							

JMA 12 22:21:22.1, 37.05N×138.65E, h10km±1km, M1.9, Near west coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHK	**Hiroka**	**0.35**	**56**	P	Pg	22 21 29.0	-0.1
JHK				S	Sg	22 21 34.4	+0.6
JJN	**Nakama**	**0.39**	**278**	P	Pg	22 21 29.7	-0.2
JJN				S	Sg	22 21 35.9	+0.8
JIZZ	**Izumozaki**	**0.48**	**6**	P	Pg	22 21 32.1	+0.6
JGK	**Kuni**	**0.49**	**181**	P	Pg	22 21 31.9	+0.3
JGK				S	Sg	22 21 38.9	+0.9
JKT	**Katashina**	**0.56**	**120**	P	Pg	22 21 33.0	+0.1
JKT				S	Sg	22 21 40.3	0.0
MAT	**Matsushiro**	**0.62**	**215**	P	Pg	22 21 33.6	-0.5
MAT				S	Sg	22 21 41.5	-0.7
MAT	**Matsushiro**	**0.62**	**215**	P	Pg	22 21 33.6	-0.5
MAT				S	Sg	22 21 41.5	-0.7
JNG	**Nsakai**	**0.78**	**215**	P	Pg	22 21 36.5	-0.6
JNG				S	Sg	22 21 46.9	-0.4
JAG	**Ashikaga**	**0.90**	**134**	S	Sg	22 21 51.2	+0.1
JFY	**Yanaizu**	**0.91**	**67**	P	Pg	22 21 39.2	-0.5

JMA 12 22:24:11.4, 37.04N×140.61E, h8km±1km, M2.8, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.16**	**68**	P	Pg	22 24 15.1	+0.3
ONAJ				S	Sg	22 24 17.7	+0.5
JHO	**Hitachi**	**0.43**	**184**	P	Pg	22 24 19.7	-0.1
JHO				S	Sg	22 24 25.4	0.0
JFT	**Otama**	**0.53**	**336**	P	Pg	22 24 22.0	+0.4
JFT				S	Sg	22 24 29.1	+0.6
JMM	**Marumori**	**0.84**	**10**	P	Pg	22 24 27.0	-0.5
JMM				S	Sg	22 24 38.7	+0.3
JOU	**Okura**	**1.32**	**2**	P	Pn	22 24 36.0	-0.2
JOU				S	Sb	22 24 53.5	-0.2
JIO	**Ouri**	**1.53**	**22**	P	Pn	22 24 38.7	-0.3
JIO				S	Sn	22 24 59.1	0.0
MAT	**Matsushiro**	**1.99**	**256**	P	Pn	22 24 46.6	+1.2
MAT				S	Sb	22 25 13.3	+0.4

NIED ***12*** *22:35:00.36°.90N×140°.60E, h8km, Mw3.9 Best double couple: M₀8.48000×10¹⁴ NP1:φs119.00000°,δ41.00000°, λ-77.00000°. NP2:φs282.00000°,δ50.00000°, λ-101.00000°.*

IDC ***12*** *22:35:48.5±0.5,36°.90N×140°.66E, h0km, mb4.0/23, mb1 4.1/25,mb1mx4.0/55,mbtmp4.0/25,ML4.4/2,MS3.4/2, Ms1 3.4/2,ms1mx2.7/51,Error ellipse: s-maj=15.1km s-min=12.7km az=93.0*

ISCJB ***12*** *22:35:49.6±0.5,36°.92N±0°.02×140°.75E±0°.04, h20km±3km, mb4.0/29,MS4.0/1,Error ellipse: s-maj=5.9km s-min=3.7km az=21.7*

JMA ***12*** *22:35:50.4,36°.95N×140°.64E, h10km±1km,M3.8 Broadband fault plane solution: P waves. NP1: φs274.00000°,δ55.00000°,λ-115.00000°. NP2: φs134.00000°,δ42.00000°,λ-58.00000°. Principal axes: T Plg7.0000°, Azm22.0000°; N Plg21.0000°, Azm289.0000°; P Plg68.0000°, Azm130.0000°;*

JMA Felt II J1.

NEIC ***12*** *22:35:53.5±0.4,36°.85N×140°.59E, h35km, mb4.3/4 Error ellipse: s-maj=10.7km s-min=8.4km az=116.0*

ISC 12 22:35:49.2±1.2, 36°.90N±0°.03×140°.62E±0°.04, h4km±7km, n58, σ1°04/63, mb4.1/29, 6C, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.25**	**34**	⇑P	**Pg**	**22 35 54.7**	**+0.6**
ONAJ				*e*S	**Sg**	**22 35 58.2**	**+0.8**
JHO	**Hitachi**	**0.29**	**189**	P	**Pb**	**22 35 57.0**	**+0.1**
JHO				S	**Sb**	**22 36 02.1**	**+0.1**
JSB	**Shiboa**	**0.57**	**278**	⇑P	**Pb**	**22 36 02.3**	**+0.6**
JSB				S	**Sb**	**22 36 10.4**	**+0.2**
JFT	**Otama**	**0.66**	**340**	⇑P	**Pg**	**22 36 02.4**	**+0.4**
JFT				S	**Sg**	**22 36 10.9**	**+0.3**
JYT	**Yasato**	**0.75**	**207**	⇑P	**Pb**	**22 36 05.4**	**+0.6**
JYT				S	**Sb**	**22 36 16.4**	**+1.0**
JFY	**Yanaizu**	**0.89**	**305**	⇑P	**Pb**	**22 36 07.3**	**0.0**
JFY				S	**Sg**	**22 36 18.4**	**+0.4**
JMM	**Marumori**	**0.98**	**8**	⇑P	**Pg**	**22 36 07.5**	**-0.5**
JMM				S	**Sg**	**22 36 19.8**	**-0.9**
MJAR	**Matsushiro Arr**	**1.97**	**260**	Pn	**Pb**	**22 36 24.8**	**-0.9**
	42nm,0.3s,baz=83,slow=16,SNR=61							
MJAR				Sn	**Sb**	**22 36 50.7**	**+0.1**
	73nm,0.3s,baz=86,slow=27,SNR=22							
MAJO	**Matsushiro**	**1.97**	**260**	*e*Pn	**Pb**	**22 36 24.8**	**-0.9**
MAJO				*e*Sn	**Sn**	**22 36 49.1**	**+0.5**
MAT	**Matsushiro**	**1.97**	**260**	P	**Pb**	**22 36 24.8**	**-0.9**
MAT				S	**Sg**	**22 36 52.0**	**-0.6**
JHJ	**Hachijo jima 2**	**3.83**	**191**	Pn	**Pn**	**22 36 50.8**	**+1.8**
	27nm,0.3s,baz=316,slow=22,SNR=11							
JHJ				Sn	**Sn**	**22 37 36.2**	**+1.8**
	49nm,0.3s,baz=75,slow=23,SNR=6.9							
ERM	**Erimo**	**5.48**	**20**	*e*Pn	**Pn**	**22 37 10.5**	**-1.0**
ERM				*e*Sn	**Sn**	**22 38 14.5**	**-0.5**
JNU	**Nakatsue**	**8.83**	**248**	Pn	Pn	22 38 04.5	+6.8
	0.2nm,0.3s,baz=29,slow=13,SNR=2.6							
JNU	**Nakatsue**	**8.83**	**248**	*e*Pn	**Pn**	**22 37 56.4**	**-1.3**
USRK	**Ussuriysk Ar.**	**9.81**	**321**	Pn	**Pn**	**22 38 13.5**	**+2.5**
	0.2nm,0.3s,baz=154,slow=27,SNR=2.9							
CBIJ	**Chichi jima**	**9.86**	**172**	Pn	**Pn**	**22 38 10.4**	**-1.3**
CBIJ				Sn	Sn	22 39 55.0	-7.9
JCJ	**Chichijima**	**9.86**	**172**	Pn	**Pn**	**22 38 10.4**	**-1.3**
	7.9nm,0.3s,baz=97,slow=22,SNR=3.5							
JCJ				Sn	Sn	22 39 55.0	-7.9
	6.1nm,0.3s,baz=260,slow=20,SNR=2.7							
KSRS	**Korea Array**	**10.15**	**277**	Pn	Pn	22 38 22.6	+7.0
	0.2nm,0.3s,baz=93,slow=14,SNR=8.0							
KSRS				LR	LR	22 41 35.6		
	comp=Z,70nm,18.8s,baz=286,slow=34							
KSAR	**Wonju Array Be**	**10.18**	**277**	Pn	Pn	22 38 22.6	+6.5
KLR	**Kul'dur**	**13.92**	**335**	Pn	**P**	**22 39 14.7**	**-0.7**
	0.1nm,0.3s,baz=138,slow=11,SNR=5.6							
ULN	**Ulaanbaatar**	**26.91**	**305**	*e*P	**P**	**22 41 30.4**	**-1.0**
	1.1nm,0.5s							
SEY	**Seymchan**	**27.05**	**12**	P	**P**	**22 41 35.0**	**+2.7**
	1.3nm,0.3s,baz=186,slow=9.4,SNR=4.9							
SONM	**Songino Array**	**27.34**	**304**	P	**P**	**22 41 34.5**	**-0.7**
	2.6nm,0.7s,baz=106,slow=9.2,SNR=14							
H11N2	**WAKE ISLAND Hy**	**28.63**	**119**	T	T	23 11 34.4		
	baz=313,slow=75,SNR=252							
H11N1	**WAKE ISLAND Hy**	**28.63**	**120**	T	T	23 11 35.0		
	baz=313,slow=75,SNR=274							
H11N3	**WAKE ISLAND Hy**	**28.64**	**119**	T	T	23 11 37.8		
	baz=313,slow=75,SNR=275							
H11S1	**WAKE ISLAND Hy**	**29.32**	**122**	T	T	23 12 26.6		
	baz=314,slow=76,SNR=782							
H11S3	**WAKE ISLAND Hy**	**29.32**	**122**	T	T	23 12 25.6		
	baz=314,slow=76,SNR=390							
H11S2	**WAKE ISLAND Hy**	**29.34**	**122**	T	T	23 12 27.2		
	baz=314,slow=76,SNR=382							
TIXI	**Tiksi**	**35.35**	**354**	P	**P**	**22 42 47.7**	**+2.4**
	1.2nm,0.3s,baz=152,slow=1.1,SNR=3.2							
ZALV	**Zalesovo Beam**	**41.54**	**313**	P	**P**	**22 43 37.7**	**+0.2**
	1.4nm,0.5s,baz=91,slow=7.6,SNR=7.5							
ZALV				PcP	**PcP**	**22 45 33.5**	**-1.4**
	0.6nm,0.5s,baz=142,slow=3.3,SNR=3.1							
NRIK	**Noril'sk**	**43.13**	**335**	P	**P**	**22 43 52.0**	**+1.7**
	0.6nm,0.3s,baz=138,slow=15,SNR=2.2							
MKAR	**Makanchi Array**	**43.66**	**302**	P	**P**	**22 43 54.6**	**-0.3**
	0.8nm,0.6s,baz=89,slow=10,SNR=13							
MKAR				PcP	**PcP**	**22 45 41.4**	**-0.7**
	0.4nm,0.8s,baz=97,slow=4.3,SNR=3.5							
KURBB	**Kurchatov Arra**	**45.59**	**308**	P	**P**	**22 44 09.4**	**-0.8**
	2.1nm,0.6s,baz=84,slow=8.0,SNR=14							
TKM2	**Tokmak 2**	**49.14**	**298**	*e*P	**P**	**22 44 37.5**	**-0.8**
	1.7nm,0.5s							
ILAR	**Eielson Array**	**49.95**	**32**	P	**P**	**22 44 42.3**	**-1.6**
	0.5nm,0.8s,baz=277,slow=4.7,SNR=3.8							
BVAR	**Borovoye Array**	**50.20**	**312**	P	**P**	**22 44 45.4**	**-0.5**
	0.9nm,0.6s,baz=101,slow=7.7,SNR=5.7							
INK	**Inuvik**	**54.80**	**27**	P	**P**	**22 45 18.6**	**-1.2**
	0.4nm,0.6s,baz=246,slow=4.3,SNR=2.3							
FITZ	**Fitzroy Crossi**	**56.50**	**197**	*e*P	**P**	**22 45 32.8**	**+0.4**
WRAB	**Tennant Creek**	**56.83**	**187**	*e*P	**P**	**22 45 34.4**	**-0.4**
	3.1nm,0.6s							
WRA	**Warramunga Arr**	**56.84**	**187**	P	**P**	**22 45 34.6**	**-0.3**
	5.1nm,0.7s,baz=3.7,slow=7.4,SNR=68							
ABKAR	**Akbulak array**	**57.54**	**310**	*e*P	**P**	**22 45 38.5**	**-1.2**
	1.8nm,0.6s							
ASAR	**Alice Springs**	**60.57**	**187**	P	**P**	**22 46 00.6**	**-0.2**
	2.2nm,0.7s,baz=14,slow=6.4,SNR=24							
RES	**Resolute Bay**	**62.89**	**14**	P	**P**	**22 46 15.3**	**-0.6**
	0.7nm,0.4s,baz=314,slow=7.8,SNR=6.7							
GEYT	**Alibeck**	**63.35**	**299**	P	**P**	**22 46 19.8**	**+0.2**
	1.3nm,0.7s,baz=72,slow=6.2,SNR=3.3							
ARCES	**ARCESS Array B**	**63.90**	**339**	P	**P**	**22 46 22.8**	**+0.1**
	2.0nm,0.8s,baz=62,slow=8.4,SNR=3.8							
YKA	**Yellowknife Ar**	**64.25**	**30**	P	**P**	**22 46 25.4**	**+0.4**
	0.4nm,0.7s,baz=305,slow=6.7,SNR=7.8							
YKA				PcP	**PcP**	**22 46 59.9**	**+0.1**
	0.2nm,0.6s,baz=296,slow=4.0,SNR=3.7							
STKA	**Stephens Creek**	**68.42**	**179**	P	**P**	**22 46 51.0**	**-1.1**
	1.4nm,0.7s,baz=266,slow=3.5,SNR=3.2							
FINES	**FINESS Array B**	**68.64**	**332**	P	**P**	**22 46 52.3**	**-0.9**
	1.3nm,0.7s,baz=73,slow=8.6,SNR=5.7							
AKASG	**Malin Array Be**	**74.02**	**322**	P	**P**	**22 47 26.8**	**+1.0**
	0.3nm,0.3s,baz=47,slow=7.6,SNR=3.8							
NOA	**NORSAR Array B**	**74.07**	**337**	P	**P**	**22 47 25.0**	**-1.1**
	1.8nm,0.8s,baz=40,slow=5.7,SNR=4.1							
NVAR	**Mina Array Bea**	**75.58**	**51**	P	**P**	**22 47 36.4**	**+0.9**
	0.6nm,0.8s,baz=269,slow=6.4,SNR=4.4							
FRB	**Frobisher Bay**	**77.05**	**13**	P	**P**	**22 47 44.4**	**+1.4**
	6.1nm,1.0s,baz=346,slow=6.5,SNR=3.6							
BRTR	**Keskin Array B**	**78.47**	**311**	P	**P**	**22 47 52.9**	**+1.3**
	0.5nm,0.8s,baz=66,slow=3.9,SNR=2.7							
PFO	**Pinyon Flats O**	**79.65**	**56**	LR	LR	23 15 29.7		
	comp=Z,77nm,20.8s,baz=166,slow=30							
GERES	**GERESS Array B**	**82.49**	**328**	P	**P**	**22 48 12.7**	**-0.3**
	0.3nm,0.4s,baz=39,slow=6.8,SNR=4.2							
TXAR	**Lajitas Array**	**90.71**	**52**	P	**P**	**22 48 53.4**	**-0.2**
	0.4nm,0.6s,baz=288,slow=2.3,SNR=5.0							
LPAZ	**La Paz**	**147.31**	**59**	PKPbc	**PKPab**	**22 55 35.9**	**-1.1**
	0.8nm,0.4s,baz=7.4,slow=4.5,SNR=7.1							

ISCJB ***12*** *22:46:15.8±0.8,30°.92S±0°.06×180°.0W±0°.2, h200km, mb3.5/4, Error ellipse: s-maj=18.8km s-min=6.7km az=15.1*

IDC ***12*** *22:46:16.9±1.5,31°.00S×179°.72W, h203km±17km, mb3.3/3, mb1 3.5/5,mb1mx3.3/38,mbtmp3.9/5,Error ellipse: s-maj=26.1km s-min=21.1km az=101.0*

ISC 12 22:46:16.7±1.0, 30°.96S±0°.09×180°.0W±0°.2, h200km, n27, σ1°93/32, mb3.6/4, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**2.48**	**47**	P	**Pn**	**22 46 59.0**	**-1.4**
	292nm,0.3s,baz=15,slow=21,SNR=19							
WMGZ	**Waiomatatini S**	**6.97**	**190**	PN	**Pn**	**22 47 56.7**	**+0.3**
WMGZ				SN	**Sn**	**22 49 19.1**	**+3.5**
HAZ	**Te Kaha**	**7.02**	**195**	PN	**Pn**	**22 47 58.6**	**+1.5**
TWGZ	**Tauwhareparae**	**7.39**	**192**	PN	**Pn**	**22 48 03.0**	**+1.1**
TWGZ				SN	**Sn**	**22 49 26.9**	**+1.3**
MWZ	**Matawai**	**7.63**	**195**	PN	**Pn**	**22 48 05.5**	**+0.4**
MWZ				SN	**Sn**	**22 49 30.8**	**-0.6**
URZ	**Urewera**	**7.66**	**197**	P	**Pn**	**22 48 06.4**	**+1.0**
	1.0nm,0.3s,baz=262,slow=5.6,SNR=14							
TKGZ	**Te Karaka**	**7.67**	**193**	PN	**Pn**	**22 48 06.8**	**+1.3**
RAGZ	**Rawiri**	**7.81**	**195**	PN	**Pn**	**22 48 08.0**	**+0.5**
RAGZ				SN	**Sn**	**22 49 36.9**	**+1.2**
RIGZ	**Rimuhau**	**7.94**	**193**	SN	**Sn**	**22 49 39.4**	**+0.7**
NMHZ	**Naumai**	**8.53**	**197**	SN	**Sn**	**22 49 54.6**	**+1.9**
MCHZ	**McNeill Hill**	**8.89**	**197**	SN	**Sn**	**22 50 01.3**	**+0.3**
TSZ	**Takapari Road**	**9.66**	**199**	PN	**Pn**	**22 48 30.9**	**-0.5**
BFZ	**Birch Farm**	**10.17**	**196**	PN	**Pn**	**22 48 38.4**	**+0.5**
BFZ				SN	**Sn**	**22 50 27.5**	**-4.0**
TMWZ	**Te Maipa**	**10.66**	**197**	*e*PN	**Pn**	**22 48 41.5**	**-2.8**
KIW	**Kapiti Island**	**10.71**	**201**	*e*PN	**Pn**	**22 48 41.9**	**-3.0**
NNZ	**Nelson**	**11.55**	**206**	PN	**Pn**	**22 48 56.6**	**+0.9**
NNZ				SN	**Sn**	**22 51 00.4**	**-4.0**
QRZ	**Quartz Range**	**11.55**	**210**	PN	**Pn**	**22 48 56.4**	**+0.7**
THZ	**Tophouse**	**12.20**	**206**	PN	**Pn**	**22 49 04.1**	**+0.1**
THZ				SN	**Sn**	**22 51 16.4**	**-3.5**
KHZ	**Kahutara**	**12.55**	**203**	PN	**Pn**	**22 49 06.8**	**-1.5**
KHZ				SN	Sn	22 51 21.2	-6.9
LTZ	**Lake Taylor**	**13.31**	**205**	SN	S	22 51 37.8	-8.6
RPZ	**Rata Peaks**	**14.57**	**207**	P	**P**	**22 49 35.1**	**+0.4**
	0.6nm,0.3s,baz=288,slow=3.2,SNR=4.5							
STKA	**Stephens Creek**	**32.68**	**258**	P	P	22 52 35.6	+5.5
	3.6nm,0.5s,baz=99,slow=12,SNR=9.8							
ASAR	**Alice Springs**	**41.37**	**268**	P	**P**	**22 53 45.7**	**+2.4**
	0.4nm,0.3s,baz=102,slow=7.8,SNR=9.0							
WRA	**Warramunga Arr**	**42.41**	**274**	P	**P**	**22 53 52.8**	**+0.9**
	0.8nm,0.3s,baz=111,slow=8.1,SNR=32							
VNDA	**Vanda**	**47.37**	**185**	P	**P**	**22 54 30.5**	**+0.4**
	0.9nm,0.9s,baz=341,slow=5.0,SNR=3.8							
NOA	**NORSAR Array B**	**149.01**	**349**	PKPbc	**PKPbc**	**23 05 41.5**	**+1.2**
	1.4nm,0.9s,baz=19,slow=2.6,SNR=3.4							
TORD	**Torodi Ar. Bea**	**162.20**	**185**	PKPab	**PKPab**	**23 06 39.9**	**-2.6**
	1.2nm,0.8s,baz=164,slow=4.0,SNR=6.9							

NIED ***12*** *22:54:00.37°.70N×142°.10E, h29km, Mw4.0 Best double couple: M₀9.86000×10¹⁴ NP1:φs327.00000°,δ27.00000°, λ-130.00000°. NP2:φs190.00000°,δ70.00000°, λ-72.00000°.*

ISCJB ***12*** *22:54:13.7±0.9,37°.72N±0°.04×142°.15E±0°.07, h36km±7km, mb4.0/28,MS3.0/2,Error ellipse: s-maj=9.6km s-min=5.7km az=15.0*

JMA ***12*** *22:54:14.3±0.2,37°.74N×142°.05E, h34km±4km, M4.1*

JMA Felt II J1.

IDC ***12*** *22:54:15.3±0.6,37°.70N×142°.13E, h34km±3km, mb3.7/20, mb1 3.9/23,mb1mx3.8/53,mbtmp4.0/23,ML4.1/2,MS3.0/4, Ms1 3.0/4,ms1mx2.7/51,Error ellipse: s-maj=15.3km s-min=11.3km az=107.0*

NEIC ***12*** *22:54:15.4±0.4,37°.75N×142°.16E, h35km,mb4.4/7,Error ellipse: s-maj=10.3km s-min=6.5km az=141.0*

ISC 12 22:54:15.4±0.6, 37.75N±0°.04×142°.07E±0°.06, h34km±1km, n64, σ0°96/68, mb4.0/28, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**0.91**	**321**	P	**Pn**	**22 54 30.8**	**-1.0**
JIO				S	**Sn**	**22 54 41.6**	**-2.1**
JMM	**Marumori**	**1.02**	**277**	P	**Pn**	**22 54 32.3**	**-1.1**
ONAJ	**Iwakimizuishiy**	**1.20**	**238**	P	**Pn**	**22 54 34.7**	**-1.2**
JOU	**Okura**	**1.27**	**299**	P	**Pn**	**22 54 36.4**	**-0.5**
JOU				S	**Sn**	**22 54 52.0**	**-0.8**
JMK	**Ichinoseki**	**1.38**	**331**	P	**Pn**	**22 54 37.6**	**-0.7**
JMK				S	**Sn**	**22 54 55.0**	**-0.3**
JFT	**Otama**	**1.40**	**261**	P	**Pn**	**22 54 38.6**	**0.0**
JFT				*e*S	**Sn**	**22 54 55.8**	**0.0**
JYS	**Shirataka**	**1.66**	**287**	P	**Pn**	**22 54 41.9**	**-0.2**
JYK	**Kaneyama**	**1.79**	**311**	P	**Pn**	**22 54 43.8**	**-0.1**
JOM	**Ohasama**	**1.83**	**341**	P	**Pn**	**22 54 44.2**	**-0.3**
JFY	**Yanaizu**	**1.91**	**261**	P	**Pn**	**22 54 45.7**	**+0.1**
JFY				*e*S	**Sn**	**22 55 08.7**	**+0.2**
JRG	**Rokugo**	**2.00**	**326**	P	**Pn**	**22 54 47.2**	**+0.4**
JYA	**Atsumi**	**2.04**	**295**	P	**Pn**	**22 54 47.5**	**+0.1**
MJAR	**Matsushiro Arr**	**3.31**	**250**	Pn	**Pn**	**22 55 05.6**	**+0.7**
	13nm,0.3s,baz=90,slow=16,SNR=41							
MAJO	**Matsushiro**	**3.31**	**250**	*e*Pn	**Pn**	**22 55 05.8**	**+0.9**
MAJO				*e*Sn	**Sn**	**22 55 43.8**	**+0.7**
MAT	**Matsushiro**	**3.31**	**250**	P	**Pn**	**22 55 05.0**	**+0.1**
MAT				*e*S	**Sb**	**22 55 50.3**	**-3.1**
JHJ	**Hachijo jima 2**	**4.98**	**203**	Pn	**Pn**	**22 55 27.6**	**-0.2**
	33nm,0.3s,baz=144,slow=23,SNR=7.9							
JHJ				Sn	**Sn**	**22 56 23.5**	**-0.7**
	40nm,0.3s,baz=269,slow=23,SNR=7.4							
JHJ				LR	LR	22 57 23.5		
	comp=Z,91nm,19.4s,baz=79,slow=38							
USRK	**Ussuriysk Ar.**	**9.98**	**313**	Pn	**Pn**	**22 56 38.0**	**+1.6**
	0.3nm,0.3s,baz=115,slow=15,SNR=4.3							
JNU	**Nakatsue**	**10.23**	**247**	Pn	**Pn**	**22 56 42.6**	**+2.7**
	0.4nm,0.3s,baz=12,slow=9.6,SNR=3.1							
KSRS	**Korea Array**	**11.23**	**273**	Pn	Pn	22 56 59.1	+5.6
	0.3nm,0.3s,baz=81,slow=14,SNR=8.7							
KSAR	**Wonju Array Be**	**11.26**	**273**	Pn	Pn	22 56 59.1	+5.2
KLR	**Kul'dur**	**13.69**	**330**	LR	LR	23 02 39.2		
	comp=Z,52nm,19.7s,baz=142,slow=37							
SEY	**Seymchan**	**25.99**	**11**	P	**P**	**22 59 46.2**	**+1.5**
	1.4nm,0.3s,baz=221,slow=6.2,SNR=5.7							
SONM	**Songino Array**	**27.83**	**303**	P	**P**	**23 00 02.3**	**+0.7**
	2.3nm,0.7s,baz=96,slow=7.8,SNR=14							
SONM				LR	LR	23 12 35.1		
	comp=Z,31nm,18.5s,baz=52,slow=39							
ENH	**Enshi**	**27.92**	**264**	*e*P	**P**	**23 00 03.1**	**+0.6**
	7.6nm,0.8s							
H11N2	**WAKE ISLAND Hy**	**28.08**	**123**	T	T	23 29 24.2		
	baz=322							
H11N1	**WAKE ISLAND Hy**	**28.08**	**123**	T	T	23 29 24.5		
	baz=322							
H11N3	**WAKE ISLAND Hy**	**28.09**	**123**	T	T	23 29 20.6		
	baz=322							
H11S1	**WAKE ISLAND Hy**	**28.82**

NIED **12** *22:55:00, 37.00N×140.70E, h53km, Mw4.0 Best double couple: M0 1.14000×10^15 NP1:φ=219.00000°, δ=47.00000°, λ=126.00000°. NP2:φ=352.00000°, δ=54.00000°, λ=57.00000°.*
ISCJB **12** *22:55:16.8±0.6, 37.03N±0.0×140.77E±0.05, h18km±4km, mb3.8/10, Error ellipse: s-maj=7.5km s-min=5.4km az=18.1*
IDC **12** *22:55:16.0±0.8, 37.03N×140.68E, h0km, mb3.8/10, mb1 4.0/11, mb1mx3.8/52, mbtmp3.8/11, ML3.7/1, Error ellipse: s-maj=21.1km s-min=18.3km az=129.0*
JMA **12** *22:55:17.6, 37.04N×140.69E, h9km±1km, M3.8*
JMA Felt II J1.

ISC 12 22:55:17.5±0.9, 37.03N±0.03×140.68E±0.04, h10km±6km, n27, σ=0.34/28, mb3.7/10, 1C, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.12**	**55**	P		**Pg**		**22 55 20.4**	**+0.1**
ONAJ				S		**Sg**		**22 55 22.2**	**-0.2**
JHO	**Hitachi**	**0.43**	**192**	↑P		**Pg**		**22 55 25.9**	**0.0**
JHO				S		**Sg**		**22 55 32.1**	**+0.5**
JFT	**Otama**	**0.56**	**331**	P		**Pg**		**22 55 28.5**	**+0.2**
JFT				S		**Sg**		**22 55 36.0**	**+0.4**
JSB	**Shiboa**	**0.61**	**264**	P		**Pb**		**22 55 30.1**	**-0.2**
JSB				S		**Sb**		**22 55 38.5**	**-0.5**
JMM	**Marumori**	**0.83**	**6**	P		**Pg**		**22 55 33.2**	**-0.4**
JMM				S		**Sg**		**22 55 44.3**	**-0.2**
JFY	**Yanaizu**	**0.86**	**296**	P		**Pg**		**22 55 34.2**	**+0.1**
JFY				S		**Sg**		**22 55 45.3**	**0.0**
JYT	**Yasato**	**0.90**	**206**	P		**Pg**		**22 55 34.4**	**-0.3**
MJAR	**Matsushiro Arr** 26nm,0.3s,baz=75,slow=17,SNR=11	**2.04**	**257**	Pn		**Pn**		**22 55 52.1**	**+0.2**
MJAR				Sn		**Sb**		**22 56 20.2**	**0.0**
USRK	**Ussuriysk Ar.** 64nm,0.3s,baz=197,slow=20,SNR=14	**9.74**	**320**	Pn		Pn		22 57 43.6	+6.1
KSRS	**Korea Array** 0.2nm,0.3s,baz=125,slow=12,SNR=3.1	**10.18**	**276**	Pn		Pn		22 57 50.2	+6.6
SONM	**Songino Array** 1.0nm,0.6s,baz=99,slow=8.2,SNR=4.2	**27.30**	**304**	P		**P**		**23 01 02.2**	**-0.1**
SONM				PcP		**PcP**		**23 04 21.9**	**+0.2**
H11N2	**WAKE ISLAND Hy** baz=313,slow=75,SNR=104	**28.66**	**120**	T		T		23 31 00.5	
H11N1	**WAKE ISLAND Hy** baz=313,slow=75,SNR=131	**28.66**	**120**	T		T		23 31 02.2	
H11N3	**WAKE ISLAND Hy** baz=313,slow=75,SNR=109	**28.67**	**120**	T		T		23 31 03.7	
H11S1	**WAKE ISLAND Hy** baz=314,slow=76,SNR=130	**29.36**	**122**	T		T		23 31 58.0	
H11S3	**WAKE ISLAND Hy** baz=314,slow=76,SNR=94	**29.36**	**122**	T		T		23 31 58.0	
H11S2	**WAKE ISLAND Hy** baz=314,slow=76,SNR=101	**29.37**	**122**	T		T		23 31 52.3	
ZALV	**Zalesovo Beam** 0.6nm,0.4s,baz=98,slow=8.2,SNR=2.3	**41.48**	**312**	P		**P**		**23 03 03.9**	**-0.5**
ZALV				PcP		**PcP**		**23 05 01.7**	**-0.2**
MKAR	**Makanchi Array** 0.5nm,0.4s,baz=72,slow=4.7,SNR=2.6	**43.62**	**302**	P		**P**		**23 03 22.0**	**0.0**
ILAR	**Eielson Array** 0.6nm,0.8s,baz=86,slow=8.5,SNR=4.9	**49.81**	**32**	P		**P**		**23 04 10.9**	**+0.8**
WRA	**Warramunga Arr** 3.4nm,0.5s,baz=4.0,slow=7.4,SNR=14	**56.98**	**187**	P		**P**		**23 05 02.7**	**-0.6**
ASAR	**Alice Springs** 1.1nm,0.7s,baz=12,slow=7.4,SNR=7.1	**60.71**	**187**	P		**P**		**23 05 29.3**	**+0.1**
RES	**Resolute Bay** 0.4nm,0.5s,baz=310,slow=5.9,SNR=4.5	**62.75**	**14**	P		**P**		**23 05 42.1**	**-0.2**
GEYT	**Alibeck** 0.7nm,0.3s,baz=40,slow=2.5,SNR=3.1	**63.32**	**299**	P		**P**		**23 05 46.9**	**+0.2**
YKA	**Yellowknife Ar** 0.2nm,0.7s,baz=305,slow=6.7,SNR=3.2	**64.10**	**30**	P		**P**		**23 05 51.8**	**+0.4**
GERES	**GERESS Array B** 0.2nm,0.4s,baz=52,slow=6.4,SNR=3.0	**82.40**	**328**	P		**P**		**23 07 39.3**	**-0.5**
LPAZ	**La Paz** 0.8nm,0.7s,baz=72,slow=5.2,SNR=3.8	**147.20**	**59**	PKPbc		**PKPbc**		**23 15 02.5**	**+0.3**

MEX 12 22:55:42.7±0.4, 14.90N×92.22W, h58km±5km, MD3.7, Near coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
PCIG		**1.26**	**310**	*e*P		Pn		22 56 02.3	-1.8
PCIG				*e*S		Sn		22 56 18.4	-1.6
CCIG	**Comitan**	**1.38**	**3**	*e*P		Pn		22 56 04.4	-1.5
CCIG				*i* S		Sn		22 56 21.3	-1.9

NIED **12** *22:59:00, 38.50N×144.00E, h23km, Mw3.6 Best double couple: M0 2.39000×10^14 NP1:φ=53.00000°, δ=61.00000°, λ=7.00000°. NP2:φ=320.00000°, δ=84.00000°, λ=150.00000°.*

JMA 12 22:59:06.5±0.2, 38.53N×144.01E, h26km, M3.8, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**1.91**	**287**	P		Pn		22 59 38.4	+1.0
JIO	**Ouri**	**2.09**	**269**	P		Pn		22 59 40.7	+0.9
JIO				*e*S		Sn		23 00 06.1	+1.1
JTH	**Tanohata**	**2.18**	**311**	*e*S		Sn		23 00 07.7	+0.5
JMK	**Ichinoseki**	**2.22**	**282**	P		Pn		22 59 43.1	+1.5
JMK				*e*S		Sn		23 00 10.4	+2.2
JOM	**Ohasama**	**2.32**	**295**	P		Pn		22 59 44.2	+1.2
JOM				*e*S		Sn		23 00 12.6	+2.0
JMM	**Marumori**	**2.62**	**256**	P		Pn		22 59 47.8	+0.7
JMM				*e*S		Sn		23 00 20.1	+2.0
JOU	**Okura**	**2.63**	**267**	P		Pn		22 59 48.9	+1.6
JRG	**Rokugo**	**2.77**	**289**	P		Pn		22 59 51.3	+2.1
JRG				*e*S		Sn		23 00 25.2	+3.4
JYK	**Kaneyama**	**2.88**	**279**	P		Pn		22 59 52.7	+2.0
JYK				*e*S		Sn		23 00 27.4	+2.9
JFT	**Otama**	**3.07**	**252**	*e*S		Sn		23 00 31.3	+2.0
JTM	**Tenmabayashi**	**3.20**	**316**	S		Sn		23 00 32.7	+0.3
JNBK	**Urakawa-nobuka**	**3.87**	**346**	P		Pn		23 00 03.9	-0.3
JNBK				*e*S		Sn		23 00 47.7	-1.1
JCH	**Churui**	**4.11**	**353**	P		Pn		23 00 06.0	-1.6
JCH				*e*S		Sn		23 00 50.6	-4.2
JRY	**Ryogami san**	**4.78**	**240**	P		Pn		23 00 17.5	+0.6
JRY				*e*S		Sn		23 01 10.3	-1.2
MAT	**Matsushiro**	**5.02**	**249**	P		Pn		23 00 22.5	+2.4

IDC **12** *23:06:10.7±2.2, 35.97N×141.08E, h0km, mb3.7/3, mb1 3.8/4, mb1mx3.3/51, mbtmp3.7/4, ML3.6/1, MS4.4/1, Ms1 4.4/1, ms1mx2.6/58, Error ellipse: s-maj=57.4km s-min=25.5km az=51.0*
ISCJB **12** *23:06:21.5±0.8, 35.66N±0.07×140.1E±0.1, h76km±6km, mb3.7/3, Error ellipse: s-maj=16.9km s-min=7.9km az=146.2*
JMA **12** *23:06:22.0±0.1, 35.73N×140.19E, h64km±1km, M2.7*

ISC 12 23:06:22.5±1.2, 35.67N±0.08×140.19E±0.10, h69km±9km, n18, σ=1.44/15, mb3.9/3, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
JCN	**Nagara**	**0.25**	**178**	P		**Pn**		**23 06 33.1**	**-0.1**
JCN				*e*S		**Sn**		**23 06 41.7**	**+0.7**
BSO3	**Boso 3**	**0.90**	**163**	P		**Pn**		**23 06 39.2**	**-0.2**
BSO3				S		**Sn**		**23 06 53.2**	**+1.2**
JAG	**Ashikaga**	**0.97**	**322**	P		**Pn**		**23 06 39.7**	**-0.8**
JAG				S		**Sn**		**23 06 52.6**	**-1.3**
JOD2	**Odawara 2**	**0.99**	**246**	P		**Pn**		**23 06 40.2**	**-0.5**
JOD2				S		**Sn**		**23 06 53.0**	**-1.3**
JRY	**Ryogami san**	**1.10**	**289**	P		**Pn**		**23 06 42.3**	**0.0**
MJAR	**Matsushiro Arr** 13nm,0.3s,baz=99,slow=15,SNR=50	**1.83**	**299**	Pn		**Pn**		**23 06 51.8**	**0.0**
MJAR				Sn		Sn		23 07 20.3	+6.3
MAT	**Matsushiro** 5.4nm,0.3s,baz=86,slow=18,SNR=6.5	**1.83**	**299**	P		**Pn**		**23 06 51.4**	**-0.4**
MAT				*e*S		**Sn**		**23 07 18.1**	**+4.0**
MA2	**Magadan** comp=Z,25nm,19.6s,baz=90,slow=38	**24.90**	**13**	LR		LR		23 21 49.7	
H11N2	**WAKE ISLAND Hy** baz=309	**28.35**	**117**	T		T		23 42 01.9	
H11N1	**WAKE ISLAND Hy** baz=309	**28.36**	**117**	T		T		23 41 38.4	
H11N3	**WAKE ISLAND Hy** baz=309	**28.37**	**117**	T		T		23 42 06.3	
H11S3	**WAKE ISLAND Hy** baz=329	**29.00**	**119**	T		T		23 42 26.5	
H11S1	**WAKE ISLAND Hy** baz=329	**29.00**	**119**	T		T		23 42 20.6	
H11S2	**WAKE ISLAND Hy** baz=329	**29.02**	**119**	T		T		23 42 16.0	
MKAR	**Makanchi Array** 0.5nm,0.9s,baz=89,slow=10.0,SNR=4.1	**44.02**	**303**	P		**P**		**23 14 22.8**	**-0.4**
KURBB	**Kurchatov Arra** 0.6nm,0.2s,baz=84,slow=8.1,SNR=4.4	**46.08**	**309**	P		**P**		**23 14 39.5**	**+0.2**
WRA	**Warramunga Arr** 0.4nm,0.4s,baz=0.8,slow=7.5,SNR=13	**55.58**	**187**	P		**P**		**23 15 50.7**	**-0.3**
ASF	**Jabal al Asfar** comp=Z,237nm,21.1s,baz=292,slow=38	**81.44**	**303**	LR		LR		23 57 17.5	

JMA 12 23:12:25.8, 36.97N×140.64E, h10km±1km, M2.7, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.18**	**44**	P		Pg		23 12 29.9	+0.2
ONAJ				S		Sg		23 12 32.7	+0.2
JHO	**Hitachi**	**0.36**	**189**	P		Pg		23 12 32.9	-0.1
JHO				S		Sg		23 12 37.9	+0.1
JFT	**Otama**	**0.60**	**336**	P		Pg		23 12 37.5	+0.1
JFT				S		Sg		23 12 45.7	+0.4
JMM	**Marumori**	**0.90**	**8**	P		Pg		23 12 42.4	-0.8
JMM				S		Sg		23 12 54.6	-0.4
MAT	**Matsushiro**	**2.00**	**258**	P		Pn		23 13 00.4	+0.7
MAT				S		Sb		23 13 26.8	-0.4

ISCJB **12** *23:31:47.8±0.4, 58.19N±0.07×32.5W±0.1, h18km, mb4.0/30, MS4.5/13, Error ellipse: s-maj=9.4km s-min=7.6km az=3.9*
IDC **12** *23:31:47.2±0.6, 58.24N×32.45W, h0km, mb3.9/24, mb1 4.1/26, mb1mx3.9/70, mbtmp4.0/26, ML3.4/2, MS4.1/4, Ms1 4.1/4, ms1mx3.7/30, Error ellipse: s-maj=17.3km s-min=11.0km az=15.0*
NEIC **12** *23:31:48.5±0.4, 58.23N×32.42W, h10km, mb4.4/6, Error ellipse: s-maj=11.0km s-min=7.0km az=195.0*

ISC 12 23:31:49.3±0.6, 58.13N±0.08×32.56W±0.07, h18km, n53, σ=1.36/40, mb4.0/30, MS4.6/13, Reykjanes Ridge

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
BORG	**Borgarnes** 0.4nm,0.3s,baz=337,slow=18,SNR=2.0	**8.54**	**34**	Pn		**Pn**		**23 33 51.9**	**+0.1**
BORG				Sn		**Sn**		**23 35 29.4**	**+1.9**
BORG	**Borgarnes** baz=56,slow=18,SNR=2.1	**8.54**	**34**	*e*Pn		**Pn**		**23 33 49.5**	**-2.3**
BORG				Sn		**Sn**		**23 35 29.4**	**+1.9**
EKA	**Eskdalemuir Ar** baz=297,slow=13,SNR=4.0	**16.31**	**87**	Pn		**Pn**		**23 35 36.3**	**-0.8**
EKA				LR		LR		23 40 50.5	
SCHQ	**Schefferville** 0.1nm,0.3s,baz=295,slow=5.3,SNR=2.1	**19.08**	**275**	P		**P**		**23 36 07.1**	**-3.5**
NOA	**NORSAR Array B** 2.8nm,0.9s,baz=282,slow=9.2,SNR=3.3	**22.04**	**64**	P		**P**		**23 36 43.5**	**+1.0**
HFS	**Hagfors** 3.9nm,0.8s,baz=279,slow=19,SNR=3.8	**23.45**	**65**	P		**P**		**23 36 57.4**	**+0.2**
ESDC	**Sonseca Array** 1.7nm,0.8s,baz=321,slow=9.3,SNR=9.0	**26.03**	**123**	P		**P**		**23 37 21.8**	**+0.6**
CLL	**Collm**	**26.75**	**85**	*e*(P)		**P**		**23 37 29.0**	**+1.5**
ARCES	**ARCESS Array B** 7.6nm,1.0s,baz=278,slow=9.7,SNR=5.6	**26.85**	**41**	P		**P**		**23 37 28.1**	**-0.2**
NKC	**Novy Kostel** comp=Z,1μm,14.9s	**27.05**	**87**	AMS		AMS		23 48 40.0	
PVCC	**Panska Ves** comp=Z,1μm,17.2s	**28.00**	**85**	AMS		AMS		23 49 40.0	
RES	**Resolute Bay** 1.0nm,0.8s,baz=102,slow=5.7,SNR=4.3	**28.04**	**330**	P		**P**		**23 37 39.6**	**+0.7**
PRA	**Prague** comp=Z,2μm,16.4s	**28.19**	**86**	AMS		AMS		23 49 40.0	
KHC	**Kasperske Hory** comp=Z,1μm,24.7s	**28.28**	**88**	AMS		AMS		23 47 30.0	
PRU	**Pruhonice** comp=Z,1μm,15.7s	**28.30**	**86**	AMS		AMS		23 49 30.0	
GOPC	**GO Pecny, Ondr** comp=Z,1μm,12.1s	**28.47**	**86**	AMS		AMS		23 49 40.0	
GERES	**GERESS Array B** 0.6nm,0.8s,baz=282,slow=6.9,SNR=2.9	**28.52**	**89**	P		**P**		**23 37 44.9**	**+1.4**
UPC	**Upice** comp=Z,1μm,19.4s	**28.78**	**84**	AMS		AMS		23 50 20.0	
FINES	**FINESS Array B** 1.0nm,0.7s,baz=291,slow=12,SNR=2.8	**28.83**	**58**	P		**P**		**23 37 46.4**	**+0.4**
DPC	**Dobruska-Polom**	**29.03**	**84**	*e*P		**P**		**23 37 50.7**	**+2.7**
DPC	comp=Z,1μm,18.1s				AMS	AMS		23 50 10.0	
TREC	**Trest** comp=Z,1μm,15.3s	**29.20**	**86**	AMS		AMS		23 50 10.0	
OKC	**Ostrava-Krasne** comp=Z,1μm,15.7s	**30.29**	**84**	AMS		AMS		23 51 20.0	
MDT	**Midelt** 1.9nm,0.9s,baz=297,slow=10,SNR=3.0	**31.58**	**131**	P		**P**		**23 38 12.3**	**+1.6**
PSZ	**Piszkesteto**	**32.36**	**85**	*e*P		**P**		**23 38 16.4**	**-1.0**
KEST	**Kesra** 4.6nm,0.9s,baz=327,slow=10,SNR=4.1	**35.50**	**111**	P		**P**		**23 38 45.4**	**+0.7**
AKASG	**Malin Array Be** 0.5nm,0.4s,baz=305,slow=8.6,SNR=4.0	**35.54**	**75**	P		**P**		**23 38 43.4**	**-1.4**
ULM	**Lac du Bonnet** 1.3nm,0.5s,baz=170,slow=12,SNR=2.4	**36.59**	**286**	P		**P**		**23 38 54.7**	**+0.8**
YKA	**Yellowknife Ar** 1.1nm,0.8s,baz=59,slow=9.3,SNR=13	**38.30**	**312**	P		**P**		**23 39 08.6**	**+0.5**
INK	**Inuvik** 1.6nm,0.9s,baz=46,slow=2.2,SNR=5.3	**41.47**	**327**	P		**P**		**23 39 35.0**	**+0.7**
TAM	**Tamanrasset** 1.8nm,0.9s	**44.61**	**126**	*e*P		**P**		**23 39 58.9**	**-1.6**
BBTS	**Babadag** comp=Z,187nm,21.7s,baz=349,slow=30	**45.03**	**158**	LR		LR		23 54 33.2	
BRTR	**Keskin Array B** 1.1nm,1.1s,baz=342,slow=5.2,SNR=3.7	**45.20**	**84**	P		**P**		**23 40 03.2**	**-1.9**
ARU	**Arti** 4.1nm,0.9s	**45.65**	**51**	*e*P		**P**		**23 40 07.7**	**-0.5**
NRIK	**Noril'sk** 1.2nm,0.5s,baz=313,slow=9.0,SNR=4.4	**45.74**	**25**	P		**P**		**23 40 08.8**	**0.0**
ILAR	**Eielson Array** 1.4nm,0.8s,baz=34,slow=6.7,SNR=18	**47.77**	**328**	P		**P**		**23 40 26.0**	**+1.3**
PDAR	**Pinedale Array** 1.1nm,0.8s,baz=56,slow=6.4,SNR=9.9	**48.59**	**287**	P		**P**		**23 40 31.7**	**0.0**
TIXI	**Tiksi** 3.8nm,0.4s,baz=296,slow=9.6,SNR=13	**49.86**	**8**	P		**P**		**23 40 38.7**	**-1.9**
MMAI	**Mount Meron Ar** comp=Z,204nm,21.8s,baz=235,slow=37	**51.18**	**88**	LR		LR		00 03 36.1	
ABKAR	**Akbulak array** 2.9nm,0.9s	**51.31**	**57**	*e*P		**P**		**23 40 51.1**	**-0.8**
TORD	**Torodi Ar. Bea** 2.7nm,0.8s,baz=335,slow=7.8,SNR=13	**51.77**	**136**	P		**P**		**23 40 57.1**	**+1.5**
TXAR	**Lajitas Array** 0.5nm,0.8s,baz=69,slow=6.9,SNR=5.3	**55.72**	**271**	P		**P**		**23 41 25.6**	**+1.0**
NVAR	**Mina Array Bea** 0.6nm,0.7s,baz=56,slow=5.5,SNR=5.1	**56.25**	**290**	P		**P**		**23 41 29.3**	**+0.9**
ZALV	**Zalesovo Beam** 0.4nm,0.5s,baz=348,slow=11,SNR=2.6	**57.35**	**39**	P		**P**		**23 41 34.9**	**-0.8**
KURK	**Kurchatov**	**57.83**	**44**	P		**P**		**23 41 39.6**	**+0.4**
KURBB	**Kurchatov Arra** 1.2nm,0.2s,baz=322,slow=7.4,SNR=8.2	**57.87**	**45**	P		**P**		**23 41 39.6**	**+0.1**
MKAR	**Makanchi Array** 1.5nm,0.7s,baz=339,slow=4.7,SNR=19	**62.44**	**45**	P		**P**		**23 42 09.7**	**-1.2**
EKS2	**Erkin-Say** 5.3nm,1.1s	**62.47**	**53**	*e*P		**P**		**23 42 10.4**	**-0.9**
MA2	**Magadan** comp=Z,101nm,19.6s,baz=311,slow=37	**62.61**	**358**	LR		LR		00 10 40.6	
AAK	**Ala-Archa** 5.0nm,1.4s	**62.80**	**52**	*e*P		**P**		**23 42 13.3**	**-0.2**
TKM2	**Tokmak 2** 5.9nm,1.4s	**63.02**	**52**	*e*P		**P**		**23 42 13.6**	**-1.4**
H10S1	**ASCENSION HYDR** baz=350	**68.41**	**161**	T		T		00 56 46.0	
H10S3	**ASCENSION HYDR** baz=350,slow=75,SNR=22	**68.42**	**161**	T		T		00 56 51.4	
H10S2	**ASCENSION HYDR** baz=350,slow=75,SNR=20	**68.43**	**161**	T		T		00 56 49.6	

ISCJB **12** *23:32:30.9±0.4, 58.09N±0.06×32.38W±0.08, h18km, mb4.2/34, MS3.9/1, Error ellipse: s-maj=9.3km s-min=5.8km az=1.0*
IDC **12** *23:32:30.1±0.7, 58.03N×32.41W, h0km, mb4.1/24, mb1 4.3/28, mb1mx4.1/73, mbtmp4.1/28, ML3.3/4, MS4.0/1, Ms1 4.0/1, ms1mx3.4/29, Error ellipse: s-maj=20.8km s-min=10.2km az=2.0*
NEIC **12** *23:32:31.4±0.3, 58.05N×32.38W, h10km, mb4.4/9, Error ellipse: s-maj=10.0km s-min=5.1km az=187.0*
CSEM **12** *23:32:31.1±0.2, 58.05N×32.38W, h10km, mb4.5/8, Error ellipse: s-maj=8.7km s-min=4.8km az=1.0*

ISC 12 23:32:32.6±0.6, 58.03N±0.09×32.38W±0.06, h18km, n62, σ=0.79/58, mb4.2/34, Reykjanes Ridge

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
BORG	**Borgarnes** 0.6nm,0.3s,baz=233,slow=17,SNR=1.7	**8.57**	**34**	Pn		**Pn**		**23 34 34.7**	**-0.8**
BORG				Sn		**Sn**		**23 36 12.5**	**+0.9**
SUMG	**Summit** 0.4nm,0.3s,baz=70,slow=21,SNR=2.5	**14.81**	**353**	*e*Pn		**Pn**		**23 36 01.0**	**-0.2**
SUMG	**Summit**	**14.81**	**353**	*e*Pn		**Pn**		**23 36 01.0**	**-0.2**
DSB	**Dublin** 14nm,0.9s	**15.39**	**97**	*e*P		**Pn**		**23 36 07.3**	**-1.4**
EKA	**Eskdalemuir Ar** baz=284,slow=15,SNR=3.6	**16.22**	**87**	Pn		**Pn**		**23 36 18.3**	**-0.9**
FRB	**Frobisher Bay** 0.1nm,0.3s,baz=106,slow=6.7,SNR=3.7	**18.31**	**303**	P		**Pn**		**23 36 44.1**	**-1.1**
SCHQ	**Schefferville** 0.2nm,0.3s,baz=79,slow=13,SNR=3.6	**19.19**	**275**	P		**P**		**23 36 54.7**	**-0.4**
NB2	**NORSAR Subarra** comp=Z,1.1nm,0.8s,baz=281,slow=10	**22.00**	**64**	P		**P**		**23 37 25.1**	**-0.4**
NB2	**NORSAR Subarra** comp=Z,1.1nm,0.8s,baz=281,slow=10,SNR=3.7	**22.00**	**64**	P		**P**		**23 37 25.1**	**-0.4**
NOA	**NORSAR Array B** comp=Z,4.4nm,1.0s,baz=281,slow=10,SNR=4.1	**22.00**	**64**	P		**P**		**23 37 25.9**	**+0.4**
HFS	**Hagfors** comp=Z,5.1nm,0.9s,baz=234,slow=12,SNR=3.9	**23.40**	**65**	P		**P**		**23 37 41.4**	**+1.4**
ESDC	**Sonseca Array** comp=Z,1.7nm,0.8s,baz=316,slow=8.6,SNR=5.0	**25.90**	**123**	P		**P**		**23 38 03.7**	**+0.3**
CLL	**Collm** comp=Z,4.0nm,0.8s	**26.66**	**85**	*e*(P)		**P**		**23 38 11.0**	**+1.0**
CLL	comp=Z,1μm,21.2s				Lm	MLR		23 47 00.0	
ARCES	**ARCESS Array B** comp=Z,3.5nm,0.8s,baz=263,slow=8.4,SNR=4.7	**26.86**	**41**	P		**P**		**23 38 10.6**	**-1.1**
RES	**Resolute Bay** comp=Z,2.4nm,0.9s,baz=109,slow=7.3,SNR=6.5	**28.18**	**330**	P		**P**		**23 38 23.5**	**+0.1**
FINES	**FINESS Array B** comp=Z,2.5nm,1.0s,baz=288,slow=12,SNR=2.9	**28.80**	**58**	P		**P**		**23 38 29.3**	**+0.2**
DPC	**Dobruska-Polom**	**28.94**	**84**	*e*P		**P**		**23 38 30.7**	**+0.1**
MDT	**Midelt** comp=Z,278nm,19.6s,baz=347,slow=33	**31.45**	**131**	LR		LR		23 49 49.4	
PSZ	**Piszkesteto** comp=Z,4.3nm,0.9s	**32.27**	**85**	*e*P		**P**		**23 38 59.4**	**-0.6**
PSZ	**Piszkesteto** comp=Z,4.4nm,0.9s	**32.27**	**85**	*e*P		**P**		**23 38 59.4**	**-0.6**
AKASG	**Malin Array Be** comp=Z,2.2nm,0.6s,baz=304,slow=8.4,SNR=8.0	**35.48**	**75**	P		**P**		**23 39 27.0**	**-0.7**
AKASG	**Malin Array Be**	**35.48**	**75**	P		**P**		**23 39 27.0**	**-0.7**
ULM	**Lac du Bonnet** comp=Z,1.3nm,0.4s,baz=166,slow=10.0,SNR=2.9	**36.71**	**286**	P		**P**		**23 39 38.5**	**+0.2**
YKA	**Yellowknife Ar** comp=Z,1.3nm,0.7s,baz=59,slow=9.1,SNR=9.5	**38.43**	**312**	P		**P**		**23 39 52.1**	**-0.5**
INK	**Inuvik** comp=Z,1.4nm,0.6s,baz=25,slow=15,SNR=6.1	**41.60**	**327**	P		P		23 40 15.9	-2.9
TAM	**Tamanrasset** comp=Z,5.7nm,1.3s	**44.47**	**126**	*e*P		**P**		**23 40 43.0**	**+0.2**
TAM	**Tamanrasset** comp=Z,5.7nm,1.3s	**44.47**	**126**	*e*P		**P**		**23 40 43.0**	**+0.2**
BRTR	**Keskin Array B** comp=Z,2.8nm,0.9s,baz=323,slow=4.5,SNR=7.9	**45.11**	**84**	P		**P**		**23 40 49.1**	**+1.5**
ARU	**Arti** comp=Z,6.1nm,1.0s	**45.64**	**51**	*e*P		**P**		**23 40 51.7**	**+0.2**
ARU	**Arti** comp=Z,6.1nm,1.0s	**45.64**	**51**	*e*P		**P**		**23 40 51.7**	**+0.2**
NRIK	**Noril'sk** comp=Z,1.7nm,0.9s,baz=301,slow=6.9,SNR=4.2	**45.79**	**25**	P		**P**		**23 40 52.4**	**-0.1**
KIV	**Kislovodsk** comp=Z,6.2nm,0.8s	**46.79**	**73**	*e*P		**P**		**23 41 00.7**	**-0.1**
KIV	**Kislovodsk** comp=Z,6.2nm,0.8s	**46.79**	**73**	*e*P		**P**		**23 41 00.7**	**-0.1**
KBZ	**Khabaz** comp=Z,4.3nm,0.9s,baz=337,slow=7.1,SNR=4.1	**47.06**	**73**	P		**P**		**23 41 04.1**	**+1.4**
ILAR	**Eielson Array** comp=Z,2.9nm,0.9s,baz=41,slow=7.1,SNR=9.1	**47.90**	**328**	P		**P**		**23 41 09.9**	**+0.8**
H17A	**Grant Village** comp=Z,4.0nm,0.8s	**48.06**	**289**	*e*P		**P**		**23 41 12.3**	**+1.4**
H17A	**Grant Village** comp=Z,4.0nm,0.8s	**48.06**	**289**	*e*P		**P**		**23 41 12.3**	**+1.4**
NEW	**Newport** comp=Z,2.5nm,0.9s,baz=328,slow=1.1,SNR=3.1	**48.51**	**297**	P		**P**		**23 41 14.5**	**+0.4**
PDAR	**Pinedale Array** comp=Z,2.4nm,0.8s,baz=57,slow=6.4,SNR=9.4	**48.72**	**287**	P		**P**		**23 41 15.3**	**-0.6**
HWUT	**Hardware Ranch** comp=Z,3.9nm,0.8s	**50.58**	**288**	*e*P		**P**		**23 41 29.3**	**-0.8**
HWUT	**Hardware Ranch** comp=Z,3.9nm,0.8s	**50.58**	**288**	*e*P		**P**		**23 41 29.3**	**-0.8**
GNI	**Garni** comp=Z,11nm,0.9s	**50.60**	**75**	P		**P**		**23 41 30.8**	**+0.5**
ABKAR	**Akbulak array** comp=Z,6.2nm,1.1s	**51.28**	**57**	*e*P		**P**		**23 41 34.5**	**-0.5**
ABKAR	**Akbulak array** comp=Z,6.2nm,1.1s	**51.28**	**57**	*e*P		**P**		**23 41 34.5**	**-0.5**
TORD	**Torodi Ar. Bea** comp=Z,2.6nm,0.8s,baz=342,slow=6.7,SNR=7.1	**51.63**	**136**	P		**P**		**23 41 37.1**	**-0.9**
TXAR	**Lajitas Array** comp=Z,0.6nm,0.7s,baz=35,slow=3.1,SNR=5.5	**55.82**	**272**	P		**P**		**23 42 09.0**	**+0.3**
TXAR	**Lajitas Array**	**55.82**	**272**	P		**P**		**23 42 09.0**	**+0.3**
NVAR	**Mina Array Bea** comp=Z,1.1nm,0.7s,baz=46,slow=6.5,SNR=6.5	**56.37**	**290**	P		**P**		**23 42 12.9**	**+0.2**
ZALV	**Zalesovo Beam** comp=Z,0.2nm,0.3s,baz=342,slow=7.7,SNR=2.4	**57.37**	**39**	P		**P**		**23 42 19.8**	**+0.5**
KURK	**Kurchatov**	**57.84**	**45**	P		**P**		**23 42 22.8**	**+0.3**
KURK	**Kurchatov**	**57.84**

MS4.9/45,Error ellipse: s-maj=6.4km s-min=4.0km az=106.5

ISC 12 23:36:21.2±0.4,**35°45N**±0˙02×**140°82E**±0˙03,**h19**km±1km, **h19**km:**pP-P,n890,**σ1ᵗ**76/**916,**mb5.2**/244,**MS5.0**/66, **38C-22D,Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase	ID	Time h m s	Res ISC
				Op	ISC		
CHOJ	**Chosi**	**0.26**	**6**	P	**Pg**	**23 36 26.0**	**-1.1**
CHOJ				S	**Sg**	**23 36 30.6**	**-0.6**
I30JP	**ISUMI INFRASON**	**0.44**	**252**	Pg	**Pb**	**23 36 30.0**	**-0.4**
	baz=93,slow=32,SNR=2.5						
I30JP				Lg	Lg	23 36 39.4	
JCN	**Nagara**	**0.51**	**267**	⇑P	**Pb**	**23 36 31.8**	**+0.3**
JCN				*e*S	**Sn**	**23 36 39.5**	**-2.1**
KTR	**Katsuura**	**0.51**	**235**	P	**Pb**	**23 36 31.3**	**-0.2**
KTR				S	**Sn**	**23 36 40.6**	**-1.1**
BSO4	**Boso 4**	**0.60**	**221**	⇑P	**Pn**	**23 36 33.7**	**-1.0**
BSO3	**Boso 3**	**0.69**	**202**	⇑P	**Pg**	**23 36 34.6**	**-0.2**
BSO1	**Boso 1**	**0.80**	**171**	⇑P	**Pb**	**23 36 34.5**	**-1.7**
JYT	**Yasato**	**0.93**	**327**	⇑P	**Pb**	**23 36 37.1**	**-1.6**
JYT				S	**Sb**	**23 36 50.0**	**-0.7**
JHO	**Hitachi**	**1.18**	**350**	⇑P	**Pn**	**23 36 42.4**	**-0.3**
JIM2	**Oshima 3**	**1.35**	**238**	P	**Pn**	**23 36 43.7**	**-1.4**
MJAR	**Matsushiro Arr**	**2.39**	**298**	Pn	**Pn**	**23 37 00.5**	**+1.2**
	44nm,0.3s,baz=96,slow=12,SNR=312						
MAJO	**Matsushiro**	**2.39**	**298**	*d i*P	**Pn**	**23 37 00.3**	**+1.0**
MAJO	**Matsushiro**	**2.39**	**298**	*e*Pn	**Pn**	**23 37 00.3**	**+1.0**
MAJO				*e*Sn	**Sn**	**23 37 26.9**	**-1.1**
MAT	**Matsushiro**	**2.39**	**298**	P	**Pn**	**23 37 00.1**	**+0.8**
MAT				*e*S	**Sg**	**23 37 35.6**	**-2.4**
JHJ2	**Mitsune**	**2.47**	**200**	*e*Pn	**Pn**	**23 36 58.2**	**-2.3**
JHJ2				*e*Sn	**Sn**	**23 37 26.4**	**-3.8**
JHJ	**Hachijo jima 2**	**2.48**	**201**	Pn	**Pn**	**23 36 59.2**	**-1.3**
	103nm,0.3s,baz=324,slow=23,SNR=29						
JHJ				Sn	**Sn**	**23 37 27.6**	**-2.7**
	368nm,0.3s,baz=44,slow=23,SNR=12						
JHJ				Lg	Lg	23 37 37.4	
	432nm,0.3s,baz=238,slow=23,SNR=8.1						
JHJ				LR	LR	23 37 50.7	
	comp=Z,2μm,18.4s,baz=353,slow=37						
INU	**Inuyama**	**3.11**	**269**	*e*Pn	**Pn**	**23 37 11.0**	**+1.7**
ERM	**Erimo**	**6.81**	**15**	*e*P	**Pn**	**23 37 57.5**	**-2.5**
ERM				*e*		23 39 09.5	
ERM	**Erimo**	**6.81**	**15**	*e*Pn	**Pn**	**23 37 57.5**	**-2.5**
ERM				*e*Sn	**Sn**	**23 39 09.5**	**-7.4**
CBIJ	**Chichi jima**	**8.41**	**172**	*e*Pn	**Pn**	**23 38 20.2**	**-1.8**
CBIJ				*e*Sn	**Sn**	**23 39 48.0**	**-8.3**
JCJ	**Chichijima**	**8.41**	**172**	Pn	**Pn**	**23 38 20.3**	**-1.7**
JCJ				Sn	**Sn**	**23 39 53.1**	**-3.3**
JCJ				LR	LR	23 40 47.7	
	comp=Z,998nm,21.7s,baz=349,slow=32						
JNU	**Nakatsue**	**8.55**	**257**	Pn	**Pn**	**23 38 27.9**	**+3.9**
	1.0nm,0.3s,baz=67,slow=6.3,SNR=18						
JNU	**Nakatsue**	**8.55**	**257**	*e*Pn	Pn	23 38 30.2	+6.2
YUK	**Yuzh-Kuril'sk**	**9.41**	**23**	*e*P	**Pn**	**23 38 37.3**	**+1.6**
YUK				*i* S	**Sn**	**23 40 14.6**	**-6.3**
YUK				pmax	pmax		
	comp=N,56nm,0.5s						
YUK				pmax	pmax		
	comp=Z,150nm,0.5s						
YUK				pmax	pmax		
	comp=E,55nm,0.3s						
YUK				MLR	MLR		
	comp=Z,3μm,16.0s						
YUK				MLR	MLR		
	comp=E,2μm,14.0s						
YUK				MLR	MLR		
	comp=N,3μm,16.0s						
SHO	**Shikotan**	**9.60**	**27**	*e*P	**Pn**	**23 38 36.6**	**-1.7**
SHO				pmax	pmax		
	comp=Z,148nm,0.8s						
SHO				pmax	pmax		
	comp=N,32nm,0.4s						
SHO				pmax	pmax		
	comp=E,54nm,0.4s						
VLA	**Vladivostok**	**10.32**	**321**	⇓*e*P	**Pn**	**23 38 44.8**	**-3.4**
KSRS	**Korea Array**	**10.58**	**285**	Pn	**Pn**	**23 38 56.2**	**+4.5**
	comp=E,0.6nm,0.3s,baz=103,slow=13,SNR=33						
KSRS				LR	LR	23 43 10.6	
	comp=E,10μm,18.1s,baz=83,slow=38						
KS01	**Wonju Array Si**	**10.61**	**285**	*e*Pn	Pn	23 38 57.3	+5.1
KS15	**Wonju Array Si**	**10.61**	**285**	*e*Pn	Pn	23 38 58.4	+6.2
KSAR	**Wonju Array Be**	**10.61**	**285**	P	**Pn**	**23 38 56.3**	**+4.1**
KSAR	**Wonju Array Be**	**10.61**	**285**	Pn	**Pn**	**23 38 56.2**	**+4.1**
USRK	**Ussuriysk Ar.**	**11.06**	**325**	Pn	**Pn**	**23 39 00.9**	**+2.5**
	comp=E,0.5nm,0.3s,baz=134,slow=12,SNR=19						
USRK				LR	LR	23 42 56.5	
	comp=E,5μm,19.7s,baz=128,slow=36						
KUR	**Kuril'sk**	**11.15**	**27**	*e*P	**Pn**	**23 39 02.1**	**+2.6**
KUR				*e*S	**Sn**	**23 40 57.4**	**-6.1**
KUR				pmax	pmax		
	comp=Z,69nm,0.8s						
KUR				pmax	pmax		
	comp=N,34nm,0.4s						
KUR				pmax	pmax		
	comp=E,44nm,0.4s						
YSS	**Yuzh-Sakhalins**	**11.59**	**7**	⇓*e*P	**Pn**	**23 39 02.0**	**-3.5**
YSS				*e*S	Sn	23 41 05.0	-9.3
YSS				pmax	pmax		
	comp=Z,40nm,0.6s						
YSS				MLR	MLR		
	comp=N,4μm,14.0s						
YSS				MLR	MLR		
	comp=Z,5μm,14.0s						
YSS				MLR	MLR		
	comp=E,2μm,15.0s						
YSS	**Yuzh-Sakhalins**	**11.59**	**7**	*e*Pn	**Pn**	**23 39 02.9**	**-2.6**
MDJ	**Mudanjiang**	**12.56**	**320**	P	**Pn**	**23 39 23.1**	**+4.3**
MDJ				S	**Sn**	**23 41 40.0**	**+2.0**
MDJ				PcP	**PcP**	**23 44 58.7**	**+1.7**
MDJ				ScP	**ScP**	**23 48 29.2**	**+0.2**
MDJ				PcS	**PcS**	**23 48 32.1**	**+1.0**
MDJ				ScS	**ScS**	**23 52 04.4**	**-0.6**
MDJ				pmax	pmax		
	comp=E,43nm,1.5s						
MDJ				pmax	pmax		
	comp=E,920nm,8.5s						
MDJ				LR	LR		
	comp=E,1μm,13.0s						
MDJ				LR	LR		
	comp=E,3μm,11.9s						
MDJ				LR	LR		
	comp=E,5μm,12.5s						
MDJ	**Mudanjiang**	**12.56**	**320**	*e*Pn	**Pn**	**23 39 19.5**	**+0.7**
	comp=E,281nm,1.8s						
UGL	**Uglegorsk**	**13.65**	**3**	P	**P**	**23 39 47.0**	**+4.6**
UGL				*e*		23 42 00.0	
UGL				MLR	MLR		
	comp=N,7μm,16.0s						
UGL				MLR	MLR		
	comp=Z,5μm,16.0s						
UGL				MLR	MLR		
	comp=E,2μm,18.0s						
HABR	**Khabarovsk**	**13.70**	**344**	*e*P	**Pn**	**23 39 31.7**	**-2.6**
HABR				*e*S	**Sn**	**23 42 02.3**	**-3.6**
HABR				pmax	pmax		
	comp=E,84nm,2.3s						
HABR				pmax	pmax		
	comp=N,29nm,2.3s						
HABR				pmax	pmax		
	comp=Z,28nm,2.3s						
HABR				MLR	MLR		
	comp=Z,745nm,11.0s						
JOW	**Kunigami**	**13.75**	**235**	*e*Pn	Pn	23 39 29.5	-5.6
SNY	**Shenyang**	**14.90**	**300**	⇑P	**P**	**23 39 57.0**	**+0.7**
SNY				S	**S**	**23 42 49.4**	**-3.6**
SNY				pmax	pmax		
	comp=Z,46nm,1.2s						
SNY				pmax	pmax		
	comp=Z,620nm,3.7s						
SNY				LR	LR		
	comp=Z,2μm,12.0s						
SNY				LR	LR		
	comp=Z,3μm,14.1s						
SNY				LR	LR		
	comp=Z,5μm,13.3s						
KLR	**Kul'dur**	**15.30**	**337**	Pn	**Pn**	**23 39 57.0**	**+0.9**
	comp=Z,0.4nm,0.3s,baz=130,slow=6.8,SNR=6.9						
KLR				LR	LR	23 45 40.6	
	comp=Z,5μm,19.1s,baz=148,slow=36						
KLR	**Kul'dur**	**15.30**	**337**	P	**Pn**	**23 39 57.0**	**+0.9**
KLR				MLR	MLR		
	comp=Z,5μm,19.2s						
TYV	**Tymovskoe**	**15.47**	**4**	*e*P	**Pn**	**23 39 55.2**	**-3.0**
TYV				*e*S	**Sn**	**23 42 56.0**	**+7.1**
TYV				pmax	pmax		
	comp=Z,26nm,1.0s						
TYV				smax	smax		
	comp=E,1μm,9.0s						
TYV				MLR	MLR		
	comp=N,3μm,20.0s						
TYV				MLR	MLR		
	comp=Z,4μm,14.0s						
DL2	**Dalian**	**15.69**	**288**	⇓P	**P**	**23 40 03.2**	**-1.8**
DL2				S	**S**	**23 43 01.8**	**-7.3**
DL2				pmax	pmax		
	comp=Z,210nm,1.5s						
DL2				pmax	pmax		
	comp=Z,1μm,5.1s						
DL2				LR	LR		
	comp=Z,2μm,13.7s						
DL2				LR	LR		
	comp=Z,7μm,16.9s						
DL2				LR	LR		
	comp=Z,10μm,17.7s						
SSE	**Sheshan**	**16.98**	**261**	P	**Pn**	**23 40 17.3**	**-0.4**
SSE				sP	**pP**	**23 40 23.9**	**-0.9**
SSE				S	**Sn**	**23 43 27.1**	**+1.2**
SSE				sS	**sS**	**23 43 42.7**	**-1.6**
SSE				pmax	pmax		
	comp=Z,41nm,0.7s						
SSE				pmax	pmax		
	comp=Z,71nm,4.6s						
SSE				LR	LR		
	comp=Z,2μm,12.8s						
SSE				LR	LR		
	comp=Z,7μm,12.8s						
SSE				LR	LR		
	comp=Z,10μm,13.2s						
NKL	**Nikolayevsk**	**17.70**	**360**	*e*P	**Pn**	**23 40 24.0**	**-2.4**
NKL				*e*		23 43 38.0	
NKL				pmax	pmax		
	comp=Z,77nm,1.0s						
NKL				MLR	MLR		
	comp=N,2μm,16.0s						
NKL				MLR	MLR		
	comp=E,1μm,16.0s						
NKL				MLR	MLR		
	comp=Z,4μm,16.0s						
OKH	**Okha**	**18.16**	**4**	*e*P	**P**	**23 40 34.0**	**+1.7**
OKH				*e*S	**Sn**	**23 43 51.2**	**-2.9**
OKH				MLR	MLR		
	comp=Z,3μm,16.0s						
NJ2	**Nanjing**	**18.58**	**266**	*e*P	**P**	**23 40 36.6**	**-0.4**
NJ2				S	**S**	**23 44 09.3**	**+1.2**
NJ2				pmax	pmax		
	comp=Z,15nm,0.8s						
NJ2				LR	LR		
	comp=Z,4μm,16.8s						
NJ2				LR	LR		
	comp=Z,3μm,13.6s						
NJ2				LR	LR		
	comp=Z,4μm,10.8s						
SKR	**Severo-Kuril's**	**18.83**	**31**	*e*P	**Pn**	**23 40 41.3**	**+1.1**
TIA	**Tai'an**	**19.23**	**279**	⇓P	**P**	**23 40 42.7**	**-1.5**
TIA				S	**S**	**23 44 21.9**	**+0.7**
TIA				pmax	pmax		
	comp=Z,30nm,1.1s						
TIA				pmax	pmax		
	comp=Z,240nm,3.1s						
TIA				LR	LR		
	comp=Z,2μm,11.3s						
TIA				LR	LR		
	comp=Z,6μm,13.5s						
TIA				LR	LR		
	comp=Z,6μm,14.2s						
BJI	**Beijing**	**20.00**	**291**	P	**P**	**23 40 49.5**	**-3.1**
BJI				S	**S**	**23 44 36.1**	**-0.6**
BJI				pmax	pmax		
	comp=Z,69nm,1.8s						
BJI				LR	LR		
	comp=Z,2μm,12.5s						
BJI				LR	LR		
	comp=Z,3μm,12.0s						
BJT	**Baijiatuau**	**20.00**	**291**	*e*P	**P**	**23 40 50.6**	**-2.1**
BJT				pmax	pmax		
	comp=Z,590nm,1.7s						
BJT	**Baijiatuau**	**20.00**	**291**	*e*P	**P**	**23 40 50.6**	**-2.1**
	comp=Z,590nm,1.7s						
NACB	**Ninganchiao**	**20.08**	**241**	*e*P	**P**	**23 40 51.0**	**-2.5**
	comp=Z,29nm,1.1s						
HIA	**Hailar**	**20.73**	**318**	*e*P	**P**	**23 40 55.5**	**-5.0**
HIA				pmax	pmax		
	comp=Z,33nm,1.1s						
HIA	**Hailar**	**20.73**	**318**	*e*P	**P**	**23 40 55.5**	**-5.0**
	comp=Z,33nm,1.1s						
YULB	**Yu-li**	**20.78**	**240**	*e*P	**P**	**23 41 01.8**	**+0.6**
	comp=Z,90nm,1.7s						
PEA0	**Petropavlovsk-**	**21.30**	**29**	*e*P	**P**	**23 41 07.2**	**+0.6**
PEA0B	**Petropavlovsk-**	**21.30**	**29**	*e*P	**P**	**23 41 08.6**	**+2.1**
	comp=Z,186nm,1.4s						
PETK	**Petropavlovsk-**	**21.30**	**29**	P	**P**	**23 41 06.9**	**+0.3**
	comp=Z,31nm,1.0s,baz=217,slow=7.2,SNR=15						
TWG	**Pinlang**	**21.30**	**239**	*e*P	P	23 41 21.0	+14
TPUB	**Ta-pu**	**21.31**	**241**	*e*P	**P**	**23 41 05.2**	**-1.7**
	comp=Z,219nm,1.9s						
PET	**Petropavlovsk**	**21.62**	**30**	*e*P	**P**	**23 41 11.7**	**+1.8**
PET	**Petropavlovsk**	**21.62**	**30**	*e*P	**P**	**23 41 09.8**	**-0.1**
	comp=Z,307nm,1.5s						
QZH	**Quanzhou**	**21.84**	**247**	P	P	23 41 04.1	-8.4
QZH				S	**S**	**23 45 09.0**	**-4.1**
GUMO	**Guam**	**22.07**	**169**	P	**P**	**23 41 14.8**	**-0.2**
	comp=Z,71nm,0.9s,baz=0.9,slow=8.0,SNR=3.0						
GUMO	**Guam**	**22.07**	**169**	*e*P	**P**	**23 41 12.3**	**-2.7**
GUMO				*e*pP	**pP**	**23 41 20.3**	**-0.2**
WHN	**Wuhan**	**22.71**	**265**	P	**P**	**23 41 21.9**	**+0.1**
WHN				S	**S**	**23 45 24.5**	**-4.8**
WHN				pmax	pmax		
	comp=Z,84nm,1.1s						
WHN				LR	LR		
	comp=Z,7μm,16.3s						
WHN				LR	LR		
	comp=Z,12μm,13.3s						
WHN				LR	LR		
	comp=Z,17μm,13.7s						
TIY	**Taiyuan**	**22.88**	**284**	*e*P	**P**	**23 41 26.2**	**+2.6**
TIY				S	**S**	**23 45 32.8**	**+0.4**
TIY				pmax	pmax		
	comp=Z,23nm,0.7s						
TIY				LR	LR		
	comp=Z,2μm,13.8s						
TIY				LR	LR		
	comp=Z,5μm,15.2s						
TIY				LR	LR		
	comp=Z,6μm,16.8s						
HHC	**Hu-ho-hao-te**	**23.57**	**292**	*e*P	**P**	**23 41 29.4**	**-1.3**
HHC				sP	sP	23 41 39.5	+0.7
HHC				S	**S**	**23 45 39.4**	**-4.6**
HHC				SS	**SnSn**	**23 46 27.3**	**+6.4**
HHC				pmax	pmax		
	comp=Z,46nm,1.4s						
HHC				pmax	pmax		
	comp=Z,190nm,3.0s						
HHC				LR	LR		
	comp=Z,2μm,16.0s						
HHC				LR	LR		
	comp=Z,3μm,19.4s						
HHC				LR	LR		
	comp=Z,3μm,16.0s						
CLNS	**Chul'man**	**23.96**	**338**	*e*P	**P**	**23 41 34.8**	**+0.7**
CLNS				*e**PP	**sP**	**23 41 44.2**	**+1.9**
CLNS				*e*		23 45 18.5	
CLNS				*e*S	**S**	**23 45 47.7**	**-2.0**
CLNS				*e*SS	**SnSn**	**23 46 32.1**	**+2.1**
CLNS				pmax	pmax		
	comp=Z,31nm,1.2s						
CLNS				pmax	pmax		
	comp=N,47nm,1.0s						
CLNS				pmax	pmax		
	comp=E,21nm,1.1s						
CLNS				pmax	pmax		
	comp=N,26nm,1.0s						
CLNS				pmax	pmax		
	comp=Z,29nm,0.9s						
CLNS				pmax	pmax		
	comp=E,16nm,1.1s						
CLNS				smax	smax		
	comp=N,829nm,10.5s						
CLNS				smax	smax		
	comp=E,402nm,11.5s						
CLNS				MLR	MLR		
	comp=Z,2μm,15.0s						
CLNS				MLR	MLR		
	comp=E,592nm,11.0s						
CLNS				MLR	MLR		
	comp=N,2μm,16.0s						
BTO	**Baotou**	**24.73**	**291**	*e*P	**P**	**23 41 37.8**	**-3.7**
MA2	**Magadan**	**25.00**	**12**	P	**P**	**23 41 43.2**	**-0.4**
	comp=N,46nm,0.9s,baz=213,slow=7.9,SNR=20						
MA2				LR	LR	23 53 19.3	
	comp=N,1μm,18.3s,baz=213,slow=41						
CIT	**Chita**	**25.53**	**319**	*e*P	**P**	**23 41 49.6**	**+1.1**
CIT				*e*		23 42 00.0	
CIT				*e*		23 42 25.0	
CIT				*e*		23 42 33.6	
CIT				pmax	pmax		
	comp=Z,66nm,1.7s						
XAN	**Xi'an**	**26.20**	**276**	P	**P**	**23 41 52.5**	**-2.2**
XAN				pP	sP	23 42 03.4	+0.5
XAN				S	**S**	**23 46 20.0**	**-5.9**
XAN				SS	**SnSn**	**23 47 33.0**	**+7.9**
XAN				pmax	pmax		
	comp=Z,35nm,1.5s						
XAN				pmax	pmax		
	comp=Z,240nm,4.7s						
XAN				LR	LR		
	comp=Z,5μm,15.3s						
XAN				LR	LR		
	comp=Z,5μm,17.1s						
XAN				LR	LR		
	comp=Z,5μm,17.1s						
ENH	**Enshi**	**26.76**	**268**	*e*P	**P**	**23 41 57.8**	**-2.0**
	comp=Z,116nm,0.9s						
YAK	**Yakutsk**	**27.52**	**349**	P	**P**	**23 42 05.3**	**-0.9**
	comp=Z,14nm,0.3s,baz=170,slow=2.7,SNR=8.4						
YAK				LR	LR	23 52 58.5	
	comp=Z,1μm,20.5s,baz=157,slow=36						
YAK	**Yakutsk**	**27.52**	**349**	*e*P	**P**	**23 42 05.6**	**-0.6**
YAK				*e*		23 42 49.0	
YAK				*e*		23 45 22.6	
YAK				*e*S	**S**	**23 46 43.6**	**-2.4**
YAK				*e*		23 52 56.7	
YAK				pmax	pmax		
	comp=Z,58nm,1.3s						
YAK				pmax	pmax		
	comp=E,11nm,1.1s						
YAK				pmax	pmax		
	comp=N,33nm,1.2s						
YAK				pmax	pmax		
	comp=Z,65nm,1.3s						
YAK				pmax	pmax		
	comp=N,58nm,1.3s						
YAK				pmax	pmax		
	comp=E,43nm,1.6s						
YAK				smax	smax		
	comp=E,309nm,4.4s						
YAK				smax	smax		
	comp=N,868nm,4.3s						
YAK				MLR	MLR		
	comp=Z,1μm,15.0s						
YAK				MLR	MLR		
	comp=N,572nm,13.0s						
YAK				MLR	MLR		
	comp=E,532nm,13.0s						
YAK	**Yakutsk**	**27.52**	**349**	*e*P	**P**	**23 42 05.2**	**-1.1**
	comp=E,82nm,0.9s						
H11N2	**WAKE ISLAND Hy**	**27.79**	**117**	T	T	00 11 07.5	
	baz=310,slow=76,SNR=3928						
H11N1	**WAKE ISLAND Hy**	**27.80**	**117**	T	T	00 11 05.8	
	baz=310,slow=76,SNR=7593						
H11N3	**WAKE ISLAND Hy**	**27.81**	**117**	T	T	00 11 04.8	
	baz=310,slow=76,SNR=4402						
ULN	**Ulaanbaatar**	**27.89**	**307**	*e*P	**P**	**23 42 10.0**	**+0.1**
ULN				pmax	pmax		
	comp=Z,43nm,1.1s						
ULN	**Ulaanbaatar**	**27.89**	**307**	*e*P	**P**	**23 42 10.0**	**+0.1**
	comp=Z,43nm,1.1s						
SONA1	**Songino Array**	**28.31**	**307**	*e*P	**P**	**23 42 12.4**	**-1.2**
SONA1				*e*ScP	**ScP**	**23 49 06.2**	**-0.1**
SONM	**Songino Array**	**28.31**	**307**	P	**P**	**23 42 13.0**	**-0.7**
	comp=Z,3.3nm,0.9s,baz=108,slow=8.4,SNR=17						
SONM				LR	LR	23 53 50.3	
	comp=Z,2μm,19.3s,baz=106,slow=37						
SEY	**Seymchan**	**28.44**	**11**	P	**P**	**23 42 14.3**	**-0.1**
	comp=Z,6.5nm,0.7s,baz=203,slow=7.1,SNR=12						
H11S1	**WAKE ISLAND Hy**	**28.45**	**120**	T	T	00 11 54.3	
	baz=312,slow=76						
H11S3	**WAKE ISLAND Hy**	**28.45**	**120**	T	T	00 11 54.2	
	baz=312,slow=76						
H11S2	**WAKE ISLAND Hy**	**28.46**	**120**	T	T	00 11 56.1	
	baz=312,slow=76						
LZH	**Lanzhou**	**29.90**	**282**	⇑P	**P**	**23 42 27.4**	**-0.5**
LZH				pP	pP	23 42 32.6	-1.2
LZH				sP	sP	23 42 37.7	+1.5
LZH				S	**S**	**23 47 18.2**	**-6.2**
LZH				pmax	pmax		
	comp=Z,95nm,1.4s						
LZH				pmax	pmax		
	comp=Z,350nm,4.3s						
LZH				LR	LR		
	comp=Z,2μm,12.2s						
LZH				LR	LR		
	comp=Z,3μm,12.3s						
LZH				LR	LR		
	comp=Z,3μm,12.9s						
GYA	**Guiyang**	**30.51**	**262**	⇑*i*P	**P**	**23 42 30.8**	**-2.6**
GYA				pP	sP	23 42 41.0	-0.6
GYA				PP	**PnPn**	**23 43 33.7**	**+1.3**
GYA				PcP	**PcP**	**23 45 34.2**	**+2.0**
GYA				S	**S**	**23 47 33.0**	**-1.1**
GYA				sS	sS	23 47 43.4	-0.3
GYA				SS	**ScP**	**23 49 12.8**	**-0.9**
GYA				ScS	**ScS**	**23 53 07.5**	**-2.6**
GYA				pmax	pmax		
	comp=Z,50nm,1.0s						
GYA				pmax	pmax		
	comp=Z,160nm,6.2s						
GYA				LR	LR		
	comp=Z,2μm,15.8s						
GYA				LR	LR		
	comp=Z,4μm,14.9s						
GYA				LR	LR		
	comp=Z,4μm,16.1s						
IRK	**Irkutsk**	**30.84**	**314**	*e*P	**P**	**23 42 37.7**	**+1.8**
IRK				pmax	pmax		
	comp=Z,83nm,0.6s						
ZAK	**Zakamensk**	**30.91**	**311**	*e*P	**P**	**23 42 35.9**	**-0.7**
ZAK				*e*		23 45 39.7	
ZAK				pmax	pmax		
	comp=Z,10.0nm,1.7s						
ZAK				pmax	pmax		
	comp=Z,5.0nm,1.4s						
TLY	**Talaya**	**31.04**	**313**	P	**P**	**23 42 36.9**	**-0.7**
	comp=Z,1.4nm,0.6s,baz=114,slow=10,SNR=1.5						
TLY				LR	LR	23 55 33.9	
	comp=Z,1μm,18.3s,baz=110,slow=37						
TLY	**Talaya**	**31.04**	**313**	*c i*P	**P**	**23 42 37.9**	**+0.3**
TLY				*e*S	**S**	**23 47 38.3**	**-3.3**
TLY				pmax	pmax		
	comp=Z,26nm,1.6s						
TLY				MLR	MLR		
	comp=Z,2μm,11.0s						
TLY	**Talaya**	**31.04**	**313**	*e*P	**P**	**23 42 36.0**	**-1.6**
TLY				*e*pP	**sP**	**23 42 44.8**	**-1.1**
CD2	**Chengdu**	**31.23**	**272**	P	**P**	**23 42 39.0**	**-0.6**
CD2				sP	sP	23 42 48.3	+0.5
CD2				S	**S**	**23 47 44.0**	**-1.1**
CD2				sS	sS	23 47 55.3	+0.5
CD2				pmax	pmax		
	comp=Z,50nm,1.5s						
CD2				pmax	pmax		
	comp=Z,220nm,6.7s						
CD2				LR	LR		
	comp=Z,9μm,18.0s						
CD2				LR	LR		
	comp=Z,12μm,15.6s						
QIZ	**Qiongzhong**	**31.86**	**247**	P	**P**	**23 42 41.6**	**-3.6**
QIZ				S	**S**	**23 47 51.0**	**-4.0**
QIZ				pmax	pmax		
	comp=Z,8.0nm,1.6s						
QIZ				LR	LR		
	comp=Z,520nm,9.9s						
QIZ				LR	LR		
	comp=Z,410nm,10.9s						
GTA	**Gaotai**	**32.61**	**289**	*e*P	**P**	**23 42 51.3**	**-0.4**
GTA				pP	sP	23 42 58.3	-1.7

GTA sP pP 23 43 01.8 +4.2
GTA S **S** **23 48 02.4 -4.2**
GTA pmax pmax
comp=Z,8.0nm,0.8s
GTA pmax pmax
comp=Z,84nm,5.9s
GTA LR LR
comp=Z,1μm,22.8s
GTA LR LR
comp=Z,2μm,17.3s
GTA LR LR
comp=Z,2μm,18.8s
MOY Mondy 32.62 312 *e*P **P** **23 42 55.8 +4.1**
KMI Kunming 34.27 263 P **P** **23 43 07.3 +0.8**
KMI pP sP 23 43 16.6 +1.9
KMI sP pP 23 43 21.5 +9.1
KMI S **S** **23 48 31.7 -1.2**
KMI sS sS 23 48 49.8 +7.2
KMI SS **SnSn** **23 50 43.6 +1.4**
KMI pmax pmax
comp=Z,29nm,1.6s
KMI pmax pmax
comp=Z,200nm,5.7s
KMI LR LR
comp=Z,3μm,13.8s
KMI LR LR
comp=Z,5μm,14.6s
KMI LR LR
comp=Z,6μm,14.8s
SGSI Sangihe 34.63 208 P P 23 43 16.8 +7.5
comp=Z,722nm,0.8s
BILL Bilibino 35.68 16*c i*P **P** **23 43 17.3 -0.5**
BILL pmax pmax
comp=Z,24nm,1.3s
BILL MLR MLR
comp=Z,817nm,17.0s
BILL Bilibino 35.68 16 *e*P **P** **23 43 16.7 -1.1**
comp=Z,34nm,1.3s
TNTI Ternate 36.70 203 P P 23 43 33.0 +5.9
comp=Z,85nm,1.6s
TIXI Tiksi 36.81 354 P **P** **23 43 26.2 -1.2**
comp=Z,26nm,1.2s,baz=139,slow=10,SNR=18
TIXI Tiksi 36.81 354⇑ *e*P **P** **23 43 26.8 -0.6**
TIXI pmax pmax
comp=Z,33nm,1.2s
TIXI Tiksi 36.81 354 *e*P **P** **23 43 26.5 -0.9**
comp=Z,26nm,1.1s
SWI Sorong 37.21 196 P **P** **23 43 35.1 +3.7**
comp=Z,28nm,1.5s,comp=Z,4μm
RKPI Ransiki, Papua 37.29 191 P **P** **23 43 34.4 +2.3**
comp=Z,116nm,1.1s,comp=Z,4μm
SKNT Sakolnakorn 37.55 250 P P 23 43 39.2 +4.9
JAY Jayapura 37.76 180 P **P** **23 43 35.8 -0.3**
comp=Z,1.0nm,0.8s,baz=3.9,slow=22,SNR=2.9
JAY Jayapura 37.76 180 P **P** **23 43 34.9 -1.2**
GENI Genyem 37.85 181 P **P** **23 43 37.9 +1.1**
comp=Z,85nm,1.0s,comp=Z,3μm
LBMI Labuha 37.99 202 P **P** **23 43 37.8 -0.2**
CRAI Chiangrai 38.56 258 P **P** **23 43 44.0 +1.1**
comp=Z,106nm,0.8s,comp=Z,9μm
FAKI Fak Fak 39.00 194 P **P** **23 43 44.8 -1.7**
FAKI Fak Fak 39.00 194 *e*P **P** **23 43 46.8 +0.2**
comp=Z,34nm,0.9s
UTTA Uttaradit 39.77 254 P **P** **23 43 53.9 +0.9**
comp=Z,5.7nm,1.2s,comp=Z,168nm
SANI Sanana 39.80 204 P **P** **23 43 52.6 -0.6**
LUWI Luwuk 40.03 209 P P 23 44 00.0 +4.9
comp=Z,56nm,1.2s,comp=Z,2μm
LAMP Lampang 40.07 256 P **P** **23 43 57.2 +1.7**
comp=Z,3.8nm,1.4s
PBKT Sadao Pong 40.12 253 P **P** **23 43 55.8 0.0**
comp=Z,43nm,1.4s,comp=Z,735nm
MSAI Masohi 40.17 199 P **P** **23 43 52.4 -3.8**
GAMB Gambell 40.32 30 *e*P **P** **23 43 58.7 +1.7**
comp=Z,12nm,1.3s
CMMT Chiang Mai 40.45 257 P **P** **23 43 58.7 0.0**
comp=Z,17nm,1.5s,comp=Z,522nm
CHTO Chiang Mai 40.46 257 P **P** **23 43 58.8 +0.1**
comp=Z,36nm,1.1s,comp=Z,1μm
CHTO Chiang Mai 40.46 257 *e*P **P** **23 43 58.1 -0.6**
CHTO pmax pmax
comp=Z,17nm,1.1s
CHTO Chiang Mai 40.46 257 *e*P **P** **23 43 58.1 -0.6**
comp=Z,17nm,1.1s
CHTO Chiang Mai 40.46 257 P **P** **23 43 57.9 -0.8**
SNR=10
CHTO P **P** **23 43 57.9 -0.8**
SNR=10
CHTO Chiang Mai 40.46 257 P **P** **23 43 57.9 -0.8**
SNR=10
SUKH Sukhothai 40.65 255 P **P** **23 44 01.4 +1.2**
comp=Z,4.6nm,1.4s,comp=Z,46nm
CMAR Chiang Mai Arr 40.65 257 P **P** **23 43 58.6 -1.7**
comp=Z,1.9nm,0.7s,baz=48,slow=7.8,SNR=16
CMAR PcP **PcP** **23 46 03.2 +1.2**
comp=Z,1.2nm,0.8s,baz=23,slow=3.6,SNR=3.1
CMAR LR LR 00 01 56.8
comp=Z,645nm,18.7s,baz=56,slow=38
CM01 Chiang Mai Arr 40.66 257 *e*P **P** **23 43 59.2 -1.1**
SRAK Srakaew 40.83 248 P **P** **23 43 59.1 -2.6**
comp=Z,74nm,1.2s,comp=Z,708nm
PCI Palu 41.13 213 P **P** **23 44 07.8 +3.6**
comp=Z,31nm,1.1s
WMQ Urumqi 41.15 298 P **P** **23 44 05.5 +1.3**
WMQ pP pP 23 44 09.5 -0.7
WMQ PP **PnPn** **23 45 45.9 +2.2**
WMQ ScP **ScP** **23 49 50.4 -1.7**
WMQ S **S** **23 50 18.2 +1.7**
WMQ sS sS 23 50 27.7 +1.4
WMQ SS **SS** **23 53 12.3 -7.0**
WMQ pmax pmax
comp=Z,24nm,1.2s
WMQ pmax pmax
comp=Z,190nm,3.6s
WMQ LR LR
comp=Z,720nm,18.0s
WMQ LR LR
comp=Z,400nm,20.6s
WMQ LR LR
comp=Z,500nm,23.0s
CHBT CHBT 41.40 247 P **P** **23 44 07.9 +1.5**
comp=Z,51nm,1.3s
LSA Lhasa 41.90 277 P **P** **23 44 11.6 +0.6**
LSA pmax pmax
comp=Z,9.0nm,1.2s
LSA Lhasa 41.90 277 *e*P **P** **23 44 12.2 +1.2**
LSA pmax pmax
comp=Z,120nm,1.4s
LSA Lhasa 41.90 277 *e*P **P** **23 44 12.2 +1.2**
comp=Z,120nm,1.4s
ZAAO Zalesovo Array 42.65 314 *e*P **P** **23 44 16.0 -0.2**
ZALV Zalesovo Beam 42.65 314 P **P** **23 44 14.9 -1.3**
comp=Z,10.0nm,0.7s,baz=106,slow=6.9,SNR=35
ZALV PcP **PcP** **23 46 08.0 +0.1**
comp=Z,5.9nm,0.9s,baz=95,slow=4.9,SNR=2.6
ZALV ScP **ScP** **23 49 55.4 -2.4**
comp=Z,0.3nm,0.3s,baz=297,slow=4.5,SNR=3.8
ZALV LR LR 00 02 43.3
comp=Z,458nm,19.4s,baz=72,slow=37
SRDT SRDT 42.86 251 P P 23 44 23.0 +4.6
SHL Shillong 42.93 271 *e*P **P** **23 44 20.0 +0.9**
KHLT Khaolaem Dam 43.01 252 P P 23 44 25.4 +5.8
NVS Novosibirsk 43.61 315⇓ *i*P **P** **23 44 25.9 +2.0**
NVS pmax pmax
comp=Z,70nm,1.0s
NVS pmax pmax
comp=N,10.0nm,0.5s
NVS pmax pmax
comp=E,48nm,1.1s
SPSI Sidrap Palu 43.90 211 P **P** **23 44 29.4 +2.7**
comp=E,16nm,1.8s
NRIK Noril'sk 44.51 336 P **P** **23 44 31.0 -0.1**
comp=E,35nm,1.2s,baz=112,slow=6.8,SNR=30
NRIK LR LR 00 04 06.3
comp=E,2μm,18.1s,baz=106,slow=37
NRIK Noril'sk 44.51 336 P **P** **23 44 31.0 -0.1**
NRIK pmax pmax
comp=Z,35nm,1.2s
NRIK MLR MLR
comp=Z,2μm,18.2s
MKAR Makanchi Array 44.58 303 P **P** **23 44 31.4 -0.6**
comp=Z,7.0nm,0.8s,baz=86,slow=10,SNR=42
MKAR LR LR 00 03 54.3
comp=Z,1μm,18.2s,baz=82,slow=37
MKAR Makanchi Array 44.58 303 *e*P **P** **23 44 31.9 -0.1**
MAKZ Makanchi 44.79 303 *e*P **P** **23 44 33.1 -0.5**
MAKZ pmax pmax
comp=Z,96nm,1.6s
MAKZ Makanchi 44.79 303 *e*P **P** **23 44 33.1 -0.5**
comp=Z,96nm,1.6s
KAPI Kappang 44.86 211 *e*P **P** **23 44 35.4 +1.0**
comp=Z,46nm,1.2s
KBKI Kotabaru 44.94 216 P P 23 44 40.3 +5.2
comp=Z,14nm,0.8s
PMG Port Moresby 45.01 171⇑ *e*P **P** **23 44 34.7 -0.8**
PMG pmax pmax
comp=Z,231nm,1.4s
PMG Port Moresby 45.01 171 *e*P **P** **23 44 36.9 +1.4**
comp=Z,63nm,1.2s
BSSI Bau Bau, Buton 45.58 209 P **P** **23 44 41.1 +1.0**
comp=Z,54nm,0.9s,comp=Z,1μmcomp=Z,56μm
TAPN Taplejung 45.59 275 *e*P **P** **23 44 40.7 +0.1**
ODAN Odare 46.05 275 *e*P **P** **23 44 44.0 -0.1**
comp=Z,181nm,1.4s
SURT Suratani 46.49 246 P P 23 44 52.9 +5.6
KURK Kurchatov 46.55 309 *e*P **P** **23 44 47.1 -0.3**
KURK pmax pmax
comp=Z,191nm,1.4s
KURK Kurchatov 46.55 309 *e*P **P** **23 44 47.1 -0.3**
comp=Z,191nm,1.4s
KURBB Kurchatov Arra 46.62 309 P **P** **23 44 47.0 -1.0**
comp=Z,31nm,1.0s,baz=85,slow=8.4,SNR=53
RAMN Ramite 46.66 275 *e*P **P** **23 44 48.1 -0.8**
comp=Z,286nm,1.3s
PBKI Pangkalan Bun 46.75 222 P P 23 44 54.2 +4.9
comp=Z,76nm,0.5s,comp=Z,6μm
GUN Gumba 46.85 277 *e*P **P** **23 44 50.9 +0.4**
comp=Z,424nm,1.5s
TT01 Tatalina 46.99 34 *e*P **P** **23 44 52.6 +1.9**
TTA Tatalina 47.00 34 *e*P **P** **23 44 52.6 +1.7**
TTA pmax pmax
comp=Z,15nm,1.3s
TTA Tatalina 47.00 34 *e*P **P** **23 44 52.6 +1.7**
comp=Z,15nm,1.3s
SVW2 Sprewohn 47.07 36 *e*P **P** **23 44 53.9 +2.5**
comp=Z,28nm,1.2s
PDGK Podgornoye 47.12 299 P **P** **23 44 51.6 -0.3**
PDGK pmax pmax
comp=Z,94nm,1.2s
MMRI Maumere 47.23 205 P **P** **23 44 55.5 +2.5**
comp=Z,59nm,1.4s,comp=Z,12μm
PKIN Phulchoki 47.38 277 *e*P **P** **23 44 54.5 -0.1**
comp=Z,102nm,1.2s
KKN Kakani 47.39 277 *e*P **P** **23 44 54.8 +0.2**
comp=Z,156nm,1.1s
SOEI Soe 47.60 202 P **P** **23 44 58.4 +2.3**
comp=Z,143nm,1.1s,comp=Z,2μm
SOEI Soe 47.60 202 *e*P **P** **23 44 57.7 +1.6**
comp=Z,139nm,1.0s
GKN Gorkha 47.82 278 *e*P **P** **23 44 58.1 +0.2**
comp=Z,457nm,1.3s
HNR Honiara 48.15 154 LR LR 00 04 34.2
comp=Z,469nm,20.5s,baz=334,slow=35
BATI Baumata 48.22 203 P **P** **23 45 00.1 -0.6**
KDAK Kodiak Island 48.60 41 *ce*P **P** 23 45 18.2 +15
comp=Z,11nm,0.9s,baz=256,slow=8.1,SNR=7.1
KDAK Kodiak Island 48.60 41 *ce*P **P** **23 45 03.9 +0.7**
PPLA Purkeypile 48.74 34 *e*P **P** **23 45 06.7 +2.2**
comp=Z,48nm,1.4s
KOLN Koldanda 48.76 278 *e*P **P** **23 45 05.3 +0.2**
comp=Z,197nm,1.4s
SPU Mount Spurr 48.79 36 *e*P **P** **23 45 07.1 +2.4**
CAST Castle Rocks 48.81 33 *e*P **P** **23 45 06.4 +1.6**
comp=Z,13nm,1.2s
MTN Manton Dam 48.90 193 *e*P **P** **23 45 02.8 -3.1**
comp=Z,154nm,1.4s
PYUN Piuthan 49.12 278 *e*P **P** **23 45 07.9 0.0**
comp=Z,299nm,1.0s
PLAI Plampang 49.12 211 P **P** **23 45 06.2 -1.4**
COEN Coen 49.18 177 *e*P **P** **23 45 08.1 0.0**
comp=Z,65nm,1.0s
BPAW Bear Paw Mtn. **49.31 33** *e*P **P** **23 45 10.6 +1.9**
comp=Z,8.5nm,1.0s
KTH Kanishna Hill 49.33 33 *e*P **P** **23 45 10.8 +2.0**
comp=Z,41nm,1.6s
TWSI Taliwang, Sumb 49.42 212 P **P** **23 45 08.2 -1.7**
MLY Manley 49.45 31 *e*P **P** **23 45 11.0 +1.3**
comp=Z,29nm,1.3s
PPBI Pangkal Pinang 49.51 228 P P 23 45 05.5 -5.2
TRF Thorofare Moun 49.61 33 *e*P **P** **23 45 13.1 +1.9**
comp=Z,57nm,1.8s
COLD Coldfoot 49.77 28 *e*P **P** **23 45 16.8 +4.7**
comp=Z,6.9nm,1.0s
ABJI Asem Bagus 49.78 216 P **P** **23 45 10.3 -2.4**
GRJI Gresik 49.88 218 P **P** **23 45 17.6 +4.1**
comp=Z,53nm,0.8s
RC01 Rabbit Creek A 49.91 36 *e*P **P** **23 45 15.1 +1.9**
comp=Z,60nm,1.4s
TKM2 Tokmak 2 49.98 299 *e*P **P** **23 45 15.1 +0.8**
TKM2 pmax pmax
comp=Z,367nm,1.8s
TKM2 Tokmak 2 49.98 299 *e*P **P** **23 45 15.1 +0.8**
comp=Z,367nm,1.8s
SEW Seward 50.10 38 *e*P **P** **23 45 16.8 +2.2**
comp=Z,74nm,1.4s
TBJI Tambak Boyo 50.12 219 P **P** **23 45 19.8 +4.5**
comp=Z,2μm,0.9s
PMR Palmer 50.18 36 *e*P **P** **23 45 15.9 +0.7**
PMR pmax pmax
comp=Z,46nm,1.5s
PMR Palmer 50.18 36 *e*P **P** **23 45 15.9 +0.7**
comp=Z,46nm,1.5s
MCK McKinley 50.22 33 *e*P **P** **23 45 16.9 +1.3**
MCK pmax pmax
comp=Z,26nm,1.2s
MCK McKinley 50.22 33 *e*P **P** **23 45 16.9 +1.3**
comp=Z,26nm,1.2s
UWJI Ujung Watu 50.25 220 P **P** **23 45 20.5 +4.2**
comp=Z,59nm,0.4s,comp=Z,2μm
RND Reindeer 50.26 33 *e*P **P** **23 45 16.4 +0.5**
RND pmax pmax
comp=Z,23nm,1.2s
RND Reindeer 50.26 33 *e*P **P** **23 45 16.4 +0.5**
comp=Z,23nm,1.2s
LHMI Lhok Sumawe 50.33 244 P **P** **23 45 18.4 +1.5**
comp=Z,50nm,1.1s
TSI Tuntungan 50.34 241 P P 23 45 23.3 +6.2
comp=Z,100nm,0.4s
JAGI Jajag, Banyuwa 50.41 215 P P 23 45 23.0 +5.5
comp=Z,41nm,0.5s
MDM Murphy Dome 50.51 31 *e*P **P** **23 45 18.1 +0.3**
comp=Z,31nm,0.8s
SML Sawmill 50.55 36 *e*P **P** **23 45 18.9 +0.7**
SML pmax pmax
comp=Z,25nm,0.9s
SML Sawmill 50.55 36 *e*P **P** **23 45 18.9 +0.7**
comp=Z,25nm,0.9s
GMJI Gumukmas 50.58 216 P P 23 45 23.8 +5.1
comp=Z,24nm,1.8s
WRH Wood River Hil 50.58 32 *e*P **P** **23 45 18.8 +0.6**
comp=Z,10.0nm,0.8s
KSH Kashi 50.63 295 P **P** **23 45 22.7 +3.5**
KSH *ep*P sP 23 45 29.2 +1.6
KSH *es*P pP 23 45 31.7 +6.5
KSH *eP*P **PP** **23 47 20.7 +5.7**
KSH PcS **PcS** **23 50 36.3 +2.3**
KSH S **S** **23 52 36.1 +3.0**
KSH ScS **ScS** **23 55 09.1 -0.2**
KSH SS **SS** **23 56 11.5 +4.4**
KSH pmax pmax
comp=Z,36nm,1.0s
KSH pmax pmax
comp=Z,390nm,5.7s
KSH LR LR
comp=Z,710nm,12.8s
KSH LR LR
comp=Z,1μm,16.0s
KSH LR LR
comp=Z,2μm,16.9s
COLA College 50.67 32 *e*P **P** **23 45 23.3 +4.4**
COLA pmax pmax
comp=Z,15nm,0.8s
COLA College 50.67 32 *e*P **P** **23 45 23.3 +4.4**
comp=Z,15nm,0.8s
CCB Clear Creek Bu 50.70 32 *e*P **P** **23 45 20.2 +1.1**
comp=Z,12nm,1.2s
FRU Bishkek 50.70 300 *e*P **P** **23 45 20.0 +0.5**
FRU pmax pmax
comp=Z,245nm,2.0s
NGJI Ngawi 50.78 219 P P 23 45 25.0 +4.7
comp=Z,32nm,1.8s
AAK Ala-Archa 50.84 299 P **P** **23 45 20.5 -0.2**
comp=Z,6.6nm,0.8s
AAK Ala-Archa 50.84 299 *e*P **P** **23 45 20.9 +0.2**
AAK pmax pmax
comp=Z,25nm,0.9s
AAK Ala-Archa 50.84 299 *e*P **P** **23 45 20.9 +0.2**
comp=Z,25nm,0.9s
AAK Ala-Archa 50.84 299 P **P** **23 45 21.4 +0.7**
SNR=27
KCSI Kotacane, Aceh 50.90 241 P P 23 45 26.3 +5.0
comp=Z,10nm,1.1s,comp=Z,869nm
PMBI Palembang 50.95 229 P P 23 45 27.3 +5.7
comp=Z,205nm,0.6s,comp=Z,37μm
SCM Sheep Creek Mo 51.03 35 *e*P **P** **23 45 22.7 +0.9**
SCM pmax pmax
comp=Z,109nm,1.8s
SCM Sheep Creek Mo 51.03 35 *e*P **P** **23 45 22.7 +0.9**
comp=Z,109nm,1.8s
IL1 Eielson Array 51.09 32 *e*P **P** **23 45 21.3 -0.7**
ILAR Eielson Array 51.09 32 P **P** **23 45 21.9 -0.2**
comp=Z,15nm,0.9s,baz=257,slow=5.9,SNR=69
ILB Eielson Array 51.09 32 *e*P **P** **23 45 21.9 -0.1**
PWJI Pagerwojo 51.17 218 P **P** **23 45 22.1 -1.1**
BVAR Borovoye Array 51.30 313 P **P** **23 45 23.2 -0.6**
comp=Z,4.8nm,0.7s,baz=82,slow=7.6,SNR=2.0
BVAR LR LR 00 07 14.9
comp=Z,501nm,21.2s,baz=76,slow=36
BVAR Borovoye Array 51.30 313 P **P** **23 45 23.2 -0.6**
BVAR pmax pmax
comp=Z,6.0nm,0.8s
BVAR MLR MLR
comp=Z,501nm,21.2s
EKS2 Erkin-Say 51.34 300 *e*P **P** **23 45 25.3 +0.8**
EKS2 pmax pmax
comp=Z,21nm,1.0s
EKS2 Erkin-Say 51.34 300 *e*P **P** **23 45 25.2 +0.8**
comp=Z,21nm,1.0s
BRVK Borovoye 51.35 313 *e*P **P** **23 45 24.2 -0.1**
BRVK pmax pmax
comp=Z,40nm,1.0s
BRVK Borovoye 51.35 313 *e*P **P** **23 45 24.2 -0.1**
comp=Z,40nm,1.0s
BRVK Borovoye 51.35 313 P **P** **23 45 24.1 -0.1**
SNR=32
BRVK Borovoye 51.35 313 P **P** **23 45 24.1 -0.1**
SNR=32
WOJI Wonogiri, Jawa 51.46 219 P P 23 45 30.5 +5.1
comp=Z,41nm,2.6s,comp=Z,4μm
TPTI 51.50 242 P P 23 45 31.2 +5.4
comp=Z,25nm,1.1s,comp=Z,818nm
MNSI Mandailing Nat 51.55 237 P **P** **23 45 30.7 +4.6**
comp=Z,17nm,1.5s,comp=Z,1μm
SDSI Sungai Dareh 51.57 234 P **P** **23 45 30.2 +3.9**
comp=Z,25nm,1.3s,comp=Z,50μm
PCJI Pacitan 51.63 219 P **P** **23 45 29.4 +2.7**
comp=Z,33nm,1.3s
FYU Fort Yukon 51.72 29 *e*P **P** **23 45 29.3 +2.5**
comp=Z,57nm,1.3s
KLU Klutina 51.73 36 *e*P **P** **23 45 28.0 +1.0**
comp=Z,95nm,1.9s
PAX Paxson 51.81 34 *e*P **P** **23 45 29.7 +2.1**
PAX pmax pmax
comp=Z,18nm,1.2s
PAX Paxson 51.81 34 *e*P **P** **23 45 29.7 +2.1**
comp=Z,18nm,1.2s
PPI Padang Panjang 51.91 235 P P 23 45 34.8 +6.0
comp=Z,13nm,0.8s
KPJI Karang Pucung 52.09 222 P **P** **23 45 29.6 -0.5**
DOT Dot Lake 52.39 33 *e*P **P** **23 45 31.8 0.0**
comp=Z,35nm,1.1s
LEM Lembang 52.40 223 P P 23 45 38.3 +5.7
LHSI Lahat 52.43 230 P **P** **23 45 32.6 0.0**
MDSI Maura Dua 52.54 229 P **P** **23 45 32.5 -0.9**
GSI Gunungsitoli 52.58 240 P P 23 45 39.0 +5.2
comp=Z,74nm,1.1s
GSI Gunungsitoli 52.58 240 *e*P **P** **23 45 32.9 -1.0**
comp=Z,124nm,1.3s
MENT Mentasta 52.61 34 *e*P **P** **23 45 36.7 +3.2**
comp=Z,18nm,0.9s
MASI Maura Aman, Be 52.71 232 P **P** **23 45 35.7 +0.9**
comp=Z,96nm,1.1s,comp=Z,3μm
CISI Cisompet, Garu 52.88 223 P **P** **23 45 37.6 +1.5**
comp=Z,38nm,1.0s
LWLI Liwa 53.03 228 P **P** **23 45 38.9 +1.7**
comp=Z,55nm,0.5s
CNJI Cibinong 53.06 224 P **P** **23 45 35.2 -2.1**
KASI Kota Agung 53.16 227 P **P** **23 45 36.0 -2.0**
MNAI Manna 53.19 230 P **P** **23 45 35.6 -2.7**
THN Thein Dam 53.22 287 *e*P **P** **23 45 36.2 -2.1**
CGJI Cibinong 53.32 225 P **P** **23 45 35.4 -3.8**
NDI New Delhi 53.52 282 *ex* **P** **23 45 38.0 -2.6**
KKAR Karatay Array 53.52 301 *e*P **P** **23 45 40.5 0.0**
KKAR Karatay Array 53.52 301 *e*P **P** **23 45 40.5 0.0**
EGAK Eagle 53.54 31 *e*P **P** **23 45 39.9 -0.3**
comp=Z,11nm,0.9s
FITZ Fitzroy Crossi 55.17 198 *e*P **P** **23 45 51.9 -0.7**
comp=Z,56nm,1.0s
WRAB Tennant Creek 55.42 187*c i*P **P** **23 45 52.3 -2.0**
WRAB pmax pmax
comp=Z,132nm,1.2s
WRAB Tennant Creek 55.42 187 *e*P **P** **23 45 53.1 -1.2**
comp=Z,102nm,1.1s
WRA Warramunga Arr 55.43 187 P **P** **23 45 52.3 -2.1**
comp=Z,28nm,0.8s,baz=4.3,slow=7.5,SNR=99
WRA Warramunga Arr 55.43 187 P **P** **23 45 52.3 -2.1**
WRA pmax pmax
comp=Z,26nm,0.8s
CTAO Charters Tower 55.47 174 *e*P **P** **23 45 58.8 +4.1**
CTAO pmax pmax
comp=Z,22nm,1.2s
CTAO Charters Tower 55.47 174 *e*P **P** **23 45 58.8 +4.1**
comp=Z,22nm,1.2s
INK Inuvik 56.02 27 P **P** **23 45 58.4 +0.3**
comp=Z,8.2nm,0.8s,baz=268,slow=7.1,SNR=28
INK Inuvik 56.02 27 *e*P **P** **23 45 58.6 +0.5**
INK pmax pmax
comp=Z,26nm,1.3s
INK Inuvik 56.02 27 *e*P **P** **23 45 58.6 +0.5**
comp=Z,26nm,1.3s
SVE Sverdlovsk 56.03 319 *e*P **P** **23 45 58.4 0.0**
SVE pmax pmax
comp=Z,54nm,1.2s
SVE MLR MLR
comp=Z,2μm,15.0s
ARU Arti 57.24 319 P **P** **23 46 06.2 -0.8**
comp=Z,15nm,0.8s,baz=75,slow=4.7,SNR=33
ARU Arti 57.24 319*d i*P **P** **23 46 06.3 -0.8**
ARU 23 48 10.3
ARU S **S** **23 54 00.8 -0.9**
ARU SS **SS** **23 57 47.7 -2.6**
ARU pmax pmax
comp=Z,68nm,1.2s
ARU MLR MLR
comp=Z,2μm,20.0s
ARU Arti 57.24 319 *e*P **P** **23 46 06.2 -0.8**
comp=Z,289nm,2.0s
SKAG Skagway 57.24 37 *e*P P 23 46 12.6 +5.7
comp=Z,38nm,1.4s
SOKR Solikamsk 57.30 323 *e*P **P** **23 46 06.5 -0.8**
SOKR pmax pmax
comp=Z,25nm,0.8s
SOKR MLR MLR
comp=Z,1μm,19.0s
KBL Kabul 57.55 292 *e*P **P** **23 46 10.6 +0.8**
KBL pmax pmax
comp=Z,34nm,1.0s
KBL Kabul 57.55 292 *e*P **P** **23 46 10.6 +0.8**
comp=Z,34nm,1.0s
HYB Hyderabad 57.69 269 *i* P **P** **23 46 10.0 -0.8**
ABKAR Akbulak array 58.60 311 *e*P **P** **23 46 16.2 -0.4**
AS01 Alice Springs 59.15 187 *e*P **P** **23 46 19.0 -1.6**
AS31 Alice Springs 59.15 187 *e*P **P** **23 46 20.3 -0.4**
comp=Z,3.7nm,0.9s
ASAR Alice Springs 59.16 187 P **P** **23 46 18.9 -1.8**
comp=Z,13nm,1.1s,baz=8.9,slow=5.1,SNR=38
ASAR PcP **PcP** **23 47 10.3 +1.2**
comp=Z,7.2nm,0.9s,baz=359,slow=3.6,SNR=4.4
ASAR LR LR 00 11 15.0
comp=Z,210nm,21.0s,baz=16,slow=35
AKTO Aktyubinsk 59.39 313 P **P** **23 46 22.0 -0.1**
comp=Z,7.1nm,0.7s,baz=71,slow=7.6,SNR=16
AKTO Aktyubinsk 59.39 313 P **P** **23 46 22.0 -0.1**
AKTO pmax pmax
comp=Z,7.0nm,0.7s
AKTO Aktyubinsk 59.39 313 P **P** **23 46 22.0 -0.1**
MBWA Marble Bar 59.74 203 *e*P **P** **23 46 24.8 0.0**
comp=Z,162nm,1.5s
MBWA Marble Bar 59.74 203 P **P** **23 46 25.3 +0.5**

SNR=9.2
MBWA P P 23 46 25.3 +0.5
SNR=9.2
MBWA Marble Bar 59.74 203 P P 23 46 25.3 +0.5
SNR=9.2
DLBC Dease Lake 60.17 37 P P 23 46 29.6 +2.1
comp=Z,7.1nm,0.9s,baz=266,slow=7.2,SNR=7.1
DLBC Dease Lake 60.17 37 *eP* P 23 46 31.0 +3.6
comp=Z,113nm,2.0s
POO Poona 60.96 273 *ex* P 23 46 31.0 -2.4
EIDS Eidsvold 61.26 169 *eP* P 23 46 36.1 +1.0
comp=Z,12nm,0.9s
SPITS Spitsbergen Ar 61.98 349 P P 23 46 40.3 +0.8
comp=Z,11nm,0.9s,baz=111,slow=4.6,SNR=6.5
KBS Kingsbay 62.14 350 *eP* P 23 46 42.9 +2.5
KBS pmax pmax
comp=Z,90nm,1.4s
KBS Kingsbay 62.14 350 *eP* P 23 46 42.9 +2.5
comp=Z,90nm,1.4s
DZM Mont Dzumac 62.15 153 P P 23 46 41.9 +0.7
comp=Z,68nm,1.1s,baz=18,slow=8.7,SNR=16
LVZ Lovozero 63.36 336‖ *eP* P 23 46 49.9 +1.1
LVZ pmax pmax
comp=Z,47nm,2.5s
MSVF Nonsavu 63.59 140 *eP* P 23 46 52.4 +1.5
MSVF pmax pmax
comp=Z,61nm,1.2s
MSVF Nonsavu 63.59 140 *eP* P 23 46 52.4 +1.5
comp=Z,61nm,1.2s
TMCR Tamitsa 63.91 332 *eP* P 23 46 52.1 -0.2
TMCR pmax pmax
comp=Z,48nm,1.3s
APA Apatity 63.94 336‖ *i*P P 23 46 53.2 +0.7
APA MLR MLR
comp=Z,2µm,20.0s
GEYT Alibeck 64.19 299 P P 23 46 54.1 -0.7
comp=Z,14nm,1.1s,baz=44,slow=4.5,SNR=26
GEYT LR LR 00 16 54.6
comp=Z,1µm,18.7s,baz=75,slow=38
RES Resolute Bay 64.25 14 P P 23 46 54.1 -0.4
comp=Z,27nm,1.2s,baz=309,slow=7.0,SNR=25
RES Resolute Bay 64.25 14 *eP* P 23 46 54.4 -0.1
RES pmax pmax
comp=Z,29nm,1.0s
RES Resolute Bay 64.25 14 *eP* P 23 46 54.4 -0.1
comp=Z,29nm,1.0s
KLMR Klimovskoe 64.84 328 *eP* P 23 46 55.8 -2.7
KLMR *e**PP **sP** 23 47 06.0 -1.0
KLMR *e* 23 47 30.3
KLMR pmax pmax
comp=Z,36nm,1.2s
ARA0 ARCESS Array S 65.31 340 *eP* P 23 47 03.0 +1.5
ARCES ARCESS Array B 65.31 340 P P 23 47 01.0 -0.5
comp=Z,14nm,1.0s,baz=47,slow=5.3,SNR=10.0
ARCES LR LR 00 18 41.5
comp=Z,1µm,20.2s,baz=50,slow=39
ARCES ARCESS Array B 65.31 340 P P 23 47 01.0 -0.5
ARCES pmax pmax
comp=Z,15nm,1.0s
ARCES MLR MLR
comp=Z,1µm,20.2s
YKW3 Yellowknife Ar 65.38 30 *eP* P 23 47 02.1 +0.2
YKA Yellowknife Ar 65.42 30 P P 23 47 01.5 -0.7
comp=Z,8.0nm,0.9s,baz=298,slow=6.4,SNR=50
YKB5 Yellowknife Ar 65.42 30 *eP* P 23 47 01.9 -0.3
ARMA Armidale 66.30 170 *eP* P 23 47 10.8 +2.5
comp=Z,17nm,1.0s
STKA Stephens Creek 66.97 179 P P 23 47 11.6 -0.9
comp=Z,4.5nm,0.7s,baz=11,slow=5.7,SNR=9.6
STKA LR LR 00 15 18.5
comp=Z,336nm,21.3s,baz=20,slow=35
STKA Stephens Creek 66.97 179 *eP* P 23 47 12.2 -0.3
comp=Z,3.2nm,0.9s
DAG Danmarks Havn 67.31 355 *i* P P 23 47 14.5 +0.4
comp=Z,23nm,1.1s
DAG Danmarks Havn 67.31 355 *i* P P 23 47 14.9 +0.8
comp=Z,23nm,1.1s
DAG Danmarks Havn 67.31 355 *i* P P 23 47 14.9 +0.8
DAG pmax pmax
comp=Z,29nm,1.1s
NLWA Neilton Lookou 68.14 47 *eP* P 23 47 23.7 +3.8
comp=Z,55nm,1.4s
MOS Moscow 68.24 324 *eP* P 23 47 20.2 -0.1
MOS *e* 23 47 35.6
MOS *e* 23 49 52.8
MOS pmax pmax
comp=Z,128nm,1.7s
MOS pmax pmax
comp=Z,300nm,2.0s
MOS MLR MLR
comp=Z,1µm,16.0s
MOS MLR MLR
comp=E,800nm,15.0s
VRH Novokhopyorsk 68.44 318 *eP* P 23 47 21.5 -0.1
VRH *e**PP **pP** 23 47 27.3 -0.6
VRH pmax pmax
comp=Z,20nm,0.6s
VRH MLR MLR
comp=Z,1µm,13.0s
OBN Obninsk 69.08 323 P P 23 47 25.9 +0.4
comp=Z,8.0nm,0.4s,baz=76,slow=9.6,SNR=11
OBN Obninsk 69.08 323 *i* P P 23 47 25.0 -0.6
OBN *i* 23 47 32.1
OBN *i* 23 47 45.6
OBN pmax pmax
comp=Z,67nm,1.7s
OBN MLR MLR
comp=Z,1µm,15.0s
OBN Obninsk 69.08 323 *eP* P 23 47 25.9 +0.4
comp=Z,155nm,1.7s
LPSR Galich'ya Gora 69.21 320 *eP* P 23 47 26.5 +0.1
LPSR *e**PP **pP** 23 47 32.2 -0.5
LPSR pmax pmax
comp=Z,50nm,1.5s
LPSR MLR MLR
comp=Z,1µm,15.0s
VSR Storozhevoye 69.81 319 *eP* P 23 47 30.1 -0.1
VSR *e**PP **pP** 23 47 35.9 -0.5
VSR pmax pmax
comp=Z,50nm,1.3s
VSR MLR MLR
comp=Z,2µm,17.0s
FIA1 FINESS Array S 69.99 332 *eP* P 23 47 31.2 +0.1
FINES FINESS Array B 70.00 332 P P 23 47 30.7 -0.4
comp=Z,43nm,1.2s,baz=57,slow=7.0,SNR=28
FINES LR LR 00 20 22.5
comp=Z,961nm,18.3s,baz=36,slow=38
LTY Liberty 70.10 46 *eP* P 23 47 33.8 +1.7
comp=Z,58nm,1.8s
I03D Drain, OR 70.28 50 P P 23 47 34.6 +1.4
baz=300
B08A Colville Reser 70.30 44 *eP* P 23 47 33.7 +0.4
comp=Z,22nm,1.1s
H04A Detroit Lake 70.50 49 *eP* P 23 47 37.1 +2.5
comp=Z,35nm,1.3s
GOF Gofitskoye 70.80 312⇑ *eP* P 23 47 37.6 +1.3
GOF pmax pmax
comp=Z,75nm,1.1s
I04A Tendick Farm, 70.82 50 P P 23 47 37.4 +0.8
baz=301
WSAR Wadi Sarin 70.82 285 P P 23 47 38.2 +1.3
comp=Z,15nm,1.2s,baz=87,slow=3.6,SNR=6.7
C09A Chrisman Ranch 71.20 44 *eP* P 23 47 40.6 +1.8
comp=Z,49nm,1.5s
D08A Wollman Farm, 71.22 45 *eP* P 23 47 40.8 +1.9
comp=Z,15nm,1.0s
GUDG Gudauri 71.24 309 P P 23 47 41.4 +2.1
NCK Nalchik 71.26 310⇑ *eP* P 23 47 40.1 +0.9
NCK pmax pmax
comp=Z,19nm,1.1s
SMDO Samad 71.37 285 P P 23 47 43.8 +3.5
SNR=6.9
ZEI Tsey 71.44 310 *eP* P 23 47 41.0 +0.5
ZEI pmax pmax
comp=Z,71nm,1.1s
TBLG Delisi 71.45 308 P P 23 47 42.2 +1.8
TBLG Delisi 71.45 308 *eP* P 23 47 42.2 +1.8
KBZ Khabaz 71.58 311 P P 23 47 41.8 +0.8
comp=Z,24nm,1.1s,baz=51,slow=5.3,SNR=16
KBZ LR LR 00 20 50.3
comp=Z,597nm,21.0s,baz=44,slow=37
VSU Vasula 71.58 330‖ *eP* P 23 47 41.1 +0.3
VSU pmax pmax
comp=Z,139nm,1.2s
KVAR Kislovodsk Arr 71.58 311 P P 23 47 42.3 +1.1
comp=Z,111nm,1.3s,baz=32,slow=2.7,SNR=19
KIV Kislovodsk 71.59 311 *i* P P 23 47 41.9 +0.7
SNR=17
KIV Kislovodsk 71.59 311 *eP* P 23 47 41.7 +0.4
KIV pmax pmax
comp=Z,105nm,1.1s
KIV MLR MLR
comp=Z,532nm,17.0s
KIV Kislovodsk 71.59 311 *eP* P 23 47 42.3 +1.0
KIV Kislovodsk 71.59 311 P P 23 47 42.8 +1.5
SNR=20
NEW Newport 71.60 44 P P 23 47 42.8 +1.6
baz=303
NEW Newport 71.60 44 *eP* P 23 47 42.9 +1.6
NEW pmax pmax
comp=Z,21nm,1.2s
NEW Newport 71.60 44 *eP* P 23 47 42.9 +1.7
comp=Z,21nm,1.2s
YBH Yreka Blue Hor 71.69 52 P P 23 47 42.7 +0.8
comp=Z,4.2nm,1.0s,baz=290,slow=2.7,SNR=5.8
YBH Yreka Blue Hor 71.69 52 *eP* P 23 47 43.9 +1.9
YBH pmax pmax
comp=Z,38nm,1.6s
YBH Yreka Blue Hor 71.69 52 *eP* P 23 47 43.9 +1.9
comp=Z,38nm,1.6s
M02C Callahan 71.78 52 P P 23 47 44.1 +1.6
baz=301
J05D Fort Rock, OR 71.82 50 P P 23 47 44.1 +1.4
baz=302
UOSS Minazif 71.84 288 *eP* P 23 47 45.0 +2.0
comp=Z,1.8nm,1.1s
NEY Neytrino 71.94 310⇑ *eP* P 23 47 41.9 -1.6
NEY pmax pmax
comp=Z,3.0nm,1.1s
HATD Hatta, Dubai 71.96 288 *i* P P 23 47 44.9 +1.2
SNR=6.5
ASHO Ashiyiah 72.09 288 *i* P P 23 47 46.2 +1.6
SNR=6.9
NAZ Nazwa, Dubai 72.24 288 P P 23 47 46.3 +0.9
SUMG Summit 72.27 360 *i* P P 23 47 45.9 +0.7
comp=Z,36nm,1.2s
SUMG Summit 72.27 360 *i* P P 23 47 47.4 +2.2
comp=Z,42nm,1.3s
SUMG Summit 72.27 360 *i* P P 23 47 47.4 +2.2
SUMG pmax pmax
comp=Z,42nm,1.3s
SUMG Summit 72.27 360 *eP* P 23 47 45.8 +0.6
comp=Z,30nm,1.1s
GNI Garni 72.27 307 P P 23 47 46.1 +0.6
comp=Z,26nm,1.2s,baz=174,slow=6.9,SNR=6.1
GNI Garni 72.27 307 *deP* P 23 47 45.4 -0.1
GNI pmax pmax
comp=Z,168nm,1.4s
GNI Garni 72.27 307 *eP* P 23 47 47.6 +2.1
K05A Summer Lake 72.32 50 *eP* P 23 47 48.5 +2.6
WDC Whiskeytown Da 72.41 53 *eP* P 23 47 48.7 +2.6
WDC Whiskeytown Da 72.41 53 *eP* P 23 47 48.7 +2.6
AKH Akhalkalaki 72.42 308 P P 23 47 48.6 +2.2
AKH Akhalkalaki 72.42 308⇑ *i*P P 23 47 47.2 +0.8
AKH Akhalkalaki 72.42 308 *eP* P 23 47 48.6 +2.2
CHVG Ch'k'valeri 72.61 310 P P 23 47 54.4 +7.1
CHVG Ch'k'valeri 72.61 310⇑ *i*P P 23 47 46.3 -1.0
F10A Beach Ranch, E 72.79 46 *eP* P 23 47 50.8 +4.4
WALA Waterton Lakes 72.93 42 *eP* P 23 47 50.4 +1.1
MOD Modoc Plateau 73.13 50 *eP* P 23 47 52.7 +2.1
BLMT Blacktail Moun 73.28 43 *eP* P 23 47 54.1 +2.6
BLMT *ep*P **sP** 23 47 58.8 -1.2
BMO Blue Mountains 73.36 47 *eP* P 23 47 53.4 +1.6
JTMT Jette 73.47 43 *eP* P 23 47 53.5 +1.0
IZAR Zarasai 73.49 328 *eP* P 23 47 52.5 +0.3
IZAR IAmb IAmb 23 47 55.5
comp=Z,15nm,1.1s
MICGM Minsk 73.54 326 *e* P 23 47 53.0 +0.5
MNK Minsk 73.54 326 *eP* P 23 47 53.0 +0.5
IDID Didziasalis 73.55 327 *eP* P 23 47 52.8 +0.2
IDID IAmb IAmb 23 47 55.9
comp=Z,22nm,1.4s
YBMT Yellow Bay 73.56 43 *eP* P 23 47 55.0 +2.0
ORV Oroville 73.63 53 *eP* P 23 47 55.4 +2.1
ORV Oroville 73.63 53 *eP* P 23 47 55.4 +2.1
SCO Scoresbysund 73.64 354 *i* P P 23 47 54.6 +1.8
comp=Z,16nm,1.1s
SCO Scoresbysund 73.64 354 *i* P P 23 47 54.6 +1.8
SCO pmax pmax
comp=Z,16nm,1.1s
ISAL Salakas 73.66 327 *eP* P 23 47 53.4 +0.2
ISAL IAmb IAmb 23 47 56.6
comp=Z,35nm,1.4s
IIGN Ignalina 73.75 327 *eP* P 23 47 54.1 +0.3
IIGN IAmb IAmb 23 47 57.1
comp=Z,16nm,1.2s
SWMT Swartz Lake 73.77 43 *eP* P 23 47 55.4 +1.2
NACGM Naroch 73.79 327 *e* P 23 47 54.0 0.0
NACGM *e*LR LR 00 18 12.0
WVOR Wild Horse Val 73.88 49 *eP* P 23 47 56.2 +1.2
WVOR Wild Horse Val 73.88 49 *eP* P 23 47 56.2 +1.2
MSO Missoula 74.19 44 *eP* P 23 47 58.7 +2.0
ANN Anapa 74.29 314 *eP* P 23 47 56.8 -0.3
ANN *e* 23 48 12.2
ANN *e*S **SKiKP** 23 57 25.6 +2.4
ANN pmax pmax
comp=Z,105nm,1.8s
CHMT Chamberlain Mo 74.53 43 *eP* P 23 48 00.4 +1.6
MFID Camas Ranch 75.05 47 *eP* P 23 48 02.8 +1.0
CMB Columbia Colle 75.18 54 *eP* P 23 48 03.5 +1.0
CMB Columbia Colle 75.18 54 *eP* P 23 48 03.5 +1.0
AKASG Malin Array Be 75.26 322 P P 23 48 01.6 -1.0
comp=Z,7.4nm,0.7s,baz=45,slow=6.0,SNR=46
AKASG LR LR 00 24 04.6
comp=Z,1µm,18.4s,baz=55,slow=38
AKBB Malin Array Si 75.26 322 *eP* P 23 48 03.4 +0.8
AKBB Malin Array Si 75.26 322 *eP* P 23 48 03.4 +0.8
KIEV Kiev 75.27 322‖ *eP* P 23 48 02.3 -0.4
KIEV pmax pmax
comp=Z,30nm,1.1s
KIEV Kiev 75.27 322 *eP* P 23 48 01.1 -1.6
FFC Flin Flon 75.30 32 *eP* P 23 48 02.6 -0.2
FFC Flin Flon 75.30 32 *eP* P 23 48 02.6 -0.2
AK11 Malin Array Si 75.30 322 *eP* P 23 48 03.4 +0.6
HFS Hagfors 75.33 336 P P 23 48 02.6 -0.3
comp=Z,20nm,1.0s,baz=46,slow=6.4,SNR=14
NB2 NORSAR Subarra 75.46 337 P P 23 48 02.8 -0.9
comp=Z,86nm,1.4s,baz=41,slow=5.9
NB2 NORSAR Subarra 75.46 337 P P 23 48 02.8 -0.9
baz=41,slow=5.9
NOA NORSAR Array B 75.46 337 P P 23 48 03.0 -0.7
comp=Z,32nm,1.1s,baz=40,slow=5.7,SNR=24
NOA LR LR 00 24 03.6
comp=Z,929nm,19.1s,baz=40,slow=38
NOA NORSAR Array B 75.46 337 P P 23 48 03.0 -0.7
NOA pmax pmax
comp=Z,32nm,1.1s
NOA MLR MLR
comp=Z,929nm,19.2s
NOA NORSAR Array B 75.46 337 P P 23 48 03.0 -0.7
WAKR Walker 75.55 53 *eP* P 23 48 06.3 +1.5
FCC Fort Churchill 75.63 26 *eP* P 23 48 04.3 -0.3
FCC Fort Churchill 75.63 26 *eP* P 23 48 04.2 -0.3
EGMT Eagleton 75.78 41 P P 23 48 06.4 +0.6
baz=308
EGMT Eagleton 75.78 41 *eP* P 23 48 06.2 +0.4
HLID Hailey 75.80 46 P P 23 48 06.6 +0.5
baz=306
HLID Hailey 75.80 46 *eP* P 23 48 06.8 +0.7
DLMT Dillon 75.81 44 *eP* P 23 48 07.1 +1.0
BMN Battle Mountai 75.88 50 *eP* P 23 48 07.8 +1.1
BMN Battle Mountai 75.88 50 *eP* P 23 48 07.8 +1.1
SUW Suwalki 75.97 327 *eP* P 23 48 07.6 +1.0
SUW Suwalki 75.97 327 *eP* P 23 48 07.6 +1.0
MCMT McKenzie Canyo 75.98 45 *eP* P 23 48 12.5 +5.3
SIM Simferopol' 76.12 316 *eP* P 23 48 09.1 +1.4
SIM pmax pmax
comp=Z,44nm,1.3s
SIM MLR MLR
comp=Z,300nm,17.0s
BOZ Bozeman (W) 76.18 44 P P 23 48 08.9 +0.6
baz=307
BOZ Bozeman (W) 76.18 44 *eP* P 23 48 08.8 +0.6
BOZ Bozeman (W) 76.18 44 *eP* P 23 48 08.8 +0.6
NV01 Mina Array Sit 76.32 53 *eP* P 23 48 09.9 +0.7
NVAR Mina Array Bea 76.32 53 P P 23 48 09.8 +0.5
comp=Z,3.4nm,0.7s,baz=286,slow=5.7,SNR=16
NVAR LR LR 00 15 35.0
comp=Z,191nm,21.7s,baz=328,slow=31
KBSD Kabsdagh 76.74 306 *eP* P 23 48 11.2 -0.2
QLMT Earthquake Lak 76.79 44 *eP* P 23 48 14.0 +2.3
ELK Elko 76.94 49 *eP* P 23 48 15.0 +2.3
ELK Elko 76.94 49 *eP* P 23 48 15.0 +2.3
GCMT Greycliff 77.19 43 *eP* P 23 48 15.0 +1.1
MZRK Al-Mazaregh 77.33 305 *eP* P 23 48 14.8 +0.1
MZRK Al-Mazaregh 77.33 305 *eP* P 23 48 14.8 +0.1
YFT Old Faithful 77.35 44 *eP* P 23 48 18.8 +3.8
SFNV Sufian 77.36 306 *eP* P 23 48 16.4 +1.5
SFNV Sufian 77.36 306 *eP* P 23 48 16.4 +1.5
LKWY Lake 77.53 44 *eP* P 23 48 16.2 +0.2
LKWY pmax pmax
comp=Z,24nm,1.1s
LKWY Lake 77.53 44 *eP* P 23 48 16.2 +0.2
comp=Z,24nm,1.1s
H17A Grant Village 77.53 44 P P 23 48 18.3 +2.2
baz=308
IMW Indian Meadow 77.63 45 *eP* P 23 48 18.2 +1.6
FLWY Flagg Ranch 77.66 44 *eP* P 23 48 19.2 +2.6
FXWY Fox Creek 77.74 45 *eP* P 23 48 19.3 +2.2
KIS Kishinev 77.79 320 *eP* P 23 48 18.0 +1.0
KIS LRM MLR 00 25 18.0
comp=Z,1µm,15.0s
KIS Kishinev 77.79 320 *eP* P 23 48 18.0 +1.0
KIS *e* 23 48 26.0
KIS MLR MLR
comp=Z,2µm,16.0s
KIS MLR MLR
comp=N,1µm,15.0s
KIS MLR MLR
comp=E,1µm,15.0s
KIS MLR MLR
comp=Z,2µm,16.0s
RLMT Red Lodge 77.82 43 P P 23 48 18.2 +0.6
baz=308
RLMT Red Lodge 77.82 43 *eP* P 23 48 20.4 +2.9
HVU Hansel Valley 77.83 47 *eP* P 23 48 18.9 +1.3
HVU Hansel Valley 77.83 47 *eP* P 23 48 18.9 +1.3
MOOW Moose Ponds 77.83 45 *eP* P 23 48 19.1 +1.5
LOHW Long Hollow 78.00 45 *eP* P 23 48 20.9 +2.3
REDW Red Top Meadow 78.01 45 *eP* P 23 48 21.4 +2.8
DAC Darwin (Calif) 78.01 54 *eP* P 23 48 20.3 +1.6
DAC Darwin (Calif) 78.01 54 *eP* P 23 48 20.3 +1.6
R11A Troy Canyon, C 78.12 51 P P 23 48 19.7 +0.5
baz=306
R11A Troy Canyon, C 78.12 51 *eP* P 23 48 20.4 +1.2
comp=Z,9.5nm,0.9s
BGU Big Grassy Mou 78.19 48 *eP* P 23 48 20.5 +0.9
MNKR ALMNKUR 78.19 306 *eP* P 23 48 15.5 -4.0
MNKR ALMNKUR 78.19 306 *eP* P 23 48 15.5 -4.0
MPMC Manual Prospec 78.21 54 P P 23 48 20.3 +0.5
baz=305
AHID Auburn Hatcher 78.23 46 *eP* P 23 48 21.1 +1.2
SPUT South Promonto 78.31 47 *eP* P 23 48 23.2 +3.0
DGMT Dagmar 78.38 38 *eP* P 23 48 21.9 +1.5
LVV L'vov 78.38 324 *eP* P 23 48 20.9 +0.7
LVV *e* 23 51 12.9
LVV MLR MLR
comp=N,300nm,14.0s
LVV MLR MLR
comp=E,400nm,14.0s
LVV MLR MLR
comp=Z,800nm,14.0s
FRB Frobisher Bay 78.42 13 P P 23 48 20.2 0.0
comp=Z,13nm,0.8s,baz=353,slow=5.5,SNR=5.4
LEOM Leova 78.43 319‖ *i*P P 23 48 21.3 +0.8
LAO LASA Array 78.49 40 P P 23 48 21.4 +0.4
baz=310
LAO LASA Array 78.49 40 *eP* P 23 48 22.7 +1.7
TPNV Topopah Spring 78.51 53 P P 23 48 22.1 +0.7
baz=306
TPNV Topopah Spring 78.51 53 *eP* P 23 48 22.7 +1.2
TPNV Topopah Spring 78.51 53 *eP* P 23 48 22.6 +1.2
BEL Belsk 78.51 327 *eP* P 23 48 22.7 +1.8
BEL Belsk 78.51 327 *eP* P 23 48 22.7 +1.8
EDW2 Edwards Air Fo 78.55 55 P P 23 48 22.6 +1.0
baz=305
HWUT Hardware Ranch 78.66 47 *eP* P 23 48 24.6 +2.4
DUG Dugway, Tooele 78.76 49 P P 23 48 23.6 +0.8
baz=307
DUG Dugway, Tooele 78.76 49 *eP* P 23 48 23.5 +0.8
DUG Dugway, Tooele 78.76 49 *eP* P 23 48 23.5 +0.7
GIRR Girov 79.03 321⇑ *i*P P 23 48 24.3 +0.4
TCUT Toone Canyon 79.05 47 *eP* P 23 48 26.3 +1.9
GSC Goldstone, Bar 79.10 54 *eP* P 23 48 25.9 +1.3
GSC Goldstone, Bar 79.10 54 *eP* P 23 48 25.9 +1.3
CTU Camp Tracy 79.10 48 *eP* P 23 48 26.1 +1.4
BW06 Boulder Array 79.12 45 P P 23 48 24.7 0.0
baz=309
BW06 Boulder Array 79.12 45 *eP* P 23 48 24.8 0.0
PD31 Pinedale Array 79.12 45 *eP* P 23 48 24.8 0.0
PDAR Pinedale Array 79.12 45 P P 23 48 24.6 -0.2
comp=Z,2.4nm,0.7s,baz=261,slow=2.2,SNR=21
PDAR LR LR 00 19 16.6
comp=Z,100nm,21.9s,baz=344,slow=32
KWP Kalwaria Pacla 79.14 324 *eP* P 23 48 24.7 +0.2
KWP Kalwaria Pacla 79.14 324 *eP* P 23 48 24.7 +0.2
TESR Tescani 79.25 320‖ *i*P P 23 48 26.1 +1.0
BUR08 Bucovina Ar. S 79.25 322 *eP* P 23 48 25.1 -0.1
CFR Carcaliu 79.31 318⇑ *i*P P 23 48 27.2 +1.8
JLU Jordanelle 79.34 48 *eP* P 23 48 28.3 +2.3
NLU North Lily Min 79.35 48 *eP* P 23 48 27.6 +1.5
DRWC Darouich 79.50 307 *eP* P 23 48 28.0 +1.3
DRWC Darouich 79.50 307 *eP* P 23 48 28.0 +1.3
ODBI Odobesti 79.52 319⇑ *i*P P 23 48 27.4 +0.8
BR131 Keskin Array S 79.54 311 *eP* P 23 48 28.1 +1.1
BRTR Keskin Array B 79.54 311 P P 23 48 26.6 -0.4
comp=Z,16nm,1.0s,baz=132,slow=2.9,SNR=27
BRTR PP **PP** 23 51 29.4 +2.3
comp=Z,4.0nm,1.1s,baz=60,slow=5.9,SNR=3.9
BRTR LR LR 00 29 05.5
comp=Z,213nm,19.4s,baz=43,slow=40
MPU Maple Canyon 79.58 48 *eP* P 23 48 29.1 +1.8
TUQ Turquoise Moun 79.61 54 P P 23 48 28.7 +1.3
baz=306
VRI Vrincioaia 79.62 320⇑ *i*P P 23 48 27.7 +0.5
TIRR Tirgusor 79.63 318 *eP* P 23 48 25.5 -1.7
TIRR pmax pmax
comp=Z,8.0nm,0.9s
TIRR Tirgusor 79.63 318 *eP* P 23 48 25.5 -1.7
comp=Z,7.7nm,0.9s
PLOR Plostina 79.67 320‖ *i*P P 23 48 28.4 +0.9
KOLS Kolonicke sedl 79.82 324 *eP* P 23 48 29.6 +1.4
KOLS pmax pmax
comp=Z,18nm,1.3s
KOLS Kolonicke sedl 79.82 324 *eP* P 23 48 29.6 +1.4
ANTO Ankara 79.97 312 *eP* P 23 48 30.8 +1.6
ANTO Ankara 79.97 312 *eP* P 23 48 30.8 +1.6
STHS Stebnicka Huta 79.98 325 *eP* P 23 48 31.0 +2.0
STHS pmax pmax
comp=Z,29nm,1.4s
STHS Stebnicka Huta 79.98 325 *eP* P 23 48 31.0 +2.0
STHS *e* 23 48 50.6
BTCH Batrach 79.98 307 *eP* P 23 48 24.0 -5.3
BTCH Batrach 79.98 307 *eP* P 23 48 24.0 -5.3
BR231 Keskin MP Arra 80.00 312 *eP* P 23 48 27.5 -2.0
A28A Rude Farm, Bot 80.01 36 P P 23 48 30.4 +1.1
baz=314
UZH Uzhgorod 80.02 324*d* *i*P P 23 48 30.2 +1.0
UZH *e* 23 48 36.0
UZH *e* 23 48 45.0
ARCR ARCALIA 80.05 322⇑ *i*P P 23 48 31.7 +2.3
OJC Ojcow 80.09 326 *eP* P 23 48 30.9 +1.3
OJC Ojcow 80.09 326 *eP* P 23 48 29.9 +0.3
OJC Ojcow 80.09 326 *eP* P 23 48 29.9 +0.3
GMRC Granite Mounta 80.16 54 P P 23 48 31.5 +1.0
baz=306
MSU Marysvale 80.17 50 *eP* P 23 48 33.3 +2.7
MSU Marysvale 80.17 50 *eP* P 23 48 33.2 +2.7
MSAB Monastry St. A 80.19 318⇑ *i*P P 23 48 31.3 +1.1
CRVS Cervenica-Dubn 80.23 324 *eP* P 23 48 30.8 +0.4
CRVS Cervenica-Dubn 80.23 324 *eP* P 23 48 30.8 +0.4
CRVS *e* 23 48 53.0
PSN Preselentsi 80.25 317 P P 23 48 39.5 +8.9
DOPR Dopca 80.26 320⇑ *i*P P 23 48 31.4 +0.8
MLR Muntele Rosu 80.28 320 P P 23 48 31.5 +0.6
comp=Z,4.7nm,1.4s,baz=29,slow=5.5,SNR=7.3
MLR Muntele Rosu 80.28 320⇑ *i*P P 23 48 31.9 +1.0
PFO Pinyon Flats O 80.32 56 P P 23 48 32.2 +0.9
comp=Z,7.0nm,0.9s,baz=342,slow=3.5,SNR=5.3
PFO Pinyon Flats O 80.32 56 *eP* P 23 48 32.9 +1.6
BELC Belle Mtn. Jos 80.40 55 P P 23 48 32.7 +0.9
baz=306
LCMT Little Creek M 80.41 51 *eP* P 23 48 33.1 +1.4

NIE Niedzica 80.42 325 eP P 23 48 33.4 +2.0
NIE Niedzica 80.42 325 eP P 23 48 33.5 +2.0
P17A Butcher Ranch, 80.46 48 eP P 23 48 33.4 +1.3
A29A Manning Farm, 80.49 35 P P 23 48 32.7 +0.9
baz=314
P18A Preston Nutter 80.67 48 eP P 23 48 35.8 +2.5
KNB Kanab 80.67 51 eP P 23 48 35.4 +2.2
KNB Kanab 80.67 51 eP P 23 48 35.4 +2.2
URZ Urewera 80.67 152 P P 23 48 30.9 -1.7
comp=Z,8.9nm,1.0s,baz=22,slow=6.1,SNR=3.4
MONP2 Monument Peak 80.77 56 P P 23 48 34.8 +0.9
baz=306
RAYN Ar Rayn 80.81 292 eP P 23 48 33.3 -0.8
SRU San Rafael Swe 80.82 48 eP P 23 48 35.0 +1.0
SRU San Rafael Swe 80.82 48 eP P 23 48 35.0 +1.0
IRM Iron Mountain 80.88 55 P P 23 48 35.6 +1.4
baz=307
A30A Hoffart Farm, 80.92 35 P P 23 48 34.2 +0.1
baz=315
K22A Casper 80.92 44 eP P 23 48 34.0 -0.5
comp=Z,80nm,1.8s
BC3 Big Chuckawall 80.97 55 P P 23 48 35.8 +1.0
baz=307
LANS Liptovska Anna 81.00 325 eP P 23 48 37.1 +2.6
LANS Liptovska Anna 81.00 325 eP P 23 48 37.1 +2.6
D28A Regan 81.05 37 P P 23 48 35.3 +0.5
baz=314
ARR Arges 81.06 320⇓ iP P 23 48 35.8 +0.8
E27A Carson 81.07 38 P P 23 48 35.6 +0.6
baz=313
DRGR 81.08 322⇓ iP P 23 48 36.8 +1.8
ULM Lac du Bonnet 81.09 33 P P 23 48 34.5 -0.4
comp=Z,7.7nm,1.0s,baz=327,slow=6.4,SNR=6.2
ULM LR LR 00 28 16.5
comp=Z,127nm,18.5s,baz=316,slow=38
OKC Ostrava-Krasne 81.11 327 eP P 23 48 36.6 +1.5
OKC epP sP 23 48 42.3 -1.4
OKC AMS AMS 00 28 20.0
comp=Z,1μm,18.2s
OKC Ostrava-Krasne 81.11 327 eP P 23 48 36.6 +1.5
OKC e 23 48 42.3
OKC MLR MLR
comp=Z,1μm,18.2s
SWSC Sam W. Stewart 81.16 56 P P 23 48 37.2 +1.5
baz=307
KSP Ksiaz 81.20 328 eP P 23 48 36.6 +1.1
KSP Ksiaz 81.20 328 eP P 23 48 36.7 +1.2
F27A Lemmon 81.22 39 P P 23 48 36.0 +0.2
baz=313
BKZ Black Stump Fm 81.23 153 eP P 23 48 36.9 +1.3
B30A Myrvik Farm, E 81.25 35 P P 23 48 36.2 +0.3
baz=315
G26A Maurine 81.31 40 P P 23 48 36.3 0.0
baz=312
RSSD Black Hills 81.33 41 eP P 23 48 38.4 +1.7
RSSD Black Hills 81.33 41 eP P 23 48 38.4 +1.7
MORC Moravsky Berou 81.42 327 eP P 23 48 37.6 +0.8
MORC Moravsky Berou 81.42 327 eP P 23 48 37.6 +0.8
LOT Lotru 81.45 321⇑ iP P 23 48 38.6 +1.5
PDMCI Parker Dam,Lak 81.46 54 P P 23 48 37.5 +0.3
baz=307
Y12C Blythe 81.53 55 P P 23 48 38.9 +1.2
baz=307
O20A White River Ci 81.54 46 P P 23 48 38.5 +0.7
baz=310
O20A White River Ci 81.54 46 eP P 23 48 38.5 +0.7
comp=Z,18nm,1.1s
DPC Dobruska-Polom 81.55 328 eP P 23 48 38.8 +1.4
DPC epP sP 23 48 45.2 -0.9
DPC AMS AMS 00 29 00.0
comp=Z,1μm,17.6s
DPC Dobruska-Polom 81.55 328 eP P 23 48 38.8 +1.4
DPC e 23 48 45.2
DPC MLR MLR
comp=Z,1μm,17.6s
KRLC Kraliky 81.55 327 eP P 23 48 38.5 +1.1
KRLC Kraliky 81.55 327 eP P 23 48 38.5 +1.1
UPC Upice 81.56 328 eP P 23 48 37.7 +0.2
UPC AMS AMS 00 29 00.0
comp=Z,1μm,16.1s
UPC Upice 81.56 328 eP P 23 48 37.7 +0.2
UPC MLR MLR
comp=Z,1μm,16.1s
PSZ Piszkesteto 81.67 324⇑ ePKiKP P 23 48 40.0 +1.8
PSZ Piszkesteto 81.67 324 eP P 23 48 38.6 +0.4
PSZ Piszkesteto 81.67 324 eP P 23 48 38.6 +0.4
GLA Glamis 81.75 55 P P 23 48 39.8 +0.9
baz=307
GLA Glamis 81.75 55 eP P 23 48 40.0 +1.2
GLA Glamis 81.75 55 eP P 23 48 40.0 +1.2
VYHS Vyhne 81.76 325 eP P 23 48 40.2 +1.7
VYHS pmax pmax
comp=Z,15nm,1.3s
VYHS Vyhne 81.76 325 eP P 23 48 40.2 +1.7
VYHS ePP PP 23 51 40.3 -4.6
SZH Strazhica 81.76 318 P P 23 48 53.4 +15
D30A Buchanan 81.99 37 P P 23 48 40.1 +0.3
baz=315
ASF Jabal al Asfar 81.99 304 P P 23 48 40.8 +0.6
comp=Z,7.1nm,0.8s,baz=94,slow=2.6,SNR=7.2
GZR Gura Zlata 82.00 321⇓ iP P 23 48 41.0 +1.0
H27A Howes 82.03 40 P P 23 48 40.4 +0.3
baz=313
PV09 Paradox Valley 82.05 48 eP P 23 48 42.8 +2.1
B32A Ashes, Strandq 82.13 35 P P 23 48 40.2 -0.3
baz=316
PVCC Panska Ves 82.17 329 eP P 23 48 42.3 +1.7
PVCC AMS AMS 00 28 10.0
comp=Z,1μm,16.8s
PVCC Panska Ves 82.17 329 eP P 23 48 42.3 +1.7
PVCC MLR MLR
comp=Z,1μm,16.8s
BRG Berggiesshubel 82.17 329 eP P 23 48 41.4 +0.8
comp=Z,16nm,1.1s
BRG Berggiesshubel 82.17 329 eP P 23 48 41.4 +0.8
BRG pmax pmax
comp=Z,8.0nm,1.1s
BRG MLR MLR
comp=N,16μm,16.5s
BRG MLR MLR
comp=E,534nm,11.2s
BRG MLR MLR
comp=Z,816nm,14.6s
VRAC Vranov 82.19 327 P P 23 48 41.9 +1.1
comp=Z,6.9nm,0.9s,baz=40,slow=5.6,SNR=12
VRAC Vranov 82.19 327⇑ iP P 23 48 42.6 +1.8
CLL Collm 82.23 330⇓ iP P 23 48 41.6 +0.7
comp=Z,60nm,1.4s
CLL i 23 48 46.6
CLL i 23 48 48.5
CLL i 23 48 52.0
CLL e 23 48 56.0
CLL ePPP PPP 23 53 41.0
CLL Lm MLR 00 32 00.0
comp=N,500nm,19.4s
CLL Lm MLR 00 32 00.0
comp=E,400nm,19.5s
CLL Lm MLR 00 32 00.0
comp=Z,700nm,19.0s
CLL Collm 82.23 330⇓ iP P 23 48 41.6 +0.7
CLL i 23 48 46.6
CLL pmax pmax
comp=Z,6.0nm,1.4s
CLL MLR MLR
comp=Z,700nm,19.0s
CLL Collm 82.23 330 eP P 23 48 40.6 -0.3
THZ Tophouse 82.27 156 eP P 23 48 40.7 -0.4
PV05 Paradox Valley 82.33 48 eP P 23 48 44.1 +2.0
E30A Jud 82.34 37 P P 23 48 41.6 -0.1
baz=315
F29A Eureka 82.36 38 P P 23 48 41.9 +0.1
baz=314
J26A Sides Ranch, S 82.39 41 P P 23 48 42.7 +0.6
baz=312
N23A Red Feather La 82.39 45 P P 23 48 44.2 +1.9
baz=311
PHWY Pilot Hill 82.40 44 eP P 23 48 44.0 +1.6
BZS Buzias 82.44 322⇑ iP P 23 48 43.2 +1.1
MMAI Mount Meron Ar 82.49 305 P P 23 48 44.3 +1.5
comp=Z,22nm,1.2s,baz=57,slow=5.3,SNR=5.8
AGMN Agassiz Nation 82.51 34 eP P 23 48 43.2 +0.7
WUAZ Wupatki 82.51 52 eP P 23 48 45.3 +2.4
GOPC GO Pecny, Ondr 82.53 328 eP P 23 48 44.2 +1.6
GOPC GO Pecny, Ondr 82.53 328 eP P 23 48 44.2 +1.6
D31A Mcclaflin, Tow 82.53 36 P P 23 48 42.6 0.0
baz=316
H28A Mission Ridge 82.55 39 P P 23 48 44.4 +1.6
baz=314
PRA Prague 82.57 328 eP P 23 48 45.4 +2.7
PRA AMS AMS 00 29 40.0
comp=Z,1μm,17.2s
PRA Prague 82.57 328 eP P 23 48 45.4 +2.7
PRA MLR MLR
comp=Z,1μm,17.2s
PRU Pruhonice 82.58 328 eP P 23 48 44.3 +1.5
PRU AMS AMS 00 29 40.0
comp=Z,1μm,14.6s
PRU Pruhonice 82.58 328 eP P 23 48 44.3 +1.5
PRU MLR MLR
comp=Z,1μm,14.6s
PV01 Paradox Valley 82.62 48 eP P 23 48 47.7 +4.2
CSS Mathiatis 82.66 308 P P 23 48 49.0 +5.5
TREC Trest 82.69 327 eP P 23 48 43.3 -0.1
TREC Trest 82.69 327 eP P 23 48 43.3 -0.1
DIM Dimitrovgrad 82.79 317 P P 23 48 46.2 +2.1
E31A Nome 82.80 36 P P 23 48 44.4 +0.3
baz=315
MPEP Malo Peshtene 82.89 319 P P 23 48 45.6 +1.1
SMCO Snowmass 82.91 46 eP P 23 48 47.3 +2.0
FOZ Fox Glacier 82.92 159 eP P 23 48 45.3 +0.9
I28A Midland 82.94 40 P P 23 48 45.2 +0.4
baz=314
MDVR Moldovita 82.97 321⇓ iP P 23 48 46.4 +1.4
KHZ Kahutara 83.07 156 eP P 23 48 44.7 -0.4
F31A Hecla 83.12 37 P P 23 48 45.7 0.0
baz=315
KDZ Kurdzhali 83.12 317 P P 23 48 47.5 +1.7
PLD Plovdiv 83.21 318 P P 23 48 48.3 +2.1
MVCO Mesa Verde 83.25 49 P P 23 48 48.2 +1.3
baz=310
MVCO Mesa Verde 83.25 49 eP P 23 48 48.9 +2.0
NKC Novy Kostel 83.28 330 eP P 23 48 47.8 +1.3
NKC AMS AMS 00 29 30.0
comp=Z,1μm,18.1s
NKC Novy Kostel 83.28 330 eP P 23 48 47.8 +1.3
NKC MLR MLR
comp=Z,1μm,18.1s
ISCO Idaho Springs 83.30 45 eP P 23 48 49.4 +2.2
ISCO Idaho Springs 83.30 45 eP P 23 48 49.4 +2.2
SOP Sopron 83.40 326⇑ ePKiKP P 23 48 49.2 +2.1
OXZ Oxford 83.41 158 eP P 23 48 47.2 +0.3
RPZ Rata Peaks 83.46 158 P P 23 48 46.0 -1.1
comp=Z,9.5nm,1.0s,baz=32,slow=12,SNR=3.3
PKSM Moragy 83.48 324⇑ ePKiKP P 23 48 48.7 +1.2
CONA Conrad Observa 83.53 326 iPcP P 23 48 49.1 +1.2
comp=Z,42nm,1.4s,SNR=12
KHC Kasperske Hory 83.64 328 eP P 23 48 48.4 0.0
KHC epP sP 23 48 55.5 -1.5
KHC AMS AMS 00 30 00.0
comp=Z,1μm,15.8s
KHC Kasperske Hory 83.64 328 eP P 23 48 48.4 0.0
KHC e 23 48 55.5
KHC MLR MLR
comp=Z,1μm,15.8s
KHC Kasperske Hory 83.64 328 eP P 23 48 48.5 +0.2
VTS Vitosha 83.69 319⇑ iP P 23 48 49.2 +0.3
VTS Vitosha 83.69 319 P P 23 48 49.0 +0.1
VTS Vitosha 83.69 319 eP P 23 48 49.3 +0.3
VTS Vitosha 83.69 319 P P 23 48 50.1 +1.2
VTS Vitosha 83.69 319 eP P 23 48 49.2 +0.3
214A Organ Pipe Nat 83.77 55 P P 23 48 49.9 +0.6
baz=308
214A Organ Pipe Nat 83.77 55 eP P 23 48 49.2 -0.1
comp=Z,173nm,1.4s
GEC2 GERESS Array S 83.81 328 eP P 23 48 49.6 +0.3
GEC2 GERESS Array S 83.81 328 eP P 23 48 49.6 +0.3
GERES GERESS Array B 83.81 328 P P 23 48 48.6 -0.7
comp=Z,7.4nm,1.0s,baz=44,slow=4.1,SNR=24
GERES PP PP 23 52 00.3 -1.4
comp=Z,2.3nm,1.0s,baz=63,slow=6.1,SNR=5.2
GERES LR LR 00 27 55.1
comp=Z,497nm,21.9s,baz=32,slow=37
LBZ Lake Benmore 83.81 159 eP P 23 48 49.4 +0.5
S22A 4UR Ranch, Cre 83.92 48 P P 23 48 52.2 +1.8
baz=311
PMOR Pomariorio Ree 83.99 113 eT T 01 21 03.5
comp=Z,54nm,0.2s
MMB Musomiste 84.10 318 P P 23 48 52.1 +1.2
Q24A Divide 84.12 46 P P 23 48 53.0 +1.6
baz=312
NVR Nevrokopi 84.19 318 P P 23 48 51.5 +0.2
NVR Nevrokopi 84.19 318 P P 23 48 51.5 +0.2
ARSA Arzberg 84.19 326 iPcP P 23 48 52.3 +1.1
comp=Z,14nm,1.1s
GRFO Grafenberg 84.20 330 eP P 23 48 51.6 +0.4
GRFO Grafenberg 84.20 330 eP P 23 48 51.5 +0.4
KKB Krupnik 84.26 318 P P 23 48 53.4 +1.8
C36A Pine Crest Far 84.28 33 P P 23 48 50.7 -0.9
baz=319
MOA Molln 84.31 327 iPcP P 23 48 53.2 +1.4
comp=Z,31nm,1.3s,SNR=8.2
PPT Papeete 84.36 116 LR LR 00 26 50.6
comp=Z,235nm,18.8s,baz=354,slow=36
PPT2 Papeete2 84.37 116 eLR LR 00 15 16.8
comp=Z,447nm,22.0s
PPT2 Papeete2 84.37 116 eT T 01 21 34.8
comp=Z,20nm,0.3s
EKA Eskdalemuir Ar 84.46 340 P P 23 48 51.2 -1.1
comp=Z,3.1nm,0.8s,baz=2.3,slow=4.2,SNR=5.7
G33A Ortonville 84.49 37 P P 23 48 52.5 -0.2
baz=316
ESK Eskdalemuir 84.49 340 ceP P 23 48 55.8 +3.3
TIAR Tiarei 84.52 116 eT T 01 21 44.9
comp=Z,5.5nm,0.2s
C37A Embarrass 84.59 33 P P 23 48 52.8 -0.4
baz=319
K30A Basset 84.67 40 P P 23 48 55.6 +1.8
baz=315
H33A Prehn Over Nor 84.71 37 P P 23 48 54.1 +0.2
baz=316
SDCO Great Sand Dun 84.72 47 P P 23 48 56.4 +2.0
baz=312
SDCO Great Sand Dun 84.72 47 eP P 23 48 57.1 +2.7
EYMN Ely 84.73 32 P P 23 48 54.8 +0.9
baz=320
EYMN Ely 84.73 32 eP P 23 48 54.8 +0.9
PERS Pernice 84.83 326 iP P 23 48 54.5 0.0
EIL Elat 84.84 303 P P 23 48 55.0 +0.2
comp=Z,37nm,1.1s,baz=58,slow=1.9,SNR=12
SOKA Soboth 84.84 326 iPcP P 23 48 55.1 +0.5
comp=Z,58nm,1.3s,SNR=14
KNT Kendrikon 84.84 318 P P 23 48 54.6 0.0
KNT Kendrikon 84.84 318 P P 23 48 54.6 0.0
KNT Kendrikon 84.84 318 P P 23 48 54.6 0.0
TUC Tucson 84.89 54 P P 23 48 55.7 +0.6
baz=309
TUC Tucson 84.89 54 eP P 23 48 56.1 +1.0
TUC Tucson 84.89 54 eP P 23 48 56.1 +1.0
VAY Valandovo 84.91 318⇑ iP P 23 48 56.1 +1.2
SKO Skopje 85.07 319 iP P 23 48 56.4 +0.7
BODT Bodrum 85.07 313 P P 23 49 02.2 +6.4
PLG Polygyros 85.08 317 P P 23 48 55.3 -0.6
PLG Polygyros 85.08 317 P P 23 48 55.3 -0.6
PLG Polygyros 85.08 317 P P 23 48 55.3 -0.6
ARG Arkhangelos 85.13 312 P P 23 49 02.5 +6.4
KBA Koelnbreinsper 85.30 327 iPcP P 23 48 57.7 +0.7
comp=Z,32nm,1.8s
C39A Grand Marais 85.42 32 P P 23 48 57.9 +0.6
baz=321
ECSD EROS Data Cent 85.46 38 P P 23 48 57.2 -0.5
baz=316
ECSD EROS Data Cent 85.46 38 eP P 23 48 57.1 -0.5
MEM Membach 85.51 333 P P 23 48 58.4 +0.7
comp=Z,17nm,1.3s
MYKA Terra Mystica 85.51 327 iPcP P 23 48 58.3 +0.4
comp=Z,12nm,1.0s
KSCO Kaye Shedlock' 85.55 44 eP P 23 48 58.5 +0.2
comp=Z,47nm,1.1s
VISS Visnje 85.58 325 iP P 23 48 59.1 +0.9
BOJS Bojanci 85.62 325 iP P 23 48 59.3 +0.9
H35A Sunnyside Ranc 85.63 36 P P 23 48 58.5 +0.1
baz=318
MEH Mehetia 85.66 115 eT T 01 23 10.0
comp=Z,80nm,0.2s
STU Stuttgart 85.75 330 eP P 23 49 00.0 +1.1
STU Stuttgart 85.75 330 eP P 23 49 00.0 +1.1
T25A Trinidad 85.77 47 P P 23 49 00.6 +1.0
baz=312
JAVS Javornik 85.87 326 iP P 23 49 00.4 +0.7
LAZ Ladron 85.91 50 eP P 23 49 03.6 +3.3
XOR Xorichti 85.92 316 P P 23 49 04.2 +4.2
ABTA Abfaltersbach 85.92 327 iPcP P 23 49 00.3 +0.3
comp=Z,17nm,1.5s
BCLA Clavier 85.92 333 P P 23 49 00.5 +0.7
comp=Z,30nm,1.8s
BCLA AP sP 23 49 07.1 -1.3
ANMO Albuquerque 85.98 49 P P 23 49 01.5 +0.8
baz=311
ANMO Albuquerque 85.98 49⇑ eP P 23 49 00.9 +0.3
ANMO pmax pmax
comp=Z,12nm,1.2s
ANMO Albuquerque 85.98 49 eP P 23 49 01.7 +1.1
RETA Reutte 86.11 329 iPcP P 23 49 01.9 +1.0
comp=Z,28nm,1.1s,SNR=7.6
LANF Langenberg 86.14 331 eP P 23 49 02.3 +1.4
CWF Charnwood Fore 86.19 338 eP P 23 49 01.4 +0.4
SNF Seneffe 86.22 334 E 23 48 58.4
SNF E 23 49 02.6
WLF Walferdange 86.22 332 P P 23 49 03.1 +1.9
comp=Z,34nm,1.6s
WLF Walferdange 86.22 332 eP P 23 49 02.1 +0.8
WLF Walferdange 86.22 332 eP P 23 49 02.1 +0.8
TAOE Nuku Hiva Isla 86.26 104 eLR LR 00 16 12.0
comp=Z,541nm,23.7s
BGNE Belgrade 86.34 40 P P 23 49 03.1 +1.1
baz=316
DOU Dourbes 86.45 333 P P 23 49 03.2 +0.8
comp=Z,13nm,1.6s
DOU AP sP 23 49 09.7 -1.3
BFO Black Forest 86.45 330 eP P 23 49 02.3 -0.1
BFO pmax pmax
comp=Z,54nm,1.3s
BFO Black Forest 86.45 330 eP P 23 49 02.3 -0.1
comp=Z,54nm,1.3s
FETA Feichten 86.49 328 iPcP P 23 49 03.5 +0.6
comp=Z,15nm,1.3s
CMBO Columbo, Santo 86.61 313 P P 23 49 06.6 +3.2
DAVA Damuels 86.64 329 iPcP P 23 49 04.2 +0.7
comp=Z,34nm,1.2s,SNR=7.6
121A Cookes Peak, D 86.71 52 eP P 23 49 04.5 +0.3
comp=Z,26nm,1.5s
WLS Welschbruch 86.77 331 eP P 23 49 04.9 +0.8
I37A Lemond, Waseca 86.82 36 P P 23 49 04.6 +0.2
baz=319
J36A Seneca 1, Swea 86.88 37 P P 23 49 04.6 0.0
baz=318
SCHQ Schefferville 86.99 16 P P 23 49 04.8 -0.1
comp=Z,5.3nm,0.9s,baz=355,slow=4.7,SNR=4.8
SCHQ LR LR 00 30 14.3
comp=Z,172nm,20.1s,baz=342,slow=37
FUORN Ofenpass-Fuorn 87.00 328 eP P 23 49 05.3 -0.1
ECH Echery 87.01 331 eP P 23 49 06.2 +1.0
DAVOX Davos/Dischmat 87.04 329 P P 23 49 06.1 +0.5
comp=Z,5.3nm,0.9s,baz=358,slow=2.4,SNR=4.9
COWI Conover 87.18 32 eP P 23 49 06.9 +0.8
CBKS Cedar Bluff 87.31 43 eP P 23 49 08.8 +1.9
CBKS Cedar Bluff 87.31 43 eP P 23 49 08.8 +1.9
I38A Scanlan Farm, 87.31 35 P P 23 49 07.4 +0.7
baz=319
THEF They Montfort 87.46 332 eP P 23 49 08.2 +0.8
TUE Stuetta 87.51 329 eP P 23 49 07.5 -0.3
comp=Z,22nm,1.3s
K37A Belmond 87.64 37 P P 23 49 08.4 0.0
baz=318
IDI Anoyia 87.71 313 P P 23 49 08.8 -0.1
comp=Z,9.9nm,1.0s,baz=80,slow=9.6,SNR=2.6
J38A Wedel Dairy, R 87.79 36 P P 23 49 09.5 +0.5
baz=319
N35A Tabor 88.04 39 P P 23 49 10.2 -0.1
baz=317
TBI Tubuai 88.13 120 eLR LR 00 17 06.9
comp=Z,553nm,21.8s,baz=310
TBI Tubuai 88.13 120 eT T 01 26 17.9
comp=Z,26nm,0.3s
Q33A Connelly Farm, 88.23 42 P P 23 49 11.4 +0.1
baz=316
P34A Walnut Farm, R 88.38 41 P P 23 49 11.7 -0.2
baz=316
Q34A Chapman 88.77 41 P P 23 49 14.5 +0.8
baz=316
KSU1 Kansas State U 88.81 41 eP P 23 49 14.5 +0.6
P35A Duane Minner, 88.82 40 P P 23 49 15.1 +1.1
baz=317
M38A Pleasantville 88.87 37 P P 23 49 14.5 +0.3
baz=319
T32A Huddler Ranch, 88.92 44 P P 23 49 14.7 +0.2
baz=315
S33A Kaszmaul Farm, 89.14 43 P P 23 49 17.2 +1.7
baz=316
P36A Good Intent, A 89.18 40 P P 23 49 16.8 +1.1
baz=318
Q35A Mercer Eighty, 89.30 41 P P 23 49 16.1 -0.2
baz=317
N38A Joes South For 89.32 38 P P 23 49 18.1 +1.8
baz=319
R35A Emporia Munici 89.60 41 P P 23 49 18.2 +0.5
baz=317
S35A Otter Creek Ra 90.00 42 P P 23 49 19.2 -0.3
baz=317
P38A Dawn 90.04 39 P P 23 49 19.6 -0.1
baz=319
W32A Sentinel 90.19 45 P P 23 49 21.6 +1.1
baz=315
U34A Anderson Ranch 90.23 43 P P 23 49 21.0 +0.3
baz=316
U34A Anderson Ranch 90.23 43 eP P 23 49 20.4 -0.2
comp=Z,50nm,1.1s
PLDF La Plantade 90.23 332 eP P 23 49 22.6 +2.0
AGO Saint Agoulin 90.35 332 eP P 23 49 22.6 +1.5
Q38A Cooks Store, C 90.49 39 P P 23 49 21.6 -0.2
baz=318
PYM Petit Puy Mans 90.65 332 eP P 23 49 24.1 +1.6
V34A Guthrie 90.67 44 P P 23 49 22.7 -0.1
baz=316
V34A Guthrie 90.67 44 eP P 23 49 22.5 -0.2
comp=Z,23nm,0.9s
T36A Boggs Farm, Ca 90.69 42 P P 23 49 22.7 -0.1
baz=317
WMOK Wichita Mounta 90.73 45 eP P 23 49 23.5 +0.5
WMOK Wichita Mounta 90.73 45 eP P 23 49 23.5 +0.5
S37A Fort Scott 90.75 41 P P 23 49 23.0 -0.1
baz=318
W34A Bridge Creek, 90.95 44 P P 23 49 26.1 +2.0
baz=316
T37A Cheneyville 18 91.17 41 P P 23 49 25.0 0.0
baz=318
R39A Chumby, Stover 91.28 39 P P 23 49 24.9 -0.6
baz=319
S38A Stockton 91.33 40 P P 23 49 25.2 -0.6
baz=318
Y33A Hilltop Ranch, 91.34 46 P P 23 49 25.8 0.0
baz=316
X34A Smith Ranch, M 91.37 45 P P 23 49 26.9 +0.8
baz=316
TX31 Lajitas Ar. Si 91.47 52 eP P 23 49 27.4 +0.7
TXAR Lajitas Array 91.47 52 P P 23 49 26.7 0.0
comp=Z,4.7nm,1.0s,baz=295,slow=3.3,SNR=22
TXAR LR LR 00 27 08.2
comp=Z,264nm,19.8s,baz=0.0,slow=33
W35A Tecumseh 91.52 44 P P 23 49 26.9 +0.2
baz=316
T38A Diamond 91.57 41 P P 23 49 26.5 -0.4
baz=318
TUL1 Leonard 91.58 43 P P 23 49 26.5 -0.4
baz=317
TUL1 Leonard 91.58 43 eP P 23 49 26.1 -0.8
comp=Z,21nm,1.0s
U37A Salina 91.59 42 P P 23 49 27.2 +0.2
baz=318
S39A Bolivar 91.60 40 P P 23 49 26.0 -0.9
baz=319
R40A Maddies Statio 91.69 39 P P 23 49 27.3 -0.1
baz=319
ABTX Abilene, Hawle 91.71 47 eP P 23 49 27.8 +0.2
comp=Z,49nm,1.4s
Y34A Reagan Ranch, 91.88 45 P P 23 49 28.7 +0.4
baz=316
W36A Wetumka 91.90 43 P P 23 49 29.9 +1.5
baz=317
V37A Hulbert 91.96 42 P P 23 49 28.6 -0.1
baz=318
U38A Gravette 91.96 42 P P 23 49 28.7 0.0
baz=318
X35A Drake 92.01 44 P P 23 49 28.8 -0.2
baz=316
S40A Lebanon 92.09 40 P P 23 49 29.1 -0.2
baz=319

X36A	Centrahoma	92.24	44	P	P	23 49 30.1	+0.1
	baz=317						
HHAR	Hobbs	92.32	41	eP	P	23 49 30.5	+0.2
W37B	Quinton	92.34	43	P	P	23 49 30.7	+0.2
	baz=317						
V38A	Canehill	92.38	42	P	P	23 49 31.8	+1.2
	baz=318						
T40A	Mansfield	92.42	40	P	P	23 49 31.8	+1.0
	baz=319						
U39A	Green Forest	92.49	41	P	P	23 49 30.8	-0.3
	baz=319						
233A	Rising Star	92.58	47	P	P	23 49 33.6	+1.9
	baz=315						
Z35A	Perchaven, San	92.62	45	P	P	23 49 32.2	+0.4
	baz=316						
134A	White-Moore Ra	92.68	46	P	P	23 49 33.7	+1.7
	baz=316						
Y36A	Durant	92.77	44	P	P	23 49 33.9	+1.5
	baz=317						
X37A	Clayton	92.78	43	P	P	23 49 32.8	+0.3
	baz=317						
V39A	Pettigrew	92.81	41	P	P	23 49 33.0	+0.4
	baz=318						
U40A	Yellville	92.84	41	P	P	23 49 32.5	-0.2
	baz=319						
333A	Richland Sprin	93.02	48	P	P	23 49 35.3	+1.6
	baz=315						
X38A	Whitesboro	93.02	43	P	P	23 49 35.2	+1.5
	baz=318						
234A	Clairette	93.05	47	P	P	23 49 35.6	+1.8
	baz=316						
JCT	Junction City	93.11	49	eP	P	23 49 35.1	+0.9
JCT	Junction City	93.11	49	eP	P	23 49 35.1	+0.9
H06N1	SOCORRO T-PHAS	93.20	64	T	T	01 33 04.5	
W39A	Magazine	93.21	42	P	P	23 49 36.1	+1.6
	baz=318						
H06E1	SOCORRO T-PHAS	93.30	64	T	T	01 33 06.2	
	SNR=46						
H06S1	SOCORRO T	93.30	64	T	T	01 33 08.8	
433A	Art	93.36	48	P	P	23 49 36.9	+1.7
	baz=315						
WHTX	Lake Whitney,	93.46	46	P	P	23 49 37.7	+2.0
	baz=316						
WHTX	Lake Whitney,	93.46	46	eP	P	23 49 35.2	-0.5
	comp=Z,29nm,1.1s						
X39A	Fountain Ranch	93.54	43	P	P	23 49 37.2	+1.2
	baz=318						
W40A	Ferguson Farm,	93.60	42	P	P	23 49 37.4	+1.2
	baz=319						
MIAR	Mount Ida	93.81	42	P	P	23 49 38.1	+0.9
	baz=318						
MIAR	Mount Ida	93.81	42	eP	P	23 49 38.0	+0.7
MIAR	Mount Ida	93.81	42	eP	P	23 49 38.0	+0.7
WHAR	Wooly Hollow	93.95	41	eP	P	23 49 39.6	+1.7
KEST	Kesra	95.99	322	P	P	23 49 48.5	+1.2
	comp=Z,3.8nm,0.9s,baz=334,slow=12,SNR=3.5						
KEST				LR	LR	00 38 12.1	
	comp=Z,557nm,18.1s,baz=360,slow=39						
TKL	Tuckaleechee C	97.95	35	P	Pdif	23 49 56.3	+0.2
	comp=Z,5.8nm,0.9s,baz=94,slow=5.3,SNR=2.9						
ESDC	Sonseca Array	98.50	333	LR	LR	00 38 24.3	
	comp=Z,367nm,19.4s,baz=0.0,slow=38						
KMBO	Kilima Mbogo	101.70	277	PP	PP	23 54 26.9	+2.9
	comp=Z,0.6nm,0.2s,baz=41,slow=12,SNR=5.4						
MAW	Mawson	117.90	205	PP	PP	23 56 22.1	+2.0
	comp=Z,5.7nm,1.0s,baz=96,slow=8.1,SNR=4.8						
TORD	Torodi Ar. Bea	118.10	311	PKP	PKPdf	23 55 06.5	-1.0
	comp=Z,1.8nm,0.9s,baz=2.2,slow=2.3,SNR=9.2						
TORD				PP	PP	23 56 22.7	+1.1
	comp=Z,1.8nm,1.1s,baz=11,slow=6.5,SNR=3.5						
TORD				PKKPbc	PKKPbc	00 05 27.1	+1.6
	comp=Z,0.7nm,0.8s,baz=229,slow=3.7,SNR=4.3						
QSPA	South Pole Qui	125.19	180	ePKPdf	PKPdf	23 55 18.7	-0.8
BOSA	Boshof	125.80	258	PKP	PKPdf	23 55 23.2	+1.3
	comp=Z,1.4nm,0.8s,baz=190,slow=15,SNR=2.3						
SDV	Santo Domingo	126.84	40	PKP	PKPdf	23 55 24.5	0.0
	comp=Z,1.9nm,0.5s,baz=306,slow=6.5,SNR=5.2						
DBIC	Dimbokro	127.10	315	PKP	PKPdf	23 55 24.9	+0.2
	comp=Z,5.1nm,1.1s,baz=347,slow=11,SNR=4.0						
PTGA	Pitinga	140.41	34	PKhKP	PKPpre	23 55 43.8	
	comp=Z,1.7nm,0.6s,baz=126,slow=9.1,SNR=2.9						
SAML	Samuel	145.70	46	ePKPdf	PKPdf	23 55 58.2	-0.7
LPAZ	La Paz	147.89	61	PKP	PKPdf	23 56 02.8	-0.5
	comp=Z,7.2nm,0.8s,baz=15,slow=2.1,SNR=11						
LPAZ				PKPbc	PKPbc	23 56 06.6	+0.3
	comp=Z,12nm,0.9s,baz=21,slow=14,SNR=36						
RCBR	Riachuelo	150.37	353	PKPbc	PKPdf	23 56 08.8	+2.1
	comp=Z,25nm,1.1s,baz=351,slow=4.1,SNR=3.7						
SIV	San Ignacio	152.46	51	PKPbc	PKPbc	23 56 16.6	-0.1
	comp=Z,4.4nm,0.8s,baz=285,slow=1.8,SNR=7.6						
PLCA	Paso Flores	154.83	112	PKPab	PKPab	23 56 35.5	-0.9
	comp=Z,4.9nm,1.0s,baz=110,slow=3.1,SNR=3.1						
BDFB	Brasilia	158.75	24	PKPab	PKPab	23 56 52.4	-1.3
	comp=Z,2.7nm,0.8s,baz=10,slow=7.9,SNR=4.3						

IDC 12 23:38:38.7±1.0, 57°.87N×32°.57W, h0km, mb3.4/6, mb1 3.7/6, mb1mx3.4/76, mbtmp3.4/6, Error ellipse: s-maj=52.5km s-min=18.6km az=23.0, Reykjanes Ridge

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
EKA	Eskdalemuir Ar	16.33	86	Pn	P	23 42 36.9	+4.8
	baz=284,slow=28,SNR=2.8						
ESDC	Sonseca Array	25.90	122	P	P	23 44 12.6	+0.5
	1.0nm,0.9s,baz=317,slow=8.5,SNR=4.1						
YKA	Yellowknife Ar	38.47	312	P	P	23 46 00.8	-1.0
	0.4nm,0.9s,baz=58,slow=9.0,SNR=3.6						
BRTR	Keskin Array B	45.23	84	P	P	23 46 58.2	+0.7
	0.5nm,0.9s,baz=251,slow=6.1,SNR=2.7						
PDAR	Pinedale Array	48.67	287	P	P	23 47 23.7	-0.8
	0.4nm,1.0s,baz=49,slow=6.1,SNR=2.3						
TORD	Torodi Ar. Bea	51.59	136	P	P	23 47 45.3	-1.3
	0.7nm,1.0s,baz=326,slow=6.1,SNR=3.5						
TXAR	Lajitas Array	55.73	271	P	P	23 48 18.4	+1.4
	0.3nm,0.9s,baz=25,slow=2.4,SNR=2.9						

IDC 12 23:38:58.6±1.0, 58°.22N×32°.16W, h0km, mb3.6/7, mb1 3.9/7, mb1mx3.5/76, mbtmp3.6/7, Error ellipse: s-maj=45.1km s-min=18.6km az=20.0, Reykjanes Ridge

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
EKA	Eskdalemuir Ar	16.09	88	Pn	P	23 42 52.4	+3.0
	baz=299,slow=10,SNR=3.9						
ESDC	Sonseca Array	25.91	123	P	P	23 44 33.5	+1.3
	1.4nm,0.9s,baz=318,slow=8.5,SNR=6.5						
AKASG	Malin Array Be	35.31	75	P	P	23 45 55.3	+0.3
	0.2nm,0.2s,baz=302,slow=8.3,SNR=4.5						
YKA	Yellowknife Ar	38.39	312	P	P	23 46 20.7	-0.3
	0.7nm,0.9s,baz=60,slow=9.2,SNR=6.6						
BRTR	Keskin Array B	44.97	84	P	P	23 47 15.1	-0.3
	0.9nm,0.8s,baz=316,slow=14,SNR=4.4						
PDAR	Pinedale Array	48.77	287	P	P	23 47 43.5	-1.6
	0.6nm,0.8s,baz=57,slow=5.5,SNR=4.5						
TORD	Torodi Ar. Bea	51.69	136	P	P	23 48 05.5	-1.8
	1.1nm,0.8s,baz=338,slow=6.9,SNR=5.6						
TXAR	Lajitas Array	55.94	272	P	P	23 48 40.2	+1.9
	0.4nm,0.8s,baz=25,slow=6.9,SNR=3.9						

*ISCJB **12** 23:42:04.0±0.9, 57°.7N±0°.2×32°.5W±0°.2, h10km, mb3.8/11, Error ellipse: s-maj=22.9km s-min=15.0km az=173.3*
*IDC **12** 23:42:04.7±1.1, 57°.78N×32°.47W, h0km, mb3.7/11, mb1 3.9/11, mb1mx3.6/75, mbtmp3.7/11, Error ellipse: s-maj=33.5km s-min=18.3km az=4.0*
ISC 12 23:42:05.8±1.1, 57°.6N±0°.2×32°.6W±0°.1, h10km, n12, σ1§12/12, mb3.9/11, Reykjanes Ridge

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
BORG	Borgarnes	9.00	33	Pn	Pn	23 44 17.4	+1.8
	1.0nm,0.3s,baz=224,slow=6.3,SNR=3.1						
YKA	Yellowknife Ar	38.62	313	P	P	23 49 28.1	-0.6
	0.6nm,0.7s,baz=62,slow=9.0,SNR=3.1						
ARU	Arti	46.02	51	P	P	23 50 28.3	-0.6
	2.0nm,0.6s,baz=325,slow=3.8,SNR=2.8						
ILAR	Eielson Array	48.19	328	P	P	23 50 46.0	+0.1
	0.5nm,0.8s,baz=40,slow=6.7,SNR=4.3						
PDAR	Pinedale Array	48.71	287	P	P	23 50 50.8	+0.4
	1.0nm,0.8s,baz=54,slow=4.6,SNR=4.0						
AKTO	Aktyubinsk	49.91	57	P	P	23 50 58.7	-0.4
	3.0nm,0.8s,baz=317,slow=8.1,SNR=5.0						
TORD	Torodi Ar. Bea	51.42	135	P	P	23 51 11.8	+0.9
	0.6nm,0.9s,baz=327,slow=7.9,SNR=5.8						
BVAR	Borovoye Array	53.25	47	P	P	23 51 23.1	-1.0
	1.1nm,0.8s,baz=323,slow=9.4,SNR=4.0						
NVAR	Mina Array Bea	56.39	290	P	P	23 51 48.2	+0.9
	0.6nm,0.6s,baz=30,slow=7.3,SNR=3.5						
KURBB	Kurchatov Arra	58.28	44	P	P	23 51 58.4	-1.7
	0.7nm,0.6s,baz=327,slow=6.8,SNR=4.8						
MKAR	Makanchi Array	62.84	44	P	P	23 52 30.3	-1.1
	0.6nm,0.6s,baz=339,slow=6.1,SNR=5.6						
SONM	Songino Array	69.58	28	P	P	23 53 14.1	-0.6
	0.2nm,0.3s,baz=344,slow=9.9,SNR=3.7						

*ISCJB **12** 23:45:09.4±0.7, 38°.88N±0°.04×26°.28E±0°.06, h11km, Error ellipse: s-maj=7.7km s-min=5.3km az=152.5*
*CSEM **12** 23:45:09.8±0.1, 38°.88N×26°.29E, h11km±1km, MD2.7, Error ellipse: s-maj=2.9km s-min=1.7km az=60.0*
*ISK **12** 23:45:09.2, 38°.90N×26°.28E, h11km, MD2.7*
*DDA **12** 23:45:09.7, 38°.89N×26°.25E, h7km, Md2.7*
ISC 12 23:45:09.5±1.0, 38°.87N±0°.04×26°.26E±0°.04, h11km, n17, σ0§32/21, Aegean Sea

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
SIGR	SIGRI	0.46	317	ePG	Pb	23 45 19.2	-0.4
SIGR				eSG	Sg	23 45 25.1	+0.4
SIGR	SIGRI	0.46	317	ePg	Pb	23 45 19.2	-0.4
SIGR				eSg	Sg	23 45 25.1	+0.4
DKL	Dikili	0.54	68	ePG	Pg	23 45 20.0	0.0
DKL	Dikili	0.54	68	ePg	Pg	23 45 20.0	0.0
AYVA	Ayvalik	0.55	37	iP	Pg	23 45 20.1	0.0
AYVA				iS	Sg	23 45 27.6	+0.2
AYVA	Ayvalik	0.55	37	P	Pg	23 45 20.1	0.0
AYVA				S	Sg	23 45 27.6	+0.2
URLA	Izmir	0.58	153	iP	Pb	23 45 21.1	-0.5
URLA	Izmir	0.58	153	P	Pb	23 45 21.1	-0.5
ZEY	˜zmir	0.66	163	iP	Pg	23 45 22.4	+0.1
BLCB	Balcova	0.78	128	ePG	Pb	23 45 24.7	-0.4
BLCB	Balcova	0.78	128	ePg	Pb	23 45 24.7	-0.4
EZN	Ezine	0.95	3	ePG	Pg	23 45 27.5	-0.3
EZN	Ezine	0.95	3	ePg	Pg	23 45 27.5	-0.3
GELI	Tayfur-Gelibol	1.53	6	ePN	Pn	23 45 37.0	+0.3
GELI	Tayfur-Gelibol	1.53	6	ePn	Pn	23 45 37.0	+0.3
AYDB	Zeytinkoy-Aydi	1.58	125	ePN	Pn	23 45 37.7	+0.2
AYDB	Zeytinkoy-Aydi	1.58	125	ePn	Pn	23 45 37.7	+0.2

*JMA **12** 23:45:52.5±0.2, 35°.51N×140°.97E, h25km±2km, M3.0*
*IDC **12** 23:46:03.0±5.2, 34°.84N×139°.44E, h74km±27km, mb3.1/3, mb1 3.2/3, mb1mx2.9/66, mbtmp3.4/3, Error ellipse: s-maj=258.1km s-min=17.4km az=68.0*
ISC 12 23:45:50.1±1.5, 35°.46N±0°.06×141°.2E±0°.1, h10km, n16, σ1§44/11, mb3.6/3, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
CHOJ	Chosi	0.34	316	P	Pg	23 45 58.3	+1.4
CHOJ				S	Sg	23 46 02.5	+1.1
BSO4	Boso 4	0.81	235	P	Pg	23 46 06.8	+1.1
BSO1	Boso 1	0.81	190	P	Pg	23 46 07.3	+1.3
BSO3	Boso 3	0.84	219	P	Pg	23 46 07.2	+1.0
BSO3				X		23 46 18.5	
JHJ	Hachijo jima 2	2.59	206	P	Pn	23 46 31.1	-1.0
	4.1nm,0.3s,baz=92,slow=22,SNR=4.2						
JHJ				S	Sn	23 46 48.5	-15
	100nm,0.3s,baz=67,slow=23,SNR=15						
MJAR	Matsushiro Arr	2.62	295	P	Pn	23 46 34.2	+1.7
	2.4nm,0.3s,baz=116,slow=9.3,SNR=8.8						
MAT	Matsushiro	2.62	295	P	Pn	23 46 31.1	-1.4
MAT				eS	Sb	23 47 07.7	-1.7
H11N2	WAKE ISLAND Hy	27.57	118	T	T	00 20 38.9	
	baz=310,slow=76,SNR=9.6						
H11N1	WAKE ISLAND Hy	27.57	118	T	T	00 20 38.0	
	baz=310,slow=76,SNR=15						
H11N3	WAKE ISLAND Hy	27.59	118	T	T	00 20 40.2	
	baz=310,slow=76,SNR=9.0						
H11S1	WAKE ISLAND Hy	28.22	120	T	T	00 21 26.6	
	baz=312,slow=75,SNR=6.4						
H11S3	WAKE ISLAND Hy	28.22	120	T	T	00 21 25.0	
	baz=312,slow=75,SNR=8.2						
H11S2	WAKE ISLAND Hy	28.24	120	T	T	00 21 25.0	
	baz=312,slow=75,SNR=7.1						
MKAR	Makanchi Array	44.79	303	P	P	23 54 03.1	-0.9
	0.2nm,0.6s,baz=86,slow=8.6,SNR=3.6						
KURBB	Kurchatov Arra	46.81	309	P	P	23 54 18.9	-0.9
	0.4nm,0.6s,baz=82,slow=8.0,SNR=4.4						
WRA	Warramunga Arr	55.47	188	P	P	23 55 24.7	-0.5
	0.5nm,0.8s,baz=3.8,slow=7.6,SNR=7.4						

*IDC **12** 23:47:48.8±4.1, 28°.53S×177°.61W, h45km±43km, mb3.8/3, mb1 3.9/3, mb1mx3.6/31, mbtmp4.0/3, Error ellipse: s-maj=61.1km s-min=33.0km az=161.0*
*ISCJB **12** 23:47:49.1±5.4, 28°.5S±0°.2×177°.8W±0°.7, h54km, mb3.9/3, Error ellipse: s-maj=97.4km s-min=13.8km az=163.8*
ISC 12 23:47:49.7±1.3, 28°.5S±0°.1×177°.6W±0°.3, h54km, n11, σ1§09/11, mb3.9/3, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
RAO	Raoul Island	0.75	199	P	Pn	23 48 04.0	-0.3
	910nm,0.3s,baz=104,slow=8.1,SNR=50						
RAO				S	Sn	23 48 15.1	+0.2
	4µm,0.3s,baz=79,slow=23,SNR=48						
STKA	Stephens Creek	35.24	254	P	P	23 54 39.1	-0.1
	0.8nm,0.5s,baz=144,slow=18,SNR=2.5						
ASAR	Alice Springs	43.56	265	P	P	23 55 48.6	+0.1
	1.3nm,0.5s,baz=99,slow=6.7,SNR=20						
WRA	Warramunga Arr	44.38	270	P	P	23 55 55.2	+0.1
	1.2nm,0.4s,baz=110,slow=7.7,SNR=14						
BVAR	Borovoye Array	125.29	317	PKP	PKPdf	00 06 42.8	-1.2
	0.6nm,0.7s,baz=142,slow=2.0,SNR=3.5						
ARCES	ARCESS Array B	136.84	348	PKP	PKPdf	00 07 06.8	+1.5
	3.3nm,1.0s,baz=38,slow=1.6,SNR=3.8						
FINES	FINESS Array B	143.51	341	PKhKP	PKPpre	00 07 13.3	
	1.1nm,0.8s,baz=80,slow=2.3,SNR=3.6						
NB2	NORSAR Subarra	146.97	352	PKP	PKPbc	00 07 24.5	-1.2
	comp=Z,0.7nm,0.5s,baz=13,slow=2.9						
NOA	NORSAR Array B	146.97	352	PKPbc	PKPdf	00 07 24.2	+0.5
	comp=Z,1.2nm,0.8s,baz=16,slow=4.6,SNR=4.0						
AKASG	Malin Array Be	149.99	325	PKPbc	PKPbc	00 07 32.7	-1.1
	comp=Z,1.1nm,0.5s,baz=46,slow=3.1,SNR=6.1						
BRTR	Keskin Array B	151.95	302	PKPbc	PKPbc	00 07 40.6	+1.7
	comp=Z,0.3nm,0.5s,baz=140,slow=3.2,SNR=3.0						

JMA 12 23:48:19.9, 34°.95N×132°.26E, h6km, M1.2, Western Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JGT2	ShimaneMisato	0.23	61	P	Pg	23 48 24.7	+0.2
JGT2				S	Sg	23 48 28.0	+0.4
JHT	Toyohira	0.32	155	P	Pg	23 48 26.1	0.0
JHIK	Hikimi	0.50	213	P	Pg	23 48 29.5	0.0
JHIK				S	Sg	23 48 36.4	+0.4
MAT	Matsushiro	5.09	70	eS	Sg	23 51 04.3	+0.9

*IDC **12** 23:49:08.9±2.7, 39°.07N×144°.79E, h0km, mb3.5/5, mb1 3.7/7, mb1mx3.4/64, mbtmp3.6/7, ML2.9/2, MS3.1/1, Ms1 3.1/1, ms1mx2.7/48, Error ellipse: s-maj=69.6km s-min=25.1km az=162.0*
*ISCJB **12** 23:49:09.7±1.3, 39°.1N±0°.2×144°.7E±0°.2, h19km, mb3.6/5, MS3.1/1, Error ellipse: s-maj=31.5km s-min=12.8km az=147.5*
ISC 12 23:49:11.5±1.7, 39°.0N±0°.2×144°.8E±0°.2, h19km, n9, σ0§24/8, mb3.5/5, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
MJAR	Matsushiro Arr	5.76	247	Pn	Pn	23 50 36.1	0.0
	2.1nm,0.3s,baz=65,slow=12,SNR=8.0						
MAT	Matsushiro	5.76	247	P	Pn	23 50 36.1	+0.1
USRK	Ussuriysk Ar.	10.89	303	Pn	Pn	23 51 46.3	+0.1
	0.1nm,0.3s,baz=102,slow=14,SNR=4.6						
DAV	Davao City (W)	36.21	214	LR	LR	00 10 35.3	
	comp=Z,33nm,21.2s,baz=6.0,slow=36						
ILAR	Eielson Array	46.39	33	P	P	23 57 36.2	-0.1
	0.4nm,0.7s,baz=267,slow=7.4,SNR=4.8						
KURBB	Kurchatov Arra	46.91	307	P	P	23 57 40.4	-0.1
	0.5nm,0.8s,baz=78,slow=7.5,SNR=2.5						
INK	Inuvik	51.40	28	P	P	23 58 15.1	+0.5
	0.3nm,0.5s,baz=331,slow=8.5,SNR=3.3						
YKA	Yellowknife Ar	60.75	32	P	P	23 59 21.4	-0.1
	0.3nm,0.8s,baz=301,slow=7.8,SNR=3.7						
FINES	FINESS Array B	68.28	333	P	P	00 00 10.6	-0.2
	1.5nm,0.9s,baz=249,slow=26,SNR=2.8						

*IDC **12** 23:49:18.8±2.8, 39°.11N×144°.69E, h0km, mb3.6/4, mb1 3.7/6, mb1mx3.4/64, mbtmp3.6/6, ML2.8/2, Error ellipse: s-maj=69.9km s-min=27.3km az=161.0*
*ISCJB **12** 23:49:19.7±1.7, 39°.1N±0°.2×144°.6E±0°.2, h19km, mb3.7/4, Error ellipse: s-maj=36.4km s-min=17.8km az=151.9*
ISC 12 23:49:21.5±1.8, 39°.1N±0°.2×144°.7E±0°.2, h19km, n6, σ0§43/6, mb3.8/4, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
MJAR	Matsushiro Arr	5.69	246	Pn	Pn	23 50 45.0	0.0
	2.0nm,0.3s,baz=56,slow=11,SNR=5.5						
USRK	Ussuriysk Ar.	10.77	302	Pn	Pn	23 51 54.5	-0.2
	0.1nm,0.3s,baz=115,slow=9.7,SNR=3.0						
KURBB	Kurchatov Arra	46.79	307	P	P	23 57 49.9	+0.3
	2.2nm,0.7s,baz=83,slow=8.8,SNR=7.6						
INK	Inuvik	51.40	28	P	P	23 58 25.1	+0.4
	0.3nm,0.6s,baz=300,slow=4.1,SNR=3.0						
YKA	Yellowknife Ar	60.75	32	P	P	23 59 31.1	-0.5
	0.1nm,0.6s,baz=301,slow=6.3,SNR=2.6						
FINES	FINESS Array B	68.18	333	P	P	00 00 20.1	-0.1
	1.2nm,0.9s,baz=52,slow=12,SNR=3.5						

*NIED **12** 23:54:00, 38°.30N×141°.90E, h68km, Mw4.3 Best double couple: M0 3.16000×10^15 NP1:φs 357.00000°, δ 45.00000°, λ 64.00000°. NP2:φs 211.00000°, δ 51.00000°, λ 113.00000°.*
*BJI **12** 23:54:02.9, 37°.52N×142°.17E, h10km, mb4.6/17, mB5.2/10, Ms4.7/4, MS7 4.6/4*
*MOS **12** 23:54:13.2±1.0, 38°.29N×141°.99E, h62km, mb4.5/28, Error ellipse: s-maj=8.0km s-min=5.9km az=93.6*
*ISCJB **12** 23:54:13.8±0.5, 38°.25N±0°.03×141°.93E±0°.05, h66km±3km, mb4.2/50, Error ellipse: s-maj=7.5km s-min=4.2km az=31.5*
*IDC **12** 23:54:15.2±0.5, 38°.22N×141°.75E, h61km±3km, mb3.9/30, mb1 4.1/33, mb1mx4.0/49, mbtmp4.3/33, MS3.1/2, Ms1 3.1/2, ms1mx2.8/50, Error ellipse: s-maj=10.4km s-min=9.0km az=92.0*
*JMA **12** 23:54:15.1±0.1, 38°.27N×141°.87E, h61km±1km, M4.5*
JMA Felt III J1.
*NEIC **12** 23:54:15.9±1.0, 38°.26N×141°.80E, h70km±8km, mb4.7/8, Error ellipse: s-maj=8.7km s-min=6.9km az=117.0*
NEIC Recorded [3 JMA] in Iwate and Miyagi.
ISC 12 23:54:15.2±0.5, 38°.25N±0°.04×141°.86E±0°.05, h62km±3km, h61km:pP-P, n123, σ1§20/150, mb4.3/50, 4C-3D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JIO	Ouri	0.45	297	P	Pn	23 54 26.7	-0.1
JIO				S	Sn	23 54 34.6	-0.6
OFUJ	Ofunato	0.84	350	P	Pn	23 54 30.9	-0.4
OFUJ				S	Sn	23 54 42.4	-0.8
JMK	Ichinoseki	0.86	325	P	Pn	23 54 31.6	+0.1
JMK				S	Sn	23 54 43.3	-0.3
JMM	Marumori	0.92	246	P	Pn	23 54 32.3	0.0
JMM				S	Sn	23 54 44.8	-0.1
JOU	Okura	0.95	277	P	Pn	23 54 32.8	+0.2
JOU				S	Sn	23 54 45.9	+0.4
JOM	Ohasama	1.30	340	P	Pn	23 54 37.1	-0.1
JOM				S	Sn	23 54 53.4	-0.4
JYK	Kaneyama	1.35	300	P	Pn	23 54 38.1	+0.2
JYK				S	Sn	23 54 55.7	+0.7
JFT	Otama	1.41	239	P	Pn	23 54 39.5	+0.8
JFT				S	Sn	23 54 57.2	+0.9
JYS	Shirataka	1.41	269	P	Pn	23 54 39.3	+0.6
JYS				S	Sn	23 54 57.7	+1.3
JRG	Rokugo	1.49	321	P	Pn	23 54 40.0	+0.2
JRG				S	Sn	23 54 59.6	+1.3
MJA0	Matsu Arr-Jizo	3.34	240	eP	Pn	23 55 07.3	+2.3
MJA0				pmax	pmax		
	comp=Z,15nm,0.3s						
MAJO	Matsushiro	3.37	241	d iP	Pn	23 55 07.4	+2.0
MAJO	Matsushiro	3.37	241	eP	Pn	23 55 07.1	+1.8
MAT	Matsushiro	3.37	241	P	Pn	23 55 07.4	+2.0
MAT				eS	Sn	23 55 44.0	-0.1
MJAR	Matsushiro Arr	3.37	241	P	Pn	23 55 07.2	+1.8
	comp=Z,15nm,0.3s,baz=45,slow=12,SNR=81						
MJAR				LR	LR	23 56 46.8	
	comp=Z,286nm,20.1s,baz=175,slow=46						
ERM	Erimo	3.89	14	eP	Pn	23 55 11.1	-1.3
ERM				e		23 55 57.3	
ERM	Erimo	3.89	14	ePn	Pn	23 55 11.1	-1.3
ERM				eSn	Sn	23 55 57.3	+0.5
JHJ	Hachijo jima 2	5.39	199	P	Pn	23 55 32.2	-0.8
	comp=Z,81nm,0.3s,baz=81,slow=23,SNR=2.9						
JHJ				S	Sn	23 56 30.9	-2.8
	comp=Z,170nm,0.3s,baz=44,slow=22,SNR=11						
JHJ				LR	LR	23 57 54.8	
	comp=Z,200nm,18.8s,baz=337,slow=41						
YUK	Yuzh-Kuril'sk	6.52	26	eP	Pn	23 55 45.7	-2.7
YUK				eS	Sn	23 56 53.0	-8.4
YUK				pmax	pmax		
	comp=N,94nm,0.3s						
YUK				pmax	pmax		
	comp=E,99nm,0.3s						
YUK				pmax	pmax		
	comp=Z,204nm,0.3s						
SHO	Shikotan	6.76	32	iP	Pn	23 55 48.4	-3.2
SHO				iS	S

H11S2	**WAKE ISLAND Hy**	**29.26**	**125**	T	T	00 31 20.3		
	baz=318,slow=76,SNR=226							
TLY	**Talaya**	**29.82**	**309**	P	**P**	**00 00 16.5**	**+0.3**	
	comp=Z,5.1nm,0.7s,baz=116,slow=4.7,SNR=7.6							
TLY	**Talaya**	**29.82**	**309**	*e*P	**P**	**00 00 16.4**	**+0.2**	
TLY				pmax	pmax			
	comp=Z,6.0nm,0.9s							
MOY	**Mondy**	**31.44**	**309**	*e*P	**P**	**00 00 30.3**	**-0.3**	
BILL	**Bilibino**	**32.76**	**17**	*i*P	**P**	**00 00 41.3**	**-0.6**	
BILL				*i*		00 03 26.6		
BILL				pmax	pmax			
	comp=Z,2.0nm,1.1s							
TIXI	**Tiksi**	**34.13**	**353**	*e*P	**P**	**00 00 55.5**	**+1.8**	
TIXI				pmax	pmax			
	comp=Z,3.0nm,1.7s							
ZALV	**Zalesovo Beam**	**41.37**	**311**	P	**P**	**00 01 54.6**	**-0.3**	
	comp=Z,7.2nm,0.5s,baz=84,slow=7.4,SNR=47							
ZALV				pP	**pP**	**00 02 08.7**	**-1.8**	
	comp=Z,3.9nm,0.7s,baz=80,slow=7.0,SNR=6.2							
ZALV				PcP	**PcP**	**00 03 51.7**	**-0.3**	
	comp=Z,1.2nm,0.4s,baz=69,slow=3.2,SNR=3.9							
ZALV				pPcP		00 04 10.8		
	comp=Z,1.0nm,0.4s,baz=96,slow=3.2,SNR=3.9							
CMAR	**Chiang Mai Arr**	**42.15**	**254**	P	**P**	**00 02 02.3**	**+0.6**	
	comp=Z,0.3nm,0.4s,baz=46,slow=5.2,SNR=3.6							
CMAR				PcP	**PcP**	**00 03 55.8**	**+0.5**	
	comp=Z,0.9nm,0.7s,baz=357,slow=1.8,SNR=6.8							
NVS	**Novosibirsk**	**42.27**	**313**	*e*P	**P**	**00 02 02.0**	**-0.2**	
NRIK	**Noril'sk**	**42.32**	**335**	P	**P**	**00 02 03.5**	**+1.0**	
	comp=Z,1.0nm,0.4s,baz=122,slow=6.9,SNR=3.5							
MKAR	**Makanchi Array**	**43.78**	**301**	P	**P**	**00 02 15.4**	**+0.8**	
	comp=Z,7.2nm,0.6s,baz=86,slow=10.0,SNR=105							
MKAR				pP	**pP**	**00 02 29.2**	**-1.2**	
	comp=Z,2.1nm,0.7s,baz=90,slow=9.7,SNR=5.3							
KURK	**Kurchatov**	**45.47**	**307**	*e*P	**P**	**00 02 26.9**	**-1.0**	
KURK				*e**PP	**pP**	**00 02 42.0**	**-1.7**	
KURK				pmax	pmax			
	comp=Z,19nm,0.6s							
KURK	**Kurchatov**	**45.47**	**307**	*e*P	**P**	**00 02 26.9**	**-1.0**	
	comp=Z,19nm,0.6s							
KURK				*e*pP	**pP**	**00 02 42.0**	**-1.7**	
KURBB	**Kurchatov Arra**	**45.54**	**307**	P	**P**	**00 02 28.0**	**-0.5**	
	comp=Z,5.8nm,0.3s,baz=82,slow=8.3,SNR=47							
KURBB				pP	**pP**	**00 02 43.0**	**-1.4**	
	comp=Z,7.0nm,0.5s,baz=82,slow=8.5,SNR=13							
KDAK	**Kodiak Island**	**45.97**	**43**	*c**e*P	**P**	**00 02 32.2**	**+0.5**	
TAPN	**Taplejung**	**46.22**	**273**	*e*P	**P**	**00 02 34.1**	**-0.4**	
	comp=Z,5.3nm,0.3s							
PDGK	**Podgornoye**	**46.53**	**297**	P	**P**	**00 02 37.2**	**+0.8**	
PDGK				pmax	pmax			
	comp=Z,6.0nm,0.6s							
ODAN	**Odare**	**46.70**	**273**	*e*P	**P**	**00 02 39.0**	**+0.8**	
	comp=Z,5.6nm,0.4s							
RAMN	**Ramite**	**47.28**	**273**	*e*P	**P**	**00 02 43.2**	**+0.4**	
	comp=Z,9.8nm,0.5s							
GUN	**Gumba**	**47.40**	**275**	*e*P	**P**	**00 02 44.3**	**+0.5**	
	comp=Z,17nm,0.3s							
COLA	**College**	**47.87**	**33**	*e*P	**P**	**00 02 45.8**	**-0.7**	
COLA				pmax	pmax			
	comp=Z,3.0nm,0.5s							
KKN	**Kakani**	**47.92**	**275**	*e*P	**P**	**00 02 48.8**	**+1.1**	
	comp=Z,18nm,0.5s							
ILAR	**Eielson Array**	**48.28**	**33**	P	**P**	**00 02 49.4**	**-0.3**	
	comp=Z,1.2nm,0.7s,baz=270,slow=6.2,SNR=16							
ILAR				pP	**pP**	**00 03 05.8**	**+0.2**	
	comp=Z,3.0nm,0.7s,baz=269,slow=6.4,SNR=21							
GKN	**Gorkha**	**48.33**	**276**	*e*P	**P**	**00 02 51.2**	**+0.4**	
	comp=Z,13nm,0.5s							
TKM2	**Tokmak 2**	**49.37**	**298**	*e*P	**P**	**00 02 58.8**	**+0.2**	
TKM2				*e**PP	**pP**	**00 03 13.1**	**-1.5**	
TKM2				pmax	pmax			
	comp=Z,5.0nm,0.5s							
TKM2	**Tokmak 2**	**49.37**	**298**	*e*P	**P**	**00 02 58.8**	**+0.2**	
	comp=Z,5.3nm,0.5s							
TKM2				*e*pP	**pP**	**00 03 13.1**	**-1.5**	
PYUN	**Piuthan**	**49.57**	**277**	*e*P	**P**	**00 03 01.9**	**+1.5**	
	comp=Z,20nm,0.4s							
OTUK	**Ortayu**	**50.01**	**305**	P	**P**	**00 03 04.6**	**+1.4**	
OTUK				pmax	pmax			
	comp=Z,3.0nm,1.0s							
BVAR	**Borovoye Array**	**50.02**	**312**	P	**P**	**00 03 02.0**	**-1.2**	
	comp=Z,1.1nm,0.4s,baz=72,slow=7.3,SNR=16							
BVAR				pP	**pP**	**00 03 18.0**	**-1.2**	
	comp=Z,2.1nm,0.7s,baz=81,slow=9.2,SNR=7.5							
BVAR				PcP	**PcP**	**00 04 22.1**	**-0.2**	
	comp=Z,2.5nm,0.5s,baz=77,slow=2.8,SNR=8.3							
BRVK	**Borovoye**	**50.08**	**312**	*d*P	**P**	**00 03 03.9**	**+0.3**	
BRVK				pmax	pmax			
	comp=Z,7.0nm,2.1s							
AAK	**Ala-Archa**	**50.23**	**298**	P	**P**	**00 03 05.0**	**-0.1**	
	comp=Z,2.5nm,0.5s,baz=127,slow=10,SNR=14							
AAK				pP	**pP**	**00 03 20.2**	**-1.0**	
	comp=Z,1.3nm,0.5s,baz=10,slow=12,SNR=3.6							
KSH	**Kashi**	**50.24**	**293**	P	P	00 03 10.5	+5.3	
KSH				pmax	pmax			
	comp=Z,4.0nm,0.8s							
KSH				pmax	pmax			
	comp=Z,140nm,6.3s							
KSH				LR	LR			
	comp=Z,290nm,8.5s							
KSH				LR	LR			
	comp=Z,250nm,9.7s							
KSH				LR	LR			
	comp=Z,440nm,9.1s							
EKS2	**Erkin-Say**	**50.72**	**298**	*e*P	**P**	**00 03 07.8**	**-1.0**	
EKS2	**Erkin-Say**	**50.72**	**298**	*e*P	**P**	**00 03 07.8**	**-1.0**	
MNAS	**Manas**	**51.67**	**298**	P	**P**	**00 03 17.2**	**+1.3**	
MNAS				pmax	pmax			
	comp=Z,6.0nm,0.7s							
SFK	**Sufi-Kurgan**	**51.84**	**295**	P	**P**	**00 03 18.9**	**+1.6**	
SFK				pmax	pmax			
	comp=Z,6.0nm,1.0s							
KKAR	**Karatay Array**	**52.83**	**299**	*e*P	**P**	**00 03 24.3**	**0.0**	
KKAR				pmax	pmax			
	comp=Z,1.0nm,0.6s							
KKAR	**Karatay Array**	**52.83**	**299**	*e*P	**P**	**00 03 24.3**	**0.0**	
	comp=Z,1.4nm,0.6s							
INK	**Inuvik**	**53.15**	**28**	P	**P**	**00 03 26.8**	**+0.5**	
	comp=Z,1.0nm,0.6s,baz=304,slow=8.2,SNR=6.6							
INK				pP	**pP**	**00 03 42.7**	**+0.4**	
	comp=Z,1.9nm,0.8s,baz=309,slow=6.4,SNR=5.7							
SVE	**Sverdlovsk**	**54.48**	**318**	*e*P	**pP**	**00 03 51.6**	**-0.7**	
SVE				pmax	pmax			
	comp=Z,11nm,0.8s							
ARU	**Arti**	**55.69**	**318**	P	**P**	**00 03 44.9**	**0.0**	
	comp=Z,2.4nm,0.4s,baz=75,slow=4.9,SNR=7.8							
ARU				pP	**pP**	**00 03 59.4**	**-1.7**	
	comp=Z,3.3nm,0.5s,baz=33,slow=1.8,SNR=6.9							
ARU	**Arti**	**55.69**	**318**	*c*P	**P**	**00 03 44.6**	**-0.2**	
ARU						00 05 44.9		
ARU				S	**S**	**00 11 29.1**	**+2.7**	
ARU						00 13 29.3		
ARU				SS	**SS**	**00 15 10.5**	**-1.3**	
ARU				pmax	pmax			
	comp=Z,3.0nm,0.8s							
ABKAR	**Akbulak array**	**57.43**	**310**	*e*P	**P**	**00 03 56.4**	**-0.9**	
	comp=Z,2.0nm,0.5s							
ABKAR				*e*pP	**pP**	**00 04 11.8**	**-1.9**	
FITZ	**Fitzroy Crossi**	**58.08**	**198**	*e*P	**P**	**00 04 00.7**	**-1.4**	
	comp=Z,3.4nm,0.9s							
AKTO	**Aktyubinsk**	**58.13**	**312**	P	**P**	**00 04 02.4**	**+0.1**	
	comp=Z,1.9nm,0.8s,baz=81,slow=10,SNR=7.6							
WRAB	**Tennant Creek**	**58.30**	**188**	*c*P	**P**	**00 04 03.0**	**-0.6**	
WRAB				pmax	pmax			
	comp=Z,19nm,0.6s							
WRAB	**Tennant Creek**	**58.30**	**188**	*e*P	**P**	**00 04 03.0**	**-0.6**	
	comp=Z,7.6nm,0.9s							
WRA	**Warramunga Arr**	**58.31**	**188**	P	**P**	**00 04 02.7**	**-1.0**	
	comp=Z,10nm,0.5s,baz=5.6,slow=7.0,SNR=174							
WRA	**Warramunga Arr**	**58.31**	**188**	*e*P	**P**	**00 04 03.1**	**-0.6**	
WRA				pmax	pmax			
	comp=Z,10.0nm,0.5s							
ASAR	**Alice Springs**	**62.04**	**188**	P	**P**	**00 04 28.8**	**-0.4**	
	comp=Z,5.7nm,0.7s,baz=11,slow=6.3,SNR=68							
ASAR				pP	**pP**	**00 04 46.5**	**+0.8**	
	comp=Z,1.2nm,0.6s,baz=3.7,slow=6.1,SNR=3.0							
YKA	**Yellowknife Ar**	**62.58**	**31**	P	**P**	**00 04 32.1**	**-0.3**	
	comp=Z,0.5nm,0.6s,baz=300,slow=6.5,SNR=11							
YKA				pP	**pP**	**00 04 49.3**	**+0.5**	
	comp=Z,0.6nm,0.7s,baz=304,slow=6.9,SNR=8.5							
YKA				PcP	**PcP**	**00 05 11.3**	**+0.4**	
	comp=Z,0.8nm,0.8s,baz=301,slow=4.2,SNR=8.0							
ARCES	**ARCESS Array B**	**62.99**	**339**	P	**P**	**00 04 35.0**	**+0.1**	
	comp=Z,4.8nm,1.1s,baz=47,slow=7.1,SNR=4.4							
ARCES	**ARCESS Array B**	**62.99**	**339**	*e*P	**P**	**00 04 35.8**	**+0.8**	
ARCES				pmax	pmax			
	comp=Z,5.0nm,1.1s							

GEYT	**Alibeck**	**63.56**	**299**	P	**P**	**00 04 39.4**	**+0.1**	
	comp=Z,0.8nm,0.4s,baz=311,slow=25,SNR=3.0							
DZM	**Mont Dzumac**	**64.29**	**155**	P	**P**	**00 04 45.4**	**+1.2**	
	comp=Z,9.3nm,1.0s,baz=60,slow=12,SNR=4.5							
FINES	**FINESS Array B**	**67.91**	**332**	P	**P**	**00 05 06.6**	**-0.2**	
	comp=Z,2.7nm,0.6s,baz=60,slow=5.0,SNR=10							
STKA	**Stephens Creek**	**69.77**	**180**	P	**P**	**00 05 18.6**	**0.0**	
	comp=Z,2.3nm,0.7s,baz=353,slow=5.0,SNR=4.9							
KBZ	**Khabaz**	**70.38**	**311**	P	**P**	**00 05 22.8**	**+0.4**	
	comp=Z,2.5nm,1.0s,baz=56,slow=4.2,SNR=4.2							
FFC	**Flin Flon**	**72.50**	**33**	P	**P**	**00 05 36.1**	**+1.1**	
NB2	**NORSAR Subarra**	**73.20**	**337**	P	**P**	**00 05 38.7**	**-0.5**	
	comp=Z,1.3nm,0.7s,baz=37,slow=6.2							
NOA	**NORSAR Array B**	**73.20**	**337**	P	**P**	**00 05 39.0**	**-0.2**	
	comp=Z,1.9nm,0.7s,baz=38,slow=5.9,SNR=8.7							
NOA	**NORSAR Array B**	**73.20**	**337**	P	**P**	**00 05 39.0**	**-0.2**	
NOA				pmax	pmax			
	comp=Z,2.0nm,0.7s							
AKASG	**Malin Array Be**	**73.55**	**322**	P	**P**	**00 05 40.8**	**-0.5**	
	comp=Z,0.5nm,0.3s,baz=45,slow=5.9,SNR=9.1							
AKASG	**Malin Array Be**	**73.55**	**322**	*e*P	**P**	**00 05 40.6**	**-0.7**	
AKASG				pmax	pmax			
	comp=Z,1.0nm,0.4s							
NVAR	**Mina Array Bea**	**73.98**	**54**	P	**P**	**00 05 45.4**	**+1.0**	
	comp=Z,0.8nm,0.8s,baz=286,slow=6.5,SNR=6.8							
NVAR				pP	**pP**	**00 06 04.4**	**+3.1**	
	comp=Z,1.2nm,0.7s,baz=294,slow=5.8,SNR=6.9							
PDAR	**Pinedale Array**	**76.57**	**46**	P	**P**	**00 05 59.2**	**0.0**	
	comp=Z,1.3nm,0.6s,baz=262,slow=1.7,SNR=19							
PDAR				pP	**pP**	**00 06 17.9**	**+1.7**	
	comp=Z,0.8nm,0.6s,baz=286,slow=1.7,SNR=5.4							
BRTR	**Keskin Array B**	**78.31**	**312**	P	**P**	**00 06 08.6**	**-0.3**	
	comp=Z,0.4nm,0.5s,baz=114,slow=3.2,SNR=8.8							
BRTR	**Keskin Array B**	**78.31**	**312**	*e*P	**P**	**00 06 08.8**	**0.0**	
BRTR				pmax	pmax			
	comp=Z,1.0nm,0.4s							
CLL	**Collm**	**80.22**	**330**	*e*P	**P**	**00 06 18.0**	**-0.8**	
	comp=Z,3.0nm,0.8s							
CLL	**Collm**	**80.22**	**330**	*e*P	**P**	**00 06 18.0**	**-0.8**	
CLL				pmax	pmax			
	comp=Z,60nm,0.8s							
GERES	**GERESS Array B**	**81.87**	**328**	P	**P**	**00 06 27.4**	**-0.3**	
	comp=Z,0.4nm,0.5s,baz=40,slow=7.7,SNR=3.8							
ANMO	**Albuquerque**	**83.54**	**50**	*c**e*P	**P**	**00 06 38.3**	**+1.5**	
ANMO				pmax	pmax			
	comp=Z,2.0nm,1.1s							
SCHQ	**Schefferville**	**84.07**	**16**	P	**P**	**00 06 38.5**	**-0.4**	
	comp=Z,3.5nm,1.0s,baz=14,slow=17,SNR=2.5							
TXAR	**Lajitas Array**	**89.10**	**53**	P	**P**	**00 07 04.5**	**+0.4**	
	comp=Z,1.4nm,0.6s,baz=300,slow=3.2,SNR=23							
TXAR				pP	**pP**	**00 07 24.0**	**+2.5**	
	comp=Z,0.9nm,0.7s,baz=306,slow=3.6,SNR=5.2							
TORD	**Torodi Ar. Bea**	**116.72**	**316**	PKP	**PKPdf**	**00 12 51.3**	**-1.6**	
	comp=Z,0.2nm,0.4s,baz=4.4,slow=2.7,SNR=6.9							
VNA2	**Neumayer--Watz**	**143.58**	**196**	PKP	PKPbc	00 13 39.0	-0.3	
	baz=95,slow=2.4							
VNA3	**Neumayer Olymp**	**143.83**	**195**	PKP	PKPab	00 13 38.9	-0.4	
LPAZ	**La Paz**	**145.77**	**59**	PKPbc	**PKPbc**	**00 13 48.4**	**-0.1**	
	comp=Z,3.8nm,0.6s,baz=351,slow=4.2,SNR=20							
LPAZ				pPKPbc	pPKPbc	00 14 06.8	+0.5	
	comp=Z,1.4nm,0.5s,baz=27,slow=12,SNR=2.8							

JMA 12 23:57:28.9, 37.03N×140.64E, h7km±1km, M2.8, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.14**	**60**	P	Pg	23 57 32.2	+0.2
ONAJ				S	Sg	23 57 34.5	+0.4
JHO	**Hitachi**	**0.42**	**188**	P	Pg	23 57 37.0	-0.1
JFT	**Otama**	**0.54**	**334**	S	Sg	23 57 47.0	+0.5
MAT	**Matsushiro**	**2.01**	**257**	P	Pn	23 58 04.3	+1.0
MAT				*e*S	Sb	23 58 30.4	-0.7

IDC 13 00:01:29.4±5.8, 16.11S×173.31W, h228km±35km, mb3.2/3, mb1 3.5/4, mb1mx3.1/43, mbtmp3.8/4, Error ellipse: s-maj=183.1km s-min=18.9km az=149.0, Tonga Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
AFI	**Afiamalu**	**2.64**	**34**	P	Pn	00 02 17.6	+0.9
	19nm,0.3s,baz=22,slow=1.8,SNR=10.0						
AFI				S	S	00 02 54.0	+0.2
	20nm,0.3s,baz=204,slow=23,SNR=4.0						
WRA	**Warramunga Arr**	**49.77**	**257**	P	P	00 09 59.4	0.0
	0.4nm,0.3s,baz=96,slow=6.5,SNR=13						
ASAR	**Alice Springs**	**49.98**	**252**	P	P	00 10 00.5	-0.4
	1.7nm,0.7s,baz=86,slow=8.5,SNR=20						
NVAR	**Mina Array Bea**	**74.80**	**42**	P	P	00 12 44.9	-0.1
	0.3nm,0.6s,baz=241,slow=11,SNR=2.4						
GEYT	**Alibeck**	**130.00**	**306**	PKP	PKPdf	00 20 13.2	+0.9
	1.2nm,0.4s,baz=72,slow=4.8,SNR=4.4						

*ISCJB **13** 00:06:45.5±0.5, 20.75N±0.06×144.8E±0.1, h129km, mb4.0/28, Error ellipse: s-maj=16.4km s-min=8.0km az=170.0*
*NEIC **13** 00:06:45.9±1.4, 20.75N×144.80E, h118km±13km, mb4.5/6, Error ellipse: s-maj=14.7km s-min=7.6km az=77.0*
*IDC **13** 00:06:46.1±2.9, 20.79N×144.83E, h118km±27km, mb3.8/21, mb1 3.9/24, mb1mx3.8/45, mbtmp4.2/24, Error ellipse: s-maj=18.2km s-min=11.1km az=75.0*
ISC 13 00:06:47.3±0.6, 20.74N±0.08×144.7E±0.1, h129km, n34, σ0s93/33, mb4.1/28, Mariana Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
GUMO	**Guam**	**7.11**	**179**	P	**Pn**	**00 08 27.4**	**-1.4**
	8.3nm,0.3s,baz=8.1,slow=15,SNR=2.7						
MJAR	**Matsushiro Arr**	**16.75**	**341**	P	**Pn**	**00 10 31.6**	**-2.6**
	baz=166,slow=12,SNR=3.2						
JNU	**Nakatsue**	**17.44**	**318**	P	**Pn**	**00 10 43.1**	**+0.5**
	0.5nm,0.3s,baz=49,slow=8.0,SNR=2.3						
KSRS	**Korea Array**	**22.15**	**322**	P	P	**00 11 33.3**	**+0.7**
	8.1nm,0.8s,baz=144,slow=9.0,SNR=17						
KSAR	**Wonju Array Be**	**22.17**	**322**	P	P	**00 11 33.3**	**+0.5**
USRK	**Ussuriysk Ar.**	**25.69**	**339**	P	P	**00 12 04.7**	**-0.6**
	2.4nm,0.7s,baz=148,slow=7.7,SNR=7.7						
KLR	**Kul'dur**	**30.27**	**343**	P	P	**00 12 45.9**	**0.0**
	10nm,0.6s,baz=150,slow=7.6,SNR=47						
SONM	**Songino Array**	**41.00**	**320**	P	P	**00 14 17.3**	**-0.4**
	1.0nm,0.6s,baz=136,slow=7.5,SNR=7.8						
WRAB	**Tennant Creek**	**41.68**	**195**	*e*P	P	**00 14 22.6**	**-0.7**
	13nm,1.2s						
WRA	**Warramunga Arr**	**41.69**	**195**	P	P	**00 14 22.6**	**-0.8**
	7.1nm,1.1s,baz=12,slow=8.9,SNR=11						
SEY	**Seymchan**	**42.49**	**5**	P	P	**00 14 29.6**	**+0.2**
	1.4nm,0.5s,baz=189,slow=6.2,SNR=4.2						
FITZ	**Fitzroy Crossi**	**42.90**	**207**	*e*P	P	**00 14 32.4**	**-0.9**
	2.2nm,0.7s						
CMAR	**Chiang Mai Arr**	**43.10**	**275**	P	P	**00 14 36.1**	**+1.2**
	0.9nm,0.7s,baz=60,slow=7.1,SNR=8.7						
ASAR	**Alice Springs**	**45.38**	**194**	P	P	**00 14 54.6**	**+1.6**
	1.1nm,0.7s,baz=21,slow=7.9,SNR=9.5						
DZM	**Mont Dzumac**	**47.53**	**152**	P	P	**00 15 10.9**	**+1.0**
	4.6nm,0.8s,baz=57,slow=16,SNR=3.4						
ZALV	**Zalesovo Beam**	**55.86**	**322**	P	P	**00 16 10.6**	**-0.7**
	1.9nm,0.6s,baz=111,slow=8.2,SNR=10						
MKAR	**Makanchi Array**	**56.41**	**313**	P	P	**00 16 15.7**	**+0.4**
	2.2nm,0.7s,baz=91,slow=9.3,SNR=35						
KURK	**Kurchatov**	**59.16**	**317**	*e*P	P	**00 16 34.3**	**-0.1**
	14nm,0.8s						
NRIK	**Noril'sk**	**59.39**	**340**	P	P	**00 16 35.8**	**0.0**
	2.2nm,0.5s,baz=101,slow=8.3,SNR=9.0						
ILAR	**Eielson Array**	**62.23**	**27**	P	P	**00 16 53.9**	**-1.1**
	0.6nm,0.7s,baz=260,slow=6.3,SNR=6.4						
BVAR	**Borovoye Array**	**64.34**	**320**	P	P	**00 17 09.3**	**+0.2**
	8.5nm,0.5s,baz=92,slow=7.5,SNR=88						
BRVK	**Borovoye**	**64.40**	**320**	*e*P	P	**00 17 09.0**	**-0.5**
	6.0nm,0.6s						
KKAR	**Karatay Array**	**64.78**	**309**	*e*P	P	**00 17 11.2**	**-1.0**
	4.1nm,0.7s						
INK	**Inuvik**	**67.87**	**23**	P	P	**00 17 31.4**	**+0.1**
	0.4nm,0.5s,baz=208,slow=0.7,SNR=4.3						
ABKAR	**Akbulak array**	**71.24**	**316**	*e*P	P	**00 17 51.8**	**-0.6**
	0.9nm,0.5s						
GEYT	**Alibeck**	**74.98**	**305**	P	P	**00 18 15.7**	**+1.0**
	2.7nm,0.8s,baz=297,slow=1.0,SNR=7.0						
YKA	**Yellowknife Ar**	**76.62**	**28**	P	P	**00 18 23.3**	**-0.1**
	1.5nm,0.6s,baz=291,slow=5.6,SNR=33						
ARCES	**ARCESS Array B**	**80.28**	**342**	P	P	**00 18 43.9**	**+0.4**
	2.0nm,0.6s,baz=62,slow=8.4,SNR=13						
NVAR	**Mina Array Bea**	**82.60**	**52**	P	P	**00 18 57.5**	**+1.0**

	0.2nm,0.5s,baz=258,slow=6.5,SNR=3.6							
FINES	**FINESS Array B**	**84.66**	**335**	P	P	**00 19 05.7**	**-0.6**	
	2.2nm,0.6s,baz=71,slow=4.4,SNR=22							
PDAR	**Pinedale Array**	**87.04**	**45**	P	P	00 19 24.9	+6.1	
	0.4nm,0.6s,baz=241,slow=2.7,SNR=5.7							
BRTR	**Keskin Array B**	**92.05**	**314**	P	**P**	**00 19 42.4**	**+0.3**	
	0.2nm,0.6s,baz=41,slow=4.6,SNR=2.6							
TORD	**Torodi Ar. Bea**	**130.47**	**310**	PKP	**PKPdf**	**00 25 42.9**	**-0.7**	
	0.3nm,0.8s,baz=28,slow=3.4,SNR=2.3							
LPAZ	**La Paz**	**148.55**	**87**	PKPbc	**PKPdf**	**00 26 18.4**	**+1.6**	
	0.5nm,0.7s,baz=95,slow=13,SNR=1.9							

*IDC **13** 00:11:16.3±1.2, 35.61N×141.70E, h0km, mb3.4/6, mb1 3.6/7, mb1mx3.4/41, mbtmp3.3/7, ML3.4/1, MS3.6/1, Ms1 3.6/1, ms1mx2.8/27, Error ellipse: s-maj=28.0km s-min=25.9km az=17.0*
*ISCJB **13** 00:11:18.7±0.8, 35.72N±0.07×141.50E±0.07, h25km, mb3.4/6, MS3.6/1, Error ellipse: s-maj=10.8km s-min=8.2km az=18.0*
*JMA **13** 00:11:18.8±0.1, 35.77N×141.44E, h12km±2km, M3.2*
ISC 13 00:11:20.2±1.0, 35.73N±0.09×141.43E±0.08, h25km, n18, σ1s25/13, mb3.4/6, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CHOJ	**Chosi**	**0.46**	**267**	P	**Pb**	**00 11 28.3**	**-1.5**
CHOJ				S	**Sb**	**00 11 35.2**	**-1.1**
JYT	**Yasato**	**1.12**	**297**	P	**Pn**	**00 11 39.5**	**-0.7**
JHO	**Hitachi**	**1.12**	**322**	*e*S	**Sn**	**00 11 54.0**	**-0.9**
BSO3	**Boso 3**	**1.19**	**219**	P	**Pb**	**00 11 41.4**	**-0.5**
MJAR	**Matsushiro Arr**	**2.73**	**288**	Pn	**Pn**	**00 12 03.3**	**+0.9**
	5.1nm,0.3s,baz=94,slow=8.9,SNR=12						
MAT	**Matsushiro**	**2.73**	**288**	P	**Pn**	**00 12 03.7**	**+1.3**
MAT				S	**Sn**	**00 12 36.7**	**+2.1**
H11N2	**WAKE ISLAND Hy**	**27.49**	**119**	T	T	00 46 01.8	
	baz=311,slow=75,SNR=34						
H11N1	**WAKE ISLAND Hy**	**27.50**	**119**	T	T	00 46 01.0	
	baz=311,slow=75,SNR=42						
H11N3	**WAKE ISLAND Hy**	**27.51**	**119**	T	T	00 46 06.4	
	baz=311,slow=75,SNR=34						
H11S1	**WAKE ISLAND Hy**	**28.16**	**121**	T	T	00 46 49.2	
	baz=313,slow=75,SNR=24						
H11S3	**WAKE ISLAND Hy**	**28.16**	**121**	T	T	00 46 49.6	
	baz=313,slow=75,SNR=26						
H11S2	**WAKE ISLAND Hy**	**28.18**	**121**	T	T	00 46 50.4	
	baz=313,slow=75,SNR=22						
SONM	**Songino Array**	**28.54**	**306**	P	P	00 17 17.4	+3.5
	0.2nm,0.5s,baz=103,slow=1.9,SNR=2.2						
ZALV	**Zalesovo Beam**	**42.81**	**313**	P	**P**	**00 19 17.1**	**+1.4**
	0.3nm,0.3s,baz=90,slow=13,SNR=2.5						
MKAR	**Makanchi Array**	**44.83**	**303**	P	**P**	**00 19 33.4**	**+1.3**
	0.2nm,0.6s,baz=87,slow=8.2,SNR=3.4						
MKAR				LR	LR	00 41 17.5	
	comp=Z,66nm,18.9s,baz=190,slow=40						
ILAR	**Eielson Array**	**50.59**	**32**	P	**P**	**00 20 16.4**	**-0.1**
	0.3nm,0.6s,baz=273,slow=6.3,SNR=4.4						
WRA	**Warramunga Arr**	**55.77**	**188**	P	**P**	**00 20 54.4**	**-0.6**
	0.8nm,0.8s,baz=7.1,slow=7.6,SNR=4.0						
YKA	**Yellowknife Ar**	**64.93**	**30**	P	**P**	**00 21 57.0**	**-0.2**
	0.1nm,0.3s,baz=305,slow=6.5,SNR=7.8						

*NIED **13** 00:12:00, 37.40N×142.20E, h14km, Mw4.2 Best double couple: M0 2.08000×10^15 NP1:ϕs180.00000°, δ15.00000°, λ49.00000°. NP2:ϕs42.00000°, δ79.00000°, λ100.00000°.*
*ISCJB **13** 00:12:58.0±1.0, 37.40N±0.04×142.29E±0.04, h17km±6km, mb4.3/62, MS3.9/1, Error ellipse: s-maj=6

YAK					pmax	pmax		
	comp=Z,19nm,0.9s							
YAK					pmax	pmax		
	comp=N,9.0nm,1.2s							
YAK					pmax	pmax		
	comp=E,4.0nm,1.1s							
SEY	**Seymchan**	**26.27**	**11**	P		**P**	**00 18 35.5**	**+1.3**
	comp=E,5.0nm,0.7s,baz=188,slow=7.5,SNR=14							
SEY	**Seymchan**	**26.27**	**11**	P		**P**	**00 18 35.5**	**+1.3**
SEY					pmax	pmax		
	comp=Z,4.0nm,0.6s							
BOD	**Bodaibo**	**27.53**	**327**	*e*P		**P**	**00 18 44.8**	**-0.9**
BOD					pmax	pmax		
	comp=Z,5.0nm,0.9s							
ULN	**Ulaanbaatar**	**27.66**	**303**⇑	*e*P		**P**	**00 18 47.3**	**+0.2**
ULN					pmax	pmax		
	comp=Z,8.0nm,1.2s							
ULN	**Ulaanbaatar**	**27.66**	**303**	*e*P		**P**	**00 18 46.7**	**-0.4**
	comp=Z,7.7nm,1.0s							
H11N2	**WAKE ISLAND Hy**	**27.81**	**123**	T		T	00 47 52.0	
	baz=315,slow=75,SNR=101							
H11N1	**WAKE ISLAND Hy**	**27.82**	**123**	T		T	00 47 42.5	
	baz=315,slow=75,SNR=48							
H11N3	**WAKE ISLAND Hy**	**27.83**	**123**	T		T	00 47 42.8	
	baz=315,slow=75,SNR=49							
ENH	**Enshi**	**28.01**	**265**	*e*P		**P**	**00 18 48.8**	**-1.5**
	comp=Z,9.3nm,0.6s							
SONM	**Songino Array**	**28.10**	**303**	P		**P**	**00 18 51.8**	**+0.8**
	comp=Z,7.4nm,0.9s,baz=98,slow=8.9,SNR=39							
H11S1	**WAKE ISLAND Hy**	**28.55**	**125**	T		T	00 48 49.4	
	baz=317,slow=76,SNR=88							
H11S3	**WAKE ISLAND Hy**	**28.55**	**125**	T		T	00 48 53.7	
	baz=317,slow=76,SNR=95							
H11S2	**WAKE ISLAND Hy**	**28.57**	**125**	T		T	00 48 50.7	
	baz=317,slow=76,SNR=91							
ZAK	**Zakamensk**	**30.52**	**308**	*e*P		**P**	**00 19 12.9**	**+0.4**
ZAK					pmax	pmax		
	comp=Z,5.0nm,1.2s							
TLY	**Talaya**	**30.55**	**310**	*e*P		**P**	**00 19 14.0**	**+1.4**
TLY					pmax	pmax		
	comp=Z,2.0nm,0.6s							
BILL	**Bilibino**	**33.45**	**16**	*i* P		**P**	**00 19 36.6**	**-1.2**
BILL				*i*			00 19 48.9	
BILL					pmax	pmax		
	comp=Z,4.0nm,1.2s							
ZALV	**Zalesovo Beam**	**42.12**	**312**	P		**P**	**00 20 51.5**	**+0.3**
	comp=Z,7.8nm,0.5s,baz=88,slow=7.2,SNR=34							
CMAR	**Chiang Mai Arr**	**42.22**	**256**	P		**P**	**00 20 53.6**	**+1.1**
	comp=Z,0.2nm,0.5s,baz=30,slow=3.1,SNR=3.5							
NVS	**Novosibirsk**	**43.02**	**313**	*i* P		**P**	**00 20 58.3**	**-0.2**
NRIK	**Noril'sk**	**43.17**	**335**	P		**P**	**00 21 01.4**	**+1.9**
	comp=Z,1.1nm,0.4s,baz=115,slow=11,SNR=3.6							
NRIK					LR	LR	00 39 28.6	
	comp=Z,148nm,19.5s,baz=116,slow=37							
MK31	**Makanchi Array**	**44.45**	**302**	P		**P**	**00 21 09.3**	**-0.8**
MK31					pmax	pmax		
	comp=Z,3.0nm,0.6s							
MKAR	**Makanchi Array**	**44.45**	**302**	P		**P**	**00 21 10.4**	**+0.3**
	comp=Z,3.1nm,0.6s,baz=85,slow=10,SNR=38							
MAKZ	**Makanchi**	**44.66**	**302**	P		**P**	**00 21 10.8**	**-1.0**
MAKZ					pmax	pmax		
	comp=Z,7.0nm,1.0s							
KURK	**Kurchatov**	**46.19**	**308**	P		**P**	**00 21 22.8**	**-1.0**
KURK					pmax	pmax		
	comp=Z,14nm,0.5s							
KURK	**Kurchatov**	**46.19**	**308**	*e*P		**P**	**00 21 22.8**	**-1.0**
	comp=Z,19nm,0.6s							
ODAN	**Odare**	**47.03**	**274**	*e*P		**P**	**00 21 31.2**	**+0.2**
	comp=Z,8.5nm,0.5s							
PDGK	**Podgornoye**	**47.16**	**298**	P		**P**	**00 21 30.5**	**-1.0**
PDGK					pmax	pmax		
	comp=Z,8.0nm,1.2s							
RAMN	**Ramite**	**47.62**	**274**	*e*P		**P**	**00 21 35.7**	**+0.1**
	comp=Z,15nm,0.8s							
GUN	**Gumba**	**47.76**	**276**	*e*P		**P**	**00 21 37.2**	**+0.4**
	comp=Z,15nm,0.4s							
KKN	**Kakani**	**48.28**	**276**	*e*P		**P**	**00 21 41.0**	**+0.3**
	comp=Z,15nm,0.6s							
GKN	**Gorkha**	**48.70**	**276**	*e*P		**P**	**00 21 44.0**	**+0.2**
	comp=Z,9.6nm,0.4s							
ILAR	**Eielson Array**	**48.80**	**33**	P		**P**	**00 21 43.9**	**-0.1**
	comp=Z,1.6nm,0.9s,baz=266,slow=6.0,SNR=16							
ILAR					pP	**sP**	**00 21 52.5**	**-0.3**
	comp=Z,2.0nm,0.8s,baz=270,slow=6.4,SNR=11							
PYUN	**Piuthan**	**49.95**	**277**	*e*P		**P**	**00 21 53.7**	**+0.2**
TKM2	**Tokmak 2**	**50.00**	**298**	*e*P		**P**	**00 21 54.4**	**+0.7**
TKM2					pmax	pmax		
	comp=Z,5.0nm,0.5s							
TKM2	**Tokmak 2**	**50.00**	**298**	*e*P		**P**	**00 21 54.4**	**+0.7**
	comp=Z,5.2nm,0.5s							
CHKZ	**Chkalovo**	**50.50**	**313**	P		**P**	**00 21 56.2**	**-0.8**
CHKZ					pmax	pmax		
	comp=Z,3.0nm,0.6s							
OTUK	**Ortayu**	**50.71**	**306**	P		**P**	**00 21 58.1**	**-0.6**
OTUK					pmax	pmax		
	comp=Z,10.0nm,1.3s							
BVA0	**Borovoye Array**	**50.77**	**312**	*i* P		**P**	**00 21 58.5**	**-0.6**
BVA0					pmax	pmax		
	comp=Z,1.0nm,0.5s							
BVAR	**Borovoye Array**	**50.77**	**312**	P		**P**	**00 21 59.3**	**+0.2**
	comp=Z,1.9nm,0.5s,baz=66,slow=7.6,SNR=17							
KSH	**Kashi**	**50.83**	**294**	P		P	00 22 04.1	+4.2
KSH					pmax	pmax		
	comp=Z,5.0nm,1.1s							
BRVK	**Borovoye**	**50.83**	**312**	P		**P**	**00 21 57.9**	**-1.6**
BRVK					pmax	pmax		
	comp=Z,6.0nm,1.0s							
AAK	**Ala-Archa**	**50.86**	**298**⇑	*e*P		**P**	**00 22 00.0**	**-0.2**
AAK					pmax	pmax		
	comp=Z,7.0nm,0.8s							
AAK	**Ala-Archa**	**50.86**	**298**	*e*P		**P**	**00 21 59.9**	**-0.2**
	comp=Z,3.1nm,0.8s							
ZRNK	**Zerenda**	**51.61**	**312**	P		**P**	**00 22 04.9**	**-0.4**
ZRNK					pmax	pmax		
	comp=Z,2.0nm,0.6s							
MNAS	**Manas**	**52.30**	**299**	P		**P**	**00 22 10.7**	**-0.2**
MNAS					pmax	pmax		
	comp=Z,5.0nm,0.7s							
SFK	**Sufi-Kurgan**	**52.44**	**295**	P		**P**	**00 22 12.2**	**+0.2**
KK31	**Karatay Array**	**53.48**	**300**	P		**P**	**00 22 19.0**	**-0.4**
KK31					pmax	pmax		
	comp=Z,2.0nm,0.6s							
KKAR	**Karatay Array**	**53.48**	**300**	*e*P		**P**	**00 22 18.8**	**-0.6**
KKAR					pmax	pmax		
	comp=Z,3.0nm,0.5s							
KKAR	**Karatay Array**	**53.48**	**300**	*e*P		**P**	**00 22 18.8**	**-0.6**
	comp=Z,2.6nm,0.5s							
INK	**Inuvik**	**53.73**	**27**	P		**P**	**00 22 21.1**	**+0.4**
	comp=Z,1.1nm,0.7s,baz=270,slow=7.6,SNR=6.6							
SVE	**Sverdlovsk**	**55.27**	**319**	*e*P		**P**	**00 22 33.1**	**+1.0**
SVE					pmax	pmax		
	comp=Z,17nm,0.9s							
ARU	**Arti**	**56.48**	**319**	*c* P		**P**	**00 22 40.8**	**-0.1**
ARU							00 23 39.2	
ARU					S	**S**	**00 30 28.5**	**-2.2**
ARU					SS	**SS**	**00 34 12.7**	**-4.8**
ARU					pmax	pmax		
	comp=Z,12nm,1.0s							
ARU	**Arti**	**56.48**	**319**	*e*P		**P**	**00 22 40.7**	**-0.1**
	comp=Z,6.7nm,0.7s							
WRAB	**Tennant Creek**	**57.55**	**189**	*e*P		**P**	**00 22 47.4**	**-1.3**
WRAB					pmax	pmax		
	comp=Z,2.0nm,0.5s							
WRAB	**Tennant Creek**	**57.55**	**189**	*e*P		**P**	**00 22 47.4**	**-1.3**
	comp=Z,2.4nm,0.5s							
WRA	**Warramunga Arr**	**57.56**	**189**	P		**P**	**00 22 47.2**	**-1.6**
	comp=Z,2.8nm,0.6s,baz=6.4,slow=7.1,SNR=42							
KBL	**Kabul**	**57.87**	**291**	P		**P**	**00 22 52.4**	**+1.1**
KBL					pmax	pmax		
	comp=Z,7.0nm,1.0s							
AB31	**Akbulak array**	**58.17**	**310**	P		**P**	**00 22 52.1**	**-0.8**
AB31					pmax	pmax		
	comp=Z,1.0nm,0.5s							
ABKAR	**Akbulak array**	**58.17**	**310**	*e*P		**P**	**00 22 52.3**	**-0.6**
	comp=Z,1.7nm,0.5s							
AKTO	**Aktyubinsk**	**58.88**	**312**	P		P	00 22 54.8	-3.0
AKTO					pmax	pmax		
	comp=Z,4.0nm,1.1s							
ASAR	**Alice Springs**	**61.28**	**189**	P		**P**	**00 23 13.6**	**-0.9**
	comp=Z,2.0nm,0.7s,baz=9.2,slow=6.5,SNR=25							
ASAR					pP	**pP**	**00 23 21.1**	**+0.1**
	comp=Z,1.6nm,0.9s,baz=17,slow=7.3,SNR=7.7							
RES	**Resolute Bay**	**62.04**	**15**	P		**P**	**00 23 20.1**	**+1.1**
RES					pmax	pmax		
	comp=Z,7.0nm,2.6s							
YKA	**Yellowknife Ar**	**63.13**	**30**	P		**P**	**00 23 26.4**	**-0.1**
	comp=Z,0.6nm,0.8s,baz=301,slow=6.7,SNR=13							
YKA					pP	**sP**	**00 23 35.1**	**-0.3**
	comp=Z,0.8nm,0.7s,baz=301,slow=6.5,SNR=12							
ARCES	**ARCESS Array B**	**63.84**	**340**	P		**P**	**00 23 31.9**	**+0.8**
	comp=Z,5.6nm,0.9s,baz=22,slow=10,SNR=3.6							
GEYT	**Alibeck**	**64.20**	**299**	P		**P**	**00 23 33.0**	**-1.0**
	comp=Z,1.9nm,0.7s,baz=15,slow=6.2,SNR=4.3							
FINES	**FINESS Array B**	**68.75**	**332**	P		**P**	**00 24 02.8**	**+0.2**
	comp=Z,8.6nm,0.8s,baz=61,slow=9.0,SNR=26							
FINES	**FINESS Array B**	**68.75**	**332**	P		**P**	**00 24 02.8**	**+0.2**
FINES					pmax	pmax		
	comp=Z,8.0nm,0.8s							
STKA	**Stephens Creek**	**68.96**	**181**	P		**P**	**00 24 03.8**	**-0.4**
	comp=Z,1.0nm,0.5s,baz=171,slow=19,SNR=3.8							
VSU	**Vasula**	**70.43**	**330**⇓	*e*P		**P**	**00 24 13.5**	**+0.5**
VSU					pmax	pmax		
	comp=Z,51nm,2.5s							
KBZ	**Khabaz**	**71.12**	**311**	P		**P**	**00 24 18.3**	**+0.8**
	comp=Z,3.4nm,1.0s,baz=5.6,slow=0.7,SNR=5.4							
KBZ	**Khabaz**	**71.12**	**311**	P		**P**	**00 24 18.3**	**+0.8**
KBZ					pmax	pmax		
	comp=Z,4.0nm,0.9s							
KIV	**Kislovodsk**	**71.12**	**311**	*e*P		**P**	**00 24 19.1**	**+1.4**
KIV					pmax	pmax		
	comp=Z,11nm,1.0s							
KIV	**Kislovodsk**	**71.12**	**311**	*e*P		**P**	**00 24 17.0**	**-0.7**
	comp=Z,9.2nm,0.8s							
FFC	**Flin Flon**	**73.01**	**33**	*e*P		**P**	**00 24 28.4**	**-0.3**
FFC					pmax	pmax		
	comp=Z,4.0nm,0.9s							
FFC	**Flin Flon**	**73.01**	**33**	*e*P		**P**	**00 24 28.4**	**-0.3**
	comp=Z,4.4nm,0.9s							
NB2	**NORSAR Subarra**	**74.06**	**338**	P		**P**	**00 24 34.6**	**-0.1**
	comp=Z,1.6nm,0.9s,baz=39,slow=6.2							
NOA	**NORSAR Array B**	**74.06**	**338**	P		**P**	**00 24 35.0**	**+0.3**
	comp=Z,2.9nm,0.9s,baz=39,slow=5.8,SNR=5.3							
NOA					pP	**sP**	**00 24 43.8**	**0.0**
	comp=Z,2.3nm,0.9s,baz=40,slow=5.9,SNR=3.5							
NVAR	**Mina Array Bea**	**74.23**	**54**	P		**P**	**00 24 36.5**	**+0.1**
	comp=Z,0.1nm,0.3s,baz=307,slow=5.4,SNR=2.8							
NVAR					pP	**sP**	**00 24 46.0**	**+0.6**
	comp=Z,0.8nm,0.7s,baz=299,slow=6.6,SNR=5.3							
AKASG	**Malin Array Be**	**74.37**	**323**	P		**P**	**00 24 36.5**	**-0.1**
	comp=Z,1.6nm,0.4s,baz=45,slow=6.1,SNR=15							
AKASG					pP	**sP**	**00 24 46.2**	**+0.5**
	comp=Z,1.0nm,0.4s,baz=46,slow=5.9,SNR=7.0							
AKASG	**Malin Array Be**	**74.37**	**323**	P		**P**	**00 24 36.5**	**-0.1**
AKASG					*i*PP	**sP**	**00 24 46.2**	**+0.5**
AKASG					pmax	pmax		
	comp=Z,1.0nm,0.4s							
AKASG					pmax	pmax		
	comp=Z,1.0nm,0.4s							
KIEV	**Kiev**	**74.38**	**323**⇑	*e*P		**P**	**00 24 36.4**	**-0.3**
KIEV					pmax	pmax		
	comp=Z,4.0nm,0.9s							
PDAR	**Pinedale Array**	**76.92**	**46**	P		**P**	**00 24 52.5**	**+0.7**
	comp=Z,0.4nm,0.6s,baz=294,slow=2.5,SNR=5.8							
BRTR	**Keskin Array B**	**79.06**	**312**	P		**P**	**00 25 04.5**	**+0.9**
	comp=Z,2.0nm,1.0s,baz=64,slow=5.6,SNR=7.3							
OKC	**Ostrava-Krasne**	**80.06**	**327**	*e*P		**P**	**00 25 09.4**	**+0.8**
OKC	**Ostrava-Krasne**	**80.06**	**327**	*e*P		**P**	**00 25 09.4**	**+0.8**
DPC	**Dobruska-Polom**	**80.45**	**328**	*e*P		**P**	**00 25 11.8**	**+1.0**
DPC	**Dobruska-Polom**	**80.45**	**328**	*e*P		**P**	**00 25 11.8**	**+1.0**
PSZ	**Piszkesteto**	**80.70**	**325**	P		**P**	**00 25 14.1**	**+1.9**
PSZ					pmax	pmax		
	comp=Z,10.0nm,1.9s							
CLL	**Collm**	**81.06**	**331**⇓	*i* P		**P**	**00 25 14.2**	**+0.2**
	comp=Z,8.0nm,1.1s							
CLL				*e*			00 25 21.0	
CLL	**Collm**	**81.06**	**331**⇓	*i* P		**P**	**00 25 14.2**	**+0.2**
CLL				*e*			00 25 21.0	
CLL					pmax	pmax		
	comp=Z,3.0nm,1.1s							
PRU	**Pruhonice**	**81.47**	**329**	*e*P		**P**	**00 25 16.8**	**+0.6**
PRU	**Pruhonice**	**81.47**	**329**	*e*P		**P**	**00 25 16.8**	**+0.6**
KHC	**Kasperske Hory**	**82.53**	**329**	*e*P		**P**	**00 25 22.3**	**+0.5**
KHC	**Kasperske Hory**	**82.53**	**329**	*e*P		**P**	**00 25 22.3**	**+0.5**
GERES	**GERESS Array B**	**82.70**	**329**	P		**P**	**00 25 23.0**	**+0.2**
	comp=Z,1.4nm,0.6s,baz=35,slow=6.0,SNR=11							
GERES	**GERESS Array B**	**82.70**	**329**	P		**P**	**00 25 23.0**	**+0.2**
GERES					pmax	pmax		
	comp=Z,2.0nm,0.7s							
VTS	**Vitosha**	**82.92**	**319**	P		**P**	**00 25 25.6**	**+1.4**
VTS					pmax	pmax		
	comp=Z,5.0nm,0.9s							
BFO	**Black Forest**	**85.26**	**331**	*i* P		**P**	**00 25 36.9**	**+1.1**
TXAR	**Lajitas Array**	**89.36**	**53**	P		P	00 26 04.7	+8.7
	comp=Z,0.7nm,0.7s,baz=306,slow=4.5,SNR=6.3							
TORD	**Torodi Ar. Bea**	**117.49**	**316**	PKP		**PKPdf**	**00 31 44.2**	**-1.2**
	comp=Z,0.2nm,0.6s,baz=58,slow=2.4,SNR=3.8							
LPAZ	**La Paz**	**145.93**	**60**	PKPbc		**PKPdf**	**00 32 39.5**	**+0.3**
	comp=Z,0.9nm,0.6s,baz=285,slow=4.0,SNR=5.9							

*ISCJB **13** 00:20:58.3±0.9, 17°.4S±0°.5×178°.8W±0°.2, h533km, mb3.6/8, Error ellipse: s-maj=69.8km s-min=9.1km az=155.8*
*IDC **13** 00:20:58.4±1.5, 17°.04S×179°.03W, h516km±21km, mb3.3/8, mb1 3.7/10, mb1mx3.3/30, mbtmp4.2/10, Error ellipse: s-maj=72.7km s-min=11.4km az=152.0*
ISC 13 00:20:58.7±1.0, 17°.4S±0°.5×178°.8W±0°.2, h533km, n11, σ1§30/15, mb3.4/8, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
AFI	**Afiamalu**	**7.58**	**64**	P	Op	**P**	**00 22 50.3**	**-1.6**
	15nm,0.3s,baz=142,slow=2.3,SNR=10							
AFI				S		**S**	**00 24 23.1**	**-1.5**
	5.0nm,0.3s,baz=47,slow=16,SNR=2.7							
DZM	**Mont Dzumac**	**14.67**	**249**	P		**P**	**00 24 05.0**	**-0.3**
	0.7nm,0.3s,baz=86,slow=21,SNR=7.8							
STKA	**Stephens Creek**	**38.57**	**241**	P		**P**	**00 27 36.9**	**+0.9**
	6.9nm,0.5s,baz=94,slow=11,SNR=27							
WRA	**Warramunga Arr**	**44.39**	**259**	P		**P**	**00 28 21.4**	**-0.8**
	2.1nm,0.6s,baz=94,slow=7.2,SNR=25							
WRA					PcP	**PcP**	**00 29 54.0**	**-0.7**
	0.7nm,0.7s,baz=88,slow=3.5,SNR=3							
ASAR	**Alice Springs**	**44.60**	**254**	P		**P**	**00 28 23.9**	**0.0**
	22nm,0.6s,baz=86,slow=8.3,SNR=219							
ASAR					PcP	**PcP**	**00 29 55.4**	**0.0**
	1.0nm,0.7s,baz=89,slow=4.8,SNR=5.1							
ASAR					S	**S**	**00 34 19.0**	**-2.2**
	1.1nm,1.0s,baz=85,slow=15,SNR=5.7							
NVAR	**Mina Array Bea**	**79.30**	**44**	P		**P**	**00 32 11.1**	**+1.7**
	0.5nm,0.6s,baz=220,slow=8.0,SNR=5.3							
TXAR	**Lajitas Array**	**86.02**	**58**	P		**P**	**00 32 45.3**	**+2.1**
	0.4nm,0.7s,baz=208,slow=6.5,SNR=7.0							
PDAR	**Pinedale Array**	**87.22**	**44**	P		**P**	**00 32 49.0**	**+0.1**
	0.3nm,0.5s,baz=227,slow=5.5,SNR=4.6							
CMAR	**Chiang Mai Arr**	**88.39**	**290**	P		**P**	**00 32 55.5**	**+0.9**
	0.2nm,0.4s,baz=335,slow=30,SNR=4.4							
YKA	**Yellowknife Ar**	**94.02**	**25**	P		**P**	**00 33 19.6**	**+0.2**
	0.1nm,0.2s,baz=244,slow=4.7,SNR=8.1							
GERES	**GERESS Array B**	**147.04**	**345**	PKPbc		**PKPbc**	**00 39 40.8**	**-1.0**
	0.1nm,0.4s,baz=328,slow=22,SNR=2.4							

*ISCJB **13** 00:37:25.7±0.7, 17°.74S±0°.07×69°.4W±0°.1, h163km±6km, mb3.5/3, Error ellipse: s-maj=20.4km s-min=8.1km az=22.8*
*GUC **13** 00:37:27.7±0.7, 17°.92S×69°.58W, h164km±11km, ML3.5*
*IDC **13** 00:37:29.1±5.6, 17°.58S×69°.07W, h170km±31km, mb3.3/3, mb1 3.3/3, mb1mx3.0/23, mbtmp3.7/3, Error ellipse: s-maj=85.4km s-min=39.7km az=17.0*
ISC 13 00:37:26.2±1.0, 17°.71S±0°.07×69°.4W±0°.1, h157km±8km, n10, σ0§94/17, mb3.6/3, 6C, Peru-Bolivia border region

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
PB12	**IPOC Station P**	**1.25**	**223**	*i* P		**Pn**	**00 37 54.1**	**+0.2**
PB12				*i* S		**Sn**	**00 38 14.8**	**-0.4**
MNMC	**Minye Minye**	**1.43**	**187**	*i* P		**Pn**	**00 37 56.8**	**+0.9**
MNMC				*i* S		**Sn**	**00 38 19.4**	**+0.7**
LPAZ	**La Paz**	**1.88**	**41**	P		**Pn**	**00 38 01.6**	**+0.5**
	26nm,0.3s,baz=229,slow=6.7,SNR=803							
LPAZ				S		**Sn**	**00 38 26.8**	**-0.9**
	1.3nm,0.3s,baz=325,slow=20,SNR=3.5							
PSGC	**Pisagua**	**1.99**	**199**⇑	*i* P		**Pn**	**00 38 01.9**	**+0.1**
PSGC				*i* S		**Sn**	**00 38 28.1**	**-1.2**
PSGC				IAML			00 38 28.7	
	comp=N,458nm,0.3s							
PB11	**IPOC Station P**	**2.06**	**186**⇑	*i* P		**Pn**	**00 38 03.1**	**+0.6**
PB11				*i* S		**Sn**	**00 38 30.2**	**-0.5**
PB08	**IPOC Station P**	**2.44**	**174**⇑	*i* P		**Pn**	**00 38 08.5**	**+1.3**
PB08				*i* S		**Sn**	**00 38 38.6**	**-0.4**
HMBC	**Humberstone**	**2.59**	**190**⇑	*i* P		**Pn**	**00 38 09.1**	**+0.2**
HMBC				*i* S		**Sn**	**00 38 40.7**	**-1.3**
HMBC				IAML			00 38 43.0	
	comp=E,162nm,0.3s							
DBIC	**Dimbokro**	**68.18**	**75**	P		**P**	**00 48 08.9**	**-1.2**
	comp=E,2.0nm,0.8s,baz=196,slow=7.7,SNR=3.4							
TORD	**Torodi Ar. Bea**	**76.58**	**71**	P		**P**	**00 48 59.7**	**-0.2**
	comp=E,0.6nm,0.5s,baz=256,slow=6.0,SNR=26							
YKA	**Yellowknife Ar**	**87.47**	**341**	P		**P**	**00 49 56.8**	**+1.3**
	comp=E,0.1nm,0.5s,baz=132,slow=4.4,SNR=3.1							

*IDC **13** 00:40:51.6±1.6, 42°.25S×174°.47E, h0km, mb3.5/2, mb1 3.8/4, mb1mx3.6/24, mbtmp3.6/4, ML3.5/2, MS3.3/1, Ms1 3.3/1, ms1mx2.9/21, Error ellipse: s-maj=45.5km s-min=25.9km az=137.0*
*WEL **13** 00:40:55.9±0.2, 42°.41S×174°.56E, h33km, ML3.9/38, Error ellipse: s-maj=1.6km s-min=1.6km az=90.0*
ISC 13 00:40:51.8±1.4, 42°.46S±0°.04×174°.59E±0°.03, h3km±10km, n92, σ1§24/92, 17C-6D, Off east coast of South Island

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
CMWZ	**Cape Campbell**	**0.76**	**338**	⇑P*		**Pn**	**00 41 10.0**	**+0.5**
CMWZ				S*		**Sn**	**00 41 20.2**	**-1.2**
CMWZ				S*		**Sb**	**00 41 20.4**	**+1.9**
KHZ	**Kahutara**	**0.78**	**273**	P*		**Pn**	**00 41 09.6**	**0.0**
KHZ				S*		**Sn**	**00 41 19.5**	**-2.3**
KHZ				S*		**Sb**	**00 41 20.1**	**+1.1**
BSWZ	**Blackbirch Sta**	**0.92**	**324**	P*		**Pn**	**00 41 11.6**	**+0.1**
BSWZ				S*		**Sn**	**00 41 22.6**	**-2.6**
BSWZ				AML		AML	00 41 23.0	
PLWZ	**Palliser**	**1.02**	**29**	⇑P*		**Pn**	**00 41 13.4**	**+0.4**
BHW	**Baring Head**	**1.07**	**11**	⇑P*		**Pn**	**00 41 13.8**	**+0.2**
BHW				AML		AML	00 41 26.6	
BHW				AML		AML	00 41 26.7	
TUWZ	**Tuamarina**	**1.14**	**335**	⇑P*		**Pg**	**00 41 14.4**	**+0.8**
TUWZ				AML		AML	00 41 28.6	
TUWZ				AML		AML	00 41 28.8	
MSWZ	**Moikau Station**	**1.15**	**25**	⇑P*		**Pg**	**00 41 15.0**	**+1.1**
MSWZ				S*		**Sg**	**00 41 28.1**	**-0.7**
MSWZ				AML		AML	00 41 29.6	
WEL	**Wellington**	**1.18**	**6**	⇑P*		**Pg**	**00 41 15.4**	**+1.0**
PAWZ	**Paruwai Farm**	**1.24**	**30**	⇑P*		**Pg**	**00 41 16.2**	**+0.6**
PAWZ				S*		**Sb**	**00 41 29.6**	**-2.7**
PAWZ				AML		AML	00 41 31.1	
TRWZ	**Traveller**	**1.34**	**38**	⇑PN		**Pb**	**00 41 17.7**	**+0.2**
TRWZ				AML		AML	00 41 34.3	
TRWZ				AML		AML	00 41 35.3	
CAW	**Cannon Point**	**1.40**	**15**	⇑PN		**Pg**	**00 41 18.5**	**-0.1**
CAW				AML		AML	00 41 33.9	
CAW				AML		AML	00 41 34.3	
THZ	**Tophouse**	**1.44**	**298**	⇑PN		**Pb**	**00 41 18.8**	**-0.4**
THZ				AML		AML	00 41 38.1	
THZ				AML		AML	00 41 55.7	
MTW	**Mount Morrison**	**1.47**	**28**	⇑PN		**Pb**	**00 41 19.2**	**-0.5**
MTW				AML		AML	00 41 36.3	
MTW				AML		AML	00 41 36.8	
NNZ	**Nelson**	**1.54**	**323**	⇑PN		**Pb**	**00 41 19.6**	**-1.2**
NNZ				AML		AML	00 41 44.6	
NNZ				AML		AML	00 41 57.1	
KIW	**Kapiti Island**	**1.61**	**9**	⇑PN		**Pb**	**00 41 21.6**	**-0.6**
KIW				AML		AML	00 41 39.2	
KIW				AML		AML	00 41 40.2	
TMWZ	**Te Maipa**	**1.66**	**36**	PN		**Pn**	**00 41 21.7**	**-0.1**
OGWZ	**Otaki Gorge**	**1.70**	**15**	⇑PN		**Pb**	**00 41 22.6**	**-1.0**
HOWZ	**Holdsworth Sta**	**1.71**	**24**	PN		**Pb**	**00 41 22.6**	**-1.1**
DUWZ	**D'Urville Isla**	**1.73**	**343**	PN		**Pb**	**00 41 22.8**	**-1.4**
DUWZ				AML		AML	00 41 44.4	
DUWZ				AML		AML	00 42 04.8	
LTZ	**Lake Taylor**	**1.74**	**259**	PN		**Pn**	**00 41 23.5**	**+0.5**
LTZ				AML		AML	00 41 44.2	
LTZ				AML		AML	00 41 44.3	
CRLZ	**Canterbury Las**	**1.83**	**232**	PN		**Pn**	**00 41 24.5**	**+0.5**
CRLZ				AML		AML	00 41 49.6	
MQZ	**McQueen's Vall**	**1.89**	**228**	PN		**Pn**	**00 41 24.8**	**-0.1**
MQZ				AML		AML	00 41 46.6	
MQZ			

BKZ	**Black Stump Fm**	**3.59**	**24**	AML	AML	00 42 32.3	
FOZ	**Fox Glacier**	**3.67**	**251**	PN	**Pn**	**00 41 50.6**	**+1.3**
ARHZ	**Aropaoanui**	**3.67**	**31**	PN	**Pn**	**00 41 49.5**	**0.0**
RATZ	**Rangitukua**	**3.70**	**14**	PN	**Pn**	**00 41 52.0**	**+2.1**
LBZ	**Lake Benmore**	**3.75**	**238**	PN	**Pn**	**00 41 51.2**	**+0.7**
NMHZ	**Naumai**	**3.75**	**27**	PN	**Pn**	**00 41 50.8**	**+0.2**
ODZ	**Otahua Downs**	**3.85**	**227**	⇑PN	**Pn**	**00 41 52.6**	**+0.7**
MRHZ	**Matea Rd**	**3.88**	**22**	PN	**Pn**	**00 41 52.1**	**-0.2**
HIZ	**Hauiti**	**3.95**	**3**	PN	**Pn**	**00 41 55.1**	**+1.9**
HIZ				AML	AML	00 42 40.3	
TLZ	**Tolley Road**	**4.19**	**10**	PN	**Pn**	**00 41 57.0**	**+0.4**
RAGZ	**Rawiri**	**4.50**	**29**	PN	**Pn**	**00 42 00.0**	**-0.9**
JCZ	**Jackson Bay**	**4.54**	**247**	PN	**Pn**	**00 42 02.0**	**+0.6**
URZ	**Urewera**	**4.61**	**25**	PN	**Pn**	**00 42 00.8**	**-1.6**
	3.3nm,0.3s,baz=227,slow=3.4,SNR=22						
URZ				Sn	**Sn**	**00 42 52.7**	**-3.7**
	4.7nm,0.3s,baz=89,slow=18,SNR=8.2						
URZ	**Urewera**	**4.61**	**25**	PN	**Pn**	**00 42 00.8**	**-1.6**
MWZ	**Matawai**	**4.69**	**30**	PN	**Pn**	**00 42 02.2**	**-1.2**
MWZ				AML	AML	00 42 54.4	
MWZ				AML	AML	00 42 56.1	
EAZ	**Earnscleugh**	**4.72**	**232**	PN	**Pn**	**00 42 04.5**	**+0.7**
TOZ	**Tahuroa Road**	**4.77**	**9**	PN	**Pn**	**00 42 04.8**	**+0.3**
HAZ	**Te Kaha**	**5.29**	**29**	PN	**Pn**	**00 42 10.7**	**-1.0**
KBAZ	**Karaka Road Bo**	**5.36**	**3**	PN	**Pn**	**00 42 14.2**	**+1.6**
AWAZ	**Awhitu Peninsu**	**5.39**	**0**	PN	**Pn**	**00 42 14.2**	**+1.2**
MLZ	**Mavora Lakes**	**5.51**	**236**	PN	**Pn**	**00 42 15.0**	**+0.3**
WIAZ	**Waiheke Island**	**5.67**	**4**	PN	**Pn**	**00 42 18.0**	**+1.0**
WCZ	**Waipu Caves**	**6.51**	**358**	PN	**Pn**	**00 42 29.4**	**+1.0**
ASAR	**Alice Springs**	**38.47**	**286**	P	**P**	**00 48 14.5**	**-0.6**
	0.3nm,0.4s,baz=123,slow=6.3,SNR=4.9						
WRA	**Warramunga Arr**	**40.59**	**291**	P	**P**	**00 48 31.1**	**-1.7**
	0.8nm,0.7s,baz=127,slow=8.5,SNR=6.7						
JAY	**Jayapura**	**49.98**	**313**	LR	LR	01 08 17.6	
	comp=Z,32nm,20.6s,slow=33						
KURBB	**Kurchatov Arra**	**124.63**	**310**	PKP	**PKPdf**	**00 59 52.6**	**+0.7**
	baz=242,slow=2.0						
TORD	**Torodi Ar. Bea**	**150.15**	**194**	PKPbc	**PKPbc**	**01 00 44.2**	**-0.1**
	0.1nm,0.4s,baz=176,slow=3.0,SNR=6.5						

JMA 13 00:52:56.1±0.2, 38°29N×142°29E, h34km±3km, M3.5, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**0.76**	**283**	P	Pn	00 53 10.3	-0.1
JIO				S	Sn	00 53 20.2	-0.4
OFUJ	**Ofunato**	**0.93**	**329**	P	Pn	00 53 13.0	+0.3
JMK	**Ichinoseki**	**1.07**	**309**	P	Pn	00 53 15.2	+0.6
JOU	**Okura**	**1.28**	**274**	P	Pb	00 53 18.7	-1.0
JOU				*e*S	Sn	00 53 34.5	+0.9
MIYJ	**Miyakonagasawa**	**1.34**	**344**	P	Pn	00 53 18.8	+0.4
MIYJ				*e*S	Sn	00 53 35.3	+0.4
JOM	**Ohasama**	**1.42**	**327**	P	Pb	00 53 20.7	-1.2
JYK	**Kaneyama**	**1.64**	**293**	P	Pn	00 53 23.7	+1.2
JFT	**Otama**	**1.73**	**244**	*e*S	Sn	00 53 45.8	+1.2
JYS	**Shirataka**	**1.75**	**268**	P	Pn	00 53 25.2	+1.1

IDC ***13*** *01:00:15.0±1.2, 6°34S×155°81E, h0km, mb3.7/6, mb1 4.0/8, mb1mx3.8/44, mbtmp3.9/8, ML2.7/1, Error ellipse: s-maj=32.6km s-min=25.7km az=106.0*

ISCJB ***13*** *01:00:15.2±0.8, 6°3S±0°.1×155°.8E±0°.1, h10km, mb3.8/7, Error ellipse: s-maj=18.8km s-min=13.1km az=32.3*

ISC 13 01:00:16.9±0.9, 6°3S±0°.2×155°.8E±0°.1, h10km, n11, σ1§11/11, mb3.9/7, Bougainville-Solomon Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
HNR	**Honiara**	**5.17**	**128**	Pn	**Pn**	**01 01 33.6**	**-0.8**
	28nm,0.3s,baz=152,slow=7.0,SNR=3.1						
PMG	**Port Moresby**	**9.13**	**249**	Pn	**Pn**	**01 02 29.5**	**+0.6**
	3.9nm,0.3s,baz=45,slow=9.9,SNR=10						
DZM	**Mont Dzumac**	**18.78**	**148**	P	**Pn**	**01 04 38.8**	**+1.7**
	0.1nm,0.3s,baz=171,slow=13,SNR=3.3						
WRA	**Warramunga Arr**	**24.91**	**235**	P	**P**	**01 05 39.4**	**-1.0**
	2.3nm,0.8s,baz=59,slow=9.8,SNR=14						
ASAR	**Alice Springs**	**27.27**	**228**	P	**P**	**01 06 00.2**	**-1.5**
	0.7nm,0.5s,baz=62,slow=8.7,SNR=9.3						
CMAR	**Chiang Mai Arr**	**61.21**	**295**	P	**P**	**01 10 32.0**	**-0.4**
	5.1nm,0.4s,baz=117,slow=5.3,SNR=10.0						
SONM	**Songino Array**	**69.16**	**327**	P	**P**	**01 11 24.8**	**+1.1**
	0.2nm,0.4s,baz=165,slow=6.0,SNR=2.6						
MKAR	**Makanchi Array**	**83.39**	**318**	P	**P**	**01 12 45.0**	**+0.4**
	0.3nm,0.4s,baz=91,slow=6.5,SNR=5.1						
ZALV	**Zalesovo Beam**	**84.03**	**326**	P	**P**	**01 12 46.5**	**-1.0**
	0.3nm,0.4s,baz=90,slow=2.9,SNR=2.9						
KURBB	**Kurchatov Arra**	**86.79**	**322**	P	**P**	**01 13 01.1**	**-0.4**
	0.2nm,0.4s,baz=96,slow=5.1,SNR=4.2						
TORD	**Torodi Ar. Bea**	**153.60**	**287**	PKPbc	**PKPbc**	**01 20 17.2**	**+0.1**
	0.3nm,0.6s,baz=71,slow=2.0,SNR=6.2						

JMA ***13*** *01:03:53.2±0.1, 39°.20N×142°.40E, h33km±1km, M3.7*

IDC ***13*** *01:03:58.8±3.5, 39°.08N×142°.45E, h74km±33km, mb3.1/7, mb1 3.3/8, mb1mx3.2/49, mbtmp3.4/8, Error ellipse: s-maj=29.2km s-min=21.0km az=84.0*

ISC 13 01:03:50.0±2.2, 39°.20N±0°.04×142°.49E±0°.08, h0km±13km, n22, σ1§12/24, mb3.6/7, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MIYJ	**Miyakonagasawa**	**0.64**	**306**	P	**Pb**	**01 04 04.7**	**+0.6**
MIYJ				S	**Sb**	**01 04 12.7**	**-0.9**
OFUJ	**Ofunato**	**0.65**	**260**	P	**Pb**	**01 04 04.8**	**+0.6**
OFUJ				S	**Sb**	**01 04 13.0**	**-0.8**
JOM	**Ohasama**	**0.97**	**287**	P	**Pb**	**01 04 09.8**	**+0.2**
JOM				S	**Sb**	**01 04 21.9**	**-1.1**
JMK	**Ichinoseki**	**1.02**	**256**	P	**Pb**	**01 04 10.5**	**0.0**
JMK				S	**Sg**	**01 04 23.1**	**+0.4**
JIO	**Ouri**	**1.16**	**230**	P	**Pg**	**01 04 12.2**	**-0.1**
JIO				S	**Sg**	**01 04 25.7**	**-1.6**
JKZ	**Kuzumaki**	**1.19**	**312**	P	**Pb**	**01 04 13.7**	**+0.2**
JKZ				S	**Sg**	**01 04 28.5**	**+0.2**
JANG	**Nango**	**1.39**	**328**	P	**Pg**	**01 04 16.6**	**-0.1**
JANG				S	**Sg**	**01 04 33.7**	**-1.1**
JRG	**Rokugo**	**1.45**	**278**	P	**Pg**	**01 04 17.6**	**-0.3**
MAT	**Matsushiro**	**4.30**	**233**	P	**Pn**	**01 04 59.0**	**+2.3**
MAT				S	Sn	01 05 27.6	-20
MJAR	**Matsushiro Arr**	**4.30**	**233**	P	**Pn**	**01 04 59.0**	**+2.4**
	0.9nm,0.3s,baz=41,slow=11,SNR=16						
JHJ	**Hachijo jima 2**	**6.45**	**201**	P	Pn	01 05 31.1	+4.9
	88nm,0.3s,baz=245,slow=23,SNR=3.7						
H11N2	**WAKE ISLAND Hy**	**28.62**	**126**	T	T	01 40 10.8	
	baz=318,slow=76,SNR=37						
H11N1	**WAKE ISLAND Hy**	**28.63**	**126**	T	T	01 40 24.5	
	baz=318,slow=76,SNR=44						
H11N3	**WAKE ISLAND Hy**	**28.64**	**126**	T	T	01 40 11.9	
	baz=318,slow=76,SNR=34						
H11S3	**WAKE ISLAND Hy**	**29.42**	**128**	T	T	01 41 29.2	
	SNR=10						
ZALV	**Zalesovo Beam**	**41.12**	**311**	P	**P**	**01 11 36.7**	**+1.3**
	0.6nm,0.4s,baz=85,slow=9.5,SNR=4.4						
MKAR	**Makanchi Array**	**43.72**	**300**	P	**P**	**01 11 56.6**	**-0.2**
	0.3nm,0.7s,baz=87,slow=7.4,SNR=3.9						
KURBB	**Kurchatov Arra**	**45.37**	**306**	P	**P**	**01 12 09.3**	**-0.5**
	0.4nm,0.5s,baz=80,slow=8.6,SNR=8.7						
ILAR	**Eielson Array**	**47.22**	**33**	P	**P**	**01 12 24.4**	**+0.1**
	0.4nm,0.7s,baz=250,slow=5.7,SNR=5.4						
WRA	**Warramunga Arr**	**59.32**	**189**	P	**P**	**01 13 52.0**	**-1.7**
	0.7nm,0.7s,baz=6.8,slow=7.3,SNR=6.0						
YKA	**Yellowknife Ar**	**61.52**	**31**	P	**P**	**01 14 08.3**	**+0.1**
	0.1nm,0.6s,baz=301,slow=6.4,SNR=2.9						
ASAR	**Alice Springs**	**63.05**	**189**	P	**P**	**01 14 17.4**	**-1.5**
	0.3nm,0.7s,baz=5.4,slow=9.7,SNR=2.8						

JMA 13 01:07:44.4±0.1, 38°.49N×142°.20E, h28km±3km, M2.7, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**0.67**	**267**	P	Pb	01 07 57.0	-0.5
JIO				S	Sb	01 08 05.5	-1.0
OFUJ	**Ofunato**	**0.72**	**325**	P	Pb	01 07 58.1	-0.3
OFUJ				S	Sb	01 08 07.7	-0.3
JMK	**Ichinoseki**	**0.90**	**301**	P	Pn	01 08 00.8	-0.3
JMK				*e*S	Sb	01 08 12.9	0.0
JOM	**Ohasama**	**1.21**	**325**	P	Pn	01 08 05.7	+0.2

NIED ***13*** *01:07:00, 36°.90N×140°.70E, h5km, Mw5.4 Best double couple: Mo1.36000×10¹⁷ NP1:φs357.00000°, δ33.00000°, λ-92.00000°. NP2:φs180.00000°, δ57.00000°, λ-89.00000°.*

BJI ***13*** *01:07:55.9, 36°.76N×140°.85E, h24km, mb5.0/70, mB5.3/65, Ms5.4/91, Ms7 5.2/83*

ISCJB ***13*** *01:07:57.0±0.5, 36°.94N±0°.02×140°.42E±0°.02, h7km±3km, mb5.3/252, MS5.0/195, Error ellipse: s-maj=3.3km s-min=2.4km az=153.6*

IDC ***13*** *01:07:57.4±0.3, 36°.99N×140°.50E, h0km, mb5.0/39, mb1 5.1/40, mb1mx5.1/45, mbtmp5.0/40, ML4.8/1, MS4.8/39, Ms1 4.8/39, ms1mx4.7/47, Error ellipse: s-maj=11.0km s-min=8.8km az=86.0*

JMA ***13*** *01:07:58.0, 36°.92N×140°.71E, h5km±1km, MS.7 Broadband fault plane solution: P waves. NP1: φs331.00000°, δ51.00000°, λ-114.00000°. NP2: φs187.00000°, δ45.00000°, λ-63.00000°. Principal axes: T Plg3.0000°, Azm78.0000°; N Plg19.0000°, Azm347.0000°; P Plg71.0000°, Azm177.0000°;*

MOS ***13*** *01:08:01.9±0.8, 37°.31N×140°.40E, h30km, mb5.5/115, MS4.9/73 Error ellipse: s-maj=6.2km s-min=3.9km az=103.6*

NEIC ***13*** *01:08:02.2±1.1, 36°.95N×140°.42E, h32km±7km, mb5.4/159, MS5.0/131, Error ellipse: s-maj=3.7km s-min=2.3km az=129.0*

NEIC Recorded [5L JMA] in Ibaraki.

GCMT ***13*** *01:08:02.2±0.1, 36°.93N×140°.63E, h12km, MW5.3/131, Moment Tensor Solution. s74,c119; s131,c259; Duration: 1§1 Moment tensor: Scale 10¹⁷Nm; Mrr-1.30±.01; Mθθ0.04±.01; Mφφ1.26±.01; Mrθ0.12±.04; Mθφ-0.12±.01; Mφr0.18±.04; Best double couple: Mo1.30400×10¹⁷ NP1:φs180.00000°, δ49.00000°, λ-82.00000°. NP2:φs348.00000°, δ42.00000°, λ-99.00000°. Principal axes: T 1.2830, Plg4.0000°, Azm265.0000°; N 0.0430, Plg6.0000°, Azm355.0000°; P -1.3250, Plg83.0000°, Azm143.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

ISC 13 01:07:59.9±0.4, 36°.95N±0°.02×140°.63E±0°.02, h20km±1km, h20km:pP-P, n1059, σ1§71/1118, mb5.4/262, MS5.0/197, 52C-46D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.20**	**41**	⇑P	**Pg**	**01 08 02.3**	**-2.8**
ONAJ				*e*S	**Sg**	**01 08 05.1**	**-3.6**
JHO	**Hitachi**	**0.34**	**189**	⇑P	**Pg**	**01 08 04.4**	**-2.8**
JHO				S	**Sg**	**01 08 09.1**	**-3.1**
JSB	**Shiboa**	**0.57**	**272**	⇑P	**Pb**	**01 08 10.9**	**-0.3**
JSB				S	**Sb**	**01 08 20.1**	**+1.2**
JFT	**Otama**	**0.62**	**338**	⇑P	**Pg**	**01 08 11.1**	**-1.1**
JFT				S	**Sg**	**01 08 20.3**	**-0.2**
JYT	**Yasato**	**0.80**	**206**	⇑P	**Pg**	**01 08 13.2**	**-2.4**
JYT				*e*S	**Sg**	**01 08 23.7**	**-2.5**
JFY	**Yanaizu**	**0.87**	**302**	⇑P	**Pg**	**01 08 15.9**	**-1.0**
JFY				S	**Sg**	**01 08 28.3**	**-0.2**
JMM	**Marumori**	**0.93**	**8**	⇑P	**Pg**	**01 08 15.7**	**-2.3**
JMM				*e*S	**Sg**	**01 08 28.7**	**-1.5**
I30JP	**ISUMI INFRASON**	**1.66**	**189**	Pg	**Pg**	**01 08 30.0**	**-1.8**
	baz=17,slow=16,SNR=1.9						
I30JP				*i*		01 16 30.0	
	baz=14,slow=330,SNR=0.4						
MJAR	**Matsushiro Arr**	**1.99**	**259**	Pg	**Pn**	**01 08 33.4**	**+1.0**
	981nm,0.3s,baz=82,slow=16,SNR=1189						
MJAR				Lg	Lg	01 09 00.9	
	3μm,0.3s,baz=79,slow=28,SNR=34						
MJAR				LR	LR	01 09 26.8	
	comp=Z,73μm,20.7s,baz=70,slow=48						
MAJO	**Matsushiro**	**1.99**	**259**	*ce*P	**Pn**	**01 08 33.8**	**+1.3**
MAJO	**Matsushiro**	**1.99**	**259**	*e*Pn	**Pn**	**01 08 33.8**	**+1.3**
MAJO				*e*Sn	**Sn**	**01 08 51.2**	**-5.6**
MAT	**Matsushiro**	**1.99**	**259**	P	**Pn**	**01 08 33.8**	**+1.3**
MAT				S	**Sb**	**01 09 00.9**	**+1.1**
INU	**Inuyama**	**3.33**	**242**	*e*Pn	**Pn**	**01 08 52.9**	**+2.0**
INU				*e*Sn	**Sn**	**01 09 30.3**	**+0.4**
JHJ	**Hachijo jima 2**	**3.88**	**191**	Pn	**Pn**	**01 08 58.9**	**+0.4**
	182nm,0.3s,baz=262,slow=6.2,SNR=20						
JHJ				Sn	**Sn**	**01 09 48.0**	**+4.5**
	646nm,0.3s,baz=287,slow=20,SNR=5.7						
JHJ				LR	LR	01 10 27.6	
	comp=Z,7μm,21.1s,baz=46,slow=38						
JHJ2	**Mitsune**	**3.88**	**190**	*e*Pn	**Pn**	**01 08 58.4**	**-0.1**
JHJ2				*e*Sn	**Sn**	**01 09 39.1**	**-4.5**
ERM	**Erimo**	**5.42**	**20**	*e*P	**Pn**	**01 09 19.2**	**-0.4**
ERM				*e*		01 10 16.9	
ERM	**Erimo**	**5.42**	**20**	*e*Pn	**Pn**	**01 09 19.2**	**-0.4**
ERM				*e*Sn	**Sn**	**01 10 16.9**	**-4.6**
YUK	**Yuzh-Kuril'sk**	**8.12**	**28**	*e*P	**Pn**	**01 09 56.9**	**+0.3**
YUK				*e*S	**Sn**	**01 11 24.4**	**-3.4**
YUK				pmax	pmax		
	comp=Z,208nm,0.4s						
YUK				pmax	pmax		
	comp=E,68nm,0.2s						
YUK				pmax	pmax		
	comp=N,68nm,0.4s						
YUK				MLR	MLR		
	comp=Z,5μm,14.0s						
YUK				MLR	MLR		
	comp=N,7μm,13.0s						
YUK				MLR	MLR		
	comp=E,4μm,12.0s						
SHO	**Shikotan**	**8.37**	**32**	*e*P	**Pn**	**01 09 57.5**	**-2.6**
SHO				*e*S	**Sn**	**01 11 25.9**	**-8.1**
SHO				pmax	pmax		
	comp=Z,174nm,0.7s						
SHO				pmax	pmax		
	comp=N,65nm,0.5s						
SHO				pmax	pmax		
	comp=E,84nm,0.4s						
JNU	**Nakatsue**	**8.86**	**247**	Pn	**Pn**	**01 10 10.2**	**+3.3**
	comp=E,2.3nm,0.3s,baz=68,slow=6.7,SNR=43						
JNU				LR	LR	01 13 50.7	
	comp=E,9μm,20.1s,baz=64,slow=40						
JNU	**Nakatsue**	**8.86**	**247**	*e*Pn	**Pn**	**01 10 09.7**	**+2.8**
VLA	**Vladivostok**	**9.11**	**315**	*de*P	Pn	01 10 15.8	+5.6
USRK	**Ussuriysk Ar.**	**9.78**	**320**	Pn	Pn	01 10 24.9	+5.6
	comp=E,1.6nm,0.3s,baz=127,slow=12,SNR=128						
USRK				LR	LR	01 13 49.3	
	comp=E,8μm,19.4s,baz=129,slow=36						
CBIJ	**Chichi jima**	**9.91**	**172**	*e*Pn	**Pn**	**01 10 17.7**	**-3.5**
CBIJ				*e*Sn	Sn	01 12 02.0	-10
JCJ	**Chichijima**	**9.91**	**172**	Pn	**Pn**	**01 10 18.4**	**-2.8**
	comp=E,77nm,0.3s,baz=92,slow=13,SNR=11						
JCJ				Sn	**Sn**	**01 12 05.1**	**-6.9**
	comp=E,42nm,0.3s,baz=111,slow=23,SNR=3.6						
KUR	**Kuril'sk**	**9.91**	**31**	*e*P	**Pn**	**01 10 19.4**	**-1.8**
KUR				*e*S	**Sn**	**01 12 04.1**	**-7.7**
KUR				pmax	pmax		
	comp=Z,112nm,0.7s						
KUR				MLR	MLR		
	comp=Z,3μm,19.0s						
YSS	**Yuzh-Sakhalins**	**10.12**	**8**	⇓*e*P	**Pn**	**01 10 24.8**	**+0.8**
YSS				*e*S	**Sn**	**01 12 15.0**	**-1.9**
YSS				pmax	pmax		
	comp=Z,930nm,0.8s						
YSS				pmax	pmax		
	comp=Z,700nm,5.0s						
YSS				MLR	MLR		
	comp=N,6μm,14.0s						
YSS				MLR	MLR		
	comp=Z,5μm,14.0s						
YSS	**Yuzh-Sakhalins**	**10.12**	**8**	*e*Pn	**Pn**	**01 10 24.1**	**+0.1**
KSRS	**Korea Array**	**10.15**	**277**	Pn	Pn	01 10 31.0	+6.5
	comp=Z,2.5nm,0.3s,baz=94,slow=13,SNR=90						
KSRS				LR	LR	01 14 14.0	
	comp=Z,14μm,18.0s,baz=84,slow=37						
KSRS				PcP	**PcP**	**01 16 35.1**	**+2.0**
	comp=Z,0.3nm,0.3s,baz=106,slow=0.2,SNR=5.4						
KSRS				ScP	**ScP**	**01 20 06.5**	**+2.2**
	comp=Z,0.2nm,0.3s,baz=46,slow=3.6,SNR=4.1						
KSRS	**Korea Array**	**10.15**	**277**	P	Pn	01 10 31.0	+6.5
KSRS				pmax	pmax		
	comp=Z,3.0nm,0.3s						
KSRS				MLR	MLR		
	comp=Z,14μm,18.0s						
KS01	**Wonju Array Si**	**10.18**	**277**	*e*Pn	**Pn**	**01 10 29.0**	**+4.2**
KS15	**Wonju Array Si**	**10.18**	**277**	*e*Pn	Pn	01 10 31.4	+6.5
KSAR	**Wonju Array Be**	**10.18**	**277**	P	Pn	01 10 31.0	+6.1
KSAR	**Wonju Array Be**	**10.18**	**277**	Pn	Pn	01 10 31.0	+6.1
KSAR				PcP	**PcP**	**01 16 35.1**	**+2.0**
KSAR				ScP	**ScP**	**01 20 06.5**	**+2.1**
INCN	**Inchon**	**11.18**	**277**	*e*Pn	**Pn**	**01 10 37.6**	**-1.0**
MDJ	**Mudanjiang**	**11.34**	**316**	P	**Pn**	**01 10 41.6**	**+0.9**
MDJ				S	**Sn**	**01 12 55.2**	**+8.4**
MDJ				pmax	pmax		
	comp=Z,9.0nm,1.5s						
MDJ				pmax	pmax		
	comp=Z,570nm,4.2s						
MDJ				LR	LR		
	comp=Z,8μm,19.5s						
MDJ				LR	LR		
	comp=Z,6μm,17.8s						
MDJ				LR	LR		
	comp=Z,7μm,21.1s						
MDJ	**Mudanjiang**	**11.34**	**316**	*e*Pn	**Pn**	**01 10 39.7**	**-1.0**
	comp=Z,184nm,1.4s						
UGL	**Uglegorsk**	**12.17**	**4**	P	**Pn**	**01 10 52.0**	**0.0**
UGL				*e*		01 13 00.0	
UGL				pmax	pmax		
	comp=Z,157nm,1.0s						
UGL				MLR	MLR		
	comp=N,4μm,16.0s						
UGL				MLR	MLR		
	comp=Z,5μm,16.0s						
UGL				MLR	MLR		
	comp=E,4μm,20.0s						
HABR	**Khabarovsk**	**12.22**	**342**	*e*P	**Pn**	**01 10 50.1**	**-2.7**
HABR				*e*S	**Sn**	**01 13 05.0**	**-3.4**
HABR				pmax	pmax		
	comp=Z,49nm,2.2s						
HABR				MLR	MLR		
	comp=Z,2μm,13.0s						
CN2	**Changchun**	**13.44**	**305**	*e*P	**Pn**	**01 11 12.9**	**+3.5**
CN2				*es*P	P	01 11 22.6	+3.9
CN2				*e*S	**Sn**	**01 13 36.4**	**-1.8**
CN2				pmax	pmax		
	comp=Z,50nm,1.2s						
CN2				pmax	pmax		
	comp=Z,200nm,3.0s						
CN2				LR	LR		
	comp=Z,7μm,12.0s						
CN2				LR	LR		
	comp=Z,7μm,12.0s						
CN2				LR	LR		
	comp=Z,5μm,13.0s						
KLR	**Kul'dur**	**13.87**	**335**	Pn	**Pn**	**01 11 16.8**	**+1.5**
	comp=Z,0.3nm,0.3s,baz=136,slow=13,SNR=13						
KLR				LR	LR	01 16 28.0	
	comp=Z,5μm,18.1s,baz=150,slow=37						
KLR				ScP	**ScP**	**01 20 13.2**	**+3.7**
	comp=Z,0.1nm,0.3s,baz=330,slow=2.4,SNR=4.4						
TYV	**Tymovskoe**	**13.99**	**5**	*e*P	**Pn**	**01 11 15.5**	**-1.3**
TYV				*e*S	**Sn**	**01 13 51.0**	**-0.4**
TYV				pmax	pmax		
	comp=Z,55nm,0.8s						
TYV				pmax	pmax		
	comp=Z,1μm,5.0s						
TYV				smax	smax		
	comp=E,1μm,7.0s						
TYV				MLR	MLR		
	comp=E,6μm,16.0s						
TYV				MLR	MLR		
	comp=Z,6μm,16.0s						
SNY	**Shenyang**	**14.06**	**296**	⇓P	**Pn**	**01 11 20.5**	**+2.7**
SNY				PP	**PnPn**	**01 11 30.9**	**+5.2**
SNY				S	S	01 14 06.3	-8.0
SNY				pmax	pmax		
	comp=Z,130nm,2.5s						
SNY				pmax	pmax		
	comp=Z,3μm,4.4s						
SNY				LR	LR		
	comp=Z,18μm,13.5s						
SNY				LR	LR		
	comp=Z,12μm,16.9s						
SNY				LR	LR		
	comp=Z,16μm,19.1s						
JOW	**Kunigami**	**14.54**	**230**	*e*Pn	**Pn**	**01 11 22.1**	**-2.5**
DL2	**Dalian**	**15.13**	**283**	⇓*i*P	**Pn**	**01 11 35.1**	**+2.7**
DL2				S	**Sn**	**01 14 28.2**	**+8.9**
DL2				pmax	pmax		
	comp=Z,96nm,1.2s						
DL2				pmax	pmax		
	comp=Z,2μm,6.9s						
DL2				LR	LR		
	comp=Z,2μm,17.9s						
DL2				LR	LR		
	comp=Z,8μm,18.2s						
DL2				LR	LR		
	comp=Z,12μm,18.3s						
NKL	**Nikolayevsk**	**16.20**	**0**	*e*P	**Pn**	**01 11 42.0**	**-4.2**
NKL				*e*		01 14 40.0	
NKL				pmax	pmax		
	comp=Z,17nm,0.9s						
NKL				MLR	MLR		
	comp=N,2μm,16.0s						
NKL				MLR	MLR		
	comp=Z,4μm,16.0s						
OKH	**Okha**	**16.68**	**5**	*e*P	**P**	**01 11 54.4**	**-0.1**
OKH				*e*S	**Sn**	**01 14 50.2**	**-6.6**
OKH				smax	smax		
	comp=E,1μm,6.0s						
OKH				MLR	MLR		
	comp=Z,3μm,14.0s						
SSE	**Sheshan**	**17.14**	**256**	⇑P	**P**	**01 12 00.7**	**+0.9**
SSE				sP	**sP**	**01 12 10.9**	**+3.1**
SSE				S	**Sn**	**01 15 08.6**	**+0.4**
SSE				pmax	pmax		
	comp=Z,57nm,0.7s						
SSE				pmax	pmax		
	comp=Z,2μm,6.2s						
SSE				LR	LR		
	comp=Z,7μm,19.4s						
SSE				LR	LR		
	comp=Z,4μm,19.4s						
SSE				LR	LR		
	comp=Z,7μm,19.3s						
SKR	**Severo-Kuril's**	**17.65**	**34**	*e*P	**Pn**	**01 12 01.2**	**-3.2**
SKR				pmax	pmax		
	comp=N,220nm,1.0s						
SKR				pmax	pmax		
	comp=E,220nm,1.0s						
SKR				pmax	pmax		
	comp=Z,220nm,1.0s						
SKR				MLR	MLR		
	comp=Z,3μm,14.0s						
SKR				MLR	MLR		
	comp=N,4μm,18.0s						
SKR				MLR	MLR		
	comp=E,5μm,14.0s						
NJ2	**Nanjing**	**18.59**	**261**	*e*P	**P**	**01 12 15.2**	**-0.6**
NJ2				pP	**pP**	**01 12 19.1**	**-2.3**
NJ2				sP	**sP**	**01 12 23.9**	**0.0**
NJ2				S	**Sn**	**01 15 42.8**	**-0.7**
NJ2				sS	**sS**	**01 15 53.1**	**-2.7**
NJ2				pmax	pmax		
	comp=E,63nm,1.1s						
NJ2				pmax	pmax		
	comp=E,2μm,5.4s						
NJ2				LR	LR		
	comp=E,5μm,14.6s						
NJ2			

comp=E,4μm,29.1s
BJT Baijiatuau 19.38 287 *e*P **P 01 12 23.0 -1.5**
BJT pmax pmax
comp=Z,106nm,1.1s
BJT Baijiatuau 19.38 287 *e*P **P 01 12 23.0 -1.5**
comp=Z,106nm,1.1s
YOJ Yonaguni jima 19.57 235 *e*P **P 01 12 25.8 -0.8**
YOJ pmax pmax
comp=Z,39nm,0.9s
YOJ Yonaguni jima 19.57 235 *e*P **P 01 12 25.8 -0.8**
comp=Z,39nm,0.9s
PEA0 Petropavlovsk- 20.08 31 *e*P Pn 01 12 32.5 -1.3
PEA0B Petropavlovsk- 20.08 31 *e*P Pn 01 12 33.9 +0.1
comp=Z,119nm,1.1s
PETK Petropavlovsk- 20.08 31 P Pn 01 12 32.9 -0.9
comp=Z,35nm,1.1s,baz=215,slow=7.5,SNR=11
PETK PcP **PcP 01 16 48.3 +1.5**
PETK comp=Z,5.8nm,0.8s,baz=163,slow=11,SNR=3.9
LR LR 01 19 54.5
comp=Z,3μm,20.7s,baz=216,slow=36
TATO Taipei 20.25 239 *e*P Pn 01 12 35.4 -0.7
TATO comp=Z,297nm,1.5s
LR LR
comp=Z,3μm,19.0s
PET Petropavlovsk 20.42 32 *e*P Pn 01 12 37.4 -0.4
PET *e*S **S 01 16 17.9 -5.4**
PET pmax pmax
comp=Z,2μm,8.5s
PET MLR MLR
comp=Z,4μm,20.0s
PET Petropavlovsk 20.42 32 *e*P Pn 01 12 39.3 +1.5
comp=Z,471nm,1.5s
PET LR LR
comp=Z,2μm,20.0s
YHNB Yeheng 20.53 239 *e*P **P 01 12 36.3 -0.9**
comp=Z,127nm,1.5s
YHNB LR LR
comp=Z,4μm,20.0s
NACB Ninganchiao 20.71 237 *e*P **P 01 12 37.5 -1.5**
comp=Z,36nm,1.0s
SSLB Suanglung 21.40 238 *e*P **P 01 12 44.1 -2.4**
comp=Z,63nm,1.4s
YULB Yu-li 21.44 236 *e*P **P 01 12 43.7 -3.2**
comp=Z,25nm,0.8s
TPUB Ta-pu 21.95 237 *e*P **P 01 12 50.1 -2.2**
comp=Z,80nm,1.0s
TWG Pinlang 21.98 236 *e*P **P 01 12 51.6 -1.1**
comp=Z,470nm,1.3s
QZH Quanzhou 22.31 244⇑*i*P **P 01 12 50.7 -5.6**
QZH S S 01 16 47.1 -14
QZH LR LR
comp=Z,5μm,12.3s
QZH LR LR
comp=Z,4μm,11.7s
QZH LR LR
comp=Z,7μm,17.4s
CLNS Chul'man 22.51 337 *e*P **P 01 13 00.4 +2.2**
CLNS *e**PP **sP 01 13 08.3 +2.0**
CLNS *e* 01 13 23.9
CLNS *e* 01 16 53.2
CLNS *e*S **S 01 17 05.3 +1.2**
CLNS *e*SS **SnSn 01 17 47.6 +14**
CLNS pmax pmax
comp=N,18nm,0.9s
CLNS pmax pmax
comp=Z,39nm,0.9s
CLNS pmax pmax
comp=E,10.0nm,0.8s
CLNS pmax pmax
comp=Z,23nm,1.0s
CLNS pmax pmax
comp=E,11nm,0.8s
CLNS pmax pmax
comp=N,42nm,1.2s
CLNS smax smax
comp=E,410nm,10.2s
CLNS smax smax
comp=N,536nm,10.5s
CLNS MLR MLR
comp=N,2μm,16.0s
CLNS MLR MLR
comp=E,2μm,12.0s
CLNS MLR MLR
comp=Z,2μm,16.0s
WHN Wuhan 22.73 261⇑P **P 01 12 59.1 -1.5**
WHN S S 01 16 52.4 -16
WHN pmax pmax
comp=Z,880nm,5.4s
WHN LR LR
comp=Z,9μm,11.5s
WHN LR LR
comp=Z,11μm,14.9s
WHN LR LR
comp=Z,16μm,19.8s
HHC Hu-ho-hao-te 22.91 289 *e*P **P 01 13 02.8 +0.2**
HHC pP sP 01 13 12.1 +1.4
HHC sP pP 01 13 16.8 +8.6
HHC S **S 01 17 04.8 -6.7**
HHC pmax pmax
comp=Z,25nm,0.8s
HHC pmax pmax
comp=Z,280nm,7.3s
HHC LR LR
comp=Z,2μm,12.6s
HHC LR LR
comp=Z,2μm,15.9s
HHC LR LR
comp=Z,2μm,17.2s
GUMO Guam 23.57 170 P **P 01 13 10.5 +1.2**
comp=Z,37nm,0.3s,baz=141,slow=21,SNR=4.9
GUMO LR LR 01 20 16.9
comp=Z,682nm,21.6s,baz=13,slow=31
GUMO Guam 23.57 170 *e*P **P 01 13 10.5 +1.2**
comp=Z,626nm,1.1s
MA2 Magadan 23.57 13 P **P 01 13 08.8 -0.2**
comp=Z,72nm,0.8s,baz=217,slow=9.3,SNR=30
MA2 PcP **PcP 01 16 55.1 +1.6**
MA2 comp=Z,4.0nm,0.4s,baz=124,slow=11,SNR=3.4
LR LR 01 22 06.0
comp=Z,1μm,21.5s,baz=215,slow=36
MA2 Magadan 23.57 13 *e*P **P 01 13 08.1 -0.8**
comp=Z,1μm,1.3s
MA2 PcP **PcP 01 16 55.1 +1.6**
BTO Baotou 24.08 288 *e*P **P 01 13 10.0 -4.1**
CIT Chita 24.31 317 *e*P **P 01 13 13.7 -2.4**
CIT *e* 01 13 29.1
CIT *e* 01 13 54.3
CIT pmax pmax
comp=Z,95nm,2.1s
XAN Xi'an 25.92 273 P **P 01 13 29.6 -1.2**
XAN pP sP 01 13 36.4 -2.8
XAN PP **PnPn 01 14 10.3 +1.9**
XAN S **S 01 17 53.2 -6.9**
XAN pmax pmax
comp=Z,22nm,2.0s
XAN pmax pmax
comp=Z,360nm,5.0s
XAN LR LR
comp=Z,6μm,16.5s
XAN LR LR
comp=Z,4μm,16.5s
XAN LR LR
comp=Z,4μm,18.4s
YAK Yakutsk 26.02 348 P **P 01 13 31.1 -0.2**
comp=Z,34nm,0.3s,baz=327,slow=3.3,SNR=14
YAK PcP **PcP 01 17 00.3 +1.4**
YAK comp=Z,18nm,0.4s,baz=160,slow=2.4,SNR=4.8
LR LR 01 23 56.2
comp=Z,1μm,19.4s,baz=149,slow=37
YAK Yakutsk 26.02 348 *e*P **P 01 13 30.5 -0.8**
YAK *e* 01 14 06.6
YAK *e* 01 16 58.9
YAK *e*S **S 01 17 58.2 -2.7**
YAK *e* 01 24 25.6
YAK pmax pmax
comp=Z,92nm,1.0s
YAK pmax pmax
comp=N,35nm,1.1s
YAK pmax pmax
comp=E,15nm,1.2s
YAK pmax pmax
comp=Z,79nm,0.9s
YAK pmax pmax
comp=N,27nm,1.1s
YAK pmax pmax
comp=E,71nm,1.3s
YAK smax smax
comp=E,291nm,4.0s
YAK smax smax
comp=N,541nm,3.0s
YAK MLR MLR
comp=Z,3μm,16.0s
YAK MLR MLR
comp=E,3μm,15.0s
YAK MLR MLR
comp=N,2μm,15.0s
YAK Yakutsk 26.02 348 *e*P **P 01 13 30.2 -1.1**
comp=N,80nm,0.7s
YAK PcP **PcP 01 17 00.3 +1.4**
YAK LR LR
comp=Z,1μm,22.0s
ENH Enshi 26.70 265 *e*P **P 01 13 36.4 -1.5**
comp=Z,41nm,0.6s
ENH LR LR
comp=Z,5μm,21.0s
ULN Ulaanbaatar 26.89 305 *e*P **P 01 13 38.3 -1.3**
ULN *e* 01 17 02.7
ULN pmax pmax
comp=Z,19nm,0.8s
ULN MLR MLR
comp=Z,2μm,21.0s
ULN Ulaanbaatar 26.89 305 *e*P **P 01 13 38.3 -1.3**
comp=Z,19nm,0.8s
ULN *e*PcP **PcP 01 17 02.7 +1.2**
ULN LR LR
comp=Z,2μm,21.0s
ULN Ulaanbaatar 26.89 305 P **P 01 13 40.7 +1.1**
SNR=16
ULN Ulaanbaatar 26.89 305 P **P 01 13 40.7 +1.1**
SNR=16
SEY Seymchan 27.00 12 P **P 01 13 41.9 +1.7**
comp=Z,87nm,1.0s,baz=198,slow=6.8,SNR=57
SEY LR LR 01 26 07.9
comp=Z,2μm,19.0s,baz=322,slow=40
GZH Guangzhou 27.26 247 P **P 01 13 39.2 -3.7**
GZH PP **PnPn 01 14 27.1 +0.4**
GZH PcP **PcP 01 16 57.7 -4.8**
GZH S **S 01 18 13.7 -7.4**
GZH pmax pmax
comp=Z,940nm,5.3s
BOD Bodaibo 27.27 328 *e*P **P 01 13 42.0 -0.7**
BOD pmax pmax
comp=Z,25nm,1.5s
SONA1 Songino Array 27.31 304 *e*P **P 01 13 41.6 -1.8**
SONM Songino Array 27.32 304 P **P 01 13 42.5 -0.9**
comp=Z,12nm,0.5s,baz=110,slow=8.7,SNR=71
SONM PcP **PcP 01 17 03.0 +0.6**
comp=Z,8.6nm,0.7s,baz=103,slow=2.0,SNR=13
SONM ScP **ScP 01 20 44.0 +2.2**
comp=Z,3.6nm,1.3s,baz=104,slow=2.8,SNR=4.1
SONM LR LR 01 24 38.2
comp=Z,2μm,20.2s,baz=104,slow=37
H11N2 WAKE ISLAND Hy 28.64 120 T T 01 43 40.4
baz=313,slow=75,SNR=2698
H11N1 WAKE ISLAND Hy 28.65 120 T T 01 43 42.4
baz=313,slow=75,SNR=4133
H11N3 WAKE ISLAND Hy 28.66 120 T T 01 43 43.0
baz=313,slow=75,SNR=2654
H11S1 WAKE ISLAND Hy 29.34 122 T T 01 44 33.8
baz=314,slow=75,SNR=8746
H11S3 WAKE ISLAND Hy 29.34 122 T T 01 44 32.7
baz=314,slow=75
H11S2 WAKE ISLAND Hy 29.36 122 T T 01 44 33.8
baz=314,slow=75,SNR=7389
LZH Lanzhou 29.46 280⇑P **P 01 14 02.1 -0.6**
LZH pP sP 01 14 08.1 -3.0
LZH sP pP 01 14 12.1 +3.4
LZH PP **PnPn 01 14 57.0 +0.1**
LZH S **S 01 18 51.0 -5.1**
LZH pmax pmax
comp=Z,55nm,1.0s
LZH pmax pmax
comp=Z,230nm,4.3s
LZH LR LR
comp=Z,3μm,14.0s
LZH LR LR
comp=Z,7μm,14.9s
LZH LR LR
comp=Z,9μm,16.0s
ZAK Zakamensk 29.83 309 *e*P **P 01 14 03.5 -2.2**
ZAK *e* 01 17 09.1
ZAK pmax pmax
comp=Z,10.0nm,1.5s
ZAK pmax pmax
comp=Z,15nm,1.7s
TLY Talaya 29.92 311 P **P 01 14 05.6 -0.8**
comp=Z,1.6nm,0.5s,baz=117,slow=8.5,SNR=5.1
TLY PcP **PcP 01 17 10.8 +2.1**
TLY comp=Z,12nm,0.6s,baz=157,slow=1.1,SNR=5.9
LR LR 01 26 18.1
TLY comp=Z,2μm,19.4s,baz=107,slow=37
TLY Talaya 29.92 311*c i*P **P 01 14 04.1 -2.2**
TLY *e* 01 15 07.6
TLY *e*PPP PPP 01 15 16.4
TLY *e* 01 17 10.1
TLY *e*S **S 01 19 02.2 -0.4**
TLY pmax pmax
comp=Z,10.0nm,0.9s
TLY MLR MLR
comp=Z,2μm,15.0s
TLY Talaya 29.92 311 *e*P **P 01 14 04.5 -1.8**
comp=Z,8.2nm,0.7s
TLY *e*PcP **PcP 01 17 10.2 +1.5**
TLY LR LR
comp=Z,3μm,20.0s
GYA Guiyang 30.59 260⇑*i*P **P 01 14 10.2 -2.5**
GYA pP sP 01 14 20.8 -0.3
GYA PP **PnPn 01 15 13.6 +1.6**
GYA PcP **PcP 01 17 12.0 +1.0**
GYA S **S 01 19 10.4 -3.4**
GYA SS **SnSn 01 20 51.3 +0.2**
GYA ScS **ScS 01 24 47.2 -1.8**
GYA pmax pmax
comp=Z,20nm,1.1s
GYA pmax pmax
comp=Z,160nm,5.6s
GYA LR LR
comp=Z,3μm,19.2s
GYA LR LR
comp=Z,3μm,19.8s
GYA LR LR
comp=Z,4μm,16.4s
CD2 Chengdu 31.05 270 P **P 01 14 14.9 -1.7**
CD2 sP sP 01 14 25.5 +0.5
CD2 PcP **PcP 01 17 11.3 -0.8**
CD2 S **S 01 19 17.8 -3.0**
CD2 sS sS 01 19 30.5 -0.2
CD2 pmax pmax
comp=Z,30nm,0.6s
CD2 pmax pmax
comp=Z,310nm,6.7s
CD2 LR LR
comp=Z,8μm,15.6s
CD2 LR LR
comp=Z,9μm,16.8s
GTA Gaotai 31.99 287 *e*P **P 01 14 23.9 -1.0**
GTA pP sP 01 14 31.4 -2.0
GTA sP pP 01 14 34.8 +3.9
GTA PcP **PcP 01 17 15.4 +0.8**
GTA S **S 01 19 31.7 -3.8**
GTA SS **SnSn 01 21 24.6 -0.3**
GTA pmax pmax
comp=Z,6.0nm,1.1s
GTA pmax pmax
comp=Z,290nm,5.9s
GTA LR LR
comp=Z,3μm,14.7s
GTA LR LR
comp=Z,2μm,15.7s
GTA LR LR
comp=Z,3μm,18.8s
QIZ Qiongzhong 32.33 245 P **P 01 14 25.8 -2.0**
QIZ S **S 01 19 40.5 -0.3**
QIZ LR LR
comp=Z,950nm,15.9s
QIZ LR LR
comp=Z,1μm,18.2s
DAV Davao City (W) 32.75 208 PFAKE 01 14 40.0 +8.4
DAV LR LR
comp=Z,1μm,20.0s
BILL Bilibino 34.29 17*d i*P **P 01 14 44.0 -0.4**
BILL *e* 01 17 20.2
BILL *i* S S 01 20 00.2 -10
BILL pmax pmax
comp=Z,38nm,1.1s
BILL MLR MLR
comp=Z,2μm,17.0s
BILL Bilibino 34.29 17 *e*P **P 01 14 44.7 +0.3**
comp=Z,65nm,1.3s
BILL *e*PcP **PcP 01 17 21.9 +1.7**
BILL LR LR
comp=Z,917nm,20.0s
KMI Kunming 34.33 261 P **P 01 14 44.7 -0.9**
KMI pP sP 01 14 51.7 -2.3
KMI sP pP 01 14 54.9 +3.3
KMI PP **PP 01 16 03.1 -0.3**
KMI S **S 01 20 07.2 -5.1**
KMI sS sS 01 20 19.4 -2.8
KMI SS **SnSn 01 22 15.3 -6.8**
KMI pmax pmax
comp=Z,33nm,1.6s
KMI pmax pmax
comp=Z,290nm,3.4s
KMI LR LR
comp=Z,4μm,18.5s
KMI LR LR
comp=Z,3μm,19.7s
KMI LR LR
comp=Z,4μm,21.1s
ATKA Atka Island 34.98 50 *e*P **P 01 14 51.2 +0.5**
comp=Z,91nm,1.2s
ATKA *e*PcP **PcP 01 17 24.0 +1.5**
TIXI Tiksi 35.30 354 P **P 01 14 52.5 -0.6**
comp=Z,12nm,0.6s,baz=144,slow=7.0,SNR=29
TIXI PcP **PcP 01 17 25.9 +2.8**
TIXI comp=Z,2.1nm,0.4s,baz=199,slow=2.1,SNR=3.3
LR LR 01 29 38.0
comp=Z,1μm,18.6s,baz=154,slow=37
TIXI Tiksi 35.30 354*d i*P **P 01 14 52.6 -0.6**
TIXI pmax pmax
comp=Z,76nm,2.5s
TIXI Tiksi 35.30 354 *e*P **P 01 14 52.4 -0.7**
comp=Z,14nm,0.7s
TIXI *e*PcP **PcP 01 17 22.7 -0.4**
MIDW Midway 36.21 92 PFAKE 01 15 20.0 +19
MIDW LR LR
comp=Z,3μm,22.0s
MYLDM Lahad Datu 37.55 218 *e*P **P 01 15 15.6 +2.6**
comp=Z,78nm,1.0s
TNTI Ternate 38.03 202 *e*P **P 01 15 17.7 +0.7**
comp=Z,506nm,1.6s
GAMB Gambell 39.12 31 *e*P **P 01 15 27.1 +1.5**
comp=Z,34nm,1.5s
JAY Jayapura 39.26 180 P **P 01 15 27.9 +0.6**
comp=Z,2.6nm,0.7s,baz=308,slow=23,SNR=7.5
MANU Manus Island 39.30 169 *e*P **P 01 15 28.0 +0.5**
comp=Z,20nm,1.0s
WMQ Urumqi 40.32 297 P **P 01 15 36.8 +0.8**
WMQ pP sP 01 15 43.3 -1.2
WMQ sP pP 01 15 47.9 +5.8
WMQ PP **PnPn 01 17 15.7 +3.2**
WMQ S **S 01 21 43.6 +0.9**
WMQ sS sS 01 21 56.8 +4.1
WMQ SS **SS 01 24 33.3 -8.0**
WMQ pmax pmax
comp=Z,14nm,1.0s
WMQ pmax pmax
comp=Z,550nm,3.8s
WMQ LR LR
comp=Z,2μm,19.6s
WMQ LR LR
comp=Z,1μm,21.4s
WMQ LR LR
comp=Z,1μm,25.0s
FAKI Fak Fak 40.42 193 *e*P **P 01 15 37.5 +0.5**
comp=Z,118nm,0.9s
CHTO Chiang Mai 40.66 255 *e*P **P 01 15 38.4 -0.6**
CHTO *e* 01 17 41.9
CHTO pmax pmax
comp=Z,22nm,1.4s
CHTO MLR MLR
comp=Z,2μm,21.0s
CHTO Chiang Mai 40.66 255 *e*P **P 01 15 38.4 -0.6**
comp=Z,22nm,1.4s
CHTO *e*PcP **PcP 01 17 41.9 +1.3**
CHTO LR LR
comp=Z,2μm,21.0s
CHTO Chiang Mai 40.66 255 P **P 01 15 38.8 -0.2**
SNR=14
CHTO Chiang Mai 40.66 255 P **P 01 15 38.8 -0.2**
SNR=14
CMAR Chiang Mai Arr 40.87 255 P **P 01 15 40.8 +0.1**
comp=Z,1.4nm,0.5s,baz=46,slow=8.0,SNR=14
CMAR PcP **PcP 01 17 42.5 +1.2**
comp=Z,5.3nm,0.9s,baz=29,slow=1.1,SNR=8.3
CMAR ScP **ScP 01 21 32.8 +2.9**
comp=Z,0.3nm,0.4s,baz=18,slow=4.6,SNR=4.1
CM01 Chiang Mai Arr 40.88 255 *e*P **P 01 15 40.3 -0.5**
LUWI Luwuk 41.27 208 *e*P **P 01 15 43.0 -0.9**
comp=Z,168nm,1.1s
ZALV Zalesovo Beam 41.51 312 P **P 01 15 45.2 -0.4**
comp=Z,23nm,0.5s,baz=101,slow=6.8,SNR=69
ZALV PcP **PcP 01 17 43.0 +0.2**
comp=Z,20nm,0.5s,baz=101,slow=2.9,SNR=17
ZALV ScP **ScP 01 21 33.9 +2.1**
comp=Z,2.5nm,0.6s,baz=112,slow=3.1,SNR=7.6
ZALV LR LR 01 33 36.3
comp=Z,2μm,18.4s,baz=86,slow=37
ZALV PKKP **PKKPdf 01 39 27.2 -0.9**
comp=Z,0.8nm,0.6s,baz=115,slow=6.7,SNR=4.9
ZALV Zalesovo Beam 41.51 312 P **P 01 15 45.2 -0.4**
ZALV 01 17 43.0
ZALV pmax pmax
comp=Z,24nm,0.5s
ZALV pmax pmax
comp=Z,20nm,0.5s
ZALV pmax pmax
comp=N,3.0nm,0.6s
ZALV MLR MLR
comp=Z,2μm,18.4s
ZALV pmax pmax
comp=Z,1.0nm,0.6s
LSA Lhasa 41.59 275 P **P 01 15 47.8 +0.7**
LSA pmax pmax
comp=Z,26nm,1.8s
LSA Lhasa 41.59 275 *e*P **P 01 15 47.6 +0.5**
LSA pmax pmax
comp=Z,43nm,1.3s
LSA MLR MLR
comp=Z,2μm,21.0s
LSA Lhasa 41.59 275 *e*P **P 01 15 47.5 +0.5**
comp=Z,43nm,1.3s
LSA LR LR
comp=Z,2μm,21.0s
ZSN Zaisan 42.12 303⇑*i*P **P 01 15 49.6 -1.0**
comp=Z,566nm,1.6s
ZSN LR LR 01 33 51.3
comp=Z,1μm,12.0s
NVS Novosibirsk 42.45 314⇑*i*P **P 01 15 53.2 0.0**
NVS *i* 01 17 46.1
NVS pmax pmax
comp=Z,23nm,0.5s
NVS pmax pmax
comp=N,2.0nm,0.3s
NVS pmax pmax
comp=E,16nm,0.7s
NVS pmax pmax
comp=Z,32nm,1.1s
NVS pmax pmax
comp=N,5.0nm,0.6s
NVS pmax pmax
comp=E,7.0nm,0.5s
NRIK Noril'sk 43.08 335 P **P 01 15 57.7 -0.4**
comp=E,8.4nm,0.6s,baz=115,slow=7.7,SNR=33
NRIK PcP **PcP 01 17 49.1 +1.4**
NRIK comp=E,16nm,0.8s,baz=216,slow=2.9,SNR=5.3
LR LR 01 34 45.2
comp=E,2μm,18.2s,baz=108,slow=37
SBUM Sibu 43.16 224 *e*P **P 01 16 00.3 +0.9**
MK31 Makanchi Array 43.63 302 P **P 01 16 03.2 +0.2**
MK31 pmax pmax
comp=Z,4.0nm,0.7s
MKAR Makanchi Array 43.63 302 P **P 01 16 03.5 +0.5**
comp=Z,13nm,0.7s,baz=87,slow=8.7,SNR=103
MKAR PcP **PcP 01 17 50.6 +0.5**
comp=Z,9.2nm,0.8s,baz=78,slow=6.3,SNR=4.3
MKAR ScP **ScP 01 21 42.7 +2.2**
comp=Z,4.7nm,1.2s,baz=78,slow=6.3,SNR=5.6
MKAR LR LR 01 34 33.4
comp=Z,2μm,19.0s,baz=86,slow=37

MKAR **Makanchi Array** 43.63 302 *e*P **P** 01 16 03.0 0.0
MKAR PcP **PcP** 01 17 50.6 +0.5
MKAR ScP **ScP** 01 21 42.7 +2.2
MAKZ Makanchi 43.84 302 *e*P **P** 01 16 04.2 -0.4
MAKZ pmax pmax
comp=Z,23nm,0.9s
MAKZ Makanchi 43.84 302 *e*P **P** 01 16 04.2 -0.4
comp=Z,23nm,0.9s
KSM Kuching 45.04 226 *e*P **P** 01 16 14.9 +0.4
KSM LR LR
comp=Z,567nm,19.0s
TAPN Taplejung 45.32 274 *e*P **P** 01 16 17.2 +0.2
KURK Kurchatov 45.49 308 P **P** 01 16 17.8 +0.1
KURK 01 17 56.8
KURK pmax pmax
comp=Z,68nm,0.8s
KURK pmax pmax
comp=Z,5.0nm,0.5s
KURK pmax pmax
comp=N,1.0nm,0.2s
KURK Kurchatov 45.49 308 *e*P **P** 01 16 17.2 -0.5
comp=N,85nm,0.9s
KURK PcP **PcP** 01 17 56.8 +0.5
KURK ScP **ScP** 01 21 50.2 +2.2
KURK LR LR
comp=Z,5μm,21.0s
KURK Kurchatov 45.49 308 P **P** 01 16 17.5 -0.2
SNR=70
KURK Kurchatov 45.49 308 P **P** 01 16 17.5 -0.2
SNR=70
KURBB Kurchatov Arra 45.56 308 P **P** 01 16 17.8 -0.5
comp=Z,68nm,0.8s,baz=82,slow=7.9,SNR=256
KURBB PcP **PcP** 01 17 56.8 +0.2
comp=Z,4.7nm,0.5s,baz=91,slow=3.1,SNR=4.0
KURBB ScP **ScP** 01 21 50.2 +1.9
comp=Z,0.8nm,0.2s,baz=82,slow=3.2,SNR=7.6
ODAN Odare 45.79 273 *e*P **P** 01 16 20.5 -0.2
comp=Z,19nm,0.4s
TT01 Tatalina 45.84 35 *e*P **P** 01 16 21.7 +1.4
TTA Tatalina 45.85 35 *e*P **P** 01 16 22.1 +1.7
TTA Tatalina 45.85 35 *e*P **P** 01 16 22.1 +1.7
SVW2 Sparrevohn 45.97 37 *e*P **P** 01 16 23.6 +2.3
SHLS Shalkode 46.02 297⇓ *i*P **P** 01 16 22.1 -0.2
comp=Z,356nm,1.7s
SHLS *e*S **S** 01 23 05.6 -1.0
SHLS LRM MLR 01 37 25.6
comp=Z,1μm,13.2s
KAPI Kappang 46.08 210 *e*P **P** 01 16 23.1 +0.5
comp=Z,446nm,1.3s
KAPI *e*PcP **PcP** 01 18 01.9 +3.2
KAPI LR LR
comp=Z,441nm,20.0s
KAPI Kappang 46.08 210 P **P** 01 16 22.5 -0.1
SNR=45
KAPI P **P** 01 16 22.5 -0.1
SNR=45
KAPI Kappang 46.08 210 P **P** 01 16 22.5 -0.1
SNR=45
PDGK Podgornoye 46.27 298 P **P** 01 16 23.6 -0.3
PDGK pmax pmax
comp=Z,119nm,1.4s
RAMN Ramite 46.39 274 *e*P **P** 01 16 25.2 -0.2
comp=Z,96nm,0.7s
PMG Port Moresby 46.51 171 *e*P **P** 01 16 26.2 +0.2
PMG pmax pmax
comp=Z,49nm,1.1s
PMG MLR MLR
comp=Z,521nm,20.0s
PMG Port Moresby 46.51 171 *e*P **P** 01 16 26.1 +0.2
comp=Z,49nm,1.1s
PMG LR LR
comp=Z,521nm,20.0s
GUN Gumba 46.54 275 *e*P **P** 01 16 26.6 -0.1
comp=Z,53nm,0.6s
UZB Uzynbulak 46.64 298⇓ *i*P **P** 01 16 26.9 -0.1
comp=Z,415nm,1.8s
UZB LRM MLR 01 37 53.1
comp=Z,1μm,13.7s
KKN Kakani 47.07 275 *e*P **P** 01 16 30.4 -0.3
comp=Z,37nm,0.5s
PKIN Phulchoki 47.07 275 *e*P **P** 01 16 30.4 -0.3
SATY Saty 47.10 298⇓ *i*P **P** 01 16 30.8 +0.2
comp=Z,662nm,1.9s
SATY *e*S **S** 01 23 21.1 -0.7
SATY LRM MLR 01 38 07.6
comp=Z,2μm,12.8s
OHAK Old Harbor 47.24 43 *e*P **P** 01 16 31.0 -0.3
GKN Gorkha 47.49 276 *e*P **P** 01 16 33.7 -0.2
comp=Z,90nm,0.6s
KDAK Kodiak Island 47.58 42 P P 01 16 49.9 +16
comp=Z,16nm,0.6s,baz=280,slow=4.9,SNR=12
KDAK PcP PP 01 18 20.1 -5.2
comp=Z,22nm,0.8s,baz=166,slow=2.9,SNR=3.6
KDAK Kodiak Island 47.58 42 *e*P **P** 01 16 34.5 +0.6
KDAK 01 18 20.1
KDAK pmax pmax
comp=Z,107nm,1.4s
KDAK MLR MLR
comp=Z,2μm,20.0s
KDAK Kodiak Island 47.58 42 *e*P **P** 01 16 34.5 +0.6
comp=Z,107nm,1.4s
KDAK PcP **PP** 01 18 20.1 -5.2
KDAK LR LR
comp=Z,2μm,20.0s
PPLA Purkeypile 47.60 35 *e*P **P** 01 16 36.7 +2.5
PPLA *e*PcP **PcP** 01 18 05.1 +1.4
CAST Castle Rocks 47.65 34 *e*P **P** 01 16 36.8 +2.3
CHKK Chushkaly 47.88 299⇓ *e*P **P** 01 16 36.6 +0.1
comp=Z,508nm,1.5s
MDOK Medeo 48.03 298⇑ *i*P **P** 01 16 38.4 +0.5
comp=Z,463nm,1.8s
MDOK *e*S **S** 01 23 34.6 -0.5
MDOK LR LR 01 37 15.2
comp=Z,3μm,15.6s
AAA Alma-Ata 48.07 298 *i*P **P** 01 16 39.3 +1.2
AAA *i*S S 01 23 47.5 +12
AAA pmax pmax
comp=Z,1μm,1.9s
AAA smax smax
comp=E,1μm,5.6s
AAA MLR MLR
comp=Z,8μm,15.0s
BPAW Bear Paw Mtn. 48.14 33 *e*P **P** 01 16 40.2 +2.0
comp=Z,12nm,1.5s
BPAW *e*PcP **PcP** 01 18 07.1 +1.6
KTH Kantishna Hill 48.17 34 *e*P **P** 01 16 40.7 +2.1
comp=Z,92nm,1.3s
KULM Kulim 48.23 239 *e*P **P** 01 16 39.0 -0.6
KULM LR LR
comp=Z,1μm,20.0s
MLY Manley 48.25 32 *e*P **P** 01 16 40.5 +1.4
KUU Kurty 48.34 299⇓ *e*P **P** 01 16 40.0 -0.1
comp=Z,736nm,1.6s
KUU LR LR 01 37 33.0
comp=Z,2μm,13.7s
KOLN Koldanda 48.42 276 *e*P **P** 01 16 41.1 0.0
comp=Z,17nm,0.5s
TRF Thorofare Moun 48.45 34 *e*P **P** 01 16 43.1 +2.2
comp=Z,17nm,1.0s
COLD Coldfoot 48.53 29 *e*P **P** 01 16 41.7 +0.5
comp=Z,3.9nm,0.6s
IPM Ipoh 48.56 238 *e*P **P** 01 16 40.8 -1.3
comp=Z,171nm,1.5s
MYKOM Kota Tinggi 48.71 233 *e*P **P** 01 16 44.1 +0.9
PYUN Piuthan 48.76 277 *e*P **P** 01 16 43.8 0.0
RC01 Rabbit Creek A 48.81 37 *e*P **P** 01 16 44.4 +1.0
comp=Z,51nm,1.0s
RC01 *e*PcP **PcP** 01 18 08.7 +0.8
SOEI Soe 48.93 202 *e*P **P** 01 16 44.0 -0.9
comp=Z,561nm,1.1s
MCK McKinley 49.05 34 *e*P **P** 01 16 46.7 +1.4
MCK *e* 01 18 09.7
MCK pmax pmax
comp=Z,71nm,1.5s
MCK McKinley 49.05 34 *e*P **P** 01 16 46.7 +1.4
comp=Z,71nm,1.5s
MCK *e*PcP **PcP** 01 18 09.7 +0.9
PMR Palmer 49.07 37 *e*P **P** 01 16 45.5 +0.2
PMR *e* 01 18 09.4
PMR pmax pmax
comp=Z,19nm,0.6s
PMR Palmer 49.07 37 *e*P **P** 01 16 45.5 +0.2
comp=Z,19nm,0.6s
PMR *e*PcP **PcP** 01 18 09.4 +0.6
TKM2 Tokmak 2 49.12 298 *e*P **P** 01 16 47.0 +0.7
TKM2 pmax pmax
comp=Z,335nm,1.7s
TKM2 MLR MLR
comp=Z,7μm,19.0s
TKM2 Tokmak 2 49.12 298 *e*P **P** 01 16 47.0 +0.7
comp=Z,335nm,1.7s
TKM2 LR LR
comp=Z,7μm,19.0s
MDM Murphy Dome 49.32 32 *e*P **P** 01 16 49.4 +2.1
BRZS Berezniki 49.37 308 *e*P **P** 01 16 47.8 0.0
comp=Z,91nm,0.4s
BRZS *e*S **S** 01 23 52.2 -1.2
WRH Wood River Hil 49.40 33 *e*P **P** 01 16 49.2 +1.4
SML Sawmill 49.43 36 *e*P **P** 01 16 48.4 +0.2
SML *e* 01 18 11.5
SML pmax pmax
comp=Z,14nm,1.2s
SML Sawmill 49.43 36 *e*P **P** 01 16 48.4 +0.2
comp=Z,14nm,1.2s
SML *e*PcP **PcP** 01 18 11.5 +1.3
COLA College 49.48 32 *e*P **P** 01 16 49.6 +1.1
COLA pmax pmax
comp=Z,16nm,0.8s
COLA MLR MLR
comp=Z,782nm,20.0s
COLA College 49.48 32 *e*P **P** 01 16 49.6 +1.1
comp=Z,16nm,0.8s
COLA LR LR
comp=Z,782nm,20.0s
CCB Clear Creek Bu 49.51 32 *e*P **P** 01 16 50.0 +1.3
HNR Honiara 49.57 155 LR LR 01 37 06.6
comp=Z,533nm,19.9s,baz=296,slow=35
FRU Bishkek 49.84 298 *i*P **P** 01 16 52.0 +0.4
FRU *e*S **S** 01 24 02.0 +1.7
FRU pmax pmax
comp=Z,300nm,2.1s
FRU smax smax
comp=N,125nm,2.8s
KSH Kashi 49.87 294 P **P** 01 16 56.2 +4.2
KSH *e*pP sP 01 17 04.5 +3.9
KSH *e*PcP **PcP** 01 18 15.5 +3.2
KSH *e*ScP **ScP** 01 22 09.1 +2.2
KSH PcS **PcS** 01 22 11.7 +2.4
KSH S **S** 01 24 04.9 +3.9
KSH pmax pmax
comp=N,170nm,2.1s
KSH pmax pmax
comp=N,550nm,3.3s
KSH LR LR
comp=N,4μm,17.4s
KSH LR LR
comp=N,2μm,13.4s
KSH LR LR
comp=N,4μm,15.9s
IL1 Eielson Array 49.90 32 *e*P **P** 01 16 49.9 -1.8
ILAR Eielson Array 49.90 32 P **P** 01 16 52.4 +0.7
comp=N,11nm,0.8s,baz=268,slow=5.9,SNR=43
ILAR PcP **PcP** 01 18 11.6 -0.3
comp=N,5.4nm,0.7s,baz=274,slow=3.5,SNR=5.7
ILAR LR LR 01 39 40.5
comp=N,784nm,19.3s,baz=280,slow=38
ILB Eielson Array 49.90 32 *e*P **P** 01 16 52.2 +0.5
SCM Sheep Creek Mo 49.91 36 *e*P **P** 01 16 52.4 +0.5
SCM Sheep Creek Mo 49.91 36 *e*P **P** 01 16 52.4 +0.5
CHKZ Chkalovo 49.91 313 P **P** 01 16 51.0 -0.9
CHKZ pmax pmax
comp=Z,30nm,0.6s
OTUK Ortayu 49.97 306 P **P** 01 16 51.4 -1.1
OTUK pmax pmax
comp=Z,44nm,0.8s
AAK Ala-Archa 49.98 298 P **P** 01 16 53.1 +0.2
comp=Z,7.6nm,0.7s,baz=87,slow=6.4,SNR=34
AAK Ala-Archa 49.98 298 *d*iP **P** 01 16 52.7 -0.1
AAK pmax pmax
comp=Z,138nm,1.7s
AAK Ala-Archa 49.98 298 *e*P **P** 01 16 53.1 +0.2
AAK LR LR
comp=Z,6μm,19.0s
AAK Ala-Archa 49.98 298 P **P** 01 16 53.0 +0.2
SNR=26
AAK P **P** 01 16 53.0 +0.2
SNR=26
AAK Ala-Archa 49.98 298 P **P** 01 16 53.0 +0.2
SNR=26
BVA0 Borovoye Array 50.17 312 *i*P **P** 01 16 53.3 -0.6
BVA0 pmax pmax
comp=Z,36nm,1.1s
BVAR Borovoye Array 50.17 312 PcP **PcP** 01 18 13.7 +0.7
comp=Z,14nm,0.8s,baz=90,slow=3.0,SNR=5.0
BVAR ScP **ScP** 01 22 12.0 +4.3
comp=Z,2.6nm,0.9s,baz=83,slow=4.6,SNR=4.5
BRVK Borovoye 50.22 312 *d*iP **P** 01 16 54.1 -0.2
BRVK pmax pmax
comp=Z,121nm,2.5s
BRVK Borovoye 50.22 312 *e*P **P** 01 16 54.4 +0.1
BRVK LR LR
comp=Z,2μm,19.0s
BRVK Borovoye 50.22 312 P **P** 01 16 54.6 +0.3
SNR=29
BRVK Borovoye 50.22 312 P **P** 01 16 54.6 +0.3
SNR=29
MTN Manton Dam 50.33 192 *e*P **P** 01 16 55.3 0.0
EKS2 Erkin-Say 50.48 298 *e*P **P** 01 16 56.0 -0.6
EKS2 pmax pmax
comp=Z,31nm,1.2s
EKS2 MLR MLR
comp=Z,5μm,20.0s
EKS2 Erkin-Say 50.48 298 *e*P **P** 01 16 56.0 -0.6
comp=Z,32nm,1.2s
EKS2 LR LR
comp=Z,5μm,20.0s
FYU Fort Yukon 50.49 30 *e*P **P** 01 16 58.9 +2.8
KLU Klutina 50.61 37 *e*P **P** 01 16 59.0 +1.8
PAX Paxson 50.66 35 *e*P **P** 01 16 58.6 +1.0
PAX pmax pmax
comp=Z,32nm,1.5s
PAX Paxson 50.66 35 *e*P **P** 01 16 58.6 +1.0
comp=Z,32nm,1.5s
COEN Coen 50.69 177 *e*P **P** 01 16 58.7 +0.6
comp=Z,153nm,1.1s
DIV Divide 50.72 37 *e*P **P** 01 17 00.1 +2.0
comp=Z,153nm,1.5s
EYAK Cordova Ski Ar 50.80 38 *e*P **P** 01 17 02.5 +4.0
LHMI Lhok Sumawe 50.87 242 *e*P **P** 01 16 59.2 -0.4
PSI Prapat 51.21 238 *e*P **P** 01 17 01.8 -0.6
PSI Prapat 51.21 238 *e*P **P** 01 17 01.8 -0.6
DOT Dot Lake 51.22 34 *e*P **P** 01 17 02.8 +1.1
comp=Z,33nm,0.8s
DOT *e*PcP **PcP** 01 18 18.4 +1.7
BMRM Bremner River 51.31 37 *e*P **P** 01 17 04.5 +2.1
comp=Z,36nm,1.0s
BMRM *e*PcP **PcP** 01 18 18.5 +1.4
RAGM Ragged Mountai 51.35 38 *e*P P 01 17 08.3 +5.6
MNAS Manas 51.43 299 P **P** 01 17 04.2 +0.5
MNAS pmax pmax
comp=Z,60nm,1.6s
MENT Mentasta 51.46 35 *e*P **P** 01 17 05.7 +2.1
SFK Sufi-Kurgan 51.51 295 P **P** 01 17 04.1 -0.4
SFK pmax pmax
comp=Z,17nm,0.6s
JAGI Jajag, Banyuwa 51.55 214 *e*P **P** 01 17 03.5 -1.2
comp=Z,231nm,1.4s
BKNI Bangkinang 51.63 234 *e*P **P** 01 17 05.8 +0.5
EGAK Eagle 52.34 32 *e*P **P** 01 17 11.2 +1.2
EGAK LR LR
comp=Z,723nm,21.0s
KK31 Karatay Array 52.63 300 *i*P **P** 01 17 11.8 -0.7
KK31 pmax pmax
comp=Z,35nm,1.2s
KKAR Karatay Array 52.63 300 *e*P **P** 01 17 12.4 -0.1
KKAR *e* 01 18 23.0
KKAR pmax pmax
comp=Z,90nm,1.3s
KKAR Karatay Array 52.63 300 *e*P **P** 01 17 12.4 -0.1
comp=Z,90nm,1.3s
KKAR *e*PcP **PcP** 01 18 23.0 +0.6
UGM Wanagama 52.80 219 *e*P **P** 01 17 13.2 -0.8
GSI Gunungsitoli 53.22 238 *e*P **P** 01 17 16.4 -0.7
comp=Z,164nm,0.7s
IUG Iuzhnay 53.27 299⇓ *e*P **P** 01 17 17.9 +0.5
comp=Z,770nm,1.2s
IUG LR LR 01 40 30.2
comp=Z,1μm,14.3s
INK Inuvik 54.75 27 P **P** 01 17 28.7 +1.2
comp=Z,8.5nm,0.9s,baz=261,slow=8.1,SNR=20
INK PcP **PcP** 01 18 31.3 +1.4
comp=Z,9.1nm,1.0s,baz=304,slow=3.6,SNR=4.5
INK Inuvik 54.75 27 *e*P **P** 01 17 28.2 +0.6
INK 01 18 31.3
INK pmax pmax
comp=Z,16nm,1.1s
INK Inuvik 54.75 27 *e*P **P** 01 17 28.2 +0.6
comp=Z,16nm,1.1s
INK PcP **PcP** 01 18 31.3 +1.4
INK Inuvik 54.75 27 *e*Pn **PcP** 01 18 31.6 +1.7
SVE Sverdlovsk 54.80 319⇑ *e*P **P** 01 17 28.3 +0.2
SVE pmax pmax
comp=Z,99nm,1.8s
ARU Arti 56.01 318 *d*iP **P** 01 17 36.6 -0.3
ARU 01 18 34.7
ARU PPP PPP 01 20 54.4
ARU S **S** 01 25 22.7 -1.2
ARU SS **SS** 01 29 00.5 -9.0
ARU pmax pmax
comp=Z,112nm,1.7s
ARU Arti 56.01 318 *e*P **P** 01 17 36.3 -0.6
comp=Z,68nm,1.0s
ARU LR LR
comp=Z,2μm,19.0s
SOKR Solikamsk 56.01 322 *d*iP **P** 01 17 35.2 -1.6
SOKR pmax pmax
comp=Z,48nm,1.5s
SOKR MLR MLR
comp=Z,1μm,20.0s
SKAG Skagway 56.15 38 *e*P **P** 01 17 40.5 +2.8
SKAG Skagway 56.15 38 *e*Pn **P** 01 17 39.8 +2.0
FITZ Fitzroy Crossi 56.55 197 *e*P **P** 01 17 41.1 0.0
comp=Z,190nm,1.4s
KBL Kabul 56.86 291 *e*P **P** 01 17 43.5 -0.1
KBL Kabul 56.86 291 *e*P **P** 01 17 43.5 -0.1
WRAB Tennant Creek 56.88 187 *d*iP **P** 01 17 42.3 -1.1
WRAB pmax pmax
comp=Z,439nm,1.2s
WRAB Tennant Creek 56.88 187 *e*P **P** 01 17 42.6 -0.9
comp=Z,83nm,0.8s
WRAB LR LR
comp=Z,652nm,20.0s
WRA Warramunga Arr 56.89 187 P **P** 01 17 42.5 -1.0
comp=Z,82nm,0.9s,baz=3.5,slow=7.2,SNR=516
WRA PcP **PcP** 01 18 40.5 +1.6
comp=Z,16nm,0.9s,baz=2.8,slow=5.0,SNR=4.8
WRA LR LR 01 41 10.8
comp=Z,520nm,21.4s,baz=10.0,slow=35
WRA PKPPKP **P'P'df** 01 47 32.8 +4.9
comp=Z,0.6nm,0.8s,baz=158,slow=2.4,SNR=4.6
WRA PKP2bc 01 47 45.8
comp=Z,2.3nm,1.1s,baz=191,slow=2.1,SNR=5.5
WRA Warramunga Arr 56.89 187 P **P** 01 17 42.5 -1.0
WRA 01 18 40.5
WRA pmax pmax
comp=Z,92nm,0.9s
WRA pmax pmax
comp=Z,16nm,0.9s
CTAO Charters Tower 56.98 174 *e*P **P** 01 17 44.3 +0.3
CTAO pmax pmax
comp=Z,65nm,1.3s
CTAO MLR MLR
comp=Z,503nm,20.0s
CTAO Charters Tower 56.98 174 *e*P **P** 01 17 44.3 +0.3
comp=Z,65nm,1.3s
CTAO LR LR
comp=Z,503nm,20.0s
XMIS Christmas Isla 57.49 222 *e*P **P** 01 17 48.0 +0.1
AB31 Akbulak array 57.52 310 *i*P **P** 01 17 47.2 -0.5
AB31 pmax pmax
comp=Z,30nm,0.8s
ABKAR Akbulak array 57.52 310 *e*P **P** 01 17 47.0 -0.6
HYB Hyderabad 57.58 268 *i*P **P** 01 17 47.0 -1.6
HYB *e* 01 17 55.0
AKTO Aktyubinsk 58.27 312 P **P** 01 17 51.7 -1.2
AKTO pmax pmax
comp=Z,68nm,1.7s
WRAK Wrangell Islan 58.62 41 PFAKE 01 18 10.0 +15
WRAK LR LR
comp=Z,825nm,20.0s
DLBC Dease Lake 59.08 38 LR LR 01 41 57.1
comp=Z,33nm,20.6s,baz=319,slow=34
DLBC Dease Lake 59.08 38 *e*P **P** 01 18 00.9 +2.3
comp=Z,29nm,1.2s
HOPEN Hopen 59.97 346 *e*P **P** 01 18 05.0 +0.7
HOPEN IAmb IAmb 01 18 06.8
comp=Z,66nm,1.0s
SPA0 Spitsbergen Ar 60.48 349 *e*P **P** 01 18 07.7 -0.1
SPA0 IAmb IAmb 01 18 08.7
comp=Z,184nm,1.8s
ASAR Alice Springs 60.62 187 P **P** 01 18 08.9 -0.5
comp=Z,55nm,1.0s,baz=9.7,slow=6.1,SNR=181
ASAR LR LR 01 43 15.4
comp=Z,465nm,21.4s,baz=12,slow=35
ASAR PKPPKP P'P'df 01 47 33.6 +11
comp=Z,1.2nm,0.9s,baz=181,slow=2.5,SNR=5.6
ASAR PKP2bc 01 47 40.1
comp=Z,3.4nm,0.8s,baz=180,slow=2.1,SNR=15
KBS Kingsbay 60.63 350 *e*P **P** 01 18 10.5 +1.7
KBS Kingsbay 60.63 350 *e*P **P** 01 18 08.7 -0.1
KBS pmax pmax
comp=Z,52nm,0.9s
KBS Kingsbay 60.63 350 *e*P **P** 01 18 08.7 -0.1
comp=Z,52nm,0.9s
MBWA Marble Bar 61.07 202 *e*P **P** 01 18 12.1 -0.3
MBWA LR LR
comp=Z,317nm,19.0s
MBWA Marble Bar 61.07 202 P **P** 01 18 12.3 -0.1
SNR=18
MBWA Marble Bar 61.07 202 P **P** 01 18 12.3 -0.1
SNR=18
HSPB Hornsund (broa 61.40 348 *e*P **P** 01 18 14.7 +0.7
HSPB IAmb IAmb 01 18 16.6
comp=Z,88nm,1.0s
HSPB Hornsund (broa 61.40 348 *e*P **P** 01 18 15.8 +1.8
LVZ Lovozero 61.93 336 *e*P **P** 01 18 17.8 0.0
LVZ pmax pmax
comp=Z,20nm,0.8s
LVZ MLR MLR
comp=Z,1μm,19.0s
LVZ Lovozero 61.93 336 *e*P **P** 01 18 17.8 0.0
comp=Z,20nm,0.8s
LVZ LR LR
comp=Z,1μm,19.0s
APA Apatity 62.51 336⇑ *i*P **P** 01 18 22.0 +0.4
APA pmax pmax
comp=Z,31nm,1.0s
APA MLR MLR
comp=Z,2μm,16.0s
TMCR Tamitsa 62.52 331 *e*P **P** 01 18 21.8 +0.1
TMCR pmax pmax
comp=Z,66nm,1.5s
EIDS Eidsvold 62.76 169 *e*P **P** 01 18 23.6 -0.1
comp=Z,70nm,1.2s
RES Resolute Bay 62.84 14 P **P** 01 18 24.3 +0.6
comp=Z,18nm,0.8s,baz=307,slow=6.9,SNR=76
RES LR LR 01 50 22.4
comp=Z,282nm,18.1s,baz=329,slow=40
KEV Kevo 63.30 339 *e*P **P** 01 18 27.4 +0.6
KEV pmax pmax
comp=Z,13nm,0.8s
KEV MLR MLR
comp=Z,897nm,20.0s
KEV Kevo 63.30 339 *e*P **P** 01 18 27.4 +0.6
comp=Z,13nm,0.8s
KEV LR LR
comp=Z,897nm,20.0s
GEYT Alibeck 63.33 299 P **P** 01 18 28.0 +0.4
comp=Z,12nm,0.7s,baz=31,slow=4.0,SNR=31
GEYT LR LR 01 47 34.1
comp=Z,2μm,18.2s,baz=45,slow=38
KLMR Klimovskoe 63.49 328 *e*P **P** 01 18 24.5 -3.8
KLMR *e*SS SS 01 31 03.2 -3.3
KLMR pmax pmax
comp=Z,36nm,1.0s
DZM Mont Dzumac 63.55 153 P **P** 01 18 32.3 +3.1
comp=Z,27nm,1.0s,baz=22,slow=8.7,SNR=10
ARCES ARCESS Array B 63.86 339 P **P** 01 18 30.9 +0.3
comp=Z,12nm,0.7s,baz=58,slow=8.6,SNR=32
ARCES LR LR 01 49 40.5
comp=Z,790nm,18.6s,baz=53,slow=39
ARE0 ARCESS Array S 63.86 339 *e*P **P** 01 18 30.2 -0.4
ARE0 IAmb IAmb 01 18 30.9
comp=Z,363nm,2.4s
COCO West Island 63.91 229 *i*P **P** 01 18 34.9 +3.4
YKA Yellowknife Ar 64.19 30 P **P** 01 18 32.9 0.0
comp=Z,7.1nm,0.8s,baz=301,slow=6.7,SNR=130
YKA PKPPKP **P'P'df** 01 47 23.0 -7.1

comp=Z,3.3nm,1.2s,baz=116,slow=2.7,SNR=9.9
YKA PKP2bc 01 47 32.7
comp=Z,1.6nm,1.0s,baz=122,slow=2.4,SNR=7.8
KTK1 Kautokeino 64.82 339 *e*P **P 01 18 37.7 +0.8**
KTK1 IAmb IAmb 01 18 38.6
comp=Z,23nm,0.8s
MSVF Nonsavu 64.83 140 *e*P **P 01 18 39.5 +1.8**
MSVF pmax pmax
comp=Z,34nm,1.1s
MSVF MLR MLR
comp=Z,1μm,22.0s
MSVF Nonsavu 64.83 140 *e*P **P 01 18 39.5 +1.8**
MSVF LR LR
comp=Z,1μm,22.0s
HEF Hetta 65.07 339 *e*P **P 01 18 38.9 +0.4**
DAG Danmarks Havn 65.81 355⇓*i*P **P 01 18 43.1 0.0**
comp=Z,46nm,0.8s
DAG Danmarks Havn 65.81 355⇓*i*P **P 01 18 43.1 0.0**
DAG pmax pmax
comp=Z,34nm,0.8s
MOS Moscow 66.94 323 *e*P **P 01 18 50.1 -0.6**
MOS *e* 01 19 17.0
MOS *e* 01 21 19.0
MOS *e*S **S 01 27 41.9 -0.7**
MOS pmax pmax
comp=Z,148nm,1.9s
MOS pmax pmax
comp=Z,500nm,2.2s
VRH Novokhopyorsk 67.22 318 *e*P **P 01 18 51.9 -0.7**
VRH pmax pmax
comp=Z,40nm,0.7s
VRH MLR MLR
comp=Z,1μm,17.0s
NLWA Neilton Lookou 67.23 47 *e*P **P 01 18 54.6 +1.9**
comp=Z,32nm,1.1s
NLWA LR LR
comp=Z,776nm,21.0s
AFI Afiamalu 67.56 129 LR LR 01 42 34.0
comp=Z,560nm,20.0s,baz=314,slow=31
OBN Obninsk 67.79 323 *i*P **P 01 18 55.2 -0.8**
OBN *i* 01 19 25.6
OBN *i* 01 21 25.9
OBN pmax pmax
comp=Z,53nm,1.8s
OBN MLR MLR
comp=Z,1μm,15.0s
OBN Obninsk 67.79 323 *e*P **P 01 18 55.3 -0.8**
comp=Z,27nm,0.7s
OBN LR LR
comp=Z,1μm,20.0s
ARMA Armidale 67.80 170 *e*P **P 01 18 57.2 +0.7**
comp=Z,58nm,1.1s
B05A Bryant 67.82 46 P **P 01 18 57.9 +1.5**
baz=301
JCW Jim Creek 67.95 46 P **P 01 18 59.3 +2.0**
LPSR Galich'ya Gora 67.97 320 *e*P **P 01 18 57.2 0.0**
LPSR pmax pmax
comp=Z,30nm,0.7s
LPSR MLR MLR
comp=Z,1μm,14.0s
STKA Stephens Creek 68.47 179 P **P 01 19 00.6 +0.1**
comp=Z,20nm,0.7s,baz=335,slow=8.3,SNR=41
VSR Storozhevoye 68.58 319 *e*P **P 01 19 00.7 -0.4**
VSR pmax pmax
comp=Z,100nm,1.5s
VSR MLR MLR
comp=Z,2μm,18.0s
FINES FINESS Array B 68.60 332 P **P 01 19 00.9 -0.1**
comp=Z,26nm,0.7s,baz=58,slow=7.2,SNR=77
FINES LR LR 01 54 31.4
comp=Z,903nm,18.6s,baz=50,slow=41
COR Corvallis 69.01 50 *e*P **P 01 19 05.2 +1.3**
COR pmax pmax
comp=Z,69nm,1.1s
COR Corvallis 69.01 50 *e*P **P 01 19 05.2 +1.3**
comp=Z,69nm,1.1s
ETW Entiat 69.18 46 P **P 01 19 06.8 +1.7**
MOR8 Moi Rana 69.22 339 *e*P **P 01 19 03.8 -1.1**
MOR8 IAmb IAmb 01 19 05.3
comp=Z,42nm,0.9s
I03D Drain, OR 69.45 50 P **P 01 19 09.3 +2.7**
baz=302
BBOO Buckleboo 69.53 184 *e*P **P 01 19 06.9 -0.2**
comp=Z,90nm,1.3s
GOF Gofitskoye 69.68 311⇑*e*P **P 01 19 08.3 +0.2**
GOF pmax pmax
comp=Z,107nm,1.5s
I04A Tendick Farm, 69.97 50 P **P 01 19 11.8 +1.8**
baz=302
L02D Cave Junction, 70.10 52 P **P 01 19 13.3 +2.6**
baz=302
DGRG David-gareji 70.15 307 P P 01 19 20.0 +8.9
DGRG David-gareji 70.15 307 *e*P P 01 19 20.0 +8.9
NCK Nalchik 70.18 310⇑*e*P **P 01 19 11.5 +0.3**
NCK pmax pmax
comp=Z,10.0nm,1.2s
GUDG Gudauri 70.18 309 P **P 01 19 12.0 +0.5**
CROR Criterion Ridg 70.20 48 P **P 01 19 13.3 +1.9**
VSU Vasula 70.21 329*d*i*P* **P 01 19 11.0 0.0**
VSU pmax pmax
comp=Z,247nm,1.7s
HAWA Hanford 70.29 46 PFAKE 01 19 30.0 +18
HAWA LR LR
comp=Z,461nm,19.0s
I05D Terrebonne, OR 70.33 49 P **P 01 19 14.1 +1.9**
baz=303
VTHM Trough 70.34 48 P **P 01 19 14.3 +2.1**
ZEI Tsey 70.37 309 *e*P **P 01 19 11.0 -1.6**
ZEI pmax pmax
comp=Z,164nm,1.9s
TBLG Delisi 70.41 308 P **P 01 19 14.2 +1.5**
TBLG Delisi 70.41 308 *e*P **P 01 19 14.1 +1.5**
KBZ Khabaz 70.48 310 P **P 01 19 13.3 +0.4**
comp=Z,20nm,0.9s,baz=43,slow=5.0,SNR=32
KBZ LR LR 01 52 54.2
comp=Z,1μm,18.5s,baz=77,slow=38
KIV Kislovodsk 70.49 311 *i*P **P 01 19 13.7 +0.5**
SNR=12
KIV Kislovodsk 70.49 311 *e*P **P 01 19 13.2 0.0**
KIV *e*S **S 01 28 24.1 -1.2**
KIV *e*SS **SS 01 32 56.0 +0.2**
KIV pmax pmax
comp=Z,65nm,1.1s
KIV pmax pmax
comp=Z,146nm,3.5s
KIV Kislovodsk 70.49 311 *e*P **P 01 19 13.6 +0.3**
comp=Z,32nm,0.6s
KIV LR LR
comp=Z,1μm,20.0s
KIV Kislovodsk 70.49 311 P **P 01 19 13.5 +0.3**
SNR=14
KIV Kislovodsk 70.49 311 P **P 01 19 13.5 +0.3**
SNR=14
NEW Newport 70.62 44 P **P 01 19 15.1 +1.3**
baz=304
NEW Newport 70.62 44 *e*P **P 01 19 14.9 +1.0**
NEW pmax pmax
comp=Z,46nm,1.5s
NEW MLR MLR
comp=Z,685nm,21.0s
NEW Newport 70.62 44 *e*P **P 01 19 14.9 +1.0**
comp=Z,46nm,1.5s
NEW LR LR
comp=Z,685nm,21.0s
BANOM Banah 70.64 288 *i*P **P 01 19 14.6 +0.3**
SNR=6.5
SUMG Summit 70.77 360 *i*P **P 01 19 15.9 +1.1**
comp=Z,58nm,0.8s
SUMG Summit 70.77 360 *e*P **P 01 19 15.5 +0.7**
SUMG pmax pmax
comp=Z,93nm,1.0s
SUMG Summit 70.77 360 *e*P **P 01 19 15.5 +0.7**
comp=Z,93nm,1.0s
SMDO Samad 70.83 285 P **P 01 19 16.2 +0.6**
SNR=6.0
SMDO Samad 70.83 285 P **P 01 19 16.2 +0.6**
SNR=6.0
NEY Neytrino 70.85 310⇓*e*P **P 01 19 15.8 +0.3**
NEY pmax pmax
comp=Z,2.0nm,0.8s
YBH Yreka Blue Hor 70.89 52 *e*P **P 01 19 17.6 +1.9**
YBH pmax pmax
comp=Z,16nm,1.1s
YBH Yreka Blue Hor 70.89 52 *e*P **P 01 19 17.6 +1.9**
comp=Z,16nm,1.1s

J05D Fort Rock, OR 70.97 50 P **P 01 19 18.3 +2.1**
baz=303
M02C Callahan 70.98 52 P **P 01 19 18.1 +1.9**
baz=303
K04D Chiloquin, OR 71.00 51 P **P 01 19 18.6 +2.2**
baz=303
GNI Garni 71.25 306 *e*P **P 01 19 17.8 -0.2**
GNI pmax pmax
comp=Z,406nm,1.4s
GNI MLR MLR
comp=Z,1μm,22.0s
GNI Garni 71.25 306 *e*P **P 01 19 17.8 -0.2**
comp=Z,406nm,1.4s
GNI LR LR
comp=Z,1μm,22.0s
HATD Hatta, Dubai 71.36 287 *i*P **P 01 19 18.8 +0.1**
SNR=11
AKH Akhalkalaki 71.37 308 P **P 01 19 19.4 +0.7**
AKH Akhalkalaki 71.37 308⇑*i*P **P 01 19 19.9 +1.2**
AKH Akhalkalaki 71.37 308 *e*P **P 01 19 19.4 +0.7**
M04C Macdoel 71.41 51 P **P 01 19 20.6 +1.7**
baz=303
ASHO Ashiyiah 71.49 287 *i*P **P 01 19 19.6 +0.1**
SNR=7.5
CHVG Ch'k'valeri 71.53 310 P **P 01 19 21.0 +1.6**
CHVG Ch'k'valeri 71.53 310⇓*i*P **P 01 19 19.3 -0.1**
WDC Whiskeytown Da 71.62 53 *e*P **P 01 19 20.4 +0.4**
WDC pmax pmax
comp=Z,58nm,1.7s
WDC Whiskeytown Da 71.62 53 *e*P **P 01 19 20.4 +0.4**
comp=Z,58nm,1.7s
NAZ Nazwa, Dubai 71.63 288 *i*P **P 01 19 20.3 0.0**
SNR=5.6
FAQ Al Faqa, Dubai 71.81 288 *i*P **P 01 19 21.2 -0.2**
SNR=6.2
WALA Waterton Lakes 71.92 42 *e*P **P 01 19 22.8 +1.0**
comp=Z,27nm,1.3s
SCO Scoresbysund 72.13 354 *i*P **P 01 19 23.5 +1.0**
comp=Z,17nm,0.7s
SCO Scoresbysund 72.13 354 *i*P **P 01 19 23.5 +1.0**
SCO pmax pmax
comp=Z,17nm,0.7s
IZAR Zarasai 72.14 327 *e*P **P 01 19 23.0 +0.2**
IZAR IAmb IAmb 01 19 24.4
comp=Z,11nm,0.7s
BSMT Bassoo Peak 72.15 43 P **P 01 19 25.2 +1.9**
IDID Didziasalis 72.21 327 *e*P **P 01 19 23.3 +0.1**
IDID IAmb IAmb 01 19 24.9
comp=Z,14nm,0.9s
MICGM Minsk 72.21 326 *e* **P 01 19 23.0 -0.3**
MNK Minsk 72.21 326 *e*P **P 01 19 23.0 -0.3**
O03D Paynes Creek 72.25 53 P **P 01 19 25.3 +1.5**
baz=304
MOD Modoc Plateau 72.30 51 *e*P **P 01 19 25.4 +1.2**
comp=Z,21nm,1.2s
ISAL Salakas 72.31 327 *e*P **P 01 19 23.9 +0.1**
ISAL IAmb IAmb 01 19 25.6
comp=Z,30nm,1.0s
CAN Canberra 72.32 173 PFAKE 01 19 40.0 +16
CAN LR LR
comp=Z,627nm,20.0s
IIGN Ignalina 72.41 327 *e*P **P 01 19 24.5 +0.1**
IIGN IAmb IAmb 01 19 26.2
comp=Z,18nm,0.9s
BMO Blue Mountains 72.44 47 *e*P **P 01 19 26.5 +1.5**
comp=Z,31nm,1.1s
BMO LR LR
comp=Z,617nm,20.0s
NACGM Naroch 72.45 326 *e* **P 01 19 25.0 +0.3**
NACGM *e*LQ LQ 01 47 26.0
NACGM *e*LR LR 01 51 33.0
NACGM LRM MLR 01 56 23.0
comp=Z,2.0nm,14.0s
SOC Sochi 72.49 312 *e*P **P 01 19 25.5 +0.4**
SOC *e* 01 22 09.4
SOC *e*PPP PPP 01 23 43.2
SOC *e*S **S 01 28 45.1 -3.1**
SOC *e* 01 29 14.8
SOC pmax pmax
comp=Z,28nm,1.0s
SOC MLR MLR
comp=Z,1μm,17.0s
NWAO Narrogin (SRO) 72.87 200 *e*P **P 01 19 27.4 +0.1**
NWAO pmax pmax
comp=Z,99nm,1.2s
NWAO Narrogin (SRO) 72.87 200 *e*P **P 01 19 27.4 +0.1**
comp=Z,99nm,1.2s
WVOR Wild Horse Val 73.03 50 *e*P **P 01 19 29.9 +1.4**
WVOR pmax pmax
comp=Z,89nm,1.8s
WVOR MLR MLR
comp=Z,707nm,22.0s
WVOR Wild Horse Val 73.03 50 *e*P **P 01 19 29.9 +1.4**
comp=Z,89nm,1.8s
WVOR LR LR
comp=Z,707nm,22.0s
ANN Anapa 73.14 314 *e*P **P 01 19 28.3 -0.6**
ANN *e*S **S 01 28 56.0 +0.5**
ANN pmax pmax
comp=Z,100nm,1.6s
ANN MLR MLR
comp=Z,684nm,17.0s
ANN MLR MLR
comp=E,1μm,17.0s
ANN MLR MLR
comp=N,934nm,17.0s
MSO Missoula 73.21 44 P **P 01 19 30.8 +1.3**
baz=306
ILULI Ilulissat 73.80 4 *i*P **P 01 19 33.4 +1.0**
comp=N,31nm,0.8s
ILULI Ilulissat 73.80 4 *i*P **P 01 19 33.4 +1.0**
ILULI pmax pmax
comp=Z,31nm,0.8s
AKASG Malin Array Be 73.98 322 P **P 01 19 33.4 -0.4**
comp=Z,6.6nm,0.4s,baz=44,slow=6.2,SNR=53
AKASG LR LR 01 54 49.2
comp=Z,2μm,19.1s,baz=35,slow=38
KIEV Kiev 73.99 322 *e*P **P 01 19 33.3 -0.6**
KIEV pmax pmax
comp=Z,30nm,0.8s
KIEV MLR MLR
comp=Z,2μm,20.0s
KIEV Kiev 73.99 322 *e*P **P 01 19 33.2 -0.6**
comp=Z,30nm,0.8s
KIEV LR LR
comp=Z,2μm,20.0s
NB2 NORSAR Subarra 74.02 337 P **P 01 19 33.8 -0.1**
comp=Z,178nm,2.0s,baz=40,slow=6.2
NB2 NORSAR Subarra 74.02 337 P **P 01 19 33.8 -0.1**
baz=40,slow=6.2
NOA NORSAR Array B 74.02 337 P **P 01 19 33.8 -0.1**
comp=Z,13nm,0.6s,baz=38,slow=5.9,SNR=46
NOA LR LR 01 54 35.2
comp=Z,717nm,19.9s,baz=50,slow=38
NOA NORSAR Array B 74.02 337 P **P 01 19 33.8 -0.1**
NOA pmax pmax
comp=Z,12nm,0.6s
NOA MLR MLR
comp=Z,717nm,19.9s
FFC Flin Flon 74.11 32 *e*P **P 01 19 34.8 +0.3**
FFC pmax pmax
comp=Z,24nm,0.9s
FFC MLR MLR
comp=Z,430nm,20.0s
FFC Flin Flon 74.11 32 *e*P **P 01 19 34.8 +0.3**
comp=Z,24nm,0.9s
FFC LR LR
comp=Z,430nm,20.0s
MFID Camas Ranch 74.14 47 *e*P **P 01 19 36.8 +1.7**
comp=Z,34nm,1.2s
NC602 NORSAR Array S 74.15 337 *e*P **P 01 19 34.8 +0.2**
FCC Fort Churchill 74.36 26 *e*P **P 01 19 35.7 -0.1**
FCC pmax pmax
comp=Z,32nm,1.0s
FCC Fort Churchill 74.36 26 *e*P **P 01 19 35.7 -0.1**
comp=Z,32nm,1.0s
AKN Aaknes 74.39 339 *e*P **P 01 19 37.5 +1.6**
CMB Columbia Colle 74.43 54 *e*P **P 01 19 38.3 +1.6**
CMB pmax pmax
comp=Z,434nm,1.6s
CMB Columbia Colle 74.43 54 *e*P **P 01 19 38.2 +1.6**
comp=Z,434nm,1.6s
SUW Suwalki 74.62 327 *e*P **P 01 19 38.3 +0.8**
SUW Suwalki 74.62 327 *e*P **P 01 19 38.4 +0.9**
EGMT Eagleton 74.75 41 P **P 01 19 39.5 +1.0**
baz=309

EGMT Eagleton 74.75 41 *e*P **P 01 19 39.5 +1.0**
comp=Z,30nm,0.8s
EGMT LR LR
comp=Z,511nm,20.0s
DLMT Dillon 74.84 44 *e*P **P 01 19 40.0 +0.9**
comp=Z,23nm,0.7s
HLID Hailey 74.89 47 P **P 01 19 41.4 +1.9**
baz=307
HLID Hailey 74.89 47 *e*P **P 01 19 41.4 +1.9**
comp=Z,16nm,1.1s
HLID LR LR
comp=Z,531nm,21.0s
SIM Simferopol' 74.95 315*d*i*P* **P 01 19 40.4 +0.9**
SIM *e*S SKSac 01 29 37.0 -10
SIM pmax pmax
comp=Z,18nm,0.8s
LCCM Lewis and Clar 74.95 44 P **P 01 19 41.4 +1.6**
BMN Battle Mountai 75.05 51 *e*P **P 01 19 42.4 +1.9**
BMN pmax pmax
comp=Z,62nm,1.6s
BMN Battle Mountai 75.05 51 *e*P **P 01 19 42.4 +1.9**
comp=Z,62nm,1.6s
BOZ Bozeman (W) 75.21 44 P **P 01 19 42.7 +1.5**
baz=308
BOZ Bozeman (W) 75.21 44 *e*P **P 01 19 42.6 +1.4**
BOZ pmax pmax
comp=Z,13nm,0.8s
BOZ MLR MLR
comp=Z,433nm,19.0s
BOZ Bozeman (W) 75.21 44 *e*P **P 01 19 42.6 +1.4**
comp=Z,13nm,0.8s
BOZ LR LR
comp=Z,433nm,19.0s
NVAR Mina Array Bea 75.54 53 P **P 01 19 45.4 +2.1**
comp=Z,13nm,0.9s,baz=285,slow=6.0,SNR=55
SFJD Kangerlussuaq 76.02 5 *i*P **P 01 19 45.9 +0.6**
comp=Z,25nm,0.8s
SFJD Kangerlussuaq 76.02 5 *i*P **P 01 19 45.9 +0.6**
SFJD pmax pmax
comp=Z,25nm,0.8s
SFJD Kangerlussuaq 76.02 5 *e*P **P 01 19 45.5 +0.2**
comp=Z,22nm,0.8s
ELK Elko 76.08 49 *e*P **P 01 19 48.0 +1.5**
ELK pmax pmax
comp=Z,101nm,2.0s
ELK Elko 76.08 49 *e*P **P 01 19 48.0 +1.5**
comp=Z,101nm,2.0s
ASK Askoy 76.27 339 *e*P **P 01 19 47.7 +0.9**
BER Bergen 76.31 339 *e*P **P 01 19 45.6 -1.4**
CUKAN kangal_SIVAS 76.34 309 *i*P **P 01 19 47.9 +0.1**
RAO Raoul Island 76.48 143 LR LR 01 49 55.8
comp=Z,366nm,18.9s,baz=130,slow=33
KIS Kishinev 76.55 319⇑*i*P **P 01 19 48.0 -0.7**
comp=Z,200nm,2.0s
KIS LRM MLR 01 56 17.0
comp=Z,2μm,16.0s
KIS Kishinev 76.55 319⇑*i*P **P 01 19 48.0 -0.7**
KIS *e* 01 20 02.0
KIS pmax pmax
comp=Z,200nm,2.0s
KIS MLR MLR
comp=Z,2μm,17.0s
KIS MLR MLR
comp=N,2μm,16.0s
KIS MLR MLR
comp=E,2μm,16.0s
KIS MLR MLR
comp=Z,2μm,16.0s
LKWY Lake 76.56 44 *e*P **P 01 19 52.0 +2.9**
LKWY pmax pmax
comp=Z,114nm,1.8s
LKWY MLR MLR
comp=Z,601nm,20.0s
LKWY Lake 76.56 44 *e*P **P 01 19 52.0 +2.9**
comp=Z,114nm,1.8s
LKWY LR LR
comp=Z,601nm,20.0s
H17A Grant Village 76.57 44 P **P 01 19 52.6 +3.4**
baz=309
H17A Grant Village 76.57 44 *e*P **P 01 19 52.5 +3.3**
comp=Z,88nm,1.5s
BOYT Boyabat 76.64 312 *i*P **P 01 19 50.5 +1.2**
FLWY Flagg Ranch 76.69 45 *e*P **P 01 19 52.2 +2.4**
comp=Z,204nm,2.0s
BLS5 Blasjo 76.76 338 *e*P **P 01 19 50.4 +0.7**
CUALT Altinyayla-SIV 76.81 309 *i*P **P 01 19 50.5 0.0**
RLMT Red Lodge 76.83 43 P **P 01 19 52.4 +1.7**
baz=310
RLMT Red Lodge 76.83 43 *e*P **P 01 19 52.3 +1.7**
comp=Z,35nm,1.2s
MOOW Moose Ponds 76.88 45 *e*P **P 01 19 52.5 +1.6**
comp=Z,32nm,1.3s
CUSAR Sarkisla-SIVAS 77.04 310 *i*P **P 01 19 51.8 0.0**
LOHW Long Hollow 77.04 45 *e*P **P 01 19 53.7 +1.9**
comp=Z,9.4nm,0.2s
SNOW Snow King Moun 77.05 45 *e*P **P 01 19 54.1 +2.2**
comp=Z,27nm,1.3s
REDW Red Top Meadow 77.06 45 *e*P **P 01 19 53.5 +1.6**
comp=Z,38nm,1.4s
LVV L'vov 77.08 324 *e*P **P 01 19 51.1 -0.5**
LVV *e* 01 22 48.1
LVV MLR MLR
comp=N,700nm,15.0s
LVV MLR MLR
comp=E,500nm,15.0s
LVV MLR MLR
comp=Z,800nm,15.0s
BEL Belsk 77.17 326 *e*P **P 01 19 52.9 +0.8**
BEL Belsk 77.17 326 *e*P **P 01 19 52.9 +0.8**
BSD Bornholm Skovb 77.22 331⇓*i*P **P 01 19 51.9 -0.4**
comp=Z,27nm,0.8s
BSD Bornholm Skovb 77.22 331⇓*i*P **P 01 19 51.9 -0.4**
BSD pmax pmax
comp=Z,27nm,0.8s
DAC Darwin (Calif) 77.26 54 *e*P **P 01 19 53.9 +0.8**
DAC pmax pmax
comp=Z,32nm,1.4s
DAC Darwin (Calif) 77.26 54 *e*P **P 01 19 53.9 +0.8**
comp=Z,32nm,1.4s
AHID Auburn Hatcher 77.29 46 *e*P **P 01 19 54.7 +1.5**
comp=Z,27nm,1.3s
AHID LR LR
comp=Z,774nm,22.0s
DGMT Dagmar 77.29 38 P **P 01 19 54.2 +1.3**
baz=312
DGMT Dagmar 77.29 38 *e*P **P 01 19 53.2 +0.3**
comp=Z,21nm,0.8s
DGMT LR LR
comp=Z,679nm,22.0s
COAL Corum-Alaca 77.30 311 *i*P **P 01 19 54.4 +1.2**
R11A Troy Canyon, C 77.31 52 P **P 01 19 54.8 +1.5**
baz=307
R11A Troy Canyon, C 77.31 52 *e*P **P 01 19 54.3 +0.9**
comp=Z,83nm,1.6s
DGAR Diego Garcia 77.37 251 PFAKE 01 20 00.0 +6.3
DGAR LR LR
comp=Z,868nm,21.0s
KSRV Kasrt alli 77.41 305 *e*P **P 01 19 55.1 +1.4**
LAO LASA Array 77.45 40 P **P 01 19 55.5 +1.7**
baz=311
LAO LASA Array 77.45 40 *e*P **P 01 19 54.9 +1.0**
comp=Z,169nm,1.8s
LAO LR LR
comp=Z,508nm,19.0s
GZT Gaziantep 77.45 307 *i*P **P 01 19 55.7 +1.6**
MPMC Manual Prospec 77.46 54 P **P 01 19 55.4 +1.2**
baz=307
A25A Svangstu Ranch 77.51 37 P **P 01 19 55.3 +1.2**
baz=313
FURC Furnace Creek, 77.62 54 P **P 01 19 57.1 +2.2**
baz=307
BORG Borgarnes 77.65 352 *e*P **P 01 19 54.8 +0.3**
BORG pmax pmax
comp=Z,270nm,1.5s
BORG Borgarnes 77.65 352 *e*P **P 01 19 54.8 +0.3**
comp=Z,270nm,1.5s
TLCR 77.72 318⇑*i*P **P 01 19 55.7 +0.4**
TPNV Topopah Spring 77.73 53 P **P 01 19 57.5 +1.8**
baz=307
HWUT Hardware Ranch 77.75 47 *e*P **P 01 19 57.1 +1.4**
comp=Z,63nm,1.3s
HWUT LR LR
comp=Z,384nm,19.0s
KWP Kalwaria Pacla 77.83 324 *e*P **P 01 19 56.7 +0.9**
KWP Kalwaria Pacla 77.83 324 *e*P **P 01 19 56.7 +0.9**
DUG Dugway, Tooele 77.88 49 P **P 01 19 58.6 +2.1**
baz=308

DUG	Dugway, Tooele	77.88	49	*e*P		P		01 19 58.1	+1.6
DUG					pmax	pmax			
	comp=Z,42nm,1.2s								
DUG					MLR	MLR			
	comp=Z,434nm,22.0s								
DUG	**Dugway, Tooele**	**77.88**	**49**	*e*P		**P**		**01 19 58.1**	**+1.6**
	comp=Z,42nm,1.2s								
DUG					LR	LR			
	comp=Z,434nm,22.0s								
AYKD	**Aykdinkavak**	**77.90**	**308**	*i* P		**P**		**01 19 57.0**	**+0.5**
BURAR	**Bucovina Array**	**77.99**	**321**⇑	*i*P		**P**		**01 19 57.5**	**+0.6**
TESR	**Tescani**	**78.00**	**320**⇓	*i*P		**P**		**01 19 58.0**	**+1.2**
A26A	**Wade Farm, Ken**	**78.06**	**37**	P		**P**		**01 19 58.6**	**+1.5**
	baz=314								
CFR	**Carcaliu**	**78.09**	**318**⇓	*i*P		**P**		**01 19 58.2**	**+0.9**
KUZU	**Kuzuini**	**78.11**	**307**	*i* P		**P**		**01 19 59.6**	**+1.9**
KAMA	**Osmaniye**	**78.12**	**308**	*i* P		**P**		**01 19 58.3**	**+0.5**
BW06	**Boulder Array**	**78.17**	**45**	P		**P**		**01 19 59.3**	**+1.1**
	baz=310								
BW06	**Boulder Array**	**78.17**	**45**	*e*P		**P**		**01 19 59.1**	**+0.9**
	comp=Z,18nm,1.1s								
BW06					LR	LR			
	comp=Z,596nm,21.0s								
PDAR	**Pinedale Array**	**78.17**	**45**	P		**P**		**01 19 58.9**	**+0.8**
	comp=Z,5.3nm,0.6s,baz=275,slow=2.1,SNR=56								
PETR	**Petresti**	**78.22**	**319**⇓	*i*P		**P**		**01 19 58.9**	**+0.9**
AVNS	**Nevsehir-Avano**	**78.27**	**310**	*i* P		**P**		**01 19 58.3**	**-0.3**
ODBI	**Odobesti**	**78.28**	**319**⇓	*i*P		**P**		**01 20 01.4**	**+3.0**
B26A	**Jensen Ranch,**	**78.32**	**37**	P		**P**		**01 20 00.7**	**+2.1**
	baz=314								
SHOC	**Shoshone, Teco**	**78.34**	**54**	P		**P**		**01 20 00.8**	**+1.9**
	baz=307								
GSC	**Goldstone, Bar**	**78.36**	**55**	P		**P**		**01 20 00.6**	**+1.4**
	baz=307								
VRI	**Vrincioaia**	**78.39**	**319**⇓	*i*P		**P**		**01 20 00.5**	**+1.5**
TIRR	**Tirgusor**	**78.42**	**317**⇑	*i*P		**P**		**01 19 59.4**	**+0.3**
TIRR	**Tirgusor**	**78.42**	**317**	*e*P		**P**		**01 19 58.3**	**-0.8**
TIRR					pmax	pmax			
	comp=Z,12nm,1.0s								
TIRR	**Tirgusor**	**78.42**	**317**	*e*P		**P**		**01 19 58.3**	**-0.8**
	comp=Z,12nm,1.0s								
PLOR	**Plostina**	**78.44**	**319**⇑	*i*P		**P**		**01 19 59.9**	**+0.6**
BRTR	**Keskin Array B**	**78.44**	**311**	P		**P**		**01 20 00.1**	**+0.6**
	comp=Z,6.2nm,0.6s,baz=114,slow=2.9,SNR=32								
BRTR					LR	LR		01 56 48.3	
	comp=Z,449nm,21.6s,baz=48,slow=37								
DRWC	**Darouich**	**78.47**	**307**	*e*P		**P**		**01 20 02.1**	**+2.4**
KOLS	**Kolonicke sedl**	**78.52**	**324**	*e*P		**P**		**01 20 00.6**	**+0.9**
KOLS				*e*				01 20 07.8	
KOLS					pmax	pmax			
	comp=Z,25nm,1.3s								
KOLS	**Kolonicke sedl**	**78.52**	**324**	*e*P		**P**		**01 20 00.5**	**+0.9**
KOLS				*e*				01 20 07.8	
HARR	**Harsova**	**78.52**	**318**⇑	*i*P		**P**		**01 20 00.1**	**+0.4**
D25A	**Fairfield**	**78.62**	**39**	P		**P**		**01 20 02.2**	**+1.8**
	baz=313								
STHS	**Stebnicka Huta**	**78.67**	**325**	*e*P		**P**		**01 20 01.7**	**+1.2**
STHS				*e*				01 20 09.6	
STHS					pmax	pmax			
	comp=Z,19nm,1.2s								
STHS	**Stebnicka Huta**	**78.67**	**325**	*e*P		**P**		**01 20 01.7**	**+1.2**
STHS				*e*				01 20 09.6	
UZH	**Uzhgorod**	**78.72**	**323**	*d* iP		**P**		**01 20 01.3**	**+0.6**
UZH				*e*				01 20 10.8	
UZH				*e*				01 20 16.4	
OJC	**Ojcow**	**78.76**	**326**	*e*P		**P**		**01 20 01.4**	**+0.5**
OJC	**Ojcow**	**78.76**	**326**	*e*P		**P**		**01 20 01.5**	**+0.5**
C26A	**Wahner Farm, P**	**78.76**	**38**	P		**P**		**01 20 03.1**	**+2.0**
	baz=314								
ARCR	**ARCALIA**	**78.78**	**321**⇑	*i*P		**P**		**01 20 02.7**	**+1.6**
BMR	**Baia Mare**	**78.80**	**322**⇓	*i*P		**P**		**01 20 02.3**	**+1.1**
TUQ	**Turquoise Moun**	**78.85**	**54**	P		**P**		**01 20 03.7**	**+1.8**
	baz=308								
ANTO	**Ankara**	**78.86**	**312**	PFAKE				01 20 10.0	+8.2
ANTO					LR	LR			
	comp=Z,119nm,22.0s								
A28A	**Rude Farm, Bot**	**78.89**	**36**	P		**P**		**01 20 03.4**	**+1.7**
	baz=315								
CRVS	**Cervenica-Dubn**	**78.93**	**324**	*e*P		**P**		**01 20 02.9**	**+1.0**
CRVS	**Cervenica-Dubn**	**78.93**	**324**	*e*P		**P**		**01 20 02.9**	**+1.0**
HEC	**Hector,Ludlow**	**78.95**	**55**	P		**P**		**01 20 04.3**	**+1.9**
	baz=308								
TRPA	**Tarpa**	**78.95**	**323**⇑	*e*P		**P**		**01 20 04.1**	**+2.1**
MSAB	**Monastry St. A**	**78.97**	**317**⇑	*i*P		**P**		**01 20 03.8**	**+1.6**
DOPR	**Dopca**	**79.01**	**320**⇑	*i*P		**P**		**01 20 03.1**	**+0.7**
E25A	**Miller Ranch,**	**79.02**	**39**	P		**P**		**01 20 04.2**	**+1.7**
	baz=313								
MLR	**Muntele Rosu**	**79.05**	**319**⇓	*i*P		**P**		**01 20 02.8**	**0.0**
PSN	**Preselentsi**	**79.05**	**317**	P		**P**		**01 20 03.2**	**+0.6**
NIE	**Niedzica**	**79.10**	**325**	*e*P		**P**		**01 20 03.7**	**+0.9**
NIE	**Niedzica**	**79.10**	**325**	*e*P		**P**		**01 20 03.8**	**+0.9**
C27A	**Sayler Ranch,**	**79.13**	**37**	P		**P**		**01 20 04.1**	**+1.1**
	baz=314								
D26A	**Manning**	**79.14**	**38**	P		**P**		**01 20 04.3**	**+1.2**
	baz=314								
B28A	**Dugan Ranch, T**	**79.17**	**36**	P		**P**		**01 20 04.7**	**+1.5**
	baz=315								
KKUL	**Konya-Kulu**	**79.22**	**311**	*i* P		**P**		**01 20 04.8**	**+0.9**
A29A	**Manning Farm,**	**79.36**	**35**	P		**P**		**01 20 05.7**	**+1.4**
	baz=315								
SLNF	**Slenfeh**	**79.38**	**307**	*e*P		**P**		**01 20 03.5**	**-1.3**
F25A	**Bowman**	**79.38**	**40**	P		**P**		**01 20 05.8**	**+1.3**
	baz=313								
CJR	**Cluj-Napoca**	**79.41**	**321**⇑	*i*P		**P**		**01 20 05.9**	**+1.3**
GMRC	**Granite Mounta**	**79.42**	**54**	P		**P**		**01 20 06.7**	**+1.7**
	baz=308								
SULR		**79.43**	**319**⇑	*i*P		**P**		**01 20 05.6**	**+0.9**
D27A	**Center**	**79.54**	**38**	P		**P**		**01 20 07.1**	**+1.8**
	baz=314								
KERG	**Konya-Eregli**	**79.58**	**309**	*i* P		**P**		**01 20 07.3**	**+1.5**
PFO	**Pinyon Flats O**	**79.61**	**56**	*e*P		**P**		**01 20 07.2**	**+1.2**
PFO					pmax	pmax			
	comp=Z,122nm,1.8s								
PFO					MLR	MLR			
	comp=Z,1μm,20.0s								
PFO	**Pinyon Flats O**	**79.61**	**56**	*e*P		**P**		**01 20 07.2**	**+1.2**
	comp=Z,122nm,1.8s								
PFO					LR	LR			
	comp=Z,1μm,20.0s								
B29A	**Wagenman Farm,**	**79.63**	**36**	P		**P**		**01 20 07.3**	**+1.5**
	baz=315								
LANS	**Liptovska Anna**	**79.68**	**325**	*e*P		**P**		**01 20 07.9**	**+1.9**
LANS				*e*				01 23 06.6	
LANS	**Liptovska Anna**	**79.68**	**325**	*e*P		**P**		**01 20 07.9**	**+1.9**
LANS				*e*PP		**PP**		**01 23 06.6**	**+0.3**
KECS	**Kecovo**	**79.68**	**324**	*e*P		**P**		**01 20 07.4**	**+1.4**
KECS					pmax	pmax			
	comp=Z,11nm,1.5s								
KECS	**Kecovo**	**79.68**	**324**	*e*P		**P**		**01 20 07.4**	**+1.4**
OKC	**Ostrava-Krasne**	**79.78**	**326**⇓	*e*P		**P**		**01 20 07.3**	**+0.8**
OKC				*e*pP		**PcP**		**01 20 15.1**	**+1.0**
OKC					AMS	AMS		02 01 00.0	
	comp=Z,1μm,16.5s								
OKC	**Ostrava-Krasne**	**79.78**	**326**	*e*P		**P**		**01 20 07.3**	**+0.8**
OKC				*e*				01 20 15.1	
OKC					MLR	MLR			
	comp=Z,1μm,16.5s								
A30A	**Hoffart Farm,**	**79.78**	**35**	P		**P**		**01 20 07.5**	**+1.0**
	baz=316								
DRGR		**79.80**	**322**⇑	*i*P		**P**		**01 20 07.9**	**+1.1**
TNR	**Turnu Rosu**	**79.80**	**320**⇑	*i*P		**P**		**01 20 09.9**	**+3.2**
TNR	**Turnu Rosu**	**79.80**	**320** ⇑	P		**P**		**01 20 10.0**	**+3.2**
ARR	**Arges**	**79.81**	**320**⇑	*i*P		**P**		**01 20 08.4**	**+1.6**
F26A	**Lodgepole**	**79.83**	**39**	P		**P**		**01 20 08.1**	**+1.1**
	baz=314								
KSP	**Ksiaz**	**79.84**	**328**	*e*P		**P**		**01 20 07.5**	**+0.7**
KSP	**Ksiaz**	**79.84**	**328**	*e*P		**P**		**01 20 07.5**	**+0.7**
ULM	**Lac du Bonnet**	**79.92**	**33**	P		**P**		**01 20 07.7**	**+0.4**
	comp=Z,9.9nm,0.8s,baz=308,slow=7.1,SNR=12								
ULM					LR	LR		01 56 36.2	
	comp=Z,243nm,20.2s,baz=300,slow=36								
K22A	**Casper**	**79.95**	**44**	P		**P**		**01 20 09.1**	**+1.3**
	baz=312								
K22A	**Casper**	**79.95**	**44**	*e*P		**P**		**01 20 08.5**	**+0.8**
	comp=Z,101nm,1.7s								
D28A	**Regan**	**79.95**	**37**	P		**P**		**01 20 08.8**	**+1.3**
	baz=315								
E27A	**Carson**	**79.99**	**38**	P		**P**		**01 20 09.6**	**+1.8**
	baz=314								
RAYN	**Ar Rayn**	**80.11**	**292**	*e*P		**P**		**01 20 08.6**	**-0.2**
	comp=Z,175nm,1.8s								
RAYN					LR	LR			
	comp=Z,1μm,19.0s								
B30A	**Myrvik Farm, E**	**80.12**	**35**	P		**P**		**01 20 09.7**	**+1.3**
	baz=316								
IRM	**Iron Mountain**	**80.14**	**55**	P		**P**		**01 20 10.3**	**+1.5**
	baz=308								
F27A	**Lemmon**	**80.15**	**39**	P		**P**		**01 20 09.8**	**+1.1**
	baz=314								
MARH	**Ras Al Marh**	**80.17**	**305**	*e*P		**P**		**01 20 08.8**	**-0.6**
DPC	**Dobruska-Polom**	**80.20**	**328**	*e*P		**P**		**01 20 09.2**	**+0.4**
DPC				*e*pP		**PcP**		**01 20 18.4**	**+2.3**
DPC					AMS	AMS		02 01 00.0	
	comp=Z,1μm,19.2s								
DPC	**Dobruska-Polom**	**80.20**	**328**	*e*P		**P**		**01 20 09.2**	**+0.4**
DPC				*e*				01 20 18.4	
DPC					MLR	MLR			
	comp=Z,1μm,19.2s								
H25A	**Fruitdale**	**80.20**	**41**	P		**P**		**01 20 10.1**	**+1.1**
	baz=313								
KRLC	**Kraliky**	**80.20**	**327**⇓	*e*P		**P**		**01 20 09.7**	**+0.8**
KRLC				*e*pP		**PcP**		**01 20 18.0**	**+1.9**
KRLC	**Kraliky**	**80.20**	**327**	*e*P		**P**		**01 20 09.7**	**+0.8**
KRLC				*e*				01 20 18.0	
UPC	**Upice**	**80.21**	**328**⇓	*e*P		**P**		**01 20 10.0**	**+1.1**
UPC					AMS	AMS		02 01 20.0	
	comp=Z,1μm,18.2s								
UPC	**Upice**	**80.21**	**328**	*e*P		**P**		**01 20 10.0**	**+1.1**
UPC					MLR	MLR			
	comp=Z,1μm,18.2s								
G26A	**Maurine**	**80.25**	**40**	P		**P**		**01 20 10.5**	**+1.3**
	baz=314								
ZALF	**Zalf**	**80.28**	**304**	*e*P		**P**		**01 20 08.5**	**-1.1**
RSSD	**Black Hills**	**80.31**	**41**	P		**P**		**01 20 10.6**	**+0.8**
	baz=313								
RSSD	**Black Hills**	**80.31**	**41**	*e*P		**P**		**01 20 10.5**	**+0.8**
RSSD					pmax	pmax			
	comp=Z,10.0nm,0.9s								
RSSD	**Black Hills**	**80.31**	**41**	*e*P		**P**		**01 20 10.5**	**+0.8**
	comp=Z,9.8nm,0.9s								
PSZ	**Piszkesteto**	**80.36**	**324**⇓	*e*P		**P**		**01 20 10.4**	**+0.6**
PSZ	**Piszkesteto**	**80.36**	**324**	*e*P		**P**		**01 20 10.0**	**+0.2**
PSZ					pmax	pmax			
	comp=Z,147nm,1.7s								
PSZ					MLR	MLR			
	comp=Z,892nm,19.0s								
PSZ	**Piszkesteto**	**80.36**	**324**	*e*P		**P**		**01 20 09.9**	**+0.2**
	comp=Z,147nm,1.7s								
PSZ					LR	LR			
	comp=Z,892nm,19.0s								
VYHS	**Vyhne**	**80.44**	**325**	*e*P		**P**		**01 20 11.3**	**+1.2**
VYHS					pmax	pmax			
	comp=Z,66nm,2.0s								
VYHS	**Vyhne**	**80.44**	**325**	*e*P		**P**		**01 20 11.3**	**+1.2**
VYHS				*e*PP		**PP**		**01 23 12.8**	**+0.2**
SWSC	**Sam W. Stewart**	**80.45**	**56**	P		**P**		**01 20 12.0**	**+1.6**
	baz=308								
I25A	**Rochford**	**80.54**	**41**	P		**P**		**01 20 12.2**	**+1.3**
	baz=313								
SZH	**Strazhica**	**80.55**	**318**	P		**P**		**01 20 10.9**	**+0.1**
C30A	**Mose, Pekin**	**80.59**	**36**	P		**P**		**01 20 11.6**	**+0.6**
	baz=316								
TOTH	**TOTAH**	**80.61**	**305**	*e*P		**P**		**01 20 11.9**	**+0.5**
RAR	**Rarotonga**	**80.62**	**125**	LR		LR		01 51 01.4	
	comp=Z,723nm,19.3s,baz=286,slow=32								
A32A	**Rocking H Ranc**	**80.62**	**34**	P		**P**		**01 20 11.6**	**+0.5**
	baz=317								
O20A	**White River Ci**	**80.62**	**46**	P		**P**		**01 20 13.0**	**+1.5**
	baz=311								
O20A	**White River Ci**	**80.62**	**46**	*e*P		**P**		**01 20 12.5**	**+1.0**
	comp=Z,24nm,1.0s								
H26A	**Fairpoint**	**80.63**	**40**	P		**P**		**01 20 12.3**	**+1.0**
	baz=314								
PDMCI	**Parker Dam,Lak**	**80.70**	**54**	P		**P**		**01 20 13.0**	**+1.2**
	baz=309								
JMB	**Yambol**	**80.73**	**317**	P		**P**		**01 20 12.3**	**+0.5**
GZR	**Gura Zlata**	**80.74**	**321**⇓	*i*P		**P**		**01 20 13.1**	**+1.2**
F28A	**McLaughlin**	**80.78**	**38**	P		**P**		**01 20 13.2**	**+1.2**
	baz=315								
Y12C	**Blythe**	**80.80**	**55**	P		**P**		**01 20 13.9**	**+1.6**
	baz=309								
BRG	**Berggiesshubel**	**80.81**	**329**	*i* P		**P**		**01 20 12.9**	**+0.9**
	comp=Z,221nm,2.3s								
	comp=N,1μm,11.7s								
	comp=E,698nm,17.2s								
	comp=Z,2μm,20.0s								
BRG	**Berggiesshubel**	**80.81**	**329**	*i* P		**P**		**01 20 12.9**	**+0.9**
BRG					pmax	pmax			
	comp=Z,5.0nm,2.3s								
BRG					MLR	MLR			
	comp=N,221μm,11.7s								
BRG					MLR	MLR			
	comp=E,1μm,17.2s								
BRG					MLR	MLR			
	comp=Z,698nm,20.0s								
PVCC	**Panska Ves**	**80.81**	**328**⇓	*e*P		**P**		**01 20 12.7**	**+0.7**
PVCC	**Panska Ves**	**80.81**	**328**	*e*P		**P**		**01 20 12.7**	**+0.7**
ULDT	**Uludag**	**80.83**	**314**	*i* P		**P**		**01 20 12.5**	**-0.1**
VRAC	**Vranov**	**80.85**	**327**⇑	*i*P		**P**		**01 20 13.4**	**+1.1**
CLL	**Collm**	**80.86**	**330**⇓	*i*P		**P**		**01 20 12.3**	**0.0**
	comp=Z,173nm,2.0s								
CLL				*i*				01 20 15.8	
CLL				*i*				01 20 24.6	
CLL				*i*				01 20 30.8	
CLL				*e*SS		SS		01 35 48.0	+16
CLL					Lm	MLR		02 01 00.0	
	comp=N,1μm,18.2s								
CLL					Lm	MLR		02 01 00.0	
	comp=E,1μm,18.4s								
CLL					Lm	MLR		02 01 00.0	
	comp=Z,1μm,19.2s								
CLL	**Collm**	**80.86**	**330**⇓	*i*P		**P**		**01 20 12.3**	**0.0**
CLL				*i*				01 20 24.6	
CLL					pmax	pmax			
	comp=Z,8.0nm,2.0s								
CLL					MLR	MLR			
	comp=Z,1μm,19.2s								
C31A	**Landman Farms,**	**80.87**	**36**	P		**P**		**01 20 13.1**	**+0.6**
	baz=316								
D30A	**Buchanan**	**80.88**	**37**	P		**P**		**01 20 13.4**	**+0.9**
	baz=316								
H27A	**Howes**	**80.98**	**40**	P		**P**		**01 20 14.7**	**+1.6**
	baz=314								
B32A	**Ashes, Strandq**	**80.98**	**35**	P		**P**		**01 20 13.4**	**+0.4**
	baz=317								
GLA	**Glamis**	**81.03**	**55**	P		**P**		**01 20 15.5**	**+1.9**
	baz=308								
SMOL	**Smolenice**	**81.06**	**326**	*e*P		**P**		**01 20 14.7**	**+1.2**
SMOL	**Smolenice**	**81.06**	**326**	*e*P		**P**		**01 20 14.7**	**+1.2**
BUD	**Budapest**	**81.08**	**324**⇑	*e*P		**P**		**01 20 15.4**	**+1.9**
A33A	**Warroad**	**81.10**	**34**	P		**P**		**01 20 14.2**	**+0.6**
	baz=318								
BZS	**Buzias**	**81.16**	**322**⇑	*i*P		**P**		**01 20 15.0**	**+1.0**
GOPC	**GO Pecny, Ondr**	**81.18**	**328**	*e*P		**P**		**01 20 14.4**	**+0.3**
GOPC				*e*pP		**PcP**		**01 20 22.9**	**+2.6**
GOPC					AMS	AMS		01 59 00.0	
	comp=Z,1μm,20.1s								
GOPC	**GO Pecny, Ondr**	**81.18**	**328**	*e*P		**P**		**01 20 14.4**	**+0.3**
GOPC				*e*				01 20 22.9	
GOPC					MLR	MLR			
	comp=Z,1μm,20.1s								
PRA	**Prague**	**81.21**	**328**⇓	*e*P		**P**		**01 20 15.4**	**+1.2**
PRA					AMS	AMS		02 01 40.0	
	comp=Z,2μm,20.2s								
PRA	**Prague**	**81.21**	**328**	*e*P		**P**		**01 20 15.4**	**+1.2**
PRA					MLR	MLR			
	comp=Z,2μm,20.2s								
PRU	**Pruhonice**	**81.23**	**328**⇓	*e*P		**P**		**01 20 14.7**	**+0.4**
PRU				*e*pP		**PcP**		**01 20 23.1**	**+2.6**
PRU					AMS	AMS		02 02 40.0	
	comp=Z,1μm,18.9s								
PRU	**Pruhonice**	**81.23**	**328**	*e*P		**P**		**01 20 14.7**	**+0.4**
PRU				*e*				01 20 23.1	
PRU					MLR	MLR			
	comp=Z,1μm,18.9s								
E30A	**Jud**	**81.24**	**37**	P		**P**		**01 20 15.7**	**+1.3**
	baz=316								
BAGO	**Egridir - ISPA**	**81.26**	**311**	*i* P		**P**		**01 20 13.8**	**-1.0**
G28A	**Parade**	**81.26**	**39**	P		**P**		**01 20 16.3**	**+1.7**
	baz=315								
F29A	**Eureka**	**81.27**	**38**	P		**P**		**01 20 15.9**	**+1.3**
	baz=315								
PKS7	**Kunszentmiklos**	**81.33**	**324**⇓	*e*P		**P**		**01 20 16.2**	**+1.3**
TCHB	**Talchehab**	**81.34**	**304**	*e*P		**P**		**01 20 13.4**	**-1.9**
AGMN	**Agassiz Nation**	**81.36**	**34**	P		**P**		**01 20 15.1**	**+0.1**
	baz=318								
AGMN	**Agassiz Nation**	**81.36**	**34**	*e*P		**P**		**01 20 14.6**	**-0.4**
	comp=Z,8.9nm,0.7s								
AGMN					LR	LR			
	comp=Z,764nm,20.0s								
PV04	**Paradox Valley**	**81.37**	**48**	*e*P		**P**		**01 20 17.0**	**+1.5**
J26A	**Sides Ranch, S**	**81.37**	**41**	P		**P**		**01 20 16.3**	**+1.0**
	baz=314								
I27A	**Quinn**	**81.38**	**40**	P		**P**		**01 20 15.7**	**+0.4**
	baz=314								
D31A	**Mcclaflin, Tow**	**81.42**	**36**	P		**P**		**01 20 15.7**	**+0.3**
	baz=317								
N23A	**Red Feather La**	**81.44**	**45**	P		**P**		**01 20 17.2**	**+1.3**
	baz=312								
PHWY	**Pilot Hill**	**81.44**	**44**	*e*P		**P**		**01 20 17.2**	**+1.3**
	comp=Z,63nm,1.8s								
PKSG		**81.44**	**324**⇑	*e*P		**P**		**01 20 16.5**	**+1.0**
PKS6	**Bocsa**	**81.47**	**323**⇑	*e*P		**P**		**01 20 16.5**	**+0.9**
H28A	**Mission Ridge**	**81.49**	**39**	P		**P**		**01 20 16.9**	**+1.0**
	baz=315								
CSKK	**Cs˙‡kako**	**81.53**	**325**	*e*P		**P**		**01 20 16.7**	**+0.8**
ISP	**Isparta**	**81.53**	**311**	PFAKE				01 20 30.0	+14
ISP					LR	LR			
	comp=Z,542nm,21.0s								
DURS	**Dursunbey**	**81.57**	**314**	*i* P		**P**		**01 20 15.1**	**-1.3**
DIM	**Dimitrograd**	**81.59**	**317**	P		**P**		**01 20 16.9**	**+0.6**
CSS	**Mathiatis**	**81.62**	**308**	PFAKE				01 20 30.0	+13
CSS					LR	LR			
	comp=Z,216nm,20.0s								
MPEP	**Malo Peshtene**	**81.66**	**319**	P		**P**		**01 20 17.2**	**+0.5**
G29A	**Hoven**	**81.68**	**38**	P		**P**		**01 20 18.1**	**+1.3**
	baz=315								
D32A	**Dogwood Acres,**	**81.68**	**36**	P		**P**		**01 20 16.8**	**+0.1**
	baz=317								
E31A	**Nome**	**81.69**	**36**	P		**P**		**01 20 17.5**	**+0.7**
	baz=317								
MDVR	**Moldovita**	**81.70**	**321**⇑	*i*P		**P**		**01 20 17.7**	**+0.7**
WUAZ	**Wupatki**	**81.70**	**52**	P		**P**		**01 20 19.3**	**+1.9**
	baz=310								
WUAZ	**Wupatki**	**81.70**	**52**	*e*P		**P**		**01 20 17.9**	**+0.6**
	comp=Z,28nm,1.0s								
WUAZ					LR	LR			
	comp=Z,590nm,22.0s								
PKST	**T˙˙s**	**81.71**	**325**⇑	*e*P		**P**		**01 20 18.0**	**+1.1**
PV01	**Paradox Valley**	**81.74**	**48**	*e*P		**P**		**01 20 19.1**	**+1.5**
B34A	**Aery, Baudette**	**81.76**	**34**	P		**P**		**01 20 17.3**	**+0.2**
	baz=318								
KHAL	**Karahalli**	**81.79**	**312**	*i* P		**P**		**01 20 17.7**	**+0.1**
C33A	**Trail**	**81.80**	**35**	P		**P**		**01 20 17.7**	**+0.3**
	baz=318								
DEMI	**Demirci**	**81.80**	**313**	*i* P		**P**		**01 20 16.4**	**-1.2**
I28A	**Midland**	**81.89**	**40**	P		**P**		**01 20 19.0**	**+1.0**
	baz=315								
NKC	**Novy Kostel**	**81.91**	**329**⇓	*e*P		**P**		**01 20 18.0**	**+0.1**
NKC				*e*pP		**PcP**		**01 20 24.8**	**+1.3**
NKC	**Novy Kostel**	**81.91**	**329**	*e*P		**P**		**01 20 18.0**	**+0.1**
NKC				*e*				01 20 24.8	
KDZ	**Kurdzhali**	**81.92**	**317**	P		**P**		**01 20 18.7**	**+0.6**
H29A	**Onida**	**81.93**	**39**	P		**P**		**01 20 18.7**	**+0.5**
	baz=315								
J27A	**Elkhorn Farm,**	**81.97**	**41**	P		**P**		**01 20 19.9**	**+1.4**
	baz=314								
PGB	**Panagyurishte**	**81.98**	**318**	P		**P**		**01 20 18.9**	**+0.4**
SMCO	**Snowmass**	**81.99**	**47**	*e*P		**P**		**01 20 20.4**	**+1.4**
	comp=Z,37nm,1.4s								
PLD	**Plovdiv**	**82.00**	**317**	P		**P**		**01 20 18.9**	**+0.4**
F31A	**Hecla**	**82.02**	**37**	P		**P**		**01 20 19.0**	**+0.5**
	baz=316								
URZ	**Urewera**	**82.07**	**152**	P		**P**		**01 20 19.2**	**+0.6**
	comp=Z,7.1nm,0.8s,baz=18,slow=4.5,SNR=6.4								
URZ					LR	LR		01 50 41.0	
	comp=Z,426nm,21.8s,baz=340,slow=31								
SOP	**Sopron**	**82.07**	**326**⇓	*e*P		**P**		**01 20 19.6**	**+0.8**
G30A	**Faulkton**	**82.11**	**38**	P		**P**		**01 20 19.3**	**+0.3**
	baz=316								
PKSM	**Moragy**	**82.19**	**324**⇑	*e*P		**P**		**01 20 19.5**	**+0.1**
D33A	**AnnSam, Waubun**	**82.22**	**35**	P		**P**		**01 20 19.7**	**+0.1**
	baz=318								
J28A	**Allard Ranch,**	**82.26**	**40**	P		**P**		**01 20 21.5**	**+1.5**
	baz=315								
B35A	**Bob, Littlefor**	**82.26**	**33**	P		**P**		**01 20 19.7**	**-0.1**
	baz=319								
RZN	**Rozhen**	**82.28**	**317**	P		**P**		**01 20 20.8**	**+0.6**
**K

baz=320
C37A Embarrass 83.42 33 P **P** 01 20 26.2 +0.4
baz=320
F34A Alexandria 83.49 36 P **P** 01 20 26.9 +0.7
baz=318
PERS Pernice 83.51 326 *i* P **P** 01 20 26.5 +0.2
EYMN Ely 83.55 32 P **P** 01 20 26.7 +0.3
baz=321
EYMN Ely 83.55 32 *e*P **P** 01 20 26.7 +0.3
comp=Z,13nm,0.8s
EYMN LR LR
comp=Z,462nm,22.0s
OGNE Ogallala 83.57 43 *e*P **P** 01 20 27.1 +0.3
comp=Z,100nm,1.5s
OGNE LR LR
comp=Z,490nm,19.0s
H33A Prehn Over Nor 83.61 37 P **P** 01 20 28.2 +1.3
baz=318
SOH Sokhos 83.62 317 P **P** 01 20 23.6 -3.4
SOH Sokhos 83.62 317 P **P** 01 20 23.6 -3.4
SOH Sokhos 83.62 317 P **P** 01 20 23.6 -3.4
KNT Kendrikon 83.63 318 P **P** 01 20 25.8 -1.2
KNT Kendrikon 83.63 318 P **P** 01 20 25.8 -1.2
KNT Kendrikon 83.63 318 P **P** 01 20 25.8 -1.2
VAY Valandovo 83.69 318⇑ *i*P **P** 01 20 28.0 +0.7
D37A Cotton 83.75 33 P **P** 01 20 28.2 +0.7
baz=320
F35A Swanville 83.76 35 P **P** 01 20 28.2 +0.6
baz=319
SDCO Great Sand Dun 83.81 47 P **P** 01 20 30.5 +2.2
baz=313
SDCO Great Sand Dun 83.81 47 *e*P **P** 01 20 30.1 +1.7
comp=Z,86nm,1.9s
SDCO LR LR
comp=Z,475nm,22.0s
C38A Sawbill Land. 83.82 32 P **P** 01 20 28.5 +0.6
baz=321
SKO Skopje 83.83 319 P **P** 01 20 28.1 +0.1
SKO Skopje 83.83 319⇑ *i*P **P** 01 20 29.4 +1.4
SKO Skopje 83.83 319 P **P** 01 20 28.1 +0.1
SKO Skopje 83.83 319 P **P** 01 20 28.1 +0.1
E36A McGregor 83.87 34 P **P** 01 20 28.4 +0.3
baz=320
PLG Polygyros 83.88 317 P **P** 01 20 28.1 -0.3
PLG Polygyros 83.88 317 P **P** 01 20 28.1 -0.3
PLG Polygyros 83.88 317 P **P** 01 20 28.1 -0.3
SNZO South Karori 83.90 155 PFAKE 01 20 40.0 +12
SNZO LR LR
comp=Z,696nm,19.0s
BODT Bodrum 83.95 312 P **P** 01 20 26.7 -2.0
BODT Bodrum 83.95 312 P **P** 01 20 26.7 -2.0
HGN Heimansgroeve 84.00 333 *e*P **P** 01 20 29.0 +0.3
comp=Z,152nm,2.0s
J32A Parkston 84.02 39 P **P** 01 20 29.9 +1.0
baz=317
GRG Griva 84.04 318 P **P** 01 20 28.1 -1.1
GRG Griva 84.04 318 P **P** 01 20 28.1 -1.1
GRG Griva 84.04 318 P **P** 01 20 28.1 -1.1
I33A Coleman 84.05 38 P **P** 01 20 29.1 0.0
baz=318
PAIG Paliouri 84.07 316 P **P** 01 20 25.6 -3.6
PAIG Paliouri 84.07 316 P **P** 01 20 25.6 -3.6
PAIG Paliouri 84.07 316 P **P** 01 20 25.6 -3.6
BEBN Eben Emael 84.07 333 P **P** 01 20 29.7 +0.7
H34A Spellman Lake, 84.08 37 P **P** 01 20 30.6 +1.3
baz=318
MEM Membach 84.10 333 P **P** 01 20 29.9 +0.6
K31A O'Neill 84.11 40 P **P** 01 20 31.2 +1.7
baz=316
TUC Tucson 84.14 54 P **P** 01 20 31.8 +1.9
baz=310
TUC Tucson 84.14 54 *e*P **P** 01 20 31.2 +1.4
TUC pmax pmax
comp=Z,59nm,1.6s
TUC MLR MLR
comp=Z,778nm,22.0s
TUC Tucson 84.14 54 *e*P **P** 01 20 31.2 +1.4
comp=Z,59nm,1.6s
TUC LR LR
comp=Z,778nm,22.0s
LJU Ljubljana 84.22 326 *e*P **P** 01 20 29.7 -0.2
C39A Grand Marais 84.22 32 P **P** 01 20 30.4 +0.5
baz=322
ECSD EROS Data Cent 84.37 38 P **P** 01 20 31.6 +0.8
baz=318
ECSD EROS Data Cent 84.37 38 *e*P **P** 01 20 31.0 +0.2
comp=Z,20nm,0.9s
ECSD LR LR
comp=Z,705nm,20.0s
STU Stuttgart 84.37 330 *e*P **P** 01 20 30.8 +0.2
STU pmax pmax
comp=Z,33nm,0.9s
STU Stuttgart 84.37 330 *e*P **P** 01 20 30.8 +0.2
comp=Z,33nm,0.9s
L31A Butterfield Fa 84.38 40 P **P** 01 20 32.2 +1.3
baz=316
J33A Davis 84.50 38 P **P** 01 20 32.4 +1.0
baz=317
H35A Sunnyside Ranc 84.51 36 P **P** 01 20 32.8 +1.4
baz=319
BCLA Clavier 84.52 333 P **P** 01 20 31.7 +0.4
comp=Z,27nm,2.1s
KSCO Kaye Shedlock' 84.58 44 *e*P **P** 01 20 33.1 +1.0
comp=Z,71nm,1.2s
LIT Litokhoron 84.60 317 P **P** 01 20 30.7 -1.3
LIT Litokhoron 84.60 317 P **P** 01 20 30.7 -1.3
LIT Litokhoron 84.60 317 P **P** 01 20 30.7 -1.3
FNA Florina 84.71 318 P **P** 01 20 31.2 -1.4
FNA Florina 84.71 318 P **P** 01 20 31.2 -1.4
FNA Florina 84.71 318 P **P** 01 20 31.2 -1.4
PMOR Pomariorio Ree 84.72 113 *e*T T 02 53 36.8
comp=Z,46nm,0.2s
LANF Langenberg 84.75 331 *e*P **P** 01 20 32.1 -0.5
OHR Ohrid 84.78 319⇑ *i*P **P** 01 20 33.1 +0.2
SNF Seneffe 84.81 334 P **P** 01 20 32.8 0.0
WLF Walferdange 84.82 332 P **P** 01 20 33.6 +0.7
comp=Z,66nm,2.2s
WLF Walferdange 84.82 332 *e*P **P** 01 20 33.1 +0.2
WLF pmax pmax
comp=Z,148nm,1.8s
WLF MLR MLR
comp=Z,1μm,22.0s
WLF Walferdange 84.82 332 *e*P **P** 01 20 33.1 +0.2
comp=Z,148nm,1.8s
WLF LR LR
comp=Z,1μm,22.0s
T25A Trinidad 84.85 47 P **P** 01 20 35.5 +1.9
baz=313
L32A Elgin 84.93 40 P **P** 01 20 35.1 +1.4
baz=317
H36A Jessenland, He 85.03 36 P **P** 01 20 35.3 +1.3
baz=319
DOU Dourbes 85.04 333 P **P** 01 20 34.3 +0.3
comp=Z,22nm,2.1s
SPMN Marine on St. 85.06 35 P **P** 01 20 34.9 +0.7
baz=320
BFO Black Forest 85.07 330 *e*P **P** 01 20 34.2 0.0
BFO pmax pmax
comp=Z,111nm,1.5s
BFO MLR MLR
comp=Z,1μm,20.0s
BFO Black Forest 85.07 330 *e*P **P** 01 20 34.2 0.0
comp=Z,111nm,1.5s
BFO LR LR
comp=Z,1μm,20.0s
STR Strasbourg 85.09 331 *e*P **P** 01 20 35.5 +1.3
TIR Tirane 85.10 320 *e*P **P** 01 20 34.5 0.0
TIR pmax pmax
comp=Z,19nm,0.7s
TIR MLR MLR
comp=Z,2μm,19.0s
TIR Tirane 85.10 320 *e*P **P** 01 20 34.5 0.0
comp=Z,19nm,0.7s
TIR LR LR
comp=Z,2μm,19.0s
ANMO Albuquerque 85.12 49 P **P** 01 20 37.0 +2.1
baz=312
ANMO Albuquerque 85.12 49 *e*P **P** 01 20 36.2 +1.3
ANMO pmax pmax
comp=Z,86nm,1.7s
ANMO MLR MLR
comp=Z,475nm,20.0s
ANMO Albuquerque 85.12 49 *e*P **P** 01 20 36.2 +1.3
comp=Z,86nm,1.7s
ANMO LR LR
comp=Z,475nm,20.0s
NEST Nestorio 85.15 318 P **P** 01 20 33.1 -1.8
PPT Papeete 85.16 116 LR LR 01 51 47.8
comp=Z,756nm,19.6s,baz=302,slow=31
PPT2 Papeete2 85.17 116 *e*S **S** 01 31 04.1 -0.1
comp=Z,191nm,29.5s
PPT2 Papeete2 85.17 116 *e*LR LR 01 47 26.2
comp=Z,2μm,27.8s,baz=311
PPT2 Papeete2 85.17 116 *e*T T 02 54 10.0
comp=Z,97nm,0.3s
BGNE Belgrade 85.29 40 *e*P **P** 01 20 35.9 +0.4
comp=Z,54nm,1.1s
TIAR Tiarei 85.32 116 *e*T T 02 54 20.7
comp=Z,3.9nm,0.2s
WLS Welschbruch 85.39 331 *e*P **P** 01 20 35.9 +0.1
K34A Le Mars 85.40 38 P **P** 01 20 36.2 +0.2
baz=318
SANT Santorini 85.51 313 PFAKE 01 20 50.0 +13
SANT LR LR
comp=Z,573nm,21.0s
SCHQ Schefferville 85.59 16 P **P** 01 20 37.9 +1.2
comp=Z,13nm,0.8s,baz=353,slow=4.7,SNR=13
SCHQ LR LR 02 00 20.3
comp=Z,439nm,21.8s,baz=324,slow=37
ECH Echery 85.62 331 *e*P **P** 01 20 36.8 -0.2
I37A Lemond, Waseca 85.70 36 P **P** 01 20 38.7 +1.3
baz=320
J36A Seneca 1, Swea 85.77 37 P **P** 01 20 38.8 +1.0
baz=319
121A Cookes Peak, D 85.91 52 P **P** 01 20 40.5 +1.6
baz=312
121A Cookes Peak, D 85.91 52 *e*P **P** 01 20 40.7 +1.8
comp=Z,29nm,1.1s
MOF Molkenrain 85.93 331 *e*P **P** 01 20 38.3 -0.3
COWI Conover 86.00 32 *e*P **P** 01 20 39.1 +0.2
comp=Z,16nm,1.2s
COWI LR LR
comp=Z,543nm,19.0s
DSL Palaion Diasel 86.04 317 P **P** 01 20 38.1 -1.1
DSL Palaion Diasel 86.04 317 P **P** 01 20 38.1 -1.1
THEF They Montfort 86.07 332 *e*P **P** 01 20 39.7 +0.6
TUE Stuetta 86.14 329 *e*P **P** 01 20 39.9 +0.1
comp=Z,30nm,1.4s
TUE LR LR
comp=Z,2μm,19.0s
J37A Redenius Farm, 86.16 36 P **P** 01 20 40.8 +1.1
baz=320
I38A Scanlan Farm, 86.18 35 P **P** 01 20 40.3 +0.5
baz=320
K36A Gilmore City 86.24 37 P **P** 01 20 41.5 +1.4
baz=319
DAMY Dhamar 86.25 285 *e*P **P** 01 20 41.2 +0.2
comp=Z,187nm,1.9s
LAST Lasithi 86.32 312 P **P** 01 20 40.2 -0.6
LAST Lasithi 86.32 312 P **P** 01 20 40.2 -0.6
P32A Huiting Farm, 86.35 42 P **P** 01 20 41.3 +0.6
baz=317
PDO Prodromos 86.38 317 P **P** 01 20 39.7 -1.1
MEH Mehetia 86.45 115 *e*T T 02 55 45.3
comp=Z,93nm,0.3s
LOMF Lomont 86.46 331 *e*P **P** 01 20 41.3 +0.1
K37A Belmond 86.53 37 P **P** 01 20 42.6 +1.1
baz=320
N34A Lincoln 86.56 40 P **P** 01 20 42.1 +0.4
baz=318
IDI Anoyia 86.59 312 *e*P **P** 01 20 41.5 -0.5
comp=Z,62nm,1.3s
J38A Wedel Dairy, R 86.67 36 P **P** 01 20 43.0 +0.8
baz=320
TAOE Nuku Hiva Isla 86.76 104 *e*LR LR 01 47 46.1
comp=Z,2μm,24.1s,baz=308
TAOE Nuku Hiva Isla 86.76 104 *e*T T 02 56 12.2
comp=Z,79nm,0.3s
Q32A Meitler Ranch, 86.83 42 P **P** 01 20 44.0 +0.9
baz=317
O34A Beatrice 86.94 40 P **P** 01 20 44.2 +0.5
baz=318
L37A Phoenix Point, 86.97 37 P **P** 01 20 45.2 +1.5
baz=320
P33A Williams Farm, 86.97 41 P **P** 01 20 44.5 +0.8
baz=317
ITM Ithomi 86.97 315 P **P** 01 20 41.6 -2.2
ITM Ithomi 86.97 315 P **P** 01 20 41.6 -2.2
N35A Tabor 86.98 39 P **P** 01 20 45.0 +1.2
baz=318
Q33A Connelly Farm, 87.21 42 P **P** 01 20 45.7 +0.8
baz=317
O35A Humboldt 87.28 40 P **P** 01 20 46.0 +0.7
baz=318
L38A Oak Wood Farm, 87.34 37 P **P** 01 20 46.4 +0.9
baz=320
P34A Walnut Farm, R 87.34 41 P **P** 01 20 46.1 +0.5
baz=318
N36A Muff Farm, Cla 87.36 39 P **P** 01 20 47.3 +1.7
baz=319
M37A Trindle Farm, 87.36 38 P **P** 01 20 46.8 +1.2
baz=319
SCIA State Center 87.39 37 *e*P **P** 01 20 47.0 +1.2
comp=Z,27nm,0.9s
SCIA LR LR
comp=Z,696nm,21.0s
VLC Villacollemand 87.54 327 PFAKE 01 21 00.0 +14
VLC LR LR
comp=Z,712nm,21.0s
Q34A Chapman 87.74 41 P **P** 01 20 48.7 +1.3
baz=318
M38A Pleasantville 87.78 37 P **P** 01 20 48.9 +1.3
baz=320
P35A Duane Minner, 87.78 40 P **P** 01 20 48.7 +1.1
baz=318
KSU1 Kansas State U 87.78 41 P **P** 01 20 48.4 +0.6
baz=318
KSU1 Kansas State U 87.78 41 *e*P **P** 01 20 48.3 +0.6
comp=Z,26nm,0.8s
KSU1 LR LR
comp=Z,620nm,21.0s
O36A Bolckow 87.87 39 P **P** 01 20 48.6 +0.5
baz=319
MNTX Cornudas Mount 87.97 51 P **P** 01 20 49.8 +1.1
baz=313
MNTX Cornudas Mount 87.97 51 PFAKE 01 21 00.0 +11
MNTX LR LR
comp=Z,398nm,21.0s
MSTX Muleshoe 88.00 48 *e*P **P** 01 20 49.5 +0.6
comp=Z,42nm,1.6s
AMTX Amarillo 88.01 47 P **P** 01 20 50.2 +1.2
baz=315
AMTX Amarillo 88.01 47 *e*P **P** 01 20 49.8 +0.8
comp=Z,26nm,1.0s
JFWS Jewell Farm 88.01 35 *e*P **P** 01 20 48.6 -0.1
JFWS pmax pmax
comp=Z,13nm,0.8s
JFWS MLR MLR
comp=Z,974nm,22.0s
JFWS Jewell Farm 88.01 35 *e*P **P** 01 20 48.6 -0.1
comp=Z,13nm,0.8s
JFWS LR LR
comp=Z,974nm,22.0s
P36A Good Intent, A 88.13 40 P **P** 01 20 49.9 +0.7
baz=319
S33A Kaszmaul Farm, 88.15 43 P **P** 01 20 50.9 +1.4
baz=317
CUC Castrocucco 88.18 321 PFAKE 01 21 00.0 +10
CUC LR LR
comp=Z,938nm,19.0s
N38A Joes South For 88.23 38 P **P** 01 20 50.9 +1.1
baz=320
O37A Wolven Farm, M 88.25 39 P **P** 01 20 50.9 +1.0
baz=319
Q35A Mercer Eighty, 88.26 41 P **P** 01 20 51.0 +1.0
baz=318
TIP Timpagrande 88.31 320 PFAKE 01 21 00.0 +10
TIP LR LR
comp=Z,1μm,21.0s
BNI Bardonecchia 88.39 329 PFAKE 01 21 00.0 +9.4
BNI LR LR
comp=Z,970nm,21.0s
U32A Winter Ranch, 88.47 44 P **P** 01 20 52.1 +1.0
baz=316
N39A Derby Farms, D 88.53 37 P **P** 01 20 52.6 +1.5
baz=320
R35A Emporia Munici 88.58 41 P **P** 01 20 53.3 +1.8
baz=318
PLDF La Plantade 88.84 332 *e*P **P** 01 20 53.6 +1.0
R36A Gordon, Harris 88.94 41 P **P** 01 20 54.3 +1.2
baz=318
AGO Saint Agoulin 88.96 332 *e*P **P** 01 20 54.1 +1.0
P38A Dawn 88.97 39 P **P** 01 20 54.8 +1.5
baz=320
S35A Otter Creek Ra 88.99 42 P **P** 01 20 54.9 +1.5
baz=318
T34A McClaskey Farm 89.00 43 P **P** 01 20 55.0 +1.5
baz=318
TBI Tubuai 89.02 120 *e*S **S** 01 31 40.0 -1.0
comp=Z,389nm,35.2s
TBI Tubuai 89.02 120 *e*LR LR 01 49 03.4
comp=Z,2μm,26.5s,baz=310
TBI Tubuai 89.02 120 *e*T T 02 58 57.0
comp=Z,73nm,0.3s
W32A Sentinel 89.24 45 P **P** 01 20 56.2 +1.6
baz=316
U34A Anderson Ranch 89.24 43 P **P** 01 20 56.4 +1.8
baz=317
U34A Anderson Ranch 89.24 43 *e*P **P** 01 20 55.9 +1.3
comp=Z,30nm,1.0s
PYM Petit Puy Mans 89.26 332 *e*P **P** 01 20 55.5 +0.9
V33A Lossen Ranch, 89.28 44 P **P** 01 20 56.5 +1.7
baz=317
S36A Lake Cedric, C 89.34 41 P **P** 01 20 56.4 +1.4
baz=318
O40A La Belle 89.41 37 P **P** 01 20 56.9 +1.5
baz=321
Q38A Cooks Store, C 89.43 39 P **P** 01 20 56.2 +0.8
baz=320
CEL Celeste 89.44 320 PFAKE 01 21 10.0 +14
CEL LR LR
comp=Z,972nm,21.0s
T35A Sooner Cattle 89.45 42 P **P** 01 20 56.7 +1.1
baz=318
LBL Lubilhac 89.60 331 *e*P **P** 01 20 54.3 -1.9
T36A Boggs Farm, Ca 89.68 42 P **P** 01 20 57.8 +1.1
baz=318
V34A Guthrie 89.69 44 P **P** 01 20 58.4 +1.6
baz=317
V34A Guthrie 89.69 44 *e*P **P** 01 20 58.1 +1.4
comp=Z,38nm,0.9s
S37A Fort Scott 89.72 41 P **P** 01 20 57.8 +1.0
baz=319
X32A Elmer 89.72 46 P **P** 01 20 57.9 +0.9
baz=316
U35A Pawnee 89.73 43 P **P** 01 20 58.4 +1.5
baz=318
P40A Paris 89.78 38 P **P** 01 20 58.3 +1.2
baz=321
WMOK Wichita Mounta 89.78 45 *e*P **P** 01 20 58.0 +0.8
WMOK pmax pmax
comp=Z,22nm,1.3s
WMOK MLR MLR
comp=Z,452nm,21.0s
WMOK Wichita Mounta 89.78 45 *e*P **P** 01 20 58.0 +0.8
comp=Z,22nm,1.3s
WMOK LR LR
comp=Z,452nm,21.0s
W34A Bridge Creek, 89.99 44 P **P** 01 20 59.6 +1.5
baz=317
T37A Cheneyville 18 90.15 41 P **P** 01 20 59.7 +0.9
baz=319
R39A Chumby, Stover 90.22 39 P **P** 01 20 59.7 +0.6
baz=320
U36A Oologah 90.26 42 P **P** 01 21 00.4 +1.1
baz=318
S38A Stockton 90.29 40 P **P** 01 21 00.1 +0.6
baz=320
HDIL Hopedale 90.31 36 P **P** 01 20 59.9 +0.5
baz=322
HDIL Hopedale 90.31 36 *e*P **P** 01 21 00.2 +0.7
comp=Z,44nm,1.3s
HDIL LR LR
comp=Z,668nm,20.0s
Y33A Hilltop Ranch, 90.40 46 P **P** 01 21 01.4 +1.3
baz=317
X34A Smith Ranch, M 90.42 45 P **P** 01 21 02.1 +2.0
baz=317
T38A Diamond 90.54 41 P **P** 01 21 01.8 +1.1
baz=319
S39A Bolivar 90.55 40 P **P** 01 21 01.2 +0.5
baz=320
W35A Tecumseh 90.55 44 P **P** 01 21 01.7 +1.0
baz=318
U37A Salina 90.58 42 P **P** 01 21 02.1 +1.2
baz=319
TUL1 Leonard 90.58 43 P **P** 01 21 02.4 +1.5
baz=318
TUL1 Leonard 90.58 43 *e*P **P** 01 21 01.8 +0.9
comp=Z,13nm,0.7s
V36A Jenks 90.59 43 P **P** 01 21 02.4 +1.4
baz=318
R40A Maddies Statio 90.63 39 P **P** 01 21 02.1 +1.1
baz=320
TXAR Lajitas Array 90.67 52 P **P** 01 21 02.3 +0.8
comp=Z,12nm,0.8s,baz=299,slow=3.2,SNR=116
TXAR PKKPbc **PKKPbc** 01 38 30.4 +3.9
comp=Z,0.3nm,0.6s,baz=139,slow=5.9,SNR=4.6
TXAR PKPPKP **P'P'df** 01 46 37.8 -3.8
comp=Z,1.5nm,1.3s,baz=195,slow=3.4,SNR=4.2
TXAR LR LR 01 55 23.4
comp=Z,497nm,21.9s,baz=0.0,slow=31
ABTX Abilene, Hawle 90.81 47 P **P** 01 21 03.4 +1.3
baz=316
ABTX Abilene, Hawle 90.81 47 *e*P **P** 01 21 02.6 +0.6
comp=Z,50nm,1.3s
Z33A Whitaker Ranch 90.84 46 P **P** 01 21 03.3 +1.1
baz=317
W36A Wetumka 90.92 43 P **P** 01 21 03.4 +0.9
baz=318
Y34A Reagan Ranch, 90.93 45 P **P** 01 21 03.6 +1.1
baz=317
V37A Hulbert 90.95 42 P **P** 01 21 03.7 +1.1
baz=319
T39A Clever 91.03 40 P **P** 01 21 03.8 +0.8
baz=320
S40A Lebanon 91.04 39 P **P** 01 21 03.9 +0.9
baz=320
X35A Drake 91.05 44 P **P** 01 21 04.5 +1.4
baz=318
133A Hamilton Ranch 91.24 47 P **P** 01 21 05.6 +1.6
baz=317
X36A Centrahoma 91.27 44 P **P** 01 21 05.6 +1.6
baz=318
CLTB Caltabellotta 91.33 321 PFAKE 01 21 20.0 +16
CLTB LR LR
comp=Z,585nm,20.0s
W37B Quinton 91.35 43 P **P** 01 21 05.9 +1.4
baz=319
V38A Canehill 91.36 42 P **P** 01 21 05.6 +1.1
baz=319
T40A Mansfield 91.37 40 P **P** 01 21 05.3 +0.8
baz=320
Y35A Marietta 91.38 45 P **P** 01 21 06.0 +1.4
baz=318
AAM Ann Arbor 91.38 31 PFAKE 01 21 20.0 +16
AAM LR LR
comp=Z,749nm,21.0s
SFIN Lafayette 91.46 34 P **P** 01 21 06.1 +1.3
baz=324
SFIN Lafayette 91.46 34 *e*P **P** 01 21 05.8 +0.9
comp=Z,14nm,1.0s
U39A Green Forest 91.46 41 P **P** 01 21 05.4 +0.4
baz=320
Z35A Perchaven, San 91.67 45 P **P** 01 21 06.9 +0.9
baz=318
233A Rising Star 91.68 47 P **P** 01 21 07.5 +1.4
baz=317
VSL Villasalto 91.70 324 PFAKE 01 21 20.0 +14
VSL LR LR
comp=Z,694nm,20.0s
134A White-Moore Ra 91.75 46 P **P** 01 21 07.6 +1.2
baz=317
V39A Pettigrew 91.79 41 P **P** 01 21 07.6 +1.1
baz=320
X37A Clayton 91.80 43 P **P** 01 21 07.9 +1.4
baz=319
Y36A Durant 91.80 44 P **P** 01 21 07.9 +1.3
baz=318
U40A Yellville 91.81 40 P **P** 01 21 07.4 +0.8
baz=320
W38A Poteau 91.90 42 P **P** 01 21 08.5 +1.5
baz=319
WDD Wied Dalam 91.97 319 PFAKE 01 21 20.0 +13
WDD LR LR
comp=Z,731nm,21.0s
X38A Whitesboro 92.03 43 P **P** 01 21 09.3 +1.7
baz=319
333A Richland Sprin 92.13 48 P **P** 01 21 09.3 +1.2
baz=316
234A Clairette 92.13 47 P **P** 01 21 09.8 +1.6

baz=317
Z36A Blue Ridge 92.18 45 P P 01 21 09.4 +1.1
baz=318
W39A Magazine 92.20 42 P P 01 21 09.2 +0.8
baz=320
JCT Junction City 92.25 49 P P 01 21 09.5 +0.8
baz=316
JCT Junction City 92.25 49 eP P 01 21 09.8 +1.1
JCT pmax pmax
comp=Z,42nn,1.4s
JCT MLR MLR
comp=Z,601nm,22.0s
JCT Junction City 92.25 49 eP P 01 21 09.8 +1.1
comp=Z,42nn,1.4s
JCT LR LR
comp=Z,601nm,22.0s
V40A Witts Springs 92.25 41 P P 01 21 09.3 +0.7
baz=320
433A Art 92.47 48 P P 01 21 10.9 +1.1
baz=316
WHTX Lake Whitney, 92.54 46 P P 01 21 11.9 +1.9
baz=317
WHTX Lake Whitney, 92.54 46 eP P 01 21 11.6 +1.6
comp=Z,30nm,0.9s
X39A Fountain Ranch 92.54 42 P P 01 21 11.6 +1.7
baz=319
334A Lometa 92.56 47 P P 01 21 11.7 +1.6
baz=317
W40A Ferguson Farm, 92.58 41 P P 01 21 11.3 +1.2
baz=320
LONY Lake Ozonia 92.78 24 PFAKE 01 21 20.0 +9.1
LONY LR LR
comp=Z,724nm,22.0s
MIAR Mount Ida 92.80 42 P P 01 21 12.7 +1.6
baz=320
MIAR Mount Ida 92.80 42 eP P 01 21 12.2 +1.0
MIAR pmax pmax
comp=Z,88nm,1.8s
MIAR MLR MLR
comp=Z,531nm,20.0s
MIAR Mount Ida 92.80 42 eP P 01 21 12.2 +1.0
comp=Z,88nm,1.8s
MIAR LR LR
comp=Z,531nm,20.0s
434A Burnet 92.92 48 P P 01 21 12.8 +1.0
baz=317
Y39A Lockesburg 92.98 43 P P 01 21 12.5 +0.5
baz=319
X40A Basin Creek Fa 93.24 42 P P 01 21 14.9 +1.7
baz=320
633A Saathoff Ranch 93.35 49 P P 01 21 15.5 +1.7
baz=316
534A Blanco 93.36 48 P P 01 21 15.2 +1.3
baz=317
ACSO Alum Creek Sta 93.38 32 eP P 01 21 14.6 +0.8
ACSO comp=Z,12nm,0.7s
LR LR
comp=Z,558nm,21.0s
NCB Newcomb 93.47 24 PFAKE 01 21 30.0 +16
NCB LR LR
comp=Z,1μm,20.0s
832A Faith Ranch, C 93.71 50 P P 01 21 17.4 +1.9
baz=316
PKME Peaks-Kenny Pk 93.82 21 PFAKE 01 21 30.0 +14
PKME LR LR
comp=Z,519nm,19.0s
NATX Nacogdoches 94.30 45 PFAKE 01 21 30.0 +12
NATX LR LR
comp=Z,888nm,21.0s
BINY Binghamton 94.43 26 PFAKE 01 21 30.0 +11
BINY LR LR
comp=Z,754nm,21.0s
438A Sam Houston St 94.59 46 P P 01 21 21.1 +1.7
baz=318
KEST Kesra 94.71 322 P P 01 21 20.1 0.0
comp=Z,3.6nm,0.8s,baz=316,slow=5.1,SNR=6.8
KEST LR LR 02 07 23.6
comp=Z,777nm,19.2s,baz=360,slow=38
KVTX Kingsville 95.51 50 PFAKE 01 21 40.0 +16
KVTX LR LR
comp=Z,375nm,19.0s
BLA Blacksburg 97.00 32 PFAKE 01 21 40.0 +10
BLA LR LR
comp=Z,597nm,20.0s
ESDC Sonseca Array 97.09 333 P P 01 21 30.4 -0.3
comp=Z,1.8nm,0.7s,baz=21,slow=3.9,SNR=9.1
ESDC LR LR 02 09 42.7
comp=Z,669nm,18.8s,baz=35,slow=38
PAB San Pablo 97.34 333 PFAKE 01 21 40.0 +8.0
PAB LR LR
comp=Z,951nm,21.0s
CBN Corbin Frederi 97.39 29 PFAKE 01 21 40.0 +7.9
CBN LR LR
comp=Z,616nm,21.0s
MTE Manteigas 97.67 336 PFAKE 01 21 40.0 +6.6
MTE LR LR
comp=Z,819nm,21.0s
GOGA Godfrey 98.81 36 PFAKE 01 21 50.0 +11
GOGA LR LR
comp=Z,691nm,22.0s
BRAL Brewton 98.86 40 PFAKE 01 21 50.0 +11
BRAL LR LR
comp=Z,356nm,22.0s
RKT Rikitea 99.30 112 eSP SP 01 34 34.8 -3.7
comp=Z,180nm,36.5s
RKT eSS SS 01 40 00.7 -1.0
comp=Z,201nm,28.2s
RKT Rikitea 99.30 112 eLR LR 01 53 47.8
comp=Z,2μm,24.8s,baz=310
CNNC Cliffs of the 99.75 31 PFAKE 01 21 50.0 +7.4
CNNC LR LR
comp=Z,744nm,21.0s
NHSC New Hope 100.58 34 PFAKE 01 22 00.0 +14
NHSC LR LR
comp=Z,825nm,20.0s
KMBO Kilima Mbogo 101.36 277 PFAKE 01 22 00.0 +10
KMBO LR LR
comp=Z,628nm,21.0s
TEIG Tepich 106.78 48 PFAKE 01 26 40.0
TEIG LR LR
comp=Z,172nm,20.0s
TAM Tamanrasset 107.05 317 ePKP PKiKP 01 26 25.4 +0.4
TAM ePP PP 01 26 40.0 -1.2
TAM LR LR
comp=Z,371nm,19.0s
BBSR BB Station 107.09 22 PFAKE 01 26 40.0
BBSR LR LR
comp=Z,305nm,19.0s
GTBY Guantanamo Bay 114.14 37 PFAKE 01 26 50.0 +12
GTBY LR LR
comp=Z,305nm,21.0s
MTDJ Mount Denham 114.37 40 PFAKE 01 26 50.0 +11
MTDJ LR LR
comp=Z,359nm,20.0s
GRTK Grand Turk 114.59 33 PFAKE 01 26 50.0 +11
GRTK LR LR
comp=Z,697nm,22.0s
VNDA Vanda 114.94 175 PKP PKPdf 01 26 39.0 +1.0
comp=Z,0.9nm,0.6s,baz=308,slow=4.2,SNR=6.3
VNDA PKKPbc **PKKPbc** 01 37 16.7 +0.4
comp=Z,0.7nm,0.7s,baz=234,slow=1.0,SNR=4.0
JTS JuntasAbangare 116.46 52 PFAKE 01 27 00.0 +17
JTS LR LR
comp=Z,396nm,22.0s
SDDR Presa de Saban 116.74 34 PFAKE 01 27 00.0 +17
SDDR LR LR
comp=Z,425nm,21.0s
LSZ Lusaka 116.86 271 ePKIKP **PKPdf** 01 26 44.0 +0.3
LSZ MLR MLR
comp=Z,672nm,20.0s
LSZ Lusaka 116.86 271 ePKPdf **PKPdf** 01 26 44.0 +0.3
LSZ LR LR
comp=Z,672nm,20.0s
TORD Torodi Ar. Bea 116.94 314 PKP **PKPdf** 01 26 43.1 -0.7
comp=Z,2.5nm,0.6s,baz=19,slow=2.4,SNR=24
TORD PP **PP** 01 27 49.1 -2.9
comp=Z,4.3nm,1.1s,baz=19,slow=5.1,SNR=8.1
TORD PKKPbc **PKKPbc** 01 37 10.3 +2.2
comp=Z,1.0nm,0.9s,baz=225,slow=1.4,SNR=5.0
MAW Mawson 119.19 205 PKP **PKPdf** 01 26 47.6 +1.2
comp=Z,5.7nm,0.7s,baz=96,slow=2.3,SNR=8.9
SJG San Juan 119.69 30 PFAKE 01 27 00.0 +11
SJG LR LR
comp=Z,355nm,22.0s
BCIP Isla Barro Col 120.47 48 PFAKE 01 27 00.0 +9.4
BCIP LR LR
comp=Z,333nm,20.0s
PAYG Puerto Ayora 120.80 65 PFAKE 01 27 00.0 +8.8
PAYG LR LR
comp=Z,1μm,21.0s
ANWB Willy Bob 121.70 25 PFAKE 01 27 00.0 +7.1
ANWB LR LR
comp=Z,359nm,19.0s
LBTB Lobatse 124.00 263 PKP **PKPdf** 01 26 57.7 +0.5
comp=Z,12nm,0.8s,baz=105,slow=1.8,SNR=19
FDF Fort de France 124.65 26 PFAKE 01 27 10.0 +11
FDF LR LR
comp=Z,336nm,21.0s
SDV Santo Domingo 125.79 39 ePKPdf **PKPdf** 01 27 00.8 -0.3
SDV LR LR
comp=Z,364nm,20.0s
DBIC Dimbokro 125.92 316 PKP **PKPdf** 01 27 00.7 -0.4
comp=Z,12nm,0.7s,baz=5.6,slow=2.7,SNR=31
BOSA Boshof 125.94 259 PKP **PKPdf** 01 27 01.5 +0.7
comp=Z,6.9nm,0.8s,baz=88,slow=2.1,SNR=13
QSPA South Pole Qui 126.69 180 ePKPdf **PKPdf** 01 27 01.0 0.0
GRGR Grenville 126.87 28 PFAKE 01 27 10.0 +7.1
GRGR LR LR
comp=Z,594nm,22.0s
TSUM Tsumeb 127.48 273 PFAKE 01 27 20.0 +16
TSUM LR LR
comp=Z,633nm,22.0s
OTAV Otavalo 128.27 53 ePKPdf **PKPdf** 01 27 05.1 -1.0
SUR Sutherland 131.00 257 PFAKE 01 27 20.0 +10
SUR LR LR
comp=Z,736nm,19.0s
NNA Nana 138.21 63 PFAKE 01 27 40.0 +16
NNA LR LR
comp=Z,240nm,20.0s
PTGA Pitinga 139.24 33 PKhKP PKPpre 01 27 19.6
comp=Z,7.3nm,0.8s,baz=22,slow=2.4,SNR=12
PTGA PKP **PKiKP** 01 27 27.4 -1.0
comp=Z,7.5nm,0.8s,baz=356,slow=1.8,SNR=9.2
SNAA Sanae 140.48 197 ePKHKP PKPpre 01 27 18.0
SNAA e 01 27 26.8
SNAA Sanae 140.48 197 ePKPpre PKPpre 01 27 18.0
SNAA ePKPdf **PKPdf** 01 27 26.8 +0.1
ASCN Ascension 143.25 316 PFAKE 01 27 50.0 +17
ASCN LR LR
comp=Z,1μm,22.0s
SAML Samuel 144.75 44 ePKPdf PKPbc 01 27 35.0 +0.2
LPAZ La Paz 147.27 59 PKP **PKPdf** 01 27 41.2 +0.3
comp=Z,32nm,0.9s,baz=336,slow=2.7,SNR=91
LPAZ PKPbc **PKPab** 01 27 44.3 -0.6
comp=Z,34nm,0.9s,baz=345,slow=3.1,SNR=92
LPAZ PP **PP** 01 31 05.3 -3.0
comp=Z,1.5nm,0.5s,baz=51,slow=15,SNR=5.7
RCBR Riachuelo 148.86 353 ePKPdf **PKPdf** 01 27 43.6 +0.7
RCBR ePKPbc **PKiKP** 01 27 47.8 -0.4
SIV San Ignacio 151.61 48 PKP **PKPdf** 01 27 48.4 +1.3
comp=Z,7.3nm,0.8s,baz=93,slow=0.7,SNR=13
SIV PKPbc **PKiKP** 01 27 53.9 +0.2
comp=Z,33nm,0.9s,baz=284,slow=3.0,SNR=29
LCO Las Campanas 152.64 82 ePKPbc **PKPbc** 01 27 56.5 +0.9
USHA Ushuaia 153.29 141 PKPbc **PKPbc** 01 27 56.9 +1.1
comp=Z,88nm,1.0s,baz=262,slow=1.4,SNR=5.9
PLCA Paso Flores 155.49 108 PKPbc PKPbc 01 28 00.8
comp=Z,4.1nm,1.0s,baz=263,slow=5.7,SNR=3.6
PLCA PKPab **PKPab** 01 28 20.2 +2.4
comp=Z,12nm,1.1s,baz=278,slow=4.0,SNR=8.8
CPUP Villa Florida 161.43 60 PKP **PKPdf** 01 28 00.1 +0.7
comp=Z,2.4nm,0.8s,baz=228,slow=3.8,SNR=3.6
CPUP PKPab **PKPab** 01 28 44.4 +0.6
comp=Z,4.7nm,0.9s,baz=316,slow=4.9,SNR=6.6

NEIC 13 01:16:01.2, 60.37N×150.70W, h44km, ML2.2(AEIC), **After AEIC., Kenai Peninsula**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SEW	**Seward**	**0.68**	**112**	*e*Pn	Pn	01 16 13.1	-1.3
SEW				*e*Sn	Sn	01 16 23.7	-0.2
RC01	**Rabbit Creek A**	**0.87**	**33**	*e*Pn	Pn	01 16 16.4	-0.6
RC01				*e*Sn	Sn	01 16 28.0	-0.5
PMR	**Palmer**	**1.45**	**31**	*e*Pn	Pn	01 16 24.0	-0.9

ROM 13 01:18:29.9±0.0, 42.86N×12.92E, h11km, Md1.5/3, MI1.0/3, Error ellipse: s-maj=0.5km s-min=0.2km az=112.0, Central Italy

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
NRCA	**Norcia**	**0.14**	**98**	Pg	Pg	01 18 33.9	+0.6
NRCA				Sg	Sg	01 18 36.6	+0.8
	30nm,0.1s						
CESI	**CESI - Serrava**	**0.15**	**356**	Pg	Pg	01 18 34.0	+0.6
CESI				Sg	Sg	01 18 36.8	+0.9
	48nm,1.2s						
LNSS	**Leonessa**	**0.27**	**160**	Pg	Pg	01 18 35.9	+0.5
LNSS				Sg	Sb	01 18 40.4	-1.0
	72nm,1.2s						

*ISCJB **13** 01:21:48.0±0.7, 36.86N±0.03×140.79E±0.06, h14km±4km, mb3.4/7, Error ellipse: s-maj=8.7km s-min=4.6km az=15.9*
*IDC **13** 01:21:47.8±1.0, 36.77N×140.69E, h0km, mb3.4/7, mb1 3.6/7, mb1mx3.4/50, mbtmp3.4/7, Error ellipse: s-maj=21.3km s-min=16.2km az=179.0*
*JMA **13** 01:21:48.7, 36.88N×140.69E, h5km±1km, M3.5*
JMA Felt I./I.
ISC 13 01:21:48.8±1.1, 36.90N±0.03×140.62E±0.06, h5km±9km, n22, σ0.72/24, mb3.4/7, 1C, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.24**	**35**	P	**Pg**	**01 21 53.7**	**+0.1**
ONAJ				S	**Sg**	**01 21 57.0**	**+0.1**
JHO	**Hitachi**	**0.29**	**188**	P	**Pg**	**01 21 54.6**	**+0.1**
JHO				S	**Sg**	**01 21 58.5**	**+0.1**
JSB	**Shiboa**	**0.57**	**277**	⇑P	**Pb**	**01 22 01.5**	**+0.3**
JSB				S	**Sb**	**01 22 10.2**	**+0.6**
JFT	**Otama**	**0.66**	**340**	P	**Pb**	**01 22 02.2**	**-0.5**
JFT				S	**Sb**	**01 22 11.5**	**-0.7**
JYT	**Yasato**	**0.76**	**207**	P	**Pg**	**01 22 03.5**	**+0.2**
JYT				S	**Sg**	**01 22 13.6**	**+0.5**
JFY	**Yanaizu**	**0.89**	**305**	P	**Pb**	**01 22 06.7**	**0.0**
JFY				S	**Sb**	**01 22 19.3**	**+0.4**
JMM	**Marumori**	**0.97**	**8**	P	**Pg**	**01 22 07.3**	**-0.2**
JMM				S	**Sg**	**01 22 20.2**	**+0.1**
MJAR	**Matsushiro Arr**	**1.97**	**260**	Pn	**Pb**	**01 22 24.2**	**-0.9**
	17nm,0.3s,baz=90,slow=16,SNR=47						
MJAR				Lg	Lg	01 22 50.9	
	31nm,0.3s,baz=78,slow=31,SNR=17						
MAT	**Matsushiro**	**1.97**	**260**	P	**Pb**	**01 22 24.4**	**-0.8**
MAT				S	**Sg**	**01 22 51.5**	**-0.7**
SONM	**Songino Array**	**27.33**	**304**	P	**P**	**01 27 35.9**	**+1.3**
	0.3nm,0.5s,baz=101,slow=8.2,SNR=2.7						
H11N2	**WAKE ISLAND Hy**	**28.63**	**120**	T	T	01 57 29.0	
	baz=312,slow=75,SNR=30						
H11N1	**WAKE ISLAND Hy**	**28.64**	**120**	T	T	01 57 30.9	
	baz=312,slow=75,SNR=23						
H11N3	**WAKE ISLAND Hy**	**28.65**	**120**	T	T	01 57 30.3	
	baz=312,slow=75,SNR=22						
H11S1	**WAKE ISLAND Hy**	**29.33**	**122**	T	T	01 58 21.7	
	baz=314,slow=75,SNR=47						
H11S3	**WAKE ISLAND Hy**	**29.33**	**122**	T	T	01 58 21.1	
	baz=314,slow=75,SNR=72						
H11S2	**WAKE ISLAND Hy**	**29.34**	**122**	T	T	01 58 23.0	
	baz=314,slow=75,SNR=48						
ZALV	**Zalesovo Beam**	**41.53**	**312**	P	**P**	**01 29 37.2**	**+0.3**
	0.4nm,0.5s,baz=130,slow=5.8,SNR=2.5						
MKAR	**Makanchi Array**	**43.65**	**302**	P	**P**	**01 29 54.5**	**+0.3**
	0.3nm,0.7s,baz=87,slow=8.3,SNR=2.5						
KURBB	**Kurchatov Arra**	**45.58**	**308**	P	**P**	**01 30 09.0**	**-0.6**
	0.6nm,0.4s,baz=82,slow=7.8,SNR=5.6						
WRA	**Warramunga Arr**	**56.85**	**187**	P	**P**	**01 31 32.9**	**-1.5**
	0.6nm,0.6s,baz=3.9,slow=7.3,SNR=9.2						
ASAR	**Alice Springs**	**60.58**	**187**	P	**P**	**01 31 59.2**	**-1.0**
	0.3nm,0.7s,baz=8.1,slow=8.5,SNR=3.5						
YKA	**Yellowknife Ar**	**64.24**	**30**	P	**P**	**01 32 25.5**	**+1.1**
	0.1nm,0.7s,baz=306,slow=6.3,SNR=2.9						

*ISCJB **13** 01:21:52.5±0.7, 59.5S±0.1×28.9W±0.3, h10km, mb4.3/11, MS3.9/3, Error ellipse: s-maj=21.0km s-min=18.9km az=21.9*
*IDC **13** 01:21:52.5±0.8, 59.60S×28.79W, h0km, mb4.3/7, mb1 4.4/7, mb1mx4.1/30, mbtmp4.3/7, MS4.0/4, Ms1 3.9/4, ms1mx3.6/21, Error ellipse: s-maj=38.9km s-min=25.5km az=116.0*
*NEIC **13** 01:21:58.0±0.5, 59.61S×28.80W, h35km, mb4.4/4, Error ellipse: s-maj=19.9km s-min=18.4km az=110.0*
ISC 13 01:21:54.0±0.6, 59.6S±0.2×28.8W±0.2, h10km, n26, σ1.9/12/18, mb4.4/10, MS4.0/3, South Sandwich Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PMSA	**Palmer Station**	**17.05**	**237**	LR	LR	01 31 48.5	
	comp=Z,265nm,19.7s,baz=58,slow=35						
USHA	**Ushuaia**	**21.72**	**265**	LR	LR	01 33 00.4	
	comp=Z,652nm,20.9s,baz=136,slow=31						
PLCA	**Paso Flores**	**32.01**	**287**	LR	LR	01 40 42.9	
	comp=Z,211nm,18.8s,baz=170,slow=35						
MAW	**Mawson**	**37.83**	**141**	LR	LR	01 42 15.1	
	comp=Z,209nm,19.5s,baz=260,slow=32						
VNDA	**Vanda**	**42.94**	**183**	P	**P**	**01 29 50.9**	**-1.4**
	2.2nm,0.8s,baz=201,slow=5.6,SNR=5.5						
BOSA	**Boshof**	**47.74**	**74**	P	**P**	**01 30 32.0**	**+0.9**
	2.5nm,0.7s,baz=195,slow=6.7,SNR=4.3						
LBTB	**Lobatse**	**50.92**	**72**	P	**P**	**01 30 55.7**	**+0.4**
	3.4nm,0.7s,baz=217,slow=7.5,SNR=5.2						
H10S2	**ASCENSION HYDR**	**51.69**	**18**	T	T	02 27 14.3	
	baz=189,slow=75,SNR=23						
H10S3	**ASCENSION HYDR**	**51.69**	**18**	T	T	02 27 27.0	
	baz=189,slow=75,SNR=29						
H10S1	**ASCENSION HYDR**	**51.71**	**18**	T	T	02 27 15.6	
	baz=189,slow=75,SNR=26						
TSUM	**Tsumeb**	**52.22**	**60**	*e*P	**P**	**01 31 04.8**	**-0.3**
	4.6nm,0.9s						
H10N3	**ASCENSION HYDR**	**52.81**	**18**	T	T	02 28 36.8	
	baz=264,slow=74,SNR=9.3						
H10N2	**ASCENSION HYDR**	**52.82**	**18**	T	T	02 28 40.0	
	baz=190,slow=74,SNR=7.4						
SAML	**Samuel**	**56.81**	**318**	*e*P	**P**	**01 31 38.2**	**0.0**
	4.0nm,1.0s						
OTAV	**Otavalo**	**71.00**	**306**	*e*P	**P**	**01 33 12.3**	**0.0**
	9.0nm,1.3s						
TORD	**Torodi Ar. Bea**	**76.60**	**31**	P	**P**	**01 33 42.8**	**-1.7**
	0.9nm,0.6s,baz=198,slow=6.8,SNR=20						
TAM	**Tamanrasset**	**86.83**	**31**	*e*P	**P**	**01 34 38.5**	**0.0**
	2.5nm,1.1s						
STKA	**Stephens Creek**	**88.48**	**172**	P	**P**	**01 34 48.1**	**+1.7**
	1.7nm,0.7s,baz=166,slow=3.8,SNR=4.3						
ASAR	**Alice Springs**	**95.80**	**164**	P	**P**	**01 35 19.5**	**-0.9**
	1.0nm,0.7s,baz=181,slow=3.8,SNR=7.4						
WRA	**Warramunga Arr**	**99.52**	**164**	P	**Pdif**	**01 35 39.0**	**+1.9**
	0.8nm,1.0s,baz=203,slow=4.1,SNR=3.4						
TKM2	**Tokmak 2**	**132.64**	**75**	*e*PKPdf	**PKPdf**	**01 41 08.3**	**+0.2**
YKA	**Yellowknife Ar**	**138.20**	**316**	PKP	**PKPdf**	**01 41 17.8**	**+0.3**
	0.1nm,0.3s,baz=191,slow=30,SNR=6.5						
ZALV	**Zalesovo Beam**	**144.60**	**69**	PKP	**PKPdf**	**01 41 30.7**	**+1.3**
	0.7nm,0.5s,baz=222,slow=4.2,SNR=5.0						
INK	**Inuvik**	**147.94**	**317**	PKPbc	**PKPbc**	**01 41 37.7**	**0.0**
	1.7nm,0.8s,baz=65,slow=3.2,SNR=4.4						
SONM	**Songino Array**	**151.57**	**94**	PKPbc	**PKPbc**	**01 41 46.0**	**-1.3**
	0.3nm,0.5s,baz=202,slow=4.9,SNR=3.1						
ILAR	**Eielson Array**	**151.72**	**307**	PKP	**PKPdf**	**01 41 42.0**	**+1.4**
	0.5nm,0.8s,baz=184,slow=2.6,SNR=5.7						
ILAR				PKPbc	**PKiKP**	**01 41 47.3**	**-0.1**
	0.5nm,0.6s,baz=163,slow=1.9,SNR=6.8						

*ISCJB **13** 01:30:29.1±0.4, 65.21N±0.03×138.47W±0.07, h10km, mb3.2/1, Error ellipse: s-maj=5.4km s-min=2.9km az=40.6*
*PGC **13** 01:30:30.8±1.2, 65.26N×138.91W, h1km, ML3.3/9, 136km Nne of Dawson, Yt Northern Yukon Territory, Canada*
*IDC **13** 01:30:31.2±0.9, 65.29N×138.92W, h0km, mb3.2/1, mb1 3.4/6, mb1mx3.2/50, mbtmp3.1/6, ML3.0/5, Error ellipse: s-maj=14.8km s-min=9.6km az=175.0*
ISC 13 01:30:30.3±0.7, 65.25N±0.04×138.64W±0.04, h10km, n44, σ2.5/17/73, Northern Yukon Territory

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
DAWY	**Dawson**	**1.23**	**195**	P	**Pn**	**01 30 52.9**	**-0.6**
DAWY				S	**Sb**	**01 31 09.1**	**-0.4**
DOT	**Dot Lake**	**2.84**	**238**	Pn	**Pn**	**01 31 15.3**	**-0.4**
DOT				Sn	**Sn**	**01 31 48.7**	**-1.3**
DOT				Sg	**Sb**	**01 31 55.1**	**-0.8**
BVCY	**Beaver Creek**	**3.01**	**200**	Pn	**Pn**	**01 31 18.6**	**+0.6**
BVCY				Sg	**Sb**	**01 32 02.1**	**+1.4**
YUK1	**Sand Pete Hill**	**3.22**	**196**	Pn	**Pn**	**01 31 21.3**	**+0.3**
YUK1				Sg	**Sb**	**01 32 07.8**	**+1.0**
ILAR	**Eielson Array**	**3.53**	**266**	Pn	**Pn**	**01 31 25.1**	**-0.1**
	1.1nm,0.3s,baz=85,slow=11,SNR=42						
ILAR				Pg	**Pb**	**01 31 34.7**	**+1.9**
	1.5nm,0.3s,baz=77,slow=16,SNR=29						
ILAR				Lg	Lg	01 32 18.5	
	5.8nm,0.3s,baz=79,slow=28,SNR=16						
YUK3	**Moose Creek**	**3.58**	**194**	Pn	**Pn**	**01 31 26.6**	**+0.6**
YUK3				Sn	**Sn**	**01 32 07.2**	**-1.2**
YUK3				Sg	**Sb**	**01 32 19.3**	**+2.0**
YUK2	**White River**	**3.61**	**197**	Pn	**Pn**	**01 31 26.8**	**+0.4**
YUK2				Sg	**Sb**	**01 32 20.3**	**+2.2**
INK	**Inuvik**	**3.68**	**31**	Pn	**Pn**	**01 31 29.4**	**+2.2**
	0.4nm,0.3s,baz=221,slow=19,SNR=15						
INK				Pg	**Pg**	**01 31 39.0**	**-1.8**
	1.9nm,0.3s,baz=220,slow=13,SNR=24						
INK				Lg	Lg	01 32 27.3	
	3.0nm,0.3s,baz=130,slow=12,SNR=7.5						
INK	**Inuvik**	**3.68**	**31**	Pn	**Pn**	**01 31 29.1**	**+1.9**
INK				Sn	**Sn**	**01 32 12.6**	**+2.0**
PAX	**Paxson**	**3.77**	**236**	Pn	**Pn**	**01 31 28.3**	**-0.2**
PAX				Sn	**Sn**	**01 32 09.9**	**-2.9**
PAX				Sg	**Sb**	**01 32 24.5**	**+2.0**
YUK5	**Granite Creek**	**4.15**	**175**	Pn	**Pn**	**01 31 35.4**	**+1.7**
YUK5				Sn	**Sn**	**01 32 22.9**	**+0.6**
YUK5				Sg	**Sb**	**01 32 38.6**	**+5.0**
CTGM	**Chitina Glacie**	**4.47**	**197**	Pn	**Pn**	**01 31 39.4**	**+1.2**
CTGM				Sn	**Sn**	**01 32 30.0**	**-0.2**
CTGM				Sg	**Sb**	**01 32 47.7**	**+4.3**
HYT	**Haines Junctio**	**4.47**	**173**	Pn	**Pn**	**01 31 39.9**	**+1.8**
HYT				Sn	**Sn**	**01 32 30.4**	**+0.2**
HYT				Sg	Sb	01 32 49.1	+6.3
BALM	**Baldy**	**4.55**	**203**	Pn	**Pn**	**01 31 40.3**	**+1.1**
BALM				Sn	**Sn**	**01 32 31.3**	**-0.8**
BALM				Sg	**Sb**	**01 32 49.9**	**+4.9**
YUK7	**Dusty Glacier**	**4.74**	**177**	Pn	**Pn**	**01 31 44.0**	**+2.0**
YUK7				Sn	**Sn**	**01 32 35.3**	**-1.7**
YUK7				Sg	**Sg**	**01 32 58.2**	**-4.2**
WHY	**Whitehorse**	**4.91**	**158**	Pn	**Pn**	**01 31 45.7**	**+1.4**
WHY				Sn	**Sn**	**01 32 40.5**	**-0.7**
COLD	**Coldfoot**	**5.08**	**298**	Pn	**Pn**	**01 31 47.9**	**+1.5**
SMPN	**Simpson Lake**	**5.60**	**53**	Pn	**Pn**	**01 31 55.7**	**+2.1**
SMPN				Sn	**Sn**	**01 32 58.5**	**+0.6**
PLBC	**Pleasant Camp**	**5.91**	**169**	Pn	**Pn**	**01 31 59.4**	**+1.6**
PLBC				Sg	Sg	01 33 33.4	-6.3
DLBC	**Dease Lake**	**7.95**	**145**	Pn	**Pn**	**01 32 28.5**	**+2.7**
	0.2nm,0.3s,baz=174,slow=24,SNR=4.0						
DLBC	**Dease Lake**	**7.95**	**145**	Sg	Sg	01 34 39.8	-5.3
KUKN	**Kugluktuk,NWT**	**9.71**	**64**	Pn	**Pn**	**01 32 50.2**	**+0.3**
KUKN				Sn	**Sn**	**01 34 34.8**	**-4.1**
YKR1	**Yellowknife Ar**	**10.78**	**94**	Pn	**Pn**	**01 33 05.2**	**+0.7**
YKR2	**Yellowknife Ar**	**10.80**	**94**	Sn	**Sn**	**01 35 00.4**	**-5.1**
YKR3	**Yellowknife Ar**	**10.82**	**94**	Pn	**Pn**	**01 33 05.2**	**+0.2**
YKR4	**Yellowknife Ar**	**10.84**	**94**	Pn	**Pn**	**01 33 05.6**	**+0.3**
YKR5	**Yellowknife Ar**	**10.86**	**94**	Pn	**Pn**	**01 33 05.8**	**+0.2**
YKR5				Sn	**Sn**	**01 35 02.3**	**-4.7**
YKB0	**Yellowknife Ar**	**10.88**	**93**	Pn	**Pn**	**01 33 06.1**	**+0.3**
YKR6	**Yellowknife Ar**	**10.88**	**94**	Pn	**Pn**	**01 33 06.1**	**+0.2**
YKB9	**Yellowknife Ar**	**10.89**	**93**	Pn	**Pn**	**01 33 05.9**	**0.0**
YKW3	**Yellowknife Ar**	**10.89**	**93**	Pn	**Pn**	**01 33 06.7**	**+0.7**
YKW3				Sn	**Sn**	**01 35 04.0**	**-3.7**
YKBB	**Yellowknife Ar**	**10.89**	**93**	Pn	**Pn**	**01 33 06.5**	**+0.5**
YKR7	**Yellowknife Ar**	**10.90**	**94**	Pn	**Pn**	**01 33 06.7**	**+0.5**
YKB7	**Yellowknife Ar**	**10.90**	**93**	Pn	**Pn**	**01 33 06.4**	**+0.3**
YKB6	**Yellowknife Ar**	**10.91**	**93**	Pn	**Pn**	**01 33 06.8**	**+0.5**
YKA	**Yellowknife Ar**	**10.92**	**94**	Pn	**Pn**	**01 33 06.5**	**+0.1**
	0.2nm,0.3s,baz=291,slow=13,SNR=16						
YKA				Sn	**Sn**	**01 35 05.8**	**-2.7**
	0.1nm,0.3s,baz=296,slow=22,SNR=5.0						
YKR8	**Yellowknife Ar**	**10.92**	**94**	Pn	**Pn**	**01 33 06.9**	**+0.4**
YKB4	**Yellowknife Ar**	**10.93**	**94**	Pn	**Pn**	**01 33 06.7**	**+0.1**
YKB3	**Yellowknife Ar**	**10.94**	**94**	Pn	**Pn**	**01 33 07.0**	**+0.3**
YKB3				Sn	**Sn**	**01 35 04.0**	**-4.9**
YKR9	**Yellowknife Ar**	**10.94**	**93**	Pn	**Pn**	**01 33 07.2**	**+0.5**
YKB2	**Yellowknife Ar**	**10.95**	**94**	Pn	**Pn**	**01 33 07.3**	**+0.4**
YKB2				Sn	**Sn**	**01 35 03.5**	**-5.7**
YKB1	**Yellowknife Ar**	**10.96**	**94**	Pn	**Pn**	**01 33 07.4**	**+0.4**
RES	**Resolute Bay**	**17.20**	**38**	Pn	**P**	**01 34 32.3**	**+0.5**

0.1nm,0.3s,baz=216,slow=12,SNR=4.1
PDAR Pinedale Array 27.80 130 P **P 01 36 23.2 +3.8**
0.6nm,1.0s,baz=5.7,slow=3.6,SNR=2.8

NIED ***13*** *01:46:00,35.80N×141.40E,h23km,Mw3.8 Best double couple: M₀6.04000×10¹⁴ NP1:ϕs193.00000°,δ40.00000°, λ-82.00000°. NP2:ϕs2.00000°,δ51.00000°,λ-97.00000°.*
IDC ***13*** *01:46:02.0±0.8,35.63N×141.49E,h0km,mb3.7/10, mb1 3.9/11,mb1mx3.7/51,mbtmp3.7/11,ML3.6/1,MS3.2/1, Ms1 3.2/1,ms1mx2.7/49,Error ellipse: s-maj=24.5km s-min=20.8km az=92.0*
ISCJB ***13*** *01:46:04.6±0.6,35.75N±0.07×141.51E±0.06,h25km, mb3.7/10,Error ellipse: s-maj=10.1km s-min=7.1km az=167.2*
JMA ***13*** *01:46:05.1±0.4,35.79N×141.42E,h12km±4km,M3.6*
ISC 13 01:46:06.1±0.7,35.69N±0.08×141.42E±0.07,h25km,n25, σ0s91/20,mb3.8/10,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.46**	**272**	P		**Pb**	**01 46 14.3**		**-1.4**
CHOJ				eS		**Sb**	**01 46 21.2**		**-1.0**
JCN	**Nagara**	**1.03**	**255**	P		**Pn**	**01 46 26.3**		**+1.3**
BSO1	**Boso 1**	**1.10**	**200**	P		**Pn**	**01 46 25.8**		**+0.4**
BSO4	**Boso 4**	**1.13**	**232**	P		**Pn**	**01 46 27.6**		**+1.3**
BSO3	**Boso 3**	**1.16**	**220**	P		**Pn**	**01 46 27.4**		**+0.9**
JOD2	**Odawara 2**	**1.95**	**258**	P		**Pn**	**01 46 38.5**		**+0.8**
MJAR	**Matsushiro Arr**	**2.74**	**289**	Pn		**Pn**	**01 46 49.0**		**+0.5**
	9.9nm,0.3s,baz=93,slow=8.5,SNR=30								
MAT	**Matsushiro**	**2.74**	**289**	P		**Pn**	**01 46 48.3**		**-0.2**
MAT				S		**Sn**	**01 47 22.5**		**+1.7**
JNU	**Nakatsue**	**9.08**	**257**	LR		LR	01 51 17.0		
	comp=Z,170nm,21.2s,baz=114,slow=34								
H11N2	**WAKE ISLAND Hy**	**27.48**	**119**	T		T	02 20 49.2		
	baz=311,slow=75,SNR=44								
H11N1	**WAKE ISLAND Hy**	**27.48**	**119**	T		T	02 20 50.3		
	baz=311,slow=75,SNR=29								
H11N3	**WAKE ISLAND Hy**	**27.50**	**119**	T		T	02 20 52.4		
	baz=311,slow=75,SNR=33								
H11S1	**WAKE ISLAND Hy**	**28.14**	**121**	T		T	02 21 37.9		
	baz=312,slow=76,SNR=30								
H11S3	**WAKE ISLAND Hy**	**28.14**	**121**	T		T	02 21 42.1		
	baz=312,slow=76,SNR=40								
H11S2	**WAKE ISLAND Hy**	**28.16**	**121**	T		T	02 21 42.9		
	baz=312,slow=76,SNR=30								
ZALV	**Zalesovo Beam**	**42.83**	**313**	P		**P**	**01 54 02.2**		**+0.4**
	0.4nm,0.3s,baz=72,slow=4.7,SNR=2.9								
MKAR	**Makanchi Array**	**44.85**	**303**	P		**P**	**01 54 18.4**		**+0.3**
	0.3nm,0.4s,baz=86,slow=9.6,SNR=5.4								
ILAR	**Eielson Array**	**50.62**	**32**	P		**P**	**01 55 03.0**		**+0.4**
	0.8nm,0.8s,baz=267,slow=6.4,SNR=7.3								
WRA	**Warramunga Arr**	**55.73**	**188**	P		**P**	**01 55 40.8**		**+0.1**
	0.9nm,0.7s,baz=4.3,slow=7.5,SNR=8.2								
ASAR	**Alice Springs**	**59.46**	**188**	P		**P**	**01 56 05.5**		**-1.5**
	0.4nm,0.5s,baz=0.9,slow=7.8,SNR=5.0								
RES	**Resolute Bay**	**63.90**	**14**	P		**P**	**01 56 36.7**		**+0.5**
	1.2nm,0.8s,baz=316,slow=6.6,SNR=6.3								
YKA	**Yellowknife Arr**	**64.96**	**30**	P		**P**	**01 56 43.1**		**-0.3**
	0.2nm,0.6s,baz=300,slow=6.6,SNR=5.1								
FINES	**FINESS Array B**	**70.00**	**332**	P		**P**	**01 57 15.3**		**+0.1**
	1.3nm,0.9s,baz=96,slow=1.9,SNR=4.1								
AKASG	**Malin Array Be**	**75.36**	**323**	P		**P**	**01 57 46.8**		**-0.5**
	0.8nm,0.5s,baz=46,slow=5.9,SNR=7.3								
TXAR	**Lajitas Array**	**90.93**	**52**	P		**P**	**01 59 08.2**		**+0.1**
	0.1nm,0.5s,baz=270,slow=2.5,SNR=3.2								

ISCJB ***13*** *01:51:38.9±0.2,12.62S±0.03×166.48E±0.04,h59km, mb4.9/97,MS4.1/22,Error ellipse: s-maj=5.5km s-min=4.4km az=170.5*
IDC ***13*** *01:51:40.7±2.5,12.61S×166.52E,h62km±21km,mb4.4/26, mb1 4.5/27,mb1mx4.3/41,mbtmp4.6/27,MS4.1/22, Ms1 4.1/22,ms1mx3.9/36,Error ellipse: s-maj=13.9km s-min=11.2km az=73.0*
MOS ***13*** *01:51:40.6±1.0,12.58S×166.39E,h71km,mb5.1/32,Error ellipse: s-maj=9.7km s-min=8.1km az=36.1*
NEIC ***13*** *01:51:42.6±0.9,12.62S×166.47E,h81km±7km,mb4.9/47, Error ellipse: s-maj=5.5km s-min=4.8km az=52.0*
GCMT ***13*** *01:51:42.6±0.3,12.63S×166.17E,h40km,MW5.0/60, Moment Tensor Solution. s58,c73; s60,c81; Duration: 0 Moment tensor: Scale 10¹⁶Nm; Mrr4.37±.19; Mθθ-0.20±.15; Mϕϕ-4.17±.12; Mrθ-0.38±.15; Mθϕ1.71±.12; Mϕr-0.19±.13; Best double couple: M₀4.61000×10¹⁶ NP1:ϕs166.00000°,δ46.00000°,λ98.00000°. NP2: ϕs334.00000°,δ45.00000°,λ81.00000°. Principal axes: T 4.4140, Plg84.0000°, Azm157.0000°; N 0.3880, Plg6.0000°, Azm340.0000°; P -4.8060, Plg0.0000°, Azm250.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
BJI ***13*** *01:51:43.5,11.98S×166.57E,h80km,mb5.2/62,mB5.1/40, Ms5.0/18,Ms7 4.7/18*
ISC 13 01:51:40.6±0.3,12.55S±0.06×166.48E±0.06,h59km,n261, σ1s51/269,mb5.0/97,MS4.2/23,10C-8D,Santa Cruz Islands

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
HNR	**Honiara**	**7.12**	**295**	P		**Pn**	**01 53 22.9**		**+0.7**
	143nm,0.3s,baz=159,slow=2.4,SNR=35								
HNR				S		**Sn**	**01 54 43.8**		**+2.0**
	83nm,0.3s,baz=69,slow=19,SNR=6.5								
HNR				LR		LR	01 56 29.8		
	comp=Z,1μm,19.7s,baz=132,slow=40								
HNR	**Honiara**	**7.12**	**295**	*eP*		**Pn**	**01 53 22.0**		**-0.3**
DZM	**Mont Dzumac**	**9.47**	**180**	P		**Pn**	**01 53 54.2**		**-0.3**
	2.7nm,0.3s,baz=359,slow=19,SNR=21								
DZM				S		Sn	01 55 52.6		+13
	6.8nm,0.3s,baz=127,slow=22,SNR=5.5								
DZM				LR		LR	01 57 15.6		
	comp=Z,2μm,20.3s,baz=56,slow=36								
MSVF	**Nonsavu**	**12.30**	**116**	*eP*		**Pn**	**01 54 35.6**		**+2.5**
MSVF	**Nonsavu**	**12.30**	**116**	*ePn*		**Pn**	**01 54 35.6**		**+2.5**
PMG	**Port Moresby**	**19.23**	**277**	P		**Pn**	**01 56 03.8**		**+2.2**
	0.7nm,0.3s,baz=45,slow=14,SNR=4.0								
PMG				LR		LR	02 02 29.7		
	comp=Z,793nm,21.4s,baz=118,slow=34								
PMG	**Port Moresby**	**19.23**	**277**	*eP*		**Pn**	**01 56 01.5**		**-0.1**
	32nm,1.0s								
EIDS	**Eidsvold**	**19.34**	**227**	P		**Pn**	**01 56 02.8**		**0.0**
	baz=19,SNR=15								
EIDS	**Eidsvold**	**19.34**	**227**	*eP*		**Pn**	**01 56 02.9**		**0.0**
	24nm,0.8s								
CTA	**Charters Tower**	**20.80**	**246**	P		**P**	**01 56 17.9**		**+0.7**
	12nm,0.9s,baz=81,slow=14,SNR=12								
CTAO	**Charters Tower**	**20.80**	**246**	*eP*		**P**	**01 56 18.0**		**+0.8**
CTAO				pmax		pmax			
	comp=Z,37nm,1.1s								
CTAO	**Charters Tower**	**20.80**	**246**	*eP*		**P**	**01 56 18.0**		**+0.8**
	comp=Z,37nm,1.1s								
PATS	**Pohnpei**	**20.90**	**337**	P		Pn	01 56 20.7		-0.6
	baz=21								
AFI	**Afiamalu**	**21.21**	**96**	P		**P**	**01 56 23.0**		**+1.3**
	comp=Z,42nm,0.9s,baz=263,slow=7.7,SNR=4.7								
AFI				LR		LR	02 03 38.8		
	comp=Z,399nm,18.6s,baz=281,slow=34								
AFI	**Afiamalu**	**21.21**	**96**	P		**P**	**01 56 23.0**		**+1.3**
AFI				pmax		pmax			
	comp=Z,30nm,0.7s								
AFI				MLR		MLR			
	comp=Z,399nm,18.6s								
MANU	**Manus Island**	**21.62**	**297**	*eP*		**P**	**01 56 28.8**		**+2.8**
	comp=Z,45nm,1.1s								
RMQ	**Roma**	**21.67**	**228**	P		**P**	**01 56 27.8**		**+1.3**
	baz=22,SNR=20								
RAO	**Raoul Island**	**22.06**	**141**	LR		LR	02 03 27.6		
	comp=Z,479nm,19.8s,baz=156,slow=32								
MTSU	**Mount Surprise**	**22.08**	**253**	P		**P**	**01 56 31.6**		**+0.7**
	baz=22,SNR=5.6								
ARMA	**Armidale**	**22.48**	**215**	P		**P**	**01 56 35.1**		**-0.1**
	baz=22,SNR=23								
ARMA	**Armidale**	**22.48**	**215**	*eP*		**P**	**01 56 35.2**		**-0.1**
	comp=Z,38nm,0.8s								
COEN	**Coen**	**22.73**	**264**	P		**P**	**01 56 37.5**		**-0.4**
	baz=23,SNR=5.9								
COEN	**Coen**	**22.73**	**264**	*eP*		**P**	**01 56 38.1**		**+0.2**
	comp=Z,16nm,1.0s								
NIUE	**Niue**	**23.59**	**109**	P		**P**	**01 56 47.4**		**+1.1**
	baz=24								
MGCD	**Mangrove Creek**	**24.91**	**212**	P		**P**	**01 56 58.4**		**+0.3**
	baz=25,SNR=8.2								
QLP	**Quilpie**	**25.13**	**233**	P		**P**	**01 57 00.6**		**+0.3**
	baz=25,SNR=9.8								
RIV	**Riverview**	**25.38**	**211**	P		**P**	**01 57 03.0**		**+0.7**
	baz=25								
CMSA	**Cobar Meteorol**	**26.90**	**222**	P		**P**	**01 57 15.4**		**-0.8**
	baz=27,SNR=8.0								
YNG	**Young**	**27.19**	**214**	P		**P**	**01 57 18.9**		**+0.2**
	baz=27								
URZ	**Urewera**	**27.30**	**162**	P		**P**	**01 57 19.2**		**-0.5**
	comp=Z,6.9nm,0.7s,baz=67,slow=3.1,SNR=5.6								
URZ				LR		LR	02 06 21.7		
	comp=Z,709nm,20.9s,baz=338,slow=32								
CAN	**Canberra**	**27.65**	**212**	*eP*		**P**	**01 57 22.3**		**-0.6**
CAN				pmax		pmax			
	comp=Z,10.0nm,0.9s								
CAN	**Canberra**	**27.65**	**212**	*eP*		**P**	**01 57 22.3**		**-0.6**
	comp=Z,10nm,0.9s								
BKZ	**Black Stump Fm**	**27.96**	**163**	*eP*		**P**	**01 57 26.8**		**+1.1**
	comp=Z,9.3nm,1.0s								
STKA	**Stephens Creek**	**29.89**	**226**	P		**P**	**01 57 43.0**		**+0.2**
	comp=Z,9.9nm,0.7s,baz=34,slow=6.9,SNR=22								
STKA				PcP		**PcP**	**02 00 44.7**		**0.0**
	comp=Z,2.7nm,0.8s,baz=302,slow=6.1,SNR=2.9								
STKA				ScP		**ScP**	**02 04 27.1**		**+5.2**
	comp=Z,1.2nm,0.6s,baz=145,slow=1.9,SNR=3.8								
STKA	**Stephens Creek**	**29.89**	**226**	P		**P**	**01 57 43.0**		**+0.2**
	baz=30,SNR=17								
STKA	**Stephens Creek**	**29.89**	**226**	*eP*		**P**	**01 57 43.0**		**+0.2**
	comp=Z,4.0nm,1.0s								
STKA				PcP		**PcP**	**02 00 44.7**		**0.0**
STKA				ScP		**ScP**	**02 04 27.1**		**+5.2**
LTZ	**Lake Taylor**	**30.54**	**172**	*eP*		**P**	**01 57 47.1**		**-1.4**
	comp=Z,15nm,0.8s								
FOZ	**Fox Glacier**	**31.01**	**175**	*eP*		**P**	**01 57 52.2**		**-0.3**
	comp=Z,41nm,1.0s								
OXZ	**Oxford**	**31.04**	**172**	*eP*		**P**	**01 57 51.5**		**-1.4**
	comp=Z,24nm,0.9s								
TOO	**Toolangi**	**31.20**	**213**	P		**P**	**01 57 54.6**		**+0.3**
	baz=31,SNR=4.7								
RPZ	**Rata Peaks**	**31.30**	**174**	P		**P**	**01 57 54.4**		**-0.8**
	comp=Z,26nm,0.9s,baz=337,slow=1.4,SNR=18								
RPZ				ScP		**ScP**	**02 04 32.3**		**+5.9**
	comp=Z,9.0nm,0.9s,baz=70,slow=3.2,SNR=7.7								
RPZ	**Rata Peaks**	**31.30**	**174**	*eP*		**P**	**01 57 53.1**		**-2.0**
	comp=Z,27nm,0.8s								
RPZ				ScP		**ScP**	**02 04 32.3**		**+5.9**
WRAB	**Tennant Creek**	**31.67**	**252**	⇑*eP*		**P**	**01 57 59.0**		**+0.3**
WRAB				pmax		pmax			
	comp=Z,27nm,2.0s								
WRAB	**Tennant Creek**	**31.67**	**252**	*eP*		**P**	**01 57 57.2**		**-1.4**
	comp=Z,11nm,1.2s								
WRA	**Warramunga Arr**	**31.68**	**252**	P		**P**	**01 57 57.1**		**-1.6**
	comp=Z,3.4nm,0.8s,baz=86,slow=9.1,SNR=12								
WRA				ScP		**ScP**	**02 04 33.6**		**+5.5**
	comp=Z,2.1nm,0.9s,baz=79,slow=3.8,SNR=9.3								
WRA				LR		LR	02 09 28.9		
	comp=Z,438nm,21.5s,baz=75,slow=34								
WRA	**Warramunga Arr**	**31.68**	**252**	P		**P**	**01 57 57.2**		**-1.6**
WRA				pmax		pmax			
	comp=Z,4.0nm,0.8s								
WRA				pmax		pmax			
	comp=N,2.0nm,0.9s								
WRA				MLR		MLR			
	comp=Z,438nm,21.5s								
WC4	**Warramunga Arr**	**31.69**	**252**	P		**P**	**01 57 58.0**		**-0.8**
	baz=32								
LBZ	**Lac Benmore**	**31.89**	**175**	*eP*		**P**	**01 57 59.2**		**-1.1**
	comp=Z,27nm,1.1s								
H11N1	**WAKE ISLAND Hy**	**32.06**	**1**	T		T	02 32 58.2		
	baz=202,slow=74,SNR=2.1								
H11N2	**WAKE ISLAND Hy**	**32.08**	**1**	T		T	02 32 58.4		
	baz=192,slow=74,SNR=1.4								
WKZ	**Wanaka**	**32.24**	**177**	*eP*		**P**	**01 58 03.2**		**-0.2**
	comp=Z,201nm,1.7s								
HTT	**Hallett**	**32.62**	**226**	P		**P**	**01 58 07.0**		**+0.1**
	baz=33,SNR=13								
AS01	**Alice Springs**	**32.76**	**246**	*eP*		**P**	**01 58 05.7**		**-2.5**
AS31	**Alice Springs**	**32.80**	**246**	*eP*		**P**	**01 58 07.4**		**-1.2**
	comp=Z,2.9nm,0.7s								
ASAR	**Alice Springs**	**32.80**	**246**	P		**P**	**01 58 07.1**		**-1.5**
	comp=Z,8.8nm,0.7s,baz=74,slow=9.6,SNR=94								
ASAR				PcP		**PcP**	**02 00 52.9**		**+0.2**
	comp=Z,1.2nm,0.8s,baz=86,slow=3.0,SNR=4.4								
ASAR				ScP		**ScP**	**02 04 36.9**		**+5.0**
	comp=Z,2.6nm,1.0s,baz=82,slow=3.0,SNR=8.5								
ASAR				LR		LR	02 10 32.4		
	comp=Z,638nm,21.1s,baz=93,slow=34								
DCZ	**Deep Cove**	**32.81**	**179**	*eP*		**P**	**01 58 07.4**		**-0.8**
	comp=Z,61nm,1.0s								
MOO	**Moorlands**	**34.18**	**206**	P		**P**	**01 58 19.5**		**-0.8**
	baz=34								
BBOO	**Buckleboo**	**34.37**	**229**	P		**P**	**01 58 21.8**		**-0.2**
	baz=34,SNR=35								
BBOO	**Buckleboo**	**34.37**	**229**	*eP*		**P**	**01 58 21.8**		**-0.2**
	comp=Z,34nm,0.6s								
MTN	**Manton Dam**	**34.47**	**266**	P		**P**	**01 58 23.6**		**+0.5**
	baz=34,SNR=3.1								
KNRA	**Kununurra**	**36.68**	**261**	P		**P**	**01 58 41.7**		**-0.4**
	baz=37								
WRKA	**Warakurna**	**38.09**	**245**	P		**P**	**01 58 52.6**		**-1.4**
	baz=38,SNR=13								
FITZ	**Fitzroy Crossi**	**39.72**	**257**	P		**P**	**01 59 07.4**		**-0.2**
	comp=Z,5.7nm,0.7s,baz=100,slow=5.4,SNR=13								
FITZ	**Fitzroy Crossi**	**39.72**	**257**	P		**P**	**01 59 07.4**		**-0.2**
	baz=40,SNR=4.8								
FITZ	**Fitzroy Crossi**	**39.72**	**257**	*eP*		**P**	**01 59 07.5**		**-0.2**
	comp=Z,20nm,1.1s								
PPT	**Papeete**	**42.65**	**102**	LR		LR	02 14 45.9		
	comp=Z,344nm,18.5s,baz=288,slow=32								
PPT2	**Papeete2**	**42.65**	**102**	*e*LQ		LQ	02 09 43.9		
	comp=Z,893nm,29.8s								
PPT2				*e*LR		LR	02 11 31.0		
	comp=Z,789nm,26.2s,baz=268								
TBI	**Tubuai**	**43.11**	**111**	*e*LQ		LQ	02 09 53.7		
	comp=Z,677nm,32.2s								
TBI				*e*LR		LR	02 11 42.0		
	comp=Z,366nm,31.2s								
LUWI	**Luwuk**	**44.80**	**281**	*eP*		**P**	**01 59 48.2**		**-0.8**
KMBL	**Kambalda**	**45.05**	**238**	P		**P**	**01 59 50.6**		**-0.2**
	baz=45,SNR=13								
MBWA	**Marble Bar**	**45.42**	**253**	*eP*		**P**	**01 59 53.5**		**-0.4**
	comp=Z,18nm,1.0s								
KAPI	**Kappang**	**46.73**	**275**	P		**P**	**02 00 04.7**		**+0.5**
	comp=Z,9.0nm,0.7s,baz=115,slow=12,SNR=5.4								
KAPI				PcP		**PcP**	**02 01 37.5**		**+0.5**
	comp=Z,14nm,0.7s,baz=110,slow=5.3,SNR=5.8								
KAPI	**Kappang**	**46.73**	**275**	*eP*		**P**	**02 00 03.9**		**-0.3**
	comp=Z,12nm,0.9s								
KAPI				PcP		**PcP**	**02 01 37.5**		**+0.5**
KLBR	**Kellerberrin**	**48.53**	**239**	P		**P**	**02 00 17.4**		**-0.7**
	baz=48,SNR=5.7								
NWAO	**Narrogin (SRO)**	**49.24**	**237**	P		**P**	**02 00 22.7**		**-0.8**
	comp=Z,18nm,0.8s,baz=100,slow=0.2,SNR=9.3								
NWAO	**Narrogin (SRO)**	**49.24**	**237**	P		**P**	**02 00 23.2**		**-0.3**
	baz=49,SNR=6.4								
MORW	**Morawa**	**49.56**	**242**	P		**P**	**02 00 26.0**		**+0.1**
	baz=50,SNR=6.6								
RKGY	**Rocky Gully**	**49.83**	**235**	P		**P**	**02 00 27.8**		**-0.1**
	baz=50								
MUN	**Mundaring**	**49.90**	**239**	P		**P**	**02 00 28.1**		**-0.4**
	baz=50								
JAGI	**Jajag, Banyuwa**	**51.55**	**269**	*eP*		**P**	**02 00 40.2**		**-0.9**
	comp=Z,46nm,1.0s								
TAOE	**Nuku Hiva Isla**	**52.50**	**92**	*e*LR		LR	02 16 11.8		
	comp=Z,414nm,26.3s								
KKM	**Kota Kinabalu**	**53.27**	**287**	*eP*		**P**	**02 00 53.2**		**-0.7**
	comp=Z,31nm,0.8s								
MJAR	**Matsushiro Arr**	**55.63**	**332**	P		**P**	**02 01 09.6**		**-1.0**
	comp=Z,5.5nm,0.7s,baz=168,slow=8.2,SNR=7.4								
MAJO	**Matsushiro**	**55.63**	**332**	⇑*eP*		**P**	**02 01 09.7**		**-0.9**
MAJO				pmax		pmax			
	comp=Z,50nm,1.0s								
MAJO	**Matsushiro**	**55.63**	**332**	*eP*		**P**	**02 01 09.9**		**-0.7**
	comp=Z,8.6nm,0.8s								
SBUM	**Sibu**	**55.90**	**282**	*eP*		**P**	**02 01 13.7**		**+0.7**
	comp=Z,5.8nm,0.9s								
RKT	**Rikitea**	**56.40**	**109**	*e*LR		LR	02 17 56.3		
	comp=Z,358nm,26.0s								
JNU	**Nakatsue**	**56.71**	**324**	LR		LR	02 22 41.5		
	comp=Z,72nm,22.0s,baz=126,slow=33								
JNU	**Nakatsue**	**56.71**	**324**	*eP*		**P**	**02 01 18.9**		**+0.5**
	comp=Z,58nm,0.9s								
YULB	**Yu-li**	**56.83**	**309**	*eP*		**P**	**02 01 20.4**		**+0.9**
	comp=Z,14nm,1.0s								
TPUB	**Ta-pu**	**57.29**	**308**	*eP*		**P**	**02 01 21.7**		**-1.0**
	comp=Z,45nm,0.9s								
YHNB	**Yeheng**	**57.50**	**310**	*eP*		**P**	**02 01 24.6**		**+0.4**
	comp=Z,35nm,0.8s								
KSRS	**Korea Array**	**61.52**	**326**	P		**P**	**02 01 52.2**		**+0.7**
	comp=Z,9.1nm,0.8s,baz=139,slow=7.0,SNR=28								
KSRS				LR		LR	02 28 15.1		
	comp=Z,36nm,18.4s,baz=86,slow=36								
KSAR	**Wonju Array Be**	**61.53**	**326**	P		**P**	**02 01 52.2**		**+0.6**
KSAR	**Wonju Array Be**	**61.53**	**326**	P		**P**	**02 01 52.2**		**+0.6**
KS01	**Wonju Array Si**	**61.55**	**326**	*eP*		**P**	**02 01 51.3**		**-0.4**
YSS	**Yuzh-Sakhalins**	**62.93**	**342**	*eP*		**P**	**02 02 02.9**		**+2.2**
YSS				pmax		pmax			
	comp=Z,8.0nm,1.1s								
NJ2	**Nanjing**	**63.59**	**316**	*eP*		**P**	**02 02 06.5**		**+1.1**
NJ2				pmax		pmax			
	comp=Z,58nm,0.7s								
USRK	**Ussuriysk Ar.**	**64.61**	**333**	P		**P**	**02 02 13.0**		**+1.1**
	comp=Z,8.6nm,0.8s,baz=137,slow=6.4,SNR=19								
USRK				LR		LR	02 27 25.8		
	comp=Z,80nm,21.9s,baz=147,slow=33								
VNDA	**Vanda**	**65.01**	**181**	P		**P**	**02 02 13.4**		**-0.6**
	comp=Z,8.2nm,1.1s,baz=1.9,slow=6.7,SNR=16								
VNDA				LR		LR	02 27 45.2		
	comp=Z,155nm,19.0s,baz=327,slow=33								
SBA	**Scott Base**	**65.31**	**180**	*eP*		**P**	**02 02 16.0**		**+0.1**
SBA				pmax		pmax			
	comp=Z,28nm,1.0s								
SBA	**Scott Base**	**65.31**	**180**	*eP*		**P**	**02 02 16.0**		**+0.1**
	comp=Z,28nm,1.0s								
PETK	**Petropavlovsk-**	**65.82**	**354**	LR		LR	02 23 50.5		
	comp=Z,180nm,20.8s,baz=175,slow=29								
WHN	**Wuhan**	**65.93**	**312**	⇓P		**P**	**02 02 19.9**		**-0.8**
MDJ	**Mudanjiang**	**66.01**	**332**	P		**P**	**02 02 21.6**		**+0.7**
MDJ				pP		sP	02 02 44.3		+0.7
MDJ				sP		PcP	02 02 54.8		+3.7
MDJ				S		**S**	**02 11 02.6**		**-1.7**
MDJ				pmax		pmax			
	comp=Z,14nm,1.1s								
MDJ				pmax		pmax			
	comp=Z,120nm,4.3s								
MDJ				LR		LR			
	comp=Z,69nm,18.8s								
MDJ				LR		LR			
	comp=Z,62nm,16.7s								
MDJ				LR		LR			
	comp=Z,120nm,23.7s								
DL2	**Dalian**	**66.11**	**323**	P		**P**	**02 02 22.4**		**+0.7**
DL2				pmax		pmax			
	comp=Z,76nm,0.7s								
IPM	**Ipoh**	**67.19**	**280**	*eP*		**P**	**02 02 29.1**		**0.0**
	comp=Z,34nm,1.0s								
TIA	**Tai'an**	**67.21**	**318**	⇑P		**P**	**02 02 29.0**		**+0.2**
TIA				pmax		pmax			
	comp=Z,30nm,0.9s								
CN2	**Changchun**	**67.39**	**329**	*eP*		**P**	**02 02 29.8**		**0.0**
CN2				pmax		pmax			
	comp=Z,10.0nm,0.4s								
KULM	**Kulim**	**67.77**	**281**	*eP*		**P**	**02 02 31.4**		**-1.4**
	comp=Z,123nm,1.8s								
SKNT	**Sakolnakorn**	**68.36**	**294**	P		**P**	**02 02 37.0**		**+0.6**
	comp=Z,53nm,0.9s								
KLR	**Kul'dur**	**68.72**	**336**	P		**P**	**02 02 39.0**		**+1.1**
	comp=Z,6.1nm,0.9s,baz=136,slow=2.6,SNR=22								
PSI	**Prapat**	**68.79**	**278**	*eP*		**P**	**02 02 38.3**		**-1.0**
PSI				pmax		pmax			
	comp=Z,23nm,0.9s								
PSI	**Prapat**	**68.79**	**278**	*eP*		**P**	**02 02 38.3**		**-1.0**
	comp=Z,23nm,0.9s								
NKL	**Nikolayevsk**	**69.08**	**344**	*eP*		P	02 02 51.5		+11
NKL				*e*			02 03 04.5		
NKL				pmax		pmax			
	comp=Z,26nm,1.0s								
SRAK	**Srakaew**	**69.09**	**290**	P		**P**	**02 02 41.2**		**+0.3**
	comp=Z,17nm,0.9s								
ENH	**Enshi**	**69.40**	**309**	*eP*		**P**	**02 02 42.6**		**0.0**
	comp=Z,77nm,0.9s								
GYA	**Guiyang**	**69.86**	**304**	P		**P**	**02 02 47.8**		**+2.1**
GYA				pP		sP	02 03 11.6		+3.2
GYA				PP		**PP**	**02 05 25.4**		**+4.4**
GYA				S		**S**	**02 11 49.0**		**-2.3**
GYA				SKS		**SKiKP**	**02 12 34.8**		**+7.0**
GYA				pmax		pmax			
	comp=Z,20nm,1.0s								
GYA				pmax		pmax			
	comp=Z,120nm,6.2s								
BJT	**Baijiatuan**	**70.09**	**321**	*eP*		**P**	**02 02 47.5**		**+0.9**
BJT	

	comp=Z,1.0nm,0.3s,baz=172,slow=12,SNR=5.0							
LZH	**Lanzhou**	**76.30**	**312**	*e*P		**P**	**02 03 25.5**	**+1.9**
LZH				pP		sP	02 03 51.5	+5.0
LZH				sP		pP	02 03 59.0	+19
LZH				pmax		pmax		
	comp=Z,42nm,1.1s							
LZH				pmax		pmax		
	comp=Z,130nm,4.4s							
YAK	**Yakutsk**	**79.73**	**343**	LR		LR	02 34 19.0	
	comp=Z,108nm,20.8s,baz=98,slow=32							
ULN	**Ulaanbaatar**	**79.93**	**324**	*e*P		**P**	**02 03 44.2**	**+0.8**
ULN				pmax		pmax		
	comp=Z,25nm,0.9s							
ULN	**Ulaanbaatar**	**79.93**	**324**	*e*P		**P**	**02 03 44.2**	**+0.8**
	comp=Z,25nm,0.9s							
SONM	**Songino Array**	**80.30**	**324**	P		**P**	**02 03 45.8**	**+0.4**
	comp=Z,8.9nm,0.8s,baz=141,slow=6.6,SNR=35							
BILL	**Bilibino**	**80.37**	**360**	*i* P		**P**	**02 03 44.6**	**-0.5**
BILL				pmax		pmax		
	comp=Z,4.0nm,1.0s							
BILL	**Bilibino**	**80.37**	**360**	*e*P		**P**	**02 03 43.4**	**-1.8**
	comp=Z,2.4nm,0.8s							
GTA	**Gaotai**	**80.61**	**314**	*e*P		**P**	**02 03 48.0**	**+0.7**
GTA				pP		sP	02 04 13.8	+3.5
GTA				sP		pP	02 04 24.3	+21
GTA				pmax		pmax		
	comp=Z,23nm,1.1s							
SHL	**Shillong**	**81.86**	**298**	*e*P		**P**	**02 03 54.5**	**+0.3**
CAST	**Castle Rocks**	**82.15**	**17**	*e*P		**P**	**02 03 54.4**	**-0.4**
BOD	**Bodaibo**	**82.19**	**335**	*e*P		**P**	**02 03 54.5**	**-0.5**
BOD				pmax		pmax		
	comp=Z,3.0nm,1.2s							
TRF	**Thorofare Moun**	**82.71**	**18**	*e*P		**P**	**02 03 57.5**	**-0.3**
MCK	**McKinley**	**83.33**	**18**	*e*P		**P**	**02 04 00.3**	**-0.5**
MCK				pmax		pmax		
	comp=Z,5.0nm,0.9s							
MCK	**McKinley**	**83.33**	**18**	*e*P		**P**	**02 04 00.3**	**-0.5**
	comp=Z,5.3nm,0.9s							
ZAK	**Zakamensk**	**83.34**	**325**	*e*P		**P**	**02 04 00.8**	**-0.5**
ZAK				pmax		pmax		
	comp=Z,12nm,1.0s							
MAW	**Mawson**	**83.61**	**202**	P		**P**	**02 04 01.5**	**-0.7**
	comp=Z,8.5nm,0.8s,baz=104,slow=2.9,SNR=12							
MAW	**Mawson**	**83.61**	**202**	*e*P		**P**	**02 04 01.1**	**-1.2**
LSA	**Lhasa**	**83.76**	**302**	*e*P		**P**	**02 04 05.4**	**+1.0**
LSA				pmax		pmax		
	comp=Z,11nm,0.6s							
LSA	**Lhasa**	**83.76**	**302**	*e*P		**P**	**02 04 05.4**	**+1.0**
	comp=Z,11nm,0.6s							
TLY	**Talaya**	**83.77**	**326**	*e*P		**P**	**02 04 03.4**	**+0.1**
TLY				pmax		pmax		
	comp=Z,21nm,1.1s							
TLY	**Talaya**	**83.77**	**326**	*e*P		**P**	**02 04 03.5**	**+0.1**
	comp=Z,17nm,1.0s							
WRH	**Wood River Hil**	**84.12**	**18**	*e*P		**P**	**02 04 05.1**	**+0.3**
CCB	**Clear Creek Bu**	**84.33**	**18**	*e*P		**P**	**02 04 06.1**	**+0.3**
COLA	**College**	**84.48**	**18**	*e*P		**P**	**02 04 06.6**	**0.0**
COLA				pmax		pmax		
	comp=Z,6.0nm,0.9s							
COLA	**College**	**84.48**	**18**	*e*P		**P**	**02 04 06.5**	**0.0**
	comp=Z,5.7nm,0.9s							
IL1	**Eielson Array**	**84.70**	**18**	*e*P		**P**	**02 04 05.1**	**-2.7**
ILAR	**Eielson Array**	**84.70**	**18**	P		**P**	**02 04 05.9**	**-1.8**
	comp=Z,3.0nm,0.6s,baz=235,slow=5.5,SNR=44							
ILAR				LR		LR	02 36 23.6	
	comp=Z,142nm,20.3s,baz=220,slow=32							
ILB	**Eielson Array**	**84.70**	**18**	*e*P		**P**	**02 04 07.4**	**-0.3**
MOY	**Mondy**	**85.22**	**325**	*e*P		**P**	**02 04 10.5**	**-0.3**
TAPN	**Taplejung**	**85.96**	**299**	*e*P		**P**	**02 04 15.7**	**+0.4**
ODAN	**Odare**	**86.10**	**298**	*e*P		**P**	**02 04 16.4**	**+0.5**
	comp=Z,92nm,0.9s							
NVAR	**Mina Array Bea**	**86.44**	**50**	P		**P**	**02 04 16.5**	**-0.8**
	comp=Z,0.6nm,0.8s,baz=237,slow=10,SNR=3.8							
NVAR				LR		LR	02 38 04.0	
	comp=Z,258nm,18.6s,baz=258,slow=32							
EGAK	**Eagle**	**86.53**	**20**	*e*P		**P**	**02 04 18.2**	**+1.3**
	comp=Z,3.6nm,0.8s							
RAMN	**Ramite**	**86.80**	**298**	*e*P		**P**	**02 04 19.5**	**+0.2**
	comp=Z,51nm,1.1s							
GUN	**Gumba**	**87.68**	**299**	*e*P		**P**	**02 04 23.8**	**+0.1**
	comp=Z,48nm,0.8s							
TIXI	**Tiksi**	**87.69**	**349**⇓	*e*P		**P**	**02 04 21.3**	**-1.0**
TIXI				pmax		pmax		
	comp=Z,1.0nm,0.8s							
KKN	**Kakani**	**88.16**	**299**	*e*P		**P**	**02 04 25.8**	**0.0**
	comp=Z,58nm,0.7s							
DMN	**Daman**	**88.26**	**299**	*e*P		**P**	**02 04 26.6**	**+0.3**
	comp=Z,118nm,0.8s							
GKN	**Gorkha**	**88.76**	**299**	*e*P		**P**	**02 04 28.1**	**-0.5**
	comp=Z,84nm,0.8s							
PYUN	**Piuthan**	**90.19**	**299**	*e*P		**P**	**02 04 34.5**	**-0.9**
	comp=Z,69nm,0.9s							
WMQ	**Urumqi**	**90.66**	**315**	*e*P		**P**	**02 04 37.3**	**+0.3**
WMQ				sP		sP	02 05 13.5	+13
WMQ				pmax		pmax		
	comp=Z,7.0nm,0.5s							
WMQ				pmax		pmax		
	comp=Z,53nm,3.8s							
WMQ				LR		LR		
	comp=Z,36nm,23.8s							
WMQ				LR		LR		
	comp=Z,43nm,20.8s							
WMQ				LR		LR		
	comp=Z,47nm,20.8s							
INK	**Inuvik**	**91.08**	**19**	P		**P**	**02 04 38.0**	**-0.2**
	comp=Z,0.4nm,0.7s,baz=128,slow=27,SNR=6.2							
HYB	**Hyderabad**	**91.75**	**287**	*i* P		**P**	**02 04 42.0**	**-0.6**
PDAR	**Pinedale Array**	**94.03**	**47**	LR		LR	02 43 22.2	
	comp=Z,115nm,18.2s,baz=342,slow=33							
PMSA	**Palmer Station**	**94.07**	**161**	*e*P		**P**	**02 04 50.1**	**-2.1**
	comp=Z,75nm,1.2s							
MKAR	**Makanchi Array**	**95.10**	**317**	P		**P**	**02 04 57.4**	**0.0**
	comp=Z,17nm,0.8s,baz=97,slow=6.4,SNR=123							
MKAR				LR		LR	02 46 48.4	
	comp=Z,62nm,21.9s,baz=88,slow=35							
ZALV	**Zalesovo Beam**	**95.19**	**324**	P		**P**	**02 04 56.6**	**-0.9**
	comp=Z,5.6nm,0.8s,baz=113,slow=4.4,SNR=26							
ZALV				LR		LR	02 46 51.3	
	comp=Z,58nm,22.0s,baz=70,slow=35							
ZALV	**Zalesovo Beam**	**95.19**	**324**	P		**P**	**02 04 56.6**	**-0.9**
ZALV				pmax		pmax		
	comp=Z,9.0nm,1.0s							
ZALV				MLR		MLR		
	comp=Z,59nm,22.0s							
SNAA	**Sanae**	**95.67**	**183**	*e*P		**P**	**02 04 57.3**	**-2.3**
SNAA	**Sanae**	**95.67**	**183**	*e*P		**P**	**02 04 57.3**	**-2.3**
	comp=Z,569nm,1.3s							
TXAR	**Lajitas Array**	**95.91**	**61**	P		**P**	**02 05 01.2**	**-0.3**
	comp=Z,0.2nm,0.5s,baz=210,slow=7.2,SNR=3.0							
TXAR				LR		LR	02 43 24.4	
	comp=Z,89nm,18.9s,baz=0.0,slow=32							
YKA	**Yellowknife Ar**	**95.97**	**27**	P		**P**	**02 05 00.4**	**-0.5**
	comp=Z,0.4nm,0.4s,baz=258,slow=4.7,SNR=21							
NRIK	**Noril'sk**	**97.77**	**339**	LR		LR	02 47 55.6	
	comp=Z,75nm,20.6s,baz=107,slow=34							
KURK	**Kurchatov**	**98.25**	**320**	*e*P		**P**	**02 05 09.6**	**-1.8**
KURK				pmax		pmax		
	comp=Z,6.0nm,1.0s							
KURK	**Kurchatov**	**98.25**	**320**	*e*P		**P**	**02 05 09.6**	**-1.8**
	comp=Z,6.0nm,1.0s							
KSH	**Kashi**	**98.25**	**309**	*e*P		Pdif	02 05 12.2	+0.2
KSH				*e*sP		sP	02 05 48.4	+13
KSH				*e*PP		**PP**	**02 09 15.4**	**+3.0**
KSH				SKS		**SKSac**	**02 15 38.3**	**-6.7**
KSH				S		S	02 16 27.4	-7.9
KSH				pmax		pmax		
	comp=Z,160nm,6.4s							
KSH				LR		LR		
	comp=Z,160nm,5.6s							
KSH				LR		LR		
	comp=Z,100nm,5.4s							
KSH				LR		LR		
	comp=Z,270nm,5.9s							
TKM2	**Tokmak 2**	**99.07**	**312**	*e*P		**Pdif**	**02 05 14.9**	**-0.7**
TKM2				pmax		pmax		
	comp=Z,2.0nm,0.8s							
TKM2	**Tokmak 2**	**99.07**	**312**	*e*P		**Pdif**	**02 05 14.9**	**-0.7**
	comp=Z,1.7nm,0.8s							
AAK	**Ala-Archa**	**99.83**	**312**	*e*P		**Pdif**	**02 05 18.4**	**-0.6**
AAK	**Ala-Archa**	**99.83**	**312**	*e*Pdif		**Pdif**	**02 05 18.4**	**-0.6**
EKS2	**Erkin-Say**	**100.36**	**311**	*e*P		**Pdif**	**02 05 21.0**	**-0.2**
EKS2	**Erkin-Say**	**100.36**	**311**	*e*Pdif		**Pdif**	**02 05 21.0**	**-0.2**
HKT	**Hockley**	**102.74**	**62**	*e*P		**Pdif**	**02 05 31.1**	**-0.8**
HKT	**Hockley**	**102.74**	**62**	*e*Pdif		**Pdif**	**02 05 31.1**	**-0.8**
BVAR	**Borovoye Array**	**103.57**	**322**	Pdiff		**Pdif**	**02 05 34.8**	**-0.3**
	comp=Z,1.4nm,0.9s,baz=96,slow=3.0,SNR=6.6							

AKTO	**Aktyubinsk**	**111.33**	**319**	PKiKP		**PKiKP**	**02 10 07.9**	**0.0**
	comp=Z,0.8nm,0.6s,baz=113,slow=4.3,SNR=4.4							
ARCES	**ARCESS Array B**	**117.96**	**345**	PKP		**PKPdf**	**02 10 18.9**	**-1.2**
	comp=Z,2.1nm,0.4s,baz=66,slow=2.1,SNR=40							
VRH	**Novokhopyorsk**	**121.20**	**323**	*e*PKiKP		**PKPdf**	**02 10 24.9**	**-1.9**
VRH				pmax		pmax		
	comp=Z,10.0nm,0.6s							
LPSR	**Galich'ya Gora**	**122.28**	**325**	*e*PKiKP		**PKPdf**	**02 10 24.1**	**-4.7**
LPSR				pmax		pmax		
	comp=Z,5.0nm,0.6s							
VSR	**Storozhevoye**	**122.69**	**324**	*e*PKiKP		**PKPdf**	**02 10 28.2**	**-1.5**
VSR				pmax		pmax		
	comp=Z,6.0nm,0.5s							
FINES	**FINESS Array B**	**123.42**	**338**	PKP		**PKPdf**	**02 10 29.7**	**-1.1**
	comp=Z,2.4nm,0.8s,baz=53,slow=2.3,SNR=9.4							
BOSA	**Boshof**	**124.50**	**222**	PKP		**PKPdf**	**02 10 33.2**	**-0.9**
	comp=Z,4.5nm,1.0s,baz=59,slow=3.7,SNR=4.1							
NB2	**NORSAR Subarra**	**128.33**	**345**	PKPdf		**PKPdf**	**02 10 38.9**	**-1.4**
	comp=Z,9.9nm,1.0s,baz=31,slow=1.9							
NOA	**NORSAR Array B**	**128.33**	**345**	PKP		**PKPdf**	**02 10 39.6**	**-0.6**
	comp=Z,1.1nm,0.8s,baz=32,slow=1.9,SNR=3.8							
AKASG	**Malin Array Be**	**128.51**	**327**	PKP		**PKPdf**	**02 10 41.3**	**+0.5**
	comp=Z,0.3nm,0.4s,baz=55,slow=2.5,SNR=6.1							
BRTR	**Keskin Array B**	**130.50**	**312**	PKP		**PKPdf**	**02 10 45.1**	**0.0**
	comp=Z,0.8nm,0.6s,baz=134,slow=2.9,SNR=5.0							
TLCR		**131.54**	**320**⇑	*i*P		**PKPdf**	**02 10 47.1**	**+0.4**
TLCR		**131.54**	**320**⇑	PKiKP		**PKPdf**	**02 10 47.1**	**+0.4**
CFR	**Carcaliu**	**131.96**	**321**⇑	*i*P		**PKPdf**	**02 10 47.8**	**+0.3**
CFR	**Carcaliu**	**131.96**	**321**⇑	PKiKP		**PKPdf**	**02 10 47.8**	**+0.3**
BURAR	**Bucovina Array**	**132.40**	**325**⇓	*i*P		**PKPdf**	**02 10 49.1**	**+0.6**
BURAR	**Bucovina Array**	**132.40**	**325**⇓	PKiKP		**PKPdf**	**02 10 49.1**	**+0.6**
MLR	**Muntele Rosu**	**133.13**	**322**	PKP		**PKPdf**	**02 10 49.8**	**-0.2**
	comp=Z,0.3nm,0.6s							
MLR	**Muntele Rosu**	**133.13**	**322**⇑	*i*P		**PKPdf**	**02 10 48.3**	**-1.7**
ARR	**Arges**	**133.98**	**323**⇓	*i*P		**PKPdf**	**02 10 52.0**	**+0.5**
DRGR		**134.27**	**325**⇓	*i*P		**PKPdf**	**02 10 52.3**	**+0.3**
DRGR		**134.27**	**325**⇓	PKiKP		**PKPdf**	**02 10 52.3**	**+0.3**
BZS	**Buzias**	**135.58**	**325**⇑	*i*P		**PKPdf**	**02 10 52.9**	**-1.5**
BZS	**Buzias**	**135.58**	**325**⇑	PKiKP		**PKPdf**	**02 10 52.9**	**-1.5**
BDFB	**Brasilia**	**135.84**	**128**	PKP		**PKPdf**	**02 10 55.9**	**0.0**
	comp=Z,0.9nm,0.6s,baz=168,slow=3.7,SNR=4.3							
MDVR	**Moldovita**	**136.02**	**324**⇓	*i*P		**PKPdf**	**02 10 56.5**	**+1.2**
GERES	**GERESS Array B**	**137.36**	**334**	PKP		**PKPdf**	**02 10 57.9**	**+0.2**
	comp=Z,1.4nm,0.9s,baz=2.9,slow=2.7,SNR=6.6							
WLF	**Walferdange**	**139.60**	**340**	*e*PKiKP		**PKPdf**	**02 11 02.2**	**+0.5**
WLF	**Walferdange**	**139.60**	**340**	*e*PKPdf		**PKPdf**	**02 11 02.1**	**+0.5**
TIP	**Timpagrande**	**142.30**	**320**	*e*PKPdf		**PKPdf**	**02 11 06.1**	**-0.9**
BNI	**Bardonecchia**	**143.31**	**336**	*e*PKiKP		**PKPdf**	**02 11 07.3**	**-1.3**
BNI	**Bardonecchia**	**143.31**	**336**	*e*PKPdf		PKPbc	02 11 07.2	+1.5
KEST	**Kesra**	**149.04**	**322**	PKPbc		**PKPbc**	**02 11 22.8**	**+0.1**
	comp=Z,23nm,0.9s,baz=84,slow=0.5,SNR=22							
PBRG	**Braganca**	**150.26**	**350**	*e*PKPbc		**PKPbc**	**02 11 24.3**	**-1.1**
PCAB	**Cabril**	**150.55**	**352**	*e*PKPdf		**PKPdf**	**02 11 18.6**	**-2.1**
POLO	**Lamas de Olo**	**150.85**	**351**	*e*PKPbc		**PKPbc**	**02 11 26.6**	**-0.3**
MVO	**Moncorvo**	**150.93**	**350**	*e*PKPbc		**PKPbc**	**02 11 26.7**	**-0.4**
SET	**Setif**	**150.93**	**327**	P		**PKPbc**	**02 11 29.0**	**+1.7**
PVRL	**Vila Real**	**150.93**	**351**	*e*PKPbc		**PKPbc**	**02 11 26.9**	**-0.1**
PTO	**Porto**	**151.19**	**352**	*e*PKPbc		**PKPbc**	**02 11 27.1**	**-0.5**
PVIS	**Viseu**	**151.51**	**351**	*e*PKPbc		**PKPbc**	**02 11 26.5**	**-1.9**
ESDC	**Sonseca Array**	**151.69**	**344**	PKPbc		**PKPbc**	**02 11 28.6**	**-0.3**
	comp=Z,1.7nm,0.6s,baz=21,slow=2.5,SNR=16							
MTE	**Manteigas**	**151.76**	**350**	*e*PKPbc		**PKPbc**	**02 11 28.6**	**-0.4**
PCAS	**Casmilo, Conde**	**152.25**	**352**	*e*PKPbc		**PKPbc**	**02 11 29.1**	**-0.9**
PCBR	**Castelo Branco**	**152.30**	**350**	*e*PKPbc		**PKPbc**	**02 11 29.6**	**-0.5**
PTOM	**Tomar**	**152.66**	**351**	*e*PKPbc		**PKPbc**	**02 11 30.4**	**-0.6**
PMRV	**Marv??o**	**152.68**	**350**	*e*PKPbc		**PKPbc**	**02 11 30.6**	**-0.5**
PMTG	**Montargil**	**153.17**	**351**	*e*PKPbc		**PKPbc**	**02 11 31.2**	**-0.9**
TAM	**Tamanrasset**	**159.22**	**302**	*e*PKP2		**PKPab**	**02 12 10.5**	**-0.1**
TAM	**Tamanrasset**	**159.22**	**302**	*e*PKPab		**PKPab**	**02 12 10.5**	**-0.1**
TORD	**Torodi Ar. Bea**	**165.16**	**274**	PKP		**PKPdf**	**02 11 38.7**	**-0.5**
	comp=Z,0.7nm,0.8s,baz=28,slow=2.2,SNR=4.3							
TORD				PKPab		**PKPab**	**02 12 36.9**	**+0.3**
	comp=Z,16nm,0.9s,baz=84,slow=5.0,SNR=68							
KIC	**Kosan Boka**	**169.39**	**235**	*e*PKP1		**PKPab**	**02 12 55.2**	**0.0**
	comp=Z,56nm,1.4s							
LIC	**Lamto**	**169.53**	**234**	*e*PKP1		**PKPab**	**02 12 55.8**	**-0.1**
	comp=Z,56nm,1.4s							
DBIC	**Dimbokro**	**169.66**	**236**	PKPab		**PKPab**	**02 12 56.4**	**-0.1**
	comp=Z,7.1nm,0.9s,baz=112,slow=3.7,SNR=6.1							
TIC	**Toumodi**	**169.78**	**236**	*e*PKP1		**PKPab**	**02 12 56.5**	**-0.5**

JMA 13 01:58:51.4,37.01N×140.67E,h8km±1km,M2.6,Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.14**	**48**	P	Pg	01 58 54.7	+0.3
ONAJ				*e*S	Sg	01 58 57.1	+0.6
JFK	**Kawauchi**	**0.39**	**25**	P	Pg	01 58 58.0	-0.2
JFK				S	Sg	01 59 04.3	0.0
JHO	**Hitachi**	**0.41**	**192**	P	Pg	01 58 59.4	+0.1
JHO				S	Sg	01 59 04.8	+0.1
JFT	**Otama**	**0.57**	**332**	P	Pg	01 59 02.7	+0.2
JFT				S	Sg	01 59 10.2	+0.2
MAT	**Matsushiro**	**2.03**	**257**	P	Pn	01 59 26.7	+0.8
MAT				S	Sb	01 59 53.6	-0.4

CSEM ***13*** *01:59:52.8±0.4, 37.45N×54.01E, h10km, ML3.0, Error ellipse: s-maj=10.4km s-min=7.0km az=43.0*
AZER ***13*** *01:59:53.2±0.3, 37.36N×53.85E, h28km, Error ellipse: s-maj=12.1km s-min=5.3km az=230.0*
ISCJB ***13*** *01:59:54.5±0.5, 37.52N±0.03×53.92E±0.05, h33km, Error ellipse: s-maj=6.2km s-min=3.5km az=143.5*
TEH ***13*** *01:59:54.7, 37.30N×54.01E, h5km, ML3.0*
ISC 13 01:59:55.3±1.3, 37.44N±0.04×54.02E±0.05, h35km, n43, σ1§30/62, 13C-11D, Iran-Turkmenistan border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m	Res ISC
IGLO	**Ghaloghah**	**0.94**	**189**	*e*Sg	**Sn**	**02 00 20.3**	**-4.4**
IGLO				*e*Pg	Pn	02 00 09.0	-3.3
IGLO				*e*AMB	AMB	02 00 24.1	
	comp=Z,12μm,0.1s						
MRVT	**Maraveh tapeh**	**1.66**	**82**	*e*Pg	**Pn**	**02 00 22.1**	**+0.1**
IPRN	**Peran**	**1.80**	**229**	*e*Pn	**Pn**	**02 00 23.1**	**-0.9**
IPRN				*e*AMB	AMB	02 00 51.1	
	comp=Z,4μm,0.1s						
IANJ	**Anjilo**	**1.97**	**183**	*e*Pn	**Pn**	**02 00 25.8**	**-0.6**
IANJ				*e*AMB	AMB	02 00 53.4	
	comp=Z,1μm,0.2s						
IANJ	**Anjilo**	**1.97**	**183**	*e*Pn	**Pn**	**02 00 25.8**	**-0.6**
IFIR	**Firoozkooh**	**2.06**	**210**	*e*Pn	**Pn**	**02 00 28.4**	**+0.7**
IFIR				*e*AMB	AMB	02 00 30.3	
	comp=Z,2μm,0.1s						
IFIR				*e*Sg	**Sn**	**02 00 54.5**	**+2.2**
IFIR	**Firoozkooh**	**2.06**	**210**	*e*Pn	**Pn**	**02 00 28.4**	**+0.7**
IFIR				*e*Sg	**Sn**	**02 00 54.5**	**+2.2**
SHRO	**Shahrood**	**2.15**	**131**	*e*Pg	**Pn**	**02 00 29.4**	**+0.6**
ILAS	**Lasjerd**	**2.22**	**203**	*e*Pn	**Pn**	**02 00 30.6**	**+0.7**
ILAS				*e*AMB	AMB	02 01 08.8	
	comp=E,1μm,0.2s						
ILAS	**Lasjerd**	**2.22**	**203**	*e*Pn	**Pn**	**02 00 30.6**	**+0.7**
DAMV	**Damavand**	**2.44**	**223**	*e*Pn	Pn	02 00 29.6	-3.4
DAMV				*e*Sg	**Sn**	**02 01 02.2**	**+0.5**
IDMV	**Damavand**	**2.45**	**221**	*e*Pn	**Pn**	**02 00 34.6**	**+1.5**
IDMV				*e*AMB	AMB	02 00 47.7	
	comp=Z,526nm,0.1s						
IDMV	**Damavand**	**2.45**	**221**	*e*Pn	**Pn**	**02 00 34.6**	**+1.5**
IVRN	**Varamin**	**3.06**	**218**	*e*Pn	**Pn**	**02 00 41.6**	**+0.3**
IVRN				*e*AMB	AMB	02 01 34.5	
	comp=Z,311nm,0.1s						
IVRN	**Varamin**	**3.06**	**218**	*e*Pn	**Pn**	**02 00 41.6**	**+0.3**
ISFR	**Sfrayin**	**3.20**	**96**	*e*Pn	**Pn**	**02 00 45.3**	**+2.0**
ISFR				*e*AMB	AMB	02 01 01.6	
	comp=Z,344nm,0.2s						
ISFR	**Sfrayin**	**3.20**	**96**	*e*Pn	**Pn**	**02 00 45.3**	**+2.0**
IMHD	**Mahdasht**	**3.21**	**238**	*e*Pn	Pn	02 00 47.1	+3.7
IMHD				*e*AMB	AMB	02 01 04.4	
	comp=Z,198nm,0.1s						
ASTR	**Astara**	**4.28**	**287**	⇓P	**Pn**	**02 00 57.6**	**-0.3**
ASTR				⇓S	**Sn**	**02 01 45.5**	**-1.1**
ASTR	**Astara**	**4.28**	**287**	P	**Pn**	**02 00 57.6**	**-0.3**
ASTR				S	**Sn**	**02 01 45.5**	**-1.1**
LKRN	**Lenkeran, Azer**	**4.33**	**289**	⇓S	**Sn**	**02 01 48.8**	**+1.1**
LKRN	**Lenkeran, Azer**	**4.33**	**289**	S	**Sn**	**02 01 48.8**	**+1.1**
LRK	**Lerik**	**4.64**	**287**	⇓P	**Pn**	**02 01 02.2**	**-0.9**
LRK				⇓S	**Sn**	**02 01 54.7**	**-1.2**
LRK	**Lerik**	**4.64**	**287**	P	**Pn**	**02 01 02.2**	**-0.9**
LRK				S	**Sn**	**02 01 54.7**	**-1.2**
GLBA	**Clilabad**	**4.78**	**294**	⇓P	**Pn**	**02 01 05.3**	**+0.5**
GLBA				⇓S	**Sn**	**02 01 58.1**	**-0.8**
GLBA	**Clilabad**	**4.78**	**294**	P	**Pn**	**02 01 05.3**	**+0.5**
ATGJ	**Altiaghaj**	**5.22**	**312**	⇑P	**Pn**	**02 01 12.3**	**+1.3**
ATGJ				⇓S	**Sn**	**02 02 09.6**	**-0.5**
ATGJ	**Altiaghaj**	**5.22**	**312**	P	**Pn**	**02 01 12.3**	**+1.3**
SIZA	**Siyzn**	**5.39**	**314**	⇑P	**Pn**	**02 01 15.3**	**+2.1**
SIZA				⇓S	**Sn**	**02 02 13.6**	**-0.4**
SIZA	**Siyzn**	**5.39**	**314**	P	**Pn**	**02 01 15.3**	**+2.1**
SIZA				S	**Sn**	**02 02 13.6**	**-0.4**
PQL	**Pirkuli**	**5.39**	**310**	⇑P	**Pn**	**02 01 14.6**	**+1.3**
PQL				⇑S	**Sn**	**02 02 13.3**	**-0.8**
PQL	**Pirkuli**	**5.39**	**310**	P	**Pn**	**02 01 14.6**	**+1.3**
PQL				S	**Sn**	**02 02 13.3**	**-0.8**
XNQ	**Khinaliq**	**5.89**	**311**	⇓P	**Pn**	**02 01 20.2**	**-0.1**
XNQ				⇑S	**Sn**	**02 02 24.9**	**-1.7**
XNQ	**Khinaliq**	**5.89**	**311**	P	**Pn**	**02 01 20.2**	**-0.1**
XNQ				S	**Sn**	**02 02 24.9**	**-1.7**
SEKA	**Sheki**	**6.49**	**308**	⇓P	**Pn**	**02 01 29.3**	**+0.9**
SEKA				⇑S	**Sn**	**02 02 41.6**	**+0.4**
SEKA	**Sheki**	**6.49**	**308**	P	**Pn**	**02 01 29.3**	**+0.9**
SEKA				S	**Sn**	**02 02 41.6**	**+0.4**
GANJ	**Ganja**	**6.79**	**301**	⇑P	**Pn**	**02 01 32.6**	**+0.1**
GANJ				⇑S	**Sn**	**02 02 47.2**	**-1.4**
GANJ	**Ganja**	**6.79**	**301**	P	**Pn**	**02 01 32.6**	**+0.1**
GANJ				S	**Sn**	**02 02 47.2**	**-1.4**
ZKTA	**Zakatala**	**7.09**	**309**	⇓P	**Pn**	**02 01 38.5**	**+1.9**
ZKTA				⇑S	**Sn**	**02 02 55.7**	**-0.2**
GDB	**GEDABAY**	**7.22**	**300**	⇑P	**Pn**	**02 01 39.2**	**+0.8**
GDB				⇑S	**Sn**	**02 02 56.6**	**-2.7**
GDB	**GEDABAY**	**7.22**	**300**	P	**Pn**	**02 01 39.2**	**+0.8**
QZX	**Qazax, Azerbai**	**7.62**	**301**	⇑S	**Sn**	**02 03 08.0**	**-1.0**
QZX	**Qazax, Azerbai**	**7.62**	**301**	S	**Sn**	**02 03 08.0**	**-1.0**

ISCJB ***13*** *02:07:24.7±0.5, 28.51N±0.04×53.62E±0.04, h10km, mb3.7/10, Error ellipse: s-maj=6.1km s-min=4.6km az=16.3*
THR ***13*** *02:07:24.9±0.7, 28.44N×53.68E, h15km±9km, ML3.5*
CSEM ***13*** *02:07:26.7±0.3, 28.46N×53.57E, h20km, ML3.4, Error ellipse: s-maj=8.0km s-min=5.4km az=21.0*
TEH ***13*** *02:07:28.5, 28.55N×53.60E, h24km, ML3.4*
IDC ***13*** *02:07:29.7±3.4, 28.24N×53.59E, h68km±39km, mb3.4/11, mb1 3.6/12, mb1mx3.3/51, mbtmp3.8/12, ML3.7/1, Error ellipse: s-maj=23.1km s-min=19.5km az=173.0*
ISC 13 02:07:23.5±0.7, 28.35N±0.04×53.52E±0.03, h10km, n51, σ1§10/58, mb3.7/10, Southern Iran

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GHIR	**Ghir-Karzin**	**0.47**	**262**	*e*Pg	**Pn**	**02 07 36.9**	**+0.5**
GHIR				*e*Sg	Sb	02 07 46.4	+5.3
GHIR				AML	AML	02 07 51.3	
	comp=E,3μm,0

IDC ***13*** *02:11:04.9±8.7, 37°.77N×71°.82E, h142km±58km, mb2.7/1, mb1 3.0/5, mb1mx2.7/56, mbtmp3.5/5, Error ellipse: s-maj=128.2km s-min=71.2km az=109.0*

ISC 13 02:11:04.7±2.2, 37°.8N±0°.2×71°.7E±0°.1, h150km, n10, σ0ᵗ75/15, 6C-2D, Afghanistan-Tajikistan border region

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
SFK	**Sufi-Kurgan**	**2.60**	**32**	⇑P		**Pn**	**02 11 46.1**	**-1.1**
	4.8nm,0.2s							
SFK				⇑S		**Sn**	**02 12 20.1**	**+0.1**
	8.4nm,0.2s							
MNAS	**Manas**	**4.70**	**7**	⇑P		**Pn**	**02 12 14.1**	**-0.1**
	1.3nm,0.3s							
MNAS				⇓S		**Sn**	**02 13 08.8**	**+0.4**
	5.0nm,0.4s							
AAK	**Ala-Archa**	**5.26**	**23**	P		**Pn**	**02 12 21.5**	**0.0**
	2.2nm,0.3s,baz=169,slow=6.0,SNR=29							
AAK				S		**Sn**	**02 13 22.3**	**+0.6**
	0.5nm,0.3s,baz=318,slow=24,SNR=8.6							
AAK	**Ala-Archa**	**5.26**	**23**	⇑P		**Pn**	**02 12 21.2**	**-0.4**
	2.9nm,0.3s							
AAK				⇑S		**Sn**	**02 13 22.1**	**+0.5**
	2.9nm,0.5s							
KK31	**Karatay Array**	**5.35**	**351**	⇓P		**Pn**	**02 12 22.6**	**-0.1**
	1.8nm,0.4s,baz=173,slow=12,SNR=35							
KK31				S		**Sn**	**02 13 23.9**	**+0.3**
	1.7nm,0.3s,baz=178,slow=21,SNR=11							
MKAR	**Makanchi Array**	**11.90**	**38**	P		**Pn**	**02 13 50.1**	**+0.6**
	0.1nm,0.3s,baz=218,slow=8.6,SNR=3.4							
KURBB	**Kurchatov Arra**	**13.69**	**19**	P		**P**	**02 14 14.9**	**-1.2**
	0.0nm,0.3s,baz=293,slow=26,SNR=2.1							
AB31	**Akbulak array**	**14.24**	**327**	⇑P		**Pn**	**02 14 18.6**	**-0.7**
	0.2nm,0.5s,baz=217,slow=7.6,SNR=6.6							
ZALV	**Zalesovo Beam**	**18.48**	**25**	P		**P**	**02 15 09.2**	**+0.3**
	0.2nm,0.3s,baz=216,slow=12,SNR=3.2							
YKA	**Yellowknife Ar**	**79.90**	**3**	P		**P**	**02 22 57.6**	**+1.3**
	0.1nm,0.5s,baz=351,slow=5.3,SNR=4.3							

CSEM ***13*** *02:17:21.4±0.1, 39°.23N×34°.32E, h8km, MD2.7, Error ellipse: s-maj=2.9km s-min=2.1km az=142.0*

DDA ***13*** *02:17:21.4, 39°.23N×34°.30E, h7km, Md2.7*

ISK ***13*** *02:17:21.0, 39°.23N×34°.30E, h6km, MD2.8*

ISC 13 02:17:21.7±1.0, 39°24N±0°.03×34°31E±0°.02, h9km±10km, n29, σ0ᵗ50/46, Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
CDAG	**Cicekdag**	**0.39**	**7**	*i* P		**Pg**	**02 17 29.5**	**+0.1**
CDAG				*i* S		**Sb**	**02 17 35.5**	**-1.4**
CDAG	**Cicekdag**	**0.39**	**7**	P		**Pg**	**02 17 29.5**	**+0.1**
CDAG				S		**Sb**	**02 17 35.5**	**-1.4**
AVNS	**Nevsehir-Avano**	**0.60**	**136**	*i* P		**Pg**	**02 17 32.8**	**-0.6**
AVNS				*i* S		**Sg**	**02 17 42.2**	**+0.9**
AVNS	**Nevsehir-Avano**	**0.60**	**136**	P		**Pg**	**02 17 32.8**	**-0.6**
AVNS				S		**Sg**	**02 17 42.2**	**+0.9**
SERE	**Sereflikochisa**	**0.65**	**243**	*e*PG		**Pg**	**02 17 33.7**	**-0.6**
SERE				*e*SG		**Sg**	**02 17 43.1**	**+0.3**
SERE	**Sereflikochisa**	**0.65**	**243**	*e*Pg		**Pg**	**02 17 33.7**	**-0.6**
SERE				*e*Sg		**Sg**	**02 17 43.1**	**+0.3**
AKSY	**AKSARAY - Alti**	**0.73**	**216**	*i* P		**Pg**	**02 17 35.6**	**-0.2**
AKSY				*i* S		**Sg**	**02 17 45.5**	**+0.2**
AKSY	**AKSARAY - Alti**	**0.73**	**216**	P		**Pg**	**02 17 35.6**	**-0.2**
AKSY				S		**Sg**	**02 17 45.5**	**+0.2**
YOZ	**Yozgat**	**0.88**	**63**	*e*PG		**Pg**	**02 17 38.5**	**-0.2**
YOZ	**Yozgat**	**0.88**	**63**	*e*Pg		**Pg**	**02 17 38.5**	**-0.2**
BBAL	**Bala**	**0.97**	**289**	*i* P		**Pg**	**02 17 40.0**	**-0.3**
BBAL				*i* S		**Sb**	**02 17 53.6**	**0.0**
BBAL	**Bala**	**0.97**	**289**	P		**Pg**	**02 17 40.0**	**-0.3**
BBAL				S		**Sb**	**02 17 53.6**	**0.0**
CORM	**Corum**	**0.97**	**15**	*e*PG		**Pg**	**02 17 40.2**	**-0.1**
CORM	**Corum**	**0.97**	**15**	*e*Pg		**Pg**	**02 17 40.3**	**-0.1**
AFSR	**Afˇar-Bala (A**	**0.98**	**282**	*e*PG		**Pg**	**02 17 40.2**	**-0.3**
AFSR				*e*SG		**Sb**	**02 17 53.9**	**-0.1**
AFSR	**Afˇar-Bala (A**	**0.98**	**282**	*e*Pg		**Pg**	**02 17 40.3**	**-0.3**
AFSR				*e*Sg		**Sb**	**02 17 53.9**	**-0.1**
KKUL	**Konya-Kulu**	**1.08**	**267**	*i* P		**Pg**	**02 17 42.1**	**-0.4**
KKUL				*i* S		**Sn**	**02 17 59.1**	**+0.8**
KKUL	**Konya-Kulu**	**1.08**	**267**	P		**Pg**	**02 17 42.1**	**-0.4**
KKUL				S		**Sn**	**02 17 59.1**	**+0.8**
COAL	**Corum-Alaca**	**1.14**	**27**	*i* P		**Pg**	**02 17 43.2**	**-0.4**
COAL				*i* S		**Sb**	**02 17 58.6**	**0.0**
COAL	**Corum-Alaca**	**1.14**	**27**	P		**Pg**	**02 17 43.2**	**-0.4**
COAL				S		**Sb**	**02 17 58.6**	**0.0**
CHBY	**Cihanbeyli**	**1.29**	**240**	*e*PN		**Pn**	**02 17 45.7**	**-0.2**
CHBY	**Cihanbeyli**	**1.29**	**240**	*e*Pn		**Pn**	**02 17 45.7**	**-0.2**
LOD	**Lodumlu**	**1.36**	**299**	*e*PN		**Pb**	**02 17 47.2**	**-0.1**
LOD	**Lodumlu**	**1.36**	**299**	*e*Pn		**Pb**	**02 17 47.2**	**-0.1**
CANT	**Cankiri**	**1.46**	**339**	*e*PN		**Pb**	**02 17 48.8**	**-0.3**
KDHN	**Kadinhani**	**1.85**	**248**	*i* P		**Pn**	**02 17 54.3**	**+0.5**
KDHN				*i* S		**Sg**	**02 18 21.8**	**+0.4**
KDHN	**Kadinhani**	**1.85**	**248**	P		**Pn**	**02 17 54.3**	**+0.5**
KIZT	**Kizilcal**	**1.92**	**260**	*e*PN		**Pn**	**02 17 54.6**	**0.0**
KIZT	**Kizilcal**	**1.92**	**260**	*e*Pn		**Pn**	**02 17 54.7**	**0.0**

ISCJB ***13*** *02:24:31.7±0.8, 19°.10N±0°.08×145°.8E±0°.3, h109km, mb3.6/7, Error ellipse: s-maj=35.7km s-min=9.7km az=10.8*

IDC ***13*** *02:24:37.1±2.8, 18°.92N×145°.80E, h148km±27km, mb3.3/7, mb1 3.6/8, mb1mx3.2/57, mbtmp3.8/8, Error ellipse: s-maj=34.0km s-min=16.1km az=106.0*

ISC 13 02:24:33.4±0.8, 19°.11N±0°.10×145°.8E±0°.3, h109km, n14, σ1ᵗ64/9, mb3.6/7, Mariana Islands

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
GUMO	**Guam**	**5.56**	**189**	P		**Pn**	**02 25 56.1**	**+2.3**
	6.0nm,0.3s,baz=21,slow=17,SNR=2.7							
GUMO				S		**Sn**	**02 26 56.9**	**+0.4**
	16nm,0.3s,baz=181,slow=21,SNR=4.7							
H11S3	**WAKE ISLAND Hy 19.83**	**88**		T		T	02 49 48.8	
	baz=275,slow=74,SNR=15							
H11S1	**WAKE ISLAND Hy 19.84**	**88**		T		T	02 50 00.1	
	baz=275,slow=74,SNR=7.2							
H11S2	**WAKE ISLAND Hy 19.84**	**88**		T		T	02 49 51.4	
	baz=275,slow=74,SNR=10							
H11N1	**WAKE ISLAND Hy 19.95**	**85**		T		T	02 50 14.9	
	baz=273,slow=75,SNR=3.0							
H11N2	**WAKE ISLAND Hy 19.95**	**85**		T		T	02 50 15.3	
	baz=273,slow=75,SNR=6.2							
H11N3	**WAKE ISLAND Hy 19.96**	**85**		T		T	02 50 12.7	
	baz=273,slow=75,SNR=4.9							
WRA	**Warramunga Arr**	**40.40**	**197**	P		**P**	**02 31 58.7**	**-2.3**
	3.4nm,0.9s,baz=19,slow=8.3,SNR=36							
FITZ	**Fitzroy Crossi**	**41.93**	**209**	P		**P**	**02 32 12.3**	**-1.2**
	1.3nm,0.3s,baz=28,slow=6.3,SNR=23							
SONM	**Songino Array**	**42.85**	**321**	P		**P**	**02 32 21.8**	**+0.9**
	0.3nm,0.5s,baz=87,slow=38,SNR=2.6							
ASAR	**Alice Springs**	**44.06**	**196**	P		**P**	**02 32 29.1**	**-1.5**
	0.6nm,0.4s,baz=19,slow=8.6,SNR=7.7							
ILAR	**Eielson Array**	**63.25**	**26**	P		**P**	**02 34 49.9**	**-0.2**
	0.4nm,0.5s,baz=246,slow=6.2,SNR=4.7							
YKA	**Yellowknife Ar**	**77.60**	**28**	P		**P**	**02 36 18.2**	**+1.0**
	0.4nm,0.7s,baz=290,slow=5.4,SNR=8.0							
NVAR	**Mina Array Bea**	**82.84**	**52**	P		**P**	**02 36 45.8**	**-0.5**
	0.2nm,0.5s,baz=297,slow=6.5,SNR=2.8							

IDC ***13*** *02:32:26.6±0.9, 38°.25N×22°.29E, h0km, mb3.6/10, mb1 3.6/14, mb1mx3.5/47, mbtmp3.5/14, ML3.1/4, Error ellipse: s-maj=17.8km s-min=16.5km az=62.0*

CSEM ***13*** *02:32:27.4±0.1, 38°.26N×22°.19E, h5km, ML3.2, Error ellipse: s-maj=1.7km s-min=1.4km az=28.0*

ISCJB ***13*** *02:32:27.3±0.2, 38°.26N±0°.01×22°.19E±0°.02, h11km±1km, mb3.6/11, Error ellipse: s-maj=2.2km s-min=1.8km az=36.8*

ATH ***13*** *02:32:27.2, 38°.26N×22°.19E, h15km±1km, ML3.2/27, Error ellipse: s-maj=1.0km s-min=0.4km az=273.0*

THE ***13*** *02:32:27.6, 38°.26N×22°.20E, h7km, ML3.4/21, Error ellipse: s-maj=0.6km s-min=0.2km az=241.0*

ISK ***13*** *02:32:29.5, 38°.39N×22°.43E, h14km, ML3.3*

ISC 13 02:32:27.4±0.7, 38°26N±0°.01×22°19E±0°.01, h11km±4km, n220, σ0ᵗ75/312, mb3.6/11, Greece

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
KALE	**Kalithea**	**0.14**	**344**	P		**Pg**	**02 32 30.6**	**-0.2**
KALE				S		**Sg**	**02 32 33.0**	**-0.2**
KALE	**Kalithea**	**0.14**	**344**	P		**Pg**	**02 32 30.6**	**-0.2**
KALE				S		**Sg**	**02 32 32.8**	**-0.4**
KALE	**Kalithea**	**0.14**	**344**	P		**Pg**	**02 32 30.3**	**-0.5**
KALE				S		**Sg**	**02 32 32.6**	**-0.6**
KALE				AML	AML		02 32 33.8	
	comp=N,75846μm,0.2s							
KALE				AML	AML		02 32 34.0	
	comp=E,71662μm,0.2s							
TRIZ	**Trizonia**	**0.14**	**320**	P		**Pg**	**02 32 30.4**	**-0.4**
TRIZ				S		**Sg**	**02 32 32.7**	**-0.4**
LAKA	**Lakka**	**0.17**	**264**	P		**Pg**	**02 32 31.1**	**-0.1**
LAKA				S		**Sg**	**02 32 33.5**	**-0.3**
LAKA	**Lakka**	**0.17**	**264**	P		**Pg**	**02 32 31.1**	**-0.1**
LAKA				S		**Sg**	**02 32 33.5**	**-0.3**
LAKA	**Lakka**	**0.17**	**264**	P		**Pg**	**02 32 31.0**	**-0.2**
LAKA				S		**Sg**	**02 32 34.4**	**+0.6**
LAKA				AML	AML		02 32 35.3	
	comp=E,15295μm,0.4s							
LAKA				AML	AML		02 32 37.5	
	comp=N,14044μm,0.5s							
SERG	**Sergoula**	**0.19**	**326**	P		**Pg**	**02 32 31.4**	**-0.1**
SERG				S		**Sg**	**02 32 34.4**	**0.0**
SERG	**Sergoula**	**0.19**	**326**	P		**Pg**	**02 32 31.5**	**-0.1**
SERG				S		**Sg**	**02 32 34.3**	**-0.1**
KLV	**Kalavryta, Ach**	**0.21**	**188**	P		**Pg**	**02 32 32.0**	**+0.1**
KLV				S		**Sg**	**02 32 35.4**	**+0.3**
KLV	**Kalavryta, Ach**	**0.21**	**188**	P		**Pg**	**02 32 32.1**	**+0.1**
KLV				S		**Sg**	**02 32 35.4**	**+0.3**
KLV	**Kalavryta, Ach**	**0.21**	**188**	P		**Pg**	**02 32 32.1**	**+0.1**
KLV				S		**Sg**	**02 32 35.1**	**-0.1**
KLV				AML	AML		02 32 36.6	
	comp=N,6695μm,0.4s							
KLV				AML	AML		02 32 38.6	
	comp=E,8853μm,0.7s							
RODI	**Rodini**	**0.24**	**286**	P		**Pg**	**02 32 32.6**	**+0.2**
RODI				S		**Sg**	**02 32 36.5**	**+0.7**
RODI	**Rodini**	**0.24**	**286**	P		**Pg**	**02 32 32.6**	**+0.2**
RODI				S		**Sg**	**02 32 36.5**	**+0.7**
RODI				AML	AML		02 32 38.4	
	comp=E,37670μm,0.3s							
RODI				AML	AML		02 32 39.0	
	comp=N,25837μm,0.3s							
EFP	**Efpalio**	**0.28**	**307**	P		**Pg**	**02 32 33.1**	**0.0**
EFP				S		**Sg**	**02 32 37.5**	**+0.5**
EFP	**Efpalio**	**0.28**	**307**	P		**Pg**	**02 32 33.1**	**0.0**
EFP				S		**Sg**	**02 32 37.4**	**+0.5**
EFP	**Efpalio**	**0.28**	**307**	P		**Pg**	**02 32 33.1**	**0.0**
EFP				S		**Sg**	**02 32 37.4**	**+0.5**
EFP				AML	AML		02 32 38.1	
	comp=E,31505μm,0.3s							
EFP				AML	AML		02 32 40.9	
	comp=N,18565μm,0.3s							
DSF	**Desfina**	**0.31**	**60**	P		**Pg**	**02 32 33.4**	**-0.3**
DSF				S		**Sg**	**02 32 38.0**	**+0.1**
DSF	**Desfina**	**0.31**	**60**	P		**Pg**	**02 32 33.4**	**-0.3**
DSF				S		**Sg**	**02 32 38.0**	**+0.1**
DSF	**Desfina**	**0.31**	**60**	P		**Pg**	**02 32 33.4**	**-0.3**
DSF				S		**Sg**	**02 32 38.3**	**+0.5**
DSF				AML	AML		02 32 39.0	
	comp=E,39059μm,0.3s							
DSF				AML	AML		02 32 39.9	
	comp=N,29923μm,0.2s							
UPR	**University Cam**	**0.32**	**275**	P		**Pg**	**02 32 33.9**	**+0.1**
UPR	**University Cam**	**0.32**	**275**	P		**Pg**	**02 32 33.9**	**+0.1**
UPR				S		**Sg**	**02 32 38.1**	**0.0**
UPR	**University Cam**	**0.32**	**275**	P		**Pg**	**02 32 34.4**	**+0.5**
UPR				S		**Sg**	**02 32 38.1**	**0.0**
GUR	**Goura**	**0.34**	**159**	P		**Pg**	**02 32 34.2**	**-0.1**
GUR				S		**Sg**	**02 32 39.5**	**+0.6**
GUR	**Goura**	**0.34**	**159**	P		**Pg**	**02 32 34.3**	**-0.1**
GUR				S		**Sg**	**02 32 38.9**	**0.0**
GUR	**Goura**	**0.34**	**159**	P		**Pg**	**02 32 34.3**	**-0.1**
GUR				S		**Sg**	**02 32 39.2**	**+0.3**
GUR				AML	AML		02 32 40.0	
	comp=N,23151μm,0.4s							
GUR				AML	AML		02 32 40.1	
	comp=E,25690μm,0.5s							
ANX	**Ano Chora**	**0.40**	**328**	P		**Pg**	**02 32 35.1**	**-0.2**
ANX				S		**Sg**	**02 32 40.9**	**+0.3**
ANX	**Ano Chora**	**0.40**	**328**	P		**Pg**	**02 32 35.1**	**-0.2**
ANX				S		**Sg**	**02 32 40.8**	**+0.2**
ANX	**Ano Chora**	**0.40**	**328**	S		**Sg**	**02 32 41.6**	**+0.9**
THAL	**Thalero**	**0.43**	**120**	P		**Pg**	**02 32 36.1**	**+0.1**
THAL	**Thalero**	**0.43**	**120**	P		**Pg**	**02 32 36.1**	**+0.1**
THAL				S		**Sg**	**02 32 42.3**	**+0.6**
THAL	**Thalero**	**0.43**	**120**	P		**Pg**	**02 32 36.5**	**+0.5**
THAL				S		**Sg**	**02 32 42.4**	**+0.6**
THAL				AML	AML		02 32 48.5	
	comp=E,18809μm,0.4s							
THAL				AML	AML		02 32 48.7	
	comp=N,12473μm,0.4s							
DRO	**Drossia**	**0.48**	**231**	P		**Pg**	**02 32 36.8**	**-0.1**
DRO	**Drossia**	**0.48**	**231**	P		**Pg**	**02 32 36.9**	**0.0**
DRO				S		**Sg**	**02 32 44.0**	**+0.7**
DRO	**Drossia**	**0.48**	**231**	P		**Pg**	**02 32 36.9**	**0.0**
DRO				S		**Sg**	**02 32 44.0**	**+0.7**
DRO				AML	AML		02 32 46.5	
	comp=N,8973μm,0.2s							
DRO				AML	AML		02 32 50.4	
	comp=E,11642μm,0.2s							
PROD	**Prodromos**	**0.56**	**90**	P		**Pg**	**02 32 38.8**	**+0.5**
PROD	**Prodromos**	**0.56**	**90**	P		**Pg**	**02 32 38.9**	**+0.5**
RLS	**Riolos of Patr**	**0.60**	**251**	P		**Pg**	**02 32 38.8**	**-0.4**
RLS				S		**Sb**	**02 32 47.9**	**-0.6**
RLS	**Riolos of Patr**	**0.60**	**251**	P		**Pg**	**02 32 38.8**	**-0.4**
RLS				S		**Sb**	**02 32 47.9**	**-0.6**
RLS	**Riolos of Patr**	**0.60**	**251**	S		**Sb**	**02 32 48.1**	**-0.3**
RLS				AML	AML		02 32 51.7	
	comp=E,3960μm,0.5s							
RLS				AML	AML		02 32 57.0	
	comp=N,3236μm,0.7s							
PVO	**Paravola**	**0.63**	**305**	P		**Pg**	**02 32 39.5**	**-0.2**
PVO				S		**Sb**	**02 32 49.0**	**-0.4**
PVO	**Paravola**	**0.63**	**305**	P		**Pg**	**02 32 39.5**	**-0.2**
PVO				S		**Sb**	**02 32 49.0**	**-0.4**
PVO	**Paravola**	**0.63**	**305**	P		**Pb**	**02 32 40.3**	**-0.2**
AXS	**Araxos**	**0.64**	**265**	P		**Pg**	**02 32 39.7**	**-0.1**
AXS				S		**Sb**	**02 32 49.2**	**-0.4**
AXS	**Araxos**	**0.64**	**265**	P		**Pg**	**02 32 39.8**	**-0.1**
AXS				S		**Sg**	**02 32 49.2**	**-0.2**
AXS	**Araxos**	**0.64**	**265**	P		**Pg**	**02 32 39.8**	**-0.1**
AXS				S		**Sg**	**02 32 48.2**	**-0.2**
LTK	**Loutraki**	**0.66**	**111**	P		**Pg**	**02 32 40.1**	**-0.1**
LTK	**Loutraki**	**0.66**	**111**	P		**Pg**	**02 32 40.1**	**-0.1**
LTK				S		**Sb**	**02 32 49.7**	**-0.4**
LTK	**Loutraki**	**0.66**	**111**	P		**Pb**	**02 32 40.7**	**-0.2**
LTK				S		**Sb**	**02 32 49.7**	**-0.4**
LTK				AML	AML		02 32 54.0	
	comp=E,3555μm,0.4s							
LTK				AML	AML		02 32 56.0	
	comp=N,2594μm,0.4s							
EVR	**Evrytania**	**0.72**	**336**	P		**Pg**	**02 32 41.0**	**-0.5**
EVR				S		**Sb**	**02 32 52.0**	**-0.1**
EVR	**Evrytania**	**0.72**	**336**	P		**Pg**	**02 32 41.0**	**-0.5**
EVR				S		**Sg**	**02 32 51.1**	**+0.1**
EVR	**Evrytania**	**0.72**	**336**	P		**Pg**	**02 32 40.9**	**-0.5**
EVR				S		**Sg**	**02 32 51.1**	**+0.1**
EVR				AML	AML		02 32 54.6	
	comp=N,8351μm,0.2s							
TRIP	**Tripoli**	**0.73**	**175**	P		**Pg**	**02 32 41.5**	**-0.1**
TRIP				S		**Sg**	**02 32 51.6**	**+0.4**
TRIP	**Tripoli**	**0.73**	**175**	P		**Pg**	**02 32 41.5**	**-0.1**
TRIP				S		**Sg**	**02 32 51.6**	**+0.4**
TRIP				AML	AML		02 32 53.5	
	comp=E,3546μm,0.6s							
TRIP				AML	AML		02 32 53.9	
	comp=N,3952μm,0.4s							
LKR	**Lokris**	**0.75**	**58**	P		**Pg**	**02 32 41.0**	**-0.9**
LKR	**Lokris**	**0.75**	**58**	P		**Pg**	**02 32 41.0**	**-0.9**
LKR				S		**Sg**	**02 32 51.5**	**-0.2**
LKR	**Lokris**	**0.75**	**58**	P		**Pg**	**02 32 40.7**	**-1.2**
LKR				S		**Sg**	**02 32 51.5**	**-0.2**
LKR				AML	AML		02 32 55.7	
	comp=E,6215μm,0.2s							
LKR				AML	AML		02 32 55.8	
	comp=N,5046μm,0.2s							
AMT	**Artemida-Makis**	**0.82**	**208**	P		**Pg**	**02 32 42.8**	**-0.4**
AMT				S		**Sb**	**02 32 54.9**	**+0.2**
AMT	**Artemida-Makis**	**0.82**	**208**	P		**Pg**	**02 32 43.3**	**+0.1**
AMT				S		**Sg**	**02 32 53.3**	**-0.6**
AMT	**Artemida-Makis**	**0.82**	**208**	P		**Pg**	**02 32 43.3**	**+0.1**
AMT				S		**Sg**	**02 32 53.3**	**-0.6**
VIL2	**Platees**	**0.85**	**93**	P		**Pb**	**02 32 44.3**	**0.0**
VIL2				S		**Sn**	**02 32 57.0**	**-0.9**
VIL2				AML	AML		02 33 03.3	
	comp=N,4907μm,0.7s							
VIL2				AML	AML		02 33 04.6	
	comp=E,3703μm,0.5s							
PDO	**Prodromos**	**0.86**	**294**	P		**Pg**	**02 32 43.4**	**-0.6**
PDO				S		**Sb**	**02 32 56.7**	**+0.8**
PDO	**Prodromos**	**0.86**	**294**	P		**Pg**	**02 32 43.8**	**-0.2**
PDO				S		**Sb**	**02 32 56.1**	**+0.2**
PDO	**Prodromos**	**0.86**	**294**	P		**Pg**	**02 32 44.2**	**+0.1**
PDO				S		**Sb**	**02 32 56.1**	**+0.2**
PDO				AML	AML		02 32 59.6	
	comp=N,6190μm,0.3s							
PDO				AML	AML		02 32 59.8	
	comp=E,3250μm,0.2s							
VILL	**Villia**	**0.89**	**96**	P		**Pg**	**02 32 44.0**	**-0.6**
VILL				S		**Sb**	**02 32 57.4**	**+0.6**
VILL	**Villia**	**0.89**	**96**	P		**Pg**	**02 32 44.3**	**-0.3**
VILL				S		**Sb**	**02 32 57.0**	**+0.2**
VLX	**Vlachokerasia**	**0.90**	**170**	P		**Pg**	**02 32 44.1**	**-0.7**
VLX				S		**Sb**	**02 32 57.4**	**+0.3**
VLX	**Vlachokerasia**	**0.90**	**170**	P		**Pg**	**02 32 44.1**	**-0.7**
VLX				S		**Sg**	**02 32 56.0**	**-0.5**
VLX	**Vlachokerasia**	**0.90**	**170**	P		**Pg**	**02 32 44.0**	**-0.8**
VLX				S		**Sg**	**02 32 56.0**	**-0.5**
VLX				AML	AML		02 33 00.6	
	comp=E,7359μm,0.6s							
VLX				AML	AML		02 33 01.7	
	comp=N,4187μm,0.4s							
SMIA	**Simia**	**1.01**	**52**	P		**Pg**	**02 32 46.2**	**-0.8**
SMIA				S		**Sb**	**02 33 01.0**	**+0.6**
SMIA	**Simia**	**1.01**	**52**	P		**Pg**	**02 32 46.2**	**-0.8**
SMIA				S		**Sb**	**02 33 01.0**	**+0.6**
SMIA	**Simia**	**1.01**	**52**	P		**Pb**	**02 32 47.3**	**+0.2**
ITM	**Ithomi**	**1.09**	**191**	P		**Pg**	**02 32 47.6**	**-0.9**
ITM	**Ithomi**	**1.09**	**191**	P		**Pg**	**02 32 47.6**	**-0.9**
ITM				S		**Sn**	**02 33 03.5**	**-0.4**
ITM	**Ithomi**	**1.09**	**191**	P		**Pg**	**02 32 47.3**	**-1.2**
ITM				S		**Sn**	**02 33 03.5**	**-0.4**
ITM				AML	AML		02 33 10.4	
	comp=N,1453μm,0.7s							
ITM				AML	AML		02 33 11.5	
	comp=E,1279μm,0.7s							
KFL	**Anninata**	**1.11**	**263**	P		**Pb**	**02 32 48.4**	**-0.3**
KFL	**Anninata**	**1.11**	**263**	P		**Pg**	**02 32 48.9**	**0.0**
KFL	**Anninata**	**1.11**	**263**	P		**Pg**	**02 32 48.9**	**0.0**
DID	**Didima**	**1.12**	**132**	P		**Pb**	**02 32 48.2**	**-0.6**
DID				S		**Sn**	**02 33 04.8**	**+0.3**
DID	**Didima**	**1.12**	**132**	P		**Pb**	**02 32 48.4**	**-0.4**
DID				S		**Sb**	**02 33 03.5**	**+0.2**
DID	**Didima**	**1.12**	**132**	P		**Pb**	**02 32 48.4**	**-0.4**
DID				S		**Sb**	**02 33 03.5**	**+0.2**
DID				AML	AML		02 33 07.8	
	comp=E,3558μm,0.5s							
DID				AML	AML		02 33 08.2	
	comp=N,2812μm,0.5s							
KRND	**KRANIDI**	**1.16**	**139**	P		**Pb**	**02 32 49.0**	**-0.5**
KRND				S		**Sn**	**02 33 05.8**	**+0.4**
KRND	**KRANIDI**	**1.16**	**139**	P		**Pn**	**02 32 49.7**	**+0.1**
KRND				S		**Sb**	**02 33 04.2**	**-0.3**
KRND	**KRANIDI**	**1.16**	**139**	P		**Pn**	**02 32 49.7**	**+0.1**
KRND				S		**Sb**	**02 33 04.2**	**-0.3**
KRND				AML	AML		02 33 08.8	
	comp=N,3564μm,0.6s							
KRND				AML	AML		02 33 10.7	
	comp=E,3603μm,0.4s							
DSL	**Palaion Diasel**	**1.22**	**316**	P		**Pn**	**02 32 50.2**	**-0.3**
DSL	**Palaion Diasel**	**1.22**	**316**	P		**Pn**	**02 32 50.7**	**+0.1**
DSL				S		**Sn**	**02 33 08.1**	**+1.0**
DSL	**Palaion Diasel**	**1.22**	**316**	P		**Pn**	**02 32 50.7**	**+0.1**
DSL				S		**Sn**	**02 33 08.1**	**+1.0**
DSL				AML	AML		02 33 16.2	
	comp=N,2341μm,0.6s							
DSL				AML	AML		02 33 17.4	
	comp=E,1133μm,0.7s							
ATH	**Athens Observa**	**1.24**	**103**	P		**Pn**	**02 32 50.6**	**-0.1**
ATH				S		**Sn**	**02 33 07.4**	**0.0**
ATH	**Athens Observa**	**1.24**	**103**	P		**Pn**	**02 32 50.6**	**-0.1**
ATH				S		**Sn**	**02 33 07.4**	**0.0**
VLS	**Valsamata**	**1.26**	**267**	P		**Pn**	**02 32 50.3**	**-0.7**
VLS				S		**Sn**	**02 33 09.8**	**+1.8**
VLS	**Valsamata**	**1.26**	**267**	P		**Pn**	**02 32 50.4**	**-0.6**
VLS				S		**Sg**	**02 33 08.1**	**0.0**
FYTO	**Fytoko, Volos**	**1.29**	**27**	P		**Pn**	**02 32 51.5**	**+0.1**
**F

KZN	Kozani	2.07	351	P		Pb	02 33 04.4	-0.7	
KYTH	Kithira	2.08	161	P		Pn	02 33 03.7	+1.3	
KYTH	Kithira	2.08	161	P		Pn	02 33 03.7	+1.3	
SERI	Serifos	2.12	120	P		Pn	02 33 04.1	+1.2	
SERI	Serifos	2.12	120	P		Pn	02 33 04.1	+1.2	
KEK	Kerkira	2.36	309	P		Pb	02 33 09.2	-0.8	
HORT	Hortiatis	2.44	17	*e*PN		Pn	02 33 07.1	-0.2	
HORT				*e*SN		Sn	02 33 35.5	-1.7	
HORT	Hortiatis	2.44	17	*e*Pn		Pn	02 33 07.1	-0.2	
HORT				*e*Sn		Sn	02 33 35.5	-1.7	
OUR	Ouranopolis	2.50	33	*e*PN		Pn	02 33 08.2	+0.2	
OUR	Ouranopolis	2.50	33	*e*Pn		Pn	02 33 08.2	+0.2	
ANKY	Antikythira Is	2.55	159	P		Pn	02 33 09.4	+0.7	
ANKY	Antikythira Is	2.55	159	P		Pn	02 33 09.4	+0.7	
FNA	Florina	2.60	346	*e*PN		Pn	02 33 10.8	+1.2	
FNA	Florina	2.60	346	P		Pn	02 33 09.5	0.0	
FNA	Florina	2.60	346	P		Pn	02 33 10.7	+1.2	
FNA	Florina	2.60	346	P		Pn	02 33 10.7	+1.2	
GRG	Griva	2.70	3	*e*PN		Pn	02 33 11.5	+0.6	
GRG	Griva	2.70	3	*e*Pn		Pn	02 33 11.5	+0.6	
SOH	Sokhos	2.71	19	P		Pn	02 33 11.3	+0.2	
SOH	Sokhos	2.71	19	P		Pn	02 33 11.3	+0.2	
BIA	Bitola	2.84	347	*e*Pn		Pn	02 33 13.8	+1.0	
BIA	Bitola	2.84	347	*e*Pn		Pn	02 33 13.7	+1.0	
APE	Apeiranthos	2.91	113	*e*PN		Pn	02 33 15.5	+1.9	
APE				*e*SN		Sn	02 33 48.0	-0.6	
APE	Apeiranthos	2.91	113	*e*Pn		Pn	02 33 15.5	+1.9	
APE				*e*Sn		Sn	02 33 48.0	-0.6	
KNT	Kendrikon	2.95	10	*e*PN		Pn	02 33 14.9	+0.7	
KNT	Kendrikon	2.95	10	P		Pn	02 33 14.5	+0.2	
KNT	Kendrikon	2.95	10	P		Pn	02 33 14.5	+0.2	
KNT	Kendrikon	2.95	10	*e*Pn		Pn	02 33 15.0	+0.7	
CHOS	Chios island	3.04	86	P		Pn	02 33 16.1	+0.5	
CHOS	Chios island	3.04	86	P		Pn	02 33 16.1	+0.5	
OHR	Ohrid	3.05	340	*e*Pn		Pn	02 33 15.9	+0.3	
OHR	Ohrid	3.05	340	*e*Pn		Pn	02 33 15.9	+0.3	
SRS	Serrai	3.06	20	P		Pn	02 33 15.8	+0.1	
SRS	Serrai	3.06	20	P		Pn	02 33 15.8	+0.1	
VAY	Valandovo	3.07	5	*e*Pn		Pn	02 33 17.2	+1.3	
VAY	Valandovo	3.07	5	*e*Pn		Pn	02 33 17.2	+1.3	
GADA	Gvkgeada	3.47	55	*e*PN		Pn	02 33 21.4	+0.1	
GADA	Gvkgeada	3.47	55	*e*Pn		Pn	02 33 21.5	+0.1	
MMB	Musomiste	3.53	19	P		Pn	02 33 22.8	+0.5	
KKB	Krupnik	3.67	10	P		Pn	02 33 27.2	+3.0	
IDI	Anoyia	3.67	143	Pn		Pn	02 33 25.3	+1.1	
	comp=N,2.2nm,0.3s,baz=329,slow=9.1,SNR=27								
IDI				Sn		Sn	02 34 08.2	+0.6	
	comp=N,2.1nm,0.3s,baz=90,slow=21,SNR=3.7								
SMG	Samos	3.71	97	P		Pn	02 33 25.0	+0.3	
SMG	Samos	3.71	97	P		Pn	02 33 25.0	+0.3	
BLCB	Balcova	3.82	87	*e*PN		Pn	02 33 26.8	+0.6	
BLCB	Balcova	3.82	87	*e*Pn		Pn	02 33 26.8	+0.6	
GELI	Tayfur-Gelibol	3.95	56	*e*PN		Pn	02 33 28.8	+0.8	
GELI	Tayfur-Gelibol	3.95	56	*e*Pn		Pn	02 33 28.8	+0.8	
ALN	Alexandroupoli	3.98	47	*e*PN		Pn	02 33 29.3	+1.0	
ALN	Alexandroupoli	3.98	47	*e*Pn		Pn	02 33 29.3	+1.0	
KDZ	Kurdzhali	4.20	35	P		Pn	02 33 30.6	-0.8	
BODT	Bodrum	4.24	105	*e*PN		Pn	02 33 32.8	+0.9	
BODT	Bodrum	4.24	105	*e*Pn		Pn	02 33 32.8	+0.9	
AYDB	Zeytinkoy-Aydi	4.51	92	*e*PN		Pn	02 33 36.8	+1.0	
AYDB	Zeytinkoy-Aydi	4.51	92	*e*Pn		Pn	02 33 36.8	+1.0	
BARS	Barje	4.56	357	*e*Pn		Pn	02 33 36.7	+0.3	
STON	Ston	5.74	325	*e*Pn		Pn	02 33 53.5	+0.9	
STON				Sn		Sn	02 34 57.4	-0.9	
STON	Ston	5.74	325	*e*Pn		Pn	02 33 53.4	+0.9	
STON				Sn		Sn	02 34 57.4	-0.9	
DIVS	Divibare	6.07	345	*e*Pn		Pn	02 33 59.1	+2.0	
TEKS	Tekeris	6.60	343	*e*Pn		Pn	02 34 06.0	+1.7	
ESKT	Eskisehir	6.87	77	*i* P		Pn	02 34 10.3	+2.0	
SEYT	Eskypehyr	6.87	77	P		Pn	02 34 10.3	+2.0	
SAHE	Sakarya_HENDEK	7.18	66	*i* P		Pn	02 34 12.9	+0.5	
SAHE	Sakarya_HENDEK	7.18	66	P		Pn	02 34 12.9	+0.5	
BTAS	Taskesti	7.20	69	*i* P		Pn	02 34 15.5	+2.8	
BTAS	Taskesti	7.20	69	P		Pn	02 34 15.5	+2.8	
MLR	Muntele Rosu	7.75	20	Pn		Pn	02 34 22.6	+2.3	
	comp=N,0.1nm,0.3s,baz=155,slow=6.1,SNR=7.0								
BCAM	Yenicaga	8.05	68	*i* P		Pn	02 34 27.1	+2.7	
BCAM	Yenicaga	8.05	68	P		Pn	02 34 27.1	+2.7	
NVLJ	Novalja	8.36	321	*i* Pn		Pn	02 34 28.2	-0.3	
NVLJ	Novalja	8.36	321	*i* Pn		Pn	02 34 28.1	-0.3	
BRTR	Keskin Array B	9.04	77	Pn		Pn	02 34 41.1	+3.2	
	comp=N,0.3nm,0.3s,baz=261,slow=13,SNR=13								
GERES	GERESS Array B	12.23	333	Pn		Pn	02 35 26.1	+4.4	
	comp=N,0.1nm,0.3s,baz=136,slow=26,SNR=2.1								
ESDC	Sonseca Array	20.36	282	P		Pn	02 37 06.1	0.0	
	comp=N,1.2nm,0.7s,baz=76,slow=9.9,SNR=9.4								
HFS	Hagfors	22.55	349	P		P	02 37 26.8	-0.4	
	comp=N,2.3nm,0.9s,baz=147,slow=8.9,SNR=4.2								
FINES	FINESS Array B	23.34	5	P		P	02 37 35.5	+0.2	
	comp=N,0.7nm,0.7s,baz=90,slow=1.9,SNR=4.7								
NB2	NORSAR Subarra	23.82	347	P		P	02 37 39.6	-0.6	
	comp=Z,0.3nm,0.4s,baz=158,slow=11								
NB2	NORSAR Subarra	23.82	347	P		P	02 37 39.6	-0.6	
	comp=Z,0.3nm,0.4s,SNR=3.2								
EKA	Eskdalemuir Ar	24.14	323	P		P	02 37 45.0	+1.8	
	comp=Z,0.5nm,0.5s,baz=137,slow=10,SNR=3.9								
TORD	Torodi Ar. Bea	30.94	222	P		P	02 38 45.7	+1.2	
	comp=Z,0.4nm,0.5s,baz=33,slow=7.8,SNR=13								
ARCES	ARCESS Array B	31.39	2	P		P	02 38 47.7	-0.3	
	comp=Z,2.1nm,0.9s,baz=190,slow=10,SNR=4.8								
MKAR	Makanchi Array	44.14	59	P		P	02 40 36.4	+0.5	
	comp=Z,1.0nm,0.6s,baz=277,slow=7.4,SNR=12								
ZALV	Zalesovo Beam	44.66	48	P		P	02 40 39.8	-0.1	
	comp=Z,1.3nm,0.5s,baz=279,slow=7.5,SNR=5.4								
SONM	Songino Array	59.39	51	P		P	02 42 29.8	0.0	
	comp=Z,0.2nm,0.4s,baz=264,slow=3.0,SNR=3.0								
YKA	Yellowknife Ar	73.76	341	P		P	02 44 01.5	+0.3	
	comp=Z,0.2nm,0.5s,baz=35,slow=5.6,SNR=6.6								
ULM	Lac du Bonnet	76.41	324	P		P	02 44 13.9	-2.9	
	comp=Z,1.8nm,0.6s,baz=41,slow=1.5,SNR=3.2								

ISCJB ***13*** *02:41:11.0±0.6, 14°.11N±0°.05×89°.76W±0°.04, h18km±6km, mb3.9/6, Error ellipse: s-maj=7.9km s-min=5.3km az=21.6*
CASC ***13*** *02:41:11.2±1.3, 14°.07N×89°.73W, h7km±4km, ML4.2*
IDC ***13*** *02:41:20.4±3.1, 14°.45N×89°.40W, h71km×27km, mb3.5/6, mb1 3.9/10, mb1mx3.6/46, mbtmp4.0/10, Error ellipse: s-maj=46.0km s-min=19.4km az=41.0*

ISC 13 02:41:11.5±0.9, 14°.12N±0°.04×89°.71W±0°.03, h11km±6km, n38, σ0°.83/39, mb3.9/6, 7C-5D, Guatemala

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RBDL	Robledal	0.02	95	*e*P	Pg	02 41 13.6	0.0
RTR	El Retiro	0.23	164	⇓*i*P	Pg	02 41 16.3	0.0
MONT	Ecomontaæa	0.26	167	⇑*i*P	Pg	02 41 17.0	+0.1
SNJE	San Jose	0.27	158	⇓*i*P	Pg	02 41 17.0	0.0
SBLS	San Blas	0.29	163	⇓*i*P	Pg	02 41 17.2	-0.2
CUS1	Cusmapa	0.30	229	*e*P	Pg	02 41 17.2	-0.5
CUS1				*e*S	Sg	02 41 21.4	-0.3
BOQS	Boqueron	0.56	132	⇓*i*P	Pg	02 41 22.4	-0.1
COLS	Colinas	0.60	138	⇑*i*P	Pg	02 41 23.1	-0.1
SNET	Serv Nac Est T	0.63	132	⇑*i*P	Pg	02 41 23.4	-0.4
SNET				*e*S	Sg	02 41 32.4	+0.3
SNET				AML	AML	02 41 35.6	
	comp=Z,13μm,0.6s						
LFU	La Fuente	0.68	122	⇑*i*P	Pg	02 41 24.5	-0.3
IXG	Ixpaco	0.72	275	⇓*i*P	Pg	02 41 24.3	-1.2
IXG				*e*S	Sg	02 41 27.8	-7.3
LBRS	Las Brisas	0.75	120	⇑*i*P	Pg	02 41 25.6	-0.3
LFRS	El Faro	0.80	128	⇑*i*P	Pg	02 41 26.3	-0.6
MRL	Marmol	0.94	1	⇑*i*P	Pg	02 41 29.6	-0.2
SNVI	San Vicente	0.98	120	*e*P	Pg	02 41 29.8	-0.7
TECA	Tecapa	1.33	118	*i* P	Pn	02 41 35.4	-0.7
PACA	Pacayal	1.49	115	*e*P	Pn	02 41 38.1	-0.3
CAHU	Cacacuatique	1.50	103	*e*P	Pn	02 41 38.2	-0.3
CAHU				*e*S	Sg	02 41 59.1	-0.6
LCY	Lacayo	1.54	116	*e*P	Pn	02 41 39.3	+0.3
CSGN	Cosiguina Volc	2.38	118	*e*P	Pn	02 41 51.4	+0.9
CSGN				*e*S	Sg	02 42 28.2	+0.3
CRIN	San Cristobal	2.95	118	*e*P	Pn	02 41 59.8	+1.5
CRIN				*e*S	Sg	02 42 43.9	-2.3
CNGN	Cerro Negro	3.34	118	*e*P	Pn	02 42 04.8	+1.1
CNGN				AML	AML	02 43 06.6	
	comp=E,174nm,0.6s						
ESTN	Estel	3.40	107	*e*P	Pn	02 42 04.2	-0.4
BOAB	BOACO BROADBAN	3.27	112	*e*P	Pn	02 42 16.0	-0.5
JTS	JuntasAbangare	6.01	129	P	Pn	02 42 45.9	+5.5
	comp=E,1.5nm,0.3s,baz=294,slow=21,SNR=5.9						
JTS				S	Sb	02 43 59.0	-9.2
	comp=E,0.7nm,0.3s,baz=225,slow=23,SNR=1.8						

TEIG	Tepich	6.23	13	P		Pn	02 42 44.0	+0.6	
	comp=E,3.0nm,0.3s,baz=268,slow=23,SNR=59								
SDV	Santo Domingo	19.40	103	P		Pn	02 45 39.7	+0.7	
	comp=E,0.3nm,0.3s,baz=279,slow=5.4,SNR=15								
TXAR	Lajitas Array	19.91	322	P		Pn	02 45 46.4	+1.4	
	comp=E,0.1nm,0.3s,baz=144,slow=11,SNR=13								
NVAR	Mina Array Bea	35.01	319	P		P	02 48 06.3	+1.9	
	comp=E,1.3nm,0.9s,baz=131,slow=8.2,SNR=5.9								
YKA	Yellowknife Ar	51.45	346	P		P	02 50 16.3	-0.2	
	comp=E,0.9nm,0.8s,baz=142,slow=7.0,SNR=14								
RES	Resolute Bay	60.63	358	P		P	02 51 21.4	-0.6	
	comp=E,1.0nm,0.6s,baz=183,slow=10,SNR=6.8								
INK	Inuvik	60.97	343	P		P	02 51 24.3	-0.1	
	comp=E,2.3nm,1.0s,baz=121,slow=3.9,SNR=4.8								
ILAR	Eielson Array	63.62	336	P		P	02 51 41.4	-0.9	
	comp=E,1.3nm,1.1s,baz=135,slow=4.1,SNR=7.2								
ESDC	Sonseca Array	77.90	52	P		P	02 53 08.3	-1.4	
	comp=E,0.6nm,0.6s,baz=271,slow=5.3,SNR=3.6								
H11S1	WAKE ISLAND Hy	98.04	291	T		T	04 45 38.6		
	SNR=10								
H11S2	WAKE ISLAND Hy	98.04	291	T		T	04 45 35.9		
	SNR=6.8								
H11S3	WAKE ISLAND Hy	98.06	291	T		T	04 45 36.3		
	SNR=9.5								
WRA	Warramunga Arr	137.58	256	PKP		PKPdf	03 00 37.1	+0.6	
	comp=E,0.3nm,0.8s,baz=88,slow=2.1,SNR=3.3								

NIED ***13*** *02:46:00, 40°.10N×141°.90E, h5km, Mw3.8 Best double couple: M0 6.47000×10^14 NP1:φs74.00000°, δ33.00000°, λ-127.00000°. NP2:φs296.00000°, δ64.00000°, λ-68.00000°.*
ISCJB ***13*** *02:46:04.0±1.5, 40°.07N±0°.04×142°.0E±0°.1, h17km±8km, mb3.8/10, MS3.3/1, Error ellipse: s-maj=16.1km s-min=6.9km az=169.7*
JMA ***13*** *02:46:05.4, 40°.08N×141°.93E, h8km±1km, M4.0*
JMA Felt II J1.
IDC ***13*** *02:46:18.6±2.7, 39°.83N×141°.17E, h112km±25km, mb3.4/10, mb1 3.4/13, mb1mx3.2/53, mbtmp3.7/13, MS3.1/2, Ms1 3.1/2, ms1mx2.5/38, Error ellipse: s-maj=22.6km s-min=15.6km az=86.0*

ISC 13 02:46:05.0±1.4, 40°.08N±0°.05×141°.94E±0°.09, h13km±7km, n26, σ0°.44/17, mb3.9/10, 2C-2D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JTH	Tanohata	0.15	203	⇑P	Pg	02 46 08.8	+0.1
JTH				S	Sg	02 46 11.1	-0.1
JANG	Nango	0.44	313	P	Pg	02 46 13.9	+0.2
JANG				S	Sg	02 46 19.7	+0.1
JKZ	Kuzumaki	0.48	259	⇓P	Pg	02 46 14.7	+0.3
JKZ				S	Sg	02 46 21.0	+0.2
JOM	Ohasama	0.78	220	⇑P	Pg	02 46 20.2	0.0
JOM				S	Sg	02 46 30.2	-0.2
JTM	Tenmabayashi	0.97	317	⇓P	Pb	02 46 23.3	-0.4
JTM				S	Sb	02 46 35.9	-0.6
MJAR	Matsushiro Arr	4.59	221	P	Pn	02 47 18.1	+4.0
	1.2nm,0.3s,baz=37,slow=14,SNR=5.5						
MJAR				LR	LR	02 49 23.6	
	comp=Z,115nm,19.0s,baz=105,slow=46						
USRK	Ussuriysk Ar.	8.46	302	P	Pn	02 48 12.2	+5.0
	0.3nm,0.3s,baz=138,slow=45,SNR=4.1						
KSRS	Korea Array	11.25	261	P	Pn	02 48 49.1	+3.6
	0.5nm,0.3s,baz=323,slow=17,SNR=2.8						
SEY	Seymchan	23.73	12	P	P	02 51 24.9	+8.4
	0.8nm,0.2s,baz=166,slow=12,SNR=3.5						
H11N2	WAKE ISLAND Hy	29.48	126	T	T	03 22 48.4	
	baz=318,slow=75,SNR=376						
H11N1	WAKE ISLAND Hy	29.49	126	T	T	03 22 57.3	
	baz=318,slow=75,SNR=337						
H11N3	WAKE ISLAND Hy	29.50	126	T	T	03 22 49.0	
	baz=318,slow=75,SNR=418						
H11S1	WAKE ISLAND Hy	30.29	128	T	T	03 24 01.6	
	baz=320,slow=76,SNR=97						
H11S3	WAKE ISLAND Hy	30.29	128	T	T	03 23 59.0	
	baz=320,slow=76,SNR=79						
H11S2	WAKE ISLAND Hy	30.30	128	T	T	03 23 56.8	
	baz=320,slow=76,SNR=63						
TIXI	Tiksi	32.33	352	LR	LR	03 06 55.3	
	comp=Z,60nm,18.2s,baz=7.0,slow=38						
ZALV	Zalesovo Beam	40.23	310	P	P	02 53 41.4	+0.3
	1.2nm,0.5s,baz=88,slow=8.3,SNR=4.0						
MKAR	Makanchi Array	42.92	299	P	P	02 54 03.8	+0.5
	0.2nm,0.3s,baz=83,slow=9.9,SNR=2.5						
KURBB	Kurchatov Arra	44.51	306	P	P	02 54 16.0	0.0
	4.1nm,0.4s,baz=79,slow=8.5,SNR=28						
ILAR	Eielson Array	46.72	34	P	P	02 54 40.1	+6.8
	0.2nm,0.4s,baz=267,slow=5.5,SNR=4.5						
BVAR	Borovoye Array	48.87	310	P	P	02 54 50.5	+0.4
	1.3nm,0.4s,baz=73,slow=8.2,SNR=5.8						
WRA	Warramunga Arr	60.13	188	P	P	02 56 11.2	-0.9
	1.1nm,0.9s,baz=6.5,slow=7.1,SNR=9.1						
YKA	Yellowknife Ar	60.98	31	P	P	02 56 22.9	+5.3
	0.1nm,0.5s,baz=298,slow=6.3,SNR=2.5						
ASAR	Alice Springs	63.85	188	P	P	02 56 37.9	+0.7
	0.5nm,0.8s,baz=360,slow=6.4,SNR=5.8						
FINES	FINESS Array B	66.32	332	P	P	02 56 52.9	+0.1
	0.3nm,0.3s,baz=278,slow=34,SNR=3.2						
H06N1	SOCORRO T-PHAS	90.42	65	T	T	04 39 39.6	
	SNR=4.7						

MOS ***13*** *02:48:11.4±0.9, 55°.35N×110°.24E, h10km, mb4.0/5, Error ellipse: s-maj=11.8km s-min=6.8km az=62.3*
IDC ***13*** *02:48:11.7±0.9, 55°.40N×110°.28E, h0km, mb3.7/8, mb1 3.7/15, mb1mx3.5/56, mbtmp3.7/15, ML3.1/6, MS3.5/1, Ms1 3.5/1, ms1mx2.5/53, Error ellipse: s-maj=17.8km s-min=10.7km az=132.0*
BYKL ***13*** *02:48:12.2±0.2, 55°.29N×110°.21E*

ISC 13 02:48:12.3±1.1, 55°.30N±0°.02×110°.29E±0°.02, h7km±8km, n64, σ1°.84/107, mb3.7/8, 7C-1D, Lake Baikal region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
NIZ	Nizh Angarsk	0.64	318	*e*Pg	Pg	02 48 24.2	-0.4
NIZ				*e*Pb	Pn	02 48 28.6	+0.8
NIZ				*e*Sg	Sg	02 48 32.8	-0.1
NIZ				max			
	133nm,0.3s						
NIZ				Smax			
	1μm,0.4s						
YLYR	Ulyunkhan	0.66	130	⇓*i*Pg	Pg	02 48 24.6	-0.3
	193nm,0.6s						
YLYR				⇑*i*Pg	Pg	02 48 24.6	-0.3
	257nm,0.6s						
YLYR				⇑*i*Pg	Pg	02 48 24.6	-0.3
	321nm,0.6s						
YLYR				*i* Sg	Sg	02 48 34.0	+0.5
YLYR				Pmax			
	326nm,0.7s						
YLYR				Smax			
	2μm,0.3s						
YLYR	Ulyunkhan	0.66	130	⇑*i*PG	Pg	02 48 24.6	-0.3
YLYR				*e*		02 48 33.8	
YLYR				pmax	pmax		
	comp=Z,308nm,0.3s						
YLYR				smax	smax		
	comp=E,2μm,0.4s						
KMO	Kumora	0.78	41	⇑*i*Pg	Pg	02 48 27.1	-0.2
KMO				*e*Pb	Pn	02 48 30.0	+0.3
KMO				*e*Sg	Sg	02 48 38.1	+0.7
KMO				max			
	comp=E,249nm,0.4s						
KMO				Smax			
	comp=E,1μm,1.1s						
KMO	Kumora	0.78	41	*e*PG	Pg	02 48 27.1	-0.2
KMO				*e*		02 48 37.7	
KMO				pmax	pmax		
	comp=Z,240nm,0.4s						
KMO				smax	smax		
	comp=N,1μm,1.1s						
YOA	Uoyan	1.16	44	*e*Pg	Pg	02 48 34.5	-0.1
YOA				*e*Sg	Sn	02 48 51.6	+0.5
YOA				Pmax			
	comp=N,437nm,0.5s						
YOA				Smax			
	comp=N,3μm,0.6s						
YOA	Uoyan	1.16	44	*e*PG	Pg	02 48 33.2	-1.4
YOA				*i*		02 48 51.4	
YOA				pmax	pmax		
	comp=Z,201nm,0.2s						
YOA				smax	smax		
	comp=E,3μm,0.4s						

SYVR	Suvo	1.66	186	*e*Pg		Pn	02 48 42.2	+0.4	
SYVR				*e*Sg		Sb	02 49 04.4	+0.2	
SYVR				*e*			02 49 07.6		
SYVR				Pmax					
	comp=E,152nm,0.5s								
SYVR				max					
	comp=E,1μm,1.0s								
SYVR	Suvo	1.66	186	*e*PN		Pn	02 48 42.4	+0.6	
SYVR				*e*			02 49 04.5		
SYVR				pmax	pmax				
	comp=Z,156nm,0.6s								
SYVR				smax	smax				
	comp=N,977nm,0.4s								
UKT	Uakit	1.91	83	⇑*i*Pg		Pb	02 48 47.0	-0.5	
UKT				*e*Sg		Sg	02 49 13.1	-0.6	
UKT				Pmax					
	comp=N,490nm,1.2s								
UKT				Smax					
	comp=N,1μm,0.4s								
UKT	Uakit	1.91	83	⇑*i*PN		Pb	02 48 47.0	-0.5	
UKT				*e*			02 49 10.7		
UKT				pmax	pmax				
	comp=Z,492nm,0.5s								
UKT				smax	smax				
	comp=N,1μm,0.5s								
SVKR	Severomuysk	2.02	65	*e*Pg		Pb	02 48 48.8	-0.6	
SVKR				*e*Sg		Sg	02 49 16.9	-0.3	
SVKR				Pmax					
	comp=N,249nm,0.3s								
SVKR				Smax					
	comp=N,2μm,0.7s								
SVKR	Severomuysk	2.02	65	*e*PN		Pb	02 48 48.7	-0.6	
SVKR				*e*			02 48 49.7		
SVKR				*e*S		Sn	02 49 12.7	+0.4	
SVKR				*e*			02 49 16.8		
SVKR				pmax	pmax				
	comp=Z,258nm,0.6s								
SVKR				smax	smax				
	comp=N,3μm,1.0s								
OGRR	Ongureny	2.29	225	*e*Pn		Pn	02 48 50.5	0.0	
OGRR				*e*Pg		Pb	02 48 52.9	-1.0	
OGRR				*e*			02 48 56.3		
OGRR				*e*Sg		Sb	02 49 22.8	+0.4	
OGRR				max					
	comp=N,93nm,0.4s								
OGRR				Smax					
	comp=N,839nm,0.4s								
OGRR	Ongureny	2.29	225	*e*PN		Pn	02 48 50.8	+0.3	
OGRR				*e*			02 48 53.6		
OGRR				*e*			02 49 22.7		
OGRR				pmax	pmax				
	comp=Z,93nm,0.5s								
OGRR				smax	smax				
	comp=N,842nm,0.4s								
BOD	Bodaibo	3.25	38	*e*Pn		Pn	02 49 04.9	+1.2	
BOD				*e*Pg		Pb	02 49 10.5	+0.2	
BOD				*e*Sn		Sn	02 49 43.8	+1.2	
BOD				*e*Sg		Sb	02 49 53.2	+3.2	
BOD				Pmax					
	comp=N,25nm,0.6s								
BOD				Smax					
	comp=N,293nm,1.6s								
BOD	Bodaibo	3.25	38	*e*PN		Pn	02 49 04.3	+0.6	
BOD				*e*			02 49 11.7		
BOD				*e*			02 49 52.4		
BOD				pmax	pmax				
	comp=Z,27nm,0.6s								
BOD				smax	smax				
	comp=E,294nm,1.4s								
NLYR	Nelyaty	3.27	66	*e*PN		Pn	02 49 05.2	+1.3	
NLYR				*e*			02 49 13.7		
NLYR				*e*			02 49 53.5		
NLYR				pmax	pmax				
	comp=Z,72nm,0.8s								
NLYR				smax	smax				
	comp=N,521nm,1.6s								
ZRHB	Zarechye	3.32	215	*e*		Pb	02 49 11.8	+0.3	
ZRHB				*e*Sg		Sb	02 49 54.4	+2.3	
ZRHB				max					
	comp=N,69nm,0.5s								
ZRHB				Smax					
	comp=N,817nm,1.4s								
TRG	Tyrgan	3.45	224	*e*Pn		Pn	02 49 07.2	+0.8	
TRG				*e*Pg		Pb	02 49 12.9	-0.8	
TRG				*e*			02 49 16.3		
TRG				*e*Sn		Sn	02 49 44.5	-3.0	
TRG				*e*Sg		Sb	02 49 57.3	+1.5	
TRG				max					
	comp=N,36nm,0.4s								
TRG				Smax					
	comp=N,292nm,0.8s								
TRG	Tyrgan	3.45	224	*e*PN		Pn	02 49 07.2	+0.8	
TRG				*e*			02 49 13.0		
TRG				*e*S		Sn	02 49 45.1	-2.4	
TRG				*e*			02 49 56.5		
TRG				pmax	pmax				

TLY				Sn		**Sn**	**02 50 34.6**	**-0.4**
	comp=E,0.1nm,0.3s,baz=247,slow=20,SNR=11							
TLY				Lg		Lg	02 50 57.4	
	comp=E,0.2nm,0.3s,baz=90,slow=21,SNR=19							
TLY	**Talaya**	**5.38**	**230**	*e*Pn		**Pn**	**02 49 33.3**	**+0.4**
TLY				*e*Pg		**Pb**	**02 49 47.0**	**+0.5**
TLY				*e*Sn		**Sn**	**02 50 31.4**	**-3.6**
TLY				*e*Sg		**Sb**	**02 50 56.4**	**+5.2**
TLY				Pmax				
	comp=E,13nm,0.7s							
TLY				Smax				
	comp=E,147nm,1.2s							
TLY	**Talaya**	**5.38**	**230**	*e*PN		**Pn**	**02 49 34.6**	**+1.7**
TLY				*e*			02 49 48.8	
TLY				*e*S		**Sn**	**02 50 32.7**	**-2.3**
TLY				*e*			02 50 56.6	
TLY				pmax	pmax			
	comp=Z,11nm,0.5s							
TUP	**Tupik**	**5.65**	**95**	*e*Pn		**Pn**	**02 49 37.9**	**+1.3**
TUP				*e*			02 49 46.1	
TUP				*e*Pg		**Pb**	**02 49 53.5**	**+2.4**
TUP				*e*Sn		**Sn**	**02 50 39.2**	**-2.5**
TUP				*e*Sg		**Sg**	**02 51 08.6**	**-4.9**
TUP				Pmax				
	comp=Z,14nm,0.6s							
TUP				Smax				
	comp=Z,104nm,0.9s							
TUP	**Tupik**	**5.65**	**95**	*e*PN		**Pn**	**02 49 37.1**	**+0.5**
TUP				*e*			02 49 54.0	
TUP				*e*S		**Sn**	**02 50 39.1**	**-2.6**
TUP				*e*			02 51 08.0	
TUP				pmax	pmax			
	comp=Z,15nm,0.5s							
TUP				smax	smax			
	comp=N,105nm,0.8s							
KPC	**Khapcheranga**	**5.75**	**166**	*e*Pn		**Pn**	**02 49 37.3**	**-0.8**
KPC				*e*			02 49 57.7	
KPC				*e*			02 50 37.2	
KPC				*e*			02 50 56.2	
KPC				*e*Sg		Sg	02 51 10.4	-6.4
KPC				max				
	comp=N,7.0nm,0.8s							
KPC				Smax				
	comp=N,189nm,1.4s							
ARS	**Arshan**	**5.78**	**237**	*e*Pn		**Pn**	**02 49 39.5**	**+1.0**
ARS				*e*			02 49 53.4	
ARS				*e*Sn		**Sn**	**02 50 42.0**	**-2.9**
ARS				*e*Sg		Sb	02 51 09.4	+6.6
ARS				max				
	comp=N,41nm,0.6s							
ARS				Smax				
	comp=N,400nm,0.6s							
ARS	**Arshan**	**5.78**	**237**	*e*PN		**Pn**	**02 49 38.8**	**+0.3**
ARS				*e*			02 49 58.1	
ARS				*e*S		**Sn**	**02 50 42.1**	**-2.9**
ARS				*e*			02 51 08.6	
ARS				pmax	pmax			
	comp=Z,41nm,0.5s							
ARS				smax	smax			
	comp=E,401nm,0.5s							
ZAK	**Zakamensk**	**6.50**	**224**	*e*Pg		**Pb**	**02 50 08.3**	**+2.5**
ZAK				*e*Sn		Sn	02 51 09.7	+6.8
ZAK				*e*Sg		Sg	02 51 33.6	-7.4
ZAK				Pmax				
	comp=E,3.0nm,0.4s							
ZAK				Smax				
	comp=E,75nm,1.3s							
ZAK	**Zakamensk**	**6.50**	**224**	*e*PN		**Pn**	**02 49 49.6**	**+1.2**
ZAK				*e*			02 50 11.8	
ZAK				*e*			02 51 33.6	
ZAK				pmax	pmax			
	comp=Z,5.0nm,0.7s							
ZAK				smax	smax			
	comp=E,80nm,1.2s							
MOY	**Mondy**	**6.64**	**241**	*e*Pn		**Pn**	**02 49 51.4**	**+1.1**
MOY				*e*			02 50 08.8	
MOY				*e*Sg		Sb	02 51 36.2	+8.7
MOY				max				
	comp=E,22nm,0.9s							
MOY				Smax				
	comp=E,111nm,1.2s							
MOY	**Mondy**	**6.64**	**241**	*e*PN		**Pn**	**02 49 51.6**	**+1.3**
MOY				*e*			02 50 12.1	
MOY				*e*S		**Sn**	**02 51 04.8**	**-1.4**
MOY				*e*			02 51 36.4	
MOY				pmax	pmax			
	comp=Z,20nm,0.7s							
MOY				smax	smax			
	comp=N,110nm,1.3s							
ORL	**Orlik**	**6.78**	**250**	⇑ *i*Pn		**Pn**	**02 49 53.4**	**+1.2**
ORL				*e*			02 51 10.1	
ORL				*e*Sg		Sb	02 51 40.8	+9.1
ORL				Smax				
	comp=N,99nm,1.2s							
ORL	**Orlik**	**6.78**	**250**	*e*PN		**Pn**	**02 49 53.5**	**+1.2**
ORL				*e*			02 50 15.6	
ORL				*e*S		**Sn**	**02 51 08.2**	**-1.5**
ORL				*e*			02 51 41.3	
ORL				pmax	pmax			
	comp=Z,2.0nm,0.3s							
ORL				smax	smax			
	comp=N,128nm,1.7s							
ULN	**Ulaanbaatar**	**7.72**	**196**	*e*		**Sn**	**02 51 33.8**	**+1.0**
ULN				*e*			02 51 48.1	
ULN				*e*Sg		Sg	02 52 10.5	-9.3
SONM	**Songino Array**	**7.86**	**200**	Pn		**Pn**	**02 50 10.0**	**+2.9**
	comp=N,0.4nm,0.3s,baz=11,slow=12,SNR=8.3							
SONM				Pg		Pg	02 50 37.5	-5.2
	comp=N,0.8nm,0.3s,baz=11,slow=15,SNR=6.6							
SONM				Sn		**Sn**	**02 51 36.5**	**+0.1**
	comp=N,0.7nm,0.3s,baz=34,slow=24,SNR=4.8							
SONM				Lg		Lg	02 52 21.1	
	comp=N,2.0nm,0.3s,baz=16,slow=29,SNR=9.3							
KLR	**Kul'dur**	**14.44**	**106**	Pn		**Pn**	**02 51 37.6**	**+0.7**
	comp=N,0.2nm,0.3s,baz=342,slow=11,SNR=3.2							
KLR				Lg		Lg	02 55 51.0	
	comp=N,0.2nm,0.3s,baz=33,slow=19,SNR=5.4							
ZALV	**Zalesovo Beam**	**14.79**	**275**	Pn		**Pn**	**02 51 42.2**	**+0.5**
	comp=N,0.1nm,0.3s,baz=76,slow=11,SNR=18							
ZALV				Lg		Lg	02 55 59.5	
	comp=N,0.2nm,0.3s,baz=82,slow=26,SNR=5.4							
NRIK	**Noril'sk**	**17.42**	**333**	Lg		Lg	02 57 21.6	
	comp=N,0.3nm,0.3s,baz=221,slow=13,SNR=3.5							
USRK	**Ussuriysk Ar.**	**17.80**	**120**	Pn		**P**	**02 52 22.2**	**+1.1**
	baz=148,slow=45,SNR=3.0							
TIXI	**Tiksi**	**18.23**	**19**	Pn		**Pn**	**02 52 21.4**	**-3.9**
	comp=N,0.3nm,0.3s,baz=214,slow=7.9,SNR=3.6							
TIXI				Lg		Lg	02 57 42.0	
	comp=N,0.2nm,0.3s,baz=279,slow=8.7,SNR=5.1							
MKAR	**Makanchi Array**	**19.45**	**256**	P		**Pn**	**02 52 40.2**	**-0.2**
	comp=N,0.1nm,0.3s,baz=58,slow=9.9,SNR=7.7							
KURK	**Kurchatov**	**19.50**	**270**	P		**Pn**	**02 52 41.2**	**+0.3**
KURBB	**Kurchatov Arra**	**19.59**	**269**	P		**P**	**02 52 41.2**	**+0.5**
	comp=N,0.1nm,0.3s,baz=64,slow=11,SNR=9.8							
KURBB				Lg		Lg	02 58 37.5	
	comp=N,0.0nm,0.3s,baz=73,slow=32,SNR=4.3							
SEY	**Seymchan**	**22.54**	**53**	P		**P**	**02 53 11.6**	**-0.8**
	comp=N,0.8nm,0.5s,baz=189,slow=13,SNR=3.0							
BVAR	**Borovoye Array**	**23.25**	**281**	P		**P**	**02 53 20.9**	**+0.9**
	comp=N,2.3nm,0.6s,baz=61,slow=13,SNR=10							
ARCES	**ARCESS Array B**	**38.16**	**325**	P		**P**	**02 55 31.5**	**-0.3**
	comp=N,2.9nm,1.1s,baz=59,slow=8.7,SNR=2.7							
FINES	**FINESS Array B**	**41.66**	**314**	P		**P**	**02 56 00.5**	**-0.2**
	comp=N,0.6nm,0.4s,baz=70,slow=8.0,SNR=6.1							
GNI	**Garni**	**44.90**	**279**	LR		LR	03 20 06.8	
	comp=N,46nm,18.2s,baz=81,slow=43							
AKASG	**Malin Array Be**	**46.40**	**300**	P		**P**	**02 56 39.1**	**+0.1**
	comp=N,0.3nm,0.4s,baz=46,slow=9.5,SNR=3.6							
HFS	**Hagfors**	**47.36**	**317**	P		**P**	**02 56 45.6**	**-0.8**
	comp=N,3.3nm,1.0s,baz=59,slow=12,SNR=4.8							
YKA	**Yellowknife Ar**	**57.42**	**23**	P		**P**	**02 58 00.4**	**-0.5**
	comp=N,0.2nm,0.7s,baz=333,slow=6.9,SNR=2.9							
TORD	**Torodi Ar. Bea**	**89.56**	**293**	P		**P**	**03 01 11.2**	**+0.7**
	comp=N,0.3nm,0.8s,baz=359,slow=5.8,SNR=2.6							

CSEM ***13*** *02:51:44.9±0.1, 45°.82N×0°.21W, h10km, ML2.7/24, Error ellipse: s-maj=2.4km s-min=1.9km az=65.0*
LDG ***13*** *02:51:46.3±0.1, 45°.81N×0°.21W, h4km, Md2.8/3, Ml2.7/24, Error ellipse: s-maj=1.1km s-min=0.8km az=65.0*
STR ***13*** *02:51:46.1±0.4, 45°.93N×0°.19W, Ml2.8, Error ellipse: s-maj=0.0km s-min=0.0km az=0.0*
ISC 13 02:51:45.7±0.8, 45°.80N±0°.02×0°.22W±0°.02, h17km±4km, n100, σ1§30/156, France

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MATF	**Mathat**	**0.05**	**301**	Pg	**Pg**	**02 51 48.4**	**-0.5**
MATF				Sg	**Sg**	**02 51 50.0**	**-1.0**
MATF	**Mathat**	**0.05**	**301**	Pg	**Pg**	**02 51 48.4**	**-0.5**
MATF				Sg	**Sg**	**02 51 50.0**	**-1.0**
MFF	**Saint Martin d**	**0.80**	**4**	*e*Pg	**Pg**	**02 52 01.4**	**0.0**
MFF	**Saint Martin d**	**0.80**	**4**	*e*Pn	**Pg**	**02 52 01.9**	**+0.5**
MFF				*e*Sg	**Sg**	**02 52 11.3**	**-0.7**
	47nm,0.2s						
MFF	**Saint Martin d**	**0.80**	**4**	*e*Pg	**Pg**	**02 52 01.4**	**0.0**
MFF	**Saint Martin d**	**0.80**	**4**	*e*Pn	**Pg**	**02 52 01.9**	**+0.5**
MFF				*e*Sg	**Sg**	**02 52 11.3**	**-0.7**
	24nm,0.2s						
LFF	**La Frestale**	**1.10**	**141**	*e*Pn	**Pg**	**02 52 06.0**	**-1.0**
LFF	**La Frestale**	**1.10**	**141**	*e*Pg	**Pg**	**02 52 06.7**	**-0.3**
LFF				*e*Sg	**Sg**	**02 52 21.3**	**0.0**
	35nm,0.2s						
LFF	**La Frestale**	**1.10**	**141**	*e*Pn	**Pg**	**02 52 06.0**	**-1.0**
LFF	**La Frestale**	**1.10**	**141**	*e*Pg	**Pg**	**02 52 06.7**	**-0.3**
LFF				*e*Sg	**Sg**	**02 52 21.3**	**0.0**
	18nm,0.2s						
RJF	**Les Rejaudoux**	**1.32**	**112**	*e*Pn	**Pn**	**02 52 09.3**	**-0.1**
RJF	**Les Rejaudoux**	**1.32**	**112**	*e*Pg	**Pn**	**02 52 10.5**	**+1.1**
RJF				*e*Sg	**Sb**	**02 52 27.0**	**+0.4**
	72nm,0.2s						
RJF	**Les Rejaudoux**	**1.32**	**112**	*e*Pn	**Pn**	**02 52 09.3**	**-0.1**
RJF	**Les Rejaudoux**	**1.32**	**112**	*e*Pg	**Pn**	**02 52 10.5**	**+1.1**
RJF				*e*Sg	**Sb**	**02 52 27.0**	**+0.4**
	36nm,0.2s						
TCF	**Toulx Ste Croi**	**1.76**	**73**	*e*Pn	**Pn**	**02 52 16.2**	**+0.7**
TCF				*e*Sn	**Sn**	**02 52 36.7**	**-0.8**
TCF				*e*Sg	**Sb**	**02 52 41.4**	**+2.0**
	9.6nm,0.2s						
TCF	**Toulx Ste Croi**	**1.76**	**73**	*e*Pn	**Pn**	**02 52 16.2**	**+0.7**
TCF				*e*Sn	**Sn**	**02 52 36.7**	**-0.8**
TCF				*e*Sg	**Sb**	**02 52 41.4**	**+2.0**
	4.8nm,0.2s						
CAF	**Calviac**	**1.84**	**118**	*e*Pn	**Pn**	**02 52 17.0**	**+0.5**
CAF	**Calviac**	**1.84**	**118**	*e*Pg	**Pb**	**02 52 19.8**	**+1.0**
CAF				*e*Sg	**Sb**	**02 52 43.2**	**+1.7**
	21nm,0.2s						
CAF	**Calviac**	**1.84**	**118**	*e*Pn	**Pn**	**02 52 17.0**	**+0.5**
CAF	**Calviac**	**1.84**	**118**	*e*Pg	**Pb**	**02 52 19.8**	**+1.0**
CAF				*e*Sg	**Sb**	**02 52 43.2**	**+1.7**
	10nm,0.2s						
BGF	**Bois d'Agland**	**2.26**	**69**	*e*Pn	**Pn**	**02 52 22.7**	**+0.4**
BGF				*e*Sg	**Sb**	**02 52 56.5**	**+2.7**
	44nm,0.4s						
BGF	**Bois d'Agland**	**2.26**	**69**	*e*Pn	**Pn**	**02 52 22.7**	**+0.4**
BGF				*e*Sg	**Sb**	**02 52 56.5**	**+2.7**
	22nm,0.4s						
PYM	**Petit Puy Mans**	**2.26**	**90**	Pn	**Pn**	**02 52 23.3**	**+0.9**
PYM	**Petit Puy Mans**	**2.26**	**90**	Pg	**Pg**	**02 52 28.5**	**-0.6**
PYM				Sg	**Sg**	**02 52 59.7**	**+1.2**
PYM	**Petit Puy Mans**	**2.26**	**90**	Pn	**Pn**	**02 52 23.3**	**+0.9**
PYM	**Petit Puy Mans**	**2.26**	**90**	Pg	**Pg**	**02 52 28.5**	**-0.6**
PYM				Sg	**Sg**	**02 52 59.7**	**+1.2**
AGO	**Saint Agoulin**	**2.35**	**83**	Pn	**Pn**	**02 52 24.3**	**+0.7**
AGO				Sg	**Sg**	**02 53 02.0**	**+0.6**
AGO	**Saint Agoulin**	**2.35**	**83**	Pn	**Pn**	**02 52 24.3**	**+0.7**
AGO				Sg	**Sg**	**02 53 02.0**	**+0.6**
HYF	**Humbligny**	**2.46**	**52**	*e*Pn	**Pn**	**02 52 25.3**	**+0.3**
HYF	**Humbligny**	**2.46**	**52**	*e*Pg	**Pb**	**02 52 31.5**	**+2.0**
HYF				*e*Sg	**Sg**	**02 53 02.9**	**-1.9**
HYF	**Humbligny**	**2.46**	**52**	*e*Pn	**Pn**	**02 52 25.3**	**+0.3**
HYF	**Humbligny**	**2.46**	**52**	*e*Pg	**Pb**	**02 52 31.5**	**+2.0**
HYF				*e*Sg	**Sg**	**02 53 02.9**	**-1.9**
LBL	**Lubilhac**	**2.50**	**102**	Pn	**Pn**	**02 52 26.5**	**+0.8**
LBL	**Lubilhac**	**2.50**	**102**	Pg	**Pg**	**02 52 33.5**	**-0.3**
LBL	**Lubilhac**	**2.50**	**102**	Pn	**Pn**	**02 52 26.5**	**+0.8**
LBL	**Lubilhac**	**2.50**	**102**	Pg	**Pg**	**02 52 33.5**	**-0.3**
GRR	**Gorron**	**2.62**	**351**	*e*Pn	**Pn**	**02 52 27.2**	**0.0**
GRR	**Gorron**	**2.62**	**351**	*e*Pg	**Pb**	**02 52 34.5**	**+2.3**
GRR				*e*Sg	**Sg**	**02 53 08.3**	**-1.7**
	9.1nm,0.3s						
GRR	**Gorron**	**2.62**	**351**	*e*Pn	**Pn**	**02 52 27.2**	**0.0**
GRR	**Gorron**	**2.62**	**351**	*e*Pg	**Pb**	**02 52 34.5**	**+2.3**
GRR				*e*Sg	**Sg**	**02 53 08.3**	**-1.7**
	4.6nm,0.3s						
AVF	**Avril sur Loir**	**2.67**	**67**	*e*Pn	**Pn**	**02 52 27.9**	**0.0**
AVF				*e*Sn	**Sn**	**02 52 58.7**	**-1.1**
AVF				*e*Sg	**Sg**	**02 53 09.5**	**-1.9**
	8.0nm,0.6s						
AVF	**Avril sur Loir**	**2.67**	**67**	*e*Pn	**Pn**	**02 52 27.9**	**0.0**
AVF				*e*Sn	**Sn**	**02 52 58.7**	**-1.1**
AVF				*e*Sg	**Sg**	**02 53 09.5**	**-1.9**
	4.0nm,0.6s						
PLDF	**La Plantade**	**2.69**	**85**	Pn	**Pn**	**02 52 28.5**	**+0.2**
PLDF				Sg	**Sg**	**02 53 12.6**	**+0.4**
PLDF	**La Plantade**	**2.69**	**85**	Pn	**Pn**	**02 52 28.5**	**+0.2**
PLDF				Sg	**Sg**	**02 53 12.6**	**+0.4**
ATE	**Arette**	**2.74**	**187**	Pn	Pn	02 52 32.6	+3.7
	0.1nm,0.1s,SNR=7.9						
ATE	**Arette**	**2.74**	**187**	Pg	**Pg**	**02 52 37.2**	**-1.0**
	0.5nm,0.2s,SNR=7.9						
ATE				Lg	Lg	02 53 10.9	
	3.6nm,0.2s,SNR=7.9						
EALK	**Alkurruntz**	**2.74**	**200**	Pg	**Pg**	**02 52 37.4**	**-0.9**
	0.2nm,0.1s,SNR=7.9						
EALK				Sn	**Sn**	**02 53 02.0**	**+0.3**
	0.4nm,0.2s,SNR=7.9						
EALK				Lg	Lg	02 53 12.6	
	4.7nm,0.3s,SNR=7.9						
SJPF	**Ste Jean**	**2.78**	**195**	*e*Pn	**Pn**	**02 52 30.4**	**+0.9**
SJPF	**Ste Jean**	**2.78**	**195**	*e*Pg	**Pg**	**02 52 38.5**	**-0.6**
SJPF				*e*Sg	**Sg**	**02 53 13.9**	**-1.2**
	6.4nm,0.5s						
SJPF	**Ste Jean**	**2.78**	**195**	*e*Pn	**Pn**	**02 52 30.4**	**+0.9**
SJPF	**Ste Jean**	**2.78**	**195**	*e*Pg	**Pg**	**02 52 38.5**	**-0.6**
SJPF				*e*Sg	**Sg**	**02 53 13.9**	**-1.2**
	3.2nm,0.5s						
LDF	**La Druitiere**	**2.79**	**1**	*e*Pn	**Pn**	**02 52 29.7**	**+0.1**
LDF	**La Druitiere**	**2.79**	**1**	*e*Pg	Pb	02 52 37.8	+2.7
LDF				*e*Sg	**Sg**	**02 53 13.5**	**-1.9**
	5.9nm,0.3s						
LDF	**La Druitiere**	**2.79**	**1**	*e*Pn	**Pn**	**02 52 29.7**	**+0.1**
LDF	**La Druitiere**	**2.79**	**1**	*e*Pg	Pb	02 52 37.8	+2.7
LDF				*e*Sg	**Sg**	**02 53 13.5**	**-1.9**
	3.0nm,0.3s						
ELIZ	**Elizondo**	**2.80**	**200**	Lg	Lg	02 53 13.9	
	0.7nm,0.2s,SNR=7.9						
EPF	**Esparros**	**2.80**	**172**	*e*Pn	**Pn**	**02 52 29.8**	**0.0**
EPF	**Esparros**	**2.80**	**172**	*e*Pg	**Pg**	**02 52 38.7**	**-0.7**
EPF				*e*Sn	**Sn**	**02 53 03.0**	**-0.2**
EPF				*e*Sg	**Sg**	**02 53 13.8**	**-1.9**
	5.6nm,0.2s						
EPF	**Esparros**	**2.80**	**172**	*e*Pn	**Pn**	**02 52 29.8**	**0.0**
EPF	**Esparros**	**2.80**	**172**	*e*Pg	**Pg**	**02 52 38.7**	**-0.7**
EPF				*e*Sn	**Sn**	**02 53 03.0**	**-0.2**
EPF				*e*Sg	**Sg**	**02 53 13.8**	**-1.9**
	2.8nm,0.2s						
SSF	**Saint Saulge**	**2.87**	**63**	*e*Pn	**Pn**	**02 52 30.8**	**+0.1**
SSF				*e*Sn	**Sn**	**02 53 02.6**	**-2.2**
SSF				*e*Sg	**Sg**	**02 53 15.6**	**-2.3**
	3.7nm,0.3s						
SSF	**Saint Saulge**	**2.87**	**63**	*e*Pn	**Pn**	**02 52 30.8**	**+0.1**
SSF				*e*Sn	**Sn**	**02 53 02.6**	**-2.2**
SSF				*e*Sg	**Sg**	**02 53 15.6**	**-2.3**
	1.9nm,0.3s						
QUIF	**Quistinic**	**2.92**	**317**	*e*Pn	**Pn**	**02 52 31.8**	**+0.4**
QUIF	**Quistinic**	**2.92**	**317**	*e*Pg	Pb	02 52 40.1	+2.8
QUIF				*e*Sg	**Sg**	**02 53 18.0**	**-1.6**
	4.4nm,0.2s						
QUIF	**Quistinic**	**2.92**	**317**	*e*Pn	**Pn**	**02 52 31.8**	**+0.4**
QUIF	**Quistinic**	**2.92**	**317**	*e*Pg	Pb	02 52 40.1	+2.8
QUIF				*e*Sg	**Sg**	**02 53 18.0**	**-1.6**
	2.2nm,0.2s						
SGMF	**Saint Gilles**	**2.93**	**328**	*e*Pn	**Pn**	**02 52 31.7**	**+0.3**
SGMF	**Saint Gilles**	**2.93**	**328**	*e*Pg	**Pg**	**02 52 40.8**	**-1.0**
SGMF				*e*Sg	**Sg**	**02 53 18.0**	**-1.7**
	4.2nm,0.3s						
SGMF	**Saint Gilles**	**2.93**	**328**	*e*Pn	**Pn**	**02 52 31.7**	**+0.3**
SGMF	**Saint Gilles**	**2.93**	**328**	*e*Pg	**Pg**	**02 52 40.8**	**-1.0**
SGMF				*e*Sg	**Sg**	**02 53 18.0**	**-1.7**
	2.1nm,0.3s						
SMF	**Signal de Mont**	**2.94**	**72**	*e*Pn	**Pn**	**02 52 31.8**	**+0.1**
SMF				*e*Sn	**Sn**	**02 53 05.7**	**-0.9**
SMF				*e*Sg	**Sg**	**02 53 18.2**	**-2.1**
	4.7nm,0.3s						
SMF	**Signal de Mont**	**2.94**	**72**	*e*Pn	**Pn**	**02 52 31.8**	**+0.1**
SMF				*e*Sn	**Sn**	**02 53 05.7**	**-0.9**
SMF				*e*Sg	**Sg**	**02 53 18.2**	**-2.1**
	2.3nm,0.3s						
FLN	**La Foliniere**	**2.97**	**357**	*e*Pn	**Pn**	**02 52 32.3**	**+0.3**
	baz=174						
FLN	**La Foliniere**	**2.97**	**357**	*e*Pg	Pb	02 52 41.0	+2.9
	baz=180						
FLN				*e*Sg	**Sg**	**02 53 19.0**	**-2.0**
	7.5nm,0.3s,baz=170						
FLN	**La Foliniere**	**2.97**	**357**	*e*Pn	**Pn**	**02 52 32.3**	**+0.3**
FLN	**La Foliniere**	**2.97**	**357**	*e*Pg	Pb	02 52 41.0	+2.9
FLN				*e*Sg	**Sg**	**02 53 19.0**	**-2.0**
	3.8nm,0.3s						
MTLF	**Montolieu**	**3.02**	**144**	*e*Pn	**Pn**	**02 52 31.7**	**-1.0**
MTLF	**Montolieu**	**3.02**	**144**	*e*Pg	**Pg**	**02 52 42.3**	**-1.2**
MTLF				*e*Sg	**Sg**	**02 53 20.9**	**-1.7**
	5.3nm,0.3s						
MTLF	**Montolieu**	**3.02**	**144**	*e*Pn	**Pn**	**02 52 31.7**	**-1.0**
MTLF	**Montolieu**	**3.02**	**144**	*e*Pg	**Pg**	**02 52 42.3**	**-1.2**
MTLF				*e*Sg	**Sg**	**02 53 20.9**	**-1.7**
	2.7nm,0.3s						
IELO	**Elcoad**	**3.05**	**194**	Pn	Pn	02 52 35.6	+2.4
	2.9nm,0.2s,SNR=7.9						
IELO				Sn	**Sn**	**02 53 10.5**	**+1.3**
	0.5nm,0.1s,SNR=7.9						
LOR	**Lormes**	**3.18**	**61**	*e*Pn	**Pn**	**02 52 34.6**	**-0.3**
	baz=243						
LOR				*e*Sn	**Sn**	**02 53 10.4**	**-1.9**
LOR				*e*Sg	**Sg**	**02 53 25.3**	**-2.4**
	2.6nm,0.2s,baz=236						
LOR	**Lormes**	**3.18**	**61**	*e*Pn	**Pn**	**02 52 34.6**	**-0.3**
LOR				*e*Sn	**Sn**	**02 53 10.4**	**-1.9**
LOR				*e*Sg	**Sg**	**02 53 25.3**	**-2.4**
	1.3nm,0.2s						
ROSF	**Rostrenen**	**3.28**	**322**	*e*Pn	**Pn**	**02 52 36.7**	**+0.4**
ROSF	**Rostrenen**	**3.28**	**322**	*e*Pg	**Pg**	**02 52 47.2**	**-1.4**
ROSF				*e*Sg	**Sg**	**02 53 29.4**	**-1.7**
	2.9nm,0.2s						
ROSF	**Rostrenen**	**3.28**	**322**	*e*Pn	**Pn**	**02 52 36.7**	**+0.4**
ROSF	**Rostrenen**	**3.28**	**322**	*e*Pg	**Pg**	**02 52 47.2**	**-1.4**
ROSF				*e*Sg	**Sg**	**02 53 29.4**	**-1.7**
	1.5nm,0.2s						
LASF	**Ste Croix**	**3.37**	**119**	*e*Pn	Pn	02 52 38.9	+1.3
LASF	**Ste Croix**	**3.37**	**119**	*e*Pg	**Pg**	**02 52 48.8**	**-1.5**
LASF				*e*Sg	**Sg**	**02 53 31.8**	**-2.2**
	7.3nm,0.5s						
LASF	**Ste Croix**	**3.37**	**119**	*e*Pn	Pn	02 52 38.9	+1.3
LASF	**Ste Croix**	**3.37**	**119**	*e*Pg	**Pg**	**02 52 48.8**	**-1.5**
LASF				*e*Sg	**Sg**	**02 53 31.8**	**-2.2**
	3.7nm,0.5s						
CSOR	**Sort**	**3.56**	**164**	Pn	Pn	02 52 44.8	+4.5
	SNR=7.9						
CSOR				Sn	**Sn**	**02 53 24.5**	**+2.5**
	0.6nm,0.2s,SNR=7.9						
CSOR				Lg	Lg	02 53 39.0	
	2.0nm,0.3s,SNR=7.9						
VIVF	**Saint-Julien-l**	**3.58**	**104**	*e*Pn	**Pn**	**02 52 40.7**	**+0.2**
VIVF	**Saint-Julien-l**	**3.58**	**104**	*e*Pg	**Pg**	**02 52 52.6**	**-1.7**
VIVF				*e*Sn	**Sn**	**02 53 20.9**	**-1.4**
VIVF				*e*Sg	**Sg**	**02 53 38.2**	**-2.5**
	4.5nm,0.4s						
VIVF	**Saint-Julien-l**	**3.58**	**104**	*e*Pn	**Pn**	**02 52 40.7**	**+0.2**
VIVF	**Saint-Julien-l**	**3.58**	**104**	*e*Pg	**Pg**	**02 52 52.6**	**-1.7**
VIVF				*e*Sn	**Sn**	**02 53 20.9**	**-1.4**
VIVF				*e*Sg	**Sg**	**02 53 38.2**	**-2.5**
	2.2nm,0.4s						
CLLI	**Llivia**	**3.68**	**154**	Pn	Pn	02 52 44.8	+2.9
	0.1nm,0.1s,SNR=7.9						
CLLI	**Llivia**	**3.68**	**154**	Pg	Pb	02 52 54.0	+3.7
	0.3nm,0.1s,SNR=11						
CLLI				Lg	Lg	02 53 42.7	
	1.0nm,0.2s,SNR=7.9						
EARI	**Arriondas**	**4.35**	**237**	Pn	**Pn**	**02 52 51.2**	**+0.1**
	0.1nm,0.1s,SNR=7.9						
EARI				Sn	**Sn**	**02 53 39.9**	**-1.5**
	0.2nm,0.1s,SNR=7.9						
CFON	**Fontmartina**	**4.47**	**154**	Pg	**Pg**	**02 53 09.7**	**-1.7**
	1.7nm,0.2s,SNR=6.0						
CFON				Lg	Lg	02 54 10.9	
	3.3nm,0.2s,SNR=7.9						

JMA ***13*** *02:53:28.0±0.2, 36°.16N×141°.98E, h64km, M3.2*
IDC ***13*** *02:53:36.6±4.5, 36°.01N×141°.35E, h64km±39km, mb3.1/6, mb1 3.2/7, mb1mx3.0/47, mbtmp3.4/7, ML3.3/1, Error ellipse: s-ma

H11N1	**WAKE ISLAND Hy**	**28.57**	**125**	T	T	03 38 38.3		
	baz=317,slow=75,SNR=17							
H11N3	**WAKE ISLAND Hy**	**28.58**	**125**	T	T	03 38 35.8		
	baz=317,slow=75,SNR=14							
H11S3	**WAKE ISLAND Hy**	**29.35**	**127**	T	T	03 39 37.8		
	baz=253,slow=74,SNR=4.2							
H11S2	**WAKE ISLAND Hy**	**29.37**	**127**	T	T	03 39 37.1		
	baz=316,slow=74,SNR=3.8							
MKAR	**Makanchi Array**	**43.77**	**301**	P	**P**	**03 10 24.0**	**+0.3**	
	0.2nm,0.2s,baz=84,slow=10,SNR=3.7							
KURBB	**Kurchatov Arra**	**45.43**	**307**	P	**P**	**03 10 36.2**	**-0.6**	
	1.0nm,0.7s,baz=81,slow=8.1,SNR=12							
WRA	**Warramunga Arr**	**59.14**	**189**	P	**P**	**03 12 18.4**	**-0.5**	
	0.5nm,0.5s,baz=6.6,slow=7.0,SNR=13							

SKHL 13 03:10:37.4±0.8, 51°.95N×141°.78E, h10km, mb3.8/3, Sakhalin Island

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
TYV	**Tymovskoe**	**1.22**	**153**	*e*Pg	Pg	03 11 01.8	+1.0
TYV				AMB	AMB	03 11 06.2	
	60nm,0.5s						
TYV				*e*Sg	Sn	03 11 18.5	+1.5
TYV				A	A	03 11 21.2	
	100nm,0.6s						
NKL	**Nikolayevsk**	**1.38**	**331**	*i* Pg	Pg	03 11 05.0	+1.2
NKL				AMB	AMB	03 11 05.5	
	51nm,0.3s						
NKL				*e*Sg	Sg	03 11 25.0	+3.3
NKL				A	A	03 11 26.5	
	250nm,0.4s						
NKL				A	A	03 11 26.5	
	190nm,0.4s						
OKH	**Okha**	**1.75**	**23**	*e*Sg	Sg	03 11 39.2	+5.6
OKH				A	A	03 11 40.0	
	140nm,0.7s						
EKMR	**Ekimchan**	**5.51**	**285**	*e*Pg	Pg	03 12 26.0	+3.2
EKMR				AMB	AMB	03 12 27.3	
	3.0nm,0.5s						
EKMR				*e*Sg	Sg	03 13 41.8	+7.7
EKMR				A	A	03 13 55.3	
	18nm,0.8s						

IDC ***13*** *03:16:34.1±2.5,36°.81N×142°.43E,h0km,mb3.5/4, mb1 3.6/5,mb1mx3.3/46,mbtmp3.4/5,ML3.2/1,Error ellipse: s-maj=70.3km s-min=25.8km az=59.0*
JMA ***13*** *03:16:51.7,37°.02N×140°.60E,h10km±1km,M2.7*
ISC 13 03:16:44.0±2.1, 36°.96N±0°.07×141°.2E±0°.1, h10km, n11, σ2s09/12, mb3.5/4, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.36**	**293**	P	**Pn**	**03 16 55.7**	**+0.2**
ONAJ				S	**Sg**	**03 16 58.6**	**+2.4**
JFK	**Kawauchi**	**0.49**	**326**	P	**Pn**	**03 16 59.8**	**+2.6**
JHO	**Hitachi**	**0.62**	**237**	P	**Pn**	**03 16 59.5**	**+0.5**
JHO				*e*S	**Sg**	**03 17 05.0**	**+0.6**
JFT	**Otama**	**0.90**	**309**	P	**Pg**	**03 17 02.4**	**+1.0**
JFT				S	**Sg**	**03 17 09.5**	**-3.6**
JSB	**Shiboa**	**1.04**	**271**	P	**Pb**	**03 17 02.9**	**-1.2**
MJAR	**Matsushiro Arr**	**2.45**	**261**	Pn	**Pb**	**03 17 27.8**	**-0.4**
	2.2nm,0.3s,baz=75,slow=18,SNR=14						
MAT	**Matsushiro**	**2.45**	**261**	P	**Pn**	**03 17 26.2**	**+2.1**
MKAR	**Makanchi Array**	**44.03**	**302**	P	**P**	**03 24 49.3**	**-2.4**
	0.1nm,0.3s,baz=101,slow=6.0,SNR=3.4						
KURBB	**Kurchatov Arra**	**45.92**	**308**	P	**P**	**03 25 06.3**	**-0.4**
	0.9nm,0.5s,baz=81,slow=8.3,SNR=4.3						
WRA	**Warramunga Arr**	**56.96**	**188**	P	P	03 26 22.6	-7.1
	0.3nm,0.6s,baz=8.5,slow=6.8,SNR=6.4						
ASAR	**Alice Springs**	**60.69**	**188**	P	P	03 26 45.9	-10
	0.2nm,0.5s,baz=8.9,slow=6.6,SNR=3.6						

NIED ***13*** *03:16:00,36°.10N×141°.10E,h11km,Mw4.2 Best double couple: M0 2.17000×10^15 NP1:φs200.00000°,δ11.00000°, λ-92.00000°. NP2:φs23.00000°,δ79.00000°,λ-90.00000°.*
ISCJB ***13*** *03:16:57.7±0.4,36°.13N±0°.03×141°.15E±0°.05,h31km, mb4.2/46,MS3.1/4,Error ellipse: s-maj=5.9km s-min=5.0km az=6.9*
JMA ***13*** *03:16:57.8±0.1,36°.07N×141°.14E,h43km±1km,M4.2*
JMA Felt II J1.
NEIC ***13*** *03:17:00.4±1.3,35°.93N×141°.07E,h42km±12km,mb4.5/7, Error ellipse: s-maj=13.5km s-min=10.0km az=48.0*
BJI ***13*** *03:17:02.7,36°.01N×140°.39E,h42km,mb4.6/11,mB5.0/6, Ms4.7/4,Ms7 4.3/4*
MOS ***13*** *03:17:03.8±0.8,36°.40N×140°.81E,h65km,mb4.5/29,Error ellipse: s-maj=11.0km s-min=6.5km az=130.8*
IDC ***13*** *03:17:03.3±1.7,36°.05N×140°.92E,h62km±15km,mb3.8/23, mb1 3.9/27,mb1mx3.8/49,mbtmp4.0/27,MS3.1/3, Ms1 3.1/3,ms1mx2.8/46,Error ellipse: s-maj=14.9km s-min=8.7km az=67.0*
ISC 13 03:16:59.6±0.6, 36°.15N±0°.04×141°.00E±0°.07, h31km, n89, σ1s21/78, mb4.2/46, MS3.1/4, 5C-1D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
CHOJ	**Chosi**	**0.46**	**194**	P	**Pb**	**03 17 07.7**	**-1.8**
CHOJ				S	**Sb**	**03 17 15.0**	**-1.2**
JHO	**Hitachi**	**0.57**	**323**	P	**Pn**	**03 17 11.8**	**+0.1**
JHO				S	**Sn**	**03 17 21.0**	**+0.9**
JYT	**Yasato**	**0.66**	**277**	P	**Pb**	**03 17 12.8**	**+0.2**
JYT				S	**Sn**	**03 17 23.1**	**+1.1**
MJAR	**Matsushiro Arr**	**2.29**	**281**	P	**Pb**	**03 17 37.3**	**-2.9**
	19nm,0.3s,baz=89,slow=9.2,SNR=65						
MJAR				S	**Sn**	**03 18 04.4**	**+2.1**
	28nm,0.3s,baz=124,slow=15,SNR=6.9						
MJAR	**Matsushiro Arr**	**2.29**	**281**	P	**Pb**	**03 17 37.3**	**-2.9**
MJAR				S	**Sn**	**03 18 04.4**	**+2.1**
MJAR				pmax	pmax		
	comp=Z,19nm,0.3s						
MJAR				smax	smax		
	comp=N,29nm,0.3s						
MAJO	**Matsushiro**	**2.29**	**281**	*e*P	**Pb**	**03 17 37.7**	**-2.5**
MAJO	**Matsushiro**	**2.29**	**281**	*e*Pn	**Pb**	**03 17 37.7**	**-2.5**
JHJ	**Hachijo jima 2**	**3.19**	**199**	P	**Pn**	**03 17 48.8**	**+1.3**
	comp=N,30nm,0.3s,baz=334,slow=20,SNR=16						
JHJ				S	**Sn**	**03 18 25.5**	**+1.0**
	comp=N,108nm,0.3s,baz=283,slow=23,SNR=9.3						
CBIJ	**Chichi jima**	**9.08**	**173**	*e*Pn	Pn	03 19 03.5	-5.1
CBIJ				*e*S	Sn	03 20 37.8	-12
KUR	**Kuril'sk**	**10.46**	**28**	*e*P	Pn	03 19 31.8	+4.5
KSRS	**Korea Array**	**10.57**	**281**	P	Pn	03 19 32.8	+4.0
	comp=N,0.3nm,0.3s,baz=287,slow=38,SNR=2.8						
USRK	**Ussuriysk Ar.**	**10.58**	**322**	P	Pn	03 19 32.9	+3.9
	comp=N,0.2nm,0.3s,baz=141,slow=12,SNR=3.8						
KSAR	**Wonju Array Be**	**10.60**	**281**	P	Pn	03 19 32.8	+3.5
KSAR	**Wonju Array Be**	**10.60**	**281**	P	Pn	03 19 32.8	+3.5
KLR	**Kul'dur**	**14.72**	**336**	*e*P	**Pn**	**03 20 24.3**	**-1.2**
BJT	**Baijiatuau**	**19.90**	**289**	*e*P	**Pn**	**03 21 28.8**	**-1.5**
BJT				pmax	pmax		
	comp=Z,5.0nm,0.4s						
BJT	**Baijiatuau**	**19.90**	**289**	*e*P	**Pn**	**03 21 28.8**	**-1.5**
	comp=Z,5.0nm,0.4s						
PETK	**Petropavlovsk-**	**20.62**	**29**	LR	LR	03 29 32.5	
	comp=Z,24nm,21.6s,baz=244,slow=36						
GUMO	**Guam**	**22.73**	**170**	LR	LR	03 29 02.2	
	comp=Z,45nm,21.2s,baz=358,slow=32						
YAK	**Yakutsk**	**26.86**	**348**	*e*P	**P**	**03 22 37.2**	**+0.1**
YAK				pmax	pmax		
	comp=Z,12nm,0.8s						
ULN	**Ulaanbaatar**	**27.59**	**306**	*ce*P	**P**	**03 22 46.5**	**+2.5**
ULN				pmax	pmax		
	comp=Z,4.0nm,1.2s						
SEY	**Seymchan**	**27.72**	**11**	P	**P**	**03 22 46.0**	**+1.1**
	comp=Z,0.8nm,0.3s,baz=199,slow=8.2,SNR=4.3						
SEY	**Seymchan**	**27.72**	**11**	P	**P**	**03 22 46.0**	**+1.1**
SEY				pmax	pmax		
	comp=Z,1.0nm,0.3s						
H11N2	**WAKE ISLAND Hy**	**28.00**	**119**	T	T	03 51 49.7	
	baz=311,slow=75,SNR=214						
H11N1	**WAKE ISLAND Hy**	**28.01**	**119**	T	T	03 51 52.8	
	baz=311,slow=75,SNR=234						
SONM	**Songino Array**	**28.01**	**305**	P	**P**	**03 22 48.4**	**+0.6**
	comp=Z,2.5nm,0.8s,baz=109,slow=9.1,SNR=13						
SONM				LR	LR	03 34 29.3	
	comp=Z,86nm,19.7s,baz=138,slow=37						
SONM	**Songino Array**	**28.01**	**305**	P	**P**	**03 22 48.4**	**+0.6**
SONM				pmax	pmax		
	comp=Z,0.2nm,0.8s						
SONM				MLR	MLR		
	comp=Z,86nm,19.7s						
H11N3	**WAKE ISLAND Hy**	**28.02**	**119**	T	T	03 51 57.0	
	baz=311,slow=75,SNR=247						
BOD	**Bodaibo**	**28.10**	**329**	*e*P	**P**	**03 22 48.3**	**0.0**
BOD				pmax	pmax		
	comp=Z,4.0nm,1.1s						
H11S1	**WAKE ISLAND Hy**	**28.68**	**121**	T	T	03 52 47.0	
	baz=313,slow=75,SNR=239						
H11S3	**WAKE ISLAND Hy**	**28.68**	**121**	T	T	03 52 47.1	
	baz=313,slow=75,SNR=200						
H11S2	**WAKE ISLAND Hy**	**28.69**	**121**	T	T	03 52 44.0	
	baz=313,slow=75,SNR=136						
ZAK	**Zakamensk**	**30.56**	**310**	*e*P	**P**	**03 23 09.9**	**-0.5**
ZAK				pmax	pmax		
	comp=Z,1.0nm,1.3s						
TLY	**Talaya**	**30.66**	**312**	P	**P**	**03 23 13.0**	**+1.8**
	comp=Z,1.4nm,0.3s,baz=240,slow=4.6,SNR=3.1						
TLY	**Talaya**	**30.66**	**312**	*e*P	**P**	**03 23 08.3**	**-2.9**
TLY				pmax	pmax		
	comp=Z,2.0nm,0.9s						
TLY				MLR	MLR		
	comp=Z,100nm,17.0s						
BILL	**Bilibino**	**34.97**	**16**	*e*P	P	03 23 54.8	+6.3
BILL				pmax	pmax		
	comp=Z,2.0nm,1.2s						
TIXI	**Tiksi**	**36.13**	**354**	P	**P**	**03 23 58.2**	**-0.2**
	comp=Z,1.4nm,0.6s,baz=151,slow=2.3,SNR=6.1						
CMAR	**Chiang Mai Arr**	**40.95**	**256**	P	**P**	**03 24 40.3**	**+0.7**
	comp=Z,0.6nm,0.4s,baz=47,slow=8.0,SNR=4.5						
ZALV	**Zalesovo Beam**	**42.27**	**313**	P	**P**	**03 24 50.8**	**+0.9**
	comp=Z,5.6nm,0.5s,baz=91,slow=6.8,SNR=21						
ZALV				PcP	**PcP**	**03 26 43.5**	**+0.2**
	comp=Z,0.9nm,0.5s,baz=60,slow=3.5,SNR=4.5						
MK31	**Makanchi Array**	**44.31**	**303**	*i* P	**P**	**03 25 07.1**	**+0.6**
MK31				pmax	pmax		
	comp=Z,2.0nm,0.8s						
MKAR	**Makanchi Array**	**44.31**	**303**	P	**P**	**03 25 08.1**	**+1.5**
	comp=Z,1.2nm,0.6s,baz=83,slow=9.9,SNR=15						
KURK	**Kurchatov**	**46.22**	**309**	*e*P	**P**	**03 25 21.9**	**+0.3**
KURK				pmax	pmax		
	comp=Z,13nm,0.6s						
KURK	**Kurchatov**	**46.22**	**309**	*e*P	**P**	**03 25 21.9**	**+0.3**
	comp=Z,13nm,0.6s						
KURBB	**Kurchatov Arra**	**46.28**	**309**	P	**P**	**03 25 22.6**	**+0.5**
	comp=Z,5.1nm,0.4s,baz=83,slow=7.6,SNR=38						
PDGK	**Podgornoye**	**46.90**	**299**	P	**P**	**03 25 27.9**	**+0.9**
PDGK				pmax	pmax		
	comp=Z,8.0nm,0.7s						
TKM2	**Tokmak 2**	**49.76**	**299**	*e*P	**P**	**03 25 50.6**	**+1.2**
TKM2				pmax	pmax		
	comp=Z,14nm,1.1s						
TKM2	**Tokmak 2**	**49.76**	**299**	*e*P	**P**	**03 25 50.6**	**+1.2**
	comp=Z,14nm,1.1s						
ILAR	**Eielson Array**	**50.42**	**32**	P	P	03 25 56.8	+3.0
	comp=Z,0.7nm,0.7s,baz=270,slow=7.1,SNR=7.7						
AAK	**Ala-Archa**	**50.62**	**299**	*ce*P	**P**	**03 25 57.2**	**+1.3**
AAK				pmax	pmax		
	comp=Z,7.0nm,1.2s						
AAK	**Ala-Archa**	**50.62**	**299**	*e*P	**P**	**03 25 57.1**	**+1.3**
	comp=Z,1.4nm,0.5s						
CHKZ	**Chkalovo**	**50.67**	**314**	P	**P**	**03 25 55.9**	**+0.1**
CHKZ				pmax	pmax		
	comp=Z,9.0nm,1.2s						
OTUK	**Ortayu**	**50.68**	**306**	P	**P**	**03 25 56.6**	**+0.6**
OTUK				pmax	pmax		
	comp=Z,5.0nm,1.0s						
BVA0	**Borovoye Array**	**50.92**	**313**	P	**P**	**03 25 57.5**	**-0.2**
BVA0				pmax	pmax		
	comp=Z,6.0nm,1.4s						
BVAR	**Borovoye Array**	**50.92**	**313**	P	**P**	**03 25 58.5**	**+0.8**
	comp=Z,1.6nm,0.6s,baz=77,slow=7.8,SNR=10						
BRVK	**Borovoye**	**50.98**	**313**	*ce*P	**P**	**03 25 59.6**	**+1.5**
BRVK				pmax	pmax		
	comp=Z,10.0nm,2.5s						
BRVK	**Borovoye**	**50.98**	**313**	*e*P	**P**	**03 25 58.8**	**+0.6**
	comp=Z,2.9nm,0.8s						
ZRNK	**Zerenda**	**51.76**	**313**	P	**P**	**03 26 04.0**	**0.0**
ZRNK				pmax	pmax		
	comp=Z,11nm,1.3s						
MNAS	**Manas**	**52.07**	**299**	P	**P**	**03 26 07.8**	**+1.1**
MNAS				pmax	pmax		
	comp=Z,5.0nm,0.8s						
SFK	**Sufi-Kurgan**	**52.12**	**296**	P	**P**	**03 26 07.2**	**0.0**
SFK				pmax	pmax		
	comp=Z,5.0nm,0.6s						
KK31	**Karatay Array**	**53.28**	**301**	*i* P	**P**	**03 26 15.9**	**+0.4**
INK	**Inuvik**	**55.32**	**27**	P	P	03 26 31.8	+1.9
	comp=Z,0.7nm,0.8s,baz=313,slow=4.2,SNR=3.9						
WRA	**Warramunga Arr**	**56.14**	**188**	P	**P**	**03 26 35.0**	**-1.3**
	comp=Z,0.7nm,0.4s,baz=23,slow=7.2,SNR=21						
ARU	**Arti**	**56.80**	**319**	*d* iP	**P**	**03 26 41.0**	**+0.4**
ARU				S	**S**	**03 34 32.3**	**+0.8**
ARU				SS	**SS**	**03 38 16.7**	**-2.5**
ARU				pmax	pmax		
	comp=Z,15nm,1.2s						
ARU	**Arti**	**56.80**	**319**	*e*P	**P**	**03 26 41.1**	**+0.4**
	comp=Z,6.4nm,0.7s						
AB31	**Akbulak array**	**58.25**	**310**	*i* P	**P**	**03 26 51.4**	**+0.4**
AB31				pmax	pmax		
	comp=Z,2.0nm,0.6s						
ABKAR	**Akbulak array**	**58.25**	**310**	*e*P	**P**	**03 26 51.1**	**+0.1**
	comp=Z,2.1nm,0.4s						
AKTO	**Aktyubinsk**	**59.02**	**312**	P	**P**	**03 26 55.0**	**-1.3**
	comp=Z,1.3nm,0.6s,baz=80,slow=8.8,SNR=6.5						
AKTO	**Aktyubinsk**	**59.02**	**312**	P	**P**	**03 26 55.0**	**-1.3**
AKTO				pmax	pmax		
	comp=Z,1.0nm,0.6s						
ASAR	**Alice Springs**	**59.87**	**188**	P	**P**	**03 27 02.2**	**-0.2**
	comp=Z,0.9nm,0.8s,baz=178,slow=35,SNR=8.5						
YKA	**Yellowknife Ar**	**64.74**	**30**	P	**P**	**03 27 34.3**	**-0.2**
	comp=Z,0.1nm,0.4s,baz=307,slow=4.7,SNR=6.2						
YKA	**Yellowknife Ar**	**64.74**	**30**	P	**P**	**03 27 34.3**	**-0.2**
YKA				pmax	pmax		
	comp=Z,1.0nm,0.8s						
FINES	**FINESS Array B**	**69.44**	**332**	P	**P**	**03 28 04.7**	**+0.4**
	comp=Z,3.9nm,0.7s,baz=51,slow=6.1,SNR=12						
KBZ	**Khabaz**	**71.22**	**311**	P	**P**	**03 28 15.6**	**0.0**
	comp=Z,2.2nm,0.8s,baz=146,slow=4.9,SNR=5.1						
KIV	**Kislovodsk**	**71.23**	**311**	*e*P	**P**	**03 28 17.3**	**+1.5**
KIV				pmax	pmax		
	comp=Z,10.0nm,0.9s						
AKASG	**Malin Array Be**	**74.79**	**322**	P	**P**	**03 28 36.5**	**0.0**
	comp=Z,2.6nm,0.5s,baz=47,slow=6.0,SNR=16						
KIEV	**Kiev**	**74.80**	**322**	*e*P	**P**	**03 28 37.1**	**+0.5**
KIEV				pmax	pmax		
	comp=Z,5.0nm,1.0s						
NB2	**NORSAR Subarra**	**74.87**	**337**	P	**P**	**03 28 37.1**	**+0.2**
	comp=Z,1.9nm,0.6s,baz=40,slow=6.2						
NOA	**NORSAR Array B**	**74.87**	**337**	P	**P**	**03 28 37.0**	**+0.2**
	comp=Z,2.7nm,0.6s,baz=40,slow=5.8,SNR=11						
NVAR	**Mina Array Bea**	**75.79**	**53**	P	P	03 28 44.7	+1.8
	comp=Z,0.3nm,0.6s,baz=304,slow=7.2,SNR=2.7						
BORG	**Borgarnes**	**78.48**	**352**	*i* P	P	03 29 01.7	+4.6
PDAR	**Pinedale Array**	**78.52**	**45**	P	**P**	**03 28 57.8**	**-0.4**
	comp=Z,0.2nm,0.5s,baz=209,slow=2.7,SNR=3.5						
BRTR	**Keskin Array B**	**79.19**	**311**	P	**P**	**03 29 02.4**	**+0.7**
	comp=Z,2.2nm,1.1s,baz=72,slow=5.5,SNR=7.0						
STHS	**Stebnicka Huta**	**79.49**	**325**	*e*P	**P**	**03 29 03.8**	**+0.8**
STHS	**Stebnicka Huta**	**79.49**	**325**	*e*P	**P**	**03 29 03.8**	**+0.8**
CLL	**Collm**	**81.69**	**330**	*e*P	**P**	**03 29 15.0**	**+0.2**
CLL	**Collm**	**81.69**	**330**	*e*P	**P**	**03 29 15.0**	**+0.2**
GERES	**GERESS Array B**	**83.28**	**328**	P	P	**03 29 22.8**	**-0.5**
	comp=Z,0.6nm,0.6s,baz=11,slow=8.3,SNR=3.4						
TXAR	**Lajitas Array**	**90.92**	**52**	P	P	03 30 04.4	+3.6
	comp=Z,0.4nm,0.7s,baz=294,slow=3.7,SNR=2.9						
TORD	**Torodi Ar. Bea**	**117.71**	**314**	PKP	**PKPdf**	**03 35 42.3**	**-1.0**
	comp=Z,0.5nm,1.0s,baz=44,slow=2.5,SNR=3.4						

JMA ***13*** *03:21:07.7±0.1,35°.70N×140°.96E,h12km,M3.4*
JMA Felt I J1.
IDC ***13*** *03:21:13.3±1.2,34°.66N×139°.22E,h0km,mb3.6/5, mb1 3.8/5,mb1mx3.4/42,mbtmp3.6/5,Error ellipse: s-maj=47.3km s-min=21.0km az=70.0*
ISC 13 03:21:07.7±1.0, 35°.69N±0°.07×140°.76E±0°.08, h11km±8km, n17, σ1s04/12, mb3.7/5, 1C, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
CHOJ	**Chosi**	**0.08**	**81**	⇑P	**Pg**	**03 21 10.2**	**0.0**
CHOJ				S	**Sg**	**03 21 12.2**	**+0.1**
JYT	**Yasato**	**0.71**	**320**	P	**Pn**	**03 21 23.0**	**-0.6**
JYT				S	**Sn**	**03 21 33.8**	**-0.7**
BSO3	**Boso 3**	**0.91**	**193**	P	**Pn**	**03 21 25.7**	**-0.5**
JHO	**Hitachi**	**0.93**	**351**	P	**Pn**	**03 21 26.0**	**-0.7**
MJAR	**Matsushiro Arr**	**2.23**	**293**	Pn	**Pg**	**03 21 50.0**	**-0.6**
	baz=92,slow=8.4,SNR=1.9						
MAT	**Matsushiro**	**2.23**	**293**	P	**Pb**	**03 21 47.9**	**-0.2**
MAT				*e*S	**Sb**	**03 22 17.1**	**+1.3**
H11N2	**WAKE ISLAND Hy**	**27.95**	**118**	T	T	03 55 51.1	
	baz=311,slow=75,SNR=42						
H11N1	**WAKE ISLAND Hy**	**27.96**	**118**	T	T	03 55 58.0	
	baz=311,slow=75,SNR=28						
H11N3	**WAKE ISLAND Hy**	**27.97**	**118**	T	T	03 55 58.6	
	baz=311,slow=75,SNR=36						
H11S1	**WAKE ISLAND Hy**	**28.61**	**120**	T	T	03 56 41.5	
	baz=312,slow=75,SNR=136						
H11S3	**WAKE ISLAND Hy**	**28.61**	**120**	T	T	03 56 42.5	
	baz=312,slow=75,SNR=107						
H11S2	**WAKE ISLAND Hy**	**28.63**	**120**	T	T	03 56 46.0	
	baz=312,slow=75,SNR=104						
MKAR	**Makanchi Array**	**44.40**	**303**	P	**P**	**03 29 20.2**	**+2.0**
	0.2nm,0.2s,baz=92,slow=8.2,SNR=3.9						
KURBB	**Kurchatov Arra**	**46.42**	**309**	P	P	03 29 39.7	+5.5
	0.5nm,0.6s,baz=81,slow=7.7,SNR=3.5						
WRA	**Warramunga Arr**	**55.66**	**187**	P	**P**	**03 30 42.9**	**-1.0**
	0.6nm,0.8s,baz=5.5,slow=7.6,SNR=4.4						
ASAR	**Alice Springs**	**59.39**	**187**	P	**P**	**03 31 09.8**	**-0.4**
	0.2nm,0.4s,baz=16,slow=12,SNR=3.0						
TXAR	**Lajitas Array**	**91.36**	**52**	P	P	03 34 28.6	+15
	0.4nm,0.9s,baz=225,slow=47,SNR=3.4						

NIED ***13*** *03:34:00,42°.80N×145°.60E,h47km,Mw3.6 Best double couple: M0 2.85000×10^14 NP1:φs248.00000°,δ76.00000°, λ175.00000°. NP2:φs340.00000°,δ85.00000°,λ14.00000°.*
JMA ***13*** *03:34:31.8±0.1,42°.81N×145°.64E,h45km±1km,M3.5*
SKHL ***13*** *03:34:32.7±0.2,42°.78N×145°.77E,h40km±2km,mb4.8/3*
ISC 13 03:34:31.0±2.2, 42°.7N±0°.1×145°.69E±0°.06, h32km±12km, n13, σ0s91/21, Hokkaido region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
NEM2	**Nemuro 2**	**0.62**	**3**	P	**Pb**	**03 34 43.5**	**-0.1**
NEM2				*e*S	**Sb**	**03 34 51.8**	**-0.3**
JAK	**Akkeshi**	**0.78**	**289**	P	**Pn**	**03 34 45.7**	**0.0**
JAK				*e*S	**Sb**	**03 34 56.3**	**0.0**
JNK	**Nakash**	**1.10**	**320**	P	**Pn**	**03 34 49.9**	**-0.4**
JNK				*e*S	**Sn**	**03 35 02.7**	**-1.7**
JRA	**Rausu**	**1.27**	**341**	P	**Pn**	**03 34 52.5**	**0.0**
JRA				*e*S	**Sn**	**03 35 07.8**	**-0.6**
YUK	**Yuzh-Kuril'sk**	**1.30**	**5**	*i* P	**Pn**	**03 34 53.2**	**+0.3**
YUK				AMB	AMB	03 34 53.9	
	150nm,0.4s						
YUK				AMB	AMB	03 34 53.9	
	160nm,0.4s						
YUK				AMB	AMB	03 34 53.9	
	620nm,0.4s						
YUK				*i* S	**Sn**	**03 35 08.4**	**-0.8**
YUK				A	A	03 35 10.5	
	1μm,0.4s						
YUK				A	A	03 35 10.5	
	1μm,0.4s						
JOB	**Onbets**	**1.38**	**277**	P	**Pn**	**03 34 54.2**	**+0.2**
SHO	**Shikotan**	**1.40**	**36**	*e*P	**Pn**	**03 34 54.2**	**-0.1**
SHO				AMB	AMB	03 34 57.2	
	450nm,0.4s						
SHO				*i* S	**Sn**	**03 35 10.5**	**-1.2**
SHO				A	A	03 35 17.0	
	350nm,0.3s						
SHO				A	A	03 35 17.0	
	620nm,0.3s						
JAR	**Ashorobuto**	**1.52**	**292**	P	**Pn**	**03 34 55.9**	**0.0**
JAR				*e*S	**Sn**	**03 35 14.5**	**-0.1**
JCH	**Churui**	**1.72**	**267**	P	**Pn**	**03 34 59.0**	**+0.2**
JTKR	**Abashiri--Toko**	**1.79**	**314**	P	**Pn**	**03 35 00.2**	**+0.5**
JTKR				*e*S	**Sn**	**03 35 21.7**	**+0.4**
KUR	**Kuril'sk**	**2.94**	**31**	*e*P	**Pn**	**03 35 16.7**	**+1.2**
KUR				AMB	AMB	03 35 17.8	
	30nm,0.1s						
KUR				*e*S	**Sn**	**03 35 49.3**	**-0.4**
KUR				A	A	03 35 49.9	
	70nm,0.2s						
YSS	**Yuzh-Sakhalins**	**4.70**	**335**	*e*P	**Pn**	**03 35 42.2**	**+2.5**
TYV	**Tymovskoe**	**8.39**	**347**	*e*P	Pn	03 36 33.9	+3.7

ISCJB ***13*** *03:37:08.7±0.2,28°.03N±0°.02×59°.07E±0°.03,h10km, mb4.0/30,MS3.9/22,Error ellipse: s-maj=4.2km s-min=3.0km az=31.6*
TEH ***13*** *03:37:08.2,28°.21N×58°.99E,h6km,ML4.6*
BJI ***13*** *03:37:08.2,28°.20N×59°.00E,h6km,mb4.3/3,mB4.6/4, Ms4.4/4,Ms7 4.2/4*
NEIC ***13*** *03:37:09.5,27°.99N×58°.98E,h18km,mb4.3/9, ML4.5(THR),MN4.6(TEH),After THR.*
OMAN ***13*** *03:37:09.7±4.3,27°.95N×58°.88E,h2km±28km,Error ellipse: s-maj=32.8km s-min=6.9km az=124.0*
IDC ***13*** *03:37:09.2±0.7,27°.99N×59°.07E,h0km,mb4.0/24, mb1 4.2/27,mb1mx4.0/59,mbtmp4.1/27,ML4.0/3,MS3.9/23, Ms1 3.9/23,ms1mx3.7/47,Error ellipse: s-maj=15.3km s-min=13.2km az=164.0*
THR ***13*** *03:37:09.5±0.7,27°.98N×58°.97E,h18km±17km,ML4.5*
CSEM ***13*** *03:37:10.0±0.2,28°.03N×59°.08E,h10km,mb4.4/6,Error ellipse: s-maj=6.1km s-min=4.1km az=114.0*
DSN ***

SNR=6.4
ASHO Ashiyiah 4.26 220 P **Pn** 03 38 14.9 -0.1
SNR=6.4
ASHO Ashiyiah 4.26 220 pPn **Pn** 03 38 16.9 +1.9
SNR=19
ASHO Ashiyiah 4.26 220 P **Pn** 03 38 16.9 +1.9
SNR=19
NAZ Nazwa, Dubai 4.27 226 *i* P **Pn** 03 38 15.7 +0.6
SNR=16
NAZ Nazwa, Dubai 4.27 226 P **Pn** 03 38 15.7 +0.6
SNR=16
IKOO Kooshah 4.39 360 *e*Pn **Pn** 03 38 15.2 -1.8
IKOO *e*AMB AMB 03 38 16.5
comp=Z,7μm,0.1s
IKOO Kooshah 4.39 360 *e*Pn **Pn** 03 38 15.2 -1.8
FAQ Al Faqa, Dubai 4.49 224 P **Pn** 03 38 18.2 +0.1
FAQ Al Faqa, Dubai 4.49 224 P **Pn** 03 38 18.2 +0.1
BIDO Bidbid 4.55 191 Pn **Pn** 03 38 17.4 -1.6
SNR=13
BIDO Bidbid 4.55 191 Pn **Pn** 03 38 17.4 -1.6
SNR=13
BIDO Bidbid 4.55 191 P **Pn** 03 38 17.4 -1.6
SNR=13
IBAF Bafgh 4.67 321 *e*Pn **Pn** 03 38 19.7 -1.0
IBAF *e*AMB AMB 03 39 45.2
comp=Z,7μm,0.6s
IBAF Bafgh 4.67 321 *e*Pn **Pn** 03 38 19.7 -1.0
IDAH Dahanechah 4.76 8 *e*Pn **Pn** 03 38 21.5 -0.6
IDAH *e*AMB AMB 03 38 22.5
comp=Z,3μm,0.2s
IDAH Dahanechah 4.76 8 *e*Pn **Pn** 03 38 21.5 -0.6
WSAR Wadi Sarin 4.77 185 Pn **Pn** 03 38 21.8 -0.2
comp=Z,9.5nm,0.3s,baz=24,slow=7.9,SNR=61
WSAR Sn **Sn** 03 39 17.0 -0.3
comp=Z,32nm,0.3s,baz=29,slow=18,SNR=11
ITEG Tejag 4.87 357 *e*Pn **Pn** 03 38 21.8 -1.7
ITEG Tejag 4.87 357 *e*Pn **Pn** 03 38 21.8 -1.7
SMDO Samad 5.02 190 P **Pn** 03 38 24.8 -0.7
SNR=22
SMDO Samad 5.02 190 Pn **Pn** 03 38 24.8 -0.7
SNR=22
SMDO Samad 5.02 190 P **Pn** 03 38 24.8 -0.7
SNR=22
IMEH Mehriz 5.11 312 *e*Pn **Pb** 03 38 38.0 -1.7
IMEH *e*AMB AMB 03 40 04.4
comp=Z,3μm,0.3s
ARQ Araqi 5.18 207 P **Pn** 03 38 29.1 +1.4
SNR=14
ARQ S **Sn** 03 39 30.1 +2.5
ARQ Araqi 5.18 207 Pn **Pn** 03 38 29.1 +1.4
SNR=14
ARQ Sn **Sn** 03 39 30.1 +2.5
ARQ Araqi 5.18 207 P **Pn** 03 38 29.1 +1.4
SNR=14
ARQ S **Sn** 03 39 30.1 +2.5
IMON Monand 5.19 6 *e*Pn **Pn** 03 38 27.1 -0.8
IMON *e*AMB AMB 03 39 29.8
comp=Z,4μm,0.2s
IMON Monand 5.19 6 *e*Pn **Pn** 03 38 27.1 -0.8
GHIR Ghir-Karzin 5.35 274 *e*Pn **Pn** 03 38 30.2 +0.2
GHIR Ghir-Karzin 5.35 274 *e*Pn **Pn** 03 38 30.2 +0.2
WBK Wadi Bani Khal 5.38 181 Pn **Pn** 03 38 29.4 -1.0
SNR=40
WBK Wadi Bani Khal 5.38 181 Pn **Pn** 03 38 29.4 -1.0
SNR=40
WBK Wadi Bani Khal 5.38 181 P **Pn** 03 38 29.4 -1.0
SNR=40
IPAR Pars 5.56 291 *e*Pn **Pn** 03 38 33.3 +0.3
IPAR *e*AMB AMB 03 40 25.0
comp=Z,2μm,0.4s
IPAR Pars 5.56 291 *e*Pn **Pn** 03 38 33.3 +0.3
JMDO Jabal Madar 5.68 189 P **Pn** 03 38 34.8 +0.2
SNR=15
JMDO Jabal Madar 5.68 189 Pn **Pn** 03 38 34.8 +0.2
SNR=15
JMDO Jabal Madar 5.68 189 P **Pn** 03 38 34.8 +0.2
SNR=15
ICHK Chekchek 5.82 318 *e*Pn **Pn** 03 38 38.7 +2.2
ICHK *e*AMB AMB 03 40 25.1
comp=Z,2μm,0.4s
ICHK Chekchek 5.82 318 *e*Pn **Pn** 03 38 38.7 +2.2
IKAZ Kazeroun 6.55 287 *e*Pn **Pn** 03 38 46.9 +0.2
IKAZ *e*AMB AMB 03 40 06.1
comp=Z,3μm,0.2s
IKAZ Kazeroun 6.55 287 *e*Pn **Pn** 03 38 46.9 +0.2
IMYA Miami 8.35 6 *e*Pn **Pn** 03 39 10.6 -0.7
IMYA *e*AMB AMB 03 42 06.6
comp=Z,480nm,0.5s
IMYA Miami 8.35 6 *e*Pn **Pn** 03 39 10.6 -0.7
ABTO Aybut 11.86 208 Pn **Pn** 03 39 55.1 -4.1
SNR=7.3
ABTO Aybut 11.86 208 P **Pn** 03 39 55.1 -4.1
SNR=7.3
RAYN Ar Rayn 12.99 253 *e*Pn Pn 03 40 09.8 -4.9
comp=Z,16nm,0.8s
RAYN *e*S Sn 03 42 21.1 -18
GNI Garni 16.91 319 LR LR 03 48 10.9
comp=Z,359nm,19.1s,baz=127,slow=39
KKAR Karatay Array 17.69 29 *e*Pn **Pn** 03 41 16.8 +0.4
comp=Z,4.8nm,0.8s
KKAR Karatay Array 17.69 29 *e*Pn **Pn** 03 41 16.8 +0.4
comp=Z,4.8nm,0.8s
KSH Kashi 18.13 46 P **Pn** 03 41 16.9 -5.1
KSH S Sn 03 44 24.3 -20
KSH PcS **PcS** 03 49 29.0 -3.3
KSH pmax pmax
comp=Z,9.0nm,0.7s
KSH pmax pmax
comp=Z,170nm,5.6s
KSH LR LR
comp=Z,700nm,13.3s
KSH LR LR
comp=Z,610nm,9.6s
KSH LR LR
comp=Z,730nm,13.3s
EKS2 Erkin-Say 18.88 35 *e*P **P** 03 41 30.1 -0.5
comp=Z,16nm,0.8s
EKS2 Erkin-Say 18.88 35 *e*P **P** 03 41 30.1 -0.5
comp=Z,16nm,0.8s
AAK Ala-Archa 19.23 37 P **Pn** 03 41 36.8 +1.3
comp=Z,0.4nm,0.3s,baz=210,slow=6.3,SNR=18
AAK Ala-Archa 19.23 37 *e*P **P** 03 41 34.6 +0.1
comp=Z,7.3nm,0.7s
AAK Ala-Archa 19.23 37 *e*P **P** 03 41 34.6 +0.1
comp=Z,7.3nm,0.7s
AAK Ala-Archa 19.23 37 P **Pn** 03 41 37.1 +1.6
SNR=10
AAK Ala-Archa 19.23 37 P **Pn** 03 41 37.1 +1.6
SNR=10
ASF Jabal al Asfar 19.59 288 P **Pn** 03 41 39.5 -0.3
comp=Z,0.3nm,0.3s,baz=41,slow=13,SNR=3.0
TKM2 Tokmak 2 20.02 38 *e*P **P** 03 41 43.0 -0.2
comp=Z,3.9nm,0.8s
TKM2 Tokmak 2 20.02 38 *e*P **P** 03 41 43.0 -0.2
comp=Z,3.9nm,0.8s
KBZ Khabaz 20.36 325 P Pn 03 41 48.9 +0.3
comp=Z,2.5nm,0.7s,baz=147,slow=10,SNR=4.8
KVAR Kislovodsk Arr 20.62 325 P Pn 03 41 52.7 +0.8
comp=Z,9.2nm,0.7s,baz=261,slow=21,SNR=6.0
KIV Kislovodsk 20.63 325 *e*P **P** 03 41 48.8 -0.8
comp=Z,17nm,0.8s
KIV Kislovodsk 20.63 325 *e*P **P** 03 41 48.8 -0.8
comp=Z,17nm,0.8s
MMAI Mount Meron Ar 20.95 290 P Pn 03 41 55.7 0.0
comp=Z,0.9nm,0.2s,baz=109,slow=31,SNR=4.1
MMAI LR LR 03 51 31.6
comp=Z,375nm,18.9s,baz=100,slow=41
PYUN Piuthan 21.13 84 *e*P **P** 03 41 57.0 +1.6
EIL Elat 21.16 280 P **P** 03 41 56.0 +0.6
comp=Z,14nm,1.0s,baz=52,slow=7.8,SNR=6.1
EIL LR LR 03 51 33.4
comp=Z,480nm,18.3s,baz=96,slow=41
EIL Elat 21.16 280 P **P** 03 41 56.0 +0.6
ABKAR Akbulak array 21.22 2 *e*P **P** 03 41 55.3 -0.5
comp=Z,14nm,0.9s
ABKAR Akbulak array 21.22 2 *e*P **P** 03 41 55.3 -0.5
comp=Z,14nm,0.9s
ATD Arta Tunnel 22.34 226 LR LR 03 52 53.8
comp=Z,106nm,18.8s,baz=70,slow=42
AKTO Aktyubinsk 22.40 359 P **P** 03 42 08.5 0.0
comp=Z,6.9nm,0.9s,baz=190,slow=11,SNR=11
GKN Gorkha 22.59 84 *e*P **P** 03 42 11.7 +0.7
KKN Kakani 23.18 84 *e*P **P** 03 42 17.5 +0.3
PKIN Phulchoki 23.31 85 *e*P **P** 03 42 18.4 -0.1
GUN Gumba 23.70 84 *e*P **P** 03 42 22.9 +0.5
comp=Z,26nm,0.7s

BRTR Keskin Array B 24.02 306 P **P** 03 42 26.1 +0.9
comp=Z,1.7nm,0.8s,baz=122,slow=12,SNR=12
RAMN Ramite 24.46 86 *e*P **P** 03 42 29.4 -0.1
comp=Z,14nm,0.6s
ODAN Odare 25.17 86 *e*P **P** 03 42 35.8 -0.1
comp=Z,3.7nm,0.3s
MKAR Makanchi Array 26.15 38 P **P** 03 42 45.2 +0.8
comp=Z,1.4nm,0.7s,baz=216,slow=6.0,SNR=9.0
MKAR LR LR 03 54 09.5
comp=Z,355nm,18.8s,baz=234,slow=39
BVAR Borovoye Array 26.36 16 P **P** 03 42 46.3 +0.1
comp=Z,9.1nm,1.0s,baz=194,slow=5.4,SNR=16
BRVK Borovoye 26.37 15 *e*P **P** 03 42 46.4 +0.2
comp=Z,17nm,1.3s
BRVK Borovoye 26.37 15 *e*P **P** 03 42 46.4 +0.2
comp=Z,17nm,1.3s
KURBB Kurchatov Arra 26.99 28 P **P** 03 42 52.5 +0.6
comp=Z,1.1nm,0.8s,baz=226,slow=8.6,SNR=14
KURK Kurchatov 27.10 28 P **P** 03 42 52.5 -0.3
KURK Kurchatov 27.10 28 P **P** 03 42 52.5 -0.3
IDI Anoyia 29.85 293 P **P** 03 43 19.2 +1.6
comp=Z,3.7nm,0.4s,baz=227,slow=12,SNR=5.7
AKASG Malin Array Be 31.96 323 P **P** 03 43 33.5 -2.4
comp=Z,0.8nm,0.5s,baz=128,slow=8.3,SNR=6.3
AKASG LR LR 03 58 08.3
comp=Z,144nm,21.9s,baz=110,slow=39
ZALV Zalesovo Beam 32.06 29 P **P** 03 43 38.4 +1.6
comp=Z,0.5nm,0.3s,baz=83,slow=24,SNR=15
ZALV LR LR 03 58 22.0
comp=Z,238nm,18.6s,baz=250,slow=40
KOLS Kolonicke sedl 35.08 317 *e*P **P** 03 44 04.7 +1.5
KOLS Kolonicke sedl 35.08 317 *e*P **P** 03 44 04.7 +1.5
KMBO Kilima Mbogo 35.74 219 P **P** 03 44 10.4 +1.0
comp=Z,1.7nm,0.8s,baz=54,slow=8.6,SNR=4.4
KMBO LR LR 04 00 42.3
comp=Z,87nm,19.6s,baz=130,slow=40
KMBO Kilima Mbogo 35.74 219 P **P** 03 44 10.2 +0.8
comp=Z,3nm,1.4s
KMBO Kilima Mbogo 35.74 219 P **P** 03 44 10.2 +0.8
comp=Z,7.3nm,1.4s
VYHS Vyhne 37.05 315 *e*P **P** 03 44 20.0 -0.1
VYHS Vyhne 37.05 315 *e*P **P** 03 44 20.0 -0.1
CUC Castrocucco 37.43 300 *e*P **P** 03 44 22.1 -1.4
comp=Z,12nm,0.9s
CUC Castrocucco 37.43 300 *e*P **P** 03 44 22.1 -1.4
comp=Z,12nm,0.9s
CMAR Chiang Mai Arr 37.74 96 LR LR 04 03 18.6
comp=Z,94nm,19.8s,baz=275,slow=42
FINES FINESS Array B 39.98 336 P **P** 03 44 46.1 +1.6
comp=Z,1.9nm,0.6s,baz=134,slow=7.8,SNR=16
GERES GERESS Array B 40.42 314 P **P** 03 44 48.2 -0.2
comp=Z,1.6nm,0.6s,baz=92,slow=9.3,SNR=8.8
TLY Talaya 40.75 42 LR LR 04 03 15.7
comp=Z,368nm,19.6s,baz=258,slow=38
WTTA Wattenberg 41.44 311 *i* pP **P** 03 44 56.4 -0.5
comp=Z,3.5nm,0.5s
WTTA Wattenberg 41.44 311 P **P** 03 44 56.4 -0.5
comp=Z,3.5nm,0.5s
SONM Songino Array 41.51 48 P **P** 03 44 58.8 +1.3
comp=Z,2.0nm,0.8s,baz=255,slow=9.0,SNR=16
SONM LR LR 04 03 32.0
comp=Z,285nm,21.3s,baz=275,slow=38
MOTA Moosalm 41.81 311 *i* pP **P** 03 44 59.2 -0.7
comp=Z,2.5nm,0.5s
MOTA Moosalm 41.81 311 P **P** 03 44 59.2 -0.7
comp=Z,2.5nm,0.5s
KEST Kesra 42.52 293 P **P** 03 45 08.4 +2.6
comp=Z,2.5nm,0.7s,baz=37,slow=3.0,SNR=4.1
KEST LR LR 04 07 40.3
comp=Z,83nm,18.8s,baz=260,slow=43
HFS Hagfors 44.31 329 P **P** 03 45 20.8 +1.0
comp=Z,0.9nm,0.5s,baz=129,slow=12,SNR=6.8
NRIK Noril'sk 44.56 14 LR LR 04 07 07.8
comp=Z,250nm,18.8s,baz=254,slow=40
NOA NORSAR Array B 45.81 330 P **P** 03 45 31.5 -0.3
comp=Z,0.9nm,0.8s,baz=119,slow=7.3,SNR=3.3
ARCES ARCESS Array B 45.84 344 P **P** 03 45 30.0 -1.9
comp=Z,2.1nm,0.8s,baz=145,slow=8.8,SNR=6.7
ARCES LR LR 04 07 26.7
comp=Z,249nm,18.1s,baz=146,slow=40
ARCES ARCESS Array B 45.84 344 P **P** 03 45 30.0 -1.9
ESDC Sonseca Array 52.63 300 P **P** 03 46 24.3 -0.1
comp=Z,0.2nm,0.5s,baz=77,slow=7.4,SNR=4.1
TORD Torodi Ar. Bea 55.23 267 P **P** 03 46 41.5 -2.1
comp=Z,2.3nm,0.7s,baz=58,slow=6.4,SNR=39
TORD LR LR 04 13 53.5
comp=Z,73nm,21.4s,baz=45,slow=40
TIXI Tiksi 57.33 21 P **P** 03 46 58.5 +0.7
comp=Z,0.7nm,0.3s,baz=273,slow=3.4,SNR=4.4
KSRS Korea Array 57.56 62 LR LR 04 15 06.5
comp=Z,88nm,20.3s,baz=282,slow=40
USRK Ussuriysk Ar. 59.27 53 LR LR 04 16 12.3
comp=Z,95nm,19.9s,baz=280,slow=40
DBIC Dimbokro 63.87 263 LR LR 04 15 29.5
comp=Z,84nm,18.0s,baz=46,slow=36
BOSA Boshof 64.95 213 LR LR 04 16 46.9
comp=Z,80nm,18.3s,baz=33,slow=37
MJAR Matsushiro Arr 65.75 60 LR LR 04 19 41.5
comp=Z,35nm,19.5s,baz=20,slow=39
SEY Seymchan 66.93 30 P **P** 03 48 03.0 +0.8
comp=Z,1.4nm,0.5s,baz=255,slow=7.1,SNR=7.9
PETK Petropavlovsk- 72.99 39 LR LR 04 22 17.1
comp=Z,82nm,19.3s,baz=294,slow=37
ILAR Eielson Array 85.33 11 P **P** 03 49 45.7 -1.3
comp=Z,0.3nm,0.6s,baz=332,slow=4.5,SNR=4.0
ILAR LR LR 04 33 37.7
comp=Z,60nm,18.2s,baz=334,slow=40
WRA Warramunga Arr 86.98 114 P **P** 03 49 56.0 +0.1
comp=Z,1.7nm,0.9s,baz=312,slow=4.0,SNR=12
ASAR Alice Springs 88.56 118 P **P** 03 50 04.9 +1.5
comp=Z,1.8nm,0.8s,baz=308,slow=4.9,SNR=15
YKA Yellowknife Ar 89.66 357 P **P** 03 50 08.5 +0.7
comp=Z,0.4nm,0.6s,baz=360,slow=5.4,SNR=14
STKA Stephens Creek 98.52 121 LR LR 04 36 08.3
comp=Z,55nm,19.9s,baz=223,slow=36

JHJ LR LR 03 47 48.0
comp=Z,361nm,21.0s,baz=157,slow=35
USRK Ussuriysk Ar. 10.19 311 Pn Pn 03 47 10.2 +3.6
0.2nm,0.3s,baz=116,slow=13,SNR=9.4
H11N2 WAKE ISLAND Hy 27.81 124 T T 04 19 31.2
baz=316,slow=75,SNR=20
H11N1 WAKE ISLAND Hy 27.82 124 T T 04 19 32.2
baz=316,slow=75,SNR=18
H11N3 WAKE ISLAND Hy 27.82 124 T T 04 19 31.1
baz=316,slow=75,SNR=18
SONM Songino Array 28.11 302 P P 03 50 35.9 +3.7
0.3nm,0.5s,baz=102,slow=9.0,SNR=3.0
H11S1 WAKE ISLAND Hy 28.56 126 T T 04 20 25.4
H11S3 WAKE ISLAND Hy 28.56 126 T T 04 20 25.4
H11S2 WAKE ISLAND Hy 28.58 126 T T 04 20 25.4
ZALV Zalesovo Beam 42.04 312 P **P** 03 52 32.9 +1.3
0.5nm,0.6s,baz=301,slow=37,SNR=2.3
MKAR Makanchi Array 44.47 302 P **P** 03 52 53.8 +2.3
0.2nm,0.3s,baz=98,slow=6.2,SNR=4.7
KURBB Kurchatov Arra 46.22 307 P **P** 03 53 05.9 +0.7
0.8nm,0.6s,baz=81,slow=8.2,SNR=3.3
ILAR Eielson Array 48.25 33 P **P** 03 53 20.9 0.0
0.3nm,0.7s,baz=262,slow=6.2,SNR=3.4
WRA Warramunga Arr 58.06 189 P **P** 03 54 32.7 -0.8
0.9nm,0.7s,baz=6.3,slow=7.3,SNR=9.9
ASAR Alice Springs 61.79 189 P **P** 03 54 59.1 +0.1
0.2nm,0.3s,baz=15,slow=14,SNR=3.6
YKA Yellowknife Ar 62.58 31 P **P** 03 55 03.9 -0.1
0.1nm,0.6s,baz=303,slow=6.5,SNR=3.9
PDAR Pinedale Array 76.38 46 P **P** 03 56 28.9 -1.0
0.2nm,0.6s,baz=65,slow=7.0,SNR=3.2
TXAR Lajitas Array 88.84 53 P **P** 03 57 34.6 -0.2
0.2nm,0.6s,baz=349,slow=3.7,SNR=2.8

NIED ***13*** *03:49:00,36°.90N×143°.40E,h5km,Mw3.8 Best double couple: M₀5.97000×10¹⁴ NP1:φ₈29.00000°,δ27.00000°, λ-89.00000°. NP2:φ₈208.00000°,δ63.00000°, λ-91.00000°.*
IDC ***13*** *03:49:27.4±0.8,36°.77N×143°.61E,h0km,mb3.7/14, mb1 3.9/17,mb1mx3.8/50,mbtmp3.7/17,ML3.2/3,MS2.8/2, Ms1 2.8/2,ms1mx2.4/47,Error ellipse: s-maj=21.4km s-min=18.0km az=118.0*
ISCJB ***13*** *03:49:31.3±0.6,36°.91N±0°.06×143°.47E±0°.05,h33km, mb3.7/14,Error ellipse: s-maj=8.4km s-min=5.3km az=10.7*
JMA ***13*** *03:49:31.4±0.3,36°.94N×143°.44E,h36km,M3.9*
ISC 13 03:49:33.2±0.7,36°.91N±0°.08×143°.46E±0°.07,h35km,n34, σ1°.07/32,mb3.8/14,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JFK	**Kawauchi**	**2.11**	**283**	P	**Pn**	**03 50 05.1**	**-1.0**
JFK				S	Sn	**03 50 30.3**	**-0.8**
ONAJ	**Iwakimizuishiy**	**2.13**	**276**	S	Sn	**03 50 30.8**	**-0.9**
JIO	**Ouri**	**2.27**	**313**	P	**Pn**	**03 50 07.4**	**-0.8**
JIO				S	Sn	**03 50 34.1**	**-0.9**
JMM	**Marumori**	**2.33**	**295**	P	**Pn**	**03 50 08.1**	**-0.8**
JMM				*e*S	Sn	**03 50 35.8**	**-0.5**
JFT	**Otama**	**2.56**	**285**	P	**Pn**	**03 50 12.3**	**+0.1**
JFT				S	Sn	**03 50 42.7**	**+0.5**
OFUJ	**Ofunato**	**2.58**	**327**	S	Sn	**03 50 40.4**	**-2.3**
JOU	**Okura**	**2.65**	**304**	P	**Pn**	**03 50 13.5**	**+0.1**
JOM	**Ohasama**	**3.07**	**327**	S	Sn	**03 50 53.8**	**-1.0**
JYK	**Kaneyama**	**3.16**	**310**	P	**Pn**	**03 50 20.3**	**-0.2**
MJAR	**Matsushiro Arr**	**4.23**	**267**	Pn	**Pn**	**03 50 35.6**	**+0.4**
	5.1nm,0.3s,baz=96,slow=11,SNR=25						
MAT	**Matsushiro**	**4.23**	**267**	P	**Pn**	**03 50 35.8**	**+0.6**
MAT				S	Sn	**03 51 21.6**	**-1.8**
USRK	**Ussuriysk Ar.**	**11.35**	**313**	Pn	**Pn**	**03 52 14.8**	**+2.0**
	0.3nm,0.3s,baz=108,slow=12,SNR=4.6						
KSRS	**Korea Array**	**12.40**	**277**	Pn	Pn	03 52 30.6	+3.5
	0.2nm,0.3s,baz=94,slow=14,SNR=6.0						
KSRS				LR	LR	03 56 56.1	
	comp=Z,45nm,22.0s,baz=160,slow=36						
KLR	**Kul'dur**	**14.97**	**329**	Pn	**Pn**	**03 53 03.9**	**+1.9**
	0.1nm,0.3s,baz=313,slow=19,SNR=2.7						
KLR				LR	LR	03 58 13.5	
	comp=Z,38nm,20.9s,baz=337,slow=35						
SEY	**Seymchan**	**26.62**	**9**	P	**P**	**03 55 08.9**	**+0.8**
	1.7nm,0.7s,baz=211,slow=5.4,SNR=5.6						
H11N2	**WAKE ISLAND Hy**	**26.70**	**123**	T	T	04 22 07.1	
H11N1	**WAKE ISLAND Hy**	**26.71**	**124**	T	T	04 22 07.1	
H11N3	**WAKE ISLAND Hy**	**26.72**	**123**	T	T	04 22 07.1	
H11S1	**WAKE ISLAND Hy**	**27.44**	**126**	T	T	04 23 01.2	
H11S3	**WAKE ISLAND Hy**	**27.44**	**126**	T	T	04 23 01.2	
H11S2	**WAKE ISLAND Hy**	**27.46**	**126**	T	T	04 23 01.2	
MKAR	**Makanchi Array**	**45.56**	**303**	P	**P**	**03 57 50.5**	**+1.0**
	0.3nm,0.4s,baz=84,slow=15,SNR=2.5						
KURBB	**Kurchatov Arra**	**47.36**	**308**	P	**P**	**03 58 04.1**	**+0.6**
	1.1nm,0.7s,baz=80,slow=8.1,SNR=9.9						
ILAR	**Eielson Array**	**48.72**	**32**	P	**P**	**03 58 13.6**	**-0.3**
	0.8nm,0.7s,baz=264,slow=6.7,SNR=12						
INK	**Inuvik**	**53.75**	**27**	P	**P**	**03 58 52.1**	**+0.7**
	0.3nm,0.4s,baz=291,slow=6.9,SNR=5.2						
WRA	**Warramunga Arr**	**57.20**	**190**	P	**P**	**03 59 15.3**	**-1.5**
	0.8nm,0.5s,baz=10,slow=7.2,SNR=12						
ASAR	**Alice Springs**	**60.92**	**190**	P	**P**	**03 59 41.3**	**-1.3**
	0.3nm,0.4s,baz=6.0,slow=7.0,SNR=4.3						
RES	**Resolute Bay**	**62.30**	**15**	P	**P**	**03 59 51.1**	**-0.2**
	0.9nm,0.8s,baz=322,slow=7.3,SNR=7.0						
YKA	**Yellowknife Ar**	**63.09**	**31**	P	**P**	**03 59 55.7**	**-0.9**
	0.2nm,0.6s,baz=302,slow=6.7,SNR=4.9						
FINES	**FINESS Array B**	**69.67**	**333**	P	**P**	**04 00 39.0**	**+0.2**
	1.4nm,0.8s,baz=34,slow=8.1,SNR=3.7						
PDAR	**Pinedale Array**	**76.58**	**46**	P	**P**	**04 01 20.1**	**-0.1**
	0.3nm,0.6s,baz=233,slow=1.5,SNR=3.6						
BRTR	**Keskin Array B**	**80.15**	**313**	P	**P**	**04 01 40.8**	**+0.8**
	0.4nm,0.6s,baz=108,slow=4.0,SNR=2.6						
GERES	**GERESS Array B**	**83.66**	**329**	P	**P**	**04 01 57.2**	**-1.1**
	0.7nm,0.7s,baz=218,slow=26,SNR=3.2						
TXAR	**Lajitas Array**	**88.89**	**54**	P	**P**	**04 02 25.4**	**+1.2**
	0.4nm,0.8s,baz=315,slow=3.7,SNR=4.4						

TEH ***13*** *03:52:31.6,28°.23N×59°.03E,h6km,ML4.0*
IDC ***13*** *03:52:31.3±3.0,27°.98N×58°.78E,h0km,mb3.6/5, mb1 3.6/6,mb1mx3.3/50,mbtmp3.6/6,ML3.4/1,MS3.4/2, Ms1 3.4/2,ms1mx2.8/44,Error ellipse: s-maj=73.2km s-min=25.3km az=145.0*
CSEM ***13*** *03:52:33.4±0.4,28°.11N×59°.16E,h10km,ML4.0,Error ellipse: s-maj=11.0km s-min=7.8km az=116.0*
THR ***13*** *03:52:33.8±1.0,27°.89N×58°.96E,h15km,ML3.8*
ISC 13 03:52:32.9±0.8,28°.07N±0°.05×58°.88E±0°.04,h10km,n37, σ0°.98/36,mb3.6/5,2D,Southern Iran

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
NIAN	**Nian**	**1.88**	**255**	*e*Pn	**Pg**	**03 53 08.9**	**-0.1**
NIAN	**Nian**	**1.88**	**255**	*e*Pn	**Pg**	**03 53 08.9**	**-0.1**
IBND	**Bandar-abas**	**2.16**	**254**	*e*Pn	**Pg**	**03 53 13.5**	**-0.9**
IBND				*e*AMB	AMB	03 53 58.5	
	comp=Z,14μm,0.3s						
IBND	**Bandar-abas**	**2.16**	**254**	*e*Pn	**Pg**	**03 53 13.5**	**-0.9**
ZHSF	**Zahedan**	**2.26**	**47**	*e*Pn	**Pb**	**03 53 14.3**	**+0.3**
ZHSF	**Zahedan**	**2.26**	**47**	*e*Pn	**Pb**	**03 53 14.3**	**+0.3**
NGRK	**Negar Kerman**	**2.45**	**310**	*e*Pn	**Pb**	**03 53 16.2**	**-1.1**
NGRK				*e*Pn	Pg	03 53 24.3	+4.4
NGRK	**Negar Kerman**	**2.45**	**310**	*e*Pn	**Pb**	**03 53 16.2**	**-1.1**
GENO	**Geno**	**2.49**	**255**	*e*Pn	**Pb**	**03 53 18.2**	**+0.3**
GENO	**Geno**	**2.49**	**255**	*e*Pn	**Pb**	**03 53 18.2**	**+0.3**
BNDS	**Bandar-Abbas**	**2.49**	**255**	*e*Pn	**Pb**	**03 53 16.9**	**-1.0**
BNDS				AML	AML	03 53 60.0	
	comp=N,450nm,0.5s						
BNDS	**Bandar-Abbas**	**2.49**	**255**	*e*Pn	**Pb**	**03 53 16.9**	**-1.0**
KRBR	**Kerman**	**2.66**	**316**	*e*Pn	**Pb**	**03 53 20.3**	**-0.5**
KRBR				AML	AML	03 54 00.9	
	comp=E,396nm,0.7s						
KRBR	**Kerman**	**2.66**	**316**	*e*Pn	**Pb**	**03 53 20.3**	**-0.5**
TVBK	**TV Kerman**	**2.66**	**316**	*e*Pn	**Pb**	**03 53 19.0**	**-1.9**
TVBK	**TV Kerman**	**2.66**	**316**	*e*Pn	**Pb**	**03 53 19.0**	**-1.9**
CHBR	**Chabahar**	**2.85**	**150**	*e*Pn	**Pn**	**03 53 17.9**	**-0.6**
CHBR	**Chabahar**	**2.85**	**150**	*e*Pn	**Pn**	**03 53 17.9**	**-0.6**
IKOO	**Kooshah**	**4.34**	**1‖**	*e*Pn	**Pn**	**03 53 38.6**	**-0.6**
IKOO				*e*AMB	AMB	03 54 57.9	
	comp=Z,1μm,0.2s						
IKOO	**Kooshah**	**4.34**	**1‖**	*e*Pn	**Pn**	**03 53 38.6**	**-0.6**
IBAF	**Bafgh**	**4.54**	**321**	*e*Pn	**Pb**	**03 53 52.1**	**-0.6**
IBAF				*e*AMB	AMB	03 55 08.8	
	comp=Z,851nm,0.4s						
IBAF	**Bafgh**	**4.54**	**321**	*e*Pn	**Pb**	**03 53 52.1**	**-0.6**
IDAH	**Dahanechah**	**4.73**	**10**	*e*Pn	**Pn**	**03 53 44.6**	**+0.1**

IDC 13 03:40:52.0±14.0,17°.55S×167°.56E,h0km,mb4.0/3, mb1 4.1/4,mb1mx3.5/43,mbtmp4.0/4,ML3.6/1,MS3.1/1, Ms1 3.1/1,ms1mx2.5/33,Error ellipse: s-maj=239.3km s-min=40.1km az=73.0,Vanuatu Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
DZM	**Mont Dzumac**	**4.62**	**193**	Pn	Pn	03 42 02.9	-0.3
	2.6nm,0.3s,baz=64,slow=13,SNR=19						
DZM				Sn	Sn	03 42 57.1	-0.5
	5.4nm,0.3s,baz=159,slow=22,SNR=10.0						
HNR	**Honiara**	**10.95**	**316**	LR	LR	03 46 45.0	
	comp=Z,93nm,18.4s,baz=286,slow=32						
STKA	**Stephens Creek**	**27.47**	**234**	P	P	03 46 40.6	+0.6
	0.6nm,0.3s,baz=49,slow=6.6,SNR=3.8						
WRA	**Warramunga Arr**	**31.52**	**260**	P	P	03 47 16.1	0.0
	0.9nm,0.8s,baz=89,slow=8.9,SNR=8.5						
ASAR	**Alice Springs**	**32.03**	**253**	P	P	03 47 20.3	-0.3
	2.5nm,0.7s,baz=79,slow=8.6,SNR=27						

ISCJB ***13*** *03:44:39.3±0.6,37°.87N±0°.05×142°.77E±0°.07,h14km, mb3.5/10,Error ellipse: s-maj=9.1km s-min=6.7km az=139.2*
JMA ***13*** *03:44:39.9±0.3,37°.89N×142°.69E,h12km,M4.1*
IDC ***13*** *03:44:44.5±3.9,37°.81N×142°.89E,h40km±35km,mb3.2/10, mb1 3.5/13,mb1mx3.4/55,mbtmp3.5/13,ML3.0/3,MS3.4/1, Ms1 3.4/1,ms1mx2.5/21,Error ellipse: s-maj=27.1km s-min=19.3km az=87.0*
ISC 13 03:44:40.8±0.8,37°.90N±0°.05×142°.61E±0°.08,h14km,n28, σ0°.86/21,mb3.5/10,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**1.14**	**299**	P	**Pb**	**03 45 01.9**	**-0.3**
JIO				S	Sn	**03 45 17.8**	**+0.1**
OFUJ	**Ofunato**	**1.39**	**328**	P	**Pn**	**03 45 05.7**	**-0.1**
OFUJ				S	Sb	**03 45 23.7**	**-0.4**
**J

IDAH eAMB AMB 03 53 45.2
comp=Z,1μm,0.2s
IDAH Dahanechah 4.73 10 ePn Pn 03 53 44.6 +0.1
ITEG Tejag 4.81 359 ePn Pn 03 53 45.1 -0.5
ITEG eAMB AMB 03 54 04.8
comp=Z,2μm,0.3s
ITEG Tejag 4.81 359 ePn Pn 03 53 45.1 -0.5
IMON Monand 5.15 7 ePn Pn 03 53 50.2 -0.1
IMON eAMB AMB 03 54 52.6
comp=Z,744nm,0.2s
IMON Monand 5.15 7 ePn Pn 03 53 50.2 -0.1
IKAZ Kazeroun 6.40 287 ePn Pn 03 54 09.9 +2.3
IKAZ eAMB AMB 03 55 36.0
comp=Z,458nm,0.2s
IKAZ Kazeroun 6.40 287 ePn Pn 03 54 09.9 +2.3
AAK Ala-Archa 19.27 37 P Pn 03 56 58.7 -0.2
comp=Z,0.1nm,0.3s,baz=188,slow=14,SNR=2.6
AKTO Aktyubinsk 22.34 359 P P 03 57 31.7 +0.9
comp=Z,1.4nm,0.7s,baz=184,slow=13,SNR=4.7
AKTO LR LR 04 07 09.2
comp=Z,96nm,20.2s,baz=197,slow=39
BRTR Keskin Array B 23.88 306 P P 03 57 46.5 -0.2
comp=Z,0.4nm,0.6s,baz=134,slow=12,SNR=3.2
BVAR Borovoye Array 26.35 16 P P 03 58 10.0 +1.1
comp=Z,2.1nm,0.9s,baz=204,slow=6.3,SNR=7.5
ARU Arti 28.34 360 LR LR 04 10 34.5
comp=Z,65nm,19.8s,baz=130,slow=38
ZALV Zalesovo Beam 32.08 29 P P 03 59 01.1 +1.2
comp=Z,0.4nm,0.5s,baz=236,slow=10,SNR=3.7
TORD Torodi Ar. Bea 55.09 267 P P 04 02 04.7 -0.7
comp=Z,0.6nm,0.6s,baz=65,slow=6.7,SNR=11

*BYKL **13** 03:53:38.7±0.2,55°.28N×110°.22E*
*MOS **13** 03:53:38.5±0.9,55°.30N×110°.31E,h9km,mb4.0/2,Error ellipse: s-maj=14.4km s-min=7.3km az=64.6*
*IDC **13** 03:53:39.7±1.4,55°.34N×110°.15E,h0km,mb3.7/5, mb1 3.7/10,mb1mx3.4/53,mbtmp3.6/10,ML3.1/4,Error ellipse: s-maj=28.4km s-min=12.0km az=122.0*
ISC 13 03:53:38.9±1.2,55°.30N±0°.03×110°.29E±0°.02,h2km±9km, n51,σ1§90/97,mb3.6/5,3C,Lake Baykal region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
NIZ	**Nizh Angarsk**	**0.64**	**318**	*e*Pg		**Pg**	**Pg**	**03 53 50.7**	**-0.4**
NIZ				*e*Sg		**Sg**	**Sg**	**03 53 58.5**	**-0.9**
NIZ				*e*				03 53 59.6	
NIZ				Pmax					
	96nm,0.2s								
NIZ				max					
	890nm,0.3s								
YLYR	**Ulyunkhan**	**0.66**	**130⇑**	*i*Pg		**Pg**	**Pg**	**03 53 51.2**	**-0.4**
YLYR				*e*Sg		**Sg**	**Sg**	**03 54 00.3**	**+0.2**
YLYR				Pmax					
	219nm,0.2s								
YLYR				Smax					
	1μm,0.4s								
YLYR	**Ulyunkhan**	**0.66**	**130**	*e*PG		**Pg**	**Pg**	**03 53 51.1**	**-0.5**
YLYR				*e*				03 53 59.8	
YLYR				pmax	pmax				
	comp=Z,219nm,0.3s								
YLYR				smax	smax				
	comp=N,1μm,0.5s								
KMO	**Kumora**	**0.78**	**41⇑**	*i*Pg		**Pg**	**Pg**	**03 53 53.7**	**-0.2**
KMO				*e*Sg		**Sg**	**Sg**	**03 54 04.8**	**+0.8**
KMO				Pmax					
	comp=N,193nm,0.3s								
KMO				Smax					
	comp=N,706nm,1.0s								
KMO	**Kumora**	**0.78**	**41**	*e*PG		**Pg**	**Pg**	**03 53 53.6**	**-0.3**
KMO				*e*				03 54 04.4	
KMO				pmax	pmax				
	comp=Z,194nm,0.3s								
KMO				smax	smax				
	comp=N,706nm,1.0s								
YOA	**Uoyan**	**1.16**	**44**	*e*Pg		**Pg**	**Pg**	**03 54 00.7**	**-0.5**
YOA				*e*Sg		**Sg**	**Sg**	**03 54 16.5**	**+0.2**
YOA				Pmax					
	comp=N,207nm,0.5s								
YOA				Smax					
	comp=N,2μm,0.5s								
YOA	**Uoyan**	**1.16**	**44**	*e*PG		**Pg**	**Pg**	**03 54 01.2**	**0.0**
YOA				*i*				03 54 17.6	
YOA				pmax	pmax				
	comp=Z,229nm,0.3s								
YOA				smax	smax				
	comp=E,2μm,0.4s								
SYVR	**Suvo**	**1.66**	**186**	*e*Pg		**Pn**	**Pn**	**03 54 08.8**	**-0.2**
SYVR				*e*				03 54 11.0	
SYVR				*e*Sg		**Sn**	**Sn**	**03 54 31.0**	**+0.1**
SYVR				max					
	comp=E,98nm,0.4s								
SYVR				Smax					
	comp=E,583nm,0.4s								
SYVR	**Suvo**	**1.66**	**186**	*e*PN		**Pn**	**Pn**	**03 54 07.7**	**-1.3**
SYVR				*e*				03 54 31.0	
SYVR				pmax	pmax				
	comp=Z,99nm,0.3s								
SYVR				smax	smax				
	comp=N,585nm,0.4s								
UKT	**Uakit**	**1.91**	**83⇑**	*i*Pg		**Pn**	**Pn**	**03 54 13.6**	**+0.9**
UKT				*e*Sg		**Sb**	**Sb**	**03 54 39.7**	**+0.8**
UKT				Pmax					
	comp=N,271nm,0.3s								
UKT				Smax					
	comp=N,553nm,0.5s								
UKT	**Uakit**	**1.91**	**83**	*e*PN		**Pn**	**Pn**	**03 54 13.5**	**+0.9**
UKT				*e*				03 54 37.3	
UKT				pmax	pmax				
	comp=Z,272nm,0.5s								
UKT				smax	smax				
	comp=N,553nm,0.5s								
SVKR	**Severomuysk**	**2.02**	**65**	*e*Pn		**Pn**	**Pn**	**03 54 13.5**	**-0.6**
SVKR				*e*Pg		**Pb**	**Pb**	**03 54 15.0**	**-1.4**
SVKR				*e*Sg		**Sg**	**Sg**	**03 54 43.3**	**-0.6**
SVKR				Pmax					
	comp=N,207nm,0.3s								
SVKR				Smax					
	comp=N,1μm,0.6s								
OGRR	**Ongureny**	**2.29**	**224**	*e*Pg		**Pn**	**Pn**	**03 54 18.6**	**+0.9**
OGRR				*e*				03 54 19.9	
OGRR				*e*Sg		**Sn**	**Sn**	**03 54 47.6**	**+1.1**
OGRR				max					
	comp=N,55nm,0.3s								
OGRR				Smax					
	comp=N,448nm,0.4s								
OGRR	**Ongureny**	**2.29**	**224**	*e*PN		**Pn**	**Pn**	**03 54 17.3**	**-0.4**
OGRR				*e*				03 54 20.1	
OGRR				*e*				03 54 49.3	
OGRR				pmax	pmax				
	comp=Z,55nm,0.5s								
OGRR				smax	smax				
	comp=N,451nm,0.4s								
BOD	**Bodaibo**	**3.25**	**38**	*e*Pn		**Pn**	**Pn**	**03 54 31.4**	**+0.5**
BOD				*e*Pg		**Pb**	**Pb**	**03 54 37.6**	**+0.2**
BOD				*e*Sn		**Sn**	**Sn**	**03 55 10.5**	**+0.3**
BOD				*e*Sg		**Sb**	**Sb**	**03 55 19.4**	**+2.0**
BOD				Pmax					
	comp=N,20nm,0.5s								
BOD				Smax					
	comp=N,128nm,0.6s								
BOD	**Bodaibo**	**3.25**	**38**	*e*PN		**Pn**	**Pn**	**03 54 30.5**	**-0.4**
BOD				*e*				03 54 37.4	
BOD				*e*S		**Sn**	**Sn**	**03 55 09.8**	**-0.4**
BOD				*e*				03 55 19.1	
BOD				pmax	pmax				
	comp=Z,20nm,0.5s								
BOD				smax	smax				
	comp=E,175nm,1.3s								
NLYR	**Nelyaty**	**3.27**	**66**	*e*Pn		**Pn**	**Pn**	**03 54 31.9**	**+0.7**
NLYR				*e*Pg		**Pb**	**Pb**	**03 54 38.2**	**+0.5**
NLYR				*e*PgPg		**PbPb**	**PbPb**	**03 54 41.1**	**+0.3**
NLYR				*e*Sn		**Sn**	**Sn**	**03 55 07.7**	**-3.0**
NLYR				*e*Sg		**Sb**	**Sb**	**03 55 20.4**	**+2.4**
NLYR				max					
	comp=E,39nm,0.7s								
NLYR				Smax					
	comp=E,302nm,1.6s								
NLYR	**Nelyaty**	**3.27**	**66**	*e*PN		**Pn**	**Pn**	**03 54 32.0**	**+0.7**
NLYR				*e*				03 54 40.0	
NLYR				*e*				03 55 18.5	
NLYR				pmax	pmax				
	comp=Z,38nm,0.7s								
NLYR				smax	smax				
	comp=N,301nm,1.6s								
ZRHB	**Zarechye**	**3.32**	**215**	*e*Pg		**Pb**		**03 54 38.0**	**-0.5**
ZRHB				*e*Sg		**Sb**		**03 55 19.9**	**+0.6**
ZRHB				Pmax					
	comp=N,51nm,0.5s								
ZRHB				Smax					
	comp=N,523nm,1.2s								
TRG	**Tyrgan**	**3.45**	**224**	*e*Pn		**Pn**		**03 54 34.0**	**+0.3**
TRG				*e*Pg		**Pb**		**03 54 39.6**	**-1.1**
TRG				*e*PgPg		**PbPb**		**03 54 42.9**	**-1.0**
TRG				*e*Sn		**Sn**		**03 55 10.8**	**-4.3**
TRG				*e*Sg		**Sb**		**03 55 24.3**	**+1.2**
TRG				max					
	comp=N,21nm,0.2s								
TRG				Smax					
	comp=N,122nm,0.4s								
TRG	**Tyrgan**	**3.45**	**224**	*e*PN		**Pn**		**03 54 33.9**	**+0.3**
TRG				*e*				03 54 41.3	
TRG				*e*S		**Sn**		**03 55 13.5**	**-1.6**
TRG				*e*				03 55 23.9	
TRG				pmax	pmax				
	comp=Z,21nm,0.4s								
TRG				smax	smax				
	comp=E,167nm,0.6s								
CIT	**Chita**	**3.82**	**148**	*e*Sg		**Sb**		**03 55 37.0**	**+3.3**
CIT				Smax					
	comp=E,291nm,0.4s								
HRMR	**Khuramsha**	**4.19**	**210**	*e*Pn		**Pn**		**03 54 43.3**	**-0.5**
HRMR				*e*Pg		**Pb**		**03 54 54.0**	**+0.7**
HRMR				*e*Sn		**Sn**		**03 55 30.4**	**-2.9**
HRMR				*e*Sg		**Sb**		**03 55 47.2**	**+2.9**
HRMR				Pmax					
	comp=E,40nm,0.5s								
HRMR				Smax					
	comp=E,309nm,0.4s								
LSTR	**Listvyanka**	**4.73**	**226**	*e*Pn		**Pn**		**03 54 50.5**	**-0.8**
LSTR				*e*Sn		**Sn**		**03 55 43.1**	**-3.6**
LSTR				*e*Sg		**Sb**		**03 56 03.1**	**+3.1**
LSTR				Smax					
	comp=E,69nm,0.5s								
CRS	**Chara**	**4.75**	**67**	*e*Pn		**Pn**		**03 54 52.6**	**+1.1**
CRS				*e*Pg		**Pb**		**03 55 04.7**	**+1.9**
CRS				*e*Sg		**Sg**		**03 56 07.1**	**-4.1**
CRS				Pmax					
	comp=E,73nm,1.1s								
CRS				Smax					
	comp=E,170nm,1.6s								
CRS	**Chara**	**4.75**	**67**	*e*PN		Pb		03 55 06.1	+3.3
CRS				*e*				03 56 07.6	
CRS				pmax	pmax				
	comp=Z,71nm,1.1s								
CRS				smax	smax				
	comp=E,172nm,1.6s								
TLY	**Talaya**	**5.38**	**230**	Pn		**Pn**		**03 55 01.4**	**+1.3**
	comp=E,0.0nm,0.3s,baz=28,slow=12,SNR=7.2								
TLY				Pg		**Pb**		**03 55 15.3**	**+1.7**
	comp=E,0.0nm,0.3s,baz=5.5,slow=11,SNR=5.6								
TLY				Sn		**Sn**		**03 55 59.4**	**-3.1**
	comp=E,0.0nm,0.3s,baz=247,slow=20,SNR=10								
TLY				Lg	Lg			03 56 24.1	
	comp=E,0.1nm,0.3s,baz=88,slow=23,SNR=17								
TLY	**Talaya**	**5.38**	**230**	*e*Pn		**Pn**		**03 54 59.8**	**-0.3**
TLY				*e*Pg		**Pb**		**03 55 14.4**	**+0.9**
TLY				*e*Sn		**Sn**		**03 55 58.8**	**-3.8**
TLY				*e*Sg		**Sb**		**03 56 21.8**	**+3.4**
TLY				Pmax					
	comp=E,8.0nm,0.5s								
TLY				Smax					
	comp=E,82nm,1.0s								
TLY	**Talaya**	**5.38**	**230**	*e*PN		**Pn**		**03 55 01.8**	**+1.7**
TLY				*e*				03 55 15.1	
TLY				*e*S		**Sn**		**03 56 00.2**	**-2.4**
TLY				*e*				03 56 22.6	
TLY				pmax	pmax				
	comp=Z,6.0nm,0.5s								
TUP	**Tupik**	**5.65**	**95**	*e*Pn		**Pn**		**03 55 04.4**	**+0.5**
TUP				*e*				03 55 12.1	
TUP				*e*Pg		**Pb**		**03 55 20.5**	**+2.3**
TUP				*e*Sn		**Sn**		**03 56 06.3**	**-3.0**
TUP				*e*Sg		**Sg**		**03 56 35.7**	**-4.6**
TUP				Pmax					
	comp=Z,8.0nm,0.5s								
TUP				Smax					
	comp=Z,54nm,0.8s								
TUP	**Tupik**	**5.65**	**95**	*e*PN		**Pn**		**03 55 04.4**	**+0.5**
TUP				*e*				03 55 21.6	
TUP				*e*S		**Sn**		**03 56 08.5**	**-0.8**
TUP				*e*				03 56 35.3	
TUP				pmax	pmax				
	comp=Z,10.0nm,0.5s								
TUP				smax	smax				
	comp=N,54nm,0.8s								
KPC	**Khapcheranga**	**5.75**	**166**	*e*Pn		**Pn**		**03 55 03.5**	**-1.8**
KPC				*e*Pg		**Pb**		**03 55 21.9**	**+1.9**
KPC				*e*Sn		**Sn**		**03 56 07.2**	**-4.7**
KPC				*e*Sg		Sb		03 56 35.9	+6.6
KPC				Pmax					
	comp=N,6.0nm,0.6s								
KPC				Smax					
	comp=N,102nm,1.3s								
ARS	**Arshan**	**5.78**	**237**	*e*Pn		**Pn**		**03 55 05.6**	**-0.1**
ARS				*e*				03 55 17.0	
ARS				*e*				03 55 26.2	
ARS				*e*Sn		**Sn**		**03 56 08.6**	**-4.0**
ARS				*e*Sg		Sb		03 56 36.4	+6.3
ARS				Smax					
	comp=N,235nm,0.6s								
ARS	**Arshan**	**5.78**	**237**	*e*Pn		**Pn**		**03 55 07.0**	**+1.3**
ARS				*e*				03 55 25.5	
ARS				*e*S		**Sn**		**03 56 10.5**	**-2.1**
ARS				*e*				03 56 36.0	
ARS				pmax	pmax				
	comp=Z,25nm,0.5s								
ARS				smax	smax				
	comp=E,234nm,0.6s								
ZAK	**Zakamensk**	**6.50**	**224**	*e*Sg		Sb		03 56 58.5	+7.5
ZAK				Smax					
	comp=E,46nm,1.2s								
ZAK	**Zakamensk**	**6.50**	**224**	*e*PN		**Pn**		**03 55 18.7**	**+3.0**
ZAK				*e*				03 55 39.9	
ZAK				*e*				03 57 01.1	
ZAK				pmax	pmax				
	comp=Z,4.0nm,0.4s								
ZAK				smax	smax				
	comp=E,46nm,1.2s								
MOY	**Mondy**	**6.63**	**241**	*e*Pn		**Pn**		**03 55 17.9**	**+0.4**
MOY				*e*Sn		**Sn**		**03 56 28.6**	**-5.1**
MOY				*e*Sg		Sb		03 57 03.1	+8.4
MOY				Smax					
	comp=E,68nm,1.5s								
MOY	**Mondy**	**6.63**	**241**	*e*PN		**Pn**		**03 55 18.5**	**+1.0**
MOY				*e*				03 55 39.1	
MOY				*e*S		**Sn**		**03 56 31.7**	**-2.0**
MOY				*e*				03 57 03.3	
MOY				pmax	pmax				
	comp=Z,10.0nm,0.6s								
MOY				smax	smax				
	comp=N,68nm,1.4s								
ORL	**Orlik**	**6.78**	**250**	*e*Pn		**Pn**		**03 55 18.8**	**-0.7**
ORL				*e*				03 56 34.9	
ORL				*e*Sg		Sg		03 57 07.9	-8.6
ORL				Smax					
	comp=N,65nm,1.5s								
ORL	**Orlik**	**6.78**	**250**	*e*PN		**Pn**		**03 55 20.4**	**+0.9**
ORL				*e*				03 55 41.8	
ORL				*e*S		**Sn**		**03 56 35.0**	**-2.3**
ORL				*e*				03 57 08.0	
ORL				pmax	pmax				
	comp=Z,5.0nm,0.3s								
ORL				smax	smax				
	comp=N,62nm,1.4s								
SONM	**Songino Array**	**7.86**	**200**	Pn		**Pn**		**03 55 35.8**	**+1.4**
	comp=N,0.2nm,0.3s,baz=9.9,slow=14,SNR=7.4								
SONM				Sn		**Sn**		**03 57 04.3**	**+0.4**
	comp=N,0.2nm,0.3s,baz=12,slow=15,SNR=2.8								
SONM				Lg	Lg			03 57 47.9	
	comp=N,1.3nm,0.3s,baz=12,slow=30,SNR=11								
ZALV	**Zalesovo Beam**	**14.79**	**275**	Pn		**Pn**		**03 57 08.9**	**0.0**
	baz=75,slow=11,SNR=11								
ZALV				Lg	Lg			04 01 26.4	
	baz=78,slow=27,SNR=4.3								
MKAR	**Makanchi Array**	**19.44**	**256**	P		**P**		**03 58 06.7**	**+0.1**
	comp=N,0.1nm,0.3s,baz=58,slow=7.8,SNR=3.8								
KURK	**Kurchatov**	**19.50**	**270**	P		**P**		**03 58 04.1**	**-2.9**
KURK				pmax	pmax				
	comp=Z,1.0nm,0.6s								
KURBB	**Kurchatov Arra**	**19.59**	**269**	P		**P**		**03 58 08.2**	**+0.1**
	comp=Z,0.1nm,0.3s,baz=67,slow=10,SNR=7.3								
BVAR	**Borovoye Array**	**23.25**	**281**	P		**P**		**03 58 49.0**	**+1.7**
	comp=Z,1.1nm,0.5s,baz=61,slow=15,SNR=4.7								
BVAR	**Borovoye Array**	**23.25**	**281**	P		**P**		**03 58 49.0**	**+1.7**
BVAR				pmax	pmax				
	comp=Z,1.0nm,0.5s								
ARCES	**ARCESS Array B**	**38.16**	**325**	P		**P**		**04 00 59.8**	**+0.7**
	comp=Z,3.5nm,0.9s,baz=71,slow=8.9,SNR=2.4								
ILAR	**Eielson Array**	**46.62**	**35**	P		**P**		**04 02 08.9**	**+0.9**
	comp=Z,0.3nm,0.7s,baz=303,slow=8.4,SNR=3.2								
HFS	**Hagfors**	**47.36**	**317**	P		**P**		**04 02 12.4**	**-1.4**
	comp=Z,1.4nm,0.8s,baz=51,slow=9.4,SNR=2.9								
TORD	**Torodi Ar. Bea**	**89.55**	**293**	P		**P**		**04 06 38.6**	**+0.7**
	comp=Z,0.3nm,0.9s,baz=66,slow=3.6,SNR=2.1								

JMA 13 04:03:11.7±0.1,37°.34N×141°.36E,h46km±1km,M3.5, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**0.39**	**274**	P		P	Pn	04 03 21.4	0.0
JFK				S		S	Sn	04 03 28.0	-0.3
ONAJ	**Iwakimizuishiy**	**0.51**	**242**	P		P	Pn	04 03 22.8	-0.1
ONAJ				S		S	Sn	04 03 30.6	-0.2
JMM	**Marumori**	**0.69**	**320**	P		P	Pn	04 03 25.0	-0.2
JMM				S		S	Sn	04 03 34.8	-0.1
JFT	**Otama**	**0.83**	**283**	P		P	Pn	04 03 27.7	+0.6
JFT				S		S	Sn	04 03 38.9	+0.6
JHO	**Hitachi**	**0.96**	**221**	P		P	Pn	04 03 28.4	-0.5
JHO				S		S	Sn	04 03 40.2	-1.2
JIO	**Ouri**	**1.11**	**360**	P		P	Pn	04 03 30.5	-0.4
JOU	**Okura**	**1.16**	**332**	P		P	Pn	04 03 32.1	+0.5
MAT	**Matsushiro**	**2.65**	**253**	P		P	Pn	04 03 53.5	+1.6
MAT				S		S	Sn	04 04 26.6	+3.8

*THR **13** 04:05:38.8±0.6,34°.35N×45°.42E,h14km±9km,ML3.6*
*ISN **13** 04:05:38.5±0.3,34°.24N×45°.55E,h0km,ML3.7*
*CSEM **13** 04:05:39.3±0.6,34°.36N×45°.54E,h2km,ML3.7,Error ellipse: s-maj=11.1km s-min=9.2km az=70.0*
*TEH **13** 04:05:39.4,34°.35N×45°.48E,h5km,ML3.7*
ISC 13 04:05:39.9±2.0,34°.35N±0°.06×45°.52E±0°.08,h18km,n37, σ1§44/42,Iran-Iraq border region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
IDHR	**Dehrash**	**0.80**	**64**	*e*Pg		**Pg**	**Pb**	**04 05 53.4**	**-2.1**
IDHR				*e*Sg		**Sg**	**Sb**	**04 06 04.8**	**-1.3**
IDHR				*e*AMB		AMB	AMB	04 06 05.9	
	comp=Z,1μm,0.1s								
IDHR	**Dehrash**	**0.80**	**64**	*e*Pg		**Pg**	**Pb**	**04 05 53.4**	**-2.1**
IDHR				*e*Sg		**Sg**	**Sb**	**04 06 04.8**	**-1.3**
IGHG	**Ghaleghazi**	**0.87**	**91**	*e*Pg		**Pg**	**Pb**	**04 05 55.5**	**-1.2**
IGHG				*e*Sg		**Sg**	**Sg**	**04 06 08.3**	**-0.3**
IGHG				*e*AMB		AMB	AMB	04 06 10.2	
	comp=Z,33μm,0.2s								
IGHG	**Ghaleghazi**	**0.87**	**91**	*e*Pg		**Pg**	**Pb**	**04 05 55.5**	**-1.2**
IGHG				*e*Sg		**Sg**	**Sg**	**04 06 08.3**	**-0.3**
ILIN	**Lien**	**1.32**	**64**	*e*Sg		**Sb**	**Sb**	**04 06 21.6**	**+0.5**
ILIN				*e*Pg		**Pn**	**Pn**	**04 06 03.7**	**-0.1**
ILIN				*e*AMB		AMB	AMB	04 06 25.2	
	comp=Z,6μm,0.3s								
BHD	**Baghdad**	**1.43**	**222**	*i* Pg		Pg	Pg	04 06 08.9	+1.4
	baz=45								
BHD				*i* Sg		Sg	Sg	04 06 30.2	+4.1
SNGE	**Sanandaj**	**1.68**	**63**	*e*Pg		**Pg**	**Pb**	**04 06 10.8**	**+0.3**
SNGE				*e*Sg		**Sg**	**Sg**	**04 06 34.6**	**+0.3**
SNGE				AML		AML	AML	04 06 36.8	
	comp=N,852nm,0.5s								
SNGE				AML		AML	AML	04 06 39.6	
	comp=E,713nm,0.5s								
SNGE	**Sanandaj**	**1.68**	**63**	*e*Pg		**Pg**	**Pb**	**04 06 10.8**	**+0.3**
SNGE				*e*Sg		**Sg**	**Sg**	**04 06 34.6**	**+0.3**
IBZA	**Bozab**	**1.94**	**86**	*e*Pn		**Pn**	**Pn**	**04 06 12.7**	**+0.4**
IBZA				*e*AMB		AMB	AMB	04 06 43.9	
	comp=Z,11μm,0.2s								
IBZA	**Bozab**	**1.94**	**86**	*e*Pn		**Pn**	**Pn**	**04 06 12.7**	**+0.4**
IKFM	**Kafar-mosalman**	**2.10**	**112**	*e*Pn		**Pn**	**Pn**	**04 06 15.9**	**+1.7**
IKFM				*e*AMB		AMB	AMB	04 06 51.3	
	comp=Z,99nm,0.3s								
IKFM	**Kafar-mosalman**	**2.10**	**112**	*e*Pn		**Pn**	**Pn**	**04 06 15.9**	**+1.7**
ZNJK	**Zanjan**	**3.47**	**47**	*e*Pn		**Pn**	**Pn**	**04 06 35.6**	**+2.3**
ZNJK	**Zanjan**	**3.47**	**47**	*e*Pn		**Pn**	**Pn**	**04 06 35.6**	**+2.3**
IBST	**Bostanabad**	**3.53**	**18**	*e*AMB		AMB	AMB	04 07 32.7	
	comp=Z,681nm,0.3s								
ASAO	**Ashtian**	**3.73**	**86**	*e*Pn		**Pn**	**Pn**	**04 06 39.2**	**+2.3**
ASAO				AML		AML	AML	04 07 54.0	
	comp=N,56nm,0.8s								
ASAO	**Ashtian**	**3.73**	**86**	*e*Pn		**Pn**	**Pn**	**04 06 39.2**	**+2.3**
KHMZ	**Khomeyn**	**3.74**	**98**	*e*Pn		**Pn**	**Pn**	**04 06 39.8**	**+2.8**
KHMZ				AML		AML	AML	04 07 54.7	
	comp=N,58nm,0.6s								
KHMZ	**Khomeyn**	**3.74**	**98**	*e*Pn		**Pn**	**Pn**	**04 06 39.8**	**+2.8**
IRAZ	**Razeghan**	**3.78**	**73**	*e*Pn		**Pn**	**Pn**	**04 06 39.2**	**+1.7**
IRAZ				*e*AMB		AMB	AMB	04 07 10.4	
	comp=Z,714nm,0.3s								
IRAZ	**Razeghan**	**3.78**	**73**	*e*Pn		**Pn**	**Pn**	**04 06 39.2**	**+1.7**
ISHB	**Shabestar**	**3.93**	**1**	*e*Pn		**Pn**	**Pn**	**04 06 39.8**	**+0.2**
ISHB				*e*AMB		AMB	AMB	04 06 57.6	
	comp=Z,789nm,0.2s								
IMRD	**Marand**	**4.36**	**2**	*e*Pn		**Pn**	**Pn**	**04 06 46.0**	**+0.5**
IMRD				*e*AMB		AMB	AMB	04 08 17.1	
	comp=Z,654nm,0.3s								
IMRD	**Marand**	**4.36**	**2**	*e*Pn		**Pn**	**Pn**	**04 06 46.0**	**+0.5**
IPIR	**Pirpir**	**4.79**	**109**	*e*Pn		**Pn**	**Pn**	**04 06 52.0**	**+0.6**
IPIR				*e*AMB		AMB	AMB	04 07 52.0	
	comp=Z,1μm,0.2s								
IPIR	**Pirpir**	**4.79**	**109**	*e*Pn		**Pn**	**Pn**	**04 06 52.0**	**+0.6**
GRMI	**Germi**	**4.85**	**23**	*e*Pn		**Pn**	**Pn**	**04 06 53.9**	**+1.8**
GRMI	**Germi**	**4.85**	**23**	*e*Pn		**Pn**	**Pn**	**04 06 53.9**	**+1.8**
IKLH	**Kolahrood**	**5.15**	**100**	*e*Pn		**Pn**	**Pn**	**04 06 57.4**	**+1.0**
IKLH				*e*AMB		AMB	AMB	04 08 05.6	
	comp=Z,566nm,0.2s								
IKLH	**Kolahrood**	**5.15**	**100**	*e*Pn		**Pn**	**Pn**	**04 06 57.4**	**+1.0**
IVRN	**Varamin**	**5.16**	**81**	*e*Pn		**Pn**	**Pn**	**04 06 56.9**	**+0.6**
IVRN				*e*AMB		AMB	AMB	04 07 27.7	
	comp=Z,228nm,0.2s								
IVRN	**Varamin**	**5.16**	**81**	*e*Pn		**Pn**	**Pn**	**04 06 56.9**	**+0.6**

mb1 4.5/31,mb1mx4.4/46,mbtmp4.8/31,MS3.4/9,
Ms1 3.4/9,ms1mx3.0/44,Error ellipse: s-maj=12.3km
s-min=8.8km az=99.0
MOS ***13*** *04:18:32.2±1.0,5°22S×151°38E,h128km,mb4.7/30,Error*
ellipse: s-maj=9.7km s-min=7.6km az=106.6
DJA ***13*** *04:18:37.3±1.0,5°5S×15°1E±°,h144km±8km,M5.3/22,*
mb5.0/22,mB5.5/6,MLv5.7/1,Mw(mB)4.9/6
ISC 13 04:18:33.6±0.3,5°24S±0°05×151°47E±0°06,h129km,n216,
σ1§**27**/220,**mb4.8**/93,**2C-1D,New Britain region**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
RABL	**Rabaul**	**1.25**	**34**	*e*Pn	Pn	04 18 54.7	-4.3
PMG	**Port Moresby**	**5.95**	**226**	P	**Pn**	**04 19 57.7**	**-1.8**
	18nm,0.3s,baz=36,slow=7.8,SNR=34						
PMG				S	**Sn**	**04 21 04.7**	**-1.8**
	56nm,0.3s,baz=93,slow=18,SNR=13						
PMG				LR	LR	04 22 29.4	
	comp=Z,421nm,18.9s,baz=55,slow=40						
PMG	**Port Moresby**	**5.95**	**226**	*e*P	**Pn**	**04 19 58.0**	**-1.5**
PMG				*e*S	**Sn**	**04 21 04.5**	**-2.0**
PMG	**Port Moresby**	**5.95**	**226**	*e*Pn	**Pn**	**04 19 58.0**	**-1.5**
PMG				*e*S	**Sn**	**04 21 04.5**	**-2.0**
JAY	**Jayapura**	**11.07**	**284**	P	**Pn**	**04 21 08.1**	**-0.4**
	0.1nm,0.3s,baz=293,slow=23,SNR=12						
JAY	**Jayapura**	**11.07**	**284**	P	**Pn**	**04 21 10.2**	**+1.7**
GENI	**Genyem**	**11.58**	**283**	P	**Pn**	**04 21 16.6**	**+1.5**
COEN	**Coen**	**11.91**	**223**	P	**Pn**	**04 21 17.9**	**-1.5**
	baz=12,SNR=9.4						
COEN	**Coen**	**11.91**	**223**	*e*Pn	**Pn**	**04 21 18.2**	**-1.2**
PATS	**Pohnpei**	**13.81**	**30**	P	**Pn**	**04 21 41.1**	**-2.9**
	baz=14,SNR=3.4						
MTSU	**Mount Surprise**	**14.60**	**208**	P	**Pn**	**04 21 55.4**	**+1.3**
	baz=15,SNR=24						
CTA	**Charters Tower**	**15.61**	**199**	P	**Pn**	**04 22 07.1**	**+0.4**
	1.3nm,0.3s,baz=18,slow=13,SNR=20						
CTA	**Charters Tower**	**15.61**	**199**	P	**Pn**	**04 22 07.3**	**+0.7**
	baz=16						
CTAO	**Charters Tower**	**15.61**	**199**	*e*P	**P**	**04 22 09.5**	**+1.4**
CTAO				pmax	pmax		
	comp=Z,22nm,0.8s						
CTAO	**Charters Tower**	**15.61**	**199**	*e*Pn	**P**	**04 22 09.5**	**+1.4**
	comp=Z,22nm,0.8s						
QIS	**Mount Isa**	**19.10**	**216**	P	**P**	**04 22 46.9**	**+0.4**
	baz=19,SNR=27						
FAKI	**Fak Fak**	**19.31**	**276**	P	**Pn**	**04 22 50.3**	**-0.9**
FAKI	**Fak Fak**	**19.31**	**276**	*e*P	**P**	**04 22 48.8**	**-0.1**
	comp=Z,34nm,0.8s						
GUMO	**Guam**	**19.82**	**341**	P	**Pn**	**04 22 55.9**	**-1.3**
	comp=Z,6.3nm,0.3s,baz=190,slow=5.7,SNR=7.2						
GUMO	**Guam**	**19.82**	**341**	*e*P	**Pn**	**04 22 55.9**	**-1.3**
	comp=Z,256nm,0.9s						
EIDS	**Eidsvold**	**20.02**	**181**	P	**P**	**04 22 56.2**	**-0.2**
	baz=20						
EIDS	**Eidsvold**	**20.02**	**181**	*e*P	**P**	**04 22 56.3**	**-0.1**
	comp=Z,20nm,0.9s						
KDU	**Kakadu**	**20.16**	**247**	P	**P**	**04 22 57.2**	**-0.7**
	baz=20,SNR=60						
SAUI	**Saumlaki**	**20.22**	**261**	P	**P**	**04 23 00.2**	**+1.5**
SWI	**Sorong**	**20.64**	**281**	P	Pn	04 23 04.9	-1.9
	comp=Z,183nm,1.0s,comp=Z,2μm						
RMQ	**Roma**	**21.28**	**187**	P	**P**	**04 23 10.8**	**+0.8**
	baz=21,SNR=7.0						
MTN	**Manton Dam**	**21.44**	**248**	P	**P**	**04 23 10.7**	**-1.1**
	baz=22,SNR=28						
MTN	**Manton Dam**	**21.44**	**248**	*e*P	**P**	**04 23 10.7**	**-1.1**
	comp=Z,219nm,1.1s						
MTN				*e*S	**S**	**04 27 01.9**	**-0.3**
DZM	**Mont Dzumac**	**22.14**	**140**	P	**P**	**04 23 18.4**	**-0.7**
	comp=Z,45nm,1.0s,baz=10,slow=9.5,SNR=22						
DZM				LR	LR	04 30 16.2	
	comp=Z,281nm,19.0s,baz=292,slow=32						
WRAB	**Tennant Creek**	**22.15**	**227**	*e*P	**P**	**04 23 18.0**	**-1.2**
WRAB				*e*		04 27 15.5	
WRAB				pmax	pmax		
	comp=Z,96nm,0.7s						
WRAB	**Tennant Creek**	**22.15**	**227**	*e*P	**P**	**04 23 18.0**	**-1.2**
	comp=Z,96nm,0.7s						
WRAB				*e*PcP	**PcP**	**04 27 15.5**	**+3.9**
WB2	**Warramunga Arr**	**22.16**	**227**	*e*P	**P**	**04 23 18.2**	**-1.1**
	comp=Z,88nm,0.8s						
WRA	**Warramunga Arr**	**22.17**	**227**	P	**P**	**04 23 18.1**	**-1.3**
	comp=Z,80nm,0.8s,baz=50,slow=10,SNR=101						
WRA				S	**S**	**04 27 15.7**	**+0.9**
	comp=Z,25nm,1.2s,baz=56,slow=19,SNR=9.1						
WRA				ScP	**ScP**	**04 30 39.8**	**+2.5**
	comp=Z,7.2nm,0.9s,baz=47,slow=2.9,SNR=14						
WRA	**Warramunga Arr**	**22.17**	**227**	P	**P**	**04 23 18.1**	**-1.3**
WRA				S	**S**	**04 27 15.7**	**+0.9**
WRA				pmax	pmax		
	comp=Z,73nm,0.8s						
WRA				smax	smax		
	comp=N,25nm,1.2s						
WRA				pmax	pmax		
	comp=N,7.0nm,0.9s						
AS01	**Alice Springs**	**24.91**	**221**	*e*P	**P**	**04 23 44.3**	**-0.6**
AS31	**Alice Springs**	**24.94**	**221**	*e*P	**P**	**04 23 45.0**	**-0.2**
	comp=N,16nm,0.6s						
ASAR	**Alice Springs**	**24.94**	**221**	P	**P**	**04 23 44.8**	**-0.4**
	comp=N,43nm,0.7s,baz=54,slow=8.8,SNR=122						
ASAR				S	S	04 28 11.6	+12
	comp=N,6.8nm,1.0s,baz=40,slow=19,SNR=9.7						
ASAR				ScP	**ScP**	**04 30 47.9**	**+3.2**
	comp=N,3.4nm,0.8s,baz=50,slow=3.1,SNR=10						
ARMA	**Armidale**	**25.04**	**180**	P	**P**	**04 23 47.1**	**+1.1**
	baz=25,SNR=4.0						
ARMA	**Armidale**	**25.04**	**180**	*e*P	**P**	**04 23 46.8**	**+0.7**
	comp=N,32nm,1.1s						
SANI	**Sanana**	**25.62**	**276**	P	**P**	**04 23 52.9**	**+1.5**
CMSA	**Cobar Meteorol**	**26.71**	**191**	P	**P**	**04 24 00.6**	**-0.4**
	baz=27						
SOEI	**Soe**	**27.33**	**259**	P	**P**	**04 24 08.0**	**+1.1**
SOEI	**Soe**	**27.33**	**259**	*e*P	**P**	**04 24 07.1**	**+0.3**
	comp=N,86nm,0.9s						
H11S3	**WAKE ISLAND Hy**	**27.95**	**32**	T	T	04 52 33.1	
	baz=207,slow=74,SNR=3.1						
H11S2	**WAKE ISLAND Hy**	**27.96**	**32**	T	T	04 52 34.1	
	baz=1.2,slow=74,SNR=2.7						
H11S1	**WAKE ISLAND Hy**	**27.97**	**32**	T	T	04 52 40.4	
BATI	**Baumata**	**27.98**	**258**	P	**P**	**04 24 13.1**	**+0.6**
	comp=N,34nm,0.7s,baz=326,slow=24,SNR=8.1						
BATI	**Baumata**	**27.98**	**258**	P	**P**	**04 24 14.0**	**+1.5**
STKA	**Stephens Creek**	**28.07**	**198**	P	**P**	**04 24 12.5**	**-0.5**
	comp=N,5.5nm,0.7s,baz=0.2,slow=11,SNR=8.4						
STKA				ScP	**ScP**	**04 30 59.1**	**+5.3**
	comp=N,1.4nm,0.6s,baz=301,slow=3.3,SNR=3.2						
STKA	**Stephens Creek**	**28.07**	**198**	P	**P**	**04 24 12.8**	**-0.2**
	baz=28,SNR=11						
FITZ	**Fitzroy Crossi**	**28.29**	**241**	P	**P**	**04 24 14.3**	**-0.9**
	comp=N,61nm,0.8s,baz=64,slow=7.0,SNR=100						
FITZ				LR	LR	04 37 06.5	
	comp=N,65nm,18.6s,baz=44,slow=39						
FITZ	**Fitzroy Crossi**	**28.29**	**241**	P	**P**	**04 24 14.2**	**-0.9**
	baz=28,SNR=80						
FITZ	**Fitzroy Crossi**	**28.29**	**241**	*e*P	**P**	**04 24 14.3**	**-0.9**
	comp=N,56nm,0.8s						
MSVF	**Nonsavu**	**28.80**	**118**	*e*P	**P**	**04 24 20.3**	**+0.4**
MSVF				pmax	pmax		
	comp=Z,20nm,0.9s						
MSVF	**Nonsavu**	**28.80**	**118**	*e*P	**P**	**04 24 20.3**	**+0.4**
	comp=Z,20nm,0.9s						
H11N1	**WAKE ISLAND Hy**	**29.07**	**31**	T	T	04 54 03.8	
H11N3	**WAKE ISLAND Hy**	**29.09**	**31**	T	T	04 54 03.8	
H11N2	**WAKE ISLAND Hy**	**29.09**	**31**	T	T	04 54 03.8	
WRKA	**Warakurna**	**29.69**	**226**	P	**P**	**04 24 26.8**	**-0.9**
	baz=30,SNR=53						
HTT	**Hallett**	**30.38**	**201**	P	**P**	**04 24 33.6**	**0.0**
	baz=31,SNR=14						
BBOO	**Buckleboo**	**30.97**	**206**	P	**P**	**04 24 38.0**	**-0.7**
	baz=31,SNR=8.3						
KAPI	**Kappang**	**31.59**	**269**	LR	LR	04 40 35.6	
	comp=Z,20nm,18.2s,baz=99,slow=42						
PLAI	**Plampang**	**33.62**	**262**	P	**P**	**04 25 00.1**	**-2.0**
TWSI	**Taliwang, Sumb**	**34.49**	**262**	P	**P**	**04 25 09.9**	**+0.2**
	comp=Z,16nm,0.7s						
MBWA	**Marble Bar**	**34.60**	**240**	*e*P	**P**	**04 25 09.7**	**-0.9**
	comp=Z,34nm,0.6s						
JAGI	**Jajag, Banyuwa**	**37.18**	**263**	*e*P	**P**	**04 25 30.7**	**-1.9**
	comp=Z,31nm,0.9s						
KMBL	**Kambalda**	**38.02**	**223**	P	**P**	**04 25 38.8**	**-0.6**
	baz=38,SNR=6.8						
GIRL	**Giralia**	**39.89**	**241**	P	**P**	**04 25 55.3**	**+0.1**
	baz=40,SNR=19						
URZ	**Urewera**	**40.29**	**148**	P	**P**	**04 25 57.5**	**-0.8**
	comp=Z,3.2nm,0.4s,baz=345,slow=1.2,SNR=7.0						
URZ				LR	LR	04 40 15.7	
	comp=Z,84nm,18.3s,baz=326,slow=32						
YULB	**Yu-li**	**40.96**	**315**	*e*P	**P**	**04 26 03.8**	**-0.1**
	comp=Z,13nm,0.7s						
MORW	**Morawa**	**41.04**	**231**	P	**P**	**04 26 03.5**	**-1.0**
	baz=41,SNR=9.8						
KLBR	**Kellerberrin**	**41.04**	**226**	P	**P**	**04 26 03.4**	**-1.1**
	baz=41,SNR=5.3						
THZ	**Tophouse**	**41.09**	**155**	*e*P	**P**	**04 26 05.0**	**+0.2**
	comp=Z,54nm,1.7s						
NACB	**Ninganchiao**	**41.26**	**316**	*e*P	**P**	**04 26 05.7**	**-0.7**
	comp=Z,21nm,0.8s						
BLDU	**Ballidu**	**41.29**	**228**	P	**P**	**04 26 05.6**	**-1.0**
	baz=42,SNR=13						
SSLB	**Suanglung**	**41.45**	**315**	*e*P	**P**	**04 26 08.8**	**+0.9**
	comp=Z,18nm,1.0s						
YHNB	**Yeheng**	**41.73**	**317**	*e*P	**P**	**04 26 11.3**	**+1.0**
	comp=Z,51nm,0.9s						
RPZ	**Rata Peaks**	**42.03**	**159**	P	**P**	**04 26 11.5**	**-0.8**
	comp=Z,8.5nm,0.7s,baz=250,slow=0.9,SNR=8.6						
RPZ				LR	LR	04 42 57.7	
	comp=Z,84nm,18.3s,baz=337,slow=35						
RPZ	**Rata Peaks**	**42.03**	**159**	*e*P	**P**	**04 26 12.8**	**+0.5**
NWAO	**Narrogin (SRO)**	**42.14**	**225**	P	**P**	**04 26 12.7**	**-0.7**
	comp=Z,5.3nm,0.6s,baz=256,slow=0.3,SNR=3.8						
MUN	**Mundaring**	**42.36**	**227**	P	**P**	**04 26 14.2**	**-1.0**
	baz=42						
MJAR	**Matsushiro Arr**	**43.38**	**344**	LR	LR	04 44 37.8	
	comp=Z,16nm,18.6s,baz=235,slow=36						
MAJO	**Matsushiro**	**43.38**	**344**	*i*P	**P**	**04 26 21.3**	**-2.1**
MAJO				pmax	pmax		
	comp=Z,65nm,1.0s						
CISI	**Cisompet, Garu**	**43.43**	**265**	*e*P	**P**	**04 26 22.7**	**-1.5**
	comp=Z,50nm,0.8s						
LEM	**Lembang**	**43.63**	**266**	LR	LR	04 48 13.7	
	comp=Z,33nm,18.4s,baz=214,slow=41						
KASI	**Kota Agung**	**46.76**	**267**	P	**P**	**04 26 49.6**	**-0.8**
KSRS	**Korea Array**	**47.81**	**335**	P	**P**	**04 26 59.3**	**+1.2**
	comp=Z,3.1nm,0.6s,baz=157,slow=8.9,SNR=10						
KSRS				PcP	**PcP**	**04 28 24.9**	**-0.1**
	comp=Z,1.2nm,0.6s,baz=183,slow=3.7,SNR=4.3						
KSRS				ScP	**ScP**	**04 32 10.6**	**+3.1**
	comp=Z,0.7nm,0.3s,baz=137,slow=5.3,SNR=4.4						
KSRS				LR	LR	04 46 18.1	
	comp=Z,23nm,20.1s,baz=146,slow=35						
KSAR	**Wonju Array Be**	**47.82**	**335**	P	**P**	**04 26 59.3**	**+1.1**
KSAR						04 28 24.9	
KSAR	**Wonju Array Be**	**47.82**	**335**	P	**P**	**04 26 59.3**	**+1.1**
KSAR				PcP	**PcP**	**04 28 24.9**	**-0.2**
KSAR				ScP	**ScP**	**04 32 10.6**	**+3.0**
NJ2	**Nanjing**	**48.37**	**322**	*e*P	**P**	**04 27 01.9**	**-0.6**
NJ2				pmax	pmax		
	comp=Z,17nm,0.8s						
PPI	**Padang Panjang**	**51.21**	**274**	P	**P**	**04 27 23.2**	**-1.2**
IPM	**Ipoh**	**51.30**	**280**	*e*P	**P**	**04 27 24.5**	**-0.6**
	comp=Z,12nm,0.8s						
SKNT	**Sakolnakorn**	**51.85**	**296**	P	**P**	**04 27 30.0**	**+0.9**
	comp=Z,26nm,0.9s						
MNSI	**Mandailing Nat**	**52.17**	**275**	P	**P**	**04 27 32.7**	**+1.2**
	comp=Z,36nm,0.3s,comp=Z,17μm						
USRK	**Ussuriysk Ar.**	**52.25**	**342**	P	**P**	**04 27 32.3**	**+0.8**
	comp=Z,1.2nm,0.5s,baz=160,slow=9.2,SNR=3.9						
USRK				ScP	**ScP**	**04 32 29.0**	**+2.6**
	comp=Z,1.8nm,0.8s,baz=85,slow=6.5,SNR=4.6						
KHON	**Khomkaen**	**52.67**	**295**	P	**P**	**04 27 36.9**	**+1.8**
	comp=Z,7.1nm,0.7s,comp=Z,777nm						
PSI	**Prapat**	**53.09**	**277**	P	**P**	**04 27 37.6**	**-0.9**
	comp=Z,2.4nm,0.3s,baz=195,slow=11,SNR=4.0						
MDJ	**Mudanjiang**	**53.38**	**341**	P	P	04 27 41.6	+1.7
MDJ				pmax	pmax		
	comp=Z,9.0nm,2.1s						
MDJ				pmax	pmax		
	comp=Z,55nm,3.3s						
ENH	**Enshi**	**53.49**	**314**	*e*P	**P**	**04 27 41.3**	**+0.3**
	comp=Z,18nm,1.0s						
GYA	**Guiyang**	**53.62**	**308**	*e*P	P	04 27 44.3	+2.2
GYA				pP	pP	04 28 12.4	0.0
GYA				sP	sP	04 28 25.5	-1.1
GYA				PP	**PP**	**04 29 47.8**	**+3.6**
GYA				ScP	**ScP**	**04 32 35.0**	**+2.0**
GYA				S	**S**	**04 35 07.6**	**+1.6**
GYA				sS	sS	04 35 55.3	-3.0
GYA				pmax	pmax		
	comp=Z,10.0nm,1.0s						
GYA				pmax	pmax		
	comp=Z,110nm,6.2s						
PBKT	**Sadao Pong**	**54.42**	**295**	P	**P**	**04 27 49.1**	**+1.2**
	comp=Z,7.9nm,1.3s						
UTTA	**Uttaradit**	**55.19**	**296**	P	**P**	**04 27 54.8**	**+1.4**
	comp=Z,6.5nm,1.1s						
NANT	**Nan**	**55.42**	**297**	P	**P**	**04 27 55.7**	**+0.6**
	comp=Z,14nm,1.2s,comp=Z,127nm						
SRDT	**SRDT**	**55.44**	**291**	P	**P**	**04 27 56.9**	**+1.6**
	comp=Z,80nm,1.0s						
SUKH	**Sukhothai**	**55.93**	**295**	P	**P**	**04 28 00.3**	**+1.6**
	comp=Z,4.3nm,1.1s,comp=Z,46nm						
XAN	**Xi'an**	**56.04**	**317**	P	**P**	**04 27 59.3**	**0.0**
XAN				pP	pP	04 28 25.3	-4.5
XAN				pmax	pmax		
	comp=Z,48nm,0.9s						
KHLT	**Khaolaem Dam**	**56.06**	**292**	P	**P**	**04 28 01.2**	**+1.5**
	comp=Z,12nm,1.0s,comp=Z,350nm						
KMI	**Kunming**	**56.14**	**305**	P	**P**	**04 28 01.8**	**+1.4**
KMI				pP	pP	04 28 27.1	-3.9
KMI				pmax	pmax		
	comp=Z,13nm,0.7s						
LAMP	**Lampang**	**56.27**	**296**	P	**P**	**04 28 02.5**	**+1.3**
	comp=Z,9.0nm,0.9s						
CM01	**Chiang Mai Arr**	**56.84**	**296**	*e*P	**P**	**04 28 05.8**	**+0.6**
CM31	**Chiang Mai Arr**	**56.87**	**296**	*e*P	**P**	**04 28 06.7**	**+1.3**
CMAR	**Chiang Mai Arr**	**56.87**	**296**	P	**P**	**04 28 06.7**	**+1.3**
	comp=Z,14nm,1.0s,baz=115,slow=5.5,SNR=65						
CMAR				ScP	**ScP**	**04 32 49.9**	**+2.5**
	comp=Z,0.9nm,0.8s,baz=136,slow=2.6,SNR=5.0						
CMAR	**Chiang Mai Arr**	**56.87**	**296**	P	**P**	**04 28 06.7**	**+1.3**
CMAR				pmax	pmax		
	comp=Z,10.0nm,0.8s						
CMAR				pmax	pmax		
	comp=N,1.0nm,0.8s						
KLR	**Kul'dur**	**56.91**	**345**	P	**P**	**04 28 04.2**	**-0.9**
	comp=N,1.7nm,0.5s,baz=151,slow=3.2,SNR=6.7						
CMMT	**Chiang Mai**	**56.98**	**296**	P	**P**	**04 28 07.0**	**+0.8**
	comp=N,22nm,1.3s						
CHTO	**Chiang Mai**	**56.99**	**296**	P	**P**	**04 28 07.0**	**+0.8**
	comp=N,97nm,1.3s						
CHTO	**Chiang Mai**	**56.99**	**296**	*e*P	**P**	**04 28 06.8**	**+0.6**
CHTO				*e*		04 29 00.3	
CHTO				pmax	pmax		
	comp=Z,20nm,1.0s						
CHTO	**Chiang Mai**	**56.99**	**296**	*e*P	**P**	**04 28 06.8**	**+0.6**
	comp=Z,20nm,1.0s						
CHTO				*e*PcP	**PcP**	**04 29 00.3**	**+0.3**
CD2	**Chengdu**	**58.02**	**311**	P	**P**	**04 28 13.1**	**-0.3**
CD2				pmax	pmax		
	comp=Z,30nm,0.5s						
PETK	**Petropavlovsk-**	**58.37**	**4**	P	**P**	**04 28 12.5**	**-2.7**
	comp=Z,2.1nm,0.6s,baz=156,slow=9.1,SNR=6.7						
PETK	**Petropavlovsk-**	**58.37**	**4**	P	**P**	**04 28 12.5**	**-2.7**
PETK				pmax	pmax		
	comp=Z,3.0nm,0.9s						
HHC	**Hu-ho-hao-te**	**58.64**	**325**	*e*P	P	04 28 20.3	+2.8
HHC				pP	pP	04 28 47.0	-1.3
HHC				sP	sP	04 28 59.1	-3.4
HHC				S	**S**	**04 36 14.6**	**+2.6**
HHC				pmax	pmax		
	comp=Z,24nm,0.9s						
HHC				pmax	pmax		
	comp=Z,73nm,10.1s						
LZH	**Lanzhou**	**60.63**	**317**	*e*P	**P**	**04 28 33.0**	**+1.7**
LZH				pP	pP	04 28 59.8	-2.5
LZH				sP	PcP	04 29 10.8	-3.6
LZH				pmax	pmax		
	comp=Z,31nm,1.0s						
LZH				pmax	pmax		
	comp=Z,120nm,4.5s						
GTA	**Gaotai**	**65.09**	**318**	*e*P	**P**	**04 29 01.6**	**+0.9**
GTA				pP	pP	04 29 28.8	-3.3
GTA				sP	sP	04 29 41.1	-5.0
GTA				pmax	pmax		
	comp=Z,9.0nm,0.9s						
SHL	**Shillong**	**65.39**	**301**	*e*P	**P**	**04 29 03.0**	**0.0**
SONM	**Songino Array**	**66.00**	**329**	P	**P**	**04 29 07.0**	**+0.6**
	comp=Z,8.5nm,0.6s,baz=120,slow=7.3,SNR=6.0						
SONM	**Songino Array**	**66.00**	**329**	P	**P**	**04 29 07.0**	**+0.6**
SONM				pmax	pmax		
	comp=Z,9.0nm,0.6s						
SEY	**Seymchan**	**67.99**	**0**	*i*P	**P**	**04 29 18.0**	**-0.5**
ZAK	**Zakamensk**	**69.19**	**329**	*e*P	**P**	**04 29 26.4**	**0.0**
ZAK				pmax	pmax		
	comp=Z,11nm,0.9s						
BOD	**Bodaibo**	**69.74**	**340**	*e*P	**P**	**04 29 28.6**	**-0.8**
BOD				pmax	pmax		
	comp=Z,2.0nm,0.7s						
TLY	**Talaya**	**69.80**	**331**	*e*P	**P**	**04 29 30.2**	**+0.2**
TLY				pmax	pmax		
	comp=Z,2.0nm,0.6s						
MOY	**Mondy**	**71.11**	**329**	*e*P	**P**	**04 29 38.7**	**+0.6**
GUN	**Gumba**	**71.22**	**302**	*e*P	**P**	**04 29 39.3**	**-0.2**
	comp=Z,43nm,0.6s						
PKIN	**Phulchoki**	**71.53**	**301**	*e*P	**P**	**04 29 40.6**	**-0.7**
	comp=Z,18nm,0.9s						
KKN	**Kakani**	**71.69**	**301**	*e*P	**P**	**04 29 41.9**	**-0.3**
DMN	**Daman**	**71.79**	**301**	*e*P	**P**	**04 29 42.8**	**-0.1**
	comp=Z,62nm,0.9s						
GKN	**Gorkha**	**72.30**	**301**	*e*P	**P**	**04 29 45.3**	**-0.5**
	comp=Z,33nm,0.7s						
VNDA	**Vanda**	**72.44**	**178**	P	**P**	**04 29 46.5**	**+1.0**
	comp=Z,1.9nm,0.8s,baz=311,slow=5.6,SNR=7.7						
VNDA	**Vanda**	**72.44**	**178**	*e*P	**P**	**04 29 46.2**	**+0.7**
VNDA				pmax	pmax		
	comp=Z,4.0nm,1.0s						
VNDA	**Vanda**	**72.44**	**178**	*e*P	**P**	**04 29 46.2**	**+0.7**
	comp=Z,3.7nm,1.0s						
PYUN	**Piuthan**	**73.73**	**301**	*e*P	**P**	**04 29 53.4**	**-0.8**
	comp=Z,64nm,0.8s						
BILL	**Bilibino**	**73.86**	**6**	*e*P	**P**	**04 29 54.2**	**+0.3**
BILL				*i*		04 30 26.3	
BILL				pmax	pmax		
	comp=Z,2.0nm,1.1s						
WMQ	**Urumqi**	**75.17**	**318**	*e*P	**P**	**04 30 03.3**	**+1.2**
WMQ				pP	pP	04 30 31.5	-2.7
WMQ				sP	sP	04 30 42.8	-5.3
WMQ				pmax	pmax		
	comp=Z,4.0nm,1.2s						
WMQ				pmax	pmax		
	comp=Z,44nm,6.0s						
WMQ				LR	LR		
	comp=Z,12nm,16.4s						
WMQ				LR	LR		
	comp=Z,67nm,18.2s						
WMQ				LR	LR		
	comp=Z,14nm,16.4s						
TIXI	**Tiksi**	**78.16**	**353**	P	**P**	**04 30 17.2**	**-1.0**
	comp=Z,2.0nm,0.5s,baz=90,slow=3.5,SNR=5.0						
MK01	**Makanchi Array**	**79.78**	**319**	*e*P	**P**	**04 30 27.2**	**-0.4**
MK31	**Makanchi Array**	**79.79**	**319**	*i*P	**P**	**04 30 27.1**	**-0.6**
MK31				pmax	pmax		
	comp=Z,4.0nm,0.7s						
MK31	**Makanchi Array**	**79.79**	**319**	*e*P	**P**	**04 30 27.8**	**+0.1**
MKAR	**Makanchi Array**	**79.79**	**319**	P	**P**	**04 30 27.5**	**-0.2**
	comp=Z,3.7nm,0.5s,baz=100,slow=7.2,SNR=42						
MKAR	**Makanchi Array**	**79.79**	**319**	*e*P	**P**	**04 30 27.8**	**+0.1**
MAKZ	**Makanchi**	**80.00**	**319**	*e*P	**P**	**04 30 28.8**	**0.0**
MAKZ				pmax	pmax		
	comp=Z,12nm,1.1s						
MAKZ	**Makanchi**	**80.00**	**319**	*e*P	**P**	**04 30 28.8**	**0.0**
	comp=Z,12nm,1.1s						
PDGK	**Podgornoye**	**80.64**	**315**	P	**P**	**04 30 31.4**	**-0.8**
PDGK				pmax	pmax		
	comp=Z,13nm,0.7s						
ZAA0	**Zalesovo Array**	**80.79**	**327**	*e*P	**P**	**04 30 31.8**	**-1.0**
ZALV	**Zalesovo Beam**	**80.79**	**327**	P	**P**	**04 30 31.7**	**-1.0**
	comp=Z,6.3nm,0.5s,baz=117,slow=5.9,SNR=22						
MLY	**Manley**	**81.77**	**21**	*e*P	**P**	**04 30 38.1**	**+0.3**
	comp=Z,4.2nm,0.7s						
MCK	**McKinley**	**81.78**	**23**	*e*P	**P**	**04 30 39.5**	**+1.6**
MCK				pmax	pmax		
	comp=Z,20nm,1.5s						
MCK	**McKinley**	**81.78**	**23**	*e*P	**P**	**04 30 39.5**	**+1.6**
	comp=Z,20nm,1.5s						
KSH	**Kashi**	**82.22**	**311**	*e*P	**P**	**04 30 42.6**	**+1.8**
KSH				*es*P	sP	04 31 24.6	-2.6
KSH				*e*PP	PP	04 33 55.3	+4.2
KSH				S	**S**	**04 40 45.1**	**-0.6**
KSH				pmax	pmax		
	comp=Z,120nm,6.1s						
KSH				LR	LR		
	comp=Z,200nm,9.1s						
KSH				LR	LR		
	comp=Z,140nm,6.3s						
KSH				LR	LR		
	comp=Z,200nm,6.4s						
IL1	**Eielson Array**	**83.07**	**22**	*e*P	**P**	**04 30 42.8**	**-1.7**
ILAR	**Eielson Array**	**83.07**	**22**	P	**P**	**04 30 42.8**	**-1.7**
	comp=Z,2.1nm,0.8s,baz=247,slow=5.4,SNR=14						
TKM2	**Tokmak 2**	**83.28**	**314**	*e*P	**P**	**04 30 46.3**	**0.0**
TKM2				pmax	pmax		
	comp=Z,13nm,0.6s						
TKM2	**Tokmak 2**	**83.28**	**314**	*e*P	**P**	**04 30 46.3**	**0.0**
	comp=Z,13nm,0.6s						
KURK	**Kurchatov**	**83.30**	**322**	P	**P**	**04 30 45.4**	**-0.6**
KURK				pmax	pmax		
	comp=Z,5.0nm,0.9s						
**KUR

ABKAR	**Akbulak array**	**94.93**	**319**	*e*P		**P**	**04 31 39.1**	**-2.2**
TPNV	**Topopah Spring**	**94.94**	**53**	P		**P**	**04 31 42.9**	**+1.0**
	baz=267							
TPNV	**Topopah Spring**	**94.94**	**53**	*e*P		**P**	**04 31 42.9**	**+1.0**
TPNV				pmax		pmax		
	comp=Z,6.0nm,0.9s							
TPNV	**Topopah Spring**	**94.94**	**53**	*e*P		**P**	**04 31 42.9**	**+1.0**
	comp=Z,5.9nm,0.9s							
BELC	**Belle Mtn. Jos**	**95.00**	**56**	P		**P**	**04 31 43.7**	**+1.5**
	baz=267							
BC3	**Big Chuckawall**	**95.43**	**57**	P		**P**	**04 31 45.6**	**+1.4**
	baz=267							
R11A	**Troy Canyon, C**	**95.53**	**52**	P		**P**	**04 31 45.9**	**+1.3**
	baz=268							
R11A	**Troy Canyon, C**	**95.53**	**52**	*e*P		**P**	**04 31 46.0**	**+1.3**
	comp=Z,7.4nm,1.6s							
IRM	**Iron Mountain**	**95.71**	**56**	P		P	04 31 47.5	+2.1
	baz=268							
YKA	**Yellowknife Ar**	**96.43**	**28**	P		**Pdif**	**04 32 04.5**	**-0.7**
	comp=Z,0.3nm,0.6s,baz=270,slow=4.8,SNR=7.7							
PDAR	**Pinedale Array**	**100.12**	**48**	P		**Pdif**	**04 32 04.5**	**-0.7**
	comp=Z,0.5nm,0.8s,baz=189,slow=2.9,SNR=3.8							
AKASG	**Malin Array Be**	**114.07**	**324**	PKP		PKPdf	04 36 56.9	-0.7
	comp=Z,0.3nm,0.5s,baz=52,slow=2.2,SNR=3.6							
AKASG	**Malin Array Be**	**114.07**	**324**	PKIKP		PKPdf	04 36 57.0	-0.6
BRTR	**Keskin Array B**	**114.60**	**311**	PKP		PKPdf	04 37 00.0	+0.8
	comp=Z,1.0nm,1.0s,baz=317,slow=7.9,SNR=2.9							
NOA	**NORSAR Array B**	**116.87**	**340**	PKP		**PKPdf**	**04 37 02.7**	**-0.1**
	comp=Z,0.7nm,0.8s,baz=205,slow=10,SNR=2.7							
BOSA	**Boshof**	**118.30**	**234**	PKP		**PKPdf**	**04 37 06.0**	**-0.6**
	comp=Z,1.3nm,0.5s,baz=192,slow=2.0,SNR=5.4							
BOSA	**Boshof**	**118.30**	**234**	PKIKP		**PKPdf**	**04 37 06.1**	**-0.6**
BOSA				pmax		pmax		
	comp=Z,2.0nm,0.7s							
GERES	**GERESS Array B**	**123.73**	**328**	PKP		**PKPdf**	**04 37 16.4**	**0.0**
	comp=Z,0.9nm,0.5s,baz=70,slow=1.6,SNR=5.9							
ESDC	**Sonseca Array**	**139.18**	**331**	PKP		**PKPdf**	**04 37 44.0**	**-1.8**
	comp=Z,0.2nm,0.3s,baz=38,slow=2.3,SNR=3.9							
TORD	**Torodi Ar. Bea**	**149.17**	**287**	PKPbc		**PKPbc**	**04 38 07.5**	**-0.6**
	comp=Z,16nm,0.7s,baz=99,slow=2.4,SNR=113							

JMA 13 04:23:09.3, 36°.93N×140°.65E, *h*6km±1km, M2.5, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.21**	**35**	P		Pg	04 23 13.7	+0.2
ONAJ				S		Sg	04 23 16.8	+0.5
JHO	**Hitachi**	**0.33**	**192**	P		Pg	04 23 15.8	+0.2
JHO				S		Sg	04 23 20.3	+0.4
JFK	**Kawauchi**	**0.47**	**22**	P		Pg	04 23 18.4	0.0
JFT	**Otama**	**0.64**	**337**	P		Pg	04 23 21.8	+0.2
JFT				S		Sg	04 23 30.5	+0.6
JMM	**Marumori**	**0.94**	**7**	P		Pg	04 23 26.8	-0.6
JMM				S		Sg	04 23 39.5	-0.1
MAT	**Matsushiro**	**2.00**	**260**	P		Pb	04 23 45.0	-1.1
MAT				S		Sb	04 24 11.4	+0.1

MEX 13 04:24:11.4±0.5, 16°.69N×94°.91W, *h*118km±14km, MD3.9, Oaxaca

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
HUIG	**Huatulco**	**1.47**	**232**	*i* P		Pn	04 24 37.3	-1.1
HUIG				*e*S		Sn	04 24 57.3	-1.6
VHO	**Vista Hermosa**	**1.79**	**283**	*e*P		Pn	04 24 41.2	-1.2
VHO				*i* S		Sn	04 25 04.1	-1.9
PCIG		**1.89**	**121**	*i* P		Pn	04 24 42.3	-1.1
PCIG				*e*S		Sn	04 25 05.7	-2.1
PNIG	**Pinotepa**	**3.10**	**265**	*e*P		Pn	04 24 57.3	-1.8
PNIG				*i* S		Sn	04 25 34.0	-1.8

*ISCJB **13** 04:24:48.7±1.6, 38°.44N±0°.06×142°.22E±0°.10, *h*27km±8km, mb3.7/3, Error ellipse: s-maj=12.7km s-min=9.3km az=15.7.*
*IDC **13** 04:24:48.2±2.5, 38°.01N×143°.13E, *h*0km, mb3.6/3, mb1 3.6/4, mb1mx3.3/64, mbtmp3.4/4, ML2.5/1, Error ellipse: s-maj=66.6km s-min=31.0km az=61.0*
*JMA **13** 04:24:50.7±0.2, 38°.49N×142°.14E, *h*31km±2km, M3.6*
JMA Felt I J1.

ISC 13 04:24:47.7±2.4, 38°.45N±0°.05×142°.19E±0°.10, *h*12km±14km, n16, σ0s36/15, mb3.8/3, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
JIO	**Ouri**	**0.66**	**271**	P		**Pn**	**04 25 02.7**	**-0.2**
JIO				S		**Sb**	**04 25 10.5**	**+0.2**
OFUJ	**Ofunato**	**0.75**	**327**	P		**Pn**	**04 25 03.9**	**-0.3**
OFUJ				S		**Sb**	**04 25 13.2**	**+0.2**
JMK	**Ichinoseki**	**0.91**	**304**	P		**Pn**	**04 25 06.4**	**+0.1**
JMK				S		**Sb**	**04 25 17.6**	**0.0**
JOU	**Okura**	**1.20**	**267**	P		**Pg**	**04 25 11.6**	**+0.7**
JOU				S		**Sg**	**04 25 26.3**	**-0.2**
JOM	**Ohasama**	**1.24**	**326**	P		**Pg**	**04 25 11.6**	**0.0**
JOM				S		**Sb**	**04 25 26.7**	**-0.4**
JMM	**Marumori**	**1.25**	**243**	P		**Pg**	**04 25 11.6**	**-0.1**
JMM				*e*S		**Sb**	**04 25 26.7**	**-0.4**
MJAR	**Matsushiro Arr**	**3.69**	**240**	Pn		**Pb**	**04 25 52.6**	**-0.3**
	0.3nm,0.3s,baz=64,slow=14,SNR=3.3							
H11N2	**WAKE ISLAND Hy**	**28.38**	**124**	T		T	05 00 59.5	
	baz=316,slow=76,SNR=18							
H11N1	**WAKE ISLAND Hy**	**28.39**	**124**	T		T	05 00 58.2	
	baz=316,slow=76,SNR=38							
H11N3	**WAKE ISLAND Hy**	**28.40**	**124**	T		T	05 00 58.6	
	baz=316,slow=76,SNR=30							
H11S1	**WAKE ISLAND Hy**	**29.15**	**126**	T		T	05 01 56.9	
	baz=318,slow=76,SNR=25							
H11S3	**WAKE ISLAND Hy**	**29.15**	**126**	T		T	05 01 57.0	
	baz=318,slow=76,SNR=36							
H11S2	**WAKE ISLAND Hy**	**29.17**	**126**	T		T	05 01 58.1	
	baz=318,slow=76,SNR=24							
KURBB	**Kurchatov Arra**	**45.63**	**307**	P		P	04 33 16.9	+9.1
	0.7nm,0.6s,baz=81,slow=7.9,SNR=3.3							
WRA	**Warramunga Arr**	**58.55**	**189**	P		**P**	**04 34 44.2**	**+0.1**
	0.5nm,0.7s,baz=6.8,slow=7.1,SNR=6.5							
ASAR	**Alice Springs**	**62.27**	**189**	P		**P**	**04 35 10.0**	**+0.4**
	0.2nm,0.3s,baz=18,slow=7.5,SNR=3.1							

*ISCJB **13** 04:24:46.9±0.9, 35°.62S±0°.04×73°.29W±0°.08, *h*17km, mb3.8/3, MS3.6/1, Error ellipse: s-maj=9.1km s-min=5.0km az=177.8*
*GUC **13** 04:24:47.4±0.6, 35°.61S×73°.28W, *h*24km±6km, ML4.7*
*IDC **13** 04:24:51.1±1.3, 35°.60S×71°.76W, *h*0km, mb3.7/3, mb1 3.9/5, mb1mx3.7/35, mbtmp3.7/5, ML3.6/2, MS3.4/2, Ms1 3.4/2, ms1mx3.1/23, Error ellipse: s-maj=51.8km s-min=18.3km az=86.0*

ISC 13 04:24:49.3±1.1, 35°.71S±0°.04×73°.08W±0°.08, *h*17km, n22, σ1s65/29, mb3.9/3, 4C-1D, Off coast of central Chile

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
COCH	**Cobquecura**	**0.48**	**151**	*i* P		**Pb**	**04 24 59.7**	**+0.5**
COCH				*i* S		**Sn**	**04 25 08.2**	**-1.1**
CCSP	**San Pedro de C**	**1.13**	**181**	*e*P		**Pn**	**04 25 09.0**	**-1.3**
CCHI	**Chillan**	**1.20**	**138**	⇑*i* P		**Pb**	**04 25 11.5**	**0.0**
CCHI				*i* S		**Sg**	**04 25 29.3**	**+1.1**
TALC	**Talca**	**1.22**	**75**	⇑*i* P		**Pn**	**04 25 10.6**	**-0.9**
TALC				*i* S		**Sg**	**04 25 28.6**	**-0.1**
NICH	**Los Niches**	**1.67**	**65**	⇑*i* P		**Pn**	**04 25 17.5**	**-0.3**
NICH				*i* S		**Sb**	**04 25 40.6**	**+0.3**
ANTU	**Antumapu**	**2.94**	**44**	*e*P		**Pn**	**04 25 34.5**	**-0.7**
ANTU				IAML			04 26 24.3	
	comp=E,3μm,0.4s							
CLCH	**Cerro Calan**	**3.12**	**43**	*e*P		**Pn**	**04 25 37.0**	**-0.8**
CLCH				*e*S		**Sn**	**04 26 14.9**	**+0.3**
CLCH				IAML			04 26 32.9	
	comp=E,2μm,0.3s							
ROC1	**El Roble**	**3.22**	**33**	*i* P		**Pn**	**04 25 38.6**	**-0.7**
ROC1				*i* S		**Sg**	**04 26 36.1**	**+3.4**
ROCH	**El Roble**	**3.22**	**33**	*e*P		**Pn**	**04 25 38.1**	**-1.3**
ROCH				IAML			04 26 36.3	
	comp=N,1μm,0.5s							
PEL	**Peldehue**	**3.24**	**38**	⇑*i* P		**Pn**	**04 25 38.3**	**-1.1**
PEL				IAML			04 26 34.4	
	comp=N,1μm,1.4s							
AAGR	**Agrelo**	**4.38**	**54**	*i* P		**Pn**	**04 25 56.3**	**+1.1**
AAGR				*i* S		**Sg**	**04 27 08.1**	**-2.0**
ARCO	**CERRO ARCO**	**4.47**	**51**	*i* P		**Pn**	**04 25 57.7**	**+1.3**
ARCO				*i* S		**Sg**	**04 27 08.7**	**-4.1**
ARCO				IAML			04 27 20.3	
	comp=Z,62nm,0.6s							
AUSP	**Uspallata**	**4.64**	**42**	*i* P		**Pn**	**04 25 58.7**	**-0.2**
AUSP				*i* S		**Sb**	**04 27 09.6**	**+3.6**
RTCV	**Cerro Valdivia**	**5.39**	**46**	*i* P		**Pn**	**04 26 07.8**	**-1.2**
PLCA	**Paso Flores**	**5.39**	**159**	Pn		**Pn**	**04 26 11.0**	**+2.0**
	comp=Z,0.6nm,0.3s,baz=352,slow=9.6,SNR=20							
PLCA				Pg		Pb	04 26 26.4	+3.3
	comp=Z,0.8nm,0.3s,baz=345,slow=13,SNR=7.9							
PLCA				Lg		Lg	04 27 38.0	
	comp=Z,0.8nm,0.3s,baz=290,slow=21,SNR=5.0							
CPUP	**Villa Florida**	**16.40**	**60**	LR		LR	04 35 14.1	
	comp=Z,80nm,20.6s,baz=232,slow=40							
LPAZ	**La Paz**	**19.84**	**14**	P		**Pn**	**04 29 21.8**	**+0.1**
	comp=Z,0.1nm,0.3s,baz=205,slow=8.7,SNR=4.7							
SIV	**San Ignacio**	**22.38**	**32**	P		**P**	**04 29 45.2**	**-1.6**
	comp=Z,4.7nm,0.9s,baz=216,slow=12,SNR=6.2							
SIV				LR		LR	04 40 08.7	
	comp=Z,206nm,18.2s,baz=208,slow=42							
NVAR	**Mina Array Bea**	**84.81**	**326**	P		P	04 37 30.5	+7.6
	comp=Z,0.4nm,0.8s,baz=163,slow=6.0,SNR=2.4							
TORD	**Torodi Ar. Bea**	**85.59**	**71**	P		**P**	**04 37 26.3**	**-0.7**
	comp=Z,0.8nm,1.0s,baz=237,slow=5.3,SNR=4.2							
KURBB	**Kurchatov Arra**	**154.69**	**45**	PKPbc		**PKPbc**	**04 44 50.9**	**+2.0**
	comp=Z,0.1nm,0.3s,baz=298,slow=3.9,SNR=2.6							
MKAR	**Makanchi Array**	**158.51**	**51**	PKPab		**PKPab**	**04 45 19.8**	**-0.6**
	comp=Z,0.1nm,0.3s,baz=348,slow=2.1,SNR=3.8							

*TRN **13** 04:28:55.2, 18°.94N×64°.28W, *h*33km, MD5.1*
TRN Felt in St. Maarten, MMI II.
*ISCJB **13** 04:28:56.9±0.3, 18°.83N±0°.02×64°.30W±0°.01, *h*49km±3km, mb5.1/200, MS4.2/33, Error ellipse: s-maj=3.4km s-min=1.7km az=21.2*
*NEIC **13** 04:28:57.7, 18°.96N×64°.26W, *h*31km, mb5.3/122, MW5.0, MD5.1(TRN), MD5.1(RSPR), Moment Tensor Solution. s20 Moment tensor: Scale 10¹⁶Nm; M_{rr}1.68; $M_{\theta\theta}$-0.71; $M_{\phi\phi}$-0.98; $M_{r\theta}$0.63; $M_{r\phi}$3.70; $M_{\theta\phi}$1.83; Best double couple: $M_0$4.40000×10¹⁶ NP1:ϕ_s355.00000°, δ72.00000°, λ147.00000°. NP2:ϕ_s96.00000°, δ59.00000°, λ22.00000°. Principal axes: T 4.1200, Plg36.0000°, Azm312.0000°; N 0.5400, Plg53.0000°, Azm149.0000°; P -4.6700, Plg8.0000°, Azm48.0000°; After RSPR.*
NEIC Felt [III] at Christiansted, Saint Croix and at Road Town, Tortola. Also felt [III] on Saint John and Saint Thomas. Felt [III] at Carolina and San Juan and [II] at Fajardo, Puerto Rico. Felt widely in eastern Puerto Rico. Felt [II] on Saint Martin. Also felt on Anguilla.
*MOS **13** 04:28:57.4±1.1, 18.79N×64°.37W, *h*51km, mb5.1/68, MS4.1/11 Error ellipse: s-maj=6.6km s-min=4.7km az=116.2*
*GCMT **13** 04:28:57.7±0.2, 18°.98N×64°.26W, *h*44km±1km, MW5.2/100, Moment Tensor Solution. s64,c86; s100,c153; Duration: 0 Moment tensor: Scale 10¹⁶Nm; M_{rr}3.41±.20; $M_{\theta\theta}$-2.39±.15; $M_{\phi\phi}$-1.03±.16; $M_{r\theta}$-0.22±.13; $M_{\theta\phi}$4.28±.11; $M_{r\phi}$4.12±.14; Best double couple: $M_0$6.66100×10¹⁶ NP1:ϕ_s342.00000°, δ70.00000°, λ127.00000°. NP2: ϕ_s97.00000°, δ41.00000°, λ31.00000°. Principal axes: T 6.4150, Plg51.0000°, Azm294.0000°; N 0.4810, Plg34.0000°, Azm148.0000°; P -6.9060, Plg17.0000°, Azm46.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
*BJI **13** 04:28:57.7, 19.00N×64°.30W, *h*31km, mB5.4/7, Ms5.3/5, Ms7 5.2/2*
*IDC **13** 04:28:59.7±1.4, 18°.71N×64°.31W, *h*62km±12km, mb4.6/37, mb1 4.8/40, mb1mx4.7/48, mbtmp4.9/40, MS4.2/34, Ms1 4.2/34, ms1mx4.2/43, Error ellipse: s-maj=9.0km s-min=7.5km az=47.0*

ISC 13 04:28:57.3±0.2, 18°.82N±0°.04×64°.32W±0°.02, *h*39km±2km, n1040, σ1s35/1103, mb5.2/200, MS4.2/33, 44C-33D, Virgin Islands

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
ABV	**Anegada**	**0.09**	**188**	⇑*e*P		**Pn**	**04 29 04.1**	**+0.3**
ABVI	**Anegada Island**	**0.09**	**188**	⇑*e*P		**Pn**	**04 29 04.1**	**+0.3**
STVI	**Saint Thomas**	**0.76**	**232**	⇓*e*P		**Pn**	**04 29 11.8**	**+0.3**
STVI				*e*S		**Sn**	**04 29 23.4**	**+1.6**
STVI	**Saint Thomas**	**0.76**	**232**	⇓*e*P		**Pn**	**04 29 11.8**	**+0.3**
STVI				*e*S		**Sn**	**04 29 23.4**	**+1.6**
CDVI	**St. Croix**	**1.15**	**202**	*e*Pn		**Pn**	**04 29 17.6**	**+0.8**
CDVI				*e*Sn		**Sn**	**04 29 33.2**	**+2.0**
MTP	**Monte Pirata**	**1.38**	**239**	⇓*i* P		**Pn**	**04 29 20.6**	**+0.6**
MTP				*e*S		**Sn**	**04 29 39.0**	**+2.1**
MTP	**Monte Pirata**	**1.38**	**239**	⇓*i* P		**Pn**	**04 29 20.6**	**+0.6**
MTP				*e*S		**Sn**	**04 29 39.0**	**+2.1**
SMRT	**St. Maarten**	**1.41**	**123**	⇑*i* P		**Pn**	**04 29 20.7**	**+0.3**
SMRT				*e*S		**Sn**	**04 29 39.0**	**+1.2**
SMRT	**St. Maarten**	**1.41**	**123**	⇑*e*P		**Pn**	**04 29 20.7**	**+0.3**
SMRT				*e*S		**Sn**	**04 29 38.8**	**+1.0**
CBVP	**Canovanas**	**1.56**	**250**	⇓*e*P		**Pn**	**04 29 22.9**	**+0.4**
CBVP	**Canovanas**	**1.56**	**250**	⇓*e*P		**Pn**	**04 29 22.9**	**+0.4**
SABA	**Saba**	**1.57**	**139**	⇑*i* P		**Pn**	**04 29 22.9**	**+0.2**
SABA	**Saba**	**1.57**	**139**	⇑*e*P		**Pn**	**04 29 22.9**	**+0.2**
SABA				*e*S		**Sn**	**04 29 42.8**	**+1.0**
SABA	**Saba**	**1.57**	**139**	⇑*e*P		**Pn**	**04 29 22.9**	**+0.2**
SABA				*e*S		**Sn**	**04 29 42.8**	**+1.0**
HUMP	**Col San Antoni**	**1.60**	**245**	⇓*e*P		**Pn**	**04 29 23.7**	**+0.6**
HUMP				*e*S		**Sn**	**04 29 44.6**	**+2.1**
HUMP	**Col San Antoni**	**1.60**	**245**	⇓*e*P		**Pn**	**04 29 23.7**	**+0.6**
HUMP				*e*S		**Sn**	**04 29 44.6**	**+2.1**
SEUS	**St. Eustatius**	**1.83**	**136**	⇑*e*P		**Pn**	**04 29 26.3**	**+0.1**
SEUS				*e*S		**Sn**	**04 29 49.7**	**+1.5**
SEUS	**St. Eustatius**	**1.83**	**136**	⇑*e*P		**Pn**	**04 29 26.3**	**+0.1**
SEUS				*e*S		**Sn**	**04 29 49.7**	**+1.5**
SJG	**San Juan**	**1.88**	**248**	P		**Pn**	**04 29 27.2**	**+0.4**
	220nm,0.3s,baz=70,slow=11,SNR=335							
SJG				S		**Sn**	**04 29 53.3**	**+4.0**
	715nm,0.3s,baz=86,slow=20,SNR=7.9							
SJG				LR		LR	04 30 22.9	
	comp=Z,16μm,19.4s,baz=13,slow=45							
SJG	**San Juan**	**1.88**	**248**	⇓*i* P		**Pn**	**04 29 27.4**	**+0.6**
SJG				*e*S		**Sn**	**04 29 51.0**	**+1.8**
SJG	**San Juan**	**1.88**	**248**	*e*P		**Pn**	**04 29 27.4**	**+0.6**
SJG				*e*S		**Sn**	**04 29 46.1**	**-3.1**
SJG	**San Juan**	**1.88**	**248**	*e*Pn		**Pn**	**04 29 27.4**	**+0.6**
SJG				*e*S		**Sn**	**04 29 46.1**	**-3.1**
CELP	**Cerrillos**	**2.27**	**251**	⇓*i* P		**Pn**	**04 29 33.2**	**+0.9**
CELP	**Cerrillos**	**2.27**	**251**	⇓*i* P		**Pn**	**04 29 33.2**	**+0.9**
ICMP	**Isla Caja de M**	**2.29**	**246**	⇓*e*P		**Pn**	**04 29 34.1**	**+1.5**
OBIP	**Obispado Ponce**	**2.31**	**251**	⇑*e*P		**Pn**	**04 29 33.6**	**+0.9**
OBIP				*e*S		**Sn**	**04 30 01.8**	**+2.0**
OBIP	**Obispado Ponce**	**2.31**	**251**	⇑*e*P		**Pn**	**04 29 33.6**	**+0.9**
OBIP				*e*S		**Sn**	**04 30 01.8**	**+2.0**
AOPR	**Arecibo Observ**	**2.36**	**259**	⇓*e*P		**Pn**	**04 29 34.3**	**+0.9**
AOPR				*e*S		**Sn**	**04 30 02.6**	**+1.4**
AOPR	**Arecibo Observ**	**2.36**	**259**	⇓*e*P		**Pn**	**04 29 34.3**	**+0.9**
AOPR				*e*S		**Sn**	**04 30 02.6**	**+1.4**
LRS	**Lares**	**2.45**	**258**	⇓*i* P		**Pn**	**04 29 35.4**	**+0.5**
LRS	**Lares**	**2.45**	**258**	⇓*i* P		**Pn**	**04 29 35.4**	**+0.5**
GBPR	**Guanica, Bosqu**	**2.57**	**251**	⇓*e*P		**Pn**	**04 29 38.4**	**+2.0**
GBPR				*e*S		**Sn**	**04 30 08.7**	**+2.3**
GBPR	**Guanica, Bosqu**	**2.57**	**251**	⇓*e*P		**Pn**	**04 29 38.4**	**+2.0**
GBPR				*e*S		**Sn**	**04 30 08.7**	**+2.3**
ANWB	**Willy Bob**	**2.67**	**115**	⇓*e*P		**Pn**	**04 29 36.5**	**-1.2**
ANWB				*e*S		**Sn**	**04 30 09.7**	**+0.9**
ANWB	**Willy Bob**	**2.67**	**115**	*e*Pn		**Pn**	**04 29 37.0**	**-0.7**
ANWB				*e*S		**Sn**	**04 30 11.9**	**+3.1**
AGPR	**Aguadilla, PR**	**2.67**	**263**	⇓*e*P		**Pn**	**04 29 38.6**	**+0.8**
AGPR				*e*S		**Sn**	**04 30 10.1**	**+1.2**
AGPR	**Aguadilla, PR**	**2.67**	**263**	⇓*e*P		**Pn**	**04 29 38.6**	**+0.8**
AGPR				*e*S		**Sn**	**04 30 10.1**	**+1.2**
LSP	**Las Mesas**	**2.70**	**257**	⇑*e*P		**Pn**	**04 29 39.5**	**+1.3**
LSP	**Las Mesas**	**2.70**	**257**	⇑*e*P		**Pn**	**04 29 39.5**	**+1.3**
AGP	**Aguadilla**	**2.71**	**262**	*e*Pn		**Pn**	**04 29 38.4**	**+0.1**
MPR	**Mayaguez**	**2.75**	**258**	⇓*e*P		**Pn**	**04 29 39.7**	**+0.9**
MPR				*e*S		**Sn**	**04 30 12.8**	**+2.1**
MPR	**Mayaguez**	**2.75**	**258**	⇓*e*P		**Pn**	**04 29 39.7**	**+0.9**
MPR				*e*S		**Sn**	**04 30 12.8**	**+2.1**
CRPR	**Cabo Rojo, PR**	**2.77**	**253**	⇓*e*P		**Pn**	**04 29 40.8**	**+1.7**
CRPR				*e*S		**Sn**	**04 30 13.6**	**+2.2**
CRPR	**Cabo Rojo, PR**	**2.77**	**253**	⇓*e*P		**Pn**	**04 29 40.8**	**+1.7**
CRPR				*e*S		**Sn**	**04 30 13.6**	**+2.2**
MBGB		**2.88**	**136**	⇑*i* P		**Pn**	**04 29 41.5**	**+0.8**
MBGB				*e*S		**Sn**	**04 30 16.0**	**+2.0**
MBWH		**2.90**	**135**	⇑*i* P		**Pn**	**04 29 41.5**	**+0.6**
MBWH				*i* S		**Sn**	**04 30 16.6**	**+2.2**
MLYT	**Lee's Yard**	**2.91**	**136**	⇑*i* P		**Pn**	**04 29 41.7**	**+0.6**
MLYT	**Lee's Yard**	**2.91**	**136**	⇑*i* P		**Pn**	**04 29 41.9**	**+0.8**
MLYT	**Lee's Yard**	**2.91**	**136**	*e*P		**Pn**	**04 29 42.4**	**+1.3**
MLYT				*e*S		**Sn**	**04 30 13.9**	**-0.9**
MLYT				*e*S		**Sn**	**04 30 15.6**	**+0.8**
MBBY		**2.92**	**136**	⇑*i* P		**Pn**	**04 29 42.1**	**+0.9**
MBBY				*e*S		**Sn**	**04 30 17.2**	**+2.1**
MBLG		**2.93**	**135**	⇑*i* P		**Pn**	**04 29 42.1**	**+0.8**
MBLG				*e*S		**Sn**	**04 30 16.2**	**+1.0**
BPA	**Boggy Peak**	**2.93**	**127**	*e*P		**Pn**	**04 29 42.1**	**+0.7**
BPA				*e*S		**Sn**	**04 30 16.1**	**+0.7**
BPA	**Boggy Peak**	**2.93**	**127**	*e*P		**Pn**	**04 29 42.1**	**+0.7**
BPA				*e*S		**Sn**	**04 30 16.1**	**+0.7**
MBRY		**2.95**	**135**	⇑*i* P		**Pn**	**04 29 42.5**	**+0.9**
MBRY				*i* S		**Sn**	**04 30 17.5**	**+1.8**
IDE	**Isla Desecheo**	**3.02**	**262**	⇓*e*P		**Pn**	**04 29 43.8**	**+1.2**
IDE				*e*S		**Sn**	**04 30 19.7**	**+2.1**
IDE	**Isla Desecheo**	**3.02**	**262**	⇓*e*P		**Pn**	**04 29 43.8**	**+1.2**
IDE				*e*S		**Sn**	**04 30 19.7**	**+2.1**
GDHS	**Morne Mazeau,**	**3.52**	**136**	*e*Pn		**Pn**	**04 29 50.2**	**+0.8**
SEG	**Port Louis**	**3.60**	**131**	⇓*e*P		**Pn**	**04 29 51.1**	**+0.5**
TBG	**Guadaloupe-3**	**3.90**	**139**	*e*P		**Pn**	**04 29 55.5**	**+0.8**
SFG	**Saint Francois**	**3.92**	**130**	*e*P		**Pn**	**04 29 54.8**	**-0.2**
DEG	**La Desirade**	**3.98**	**128**	*e*P		**Pn**	**04 29 57.1**	**+1.2**
DEG	**La Desirade**	**3.98**	**128**	*e*P		**Pn**	**04 29 57.1**	**+1.2**
H05N1	**Guadeloupe/Mar**	**3.98**	**128**	P		**Pn**	**04 29 57.8**	**+1.9**
	SNR=2784							
H05N1				S		**Sn**	**04 30 42.4**	**+1.0**
MGG	**Marie-Galante**	**4.07**	**135**	*e*P		**Pn**	**04 29 58.4**	**+1.4**
MGG	**Marie-Galante**	**4.07**	**135**	*e*S		**Sn**	**04 30 43.7**	**+0.4**
MGG	**Marie-Galante**	**4.07**	**135**	*e*P		**Pn**	**04 29 58.4**	**+1.4**
MGG				*e*S		Sn	04 30 52.8	+9.4
BBL	**Barber's Block**	**4.26**	**140**	*e*P		**Pn**	**04 30 00.6**	**+0.9**
BBL	**Barber's Block**	**4.26**	**140**	*e*S		**Sn**	**04 30 48.0**	**-0.2**
BBL	**Barber's Block**	**4.26**	**140**	*e*P		**Pn**	**04 30 00.6**	**+0.9**
MDN	**Morne-Daniel**	**4.47**	**141**	*e*P		**Pn**	**04 30 04.3**	**+1.9**
MDN	**Morne-Daniel**	**4.47**	**141**	*e*P		**Pn**	**04 30 05.5**	**+3.0**
DPMT	**Pointe Michel**	**4.52**	**141**	*e*P		**Pn**	**04 30 05.6**	**+2.4**
DLPL	**La Plaine**	**4.54**	**139**	*e*P		**Pn**	**04 30 05.5**	**+1.9**
DLPL	**La Plaine**	**4.54**	**139**	*e*S		**Sn**	**04 30 57.5**	**+2.3**
DSHT	**Scott's Head**	**4.56**	**141**	*e*P		**Pn**	**04 30 06.2**	**+2.4**
PCM	**Pelee Case Pet**	**4.97**	**143**	⇓*e*P		**Pn**	**04 30 09.9**	**+0.4**
PCM	**Pelee Case Pet**	**4.97**	**143**	*e*P		**Pn**	**04 30 10.6**	**+1.2**
CXM	**Morne La Croix**	**5.00**	**142**	*e*P		**Pn**	**04 30 10.4**	**+0.5**
BAMF	**Morne Balai**	**5.01**	**142**	⇓*i* P		**Pn**	**04 30 10.5**	**+0.6**
GBMF	**Grand Be**	**5.01**	**142**	*e*P		**Pn**	**04 30 10.3**	**+0.3**
PML	**Morne Lenard**	**5.01**	**143**	*e*P		**Pn**	**04 30 10.3**	**+0.2**
FDF	**Fort de France**	**5.07**	**143**	*e*P		**Pn**	**04 30 12.2**	**+1.4**
FDF	**Fort de France**	**5.07**	**143**	*e*S		**Sn**	**04 31 07.8**	**-0.4**
FDF	**Fort de France**	**5.07**	**143**	*e*P		**Pn**	**04 30 11.

comp=Z,53nm,0.9s,baz=60,slow=6.9,SNR=32
JTS LR LR 04 41 37.4
comp=Z,550nm,20.1s,baz=62,slow=35
JTS JuntasAbangare 21.68 250 eP P 04 33 44.7 -0.1
comp=Z,97nm,1.0s
CMBC Cumbal 22.16 218 eP P 04 33 50.2 -0.3
KMSC Kings Mountain 22.18 321 P P 04 33 50.4 +0.4
baz=132
KMSC Kings Mountain 22.18 321 eP P 04 33 50.5 +0.4
comp=Z,59nm,0.6s
CBN Corbin Frederi 22.42 332 eP P 04 33 54.1 +1.6
comp=Z,138nm,0.4s
GOGA Godfrey 22.45 314 eP P 04 33 54.2 +1.2
GOGA pmax pmax
comp=Z,85nm,1.0s
GOGA Godfrey 22.45 314 eP P 04 33 54.2 +1.2
comp=Z,85nm,1.0s
TGUH Tegucigalpa,Un 22.51 261 eP P 04 33 54.8 +1.0
comp=Z,140nm,0.9s
TEIG Tepich 22.62 278 P P 04 33 55.3 +0.4
comp=Z,58nm,0.9s,baz=269,slow=23,SNR=38
TEIG LR LR 04 44 19.5
comp=Z,242nm,18.0s,baz=314,slow=41
TEIG Tepich 22.62 278 eP P 04 33 55.3 +0.4
comp=Z,65nm,0.9s
VWCC Virginia Weste 22.92 326 eP P 04 33 59.4 +1.5
OTAV Otavalo 23.10 218 eP P 04 34 00.2 -0.1
comp=Z,142nm,1.1s
OTAV Otavalo 23.10 218 eP P 04 33 59.7 -0.7
BLA Blacksburg 23.13 326 eP P 04 34 00.7 +0.7
BLA pmax pmax
comp=Z,190nm,0.8s
BLA Blacksburg 23.13 326 eP P 04 34 00.7 +0.7
comp=Z,190nm,0.8s
SDMD Soldier's Deli 23.20 335 eP P 04 34 01.6 +0.9
LUPA Lehigh Univers 23.69 339 eP P 04 34 06.5 +1.1
comp=Z,70nm,0.6s
ODNJ Ogdensburg 23.88 341 eP P 04 34 08.5 +1.4
comp=Z,230nm,1.6s
BRAL Brewton 23.94 305 eP P 04 34 09.9 +2.1
comp=Z,438nm,1.2s
TKL Tuckaleechee C 24.02 318 P P 04 34 09.6 +1.0
comp=Z,16nm,0.8s,baz=145,slow=8.4,SNR=18
TKL S S 04 38 25.1 +2.1
comp=Z,6.0nm,0.4s,baz=180,slow=4.0,SNR=3.5
TKL LR LR 04 43 32.6
comp=Z,446nm,19.4s,baz=138,slow=36
N59A State Game Lan 24.11 338 P P 04 34 10.0 +0.6
baz=152
CPCT Cooper Cave 24.37 317 eP P 04 34 13.0 +1.2
comp=Z,38nm,0.7s
HRV Adam Dziewonsk 24.40 347 eP P 04 34 11.9 0.0
HRV Adam Dziewonsk 24.40 347 eP P 04 34 11.9 0.0
TZTN Tazewell 24.45 320 eP P 04 34 13.5 +1.0
comp=Z,74nm,0.9s
O56A Blue Knob Stat 24.64 333 P P 04 34 15.1 +0.8
baz=146
SSPA Standing Stone 24.67 335 eP P 04 34 15.2 +0.8
comp=Z,60nm,0.7s
KSPA Keystone Colle 24.68 339 eP P 04 34 16.3 +1.8
comp=Z,93nm,0.9s
348A Jackson 24.70 305 P P 04 34 16.3 +1.6
baz=115,SNR=5.6
LRAL Lakeview Retre 24.75 309 eP P 04 34 16.6 +1.3
comp=Z,79nm,0.8s
447A Lucedale 25.04 303 P P 04 34 19.7 +1.9
baz=112
SWET Sewanee 25.16 315 eP P 04 34 20.4 +1.4
comp=Z,21nm,1.0s
347A Saraland 25.19 304 P P 04 34 20.8 +1.6
baz=114,SNR=14
BINY Binghamton 25.33 339 eP P 04 34 21.0 +0.6
comp=Z,65nm,0.9s
247A Quitman 25.52 306 P P 04 34 23.9 +1.7
baz=115
147A Livingston 25.53 307 P P 04 34 23.6 +1.3
baz=117
446A Poplarville 25.61 303 P P 04 34 24.8 +1.9
baz=112,SNR=16
N54A Moraine State 25.83 332 P P 04 34 26.1 +1.2
baz=144
246A Jackson Lee, B 25.90 305 P P 04 34 26.9 +1.2
baz=114
346A Big Creek Wild 25.91 304 P P 04 34 27.2 +1.5
baz=113,SNR=10
146A Union 26.11 307 P P 04 34 29.0 +1.4
baz=116,SNR=21
M54A Oil Creek Stat 26.14 333 P P 04 34 28.6 +0.9
baz=145
345A Thompson Farm, 26.33 303 P P 04 34 31.0 +1.5
baz=112
445A Amite 26.36 302 P P 04 34 32.1 +2.2
baz=110
MMNY Mt. Morris Dam 26.47 337 eP P 04 34 34.6 +3.9
comp=Z,124nm,0.6s
245A Little AP, Sta 26.50 305 P P 04 34 32.3 +1.2
baz=113,SNR=8.8
PLAL Pickwick Lake 26.51 312 eP P 04 34 31.6 +0.5
comp=Z,46nm,0.8s
CCIG Comitan 26.63 269 eP P 04 34 32.6 -0.1
comp=Z,83nm,1.0s
444A Pine Grove 26.69 301 P P 04 34 34.9 +2.1
baz=110
ACSO Alum Creek Sta 26.71 327 eP P 04 34 33.9 +1.0
comp=Z,57nm,0.9s
145A Houston Renfro 26.76 306 P P 04 34 35.0 +1.6
baz=114,SNR=20
344A Westbrook Farm 26.94 303 P P 04 34 36.9 +1.8
baz=111,SNR=12
WVT Waverly 26.95 315 eP P 04 34 35.7 +0.6
WVT pmax pmax
comp=Z,31nm,0.8s
WVT Waverly 26.95 315 eP P 04 34 35.7 +0.6
comp=Z,31nm,0.8s
VBMS Vicksburg 27.06 305 P P 04 34 37.7 +1.6
baz=113,SNR=7.9
VBMS Vicksburg 27.06 305 eP P 04 34 37.7 +1.6
comp=Z,116nm,0.9s
244A Avery, Jackson 27.12 304 P P 04 34 38.4 +1.7
baz=112,SNR=30
144A Alexander Plac 27.15 306 P P 04 34 38.4 +1.4
baz=114,SNR=9.4
WCI Wyandotte Cave 27.20 320 eP P 04 34 38.7 +1.3
WCI pmax pmax
comp=Z,35nm,0.9s
WCI Wyandotte Cave 27.20 320 eP P 04 34 38.7 +1.3
comp=Z,36nm,0.9s
OXF Oxford 27.23 310 eP P 04 34 38.6 +1.0
OXF pmax pmax
comp=Z,148nm,0.9s
OXF Oxford 27.23 310 eP P 04 34 38.6 +1.0
comp=Z,148nm,0.9s
343A Vidalia 27.59 302 P P 04 34 42.8 +2.0
baz=110
SAML Samuel 27.62 178 eP P 04 34 39.6 -1.6
comp=Z,50nm,1.2s
243A Waterproof 27.69 303 P P 04 34 43.5 +1.7
baz=111,SNR=9.4
UTMT University of 27.77 314 eP P 04 34 44.0 +1.6
comp=Z,215nm,0.9s
USIN University of 27.90 318 eP P 04 34 44.8 +1.2
comp=Z,65nm,0.6s
143A Socs Landing, 27.94 305 P P 04 34 45.3 +1.3
baz=113,SNR=28
BLO Bloomington 27.94 321 eP P 04 34 45.1 +1.2
BLO pmax pmax
comp=Z,50nm,0.6s
BLO Bloomington 27.94 321 eP P 04 34 45.1 +1.2
comp=Z,50nm,0.6s
342A Flagon Creek P 28.19 302 P P 04 34 48.4 +2.2
baz=110
242A Grayson 28.29 303 P P 04 34 48.8 +1.7
baz=111,SNR=25
142A Monroe 28.30 304 P P 04 34 48.9 +1.7
baz=112
541A Lake Charles 28.48 299 P P 04 34 51.2 +2.3
baz=106
AAM Ann Arbor 28.59 329 eP P 04 34 55.8 +6.1
AAM pmax pmax
comp=Z,66nm,0.9s
AAM Ann Arbor 28.59 329 eP P 04 34 55.8 +6.1
comp=Z,66nm,0.9s
OLIL Olney 28.63 319 eP P 04 34 50.6 +0.5
comp=Z,94nm,0.7s
SADO Sadowa 28.68 338 P P 04 34 50.4 -0.1
comp=Z,6.1nm,0.7s,baz=182,slow=7.6,SNR=8.1
SADO LR LR 04 45 02.0
comp=Z,421nm,21.9s,baz=161,slow=33

Y42A Garnett, Star 28.69 307 P P 04 34 52.2 +1.6
baz=114,SNR=49
441A DeRidder 28.69 300 P P 04 34 52.7 +2.0
baz=108
CCAR Cane Creek 28.71 307 eP P 04 34 53.1 +2.2
comp=Z,239nm,0.8s
SIUC Southern Illin 28.75 316 eP P 04 34 52.6 +1.4
comp=Z,49nm,0.8s
341A Kurthwood 28.85 301 P P 04 34 53.6 +1.4
baz=108
241A Mo Tay, Goldon 28.88 303 P P 04 34 54.0 +1.6
baz=110,SNR=6.9
SFIN Lafayette 29.06 322 P P 04 34 55.5 +1.6
baz=131
SFIN Lafayette 29.06 322 eP P 04 34 54.9 +1.0
comp=Z,45nm,0.6s
PBMO Poplar Bluff 29.07 313 eP P 04 34 54.3 +0.3
comp=Z,37nm,0.8s
141A Papa Simpson, 29.08 304 P P 04 34 55.9 +1.8
baz=111
540A Vidor 29.19 299 P P 04 34 57.1 +2.0
baz=106
Z41A Richland Creek 29.24 305 P P 04 34 56.7 +1.2
baz=112,SNR=5.5
ATAH Atahualpa 29.29 210 P P 04 34 55.9 -0.7
comp=Z,14nm,0.7s,baz=351,slow=11,SNR=7.6
440A Kirbyville 29.32 300 P P 04 34 58.1 +1.8
baz=107
340A Bronson 29.46 301 P P 04 34 58.9 +1.3
baz=108
UALR University of 29.50 308 eP P 04 34 59.3 +1.5
comp=Z,35nm,1.0s
240A Hunter Patters 29.56 302 P P 04 34 60.0 +1.6
baz=109
W41A Tony Mavity, V 29.60 309 P P 04 34 59.8 +1.1
baz=116,SNR=33
W41B Gary Mavity, V 29.60 309 P P 04 34 59.9 +1.2
baz=116,SNR=33
140A Cam and Jess, 29.62 303 P P 04 35 00.1 +1.2
baz=110,SNR=5.9
WLAR White Oak Lake 29.64 306 eP P 04 35 01.0 +1.9
comp=Z,139nm,0.9s
WHAR Wooly Hollow 29.68 309 eP P 04 35 00.5 +1.0
comp=Z,205nm,1.6s
Z40A Long Farm, Mag 29.70 305 P P 04 35 01.2 +1.6
baz=112
X40A Basin Creek Fa 29.75 307 P P 04 35 01.2 +1.2
baz=114,SNR=73
539A Cross D Ranch, 29.78 298 P P 04 35 02.0 +1.6
baz=105
Y40A Okolona 29.89 306 P P 04 35 02.7 +1.3
baz=113,SNR=37
339A Huntington 29.98 300 P P 04 35 03.7 +1.6
baz=107,SNR=8.6
439A Center Grove, 30.00 299 P P 04 35 04.1 +1.8
baz=106
239A Gary 30.12 302 P P 04 35 05.2 +1.8
baz=108
NATX Nacogdoches 30.20 301 P P 04 35 05.4 +1.3
baz=108,SNR=7.0
NATX Nacogdoches 30.20 301 eP P 04 35 06.2 +2.1
comp=Z,84nm,1.0s
W40A Ferguson Farm, 30.22 308 P P 04 35 05.6 +1.4
baz=115,SNR=9.3
139A Bunkhouse Ranc 30.28 303 P P 04 35 06.3 +1.6
baz=110
V40A Witts Springs 30.30 310 P P 04 35 06.0 +1.0
baz=116
Z39A Irene McRaven, 30.31 304 P P 04 35 06.7 +1.7
baz=111,SNR=8.5
MIAR Mount Ida 30.33 307 P P 04 35 06.1 +0.9
baz=113,SNR=17
MIAR Mount Ida 30.33 307 eP P 04 35 06.1 +0.9
MIAR pmax pmax
comp=Z,28nm,0.9s
MIAR Mount Ida 30.33 307 eP P 04 35 06.1 +0.9
comp=Z,28nm,0.9s
538A Harpers Horsep 30.45 298 P P 04 35 08.1 +1.8
baz=104
HDIL Hopedale 30.47 321 P P 04 35 07.4 +1.1
baz=128
HDIL Hopedale 30.47 321 eP P 04 35 07.5 +1.1
comp=Z,49nm,0.6s
Y39A Lockesburg 30.49 306 P P 04 35 07.7 +1.0
baz=112,SNR=16
U40A Yellville 30.57 311 P P 04 35 08.0 +0.6
baz=117,SNR=54
438A Sam Houston St 30.57 299 P P 04 35 09.2 +1.8
baz=105
338A Crockett 30.61 300 P P 04 35 09.6 +1.9
baz=106
238A Jacksonville 30.64 301 P P 04 35 09.3 +1.3
baz=108,SNR=5.5
HKT Hockley 30.67 297 eP P 04 35 09.1 +0.9
HKT pmax pmax
comp=Z,40nm,1.4s
HKT Hockley 30.67 297 eP P 04 35 09.1 +0.9
comp=Z,40nm,1.4s
T40A Mansfield 30.71 312 P P 04 35 09.0 +0.5
baz=119,SNR=38
X39A Fountain Ranch 30.73 307 P P 04 35 09.3 +0.6
baz=113,SNR=14
W39A Magazine 30.75 308 P P 04 35 10.4 +1.5
baz=114,SNR=35
138A Matatall Enter 30.83 303 P P 04 35 11.0 +1.4
baz=109,SNR=10
S40A Lebanon 30.91 313 P P 04 35 10.5 +0.1
baz=119,SNR=30
V39A Pettigrew 30.92 309 P P 04 35 11.4 +0.9
baz=115,SNR=108
737A Port Lavaca 30.93 295 P P 04 35 12.1 +1.6
baz=101
Z38A Mt. Pleasant 30.94 304 P P 04 35 12.0 +1.4
baz=110
637A Eagle Lake 30.98 296 P P 04 35 12.5 +1.6
baz=102,SNR=7.2
Y38A Idabel 30.98 305 P P 04 35 12.0 +1.0
baz=111,SNR=20
U39A Green Forest 31.04 310 P P 04 35 12.0 +0.6
baz=116,SNR=57
337A Centerville 31.07 300 P P 04 35 13.5 +1.8
baz=106
R40A Maddies Statio 31.10 314 P P 04 35 12.2 +0.3
baz=121,SNR=16
537A Green Hill Far 31.11 297 P P 04 35 13.4 +1.3
baz=104
VLDQ Val d'Or 31.11 343 eP P 04 35 13.0 +1.1
437A Phantom Ranch, 31.15 299 P P 04 35 13.5 +1.0
baz=105
237A Washetta, Mont 31.20 301 P P 04 35 14.6 +1.7
baz=107,SNR=12
W38A Poteau 31.25 307 P P 04 35 14.6 +1.3
baz=113,SNR=17
T39A Clever 31.25 311 P P 04 35 14.1 +0.7
baz=117,SNR=30
HHAR Hobbs 31.32 310 eP P 04 35 14.8 +0.8
comp=Z,74nm,1.2s
X38A Whitesboro 31.33 306 P P 04 35 15.2 +1.1
baz=112,SNR=80
Q40A Laux Farm, Aux 31.34 316 P P 04 35 14.3 +0.3
baz=122
137A Heron Place, G 31.34 302 P P 04 35 15.5 +1.4
baz=108,SNR=9.7
Z37A Pogue Cattle C 31.43 303 P P 04 35 15.8 +0.9
baz=109
V38A Canehill 31.49 309 P P 04 35 16.4 +1.0
baz=114,SNR=31
736A Circle Diamond 31.50 295 P P 04 35 17.3 +1.7
baz=101,SNR=9.9
S39A Bolivar 31.53 313 P P 04 35 15.9 +0.1
baz=118,SNR=22
636A Smothers Creek 31.60 296 P P 04 35 17.7 +1.2
baz=102
P40A Paris 31.60 317 P P 04 35 16.6 +0.3
baz=123,SNR=17
R39A Chumby, Stover 31.63 314 P P 04 35 16.4 -0.2
baz=120,SNR=24
Y37A Hugo 31.69 305 P P 04 35 18.0 +0.8
baz=110,SNR=16
X37A Clayton 31.71 306 P P 04 35 18.3 +0.9
baz=112,SNR=20
U38A Gravette 31.72 310 P P 04 35 17.7 +0.2
baz=115
536A Bastrop 31.74 297 P P 04 35 18.4 +0.7
baz=105,SNR=5.6
236A Katherine and 31.79 301 P P 04 35 19.0 +0.9
baz=106
O40A La Belle 31.82 318 P P 04 35 18.4 +0.1
baz=124,SNR=10
336A Riesel 31.88 299 P P 04 35 19.5 +0.6
baz=105
S38A Stockton 31.91 312 P P 04 35 19.3 +0.2
baz=118,SNR=17
T38A Diamond 31.91 311 P P 04 35 19.4 +0.2
baz=116,SNR=13
136A Ennis 31.92 302 P P 04 35 20.0 +0.8
baz=107,SNR=17
Q39A Willow Grove F 31.96 315 P P 04 35 19.6 +0.1
baz=121,SNR=18
W37B Quinton 31.97 307 P P 04 35 20.7 +1.1
baz=112,SNR=31
035Z Hargill 31.99 290 P P 04 35 21.5 +1.6
baz=96
V37A Hulbert 32.04 308 P P 04 35 20.9 +0.6
baz=114,SNR=56
835A Beeville 32.04 293 P P 04 35 21.8 +1.4
baz=100,SNR=12
P39A Salisbury 32.04 316 P P 04 35 20.1 -0.1
baz=122,SNR=10
035A Encino 32.08 291 P P 04 35 21.9 +1.2
baz=97
Z36A Blue Ridge 32.09 303 P P 04 35 21.0 +0.2
baz=108,SNR=8.6
735A Kenedy 32.12 294 P P 04 35 21.6 +0.5
baz=100,SNR=6.4
535A Dale 32.16 297 P P 04 35 21.6 +0.3
baz=102,SNR=11
R38A Fenwick Farm, 32.17 313 P P 04 35 21.2 -0.1
baz=118,SNR=20
Y36A Durant 32.18 304 P P 04 35 22.5 +1.0
baz=110
635A Leesville 32.20 295 P P 04 35 22.2 +0.5
baz=101,SNR=11
U37A Salina 32.24 309 P P 04 35 22.3 +0.4
baz=114,SNR=20
O39A Kirksville 32.32 317 P P 04 35 22.6 0.0
baz=123
335A Moody 32.33 299 P P 04 35 23.5 +0.6
baz=104,SNR=10
435B Jarrell 32.34 298 P P 04 35 23.8 +0.9
baz=104,SNR=7.2
Q38A Cooks Store, C 32.35 315 P P 04 35 22.9 0.0
baz=120,SNR=14
T37A Cheneyville 18 32.40 311 P P 04 35 23.9 +0.5
baz=116,SNR=27
X36A Centrahoma 32.46 305 P P 04 35 24.5 +0.5
baz=110,SNR=30
JFWS Jewell Farm 32.50 323 eP P 04 35 23.5 -0.7
JFWS pmax pmax
comp=Z,44nm,0.8s
JFWS Jewell Farm 32.50 323 eP P 04 35 23.5 -0.7
comp=Z,44nm,0.8s
TLIG Tlapa 32.53 273 eP P 04 35 25.9 +1.0
comp=Z,89nm,0.8s
TUL1 Leonard 32.54 308 P P 04 35 25.2 +0.6
baz=113,SNR=62
TUL1 Leonard 32.54 308 eP P 04 35 25.5 +0.8
934A Benavides 32.54 292 P P 04 35 26.4 +1.7
baz=98,SNR=18
WHTX Lake Whitney, 32.54 300 P P 04 35 25.6 +0.9
baz=106,SNR=9.8
WHTX Lake Whitney, 32.54 300 eP P 04 35 25.1 +0.4
comp=Z,17nm,0.8s
W36A Wetumka 32.57 306 P P 04 35 25.7 +0.7
baz=111,SNR=23
V36A Jenks 32.60 308 P P 04 35 26.1 +1.0
baz=113,SNR=47
034A Hebbronville 32.61 291 P P 04 35 26.2 +0.8
baz=97,SNR=9.9
S37A Fort Scott 32.62 312 P P 04 35 25.5 +0.2
baz=117,SNR=17
P38A Dawn 32.63 316 P P 04 35 25.5 +0.1
baz=121,SNR=19
N39A Derby Farms, D 32.63 318 P P 04 35 25.3 -0.1
baz=124
834A Tilden 32.65 293 P P 04 35 26.3 +0.7
baz=99,SNR=16
135A Vickery Place, 32.66 301 P P 04 35 26.7 +1.0
baz=106
U36A Oologah 32.68 309 P P 04 35 26.6 +0.7
baz=114,SNR=23
634A China Grove, S 32.69 295 P P 04 35 26.6 +0.5
baz=101
Z35A Perchaven, San 32.76 303 P P 04 35 27.6 +1.0
baz=108,SNR=8.9
734A La Parita Cree 32.77 294 P P 04 35 27.4 +0.7
baz=100
Y35A Marietta 32.77 304 P P 04 35 27.6 +0.8
baz=109,SNR=11
O38A Galt 32.85 316 P P 04 35 27.3 0.0
baz=122,SNR=7.2
R37A Teagarden Farm 32.87 313 P P 04 35 27.5 0.0
baz=118,SNR=53
Q37A Longview Farm, 32.87 314 P P 04 35 27.4 -0.2
baz=119,SNR=19
X35A Drake 32.89 305 P P 04 35 27.7 0.0
baz=110,SNR=9.3
434A Burnet 32.92 298 P P 04 35 27.8 -0.3
baz=103,SNR=11
534A Blanco 32.92 296 P P 04 35 28.2 +0.1
baz=102,SNR=17
NNA Nana 33.01 203 P P 04 35 27.6 -1.3
comp=Z,51nm,0.6s,baz=344,slow=8.1,SNR=34
NNA Nana 33.01 203 eP P 04 35 27.7 -1.3
NNA pmax pmax
comp=Z,166nm,0.6s
NNA Nana 33.01 203 eP P 04 35 27.7 -1.3
comp=Z,166nm,0.6s
334A Lometa 33.02 299 P P 04 35 29.1 +0.2
baz=104,SNR=25
N38A Joes South For 33.05 318 P P 04 35 29.0 0.0
baz=123
T36A Boggs Farm, Ca 33.06 310 P P 04 35 29.6 +0.3
baz=114,SNR=57
W35A Tecumseh 33.07 306 P P 04 35 29.6 +0.3
baz=111,SNR=38
234A Clairette 33.10 300 P P 04 35 30.0 +0.3
baz=105
S36A Lake Cedric, C 33.14 311 P P 04 35 30.3 +0.4
baz=116,SNR=30
P37A Lathrop 33.15 315 P P 04 35 29.9 0.0
baz=120,SNR=16
933A Laredo 33.20 292 P P 04 35 31.6 +1.0
baz=98,SNR=31
134A White-Moore Ra 33.21 301 P P 04 35 31.4 +0.8
baz=106,SNR=9.8
V35A Meyer Ranch, C 33.27 307 P P 04 35 31.6 +0.6
baz=112,SNR=18
Z34A Collier Ranch, 33.30 303 P P 04 35 32.4 +1.1
baz=107,SNR=16
O37A Wolven Farm, M 33.31 316 P P 04 35 31.8 +0.5
baz=121
R36A Gordon, Harris 33.34 312 P P 04 35 31.9 +0.2
baz=117,SNR=20
Y34A Reagan Ranch, 33.36 304 P P 04 35 32.4 +0.6
baz=108,SNR=15
M38A Pleasantville 33.37 319 P P 04 35 32.1 +0.2
baz=124,SNR=8.2
733A Divot King Ran 33.38 294 P P 04 35 32.3 +0.1
baz=99,SNR=13
533A Kerrville 33.41 296 P P 04 35 32.4 +0.1
baz=101,SNR=11
833A Chaparral WMA, 33.41 293 P P 04 35 32.7 +0.4
baz=98,SNR=37
633A Saathoff Ranch 33.41 295 P P 04 35 32.8 +0.5
baz=100,SNR=63
U35A Pawnee 33.42 308 P P 04 35 33.2 +0.9
baz=113,SNR=28
T35A Sooner Cattle 33.47 309 P P 04 35 33.2 +0.4
baz=114,SNR=89
433A Art 33.60 297 P P 04 35 34.0 +0.1
baz=102,SNR=26
Q36A Arnold C. Orve 33.61 313 P P 04 35 34.4 +0.4
baz=118,SNR=6.6
X34A Smith Ranch, M 33.62 305 P P 04 35 34.8 +0.7
baz=109,SNR=13
L38A Oak Wood Farm, 33.63 320 P P 04 35 34.2 +0.1
baz=125
333A Richland Sprin 33.63 299 P P 04 35 34.4 0.0
baz=103,SNR=32
S35A Otter Creek Ra 33.64 311 P P 04 35 34.7 +0.4
baz=115,SNR=29
N37A Lee Faris, Mou 33.66 317 P P 04 35 34.4 +0.1
baz=122,SNR=6.8
233A Rising Star 33.73 300 P P 04 35 35.7 +0.5
baz=104,SNR=27

P36A **Good Intent, A** 33.75 314 P P 04 35 35.3 +0.2
baz=119
W34A **Bridge Creek,** 33.79 306 P P 04 35 35.9 +0.3
baz=110,SNR=11
W34A **Bridge Creek,** 33.79 306 *eP* P 04 35 36.7 +1.1
V34A **Guthrie** 33.80 307 P P 04 35 36.5 +0.8
baz=111,SNR=25
V34A **Guthrie** 33.80 307 *eP* P 04 35 36.6 +0.9
K38A **Parkersburg** 33.81 321 P P 04 35 35.7 +0.1
baz=126,SNR=7.7
O36A **Bolckow** 33.83 315 P P 04 35 36.2 +0.3
baz=120,SNR=10
R35A **Emporia Munici** 33.84 312 P P 04 35 36.2 +0.3
baz=116,SNR=5.9
133A **Hamilton Ranch** 33.90 301 P P 04 35 36.8 +0.3
baz=105,SNR=6.7
M37A **Trindle Farm,** 33.90 318 P P 04 35 36.7 +0.2
baz=122,SNR=7.0
832A **Faith Ranch, C** 33.91 293 P P 04 35 36.6 -0.1
baz=98,SNR=27
Q35A **Mercer Eighty,** 33.96 313 P P 04 35 37.1 0.0
baz=117
Z33A **Whitaker Ranch** 33.96 302 P P 04 35 37.8 +0.7
baz=106,SNR=21
T34A **McClaskey Farm** 34.01 309 P P 04 35 38.2 +0.8
baz=113,SNR=43
J38A **Wedel Dairy, R** 34.03 322 P P 04 35 37.7 +0.1
baz=127
U34A **Anderson Ranch** 34.04 308 P P 04 35 38.7 +0.9
baz=112,SNR=48
U34A **Anderson Ranch** 34.04 308 *eP* P 04 35 38.6 +0.9
COWI **Conover** 34.05 329 *eP* P 04 35 38.2 +0.4
Y33A **Hilltop Ranch,** 34.06 303 P P 04 35 38.4 +0.4
baz=107,SNR=13
L37A **Phoenix Point,** 34.11 319 P P 04 35 38.5 +0.2
baz=124,SNR=5.4
X33A **Lawton** 34.12 304 P P 04 35 38.8 +0.3
baz=108,SNR=23
JCT **Junction City** 34.14 297 P P 04 35 38.7 0.0
baz=101,SNR=32
JCT **Junction City** 34.14 297 *eP* P 04 35 39.0 +0.3
JCT **Junction City** 34.14 297 *eP* P 04 35 39.0 +0.3
N36A **Muff Farm, Cla** 34.18 316 P P 04 35 39.2 +0.3
baz=121,SNR=15
S34A **Willow Spring** 34.22 310 P P 04 35 39.7 +0.4
baz=114,SNR=18
P35A **Duane Minner,** 34.26 314 P P 04 35 39.4 -0.2
baz=118,SNR=16
W33A **Caddo, Fort Co** 34.30 305 P P 04 35 40.5 +0.5
baz=109
V33A **Lossen Ranch,** 34.38 306 P P 04 35 41.0 +0.3
baz=110,SNR=12
I38A **Scanlan Farm,** 34.39 323 P P 04 35 40.4 -0.3
baz=128,SNR=22
K37A **Belmond** 34.40 320 P P 04 35 40.9 +0.1
baz=125
M36A **Felix, Anita** 34.41 318 P P 04 35 41.0 +0.2
baz=122,SNR=9.6
WMOK **Wichita Mounta** 34.41 304 *eP* P 04 35 41.5 +0.5
WMOK **Wichita Mounta** 34.41 304 *eP* P 04 35 41.5 +0.5
KSU1 **Kansas State U** 34.47 313 P P 04 35 40.8 -0.6
baz=116,SNR=23
KSU1 **Kansas State U** 34.47 313 *eP* P 04 35 41.3 -0.1
U33A **Lingo Farm, Me** 34.47 308 P P 04 35 41.9 +0.4
baz=111,SNR=33
ABTX **Abilene, Hawle** 34.49 301 P P 04 35 41.9 +0.1
baz=104,SNR=18
ABTX **Abilene, Hawle** 34.49 301 *eP* P 04 35 42.3 +0.6
O35A **Humboldt** 34.53 315 P P 04 35 41.5 -0.5
baz=119,SNR=8.6
R34A **Isabella, Hill** 34.57 311 P P 04 35 42.0 -0.4
baz=115,SNR=9.3
Q34A **Chapman** 34.62 312 P P 04 35 42.4 -0.3
baz=116,SNR=18
N35A **Tabor** 34.65 316 P P 04 35 43.1 +0.2
baz=120
J37A **Redenius Farm,** 34.66 321 P P 04 35 43.4 +0.3
baz=126,SNR=5.5
L36A **Harm Buss Farm** 34.66 319 P P 04 35 43.5 +0.4
baz=123,SNR=7.3
X32A **Elmer** 34.70 304 P P 04 35 44.0 +0.5
baz=107,SNR=33
SIV **San Ignacio** 34.74 175 P P 04 35 42.4 -1.5
comp=Z,28nm,0.6s,baz=18,slow=8.5,SNR=70
SIV PcP PcP 04 38 17.4 +0.2
comp=Z,6.6nm,0.8s,baz=129,slow=2.0,SNR=3.9
SIV LR LR 04 50 32.2
comp=Z,637nm,20.2s,baz=10.0,slow=37
T33A **Patterson Ranc** 34.81 309 P P 04 35 45.0 +0.6
baz=112,SNR=9.6
P34A **Walnut Farm, R** 34.82 313 P P 04 35 44.3 -0.1
baz=117,SNR=27
K36A **Gilmore City** 34.82 320 P P 04 35 45.1 +0.7
baz=124
S33A **Kaszmaul Farm,** 34.83 310 P P 04 35 45.4 +0.9
baz=113,SNR=19
W32A **Sentinel** 34.89 305 P P 04 35 45.6 +0.5
baz=108,SNR=18
V32A **Arapaho** 34.93 306 P P 04 35 45.8 +0.4
baz=109,SNR=9.6
M35A **Neola** 34.98 317 P P 04 35 46.5 +0.7
baz=120
I37A **Lemond, Waseca** 34.99 322 P P 04 35 45.8 -0.1
baz=126
O34A **Beatrice** 35.02 314 P P 04 35 45.7 -0.5
baz=118,SNR=8.2
H37A **Dierke Farm, C** 35.05 323 P P 04 35 46.5 +0.1
baz=128,SNR=6.7
LPAZ **La Paz** 35.09 186 P P 04 35 45.8 -1.8
comp=Z,20nm,1.0s,baz=354,slow=10,SNR=27
LPAZ PcP PcP 04 38 18.4 -0.6
comp=Z,3.5nm,0.7s,baz=233,slow=6.4,SNR=2.2
LPAZ ScP ScP 04 41 59.9 -1.7
comp=Z,5.4nm,0.8s,baz=52,slow=5.8,SNR=5.4
LPAZ LR LR 04 50 47.4
comp=Z,452nm,21.2s,baz=354,slow=37
R33A **Olander Ranch,** 35.10 311 P P 04 35 47.7 +0.7
baz=114
U32A **Winter Ranch,** 35.12 307 P P 04 35 47.9 +0.7
baz=110,SNR=12
J36A **Seneca 1, Swea** 35.14 321 P P 04 35 47.5 +0.3
baz=124
H07S1 **FLORES T-PHASE** 35.16 47 T T 05 12 54.6
SNR=8.6
N34A **Lincoln** 35.20 315 P P 04 35 47.6 -0.1
baz=119,SNR=6.7
L35A **Bielow Farm, R** 35.22 318 P P 04 35 47.8 -0.1
baz=122,SNR=5.7
Q33A **Connelly Farm,** 35.28 312 P P 04 35 48.6 +0.1
baz=115,SNR=35
I36A **Fitzsimmons Fa** 35.35 322 P P 04 35 48.7 -0.2
baz=126
T32A **Huddler Ranch,** 35.35 308 P P 04 35 49.7 +0.6
baz=111,SNR=23
K35A **Storm Lake** 35.35 319 P P 04 35 49.3 +0.3
baz=123
P33A **Williams Farm,** 35.37 313 P P 04 35 49.1 -0.1
baz=116
SPMN **Marine on St.** 35.39 324 P P 04 35 48.8 -0.4
baz=129,SNR=8.2
SPMN **Marine on St.** 35.39 324 *eP* P 04 35 49.2 -0.1
S32A **Newby Ranch, P** 35.55 309 P P 04 35 51.5 +0.7
baz=112,SNR=23
O33A **Hebron** 35.58 314 P P 04 35 50.5 -0.5
baz=117,SNR=9.0
M34A **Aspy Farms, Fr** 35.58 316 P P 04 35 51.0 0.0
baz=120,SNR=6.1
H36A **Jessenland, He** 35.63 323 P P 04 35 51.4 +0.1
baz=126,SNR=13
R32A **Long Quarter,** 35.67 310 P P 04 35 52.3 +0.5
baz=113,SNR=72
L34A **Svendsen Farm,** 35.68 317 P P 04 35 52.1 +0.3
baz=120
J35A **Milford** 35.69 320 P P 04 35 51.9 0.0
baz=123
C39A **Grand Marais** 35.75 330 P P 04 35 52.9 +0.6
baz=135
N33A **J Bar K, Exete** 35.79 315 P P 04 35 52.4 -0.4
baz=118
Q32A **Meitler Ranch,** 35.79 311 P P 04 35 53.2 +0.3
baz=114,SNR=17
I35A **Creekview Farm** 35.83 321 P P 04 35 53.6 +0.5
baz=124
K34A **Le Mars** 35.87 318 P P 04 35 53.7 +0.3
baz=122,SNR=6.0
ZAIG **Zacatecas** 35.91 283 *eP* P 04 35 55.7 +1.4
G36A **St. Michael** 35.92 324 P P 04 35 54.3 +0.4
baz=127

SCHQ **Schefferville** 36.00 358 P P 04 35 54.8 +0.4
comp=Z,9.6nm,0.7s,baz=181,slow=7.5,SNR=15
SCHQ LR LR 04 48 59.9
comp=Z,203nm,19.6s,baz=188,slow=33
E37A **Wrenshall** 36.03 326 P P 04 35 54.9 +0.2
baz=131
P32A **Huiting Farm,** 36.08 312 P P 04 35 55.2 -0.2
baz=115,SNR=8.6
J34A **George** 36.10 319 P P 04 35 55.7 +0.3
baz=122,SNR=12
O32A **Brockman Farm,** 36.13 314 P P 04 35 55.4 -0.4
baz=116,SNR=11
F36A **Milaca** 36.18 325 P P 04 35 55.8 -0.3
baz=128,SNR=14
H35A **Sunnyside Ranc** 36.22 322 P P 04 35 56.2 -0.2
baz=125,SNR=10
C38A **Sawbill Land.** 36.23 329 P P 04 35 56.0 -0.4
baz=133
G35A **Watkins** 36.33 323 P P 04 35 56.6 -0.7
baz=126
L33A **Hoskins** 36.36 317 P P 04 35 57.9 +0.2
baz=120,SNR=8.6
N32A **Stulken Farm,** 36.37 314 P P 04 35 57.4 -0.4
baz=117
K33A **Hardington** 36.40 318 P P 04 35 58.5 +0.5
baz=120,SNR=17
D37A **Cotton** 36.43 327 P P 04 35 58.7 +0.6
baz=131
E36A **McGregor** 36.45 326 P P 04 35 58.4 +0.1
baz=129,SNR=21
I34A **Hadley** 36.45 321 P P 04 35 58.8 +0.4
baz=123
EYMN **Ely** 36.50 329 P P 04 35 58.7 -0.1
baz=133
EYMN **Ely** 36.50 329 *eP* P 04 35 59.5 +0.8
CBKS **Cedar Bluff** 36.56 311 P P 04 35 59.9 +0.4
baz=113,SNR=27
CBKS **Cedar Bluff** 36.56 311 *eP* P 04 36 00.7 +1.2
CBKS **Cedar Bluff** 36.56 311 *eP* P 04 36 00.7 +1.2
BGNE **Belgrade** 36.57 315 P P 04 35 59.8 +0.3
baz=118,SNR=24
BGNE **Belgrade** 36.57 315 *eP* P 04 36 00.2 +0.7
C37A **Embarrass** 36.69 328 P P 04 35 59.9 -0.4
baz=132
AMTX **Amarillo** 36.73 303 P P 04 36 01.5 +0.4
baz=106
AMTX **Amarillo** 36.73 303 *eP* P 04 36 01.4 +0.4
ECSD **EROS Data Cent** 36.75 320 P P 04 36 00.9 0.0
baz=122,SNR=31
ECSD **EROS Data Cent** 36.75 320 *eP* P 04 36 01.1 +0.2
J33A **Davis** 36.75 319 P P 04 36 00.9 0.0
baz=121,SNR=22
H34A **Spellman Lake,** 36.76 322 P P 04 35 59.6 -1.3
baz=124
L32A **Elgin** 36.76 316 P P 04 36 00.6 -0.4
baz=118
F35A **Swanville** 36.76 324 P P 04 36 00.9 -0.1
baz=127,SNR=5.7
O31A **Woolen Ranch,** 36.81 313 P P 04 36 01.3 -0.3
baz=115,SNR=9.6
D36A **Goodland** 36.83 327 P P 04 36 01.8 +0.3
baz=130,SNR=9.9
N31A **Bailey Ranch,** 36.85 314 P P 04 36 01.7 -0.2
baz=116,SNR=9.4
G34A **Benson** 37.00 322 P P 04 36 02.7 -0.3
baz=125
I33A **Coleman** 37.03 320 P P 04 36 03.3 0.0
baz=122
C36A **Pine Crest Far** 37.04 328 P P 04 36 03.3 -0.1
baz=131,SNR=6.1
K32A **Verdigre** 37.05 317 P P 04 36 03.3 -0.3
baz=119,SNR=18
M31A **Lambtecht Ranc** 37.09 315 P P 04 36 04.1 +0.2
baz=117,SNR=40
E35A **Pequot Lakes** 37.09 325 P P 04 36 03.6 -0.2
baz=128
F34A **Alexandria** 37.11 323 P P 04 36 03.1 -0.8
baz=126
RCBR **Riachuelo** 37.21 128 P P 04 36 04.9 -0.3
comp=Z,8.9nm,0.6s,baz=309,slow=8.2,SNR=11
D35A **Remer** 37.23 326 P P 04 36 04.9 -0.1
baz=129,SNR=6.2
TXAR **Lajitas Array** 37.26 294 P P 04 36 06.0 +0.4
comp=Z,25nm,0.8s,baz=112,slow=7.8,SNR=138
TXAR PcP PcP 04 38 25.8 +1.1
comp=Z,3.2nm,0.7s,baz=129,slow=5.1,SNR=4.0
TXAR ScP ScP 04 42 09.0 +0.1
comp=Z,0.9nm,0.7s,baz=113,slow=6.2,SNR=5.0
TXAR LR LR 04 55 55.2
comp=Z,264nm,20.5s,baz=0.0,slow=43
TX31 **Lajitas Ar. Si** 37.26 294 *eP* P 04 36 06.1 +0.5
J32A **Parkston** 37.33 318 P P 04 36 05.6 -0.3
baz=120,SNR=9.3
H33A **Prehn Over Nor** 37.34 321 P P 04 36 06.0 +0.1
baz=123,SNR=21
MSTX **Muleshoe** 37.36 302 P P 04 36 06.3 -0.2
baz=104,SNR=13
MSTX **Muleshoe** 37.36 302 *eP* P 04 36 06.4 0.0
comp=Z,48nm,1.2s
L31A **Butterfield Fa** 37.38 316 P P 04 36 06.7 +0.3
baz=118,SNR=36
I32A **Karley and Nic** 37.42 320 P P 04 36 06.9 +0.2
baz=121,SNR=12
G33A **Ortonville** 37.44 322 P P 04 36 06.3 -0.5
baz=124
E34A **Wadena** 37.49 324 P P 04 36 06.9 -0.2
baz=127,SNR=8.3
K31A **O'Neill** 37.54 317 P P 04 36 07.6 0.0
baz=118,SNR=23
C35A **Jirik Farms, M** 37.59 327 P P 04 36 07.9 -0.1
baz=130,SNR=19
H32A **Carlson Farm,** 37.66 320 P P 04 36 08.6 0.0
baz=122,SNR=7.8
F33A **5 Mile Ranch,** 37.72 323 P P 04 36 09.0 -0.1
baz=125
BDFB **Brasilia** 37.82 154 P P 04 36 10.4 +0.1
comp=Z,8.0nm,0.6s,baz=308,slow=7.6,SNR=16
BDFB LR LR 04 52 13.2
comp=Z,241nm,19.2s,baz=321,slow=37
BDFB **Brasilia** 37.82 154 *eP* P 04 36 10.9 +0.6
D34A **Park Rapids** 37.85 325 P P 04 36 09.6 -0.6
baz=128
B35A **Bob, Littlefor** 37.88 328 P P 04 36 10.5 0.0
baz=131,SNR=14
C34A **RKJ Ranch, Bem** 38.04 326 P P 04 36 11.6 -0.2
baz=128,SNR=14
G32A **Webster** 38.10 321 P P 04 36 12.0 -0.4
baz=123,SNR=11
K30A **Basset** 38.12 316 P P 04 36 13.0 +0.4
baz=117,SNR=33
F32A **Veblen** 38.22 322 P P 04 36 12.9 -0.5
baz=124
D33A **AnnSam, Waubun** 38.23 325 P P 04 36 13.2 -0.2
baz=127,SNR=8.1
H31A **Wolsey** 38.28 320 P P 04 36 13.8 -0.1
baz=121,SNR=5.5
J30A **Dallas** 38.35 317 P P 04 36 14.7 +0.2
baz=118,SNR=43
B34A **Aery, Baudette** 38.44 327 P P 04 36 14.7 -0.5
baz=130,SNR=8.2
SUSD **Miller** 38.56 319 P P 04 36 15.9 -0.3
baz=120,SNR=7.0
C33A **Trail** 38.57 326 P P 04 36 15.9 -0.4
baz=128
I30A **Oacoma** 38.59 318 P P 04 36 16.6 +0.1
baz=119,SNR=8.1
E32A **Braaten, Kindr** 38.59 323 P P 04 36 16.1 -0.4
baz=125
KSCO **Kaye Shedlock'** 38.73 309 P P 04 36 18.4 +0.5
baz=110,SNR=36
KSCO **Kaye Shedlock'** 38.73 309 *eP* P 04 36 18.4 +0.5
comp=Z,99nm,0.7s
B33A **Robert and Kas** 38.79 326 P P 04 36 17.4 -0.7
baz=128
HPIG 38.80 290 *eP* P 04 36 19.3 +0.6
F31A **Hecla** 38.87 322 P P 04 36 18.4 -0.4
baz=122,SNR=11
D32A **Dogwood Acres,** 38.88 324 P P 04 36 18.7 -0.1
baz=125
J29A **Okreek** 38.92 317 P P 04 36 19.6 +0.3
baz=118,SNR=50
AGMN **Agassiz Nation** 38.95 326 P P 04 36 19.4 0.0
baz=128,SNR=15
AGMN **Agassiz Nation** 38.95 326 *eP* P 04 36 19.1 -0.3
OGNE **Ogallala** 39.02 313 P P 04 36 20.5 +0.2
baz=113,SNR=13
OGNE **Ogallala** 39.02 313 *eP* P 04 36 20.8 +0.5
G30A **Faulkton** 39.02 320 P P 04 36 20.2 +0.1
baz=121

E31A **Nome** 39.04 323 P P 04 36 20.2 0.0
baz=124,SNR=6.3
MNTX **Cornudas Mount** 39.07 297 P P 04 36 21.1 +0.4
baz=99,SNR=93
MNTX **Cornudas Mount** 39.07 297 *eP* P 04 36 21.2 +0.6
A33A **Warroad** 39.10 327 P P 04 36 20.3 -0.3
baz=129,SNR=13
I29A **Vivian Onida** 39.20 318 P P 04 36 21.3 -0.3
baz=118,SNR=27
D31A **Mcclaflin, Tow** 39.22 323 P P 04 36 21.2 -0.5
baz=124
B32A **Ashes, Strandq** 39.36 326 P P 04 36 22.6 -0.2
baz=127,SNR=12
H29A **Onida** 39.43 319 P P 04 36 23.4 -0.2
baz=119
T25A **Trinidad** 39.48 306 P P 04 36 25.2 +0.9
baz=106,SNR=29
J28A **Allard Ranch,** 39.52 317 P P 04 36 24.9 +0.5
baz=116,SNR=73
G29A **Hoven** 39.53 320 P P 04 36 24.1 -0.3
baz=120
E30A **Jud** 39.60 322 P P 04 36 24.5 -0.4
baz=122,SNR=5.8
C31A **Landman Farms,** 39.65 324 P P 04 36 25.0 -0.4
baz=125,SNR=15
A32A **Rocking H Ranc** 39.66 327 P P 04 36 25.2 -0.1
baz=128,SNR=8.4
I28A **Midland** 39.74 317 P P 04 36 26.4 +0.3
baz=117,SNR=46
F29A **Eureka** 39.80 321 P P 04 36 25.9 -0.7
baz=121,SNR=22
D30A **Buchanan** 39.84 323 P P 04 36 26.8 -0.1
baz=123,SNR=7.8
PB01 **IPOC Station P** 39.94 188 *eP* P 04 36 24.7 -3.3
J27A **Elkhorn Farm,** 39.95 316 P P 04 36 28.3 +0.3
baz=116,SNR=36
H28A **Mission Ridge** 39.96 318 P P 04 36 28.4 +0.4
baz=118,SNR=49
B31A **Greenbush Farm** 39.98 325 P P 04 36 27.5 -0.5
baz=126
C30A **Mose, Pekin** 40.02 324 P P 04 36 28.2 -0.1
baz=124,SNR=5.1
E29A **Napoleon** 40.07 322 P P 04 36 28.6 -0.2
baz=122,SNR=19
G28A **Parade** 40.08 319 P P 04 36 29.2 +0.2
baz=119,SNR=16
ULM **Lac du Bonnet** 40.18 329 P P 04 36 29.2 -0.5
comp=Z,16nm,0.6s,baz=126,slow=7.9,SNR=26
ULM LR LR 04 52 32.9
comp=Z,382nm,21.6s,baz=126,slow=35
D29A **Pettibone, Tap** 40.30 322 P P 04 36 30.5 -0.2
baz=122,SNR=8.1
I27A **Quinn** 40.34 317 P P 04 36 31.5 +0.4
baz=116,SNR=30
B30A **Myrvik Farm, E** 40.36 325 P P 04 36 30.8 -0.4
baz=125
F28A **McLaughlin** 40.39 320 P P 04 36 31.4 -0.1
baz=120,SNR=9.2
SDCO **Great Sand Dun** 40.48 306 P P 04 36 33.3 +0.6
baz=106,SNR=83
SDCO **Great Sand Dun** 40.48 306 *eP* P 04 36 33.6 +0.9
BNM **Barren Site** 40.53 301 *eP* P 04 36 34.3 +1.2
ANMO **Albuquerque** 40.55 302 P P 04 36 34.3 +1.2
comp=Z,16nm,0.8s,baz=114,slow=9.2,SNR=76
ANMO PcP PcP 04 38 35.8 +0.7
comp=Z,3.5nm,0.7s,baz=86,slow=7.1,SNR=3.3
ANMO **Albuquerque** 40.55 302 P P 04 36 34.4 +1.2
baz=102
LPM **Los Pinos Moun** 40.56 301 *eP* P 04 36 34.5 +1.2
Q24A **Divide** 40.58 308 P P 04 36 33.8 +0.3
baz=108,SNR=18
H27A **Howes** 40.61 318 P P 04 36 33.6 +0.3
baz=117,SNR=35
A30A **Hoffart Farm,** 40.63 326 P P 04 36 33.2 -0.1
baz=126,SNR=7.1
J26A **Sides Ranch, S** 40.68 315 P P 04 36 33.9 -0.2
baz=114,SNR=25
E28A **Huff** 40.69 321 P P 04 36 33.9 -0.1
baz=120,SNR=8.3
MDND **Maddock** 40.73 323 P P 04 36 34.0 -0.3
baz=123
Y22D **IRIS PASSCAL I** 40.75 301 P P 04 36 35.9 +1.1
baz=101
I26A **New Underwood** 40.84 317 P P 04 36 35.4 +0.1
baz=115,SNR=46
G27A **Dupree** 40.86 319 P P 04 36 35.9 +0.5
baz=118,SNR=44
B29A **Wagenman Farm,** 40.93 324 P P 04 36 35.9 0.0
baz=124
D28A **Regan** 40.94 322 P P 04 36 35.9 -0.1
baz=121,SNR=8.7
H26A **Fairpoint** 41.05 317 P P 04 36 37.1 +0.1
baz=116,SNR=10.0
C28A **Hausauer Farms** 41.10 323 P P 04 36 37.3 -0.1
baz=122,SNR=5.6
A29A **Manning Farm,** 41.12 325 P P 04 36 36.8 -0.7
baz=124,SNR=10
E27A **Carson** 41.14 320 P P 04 36 38.1 +0.4
baz=119,SNR=6.0
F27A **Lemmon** 41.15 320 P P 04 36 38.4 +0.6
baz=118,SNR=13
ISCO **Idaho Springs** 41.18 309 P P 04 36 39.3 +0.9
baz=108,SNR=52
ISCO **Idaho Springs** 41.18 309 *eP* P 04 36 39.2 +0.8
ISCO pmax pmax
comp=Z,23nm,0.7s
ISCO **Idaho Springs** 41.18 309 *eP* P 04 36 39.2 +0.8
comp=Z,22nm,0.7s
J25A **Sunshine Ranch** 41.20 315 P P 04 36 38.6 +0.3
baz=114,SNR=22
121A **Cookes Peak, D** 41.21 298 P P 04 36 40.1 +1.4
baz=98,SNR=23
121A **Cookes Peak, D** 41.21 298 *eP* P 04 36 39.8 +1.2
comp=Z,111nm,1.6s
G26A **Maurine** 41.24 318 P P 04 36 39.0 +0.5
baz=117,SNR=101
I25A **Rochford** 41.41 316 P P 04 36 40.7 +0.6
baz=114,SNR=15
D27A **Center** 41.45 321 P P 04 36 40.3 0.0
baz=120
B28A **Dugan Ranch, T** 41.48 324 P P 04 36 40.3 -0.2
baz=123
S22A **4UR Ranch, Cre** 41.50 306 P P 04 36 41.7 +0.7
baz=105,SNR=18
F26A **Lodgepole** 41.54 319 P P 04 36 41.2 +0.2
baz=118,SNR=15
PHWY **Pilot Hill** 41.56 312 *eP* P 04 36 42.2 +0.7
H25A **Fruitdale** 41.58 317 P P 04 36 41.9 +0.6
baz=115,SNR=59
RSSD **Black Hills** 41.65 316 P P 04 36 42.5 +0.4
baz=114
RSSD **Black Hills** 41.65 316 *eP* P 04 36 42.9 +0.8
RSSD **Black Hills** 41.65 316 *eP* P 04 36 42.9 +0.8
A28A **Rude Farm, Bot** 41.68 324 P P 04 36 41.4 -0.7
baz=123
E26A **Carlson Angus** 41.70 320 P P 04 36 42.6 +0.3
baz=118,SNR=6.5
G25A **Newell** 41.71 318 P P 04 36 42.5 +0.1
baz=116,SNR=61
C27A **Sayler Ranch,** 41.75 322 P P 04 36 42.8 +0.2
baz=121,SNR=6.6
N23A **Red Feather La** 41.77 311 P P 04 36 43.5 +0.3
baz=109,SNR=16
D26A **Manning** 41.95 321 P P 04 36 44.6 +0.3
baz=119
SMCO **Snowmass** 41.99 308 *eP* P 04 36 46.0 +0.7
F25A **Bowman** 42.06 319 P P 04 36 45.5 +0.2
baz=117,SNR=11
C26A **Wahner Farm, P** 42.15 322 P P 04 36 45.9 0.0
baz=120
A27A **Ledoux Ranch,** 42.24 324 P P 04 36 46.6 0.0
baz=122
E25A **Miller Ranch,** 42.29 320 P P 04 36 47.9 +0.7
baz=117
ALOL **LOMAS DE OLMED** 42.38 180 *i* P P 04 36 43.8 -4.2
B26A **Jensen Ranch,** 42.51 323 P P 04 36 49.5 +0.6
baz=120
D25A **Fairfield** 42.54 321 P P 04 36 49.5 +0.4
baz=118,SNR=10.0
MVCO **Mesa Verde** 42.66 305 P P 04 36 50.9 +0.5
baz=103
MVCO **Mesa Verde** 42.66 305 *eP* P 04 36 51.6 +1.1
A26A **Wade Farm, Ken** 42.66 323 P P 04 36 49.9 -0.2
baz=121,SNR=7.3
SLBS **Sierra La Lagu** 42.66 285 *eP* P 04 36 52.4 +1.9
K22A **Casper** 42.77 313 P P 04 36 52.1 +0.9
baz=110,SNR=35

K22A **Casper** 42.77 313 *e*P P 04 36 52.0 +0.7
comp=Z,101nm,1.1s
C25A **Freed Ranch, W** 42.77 321 P P 04 36 51.4 +0.4
baz=119,SNR=7.7
AZAP **Zapla** 42.79 181 *i* P P 04 36 47.7 -3.9
PV01 **Paradox Valley** 42.93 306 *e*P P 04 36 54.0 +1.4
B25A **Knox Farm, Ray** 42.99 322 P P 04 36 53.5 +0.8
baz=119
O20A **White River Ci** 43.20 309 P P 04 36 55.4 +0.6
baz=106
O20A **White River Ci** 43.20 309 *e*P P 04 36 55.7 +0.9
comp=Z,40nm,1.1s
O20A *e*PcP PcP 04 38 43.0 -0.8
W18A **Petrified Fore** 43.22 302 P P 04 36 56.3 +1.3
baz=100,SNR=15
W18A **Petrified Fore** 43.22 302 *e*P P 04 36 56.1 +1.1
comp=Z,29nm,0.8s
PV04 **Paradox Valley** 43.25 306 *e*P P 04 36 55.5 +0.3
A25A **Svangstu Ranch** 43.29 323 P P 04 36 55.3 +0.2
baz=120,SNR=6.9
SLA **San Lorenzo** 43.29 182 *i* P P 04 36 51.8 -3.8
PV05 **Paradox Valley** 43.32 306 *e*P P 04 36 56.3 +0.5
DGMT **Dagmar** 43.69 322 P P 04 36 58.8 +0.4
baz=118
DGMT **Dagmar** 43.69 322 *e*P P 04 36 59.2 +0.8
TUC **Tucson** 43.70 297 P P 04 37 00.4 +1.7
baz=96
TUC **Tucson** 43.70 297 *e*P P 04 37 00.4 +1.7
TUC **Tucson** 43.70 297 *e*P P 04 37 00.4 +1.7
LAO **LASA Array** 44.12 319 P P 04 37 02.9 +0.9
baz=114,SNR=25
LAO **LASA Array** 44.12 319 *e*P P 04 37 02.5 +0.6
comp=Z,39nm,0.8s
WUAZ **Wupatki** 44.61 302 P P 04 37 07.7 +1.5
baz=99,SNR=16
WUAZ **Wupatki** 44.61 302 *e*P P 04 37 07.7 +1.5
comp=Z,38nm,1.0s
FSA **Cafayete** 44.69 182 *i* P P 04 37 03.9 -2.9
BW06 **Boulder Array** 44.92 312 P P 04 37 09.0 +0.5
baz=108,SNR=131
BW06 **Boulder Array** 44.92 312 *e*P P 04 37 09.1 +0.5
comp=Z,83nm,0.9s
PDAR **Pinedale Array** 44.92 312 P P 04 37 09.2 +0.6
comp=Z,65nm,0.8s,baz=106,slow=8.5,SNR=443
PDAR PcP PcP 04 38 49.8 +0.2
comp=Z,13nm,0.8s,baz=101,slow=4.4,SNR=5.7
PDAR ScP ScP 04 42 36.8 -2.3
comp=Z,1.5nm,0.9s,baz=95,slow=5.1,SNR=3.8
PDAR LR LR 04 57 58.9
comp=Z,332nm,19.7s,baz=115,slow=39
AHML **Horco Molle** 45.34 181 *i* P P 04 37 07.5 -4.3
214A **Organ Pipe Nat** 45.37 297 P P 04 37 13.5 +1.4
baz=94,SNR=16
214A **Organ Pipe Nat** 45.37 297 *e*P P 04 37 13.4 +1.3
comp=Z,197nm,0.4s
CPUP **Villa Florida** 45.39 171 P P 04 37 09.3 -2.7
comp=Z,16nm,0.7s,baz=356,slow=8.3,SNR=25
CPUP PcP PcP 04 38 50.9 -0.1
comp=Z,15nm,0.7s,baz=358,slow=3.9,SNR=7.9
CPUP ScP ScP 04 42 39.3 -1.5
comp=Z,3.8nm,1.0s,baz=342,slow=6.2,SNR=2.9
CPUP LR LR 04 56 08.8
comp=Z,190nm,20.9s,baz=354,slow=36
FCC **Fort Churchill** 45.40 339 *e*P P 04 37 10.7 -1.1
FCC pmax pmax
comp=Z,8.0nm,0.6s
FCC **Fort Churchill** 45.40 339 *e*P P 04 37 10.7 -1.1
comp=Z,7.7nm,0.6s
RLMT **Red Lodge** 45.49 315 P P 04 37 13.9 +0.8
baz=110,SNR=60
RLMT **Red Lodge** 45.49 315 *e*P P 04 37 13.6 +0.6
comp=Z,67nm,0.9s
RLMT *e*PcP PcP 04 38 52.2 +0.7
BBTS **Babate** 45.84 88 P P 04 37 15.9 0.0
comp=Z,42nm,1.1s,baz=300,slow=7.7,SNR=3.2
FFC **Flin Flon** 45.88 330 *e*P P 04 37 15.1 -0.6
FFC *e* 04 38 53.2
FFC pmax pmax
comp=Z,7.0nm,0.8s
FFC **Flin Flon** 45.88 330 *e*P P 04 37 15.1 -0.6
comp=Z,6.5nm,0.8s
FFC *e*PcP PcP 04 38 53.2 +0.8
LOHW **Long Hollow** 45.91 313 *e*P P 04 37 17.1 +0.7
comp=Z,51nm,0.8s
LOHW *e*PcP PcP 04 38 53.5 +0.5
SNOW **Snow King Moun** 45.97 313 *e*P P 04 37 18.0 +1.1
comp=Z,69nm,1.1s
SNOW *e*PcP PcP 04 38 54.0 +0.8
REDW **Red Top Meadow** 46.00 313 *e*P P 04 37 17.8 +0.7
comp=Z,367nm,1.8s
AHID **Auburn Hatcher** 46.01 312 *e*P P 04 37 17.9 +0.8
comp=Z,104nm,1.0s
AHID *e*PcP PcP 04 38 53.9 +0.6
HWUT **Hardware Ranch** 46.03 310 *e*P P 04 37 17.8 +0.5
comp=Z,48nm,0.9s
HWUT *e*PcP PcP 04 38 53.6 +0.2
MOOW **Moose Ponds** 46.04 313 *e*P P 04 37 17.8 +0.3
comp=Z,42nm,0.9s
MOOW *e*PcP PcP 04 38 53.6 +0.2
LKWY **Lake** 46.06 314 *e*P P 04 37 19.2 +1.6
LKWY *e* 04 38 55.0
LKWY pmax pmax
comp=Z,13nm,0.7s
LKWY **Lake** 46.06 314 *e*P P 04 37 19.2 +1.6
comp=Z,13nm,0.7s
LKWY *e*PcP PcP 04 38 55.0 +1.5
FLWY **Flagg Ranch** 46.12 314 *e*P P 04 37 18.8 +0.8
comp=Z,28nm,0.8s
H17A **Grant Village** 46.13 314 P P 04 37 19.7 +1.5
baz=108
H17A **Grant Village** 46.13 314 *e*P P 04 37 19.2 +1.1
comp=Z,21nm,1.1s
DUG **Dugway, Tooele** 46.61 308 P P 04 37 22.5 +0.6
baz=102,SNR=25
DUG **Dugway, Tooele** 46.61 308 *e*P P 04 37 22.5 +0.6
DUG *e* 04 38 56.1
DUG *e* 04 39 12.1
DUG pmax pmax
comp=Z,42nm,1.3s
DUG **Dugway, Tooele** 46.61 308 *e*P P 04 37 22.5 +0.6
comp=Z,42nm,1.3s
DUG *e*PcP PcP 04 38 56.1 +0.7
DUG *e*PP PP 04 39 12.1 +0.3
PDMCI **Parker Dam,Lak** 46.70 300 P P 04 37 23.7 +1.2
baz=96,SNR=9.6
EGMT **Eagleton** 46.85 319 P P 04 37 24.6 +1.0
baz=112,SNR=21
EGMT **Eagleton** 46.85 319 *e*P P 04 37 24.6 +1.0
comp=Z,64nm,1.1s
EGMT *e*PcP PcP 04 38 57.0 +0.9
Y12C **Blythe** 46.97 299 P P 04 37 26.1 +1.6
baz=95,SNR=8.4
NEE2 **Needles Airpor** 47.15 300 P P 04 37 27.8 +1.8
baz=96
BOZ **Bozeman (W)** 47.23 315 P P 04 37 27.5 +0.9
baz=108,SNR=26
BOZ **Bozeman (W)** 47.23 315 *e*P P 04 37 27.6 +0.9
BOZ pmax pmax
comp=Z,40nm,0.9s
BOZ **Bozeman (W)** 47.23 315 *e*P P 04 37 27.6 +0.9
comp=Z,40nm,0.9s
IRM **Iron Mountain** 47.52 299 P P 04 37 30.5 +1.7
baz=95,SNR=34
BC3 **Big Chuckawall** 47.73 299 P P 04 37 32.3 +1.7
baz=94,SNR=22
DLMT **Dillon** 47.79 315 *e*P P 04 37 32.4 +1.4
comp=Z,73nm,1.1s
DLMT *e*PcP PcP 04 39 00.9 +1.4
GMRC **Granite Mounta** 48.00 300 P P 04 37 34.1 +1.4
baz=95,SNR=10
BELC **Belle Mtn. Jos** 48.21 299 P P 04 37 36.0 +1.7
baz=94,SNR=12
TUQ **Turquoise Moun** 48.28 301 P P 04 37 36.3 +1.4
baz=96,SNR=9.0
R11A **Troy Canyon, C** 48.38 305 P P 04 37 37.2 +1.5
baz=99,SNR=16
R11A **Troy Canyon, C** 48.38 305 *e*P P 04 37 36.8 +1.1
comp=Z,72nm,1.9s
R11A *e*PcP PcP 04 39 02.9 +1.0
ELK **Elko** 48.53 308 *e*P P 04 37 37.9 +1.0
ELK *e* 04 39 03.3
ELK pmax pmax
comp=Z,167nm,2.0s
ELK **Elko** 48.53 308 *e*P P 04 37 37.9 +1.0
comp=Z,167nm,2.0s
ELK *e*PcP PcP 04 39 03.3 +0.9

HLID **Hailey** 48.55 312 P P 04 37 38.2 +1.2
baz=104,SNR=48
HLID **Hailey** 48.55 312 *e*P P 04 37 38.3 +1.4
comp=Z,37nm,0.9s
HLID *e*PcP PcP 04 39 03.4 +1.0
HEC **Hector,Ludlow** 48.56 300 P P 04 37 38.6 +1.6
baz=95,SNR=5.8
PFO **Pinyon Flats O** 48.56 298 P P 04 37 39.1 +2.0
baz=94
PFO **Pinyon Flats O** 48.56 298 *i* P P 04 37 39.7 +2.6
SHOC **Shoshone, Teco** 48.62 302 P P 04 37 39.1 +1.8
baz=96
TPNV **Topopah Spring** 48.72 303 P P 04 37 40.1 +1.9
baz=97,SNR=31
GSC **Goldstone, Bar** 48.98 301 P P 04 37 41.6 +1.3
baz=95,SNR=8.7
BBRC **Big Bear Solar** 48.99 299 P P 04 37 42.3 +1.8
baz=94
RRX **Edison Barstow** 49.10 300 P P 04 37 43.0 +1.9
baz=95
MSO **Missoula** 49.12 316 P P 04 37 41.8 +0.7
baz=107,SNR=6.8
FURC **Furnace Creek,** 49.15 302 P P 04 37 42.8 +1.5
baz=96,SNR=5.7
MURC **Murrieta** 49.17 298 P P 04 37 43.1 +1.4
baz=93,SNR=14
MFID **Camas Ranch** 49.52 311 *e*P P 04 37 45.0 +0.8
comp=Z,42nm,1.0s
BFSC **Mount Baldy Ra** 49.60 299 P P 04 37 46.2 +1.2
baz=94,SNR=7.2
GRAC **Grapevine Rang** 49.61 303 P P 04 37 46.1 +1.1
baz=96,SNR=7.7
MPMC **Manual Prospec** 49.61 302 P P 04 37 46.1 +0.9
baz=95,SNR=11
LRMC **Laurel Mtn Rad** 49.71 301 P P 04 37 47.1 +1.3
baz=95
DAC **Darwin (Calif)** 49.72 302 *e*P P 04 37 47.5 +1.5
DAC *e* 04 39 07.5
DAC pmax pmax
comp=Z,11nm,0.8s
DAC **Darwin (Calif)** 49.72 302 *e*P P 04 37 47.5 +1.5
comp=Z,11nm,0.8s
DAC *e*PcP PcP 04 39 07.5 +0.8
WALA **Waterton Lakes** 49.80 319 *e*P P 04 37 46.4 0.0
comp=Z,7.8nm,0.6s
WALA *e*PcP PcP 04 39 06.9 +0.2
EDW2 **Edwards Air Fo** 49.92 300 P P 04 37 48.7 +1.4
baz=94,SNR=13
BMN **Battle Mountai** 49.97 307 *e*P P 04 37 48.7 +1.0
BMN *e* 04 39 08.1
BMN pmax pmax
comp=Z,19nm,0.8s
BMN **Battle Mountai** 49.97 307 *e*P P 04 37 48.7 +1.0
comp=Z,19nm,0.8s
BMN *e*PcP PcP 04 39 08.1 +0.6
FMP **Fort Macarthur** 50.10 299 P P 04 37 50.5 +1.8
baz=93
DECC **Green Verdugo** 50.16 299 P P 04 37 50.8 +1.6
baz=93
CIS **Catalina Islan** 50.18 298 P P 04 37 51.1 +1.8
baz=92
ISA **Isabella, Lake** 50.37 301 P P 04 37 52.4 +1.6
baz=94
OSI **Osito Audit: C** 50.50 300 P P 04 37 52.9 +1.1
baz=93
NVAR **Mina Array Bea** 50.51 305 P P 04 37 53.0 +1.0
comp=Z,9.0nm,0.9s,baz=107,slow=6.0,SNR=46
NVAR PcP PcP 04 39 10.6 +1.0
comp=Z,1.6nm,0.7s,baz=204,slow=26,SNR=3.6
NVAR ScP ScP 04 43 03.1 +0.4
comp=Z,1.8nm,0.9s,baz=112,slow=5.8,SNR=4.6
NVAR LR LR 05 00 47.6
comp=Z,502nm,21.6s,baz=118,slow=38
ARVC **Arvin** 50.62 300 P P 04 37 53.9 +1.3
baz=94,SNR=6.9
BLG **Laguna Peak, P** 50.76 299 P P 04 37 54.9 +1.3
baz=93
MLAC **Mammoth, Mammo** 50.84 304 P P 04 37 55.9 +1.4
baz=96
BMO **Blue Mountains** 50.88 313 *e*P P 04 37 54.2 -0.3
BMO pmax pmax
comp=Z,12nm,0.8s
BMO **Blue Mountains** 50.88 313 *e*P P 04 37 54.2 -0.3
comp=Z,12nm,0.8s
RCTC **Rector, Farmer** 51.05 302 P P 04 37 56.7 +1.0
baz=94,SNR=7.3
SNCC **San Nicolas Is** 51.10 298 P P 04 37 57.8 +1.6
baz=92
SCZ2 **Santa Cruz Isl** 51.22 299 P P 04 37 58.7 +1.5
baz=92
SBC **Santa Barbara** 51.31 299 P P 04 37 59.1 +1.3
baz=93
WVOR **Wild Horse Val** 51.35 310 *e*P P 04 37 58.1 0.0
WVOR *e* 04 39 14.0
WVOR pmax pmax
comp=Z,28nm,1.2s
WVOR **Wild Horse Val** 51.35 310 *e*P P 04 37 58.1 0.0
comp=Z,28nm,1.2s
WVOR *e*PcP PcP 04 39 13.9 +1.4
PKM **Mcpherson Peak** 51.41 300 P P 04 38 00.1 +1.3
baz=93
SMMC **Simmler** 51.59 300 P P 04 38 01.0 +1.1
baz=93,SNR=6.1
NEW **Newport** 51.60 317 P P 04 37 59.9 +0.1
baz=106,SNR=62
NEW **Newport** 51.60 317 *e*P P 04 37 59.9 +0.1
NEW pmax pmax
comp=Z,71nm,0.7s
NEW **Newport** 51.60 317 *e*P P 04 37 59.9 +0.1
comp=Z,71nm,0.7s
MORF **Marmelete** 51.72 57 *e*P P 04 38 01.8 +0.9
MORF AMb AMB 04 38 03.6
comp=Z,48nm,1.7s
MORF **Marmelete** 51.72 57 *e*P P 04 38 02.0 +1.1
MORF **Marmelete** 51.72 57 *e*P P 04 38 01.8 +0.9
PEL **Peldehue** 52.03 187 ǁ *i*P P 04 38 03.2 +0.1
CMB **Columbia Colle** 52.10 304 *e*P P 04 38 04.4 +0.7
CMB pmax pmax
comp=Z,27nm,0.8s
CMB **Columbia Colle** 52.10 304 *e*P P 04 38 04.4 +0.7
comp=Z,27nm,0.8s
PCAS **Casmilo, Conde** 52.12 54 *e*P P 04 38 04.8 +1.0
comp=Z,51nm,1.5s
PTOM **Tomar** 52.14 54 *e*P P 04 38 04.7 +0.8
comp=Z,45nm,1.0s
PMTG **Montargil** 52.22 55 *e*P P 04 38 05.4 +0.9
comp=Z,34nm,2.1s
CLCH **Cerro Calan** 52.26 187 *e*P P 04 38 03.6 -1.2
PBDV **Barranco-do-Ve** 52.29 57 *e*P P 04 38 06.0 +0.9
EVO **Evora** 52.33 56 *e*P P 04 38 06.1 +0.8
PBEJ **Beja** 52.40 56 *e*P P 04 38 06.9 +1.0
PVAQ **Vaqueiros** 52.47 57 *e*P P 04 38 07.6 +1.2
PVAQ *e*S S 04 45 33.0 +2.8
PVAQ *e*LR LR 04 53 03.0
comp=Z,569nm,20.0s
MOD **Modoc Plateau** 52.49 309 *e*P P 04 38 05.6 -1.0
comp=Z,6.5nm,0.6s
MOD *e*PcP PcP 04 39 13.7 -3.2
PGAV **Gavieira, Arco** 52.55 51 *e*LR LR 04 53 33.7
comp=Z,445nm,20.0s
PVIS **Viseu** 52.66 53 *e*P P 04 38 08.5 +0.7
PESTR **Estremoz** 52.70 55 *e*P P 04 38 09.4 +1.4
comp=Z,30nm,1.4s
HAWA **Hanford** 52.74 314 *e*P P 04 38 08.6 +0.4
comp=Z,14nm,0.9s
HAWA *e*PcP PcP 04 39 17.9 +0.4
POLO **Lamas de Olo** 52.82 52 *e*P P 04 38 10.0 +1.0
comp=Z,18nm,1.4s
PVRL **Vila Real** 52.86 52 *e*P P 04 38 10.2 +0.9
comp=Z,55nm,1.7s
PCBR **Castelo Branco** 52.88 54 *e*P P 04 38 13.3 +4.0
comp=Z,29nm,1.4s
MTE **Manteigas** 52.89 53 *e*P P 04 38 10.4 +0.9
MTE *e*S S 04 45 42.0 +6.1
MTE *e*LR LR 04 53 28.2
comp=Z,570nm,22.0s
PMRV **Marv??o** 52.90 54 *e*P P 04 38 10.3 +0.7
comp=Z,38nm,1.5s
PMRV **Marv??o** 52.90 54 *e*LR LR 04 53 31.0
comp=Z,333nm,22.0s
SAW **Saint Andrews** 52.94 316 P P 04 38 10.3 +0.6
PBAR **Barrancos** 53.07 56 *e*P P 04 38 11.8 +1.0
VTHM **Trough** 53.20 313 P P 04 38 12.9 +1.1
MVO **Moncorvo** 53.37 52 *e*P P 04 38 14.0 +1.0
comp=Z,39nm,1.3s
MVO **Moncorvo** 53.37 52 *e*LR LR 04 53 44.5
comp=Z,533nm,22.0s

J05D **Fort Rock, OR** 53.37 310 P P 04 38 13.8 +0.7
baz=98,SNR=12
O03D **Paynes Creek** 53.42 307 P P 04 38 13.5 +0.1
baz=96,SNR=6.8
CROR **Criterion Ridg** 53.47 312 P P 04 38 14.7 +1.0
EBG **Ellensburg** 53.54 315 P P 04 38 15.6 +1.4
I05D **Terrebonne, OR** 53.61 312 P P 04 38 16.1 +1.3
baz=99,SNR=8.6
M04C **Macdoel** 53.61 308 P P 04 38 15.5 +0.6
baz=97,SNR=7.4
TBM **Table Mountain** 53.62 315 P P 04 38 15.6 +0.8
K04D **Chiloquin, OR** 53.66 309 P P 04 38 16.0 +0.9
baz=98,SNR=15
G05D **Wamic, OR** 53.74 313 P P 04 38 17.0 +1.4
baz=100
C06D **Leavenworth** 53.97 316 P P 04 38 18.3 +1.0
baz=102
WDC **Whiskeytown Da** 54.01 307 *e*P P 04 38 16.3 -1.3
WDC pmax pmax
comp=Z,15nm,1.1s
WDC **Whiskeytown Da** 54.01 307 *e*P P 04 38 16.2 -1.3
comp=Z,15nm,1.1s
N02D **Trinity Center** 54.17 307 P P 04 38 18.5 -0.4
baz=96
YBH **Yreka Blue Hor** 54.25 308 *e*P P 04 38 18.6 -0.9
YBH *e* 04 39 23.7
YBH pmax pmax
comp=Z,12nm,0.7s
YBH **Yreka Blue Hor** 54.25 308 *e*P P 04 38 18.6 -0.9
comp=Z,12nm,0.7s
YBH *e*PcP PcP 04 39 23.7 +0.2
I04A **Tendick Farm,** 54.29 311 P P 04 38 19.8 +0.1
baz=98
M02C **Callahan** 54.32 308 P P 04 38 19.4 -0.6
baz=96,SNR=7.8
HUMO **Hull Mountain** 54.53 309 *e*P P 04 38 20.4 -1.1
comp=Z,62nm,0.7s
B05A **Bryant** 54.83 316 P P 04 38 22.0 -1.4
baz=101,SNR=11
MDT **Midelt** 54.88 63 P P 04 38 25.6 +1.3
comp=Z,7.7nm,0.8s,baz=297,slow=8.0,SNR=12
I03D **Drain, OR** 54.95 311 P P 04 38 24.5 +0.1
baz=97
L02D **Cave Junction,** 54.96 309 P P 04 38 24.3 -0.2
baz=96
F04D **Rainier, OR** 55.05 313 P P 04 38 25.8 +0.7
baz=99
G03D **McMinnville, O** 55.10 312 P P 04 38 26.2 +0.8
baz=98
A04D **Lummi Island** 55.31 317 P P 04 38 27.8 +0.8
baz=101
ESDC **Sonseca Array** 55.56 54 P P 04 38 30.1 +1.2
comp=Z,4.7nm,0.7s,baz=268,slow=7.0,SNR=22
ESDC LR LR 04 56 40.6
comp=Z,223nm,21.5s,baz=305,slow=30
YKA **Yellowknife Ar** 55.60 334 P P 04 38 27.8 -0.9
comp=Z,15nm,0.7s,baz=110,slow=7.5,SNR=202
YKA PKP2bc 05 08 49.7
comp=Z,0.2nm,1.0s,baz=294,slow=2.2,SNR=3.7
YKA **Yellowknife Ar** 55.60 334 P P 04 38 27.8 -0.9
YKA pmax pmax
comp=Z,18nm,0.8s
SUMG **Summit** 55.77 9 *i* P P 04 38 30.7 +0.4
SUMG **Summit** 55.77 9 *e*P P 04 38 31.0 +0.7
SUMG pmax pmax
comp=Z,30nm,1.0s
SUMG **Summit** 55.77 9 *e*P P 04 38 31.0 +0.7
comp=Z,30nm,1.0s
H10N3 **ASCENSION HYDR** 55.80 114 T T 05 37 14.2
baz=299,slow=75,SNR=4.3
H10N2 **ASCENSION HYDR** 55.81 114 T T 05 37 08.5
baz=299,slow=75,SNR=7.2
H10N1 **ASCENSION HYDR** 55.82 114 T T 05 36 50.3
baz=299,slow=75,SNR=4.9
NLWA **Neilton Lookou** 55.85 315 *e*P P 04 38 31.3 +0.4
comp=Z,23nm,0.9s
H10S3 **ASCENSION HYDR** 56.20 115 T T 05 37 51.4
baz=300,slow=75,SNR=9.3
H10S1 **ASCENSION HYDR** 56.21 115 T T 05 37 51.9
baz=300,slow=75,SNR=9.1
H10S2 **ASCENSION HYDR** 56.22 115 T T 05 37 52.8
baz=300,slow=75,SNR=3.9
RES **Resolute Bay** 58.27 351 *e*P P 04 38 46.4 -1.1
RES pmax pmax
comp=Z,6.0nm,0.9s
RES **Resolute Bay** 58.27 351 *e*P P 04 38 46.4 -1.1
comp=Z,5.6nm,0.9s
ESK **Eskdalemuir** 58.35 36 *e*P P 04 38 49.2 +0.8
ESK pmax pmax
comp=Z,5.0nm,0.8s
ESK **Eskdalemuir** 58.35 36 *e*P P 04 38 49.2 +0.8
comp=Z,5.4nm,0.8s
TIC **Toumodi** 58.85 94 *e*P P 04 38 51.3 -1.2
FLN **La Foliniere** 58.88 44 *e*P P 04 38 52.9 +0.7
FLN pmax pmax
comp=Z,7.0nm,0.7s
LIC **Lamto** 58.97 94 *e*P P 04 38 54.2 +0.8
EPF **Esparros** 58.98 51 *e*P P 04 38 54.2 +1.1
EPF pmax pmax
comp=Z,8.0nm,0.7s
DBIC **Dimbokro** 59.00 94 P P 04 38 53.7 +0.2
comp=Z,5.5nm,0.5s,baz=278,slow=8.1,SNR=11
DBIC LR LR 05 00 22.0
comp=Z,461nm,20.6s,baz=253,slow=32
LDF **La Druitiere** 59.10 44 *e*P P 04 38 54.3 +0.6
LDF pmax pmax
comp=Z,9.0nm,0.9s
KIC **Kosan Boka** 59.20 94 *e*P P 04 38 54.8 -0.2
comp=Z,35nm,0.7s
PLCA **Paso Flores** 59.53 185 P P 04 38 55.8 -0.9
comp=Z,16nm,0.8s,baz=26,slow=8.2,SNR=11
PLCA PcP PcP 04 39 44.4 +0.6
comp=Z,10nm,0.9s,baz=52,slow=4.9,SNR=3.0
PLCA PP PP 04 41 07.2 -1.5
comp=Z,12nm,1.1s,baz=40,slow=12,SNR=3.3
PLCA LR LR 05 07 41.4
comp=Z,275nm,19.3s,baz=30,slow=39
TCF **Toulx Ste Croi** 60.48 47 *e*P P 04 39 03.7 +0.4
TCF pmax pmax
comp=Z,8.0nm,0.9s
LBL **Lubilhac** 61.16 48 *e*P P 04 39 08.7 +0.7
PLDF **La Plantade** 61.45 47 *e*P P 04 39 11.7 +1.8
DLBC **Dease Lake** 61.47 327 LR LR 05 08 05.5
comp=Z,284nm,19.2s,baz=108,slow=38
DLBC **Dease Lake** 61.47 327 *e*P P 04 39 10.6 +0.8
comp=Z,22nm,0.8s
LOR **Lormes** 61.67 46 *e*P P 04 39 11.7 +0.4
VIVF **Saint-Julien-l** 62.16 49 *e*P P 04 39 16.2 +1.5
VIVF pmax pmax
comp=Z,26nm,1.5s
DAG **Danmarks Havn** 62.32 11 *i* P P 04 39 08.3 -6.8
DAG **Danmarks Havn** 62.32 11 *e*P P 04 39 08.3 -6.8
GIVF **Givet** 62.45 43 *e*P P 04 39 18.2 +1.7
GIVF pmax pmax
comp=Z,11nm,0.9s
THEF **They Montfort** 63.13 45 *e*P P 04 39 16.3 -4.8
TORD **Torodi Ar. Bea** 63.41 84 P P 04 39 22.9 -0.5
comp=Z,7.0nm,0.7s,baz=288,slow=6.1,SNR=13
TORD LR LR 05 05 32.9
comp=Z,604nm,18.7s,baz=275,slow=35
TORD PKP2ab 05 08 40.5
comp=Z,1.8nm,1.1s,baz=77,slow=2.7,SNR=6.4
LPL **La Plagne** 63.62 48 *e*P P 04 39 27.3 +2.7
LPL pmax pmax
comp=Z,9.0nm,1.0s
LPG **La Plagne** 63.64 48 *e*P P 04 39 25.8 +1.0
LPG pmax pmax
comp=Z,12nm,1.2s
LOMF **Lomont** 63.69 46 *e*P P 04 39 22.9 -1.9
MOF **Molkenrain** 63.90 45 *e*P P 04 39 25.2 -1.0
ECH **Echery** 63.92 45 *e*P P 04 39 20.9 -5.4
LANF **Langnberg** 64.36 44 *e*P P 04 39 28.2 -0.9
TAM **Tamanrasset** 64.87 73 *e*P P 04 39 34.1 +1.0
TAM pmax pmax
comp=Z,7.0nm,0.9s
TAM **Tamanrasset** 64.87 73 *e*P P 04 39 34.1 +1.0
comp=Z,6.9nm,0.9s
INK **Inuvik** 64.99 337 P P 04 39 32.2 -0.6
comp=Z,19nm,1.0s,baz=97,slow=7.6,SNR=56
INK PKPPKP P'P'df 05 08 14.7 -5.6
comp=Z,2.5nm,1.2s,baz=188,slow=4.5,SNR=3.0
INK **Inuvik** 64.99 337 *e*P P 04 39 31.9 -1.0
INK pmax pmax
comp=Z,22nm,1.0s
INK **Inuvik** 64.99 337 *e*P P 04 39 31.9 -1.0
comp=Z,22nm,1.0s

INK P'P' 05 08 14.7
DAVA Damuels 65.77 46 *i* pP pP 04 39 46.1 -4.1
comp=Z,9.5nm,1.0s
KONO Kongsberg 65.83 32 *e*P **P 04 39 38.7 +0.3**
KONO pmax pmax
comp=Z,36nm,0.9s
KEST Kesra 66.22 59 P **P 04 39 42.1 +0.6**
comp=Z,7.0nm,0.9s,baz=53,slow=0.3,SNR=6.2
KEST LR LR 05 08 10.6
comp=Z,114nm,18.0s,baz=264,slow=36
FETA Feichten 66.36 46 *i* P **P 04 39 43.7 +1.4**
comp=Z,8.3nm,1.1s
RETA Reutte 66.36 46 *i* pP P 04 39 47.4 +5.2
comp=Z,4.9nm,0.9s
MOTA Moosalm 66.59 46 *i* P **P 04 39 45.7 +1.9**
comp=Z,13nm,0.8s
NB2 NORSAR Subarra 66.72 31 P **P 04 39 45.3 +1.1**
comp=Z,10nm,1.0s,baz=268,slow=6.5
NOA NORSAR Array B 66.72 31 P **P 04 39 45.7 +1.5**
comp=Z,4.2nm,0.7s,baz=267,slow=6.4,SNR=15
NOA LR LR 05 06 19.7
comp=Z,183nm,19.2s,baz=265,slow=34
EGAK Eagle 67.53 333 *e*P **P 04 39 49.2 0.0**
comp=Z,16nm,0.6s
CLL Collm 67.66 41 *e*P **P 04 39 52.0 +1.7**
CLL *e* 04 39 59.0
CLL LmV 05 05 00.0
comp=Z,200nm,19.1s
CLL Collm 67.66 41 *e*P **P 04 39 52.0 +1.7**
CLL MLR MLR
comp=Z,200nm,19.1s
KBA Koelnbreinsper 68.14 46 *i* P **P 04 39 54.2 +0.6**
comp=Z,9.4nm,1.3s
KHC Kasperske Hory 68.15 44 *e*P **P 04 39 52.9 -0.5**
KHC *e*pP **pP 04 40 00.6 -4.6**
KHC *ex* x 04 40 08.8
KHC Kasperske Hory 68.15 44 *e*P **P 04 39 52.9 -0.5**
KHC *e* 04 40 08.8
GERES GERESS Array B 68.25 44 P **P 04 39 54.5 +0.4**
comp=Z,1.0nm,0.5s,baz=262,slow=4.8,SNR=5.6
GERES LR LR 05 07 52.7
comp=Z,105nm,18.8s,baz=273,slow=34
BRG Berggiesshubel 68.27 42 *e*PKP **P 04 39 58.7 +4.5**
comp=Z,5.7nm,1.0s
BRG *e* 04 40 08.3
comp=Z,10.0nm,0.8s
BRG Berggiesshubel 68.27 42 *e*P **P 04 39 58.7 +4.5**
BRG *e* 04 40 08.4
BRG pmax pmax
comp=Z,2.0nm,1.0s
BRG pmax pmax
comp=Z,6.0nm,0.8s
MOA Molln 68.70 45 *i* pP pP 04 40 04.9 -3.7
comp=Z,4.1nm,0.7s
PRU Pruhonice 68.71 43 *e*P **P 04 39 57.5 +0.6**
PRU *e*pP **pP 04 40 07.7 -0.9**
PRU Pruhonice 68.71 43 *e*P **P 04 39 57.5 +0.6**
PRU *e* 04 40 07.7
DOT Dot Lake 68.76 332 *e*P **P 04 39 57.7 +0.7**
comp=Z,62nm,0.7s
BMRM Bremner River 69.03 329 *e*P **P 04 39 59.4 +0.7**
comp=Z,35nm,0.6s
PAX Paxson 69.40 331 *e*P **P 04 40 01.4 +0.3**
PAX pmax pmax
comp=Z,10.0nm,0.7s
PAX Paxson 69.40 331 *e*P **P 04 40 01.4 +0.3**
comp=Z,9.6nm,0.7s
DIV Divide 69.59 329 *e*P **P 04 40 02.4 +0.2**
comp=Z,8.9nm,0.6s
ARSA Arzberg 69.60 46 *i* pP pP 04 40 09.4 -4.9
comp=Z,5.9nm,1.0s
CONA Conrad Observa 69.76 45 *i* P **P 04 40 04.8 +1.3**
comp=Z,9.3nm,1.8s
DPC Dobruska-Polom 69.82 42 *e*P **P 04 40 05.0 +1.2**
DPC Dobruska-Polom 69.82 42 *e*P **P 04 40 05.0 +1.2**
ILAR Eielson Array 69.99 333 P **P 04 40 04.2 -0.3**
comp=Z,16nm,0.6s,baz=107,slow=4.3,SNR=226
ILAR LR LR 05 12 15.7
comp=Z,257nm,20.4s,baz=102,slow=37
ILAR Eielson Array 69.99 333 P **P 04 40 04.2 -0.3**
ILAR pmax pmax
comp=Z,15nm,0.6s
ILAR MLR MLR
comp=Z,257nm,20.4s
COLA College 70.40 333 *e*P **P 04 40 06.7 -0.3**
COLA pmax pmax
comp=Z,32nm,0.8s
COLA College 70.40 333 *e*P **P 04 40 06.7 -0.3**
comp=Z,32nm,0.8s
EFI East Falkland 70.41 176⇑ *e*P **P 04 40 06.7 -0.3**
EFI pmax pmax
comp=Z,105nm,1.4s
SML Sawmill 70.79 330 *e*P **P 04 40 09.3 -0.2**
SML pmax pmax
comp=Z,3.0nm,0.8s
SML Sawmill 70.79 330 *e*P **P 04 40 09.3 -0.2**
comp=Z,3.4nm,0.8s
MCK McKinley 70.93 332 *e*P **P 04 40 10.1 -0.2**
MCK pmax pmax
comp=Z,15nm,0.9s
MCK McKinley 70.93 332 *e*P **P 04 40 10.1 -0.2**
comp=Z,15nm,0.9s
COLD Coldfoot 71.23 336 *e*P **P 04 40 12.3 +0.3**
comp=Z,10nm,0.8s
RC01 Rabbit Creek A 71.52 329 *e*P **P 04 40 13.7 -0.2**
comp=Z,9.3nm,0.7s
TRF Thorofare Moun 71.56 332 *e*P **P 04 40 14.2 -0.1**
comp=Z,46nm,0.8s
VYHS Vyhne 71.67 44 *e*P P 04 40 21.3 +6.2
VYHS pmax pmax
comp=Z,5.0nm,1.3s
VYHS Vyhne 71.67 44 *e*P P 04 40 21.3 +6.2
BPAW Bear Paw Mtn. 71.80 333 *e*P **P 04 40 15.2 -0.4**
comp=Z,9.3nm,0.8s
KTH Kantishna Hill 71.83 332 *e*P **P 04 40 16.2 +0.4**
comp=Z,65nm,0.9s
LANS Liptovska Anna 71.99 43 *e*P P 04 40 23.2 +6.2
LANS *e* 04 40 29.0
LANS Liptovska Anna 71.99 43 *e*P P 04 40 23.2 +6.2
LANS *e*pP pP 04 40 29.0 +0.2
ARCES ARCESS Array B 72.47 22 P **P 04 40 20.3 +0.8**
comp=Z,6.9nm,0.7s,baz=270,slow=5.2,SNR=20
ARCES LR LR 05 06 30.3
comp=Z,107nm,21.7s,baz=265,slow=31
PPLA Purkeypile 72.47 331 *e*P **P 04 40 19.3 -0.5**
comp=Z,12nm,0.8s
KECS Kecovo 72.75 44 *e*P pP 04 40 32.7 -0.6
KECS Kecovo 72.75 44 *e*pP pP 04 40 32.7 -0.6
STHS Stebnicka Huta 73.10 43 *e*P P 04 40 29.9 +6.3
STHS pmax pmax
comp=Z,5.0nm,0.8s
STHS Stebnicka Huta 73.10 43 *e*P P 04 40 29.9 +6.3
CRVS Cervenica-Dubn 73.33 43 *e*P **P 04 40 29.2 +4.3**
CRVS *e* 04 40 36.4
CRVS Cervenica-Dubn 73.33 43 *e*P **P 04 40 29.2 +4.3**
CRVS *e*pP **pP 04 40 36.4 -0.3**
KDAK Kodiak Island 73.37 326 *i* P **P 04 40 25.5 +0.5**
USHA Ushuaia 73.44 182 P **P 04 40 26.6 +1.4**
comp=Z,48nm,0.8s,baz=291,slow=18,SNR=4.4
OHAK Old Harbor 73.84 326 *e*P **P 04 40 28.4 +0.7**
comp=Z,17nm,0.7s
FINES FINESS Array B 73.85 30 P **P 04 40 28.6 +0.8**
comp=Z,6.4nm,0.7s,baz=267,slow=3.8,SNR=23
FINES LR LR 05 07 55.4
comp=Z,316nm,21.7s,baz=274,slow=32
UZH Uzhgorod 73.91 44 *e*P **P 04 40 32.4 +4.1**
BZS Buzias 74.01 47 *i*P **P 04 40 30.6 +1.6**
BZS Buzias 74.01 47 *i*P **P 04 40 30.6 +1.6**
VSU Vasula 74.71 33*ce*P P 04 40 42.0 +9.2
VSU pmax pmax
comp=Z,51nm,1.0s
GZR Gura Zlata 74.85 47⇑ *i*P **P 04 40 35.9 +1.9**
GZR Gura Zlata 74.85 47 ⇑P **P 04 40 35.9 +1.9**
NACGM Naroch 75.45 37 *e* **P 04 40 39.0 +1.9**
LOT Lotru 75.52 47⇑ *i*P **P 04 40 40.1 +2.2**
BURAR Bucovina Array 76.03 44⇑ *i*P **P 04 40 42.2 +1.4**
BURAR Bucovina Array 76.03 44 ⇑P **P 04 40 42.2 +1.4**
LVZ Lovozero 76.06 23⇑ *e*P **P 04 40 41.1 +0.7**
LVZ pmax pmax
comp=Z,5.0nm,0.7s
ARR Arges 76.13 47⇑ *i*P **P 04 40 43.2 +1.9**
DOPR Dopca 76.52 46⇑ *i*P **P 04 40 45.6 +2.2**
MLR Muntele Rosu 77.00 46⇑ *i*P **P 04 40 48.2 +1.9**
MLR Muntele Rosu 77.00 46 ⇑P **P 04 40 48.2 +1.9**
PLOR Plostina 77.40 46⇑ *i*P **P 04 40 50.0 +1.6**
PLOR Plostina 77.40 46 ⇑P **P 04 40 50.0 +1.6**
VRI Vrincioaia 77.45 46⇑ *i*P **P 04 40 51.0 +2.3**
VRI Vrincioaia 77.45 46 ⇑P **P 04 40 51.0 +2.3**
KIEV Kiev 77.86 40 *e*P **P 04 40 52.6 +1.9**
KIEV pmax pmax
comp=Z,8.0nm,0.9s
KIEV Kiev 77.86 40 *e*P **P 04 40 52.6 +1.9**
comp=Z,7.7nm,0.9s
AKASG Malin Array Be 77.86 40 P **P 04 40 51.5 +0.7**
comp=Z,1.1nm,0.6s,baz=278,slow=4.4,SNR=4.4
CFR Carcaliu 78.58 46⇑ *i*P **P 04 40 57.7 +2.8**
CFR Carcaliu 78.58 46 ⇑P **P 04 40 57.7 +2.8**
TIRR Tirgusor 78.96 47⇑ *i*P **P 04 40 59.7 +2.7**
TIRR Tirgusor 78.96 47 ⇑P **P 04 40 59.7 +2.7**
KLMR Klimovskoe 80.29 29 *e*P **P 04 41 02.3 -1.6**
KLMR *e*S **S 04 51 06.0 -0.4**
KLMR pmax pmax
comp=Z,23nm,1.1s
GAMB Gambell 80.70 335 *e*P **P 04 41 06.6 +0.6**
comp=Z,14nm,1.3s
OBN Obninsk 80.81 35 *e*P **P 04 41 07.7 +0.9**
OBN pmax pmax
comp=Z,8.0nm,1.0s
LPSR Galich'ya Gora 83.01 37 *e*P **P 04 41 18.7 +0.3**
LPSR pmax pmax
comp=Z,10.0nm,1.3s
PMSA Palmer Station 83.33 180 P **P 04 41 19.7 +0.2**
comp=Z,34nm,0.8s,baz=352,slow=1.9,SNR=4.0
VSR Storozhevoye 83.66 38 *e*P **P 04 41 21.9 +0.1**
VSR pmax pmax
comp=Z,5.0nm,0.6s
BRTR Keskin Array B 84.09 50 P **P 04 41 25.8 +1.3**
comp=Z,4.3nm,0.8s,baz=256,slow=4.6,SNR=15
BRTR Keskin Array B 84.09 50 P **P 04 41 25.8 +1.3**
BRTR pmax pmax
comp=Z,5.0nm,0.9s
ANN Anapa 84.96 44 *e*P **P 04 41 27.0 -1.5**
ANN pmax pmax
comp=Z,40nm,1.1s
VRH Novokhopyorsk 85.15 37 *e*P **P 04 41 29.2 -0.1**
VRH pmax pmax
comp=Z,10.0nm,0.8s
BILL Bilibino 85.93 343 *i* P **P 04 41 33.5 +0.5**
BILL pmax pmax
comp=Z,13nm,0.8s
BILL Bilibino 85.93 343 *e*P **P 04 41 33.4 +0.5**
comp=Z,12nm,0.6s
VAH Vaihoa 88.69 254 *e*P **P 04 41 47.9 +0.8**
comp=Z,128nm,0.9s
KIV Kislovodsk 88.75 44 *e*P **P 04 41 48.7 +1.5**
KIV pmax pmax
comp=Z,13nm,1.0s
PMOR Pomariorio Ree 88.86 254 *e*P **P 04 41 48.7 +0.8**
comp=Z,116nm,0.8s
KBZ Khabaz 88.99 44 P **P 04 41 48.4 +0.3**
comp=Z,2.9nm,0.9s,baz=106,slow=5.1,SNR=3.3
KBZ LR LR 05 19 27.2
comp=Z,70nm,21.0s,baz=318,slow=34
NEY Neytrino 89.08 44⇑ *e*P **P 04 41 46.9 -1.9**
NEY pmax pmax
comp=Z,7.0nm,1.8s
TIXI Tiksi 89.31 356 P **P 04 41 49.2 +0.2**
comp=Z,12nm,0.8s,baz=30,slow=4.8,SNR=44
TIXI LR LR 05 22 50.5
comp=Z,133nm,19.9s,baz=27,slow=36
TIXI Tiksi 89.31 356*ce*P **P 04 41 49.3 +0.2**
TIXI pmax pmax
comp=Z,32nm,1.7s
TIXI Tiksi 89.31 356 *e*P **P 04 41 49.4 +0.3**
comp=Z,11nm,0.7s
NRIK Noril'sk 89.81 10 P **P 04 41 52.4 +1.0**
comp=Z,4.3nm,0.8s,baz=18,slow=3.3,SNR=4.2
NRIK LR LR 05 20 47.9
comp=Z,105nm,21.6s,baz=308,slow=35
MEH Mehetia 89.98 251 *e*P **P 04 41 53.8 +0.6**
comp=Z,18nm,0.9s
TVO Taravao 91.01 252 *e*P **P 04 41 58.8 +0.8**
comp=Z,14nm,1.0s
TIAR Tiarei 91.02 252 *e*P **P 04 41 58.5 +0.5**
comp=Z,12nm,0.8s
PPT Papeete 91.23 252 LR LR 05 16 38.6
comp=Z,93nm,20.1s,baz=94,slow=31
PPT2 Papeete2 91.24 252 *e*P **P 04 41 59.7 +0.6**
comp=Z,24nm,1.1s
PPT2 Papeete2 91.24 252 *e*LR LR 05 11 16.1
comp=Z,368nm,25.0s
PAE Paea 91.27 252 *e*P **P 04 41 59.7 +0.6**
comp=Z,7.6nm,1.0s
GNI Garni 91.78 46*ce*P **P 04 41 59.1 -2.4**
GNI pmax pmax
comp=Z,66nm,1.6s
TBI Tubuai 93.02 246 *e*LR LR 05 12 04.3
comp=Z,243nm,32.8s
SEY Seymchan 93.57 344 P **P 04 42 10.1 +1.1**
comp=Z,14nm,0.7s,baz=47,slow=1.7,SNR=28
MA2 Magadan 96.80 343 LR LR 05 26 46.3
comp=Z,96nm,22.0s,baz=99,slow=36
VNA1 Neumayer--Stat 97.24 164 P **P 04 42 22.2 -3.1**
VNA3 Neumayer Olymp 97.25 165 P Pdif 04 42 25.7 +0.2
VNA2 Neumayer--Watz 97.64 164 P **P 04 42 27.1 -0.1**
baz=321,slow=6.7
BOSA Boshof 98.43 117 LR LR 05 21 32.9
comp=Z,39nm,18.4s,baz=310,slow=32
BVAR Borovoye Array 98.45 26 P Pdif 04 42 34.0 +2.6
comp=Z,1.1nm,0.6s,baz=250,slow=38,SNR=3.0
BVAR Borovoye Array 98.45 26 P Pdif 04 42 34.0 +2.6
BVAR pmax pmax
comp=Z,1.0nm,0.5s
SNAA Sanae 99.27 164 P **Pdif 04 42 34.4 -0.1**
SNAA Sanae 99.27 164 P **Pdif 04 42 35.0 +0.5**
PETK Petropavlovsk- 99.70 336 LR LR 05 29 35.5
comp=Z,97nm,20.9s,baz=45,slow=36
KURK Kurchatov 103.47 23 P **Pdif 04 42 53.5 -0.3**
KURK Kurchatov 103.47 23 Pdif **Pdif 04 42 53.5 -0.3**
KURBB Kurchatov Arra 103.51 23 Pdiff **Pdif 04 42 53.5 -0.5**
comp=Z,0.2nm,0.4s,baz=318,slow=5.0,SNR=3.7
MKAR Makanchi Array 108.08 23 PKKPbc PKKPbc 04 58 31.4 -2.8
comp=Z,1.5nm,0.8s,baz=116,slow=5.5,SNR=11
MKAR PKKP **PKKPdf 04 58 45.3 -1.9**
comp=Z,1.5nm,0.7s,baz=133,slow=6.8,SNR=8.7
WMQ Urumqi 112.59 22 *e*PKP **PKiKP 04 47 29.8 0.0**
SONM Songino Array 113.13 7 PKKPbc PKKPbc 04 58 14.4 -3.7
comp=Z,0.9nm,0.6s,baz=159,slow=3.5,SNR=5.8
SONM PKKP **PKKPab 04 58 22.9 -4.3**
comp=Z,2.0nm,0.6s,baz=167,slow=4.1,SNR=11
GTA Gaotai 120.20 14 *e*PKP **PKPdf 04 47 44.5 -0.1**
GTA sPKP 04 47 58.3
MJAR Matsushiro Arr 120.96 339 PKP **PKPdf 04 47 45.6 -0.4**
comp=Z,4.3nm,0.6s,baz=67,slow=0.9,SNR=6.8
BJI Beijing 121.44 360 PKP **PKPdf 04 47 46.5 -0.2**
BJI SS SS 05 05 51.1 +3.0
BJI LR LR
comp=Z,150nm,20.3s
BJI LR LR
comp=Z,120nm,16.1s
KSRS Korea Array 122.85 348 PKP **PKPdf 04 47 49.2 -0.2**
comp=Z,3.4nm,0.8s,baz=49,slow=1.2,SNR=7.3
KSRS Korea Array 122.85 348 PKIKP **PKPdf 04 47 49.3 -0.2**
KSRS pmax pmax
comp=Z,4.0nm,0.8s
KSAR Wonju Array Be 122.87 348 PKIKP **PKPdf 04 47 49.3 -0.3**
KSAR Wonju Array Be 122.87 348 PKP **PKPdf 04 47 49.2 -0.3**
JHJ Hachijo jima 2 123.45 336 PKP **PKPdf 04 47 50.1 -0.7**
comp=Z,185nm,0.3s,baz=249,slow=22,SNR=3.4
LZH Lanzhou 124.25 12 *e*PKP **PKPdf 04 47 53.3 +0.8**
LZH sPKP 04 48 06.8
XAN Xi'an 127.04 7 PKP **PKPdf 04 47 57.3 -0.5**
RPZ Rata Peaks 127.67 229 PKP **PKPdf 04 47 58.8 +0.3**
comp=Z,8.0nm,0.7s,baz=45,slow=13,SNR=6.8
CD2 Chengdu 129.24 13 PKP **PKPdf 04 48 00.9 -1.1**
CD2 SKS **SKSdf 04 55 09.0 -2.0**
CD2 SKKS **SKKSac 04 57 01.1 -3.9**
CD2 SS **SS 05 07 26.8 +0.4**
CD2 AMB AMB
comp=Z,150nm,7.2s
CD2 LR LR
comp=Z,110nm,4.5s
CD2 LR LR
comp=Z,170nm,6.6s
NJ2 Nanjing 129.33 357 *e*PKP **PKPdf 04 48 02.6 +0.5**
GYA Guiyang 134.15 11 *e*Pdif **Pdif 04 45 09.6 -1.3**
GYA PKP **PKPdf 04 48 11.8 +0.3**
GYA PP **PP 04 50 46.0 +5.1**
GYA AMB AMB
comp=Z,120nm,7.8s
KMI Kunming 134.54 17 PKP **PKPdf 04 48 07.8 -4.6**
CMAR Chiang Mai Arr 139.47 25 PKhKP PKPpre 04 48 15.2
comp=Z,0.8nm,0.8s,baz=315,slow=5.2,SNR=4.9
CMAR PKP **PKPdf 04 48 21.4 0.0**
comp=Z,2.9nm,0.8s,baz=312,slow=3.4,SNR=18
CMAR SKPbc **SKPbc 04 51 53.1 -0.8**
comp=Z,2.0nm,0.8s,baz=314,slow=4.1,SNR=7.2
ARMA Armidale 145.48 243 *e*PKPdf **PKPab 04 48 32.3 +0.1**
EIDS Eidsvold 146.63 252 *e*PKPdf **PKPdf 04 48 34.5 +0.7**
CTA Charters Tower 151.16 262 PKPbc **PKPbc 04 48 47.2 0.0**
comp=Z,6.8nm,0.9s,baz=14,slow=4.2,SNR=7.5
CTAO Charters Tower 151.16 262 *e*PKIKP **PKPdf 04 48 41.7 +0.5**
CTAO Charters Tower 151.16 262 *e*PKPdf **PKPdf 04 48 41.7 +0.5**
CTAO *e*PKPbc **PKPbc 04 48 46.6 -0.6**
STKA Stephens Creek 153.30 236 PKPbc **PKPbc 04 48 50.9 -0.7**
comp=Z,7.6nm,0.8s,baz=66,slow=1.0,SNR=21
STKA PKPab **PKPab 04 49 01.5 -2.1**
comp=Z,10nm,0.8s,baz=131,slow=4.1,SNR=10
ASAR Alice Springs 162.35 251 PKP **PKPdf 04 48 54.5 -1.0**
comp=Z,1.3nm,0.8s,baz=125,slow=1.0,SNR=12
ASAR PKPab **PKPab 04 49 42.2 -0.8**
comp=Z,16nm,0.7s,baz=110,slow=4.5,SNR=62
WRAB Tennant Creek 162.35 263 *e*PKIKP **PKPdf 04 48 55.8 +0.2**
WRAB *e* 04 49 42.2
WRAB Tennant Creek 162.35 263 *e*PKPdf **PKPdf 04 48 55.8 +0.2**
WRAB *e*PKPab **PKPab 04 49 42.2 -1.0**
WRA Warramunga Arr 162.36 263 PKP **PKPdf 04 48 54.4 -1.2**
comp=Z,2.2nm,0.8s,baz=61,slow=1.3,SNR=13
WRA PKPab **PKPab 04 49 42.5 -0.7**
comp=Z,8.5nm,0.9s,baz=88,slow=4.2,SNR=18

NEIC 13 04:33:31.7, 18.96N×64.34W, h37km, MD2.5(RSPR),
4C-3D, After RSPR., Virgin Islands

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
					Op	ISC	h m s	ISC
ABV	**Anegada**	**0.23**	**179⇓**	*e*P		Pn	04 33 38.2	-2.1
ABV				*e*S		Sn	04 33 43.4	-5.1
ABVI	**Anegada Island**	**0.23**	**179⇓**	*e*P		Pn	04 33 38.2	-2.1
ABVI				*e*S		Sn	04 33 43.4	-5.1
STVI	**Saint Thomas**	**0.84**	**224⇓**	*e*P		Pn	04 33 45.8	-1.2
STVI	**Saint Thomas**	**0.84**	**224⇓**	*e*P		Pn	04 33 46.1	-0.9
STVI				*e*S		Sn	04 33 56.9	-1.3
STVI				*e*S		Sn	04 33 57.0	-1.3
STVI	**Saint Thomas**	**0.84**	**224⇑**	*e*P		Pn	04 33 46.1	-0.9
CDVI	**St. Croix**	**1.27**	**199⇑**	*e*P		Pn	04 33 52.1	-0.7
CDVI				*e*S		Sn	04 34 07.5	-1.2
CDVI	**St. Croix**	**1.27**	**199⇑**	*e*P		Pn	04 33 52.1	-0.7
CDVI				*e*S		Sn	04 34 07.5	-1.2
SJG	**San Juan**	**1.92**	**244**	Pn		Pn	04 33 59.8	-2.0
ANWB	**Willy Bob**	**2.74**	**118**	*e*Pn		Pn	04 34 14.8	+1.6
ANWB	**Willy Bob**	**2.74**	**118**	*e*Pn		Sn	04 34 49.9	+4.8

TRN ***13*** *04:34:08.2, 18.76N×64.61W, h4km*
NEIC ***13*** *04:34:09.8, 18.97N×64.35W, h34km, MD3.4(RSPR), After RSPR.*

ISC 13 04:34:10.9±1.3, 18.79N±0.09×64.57W±0.04, h14km±8km, n22, σ0°76/38, 15C-6D, Virgin Islands

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
					Op	ISC	h m s	ISC
ABVI	**Anegada Island**	**0.24**	**104⇑**	*e*P		**Pg**	**04 34 16.0**	**0.0**
ABVI				*e*S		**Sb**	**04 34 21.2**	**+0.2**
ABV	**Anegada**	**0.24**	**104⇑**	*e*P		**Pg**	**04 34 16.0**	**0.0**
ABV				*e*S		**Sb**	**04 34 21.2**	**+0.2**
STVI	**Saint Thomas**	**0.56**	**220⇑**	*e*P		**Pn**	**04 34 24.0**	**-0.5**
STVI				*e*S		**Sn**	**04 34 34.8**	**+1.2**
STVI	**Saint Thomas**	**0.56**	**220⇑**	*e*P		**Pn**	**04 34 24.0**	**-0.5**
STVI				*e*S		**Sn**	**04 34 34.8**	**+1.2**
CDVI	**St. Croix**	**1.05**	**190⇓**	*e*P		**Pb**	**04 34 30.1**	**-0.6**
CDVI				*e*S		**Sn**	**04 34 45.5**	**-0.1**
CDVI	**St. Croix**	**1.05**	**190⇓**	*e*P		**Pb**	**04 34 30.1**	**-0.6**
CDVI				*e*S		**Sn**	**04 34 45.5**	**-0.1**
MTP	**Monte Pirata**	**1.16**	**234⇑**	*e*P		**Pb**	**04 34 32.7**	**+0.1**
MTP				*e*S		**Sg**	**04 34 49.8**	**+1.6**
MTP	**Monte Pirata**	**1.16**	**234⇑**	*e*P		**Pb**	**04 34 32.7**	**+0.1**
MTP				*e*S		**Sg**	**04 34 49.8**	**+1.6**
CBYP	**Canovanas**	**1.32**	**247⇑**	*e*P		**Pn**	**04 34 34.8**	**-0.2**
CBYP				*e*S		**Sg**	**04 34 53.7**	**+0.2**
CBYP	**Canovanas**	**1.32**	**247⇑**	*e*P		**Pn**	**04 34 34.8**	**-0.2**
CBYP				*e*S		**Sg**	**04 34 53.7**	**+0.2**
HUMP	**Col San Antoni**	**1.37**	**242⇑**	*e*P		**Pn**	**04 34 35.8**	**+0.2**
HUMP				*e*S		**Sg**	**04 34 54.3**	**-0.8**
HUMP	**Col San Antoni**	**1.37**	**242⇑**	*e*P		**Pn**	**04 34 35.8**	**+0.2**
HUMP				*e*S		**Sg**	**04 34 54.3**	**-0.8**
SJG	**San Juan**	**1.64**	**246⇑**	*e*P		**Pn**	**04 34 38.5**	**-0.8**
SJG	**San Juan**	**1.64**	**246**	*e*Pn		**Pn**	**04 34 39.7**	**+0.4**
CELP	**Cerrillos**	**2.03**	**250⇑**	*e*P		**Pn**	**04 34 45.0**	**+0.3**
CELP	**Cerrillos**	**2.03**	**250⇑**	*e*P		**Pn**	**04 34 45.0**	**+0.3**
OBIP	**Obispado Ponce**	**2.07**	**249⇑**	*e*P		**Pn**	**04 34 44.8**	**-0.3**
OBIP				*e*S		**Sb**	**04 35 12.9**	**-0.9**
OBIP	**Obispado Ponce**	**2.07**	**249⇑**	*e*P		**Pn**	**04 34 44.8**	**-0.3**
OBIP				*e*S		**Sb**	**04 35 12.9**	**-0.9**
AOPR	**Arecibo Observ**	**2.11**	**258⇓**	*e*P		**Pn**	**04 34 44.7**	**-1.2**
AOPR				*e*S		**Sn**	**04 35 13.0**	**+1.1**
AOPR	**Arecibo Observ**	**2.11**	**258⇓**	*e*P		**Pn**	**04 34 44.7**	**-1.2**
AOPR				*e*S		**Sn**	**04 35 13.0**	**+1.1**
CRPR	**Cabo Rojo, PR**	**2.53**	**253⇓**	*e*P		**Pn**	**04 34 50.9**	**-0.6**
CRPR	**Cabo Rojo, PR**	**2.53**	**253⇓**	*e*P		**Pn**	**04 34 50.9**	**-0.6**

ISCJB ***13*** *04:36:52.0±0.6, 37.12N±0.03×140.76E±0.06, h11km±4km, mb3.3/4, Error ellipse: s-maj=8.1km s-min=4.8km az=15.8*
IDC ***13*** *04:36:51.4±1.9, 37.19N×140.79E, h0km, mb3.4/4, mb1 3.5/5, mb1mx3.3/45, mbtmp3.4/5, ML3.2/1, Error ellipse: s-maj=38.3km s-min=27.1km az=64.0*
JMA ***13*** *04:36:52.3, 37.12N×140.70E, h7km±1km, M3.4*
JMA Felt II J1.

ISC 13 04:36:52.5±1.0, 37.12N±0.03×140.70E±0.04, h6km±8km, n19, σ0°52/22, mb3.3/4, 1C-3D, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
					Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.09**	**102**	⇓P		**Pg**	**04 36 54.3**	**-0.1**
ONAJ					S	**Sg**	**04 36 55.9**	**+0.2**
JFK	**Kawauchi**	**0.28**	**30**	⇑P		**Pg**	**04 36 58.1**	**0.0**
JFK					S	**Sg**	**04 37 02.1**	**+0.2**
JFT	**Otama**	**0.49**	**324**	P		**Pg**	**04 37 02.1**	**+0.2**
JFT					S	**Sg**	**04 37 08.9**	**+0.6**
JHO	**Hitachi**	**0.52**	**191**	P		**Pg**	**04 37 02.4**	**0.0**
JHO					S	**Sg**	**04 37 09.4**	**+0.2**
JSB	**Shiboa**	**0.64**	**257**	⇓P		**Pb**	**04 37 05.4**	**-0.7**
JSB					S	**Sb**	**04 37 14.3**	**-1.0**
JMM	**Marumori**	**0.75**	**6**	P		**Pg**	**04 37 06.5**	**-0.4**
JMM					S	**Sg**	**04 37 16.6**	**0.0**
JFY	**Yanaizu**	**0.84**	**290**	⇓P		**Pg**	**04 37 08.6**	**0.0**
JFY					S	**Sg**	**04 37 19.5**	**0.0**
MJAR	**Matsushiro Arr**	**2.08**	**255**	Pn		**Pn**	**04 37 28.5**	**+0.6**
	7.2nm,0.3s,baz=92,slow=16,SNR=28							
MJAR					Sn	**Sb**	**04 37 56.6**	**-0.1**
	11nm,0.3s,baz=332,slow=26,SNR=14							
MAT	**Matsushiro**	**2.08**	**255**	P		**Pn**	**04 37 28.5**	**+0.6**
MAT					S	**Sb**	**04 37 56.7**	**0.0**
SONM	**Songino Array**	**27.26**	**304**	P		**P**	**04 42 38.4**	**+0.8**
	0.3nm,0.5s,baz=96,slow=8.4,SNR=2.8							
H11N2	**WAKE ISLAND Hy**	**28.69**	**120**	T		T	05 12 34.9	
	baz=313,slow=75,SNR=18							
H11N1	**WAKE ISLAND Hy**	**28.70**	**120**	T		T	05 12 40.2	
	baz=313,slow=75,SNR=17							
H11N3	**WAKE ISLAND Hy**	**28.70**	**120**	T		T	05 12 37.5	
	baz=313,slow=75,SNR=14							
H11S1	**WAKE ISLAND Hy**	**29.39**	**122**	T		T	05 13 30.7	
	baz=314,slow=76,SNR=12							
H11S3	**WAKE ISLAND Hy**	**29.39**	**122**	T		T	05 13 28.8	
	baz=314,slow=76,SNR=14							
H11S2	**WAKE ISLAND Hy**	**29.41**	**122**	T		T	05 13 32.7	
	baz=314,slow=76,SNR=8.6							
MKAR	**Makanchi Array**	**43.59**	**302**	P		**P**	**04 44 57.5**	**+0.1**
	0.1nm,0.3s,baz=83,slow=13,SNR=2.1							
KURBB	**Kurchatov Arra**	**45.49**	**308**	P		**P**	**04 45 11.3**	**-1.1**
	0.2nm,0.4s,baz=80,slow=7.8,SNR=3.5							
WRA	**Warramunga Arr**	**57.07**	**187**	P		**P**	**04 46 39.8**	**+0.3**
	0.2nm,0.4s,baz=3.7,slow=7.1,SNR=12							

ISCJB ***13*** *04:37:10.2±0.4, 32.31N±0.02×115.34W±0.03, h19km±5km, Error ellipse: s-maj=4.0km s-min=3.7km az=145.7*
NEIC ***13*** *04:37:11.4, 32.29N×115.37W, h6km, ML2.9(ECX), ML3.0(PAS), After ECX.*
ECX ***13*** *04:37:11.4±0.5, 32.29N×115.37W, h6km, MD2.9, ML3.1*

*MEX **13** 04:37:12.5±0.7, 32.36N×115.26W, h16km±70km, MD3.7*
ISC 13 04:37:09.4±0.9, 32°30N±0.02×115°35W±0.02, h17km±8km, n40, σ0s72/63, 6C-2D, California-Baja California border region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
CPBX	**Cerro Prieto**	**0.12**	**19**	*eP*	**Pb**	**04 37 14.0**	**+0.7**
CPBX				*eS*	**Sb**	**04 37 16.6**	**+0.7**
CPBX				⇓*e*		04 37 18.8	
CPBX	comp=N,12μm,0.2s			AML	AML	04 37 18.8	
CPBX	**Cerro Prieto**	**0.12**	**19**	*i* P	**Pb**	**04 37 14.1**	**+0.7**
CPBX				*i* S	**Sb**	**04 37 16.6**	**+0.7**
MBIG	**Mexicali**	**0.17**	**51**	*eP*	**Pb**	**04 37 14.9**	**+0.8**
MBIG	**Mexicali**	**0.17**	**51**	*eP*	**Pb**	**04 37 14.9**	**+0.8**
MBIG	**Mexicali**	**0.17**	**51**	*i* P	**Pb**	**04 37 15.1**	**+1.1**
MBIG				*eS*	**Sg**	**04 37 17.0**	**+0.3**
SGL	**Mount Signal**	**0.47**	**318**	⇑*i* P	**Pb**	**04 37 19.7**	**+0.5**
SGL	**Mount Signal**	**0.47**	**318**	P	**Pb**	**04 37 19.7**	**+0.5**
DRIEC	**Desert Rsrch C**	**0.51**	**351**	*eP*	**Pb**	**04 37 21.0**	**+1.2**
EMSC	**East Mesa**	**0.54**	**35**	⇑*i* P	**Pb**	**04 37 21.4**	**+1.1**
WESC	**Westside Schoo**	**0.56**	**325**	*eP*	**Pb**	**04 37 21.6**	**+0.8**
COA	**Coachella**	**0.59**	**19**	⇓*i* P	**Pb**	**04 37 22.0**	**+0.7**
YUH	**Yuha Desert**	**0.59**	**306**	⇑*i* P	**Pb**	**04 37 21.6**	**+0.3**
RMX	**La Rumorosa**	**0.69**	**296**	*eP*	**Pg**	**04 37 22.8**	**-0.1**
RMX				*eS*	**Sg**	**04 37 32.1**	**0.0**
IBP	**Imperial Bould**	**0.72**	**300**	*eP*	**Pb**	**04 37 24.0**	**+0.4**
IBP				*eS*	**Sb**	**04 37 33.5**	**+0.2**
IBP	**Imperial Bould** baz=121	**0.72**	**300**	P	**Pb**	**04 37 24.0**	**+0.4**
YMD	**Yuma Desert**	**0.73**	**69**	⇑*i* P	**Pg**	**04 37 24.0**	**+0.4**
ECBX	**El Chinero**	**0.86**	**163**	*eP*	**Pb**	**04 37 26.6**	**+0.7**
ECBX				*eS*	**Sb**	**04 37 38.3**	**+1.2**
GLA	**Glamis** baz=211	**0.87**	**30**	P	**Pg**	**04 37 25.8**	**-0.5**
MONP2	**Monument Peak** baz=124	**1.08**	**303**	Pb	**Pg**	**04 37 30.4**	**0.0**
ZAX	**El Zacaton**	**1.11**	**225**	*i* P	**Pb**	**04 37 30.4**	**+0.3**
ZAX				*eS*	**Sg**	**04 37 45.0**	**-0.5**
CBX	**Cerro Bola**	**1.11**	**271**	*eP*	**Pg**	**04 37 30.8**	**-0.2**
CBX				*eS*	**Sg**	**04 37 45.3**	**-0.3**
CBX	comp=E,742nm,0.5s			AML	AML	04 37 52.1	
CBX				⇑*e*		04 37 52.1	
CBX	**Cerro Bola**	**1.11**	**271**	*i* P	**Pg**	**04 37 30.7**	**-0.2**
CBX				*i* S	**Sb**	**04 37 44.9**	**+0.4**
CBX	**Cerro Bola**	**1.11**	**271**	*i* P	**Pg**	**04 37 30.7**	**-0.2**
CBX				*i* S	**Sb**	**04 37 44.9**	**+0.4**
TJIG	**Tijuana**	**1.13**	**277**	*eP*	**Pb**	**04 37 30.8**	**+0.3**
TJIG				*eS*	**Sg**	**04 37 45.4**	**-0.6**
TJIG	**Tijuana**	**1.13**	**277**	*i* P	**Pg**	**04 37 31.0**	**-0.2**
TJIG				*eS*	**Sb**	**04 37 44.6**	**-0.2**
BAR	**Barrett**	**1.18**	**289**	*eP*	**Pn**	**04 37 31.7**	**+0.6**
BAR				*eS*	**Sb**	**04 37 46.7**	**+0.4**
ECNX	**Esteban Cantu**	**1.24**	**239**	*eP*	**Pn**	**04 37 32.5**	**+0.5**
ECNX				*eS*	**Sg**	**04 37 49.2**	**-0.3**
SPIG	**San Pedro Mart**	**1.25**	**185**	*eP*	**Pn**	**04 37 32.9**	**+0.4**
SPIG				*eS*	**Sb**	**04 37 49.3**	**+0.5**
SPIG	**San Pedro Mart**	**1.25**	**185**	*i* P	**Pn**	**04 37 33.0**	**+0.6**
SPIG				*i* S	**Sb**	**04 37 48.7**	**0.0**
SPIG	**San Pedro Mart**	**1.25**	**185**	*i* P	**Pn**	**04 37 33.0**	**+0.6**
SPIG				*i* S	**Sb**	**04 37 48.7**	**0.0**
SPX	**San Pedro Mart**	**1.26**	**184**	*eP*	**Pn**	**04 37 32.9**	**+0.4**
SPX				*eS*	**Sg**	**04 37 50.6**	**+0.4**
SPX	comp=N,192nm,0.1s			AML	AML	04 37 53.5	
SPX				⇑*e*		04 37 53.5	
SPX	**San Pedro Mart**	**1.26**	**184**	*i* P	**Pn**	**04 37 33.1**	**+0.6**
SPX				*i* S	**Sb**	**04 37 47.6**	**-1.2**
PBX	**Punta Banda**	**1.29**	**245**	*eP*	**Pg**	**04 37 33.9**	**-0.5**
PBX				*eS*	**Sg**	**04 37 50.7**	**-0.6**
SDRC	**San Diego Road**	**1.41**	**288**	*eP*	**Pb**	**04 37 35.6**	**+0.3**
109C	**Camp Elliot, M** baz=112	**1.59**	**292**	Pb	**Pb**	**04 37 38.7**	**+0.3**
109C				Sb	**Sb**	**04 37 58.8**	**+0.7**
PFO	**Pinyon Flats O** baz=145	**1.60**	**325**	P	**Pn**	**04 37 36.5**	**-0.5**
PFO	**Pinyon Flats O**	**1.60**	**325**	*e*Pn	**Pn**	**04 37 35.9**	**-1.1**
PFO				*eS*	**Sb**	**04 37 59.0**	**+0.5**
214A	**Organ Pipe Nat** baz=280	**2.18**	**98**	P	**Pn**	**04 37 44.6**	**-0.3**
BBRC	**Big Bear Solar** baz=146	**2.36**	**327**	Sb	**Sg**	**04 38 23.9**	**-1.4**
TUC	**Tucson**	**3.87**	**89**	Pn	**Pb**	**04 38 16.4**	**-0.8**
TUC				*eS*	**Sg**	**04 39 10.8**	**-2.7**

*ISCJB **13** 04:42:37.5±0.5, 41.84N±0.02×22.94E±0.05, h7km±7km, Error ellipse: s-maj=6.3km s-min=3.5km az=179.5*
*CSEM **13** 04:42:37.9±0.2, 41.83N×22.95E, h10km, ML2.4, Error ellipse: s-maj=3.9km s-min=2.5km az=74.0*
*SKO **13** 04:42:37.2, 41.83N×23.05E, h27km, M1.5, ML1.9*
*BEO **13** 04:42:39.5±0.4, 41.83N×22.92E, h0km, M1.8/4*
*THE **13** 04:42:39.3, 41.77N×23.01E, h4km, ML2.4/4, Error ellipse: s-maj=1.1km s-min=0.4km az=179.0*
ISC 13 04:42:38.4±1.0, 41.83N±0.02×22.97E±0.03, h9km±12km, n24, σ0s64/44, Northwestern Balkan Peninsula

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
VAY	**Valandovo**	**0.59**	**211**	P	**Pg**	**04 42 50.0**	**+0.1**
VAY				S	**Sg**	**04 42 57.7**	**+0.1**
VAY	**Valandovo**	**0.59**	**211**	*i* Pg	**Pg**	**04 42 50.9**	**+1.0**
VAY				*e*Lg	Lg	04 42 58.9	
VAY	comp=N,57nm,0.5s			*i* Sg	**Sg**	**04 42 59.0**	**+1.4**
VAY				*e*Lg	Lg	04 42 59.2	
VAY	comp=E,36nm,0.3s **Valandovo**	**0.59**	**211**	*e*Pg	**Pg**	**04 42 49.9**	**+0.1**
VAY				*e*Sg	**Sg**	**04 42 57.5**	**-0.1**
VAY	**Valandovo**	**0.59**	**211**	*e*Pg	**Pg**	**04 42 49.9**	**+0.1**
VAY				*e*Sg	**Sg**	**04 42 57.5**	**-0.1**
VAY	comp=E,57nm,0.5s			*e*Lg	Lg	04 42 58.9	
KNT	**Kendrikon**	**0.67**	**185**	P	**Pg**	**04 42 50.7**	**-0.6**
KNT				S	**Sg**	**04 42 59.8**	**-0.2**
KNT	**Kendrikon**	**0.67**	**185**	P	**Pg**	**04 42 50.7**	**-0.6**
KNT				S	**Sg**	**04 42 59.8**	**-0.2**
VTS	**Vitosha**	**0.78**	**13**	P	**Pg**	**04 42 52.8**	**-0.8**
VTS				S	**Sg**	**04 43 03.8**	**0.0**
VTS	**Vitosha**	**0.78**	**13**	*e*Pg	**Pg**	**04 42 53.0**	**-0.6**
VTS				*e*Sg	**Sg**	**04 43 03.9**	**+0.1**
VTS	**Vitosha**	**0.78**	**13**	*e*Pg	**Pg**	**04 42 53.0**	**-0.6**
VTS				S	**Sg**	**04 43 03.8**	**0.0**
NVR	**Nevrokopi**	**0.82**	**125**	P	**Pg**	**04 42 53.6**	**-0.6**
NVR				S	**Sg**	**04 43 04.9**	**0.0**
NVR	**Nevrokopi**	**0.82**	**125**	P	**Pg**	**04 42 53.6**	**-0.6**
NVR				S	**Sg**	**04 43 04.9**	**0.0**
SRS	**Serrai**	**0.85**	**147**	P	**Pg**	**04 42 54.0**	**-0.8**
SRS	**Serrai**	**0.85**	**147**	P	**Pg**	**04 42 54.0**	**-0.8**
SOH	**Sokhos**	**1.04**	**164**	P	**Pg**	**04 42 57.7**	**-0.8**
SOH				S	**Sg**	**04 43 12.1**	**0.0**
SOH	**Sokhos**	**1.04**	**164**	P	**Pg**	**04 42 57.7**	**-0.8**
SOH				S	**Sg**	**04 43 12.1**	**0.0**
BARS	**Barje**	**1.31**	**319**	*e*Pg	**Pn**	**04 43 02.9**	**0.0**
BARS				*e*Sg	**Sb**	**04 43 19.2**	**-0.9**
BARS	**Barje**	**1.31**	**319**	*e*Pg	**Pn**	**04 43 02.9**	**0.0**
BARS				*e*Sg	**Sb**	**04 43 19.2**	**-0.9**
PLD	**Plovdiv**	**1.32**	**77**	*e*Pg	**Pb**	**04 43 03.9**	**+0.5**
PLD				*e*Sg	**Sg**	**04 43 22.3**	**+1.4**
PLD	**Plovdiv**	**1.32**	**77**	*e*Pg	**Pn**	**04 43 03.9**	**+0.5**
PLD				*e*Sg	**Sg**	**04 43 22.3**	**+1.4**
KAVA	**Kavala**	**1.43**	**125**	P	**Pn**	**04 43 04.5**	**0.0**
KAVA				S	**Sb**	**04 43 23.8**	**+0.4**
KAVA	**Kavala**	**1.43**	**125**	P	**Pn**	**04 43 04.5**	**0.0**
KAVA				S	**Sb**	**04 43 23.8**	**+0.4**
ZAPS	**Zavoj**	**1.47**	**350**	*e*Pg	**Pb**	**04 43 06.6**	**+0.7**
ZAPS				*e*Sg	**Sg**	**04 43 26.2**	**+0.6**
OUR	**Ouranopolis**	**1.68**	**153**	P	**Pn**	**04 43 07.5**	**-0.4**
OUR	**Ouranopolis**	**1.68**	**153**	P	**Pn**	**04 43 07.5**	**-0.4**

*ISCJB **13** 04:43:57.6±0.6, 37.90N±0.03×27.30E±0.04, h9km±6km, Error ellipse: s-maj=6.1km s-min=5.2km az=155.2*
*DDA **13** 04:43:57.7, 37.88N×27.30E, h7km, Md2.2*
*CSEM **13** 04:43:57.5±0.3, 37.92N×27.28E, h8km, MD2.2, Error ellipse: s-maj=6.2km s-min=3.6km az=111.0*
*ISK **13** 04:43:57.8, 37.92N×27.33E, h10km, MD2.6*

ISC 13 04:43:57.4±1.2, 37.93N±0.04×27.27E±0.04, h6km±17km, n21, σ0s34/30, Turkey

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
GCAM	**G?zelcami?**	**0.23**	**186**	*i* P	**Pg**	**04 44 01.7**	**-0.2**
GCAM				*i* S	**Sg**	**04 44 05.3**	**+0.4**
GCAM	**G?zelcami?**	**0.23**	**186**	P	**Pg**	**04 44 01.7**	**-0.2**
GCAM				S	**Sg**	**04 44 05.3**	**+0.4**
IZM	**Izmir**	**0.47**	**360**	*e*PG	**Pb**	**04 44 07.8**	**-0.4**
IZM	**Izmir**	**0.47**	**360**	*e*Pg	**Pb**	**04 44 07.8**	**-0.4**
BLCB	**Balcova**	**0.49**	**339**	*e*PG	**Pb**	**04 44 08.2**	**-0.3**
BLCB	**Balcova**	**0.49**	**339**	*e*Pg	**Pb**	**04 44 08.2**	**-0.3**
AYDB	**Zeytinkoy-Aydi**	**0.49**	**87**	*e*PG	**Pg**	**04 44 07.0**	**0.0**
AYDB				*e*SG	**Sg**	**04 44 13.6**	**+0.2**
AYDB	**Zeytinkoy-Aydi**	**0.49**	**87**	*e*Pg	**Pg**	**04 44 07.0**	**0.0**
AYDB				*e*Sg	**Sg**	**04 44 13.6**	**+0.2**
AYDN	**Tasoluk**	**0.55**	**118**	*i* P	**Pg**	**04 44 08.4**	**+0.3**
AYDN				*i* S	**Sg**	**04 44 15.1**	**-0.2**
AYDN	**Tasoluk**	**0.55**	**118**	P	**Pg**	**04 44 08.4**	**+0.3**
AYDN				S	**Sg**	**04 44 15.1**	**-0.2**
ZEY	**¨zmir**	**0.68**	**298**	*i* P	**Pb**	**04 44 11.6**	**0.0**
ZEY				*i* S	**Sb**	**04 44 21.8**	**+0.5**
BODT	**Bodrum**	**0.86**	**178**	*e*PG	**Pb**	**04 44 14.8**	**0.0**
BODT	**Bodrum**	**0.86**	**178**	*e*Pg	**Pb**	**04 44 14.8**	**0.0**
BDRM	**Kayabasi**	**0.87**	**171**	*i* P	**Pg**	**04 44 14.3**	**+0.2**
BDRM				*i* S	**Sg**	**04 44 24.6**	**-0.8**
BDRM	**Kayabasi**	**0.87**	**171**	P	**Pg**	**04 44 14.4**	**+0.2**
BDRM				S	**Sg**	**04 44 24.6**	**-0.8**
AKS	**Akhisar**	**1.04**	**24**	*e*PG	**Pb**	**04 44 18.0**	**+0.1**
AKS	**Akhisar**	**1.04**	**24**	*e*Pg	**Pb**	**04 44 18.0**	**+0.1**
YER	**Yerkesik**	**1.13**	**134**	*e*PN	**Pg**	**04 44 19.1**	**0.0**
YER	**Yerkesik**	**1.13**	**134**	*e*Pn	**Pg**	**04 44 19.1**	**0.0**
KULA	**Kula-Manisa**	**1.25**	**61**	*e*PN	**Pb**	**04 44 21.2**	**-0.2**
KULA	**Kula-Manisa**	**1.25**	**61**	*e*Pn	**Pb**	**04 44 21.2**	**-0.2**

*IDC **13** 04:46:47.8±1.4, 37.66N×144.14E, h0km, mb3.5/5, mb1 3.7/6, mb1mx3.4/39, mbtmp3.5/6, ML3.0/1, Error ellipse: s-maj=31.3km s-min=28.7km az=86.0*
*ISCJB **13** 04:46:49.9±1.3, 37.97N±0.08×143.46E±0.08, h19km, mb3.5/5, Error ellipse: s-maj=11.8km s-min=9.5km az=165.3*
*JMA **13** 04:46:49.9±0.3, 37.99N×143.26E, h0km, M3.4*
ISC 13 04:46:49.8±1.4, 37.91N±0.08×143.31E±0.08, h19km, n21, σ1s28/16, mb3.6/5, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**1.64**	**290**	P	**Pb**	**04 47 19.3**	**-0.1**
JIO				*e*S	**Sb**	**04 47 40.7**	**+1.1**
OFUJ	**Ofunato**	**1.74**	**313**	S	**Sb**	**04 47 42.5**	**-0.1**
JMK	**Ichinoseki**	**1.94**	**303**	S	**Sb**	**04 47 47.9**	**-0.5**
JMM	**Marumori**	**1.99**	**270**	P	**Pb**	**04 47 24.6**	**-0.8**
JMM				S	**Sb**	**04 47 50.0**	**+0.2**
JFK	**Kawauchi**	**2.00**	**255**	S	**Sb**	**04 47 51.3**	**+1.0**
JOU	**Okura**	**2.13**	**283**	P	**Pb**	**04 47 26.9**	**-1.0**
JFT	**Otama**	**2.39**	**262**	P	**Pb**	**04 47 31.0**	**-1.2**
JFT				S	**Sb**	**04 48 01.5**	**+0.2**
JYK	**Kaneyama**	**2.53**	**294**	P	**Pb**	**04 47 32.3**	**-2.3**
JYK				S	**Sb**	**04 48 03.9**	**-1.3**
JRG	**Rokugo**	**2.57**	**306**	P	**Pn**	**04 47 32.6**	**+2.2**
MJAR	**Matsushiro Arr** 0.7nm,0.3s,baz=81,slow=13,SNR=2.9	**4.29**	**253**	Pn	**Pb**	**04 48 02.7**	**-1.9**
H11N2	**WAKE ISLAND Hy**	**27.35**	**125**	T	T	05 21 00.7	
H11N1	**WAKE ISLAND Hy**	**27.36**	**125**	T	T	05 21 00.7	
H11N3	**WAKE ISLAND Hy** SNR=3.6	**27.37**	**125**	T	T	05 21 02.0	
H11S1	**WAKE ISLAND Hy**	**28.12**	**127**	T	T	05 21 59.0	
H11S3	**WAKE ISLAND Hy**	**28.12**	**127**	T	T	05 21 59.0	
H11S2	**WAKE ISLAND Hy**	**28.14**	**127**	T	T	05 21 59.0	
SONM	**Songino Array** 0.1nm,0.4s,baz=98,slow=10,SNR=2.3	**28.57**	**302**	P	P	04 52 51.0	+6.4
MKAR	**Makanchi Array** 0.2nm,0.3s,baz=98,slow=7.9,SNR=3.3	**44.94**	**302**	P	P	04 55 09.7	+6.2
KURBB	**Kurchatov Arra** 0.6nm,0.6s,baz=83,slow=8.4,SNR=4.5	**46.66**	**308**	P	P	04 55 23.3	+6.4
ILAR	**Eielson Array** 0.4nm,0.7s,baz=256,slow=6.2,SNR=5.7	**47.95**	**33**	P	**P**	**04 55 26.4**	**-0.3**
WRA	**Warramunga Arr** 0.5nm,0.7s,baz=12,slow=7.6,SNR=4.2	**58.16**	**190**	P	**P**	**04 56 42.5**	**+0.1**

JMA 13 04:48:54.1, 36.95N×140.66E, h7km±1km, M2.5, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.19**	**36**	P	Pg	04 48 58.1	+0.2
ONAJ				S	Sg	04 49 00.9	+0.4
JHO	**Hitachi**	**0.35**	**192**	P	Pg	04 49 00.9	0.0
JHO				S	Sg	04 49 05.8	+0.4
JFK	**Kawauchi**	**0.45**	**22**	P	Pg	04 49 02.8	0.0
JFK				S	Sg	04 49 09.0	+0.2
JFT	**Otama**	**0.62**	**336**	P	Pg	04 49 06.4	+0.3
JFT				S	Sg	04 49 14.9	+0.6
JMM	**Marumori**	**0.92**	**7**	P	Pg	04 49 11.2	-0.6
JMM				S	Sg	04 49 23.5	-0.3
MAT	**Matsushiro**	**2.01**	**259**	P	Pn	04 49 28.2	-0.3
MAT				S	Sb	04 49 56.2	-0.1

IDC 13 05:00:22.2±3.0, 35.81N×143.41E, h0km, mb3.4/4, mb1 3.5/5, mb1mx3.3/41, mbtmp3.3/5, ML3.2/1, MS2.9/1, Ms1 2.9/1, ms1mx2.3/29, Error ellipse: s-maj=92.8km s-min=24.8km az=61.0, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
MJAR	**Matsushiro Arr** 1.2nm,0.3s,baz=150,slow=16,SNR=4.5	**4.27**	**281**	Pn	Pn	05 01 28.0	-0.5
H11N2	**WAKE ISLAND Hy** baz=317,slow=74,SNR=5.5	**26.14**	**122**	T	T	05 32 51.4	
H11N1	**WAKE ISLAND Hy** baz=77,slow=74,SNR=5.3	**26.14**	**122**	T	T	05 32 51.6	
MKAR	**Makanchi Array** 0.1nm,0.2s,baz=99,slow=4.5,SNR=1.7	**46.13**	**303**	P	P	05 08 47.9	-0.4
KURBB	**Kurchatov Arra** 0.2nm,0.4s,baz=81,slow=8.3,SNR=2.5	**48.02**	**309**	P	P	05 09 03.1	+0.2
WRA	**Warramunga Arr** 0.2nm,0.4s,baz=8.4,slow=7.0,SNR=6.2	**56.11**	**190**	P	P	05 10 02.9	-0.5
FITZ	**Fitzroy Crossi** comp=Z,9.8nm,19.7s,slow=37	**56.20**	**200**	LR	LR	05 35 09.3	
ASAR	**Alice Springs** 0.1nm,0.3s,baz=13,slow=8.6,SNR=3.9	**59.83**	**190**	P	P	05 10 29.7	+0.3

JMA 13 05:04:22.0±0.1, 38.73N×142.36E, h38km±2km, M3.6, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
OFUJ	**Ofunato**	**0.64**	**303**	P	Pn	05 04 34.8	+0.1
OFUJ				S	Sn	05 04 43.7	+0.1
JIO	**Ouri**	**0.84**	**251**	P	Pn	05 04 37.3	0.0
JIO				S	Sn	05 04 48.1	-0.3
JMK	**Ichinoseki**	**0.92**	**284**	P	Pn	05 04 38.7	+0.4
JMK				S	Sn	05 04 50.7	+0.4
MIYJ	**Miyakonagasawa**	**0.94**	**334**	P	Pn	05 04 38.8	+0.1
MIYJ				S	Sn	05 04 50.7	-0.3
JOM	**Ohasama**	**1.11**	**312**	P	Pn	05 04 41.7	+0.7
JOM				*e*S	Sn	05 04 56.1	+1.0
JOU	**Okura**	**1.38**	**255**	P	Pn	05 04 45.8	+1.1
JOU				S	Sn	05 05 03.2	+1.5
JKZ	**Kuzumaki**	**1.49**	**328**	P	Pn	05 04 47.7	+1.5
JRG	**Rokugo**	**1.50**	**297**	P	Pn	05 04 47.5	+1.2
JRG				S	Sn	05 05 06.1	+1.5
JMM	**Marumori**	**1.50**	**236**	P	Pn	05 04 49.6	+0.2
JMM				*e*S	Sn	05 05 05.4	+0.7
JYK	**Kaneyama**	**1.57**	**277**	P	Pn	05 04 48.9	+1.5

TRN 13 05:11:25.1, 14.53N×59.80W, h138km, MD3.7, Windward Islands

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
MVM	**Montagne Vaucl**	**1.06**	**272**	*e*P	Pn	05 11 49.6	+0.4
LPMF	**Morne Lapointe**	**1.13**	**272**	*e*P	Pn	05 11 49.9	+0.1
ZAM	**Aeronautique**	**1.19**	**272**	*e*P	Pn	05 11 50.8	+0.3
FDF	**Fort de France**	**1.32**	**279**	*e*P	Pn	05 11 53.8	+2.0
FDF				*e*S	Sn	05 12 13.7	+1.4
BAMF	**Morne Balai**	**1.33**	**283**	*e*P	Pn	05 11 53.1	+1.1
GBMF	**Grand Be**	**1.34**	**282**	*e*P	Pn	05 11 53.4	+1.2
CXM	**Morne La Croix**	**1.35**	**282**	*e*P	Pn	05 11 53.7	+1.4
PML	**Morne Lenard**	**1.36**	**281**	*e*P	Pn	05 11 53.8	+1.6
PCM	**Pelee Case Pet**	**1.39**	**282**	*e*P	Pn	05 11 53.5	+0.9
BBL	**Barber's Block**	**1.89**	**302**	*e*P	Pn	05 11 59.4	+1.2
BBL				*e*S	Sn	05 12 24.8	+1.2
MGG	**Marie-Galante**	**2.01**	**314**	*e*P	Pn	05 12 01.0	+1.4
MGG				*e*S	Sn	05 12 26.8	+0.7
DEG	**La Desirade**	**2.15**	**326**	*e*P	Pn	05 12 01.7	+0.4
DEG				*e*S	Sn	05 12 30.2	+1.0
TBG	**Guadaloupe-3**	**2.21**	**307**	*e*P	Pn	05 12 03.1	+1.0
TBG				*e*S	Sn	05 12 30.7	+0.2
DOG	**Dongo Capester**	**2.30**	**311**	*e*P	Pn	05 12 04.1	+0.9
ECG	**Echelle**	**2.33**	**310**	*e*P	Pn	05 12 04.5	+0.8
SSG	**Sans Toucher**	**2.38**	**311**	*e*P	Pn	05 12 04.7	+0.3
LZG	**Guadaloupe-1**	**2.49**	**310**	*e*P	Pn	05 12 06.7	+1.2

*ISCJB **13** 05:12:56.9±1.0, 36.86N±0.05×140.88E±0.09, h10km, mb3.6/3, Error ellipse: s-maj=10.7km s-min=5.6km az=22.0*
*JMA **13** 05:12:58.5, 36.92N×140.69E, h6km±1km, M3.3*
*IDC **13** 05:13:00.4±1.7, 36.40N×140.59E, h0km, mb3.4/3, mb1 3.8/3, mb1mx3.3/35, mbtmp3.4/3, Error ellipse: s-maj=41.9km s-min=26.8km az=14.0*
ISC 13 05:12:58.6±1.1, 36.92N±0.05×140.68E±0.08, h10km, n15, σ0s79/12, mb3.5/3, 1C-1D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.20**	**27**	P	**Pg**	**05 13 02.9**	**0.0**
ONAJ				S	**Sg**	**05 13 05.8**	**0.0**
JHO	**Hitachi**	**0.32**	**197**	P	**Pg**	**05 13 04.8**	**-0.3**
JHO				S	**Sg**	**05 13 10.0**	**+0.6**
JFK	**Kawauchi**	**0.47**	**19**	⇓P	**Pg**	**05 13 07.7**	**-0.1**
JSB	**Shiboa**	**0.61**	**275**	⇑P	**Pb**	**05 13 11.1**	**-0.4**
MJAR	**Matsushiro Arr** 10nm,0.3s,baz=83,slow=16,SNR=24	**2.02**	**260**	Pn	**Pn**	**05 13 33.9**	**+1.1**
MJAR	13nm,0.3s,baz=79,slow=30,SNR=6.6			Sn	**Sb**	**05 13 59.8**	**-0.9**
MAT	**Matsushiro**	**2.02**	**260**	P	**Pn**	**05 13 34.1**	**+1.2**
MAT				S	**Sb**	**05 14 00.6**	**-0.2**
H11N2	**WAKE ISLAND Hy** baz=313,slow=75,SNR=22	**28.60**	**120**	T	T	05 48 40.3	
H11N1	**WAKE ISLAND Hy** baz=313,slow=75,SNR=38	**28.60**	**120**	T	T	05 48 40.9	
H11N3	**WAKE ISLAND Hy** baz=313,slow=75,SNR=29	**28.61**	**120**	T	T	05 48 41.7	
H11S1	**WAKE ISLAND Hy** baz=314,slow=75,SNR=48	**29.29**	**122**	T	T	05 49 34.4	
H11S3	**WAKE ISLAND Hy** baz=314,slow=75,SNR=55	**29.29**	**122**	T	T	05 49 32.5	
H11S2	**WAKE ISLAND Hy** baz=314,slow=75,SNR=55	**29.31**	**122**	T	T	05 49 34.3	
WRA	**Warramunga Arr** 0.2nm,0.4s,baz=3.3,slow=7.3,SNR=6.2	**56.87**	**187**	P	**P**	**05 22 42.5**	**-1.1**
ASAR	**Alice Springs** 0.3nm,0.8s,baz=13,slow=8.2,SNR=2.9	**60.60**	**187**	P	**P**	**05 23 09.8**	**+0.2**
TXAR	**Lajitas Array** 0.4nm,1.0s,baz=331,slow=7.2,SNR=3.4	**90.65**	**52**	P	P	05 26 06.9	+5.1

*JMA **13** 05:22:20.7±0.2, 35.65N×140.20E, h70km±2km, M3.2 Broadband fault plane solution: P waves. NP1: φs24.00000°, δ85.00000°, λ72.00000°. NP2:φs280.00000°, δ18.00000°, λ165.00000°. Principal axes: T Plg47.0000°, Azm276.0000°; N Plg17.0000°, Azm26.0000°; P Plg38.0000°, Azm130.0000°;*
JMA Felt I J1.
*ISCJB **13** 05:22:21.0±0.4, 35.61N±0.03×140.22E±0.05, h69km±3km, mb3.8/17 Error ellipse: s-maj=7.5km s-min=5.1km az=156.2*
*IDC **13** 05:22:23.7±1.4, 35.55N×140.16E, h80km±12km, mb3.6/17, mb1 3.7/21, mb1mx3.6/48, mbtmp3.9/21, Error ellipse: s-maj=18.5km s-min=7.1km az=67.0*
ISC 13 05:22:22.1±0.7, 35.61N±0.04×140.21E±0.05, h64km±6km, n41, σ1s22/46, mb3.9/17, 1C-4D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JCN	**Nagara**	**0.19**	**182**	⇑P	**Pn**	**05 22 31.9**	**-0.1**
JCN				*e*S	**Sn**	**05 22 40.7**	**+1.6**
TOK	**Tokyo**	**0.38**	**282**	P	**Pn**	**05 22 33.2**	**0.0**
JYT	**Yasato**	**0.61**	**359**	P	**Pn**	**05 22 34.5**	**-1.1**
JYT				S	**Sn**	**05 22 43.9**	**-1.6**
BSO3	**Boso 3**	**0.84**	**163**	P	**Pn**	**05 22 37.2**	**-0.9**
BSO3				*e*X		05 22 50.6	
JOD2	**Odawara 2**	**0.98**	**250**	⇓P	**Pn**	**05 22 39.0**	**-1.1**
JOD2				S	**Sn**	**05 22 52.1**	**-1.3**
JAG	**Ashikaga**	**1.02**	**323**	⇓P	**Pn**	**05 22 39.5**	**-1.1**
JAG				S	**Sn**	**05 22 53.7**	**-0.5**
JIM2	**Oshima 3**	**1.10**	**216**	P	**Pn**	**05 22 40.3**	**-1.3**
JIM2				S	**Sn**	**05 22 54.6**	**-

BRTR	**Keskin Array B**	**79.06**	**311**	P		**P**	**05 34 20.3**	**+0.6**
	comp=Z,0.6nm,0.7s,baz=103,slow=3.9,SNR=3.4							
PDAR	**Pinedale Array**	**79.36**	**45**	P		**P**	**05 34 21.6**	**+0.2**
	comp=Z,0.5nm,0.6s,baz=349,slow=1.5,SNR=4.4							
TXAR	**Lajitas Array**	**91.76**	**52**	P		**P**	**05 35 24.0**	**+0.8**
	comp=Z,0.2nm,0.6s,baz=353,slow=8.8,SNR=2.5							
TORD	**Torodi Ar. Bea**	**117.62**	**313**	PKP		**PKPdf**	**05 41 00.8**	**-0.7**
	comp=Z,0.5nm,0.9s,baz=19,slow=3.6,SNR=2.4							

MEX 13 05:26:48.4±0.3, 16.74N×99.74W, h16km±4km, MD3.7, Near coast of Guerrero

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CAIG	**El Cayaco**	**0.59**	**301**	*e*P	Pg	05 26 58.1	-2.1
CAIG				*e*S	Sg	05 27 05.5	-2.7
MEIG	**Mezcala**	**1.19**	**5**	*e*P	Pn	05 27 06.7	-3.7
MEIG				*i* S	Sb	05 27 20.8	-5.0
TLIG	**Tlapa**	**1.39**	**54**	*e*P	Pn	05 27 09.5	-3.7
TLIG				*i* S	Sn	05 27 25.6	-5.7
PNIG	**Pinotepa**	**1.58**	**102**	*i* P	Pn	05 27 11.9	-3.9
PNIG				*i* S	Sn	05 27 30.9	-5.0
ARIG	**Puente Sto Nin**	**1.64**	**339**	*e*P	Pn	05 27 13.5	-3.1
ARIG				*e*S	Sn	05 27 32.4	-5.0

IDC ***13*** *05:27:43.1±1.4, 34.75N×138.39E, h0km, mb3.5/5, mb1 3.6/5, mb1mx3.4/47, mbtmp3.5/5, Error ellipse: s-maj=35.7km s-min=22.1km az=88.0*
ISCJB ***13*** *05:27:45.1±0.8, 35.49N±0.06×140.14E±0.08, h76km±5km, mb3.4/5, Error ellipse: s-maj=12.4km s-min=8.6km az=138.3*
JMA ***13*** *05:27:45.0±0.2, 35.63N×140.14E, h68km±2km, M2.9*
ISC 13 05:27:46.1±1.1, 35.52N±0.06×140.12E±0.07, h69km±8km, n14, σ0.968/19, mb3.5/5, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JCN	**Nagara**	**0.12**	**147**	P	**Pn**	**05 27 56.1**	**-0.2**
JCN				*e*S	**Sn**	**05 28 04.6**	**+0.8**
BSO3	**Boso 3**	**0.78**	**156**	P	**Pn**	**05 28 01.4**	**-0.2**
BSO3				*e*X		05 28 15.7	
JOD2	**Odawara 2**	**0.88**	**254**	P	**Pn**	**05 28 02.7**	**-0.5**
JOD2				S	**Sn**	**05 28 15.5**	**-0.3**
JIM2	**Oshima 3**	**0.98**	**216**	P	**Pn**	**05 28 04.1**	**-0.3**
JIM2				S	**Sn**	**05 28 17.7**	**-0.2**
JAG	**Ashikaga**	**1.06**	**329**	P	**Pn**	**05 28 03.8**	**-1.5**
JRY	**Ryogami san**	**1.11**	**297**	P	**Pn**	**05 28 05.6**	**-0.4**
JYN	**Shimob**	**1.29**	**270**	P	**Pn**	**05 28 08.0**	**-0.4**
JYN				S	**Sn**	**05 28 25.3**	**+0.3**
MJAR	**Matsushiro Arr**	**1.86**	**304**	Pn	**Pn**	**05 28 16.3**	**+0.4**
	9.2nm,0.3s,baz=141,slow=13,SNR=20						
MJAR				Sn	**Sn**	**05 28 39.6**	**+1.1**
	7.9nm,0.3s,baz=16,slow=16,SNR=10						
MAT	**Matsushiro**	**1.86**	**304**	P	**Pn**	**05 28 15.7**	**-0.2**
MAT				S	**Sn**	**05 28 38.7**	**+0.2**
ZALV	**Zalesovo Beam**	**42.19**	**314**	P	**P**	**05 35 33.0**	**+1.2**
	0.2nm,0.3s,baz=115,slow=6.5,SNR=2.4						
MKAR	**Makanchi Array**	**44.06**	**303**	P	**P**	**05 35 47.2**	**+0.1**
	0.2nm,0.2s,baz=101,slow=7.5,SNR=2.9						
KURBB	**Kurchatov Arra**	**46.13**	**309**	P	**P**	**05 36 03.3**	**-0.1**
	0.5nm,0.5s,baz=85,slow=7.4,SNR=5.7						
ILAR	**Eielson Array**	**51.33**	**32**	P	P	05 36 58.7	+16
	0.2nm,0.6s,baz=269,slow=7.2,SNR=3.0						
WRA	**Warramunga Arr**	**55.43**	**187**	P	**P**	**05 37 13.1**	**-0.4**
	0.2nm,0.4s,baz=0.6,slow=7.4,SNR=5.4						

IDC 13 05:32:22.2±2.5, 53.92N×86.51E, h0km, mb1 2.8/2, mb1mx2.7/50, mbtmp2.8/2, ML2.8/3, Error ellipse: s-maj=20.3km s-min=13.9km az=65.0, Southwestern Siberia

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
I46RU	**ZALESOVO INFRA**	**1.00**	**272**	*i*		05 40 00.0	
	baz=90,slow=318,SNR=3.7						
ZALV	**Zalesovo Beam**	**1.00**	**272**	Pg	Pg	05 32 41.5	+0.1
	1.0nm,0.3s,baz=93,slow=11,SNR=10						
ZALV				Lg	Lg	05 32 54.6	
	1.6nm,0.3s,baz=93,slow=30,SNR=8.3						
ZALV				Rg	Rg	05 33 00.8	
	4.1nm,0.5s,baz=96,slow=25,SNR=16						
KURBB	**Kurchatov Arra**	**5.91**	**239**	Pn	Pn	05 33 51.5	+0.6
	0.1nm,0.3s,baz=58,slow=13,SNR=7.4						
KURBB				Sn	Sn	05 34 59.0	-0.3
	0.0nm,0.3s,baz=51,slow=23,SNR=2.8						
KURBB				Lg	Lg	05 35 30.5	
	0.0nm,0.3s,baz=60,slow=33,SNR=3.3						
MKAR	**Makanchi Array**	**7.63**	**202**	Pn	Pn	05 34 15.7	+1.1
	0.1nm,0.3s,baz=24,slow=16,SNR=3.5						
BVAR	**Borovoye Array**	**9.66**	**271**	Pn	Pn	05 34 41.2	-1.1
	0.1nm,0.3s,baz=76,slow=15,SNR=2.8						

NIED ***13*** *05:40:00, 37.10N×142.50E, h11km, Mw4.5 Best double couple: M05.84000×10^15 NP1:φs348.00000°, δ44.00000°, λ-134.00000°. NP2:φs221.00000°, δ60.00000°, λ-56.00000°.*
JMA ***13*** *05:40:58.4±0.2, 37.07N×142.46E, h0km, M4.7*
JMA Felt I J1.
ISCJB ***13*** *05:40:60.0±1.1, 37.08N±0.02×142.40E±0.02, h5km±6km, mb4.6/147, MS3.9/17, Error ellipse: s-maj=4.0km s-min=3.1km az=166.5*
IDC ***13*** *05:41:00.3±0.4, 37.03N×142.45E, h0km, mb4.5/31, mb1 4.6/36, mb1mx4.6/50, mbtmp4.5/36, ML4.5/4, MS3.8/18, Ms1 3.8/18, ms1mx3.6/42, Error ellipse: s-maj=12.3km s-min=10.7km az=96.0*
BJI ***13*** *05:41:03.3, 37.08N×142.45E, h36km, mb4.7/58, mB4.9/39, Ms4.4/34, Ms7 4.3/25*
NEIC ***13*** *05:41:05.9±0.1, 37.04N×142.35E, h35km, mb4.7/85, Error ellipse: s-maj=4.0km s-min=2.7km az=156.0*
MOS ***13*** *05:41:05.2±1.0, 37.48N×142.27E, h29km, mb4.8/62, Error ellipse: s-maj=7.3km s-min=4.9km az=98.2*
ISC 13 05:41:01.8±0.5, 37.10N±0.04×142.40E±0.04, h9km±2km, h9km:pP-P, n296, σ1.959/322, mb4.7/147, MS3.9/17, 5C-1D, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JFK	**Kawauchi**	**1.25**	**283**	P	**Pb**	**05 41 23.5**	**-2.0**
JFK				S	**Sn**	**05 41 41.5**	**-0.8**
ONAJ	**Iwakimizuishiy**	**1.28**	**271**	P	**Pn**	**05 41 23.8**	**-2.1**
ONAJ				S	**Sn**	**05 41 43.2**	**0.0**
JMM	**Marumori**	**1.49**	**301**	P	**Pn**	**05 41 27.0**	**-1.7**
JMM				*e*S	**Sn**	**05 41 47.8**	**-0.5**
JIO	**Ouri**	**1.59**	**329**	P	**Pn**	**05 41 28.4**	**-1.7**
JIO				*e*S	**Sn**	**05 41 49.9**	**-0.8**
JFT	**Otama**	**1.70**	**285**	P	**Pn**	**05 41 31.0**	**-0.6**
JFT				*e*S	**Sg**	**05 41 54.8**	**-1.6**
JMK	**Ichinoseki**	**2.07**	**334**	P	**Pn**	**05 41 36.1**	**-0.6**
JYK	**Kaneyama**	**2.43**	**319**	P	**Pn**	**05 41 41.3**	**-0.3**
JAG	**Ashikaga**	**2.46**	**255**	P	**Pn**	**05 41 41.4**	**-0.7**
JAG				*e*S	**Sn**	**05 42 12.5**	**+0.3**
JOM	**Ohasama**	**2.52**	**340**	P	**Pn**	**05 41 42.7**	**-0.3**
JOM				*e*S	**Sn**	**05 42 13.9**	**0.0**
JNS	**Sasagawa**	**2.55**	**287**	P	**Pn**	**05 41 45.0**	**+1.6**
BSO1	**Boso 1**	**2.70**	**206**	P	**Pn**	**05 41 44.9**	**0.0**
JAW	**Awa shima**	**2.84**	**299**	P	**Pn**	**05 41 48.9**	**+1.6**
JRY	**Ryogami san**	**3.02**	**250**	P	**Pn**	**05 41 49.1**	**-0.7**
JOD2	**Odawara 2**	**3.24**	**237**	P	**Pn**	**05 41 53.2**	**+0.3**
MJAR	**Matsushiro Arr**	**3.41**	**262**	Pn	**Pn**	**05 41 55.8**	**+0.7**
	29nm,0.3s,baz=87,slow=15,SNR=95						
MJAR				Sn	**Sn**	**05 42 38.8**	**+3.1**
	25nm,0.3s,baz=93,slow=10,SNR=4.9						
MAJO	**Matsushiro**	**3.41**	**262**	*i* P	**Pn**	**05 41 57.7**	**+2.5**
MAJO	**Matsushiro**	**3.41**	**262**	*e*Pn	**Pn**	**05 41 56.3**	**+1.2**
MJB9	**Matsu-Tunnel**	**3.41**	**262**	*e*Pn	**Pn**	**05 41 55.5**	**+0.3**
JHJ2	**Mitsune**	**4.51**	**209**	*e*Pn	**Pn**	**05 42 09.0**	**-1.2**
JHJ2				*e*Sn	**Sn**	**05 43 00.0**	**-2.7**
JHJ	**Hachijo jima 2**	**4.51**	**209**	Pn	**Pn**	**05 42 08.3**	**-2.0**
	155nm,0.3s,baz=256,slow=23,SNR=5.5						
JHJ				Sn	**Sn**	**05 43 02.7**	**-0.1**
	135nm,0.3s,baz=52,slow=21,SNR=3.6						
INU	**Inuyama**	**4.69**	**250**	*e*Pn	**Pn**	**05 42 14.9**	**+2.1**
INU				*e*Sn	**Sn**	**05 43 03.2**	**-4.0**
ERM	**Erimo**	**4.94**	**7**	*e*P	**Pn**	**05 42 16.2**	**0.0**
ERM				*e*		05 43 14.0	
ERM	**Erimo**	**4.94**	**7**	*e*Pn	**Pn**	**05 42 16.2**	**0.0**
ERM				*e*Sn	**Sn**	**05 43 14.0**	**+0.5**
ASAJ	**Asahikawa**	**7.01**	**1**	Pn	**Pn**	**05 42 42.6**	**-2.1**
	14nm,0.3s,baz=3.7,slow=27,SNR=30						
ASAJ	**Asahikawa**	**7.01**	**1**	*e*Pn	**Pn**	**05 42 42.6**	**-2.1**
ASAJ				*e*Sn	**Sn**	**05 44 05.4**	**+1.0**
YUK	**Yuzh-Kuril'sk**	**7.41**	**20**	*e*P	**Pn**	**05 42 47.7**	**-2.4**
YUK				*e*S	Sn	05 44 05.7	-8.5
YUK					pmax pmax		
	comp=Z,157nm,0.6s						
YUK					pmax pmax		
	comp=N,146nm,0.4s						
YUK					pmax pmax		
	comp=E,114nm,0.3s						
YUK					MLR MLR		
	comp=Z,819nm,14.0s						
YUK					MLR MLR		
	comp=N,693nm,13.0s						
YUK					MLR MLR		
	comp=E,739nm,11.0s						
SHO	**Shikotan**	**7.56**	**25**	*e*P	**Pn**	**05 42 49.5**	**-2.6**
SHO				*e*S	Sn	05 44 08.8	-9.0
SHO					pmax pmax		
	comp=Z,92nm,0.7s						
SHO					pmax pmax		
	comp=E,39nm,0.4s						
SHO					pmax pmax		
	comp=N,38nm,0.5s						
KUR	**Kuril'sk**	**9.11**	**25**	*i* P	**Pn**	**05 43 13.4**	**0.0**
KUR				*i* S	**Sn**	**05 44 49.0**	**-7.0**
KUR					pmax pmax		
	comp=N,21nm,0.4s						
KUR					pmax pmax		
	comp=Z,21nm,0.4s						
KUR					pmax pmax		
	comp=E,17nm,0.5s						
KUR					pmax pmax		
	comp=Z,221nm,3.5s						
KUR					smax smax		
	comp=N,78nm,0.6s						
KUR					smax smax		
	comp=E,48nm,0.6s						
KUR					pmax pmax		
	comp=N,232nm,3.9s						
KUR					pmax pmax		
	comp=E,219nm,3.9s						
YSS	**Yuzh-Sakhalins**	**9.85**	**1**	*e*P	**Pn**	**05 43 22.8**	**-0.8**
YSS				*e*S	**Sn**	**05 45 07.5**	**-6.7**
YSS					pmax pmax		
	comp=Z,20nm,0.8s						
YSS					pmax pmax		
	comp=Z,100nm,4.0s						
YSS					MLR MLR		
	comp=Z,300nm,11.0s						
YSS	**Yuzh-Sakhalins**	**9.85**	**1**	*e*Pn	**Pn**	**05 43 22.8**	**-0.8**
CBIJ	**Chichi jima**	**9.98**	**181**	Pn	**Pn**	**05 43 22.6**	**-2.7**
JCJ	**Chichijima**	**9.98**	**181**	Pn	**Pn**	**05 43 22.6**	**-2.7**
	comp=Z,19nm,0.3s,baz=284,slow=19,SNR=5.5						
VLA	**Vladivostok**	**10.04**	**310**	*i* P	**Pn**	**05 43 30.0**	**+3.8**
JNU	**Nakatsue**	**10.23**	**251**	Pn	**Pn**	**05 43 31.4**	**+2.5**
	comp=Z,0.7nm,0.3s,baz=61,slow=11,SNR=11						
JNU				LR	LR	05 47 10.1	
	comp=Z,139nm,20.5s,baz=110,slow=36						
USRK	**Ussuriysk Ar.**	**10.62**	**315**	Pn	**Pn**	**05 43 36.5**	**+2.4**
	comp=Z,0.9nm,0.3s,baz=126,slow=12,SNR=35						
USRK				LR	LR	05 47 23.8	
	comp=Z,423nm,20.2s,baz=114,slow=36						
KSRS	**Korea Array**	**11.54**	**276**	Pn	**Pn**	**05 43 49.4**	**+2.7**
	comp=Z,0.5nm,0.3s,baz=90,slow=12,SNR=18						
KSRS				LR	LR	05 48 06.8	
	comp=Z,488nm,18.5s,baz=77,slow=37						
KS01	**Wonju Array Si**	**11.56**	**276**	*e*Pn	**Pn**	**05 43 47.1**	**+0.1**
KS15	**Wonju Array Si**	**11.57**	**276**	*e*Pn	**Pn**	**05 43 48.2**	**+1.1**
KSAR	**Wonju Array Be**	**11.57**	**276**	P	**Pn**	**05 43 49.4**	**+2.3**
KSAR	**Wonju Array Be**	**11.57**	**276**	Pn	**Pn**	**05 43 49.4**	**+2.3**
MDJ	**Mudanjiang**	**12.25**	**312**	P	**Pn**	**05 43 58.1**	**+1.7**
MDJ				S	**Sn**	**05 46 09.6**	**-3.5**
MDJ				ScP	**ScP**	**05 53 10.0**	**-1.9**
MDJ				PcS	**PcS**	**05 53 13.8**	**+0.9**
MDJ					pmax pmax		
	comp=Z,5.0nm,0.9s						
MDJ					pmax pmax		
	comp=Z,40nm,3.8s						
MDJ	**Mudanjiang**	**12.25**	**312**	*e*Pn	**Pn**	**05 43 58.9**	**+2.5**
	comp=Z,26nm,0.8s						
TYV	**Tymovskoe**	**13.76**	**1**	*e*P	**Pn**	**05 44 15.5**	**-1.5**
TYV					pmax pmax		
	comp=Z,9.0nm,0.4s						
TYV					MLR MLR		
	comp=E,2μm,16.0s						
TYV					MLR MLR		
	comp=Z,1μm,14.0s						
KLR	**Kul'dur**	**14.38**	**331**	Pn	**Pn**	**05 44 23.8**	**-1.7**
	comp=Z,0.7nm,0.3s,baz=151,slow=13,SNR=11						
KLR				LR	LR	05 49 55.6	
	comp=Z,500nm,18.5s,baz=148,slow=37						
CN2	**Changchun**	**14.53**	**303**	*e*P	**P**	**05 44 30.9**	**-3.2**
CN2					pmax pmax		
	comp=Z,10.0nm,0.4s						
NKL	**Nikolayevsk**	**16.10**	**356**	*e*P	**Pn**	**05 44 44.0**	**-4.1**
NKL					pmax pmax		
	comp=N,13nm,1.0s						
NKL					pmax pmax		
	comp=Z,22nm,1.0s						
NKL					MLR MLR		
	comp=N,450nm,16.0s						
NKL					MLR MLR		
	comp=Z,500nm,16.0s						
DL2	**Dalian**	**16.47**	**283**	P	**P**	**05 44 56.3**	**+0.6**
DL2				*e*S	**Sn**	**05 47 55.9**	**0.0**
DL2					pmax pmax		
	comp=Z,53nm,0.8s						
NJ2	**Nanjing**	**20.01**	**262**	*e*P	**P**	**05 45 34.8**	**0.0**
NJ2					pmax pmax		
	comp=Z,10.0nm,0.7s						
TIA	**Tai'an**	**20.28**	**275**	*e*P	**P**	**05 45 37.3**	**-0.5**
TIA					pmax pmax		
	comp=Z,10.0nm,1.1s						
BJI	**Beijing**	**20.69**	**286**	P	**P**	**05 45 42.6**	**+0.5**
BJI				S	**S**	**05 49 33.0**	**-0.1**
BJI					pmax pmax		
	comp=Z,13nm,0.8s						
BJI					pmax pmax		
	comp=Z,130nm,4.8s						
BJI					LR LR		
	comp=Z,310nm,14.9s						
BJI					LR LR		
	comp=Z,150nm,13.6s						
MA2	**Magadan**	**23.13**	**11**	P	**P**	**05 46 09.0**	**+1.0**
	comp=Z,21nm,0.8s,baz=222,slow=11,SNR=7.6						
MA2				LR	LR	05 55 56.0	
	comp=Z,152nm,18.2s,baz=278,slow=39						
WHN	**Wuhan**	**24.15**	**263**	P	**P**	**05 46 19.5**	**+1.3**
HHC	**Hu-ho-hao-te**	**24.20**	**288**	*e*P	**P**	**05 46 18.4**	**-0.3**
HHC				pP	sP	05 46 27.6	+4.9
HHC				sP	pP	05 46 31.6	+10
HHC				S	**S**	**05 50 30.9**	**-6.1**
HHC					pmax pmax		
	comp=Z,23nm,0.8s						
HHC					pmax pmax		
	comp=Z,69nm,11.6s						
HHC					LR LR		
	comp=Z,890nm,12.3s						
HHC					LR LR		
	comp=Z,860nm,12.9s						
HHC					LR LR		
	comp=Z,880nm,14.7s						
YAK	**Yakutsk**	**26.18**	**346**	P	**P**	**05 46 36.6**	**+0.3**
	comp=Z,23nm,0.4s,baz=19,slow=1.0,SNR=4.5						
YAK	**Yakutsk**	**26.18**	**346**	*e*P	**P**	**05 46 35.8**	**-0.5**
YAK				*e*S	**S**	**05 51 07.4**	**-0.7**
YAK				*e*		05 57 28.5	
YAK					pmax pmax		
	comp=Z,24nm,1.0s						
YAK					pmax pmax		
	comp=E,4.0nm,1.0s						
YAK					pmax pmax		
	comp=N,9.0nm,1.0s						
YAK					smax smax		
	comp=N,64nm,2.3s						
YAK					smax smax		
	comp=E,32nm,2.0s						
YAK					pmax pmax		
	comp=N,273nm,13.0s						
YAK					pmax pmax		
	comp=E,143nm,12.0s						
SEY	**Seymchan**	**26.58**	**10**	P	**P**	**05 46 41.0**	**+1.1**
	comp=E,7.3nm,0.6s,baz=182,slow=7.6,SNR=20						
SEY	**Seymchan**	**26.58**	**10**	P	**P**	**05 46 41.0**	**+1.1**
SEY				pmax	pmax		
	comp=Z,7.0nm,0.6s						
XAN	**Xi'an**	**27.32**	**274**	P	**P**	**05 46 47.8**	**+0.8**
XAN				pP	sP	05 46 53.4	+2.4
XAN				pmax	pmax		
	comp=Z,10.0nm,0.7s						
H11N2	**WAKE ISLAND Hy**	**27.51**	**122**	T	T	06 15 47.1	
	baz=315,slow=75,SNR=114						
H11N1	**WAKE ISLAND Hy**	**27.52**	**122**	T	T	06 16 03.3	
	baz=315,slow=75,SNR=139						
H11N3	**WAKE ISLAND Hy**	**27.53**	**122**	T	T	06 15 48.2	
	baz=315,slow=75,SNR=120						
BOD	**Bodaibo**	**27.90**	**327**	*e*P	**P**	**05 46 51.1**	**-0.7**
BOD				pmax	pmax		
	comp=Z,15nm,1.0s						
ULN	**Ulaanbaatar**	**27.97**	**304**	*e*P	**P**	**05 46 52.8**	**0.0**
ULN				pmax	pmax		
	comp=Z,9.0nm,0.8s						
ULN	**Ulaanbaatar**	**27.97**	**304**	*e*P	**P**	**05 46 52.8**	**0.0**
	comp=Z,8.6nm,0.8s						
ENH	**Enshi**	**28.12**	**266**	*e*P	**P**	**05 46 54.0**	**-0.1**
	comp=Z,28nm,0.7s						
H11S1	**WAKE ISLAND Hy**	**28.24**	**124**	T	T	06 16 43.0	
	baz=317,slow=76,SNR=166						
H11S3	**WAKE ISLAND Hy**	**28.24**	**124**	T	T	06 16 41.1	
	baz=317,slow=76,SNR=376						
H11S2	**WAKE ISLAND Hy**	**28.26**	**124**	T	T	06 16 43.4	
	baz=317,slow=76,SNR=129						
SONA1	**Songino Array**	**28.40**	**304**	*e*P	**P**	**05 46 56.6**	**0.0**
SONM	**Songino Array**	**28.40**	**304**	P	**P**	**05 46 56.6**	**0.0**
	comp=Z,12nm,0.8s,baz=101,slow=8.8,SNR=48						
SONM				LR	LR	05 58 37.2	
	comp=Z,107nm,21.2s,baz=60,slow=37						
LZH	**Lanzhou**	**30.83**	**280**	*e*P	**P**	**05 47 20.9**	**+2.6**
LZH				pP	sP	05 47 28.4	+6.1
LZH				sP	pP	05 47 32.1	+11
LZH				pmax	pmax		
	comp=Z,14nm,1.0s						
ZAK	**Zakamensk**	**30.85**	**308**	*e*P	**P**	**05 47 17.9**	**-0.3**
ZAK				pmax	pmax		
	comp=Z,8.0nm,1.0s						
TLY	**Talaya**	**30.88**	**311**	P	**P**	**05 47 18.9**	**+0.5**
	comp=Z,4.8nm,0.6s,baz=124,slow=8.0,SNR=8.0						
TLY				LR	LR	06 00 18.0	
	comp=Z,166nm,18.2s,baz=106,slow=37						
TLY	**Talaya**	**30.88**	**311**	*e*P	**P**	**05 47 18.7**	**+0.3**
TLY				pmax	pmax		
	comp=Z,8.0nm,0.9s						
TLY				MLR	MLR		
	comp=Z,133nm,12.0s						
TLY	**Talaya**	**30.88**	**311**	*e*P	**P**	**05 47 18.9**	**+0.5**
	comp=Z,6.4nm,0.8s						
GYA	**Guiyang**	**32.01**	**261**	*e*P	**P**	**05 47 28.9**	**+0.2**
GYA				pmax	pmax		
	comp=Z,10.0nm,0.8s						
CD2	**Chengdu**	**32.46**	**271**	P	**P**	**05 47 31.1**	**-1.4**
GTA	**Gaotai**	**33.30**	**287**	*e*P	**P**	**05 47 41.0**	**+1.1**
GTA				pP	sP	05 47 50.1	+6.2
GTA				sP	pP	05 47 54.4	+12
GTA				pmax	pmax		
	comp=Z,4.0nm,0.7s						
BILL	**Bilibino**	**33.74**	**16**	*i* P	**P**	**05 47 43.2**	**-0.1**
BILL				*i*		05 48 57.7	
BILL				*i*		05 50 23.2	
BILL				pmax	pmax		
	comp=Z,8.0nm,1.2s						
BILL	**Bilibino**	**33.74**	**16**	*e*P	**P**	**05 47 44.8**	**+1.5**
	comp=Z,13nm,1.3s						
TIXI	**Tiksi**	**35.32**	**353**	P	**P**	**05 47 56.3**	**-0.6**
	comp=Z,1.9nm,0.5s,baz=150,slow=8.1,SNR=6.1						
TIXI	**Tiksi**	**35.32**	**353**	*e*P	**P**	**05 47 57.2**	**+0.4**
TIXI				pmax	pmax		
	comp=Z,2.0nm,0.7s						
TIXI	**Tiksi**	**35.32**	**353**	*e*P	**P**	**05 47 58.2**	**+1.4**
	comp=Z,2.9nm,0.8s						
KMI	**Kunming**	**35.75**	**262**	P	**P**	**05 48 03.0**	**+1.7**
KMI				pP	sP	05 48 12.9	+7.5
KMI				sP	pP	05 48 16.5	+12
KMI				pmax	pmax		
	comp=Z,21nm,0.6s						
KMI				pmax	pmax		
	comp=Z,53nm,3.1s						
KMI				LR	LR		
	comp=Z,260nm,15.5s						
KMI				LR	LR		
	comp=Z,170nm,19.1s						
KMI				LR	LR		
	comp=Z,190nm,19.1s						
CRAI	**Chiangrai**	**40.16**	**257**	P	**P**	**05 48 42.9**	**+4.5**
	comp=Z,7.5nm,1.0s						
CMAI	**Chiengmai2**	**41.37**	**258**	P	**P**	**05 48 52.5**	**+4.0**
	comp=Z,48nm,1.1s						
WMQ	**Urumqi**	**41.51**	**297**	*e*P	**P**	**05 48 50.6**	**+1.2**
WMQ				pP	sP	05 49 00.5	+7.1
WMQ				sP	pP	05 49 05.4	+13
WMQ				PcP	**PcP**	**05 50 46.1**	**-0.7**
WMQ				pmax	pmax		
	comp=Z,6.0nm,0.6s						
WMQ				pmax	pmax		
	comp=Z,89nm,5.4s						
PBKT	**Sadao Pong**	**41.83**	**252**	P	P	05 48 57.6	+5.5
	comp=Z,7.7nm,1.0s,comp=Z,854nm						
CMMT	**Chiang Mai**	**42.07**	**256**	P	P	05 49 02.8	+8.7
	comp=Z,5.9nm,0.9s						
CHTO	**Chiang Mai**	**42.07**	**256**	P	P	05 49 02.9	+8.8
	comp=Z,21nm,0.8s						
CMAR	**Chiang Mai Arr**	**42.28**	**256**	P	**P**	**05 48 55.8**	**0.0**
	comp=Z,1.7nm,0.8s,baz=42,slow=5.9,SNR=6.7						
CM01	**Chiang Mai Arr**	**42.28**	**256**	*e*P	**P**	**05 48 56.1**	**+0.2**
ZAA0	**Zalesovo Array**	**42.45**	**312**	*e*P	**P**	**05 48 56.7**	**-0.1**
ZAA0				*e*P	**pP**	**05 48 56.9**	**-2.8**
ZALV	**Zalesovo Beam**	**42.45**	**312**	P	**P**	**05 48 56.8**	**0.0**
	comp=Z,7.1nm,0.7s,baz=100,slow=6.9,SNR=22						
ZALV				PcP	**PcP**	**05 50 50.1**	**+0.5**
	comp=Z,0.5nm,0.3s,baz=170,slow=15,SNR=2.5						
ZALV				LR	LR	06 07 23.7	
	comp=Z,181nm,18.0s,baz=70,slow=37						
NVS	**Novosibirsk**	**43.36**	**314**	*e*P	**P**	**05 49 04.1**	**0.0**
NVS				pmax	pmax		
	comp=Z,9.0nm,0.6s						
NVS				pmax	pmax		
	comp=N,1.0nm,0.2s						
NVS				pmax	pmax		
	comp=E,1.0nm,0.2s						
NRIK	**Noril'sk**	**43.54**	**335**	P	**P**	**05 49 05.3**	**-0.1**
	comp=E,2.3nm,0.4s,baz=131,slow=3.0,SNR=3.4						
NRIK				LR	LR	06 08 37.6	
	comp=E,264nm,18.4s,baz=110,slow=38						
MK31	**Makanchi Array**	**44.75**	**302**	*i* P	**P**	**05 49 15.1**	**-0.4**
MK31				pmax	pmax		
	comp=Z,12nm,0.7s						
MKAR	**Makanchi Array**	**44.75**	**302**

PMR pmax pmax
comp=Z,15nm,1.1s
PMR Palmer 48.10 37 *e*P **P 05 49 41.9 +0.4**
comp=Z,15nm,1.1s
MCK McKinley 48.14 34 *e*P **P 05 49 42.1 +0.3**
MCK *e**PP **sP 05 49 49.4 +3.5**
MCK McKinley 48.14 34 *e*P **P 05 49 42.1 +0.3**
MCK *e*pP **sP 05 49 49.4 +3.5**
RND Reindeer 48.18 34 *e*P **P 05 49 42.3 +0.1**
RND *e**PP **sP 05 49 46.3 0.0**
RND Reindeer 48.18 34 *e*P **P 05 49 42.3 +0.1**
RND *e*pP **sP 05 49 46.3 0.0**
MDM Murphy Dome 48.44 32 *e*P **P 05 49 45.2 +1.1**
comp=Z,19nm,1.0s
SML Sawmill 48.47 36 *e*P **P 05 49 45.3 +0.8**
SML pmax pmax
comp=Z,12nm,0.8s
SML Sawmill 48.47 36 *e*P **P 05 49 45.3 +0.8**
comp=Z,12nm,0.8s
WRH Wood River Hil 48.50 33 *e*P **P 05 49 45.3 +0.7**
comp=Z,4.4nm,0.8s
COLA College 48.60 32⇑ *e*P **P 05 49 46.4 +1.1**
COLA pmax pmax
comp=Z,16nm,2.4s
COLA College 48.60 32 *e*P **P 05 49 46.3 +1.0**
comp=Z,5.6nm,0.8s
IL1 Eielson Array 49.02 32 *e*P **P 05 49 48.7 +0.1**
ILAR Eielson Array 49.02 32 P **P 05 49 48.5 0.0**
comp=Z,3.5nm,0.8s,baz=267,slow=6.4,SNR=44
ILB Eielson Array 49.02 32 *e*P **P 05 49 48.3 -0.2**
KLU Klutina 49.64 37 *e*P **P 05 49 54.3 +0.9**
comp=Z,9.9nm,0.7s
TKM2 Tokmak 2 50.29 299 P **P 05 49 59.3 +0.5**
TKM2 pmax pmax
comp=Z,12nm,1.0s
TKM2 Tokmak 2 50.29 299 *e*P **P 05 49 59.2 +0.5**
comp=Z,12nm,0.8s
BMRM Bremner River 50.33 37 *e*P **P 05 49 59.6 +1.0**
comp=Z,14nm,0.9s
MENT Mentasta 50.53 35 *e*P **P 05 50 01.7 +1.5**
comp=Z,7.0nm,0.9s
COEN Coen 50.79 179 *e*P **P 05 50 02.3 -0.2**
comp=Z,20nm,1.1s
CHKZ Chkalovo 50.84 313 P **P 05 50 00.6 -1.9**
CHKZ pmax pmax
comp=Z,4.0nm,0.8s
OTUK Ortayu 51.02 306 P **P 05 50 03.8 -0.3**
OTUK pmax pmax
comp=Z,10.0nm,0.8s
KSH Kashi 51.10 294 *e*P P 05 50 12.8 +8.0
KSH *e*pP sP 05 50 22.8 +14
KSH *e*sP pP 05 50 26.6 +19
KSH PcS **PcS 05 55 22.8 +4.5**
KSH S **S 05 57 31.0 +8.3**
KSH pmax pmax
comp=Z,5.0nm,0.7s
KSH pmax pmax
comp=Z,130nm,4.7s
KSH LR LR
comp=Z,200nm,6.6s
KSH LR LR
comp=Z,180nm,6.6s
BVAR Borovoye Array 51.11 312 P **P 05 50 04.5 -0.1**
comp=Z,1.3nm,0.5s,baz=70,slow=8.5,SNR=9.8
AAK Ala-Archa 51.15 299 P **P 05 50 07.1 +1.8**
AAK pmax pmax
comp=Z,5.0nm,0.9s
AAK Ala-Archa 51.15 299 *e*P **P 05 50 05.4 +0.1**
comp=Z,5.0nm,0.8s
AAK *e*P **pP 05 50 05.5 -2.7**
BRVK Borovoye 51.16 312 *i* P **P 05 50 05.3 +0.3**
BRVK pmax pmax
comp=Z,3.0nm,0.8s
EKS2 Erkin-Say 51.65 299 *e*P **P 05 50 09.5 +0.6**
EKS2 pmax pmax
comp=Z,4.0nm,0.8s
EKS2 Erkin-Say 51.65 299 *e*P **P 05 50 09.5 +0.6**
comp=Z,4.2nm,0.8s
ZRNK Zerenda 51.94 313 P **P 05 50 10.3 -0.5**
ZRNK pmax pmax
comp=Z,4.0nm,0.8s
MNAS Manas 52.59 299 P **P 05 50 16.2 +0.2**
MNAS pmax pmax
comp=Z,9.0nm,0.7s
SFK Sufi-Kurgan 52.72 296 P **P 05 50 17.5 +0.4**
SFK pmax pmax
comp=Z,7.0nm,0.8s
KK31 Karatay Array 53.77 300 P **P 05 50 24.0 -0.5**
KK31 pmax pmax
comp=Z,3.0nm,0.6s
KKAR Karatay Array 53.77 300 *e*P **P 05 50 24.8 +0.3**
KKAR Karatay Array 53.77 300 *e*P **P 05 50 24.8 +0.3**
INK Inuvik 53.97 27 P **P 05 50 25.9 +0.4**
comp=Z,2.5nm,0.7s,baz=295,slow=6.7,SNR=16
INK Inuvik 53.97 27 *e*P **P 05 50 26.3 +0.8**
INK pmax pmax
comp=Z,7.0nm,0.8s
INK Inuvik 53.97 27 *e*P **P 05 50 26.2 +0.8**
comp=Z,7.2nm,0.8s
ARU Arti 56.83 319 LR LR 06 19 45.1
comp=Z,101nm,19.4s,baz=74,slow=41
ARU Arti 56.83 319*c i*P **P 05 50 46.1 -0.2**
ARU 05 52 51.9
ARU S **S 05 58 36.5 -3.0**
ARU SS **SS 06 02 24.4 -2.6**
ARU pmax pmax
comp=Z,24nm,1.7s
ARU Arti 56.83 319 *e*P **P 05 50 46.1 -0.2**
comp=Z,9.4nm,0.7s
WRAB Tennant Creek 57.23 189*ce*P **P 05 50 47.8 -1.7**
WRAB pmax pmax
comp=Z,70nm,1.2s
WRAB Tennant Creek 57.23 189 *e*P **P 05 50 47.9 -1.5**
comp=Z,17nm,0.6s
WB2 Warramunga Arr 57.24 189 *e*P **P 05 50 48.1 -1.4**
comp=Z,17nm,0.7s
WRA Warramunga Arr 57.24 189 P **P 05 50 48.1 -1.5**
comp=Z,17nm,0.6s,baz=7.3,slow=7.1,SNR=68
AB31 Akbulak array 58.50 310 *i* P **P 05 50 56.5 -1.7**
AB31 pmax pmax
comp=Z,5.0nm,0.6s
ABKAR Akbulak array 58.50 310 *e*P **P 05 50 57.7 -0.5**
AKTO Aktyubinsk 59.22 312 P **P 05 51 02.4 -0.7**
AKTO pmax pmax
comp=Z,6.0nm,0.9s
AS01 Alice Springs 60.96 189 *e*P **P 05 51 14.3 -1.0**
AS31 Alice Springs 60.97 189 *e*P **P 05 51 14.8 -0.6**
comp=Z,3.3nm,0.6s
ASAR Alice Springs 60.97 189 P **P 05 51 14.6 -0.8**
comp=Z,7.7nm,0.7s,baz=15,slow=7.0,SNR=53
MBWA Marble Bar 61.76 204 *e*P **P 05 51 20.3 -0.4**
comp=Z,16nm,1.3s
RES Resolute Bay 62.34 15 *e*P **P 05 51 24.2 +0.2**
RES pmax pmax
comp=Z,13nm,0.9s
RES Resolute Bay 62.34 15 *e*P **P 05 51 24.2 +0.2**
comp=Z,13nm,0.9s
EIDS Eidsvold 62.67 171 *e*P **P 05 51 26.5 -0.2**
comp=Z,5.8nm,0.6s
DZM Mont Dzumac 63.07 155 P **P 05 51 30.6 +1.0**
comp=Z,5.9nm,1.0s,baz=30,slow=12,SNR=4.4
YKA Yellowknife Ar 63.35 30 P **P 05 51 29.9 -1.0**
comp=Z,0.3nm,0.3s,baz=96,slow=32,SNR=20
YKB5 Yellowknife Ar 63.35 30 *e*P **P 05 51 31.0 +0.1**
KLMR Klimovskoe 64.12 328 P **P 05 51 35.8 -0.2**
KLMR pmax pmax
comp=Z,12nm,1.2s
ARCES ARCESS Array B 64.21 340 P **P 05 51 38.1 +1.6**
comp=Z,2.2nm,0.7s,baz=51,slow=8.4,SNR=6.7
ARCES LR LR 06 24 42.2
comp=Z,156nm,18.1s,baz=41,slow=41
GEYT Alibeck 64.49 299 P **P 05 51 40.0 +1.1**
comp=Z,2.3nm,0.4s,baz=252,slow=0.9,SNR=3.3
GEYT LR LR 06 21 09.9
comp=Z,65nm,18.8s,baz=25,slow=37
VRH Novokhopyorsk 68.06 318 *e*P **P 05 52 00.1 -1.4**
VRH pmax pmax
comp=Z,8.0nm,0.6s
STKA Stephens Creek 68.62 181 P **P 05 52 04.8 -0.2**
comp=Z,4.4nm,0.6s,baz=353,slow=9.0,SNR=11
LPSR Galich'ya Gora 68.75 320 *e*P **P 05 52 05.9 +0.1**
LPSR pmax pmax
comp=Z,20nm,1.8s
FIA1 FINESS Array S 69.12 333 *e*P **P 05 52 08.0 +0.1**
FIA1 *e*P **pP 05 52 08.3 -2.6**
FINES FINESS Array B 69.12 333 P **P 05 52 09.2 +1.3**
comp=Z,9.3nm,0.7s,baz=82,slow=14,SNR=34
FINES LR LR 06 27 15.9
comp=Z,115nm,19.2s,baz=55,slow=40
VSR Storozhevoye 69.40 319 *e*P **P**
VSR pmax pmax **05 52 09.8 0.0**
comp=Z,9.0nm,0.6s
BBOO Buckleboo 69.80 186 *e*P **P 05 52 12.1 -0.3**
comp=Z,11nm,0.7s
K05A Summer Lake 70.29 51 *e*P **P 05 52 16.9 +1.1**
comp=Z,20nm,1.1s
KBZ Khabaz 71.45 311 P **P 05 52 24.4 +1.9**
comp=Z,2.7nm,0.9s,baz=20,slow=12,SNR=3.0
KIV Kislovodsk 71.46 311 *e*P **P 05 52 24.4 +1.7**
KIV pmax pmax
comp=Z,11nm,1.0s
MFID Camas Ranch 73.00 48 *e*P **P 05 52 32.3 +0.4**
comp=Z,3.6nm,0.8s
CMB Columbia Colle 73.19 55 *e*P **P 05 52 33.8 +0.7**
CMB pmax pmax
comp=Z,6.0nm,0.9s
CMB Columbia Colle 73.19 55 *e*P **P 05 52 33.8 +0.7**
comp=Z,5.9nm,0.9s
FFC Flin Flon 73.22 33 *e*P **P 05 52 33.1 +0.2**
FFC pmax pmax
comp=Z,14nm,0.9s
FFC Flin Flon 73.22 33 *e*P **P 05 52 33.1 +0.2**
comp=Z,14nm,0.9s
LRM Limekiln Ridge 73.55 45 *e*P **P 05 52 35.9 +0.6**
LRM *e*pP **sP 05 52 42.9 +3.3**
FCC Fort Churchill 73.59 27 *e*P **P 05 52 34.8 -0.1**
FCC pmax pmax
comp=Z,17nm,1.2s
FCC Fort Churchill 73.59 27 *e*P **P 05 52 34.8 -0.1**
comp=Z,16nm,1.2s
DLMT Dillon 73.74 45 *e*P **P 05 52 36.5 +0.1**
comp=Z,5.8nm,0.8s
HLID Hailey 73.75 47 *e*P **P 05 52 37.2 +0.7**
comp=Z,3.5nm,1.1s
BOZ Bozeman (W) 74.11 45 *e*P **P 05 52 39.1 +0.6**
BOZ pmax pmax
comp=Z,7.0nm,0.8s
BOZ Bozeman (W) 74.11 45 *e*P **P 05 52 39.1 +0.6**
comp=Z,6.9nm,0.8s
NV01 Mina Array Sit 74.32 54 *e*P **P 05 52 40.4 +0.5**
NVAR Mina Array Bea 74.32 54 P **P 05 52 40.8 +0.8**
comp=Z,3.4nm,0.8s,baz=281,slow=5.8,SNR=27
NC204 NORSAR Array S 74.38 338 *e*P **P 05 52 40.1 +0.5**
NB2 NORSAR Subarra 74.43 338 P **P 05 52 40.4 +0.4**
comp=Z,7.3nm,1.0s,baz=39,slow=5.9
NOA NORSAR Array B 74.43 338 P **P 05 52 40.3 +0.4**
comp=Z,2.7nm,0.8s,baz=39,slow=5.8,SNR=12
NOA LR LR 06 30 33.9
AKASG Malin Array Be 74.72 323 P **P 05 52 41.7 0.0**
comp=Z,2.0nm,0.5s,baz=45,slow=6.1,SNR=13
AKASG LR LR 06 25 49.6
comp=Z,41nm,21.2s,baz=295,slow=36
KIEV Kiev 74.74 323⇓ *e*P **P 05 52 42.7 +0.9**
KIEV pmax pmax
comp=Z,15nm,1.9s
KIEV Kiev 74.74 323 *e*P **P 05 52 42.6 +0.8**
comp=Z,11nm,1.1s
AK11 Malin Array Si 74.77 323 *e*P **P 05 52 42.2 +0.2**
YMR Madison River 75.08 45 *e*P **P 05 52 45.0 +0.8**
comp=Z,4.6nm,0.7s
YFT Old Faithful 75.29 45 *e*P **P 05 52 48.2 +2.8**
comp=Z,5.5nm,0.8s
LKWY Lake 75.46 45 P **P 05 52 49.1 +2.6**
LKWY pmax pmax
comp=Z,3.0nm,0.9s
LKWY Lake 75.46 45 P **P 05 52 49.1 +2.6**
comp=Z,2.7nm,0.9s
H17A Grant Village 75.47 45 *e*P **P 05 52 48.7 +2.2**
comp=Z,9.7nm,0.8s
FXWY Fox Creek 75.67 46 *e*P **P 05 52 48.5 +0.7**
comp=Z,6.5nm,1.0s
RLMT Red Lodge 75.75 44 *e*P **P 05 52 49.0 +0.9**
comp=Z,16nm,1.5s
MOOW Moose Ponds 75.77 46 *e*P **P 05 52 49.5 +1.3**
comp=Z,5.3nm,1.1s
HVU Hansel Valley 75.78 48 *e*P **P 05 52 49.3 +1.1**
HVU pmax pmax
comp=Z,5.0nm,1.1s
HVU Hansel Valley 75.78 48 *e*P **P 05 52 49.3 +1.1**
comp=Z,4.9nm,1.1s
LOHW Long Hollow 75.93 46 *e*P **P 05 52 50.3 +1.1**
comp=Z,5.7nm,1.4s
SNOW Snow King Moun 75.94 46 *e*P **P 05 52 50.4 +1.1**
comp=Z,5.5nm,0.8s
REDW Red Top Meadow 75.94 46 *e*P **P 05 52 50.2 +0.9**
comp=Z,5.7nm,1.0s
R11A Troy Canyon, C 76.10 52 *e*P **P 05 52 50.5 +0.3**
comp=Z,7.0nm,1.1s
BGU Big Grassy Mou 76.14 49 *e*P **P 05 52 51.3 +1.0**
comp=Z,3.3nm,0.9s
LAO LASA Array 76.41 41 *e*P **P 05 52 52.6 +1.0**
comp=Z,9.9nm,1.0s
TPNV Topopah Spring 76.50 54 *e*P **P 05 52 52.6 +0.2**
TPNV pmax pmax
comp=Z,6.0nm,0.8s
TPNV Topopah Spring 76.50 54 *e*P **P 05 52 52.6 +0.2**
comp=Z,5.5nm,0.8s
HWUT Hardware Ranch 76.60 48 *e*P **P 05 52 53.3 +0.4**
comp=Z,9.5nm,1.1s
DUG Dugway, Tooele 76.72 50 *e*P **P 05 52 54.2 +0.6**
DUG pmax pmax
comp=Z,7.0nm,1.0s
DUG Dugway, Tooele 76.72 50 *e*P **P 05 52 54.2 +0.6**
comp=Z,7.2nm,1.0s
TCUT Toone Canyon 77.00 48 *e*P **P 05 52 56.3 +1.1**
comp=Z,49nm,1.9s
BW06 Boulder Array 77.06 46 *e*P **P 05 52 55.5 -0.1**
comp=Z,3.6nm,0.8s
PD31 Pinedale Array 77.06 46 *e*P **P 05 52 55.7 +0.2**
PDAR Pinedale Array 77.06 46 P **P 05 52 55.5 -0.1**
comp=Z,2.0nm,0.6s,baz=269,slow=2.3,SNR=21
JLU Jordanelle 77.29 49 *e*P **P 05 52 57.9 +1.0**
comp=Z,7.1nm,1.1s
NLU North Lily Min 77.31 49 *e*P **P 05 52 57.3 +0.3**
comp=Z,3.7nm,0.8s
MPU Maple Canyon 77.54 49 *e*P **P 05 52 58.9 +0.6**
comp=Z,4.4nm,0.8s
MSU Marysvale 78.13 51 *e*P **P 05 53 02.3 +0.6**
MSU Marysvale 78.13 51 *e*P **P 05 53 02.3 +0.6**
LCMT Little Creek M 78.39 52 *e*P **P 05 53 03.7 +0.7**
comp=Z,7.1nm,1.0s
P17A Butcher Ranch, 78.42 49 *e*P **P 05 53 03.5 +0.3**
comp=Z,8.0nm,0.8s
P18A Preston Nutter 78.62 49 *e*P **P 05 53 05.3 +0.9**
comp=Z,19nm,1.5s
KNB Kanab 78.65 52 *e*P **P 05 53 05.3 +0.8**
KNB pmax pmax
comp=Z,12nm,1.2s
KNB Kanab 78.65 52 *e*P **P 05 53 05.3 +0.8**
comp=Z,12nm,1.2s
BUR08 Bucovina Ar. S 78.73 322 *e*P **P 05 53 05.9 +1.3**
SRU San Rafael Swe 78.78 49 *e*P **P 05 53 05.7 +0.6**
SRU pmax pmax
comp=Z,10.0nm,0.8s
SRU San Rafael Swe 78.78 49 *e*P **P 05 53 05.7 +0.6**
comp=Z,10nm,0.8s
ULM Lac du Bonnet 79.01 34 P **P 05 53 06.2 +0.3**
comp=Z,1.7nm,0.6s,baz=9.4,slow=3.1,SNR=2.5
STHS Stebnicka Huta 79.36 325 *e*P **P 05 53 10.5 +2.6**
STHS *e* 05 53 15.0
STHS pmax pmax
comp=Z,3.0nm,0.9s
STHS Stebnicka Huta 79.36 325 *e*P **P 05 53 10.4 +2.6**
STHS *e*PCP **PcP 05 53 15.0 -1.0**
BRTR Keskin Array B 79.39 312 P **P 05 53 08.8 +0.3**
comp=Z,0.8nm,1.0s,baz=114,slow=11,SNR=2.9
BRTR LR LR 06 32 45.0
comp=Z,36nm,18.0s,baz=26,slow=39
O20A White River Ci 79.49 47 *e*P **P 05 53 09.2 +0.2**
comp=Z,6.6nm,1.0s
CRVS Cervenica-Dubn 79.62 325 *e*P **P 05 53 11.0 +1.6**
CRVS *e* 05 53 16.1
CRVS Cervenica-Dubn 79.62 325 *e*P **P**
CRVS *e*PCP **PcP 05 53 16.1 -1.1**
BR231 Keskin MP Arra 79.83 313 *e*P **P 05 53 14.7 +3.9**
PV09 Paradox Valley 80.00 49 *e*P **P 05 53 12.5 +0.5**
PV10 Paradox Valley 80.14 49 *e*P **P 05 53 13.8 +1.2**
PV04 Paradox Valley 80.21 49 *e*P **P 05 53 13.6 +0.7**
PV05 Paradox Valley 80.29 49 *e*P **P 05 53 14.5 +1.0**
N23A Red Feather La 80.33 46 *e*P **P 05 53 14.6 +0.9**
comp=Z,11nm,1.1s
LANS Liptovska Anna 80.35 326 *e*P **P 05 53 13.2 -0.1**
LANS Liptovska Anna 80.35 326 *e*P **P 05 53 13.2 -0.1**
Y14A Wickenburg 80.43 55 *e*P **P 05 53 14.1 +0.1**
comp=Z,27nm,0.8s
WUAZ Wupatki 80.50 53 *e*P **P 05 53 15.2 +0.7**
comp=Z,8.0nm,0.9s
PV01 Paradox Valley 80.58 49 *e*P **P 05 53 15.6 +0.6**
MORC Moravsky Berou 80.73 327 *e*P **P 05 53 16.4 +1.0**
MORC pmax pmax
comp=Z,27nm,1.0s
MORC Moravsky Berou 80.73 327 *e*P **P 05 53 16.4 +1.0**
comp=Z,27nm,1.0s
DPC Dobruska-Polom 80.82 328 *e*P **P 05 53 17.4 +1.6**
DPC Dobruska-Polom 80.82 328 *e*P **P 05 53 17.4 +1.6**
SMCO Snowmass 80.85 47 *e*P **P 05 53 17.4 +0.7**
comp=Z,17nm,1.9s
X16A Lo Mia Camp, P 81.14 53 *e*P **P 05 53 19.1 +1.1**
comp=Z,5.2nm,0.8s
MVCO Mesa Verde 81.21 50 *e*P **P 05 53 18.7 +0.3**
comp=Z,7.0nm,0.9s
BRG Berggiesshubel 81.39 330 *e*P **P 05 53 20.5 +1.7**
comp=Z,4.2nm,0.8s
BRG *e* 05 53 26.8
comp=Z,8.9nm,1.1s
BRG Berggiesshubel 81.39 330 *e*P **P 05 53 20.5 +1.7**
BRG *e* 05 53 26.8
BRG pmax pmax
comp=Z,10.0nm,0.8s
BRG pmax pmax
comp=Z,4.0nm,1.1s
CLL Collm 81.43 331 *e*P **P 05 53 17.0 -2.0**
CLL *e* 05 53 22.0
CLL *i* 05 53 27.4
comp=Z,9.0nm,0.8s
CLL Collm 81.43 331 *e*P **P 05 53 17.0 -2.0**
CLL *i* 05 53 27.4
PRU Pruhonice 81.83 329 *e*P **P 05 53 24.5 +3.4**
PRU *e*pP **PcP 05 53 29.9 +3.1**
PRU Pruhonice 81.83 329 *e*P **P 05 53 24.5 +3.4**
PRU *e* 05 53 29.9
S22A 4UR Ranch, Cre 81.87 48 *e*P **P 05 53 22.5 +0.5**
comp=Z,3.9nm,1.0s
EYMN Ely 82.65 33 *e*P **P 05 53 25.6 +0.1**
comp=Z,7.1nm,0.9s
CONA Conrad Observa 82.86 327 *i* pP pP 05 53 33.5 +3.7
comp=Z,6.6nm,1.0s
KHC Kasperske Hory 82.90 329 *e*P **P 05 53 27.7 +0.9**
KHC *e*PCP **PcP 05 53 34.0 +2.4**
KHC Kasperske Hory 82.90 329 *e*P **P 05 53 27.5 +0.7**
KHC pmax pmax
comp=Z,4.0nm,1.1s
KHC Kasperske Hory 82.90 329 *e*P **P 05 53 27.5 +0.7**
comp=Z,3.8nm,1.1s
TUC Tucson 82.90 55 *e*P **P 05 53 27.8 +0.6**
TUC pmax pmax
comp=Z,15nm,2.0s
TUC Tucson 82.90 55 *e*P **P 05 53 27.8 +0.6**
comp=Z,15nm,2.0s
GERES GERESS Array B 83.07 329 P **P 05 53 28.4 +0.7**
comp=Z,0.5nm,0.2s,baz=53,slow=5.2,SNR=4.5
GEA0 GERESS Array S 83.07 329 *e*P **P 05 53 28.4 +0.7**
T25A Trinidad 83.72 48 *e*P **P 05 53 32.2 +0.7**
comp=Z,8.8nm,0.9s
ANMO Albuquerque 83.94 50 *e*P **P 05 53 32.8 +0.2**
ANMO pmax pmax
comp=Z,9.0nm,1.2s
ANMO Albuquerque 83.94 50 *e*P **P 05 53 32.8 +0.2**
comp=Z,8.7nm,1.2s
PPT Papeete 83.96 117 LR LR 06 22 03.4
comp=Z,36nm,21.5s,baz=293,slow=29
319A Douglas 84.48 55 *e*P **P 05 53 36.0 +0.7**
comp=Z,13nm,1.2s
121A Cookes Peak, D 84.69 53 *e*P **P 05 53 37.2 +0.8**
comp=Z,3.3nm,1.0s
FETA Feichten 85.73 329 *i* pP pP 05 53 49.1 +4.6
comp=Z,6.1nm,1.0s
DAVA Damuels 85.87 330 *i* pP pP 05 53 49.2 +4.0
comp=Z,12nm,1.1s
TX31 Lajitas Ar. Si 89.45 53 *e*P **P 05 53 59.1 -0.4**
TX31 *e*P **PcP 05 53 59.4 -1.5**
TXAR Lajitas Array 89.46 53 P **P 05 53 59.5 -0.1**
comp=Z,1.9nm,0.6s,baz=301,slow=3.3,SNR=31
TORD Torodi Ar. Bea 117.84 316 PKP **PKPdf 05 59 48.0 -1.2**
comp=Z,0.5nm,0.8s,baz=350,slow=2.2,SNR=3.1
LPAZ La Paz 145.98 61 PKPbc **PKPdf 06 00 42.2 -0.2**
comp=Z,3.2nm,0.5s,baz=345,slow=5.4,SNR=26

IDC 13 05:41:50.5±2.6,**16°28S**×**173°28W**,**h49**km±30km,**mb3.8/5, mb1 4.0/7,mb1mx3.6/41,mbtmp4.0/7,ML3.5/2,MS3.1/2, Ms1 3.1/2,ms1mx2.7/41,Error ellipse: s-maj=48.4km s-min=18.1km az=134.0,Tonga Islands**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
AFI	**Afiamalu**	**2.77**	**32**	P	Pn	05 42 32.7	+0.2
	6.5nm,0.3s,baz=178,slow=1.9,SNR=7.8						
AFI				S	Sn	05 43 05.3	+0.6
	69nm,0.3s,baz=85,slow=21,SNR=16						
AFI				LR	LR	05 43 07.8	
	comp=Z,176nm,19.2s,baz=221,slow=28						
DZM	**Mont Dzumac**	**19.99**	**250**	P		05 46 18.8	-0.4
	0.1nm,0.3s,baz=294,slow=18,SNR=3.1						
DZM				LR	LR	05 52 14.4	
	comp=Z,101nm,18.3s,baz=74,slow=31						
URZ	**Urewera**	**23.47**	**199**	P		05 46 55.9	+0.2
	4.7nm,0.5s,baz=237,slow=2.7,SNR=6.0						
STKA	**Stephens Creek**	**43.70**	**241**	P		05 49 50.8	-0.2
	2.5nm,0.7s,baz=71,slow=7.5,SNR=6.3						
WRA	**Warramunga Arr**	**49.76**	**257**	P		05 50 38.8	+0.2
	0.4nm,0.4s,baz=96,slow=7.1,SNR=10						
ASAR	**Alice Springs**	**49.95**	**253**	P		05 50 39.8	-0.2
	5.7nm,0.6s,baz=88,slow=8.5,SNR=75						
PDAR	**Pinedale Array**	**82.84**	**42**	P		05 54 10.1	0.0
	0.5nm,0.9s,baz=264,slow=5.3,SNR=2.3						

NIED ***13*** *05:48:00,35°.50N*×*140°.90E,h5*km*,Mw4.0 Best double couple: M*ϑ*1.05000*×*10*^{15} *NP1:*ϕ*s176.00000°,*δ*17.00000°, λ-42.00000°. NP2:*ϕ*s306.00000°,*δ*79.00000°, λ-103.00000°.*

JMA ***13*** *05:48:58.7*±*0.1,35°.48N*×*140°.86E,h25*km*±1km,M3.9*

JMA Felt II J1.

IDC ***13*** *05:49:02.1*±*3.9,36°.22N*×*140°.83E,h0*km*,mb3.3/5, mb1 3.6/6,mb1mx3.4/38,mbtmp3.3/6,ML3.0/1,Error ellipse: s-maj=112.5km s-min=23.3km az=175.0*

ISC 13 05:49:02.0±1.2,**35.7N**±0.1×**140.72E**±0.0,**h17**km±8km, **n20,**σ**1s43/14,mb3.3/5,4C-3D,Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CHOJ	**Chosi**	**0.11**	**94**	⇓P	**Pb**	**05 49 04.6**	**-1.1**
CHOJ				S	**Sg**	**05 49 09.0**	**+0.9**
JCN	**Nagara**	**0.52**	**236**	⇑P	Pg	05 49 10.1	-2.2
JCN				eS	**Sg**	**05 49 19.7**	**+0.4**
KTR	**Katsuura**	**0.65**	**211**	⇑P	Pg	05 49 09.5	-5.4
JYT	**Yasato**	**0.67**	**320**	⇓P	**Pn**	**05 49 15.4**	**-1.3**
JYT				S	**Sn**	**05 49 28.1**	**+1.3**
BSO4	**Boso 4**	**0.79**	**204**	⇓P	Pb	05 49 11.8	-5.3
BSO4				eX		05 49 20.0	
BSO3	**Boso 3**	**0.92**	**191**	⇑P	Pb	05 49 12.7	-6.7
BSO1	**Boso 1**	**1.07**	**169**	⇑P	Pn	05 49 13.3	-8.5
MJAR	**Matsushiro Arr**	**2.20**	**293**	Pn	**Pb**	**05 49 40.2**	**-1.1**
	4.4nm,0.3s,baz=97,slow=11,SNR=17						
MJAR				Sn	**Sb**	**05 50 10.3**	**+2.0**
	11nm,0.3s,baz=141,slow=18,SNR=5.8						
MAT	**Matsushiro**	**2.20**	**293**	P	**Pb**	**05 49 39.1**	**-2.3**
MAT				S	**Sb**	**05 50 09.7**	**+1.4**
H11N2	**WAKE ISLAND Hy**	**27.99**	**118**	T	T	06 23 41.6	
	baz=310,slow=75,SNR=117						
H11N1	**WAKE ISLAND Hy**	**28.00**	**118**	T	T	06 23 43.9	
	baz=310,slow=75,SNR=156						
H11N3	**WAKE ISLAND Hy**	**28.00**	**118**	T	T	06 23 44.7	
	baz=310,slow=75,SNR=132						
SONM	**Songino Array**	**28.09**	**306**	P	**P**	**05 54 53.8**	**+1.0**
	0.4nm,0.4s,baz=93,slow=12,SNR=2.8						
H11S1	**WAKE ISLAND Hy**	**28.65**	**120**	T	T	06 24 31.5	
	baz=312,slow=76,SNR=302						
H11S3	**WAKE ISLAND Hy**	**28.65**	**120**	T	T	06 24 30.0	
	baz=312,slow=76,SNR=273						
H11S2	**WAKE ISLAND Hy**	**28.66**	**120**	T	T	06 24 32.0	
	baz=312,slow=76,SNR=294						
MKAR	**Makanchi Array**	**44.36**	**303**	P	**P**	**05 57 10.9**	**-0.5**
	0.2nm,0.4s,baz=88,slow=9.4,SNR=3.9						

ILAR	**Eielson Array**	**50.91**	**32**	P	**P**	**05 58 01.3**	**-0.5**
	0.3nm,0.8s,baz=280,slow=7.2,SNR=3.0						
YKA	**Yellowknife Ar**	**65.23**	**30**	P	**P**	**05 59 41.9**	**-0.2**
	0.1nm,0.7s,baz=304,slow=6.9,SNR=3.1						
TXAR	**Lajitas Array**	**91.37**	**52**	P	**P**	**06 02 08.3**	**+1.0**
	0.1nm,0.6s,baz=321,slow=1.2,SNR=2.1						

NIED **13** *05:52:00,37.˚10N×140.˚80E,h20km,Mw3.9 Best double couple: M₀7.16000×10¹⁴ NP1:φs186.00000°,δ38.00000°, λ28.00000°. NP2:φs74.00000°,δ73.00000°,λ125.00000°.*
ISCJB **13** *05:52:21.5±0.5,37.˚09N±0.˚03×140.˚73E±0.˚04,h21km±3km, mb3.8/12,MS3.7/1,Error ellipse: s-maj=6.3km s-min=4.9km az=38.1*
JMA **13** *05:52:21.9,37.˚09N×140.˚65E,h14km±1km,M4.1 Broadband fault plane solution: P waves. NP1: φs75.00000°,δ66.00000°,λ122.00000°. NP2: φs198.00000°,δ39.00000°,λ41.00000°. Principal axes: T Plg57.0000°, Azm28.0000°; N Plg29.0000°, Azm240.0000°; P Plg15.0000°, Azm142.0000°;*
JMA Felt III J1.
IDC **13** *05:52:29.1±2.8,37.˚16N×140.˚44E,h71km±26km,mb3.6/12, mb1 3.9/12,mb1mx3.7/33,mbtmp3.9/12,MS3.6/1, Ms1 3.6/1,ms1mx2.5/50 Error ellipse: s-maj=23.0km s-min=15.9km az=91.0*

ISC 13 05:52:21.1±1.0,37.˚07N±0.˚03×140.˚57E±0.˚04,h10km±7km, n31,σ1°79/31,mb3.8/12,3C-4D,Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.18**	**81**	⇑P	**Pg**	**05 52 25.4**	**+0.4**
ONAJ				S	**Sg**	**05 52 27.7**	**-0.1**
JFK	**Kawauchi**	**0.38**	**39**	⇑P	**Pg**	**05 52 28.7**	**+0.1**
JFK				S	**Sg**	**05 52 33.4**	**-0.3**
JHO	**Hitachi**	**0.46**	**180**	⇓P	**Pb**	**05 52 31.2**	**-0.1**
JHO				S	**Sb**	**05 52 37.7**	**-0.5**
JFT	**Otama**	**0.48**	**337**	⇓P	**Pb**	**05 52 32.0**	**+0.3**
JFT				S	**Sb**	**05 52 38.8**	**0.0**
JSB	**Shiboa**	**0.53**	**259**	⇓P	**Pn**	**05 52 34.1**	**-0.6**
JSB				S	**Sb**	**05 52 42.1**	**+1.8**
JFY	**Yanaizu**	**0.77**	**296**	⇓P	**Pn**	**05 52 37.5**	**-0.5**
JFY				S	**Sb**	**05 52 48.1**	**+1.0**
JMM	**Marumori**	**0.81**	**12**	⇑P	**Pg**	**05 52 36.5**	**-0.2**
JMM				S	**Sg**	**05 52 46.8**	**-0.5**
MJAR	**Matsushiro Arr**	**1.97**	**255**	P	**Pg**	**05 52 58.5**	**-0.3**
	22nm,0.3s,baz=83,slow=17,SNR=22						
MJAR				S	**Sb**	**05 53 22.4**	**+0.8**
	20nm,0.3s,baz=88,slow=27,SNR=7.0						
MJAR				LR	LR	05 53 58.4	
	comp=Z,113nm,21.6s,baz=100,slow=48						
MAT	**Matsushiro**	**1.97**	**255**	P	**Pb**	**05 52 57.0**	**0.0**
MAT				S	**Sg**	**05 53 24.1**	**-0.3**
USRK	**Ussuriysk Ar.**	**9.65**	**320**	P	Pn	05 54 46.5	+6.5
	0.2nm,0.3s,baz=139,slow=13,SNR=18						
KSRS	**Korea Array**	**10.09**	**276**	P	Pn	05 54 53.1	+7.1
	0.3nm,0.3s,baz=87,slow=14,SNR=4.6						
SEY	**Seymchan**	**26.89**	**12**	P	**P**	**05 58 02.6**	**+0.9**
	2.7nm,0.8s,baz=192,slow=8.5,SNR=6.1						
SONM	**Songino Array**	**27.21**	**304**	P	**P**	**05 58 05.4**	**+0.4**
	1.1nm,0.6s,baz=101,slow=9.0,SNR=7.6						
H11N2	**WAKE ISLAND Hy**	**28.75**	**120**	T	T	06 28 10.6	
	baz=313,slow=75,SNR=57						
H11N1	**WAKE ISLAND Hy**	**28.76**	**120**	T	T	06 28 12.3	
	baz=313,slow=75,SNR=68						
H11N3	**WAKE ISLAND Hy**	**28.77**	**120**	T	T	06 28 12.0	
	baz=313,slow=75,SNR=68						
H11S1	**WAKE ISLAND Hy**	**29.45**	**122**	T	T	06 29 03.8	
	baz=314,slow=76,SNR=228						
H11S3	**WAKE ISLAND Hy**	**29.45**	**122**	T	T	06 29 03.7	
	baz=314,slow=76,SNR=168						
H11S2	**WAKE ISLAND Hy**	**29.46**	**122**	T	T	06 29 04.0	
	baz=314,slow=76,SNR=148						
ZALV	**Zalesovo Beam**	**41.39**	**312**	P	**P**	**06 00 06.1**	**-1.1**
	1.0nm,0.5s,baz=98,slow=7.8,SNR=3.6						
MKAR	**Makanchi Array**	**43.53**	**302**	P	**P**	**06 00 25.1**	**+0.3**
	0.8nm,0.6s,baz=87,slow=11,SNR=9.7						
WRA	**Warramunga Arr**	**57.01**	**187**	P	**P**	**06 02 06.8**	**-0.2**
	3.0nm,0.6s,baz=3.8,slow=7.3,SNR=37						
ASAR	**Alice Springs**	**60.74**	**187**	P	**P**	**06 02 34.6**	**+1.7**
	1.4nm,0.7s,baz=11,slow=6.3,SNR=14						
ARCES	**ARCESS Array B**	**63.72**	**339**	P	**P**	**06 02 51.4**	**-0.9**
	2.2nm,0.9s,baz=64,slow=9.5,SNR=5.2						
YKA	**Yellowknife Ar**	**64.11**	**30**	P	**P**	**06 02 54.7**	**-0.3**
	0.3nm,0.8s,baz=304,slow=7.1,SNR=6.7						
FINES	**FINESS Array B**	**68.47**	**332**	P	**P**	**06 03 21.5**	**-1.4**
	2.2nm,0.8s,baz=15,slow=9.8,SNR=6.1						
NVAR	**Mina Array Bea**	**75.50**	**53**	P	**P**	**06 04 07.1**	**+1.2**
	0.7nm,0.7s,baz=294,slow=4.3,SNR=6.8						
PDAR	**Pinedale Array**	**78.12**	**45**	P	**P**	**06 04 20.3**	**-0.3**
	0.3nm,0.6s,baz=252,slow=1.4,SNR=4.8						
SCHQ	**Schefferville**	**85.48**	**15**	LR	LR	06 46 07.0	
	comp=Z,32nm,19.1s,baz=62,slow=38						
TXAR	**Lajitas Array**	**90.63**	**52**	P	**P**	**06 05 24.0**	**-0.1**
	0.3nm,0.7s,baz=327,slow=4.4,SNR=4.4						
LPAZ	**La Paz**	**147.25**	**58**	PKPbc	**PKPbc**	**06 12 06.3**	**+0.5**
	1.7nm,0.9s,baz=46,slow=4.8,SNR=5.0						

NIED **13** *06:08:00,36.˚90N×142.˚10E,h26km,Mw3.6 Best double couple: M₀2.98000×10¹⁴ NP1:φs32.00000°,δ43.00000°, λ-61.00000°. NP2:φs175.00000°,δ53.00000°, λ-115.00000°.*
ISCJB **13** *06:08:09.8±0.7,36.˚75N±0.˚07×142.˚10E±0.˚08,h19km, mb3.5/9,Error ellipse: s-maj=10.3km s-min=8.8km az=44.3*
IDC **13** *06:08:09.0±0.8,36.˚76N×142.˚03E,h0km,mb3.5/9, mb1 3.7/10,mb1mx3.5/55,mbtmp3.5/10,ML3.5/1,Error ellipse: s-maj=22.3km s-min=21.0km az=94.0*
JMA **13** *06:08:11.6±0.4,36.˚86N×142.˚15E,h64km,M3.6*

ISC 13 06:08:12.0±0.9,36.˚84N±0.˚08×141.˚98E±0.˚07,h19km,n21, σ1°97/17,mb3.6/9,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.98**	**286**	*e*S	**Sg**	**06 08 46.4**	**+2.3**
JFK	**Kawauchi**	**1.03**	**301**	P	**Pg**	**06 08 31.7**	**-0.3**
JIO	**Ouri**	**1.69**	**343**	P	**Pb**	**06 08 40.6**	**-1.8**
JIO				*e*S	**Sn**	**06 09 01.8**	**+0.3**
JOU	**Okura**	**1.85**	**326**	P	**Pn**	**06 08 42.2**	**-0.5**
MJAR	**Matsushiro Arr**	**3.05**	**265**	Pn	**Pn**	**06 08 59.3**	**+0.1**
	6.1nm,0.3s,baz=97,slow=11,SNR=38						
MAT	**Matsushiro**	**3.05**	**265**	P	**Pn**	**06 08 59.4**	**+0.2**
MAT				S	**Sn**	**06 09 33.1**	**-2.1**
H11N2	**WAKE ISLAND Hy**	**27.66**	**121**	T	T	06 42 58.7	
H11N1	**WAKE ISLAND Hy**	**27.67**	**121**	T	T	06 42 58.7	
H11N3	**WAKE ISLAND Hy**	**27.68**	**121**	T	T	06 43 03.2	
	SNR=11						
SONM	**Songino Array**	**28.27**	**304**	P	**P**	**06 14 04.5**	**+0.4**
	1.2nm,0.7s,baz=104,slow=9.1,SNR=8.3						
H11S1	**WAKE ISLAND Hy**	**28.37**	**123**	T	T	06 43 54.4	
H11S3	**WAKE ISLAND Hy**	**28.37**	**123**	T	T	06 43 54.4	
H11S2	**WAKE ISLAND Hy**	**28.39**	**123**	T	T	06 44 10.1	
	SNR=7.8						
ZALV	**Zalesovo Beam**	**42.38**	**313**	P	**P**	**06 16 05.4**	**+0.5**
	0.6nm,0.4s,baz=90,slow=5.9,SNR=4.0						
MKAR	**Makanchi Array**	**44.61**	**302**	P	**P**	**06 16 23.5**	**+0.6**
	0.4nm,0.8s,baz=88,slow=11,SNR=4.8						
KURBB	**Kurchatov Arra**	**46.48**	**308**	P	**P**	**06 16 37.9**	**+0.3**
	0.7nm,0.6s,baz=82,slow=7.9,SNR=7.0						
ILAR	**Eielson Array**	**49.41**	**32**	P	**P**	**06 17 00.5**	**+0.3**
	0.6nm,0.8s,baz=263,slow=6.7,SNR=7.1						
WRA	**Warramunga Arr**	**56.94**	**189**	P	**P**	**06 17 55.7**	**-0.2**
	0.4nm,0.7s,baz=6.8,slow=7.4,SNR=3.8						
ASAR	**Alice Springs**	**60.66**	**189**	P	**P**	**06 18 20.9**	**-1.0**
	0.3nm,0.8s,baz=0.0,slow=6.0,SNR=3.4						
YKA	**Yellowknife Ar**	**63.74**	**30**	P	**P**	**06 18 42.3**	**+0.3**
	0.1nm,0.4s,baz=302,slow=6.8,SNR=3.0						
TXAR	**Lajitas Array**	**89.87**	**53**	P	**P**	**06 21 10.9**	**+0.9**
	0.2nm,0.7s,baz=328,slow=4.3,SNR=2.8						

ISCJB **13** *06:09:34.5±0.7,36.˚68N±0.˚03×140.˚70E±0.˚05,h11km±3km, mb3.5/13,MS3.6/2,Error ellipse: s-maj=8.0km s-min=4.6km az=31.7*
IDC **13** *06:09:34.9±0.7,36.˚77N×140.˚52E,h0km,mb3.6/13, mb1 3.8/13,mb1mx3.6/54,mbtmp3.6/13,MS2.7/2, Ms1 2.7/2,ms1mx2.4/45, Error ellipse: s-maj=20.1km s-min=16.7km az=1.0*
JMA **13** *06:09:35.4,36.˚70N×140.˚64E,h7km±1km,M3.4*
JMA Felt II J1.

ISC 13 06:09:34.9±1.1,36.˚73N±0.˚03×140.˚49E±0.˚04,h4km±8km, n31,σ1°01/30,mb3.6/13,1C,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHO	**Hitachi**	**0.14**	**152**	⇑P	**Pg**	**06 09 37.8**	**+0.2**
JHO				S	**Sg**	**06 09 39.5**	**+0.1**
ONAJ	**Iwakimizuishiy**	**0.45**	**34**	P	**Pg**	**06 09 43.7**	**+0.2**
ONAJ				S	**Sg**	**06 09 49.3**	**0.0**
JSB	**Shiboa**	**0.51**	**298**	P	**Pn**	**06 09 48.2**	**-0.9**
JSB				S	**Sn**	**06 09 57.4**	**-0.9**
JYT	**Yasato**	**0.56**	**205**	P	**Pb**	**06 09 46.7**	**-0.5**
JYT				*e*S	**Sb**	**06 09 55.2**	**-0.3**
JFK	**Kawauchi**	**0.70**	**26**	P	**Pg**	**06 09 48.4**	**0.0**
JFK				S	**Sg**	**06 09 57.5**	**-0.1**
JFT	**Otama**	**0.80**	**351**	P	**Pb**	**06 09 51.7**	**+0.4**
JFT				S	**Sb**	**06 10 02.7**	**+0.3**
MJAR	**Matsushiro Arr**	**1.84**	**265**	Pn	**Pg**	**06 10 09.9**	**-0.3**
	19nm,0.3s,baz=83,slow=9.8,SNR=21						
MJAR				Sn	**Sg**	**06 10 34.2**	**+0.1**
	16nm,0.3s,baz=73,slow=14,SNR=13						
MAT	**Matsushiro**	**1.84**	**265**	P	**Pb**	**06 10 09.3**	**+0.1**
MAT				S	**Sg**	**06 10 35.8**	**+1.6**
JNU	**Nakatsue**	**8.67**	**248**	LR	LR	06 14 52.9	
	comp=Z,67nm,19.3s,baz=110,slow=36						
PETK	**Petropavlovsk-**	**20.32**	**31**	P	**P**	**06 14 08.1**	**-3.8**
	1.9nm,0.5s,baz=72,slow=4.8,SNR=5.0						
SONM	**Songino Array**	**27.34**	**305**	P	**P**	**06 15 21.4**	**+0.3**
	0.5nm,0.7s,baz=109,slow=7.9,SNR=3.0						
H11N2	**WAKE ISLAND Hy**	**28.64**	**119**	T	T	06 45 15.0	
	baz=313,slow=75,SNR=36						
H11N1	**WAKE ISLAND Hy**	**28.65**	**119**	T	T	06 45 14.8	
	baz=313,slow=75,SNR=114						
H11N3	**WAKE ISLAND Hy**	**28.66**	**119**	T	T	06 45 16.7	
	baz=313,slow=75,SNR=128						
H11S1	**WAKE ISLAND Hy**	**29.33**	**121**	T	T	06 46 05.4	
	baz=314,slow=75,SNR=178						
H11S3	**WAKE ISLAND Hy**	**29.33**	**121**	T	T	06 46 06.8	
	baz=314,slow=75,SNR=148						
H11S2	**WAKE ISLAND Hy**	**29.34**	**121**	T	T	06 46 07.8	
	baz=314,slow=75,SNR=129						
JAY	**Jayapura**	**39.05**	**180**	LR	LR	06 30 41.1	
	comp=Z,9.9nm,21.8s,baz=159,slow=32						
ZALV	**Zalesovo Beam**	**41.57**	**313**	P	**P**	**06 17 24.3**	**+0.8**
	0.7nm,0.3s,baz=94,slow=7.3,SNR=3.9						
MKAR	**Makanchi Array**	**43.65**	**302**	P	**P**	**06 17 41.5**	**+0.9**
	0.2nm,0.5s,baz=78,slow=8.7,SNR=4.4						
KURBB	**Kurchatov Arra**	**45.60**	**308**	P	**P**	**06 17 55.6**	**-0.4**
	1.6nm,0.7s,baz=84,slow=7.9,SNR=11						
BVAR	**Borovoye Array**	**50.23**	**312**	P	**P**	**06 18 32.5**	**+0.6**
	0.4nm,0.4s,baz=90,slow=7.6,SNR=3.3						
WRA	**Warramunga Arr**	**56.66**	**187**	P	**P**	**06 19 19.8**	**+0.4**
	0.9nm,0.7s,baz=4.4,slow=7.2,SNR=8.5						
ASAR	**Alice Springs**	**60.39**	**187**	P	**P**	**06 19 45.8**	**+0.4**
	0.5nm,0.7s,baz=13,slow=8.3,SNR=6.3						
YKA	**Yellowknife Ar**	**64.44**	**30**	P	**P**	**06 20 12.4**	**+0.4**
	0.1nm,0.7s,baz=300,slow=5.8,SNR=3.3						
FINES	**FINESS Array B**	**68.73**	**332**	P	**P**	**06 20 38.9**	**-0.6**
	1.6nm,1.0s,baz=152,slow=8.6,SNR=2.5						
AKASG	**Malin Array Be**	**74.08**	**322**	P	**P**	**06 21 11.4**	**-0.6**
	0.2nm,0.3s,baz=40,slow=6.4,SNR=4.5						
NVAR	**Mina Array Bea**	**75.76**	**53**	P	**P**	**06 21 22.9**	**+0.6**
	0.2nm,0.5s,baz=294,slow=6.8,SNR=2.4						
PDAR	**Pinedale Array**	**78.41**	**45**	P	**P**	**06 21 37.7**	**+0.7**
	0.1nm,0.3s,baz=349,slow=2.8,SNR=2.4						
RAR	**Rarotonga**	**80.59**	**125**	LR	LR	06 49 47.6	
	comp=Z,287nm,20.6s,baz=211,slow=30						
TXAR	**Lajitas Array**	**90.89**	**52**	P	**P**	**06 22 42.0**	**+1.8**
	0.2nm,0.7s,baz=316,slow=3.8,SNR=3.3						

ISCJB **13** *06:15:49.2±0.6,6.˚30S±0.˚10×151.˚3E±0.˚1,h36km, mb4.3/14,Error ellipse: s-maj=18.2km s-min=8.5km az=43.1*
IDC **13** *06:15:54.0±3.9,6.˚33S×151.˚23E,h65km±34km,mb4.1/11, mb1 4.2/12,mb1mx3.8/47,mbtmp4.4/12,ML2.2/1,Error ellipse: s-maj=25.3km s-min=20.6km az=115.0*
NEIC **13** *06:15:53.7±1.8,6.˚37S×151.˚2E,h62km±15km,mb4.5/2, Error ellipse: s-maj=14.4km s-min=12.6km az=112.0*

ISC 13 06:15:50.8±0.7,6.˚3S±0.˚1×151.˚3E±0.˚1,h36km,n18, σ1°13/19,mb4.3/14,New Britain region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**5.19**	**233**	P	**Pn**	**06 17 07.9**	**+2.0**
	5.6nm,0.3s,baz=51,slow=9.9,SNR=11						
PMG				S	**Sn**	**06 18 05.0**	**+0.5**
	8.1nm,0.3s,baz=130,slow=20,SNR=6.1						
COEN	**Coen**	**11.09**	**226**	*e*Pn	**Pn**	**06 18 26.9**	**-0.1**
WRAB	**Tennant Creek**	**21.38**	**229**	*e*P	**P**	**06 20 35.1**	**-0.3**
	15nm,0.8s						
WRA	**Warramunga Arr**	**21.39**	**229**	P	**P**	**06 20 34.9**	**-0.6**
	13nm,0.8s,baz=52,slow=10,SNR=44						
DZM	**Mont Dzumac**	**21.45**	**139**	P	**P**	**06 20 36.8**	**+0.6**
	5.1nm,0.8s,baz=346,slow=13,SNR=5.2						
ASAR	**Alice Springs**	**24.09**	**222**	P	**P**	**06 21 03.2**	**0.0**
	17nm,0.7s,baz=54,slow=9.3,SNR=174						
STKA	**Stephens Creek**	**27.06**	**198**	P	**P**	**06 21 28.6**	**-1.4**
	4.2nm,0.8s,baz=342,slow=14,SNR=8.5						
FITZ	**Fitzroy Crossi**	**27.69**	**243**	P	**P**	**06 21 35.0**	**-0.8**
	4.6nm,0.7s,baz=119,slow=3.9,SNR=4.2						
PETK	**Petropavlovsk-**	**59.39**	**4**	P	**P**	**06 25 51.7**	**+2.3**
	9.0nm,1.1s,baz=71,slow=6.4,SNR=3.5						
VNDA	**Vanda**	**71.44**	**178**	P	**P**	**06 27 07.7**	**+0.6**
	1.0nm,0.8s,baz=338,slow=6.3,SNR=4.9						
KURK	**Kurchatov**	**84.02**	**322**	*e*P	**P**	**06 28 17.5**	**0.0**
	11nm,1.0s						
ILAR	**Eielson Array**	**84.05**	**22**	P	**P**	**06 28 16.7**	**-0.7**
	1.2nm,0.7s,baz=248,slow=5.2,SNR=13						
INK	**Inuvik**	**90.33**	**21**	P	**P**	**06 28 47.9**	**+0.2**
	1.6nm,1.1s,baz=34,slow=1.1,SNR=2.8						
ABKAR	**Akbulak array**	**95.61**	**319**	*e*P	**P**	**06 29 12.5**	**0.0**
	4.0nm,1.7s						
GEYT	**Alibeck**	**96.34**	**307**	P	**P**	**06 29 13.8**	**-2.4**
	1.2nm,0.3s,baz=147,slow=3.0,SNR=3.1						
YKA	**Yellowknife Ar**	**97.39**	**28**	P	**P**	**06 29 20.6**	**+0.3**
	0.3nm,0.7s,baz=268,slow=4.6,SNR=7.5						
TORD	**Torodi Ar. Bea**	**149.33**	**285**	PKPbc	**PKPbc**	**06 35 36.5**	**-0.5**
	2.1nm,0.7s,baz=75,slow=2.7,SNR=16						
BDFB	**Brasilia**	**151.00**	**139**	PKPbc	**PKPbc**	**06 35 40.3**	**-0.8**
	1.3nm,0.7s,baz=28,slow=27,SNR=3.5						

NEIC **13** *06:17:07.7±4.0,3.˚43S×131.˚06E,h0km±26km,mb4.3/1, Error ellipse: s-maj=10.5km s-min=8.7km az=93.0*
IDC **13** *06:17:07.7±0.8,3.˚46S×131.˚04E,h0km,mb4.2/11, mb1 4.3/11,mb1mx4.0/43,mbtmp4.2/11,MS3.4/3, Ms1 3.4/3,ms1mx2.7/43,Error ellipse: s-maj=46.8km s-min=16.0km az=75.0*
ISCJB **13** *06:17:09.8±0.5,3.˚59S±0.˚05×131.˚07E±0.˚06,h30km, mb4.1/11,MS3.2/3,Error ellipse: s-maj=8.9km s-min=6.7km az=26.7*
DJA **13** *06:17:11.7±0.4,4.˚5S±5.˚×13.˚1E±.˚,h10km,M4.2/5,mB5.3/2, mb4.5/5,MLv4.1/1,Mw(mB)4.7/2*

ISC 13 06:17:11.2±0.6,3.˚62S±0.˚07×131.˚20E±0.˚07,h30km,n25, σ1°53/23,mb4.0/11,MS3.4/3,Irian Jaya region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FAKI	**Fak Fak**	**1.26**	**56**	P	**Pn**	**06 17 32.6**	**-0.2**
FAKI				S	**Sb**	**06 17 50.0**	**-0.2**
FAKI	**Fak Fak**	**1.26**	**56**	*e*Pn	**Pn**	**06 17 32.7**	**0.0**
BNDI	**Bandanaira**	**1.57**	**235**	P	**Pb**	**06 17 40.3**	**+0.7**
SANI	**Sanana**	**5.43**	**287**	P	**Pn**	**06 18 31.5**	**+1.3**
	29nm,0.7s,0.2nm						
SOEI	**Soe**	**9.19**	**228**	P	Pn	06 19 25.2	+3.2
SOEI	**Soe**	**9.19**	**228**	*e*Pn	**Pn**	**06 19 21.9**	**-0.1**
	28nm,0.8s						
FITZ	**Fitzroy Crossi**	**15.39**	**200**	Pn	**Pn**	**06 20 43.3**	**-3.0**
	0.8nm,0.3s,baz=34,slow=12,SNR=20						
FITZ				Sn	**Sn**	**06 23 33.4**	**-2.5**
	0.3nm,0.3s,baz=65,slow=21,SNR=3.6						
WRAB	**Tennant Creek**	**16.50**	**170**	P	**P**	**06 21 03.7**	**+0.7**
	44nm,1.9s						
WRA	**Warramunga Arr**	**16.51**	**170**	Pn	**Pn**	**06 21 00.1**	**-0.7**
	0.8nm,0.3s,baz=352,slow=13,SNR=9.5						
WRA				Sn	Sn	06 23 55.9	-7.3
	0.6nm,0.3s,baz=357,slow=23,SNR=5.5						
ASAR	**Alice Springs**	**20.10**	**173**	P	Pn	06 21 45.6	+1.0
	9.1nm,0.4s,baz=354,slow=8.3,SNR=28						
ASAR				S	**S**	**06 25 24.7**	**-2.3**
	1.2nm,0.8s,baz=358,slow=29,SNR=5.1						
KSM	**Kuching**	**21.49**	**283**	*e*P	**P**	**06 21 55.9**	**-1.7**
GUMO	**Guam**	**21.83**	**38**	LR	LR	06 30 37.4	
	comp=Z,47nm,18.2s,baz=214,slow=37						
LEM	**Lembang**	**23.70**	**261**	LR	LR	06 33 24.5	
	comp=Z,126nm,19.1s,baz=136,slow=42						
STKA	**Stephens Creek**	**29.76**	**162**	P	**P**	**06 23 18.0**	**+2.8**
	1.7nm,0.6s,baz=340,slow=9.8,SNR=2.8						
STKA				LR	LR	06 36 19.0	
	comp=Z,92nm,20.7s,baz=17,slow=38						
NWAO	**Narrogin (SRO)**	**31.95**	**203**	P	**P**	**06 23 35.5**	**+1.0**
	7.5nm,0.7s,baz=152,slow=0.1,SNR=2.6						
CMAR	**Chiang Mai Arr**	**38.61**	**306**	P	**P**	**06 24 32.4**	**+0.3**
	1.0nm,0.7s,baz=139,slow=7.3,SNR=8.7						
SONM	**Songino Array**	**55.67**	**340**	P	**P**	**06 26 43.6**	**-1.1**
	0.5nm,0.3s,baz=168,slow=7.6,SNR=7.0						
MKAR	**Makanchi Array**	**66.10**	**326**	P	**P**	**06 27 55.6**	**0.0**
	1.8nm,0.6s,baz=120,slow=8.3,SNR=25						
SEY	**Seymchan**	**68.29**	**10**	P	**P**	**06 28 10.3**	**+1.2**
	0.8nm,0.5s,baz=178,slow=18,SNR=3.9						
ZALV	**Zalesovo Beam**	**69.12**	**333**	P	**P**	**06 28 13.2**	**-1.3**
	1.3nm,0.6s,baz=117,slow=6.2,SNR=5.7						
VNDA	**Vanda**	**75.64**	**173**	P	**P**	**06 28 54.9**	**+1.9**
	1.0nm,0.6s,baz=326,slow=8.6,SNR=5.4						
BVAR	**Borovoye Array**	**75.88**	**327**	P	**P**	**06 28 54.4**	**-0.3**
	1.9nm,0.7s,baz=145,slow=5.4,SNR=9.6						
ILAR	**Eielson Array**	**89.80**	**25**	P	P	06 30 14.6	+7.9
	0.4nm,0.6s,baz=258,slow=4.2,SNR=4.0						
ARCES	**ARCESS Array B**	**98.84**	**340**	P	**P**	**06 30 47.2**	**-0.8**
	2.1nm,1.0s,baz=59,slow=7.2,SNR=4.0						
CPUP	**Villa Florida**	**149.10**	**165**	PKPbc	**PKPab**	**06 36 60.0**	**-1.6**
	3.5nm,1.0s,baz=333,slow=2.7,SNR=4.5						

IDC **13** *06:30:52.6±0.7,37.˚73N×143.˚61E,h0km,mb3.7/13, mb1 3.9/15,mb1mx3.8/58,mbtmp3.7/15,ML3.5/2,MS2.8/4, Ms1 2.8/4,ms1mx2.5/41, Error ellipse: s-maj=20.0km s-min=17.1km az=114.0*
ISCJB **13** *06:30:54.4±0.6,37.˚88N±0.˚06×143.˚38E±0.˚05,h19km, mb3.7/13,MS3.4/1,Error ellipse: s-maj=8.3km s-min=5.7km az=175.4*
JMA **13** *06:30:55.3±0.4,37.˚96N×143.˚28E,h18km,M4.0*

ISC 13 06:30:56.2±0.7,37.˚92N±0.˚07×143.˚39E±0.˚07,h19km,n36, σ1°41/32,mb3.8/13,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**1.69**	**289**	P	**Pn**	**06 31 23.4**	**-1.3**
JIO				S	**Sn**	**06 31 43.7**	**-2.2**
OFUJ	**Ofunato**	**1.78**	**311**	P	Pn	**06 31 25.1**	**-0.8**
JMK	**Ichinoseki**	**1.99**	**302**	P	**Pn**	**06 31 28.2**	**-0.6**
JMK				*e*S	**Sn**	**06 31 51.7**	**-1.5**
JMM	**Marumori**	**2.05**	**269**	P	**Pn**	**06 31 28.9**	**-0.8**
JMM				*e*S	**Sn**	**06 31 53.0**	**-1.7**
JFK	**Kawauchi**	**2.07**	**255**	P	**Pn**	**06 31 28.1**	**-1.8**
JOU	**Okura**	**2.19**	**283**	P	**Pn**	**06 31 30.7**	**-0.9**
JOM	**Ohasama**	**2.26**	**314**	P	**Pn**	**06 31 31.0**	**-1.5**
JOM				*e*S	**Sn**	**06 31 58.0**	**-1.9**
JFT	**Otama**	**2.45**	**262**	P	**Pn**	**06 31 34.6**	**-0.6**
JYK	**Kaneyama**	**2.58**	**294**	P	**Pn**	**06 31 36.0**	**-0.9**
JRG	**Rokugo**	**2.61**	**305**	P	**Pn**	**06 31 37.7**	**+0.3**
MJAR	**Matsushiro Arr**	**4.35**	**253**	Pn	**Pn**	**06 32 02.1**	**+0.7**
	1.4nm,0.3s,baz=74,slow=14,SNR=7.1						
MJAR				LR	LR	06 33 26.1	
	comp=Z,25nm,18.9s,baz=75,slow=34						
MAT	**Matsushiro**	**4.36**	**253**	P	**Pn**	**06 32 02.2**	**+0.8**
MAT				*e*S	**Sn**	**06 32 52.2**	**+0.6**
ASAJ	**Asahikawa**	**6.22**	**355**	Pn	Pn	06 32 30.5	+3.5
	1.4nm,0.3s,baz=150,slow=9.6,SNR=3.5						
USRK	**Ussuriysk Ar.**	**10.65**	**310**	Pn	Pn	06 33 35.2	+7.6
	0.2nm,0.3s,baz=125,slow=13,SNR=10						
USRK				LR	LR	06 37 01.3	
	comp=Z,66nm,19.8s,baz=159,slow=34						
JNU	**Nakatsue**	**11.26**	**249**	LR	LR	06 37 58.8	
	comp=Z,45nm,21.4s,baz=115,slow=38						
KLR	**Kul'dur**	**14.09**	**327**

baz=313,slow=75,SNR=53
H11N1 WAKE ISLAND Hy 28.62 120 T T 07 11 38.8
baz=313,slow=75,SNR=48
H11N3 WAKE ISLAND Hy 28.63 120 T T 07 11 38.4
baz=313,slow=75,SNR=62
H11S1 WAKE ISLAND Hy 29.31 122 T T 07 12 31.8
baz=314,slow=76,SNR=104
H11S3 WAKE ISLAND Hy 29.31 122 T T 07 12 30.5
baz=314,slow=76,SNR=65
H11S2 WAKE ISLAND Hy 29.33 122 T T 07 12 32.5
baz=314,slow=76,SNR=85
MKAR Makanchi Array 43.66 302 P **P** **06 43 58.7 0.0**
0.2nm,0.6s,baz=82,slow=10,SNR=2.9
KURBB Kurchatov Arra 45.59 308 P **P** **06 44 13.5 -0.5**
0.3nm,0.4s,baz=81,slow=7.8,SNR=3.7
WRA Warramunga Arr 56.91 187 P **P** **06 45 38.7 -0.5**
1.0nm,0.7s,baz=3.8,slow=7.4,SNR=14
ASAR Alice Springs 60.64 187 P **P** **06 46 05.2 +0.1**
0.5nm,0.6s,baz=5.5,slow=6.8,SNR=6.0
TXAR Lajitas Array 90.63 52 P **P** **06 48 58.1 +1.1**
0.1nm,0.5s,baz=270,slow=2.7,SNR=2.8

*IDC **13** 06:37:21.7±1.9,37.03N×140.97E,h0km,mb3.4/4, mb1 3.6/5,mb1mx3.3/41,mbtmp3.4/5,ML3.5/1,Error ellipse: s-maj=40.7km s-min=28.2km az=59.0*
*ISCJB **13** 06:37:22.7±0.9,36.97N±0.03×140.91E±0.07,h12km±4km, mb3.4/4,Error ellipse: s-maj=10.3km s-min=4.6km az=15.2*
*JMA **13** 06:37:24.0,36.99N×140.77E,h7km±1km,M3.5*
JMA Felt I J1.
ISC 13 06:37:23.7±1.1,37.00N±0.03×140.76E±0.08,h10km±7km, n19,σ0§54/22,mb3.4/4,5C,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.11**	**16**	⇑*P*	**Pg**	**06 37 26.6**	**+0.1**
ONAJ				*S*	**Sg**	**06 37 28.4**	**-0.1**
JFK	**Kawauchi**	**0.38**	**14**	⇑*P*	**Pg**	**06 37 31.4**	**+0.2**
JFK				*S*	**Sg**	**06 37 37.0**	**+0.7**
JHO	**Hitachi**	**0.42**	**202**	⇑*P*	**Pg**	**06 37 32.1**	**+0.2**
JHO				*S*	**Sg**	**06 37 37.6**	**+0.2**
JFT	**Otama**	**0.62**	**327**	*P*	**Pg**	**06 37 36.1**	**+0.3**
JFT				*S*	**Sb**	**06 37 44.8**	**-0.7**
JSB	**Shiboa**	**0.68**	**268**	⇑*P*	**Pb**	**06 37 37.7**	**+0.1**
JSB				*S*	**Sb**	**06 37 46.8**	**-0.2**
JMM	**Marumori**	**0.87**	**2**	⇑*P*	**Pg**	**06 37 40.2**	**-0.2**
JMM				*S*	**Sg**	**06 37 51.7**	**0.0**
JYT	**Yasato**	**0.89**	**211**	*P*	**Pg**	**06 37 40.9**	**0.0**
JYT				*S*	**Sg**	**06 37 52.8**	**+0.2**
MJAR	**Matsushiro Arr**	**2.10**	**258**	Pn	**Pb**	**06 38 00.9**	**-1.1**
	12nm,0.3s,baz=103,slow=15,SNR=6.2						
MJAR				Sn	**Sb**	**06 38 28.7**	**+0.6**
	27nm,0.3s,baz=110,slow=18,SNR=9.9						
MAT	**Matsushiro**	**2.10**	**258**	*P*	**Pb**	**06 38 00.8**	**-1.1**
MAT				*S*	**Sb**	**06 38 28.3**	**+0.2**
SONM	**Songino Array**	**27.37**	**304**	*P*	**P**	**06 43 09.9**	**+0.7**
	0.2nm,0.4s,baz=99,slow=8.9,SNR=2.0						
H11N2	**WAKE ISLAND Hy 28.58 120**			T	T	07 13 06.2	
	baz=313,slow=75,SNR=5.4						
H11N1	**WAKE ISLAND Hy 28.59 120**			T	T	07 13 04.5	
	baz=313,slow=75,SNR=4.0						
H11N3	**WAKE ISLAND Hy 28.60 120**			T	T	07 13 07.1	
	baz=313,slow=75,SNR=4.8						
H11S1	**WAKE ISLAND Hy 29.28 122**			T	T	07 14 02.4	
	baz=314,slow=76,SNR=7.3						
H11S3	**WAKE ISLAND Hy 29.28 122**			T	T	07 14 01.8	
	baz=314,slow=76,SNR=8.9						
H11S2	**WAKE ISLAND Hy 29.30 122**			T	T	07 14 01.6	
	baz=314,slow=76,SNR=10						
MKAR	**Makanchi Array 43.70 302**			P	**P**	**06 45 29.5**	**+0.7**
	0.2nm,0.5s,baz=74,slow=12,SNR=2.3						
KURBB	**Kurchatov Arra 45.61 308**			P	**P**	**06 45 43.9**	**-0.1**
	0.2nm,0.3s,baz=83,slow=7.9,SNR=4.2						
WRA	**Warramunga Arr 56.96 187**			P	**P**	**06 47 09.1**	**-0.3**
	0.4nm,0.5s,baz=2.3,slow=7.2,SNR=7.8						

*ISCJB **13** 06:46:00.5±0.6,6.85N±0.04×73.10W±0.05,h162km±5km, Error ellipse: s-maj=10.3km s-min=4.6km az=38.7*
*RSNC **13** 06:46:02.7±0.9,6.81N×73.11W,h149km±6km,ML2.7*
*FUNV **13** 06:46:02.2,6.79N×73.09W,h164km,MW2.9*
ISC 13 06:46:00.6±1.4,6.83N±0.05×73.09W±0.06,h163km±8km, n23,σ1§03/35,2C,Northern Colombia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BTLC	**Betulia, Santa**	**0.19**	**296**	*eS*	**Sn**	**06 46 38.5**	**-1.1**
BARC	**Barichara**	**0.26**	**200**	*eP*	**Pn**	**06 46 22.7**	**-0.2**
BARC				*eS*	**Sn**	**06 46 37.5**	**-2.4**
BARC				*i*		06 46 40.4	
	comp=Z,152nm,0.3s						
PAMC	**Pamplona, Colo**	**0.64**	**38**	*eP*	**Pn**	**06 46 25.5**	**+0.8**
PAMC				*eS*	**Sn**	**06 46 42.7**	**-0.4**
PAMC				*i*		06 46 45.0	
	comp=Z,50nm,0.7s						
BRRC	**Barranca, Sant**	**0.67**	**294**	⇑*iP*	**Pn**	**06 46 24.6**	**+0.3**
BRRC				*eS*	**Sn**	**06 46 41.7**	**-0.8**
BRRC				*i*		06 46 45.2	
	comp=Z,145nm,0.1s						
GRMC	**Gramalote, San**	**0.92**	**18**	*i P*	**Pn**	**06 46 28.6**	**+2.4**
GRMC				*eS*	**Sn**	**06 46 47.7**	**+1.7**
GRMC				*i*		06 46 53.3	
	comp=Z,74nm,0.3s						
CAPV	**Capacho**	**1.28**	**37**	⇑*iP*	**Pn**	**06 46 30.6**	**+1.3**
CAPV				*eS*	**Sn**	**06 46 51.5**	**+0.1**
OCAC	**Ocana**	**1.41**	**351**	*eP*	**Pn**	**06 46 30.9**	**+0.4**
OCAC				*eS*	**Sn**	**06 46 52.7**	**-0.9**
NORC	**Norcasia**	**2.17**	**235**	*eP*	**Pn**	**06 46 38.4**	**-0.2**
NORC				*eS*	**Sn**	**06 47 07.2**	**-0.7**
CHIC	**Chingaza**	**2.28**	**196**	*eP*	**Pn**	**06 46 40.9**	**+0.7**
CHIC				*eS*	**Sn**	**06 47 11.1**	**+0.3**
CHIC				*i*		06 47 13.5	
	comp=Z,23nm,0.5s						
HELC	**Santa Helena**	**2.50**	**255**	*eP*	**Pn**	**06 46 44.0**	**+1.2**
HELC				*eS*	**Sn**	**06 47 15.4**	**+0.1**
HELC				*i*		06 47 22.4	
	comp=Z,26nm,0.4s						
SOCV	**Socops**	**2.65**	**57**	*eP*	**Pn**	**06 46 45.1**	**+0.9**
SOCV				*eS*	**Sn**	**06 47 16.2**	**-1.7**
SDV	**Santo Domingo**	**3.18**	**50**	*eP*	**Pn**	**06 46 52.1**	**+1.2**
PRAC	**Prado**	**3.58**	**210**	*eP*	**Pn**	**06 46 55.8**	**0.0**
PRAC				*eS*	**Sn**	**06 47 39.0**	**+0.2**
ELOV	**Elorza**	**3.59**	**87**	*eP*	**Pn**	**06 46 56.6**	**+0.7**
VIRV	**Villa del Rosa**	**3.71**	**11**	*eP*	**Pn**	**06 46 57.5**	**0.0**
VIRV				*eS*	**Sn**	**06 47 40.5**	**-1.4**
QARV	**Quebrada Arrib**	**4.21**	**37**	*eP*	**Pn**	**06 47 04.7**	**+0.8**
SANV	**Sanarito**	**4.41**	**53**	*eP*	**Pn**	**06 47 07.5**	**+0.9**
CURV	**Curarigua**	**4.42**	**44**	*eP*	**Pn**	**06 47 07.4**	**+0.6**
DABV	**Dabajuro**	**4.73**	**31**	*eP*	**Pn**	**06 47 11.6**	**+0.8**
SIQV	**Siquisique**	**4.99**	**40**	*eP*	**Pn**	**06 47 14.3**	**+0.1**
BAUV	**El Baul**	**5.42**	**67**	*eP*	**Pn**	**06 47 19.4**	**-0.5**
MAPV	**Macapo**	**5.47**	**57**	*eP*	**Pn**	**06 47 20.8**	**+0.3**
MONV	**Montecano**	**5.95**	**31**	*eP*	**Pn**	**06 47 26.1**	**-0.7**

*CSEM **13** 06:48:03.6±0.2,37.44N×29.96E,h2km,ML1.8,Error ellipse: s-maj=7.7km s-min=5.0km az=159.0*
*ISK **13** 06:48:03.8,37.45N×30.02E,h11km,ML1.8*
*ISCJB **13** 06:48:04.4±1.1,37.43N±0.07×30.04E±0.08,h13km±8km, Error ellipse: s-maj=13.0km s-min=7.9km az=141.5*
*DDA **13** 06:48:09.7,37.34N×30.80E,h7km,Md2.8*
ISC 13 06:48:04.3±1.3,37.48N±0.04×30.01E±0.04,h11km±10km, n16,σ0§74/24,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BCK	**Bucak**	**0.46**	**92**	*ePG*	**Pg**	**06 48 13.3**	**-0.1**
BCK				*eSG*	**Sg**	**06 48 19.8**	**+0.3**
BCK	**Bucak**	**0.46**	**92**	*ePg*	**Pg**	**06 48 13.3**	**-0.1**
BCK				*eSg*	**Sg**	**06 48 19.8**	**+0.3**
ISP	**Isparta**	**0.53**	**50**	*ePG*	**Pg**	**06 48 15.0**	**+0.3**
ISP				*eSG*	**Sb**	**06 48 22.9**	**-0.5**
ISP	**Isparta**	**0.53**	**50**	*ePg*	**Pg**	**06 48 15.0**	**+0.3**
ISP				*eSg*	**Sb**	**06 48 22.9**	**-0.5**
KORT	**Korkueli**	**0.55**	**150**	*iP*	**Pn**	**06 48 19.3**	**+1.1**
KORT				*iS*	**Sn**	**06 48 28.0**	**+0.6**
ANTB	**Antalya**	**0.78**	**138**	*ePG*	**Pg**	**06 48 18.8**	**-0.5**
ANTB	**Antalya**	**0.78**	**138**	*ePg*	**Pg**	**06 48 18.8**	**-0.5**
BAGO	**Egridir - ISPA**	**0.80**	**50**	*iP*	**Pn**	**06 48 21.6**	**0.0**
BAGO				*iS*	**Sn**	**06 48 35.7**	**+2.2**
FETY	**Fethiye**	**1.12**	**222**	*ePN*	**Pb**	**06 48 25.3**	**-0.4**
FETY	**Fethiye**	**1.12**	**222**	*ePn*	**Pb**	**06 48 25.3**	**-0.4**
AYDB	**Zeytinkoy-Aydi**	**1.74**	**286**	*ePN*	**Pn**	**06 48 34.9**	**+0.3**
AYDB	**Zeytinkoy-Aydi**	**1.74**	**286**	*ePn*	**Pn**	**06 48 34.9**	**+0.3**
KONT	**Konya--Tatoy**	**1.92**	**75**	*ePN*	**Pn**	**06 48 37.2**	**+0.3**
KONT	**Konya--Tatoy**	**1.92**	**75**	*ePn*	**Pn**	**06 48 37.2**	**+0.3**
KDHN	**Kadinhani**	**1.96**	**57**	*i P*	**Pb**	**06 48 39.7**	**-0.3**
KDHN				*i S*	**Sn**	**06 49 01.1**	**-1.1**
KDHN	**Kadinhani**	**1.96**	**57**	*P*	**Pb**	**06 48 39.7**	**-0.3**
KDHN				*S*	**Sn**	**06 49 01.1**	**-1.1**

*ISCJB **13** 06:51:54.9±0.5,39.69N±0.05×143.37E±0.05,h18km, mb3.6/14,MS3.0/4,Error ellipse: s-maj=7.6km s-min=4.7km az=161.7*
*JMA **13** 06:51:54.9±0.3,39.75N×143.31E,h13km±3km,M4.0*
*IDC **13** 06:52:00.2±2.3,39.70N×143.25E,h47km±22km,mb3.5/15, mb1 3.7/20,mb1mx3.6/46,mbtmp3.7/20,ML3.3/5,MS3.1/8, Ms1 3.1/8,ms1mx2.8/42,Error ellipse: s-maj=20.8km s-min=15.0km az=119.0*
ISC 13 06:51:56.7±0.7,39.73N±0.06×143.21E±0.05,h18km,n47, σ1§07/38,mb3.8/14,MS3.1/4,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JTH	**Tanohata**	**1.06**	**282**	*P*	**Pb**	**06 52 15.8**	**-0.7**
JTH				*eS*	**Sn**	**06 52 30.8**	**-0.2**
MIYJ	**Miyakonagasawa**	**1.09**	**262**	*P*	**Pb**	**06 52 16.3**	**-0.6**
MIYJ				*eS*	**Sg**	**06 52 31.8**	**-0.2**
OFUJ	**Ofunato**	**1.36**	**242**	*P*	**Pn**	**06 52 20.8**	**0.0**
JANG	**Nango**	**1.46**	**297**	*P*	**Pn**	**06 52 21.5**	**-0.6**
JKZ	**Kuzumaki**	**1.47**	**281**	*P*	**Pn**	**06 52 22.5**	**+0.1**
JOM	**Ohasama**	**1.51**	**261**	*P*	**Pb**	**06 52 23.3**	**-0.8**
JOM				*S*	**Sb**	**06 52 43.6**	**+0.7**
JMK	**Ichinoseki**	**1.73**	**244**	*P*	**Pn**	**06 52 25.9**	**+0.1**
JTM	**Tenmabayashi**	**1.95**	**303**	*P*	**Pn**	**06 52 29.3**	**+0.4**
JTM				*eS*	**Sb**	**06 52 54.5**	**-1.2**
JRG	**Rokugo**	**2.02**	**261**	*P*	**Pn**	**06 52 30.6**	**+0.7**
JAH	**Hinai**	**2.04**	**284**	*P*	**Pn**	**06 52 30.9**	**+0.9**
JEM	**Erimo**	**2.29**	**359**	*P*	**Pn**	**06 52 33.9**	**+0.4**
JOT	**Ohata**	**2.34**	**316**	*P*	**Pn**	**06 52 35.9**	**+1.7**
JYK	**Kaneyama**	**2.36**	**251**	*P*	**Pn**	**06 52 35.5**	**+1.0**
ASAJ	**Asahikawa**	**4.41**	**354**	*P*	**Pn**	**06 53 03.2**	**+0.5**
	2.3nm,0.3s,baz=198,slow=14,SNR=9.6						
MAT	**Matsushiro**	**5.07**	**233**	*P*	**Pn**	**06 53 13.4**	**+1.6**
MAT				*eS*	Sn	06 53 41.4	-28
MJAR	**Matsushiro Arr**	**5.07**	**233**	*P*	**Pn**	**06 53 13.6**	**+1.8**
	2.0nm,0.3s,baz=39,slow=12,SNR=11						
JHJ	**Hachijo jima 2**	**7.15**	**204**	LR	LR	06 56 12.3	
	comp=Z,211nm,19.7s,baz=336,slow=35						
USRK	**Ussuriysk Ar.**	**9.48**	**302**	*P*	Pn	06 54 16.3	+4.1
	0.3nm,0.3s,baz=100,slow=14,SNR=7.4						
USRK				LR	LR	06 57 52.4	
	comp=Z,134nm,19.0s,baz=142,slow=37						
JNU	**Nakatsue**	**11.92**	**240**	LR	LR	06 59 31.7	
	comp=Z,55nm,22.0s,baz=98,slow=38						
KSRS	**Korea Array**	**12.18**	**264**	*P*	Pn	06 54 53.6	+4.4
	0.3nm,0.3s,baz=93,slow=14,SNR=4.8						
KSRS				LR	LR	06 59 31.3	
	comp=Z,66nm,18.1s,baz=94,slow=37						
KLR	**Kul'dur**	**12.53**	**323**	*P*	**Pn**	**06 54 56.9**	**+3.0**
	0.1nm,0.3s,baz=111,slow=6.4,SNR=4.1						
MA2	**Magadan**	**20.43**	**11**	*P*	**P**	**06 56 32.9**	**+0.2**
	4.8nm,0.6s,baz=236,slow=10,SNR=4.6						
YAK	**Yakutsk**	**23.81**	**344**	LR	LR	07 06 26.1	
	comp=Z,33nm,19.6s,baz=259,slow=36						
SEY	**Seymchan**	**23.88**	**10**	*P*	**P**	**06 57 08.0**	**-1.0**
	3.0nm,0.7s,baz=193,slow=8.1,SNR=13						
SONM	**Songino Array**	**27.58**	**299**	*P*	**P**	**06 57 43.0**	**+0.2**
	1.4nm,0.8s,baz=98,slow=9.4,SNR=5.9						
H11N2	**WAKE ISLAND Hy 28.49 128**			T	T	07 28 48.5	
	baz=318,slow=75,SNR=113						
H11N1	**WAKE ISLAND Hy 28.50 128**			T	T	07 28 41.8	
	baz=318,slow=75,SNR=90						
H11N3	**WAKE ISLAND Hy 28.50 128**			T	T	07 28 42.5	
	baz=318,slow=75,SNR=91						
H11S1	**WAKE ISLAND Hy 29.30 129**			T	T	07 29 47.9	
	baz=318,slow=76,SNR=18						
H11S3	**WAKE ISLAND Hy 29.31 129**			T	T	07 29 48.5	
	baz=124,slow=74,SNR=17						
H11S2	**WAKE ISLAND Hy 29.32 129**			T	T	07 28 56.4	
	SNR=16						
TLY	**Talaya**	**29.74**	**307**	LR	LR	07 09 44.2	
	comp=Z,43nm,18.4s,baz=88,slow=36						
ZALV	**Zalesovo Beam**	**41.20**	**310**	*P*	**P**	**06 59 40.1**	**+0.1**
	1.9nm,0.5s,baz=94,slow=8.3,SNR=10						
NRIK	**Norilsk**	**41.45**	**334**	LR	LR	07 17 43.2	
	comp=Z,29nm,19.2s,baz=120,slow=37						
MKAR	**Makanchi Array**	**43.94**	**300**	*P*	**P**	**07 00 02.1**	**-0.3**
	1.3nm,0.7s,baz=84,slow=10.0,SNR=16						
ILAR	**Eielson Array**	**46.47**	**34**	*P*	**P**	**07 00 22.5**	**+0.3**
	0.6nm,0.7s,baz=265,slow=6.2,SNR=7.1						
INK	**Inuvik**	**51.35**	**28**	*P*	**P**	**07 01 00.1**	**+0.6**
	0.6nm,0.7s,baz=262,slow=4.5,SNR=4.1						
INK				LR	LR	07 24 13.5	
	comp=Z,18nm,19.1s,baz=281,slow=38						
WRA	**Warramunga Arr**	**59.94**	**190**	*P*	**P**	**07 02 00.3**	**-1.4**
	0.5nm,0.7s,baz=8.3,slow=7.1,SNR=5.5						
YKA	**Yellowknife Ar**	**60.77**	**31**	*P*	**P**	**07 02 07.4**	**+0.4**
	0.1nm,0.6s,baz=300,slow=5.6,SNR=3.0						
ASAR	**Alice Springs**	**63.66**	**190**	*P*	**P**	**07 02 26.4**	**-0.4**
	0.6nm,0.7s,baz=4.7,slow=6.9,SNR=6.1						
FINES	**FINESS Array B**	**67.09**	**332**	*P*	**P**	**07 02 49.0**	**+0.4**
	0.7nm,0.6s,baz=72,slow=12,SNR=4.4						
NB2	**NORSAR Subarra**	**72.24**	**338**	*P*	**P**	**07 03 20.4**	**0.0**
	comp=Z,1.4nm,0.8s,baz=40,slow=6.2						
NOA	**NORSAR Array B**	**72.24**	**338**	*P*	**P**	**07 03 20.4**	**0.0**
	comp=Z,1.0nm,0.6s,baz=39,slow=6.0,SNR=5.5						
NVAR	**Mina Array Bea**	**72.26**	**55**	*P*	**P**	**07 03 22.0**	**+0.8**
	comp=Z,0.5nm,0.8s,baz=328,slow=5.3,SNR=4.2						
PDAR	**Pinedale Array**	**74.78**	**47**	*P*	**P**	**07 03 34.1**	**-1.8**
	comp=Z,0.1nm,0.4s,baz=303,slow=35,SNR=3.4						
KECS	**Kecovo**	**78.59**	**325**	*eP*	**P**	**07 03 54.4**	**-2.6**
TXAR	**Lajitas Array**	**87.37**	**54**	*P*	**P**	**07 04 43.7**	**+0.7**
	comp=Z,0.2nm,0.8s,baz=126,slow=4.8,SNR=2.3						

*IDC **13** 06:56:53.4±0.9,37.27N×141.89E,h0km,mb3.3/6, mb1 3.5/7,mb1mx3.4/35,mbtmp3.2/7,ML2.9/1,MS2.4/1, Ms1 2.4/1,ms1mx2.1/25,Error ellipse: s-maj=25.1km s-min=20.9km az=134.0*
*ISCJB **13** 06:56:54.4±1.6,37.29N±0.06×141.95E±0.08, h19km±10km,mb3.3/6,Error ellipse: s-maj=12.7km s-min=7.5km az=41.8*
*JMA **13** 06:56:57.5±0.2,37.29N×141.78E,h34km±3km,M3.9*
ISC 13 06:56:54.3±2.1,37.32N±0.07×141.89E±0.07,h7km±12km, n22,σ0§81/23,mb3.4/6,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**0.81**	**274**	*P*	**Pn**	**06 57 11.4**	**-0.7**
JFK				*S*	**Sb**	**06 57 21.1**	**-0.7**
ONAJ	**Iwakimizuishiy**	**0.89**	**256**	*P*	**Pn**	**06 57 12.4**	**-0.9**
ONAJ				*S*	**Sg**	**06 57 22.9**	**-0.2**
JMM	**Marumori**	**1.03**	**303**	*P*	**Pn**	**06 57 14.9**	**-0.2**
JMM				*S*	**Sb**	**06 57 27.7**	**-0.3**
JIO	**Ouri**	**1.21**	**340**	*P*	**Pg**	**06 57 17.9**	**+0.4**
JIO				*S*	**Sg**	**06 57 32.3**	**-1.1**
JFT	**Otama**	**1.25**	**280**	*P*	**Pg**	**06 57 18.6**	**+0.4**
JFT				*S*	**Sb**	**06 57 33.5**	**-1.0**
JHO	**Hitachi**	**1.27**	**237**	*P*	**Pn**	**06 57 17.4**	**-1.0**
JOU	**Okura**	**1.42**	**318**	*P*	**Pg**	**06 57 21.5**	**-0.1**
MJAR	**Matsushiro Arr**	**3.05**	**256**	Pn	**Pn**	**06 57 44.1**	**+1.2**
	1.7nm,0.3s,baz=87,slow=14,SNR=4.9						
MJAR				Sn	**Sn**	**06 58 20.6**	**+1.0**
	2.6nm,0.3s,baz=87,slow=13,SNR=4.0						
MJAR				LR	LR	06 59 12.8	
	comp=Z,58nm,18.0s,baz=50,slow=46						
MAT	**Matsushiro**	**3.05**	**256**	*P*	**Pn**	**06 57 44.3**	**+1.4**
MAT				*eS*	**Sn**	**06 58 20.4**	**+0.8**
SONM	**Songino Array**	**27.94**	**303**	*P*	**P**	**07 02 45.3**	**0.0**
	0.4nm,0.7s,baz=99,slow=7.4,SNR=2.0						
H11N2	**WAKE ISLAND Hy 27.97 122**			T	T	07 32 14.8	
	baz=315,slow=75,SNR=30						
H11N1	**WAKE ISLAND Hy 27.98 122**			T	T	07 32 16.0	
	baz=315,slow=75,SNR=30						
H11N3	**WAKE ISLAND Hy 27.99 122**			T	T	07 32 16.8	
	baz=315,slow=75,SNR=30						
H11S1	**WAKE ISLAND Hy 28.70 124**			T	T	07 33 10.5	
	baz=316,slow=76,SNR=30						
H11S3	**WAKE ISLAND Hy 28.70 124**			T	T	07 33 14.3	
	baz=316,slow=76,SNR=31						
H11S2	**WAKE ISLAND Hy 28.72 124**			T	T	07 33 16.3	
	baz=316,slow=76,SNR=31						
MKAR	**Makanchi Array 44.29 302**			P	**P**	**07 05 04.4**	**-0.2**
	0.3nm,0.8s,baz=81,slow=9.3,SNR=2.6						
ILAR	**Eielson Array 49.05 32**			P	**P**	**07 05 42.1**	**+0.5**
	0.4nm,0.7s,baz=266,slow=5.9,SNR=5.1						
WRA	**Warramunga Arr 57.40 188**			P	**P**	**07 06 42.6**	**-0.8**
	0.3nm,0.6s,baz=5.4,slow=7.0,SNR=4.6						
ASAR	**Alice Springs 61.12 188**			P	**P**	**07 07 09.2**	**0.0**
	0.1nm,0.3s,baz=201,slow=30,SNR=2.3						
YKA	**Yellowknife Ar 63.37 30**			P	**P**	**07 07 24.5**	**+0.7**
	0.1nm,0.6s,baz=305,slow=7.3,SNR=4.4						
LPAZ	**La Paz 146.22 60**			PKPbc	**PKPab**	**07 16 36.4**	**-0.9**
	0.5nm,0.5s,baz=87,slow=24,SNR=2.7						

*IDC **13** 07:01:40.3±1.3,8.38N×126.15E,h0km,mb3.4/6, mb1 3.5/6,mb1mx3.4/50,mbtmp3.4/6,Error ellipse: s-maj=72.9km s-min=19.2km az=65.0*
*ISCJB **13** 07:01:43.4±0.8,8.3N±0.2×126.0E±0.1,h34km,mb3.3/6, Error ellipse: s-maj=25.5km s-min=10.0km az=33.2*
ISC 13 07:01:45.3±1.0,8.4N±0.2×126.2E±0.3,h34km,n7,σ0§91/8, mb3.3/6,1C,Mindanao

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BIPH	**Bislig**	**0.25**	**143**	⇑*eP*	**Pn**	**07 01 51.9**	**-0.2**
BIPH				*eS*	**Sb**	**07 01 58.0**	**+0.6**
CMAR	**Chiang Mai Arr**	**28.31**	**294**	*P*	**P**	**07 07 36.5**	**+0.5**
	0.5nm,0.6s,baz=97,slow=7.4,SNR=4.7						
WRA	**Warramunga Arr**	**29.27**	**164**	*P*	**P**	**07 07 44.8**	**+0.3**
	0.3nm,0.9s,baz=346,slow=7.9,SNR=3.2						
ASAR	**Alice Springs**	**32.73**	**167**	*P*	**P**	**07 08 14.6**	**-0.4**
	0.1nm,0.4s,baz=343,slow=7.2,SNR=2.6						
SONM	**Songino Array**	**42.76**	**340**	*P*	**P**	**07 09 40.5**	**+0.9**
	0.2nm,0.4s,baz=188,slow=9.4,SNR=2.4						
MKAR	**Makanchi Array**	**53.49**	**324**	*P*	**P**	**07 11 01.2**	**-1.1**
	0.2nm,0.3s,baz=102,slow=8.5,SNR=6.3						
KURBB	**Kurchatov Arra**	**57.59**	**326**	*P*	**P**	**07 11 30.6**	**-1.0**
	0.3nm,0.4s,baz=124,slow=7.0,SNR=6.2						

*GUC **13** 07:02:08.6±0.7,34.53S×71.80W,h20km±7km,ML3.9*
*ISCJB **13** 07:02:09.4±0.8,34.57S±0.03×71.84W±0.08,h14km±8km, mb3.7/5,Error ellipse: s-maj=11.8km s-min=5.5km az=178.8*
*IDC **13** 07:02:09.2±1.3,34.57S×71.63W,h0km,mb3.8/5, mb1 3.9/7,mb1mx3.8/25,mbtmp3.7/7,ML3.8/2,Error ellipse: s-maj=35.8km s-min=29.3km az=56.0*
ISC 13 07:02:08.6±1.3,34.53S±0.04×71.73W±0.04,h1km±10km, n20,σ1§35/28,mb3.9/5,4C-1D,Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHPI	**Pichilemu**	**0.26**	**301**	⇑*iP*	**Pg**	**07 02 13.6**	**0.0**
CHPI				*i S*	**Sg**	**07 02 17.3**	**+0.3**
NICH	**Los Niches**	**0.63**	**139**	⇑*iP*	**Pg**	**07 02 21.2**	**+0.6**
NICH				*i S*	**Sg**	**07 02 30.2**	**+1.3**
TALC	**Talca**	**0.87**	**175**	⇑*iP*	**Pg**	**07 02 24.9**	**-0.4**
TALC				*i S*	**Sg**	**07 02 36.5**	**-0.2**
ANTU	**Antumapu**	**1.32**	**44**	*eP*	**Pn**	**07 02 32.8**	**-1.5**
ANTU				*i S*	**Sb**	**07 02 50.6**	**-1.1**
ANTU				IAML		07 02 53.5	
	comp=N,3μm,0.9s						
CLCH	**Cerro Calan**	**1.50**	**42**	⇓*iP*	**Pn**	**07 02 36.1**	**-0.7**
CLCH				*i S*	**Sn**	**07 02 56.3**	**-0.8**
CLCH				IAML		07 03 00.8	
	comp=N,5μm,0.6s						
PEL	**Peldehue**	**1.63**	**33**	⇑*iP*	**Pn**	**07 02 37.7**	**-0.9**
PEL				*i S*	**Sn**	**07 02 59.1**	**-1.1**
PEL				IAML		07 03 09.3	
	comp=N,2μm,0.3s						
ROC1	**El Roble**	**1.66**	**21**	*i P*	**Pn**	**07 02 39.6**	**+0.5**
AAGR	**Agrelo**	**2.81**	**60**	*i P*	**Pb**	**07 02 59.1**	**-0.6**
AAGR				*i S*	**Sg**	**07 03 38.8**	**-0.2**
ARCO	**CERRO ARCO**	**2.88**	**55**	*i P*	**Pb**	**07 02 59.3**	**-1.6**
ARCO				*i S*	**Sg**	**07 03 41.0**	**-0.1**
ARCO				IAML		07 03 48.1	
	comp=Z,98nm,0.3s						
AUSP	**Uspallata**	**3.02**	**41**	*i P*	**Pb**	**07 03 01.9**	**-1.5**
AUSP				*i S*	**Sb**	**07 03 43.0**	**+2.0**
ASAL	**Salagasta**	**3.10**	**52**	*i P*	**Pb**	**07 03 02.6**	**-2.0**
**

	comp=N,3μm,0.3s							
CPBX					AML	AML	07 16 57.7	
	comp=E,7μm,0.3s							
CPBX				⇑e			07 16 57.7	
MBIG	**Mexicali**	**0.18**	**52**	*eP*		**Pb**	**07 16 53.1**	**+0.2**
MBIG	**Mexicali**	**0.18**	**52**	*i* P		**Pb**	**07 16 53.1**	**+0.2**
MBIG				*eS*		**Sg**	**07 16 55.0**	**-0.7**
SGL	**Mount Signal**	**0.46**	**319**	⇑*i*P		**Pg**	**07 16 57.8**	**+0.4**
DREC	**Desert Rsrch C**	**0.51**	**352**	*eP*		**Pb**	**07 16 59.1**	**+0.5**
EMSC	**East Mesa**	**0.55**	**36**	⇑*i*P		**Pb**	**07 16 59.6**	**+0.5**
WESC	**Westside Schoo**	**0.55**	**326**	*eP*		**Pb**	**07 16 59.7**	**+0.4**
YUH	**Yuha Desert**	**0.59**	**307**	⇑*i*P		**Pg**	**07 16 59.8**	**+0.1**
COA	**Coachella**	**0.60**	**20**	⇓*i*P		**Pg**	**07 17 00.2**	**+0.2**
COK	**Cook Ranch**	**0.63**	**331**	⇓*i*P		**Pb**	**07 17 00.9**	**+0.3**
RMX	**La Rumorosa**	**0.68**	**297**	*eP*		**Pg**	**07 17 01.0**	**-0.4**
RMX				*eS*		**Sg**	**07 17 10.2**	**-0.2**
IBP	**Imperial Bould**	**0.71**	**301**	*eP*		**Pg**	**07 17 02.1**	**0.0**
IKP	**In-Ko-Pah, Jac**	**0.72**	**299**	⇑*i*P		**Pg**	**07 17 02.3**	**+0.1**
YMD	**Yuma Desert**	**0.74**	**69**	⇑*i*P		**Pg**	**07 17 02.1**	**-0.4**
ECBX	**El Chinero**	**0.86**	**162**	*eP*		**Pg**	**07 17 05.2**	**+0.3**
ECBX				*eS*		**Sg**	**07 17 16.9**	**+0.5**
ZAX	**El Zacaton**	**1.10**	**225**	*eP*		**Pb**	**07 17 08.7**	**0.0**
ZAX				*eS*		**Sg**	**07 17 23.6**	**-0.1**
ZAX				⇑*e*			07 17 26.4	
ZAX					AML	AML	07 17 26.4	
	comp=E,232nm,0.6s							
ZAX					AML	AML	07 17 28.0	
	comp=N,221nm,0.5s							
ZAX				⇑*e*			07 17 28.0	
CBX	**Cerro Bola**	**1.10**	**271**	*eP*		**Pb**	**07 17 08.9**	**+0.2**
CBX				*eS*		**Sg**	**07 17 23.7**	**-0.1**
CBX	**Cerro Bola**	**1.10**	**271**	*i* P		**Pb**	**07 17 08.9**	**+0.2**
CBX				*i* S		**Sb**	**07 17 22.6**	**-0.2**
TJIG	**Tijuana**	**1.11**	**277**	*eP*		**Pb**	**07 17 08.8**	**-0.1**
TJIG	**Tijuana**	**1.11**	**277**	*eP*		**Pb**	**07 17 08.9**	**-0.1**
TJIG				*i* S		**Sb**	**07 17 22.5**	**-0.6**
BAR	**Barrett**	**1.17**	**289**	*eP*		**Pn**	**07 17 10.0**	**+0.3**
ECNX	**Esteban Cantu**	**1.23**	**239**	*eP*		**Pb**	**07 17 11.3**	**+0.4**
SPIG	**San Pedro Mart**	**1.25**	**184**	*eP*		**Pn**	**07 17 11.0**	**-0.1**
SPIG	**San Pedro Mart**	**1.25**	**184**	*i* P		**Pn**	**07 17 11.1**	**-0.1**
SPIG				*i* S		**Sb**	**07 17 26.7**	**-0.6**
SPX	**San Pedro Mart**	**1.25**	**184**	*eP*		**Pn**	**07 17 11.0**	**-0.1**
PBX	**Punta Banda**	**1.28**	**245**	*eP*		**Pb**	**07 17 12.3**	**+0.6**
SDRC	**San Diego Road**	**1.40**	**289**	*eP*		**Pb**	**07 17 13.8**	**0.0**

DJA ***13*** *07:22:45.7±0.9,5˚N±4˚,9˚6E±˚, h59km,15km, M4.2/10, mB5.5/1, mb4.4/2, MLv4.1/10, Mw(mB)5.0/1*

IDC ***13*** *07:22:49.1±1.3,4.25N×96.25E, h0km, mb3.5/6, mb1 3.7/8, mb1mx3.5/39, mbtmp3.5/8, ML3.5/2, Error ellipse: s-maj=44.6km s-min=14.4km az=46.0*

ISCJB ***13*** *07:22:51.6±0.8,4.24N±0.09×96.2E±0.1, h31km, mb3.5/6, Error ellipse: s-maj=21.3km s-min=8.2km az=148.0*

ISC 13 07:22:53.6±0.9,4.27N±0.09×96.16E±0.10, h31km, n18, σ1°57/17, mb3.6/6, Northern Sumatera

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LHMI	**Lhok Sumawe**	**1.24**	**39**	P	Pn	07 23 07.8	-7.0
LHMI				S	Sn	07 23 24.4	-6.0
TPTI		**1.43**	**134**	P	**Pn**	**07 23 16.3**	**-1.1**
TPTI				S	**Sb**	**07 23 41.1**	**+3.6**
KCSI	**Kotacane, Aceh**	**1.77**	**115**	P	**Pn**	**07 23 21.1**	**-1.1**
KCSI				S	**Sb**	**07 23 49.6**	**+2.3**
TSI	**Tuntungan**	**2.52**	**108**	P	**Pn**	**07 23 31.3**	**-1.1**
TSI				S	**Sb**	**07 24 07.0**	**-1.8**
PSI	**Prapat**	**3.12**	**118**	Pn	**Pn**	**07 23 41.2**	**+0.4**
	4.5nm,0.3s,baz=329,slow=15,SNR=14						
PSI				Lg	Lg	07 24 26.5	
	10nm,0.3s,baz=311,slow=11,SNR=5.2						
GSI	**Gunungsitoli**	**3.27**	**154**	P	**Pn**	**07 23 41.1**	**-1.6**
MNSI	**Mandailing Nat**	**4.86**	**135**	P	**Pn**	**07 24 03.1**	**-1.5**
CMAR	**Chiang Mai Arr**	**14.36**	**11**	Pn	**Pn**	**07 26 15.5**	**+0.5**
	0.1nm,0.3s,baz=187,slow=14,SNR=4.0						
H01W3	**Cape Leeuwin H**	**42.46**	**158**	T	T	08 15 55.5	
H01W2	**Cape Leeuwin H**	**42.47**	**158**	T	T	08 15 55.5	
H01W1	**Cape Leeuwin H**	**42.48**	**158**	T	T	08 15 55.5	
MKAR	**Makanchi Array**	**44.03**	**346**	P	**P**	**07 30 58.4**	**-0.1**
	0.2nm,0.4s,baz=152,slow=9.3,SNR=4.1						
SONM	**Songino Array**	**44.29**	**10**	P	**P**	**07 31 00.2**	**-0.5**
	0.1nm,0.3s,baz=180,slow=10,SNR=2.5						
WRA	**Warramunga Arr**	**44.57**	**124**	P	**P**	**07 31 02.4**	**-0.8**
	1.3nm,0.7s,baz=302,slow=9.3,SNR=13						
ASAR	**Alice Springs**	**46.09**	**129**	P	**P**	**07 31 13.9**	**-1.3**
	0.3nm,0.4s,baz=299,slow=8.7,SNR=4.4						
ZALV	**Zalesovo Beam**	**50.39**	**351**	P	**P**	**07 31 48.2**	**+0.4**
	0.4nm,0.4s,baz=161,slow=6.1,SNR=2.5						
BRTR	**Keskin Array B**	**66.30**	**312**	P	**P**	**07 33 40.5**	**+1.0**
	0.4nm,0.6s,baz=127,slow=8.5,SNR=3.2						
PLCA	**Paso Flores**	**141.78**	**196**	PKP	**PKPdf**	**07 42 23.4**	**+0.8**
	2.5nm,0.9s,baz=348,slow=4.1,SNR=3.4						

NIED ***13*** *07:32:00, 39˚10N×142˚40E, h32km, Mw4.1 Best double couple: M0 1.88000×10^15 NP1:φs301.00000°,δ32.00000°, λ-136.00000°. NP2:φs172.00000°,δ69.00000°, λ-66.00000°.*

JMA ***13*** *07:32:31.6±0.1, 39˚13N×142˚40E, h32km±1km, M4.1 JMA Felt I J1.*

ISCJB ***13*** *07:32:33.0±0.7, 39˚14N±0˚04×142˚29E±0˚06, h49km±4km, mb4.3/38, MS3.5/9, Error ellipse: s-maj=8.8km s-min=5.0km az=30.6*

NEIC ***13*** *07:32:33.0±0.6, 39˚06N×142˚50E, h35km, mb4.5/4, Error ellipse: s-maj=14.8km s-min=8.1km az=130.0*

MOS ***13*** *07:32:34.8±1.2, 39˚14N×142˚27E, h68km, mb4.3/23, Error ellipse: s-maj=9.5km s-min=7.0km az=89.6*

BJI ***13*** *07:32:35.8, 39˚35N×141˚17E, h14km, mb4.6/27, mB4.8/14, Ms4.3/4, Ms7 4.3/2*

IDC ***13*** *07:32:36.0±2.0, 39˚05N×142˚35E, h65km±17km, mb3.8/21, mb1 4.0/26, mb1mx3.9/45, mbtmp4.1/26, MS3.4/13, Ms1 3.4/13, ms1mx3.1/52, Error ellipse: s-maj=15.2km s-min=11.0km az=124.0*

ISC 13 07:32:33.9±1.1, 39.13N±0.05×142.29E±0.06, h43km±9km, n93, σ1°52/86, mb4.2/38, MS3.3/9, 1C-2D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**0.49**	**264**	P	**Pn**	**07 32 42.9**	**-1.7**
OFUJ				S	**Sn**	**07 32 50.8**	**-1.4**
MIYJ	**Miyakonagasawa**	**0.57**	**321**	P	**Pn**	**07 32 43.8**	**-1.9**
MIYJ				S	**Sn**	**07 32 52.5**	**-1.7**
JOM	**Ohasama**	**0.85**	**294**	P	**Pn**	**07 32 48.7**	**-0.7**
JOM				S	**Sn**	**07 33 00.8**	**+0.1**
JMK	**Ichinoseki**	**0.85**	**258**	P	**Pn**	**07 32 48.4**	**-1.1**
JMK				S	**Sn**	**07 33 00.4**	**-0.4**
JTH	**Tanohata**	**0.87**	**338**	P	**Pn**	**07 32 48.0**	**-1.7**
JTH				S	**Sn**	**07 33 00.7**	**-0.6**
JKZ	**Kuzumaki**	**1.13**	**319**	P	**Pn**	**07 32 52.7**	**-0.6**
JKZ				S	**Sn**	**07 33 08.2**	**+0.5**
ERM	**Erimo**	**2.95**	**13**	*ce*P	**Pn**	**07 33 17.4**	**-0.8**
ERM				pmax	pmax		
	comp=Z,52nm,1.7s						
ERM	**Erimo**	**2.95**	**13**	*e*Pn	**Pn**	**07 33 20.0**	**+1.7**
MAJO	**Matsushiro**	**4.14**	**233**	*eP*	**Pn**	**07 33 35.9**	**+1.3**
MAJO	**Matsushiro**	**4.14**	**233**	*e*Pn	**Pn**	**07 33 35.9**	**+1.3**
MAT	**Matsushiro**	**4.14**	**233**	P	**Pn**	**07 33 35.6**	**+1.0**
MAT				*e*S	**Sn**	**07 34 24.9**	**+3.2**
MJAR	**Matsushiro Arr**	**4.14**	**233**	P	**Pn**	**07 33 35.8**	**+1.2**
	comp=Z,7.5nm,0.3s,baz=39,slow=11,SNR=104						
MJAR				LR	LR	07 35 24.6	
	comp=Z,586nm,18.6s,baz=45,slow=4.1						
ASAJ	**Asahikawa**	**4.99**	**3**	P	Pn	07 33 49.6	+3.5
	comp=Z,3.4nm,0.3s,baz=217,slow=9.2,SNR=20						
ASAJ				S	**Sn**	**07 34 46.7**	**+4.2**
	comp=Z,0.2nm,0.3s,baz=106,slow=20,SNR=3.1						
ASAJ	**Asahikawa**	**4.99**	**3**	*e*Pn	Pn	07 33 49.2	+3.0
ASAJ				S	**Sn**	**07 34 46.7**	**+4.2**
YUK	**Yuzh-Kuril'sk**	**5.58**	**28**	*e*P	Pn	07 34 01.8	+7.5
YUK				*e*S	**Sn**	**07 34 51.9**	**-5.2**
YUK				pmax	pmax		
	comp=Z,106nm,0.6s						
YUK				pmax	pmax		
	comp=N,62nm,0.3s						
YUK				pmax	pmax		
	comp=E,40nm,0.7s						
INU	**Inuyama**	**5.65**	**230**	*e*Pn	**Pn**	**07 33 57.1**	**+1.7**
SHO	**Shikotan**	**5.83**	**34**	*e*P	Pn	07 34 02.1	+4.4
SHO				pmax	pmax		
	comp=Z,48nm,0.8s						
SHO				pmax	pmax		
	comp=N,28nm,0.4s						
SHO				pmax	pmax		
	comp=E,25nm,0.4s						
KUR	**Kuril'sk**	**7.37**	**32**	*e*P	Pn	07 34 23.6	+4.8
KUR				pmax	pmax		
	comp=Z,43nm,0.5s						
KUR				pmax	pmax		
	comp=N,39nm,0.1s						
KUR				pmax	pmax		
	comp=E,31nm,0.1s						
USRK	**Ussuriysk Ar.**	**9.22**	**307**	P	**Pn**	**07 34 47.2**	**+3.0**
	comp=E,0.2nm,0.3s,baz=103,slow=14,SNR=9.8						
USRK				LR	LR	07 38 13.7	
	comp=E,228nm,19.6s,baz=136,slow=36						
MDJ	**Mudanjiang**	**10.94**	**304**	P	Pn	07 34 58.3	-9.4
MDJ				pmax	pmax		
	comp=Z,5.0nm,0.8s						
MDJ				pmax	pmax		
	comp=Z,19nm,2.7s						
JNU	**Nakatsue**	**11.00**	**240**	P	**Pn**	**07 35 11.2**	**+2.5**
	comp=Z,0.5nm,0.3s,baz=22,slow=1.3,SNR=4.1						
JNU				LR	LR	07 39 43.6	
	comp=Z,245nm,19.9s,baz=83,slow=39						
KSRS	**Korea Array**	**11.42**	**266**	P	Pn	07 35 19.1	+4.8
	comp=Z,0.3nm,0.3s,baz=77,slow=14,SNR=4.5						
KSRS				LR	LR	07 39 09.2	
	comp=Z,177nm,21.3s,baz=93,slow=34						
KSAR	**Wonju Array Be**	**11.45**	**266**	P	Pn	07 35 19.1	+4.4
KSAR	**Wonju Array Be**	**11.45**	**266**	P	Pn	07 35 19.1	+4.4
KLR	**Kul'dur**	**12.60**	**327**	P	**P**	**07 35 41.4**	**+0.5**
	comp=Z,0.1nm,0.3s,baz=127,slow=11,SNR=5.2						
KLR				LR	LR	07 40 32.8	
	comp=Z,105nm,18.1s,baz=140,slow=38						
KLR	**Kul'dur**	**12.60**	**327**	*e*P	**Pn**	**07 35 30.7**	**+0.3**
PETK	**Petropavlovsk-**	**17.54**	**32**	LR	LR	07 42 41.5	
	comp=Z,75nm,22.0s,baz=218,slow=34						
BJI	**Beijing**	**20.13**	**281**	P	**P**	**07 37 00.5**	**-3.6**
BJI				S	S	07 40 37.4	-10
BJI				pmax	pmax		
	comp=Z,7.0nm,0.9s						
NJ2	**Nanjing**	**20.30**	**257**	*e*P	**P**	**07 37 05.3**	**-0.6**
NJ2				pmax	pmax		
	comp=Z,15nm,0.5s						
MA2	**Magadan**	**21.16**	**12**	P	**P**	**07 37 14.9**	**-0.1**
	comp=Z,8.4nm,0.8s,baz=200,slow=3.0,SNR=4.7						
MA2				LR	LR	07 44 45.0	
	comp=Z,50nm,19.9s,baz=175,slow=34						
HHC	**Hu-ho-hao-te**	**23.55**	**284**	*e*P	**P**	**07 37 37.3**	**-3.0**
HHC				pP	pP	07 37 41.4	-10
HHC				sP	sP	07 37 44.3	-13
HHC				S	S	07 41 40.5	-11
HHC				pmax	pmax		
	comp=Z,19nm,0.8s						
HHC				pmax	pmax		
	comp=Z,78nm,11.1s						
HHC				LR	LR		
	comp=Z,610nm,14.5s						
HHC				LR	LR		
	comp=Z,1μm,16.9s						
HHC				LR	LR		
	comp=Z,700nm,14.7s						
SEY	**Seymchan**	**24.60**	**11**	P	**P**	**07 37 50.9**	**+1.3**
	comp=Z,3.2nm,0.7s,baz=198,slow=5.0,SNR=20						
BOD	**Bodaibo**	**26.17**	**325**	*e*P	**P**	**07 38 03.0**	**-0.9**
BOD				pmax	pmax		
	comp=Z,3.0nm,0.8s						
SONM	**Songino Array**	**27.25**	**300**	P	**P**	**07 38 15.8**	**+1.8**
	comp=Z,1.0nm,0.6s,baz=79,slow=7.7,SNR=6.5						
SONM				LR	LR	07 49 35.3	
	comp=Z,83nm,18.9s,baz=148,slow=37						
H11N2	**WAKE ISLAND Hy**	**28.71**	**125**	T	T	08 08 46.9	
	baz=317,slow=75,SNR=1689						
H11N1	**WAKE ISLAND Hy**	**28.72**	**125**	T	T	08 08 51.3	
	baz=317,slow=75,SNR=1499						
H11N3	**WAKE ISLAND Hy**	**28.73**	**125**	T	T	08 08 52.6	
	baz=317,slow=75,SNR=1142						
H11S1	**WAKE ISLAND Hy**	**29.50**	**127**	T	T	08 09 48.6	
	baz=318,slow=76,SNR=168						
H11S3	**WAKE ISLAND Hy**	**29.50**	**127**	T	T	08 09 48.8	
	baz=318,slow=76,SNR=300						
H11S2	**WAKE ISLAND Hy**	**29.51**	**127**	T	T	08 09 49.9	
	baz=318,slow=76,SNR=115						
TLY	**Talaya**	**29.53**	**308**	P	**P**	**07 38 34.8**	**+0.7**
	comp=Z,3.1nm,0.6s,baz=105,slow=2.9,SNR=4.6						
TLY				LR	LR	07 51 00.4	
	comp=Z,93nm,18.9s,baz=97,slow=37						
TLY	**Talaya**	**29.53**	**308**	*e*P	**P**	**07 38 34.2**	**+0.1**
TLY				pmax	pmax		
	comp=Z,2.0nm,0.8s						
TLY				MLR	MLR		
	comp=Z,98nm,20.0s						
ZAK	**Zakamensk**	**29.57**	**305**	*e*P	**P**	**07 38 35.0**	**+0.5**
ZAK				pmax	pmax		
	comp=Z,3.0nm,1.1s						
BILL	**Bilibino**	**31.82**	**17**	*i* P	**P**	**07 38 53.8**	**-0.2**
BILL				pmax	pmax		
	comp=Z,3.0nm,1.3s						
BILL				MLR	MLR		
	comp=Z,42nm,18.0s						
CD2	**Chengdu**	**32.41**	**267**	P	**P**	**07 38 58.4**	**-1.3**
CD2				pmax	pmax		
	comp=Z,1.0nm,0.5s						
GTA	**Gaotai**	**32.66**	**284**	*e*P	P	07 38 54.6	-7.3
GTA				pP	pP	07 38 58.8	-15
GTA				sP	sP	07 39 01.8	-17
GTA				pmax	pmax		
	comp=Z,4.0nm,0.7s						
TIXI	**Tiksi**	**33.30**	**352**	*e*P	**P**	**07 39 06.3**	**-0.6**
TIXI				pmax	pmax		
	comp=Z,1.0nm,1.0s						
KMI	**Kunming**	**36.00**	**259**	P	**P**	**07 39 33.3**	**+2.3**
KMI				pP	pP	07 39 37.4	-5.4
KMI				pmax	pmax		
	comp=Z,19nm,0.7s						
KMI				LR	LR		
	comp=Z,66nm,9.1s						
KMI				LR	LR		
	comp=Z,140nm,7.9s						
WMQ	**Urumqi**	**40.55**	**295**	P	**P**	**07 40 09.3**	**+0.4**
WMQ				pP	pP	07 40 12.8	-8.0
WMQ				sP	sP	07 40 16.3	-10
WMQ				pmax	pmax		
	comp=Z,12nm,0.6s						
WMQ				pmax	pmax		
	comp=Z,88nm,3.8s						
ZAA0	**Zalesovo Array**	**41.05**	**311**	*e*P	**P**	**07 40 11.6**	**-1.2**
ZAA0				*e*P	pP	07 40 12.7	-12
ZALV	**Zalesovo Beam**	**41.05**	**311**	P	**P**	**07 40 13.1**	**+0.4**
	comp=Z,2.4nm,0.5s,baz=89,slow=7.9,SNR=10.0						
ZALV				LR	LR	07 57 54.6	
	comp=Z,78nm,18.3s,baz=70,slow=37						
CMAR	**Chiang Mai Arr**	**42.72**	**254**	P	**P**	**07 40 27.4**	**+0.6**
	comp=Z,1.3nm,0.8s,baz=42,slow=6.7,SNR=11						
CMAR				LR	LR	07 58 54.0	
	comp=Z,20nm,18.4s,baz=15,slow=37						
CM01	**Chiang Mai Arr**	**42.73**	**254**	*e*P	**P**	**07 40 27.0**	**+0.1**
MKAR	**Makanchi Array**	**43.62**	**300**	P	**P**	**07 40 34.4**	**+0.5**
	comp=Z,4.4nm,0.8s,baz=85,slow=9.6,SNR=48						
MAKZ	**Makanchi**	**43.83**	**300**	*e*P	**P**	**07 40 36.0**	**+0.5**
MAKZ				pmax	pmax		
	comp=Z,5.0nm,0.9s						
MAKZ	**Makanchi**	**43.83**	**300**	*e*P	**P**	**07 40 36.0**	**+0.5**
	comp=Z,4.5nm,0.9s						
KURK	**Kurchatov**	**45.21**	**307**	*e*P	**P**	**07 40 46.3**	**-0.1**
KURK				pmax	pmax		
	comp=Z,10.0nm,0.8s						
KURK	**Kurchatov**	**45.21**	**307**	*e*P	**P**	**07 40 46.3**	**-0.1**
	comp=Z,10nm,0.8s						
KURBB	**Kurchatov Arra**	**45.28**	**306**	P	**P**	**07 40 47.1**	**+0.1**
	comp=Z,9.6nm,0.7s,baz=82,slow=8.2,SNR=58						
ILAR	**Eielson Array**	**47.36**	**33**	P	**P**	**07 41 03.4**	**+0.2**
	comp=Z,3.1nm,0.7s,baz=268,slow=6.2,SNR=38						
RAMN	**Ramite**	**47.57**	**273**	*e*P	**P**	**07 41 05.6**	**0.0**
GUN	**Gumba**	**47.66**	**274**	*e*P	**P**	**07 41 07.0**	**+0.6**
	comp=Z,12nm,0.6s						
KKN	**Kakani**	**48.19**	**274**	*e*P	**P**	**07 41 11.0**	**+0.7**
TKM2	**Tokmak 2**	**49.27**	**297**	*e*P	**P**	**07 41 19.5**	**+1.1**
TKM2				pmax	pmax		
	comp=Z,7.0nm,0.8s						
TKM2	**Tokmak 2**	**49.27**	**297**	*e*P	**P**	**07 41 19.5**	**+1.1**
	comp=Z,7.4nm,0.8s						
KOLN	**Koldanda**	**49.50**	**275**	*e*P	**P**	**07 41 20.8**	**+0.4**
	comp=Z,8.3nm,0.6s						
BVAR	**Borovoye Array**	**49.69**	**311**	P	**P**	**07 41 21.5**	**+0.3**
	comp=Z,2.4nm,0.6s,baz=77,slow=7.8,SNR=12						
BRVK	**Borovoye**	**49.75**	**311**	⇓*i*P	**P**	**07 41 22.1**	**+0.5**
BRVK				pmax	pmax		
	comp=Z,3.0nm,0.8s						
PYUN	**Piuthan**	**49.81**	**276**	*e*P	**P**	**07 41 23.4**	**+0.7**
	comp=Z,32nm,0.9s						
AAK	**Ala-Archa**	**50.13**	**297**	P	**P**	**07 41 25.5**	**+0.7**
	comp=Z,1.0nm,0.3s,baz=150,slow=4.7,SNR=6.5						
AAK	**Ala-Archa**	**50.13**	**297**	*e*P	**P**	**07 41 23.0**	**-1.9**
AAK				pmax	pmax		
	comp=Z,5.0nm,1.0s						
AAK	**Ala-Archa**	**50.13**	**297**	*e*P	**P**	**07 41 25.6**	**+0.7**
	comp=Z,2.2nm,0.7s						
PSI	**Prapat**	**53.47**	**239**	LR	LR	08 03 07.7	
	comp=Z,31nm,21.2s,slow=34						
KIP	**Kipapa**	**53.56**	**91**	*i* P	**P**	**07 41 50.4**	**-0.1**
KIP				pmax	pmax		
	comp=Z,946nm,2.5s						
ARU	**Arti**	**55.26**	**318**	*d i*P	**P**	**07 42 02.3**	**-0.1**
ARU				S	**S**	**07 49 41.7**	**-1.0**
ARU				SS	**SS**	**07 53 24.5**	**-2.3**
ARU				pmax	pmax		
	comp=Z,4.0nm,0.7s						
AKTO	**Aktyubinsk**	**57.80**	**311**	P	**P**	**07 42 20.5**	**0.0**
	comp=Z,1.3nm,0.6s,baz=69,slow=16,SNR=3.8						
WRA	**Warramunga Arr**	**59.23**	**189**	P	**P**	**07 42 28.3**	**-2.5**
	comp=Z,1.4nm,0.7s,baz=6.7,slow=7.1,SNR=14						
YKA	**Yellowknife Ar**	**61.65**	**31**	P	**P**	**07 42 46.5**	**-0.2**
	comp=Z,1.0nm,0.9s,baz=297,slow=6.7,SNR=12						
ASAR	**Alice Springs**	**62.96**	**189**	P	**P**	**07 42 55.8**	**-0.2**
	comp=Z,0.9nm,0.7s,baz=12,slow=7.2,SNR=11						
GEYT	**Alibeck**	**63.44**	**298**	P	**P**	**07 42 58.9**	**-0.3**
	comp=Z,1.2nm,0.4s,baz=218,slow=36,SNR=3.0						
FINES	**FINESS Array B**	**67.28**	**332**	P	**P**	**07 43 23.5**	**-0.1**
	comp=Z,1.1nm,0.7s,baz=46,slow=11,SNR=3.0						
NCK	**Nalchik**	**69.78**	**310**	*e*P	**P**	**07 43 40.2**	**+0.6**
NCK				pmax	pmax		
	comp=Z,17nm,0.6s						
KIV	**Kislovodsk**	**70.06**	**311**	*e*P	**P**	**07 43 42.0**	**+0.7**
KIV				pmax	pmax		
	comp=Z,8.0nm,1.0s						
FFC	**Flin Flon**	**71.57**	**33**	*e*P	**P**	**07 43 50.8**	**+0.6**
AKASG	**Malin Array Be**	**73.06**	**322**	P	**P**	**07 43 59.2**	**+0.1**
	comp=Z,0.7nm,0.4s,baz=45,slow=5.9,SNR=5.6						
NVAR	**Mina Array Bea**	**73.19**	**54**	P	**P**	**07 44 01.1**	**+0.7**
	comp=Z,1.5nm,0.9s,baz=284,slow=6.0,SNR=10						
PDAR	**Pinedale Array**	**75.71**	**46**	P	**P**	**07 44 14.9**	**-0.1**
	comp=Z,0.7nm,0.7s,baz=300,slow=2.9,SNR=8.6						
VYHS	**Vyhne**	**79.39**	**326**	*e*P	**P**	**07 44 32.9**	**-2.3**
VYHS	**Vyhne**	**79.39**	**326**	*e*P	**P**	**07 44 32.9**	**-2.3**
GERES	**GERESS Array B**	**81.29**	**329**	LR	LR	08 22 42.9	
	comp=Z,40nm,18.4s,baz=304,slow=37						
ANMO	**Albuquerque**	**82.71**	**51**	*i* P	**P**	**07 44 53.2**	**-0.1**
ANMO				pmax	pmax		
	comp=Z,3.0nm,1.7s						
TXAR	**Lajitas Array**	**88.30**	**53**	P	**P**	**07 45 21.1**	**0.0**
	comp=Z,0.2nm,0.6s,baz=301,slow=3.0,SNR=5.1						
LPAZ	**La Paz**	**145.01**	**58**	PKPbc	**PKPab**	**07 52 07.0**	**+0.1**
	comp=Z,0.4nm,0.7s,baz=251,slow=9.8,SNR=2.5						

IDC 13 07:35:22.8±7.9, 15.40S×71.43W, h142km±62km, mb3.6/1, mb1 3.6/2, mb1mx3.0/21, mbtmp4.0/2, Error ellipse: s-maj=121.3km s-min=52.8km az=164.0, Southern Peru

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LPAZ	**La Paz**	**3.30**	**106**	P	Pn	07 36 14.2	0.0
	8.7nm,0.3s,baz=284,slow=9.8,SNR=272						
LPAZ				S	Sn	07 36 54.5	+0.5
	0.6nm,0.3s,baz=191,slow=22,SNR=6.8						
DBIC	**Dimbokro**	**69.49**	**77**	P	P	07 46 12.6	-3.7
	2.5nm,0.9s,baz=225,slow=4.3,SNR=3.7						
TORD	**Torodi Ar. Bea**	**77.70**	**73**	P	P	07 47 04.4	0.0
	0.8nm,0.5s,baz=270,slow=4.5,SNR=10						
ASAR	**Alice Springs**	**133.95**	**213**	PKP	PKPdf	07 54 23.7	-0.2
	0.2nm,0.4s,baz=117,slow=5.7,SNR=2.6						
WRA	**Warramunga Arr**	**136.69**	**217**	PKP	PKPdf	07 54 28.4	-0.8
	0.2nm,0.9s,baz=128,slow=2.1,SNR=4.1						

ISCJB ***13*** *07:35:43.9±1.3, 43˚02N±0˚06×15˚68E±0˚07, h3km±6km, Error ellipse: s-maj=12.2km s-min=4.0km az=41.0*

CSEM ***13*** *07:35:44.9±0.4, 42˚94N×15˚65E, h10km, ML3.1, Error ellipse: s-maj=9.5km s-min=3.2km az=40.0*

VIE ***13*** *07:35:46.1±1.0, 43˚07N×15˚71E, h5km±4km, mb2.6/3, ml2.6/4, Error ellipse: s-maj=17.1km s-min=5.4km az=82.0*

ISC 13 07:35:45.8±2.6, 42.97N±0.08×15.69E±0.07, h12km±14km, n22, σ0°78/37, 1C, Adriatic Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
STON	**Ston**	**1.48**	**93**	*e*Pn	**Pn**	**07 36 11.6**	**-0.7**
STON				Sn	**Sg**	**07 36 33.0**	**-0.4**
STON	**Ston**	**1.48**	**93**	*e*Pn	**Pn**	**07 36 11.5**	**-0.7**
STON				*e*S

*ISCJB **13** 07:41:34.7±0.4,24°.38N±0°.02×121°.87E±0°.02, h6km±3km, Error ellipse: s-maj=3.7km s-min=2.5km az=41.8*
*TAP **13** 07:41:34.9,24°.40N×121°.81E, h9km, ML3.1, B*
*JMA **13** 07:41:34.6±0.1,24°.39N×121°.82E, h5km±2km, M2.7*

ISC 13 07:41:34.9±0.8,24°.40N±0°.02×121°.83E±0°.02,h12km±6km, n47,σ0°55/67,3C-5D,Taiwan

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
ENA	**Nanau**	**0.09**	**291**	⇓*iP*	**Pg**		**07 41 37.1**	**-0.5**
	baz=297							
EHP	**Heping Village**	**0.12**	**223**	*eP*	**Pg**		**07 41 38.2**	**+0.2**
	baz=213							
EHP				*eS*	**Sg**		**07 41 40.5**	**+0.3**
	baz=213							
TWC	**Suao**	**0.21**	**5**	⇑*iP*	**Pg**		**07 41 39.7**	**+0.2**
	baz=5.0							
TWC				*i* S	**Sg**		**07 41 42.7**	**0.0**
	baz=5.0							
ENTT	**Nioudou**	**0.34**	**315**	⇓*iP*	**Pg**		**07 41 42.2**	**+0.4**
	baz=318							
ENTT				*i* S	**Sg**		**07 41 46.6**	**+0.1**
	baz=318							
TWE	**Neicheng**	**0.35**	**335**	⇓*iP*	**Pg**		**07 41 42.5**	**+0.5**
	baz=340							
TWE				S	**Sg**		**07 41 47.0**	**+0.1**
	baz=340							
ILA	**Ilan**	**0.38**	**349**	*eP*	**Pg**		**07 41 41.9**	**-0.5**
	baz=345							
ILA				*eS*	**Sb**		**07 41 48.6**	**-0.6**
	baz=345							
TWD	**Chiawan**	**0.38**	**214**	⇑*iP*	**Pg**		**07 41 42.4**	**-0.1**
	baz=211							
TWD				*i* S	**Sg**		**07 41 47.5**	**0.0**
	baz=211							
NNS	**Nan Shan**	**0.42**	**276**	⇓*iP*	**Pg**		**07 41 43.3**	**+0.1**
	baz=276							
NNS				*i* S	**Sg**		**07 41 48.5**	**-0.3**
	baz=276							
EGS		**0.46**	**12**	*eP*	**Pb**		**07 41 44.5**	**-0.4**
	baz=25							
HWA	**Hwalien**	**0.47**	**206**	*eP*	**Pb**		**07 41 44.8**	**-0.2**
	baz=212							
NSK	**Sanguang**	**0.51**	**303**	⇓*iP*	**Pb**		**07 41 45.5**	**-0.4**
	baz=305							
NSK				*eS*	**Sg**		**07 41 51.7**	**-0.1**
	baz=305							
WHF	**Hehuan Shan**	**0.57**	**244**	⇑*iP*	**Pg**		**07 41 46.1**	**-0.1**
	baz=243							
WHF				S	**Sg**		**07 41 53.6**	**-0.3**
	baz=243							
TWT	**Tachien**	**0.61**	**257**	*eP*	**Pb**		**07 41 47.6**	**0.0**
	baz=256							
TWT				*eS*	**Sg**		**07 41 55.4**	**+0.4**
	baz=256							
TWA	**Mucha**	**0.62**	**339**	*eP*	**Pn**		**07 41 49.1**	**-0.5**
	baz=331							
TWB1	**Santiao Chiao**	**0.63**	**13**	*eP*	**Pg**		**07 41 47.3**	**+0.2**
	baz=15							
TWB1				S	**Sg**		**07 41 56.0**	**+0.6**
	baz=15							
NWF	**Wu-fen Shan**	**0.67**	**356**	*eP*	**Pb**		**07 41 49.0**	**+0.4**
	baz=348							
NWF				*eS*	**Sb**		**07 41 57.7**	**-0.2**
	baz=348							
ESL	**Shilin**	**0.68**	**212**	*eP*	**Pg**		**07 41 47.6**	**-0.6**
	baz=210							
NSTT	**Nanjuang**	**0.79**	**287**	P	**Pb**		**07 41 51.0**	**+0.5**
	baz=288							
NSTT				*eS*	**Sb**		**07 42 01.0**	**-0.2**
	baz=288							
TWS1	**Kuangyinshan**	**0.80**	**332**	*eP*	**Pn**		**07 41 51.9**	**0.0**
	baz=333							
NCU	**National Centr**	**0.82**	**314**	*eP*	**Pn**		**07 41 52.0**	**-0.2**
	baz=315							
TWY	**Chenhua**	**0.90**	**347**	*eP*	**Pn**		**07 41 53.8**	**+0.5**
	baz=339							
TWY				*eS*	**Sn**		**07 42 05.4**	**-0.8**
	baz=339							
WDT	**Danda**	**0.90**	**225**	*eP*	**Pg**		**07 41 51.9**	**-0.4**
	baz=224							
WDT				*eS*	**Sb**		**07 42 04.4**	**-0.3**
	baz=224							
TWQ1	**Liyutan**	**0.96**	**267**	*eP*	**Pn**		**07 41 54.3**	**+0.1**
	baz=266							
NSY	**Sanyi**	**0.97**	**271**	*eP*	**Pn**		**07 41 55.0**	**+0.6**
	baz=271							
SMLT	**Sun Moon Lake**	**0.99**	**239**	*eP*	**Pb**		**07 41 53.9**	**-0.1**
	baz=238							
EHY	**Hungye**	**1.00**	**208**	*eP*	**Pb**		**07 41 53.4**	**-0.8**
	baz=218							
TYC	**Yuchr**	**1.01**	**241**	*eP*	**Pg**		**07 41 54.4**	**0.0**
	baz=240							
JYNG	**Yonagunijimaku**	**1.02**	**87**	P	**Pg**		**07 41 54.6**	**+0.1**
JYNG				S	**Sg**		**07 42 08.2**	**+0.4**
YOJ	**Yonaguni jima**	**1.08**	**86**	P	**Pb**		**07 41 55.3**	**-0.1**
YOJ				S	**Sb**		**07 42 09.4**	**-0.1**
YOJ	**Yonaguni jima**	**1.08**	**86**	*eP*	**Pb**		**07 41 55.6**	**+0.1**
	baz=74							
TCU	**Taichung**	**1.08**	**257**	*eP*	**Pn**		**07 41 58.1**	**+2.3**
	baz=245							
TWF1	**Yuli**	**1.15**	**205**	*eP*	**Pb**		**07 41 56.2**	**-0.5**
	baz=216							
YUS	**Yu-Shan**	**1.21**	**222**	*eP*	**Pb**		**07 41 57.5**	**-0.5**
	baz=230							
PCYT	**Pengchaiyu**	**1.25**	**10**	*eP*	**Pn**		**07 41 58.2**	**+0.1**
	baz=13							
ALS	**Alishan**	**1.29**	**227**	*eP*	**Pn**		**07 41 58.8**	**-0.1**
	baz=210							
CHN5	**Tsauling**	**1.32**	**233**	P	**Pg**		**07 42 00.8**	**+0.5**
	baz=233							
CHN5				*eS*	**Sg**		**07 42 19.4**	**+1.9**
	baz=233							
ELDTW	**Lidau**	**1.41**	**212**	*eP*	**Pb**		**07 42 01.4**	**+0.1**
	baz=210							
CHN4	**Tsaushan**	**1.54**	**228**	*eP*	**Pg**		**07 42 04.7**	**+0.3**
	baz=211							
WTP	**Ta-pu**	**1.60**	**224**	*eP*	**Pg**		**07 42 05.2**	**-0.4**
	baz=208							
TWK	**Hsinying**	**1.67**	**228**	*eP*	**Pg**		**07 42 06.8**	**0.0**
	baz=209							
CHN1	**Nanshi**	**1.70**	**225**	*eP*	**Pb**		**07 42 05.5**	**-0.5**
	baz=209							
IRIF	**Iriomote-Funau**	**1.73**	**92**	P	**Pn**		**07 42 04.9**	**+0.1**
IRIF				*eS*	**Sn**		**07 42 26.9**	**+0.1**
HATJ	**Hateruma jima**	**1.83**	**100**	*eS*	**Sn**		**07 42 29.7**	**+0.4**
JKRS	**Kuro-shima**	**2.00**	**94**	P	**Pn**		**07 42 09.0**	**+0.6**
JKRS				S	**Sn**		**07 42 32.8**	**-0.5**
JIJ	**Ishigaki jima**	**2.11**	**90**	*eS*	**Sn**		**07 42 34.6**	**-1.5**
JISG	**Ishigakijimahi**	**2.27**	**85**	*eS*	**Sn**		**07 42 39.9**	**-0.1**
JTJ	**Tarama**	**2.63**	**84**	*eS*	**Sn**		**07 42 49.0**	**+0.1**

IDC 13 07:47:54.7±6.5,38°.95N×141°.72E,h0km,mb3.5/4, mb1 3.5/5,mb1mx3.2/53,mbtmpb3.4/5,ML2.6/1,Error ellipse: s-maj=122.0km s-min=39.8km az=112.0,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
MJAR	**Matsushiro Arr**	**3.67**	**230**		Pn	Pn	07 48 52.9	+0.1
	0.5nm,0.3s,baz=46,slow=16,SNR=2.8							
SONM	**Songino Array**	**26.97**	**301**	P		P	07 53 39.6	+1.6
	0.2nm,0.5s,baz=119,slow=12,SNR=2.9							
NRIK	**Noril'sk**	**41.64**	**334**	P		P	07 55 44.8	+0.5
	1.6nm,0.5s,baz=56,slow=18,SNR=6.4							
MKAR	**Makanchi Array**	**43.34**	**300**	P		P	07 55 57.9	-0.5
	0.2nm,0.7s,baz=64,slow=3.4,SNR=2.1							
KURBB	**Kurchatov Arra**	**45.04**	**307**	P		P	07 56 09.8	-2.1
	0.3nm,0.3s,baz=70,slow=6.2,SNR=5.3							

JMA 13 07:47:59.2,37°.76N×140°.00E,h9km±1km,M1.4,Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
JFT	**Otama**	**0.36**	**132**	P	Pg		07 48 06.2	-0.1
JFT				S	Sg		07 48 10.9	-0.2
JFY	**Yanaizu**	**0.42**	**214**	S	Sg		07 48 13.1	0.0
JYS	**Shirataka**	**0.46**	**6**	*eS*	Sg		07 48 14.9	+0.5

*ISCJB **13** 07:49:08.5±0.7,26°.59N±0°.10×142°.8E±0°.1, h31km, mb3.7/12, MS2.4/1, Error ellipse: s-maj=19.3km s-min=10.5km az=143.0*

*IDC **13** 07:49:11.0±5.0,26°.65N×142°.69E, h33km±36km, mb3.6/10, mb1 3.8/11,mb1mx3.5/50,mbtmpb3.8/11, ML2.5/1, MS2.6/1, Ms1 2.6/1, ms1mx2.2/46, Error ellipse: s-maj=28.0km s-min=17.0km az=82.0*

ISC 13 07:49:10.8±0.9,26°.6N±0°.1×142°.7E±0°.2,h31km,n14, σ1°04/15,mb3.7/12,Bonin Islands region

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
JCJ	**Chichijima**	**0.67**	**317**		Pn	Pn	**07 49 23.3**	**-0.9**
JCJ					Sn	**Sn**	**07 49 34.0**	**+0.4**
	289nm,0.3s,baz=285,slow=24,SNR=23							
USRK	**Ussuriysk Ar.**	**19.57**	**336**	P		Pn	07 53 37.1	-0.5
	0.1nm,0.3s,baz=200,slow=20,SNR=2.6							
KLR	**Kul'dur**	**24.13**	**342**	P		**P**	**07 54 26.1**	**+2.3**
	1.0nm,0.6s,baz=133,slow=2.0,SNR=4.2							
KLR				LR		LR	08 02 04.1	
	comp=Z,14nm,21.3s,baz=314,slow=32							
SONM	**Songino Array**	**35.38**	**316**	P		**P**	**07 56 05.6**	**+1.9**
	0.3nm,0.5s,baz=102,slow=5.0,SNR=2.2							
CMAR	**Chiang Mai Arr**	**41.06**	**268**	P		**P**	**07 56 51.1**	**-0.6**
	0.5nm,0.6s,baz=66,slow=6.3,SNR=4.5							
WRA	**Warramunga Arr**	**46.98**	**191**	P		**P**	**07 57 39.5**	**+0.5**
	4.5nm,0.7s,baz=12,slow=8.6,SNR=49							
ASAR	**Alice Springs**	**50.69**	**190**	P		**P**	**07 58 08.0**	**+0.4**
	0.3nm,0.5s,baz=5.0,slow=4.7,SNR=5.3							
MKAR	**Makanchi Array**	**51.14**	**310**	P		**P**	**07 58 10.8**	**+0.1**
	0.1nm,0.5s,baz=95,slow=9.4,SNR=2.3							
KURBB	**Kurchatov Arra**	**53.71**	**315**	P		**P**	**07 58 28.5**	**-1.2**
	0.4nm,0.3s,baz=90,slow=7.8,SNR=5.9							
BVAR	**Borovoye Array**	**58.71**	**318**	P		**P**	**07 59 04.7**	**-0.7**
	0.9nm,0.5s,baz=94,slow=9.1,SNR=5.9							
INK	**Inuvik**	**63.29**	**24**	P		**P**	**07 59 35.8**	**-0.3**
	0.5nm,0.6s,baz=269,slow=6.4,SNR=3.0							
YKA	**Yellowknife Ar**	**72.35**	**28**	P		**P**	**08 00 32.9**	**-0.4**
	0.3nm,0.7s,baz=293,slow=5.8,SNR=4.2							
ARCES	**ARCESS Array B**	**74.15**	**341**	P		**P**	**08 00 43.6**	**-0.3**
	5.4nm,1.1s,baz=52,slow=5.8,SNR=2.8							
FINES	**FINESS Array B**	**78.59**	**334**	P		**P**	**08 01 08.7**	**-0.4**
	0.7nm,0.4s,baz=73,slow=6.6,SNR=6.0							

*ISCJB **13** 07:50:14.6±0.8, 7°.23N±0°.04×72°.17W±0°.04, h21km±8km, Error ellipse: s-maj=7.9km s-min=5.0km az=137.6*
*FUNV **13** 07:50:14.9, 7°.22N×72°.18W, h3km, MW2.6*
*RSNC **13** 07:50:15.5±1.3, 7°.25N×72°.26W, h1km±12km, ML2.4*

ISC 13 07:50:13.6±1.3,7°.22N±0°.05×72°.17W±0°.04,h7km±11km, n24,σ1°.95/35,Northern Colombia

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
PAMC	**Pamplona, Colo**	**0.54**	**282**	*eP*	**Pg**		**07 50 23.9**	**-0.2**
PAMC				*eS*	**Sg**		**07 50 30.9**	**-0.3**
PAMC				*i*			07 50 32.1	
	comp=Z,126nm,0.2s							
CAPV	**Capacho**	**0.65**	**347**	*eP*	**Pb**		**07 50 27.2**	**-0.2**
CAPV				*eS*	**Sb**		**07 50 37.1**	**+0.3**
GRMC	**Gramalote, San**	**0.80**	**308**	*eP*	**Pn**		**07 50 31.2**	**-0.2**
GRMC				*i*			07 50 45.4	
	comp=Z,153nm,0.2s							
GIRC	**Giron, Santand**	**1.03**	**262**	*eP*	**Pg**		**07 50 32.4**	**-1.0**
BTLC	**Betulia, Santa**	**1.13**	**255**	*eP*	**Pg**		**07 50 35.4**	**+0.1**
BARC	**Barichara**	**1.19**	**238**	*eP*	**Pg**		**07 50 35.2**	**-1.2**
BRRC	**Barranca, Sant**	**1.54**	**266**	*i*	**Pg**		**07 50 44.8**	**+1.7**
	comp=Z,126nm,0.1s							
BRRC				*eS*	**Sn**		**07 51 01.4**	**-0.2**
SOCV	**Socops**	**1.67**	**51**	*eP*	**Pn**		**07 50 44.5**	**+1.2**
SOCV				*eS*	**Sg**		**07 51 07.4**	**0.0**
YOPC	**Yopal, Colombi**	**1.87**	**188**	*eP*	**Pn**		**07 50 47.5**	**+1.3**
YOPC				*i*			07 51 15.6	
	comp=Z,32nm,0.3s							
SDV	**Santo Domingo**	**2.25**	**42**	*eP*	**Pn**		**07 50 53.2**	**+1.9**
SDV				*eS*	**Sb**		**07 51 22.6**	**0.0**
ELOV	**Elorza**	**2.67**	**95**	*eP*	**Pn**		**07 50 58.0**	**+0.9**
NORC	**Norcasia**	**3.15**	**239**	*eP*	**Pn**		**07 51 04.7**	**+1.0**
NORC				*i*			07 51 50.9	
	comp=Z,6.7nm,0.5s							
VIRV	**Villa del Rosa**	**3.27**	**356**	*eP*	**Pn**		**07 51 05.9**	**+0.7**
VIRV				*eS*	**Sn**		**07 51 44.2**	**-0.2**
QARV	**Quebrada Arrib**	**3.38**	**29**	*eP*	**Pn**		**07 51 08.5**	**+1.7**
QARV				*eS*	**Sn**		**07 51 47.7**	**+0.5**
SANV	**Sanarito**	**3.45**	**49**	*eP*	**Pn**		**07 51 08.9**	**+1.1**
SANV				*eS*	**Sn**		**07 51 48.3**	**-0.7**
CURV	**Curarigua**	**3.53**	**38**	*eP*	**Pn**		**07 51 10.3**	**+1.5**
CURV				*eS*	**Sn**		**07 51 50.3**	**-0.6**
DABV	**Dabajuro**	**3.97**	**22**	*eP*	**Pn**		**07 51 15.9**	**+0.9**
DABV				*eS*	**Sn**		**07 52 00.1**	**-1.7**
TEPV	**Terepaima**	**4.01**	**47**	*eP*	**Pn**		**07 51 16.4**	**+1.0**
SIQV	**Siquisique**	**4.13**	**34**	*eP*	**Pn**		**07 51 17.5**	**+0.5**
BAUV	**El Baul**	**4.43**	**67**	*eP*	**Pn**		**07 51 21.4**	**+0.2**
BAUV				*eS*	**Sn**		**07 52 10.6**	**-2.4**
MAPV	**Macapo**	**4.49**	**55**	*eP*	**Pn**		**07 51 22.9**	**+0.8**
MONV	**Montecano**	**5.18**	**25**	*eP*	**Pn**		**07 51 31.8**	**+0.3**
TURV	**Turiamo**	**5.34**	**53**	*eP*	**Pn**		**07 51 34.3**	**+0.5**
CUPV	**Cœpira**	**6.91**	**65**	*eP*	**Pn**		**07 51 55.6**	**+0.3**

*ISCJB **13** 07:51:36.7±1.3,27°.2S±0°.3×67°.2E±0°.2, h10km, mb3.6/7, Error ellipse: s-maj=48.4km s-min=23.1km az=24.6*
*IDC **13** 07:51:36.8±1.4,27°.17S×67°.16E, h0km, mb3.6/7, mb1 3.8/7, mb1mx3.5/50, mbtmpb3.6/7, Error ellipse: s-maj=54.8km s-min=23.9km az=25.0*

ISC 13 07:51:38.6±1.6,27°.2S±0°.4×67°.2E±0°.2,h10km,n11, σ0°61/8,mb3.7/7,Indian Ocean Triple Junction

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
H08S1	**Diego Carcia H**	**20.05**	**15**	T	T		08 16 48.1	
	baz=194,slow=76,SNR=3.1							
H08S2	**Diego Garcia H**	**20.05**	**16**	T	T		08 16 48.2	
	baz=194,slow=76,SNR=5.1							
H08S3	**Diego Garcia H**	**20.07**	**15**	T	T		08 16 50.6	
	baz=194,slow=76,SNR=4.5							
CMAR	**Chiang Mai Arr**	**54.82**	**38**	P	**P**		**08 01 09.2**	**+0.2**
	0.5nm,0.8s,baz=224,slow=8.2,SNR=4.7							
ASAR	**Alice Springs**	**59.73**	**103**	P	**P**		**08 01 43.9**	**-0.1**
	0.4nm,0.6s,baz=252,slow=6.2,SNR=8.1							
WRA	**Warramunga Arr**	**61.36**	**99**	P	**P**		**08 01 54.9**	**-0.1**
	0.5nm,0.3s,baz=253,slow=6.3,SNR=3.7							
BRTR	**Keskin Array B**	**73.52**	**334**	P	**P**		**08 03 10.6**	**-1.0**
	0.6nm,0.7s,baz=130,slow=2.3,SNR=2.7							
TORD	**Torodi Ar. Bea**	**75.08**	**293**	P	**P**		**08 03 21.2**	**+0.2**
	0.2nm,0.7s,baz=85,slow=6.0,SNR=2.4							
ZALV	**Zalesovo Beam**	**82.20**	**10**	P	**P**		**08 03 59.4**	**0.0**
	0.4nm,0.3s,baz=197,slow=4.6,SNR=3.7							
AKASG	**Malin Array Be**	**84.47**	**337**	P	**P**		**08 04 12.0**	**+0.8**
	0.2nm,0.3s,baz=222,slow=29,SNR=3.1							
YKA	**Yellowknife Ar**	**144.65**	**1**	PKP	**PKPab**		**08 11 13.3**	**-0.1**
	0.2nm,0.6s,baz=339,slow=3.8,SNR=5.8							

*ISK **13** 07:55:04.8,39°.07N×29°.19E, h6km, MD2.4*
*ISCJB **13** 07:55:05.5±0.5,39°.12N±0°.03×29°.10E±0°.04, h6km±6km, Error ellipse: s-maj=5.5km s-min=4.5km az=145.9*
*DDA **13** 07:55:05.4,39°.13N×29°.08E, h7km, Md2.6*
*CSEM **13** 07:55:05.6±0.2,39°.10N×29°.12E, h5km, MD2.6, Error ellipse: s-maj=4.2km s-min=3.4km az=91.0*

ISC 13 07:55:04.9±1.0,39°.08N±0°.02×29°.15E±0°.02,h10km±11km, n27,σ0°69/40,Turkey

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
GDZ	**Gediz**	**0.26**	**87**	*i* P	**Pb**		**07 55 12.1**	**+0.3**
GDZ				*i* S	**Sb**		**07 55 16.7**	**+0.3**
GDZ	**Gediz**	**0.26**	**87**	P	**Pb**		**07 55 12.1**	**+0.3**
GDZ				S	**Sb**		**07 55 16.7**	**+0.3**
DEMI	**Demirci**	**0.34**	**265**	*i* P	**Pg**		**07 55 12.2**	**+0.5**
DEMI				*i* S	**Sg**		**07 55 16.3**	**+0.1**
DEMI	**Demirci**	**0.34**	**265**	P	**Pg**		**07 55 12.2**	**+0.5**
DEMI				S	**Sg**		**07 55 16.3**	**+0.1**
TVSB	**Tavsanli**	**0.45**	**33**	*e*PG	**Pg**		**07 55 14.2**	**+0.5**
TVSB				*e*SG	**Sg**		**07 55 19.9**	**+0.2**
TVSB	**Tavsanli**	**0.45**	**33**	*e*Pg	**Pg**		**07 55 14.2**	**+0.5**
TVSB				*e*Sg	**Sg**		**07 55 19.9**	**+0.2**
KULA	**Kula-Manisa**	**0.68**	**214**	*e*PG	**Pb**		**07 55 18.7**	**-0.2**
KULA				*e*SG	**Sb**		**07 55 28.2**	**0.0**
KULA	**Kula-Manisa**	**0.68**	**214**	*e*Pg	**Pb**		**07 55 18.7**	**-0.2**
KULA				*e*Sg	**Sb**		**07 55 28.3**	**0.0**
DURS	**Dursunbey**	**0.74**	**315**	*i* P	**Pg**		**07 55 19.4**	**+0.2**
DURS				*i* S	**Sg**		**07 55 27.8**	**-1.1**
DURS	**Dursunbey**	**0.74**	**315**	P	**Pg**		**07 55 19.5**	**+0.2**
DURS				S	**Sg**		**07 55 27.8**	**-1.1**
KHAL	**Karahalli**	**0.75**	**159**	*i* P	**Pn**		**07 55 21.6**	**-0.1**
KHAL	**Karahalli**	**0.75**	**159**	P	**Pn**		**07 55 21.6**	**-0.1**
KHL	**Karahalli**	**0.81**	**158**	*e*PG	**Pg**		**07 55 20.4**	**-0.1**
KHL	**Karahalli**	**0.81**	**158**	*e*Pg	**Pg**		**07 55 20.4**	**-0.1**
ULDT	**Uludag**	**1.06**	**360**	*i* P	**Pg**		**07 55 25.7**	**+0.2**
ULDT				*i* S	**Sg**		**07 55 37.1**	**-2.2**
ULDT	**Uludag**	**1.06**	**360**	P	**Pg**		**07 55 25.7**	**+0.2**
ULDT				S	**Sg**		**07 55 37.1**	**-2.2**
BALB	**Balikesir**	**1.13**	**300**	*e*PN	**Pn**		**07 55 27.4**	**+0.7**
BALB	**Balikesir**	**1.13**	**300**	*e*Pn	**Pn**		**07 55 27.5**	**+0.7**
IGD	**Bursa**	**1.19**	**2**	*i* P	**Pb**		**07 55 26.8**	**-0.8**
IGD				*i* S	**Sb**		**07 55 42.6**	**-0.3**
CAVI	**Cavuskoy**	**1.25**	**25**	*e*PN	**Pb**		**07 55 28.9**	**+0.3**
CAVI	**Cavuskoy**	**1.25**	**25**	*e*Pn	**Pb**		**07 55 28.9**	**+0.3**
IZI	**Iznik**	**1.28**	**11**	*e*PN	**Pg**		**07 55 30.1**	**+0.4**
IZI	**Iznik**	**1.28**	**11**	*e*Pn	**Pg**		**07 55 30.1**	**+0.4**
KCTX	**Karacabey (Bur**	**1.34**	**333**	*e*PN	**Pg**		**07 55 31.1**	**+0.5**
KCTX	**Karacabey (Bur**	**1.34**	**333**	*e*Pn	**Pg**		**07 55 31.1**	**+0.5**
GONE	**Gonen-Balikesi**	**1.49**	**311**	*e*PN	**Pb**		**07 55 32.9**	**+0.3**
GONE	**Gonen-Balikesi**	**1.49**	**311**	*e*Pn	**Pb**		**07 55 32.9**	**+0.3**

IDC 13 08:05:01.1±2.9,54°.33N×87°.11E,h0km,mb1 3.0/2, mb1mx2.8/37,mbtmpb3.0/2,ML2.7/2,4C-2D,Error ellipse: s-maj=26.2km s-min=18.7km az=54.0,Southwestern Siberia

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
I46RU	**ZALESOVO INFRA**	**1.40**	**255**	*i*			08 13 40.0	
	baz=76,slow=321,SNR=4.5							
ZALV	**Zalesovo Beam**	**1.40**	**255**	Pg		Pn	08 05 25.3	-2.6
	4.0nm,0.3s,baz=73,slow=16,SNR=21							
ZALV				Lg		Lg	08 05 45.8	
	1.8nm,0.3s,baz=72,slow=29,SNR=7.6							
KURBB	**Kurchatov Arra**	**6.42**	**238**	Pn		Pn	08 06 37.8	+0.9
	0.2nm,0.3s,baz=52,slow=13,SNR=11							
KURBB				Lg		Lg	08 08 25.8	
	0.0nm,0.3s,baz=56,slow=34,SNR=4.4							
KURBB	**Kurchatov Arra**	**6.42**	**238**	⇑Pn		Pn	08 06 37.4	+0.5
	1.5nm,0.5s							
KURBB				⇑Sn		Sn	08 07 48.3	-2.5
	1.6nm,0.5s							
KURBB				⇓Lg		Lg	08 08 17.2	
	4.8nm,0.8s							
MK31	**Makanchi Array**	**8.14**	**204**	⇓Pn		Pn	08 07 04.7	+4.2
	0.2nm,0.5s,baz=27,slow=14,SNR=6.4							
MK31				⇑Sn		Sn	08 08 33.8	+0.6
	0.3nm,0.5s							
MK31				⇑Lg		Lg	08 09 18.6	
	1.1nm,0.8s,baz=26,slow=30,SNR=4.0							
MKAR	**Makanchi Array**	**8.14**	**204**	Pn		Pn	08 07 01.9	+1.4
	0.1nm,0.3s,baz=25,slow=12,SNR=5.8							
MKAR				Lg		Lg	08 09 19.3	
	0.1nm,0.3s,baz=32,slow=30,SNR=3.0							
BVAR	**Borovoye Array**	**10.01**	**269**	Pn		Pn	08 07 27.1	+1.0
	0.2nm,0.3s,baz=70,slow=17,SNR=3.4							

JMA 13 08:05:11.4,36°.99N×140°.71E,h8km±1km,M2.6,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.13**	**32**	P	Pg		08 05 14.5	+0.2
ONAJ				S	Sg		08 05 16.7	+0.3
JHO	**Hitachi**	**0.40**	**197**	P	Pg		08 05 19.2	+0.1
JHO				S	Sg		08 05 24.6	+0.3
JFK	**Kawauchi**	**0.40**	**19**	P	Pg		08 05 19.2	0.0
JFK				S	Sg		08 05 24.6	+0.1
JFT	**Otama**	**0.61**	**331**	P	Pg		08 05 23.3	+0.2
JFT				S	Sg		08 05 31.4	+0.4
JMM	**Marumori**	**0.88**	**4**	P	Pg		08 05 27.8	-0.5
JMM				S	Sg		08 05 39.4	-0.3
JOU	**Okura**	**1.37**	**358**	S	Sb		08 05 55.1	0.0
MAT	**Matsushiro**	**2.06**	**258**	P	Pb		08 05 48.3	-0.7
MAT				S	Sb		08 06 14.8	0.0

*ATH **13** 08:07:00.6, 36°.06N×27°.09E, h17km±3km, ML2.1/2, Error ellipse: s-maj=4.2km s-min=1.2km az=145.0*
*CSEM **13** 08:07:02.5±0.3, 35°.95N×27°.21E, h20km, ML2.1, Error ellipse: s-maj=10.1km s-min=5.0km az=129.0*
*DDA **13** 08:07:08.3, 36°.39N×27°.26E, h8km, Ml2.7*

ISC 13 08:07:02.0±1.1,35°.91N±0°.04×27°.38E±0°.05,h35km±4km, n17,σ1°.26/31,Dodecanese Islands

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
KARP	**Karpathos**	**0.40**	**206**	P	**Pb**		**08 07 11.2**	**0.0**
KARP				S	**Sb**		**08 07 17.4**	**-0.2**
KARP	**Karpathos**	**0.40**	**206**	P	**Pb**		**08 07 11.2**	**0.0**
KARP				S	**Sb**		**08 07 17.4**	**-0.2**
KARP				AML	AML		08 07 18.4	
	comp=E,1318μm,0.1s							
KARP				AML	AML		08 07 18.5	
	comp=N,838μm,0.1s			

mb1 4.1/31,mb1mx4.0/51,mbtmp4.2/31,MS3.4/21, Ms1 3.4/21,ms1mx3.2/49,Error ellipse: s-maj=14.3km s-min=11.8km az=118.0

ISC 13 08:26:05.8±0.9,38°62N±0°04×142°04E±0°05,h44km±7km, n131,σ1§24/135,mb4.4/53,MS3.4/21,1C-2D,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
OFUJ	**Ofunato**	**0.54**	**328**	P	**Pn**	**08 26 17.9**	**+0.6**
OFUJ				S	**Sn**	**08 26 25.6**	**+0.2**
JIO	**Ouri**	**0.57**	**253**	P	**Pn**	**08 26 17.8**	**+0.2**
JIO				S	**Sn**	**08 26 25.2**	**-0.8**
JMK	**Ichinoseki**	**0.72**	**297**	P	**Pn**	**08 26 19.9**	**+0.3**
JMK				S	**Sn**	**08 26 29.0**	**-0.6**
JOM	**Ohasama**	**1.03**	**326**	P	**Pn**	**08 26 24.4**	**+0.6**
JOU	**Okura**	**1.11**	**257**	P	**Pn**	**08 26 25.0**	**+0.1**
JOU				S	**Sn**	**08 26 38.5**	**-0.6**
JMM	**Marumori**	**1.24**	**233**	P	**Pn**	**08 26 26.6**	**0.0**
JMM				S	**Sn**	**08 26 41.0**	**-1.2**
JRG	**Rokugo**	**1.34**	**306**	P	**Pn**	**08 26 28.3**	**+0.2**
JYK	**Kaneyama**	**1.35**	**283**	P	**Pn**	**08 26 28.3**	**+0.2**
JFK	**Kawauchi**	**1.56**	**217**	P	**Pn**	**08 26 31.4**	**+0.4**
JFK				S	**Sn**	**08 26 48.9**	**-1.1**
JYS	**Shirataka**	**1.60**	**256**	P	**Pn**	**08 26 32.1**	**+0.5**
JFT	**Otama**	**1.74**	**231**	P	**Pn**	**08 26 34.2**	**+0.7**
ERM	**Erimo**	**3.50**	**14**	*e*P	**Pn**	**08 27 00.7**	**+3.1**
ERM	**Erimo**	**3.50**	**14**	*e*Pn	**Pn**	**08 27 00.7**	**+3.1**
MJAR	**Matsushiro Arr**	**3.68**	**237**	P	**Pn**	**08 27 02.3**	**+2.1**
	16nm,0.3s,baz=40,slow=12,SNR=57						
MJAR				LR	LR	08 28 48.0	
	comp=Z,286nm,19.1s,baz=45,slow=45						
MAJO	**Matsushiro**	**3.69**	**237**	*d* /P	**Pn**	**08 27 02.2**	**+1.9**
MAJO	**Matsushiro**	**3.69**	**237**	*e*Pn	**Pn**	**08 27 02.5**	**+2.3**
MAT	**Matsushiro**	**3.69**	**237**	P	**Pn**	**08 27 01.9**	**+1.6**
MAT				*e*S	**Sn**	**08 27 45.0**	**+2.6**
INU	**Inuyama**	**5.18**	**232**	*e*Pn	**Pn**	**08 27 23.7**	**+2.9**
ASAJ	**Asahikawa**	**5.50**	**4**	P	**Pn**	**08 27 26.4**	**+1.2**
	2.5nm,0.3s,baz=266,slow=6.5,SNR=17						
ASAJ	**Asahikawa**	**5.50**	**4**	*e*Pn	**Pn**	**08 27 26.3**	**+1.1**
JHJ2	**Mitsune**	**5.79**	**199**	*e*Pn	**Pn**	**08 27 31.2**	**+2.1**
JHJ	**Hachijo jima 2**	**5.79**	**199**	P	**Pn**	**08 27 30.3**	**+1.2**
	19nm,0.3s,baz=88,slow=23,SNR=5.1						
JHJ				S	**Sn**	**08 28 32.9**	**-1.4**
	46nm,0.3s,baz=105,slow=22,SNR=5.6						
YUK	**Yuzh-Kuril'sk**	**6.12**	**27**	P	**Pn**	**08 27 33.6**	**-0.1**
YUK				*e*S	**Sn**	**08 28 39.5**	**-2.9**
YUK				pmax	pmax		
	comp=Z,162nm,0.4s						
SHO	**Shikotan**	**6.36**	**33**	P	**Pn**	**08 27 35.1**	**-1.9**
SHO				*e*S	**Sn**	**08 28 43.1**	**-5.2**
SHO				pmax	pmax		
	comp=Z,40nm,0.7s						
SHO				pmax	pmax		
	comp=N,28nm,0.6s						
SHO				pmax	pmax		
	comp=E,27nm,0.5s						
KUR	**Kuril'sk**	**7.90**	**31**	*e*P	**Pn**	**08 28 01.2**	**+3.2**
KUR				*e*S	**Sn**	**08 29 24.9**	**-1.2**
KUR				pmax	pmax		
	comp=Z,11nm,0.9s						
KUR				smax	smax		
	comp=N,35nm,0.7s						
KUR				smax	smax		
	comp=E,23nm,0.7s						
USRK	**Ussuriysk Ar.**	**9.38**	**310**	P	**Pn**	**08 28 19.2**	**+0.9**
	comp=E,1.2nm,0.3s,baz=128,slow=14,SNR=23						
USRK				LR	LR	08 31 45.6	
	comp=E,180nm,20.1s,baz=119,slow=36						
JNU	**Nakatsue**	**10.59**	**242**	P	**Pn**	**08 28 36.2**	**+1.3**
	comp=E,0.8nm,0.3s,baz=287,slow=1.7,SNR=9.0						
JNU				LR	LR	08 32 58.5	
	comp=E,208nm,20.0s,baz=348,slow=39						
JNU	**Nakatsue**	**10.59**	**242**	*e*Pn	**Pn**	**08 28 36.9**	**+2.0**
MDJ	**Mudanjiang**	**11.07**	**307**	P	**Pn**	**08 28 38.8**	**-2.6**
MDJ				S	**Sn**	**08 30 43.4**	**-0.4**
MDJ				pmax	pmax		
	comp=Z,8.0nm,0.8s						
MDJ				pmax	pmax		
	comp=Z,49nm,3.2s						
MDJ				LR	LR		
	comp=N,150nm,18.4s						
MDJ				LR	LR		
	comp=E,120nm,15.9s						
MDJ				LR	LR		
	comp=Z,170nm,18.4s						
KSRS	**Korea Array**	**11.20**	**268**	P	Pn	08 28 46.5	+3.3
	comp=Z,0.6nm,0.3s,baz=80,slow=13,SNR=12						
KSRS				LR	LR	08 32 40.6	
	comp=Z,151nm,20.4s,baz=103,slow=35						
KSAR	**Wonju Array Be**	**11.23**	**268**	P	**Pn**	**08 28 46.5**	**+2.9**
KSAR	**Wonju Array Be**	**11.23**	**268**	P	**Pn**	**08 28 46.5**	**+2.9**
KLR	**Kul'dur**	**12.93**	**328**	P	**Pn**	**08 29 04.0**	**-2.7**
	comp=Z,0.1nm,0.3s,baz=157,slow=13,SNR=3.2						
KLR				LR	LR	08 34 01.9	
	comp=Z,155nm,19.7s,baz=82,slow=37						
TIA	**Tai'an**	**19.92**	**271**	⇑P	**P**	**08 30 33.0**	**-0.8**
TIA				pmax	pmax		
	comp=Z,10.0nm,0.9s						
BJI	**Beijing**	**20.04**	**282**	P	**P**	**08 30 33.8**	**-1.2**
BJI				pmax	pmax		
	comp=Z,7.0nm,0.5s						
BJI				LR	LR		
	comp=N,75nm,7.9s						
BJI				LR	LR		
	comp=E,140nm,9.4s						
BJI				LR	LR		
	comp=Z,37nm,14.4s						
MA2	**Magadan**	**21.70**	**12**	P	**P**	**08 30 53.8**	**+1.1**
	comp=Z,6.1nm,0.7s,baz=231,slow=11,SNR=5.3						
MA2				LR	LR	08 38 58.6	
	comp=Z,32nm,19.5s,baz=293,slow=35						
HHC	**Hu-ho-hao-te**	**23.49**	**285**	*e*P	**P**	**08 31 11.3**	**-0.3**
HHC				pP	pP	08 31 15.8	-7.0
HHC				sP	sP	08 31 18.5	-10
HHC				S	**S**	**08 35 20.0**	**-2.1**
HHC				pmax	pmax		
	comp=Z,16nm,0.9s						
HHC				pmax	pmax		
	comp=Z,91nm,12.5s						
HHC				LR	LR		
	comp=N,690nm,12.6s						
HHC				LR	LR		
	comp=E,540nm,13.5s						
HHC				LR	LR		
	comp=Z,600nm,14.2s						
YAK	**Yakutsk**	**24.64**	**346**	LR	LR	08 41 39.1	
	comp=Z,58nm,18.1s,baz=205,slow=38						
YAK	**Yakutsk**	**24.64**	**346**	*e*P	**P**	**08 31 20.4**	**-1.4**
YAK				pmax	pmax		
	comp=Z,18nm,0.9s						
YAK				pmax	pmax		
	comp=N,10.0nm,1.2s						
GUMO	**Guam**	**25.06**	**173**	LR	LR	08 41 28.1	
	comp=N,15nm,21.5s,baz=353,slow=37						
SEY	**Seymchan**	**25.14**	**11**	P	**P**	**08 31 28.6**	**+2.3**
	comp=N,7.8nm,0.8s,baz=200,slow=6.8,SNR=38						
BOD	**Bodaibo**	**26.48**	**326**	*e*P	**P**	**08 31 38.1**	**-0.4**
BOD				pmax	pmax		
	comp=Z,4.0nm,0.8s						
ULN	**Ulaanbaatar**	**26.91**	**301**	*i* P	**P**	**08 31 41.4**	**-1.4**
ULN				pmax	pmax		
	comp=Z,6.0nm,1.2s						
ULN	**Ulaanbaatar**	**26.91**	**301**	*e*P	**P**	**08 31 43.6**	**+0.8**
	comp=Z,3.2nm,0.7s						
SONA1	**Songino Array**	**27.34**	**301**	*e*P	**P**	**08 31 46.9**	**+0.3**
SONM	**Songino Array**	**27.35**	**301**	P	**P**	**08 31 46.9**	**+0.3**
	comp=Z,2.3nm,0.8s,baz=115,slow=8.6,SNR=9.4						
SONM				LR	LR	08 42 07.2	
	comp=Z,56nm,19.9s,baz=78,slow=35						
H11N2	**WAKE ISLAND Hy 28.58 124**			T	T	09 02 18.7	
	baz=316,slow=75,SNR=1344						
H11N1	**WAKE ISLAND Hy 28.59 124**			T	T	09 02 19.4	
	baz=316,slow=75,SNR=2083						
H11N3	**WAKE ISLAND Hy 28.60 124**			T	T	09 02 20.1	
	baz=316,slow=75,SNR=1697						
H11S1	**WAKE ISLAND Hy 29.35 126**			T	T	09 03 14.4	
	baz=318,slow=76,SNR=264						
H11S3	**WAKE ISLAND Hy 29.35 126**			T	T	09 03 14.6	
	baz=318,slow=76,SNR=717						
H11S2	**WAKE ISLAND Hy 29.37 126**			T	T	09 03 14.5	
	baz=318,slow=76,SNR=370						
TLY	**Talaya**	**29.70**	**309**	P	**P**	**08 32 07.8**	**+0.5**
	comp=Z,2.3nm,0.2s,baz=183,slow=4.1,SNR=5.1						
TLY	**Talaya**	**29.70**	**309**	*e*P	**P**	**08 32 07.5**	**+0.1**
TLY				pmax	pmax		
	comp=Z,6.0nm,0.9s						
TLY				MLR	MLR		
	comp=Z,67nm,16.0s						
TLY	**Talaya**	**29.70**	**309**	*e*P	**P**	**08 32 07.9**	**+0.5**
	comp=Z,5.7nm,0.9s						
ZAK	**Zakamensk**	**29.70**	**306**	*e*P	**P**	**08 32 07.5**	**-0.1**
ZAK				pmax	pmax		
	comp=Z,6.0nm,0.8s						
CD2	**Chengdu**	**32.20**	**268**	P	**P**	**08 32 28.9**	**-0.7**
CD2				pmax	pmax		
	comp=Z,1.0nm,0.6s						
TIXI	**Tiksi**	**33.78**	**353**	*i* P	**P**	**08 32 42.0**	**-0.9**
TIXI				pmax	pmax		
	comp=Z,2.0nm,0.7s						
TIXI	**Tiksi**	**33.78**	**353**	*e*P	**P**	**08 32 42.6**	**-0.2**
	comp=Z,2.9nm,0.8s						
KMI	**Kunming**	**35.71**	**260**	P	**P**	**08 33 01.1**	**+0.7**
KMI				pP	pP	08 33 05.5	-6.9
KMI				pmax	pmax		
	comp=Z,21nm,0.8s						
KMI				LR	LR		
	comp=Z,100nm,13.4s						
WMQ	**Urumqi**	**40.59**	**295**	P	**P**	**08 33 41.8**	**+0.7**
WMQ				pP	pP	08 33 45.8	-7.4
WMQ				sP	sP	08 33 48.4	-10
WMQ				pmax	pmax		
	comp=Z,11nm,0.8s						
WMQ				pmax	pmax		
	comp=Z,64nm,4.6s						
WMQ				LR	LR		
	comp=N,14nm,15.2s						
WMQ				LR	LR		
	comp=E,28nm,21.8s						
WMQ				LR	LR		
	comp=Z,17nm,16.8s						
ZALV	**Zalesovo Beam**	**41.23**	**311**	P	**P**	**08 33 46.3**	**+0.2**
	comp=Z,5.6nm,0.5s,baz=85,slow=7.3,SNR=29						
ZALV				PcP	**PcP**	**08 35 44.5**	**+0.2**
	comp=Z,1.5nm,0.4s,baz=106,slow=2.0,SNR=5.0						
ZALV				LR	LR	08 51 35.0	
	comp=Z,49nm,18.8s,baz=72,slow=37						
NRIK	**Noril'sk**	**42.04**	**334**	LR	LR	08 52 25.9	
	comp=Z,77nm,19.2s,baz=110,slow=38						
NVS	**Novosibirsk**	**42.12**	**312**	*e*P	**P**	**08 33 53.6**	**+0.3**
CHTO	**Chiang Mai**	**42.18**	**255**	*e*P	**P**	**08 33 53.6**	**-0.7**
CHTO	**Chiang Mai**	**42.18**	**255**	*e*P	**P**	**08 33 53.5**	**-0.7**
CMAR	**Chiang Mai Arr**	**42.39**	**254**	P	**P**	**08 33 56.2**	**+0.2**
	comp=Z,0.7nm,0.6s,baz=40,slow=7.2,SNR=6.4						
CMAR				LR	LR	08 53 17.2	
	comp=Z,10nm,18.4s,baz=40,slow=39						
MK31	**Makanchi Array**	**43.71**	**301**	*i* P	**P**	**08 34 06.4**	**0.0**
MK31				pmax	pmax		
	comp=Z,16nm,1.2s						
MKAR	**Makanchi Array**	**43.71**	**301**	P	**P**	**08 34 06.5**	**0.0**
	comp=Z,7.2nm,0.9s,baz=86,slow=9.9,SNR=29						
MKAR				LR	LR	08 51 50.2	
	comp=Z,38nm,19.3s,baz=28,slow=35						
MKAR	**Makanchi Array**	**43.71**	**301**	*e*P	**P**	**08 34 06.6**	**+0.2**
MAKZ	**Makanchi**	**43.92**	**301**	P	**P**	**08 34 08.2**	**+0.1**
MAKZ				pmax	pmax		
	comp=Z,11nm,1.2s						
MAKZ	**Makanchi**	**43.92**	**301**	*e*P	**P**	**08 34 08.2**	**+0.1**
	comp=Z,6.5nm,0.9s						
KURK	**Kurchatov**	**45.36**	**307**	P	**P**	**08 34 19.0**	**-0.4**
KURK				pmax	pmax		
	comp=Z,76nm,1.0s						
KURK	**Kurchatov**	**45.36**	**307**	*e*P	**P**	**08 34 19.4**	**-0.1**
	comp=Z,36nm,1.0s						
PDGK	**Podgornoye**	**46.49**	**297**	P	**P**	**08 34 27.5**	**-0.9**
PDGK				pmax	pmax		
	comp=Z,8.0nm,1.3s						
ODAN	**Odare**	**46.83**	**272**	*e*P	**P**	**08 34 31.7**	**+0.1**
RAMN	**Ramite**	**47.40**	**273**	*e*P	**P**	**08 34 36.2**	**+0.1**
	comp=Z,48nm,0.8s						
GUN	**Gumba**	**47.51**	**275**	*e*P	**P**	**08 34 37.2**	**+0.2**
	comp=Z,12nm,0.4s						
ILAR	**Eielson Array**	**47.89**	**33**	P	**P**	**08 34 40.6**	**+1.5**
	comp=Z,1.1nm,0.7s,baz=266,slow=6.2,SNR=18						
ILB	**Eielson Array**	**47.89**	**33**	*e*P	**P**	**08 34 40.6**	**+1.5**
KKN	**Kakani**	**48.03**	**275**	*e*P	**P**	**08 34 41.1**	**+0.1**
	comp=Z,23nm,0.6s						
DMN	**Daman**	**48.25**	**275**	*e*P	**P**	**08 34 42.7**	**0.0**
GKN	**Gorkha**	**48.43**	**275**	*e*P	**P**	**08 34 43.9**	**-0.1**
TKM2	**Tokmak 2**	**49.33**	**297**	P	**P**	**08 34 50.6**	**-0.1**
TKM2				pmax	pmax		
	comp=Z,7.0nm,0.7s						
TKM2	**Tokmak 2**	**49.33**	**297**	*e*P	**P**	**08 34 51.2**	**+0.6**
CHKZ	**Chkalovo**	**49.60**	**312**	P	**P**	**08 34 51.8**	**-0.5**
CHKZ				pmax	pmax		
	comp=Z,5.0nm,0.6s						
PYUN	**Piuthan**	**49.67**	**276**	*e*P	**P**	**08 34 53.7**	**+0.2**
	comp=Z,20nm,0.5s						
BVA0	**Borovoye Array**	**49.88**	**311**	*i* P	**P**	**08 34 54.5**	**0.0**
BVA0				pmax	pmax		
	comp=Z,4.0nm,0.7s						
BVAR	**Borovoye Array**	**49.88**	**311**	P	**P**	**08 34 54.5**	**0.0**
	comp=Z,3.4nm,0.5s,baz=77,slow=8.4,SNR=19						
BVAR				PcP	**PcP**	**08 36 15.1**	**+0.7**
	comp=Z,2.2nm,0.7s,baz=96,slow=4.5,SNR=5.4						
OTUK	**Ortayu**	**49.91**	**305**	P	**P**	**08 34 54.5**	**-0.3**
OTUK				pmax	pmax		
	comp=Z,6.0nm,0.8s						
BRVK	**Borovoye**	**49.94**	**311**	*i* P	**P**	**08 34 54.6**	**-0.3**
BRVK				pmax	pmax		
	comp=Z,4.0nm,0.8s						
BRVK	**Borovoye**	**49.94**	**311**	*e*P	**P**	**08 34 55.4**	**+0.5**
AAK	**Ala-Archa**	**50.19**	**297**	*e*P	**P**	**08 34 56.0**	**-1.2**
AAK				pmax	pmax		
	comp=Z,3.0nm,0.9s						
ZRNK	**Zerenda**	**50.71**	**312**	P	**P**	**08 35 00.6**	**-0.2**
ZRNK				pmax	pmax		
	comp=Z,7.0nm,0.9s						
MNAS	**Manas**	**51.62**	**298**	P	**P**	**08 35 08.1**	**+0.2**
MNAS				pmax	pmax		
	comp=Z,7.0nm,0.9s						
SFK	**Sufi-Kurgan**	**51.81**	**295**	P	**P**	**08 35 08.7**	**-0.8**
SFK				pmax	pmax		
	comp=Z,8.0nm,1.1s						
INK	**Inuvik**	**52.75**	**28**	P	**P**	**08 35 17.2**	**+1.5**
	comp=Z,1.3nm,0.7s,baz=290,slow=6.3,SNR=8.2						
KK31	**Karatay Array**	**52.77**	**299**	*i* P	**P**	**08 35 16.1**	**-0.2**
KK31				pmax	pmax		
	comp=Z,3.0nm,0.7s						
KKAR	**Karatay Array**	**52.77**	**299**	*e*P	**P**	**08 35 16.2**	**-0.1**
KKAR	**Karatay Array**	**52.77**	**299**	*e*P	**P**	**08 35 16.2**	**-0.1**
ARU	**Arti**	**55.51**	**318**	P	**P**	**08 35 36.1**	**+0.1**
	comp=Z,2.5nm,0.3s,baz=81,slow=1.7,SNR=7.3						
ARU	**Arti**	**55.51**	**318**	*d* /P	**P**	**08 35 35.9**	**-0.1**
ARU						08 37 35.7	
ARU				S	**S**	**08 43 17.7**	**-0.1**
ARU				SS	**SS**	**08 47 02.3**	**-0.2**
ARU				pmax	pmax		
	comp=Z,14nm,1.2s						
ABKAR	**Akbulak array**	**57.30**	**310**	*e*P	**P**	**08 35 48.6**	**-0.3**
AKTO	**Aktyubinsk**	**57.99**	**311**	P	**P**	**08 35 53.4**	**-0.4**
	comp=Z,4.1nm,0.7s,baz=65,slow=11,SNR=12						
AKTO	**Aktyubinsk**	**57.99**	**311**	P	**P**	**08 35 53.1**	**-0.6**
AKTO				pmax	pmax		
	comp=Z,6.0nm,0.9s						
WRA	**Warramunga Arr**	**58.70**	**188**	P	**P**	**08 35 58.9**	**0.0**
	comp=Z,1.6nm,0.6s,baz=6.1,slow=7.0,SNR=18						
YKA	**Yellowknife Ar**	**62.19**	**31**	P	**P**	**08 36 23.6**	**+1.4**
	comp=Z,0.5nm,0.7s,baz=303,slow=6.5,SNR=12						
ASAR	**Alice Springs**	**62.43**	**188**	P	**P**	**08 36 24.9**	**+0.6**
	comp=Z,0.7nm,0.7s,baz=8.8,slow=7.7,SNR=8.8						
KLMR	**Klimovskoe**	**62.68**	**327**	*e*P	**P**	**08 36 24.3**	**-1.2**
KLMR				pmax	pmax		
	comp=Z,7.0nm,1.1s						
ARCES	**ARCESS Array B**	**62.69**	**339**	P	**P**	**08 36 25.4**	**-0.1**
	comp=Z,2.4nm,0.9s,baz=46,slow=8.7,SNR=4.9						
ARCES				LR	LR	09 05 35.9	
	comp=Z,48nm,18.7s,baz=337,slow=38						
ARCES	**ARCESS Array B**	**62.69**	**339**	P	**P**	**08 36 25.4**	**-0.1**
ARCES				pmax	pmax		
	comp=Z,3.0nm,0.9s						
ARCES				MLR	MLR		
	comp=Z,48nm,18.7s						
GEYT	**Alibeck**	**63.51**	**299**	P	**P**	**08 36 30.9**	**-0.6**
	comp=Z,2.8nm,0.5s,baz=340,slow=3.9,SNR=3.9						
FINES	**FINESS Array B**	**67.64**	**332**	P	**P**	**08 36 57.6**	**0.0**
	comp=Z,4.8nm,0.8s,baz=46,slow=8.2,SNR=14						
KIV	**Kislovodsk**	**70.24**	**311**	*e*P	**P**	**08 37 14.7**	**+0.4**
KIV				pmax	pmax		
	comp=Z,20nm,1.0s						
KBZ	**Khabaz**	**70.25**	**310**	P	**P**	**08 37 14.6**	**+0.5**
	comp=Z,4.7nm,0.9s,baz=20,slow=4.6,SNR=7.2						
KBZ				LR	LR	09 13 51.0	
	comp=Z,63nm,18.4s,baz=178,slow=41						
GNI	**Garni**	**71.16**	**307**	LR	LR	09 10 45.4	
	comp=Z,46nm,18.4s,baz=18,slow=38						
HFS	**Hagfors**	**72.85**	**336**	LR	LR	09 15 09.4	
	comp=Z,115nm,19.3s,baz=329,slow=40						
NB2	**NORSAR Subarra**	**72.91**	**337**	P	**P**	**08 37 30.1**	**+0.1**
	comp=Z,4.2nm,0.7s,baz=39,slow=6.2						
NB2	**NORSAR Subarra**	**72.91**	**337**	*e*P	**P**	**08 37 30.1**	**+0.1**
NB2				pmax	pmax		
	comp=Z,4.0nm,0.8s						
NOA	**NORSAR Array B**	**72.91**	**337**	P	**P**	**08 37 30.2**	**+0.2**
	comp=Z,3.7nm,0.8s,baz=38,slow=5.9,SNR=12						
NOA				LR	LR	09 12 17.5	
	comp=Z,34nm,19.1s,baz=5.0,slow=38						
AKASG	**Malin Array Be**	**73.35**	**322**	P	**P**	**08 37 31.6**	**-1.0**
	comp=Z,2.3nm,0.5s,baz=44,slow=5.7,SNR=11						
AKASG				LR	LR	09 12 52.6	
	comp=Z,29nm,19.3s,baz=335,slow=38						
KIEV	**Kiev**	**73.36**	**322**	*e*P	**P**	**08 37 32.3**	**-0.4**
KIEV				pmax	pmax		
	comp=Z,3.0nm,0.8s						
NVAR	**Mina Array Bea**	**73.65**	**54**	P	**P**	**08 37 36.8**	**+1.9**
	comp=Z,0.4nm,0.7s,baz=276,slow=4.3,SNR=4.4						
PDAR	**Pinedale Array**	**76.20**	**46**	P	**P**	**08 37 51.4**	**+1.7**
	comp=Z,0.8nm,0.7s,baz=254,slow=1.4,SNR=11						
BRTR	**Keskin Array B**	**78.17**	**312**	P	**P**	**08 37 59.6**	**-1.0**
	comp=Z,0.8nm,0.4s,baz=114,slow=3.0,SNR=6.1						
MLR	**Muntele Rosu**	**78.49**	**320**	LR	LR	09 13 35.5	
	comp=Z,12nm,18.1s,baz=46,slow=36						
CLL	**Collm**	**79.97**	**330**	*e*P	**P**	**08 38 10.0**	**0.0**
	comp=Z,8.0nm,0.8s						
CLL	**Collm**	**79.97**	**330**	*e*P	**P**	**08 38 10.0**	**0.0**
CLL				pmax	pmax		
	comp=Z,173nm,0.8s						
GERES	**GERESS Array B**	**81.62**	**328**	P	**P**	**08 38 18.1**	**-1.0**
	comp=Z,0.7nm,0.3s,baz=28,slow=6.0,SNR=4.6						
GERES				LR	LR	09 15 50.6	
	comp=Z,18nm,19.5s,baz=294,slow=37						
TXAR	**Lajitas Array**	**88.76**	**53**	P	**P**	**08 38 56.1**	**+1.0**
	comp=Z,0.3nm,0.6s,baz=281,slow=4.2,SNR=5.8						
TORD	**Torodi Ar. Bea**	**116.55**	**316**	PKP	**PKPdf**	**08 44 44.9**	**-0.5**
	comp=Z,0.3nm,0.8s,baz=337,slow=3.3,SNR=2.6						

IDC 13 08:38:18.2±1.8,34°84N×141°82E,h0km,mb3.6/2, mb1 3.7/5,mb1mx3.4/37,mbtmp3.6/5,ML3.4/3,MS2.3/2, Ms1 2.3/2,ms1mx2.1/54,Error ellipse: s-maj=46.3km s-min=27.2km az=82.0,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JHJ	**Hachijo jima 2**	**2.41**	**225**	Pn	Pn	08 38 58.6	-0.2
	14nm,0.3s,baz=308,slow=21,SNR=6.3						
JHJ				Sn	Sn	08 39 23.7	-5.3
	44nm,0.3s,baz=76,slow=22,SNR=15						
MJAR	**Matsushiro Arr**	**3.39**	**301**	Pn	Pn	08 39 12.1	-0.3
	2.2nm,0.3s,baz=101,slow=13,SNR=11						
MJAR				LR	LR	08 40 29.1	
	comp=Z,17nm,19.9s,baz=135,slow=39						
MAT	**Matsushiro**	**3.40**	**301**	P	Pn	08 39 12.3	-0.1
MAT				*e*S	Sn	08 39 42.4	-11
ASAJ	**Asahikawa**	**9.29**	**3**	Pn	Pn	08 40 33.1	-0.1
	0.8nm,0.3s,baz=212,slow=14,SNR=6.7						
KSRS	**Korea Array**	**11.53**	**287**	LR	LR	08 45 43.9	
	comp=Z,32nm,18.2s,baz=115,slow=38						
WRA	**Warramunga Arr**	**54.94**	**189**	P	P	08 47 50.6	-0.3
	0.6nm,0.4s,baz=5.8,slow=7.5,SNR=18						
ASAR	**Alice Springs**	**58.67**	**188**	P	P	08 48 17.5	+0.1
	0.2nm,0.6s,baz=1.8,slow=6.8,SNR=4.3						

ISCJB 13 08:44:12.8±0.5,39°77N±0°03×29°36E±0°06,h0km,Error ellipse: s-maj=6.6km s-min=3.9km az=160.8
CSEM 13 08:44:12.8±0.2,39°77N×29°32E,h1km,ML2.4,Error ellipse: s-maj=6.1km s-min=4.0km az=73.0,Suspected Mining explosion.
ISK 13 08:44:12.2,39°74N×29°26E,h7km,ML2.4
DDA 13 08:44:13.1,39°72N×29°53E,h7km,Md2.6,Suspected Mining explosion.

ISC 13 08:44:13.4±0.8,39°74N±0°02×29°28E±0°03,h0km,n24, σ0§82/33,Turkey

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
TVSB	**Tavsanli**	**0.32**	**154**	*e*PG	**Pg**	**08 44 18.9**	**-0.7**
TVSB				*e*SG	**Sg**	**08 44 24.4**	**+0.7**
TVSB	**Tavsanli**	**0.32**	**154**	*e*Pg	**Pg**	**08 44 18.9**	**-0.7**
TVSB				*e*Sg	**Sg**	**08 44 24.4**	**+0.7**
ULDT	**Uludag**	**0.42**	**345**	*i* P	**Pb**	**08 44 24.0**	**+0.2**
ULDT				*i* S	**Sb**	**08 44 33.2**	**+2.5**
ULDT	**Uludag**	**0.42**	**345**	P	**Pb**	**08 44 24.0**	**+0.2**
ORLT	**Orhaneli**	**0.42**	**316**	*e*PG	**Pg**	**08 44 20.7**	**-0.8**
ORLT				*e*SG	**Sg**	**08 44 27.4**	**+0.4**
ORLT	**Orhaneli**	**0.42**	**316**	*e*Pg	**Pg**	**08 44 20.7**	**-0.8**
ORLT				*e*Sg	**Sg**	**08 44 27.4**	**+0.4**
IZI	**Iznik**	**0.61**	**14**	*e*PG	**Pg**	**08 44 24.7**	**-0.5**
IZI	**Iznik**	**0.61**	**14**	*e*Pg	**Pg**	**08 44 24.7**	**-0.5**
CAVI	**Cavuskoy**	**0.63**	**43**	*e*PG	**Pg**	**08 44 25.0**	**-0.5**
CAVI	**Cavuskoy**	**0.63**	**43**	*e*Pg	**Pg**	**08 44 25.0**	**-0.5**
DURS	**Dursunbey**	**0.64**	**258**	*i* P	**Pn**	**08 44 29.0**	**-0.8**
DURS				*i* S	**Sn**	**08 44 40.9**	**+0.2**
DURS	**D

*ISCJB **13** 09:06:03.1±0.5,39.92N±0.05×143.30E±0.06,h12km, mb4.0/34,MS4.0/10,Error ellipse: s-maj=8.3km s-min=4.6km az=138.9*
*MOS **13** 09:06:04.5±1.2,39.84N×143.34E,h30km,mb4.3/17,Error ellipse: s-maj=11.9km s-min=7.3km az=92.0*
*JMA **13** 09:06:04.7±0.4,39.99N×143.16E,h8km±4km, M4.3*
*NEIC **13** 09:06:08.0±0.4,39.89N×143.09E,h35km,mb4.5/4,Error ellipse: s-maj=9.6km s-min=8.5km az=110.0*
*BJI **13** 09:06:16.8,40.66N×142.11E,h59km,mb4.5/27,mB4.8/18, Ms4.4/15,Ms7 4.3/13*

ISC 13 09:06:04.5±0.6,39.97N±0.06×143.10E±0.05,h12km,n95, σ1§47/69,mb4.2/34,MS4.1/10,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JTH	**Tanohata**	**0.95**	**269**	P	**Pn**	**09 06 23.6**	**-0.1**
MIYJ	**Miyakonagasawa**	**1.06**	**249**	P	**Pn**	**09 06 25.8**	**+0.6**
JANG	**Nango**	**1.28**	**289**	P	**Pg**	**09 06 28.7**	**-0.4**
JOM	**Ohasama**	**1.48**	**251**	P	**Pg**	**09 06 32.4**	**-0.5**
JOM				*e*S	**Sg**	**09 06 52.4**	**+0.3**
JTM	**Tenmabayashi**	**1.75**	**298**	P	**Pg**	**09 06 36.5**	**-1.7**
JAH	**Hinai**	**1.90**	**277**	P	**Pg**	**09 06 38.8**	**-2.2**
JRG	**Rokugo**	**1.99**	**254**	P	**Pg**	**09 06 40.5**	**-2.1**
ERM	**Erimo**	**2.05**	**1**	*e*P	**Pb**	**09 06 40.5**	**-1.1**
ERM	**Erimo**	**2.05**	**1**	*e*Pn	**Pb**	**09 06 40.5**	**-1.1**
JEM	**Erimo**	**2.05**	**1**	P	**Pb**	**09 06 40.6**	**-1.0**
JOT	**Ohata**	**2.10**	**313**	P	**Pb**	**09 06 41.6**	**-1.0**
JNBK	**Urakawa-nobuka**	**2.33**	**354**	P	**Pb**	**09 06 44.6**	**-1.7**
ASAJ	**Asahikawa**	**4.16**	**355**	Pn	**Pn**	**09 07 10.1**	**+2.2**
	1.0nm,0.3s,baz=207,slow=14,SNR=15						
ASAJ	**Asahikawa**	**4.16**	**355**	*e*Pn	**Pn**	**09 07 09.5**	**+1.7**
ASAJ				*e*Sn	**Sn**	**09 07 57.0**	**+0.6**
YUK	**Yuzh-Kuril'sk**	**4.56**	**26**	*e*P	**Pn**	**09 07 13.6**	**+0.4**
YUK				*e*S	**Sn**	**09 08 02.6**	**-3.4**
YUK				pmax	pmax		
	comp=N,36nm,0.3s						
YUK				pmax	pmax		
	comp=E,100nm,0.3s						
YUK				pmax	pmax		
	comp=Z,173nm,0.3s						
YUK				MLR	MLR		
	comp=Z,710nm,15.0s						
YUK				MLR	MLR		
	comp=E,1μm,11.0s						
YUK				MLR	MLR		
	comp=N,906nm,10.0s						
SHO	**Shikotan**	**4.79**	**34**	*e*P	**Pn**	**09 07 15.5**	**-0.9**
SHO				*e*S	Sn	09 08 05.2	-6.6
SHO				pmax	pmax		
	comp=Z,100nm,0.9s						
SHO				pmax	pmax		
	comp=N,47nm,0.5s						
SHO				pmax	pmax		
	comp=E,29nm,0.3s						
MJAR	**Matsushiro Arr**	**5.15**	**230**	LR	LR	09 09 36.5	
	comp=E,848nm,19.3s,baz=55,slow=42						
KUR	**Kuril'sk**	**6.33**	**32**	*e*P	**Pn**	**09 07 37.6**	**0.0**
KUR				*e*S	**Sn**	**09 08 45.8**	**-3.9**
KUR				pmax	pmax		
	comp=Z,59nm,0.3s						
KUR				pmax	pmax		
	comp=N,41nm,0.1s						
KUR				pmax	pmax		
	comp=E,44nm,0.4s						
KUR				MLR	MLR		
	comp=N,649nm,11.0s						
KUR				MLR	MLR		
	comp=Z,621nm,11.0s						
JHJ	**Hachijo jima 2**	**7.34**	**202**	LR	LR	09 10 58.8	
	comp=Z,418nm,20.7s,baz=86,slow=41						
USRK	**Ussuriysk Ar.**	**9.28**	**301**	Pn	Pn	09 08 22.4	+4.4
	comp=Z,0.7nm,0.3s,baz=92,slow=14,SNR=19						
TYV	**Tymovskoe**	**10.90**	**359**	*e*P	Pn	09 08 53.2	+13
MDJ	**Mudanjiang**	**11.03**	**299**	P	Pn	09 08 37.8	-4.2
MDJ				pmax	pmax		
	comp=Z,6.0nm,1.8s						
MDJ				pmax	pmax		
	comp=Z,84nm,4.6s						
JNU	**Nakatsue**	**11.96**	**239**	LR	LR	09 13 52.6	
	comp=Z,770nm,18.4s,baz=58,slow=40						
KSRS	**Korea Array**	**12.12**	**263**	Pn	P	09 09 01.9	-7.7
	comp=Z,0.3nm,0.3s,baz=74,slow=13,SNR=4.6						
KSRS				LR	LR	09 13 24.3	
	comp=Z,725nm,18.5s,baz=74,slow=36						
KSRS	**Korea Array**	**12.12**	**263**	P	P	09 09 02.0	-7.7
KSRS				MLR	MLR		
	comp=Z,725nm,18.5s						
KSAR	**Wonju Array Be**	**12.15**	**263**	P	P	09 09 02.0	-8.1
KSAR	**Wonju Array Be**	**12.15**	**263**	Pn	P	09 09 01.9	-8.1
NKL	**Nikolayevsk**	**13.29**	**354**	*e*P	**Pn**	**09 09 15.0**	**+2.2**
NKL				pmax	pmax		
	comp=Z,10.0nm,1.0s						
NKL				MLR	MLR		
	comp=N,300nm,16.0s						
NKL				MLR	MLR		
	comp=Z,500nm,16.0s						
PETK	**Petropavlovsk-**	**16.50**	**32**	LR	LR	09 15 51.0	
	comp=Z,174nm,22.0s,baz=216,slow=35						
BJI	**Beijing**	**20.60**	**279**	P	**P**	**09 10 41.9**	**-1.5**
BJI				S	S	09 14 21.1	-12
BJI				pmax	pmax		
	comp=Z,8.0nm,0.6s						
BJI				pmax	pmax		
	comp=Z,78nm,4.9s						
BJI				LR	LR		
	comp=Z,360nm,15.6s						
BJI				LR	LR		
	comp=Z,280nm,18.6s						
NJ2	**Nanjing**	**21.10**	**256**	*e*P	P	09 10 55.4	+6.6
NJ2				pmax	pmax		
	comp=Z,19nm,0.6s						
YAK	**Yakutsk**	**23.55**	**344**	*e*P	**P**	**09 11 17.0**	**+2.6**
YAK				*e*		09 11 41.9	
YAK				*e*		09 15 03.8	
YAK				*e*S	**S**	**09 15 25.2**	**-2.8**
YAK				pmax	pmax		
	comp=Z,11nm,0.9s						
YAK				pmax	pmax		
	comp=N,2.0nm,0.9s						
YAK				pmax	pmax		
	comp=E,3.0nm,1.1s						
YAK				pmax	pmax		
	comp=Z,22nm,0.9s						
YAK				pmax	pmax		
	comp=N,10.0nm,0.9s						
YAK				pmax	pmax		
	comp=E,12nm,0.9s						
YAK				smax	smax		
	comp=N,74nm,2.5s						
YAK				smax	smax		
	comp=E,34nm,2.4s						
YAK				MLR	MLR		
	comp=Z,191nm,17.0s						
YAK				MLR	MLR		
	comp=N,66nm,16.0s						
YAK				MLR	MLR		
	comp=E,138nm,14.0s						
SEY	**Seymchan**	**23.66**	**11**	P	**P**	**09 11 16.2**	**+0.7**
	comp=E,6.5nm,0.9s,baz=198,slow=6.2,SNR=15						
BOD	**Bodaibo**	**25.86**	**323**	*e*P	**P**	**09 11 35.8**	**+0.1**
BOD				pmax	pmax		
	comp=Z,7.0nm,1.0s						
GUMO	**Guam**	**26.32**	**176**	LR	LR	09 20 52.2	
	comp=Z,88nm,21.6s,baz=8,0,slow=34						
SONA1	**Songino Array**	**27.38**	**299**	*e*P	**P**	**09 11 50.3**	**+0.6**
SONM	**Songino Array**	**27.39**	**299**	P	**P**	**09 11 50.2**	**+0.5**
	comp=Z,2.4nm,0.7s,baz=92,slow=8.9,SNR=14						
H11N2	**WAKE ISLAND Hy**	**28.70**	**128**	T	T	09 41 58.1	
	baz=321,slow=75,SNR=230						
H11N1	**WAKE ISLAND Hy**	**28.71**	**128**	T	T	09 41 58.6	
	baz=321,slow=75,SNR=236						
H11N3	**WAKE ISLAND Hy**	**28.72**	**128**	T	T	09 42 00.6	
	baz=321,slow=75,SNR=264						
H11S1	**WAKE ISLAND Hy**	**29.52**	**130**	T	T	09 42 48.9	
	baz=322,slow=76,SNR=60						
H11S3	**WAKE ISLAND Hy**	**29.53**	**130**	T	T	09 42 48.9	
	baz=322,slow=76,SNR=58						
H11S2	**WAKE ISLAND Hy**	**29.54**	**130**	T	T	09 43 02.1	
	baz=322,slow=76,SNR=69						
BILL	**Bilibino**	**30.84**	**17**	*i* P	P	09 12 28.7	+8.7
BILL				pmax	pmax		
	comp=Z,1.0nm,0.9s						
GTA	**Gaotai**	**33.07**	**283**	*e*P	**P**	**09 12 41.4**	**+1.3**
GTA				pP	sP	09 12 52.5	+7.2
GTA				sP	pP	09 12 58.6	+15
GTA				S	S	09 17 49.6	-9.3
GTA				sS	sS	09 18 10.5	+5.6
GTA				SS	SnSn	09 19 45.8	-11
GTA				pmax	pmax		
	comp=Z,6.0nm,1.0s						
GTA				pmax	pmax		
	comp=Z,98nm,6.4s						
GTA				LR	LR		
	comp=Z,200nm,16.4s						
GTA				LR	LR		
	comp=Z,550nm,19.0s						
GTA				LR	LR		
	comp=Z,720nm,16.4s						
CD2	**Chengdu**	**33.08**	**267**	P	P	09 12 43.0	+2.8
CD2				pmax	pmax		
	comp=Z,2.0nm,0.5s						
DAV	**Davao City (W)**	**36.33**	**210**	LR	LR	09 29 35.3	
	comp=Z,80nm,18.4s,baz=352,slow=39						
KMI	**Kunming**	**36.77**	**259**	P	P	09 13 17.0	+4.7
KMI				pP	sP	09 13 31.1	+14
KMI				pmax	pmax		
	comp=Z,10.0nm,1.0s						
KMI				pmax	pmax		
	comp=Z,95nm,6.0s						
KMI				LR	LR		
	comp=Z,300nm,14.5s						
KMI				LR	LR		
	comp=Z,260nm,14.8s						
KMI				LR	LR		
	comp=Z,370nm,15.6s						
WMQ	**Urumqi**	**40.77**	**294**	*e*P	P	09 13 48.3	+2.8
WMQ				sP	sP	09 14 07.9	+17
WMQ				pmax	pmax		
	comp=Z,4.0nm,0.6s						
WMQ				pmax	pmax		
	comp=Z,98nm,5.0s						
WMQ				LR	LR		
	comp=Z,64nm,16.6s						
WMQ				LR	LR		
	comp=Z,69nm,19.8s						
WMQ				LR	LR		
	comp=Z,47nm,17.8s						
ZAA0	**Zalesovo Array**	**40.98**	**310**	*e*P	**P**	**09 13 47.7**	**+0.7**
ZALV	**Zalesovo Beam**	**40.98**	**310**	P	**P**	**09 13 48.0**	**+1.0**
	comp=Z,2.1nm,0.5s,baz=94,slow=8.0,SNR=6.8						
CMAR	**Chiang Mai Arr**	**43.55**	**254**	P	**P**	**09 14 09.1**	**+0.7**
	comp=Z,0.5nm,0.5s,baz=41,slow=6.9,SNR=5.6						
MKAR	**Makanchi Array**	**43.74**	**300**	P	**P**	**09 14 10.3**	**+0.7**
	comp=Z,1.7nm,0.5s,baz=81,slow=9.1,SNR=10						
MKAR	**Makanchi Array**	**43.74**	**300**	*e*P	**P**	**09 14 10.1**	**+0.5**
MKAR	**Makanchi Array**	**43.74**	**300**	*e*P	**P**	**09 14 10.1**	**+0.5**
MAKZ	**Makanchi**	**43.95**	**300**	*e*P	**P**	**09 14 12.2**	**+0.9**
MAKZ				pmax	pmax		
	comp=Z,9.0nm,1.4s						
MAKZ	**Makanchi**	**43.95**	**300**	*e*P	**P**	**09 14 12.2**	**+0.9**
	comp=Z,8.7nm,1.4s						
KURK	**Kurchatov**	**45.22**	**306**	*e*P	**P**	**09 14 21.9**	**+0.6**
KURK				pmax	pmax		
	comp=Z,9.0nm,0.8s						
KURK	**Kurchatov**	**45.22**	**306**	*e*P	**P**	**09 14 21.9**	**+0.6**
	comp=Z,9.3nm,0.8s						
KURBB	**Kurchatov Arra**	**45.30**	**306**	P	**P**	**09 14 22.5**	**+0.6**
	comp=Z,2.6nm,0.4s,baz=80,slow=8.7,SNR=19						
ILAR	**Eielson Array**	**46.32**	**34**	P	**P**	**09 14 29.1**	**-0.7**
	comp=Z,0.3nm,0.7s,baz=263,slow=6.2,SNR=3.6						
TAPN	**Taplejung**	**47.10**	**272**	*e*P	P	09 14 38.4	+1.6
RAMN	**Ramite**	**48.16**	**272**	*e*P	**P**	**09 14 44.8**	**-0.1**
	comp=Z,9.9nm,0.6s						
GUN	**Gumba**	**48.23**	**274**	*e*P	P	09 14 48.8	+3.2
KKN	**Kakani**	**48.75**	**274**	*e*P	P	09 14 51.2	+1.8
TKM2	**Tokmak 2**	**49.45**	**297**	*e*P	**P**	**09 14 55.5**	**+0.9**
TKM2				pmax	pmax		
	comp=Z,4.0nm,0.6s						
TKM2	**Tokmak 2**	**49.45**	**297**	*e*P	**P**	**09 14 55.5**	**+0.9**
	comp=Z,4.5nm,0.6s						
BVAR	**Borovoye Array**	**49.62**	**311**	P	**P**	**09 14 56.6**	**+1.1**
	comp=Z,2.4nm,0.5s,baz=64,slow=7.9,SNR=13						
PYUN	**Piuthan**	**50.35**	**276**	*e*P	**P**	**09 15 02.7**	**+1.1**
KSH	**Kashi**	**50.46**	**292**	*e*P	P	09 15 07.4	+5.1
KSH				*e*pP	sP	09 15 20.3	+13
KSH				*e*PP	PP	09 17 01.8	+4.1
KSH				PcS	PcS	09 20 25.1	+7.4
KSH				S	**S**	**09 22 11.4**	**-4.4**
KSH				ScS	**ScS**	**09 24 51.8**	**-1.5**
KSH				LR	LR		
	comp=Z,170nm,10.1s						
KSH				LR	LR		
	comp=Z,180nm,12.3s						
KSH				LR	LR		
	comp=Z,260nm,6.4s						
EKS2	**Erkin-Say**	**50.79**	**297**	*e*P	**P**	**09 15 05.5**	**+0.8**
EKS2				pmax	pmax		
	comp=Z,3.0nm,0.7s						
EKS2	**Erkin-Say**	**50.79**	**297**	*e*P	**P**	**09 15 05.5**	**+0.8**
	comp=Z,2.8nm,0.7s						
INK	**Inuvik**	**51.18**	**28**	P	**P**	**09 15 08.7**	**+1.7**
	comp=Z,0.4nm,0.6s,baz=270,slow=4.3,SNR=3.0						
KKAR	**Karatay Array**	**52.84**	**299**	*e*P	**P**	**09 15 20.0**	**+0.2**
KKAR	**Karatay Array**	**52.84**	**299**	*e*P	**P**	**09 15 20.0**	**+0.2**
ABKAR	**Akbulak array**	**57.09**	**309**	*e*P	**P**	**09 15 51.0**	**+0.6**
AKTO	**Aktyubinsk**	**57.72**	**311**	P	**P**	**09 15 53.8**	**-1.1**
	comp=Z,0.9nm,0.4s,baz=86,slow=14,SNR=4.4						
WRA	**Warramunga Arr**	**60.16**	**190**	P	**P**	**09 16 09.6**	**-2.4**
	comp=Z,1.7nm,0.6s,baz=61,slow=7.0,SNR=15						
YKA	**Yellowknife Ar**	**60.62**	**31**	P	**P**	**09 16 15.4**	**+0.6**
	comp=Z,0.1nm,0.4s,baz=296,slow=5.4,SNR=2.8						
ASAR	**Alice Springs**	**63.88**	**189**	P	**P**	**09 16 36.5**	**-0.5**
	comp=Z,0.5nm,0.6s,baz=2.8,slow=4.9,SNR=14						
FINES	**FINESS Array B**	**66.84**	**332**	P	**P**	**09 16 56.4**	**+0.6**
	comp=Z,0.9nm,0.6s,baz=35,slow=7.0,SNR=5.8						
FINES				LR	LR	09 48 36.2	
	comp=Z,287nm,18.2s,baz=32,slow=38						
KIV	**Kislovodsk**	**69.99**	**311**	*e*P	**P**	**09 17 13.2**	**-2.7**
KIV				pmax	pmax		
	comp=Z,12nm,1.1s						
KBZ	**Khabaz**	**70.00**	**311**	P	**P**	**09 17 16.5**	**+0.7**
	comp=Z,4.0nm,0.9s,baz=190,slow=3.1,SNR=4.2						
STKA	**Stephens Creek**	**71.50**	**181**	P	**P**	**09 17 24.5**	**-0.4**
	comp=Z,1.4nm,0.8s,baz=4.0,slow=8.6,SNR=3.9						
NB2	**NORSAR Subarra**	**71.99**	**338**	P	**P**	**09 17 27.3**	**-0.4**
	comp=Z,0.6nm,0.6s,baz=38,slow=6.2						
NOA	**NORSAR Array B**	**71.99**	**338**	P	**P**	**09 17 27.6**	**-0.1**
	comp=Z,1.3nm,1.0s,baz=139,slow=20,SNR=3.9						
NVAR	**Mina Array Bea**	**72.19**	**55**	P	P	09 17 31.6	+2.0
	comp=Z,0.3nm,0.6s,baz=311,slow=6.8,SNR=2.6						
PDAR	**Pinedale Array**	**74.68**	**47**	P	**P**	**09 17 45.0**	**+0.9**
	comp=Z,0.1nm,0.3s,baz=289,slow=2.8,SNR=2.0						
BRTR	**Keskin Array B**	**77.89**	**312**	P	**P**	**09 18 02.9**	**+0.6**
	comp=Z,0.4nm,0.5s,baz=280,slow=0.8,SNR=3.7						
PMOR	**Pomariorio Ree**	**84.18**	**115**	*e*T	T	10 50 51.2	
	comp=Z,3.1nm,0.2s						
PPT	**Papeete**	**84.80**	**118**	LR	LR	09 50 11.1	
	comp=Z,104nm,20.3s,baz=318,slow=31						
PPT2	**Papeete2**	**84.81**	**118**	*e*LR	LR	09 45 17.1	
	comp=Z,132nm,22.8s						
TAOE	**Nuku Hiva Isla**	**85.63**	**105**	*e*LR	LR	09 45 33.8	
	comp=Z,125nm,21.3s						
TXAR	**Lajitas Array**	**87.30**	**53**	P	**P**	**09 18 53.3**	**+1.8**
	comp=Z,0.4nm,0.8s,baz=281,slow=4.0,SNR=5.0						
TXAR	**Lajitas Array**	**87.30**	**53**	P	**P**	**09 18 53.3**	**+1.8**
TXAR				pmax	pmax		
	comp=Z,1.0nm,0.9s						

JMA 13 09:06:13.3,36.97N×140.76E,h12km±1km,M3.6,2C-2D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.14**	**13**	⇑P	Pg	09 06 16.8	+0.1
ONAJ				S	Sg	09 06 19.2	+0.1
JHO	**Hitachi**	**0.39**	**203**	⇓P	Pg	09 06 21.0	-0.1
JHO				S	Sg	09 06 26.1	-0.2
JFK	**Kawauchi**	**0.41**	**13**	P	Pg	09 06 21.4	0.0
JFK				S	Sg	09 06 27.1	+0.3
JFT	**Otama**	**0.64**	**328**	P	Pg	09 06 25.9	+0.1
JFT				S	Sg	09 06 34.5	+0.2
JSB	**Shiboa**	**0.67**	**270**	⇑P	Pb	09 06 26.9	-0.1
JSB				S	Sb	09 06 36.5	+0.2
JYT	**Yasato**	**0.87**	**212**	P	Pg	09 06 29.7	-0.4
JMM	**Marumori**	**0.90**	**2**	⇓P	Pg	09 06 29.9	-0.7
JMM				S	Sg	09 06 41.7	-0.6
JFY	**Yanaizu**	**0.95**	**298**	P	Pg	09 06 31.3	-0.3
JFY				S	Sg	09 06 43.4	-0.6

IDC 13 09:18:47.9±1.3,57.90N×32.50W,h0km,mb3.5/5, mb1 3.8/5,mb1mx3.4/68,mbtmpg3.5/5,MS3.2/2,Ms1 3.2/2, ms1mx2.6/41,Error ellipse: s-maj=48.7km s-min=25.1km az=28.0,Reykjanes Ridge

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SCHQ	**Schefferville**	**19.14**	**276**	LR	LR	09 28 56.0	
	comp=Z,68nm,19.8s,baz=42,slow=32						
DAVOX	**Davos/Dischmat**	**27.72**	**95**	LR	LR	09 34 18.9	
	comp=Z,56nm,19.0s,baz=262,slow=34						
YKA	**Yellowknife Ar**	**38.47**	**312**	P	P	09 26 10.5	-0.5
	0.5nm,0.8s,baz=59,slow=9.4,SNR=7.4						
ILAR	**Eielson Array**	**47.97**	**328**	P	P	09 27 28.1	+0.3
	0.4nm,0.8s,baz=51,slow=7.1,SNR=5.2						
PDAR	**Pinedale Array**	**48.69**	**287**	P	P	09 27 33.8	-0.1
	0.5nm,0.7s,baz=60,slow=8.8,SNR=5.4						
AKTO	**Aktyubinsk**	**49.69**	**57**	P	P	09 27 40.9	-0.3
	1.6nm,0.7s,baz=311,slow=7.8,SNR=5.1						
TORD	**Torodi Ar. Bea**	**51.59**	**136**	P	P	09 27 55.8	0.0
	0.5nm,0.8s,baz=345,slow=6.9,SNR=4.2						

*HLW **13** 09:21:33.1,34.47N×31.99E,h33km±26km, Ml3.3*
*CSEM **13** 09:21:34.6±0.1,34.44N×32.11E,h40km, ML3.3,Error ellipse: s-maj=3.4km s-min=2.9km az=54.0*
*DDA **13** 09:21:34.6,34.77N×32.06E,h18km, Md3.3*
*NIC **13** 09:21:35.0±0.1,34.56N×32.13E,h51km,ML3.3*
*NSSC **13** 09:21:34.2±0.4,34.50N×32.42E,h3km±11km,MD1.5, ML2.6*
*GII **13** 09:21:35.4±0.3,34.41N×32.42E,h10km,MD2.6/2*
*ISK **13** 09:21:36.0,34.77N×32.04E,h33km,ML3.2*

ISC 13 09:21:33.2±1.2,34.44N±0.03×32.10E±0.03,h32km±12km, n116,σ1§57/167,Cyprus region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PPCY	**Paphos**	**0.49**	**25**	P	**Pn**	**09 21 44.8**	**+0.8**
	baz=209						
PPCY	**Paphos**	**0.49**	**25**	P	**Pn**	**09 21 44.8**	**+0.8**
AKMC	**Akamas**	**0.62**	**18**	P	**Pn**	**09 21 46.4**	**+0.6**
	baz=199						
AKMC	**Akamas**	**0.62**	**18**	P	**Pn**	**09 21 46.4**	**+0.6**
SZAC	**Souni**	**0.72**	**64**	P	**Pn**	**09 21 48.1**	**+0.9**
	baz=252						
SZAC				S	**Sn**	**09 21 58.9**	**+1.7**
SZAC	**Souni**	**0.72**	**64**	P	**Pn**	**09 21 48.1**	**+0.9**
ALFC	**Alefka**	**0.83**	**30**	P	**Pb**	**09 21 49.2**	**0.0**
	baz=213						
ALFC				S	**Sb**	**09 21 59.9**	**-0.2**
ALFC	**Alefka**	**0.83**	**30**	P	**Pb**	**09 21 49.2**	**0.0**
ALFC				S	**Sb**	**09 21 59.9**	**-0.2**
LEF	**Lefka**	**0.94**	**44**	*e*PG	**Pn**	**09 21 50.5**	**+0.3**
LEF				*e*SG	**Sn**	**09 22 01.3**	**-1.3**
LEF	**Lefka**	**0.94**	**44**	*e*Pg	**Pn**	**09 21 50.5**	**+0.3**
LEF				*e*Sg	**Sn**	**09 22 01.3**	**-1.3**
AKDN	**Akdeniz- K¯br**	**1.12**	**40**	*e*PG	**Pn**	**09 21 52.9**	**+0.3**
AKDN	**Akdeniz- K¯br**	**1.12**	**40**	*e*Pg	**Pn**	**09 21 52.9**	**+0.3**
CSS	**Mathiatis**	**1.15**	**62**	*e*PG	**Pb**	**09 21 55.4**	**+1.0**
CSS				*e*SG	**Sb**	**09 22 09.8**	**+0.8**
CSS	**Mathiatis**	**1.15**	**62**	P	**Pn**	**09 21 53.6**	**+0.6**
	baz=248						
CSS				S	**Sb**	**09 22 08.5**	**-0.5**
CSS	**Mathiatis**	**1.15**	**62**	Pg	**Pn**	**09 21 52.8**	**-0.2**
CSS	**Mathiatis**	**1.15**	**62**	Pg	**Pn**	**09 21 52.8**	**-0.2**
CSS	**Mathiatis**	**1.15**	**62**	P	**Pn**	**09 21 53.6**	**+0.6**
CSS				S	**Sb**	**09 22 08.5**	**-0.5**
CSS				*e*Sg	**Sb**	**09 22 09.8**	**+0.8**
LFK	**Lefkose**	**1.45**	**54**	*e*PN	**Pb**	**09 21 58.5**	**-1.1**
LFK				*e*SN	**Sn**	**09 22 15.5**	**+0.3**
LFK	**Lefkose**	**1.45**	**54**	*e*Pn	**Pb**	**09 21 58.6**	**-1.1**
LFK				*e*Sn	**Sn**	**09 22 15.5**	**+0.3**
GAZI	**Gazipasa**	**1.80**	**6**	*i* P	**Pn**	**09 22 03.0**	**+1.0**
GAZI				*i* S	**Sn**	**09 22 22.6**	**-1.2**
GAZI	**Gazipasa**	**1.80**	**6**	P	**Pn**	**09 22 03.0**	**+1.0**
GAZI				S	**Sn**	**09 22 22.6**	**-1.2**
EREN	**Erenkoy**	**2.02**	**57**	*e*PN	**Pn**	**09 22 06.8**	**+1.8**
EREN	**Erenkoy**	**2.02**	**57**	*e*Pn	**Pn**	**09 22 06.8**	**+1.8**
IKL	**Isikli**	**2.22**	**35**	*e*PN	**Pn**	**09 22 08.4**	**+0.7**
IKL	**Isikli**	**2.22**	**35**	*e*Pn	**Pn**	**09 22 08.4**	**+0.7**
ERMK	**Ermenek**	**2.30**	**17**	*i* P	**Pn**	**09 22 10.9**	**+1.9**
ERMK				*i* S	**Sn**	**09 22 37.5**	**+1.1**
ERMK	**Ermenek**	**2.30**	**17**	P	**Pn**	**09 22 10.9**	**+1.9**
ERMK				S	**Sn**	**09 22 37.5**	**+1.1**
KIZK	**Mersin**	**2.64**	**39**	*i* P	**Pn**	**09 22 15.1**	**+1.6**
KIZK				*i* S	**Sn**	**09 22 45.9**	**+1.5**
KIZK	**Mersin**	**2.64**	**39**	P	**Pn**	**09 22 15.1**	**+1.6**
KIZK				S	**Sn**	**09 22 45.9**	**+1.5**
AKAS	**Kas**	**2.71**	**312**	*i* P	**Pn**	**09 22 16.6**	**+1.9**
AKAS				*i* S	**Sn**	**09 22 44.4**	**-2.0**
AKAS	**Kas**	**2.71**	**312**	P	**Pn**	**09 22 16.6**	**+1.9**
AKAS				S	**Sn**	**09 22 44.4**	**-2.0**
ELL	**Elmali**	**2.92**	**323**	*e*PN	**Pn**	**09 22 17.6**	**+0.2**
ELL	**Elmali**	**2.92**	**323**	*e*Pn	**Pn**	**09 22 17.6**	**+0.2**
KORT	**Korkueli**	**2.93**	**331**	*i* P	**Pb**	**09 22 22.3**	**-2.5**
KORT				*i* S	**Sn**	**09 22 52.4**	**+0.6**
KORT	**Korkueli**	**2.93**	**331**	P	**Pb**	**09 22 22.3**	**-2.5**
KORT				S	**Sn**	**09 22 52.3**	**+0.6**
OFRI	**'Ofer**	**3.02**	**126**	Pn	**Pn**	**09 22 19.2**	**+0.5**
OFRI	**'Ofer**	**3.02**	**126**	Pn	**Pn**	**09 22 19.2**	**+0.5**
MMA0B	**Mount Meron ar**	**3.10**	**116**	Pn	**Pn**	**09 22 20.6**	**+0.7**
MMA0B	**Mount Meron ar**	**3.10**	**116**	Pn	**Pn**	**09 22 20.6**	**+0.7**
MERS	**Mersin**	**3.13**	**38**	*e*PN	**Pn**	**09 22 21.1**	**+0.8**
MERS	**Mersin**	**3.13**	**38**	*e*Pn	**Pn**	**09 22 21.1**	**+0.8**
HWQ	**Hawqa**	**3.19**	**92**	*e*P	**Pn**	**09 22 21.5**	**+0.3**
HWQ	**Hawqa**	**3.19**	**92**	*e*P	**Pn**	**09 22 21.5**	**+0.3**
KSDI	**Kefar Szold**	**3.22**	**112**	Pn	**Pn**	**09 22 22.0**	**+0.6**
KSDI				Sn	**Sn**	**09 22 58.4**	**-0.2**
**K

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DALY	**Dalyan (Mu˘la**	**3.67**	**311**	*e*Pn	**Pn**	**09 22 28.5**	**+0.8**
KARA	**Karaisali**	**3.71**	**40**	*e*PN	**Pn**	**09 22 29.6**	**+1.4**
KARA	**Karaisali**	**3.71**	**40**	*e*Pn	**Pn**	**09 22 29.6**	**+1.4**
TURN	**Turunc**	**3.74**	**312**	*i* P	Pn	09 22 32.4	+3.8
TURN				*i* S	**Sn**	**09 23 13.8**	**+2.2**
TURN	**Turunc**	**3.74**	**312**	P	Pn	09 22 32.4	+3.8
TURN				S	**Sn**	**09 23 13.8**	**+2.2**
BTCH	**Batrach**	**3.91**	**65**	*e*P	**Pn**	**09 22 32.1**	**+1.0**
BTCH				*e*S	**Sn**	**09 23 13.7**	**-2.3**
BTCH	comp=E,51nm,0.3s			AML	AML	09 23 15.3	
BTCH	comp=N,32nm,0.4s			AML	AML	09 23 25.9	
BTCH	**Batrach**	**3.91**	**65**	*e*P	**Pn**	**09 22 31.7**	**+0.6**
BTCH	comp=N,32nm,0.4s			*e*S	**Sn**	**09 23 12.8**	**-3.2**
DSI	**Dead Sea**	**3.97**	**135**	Pn	**Pn**	**09 22 33.5**	**+1.6**
DSI				Sn	**Sn**	**09 23 18.8**	**+1.5**
DSI	**Dead Sea**	**3.97**	**135**	Pn	**Pn**	**09 22 33.5**	**+1.6**
DSI				Sn	**Sn**	**09 23 18.8**	**+1.5**
YER	**Yerkesik**	**4.11**	**312**	*e*PN	**Pn**	**09 22 34.8**	**+1.1**
YER	**Yerkesik**	**4.11**	**312**	*e*Pn	**Pn**	**09 22 34.8**	**+1.1**
NIG	**Nigde**	**4.19**	**28**	*e*PN	**Pn**	**09 22 36.0**	**+0.9**
NIG	**Nigde**	**4.19**	**28**	*e*Pn	**Pn**	**09 22 36.0**	**+0.9**
SALA	**Sala**	**4.24**	**113**	*e*P	**Pn**	**09 22 37.5**	**+1.8**
SALA				*e*S	**Sn**	**09 23 22.8**	**-1.3**
SALA	comp=N,14nm,0.4s			AML	AML	09 23 34.6	
SALA	**Sala**	**4.24**	**113**	*e*P	**Pn**	**09 22 37.3**	**+1.6**
SALA	comp=N,14nm,0.4s			*e*S	**Sn**	**09 23 21.3**	**-2.8**
KOZT	**Kozan**	**4.29**	**44**	*e*PN	**Pn**	**09 22 38.1**	**+1.9**
KOZT	**Kozan**	**4.29**	**44**	*e*Pn	**Pn**	**09 22 38.1**	**+1.9**
ROOS	**tl_alroos**	**4.31**	**92**	*e*P	**Pn**	**09 22 38.1**	**+1.6**
ROOS				*e*S	**Sn**	**09 23 23.2**	**-2.5**
ROOS	comp=E,26nm,0.6s			AML	AML	09 23 28.9	
ROOS	comp=N,33nm,0.6s			AML	AML	09 23 29.3	
ROOS	**tl_alroos**	**4.31**	**92**	*e*P	**Pn**	**09 22 38.0**	**+1.5**
ROOS	comp=N,33nm,0.6s			*e*S	**Sn**	**09 23 22.2**	**-3.5**
DRWC	**Darouich**	**4.32**	**58**	*e*P	**Pn**	**09 22 37.7**	**+1.0**
DRWC				*e*S	**Sn**	**09 23 23.7**	**-2.3**
DRWC	**Darouich**	**4.32**	**58**	*e*P	**Pn**	**09 22 37.2**	**+0.5**
KHL	**Karahalli**	**4.40**	**333**	*e*PN	**Pn**	**09 22 37.8**	**0.0**
KHL	**Karahalli**	**4.40**	**333**	*e*Pn	**Pn**	**09 22 37.8**	**0.0**
KHAL	**Karahalli**	**4.45**	**333**	*i* P	**Pn**	**09 22 40.1**	**+1.5**
KHAL				*i* S	**Sn**	**09 23 28.6**	**-0.7**
KHAL	**Karahalli**	**4.45**	**333**	P	**Pn**	**09 22 40.1**	**+1.5**
KHAL				S	**Sn**	**09 23 28.6**	**-0.7**
KOT	**Kottamia** baz=182	**4.50**	**183**	P	**Pn**	**09 22 40.2**	**+1.1**
KOT	comp=N,40μm,0.2s,logA/T=5.2,baz=182			AMP		09 23 00.0	
KOT	baz=182			S	**Sn**	**09 23 28.7**	**-1.7**
KOT	**Kottamia**	**4.50**	**183**	P	**Pn**	**09 22 40.2**	**+1.1**
BDRM	**Kayabasi**	**4.60**	**306**	*i* P	**Pn**	**09 22 42.3**	**+1.8**
BDRM	**Kayabasi**	**4.60**	**306**	P	**Pn**	**09 22 42.3**	**+1.8**
ZALF	**Zalf**	**4.62**	**108**	*e*P	**Pn**	**09 22 42.1**	**+1.3**
ZALF	comp=N,4.0nm,0.7s			*e*S	**Sn**	**09 23 31.0**	**-2.4**
AYDN	**Tasoluk**	**4.69**	**315**	*i* P	**Pn**	**09 22 44.6**	**+2.8**
AYDN	**Tasoluk**	**4.69**	**315**	P	**Pn**	**09 22 44.6**	**+2.8**
PRNI	**Paran**	**4.76**	**148**	Pn	**Pn**	**09 22 44.4**	**+1.7**
PRNI				Sn	**Sn**	**09 23 38.7**	**+2.0**
PRNI	**Paran**	**4.76**	**148**	Pn	**Pn**	**09 22 44.4**	**+1.7**
PRNI				Sn	**Sn**	**09 23 38.7**	**+2.0**
HNKL	**Nakhl** baz=159	**4.77**	**160**	P	**Pn**	**09 22 43.7**	**+0.9**
HNKL	**Nakhl**	**4.77**	**160**	P	**Pn**	**09 22 43.7**	**+0.9**
GLL	**Jalalah** baz=183	**4.86**	**184**	P	**Pn**	**09 22 45.1**	**+1.1**
GLL	**Jalalah**	**4.86**	**184**	P	**Pn**	**09 22 45.1**	**+1.1**
MBRI	**Mt Berech**	**5.21**	**152**	Pn	**Pn**	**09 22 52.1**	**+3.2**
MBRI	**Mt Berech**	**5.21**	**152**	Pn	**Pn**	**09 22 52.1**	**+3.2**
HMAT	**Matruh** baz=233	**5.37**	**233**	P	**Pn**	**09 22 52.4**	**+1.4**
HMAT	**Matruh**	**5.37**	**233**	P	**Pn**	**09 22 52.4**	**+1.4**
SLUM	**Salum** baz=245	**6.49**	**245**	P	**Pn**	**09 23 06.7**	**+0.3**
SLUM				S	**Sn**	**09 24 14.3**	**-4.9**
SLUM	**Salum**	**6.49**	**245**	P	**Pn**	**09 23 06.7**	**+0.3**
SWA2	baz=229	**7.66**	**229**	P	**Pn**	**09 23 22.6**	**+0.1**
SWA2		**7.66**	**229**	P	**Pn**	**09 23 22.6**	**+0.1**

JMA 13 09:23:45.6, 37.02N×140.63E, h7km±1km, M2.7, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.16**	**59**	P	Pg	09 23 49.0	+0.1
ONAJ				S	Sg	09 23 51.4	+0.3
JFK	**Kawauchi**	**0.40**	**29**	S	Sg	09 23 58.7	+0.1
JFT	**Otama**	**0.55**	**335**	P	Pg	09 23 56.5	+0.3
JFT				S	Sg	09 24 03.8	+0.4
JFY	**Yanaizu**	**0.83**	**298**	P	Pg	09 24 01.6	0.0
JFY				S	Sg	09 24 12.4	-0.1
JMM	**Marumori**	**0.85**	**9**	P	Pg	09 24 01.6	-0.4
JMM				S	Sg	09 24 13.1	0.0
JYT	**Yasato**	**0.86**	**204**	P	Pg	09 24 01.9	-0.3
JYT				S	Sg	09 24 12.8	-0.6

IDC ***13*** *09:24:44.7±1.0, 36.46N×142.31E, h0km, mb3.6/8, mb1 3.7/10, mb1mx3.5/61, mbtmp3.6/10, ML3.4/2, Error ellipse: s-maj=25.4km s-min=20.6km az=75.0*

ISC 13 09:24:44.3±1.7, 35.9N±0.1×142.5E±0.2, h18km, n15, σ0§64/8, mb3.5/8, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MJAR	**Matsushiro Arr**	**3.49**	**281**	Pn	**Pn**	**09 25 38.2**	**+0.5**
	3.8nm,0.3s,baz=89,slow=15,SNR=13						
JHJ	**Hachijo jima 2**	**3.58**	**219**	Pn	**Pb**	**09 25 47.1**	**0.0**
	8.8nm,0.3s,baz=252,slow=18,SNR=5.9						
JHJ				Sn	**Sb**	**09 26 29.9**	**-0.2**
	11nm,0.3s,baz=75,slow=20,SNR=2.9						
H11N2	**WAKE ISLAND Hy**	**26.86**	**120**	T	T	09 59 05.5	
	baz=313,slow=75,SNR=15						
H11N1	**WAKE ISLAND Hy**	**26.87**	**120**	T	T	09 59 08.5	
	baz=313,slow=75,SNR=16						
H11N3	**WAKE ISLAND Hy**	**26.88**	**120**	T	T	09 59 21.5	
	baz=313,slow=75,SNR=15						
H11S1	**WAKE ISLAND Hy**	**27.56**	**123**	T	T	10 00 24.6	
	baz=314,slow=74,SNR=16						
H11S3	**WAKE ISLAND Hy**	**27.56**	**123**	T	T	10 00 27.2	
	baz=131,slow=74,SNR=11						
SONM	**Songino Array**	**29.10**	**305**	P	**P**	**09 30 44.1**	**+0.1**
	0.8nm,0.5s,baz=95,slow=7.9,SNR=2.9						
ZALV	**Zalesovo Beam**	**43.28**	**313**	P	**P**	**09 32 43.4**	**-1.3**
	0.3nm,0.3s,baz=86,slow=7.4,SNR=2.5						
MKAR	**Makanchi Array**	**45.42**	**303**	P	**P**	**09 33 01.9**	**-0.1**
	0.1nm,0.3s,baz=87,slow=7.4,SNR=4.0						
KURBB	**Kurchatov Arra**	**47.34**	**309**	P	**P**	**09 33 16.7**	**-0.3**
	1.1nm,0.2s,baz=83,slow=7.6,SNR=4.7						
WRA	**Warramunga Arr**	**56.10**	**189**	P	P	09 34 28.4	+5.8
	0.2nm,0.5s,baz=8.5,slow=7.4,SNR=4.6						
ASAR	**Alice Springs**	**59.83**	**189**	P	P	09 34 55.5	+6.8
	0.2nm,0.7s,baz=8.3,slow=6.4,SNR=3.5						
YKA	**Yellowknife Ar**	**64.33**	**30**	P	**P**	**09 35 18.8**	**+0.3**
	0.2nm,0.7s,baz=305,slow=5.6,SNR=4.4						
TXAR	**Lajitas Array**	**90.11**	**53**	P	P	09 37 47.0	+3.3
	0.4nm,1.0s,baz=336,slow=4.2,SNR=2.8						

ISCJB ***13*** *09:27:26.5±0.9, 38.35N±0.04×141.97E±0.10, h71km±6km, mb3.5/4, Error ellipse: s-maj=13.0km s-min=5.8km az=13.9*

IDC ***13*** *09:27:27.5±2.8, 38.38N×142.08E, h69km±22km, mb3.4/4, mb1 3.5/8, mb1mx3.2/59, mbtmp3.8/8, Error ellipse: s-maj=42.0km s-min=19.3km az=82.0*

JMA ***13*** *09:27:28.2±0.1, 38.37N×141.88E, h65km±1km, M3.7*

JMA Felt I J1.

ISC 13 09:27:27.3±1.5, 38.36N±0.05×142.0E±0.1, h59km±10km, n26, σ1§57/34, mb3.5/4, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**0.50**	**281**	P	**Pn**	**09 27 40.0**	**+0.9**
JIO				S	**Sn**	**09 27 48.1**	**+0.3**
OFUJ	**Ofunato**	**0.76**	**342**	P	**Pn**	**09 27 43.0**	**+0.8**
OFUJ				S	**Sn**	**09 27 53.7**	**+0.6**
JMK	**Ichinoseki**	**0.84**	**315**	P	**Pn**	**09 27 44.0**	**+0.8**
JMK				S	**Sn**	**09 27 55.2**	**+0.4**
JOU	**Okura**	**1.03**	**271**	P	**Pn**	**09 27 46.1**	**+0.4**
JOU				S	**Sn**	**09 27 59.0**	**-0.3**
JMM	**Marumori**	**1.05**	**243**	P	**Pn**	**09 27 46.3**	**+0.3**
JMM				S	**Sn**	**09 27 59.3**	**-0.5**
JOM	**Ohasama**	**1.23**	**335**	P	**Pn**	**09 27 49.2**	**+0.8**
JOM				S	**Sn**	**09 28 04.5**	**+0.4**
JFK	**Kawauchi**	**1.32**	**222**	P	**Pn**	**09 27 49.8**	**+0.3**
JFK				S	**Sn**	**09 28 06.5**	**+0.3**
JYK	**Kaneyama**	**1.39**	**294**	P	**Pn**	**09 27 50.6**	**+0.2**
JYK				*e*S	**Sn**	**09 28 08.0**	**+0.3**
JRG	**Rokugo**	**1.48**	**315**	P	**Pn**	**09 27 52.3**	**+0.7**
JRG				S	**Sn**	**09 28 10.7**	**+0.8**
JYS	**Shirataka**	**1.51**	**265**	P	**Pn**	**09 27 52.6**	**+0.5**
JYS				S	**Sn**	**09 28 11.0**	**+0.3**
JFT	**Otama**	**1.54**	**238**	P	**Pn**	**09 27 52.9**	**+0.4**
JFT				*e*S	**Sn**	**09 28 11.1**	**-0.5**
MJAR	**Matsushiro Arr** 3.6nm,0.3s,baz=58,slow=10,SNR=13	**3.50**	**240**	P	**Pn**	**09 28 21.3**	**+2.0**
MAT	**Matsushiro**	**3.50**	**240**	P	**Pn**	**09 28 21.5**	**+2.2**
MAT				*e*S	**Sn**	**09 29 04.3**	**+4.8**
JHJ	**Hachijo jima 2** 21nm,0.3s,baz=267,slow=15,SNR=6.3	**5.52**	**199**	P	**Pn**	**09 28 46.5**	**-0.5**
JHJ	13nm,0.3s,baz=90,slow=20,SNR=3.4			S	**Sn**	**09 29 45.1**	**-4.0**
ASAJ	**Asahikawa** 1.7nm,0.3s,baz=195,slow=14,SNR=10	**5.77**	**4**	P	**Pn**	**09 28 50.2**	**-0.1**
ASAJ	1.1nm,0.3s,baz=83,slow=17,SNR=2.8			S	**Sn**	**09 29 51.0**	**-4.1**
USRK	**Ussuriysk Ar.** 0.4nm,0.3s,baz=121,slow=14,SNR=4.4	**9.51**	**311**	P	**Pn**	**09 29 42.7**	**+1.2**
SONM	**Songino Array** 0.6nm,0.5s,baz=99,slow=8.9,SNR=4.2	**27.44**	**302**	P	**P**	**09 33 06.9**	**-0.8**
H11N2	**WAKE ISLAND Hy** baz=316,slow=75,SNR=5.0	**28.47**	**124**	T	T	10 03 53.1	
H11N1	**WAKE ISLAND Hy** baz=316,slow=75,SNR=11	**28.48**	**124**	T	T	10 03 41.6	
H11N3	**WAKE ISLAND Hy** baz=316,slow=75,SNR=24	**28.49**	**124**	T	T	10 03 40.7	
H11S1	**WAKE ISLAND Hy** baz=316,slow=75,SNR=3.4	**29.23**	**126**	T	T	10 04 36.8	
H11S3	**WAKE ISLAND Hy** baz=318,slow=76,SNR=3.8	**29.24**	**126**	T	T	10 04 41.1	
H11S2	**WAKE ISLAND Hy** baz=318,slow=76,SNR=3.1	**29.25**	**126**	T	T	10 04 41.0	
ZALV	**Zalesovo Beam** 0.9nm,0.3s,baz=70,slow=8.5,SNR=4.7	**41.37**	**311**	P	**P**	**09 35 06.6**	**-0.7**
MKAR	**Makanchi Array** 0.4nm,0.4s,baz=86,slow=9.3,SNR=7.7	**43.81**	**301**	P	**P**	**09 35 26.8**	**-0.4**
WRA	**Warramunga Arr** 0.1nm,0.5s,baz=4.7,slow=7.1,SNR=3.3	**58.43**	**188**	P	**P**	**09 37 16.5**	**-0.4**

IDC ***13*** *09:38:34.3±0.8, 57.92N×32.53W, h0km, mb3.6/11, mb1 3.9/11, mb1mx3.6/54, mbtmp3.6/11, MS3.6/26, Ms1 3.6/26, ms1mx3.4/55, Error ellipse: s-maj=30.0km s-min=15.6km az=18.0*

ISCJB ***13*** *09:38:35.1±0.7, 57.9N±0.2×32.6W±0.2, h18km, mb3.7/11, MS3.6/21, Error ellipse: s-maj=25.2km s-min=12.7km az=18.1*

ISC 13 09:38:37.1±0.8, 57.9N±0.2×32.6W±0.1, h18km, n33, σ1§03/10, mb3.7/11, MS3.6/21, Reykjanes Ridge

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BORG	**Borgarnes**	**8.77**	**33**	LR	LR	09 43 13.7	
	comp=Z,562nm,19.5s,baz=195,slow=32						
SFJD	**Kangerlussuaq**	**12.33**	**325**	LR	LR	09 45 31.5	
	comp=Z,559nm,18.0s,baz=159,slow=34						
JMIC	**Jan Mayen**	**16.59**	**28**	LR	LR	09 47 14.3	
	comp=Z,74nm,19.5s,baz=256,slow=32						
FRB	**Frobisher Bay**	**18.29**	**304**	LR	LR	09 48 57.9	
	comp=Z,355nm,19.2s,baz=2.5,slow=34						
SCHQ	**Schefferville**	**19.08**	**276**	LR	LR	09 49 13.2	
	comp=Z,304nm,18.5s,baz=84,slow=33						
ESDC	**Sonseca Array**	**25.92**	**122**	P	**P**	**09 44 09.5**	**+1.5**
	0.4nm,0.3s,baz=326,slow=9.4,SNR=7.0						
ESDC				LR	LR	09 52 26.4	
	comp=Z,112nm,19.4s,baz=355,slow=32						
DAVOX	**Davos/Dischmat**	**27.77**	**95**	LR	LR	09 54 48.3	
	comp=Z,181nm,18.7s,baz=257,slow=35						
RES	**Resolute Bay**	**28.25**	**330**	LR	LR	09 55 33.1	
	comp=Z,59nm,18.9s,baz=44,slow=36						
VRAC	**Vranov**	**29.82**	**85**	LR	LR	09 56 45.8	
	comp=Z,225nm,18.3s,baz=358,slow=37						
KEST	**Kesra**	**35.44**	**110**	LR	LR	09 58 39.1	
	comp=Z,136nm,18.8s,baz=320,slow=34						
AKASG	**Malin Array Be**	**35.64**	**74**	P	P	09 45 31.3	-2.3
	0.3nm,0.4s,baz=308,slow=8.1,SNR=6.3						
ULM	**Lac du Bonnet**	**36.64**	**286**	LR	LR	09 59 23.4	
	comp=Z,183nm,18.7s,baz=287,slow=34						
OBN	**Obninsk**	**36.78**	**64**	LR	LR	09 59 26.3	
	comp=Z,106nm,18.2s,baz=270,slow=34						
YKA	**Yellowknife Ar**	**38.45**	**312**	P	**P**	**09 45 56.9**	**-0.3**
	0.7nm,0.9s,baz=58,slow=9.4,SNR=8.4						
BRTR	**Keskin Array**	**45.25**	**84**	P	**P**	**09 46 53.7**	**+0.4**
	2.0nm,1.0s,baz=317,slow=5.2,SNR=6.8						
BRTR				LR	LR	10 05 26.7	
	comp=Z,54nm,21.6s,baz=316,slow=36						
ARU	**Arti**	**45.84**	**51**	LR	LR	10 04 37.7	
	comp=Z,70nm,18.9s,baz=336,slow=34						
NRIK	**Noril'sk**	**45.99**	**25**	LR	LR	10 04 40.1	
	comp=Z,29nm,20.8s,baz=302,slow=34						
KVAR	**Kislovodsk Arr**	**46.96**	**73**	LR	LR	10 06 35.8	
	comp=Z,37nm,19.1s,baz=300,slow=36						
KBZ	**Khaz**	**47.23**	**73**	LR	LR	10 07 02.3	
	comp=Z,56nm,18.4s,baz=341,slow=36						
ILAR	**Eielson Array**	**47.97**	**328**	P	**P**	**09 47 14.4**	**+0.3**
	0.9nm,0.9s,baz=32,slow=5.7,SNR=8.5						
ILAR				LR	LR	10 08 09.2	
	comp=Z,60nm,19.7s,baz=60,slow=37						
PDAR	**Pinedale Array**	**48.64**	**287**	P	**P**	**09 47 18.9**	**-0.9**
	0.9nm,0.9s,baz=61,slow=10,SNR=4.9						
PDAR				LR	LR	10 06 41.0	
	comp=Z,107nm,19.3s,baz=46,slow=35						
AKTO	**Aktyubinsk**	**49.76**	**57**	LR	LR	10 06 59.4	
	comp=Z,26nm,18.8s,baz=321,slow=34						
TIXI	**Tiksi**	**50.12**	**8**	LR	LR	10 06 08.0	
	comp=Z,29nm,18.2s,baz=348,slow=33						
GNI	**Garni**	**50.77**	**75**	LR	LR	10 09 25.7	
	comp=Z,47nm,20.4s,baz=352,slow=36						
TORD	**Torodi Ar. Bea**	**51.60**	**136**	P	**P**	**09 47 40.9**	**-1.4**
	2.0nm,1.0s,baz=331,slow=6.6,SNR=7.4						
TORD				LR	LR	10 07 39.0	
	comp=Z,27nm,18.6s,baz=115,slow=34						
DBIC	**Dimbokro**	**55.44**	**146**	LR	LR	10 08 38.2	
	comp=Z,83nm,20.7s,baz=344,slow=32						
TXAR	**Lajitas Array**	**55.70**	**271**	P	**P**	**09 48 13.3**	**+0.9**
	0.5nm,0.9s,baz=60,slow=3.6,SNR=3.3						
TXAR				LR	LR	10 11 23.8	
	comp=Z,64nm,18.3s,baz=0.0,slow=35						
NVAR	**Mina Array Bea**	**56.31**	**290**	P	**P**	**09 48 16.8**	**0.0**
	0.5nm,0.7s,baz=52,slow=7.5,SNR=4.6						
NVAR				LR	LR	10 11 19.0	
	comp=Z,92nm,18.8s,baz=19,slow=35						
MKAR	**Makanchi Array**	**62.65**	**45**	P	**P**	**09 48 59.1**	**-1.0**
	0.4nm,0.5s,baz=339,slow=5.8,SNR=6.5						
H10S1	**ASCENSION HYDR**	**68.17**	**161**	T	T	11 03 18.3	
	baz=351,slow=75,SNR=5.2						
H10S3	**ASCENSION HYDR**	**68.18**	**161**	T	T	11 03 19.1	
	baz=351,slow=75,SNR=5.1						
H10S2	**ASCENSION HYDR**	**68.19**	**161**	T	T	11 03 21.3	
	baz=351,slow=75,SNR=5.8						
SONM	**Songino Array**	**69.34**	**28**	P	**P**	**09 49 43.8**	**+0.5**
	0.2nm,0.4s,baz=318,slow=2.0,SNR=4.3						

ISCJB ***13*** *09:41:25.5±1.1, 38.21S±0.03×74.9W±0.1, h33km, mb3.7/5, MS3.8/2, Error ellipse: s-maj=12.8km s-min=4.4km az=2.9*

GUC ***13*** *09:41:27.4±0.6, 38.28S×74.71W, h25km±3km, ML4.6*

IDC ***13*** *09:41:32.7±2.2, 37.14S×75.72W, h0km, mb3.7/5, mb1 4.0/6, mb1mx3.8/19, mbtmp3.8/6, ML4.6/1, MS3.6/3, Ms1 3.5/3, ms1mx2.9/24, Error ellipse: s-maj=56.2km s-min=31.9km az=52.0*

ISC 13 09:41:29.0±1.5, 38.24S±0.05×74.8W±0.1, h35km, n25, σ1§83/26, mb3.7/5, 2C, Off coast of central Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CCSP	**San Pedro de C**	**1.94**	**45**	*e*P	**Pn**	**09 41 56.8**	**-2.6**
CCSP				*e*S	**Sn**	**09 42 20.9**	**-1.7**
VLCH	**Valdivia**	**1.98**	**143**	*e*P	**Pn**	**09 41 59.2**	**-0.7**
VLCH				*e*S	**Sn**	**09 42 23.5**	**0.0**
CCHI	**Chillan**	**2.72**	**54**	⇑*i*P	**Pn**	**09 42 10.3**	**+0.1**
CCHI				*e*S	**Sn**	**09 42 42.3**	**+0.5**
CCHI	comp=N,2μm,1.1s			IAML		09 42 45.9	
PMCH	**Puerto Montt**	**3.56**	**156**	*i* S	**Sn**	**09 43 02.2**	**-0.3**
PUEL	**Puelo Alto**	**3.92**	**151**	*i* S	**Sn**	**09 43 10.8**	**-0.7**
PLCA	**Paso Flores** comp=N,4.7nm,0.3s,baz=305,slow=16,SNR=4.7	**4.13**	**128**	Pn	Pn	09 42 54.9	+25
CLCH	**Cerro Calan**	**5.95**	**37**	⇑*i*P	**Pn**	**09 42 53.1**	**-1.6**
CLCH				*e*S	**Sn**	**09 44 00.1**	**-1.5**
PEL	**Peldehue**	**6.09**	**35**	*e*P	**Pn**	**09 42 54.9**	**-1.7**
PEL				*e*S	**Sn**	**09 44 03.1**	**-2.0**
ROC1	**El Roble**	**6.10**	**32**	*i* P	**Pn**	**09 42 54.8**	**-2.0**
ROC1				*i* S	**Sn**	**09 44 07.4**	**+2.0**
ASAL	**Salagasta**	**7.45**	**43**	*i* P	**Pn**	**09 43 16.0**	**+0.7**
ASAL				*i* S	**Sn**	**09 44 43.7**	**+5.1**
AUSP	**Uspallata**	**7.46**	**38**	*i* P	**Pn**	**09 43 15.0**	**-0.6**
AUSP				*i* S	**Sn**	**09 44 40.3**	**+1.1**
RTLS	**Leoncito**	**7.86**	**37**	*i* P	**Pn**	**09 43 20.6**	**-0.5**
RTLS				*i* S	**Sn**	**09 44 49.7**	**+0.8**
AMOG	**MOGNA**	**8.95**	**37**	*e*P	**Pn**	**09 43 34.0**	**-1.9**
AVFE	**Valle Fertil**	**9.70**	**41**	*e*P	**Pn**	**09 43 43.0**	**-3.0**
AGUA	**GUANDACOL**	**10.19**	**33**	*e*P	**Pn**	**09 43 51.5**	**-1.3**
ACLC	**CERRO LA CRUZ**	**10.95**	**39**	*e*P	Pn	09 43 60.0	-3.4
ACLC	comp=Z,4.6nm,0.5s			IAML		09 44 24.2	
VCA	**Vinchina**	**10.96**	**32**	*e*P	**Pn**	**09 44 02.3**	**-1.1**
VCA	comp=Z,9.8nm,0.5s			IAML		09 44 21.1	
CPUP	**Villa Florida** comp=Z,62nm,18.3s,baz=232,slow=39	**18.92**	**56**	LR	LR	09 53 46.6	
LPAZ	**La Paz** comp=Z,1.5nm,1.0s,baz=185,slow=12,SNR=3.9	**22.65**	**17**	P	**P**	**09 46 28.9**	**+1.1**
NNA	**Nana** comp=Z,43nm,19.8s,baz=181,slow=31	**26.21**	**355**	LR	LR	09 54 35.5	
BDFB	**Brasilia** comp=Z,2.9nm,0.8s,baz=216,slow=11,SNR=3.5	**32.61**	**54**	P	P	09 48 04.2	+6.6
TXAR	**Lajitas Array** comp=Z,0.3nm,0.7s,baz=157,slow=9.1,SNR=4.5	**72.44**	**334**	P	**P**	**09 52 52.6**	**+0.9**
DBIC	**Dimbokro** comp=Z,1.5nm,0.8s,baz=188,slow=7.1,SNR=2.4	**78.64**	**72**	P	P	09 53 38.9	+11
RAO	**Raoul Island** comp=Z,229nm,21.5s,baz=78,slow=28	**81.74**	**239**	LR	LR	10 19 59.2	
TORD	**Torodi Ar. Bea** comp=Z,0.3nm,0.7s,baz=238,slow=5.1,SNR=2.3	**87.73**	**71**	P	P	09 54 26.1	+12

ISK ***13*** *09:48:03.9, 37.23N×28.14E, h5km, ML1.9*

ISCJB ***13*** *09:48:04.8±0.6, 37.21N±0.04×28.16E±0.04, h0km, Error ellipse: s-maj=6.3km s-min=3.6km az=26.9*

DDA ***13*** *09:48:04.7, 37.21N×28.13E, h7km, Md2.6, Suspected Mining explosion.*

CSEM ***13*** *09:48:05.0±0.3, 37.22N×28.18E, h2km, ML1.9, Error ellipse: s-maj=8.4km s-min=4.9km az=29.0, Suspected Mining explosion.*

ISC 13 09:48:03.8±0.8, 37.12N±0.04×28.02E±0.03, h0km, n18, σ1§33/29, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
YER	**Yerkesik**	**0.21**	**87**	*e*PG	**Pg**	**09 48 07.3**	**-0.5**
YER				*e*SG	**Sg**	**09 48 10.3**	**-0.2**
YER	**Yerkesik**	**0.21**	**87**	*e*Pg	**Pg**	**09 48 07.3**	**-0.5**
YER				*e*Sg	**Sg**	**09 48 10.3**	**-0.2**
BDRM	**Kayabasi**	**0.47**	**263**	*i* P	**Pn**	**09 48 17.0**	**-0.8**
BDRM				*i* S	**Sb**	**09 48 23.9**	**+1.5**
BDRM	**Kayabasi**	**0.47**	**263**	P	**Pn**	**09 48 17.0**	**-0.8**
BDRM				S	**Sb**	**09 48 23.9**	**+1.5**
TURN	**Turunc**	**0.53**	**118**	*i* P	**Pg**	**09 48 12.2**	**-1.7**
TURN				*i* S	**Sg**	**09 48 20.1**	**-0.6**
TURN	**Turunc**	**0.53**	**118**	P	**Pg**	**09 48 12.2**	**-1.7**
TURN				S	**Sg**	**09 48 20.1**	**-0.6**
AYDN	**Tasoluk**	**0.55**	**348**	*i* P	**Pg**	**09 48 14.4**	**+0.1**
AYDN				*i* S	**Sg**	**09 48 21.7**	**+0.2**
AYDN	**Tasoluk**	**0.55**	**348**	P	**Pg**	**09 48 14.4**	**+0.1**
AYDN				S	**Sg**	**09 48 21.7**	**+0.2**
BODT	**Bodrum**	**0.57**	**264**	*e*PG	**Pn**	**09 48 18.3**	**-0.9**
BODT				*e*SG	**Sn**	**09 48 28.9**	**-0.5**
BODT	**Bodrum**	**0.57**	**264**	*e*Pg	**Pn**	**09 48 18.3**	**-0.9**
BODT				*e*Sg	**Sn**	**09 48 28.9**	**-0.5**
FETY	**Fethiye**	**0.98**	**119**	*e*PG	**Pb**	**09 48 23.6**	**-0.1**
FETY	**Fethiye**	**0.98**	**119**	*e*Pg	**Pb**	**09 48 23.6**	**-0.1**
KULA	**Kula-Manisa**	**1.48**	**20**	*e*PN	**Pn**	**09 48 30.8**	**-1.0**
KULA	**Kula-Manisa**	**1.48**	**20**	*e*Pn	**Pn**	**09 48 30.8**	**-1.0**
AKAS	**Kas**	**1.55**	**124**	*i* P	**Pg**	**09 48 34.5**	**+0.9**
AKAS				*i* S	**Sn**	**09 48 58.8**	**+5.1**
AKAS	**Kas**	**1.55**	**124**	P	**Pg**	**09 48 34.5**	**+0.9**
ELL	**Elmali**	**1.56**	**103**	*e*PN	**Pb**	**09 48 32.9**	**-0.7**
ELL	**Elmali**	**1.56**	**103**	*e*Pn	**Pb**	**09 48 32.9**	**-0.7**

ISCJB ***13*** *09:53:14.3±0.7, 51.27N±0.07×75.64E±0.08, h0km, Error ellipse: s-maj=11.6km

MKAR Lg Lg 09 56 37.3
0.4nm,0.3s,baz=309,slow=30,SNR=10
AAK Ala-Archa 8.85 186 Lg Lg 09 57 53.5
0.2nm,0.3s,baz=71,slow=7.6,SNR=5.6

BJI ***13*** *09:56:55.8, 5.06S× 127.05E, h411km, mb4.5/54, mB4.5/25*
ISCJB ***13*** *09:56:59.7± 0.1, 4.55S± 0.02× 126.73E± 0.02, h400km, mb4.5/98, Error ellipse: s-maj=3.3km s-min=2.6km az=164.6*
NEIC ***13*** *09:57:00.9± 0.3, 4.61S× 126.68E, h402km± 3km, mb4.7/42, Error ellipse: s-maj=5.0km s-min=3.3km az=63.0*
IDC ***13*** *09:57:01.0± 0.7, 4.63S× 126.64E, h400km± 7km, mb4.3/36, mb1 4.3/41, mb1mx4.2/56, mbtmp5.0/41, Error ellipse: s-maj=9.3km s-min=5.7km az=77.0*
MOS ***13*** *09:57:00.3± 0.8, 4.58S× 126.65E, h413km, mb4.6/52, Error ellipse: s-maj=11.3km s-min=5.7km az=110.4*
DJA ***13*** *09:57:02.6± 0.4, 5.5S× 123.3× 12.7E± *, h382km± 9km, M4.8/22, mb4.8/22, mB5.2/15, MLv5.2/20, Mw(mB)4.6/15*
KLM ***13*** *09:57:03.2, 4.69S× 126.73E, h459km, mb4.9, MS5.8*
ISC 13 09:57:00.9± 0.3, 4.62S± 0.03× 126.71E± 0.04, h400km, n259, σ1§14/295, mb4.6/95, 6C-4D, Banda Sea

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MSAI	**Masohi**	**2.55**	**60**	P	**Pn**	**09 57 59.5**	**-1.1**
MSAI				S	**S**	**09 58 44.7**	**-4.2**
SANI	**Sanana**	**2.65**	**344**	P	**Pn**	**09 58 02.8**	**+1.4**
SANI				S	**S**	**09 58 51.7**	**+1.4**
BNDI	**Bandanaira**	**3.19**	**88**	P	**Pn**	**09 58 05.0**	**-0.7**
BNDI				S	**S**	**09 58 57.0**	**-1.0**
LBMI	**Labuha**	**4.04**	**11**	P	**Pn**	**09 58 14.8**	**+1.4**
KDI	**Kendari**	**4.13**	**279**	P	**Pn**	**09 58 15.0**	**+0.7**
TNTI	**Ternate**	**5.40**	**7**	P	**Pn**	**09 58 27.3**	**+0.2**
	2μm,0.9s,24μm6.9nm						
TNTI	**Ternate**	**5.40**	**7**	*e*Pn	**Pn**	**09 58 27.2**	**+0.1**
	1μm,0.8s						
TNTI				*e*S	**S**	**09 59 35.5**	**-1.7**
SOEI	**Soe**	**5.65**	**205**	P	**Pn**	**09 58 30.6**	**+0.7**
	1μm,0.9s,16μm6.9nm						
SOEI				S	**S**	**09 59 42.7**	**+0.4**
	1μm,0.9s,16μm6.9nm						
SOEI	**Soe**	**5.65**	**205**	*e*Pn	**Pn**	**09 58 30.5**	**+0.6**
	847nm,0.8s						
SOEI				*e*S	**S**	**09 59 42.0**	**-0.2**
SAUI	**Saumlaki**	**5.65**	**126**	P	**Pn**	**09 58 30.1**	**+0.3**
	467nm,1.1s,6μm3.0nm						
SAUI				S	**S**	**09 59 41.4**	**-0.8**
	467nm,1.1s,6μm3.0nm						
FAKI	**Fak Fak**	**5.78**	**73**	P	**Pn**	**09 58 31.1**	**-0.1**
	478nm,1.0s,8μm3.2nm						
FAKI	**Fak Fak**	**5.78**	**73**	*e*Pn	**Pn**	**09 58 31.0**	**-0.1**
	288nm,0.5s						
FAKI				*e*S	S	09 59 37.7	-7.0
SWI	**Sorong**	**5.88**	**51**	P	**Pn**	**09 58 33.4**	**+1.1**
	2μm,0.7s,16μm6.4nm						
SWI				S	**S**	**09 59 47.3**	**+0.6**
	2μm,0.7s,16μm6.4nm						
SIJI	**Sorong**	**5.88**	**51**	P	**Pn**	**09 58 33.5**	**+1.2**
	13nm,0.3s,baz=177,slow=16,SNR=10						
SIJI				S	**S**	**09 59 45.3**	**-1.4**
	15nm,0.3s,baz=269,slow=24,SNR=12						
MMRI	**Maumere**	**5.97**	**228**	P	**Pn**	**09 58 34.7**	**+1.5**
	604nm,1.3s,7μm2.0nm						
MMRI	**Maumere**	**5.97**	**228**	*e*Pn	**Pn**	**09 58 34.7**	**+1.5**
	464nm,0.8s						
MMRI				*e*S	S	09 59 58.1	+10
BATI	**Baumata**	**6.32**	**208**	P	**Pn**	**09 58 37.4**	**+0.4**
	54nm,0.3s,baz=115,slow=24,SNR=48						
BATI				S	**S**	**09 59 54.3**	**-1.2**
	75nm,0.3s,baz=0.7,slow=24,SNR=14						
BATI	**Baumata**	**6.32**	**208**	P	**Pn**	**09 58 37.7**	**+0.7**
	142nm,0.8s,2μm2.3nm						
BSSI	**Bau Bau, Buton**	**6.37**	**256**	P	**Pn**	**09 58 39.3**	**+1.7**
	240nm,1.3s,3μm0.7nm						
EDFI	**Ende, Flores**	**6.46**	**230**	P	**Pn**	**09 58 40.2**	**+1.6**
	233nm,1.1s,3μm0.8nm						
KAPI	**Kappang**	**6.95**	**266**	P	**Pn**	**09 58 45.0**	**+1.0**
	2.2nm,0.3s,baz=94,slow=6.4,SNR=6.7						
KAPI				S	**S**	**10 00 08.1**	**0.0**
	baz=29,slow=19,SNR=2.8						
KAPI	**Kappang**	**6.95**	**266**	*e*Pn	**Pn**	**09 58 42.5**	**-1.4**
KAPI				S	**S**	**10 00 08.1**	**0.0**
MRSI	**Marisa**	**6.95**	**317**	P	**Pn**	**09 58 44.6**	**+0.5**
	288nm,0.9s,3μm1.0nm						
TTSI	**Tana Toraja**	**7.05**	**283**	P	**P**	**09 58 47.3**	**+1.5**
	63nm,1.0s,2μm0.2nm						
BASI	**Baing, Sumba**	**8.24**	**227**	P	**P**	**09 59 00.7**	**+1.7**
	322nm,0.8s						
SGSI	**Sangihe**	**8.34**	**352**	P	**P**	**09 59 02.3**	**+2.2**
	996nm,0.7s						
MTN	**Manton Dam**	**9.27**	**152**	P	**P**	**09 59 10.2**	**-0.2**
	baz=9.4,SNR=176						
MTN	**Manton Dam**	**9.27**	**152**	*e*Pn	**P**	**09 59 10.0**	**-0.4**
PLAI	**Plampang**	**9.81**	**244**	P	**P**	**09 59 17.1**	**+0.7**
	60nm,1.6s						
KDU	**Kakadu**	**9.83**	**145**	P	**P**	**09 59 16.8**	**+0.1**
	baz=9.9,SNR=66						
BKB	**Balikpapan**	**10.35**	**289**	P	**Pn**	**09 59 26.0**	**+2.9**
	68nm,1.0s						
TWSI	**Taliwang, Sumb**	**10.58**	**247**	P	**Pn**	**09 59 26.8**	**+1.1**
	39nm,1.0s						
KBKI	**Kotabaru**	**10.60**	**277**	P	**Pn**	**09 59 27.3**	**+1.4**
	30nm,1.4s,1μm						
DAV	**Davao City (W)**	**11.67**	**354**	S	**S**	**10 01 49.6**	**+3.6**
	34nm,0.3s,baz=162,slow=20,SNR=3.6						
BBKI	**Banjar Baru**	**11.89**	**275**	P	**Pn**	**09 59 42.0**	**+1.0**
TSM	**Tawau**	**12.50**	**315**	⇑P	**Pn**	**09 59 50.7**	**+2.7**
MYLDM	**Lahad Datu**	**12.73**	**320**	⇓P	Pn	09 59 56.4	+5.8
JAGI	**Jajag, Banyuwa**	**13.05**	**252**	*e*P	**P**	**09 59 51.6**	**-0.6**
	37nm,0.4s						
JAGI				*e*S	S	10 02 04.9	-9.0
FITZ	**Fitzroy Crossi**	**13.44**	**184**	P	**P**	**09 59 56.1**	**-0.2**
	7.1nm,0.3s,baz=16,slow=9.4,SNR=110						
FITZ				S	**S**	**10 02 18.3**	**-3.4**
	0.9nm,0.3s,baz=266,slow=18,SNR=9.3						
FITZ	**Fitzroy Crossi**	**13.44**	**184**	P	**P**	**09 59 56.2**	**-0.2**
	baz=14,SNR=37						
SDKM	**Sandakan**	**13.94**	**317**	⇑P	**P**	**10 00 02.5**	**+0.5**
JAY	**Jayapura**	**14.12**	**82**	P	**P**	**10 00 05.0**	**+1.0**
	0.4nm,0.3s,baz=38,slow=19,SNR=8.0						
JAY	**Jayapura**	**14.12**	**82**	P	**P**	**10 00 05.0**	**+1.0**
PALU	**Palau**	**14.19**	**33**	P	**P**	**10 00 04.7**	**0.0**
	baz=14,SNR=10						
KKM	**Kota Kinabalu**	**14.90**	**315**	⇓P	**P**	**10 00 13.0**	**+0.4**
KKM	**Kota Kinabalu**	**14.90**	**315**	*e*P	**P**	**10 00 12.8**	**+0.3**
BTM	**Bintulu**	**15.68**	**299**	⇑P	**P**	**10 00 22.5**	**+1.7**
SBUM	**Sibu**	**16.09**	**296**	⇓P	**P**	**10 00 26.3**	**+1.0**
SBUM	**Sibu**	**16.09**	**296**	*e*P	**P**	**10 00 25.8**	**+0.5**
	82nm,1.3s						
WRAB	**Tennant Creek**	**16.94**	**155**	*e*P	**P**	**10 00 34.1**	**-0.2**
WRAB				pmax	pmax		
	comp=Z,125nm,1.0s						
WRAB	**Tennant Creek**	**16.94**	**155**	*e*P	**P**	**10 00 34.1**	**-0.2**
	comp=Z,125nm,1.0s						
WRA	**Warramunga Arr**	**16.95**	**155**	P	**P**	**10 00 34.1**	**-0.2**
	comp=Z,42nm,0.3s,baz=330,slow=11,SNR=1456						
WRA				S	**S**	**10 03 29.4**	**-1.6**
	comp=Z,11nm,0.3s,baz=336,slow=21,SNR=11						
WRA				ScP	**ScP**	**10 07 53.6**	**-0.5**
	comp=Z,0.5nm,0.3s,baz=328,slow=2.2,SNR=5.3						
WB2	**Warramunga Arr**	**16.95**	**155**	*e*P	**P**	**10 00 33.9**	**-0.5**
	comp=Z,189nm,1.2s						
KSM	**Kuching**	**17.47**	**290**	⇑P	**P**	**10 00 40.5**	**+0.6**
KSM	**Kuching**	**17.47**	**290**	*e*P	**P**	**10 00 40.4**	**+0.4**
	comp=Z,12nm,0.8s						
MBWA	**Marble Bar**	**17.78**	**202**	*e*P	**P**	**10 00 41.7**	**-1.4**
	comp=Z,28nm,1.1s						
MBWA				*e*S	**S**	**10 03 44.0**	**-3.2**
COEN	**Coen**	**18.70**	**121**	P	**P**	**10 00 52.1**	**-0.8**
	baz=19,SNR=30						
COEN	**Coen**	**18.70**	**121**	*e*P	**P**	**10 00 52.5**	**-0.4**
	comp=Z,59nm,1.0s						
COEN				*e*S	**S**	**10 04 05.5**	**+1.7**
LEM	**Lembang**	**19.12**	**263**	S	**S**	**10 04 07.8**	**-3.5**
	comp=Z,3.6nm,0.3s,baz=270,slow=20,SNR=2.8						
AS31	**Alice Springs**	**20.17**	**161**	*e*P	**P**	**10 01 07.3**	**+0.4**
	comp=Z,58nm,0.6s						
ASAR	**Alice Springs**	**20.17**	**161**	P	**P**	**10 01 07.3**	**+0.3**
	comp=Z,69nm,0.3s,baz=336,slow=7.6,SNR=2676						
ASAR				S	**S**	**10 04 27.4**	**-0.5**
	comp=Z,19nm,0.9s,baz=347,slow=20,SNR=5.8						
ASAR				ScP	**ScP**	**10 08 00.7**	**-0.5**
	comp=Z,3.2nm,0.5s,baz=354,slow=2.1,SNR=4.5						
AS01	**Alice Springs**	**20.18**	**160**	*e*P	**P**	**10 01 07.3**	**+0.3**
WRKA	**Warakurna**	**20.36**	**176**	P	**P**	**10 01 09.0**	**+0.4**
	baz=20,SNR=486						
MANU	**Manus Island**	**20.78**	**84**	*e*P	**P**	**10 01 14.5**	**+1.8**
	comp=Z,18nm,0.8s						
PMG	**Port Moresby**	**20.84**	**104**	P	**P**	**10 01 14.3**	**+1.2**
	comp=Z,22nm,0.4s,baz=79,slow=3.4,SNR=16						
PMG	**Port Moresby**	**20.84**	**104**	*e*P	**P**	**10 01 13.2**	**0.0**
PMG				pmax	pmax		
	comp=Z,57nm,0.9s						
PMG	**Port Moresby**	**20.84**	**104**	*e*P	**P**	**10 01 13.2**	**0.0**
	comp=Z,57nm,0.9s						
GIRL	**Giralia**	**21.60**	**213**	P	**P**	**10 01 21.2**	**+1.3**
	baz=22,SNR=18						
MTSU	**Mount Surprise**	**21.84**	**129**	P	**P**	**10 01 23.3**	**+1.0**
	baz=22,SNR=27						
CTA	**Charters Tower**	**24.46**	**131**	P	**P**	**10 01 47.0**	**+1.1**
	comp=Z,4.4nm,0.6s,baz=326,slow=11,SNR=6.0						
CTAO	**Charters Tower**	**24.46**	**131**	*e*P	**P**	**10 01 45.9**	**0.0**
CTAO				pmax	pmax		
	comp=Z,15nm,1.1s						
CTAO	**Charters Tower**	**24.46**	**131**	*e*P	**P**	**10 01 45.9**	**0.0**
	comp=Z,15nm,1.1s						
MORW	**Morawa**	**26.34**	**201**	P	**P**	**10 02 01.7**	**-0.7**
	baz=26,SNR=10.0						
KMBL	**Kambalda**	**26.99**	**189**	P	**P**	**10 02 08.0**	**-0.2**
	baz=27,SNR=100						
BLDU	**Baliidu**	**27.52**	**199**	P	**P**	**10 02 12.3**	**-0.6**
	baz=28,SNR=12						
QLP	**Quilpie**	**27.52**	**144**	P	**P**	**10 02 13.4**	**+0.4**
	baz=28,SNR=26						
KLBR	**Kellerberrin**	**28.12**	**196**	P	**P**	**10 02 17.7**	**-0.4**
	baz=28,SNR=93						
YULB	**Yu-li**	**28.34**	**349**	*e*P	**P**	**10 02 19.9**	**-0.3**
	comp=Z,11nm,0.9s						
TPUB	**Ta-pu**	**28.38**	**348**	*e*P	**P**	**10 02 18.9**	**-1.6**
	comp=Z,130nm,1.4s						
PSI	**Prapat**	**28.73**	**284**	P	**P**	**10 02 23.3**	**-0.6**
	comp=Z,6.4nm,0.8s,baz=115,slow=10,SNR=4.2						
BBOO	**Buckleboo**	**29.38**	**164**	P	**P**	**10 02 29.3**	**+0.1**
	baz=30,SNR=151						
BBOO	**Buckleboo**	**29.38**	**164**	*e*P	**P**	**10 02 28.7**	**-0.4**
	comp=Z,79nm,1.1s						
NWAO	**Narrogin (SRO)**	**29.52**	**196**	P	**P**	**10 02 30.1**	**-0.3**
	comp=Z,60nm,0.7s,baz=232,slow=0.0,SNR=52						
NWAO	**Narrogin (SRO)**	**29.52**	**196**	P	**P**	**10 02 30.2**	**-0.2**
	baz=30,SNR=47						
NWAO	**Narrogin (SRO)**	**29.52**	**196**	*e*P	**P**	**10 02 30.2**	**-0.2**
NWAO				pmax	pmax		
	comp=Z,59nm,0.8s						
NWAO	**Narrogin (SRO)**	**29.52**	**196**	*e*P	**P**	**10 02 30.2**	**-0.2**
	comp=Z,59nm,0.8s						
YHNB	**Yeheng**	**29.57**	**350**	*e*P	**P**	**10 02 29.1**	**-2.0**
	comp=Z,20nm,0.7s						
RMQ	**Roma**	**30.29**	**138**	P	**P**	**10 02 37.7**	**+0.5**
	baz=30,SNR=8.3						
STKA	**Stephens Creek**	**30.50**	**154**	P	**P**	**10 02 39.4**	**+0.5**
	comp=Z,46nm,0.4s,baz=333,slow=8.6,SNR=458						
STKA				ScP	**ScP**	**10 08 29.9**	**-0.8**
	comp=Z,2.6nm,0.7s,baz=332,slow=6.2,SNR=3.1						
STKA	**Stephens Creek**	**30.50**	**154**	P	**P**	**10 02 39.5**	**+0.5**
	baz=31,SNR=514						
STKA	**Stephens Creek**	**30.50**	**154**	*e*P	**P**	**10 02 39.5**	**+0.5**
	comp=Z,11nm,0.6s						
STKA				ScP	**ScP**	**10 08 29.9**	**-0.8**
HTT	**Hallett**	**30.84**	**160**	P	**P**	**10 02 42.6**	**+0.5**
	baz=31,SNR=74						
SKNT	**Sakolnakorn**	**31.06**	**314**	P	**P**	**10 02 44.1**	**0.0**
	comp=Z,19nm,1.3s						
RKGY	**Rocky Gully**	**31.18**	**196**	P	**P**	**10 02 46.1**	**+1.3**
	baz=31,SNR=7.0						
KHON	**Khomkaen**	**31.49**	**312**	P	**P**	**10 02 50.2**	**+2.4**
	comp=Z,6.4nm,0.5s						
CMSA	**Cobar Meteorol**	**32.17**	**149**	P	**P**	**10 02 54.4**	**+0.9**
	baz=32,SNR=153						
UTTA	**Uttaradit**	**34.06**	**311**	P	**P**	**10 03 10.0**	**+0.2**
	comp=Z,3.6nm,0.8s,comp=Z,41nm						
ARMA	**Armidale**	**34.79**	**140**	P	**P**	**10 03 17.2**	**+1.2**
	baz=35,SNR=12						
ARMA	**Armidale**	**34.79**	**140**	*e*P	**P**	**10 03 16.3**	**+0.3**
	comp=Z,8.5nm,0.6s						
ARPS	**Mount Arapiles**	**34.88**	**159**	P	**P**	**10 03 17.4**	**+0.9**
	baz=35,SNR=169						
CM01	**Chiang Mai Arr**	**35.67**	**311**	*e*P	**P**	**10 03 23.0**	**-0.4**
CM31	**Chiang Mai Arr**	**35.71**	**311**	*e*P	**P**	**10 03 24.4**	**+0.7**
CMAR	**Chiang Mai Arr**	**35.71**	**311**	P	**P**	**10 03 24.1**	**+0.4**
	comp=Z,2.6nm,0.6s,baz=143,slow=7.6,SNR=29						
CMAR				ScP	**ScP**	**10 08 50.4**	**+1.1**
	comp=Z,2.4nm,0.9s,baz=154,slow=2.7,SNR=14						
YNG	**Young**	**35.74**	**148**	P	**P**	**10 03 25.2**	**+1.5**
	baz=36,SNR=30						
CRAI	**Chiangrai**	**35.77**	**315**	P	**P**	**10 03 25.8**	**+1.6**
	comp=Z,5.2nm,1.6s,comp=Z,872nm						
CMMT	**Chiang Mai**	**35.92**	**311**	P	**P**	**10 03 25.6**	**+0.1**
	comp=Z,15nm,1.3s,comp=Z,384nm						
CHTO	**Chiang Mai**	**35.92**	**311**	P	**P**	**10 03 25.7**	**+0.2**
	comp=Z,66nm,1.3s						
CHTO	**Chiang Mai**	**35.92**	**311**	*e*P	**P**	**10 03 25.0**	**-0.5**
CHTO				pmax	pmax		
	comp=Z,20nm,1.3s						
CHTO	**Chiang Mai**	**35.92**	**311**	*e*P	**P**	**10 03 25.0**	**-0.5**
	comp=Z,20nm,1.3s						
CHTO				*e*PP	PP	10 05 07.8	+10
CHTO				*e*sP	sP	10 05 17.4	-9.2
MGCD	**Mangrove Creek**	**36.42**	**144**	P	**P**	**10 03 31.7**	**+2.2**
	baz=37,SNR=22						
GYA	**Guiyang**	**36.49**	**329**	*e*P	**P**	**10 03 31.8**	**+1.5**
GYA				pP	pP	10 04 47.6	+2.2
GYA				sP	sP	10 05 31.0	-0.5
GYA				S	**S**	**10 08 46.4**	**+3.9**
GYA				pmax	pmax		
	comp=Z,10.0nm,0.8s						
CMAI	**Chiengmai2**	**36.54**	**313**	P	**P**	**10 03 31.2**	**+0.4**
	comp=Z,12nm,1.1s,comp=Z,12nm						
CAN	**Canberra**	**36.84**	**149**	*e*P	**P**	**10 03 34.7**	**+1.6**
CAN				pmax	pmax		
	comp=Z,82nm,1.2s						
CAN	**Canberra**	**36.84**	**149**	*e*P	**P**	**10 03 34.6**	**+1.6**
	comp=Z,82nm,1.2s						
WHN	**Wuhan**	**36.91**	**342**	P	**P**	**10 03 34.3**	**+0.7**
WHN				pmax	pmax		
	comp=Z,130nm,1.1s						
TOO	**Toolangi**	**37.02**	**155**	P	**P**	**10 03 36.2**	**+1.7**
	baz=37,SNR=18						
CNB	**Canberra Magne**	**37.03**	**148**	P	**P**	**10 03 35.9**	**+1.3**
	baz=37,SNR=16						
NJ2	**Nanjing**	**37.23**	**349**	*e*P	**P**	**10 03 36.3**	**+0.1**
NJ2				pmax	pmax		
	comp=Z,57nm,0.5s						
KMI	**Kunming**	**37.64**	**323**	P	**P**	**10 03 41.0**	**+1.0**
KMI				pmax	pmax		
	comp=Z,22nm,1.3s						
JNU	**Nakatsue**	**37.74**	**6**	P	**P**	**10 03 39.6**	**-0.8**
	comp=Z,11nm,0.4s,baz=293,slow=1.8,SNR=26						
JNU	**Nakatsue**	**37.74**	**6**	*e*P	**P**	**10 03 39.7**	**-0.8**
	comp=Z,30nm,1.1s						
ENH	**Enshi**	**38.41**	**336**	*e*P	**P**	**10 03 45.6**	**-0.5**
	comp=Z,22nm,0.4s						
INU	**Inuyama**	**40.92**	**13**	*e*P	**P**	**10 04 06.2**	**-0.1**
	comp=Z,18nm,0.8s						
CD2	**Chengdu**	**41.58**	**330**	P	**P**	**10 04 11.5**	**-0.3**
CD2				pmax	pmax		
	comp=Z,60nm,0.5s						
TIA	**Tai'an**	**41.60**	**348**	*e*P	**P**	**10 04 10.8**	**-1.0**
TIA				pmax	pmax		
	comp=Z,20nm,0.9s						
KS15	**Wonju Array Si**	**41.86**	**1**	*e*P	**P**	**10 04 14.6**	**+0.8**
KSAR	**Wonju Array Be**	**41.86**	**1**	P	**P**	**10 04 14.3**	**+0.5**
KSAR	**Wonju Array Be**	**41.86**	**1**	P	**P**	**10 04 14.2**	**+0.5**
KSRS	**Korea Array**	**41.87**	**1**	P	**P**	**10 04 14.2**	**+0.4**
	comp=Z,12nm,0.6s,baz=178,slow=8.6,SNR=43						
KS01	**Wonju Array Si**	**41.90**	**1**	*e*P	**P**	**10 04 14.2**	**+0.2**
XAN	**Xi'an**	**41.96**	**338**	P	**P**	**10 04 13.5**	**-1.3**
XAN				pmax	pmax		
	comp=Z,28nm,0.7s						
DZM	**Mont Dzumac**	**42.19**	**118**	P	**P**	**10 04 17.6**	**+0.8**
	comp=Z,4.5nm,0.4s,baz=247,slow=9.3,SNR=26						
MAJO	**Matsushiro**	**42.34**	**14**	*e*P	**P**	**10 04 16.5**	**-1.1**
MAJO				pmax	pmax		
	comp=Z,71nm,1.3s						
MAJO	**Matsushiro**	**42.34**	**14**	*e*P	**P**	**10 04 16.5**	**-1.1**
	comp=Z,71nm,1.3s						
MAT	**Matsushiro**	**42.34**	**14**	P	**P**	**10 04 16.7**	**-1.0**
MJAR	**Matsushiro Arr**	**42.34**	**14**	P	**P**	**10 04 16.7**	**-1.0**
	comp=Z,22nm,0.9s,baz=188,slow=8.8,SNR=34						
DL2	**Dalian**	**43.56**	**354**	P	**P**		
DL2				pmax	pmax	**10 04 26.9**	**-0.3**
	comp=Z,39nm,0.7s						
BJT	**Baijiatuau**	**45.47**	**349**	*e*P	**P**	**10 04 41.2**	**-0.9**
BJT				pmax	pmax		
	comp=Z,19nm,0.8s						
BJT	**Baijiatuau**	**45.47**	**349**	*e*P	**P**	**10 04 41.2**	**-0.9**
	comp=Z,19nm,0.8s						
BJI	**Beijing**	**45.49**	**349**	P	**P**	**10 04 41.3**	**-0.9**
BJI				pmax	pmax		
	comp=Z,25nm,1.2s						
BJI				pmax	pmax		
	comp=Z,60nm,3.0s						
LZH	**Lanzhou**	**45.81**	**334**	*e*P	**P**	**10 04 45.4**	**+0.3**
LZH				pmax	pmax		
	comp=Z,50nm,1.0s						
LZH				pmax	pmax		
	comp=Z,120nm,4.3s						
VLA	**Vladivostok**	**47.75**	**5**	*e*P	**P**	**10 05 00.2**	**+0.7**
VLA				pmax	pmax		
	comp=Z,25nm,0.8s						
CN2	**Changchun**	**48.21**	**359**	*e*P	**P**	**10 05 02.3**	**-0.7**
CN2				pmax	pmax		
	comp=Z,10.0nm,0.5s						
LSA	**Lhasa**	**48.23**	**317**	*e*P	**P**	**10 05 03.4**	**-0.6**
LSA				pmax	pmax		
	comp=Z,13nm,0.4s						
LSA	**Lhasa**	**48.23**	**317**	*e*P	**P**	**10 05 03.4**	**-0.6**
	comp=Z,13nm,0.4s						
USRK	**Ussuriysk Ar.**	**48.83**	**5**	P	**P**	**10 05 07.8**	**+0.2**
	comp=Z,17nm,0.4s,baz=186,slow=7.3,SNR=61						
MDJ	**Mudanjiang**	**49.08**	**3**	P	**P**	**10 05 09.6**	**+0.1**
MDJ				pP	PcP	10 06 27.8	+1.6
MDJ				S	**S**	**10 11 42.9**	**-0.4**
MDJ				pmax	pmax		
	comp=Z,37nm,1.0s						
MDJ				pmax	pmax		
	comp=Z,54nm,2.8s						
MDJ	**Mudanjiang**	**49.08**	**3**	*e*P	**P**	**10 05 09.7**	**+0.1**
	comp=Z,50nm,1.2s						
GTA	**Gaotai**	**50.35**	**333**	*e*P	**P**	**10 05 19.0**	**-0.2**
GTA				pP	pP	10 06 37.4	-2.6
GTA				pmax	pmax		
	comp=Z,33nm,1.1s						
ASAJ	**Asahikawa**	**50.58**	**15**	P	**P**	**10 05 21.2**	**+0.5**
	comp=Z,18nm,0.4s,baz=233,slow=8.9,SNR=50						
ASAJ	**Asahikawa**	**50.58**	**15**	*e*P	**P**	**10 05 21.3**	**+0.6**
	comp=Z,47nm,1.2s						
MSVF	**Nonsavu**	**51.85**	**109**	*e*P	**P**	**10 05 31.3**	**+0.7**
MSVF				pmax	pmax		
	comp=Z,14nm,1.1s						
MSVF	**Nonsavu**	**51.85**	**109**	*e*P	**P**	**10 05 31.3**	**+0.7**
	comp=Z,14nm,1.1s						
KUR	**Kuril'sk**	**53.11**	**19**	*i* P	**P**	**10 05 38.8**	**-0.3**
YSS	**Yuzh-Sakhalins**	**53.28**	**14**	*e*P	**P**	**10 05 40.1**	**-0.1**
YSS				pmax	pmax		
	comp=Z,30nm,1.2s						
HABR	**Khabarovsk**	**53.38**	**7**	*e*P	**P**	**10 05 38.8**	**-2.1**
HABR				*e**PP	**pP**	**10 07 00.5**	**-2.3**
HABR				*e*		10 07 44.1	
HABR				*e*S	**S**	**10 12 39.6**	**-1.7**
HABR				*e**SS	**sS**	**10 15 06.8**	**-1.3**
HABR				*e*SS	**SS**	**10 16 28.3**	**0.0**
HABR				pmax	pmax		
	comp=Z,44nm,1.0s						
HABR				pmax	pmax		
	comp=Z,10.0nm,1.1s						
HABR				pmax	pmax		
	comp=Z,8.0nm,1.1s						
KLR	**Kul'dur**	**53.81**	**4**	P	**P**	**10 05 43.9**	**-0.2**
	comp=Z,4.7nm,0.4s,baz=183,slow=5.5,SNR=24						
ULN	**Ulaanbaatar**	**55.05**	**344**	*e*P	**P**	**10 05 53.2**	**+0.2**
ULN				pmax	pmax		
	comp=Z,41nm,1.3s						
ULN	**Ulaanbaatar**	**55.05**	**344**	*e*P	**P**	**10 05 53.2**	**+0.2**
	comp=Z,41nm,1.3s						
RPZ	**Rata Peaks**	**55.11**	**142**	*e*P	**P**	**10 05 54.5**	**+1.1**
	comp=Z,93nm,1.3s						
SONM	**Songino Array**	**55.20**	**343**	P	**P**	**10 05 54.1**	**0.0**
	comp=Z,7.1nm,0.5s,baz=159,slow=7.0,SNR=57						
SONM				ScP	**ScP**	**10 10 09.2**	**0.0**
	comp=Z,0.8nm,0.8s,baz=116,slow=3.4,SNR=3.9						
SONA1	**Songino Array**	**55.21**	**343**	*e*P	**P**	**10 05 54.0**	**-0.2**
KHZ	**Kahutara**	**56.03**	**139**	*e*P	**P**	**10 05 60.0**	**+0.1**
	comp=Z,29nm,0.4s						
BKZ	**Black Stump Fm**	**56.59**	**135**	*e*P	**P**	**10 06 03.6**	**-0.3**
	comp=Z,42nm,1.6s						
URZ	**Urewera**	**56.66**	**133**	*e*P	**P**	**10 06 03.7**	**-0.7**
	comp=Z,4.1nm,0.4s						
TYV	**Tymovskoe**	**56.94**	**12**	*e*P	**P**	**10 06 08.0**	**+2.0**
TYV				pmax	pmax		
	comp=Z,13nm,0.8s						
ZAK	**Zakamensk**	**58.40**	**343**	*e*P	**P**	**10 06 14.1**	**-2.1**
ZAK				pmax	pmax		
	comp=Z,6.

comp=N,61nm,3.6s
YAK pmax pmax
comp=E,73nm,3.8s
YAK smax smax
comp=N,152nm,3.5s
YAK smax smax
comp=E,59nm,2.6s
YAK Yakutsk 66.50 2 *eP* **P 10 07 08.8 +0.1**
comp=E,59nm,0.5s
AAK Ala-Archa 66.63 321 P **P 10 07 10.5 +0.3**
comp=E,5.8nm,0.6s,baz=122,slow=7.8,SNR=22
AAK Ala-Archa 66.63 321 *i* P **P 10 07 08.1 -2.1**
AAK pmax pmax
comp=Z,17nm,1.0s
AAK Ala-Archa 66.63 321 *eP* **P 10 07 09.8 -0.5**
comp=Z,1.4nm,0.8s
MA2 Magadan 66.78 13 P **P 10 07 11.6 +1.0**
comp=Z,12nm,0.8s,baz=222,slow=5.0,SNR=6.9
EKS2 Erkin-Say 67.10 320 *eP* **P 10 07 13.6 +0.5**
EKS2 pmax pmax
comp=Z,43nm,1.6s
EKS2 Erkin-Say 67.10 320 *eP* **P 10 07 13.6 +0.5**
comp=Z,43nm,1.6s
MNAS Manas 67.83 320 P **P 10 07 16.8 -0.9**
MNAS pmax pmax
comp=Z,11nm,0.8s
ZALV Zalesovo Beam 68.03 335 P **P 10 07 17.4 -1.1**
comp=Z,7.8nm,0.5s,baz=128,slow=4.8,SNR=34
KURBB Kurchatov Arra 68.80 329 P **P 10 07 22.7 -0.5**
comp=Z,12nm,0.5s,baz=135,slow=5.5,SNR=119
KURK Kurchatov 68.81 330 *eP* **P 10 07 22.2 -1.0**
KURK pmax pmax
comp=Z,20nm,0.5s
KURK Kurchatov 68.81 330 *eP* **P 10 07 22.2 -1.0**
comp=Z,20nm,0.5s
NVS Novosibirsk 69.32 335 *eP* **P 10 07 25.2 -1.1**
NVS pmax pmax
comp=N,16nm,0.5s
NVS pmax pmax
comp=E,8.0nm,0.5s
NVS pmax pmax
comp=Z,12nm,0.5s
KK31 Karatay Array 69.41 319 *eP* **P 10 07 26.3 -0.8**
KK31 pmax pmax
comp=Z,4.0nm,0.7s
KKAR Karatay Array 69.41 319 *eP* **P 10 07 26.6 -0.5**
KKAR Karatay Array 69.41 319 *eP* **P 10 07 26.6 -0.5**
SEY Seymchan 70.13 12 P **P 10 07 32.1 +1.1**
comp=Z,19nm,0.5s,baz=207,slow=5.2,SNR=152
OTUK Ortayu 70.82 325 P **P 10 07 34.8 -0.7**
OTUK pmax pmax
comp=Z,11nm,0.6s
BVA0 Borovoye Array 74.33 329 *i* P **P 10 07 54.7 -1.1**
BVA0 pmax pmax
comp=Z,17nm,1.3s
BVAR Borovoye Array 74.33 329 P **P 10 07 55.4 -0.4**
comp=Z,5.3nm,0.4s,baz=128,slow=9.3,SNR=31
BRVK Borovoye 74.40 329 *eP* **P 10 07 56.0 -0.2**
BRVK pmax pmax
comp=Z,18nm,1.2s
BRVK Borovoye 74.40 329 *eP* **P 10 07 56.0 -0.2**
comp=Z,18nm,1.2s
CHKZ Chkalovo 74.55 329 P **P 10 07 55.4 -1.5**
CHKZ pmax pmax
comp=Z,14nm,1.1s
ZRNK Zerenda 75.02 328 P **P 10 07 58.6 -1.1**
ZRNK pmax pmax
comp=Z,14nm,0.6s
VNDA Vanda 75.20 173 P **P 10 07 60.0 -0.3**
comp=Z,3.2nm,0.4s,baz=317,slow=6.3,SNR=43
VNDA Vanda 75.20 173 P **P 10 08 00.0 -0.3**
VNDA pmax pmax
comp=Z,3.0nm,0.4s
VNDA Vanda 75.20 173 *eP* **P 10 08 00.0 -0.3**
ATKA Atka Island 75.40 33 *eP* **P 10 08 02.6 +0.8**
MAW Mawson 75.98 201 P **P 10 08 04.7 -0.1**
comp=Z,3.1nm,0.4s,baz=62,slow=6.6,SNR=14
TIXI Tiksi 76.14 1 P **P 10 08 05.1 -0.5**
comp=Z,26nm,0.4s,baz=163,slow=4.3,SNR=81
TIXI Tiksi 76.14 1*c i*P **P 10 08 05.0 -0.5**
TIXI pmax pmax
comp=Z,12nm,1.1s
TIXI Tiksi 76.14 1 *eP* **P 10 08 04.6 -0.9**
BILL Bilibino 77.59 14 *i* P **P 10 08 12.8 -0.9**
BILL pmax pmax
comp=Z,2.0nm,1.4s
NRIK Noril'sk 78.49 347 P **P 10 08 18.9 +0.4**
comp=Z,5.5nm,0.5s,baz=138,slow=6.5,SNR=10
AB31 Akbulak array 78.63 322 *i* P **P 10 08 19.2 -0.5**
AB31 pmax pmax
comp=Z,4.0nm,0.4s
ABKAR Akbulak array 78.63 322 *eP* **P 10 08 19.3 -0.4**
AKTO Aktyubinsk 80.21 323 P **P 10 08 27.8 -0.3**
comp=Z,8.4nm,0.6s,baz=111,slow=7.1,SNR=28
AKTO Aktyubinsk 80.21 323 P **P 10 08 27.6 -0.5**
AKTO pmax pmax
comp=Z,9.0nm,0.7s
ARU Arti 81.98 329 P **P 10 08 36.7 -0.4**
comp=Z,3.1nm,0.4s,baz=100,slow=1.3,SNR=5.6
ARU Arti 81.98 329*c i*P **P 10 08 36.3 -0.9**
ARU 10 11 46.2
ARU S **S** 10 18 16.6 -0.3
ARU SS **SS** 10 23 42.0 -4.5
ARU pmax pmax
comp=Z,9.0nm,1.0s
ARU Arti 81.98 329 *eP* **P 10 08 36.4 -0.7**
GAMB Gambell 82.01 23 *eP* **P 10 08 38.2 +1.1**
SYO Syowa Base 84.68 201‖ *eP* **P 10 08 51.2 +0.7**
QSPA South Pole Qui 85.34 180 *eP* **P 10 08 53.4 -0.6**
comp=Z,69nm,1.0s
MLY Manley 91.01 25 *eP* **P 10 09 20.5 0.0**
COLD Coldfoot 91.55 23 *eP* **P 10 09 23.6 +0.6**
RND Reindeer 91.60 27 *eP* **P 10 09 22.6 -0.8**
RND Reindeer 91.60 27 *eP* **P 10 09 22.6 -0.8**
CCB Clear Creek Bu 92.20 25 *eP* **P 10 09 25.1 -0.9**
IL1 Eielson Array 92.61 25 *eP* **P 10 09 25.6 -2.3**
ILAR Eielson Array 92.61 25 P **P 10 09 26.1 -1.8**
comp=Z,1.5nm,0.8s,baz=234,slow=5.6,SNR=27
ILAR PP **PP** 10 13 11.5 -4.3
comp=Z,0.3nm,0.8s,baz=290,slow=7.7,SNR=4.3
ILAR Eielson Array 92.61 25 P **P 10 09 26.1 -1.8**
ILAR 10 13 11.5
ILAR pmax pmax
comp=Z,1.0nm,0.6s
ILB Eielson Array 92.61 25 *eP* **P 10 09 26.1 -1.8**
INK Inuvik 97.89 22 P **P 10 09 50.5 -1.2**
comp=Z,0.7nm,0.4s,baz=254,slow=6.6,SNR=8.9
ARCES ARCESS Array B 98.22 340 P Pdif 10 09 52.2 -1.0
comp=Z,1.4nm,0.7s,baz=90,slow=6.1,SNR=6.6
ARCES ARCESS Array B 98.22 340 P Pdif 10 09 52.3 -0.9
ARCES pmax pmax
comp=Z,2.0nm,0.8s
AKASG Malin Array Be 98.30 320 P Pdif 10 09 51.6 -2.3
comp=Z,0.6nm,0.5s,baz=72,slow=3.5,SNR=3.1
SPITS Spitsbergen Ar 98.61 349 P Pdif 10 09 54.1 -0.8
comp=Z,2.2nm,0.4s,baz=96,slow=8.5,SNR=23
YKA Yellowknife Ar 107.04 25 Pdiff **Pdif 10 10 33.8 +1.3**
comp=Z,0.2nm,0.7s,baz=300,slow=4.9,SNR=4.4
YKA SKiKP **SKiKP** 10 17 35.8 -0.5
comp=Z,0.2nm,0.6s,baz=304,slow=1.6,SNR=3.8
PDAR Pinedale Array 117.50 44 PKP **PKPdf 10 15 00.1 -0.4**
comp=Z,0.2nm,0.4s,baz=26,slow=2.3,SNR=3.7
TORD Torodi Ar. Bea 125.12 283 PKP **PKPdf**
comp=Z,0.8nm,0.5s,baz=70,slow=2.3,SNR=12
TORD SKPbc SKPbc 10 17 51.7
comp=Z,0.6nm,0.7s,baz=76,slow=3.7,SNR=4.0
TORD SKP 10 18 12.2
comp=Z,0.6nm,0.5s,baz=59,slow=1.7,SNR=4.4
TXAR Lajitas Array 126.45 57 PKP **PKPdf 10 15 18.9 +1.0**
comp=Z,0.2nm,0.4s,baz=205,slow=3.1,SNR=6.2
SCHQ Schefferville 128.75 10 PKP **PKPdf 10 15 21.8 +0.4**
comp=Z,6.6nm,1.2s,baz=0.0,slow=5.1,SNR=3.0
KIC Kosan Boka 131.66 274 *eP* **SKPab 10 18 15.1 -1.7**
comp=Z,25nm,1.1s
DBIC Dimbokro 131.77 275 PKP **PKPdf 10 15 29.1 +0.8**
comp=Z,3.0nm,1.0s,baz=129,slow=6.5,SNR=3.5
DBIC SKPbc **SKPbc 10 18 15.7 -0.4**
comp=Z,4.4nm,0.5s,baz=90,slow=4.0,SNR=19
TIC Toumodi 131.94 275 *eP* **SKPab 10 18 16.1 -1.9**
LIC Lamto 131.94 274 *eP* **SKPab 10 18 16.6 -1.4**
PLCA Paso Flores 132.17 162 PKP **PKPdf 10 15 29.8 +1.3**
comp=Z,0.8nm,0.4s,baz=151,slow=2.4,SNR=7.0
PLCA SKPbc **SKPbc 10 18 17.2 +0.4**
comp=Z,3.4nm,1.1s,baz=256,slow=1.6,SNR=4.2
PLCA Paso Flores 132.17 162 PKIKP **PKPdf 10 15 29.8 +1.3**
PLCA pmax pmax
comp=Z,2.0nm,0.9s
PLCA pmax pmax
comp=N,3.0nm,1.1s
SADO Sadowa 134.04 26 SKPbc **SKPbc 10 18 22.6 -0.2**
baz=3.1,slow=6.1
CPUP Villa Florida 148.98 173 PKPbc **PKPbc 10 16 03.4 +0.2**
comp=N,5.5nm,0.4s,baz=206,slow=2.5,SNR=24
LPAZ La Paz 154.56 145 PKPbc **PKPbc 10 16 17.6 +0.8**
comp=N,2.8nm,0.4s,baz=19,slow=2.3,SNR=21
LPAZ PKPab **PKPab 10 16 32.5 -0.6**
comp=N,3.5nm,0.6s,baz=224,slow=1.1,SNR=8.3

CSEM ***13*** *09:57:42.7±0.3,34.43N×36.69E, h2km, ML3.1, Error ellipse: s-maj=9.0km s-min=4.2km az=98.0*
GRAL ***13*** *09:57:42.3±0.3,34.40N×36.81E, h0km±7km, MD3.1*
NSSC ***13*** *09:57:43.3±0.5,34.44N×36.75E, h1km±2km, ML2.3*
DDA ***13*** *09:57:44.2,34.50N×36.42E, h2km, Md3.4*
ISC 13 09:57:43.0±1.3,34.39N±0.02×36.69E±0.04,h3km±11km, n28,σ0.897/50,Jordan-Syria region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
FKH	**Fakeheh**	**0.27**	**238**	*eP*	**Pg**	**09 57 48.7**	**+0.3**
MARH	**Ras Al Marh**	**0.40**	**206**	*eP*	**Pg**	**09 57 50.9**	**+0.1**
MARH				*eS*	**Sb**	**09 57 58.1**	**-1.5**
	472nm,0.5s						
HWQ	**Hawqa**	**0.63**	**260**	*eP*	**Pg**	**09 57 55.3**	**+0.2**
HWQ				*eS*	**Sb**	**09 58 04.8**	**-1.1**
HWQ	**Hawqa**	**0.63**	**260**	*eP*	**Pg**	**09 57 55.3**	**+0.2**
HWQ				*eS*	**Sb**	**09 58 04.8**	**-1.1**
BHL	**Bhannes**	**0.99**	**241**	*eP*	**Pg**	**09 58 01.5**	**-0.5**
BHL	**Bhannes**	**0.99**	**241**	*eP*	**Pg**	**09 58 01.5**	**-0.5**
TOTH	**TOTAH**	**1.05**	**192**	*eP*	**Pn**	**09 58 04.9**	**+0.2**
TOTH				*eS*	**Sn**	**09 58 19.8**	**0.0**
TOTH				AML	AML	09 58 21.9	
	comp=E,142nm,0.5s						
TOTH				AML	AML	09 58 33.8	
	comp=N,71nm,0.5s						
RCY	**Rachaya**	**1.14**	**219**	*eP*	**Pg**	**09 58 04.0**	**-1.0**
RCY				*eS*	**Sg**	**09 58 20.0**	**+0.3**
BRBR	**Barbar**	**1.15**	**212**	*eP*	**Pn**	**09 58 06.7**	**+0.4**
BRBR				*eS*	**Sn**	**09 58 23.6**	**+0.9**
BRBR				AML	AML	09 58 33.1	
	comp=N,50nm,0.5s						
BRBR				AML	AML	09 58 38.0	
	comp=E,88nm,0.5s						
BRBR	**Barbar**	**1.15**	**212**	*eP*	**Pn**	**09 58 06.3**	**0.0**
BRBR				*eS*	**Sn**	**09 58 23.3**	**+0.7**
	comp=E,88nm,0.5s						
DQRL	**Deir Qamar**	**1.15**	**234**	*eP*	**Pg**	**09 58 04.3**	**-0.9**
ZALF	**Zalf**	**1.56**	**160**	*eP*	**Pb**	**09 58 12.5**	**-0.1**
ZALF				*eS*	**Sg**	**09 58 33.8**	**+0.6**
ZALF				AML	AML	09 58 38.4	
	comp=E,62nm,0.5s						
ZALF				AML	AML	09 58 42.0	
	comp=N,27nm,0.5s						
ZALF	**Zalf**	**1.56**	**160**	*eP*	**Pb**	**09 58 12.6**	**+0.1**
ZALF				*eS*	**Sb**	**09 58 32.6**	**-0.1**
	comp=N,27nm,0.5s						
ARNB	**Al Arnab**	**1.58**	**338**	*eP*	**Pn**	**09 58 11.6**	**-0.4**
ARNB				*eS*	**Sn**	**09 58 32.5**	**-0.5**
ARNB				AML	AML	09 58 36.7	
	comp=E,190nm,0.7s						
ARNB				AML	AML	09 58 37.1	
	comp=N,141nm,0.5s						
ARNB	**Al Arnab**	**1.58**	**338**	*eP*	**Pn**	**09 58 11.0**	**-1.0**
ARNB				*eS*	**Sn**	**09 58 32.0**	**-1.0**
	comp=N,141nm,0.5s						
BTCH	**Batrach**	**1.66**	**353**	*eP*	**Pn**	**09 58 10.6**	**-2.4**
BTCH				*eS*	**Sn**	**09 58 33.3**	**-1.5**
	comp=N,77nm,0.5s						
SALA	**Sala**	**1.68**	**179**	*eP*	**Pb**	**09 58 14.7**	**+0.1**
SALA				*eS*	**Sg**	**09 58 37.2**	**+0.3**
SALA				AML	AML	09 58 39.5	
	comp=E,16nm,0.5s						
SALA				AML	AML	09 58 42.6	
	comp=N,88nm,0.5s						
SALA	**Sala**	**1.68**	**179**	*eP*	**Pb**	**09 58 14.4**	**-0.2**
SALA				*eS*	**Sg**	**09 58 36.9**	**0.0**
	comp=N,88nm,0.5s						
YAYL	**Yayladag**	**1.71**	**344**	*i* P	**Pn**	**09 58 12.5**	**-1.3**
YAYL				*i* S	**Sn**	**09 58 36.6**	**+0.3**
YAYL	**Yayladag**	**1.71**	**344**	P	**Pn**	**09 58 12.5**	**-1.3**
YAYL				S	**Sn**	**09 58 36.6**	**+0.3**
DRWC	**Darouich**	**2.23**	**359**	*eP*	**Pn**	**09 58 21.1**	**+0.2**
DRWC				AML	AML	09 58 57.2	
	comp=E,49nm,0.5s						
DRWC				AML	AML	09 59 00.9	
	comp=N,22nm,0.5s						
DRWC	**Darouich**	**2.23**	**359**	*eP*	**Pn**	**09 58 20.9**	**0.0**
DRWC				*eS*	**Sn**	**09 58 47.6**	**-1.4**
	comp=N,22nm,0.5s						
KUZU	**Kuzuini**	**2.40**	**7**	*i* P	**Pb**	**09 58 26.5**	**-0.4**
KUZU				*i* S	**Sb**	**09 58 57.4**	**+0.5**
KUZU	**Kuzuini**	**2.40**	**7**	P	**Pb**	**09 58 26.5**	**-0.4**
KAMA	**Osmaniye**	**2.79**	**360**	*eP*	**Pb**	**09 58 34.4**	**+0.8**
KAMA				*eS*	**Sb**	**09 59 08.8**	**+0.6**
SURC	**SANLIURFA_SURC**	**2.94**	**32**	*i* P	**Pb**	**09 58 35.8**	**-0.3**
SURC				*i* S	**Sb**	**09 59 13.7**	**+1.4**
KERG	**Konya-Eregli**	**3.67**	**326**	*i* P	**Pn**	**09 58 42.0**	**+1.2**
KERG				*i* S	**Sn**	**09 59 26.9**	**+2.3**
KERG	**Konya-Eregli**	**3.67**	**326**	P	**Pn**	**09 58 42.0**	**+1.2**
KERG				S	**Sn**	**09 59 26.9**	**+2.3**

IDC 13 09:59:28.2±3.2,53.60N×87.98E,h0km,mb1 3.0/2, mb1mx2.9/57,mbtmp3.0/2,ML2.6/2,Error ellipse: s-maj=29.1km s-min=17.4km az=54.0,Southwestern Siberia

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
I46RU	**ZALESOVO INFRA**	**1.91**	**282**	*i*		10 12 15.0	
	baz=98,slow=318,SNR=5.4						
ZALV	**Zalesovo Beam**	**1.91**	**282**	Pg	Pn	10 00 02.9	+0.9
	2.3nm,0.3s,baz=102,slow=15,SNR=23						
ZALV				Lg	Lg	10 00 29.4	
	4.3nm,0.3s,baz=102,slow=27,SNR=17						
KURBB	**Kurchatov Arra**	**6.54**	**247**	Pn	Pn	10 01 04.8	-0.7
	0.1nm,0.3s,baz=62,slow=114,SNR=5.8						
KURBB				Lg	Lg	10 02 55.8	
	0.1nm,0.3s,baz=63,slow=31,SNR=12						
MKAR	**Makanchi Array**	**7.73**	**210**	Pn	Pn	10 01 24.2	+2.3
	0.2nm,0.3s,baz=28,slow=14,SNR=4.6						
MKAR				Lg	Lg	10 03 34.0	
	0.1nm,0.3s,baz=31,slow=31,SNR=9.3						

JMA 13 10:08:00.5,37.06N×140.80E,h9km±1km,M2.8,Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.04**	**358**	P	Pg	10 08 02.2	-0.2
ONAJ				S	Sg	10 08 03.3	-0.4
JFK	**Kawauchi**	**0.31**	**11**	P	Pg	10 08 06.7	0.0
JFK				S	Sg	10 08 11.3	+0.4
JFT	**Otama**	**0.59**	**321**	P	Pg	10 08 12.1	+0.2
JFT				S	Sg	10 08 20.0	+0.4
JMM	**Marumori**	**0.81**	**360**	P	Pg	10 08 15.7	-0.3
JMM				S	Sg	10 08 26.4	-0.1
JFY	**Yanaizu**	**0.94**	**292**	P	Pg	10 08 18.5	-0.1
JFY				S	Sg	10 08 30.6	-0.2
MAT	**Matsushiro**	**2.14**	**257**	P	Pn	10 08 34.7	-1.8

JMA 13 10:11:03.5,37.09N×140.82E,h8km±1km,M1.9,Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.02**	**304**	P	Pg	10 11 04.9	-0.2
ONAJ				S	Sg	10 11 05.9	-0.3
JFK	**Kawauchi**	**0.28**	**9**	P	Pg	10 11 09.1	0.0
JHO	**Hitachi**	**0.52**	**203**	P	Pg	10 11 13.4	-0.1
JHO				S	Sg	10 11 20.4	+0.1
JFT	**Otama**	**0.58**	**318**	P	Pg	10 11 14.7	+0.1

NIED ***13*** *10:11:00,37.10N×141.10E,h53km,Mw3.5 Best double couple: M₀2.37000×10¹⁴ NP1:φs115.00000°,δ24.00000°, λ27.00000°. NP2:φs0.00000°,δ80.00000°,λ111.00000°.*

ISCJB ***13*** *10:11:44.9±1.0,37.10N±0.04×141.25E±0.10,h61km±6km, mb3.4/4, Error ellipse: s-maj=13.2km s-min=6.8km az=6.2*
JMA ***13*** *10:11:47.5±0.1,37.13N×141.08E,h53km±1km,M3.6*
JMA Felt I J1.
IDC ***13*** *10:11:51.5±5.1,36.86N×140.85E,h108km±35km,mb3.1/4, mb1 3.2/6,mb1mx3.0/50,mbtmp3.5/6,MS3.0/1,Ms1 3.0/1, ms1mx2.2/17,Error ellipse: s-maj=54.0km s-min=13.1km az=59.0*
ISC 13 10:11:45.2±1.3,37.11N±0.05×141.3E±0.1,h56km±9km, n20,σ1.928/21,mb3.4/4,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.39**	**269**	P	**Pn**	**10 11 56.4**	**+0.7**
ONAJ				S	**Sn**	**10 12 02.8**	**-0.5**
JFK	**Kawauchi**	**0.41**	**308**	P	**Pn**	**10 11 56.8**	**+0.8**
JFK				S	**Sn**	**10 12 03.3**	**-0.5**
JHO	**Hitachi**	**0.76**	**229**	P	**Sn**	**10 12 00.6**	**+0.6**
JHO				S	**Sn**	**10 12 09.9**	**-0.9**
JMM	**Marumori**	**0.85**	**333**	P	**Pn**	**10 12 02.3**	**+1.2**
JMM				S	**Sn**	**10 12 12.9**	**+0.2**
JFT	**Otama**	**0.86**	**298**	P	**Pn**	**10 12 02.0**	**+0.8**
JFT				S	**Sn**	**10 12 12.2**	**-0.8**
JOU	**Okura**	**1.34**	**339**	S	**Sn**	**10 12 24.9**	**+0.3**
MJAR	**Matsushiro Arr**	**2.53**	**258**	P	**Pn**	**10 12 24.9**	**+1.0**
	6.3nm,0.3s,baz=82,slow=15,SNR=28						
MJAR				S	**Sn**	**10 12 52.5**	**-1.1**
	3.4nm,0.3s,baz=214,slow=29,SNR=5.0						
MAT	**Matsushiro**	**2.54**	**258**	P	**Pn**	**10 12 25.1**	**+1.2**
MAT				*eS*	**Sn**	**10 12 55.5**	**+1.9**
JHJ	**Hachijo jima 2**	**4.17**	**198**	P	**Pn**	**10 12 48.8**	**+2.5**
	15nm,0.3s,baz=72,slow=19,SNR=6.8						
JHJ				S	**Sn**	**10 13 33.8**	**0.0**
	17nm,0.3s,baz=107,slow=19,SNR=3.2						
KLR	**Kul'dur**	**13.95**	**333**	LR	LR	10 19 27.7	
	comp=Z,52nm,18.7s,baz=354,slow=32						
SONM	**Songino Array**	**27.66**	**304**	P	**P**	**10 17 29.1**	**+1.4**
	0.3nm,0.3s,baz=95,slow=8.2,SNR=3.7						
H11N2	**WAKE ISLAND Hy**	**28.27**	**121**	T	T	10 46 17.2	
	baz=316,slow=75,SNR=53						
H11N1	**WAKE ISLAND Hy**	**28.28**	**121**	T	T	10 46 20.7	
	baz=316,slow=75,SNR=41						
H11N3	**WAKE ISLAND Hy**	**28.29**	**121**	T	T	10 46 16.3	
	baz=316,slow=75,SNR=50						
H11S1	**WAKE ISLAND Hy**	**28.99**	**123**	T	T	10 47 15.1	
	baz=318,slow=76,SNR=45						
H11S3	**WAKE ISLAND Hy**	**28.99**	**123**	T	T	10 47 12.9	
	baz=318,slow=76,SNR=42						
H11S2	**WAKE ISLAND Hy**	**29.00**	**123**	T	T	10 47 15.6	
	baz=318,slow=76,SNR=44						
MKAR	**Makanchi Array**	**43.99**	**302**	P	**P**	**10 19 46.6**	**-0.3**
	0.4nm,0.4s,baz=83,slow=9.7,SNR=4.5						
WRA	**Warramunga Arr**	**57.12**	**188**	P	**P**	**10 21 23.8**	**-2.3**
	0.6nm,0.9s,baz=6.5,slow=7.2,SNR=6.8						
ASAR	**Alice Springs**	**60.85**	**188**	P	**P**	**10 21 50.5**	**-1.4**
	0.1nm,0.5s,baz=12,slow=7.4,SNR=4.9						

JMA 13 10:25:15.9,37.02N×140.68E,h7km±1km,M2.5,Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.12**	**49**	P	Pg	10 25 18.8	+0.2
ONAJ				S	Sg	10 25 20.8	+0.3
JFK	**Kawauchi**	**0.38**	**24**	P	Pg	10 25 23.3	0.0
JFK				S	Sg	10 25 28.6	+0.3
JHO	**Hitachi**	**0.42**	**192**	P	Pg	10 25 24.1	+0.1
JHO				S	Sg	10 25 29.6	+0.1
JFT	**Otama**	**0.57**	**331**	P	Pg	10 25 27.0	+0.1
JFT				S	Sg	10 25 34.7	+0.4
JMM	**Marumori**	**0.85**	**6**	P	Pg	10 25 32.0	-0.2
JFY	**Yanaizu**	**0.87**	**297**	S	Sg	10 25 43.7	-0.2
MAT	**Matsushiro**	**2.04**	**257**	P	Pn	10 25 51.6	+0.9
MAT				S	Sb	10 26 18.4	-0.5

NIED ***13*** *10:33:00,39.30N×142.30E,h38km,Mw3.8 Best double couple: M₀5.84000×10¹⁴ NP1:φs14.00000°,δ31.00000°, λ57.00000°. NP2:φs231.00000°,δ65.00000°,λ108.00000°.*
ISCJB ***13*** *10:33:15.5±1.8,39.20N±0.05×142.4E±0.1,h25km±12km, mb3.5/4, Error ellipse: s-maj=16.7km s-min=8.0km az=12.9*
JMA ***13*** *10:33:16.9±0.1,39.29N×142.35E,h29km±1km,M3.8*
JMA Felt I J1.
IDC ***13*** *10:33:20.2±3.0,39.18N×142.46E,h57km±30km,mb3.2/4, mb1 3.5/7,mb1mx3.2/37,mbtmp3.5/7,ML2.9/3,MS2.4/3, Ms1 2.4/3,ms1mx2.3/23,Error ellipse: s-maj=38.0km s-min=16.2km az=105.0*
ISC 13 10:33:14.7±2.5,39.22N±0.06×142.39E±0.09,h9km±14km, n20,σ1.930/17,mb3.5/4,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MIYJ	**Miyakonagasawa**	**0.57**	**309**	P	**Pb**	**10 33 27.0**	**0.0**
MIYJ				S	**Sb**	**10 33 34.0**	**-1.2**
OFUJ	**Ofunato**	**0.58**	**257**	P	**Pb**	**10 33 28.0**	**+0.9**
OFUJ				S	**Sb**	**10 33 35.7**	**+0.3**
JTH	**Tanohata**	**0.83**	**331**	P	**Pb**	**10 33 39.9**	**-0.5**
JOM	**Ohasama**	**0.89**	**287**	P	**Pb**	**10 33 32.5**	**+0.1**
JOM				S	**Sb**	**10 33 43.8**	**-0.6**
JMK	**Ichinoseki**	**0.95**	**254**	P	**Pb**	**10 33 33.9**	**+0.5**
JMK				S	**Sg**	**10 33 45.8**	**+0.5**
JKZ	**Kuzumaki**	**1.12**	**313**	P	**Pg**	**10 33 35.9**	**-0.4**
JKZ				S	**Sb**	**10 33 49.7**	**-1.5**
MJAR	**Matsushiro Arr**	**4.25**	**232**	P	Pn	10 34 24.1	+4.3
	0.6nm,0.3s,baz=39,slow=11,SNR=4.1						
MJAR				LR	LR	10 36 13.4	
	comp=Z,41nm,18.1s,baz=235,slow=41						
ASAJ	**Asahikawa**	**4.90**	**2**	P	**Pn**	**10 34 30.2**	**+1.7**
	1.0nm,0.3s,baz=224,slow=8.7,SNR=8.5						
ASAJ				S	**Sn**	**10 35 28.4**	**+3.0**
	0.4nm,0.3s,baz=347,slow=31,SNR=2.9						
ASAJ				LR	LR	10 36 37.0	
	comp=Z,48nm,19.8s,baz=150,slow=40						
USRK	**Ussuriysk Ar.**	**9.23**	**306**	P	Pn	10 35 31.8	+3.7
	0.2nm,0.3s,baz=114,slow=13,SNR=4.0						
KSRS	**Korea Array**	**11.50**	**266**	LR	LR	10 39 31.0	
	comp=Z,18nm,19.2s,baz=130,slow=32						
H11N2	**WAKE ISLAND Hy**	**28.69**	**126**	T	T	11 09 35.3	
	baz=318,slow=75,SNR=82						
H11N1	**WAKE ISLAND Hy**	**28.70**	**126**	T	T	11 09 35.1	
	baz=318,slow=75,SNR=62						
H11N3	**WAKE ISLAND Hy**	**28.71**	**126**	T	T	11 09 35.3	
	baz=318,slow=75,SNR=63						
H11S1	**WAKE ISLAND Hy**	**29.48**	**127**	T	T	11 10 40.3	
	baz=319,slow=76,SNR=17						
H11S3	**WAKE ISLAND Hy**	**29.49**	**128**	T	T	11 10 43.2	
	baz=319,slow=76,SNR=19						
H11S2	**WAKE ISLAND Hy**	**29.50**	**127**	T	T	11 10 43.1	
	baz=319,slow=76,SNR=19						
ZALV	**Zalesovo Beam**	**41.05**	**311**	P	**P**	**10 40 58.0**	**-0.3**
	0.7nm,0.4s,baz=107,slow=7.5,SNR=3.1						
WRA	**Warramunga Arr**	**59.33**	**189**	P	**P**	**10 43 15.8**	**-1.3**
	0.4nm,0.4s,baz=6.8,slow=7.0,SNR=16						
ASAR	**Alice Springs**	**63.05**	**189**	P	**P**	**10 43 40.9**	**-1.5**
	0.2nm,0.8s,baz=1.1,slow=4.9,SNR=3.7						
TXAR	**Lajitas Array**	**88.19**	**53**	P	**P**	**10 46 06.1**	**-0.4**
	0.1nm,0.5s,baz=305,slow=3.2,SNR=2.3						

SJA 13 10:37:06.6±0.5,32.16S×70.98W,h2km±6km,MD3.5, Chile-Argentina border region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ROC1	**El Roble**	**0.82**	**182**	*i* P	Pb	10 37 23.5	-0.2
ROC1				*i* S	Sb	10 37 36.4	+1.1
AUSP	**Uspallata**	**1.35**	**93**	*i* P	Pb	10 37 33.7	+1.0
AUSP				*i* S	Sn	10 37 53.3	+2.1
RTLS	**Leoncito**	**1.47**	**76**	*i* P	Pb	10 37 35.6	+0.8
RTLS				*i* S	Sn

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SPIG	**San Pedro Mart**	**0.24**	**147**	*e*P	**Pb**	**10 37 48.6**	**0.0**
SPIG				*e*S	**Sb**	**10 37 52.5**	**-0.4**
SPIG	**San Pedro Mart**	**0.24**	**147**	*i* P	**Pb**	**10 37 48.9**	**+0.4**
SPIG				*e*S	**Sg**	**10 37 51.5**	**+0.5**
SPX	**San Pedro Mart**	**0.24**	**147**	⇓*e*P	**Pb**	**10 37 48.9**	**+0.3**
SPX				*e*S	**Sb**	**10 37 52.6**	**-0.3**
SPX				⇑*e*		10 37 53.5	
SPX				AML	AML	10 37 53.5	
	comp=E,2μm,0.3s						
ECBX	**El Chinero**	**0.53**	**65**	⇑*e*P	**Pg**	**10 37 52.1**	**-0.5**
ECBX				*e*S	**Sg**	**10 37 59.5**	**-0.1**
ECBX				⇓*e*		10 38 02.3	
ECBX				AML	AML	10 38 02.3	
	comp=E,868nm,0.4s						
ZAX	**El Zacaton**	**0.62**	**295**	*e*P	**Pg**	**10 37 54.3**	**0.0**
ZAX				*e*S	**Sg**	**10 38 02.6**	**+0.1**
ZAX				AML	AML	10 38 04.8	
	comp=N,1μm,0.6s						
ECNX	**Esteban Cantu**	**0.93**	**296**	*e*P	**Pb**	**10 38 00.3**	**+0.1**
ECNX				*e*S	**Sg**	**10 38 11.8**	**-0.5**
PBX	**Punta Banda**	**1.07**	**298**	*e*P	**Pb**	**10 38 02.0**	**-0.4**
PBX				*e*S	**Sb**	**10 38 15.9**	**-0.4**
CBX	**Cerro Bola**	**1.39**	**320**	*e*P	**Pb**	**10 38 08.1**	**+0.1**
CBX				*e*S	**Sb**	**10 38 26.2**	**+0.6**
CBX				⇑*e*		10 38 32.4	
CBX				AML	AML	10 38 32.4	
	comp=E,304nm,0.6s						
CBX	**Cerro Bola**	**1.39**	**320**	*i* P	**Pb**	**10 38 08.2**	**+0.1**
CBX				*i* S	**Sn**	**10 38 24.9**	**-0.6**
RMX	**La Rumorosa**	**1.41**	**344**	*e*P	**Pb**	**10 38 08.8**	**+0.4**
RMX				*e*S	**Sg**	**10 38 27.3**	**-0.2**
TJIG	**Tijuana**	**1.48**	**323**	*e*P	**Pn**	**10 38 09.0**	**+0.4**
TJIG	**Tijuana**	**1.48**	**323**	*i* P	**Pb**	**10 38 09.7**	**+0.1**
TJIG				*i* S	**Sn**	**10 38 27.6**	**-0.2**
BAR	**Barrett**	**1.69**	**328**	*e*P	**Pb**	**10 38 13.0**	**0.0**
SWSC	**Sam W. Stewart**	**1.69**	**355**	P	**Pg**	**10 38 14.8**	**+0.1**
	baz=177						
MONP2	**Monument Peak**	**1.77**	**338**	P	**Pb**	**10 38 14.9**	**+0.3**
	baz=157						
MONP2				S	**Sb**	**10 38 37.9**	**+1.0**
	baz=157						
SDRC	**San Diego Road**	**1.86**	**323**	*e*P	**Pb**	**10 38 15.9**	**-0.1**
109C	**Camp Elliot, M**	**2.07**	**323**	P	**Pb**	**10 38 19.3**	**-0.2**
	baz=141						
109C				S	**Sb**	**10 38 45.5**	**+0.4**
	baz=141						
PFO	**Pinyon Flats O**	**2.46**	**343**	Sb	**Sg**	**10 38 59.1**	**-2.1**
	baz=164						
MURC	**Murrieta**	**2.70**	**331**	Sb	**Sb**	**10 39 04.7**	**+1.3**
	baz=150						

JMA 13 10:37:58.4, 37.06N×140.59E, h8km±1km, M2.8, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.17**	**76**	P	Pg	10 38 02.2	+0.2
ONAJ				S	Sg	10 38 04.9	+0.5
JFK	**Kawauchi**	**0.38**	**37**	P	Pg	10 38 05.9	0.0
JFK				S	Sg	10 38 11.1	+0.2
JHO	**Hitachi**	**0.45**	**182**	P	Pg	10 38 07.0	-0.1
JHO				S	Sg	10 38 13.1	+0.1
JFT	**Otama**	**0.50**	**336**	P	Pg	10 38 08.4	+0.3
JFT				S	Sg	10 38 15.1	+0.4
JFY	**Yanaizu**	**0.79**	**296**	P	Pg	10 38 13.7	+0.2
JFY				S	Sg	10 38 23.8	0.0
JMM	**Marumori**	**0.82**	**11**	S	Sg	10 38 25.0	+0.1
MAT	**Matsushiro**	**1.98**	**256**	P	Pb	10 38 33.6	-1.1
MAT				S	Sb	10 38 59.9	+0.3

NIED ***13*** *10:45:00, 37.40N×141.30E, h53km, Mw3.6 Best double couple: M₀2.46000×10¹⁴ NP1:φ₈313.00000°, δ45.00000°, λ-170.00000°. NP2:φ₈215.00000°, δ83.00000°, λ-46.00000°.*

JMA 13 10:45:04.3±0.1, 37.36N×141.29E, h35km±1km, M3.7, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**0.33**	**271**	P	Pn	10 45 12.4	-0.3
JFK				S	Sn	10 45 17.8	-0.6
ONAJ	**Iwakimizuishiy**	**0.47**	**237**	P	Pn	10 45 14.2	-0.4
ONAJ				*i* S	Sn	10 45 21.0	-0.7
JMM	**Marumori**	**0.64**	**322**	P	Pn	10 45 16.5	-0.4
JMM				S	Sn	10 45 25.2	-0.7
JFT	**Otama**	**0.78**	**282**	P	Pn	10 45 19.3	+0.5
JFT				S	Sn	10 45 29.7	+0.5
JHO	**Hitachi**	**0.94**	**218**	P	Pn	10 45 20.6	-0.5
JHO				S	Sn	10 45 32.8	-0.5
JIO	**Ouri**	**1.09**	**2**	P	Pn	10 45 23.1	0.0
JIO				S	Sn	10 45 36.2	-0.8
JOU	**Okura**	**1.12**	**334**	P	Pn	10 45 24.2	+0.7
JOU				S	Sn	10 45 38.8	+1.1
MAT	**Matsushiro**	**2.60**	**253**	P	Pn	10 45 45.7	+1.8
MAT				S	Sn	10 46 19.2	+4.9

IDC 13 10:54:12.3±3.0, 4.52S×133.35E, h0km, mb3.4/1, mb1 3.7/4, mb1mx3.4/45, mbtmp3.5/4, ML3.5/3, MS3.0/3, Ms1 3.0/3, ms1mx2.4/28, Error ellipse: s-maj=130.4km s-min=28.3km az=81.0, Irian Jaya region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**15.36**	**176**	Pn	Pn	10 57 48.7	-1.8
	0.1nm,0.3s,baz=354,slow=13,SNR=8.2						
WRA				Sn	Sn	11 00 31.4	-10
	0.1nm,0.3s,baz=359,slow=22,SNR=4.2						
FITZ	**Fitzroy Crossi**	**15.46**	**209**	Pn	Pn	10 57 52.2	+0.3
	0.2nm,0.3s,baz=28,slow=13,SNR=3.6						
FITZ				Sn	Sn	11 00 37.2	-6.8
	0.3nm,0.3s,baz=235,slow=18,SNR=7.1						
ASAR	**Alice Springs**	**19.04**	**178**	P	Pn	10 58 36.9	0.0
	0.2nm,0.3s,baz=0.2,slow=12,SNR=16						
ASAR				S	Sn	11 02 00.5	-10
	0.0nm,0.3s,baz=353,slow=28,SNR=3.3						
GUMO	**Guam**	**21.32**	**32**	LR	LR	11 06 44.5	
	comp=Z,21nm,21.6s,baz=314,slow=35						
LEM	**Lembang**	**25.70**	**264**	LR	LR	11 09 18.1	
	comp=Z,22nm,21.8s,baz=49,slow=35						
STKA	**Stephens Creek**	**28.29**	**165**	LR	LR	11 12 32.1	
	comp=Z,126nm,19.9s,baz=199,slow=39						
MKAR	**Makanchi Array**	**68.06**	**325**	P	P	11 05 13.8	0.0
	0.2nm,0.4s,baz=116,slow=6.6,SNR=2.5						

IDC ***13*** *10:54:18.0±1.1, 35.36N×141.03E, h0km, mb3.4/3, mb1 3.6/6, mb1mx3.4/71, mbtmp3.4/6, ML2.9/3, Error ellipse: s-maj=37.8km s-min=18.6km az=111.0*
JMA ***13*** *10:54:21.6±0.1, 35.46N×140.92E, h23km±2km, M3.4*
JMA Felt I J1.

ISC 13 10:54:19.2±2.0, 35.41N±0.05×140.99E±0.08, h7km±13km, n20, σ0°81/19, mb3.5/3, 2C-1D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.31**	**340**	⇑P	**Pb**	**10 54 27.6**	**+0.6**
CHOJ				S	**Sb**	**10 54 32.1**	**-0.2**
KTR	**Katsuura**	**0.61**	**245**	⇓P	**Pb**	**10 54 33.0**	**+0.9**
JCN	**Nagara**	**0.64**	**271**	P	**Pb**	**10 54 33.8**	**+1.1**
JCN				*e*S	**Sn**	**10 54 43.7**	**-1.3**
BSO4	**Boso 4**	**0.68**	**232**	P	**Pn**	**10 54 35.2**	**+0.2**
BSO4				*e*X		10 54 46.7	
BSO3	**Boso 3**	**0.72**	**213**	⇑P	**Pn**	**10 54 35.8**	**+0.3**
BSO1	**Boso 1**	**0.75**	**181**	P	**Pn**	**10 54 35.9**	**+0.2**
JYT	**Yasato**	**1.04**	**322**	P	**Pg**	**10 54 39.0**	**-0.1**
JYT				S	**Sg**	**10 54 51.7**	**-1.0**
JHJ	**Hachijo jima 2**	**2.49**	**204**	Pn	**Pn**	**10 54 59.5**	**-0.6**
	5.6nm,0.3s,baz=82,slow=19,SNR=4.8						
JHJ				Sn	**Sn**	**10 55 29.1**	**-1.6**
	20nm,0.3s,baz=73,slow=19,SNR=3.6						
MJAR	**Matsushiro Arr**	**2.52**	**297**	Pn	**Pn**	**10 55 00.7**	**+0.2**
	1.6nm,0.3s,baz=84,slow=15,SNR=11						
MAT	**Matsushiro**	**2.52**	**297**	P	**Pn**	**10 55 01.0**	**+0.5**
MAT				*e*S	**Sn**	**10 55 32.2**	**+0.7**
ASAJ	**Asahikawa**	**8.78**	**8**	Pn	**Pn**	**10 56 25.8**	**-0.7**
	0.2nm,0.3s,baz=223,slow=19,SNR=1.9						
H11N2	**WAKE ISLAND Hy**	**27.66**	**118**	T	T	11 29 07.3	
	baz=310,slow=76,SNR=125						
H11N1	**WAKE ISLAND Hy**	**27.66**	**118**	T	T	11 29 11.2	
	baz=310,slow=76,SNR=166						
H11N3	**WAKE ISLAND Hy**	**27.68**	**118**	T	T	11 29 06.3	
	baz=310,slow=76,SNR=117						
H11S1	**WAKE ISLAND Hy**	**28.31**	**120**	T	T	11 29 57.2	
	baz=312,slow=75,SNR=409						
H11S3	**WAKE ISLAND Hy**	**28.31**	**120**	T	T	11 29 55.6	
	baz=312,slow=75,SNR=438						
H11S2	**WAKE ISLAND Hy**	**28.33**	**120**	T	T	11 29 54.1	
	baz=312,slow=75,SNR=356						
ILAR	**Eielson Array**	**51.05**	**32**	P	**P**	**11 03 22.2**	**+0.6**
	0.2nm,0.7s,baz=264,slow=6.3,SNR=3.0						
WRA	**Warramunga Arr**	**55.41**	**188**	P	**P**	**11 03 54.0**	**-0.1**
	0.4nm,0.7s,baz=7.8,slow=7.7,SNR=4.6						
YKA	**Yellowknife Ar**	**65.39**	**30**	P	**P**	**11 05 01.7**	**-0.1**
	0.2nm,0.3s,baz=305,slow=5.9,SNR=14						

CSEM ***13*** *10:55:59.3±0.1, 36.41N×40.33E, h5km, ML2.4, Error ellipse: s-maj=3.8km s-min=3.0km az=80.0*

DDA 13 10:55:59.8, 36.47N×40.24E, h7km, Ml2.7, Jordan-Syria region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SFNV	**Sufian**	**0.12**	**245**	*e*P	Pg	10 56 02.9	+0.5
SFNV				*e*S	Sg	10 56 06.5	+2.3
	3μm,0.4s						
MZRK	**Al-Mazaregh**	**0.72**	**152**	*e*P	Pg	10 56 11.6	-2.1
MZRK				*e*S	Sg	10 56 20.5	-2.5
	92nm,0.3s						
MNKR	**ALMNKUR**	**0.94**	**237**	*e*P	Pb	10 56 18.3	-0.2
MNKR				*e*S	Sb	10 56 31.5	+0.3
	51nm,0.2s						
MARD	**Mardin**	**0.95**	**27**	*i* P	Pg	10 56 18.0	0.0
MARD				*i* S	Sb	10 56 32.2	+0.7
SURC	**SANLIURFA_SURC**	**1.37**	**288**	*i* P	Pb	10 56 25.7	-0.1
SURC				*i* S	Sg	10 56 45.4	+1.4
SURC	**SANLIURFA_SURC**	**1.37**	**288**	P	Pb	10 56 25.7	-0.1
SURC				S	Sg	10 56 45.4	+1.4
DIYA	**Diyarbakir**	**1.46**	**356**	*i* P	Pb	10 56 27.5	+0.2
DIYA				*i* S	Sg	10 56 48.0	+1.3
DIYA	**Diyarbakir**	**1.46**	**356**	P	Pb	10 56 27.5	+0.2
DIYA				S	Sg	10 56 48.0	+1.3
BTMN	**Batman**	**1.64**	**30**	*i* P	Pn	10 56 28.9	-0.3
BTMN				*i* S	Sg	10 56 53.9	+1.3
BTMN	**Batman**	**1.64**	**30**	P	Pn	10 56 28.9	-0.3
BTMN				S	Sg	10 56 53.9	+1.3

ISCJB ***13*** *10:56:23.7±0.5, 39.86N±0.02×38.69E±0.03, h6km±5km, Error ellipse: s-maj=3.9km s-min=3.8km az=11.1*
DDA ***13*** *10:56:23.5, 39.83N×38.70E, h11km, Ml3.0*
CSEM ***13*** *10:56:23.8±0.1, 39.86N×38.68E, h10km, MD2.8, Error ellipse: s-maj=3.0km s-min=2.6km az=114.0*
ISK ***13*** *10:56:23.3, 39.87N×38.67E, h9km, MD2.8*

ISC 13 10:56:23.8±1.0, 39.85N±0.02×38.65E±0.02, h11km±9km, n41, σ0°62/57, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ILIC	**ilic-Erzincan**	**0.40**	**189**	*e*PG	**Pg**	**10 56 32.1**	**+0.3**
ILIC				*e*SG	**Sb**	**10 56 38.6**	**-0.5**
ILIC	**ilic-Erzincan**	**0.40**	**189**	*e*Pg	**Pg**	**10 56 32.1**	**+0.3**
ILIC				*e*Sg	**Sb**	**10 56 38.7**	**-0.5**
REFA	**Refahiye_ERZ˜**	**0.46**	**169**	*i* P	Pg	10 56 26.5	-6.5
REFA				*i* S	Sg	10 56 28.3	-11
SUSE	**Susehri**	**0.50**	**316**	*i* P	**Pb**	**10 56 34.2**	**-0.5**
SUSE				*i* S	**Sb**	**10 56 42.2**	**+0.1**
SUSE	**Susehri**	**0.50**	**316**	P	**Pb**	**10 56 34.2**	**-0.5**
SUSE				S	**Sb**	**10 56 42.2**	**+0.1**
KELT	**Kelkit**	**0.55**	**57**	*i* P	**Pg**	**10 56 34.1**	**-0.6**
KELT				*i* S	**Sg**	**10 56 42.0**	**0.0**
KELT	**Kelkit**	**0.55**	**57**	P	**Pg**	**10 56 34.1**	**-0.6**
KELT				S	**Sg**	**10 56 42.0**	**0.0**
KEMA	**Kemaliye**	**0.59**	**192**	*i* P	**Pg**	**10 56 35.0**	**-0.4**
KEMA				*i* S	**Sg**	**10 56 43.6**	**+0.4**
KEMA	**Kemaliye**	**0.59**	**192**	P	**Pg**	**10 56 35.0**	**-0.4**
KEMA				S	**Sg**	**10 56 43.6**	**+0.4**
CUZAR	**Zara_SIVAS**	**0.68**	**274**	*i* P	**Pg**	**10 56 36.6**	**-0.5**
CUZAR				*i* S	**Sb**	**10 56 47.8**	**+0.6**
CUZAR	**Zara_SIVAS**	**0.68**	**274**	P	**Pg**	**10 56 36.6**	**-0.5**
CUZAR				S	**Sb**	**10 56 47.8**	**+0.6**
ERZN	**Erzincan**	**0.87**	**107**	*e*PG	**Pg**	**10 56 40.3**	**-0.2**
ERZN				*e*SG	**Sb**	**10 56 52.6**	**+0.1**
GUMT	**Gumushane**	**0.88**	**46**	*e*PG	**Pg**	**10 56 40.3**	**-0.6**
GUMT	**Gumushane**	**0.88**	**46**	*e*Pg	**Pg**	**10 56 40.3**	**-0.6**
CUKAN	**kangal_SIVAS**	**1.06**	**240**	*i* P	**Pg**	**10 56 43.9**	**-0.3**
CUKAN				*i* S	**Sn**	**10 56 60.0**	**+0.4**
CUKAN	**kangal_SIVAS**	**1.06**	**240**	P	**Pg**	**10 56 43.9**	**-0.3**
CUKAN				S	**Sn**	**10 57 00.0**	**+0.4**
ESPY	**Espiye-Giresun**	**1.07**	**3**	*e*PG	**Pb**	**10 56 44.0**	**-0.3**
ESPY	**Espiye-Giresun**	**1.07**	**3**	*e*Pg	**Pb**	**10 56 44.0**	**-0.3**
GRSN	**GIRESUNGRSN**	**1.11**	**345**	*i* P	**Pb**	**10 56 44.9**	**-0.2**
GRSN				*i* S	**Sg**	**10 57 00.2**	**+0.5**
GRSN	**GIRESUNGRSN**	**1.11**	**345**	P	**Pb**	**10 56 44.9**	**-0.2**
GRSN				S	**Sg**	**10 57 00.2**	**+0.5**
PTK	**Pertek**	**1.11**	**149**	*e*PN	**Pb**	**10 56 45.1**	**-0.1**
PTK	**Pertek**	**1.11**	**149**	*e*Pn	**Pb**	**10 56 45.1**	**-0.1**
RSDY	**Resadiye-TOKAT**	**1.15**	**299**	*e*PN	**Pb**	**10 56 45.8**	**0.0**
RSDY	**Resadiye-TOKAT**	**1.15**	**299**	*e*Pn	**Pb**	**10 56 45.8**	**0.0**
BAYT	**Ayd¯–ntepe-Bay**	**1.27**	**64**	*e*PN	**Pn**	**10 56 47.3**	**-0.3**
BAYT	**Ayd¯–ntepe-Bay**	**1.27**	**64**	*e*Pn	**Pn**	**10 56 47.3**	**-0.3**
SVSK	**Karacayir**	**1.27**	**274**	*e*PN	**Pb**	**10 56 48.0**	**+0.2**
SVSK	**Karacayir**	**1.27**	**274**	*e*Pn	**Pb**	**10 56 48.0**	**+0.2**
ELZG	**Elazig**	**1.37**	**169**	*i* P	**Pn**	**10 56 48.8**	**-0.3**
ELZG				*i* S	**Sg**	**10 57 07.8**	**-0.3**
ELZG	**Elazig**	**1.37**	**169**	P	**Pn**	**10 56 48.8**	**-0.3**
ELZG	**Elazig**	**1.37**	**169**	S	**Sg**	**10 57 07.8**	**-0.3**
KTUT	**Trabzon**	**1.42**	**36**	*e*PN	**Pn**	**10 56 49.3**	**-0.2**
KTUT	**Trabzon**	**1.42**	**36**	*e*Pn	**Pn**	**10 56 49.3**	**-0.2**
KOPT	**Kop Dagi**	**1.43**	**83**	*i* P	**Pb**	**10 56 50.6**	**0.0**
KOPT				*i* S	**Sg**	**10 57 13.6**	**+3.7**
KOPT	**Kop Dagi**	**1.43**	**83**	P	**Pb**	**10 56 50.6**	**0.0**
SVRC	**Sivrice-ELAZID**	**1.55**	**161**	*e*PN	**Pb**	**10 56 52.4**	**-0.3**
SVRC	**Sivrice-ELAZID**	**1.55**	**161**	*e*Pn	**Pb**	**10 56 52.4**	**-0.3**
DARE	**Darende-Malaty**	**1.57**	**216**	*e*PN	**Pb**	**10 56 52.6**	**-0.2**
DARE	**Darende-Malaty**	**1.57**	**216**	*e*Pn	**Pb**	**10 56 52.6**	**-0.2**
BINT	**Bingol**	**1.72**	**124**	*e*Pn	**Pb**	**10 56 54.9**	**-0.7**
BNGB	**Bing¯¶l**	**1.79**	**118**	*e*PN	**Pn**	**10 56 54.9**	**+0.2**

IDC ***13*** *11:03:43.3±0.8, 4.76N×82.71W, h0km, mb4.2/14, mb1 4.5/18, mb1mx4.3/37, mbtmp4.3/18, ML2.9/2, MS3.9/22, Ms1 3.9/22, ms1mx3.7/35, Error ellipse: s-maj=27.6km s-min=13.1km az=44.0*
ISCJB ***13*** *11:03:43.9±0.2, 4.95N±0.03×82.53W±0.02, h12km, mb4.6/75, MS3.9/19, Error ellipse: s-maj=4.1km s-min=3.3km az=33.4*
BJI ***13*** *11:03:44.5, 4.90N×82.60W, h5km, mB5.3/4, Ms4.3/1*
GCMT ***13*** *11:03:45.2±0.3, 4.75N×82.68W, h27km±1km, MW5.0/87, Moment Tensor Solution. s35,c43; s87,c131; Duration: 0 Moment tensor: Scale 10¹⁶Nm; Mrr0.10±.17; Mθθ0.21±.12; Mϕϕ-0.30±.16; Mrθ0.38±.21; Mθϕ3.91±.11; Mϕr0.17±.24; Best double couple: M₀3.94000×10¹⁶ NP1:φ₈92.00000°, δ87.00000°, λ5.00000°. NP2: φ₈2.00000°, δ85.00000°, λ177.00000°. Principal axes: T 3.9090, Plg6.0000°, Azm317.0000°; N 0.0620, Plg84.0000°, Azm119.0000°; P -3.9710, Plg2.0000°, Azm227.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
NEIC ***13*** *11:03:45.3±0.2, 4.86N×82.56W, h10km, mb4.7/70, MW4.5 Error ellipse: s-maj=5.7km s-min=3.6km az=45.0, Moment Tensor Solution. s9 Moment tensor: Scale 10¹⁵ Nm; Mrr1.43; Mθθ0.39; Mϕϕ-1.82; Mrθ1.01; Mθϕ6.34; Mϕr1.02; Best double couple: M₀6.70000×10¹⁵ NP1: φ₈4.00000°, δ79.00000°, λ167.00000°. NP2:φ₈96.00000°, δ78.00000°, λ11.00000°. Principal axes: T 6.1500, Plg17.0000°, Azm320.0000°; N 1.0000, Plg73.0000°, Azm143.0000°; P -7.1500, Plg1.0000°, Azm50.0000°;*
CASC ***13*** *11:03:45.8±1.6, 5.04N×82.75W, h10km, MD4.6, mb4.7(NEIC)*

ISC 13 11:03:45.3±0.5, 4.89N±0.05×82.67W±0.05, h12km, n348, σ1°17/340, mb4.7/77, MS4.0/19, 4C-3D, South of Panama

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AZU	**Azuero**	**3.74**	**39**	⇑*e*P	**Pn**	**11 04 41.8**	**-1.0**
AZU				*e*S	**Sn**	**11 05 22.6**	**-4.3**
BRU2	**Volcan**	**3.88**	**360**	*i* P	**Pn**	**11 04 43.4**	**-1.6**
BRU2				*e*S	**Sn**	**11 05 28.6**	**-1.9**
TBS2		**3.88**	**0**	*e*P	**Pn**	**11 04 44.5**	**-0.5**
TBS2				*e*S	**Sn**	**11 05 29.1**	**-1.5**
QCR	**Quepos**	**4.75**	**342**	⇑*e*P	**Pn**	**11 04 54.0**	**-2.7**
BUS	**Buena Vista**	**4.76**	**347**	⇑*e*P	**Pn**	**11 04 55.4**	**-1.9**
GRGC	**Isla de Gorgon**	**4.87**	**112**	*e*P	Pn	11 04 54.6	-3.7
ZANG	**Zanguenga, Cho**	**4.91**	**34**	⇑*i*P	**Pn**	**11 04 59.4**	**+0.5**
ZANG				*e*S	**Sn**	**11 05 54.9**	**-0.8**
URSC	**Urasca**	**5.04**	**347**	*e*P	**Pn**	**11 04 59.6**	**-1.2**
BCIP	**Isla Barro Col**	**5.09**	**33**	*e*Pn	**Pn**	**11 05 01.3**	**-0.1**
BCIP				*e*Sn	**Sn**	**11 05 58.8**	**-1.5**
BCIP	**Isla Barro Col**	**5.09**	**33**	*e*P	**Pn**	**11 05 01.4**	**-0.1**
UPA	**Univ. de Panam**	**5.12**	**37**	⇓*i*P	**Pn**	**11 05 01.8**	**-0.1**
UPA				*e*S	**Sn**	**11 06 02.1**	**+1.2**
HDC	**Heredia**	**5.28**	**344**	*e*P	**Pn**	**11 05 03.0**	**-1.1**
HDC				*e*S	**Sn**	**11 06 03.4**	**-1.6**
HDC	**Heredia**	**5.28**	**344**	*e*Pn	**Pn**	**11 05 03.0**	**-1.1**
HDC				*e*Sn	**Sn**	**11 06 03.9**	**-1.2**
MALC	**Bahia Malaga**	**5.39**	**99**	*e*P	**Pn**	**11 05 03.9**	**-1.7**
SOLC	**Bahia Solano**	**5.40**	**76**	*e*P	**Pn**	**11 05 03.0**	**-2.8**
JCR	**Jicaral**	**5.49**	**334**	*e*P	**Pn**	**11 05 04.5**	**-2.6**
JTS	**JuntasAbangare**	**5.83**	**337**	Pn	**Pn**	**11 05 10.5**	**-1.1**
	56nm,0.3s,baz=90,slow=8.2,SNR=208						
JTS				Sn	**Sn**	**11 06 15.8**	**-2.5**
	69nm,0.3s,baz=285,slow=22,SNR=23						
JTS	**JuntasAbangare**	**5.83**	**337**	*e*P	**Pn**	**11 05 09.6**	**-2.0**
JTS				*e*S	**Sn**	**11 06 16.0**	**-2.4**
JTS	**JuntasAbangare**	**5.83**	**337**	*e*Pn	**Pn**	**11 05 09.8**	**-1.8**
JTS				Sn	**Sn**	**11 06 15.8**	**-2.5**
JTS				*e*Sn	**Sn**	**11 06 15.9**	**-2.5**
UPD2	**Meteti**	**5.88**	**52**	⇓*i*P	**Pn**	**11 05 14.0**	**+1.7**
UPD2				*e*S	**Sn**	**11 06 21.6**	**+1.9**
VCR	**Vista de Mar**	**5.97**	**331**	⇓*e*P	**Pn**	**11 05 12.4**	**-1.3**
CMBC	**Cumbal**	**6.23**	**129**	*e*P	Pn	11 05 14.5	-3.0
OTAV	**Otavalo**	**6.25**	**138**	*e*Pn	**Pn**	**11 05 15.5**	**-2.4**
OTAV	**Otavalo**	**6.25**	**138**	*e*P	Pn	11 05 13.7	-4.1
POPC	**Popayan, Colom**	**6.42**	**111**	*e*P	Pn	11 05 16.6	-3.4
CRUC	**La Cruz**	**6.59**	**120**	*e*P	**Pn**	**11 05 21.1**	**-1.3**
DBBC	**Dabeiba**	**6.76**	**71**	*e*P	**Pn**	**11 05 24.7**	**+0.1**
TOLC	**Tolima**	**7.33**	**92**	*e*P	**Pn**	**11 05 32.4**	**-0.2**
NORC	**Norcasia**	**7.80**	**85**	*e*P	**Pn**	**11 05 39.8**	**+1.1**
PRAC	**Prado**	**7.85**	**98**	*e*P	**Pn**	**11 05 39.0**	**-0.4**
ROSC	**El Rosal**	**8.32**	**90**	Pn	**Pn**	**11 05 47.9**	**+1.7**
	5.7nm,0.3s,baz=167,slow=4.8,SNR=8.6						
ROSC				LR	LR	11 08 58.8	
	comp=Z,313nm,18.1s,baz=360,slow=38						
ROSC	**El Rosal**	**8.32**	**90**	*e*Pn	Pn	11 05 50.6	+4.4
PAYG	**Puerto Ayora**	**9.40**	**234**	*e*Pn	**Pn**	**11 06 02.4**	**+1.7**
SDV	**Santo Domingo**	**12.59**	**71**	Pn	**Pn**	**11 06 45.1**	**+0.6**
	0.2nm,0.3s,baz=245,slow=9.0,SNR=12						
SDV				LR	LR	11 11 12.8	
	comp=Z,413nm,22.0s,baz=234,slow=36						
SDV	**Santo Domingo**	**12.59**	**71**	*e*Pn	**Pn**	**11 06 44.7**	**+0.2**
ATAH	**Atahualpa**	**12.68**	**160**	Pn	Pn	**11 06 47.1**	**+1.1**
	1.2nm,0.3s,baz=24,slow=3.3,SNR=4.7						
ATAH				LR	LR	11 11 14.0	
	comp=Z,2μm,19.8s,baz=335,slow=36						
CCIG	**Comitan**	**14.65**	**321**	*e*Pn	**Pn**	**11 07 14.5**	**+1.8**
NNA	**Nana**	**17.74**	**161**	Pn	**Pn**	**11 07 50.6**	**-1.8**
	1.7nm,0.3s,baz=322,slow=14,SNR=3.7						
NNA				LR	LR	11 14 07.7	
	comp=Z,327nm,20.7s,baz=318,slow=35						
NNA	**Nana**	**17.74**	**161**	*e*Pn	**Pn**	**11 07 51.3**	**-1.0**
	144nm,1.2s						
SDDR	**Presa de Saban**	**17.88**	**37**	*e*Pn	**Pn**	**11 07 52.6**	**-1.4**
	22nm,0.8s						
TLIG	**Tlapa**	**20.02**	**310**	*e*P	**P**	**11 08 18.9**	**+0.6**
	32nm,1.3s						
CELP	**Cerrillos**	**20.48**	**49**	*e*P	**P**	**11 08 23.8**	**+0.7**
SJG	**San Juan**	**20.82**	**50**	P	**P**	**11 08 27.3**	**+0.5**
	19nm,0.7s,baz=245,slow=8.4,SNR=8.1						
SJG				LR	LR	11 15 46.1	
	comp=Z,220nm,21.3s,baz=232,slow=34						
SJG	**San Juan**	**20.82**	**50**	*e*P	**P**	**11 08 27.7**	**+0.8**
	26nm,0.8s						
HUMP	**Col San Antoni**	**21.07**	**50**	*e*P	**P**	**11 08 29.9**	**+0.3**
	47nm,1.2s						
CBYP	**

baz=151
X35A **Drake** 32.22 337 P P 11 10 13.0 -0.5
baz=152
U40A **Yellville** 32.69 345 P P 11 10 17.3 -0.3
baz=161
X34A **Smith Ranch, M** 32.74 336 P P 11 10 18.0 -0.1
baz=151
W35A **Tecumseh** 32.85 338 P P 11 10 18.3 -0.8
baz=153
V37A **Hulbert** 32.92 341 P P 11 10 18.5 -1.1
baz=157
X33A **Lawton** 32.95 336 P P 11 10 19.0 -0.9
baz=150
V36A **Jenks** 33.09 340 P P 11 10 20.4 -0.8
baz=155
X32A **Elmer** 33.18 334 P P 11 10 21.8 -0.2
baz=149
W34A **Bridge Creek,** 33.27 337 P P 11 10 22.7 0.0
baz=152
T40A **Mansfield** 33.35 346 P P 11 10 22.8 -0.6
baz=162
V35A **Meyer Ranch, C** 33.39 339 P P 11 10 23.2 -0.5
baz=154
U37A **Salina** 33.39 342 P P 11 10 23.2 -0.5
baz=157
T39A **Clever** 33.46 344 P P 11 10 25.2 +0.9
baz=160
W33A **Caddo, Fort Co** 33.47 336 P P 11 10 25.3 +0.9
baz=150
W32A **Sentinel** 33.77 335 P P 11 10 27.3 +0.2
baz=149
S40A **Lebanon** 33.77 346 P P 11 10 27.3 +0.3
baz=162
U35A **Pawnee** 33.89 339 P P 11 10 28.0 -0.2
baz=154
V33A **Lossen Ranch,** 33.98 337 P P 11 10 29.0 +0.1
baz=151
T37A **Cheneyville 18** 33.99 342 P P 11 10 28.6 -0.3
baz=158,SNR=5.6
OLIL **Olney** 34.05 352 eP P 11 10 29.0 -0.4
57nm,1.6s
S39A **Bolivar** 34.07 345 P P 11 10 28.8 -0.8
baz=161
MNTX **Cornudas Mount** 34.13 324 P P 11 10 30.8 +0.5
baz=137,SNR=9.5
MNTX **Cornudas Mount** 34.13 324 eP P 11 10 31.1 +0.8
30nm,1.6s
T36A **Boggs Farm, Ca** 34.23 341 P P 11 10 30.6 -0.4
baz=156
U34A **Anderson Ranch** 34.24 338 P P 11 10 30.4 -0.7
baz=153
T35A **Sooner Cattle** 34.31 340 P P 11 10 31.4 -0.4
baz=155
MSTX **Muleshoe** 34.44 330 P P 11 10 34.0 +0.9
baz=143
S37A **Fort Scott** 34.55 343 P P 11 10 33.5 -0.3
baz=158
R39A **Chumby, Stover** 34.59 346 P P 11 10 33.7 -0.4
baz=162
T34A **McClaskey Farm** 34.64 339 P P 11 10 34.1 -0.5
baz=154
R38A **Fenwick Farm,** 34.69 344 P P 11 10 34.6 -0.3
baz=160
S36A **Lake Cedric, C** 34.75 342 P P 11 10 35.4 -0.1
baz=157
U32A **Winter Ranch,** 34.75 337 P P 11 10 35.5 0.0
baz=150
S35A **Otter Creek Ra** 34.94 341 P P 11 10 37.2 0.0
baz=156
Q39A **Willow Grove F** 35.26 346 P P 11 10 38.6 -1.3
baz=162
R36A **Gordon, Harris** 35.27 342 P P 11 10 38.8 -1.2
baz=157
Q38A **Cooks Store, C** 35.34 345 P P 11 10 39.9 -0.7
baz=161
P40A **Paris** 35.51 347 P P 11 10 41.0 -1.1
baz=164
SFIN **Lafayette** 35.56 354 P P 11 10 41.9 -0.5
baz=172
P39A **Salisbury** 35.63 347 P P 11 10 42.5 -0.6
baz=162
R34A **Isabella, Hill** 35.81 340 P P 11 10 44.6 0.0
baz=155,SNR=5.5
Q36A **Arnold C. Orve** 35.85 343 P P 11 10 44.5 -0.5
baz=158
Q35A **Mercer Eighty,** 35.93 342 P P 11 10 45.2 -0.5
baz=157
R33A **Olander Ranch,** 36.07 339 P P 11 10 46.9 0.0
baz=153
P37A **Lathrop** 36.12 345 P P 11 10 47.4 +0.1
baz=160
121A **Cookes Peak, D** 36.16 323 P P 11 10 49.8 +1.9
baz=134,SNR=16
Q34A **Chapman** 36.27 341 P P 11 10 48.6 0.0
baz=155
319A **Douglas** 36.31 320 eP P 11 10 51.7 +2.5
29nm,1.4s
KSU1 **Kansas State U** 36.33 342 P P 11 10 48.6 -0.4
baz=156
KSU1 **Kansas State U** 36.33 342 eP P 11 10 49.2 +0.1
12nm,0.8s
P36A **Good Intent, A** 36.39 344 P P 11 10 49.7 +0.1
baz=158
R32A **Long Quarter,** 36.43 339 P P 11 10 49.8 -0.1
baz=152
P35A **Duane Minner,** 36.54 343 P P 11 10 50.3 -0.6
baz=157
Q33A **Connelly Farm,** 36.63 340 P P 11 10 51.6 -0.1
baz=154
BNM **Barren Site** 36.64 326 eP P 11 10 53.4 +1.3
P34A **Walnut Farm, R** 36.80 342 P P 11 10 52.9 -0.2
baz=156
Q32A **Meitler Ranch,** 36.88 339 P P 11 10 53.1 -0.7
baz=153
N38A **Joes South For** 36.99 347 P P 11 10 53.9 -0.7
baz=162
LAZ **Ladron** 37.11 325 eP P 11 10 57.7 +1.7
ANMO **Albuquerque** 37.13 327 P P 11 10 57.7 +1.5
baz=138
ANMO **Albuquerque** 37.13 327 eP P 11 10 57.7 +1.5
16nm,1.2s
CBKS **Cedar Bluff** 37.16 338 P P 11 10 55.7 -0.5
baz=151
O34A **Beatrice** 37.34 342 P P 11 10 58.0 +0.2
baz=156
P32A **Huiting Farm,** 37.46 340 P P 11 10 59.1 +0.3
baz=153
O33A **Hebron** 37.52 341 P P 11 10 59.1 -0.1
baz=155
T25A **Trinidad** 37.77 331 P P 11 11 02.8 +1.2
baz=143
T25A **Trinidad** 37.77 331 eP P 11 11 02.3 +0.7
32nm,1.8s
TUC **Tucson** 37.89 319 P P 11 11 03.9 +1.4
baz=130
TUC **Tucson** 37.89 319 eP P 11 11 03.8 +1.3
6.4nm,1.0s
O32A **Brockman Farm,** 37.92 340 P P 11 11 02.3 -0.3
baz=154
O31A **Woolen Ranch,** 38.18 339 P P 11 11 04.8 0.0
baz=152
SDCO **Great Sand Dun** 38.78 331 P P 11 11 11.5 +1.3
baz=142,SNR=19
SDCO **Great Sand Dun** 38.78 331 eP P 11 11 11.9 +1.8
23nm,1.3s
214A **Organ Pipe Nat** 39.01 317 P P 11 11 13.2 +1.3
baz=127,SNR=7.1
W18A **Petrified Fore** 39.12 324 P P 11 11 15.2 +2.2
baz=134,SNR=5.5
W18A **Petrified Fore** 39.12 324 eP P 11 11 15.3 +2.3
39nm,1.1s
M31A **Lambtecht Ranc** 39.12 340 P P 11 11 12.6 -0.1
baz=154
S22A **4UR Ranch, Cre** 39.44 329 P P 11 11 17.4 +1.6
baz=140,SNR=14
S22A **4UR Ranch, Cre** 39.44 329 eP P 11 11 17.1 +1.3
16nm,1.3s
CPUP **Villa Florida** 39.57 143 P P 11 11 14.2 -2.4
2.9nm,0.9s,baz=327,slow=11,SNR=4.8
CPUP LR LR 11 28 44.7
comp=Z,228nm,18.1s,baz=320,slow=38
Q24A **Divide** 39.58 332 P P 11 11 17.6 +0.8
baz=143
J36A **Seneca 1, Swea** 39.65 347 P P 11 11 16.3 -0.8
baz=162
X16A **Lo Mia Camp, P** 39.68 321 eP P 11 11 19.7 +2.1
13nm,1.1s
L31A **Butterfield Fa** 39.83 341 P P 11 11 18.4 -0.2
baz=154
MVCO **Mesa Verde** 39.91 327 P P 11 11 20.7 +1.1
baz=137,SNR=11
MVCO **Mesa Verde** 39.91 327 eP P 11 11 21.4 +1.7
74nm,1.8s
BDFB **Brasilia** 39.92 121 LR LR 11 28 15.4
comp=Z,283nm,18.9s,baz=268,slow=37
K32A **Verdigre** 39.99 342 P P 11 11 19.8 -0.2
baz=156
113A **Mohawk Valley,** 40.14 318 eP P 11 11 22.9 +1.6
K31A **O'Neill** 40.20 342 P P 11 11 21.9 +0.2
baz=155
WUAZ **Wupatki** 40.37 323 P P 11 11 25.0 +1.7
baz=132,SNR=17
WUAZ **Wupatki** 40.37 323 eP P 11 11 25.4 +2.0
26nm,1.1s
ISCO **Idaho Springs** 40.46 332 P P 11 11 25.1 +0.9
baz=143
ISCO **Idaho Springs** 40.46 332 eP P 11 11 25.6 +1.4
6.0nm,1.0s
K30A **Basset** 40.53 341 P P 11 11 24.8 +0.4
baz=153
ECSD **EROS Data Cent** 40.60 344 P P 11 11 24.3 -0.6
baz=158
SMCO **Snowmass** 40.62 331 eP P 11 11 27.4 +1.8
14nm,1.2s
PV01 **Paradox Valley** 40.63 328 eP P 11 11 27.4 +1.8
PV05 **Paradox Valley** 40.88 328 eP P 11 11 29.3 +1.7
GLA **Glamis** 41.03 317 P P 11 11 29.5 +0.9
baz=126
J30A **Dallas** 41.07 341 P P 11 11 28.3 -0.6
baz=154,SNR=5.9
PDMCI **Parker Dam,Lak** 41.32 319 P P 11 11 32.5 +1.4
baz=128
J29A **Okreek** 41.41 340 P P 11 11 31.6 -0.1
baz=153,SNR=9.0
N23A **Red Feather La** 41.49 333 P P 11 11 32.8 +0.2
baz=144
N23A **Red Feather La** 41.49 333 eP P 11 11 33.3 +0.6
15nm,1.5s
H33A **Prehn Over Nor** 41.51 345 P P 11 11 31.8 -0.7
baz=158
U15A **North Rim** 41.53 323 eP P 11 11 35.3 +2.3
19nm,1.2s
H32A **Carlson Farm,** 41.53 344 P P 11 11 32.0 -0.6
baz=157
SWSC **Sam W. Stewart** 41.63 316 P P 11 11 34.9 +1.3
baz=125
J28A **Allard Ranch,** 41.74 340 P P 11 11 34.5 +0.1
baz=152
BC3 **Big Chuckawall** 41.80 317 P P 11 11 36.5 +1.4
baz=126
J27A **Elkhorn Farm,** 41.86 339 P P 11 11 36.1 +0.6
baz=150
IRM **Iron Mountain** 41.90 318 P P 11 11 37.2 +1.4
baz=127
I29A **Vivian Onida** 41.96 341 P P 11 11 35.8 -0.3
baz=153
O20A **White River Ci** 41.98 330 P P 11 11 38.1 +1.5
baz=140
O20A **White River Ci** 41.98 330 eP P 11 11 37.5 +1.0
27nm,1.8s
MONP2 **Monument Peak** 42.03 316 P P 11 11 39.4 +2.2
baz=124
I28A **Midland** 42.22 340 P P 11 11 38.1 -0.2
baz=152,SNR=7.3
PKCU **Pink Cliffs** 42.22 324 eP P 11 11 41.5 +2.7
63nm,1.9s
KNB **Kanab** 42.24 323 eP P 11 11 40.7 +2.0
16nm,1.2s
G32A **Webster** 42.25 344 P P 11 11 38.0 -0.4
baz=158
J26A **Sides Ranch, S** 42.31 338 P P 11 11 39.9 +0.9
baz=149
BELC **Belle Mtn. Jos** 42.38 317 P P 11 11 41.1 +1.2
baz=126
SRU **San Rafael Swe** 42.39 327 eP P 11 11 41.0 +1.0
17nm,1.2s
PFO **Pinyon Flats O** 42.46 317 P P 11 11 40.6 0.0
3.9nm,0.8s,baz=133,slow=9.8,SNR=4.3
PFO **Pinyon Flats O** 42.46 317 P P 11 11 41.3 +0.7
baz=125
E36A **Mcgregor** 42.47 349 P P 11 11 41.9 +1.6
baz=164
F33A **5 Mile Ranch,** 42.48 346 P P 11 11 39.5 -0.8
baz=160
LCMT **Little Creek M** 42.49 323 eP P 11 11 41.8 +1.1
9.1nm,1.2s
I27A **Quinn** 42.59 339 P P 11 11 41.5 +0.1
baz=151,SNR=7.2
G30A **Faulkton** 42.59 343 P P 11 11 40.9 -0.4
baz=155
GMRC **Granite Mounta** 42.61 319 P P 11 11 42.6 +0.9
baz=127
P18A **Preston Nutter** 42.62 328 eP P 11 11 43.6 +1.7
31nm,1.9s
J25A **Sunshine Ranch** 42.65 337 P P 11 11 42.1 +0.2
baz=148
P17A **Butcher Ranch,** 42.77 328 eP P 11 11 43.6 +0.6
7.6nm,1.0s
H28A **Mission Ridge** 42.77 341 P P 11 11 42.3 -0.4
baz=152
I26A **New Underwood** 42.85 339 P P 11 11 43.6 +0.2
baz=150
MSU **Marysvale** 42.88 325 eP P 11 11 45.2 +1.2
HEC **Hector,Ludlow** 43.09 318 P P 11 11 46.9 +1.4
baz=126
D36A **Goodland** 43.09 350 P P 11 11 43.8 -1.5
baz=164
H27A **Howes** 43.09 340 P P 11 11 45.5 +0.2
baz=151,SNR=9.0
K22A **Casper** 43.16 334 P P 11 11 46.5 +0.5
baz=144
K22A **Casper** 43.16 334 eP P 11 11 46.7 +0.6
36nm,1.8s
I25A **Rochford** 43.16 338 P P 11 11 46.3 +0.1
baz=148
RSSD **Black Hills** 43.36 338 P P 11 11 48.4 +0.6
baz=148
RSSD **Black Hills** 43.36 338 eP P 11 11 49.5 +1.7
22nm,1.4s
F29A **Eureka** 43.44 343 P P 11 11 47.3 -0.8
baz=155
SCI2 **San Clemente I** 43.58 314 P P 11 11 47.5 -1.9
baz=122
H25A **Fruitdale** 43.63 338 P P 11 11 50.2 +0.5
baz=149,SNR=6.1
MPU **Maple Canyon** 43.64 327 eP P 11 11 50.9 +0.9
5.4nm,1.1s
BFSC **Mount Baldy Ra** 43.64 316 P P 11 11 51.7 +1.7
baz=124
GSC **Goldstone, Bar** 43.67 318 P P 11 11 51.9 +1.6
baz=126
GSC **Goldstone, Bar** 43.67 318 eP P 11 11 52.2 +1.9
22nm,1.6s
SHOC **Shoshone, Teco** 43.68 319 P P 11 11 51.7 +1.5
baz=127,SNR=5.5
G27A **Dupree** 43.70 340 P P 11 11 49.8 -0.5
baz=152,SNR=5.4
CIS **Catalina Islan** 43.71 315 P P 11 11 54.3 +3.8
baz=123
E30A **Jud** 43.78 344 P P 11 11 50.1 -0.7
baz=156
NLU **North Lily Min** 43.83 327 eP P 11 11 52.9 +1.3
6.0nm,1.3s
G26A **Maurine** 43.85 340 P P 11 11 51.1 -0.4
baz=151
JLU **Jordanelle** 43.96 328 eP P 11 11 54.3 +1.6
15nm,1.6s
E29A **Napoleon** 44.05 343 P P 11 11 52.7 -0.3
baz=155
G25A **Newell** 44.05 339 P P 11 11 53.3 +0.2
baz=149,SNR=5.4
F27A **Lemmon** 44.16 341 P P 11 11 54.1 +0.1
baz=152
CTU **Camp Tracy** 44.18 328 eP P 11 11 55.7 +1.3
15nm,1.4s
EDW2 **Edwards Air Fo** 44.23 317 P P 11 11 55.8 +1.0
baz=124
D30A **Buchanan** 44.29 344 P P 11 11 55.0 +0.1
baz=157
TPNV **Topopah Spring** 44.30 321 P P 11 11 57.5 +2.1
baz=128,SNR=6.5
TPNV **Topopah Spring** 44.30 321 eP P 11 11 57.0 +1.6
7.6nm,1.0s
TCUT **Toone Canyon** 44.31 329 eP P 11 11 56.4 +0.9
32nm,1.5s
F26A **Lodgepole** 44.36 340 P P 11 11 54.4 -1.2
baz=151
E28A **Huff** 44.36 342 P P 11 11 55.2 -0.3
baz=154
FURC **Furnace Creek,** 44.40 320 P P 11 11 57.3 +1.3
baz=127
DUG **Dugway, Tooele** 44.40 327 P P 11 11 57.9 +1.8
baz=134
DUG **Dugway, Tooele** 44.40 327 eP P 11 11 57.6 +1.5
20nm,1.8s
E27A **Carson** 44.51 341 P P 11 11 56.9 +0.1
baz=152,SNR=5.7
MPMC **Manual Prospec** 44.57 319 P P 11 11 58.7 +1.2
baz=126
PD31 **Pinedale Array** 44.63 332 eP P 11 11 58.4 +0.4
PDAR **Pinedale Array** 44.63 332 P P 11 11 58.7 +0.7
1.2nm,0.9s,baz=128,slow=9.6,SNR=10
PDAR LR LR 11 32 47.1
comp=Z,149nm,18.4s,baz=148,slow=39
BW06 **Boulder Array** 44.63 332 P P 11 11 58.7 +0.7
baz=140
BW06 **Boulder Array** 44.63 332 eP P 11 11 58.4 +0.4
B34A **Aery, Baudette** 44.63 349 P P 11 11 55.7 -1.9
baz=163
C31A **Landman Farms,** 44.66 346 P P 11 11 57.0 -0.9
baz=158
R11A **Troy Canyon, C** 44.77 323 P P 11 12 00.2 +1.1
baz=130,SNR=12
R11A **Troy Canyon, C** 44.77 323 eP P 11 12 00.6 +1.5
11nm,1.3s
E26A **Carlson Angus** 44.83 341 P P 11 11 58.9 -0.5
baz=151
ARVC **Arvin** 44.94 317 P P 11 12 02.0 +1.7
baz=124
BGU **Big Grassy Mou** 45.03 327 eP P 11 12 02.6 +1.5
19nm,1.4s
GRAC **Grapevine Rang** 45.04 320 P P 11 12 02.6 +1.4
baz=127
E25A **Miller Ranch,** 45.18 340 P P 11 12 01.6 -0.5
baz=150
MDND **Maddock** 45.20 344 P P 11 12 01.9 -0.3
baz=156
AHID **Auburn Hatcher** 45.37 330 eP P 11 12 03.8 -0.1
24nm,1.8s
HVU **Hansel Valley** 45.50 328 eP P 11 12 05.9 +1.0
6.8nm,1.2s
REDW **Red Top Meadow** 45.70 331 eP P 11 12 07.6 +1.1
22nm,1.4s
B29A **Wagenman Farm,** 45.70 345 P P 11 12 06.2 +0.1
baz=156
D25A **Fairfield** 45.71 340 P P 11 12 06.6 +0.2
baz=151
SNOW **Snow King Moun** 45.73 331 eP P 11 12 08.1 +1.3
14nm,1.3s
LOHW **Long Hollow** 45.77 332 eP P 11 12 08.0 +1.0
15nm,1.8s
SMMC **Simmler** 45.84 316 P P 11 12 09.3 +1.8
baz=123
C26A **Wahner Farm, P** 45.91 342 P P 11 12 08.0 +0.2
baz=152
MOOW **Moose Ponds** 45.94 332 eP P 11 12 08.7 +0.3
6.2nm,1.4s
B28A **Dugan Ranch, T** 45.96 344 P P 11 12 08.2 0.0
baz=155
ELK **Elko** 46.13 325 eP P 11 12 10.8 +0.8
7.4nm,1.1s
FLWY **Flagg Ranch** 46.17 332 eP P 11 12 10.6 +0.4
12nm,1.4s
RLMT **Red Lodge** 46.33 334 P P 11 12 11.9 +0.5
baz=142
RLMT **Red Lodge** 46.33 334 eP P 11 12 11.8 +0.4
4.4nm,1.0s
LAO **LASA Array** 46.36 338 P P 11 12 11.2 -0.2
baz=147
LAO **LASA Array** 46.36 338 eP P 11 12 11.9 +0.5
48nm,1.6s
NV11 **Mina Array Sit** 46.40 321 eP P 11 12 13.4 +1.4
19nm,1.2s
NV01 **Mina Array Sit** 46.49 321 eP P 11 12 13.9 +1.1
NVAR **Mina Array Bea** 46.49 321 P P 11 12 14.6 +1.7
7.7nm,0.9s,baz=136,slow=7.7,SNR=48
NVAR LR LR 11 31 46.5
comp=Z,175nm,20.1s,baz=159,slow=36
YFT **Old Faithful** 46.51 332 eP P 11 12 14.2 +1.3
7.4nm,1.0s
B25A **Knox Farm, Ray** 46.64 341 P P 11 12 13.9 +0.3
baz=151
YMR **Madison River** 46.74 332 eP P 11 12 15.5 +0.8
5.2nm,1.0s
A26A **Wade Farm, Ken** 46.85 343 P P 11 12 15.4 +0.2
baz=153
BMN **Battle Mountai** 47.07 324 eP P 11 12 18.4 +1.2
13nm,1.0s
QLMT **Earthquake Lak** 47.08 332 eP P 11 12 19.4 +2.2
DGMT **Dagmar** 47.15 341 P P 11 12 17.8 +0.3
baz=150
DGMT **Dagmar** 47.15 341 eP P 11 12 18.0 +0.4
61nm,1.6s
WAKR **Walker** 47.26 320 eP P 11 12 20.6 +1.9
HLID **Hailey** 47.62 329 P P 11 12 22.3 +0.8
baz=135
HLID **Hailey** 47.62 329 eP P 11 12 22.2 +0.8
25nm,1.9s
BOZ **Bozeman (W)** 47.79 333 P P 11 12 23.2 +0.5
baz=139,SNR=5.6
BOZ **Bozeman (W)** 47.79 333 eP P 11 12 23.1 +0.4
10nm,1.3s
EGMT **Eagleton** 48.83 336 P P 11 12 31.7 +1.0
baz=143
WVOR **Wild Horse Val** 49.16 325 eP P 11 12 33.9 +0.5
31nm,1.2s
ORV **Oroville** 49.17 320 eP P 11 12 34.6 +1.2
12nm,1.1s
MSO **Missoula** 49.74 332 P P 11 12 38.1 +0.4
baz=137
MSO **Missoula** 49.74 332 eP P 11 12 37.8 +0.2
11nm,1.4s
O03D **Paynes Creek** 49.78 321 P P 11 12 38.2 +0.1
baz=125
M04C **Macdoel** 50.66 322 P P 11 12 45.7 +1.0
baz=126
K04D **Chiloquin, OR** 51.10 323 P P 11 12 48.8 +0.7
baz=126
YBH **Yreka Blue Hor** 51.16 322 P P 11 12 47.2 -1.3
3.5nm,0.9s,baz=83,slow=2.3,SNR=4.4
J05D **Fort Rock, OR** 51.19 324 P P 11 12 49.5 +0.7
baz=127
SCHQ **Schefferville** 51.42 12 LR LR 11 37 03.8
comp=Z,43nm,18.2s,baz=40,slow=39
FFC **Flin Flon** 52.09 346 eP P 11 12 55.4 +0.3
39nm,1.8s
FCC **Fort Churchill** 54.46 353 eP P 11 13 11.7 -0.7
12nm,1.3s
YKA **Yellowknife Ar** 62.12 344 P P 11 14 05.5 -0.4
2.1nm,1.0s,baz=138,slow=6.6,SNR=27
YKB5 **Yellowknife Ar** 62.12 344 eP P 11 14 05.8 -0.1
INK **Inuvik** 71.79 342 P P 11 15 08.8 +1.5
5.1nm,1.0s,baz=111,slow=7.2,SNR=7.9
BORG **Borgarnes** 73.65 23 LR LR 11 43 45.3
comp=Z,34nm,19.2s,baz=162,slow=33
IL1 **Eielson Array** 74.80 336 eP P 11 15 24.8 -0.4
ILAR **Eielson Array** 74.80 336 P P 11 15 25.3 +0.1
0.5nm,0.7s,baz=123,slow=3.8,SNR=6.3
ILAR LR LR 11 52 18.5
comp=Z,52nm,18.1s,baz=136,slow=39
RND **Reindeer** 75.13 335 eP P 11 15 28.0 +0.8
MDT **Midelt** 77.33 58 P P 11 15 41.3 +0.8
2.6nm,0.9s,baz=271,slow=6.0,SNR=4.1
ESDC **Sonseca Array** 78.20 51 LR LR 11 43 41.3
comp=Z,27nm,21.1s,baz=325,slow=31
TORD **Torodi Ar. Bea** 83.43 77 P P 11 16 14.7 +1.2
1.6nm,1.2s,baz=230,slow=3.7,SNR=5.6
NOA **NORSAR Array B** 87.64 29 LR LR 11 55 36.2
comp=Z,20nm,18.1s,baz=270,slow=36
GERES **GERESS Array B** 90.54 41 LR LR 11 50 22.2
comp=Z,54nm,20.6s,baz=286,slow=31
ARCES **ARCESS Array B** 91.72 20 LR LR 11 52 28.4
comp=Z,56nm,20.7s,baz=271,slow=32
VRAC **Vranov** 92.35 40 LR LR 11 51 41.8
comp=Z,78nm,21.1s,baz=298,slow=31
FINES **FINESS Array B** 94.57 27 LR LR 11 57 08.6
comp=Z,36nm,20.5s,baz=306,slow=34
H11N3 **WAKE ISLAND Hy** 107.41 292 T T 13 18 14.3
baz=79,slow=75,SNR=69
H11N2 **WAKE ISLAND Hy** 107.42 292 T T 13 18 20.4
baz=79,slow=75,SNR=53
H11N1 **WAKE ISLAND Hy** 107.42 292 T T 13 18 18.4
baz=79,slow=75,SNR=81
KURK **Kurchatov** 122.32 14 PKP PKPdf 11 22 42.1 +1.7

KURBB	**Kurchatov Arra**	**122.38**	**14**	PKP		**PKPdf**	**11 22 42.1**	**+1.6**
	0.3nm,0.7s,baz=334,slow=2.1,SNR=3.4							
MKAR	**Makanchi Array**	**126.84**	**13**	PKP		**PKPdf**	**11 22 49.5**	**+0.1**
	0.2nm,0.2s,baz=276,slow=2.8,SNR=3.2							
WMQ	**Urumqi**	**130.74**	**9**	*e*PKP		**PKPdf**	**11 22 56.8**	**-0.1**
WMQ				AMB		AMB		
	comp=Z,15nm,3.6s							
WMQ				LR		LR		
	comp=N,18nm,15.6s							
WMQ				LR		LR		
	comp=E,19nm,17.6s							
NJ2	**Nanjing**	**137.94**	**332**	*e*PKP		**PKPdf**	**11 23 09.6**	**-1.0**
ASAR	**Alice Springs**	**140.13**	**238**	PKP		**PKPdf**	**11 23 14.2**	**-0.7**
	0.4nm,0.7s,baz=109,slow=1.8,SNR=3.5							
CD2	**Chengdu**	**143.88**	**351**	PKP		PKPbc	11 23 19.6	+0.6
CMAR	**Chiang Mai Arr**	**156.75**	**356**	PKPab		**PKPab**	**11 24 11.4**	**+0.8**
	1.3nm,1.1s,baz=350,slow=5.3,SNR=4.6							

IDC 13 11:06:32.5±10.0, 4°.57S×153°.78E, h99km±64km, mb3.4/3, mb1 3.7/4, mb1mx3.2/51, mbtmp3.9/4, ML2.7/1, Error ellipse: s-maj=94.0km s-min=71.1km az=173.0, New Ireland region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PMG	**Port Moresby**	**8.14**	**233**	P	Pn	11 08 28.5	+0.6
	4.9nm,0.3s,baz=46,slow=6.0,SNR=17						
PMG				S	Sn	11 09 58.3	-0.1
	1.4nm,0.3s,baz=163,slow=20,SNR=4.7						
WRA	**Warramunga Arr**	**24.33**	**229**	P	P	11 11 41.9	+0.7
	2.6nm,0.5s,baz=55,slow=10,SNR=42						
ASAR	**Alice Springs**	**26.98**	**223**	P	P	11 12 04.7	-0.5
	0.2nm,0.5s,baz=56,slow=8.9,SNR=7.5						
STKA	**Stephens Creek**	**29.48**	**201**	P	P	11 12 26.9	-0.3
	0.6nm,0.6s,baz=23,slow=15,SNR=3.0						

IDC 13 11:17:13.8±8.0, 6°.54S×129°.24E, h128km±82km, mb3.5/2, mb1 3.5/6, mb1mx3.2/54, mbtmp3.9/6, MS3.2/1, Ms1 3.2/1, ms1mx2.5/21, Error ellipse: s-maj=67.6km s-min=27.5km az=38.0, Banda Sea

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
BATI	**Baumata**	**6.61**	**236**	P	Pn	11 18 50.2	+1.6
	1.8nm,0.3s,baz=107,slow=19,SNR=4.3						
BATI				S	Sn	11 20 02.7	-0.1
	4.0nm,0.3s,baz=281,slow=24,SNR=4.6						
FITZ	**Fitzroy Crossi**	**12.02**	**197**	P	Pn	11 19 59.5	-1.5
	0.7nm,0.3s,baz=35,slow=12,SNR=16						
FITZ				S	Sn	11 22 05.0	-8.5
	0.4nm,0.3s,baz=90,slow=19,SNR=3.3						
WRA	**Warramunga Arr**	**14.21**	**160**	P	Pn	11 20 27.6	-1.8
	0.1nm,0.3s,baz=338,slow=12,SNR=4.5						
WRA				S	Sn	11 22 55.9	-11
	0.2nm,0.3s,baz=329,slow=22,SNR=2.8						
ASAR	**Alice Springs**	**17.61**	**166**	P	Pn	11 21 12.4	+1.1
	0.6nm,0.3s,baz=338,slow=9.7,SNR=89						
ASAR				S	S	11 24 22.9	-4.3
	0.1nm,0.3s,baz=325,slow=16,SNR=6.5						
LEM	**Lembang**	**21.48**	**268**	LR	LR	11 31 29.4	
	comp=Z,56nm,18.4s,baz=220,slow=40						
MKAR	**Makanchi Array**	**67.43**	**327**	P	P	11 27 55.7	0.0
	0.7nm,0.5s,baz=118,slow=8.0,SNR=11						
KURBB	**Kurchatov Arra**	**71.73**	**329**	P	P	11 28 21.8	-0.1
	0.5nm,0.5s,baz=126,slow=5.0,SNR=8.9						

JMA 13 11:20:16.7, 37°.03N×140°.72E, h8km±1km, M2.6, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.10**	**41**	P	Pg	11 20 19.2	+0.1
ONAJ				S	Sg	11 20 21.0	+0.3
JFK	**Kawauchi**	**0.36**	**20**	P	Pg	11 20 23.8	0.0
JFK				S	Sg	11 20 28.9	+0.4
JHO	**Hitachi**	**0.44**	**196**	P	Pg	11 20 24.9	-0.3
JHO				S	Sg	11 20 30.9	0.0
JFT	**Otama**	**0.57**	**328**	P	Pg	11 20 28.1	+0.3
JFT				S	Sg	11 20 35.8	+0.4
MAT	**Matsushiro**	**2.08**	**257**	P	Pb	11 20 53.3	-1.3
MAT				S	Sb	11 21 20.1	-0.5

GUC 13 11:27:16.0±0.6, 23°.15S×69°.38W, h80km±4km, ML3.7, 1C-6D, Northern Chile

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PB06	**IPOC Station P**	**0.48**	**338**	⇓*i*P	Pn	11 27 29.8	+0.1
PB06				*i* S	Sn	11 27 40.6	+0.7
PB06				IAML		11 27 40.9	
	comp=E,5μm,0.1s						
PB04	**IPOC Station P**	**1.08**	**319**	⇓*i*P	Pn	11 27 36.4	+0.2
PB04				*i* S	Sn	11 27 52.3	+1.0
PB10	**IPOC Station P**	**1.14**	**251**	⇑*i*P	Pn	11 27 36.7	0.0
PB10				*i* S	Sn	11 27 53.0	+0.7
PB07	**IPOC Station P**	**1.49**	**342**	⇓*i*P	Pn	11 27 42.2	+0.8
PB07				*i* S	Sn	11 28 02.1	+1.5
PB14	**IPOC Station P**	**1.74**	**212**	⇓*i*P	Pn	11 27 46.0	+1.3
PB14				IAML		11 28 12.0	
	comp=N,1μm,0.6s						
PB01	**IPOC Station P**	**2.10**	**357**	⇓*i*P	Pn	11 27 50.4	+1.1
PB01				*i* S	Sn	11 28 16.2	+1.4
PB01				IAML		11 28 20.9	
	comp=E,592nm,0.4s						
HMBC	**Humberstone**	**2.90**	**351**	*e*P	Pn	11 28 00.5	+0.4
HMBC				IAML		11 28 42.9	
	comp=N,395nm,0.5s						
PB08	**IPOC Station P**	**3.00**	**4**	⇓*i*P	Pn	11 28 02.7	+0.9

IDC 13 11:58:48.5±1.2, 36°.91N×140°.71E, h0km, mb3.3/3, mb1 3.5/6, mb1mx3.3/54, mbtmp3.4/6, ML3.1/3, Error ellipse: s-maj=28.1km s-min=18.8km az=110.0
ISCJB 13 11:58:49.1±0.5, 37°.00N±0°.03×140°.70E±0°.05, h19km±5km, mb3.3/3, Error ellipse: s-maj=6.8km s-min=5.1km az=25.8
JMA 13 11:58:49.4, 37°.01N×140°.65E, h15km±1km, M3.5 Broadband fault plane solution: P waves. NP1: ϕs45.00000°, δ81.00000°, λ86.00000°. NP2: ϕs248.00000°, δ10.00000°, λ113.00000°. Principal axes: T Plg54.0000°, Azm310.0000°; N Plg4.0000°, Azm45.0000°; P Plg36.0000°, Azm138.0000°;
JMA Felt II J1.
ISC 13 11:58:49.1±1.1, 36°.99N±0°.05×140°.63E±0°.04, h9km±9km, n19, σ0s79/21, mb3.4/3, 1C-4D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.18**	**50**	⇑P	**Pg**	**11 58 53.4**	**+0.5**
ONAJ				S	**Sg**	**11 58 56.1**	**+0.6**
JHO	**Hitachi**	**0.38**	**187**	⇓P	**Pb**	**11 58 57.3**	**-0.8**
JHO				S	**Sb**	**11 59 02.9**	**-1.1**
JFK	**Kawauchi**	**0.43**	**27**	⇓P	**Pg**	**11 58 57.3**	**-0.2**
JFK				S	**Sg**	**11 59 02.9**	**-0.2**
JSB	**Shiboa**	**0.57**	**268**	⇓P	**Pb**	**11 59 01.2**	**-0.1**
JSB				S	**Sb**	**11 59 09.3**	**-0.2**
JFT	**Otama**	**0.58**	**336**	⇓P	**Pg**	**11 59 00.5**	**+0.1**
JFT				S	**Sg**	**11 59 08.1**	**+0.1**
JFY	**Yanaizu**	**0.85**	**300**	P	**Pg**	**11 59 05.5**	**0.0**
JFY				S	**Sg**	**11 59 16.3**	**-0.2**
JMM	**Marumori**	**0.89**	**8**	P	**Pg**	**11 59 05.3**	**-0.9**
JMM				S	**Sg**	**11 59 16.9**	**-0.9**
MJAR	**Matsushiro Arr**	**1.99**	**258**	Pn	**Pn**	**11 59 23.6**	**+0.5**
	4.6nm,0.3s,baz=81,slow=17,SNR=29						
MJAR				Sn	**Sb**	**11 59 49.9**	**-0.7**
	9.5nm,0.3s,baz=83,slow=29,SNR=18						
JHJ	**Hachijo jima 2**	**3.92**	**190**	Pn	**Pn**	**11 59 49.9**	**+0.4**
	8.0nm,0.3s,baz=51,slow=19,SNR=4.1						
ASAJ	**Asahikawa**	**7.28**	**11**	Pn	**Pn**	**12 00 35.2**	**-0.4**
	0.2nm,0.3s,baz=358,slow=16,SNR=3.2						
H11N2	**WAKE ISLAND Hy**	**28.67**	**120**	T	T	12 34 32.0	
	baz=313,slow=75,SNR=82						
H11N1	**WAKE ISLAND Hy**	**28.68**	**120**	T	T	12 34 36.7	
	baz=313,slow=75,SNR=107						
H11N3	**WAKE ISLAND Hy**	**28.68**	**120**	T	T	12 34 37.5	
	baz=313,slow=75,SNR=57						
H11S1	**WAKE ISLAND Hy**	**29.36**	**122**	T	T	12 35 26.8	
	baz=314,slow=76,SNR=183						
H11S3	**WAKE ISLAND Hy**	**29.37**	**122**	T	T	12 35 28.2	
	baz=314,slow=76,SNR=138						
H11S2	**WAKE ISLAND Hy**	**29.38**	**122**	T	T	12 35 29.0	
	baz=314,slow=76,SNR=95						
ILAR	**Eielson Array**	**49.87**	**32**	P	**P**	**12 07 43.3**	**+0.9**
	0.1nm,0.8s,baz=278,slow=6.3,SNR=2.6						
WRA	**Warramunga Arr**	**56.93**	**187**	P	**P**	**12 08 33.8**	**-0.9**
	0.4nm,0.5s,baz=2.7,slow=7.4,SNR=10						
ASAR	**Alice Springs**	**60.66**	**187**	P	**P**	**12 09 02.5**	**+1.8**
	0.2nm,0.6s,baz=18,slow=13,SNR=4.4						

NIED 13 12:05:00, 38°.10N×143°.00E, h8km, Mw4.2 Best double couple: M0 2.40000×10^15 NP1: ϕs198.00000°, δ42.00000°, λ-73.00000°. NP2: ϕs355.00000°, δ50.00000°, λ-105.00000°.
ISCJB 13 12:05:33.0±0.3, 38°.05N±0°.03×143°.10E±0°.04, h18km, mb4.3/55, MS3.6/6, Error ellipse: s-maj=4.5km s-min=3.6km az=23.6
IDC 13 12:05:32.0±0.5, 38°.07N×143°.15E, h0km, mb4.2/26, mb1 4.3/33, mb1mx4.2/58, mbtmp4.2/33, ML3.5/7, MS3.1/6, Ms1 3.2/6, ms1mx2.9/34, Error ellipse: s-maj=14.3km s-min=10.8km az=107.0
MOS 13 12:05:33.9±1.1, 38°.14N×143°.14E, h24km, mb4.5/34, Error ellipse: s-maj=8.7km s-min=5.8km az=96.0
JMA Felt I J1.
BJI 13 12:05:35.3, 38°.19N×143°.09E, h34km, mb4.5/42, mB4.8/29, Ms4.3/15, Ms7 4.4/7
NEIC 13 12:05:36.8±1.5, 38°.06N×143°.10E, h31km±10km, mb4.6/11, Error ellipse: s-maj=6.2km s-min=3.7km az=112.0
ISC 13 12:05:34.9±0.4, 38°.03N±0°.04×143°.05E±0°.05, h18km, n128, σ1s56/135, mb4.4/55, MS3.5/6, 1D, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**1.40**	**288**	P	**Pn**	**12 05 58.5**	**-1.0**
JIO				S	**Sn**	**12 06 16.1**	**-1.5**
OFUJ	**Ofunato**	**1.51**	**315**	P	**Pn**	**12 05 59.5**	**-1.5**
OFUJ				S	**Sn**	**12 06 18.0**	**-2.2**
JMK	**Ichinoseki**	**1.71**	**303**	P	**Pn**	**12 06 02.6**	**-1.1**
JMK				S	**Sn**	**12 06 23.2**	**-1.8**
JMM	**Marumori**	**1.79**	**266**	P	**Pn**	**12 06 04.4**	**-0.4**
JFK	**Kawauchi**	**1.84**	**250**	P	**Pn**	**12 06 05.4**	**-0.3**
JOU	**Okura**	**1.91**	**281**	P	**Pn**	**12 06 06.7**	**+0.2**
JOM	**Ohasama**	**1.99**	**317**	P	**Pn**	**12 06 06.5**	**-1.1**
JFT	**Otama**	**2.21**	**258**	P	**Pn**	**12 06 11.7**	**+1.1**
JYK	**Kaneyama**	**2.29**	**294**	P	**Pn**	**12 06 11.7**	**0.0**
JRG	**Rokugo**	**2.33**	**307**	P	**Pn**	**12 06 11.6**	**-0.7**
JYS	**Shirataka**	**2.36**	**276**	P	**Pn**	**12 06 13.4**	**+0.7**
JANG	**Nango**	**2.63**	**334**	P	**Pn**	**12 06 17.3**	**+0.9**
ERM	**Erimo**	**3.98**	**1**	*e*P	**Pn**	**12 06 35.8**	**+0.8**
ERM				*e*		12 07 21.0	
ERM	**Erimo**	**3.98**	**1**	*e*Pn	**Pn**	**12 06 35.8**	**+0.8**
ERM				*e*Sn	**Sn**	**12 07 21.0**	**-0.2**
MJAR	**Matsushiro Arr**	**4.13**	**250**	Pn	**Pn**	**12 06 39.4**	**+2.3**
	6.5nm,0.3s,baz=86,slow=25,SNR=40						
MAJO	**Matsushiro**	**4.13**	**250**	*e*P	**Pn**	**12 06 39.7**	**+2.6**
MAJO	**Matsushiro**	**4.13**	**250**	*e*Pn	**Pn**	**12 06 39.7**	**+2.6**
MAT	**Matsushiro**	**4.13**	**250**	P	**Pn**	**12 06 39.3**	**+2.2**
MAT				S	**Sb**	**12 07 33.7**	**-3.0**
INU	**Inuyama**	**5.53**	**243**	*e*Pn	**Pn**	**12 06 58.0**	**+1.6**
JHJ2	**Mitsune**	**5.57**	**209**	*e*Pn	**Pn**	**12 06 56.7**	**-0.1**
JHJ2				*e*Sn	**Sn**	**12 08 00.7**	**+0.4**
JHJ	**Hachijo jima 2**	**5.57**	**209**	Pn	**Pn**	**12 06 56.9**	**+0.1**
	37nm,0.3s,baz=322,slow=23,SNR=17						
JHJ				Sn	**Sn**	**12 07 59.6**	**-0.8**
	48nm,0.3s,baz=266,slow=22,SNR=5.7						
ASAJ	**Asahikawa**	**6.09**	**357**	Pn	**Pn**	**12 07 03.9**	**-0.1**
	2.3nm,0.3s,baz=209,slow=16,SNR=17						
ASAJ				Sn	**Sn**	**12 08 13.7**	**+0.4**
	1.7nm,0.3s,baz=313,slow=20,SNR=3.6						
ASAJ	**Asahikawa**	**6.09**	**357**	*e*Pn	**Pn**	**12 07 04.4**	**+0.4**
ASAJ				Sn	**Sn**	**12 08 13.7**	**+0.4**
YUK	**Yuzh-Kuril'sk**	**6.37**	**19**	*e*P	Pn	12 07 04.1	-3.6
YUK				*e*S	Sn	12 08 12.5	-7.4
YUK				pmax	pmax		
	comp=E,71nm,0.8s						
YUK				pmax	pmax		
	comp=Z,99nm,0.8s						
YUK				pmax	pmax		
	comp=N,49nm,0.4s						
SHO	**Shikotan**	**6.50**	**25**	*e*P	Pn	12 07 05.4	-4.2
SHO				*e*S	Sn	12 08 14.8	-8.4
SHO				pmax	pmax		
	comp=Z,45nm,0.4s						
SHO				pmax	pmax		
	comp=N,23nm,0.3s						
SHO				pmax	pmax		
	comp=E,20nm,0.2s						
KUR	**Kuril'sk**	**8.05**	**25**	*e*P	**Pn**	**12 07 28.4**	**-2.5**
KUR				*e*S	Sn	12 08 53.4	-8.0
KUR				pmax	pmax		
	comp=Z,21nm,0.5s						
KUR				pmax	pmax		
	comp=N,10.0nm,0.4s						
KUR				pmax	pmax		
	comp=E,11nm,0.1s						
USRK	**Ussuriysk Ar.**	**10.37**	**310**	Pn	**Pn**	**12 08 03.9**	**+1.2**
	comp=E,0.6nm,0.3s,baz=119,slow=12,SNR=13						
JNU	**Nakatsue**	**11.05**	**247**	Pn	**Pn**	**12 08 13.1**	**+1.1**
	comp=E,0.2nm,0.3s,baz=0.0,slow=4.0,SNR=3.5						
JNU				LR	LR	12 12 43.4	
	comp=E,140nm,20.6s,baz=29,slow=39						
KSRS	**Korea Array**	**11.99**	**272**	Pn	**Pn**	**12 08 27.1**	**+2.3**
	comp=E,0.2nm,0.3s,baz=91,slow=14,SNR=7.8						
KSRS				LR	LR	12 12 26.3	
	comp=E,89nm,18.7s,baz=38,slow=34						
KSAR	**Wonju Array Be**	**12.02**	**272**	P	**Pn**	**12 08 27.1**	**+1.8**
KSAR	**Wonju Array Be**	**12.02**	**272**	Pn	**Pn**	**12 08 27.1**	**+1.8**
MDJ	**Mudanjiang**	**12.06**	**307**	P	**Pn**	**12 08 25.8**	**0.0**
MDJ				pmax	pmax		
	comp=E,4.0nm,1.1s						
MDJ				pmax	pmax		
	comp=E,71nm,3.4s						
KLR	**Kul'dur**	**13.85**	**328**	Pn	**Pn**	**12 08 48.3**	**-1.8**
	comp=E,0.1nm,0.3s,baz=131,slow=11,SNR=6.2						
NKL	**Nikolayevsk**	**15.21**	**355**	*e*P	**Pn**	**12 09 07.2**	**-1.4**
DL2	**Dalian**	**16.80**	**280**	P	P	12 09 38.3	+7.1
DL2				*e*S	**S**	**12 12 52.5**	**+6.7**
DL2				pmax	pmax		
	comp=Z,33nm,1.1s						
DL2				LR	LR		
	comp=N,230nm,12.2s						
DL2				LR	LR		
	comp=E,220nm,11.3s						
DL2				LR	LR		
	comp=Z,260nm,11.6s						
PETK	**Petropavlovsk-**	**18.18**	**29**	LR	LR	12 17 42.6	
	comp=Z,14nm,18.5s,baz=214,slow=40						
BJI	**Beijing**	**20.95**	**284**	P	**P**	**12 10 16.8**	**+0.2**
BJI				S	**S**	**12 14 06.5**	**-2.8**
BJI				sS	**sS**	**12 14 22.3**	**+4.8**
BJI				pmax	pmax		
	comp=Z,10.0nm,0.8s						
MA2	**Magadan**	**22.13**	**10**	P	**P**	**12 10 29.0**	**-0.1**
	comp=Z,3.9nm,0.7s,baz=216,slow=9.3,SNR=5.6						
TPUB	**Ta-pu**	**24.15**	**239**	*e*P	**P**	**12 10 50.0**	**0.0**
	comp=Z,25nm,1.1s						
TPUB				*e*S	**S**	**12 15 03.9**	**-3.3**
HHC	**Hu-ho-hao-te**	**24.41**	**287**	*e*P	**P**	**12 10 52.3**	**-0.1**
HHC				pP	sP	12 11 02.1	+2.0
HHC				sP	pP	12 11 05.8	+8.0
HHC				S	**S**	**12 15 06.4**	**-4.9**
HHC				pmax	pmax		
	comp=Z,32nm,0.7s						
HHC				pmax	pmax		
	comp=Z,150nm,10.1s						
HHC				LR	LR		
	comp=Z,550nm,12.9s						
HHC				LR	LR		
	comp=Z,850nm,13.4s						
HHC				LR	LR		
	comp=Z,870nm,13.5s						
YAK	**Yakutsk**	**25.41**	**345**	P	**P**	**12 11 00.2**	**-0.8**
	comp=Z,9.6nm,0.3s,baz=70,slow=0.9,SNR=4.5						
YAK				LR	LR	12 22 02.0	
	comp=Z,59nm,19.5s,baz=180,slow=39						
YAK	**Yakutsk**	**25.41**	**345**	*e*P	**P**	**12 11 01.2**	**+0.2**
YAK				*e*		12 11 37.5	
YAK				*e*		12 14 33.1	
YAK				*e*S	**S**	**12 15 29.7**	**+3.0**
YAK				*e*SS	**SnSn**	**12 16 27.9**	**+8.8**
YAK				*e*		12 21 54.5	
YAK				pmax	pmax		
	comp=Z,11nm,0.9s						
YAK				pmax	pmax		
	comp=N,5.0nm,1.0s						
YAK				pmax	pmax		
	comp=E,2.0nm,0.9s						
YAK				pmax	pmax		
	comp=Z,16nm,1.3s						
YAK				smax	smax		
	comp=N,57nm,2.3s						
YAK				smax	smax		
	comp=E,39nm,2.5s						
YAK				MLR	MLR		
	comp=Z,81nm,18.0s						
YAK				MLR	MLR		
	comp=E,76nm,23.0s						
SEY	**Seymchan**	**25.58**	**10**	P	**P**	**12 11 03.5**	**+0.9**
	comp=E,7.2nm,0.6s,baz=192,slow=7.2,SNR=42						
BOD	**Bodaibo**	**27.41**	**326**	*e*P	**P**	**12 11 18.0**	**-1.2**
BOD				pmax	pmax		
	comp=Z,7.0nm,0.8s						
H11N2	**WAKE ISLAND Hy**	**27.59**	**125**	T	T	12 40 13.5	
	baz=317,slow=76,SNR=180						
H11N1	**WAKE ISLAND Hy**	**27.60**	**125**	T	T	12 40 23.0	
	baz=317,slow=76,SNR=120						
H11N3	**WAKE ISLAND Hy**	**27.61**	**125**	T	T	12 40 13.8	
	baz=317,slow=76,SNR=150						
ULN	**Ulaanbaatar**	**27.90**	**302**	*e*P	**P**	**12 11 25.2**	**+1.4**
ULN				pmax	pmax		
	comp=Z,8.0nm,1.3s						
ULN	**Ulaanbaatar**	**27.90**	**302**	*e*P	**P**	**12 11 25.2**	**+1.4**
	comp=Z,8.2nm,1.3s						
SONA1	**Songino Array**	**28.33**	**302**	*e*P	**P**	**12 11 27.9**	**+0.3**
SONM	**Songino Array**	**28.33**	**302**	P	**P**	**12 11 28.2**	**+0.5**
	comp=Z,1.5nm,0.6s,baz=96,slow=8.4,SNR=6.8						
SONM				LR	LR	12 24 05.0	
	comp=Z,72nm,18.9s,baz=48,slow=39						
H11S1	**WAKE ISLAND Hy**	**28.36**	**127**	T	T	12 41 07.8	
	baz=319,slow=76,SNR=79						
H11S3	**WAKE ISLAND Hy**	**28.36**	**127**	T	T	12 41 15.5	
	baz=319,slow=76,SNR=72						
H11S2	**WAKE ISLAND Hy**	**28.38**	**127**	T	T	12 41 18.1	
	baz=319,slow=76,SNR=67						
TLY	**Talaya**	**30.69**	**309**	P	**P**	**12 11 49.0**	**+0.7**
	comp=Z,2.1nm,0.6s,baz=79,slow=2.1,SNR=4.7						
TLY	**Talaya**	**30.69**	**309**	*e*P	**P**	**12 11 49.8**	**+1.4**
TLY				pmax	pmax		
	comp=Z,4.0nm,0.9s						
TLY				MLR	MLR		
	comp=Z,101nm,13.0s						
TLY	**Talaya**	**30.69**	**309**	*e*P	**P**	**12 11 48.7**	**+0.4**
	comp=Z,3.8nm,0.9s						
ZAK	**Zakamensk**	**30.70**	**307**	*e*P	**P**	**12 11 47.2**	**-1.4**
ZAK				pmax	pmax		
	comp=Z,4.0nm,1.1s						
LZH	**Lanzhou**	**31.19**	**279**	*e*P	P	12 11 59.9	+6.7
LZH				pP	sP	12 12 11.3	+10
LZH				sP	pP	12 12 15.3	+17
LZH				pmax	pmax		
	comp=Z,17nm,1.0s						
GYA	**Guiyang**	**32.67**	**260**	*e*P	**P**	**12 12 06.3**	**+0.1**
GYA				pmax	pmax		
	comp=Z,10.0nm,0.8s						
BILL	**Bilibino**	**32.71**	**16**	*i* P	P	12 12 01.3	-4.6
BILL				pmax	pmax		
	comp=Z,3.0nm,0.9s						
CD2	**Chengdu**	**32.98**	**270**	P	**P**	**12 12 07.9**	**-0.8**
CD2				pmax	pmax		
	comp=Z,1.0nm,0.5s						
GTA	**Gaotai**	**33.52**	**286**	*e*P	**P**	**12 12 14.8**	**+1.3**
GTA				pP	sP	12 12 24.1	+2.8
GTA				sP	pP	12 12 27.8	+8.7
GTA				S	**S**	**12 17 33.3**	**-1.5**
GTA				sS	sS	12 17 49.6	+5.7
GTA				SS	**SnSn**	**12 19 37.0**	**-0.4**
GTA				pmax	pmax		
	comp=Z,9.0nm,0.5s						
GTA				pmax	pmax		
	comp=Z,120nm,7.6s						
GTA				LR	LR		
	comp=Z,120nm,11.9s						
GTA				LR	LR		
	comp=Z,180nm,14.3s						
KMI	**Kunming**	**36.40**	**261**	P	**P**	**12 12 38.8**	**+0.3**
KMI				pP	sP	12 12 50.9	+4.6
KMI				pmax	pmax		
	comp=Z,11nm,1.1s						
KMI				LR	LR		
	comp=Z,150nm,6.3s						
KMI				LR	LR		
	comp=Z,70nm,9.3s						
JAY	**Jayapura**	**40.40**	**184**	P	**P**	**12 13 12.2**	**+0.2**
	comp=Z,0.4nm,0.5s,baz=180,slow=20,SNR=3.4						
WMQ	**Urumqi**	**41.56**	**296**	*e*P	**P**	**12 13 23.0**	**+1.6**
WMQ				pmax	pmax		
	comp=Z,5.0nm,0.6s						
WMQ				pmax	pmax		
	comp=Z,55nm,3.8s						
ZAAO	**Zalesovo Array**	**42.22**	**312**	*e*P	**P**	**12 13 26.1**	**-0.5**
ZALV	**Zalesovo Beam**	**42.22**	**312**	P	**P**	**12 13 26.6**	**0.0**
	comp=Z,3.9nm,0.4s,baz=86,slow=7.9,SNR=21						
ZALV				PcP	**PcP**	**12 15 19.6**	**-0.7**
	comp=Z,1.8nm,0.6s,baz=70,slow=3.9,SNR=3.9						
CHTO	**Chiang Mai**	**42.79**	**256**	P	**P**	**12 13 32.0**	**+0.4**
CHTO				pmax	pmax		
	comp=Z,5.0nm,1.2s						
CMAR	**Chiang Mai Arr**	**43.00**	**256**	P	**P**	**12 13 34.4**	**+1.1**
	comp=Z,0.9nm,0.7s,baz=46,slow=6.0,SNR=11						
CMAR				LR	LR	12 32 22.2	
	comp=Z,32nm,19.6s,baz=355,slow=37						
CM01	**Chiang Mai Arr**	**43.01**	**256**	*e*P	**P**	**12 13 33.4**	**0.0**
NVS	**Novosibirsk**	**43.10**	**313**	*e*P	**P**	**12 13 33.6**	**-0.1**
MKAR	**Makanchi Array**	**44.70**	**302**	P	**P**	**12 13 46.4**	**-0.3**
	comp=Z,2.4nm,0.7s,baz=86,slow=9.1,SNR=15						
MKAR	**Makanchi Array**	**44.70**	**302**	P	**P**	**12 13 46.4**	**-0.3**
MKAR				pmax	pmax		
	comp=Z,3.0nm,0.7s						
MKAR	**Makanchi Array**	**44.70**	**302**	*e*P	**P**	**12 13 47.0**	**+0.3**
MAKZ	**Makanchi**	**44.91**	**302**	*e*P	**P**	**12 13 48.5**	**+0.1**
MAKZ				pmax	pmax		
	comp=Z,3.0nm,0.8s						
MAKZ	**Makanchi**	**44.91**	**302**	*e*P	**P**	**12 13 48.5**	**+0.1**
	comp=Z,2.7nm,0.8s						
KDAK	**Kodiak Island**	**45.49**	**43**	*i* P	**P**	**12 13 53.5**	**+0.7**
KURK	**Kurchatov**	**46.35**	**308**	*e*P	**P**	**12 13 59.5**	**-0.2**
KURK				pmax	pmax		
	comp=Z,13nm,0.9s						
KURK	**Kurchatov**	**46.35**	**308**	*e*P	**P**	**12 13 59.5**	**-0.2**

SFK	**Sufi-Kurgan**	**52.78**	**295**	P	**P**	**12**	**14**	**51.0**	**+1.8**
SFK				pmax	pmax				
	comp=Z,3.0nm,0.7s								
INK	**Inuvik**	**52.91**	**28**	P	**P**	**12**	**14**	**49.0**	**-0.3**
	comp=Z,0.7nm,0.7s,baz=300,slow=5.9,SNR=5.9								
ARU	**Arti**	**56.48**	**318**	*d iP*	**P**	**12**	**15**	**14.9**	**-0.5**
ARU						12	17	16.8	
ARU				S	**S**	**12**	**23**	**03.9**	**-1.6**
ARU				pmax	pmax				
	comp=Z,15nm,2.5s								
WRAB	**Tennant Creek**	**58.23**	**190**	*eP*	**P**	**12**	**15**	**28.0**	**-0.1**
WRAB				pmax	pmax				
	comp=Z,12nm,0.8s								
WRAB	**Tennant Creek**	**58.23**	**190**	*eP*	**P**	**12**	**15**	**28.0**	**-0.1**
	comp=Z,12nm,0.8s								
WB2	**Warramunga Arr**	**58.24**	**190**	*eP*	**P**	**12**	**15**	**28.4**	**+0.3**
	comp=Z,12nm,0.8s								
WRA	**Warramunga Arr**	**58.24**	**190**	P	**P**	**12**	**15**	**28.5**	**+0.3**
	comp=Z,9.3nm,0.7s,baz=7,9,slow=7.0,SNR=80								
ABKAR	**Akbulak array**	**58.29**	**310**	*eP*	**P**	**12**	**15**	**28.2**	**-0.1**
RES	**Resolute Bay**	**61.31**	**15**	P	**P**	**12**	**15**	**48.5**	**-0.2**
	comp=Z,1.8nm,0.9s,baz=297,slow=6.7,SNR=4.9								
AS01	**Alice Springs**	**61.96**	**189**	*eP*	**P**	**12**	**15**	**53.5**	**-0.2**
ASAR	**Alice Springs**	**61.96**	**190**	P	**P**	**12**	**15**	**54.3**	**+0.6**
	comp=Z,1.9nm,0.7s,baz=6.2,slow=5.7,SNR=33								
YKA	**Yellowknife Ar**	**62.30**	**31**	P	**P**	**12**	**15**	**55.1**	**-0.4**
	comp=Z,0.5nm,0.7s,baz=304,slow=6.8,SNR=12								
ARCES	**ARCESS Array B**	**63.52**	**340**	P	**P**	**12**	**16**	**03.0**	**-0.6**
	comp=Z,5.6nm,1.1s,baz=50,slow=8.0,SNR=7.4								
ARCES	**ARCESS Array B**	**63.52**	**340**	P	**P**	**12**	**16**	**03.0**	**-0.6**
ARCES				pmax	pmax				
	comp=Z,5.0nm,1.1s								
OBN	**Obninsk**	**68.07**	**324**	*eP*	**P**	**12**	**16**	**32.4**	**-0.7**
OBN				pmax	pmax				
	comp=Z,5.0nm,0.9s								
FINES	**FINESS Array B**	**68.54**	**333**	P	**P**	**12**	**16**	**35.6**	**-0.3**
	comp=Z,3.2nm,0.7s,baz=61,slow=9.0,SNR=11								
STKA	**Stephens Creek**	**69.56**	**181**	P	**P**	**12**	**16**	**42.8**	**+0.3**
	comp=Z,3.4nm,0.7s,baz=359,slow=6.9,SNR=10								
KIV	**Kislovodsk**	**71.23**	**311**	*eP*	**P**	**12**	**16**	**51.0**	**-1.9**
KIV				pmax	pmax				
	comp=Z,9.0nm,1.0s								
NVAR	**Mina Array Bea**	**73.36**	**54**	P	**P**	**12**	**17**	**05.0**	**-0.8**
	comp=Z,0.8nm,0.8s,baz=296,slow=6.5,SNR=5.7								
NC204	**NORSAR Array S**	**73.71**	**338**	*eP*	**P**	**12**	**17**	**07.9**	**+0.6**
NB2	**NORSAR Subarra**	**73.77**	**338**	P	**P**	**12**	**17**	**07.4**	**-0.2**
	comp=Z,5.4nm,1.0s,baz=41,slow=6.2								
NOA	**NORSAR Array B**	**73.77**	**338**	P	**P**	**12**	**17**	**07.5**	**-0.1**
	comp=Z,3.4nm,0.8s,baz=39,slow=5.9,SNR=9.2								
AKASG	**Malin Array Be**	**74.30**	**323**	P	**P**	**12**	**17**	**10.8**	**-0.1**
	comp=Z,1.7nm,0.5s,baz=44,slow=6.0,SNR=7.2								
FRB	**Frobisher Bay**	**75.50**	**14**	P	**P**	**12**	**17**	**16.8**	**-0.8**
	comp=Z,3.6nm,0.7s,baz=358,slow=6.0,SNR=4.3								
PDAR	**Pinedale Array**	**76.04**	**46**	P	**P**	**12**	**17**	**20.8**	**-0.6**
	comp=Z,0.6nm,0.5s,baz=276,slow=1.1,SNR=12								
CLL	**Collm**	**80.87**	**331**	*i P*	**P**	**12**	**17**	**47.6**	**0.0**
	comp=Z,5.0nm,0.8s								
CLL				*e*		12	17	55.0	
CLL	**Collm**	**80.87**	**331**	*i P*	**P**	**12**	**17**	**47.6**	**0.0**
CLL				pmax	pmax				
	comp=Z,8.0nm,0.8s								
GERES	**GERESS Array B**	**82.54**	**329**	P	**P**	**12**	**17**	**56.3**	**-0.3**
	comp=Z,0.6nm,0.4s,baz=23,slow=4.5,SNR=5.1								
ANMO	**Albuquerque**	**82.95**	**51**	P	**P**	**12**	**17**	**59.2**	**+0.1**
	comp=Z,1.0nm,0.7s,baz=265,slow=11,SNR=3.2								
TXAR	**Lajitas Array**	**88.49**	**53**	P	**P**	**12**	**18**	**26.7**	**+0.2**
	comp=Z,0.3nm,0.6s,baz=298,slow=2.3,SNR=6.1								
VNA2	**Neumayer--Watz**	**143.63**	**196**	PKP	PKPbc	12	25	05.9	+1.0
	baz=108,slow=1.8								
LPAZ	**La Paz**	**145.07**	**60**	PKP	**PKPbc**	**12**	**25**	**11.5**	**-0.3**
	comp=Z,0.6nm,0.4s,baz=344,slow=4.8,SNR=3.4								

*JMA **13** 12:41:46.9±0.2,36°.37N×142°.24E,h69km,M3.0*
*IDC **13** 12:41:58.8±4.2,35°.75N×141°.14E,h80km±38km,mb3.1/6, mb1 3.3/7,mb1mx3.1/51,mbtmp3.3/7,MS3.6/1,Ms1 3.6/1, ms1mx2.2/22,Error ellipse: s-maj=36.4km s-min=22.0km az=86.0*
ISC 13 12:41:45.9±4.0,**36°.37N**±0°.06×**142°.13E**±0°.09,**h5**km±25km, **n16**,σ1§**18**/19,**mb3.5**/6,**Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h	m	s	Res ISC
CHOJ	**Chosi**	**1.23**	**238**	P		**Pb**	**12**	**42**	**09.6**	**+0.1**
CHOJ				eS		**Sn**	**12**	**42**	**27.3**	**+0.7**
JHO	**Hitachi**	**1.28**	**281**	P		**Pn**	**12**	**42**	**09.9**	**-0.6**
JHO				eS		**Sb**	**12**	**42**	**27.5**	**+0.2**
JMM	**Marumori**	**1.84**	**325**	P		**Pn**	**12**	**42**	**17.9**	**-0.2**
JMM				eS		**Sn**	**12**	**42**	**41.8**	**0.0**
BSO1	**Boso 1**	**1.95**	**209**	S		**Sn**	**12**	**42**	**44.1**	**+0.4**
JAG	**Ashikaga**	**2.16**	**272**	P		**Pn**	**12**	**42**	**22.9**	**+0.4**
JAG				eS		**Sn**	**12**	**42**	**49.8**	**+0.1**
JRY	**Ryogami san**	**2.64**	**263**	P		**Pn**	**12**	**42**	**29.2**	**+0.1**
JRY				eS		**Sn**	**12**	**43**	**01.0**	**-0.5**
JOD2	**Odawara 2**	**2.71**	**247**	P		**Pn**	**12**	**42**	**30.7**	**+0.6**
MJAR	**Matsushiro Arr**	**3.17**	**274**	P		**Pn**	**12**	**42**	**37.3**	**+0.9**
	1.8nm,0.3s,baz=97,slow=8.6,SNR=15									
MAT	**Matsushiro**	**3.17**	**274**	P		**Pn**	**12**	**42**	**37.7**	**+1.3**
MAT				eS		**Sb**	**12**	**43**	**19.1**	**-2.5**
JCJ	**Chichijima**	**9.24**	**180**	LR		LR	12	47	19.3	
	comp=Z,408nm,21.3s,baz=354,slow=37									
SONM	**Songino Array**	**28.64**	**305**	P		**P**	**12**	**47**	**43.6**	**+0.3**
	0.5nm,0.7s,baz=100,slow=7.6,SNR=4.1									
MKAR	**Makanchi Array**	**44.96**	**303**	P		**P**	**12**	**50**	**04.0**	**+2.1**
	0.2nm,0.3s,baz=82,slow=10,SNR=3.3									
WRA	**Warramunga Arr**	**56.48**	**189**	P		**P**	**12**	**51**	**27.0**	**-1.9**
	0.3nm,0.5s,baz=6.4,slow=7.3,SNR=7.0									
ASAR	**Alice Springs**	**60.21**	**189**	P		**P**	**12**	**51**	**53.5**	**-1.4**
	0.2nm,0.7s,baz=8.3,slow=7.7,SNR=3.3									
YKA	**Yellowknife Ar**	**64.09**	**30**	P		P	12	52	29.2	+8.7
	0.2nm,0.6s,baz=301,slow=6.7,SNR=5.3									
TXAR	**Lajitas Array**	**90.07**	**53**	P		P	12	54	56.1	+9.0
	0.2nm,0.7s,baz=291,slow=3.5,SNR=3.6									

*ISCJB **13** 12:47:04.6±0.6,39°.39N±0°.04×143°.75E±0°.06,h11km, mb3.6/11,MS3.6/2,Error ellipse: s-maj=7.1km s-min=5.8km az=28.9*
*IDC **13** 12:47:04.4±0.9,39°.31N×143°.79E,h0km,mb3.6/11, mb1 3.7/16,mb1mx3.6/54,mbtmp3.7/16,ML3.5/5,MS2.7/3, Ms1 2.7/3,ms1mx2.4/62,Error ellipse: s-maj=22.2km s-min=15.5km az=107.0*
*JMA **13** 12:47:06.6±0.2,39°.45N×143°.69E,h25km,M4.1*
ISC 13 12:47:06.7±0.9,**39°.40N**±0°.06×**143°.65E**±0°.08,**h11**km,**n32**, σ0§**98**/**32**,**mb3.7**/**11**,**Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h	m	s	Res ISC
MIYJ	**Miyakonagasawa**	**1.43**	**278**	P		**Pn**	**12**	**47**	**31.9**	**-0.6**
MIYJ				eS		**Sb**	**12**	**47**	**50.4**	**-1.1**
JTH	**Tanohata**	**1.48**	**292**	P		**Pn**	**12**	**47**	**32.4**	**-0.9**
JTH				eS		**Sn**	**12**	**47**	**51.4**	**-1.2**
OFUJ	**Ofunato**	**1.57**	**259**	P		**Pn**	**12**	**47**	**34.0**	**-0.5**
JOM	**Ohasama**	**1.82**	**273**	P		**Pn**	**12**	**47**	**38.0**	**0.0**
JANG	**Nango**	**1.91**	**301**	P		**Pn**	**12**	**47**	**38.0**	**-1.2**
JMK	**Ichinoseki**	**1.94**	**257**	P		**Pn**	**12**	**47**	**39.4**	**-0.2**
JRG	**Rokugo**	**2.33**	**271**	P		**Pn**	**12**	**47**	**45.5**	**+0.5**
JTM	**Tenmabayashi**	**2.41**	**306**	P		**Pn**	**12**	**47**	**46.0**	**-0.1**
JAH	**Hinai**	**2.45**	**290**	P		**Pn**	**12**	**47**	**46.7**	**+0.1**
JYK	**Kaneyama**	**2.60**	**260**	P		**Pn**	**12**	**47**	**49.1**	**+0.4**
JNBK	**Urakawa-nobuka**	**2.95**	**347**	P		**Pn**	**12**	**47**	**53.6**	**0.0**
JNBK				S		**Sn**	**12**	**48**	**28.0**	**-1.0**
ASAJ	**Asahikawa**	**4.78**	**351**	Pn		**Pn**	**12**	**48**	**18.2**	**-0.4**
	2.1nm,0.3s,baz=202,slow=9.9,SNR=23									
ASAJ				Sn		**Sn**	**12**	**49**	**14.1**	**+0.2**
	2.9nm,0.3s,baz=14,slow=10.0,SNR=4.6									
MJAR	**Matsushiro Arr**	**5.16**	**238**	Pn		**Pn**	**12**	**48**	**25.2**	**+1.3**
	3.0nm,0.3s,baz=46,slow=12,SNR=18									
MAT	**Matsushiro**	**5.16**	**238**	P		**Pn**	**12**	**48**	**25.2**	**+1.3**
JHJ	**Hachijo jima 2**	**7.00**	**208**	Pn		**Pn**	**12**	**48**	**47.8**	**-1.4**
	7.6nm,0.3s,baz=41,slow=19,SNR=2.5									
JHJ				Sn		Sn	12	50	02.1	-6.7
	12nm,0.3s,baz=73,slow=19,SNR=2.8									
USRK	**Ussuriysk Ar.**	**9.94**	**303**	Pn		**Pn**	**12**	**49**	**31.5**	**+2.1**
	0.5nm,0.3s,baz=95,slow=14,SNR=8.8									
JNU	**Nakatsue**	**12.06**	**243**	LR		LR	12	54	59.9	
	comp=Z,63nm,21.1s,baz=113,slow=39									
KSRS	**Korea Array**	**12.49**	**266**	Pn		**Pn**	**12**	**50**	**06.5**	**+2.2**
	0.2nm,0.3s,baz=73,slow=13,SNR=3.0									
KLR	**Kul'dur**	**12.99**	**323**	LR		LR	12	55	00.3	
	comp=Z,8.6nm,18.8s,baz=134,slow=36									
SEY	**Seymchan**	**24.15**	**10**	P		**P**	**12**	**52**	**21.6**	**-0.8**
	1.5nm,0.3s,baz=52,slow=0.3,SNR=40									
SONM	**Songino Array**	**28.03**	**300**	P		**P**	**12**	**52**	**58.5**	**+0.6**
	0.5nm,0.6s,baz=96,slow=8.9,SNR=4.3									
TLY	**Talaya**	**30.20**	**307**	LR		LR	13	05	12.7	
	comp=Z,27nm,20.1s,baz=28,slow=36									
ZALV	**Zalesovo Beam**	**41.67**	**310**	P		**P**	**12**	**54**	**55.1**	**+0.1**
	1.2nm,0.4s,baz=91,slow=9.2,SNR=6.4									
CMAR	**Chiang Mai Arr**	**43.81**	**255**	P		**P**	**12**	**55**	**12.8**	**+0.1**
	0.2nm,0.4s,baz=45,slow=7.3,SNR=2.9									
MKAR	**Makanchi Array**	**44.40**	**300**	P		**P**	**12**	**55**	**17.2**	**0.0**
	0.3nm,0.3s,baz=79,slow=12,SNR=5.1									
BVAR	**Borovoye Array**	**50.31**	**311**	P		**P**	**12**	**56**	**03.5**	**+0.3**
	0.5nm,0.4s,baz=61,slow=8.0,SNR=3.6									
INK	**Inuvik**	**51.48**	**28**	P		**P**	**12**	**56**	**12.2**	**+0.5**
	0.6nm,0.6s,baz=322,slow=13,SNR=4.8									
WRA	**Warramunga Arr**	**59.67**	**190**	P		**P**	**12**	**57**	**09.5**	**-1.6**
	0.5nm,0.7s,baz=8.8,slow=7.0,SNR=7.3									
YKA	**Yellowknife Ar**	**60.88**	**31**	P		**P**	**12**	**57**	**19.5**	**+0.6**
	0.1nm,0.5s,baz=303,slow=6.5,SNR=4.0									
ASAR	**Alice Springs**	**63.40**	**190**	P		**P**	**12**	**57**	**34.8**	**-1.4**
	0.2nm,0.8s,baz=18,slow=6.8,SNR=3.7									
OBN	**Obninsk**	**67.25**	**323**	LR		LR	13	29	39.2	
	comp=Z,176nm,21.1s,baz=348,slow=38									
FINES	**FINESS Array B**	**67.53**	**333**	P		**P**	**12**	**58**	**02.7**	**+0.1**
	0.3nm,0.4s,baz=51,slow=4.4,SNR=3.0									

*NIED **13** 12:48:00,38°.40N×142°.20E,h17km,Mw3.9 Best double couple: M0 8.59000×10^14 NP1:φs184.00000°,δ58.00000°, λ-36.00000°. NP2:φs294.00000°,δ60.00000°, λ-143.00000°.*
*JMA **13** 12:48:10.5±0.2,38°.44N×142°.16E,h33km±3km,M4.2 JMA Felt II J1.*
*ISCJB **13** 12:48:11.3±0.6,38°.41N±0°.05×142°.11E±0°.06,h41km, mb3.8/10,Error ellipse: s-maj=6.9km s-min=6.5km az=155.4*
*IDC **13** 12:48:14.4±2.8,38°.30N×142°.25E,h56km±27km,mb3.4/9, mb1 3.7/13,mb1mx3.5/51,mbtmp3.7/13,ML3.7/3,MS2.9/1, Ms1 2.9/1,ms1mx2.4/57,Error ellipse: s-maj=24.6km s-min=14.8km az=96.0*
ISC 13 12:48:13.3±0.7,**38°.50N**±0°.05×**142°.12E**±0°.07,**h41**km,**n22**, σ2§**16**/**25**,**mb3.6**/10,**Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h	m	s	Res ISC
JIO	**Ouri**	**0.61**	**266**	P		**Pn**	**12**	**48**	**22.8**	**-2.7**
JIO				S		**Sn**	**12**	**48**	**31.0**	**-3.2**
OFUJ	**Ofunato**	**0.68**	**329**	P		**Pn**	**12**	**48**	**24.5**	**-2.0**
OFUJ				S		**Sn**	**12**	**48**	**34.2**	**-1.8**
JMK	**Ichinoseki**	**0.84**	**303**	P		**Pn**	**12**	**48**	**26.9**	**-1.8**
JMK				S		**Sn**	**12**	**48**	**38.9**	**-0.9**
JOU	**Okura**	**1.15**	**264**	P		**Pn**	**12**	**48**	**31.4**	**-1.6**
JOU				S		**Sn**	**12**	**48**	**46.0**	**-1.6**
JOM	**Ohasama**	**1.17**	**327**	S		**Sn**	**12**	**48**	**48.3**	**+0.4**
JMM	**Marumori**	**1.22**	**239**	P		**Pn**	**12**	**48**	**30.9**	**-3.0**
MJAR	**Matsushiro Arr**	**3.67**	**239**	P		**Pn**	**12**	**49**	**08.7**	**+1.1**
	4.0nm,0.3s,baz=1.3,slow=5.9,SNR=7.0									
MAT	**Matsushiro**	**3.67**	**239**	P		**Pn**	**12**	**49**	**06.8**	**-0.8**
MAT				S		**Sn**	**12**	**49**	**55.0**	**+5.3**
ASAJ	**Asahikawa**	**5.62**	**3**	LR		LR	12	52	07.1	
	comp=Z,112nm,18.3s,baz=152,slow=40									
JHJ	**Hachijo jima 2**	**5.70**	**200**	P		**Pn**	**12**	**49**	**32.9**	**-2.5**
	17nm,0.3s,baz=81,slow=19,SNR=3.7									
JHJ				S		Sn	12	50	31.9	-7.5
	16nm,0.3s,baz=67,slow=18,SNR=2.7									
USRK	**Ussuriysk Ar.**	**9.51**	**310**	P		Pn	12	50	32.9	+5.3
	0.2nm,0.3s,baz=122,slow=16,SNR=3.3									
KSRS	**Korea Array**	**11.26**	**269**	P		**Pn**	**12**	**50**	**54.4**	**+2.8**
	0.3nm,0.3s,baz=75,slow=4.3,SNR=4.6									
SEY	**Seymchan**	**25.25**	**11**	P		**P**	**12**	**53**	**36.3**	**+1.2**
	16nm,0.3s,baz=180,slow=20,SNR=42									
ZALV	**Zalesovo Beam**	**41.36**	**311**	P		**P**	**12**	**55**	**54.8**	**-0.2**
	0.7nm,0.4s,baz=103,slow=8.7,SNR=2.3									
MKAR	**Makanchi Array**	**43.83**	**301**	P		**P**	**12**	**56**	**16.4**	**+1.1**
	0.3nm,0.4s,baz=82,slow=11,SNR=3.1									
ILAR	**Eielson Array**	**47.96**	**33**	P		**P**	**12**	**56**	**48.7**	**+1.3**
	0.3nm,0.7s,baz=272,slow=6.8,SNR=2.6									
WRA	**Warramunga Arr**	**58.59**	**189**	P		**P**	**12**	**58**	**04.0**	**-2.0**
	2.7nm,0.8s,baz=7.8,slow=7.7,SNR=18									
YKA	**Yellowknife Ar**	**62.26**	**31**	P		**P**	**12**	**58**	**29.0**	**-1.6**
	0.1nm,0.5s,baz=304,slow=7.2,SNR=3.3									
ASAR	**Alice Springs**	**62.32**	**189**	P		**P**	**12**	**58**	**29.9**	**-1.5**
	1.4nm,0.7s,baz=7.5,slow=5.2,SNR=20									
FINES	**FINESS Array B**	**67.78**	**332**	P		**P**	**12**	**59**	**08.0**	**+1.6**
	0.7nm,0.6s,baz=26,slow=9.8,SNR=2.9									
PDAR	**Pinedale Array**	**76.24**	**46**	P		**P**	**12**	**59**	**58.1**	**+0.4**
	0.3nm,0.6s,baz=280,slow=2.8,SNR=5.7									
TXAR	**Lajitas Array**	**88.78**	**53**	P		**P**	**13**	**01**	**03.4**	**+0.3**
	0.2nm,0.7s,baz=301,slow=2.7,SNR=4.7									

*IDC **13** 12:51:18.3±0.6,17°.69S×176°.29E,h0km,mb4.4/17, mb1 4.6/19,mb1mx4.4/42,mbtmp4.4/19,ML3.3/2,MS4.5/25, Ms1 4.5/25,ms1mx4.3/39,Error ellipse: s-maj=24.6km s-min=14.4km az=143.0*
*ISCJB **13** 12:51:22.7±0.2,17°.68S±0°.05×176°.30E±0°.04,h33km, mb4.7/50,MS4.5/27,Error ellipse: s-maj=6.9km s-min=5.3km az=150.8*
*NEIC **13** 12:51:24.2±0.3,17°.66S×176°.28E,h35km,mb4.9/27,Error ellipse: s-maj=8.7km s-min=6.1km az=136.0*
*GCMT **13** 12:51:24.2±0.1,17°.43S×176°.24E,h12km,MW5.2/115, Moment Tensor Solution. s69,c118; s115,c216; Duration: 1§0 Moment tensor: Scale 10^17Nm; Mrr-0.09±.01; Mθθ-0.66±.01; Mφφ0.74±.01; Mrθ0.17±.03; Mθφ-0.41±.01; Mφr0.34±.03; Best double couple: M0 0.89900×10^17 NP1:φs209.00000°,δ88.00000°, λ-25.00000°. NP2:φs300.00000°,δ65.00000°, λ-178.00000°. Principal axes: T 0.9420, Plg16.0000°, Azm257.0000°; N -0.0860, Plg65.0000°, Azm24.0000°; P -0.8570, Plg19.0000°, Azm161.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
*BJI **13** 12:51:25.2,17°.11S×176°.19E,h32km,mb4.9/43,mB5.2/24, Ms4.8/16,Ms7 4.5/16*
ISC 13 12:51:24.2±0.4,**17°.71S**±0°.07×**176°.37E**±0°.06,**h35**km,**n122**, σ1§**43**/122,**mb4.8**/50,**MS4.5**/27,**Fiji Islands region**

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h	m	s	Res ISC
MSVF	**Nonsavu**	**1.60**	**91**	*e*		**Pn**	**12**	**51**	**48.5**	**-1.6**
MSVF				*e*		**Sn**	**12**	**52**	**10.6**	**+0.9**
DZM	**Mont Dzumac**	**10.29**	**243**	Pn		**Pn**	**12**	**53**	**48.1**	**-1.5**
	0.1nm,0.3s,baz=75,slow=12,SNR=11									
DZM				LR		LR	12	57	15.3	
	comp=Z,5μm,21.1s,baz=88,slow=35									
AFI	**Afiamalu**	**12.02**	**73**	Pn		**Pn**	**12**	**54**	**12.7**	**-0.5**
	0.4nm,0.3s,baz=86,slow=24,SNR=8.7									
AFI				LR		LR	12	58	03.7	
	comp=Z,5μm,19.4s,baz=236,slow=34									
RAO	**Raoul Island**	**12.62**	**157**	LR		LR	12	58	24.1	
	comp=Z,4μm,19.9s,baz=346,slow=34									
NFK	**Norfolk Island**	**13.67**	**213**	P		**Pn**	**12**	**54**	**37.5**	**+1.8**
	baz=14,SNR=3.4									
OUZ	**Omahuta**	**17.61**	**188**	*e*	Pn	P	12	55	32.8	+5.2
	165nm,1.8s									
HNR	**Honiara**	**17.95**	**295**	LR		LR	13	01	16.8	
	comp=Z,739nm,21.4s,baz=133,slow=34									
URZ	**Urewera**	**20.48**	**178**	P		Pn	12	56	01.5	+0.1
	33nm,0.8s,baz=21,slow=4.8,SNR=17									
URZ				LR		LR	13	02	05.5	
	comp=Z,1μm,20.3s,baz=352,slow=32									
URZ	**Urewera**	**20.48**	**178**	*e*	P	**P**	**12**	**55**	**59.9**	**+0.8**
	168nm,1.3s									
HIZ	**Hauiti**	**20.77**	**183**	*e*	Pn		12	56	05.5	+0.8
	112nm,1.3s									
BKZ	**Black Stump Fm**	**21.38**	**180**	*e*	P	**P**	**12**	**56**	**10.8**	**+2.1**
	62nm,1.4s									
BFZ	**Birch Farm**	**22.89**	**180**	*e*	P	**P**	**12**	**56**	**24.8**	**-0.1**
	66nm,1.0s									
THZ	**Tophouse**	**24.16**	**186**	*e*	P	**P**	**12**	**56**	**36.0**	**-1.1**
	22nm,0.9s									
EIDS	**Eidsvold**	**24.70**	**248**	P		**P**	**12**	**56**	**42.9**	**+0.7**
	baz=26,SNR=7.4									
EIDS	**Eidsvold**	**24.70**	**248**	*e*	P	**P**	**12**	**56**	**42.7**	**+0.5**
	49nm,1.3s									
LTZ	**Lake Taylor**	**25.23**	**187**	*e*	P	**P**	**12**	**56**	**47.8**	**+0.9**
LTZ				*e*	pP	**pP**	**12**	**56**	**54.4**	**-2.5**
OXZ	**Oxford**	**25.80**	**187**	*e*	P	**P**	**12**	**56**	**52.0**	**0.0**
OXZ				*e*	pwP	**sP**	**12**	**57**	**07.2**	**+1.0**
ARMA	**Armidale**	**25.82**	**236**	P		**P**	**12**	**56**	**55.5**	**+3.0**
	baz=27,SNR=3.6									
ARMA	**Armidale**	**25.82**	**236**	*e*	P	**P**	**12**	**56**	**54.0**	**+1.5**
	65nm,1.8s									

RPZ	**Rata Peaks**	**26.31**	**189**	P		**P**	**12**	**56**	**58.6**	**+2.0**
	8.9nm,0.8s,baz=270,slow=5.7,SNR=4.9									
RPZ				LR		LR	13	06	00.7	
	comp=Z,1μm,18.1s,baz=3.0,slow=34									
RMQ	**Roma**	**26.98**	**246**	P		**P**	**12**	**57**	**05.0**	**+2.1**
	baz=28,SNR=8.6									
MLZ	**Mavora Lakes**	**28.43**	**192**	*e*	P	**P**	**12**	**57**	**16.0**	**+0.4**
	1.43nm,1.6s									
CTA	**Charters Tower**	**28.57**	**260**	P		**P**	**12**	**57**	**17.0**	**-0.1**
	10nm,0.8s,baz=120,slow=20,SNR=4.3									
CTA				LR		LR	13	07	20.2	
	comp=Z,2μm,20.9s,baz=90,slow=34									
CTA	**Charters Tower**	**28.57**	**260**	P		**P**	**12**	**57**	**18.1**	**+1.0**
	baz=29									
CTAO	**Charters Tower**	**28.57**	**260**	*e*	P	**P**	**12**	**57**	**17.3**	**+0.1**
	121nm,1.9s									
PMG	**Port Moresby**	**29.54**	**282**	LR		LR	13	07	47.8	
	comp=Z,1μm,18.1s,baz=108,slow=34									
MTSU	**Mount Surprise**	**30.48**	**264**	P		**P**	**12**	**57**	**35.3**	**+1.2**
	baz=31,SNR=4.5									
CMSA	**Cobar Meteorol**	**30.98**	**238**	P		**P**	**12**	**57**	**40.5**	**+2.1**
	baz=32,SNR=6.4									
PPT2	**Papeete2**	**32.43**	**95**	*e*	S	S	13	02	51.2	-13
	350nm,26.0s									
PPT2				*e*	LQ	LQ	13	04	56.4	
	4μm,26.2s									
PPT2				*e*	LR	LR	13	06	19.6	
	4μm,25.2s,baz=259									
PPT	**Papeete**	**32.43**	**95**	LR		LR	13	07	54.1	
	comp=Z,1μm,21.3s,baz=264,slow=31									
TBI	**Tubuai**	**32.44**	**106**	*e*	LQ	LQ	13	04	56.2	
	4μm,29.2s									
TBI				*e*	LR	LR	13	06	18.2	
	2μm,28.0s,baz=280									
STKA	**Stephens Creek**	**34.41**	**239**	P		**P**	**12**	**58**	**07.2**	**-1.2**
	4.7nm,1.0s,baz=50,slow=9.4,SNR=5.2									
STKA				LR		LR	13	11	07.7	
	comp=Z,1μm,18.8s,baz=64,slow=35									
STKA	**Stephens Creek**	**34.41**	**239**	P		**P**	**12**	**58**	**10.7**	**+2.3**
	baz=35,SNR=7.7									
STKA	**Stephens Creek**	**34.41**	**239**	*e*	P	**P**	**12**	**58**	**09.1**	**+0.7**
	3.1nm,0.9s									
BBOO	**Buckleboo**	**39.18**	**240**	*e*	P	**P**	**12**	**58**	**49.3**	**+0.3**
	24nm,0.8s									
WB2	**Warramunga Arr**	**39.76**	**260**	*e*	P	**P**	**12**	**58**	**50.9**	**-3.1**
	15nm,0.7s									
WRAB	**Tennant Creek**	**39.76**	**260**	*e*	P	**P**	**12**	**58**	**51.8**	**-2.1**
	11nm,0.7

KMI					LR	LR			
	comp=N,94nm,19.5s								
KMI					LR	LR			
	comp=E,130nm,19.5s								
KMI					LR	LR			
	comp=Z,170nm,20.3s								
HHC	**Hu-ho-hao-te**	**83.64**	**316**	*e*P	**P**		**13 03 50.0**	**+0.7**	
HHC				pP	pP		13 04 00.5	+0.1	
HHC				sP	sP		13 04 04.5	+0.1	
HHC				S	**S**		**13 14 09.4**	**0.0**	
HHC				pmax	pmax				
	comp=Z,18nm,0.8s								
HHC				pmax	pmax				
	comp=Z,100nm,9.4s								
HHC				LR	LR				
	comp=N,85nm,17.1s								
HHC				LR	LR				
	comp=E,190nm,20.0s								
HHC				LR	LR				
	comp=Z,160nm,18.7s								
CMAR	**Chiang Mai Arr**	**84.15**	**291**	P	**P**		**13 03 52.0**	**-0.4**	
	2.7nm,1.0s,baz=114,slow=3.3,SNR=20								
CMAR				LR	LR		13 37 03.2		
	comp=Z,41nm,21.3s,baz=138,slow=33								
CHTO	**Chiang Mai**	**84.28**	**292**	*e*P	**P**		**13 03 53.1**	**+0.1**	
	5.0nm,1.0s								
CD2	**Chengdu**	**84.82**	**305**	P	**P**		**13 03 55.1**	**-0.4**	
CD2				pmax	pmax				
	comp=Z,1.0nm,0.5s								
MCK	**McKinley**	**85.53**	**15**	*e*P	**P**		**13 03 58.3**	**0.0**	
	28nm,1.8s								
BILL	**Bilibino**	**85.82**	**356**	*e*P	**P**		**13 03 59.1**	**-0.5**	
	17nm,1.6s								
CCB	**Clear Creek Bu**	**86.57**	**15**	*e*P	**P**		**13 04 03.1**	**-0.2**	
	14nm,1.8s								
HDA	**Harding Lake**	**86.58**	**15**	*e*P	**P**		**13 04 03.6**	**+0.2**	
	36nm,2.0s								
LZH	**Lanzhou**	**86.87**	**309**	*e*P	**P**		**13 04 07.5**	**+1.8**	
LZH				pP	pP		13 04 16.8	0.0	
LZH				sP	sP		13 04 21.4	+0.6	
LZH				SKS	**SKSac**		**13 14 28.1**	**-2.3**	
LZH				S	**S**		**13 14 43.0**	**+1.3**	
LZH				sS	sS		13 15 01.5	+1.4	
LZH				*e*SS	**SS**		**13 20 23.4**	**-1.5**	
LZH				pmax	pmax				
	comp=Z,27nm,1.0s								
LZH				pmax	pmax				
	comp=Z,150nm,4.7s								
LZH				LR	LR				
	comp=N,420nm,15.6s								
LZH				LR	LR				
	comp=E,500nm,14.0s								
LZH				LR	LR				
	comp=Z,630nm,17.0s								
ILAR	**Eielson Array**	**86.89**	**15**	P	**P**		**13 04 03.4**	**-1.6**	
	1.8nm,0.9s,baz=233,slow=6.2,SNR=11								
ILAR				LR	LR		13 35 59.4		
	comp=Z,226nm,21.3s,baz=239,slow=31								
F10A	**Beach Ranch, E**	**87.17**	**40**	*e*P	**P**		**13 04 07.8**	**+0.9**	
	9.4nm,1.1s								
YAK	**Yakutsk**	**87.61**	**340**	LR	LR		13 37 56.5		
	comp=Z,236nm,21.5s,baz=95,slow=32								
PV05	**Paradox Valley**	**89.14**	**50**	*e*P	**P**		**13 04 18.4**	**+1.8**	
TXAR	**Lajitas Array**	**90.13**	**59**	P	**P**		**13 04 22.0**	**+0.7**	
	1.8nm,1.0s,baz=235,slow=4.4,SNR=12								
TXAR				LR	LR		13 36 48.7		
	comp=Z,302nm,20.1s,baz=0.0,slow=30								
SONM	**Songino Array**	**90.20**	**321**	LR	LR		13 45 15.4		
	comp=Z,94nm,18.6s,baz=106,slow=36								
H17A	**Grant Village**	**90.67**	**43**	*e*P	**P**		**13 04 23.6**	**0.0**	
	23nm,1.9s								
S22A	**4UR Ranch, Cre**	**90.68**	**51**	*e*P	**P**		**13 04 25.0**	**+1.2**	
	12nm,1.3s								
PDAR	**Pinedale Array**	**90.69**	**45**	P	**P**		**13 04 23.7**	**0.0**	
	1.3nm,1.0s,baz=204,slow=3.3,SNR=9.7								
GTA	**Gaotai**	**91.11**	**311**	*e*P	**P**		**13 04 26.1**	**+0.5**	
GTA				pP	pP		13 04 35.3	-1.5	
GTA				sP	sP		13 04 40.0	-0.8	
GTA				pmax	pmax				
	comp=Z,4.0nm,1.1s								
TIXI	**Tiksi**	**94.75**	**346**	LR	LR		13 43 08.1		
	comp=Z,354nm,20.6s,baz=31,slow=33								
PLCA	**Paso Flores**	**95.02**	**135**	LR	LR		13 38 44.0		
	comp=Z,112nm,21.9s,baz=272,slow=30								
YKA	**Yellowknife Ar**	**96.28**	**26**	P	**P**		**13 04 48.6**	**0.0**	
	0.6nm,0.9s,baz=248,slow=4.3,SNR=8.5								
WMQ	**Urumqi**	**101.11**	**312**	*e*P	**Pdif**		**13 05 11.0**	**+0.2**	
WMQ				pmax	pmax				
	comp=Z,4.0nm,0.9s								
WMQ				pmax	pmax				
	comp=Z,38nm,5.4s								
WMQ				LR	LR				
	comp=N,63nm,27.2s								
WMQ				LR	LR				
	comp=E,59nm,23.8s								
WMQ				LR	LR				
	comp=Z,63nm,37.4s								
KSH	**Kashi**	**108.94**	**306**	*e*Pdif	**Pdif**		**13 05 49.1**	**+3.2**	
KSH				*e*PP	PP		13 10 26.9	+8.6	
KSH				AMB	AMB				
	comp=Z,130nm,5.3s								
CLL	**Collm**	**143.96**	**342**	*e*PKPdf	**PKPdf**		**13 10 57.0**	**+1.1**	
BRG	**Berggiesshubel**	**144.06**	**341**	*e*PKP	**PKPdf**		**13 10 57.6**	**+1.5**	
	6.4nm,1.1s								
VYHS	**Vyhne**	**144.26**	**334**	*e*PKP	**PKPdf**		**13 10 55.8**	**-0.7**	
PRU	**Pruhonice**	**144.64**	**340**	*e*PKP	PKPbc		13 10 56.3	+0.4	
NKC	**Novy Kostel**	**145.08**	**342**	*e*PKP	**PKPdf**		**13 10 58.3**	**+0.4**	
NKC				*ex*	x		13 11 02.5		
NKC				*ep*PKP	**pPKPdf**		**13 11 07.3**	**-2.1**	
KHC	**Kasperske Hory**	**145.69**	**340**	*e*PKP	**PKPbc**		**13 10 59.1**	**-0.3**	
KHC				*ex*	x		13 11 04.6		
KHC				*ep*PKP	**pPKPdf**		**13 11 09.3**	**-1.2**	
KHC	**Kasperske Hory**	**145.69**	**340**	*e*PKPdf	**PKPdf**		**13 10 58.7**	**-0.3**	
CONA	**Conrad Observa**	**145.90**	**336**	*i* PKPab	**PKPbc**		**13 11 00.1**	**0.0**	
	25nm,1.1s								
GERES	**GERESS Array B**	**145.90**	**339**	PKPbc	**PKPdf**		**13 10 58.9**	**-0.6**	
	6.4nm,0.9s,baz=33,slow=3.2,SNR=21								
GEA0	**GERESS Array S**	**145.91**	**339**	*e*PKPdf	**PKPdf**		**13 10 59.6**	**+0.2**	
MEM	**Membach**	**146.28**	**349**	PKP	**PKPab**		**13 11 01.6**	**-0.2**	
MOA	**Molln**	**146.56**	**338**	*i* PKPab	**PKPab**		**13 11 02.8**	**-0.2**	
	12nm,0.9s								
BCLA	**Clavier**	**146.59**	**350**	PKP	**PKPab**		**13 11 03.1**	**+0.1**	
BCLA				APKP	**PKiKP**		**13 11 07.4**	**+2.6**	
DOU	**Dourbes**	**147.02**	**350**	PKP	**PKPab**		**13 11 04.1**	**-0.6**	
DOU				APKP	**PKiKP**		**13 11 08.8**	**+3.2**	
SOKA	**Soboth**	**147.25**	**336**	*i* PKPab	**PKPbc**		**13 11 04.5**	**+0.5**	
	16nm,1.2s								
KBA	**Koelnbreinsper**	**147.54**	**338**	*i* PKPab	**PKPbc**		**13 11 05.7**	**+0.7**	
	8.8nm,1.0s								
MYKA	**Terra Mystica**	**147.82**	**337**	*i* PKPab	**PKPbc**		**13 11 06.0**	**+0.4**	
	3.5nm,0.5s								
WATA	**Walderalm**	**147.91**	**340**	*i* PKPab	**PKPbc**		**13 11 06.8**	**+0.8**	
	3.0nm,0.4s								
BFO	**Black Forest**	**147.94**	**345**	*e*PKPbc	**PKPbc**		**13 11 07.0**	**+1.2**	
WTTA	**Wattenberg**	**147.96**	**340**	*i* PKiKP	**PKPbc**		**13 11 06.8**	**+0.7**	
	3.0nm,0.5s								
RETA	**Reutte**	**148.03**	**341**	*i* PKPab	**PKPab**		**13 11 07.8**	**-1.1**	
	10nm,1.3s								
MOTA	**Moosalm**	**148.06**	**341**	*i* PKPab	**PKPab**		**13 11 08.2**	**-0.9**	
	7.4nm,1.1s								
ABTA	**Abfaltersbach**	**148.12**	**339**	*i* PKiKP	**PKPbc**		**13 11 06.6**	**+0.2**	
	14nm,1.3s								
FETA	**Feichten**	**148.46**	**341**	*i* PKPbc	**PKPbc**		**13 11 06.9**	**-0.5**	
	6.9nm,1.1s								
DAVOX	**Davos/Dischmat**	**148.93**	**342**	PKPbc	**PKPbc**		**13 11 08.3**	**-0.3**	
	3.5nm,0.6s,baz=21,slow=22,SNR=5.4								
TOA0	**Torodi Ar. Sit**	**173.15**	**229**	*e*PKPdf	**PKPdf**		**13 11 29.9**	**-0.8**	
TORD	**Torodi Ar. Bea**	**173.15**	**229**	PKP	**PKPdf**		**13 11 28.1**	**-2.6**	
	1.7nm,1.2s,baz=14,slow=1.2,SNR=4.6								
TORD				PKPab	**PKPab**		**13 12 56.1**	**-2.1**	
	0.8nm,1.0s,baz=129,slow=2.1,SNR=3.4								

IDC ***13*** *12:54:29.7±2.2, 36.20N×143.39E, h0km, mb3.8/4, mb1 3.9/6, mb1mx3.5/53, mbtmp3.8/6, ML3.5/2, MS4.4/1, Ms1 4.4/1, ms1mx2.6/60, Error ellipse: s-maj=54.9km s-min=24.6km az=64.0*

ISCJB ***13*** *12:54:33.2±1.3, 36.10N±0.09×143.2E±0.2, h33km, mb3.7/4, MS4.4/1, Error ellipse: s-maj=18.8km s-min=13.0km az=15.1*

ISC 13 12:54:35.7±1.7, 36.1N±0.1×143.1E±0.2, h35km, n8, σ0 35/8, mb3.8/4, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MJAR	**Matsushiro Arr**	**4.00**	**277**	Pn	**Pn**	**12 55 34.5**	**+0.1**
	1.6nm,0.3s,baz=108,slow=9.5,SNR=11						
MAT	**Matsushiro**	**4.00**	**277**	P	**Pn**	**12 55 34.4**	**-0.1**
JHJ	**Hachijo jima 2**	**4.08**	**224**	Pn	**Pn**	**12 55 35.7**	**+0.1**
	16nm,0.3s,baz=45,slow=16,SNR=20						
JHJ				Sn	**Sn**	**12 56 22.1**	**-0.1**
	41nm,0.3s,baz=69,slow=22,SNR=8.0						
SONM	**Songino Array**	**29.44**	**305**	P	**P**	**13 00 36.5**	**+0.5**
	0.5nm,0.8s,baz=109,slow=9.2,SNR=3.5						
ZALV	**Zalesovo Beam**	**43.54**	**313**	P	**P**	**13 02 35.2**	**-0.5**
	0.6nm,0.5s,baz=90,slow=7.0,SNR=3.5						
KAPI	**Kappang**	**46.43**	**213**	LR	LR	13 22 08.0	
	comp=Z,431nm,21.7s,baz=134,slow=36						
WRA	**Warramunga Arr**	**56.39**	**190**	P	**P**	**13 04 13.4**	**-0.1**
	0.9nm,0.5s,baz=9.1,slow=7.5,SNR=10						
ASAR	**Alice Springs**	**60.11**	**190**	P	**P**	**13 04 39.6**	**+0.1**
	0.4nm,0.4s,baz=4.6,slow=7.0,SNR=14						

NIED ***13*** *12:55:00, 37.10N×142.50E, h14km, Mw3.7 Best double couple: M0 4.24000×10^14 NP1:φ=310.00000°, δ=38.00000°, λ=-79.00000°. NP2:φ=115.00000°, δ=53.00000°, λ=-99.00000°.*

IDC ***13*** *12:55:02.3±0.7, 36.99N×142.51E, h0km, mb3.7/13, mb1 3.9/15, mb1mx3.7/53, mbtmp3.7/15, ML3.8/2, Error ellipse: s-maj=20.4km s-min=17.3km az=127.0*

ISCJB ***13*** *12:55:03.8±1.7, 37.04N±0.04×142.57E±0.05, h23km±13km, mb3.7/14, Error ellipse: s-maj=7.4km s-min=5.8km az=39.1*

JMA ***13*** *12:55:03.6±0.4, 37.07N×142.53E, h17km, M4.1*

NEIC ***13*** *12:55:06.2±3.1, 37.05N×142.51E, h26km±22km, mb4.1/2, Error ellipse: s-maj=13.0km s-min=8.7km az=115.0*

ISC 13 12:55:02.7±3.4, 37.05N±0.05×142.47E±0.06, h5km±21km, n32, σ1 9 20/42, mb3.7/14, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**1.31**	**285**	P	**Pn**	**12 55 27.9**	**+0.1**
JFK				S	**Sn**	**12 55 45.4**	**-0.3**
ONAJ	**Iwakimizuishiy**	**1.33**	**273**	P	**Pn**	**12 55 26.9**	**-1.2**
ONAJ				S	**Sn**	**12 55 46.2**	**-0.1**
JMM	**Marumori**	**1.56**	**302**	P	**Pn**	**12 55 31.3**	**+0.1**
JMM				*e*S	**Sn**	**12 55 50.6**	**-1.2**
JIO	**Ouri**	**1.66**	**328**	P	**Pn**	**12 55 32.4**	**-0.1**
JIO				*e*S	**Sn**	**12 55 53.0**	**-1.3**
JFT	**Otama**	**1.76**	**286**	P	**Pn**	**12 55 35.0**	**+1.0**
JFT				S	**Sb**	**12 55 57.6**	**-0.4**
JOU	**Okura**	**1.94**	**313**	P	**Pb**	**12 55 37.6**	**-1.0**
JOU				*e*S	**Sb**	**12 56 03.0**	**-0.2**
JMK	**Ichinoseki**	**2.14**	**333**	P	**Pn**	**12 55 39.4**	**+0.3**
JMK				*e*S	**Sn**	**12 56 04.9**	**-1.2**
JFY	**Yanaizu**	**2.23**	**280**	P	**Pb**	**12 55 43.0**	**-0.6**
JFY				*e*S	**Sb**	**12 56 10.6**	**-1.0**
JYS	**Shirataka**	**2.24**	**302**	P	**Pb**	**12 55 42.6**	**-1.1**
JYS				*e*S	**Sb**	**12 56 10.5**	**-1.2**
JYK	**Kaneyama**	**2.50**	**319**	P	**Pn**	**12 55 45.2**	**+1.1**
JYK				*e*S	**Sn**	**12 56 16.0**	**+1.0**
MJAR	**Matsushiro Arr**	**3.45**	**263**	Pn	**Pn**	**12 55 59.3**	**+2.1**
	3.5nm,0.3s,baz=89,slow=15,SNR=10						
MAJO	**Matsushiro**	**3.46**	**263**	Pn	**Pn**	**12 55 58.3**	**+1.0**
JHJ2	**Mitsune**	**4.49**	**210**	*e*Pn	**Pn**	**12 56 13.2**	**+1.8**
JHJ	**Hachijo jima 2**	**4.49**	**210**	Pn	**Pn**	**12 56 11.8**	**+0.4**
	30nm,0.3s,baz=76,slow=22,SNR=5.1						
JHJ				Sn	**Sn**	**12 57 00.1**	**-4.1**
	19nm,0.3s,baz=255,slow=24,SNR=2.8						
ERM	**Erimo**	**4.99**	**6**	*e*Pn	**Pn**	**12 56 17.7**	**-0.6**
ERM				*e*Sn	**Sn**	**12 57 13.6**	**-2.8**
KSRS	**Korea Array**	**11.60**	**276**	Pn	Pn	12 57 53.1	+4.2
	0.1nm,0.3s,baz=88,slow=13,SNR=4.8						
KSAR	**Wonju Array Be**	**11.63**	**276**	Pn	Pn	12 57 53.1	+3.8
JOW	**Kunigami**	**15.76**	**234**	*e*Pn	**Pn**	**12 58 46.1**	**+0.7**
	4.5nm,0.4s						
SEY	**Seymchan**	**26.62**	**10**	P	**P**	**13 00 43.4**	**+1.5**
	0.9nm,0.7s,baz=117,slow=5.8,SNR=4.3						
SONM	**Songino Array**	**28.48**	**304**	P	**P**	**13 00 59.6**	**+0.8**
	0.8nm,0.6s,baz=93,slow=9.3,SNR=5.5						
ZALV	**Zalesovo Beam**	**42.53**	**312**	P	**P**	**13 02 59.6**	**+0.6**
	0.9nm,0.6s,baz=104,slow=8.2,SNR=5.3						
MKAR	**Makanchi Array**	**44.82**	**302**	P	**P**	**13 03 18.0**	**+0.3**
	0.5nm,0.4s,baz=87,slow=10,SNR=7.4						
ILAR	**Eielson Array**	**49.03**	**32**	P	**P**	**13 03 50.5**	**+0.2**
	0.9nm,0.7s,baz=260,slow=6.8,SNR=10						
TKM2	**Tokmak 2**	**50.36**	**299**	*e*P	**P**	**13 04 00.1**	**-0.8**
	4.2nm,1.9s						
BVAR	**Borovoye Array**	**51.19**	**312**	P	**P**	**13 04 07.0**	**+0.2**
	0.3nm,0.4s,baz=72,slow=9.5,SNR=3.0						
INK	**Inuvik**	**53.99**	**27**	P	**P**	**13 04 27.8**	**+0.5**
	0.9nm,0.7s,baz=314,slow=6.0,SNR=3.6						
WRA	**Warramunga Arr**	**57.20**	**189**	P	**P**	**13 04 50.2**	**-0.7**
	1.1nm,0.7s,baz=6.3,slow=7.0,SNR=7.5						
ASAR	**Alice Springs**	**60.92**	**189**	P	**P**	**13 05 16.6**	**-0.1**
	0.4nm,0.7s,baz=11,slow=6.8,SNR=4.7						
FINES	**FINESS Array B**	**69.19**	**333**	P	**P**	**13 06 10.1**	**+0.1**
	1.3nm,0.7s,baz=43,slow=8.6,SNR=5.4						
NVAR	**Mina Array Bea**	**74.31**	**54**	P	**P**	**13 06 42.2**	**+0.7**
	0.3nm,0.7s,baz=319,slow=4.0,SNR=3.1						
PDAR	**Pinedale Array**	**77.06**	**46**	P	**P**	**13 06 57.5**	**+0.3**
	0.4nm,0.7s,baz=338,slow=2.4,SNR=4.1						
TXAR	**Lajitas Array**	**89.44**	**53**	P	**P**	**13 08 01.8**	**+0.6**
	0.2nm,0.7s,baz=316,slow=3.8,SNR=2.9						

NIED ***13*** *12:58:00, 37.20N×141.20E, h5km, Mw4.2 Best double couple: M0 1.93000×10^15 NP1:φ=97.00000°, δ=41.00000°, λ=-37.00000°. NP2:φ=217.00000°, δ=67.00000°, λ=-124.00000°.*

ISCJB ***13*** *12:58:16.8±1.0, 37.20N±0.04×141.33E±0.05, h10km±6km, mb4.2/25, MS4.5/1, Error ellipse: s-maj=7.2km s-min=4.8km az=135.9*

MOS ***13*** *12:58:17.5±1.6, 37.13N×141.37E, h24km, mb4.5/19, Error ellipse: s-maj=10.1km s-min=7.2km az=85.7*

JMA ***13*** *12:58:19.0, 37.23N×141.20E, h14km±1km, M4.5*

JMA Felt III J1.

NEIC ***13*** *12:58:21.7±0.5, 37.09N×141.29E, h35km, mb4.5/5, Error ellipse: s-maj=10.3km s-min=7.3km az=135.0*

NEIC Recorded [3 JMA] in Fukushima.

IDC ***13*** *12:58:22.8±2.6, 37.08N×141.11E, h43km±24km, mb3.9/19, mb1 4.1/22, mb1mx3.9/64, mbtmp4.1/22, ML3.2/2, MS3.0/4, Ms1 3.0/4, ms1mx2.8/58, Error ellipse: s-maj=17.5km s-min=14.8km az=105.0*

ISC 13 12:58:17.8±1.7, 37.22N±0.04×141.29E±0.07, h7km±10km, n69, σ1 9 37/68, mb4.3/25, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**0.36**	**294**	P	**Pg**	**12 58 25.2**	**+0.4**
JFK				S	**Sg**	**12 58 29.4**	**-0.2**
ONAJ	**Iwakimizuishiy**	**0.41**	**253**	P	**Pg**	**12 58 26.0**	**+0.3**
JMM	**Marumori**	**0.76**	**329**	P	**Pg**	**12 58 32.4**	**+0.1**
JMM				S	**Sg**	**12 58 42.3**	**+0.2**
JFT	**Otama**	**0.81**	**292**	P	**Pg**	**12 58 33.5**	**+0.1**
JFT				S	**Sg**	**12 58 43.5**	**-0.5**
JHO	**Hitachi**	**0.84**	**224**	P	**Pg**	**12 58 33.6**	**-0.3**
JHO				S	**Sg**	**12 58 43.9**	**-0.9**
JSB	**Shiboa**	**1.12**	**257**	S	**Sg**	**12 58 53.2**	**-0.7**
MJAR	**Matsushiro Arr**	**2.56**	**256**	P	**Pn**	**12 59 00.5**	**+0.7**
	14nm,0.3s,baz=61,slow=13,SNR=37						
MAJO	**Matsushiro**	**2.56**	**256**	*e*P	**Pn**	**12 59 01.1**	**+1.3**
MAJO	**Matsushiro**	**2.56**	**256**	*e*Pn	**Pn**	**12 59 01.1**	**+1.3**
MAT	**Matsushiro**	**2.56**	**256**	P	**Pn**	**12 59 00.8**	**+1.0**
MAT				*e*S	**Sn**	**12 59 32.1**	**+0.9**
ERM	**Erimo**	**5.00**	**16**	*e*P	**Pn**	**12 59 35.4**	**+2.2**
ERM				e		13 00 32.7	
ERM	**Erimo**	**5.00**	**16**	*e*Pn	**Pn**	**12 59 35.4**	**+2.2**
ERM				*e*Sn	**Sn**	**13 00 32.7**	**+1.4**
ASAJ	**Asahikawa**	**6.96**	**8**	P	**Pn**	**13 00 00.3**	**+0.1**
	2.1nm,0.3s,baz=212,slow=12,SNR=11						
ASAJ				LR	LR	13 03 00.4	
	comp=Z,79nm,18.6s,baz=332,slow=39						
ASAJ	**Asahikawa**	**6.96**	**8**	*e*Pn	**Pn**	**13 00 00.3**	**+0.1**
ASAJ				*e*Sn	**Sn**	**13 01 15.7**	**-3.8**
YUK	**Yuzh-Kuril'sk**	**7.64**	**26**	*e*P	**Pn**	**13 00 08.6**	**-0.9**
YUK				*e*S	**Sn**	**13 01 31.7**	**-4.6**
YUK				pmax	pmax		
	comp=Z,63nm,0.8s						
YUK				pmax	pmax		
	comp=E,40nm,0.3s						
YUK				pmax	pmax		
	comp=N,50nm,0.4s						

SHO	**Shikotan**	**7.87**	**31**	*e*P	**Pn**		**13 00 10.2**	**-2.4**	
SHO				*e*S	Sn		13 01 35.1	-6.7	
SHO				pmax	pmax				
	comp=Z,36nm,0.8s								
SHO				pmax	pmax				
	comp=N,9.0nm,0.4s								
KUR	**Kuril'sk**	**9.41**	**30**	*e*P	**Pn**		**13 00 34.2**	**+0.5**	
KUR				*e*S	**Sn**		**13 02 16.6**	**-3.2**	
KUR				pmax	pmax				
	comp=Z,21nm,0.8s								
KUR				pmax	pmax				
	comp=E,10.0nm,0.5s								
KUR				pmax	pmax				
	comp=N,10.0nm,0.6s								
JNU	**Nakatsue**	**9.45**	**247**	P	**Pn**		**13 00 36.3**	**+1.9**	
	comp=N,0.4nm,0.3s,baz=289,slow=6.4,SNR=5.6								
USRK	**Ussuriysk Ar.**	**9.92**	**318**	P	Pn		13 00 45.6	+4.9	
	comp=N,0.4nm,0.3s,baz=131,slow=13,SNR=7.4								
USRK				LR	LR		13 04 31.0		
	comp=N,164nm,18.1s,baz=131,slow=37								
KSRS	**Korea Array**	**10.65**	**275**	P	**Pn**		**13 00 50.0**	**-0.7**	
	baz=85,slow=14,SNR=2.4								
KSRS				LR	LR		13 04 29.1		
	comp=N,35nm,19.9s,baz=84,slow=35								
KSAR	**Wonju Array Be**	**10.68**	**275**	P	**Pn**		**13 00 50.0**	**-1.2**	
KSAR	**Wonju Array Be**	**10.68**	**275**	P	**Pn**		**13 00 50.0**	**-1.2**	
MDJ	**Mudanjiang**	**11.52**	**314**	*e*Pn	Pn		13 01 07.3	+4.7	
	comp=N,11nm,0.9s								
KLR	**Kul'dur**	**13.86**	**333**	P	Pn		13 01 38.6	+4.0	
	comp=N,0.1nm,0.3s,baz=164,slow=15,SNR=2.1								
KLR				LR	LR		13 06 37.8		
	comp=N,126nm,20.1s,baz=158,slow=36								
JOW	**Kunigami**	**15.12**	**230**	*e*Pn	**Pn**		**13 01 51.2**	**-0.6**	
	comp=N,21nm,1.5s								
NKL	**Nikolayevsk**	**15.94**	**359**	*e*P	**P**		**13 02 07.6**	**+1.6**	
MA2	**Magadan**	**23.19**	**12**	P	**P**		**13 03 25.5**	**+0.6**	
	comp=N,17nm,0.7s,baz=203,slow=11,SNR=7.7								
MA2	**Magadan**	**23.19**	**12**	P	**P**		**13 03 25.5**	**+0.6**	
MA2				pmax	pmax				
	comp=Z,7.0nm,0.6s								
YAK	**Yakutsk**	**25.86**	**347**	P	**P**		**13 03 49.9**	**+0.1**	
	comp=Z,3.7nm,0.3s,baz=281,slow=3.3,SNR=4.8								
YAK	**Yakutsk**	**25.86**	**347**	*e*P	P		13 03 55.7	+5.9	
YAK				pmax	pmax				
	comp=Z,12nm,0.8s								
YAK				pmax	pmax				
	comp=N,5.0nm,1.1s								
YAK				pmax	pmax				
	comp=E,2.0nm,1.1s								
YAK	**Yakutsk**	**25.86**	**347**	*e*P	**P**		**13 03 50.7**	**+0.9**	
ULN	**Ulaanbaatar**	**27.17**	**304**	*e*P	**P**		**13 04 02.7**	**+0.8**	
ULN				pmax	pmax				
	comp=Z,10.0nm,1.0s								
ULN	**Ulaanbaatar**	**27.17**	**304**	*e*P	**P**		**13 04 02.7**	**+0.8**	
	comp=Z,10nm,1.0s								
BOD	**Bodaibo**	**27.32**	**328**	*e*P	**P**		**13 04 01.9**	**-1.1**	
BOD				pmax	pmax				
	comp=Z,3.0nm,0.7s								
SONM	**Songino Array**	**27.60**	**304**	P	**P**		**13 04 06.1**	**+0.3**	
	comp=Z,1.6nm,0.7s,baz=99,slow=8.1,SNR=9.4								
SONM	**Songino Array**	**27.60**	**304**	P	**P**		**13 04 06.1**	**+0.3**	
SONM				pmax	pmax				
	comp=Z,1.0nm,0.5s								
H11N2	**WAKE ISLAND Hy**	**28.33**	**121**	T	T		13 33 16.8		
	baz=310,slow=75,SNR=835								
H11N1	**WAKE ISLAND Hy**	**28.34**	**121**	T	T		13 33 22.4		
	baz=310,slow=75,SNR=712								
H11N3	**WAKE ISLAND Hy**	**28.35**	**121**	T	T		13 33 18.2		
	baz=310,slow=75,SNR=742								
H11S1	**WAKE ISLAND Hy**	**29.05**	**123**	T	T		13 34 06.7		
	baz=312,slow=76,SNR=2349								
H11S3	**WAKE ISLAND Hy**	**29.05**	**123**	T	T		13 34 08.1		
	baz=312,slow=76,SNR=1463								
H11S2	**WAKE ISLAND Hy**	**29.06**	**123**	T	T		13 34 08.8		
	baz=312,slow=76,SNR=1088								
ZAK	**Zakamensk**	**30.07**	**308**	*e*P	**P**		**13 04 28.6**	**+0.9**	
ZAK				pmax	pmax				
	comp=Z,4.0nm,1.6s								
ZALV	**Zalesovo Beam**	**41.72**	**312**	P	**P**		**13 06 06.9**	**-0.2**	
	comp=Z,3.4nm,0.6s,baz=103,slow=6.7,SNR=9.9								
MKAR	**Makanchi Array**	**43.94**	**302**	P	**P**		**13 06 25.1**	**-0.2**	
	comp=Z,2.8nm,0.7s,baz=90,slow=10,SNR=16								
KURK	**Kurchatov**	**45.74**	**308**	*e*P	**P**		**13 06 39.4**	**-0.1**	
KURK				pmax	pmax				
	comp=Z,13nm,0.7s								
KURK	**Kurchatov**	**45.74**	**308**	*e*P	**P**		**13 06 39.4**	**-0.1**	
	comp=Z,13nm,0.7s								
**IL

*ISCJB **13** 13:05:35.3±0.8, 21°.59S±0°.06×68°.3W±0°.1, h115km±11km, mb4.0/3, Error ellipse: s-maj=18.7km s-min=9.8km az=7.8*
*GUC **13** 13:05:37.2±0.5, 21°.67S×68°.63W, h130km±5km, ML4.0*
*IDC **13** 13:05:48.3±7.0, 20°.85S×67°.92W, h188km±48km, mb3.7/3, mb1 3.6/5, mb1mx3.3/25, mbtmp4.0/5, MS2.5/1, Ms1 2.5/1, ms1mx2.1/25, Error ellipse: s-maj=72.6km s-min=24.5km az=20.0*

ISC 13 13:05:36.3±1.5, 21°.60S±0°.07×68°.3W±0°.1, h112km±15km, n10, σ1§01/15, mb4.0/3, 5C, Chile-Bolivia border region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PB09	**IPOC Station P**	**0.87**	**257**	⇑*i*	**Pn**	**13 05 57.5**	**+0.9**
PB09				*i* S	**Sn**	**13 06 12.3**	**+0.4**
PB09				IAML		13 06 14.6	
	comp=E,7μm,0.6s						
PB01	**IPOC Station P**	**1.22**	**297**	⇑*i*	**Pn**	**13 06 00.7**	**+0.6**
PB01				*i* S	**Sn**	**13 06 18.6**	**+0.6**
PB01				IAML		13 06 19.0	
	comp=N,3μm,0.2s						
PB07	**IPOC Station P**	**1.46**	**265**	⇑*i*	**Pn**	**13 06 02.5**	**-0.3**
PB07				*i* S	**Sn**	**13 06 21.6**	**-1.5**
PB07				IAML		13 06 22.4	
	comp=N,2μm,0.3s						
PB06	**IPOC Station P**	**1.60**	**226**	⇑*i*	**Pn**	**13 06 04.3**	**-0.2**
PB06				*i* S	**Sn**	**13 06 24.7**	**-1.4**
HMBC	**Humberstone**	**1.96**	**312**	⇑*i*	**Pn**	**13 06 09.2**	**+0.1**
HMBC				*i* S	**Sn**	**13 06 33.9**	**-0.1**
HMBC				IAML		13 06 35.0	
	comp=N,2μm,0.3s						
LPAZ	**La Paz**	**5.29**	**2**	P	Pn	13 06 58.4	+4.8
	comp=N,0.6nm,0.3s,baz=173,slow=3.6,SNR=14						
LPAZ				S	**Sn**	**13 07 51.5**	**-2.2**
	comp=N,0.3nm,0.3s,baz=202,slow=10,SNR=5.2						
SIV	**San Ignacio**	**8.85**	**52**	P	**Pn**	**13 07 41.6**	**+0.2**
	comp=N,2.4nm,0.3s,baz=252,slow=13,SNR=24						
SIV				S	Sn	13 09 15.2	-4.2
	comp=N,0.4nm,0.3s,baz=316,slow=22,SNR=3.0						
SIV				LR	LR	13 10 48.8	
	comp=N,31nm,21.1s,baz=162,slow=37						
DBIC	**Dimbokro**	**68.24**	**73**	P	**P**	**13 16 26.0**	**+0.6**
	comp=N,2.5nm,0.8s,baz=226,slow=8.8,SNR=6.4						
TORD	**Torodi Ar. Bea**	**76.88**	**70**	P	**P**	**13 17 16.6**	**0.0**
	comp=N,1.0nm,0.4s,baz=246,slow=5.3,SNR=20						
YKA	**Yellowknife Ar**	**91.46**	**340**	P	**P**	**13 18 29.8**	**+0.4**
	comp=N,0.4nm,0.5s,baz=134,slow=4.3,SNR=11						

*TAP **13** 13:15:22.9, 24°.69N×122°.20E, h75km, ML2.9, D*
*JMA **13** 13:15:22.3±0.3, 24°.66N×122°.18E, h80km±4km, M1.9*
*ISCJB **13** 13:15:23.2±0.6, 24°.66N±0°.04×122°.22E±0°.02, h73km±5km, Error ellipse: s-maj=7.1km s-min=3.0km az=167.0*

ISC 13 13:15:23.8±1.4, 24°.66N±0°.05×122°.21E±0°.03, h70km±10km, n34, σ0§56/64, Taiwan region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
TWC	**Suao**	**0.33**	**262**	P	**Pn**	**13 15 35.0**	**-0.2**
	baz=255						
TWC				*e*S	**Sn**	**13 15 43.9**	**+0.4**
	baz=255						
TWB1	**Santiao Chiao**	**0.41**	**330**	P	**Pn**	**13 15 35.5**	**-0.2**
	baz=329						
TWB1				S	**Sn**	**13 15 44.7**	**+0.1**
	baz=329						
ENA	**Nanau**	**0.48**	**242**	P	**Pn**	**13 15 36.5**	**+0.1**
	baz=237						
ENA				*e*S	**Sn**	**13 15 46.7**	**+1.0**
	baz=237						
TWE	**Neicheng**	**0.50**	**278**	P	**Pn**	**13 15 36.5**	**0.0**
	baz=273						
TWE				*e*S	**Sn**	**13 15 46.0**	**+0.1**
	baz=273						
NWF	**Wu-fen Shan**	**0.57**	**317**	*e*P	**Pn**	**13 15 36.6**	**-0.8**
	baz=315						
NWF				*e*S	**Sn**	**13 15 47.2**	**-0.2**
	baz=315						
ENTT	**Nioudou**	**0.59**	**269**	*e*P	**Pn**	**13 15 37.7**	**+0.2**
	baz=264						
ENTT				*e*S	**Sn**	**13 15 48.5**	**+0.9**
	baz=264						
JYNG	**Yonagunijimaku**	**0.70**	**107**	P	**Pn**	**13 15 38.5**	**-0.2**
JYNG				S	**Sn**	**13 15 50.3**	**+0.7**
YOJ	**Yonaguni jima**	**0.75**	**105**	P	**Pn**	**13 15 39.0**	**-0.3**
YOJ				S	**Sn**	**13 15 51.0**	**+0.3**
NSK	**Sanguang**	**0.78**	**272**	P	**Pn**	**13 15 39.4**	**-0.3**
	baz=268						
NSK				S	**Sn**	**13 15 51.5**	**+0.1**
	baz=268						
NNS	**Nan Shan**	**0.79**	**255**	P	**Pn**	**13 15 39.8**	**-0.1**
	baz=251						
NNS				S	**Sn**	**13 15 52.2**	**+0.4**
	baz=251						
TWD	**Chiawan**	**0.80**	**225**	*e*P	**Pn**	**13 15 39.3**	**-0.5**
	baz=221						
TWD				*e*S	**Sn**	**13 15 52.0**	**+0.3**
	baz=221						
TWS1	**Kuangyinshan**	**0.85**	**302**	*e*P	**Pn**	**13 15 39.7**	**-0.7**
	baz=300						
WHF	**Hehuan Shan**	**1.00**	**240**	*e*P	**Pn**	**13 15 42.3**	**-0.4**
	baz=237						
WHF				*e*S	**Sn**	**13 15 56.1**	**-0.6**
	baz=237						
TWT	**Tachien**	**1.03**	**247**	*e*P	**Pn**	**13 15 43.2**	**+0.4**
	baz=245						
TWT				*e*S	**Sn**	**13 15 57.1**	**+0.2**
	baz=245						
ESL	**Shilin**	**1.10**	**221**	*e*P	**Pn**	**13 15 42.4**	**-1.1**
	baz=218						
ESL				*e*S	**Sn**	**13 15 57.3**	**-1.0**
	baz=218						
NSTT	**Nanjuang**	**1.10**	**269**	*e*P	**Pn**	**13 15 43.4**	**-0.2**
	baz=266						
NSTT				*e*S	**Sn**	**13 15 57.9**	**-0.5**
	baz=266						
WDT	**Danda**	**1.33**	**228**	*e*P	**Pn**	**13 15 46.9**	**+0.1**
	baz=226						
WDT				*e*S	**Sn**	**13 16 03.1**	**-1.0**
	baz=226						
TWQ1	**Liyutan**	**1.35**	**257**	*e*P	**Pn**	**13 15 46.7**	**0.0**
	baz=255						
TWQ1				*e*S	**Sn**	**13 16 04.3**	**+0.3**
	baz=255						
IRIF	**Iriomote-Funau**	**1.42**	**103**	P	**Pn**	**13 15 46.6**	**-1.1**
IRIF				S	**Sn**	**13 16 05.8**	**+0.2**
SMLT	**Sun Moon Lake**	**1.42**	**238**	*e*P	**Pn**	**13 15 47.7**	**-0.2**
	baz=235						
TYC	**Yuchr**	**1.45**	**239**	*e*P	**Pn**	**13 15 48.1**	**0.0**
	baz=237						
TYC				*e*S	**Sn**	**13 16 06.3**	**0.0**
	baz=237						
TWF1	**Yuli**	**1.54**	**213**	*e*P	**Pn**	**13 15 48.7**	**-0.7**
	baz=211						
TWF1				*e*S	**Sn**	**13 16 08.4**	**-0.3**
	baz=211						
YUS	**Yu-Shan**	**1.64**	**225**	*e*P	**Pn**	**13 15 51.4**	**+0.4**
	baz=223						
YUS				*e*S	**Sn**	**13 16 10.6**	**-0.9**
	baz=223						
JKRS	**Kuro-shima**	**1.69**	**104**	P	**Pn**	**13 15 51.1**	**-0.2**
JKRS				S	**Sn**	**13 16 12.1**	**0.0**
ALS	**Alishan**	**1.72**	**229**	*e*P	**Pn**	**13 15 52.4**	**+0.4**
	baz=227						
ALS				*e*S	**Sn**	**13 16 13.8**	**+0.6**
	baz=227						
CHN5	**Tsauling**	**1.75**	**233**	*e*P	**Pn**	**13 15 52.4**	**+0.1**
	baz=231						
CHN5				*e*S	**Sn**	**13 16 14.7**	**+1.0**
	baz=231						
JIJ	**Ishigaki jima**	**1.78**	**99**	P	**Pn**	**13 15 51.7**	**-0.8**
JIJ				*e*S	**Sn**	**13 16 13.6**	**-0.7**
ELDTW	**Lidau**	**1.82**	**217**	*e*P	**Pn**	**13 15 53.1**	**-0.2**
	baz=215						
JISG	**Ishigakijimahi**	**1.91**	**92**	P	**Pn**	**13 15 53.8**	**-0.4**
JISG				S	**Sn**	**13 16 17.8**	**+0.4**
CHN4	**Tsaushan**	**1.97**	**229**	*e*P	**Pn**	**13 15 55.7**	**+0.6**
	baz=227						
CHN4				*e*S	**Sn**	**13 16 18.6**	**-0.3**
	baz=227						
STYT	**Tauyuan**	**2.00**	**222**	*e*P	**Pn**	**13 15 55.8**	**+0.3**
	baz=220						
WTP	**Ta-pu**	**2.03**	**227**	*e*P	**Pn**	**13 15 56.0**	**+0.1**
	baz=225						
WTP				*e*S	**Sn**	**13 16 20.3**	**0.0**
	baz=225						
CHN1	**Nanshi**	**2.12**	**227**	*e*P	**Pn**	**13 15 57.8**	**+0.6**
	baz=225						
CHN1				*e*S	**Sn**	**13 16 23.5**	**+0.8**
	baz=225						
JTJ	**Tarama**	**2.27**	**90**	P	**Pn**	**13 15 59.8**	**+0.8**
JTJ				*e*S	**Sn**	**13 16 27.3**	**+1.3**

*ISCJB **13** 13:22:03.6±0.8, 5°.00S±0°.09×145°.0E±0°.1, h54km, mb3.6/6, MS3.6/1, Error ellipse: s-maj=18.5km s-min=7.7km az=145.0*
*IDC **13** 13:22:07.6±2.0, 5°.10S×144°.96E, h81km±19km, mb3.3/6, mb1 3.6/9, mb1mx3.3/46, mbtmp3.7/9, MS3.6/1, Ms1 3.8/1, ms1mx2.6/18, Error ellipse: s-maj=25.4km s-min=11.4km az=52.0*

ISC 13 13:22:05.4±0.9, 5°.0S±0°.1×145°.0E±0°.1, h54km, n9, σ1§90/11, mb3.6/6, Near north coast of New Guinea

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PMG	**Port Moresby**	**4.87**	**155**	P	**Pn**	**13 23 17.8**	**+1.7**
	6.9nm,0.3s,baz=313,slow=7.0,SNR=18						
PMG				S	**Sn**	**13 24 12.7**	**+1.5**
	3.8nm,0.3s,baz=316,slow=22,SNR=5.6						
JAY	**Jayapura**	**4.97**	**299**	P	**Pn**	**13 23 18.6**	**+0.9**
	0.5nm,0.3s,baz=144,slow=22,SNR=11						
JAY				S	**Sn**	**13 24 16.9**	**+3.0**
	0.1nm,0.3s,baz=307,slow=20,SNR=2.1						
WRA	**Warramunga Arr**	**18.15**	**214**	P	**P**	**13 26 12.6**	**-0.9**
	0.4nm,0.3s,baz=30,slow=10.0,SNR=29						
ASAR	**Alice Springs**	**21.45**	**209**	P	**P**	**13 26 48.4**	**-1.0**
	1.4nm,0.6s,baz=37,slow=9.8,SNR=23						
FITZ	**Fitzroy Crossi**	**23.01**	**234**	P	**P**	**13 27 02.6**	**-3.3**
	1.2nm,0.5s,baz=45,slow=13,SNR=6.8						
CMAR	**Chiang Mai Arr**	**51.05**	**298**	P	**P**	**13 31 03.0**	**+0.2**
	2.0nm,0.8s,baz=122,slow=6.2,SNR=20						
CMAR				LR	LR	13 52 35.4	
	comp=Z,69nm,21.5s,baz=176,slow=36						
SONM	**Songino Array**	**62.58**	**332**	P	**P**	**13 32 23.3**	**-0.8**
	0.2nm,0.4s,baz=126,slow=7.3,SNR=2.9						
MKAR	**Makanchi Array**	**75.48**	**321**	P	**P**	**13 33 43.5**	**-0.5**
	0.2nm,0.6s,baz=132,slow=6.4,SNR=2.4						
ILAR	**Eielson Array**	**85.33**	**24**	P	**P**	**13 34 35.6**	**-0.8**
	0.6nm,0.8s,baz=262,slow=5.6,SNR=3.5						

*ISCJB **13** 13:24:35.5±1.7, 37°.56N±0°.03×142°.17E±0°.04, h14km±10km, mb3.7/14, Error ellipse: s-maj=6.1km s-min=5.2km az=139.5*
*IDC **13** 13:24:35.3±0.7, 37°.56N×142°.09E, h0km, mb3.7/14, mb1 3.8/19, mb1mx3.7/65, mbtmp3.7/19, ML3.4/5, Error ellipse: s-maj=18.1km s-min=14.0km az=105.0*
*JMA **13** 13:24:37.0±0.2, 37°.59N×142°.09E, h20km±3km, M4.0*
JMA Felt I J1.

ISC 13 13:24:35.4±2.1, 37°.58N±0°.05×142°.11E±0°.07, h1km±12km, n44, σ0§65/47, mb3.8/14, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JFK	**Kawauchi**	**1.01**	**258**	S	**Sg**	**13 25 08.1**	**+0.3**
JIO	**Ouri**	**1.06**	**326**	P	**Pg**	**13 24 56.0**	**+0.2**
JIO				S	**Sg**	**13 25 09.7**	**+0.2**
JMM	**Marumori**	**1.08**	**286**	P	**Pg**	**13 24 56.4**	**+0.2**
JMM				S	**Sg**	**13 25 09.7**	**-0.6**
ONAJ	**Iwakimizuishiy**	**1.15**	**246**	P	**Pg**	**13 24 57.7**	**+0.2**
ONAJ				S	**Sg**	**13 25 12.0**	**-0.4**
JOU	**Okura**	**1.39**	**305**	P	**Pn**	**13 25 01.5**	**-0.5**
JOU				S	**Sg**	**13 25 19.9**	**-0.1**
JFT	**Otama**	**1.41**	**268**	P	**Pn**	**13 25 02.2**	**-0.1**
JFT				S	**Sg**	**13 25 20.0**	**-0.8**
JMK	**Ichinoseki**	**1.54**	**333**	P	**Pn**	**13 25 03.5**	**-0.5**
JYS	**Shirataka**	**1.74**	**292**	P	**Pn**	**13 25 07.2**	**+0.4**
JYS				S	**Sb**	**13 25 30.2**	**-0.4**
JYK	**Kaneyama**	**1.92**	**315**	P	**Pn**	**13 25 09.1**	**-0.2**
JFY	**Yanaizu**	**1.92**	**266**	P	**Pn**	**13 25 10.0**	**+0.6**
MJAR	**Matsushiro Arr**	**3.29**	**253**	Pn	**Pn**	**13 25 29.3**	**+1.1**
	6.1nm,0.3s,baz=90,slow=16,SNR=29						
MAT	**Matsushiro**	**3.29**	**253**	P	**Pn**	**13 25 29.5**	**+1.3**
MAT				S	**Sn**	**13 26 09.5**	**+1.5**
JHJ	**Hachijo jima 2**	**4.84**	**204**	Pn	**Pn**	**13 25 49.2**	**-0.3**
	15nm,0.3s,baz=329,slow=22,SNR=6.4						
JHJ				Sn	**Sn**	**13 26 44.5**	**-1.7**
	23nm,0.3s,baz=278,slow=22,SNR=3.4						
ASAJ	**Asahikawa**	**6.54**	**3**	Pn	**Pn**	**13 26 12.2**	**-0.5**
	1.0nm,0.3s,baz=195,slow=15,SNR=9.0						
ASAJ				S	**Sn**	**13 27 28.3**	**+0.3**
	0.4nm,0.3s,baz=190,slow=7.8,SNR=2.4						
USRK	**Ussuriysk Ar.**	**10.12**	**314**	Pn	**Pn**	**13 27 01.7**	**-0.1**
	0.4nm,0.3s,baz=117,slow=14,SNR=6.9						
KSRS	**Korea Array**	**11.27**	**274**	Pn	**Pn**	**13 27 17.5**	**-0.1**
	0.1nm,0.3s,baz=84,slow=15,SNR=2.6						
SEY	**Seymchan**	**26.15**	**11**	P	**P**	**13 30 11.8**	**+0.9**
	0.5nm,0.5s,baz=194,slow=8.6,SNR=4.9						
SONM	**Songino Array**	**27.95**	**303**	P	**P**	**13 30 26.5**	**-1.0**
	1.0nm,0.5s,baz=99,slow=9.0,SNR=6.6						
H11N2	**WAKE ISLAND Hy**	**27.96**	**123**	T	T	13 59 43.0	
	baz=315,slow=75,SNR=232						
H11N1	**WAKE ISLAND Hy**	**27.97**	**123**	T	T	13 59 53.5	
	baz=315,slow=75,SNR=316						
H11N3	**WAKE ISLAND Hy**	**27.98**	**123**	T	T	13 59 54.2	
	baz=315,slow=75,SNR=286						
H11S1	**WAKE ISLAND Hy**	**28.70**	**125**	T	T	14 00 45.5	
	baz=317,slow=76,SNR=304						
H11S3	**WAKE ISLAND Hy**	**28.70**	**125**	T	T	14 00 44.9	
	baz=317,slow=76,SNR=331						
H11S2	**WAKE ISLAND Hy**	**28.72**	**125**	T	T	14 00 47.3	
	baz=317,slow=76,SNR=197						
ZALV	**Zalesovo Beam**	**41.96**	**312**	P	**P**	**13 32 27.4**	**-0.3**
	1.7nm,0.7s,baz=93,slow=7.8,SNR=8.4						
MKAR	**Makanchi Array**	**44.30**	**302**	P	**P**	**13 32 46.8**	**-0.1**
	0.7nm,0.7s,baz=86,slow=8.5,SNR=8.2						
KURBB	**Kurchatov Arra**	**46.11**	**308**	P	**P**	**13 33 00.9**	**-0.1**
	2.3nm,0.5s,baz=81,slow=8.0,SNR=8.4						
TAPN	**Taplejung**	**46.46**	**274**	*e*P	**P**	**13 33 04.6**	**+0.1**
	2.2nm,0.4s						
ODAN	**Odare**	**46.94**	**273**	*e*P	**P**	**13 33 09.1**	**+0.9**
RAMN	**Ramite**	**47.52**	**274**	*e*P	**P**	**13 33 12.8**	**+0.1**
	9.4nm,0.8s						
GUN	**Gumba**	**47.66**	**276**	*e*P	**P**	**13 33 14.8**	**+0.9**
KKN	**Kakani**	**48.18**	**276**	*e*P	**P**	**13 33 17.9**	**+0.1**
GKN	**Gorkha**	**48.60**	**276**	*e*P	**P**	**13 33 21.1**	**+0.1**
	16nm,0.7s						
ILAR	**Eielson Array**	**48.73**	**33**	P	**P**	**13 33 22.0**	**+0.7**
	0.3nm,0.6s,baz=262,slow=5.4,SNR=2.6						
KOLN	**Koldanda**	**49.52**	**277**	*e*P	**P**	**13 33 28.1**	**0.0**
	2.1nm,0.4s						
PYUN	**Piuthan**	**49.85**	**277**	*e*P	**P**	**13 33 30.6**	**0.0**
BVAR	**Borovoye Array**	**50.62**	**312**	P	**P**	**13 33 35.6**	**-0.2**
	0.4nm,0.4s,baz=67,slow=8.0,SNR=4.2						
WRA	**Warramunga Arr**	**57.68**	**189**	P	**P**	**13 34 27.1**	**-0.6**
	1.6nm,0.8s,baz=6.7,slow=7.0,SNR=14						
ASAR	**Alice Springs**	**61.41**	**189**	P	**P**	**13 34 53.4**	**0.0**
	1.0nm,0.7s,baz=13,slow=6.7,SNR=18						
YKA	**Yellowknife Ar**	**63.06**	**30**	P	**P**	**13 35 05.0**	**+1.1**
	0.2nm,0.6s,baz=304,slow=6.7,SNR=2.9						
FINES	**FINESS Array B**	**68.59**	**332**	P	**P**	**13 35 39.8**	**+0.2**
	0.5nm,0.4s,baz=41,slow=6.1,SNR=3.6						
NOA	**NORSAR Array B**	**73.90**	**337**	P	**P**	**13 36 11.6**	**-0.2**
	0.7nm,0.7s,baz=39,slow=5.7,SNR=3.0						
PDAR	**Pinedale Array**	**76.89**	**46**	P	**P**	**13 36 28.6**	**-1.0**
	0.2nm,0.5s,baz=286,slow=4.4,SNR=2.6						
TXAR	**Lajitas Array**	**89.35**	**53**	P	**P**	**13 37 33.9**	**-0.1**
	0.1nm,0.5s,baz=308,slow=3.0,SNR=2.9						

MEX 13 13:26:58.4±0.5, 17°.06N×94°.30W, h124km±17km, MD3.7, Chiapas

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
TGIG			**1.16**	**104**	*e*P	Pn	13 27 21.0	-1.5
TGIG					*i* S	Sn	13 27 39.0	-1.7
PCIG			**1.70**	**142**	*i* P	Pn	13 27 27.3	-1.1
PCIG					*e*S	Sn	13 27 49.5	-1.8
HUIG	**Huatulco**	**2.16**	**234**	*i* P	Pn	13 27 32.6	-1.5
HUIG					*e*S	Sn	13 27 59.1	-2.3
VHO	**Vista Hermosa**	**2.33**	**271**	*i* P	Pn	13 27 35.3	-1.1
VHO					*e*S	Sn	13 28 03.0	-2.5

*NIED **13** 13:29:00, 38°.90N×142°.50E, h38km, Mw4.1 Best double couple: Mo1.39000×10^15 NP1:φs140.00000°, δ30.00000°, λ-110.00000°. NP2:φs342.00000°, δ62.00000°, λ-79.00000°.*

*ISCJB **13** 13:29:07.9±0.4, 38°.81N±0°.04×142°.59E±0°.05, h27km, mb4.1/33, MS4.2/1, Error ellipse: s-maj=5.6km s-min=4.8km az=41.1*
*JMA **13** 13:29:10.5±0.2, 38°.90N×142°.47E, h36km±2km, M4.1*
JMA Felt I J1.
*IDC **13** 13:29:13.0±2.0, 38°.85N×142°.42E, h53km±17km, mb3.8/24, mb1 3.9/28, mb1mx3.8/59, mbtmp4.1/28, ML3.9/3, MS3.3/1, Ms1 3.3/1, ms1mx2.7/57, Error ellipse: s-maj=15.8km s-min=10.3km az=103.0*
*NEIC **13** 13:29:13.1±0.7, 38°.90N×142°.48E, h54km±6km, mb4.4/7, Error ellipse: s-maj=9.3km s-min=5.3km az=123.0*

ISC 13 13:29:09.9±0.6, 38°.79N±0°.05×142°.45E±0°.06, h27km, n76, σ0§94/70, mb4.2/33, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
OFUJ	**Ofunato**	**0.67**	**296**	P	**Pb**	**13 29 23.3**	**+0.2**
OFUJ				S	**Sb**	**13 29 32.1**	**0.0**
JIO	**Ouri**	**0.93**	**249**	P	**Pb**	**13 29 27.5**	**+0.2**
JMK	**Ichinoseki**	**0.97**	**280**	P	**Pb**	**13 29 28.1**	**-0.1**
JMK				S	**Sn**	**13 29 40.6**	**-0.1**
JOM	**Ohasama**	**1.13**	**308**	P	**Pn**	**13 29 29.8**	**-0.2**
JOM				S	**Sn**	**13 29 44.0**	**-0.6**
JTH	**Tanohata**	**1.23**	**339**	P	**Pn**	**13 29 30.3**	**-1.1**
JOU	**Okura**	**1.46**	**254**	P	**Pn**	**13 29 35.6**	**+1.0**
ERM	**Erimo**	**3.27**	**9**	*e*Pn	**Pn**	**13 29 59.5**	**+0.1**
MJAR	**Matsushiro Arr**	**4.04**	**238**	P	Pn	13 30 13.6	+3.5
	11nm,0.3s,baz=34,slow=13,SNR=43						
MAJO	**Matsushiro**	**4.04**	**238**	*e*Pn	**Pn**	**13 30 12.5**	**+2.4**
MAT	**Matsushiro**	**4.04**	**238**	P	Pn	13 30 13.7	+3.6
MAT				S	**Sb**	**13 31 05.8**	**-3.1**
ASAJ	**Asahikawa**	**5.32**	**1**	P	**Pn**	**13 30 28.1**	**+0.5**
	1.8nm,0.3s,baz=261,slow=32,SNR=15						
ASAJ				S	**Sn**	**13 31 29.8**	**+1.8**
	1.9nm,0.3s,baz=304,slow=33,SNR=4.1						
ASAJ	**Asahikawa**	**5.32**	**1**	*e*Pn	**Pn**	**13 30 27.6**	**0.0**
ASAJ				S	**Sn**	**13 31 29.8**	**+1.8**
INU	**Inuyama**	**5.54**	**233**	*e*Pn	Pn	13 30 34.4	+3.9
JHJ2	**Mitsune**	**6.05**	**201**	*e*Pn	**Pn**	**13 30 37.1**	**-0.6**
JHJ	**Hachijo jima 2**	**6.06**	**202**	P	**Pn**	**13 30 38.8**	**+1.1**
	22nm,0.3s,baz=264,slow=23,SNR=8.9						
JHJ				S	**Sn**	**13 31 45.3**	**-0.8**
	15nm,0.3s,baz=34,slow=7.3,SNR=3.1						
USRK	**Ussuriysk Ar.**	**9.53**	**308**	P	**Pn**	**13 31 27.3**	**+2.0**
	0.4nm,0.3s,baz=119,slow=13,SNR=11						
JNU	**Nakatsue**	**10.95**	**242**	LR	LR	13 36 16.0	
	comp=Z,168nm,19.4s,baz=130,slow=39						
MDJ	**Mudanjiang**	**11.23**	**305**	P	**Pn**	**13 31 51.0**	**+2.4**
MDJ				pmax	pmax		
	comp=Z,5.0nm,0.7s						
MDJ				pmax	pmax		
	comp=Z,55nm,3.0s						
KSRS	**Korea Array**	**11.52**	**268**	P	Pn	13 31 58.2	+5.6
	comp=Z,0.2nm,0.3s,baz=72,slow=14,SNR=4.1						
KSAR	**Wonju Array Be**	**11.55**	**268**	P	Pn	13 31 58.2	+5.2
MA2	**Magadan**	**21.47**	**12**	P	**P**	**13 33 54.9**	**-1.2**
	comp=Z,1.6nm,0.7s,baz=211,slow=12,SNR=5.5						
HHC	**Hu-ho-hao-te**	**23.75**	**285**	*e*P	**P**	**13 34 21.4**	**+1.3**
HHC				pP	sP	13 34 32.8	+1.6
HHC				sP	pP	13 34 38.4	+11
HHC				S	**S**	**13 38 32.1**	**-1.7**
HHC				pmax	pmax		
	comp=Z,16nm,0.9s						
HHC				pmax	pmax		
	comp=Z,98nm,8.5s						
HHC				LR	LR		
	comp=N,490nm,12.9s						
HHC				LR	LR		
	comp=E,470nm,12.8s						
HHC				LR	LR		
	comp=Z,410nm,13.9s						
YAK	**Yakutsk**	**24.56**	**345**	P	**P**	**13 34 26.2**	**-0.9**
	comp=Z,12nm,0.5s,baz=6.8,slow=1.7,SNR=6.6						
YAK	**Yakutsk**	**24.56**	**345**	*e*P	**P**	**13 34 25.9**	**-1.3**
	comp=Z,15nm,0.7s						
SEY	**Seymchan**	**24.91**	**11**	P	**P**	**13 34 30.2**	**-0.1**
	comp=Z,1.4nm,0.5s,baz=201,slow=9.2,SNR=5.1						
SONM	**Songino Array**	**27.54**	**301**	P	**P**	**13 34 54.5**	**+0.1**
	comp=Z,1.0nm,0.6s,baz=93,slow=8.8,SNR=8.1						
ENH	**Enshi**	**28.33**	**263**	*e*P	**P**	**13 35 01.2**	**-0.4**
	comp=Z,7.4nm,0.6s						
H11N2	**WAKE ISLAND Hy**	**28.41**	**125**	T	T	14 05 30.3	
	baz=317,slow=75,SNR=197						
H11N1	**WAKE ISLAND Hy**	**28.42**	**125**	T	T	14 05 30.3	
	baz=317,slow=75,SNR=256						
H11N3	**WAKE ISLAND Hy**	**28.43**	**125**	T	T	14 05 31.5	
	baz=317,slow=75,SNR=188						
H11S1	**WAKE ISLAND Hy**	**29.19**	**127**	T	T	14 06 28.3	
	baz=318,slow=76,SNR=5.9						
H11S3	**WAKE ISLAND Hy**	**29.19**	**127**	T	T	14 06 27.8	
	baz=318,slow=76,SNR=6.4						
H11S2	**WAKE ISLAND Hy**	**29.21**	**127**	T	T	14 06 30.8	
	baz=318,slow=76,SNR=6.6						
TLY	**Talaya**	**29.84**	**308**	P	**P**	**13 35 15.0**	**+0.3**
	comp=Z,2.4nm,0.7s,baz=215,slow=2.1,SNR=5.0						
TLY	**Talaya**	**29.84**	**308**	*e*P	**P**	**13 35 14.3**	**-0.5**
	comp=Z,2.5nm,0.8s						
CD2	**Chengdu**	**32.52**	**268**	P	**P**	**13 35 38.3**	**-0.3**
CD2				pmax	pmax		
	comp=Z,1.0nm,0.5s						
KMI	**Kunming**	**36.06**	**260**	P	P	13 36 13.6	+4.1
KMI				pmax	pmax		
	comp=Z,12nm,1.2s						
WMQ	**Urumqi**	**40.81**	**295**	P	**P**	**13 36 49.9**	**+0.9**
WMQ				pP	sP

	comp=Z,2.1nm,0.4s,baz=44,slow=6.0,SNR=12							
PDAR	Pinedale Array	75.86	46	P	P	13 40 53.8	-0.3	
	comp=Z,0.3nm,0.5s,baz=242,slow=3.2,SNR=3.1							
BUR08	Bucovina Ar. S	77.43	322	eP	P	13 41 02.7	0.0	
BRTR	Keskin Array B	78.30	312	P	P	13 41 07.8	+0.1	
	comp=Z,0.5nm,0.4s,baz=143,slow=1.8,SNR=3.6							
CLL	Collm	79.98	331	e(P)	P	13 41 09.0	-7.5	
GERES	GERESS Array B	81.65	329	P	P	13 41 24.2	-1.4	
	comp=Z,0.6nm,0.5s,baz=15,slow=5.5,SNR=3.5							
TXAR	Lajitas Array	88.41	53	P	P	13 41 59.5	-0.3	
	comp=Z,0.2nm,0.6s,baz=301,slow=3.4,SNR=4.1							

IDC 13 13:31:49.3±544.0, 48.01N×48.50E, h0km, Error ellipse: s-maj=204.9km s-min=134.1km az=53.0, Western Kazakhstan

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
I31KZ	AKTYUBINSK INF	6.69	65	*i*		14 15 50.0	
	baz=252,slow=316,SNR=3.7						
I43RU	DUBNA INFRASON	11.11	326	*i*		14 41 10.0	
	baz=137,slow=324,SNR=3.8						
I46RU	ZALESOVO INFRA	23.44	62	*i*		15 54 50.0	
	baz=270,slow=329,SNR=1.4						
I34MN	SONGINO INFRAS	38.02	68	*i*		17 23 20.0	
	baz=297,slow=320,SNR=0.5						

JMA 13 13:57:29.8, 36.95N×140.63E, h5km±1km, M2.5, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	Iwakimizuishiy	0.20	42	P	Pg	13 57 34.2	+0.4
ONAJ				S	Sg	13 57 37.2	+0.7
JHO	Hitachi	0.34	188	P	Pg	13 57 36.5	+0.1
JHO				S	Sg	13 57 41.3	+0.4
JFK	Kawauchi	0.46	25	P	Pg	13 57 38.7	0.0
JFK				S	Sg	13 57 45.0	+0.3
JFT	Otama	0.61	338	P	Pg	13 57 42.0	+0.4
JFT				S	Sg	13 57 50.3	+0.7
MAT	Matsushiro	1.99	259	P	Pn	13 58 05.2	+1.1
MAT				S	Sb	13 58 31.3	-0.2

WEL 13 13:57:36.8±0.1, 39.87S×175.11E, h33km, ML3.5/37, 7C-13D, Error ellipse: s-maj=0.8km s-min=0.5km az=90.0, MM 5., North Island

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
WAZ	Wanganui	0.15	321	↑P*	Pb	13 57 43.2	+0.3
WAZ				AML	AML	13 57 49.6	
WAZ				AML	AML	13 57 50.0	
MTVZ	Mangateitei	0.56	30	PN	Pb	13 57 47.6	-0.8
MTVZ				SN	Sn	13 57 57.1	+0.4
MTVZ				AML	AML	13 57 59.8	
PKVZ	Pokaka	0.61	17	↓PN	Pn	13 57 48.0	-1.2
PKVZ				AML	AML	13 57 57.9	
PKVZ				AML	AML	13 57 59.6	
WNVZ	Wahianoa	0.66	35	PN	Pn	13 57 49.0	-1.0
WNVZ				SN	Sb	13 57 58.6	-0.6
TRVZ	Turoa	0.67	31	PN	Pn	13 57 48.9	-1.1
TRVZ				SN	Sb	13 57 58.9	-0.4
TRVZ				AML	AML	13 58 00.3	
MOVZ	Moawhango	0.68	47	↑PN	Pn	13 57 48.8	-1.3
MOVZ				SN	Sb	13 57 58.9	-0.7
MOVZ				AML	AML	13 58 02.9	
TSZ	Takapari Road	0.68	106	↑PN	Pn	13 57 49.0	-1.1
TSZ				SN	Sb	13 57 58.3	-1.2
TSZ				AML	AML	13 58 01.2	
LREZ	Lake Rotokare	0.68	307	PN	Pn	13 57 49.3	-0.8
DRZ	Dome Shelter	0.69	31	PN	Pn	13 57 49.6	-0.9
DRZ				AML	AML	13 58 00.5	
DRZ				AML	AML	13 58 04.3	
FWVZ	Far West T-bar	0.71	29	PN	Pn	13 57 49.4	-1.2
FWVZ				AML	AML	13 58 02.2	
FWVZ				AML	AML	13 58 02.5	
POWZ	Post Office Ro	0.72	136	↓PN	Pn	13 57 49.7	-1.0
TUVZ	Tukino	0.74	35	PN	Pn	13 57 50.1	-0.9
TUVZ				AML	AML	13 58 03.3	
TUVZ				AML	AML	13 58 04.6	
NGZ	Ngauruhoe	0.79	29	PN	Pn	13 57 50.3	-1.5
NGZ				AML	AML	13 58 07.3	
NGZ				AML	AML	13 58 08.1	
VRZ	Vera Road	0.80	340	↓PN	Pn	13 57 50.5	-1.1
VRZ				AML	AML	13 58 04.5	
VRZ				AML	AML	13 58 05.9	
BHHZ	Black Hill Sta	0.83	63	↑PN	Pn	13 57 50.7	-1.4
OTVZ	Oturere	0.83	31	PN	Pn	13 57 51.4	-0.9
OTVZ				AML	AML	13 58 06.7	
OTVZ				AML	AML	13 58 06.8	
PNHZ	Pukenui	0.84	93	PN	Pn	13 57 51.3	-1.0
TWVZ	Taurewa	0.84	18	PN	Pn	13 57 50.8	-1.5
TWVZ				AML	AML	13 58 04.6	
TWVZ				AML	AML	13 58 04.9	
WTVZ	West Tongariro	0.84	26	PN	Pn	13 57 51.2	-1.2
WTVZ				AML	AML	13 58 06.2	
WTVZ				AML	AML	13 58 07.4	
KRVZ	Karewarewa	0.88	28	PN	Pn	13 57 51.5	-1.4
KRVZ				AML	AML	13 58 06.2	
KRVZ				AML	AML	13 58 06.8	
PREZ	Palmer Road	0.91	305	PN	Pn	13 57 52.8	-0.5
DVHZ	Dannevirke	0.92	118	PN	Pn	13 57 53.0	-0.3
OGWZ	Otaki Gorge	0.94	177	↓PN	Pn	13 57 52.4	-1.4
PRWZ	Pori Road	0.95	136	PN	Pn	13 57 53.5	-0.2
DREZ	Durham Road	0.98	314	PN	Pn	13 57 53.7	-0.5
NEZ	North Egmont	0.99	307	PN	Pn	13 57 53.9	-0.5
KRHZ	Kereru	1.00	77	↓PN	Pn	13 57 53.9	-0.5
KIW	Kapiti Island	1.00	189	↓PN	Pn	13 57 52.9	-1.6
KIW				AML	AML	13 58 07.3	
KIW				AML	AML	13 58 07.5	
MHEZ	Mangahewa	1.00	322	↓PN	Pn	13 57 54.1	-0.4
KATZ	Kakaramea	1.00	27	PN	Pn	13 57 53.9	-0.7
KATZ				AML	AML	13 58 11.1	
KHEZ	Kahui Hut	1.02	304	PN	Pn	13 57 54.5	-0.3
WPHZ	Waipukurau	1.04	101	PN	Pn	13 57 55.1	0.0
NMEZ	Namu Road	1.06	295	PN	Pn	13 57 54.8	-0.4
RITZ	Rihia Road	1.07	33	PN	Pn	13 57 55.2	-0.2
RITZ				AML	AML	13 58 15.9	
RITZ				AML	AML	13 58 16.0	
HOWZ	Holdsworth Sta	1.07	163	↓PN	Pn	13 57 54.7	-0.7
TIWZ	Tintock	1.08	147	↓PN	Pn	13 57 55.4	-0.2
TIWZ				AML	AML	13 58 12.1	
TIWZ				AML	AML	13 58 13.0	
PKE	Pukeiti	1.10	308	PN	Pn	13 57 55.7	-0.2
PKE				AML	AML	13 58 11.5	
PKE				AML	AML	13 58 12.7	
KWHZ	Kaweka Forest	1.11	67	PN	Pn	13 57 55.6	-0.4
RATZ	Rangitukua	1.13	27	PN	Pn	13 57 56.0	-0.3
RATZ				AML	AML	13 58 22.2	
RATZ				AML	AML	13 58 27.0	
NWEZ	Newall Road	1.13	301	PN	Pn	13 57 56.2	-0.1
BFZ	Birch Farm	1.19	133	PN	Pn	13 57 56.1	-1.0
BFZ				AML	AML	13 58 16.9	
BFZ				AML	AML	13 58 16.9	
BFZ				AML	AML	13 58 17.2	
BFZ				AML	AML	13 58 17.2	
ANWZ	Angora Road	1.20	120	PN	Pn	13 57 56.7	-0.5
CAW	Cannon Point	1.23	182	↓PN	Pn	13 57 56.7	-1.0
CAW				AML	AML	13 58 14.6	
CAW				AML	AML	13 58 17.9	
PRHZ	Porangahau	1.23	109	PN	Pn	13 57 57.1	-0.6
WATZ	Wairara	1.26	23	PN	Pn	13 57 57.5	-0.6
BKZ	Black Stump Fm	1.28	57	↑PN	Pn	13 57 58.1	-0.3
BKZ				AML	AML	13 58 20.2	
BKZ				AML	AML	13 58 20.8	
DUWZ	D'Urville Isla	1.30	224	PN	Pn	13 57 56.4	-2.2
DUWZ				AML	AML	13 58 17.7	
DUWZ				AML	AML	13 58 21.0	
MTW	Mount Morrison	1.32	167	↑PN	Pn	13 57 58.5	-0.4
MTW				AML	AML	13 58 17.3	
MTW				AML	AML	13 58 20.2	
PXZ	Pawanui	1.36	97	PN	Pn	13 57 58.9	-0.4
PXZ				AML	AML	13 58 26.8	
PXZ				AML	AML	13 58 26.8	
PXZ				AML	AML	13 58 26.8	
KAHZ	Kahuranaki	1.36	87	PN	Pn	13 57 59.7	+0.2
TMWZ	Te Maipa	1.37	154	PN	Pn	13 57 59.6	0.0
HIZ	Hauiti	1.37	352	↓PN	Pn	13 57 58.6	-1.0
HIZ				AML	AML	13 58 17.1	
HIZ				AML	AML	13 58 19.7	
WEL	Wellington	1.43	190	PN	Pn	13 57 59.5	-0.9
MRHZ	Matea Rd	1.45	45	PN	Pn	13 57 59.9	-0.8
NMHZ	Naumai	1.52	60	PN	Pn	13 58 02.7	+1.0
PAWZ	Paruwai Farm	1.53	171	PN	Pn	13 58 01.5	-0.3
PAWZ				AML	AML	13 58 27.0	
PAWZ				AML	AML	13 58 27.1	
CKHZ	Cape Kidnapper	1.53	83	PN	Pb	13 58 04.2	-0.3
BHW	Baring Head	1.54	187	PN	Pn	13 58 01.0	-1.0
BHW				AML	AML	13 58 38.9	
BHW				AML	AML	13 58 40.1	
TLZ	Tolley Road	1.58	12	PN	Pn	13 58 00.8	-1.6
WPRZ	Whakapapatarin	1.58	32	↓PN	Pn	13 58 02.4	-0.1
TRWZ	Traveller	1.59	164	PN	Pn	13 58 02.7	+0.1
TRWZ				AML	AML	13 58 30.9	
TRWZ				AML	AML	13 58 30.9	
ALRZ	Allen Road	1.62	37	PN	Pn	13 58 02.6	-0.4
PRRZ	Plateau Road	1.70	36	PN	Pn	13 58 03.7	-0.4
PLWZ	Palliser	1.70	176	PN	Pn	13 58 02.7	-1.4
TUWZ	Tuamarina	1.79	209	PN	Pn	13 58 03.9	-1.4
TUWZ				AML	AML	13 58 43.1	
TUWZ				AML	AML	13 58 47.1	
RAHZ	Arahi	1.81	59	PN	Pn	13 58 06.1	+0.6
WHHZ	Waihua	1.83	65	PN	Pn	13 58 06.0	+0.2
NNZ	Nelson	1.88	224	PN	Pn	13 58 05.3	-1.3
TARZ	Mount Tarawera	1.96	34	PN	Pn	13 58 08.0	+0.2
SNGZ	Shannon Statio	2.04	58	PN	Pn	13 58 09.1	+0.3
BSWZ	Blackbirch Sta	2.06	207	PN	Pn	13 58 08.2	-1.0
BSWZ				AML	AML	13 59 00.2	
KNZ	Kokohu	2.16	68	PN	Pn	13 58 09.6	-0.8
TOZ	Tahuroa Road	2.16	8	PN	Pn	13 58 08.7	-1.7
QRZ	Quartz Range	2.19	243	PN	Pn	13 58 08.8	-2.0
QRZ				AML	AML	13 58 40.1	
QRZ				AML	AML	13 58 40.2	
URZ	Urewera	2.24	45	PN	Pn	13 58 09.7	-1.8
URZ				AML	AML	13 58 40.5	
URZ				AML	AML	13 58 43.5	
RAGZ	Rawiri	2.26	53	PN	Pn	13 58 12.0	+0.2
MHGZ	Mahia Peninsul	2.28	72	PN	Pn	13 58 11.7	-0.4
PRGZ	Paritu Road	2.35	67	PN	Pn	13 58 12.4	-0.7
RIGZ	Rimuhau	2.37	61	PN	Pn	13 58 13.1	-0.2
MWZ	Matawai	2.43	52	PN	Pn	13 58 13.2	-0.9
MWZ				AML	AML	13 58 55.9	
THZ	Tophouse	2.52	221	↓PN	Pn	13 58 14.8	-0.7
THZ				AML	AML	13 59 01.9	
THZ				AML	AML	13 59 04.8	
TKGZ	Te Karaka	2.56	57	PN	Pn	13 58 15.5	-0.5
MKAZ	Moumakai	2.77	1	PN	Pn	13 58 17.5	-1.2
KHZ	Kahutara	2.80	205	PN	Pn	13 58 17.4	-1.8
TWGZ	Tauwhareparae	2.80	54	PN	Pn	13 58 19.1	-0.2
AWAZ	Awhitu Peninsu	2.83	352	PN	Pn	13 58 19.1	-0.5
ETAZ	East Tamaki Re	2.92	357	PN	Pn	13 58 19.9	-1.0
WTAZ	Waiatarua	2.97	352	PN	Pn	13 58 21.4	-0.1
HAZ	Te Kaha	2.97	45	PN	Pn	13 58 20.4	-1.1
PUZ	Puketiti	3.04	55	↑PN	Pn	13 58 21.4	-1.1
WIAZ	Waiheke Island	3.08	0	PN	Pn	13 58 21.8	-1.2
DSZ	Dennistone Nort	3.13	232	PN	Pn	13 58 22.2	-1.6
ABAZ	Army Bay	3.27	356	PN	Pn	13 58 24.8	-0.9
WMGZ	Waiomatatini S	3.30	53	PN	Pn	13 58 25.0	-1.1
LTZ	Lake Taylor	3.61	215	PN	Pn	13 58 28.0	-2.3
INZ	Inchbonnie	3.97	223	PN	Pn	13 58 33.0	-2.3
WCZ	Waipu Caves	3.97	351	PN	Pn	13 58 34.3	-1.1
CRLZ	Canterbury Las	4.14	206	PN	Pn	13 58 35.3	-2.3
OXZ	Oxford	4.15	213	PN	Pn	13 58 34.2	-3.6
MQZ	McQueen's Vall	4.25	205	PN	Pn	13 58 34.8	-4.3
WVZ	Waitaha Valley	4.58	224	PN	Pn	13 58 41.5	-2.3
RPZ	Rata Peaks	4.89	217	PN	Pn	13 58 45.7	-2.3
FOZ	Fox Glacier	5.39	226	PN	Pn	13 58 51.6	-3.2

JMA 13 13:59:10.8, 37.79N×139.99E, h8km±1km, M2.6, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JFT	Otama	0.39	134	P	Pg	13 59 18.4	0.0
JFT				S	Sg	13 59 23.5	+0.1
JYS	Shirataka	0.43	8	P	Pg	13 59 19.6	+0.3
JYS				eS	Sg	13 59 25.5	+0.5
JFY	Yanaizu	0.45	211	P	Pg	13 59 19.6	+0.2
JFY				S	Sg	13 59 25.4	+0.1
JNS	Sasagawa	0.53	273	P	Pg	13 59 21.1	0.0
JNS				S	Sg	13 59 28.0	-0.1
JMM	Marumori	0.64	83	P	Pg	13 59 22.9	-0.3
JMM				S	Sg	13 59 31.0	-0.5
JYA	Atsumi	0.83	345	P	Pg	13 59 26.5	-0.3
JYA				S	Sg	13 59 37.6	0.0
JAW	Awa shima	0.89	319	P	Pg	13 59 27.8	0.0
JAW				S	Sb	13 59 40.3	-0.1
JHK	Hiroka	0.94	235	P	Pg	13 59 28.4	-0.5
JHK				S	Sg	13 59 40.4	-0.8
MAT	Matsushiro	1.89	229	P	Pn	13 59 44.4	+1.0
MAT				S	Sb	14 00 09.4	0.0

*JMA **13** 13:59:34.0±0.3, 39.50N×143.46E, h19km, M3.3*
*IDC **13** 13:59:41.9±1.1, 39.94N×142.03E, h0km, mb3.4/7, mb1 3.5/9, mb1mx3.3/61, mbtmp3.3/9, ML2.8/2, Error ellipse: s-maj=29.0km s-min=19.3km az=85.0*
ISC 13 13:59:36.9±1.8, 39.56N±0.09×143.2E±0.1, h18km, n17, σ0.78/16, mb3.3/7, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MIYJ	Miyakonagasawa	1.07	271	P	Pb	13 59 56.8	-0.1
MIYJ				S	Sn	14 00 13.3	+1.8
JTH	Tanohata	1.10	290	P	Pb	13 59 57.6	+0.2
OFUJ	Ofunato	1.29	248	P	Pn	13 59 59.3	-0.7
JOM	Ohasama	1.48	267	P	Pn	14 00 03.0	+0.3
JOM				eS	Sg	14 00 23.7	-1.1
JKZ	Kuzumaki	1.51	287	P	Pn	14 00 03.7	+0.6
JANG	Nango	1.53	302	P	Pn	14 00 03.2	-0.2
JTM	Tenmabayashi	2.04	307	P	Pn	14 00 11.0	+0.6
JAH	Hinai	2.07	288	P	Pb	14 00 13.2	-0.8
ASAJ	Asahikawa	4.57	354	Pn	Pn	14 00 45.3	+0.2
	0.4nm,0.3s,baz=207,slow=16,SNR=8.2						
MJAR	Matsushiro Arr	4.97	234	Pn	Pn	14 00 51.5	+0.9
	0.5nm,0.3s,baz=38,slow=13,SNR=4.1						
SONM	Songino Array	27.66	300	P	P	14 05 23.4	-0.3
	0.2nm,0.4s,baz=90,slow=8.6,SNR=2.4						
ZALV	Zalesovo Beam	41.30	310	P	P	14 07 21.2	+0.1
	0.3nm,0.4s,baz=66,slow=4.9,SNR=2.4						
MKAR	Makanchi Array	44.02	300	P	P	14 07 43.0	-0.3
	0.3nm,0.6s,baz=87,slow=11,SNR=5.3						
KURBB	Kurchatov Arra	45.60	306	P	P	14 07 55.4	-0.4
	0.8nm,0.6s,baz=80,slow=8.8,SNR=5.7						
ILAR	Eielson Array	46.61	34	P	P	14 08 13.3	+10
	0.3nm,0.9s,baz=263,slow=7.2,SNR=3.3						
WRA	Warramunga Arr	59.77	190	P	P	14 09 49.3	+8.4
	0.2nm,0.7s,baz=6.8,slow=7.1,SNR=3.1						
ASAR	Alice Springs	63.50	190	P		14 10 16.0	+10
	0.3nm,1.0s,baz=15,slow=11,SNR=3.1						

*ISCJB **13** 14:00:05.2±0.4, 39.49N±0.04×143.48E±0.05, h11km, mb3.9/21, MS3.1/3, Error ellipse: s-maj=6.5km s-min=4.4km az=142.0*
*IDC **13** 14:00:05.9±0.7, 39.51N×143.22E, h0km, mb3.8/18, mb1 3.9/23, mb1mx3.8/63, mbtmp3.8/23, ML3.6/4, MS3.2/8, Ms1 3.2/8, ms1mx2.8/47, Error ellipse: s-maj=17.6km s-min=13.9km az=116.0*
*JMA **13** 14:00:06.5±0.2, 39.41N×143.45E, h17km±4km, M4.3*
*NEIC **13** 14:00:07.5±0.4, 39.55N×143.21E, h10km, mb4.1/4, Error ellipse: s-maj=9.9km s-min=5.9km az=115.0*
ISC 13 14:00:07.6±0.7, 39.54N±0.06×143.36E±0.07, h11km, n56, σ1.36/54, mb4.0/21, MS3.1/3, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MIYJ	Miyakonagasawa	1.19	272	P	Pn	14 00 29.5	-0.7
MIYJ				S	Sb	14 00 45.5	-0.1
JTH	Tanohata	1.22	290	P	Pn	14 00 30.3	-0.3
JTH				S	Sn	14 00 48.0	+0.9
OFUJ	Ofunato	1.39	251	P	Pn	14 00 31.8	-1.1
JOM	Ohasama	1.60	268	P	Pn	14 00 35.5	-0.3
JOM				S	Sn	14 00 56.3	-0.2
JRG	Rokugo	2.11	267	P	Pn	14 00 43.1	+0.2
JAH	Hinai	2.19	288	P	Pn	14 00 44.4	+0.4
JOU	Okura	2.40	242	P	Pn	14 00 46.3	-0.6
JOU				S	Sn	14 01 15.4	-1.0

JYK	Kaneyama	2.41	256	P	Pn	14 00 47.0	0.0	
ERM	Erimo	2.48	357	ePn	Pn	14 00 45.0	-2.9	
ASAJ	Asahikawa	4.61	353	Pn	Pn	14 01 17.5	+0.3	
	2.1nm,0.3s,baz=213,slow=12,SNR=13							
ASAJ				Sn	Sn	14 02 11.3	+0.5	
	1.1nm,0.3s,baz=38,slow=19,SNR=2.6							
MJAR	Matsushiro Arr	5.04	235	Pn	Pn	14 01 22.7	-0.6	
	3.7nm,0.3s,baz=38,slow=13,SNR=22							
MJAR				LR	LR	14 03 33.6		
	comp=Z,124nm,19.0s,baz=40,slow=42							
MAJO	Matsushiro	5.05	235	ePn	Pn	14 01 23.2	0.0	
MAT	Matsushiro	5.05	235	P	Pn	14 01 23.8	+0.5	
MAT				S	Sn	14 02 24.7	+3.1	
JHJ2	Mitsune	7.02	205	ePn	Pn	14 01 48.3	-2.0	
JHJ	Hachijo jima 2	7.02	205	Pn	Pn	14 01 48.0	-2.4	
	13nm,0.3s,baz=342,slow=24,SNR=6.1							
JHJ				Sn	Sn	14 03 02.3	-7.9	
	11nm,0.3s,baz=66,slow=19,SNR=3.9							
USRK	Ussuriysk Ar.	9.67	302	Pn	Pn	14 02 26.0	-0.7	
	0.1nm,0.3s,baz=103,slow=12,SNR=3.4							
USRK				LR	LR	14 06 11.9		
	comp=Z,142nm,18.7s,baz=151,slow=38							
JNU	Nakatsue	11.92	241	LR	LR	14 07 43.4		
	comp=Z,96nm,19.1s,baz=310,slow=39							
KSRS	Korea Array	12.27	265	Pn	Pn	14 03 05.4	+3.2	
	0.2nm,0.3s,baz=78,slow=13,SNR=4.0							
KSRS				LR	LR	14 07 27.3		
	comp=Z,85nm,18.8s,baz=87,slow=36							
KSAR	Wonju Array Be	12.30	265	Pn	Pn	14 03 05.4	+2.7	
KLR	Kul'dur	12.74	323	Pn	Pn	14 03 07.3	-1.4	
	0.1nm,0.3s,baz=116,slow=6.9,SNR=3.7							
KLR				LR	LR	14 08 13.9		
	comp=Z,96nm,18.1s,baz=93,slow=38							
MA2	Magadan	20.60	11	P	P	14 04 47.2	+0.7	
	2.3nm,0.6s,baz=193,slow=12,SNR=4.2							
MA2				LR	LR	14 12 38.6		
	comp=Z,37nm,19.5s,baz=167,slow=36							
SEY	Seymchan	24.05	10	P	P	14 05 22.6	0.0	
	2.5nm,0.8s,baz=189,slow=12,SNR=12							
ULN	Ulaanbaatar	27.33	300	eP	P	14 05 50.6	-2.0	
	1.9nm,0.5s							
SONM	Songino Array	27.77	300	P	P	14 05 56.4	-0.1	
	0.9nm,0.4s,baz=95,slow=9.3,SNR=7.5							
SONM				LR	LR	14 17 36.3		
	comp=Z,116nm,18.1s,baz=136,slow=38							
H11N2	WAKE ISLAND Hy	28.28	127	T	T	14 36 56.0		
	baz=318,slow=75,SNR=27							
H11N1	WAKE ISLAND Hy	28.29	127	T	T	14 36 56.7		
	baz=318,slow=75,SNR=20							
H11N3	WAKE ISLAND Hy	28.30	127	T	T	14 37 00.5		
	baz=318,slow=75,SNR=18							
H11S1	WAKE ISLAND Hy	29.10	129	T	T	14 37 49.4		
	baz=321,slow=74,SNR=6.6							
H11S3	WAKE ISLAND Hy	29.10	129	T	T	14 37 58.4		
	baz=124,slow=74,SNR=8.4							
H11S2	WAKE ISLAND Hy	29.11	129	T	T	14 36 37.9		
	SNR=5.7							
TLY	Talaya	29.94	307	LR	LR	14 19 05.8		
	comp=Z,42nm,18.2s,baz=140,slow=38							
ZALV	Zalesovo Beam	41.41	310	P	P	14 07 53.5	-0.3	
	1.6nm,0.5s,baz=102,slow=8.3,SNR=7.6							
CMAR	Chiang Mai Arr	43.63	254	P	P	14 08 10.6	-1.7	
	0.4nm,0.8s,baz=46,slow=7.9,SNR=4.5							
MKAR	Makanchi Array	44.13	300	P	P	14 08 15.1	-0.9	
	1.6nm,0.6s,baz=84,slow=10.0,SNR=16							
KURK	Kurchatov	45.63	306	eP	P	14 08 26.7	-1.2	
	7.3nm,0.5s							
KURBB	Kurchatov Arra	45.71	306	P	P	14 08 27.8	-0.7	
	4.5nm,0.7s,baz=80,slow=8.5,SNR=21							
ILAR	Eielson Array	46.56	34	P	P	14 08 35.4	+0.3	
	0.6nm,0.6s,baz=262,slow=6.1,SNR=8.8							
RAMN	Ramite	48.38	273	eP	P	14 08 48.6	-1.3	
GUN	Gumba	48.46	274	eP	P	14 08 53.1	+2.4	
	14nm,0.5s							
GKN	Gorkha	49.37	275	eP	P	14 08 59.7	+2.3	
	8.1nm,0.5s							
TKM2	Tokmak 2	49.82	297	eP	P	14 09 00.1	-0.6	
	0.9nm,0.3s							
BRVK	Borovoye	50.10	311	eP	P	14 09 02.0	-0.4	
KOLN	Koldanda	50.28	276	eP	P	14 09 06.7	+2.3	
	4.3nm,0.4s							
PYUN	Piuthan	50.59	276	eP	P	14 09 09.5	+2.7	
INK	Inuvik	51.46	28	P	P	14 09 13.3	+0.9	
	0.5nm,0.6s,baz=312,slow=6.8,SNR=4.4							
ARU	Arti	55.52	318	P	P	14 09 42.2	-0.2	
	1.2nm,0.3s,baz=74,slow=5.0,SNR=3.8							
ABKAR	Akbulak array	57.51	310	eP	P	14 09 56.2	-0.6	
	0.6nm,0.4s							
WRA	Warramunga Arr	59.77	190	P	P	14 10 12.2	-0.5	
	0.2nm,0.4s,baz=8.0,slow=6.9,SNR=5.6							
YKA	Yellowknife Ar	60.88	31	P	P	14 10 19.9	+0.1	
	0.2nm,0.5s,baz=301,slow=6.4,SNR=5.8							
ASAR	Alice Springs	63.49	190	P	P	14 10 37.7	-0.1	
	0.3nm,0.9s,baz=13,slow=8.2,SNR=3.4							
FINES	FINESS Array B	67.31	332	P	P	14 11 01.4	-0.7	
	1.5nm,0.6s,baz=57,slow=7.0,SNR=6.1							
NVAR	Mina Array Bea	72.28	55	P	P	14 11 34.8	+1.4	
	0.3nm,0.6s,baz=289,slow=9.2,SNR=2.7							
HFS	Hagfors	72.43	336	P	P	14 11 33.4	-0.1	
	1.2nm,0.6s,baz=54,slow=7.5,

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.11**	**67** ⇑	P	**Pg**	**14 04 16.9**	**0.0**
ONAJ				S	**Sg**	**14 04 19.2**	**+0.1**
JFK	**Kawauchi**	**0.35**	**28** ⇑	P	**Pg**	**14 04 20.7**	**+0.1**
JFK				S	**Sg**	**14 04 25.6**	**+0.2**
JHO	**Hitachi**	**0.46**	**191** ⇓	P	**Pg**	**14 04 22.4**	**-0.2**
JHO				S	**Sg**	**14 04 28.6**	**-0.1**
JFT	**Otama**	**0.53**	**330** ⇓	P	**Pg**	**14 04 24.1**	**+0.1**
JFT				S	**Sg**	**14 04 31.3**	**+0.2**
JSB	**Shiboa**	**0.61**	**262** ⇑	P	**Pb**	**14 04 25.9**	**-0.1**
JSB				S	**Sb**	**14 04 33.9**	**-0.5**
JMM	**Marumori**	**0.81**	**7** ⇓	P	**Pg**	**14 04 28.6**	**-0.7**
JMM				S	**Sg**	**14 04 39.3**	**-0.6**
JFY	**Yanaizu**	**0.85**	**294** ⇓	P	**Pg**	**14 04 29.6**	**-0.4**
JFY				S	**Sg**	**14 04 40.4**	**-0.7**
MJAR	**Matsushiro Arr**	**2.04**	**256**	Pn	**Pn**	**14 04 48.8**	**+1.3**
	11nm,0.3s,baz=78,slow=16,SNR=21						
MJAR				Sn	**Sb**	**14 05 15.2**	**-0.5**
	20nm,0.3s,baz=65,slow=25,SNR=9.4						
MAT	**Matsushiro**	**2.05**	**256**	P	**Pn**	**14 04 48.6**	**+1.1**
MAT				S	**Sb**	**14 05 15.6**	**-0.2**
JHJ	**Hachijo jima 2**	**4.00**	**191**	Pn	**Pn**	**14 05 14.3**	**0.0**
	4.4nm,0.3s,baz=145,slow=7.8,SNR=3.6						
JHJ				Sn	**Sn**	**14 06 01.7**	**+0.7**
	6.8nm,0.3s,baz=246,slow=20,SNR=2.7						
ASAJ	**Asahikawa**	**7.20**	**11**	Pn	**Pn**	**14 05 58.4**	**+0.1**
	0.5nm,0.3s,baz=208,slow=13,SNR=6.2						
ASAJ				Sn	**Sn**	**14 07 20.8**	**+1.0**
	baz=276,slow=19,SNR=2.2						
USRK	**Ussuriysk Ar.**	**9.71**	**320**	Pn	**Pn**	**14 06 33.5**	**+0.7**
	0.0nm,0.3s,baz=119,slow=15,SNR=2.0						
KSRS	**Korea Array**	**10.17**	**276**	Pn	Pn	14 06 44.0	+4.9
	0.1nm,0.3s,baz=88,slow=15,SNR=3.9						
SONM	**Songino Array**	**27.22**	**304**	P	**P**	**14 09 57.4**	**-0.1**
	0.4nm,0.5s,baz=106,slow=10.0,SNR=3.6						
H11N2	**WAKE ISLAND Hy**	**28.67**	**120**	T	T	14 40 50.5	
	baz=311,slow=75,SNR=17						
H11N1	**WAKE ISLAND Hy**	**28.68**	**120**	T	T	14 40 49.6	
	baz=311,slow=75,SNR=16						
H11N3	**WAKE ISLAND Hy**	**28.69**	**120**	T	T	14 40 50.4	
	baz=311,slow=75,SNR=18						
H11S1	**WAKE ISLAND Hy**	**29.37**	**122**	T	T	14 40 52.4	
	baz=314,slow=76,SNR=80						
H11S3	**WAKE ISLAND Hy**	**29.37**	**122**	T	T	14 40 52.5	
	baz=314,slow=76,SNR=61						
H11S2	**WAKE ISLAND Hy**	**29.39**	**122**	T	T	14 40 57.0	
	baz=314,slow=76,SNR=46						
ZALV	**Zalesovo Beam**	**41.46**	**312**	P	**P**	**14 11 58.7**	**-0.9**
	0.4nm,0.4s,baz=95,slow=8.0,SNR=2.7						
MKAR	**Makanchi Array**	**43.60**	**302**	P	**P**	**14 12 16.7**	**-0.5**
	0.4nm,0.6s,baz=90,slow=9.5,SNR=6.4						
ILAR	**Eielson Array**	**49.79**	**32**	P	**P**	**14 13 05.3**	**0.0**
	0.4nm,0.8s,baz=261,slow=5.4,SNR=3.9						
WRA	**Warramunga Arr**	**57.01**	**187**	P	**P**	**14 13 58.1**	**-0.7**
	1.1nm,0.5s,baz=4.1,slow=7.3,SNR=21						
ASAR	**Alice Springs**	**60.74**	**187**	P	**P**	**14 14 24.6**	**0.0**
	0.4nm,0.7s,baz=14,slow=9.2,SNR=8.1						
TXAR	**Lajitas Array**	**90.57**	**52**	P	**P**	**14 17 16.3**	**+0.7**
	0.2nm,0.7s,baz=289,slow=2.8,SNR=2.2						

*ISCJB **13** 14:05:11.9±0.7, 21°.21S±0°.05×69°.0W±0°.2, h118km±10km, mb3.8/2, Error ellipse: s-maj=24.6km s-min=8.4km az=177.6*

*GUC **13** 14:05:12.9±0.4, 21°.20S×69°.04W, h106km±3km, ML3.6*

*IDC **13** 14:05:20.0±7.9, 20°.78S×68°.43W, h143km±49km, mb3.4/3, mb1 3.3/5, mb1mx3.1/26, mbtmp3.8/5, Error ellipse: s-maj=88.2km s-min=41.0km az=31.0*

ISC 13 14:05:12.8±0.9, 21°.18S±0°.06×68°.9W±0°.1, h105km±11km, n11, σ1°13/16, 5C, Chile-Bolivia border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PB01	**IPOC Station P**	**0.57**	**284** ⇑	*i* P	**Pn**	**14 05 29.6**	**-0.2**
PB01				*i* S	**Sn**	**14 05 41.8**	**-0.7**
PB09	**IPOC Station P**	**0.69**	**208** ⇑	*i* P	**Pn**	**14 05 31.0**	**+0.2**
PB09				*i* S	**Sn**	**14 05 44.7**	**+0.4**
PB09				IAML		14 05 46.5	
	comp=E,4μm,0.6s						
PB08	**IPOC Station P**	**1.06**	**347** ⇑	*i* P	**Pn**	**14 05 35.6**	**+0.9**
PB08				*i* S	**Sn**	**14 05 52.5**	**+1.3**
PB08				IAML		14 05 53.2	
	comp=E,1μm,0.3s						
HMBC	**Humberstone**	**1.29**	**314** ⇑	*i* P	**Pn**	**14 05 36.9**	**-0.1**
HMBC				*i* S	**Sn**	**14 05 54.9**	**-0.4**
HMBC				IAML		14 05 57.0	
	comp=E,2μm,0.8s						
PB06	**IPOC Station P**	**1.64**	**202** ⇑	*i* P	**Pn**	**14 05 41.3**	**+0.1**
PB06				*i* S	**Sn**	**14 06 02.9**	**+0.1**
PB06				IAML		14 06 03.5	
	comp=E,1μm,0.3s						
LPAZ	**La Paz**	**4.92**	**9**	P	**Pn**	**14 06 27.4**	**+2.3**
	comp=E,0.6nm,0.3s,baz=211,slow=4.7,SNR=10.0						
SIV	**San Ignacio**	**9.04**	**56**	P	**Pn**	**14 07 18.5**	**-2.0**
	comp=E,0.9nm,0.3s,baz=264,slow=9.8,SNR=7.2						
BDFB	**Brasilia**	**20.56**	**78**	P	**P**	**14 09 43.5**	**+0.2**
	comp=E,2.5nm,0.5s,baz=243,slow=14,SNR=3.8						
PTGA	**Pitinga**	**22.12**	**24**	P	**P**	**14 09 58.6**	**-1.2**
	comp=E,2.6nm,0.4s,baz=171,slow=16,SNR=5.0						
TORD	**Torodi Ar. Bea**	**77.24**	**70**	P	**P**	**14 16 55.4**	**-0.5**
	comp=E,0.5nm,0.4s,baz=253,slow=6.1,SNR=5.8						
MKAR	**Makanchi Array**	**145.37**	**36**	PKP	**PKPab**	**14 24 39.7**	**+1.0**
	comp=E,0.3nm,0.8s,baz=298,slow=3.1,SNR=3.6						

*ISCJB **13** 14:05:56.5±1.6, 35°.88N±0°.05×141°.30E±0°.08, h8km±8km, mb3.4/4, Error ellipse: s-maj=11.8km s-min=7.0km az=156.2*

*IDC **13** 14:05:56.7±1.9, 35°.94N×141°.23E, h0km, mb3.4/4, mb1 3.5/6, mb1mx3.3/50, mbtmp3.4/6, ML3.1/2, Error ellipse: s-maj=44.2km s-min=20.0km az=62.0*

*JMA **13** 14:06:00.8±0.2, 35°.85N×141°.00E, h22km±1km, M3.6*

JMA Felt I J1.

*NIED **13** 14:06:00, 35°.80N×141°.00E, h23km, Mw3.5 Best double couple: M0=1.84000×10^14 NP1:φs=340.00000°, δ60.00000°, λ=-164.00000°. NP2:φs=241.00000°, δ76.00000°, λ=-31.00000°.*

ISC 13 14:06:00.3±1.6, 35°.89N±0°.04×141°.06E±0°.09, h20km±6km, n12, σ0°93/18, mb3.5/4, 2C, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.25**	**222** ⇑	P	**Pb**	**14 06 05.8**	**-0.3**
CHOJ				S	**Sb**	**14 06 09.3**	**-0.6**
JYT	**Yasato**	**0.78**	**296** ⇑	P	**Pb**	**14 06 14.5**	**-0.7**
JYT				S	**Sb**	**14 06 25.8**	**+0.4**
JHO	**Hitachi**	**0.82**	**331**	P	**Pb**	**14 06 15.9**	**0.0**
JHO				*e*S	**Sn**	**14 06 28.2**	**-0.2**
JCN	**Nagara**	**0.85**	**236**	P	**Pg**	**14 06 16.7**	**-0.1**
BSO3	**Boso 3**	**1.18**	**203**	P	**Pn**	**14 06 20.5**	**-0.9**
MJAR	**Matsushiro Arr**	**2.40**	**287**	Pn	**Pn**	**14 06 38.1**	**-0.3**
	5.2nm,0.3s,baz=95,slow=8.8,SNR=5.8						
MJAR				Sn	**Sb**	**14 07 12.1**	**+0.1**
	3.2nm,0.3s,baz=120,slow=8.4,SNR=3.5						
MAT	**Matsushiro**	**2.40**	**287**	P	**Pn**	**14 06 38.7**	**+0.2**
MAT				S	**Sb**	**14 07 12.5**	**+0.5**
JHJ	**Hachijo jima 2**	**2.96**	**201**	Pn	**Pn**	**14 06 46.2**	**0.0**
	5.2nm,0.3s,baz=75,slow=20,SNR=1.6						
JHJ				Sn	**Sn**	**14 07 23.1**	**+2.0**
	5.4nm,0.3s,baz=307,slow=20,SNR=2.3						
SONM	**Songino Array**	**28.21**	**306**	P	**P**	**14 11 53.4**	**+1.7**
	0.2nm,0.4s,baz=106,slow=11,SNR=2.6						
MKAR	**Makanchi Array**	**44.49**	**303**	P	**P**	**14 14 08.6**	**-1.7**
	0.5nm,0.6s,baz=89,slow=8.8,SNR=8.8						
WRA	**Warramunga Arr**	**55.89**	**188**	P	**P**	**14 15 36.7**	**-0.1**
	0.4nm,0.7s,baz=5.0,slow=7.2,SNR=4.2						
ASAR	**Alice Springs**	**59.62**	**188**	P	**P**	**14 16 03.3**	**+0.3**
	0.2nm,0.6s,baz=12,slow=9.0,SNR=3.3						

*ISCJB **13** 14:21:27.3±0.5, 41°.38N±0°.04×35°.80E±0°.04, h0km, Error ellipse: s-maj=5.6km s-min=3.6km az=20.0*

*CSEM **13** 14:21:27.4±0.2, 41°.36N×35°.82E, h1km, MD2.9, Error ellipse: s-maj=5.5km s-min=3.2km az=29.0, Suspected Mining explosion.*

*DDA **13** 14:21:27.7, 41°.34N×35°.86E, h8km, Md2.9, Suspected Mining explosion.*

*ISK **13** 14:21:27.3, 41°.36N×35°.81E, h7km, MD2.9*

ISC 13 14:21:25.8±0.9, 41°.47N±0°.04×35°.87E±0°.02, h0km, n33, σ0°42/47, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SAMS	**Samsun-Alacam**	**0.26**	**115**	*i* P	**Pb**	**14 21 33.2**	**-0.2**
SAMS				*i* S	**Sb**	**14 21 38.4**	**0.0**
SAMS	**Samsun-Alacam**	**0.26**	**115**	P	**Pb**	**14 21 33.2**	**-0.2**
SAMS				S	**Sb**	**14 21 38.4**	**0.0**
KVT	**Kavak**	**0.41**	**161**	*e*PG	**Pg**	**14 21 34.3**	**+0.6**
KVT				*e*SG	**Sg**	**14 21 39.4**	**+0.4**
KVT	**Kavak**	**0.41**	**161**	*e*Pg	**Pg**	**14 21 34.3**	**+0.6**
KVT				*e*Sg	**Sg**	**14 21 39.4**	**+0.4**
HAVZ	**Havza**	**0.41**	**197**	*i* P	**Pg**	**14 21 33.3**	**-0.4**
HAVZ				*i* S	**Sg**	**14 21 39.0**	**0.0**
HAVZ	**Havza**	**0.41**	**197**	P	**Pg**	**14 21 33.3**	**-0.4**
HAVZ				S	**Sg**	**14 21 39.0**	**0.0**
DIKM	**Dikmen**	**0.50**	**292**	*e*PG	**Pb**	**14 21 37.7**	**+0.2**
DIKM	**Dikmen**	**0.50**	**292**	*e*Pg	**Pb**	**14 21 37.7**	**+0.2**
SNOP	**Sinop**	**0.74**	**318**	*e*PG	**Pn**	**14 21 43.2**	**-0.4**
SNOP	**Sinop**	**0.74**	**318**	*e*Pg	**Pn**	**14 21 43.2**	**-0.4**
BYBT	**Boyabat**	**0.83**	**270**	*e*PG	**Pb**	**14 21 43.0**	**-0.2**
BYBT	**Boyabat**	**0.83**	**270**	*e*Pg	**Pb**	**14 21 43.0**	**-0.2**
ERBA	**Erbaa**	**1.03**	**139**	*i* P	**Pg**	**14 21 45.4**	**-0.2**
ERBA				*i* S	**Sg**	**14 21 59.2**	**+0.3**
ERBA	**Erbaa**	**1.03**	**139**	P	**Pg**	**14 21 45.4**	**-0.2**
ERBA				S	**Sg**	**14 21 59.2**	**+0.3**
TOKT	**Tokat**	**1.26**	**156**	*e*PN	**Pb**	**14 21 50.4**	**0.0**
TOKT	**Tokat**	**1.26**	**156**	*e*Pn	**Pb**	**14 21 50.4**	**0.0**
TOS	**Tosya**	**1.46**	**253**	*e*PN	**Pg**	**14 21 53.6**	**-0.2**
TOS	**Tosya**	**1.46**	**253**	*e*Pn	**Pg**	**14 21 53.6**	**-0.2**
BZK	**Bozkurt**	**1.48**	**290**	*e*PN	**Pb**	**14 21 54.9**	**+0.7**
BZK	**Bozkurt**	**1.48**	**290**	*e*Pn	**Pb**	**14 21 54.9**	**+0.7**
ORDU	**Ordu-Boztepe**	**1.57**	**107**	*i* P	**Pb**	**14 21 55.6**	**-0.2**
ORDU				*i* S	**Sg**	**14 22 17.1**	**+0.8**
ORDU	**Ordu-Boztepe**	**1.57**	**107**	P	**Pb**	**14 21 55.6**	**-0.2**
ORDU				S	**Sg**	**14 22 17.1**	**+0.8**
CORM	**Corum**	**1.60**	**217**	*e*PN	**Pn**	**14 21 55.2**	**-0.3**
CORM	**Corum**	**1.60**	**217**	*e*Pn	**Pn**	**14 21 55.2**	**-0.3**
SVSK	**Karacayir**	**1.77**	**151**	*e*PN	**Pn**	**14 21 58.1**	**+0.4**
SVSK	**Karacayir**	**1.77**	**151**	*e*Pn	**Pn**	**14 21 58.1**	**+0.4**
YOZ	**Yozgat**	**1.88**	**193**	*e*PN	**Pn**	**14 21 59.2**	**-0.1**
YOZ	**Yozgat**	**1.88**	**193**	*e*Pn	**Pn**	**14 21 59.2**	**-0.1**
GRSN	**GIRESUNGRSN**	**1.89**	**106**	*i* P	**Pb**	**14 22 00.6**	**-0.6**
GRSN				*i* S	**Sg**	**14 22 26.6**	**+0.1**
GRSN	**GIRESUNGRSN**	**1.89**	**106**	P	**Pb**	**14 22 00.6**	**-0.6**
GRSN				S	**Sg**	**14 22 26.6**	**+0.1**
SUSE	**Susehri**	**2.17**	**125**	*i* P	**Pb**	**14 22 05.8**	**-0.3**
SUSE				*i* S	**Sb**	**14 22 34.4**	**+0.9**
SUSE	**Susehri**	**2.17**	**125**	P	**Pb**	**14 22 05.8**	**-0.3**
KELT	**Kelkit**	**2.89**	**116**	*i* P	**Pb**	**14 22 18.1**	**-0.2**
KELT				*i* S	**Sb**	**14 22 53.1**	**-1.1**

*NIED **13** 14:25:00, 37°.80N×142°.00E, h47km, Mw3.6 Best double couple: M0=2.60000×10^14 NP1:φs=312.00000°, δ46.00000°, λ=-121.00000°. NP2:φs=173.00000°, δ52.00000°, λ=-62.00000°.*

JMA 13 14:25:35.8±0.2, 37°.77N×142°.03E, h34km±4km, M3.9, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**0.87**	**322**	P	Pn	14 25 51.8	+0.2
JIO				S	Sn	14 26 02.4	-0.7
JMM	**Marumori**	**0.98**	**276**	P	Pn	14 25 53.6	+0.4
JMM				S	Sn	14 26 05.9	0.0
JFK	**Kawauchi**	**1.00**	**247**	P	Pn	14 25 53.7	+0.2
JFK				S	Sn	14 26 06.2	-0.3
ONAJ	**Iwakimizuishiy**	**1.19**	**236**	P	Pn	14 25 54.3	+0.3
ONAJ				S	Sn	14 26 10.6	-0.4
JOU	**Okura**	**1.23**	**299**	P	Pb	14 25 57.8	-0.8
JOU				S	Sn	14 26 13.0	+0.9
JMK	**Ichinoseki**	**1.34**	**332**	P	Pn	14 25 58.8	+0.7
JMK				S	Sn	14 26 15.0	+0.3
JFT	**Otama**	**1.37**	**260**	P	Pb	14 26 00.0	-0.9
JFT				S	Sb	14 26 17.0	-1.0
JYS	**Shirataka**	**1.62**	**287**	P	Pn	14 26 03.4	+1.5
JYS				S	Sb	14 26 24.7	-0.4
JYK	**Kaneyama**	**1.74**	**312**	P	Pn	14 26 05.1	+1.4
JOM	**Ohasama**	**1.80**	**341**	P	Pn	14 26 05.4	+1.0
JOM				*e*S	Sn	14 26 26.6	+0.6
MAT	**Matsushiro**	**3.29**	**249**	P	Pn	14 26 29.1	+4.2
MAT				S	Sn	14 27 06.7	+3.8

*NIED **13** 14:37:00, 40°.20N×143°.40E, h23km, Mw3.5 Best double couple: M0=2.34000×10^14 NP1:φs=173.00000°, δ25.00000°, λ=52.00000°. NP2:φs=34.00000°, δ71.00000°, λ=106.00000°.*

JMA 13 14:37:22.7±0.2, 40°.19N×143°.37E, h8km±3km, M3.5, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JTH	**Tanohata**	**1.18**	**258**	P	Pb	14 37 45.1	-0.3
JTH				*e*S	Sb	14 38 01.2	+0.4
MIYJ	**Miyakonagasawa**	**1.34**	**243**	P	Pn	14 37 47.6	-0.1
JANG	**Nango**	**1.43**	**278**	P	Pn	14 37 48.9	-0.1
JKZ	**Kuzumaki**	**1.58**	**263**	P	Pn	14 37 51.4	+0.4
JKZ				*e*S	Sn	14 38 11.2	-0.5
OFUJ	**Ofunato**	**1.72**	**230**	P	Pn	14 37 53.1	+0.2
JOM	**Ohasama**	**1.75**	**247**	P	Pn	14 37 54.1	+0.7
JOM				*e*S	Sn	14 38 16.2	+0.3
JTM	**Tenmabayashi**	**1.85**	**289**	P	Pn	14 37 55.5	+0.7
JTM				*e*S	Sn	14 38 18.3	-0.1
JMK	**Ichinoseki**	**2.07**	**234**	P	Pn	14 37 58.3	+0.6
JAH	**Hinai**	**2.09**	**271**	P	Pn	14 37 59.4	+1.3
JAH				S	Sb	14 38 26.7	-0.4
JOT	**Ohata**	**2.13**	**305**	P	Pb	14 38 00.1	-1.4
JNBK	**Urakawa-nobuka**	**2.14**	**348**	S	Sb	14 38 28.3	-0.1
JRG	**Rokugo**	**2.25**	**250**	P	Pn	14 38 01.9	+1.7

*ISCJB **13** 14:41:51.8±0.4, 40°.19N±0°.03×29°.99E±0°.03, h0km, Error ellipse: s-maj=3.7km s-min=3.1km az=156.5*

*DDA **13** 14:41:52.0, 40°.16N×30°.03E, h7km, Md2.8, Suspected Mining explosion.*

*CSEM **13** 14:41:52.1±0.2, 40°.19N×29°.99E, h1km, MD2.7, Error ellipse: s-maj=4.8km s-min=4.4km az=142.0, Suspected Mining explosion.*

*ISK **13** 14:41:52.3, 40°.24N×29°.95E, h19km, MD2.7*

ISC 13 14:41:50.8±0.8, 40°.25N±0°.03×30°.00E±0°.02, h0km, n35, σ0°59/54, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ADVT	**Abdulvahap**	**0.27**	**312**	*e*PG	**Pb**	**14 41 58.3**	**-0.2**
ADVT				*e*SG	**Sb**	**14 42 03.3**	**-0.3**
ADVT	**Abdulvahap**	**0.27**	**312**	*e*Pg	**Pb**	**14 41 58.3**	**-0.2**
ADVT				*e*Sg	**Sb**	**14 42 03.3**	**-0.3**
IZI	**Iznik**	**0.41**	**282**	*e*PG	**Pb**	**14 42 00.4**	**-0.6**
IZI				*e*SG	**Sb**	**14 42 06.7**	**-1.1**
IZI	**Iznik**	**0.41**	**282**	*e*Pg	**Pb**	**14 42 00.4**	**-0.6**
IZI				*e*Sg	**Sb**	**14 42 06.7**	**-1.1**
IGD	**Bursa**	**0.61**	**271**	*i* P	**Pg**	**14 42 02.2**	**-0.2**
IGD				*i* S	**Sg**	**14 42 10.4**	**0.0**
HRT	**Hereke**	**0.62**	**336**	*e*PG	**Pb**	**14 42 05.1**	**+0.5**
HRT	**Hereke**	**0.62**	**336**	*e*Pg	**Pb**	**14 42 05.1**	**+0.5**
ULDT	**Uludag**	**0.67**	**261**	*i* P	**Pg**	**14 42 03.9**	**+0.3**
ULDT				*i* S	**Sb**	**14 42 14.4**	**-1.0**
ULDT	**Uludag**	**0.67**	**261**	P	**Pg**	**14 42 03.9**	**+0.3**
ULDT				S	**Sb**	**14 42 14.4**	**-1.0**
KAND	**Kocaeli-Kandir**	**0.85**	**10**	*i* P	**Pn**	**14 42 10.6**	**+0.5**
KAND				*i* S	**Sn**	**14 42 24.1**	**+0.9**
KAND	**Kocaeli-Kandir**	**0.85**	**10**	P	**Pn**	**14 42 10.6**	**+0.5**
KAND				S	**Sn**	**14 42 24.1**	**+0.9**
SAHE	**Sakarya_HENDEK**	**0.89**	**47**	*i* P	**Pn**	**14 42 10.4**	**-0.2**
SAHE				*i* S	**Sn**	**14 42 23.8**	**-0.3**
SAHE	**Sakarya_HENDEK**	**0.89**	**47**	P	**Pn**	**14 42 10.4**	**-0.2**
SAHE				S	**Sn**	**14 42 23.8**	**-0.3**
TVSB	**Tavsanli**	**0.90**	**207**	*e*PG	**Pb**	**14 42 09.7**	**+0.3**
TVSB	**Tavsanli**	**0.90**	**207**	*e*Pg	**Pb**	**14 42 09.7**	**+0.3**
ARMT	**Armutlu**	**0.92**	**290**	*e*PG	**Pb**	**14 42 10.1**	**+0.5**
ARMT	**Armutlu**	**0.92**	**290**	*e*Pg	**Pb**	**14 42 10.1**	**+0.5**
SILT	**Sile**	**0.94**	**344**	*e*PG	**Pn**	**14 42 11.0**	**-0.3**
SILT	**Sile**	**0.94**	**344**	*e*Pg	**Pn**	**14 42 11.0**	**-0.3**
MDUB	**Mudurnu**	**0.94**	**76**	*e*PG	**Pn**	**14 42 11.8**	**+0.4**
MDUB	**Mudurnu**	**0.94**	**76**	*e*Pg	**Pn**	**14 42 11.8**	**+0.4**
ISK	**Istanbul-Kandi**	**1.08**	**319**	*e*PG	**Pn**	**14 42 12.8**	**-0.4**
ISK	**Istanbul-Kandi**	**1.08**	**319**	*e*Pg	**Pn**	**14 42 12.8**	**-0.4**
AUMIH	**MIHALICIK**	**1.21**	**108**	*i* P	**Pg**	**14 42 13.6**	**-0.3**
AUMIH				*i* S	**Sb**	**14 42 30.1**	**-0.7**
AUMIH	**MIHALICIK**	**1.21**	**108**	P	**Pg**	**14 42 13.6**	**-0.3**
AUMIH				S	**Sb**	**14 42 30.1**	**-0.7**
GDZ	**Gediz**	**1.23**	**199**	*i* P	**Pb**	**14 42 14.9**	**-0.1**
GDZ				*i* S	**Sg**	**14 42 30.3**	**0.0**
GDZ	**Gediz**	**1.23**	**199**	P	**Pb**	**14 42 14.9**	**-0.1**
GDZ				S	**Sg**	**14 42 30.3**	**0.0**
KLYT	**Kilyos**	**1.23**	**324**	*e*PN	**Pb**	**14 42 14.9**	**-0.1**
KLYT	**Kilyos**	**1.23**	**324**	*e*Pn	**Pb**	**14 42 14.9**	**-0.1**
DURS	**Dursunbey**	**1.34**	**241**	*i* P	**Pg**	**14 42 15.9**	**-0.5**
DURS				*i* S	**Sn**	**14 42 35.6**	**+0.2**
DURS	**Dursunbey**	**1.34**	**241**	P	**Pg**	**14 42 15.9**	**-0.5**
DURS				S	**Sn**	**14 42 35.6**	**+0.2**
SVRH	**Sivrihisar-ESK**	**1.43**	**124**	*e*PN	**Pb**	**14 42 18.2**	**-0.1**
SVRH	**Sivrihisar-ESK**	**1.43**	**124**	*e*Pn	**Pb**	**14 42 18.2**	**-0.1**
DEMI	**Demirci**	**1.56**	**220**	*i* P	**Pg**	**14 42 21.0**	**+0.3**
DEMI				*i* S	**Sg**	**14 42 42.7**	**+1.7**
DEMI	**Demirci**	**1.56**	**220**	P	**Pg**	**14 42 21.0**	**+0.3**
DEMI				S	**Sg**	**14 42 42.7**	**+1.7**

*JMA **13** 14:45:50.4±0.1, 24°.19N×121°.78E, h45km±1km, M2.2*

*ISCJB **13** 14:45:51.0±0.3, 24°.18N±0°.02×121°.80E±0°.02, h47km±5km, Error ellipse: s-maj=4.5km s-min=2.5km az=139.8*

*TAP **13** 14:45:51.3, 24°.20N×121°.73E, h42km, ML2.9, C*

ISC 13 14:45:51.4±1.2, 24°.19N±0°.03×121°.78E±0°.03, h43km±7km, n38, σ0°67/76, Taiwan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TWD	**Chiawan**	**0.20**	**237**	*i* P	**Pn**	**14 45 58.7**	**-0.4**
	baz=222						
TWD				S	**Sn**	**14 46 04.4**	**0.0**
	baz=222						
ENA	**Nanau**	**0.24**	**351**	*e*P	**Pn**	**14 45 59.9**	**+0.4**
	baz=5.0						
ENA				*e*S	**Sn**	**14 46 05.8**	**+0.7**
	baz=5.0						
HWA	**Hwalien**	**0.27**	**217**	*e*P	**Pn**	**14 45 59.9**	**+0.3**
	baz=204						
HWA				*e*S	**Sn**	**14 46 05.8**	**+0.4**
	baz=204						
TWC	**Suao**	**0.42**	**8**	P	**Pn**	**14 46 01.6**	**+0.2**
	baz=16						
TWC				S	**Sn**	**14 46 09.4**	**+1.1**
	baz=16						
NNS	**Nan Shan**	**0.45**	**304**	P	**Pn**	**14 46 01.0**	**-0.8**
	baz=306						
NNS				S	**Sn**	**14 46 08.4**	**-0.7**
	baz=306						
WHF	**Hehuan Shan**	**0.47**	**265**	P	**Pn**	**14 46 01.4**	**-1.0**
	baz=261						
WHF				*i* S	**Sn**	**14 46 09.0**	**-1.1**
	baz=261						
ENTT	**Nioudou**	**0.49**	**336**	*e*P	**Pn**	**14 46 01.8**	**-0.5**
	baz=342						
ENTT				S	**Sn**	**14 46 09.6**	**-0.3**
	baz=342						
ESL	**Shilin**	**0.49**	**220**	*i* P	**Pn**	**14 46 02.6**	**+0.3**
	baz=213						
ESL				S	**Sn**	**14 46 09.4**	**-0.5**
	baz=213						
TWE	**Neicheng**	**0.54**	**349**	P	**Pn**	**14 46 02.6**	**-0.3**
	baz=355						
TWE				*e*S	**Sn**	**14 46 11.3**	**+0.3**
	baz=355						
TWT	**Tachien**	**0.56**	**277**	P	**Pn**	**14 46 03.0**	**-0.3**
	baz=275						
TWT				S	**Sn**	**14 46 11.3**	**-0.4**
	baz=275						
NSK	**Sanguang**	**0.62**	**321**	P	**Pn**	**14 46 03.0**	**-0.9**
	baz=325						
NSK				*e*S	**Sn**	**14 46 11.8**	**-1.1**
	baz=325						
EGS		**0.67**	**12**	*e*P	**Pn**	**14 46 05.5**	**+1.0**
	baz=17						
EGS				*e*S	**Sn**	**14 46 15.5**	**+1.6**
	baz=17						
EHY	**Hungye**	**0.80**	**212**	P	**Pn**	**14 46 05.4**	**-1.0**
	baz=207						
EHY				*e*S	**Sn**	**14 46 17.4**	**+0.2**
	baz=207						
NSTT	**Nanjuang**	**0.84**	**302**	P	**Pn**	**14 46 06.7**	**-0.1**
	baz=303						
NSTT				S	**Sn**	**14 46 18.1**	**+0.1**
	baz=303						
SMLT	**Sun Moon Lake**	**0.86**	**249**	*e*P	**Pn**	**14 46 07.5**	**+0.2**
	baz=246						
SMLT				S	**Sn**	**14 46 18.5**	**-0.3**
	baz=246						
NWF	**Wu-fen Shan**	**0.88**	**360**	P	**Pn**	**14 46 07.7**

SSD				*e*S		**Sn**	**14 46 41.7**	**+0.4**
	baz=214							
JIJ	**Ishigaki jima**	**2.16**	**85**	P		**Pn**	**14 46 24.5**	**-0.5**
JIJ				S		**Sn**	**14 46 49.7**	**-0.8**
JISG	**Ishigakijimahi**	**2.34**	**80**	P		**Pn**	**14 46 26.7**	**-0.7**
JISG				S		**Sn**	**14 46 54.2**	**-0.7**

IDC ***13*** *14:51:15.6±6.1, 35°.69N×140°.43E, h0km, mb3.4/3, mb1 3.5/4, mb1mx3.3/46, mbtmp3.4/4, ML2.3/1, MS2.3/1, Ms1 2.3/1, ms1mx2.1/28, Error ellipse: s-maj=228.6km s-min=26.2km az=65.0*

ISCJB ***13*** *14:51:24.0±0.8, 35°.57N±0°.06×140°.17E±0°.09, h74km±5km, mb3.4/3, Error ellipse: s-maj=13.6km s-min=8.4km az=154.7*

JMA ***13*** *14:51:23.8±0.2, 35°.63N×140°.19E, h69km±2km, M2.8*

ISC 13 14:51:25.1±1.1, 35°.57N±0°.06×140°.15E±0°.08, h67km±8km, n13, σ0s87/16, mb3.4/3, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JCN	**Nagara**	**0.16**	**164**	P	**Pn**	**14 51 34.9**	**-0.3**
JCN				S	**Sn**	**14 51 44.1**	**+1.5**
TOK	**Tokyo**	**0.34**	**290**	S	**Sn**	**14 51 44.3**	**0.0**
BSO3	**Boso 3**	**0.82**	**159**	P	**Pn**	**14 51 40.6**	**-0.5**
BSO3				*e*X		14 51 51.6	
JOD2	**Odawara 2**	**0.92**	**251**	P	**Pn**	**14 51 42.0**	**-0.5**
JOD2				S	**Sn**	**14 51 55.2**	**-0.2**
JAG	**Ashikaga**	**1.02**	**327**	P	**Pn**	**14 51 42.7**	**-1.1**
JAG				S	**Sn**	**14 51 56.4**	**-1.2**
JIM2	**Oshima 3**	**1.04**	**215**	P	**Pn**	**14 51 43.4**	**-0.6**
JIM2				S	**Sn**	**14 51 57.6**	**-0.4**
JRY	**Ryogami san**	**1.11**	**294**	P	**Pn**	**14 51 44.8**	**-0.1**
MAT	**Matsushiro**	**1.85**	**302**	P	**Pn**	**14 51 55.2**	**+0.5**
MAT				S	**Sn**	**14 52 18.2**	**+1.1**
KSRS	**Korea Array**	**10.02**	**284**	LR	LR	14 57 34.0	
	comp=Z,15nm,19.5s,baz=195,slow=37						
USRK	**Ussuriysk Ar.**	**10.65**	**326**	Pn	Pn	14 53 48.5	-6.3
	0.2nm,0.3s,baz=145,slow=19,SNR=3.5						
MKAR	**Makanchi Array**	**44.04**	**303**	P	**P**	**14 59 26.5**	**+0.3**
	0.5nm,0.7s,baz=88,slow=9.5,SNR=6.3						
WRA	**Warramunga Arr**	**55.48**	**187**	P	**P**	**15 00 52.3**	**-0.8**
	0.3nm,0.4s,baz=5.0,slow=7.0,SNR=12						
ASAR	**Alice Springs**	**59.21**	**187**	P	**P**	**15 01 20.3**	**+0.9**
	0.2nm,0.8s,baz=5.2,slow=7.6,SNR=6.3						

ISCJB ***13*** *14:59:04.9±0.4, 49°.85N±0°.03×18°.36E±0°.03, h0km, Error ellipse: s-maj=4.2km s-min=2.3km az=17.2*

IPEC ***13*** *14:59:05.1±0.2, 49°.84N×18°.52E, h0km, ML2.1/3, Error ellipse: s-maj=2.1km s-min=1.1km az=161.0*

CSEM ***13*** *14:59:06.0±0.2, 49°.81N×18°.36E, h2km, ML2.8/8, Error ellipse: s-maj=4.9km s-min=2.7km az=18.0*

VIE ***13*** *14:59:06.5±1.7, 49°.64N×18°.42E, h0km, mb2.0/2, ml2.6/3, Error ellipse: s-maj=10.2km s-min=7.9km az=101.0, Suspected Mining induced.*

ISC 13 14:59:05.8±0.7, 49°.82N±0°.03×18°.43E±0°.02, h0km, n39, σ0s83/71, Czech and Slovak Republics

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OKC	**Ostrava-Krasne**	**0.18**	**276**	*i* PG	**Pg**	**14 59 10.3**	**+1.0**
OKC				*e*SG	**Sg**	**14 59 12.9**	**+1.2**
	comp=Z,170nm,0.3s						
OKC	**Ostrava-Krasne**	**0.18**	**276**	Pg	**Pg**	**14 59 10.3**	**+1.0**
OKC				Sg	**Sg**	**14 59 12.9**	**+1.2**
	170nm,0.3s						
RAC	**Raciborz**	**0.30**	**330**	*e*Pg	**Pg**	**14 59 11.8**	**+0.1**
RAC				*e*Sg	**Sg**	**14 59 17.1**	**+1.5**
MORC	**Moravsky Berou**	**0.57**	**266**	*e*Pg	**Pg**	**14 59 17.1**	**+0.3**
	baz=84						
MORC				*e*Sg	**Sg**	**14 59 24.7**	**+0.4**
	40nm,0.3s,baz=84						
LANS	**Liptovska Anna**	**0.95**	**134**	*e*Pg	**Pg**	**14 59 24.1**	**+0.1**
LANS				*e*Sg	**Sb**	**14 59 38.8**	**+0.4**
LANS	**Liptovska Anna**	**0.95**	**134**	*e*PG	**Pg**	**14 59 24.1**	**+0.1**
LANS				*e*SG	**Sb**	**14 59 38.8**	**+0.4**
OJC	**Ojcow**	**0.97**	**65**	*e*Pg	**Pg**	**14 59 22.6**	**-1.8**
OJC				*e*Sg	**Sg**	**14 59 36.7**	**-0.3**
OJC	**Ojcow**	**0.97**	**65**	*e*Pg	**Pg**	**14 59 22.6**	**-1.8**
OJC				*e*Sg	**Sb**	**14 59 38.4**	**-0.5**
KRLC	**Kraliky**	**1.09**	**284**	*e*PG	**Pg**	**14 59 25.7**	**-1.1**
KRLC				*e*SG	**Sg**	**14 59 40.6**	**-0.3**
KRLC	**Kraliky**	**1.09**	**284**	Pg	**Pg**	**14 59 25.7**	**-1.1**
KRLC				Sg	**Sg**	**14 59 40.6**	**-0.3**
NIE	**Niedzica**	**1.28**	**108**	*e*Pg	**Pg**	**14 59 29.8**	**-0.6**
NIE				*e*Sg	**Sn**	**14 59 49.9**	**+1.0**
NIE	**Niedzica**	**1.28**	**108**	*e*Pg	**Pg**	**14 59 29.8**	**-0.6**
NIE				*e*Sg	**Sn**	**14 59 49.9**	**+1.0**
VRAC	**Vranov**	**1.30**	**248**	*e*Sg	**Sg**	**14 59 47.7**	**+0.2**
	34nm,0.3s,baz=66						
VYHS	**Vyhne**	**1.35**	**168**	*e*Pn	**Pg**	**14 59 31.5**	**-0.2**
VYHS				*e*Sn	**Sn**	**14 59 50.5**	**-0.1**
VYHS	**Vyhne**	**1.35**	**168**	*e*PN	**Pg**	**14 59 31.5**	**-0.2**
VYHS				*e*SN	**Sn**	**14 59 50.5**	**-0.1**
VYHS				*e*LG	Lg	14 59 53.9	
DPC	**Dobruska-Polom**	**1.46**	**292**	*i* PG	**Pg**	**14 59 32.7**	**-0.7**
DPC				*e*SG	**Sg**	**14 59 52.5**	**-0.1**
	comp=Z,29nm,0.4s						
DPC	**Dobruska-Polom**	**1.46**	**292**	Pg	**Pn**	**14 59 32.7**	**-0.7**
DPC				Sg	**Sg**	**14 59 52.5**	**-0.1**
	29nm,0.4s						
SMOL	**Smolenice**	**1.46**	**207**	*e*Pn	**Pn**	**14 59 33.1**	**-0.3**
SMOL				*e*Sn	**Sn**	**14 59 54.2**	**+0.9**
SMOL	**Smolenice**	**1.46**	**207**	*e*PN	**Pn**	**14 59 33.1**	**-0.3**
SMOL				*e*SN	**Sn**	**14 59 54.1**	**+0.8**
KRUC	**Moravsky**	**1.53**	**241**	*e*Pg	**Pn**	**14 59 34.0**	**-0.4**
	baz=60						
KRUC				*e*Sg	**Sn**	**14 59 54.9**	**0.0**
	19nm,0.4s,baz=60						
UPC	**Upice**	**1.70**	**295**	*e*PG	**Pn**	**14 59 36.7**	**0.0**
UPC				*e*SG	**Sb**	**14 59 59.5**	**-0.4**
	comp=Z,30nm,0.7s						
UPC	**Upice**	**1.70**	**295**	Pg	**Pn**	**14 59 36.7**	**0.0**
UPC				Sg	**Sb**	**14 59 59.5**	**-0.4**
	30nm,0.7s						
KSP	**Ksiaz**	**1.71**	**308**	*e*Pg	**Pg**	**14 59 38.7**	**+0.1**
KSP				*e*Sg	**Sb**	**15 00 00.1**	**-0.1**
KSP	**Ksiaz**	**1.71**	**308**	*e*Pg	**Pg**	**14 59 38.7**	**+0.1**
KSP				*e*Sg	**Sb**	**15 00 00.1**	**-0.1**
STHS	**Stebnicka Huta**	**1.88**	**101**	*e*Pn	**Pb**	**14 59 40.8**	**-0.1**
STHS	**Stebnicka Huta**	**1.88**	**101**	*e*PN	**Pb**	**14 59 40.8**	**-0.1**
STHS				*e*SN	**Sg**	**15 00 08.0**	**+2.0**
STHS				*e*LG	Lg	15 00 12.7	
KECS	**Kecovo**	**1.90**	**134**	*e*Pn	**Pn**	**14 59 40.0**	**+0.5**
KECS	**Kecovo**	**1.90**	**134**	*e*PN	**Pn**	**14 59 40.0**	**+0.5**
KECS				*e*SN	**Sg**	**15 00 06.4**	**-0.4**
KECS				*e*LG	Lg	15 00 07.3	
CRVS	**Cervenica-Dubn**	**2.19**	**114**	*e*Pn	**Pb**	**14 59 46.0**	**-0.2**
CRVS	**Cervenica-Dubn**	**2.19**	**114**	*e*PN	**Pb**	**14 59 46.0**	**-0.2**
PRU	**Pruhonice**	**2.52**	**275**	*e*PG	**Pb**	**14 59 52.6**	**+0.7**
PRU				*e*SG	**Sb**	**15 00 23.8**	**+0.4**
PRU	**Pruhonice**	**2.52**	**275**	Pg	**Pb**	**14 59 52.6**	**+0.7**
PRU				Sg	**Sb**	**15 00 23.8**	**+0.4**
KOLS	**Kolonicke sedl**	**2.67**	**108**	*e*Pg	**Pg**	**14 59 57.5**	**+0.6**
KOLS	**Kolonicke sedl**	**2.67**	**108**	*e*PG	**Pg**	**14 59 57.5**	**+0.6**
BRG	**Berggiesshubel**	**3.06**	**292**	PG	**Pb**	**15 00 01.9**	**+0.8**
BRG				SG	**Sg**	**15 00 43.3**	**-0.8**
	8.4nm,0.4s						
KHC	**Kasperske Hory**	**3.24**	**260**	*i* PG	**Pg**	**15 00 07.0**	**-0.8**
KHC				*e*SG	**Sg**	**15 00 47.5**	**-2.3**
	comp=Z,5.9nm,0.4s						
KHC	**Kasperske Hory**	**3.24**	**260**	Pg	**Pg**	**15 00 07.0**	**-0.8**
KHC				Sg	**Sg**	**15 00 47.5**	**-2.3**
	5.9nm,0.4s						
MOA	**Molln**	**3.38**	**236**	*e*Pg	**Pg**	**15 00 09.6**	**-1.0**
	0.9nm,0.3s						
MOA				*i* Sg	**Sg**	**15 00 53.6**	**-0.8**
	2.4nm,0.2s						
MOA	**Molln**	**3.38**	**236**	Pg	**Pg**	**15 00 09.6**	**-1.0**
	0.9nm,0.3s						
MOA				Sg	**Sg**	**15 00 53.6**	**-0.8**
	2.4nm,0.2s						

PGC 13 14:59:35.1±1.6, 50°.51N×130°.32W, h10km, ML3.3/29, Mw3.9/29, 205km west of Pt. Hardy, Bc Vancouver Island, Canada Region, Vancouver Island region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HOLB	**Holberg**	**1.40**	**84**	Pn	Pn	14 59 58.5	-2.2
HOLB				Sn	Sn	15 00 14.6	-4.6
BPBC	**Brooks Peninsu**	**1.67**	**101**	Pn	Pn	15 00 01.6	-2.8
PHC	**Port Hardy**	**1.85**	**83**	Pn	Pn	15 00 05.0	-1.8
PHC				Sn	Sn	15 00 25.6	-4.5
MAYB	**Maynard**	**2.01**	**92**	Pn	Pn	15 00 07.3	-1.9
FHRB	**Fair Harbour**	**2.10**	**101**	Pn	Pn	15 00 08.3	-1.9
EDB	**Eliza Dome**	**2.15**	**106**	Pn	Pn	15 00 08.6	-2.3
BBB	**Bella Bella**	**2.18**	**39**	Pn	Pn	15 00 09.8	-1.5
BBB				Sn	Sn	15 00 33.9	-4.4
TLCB	**Telegraph Cove**	**2.22**	**88**	Pn	Pn	15 00 10.7	-1.3
TLCB				Sn	Sn	15 00 36.0	-3.4
BNB	**Barry Inlet**	**2.26**	**337**	Pn	Pn	15 00 10.4	-2.1
WOSB	**Woss**	**2.42**	**97**	Pn	Pn	15 00 13.4	-1.4
ETB	**Estevan Point**	**2.69**	**113**	Pn	Pn	15 00 16.6	-1.7
NCRB	**Newcastle Ridg**	**2.73**	**91**	Pn	Pn	15 00 17.4	-1.6
MOBC	**Moresby Island**	**2.83**	**339**	Pn	Pn	15 00 18.7	-1.7
MOBC				Sn	Sn	15 00 51.2	-3.4
GDR	**Gold River**	**2.85**	**103**	Pn	Pn	15 00 18.8	-1.7
DIB	**Dawson Inlet,**	**3.02**	**334**	Pn	Pn	15 00 21.1	-1.8
VIB	**Van Inlet**	**3.08**	**334**	Pn	Pn	15 00 22.1	-1.7
VIB				Sn	Sn	15 00 57.2	-3.4
TOFB	**Tofino**	**3.16**	**114**	Pn	Pn	15 00 23.2	-1.6
CBB	**Campbell River**	**3.21**	**97**	Pn	Pn	15 00 24.6	-1.0
MWAB	**Mount Washingt**	**3.31**	**101**	Pn	Pn	15 00 25.9	-1.1
B012	**Ucluelet**	**3.48**	**115**	Pn	Pn	15 00 28.0	-1.2
OZB	**Mount Ozzard**	**3.49**	**114**	Pn	Pn	15 00 27.6	-1.8
ALB	**Alberni**	**3.76**	**107**	Pn	Pn	15 00 32.2	-0.8
B928	**Bamfield**	**3.76**	**114**	Pn	Pn	15 00 32.1	-0.9
TXB	**Texada**	**3.87**	**103**	Pn	Pn	15 00 33.6	-1.0
YOUB	**Youbou, Lake C**	**4.25**	**110**	Pn	Pn	15 00 39.4	-0.4
SHB	**Sechelt**	**4.25**	**100**	Pn	Pn	15 00 39.2	-0.7
PFB	**Port Renfrew**	**4.29**	**115**	Pn	Pn	15 00 39.3	-1.0
B926	**Mesachie Lake**	**4.36**	**110**	Pn	Pn	15 00 40.3	-0.9
UBRB	**Upper Baezaeko**	**4.55**	**56**	Pn	Pn	15 00 44.7	+0.6
UBRB				Sn	Sn	15 01 35.0	-2.0
LZB	**Mount Lazard**	**4.63**	**112**	Pn	Pn	15 00 45.0	-0.1
WSLR	**Whistler**	**4.75**	**92**	Pn	Pn	15 00 46.4	-0.4
B009	**North Saanich**	**4.84**	**110**	Pn	Pn	15 00 47.8	-0.1
PGC	**Sidney**	**4.84**	**110**	Pn	Pn	15 00 48.6	+0.7
B011	**North Saanich**	**4.84**	**110**	Pn	Pn	15 00 48.3	+0.4
MCW	**Mount Constitu**	**5.20**	**108**	Pn	Pn	15 00 54.0	+1.1
LLLB	**Lillooet**	**5.38**	**86**	Pn	Pn	15 00 55.1	-0.2
CMW	**Cultus Mountai**	**5.74**	**108**	Pn	Pn	15 01 01.4	+1.1
JCW	**Jim Creek**	**5.95**	**110**	Pn	Pn	15 01 04.1	+1.0
B06A	**Marblemount**	**6.09**	**106**	Pn	Pn	15 01 05.7	+0.7
RPW	**Rockport**	**6.09**	**106**	Pn	Pn	15 01 05.7	+0.5
GPW	**Glacier Peak**	**6.46**	**104**	Pn	Pn	15 01 10.9	+0.6
FMW	**Mount Fremont**	**6.74**	**119**	Pn	Pn	15 01 15.6	+1.4
LON	**Longmire**	**6.77**	**120**	Pn	Pn	15 01 16.3	+1.8
LTY	**Liberty**	**7.14**	**113**	Pn	Pn	15 01 20.8	+1.2
B08A	**Colville Reser**	**7.48**	**102**	Pn	Pn	15 01 24.9	+0.7

IDC 13 15:03:21.2±2.3, 6°.60S×131°.01E, h0km, mb3.5/1, mb1 3.6/4, mb1mx3.3/47, mbtmp3.5/4, ML3.5/3, Error ellipse: s-maj=87.8km s-min=29.1km az=79.0, Tanimbar Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**12.57**	**204**	Pn	Pn	15 06 22.5	+1.1
	0.3nm,0.3s,baz=30,slow=10,SNR=7.3						
FITZ				Sn	Sn	15 08 31.3	-11
	0.6nm,0.3s,baz=295,slow=23,SNR=6.8						
WRA	**Warramunga Arr**	**13.65**	**167**	Pn	Pn	15 06 35.4	-0.7
	0.2nm,0.3s,baz=348,slow=13,SNR=14						
WRA				Sn	Sn	15 08 55.7	-13
	0.6nm,0.3s,baz=346,slow=23,SNR=9.5						
ASAR	**Alice Springs**	**17.19**	**171**	P	Pn	15 07 22.8	-0.2
	0.1nm,0.3s,baz=353,slow=14,SNR=10						
ASAR				S	Sn	15 10 20.9	-14
	0.1nm,0.3s,baz=356,slow=26,SNR=5.5						
MKAR	**Makanchi Array**	**68.45**	**326**	P	P	15 14 25.1	0.0
	0.3nm,0.6s,baz=130,slow=7.6,SNR=5.5						

WEL 13 15:04:14.4±0.2, 37°.93S×176°.46E, h139km±1km, ML3.9/17, 15C-13D, Error ellipse: s-maj=0.9km s-min=0.8km az=90.0, North Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OPRZ	**Ohinepanea**	**0.11**	**43**	PN	Pn	15 04 32.7	-0.4
OPRZ				SN	Sn	15 04 47.5	+0.2
MARZ	**Manawahe**	**0.18**	**109**	⇓PN	Pn	15 04 33.1	-0.1
KARZ	**Kaharoa**	**0.19**	**241**	⇓PN	Pn	15 04 33.1	-0.2
TGRZ	**Tauranga**	**0.25**	**322**	⇓PN	Pn	15 04 33.2	-0.2
TGRZ				SN	Sn	15 04 48.2	+0.5
EDRZ	**Edgecumbe**	**0.29**	**129**	PN	Pn	15 04 33.4	-0.2
TARZ	**Mount Tarawera**	**0.31**	**173**	PN	Pn	15 04 33.8	+0.1
RRRZ	**Republican Roa**	**0.41**	**171**	PN	Pn	15 04 33.6	-0.3
HRRZ	**Handcock Road**	**0.48**	**196**	PN	Pn	15 04 34.3	-0.1
PRRZ	**Plateau Road**	**0.57**	**185**	PN	Pn	15 04 34.6	-0.2
URZ	**Urewera**	**0.61**	**123**	PN	Pn	15 04 34.3	-0.8
URZ				SN	Sn	15 04 50.4	-0.3
URZ				AML	AML	15 04 51.3	
WPRZ	**Whakapapatarin**	**0.64**	**201**	⇓PN	Pn	15 04 35.2	0.0
ALRZ	**Allen Road**	**0.64**	**188**	PN	Pn	15 04 35.2	-0.1
KUTZ	**Kaahu Road**	**0.75**	**221**	PN	Pn	15 04 36.2	+0.1
TOZ	**Tahuroa Road**	**0.78**	**284**	PN	Pn	15 04 36.0	-0.2
TOZ				SN	Sn	15 04 53.2	+0.4
TLZ	**Tolley Road**	**0.83**	**241**	⇑PN	Pn	15 04 36.8	+0.2
MRHZ	**Matea Rd**	**0.91**	**182**	PN	Pn	15 04 37.1	-0.2
MRHZ				SN	Sn	15 04 54.3	-0.5
MWZ	**Matawai**	**0.94**	**116**	⇓PN	Pn	15 04 37.0	-0.5
MWZ				SN	Sn	15 04 55.0	-0.2
MWZ				AML	AML	15 04 55.9	
RAGZ	**Rawiri**	**0.94**	**127**	⇓PN	Pn	15 04 37.6	0.0
HAZ	**Te Kaha**	**1.06**	**81**	PN	Pn	15 04 37.7	-0.9
SNGZ	**Shannon Statio**	**1.10**	**141**	⇓PN	Pn	15 04 39.1	+0.1
RAHZ	**Arahi**	**1.10**	**154**	PN	Pn	15 04 39.5	+0.4
RITZ	**Rihia Road**	**1.15**	**204**	PN	Pn	15 04 39.8	+0.3
NMHZ	**Naumai**	**1.20**	**167**	PN	Pn	15 04 40.9	+0.8
TKGZ	**Te Karaka**	**1.21**	**115**	PN	Pn	15 04 40.0	0.0
TWGZ	**Tauwhareparae**	**1.23**	**102**	⇑PN	Pn	15 04 40.2	-0.1
BKZ	**Black Stump Fm**	**1.24**	**179**	⇑PN	Pn	15 04 39.9	-0.5
BKZ				AML	AML	15 05 07.9	
BKZ				AML	AML	15 05 08.7	
PKGZ	**Pakihiroa**	**1.28**	**89**	PN	Pn	15 04 41.2	+0.4
RIGZ	**Rimuhau**	**1.29**	**128**	⇓PN	Pn	15 04 40.8	0.0
WHHZ	**Waihua**	**1.30**	**152**	PN	Pn	15 04 39.6	-1.3
KUZ	**Kuaotunu**	**1.32**	**333**	PN	Pn	15 04 40.7	-0.5
MKAZ	**Moumakai**	**1.32**	**308**	PN	Pn	15 04 41.1	-0.1
WTVZ	**West Tongariro**	**1.37**	**210**	PN	Pn	15 04 42.1	+0.3
OTVZ	**Oturere**	**1.38**	**206**	PN	Pn	15 04 42.2	+0.3
HIZ	**Hauiti**	**1.39**	**245**	PN	Pn	15 04 42.1	+0.2
TWVZ	**Taurewa**	**1.39**	**215**	PN	Pn	15 04 42.2	+0.2
ARHZ	**Aropaoanui**	**1.40**	**163**	PN	Pn	15 04 42.1	+0.1
NGZ	**Ngauruhoe**	**1.42**	**208**	PN	Pn	15 04 42.7	+0.4
PUZ	**Puketiti**	**1.43**	**96**	⇑PN	Pn	15 04 41.7	-0.7
PUZ				AML	AML	15 05 12.8	
PUZ				AML	AML	15 05 13.4	
KNZ	**Kokohu**	**1.45**	**139**	PN	Pn	15 04 42.1	-0.4
KNZ				AML	AML	15 05 04.2	
TUVZ	**Tukino**	**1.48**	**205**	PN	Pn	15 04 43.0	0.0
CNGZ	**Carnagh Statio**	**1.49**	**112**	PN	Pn	15 04 43.3	+0.4
KWHZ	**Kaweka Forest**	**1.50**	**181**	PN	Pn	15 04 43.1	0.0
PRGZ	**Paritu Road**	**1.50**	**132**	PN	Pn	15 04 42.9	-0.2
KBAZ	**Karaka Road Bo**	**1.50**	**303**	⇓PN	Pn	15 04 43.2	+0.1
FWVZ	**Far West T-bar**	**1.50**	**208**	⇓PN	Pn	15 04 43.5	+0.2
MXZ	**Matakaoa Point**	**1.51**	**77**	PN	Pn	15 04 43.4	+0.3
MXZ				AML	AML	15 05 10.6	
MXZ				AML	AML	15 05 13.6	
WHVZ	**Whangaehu Hut**	**1.52**	**206**	⇓PN	Pn	15 04 43.6	0.0
MCHZ	**McNeill Hill**	**1.53**	**173**	PN	Pn	15 04 43.6	+0.3
TRVZ	**Turoa**	**1.54**	**207**	PN	Pn	15 04 43.7	-0.1
WIAZ	**Waiheke Island**	**1.55**	**317**	⇑PN	Pn	15 04 43.5	-0.1
WNVZ	**Wahianoa**	**1.55**	**205**	⇑PN	Pn	15 04 43.6	-0.2
WMGZ	**Waiomatatini S**	**1.55**	**87**	PN	Pn	15 04 43.1	-0.5
ETAZ	**East Tamaki Re**	**1.56**	**308**	⇑PN	Pn	15 04 43.7	0.0
MOVZ	**Moawhango**	**1.58**	**200**	PN	Pn	15 04 43.3	-0.7
BHHZ	**Black Hill Sta**	**1.59**	**191**	⇑PN	Pn	15 04 43.5	-0.6
PKVZ	**Pokaka**	**1.61**	**212**	PN	Pn	15 04 44.4	0.0
MTVZ	**Mangateitei**	**1.65**	**208**	PN	Pn	15 04 44.8	0.0
MHGZ	**Mahia Peninsul**	**1.67**	**138**	PN	Pn	15 04 44.9	-0.1
AWAZ	**Awhitu Peninsu**	**1.68**	**300**	⇑PN	Pn	15 04 44.9	-0.2
KRHZ	**Kereru**	**1.71**	**182**	PN	Pn	15 04 45.1	-0.4
CKHZ	**Cape Kidnapper**	**1.79**	**165**	PN	Pn	15 04 46.2	-0.2
KAHZ	**Kahuranaki**	**1.89**	**170**	⇑PN	Pn	15 04 47.2	-0.4
PNHZ	**Pukenui**	**1.99**	**186**	PN	Pn	15 04 47.8	-1.0
PXZ	**Pawanui**	**2.12**	**172**	⇑PN	Pn	15 04 49.3	-1.0
PXZ				AML	AML	15 05 18.6	
PXZ				AML	AML	15 05 18.6	
PXZ				AML	AML	15 05 18.7	
PXZ				AML	AML	15 05 18.7	
WPHZ	**Waipukurau**	**2.13**	**180**	PN	Pn	15 04 49.2	-1.2
WAZ	**Wanganui**	**2.16**	**212**	⇑PN	Pn	15 04 50.1	-0.6
TSZ	**Takapari Road**	**2.16**	**190**	⇑PN	Pn	15 04 49.3	-1.5
TSZ				AML	AML	15 05 19.3	
TSZ				AML	AML	15 05 19.3	
PRHZ	**Porangahau**	**2.34**	**177**	PN	Pn	15 04 51.6	-1.3
DVHZ	**Dannevirke**	**2.38**	**185**	PN	Pn	15 04 51.6	-1.8
POWZ	**Post Office Ro**	**2.52**	**192**	PN	Pn	15 04 53.3	-1.8
ANWZ	**Angora Road**	**2.53**	**180**	⇑PN	Pn	15 04 53.8	-1.4
PRWZ	**Pori Road**	**2.65**	**188**	⇓PN	Pn	15 04 55.2	-1.6
BFZ	**Birch Farm**	**2.76**	**183**	PN	Pn	15 04 56.1	-2.1
BFZ				AML	AML	15 05 32.1	
BFZ				AML	AML	15 05 33.4	
TIWZ	**Tintock**	**2.88**	**189**	PN	Pn	15 04 57.5	-2.2
TIWZ				AML	AML	15 05 33.1	
TIWZ				AML	AML	15 05 34.8	
CPWZ	**Castlepoint**	**2.98**	**184**	⇓PN	Pn	15 04 59.5	-1.5
OGWZ	**Otaki Gorge**	**3.05**	**199**	PN	Pn	15 04 59.3	-2.6
HOWZ	**Holdsworth Sta**	**3.06**	**194**	PN	Pn	15 04 59.2	-2.8
KIW	**Kapiti Island**	**3.17**	**202**	PN	Pn	15 05 00.3	-3.0
TMWZ	**Te Maipa**	**3.21**	**188**	PN	Pn	15 05 01.1	-2.8
MTW	**Mount Morrison**	**3.31**	**193**	⇑PN	Pn	15 05 02.0	-3.2
MTW				AML	AML	15 05 42.0	
MTW				AML	AML	15 05 42.0	
CAW	**Cannon Point**	**3.35**	**198**	PN	Pn	15 05 02.7	-3.1
CAW				AML	AML	15 05 42.6	
CAW				AML	AML	15 05 43.4	
DUWZ	**D'Urville Isla**	**3.48**	**214**	PN	Pn	15 05 04.5	-3.0
TRWZ	**Traveller**	**3.52**	**189**	PN	Pn	15 05 04.9	-3.1
TRWZ				AML	AML	15 05 46.7	
TRWZ				AML	AML	15 05 46.9	
PAWZ	**Paruwai Farm**	**3.54**	**193**	PN	Pn	15 05 04.8	-3.5
PAWZ				AML	AML	15 05 46.4	
PAWZ				AML	AML	15 05 46.6	
WEL	**Wellington**	**3.60**	**201**	PN	Pn	15 05 05.5	-3.5
MSWZ	**Moikau Station**	**3.61**	**195**	PN	Pn	15 05 05.5	-3.7
MSWZ				AML	AML	15 05 50.0	
MSWZ				AML	AML	15 05 50.8	
BHW	**Baring Head**	**3.69**	**199**	PN	Pn	15 05 06.4	-3.8
TCW	**Tory Channel**	**3.69**	**207**	PN	Pn	15 05 06.7	-3.4
TCW				AML	AML	15 05 51.8	
TCW				AML	AML	15 05 51.9	
PLWZ	**Palliser**	**3.75**	**194**	PN	Pn	15 05 07.2	-3.9
TUWZ	**Tuamarina**	**4.00**	**208**	PN	Pn	15 05 10.5	-3.8
TUWZ				AML	AML	15 06 00.4	
TUWZ				AML	AML	15 06 00.6	
NNZ	**Nelson**	**4.06**	**215**	PN	Pn	15 05 11.8	-3.2
QRZ	**Quartz Range**	**4.20**	**225**	PN	Pn	15 05 13.6	-3.3
BSWZ	**Blackbirch Sta**	**4.27**	**207**	PN	Pn	15 05 14.5	-3.4
THZ	**Tophouse**	**4.71**	**214**	PN	Pn	15 05 20.6	-3.1
KHZ	**Kahutara**	**5.01**	**206**	PN	Pn	15 05 23.5	-4.2
LTZ	**Lake Taylor**	**5.81**	**212**	PN	Pn	15 05 34.9	-3.5
**M

ISCJB ***13*** *15:14:40.3±0.7, 33.˚79S±0.˚02×72.˚12W±0.˚03, h24km±5km, mb5.1/133, MS5.1/19, Error ellipse: s-maj=4.5km s-min=3.5km az=4.8*

MOS ***13*** *15:14:42.1±1.2, 33.˚73S×71.˚87W, h33km, mb5.2/47, MS5.3/4, Error ellipse: s-maj=15.3km s-min=7.5km az=100.3*

BJI ***13*** *15:14:42.4, 34.˚03S×72.˚58W, h39km, mB5.2/25, Ms5.3/20, Ms7 5.2/20*

GCMT ***13*** *15:14:43.0±0.1, 33.˚78S×72.˚27W, h31km, MW5.4/92, Moment Tensor Solution. s92,c162; s92,c152; Duration: 1s3 Moment tensor: Scale 10^{17}Nm; M_{rr}1.15±.03; $M_{\theta\theta}$0.12±.02; $M_{\phi\phi}$-1.27±.02; $M_{r\theta}$0.07±.03; $M_{\theta\phi}$-0.08±.01; $M_{\phi r}$-1.18±.04; Best double couple: $M_0$1.69400×10^{17} NP1:ϕ_s178.00000°,δ67.00000°, λ86.00000°. NP2:ϕ_s9.00000°,δ23.00000°,λ100.00000°. Principal axes: T 1.6360, Plg68.0000°, Azm80.0000°; N 0.1190, Plg4.0000°, Azm180.0000°; P -1.7510, Plg22.0000°, Azm272.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

NEIC ***13*** *15:14:43.0±1.2, 33.˚75S×71.˚84W, h34km±8km, mb5.1/122, ML5.4(GUC) Error ellipse: s-maj=5.6km s-min=3.1km az=71.0*

NEIC Felt [V] at Pichilemu; [IV] at Graneros, Los Andes, Melipilla, Navidad, Paredones, Penaflor, Puente Alto, Quillota, Rancagua, San Antonio, San Bernardo, San Felipe, Santiago, Santo Domingo, Valparaiso, Villa Alemana and Vina del Mar; [III] at Colina, Constitucion, El Quisco, Machali, Petorca, Puchuncavi, Santa Cruz, Talca and Zapallar.

ISC 13 15:14:42.1±1.3, 33.˚80S±0.˚03×72.˚05W±0.˚04, h28km±8km, n713, σ1s01/729, mb5.1/133, MS5.1/20, 18C-18D, Off coast of central Chile

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
CHPI	**Pichilemu**	**0.59**	**176**	*e*P		Pb	15 14 51.4	-2.5
CHPI				*i* S		**Sb**	**15 15 00.6**	**-1.4**
IHA	**Instituto Hidr**	**0.84**	**24**	⇓*i*P		**Pn**	**15 14 56.6**	**-1.5**
ROC1	**El Roble**	**1.19**	**47**	*e*Pn		**Pn**	**15 15 03.0**	**-0.1**
ROCH	**El Roble**	**1.20**	**47**	*e*P		**Pn**	**15 15 02.1**	**-1.1**
ROCH				*e*S		**Sb**	**15 15 19.9**	**+0.4**
ROCH				IAML			15 15 24.9	
	comp=N,131μm,0.7s							
ANTU	**Antumapu**	**1.20**	**79**	*e*P		**Pn**	**15 15 02.5**	**-0.5**
ANTU				*e*S		**Sn**	**15 15 19.5**	**+1.0**
ANTU				IAML			15 15 20.9	
	comp=E,114μm,0.5s							
PEL	**Peldehue**	**1.31**	**61**	⇓*i*P		**Pn**	**15 15 04.2**	**-0.4**
PEL				*i* S		**Sb**	**15 15 22.8**	**+0.1**
PEL				IAML			15 15 28.9	
	comp=E,166μm,0.4s							
CLCH	**Cerro Calan**	**1.32**	**73**	⇓*i*P		**Pn**	**15 15 04.1**	**-0.7**
CLCH				*i* S		**Sb**	**15 15 23.4**	**+0.4**
CLCH				IAML			15 15 30.1	
	comp=N,87μm,0.7s							
NICH	**Los Niches**	**1.38**	**151**	*i* P		**Pn**	**15 15 05.0**	**-0.4**
NICH				*i* S		**Sb**	**15 15 24.9**	**+0.4**
TALC	**Talca**	**1.63**	**168**	*i* P		**Pn**	**15 15 08.5**	**-0.4**
TALC				*i* S		**Sn**	**15 15 29.8**	**+0.9**
YECH	**El Yeso**	**1.64**	**86**	*e*P		**Pn**	**15 15 10.2**	**+0.8**
YECH				*e*S		**Sb**	**15 15 33.6**	**+1.3**
YECH				IAML			15 15 37.5	
	comp=N,45μm,0.5s							
COCH	**Cobquecura**	**2.40**	**194**	*e*P		**Pn**	**15 15 18.2**	**-1.4**
COCH				IAML			15 16 01.3	
	comp=E,22μm,0.8s							
AUSP	**Uspallata**	**2.73**	**56**	*i* P		**Pn**	**15 15 27.0**	**+2.7**
ARCO	**CERRO ARCO**	**2.78**	**71**	*i* P		Pn	15 15 28.6	+3.7
ARCO				*i* S		**Sb**	**15 16 08.1**	**+3.2**
ARCO				IAML			15 16 14.2	
	comp=Z,9μm,0.7s							
AAGR	**Agrelo**	**2.79**	**76**	*i* P		Pb	15 15 28.7	-2.6
CCHI	**Chillan**	**2.80**	**180**	*e*P		**Pn**	**15 15 25.1**	**+0.1**
CCHI				*e*S		**Sn**	**15 15 58.5**	**+0.8**
CCHI				IAML			15 16 16.9	
	comp=N,28μm,0.7s							
ASAL	**Salagasta**	**2.95**	**67**	*i* P		Pn	15 15 30.6	+3.4
RTLS	**Leoncito**	**3.06**	**50**	*i* P		**Pn**	**15 15 30.9**	**+2.1**
RTCV	**Cerro Valdivia**	**3.53**	**58**	*i* P		**Pn**	**15 15 37.4**	**+2.3**
SJA	**San Juan**	**3.71**	**53**	*i* P		**Pn**	**15 15 39.8**	**+2.2**
TLL	**Tololo Astrono**	**3.77**	**17**	*e*P		**Pn**	**15 15 38.1**	**-0.5**
RTLL	**Cerro Villicun**	**3.90**	**52**	*i* P		**Pn**	**15 15 42.0**	**+1.9**
AMOG	**MOGNA**	**4.15**	**47**	*i* P		**Pn**	**15 15 45.4**	**+1.8**
ACAN	**Cantantal**	**4.36**	**71**	*i* P		**Pn**	**15 15 48.8**	**+2.3**
LCO	**Las Campanas**	**4.91**	**14**	*e*Pn		**Pn**	**15 15 52.8**	**-1.5**
VACH	**Vallenar**	**5.32**	**12**	*e*P		**Pn**	**15 15 58.6**	**-1.2**
PLCA	**Paso Flores**	**7.02**	**171**	Pn		**Pn**	**15 16 23.6**	**+0.5**
	comp=N,7.7nm,0.3s,baz=355,slow=11,SNR=141							
PLCA				Lg		Lg	15 18 16.7	
	comp=N,4.9nm,0.3s,baz=97,slow=8.0,SNR=3.9							
PLCA				LR		LR	15 19 28.8	
	comp=N,12μm,19.6s,baz=14,slow=41							
PLCA	**Paso Flores**	**7.02**	**171**	*e*P		**Pn**	**15 16 23.4**	**+0.3**
TRQA	**Tornquist**	**9.20**	**120**	*e*Pn		**Pn**	**15 16 53.7**	**+0.7**
PB10	**IPOC Station P**	**10.33**	**8**	*e*Pn		**Pn**	**15 17 05.7**	**-2.7**
PB04	**IPOC Station P**	**11.55**	**9**	*e*Pn		Pn	15 17 20.8	-4.4
LPA	**La Plata**	**11.72**	**99**	*ce*P		**Pn**	**15 17 28.0**	**+0.6**
LPA				PP		**PnPn**	**15 17 37.0**	**+1.9**
LPA				PP(2)			15 18 04.0	
LPA				S		**Sn**	**15 19 38.0**	**+0.7**
LPA				SS		**SnSn**	**15 19 48.0**	**-1.1**
LPA				PCP		**PcP**	**15 23 18.0**	**+2.4**
PB01	**IPOC Station P**	**12.91**	**11**	*e*Pn		Pn	15 17 36.9	-6.9
PB01				*e*			15 17 45.6	
CHRN	**Cochrane**	**13.44**	**182**	*e*Pn		**Pn**	**15 17 49.8**	**-1.1**
PB11	**IPOC Station P**	**14.14**	**9**	*e*Pn		**Pn**	**15 18 00.6**	**-0.2**
CPUP	**Villa Florida**	**14.75**	**64**	Pn		**Pn**	**15 18 07.0**	**-1.8**
	comp=N,0.3nm,0.3s,baz=255,slow=17,SNR=5.9							
CPUP				Sn		**Sn**	**15 20 49.4**	**-1.9**
	baz=190,slow=17,SNR=2.4							
CPUP				LR		LR	15 24 12.8	
	comp=N,12μm,20.0s,baz=241,slow=39							
CPUP	**Villa Florida**	**14.75**	**64**	*e*P		Pn	15 18 05.5	-3.3
CPUP							15 20 49.4	
CPUP	**Villa Florida**	**14.75**	**64**	*e*Pn		Pn	15 18 05.5	-3.3
CPUP				Sn		**Sn**	**15 20 49.4**	**-1.9**
LPAZ	**La Paz**	**17.79**	**12**	P		**Pn**	**15 18 47.7**	**-0.6**
	comp=N,3.6nm,0.3s,baz=188,slow=6.7,SNR=78							
LPAZ				S		**Sn**	**15 22 07.7**	**+1.5**
	comp=N,0.1nm,0.3s,baz=132,slow=17,SNR=1.8							
LPAZ	**La Paz**	**17.79**	**12**	*e*Pn		**Pn**	**15 18 47.6**	**-0.6**
	comp=N,293nm,1.5s							
LPAZ				S		**Sn**	**15 22 07.7**	**+1.5**
SIV	**San Ignacio**	**20.31**	**32**	P		**P**	**15 19 13.8**	**-2.1**
	comp=N,24nm,0.6s,baz=228,slow=11,SNR=49							
SIV				S		**S**	**15 22 55.8**	**-6.5**
	comp=N,4.0nm,0.8s,baz=296,slow=18,SNR=2.1							
SIV				LR		LR	15 28 31.2	
	comp=N,9μm,19.7s,baz=226,slow=41							
EFI	**East Falkland**	**20.54**	**155**	*e*P		**P**	**15 19 17.5**	**-0.6**
EFI				pmax		pmax		
	comp=Z,56nm,0.8s							
EFI	**East Falkland**	**20.54**	**155**	*e*P		**P**	**15 19 17.1**	**-1.1**
	comp=Z,84nm,0.8s							
USHA	**Ushuaia**	**21.18**	**174**	P		**P**	**15 19 26.3**	**+1.3**
	comp=Z,219nm,0.8s,baz=342,slow=8.0,SNR=14							
USHA				LR		LR	15 28 36.7	
	comp=Z,34μm,18.1s,baz=332,slow=40							
NNA	**Nana**	**22.15**	**347**	P		**P**	**15 19 36.1**	**+0.3**
	comp=Z,13nm,0.6s,baz=193,slow=12,SNR=6.6							
NNA				LR		LR	15 26 39.2	
	comp=Z,2μm,18.6s,baz=174,slow=33							
NNA	**Nana**	**22.15**	**347**	*e*P		**P**	**15 19 36.6**	**+0.8**
NNA				pmax		pmax		
	comp=Z,379nm,1.4s							
NNA	**Nana**	**22.15**	**347**	*e*P		**P**	**15 19 36.6**	**+0.8**
	comp=Z,379nm,1.4s							
SPB	**Sao Paulo**	**23.82**	**71**	*e*P		**P**	**15 19 51.2**	**-1.5**
	comp=Z,799nm,1.9s							
SPB				*e*Sn		Sn	15 24 35.1	+5.1
SAML	**Samuel**	**26.05**	**20**	*e*P		**P**	**15 20 12.1**	**-1.0**
	comp=Z,72nm,0.9s							
ATAH	**Atahualpa**	**27.18**	**346**	LR		LR	15 29 33.6	
	comp=Z,1μm,19.1s,baz=189,slow=33							
BDFB	**Brasilia**	**28.23**	**56**	P		**P**	**15 20 31.0**	**-1.8**
	comp=Z,25nm,0.6s,baz=232,slow=9.5,SNR=28							
BDFB				LR		LR	15 33 08.7	
	comp=Z,10μm,19.2s,baz=222,slow=40							
BDFB	**Brasilia**	**28.23**	**56**	*e*P		**P**	**15 20 30.4**	**-2.4**
	comp=Z,62nm,0.8s							
HOPE	**Hope Point**	**32.25**	**140**	*e*P		**P**	**15 21 09.0**	**+1.2**
	comp=Z,206nm,0.8s							
OTAV	**Otavalo**	**34.39**	**349**	*e*P		**P**	**15 21 29.3**	**+1.9**
	comp=Z,28nm,1.3s							
OTAV	**Otavalo**	**34.39**	**349**	*e*P		P	15 21 31.1	+3.8
PTGA	**Pitinga**	**34.79**	**22**	*e*P		**P**	**15 21 29.4**	**-1.0**
	comp=Z,232nm,1.8s							
CHIC	**Chingaza**	**38.25**	**357**	*e*P		**P**	**15 22 01.1**	**+0.7**
GUYC	**Guyana, Colomb**	**38.94**	**355**	*e*P		**P**	**15 22 07.7**	**+1.5**
NORC	**Noasaa**	**39.24**	**356**	*e*P		**P**	**15 22 08.4**	**+0.2**
HELC	**Santa Helena**	**39.91**	**355**	*e*P		P	15 22 07.2	-6.9
SDV	**Santo Domingo**	**42.47**	**2**	P		**P**	**15 22 33.9**	**-1.1**
	comp=Z,5.9nm,0.5s,baz=186,slow=8.6,SNR=9.8							
SDV	**Santo Domingo**	**42.47**	**2**	*e*P		**P**	**15 22 34.0**	**-1.0**
	comp=Z,21nm,1.0s							
SDV	**Santo Domingo**	**42.47**	**2**	*e*P		**P**	**15 22 34.3**	**-0.7**
RCBR	**Riachuelo**	**43.55**	**58**	*e*P		**P**	**15 22 42.6**	**-1.0**
	comp=Z,95nm,1.6s							
VNA1	**Neumayer--Stat**	**49.86**	**157**	P		**P**	**15 23 34.3**	**+2.0**
VNA2	**Neumayer--Watz**	**50.20**	**157**	P		**P**	**15 23 35.8**	**+0.9**
	baz=296,slow=9.6							
SNAA	**Sanae**	**51.77**	**158**	P		**P**	**15 23 47.1**	**+0.3**
SNAA	**Sanae**	**51.77**	**158**	*e*P		**P**	**15 23 46.7**	**-0.1**
SNAA	**Sanae**	**51.77**	**158**	*e*P		**P**	**15 23 46.7**	**-0.1**
	comp=Z,3μm,0.8s							
SABA	**Saba**	**51.82**	**11**	*e*P		**P**	**15 23 47.1**	**-0.5**
	comp=Z,79nm,0.8s							
CELP	**Cerrillos**	**51.85**	**7**	*e*P		**P**	**15 23 46.8**	**-1.0**
MTDJ	**Mount Denham**	**52.00**	**353**	*e*P		**P**	**15 23 48.6**	**-0.4**
	comp=Z,32nm,1.1s							
CBYP	**Canovanas**	**52.12**	**7**	*e*P		**P**	**15 23 48.0**	**-1.9**
SDDR	**Presa de Saban**	**52.49**	**1**	*e*P		**P**	**15 23 52.0**	**-0.6**
	comp=Z,18nm,1.1s							
CMIG	**Matias Romero**	**55.09**	**333**	P		**P**	**15 24 12.4**	**+0.7**
	comp=Z,2.2nm,0.7s,baz=139,slow=9.3,SNR=3.6							
RKT	**Rikitea**	**55.59**	**264**	*e*S		**S**	**15 32 02.2**	**+2.8**
	comp=Z,678nm,28.8s							
RKT				*e*SS		**SS**	**15 35 47.7**	**+3.1**
	comp=Z,292nm,29.2s							
RKT				*e*LR		LR	15 40 31.5	
	comp=Z,1μm,26.8s,baz=120							
RKT	**Rikitea**	**55.59**	**264**	*e*T		T	16 24 12.2	
	comp=Z,2.0nm,0.2s							
TEIG	**Tepich**	**55.91**	**342**	*e*P		**P**	**15 24 17.4**	**0.0**
	comp=Z,25nm,0.7s							
NVL	**N'lazarevskaya**	**56.51**	**157**	*e*P		**P**	**15 24 22.4**	**+1.2**
VNDA	**Vanda**	**64.30**	**191**	P		**P**	**15 25 15.3**	**+1.0**
	comp=Z,4.3nm,0.7s,baz=125,slow=4.5,SNR=23							
VNDA				LR		LR	15 51 28.8	
	comp=Z,344nm,18.1s,baz=136,slow=34							
VNDA	**Vanda**	**64.30**	**191**	*e*P		**P**	**15 25 15.2**	**+0.8**
	comp=Z,11nm,1.0s							
035A	**Encino**	**65.27**	**334**	P		**P**	**15 25 22.8**	**+1.6**
	baz=156							
034A	**Hebbronville**	**65.60**	**334**	P		**P**	**15 25 24.8**	**+1.4**
	baz=156,SNR=6.9							
934A	**Benavides**	**66.03**	**334**	P		**P**	**15 25 27.9**	**+1.8**
	baz=156							
SYO	**Syowa Base**	**66.06**	**159**	⇓*e*P		**P**	**15 25 24.6**	**-1.2**
SYO	**Syowa Base**	**66.06**	**159**	⇓*e*pP		P	15 25 31.4	+5.6
446A	**Poplarville**	**66.29**	**344**	P		**P**	**15 25 29.4**	**+1.7**
	baz=164							
933A	**Laredo**	**66.31**	**334**	P		**P**	**15 25 29.7**	**+1.8**
	baz=155							
835A	**Beeville**	**66.41**	**335**	P		**P**	**15 25 30.5**	**+2.0**
	baz=157							
834A	**Tilden**	**66.51**	**335**	P		**P**	**15 25 31.0**	**+1.8**
	baz=156							
444A	**Pine Grove**	**66.56**	**342**	P		**P**	**15 25 30.9**	**+1.5**
	baz=163							
736A	**Circle Diamond**	**66.76**	**336**	P		**P**	**15 25 32.7**	**+2.0**
	baz=157							
735A	**Kenedy**	**66.92**	**336**	P		**P**	**15 25 33.4**	**+1.6**
	baz=157							
TAOE	**Nuku Hiva Isla**	**66.94**	**275**	*e*S		**S**	**15 34 21.2**	**-3.0**
	comp=Z,668nm,24.8s							
TAOE	**Nuku Hiva Isla**	**66.94**	**275**	*e*LR		LR	15 45 46.3	
	comp=Z,1μm,21.6s							
637A	**Eagle Lake**	**66.96**	**337**	P		**P**	**15 25 33.6**	**+1.6**
	baz=158							
833A	**Chaparral WMA,**	**67.00**	**334**	P		**P**	**15 25 33.2**	**+1.0**
	baz=155,SNR=7.2							
734A	**La Parita Cree**	**67.17**	**335**	P		**P**	**15 25 34.5**	**+1.1**
	baz=156							
832A	**Faith Ranch, C**	**67.18**	**333**	P		**P**	**15 25 34.4**	**+0.9**
	baz=155							
636A	**Smothers Creek**	**67.24**	**336**	P		**P**	**15 25 35.3**	**+1.5**
	baz=158							
344A	**Westbrook Farm**	**67.25**	**343**	P		**P**	**15 25 35.0**	**+1.2**
	baz=163							
HKT	**Hockley**	**67.28**	**338**	*e*P		**P**	**15 25 35.3**	**+1.4**
HKT				pmax		pmax		
	comp=Z,51nm,1.8s							
HKT	**Hockley**	**67.28**	**338**	*e*P		**P**	**15 25 35.3**	**+1.4**
	comp=Z,51nm,1.8s							
733A	**Divot King Ran**	**67.32**	**334**	P		**P**	**15 25 35.4**	**+1.1**
	baz=156							
247A	**Quitman**	**67.34**	**345**	P		**P**	**15 25 35.0**	**+0.7**
	baz=165							
TBI	**Tubuai**	**67.36**	**256**	*e*S		**S**	**15 34 30.9**	**+2.1**
	comp=Z,609nm,25.8s							
TBI	**Tubuai**	**67.36**	**256**	*e*LR		LR	15 45 55.5	
	comp=Z,3μm,26.0s,baz=117							
635A	**Leesville**	**67.40**	**336**	P		**P**	**15 25 35.8**	**+1.0**
	baz=157							
246A	**Jackson Lee, B**	**67.41**	**344**	P		**P**	**15 25 35.9**	**+1.1**
	baz=164							
440A	**Kirbyville**	**67.45**	**340**	P		**P**	**15 25 36.6**	**+1.5**
	baz=160							
537A	**Green Hill Far**	**67.55**	**337**	P		**P**	**15 25 37.1**	**+1.4**
	baz=158							
634A	**China Grove, S**	**67.59**	**335**	P		**P**	**15 25 37.4**	**+1.4**
	baz=156							
342A	**Flagon Creek P**	**67.59**	**341**	P		**P**	**15 25 37.2**	**+1.3**
	baz=162							
SLBS	**Sierra La Lagu**	**67.59**	**322**	*e*P		**P**	**15 25 38.0**	**+1.7**
	comp=Z,15nm,1.0s							
245A	**Little AP, Sta**	**67.61**	**344**	P		**P**	**15 25 37.0**	**+0.9**
	baz=164							
GOGA	**Godfrey**	**67.71**	**350**	*e*P		**P**	**15 25 35.9**	**-0.8**
GOGA				pmax		pmax		
	comp=Z,20nm,1.0s							
GOGA	**Godfrey**	**67.71**	**350**	*e*P		**P**	**15 25 35.9**	**-0.8**
	comp=Z,20nm,1.0s							
341A	**Kurthwood**	**67.78**	**341**	P		**P**	**15 25 38.2**	**+1.0**
	baz=161							
244A	**Avery, Jackson**	**67.81**	**343**	P		**P**	**15 25 38.5**	**+1.2**
	baz=163							
243A	**Waterproof**	**67.85**	**342**	P		**P**	**15 25 38.8**	**+1.2**
	baz=162							
147A	**Livingston**	**67.86**	**345**	P		**P**	**15 25 38.3**	**+0.7**
	baz=165							
438A	**Sam Houston St**	**67.91**	**338**	P		**P**	**15 25 39.2**	**+1.3**
	baz=159							
633A	**Saathoff Ranch**	**67.95**	**335**	P		**P**	**15 25 39.4**	**+1.1**
	comp=Z,56nm,5.9							
146A	**Union**	**68.00**	**345**	P		**P**	**15 25 39.2**	**+0.7**
	baz=165							
145A	**Houston Renfro**	**68.16**	**344**	P		**P**	**15 25 40.6**	**+1.1**
	baz=164							
339A	**Huntington**	**68.18**	**339**	P		**P**	**15 25 40.7**	**+1.0**
	baz=160							
437A	**Phantom Ranch,**	**68.19**	**338**	P		**P**	**15 25 40.9**	**+1.2**
	baz=158							
242A	**Grayson**	**68.19**	**342**	P		**P**	**15 25 40.7**	**+0.9**
	baz=162							
534A	**Blanco**	**68.22**	**335**	P		**P**	**15 25 40.5**	**+0.4**
	baz=156							
HPIG		**68.31**	**328**	*e*P		**P**	**15 25 40.9**	**+0.1**
	comp=Z,17nm,1.1s							
241A	**Mo Tay, Goldon**	**68.36**	**341**	P		**P**	**15 25 42.2**	**+1.4**
	baz=161							
338A	**Crockett**	**68.42**	**339**	P		**P**	**15 25 42.2**	**+1.0**
	baz=159							
533A	**Kerrville**	**68.46**	**335**	P		**P**	**15 25 42.4**	**+0.9**
	baz=156							
337A	**Centerville**	**68.56**	**338**	P		**P**	**15 25 42.8**	**+0.8**
	baz=159							
NATX	**Nacogdoches**	**68.61**	**339**	P		**P**	**15 25 43.7**	**+1.4**
	baz=160							
435B	**Jarrell**	**68.61**	**337**	P		**P**	**15 25 43.9**	**+1.5**
	baz=157							
143A	**Socs Landing,**	**68.61**	**343**	P		**P**	**15 25 44.0**	**+1.7**
	baz=163							
239A	**Gary**	**68.79**	**340**	P		**P**	**15 25 45.0**	**+1.5**
	baz=160							
MEH	**Mehetia**	**68.87**	**262**	*e*T		T	16 40 47.5	
	comp=Z,21nm,0.2s							
434A	**Burnet**	**68.87**	**336**	P		**P**	**15 25 44.9**	**+0.8**
	baz=157,SNR=12							
141A	**Papa Simpson,**	**68.91**	**341**	P		**P**	**15 25 45.0**	**+0.8**
	baz=161							
336A	**Riesel**	**68.93**	**337**	P		**P**	**15 25 45.0**	**+0.7**
	baz=158,SNR=5.8							
238A	**Jacksonville**	**68.97**	**339**	P		**P**	**15 25 45.6**	**+1.0**
	baz=159							
335A	**Moody**	**69.02**	**337**	P		**P**	**15 25 45.7**	**+0.8**
	baz=157							
433A	**Art**	**69.10**	**335**	P		**P**	**15 25 46.3**	**+0.8**
	baz=156							
JCT	**Junction City**	**69.10**	**335**	P		**P**	**15 25 46.4**	**+0.9**
	baz=155,SNR=7.0							
JCT	**Junction City**	**69.10**	**335**	*e*P		**P**	**15 25 45.7**	**+0.2**
JCT				pmax		pmax		
	comp=Z,147nm,1.8s							
JCT	**Junction City**	**69.10**	**335**	*e*P		**P**	**15 25 45.7**	**+0.2**
	comp=Z,147nm,1.8s							
140A	**Cam and Jess,**	**69.12**	**341**	P		**P**	**15 25 46.7**	**+1.2**
	baz=161							
KMSC	**Kings Mountain**	**69.13**	**352**	P		**P**	**15 25 45.6**	**0.0**
	baz=172							
KMSC	**Kings Mountain**	**69.13**	**352**	*e*P		**P**	**15 25 43.7**	**-1.8**
	comp=Z,53nm,1.8s							
237A	**Washetta, Mont**	**69.17**	**339**	P		**P**	**15 25 47.0**	**+1.2**
	baz=159							
334A	**Lometa**	**69.34**	**336**	P		**P**	**15 25 47.8**	**+0.9**
	baz=157,SNR=8.5							
TX31	**Lajitas Ar. Si**	**69.56**	**331**	*e*P		**P**	**15 25 48.6**	**+0.1**
TXAR	**Lajitas Array**	**69.56**	**331**	P		**P**	**15 25 48.9**	**+0.4**
	comp=Z,5.5nm,0.7s,baz=153,slow=8.3,SNR=76							
TXAR				LR		LR	15 52 12.4	
	comp=Z,2μm,18.3s,baz=0.0,slow=32							
333A	**Richland Sprin**	**69.58**	**336**	P		**P**	**15 25 48.9**	**+0.5**
	baz=156,SNR=10							
WHTX	**Lake Whitney,**	**69.68**	**337**	P		**P**	**15 25 49.3**	**+0.3**
	baz=158,SNR=6.2							
WHTX	**Lake Whitney,**	**69.68**	**337**	*e*P		**P**	**15 25 49.5**	**+0.4**
	comp=Z,20nm,0.8s							
137A	**Heron Place, G**	**69.71**	**339**	P		**P**	**15 25 50.5**	**+1.3**
	baz=159							
CPCT	**Cooper Cave**	**69.87**	**349**	*e*P		**P**	**15 25 49.7**	**-0.4**
	comp=Z,12nm,1.0s							
OXF	**Oxford**	**69.88**	**345**	*e*P		**P**	**15 25 49.7**	**-0.4**
OXF				pmax		pmax		
	comp=Z,42nm,0.9s							
OXF	**Oxford**	**69.88**	**345**	*e*P		**P**	**15 25 49.7**	**-0.4**
	comp=Z,42nm,0.9s							
SWET	**Sewanee**	**69.88**	**348**	*e*P		**P**	**15 25 50.0**	**-0.2**
	comp=Z,7.7nm,0.9s							
234A	**Clairette**	**69.92**	**337**	P		**P**	**15 25 51.5**	**+1.0**
	baz=157							
PLAL	**Pickwick Lake**	**70.05**	**346**	*e*P		**P**	**15 25 50.9**	**-0.3**
	comp=Z,16nm,0.7s							
233A	**Rising Star**	**70.19**	**336**	P		**P**	**15 25 52.5**	**+0.3**
	baz=156,SNR=5.4							
PPT2	**Papeete2**	**70.25**	**262**	*e*S		**S**	**15 35 02.6**	**-0.8**
	comp=Z,740nm,25.0s							
PPT2	**Papeete2**	**70.25**	**262**	*e*LR		LR	15 47 14.6	
	comp=Z,2μm,27.8s,baz=119							
PPT	**Papeete**	**70.26**	**262**	LR		LR	15 49 58.7	
	comp=Z,878nm,21.3s,baz=120,slow=30							
Y40A	**Okolona**	**70.34**	**341**	P		**P**	**15 25 53.9**	**+0.9**
	baz=161							
134A	**White-Moore Ra**	**70.42**	**337**	P		**P**	**15 25 54.1**	**+0.5**
	baz=157							
Z36A	**Blue Ridge**	**70.55**	**338**	P		**P**	**15 25 54.8**	**+0.5**
	baz=158,SNR=5.4							
X40A	**Basin Creek Fa**	**70.67**	**342**	P		**P**	**15 25 55.3**	**+0.3**
	baz=162							
133A	**Hamilton Ranch**	**70.73**	**336**	P		**P**	**15 25 56.3**	**+0.9**
	baz=156,SNR=5.6							
Z35A	**Perchaven, San**	**70.86**	**338**	P		**P**	**15 25 57.0**	**+0.8**
	baz=158							
MIAR	**Mount Ida**	**70.92**	**341**	P		**P**	**15 25 56.9**	**+0.3**
	baz=161,SNR=6.5							
MIAR	**Mount Ida**	**70.92**	**341**	*e*P		**P**	**15 25 56.3**	**-0.2**
MIAR				pmax		pmax		
	comp=Z,63nm,1.8s							
MIAR	**Mount Ida**	**70.92**	**341**	*e*P		**P**	**15 25 56.3**	**-0.2**
	comp=Z,63nm,1.8s							
ABTX	**Abilene, Hawle**	**70.99**	**336**	P		**P**	**15 25 57.5**	**+0.5**
	baz=156,SNR=5.9							
ABTX	**Abilene, Hawle**	**70.99**	**336**	*e*P		**P**	**15 25 56.8**	**-0.2**
	comp=Z,169nm,2.0s							
X39A	**Fountain Ranch**	**71.03**	**341**	P		**P**	**15 25 57.8**	**+0.5**
	baz=161,SNR=6.1							
WVT	**Waverly**	**71.11**	**347**	*e*P		**P**	**15 25 57.1**	**-0.5**
WVT				pmax		pmax		
	comp=Z,44nm,0.8s							
WVT	**Waverly**	**71.11**	**347**	*e*P		**P**	**15 25

U37A **Salina** 73.09 341 P P 15 26 09.2 -0.3
baz=160
T40A **Mansfield** 73.12 343 P P 15 26 09.6 -0.1
baz=162
W32A **Sentinel** 73.14 337 P P 15 26 10.0 +0.1
baz=156,SNR=8.3
T39A **Clever** 73.21 342 P P 15 26 10.0 -0.2
baz=161
MSTX **Muleshoe** 73.33 334 P P 15 26 11.1 0.0
baz=154
MSTX **Muleshoe** 73.33 334 eP P 15 26 10.9 -0.2
comp=Z,37nm,1.4s
MAW **Mawson** 73.37 164 P P 15 26 11.2 +0.4
comp=Z,28nm,0.8s,baz=210,slow=7.1,SNR=43
MAW LR LR 16 01 18.6
comp=Z,2µm,18.4s,baz=230,slow=38
MAW **Mawson** 73.37 164 eP P 15 26 10.9 0.0
comp=Z,6.3nm,0.8s
T38A **Diamond** 73.46 342 P P 15 26 11.6 -0.1
baz=161,SNR=5.5
V33A **Lossen Ranch,** 73.48 338 P P 15 26 11.7 -0.1
baz=157
U35A **Pawnee** 73.52 339 P P 15 26 12.1 +0.1
baz=159
S40A **Lebanon** 73.54 343 P P 15 26 12.4 +0.2
baz=162,SNR=7.1
V32A **Arapaho** 73.62 337 P P 15 26 13.2 +0.5
baz=157
T37A **Cheneyville 18** 73.71 341 P P 15 26 13.1 0.0
baz=160
319A **Douglas** 73.73 327 eP P 15 26 14.7 +1.1
comp=Z,13nm,0.9s
AMTX **Amarillo** 73.75 335 P P 15 26 13.7 +0.2
baz=154
AMTX **Amarillo** 73.75 335 eP P 15 26 13.8 +0.2
comp=Z,65nm,1.5s
U34A **Anderson Ranch** 73.82 339 P P 15 26 14.1 +0.3
baz=158
U34A **Anderson Ranch** 73.82 339 eP P 15 26 13.7 -0.1
comp=Z,86nm,1.8s
S39A **Bolivar** 73.83 343 P P 15 26 13.8 -0.1
baz=162,SNR=6.6
T36A **Boggs Farm, Ca** 73.92 340 P P 15 26 14.3 -0.1
baz=159
S38A **Stockton** 73.92 342 P P 15 26 14.3 -0.1
baz=161,SNR=10
O56A **Blue Knob Stat** 73.95 355 P P 15 26 14.6 +0.1
baz=174
T35A **Sooner Cattle** 73.96 340 P P 15 26 14.8 +0.2
baz=159
U33A **Lingo Farm, Me** 73.99 338 P P 15 26 14.5 -0.3
baz=158
121A **Cookes Peak, D** 74.06 329 P P 15 26 15.6 +0.1
baz=150
121A **Cookes Peak, D** 74.06 329 eP P 15 26 15.9 +0.3
comp=Z,66nm,1.6s
R40A **Maddies Statio** 74.15 344 P P 15 26 15.6 0.0
baz=162,SNR=11
T34A **McClaskey Farm** 74.26 339 P P 15 26 16.0 -0.3
baz=158
S37A **Fort Scott** 74.28 341 P P 15 26 16.3 -0.2
baz=160
R39A **Chumby, Stover** 74.35 343 P P 15 26 17.2 +0.3
baz=162,SNR=7.9
ACSO **Alum Creek Sta** 74.35 351 eP P 15 26 16.0 -0.9
comp=Z,28nm,0.9s
N59A **State Game Lan** 74.43 357 P P 15 26 17.3 0.0
baz=177
R38A **Fenwick Farm,** 74.45 342 P P 15 26 16.6 -0.8
baz=161
S36A **Lake Cedric, C** 74.46 341 P P 15 26 17.4 -0.1
baz=160
S35A **Otter Creek Ra** 74.62 340 P P 15 26 18.4 -0.1
baz=159
T33A **Patterson Ranc** 74.63 339 P P 15 26 18.4 -0.1
baz=158,SNR=5.7
LIC **Lamto** 74.72 72 eP P 15 26 19.3 -0.3
comp=Z,63nm,1.5s
N54A **Moraine State** 74.75 354 P P 15 26 19.2 0.0
baz=173
Q40A **Laux Farm, Aux** 74.77 344 P P 15 26 19.6 +0.3
baz=163,SNR=8.4
R37A **Teagarden Farm** 74.81 342 P P 15 26 19.6 +0.1
baz=160
S34A **Willow Spring** 74.86 340 P P 15 26 19.9 0.0
baz=158
T32A **Huddler Ranch,** 74.93 338 P P 15 26 20.9 +0.6
baz=157
SUR **Sutherland** 74.93 119 eP P 15 26 21.7 +0.8
comp=Z,140nm,1.9s
TIC **Toumodi** 74.98 71 eP P 15 26 20.9 -0.2
KIC **Kosan Boka** 75.03 72 eP P 15 26 20.5 -0.9
comp=Z,63nm,0.8s
Q39A **Willow Grove F** 75.03 343 P P 15 26 21.0 +0.2
baz=162
Q38A **Cooks Store, C** 75.11 343 P P 15 26 21.3 +0.1
baz=161
SFIN **Lafayette** 75.11 348 P P 15 26 20.5 -0.6
baz=167
DBIC **Dimbokro** 75.12 71 P P 15 26 21.1 -0.8
comp=Z,21nm,0.7s,baz=210,slow=5.7,SNR=46
DBIC LR LR 15 58 03.6
comp=Z,1µm,18.9s,baz=218,slow=35
DBIC **Dimbokro** 75.12 71 eP P 15 26 21.5 -0.4
comp=Z,24nm,0.8s
TUC **Tucson** 75.20 327 P P 15 26 23.0 +1.0
baz=147
TUC **Tucson** 75.20 327 eP P 15 26 23.2 +1.2
TUC pmax pmax
comp=Z,36nm,1.9s
TUC **Tucson** 75.20 327 eP P 15 26 23.2 +1.2
comp=Z,36nm,1.9s
M54A **Oil Creek Stat** 75.27 354 P P 15 26 22.3 +0.1
baz=173
P40A **Paris** 75.28 344 P P 15 26 22.4 +0.2
baz=163,SNR=10
P39A **Salisbury** 75.40 344 P P 15 26 23.0 +0.1
baz=162
LAZ **Ladron** 75.41 331 eP P 15 26 24.3 +1.0
R34A **Isabella, Hill** 75.46 340 P P 15 26 23.2 -0.1
baz=158
ANMO **Albuquerque** 75.60 331 P P 15 26 24.4 0.0
baz=151
ANMO **Albuquerque** 75.60 331 c iP P 15 26 25.5 +1.0
ANMO pmax pmax
comp=Z,14nm,1.7s
ANMO **Albuquerque** 75.60 331 eP P 15 26 25.4 +1.0
comp=Z,9.7nm,1.1s
Q35A **Mercer Eighty,** 75.64 341 P P 15 26 23.9 -0.4
baz=159
HDIL **Hopedale** 75.68 347 P P 15 26 24.0 -0.5
baz=165
R33A **Olander Ranch,** 75.68 339 P P 15 26 24.6 0.0
baz=158
P38A **Dawn** 75.72 343 P P 15 26 24.4 -0.3
baz=162
O40A **La Belle** 75.80 344 P P 15 26 25.6 +0.5
baz=163
214A **Organ Pipe Nat** 75.85 325 P P 15 26 26.5 +0.8
baz=146
214A **Organ Pipe Nat** 75.85 325 eP P 15 26 27.3 +1.6
comp=Z,84nm,1.4s
Q34A **Chapman** 75.95 340 P P 15 26 26.3 +0.2
baz=159
O39A **Kirksville** 76.08 344 P P 15 26 26.7 0.0
baz=162
O38A **Galt** 76.17 343 P P 15 26 27.0 -0.3
baz=162
P35A **Duane Minner,** 76.26 341 P P 15 26 27.9 +0.1
baz=160
O37A **Wolven Farm, M** 76.38 343 P P 15 26 28.4 0.0
baz=161
Q32A **Meitler Ranch,** 76.48 339 P P 15 26 29.1 0.0
baz=157
P34A **Walnut Farm, R** 76.50 341 P P 15 26 29.1 -0.1
baz=159
O36A **Bolckow** 76.55 342 P P 15 26 29.0 -0.4
baz=160
N39A **Derby Farms, D** 76.67 344 P P 15 26 29.9 -0.2
baz=162
RAR **Rarotonga** 76.70 253 LR LR 15 52 27.3
comp=Z,747nm,18.4s,baz=108,slow=30
T25A **Trinidad** 76.75 334 P P 15 26 31.5 +0.6
baz=153,SNR=15
T25A **Trinidad** 76.75 334 eP P 15 26 32.0 +1.1
comp=Z,127nm,1.8s
N38A **Joes South For** 76.75 344 P P 15 26 30.2 -0.4
baz=162

113A **Mohawk Valley,** 76.97 325 eP P 15 26 33.3 +1.3
comp=Z,21nm,1.6s
O34A **Beatrice** 77.06 341 P P 15 26 32.2 -0.1
baz=159
X16A **Lo Mia Camp, P** 77.26 327 eP P 15 26 35.2 +1.3
comp=Z,18nm,1.4s
M38A **Pleasantville** 77.34 344 P P 15 26 33.9 +0.1
baz=162
M37A **Trindle Farm,** 77.53 343 P P 15 26 35.4 +0.5
baz=161
O32A **Brockman Farm,** 77.57 340 P P 15 26 36.0 +0.8
baz=158
SDCO **Great Sand Dun** 77.69 333 P P 15 26 37.3 +1.0
baz=152,SNR=8.1
SDCO **Great Sand Dun** 77.69 333 eP P 15 26 36.7 +0.4
comp=Z,11nm,1.3s
GLA **Glamis** 77.72 324 P P 15 26 37.5 +1.3
baz=145
M36A **Felix, Anita** 77.76 343 P P 15 26 37.1 +0.9
baz=161
L38A **Oak Wood Farm,** 77.97 344 P P 15 26 37.4 +0.1
baz=162
SWSC **Sam W. Stewart** 78.11 324 P P 15 26 38.9 +0.6
baz=144
JFWS **Jewell Farm** 78.14 346 eP P 15 26 38.0 -0.3
JFWS pmax pmax
comp=Z,16nm,0.8s
JFWS **Jewell Farm** 78.14 346 eP P 15 26 38.0 -0.3
comp=Z,16nm,0.8s
WUAZ **Wupatki** 78.16 328 P P 15 26 39.9 +1.2
baz=147
WUAZ **Wupatki** 78.16 328 eP P 15 26 40.0 +1.2
comp=Z,50nm,1.9s
S22A **4UR Ranch, Cre** 78.19 332 P P 15 26 40.3 +1.2
baz=151
S22A **4UR Ranch, Cre** 78.19 332 eP P 15 26 39.9 +0.8
comp=Z,19nm,1.4s
MVCO **Mesa Verde** 78.39 331 P P 15 26 41.3 +1.2
baz=150
MVCO **Mesa Verde** 78.39 331 eP P 15 26 41.0 +0.9
comp=Z,27nm,1.5s
PDMCI **Parker Dam,Lak** 78.41 325 P P 15 26 41.8 +1.8
baz=145
SADO **Sadowa** 78.47 355 eP P 15 26 39.6 -0.4
comp=Z,15nm,0.9s
BC3 **Big Chuckawall** 78.51 324 P P 15 26 42.0 +1.3
baz=144
BGNE **Belgrade** 78.60 340 P P 15 26 41.8 +0.9
baz=158
Q24A **Divide** 78.64 334 P P 15 26 42.5 +0.9
baz=152,SNR=6.3
Q24A **Divide** 78.64 334 eP P 15 26 42.4 +0.9
comp=Z,28nm,1.3s
GGN **Saint George** 78.69 4 eP P 15 26 42.1 +0.9
comp=Z,178nm,1.9s
IRM **Iron Mountain** 78.77 325 P P 15 26 43.3 +1.3
baz=144
M31A **Lambtecht Ranc** 78.78 340 P P 15 26 43.1 +1.2
baz=157
K36A **Gilmore City** 78.79 343 P P 15 26 43.2 +1.3
baz=161
PFO **Pinyon Flats O** 78.97 323 P P 15 26 44.6 +1.4
baz=144
PFO **Pinyon Flats O** 78.97 323 eP P 15 26 45.3 +2.0
PFO pmax pmax
comp=Z,49nm,1.8s
PFO **Pinyon Flats O** 78.97 323 eP P 15 26 45.3 +2.0
comp=Z,49nm,1.8s
J38A **Wedel Dairy, R** 78.99 345 P P 15 26 43.9 +0.9
baz=163
BELC **Belle Mtn. Jos** 79.06 324 P P 15 26 45.2 +1.5
baz=144
K35A **Storm Lake** 79.06 343 P P 15 26 44.4 +1.0
baz=160
PV01 **Paradox Valley** 79.21 331 eP P 15 26 45.5 +0.9
J37A **Redenius Farm,** 79.22 344 P P 15 26 45.4 +1.2
baz=162
TSUM **Tsumeb** 79.28 106 eP P 15 26 45.5 0.0
comp=Z,11nm,0.9s
U15A **North Rim** 79.32 328 eP P 15 26 46.6 +1.3
comp=Z,18nm,1.4s
MURC **Murrieta** 79.33 323 P P 15 26 45.9 +0.8
baz=143
J36A **Seneca 1, Swea** 79.42 344 P P 15 26 45.6 +0.3
baz=161
SMCO **Snowmass** 79.50 333 eP P 15 26 47.4 +1.1
comp=Z,23nm,1.1s
GMRC **Granite Mounta** 79.53 325 P P 15 26 47.1 +0.9
baz=144
ISCO **Idaho Springs** 79.54 334 P P 15 26 46.5 +0.1
baz=152
ISCO **Idaho Springs** 79.54 334 eP P 15 26 47.0 +0.5
ISCO pmax pmax
comp=Z,26nm,1.7s
ISCO **Idaho Springs** 79.54 334 eP P 15 26 47.0 +0.5
comp=Z,26nm,1.7s
LMN **Caledonia Moun** 79.55 5 eP P 15 26 46.7 +0.7
comp=Z,136nm,2.0s
PV10 **Paradox Valley** 79.61 331 eP P 15 26 47.4 +0.6
I38A **Scanlan Farm,** 79.65 345 P P 15 26 46.6 +0.1
baz=163
PV09 **Paradox Valley** 79.75 331 eP P 15 26 47.4 -0.3
I37A **Lemnd, Waseca** 79.86 345 P P 15 26 48.0 +0.3
baz=162
K31A **O'Neill** 79.89 340 P P 15 26 48.9 +1.0
baz=158
I36A **Fitzsimmons Fa** 80.00 344 P P 15 26 49.0 +0.6
baz=161
KNB **Kanab** 80.05 328 eP P 15 26 50.6 +1.5
KNB pmax pmax
comp=Z,92nm,2.0s
KNB **Kanab** 80.05 328 eP P 15 26 50.6 +1.5
comp=Z,92nm,2.0s
I35A **Creekview Farm** 80.07 343 P P 15 26 49.0 +0.2
baz=161
BOSA **Boshof** 80.17 118 P P 15 26 49.5 -0.6
comp=Z,9.1nm,0.7s,baz=246,slow=3.4,SNR=23
BOSA LR LR 15 57 27.9
comp=Z,494nm,21.2s,baz=233,slow=32
BOSA **Boshof** 80.17 118 eP P 15 26 50.3 +0.2
comp=Z,14nm,0.8s
LCMT **Little Creek M** 80.23 328 eP P 15 26 50.3 +0.3
comp=Z,15nm,1.4s
ECSD **EROS Data Cent** 80.36 342 P P 15 26 50.5 +0.1
baz=159
ECSD **EROS Data Cent** 80.36 342 eP P 15 26 49.6 -0.8
comp=Z,18nm,0.8s
GSC **Goldstone, Bar** 80.50 324 P P 15 26 51.9 +0.4
baz=144
GSC **Goldstone, Bar** 80.50 324 eP P 15 26 53.0 +1.6
GSC pmax pmax
comp=Z,21nm,1.5s
GSC **Goldstone, Bar** 80.50 324 eP P 15 26 53.0 +1.6
comp=Z,21nm,1.5s
H36A **Jessenland, He** 80.51 344 P P 15 26 51.8 +0.7
baz=162
N23A **Red Feather La** 80.63 335 P P 15 26 52.8 +0.6
baz=152
N23A **Red Feather La** 80.63 335 eP P 15 26 52.9 +0.6
comp=Z,50nm,1.9s
EDW2 **Edwards Air Fo** 80.75 323 P P 15 26 53.8 +1.0
baz=143
O20A **White River Ci** 80.81 333 P P 15 26 53.9 +0.8
baz=150
PHWY **Pilot Hill** 80.81 335 eP P 15 26 54.5 +1.3
comp=Z,25nm,1.4s
H35A **Sunnyside Ranc** 80.83 344 P P 15 26 53.3 +0.4
baz=161
SRU **San Rafael Swe** 80.83 331 eP P 15 26 51.5 -1.8
SRU pmax pmax
comp=Z,8.0nm,0.8s
SRU **San Rafael Swe** 80.83 331 eP P 15 26 51.5 -1.8
comp=Z,8.1nm,0.8s
LMQ **La Malbaie** 80.99 1 eP P 15 26 52.1 -1.5
comp=Z,122nm,2.0s
H34A **Spellman Lake,** 81.02 343 P P 15 26 54.2 +0.3
baz=160
J29A **Okreek** 81.06 340 P P 15 26 55.2 +1.0
baz=156
P18A **Preston Nutter** 81.16 331 eP P 15 26 56.0 +0.8
comp=Z,72nm,1.9s
P17A **Butcher Ranch,** 81.23 331 eP P 15 26 55.7 +0.3
comp=Z,18nm,1.3s
H33A **Prehn Over Nor** 81.28 342 P P 15 26 55.8 +0.5
baz=159
I30A **Oacoma** 81.28 340 P P 15 26 55.8 +0.5
baz=157
J28A **Allard Ranch,** 81.35 339 P P 15 26 56.7 +0.9
baz=156
J27A **Elkhorn Farm,** 81.43 338 P P 15 26 57.7 +1.5
baz=155
MPMC **Manual Prospec** 81.43 324 P P 15 26 57.6 +1.0
baz=143
TPNV **Topopah Spring** 81.56 326 P P 15 26 58.5 +1.3
baz=144
TPNV **Topopah Spring** 81.56 326 eP P 15 26 58.9 +1.7
TPNV pmax pmax
comp=Z,8.0nm,0.9s
TPNV **Topopah Spring** 81.56 326 eP P 15 26 58.9 +1.7
comp=Z,8.2nm,0.9s
ISA **Isabella, Lake** 81.60 323 P P 15 26 58.1 +0.8
baz=142
F36A **Milaca** 81.64 345 P P 15 26 57.7 +0.5
baz=162
DAC **Darwin (Calif)** 81.66 324 eP P 15 26 59.1 +1.3
DAC pmax pmax
comp=Z,21nm,1.3s
DAC **Darwin (Calif)** 81.66 324 eP P 15 26 59.1 +1.3
comp=Z,21nm,1.3s
VLDQ **Val d'Or** 81.69 356 eP P 15 26 57.1 -0.1
comp=Z,16nm,0.9s
PSUT **Pine Spring** 81.76 328 eP P 15 26 59.5 +1.2
comp=Z,8.4nm,1.0s
J26A **Sides Ranch, S** 81.81 338 P P 15 26 59.0 +0.7
baz=154
I28A **Midland** 81.86 339 P P 15 26 59.0 +0.6
baz=156
J25A **Sunshine Ranch** 82.12 337 P P 15 27 00.4 +0.6
baz=154
H29A **Onida** 82.15 340 P P 15 27 00.5 +0.6
baz=156,SNR=5.2
NLU **North Lily Min** 82.19 330 eP P 15 27 01.3 +0.8
comp=Z,13nm,1.3s
E36A **McGregor** 82.21 345 P P 15 27 00.3 +0.1
baz=162
F33A **5 Mile Ranch,** 82.25 343 P P 15 27 00.4 0.0
baz=160
G30A **Faulkton** 82.32 341 P P 15 27 01.6 +0.8
baz=157
K22A **Casper** 82.38 335 P P 15 27 01.9 +0.6
baz=152
K22A **Casper** 82.38 335 eP P 15 27 01.7 +0.3
comp=Z,28nm,1.3s
R11A **Troy Canyon, C** 82.39 327 P P 15 27 02.7 +1.2
baz=145
R11A **Troy Canyon, C** 82.39 327 eP P 15 27 02.7 +1.2
comp=Z,29nm,1.6s
I26A **New Underwood** 82.39 338 P P 15 27 02.3 +1.0
baz=154
LBTB **Lobatse** 82.40 115 eP P 15 27 01.6 -0.4
LBTB pmax pmax
comp=Z,20nm,0.9s
LBTB **Lobatse** 82.40 115 eP P 15 27 01.6 -0.4
comp=Z,20nm,0.9s
H28A **Mission Ridge** 82.43 340 P P 15 27 02.1 +0.7
baz=156
JLU **Jordanelle** 82.47 331 eP P 15 27 02.6 +0.6
comp=Z,42nm,2.0s
G29A **Hoven** 82.59 341 P P 15 27 02.9 +0.7
baz=157
D37A **Cotton** 82.65 346 P P 15 27 02.5 +0.1
baz=163
I25A **Rochford** 82.66 338 P P 15 27 03.5 +0.7
baz=154,SNR=6.6
DUG **Dugway, Tooele** 82.69 330 P P 15 27 03.4 +0.4
baz=147
DUG **Dugway, Tooele** 82.69 330 eP P 15 27 03.8 +0.8
DUG pmax pmax
comp=Z,20nm,1.4s
DUG **Dugway, Tooele** 82.69 330 eP P 15 27 03.8 +0.8
comp=Z,20nm,1.4s
H27A **Howes** 82.70 339 P P 15 27 03.2 +0.4
baz=155,SNR=7.6
F31A **Hecla** 82.76 342 P P 15 27 03.6 +0.6
baz=158
G28A **Parade** 82.76 340 P P 15 27 03.5 +0.4
baz=156,SNR=7.1
RSSD **Black Hills** 82.85 337 P P 15 27 03.7 -0.1
baz=154
RSSD **Black Hills** 82.85 337 eP P 15 27 04.0 +0.2
RSSD pmax pmax
comp=Z,6.0nm,0.8s
RSSD **Black Hills** 82.85 337 eP P 15 27 04.0 +0.2
comp=Z,6.0nm,0.8s
C39A **Grand Marais** 82.85 348 P P 15 27 02.8 -0.6
baz=165
TCUT **Toone Canyon** 82.89 331 eP P 15 27 05.1 +0.9
comp=Z,46nm,1.6s
D35A **Remer** 82.91 345 P P 15 27 03.8 0.0
baz=162
C38A **Sawbill Land.** 82.96 347 P P 15 27 03.5 -0.5
baz=164
C37A **Embarrass** 83.15 346 P P 15 27 04.7 -0.3
baz=163
F29A **Eureka** 83.15 341 P P 15 27 05.2 +0.1
baz=157,SNR=5.1
H25A **Fruitdale** 83.16 338 P P 15 27 05.4 +0.2
baz=154
EYMN **Ely** 83.22 347 P P 15 27 05.1 -0.3
baz=164
EYMN **Ely** 83.22 347 eP P 15 27 04.8 -0.6
comp=Z,18nm,1.2s
MCU **Monte Cristo P** 83.22 331 eP P 15 27 06.0 +0.1
C36A **Pine Crest Far** 83.30 346 P P 15 27 05.5 -0.3
baz=163
G27A **Dupree** 83.33 339 P P 15 27 06.1 0.0
baz=155,SNR=6.2
D33A **AnnSam, Waubun** 83.37 344 P P 15 27 05.8 -0.4
baz=160
HWUT **Hardware Ranch** 83.37 331 eP P 15 27 06.5 0.0
comp=Z,60nm,1.8s
BGU **Big Grassy Mou** 83.40 330 eP P 15 27 06.8 +0.1
comp=Z,26nm,1.8s
F28A **McLaughlin** 83.44 340 P P 15 27 06.9 +0.3
baz=156
G26A **Maurine** 83.46 339 P P 15 27 06.6 -0.1
baz=155,SNR=7.1
C35A **Jirik Farms, M** 83.48 345 P P 15 27 06.6 -0.1
baz=162
E30A **Jud** 83.53 342 P P 15 27 07.2 +0.2
baz=158
BW06 **Boulder Array** 83.58 333 P P 15 27 08.0 +0.3
baz=149
BW06 **Boulder Array** 83.58 333 eP P 15 27 07.6 -0.1
PD31 **Pinedale Array** 83.58 333 eP P 15 27 07.8 +0.1
PDAR **Pinedale Array** 83.58 333 P P 15 27 08.0 +0.3
comp=Z,2.3nm,0.9s,baz=143,slow=5.3,SNR=13
G25A **Newell** 83.61 338 P P 15 27 07.7 +0.1
baz=154
NV01 **Mina Array Sit** 83.72 325 eP P 15 27 08.3 -0.1
NVAR **Mina Array Bea** 83.72 325 P P 15 27 09.6 +1.2
comp=Z,2.3nm,0.7s,baz=158,slow=6.2,SNR=16
LTZ **Lake Taylor** 83.74 222 eP P 15 27 09.4 +0.8
comp=Z,30nm,1.1s
E29A **Napoleon** 83.78 341 P P 15 27 08.1 -0.2
baz=157
URZ **Urewera** 83.79 228 P P 15 27 10.4 +1.6
comp=Z,4.8nm,0.9s,baz=245,slow=11,SNR=3.1
RPZ **Rata Peaks** 83.79 221 P P 15 27 10.1 +1.3
comp=Z,14nm,0.9s,baz=169,slow=3.0,SNR=7.8
RPZ LR LR 15 57 13.2
comp=Z,769nm,18.6s,baz=196,slow=30
RPZ **Rata Peaks** 83.79 221 eP P 15 27 09.4 +0.7
comp=Z,33nm,1.0s
F27A **Lemmon** 83.81 339 P P 15 27 08.8 +0.3
baz=155,SNR=12
C33A **Trail** 83.93 344 P P 15 27 09.2 +0.2
baz=160
F26A **Lodgepole** 83.98 339 P P 15 27 09.5 +0.1
baz=155
HVU **Hansel Valley** 84.00 331 eP P 15 27 10.2 +0.5
HVU pmax pmax
comp=Z,9.0nm,0.8s
HVU **Hansel Valley** 84.00 331 eP P 15 27 10.2 +0.5
comp=Z,8.8nm,0.8s
D30A **Buchanan** 84.05 342 P P 15 27 09.6 0.0
baz=158
B35A **Bob, Littlefor** 84.06 346 P P 15 27 09.5 -0.1
baz=162,SNR=8.8
E28A **Huff** 84.07 341 P P 15 27 10.0 +0.2
baz=156
TOA0 **Torodi Ar. Sit** 84.15 70 eP P 15 27 10.2 -0.7
TORD **Torodi Ar. Bea** 84.15 70 P P 15 27 10.1 -0.8
comp=Z,28nm,0.7s,baz=252,slow=3.9,SNR=151
TORD LR LR 16 01 50.5
comp=Z,617nm,21.6s,baz=235,slow=34

AHID **Auburn Hatcher** 84.17 332 *e*P P 15 27 10.8 +0.2
comp=Z,25nm,1.6s
E27A **Carson** 84.19 340 P P 15 27 10.4 0.0
baz=156
ELK **Elko** 84.19 328 *e*P P 15 27 11.3 +0.5
ELK pmax pmax
comp=Z,6.0nm,0.9s
ELK **Elko** 84.19 328 *e*P P 15 27 11.3 +0.5
comp=Z,5.5nm,0.9s
D29A **Pettibone, Tap** 84.22 341 P P 15 27 10.2 -0.3
baz=157
F25A **Bowman** 84.29 339 P P 15 27 10.8 -0.2
baz=154
B34A **Aery, Baudette** 84.37 345 P P 15 27 11.1 -0.1
baz=161
B33A **Robert and Kas** 84.38 344 P P 15 27 11.2 0.0
baz=160
C31A **Landman Farms,** 84.43 343 P P 15 27 11.7 +0.2
baz=159
AGMN **Agassiz Nation** 84.46 344 P P 15 27 11.8 +0.1
baz=160
AGMN **Agassiz Nation** 84.46 344 *e*P P 15 27 11.0 -0.7
comp=Z,22nm,1.3s
E26A **Carlson Angus** 84.48 339 P P 15 27 12.3 +0.4
baz=155
C30A **Mose, Pekin** 84.53 342 P P 15 27 12.4 +0.3
baz=158,SNR=10
REDW **Red Top Meadow** 84.58 333 *e*P P 15 27 12.7 -0.1
comp=Z,8.4nm,1.0s
D28A **Regan** 84.61 341 P P 15 27 12.6 +0.2
baz=156
LOHW **Long Hollow** 84.70 333 *e*P P 15 27 13.3 0.0
comp=Z,26nm,1.8s
B32A **Ashes, Strandq** 84.71 344 P P 15 27 12.6 -0.3
baz=160,SNR=7.7
D27A **Center** 84.79 340 P P 15 27 13.6 +0.1
baz=156
MOOW **Moose Ponds** 84.87 333 *e*P P 15 27 13.8 -0.3
comp=Z,4.4nm,1.0s
FXWY **Fox Creek** 84.88 333 *e*P P 15 27 14.6 +0.4
comp=Z,3.7nm,0.9s
MDND **Maddock** 84.95 342 P P 15 27 14.5 +0.3
baz=157,SNR=5.7
MDND **Maddock** 84.95 342 *e*P P 15 27 15.0 +0.8
comp=Z,44nm,0.6s
A33A **Warroad** 84.96 345 P P 15 27 14.0 -0.2
baz=160,SNR=7.6
D26A **Manning** 84.98 340 P P 15 27 14.3 -0.1
baz=155
FLWY **Flagg Ranch** 85.14 333 *e*P P 15 27 15.8 +0.3
comp=Z,11nm,0.7s
B30A **Myrvik Farm, E** 85.19 343 P P 15 27 15.7 +0.3
baz=158,SNR=7.9
C27A **Sayler Ranch,** 85.34 341 P P 15 27 16.5 +0.4
baz=156,SNR=5.9
D25A **Fairfield** 85.35 339 P P 15 27 16.5 +0.2
baz=154
H17A **Grant Village** 85.36 333 P P 15 27 16.8 +0.1
baz=149
H17A **Grant Village** 85.36 333 *e*P P 15 27 17.4 +0.7
comp=Z,14nm,1.6s
AFDM **Forest Hills D** 85.41 324 *e*P P 15 27 18.1 +1.3
comp=Z,29nm,1.8s
B29A **Wagenman Farm,** 85.46 342 P P 15 27 16.9 +0.2
baz=157
RLMT **Red Lodge** 85.50 335 P P 15 27 17.2 0.0
baz=150
RLMT **Red Lodge** 85.50 335 *e*P P 15 27 17.4 +0.2
comp=Z,7.4nm,0.8s
YFT **Old Faithful** 85.50 333 *e*P P 15 27 19.2 +1.9
comp=Z,7.9nm,0.8s
C26A **Wahner Farm, P** 85.61 340 P P 15 27 17.5 0.0
baz=155
A30A **Hoffart Farm,** 85.64 343 P P 15 27 17.7 +0.2
baz=158,SNR=5.0
B28A **Dugan Ranch, T** 85.70 342 P P 15 27 18.1 +0.2
baz=157
YMR **Madison River** 85.73 333 *e*P P 15 27 19.2 +0.7
comp=Z,64nm,0.3s
LAO **LASA Array** 85.83 337 P P 15 27 18.9 +0.2
baz=152
A29A **Manning Farm,** 85.85 342 P P 15 27 18.6 -0.1
baz=157,SNR=8.9
B27A **Peters Farms,** 85.90 341 P P 15 27 19.7 +0.8
baz=156
QLMT **Earthquake Lak** 86.05 333 *e*P P 15 27 21.2 +1.2
A28A **Rude Farm, Bot** 86.10 342 P P 15 27 20.7 +0.7
baz=157
ORV **Oroville** 86.14 324 *e*P P 15 27 21.5 +1.2
ORV pmax pmax
comp=Z,48nm,1.6s
ORV **Oroville** 86.14 324 *e*P P 15 27 21.5 +1.2
comp=Z,48nm,1.6s
HLID **Hailey** 86.16 331 P P 15 27 21.4 +0.9
baz=146
HLID **Hailey** 86.16 331 *e*P P 15 27 21.1 +0.6
comp=Z,9.3nm,1.1s
GCMT **Greycliff** 86.22 335 *e*P P 15 27 21.1 +0.4
ULM **Lac du Bonnet** 86.30 345 P P 15 27 19.8 -1.0
comp=Z,6.2nm,0.8s,baz=157,slow=4.3,SNR=8.9
A27A **Ledoux Ranch,** 86.40 341 P P 15 27 22.2 +0.9
baz=156
A26A **Wade Farm, Ken** 86.56 341 P P 15 27 22.6 +0.4
baz=155
MCMT **McKenzie Canyo** 86.59 332 *e*P P 15 27 23.4 +0.7
MFID **Camas Ranch** 86.62 330 *e*P P 15 27 23.3 +0.5
comp=Z,7.4nm,1.0s
DGMT **Dagmar** 86.79 339 P P 15 27 24.0 +0.7
baz=154
DGMT **Dagmar** 86.79 339 *e*P P 15 27 23.8 +0.4
comp=Z,33nm,0.8s
BOZ **Bozeman (W)** 86.81 333 P P 15 27 23.9 +0.2
baz=148
BOZ **Bozeman (W)** 86.81 333 *e*P P 15 27 23.7 0.0
BOZ pmax pmax
comp=Z,3.0nm,0.8s
BOZ **Bozeman (W)** 86.81 333 *e*P P 15 27 23.7 0.0
comp=Z,3.2nm,0.8s
O03D **Paynes Creek** 86.86 324 P P 15 27 25.2 +1.3
baz=140
A25A **Svangstu Ranch** 86.90 340 P P 15 27 24.7 +0.8
baz=154
DLMT **Dillon** 86.94 333 *e*P P 15 27 24.9 +0.6
comp=Z,18nm,1.5s
LRM **Limekiln Ridge** 87.27 333 *e*P P 15 27 26.8 +0.8
MOD **Modoc Plateau** 87.39 326 *e*P P 15 27 28.2 +1.6
comp=Z,5.8nm,0.8s
WDC **Whiskeytown Da** 87.44 324 *e*P P 15 27 26.7 +0.1
WDC pmax pmax
comp=Z,53nm,1.9s
WDC **Whiskeytown Da** 87.44 324 *e*P P 15 27 26.7 +0.1
comp=Z,52nm,1.9s
N02D **Trinity Center** 87.82 324 P P 15 27 28.8 +0.2
baz=140
M04C **Macdoel** 88.02 325 P P 15 27 30.1 +0.6
baz=140
EGMT **Eagleton** 88.17 336 *e*P P 15 27 29.3 -0.7
comp=Z,38nm,0.8s
K05A **Summer Lake** 88.31 326 *e*P P 15 27 31.6 +0.7
comp=Z,42nm,1.4s
SCHQ **Scheffer ville** 88.39 3 LR LR 16 07 52.7
comp=Z,286nm,20.9s,baz=179,slow=36
MSO **Missoula** 88.68 333 P P 15 27 33.2 +0.7
baz=146
BSMT **Bassoo Peak** 89.85 333 *e*P P 15 27 38.1 +0.1
LSZ **Lusaka** 89.88 108 *e*P P 15 27 40.9 +1.9
LSZ pmax pmax
comp=Z,12nm,1.3s
LSZ **Lusaka** 89.88 108 *e*P P 15 27 40.9 +1.9
comp=Z,12nm,1.3s
AFI **Afiamalu** 90.25 253 LR LR 15 59 42.8
comp=Z,767nm,20.3s,baz=264,slow=30
WALA **Waterton Lakes** 90.52 334 *e*P P 15 27 41.1 0.0
comp=Z,42nm,1.9s
C09A **Chrisman Ranch** 91.18 331 *e*P P 15 27 44.7 +0.7
comp=Z,27nm,0.2s
TAM **Tamanrasset** 92.75 64 *e*P P 15 27 51.9 -0.2
TAM pmax pmax
comp=Z,6.0nm,1.0s
TAM **Tamanrasset** 92.75 64 *e*P P 15 27 51.9 -0.2
comp=Z,5.6nm,1.0s
FCC **Fort Churchill** 94.03 349 *e*P P 15 27 57.4 +0.5
FCC pmax pmax
comp=Z,6.0nm,0.7s
FCC **Fort Churchill** 94.03 349 *e*P P 15 27 57.4 +0.5
comp=Z,5.7nm,0.7s
ESDC **Sonseca Array** 96.44 46 LR LR 16 10 37.4
comp=Z,611nm,19.1s,baz=230,slow=35

YKA **Yellowknife Ar** 101.87 341 P Pdif 15 28 31.9 -0.2
comp=Z,0.8nm,0.6s,baz=142,slow=4.4,SNR=24
YKB5 **Yellowknife Ar** 101.87 341 *e*Pdif Pdif 15 28 31.5 -0.6
CLL **Collm** 112.70 43 *e*PP PP 15 34 03.0 -0.6
CLL *e* 15 34 15.0
CLL *e*PS PS 15 43 30.0 -7.9
CLL *e*PPS PPS 15 45 00.0
CLL Lm MLR 16 19 00.0
comp=Z,700nm,19.9s
ILAR **Eielson Array** 114.01 333 PKP PKPdf 15 33 17.6 +0.1
comp=Z,0.9nm,0.8s,baz=169,slow=1.3,SNR=10
ILAR PKKPbc **PKKPbc** 15 43 58.5 -1.9
comp=Z,0.3nm,0.6s,baz=284,slow=3.9,SNR=4.3
APE **Apeiranthos** 114.85 61 ⇓ *i*P PKPdf 15 33 18.6 -1.4
APE **Apeiranthos** 114.85 61 ⇓ PKIKP PKPdf 15 33 18.6 -1.4
BZS **Buzias** 115.58 51 ⇑ *i*P **PKPdf** **15 33 21.4 +0.3**
BZS **Buzias** 115.58 51 ⇑ PKIKP **PKPdf** **15 33 21.4 +0.3**
NB2 **NORSAR Subarra** 115.86 32 PKPdf **PKPdf** **15 33 21.3 +0.1**
comp=Z,0.6nm,0.6s,baz=250,slow=1.9
NOA **NORSAR Array B** 115.86 32 PKP **PKPdf** **15 33 20.9 -0.3**
comp=Z,1.1nm,0.8s,baz=248,slow=1.9,SNR=4.2
DRGR 116.73 50 ⇑ *i*P **PKPdf** **15 33 24.7 +1.3**
DRGR 116.73 50 ⇑ PKIKP **PKPdf** **15 33 24.7 +1.3**
HUMR **Humele** 117.38 53 ⇑ *i*P **PKPdf** **15 33 25.3 +0.7**
ARR **Arges** 117.45 52 ⇓ *i*P **PKPdf** **15 33 25.1 +0.3**
MTUR **Matau** 117.69 52 ⇑ *i*P PKPdf 15 33 15.6 -10
MTUR **Matau** 117.69 52 ⇑ PKIKP PKPdf 15 33 15.6 -10
AS01 **Alice Springs** 117.72 207 *e*PKPdf **PKPdf** **15 33 24.9 -1.2**
ASAR **Alice Springs** 117.74 207 PKP **PKPdf** **15 33 24.9 -1.3**
comp=Z,2.2nm,0.8s,baz=136,slow=1.8,SNR=27
ASAR PKKPbc **PKKPbc** 15 43 46.5 -0.2
comp=Z,0.6nm,0.6s,baz=335,slow=2.7,SNR=10
AS31 **Alice Springs** 117.74 207 *e*PKPdf **PKPdf** **15 33 25.7 -0.4**
KWP **Kalwaria Pacla** 117.75 47 ⇓ *i*P **PKPdf** **15 33 26.8 +1.6**
KWP **Kalwaria Pacla** 117.75 47 ⇓ PKIKP **PKPdf** **15 33 26.8 +1.6**
ARCR **ARCALIA** 117.89 50 ⇑ *i*P **PKPdf** **15 33 26.3 +0.8**
MLR **Muntele Rosu** 118.36 52 ⇑ *i*P **PKPdf** **15 33 24.8 -1.8**
MLR **Muntele Rosu** 118.36 52 ⇑ PKIKP **PKPdf** **15 33 24.8 -1.8**
BUR08 **Bucovina Ar. S** 118.62 50 *e*PKPdf **PKPdf** **15 33 26.9 -0.1**
BURAR **Bucovina Array** 118.62 50 ⇓ *i*P **PKPdf** **15 33 27.7 +0.7**
BURAR **Bucovina Array** 118.62 50 ⇓ PKIKP **PKPdf** **15 33 27.7 +0.7**
PLOR **Plostina** 118.95 52 ⇓ *i*P **PKPdf** **15 33 26.7 -0.9**
PLOR **Plostina** 118.95 52 ⇓ PKIKP **PKPdf** **15 33 26.7 -0.9**
VRI **Vrincioaia** 119.01 52 ⇑ *i*P **PKPdf** **15 33 25.6 -2.1**
VRI **Vrincioaia** 119.01 52 ⇑ PKIKP **PKPdf** **15 33 25.6 -2.1**
TIRR **Tirgusor** 119.66 54 ⇑ *i*P **PKPdf** **15 33 29.3 +0.3**
TIRR **Tirgusor** 119.66 54 ⇑ PKIKP **PKPdf** **15 33 29.3 +0.3**
CFR **Carcaliu** 119.71 53 ⇓ *i*P **PKPdf** **15 33 29.2 +0.2**
CFR **Carcaliu** 119.71 53 ⇓ PKIKP **PKPdf** **15 33 29.2 +0.2**
TLCR 120.17 53 ⇓ *i*P **PKPdf** **15 33 30.4 +0.5**
TLCR 120.17 53 ⇓ PKIKP **PKPdf** **15 33 30.4 +0.5**
WB2 **Warramunga Arr** 120.93 209 *e*PKPdf **PKPdf** **15 33 31.9 -0.4**
WRA **Warramunga Arr** 120.93 209 PKP **PKPdf** **15 33 31.2 -1.2**
comp=Z,4.0nm,0.7s,baz=164,slow=1.6,SNR=62
WRA PKKPbc **PKKPbc** 15 43 35.5 +0.6
comp=Z,0.5nm,0.7s,baz=342,slow=4.4,SNR=6.3
WRAB **Tennant Creek** 120.94 209 *e*PKIKP **PKPdf** **15 33 31.5 -0.8**
WRAB **Tennant Creek** 120.94 209 *e*PKPdf **PKPdf** **15 33 31.5 -0.8**
BR231 **Keskin MP Arra** 121.16 60 *e*PKPdf **PKPdf** **15 33 32.7 +0.5**
BR131 **Keskin Array S** 121.75 61 *e*PKPdf **PKPdf** **15 33 32.9 -0.4**
BRTR **Keskin Array B** 121.75 61 PKP **PKPdf** **15 33 33.4 0.0**
comp=Z,3.2nm,0.7s,baz=187,slow=2.7,SNR=18
AK11 **Malin Array Si** 122.02 47 *e*PKPdf **PKPdf** **15 33 31.9 -1.4**
KIEV **Kiev** 122.05 47 *i* PKIKP **PKPdf** **15 33 32.6 -0.8**
KIEV **Kiev** 122.05 47 *e*PKPdf **PKPdf** **15 33 32.6 -0.8**
AKASG **Malin Array Be** 122.06 47 PKP **PKPdf** **15 33 32.9 -0.5**
comp=Z,3.7nm,0.6s,baz=258,slow=3.1,SNR=32
AKBB **Malin Array Si** 122.06 47 *e*PKIKP **PKPdf** **15 33 32.3 -1.1**
AKBB **Malin Array Si** 122.06 47 *e*PKPdf **PKPdf** **15 33 32.3 -1.1**
VSU **Vasula** 122.54 38 *e*PKIKP **PKPdf** **15 33 33.8 -0.2**
FINES **FINESS Array B** 122.83 34 PKP **PKPdf** **15 33 34.8 +0.3**
comp=Z,2.6nm,0.8s,baz=45,slow=1.1,SNR=7.4
ATKA **Atka Island** 122.97 314 *e*PKPdf **PKPdf** **15 33 34.7 -0.4**
ARCES **ARCESS Array B** 123.84 25 PKP **PKPdf** **15 33 36.2 -0.1**
comp=Z,2.4nm,0.6s,baz=252,slow=1.9,SNR=12
GAMB **Gambell** 123.92 328 *e*PKPdf **PKPdf** **15 33 36.9 +0.4**
RAYN **Ar Rayn** 124.98 83 *e*PKPdf **PKPdf** **15 33 39.3 -0.7**
H11S2 **WAKE ISLAND Hy** 125.76 269 T T 17 52 41.7
baz=118,slow=74,SNR=102
H11S1 **WAKE ISLAND Hy** 125.78 269 T T 17 52 45.1
baz=118,slow=74,SNR=65
H11S3 **WAKE ISLAND Hy** 125.78 269 T T 17 52 40.5
baz=118,slow=74,SNR=80
ANN **Anapa** 125.91 56 *i* PKIKP **PKPdf** **15 33 37.5 -3.4**
ANN pmax pmax
comp=Z,60nm,1.3s
LVZ **Lovozero** 127.09 27 *i* PKIKP **PKPdf** **15 33 41.8 -0.8**
LVZ **Lovozero** 127.09 27 *e*PKPdf **PKPdf** **15 33 42.7 +0.1**
OBN **Obninsk** 127.30 43 *i* PKIKP **PKPdf** **15 33 42.3 -0.9**
OBN pmax pmax
comp=Z,6.0nm,1.0s
KLMR **Klimovskoe** 129.25 36 *e*PKPdf **PKPdf** **15 33 44.4 -2.4**
KLMR *e* 15 33 59.9
KLMR pmax pmax
comp=Z,14nm,0.8s
KIV **Kislovodsk** 129.39 58 *i* PKIKP **PKPdf** **15 33 48.3 +0.5**
KIV pmax pmax
comp=Z,7.0nm,0.9s
KIV MLR MLR
comp=Z,357nm,21.0s
KBZ **Khabaz** 129.50 58 PKP PKPdf **15 33 48.9 +1.1**
comp=Z,3.8nm,0.9s,baz=126,slow=7.0,SNR=5.8
BILL **Bilibino** 132.65 334 *i* PKIKP **PKPdf** **15 33 53.5 +0.4**
BILL pmax pmax
comp=Z,3.0nm,1.1s
BILL **Bilibino** 132.65 334 *e*PKPdf **PKPdf** **15 33 53.4 +0.2**
ARU **Arti** 139.60 41 *i* PKIKP **PKPdf** **15 34 05.3 -1.0**
ARU SS SS 15 55 10.7 -9.1
ARU MLR MLR
comp=Z,722nm,21.0s
ARU **Arti** 139.60 41 *e*PKPdf **PKPdf** **15 34 07.5 +1.2**
GEYT **Alibeck** 139.79 69 PKP **PKPdf** **15 34 08.0 +0.6**
comp=Z,4.7nm,0.7s,baz=267,slow=3.0,SNR=7.2
AKTO **Aktyubinsk** 140.22 50 PKP **PKPdf** **15 34 07.7 +0.1**
comp=Z,4.8nm,0.8s,baz=287,slow=4.7,SNR=15
SANI **Sanana** 140.50 209 PKP **PKPdf** **15 34 05.7 -3.6**
AB31 **Akbulak array** 141.57 52 *i* PKHKP PKPpre 15 34 04.4
AB31 pmax pmax
comp=Z,3.0nm,0.6s
ABKAR **Akbulak array** 141.57 52 *e*PKPpre PKPpre 15 34 04.1
MDSI **Maura Dua** 141.75 174 PKP **PKPdf** **15 34 11.2 -0.4**
NRIK **Noril'sk** 142.62 12 PKP **PKPdf** **15 34 11.9 +0.6**
comp=Z,2.4nm,0.7s,baz=48,slow=1.1,SNR=6.9
NRIK **Noril'sk** 142.62 12 PKIKP **PKPdf** **15 34 12.0 +0.6**
NRIK pmax pmax
comp=Z,2.0nm,0.7s
POO **Poona** 146.01 108 ⇓ *i*P **PKPdf** **15 34 17.0 -1.9**
comp=Z,523nm,1.2s
GSI **Gunungsitoli** 146.24 161 *e*PKPdf **PKPab** **15 34 20.9 -0.3**
ZRNK **Zerenda** 146.38 43 PKP2 **PKPdf** **15 34 18.3 -0.1**
ZRNK pmax pmax
comp=Z,7.0nm,0.8s
ZRNK **Zerenda** 146.38 43 *e*PKPdf **PKPdf** **15 34 18.8 +0.3**
CHKZ **Chkalovo** 147.03 42 PKIKP **PKPdf** **15 34 19.6 +0.1**
CHKZ pmax pmax
comp=Z,30nm,0.9s
BRVK **Borovoye** 147.07 43 PKP2 **PKPdf** **15 34 20.5 +0.9**
BRVK pmax pmax
comp=Z,26nm,0.6s
BRVK **Borovoye** 147.07 43 *e*PKPdf **PKPdf** **15 34 19.6 0.0**
BRVK *e*PKPbc **PKPbc** **15 34 22.4 +0.7**
BVA0 **Borovoye Array** 147.14 43 *i* PKIKP **PKPdf** **15 34 19.9 +0.2**
BVA0 pmax pmax
comp=Z,15nm,0.8s
BVAR **Borovoye Array** 147.14 43 PKPbc **PKPdf** **15 34 20.7 +1.0**
comp=Z,16nm,0.7s,baz=281,slow=2.8,SNR=54
KSM **Kuching** 147.76 184 *e*PKPbc **PKPbc** **15 34 24.6 -0.2**
MYKOM **Kota Tinggi** 147.93 172 *e*PKPbc **PKPbc** **15 34 24.9 -0.4**
KBL **Kabul** 147.93 78 *e*PKIKP **PKPdf** **15 34 21.7 -0.2**
KBL **Kabul** 147.93 78 *e*PKPdf **PKPdf** **15 34 21.7 -0.2**
PSI **Prapat** 148.03 163 *e*PKP2 **PKPbc** **15 34 24.9 -0.7**
PSI **Prapat** 148.03 163 *e*PKPbc **PKPbc** **15 34 24.9 -0.7**
YAK **Yakutsk** 148.54 340 PKPbc **PKPbc** **15 34 25.4 +0.1**
comp=Z,50nm,0.8s,baz=202,slow=0.5,SNR=22
YAK **Yakutsk** 148.54 340 *e*PKP2 **PKPbc** **15 34 24.7 -0.6**
YAK pmax pmax
comp=Z,41nm,1.0s
YAK pmax pmax
comp=E,3.0nm,1.0s
YAK pmax pmax
comp=N,9.0nm,1.3s
YAK pmax pmax
comp=Z,34nm,0.9s
YAK pmax pmax
comp=N,5.0nm,1.0s
YAK pmax pmax
comp=E,12nm,1.1s
YAK **Yakutsk** 148.54 340 *e*PKPbc **PKPbc** **15 34 24.9 -0.5**
SBUM **Sibu** 148.56 188 *e*PKPbc **PKPbc** **15 34 27.0 +0.1**
HYB **Hyderabad** 149.02 114 *i* PKP **PKPdf** **15 34 24.0 +0.1**
HYB *e* 15 34 28.0
KK31 **Karatay Array** 149.46 61 *i* PKP2 **PKPbc** **15 34 28.2 -0.1**
KK31 pmax pmax
comp=Z,5.0nm,0.6s
KKAR **Karatay Array** 149.46 61 *e*PKP2 **PKPbc** **15 34 28.4 0.0**
KKAR **Karatay Array** 149.46 61 *e*PKPbc **PKPbc** **15 34 28.4 0.0**
TYV **Tymovskoe** 149.56 315 *e*PKP2 **PKPbc** **15 34 29.8 +1.5**
TYV pmax pmax
comp=Z,18nm,0.8s
OTUK **Ortayu** 149.81 51 PKP2 **PKPbc** **15 34 28.8 -0.2**
OTUK pmax pmax
comp=Z,23nm,0.7s
IPM **Ipoh** 150.12 166 *e*PKPbc **PKPbc** **15 34 29.9 -0.9**
YSS **Yuzh-Sakhalins** 150.66 307 *e*PKIKP **PKPbc** **15 34 30.9 -0.1**
YSS **Yuzh-Sakhalins** 150.66 307 *e*PKPbc **PKPbc** **15 34 30.9 -0.1**
KULM **Kulim** 150.83 165 *e*PKPbc **PKPbc** **15 34 31.8 -0.7**
MNAS **Manas** 150.97 62 PKIKP **PKPdf** **15 34 25.8 -0.6**
MNAS pmax pmax
comp=Z,8.0nm,0.7s
KKM **Kota Kinabalu** 151.34 197 *e*PKPbc **PKPbc** **15 34 33.1 -0.7**
SFK **Sufi-Kurgan** 151.88 67 PKIKP **PKPbc** **15 34 34.5 0.0**
SFK pmax pmax
comp=Z,35nm,0.7s
EKS2 **Erkin-Say** 151.89 62 *e*PKIKP **PKPbc** **15 34 33.2 -1.1**
EKS2 **Erkin-Say** 151.89 62 *e*PKPbc **PKPbc** **15 34 33.2 -1.1**
AAK **Ala-Archa** 152.42 61 PKP **PKPdf** **15 34 29.1 +0.4**
comp=Z,2.4nm,0.7s,baz=170,slow=1.4,SNR=12
AAK PKPbc **PKiKP** **15 34 36.3 +0.5**
comp=Z,21nm,0.6s,baz=194,slow=2.9,SNR=69
AAK **Ala-Archa** 152.42 61 *e*PKPdf **PKPdf** **15 34 29.3 +0.7**
AAK *e*PKPdf PKPbc 15 34 29.5 -6.0
AAK *e*PKPbc **PKiKP** **15 34 36.2 +0.5**
FRU **Bishkek** 152.48 61 ⇑ *e*PKIKP **PKPbc** **15 34 35.0 -0.5**
FRU *e* 15 38 18.0
FRU pmax pmax
comp=Z,80nm,2.2s
KURBB **Kurchatov Arra** 152.73 43 PKP **PKPdf** **15 34 28.8 +0.2**
comp=Z,2.7nm,0.7s,baz=302,slow=1.9,SNR=23
KURBB PKPbc **PKiKP** **15 34 36.1 +0.2**
comp=Z,10nm,0.6s,baz=297,slow=2.8,SNR=47
KURK **Kurchatov** 152.74 43 PKIKP **PKPdf** **15 34 28.8 +0.2**
KURK 15 34 36.1
KURK pmax pmax
comp=Z,3.0nm,0.7s
KURK pmax pmax
comp=Z,10.0nm,0.6s
KURK **Kurchatov** 152.74 43 *e*PKPdf **PKPdf** **15 34 28.8 +0.2**
KURK *e*PKPbc **PKiKP** **15 34 36.0 +0.1**
NVS **Novosibirsk** 152.78 32 *e*PKIKP **PKPdf** **15 34 29.0 +0.5**
NVS pmax pmax
comp=Z,32nm,0.8s
NVS pmax pmax
comp=N,2.0nm,0.6s
NVS pmax pmax
comp=E,9.0nm,0.6s
TKM2 **Tokmak 2** 153.18 61 PKIKP **PKPbc** **15 34 36.1 -1.1**
TKM2 pmax pmax
comp=Z,11nm,0.8s
TKM2 **Tokmak 2** 153.18 61 *e*PKPdf **PKPdf** **15 34 29.8 0.0**
TKM2 *e*PKPbc **PKiKP** **15 34 37.4 0.0**
KSH **Kashi** 153.81 68 *e*PKPbc **PKPdf** **15 34 31.4 +0.7**
KSH *e*PP PP 15 38 33.5 +6.9
KSH SKS **SKSdf** **15 41 34.8 -0.9**
KSH AMB AMB
comp=Z,170nm,5.3s
KSH LR LR
comp=Z,170nm,8.6s
KSH LR LR
comp=Z,130nm,6.3s
KSH LR LR
comp=Z,210nm,6.9s
ZAA0 **Zalesovo Array** 154.06 32 *e*PKPdf **PKPdf** **15 34 29.5 -0.9**
ZAA0 *e*PKPdf PKPbc 15 34 30.4 -8.1
ZAA0 *e*PKPbc **PKiKP** **15 34 39.0 +0.4**
ZALV **Zalesovo Beam** 154.06 32 PKP **PKPdf** **15 34 30.4 0.0**
comp=Z,7.1nm,0.7s,baz=280,slow=2.5,SNR=36
ZALV PKPbc **PKiKP** **15 34 38.9 +0.4**
comp=Z,24nm,0.6s,baz=302,slow=3.3,SNR=46
ZALV PKPab **PKPab** **15 34 52.5 +0.4**
comp=Z,14nm,0.6s,baz=299,slow=4.4,SNR=10
BOD **Bodaibo** 155.63 352 *e*PKP2 **PKPab** **15 34 58.7 +0.1**
BOD pmax pmax
comp=Z,13nm,0.8s
MAKZ **Makanchi** 156.44 49 PKIKP **PKPdf** **15 34 32.9 -1.0**
MAKZ pmax pmax
comp=Z,3.0nm,0.8s
MAKZ **Makanchi** 156.44 49 *e*PKPdf **PKPdf** **15 34 33.5 -0.4**
KLR **Kul'dur** 156.58 318 PKP **PKPdf** **15 34 32.6 -1.4**
comp=Z,1.9nm,0.8s,baz=67,slow=3.8,SNR=9.8
MK31 **Makanchi Array** 156.64 49 *i* PKIKP **PKPdf** **15 34 33.2 -1.0**
MK31 pmax pmax
comp=Z,3.0nm,0.8s
MKAR **Makanchi Array** 156.64 49 PKP **PKPdf** **15 34 33.7 -0.5**
comp=Z,3.3nm,0.8s,baz=304,slow=1.0,SNR=31
MKAR PKPab **PKPab** **15 35 03.4 0.0**
comp=Z,4.9nm,0.6s,baz=273,slow=3.8,SNR=20
PYUN **Piuthan** 157.88 98 *e*P **PKPdf** **15 34 35.7 -0.9**
KOLN **Koldanda** 158.26 99 *e*P **PKPdf** **15 34 36.6 -0.4**
comp=Z,5.5nm,0.6s
GKN **Gorkha** 159.20 100 *e*P **PKPdf** **15 34 37.8 -0.3**
comp=Z,7.3nm,0.7s
KKN **Kakani** 159.64 101 *e*P **PKPdf** **15 34 38.4 -0.3**
PKIN **Phulchoki** 159.66 102 *e*P **PKPdf** **15 34 38.1 -0.7**
RAMN **Ramite** 160.37 105 *e*P **PKPdf** **15 34 39.8 +0.2**
comp=Z,17nm,0.7s
ODAN **Odare** 160.97 106 *e*P **PKPdf** **15 34 40.4 +0.2**
comp=Z,18nm,0.8s
WMQ **Urumqi** 161.35 52 PKP **PKPdf** **15 34 40.4 +0.5**
WMQ pPKP pPKPdf 15 34 49.4 +0.1
WMQ PKPab **PKPab** **15 35 25.0 +0.9**
WMQ PP **PP** **15 39 12.5 +4.9**
WMQ SS SS 15 59 19.3 -2.8
WMQ AMB AMB
comp=Z,40nm,11.0s
WMQ LR LR
comp=Z,93nm,23.2s
WMQ LR LR
comp=Z,130nm,20.2s
WMQ LR LR
comp=Z,160nm,26.2s
TAPN **Taplejung** 161.44 105 *e*P **PKPdf** **15 34 40.8 0.0**
comp=Z,8.5nm,1.0s
TLY **Talaya** 161.86 9 *e*PKP2 **PKPab** **15 35 27.7 +1.9**
TLY pmax pmax
comp=Z,3.0nm,0.6s
CM01 **Chiang Mai Arr** 162.70 150 *e*PKPdf **PKPdf** **15 34 41.0 -0.9**
CM31 **Chiang Mai Arr** 162.73 150 *e*PKPdf **PKPdf** **15 34 41.5 -0.4**
CMAR **Chiang Mai Arr** 162.73 150 PKP **PKPdf** **15 34 41.7 -0.2**
comp=Z,2.5nm,0.8s,baz=239,slow=3.0,SNR=30
CMAR PKPab **PKPab** **15 35 29.9 -0.6**
comp=Z,1.3nm,0.9s,baz=224,slow=6.3,SNR=7.7
CMAR **Chiang Mai Arr** 162.73 150 PKIKP **PKPdf** **15 34 41.7 -0.2**
CMAR 15 35 29.9
CMAR pmax pmax
comp=Z,2.0nm,0.8s
CMAR pmax pmax
comp=Z,1.0nm,0.9s
CHTO **Chiang Mai** 163.04 149 *e*PKIKP **PKPdf** **15 34 41.9 -0.3**
CHTO **Chiang Mai** 163.04 149 *e*PKPdf **PKPdf** **15 34 41.9 -0.3**
ZAK **Zakamensk** 163.08 10 *e*PKP2 **PKPab** **15 35 29.1 -2.2**
ZAK pmax pmax
comp=Z,4.0nm,1.5s
KSRS **Korea Array** 163.36 288 PKP **PKPdf** **15 34 41.1 -0.8**
comp=Z,1.5nm,0.8s,baz=162,slow=0.5,SNR=5.7
KSAR **Wonju Array Be** 163.39 288 PKIKP **PKPdf** **15 34 41.1 -0.9**
KSAR **Wonju Array Be** 163.39 288 PKP **PKPdf** **15 34 41.1 -0.9**
LSA **Lhasa** 165.13 101 *e*PKP2 **PKPab** **15 35 42.4 +0.8**
LSA **Lhasa** 165.13 101 *e*PKPab **PKPab** **15 35 42.4 +0.8**
SONA1 **Songino Array** 165.92 4 *e*PKPdf **PKPdf** **15 34 43.4 -0.7**
SONA1 *e*PKPab **PKPab** **15 35 44.2 +0.3**
SONM **Songino Array** 165.93 4 PKP **PKPdf** **15 34 43.4 -0.7**
comp=Z,1.7nm,0.8s,baz=228,slow=0.7,SNR=15
SONM PKPab **PKPab** **15 35 44.3 +0.3**
comp=Z,3.1nm,0.8s,baz=340,slow=3.8,SNR=10
ULN **Ulaanbaatar** 165.93 2 *e*PKIKP **PKPdf** **15 34 43.7 -0.4**
ULN *e* 15 35 44.8
ULN **Ulaanbaatar** 165.93 2 *e*PKPdf **PKPdf** **15 34 43.6 -0.4**
ULN *e*PKPab **PKPab** **15 35 44.8 +0.8**
QZH **Quanzhou** 167.20 229 PKP **PKPdf** **15 34 41.4 -4.1**

QZH				PP	**PP**	15 39 36.8	-1.3
QZH				SKKS		15 46 21.4	
QZH				LR	LR		
	comp=Z,760nm,22.2s						
KMI	**Kunming**	**170.24**	**151**	PKP	**PKPdf**	15 34 49.5	+1.7
KMI				pPKP	pPKPdf	15 34 56.3	-1.0
KMI				PP	**PP**	15 39 51.0	**-2.1**
KMI				SS	SS	16 00 48.5	-3.0
KMI				AMB	AMB		
	comp=Z,130nm,14.2s						
KMI				LR	LR		
	comp=Z,230nm,22.1s						
KMI				LR	LR		
	comp=Z,160nm,24.8s						
KMI				LR	LR		
	comp=Z,310nm,20.0s						
NJ2	**Nanjing**	**170.67**	**262**	*e*PKP	**PKPdf**	15 34 47.8	+0.3
BJI	**Beijing**	**170.94**	**316**	PKP	**PKPdf**	15 34 47.9	+0.5
BJI				PP	**PP**	15 39 59.3	**+2.5**
BJI				SS	SS	16 00 57.6	-1.2
BJI				AMB	AMB		
	comp=Z,170nm,5.2s						
BJI				LR	LR		
	comp=Z,250nm,20.5s						
BJI				LR	LR		
	comp=Z,250nm,18.5s						
GTA	**Gaotai**	**171.39**	**47**	PKP	**PKPdf**	15 34 48.3	+0.4
GTA				pPKP	pPKPdf	15 34 58.4	+1.0
GTA				sPKP		15 35 02.9	
GTA				PKPab	**PKPab**	15 36 08.8	**+0.3**
GTA				PP	**PP**	15 39 58.8	**-0.6**
GTA				SKKS		15 46 42.9	
GTA				LR	LR		
	comp=Z,170nm,28.0s						
GTA				LR	LR		
	comp=Z,290nm,23.3s						
GTA				LR	LR		
	comp=Z,280nm,21.6s						
TIA	**Tai'an**	**172.10**	**290**	*e*PKP	**PKPdf**	15 34 48.8	+0.6
HHC	**Hu-ho-hao-te**	**172.40**	**339**	*e*PKP	**PKPdf**	15 34 49.5	+1.2
HHC				PP	**PP**	15 40 08.3	**+4.8**
HHC				AMB	AMB		
	comp=Z,130nm,10.1s						
HHC				LR	LR		
	comp=Z,250nm,17.5s						
HHC				LR	LR		
	comp=Z,310nm,15.6s						
HHC				LR	LR		
	comp=Z,420nm,18.5s						
GYA	**Guiyang**	**172.60**	**171**	*e*PKP	**PKPdf**	15 34 48.3	**-0.5**
GYA				pPKP	pPKPdf	15 34 58.8	+0.5
GYA				PKPab	**PKPab**	15 36 15.0	**+1.1**
GYA				PKS	**PKSdf**	15 38 18.6	**-2.7**
GYA				PP	**PP**	15 40 06.3	**+2.0**
GYA				AMB	AMB		
	comp=Z,120nm,8.2s						
CD2	**Chengdu**	**175.43**	**128**	PKP	**PKPdf**	15 34 48.8	**-0.8**
LZH	**Lanzhou**	**175.93**	**55**	*e*PKP	**PKPdf**	15 34 48.3	**-1.4**
LZH				pPKP	pPKPdf	15 34 59.6	+0.4
LZH				sPKP		15 35 03.1	

***IDC* 13 15:17:55.6±2.4, 3°97N×93°88E, h0km, mb3.5/4, mb1 3.8/6, mb1mx3.5/55, mbtmp3.7/6, ML3.9/2, Error ellipse: s-maj=72.7km s-min=22.4km az=59.0, Off west coast of northern Sumatera**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PSI	**Prapat**	**5.17**	**103**	Pn	Pn	15 19 15.3	+0.9
	6.6nm,0.3s,baz=278,slow=7.7,SNR=21						
PSI				Sn	Sn	15 20 09.8	-5.1
	3.4nm,0.3s,baz=338,slow=21,SNR=5.0						
CMAR	**Chiang Mai Arr**	**15.23**	**19**	Pn	Pn	15 21 31.8	-0.4
	0.1nm,0.3s,baz=215,slow=13,SNR=7.6						
H08S2	**Diego Garcia H**	**24.25**	**242**	T	T	15 48 51.3	
	baz=61,slow=76,SNR=73						
H08S3	**Diego Garcia H**	**24.25**	**242**	T	T	15 48 38.8	
	baz=61,slow=76,SNR=70						
H08S1	**Diego Carcia H**	**24.27**	**242**	T	T	15 48 38.6	
	baz=61,slow=76,SNR=75						
MKAR	**Makanchi Array**	**43.83**	**349**	P	P	15 26 04.0	+0.6
	0.3nm,0.5s,baz=169,slow=8.2,SNR=8.6						
SONM	**Songino Array**	**45.01**	**12**	P	P	15 26 12.2	-0.8
	0.5nm,0.6s,baz=198,slow=8.3,SNR=4.5						
WRA	**Warramunga Arr**	**46.31**	**122**	P	P	15 26 23.5	-0.1
	0.4nm,0.5s,baz=301,slow=9.1,SNR=9.6						
ASAR	**Alice Springs**	**47.70**	**127**	P	P	15 26 34.1	-0.3
	0.2nm,0.3s,baz=298,slow=7.8,SNR=7.0						

IDC **13** *15:19:20.4±0.8, 33°77S×71°92W, h0km, mb4.4/4, mb1 4.6/6, mb1mx4.2/29, mbtmp4.5/6, ML4.5/2, Error ellipse: s-maj=42.7km s-min=24.9km az=86.0*
ISCJB **13** *15:19:21.7±0.9, 33°74S±0.05×72°0W±0°.3, h19km, mb4.7/6, Error ellipse: s-maj=37.6km s-min=7.4km az=3.4*
NEIC **13** *15:19:24.8±2.8, 33°77S×71°96W, h30km±18km, mb4.4/1, Error ellipse: s-maj=28.2km s-min=8.5km az=92.0*
ISC 13 15:19:23.7±0.8, 33°73S±0°.7×71°9W±0°.3, h19km, n23, σ0°76/26, mb4.6/6, Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LCO	**Las Campanas**	**4.81**	**13**	*e*Pn	**Pn**	15 20 35.7	**+0.2**
LCO				*e*Sn	**Sn**	15 21 30.4	**-0.4**
PLCA	**Paso Flores**	**7.08**	**172**	Pn	**Pn**	15 21 06.5	**+0.1**
	3.5nm,0.3s,baz=356,slow=11,SNR=7.8						
PLCA				Lg	Lg	15 22 59.2	
	0.5nm,0.3s,baz=106,slow=8.9,SNR=2.9						
LPAZ	**La Paz**	**17.70**	**12**	P	**Pn**	15 23 30.5	**+0.7**
	0.4nm,0.3s,baz=163,slow=17,SNR=4.7						
SAML	**Samuel**	**25.94**	**20**	*e*P	**P**	15 24 54.9	**-0.1**
	8.3nm,0.8s						
VNA1	**Neumayer--Stat**	**49.88**	**157**	P	**P**	15 28 16.5	**+1.0**
VNA2	**Neumayer--Watz**	**50.22**	**157**	P	**P**	15 28 18.3	**+0.3**
	baz=289,slow=9.6						
SNAA	**Sanae**	**51.80**	**158**	P	**P**	15 28 30.6	**+0.6**
SNAA	**Sanae**	**51.80**	**158**	*e*P	**P**	15 28 29.9	**0.0**
	877nm,1.1s						
QSPA	**South Pole Qui**	**56.51**	**180**	*e*P	P	15 29 01.7	-2.8
TXAR	**Lajitas Array**	**69.55**	**331**	P	**P**	15 30 31.6	**+0.2**
	0.7nm,0.6s,baz=157,slow=7.3,SNR=4.3						
MAW	**Mawson**	**73.41**	**164**	P	**P**	15 30 53.8	**-0.3**
	4.3nm,0.8s,baz=235,slow=3.3,SNR=4.7						
DBIC	**Dimbokro**	**74.99**	**71**	P	**P**	15 31 03.8	**-0.4**
	5.0nm,0.8s,baz=203,slow=5.9,SNR=5.3						
TORD	**Torodi Ar. Bea**	**84.02**	**70**	P	**P**	15 31 53.1	**-0.1**
	6.5nm,0.8s,baz=249,slow=4.4,SNR=12						
WRA	**Warramunga Arr**	**121.05**	**209**	PKP	**PKPdf**	15 38 14.3	**-1.3**
	1.2nm,1.0s,baz=158,slow=1.6,SNR=4.1						
BRTR	**Keskin Array B**	**121.61**	**61**	PKP	**PKPdf**	15 38 16.4	**+0.2**
	0.2nm,0.4s,baz=225,slow=1.8,SNR=3.7						
SEY	**Seymchan**	**139.84**	**330**	PKP	**PKPdf**	15 38 50.7	**+1.0**
	1.7nm,0.8s,baz=88,slow=2.8,SNR=4.1						
BRVK	**Borovoye**	**146.94**	**4**	*e*PKPbc	**PKPdf**	15 39 04.4	**+1.9**
BVAR	**Borovoye Array**	**147.01**	**43**	PKPbc	**PKPdf**	15 39 03.3	**+0.7**
	1.8nm,0.7s,baz=293,slow=2.8,SNR=5.5						
AAK	**Ala-Archa**	**152.28**	**61**	PKPbc	**PKPbc**	15 39 18.5	**+0.2**
	4.4nm,0.8s,baz=60,slow=0.9,SNR=4.8						
KURBB	**Kurchatov Arra**	**152.60**	**43**	PKPbc	**PKPbc**	15 39 17.9	**-0.6**
	1.0nm,0.3s,baz=292,slow=2.5,SNR=5.8						
KURK	**Kurchatov**	**152.61**	**43**	PKPbc	**PKPbc**	15 39 17.9	**-0.6**
ZALV	**Zalesovo Beam**	**153.94**	**32**	PKP	**PKPdf**	15 39 12.6	**-0.7**
	1.6nm,0.7s,baz=329,slow=2.5,SNR=3.6						
ZALV				PKPbc	**PKPbc**	15 39 21.1	**-0.2**
	3.7nm,0.7s,baz=298,slow=2.7,SNR=4.3						
ZALV				PKPab	**PKPab**	15 39 34.5	**-0.1**
	2.4nm,0.7s,baz=299,slow=4.6,SNR=4.5						
SONM	**Songino Array**	**165.85**	**5**	PKP	**PKPdf**	15 39 25.6	**-1.5**
	0.2nm,0.3s,baz=354,slow=1.4,SNR=2.5						
SONM				PKPab	**PKPab**	15 40 26.9	**+0.2**
	1.0nm,0.8s,baz=29,slow=3.3,SNR=3.0						

ISCJB **13** *15:19:58.6±0.6, 37°02N±0°.03×140°75E±0°.06, h15km±6km, mb3.8/2, Error ellipse: s-maj=7.8km s-min=5.5km az=21.1*
JMA **13** *15:19:59.1, 37°.03N×140°.66E, h6km±1km, M3.2 Broadband fault plane solution: P waves. NP1: φs247.00000°, δ83.00000°, λ-90.00000°. NP2: φs67.00000°, δ7.00000°, λ-90.00000°. Principal axes: T Plg38.0000°, Azm337.0000°; N Plg0.0000°, Azm67.0000°; P Plg52.0000°, Azm157.0000°;*
JMA Felt I J1.

IDC **13** *15:20:01.9±3.6, 36°.36N×140°.53E, h0km, mb3.6/2, mb1 3.9/2, mb1mx3.2/45, mbtmp3.6/2 Error ellipse: s-maj=70.8km s-min=16.2km az=21.0*
ISC 13 15:19:58.4±1.1, 37°.01N±0°.04×140°.64E±0°.05, h9km±11km, n17, σ0°51/19, 5C, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.16**	**52**	P	**Pg**	15 20 02.0	**+0.2**
ONAJ				S	**Sg**	15 20 04.2	**0.0**
JHO	**Hitachi**	**0.40**	**188**	P	**Pb**	15 20 07.4	**-0.2**
JHO				S	**Sb**	15 20 13.3	**-0.5**
JFK	**Kawauchi**	**0.41**	**27**	↑P	**Pg**	15 20 06.5	**+0.1**
JFK				S	**Sg**	15 20 11.8	**+0.1**
JFT	**Otama**	**0.57**	**335**	↑P	**Pb**	15 20 09.9	**-0.6**
JFT				S	**Sg**	15 20 17.5	**+0.7**
JSB	**Shiboa**	**0.58**	**267**	↑P	**Pb**	15 20 11.3	**+0.6**
JSB				S	**Sb**	15 20 19.8	**+0.7**
JFY	**Yanaizu**	**0.85**	**298**	↑P	**Pb**	15 20 15.4	**+0.1**
JFY				S	**Sb**	15 20 26.4	**-0.5**
JMM	**Marumori**	**0.87**	**8**	↑P	**Pg**	15 20 14.7	**-0.4**
JMM				S	**Sg**	15 20 26.0	**-0.4**
MJAR	**Matsushiro Arr**	**2.01**	**257**	Pg	**Pb**	15 20 34.8	**-0.3**
	6.2nm,0.3s,baz=96,slow=16,SNR=33						
MJAR				Lg	Lg	15 21 01.3	
	11nm,0.3s,baz=86,slow=26,SNR=16						
MAT	**Matsushiro**	**2.01**	**257**	P	**Pb**	15 20 34.7	**-0.4**
MAT				S	**Sg**	15 21 02.1	**-0.8**
H11N2	**WAKE ISLAND Hy**	**28.67**	**120**	T	T	15 55 42.0	
	baz=313,slow=75,SNR=11						
H11N1	**WAKE ISLAND Hy**	**28.68**	**120**	T	T	15 55 44.7	
	baz=313,slow=75,SNR=11						
H11N3	**WAKE ISLAND Hy**	**28.68**	**120**	T	T	15 55 45.5	
	baz=313,slow=75,SNR=10.0						
H11S1	**WAKE ISLAND Hy**	**29.37**	**122**	T	T	15 56 38.2	
	baz=314,slow=75,SNR=16						
H11S3	**WAKE ISLAND Hy**	**29.37**	**122**	T	T	15 56 34.0	
	baz=314,slow=75,SNR=10						
H11S2	**WAKE ISLAND Hy**	**29.38**	**122**	T	T	15 56 37.5	
	baz=314,slow=75,SNR=10.0						
WRA	**Warramunga Arr**	**56.95**	**187**	P	**P**	15 29 44.6	**+0.4**
	0.9nm,0.6s,baz=3.3,slow=7.4,SNR=20						
ASAR	**Alice Springs**	**60.68**	**187**	P	**P**	15 30 10.4	**+0.4**
	0.3nm,0.6s,baz=16,slow=6.9,SNR=5.2						

IDC **13** *15:27:50.9±0.7, 17°.62S×173°.76W, h0km, mb4.0/9, mb1 4.2/11, mb1mx4.0/32, mbtmp4.0/11, ML3.6/2, MS3.4/2, Ms1 3.4/2, ms1mx3.0/45, Error ellipse: s-maj=32.9km s-min=16.3km az=128.0*
ISCJB **13** *15:27:54.7±0.6, 17°.6S±0°.1×173°.8W±0°.1, h39km, mb4.1/11, Error ellipse: s-maj=21.2km s-min=11.0km az=39.6*
NEIC **13** *15:27:55.8±8.0, 17°.67S×173°.73W, h33km±54km, mb4.3/2, Error ellipse: s-maj=17.2km s-min=16.3km az=71.0*
ISC 13 15:27:56.2±0.7, 17°.5S±0°.1×173°.7W±0°.2, h39km, n21, σ1°42/21, mb4.2/11, Tonga Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AFI	**Afiamalu**	**4.03**	**27**	Pn	**Pn**	15 28 55.7	**+0.2**
	6.4nm,0.3s,baz=173,slow=9.3,SNR=12						
AFI				Sn	**Sn**	15 29 38.0	**-3.5**
	16nm,0.3s,baz=199,slow=24,SNR=7.1						
AFI				LR	LR	15 30 15.9	
	comp=Z,246nm,21.8s,baz=244,slow=35						
MSVF	**Nonsavu**	**7.90**	**267**	*e*P	Pn	15 29 58.3	+10
DZM	**Mont Dzumac**	**19.25**	**253**	P	**P**	15 32 16.2	**-1.3**
	0.1nm,0.3s,baz=102,slow=20,SNR=2.0						
DZM				LR	LR	15 38 38.3	
	comp=Z,245nm,20.6s,baz=66,slow=34						
URZ	**Urewera**	**22.18**	**200**	P	**P**	15 32 47.0	**-1.8**
	4.3nm,0.3s,baz=286,slow=3.8,SNR=10						
URZ	**Urewera**	**22.18**	**200**	*e*P	**P**	15 32 47.0	**-1.8**
RPZ	**Rata Peaks**	**29.13**	**203**	P	**P**	15 33 51.7	**-1.6**
	5.3nm,0.7s,baz=101,slow=10,SNR=3.6						
CTAO	**Charters Tower**	**37.96**	**260**	*e*P	**P**	15 35 12.0	**+1.5**
	2.2nm,0.6s						
STKA	**Stephens Creek**	**42.78**	**242**	P	**P**	15 35 50.1	**0.0**
	1.0nm,0.6s,baz=85,slow=11,SNR=5.6						
WRAB	**Tennant Creek**	**49.13**	**259**	*e*P	**P**	15 36 40.1	**-0.3**
	3.8nm,0.9s						
WRA	**Warramunga Arr**	**49.14**	**259**	P	**P**	15 36 39.5	**-1.0**
	1.0nm,0.4s,baz=97,slow=7.7,SNR=24						
ASAR	**Alice Springs**	**49.24**	**254**	P	**P**	15 36 40.2	**-1.0**
	8.0nm,0.8s,baz=90,slow=8.2,SNR=76						
VNDA	**Vanda**	**61.24**	**186**	P	**P**	15 38 07.3	**+0.5**
	1.6nm,0.9s,baz=4.6,slow=9.0,SNR=5.5						
QSPA	**South Pole Qui**	**72.53**	**180**	*e*P	**P**	15 39 18.7	**-0.2**
NVAR	**Mina Array Bea**	**76.08**	**42**	P	**P**	15 39 41.9	**+1.8**
	0.9nm,0.9s,baz=224,slow=8.4,SNR=3.6						
PDAR	**Pinedale Array**	**84.01**	**47**	P	**P**	15 40 23.4	**+0.5**
	0.6nm,0.7s,baz=224,slow=4.1,SNR=5.5						
ILAR	**Eielson Array**	**84.57**	**11**	P	**P**	15 40 26.5	**+1.6**
	0.4nm,0.7s,baz=213,slow=6.5,SNR=3.4						
BVAR	**Borovoye Array**	**119.39**	**321**	PKP	**PKPdf**	15 46 42.2	**+1.0**
	1.0nm,0.6s,baz=113,slow=1.0,SNR=7.7						
KMBO	**Kilima Mbogo**	**144.35**	**242**	PKP	**PKPdf**	15 47 29.4	**0.0**
	2.0nm,0.7s,baz=71,slow=5.7,SNR=5.8						
BRTR	**Keskin Array B**	**147.61**	**319**	PKPbc	**PKPbc**	15 47 36.9	**0.0**
	2.5nm,0.9s,baz=88,slow=1.6,SNR=11						
GERES	**GERESS Array B**	**148.19**	**351**	PKPbc	**PKPbc**	15 47 38.6	**+0.6**
	1.7nm,0.9s,baz=87,slow=2.8,SNR=6.1						
TORD	**Torodi Ar. Bea**	**173.76**	**134**	PKP	**PKPdf**	15 48 02.4	**0.0**
	1.0nm,1.0s,baz=292,slow=1.4,SNR=4.2						

ISK **13** *15:31:58.7, 38°.68N×30°.91E, h7km, MD2.8*
IASPEI **13** *15:31:59.5±0.9, 38°.64N±0°.02×30°.93E±0°.02, h11km±6km, Error ellipse: s-maj=3.8km s-min=3.2km az=134.1, GT5 selection from ISC bulletin GT5 identified by Bond¨¡r and McLaughlin (2009) selection criteria Bond¨¡r and McLaughlin, A new ground truth data set for seismic studies, Seism. Res. Let., 80, 465-472, 2009*
ISCJB **13** *15:31:59.5±0.5, 38°.64N±0°.02×30°.91E±0°.03, h8km±4km, Error ellipse: s-maj=4.4km s-min=4.0km az=11.1*
CSEM **13** *15:31:59.4±0.1, 38°.65N×30°.91E, h8km, MD2.7, Error ellipse: s-maj=3.2km s-min=3.0km az=179.0*
DDA **13** *15:31:59.4, 38°.63N×30°.94E, h11km, Md2.7*
ISC 13 15:31:59.4±0.9, 38°.64N±0°.02×30°.93E±0°.02, h12km±5km, n37, σ0°49/54, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BOLV	**Bolvadin**	**0.08**	**14**	*i* P	**Pg**	15 32 02.3	**+0.1**
BOLV				*i* S	**Sg**	15 32 04.0	**-0.2**
BOLV	**Bolvadin**	**0.08**	**14**	P	**Pg**	15 32 02.3	**+0.1**
BOLV				S	**Sg**	15 32 04.0	**-0.2**
SHUT	**Suhut-Afyon**	**0.30**	**254**	*e*Pg	**Pg**	15 32 05.9	**+0.2**
SHUT				*e*Sg	**Sg**	15 32 10.0	**+0.1**
SHUT	**Suhut-Afyon**	**0.30**	**254**	*e*Pg	**Pg**	15 32 05.9	**+0.2**
SHUT				*e*Sg	**Sg**	15 32 10.0	**+0.1**
BAGO	**Egridir - ISPA**	**0.66**	**189**	*i* P	**Pg**	15 32 12.4	**+0.2**
BAGO				*i* S	**Sb**	15 32 21.7	**-0.3**
AUKIR	**K¨¨rka- Seyitg**	**0.71**	**334**	*i* P	**Pb**	15 32 13.5	**-0.3**
AUKIR				*i* S	**Sb**	15 32 23.7	**+0.1**
AUKIR	**K¨¨rka- Seyitg**	**0.71**	**334**	P	**Pb**	15 32 13.5	**-0.3**
AUKIR				S	**Sb**	15 32 23.7	**+0.1**
KIZT	**Kizilcal**	**0.79**	**72**	*e*PG	**Pg**	15 32 14.4	**-0.3**
KIZT	**Kizilcal**	**0.79**	**72**	*e*Pg	**Pg**	15 32 14.4	**-0.3**
ISP	**Isparta**	**0.88**	**201**	*e*PG	**Pg**	15 32 16.3	**-0.1**
ISP	**Isparta**	**0.88**	**201**	*e*Pg	**Pg**	15 32 16.3	**-0.1**
ESKT	**Eskisehir**	**0.88**	**356**	*i* P	**Pg**	15 32 16.1	**-0.4**
ESKT				*i* S	**Sb**	15 32 29.3	**+0.7**
SEYT	**Eskypehyr**	**0.88**	**356**	P	**Pg**	15 32 16.1	**-0.4**
SEYT				S	**Sb**	15 32 29.3	**+0.7**
SVRH	**Sivrihisar-ESK**	**0.93**	**30**	*e*PG	**Pg**	15 32 16.2	**-1.2**
SVRH	**Sivrihisar-ESK**	**0.93**	**30**	*e*Pg	**Pg**	15 32 16.2	**-1.2**
KDHN	**Kadinhani**	**0.94**	**97**	*i* P	**Pg**	15 32 17.5	**-0.1**
KDHN				*i* S	**Sg**	15 32 30.0	**+0.1**
KDHN	**Kadinhani**	**0.94**	**97**	P	**Pg**	15 32 17.5	**-0.1**
KDHN				S	**Sg**	15 32 30.0	**+0.1**
KHL	**Karahalli**	**1.14**	**254**	*e*PN	**Pb**	15 32 20.9	**-0.4**
KHL	**Karahalli**	**1.14**	**254**	*e*Pn	**Pb**	15 32 20.9	**-0.4**
KHAL	**Karahalli**	**1.16**	**257**	*i* P	**Pn**	15 32 21.4	**-0.1**
KHAL				*i* S	**Sg**	15 32 36.8	**0.0**
KHAL	**Karahalli**	**1.16**	**257**	P	**Pn**	15 32 21.5	**-0.1**
KHAL				S	**Sg**	15 32 36.8	**0.0**
LADK	**Ladik-KONYA**	**1.21**	**111**	*e*PN	**Pg**	15 32 23.1	**+0.3**
LADK	**Ladik-KONYA**	**1.21**	**111**	*e*Pn	**Pg**	15 32 23.1	**+0.3**
AUMIH	**MIHALICIK**	**1.30**	**19**	*i* P	**Pg**	15 32 24.4	**-0.1**
AUMIH				*i* S	**Sg**	15 32 43.1	**+1.7**
AUMIH	**MIHALICIK**	**1.30**	**19**	P	**Pg**	15 32 24.4	**-0.1**
AUMIH				S	**Sg**	15 32 43.1	**+1.7**
KONT	**Konya--Tatoy**	**1.32**	**121**	*e*PN	**Pg**	15 32 24.9	**0.0**
KONT	**Konya--Tatoy**	**1.32**	**121**	*e*Pn	**Pg**	15 32 24.9	**0.0**
TVSB	**Tavsanli**	**1.40**	**306**	*e*PN	**Pn**	15 32 24.6	**-0.2**
TVSB	**Tavsanli**	**1.40**	**306**	*e*Pn	**Pn**	15 32 24.7	**-0.2**
KMER	**Konya-Meram**	**1.43**	**127**	*i* P	**Pg**	15 32 26.9	**0.0**
KMER				*i* S	**Sg**	15 32 45.7	**+0.2**
KMER	**Konya-Meram**	**1.43**	**127**	P	**Pg**	15 32 27.0	**0.0**
KMER				S	**Sg**	15 32 45.7	**+0.2**
GULT	**Gulveren**	**1.82**	**350**	*e*PN	**Pn**	15 32 30.5	**-0.2**
GULT	**Gulveren**	**1.82**	**350**	*e*Pn	**Pn**	15 32 30.5	**-0.2**
MDUB	**Mudurnu**	**1.84**	**6**	*e*PN	**Pn**	15 32 30.9	**-0.1**
MDUB	**Mudurnu**	**1.84**	**6**	*e*Pn	**Pn**	15 32 30.9	**-0.1**
ARMT	**Armutlu**	**2.50**	**321**	*e*PN	**Pn**	15 32 40.3	**+0.3**
ARMT	**Armutlu**	**2.50**	**321**	*e*Pn	**Pn**	15 32 40.3	**+0.3**

ISCJB **13** *15:50:59.0±0.9, 39°.14N±0°.05×142°.1E±0°.1, h51km±7km, mb3.4/6, Error ellipse: s-maj=16.3km s-min=6.9km az=12.6*
IDC **13** *15:51:00.7±3.2, 39°.06N×142°.08E, h51km±30km, mb3.1/6, mb1 3.3/8, mb1mx3.1/40, mbtmp3.4/8, ML2.6/2, Error ellipse: s-maj=29.3km s-min=18.7km az=93.0*
JMA **13** *15:51:00.3, 39°.17N×142°.05E, h43km±1km, M3.0*
ISC 13 15:51:00.0±1.3, 39°.14N±0°.05×142°.05E±0°.10, h42km±10km, n18, σ0°79/24, mb3.5/6, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**0.30**	**259**	P	**Pn**	15 51 08.8	**+0.2**
OFUJ				S	**Sn**	15 51 14.9	**+0.4**
MIYJ	**Miyakonagasawa**	**0.47**	**337**	P	**Pn**	15 51 10.2	**-0.3**
MIYJ				S	**Sn**	15 51 17.3	**-0.7**
JMK	**Ichinoseki**	**0.68**	**254**	P	**Pn**	15 51 13.4	**+0.2**
JMK				*e*S	**Sn**	15 51 22.8	**+0.2**
JOM	**Ohasama**	**0.68**	**300**	P	**Pn**	15 51 13.7	**+0.1**
JOM				S	**Sn**	15 51 22.7	**0.0**
JIO	**Ouri**	**0.88**	**219**	P	**Pn**	15 51 16.1	**+0.2**
JIO				*e*S	**Sn**	15 51 27.8	**+0.3**
JKZ	**Kuzumaki**	**1.01**	**327**	P	**Pn**	15 51 18.2	**+0.4**
JKZ				*e*S	**Sn**	15 51 30.3	**-0.6**
JRG	**Rokugo**	**1.13**	**284**	P	**Pn**	15 51 20.0	**+0.6**
JANG	**Nango**	**1.30**	**342**	P	**Pn**	15 51 21.8	**+0.1**
JOU	**Okura**	**1.33**	**235**	P	**Pn**	15 51 22.7	**+0.5**
JYK	**Kaneyama**	**1.34**	**261**	P	**Pn**	15 51 22.9	**+0.6**
MJAR	**Matsushiro Arr**	**4.00**	**231**	P	**Pn**	15 51 59.0	**+0.2**
	0.2nm,0.3s,baz=42,slow=12,SNR=3.1						
ASAJ	**Asahikawa**	**4.99**	**4**	P	**Pn**	15 52 13.9	**+1.6**
	0.2nm,0.3s,baz=173,slow=8.1,SNR=2.7						
ZALV	**Zalesovo Beam**	**40.90**	**311**	P	**P**	15 58 40.0	**+2.2**
	0.3nm,0.3s,baz=99,slow=9.8,SNR=2.3						
MKAR	**Makanchi Array**	**43.46**	**300**	P	**P**	15 58 57.8	**-1.0**
	0.3nm,0.7s,baz=76,slow=10,SNR=4.9						
KURBB	**Kurchatov Arra**	**45.13**	**306**	P	**P**	15 59 11.4	**-0.7**
	0.2nm,0.3s,baz=81,slow=8.5,SNR=2.9						
ILAR	**Eielson Array**	**47.45**	**33**	P	**P**	15 59 30.2	**0.0**
	0.2nm,0.7s,baz=269,slow=5.1,SNR=3.1						
WRA	**Warramunga Arr**	**59.21**	**188**	P	**P**	16 00 56.0	**-0.9**
	0.4nm,0.5s,baz=4.6,slow=6.9,SNR=8.1						
ASAR	**Alice Springs**	**62.94**	**188**	P	**P**	16 01 21.6	**-0.6**
	0.3nm,0.8s,baz=20,slow=8.9,SNR=4.1						

***IDC* 13 15:52:32.2±5.7, 34°.10N×141°.60E, h0km, mb3.7/3, mb1 4.0/3, mb1mx3.3/39, mbtmp3.7/3, ML2.6/1, Error ellipse: s-maj=217.3km s-min=24.3km az=66.0, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHJ	**Hachijo jima 2**	**1.81**	**238**	LR	LR	15 53 39.8	
	comp=Z,150nm,20.4s,baz=92,slow=38						
MJAR	**Matsushiro Arr**	**3.69**	**312**	Pn	Pn	15 53 29.2	-1.4
	0.5nm,0.3s,baz=90,slow=16,SNR=3.4						
ZALV	**Zalesovo Beam**	**44.05**	**315**	P	P	16 00 41.8	+0.2
	0.2nm,0.2s,baz=90,slow=8.6,SNR=2.4						
WRA	**Warramunga Arr**	**54.18**	**188**	P	P	16 01 59.7	+0.2
	1.4nm,0.7s,baz=12,slow=7.4,SNR=14						
ASAR	**Alice Springs**	**57.91**	**188**	P	P	16 02 25.8	-0.4
	0.3nm,0.5s,baz=10,slow=7.8,SNR=11						

NIED **13** *15:54:00, 36°.70N×141°.80E, h29km, Mw4.1 Best double couple: M0 1.51000×10^15 NP1: φs190.00000°, δ42.00000

BJI				pmax	pmax		
	comp=Z,6.0nm,0.7s						
BJI				LR	LR		
	comp=N,140nm,16.4s						
BJI				LR	LR		
	comp=E,180nm,16.0s						
BJI				LR	LR		
	comp=Z,100nm,29.2s						
HHC	**Hu-ho-hao-te**	**23.96**	**289**	*eP*	**P**	**15 59 31.4**	**-0.6**
HHC				pP	sP	15 59 43.3	-1.0
HHC				sP	pP	15 59 49.1	+8.5
HHC				S	**S**	**16 03 41.4**	**-5.5**
HHC				pmax	pmax		
	comp=Z,16nm,0.8s						
HHC				pmax	pmax		
	comp=Z,130nm,11.4s						
HHC				LR	LR		
	comp=N,440nm,12.5s						
HHC				LR	LR		
	comp=E,420nm,12.7s						
HHC				LR	LR		
	comp=Z,470nm,12.0s						
YAK	**Yakutsk**	**26.56**	**347**	P	**P**	**15 59 55.8**	**+0.5**
	comp=Z,4.0nm,0.4s,baz=331,slow=2.2,SNR=5.8						
SEY	**Seymchan**	**27.14**	**11**	P	**P**	**16 00 01.3**	**+0.9**
	comp=Z,2.4nm,0.8s,baz=189,slow=7.5,SNR=12						
H11N2	**WAKE ISLAND Hy**	**27.61**	**121**	T	T	16 29 28.2	
	baz=313,slow=75,SNR=17						
H11N1	**WAKE ISLAND Hy**	**27.62**	**121**	T	T	16 29 34.0	
	baz=313,slow=75,SNR=16						
H11N3	**WAKE ISLAND Hy**	**27.63**	**121**	T	T	16 29 29.6	
	baz=313,slow=75,SNR=29						
H11S1	**WAKE ISLAND Hy**	**28.32**	**123**	T	T	16 30 32.5	
	baz=315,slow=76,SNR=33						
H11S3	**WAKE ISLAND Hy**	**28.32**	**123**	T	T	16 30 24.2	
	baz=315,slow=76,SNR=29						
SONA1	**Songino Array**	**28.33**	**305**	*eP*	**P**	**16 00 11.5**	**0.0**
SONM	**Songino Array**	**28.33**	**305**	P	**P**	**16 00 12.5**	**+1.0**
	comp=Z,2.2nm,0.8s,baz=105,slow=8.3,SNR=16						
H11S2	**WAKE ISLAND Hy**	**28.33**	**123**	T	T	16 30 35.0	
	baz=315,slow=76,SNR=24						
CD2	**Chengdu**	**32.05**	**271**	P	**P**	**16 00 43.5**	**-0.9**
CD2				pmax	pmax		
	comp=Z,1.0nm,0.5s						
WMQ	**Urumqi**	**41.36**	**297**	*eP*	**P**	**16 02 04.5**	**+0.9**
WMQ				pmax	pmax		
	comp=Z,5.0nm,0.6s						
WMQ				pmax	pmax		
	comp=Z,39nm,5.4s						
CMAR	**Chiang Mai Arr**	**41.75**	**256**	P	**P**	**16 02 07.3**	**+0.4**
	comp=Z,0.4nm,0.7s,baz=45,slow=6.0,SNR=7.0						
ZAA0	**Zalesovo Array**	**42.47**	**313**	*eP*	**P**	**16 02 11.2**	**-1.2**
ZALV	**Zalesovo Beam**	**42.47**	**313**	P	**P**	**16 02 13.0**	**+0.6**
	comp=Z,1.5nm,0.7s,baz=91,slow=6.9,SNR=6.3						
ZALV				PcP	**PcP**	**16 04 05.2**	**+0.4**
	comp=Z,1.1nm,0.6s,baz=80,slow=3.5,SNR=4.2						
MKAR	**Makanchi Array**	**44.66**	**303**	P	**P**	**16 02 30.2**	**+0.1**
	comp=Z,1.3nm,0.8s,baz=88,slow=9.1,SNR=12						
MKAR	**Makanchi Array**	**44.66**	**303**	*eP*	**P**	**16 02 30.1**	**-0.1**
MAKZ	**Makanchi**	**44.87**	**303**	*eP*	**P**	**16 02 32.0**	**+0.2**
	comp=Z,9.6nm,1.8s						
KURK	**Kurchatov**	**46.48**	**308**	*eP*	**P**	**16 02 44.4**	**-0.1**
	comp=Z,3.8nm,0.9s						
KURBB	**Kurchatov Arra**	**46.55**	**308**	P	**P**	**16 02 45.2**	**+0.2**
	comp=Z,0.8nm,0.2s,baz=84,slow=7.6,SNR=7.2						
ILAR	**Eielson Array**	**49.65**	**32**	P	**P**	**16 03 07.6**	**-1.2**
	comp=Z,0.4nm,0.7s,baz=268,slow=7.3,SNR=4.1						
TKM2	**Tokmak 2**	**50.16**	**299**	*eP*	**P**	**16 03 13.3**	**+0.1**
	comp=Z,2.5nm,0.7s						
ZRNK	**Zerenda**	**51.97**	**313**	*eP*	**P**	**16 03 26.7**	**+0.3**
	comp=Z,8.4nm,1.7s						
WRA	**Warramunga Arr**	**56.70**	**188**	P	**P**	**16 04 00.9**	**-0.1**
	comp=Z,1.2nm,0.4s,baz=7.0,slow=7.4,SNR=17						
ABKAR	**Akbulak array**	**58.50**	**310**	*eP*	**P**	**16 04 13.2**	**-0.2**
AS01	**Alice Springs**	**60.41**	**188**	*ep*	pP	16 04 40.7	+4.6
ASAR	**Alice Springs**	**60.42**	**188**	P	**P**	**16 04 27.6**	**+0.7**
	comp=Z,1.6nm,0.7s,baz=15,slow=6.5,SNR=22						
YKA	**Yellowknife Ar**	**63.99**	**30**	P	**P**	**16 04 51.6**	**+1.2**
	comp=Z,0.9nm,0.8s,baz=299,slow=6.7,SNR=15						
FINES	**FINESS Array B**	**69.36**	**332**	P	**P**	**16 05 24.8**	**+0.1**
	comp=Z,3.0nm,0.8s,baz=42,slow=5.9,SNR=7.1						
YBH	**Yreka Blue Hor**	**70.31**	**52**	LR	LR	16 28 19.3	
	comp=Z,125nm,21.6s,baz=253,slow=29						
FFC	**Flin Flon**	**73.86**	**33**	*eP*	**P**	**16 05 53.2**	**+1.3**
	comp=Z,3.0nm,0.8s						
LRM	**Limekiln Ridge**	**74.19**	**44**	*eP*	**P**	**16 05 56.2**	**+1.9**
NB2	**NORSAR Subarra**	**74.72**	**337**	P	**P**	**16 05 57.3**	**+0.4**
	comp=Z,2.5nm,0.7s,baz=40,slow=6.2						
NOA	**NORSAR Array B**	**74.72**	**337**	P	**P**	**16 05 57.7**	**+0.8**
	comp=Z,2.5nm,0.7s,baz=38,slow=5.8,SNR=11						
AKASG	**Malin Array Be**	**74.86**	**323**	P	**P**	**16 05 58.2**	**+0.4**
	comp=Z,1.4nm,0.5s,baz=48,slow=5.9,SNR=8.8						
NVAR	**Mina Array Bea**	**74.94**	**53**	P	**P**	**16 05 59.1**	**+0.3**
	comp=Z,1.4nm,0.7s,baz=283,slow=7.0,SNR=7.2						
PDAR	**Pinedale Array**	**77.70**	**46**	P	**P**	**16 06 14.1**	**-0.3**
	comp=Z,0.6nm,0.7s,baz=240,slow=2.9,SNR=5.6						
BUR08	**Bucovina Ar. S**	**78.86**	**322**	*eP*	**P**	**16 06 21.2**	**+0.6**
KNB	**Kanab**	**79.28**	**52**	*eP*	**P**	**16 06 25.6**	**+2.4**
	comp=Z,9.9nm,1.5s						
BRTR	**Keskin Array B**	**79.41**	**312**	P	**P**	**16 06 24.6**	**+0.8**
	comp=Z,0.6nm,0.6s,baz=96,slow=1.2,SNR=4.1						
BR231	**Keskin MP Arra**	**79.85**	**312**	*eP*	**P**	**16 06 24.7**	**-1.4**
GERES	**GERESS Array B**	**83.27**	**328**	P	**P**	**16 06 44.2**	**+0.2**
	comp=Z,0.2nm,0.3s,baz=77,slow=18,SNR=3.7						
TXAR	**Lajitas Array**	**90.08**	**53**	P	**P**	**16 07 18.9**	**+1.2**
	comp=Z,0.3nm,0.7s,baz=263,slow=2.1,SNR=4.9						
LPAZ	**La Paz**	**146.58**	**61**	PKPbc	**PKPab**	**16 14 01.1**	**0.0**
	comp=Z,2.4nm,0.7s,baz=16,slow=12,SNR=9.9						

JMA 13 16:03:00.1, 37.04N×140.74E, h9km±1km, M2.6, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.08**	**37**	P	Pg	16 03 02.2	-0.1
ONAJ				S	Sg	16 03 03.8	-0.2
JFK	**Kawauchi**	**0.34**	**18**	P	Pg	16 03 06.9	0.0
JFK				S	Sg	16 03 11.7	+0.2
JHO	**Hitachi**	**0.45**	**198**	S	Sg	16 03 14.9	+0.1
JFT	**Otama**	**0.58**	**326**	P	Pg	16 03 11.4	+0.1
JFT				S	Sg	16 03 19.5	+0.7
JMM	**Marumori**	**0.83**	**3**	P	Pg	16 03 15.5	-0.5
JMM				*eS*	Sg	16 03 26.5	-0.3
JOU	**Okura**	**1.32**	**357**	P	Pn	16 03 24.7	-0.1
JOU				*eS*	Sb	16 03 42.1	-0.2
MAT	**Matsushiro**	**2.09**	**257**	P	Pn	16 03 36.6	+1.2
MAT				S	Sb	16 04 03.9	-0.5

*JMA **13** 16:05:11.8±0.1, 38.10N×142.09E, h13km±1km, M3.9*
*IDC **13** 16:05:18.3±3.9, 37.83N×142.08E, h48km±36km, mb3.3/7, mb1 3.6/9, mb1mx3.3/44, mbtmp3.6/9, ML3.0/2, Error ellipse: s-maj=32.7km s-min=17.1km az=99.0*

ISC 13 16:05:12.7±2.0, 38.14N±0.05×141.94E±0.07, h4km±11km, n25, σ1§37/26, mb3.5/7, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**0.56**	**304**	P	**Pb**	**16 05 24.8**	**-0.2**
JMM	**Marumori**	**0.95**	**253**	P	**Pb**	**16 05 31.2**	**-0.4**
JMM				*eS*	**Sn**	**16 05 45.0**	**-1.7**
OFUJ	**Ofunato**	**0.96**	**347**	P	**Pg**	**16 05 30.7**	**-0.4**
OFUJ				S	**Sb**	**16 05 44.7**	**-0.2**
JMK	**Ichinoseki**	**0.99**	**325**	P	**Pn**	**16 05 32.2**	**-1.0**
JMK				S	**Sn**	**16 05 46.2**	**-1.4**
JOU	**Okura**	**1.03**	**283**	P	**Pn**	**16 05 33.4**	**-0.5**
JOU				S	**Sn**	**16 05 48.6**	**-0.2**
JFT	**Otama**	**1.42**	**244**	P	**Pb**	**16 05 38.9**	**-0.7**
JFT				S	**Sg**	**16 05 58.2**	**+0.1**
JOM	**Ohasama**	**1.42**	**339**	P	**Pn**	**16 05 38.3**	**-1.0**
JOM				S	**Sg**	**16 05 58.2**	**-0.1**
JYK	**Kaneyama**	**1.46**	**302**	P	**Pg**	**16 05 40.4**	**-0.3**
JYK				S	**Sg**	**16 06 00.8**	**+1.2**
MJAR	**Matsushiro Arr**	**3.38**	**243**	P	Pn	16 06 08.7	+2.6
	13nm,0.3s,baz=76,slow=12,SNR=52						
MJAR				S	**Sn**	**16 06 46.4**	**-0.3**
	11nm,0.3s,baz=98,slow=28,SNR=7.7						
MAT	**Matsushiro**	**3.38**	**243**	P	**Pn**	**16 06 07.9**	**+1.7**
MAT				S	**Sn**	**16 06 45.3**	**-1.4**
ASAJ	**Asahikawa**	**5.99**	**5**	P	**Pn**	**16 06 42.6**	**+0.7**
	0.4nm,0.3s,baz=186,slow=10,SNR=4.6						
ASAJ				S	**Sn**	**16 07 49.6**	**-1.4**
	0.1nm,0.3s,baz=162,slow=20,SNR=2.2						
USRK	**Ussuriysk Ar.**	**9.63**	**312**	P	Pn	16 07 38.3	+6.3
	0.1nm,0.3s,baz=119,slow=12,SNR=3.3						
SEY	**Seymchan**	**25.62**	**11**	P	**P**	**16 10 45.2**	**+2.4**
	0.9nm,0.9s,baz=196,slow=7.9,SNR=4.8						
H11N2	**WAKE ISLAND Hy**	**28.38**	**123**	T	T	16 40 42.6	
	baz=316,slow=76,SNR=152						
H11N1	**WAKE ISLAND Hy**	**28.39**	**123**	T	T	16 40 41.2	
	baz=316,slow=76,SNR=146						
H11N3	**WAKE ISLAND Hy**	**28.40**	**123**	T	T	16 40 43.0	
	baz=316,slow=76,SNR=111						
H11S1	**WAKE ISLAND Hy**	**29.13**	**125**	T	T	16 41 35.8	
	baz=318,slow=76,SNR=106						
H11S3	**WAKE ISLAND Hy**	**29.14**	**125**	T	T	16 41 40.1	
	baz=318,slow=76,SNR=140						
H11S2	**WAKE ISLAND Hy**	**29.15**	**125**	T	T	16 41 37.1	
	baz=318,slow=76,SNR=56						
ZALV	**Zalesovo Beam**	**41.49**	**311**	P	**P**	**16 13 02.4**	**+1.9**
	0.5nm,0.5s,baz=77,slow=6.4,SNR=2.7						
MKAR	**Makanchi Array**	**43.89**	**301**	P	P	16 13 22.4	+2.1
	0.4nm,0.8s,baz=83,slow=8.7,SNR=5.1						
WRA	**Warramunga Arr**	**58.22**	**188**	P	**P**	**16 15 05.1**	**-2.9**
	1.0nm,0.9s,baz=6.4,slow=7.5,SNR=14						
ASAR	**Alice Springs**	**61.94**	**188**	P	**P**	**16 15 31.6**	**-2.0**
	0.6nm,0.7s,baz=1.7,slow=6.1,SNR=16						
FINES	**FINESS Array B**	**68.03**	**332**	P	**P**	**16 16 14.4**	**+1.6**
	0.8nm,0.7s,baz=61,slow=11,SNR=3.1						
PDAR	**Pinedale Array**	**76.59**	**46**	P	**P**	**16 17 04.7**	**+0.1**
	0.2nm,0.6s,baz=289,slow=5.5,SNR=2.4						

*IDC **13** 16:16:48.5±0.9, 37.59N×143.06E, h0km, mb3.5/8, mb1 3.7/11, mb1mx3.5/45, mbtmp3.5/11, ML3.3/3, Error ellipse: s-maj=28.9km s-min=16.8km az=106.0*
*ISCJB **13** 16:16:50.3±0.6, 37.61N±0.04×142.88E±0.05, h24km, mb3.5/8, Error ellipse: s-maj=6.9km s-min=4.8km az=42.3*
*JMA **13** 16:16:51.6±0.2, 37.66N×142.86E, h44km, M3.6*

ISC 13 16:16:52.2±0.8, 37.63N±0.05×142.86E±0.08, h24km, n26, σ1§21/36, mb3.6/8, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**1.45**	**305**	P	**Pn**	**16 17 16.0**	**-0.8**
JIO				S	**Sn**	**16 17 33.3**	**-1.7**
JFK	**Kawauchi**	**1.60**	**261**	P	**Pn**	**16 17 18.3**	**-0.7**
JFK				*eS*	**Sn**	**16 17 37.9**	**-1.0**
JMM	**Marumori**	**1.65**	**279**	P	**Pn**	**16 17 18.9**	**-0.8**
JMM				*eS*	**Sn**	**16 17 38.9**	**-1.3**
OFUJ	**Ofunato**	**1.72**	**327**	P	**Pn**	**16 17 19.3**	**-1.3**
ONAJ	**Iwakimizuishiy**	**1.73**	**253**	P	**Pn**	**16 17 20.2**	**-0.5**
ONAJ				S	**Sn**	**16 17 39.9**	**-2.1**
JMK	**Ichinoseki**	**1.84**	**316**	P	**Pn**	**16 17 21.5**	**-0.8**
JOU	**Okura**	**1.88**	**294**	P	**Pn**	**16 17 22.5**	**-0.3**
JFT	**Otama**	**2.01**	**268**	P	**Pn**	**16 17 24.9**	**+0.3**
JFT				*eS*	**Sn**	**16 17 49.5**	**+0.6**
JHO	**Hitachi**	**2.10**	**242**	P	**Pn**	**16 17 25.1**	**-0.6**
JYK	**Kaneyama**	**2.35**	**304**	P	**Pn**	**16 17 29.1**	**-0.1**
CHOJ	**Chosi**	**2.51**	**220**	P	**Pn**	**16 17 31.7**	**+0.3**
CHOJ				*eS*	**Sn**	**16 18 00.1**	**-1.1**
JAG	**Ashikaga**	**2.98**	**247**	P	**Pn**	**16 17 38.4**	**+0.5**
JAG				S	**Sn**	**16 18 13.1**	**+0.2**
JRY	**Ryogami san**	**3.56**	**244**	P	**Pn**	**16 17 46.2**	**+0.3**
JRY				*eS*	**Sn**	**16 18 26.0**	**-1.3**
JOD2	**Odawara 2**	**3.85**	**233**	P	**Pn**	**16 17 50.3**	**+0.4**
JOD2				*eS*	**Sn**	**16 18 33.9**	**-0.5**
MJAR	**Matsushiro Arr**	**3.87**	**255**	Pn	**Pn**	**16 17 51.8**	**+1.6**
	2.1nm,0.3s,baz=84,slow=15,SNR=11						
MAT	**Matsushiro**	**3.88**	**255**	P	**Pn**	**16 17 47.2**	**-3.0**
JHJ	**Hachijo jima 2**	**5.16**	**210**	Pn	**Pn**	**16 18 07.6**	**-0.3**
	6.6nm,0.3s,baz=82,slow=21,SNR=8.1						
JHJ				Sn	**Sn**	**16 19 03.1**	**-3.5**
	11nm,0.3s,baz=53,slow=20,SNR=3.5						
ASAJ	**Asahikawa**	**6.48**	**359**	Pn	**Pn**	**16 18 25.5**	**-0.5**
	0.3nm,0.3s,baz=201,slow=13,SNR=6.8						
SEY	**Seymchan**	**25.99**	**10**	P	**P**	**16 22 23.6**	**+0.8**
	2.0nm,0.8s,baz=194,slow=4.2,SNR=8.0						
SONM	**Songino Array**	**28.42**	**303**	P	**P**	**16 22 46.0**	**+1.1**
	0.2nm,0.5s,baz=101,slow=7.5,SNR=1.9						
MKAR	**Makanchi Array**	**44.78**	**302**	P	**P**	**16 25 05.4**	**+1.6**
	0.2nm,0.6s,baz=80,slow=6.5,SNR=3.0						
ILAR	**Eielson Array**	**48.37**	**33**	P	**P**	**16 25 31.7**	**+0.1**
	0.3nm,0.6s,baz=263,slow=6.0,SNR=5.2						
WRA	**Warramunga Arr**	**57.83**	**189**	P	**P**	**16 26 41.3**	**-0.4**
	0.7nm,0.7s,baz=9.0,slow=7.3,SNR=8.3						
ASAR	**Alice Springs**	**61.55**	**189**	P	**P**	**16 27 07.5**	**+0.1**
	0.4nm,0.7s,baz=11,slow=6.7,SNR=7.6						
YKA	**Yellowknife Ar**	**62.71**	**31**	P	**P**	**16 27 14.1**	**-0.6**
	0.2nm,0.6s,baz=305,slow=6.7,SNR=4.6						
FINES	**FINESS Array B**	**68.82**	**333**	P	**P**	**16 27 54.0**	**0.0**
	0.6nm,0.6s,baz=66,slow=7.8,SNR=4.3						

JMA 13 16:19:49.5, 37.01N×140.62E, h9km±1km, M2.6, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.17**	**57**	P	Pg	16 19 53.4	+0.3
ONAJ				S	Sg	16 19 56.2	+0.6
JHO	**Hitachi**	**0.40**	**186**	P	Pg	16 19 57.1	-0.2
JHO				S	Sg	16 20 02.7	+0.1
JFK	**Kawauchi**	**0.41**	**30**	P	Pg	16 19 57.6	0.0
JFK				S	Sg	16 20 03.4	+0.4
JFT	**Otama**	**0.56**	**336**	P	Pg	16 20 00.4	+0.1
JFT				S	Sg	16 20 07.8	+0.2
JMM	**Marumori**	**0.87**	**9**	P	Pg	16 20 05.6	-0.6
JMM				S	Sg	16 20 16.8	-0.6
MAT	**Matsushiro**	**1.99**	**257**	P	Pb	16 20 25.6	-0.3
MAT				S	Sb	16 20 51.2	+0.3

MAN 13 16:25:41, 6.84N×126.20E, h22km, mb4.4, ML3.3, MS3.1, 1C, Mindanao

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MATI	**Mati**	**0.12**	**26**	*eP*	Pb	16 25 46.9	+0.6
MATI				*eS*	Sb	16 25 53.8	+3.8
BIPH	**Bislig**	**1.35**	**7**	*iP*	Pb	16 26 05.1	-0.5
BIPH				*iS*	Sb	16 26 27.1	+4.7
BUKP	**Musuan**	**1.54**	**313**	*eP*	Pn	16 26 07.2	0.0
BUKP				*eS*	Sb	16 26 27.3	-0.5

*JSCJB **13** 16:26:44.5±1.6, 36.82S±0.06×73.6W±0.1, h14km, Error ellipse: s-maj=11.8km s-min=9.2km az=174.0*
*GUC **13** 16:26:46.0±0.5, 36.85S×73.55W, h8km±4km, ML3.6*

ISC 13 16:26:45.6±2.4, 36.78S±0.07×73.6W±0.1, h14km, n6, σ1§50/11, 1C, Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CCSP	**San Pedro de C**	**0.37**	**100**	*iP*	**Pg**	**16 26 52.4**	**-0.7**
CCSP				*iS*	**Sg**	**16 26 57.5**	**-0.7**
CCSP				IAML		16 26 58.1	
	comp=N,18μm,0.5s						
CCHI	**Chillan**	**1.21**	**82**	*eP*	**Pn**	**16 27 07.2**	**-0.9**
CCHI				*iS*	**Sb**	**16 27 22.7**	**-1.1**
CCHI				IAML		16 27 31.0	
	comp=N,2μm,0.3s						
TALC	**Talca**	**2.08**	**49**	*iP*	**Pn**	**16 27 21.2**	**+1.0**
TALC				*iS*	**Sn**	**16 27 48.3**	**+2.4**
CANA	**Caviahue**	**2.28**	**120**	*iP*	**Pn**	**16 27 25.0**	**+2.0**
CANA				*iS*	**Sg**	**16 27 58.9**	**-0.1**
CANA				IAML		16 27 59.6	
	comp=E,146nm,0.7s						
ROC1	**El Roble**	**4.33**	**30**	*iP*	**Pn**	**16 27 50.0**	**-1.3**
ROC1				*iS*	**Sn**	**16 28 43.3**	**+1.5**
PLCA	**Paso Flores**	**4.60**	**150**	*iP*	**Pn**	**16 27 54.3**	**-0.5**

*IDC **13** 16:27:06.3±2.4, 36.67N×142.20E, h0km, mb3.4/4, mb1 3.6/6, mb1mx3.3/45, mbtmp3.5/6, ML3.5/2, Error ellipse: s-maj=58.2km s-min=24.6km az=63.0*
*JMA **13** 16:27:11.9±0.2, 36.65N×141.80E, h30km±4km, M3.4*

ISC 13 16:27:08.4±2.2, 36.61N±0.05×141.94E±0.08, h9km±12km, n21, σ1§22/23, mb3.5/4, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**1.04**	**299**	P	**Pg**	**16 27 28.6**	**+0.2**
ONAJ				*eS*	**Sg**	**16 27 41.3**	**-0.7**
JHO	**Hitachi**	**1.11**	**271**	P	**Pb**	**16 27 29.6**	**-0.1**
JHO				S	**Sb**	**16 27 42.4**	**-1.8**
JFK	**Kawauchi**	**1.14**	**312**	P	**Pb**	**16 27 30.2**	**-0.1**
JMM	**Marumori**	**1.56**	**324**	P	**Pn**	**16 27 36.5**	**+0.3**
JMM				S	**Sn**	**16 27 54.8**	**-1.7**
JFT	**Otama**	**1.57**	**306**	P	**Pb**	**16 27 37.4**	**-0.2**
JFT				S	**Sn**	**16 27 55.9**	**-1.1**
JAG	**Ashikaga**	**2.02**	**266**	P	**Pn**	**16 27 43.1**	**+0.6**
JOU	**Okura**	**2.03**	**330**	P	**Pb**	**16 27 44.6**	**-0.8**
JOU				S	**Sn**	**16 28 08.4**	**+0.2**
JKT	**Katashina**	**2.17**	**275**	P	**Pn**	**16 27 46.1**	**+1.3**
MJAR	**Matsushiro Arr**	**3.01**	**270**	Pn	**Pn**	**16 27 57.8**	**+1.6**
	4.7nm,0.3s,baz=114,slow=10,SNR=45						
MJAR				Sn	**Sn**	**16 28 33.2**	**+0.9**
	4.2nm,0.3s,baz=56,slow=21,SNR=6.3						
MAT	**Matsushiro**	**3.01**	**270**	P	**Pn**	**16 27 58.2**	**+2.0**
MAT				S	**Sn**	**16 28 32.1**	**-0.3**
JHJ	**Hachijo jima 2**	**3.91**	**208**	Pn	**Pn**	**16 28 09.5**	**+0.9**
	11nm,0.3s,baz=16,slow=15,SNR=4.4						
JHJ				Sn	**Sn**	**16 28 51.6**	**-2.9**
	12nm,0.3s,baz=90,slow=20,SNR=5.1						
H11N2	**WAKE ISLAND Hy**	**27.56**	**121**	T	T	17 02 12.3	
	baz=313,slow=75,SNR=7.8						
H11N1	**WAKE ISLAND Hy**	**27.57**	**121**	T	T	17 02 16.9	
	baz=313,slow=75,SNR=4.4						
H11N3	**WAKE ISLAND Hy**	**27.58**	**121**	T	T	17 02 10.8	
	baz=313,slow=75,SNR=4.3						
H11S1	**WAKE ISLAND Hy**	**28.27**	**123**	T	T	17 03 13.3	
	baz=314						
H11S3	**WAKE ISLAND Hy**	**28.27**	**123**	T	T	17 03 25.0	
	baz=314						
H11S2	**WAKE ISLAND Hy**	**28.29**	**123**	T	T	17 03 21.1	
	baz=314						
SONM	**Songino Array**	**28.38**	**304**	P	**P**	**16 33 03.8**	**+0.9**
	0.4nm,0.3s,baz=105,slow=9.1,SNR=3.9						
MKAR	**Makanchi Array**	**44.71**	**303**	P	**P**	**16 35 21.6**	**0.0**
	0.3nm,0.8s,baz=84,slow=9.1,SNR=3.0						
WRA	**Warramunga Arr**	**56.70**	**189**	P	**P**	**16 36 51.9**	**-0.3**
	0.4nm,0.8s,baz=6.8,slow=7.3,SNR=4.7						
ASAR	**Alice Springs**	**60.43**	**188**	P	**P**	**16 37 18.7**	**+0.5**
	0.3nm,0.7s,baz=4.9,slow=6.6,SNR=4.4						

IDC 13 16:37:41.9±25.0, 19.39S×172.48W, h0km, mb4.0/4, mb1 4.2/4, mb1mx3.7/35, mbtmp4.0/4, Error ellipse: s-maj=471.0km s-min=159.5km az=74.0, Tonga Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CTA	**Charters Tower**	**38.78**	**262**	P	P	16 45 08.8	+0.3
	0.7nm,0.4s,baz=73,slow=18,SNR=2.9						
STKA	**Stephens Creek**	**42.94**	**244**	P	P	16 45 42.2	-0.6
	1.1nm,0.7s,baz=127,slow=10,SNR=4.4						
ASAR	**Alice Springs**	**49.82**	**255**	P	P	16 46 37.0	0.0
	2.5nm,0.5s,baz=93,slow=8.1,SNR=119						
WRA	**Warramunga Arr**	**49.90**	**260**	P	P	16 46 37.5	-0.2
	0.8nm,0.3s,baz=96,slow=7.3,SNR=53						

*IDC **13** 16:44:13.8±20.0, 36.63N×71.53E, h84km±105km, mb3.1/1, mb1 3.3/6, mb1mx2.9/68, mbtmp3.5/6, ML3.2/5, Error ellipse: s-maj=209.7km s-min=61.0km az=178.0*
*NNC **13** 16:44:21.4±1.8, 37.39N×71.00E, h119km±50km, mb2.5, mpv3.2, Error ellipse: s-maj=22.7km s-min=14.5km az=80.0*

ISC 13 16:44:19.4±2.1, 37.3N±0.2×71.0E±0.1, h100km, n11, σ1§31/16, 3C-5D, Afghanistan-Tajikistan border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SFK	**Sufi-Kurgan**	**3.37**	**35**	⇑P	**Pn**	**16 45 11.1**	**+0.8**
	3.3nm,0.4s						
SFK				⇓S	**Sn**	**16 45 50.6**	**+1.1**
	11nm,0.3s						
MNAS	**Manas**	**5.34**	**12**	⇓P	**Pn**	**16 45 37.5**	**+0.7**
	0.7nm,0.3s						
MNAS				⇑S	**Sn**	**16 46 36.4**	**-0.7**
	4.4nm,0.4s						
KK31	**Karatay Array**	**5.84**	**356**	⇓P	**Pn**	**16 45 43.9**	**+0.4**
	0.9nm,0.2s,baz=179,slow=12,SNR=92						
KK31				⇑S	**Sn**	**16 46 49.5**	**+0.5**
	2.0nm,0.3s,baz=188,slow=25,SNR=6.5						
AAK	**Ala-Archa**	**5.99**	**25**	P	**Pn**	**16 45 45.9**	**+0.2**
	0.8nm,0.3s,baz=155,slow=1.4,SNR=11						
AAK				S	**Sn**	**16 46 52.3**	**-0.6**
	0.4nm,0.3s,baz=137,slow=22,SNR=7.5						
AAK	**Ala-Archa**	**5.99**	**25**	⇓P	**Pn**	**16 45 47.6**	**+1.9**
	0.8nm,0.3s						
AAK				⇓S	**Sn**	**16 46 53.3**	**+0.4**
	2.8nm,0.6s						
MKAR	**Makanchi Array**	**12.67**	**38**	P	**Pn**	**16 47 14.2**	**-1.7**
	0.1nm,0.3s,baz=215,slow=12,SNR=8.9						
KURBB	**Kurchatov Arra**	**14.40**	**20**	P	**P**	**16 47 41.1**	**-1.1**
	0.0nm,0.3s,

H11S2	**WAKE ISLAND Hy**	**28.88**	**123**	T	T	17 31 03.6	
	baz=315,slow=76,SNR=59						
ZALV	**Zalesovo Beam**	**41.92**	**312**	P	**P**	**17 02 42.7**	**-0.2**
	0.6nm,0.6s,baz=87,slow=6.1,SNR=4.4						
MKAR	**Makanchi Array**	**44.11**	**302**	P	**P**	**17 03 00.4**	**-0.3**
	0.3nm,0.6s,baz=82,slow=9.1,SNR=4.7						
ILAR	**Eielson Array**	**49.56**	**32**	P	**P**	**17 03 43.9**	**+0.8**
	0.2nm,0.5s,baz=263,slow=7.0,SNR=3.2						
BVAR	**Borovoye Array**	**50.58**	**312**	P	**P**	**17 03 50.5**	**-0.5**
	0.3nm,0.5s,baz=65,slow=6.8,SNR=3.0						
WRA	**Warramunga Arr**	**57.00**	**188**	P	**P**	**17 04 37.3**	**-0.9**
	0.2nm,0.5s,baz=5.4,slow=7.4,SNR=7.2						
ASAR	**Alice Springs**	**60.73**	**188**	P	**P**	**17 05 03.4**	**-0.7**
	0.3nm,0.8s,baz=14,slow=8.0,SNR=3.7						

*DDA **13** 16:56:27.9, 37.84N×32.10E, h7km, Md2.7*
*CSEM **13** 16:56:27.8±0.2, 37.84N×32.04E, h2km, MD2.7, Error ellipse: s-maj=3.8km s-min=2.9km az=51.0*
*ISK **13** 16:56:27.4, 37.83N×32.08E, h5km, MD2.8*

ISC 13 16:56:27.8±1.2, 37.84N±0.03×32.03E±0.03, h3km±11km, n27, σ0965/40, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KMER	**Konya-Meram**	**0.28**	**105**	*i* P	**Pg**	**16 56 32.7**	**-0.5**
KMER				*i* S	**Sg**	**16 56 37.0**	**+0.2**
KMER	**Konya-Meram**	**0.28**	**105**	P	**Pg**	**16 56 32.7**	**-0.5**
KMER				S	**Sg**	**16 56 37.0**	**+0.2**
KONT	**Konya--Tatoy**	**0.28**	**68**	*e*PG	**Pg**	**16 56 33.0**	**-0.3**
KONT				*e*SG	**Sg**	**16 56 37.1**	**+0.1**
KONT	**Konya--Tatoy**	**0.28**	**68**	*e*Pg	**Pg**	**16 56 33.0**	**-0.3**
KONT				*e*Sg	**Sg**	**16 56 37.1**	**+0.1**
LADK	**Ladik-KONYA**	**0.45**	**36**	*e*PG	**Pg**	**16 56 36.3**	**-0.1**
LADK	**Ladik-KONYA**	**0.45**	**36**	*e*Pg	**Pg**	**16 56 36.3**	**-0.1**
KDHN	**Kadinhani**	**0.68**	**6**	*i* P	**Pg**	**16 56 40.9**	**0.0**
KDHN				*i* S	**Sb**	**16 56 51.2**	**-1.2**
KDHN	**Kadinhani**	**0.68**	**6**	P	**Pg**	**16 56 40.9**	**0.0**
KDHN				S	**Sb**	**16 56 51.2**	**-1.2**
BAGO	**Egridir - ISPA**	**0.99**	**279**	*i* P	**Pb**	**16 56 47.6**	**-0.1**
BAGO				*i* S	**Sb**	**16 57 01.6**	**+0.4**
CHBY	**Cihanbeyli**	**1.00**	**42**	*e*PG	**Pg**	**16 56 46.9**	**-0.2**
CHBY	**Cihanbeyli**	**1.00**	**42**	*e*Pg	**Pg**	**16 56 46.9**	**-0.2**
KIZT	**Kizilcal**	**1.04**	**354**	*e*PG	**Pb**	**16 56 48.5**	**-0.2**
KIZT	**Kizilcal**	**1.04**	**354**	*e*Pg	**Pb**	**16 56 48.5**	**-0.2**
ISP	**Isparta**	**1.19**	**270**	*e*PN	**Pn**	**16 56 51.4**	**-0.1**
ISP	**Isparta**	**1.19**	**270**	*e*Pn	**Pn**	**16 56 51.4**	**-0.1**
BOLV	**Bolvadin**	**1.22**	**316**	*i* P	**Pb**	**16 56 51.4**	**-0.2**
BOLV				*i* S	**Sg**	**16 57 07.0**	**0.0**
BOLV	**Bolvadin**	**1.22**	**316**	P	**Pb**	**16 56 51.4**	**-0.2**
BOLV				S	**Sg**	**16 57 07.0**	**0.0**
ERMK	**Ermenek**	**1.39**	**149**	*i* P	**Pb**	**16 56 54.9**	**+0.3**
ERMK				*i* S	**Sn**	**16 57 14.3**	**+1.0**
ERMK	**Ermenek**	**1.39**	**149**	P	**Pb**	**16 56 54.8**	**+0.3**
KKUL	**Konya-Kulu**	**1.50**	**27**	*i* P	**Pg**	**16 56 56.7**	**+0.1**
KKUL				*i* S	**Sg**	**16 57 19.2**	**+3.1**
KKUL	**Konya-Kulu**	**1.50**	**27**	P	**Pg**	**16 56 56.7**	**+0.1**
KERG	**Konya-Eregli**	**1.72**	**104**	*i* P	**Pn**	**16 56 58.5**	**-0.3**
KERG				*i* S	**Sn**	**16 57 21.4**	**+0.1**
KERG	**Konya-Eregli**	**1.72**	**104**	P	**Pn**	**16 56 58.5**	**-0.3**
KERG				S	**Sn**	**16 57 21.4**	**+0.1**
AFSR	**Af˙ar-Bala (A**	**1.80**	**27**	*e*PN	**Pn**	**16 56 59.8**	**-0.1**
AFSR	**Af˙ar-Bala (A**	**1.80**	**27**	*e*Pn	**Pn**	**16 56 59.8**	**-0.1**
IKL	**Isikli**	**2.08**	**140**	*e*PN	**Pn**	**16 57 03.5**	**-0.1**
IKL	**Isikli**	**2.08**	**140**	*e*Pn	**Pn**	**16 57 03.5**	**-0.1**

JMA 13 16:58:26.3, 37.01N×138.59E, h9km±2km, M1.1, Near west coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JJN	**Nakama**	**0.35**	**285**	P	Pg	16 58 33.2	-0.1
JHK	**Hiroka**	**0.42**	**55**	P	Pg	16 58 34.3	-0.2
JHK				*e*S	Sg	16 58 40.3	+0.4
JGK	**Kuni**	**0.45**	**175**	S	Sg	16 58 41.7	+0.7
MAT	**Matsushiro**	**0.56**	**214**	P	Pg	16 58 36.8	-0.3
MAT				S	Sg	16 58 44.0	-0.5
MAT	**Matsushiro**	**0.56**	**214**	P	Pg	16 58 36.8	-0.3
MAT				*e*S	Sg	16 58 44.1	-0.4
JKT	**Katashina**	**0.58**	**114**	P	Pg	16 58 37.6	0.0
JNG	**Nsakai**	**0.72**	**213**	S	Sg	16 58 49.1	-0.5

JMA 13 17:03:18.7±0.2, 39.30N×143.73E, h19km, M3.5, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MIYJ	**Miyakonagasawa**	**1.50**	**281**	P	Pn	17 03 45.2	+0.5
MIYJ				*e*S	Sb	17 04 05.7	+1.0
JTH	**Tanohata**	**1.58**	**294**	P	Pn	17 03 46.3	+0.7
JTH				*e*S	Sn	17 04 05.2	-0.3
OFUJ	**Ofunato**	**1.62**	**263**	P	Pn	17 03 46.7	+0.5
JOM	**Ohasama**	**1.90**	**276**	P	Pn	17 03 51.1	+1.1
JMK	**Ichinoseki**	**1.98**	**261**	P	Pn	17 03 52.2	+1.0
JANG	**Nango**	**2.01**	**303**	P	Pn	17 03 52.5	+0.8
JTM	**Tenmabayashi**	**2.53**	**307**	P	Pn	17 04 00.1	+1.4
JAH	**Hinai**	**2.54**	**291**	P	Pn	17 04 00.4	+1.4
JNBK	**Urakawa-nobuka**	**3.07**	**346**	P	Pn	17 04 08.9	+2.8
JNBK				*e*S	Sn	17 04 44.1	+1.8
JCH	**Churui**	**3.32**	**355**	P	Pn	17 04 11.6	+2.0
JCH				S	Sn	17 04 48.3	-0.3

*IDC **13** 17:03:23.0±1.9, 37.28N×140.67E, h0km, mb3.4/4, mb1 3.5/5, mb1mx3.2/43, mbtmp3.3/5, ML3.1/1, Error ellipse: s-maj=37.6km s-min=27.0km az=76.0*
*ISCJB **13** 17:03:24.2±1.1, 37.06N±0.03×140.73E±0.06, h15km±8km, mb3.3/5, Error ellipse: s-maj=8.5km s-min=5.7km az=12.9*
*JMA **13** 17:03:24.5, 37.06N×140.68E, h12km±1km, M3.3*
JMA Felt I J1.

ISC 13 17:03:24.3±1.2, 37.09N±0.03×140.59E±0.05, h1km±11km, n20, σ0965/20, mb3.5/5, 4C-3D, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.17**	**85**	⇑P	**Pg**	**17 03 27.5**	**-0.1**
JFK	**Kawauchi**	**0.36**	**40**	⇑P	**Pg**	**17 03 31.3**	**0.0**
JFK				*i* S	**Sg**	**17 03 36.1**	**+0.1**
JFT	**Otama**	**0.47**	**335**	⇓P	**Pb**	**17 03 35.0**	**-0.5**
JFT				S	**Sb**	**17 03 42.3**	**-0.7**
JHO	**Hitachi**	**0.48**	**182**	⇓P	**Pg**	**17 03 33.3**	**-0.1**
JHO				S	**Sg**	**17 03 39.5**	**-0.1**
JSB	**Shiboa**	**0.55**	**258**	⇑P	**Pb**	**17 03 37.0**	**+0.3**
JFY	**Yanaizu**	**0.77**	**295**	⇑P	**Pb**	**17 03 40.7**	**+0.2**
JFY				S	**Sb**	**17 03 51.5**	**+1.0**
JMM	**Marumori**	**0.79**	**12**	⇓P	**Pg**	**17 03 39.5**	**-0.1**
JMM				S	**Sg**	**17 03 50.2**	**+0.3**
MJAR	**Matsushiro Arr**	**1.98**	**255**	Pn	**Pn**	**17 03 59.6**	**+0.6**
	5.7nm,0.3s,baz=66,slow=16,SNR=27						
MJAR				Sn	**Sb**	**17 04 25.5**	**-0.9**
	5.5nm,0.3s,baz=91,slow=30,SNR=11						
MAT	**Matsushiro**	**1.98**	**255**	P	**Pn**	**17 03 59.5**	**+0.5**
MAT				S	**Sg**	**17 04 27.8**	**-0.3**
SONM	**Songino Array**	**27.20**	**304**	P	**P**	**17 09 11.2**	**+1.5**
	0.2nm,0.4s,baz=106,slow=11,SNR=2.6						
H11N2	**WAKE ISLAND Hy**	**28.75**	**120**	T	T	17 39 08.0	
	baz=313,slow=75,SNR=16						
H11N1	**WAKE ISLAND Hy**	**28.75**	**120**	T	T	17 39 08.4	
	baz=313,slow=75,SNR=8.2						
H11N3	**WAKE ISLAND Hy**	**28.77**	**120**	T	T	17 39 09.4	
	baz=313,slow=75,SNR=7.3						
H11S1	**WAKE ISLAND Hy**	**29.45**	**122**	T	T	17 40 02.6	
	baz=314,slow=76,SNR=19						
H11S3	**WAKE ISLAND Hy**	**29.45**	**122**	T	T	17 39 59.7	
	baz=314,slow=76,SNR=21						
H11S2	**WAKE ISLAND Hy**	**29.46**	**122**	T	T	17 40 01.6	
	baz=314,slow=76,SNR=13						
ZALV	**Zalesovo Beam**	**41.39**	**312**	P	P	17 11 08.3	-3.6
	0.5nm,0.5s,baz=79,slow=7.8,SNR=3.5						
MKAR	**Makanchi Array**	**43.53**	**302**	P	**P**	**17 11 29.3**	**-0.1**
	0.1nm,0.5s,baz=90,slow=8.6,SNR=2.4						
KURBB	**Kurchatov Arra**	**45.45**	**308**	P	**P**	**17 11 43.3**	**-1.4**
	0.6nm,0.7s,baz=82,slow=8.7,SNR=8.1						
WRA	**Warramunga Arr**	**57.03**	**187**	P	**P**	**17 13 11.8**	**-0.1**
	0.3nm,0.6s,baz=2.6,slow=7.2,SNR=6.6						

*ISCJB **13** 17:06:18.0±1.0, 39.72N±0.04×142.1E±0.1, h31km±5km, mb3.3/4, Error ellipse: s-maj=13.9km s-min=5.9km az=10.6*

*JMA **13** 17:06:18.9±0.1, 39.73N×142.07E, h31km±1km, M3.5*
*IDC **13** 17:06:22.2±2.3, 39.74N×142.10E, h60km±20km, mb3.0/4, mb1 3.1/6, mb1mx2.9/44, mbtmp3.2/6, ML3.2/2, Error ellipse: s-maj=32.3km s-min=10.9km az=109.0*

ISC 13 17:06:19.3±1.3, 39.73N±0.04×142.09E±0.09, h26km±7km, n13, σ1938/20, mb3.4/4, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MIYJ	**Miyakonagasawa**	**0.25**	**234**	P	**Pb**	**17 06 25.6**	**-0.1**
MIYJ				S	**Sb**	**17 06 30.0**	**-0.1**
JTH	**Tanohata**	**0.27**	**321**	P	**Pb**	**17 06 25.9**	**-0.1**
JTH				S	**Sb**	**17 06 30.5**	**-0.2**
JKZ	**Kuzumaki**	**0.64**	**294**	P	**Pb**	**17 06 31.1**	**-0.8**
JKZ				S	**Sb**	**17 06 39.4**	**-1.0**
JOM	**Ohasama**	**0.66**	**248**	P	**Pb**	**17 06 31.5**	**-0.7**
JOM				S	**Sb**	**17 06 40.6**	**-0.5**
OFUJ	**Ofunato**	**0.72**	**207**	P	**Pb**	**17 06 32.1**	**-1.1**
OFUJ				S	**Sb**	**17 06 41.7**	**-1.0**
JANG	**Nango**	**0.78**	**326**	P	**Pb**	**17 06 32.9**	**-1.4**
ASAJ	**Asahikawa**	**4.41**	**5**	P	**Pn**	**17 07 25.6**	**+1.3**
	2.0nm,0.3s,baz=224,slow=9.5,SNR=13						
ASAJ				S	**Sn**	**17 08 17.1**	**+2.3**
	0.3nm,0.3s,baz=18,slow=20,SNR=2.5						
MJAR	**Matsushiro Arr**	**4.41**	**225**	P	**Pn**	**17 07 27.0**	**+2.5**
	0.4nm,0.3s,baz=37,slow=13,SNR=4.0						
MJAR				S	**Sn**	**17 08 17.5**	**+2.5**
	0.8nm,0.3s,baz=79,slow=15,SNR=3.1						
MAT	**Matsushiro**	**4.41**	**225**	P	**Pn**	**17 07 25.4**	**+0.9**
MKAR	**Makanchi Array**	**43.19**	**300**	P	**P**	**17 14 17.1**	**-0.7**
	0.3nm,0.4s,baz=79,slow=7.5,SNR=5.5						
KURBB	**Kurchatov Arra**	**44.81**	**306**	P	**P**	**17 14 29.7**	**-0.9**
	0.4nm,0.4s,baz=80,slow=8.0,SNR=3.7						
WRA	**Warramunga Arr**	**59.80**	**188**	P	**P**	**17 16 20.8**	**-1.4**
	0.2nm,0.7s,baz=4.6,slow=7.1,SNR=4.8						
ASAR	**Alice Springs**	**63.52**	**188**	P	**P**	**17 16 46.6**	**-0.7**
	0.1nm,0.7s,baz=360,slow=6.3,SNR=3.7						

*ISK **13** 17:26:29.7, 39.13N×29.07E, h5km, MD2.9*
*DDA **13** 17:26:29.8, 39.11N×29.06E, h7km, Md2.6*
*ISCJB **13** 17:26:30.1±0.5, 39.12N±0.03×29.07E±0.03, h7km±5km, Error ellipse: s-maj=4.6km s-min=4.0km az=143.3*
*CSEM **13** 17:26:30.2±0.1, 39.12N×29.07E, h5km, MD2.6, Error ellipse: s-maj=2.1km s-min=1.6km az=69.0*

ISC 13 17:26:30.3±1.0, 39.12N±0.02×29.07E±0.02, h9km±8km, n52, σ0951/65, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.29**	**254**	*i* P	**Pg**	**17 26 35.9**	**-0.2**
DEMI				*i* S	**Sg**	**17 26 39.9**	**-0.1**
DEMI	**Demirci**	**0.29**	**254**	P	**Pg**	**17 26 35.9**	**-0.2**
DEMI				S	**Sg**	**17 26 39.9**	**-0.1**
GDZ	**Gediz**	**0.32**	**96**	*i* P	**Pg**	**17 26 36.7**	**-0.1**
GDZ				*i* S	**Sg**	**17 26 41.8**	**+0.7**
GDZ	**Gediz**	**0.32**	**96**	P	**Pg**	**17 26 36.7**	**-0.1**
GDZ				S	**Sg**	**17 26 41.8**	**+0.7**
TVSB	**Tavsanli**	**0.45**	**43**	*e*PG	**Pg**	**17 26 38.8**	**-0.3**
TVSB				*e*SG	**Sg**	**17 26 45.3**	**+0.3**
TVSB	**Tavsanli**	**0.45**	**43**	*e*Pg	**Pg**	**17 26 38.8**	**-0.3**
TVSB				*e*Sg	**Sg**	**17 26 45.3**	**+0.3**
DST	**Dursunbey**	**0.59**	**324**	*e*PG	**Pg**	**17 26 41.5**	**-0.4**
DST	**Dursunbey**	**0.59**	**324**	*e*Pg	**Pg**	**17 26 41.5**	**-0.4**
DURS	**Dursunbey**	**0.66**	**316**	*i* P	**Pg**	**17 26 43.4**	**+0.2**
DURS				*i* S	**Sn**	**17 26 56.0**	**-0.6**
DURS	**Dursunbey**	**0.66**	**316**	P	**Pg**	**17 26 43.4**	**+0.2**
KULA	**Kula-Manisa**	**0.69**	**208**	*e*PG	**Pg**	**17 26 43.3**	**-0.3**
KULA	**Kula-Manisa**	**0.69**	**208**	*e*Pg	**Pg**	**17 26 43.3**	**-0.3**
KHAL	**Karahalli**	**0.82**	**156**	*i* P	**Pg**	**17 26 46.0**	**-0.2**
KHAL				*i* S	**Sg**	**17 26 57.1**	**+0.2**
KHAL	**Karahalli**	**0.82**	**156**	P	**Pg**	**17 26 46.0**	**-0.2**
KHAL				S	**Sg**	**17 26 57.1**	**+0.2**
KHL	**Karahalli**	**0.87**	**156**	*e*PG	**Pg**	**17 26 47.2**	**0.0**
KHL				*e*SG	**Sb**	**17 26 59.8**	**+0.3**
KHL	**Karahalli**	**0.87**	**156**	*e*Pg	**Pg**	**17 26 47.2**	**0.0**
KHL				*e*Sg	**Sb**	**17 26 59.8**	**+0.3**
ULDT	**Uludag**	**1.02**	**3**	*i* P	**Pg**	**17 26 49.8**	**-0.2**
ULDT				*i* S	**Sg**	**17 27 03.1**	**-0.1**
ULDT	**Uludag**	**1.02**	**3**	P	**Pg**	**17 26 49.8**	**-0.2**
ULDT				S	**Sg**	**17 27 03.1**	**-0.1**
AUKUT	**KUTAHYA**	**1.11**	**41**	*i* P	Pg	17 26 47.8	-3.8
AUKUT				*i* S	Sg	17 26 56.7	-9.4
IGD	**Bursa**	**1.14**	**5**	*i* P	**Pb**	**17 26 50.6**	**-1.7**
IGD				*i* S	**Sb**	**17 27 07.7**	**+0.5**
CAVI	**Cavuskoy**	**1.23**	**29**	*e*PN	**Pg**	**17 26 54.1**	**+0.2**
CAVI	**Cavuskoy**	**1.23**	**29**	*e*Pn	**Pg**	**17 26 54.2**	**+0.2**
IZI	**Iznik**	**1.25**	**14**	*e*PN	**Pn**	**17 26 53.6**	**-0.4**
IZI	**Iznik**	**1.25**	**14**	*e*Pn	**Pn**	**17 26 53.7**	**-0.4**
MDNY	**Mudanya-Bursa**	**1.25**	**353**	*e*PN	**Pg**	**17 26 54.4**	**0.0**
MDNY	**Mudanya-Bursa**	**1.25**	**353**	*e*Pn	**Pg**	**17 26 54.4**	**0.0**
KCTX	**Karacabey (Bur**	**1.27**	**334**	*e*PN	**Pn**	**17 26 54.1**	**-0.1**
KCTX	**Karacabey (Bur**	**1.27**	**334**	*e*Pn	**Pn**	**17 26 54.1**	**-0.1**
SHUT	**Suhut-Afyon**	**1.29**	**116**	*e*PN	**Pn**	**17 26 54.7**	**+0.1**
SHUT	**Suhut-Afyon**	**1.29**	**116**	*e*Pn	**Pn**	**17 26 54.7**	**+0.1**
ADVT	**Abdulvahap**	**1.41**	**21**	*e*PN	**Pn**	**17 26 56.4**	**+0.3**
ADVT	**Abdulvahap**	**1.41**	**21**	*e*Pn	**Pn**	**17 26 56.4**	**+0.3**
GONE	**Gonen-Balikesi**	**1.41**	**311**	*e*PN	**Pb**	**17 26 56.8**	**0.0**
GONE	**Gonen-Balikesi**	**1.41**	**311**	*e*Pn	**Pb**	**17 26 56.8**	**0.0**
ESKT	**Eskisehir**	**1.44**	**73**	*i* P	Pn	17 26 49.4	-7.3
ESKT				*i* S	**Sn**	**17 27 15.3**	**-0.4**
SEYT	**Eskypehyr**	**1.44**	**73**	S	**Sn**	**17 27 15.3**	**-0.4**
ARMT	**Armutlu**	**1.45**	**354**	*e*PN	**Pn**	**17 26 57.0**	**+0.3**
ARMT	**Armutlu**	**1.45**	**354**	*e*Pn	**Pn**	**17 26 57.0**	**+0.3**
EDC	**Edincik**	**1.54**	**323**	*e*PN	**Pn**	**17 26 58.3**	**+0.4**
EDC	**Edincik**	**1.54**	**323**	*e*Pn	**Pn**	**17 26 58.3**	**+0.4**
GULT	**Gulveren**	**1.72**	**40**	*e*PN	**Pn**	**17 27 01.1**	**+0.7**
GULT	**Gulveren**	**1.72**	**40**	*e*Pn	**Pn**	**17 27 01.1**	**+0.7**
MRMT	**Marmara Adasi**	**1.86**	**323**	*e*PN	**Pn**	**17 27 03.5**	**+1.1**
MRMT	**Marmara Adasi**	**1.86**	**323**	*e*Pn	**Pn**	**17 27 03.5**	**+1.1**
KLYT	**Kilyos**	**2.13**	**359**	*e*PN	**Pn**	**17 27 06.5**	**+0.5**
KLYT	**Kilyos**	**2.13**	**359**	*e*Pn	**Pn**	**17 27 06.5**	**+0.5**
RKY	**Sarkoy-Tekirda**	**2.13**	**318**	*e*PN	**Pn**	**17 27 07.0**	**+0.8**
RKY	**Sarkoy-Tekirda**	**2.13**	**318**	*e*Pn	**Pn**	**17 27 07.0**	**+0.8**
CTKS	**Kestanelik-??a**	**2.15**	**349**	*e*PN	**Pn**	**17 27 07.0**	**+0.7**
CTKS	**Kestanelik-??a**	**2.15**	**349**	*e*Pn	**Pn**	**17 27 07.0**	**+0.7**
CTYL	**Yalikoy Yolu**	**2.42**	**346**	*e*PN	**Pn**	**17 27 11.3**	**+1.2**
CTYL	**Yalikoy Yolu**	**2.42**	**346**	*e*Pn	**Pn**	**17 27 11.3**	**+1.2**

NNC 13 17:28:08.5±1.5, 38.54N×73.06E, h114km±18km, mb2.7, mpv3.6, 4C-6D, Error ellipse: s-maj=11.5km s-min=10.5km az=89.0, Tajikistan-Xinjiang border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SFK	**Sufi-Kurgan**	**1.52**	**13**	⇓P	Pn	17 28 35.6	-0.3
	20nm,0.3s						
MNAS	**Manas**	**3.97**	**354**	⇓P	Pn	17 29 08.1	+0.6
	12nm,0.7s						
MNAS				⇓S	Sn	17 29 54.0	+0.6
	26nm,0.6s						
AAK	**Ala-Archa**	**4.24**	**15**	⇓P	Pn	17 29 11.9	+0.7
	10nm,0.6s						
AAK				⇑S	Sn	17 30 01.1	+1.2
	22nm,0.8s						
TKM2	**Tokmak 2**	**4.79**	**23**	⇑P	Pn	17 29 18.1	-0.5
	2.3nm,0.7s						
TKM2				⇑S	Sn	17 30 12.9	-0.2
	7.4nm,0.6s						
KK31	**Karatay Array**	**4.96**	**338**	⇓P	Pn	17 29 21.1	+0.5
	3.1nm,0.4s,baz=151,slow=12,SNR=98						
KK31				⇓S	Sn	17 30 17.2	+0.3
	16nm,0.4s,baz=164,slow=16,SNR=26						
AB31	**Akbulak array**	**14.27**	**323**	⇑P	Pn	17 31 23.5	-1.6
	0.5nm,0.5s,baz=137,slow=13,SNR=13						

*NIED **13** 17:34:00, 37.90N×143.90E, h11km, Mw3.9 Best double couple: M0 9.43000×10^14 NP1:φs=50.00000°, δ67.00000°, λ=-9.00000°. NP2:φs=144.00000°, δ82.00000°, λ=-157.00000°.*
*IDC **13** 17:34:01.4±0.9, 37.73N×144.30E, h0km, mb3.6/8, mb1 3.8/12, mb1mx3.7/48, mbtmp3.7/12, ML4.1/3, MS2.9/4, Ms1 2.9/4, ms1mx2.6/45, Error ellipse: s-maj=22.3km s-min=16.7km az=110.0*
*ISCJB **13** 17:34:03.6±0.6, 37.88N±0.04×144.02E±0.05, h33km, mb3.8/11, Error ellipse: s-maj=6.1km s-min=5.4km az=43.4*
*JMA **13** 17:34:04.8±0.3, 37.92N×143.93E, h46km, M4.1*
*NEIC **13** 17:34:06.5±0.9, 37.95N×144.10E, h35km, mb4.8/1, Error ellipse: s-maj=15.8km s-min=10.8km az=119.0*

ISC 13 17:34:07.0±0.9, 37.97N±0.06×144.02E±0.07, h35km, n44, σ2917/43, mb3.7/11, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**2.16**	**302**	P	**Pn**	**17 34 38.7**	**-1.7**
OFUJ				S	**Sn**	**17 35 04.2**	**-1.7**
JIO	**Ouri**	**2.16**	**284**	P	**Pn**	**17 34 38.7**	**-1.8**
JIO				*e*S	**Sn**	**17 35 03.1**	**-3.0**
JMK	**Ichinoseki**	**2.41**	**295**	P	**Pn**	**17 34 42.4**	**-1.5**
JMK				S	**Sn**	**17 35 10.5**	**-1.7**
JOM	**Ohasama**	**2.61**	**306**	P	**Pn**	**17 34 45.7**	**-1.0**
JOM				S	**Sn**	**17 35 16.1**	**-1.1**
JFT	**Otama**	**2.96**	**262**	P	**Pn**	**17 34 50.3**	**-1.1**
JFT				S	**Sn**	**17 35 23.4**	**-2.3**
JYK	**Kaneyama**	**3.03**	**289**	P	**Pn**	**17 34 51.5**	**-0.9**
JYK				S	**Sn**	**17 35 26.3**	**-1.2**
JANG	**Nango**	**3.10**	**322**	P	**Pn**	**17 34 52.5**	**-0.8**
ERM	**Erimo**	**4.10**	**351**	*e*Pn	**Pn**	**17 35 05.3**	**-1.7**
JOT	**Ohata**	**4.11**	**327**	S	**Sn**	**17 35 51.0**	**-3.1**
BSO1	**Boso 1**	**4.12**	**218**	S	**Sn**	**17 35 49.8**	**-3.8**
JRY	**Ryogami san**	**4.54**	**246**	P	**Pn**	**17 35 11.0**	**-2.2**
JRY				S	**Sn**	**17 35 58.9**	**-5.9**
JKB	**Kayabe**	**4.54**	**331**	S	**Sn**	**17 36 01.2**	**-3.5**
JCH	**Churui**	**4.67**	**354**	P	**Pn**	**17 35 13.0**	**-1.9**
JCH				S	**Sn**	**17 36 04.5**	**-3.4**
MJAR	**Matsushiro Arr**	**4.85**	**255**	Pn	**Pn**	**17 35 16.8**	**-0.7**
	8.5nm,0.3s,baz=86,slow=15,SNR=35						
MJAR				Sn	**Sn**	**17 36 12.0**	**-0.5**
	4.2nm,0.3s,baz=93,slow=28,SNR=3.6						
MAJO	**Matsushiro**	**4.85**	**255**	*e*Pn	**Pn**	**17 35 16.8**	**-0.7**
JHJ	**Hachijo jima 2**	**5.94**	**217**	Pn	Pn	17 35 28.6	-3.9
	38nm,0.3s,baz=2.2,slow=22,SNR=15						
JHJ				Sn	Sn	17 36 30.7	-8.6
	38nm,0.3s,baz=305,slow=23,SNR=8.9						
ASAJ	**Asahikawa**	**6.24**	**350**	Pn	**Pn**	**17 35 35.8**	**-0.7**
	15nm,0.3s,baz=196,slow=13,SNR=289						
ASAJ				Sn	**Sn**	**17 36 43.0**	**-3.5**
	2.5nm,0.3s,baz=61,slow=18,SNR=2.3						
ASAJ				LR	LR	17 38 43.1	
	comp=Z,102nm,18.3s,baz=119,slow=43						
ASAJ	**Asahikawa**	**6.24**	**350**	*e*Pn	**Pn**	**17 35 35.2**	**-1.3**
	15nm,0.3s						
ASAJ				Sn	**Sn**	**17 36 43.0**	**-3.5**
YSS	**Yuzh-Sakhalins**	**9.03**	**354**	*e*Pn	**Pn**	**17 36 13.3**	**-1.5**
	10nm,0.3s						
CBIJ	**Chichi jima**	**10.95**	**189**	Pn	Pn	17 36 33.6	-7.6
CBIJ				Sn	Sn	17 38 27.3	-15
JCJ	**Chichijima**	**10.95**	**189**	Pn	Pn	17 36 33.6	-7.6
	5.2nm,0.3s,baz=82,slow=22,SNR=7.1						
JCJ				Sn	Sn	17 38 27.3	-15
	3.9nm,0.3s,baz=287,slow=20,SNR=4.0						
USRK	**Ussuriysk Ar.**	**11.01**	**308**	Pn	**Pn**	**17 36 42.6**	**+0.7**
	0.2nm,0.3s,baz=102,slow=14,SNR=5.8						
JNU	**Nakatsue**	**11.75**	**250**	LR	LR	17 42 12.5	
	comp=Z,71nm,19.5s,baz=124,slow=41						
MDJ	**Mudanjiang**	**12.72**	**306**	*e*Pn	**Pn**	**17 37 05.7**	**+0.5**
KSRS	**Korea Array**	**12.73**	**271**	Pn	**Pn**	**17 37 07.0**	**+1.2**
	0.3nm,0.3s,baz=83,slow=13,SNR=6.9						
KSRS				LR	LR	17 41 24.6	
	comp=Z,40nm,18.2s,baz=85,slow=34						
KSAR	**Wonju Array Be**	**12.80**	**273**	Pn	**Pn**	**17 37 07.0**	**+0.7**
KLR	**Kul˙dur**	**14.32**	**326**	Pn	**Pn**	**17 37 27.1**	**-0.1**
	0.1nm,0.3s,baz

EAZ				AML	AML	17 40 45.4	
CAW	**Cannon Point**	**3.04**	**47**	PN	Pn	17 39 55.0	-1.7
CAW				AML	AML	17 41 05.7	
KIW	**Kapiti Island**	**3.14**	**43**	PN	Pn	17 39 57.0	-1.0
MTW	**Mount Morrison**	**3.25**	**52**	PN	Pn	17 39 58.0	-1.6
TUZ	**Tuapeka**	**3.26**	**212**	PN	Pn	17 39 57.6	-2.1
TUZ				AML	AML	17 40 59.3	
TUZ				AML	AML	17 41 03.1	
OGWZ	**Otaki Gorge**	**3.31**	**45**	PN	Pn	17 39 58.5	-1.8
MSZ	**Milford Sound**	**3.35**	**243**	PN	Pn	17 39 58.2	-2.7
MSZ				AML	AML	17 41 00.1	
MSZ				AML	AML	17 41 01.0	
MLZ	**Mavora Lakes**	**3.58**	**232**	PN	Pn	17 40 01.5	-2.7
MRZ	**Mangatainoka R**	**3.63**	**47**	PN	Pn	17 40 02.4	-2.4
SYZ	**Scrubby Hill**	**3.94**	**211**	PN	Pn	17 40 07.0	-2.0
WHZ	**Wether Hill Ro**	**4.00**	**226**	PN	Pn	17 40 06.3	-3.6

NIED ***13*** *17:41:00.37°.00N×140°.60E.0.5km.Mw3.6 Best double couple: M₀3.08000×10¹⁴ NP1:φ₀284.00000°,δ34.00000°, λ-99.00000°. NP2:φ₀115.00000°,δ56.00000°, λ-84.00000°.*

IDC ***13*** *17:41:09.9±1.2,37°.13N×140°.75E,h0km,mb3.6/7, mb1 3.7/10,mb1mx3.5/47,mbtmp3.7/10,ML3.1/3,MS2.5/1, Ms1 2.5/1,ms1mx2.1/56,Error ellipse: s-maj=32.2km s-min=18.0km az=72.0*

ISCJB ***13*** *17:41:11.5±0.5,37°.04N±0°.03×140°.70E±0°.05,h20km±4km, mb3.6/7,Error ellipse: s-maj=6.5km s-min=4.7km az=16.9*

JMA ***13*** *17:41:11.9,37°.05N×140°.61E,h5km±1km,M3.6*

JMA Felt II J1.

ISC 13 17:41:11.6±1.0,37°.06N±0°.03×140°.56E±0°.04,h8km±8km, n26,σ0ˢ65/29,mb3.6/7,5C-2D,Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.20**	**79**	⇑P	**Pg**	**17 41 15.4**	**-0.3**
ONAJ				S	**Sg**	**17 41 18.0**	**-0.4**
JFK	**Kawauchi**	**0.39**	**40**	⇑P	**Pg**	**17 41 19.4**	**0.0**
JFK				S	**Sg**	**17 41 24.8**	**+0.2**
JHO	**Hitachi**	**0.45**	**179**	⇑P	**Pg**	**17 41 20.4**	**0.0**
JHO				S	**Sg**	**17 41 26.7**	**+0.3**
JFT	**Otama**	**0.49**	**339**	⇑P	**Pb**	**17 41 22.2**	**-0.3**
JFT				S	**Sb**	**17 41 29.3**	**-0.5**
JSB	**Shiboa**	**0.52**	**260**	⇓P	**Pb**	**17 41 23.5**	**+0.5**
JSB				S	**Sb**	**17 41 31.3**	**+0.6**
JFY	**Yanaizu**	**0.76**	**297**	⇓P	**Pb**	**17 41 27.5**	**+0.3**
JFY				S	**Sb**	**17 41 37.9**	**+0.2**
JMM	**Marumori**	**0.82**	**13**	⇑P	**Pg**	**17 41 27.3**	**-0.2**
JMM				S	**Sg**	**17 41 38.6**	**+0.4**
MJAR	**Matsushiro Arr**	**1.96**	**255**	Pn	**Pb**	**17 41 47.1**	**-0.4**
	28nm,0.3s,baz=84,slow=17,SNR=142						
MJAR				Sn	**Sb**	**17 42 13.3**	**+1.2**
	41nm,0.3s,baz=102,slow=24,SNR=30						
MJAR				LR	LR	17 42 47.3	
	comp=Z,103nm,18.6s,baz=50,slow=46						
MAT	**Matsushiro**	**1.96**	**255**	P	**Pb**	**17 41 47.0**	**-0.5**
MAT				S	**Sg**	**17 42 14.3**	**-0.2**
JHJ	**Hachijo jima 2**	**3.99**	**189**	Pn	**Pn**	**17 42 13.5**	**+0.5**
	5.8nm,0.3s,baz=42,slow=18,SNR=3.6						
JHJ				Sn	**Sn**	**17 42 58.6**	**-1.4**
	9.4nm,0.3s,baz=264,slow=23,SNR=2.3						
ASAJ	**Asahikawa**	**7.21**	**12**	Pn	**Pn**	**17 42 58.8**	**+1.4**
	0.8nm,0.3s,baz=221,slow=13,SNR=10						
USRK	**Ussuriysk Ar.**	**9.65**	**320**	Pn	**Pn**	**17 43 29.3**	**-1.4**
	0.2nm,0.3s,baz=95,slow=16,SNR=3.5						
KSRS	**Korea Array**	**10.08**	**276**	Pn	Pn	17 43 44.1	+7.4
	0.1nm,0.3s,baz=96,slow=12,SNR=5.3						
SONM	**Songino Array**	**27.20**	**304**	P	**P**	**17 46 55.8**	**-0.1**
	0.6nm,0.7s,baz=110,slow=8.3,SNR=5.7						
H11N2	**WAKE ISLAND Hy**	**28.76**	**120**	T	T	18 16 59.1	
	baz=313,slow=75,SNR=29						
H11N1	**WAKE ISLAND Hy**	**28.76**	**120**	T	T	18 16 57.0	
	baz=313,slow=75,SNR=32						
H11N3	**WAKE ISLAND Hy**	**28.77**	**120**	T	T	18 17 00.8	
	baz=313,slow=75,SNR=22						
H11S1	**WAKE ISLAND Hy**	**29.45**	**122**	T	T	18 17 51.8	
	baz=314,slow=76,SNR=67						
H11S3	**WAKE ISLAND Hy**	**29.46**	**122**	T	T	18 17 51.8	
	baz=314,slow=76,SNR=52						
H11S2	**WAKE ISLAND Hy**	**29.47**	**122**	T	T	18 17 52.6	
	baz=314,slow=76,SNR=42						
ZALV	**Zalesovo Beam**	**41.39**	**312**	P	**P**	**17 48 58.2**	**+0.1**
	0.3nm,0.5s,baz=111,slow=7.9,SNR=2.8						
MKAR	**Makanchi Array**	**43.52**	**302**	P	**P**	**17 49 16.0**	**+0.3**
	0.4nm,0.6s,baz=91,slow=8.6,SNR=7.4						
WRA	**Warramunga Arr**	**57.00**	**187**	P	**P**	**17 50 57.6**	**-0.3**
	1.0nm,0.6s,baz=2.7,slow=7.3,SNR=25						
ASAR	**Alice Springs**	**60.73**	**187**	P	**P**	**17 51 23.9**	**+0.2**
	0.3nm,0.6s,baz=19,slow=6.1,SNR=10						
FINES	**FINESS Array B**	**68.47**	**332**	P	**P**	**17 52 14.0**	**+0.1**
	1.0nm,0.6s,baz=36,slow=7.1,SNR=4.3						
AKASG	**Malin Array Be**	**73.85**	**322**	P	**P**	**17 52 46.4**	**-0.3**
	0.3nm,0.3s,baz=45,slow=6.0,SNR=5.1						

ISCJB ***13*** *17:53:43.6±0.4,32°.13N±0°.02×115°.13W±0°.04,h25km±4km, Error ellipse: s-maj=5.5km s-min=3.7km az=179.6*

NEIC ***13*** *17:53:43.8,32°.07N×115°.17W,h10km,ML3.0(PAS),After PAS.*

ECX ***13*** *17:53:45.2±0.5,32°.13N×115°.20W,h8km,MD2.9,ML3.1*

MEX ***13*** *17:53:46.7±0.5,32°.16N×115°.18W,h16km±6km,MD3.7*

ISC 13 17:53:43.4±1.0,32°.13N±0°.02×115°.15W±0°.03,h27km±8km, n30,σ0ˢ62/48,2C-6D,California-Baja California border region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
MBIG	**Mexicali**	**0.28**	**352**	*e*P	**Pb**	**17 53 50.5**	**+0.3**
MBIG	**Mexicali**	**0.28**	**352**	*e*P	**Pb**	**17 53 50.5**	**+0.3**
MBIG				*e*S	**Sb**	**17 53 55.4**	**+0.4**
CPBX	**Cerro Prieto**	**0.32**	**336**	*e*P	**Pb**	**17 53 51.0**	**+0.2**
CPBX				*e*S	**Sb**	**17 53 55.5**	**-0.3**
CPBX				⇓*e*		17 53 58.9	
CPBX				AML	AML	17 53 58.9	
	comp=E,9μm,0.3s						
CPBX				AML	AML	17 53 58.9	
	comp=N,5μm,0.2s						
CPBX				⇓*e*		17 53 58.9	
CPBX	**Cerro Prieto**	**0.32**	**336**	*i* P	**Pb**	**17 53 50.9**	**+0.2**
CPBX				*i* S	**Sb**	**17 53 54.9**	**-1.0**
EMSC	**East Mesa**	**0.62**	**13**	⇓*i*P	**Pn**	**17 53 56.4**	**-0.1**
ECBX	**El Chinero**	**0.66**	**173**	*e*P	**Pb**	**17 53 55.0**	**-1.3**
ECBX				*e*S	**Sb**	**17 54 04.4**	**-0.7**
ECBX				AML	AML	17 54 05.8	
	comp=E,792nm,0.4s						
ECBX				⇓*e*		17 54 05.8	
YMD	**Yuma Desert**	**0.67**	**50**	⇓*i*P	**Pn**	**17 53 57.0**	**0.0**
SGL	**Mount Signal**	**0.71**	**317**	⇓*i*P	**Pn**	**17 53 57.6**	**-0.1**
COA	**Coachella**	**0.73**	**2**	*e*P	**Pb**	**17 53 57.7**	**+0.1**
YUH	**Yuha Desert**	**0.83**	**309**	⇓*i*P	**Pb**	**17 53 59.0**	**-0.2**
RMX	**La Rumorosa**	**0.92**	**301**	*e*P	**Pn**	**17 54 00.2**	**-0.4**
RMX				*e*S	**Sb**	**17 54 12.8**	**+0.2**
IBP	**Imperial Bould**	**0.96**	**304**	S	**Sn**	**17 54 14.4**	**+0.5**
	baz=127						
GLA	**Glamis**	**0.96**	**16**	P	**Pn**	**17 54 00.9**	**-0.3**
	baz=196						
GLA				S	**Sn**	**17 54 14.4**	**+0.4**
	baz=196						
SPIG	**San Pedro Mart**	**1.11**	**194**	*e*P	**Pb**	**17 54 04.3**	**+0.1**
SPIG	**San Pedro Mart**	**1.11**	**194**	*e*P	**Pb**	**17 54 04.6**	**+0.4**
SPIG				*i* S	**Sn**	**17 54 18.1**	**+0.1**
SPIG	**San Pedro Mart**	**1.11**	**194**	*e*P	**Pb**	**17 54 04.6**	**+0.4**
SPIG				*i* S	**Sn**	**17 54 18.1**	**+0.1**
SPX	**San Pedro Mart**	**1.11**	**194**	*e*P	**Pb**	**17 54 04.5**	**+0.3**
SPX				*e*S	**Sb**	**17 54 19.4**	**+1.0**
SPX	**San Pedro Mart**	**1.11**	**194**	*e*P	**Pb**	**17 54 04.5**	**+0.3**
SPX				*i* S	**Sn**	**17 54 17.6**	**-0.5**
ZAX	**El Zacaton**	**1.14**	**238**	*e*P	**Pb**	**17 54 04.6**	**+0.2**
ZAX				*e*S	**Sb**	**17 54 19.6**	**+0.8**
ZAX				⇑*e*		17 54 22.4	
CBX	**Cerro Bola**	**1.30**	**279**	*e*P	**Pb**	**17 54 06.8**	**-0.4**
CBX				*e*S	**Sb**	**17 54 23.9**	**+0.5**
CBX	**Cerro Bola**	**1.30**	**279**	*e*P	**Pn**	**17 54 06.3**	**+0.5**
CBX				*e*S	**Sn**	**17 54 20.8**	**-1.5**
CBX	**Cerro Bola**	**1.30**	**279**	*e*P	**Pn**	**17 54 06.3**	**+0.5**
CBX				*e*S	**Sn**	**17 54 20.8**	**-1.5**
MONP2	**Monument Peak**	**1.32**	**306**	P	**Pb**	**17 54 08.1**	**+0.5**
	baz=128						
MONP2				S	**Sb**	**17 54 24.6**	**+0.4**
	baz=128						
ECNX	**Esteban Cantu**	**1.32**	**249**	*e*P	**Pb**	**17 54 07.7**	**+0.2**
ECNX				*e*S	**Sb**	**17 54 24.2**	**+0.2**
TJIG	**Tijuana**	**1.33**	**284**	*i* P	**Pn**	**17 54 06.3**	**+0.2**
TJIG				*i* S	**Sn**	**17 54 21.6**	**-1.3**
BAR	**Barrett**	**1.40**	**294**	*e*P	**Pb**	**17 54 08.2**	**-0.6**
BC3	**Big Chuckawall**	**1.54**	**351**	P	**Pn**	**17 54 09.4**	**+0.2**
	baz=171						
BC3				S	**Sn**	**17 54 28.2**	**-0.2**
	baz=171						
109C	**Camp Elliot, M**	**1.82**	**295**	S	**Sb**	**17 54 39.5**	**+1.2**
	baz=116						
PFO	**Pinyon Flats O**	**1.84**	**324**	P	**Pn**	**17 54 13.5**	**+0.2**
	baz=144						
214A	**Organ Pipe Nat**	**1.99**	**94**	P	**Pn**	**17 54 15.7**	**+0.4**
	baz=274						

IDC ***13*** *17:54:30.8±1.9,33°.69S×72°.20W,h0km,mb3.9/1, mb1 3.7/3,mb1mx3.5/27,mbtmp3.6/3,ML3.7/2,MS3.2/4, Ms1 3.2/4,ms1mx2.9/27,Error ellipse: s-maj=95.3km s-min=36.5km az=95.0*

ISC 13 17:54:30.5±1.3,33°.7S±0°.1×73°.0W±0°.1,h6km,n13, σ1ˢ53/12,3D,Off coast of central Chile

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
ROC1	**El Roble**	**1.82**	**68**	⇓*i*P	**Pg**	**17 55 07.9**	**+2.5**
AUSP	**Uspallata**	**3.38**	**66**	*i* P	**Pn**	**17 55 23.3**	**-0.9**
AUSP				⇓*i*S	**Sg**	**17 56 19.0**	**-0.2**
ARCO	**CERRO ARCO**	**3.53**	**77**	*i* P	**Pn**	**17 55 24.6**	**-1.4**
ARCO				*i* S	**Sg**	**17 56 23.5**	**-0.3**
ARCO				IAML		17 56 29.0	
	comp=Z,196nm,0.5s						
AAGR	**Agrelo**	**3.56**	**82**	*i* P	**Pn**	**17 55 25.2**	**-1.2**
ASAL	**Salagasta**	**3.67**	**74**	*i* P	**Pn**	**17 55 26.5**	**-1.5**
PLCA	**Paso Flores**	**7.31**	**165**	Pn	**Pn**	**17 56 17.6**	**-0.4**
	comp=Z,0.3nm,0.3s,baz=359,slow=10,SNR=7.0						
PLCA				Lg	Lg	17 58 06.2	
	baz=0.0,slow=20,SNR=1.7						
PLCA				LR	LR	17 59 14.0	
	comp=Z,93nm,20.3s,baz=342,slow=40						
CPUP	**Villa Florida**	**15.43**	**66**	LR	LR	18 04 34.9	
	comp=Z,78nm,19.1s,baz=242,slow=41						
LPAZ	**La Paz**	**17.87**	**15**	Pn	**Pn**	**17 58 40.8**	**+0.4**
	comp=Z,0.1nm,0.3s,baz=182,slow=13,SNR=4.2						
BDFB	**Brasilia**	**28.84**	**58**	LR	LR	18 12 43.3	
	comp=Z,81nm,20.3s,baz=230,slow=39						
PDAR	**Pinedale Array**	**83.11**	**334**	LR	LR	18 39 51.3	
	comp=Z,19nm,21.9s,baz=10,slow=33						
TORD	**Torodi Ar. Bea**	**84.87**	**71**	P	**P**	**18 07 04.2**	**-2.4**
	comp=Z,0.7nm,0.7s,baz=241,slow=4.8,SNR=3.6						
WRA	**Warramunga Arr**	**120.64**	**210**	PKP	**PKPdf**	**18 13 25.2**	**+1.3**
	comp=Z,0.2nm,0.8s,baz=153,slow=1.7,SNR=3.1						
ZALV	**Zalesovo Beam**	**154.38**	**31**	PKPbc	**PKPbc**	**18 14 32.1**	**+0.9**
	comp=Z,0.2nm,0.3s,baz=298,slow=3.1,SNR=2.5						

IDC 13 17:54:49.5±1.8,33°.73S×72°.22W,h0km,mb4.1/1, mb1 4.0/3,mb1mx3.7/27,mbtmp3.9/3,ML4.0/2,Error ellipse: s-maj=86.9km s-min=35.7km az=96.0,Off coast of central Chile

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
PLCA	**Paso Flores**	**7.12**	**170**	Pn	Pn	17 56 35.9	+0.9
	0.9nm,0.3s,baz=358,slow=12,SNR=9.2						
PLCA				Lg	Lg	17 58 25.8	
	0.2nm,0.3s,baz=297,slow=19,SNR=2.2						
LPAZ	**La Paz**	**17.75**	**13**	Pn	P	17 58 60.0	+0.2
	0.1nm,0.3s,baz=194,slow=8.7,SNR=6.9						
TORD	**Torodi Ar. Bea**	**84.26**	**70**	P	P	18 07 23.1	-0.4
	1.1nm,0.7s,baz=249,slow=3.9,SNR=6.0						
WRA	**Warramunga Arr**	**120.92**	**209**	PKP	PKPdf	18 13 43.8	-0.6
	0.3nm,0.9s,baz=159,slow=1.6,SNR=5.0						
ZALV	**Zalesovo Beam**	**154.08**	**32**	PKPbc	PKPbc	18 14 51.0	+0.3
	0.6nm,0.5s,baz=316,slow=3.8,SNR=5.1						

ISCJB ***13*** *18:02:32.3±1.0,33°.53S±0°.08×72°.99W±0°.08,h6km, mb4.0/2,Error ellipse: s-maj=12.7km s-min=9.0km az=151.2*

IDC ***13*** *18:02:35.6±1.4,33°.46S×72°.31W,h0km,mb3.9/2, mb1 4.1/4,mb1mx3.7/43,mbtmp4.0/4,ML4.2/2,Error ellipse: s-maj=75.0km s-min=27.0km az=100.0*

NEIC ***13*** *18:02:39.0±3.8,33°.45S×72°.47W,h24km±25km,mb4.1/1, Error ellipse: s-maj=28.7km s-min=10.1km az=91.0*

ISC 13 18:02:35.6±1.0,33°.5S±0°.1×72°.73W±0°.09,h6km,n20, σ1ˢ64/24,Off coast of central Chile

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
AUSP	**Uspallata**	**3.08**	**67**	*i* P	**Pn**	**18 03 25.7**	**+0.6**
AUSP				*i* S	**Sb**	**18 04 05.9**	**-3.0**
ARCO	**CERRO ARCO**	**3.25**	**80**	*i* P	**Pn**	**18 03 28.3**	**+1.0**
ARCO				*i* S	**Sb**	**18 04 10.9**	**-2.7**
ARCO				IAML		18 04 12.0	
	comp=Z,406nm,0.5s						
AAGR	**Agrelo**	**3.29**	**84**	*i* P	**Pn**	**18 03 29.0**	**+1.2**
RTLS	**Leoncito**	**3.35**	**61**	*i* P	**Pn**	**18 03 29.3**	**+0.6**
RTLS				*i* S	**Sn**	**18 04 12.3**	**+3.3**
ASAL	**Salagasta**	**3.39**	**76**	*i* P	**Pn**	**18 03 29.5**	**+0.4**
ASAL				*i* S	**Sn**	**18 04 13.4**	**+3.7**
RTCV	**Cerro Valdivia**	**3.88**	**67**	*i* P	**Pn**	**18 03 36.3**	**+0.4**
PLCA	**Paso Flores**	**7.44**	**167**	Pn	**Pn**	**18 04 25.8**	**+1.0**
	comp=Z,1.3nm,0.3s,baz=352,slow=13,SNR=18						
PLCA				Lg	Lg	18 06 25.0	
	comp=Z,0.1nm,0.3s,baz=287,slow=23,SNR=2.6						
TRQA	**Tornquist**	**9.85**	**121**	*e*Pn	**Pn**	**18 04 57.4**	**-0.4**
LPAZ	**La Paz**	**17.62**	**15**	P	**P**	**18 06 42.6**	**-0.8**
	comp=Z,0.2nm,0.3s,baz=194,slow=9.9,SNR=12						
SIV	**San Ignacio**	**20.35**	**34**	P	**P**	**18 07 11.4**	**-1.4**
	comp=Z,3.1nm,0.7s,baz=224,slow=12,SNR=9.0						
SAML	**Samuel**	**25.96**	**22**	*e*P	**P**	**18 08 09.2**	**+0.2**
	comp=Z,3.9nm,0.8s						
TORD	**Torodi Ar. Bea**	**84.58**	**70**	P	**P**	**18 15 08.8**	**-1.4**
	comp=Z,0.9nm,0.7s,baz=251,slow=5.0,SNR=8.0						
WRA	**Warramunga Arr**	**120.93**	**210**	PKP	**PKPdf**	**18 21 30.0**	**+0.5**
	comp=Z,0.3nm,0.8s,baz=158,slow=1.7,SNR=4.2						
BVAR	**Borovoye Array**	**147.29**	**42**	PKPbc	**PKPbc**	**18 22 18.1**	**-1.4**
	comp=Z,1.1nm,0.6s,baz=287,slow=2.2,SNR=8.2						
AAK	**Ala-Archa**	**152.76**	**61**	PKPbc	**PKPbc**	**18 22 34.4**	**+1.0**
	comp=Z,1.3nm,0.7s,baz=194,slow=4.2,SNR=8.4						
KURBB	**Kurchatov Arra**	**152.88**	**42**	PKPbc	**PKPbc**	**18 22 34.1**	**+0.9**
	comp=Z,0.2nm,0.2s,baz=301,slow=3.2,SNR=6.5						
KURK	**Kurchatov**	**152.89**	**42**	PKPbc	**PKPbc**	**18 22 34.1**	**+0.9**
ZALV	**Zalesovo Beam**	**154.09**	**31**	PKPbc	**PKPbc**	**18 22 36.5**	**+0.8**
	comp=Z,1.3nm,0.5s,baz=301,slow=3.3,SNR=9.0						
MKAR	**Makanchi Array**	**156.85**	**48**	PKPab	**PKPab**	**18 23 01.2**	**-0.2**
	comp=Z,1.0nm,0.6s,baz=298,slow=4.5,SNR=15						
CMAR	**Chiang Mai Arr**	**163.28**	**151**	PKPab	**PKPab**	**18 23 29.9**	**-0.1**
	comp=Z,0.3nm,0.6s,baz=204,slow=4.0,SNR=4.6						

ISK ***13*** *18:09:41.3,40°.66N×35°.54E,h9km,MD2.8*

CSEM ***13*** *18:09:42.0±0.1,40°.64N×35°.53E,h5km,MD2.7,Error ellipse: s-maj=3.3km s-min=2.5km az=112.0*

DDA ***13*** *18:09:42.0,40°.65N×35°.54E,h12km,Md2.7*

ISC 13 18:09:41.8±1.1,40°.65N±0°.02×35°.55E±0°.02,h6km±10km, n41,σ0ˢ58/60,Turkey

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
HAVZ	**Havza**	**0.45**	**16**	*i* P	**Pg**	**18 09 50.7**	**+0.2**
HAVZ				*i* S	**Sb**	**18 09 57.9**	**-1.2**
HAVZ	**Havza**	**0.45**	**16**	P	**Pg**	**18 09 50.7**	**+0.2**
HAVZ				S	**Sb**	**18 09 57.9**	**-1.2**
KVT	**Kavak**	**0.57**	**41**	*e*PG	**Pg**	**18 09 53.0**	**+0.1**
KVT				*e*SG	**Sg**	**18 10 00.9**	**+0.6**
KVT	**Kavak**	**0.57**	**41**	*e*Pg	**Pg**	**18 09 53.0**	**+0.1**
KVT				*e*Sg	**Sg**	**18 10 01.0**	**+0.6**
COAL	**Corum-Alaca**	**0.58**	**228**	*i* P	**Pg**	**18 09 52.6**	**-0.4**
COAL				*i* S	**Sg**	**18 10 00.6**	**0.0**
COAL	**Corum-Alaca**	**0.58**	**228**	P	**Pg**	**18 09 52.6**	**-0.4**
COAL				S	**Sg**	**18 10 00.6**	**0.0**
TOKT	**Tokat**	**0.82**	**113**	*e*PG	**Pb**	**18 09 58.3**	**-0.3**
TOKT	**Tokat**	**0.82**	**113**	*e*Pg	**Pb**	**18 09 58.3**	**-0.3**
CORM	**Corum**	**0.84**	**237**	*e*PG	**Pg**	**18 09 58.0**	**0.0**
CORM				*e*SG	**Sb**	**18 10 10.4**	**-0.1**
CORM	**Corum**	**0.84**	**237**	*e*Pg	**Pg**	**18 09 58.0**	**0.0**
CORM				*e*Sg	**Sb**	**18 10 10.4**	**-0.1**
SAMS	**Samsun-Alacam**	**0.86**	**34**	*i* P	**Pb**	**18 09 58.9**	**-0.3**
SAMS				*i* S	**Sb**	**18 10 11.3**	**+0.3**
SAMS	**Samsun-Alacam**	**0.86**	**34**	P	**Pb**	**18 09 58.9**	**-0.3**
SAMS				S	**Sb**	**18 10 11.3**	**+0.3**
BOYT	**Boyabat**	**0.92**	**328**	*i* P	**Pg**	**18 09 59.6**	**+0.2**
BOYT				*i* S	**Sb**	**18 10 12.2**	**-0.4**
BOYT	**Boyabat**	**0.92**	**328**	P	**Pg**	**18 09 59.6**	**+0.2**
BOYT				S	**Sb**	**18 10 12.2**	**-0.4**
YOZ	**Yozgat**	**1.02**	**190**	*e*PG	**Pg**	**18 10 01.2**	**-0.2**
YOZ	**Yozgat**	**1.02**	**190**	*e*Pg	**Pg**	**18 10 01.2**	**-0.2**
DIKM	**Dikmen**	**1.03**	**348**	*e*PG	**Pg**	**18 10 01.1**	**-0.4**
DIKM	**Dikmen**	**1.03**	**348**	*e*Pg	**Pg**	**18 10 01.1**	**-0.4**
TOS	**Tosya**	**1.22**	**289**	*e*PN	**Pg**	**18 10 05.2**	**-0.1**
TOS	**Tosya**	**1.22**	**289**	*e*Pn	**Pg**	**18 10 05.2**	**-0.1**
SVSK	**Karacayir**	**1.32**	**123**	*e*PN	**Pn**	**18 10 06.7**	**-0.1**
SVSK	**Karacayir**	**1.32**	**123**	*e*Pn	**Pn**	**18 10 06.7**	**-0.1**
CUSAR	**Sarkisla-SIVAS**	**1.34**	**156**	*i* P	**Pn**	**18 10 06.9**	**-0.2**
CUSAR				*i* S	**Sn**	**18 10 26.5**	**+1.2**
CUSAR	**Sarkisla-SIVAS**	**1.34**	**156**	P	**Pn**	**18 10 06.9**	**-0.2**
CUSAR				S	**Sn**	**18 10 26.5**	**+1.2**
CDAG	**Cicekdag**	**1.36**	**222**	*i* P	**Pb**	**18 10 07.9**	**+0.1**
CDAG				*i* S	**Sn**	**18 10 27.8**	**+1.9**
CDAG	**Cicekdag**	**1.36**	**222**	P	**Pb**	**18 10 07.9**	**+0.1**
SNOP	**Sinop**	**1.40**	**349**	*e*PN	**Pn**	**18 10 07.3**	**-0.5**
SNOP	**Sinop**	**1.40**	**349**	*e*Pn	**Pn**	**18 10 07.3**	**-0.5**
ILGA	**Ilgaz**	**1.45**	**287**	*i* P	**Pg**	**18 10 10.0**	**+0.4**
ILGA				*i* S	**Sg**	**18 10 28.5**	**+0.1**
ILGA	**Ilgaz**	**1.45**	**287**	P	**Pg**	**18 10 10.0**	**+0.4**
ILGA				S	**Sg**	**18 10 28.5**	**+0.1**
BZK	**Bozkurt**	**1.76**	**319**	*e*PN	**Pn**	**18 10 13.1**	**+0.3**
BZK	**Bozkurt**	**1.76**	**319**	*e*Pn	**Pn**	**18 10 13.1**	**+0.3**
KAMT	**Kaman**	**1.90**	**229**	*e*PN	**Pn**	**18 10 14.6**	**-0.3**
KAMT	**Kaman**	**1.90**	**229**	*e*Pn	**Pn**	**18 10 14.6**	**-0.3**
AVNS	**Nevsehir-Avano**	**1.92**	**197**	*i* P	**Sn**	**18 10 37.5**	**-2.0**
AVNS				*i* S	**Sg**	**18 10 44.2**	**+0.8**
CUKAN	**kangal_SIVAS**	**1.98**	**131**	*i* P	**Pb**	**18 10 18.0**	**-0.4**
CUKAN				*i* S	**Sg**	**18 10 45.5**	**0.0**
CUKAN	**kangal_SIVAS**	**1.98**	**131**	P	**Pb**	**18 10 18.0**	**-0.4**
AFSR	**Afar-Bala (A**	**2.25**	**239**	*e*PN	**Pn**	**18 10 19.4**	**-0.3**
AFSR	**Afar-Bala (A**	**2.25**	**239**	*e*Pn	**Pn**	**18 10 19.4**	**-0.3**
GULA	**Gulagac**	**2.51**	**204**	*e*PN	**Pn**	**18 10 23.3**	**0.0**
GULA	**Gulagac**	**2.51**	**204**	*e*Pn	**Pn**	**18 10 23.3**	**0.0**

ISCJB ***13*** *18:10:56.6±0.8,36°.99N±0°.03×140°.83E±0°.07,h16km±6km, mb3.5/2,Error ellipse: s-maj=9.7km s-min=4.9km az=17.7*

IDC ***13*** *18:10:56.4±2.8,36°.86N×140°.79E,h0km,mb3.3/2, mb1 3.5/3,mb1mx3.0/76,mbtmp3.2/3,ML2.8/1,Error ellipse: s-maj=50.6km s-min=29.7km az=29.0*

JMA ***13*** *18:10:57.5,37°.02N×140°.70E,h9km±1km,M3.1*

JMA Felt I J1.

ISC 13 18:10:57.3±0.9,37°.02N±0°.03×140°.73E±0°.05,h13km±7km, n11,σ0ˢ48/20,Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.10**	**34**	P	**Pg**	**18 11 00.5**	**+0.1**
ONAJ				S	**Sg**	**18 11 02.5**	**-0.1**
JFK	**Kawauchi**	**0.37**	**19**	P	**Pg**	**18 11 04.9**	**+0.1**
JFK				S	**Sg**	**18 11 10.2**	**+0.4**
JHO	**Hitachi**	**0.42**	**197**	P	**Pg**	**18 11 05.7**	**0.0**
JHO				S	**Sg**	**18 11 11.4**	**0.0**
JFT	**Otama**	**0.59**	**328**	P	**Pg**	**18 11 08.7**	**-0.2**
JFT				S	**Sg**	**18 11 16.5**	**-0.2**
JSB	**Shiboa**	**0.65**	**266**	P	**Pb**	**18 11 10.2**	**-0.3**
JSB				S	**Sg**	**18 11 18.4**	**-0.1**
JMM	**Marumori**	**0.85**	**4**	P	**Pb**	**18 11 13.2**	**-0.8**
JMM				S	**Sg**	**18 11 24.8**	**-0.1**
JYT	**Yasato**	**0.90**	**209**	P	**Pb**	**18 11 14.2**	**-0.5**
JYT				S	**Sb**	**18 11 26.0

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHPI	**Pichilemu**	**0.60**	**171**	*i* P	**Pn**	**18 19 33.2**	**-0.7**
CHPI				*i* S	**Sn**	**18 19 42.2**	**-1.7**
RCDM	**Rinconada Maip**	**1.13**	**75**	*i* P	**Pg**	**18 19 40.5**	**-0.3**
RCDM				*i* S	**Sb**	**18 19 54.1**	**-1.7**
ROCH	**El Roble**	**1.23**	**49**	*i* P	**Pg**	**18 19 43.4**	**+0.6**
ROCH				*i* S	**Sn**	**18 19 59.5**	**-0.3**
PEL	**Peldehue**	**1.36**	**62**	*i* P	**Pg**	**18 19 44.4**	**-0.7**
PEL				*i* S	**Sb**	**18 20 01.6**	**-0.7**
NICH	**Los Niches**	**1.41**	**149**	*i* P	**Pg**	**18 19 45.7**	**-0.4**
NICH				*i* S	**Sb**	**18 20 04.1**	**+0.3**
NICH	comp=N,7μm,0.4s			IAML		18 20 14.3	
TALC	**Talca**	**1.65**	**166**	*i* P	**Pg**	**18 19 50.5**	**-0.2**
TALC				*i* S	**Sg**	**18 20 12.2**	**+0.1**
AUSP	**Uspallata**	**2.77**	**56**	*i* P	**Pb**	**18 20 07.9**	**-1.1**
AUSP				*i* S	**Sg**	**18 20 48.2**	**+0.1**
CCHI	**Chillan**	**2.80**	**179**	*i* P	**Pb**	**18 20 08.6**	**-0.8**
CCHI				*i* S	**Sb**	**18 20 44.1**	**+0.2**
CCHI	comp=N,1μm,0.5s			IAML		18 20 58.0	
ARCO	**CERRO ARCO**	**2.83**	**71**	*i* P	**Pb**	**18 20 09.5**	**-0.4**
ARCO				*i* S	**Sg**	**18 20 51.2**	**+1.4**
ARCO	comp=Z,173nm,0.4s			IAML		18 20 55.3	
AAGR	**Agrelo**	**2.84**	**76**	*i* P	**Pb**	**18 20 10.0**	**0.0**
AAGR				*i* S	**Sg**	**18 20 53.0**	**+2.9**
ASAL	**Salagasta**	**3.00**	**67**	*i* P	**Pb**	**18 20 11.4**	**-1.3**
ASAL				*i* S	**Sg**	**18 20 54.8**	**-0.6**
RTLS	**Leoncito**	**3.10**	**51**	*i* P	**Pb**	**18 20 11.8**	**-2.7**
RTLS				*i* S	**Sb**	**18 20 54.6**	**+2.1**
RTCV	**Cerro Valdivia**	**3.57**	**58**	*i* P	Pb	18 20 18.1	-4.3
PLCA	**Paso Flores**	**7.04**	**170**	Pn	**Pn**	**18 21 04.7**	**+2.2**
PLCA	comp=Z,0.9nm,0.3s,baz=354,slow=12,SNR=16			Lg	Lg	18 22 53.2	
CPUP	**Villa Florida**	**14.79**	**64**	LR	LR	18 28 12.6	
LPAZ	**La Paz**	**17.80**	**13**	P	**P**	**18 23 27.3**	**-1.3**
TXAR	**Lajitas Array**	**69.52**	**331**	P	**P**	**18 30 29.5**	**+1.2**
TORD	**Torodi Ar. Bea**	**84.20**	**70**	P	**P**	**18 31 51.5**	**+0.2**
NEW	**Newport**	**91.06**	**332**	LR	LR	19 07 14.3	
KURBB	**Kurchatov Arra**	**152.76**	**43**	PKPbc	**PKPbc**	**18 39 16.2**	**+0.1**
ZALV	**Zalesovo Beam**	**154.08**	**32**	PKPbc	**PKPbc**	**18 39 19.3**	**+0.5**

comp=Z,0.2nm,0.5s,baz=307,slow=2.9,SNR=4.3

IDC ***13*** *18:21:28.9±0.8, 10°.47N×125°.12E, h0km, mb3.8/12, mb1 3.9/12, mb1mx3.8/57, mbtmp3.8/12, MS3.3/8, Ms1 3.3/8, ms1mx2.9/46, Error ellipse: s-maj=43.7km s-min=15.4km az=75.0*

MAN ***13*** *18:21:29, 10°.52N×125°.06E, h9km, mb4.5, ML3.3, MS3.2*

NEIC ***13*** *18:21:34.2±0.5, 10°.46N×125°.18E, h35km, mb4.4/2, Error ellipse: s-maj=33.9km s-min=11.0km az=73.0*

ISC 13 18:21:29.2±1.4, 10°.43N±0°.03×125°.11E±0°.05, h1km±9km, n33, σ1s14/32, mb4.0/14, MS3.5/5, 4C-2D, Leyte

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PLP	**Palo**	**0.74**	**350**	*e*P	**Pg**	**18 21 43.5**	**+0.1**
PLP				*i* S	**Sg**	**18 21 54.1**	**+1.1**
SCPH	**Surigao**	**0.75**	**150**	*e*P	**Pb**	**18 21 45.4**	**+0.4**
SCPH				*e*S	**Sn**	**18 21 58.9**	**0.0**
LLP	**Lapu-Lapu**	**1.13**	**264**	*e*P	**Pg**	**18 21 49.6**	**-1.2**
LLP				*e*S	**Sb**	**18 22 06.3**	**-0.3**
TBP	**Tagbilaran**	**1.43**	**239**	*i*P	**Pg**	**18 21 58.9**	**+2.3**
CGP	**Cagayan de Oro**	**2.01**	**192**	*e*P	**Pb**	**18 22 04.9**	**-1.5**
CGP				*e*S	**Sn**	**18 22 29.8**	**-0.1**
BUKP	**Musuan**	**2.54**	**181**	*e*P	**Pb**	**18 22 13.8**	**-1.7**
BUKP				*e*S	**Sg**	**18 22 49.5**	**-1.3**
BIPH	**Bislig**	**2.56**	**151**	*i*P	**Pb**	**18 22 15.0**	**-0.8**
BIPH				*i* S	**Sb**	**18 22 47.4**	**-0.4**
RCP	**Roxas**	**2.57**	**296**	*e*P	**Pn**	**18 22 12.6**	**+0.6**
PAGZ	**Pagadian**	**3.08**	**214**	*e*P	**Pn**	**18 22 21.4**	**+2.4**
CTBH	**Cotabato--PC H**	**3.30**	**195**	*e*P	**Pb**	**18 22 27.7**	**-0.9**
DAV	**Davao City (W)**	**3.37**	**172**	LR	LR	18 24 18.3	
comp=Z,997nm,19.3s,baz=360,slow=50							
MATI	**Mati**	**3.65**	**162**	*e*P	**Pb**	**18 22 32.5**	**-2.0**
KAPI	**Kappang**	**16.24**	**199**	LR	LR	18 31 56.9	
comp=Z,59nm,20.5s,baz=18,slow=39							
GUMO	**Guam**	**19.58**	**79**	LR	LR	18 33 36.2	
comp=Z,17nm,19.6s,baz=230,slow=37							
JNU	**Nakatsue**	**23.20**	**12**	LR	LR	18 35 10.1	
comp=Z,42nm,21.7s,baz=151,slow=36							
KSAR	**Wonju Array Be**	**27.01**	**5**	P	**P**	**18 27 11.8**	**-0.9**
KSRS	**Korea Array**	**27.02**	**5**	P	**P**	**18 27 11.8**	**-1.0**
1.1nm,0.7s,baz=184,slow=9.3,SNR=3.3							
MJAR	**Matsushiro Arr**	**28.57**	**22**	LR	LR	18 39 18.9	
comp=Z,30nm,19.0s,baz=185,slow=38							
WRA	**Warramunga Arr**	**31.52**	**163**	P	**P**	**18 27 51.9**	**-1.2**
1.1nm,0.9s,baz=345,slow=9.1,SNR=4.6							
USRK	**Ussuriysk Ar.**	**34.17**	**9**	P	**P**	**18 28 15.7**	**-0.1**
1.7nm,0.7s,baz=188,slow=9.4,SNR=4.2							
ASAR	**Alice Springs**	**34.97**	**166**	P	**P**	**18 28 22.9**	**-0.1**
0.9nm,0.7s,baz=344,slow=7.6,SNR=26							
SONM	**Songino Array**	**40.48**	**341**	P	**P**	**18 29 10.4**	**+0.8**
0.5nm,0.7s,baz=161,slow=6.6,SNR=4.7							
STKA	**Stephens Creek**	**44.93**	**160**	P	**P**	**18 29 47.5**	**+1.8**
1.9nm,0.9s,baz=329,slow=9.6,SNR=3.4							
STKA				LR	LR	18 53 19.9	
comp=Z,34nm,19.6s,baz=203,slow=42							
MKAR	**Makanchi Array**	**51.21**	**323**	P	**P**	**18 30 34.2**	**-0.1**
1.5nm,0.9s,baz=121,slow=7.6,SNR=10							
ZALV	**Zalesovo Beam**	**53.94**	**332**	P	**P**	**18 30 53.3**	**-1.0**
1.6nm,0.8s,baz=122,slow=6.1,SNR=8.9							
KURK	**Kurchatov**	**55.29**	**326**	*e*P	**P**	**18 31 04.7**	**+0.6**
5.8nm,0.7s							
KURBB	**Kurchatov Arra**	**55.29**	**326**	P	**P**	**18 31 03.6**	**-0.5**
1.2nm,0.7s,baz=128,slow=6.6,SNR=14							
BRVK	**Borovoye**	**60.95**	**326**	*e*P	**P**	**18 31 44.0**	**+0.1**
1.2nm,0.8s							
TIXI	**Tiksi**	**61.21**	**1**	P	**P**	**18 31 44.9**	**-0.4**
1.4nm,0.8s,baz=172,slow=5.6,SNR=4.1							
ILAR	**Eielson Array**	**79.79**	**26**	P	**P**	**18 33 38.0**	**-0.9**
0.4nm,0.8s,baz=243,slow=6.0,SNR=4.4							
OBN	**Obninsk**	**80.70**	**324**	LR	LR	19 15 01.7	
comp=Z,56nm,18.9s,baz=20,slow=40							
NOA	**NORSAR Array B**	**92.11**	**334**	LR	LR	19 18 41.2	
comp=Z,33nm,20.0s,baz=335,slow=37							
YKA	**Yellowknife Ar**	**94.07**	**24**	P	**P**	**18 34 49.3**	**+0.3**
0.3nm,0.7s,baz=300,slow=4.8,SNR=6.9							

IDC 13 18:27:00.4±1.9, 1°.74N×124°.69E, h0km, mb3.4/3, mb1 3.6/3, mb1mx3.3/40, mbtmp3.4/3, Error ellipse: s-maj=186.6km s-min=25.3km az=64.0, Minahassa Peninsula, Sulawesi

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**23.53**	**157**	P	P	18 32 12.5	+0.1
1.0nm,0.4s,baz=335,slow=10,SNR=19							
ASAR	**Alice Springs**	**26.79**	**161**	P	P	18 32 42.2	-0.2
0.1nm,0.4s,baz=336,slow=7.5,SNR=6.8							
MKAR	**Makanchi Array**	**58.06**	**327**	P	P	18 36 55.5	+0.1
0.2nm,0.3s,baz=122,slow=8.1,SNR=5.6							

ISCJB ***13*** *18:27:11.1±0.9, 17°.5S±0°.3×178°.8W±0°.2, h547km, mb3.8/9, Error ellipse: s-maj=49.8km s-min=12.0km az=152.8*

IDC ***13*** *18:27:11.5±1.9, 17°.54S×178°.79W, h539km±25km, mb3.3/9, mb1 3.5/11, mb1mx3.2/47, mbtmp4.3/11, Error ellipse: s-maj=53.9km s-min=13.3km az=151.0*

ISC 13 18:27:12.0±1.0, 17°.6S±0°.3×178°.7W±0°.2, h547km, n14, σ1s18/14, mb3.8/9, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AFI	**Afiamalu**	**7.63**	**62**	P	**P**	**18 29 05.5**	**-0.7**
5.0nm,0.3s,baz=73,slow=5.3,SNR=8.4							
DZM	**Mont Dzumac**	**14.64**	**250**	P	**P**	**18 30 18.3**	**+0.4**
1.0nm,0.3s,baz=125,slow=21,SNR=12							
CTA	**Charters Tower**	**33.20**	**260**	P	**P**	**18 33 03.7**	**-0.4**
2.3nm,0.7s,baz=93,slow=13,SNR=3.6							
STKA	**Stephens Creek**	**38.51**	**241**	P	**P**	**18 33 47.8**	**-0.1**
4.7nm,0.7s,baz=88,slow=11,SNR=17							
WRA	**Warramunga Arr**	**44.39**	**259**	P	**P**	**18 34 33.3**	**-1.2**
1.5nm,0.5s,baz=97,slow=6.9,SNR=43							
ASAR	**Alice Springs**	**44.58**	**254**	P	**P**	**18 34 35.4**	**-0.6**
18nm,0.6s,baz=90,slow=7.8,SNR=600							
FITZ	**Fitzroy Crossi**	**52.78**	**260**	P	**P**	**18 35 36.8**	**0.0**
0.6nm,0.3s,baz=69,slow=7.1,SNR=6.8							
PETK	**Petropavlovsk-**	**73.32**	**345**	P	**P**	**18 37 48.6**	**+0.7**
3.0nm,0.8s,baz=134,slow=6.2,SNR=3.3							
ILAR	**Eielson Array**	**85.67**	**13**	P	**P**	**18 38 51.5**	**-1.1**
0.5nm,0.5s,baz=222,slow=4.9,SNR=7.5							
TXAR	**Lajitas Array**	**86.09**	**58**	P	**P**	**18 38 56.4**	**+0.8**
0.7nm,0.6s,baz=216,slow=5.6,SNR=8.5							
PDAR	**Pinedale Array**	**87.35**	**44**	P	**P**	**18 39 01.1**	**-0.3**
0.5nm,0.5s,baz=211,slow=3.6,SNR=5.5							
FINES	**FINESS Array B**	**132.82**	**344**	PKP	**PKPdf**	**18 45 27.7**	**+3.1**
0.8nm,0.3s,baz=51,slow=2.9,SNR=14							
BRTR	**Keskin Array B**	**144.36**	**315**	PKP	**PKPdf**	**18 45 45.9**	**-0.6**
0.6nm,0.8s,baz=73,slow=1.6,SNR=3.6							
GERES	**GERESS Array B**	**147.25**	**345**	PKPbc	**PKPbc**	**18 45 53.9**	**-0.3**
0.8nm,0.5s,baz=25,slow=3.2,SNR=5.9							

ISCJB ***13*** *18:36:48.0±0.5, 37°.17N×0°.03×3°.64E±0°.04, h10km, Error ellipse: s-maj=5.0km s-min=3.5km az=20.4*

CSEM ***13*** *18:36:48.5±0.5, 36°.91N×3°.83E, h5km, ML3.9, Error ellipse: s-maj=13.5km s-min=5.8km az=123.0*

MDD ***13*** *18:36:49.7±0.8, 36°.96N×3°.75E, h0km, mb4.1/16, Error ellipse: s-maj=10.3km s-min=5.1km az=108.0, PRXIMO*

CRAAG ***13*** *18:36:49.4, 36°.85N×3°.65E, Ml3.9*

LDG ***13*** *18:36:54.9±0.3, 37°.41N×3°.27E, h2km, Ml2.9/16, Error ellipse: s-maj=5.4km s-min=3.3km az=153.0*

ISC 13 18:36:48.7±0.8, 37°.11N±0°.03×3°.68E±0°.04, h10km, n111, σ2s84/172, Western Mediterranean Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ABA	**Alger-Bouzarea**	**0.60**	**240**	P	**Pb**	**18 37 00.8**	**-0.5**
ABA	**Alger-Bouzarea**	**0.60**	**240**	P	**Pb**	**18 37 00.8**	**-0.5**
ABA	**Alger-Bouzarea**	**0.60**	**240**	P	**Pb**	**18 37 00.8**	**-0.5**
ADJB	**Djebel Djouab**	**0.96**	**192**	P	**Pg**	**18 37 05.7**	**-1.6**
ADJB	**Djebel Djouab**	**0.96**	**192**	P	**Pg**	**18 37 05.7**	**-1.6**
ADJB	**Djebel Djouab**	**0.96**	**192**	P	**Pg**	**18 37 05.7**	**-1.6**
EMHD	**Djebel Mahouad**	**1.07**	**213**	P	**Pg**	**18 37 07.7**	**-1.7**
EMHD	**Djebel Mahouad**	**1.07**	**213**	P	**Pg**	**18 37 07.7**	**-1.7**
EMHD	**Djebel Mahouad**	**1.07**	**213**	P	**Pg**	**18 37 07.7**	**-1.7**
SET	**Setif**	**1.66**	**123**	P	**Pg**	**18 37 22.0**	**+1.5**
SET	**Setif**	**1.66**	**123**	P	**Pg**	**18 37 22.0**	**+1.5**
SET	**Setif**	**1.66**	**123**	P	**Pg**	**18 37 22.0**	**+1.5**
EBNR	**Beni Rached**	**1.91**	**245**	P	**Pb**	**18 37 23.0**	**-0.6**
EBNR	**Beni Rached**	**1.91**	**245**	P	**Pb**	**18 37 23.0**	**-0.6**
ECHA	**Ech Chlef**	**2.09**	**244**	P	**Pn**	**18 37 24.0**	**+0.2**
ECHA	**Ech Chlef**	**2.09**	**244**	P	**Pn**	**18 37 24.0**	**+0.2**
ECHF	**Ech Chlef**	**2.10**	**244**	P	**Pn**	**18 37 24.0**	**0.0**
ECHF	**Ech Chlef**	**2.10**	**244**	P	**Pn**	**18 37 24.0**	**0.0**
EANR	**'Ain N'Sour**	**2.37**	**242**	P	**Pn**	**18 37 24.3**	**-3.5**
EANR	**'Ain N'Sour**	**2.37**	**242**	P	**Pn**	**18 37 24.3**	**-3.5**
EANR	**'Ain N'Sour**	**2.37**	**242**	P	**Pn**	**18 37 24.3**	**-3.5**
ETRT	**Tiaret**	**2.57**	**229**	P	**Pn**	**18 37 29.0**	**-1.6**
ETRT	**Tiaret**	**2.57**	**229**	P	**Pn**	**18 37 29.0**	**-1.6**
ETRT	**Tiaret**	**2.57**	**229**	P	**Pn**	**18 37 29.0**	**-1.6**
ETOS	**Mallorca**	**2.74**	**346**	P	**Pn**	**18 37 36.0**	**+3.2**
2.9nm,0.1s,SNR=18							
ETOS				S	**Sn**	**18 38 07.1**	**+1.1**
12nm,0.2s,SNR=7.9							
ETOS	**Mallorca**	**2.74**	**346**	P	**Pn**	**18 37 36.0**	**+3.2**
2.9nm,0.1s,SNR=18							
ETOS				S	**Sn**	**18 38 07.1**	**+1.1**
12nm,0.2s,SNR=7.9							
EMUR	**La Murta**	**3.98**	**282**	P	**Pn**	**18 37 52.6**	**+2.8**
2.1nm,0.4s,SNR=4.0							
EMUR	**La Murta**	**3.98**	**282**	P	**Pn**	**18 37 52.6**	**+2.8**
2.1nm,0.4s,SNR=4.0							
ETOB	**Tobarra**	**4.41**	**292**	P	**Pn**	**18 37 58.1**	**+2.3**
1.3nm,0.2s,SNR=7.9							
ETOB				S	**Sn**	**18 38 47.6**	**+0.4**
3.6nm,0.3s,SNR=7.9							
ETOB	**Tobarra**	**4.41**	**292**	P	**Pn**	**18 37 58.1**	**+2.3**
1.3nm,0.2s,SNR=7.9							
ETOB				S	**Sn**	**18 38 47.6**	**+0.4**
3.6nm,0.3s,SNR=7.9							
EMOS	**Mosqueruela**	**4.59**	**316**	P	**Pn**	**18 38 01.5**	**+3.1**
1.3nm,0.3s,SNR=6.2							
EMOS				S	**Sn**	**18 38 51.9**	**0.0**
5.2nm,0.2s							
EMOS	**Mosqueruela**	**4.59**	**316**	P	**Pn**	**18 38 01.5**	**+3.1**
1.3nm,0.3s,SNR=6.2							
EMOS				S	**Sn**	**18 38 51.9**	**0.0**
5.2nm,0.2s							
ERTA	**Horta de San J**	**4.64**	**327**	P	**Pn**	**18 38 02.6**	**+3.6**
0.9nm,0.3s,SNR=7.9							
ERTA				S	**Sn**	**18 38 52.8**	**-0.1**
5.0nm,0.4s,SNR=7.9							
ERTA	**Horta de San J**	**4.64**	**327**	P	**Pn**	**18 38 02.6**	**+3.6**
0.9nm,0.3s,SNR=7.9							
ERTA				S	**Sn**	**18 38 52.8**	**-0.1**
5.0nm,0.4s,SNR=7.9							
EPOB	**Poblet**	**4.70**	**335**	P	**Pn**	**18 38 03.1**	**+3.4**
2.9nm,0.3s,SNR=7.6							
EPOB				S	**Sn**	**18 38 54.2**	**-0.1**
2.2nm,0.2s							
EPOB	**Poblet**	**4.70**	**335**	P	**Pn**	**18 38 03.1**	**+3.4**
2.9nm,0.3s,SNR=7.6							
EPOB				S	**Sn**	**18 38 54.2**	**-0.1**
2.2nm,0.2s							
ENIJ	**Nijar**	**4.71**	**270**	S	**Sn**	**18 38 53.2**	**-1.3**
3.4nm,0.3s,SNR=7.9							
ENIJ	**Nijar**	**4.71**	**270**	S	**Sn**	**18 38 53.2**	**-1.3**
3.4nm,0.3s,SNR=7.9							
CFON	**Fontmartina**	**4.75**	**349**	P	**Pn**	**18 38 03.7**	**+3.3**
8.2nm,0.2s,SNR=7.9							
CFON				S	**Sn**	**18 38 55.3**	**-0.3**
13nm,0.3s,SNR=7.9							
CFON	**Fontmartina**	**4.75**	**349**	P	**Pn**	**18 38 03.7**	**+3.3**
8.2nm,0.2s,SNR=7.9							
CFON				S	**Sn**	**18 38 55.3**	**-0.3**
13nm,0.3s,SNR=7.9							
SESP	**Santiago Espad**	**5.04**	**283**	P	**Pn**	**18 38 07.3**	**+2.7**
1.5nm,0.3s,SNR=7.9							
SESP				S	**Sn**	**18 39 03.9**	**+0.9**
3.5nm,0.3s,SNR=7.9							
SESP	**Santiago Espad**	**5.04**	**283**	P	**Pn**	**18 38 07.3**	**+2.7**
1.5nm,0.3s,SNR=7.9							
SESP				S	**Sn**	**18 39 03.9**	**+0.9**
3.5nm,0.3s,SNR=7.9							
EMIR	**Miracle**	**5.08**	**342**	P	**Pn**	**18 38 09.2**	**+4.2**
10nm,0.4s,SNR=12							
EMIR				S	**Sn**	**18 39 05.0**	**+1.2**
29nm,0.4s							
EMIR	**Miracle**	**5.08**	**342**	P	**Pn**	**18 38 09.2**	**+4.2**
10nm,0.4s,SNR=12							
EMIR				S	**Sn**	**18 39 05.0**	**+1.2**
29nm,0.4s							
EJON	**La Jonquera**	**5.37**	**354**	P	**Pn**	**18 38 12.9**	**+4.0**
16nm,0.4s,SNR=7.9							
EJON				S	**Sn**	**18 39 10.1**	**-0.8**
8.1nm,0.3s,SNR=7.9							
EJON	**La Jonquera**	**5.37**	**354**	P	**Pn**	**18 38 12.9**	**+4.0**
16nm,0.4s,SNR=7.9							
EJON				S	**Sn**	**18 39 10.1**	**-0.8**
8.1nm,0.3s,SNR=7.9							
SJAF	**Saint Jean de**	**5.41**	**354**	P	**Pn**	**18 38 13.5**	**+4.1**
10.0nm,0.4s,SNR=7.9							
SJAF				S	**Sn**	**18 39 11.1**	**-0.6**
8.0nm,0.5s,SNR=7.9							
SJAF	**Saint Jean de**	**5.41**	**354**	P	**Pn**	**18 38 13.5**	**+4.1**
10.0nm,0.4s,SNR=7.9							
SJAF				S	**Sn**	**18 39 11.1**	**-0.6**
8.0nm,0.5s,SNR=7.9							
EQES	**Quesada**	**5.41**	**279**	P	**Pn**	**18 38 13.4**	**+3.8**
1.9nm,0.3s,SNR=7.9							
EQES				S	**Sn**	**18 39 12.7**	**+0.7**
1.5nm,0.3s,SNR=7.9							
EQES	**Quesada**	**5.41**	**279**	P	**Pn**	**18 38 13.4**	**+3.8**
1.9nm,0.3s,SNR=7.9							
EQES				S	**Sn**	**18 39 12.7**	**+0.7**
1.5nm,0.3s,SNR=7.9							
CLLI	**Llivia**	**5.53**	**347**	P	**Pn**	**18 38 15.5**	**+4.3**
2.4nm,0.4s,SNR=7.9							
CLLI				S	**Sn**	**18 39 15.3**	**+0.5**
1.1nm,0.2s,SNR=7.9							
CLLI	**Llivia**	**5.53**	**347**	P	**Pn**	**18 38 15.5**	**+4.3**
2.4nm,0.4s,SNR=7.9							
CLLI				S	**Sn**	**18 39 15.3**	**+0.5**
1.1nm,0.2s,SNR=7.9							
CSOR	**Sort**	**5.62**	**340**	P	Pn	18 38 17.3	+4.9
1.6nm,0.3s,SNR=7.0							
CSOR				S	**Sn**	**18 39 17.9**	**+0.9**
4.2nm,0.4s							
CSOR	**Sort**	**5.62**	**340**	P	Pn	18 38 17.3	+4.9
1.6nm,0.3s,SNR=7.0							
CSOR				S	**Sn**	**18 39 17.9**	**+0.9**
4.2nm,0.4s							
ESAC	**San Caprasio**	**5.62**	**326**	P	Pn	18 38 17.2	+4.8
6.0nm,0.4s,SNR=7.9							
ESAC				S	**Sn**	**18 39 18.5**	**+1.6**
6.6nm,0.3s,SNR=7.9							
ESAC	**San Caprasio**	**5.62**	**326**	P	Pn	18 38 17.2	+4.8
6.0nm,0.4s,SNR=7.9							
ESAC				S	**Sn**	**18 39 18.5**	**+1.6**
6.6nm,0.3s,SNR=7.9							
ETOR	**Torete**	**5.80**	**311**	P	**Pn**	**18 38 19.1**	**+4.1**
1.7nm,0.4s,SNR=7.9							
ETOR				S	**Sn**	**18 39 20.4**	**-1.2**
1.6nm,0.2s,SNR=7.9							
ETOR	**Torete**	**5.80**	**311**	P	**Pn**	**18 38 19.1**	**+4.1**
1.7nm,0.4s,SNR=7.9							
ETOR				S	**Sn**	**18 39 20.4**	**-1.2**
1.6nm,0.2s,SNR=7.9							
MTLF	**Montolieu**	**6.33**	**350**	*e*Pn	**Pn**	**18 38 22.5**	**+0.4**
MTLF				*e*Sn	**Sn**	**18 39 27.4**	**-7.0**
2.1nm,0.5s							
MTLF	**Montolieu**	**6.33**	**350**	P	**Pn**	**18 38 22.5**	**+0.4**
MTLF				S	**Sn**	**18 39 27.4**	**-7.0**
1.1nm,0.5s							
MTLF	**Montolieu**	**6.33**	**350**	P	**Pn**	**18 38 22.5**	**+0.4**
MTLF				S	**Sn**	**18 39 27.4**	**-7.0**
1.1nm,0.5s							
EPF	**Esparros**	**6.45**	**338**	*e*Pn	**Pn**	**18 38 23.3**	**-0.4**
EPF				*e*Sn	Sn	18 39 28.9	-8.5
4.0nm,0.5s							
EPF	**Esparros**	**6.45**	**338**	P	**Pn**	**18 38 23.3**	**-0.4**
EPF				S	Sn	18 39 28.9	-8.5
2.0nm,0.5s							
EPF	**Esparros**	**6.45**	**338**	P	**Pn**	**18 38 23.3**	**-0.4**
EPF				S	Sn	18 39 28.9	-8.5
2.0nm,0.5s							
ESDC	**Sonseca Array**	**6.53**	**295**	P	**Pn**	**18 38 27.0**	**+2.2**
1.1nm,0.1s,baz=112,slow=14,SNR=7.9							
ESDC				S	**Sn**	**18 39 38.2**	**-1.1**
0.6nm,0.2s,baz=110,slow=24,SNR=7.9							
ESDC	**Sonseca Array**	**6.53**	**295**	P	**Pn**	**18 38 27.0**	**+2.2**
1.1nm,0.1s,SNR=7.9							
ESDC				S	**Sn**	**18 39 38.2**	**-1.1**
0.6nm,0.2s,SNR=7.9							
LMR	**La Mourre**	**6.59**	**18**	*e*Pn	**Pn**	**18 38 28.0**	**+2.4**
LMR				*e*Sn	**Sn**	**18 39 37.6**	**-3.1**
3.1nm,0.3s							
LMR	**La Mourre**	**6.59**	**18**	P	**Pn**	**18 38 28.0**	**+2.4**
LMR				S	**Sn**	**18 39 37.6**	**-3.1**
1.6nm,0.3s							
LMR	**La Mourre**	**6.59**	**18**	P	**Pn**	**18 38 28.0**	**+2.4**
LMR				S	**Sn**	**18 39 37.6**	**-3.1**
1.6nm,0.3s							
ETSF	**Etsaut**	**6.64**	**332**	*e*Pn	**Pn**	**18 38 25.9**	**-0.5**
ETSF				*e*Sn	Sn	18 39 33.1	-9.0
2.3nm,0.4s							
ETSF	**Etsaut**	**6.64**	**332**	P	**Pn**	**18 38 25.9**	**-0.5**
ETSF				S	Sn	18 39 33.1	-9.0
1.2nm,0.4s							
ETSF	**Etsaut**	**6.64**	**332**	P	**Pn**	**18 38 25.9**	**-0.5**
ETSF				S	Sn	18 39 33.1	-9.0
1.2nm,0.4s							
PGF	**Pioggiola**	**6.80**	**35**	*e*Pn	**Pn**	**18 38 33.3**	**+4.6**
PGF				*e*Sn	**Sn**	**18 39 44.7**	**-1.6**
3.7nm,0.4s							
PGF	**Pioggiola**	**6.80**	**35**	P	**Pn**	**18 38 33.3**	**+4.6**
PGF				S	**Sn**	**18 39 44.7**	**-1.6**
1.9nm,0.4s							
PGF	**Pioggiola**	**6.80**	**35**	P	**Pn**	**18 38 33.3**	**+4.6**
PGF				S	**Sn**	**18 39 44.7**	**-1.6**
1.9nm,0.4s							
FRF	**La Foret Royal**	**6.83**	**18**	*e*Pn	**Pn**	**18 38 31.4**	**+2.4**
FRF				*e*Sn	**Sn**	**18 39 43.7**	**-3.1**
6.0nm,0.5s							
FRF	**La Foret Royal**	**6.83**	**18**	P	**Pn**	**18 38 31.4**	**+2.4**
FRF				S	**Sn**	**18 39 43.7**	**-3.1**
3.0nm,0.5s							
FRF	**La Foret Royal**	**6.83**	**18**	P	**Pn**	**18 38 31.4**	**+2.4**
FRF				S	**Sn**	**18 39 43.7**	**-3.1**
3.0nm,0.5s							
ATE	**Arette**	**6.85**	**332**	P	**Pn**	**18 38 33.7**	**+4.5**
0.4nm,0.2s,SNR=7.9							
ATE				S	**Sn**	**18 39 47

ORIF	**Oris-en-Rattie**	**7.98**	**11**	P		**Pn**	**18 38 46.5**	**+1.7**
ORIF				S		**Sn**	**18 40 09.9**	**-5.3**
	0.3nm,0.3s							
LFF	**La Frestale**	**8.13**	**345**	*e*Pn		**Pn**	**18 38 45.5**	**-1.3**
LFF				*e*Sn		Sn	18 40 09.7	-9.1
	3.4nm,0.5s							
LFF	**La Frestale**	**8.13**	**345**	P		**Pn**	**18 38 45.5**	**-1.3**
LFF				S		Sn	18 40 09.7	-9.1
	1.7nm,0.5s							
LFF	**La Frestale**	**8.13**	**345**	P		**Pn**	**18 38 45.5**	**-1.3**
LFF				S		Sn	18 40 09.7	-9.1
	1.7nm,0.5s							
RJF	**Les Rejaudoux**	**8.35**	**349**	*e*Pn		**Pn**	**18 38 49.5**	**-0.3**
RJF				*e*Sn		Sn	18 40 15.8	-8.4
	0.8nm,0.3s							
RJF	**Les Rejaudoux**	**8.35**	**349**	P		**Pn**	**18 38 49.5**	**-0.3**
RJF				S		Sn	18 40 15.8	-8.4
	0.4nm,0.3s							
RJF	**Les Rejaudoux**	**8.35**	**349**	P		**Pn**	**18 38 49.5**	**-0.3**
RJF				S		Sn	18 40 15.8	-8.4
	0.4nm,0.3s							

NIED ***13*** *18:37:00,23.70N×125.00E,h38km,Mw4.0 Best double couple: M0 9.63000×10^14 NP1:φs203.00000°,δ44.00000°, λ-154.00000°. NP2:φs94.00000°,δ73.00000°, λ-49.00000°.*

IDC ***13*** *18:37:41.0±0.8,23.60N×124.87E,h0km,mb3.8/10, mb1 3.9/12,mb1mx3.7/37,mbtmpb3.8/12,ML3.3/1,MS3.2/4, Ms1 3.2/4,ms1mx2.7/37,Error ellipse: s-maj=25.7km s-min=16.8km az=76.0*

ISCJB ***13*** *18:37:42.0±1.0,23.61N±0.03×125.09E±0.03,h25km±8km, mb3.7/12,MS3.3/3,Error ellipse: s-maj=6.0km s-min=4.2km az=159.4*

JMA ***13*** *18:37:44.9±0.1,23.70N×125.01E,h63km,M3.6*

NEIC ***13*** *18:37:46.1±1.0,23.60N×124.90E,h35km±9km,mb4.2/2, Error ellipse: s-maj=10.2km s-min=7.5km az=126.0*

ISC 13 18:37:41.5±1.8,23.64N±0.06×125.01E±0.04,h6km±11km, n48,σ0 93/52,mb4.0/12,MS3.1/3,Southwestern Ryukyu Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JTJ	**Tarama**	**1.04**	**344**	P	**Pn**	**18 38 03.0**	**+0.4**
JTJ				S	**Sb**	**18 38 15.9**	**+0.1**
JIJ	**Ishigaki jima**	**1.07**	**312**	P	**Pn**	**18 38 03.6**	**+0.5**
JIJ				S	**Sn**	**18 38 17.6**	**-0.7**
JKRS	**Kuro-shima**	**1.09**	**303**	P	**Pn**	**18 38 04.2**	**+0.8**
JKRS				S	**Sn**	**18 38 18.1**	**-0.7**
JISG	**Ishigakijimahi**	**1.14**	**326**	P	**Pn**	**18 38 04.3**	**+0.3**
JISG				S	**Sb**	**18 38 18.4**	**-0.3**
JOGS	**Gusukube**	**1.18**	**18**	P	**Pg**	**18 38 04.8**	**+0.8**
JOGS				S	**Sg**	**18 38 19.8**	**+0.5**
HATJ	**Hateruma jima**	**1.18**	**291**	P	**Pn**	**18 38 05.0**	**+0.5**
HATJ				S	**Sn**	**18 38 19.5**	**-1.4**
JIRB	**Irabujima**	**1.20**	**7**	P	**Pg**	**18 38 04.7**	**+0.3**
JIRB				S	**Sg**	**18 38 19.4**	**-0.5**
JMJ	**Miyako jima 2**	**1.20**	**12**	P	**Pg**	**18 38 05.2**	**+0.7**
JMJ				S	**Sg**	**18 38 20.3**	**+0.2**
JIKM	**Ikemajima**	**1.30**	**10**	P	**Pg**	**18 38 06.3**	**-0.1**
JIKM				S	**Sg**	**18 38 22.6**	**-0.7**
IRIF	**Iriomote-Funau**	**1.36**	**301**	P	**Pn**	**18 38 07.8**	**+0.8**
IRIF				*e*S	**Sn**	**18 38 24.9**	**-0.5**
YOJ	**Yonaguni jima**	**2.00**	**295**	P	**Pb**	**18 38 16.8**	**-1.5**
YOJ				S	**Sn**	**18 38 39.6**	**-1.7**
YOJ	**Yonaguni jima**	**2.00**	**295**	*e*Pn	**Pb**	**18 38 16.7**	**-1.7**
JYNG	**Yonagunijimaku**	**2.06**	**294**	P	**Pb**	**18 38 17.6**	**-1.6**
JYNG				S	**Sn**	**18 38 40.7**	**-1.8**
JKE	**Kume jima 2**	**3.12**	**31**	P	**Pn**	**18 38 30.5**	**-0.8**
JKE				S	Sn	18 39 04.9	-4.0
NACB	**Ninganchiao**	**3.17**	**280**	*e*Pn	**Pn**	**18 38 31.8**	**-0.2**
YULB	**Yu-li**	**3.42**	**267**	*e*Pn	**Pn**	**18 38 34.5**	**-0.8**
YHNB	**Yeheng**	**3.48**	**288**	*e*Pn	**Pn**	**18 38 37.6**	**+1.4**
JAGN	**Aguni-jima**	**3.57**	**34**	P	**Pn**	**18 38 36.2**	**-1.2**
JAGN				*e*S	Sn	18 39 15.6	-4.3
TWG	**Pinlang**	**3.71**	**258**	*e*Pn	**Pn**	**18 38 38.5**	**-0.9**
SSLB	**Suanglung**	**3.72**	**273**	*e*Pn	**Pn**	**18 38 39.8**	**+0.2**
JNTH	**Nagotoyohara**	**3.96**	**43**	P	**Pn**	**18 38 42.2**	**-0.6**
JNTH				*e*S	Sn	18 39 24.5	-5.1
TPUB	**Ta-pu**	**4.04**	**266**	*e*Pn	**Pn**	**18 38 45.1**	**+1.3**
JIH	**Iheya**	**4.31**	**38**	P	**Pn**	**18 38 46.9**	**-0.7**
JIH				*e*S	Sn	18 39 32.6	-5.6
JOW	**Kunigami**	**4.34**	**42**	P	**Pn**	**18 38 47.5**	**-0.5**
JOW				S	Sn	18 39 33.1	-5.9
JOKE	**Okinoerabujima**	**4.91**	**40**	P	**Pn**	**18 38 54.7**	**-1.1**
JTK	**Tokunoshima**	**5.45**	**40**	P	Pn	18 39 01.6	-1.6
JAMN	**Amaminishikomi**	**5.92**	**38**	P	Pn	18 39 07.5	-2.2
JMZ	**Minamidaito 2**	**6.05**	**68**	P	Pn	18 39 08.7	-2.8
JAM	**Amami Oshima**	**6.30**	**40**	P	Pn	18 39 13.0	-1.9
JNU	**Nakatsue**	**10.77**	**27**	LR	LR	18 44 13.5	
	comp=Z,40nm,19.9s,baz=304,slow=36						
KSAR	**Wonju Array Be**	**13.98**	**10**	Pn	**Pn**	**18 41 01.3**	**+1.2**
KSRS	**Korea Array**	**14.00**	**10**	Pn	**Pn**	**18 41 01.3**	**+1.0**
	0.1nm,0.3s,baz=191,slow=13,SNR=7.9						
MJAR	**Matsushiro Arr**	**17.18**	**39**	P	**P**	**18 41 45.5**	**+1.7**
	baz=234,slow=10,SNR=6.0						
CMAR	**Chiang Mai Arr**	**24.85**	**263**	P	**P**	**18 43 04.8**	**-0.2**
	0.3nm,0.7s,baz=72,slow=8.6,SNR=5.7						
ASAJ	**Asahikawa**	**25.01**	**31**	P	**P**	**18 43 07.7**	**+1.6**
	2.1nm,0.5s,baz=228,slow=15,SNR=3.9						
SONM	**Songino Array**	**28.34**	**333**	P	**P**	**18 43 36.4**	**+0.1**
	0.2nm,0.4s,baz=153,slow=9.5,SNR=3.4						
KAPI	**Kappang**	**28.93**	**191**	LR	LR	18 55 02.8	
	comp=Z,31nm,21.4s,baz=117,slow=36						
YAK	**Yakutsk**	**38.51**	**4**	LR	LR	19 02 33.7	
	comp=Z,28nm,19.5s,baz=262,slow=39						
MKAR	**Makanchi Array**	**41.19**	**315**	P	**P**	**18 45 27.1**	**+0.3**
	1.0nm,0.4s,baz=101,slow=9.7,SNR=33						
ZALV	**Zalesovo Beam**	**42.64**	**326**	P	**P**	**18 45 37.5**	**-1.1**
	1.6nm,0.5s,baz=113,slow=8.1,SNR=10.0						
WRAB	**Tennant Creek**	**44.25**	**167**	*e*P	**P**	**18 45 52.0**	**0.0**
	2.3nm,0.7s						
WRA	**Warramunga Arr**	**44.26**	**167**	P	**P**	**18 45 51.8**	**-0.2**
	2.0nm,0.7s,baz=347,slow=8.9,SNR=25						
KURK	**Kurchatov**	**44.78**	**319**	*e*P	**P**	**18 45 56.3**	**+0.5**
	2.7nm,0.7s						
KURBB	**Kurchatov Arra**	**44.80**	**319**	P	**P**	**18 45 56.1**	**+0.1**
	0.4nm,0.4s,baz=110,slow=8.1,SNR=7.2						
ASAR	**Alice Springs**	**47.81**	**169**	P	**P**	**18 46 20.6**	**+0.6**
	0.5nm,0.5s,baz=354,slow=13,SNR=22						
FINES	**FINESS Array B**	**73.67**	**330**	P	**P**	**18 49 15.7**	**-0.1**
	2.4nm,1.1s,baz=64,slow=9.4,SNR=6.1						
YKA	**Yellowknife Ar**	**82.08**	**24**	P	**P**	**18 50 02.9**	**+0.3**
	0.1nm,0.4s,baz=304,slow=4.4,SNR=3.5						
KMBO	**Kilima Mbogo**	**88.39**	**268**	LR	LR	19 32 15.9	
	comp=Z,51nm,18.4s,baz=91,slow=37						

JMA 13 18:46:00.5,37.02N×140.70E,h9km±1km,M2.5,Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.11**	**44**	P	Pg	18 46 03.4	+0.2
ONAJ				*e*S	Sg	18 46 05.4	+0.2
JFK	**Kawauchi**	**0.37**	**22**	P	Pg	18 46 08.0	+0.1
JFK				S	Sg	18 46 13.1	+0.3
JHO	**Hitachi**	**0.42**	**194**	P	Pg	18 46 08.7	0.0
JHO				S	Sg	18 46 14.1	-0.2
JFT	**Otama**	**0.58**	**330**	P	Pg	18 46 11.8	+0.1
JFT				S	Sg	18 46 19.6	+0.4
JMM	**Marumori**	**0.85**	**5**	P	Pg	18 46 16.3	-0.5
JMM				S	Sg	18 46 27.9	0.0
MAT	**Matsushiro**	**2.06**	**257**	P	Pn	18 46 35.9	+0.6
MAT				S	Sb	18 47 03.3	-0.4

ISCJB ***13*** *18:57:00.2±0.6,36.75N±0.04×141.12E±0.07,h49km±5km, mb3.7/17,MS2.4/1,Error ellipse: s-maj=9.2km s-min=5.4km az=18.9*

NIED ***13*** *18:57:00,36.80N×141.00E,h56km,Mw3.9 Best double couple: M0 8.24000×10^14 NP1:φs180.00000°,δ41.00000°, λ-97.00000°. NP2:φs9.00000°,δ50.00000°,λ-84.00000°.*

JMA ***13*** *18:57:01.4±0.1,36.77N×141.03E,h48km±1km,M4.0*

JMA Felt II J1.

IDC ***13*** *18:57:02.5±1.9,36.74N×141.06E,h55km±17km,mb3.5/17, mb1 3.7/21,mb1mx3.5/54,mbtmpb3.8/21,ML3.7/4,MS2.6/5, Ms1 2.6/5,ms1mx2.5/29,Error ellipse: s-maj=14.6km s-min=10.8km az=72.0*

ISC 13 18:57:01.0±1.2,36.77N±0.04×141.14E±0.08,h41km±10km, n39,σ0 92/42,mb3.7/17,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.43**	**321**	P	**Pn**	**18 57 11.1**	**+1.1**
ONAJ				S	**Sn**	**18 57 17.8**	**-0.2**
JHO	**Hitachi**	**0.48**	**251**	P	**Pn**	**18 57 11.4**	**-0.2**
JHO				S	**Sn**	**18 57 18.3**	**-0.7**
JFK	**Kawauchi**	**0.63**	**341**	P	**Pn**	**18 57 13.7**	**0.0**
JFK				S	**Sn**	**18 57 22.2**	**-0.5**
JYT	**Yasato**	**0.93**	**235**	P	**Pn**	**18 57 17.2**	**-0.4**
JYT				S	**Sn**	**18 57 28.1**	**-1.7**
JFT	**Otama**	**0.98**	**320**	P	**Pn**	**18 57 18.8**	**+0.4**
JFT				S	**Sn**	**18 57 31.1**	**-0.1**
JSB	**Shiboa**	**0.99**	**282**	P	**Pn**	**18 57 18.2**	**-0.4**
JSB				S	**Sn**	**18 57 30.2**	**-1.2**
JMM	**Marumori**	**1.13**	**346**	S	**Sn**	**18 57 34.1**	**-0.6**
MJAR	**Matsushiro Arr**	**2.36**	**265**	P	**Pn**	**18 57 37.4**	**+0.1**
	30nm,0.3s,baz=89,slow=15,SNR=135						
MJAR				S	**Sn**	**18 58 05.6**	**+0.5**
	43nm,0.3s,baz=84,slow=32,SNR=13						
MJAR				LR	LR	18 58 57.2	
	comp=Z,141nm,20.4s,baz=105,slow=50						
MAT	**Matsushiro**	**2.37**	**265**	P	**Pn**	**18 57 37.9**	**+0.5**
MAT				S	**Sn**	**18 58 05.6**	**+0.4**
JHJ	**Hachijo jima 2**	**3.81**	**197**	P	**Pn**	**18 57 58.0**	**+0.8**
	12nm,0.3s,baz=97,slow=23,SNR=9.7						
JHJ				S	**Sn**	**18 58 41.2**	**+0.5**
	35nm,0.3s,baz=82,slow=21,SNR=6.1						
ASAJ	**Asahikawa**	**7.42**	**8**	P	**Pn**	**18 58 46.9**	**+0.1**
	1.6nm,0.3s,baz=207,slow=14,SNR=26						
ASAJ				S	**Sn**	**19 00 06.8**	**-2.9**
	0.6nm,0.3s,baz=267,slow=19,SNR=2.5						
ASAJ				LR	LR	19 01 48.2	
	comp=Z,17nm,21.6s,baz=342,slow=38						
JNU	**Nakatsue**	**9.17**	**250**	LR	LR	19 03 04.4	
	comp=Z,38nm,18.8s,baz=122,slow=40						
USRK	**Ussuriysk Ar.**	**10.17**	**320**	P	Pn	18 59 28.8	+4.4
	0.2nm,0.3s,baz=133,slow=13,SNR=12						
KSRS	**Korea Array**	**10.58**	**278**	P	**Pn**	**18 59 30.9**	**+0.9**
	0.3nm,0.3s,baz=90,slow=13,SNR=3.3						
KSRS				LR	LR	19 03 26.2	
	comp=Z,42nm,18.4s,baz=40,slow=36						
PETK	**Petropavlovsk-**	**20.03**	**30**	LR	LR	19 09 59.2	
	comp=Z,17nm,18.5s,baz=50,slow=39						
SEY	**Seymchan**	**27.09**	**11**	P	**P**	**19 02 41.9**	**+2.3**
	1.6nm,1.0s,baz=183,slow=1.6,SNR=4.6						
SONM	**Songino Array**	**27.75**	**304**	P	**P**	**19 02 47.0**	**+1.2**
	1.4nm,0.7s,baz=105,slow=8.8,SNR=11						
H11N2	**WAKE ISLAND Hy**	**28.21**	**120**	T	T	19 32 53.1	
	baz=313,slow=75,SNR=86						
H11N1	**WAKE ISLAND Hy**	**28.21**	**120**	T	T	19 32 52.2	
	baz=313,slow=75,SNR=88						
H11N3	**WAKE ISLAND Hy**	**28.22**	**120**	T	T	19 32 54.4	
	baz=313,slow=75,SNR=72						
H11S1	**WAKE ISLAND Hy**	**28.91**	**122**	T	T	19 33 43.6	
	baz=314,slow=76,SNR=249						
H11S3	**WAKE ISLAND Hy**	**28.91**	**122**	T	T	19 33 45.0	
	baz=314,slow=76,SNR=183						
H11S2	**WAKE ISLAND Hy**	**28.92**	**122**	T	T	19 33 46.2	
	baz=314,slow=76,SNR=79						
ZALV	**Zalesovo Beam**	**41.93**	**313**	P	**P**	**19 04 47.0**	**-0.4**
	0.7nm,0.5s,baz=87,slow=9.1,SNR=3.9						
ZALV				PcP	**PcP**	**19 06 41.2**	**-1.1**
	0.3nm,0.3s,baz=90,slow=2.9,SNR=3.9						
MKAR	**Makanchi Array**	**44.07**	**302**	P	**P**	**19 05 04.7**	**-0.2**
	0.3nm,0.6s,baz=81,slow=9.1,SNR=6.4						
KURBB	**Kurchatov Arra**	**45.99**	**308**	P	**P**	**19 05 18.7**	**-1.3**
	1.2nm,0.6s,baz=83,slow=7.8,SNR=15						
ILAR	**Eielson Array**	**49.84**	**32**	P	**P**	**19 05 50.0**	**+0.4**
	0.4nm,0.6s,baz=270,slow=6.0,SNR=4.4						
BVAR	**Borovoye Array**	**50.59**	**312**	P	**P**	**19 05 54.7**	**-0.7**
	0.2nm,0.3s,baz=73,slow=5.0,SNR=3.7						
BVAR				PcP	**PcP**	**19 07 12.8**	**+0.1**
	0.8nm,0.8s,baz=105,slow=3.4,SNR=5.6						
INK	**Inuvik**	**54.73**	**27**	P	**P**	**19 06 26.4**	**+0.6**
	0.5nm,0.5s,baz=259,slow=5.7,SNR=3.7						
WRA	**Warramunga Arr**	**56.77**	**188**	P	**P**	**19 06 40.1**	**-0.8**
	1.3nm,0.6s,baz=4.5,slow=7.3,SNR=15						
ASAR	**Alice Springs**	**60.49**	**188**	P	**P**	**19 07 07.0**	**+0.1**
	0.8nm,0.8s,baz=4.2,slow=6.2,SNR=8.9						
YKA	**Yellowknife Ar**	**64.15**	**30**	P	**P**	**19 07 30.8**	**-0.1**
	0.2nm,0.6s,baz=305,slow=6.9,SNR=4.4						
FINES	**FINESS Array B**	**68.94**	**332**	P	**P**	**19 08 01.0**	**-0.4**
	1.2nm,0.7s,baz=32,slow=7.5,SNR=3.9						
NOA	**NORSAR Array B**	**74.34**	**337**	P	**P**	**19 08 33.5**	**-0.5**
	0.4nm,0.6s,baz=55,slow=8.2,SNR=2.5						
AKASG	**Malin Array Be**	**74.37**	**322**	P	**P**	**19 08 33.4**	**-0.9**
	0.8nm,0.3s,baz=46,slow=6.3,SNR=4.9						
PDAR	**Pinedale Array**	**78.01**	**45**	P	**P**	**19 08 56.2**	**+0.8**
	0.4nm,0.6s,baz=317,slow=2.1,SNR=5.3						
GERES	**GERESS Array B**	**82.82**	**328**	P	**P**	**19 09 20.4**	**-0.6**
	0.3nm,0.4s,baz=51,slow=5.2,SNR=4.0						
TXAR	**Lajitas Array**	**90.46**	**52**	P	**P**	**19 09 59.7**	**+1.0**
	0.2nm,0.5s,baz=316,slow=2.5,SNR=3.4						
LPAZ	**La Paz**	**147.02**	**60**	PKPbc	**PKPbc**	**19 16 40.4**	**-0.1**
	1.1nm,0.8s,baz=348,slow=2.5,SNR=4.4						

IDC 13 18:57:17.5±778.0,29.43N×82.55W,h0km,Error ellipse: s-maj=377.6km s-min=232.8km az=35.0,Florida Peninsula

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
I51GB	**BERMUDA INFRAS**	**15.60**	**75**	*i*		20 36 40.0	
	baz=264,slow=326,SNR=0.4						
I10CA	**LAC DU BONNET**	**23.12**	**338**	*i*		21 18 20.0	
	baz=150,slow=339,SNR=1.4						
I18DK	**QAANAAQ INFRAS**	**38.52**	**4**	*i*		23 41 20.0	
	baz=190,slow=335,SNR=0.7						

ISCJB ***13*** *19:08:17.7±0.5,50.23N±0.04×19.17E±0.03,h0km,Error ellipse: s-maj=6.1km s-min=2.4km az=20.7*

CSEM ***13*** *19:08:17.9±0.5,50.28N×19.18E,h2km,ML2.8/4,Error ellipse: s-maj=11.8km s-min=4.4km az=12.0*

PRU ***13*** *19:08:19.5,50.22N×19.19E,h0km*

ISC 13 19:08:18.8±0.8,50.16N±0.04×19.24E±0.02,h0km,n30, σ0 89/55,Poland

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OJC	**Ojcow**	**0.36**	**80**	*e*Pg	**Pg**	**19 08 25.1**	**-0.7**
OJC				*e*Sg	**Sg**	**19 08 29.7**	**-0.8**
OJC	**Ojcow**	**0.36**	**80**	*e*Pg	**Pg**	**19 08 25.1**	**-0.7**
OJC				*e*Sg	**Sg**	**19 08 29.7**	**-0.8**
OKC	**Ostrava-Krasne**	**0.77**	**246**	*e*PG	**Pb**	**19 08 35.0**	**-0.1**
OKC				*e*SG	**Sb**	**19 08 45.5**	**-0.7**
	comp=Z,15nm,0.4s						
OKC	**Ostrava-Krasne**	**0.77**	**246**	Pg	**Pb**	**19 08 35.0**	**-0.1**
OKC				Sg	**Sb**	**19 08 45.5**	**-0.7**
	15nm,0.4s						
NIE	**Niedzica**	**1.01**	**137**	*e*Pg	**Pb**	**19 08 38.7**	**-0.5**
NIE				*e*Sg	**Sb**	**19 08 53.7**	**+0.7**
NIE	**Niedzica**	**1.01**	**137**	*e*Pg	**Pb**	**19 08 38.7**	**-0.5**
NIE				*e*Sg	**Sb**	**19 08 53.7**	**+0.7**
LANS	**Liptovska Anna**	**1.02**	**172**	*e*Pg	**Pb**	**19 08 39.1**	**-0.2**
LANS				*e*Sg	**Sb**	**19 08 53.5**	**+0.2**
LANS	**Liptovska Anna**	**1.02**	**172**	*e*PG	**Pb**	**19 08 39.1**	**-0.2**
LANS				*e*SG	**Sb**	**19 08 53.5**	**+0.2**
STHS	**Stebnicka Huta**	**1.50**	**119**	*e*Pn	**Pb**	**19 08 47.7**	**+0.2**
STHS				*e*Sn	**Sn**	**19 09 08.8**	**+1.6**
STHS	**Stebnicka Huta**	**1.50**	**119**	*e*PN	**Pb**	**19 08 47.7**	**+0.2**
STHS				*e*SN	**Sn**	**19 09 08.8**	**+1.6**
STHS				*e*LG	Lg	19 09 10.3	
KRLC	**Kraliky**	**1.58**	**268**	*e*PG	**Pn**	**19 08 47.5**	**-0.7**
KRLC				*e*SG	**Sn**	**19 09 09.1**	**-0.3**
KRLC	**Kraliky**	**1.58**	**268**	Pg	**Pn**	**19 08 47.5**	**-0.7**
KRLC				Sg	**Sn**	**19 09 09.1**	**-0.3**
VYHS	**Vyhne**	**1.69**	**189**	*e*Pn	**Pn**	**19 08 49.3**	**-0.2**
VYHS				*e*Sn	**Sn**	**19 09 11.6**	**-0.2**
VYHS	**Vyhne**	**1.69**	**189**	*e*PN	**Pn**	**19 08 49.3**	**-0.2**
VYHS				*e*SN	**Sn**	**19 09 11.6**	**-0.2**
KECS	**Kecovo**	**1.86**	**154**	*e*Pn	**Pg**	**19 08 55.0**	**+0.5**
KECS				*e*Sn	**Sg**	**19 09 18.7**	**+0.1**
KECS	**Kecovo**	**1.86**	**154**	*e*PN	**Pg**	**19 08 55.0**	**+0.5**
KECS				*e*SN	**Sg**	**19 09 18.7**	**+0.1**
KECS				*e*LG	Lg	19 09 26.2	
DPC	**Dobruska-Polom**	**1.88**	**277**	*e*PG	**Pb**	**19 08 52.0**	**-0.3**
DPC				*e*SG	**Sb**	**19 09 18.0**	**-0.2**
	comp=Z,25nm,0.6s						
DPC	**Dobruska-Polom**	**1.88**	**277**	Pg	**Pn**	**19 08 52.0**	**-0.3**
DPC				Sg	**Sb**	**19 09 18.0**	**-0.2**
	25nm,0.6s						
CRVS	**Cervenica-Dubn**	**1.92**	**130**	*e*Pn	**Pb**	**19 08 54.2**	**-0.4**
CRVS				*e*Sn	**Sg**	**19 09 21.0**	**+0.6**
CRVS	**Cervenica-Dubn**	**1.92**	**130**	*e*PN	**Pb**	**19 08 54.2**	**-0.4**
CRVS				*e*SN	**Sg**	**19 09 21.0**	**+0.6**
CRVS				*e*LG	Lg	19 09 34.4	
KSP	**Ksiaz**	**2.00**	**291**	*e*Pg	**Pg**	**19 08 58.4**	**+1.2**
KSP				*e*Sg	**Sg**	**19 09 23.5**	**+0.4**
KSP	**Ksiaz**	**2.00**	**291**	*e*Pg	**Pg**	**19 08 58.4**	**+1.2**
KSP				*e*Sg	**Sg**	**19 09 23.5**	**+0.4**
UPC	**Upice**	**2.10**	**281**	*e*SG	**Sg**	**19 09 25.5**	**-0.7**
UPC	**Upice**	**2.10**	**281**	Sg	**Sg**	**19 09 25.5**	**-0.7**
PRU	**Pruhnice**	**3.03**	**269**	*e*SG	**Sg**	**19 09 54.1**	**-2.0**
	comp=Z,6.4nm,0.5s						
PRU	**Pruhonice**	**3.03**	**269**	Sg	**Sg**	**19 09 54.1**	**-2.0**
	6.4nm,0.5s						
BRG	**Berggiesshubel**	**3.46**	**284**	SG	**Sg**	**19 10 09.4**	**-0.4**
	4.9nm,0.6s						
KHC	**Kasperske Hory**	**3.82**	**257**	*e*PN	**Pn**	**19 09 18.0**	**-0.9**
KHC				*e*PG	**Pb**	**19 09 29.0**	**+1.9**
KHC				*e*SN	**Sn**	**19 10 04.0**	**-0.5**
KHC				*e*SG	**Sg**	**19 10 20.1**	**-1.4**
	comp=Z,4.6nm,0.6s						
KHC	**Kasperske Hory**	**3.82**	**257**	Pn	**Pn**	**19 09 18.0**	**-0.9**
CLL	**Collm**	**4.13**	**289**	*e*Pg	Pg	19 09 45.0	+7.2
CLL				*e*Sg	**Sg**	**19 10 34.0**	**+2.7**
	comp=Z,5.0nm,0.8s						

JMA 13 19:24:34.3,37.02N×140.60E,h9km±1km,M2.5,Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.18**	**63**	P	Pg	19 24 38.3	+0.2
ONAJ				S	Sg	19 24 41.2	+0.5
JFK	**Kawauchi**	**0.41**	**32**	P	Pg	19 24 42.4	+0.1
JFK				S	Sg	19 24 48.1	+0.3
JHO	**Hitachi**	**0.41**	**183**	P	Pg	19 24 42.1	-0.2
JHO				S	Sg	19 24 47.7	0.0
JFT	**Otama**	**0.54**	**337**	P	Pg	19 24 45.1	+0.3
JFT				S	Sg	19 24 52.3	+0.4
JMM	**Marumori**	**0.86**	**10**	P	Pg	19 24 50.2	-0.6
JMM				S	Sg	19 25 01.5	-0.5
MAT	**Matsushiro**	**1.98**	**257**	P	Pb	19 25 09.9	-0.6
MAT				S	Sb	19 25 35.0	-0.3

JMA 13 19:28:03.6±0.1,36.54N×140.66E,h55km±1km,M2.7, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHO	**Hitachi**	**0.10**	**314**	P	Pn	19 28 12.1	0.0
JHO				S	Sn	19 28 17.9	-0.2
ONAJ	**Iwakimizuishiy**	**0.57**	**11**	S	Sn	19 28 23.8	-1.3
MAT	**Matsushiro**	**1.98**	**271**	P	Pn	19 28 35.9	+1.2
MAT				*e*S	Sn	19 28 58.9	+0.6

JMA 13 19:30:09.0,37.73N×139.97E,h9km±1km,M2.5,Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFT	**Otama**	**0.36**	**126**	P	Pg	19 30 16.2	+0.1
JFT				S	Sg	19 30 20.9	0.0
JFY	**Yanaizu**	**0.39**	**213**	P	Pg	19 30 16.6	0.0
JFY				S	Sg	19 30 21.6	-0.1
JYS	**Shirataka**	**0.50**	**9**	P	Pg	19 30 19.2	+0.5
JYS				S	Sg	19 30 25.9	+0.7
JMM	**Marumori**	**0.67**	**78**	P	Pg	19 30 21.8	-0.1
JMM				S	Sg	19 30 30.5	-0.1
JOU	**Okura**	**0.84**	**41**	P	Pg	19 30 25.1	-0.1
JOU				S	Sg	19 30 36.0	-0.1
MAT	**Matsushiro**	**1.84**	**230**	P	Pn	19 30 41.2	+0.4
MAT				*e*S	Sb	19 31 05.9	-0.1

ISCJB ***13*** *19:31:11.7±0.8,37.86N±0.04×27.32E±0.05,h10km±8km, Error ellipse: s-maj=7.7km s-min=6.3km az=35.9*

ISK ***13*** *19:31:11.8,37.87N×27.37E,h14km,MD2.4*

DDA ***13*** *19:31:11.6,37.85N×27.33E,h7km,Md2.3*

CSEM ***13*** *19:31:12.2±0.2,37.85N×27.33E,h2km,MD2.3,Error ellipse: s-maj=4.8km s-min=3.5km az=78.0*

ISC 13 19:31:11.7±1.0,37.85N±0.03×27.34E±0.04,h12km±9km, n14,σ0 39/22,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GCAM	**G?zelcaml?**	**0.17**	**208**	*i* P	**Pg**

IZM	**Izmir**	**0.56**	**358**	*e*Pg	**Pg**	**19 33 57.7**	**-0.6**
IZM				*e*Sg	**Sg**	**19 34 05.7**	**-0.1**
BLCB	**Balcova**	**0.58**	**340**	*e*PG	**Pg**	**19 33 58.2**	**-0.5**
BLCB	**Balcova**	**0.58**	**340**	*e*Pg	**Pg**	**19 33 58.2**	**-0.5**
ZEY	**˜zmir**	**0.74**	**303**	*i* P	**Pg**	**19 34 00.8**	**-0.8**
ZEY				*i* S	**Sg**	**19 34 10.9**	**-0.6**
URLA	**Izmir**	**0.76**	**314**	*i* P	**Pg**	**19 34 01.3**	**-0.7**
URLA				*i* S	**Sg**	**19 34 11.7**	**-0.3**
URLA	**Izmir**	**0.76**	**314**	P	**Pg**	**19 34 01.3**	**-0.7**
URLA				S	**Sg**	**19 34 11.7**	**-0.3**
BODT	**Bodrum**	**0.77**	**179**	*e*PG	**Pb**	**19 34 03.2**	**+0.6**
BODT	**Bodrum**	**0.77**	**179**	*e*Pg	**Pb**	**19 34 03.2**	**+0.6**
BDRM	**Kayabasi**	**0.78**	**171**	*i* P	**Pg**	**19 34 01.6**	**-0.8**
BDRM				*i* S	**Sb**	**19 34 13.9**	**+0.8**
BDRM	**Kayabasi**	**0.78**	**171**	P	**Pg**	**19 34 01.6**	**-0.8**
BDRM				S	**Sb**	**19 34 13.9**	**+0.8**
YER	**Yerkesik**	**1.06**	**131**	*e*PG	**Pb**	**19 34 08.1**	**+0.7**
YER	**Yerkesik**	**1.06**	**131**	*e*Pg	**Pb**	**19 34 08.1**	**+0.7**
AKS	**Akhisar**	**1.12**	**21**	*e*PG	**Pb**	**19 34 08.0**	**-0.4**
AKS	**Akhisar**	**1.12**	**21**	*e*Pg	**Pb**	**19 34 08.0**	**-0.4**
CHOS	**Chios island**	**1.12**	**300**	*e*PN	**Pb**	**19 34 08.5**	**0.0**
CHOS	**Chios island**	**1.12**	**300**	S	**Sg**	**19 34 22.2**	**-1.3**
CHOS	**Chios island**	**1.12**	**300**	P	**Pb**	**19 34 08.4**	**0.0**
CHOS				S	**Sg**	**19 34 22.2**	**-1.3**
CHOS				AML	AML	19 34 26.6	
	comp=E,516μm,0.4s						
CHOS				AML	AML	19 34 27.9	
	comp=N,464μm,0.5s						
DKL	**Dikili**	**1.27**	**346**	*e*PN	**Pn**	**19 34 10.9**	**+0.3**
DKL	**Dikili**	**1.27**	**346**	*e*Pn	**Pn**	**19 34 10.9**	**+0.3**
KULA	**Kula-Manisa**	**1.27**	**58**	*e*PN	**Pn**	**19 34 11.2**	**+0.4**
KULA	**Kula-Manisa**	**1.27**	**58**	*e*Pn	**Pn**	**19 34 11.2**	**+0.4**
TURN	**Turunc**	**1.42**	**132**	*i* P	**Pn**	**19 34 10.1**	**-2.6**
TURN				*i* S	**Sn**	**19 34 27.7**	**-3.5**
DALY	**Dalyan (Mu˘la**	**1.49**	**133**	*e*PN	**Pb**	**19 34 15.6**	**+0.9**
DALY	**Dalyan (Mu˘la**	**1.49**	**133**	*e*Pn	**Pb**	**19 34 15.6**	**+0.9**
AYVA	**Ayvalik**	**1.54**	**342**	*i* P	**Pb**	**19 34 15.9**	**+0.3**
AYVA				*i* S	**Sg**	**19 34 36.9**	**-0.1**
AYVA	**Ayvalik**	**1.54**	**342**	P	**Pb**	**19 34 15.9**	**+0.3**
AYVA				S	**Sg**	**19 34 36.9**	**-0.1**
APE	**Apeiranthos**	**1.60**	**242**	*e*PN	**Pb**	**19 34 17.3**	**+0.7**
APE	**Apeiranthos**	**1.60**	**242**	P	**Pn**	**19 34 16.2**	**+1.0**
APE	**Apeiranthos**	**1.60**	**242**	*e*Pn	**Pb**	**19 34 17.3**	**+0.7**
APE	**Apeiranthos**	**1.60**	**242**	P	**Pn**	**19 34 16.2**	**+1.0**
PRK	**Paraskevi**	**1.62**	**331**	P	**Pb**	**19 34 16.4**	**-0.5**
PRK				S	**Sg**	**19 34 39.3**	**-0.1**
PRK	**Paraskevi**	**1.62**	**331**	P	**Pb**	**19 34 16.4**	**-0.5**
PRK				S	**Sg**	**19 34 39.3**	**-0.1**
PRK				AML	AML	19 34 41.3	
	comp=E,371μm,0.4s						
PRK				AML	AML	19 34 44.7	
	comp=N,307μm,0.5s						
ARG	**Arkhangelos**	**1.75**	**157**	P	**Pg**	**19 34 20.5**	**-0.4**
SIGR	**SIGRI**	**1.77**	**321**	*e*PN	**Pn**	**19 34 18.6**	**+1.1**
SIGR	**SIGRI**	**1.77**	**321**	*e*Pn	**Pn**	**19 34 18.6**	**+1.1**
SIGR	**SIGRI**	**1.77**	**321**	P	**Pb**	**19 34 19.6**	**0.0**
SIGR	**SIGRI**	**1.77**	**321**	P	**Pb**	**19 34 19.6**	**0.0**
BALB	**Balikesir**	**1.86**	**14**	*e*PN	**Pn**	**19 34 20.0**	**+1.3**
FETY	**Fethiye**	**1.87**	**129**	*e*PN	**Pb**	**19 34 21.2**	**0.0**
FETY	**Fethiye**	**1.87**	**129**	*e*Pn	**Pb**	**19 34 21.2**	**0.0**
TVSB	**Tavsanli**	**2.34**	**46**	*e*PN	**Pn**	**19 34 27.2**	**+1.8**
TVSB	**Tavsanli**	**2.34**	**46**	*e*Pn	**Pn**	**19 34 27.3**	**+1.8**
KSL	**Kastellorizon**	**2.49**	**132**	P	**Pn**	**19 34 29.7**	**+2.3**
KCTX	**Karacabey (Bur**	**2.56**	**19**	*e*PN	**Pn**	**19 34 30.5**	**+2.1**
KCTX	**Karacabey (Bur**	**2.56**	**19**	*e*Pn	**Pn**	**19 34 30.5**	**+2.1**
GELI	**Tayfur-Gelibol**	**2.63**	**346**	*e*PN	**Pn**	**19 34 31.4**	**+2.1**
GELI	**Tayfur-Gelibol**	**2.63**	**346**	*e*Pn	**Pn**	**19 34 31.5**	**+2.1**
ARMT	**Armutlu**	**2.98**	**24**	*e*PN	**Pn**	**19 34 36.4**	**+2.1**
ARMT	**Armutlu**	**2.98**	**24**	*e*Pn	**Pn**	**19 34 36.4**	**+2.1**
IZI	**Iznik**	**3.02**	**34**	*e*PN	**Pn**	**19 34 36.8**	**+2.1**
IZI	**Iznik**	**3.02**	**34**	*e*Pn	**Pn**	**19 34 36.8**	**+2.1**

*SKHL **13** 19:35:32.8±0.3, 43˚.57N×147˚.65E, h57km±5km, mb4.3/2*
*JMA **13** 19:35:33.0±0.3, 43˚.46N×147˚.51E, h54km, M2.9*
ISC 13 19:35:31.5±2.5, 43˚.6N±0˚.1×147˚.7E±0˚.1, h60km±24km, n11, σ0§94/20, Kuril Islands

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
SHO	**Shikotan**	**0.67**	**297**	*i* P	**Pn**	**19 35 45.9**	**+0.6**
SHO				AMB	AMB	19 35 46.3	
	120nm,0.3s						
SHO				*i* S	**Sn**	**19 35 55.6**	**+0.1**
SHO				A	A	19 35 56.6	
	1μm,0.4s						
YUK	**Yuzh-Kuril'sk**	**1.38**	**290**	*e*P	**Pn**	**19 35 54.6**	**+0.1**
YUK				AMB	AMB	19 35 57.0	
	30nm,0.2s						
YUK				AMB	AMB	19 35 57.0	
	20nm,0.2s						
YUK				AMB	AMB	19 35 57.0	
	80nm,0.2s						
YUK				*i* S	**Sn**	**19 36 11.2**	**-0.6**
YUK				A	A	19 36 12.3	
	160nm,0.3s						
YUK				A	A	19 36 12.3	
	180nm,0.3s						
NEM2	**Nemuro 2**	**1.41**	**262**	P	**Pn**	**19 35 55.1**	**+0.2**
NEM2				*e*S	**Sn**	**19 36 11.5**	**-0.9**
KUR	**Kuril'sk**	**1.67**	**5**	*e*P	**Pn**	**19 35 58.7**	**+0.3**
KUR				*i* S	**Sn**	**19 36 17.9**	**-0.9**
KUR				A	A	19 36 18.9	
	30nm,0.2s						
KUR				A	A	19 36 18.9	
	60nm,0.2s						
JRA	**Rausu**	**1.87**	**282**	P	**Pn**	**19 36 01.9**	**+0.8**
JRA				*e*S	**Sn**	**19 36 23.6**	**-0.1**
JNK	**Nakash**	**2.13**	**271**	P	**Pn**	**19 36 04.6**	**-0.1**
JNK				*e*S	**Sn**	**19 36 28.7**	**-1.4**
JAK	**Akkeshi**	**2.23**	**256**	P	**Pn**	**19 36 06.5**	**+0.4**
JAK				*e*S	**Sn**	**19 36 31.2**	**-1.3**
JTKR	**Abashiri--Toko**	**2.74**	**280**	P	**Pn**	**19 36 14.3**	**+1.3**
JAR	**Ashorobuto**	**2.84**	**266**	P	**Pn**	**19 36 15.6**	**+1.2**
JAR				*e*S	**Sn**	**19 36 47.7**	**+0.2**
JCH	**Churui**	**3.29**	**255**	P	**Pn**	**19 36 21.5**	**+1.0**
JCH				*e*S	**Sn**	**19 36 56.8**	**-1.5**
JNBK	**Urakawa-nobuka**	**3.82**	**252**	P	**Pn**	**19 36 28.6**	**+0.8**

*TAP **13** 19:36:29.4, 24˚.80N×121˚.99E, h97km, ML3.0, C*
*JMA **13** 19:36:29.9±0.1, 24˚.75N×121˚.97E, h90km±2km, M2.0*
*ISCJB **13** 19:36:30.1±0.7, 24˚.79N±0˚.04×122˚.00E±0˚.03, h92km±5km, Error ellipse: s-maj=6.7km s-min=3.5km az=154.1*
ISC 13 19:36:30.8±1.5, 24˚.76N±0˚.05×122˚.01E±0˚.03, h88km±9km, n41, σ1§01/73, 4D, Taiwan region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
EGS		**0.11**	**322**	*e*P	**Pn**	**19 36 43.6**	**+0.3**
	baz=314						
TWC	**Suao**	**0.21**	**223**	P	**Pn**	**19 36 43.6**	**0.0**
	baz=214						
TWC				*e*S	**Sn**	**19 36 53.1**	**+0.1**
	baz=214						
TWB1	**Santiao Chiao**	**0.25**	**357**	P	**Pn**	**19 36 43.2**	**-0.6**
TWB1				S	**Sn**	**19 36 52.9**	**-0.4**
TWE	**Neicheng**	**0.31**	**263**	P	**Pn**	**19 36 44.1**	**+0.1**
	baz=255						
TWE				S	**Sn**	**19 36 54.9**	**+1.0**
	baz=255						
NWF	**Wu-fen Shan**	**0.37**	**327**	P	**Pn**	**19 36 43.8**	**-0.7**
	baz=320						
NWF				S	**Sn**	**19 36 54.8**	**+0.1**
	baz=320						
ENA	**Nanau**	**0.41**	**216**	P	**Pn**	**19 36 45.0**	**+0.3**
	baz=206						
ENA				*e*S	**Sn**	**19 36 56.3**	**+1.3**
	baz=206						
ENTT	**Nioudou**	**0.42**	**253**	⇓*i*P	**Pn**	**19 36 45.0**	**+0.2**
	baz=254						
ENTT				S	**Sn**	**19 36 56.4**	**+1.2**
	baz=254						
TWA	**Mucha**	**0.44**	**300**	*e*P	**Pn**	**19 36 44.3**	**-0.7**
	baz=300						
TWA				*e*S	**Sn**	**19 36 55.5**	**+0.1**
	baz=300						
NSK	**Sanguang**	**0.59**	**262**	⇓P	**Pn**	**19 36 45.6**	**-0.6**
	baz=258						
NSK				S	**Sn**	**19 36 56.6**	**-1.1**
	baz=258						
TWS1	**Kuangyinshan**	**0.63**	**303**	P	**Pn**	**19 36 46.2**	**-0.3**
	baz=302						
TWS1				S	**Sn**	**19 36 58.7**	**+0.6**
	baz=302						
TWY	**Chenhua**	**0.63**	**324**	*e*P	**Pn**	**19 36 45.8**	**-0.7**
	baz=327						
TWY				*e*S	**Sn**	**19 36 57.5**	**-0.7**
	baz=327						
NNS	**Nan Shan**	**0.66**	**241**	⇓P	**Pn**	**19 36 46.8**	**-0.1**
	baz=244						
NNS				S	**Sn**	**19 36 59.1**	**+0.2**
	baz=244						
TWD	**Chiawan**	**0.77**	**209**	P	**Pn**	**19 36 47.2**	**-0.7**
	baz=217						
TWD				S	**Sn**	**19 37 01.0**	**+0.4**
	baz=217						
TWT	**Tachien**	**0.91**	**236**	*e*P	**Pn**	**19 36 49.9**	**+0.3**
	baz=230						
TWT				*e*S	**Sn**	**19 37 03.7**	**+0.2**
	baz=230						
JYNG	**Yonagunijimaku**	**0.91**	**110**	P	**Pn**	**19 36 49.2**	**-0.2**
JYNG				S	**Sn**	**19 37 03.4**	**+0.2**
WHF	**Hehuan Shan**	**0.91**	**228**	P	**Pn**	**19 36 50.1**	**+0.3**
	baz=222						
WHF				S	**Sn**	**19 37 04.4**	**+0.4**
	baz=222						
NSTT	**Nanjuang**	**0.92**	**262**	⇓P	**Pn**	**19 36 48.7**	**-0.8**
	baz=260						
NSTT				S	**Sn**	**19 37 02.5**	**-1.0**
	baz=260						
YOJ	**Yonaguni jima**	**0.96**	**108**	P	**Pn**	**19 36 49.7**	**-0.3**
ESL	**Shilin**	**1.08**	**209**	*e*P	**Pn**	**19 36 50.0**	**-1.4**
	baz=213						
TWQ1	**Liyutan**	**1.20**	**250**	*e*P	**Pn**	**19 36 52.0**	**-0.7**
	baz=248						
TWQ1				*e*S	**Sn**	**19 37 08.4**	**-0.7**
	baz=248						
SMLT	**Sun Moon Lake**	**1.33**	**229**	P	**Pn**	**19 36 54.6**	**+0.1**
	baz=235						
SMLT				*e*S	**Sn**	**19 37 14.2**	**+1.8**
	baz=235						
TYC	**Yuchr**	**1.35**	**231**	P	**Pn**	**19 36 54.6**	**0.0**
	baz=237						
TYC				S	**Sn**	**19 37 13.7**	**+1.2**
	baz=237						
EHY	**Hungye**	**1.40**	**207**	*e*P	**Pn**	**19 36 54.0**	**-1.2**
	baz=199						
EHY				*e*S	**Sn**	**19 37 11.9**	**-1.7**
	baz=199						
WNT	**Mingjian**	**1.49**	**234**	S	**Sn**	**19 37 16.3**	**+0.6**
	baz=242						
TWF1	**Yuli**	**1.54**	**205**	*e*P	Pn	19 36 53.6	-3.5
	baz=210						
TWF1				S	**Sn**	**19 37 15.4**	**-1.5**
	baz=210						
YUS	**Yu-Shan**	**1.59**	**217**	*e*P	**Pn**	**19 36 58.9**	**+0.8**
	baz=210						
YUS				*e*S	**Sn**	**19 37 22.1**	**+3.4**
	baz=210						
IRIF	**Iriomote-Funau**	**1.63**	**105**	P	**Pn**	**19 36 57.5**	**-0.6**
IRIF				*e*S	**Sn**	**19 37 18.7**	**-0.1**
ALS	**Alishan**	**1.66**	**222**	P	**Pn**	**19 36 59.4**	**+0.5**
	baz=230						
ALS				*e*S	**Sn**	**19 37 22.3**	**+2.3**
	baz=230						
CHN5	**Tsauling**	**1.68**	**227**	*e*P	**Pn**	**19 36 58.6**	**-0.3**
	baz=226						
CHN5				*e*S	**Sn**	**19 37 20.9**	**+0.8**
	baz=226						
CHKT	**Chengkung**	**1.75**	**200**	*e*P	**Pn**	**19 36 58.3**	**-1.5**
	baz=200						
CHKT				*e*S	**Sn**	**19 37 20.2**	**-1.6**
	baz=200						
ELDTW	**Lidau**	**1.81**	**210**	*e*P	**Pn**	**19 37 00.2**	**-0.4**
	baz=203						
ELDTW				S	**Sn**	**19 37 22.8**	**-0.3**
	baz=203						
JKRS	**Kuro-shima**	**1.90**	**106**	P	**Pn**	**19 37 01.7**	**+0.1**
CHN4	**Tsaushan**	**1.91**	**223**	*e*P	**Pn**	**19 37 03.0**	**+1.2**
	baz=223						
CHN4				*e*S	**Sn**	**19 37 28.7**	**+2.4**
	baz=223						
STYT	**Tauyuan**	**1.96**	**216**	*e*P	**Pn**	**19 37 02.9**	**+0.4**
	baz=208						
STYT				*e*S	**Sn**	**19 37 27.6**	**+1.0**
	baz=208						
WTP	**Ta-pu**	**1.97**	**220**	*e*P	**Pn**	**19 37 02.9**	**+0.2**
	baz=220						
WTP				*e*S	**Sn**	**19 37 27.1**	**+0.2**
	baz=220						
JIJ	**Ishigaki jima**	**1.99**	**101**	P	**Pn**	**19 37 02.4**	**-0.4**
CHN1	**Nanshi**	**2.07**	**221**	*e*P	**Pn**	**19 37 03.2**	**-0.7**
	baz=221						
CHN1				*e*S	**Sn**	**19 37 29.4**	**+0.2**
	baz=221						
JISG	**Ishigakijimahi**	**2.10**	**94**	P	**Pn**	**19 37 04.2**	**-0.1**
JISG				*e*S	**Sn**	**19 37 31.2**	**+1.3**
SGST	**Jiashian**	**2.12**	**218**	*e*S	**Sn**	**19 37 30.6**	**+0.3**
	baz=226						
JTJ	**Tarama**	**2.46**	**92**	P	**Pn**	**19 37 09.6**	**+0.6**
JTJ				*e*S	**Sn**	**19 37 39.2**	**+0.9**
LAY	**Lan-yu**	**2.74**	**189**	*e*S	**Sn**	**19 37 42.4**	**-2.8**
	baz=187						

IDC 13 19:36:39.4±1.8, 3˚.55N×127˚.50E, h0km, mb3.5/5, mb1 3.7/5, mb1mx3.4/43, mbtmp3.6/5, Error ellipse: s-maj=100.3km s-min=23.5km az=69.0, Talaud Islands

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
FITZ	**Fitzroy Crossi**	**21.60**	**185**	P	P	19 41 30.5	-0.6
	1.3nm,0.6s,baz=4.8,slow=12,SNR=3.3						
WRA	**Warramunga Arr**	**24.30**	**164**	P	P	19 41 57.6	-1.3
	2.0nm,1.1s,baz=345,slow=9.5,SNR=19						
ASAR	**Alice Springs**	**27.77**	**167**	P	P	19 42 29.6	-0.6
	0.6nm,1.0s,baz=343,slow=8.7,SNR=6.2						
STKA	**Stephens Creek**	**37.70**	**160**	P	P	19 43 58.0	+1.2
	1.0nm,0.6s,baz=324,slow=8.7,SNR=2.7						
MKAR	**Makanchi Array**	**58.14**	**325**	P	P	19 46 35.6	+0.6
	0.2nm,0.5s,baz=123,slow=8.6,SNR=4.8						

*IDC **13** 19:39:19.0±2.4, 43˚.21N×105˚.09W, h0km, mb2.5/1, mb1 3.4/3, mb1mx3.1/53, mbtmp3.1/3, ML2.1/1, MS2.7/2, Ms1 2.6/2, ms1mx2.5/4, Error ellipse: s-maj=45.5km s-min=9.6km az=155.0*
*ISCJB **13** 19:39:19.7±0.6, 43˚.64N±0˚.06×105˚.14W±0˚.07, h0km, Error ellipse: s-maj=8.3km s-min=7.2km az=7.5*
*NEIC **13** 19:39:20.7±0.6, 43˚.63N×105˚.13W, h0km, ML3.0, Error ellipse: s-maj=8.4km s-min=6.5km az=192.0, Suspected Mining explosion.*
NEIC 79 km [49 miles] WSW of Newcastle.
ISC 13 19:39:21.5±0.9, 43˚.58N±0˚.05×105˚.17W±0˚.04, h0km, n24, σ1§03/22, Wyoming

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
RSSD	**Black Hills**	**0.98**	**56**	*e*Pn	**Pg**	**19 39 39.9**	**-0.5**
K22A	**Casper**	**1.36**	**227**	*e*Pn	**Pg**	**19 39 45.5**	**-2.1**
PHWY	**Pilot Hill**	**2.29**	**185**	*e*Pn	**Pn**	**19 40 00.8**	**0.0**
PDAR	**Pinedale Array**	**3.31**	**257**	Pn	**Pn**	**19 40 15.2**	**+0.3**
	2.6nm,0.3s,baz=90,slow=14,SNR=30						
PDAR				Lg	Lg	19 41 02.2	
	7.8nm,0.3s,baz=81,slow=34,SNR=7.7						
BW06	**Boulder Array**	**3.31**	**257**	*e*Pn	**Pn**	**19 40 14.6**	**-0.3**
RLMT	**Red Lodge**	**3.32**	**299**	*e*Pn	**Pn**	**19 40 14.6**	**-0.3**
OGNE	**Ogallala**	**3.51**	**137**	*e*Pn	**Pn**	**19 40 17.3**	**-0.2**
ISCO	**Idaho Springs**	**3.79**	**185**	*e*Pn	**Pn**	**19 40 21.7**	**+0.2**
LKWY	**Lake**	**3.90**	**286**	*e*Pg	**Pg**	**19 40 35.7**	**-0.5**
LOHW	**Long Hollow**	**3.95**	**272**	*e*Pn	**Pn**	**19 40 23.1**	**-0.5**
H17A	**Grant Village**	**3.98**	**284**	*e*Pn	**Pn**	**19 40 23.5**	**-0.6**
FLWY	**Flagg Ranch**	**4.03**	**279**	*e*Pg	**Pb**	**19 40 35.6**	**+2.0**
MOOW	**Moose Ponds**	**4.05**	**274**	*e*Pn	**Pn**	**19 40 25.3**	**+0.4**
SNOW	**Snow King Moun**	**4.06**	**270**	Pn	**Pn**	**19 40 25.0**	**-0.2**
O20A	**White River Ci**	**4.14**	**215**	Pn	**Pn**	**19 40 25.7**	**-0.4**
REDW	**Red Top Meadow**	**4.14**	**269**	*e*Pn	**Pn**	**19 40 26.0**	**-0.2**
IMW	**Indian Meadow**	**4.19**	**276**	*e*Pg	**Pb**	**19 40 37.7**	**+1.3**
SMCO	**Snowmass**	**4.60**	**198**	*e*Pg	**Pb**	**19 40 45.5**	**+2.1**
BOZ	**Bozeman (W)**	**5.05**	**296**	*e*Pn	**Pn**	**19 40 38.2**	**-0.4**
	3.5nm,0.5s						
HWUT	**Hardware Ranch**	**5.12**	**250**	*e*Pn	**Pn**	**19 40 39.6**	**+0.1**
	7.0nm,0.6s						
I10CA	**LAC DU BONNET**	**9.11**	**40**	*i*		20 34 00.0	
	baz=224,slow=330,SNR=2.1						
ULM	**Lac du Bonnet**	**9.21**	**40**	Pn	**Pn**	**19 41 34.0**	**-1.5**
	0.3nm,0.3s,baz=230,slow=12,SNR=2.9						
ULM				Lg	Lg	19 44 09.1	
	0.8nm,0.3s,baz=153,slow=19,SNR=3.1						
ULM				LR	LR	19 45 42.1	
	comp=Z,56nm,18.5s,baz=168,slow=40						
TXAR	**Lajitas Array**	**14.27**	**175**	LR	LR	19 46 58.8	
	comp=Z,23nm,21.2s,baz=0.0,slow=33						
YKA	**Yellowknife Ar**	**19.74**	**347**	P	**Pn**	**19 43 54.8**	**+0.9**
	0.2nm,0.8s,baz=153,slow=11,SNR=3.5						

*CSEM **13** 19:46:31.8, 37˚.87N×27˚.37E, h22km, MD2.3*
ISK 13 19:46:31.8, 37˚.87N×27˚.37E, h22km, MD2.3, Turkey

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
AYDB	**Zeytinkoy-Aydi**	**0.42**	**80**	*e*PG	**Pb**	**19 46 41.2**	**+0.7**
AYDB				*e*SG	Sb	**19 46 47.6**	**+1.2**
AYDB	**Zeytinkoy-Aydi**	**0.42**	**80**	*e*Pg	**Pb**	**19 46 41.2**	**+0.7**
AYDB				*e*Sg	Sb	**19 46 47.6**	**+1.1**
IZM	**Izmir**	**0.53**	**351**	*e*PG	**Pb**	**19 46 43.1**	**+0.5**
IZM	**Izmir**	**0.53**	**351**	*e*Pg	**Pb**	**19 46 43.1**	**+0.6**
BLCB	**Balcova**	**0.57**	**333**	*e*PG	**Pb**	**19 46 43.9**	**+0.6**
BLCB	**Balcova**	**0.57**	**333**	*e*Pg	**Pb**	**19 46 43.9**	**+0.6**
BODT	**Bodrum**	**0.81**	**184**	*e*PG	**Pn**	**19 46 48.2**	**+0.2**
BODT	**Bodrum**	**0.81**	**184**	*e*Pg	**Pn**	**19 46 48.2**	**+0.3**
YER	**Yerkesik**	**1.03**	**135**	*e*PG	**Pn**	**19 46 51.4**	**+0.4**
YER	**Yerkesik**	**1.03**	**135**	*e*Pg	**Pn**	**19 46 51.4**	**+0.4**
AKS	**Akhisar**	**1.06**	**19**	*e*PG	**Pb**	**19 46 51.9**	**+0.4**
AKS	**Akhisar**	**1.06**	**19**	*e*Pg	**Pb**	**19 46 51.9**	**+0.4**

*JMA **13** 19:46:48.2±0.3, 39˚.41N×144˚.07E, h0km, M4.1*
*ISCJB **13** 19:46:50.4±0.8, 39˚.29N±0˚.07×144˚.05E±0˚.08, h11km, mb3.6/6, Error ellipse: s-maj=10.2km s-min=8.4km az=177.7*
*IDC **13** 19:46:51.6±1.3, 39˚.37N×143˚.95E, h0km, mb3.5/6, mb1 3.6/9, mb1mx3.4/47, mbtmp3.5/9, ML3.4/2, Error ellipse: s-maj=29.7km s-min=23.6km az=92.0*
ISC 13 19:46:53.4±1.1, 39˚.41N±0˚.07×143˚.84E±0˚.08, h11km, n21, σ1§10/25, mb3.6/6, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
MIYJ	**Miyakonagasawa**	**1.57**	**277**	P	**Pn**	**19 47 20.6**	**-0.6**
MIYJ				*e*S	**Sb**	**19 47 43.0**	**+0.7**
JTH	**Tanohata**	**1.61**	**290**	P	**Pn**	**19 47 20.5**	**-1.3**
OFUJ	**Ofunato**	**1.72**	**260**	P	**Pn**	**19 47 22.3**	**-0.9**
JOM	**Ohasama**	**1.97**	**273**	P	**Pn**	**19 47 26.2**	**-0.5**
JOM				*e*S	**Sb**	**19 47 53.9**	**0.0**
JANG	**Nango**	**2.03**	**299**	P	**Pn**	**19 47 26.2**	**-1.3**
JMK	**Ichinoseki**	**2.09**	**258**	P	**Pn**	**19 47 27.8**	**-0.5**
JRG	**Rokugo**	**2.48**	**271**	*e*S	**Sb**	**19 48 10.5**	**+1.9**
JTM	**Tenmabayashi**	**2.53**	**304**	P	**Pn**	**19 47 34.0**	**-0.4**
JTM				*e*S	**Sb**	**19 48 10.1**	**+0.1**
JAH	**Hinai**	**2.59**	**289**	*e*S	**Sb**	**19 48 12.4**	**+0.8**
JOU	**Okura**	**2.69**	**248**	P	**Pn**	**19 47 35.5**	**-1.1**
JYK	**Kaneyama**	**2.75**	**261**	P	**Pn**	**19 47 37.4**	**0.0**
ASAJ	**Asahikawa**	**4.79**	**349**	Pn	**Pn**	**19 48 05.9**	**+0.4**
	1.2nm,0.3s,baz=193,slow=11,SNR=15						
ASAJ				Sn	**Sn**	**19 48 58.6**	**-2.4**
	0.5nm,0.3s,baz=252,slow=20,SNR=2.1						
MJAR	**Matsushiro Arr**	**5.29**	**239**	Pn	**Pn**	**19 48 13.9**	**+1.5**
	1.5nm,0.3s,baz=33,slow=15,SNR=13						
MAT	**Matsushiro**	**5.29**	**239**	P	**Pn**	**19 48 11.4**	**-0.9**
MAT				*e*S	Sn	**19 48 48.3**	**-25**
USRK	**Ussuriysk Ar.**	**10.06**	**302**	Pn	**Pn**	**19 49 20.0**	**+2.3**
	0.1nm,0.3s,baz=104,slow=12,SNR=4.6						
ZALV	**Zalesovo Beam**	**41.78**	**310**	P	**P**	**19 54 43.0**	**+0.4**
	0.7nm,0.4s,baz=94,slow=6.8,SNR=4.2						
MKAR	**Makanchi Array**	**44.52**	**301**	P	**P**	**19 55 05.1**	**+0.3**
	0.4nm,0.8s,baz=90,slow=7.3,SNR=4.5						
KURBB	**Kurchatov Arra**	**46.09**	**307**	P	**P**	**19 55 17.2**	**0.0**
	0.9nm,0.4s,baz=82,slow=8.4,SNR=6.0						
ILAR	**Eielson Array**	**46.47**	**34**	P	**P**	**19 55 20.2**	**+0.2**
	0.2nm,0.5s,baz=265,slow=6.2,SNR=3.1						
BVAR	**Borovoye Array**	**50.42**	**311**	P	**P**	**19 55 51.2**	**+0.6**
	0.2nm,0.4s,baz=86,slow=8.3,SNR=3.2						
WRA	**Warramunga Arr**	**59.70**	**190**	P	**P**	**19 56 57.6**	**-0.4**
	0.5nm,0.8s,baz=8.8,slow=6.8,SNR=4.1						

*ISCJB **13** 19:51:58.0±1.7, 35˚.6N±0˚.1×6˚.36E±0˚.08, h10km, Error ellipse: s-maj=20.1km s-min=6.5km az=158.3*
*CSEM **13** 19:51:58.6±0.5, 35˚.66N×6˚.41E, h2km, ML3.3, Error ellipse: s-maj=11.1km s-min=4.2km az=160.0*
*CRAAG **13** 19:51:58.6, 35˚.81N×6˚.27E, Ml3.3*
*MDD **13** 19:52:00.1±1.4, 35˚.71N×6˚.37E, h0km, mb4.5/2, Error ellipse: s-maj=14.7km s-min=5.6km az=160.0, PRXIMO*
**ISC 13 19:51:59.4±1.3,

s-min=9.2km az=8.0
*ISCJB **13** 19:54:14.3±1.1,45°.42N±0°.02×98°.60E±0°.03,h2km±7km, mb5.0/142, MS5.4/3, Error ellipse: s-maj=3.7km s-min=3.0km az=27.6*
*OBM **13** 19:54:15.0±0.1,45°.22N×98°.64E, h2km, Ml5.2/2, Error ellipse: s-maj=2.1km s-min=0.5km az=7.0*
*BJI **13** 19:54:15.8,45°.54N×98°.67E,h20km, mb4.6/48, mB4.7/34, ML5.3/8, Ms4.8/31, Ms7 4.6/29*
*NNC **13** 19:54:17.3±1.3,45°.55N×98°.44E, h0km, mb4.8, Error ellipse: s-maj=18.2km s-min=14.7km az=140.0*
*MOS **13** 19:54:17.2±0.9,45°.39N×98°.62E, h24km, mb5.0/52, Error ellipse: s-maj=5.9km s-min=3.9km az=122.5*
*NEIC **13** 19:54:18.0±0.1,45°.40N×98°.61E, mb5.3/78, Error ellipse: s-maj=4.1km s-min=3.0km az=187.0*

ISC 13 19:54:17.8±0.5,45°.44N±0°.04×98°.61E±0°.04,h13km±2km, h13km:pP-P,n465,σ1§04/486,mb5.0/150,MS5.2/4, 69C-32D,Mongolia

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
TTS	**Tsetserleg**	**2.81**	**43**	⇓*i*Pn	Pn	19 55 04.1	+1.4
TTS	**Tsetserleg**	**2.81**	**43**	*e*Pg	Pb	19 55 08.8	+0.7
TTS				*e*Sg	Sb	19 55 45.4	+3.0
	12μm,0.4s						
TSC	**Tosontsengel**	**3.32**	**356**	⇓*i*Pn	Pn	19 55 11.9	+2.1
TSC	**Tosontsengel**	**3.32**	**356**	*e*Pg	Pb	19 55 18.1	+1.2
TSC				*e*Sg	Sb	19 56 02.7	+5.5
	8μm,0.4s						
BLGM	**Bulgan**	**4.73**	**43**	⇓*i*Pn	Pn	19 55 30.0	+1.0
BLGM	**Bulgan**	**4.73**	**43**	*e*Pg	Pb	19 55 43.5	+2.8
BLGM				*e*Sg	Sb	19 56 45.1	+7.6
	4μm,0.5s						
HTG	**Hatgal**	**5.11**	**11**	⇑*i*Pn	Pn	19 55 36.8	+2.4
HTG				*e*Sg	Sg	19 57 01.6	-0.5
	6μm,0.6s						
HBD	**Hovd**	**5.43**	**301**	⇑*i*Pn	Pn	19 55 40.2	+1.5
HBD	**Hovd**	**5.43**	**301**	*e*Pg	Pb	19 55 55.2	+2.5
HBD				*e*Sg	Sg	19 57 08.0	-4.3
SONB4	**Songino Array**	**5.83**	**63**	*e*Pn	Pn	19 55 44.0	-0.2
SONB4	**Songino Array**	**5.83**	**63**	*e*Pg	Pb	19 56 03.7	+4.1
SONB4				*e*Sg	Sg	19 57 21.2	-4.0
	5μm,0.7s						
SONB5	**Songino Array**	**5.85**	**63**	⇓*i*Pn	Pn	19 55 44.2	-0.2
SONB5	**Songino Array**	**5.85**	**63**	*e*Pg	Pb	19 56 03.7	+3.9
SONB5				*e*Sg	Sg	19 57 20.9	-4.8
	4μm,0.6s						
ZAK	**Zakamensk**	**5.85**	**31**	*e*P	**Pn**	**19 55 45.9**	**+1.6**
ZAK				pmax	pmax		
	comp=Z,273nm,0.8s						
SONA0	**Songino Array**	**5.86**	**63**	⇓*i*Pn	Pn	19 55 44.3	-0.2
	baz=250						
SONA0	**Songino Array**	**5.86**	**63**	*e*Pg	Pb	19 56 04.2	+4.2
SONA0				*e*Sg	Sg	19 57 20.5	-5.4
	comp=Z,2μm,1.0s						
SONA4	**Songino Array**	**5.86**	**63**	*e*Pn	Pn	19 55 44.4	-0.3
SONA4	**Songino Array**	**5.86**	**63**	*e*Pg	Pb	19 56 03.7	+3.6
SONA4				*e*Sg	Sg	19 57 20.5	-5.7
	comp=Z,4μm,0.9s						
SONA2	**Songino Array**	**5.87**	**63**	*e*Pn	Pn	19 55 44.4	-0.3
SONA2	**Songino Array**	**5.87**	**63**	*e*Pg	Pb	19 56 03.7	+3.6
SONA2				*e*Sg	Sg	19 57 20.6	-5.6
	comp=Z,4μm,0.9s						
SONA1	**Songino Array**	**5.87**	**63**	⇓*i*Pn	Pn	19 55 44.4	-0.3
SONA1	**Songino Array**	**5.87**	**63**	*e*Pg	Pb	19 56 03.7	+3.5
SONA1				*e*Sg	Sg	19 57 20.6	-5.7
	comp=Z,4μm,0.8s						
SONB3	**Songino Array**	**5.87**	**63**	⇓*i*Pn	Pn	19 55 44.5	-0.2
SONB3	**Songino Array**	**5.87**	**63**	*e*Pg	Pb	19 56 04.0	+3.8
SONB3				*e*Sg	Sg	19 57 21.0	-5.3
	comp=Z,3μm,0.6s						
SONM	**Songino Array**	**5.87**	**63**	Pn	**Pn**	**19 55 44.3**	**-0.3**
	comp=Z,38nm,0.3s,baz=246,slow=15,SNR=840						
SONM				Pg	Pb	19 56 04.0	+4.0
	comp=Z,136nm,0.3s,baz=248,slow=16,SNR=33						
SONM				Sn	**Sn**	**19 56 48.9**	**-2.8**
	comp=Z,75nm,0.3s,baz=235,slow=26,SNR=6.2						
SONM				Lg	Lg	19 57 18.5	
	comp=Z,164nm,0.3s,baz=246,slow=32,SNR=9.6						
SONM				LR	LR	19 58 19.9	
	comp=Z,1μm,20.0s,baz=224,slow=42						
SONA3	**Songino Array**	**5.87**	**63**	*e*Pn	Pn	19 55 44.5	-0.3
SONA3	**Songino Array**	**5.87**	**63**	*e*Pg	Pb	19 56 03.6	+3.4
SONA3				*e*Sg	Sg	19 57 20.7	-5.7
	comp=Z,3μm,0.8s						
SONB1	**Songino Array**	**5.87**	**63**	*e*Pn	Pn	19 55 44.6	-0.2
SONB1	**Songino Array**	**5.87**	**63**	*e*Pg	Pb	19 56 03.8	+3.5
SONB1				*e*Sg	Sg	19 57 20.9	-5.6
	comp=Z,6μm,0.9s						
SONA1	**Songino Array**	**5.88**	**63**	*e*Pn	**Pn**	**19 55 44.5**	**-0.2**
SONB2	**Songino Ar. Si**	**5.88**	**63**	⇓*i*Pn	Pn	19 55 44.6	-0.3
SONB2	**Songino Ar. Si**	**5.88**	**63**	*e*Pg	Pb	19 56 03.7	+3.3
SONB2				*e*Sg	Sg	19 57 21.2	-5.5
	comp=Z,3μm,0.6s						
GTA	**Gaotai**	**6.09**	**171**	*e*Pn	**Pn**	**19 55 47.4**	**-0.2**
GTA				LR	LR		
	comp=Z,4μm,8.1s						
GTA				LR	LR		
	comp=Z,6μm,6.9s						
GTA				LR	LR		
	comp=Z,4μm,10.5s						
UB5M		**6.10**	**64**	⇓*i*Pn	Pn	19 55 47.4	-0.4
UB5M		**6.10**	**64**	*e*Pg	Pb	19 56 07.7	+3.6
UB5M				*e*Sg	Sg	19 57 27.9	-5.7
SEMM		**6.14**	**67**	⇓*i*Pn	Pn	19 55 48.1	-0.4
SEMM		**6.14**	**67**	*e*Pg	Pb	19 56 07.5	+2.6
SEMM				*e*Sg	Sg	19 57 28.1	-7.0
ALFM		**6.15**	**63**	⇓*i*Pn	Pn	19 55 48.2	-0.5
ALFM		**6.15**	**63**	*e*Pg	Pb	19 56 09.8	+4.7
ALFM				*e*Sg	Sg	19 57 31.4	-4.1
	comp=Z,3μm,0.7s						
ULN	**Ulaanbaatar**	**6.30**	**64**	*e*P	**Pn**	**19 55 50.0**	**-0.4**
ULN	**Ulaanbaatar**	**6.30**	**64**	*e*Pn	**Pn**	**19 55 50.0**	**-0.4**
ULG	**Ulaangom**	**6.31**	**318**	⇓*i*Pn	Pn	19 55 53.4	+2.6
ULG	**Ulaangom**	**6.31**	**318**	*e*Pg	Pb	19 56 11.2	+3.5
ULG				*e*Sg	Sg	19 57 34.4	-6.2
MOY	**Mondy**	**6.43**	**13**	*e*P	**Pn**	**19 55 55.1**	**+3.0**
MOY				*e*S	Sn	19 57 14.8	+9.4
UGDM		**6.44**	**67**	⇓*i*Pn	Pn	19 55 52.0	-0.6
UGDM		**6.44**	**67**	*e*Pg	Pb	19 56 13.4	+3.5
UGDM				*e*Sg	Sg	19 57 37.3	-7.2
ARTM		**6.44**	**64**	⇓*i*Pn	Pn	19 55 52.2	-0.5
ARTM		**6.44**	**64**	*e*Pg	Pb	19 56 13.9	+3.9
ARTM				*e*Sg	Sg	19 57 38.1	-6.6
BYO	**Bayan-Olgiy**	**6.86**	**304**	⇓*i*Pn	Pn	19 56 01.6	+3.2
BYO	**Bayan-Olgiy**	**6.86**	**304**	*e*Pg	Pg	19 56 25.2	-4.1
BYO				*e*Sg	Sg	19 57 56.6	-1.5
TLY	**Talaya**	**7.08**	**26**	Pn	**Pn**	**19 56 03.2**	**+2.2**
	comp=Z,0.1nm,0.3s,baz=220,slow=11,SNR=6.5						
TLY				Lg	Lg	19 57 58.9	
	comp=Z,1.4nm,0.3s,baz=323,slow=20,SNR=15						
TLY				LR	LR	19 59 08.6	
	comp=Z,652nm,20.2s,baz=204,slow=41						
TLY	**Talaya**	**7.08**	**26**	*e*P	**Pn**	**19 56 03.2**	**+2.2**
TLY				pmax	pmax		
	comp=Z,81nm,0.4s						
TLY	**Talaya**	**7.08**	**26**	*e*Pn	**Pn**	**19 56 01.8**	**+0.8**
TLY				Lg	Lg	19 57 58.9	
IRK	**Irkutsk**	**7.76**	**27**	*e*P	Pn	19 56 13.6	+3.3
IRK				pmax	pmax		
	comp=Z,176nm,0.8s						
WMQ	**Urumqi**	**7.95**	**262**	P	**Pn**	**19 56 15.0**	**+1.9**
WMQ				S	**Sn**	**19 57 41.6**	**-1.3**
WMQ				smax	smax		
	comp=Z,760nm,1.0s						
WMQ				smax	smax		
	comp=Z,290nm,1.4s						
AKAR	**Aktash**	**8.85**	**307**	*e*P	**Pn**	**19 56 26.9**	**+1.5**
BTO	**Baotou**	**9.65**	**116**	*e*P	**Pn**	**19 56 33.6**	**-2.8**
BTO				LR	LR		
	comp=Z,690nm,5.9s						
BTO				LR	LR		
	comp=Z,520nm,2.9s						
LZH	**Lanzhou**	**10.15**	**155**	*e*P	**Pn**	**19 56 41.9**	**-1.4**
LZH				*e*S	**Sn**	**19 58 42.3**	**+5.3**
LZH				sS		19 58 51.0	
LZH				pmax	pmax		
	comp=Z,38nm,1.0s						
LZH				pmax	pmax		
	comp=Z,150nm,4.3s						
LZH				LR	LR		
	comp=Z,2μm,6.5s						
LZH				LR	LR		
	comp=Z,2μm,6.4s						
LZH				LR	LR		
	comp=Z,2μm,7.1s						
HHC	**Hu-ho-hao-te**	**10.52**	**111**	*e*P	**Pn**	**19 56 46.8**	**-1.4**
HHC				pP		19 56 49.9	
HHC				S	**Sn**	**19 58 45.5**	**-0.4**
HHC				pmax	pmax		
	comp=Z,35nm,0.6s						
HHC				pmax	pmax		
	comp=Z,92nm,6.5s						
HHC				LR	LR		
	comp=Z,6μm,8.8s						
HHC				LR	LR		
	comp=Z,5μm,7.0s						
HHC				LR	LR		
	comp=Z,6μm,8.2s						
UKR	**Ust'-Kan**	**10.74**	**306**	*e*P	Pn	19 56 55.5	+4.2
KRAR	**Krasnoyarsk**	**11.19**	**343**	*e*P	**Pn**	**19 56 59.0**	**+1.8**
ELT	**Eltsovka**	**11.23**	**319**	*e*P	**Pn**	**19 57 00.4**	**+2.6**
MK01	**Makanchi Array**	**11.41**	**282**	⇑*i*Pn	Pn	19 56 59.9	-0.6
MK01				*e*Sg		20 00 11.9	
MK31	**Makanchi Array**	**11.41**	**283**	Pn	**Pn**	**19 56 59.6**	**-0.8**
	comp=Z,7.1nm,0.7s,baz=96,slow=14,SNR=73						
MK31				⇓Pg		19 57 42.0	
	comp=Z,6.5nm,0.6s,baz=98,slow=16,SNR=4.2						
MK31				⇑Lg	Lg	20 00 14.1	
	comp=Z,95nm,0.7s,baz=0.0,slow=0.1,SNR=3.9						
MKAR	**Makanchi Array**	**11.41**	**283**	Pn	**Pn**	**19 56 59.7**	**-0.7**
	comp=Z,1.3nm,0.3s,baz=96,slow=14,SNR=50						
MKAR				Sn	**Sn**	**19 59 06.2**	**-1.5**
	comp=Z,2.4nm,0.3s,baz=98,slow=24,SNR=4.2						
MKAR				Lg	Lg	20 00 13.9	
	comp=Z,4.2nm,0.3s,baz=79,slow=28,SNR=5.8						
MAKZ	**Makanchi**	**11.63**	**283**	*e*P	**Pn**	**19 57 03.1**	**-0.2**
MAKZ	**Makanchi**	**11.63**	**283**	*e*Pn	**Pn**	**19 57 03.1**	**-0.2**
CIT	**Chita**	**11.85**	**51**	*e*P	**Pn**	**19 57 09.0**	**+2.7**
CIT				*e*		19 59 25.3	
CIT				pmax	pmax		
	comp=Z,854nm,1.4s						
ZALV	**Zalesovo Beam**	**12.32**	**319**	Pn	**Pn**	**19 57 14.6**	**+1.9**
	comp=Z,0.4nm,0.3s,baz=131,slow=11,SNR=45						
ZALV				Sn	**Sn**	**19 59 32.2**	**+2.5**
	comp=Z,0.6nm,0.3s,baz=126,slow=22,SNR=2.8						
ZALV				Lg	Lg	20 00 42.6	
	comp=Z,1.5nm,0.3s,baz=106,slow=29,SNR=3.8						
NVS	**Novosibirsk**	**13.60**	**319**	*e*P	**Pn**	**19 57 31.2**	**+1.1**
PDGK	**Podgornoye**	**13.84**	**268**	⇑Pn	**Pn**	**19 57 32.6**	**-0.9**
	comp=Z,15nm,0.5s						
PDGK				⇑Lg	Lg	20 01 31.9	
	comp=Z,195nm,1.1s						
XAN	**Xi'an**	**13.86**	**142**	P	**Pn**	**19 57 34.1**	**+0.2**
BJI	**Beijing**	**13.98**	**107**	P	**Pn**	**19 57 34.0**	**-1.5**
BJI				pmax	pmax		
	comp=Z,9.0nm,1.4s						
BJI				LR	LR		
	comp=Z,3μm,20.2s						
BJI				LR	LR		
	comp=Z,16μm,20.2s						
BJI				LR	LR		
	comp=Z,13μm,22.4s						
KURK	**Kurchatov**	**14.35**	**299**	⇑Pn	**Pn**	**19 57 38.7**	**-1.8**
	comp=Z,59nm,0.7s						
KURK				⇑Lg	Lg	20 01 47.3	
	comp=Z,678nm,1.1s						
KURK	**Kurchatov**	**14.35**	**299**	*e*P	**Pn**	**19 57 38.9**	**-1.5**
KURK	**Kurchatov**	**14.35**	**299**	*e*Pn	**Pn**	**19 57 38.9**	**-1.5**
KURK				Lg	Lg	20 01 45.7	
KURBB	**Kurchatov Arra**	**14.38**	**298**	Pn	**Pn**	**19 57 39.1**	**-1.8**
	comp=Z,0.2nm,0.3s,baz=104,slow=13,SNR=44						
KURBB				Lg	Lg	20 01 45.7	
	comp=Z,0.3nm,0.3s,baz=103,slow=30,SNR=6.4						
CD2	**Chengdu**	**15.06**	**163**	P	**Pn**	**19 57 49.6**	**-0.6**
CD2				S	**Sn**	**20 00 37.3**	**+0.5**
CD2				SS	**S**	**20 00 55.8**	**+1.5**
CD2				pmax	pmax		
	comp=Z,70nm,0.8s						
CD2				pmax	pmax		
	comp=Z,80nm,3.9s						
CD2				LR	LR		
	comp=Z,16μm,13.2s						
CD2				LR	LR		
	comp=Z,16μm,14.4s						
BOD	**Bodaibo**	**15.60**	**32**	*e*P	**P**	**19 58 02.8**	**+1.5**
BOD				pmax	pmax		
	comp=Z,28nm,0.8s						
TKM2	**Tokmak 2**	**16.69**	**270**	⇓P	**Pn**	**19 58 12.6**	**+1.1**
	comp=Z,23nm,0.8s						
TKM2				⇑Lg	Lg	20 03 01.9	
	comp=Z,52nm,1.1s						
TKM2	**Tokmak 2**	**16.69**	**270**	*e*P	**P**	**19 58 12.8**	**-1.0**
TKM2				pmax	pmax		
	comp=Z,32nm,1.1s						
TKM2	**Tokmak 2**	**16.69**	**270**	*e*Pn	**P**	**19 58 12.8**	**-1.0**
	comp=Z,32nm,1.1s						
LSA	**Lhasa**	**16.78**	**203**	P	P	19 58 20.8	+5.8
LSA				pmax	pmax		
	comp=Z,32nm,0.9s						
LSA	**Lhasa**	**16.78**	**203**	*e*P	**Pn**	**19 58 13.7**	**+0.8**
LSA				pmax	pmax		
	comp=Z,28nm,0.8s						
LSA	**Lhasa**	**16.78**	**203**	*e*Pn	**Pn**	**19 58 13.7**	**+0.8**
	comp=Z,28nm,0.8s						
ENH	**Enshi**	**17.38**	**147**	*e*Pn	**Pn**	**19 58 18.6**	**-1.4**
	comp=Z,23nm,0.8s						
FRU	**Bishkek**	**17.41**	**270**	⇑*i*P	**P**	**19 58 21.0**	**-0.5**
FRU				pmax	pmax		
	comp=Z,170nm,2.0s						
AAK	**Ala-Archa**	**17.55**	**269**	P	**Pn**	**19 58 22.7**	**+0.5**
	comp=Z,1.5nm,0.3s,baz=79,slow=6.8,SNR=41						
AAK	**Ala-Archa**	**17.55**	**269**	⇑P	**P**	**19 58 23.0**	**-0.3**
	comp=Z,23nm,0.8s						
AAK				⇑Lg	Lg	20 03 31.0	
	comp=Z,128nm,2.4s						
AAK	**Ala-Archa**	**17.55**	**269**	*e*P	**P**	**19 58 22.8**	**-0.4**
AAK				pmax	pmax		
	comp=Z,102nm,1.8s						
AAK	**Ala-Archa**	**17.55**	**269**	*e*Pn	**P**	**19 58 22.8**	**-0.4**
	comp=Z,102nm,1.8s						
KSH	**Kashi**	**17.69**	**258**	P	P	19 58 30.1	+5.3
KSH				*e*pP	sP	19 58 34.4	+4.2
KSH				*e*sP	pP	19 58 38.4	+10
KSH				S	**S**	**20 01 47.4**	**-0.7**
KSH				pmax	pmax		
	comp=Z,18nm,0.7s						
KSH				pmax	pmax		
	comp=Z,190nm,5.9s						
KSH				LR	LR		
	comp=Z,1μm,10.5s						
KSH				LR	LR		
	comp=Z,2μm,9.4s						
KSH				LR	LR		
	comp=Z,5μm,18.0s						
EKS2	**Erkin-Say**	**18.05**	**270**	*e*P	**P**	**19 58 29.6**	**+0.9**
EKS2				pmax	pmax		
	comp=Z,66nm,0.8s						
EKS2	**Erkin-Say**	**18.05**	**270**	*e*Pn	**P**	**19 58 29.6**	**+0.9**
	comp=Z,66nm,0.8s						
OTUK	**Ortayu**	**18.16**	**288**	⇓P	**Pn**	**19 58 28.3**	**-1.2**
	comp=Z,45nm,1.0s						
OTUK				⇓Lg	Lg	20 03 46.3	
	comp=Z,198nm,1.5s						
OTUK	**Ortayu**	**18.16**	**288**	*i*P	**Pn**	**19 58 27.3**	**-2.2**
OTUK				pmax	pmax		
	comp=Z,44nm,0.9s						
DL2	**Dalian**	**18.24**	**103**	P	**P**	**19 58 34.8**	**+4.2**
DL2				pmax	pmax		
	comp=Z,41nm,0.8s						
MNAS	**Manas**	**19.00**	**270**	⇓P	**Pn**	**19 58 40.4**	**+0.5**
	comp=Z,29nm,0.8s						
MNAS				⇑Lg	Lg	20 04 16.0	
	comp=Z,61nm,1.7s						
MNAS	**Manas**	**19.00**	**270**	P	**Pn**	**19 58 40.1**	**+0.3**
MNAS				pmax	pmax		
	comp=Z,39nm,1.0s						
CN2	**Changchun**	**19.15**	**85**	*e*P	**P**	**19 58 40.9**	**+0.3**
CN2				pmax	pmax		
	comp=Z,10.0nm,0.6s						
SFK	**Sufi-Kurgan**	**19.19**	**262**	⇑P	**Pn**	**19 58 42.0**	**-0.3**
	comp=Z,33nm,0.8s						
SFK	**Sufi-Kurgan**	**19.19**	**262**	*i*P	**Pn**	**19 58 43.2**	**+0.9**
SFK				pmax	pmax		
	comp=Z,14nm,0.6s						
WHN	**Wuhan**	**19.31**	**135**	P	Pn	19 58 52.3	+8.8
WHN				pmax	pmax		
	comp=Z,36nm,0.9s						
VOSK	**Vostochnaya**	**19.42**	**302**	⇑P	**P**	**19 58 43.8**	**+0.2**
	comp=Z,19nm,0.5s						
VOSK				⇑Lg	Lg	20 04 27.9	
	comp=Z,164nm,1.9s						
VOSK	**Vostochnaya**	**19.42**	**302**	*i*P	**P**	**19 58 42.0**	**-1.6**
VOSK				pmax	pmax		
	comp=Z,24nm,0.6s						
BVA0	**Borovoye Array**	**19.83**	**303**	⇓P	**P**	**19 58 48.2**	**+0.2**
	comp=Z,46nm,0.9s,baz=106,slow=13,SNR=285						
BVA0				Lg	Lg	20 04 41.6	
	comp=Z,129nm,3.0s,baz=105,slow=24,SNR=3.5						
BVAR	**Borovoye Array**	**19.83**	**303**	P	**P**	**19 58 48.5**	**+0.5**
	comp=Z,4.9nm,0.3s,baz=108,slow=9.5,SNR=158						
BVAR				LR	LR	20 06 43.8	
	comp=Z,5μm,18.4s,baz=81,slow=38						
CHKZ	**Chkalovo**	**19.84**	**305**	⇑P	**P**	**19 58 48.3**	**+0.3**
	comp=Z,62nm,0.7s						
CHKZ				⇑Lg	Lg	20 04 41.0	
	comp=Z,126nm,1.6s						
CHKZ	**Chkalovo**	**19.84**	**305**	*i*P	**P**	**19 58 47.7**	**-0.3**
CHKZ				pmax	pmax		
	comp=Z,62nm,0.6s						
BRVK	**Borovoye**	**19.90**	**303**	*c i*P	**Pn**	**19 58 49.7**	**-0.7**
BRVK				pmax	pmax		
	comp=Z,74nm,1.0s						
BRVK	**Borovoye**	**19.90**	**303**	*e*P	**P**	**19 58 49.2**	**+0.4**
	comp=Z,72nm,1.0s						
GYA	**Guiyang**	**20.01**	**158**	⇑P	**P**	**19 58 49.5**	**-0.8**
GYA				PP	**PnPn**	**19 59 12.4**	**+6.1**
GYA				S	**S**	**20 02 33.0**	**-2.0**
GYA				SS	SnSn	20 03 01.9	+10
GYA				PcP	**PcP**	**20 03 09.0**	**+2.9**
GYA				ScP	**ScP**	**20 06 42.3**	**+0.5**
GYA				pmax	pmax		
	comp=Z,70nm,0.9s						
GYA				pmax	pmax		
	comp=Z,150nm,4.8s						
GYA				LR	LR		
	comp=Z,7μm,15.0s						
GYA				LR	LR		
	comp=Z,8μm,14.8s						
GYA				LR	LR		
	comp=Z,7μm,15.4s						
TAPN	**Taplejung**	**20.04**	**209**	*e*P	**P**	**19 58 51.7**	**+0.9**
	comp=Z,51nm,0.6s						
GUN	**Gumba**	**20.21**	**214**	*e*P	**P**	**19 58 53.4**	**+0.7**
	comp=Z,83nm,0.8s						
KK31	**Karatay Array**	**20.22**	**273**	⇑P	**P**	**19 58 51.9**	**-0.4**
	comp=Z,25nm,0.8s						
KK31				⇑Lg	Lg	20 04 55.8	
	comp=Z,24nm,1.1s						
KK31	**Karatay Array**	**20.22**	**273**	*i*P	**P**	**19 58 51.2**	**-1.1**
KK31				pmax	pmax		
	comp=Z,25nm,0.8s						
KKAR	**Karatay Array**	**20.22**	**273**	*e*P	**P**	**19 58 52.3**	**0.0**
KKAR	**Karatay Array**	**20.22**	**273**	*e*P	**P**	**19 58 52.3**	**0.0**
KMI	**Kunming**	**20.55**	**169**	P	Pn	19 58 59.4	+1.0
KMI				pP	sP	19 59 04.8	+3.2
KMI				sP	pP	19 59 06.9	+7.0
KMI				S	**S**	**20 02 44.8**	**-1.0**
KMI				pmax	pmax		
	comp=Z,71nm,1.0s						
KMI				pmax	pmax		
	comp=Z,220nm,3.1s						
KKN	**Kakani**	**20.56**	**216**	*e*P	**P**	**19 58 57.5**	**+1.1**
	comp=Z,62nm,0.6s						
ODAN	**Odare**	**20.60**	**210**	*e*P	**P**	**19 58 57.3**	**+0.5**
	comp=Z,63nm,0.6s						
NJ2	**Nanjing**	**20.61**	**123**	*e*P	Pn	19 58 58.3	-0.6
NJ2				pmax	pmax		
	comp=Z,13nm,0.6s						
GKN	**Gorkha**	**20.64**	**217**	*e*P	Pn	19 58 59.0	-0.5
	comp=Z,50nm,0.8s						
ZRNK	**Zerenda**	**20.64**	**302**	⇑P	**P**	**19 58 57.2**	**+0.3**
	comp=Z,130nm,0.7s						
ZRNK				⇑Lg	Lg	20 05 06.1	
	comp=Z,202nm,1.7s						
ZRNK	**Zerenda**	**20.64**	**302**	*e*P	**P**	**19 58 57.4**	**+0.6**
ZRNK				pmax	pmax		
	comp=Z,132nm,0.6s						
ZRNK	**Zerenda**	**20.64**	**302**	*e*P	**P**	**19 58 57.4**	**+0.6**
	comp=Z,132nm,0.6s						
PKIN	**Phulchoki**	**20.70**	**215**	*e*P	**P**	**19 58 58.7**	**+0.8**
	comp=Z,49nm,0.8s						
DMN	**Daman**	**20.79**	**216**	*e*P	**P**	**19 58 59.5**	**+0.6**
	comp=Z,89nm,0.9s						
RAMN	**Ramite**	**20.80**	**212**	*e*P	**P**	**19 58 58.8**	**-0.2**
	comp=Z,59nm,0.6s						
PYUN	**Piuthan**	**21.29**	**221**	*e*P	**P**	**19 59 04.1**	**-0.1**
	comp=Z,160nm,0.8s						
KOLN	**Koldanda**	**21.30**	**219**	*e*P	**P**	**19 59 04.5**	**+0.2**
	comp=Z,39nm,0.7s						
LGTI	**Lohaghat**	**21.54**	**228**	*ex*	**P**	**19 59 09.2**	**+2.6**
MDJ	**Mudanjiang**	**21.85**	**81**	P	**P**	**19 59 09.5**	**-0.4**
MDJ				ScP	**ScP**	**20 06 46.1**	**+0.2**
MDJ				PcS	**PcS**	**20 06 49.3**	**+1.8**
MDJ				pmax	pmax		
	comp=Z,46nm,4.2s						
MDJ	**Mudanjiang**	**21.85**	**81**	*e*P	**P**	**19 59 10.0**	**+0.1**
	comp=Z,11nm,1.0s						
KLR	**Kul'dur**	**22.67**	**68**	P	**P**	**19 59 18.4**	**-0.2**
	comp=Z,4.6nm,0.8s,baz=263,slow=11,SNR=16						
KLR	**Kul'dur**	**22.67**	**68**	P	**P**	**19 59 18.4**	**-0.2**
KLR				pmax	pmax		
	comp=Z,4.0nm,0.6s						
KS01	**Wonju Array Si**	**23.25**	**100**	*e*P	**P**	**19 59 24.6**	**-0.1**
KS15	**Wonju Array Si**	**23.26**	**100**	*e*P	**P**	**19 59 25.5**	**+0.7**
KSAR	**Wonju Array Be**	**23.26**	**100**	P	**P**	**19 59 24.1**	**-0.7**
KSAR	**Wonju Array Be**	**23.26**	**100**	P	**P**	**19 59 24.1**	**-0.7**
KSRS	**Korea Array**	**23.28**	**100**	P	**P**	**19 59 24.1**	**-0.9**
	comp=Z,6.5nm,0.7s,baz=287,slow=8.9,SNR=23						
USRK	**Ussuriysk Ar.**	**23.62**	**81**	P	**P**	**19 59 26.5**	**-1.8**
	comp=Z,7.2nm,0.9s,baz=283,slow=8.4,SNR=16						
YAK	**Yakutsk**	**24.41**	**36**	P	**P**	**19 59 34.7**	**-0.9**
	comp=Z,7.8nm,0.6s,baz=216,slow=0.6,SNR=10						
YAK	**Yakutsk**

	comp=Z,146nm,1.5s									
JNU	**Nakatsue**	**27.65**	**105**	*e*P		**P**	**20 00 06.5**	**+1.3**		
	comp=Z,284nm,0.8s									
YHNB	**Yeheng**	**27.70**	**131**	*e*P		**P**	**20 00 07.3**	**+1.6**		
	comp=Z,73nm,1.6s									
NACB	**Ninganchiao**	**28.22**	**131**	*e*P		**P**	**20 00 11.2**	**+1.0**		
	comp=Z,16nm,0.8s									
SOKR	**Solikamsk**	**28.56**	**315**	*e*P		**P**	**20 00 11.3**	**-1.6**		
SOKR				pmax	pmax					
	comp=Z,12nm,1.1s									
TIXI	**Tiksi**	**29.98**	**19**	P		**P**	**20 00 24.4**	**-1.0**		
	comp=Z,2.2nm,0.5s,baz=221,slow=5.1,SNR=13									
TIXI	**Tiksi**	**29.98**	**19**	*ce*P		**P**	**20 00 24.6**	**-0.8**		
TIXI				pmax	pmax					
	comp=Z,3.0nm,0.8s									
TIXI	**Tiksi**	**29.98**	**19**	*e*P		**P**	**20 00 24.5**	**-0.8**		
	comp=Z,3.7nm,0.7s									
GEYT	**Alibeck**	**30.90**	**270**	P		**P**	**20 00 34.7**	**+0.7**		
	comp=Z,12nm,1.0s,baz=66,slow=5.0,SNR=14									
HYB	**Hyderabad**	**32.58**	**217**	*i* P		**P**	**20 00 48.5**	**-0.3**		
MA2	**Magadan**	**33.78**	**46**	*e*P		**P**	**20 00 59.3**	**+0.3**		
SEY	**Seymchan**	**34.73**	**40**	P		**P**	**20 01 07.2**	**+0.1**		
KLMR	**Klimovskoe**	**37.22**	**316**	*e*P		**P**	**20 01 25.6**	**-2.8**		
KLMR				*e**SP		**sP**	**20 01 33.7**	**-0.4**		
KLMR				*e*			20 02 50.6			
KLMR				*e*SS		SS	20 09 47.4	-10		
KLMR				*e*			20 11 36.5			
KLMR				pmax	pmax					
	comp=Z,50nm,0.9s									
VRH	**Novokhopyorsk**	**37.44**	**300**	*e*P		**P**	**20 01 30.0**	**-0.4**		
VRH				pmax	pmax					
	comp=Z,30nm,1.1s									
TMCR	**Tamitsa**	**37.82**	**322**	*e*P		**P**	**20 01 34.2**	**+0.7**		
TMCR				pmax	pmax					
	comp=Z,82nm,1.4s									
LPSR	**Galich'ya Gora**	**38.78**	**303**	*e*P		**P**	**20 01 41.3**	**-0.4**		
LPSR				pmax	pmax					
	comp=Z,20nm,0.7s									
MOS	**Moscow**	**38.85**	**308**	*e*P		**P**	**20 01 42.3**	**+0.1**		
MOS				pmax	pmax					
	comp=Z,81nm,0.7s									
VSR	**Storozhevoye**	**38.99**	**301**	*e*P		**P**	**20 01 43.3**	**-0.2**		
VSR				pmax	pmax					
	comp=Z,50nm,1.0s									
KBZ	**Khabaz**	**39.04**	**288**	P		**P**	**20 01 44.2**	**+0.2**		
	comp=Z,2.8nm,0.9s,baz=9.2,slow=2.4,SNR=5.1									
KIV	**Kislovodsk**	**39.10**	**288**	*e*P		**P**	**20 01 42.8**	**-1.8**		
KIV				pmax	pmax					
	comp=Z,9.0nm,1.1s									
LVZ	**Lovozero**	**39.26**	**327**	*ce*P		**P**	**20 01 45.1**	**-0.5**		
LVZ				pmax	pmax					
	comp=Z,17nm,0.8s									
LVZ	**Lovozero**	**39.26**	**327**	*e*P		**P**	**20 01 45.5**	**0.0**		
	comp=Z,18nm,0.8s									
GNI	**Garni**	**39.26**	**282**	*c i*P		**P**	**20 01 47.4**	**+1.3**		
GNI				pmax	pmax					
	comp=Z,114nm,1.5s									
GNI	**Garni**	**39.26**	**282**	*e*P		**P**	**20 01 48.0**	**+1.9**		
	comp=Z,56nm,1.5s									
NEY	**Neytrino**	**39.34**	**287**	*i* P		**P**	**20 01 47.6**	**+0.8**		
NEY				pmax	pmax					
	comp=Z,7.0nm,1.8s									
OBN	**Obninsk**	**39.56**	**307**	*i* P		**P**	**20 01 47.8**	**-0.4**		
OBN				*i*			20 03 19.7			
OBN				pmax	pmax					
	comp=Z,24nm,1.0s									
OBN				MLR	MLR					
	comp=Z,2µm,16.0s									
OBN	**Obninsk**	**39.56**	**307**	*e*P		**P**	**20 01 48.0**	**-0.2**		
	comp=Z,35nm,0.5s									
APA	**Apatity**	**39.73**	**327**	⇓*i*P		**P**	**20 01 51.4**	**+2.0**		
APA				pmax	pmax					
	comp=Z,29nm,0.7s									
APA				MLR	MLR					
	comp=Z,4µm,26.0s									
BILL	**Bilibino**	**40.65**	**32**	*c i*P		**P**	**20 01 57.8**	**+0.7**		
BILL				pmax	pmax					
	comp=Z,6.0nm,1.2s									
BILL	**Bilibino**	**40.65**	**32**	*e*P		**P**	**20 01 58.1**	**+1.0**		
	comp=Z,15nm,1.4s									
PUL	**Pulkovo**	**41.90**	**315**	*ce*P		**P**	**20 02 07.9**	**+0.5**		
PUL				pmax	pmax					
	comp=Z,85nm,0.7s									
ARA0	**ARCESS Array S**	**42.54**	**330**	*e*P		**P**	**20 02 13.2**	**+0.7**		
ARCES	**ARCESS Array B**	**42.54**	**330**	P		**P**	**20 02 13.3**	**+0.8**		
	comp=Z,19nm,0.7s,baz=77,slow=8.7,SNR=46									
ARE0	**ARCESS Array S**	**42.54**	**330**	*e*P		**P**	**20 02 12.4**	**-0.2**		
ARE0	**ARCESS Array S**	**42.54**	**330**	*e*P		**P**	**20 02 13.2**	**+0.6**		
	comp=Z,27nm,0.8s									
KTK1	**Kautokeino**	**43.40**	**330**	*e*P		**P**	**20 02 20.7**	**+1.2**		
KTK1				*e*P		**P**	**20 02 20.7**	**+1.2**		
FIA1	**FINESS Array S**	**43.58**	**318**	*e*P		**P**	**20 02 21.2**	**+0.2**		
FINES	**FINESS Array B**	**43.59**	**318**	P		**P**	**20 02 21.4**	**+0.3**		
	comp=Z,6.2nm,0.4s,baz=79,slow=8.2,SNR=87									
MYLDM	**Lahad Datu**	**43.69**	**151**	*e*P		**P**	**20 02 24.3**	**+1.9**		
	comp=Z,31nm,1.1s									
VSU	**Vasula**	**44.01**	**314**	⇑*i*P		**P**	**20 02 24.7**	**+0.2**		
VSU				pmax	pmax					
	comp=Z,58nm,0.6s									
SPA0	**Spitsbergen Ar**	**44.40**	**343**	*e*P		**P**	**20 02 27.4**	**0.0**		
SPITS	**Spitsbergen Ar**	**44.40**	**343**	P		**P**	**20 02 28.6**	**+1.2**		
SPITS				pmax	pmax					
	comp=Z,6.0nm,0.3s									
HSPB	**Hornsund (broa**	**44.69**	**341**	*e*P		**P**	**20 02 31.4**	**+1.7**		
TRO	**Tromso**	**44.82**	**331**	*e*P		**P**	**20 02 32.6**	**+1.8**		
IDID	**Didziasalis**	**44.93**	**310**	*e*P		**P**	**20 02 32.5**	**+0.6**		
IDID				IAmb	IAmb		20 02 34.8			
	comp=Z,8.9nm,0.8s									
IZAR	**Zarasai**	**45.06**	**310**	*e*P		**P**	**20 02 33.5**	**+0.6**		
IZAR				IAmb	IAmb		20 02 35.7			
	comp=Z,9.7nm,0.7s									
AKASG	**Malin Array Be**	**45.11**	**303**	P		**P**	**20 02 32.9**	**-0.6**		
	comp=Z,10nm,0.5s,baz=56,slow=8.4,SNR=31									
AKBB	**Malin Array Si**	**45.11**	**303**	*e*P		**P**	**20 02 33.0**	**-0.4**		
AKBB				pmax	pmax					
	comp=Z,13nm,0.6s									
AKBB	**Malin Array Si**	**45.11**	**303**	*e*P		**P**	**20 02 33.0**	**-0.4**		
	comp=Z,13nm,0.6s									
KIEV	**Kiev**	**45.12**	**303**	*e*P		**P**	**20 02 33.0**	**-0.5**		
KIEV				pmax	pmax					
	comp=Z,13nm,0.6s									
KIEV	**Kiev**	**45.12**	**303**	*e*P		**P**	**20 02 33.0**	**-0.5**		
	comp=Z,13nm,0.6s									
AK11	**Malin Array Si**	**45.16**	**303**	*e*P		**P**	**20 02 33.1**	**-0.7**		
ISAL	**Salakas**	**45.18**	**310**	*e*P		**P**	**20 02 34.6**	**+0.7**		
ISAL				IAmb	IAmb		20 02 35.5			
	comp=Z,7.8nm,0.5s									
IIGN	**Ignalina**	**45.20**	**310**	*e*P		**P**	**20 02 34.7**	**+0.6**		
IIGN				IAmb	IAmb		20 02 37.0			
	comp=Z,12nm,0.9s									
STEI	**Steigen**	**46.51**	**329**	*e*P		**P**	**20 02 45.2**	**+1.0**		
BR131	**Keskin Array S**	**47.02**	**287**	*e*P		**P**	**20 02 48.8**	**0.0**		
BRTR	**Keskin Array B**	**47.02**	**287**	P		**P**	**20 02 49.0**	**+0.2**		
	comp=Z,6.8nm,0.9s,baz=80,slow=6.8,SNR=32									
BRTR	**Keskin Array B**	**47.02**	**287**	P		**P**	**20 02 49.0**	**+0.2**		
BRTR				pmax	pmax					
	comp=Z,6.0nm,0.9s									
LOF	**Lofoten**	**47.07**	**329**	*e*P		**P**	**20 02 48.7**	**+0.1**		
LOF				IAmb	IAmb		20 02 49.5			
	comp=Z,80nm,0.8s									
BR231	**Keskin MP Arra**	**47.54**	**288**	*e*P		P	20 02 49.5	-3.3		
KONS	**Konsvik**	**47.72**	**327**	*e*P		**P**	**20 02 54.6**	**+0.9**		
STOK	**Stokkvaagen**	**47.81**	**327**	*e*P		**P**	**20 02 56.5**	**+2.1**		
RAYN	**Ar Rayn**	**47.95**	**261**	*e*P		**P**	**20 02 55.5**	**-0.6**		
	comp=Z,9.3nm,0.8s									
CFR	**Carcaliu**	**48.05**	**296**	⇑*i*P		**P**	**20 02 56.6**	**+0.1**		
CFR	**Carcaliu**	**48.05**	**296**	⇑P		**P**	**20 02 56.6**	**+0.1**		
GIRR	**Girov**	**48.28**	**299**	⇓*i*P		**P**	**20 02 58.8**	**+0.5**		
VRI	**Vrincioaia**	**48.62**	**298**	⇑*i*P		**P**	**20 03 01.6**	**+0.6**		
VRI	**Vrincioaia**	**48.62**	**298**	⇑P		**P**	**20 03 01.6**	**+0.6**		
PLOR	**Plostina**	**48.68**	**298**	⇑*i*P		**P**	**20 03 02.2**	**+0.7**		
PLOR	**Plostina**	**48.68**	**298**	⇑P		**P**	**20 03 02.2**	**+0.7**		
MSAB	**Monastry St. A**	**48.75**	**295**	⇓*i*P		**P**	**20 03 02.7**	**+0.8**		
BURAR	**Bucovina Array**	**48.77**	**300**	⇑*i*P		**P**	**20 03 02.3**	**+0.1**		
BURAR	**Bucovina Array**	**48.77**	**300**	⇑P		**P**	**20 03 02.3**	**+0.1**		
NSS	**Namsos**	**48.84**	**325**	*e*P		**P**	**20 03 02.7**	**+0.3**		
ISR	**Istrita**	**49.08**	**297**	⇑*i*P		**P**	**20 03 05.8**	**+1.2**		
ISR	**Istrita**	**49.08**	**297**	⇑P		**P**	**20 03 05.8**	**+1.2**		
MLR	**Muntele Rosu**	**49.28**	**298**	⇓*i*P		**P**	**20 03 07.1**	**+0.9**		
MLR	**Muntele Rosu**	**49.28**	**298**	*e*P		**P**	**20 03 06.6**	**+0.4**		
MLR				pmax	pmax					
	comp=Z,15nm,1.4s									
MLR	**Muntele Rosu**	**49.28**	**298**	*e*P		**P**	**20 03 06.6**	**+0.4**		
	comp=Z,14nm,1.4s									
KWP	**Kalwaria Pacla**	**49.38**	**304**	*e*P		**P**	**20 03 07.6**	**+0.9**		
KWP	**Kalwaria Pacla**	**49.38**	**304**	*e*P		**P**	**20 03 07.6**	**+0.9**		
DOPR	**Dopca**	**49.41**	**298**	⇑*i*P		**P**	**20 03 08.4**	**+1.4**		
ARCR	**ARCALIA**	**49.53**	**300**	⇓*i*P		**P**	**20 03 09.6**	**+1.7**		
KOLS	**Kolonicke sedl**	**49.94**	**303**	*e*P		**P**	**20 03 11.1**	**+0.1**		
KOLS				pmax	pmax					
	comp=Z,4.0nm,0.8s									
KOLS	**Kolonicke sedl**	**49.94**	**303**	*e*P		**P**	**20 03 11.1**	**+0.1**		
ARR	**Arges**	**50.16**	**298**	⇓*i*P		**P**	**20 03 14.0**	**+1.2**		
NC405	**NORSAR Array S**	**50.26**	**321**	*e*P		**P**	**20 03 13.3**	**0.0**		
GUMO	**Guam**	**50.27**	**114**	P		**P**	**20 03 13.0**	**-0.9**		
	comp=Z,165nm,1.1s,baz=286,slow=4.6,SNR=4.5									
GUMO	**Guam**	**50.27**	**114**	*e*P		**P**	**20 03 14.2**	**+0.3**		
GUMO	**Guam**	**50.27**	**114**	*e*P		**P**	**20 03 14.2**	**+0.3**		
	comp=Z,546nm,1.4s									
STHS	**Stebnicka Huta**	**50.33**	**304**	*e*P		**P**	**20 03 13.8**	**-0.2**		
STHS				pmax	pmax					
	comp=Z,3.0nm,0.7s									
STHS	**Stebnicka Huta**	**50.33**	**304**	*e*P		**P**	**20 03 13.8**	**-0.2**		
HUMR	**Humele**	**50.34**	**297**	⇑*i*P		**P**	**20 03 14.1**	**0.0**		
GAMB	**Gambell**	**50.36**	**35**	*e*P		**P**	**20 03 14.3**	**+0.4**		
	comp=Z,27nm,1.0s									
NC303	**NORSAR Array S**	**50.36**	**321**	*e*P		**P**	**20 03 14.1**	**0.0**		
CRVS	**Cervenica-Dubn**	**50.44**	**303**	*e*P		**P**	**20 03 14.6**	**-0.2**		
CRVS	**Cervenica-Dubn**	**50.44**	**303**	*e*P		**P**	**20 03 14.6**	**-0.2**		
NB201	**NORSAR Array S**	**50.47**	**321**	*e*P		**P**	**20 03 14.9**	**0.0**		
NC602	**NORSAR Array S**	**50.49**	**321**	*e*P		**P**	**20 03 14.8**	**-0.2**		
NC602	**NORSAR Array S**	**50.49**	**321**	*e*P		**P**	**20 03 14.7**	**-0.3**		
NB2	**NORSAR Subarra**	**50.51**	**321**	P		**P**	**20 03 14.7**	**-0.5**		
	comp=Z,24nm,0.9s,baz=66,slow=7.9									
NB2	**NORSAR Subarra**	**50.51**	**321**	P		**P**	**20 03 14.7**	**-0.5**		
	baz=66,slow=7.9									
NOA	**NORSAR Array B**	**50.51**	**321**	P		**P**	**20 03 15.0**	**-0.2**		
	comp=Z,15nm,0.8s,baz=65,slow=7.5,SNR=44									
NC204	**NORSAR Array S**	**50.61**	**321**	*e*P		**P**	**20 03 16.2**	**+0.3**		
LOT	**Lotru**	**50.65**	**299**	⇑*i*P		**P**	**20 03 17.7**	**+1.1**		
NBO02	**NORSAR Array S**	**50.66**	**321**	*e*P		**P**	**20 03 16.2**	**-0.1**		
DRGR		**50.67**	**301**	⇑*i*P		**P**	**20 03 17.4**	**+0.8**		
DRGR		**50.67**	**301**	⇑P		**P**	**20 03 17.4**	**+0.8**		
NBO00	**NORSAR Array S**	**50.71**	**321**	*e*P		**P**	**20 03 16.5**	**-0.1**		
NAO01	**NORSAR Array S**	**50.74**	**321**	*e*P		**P**	**20 03 16.5**	**-0.3**		
OJC	**Ojcow**	**50.80**	**306**	*e*P		**P**	**20 03 17.7**	**+0.2**		
OJC	**Ojcow**	**50.80**	**306**	*e*P		**P**	**20 03 17.4**	**-0.1**		
OJC				pmax	pmax					
	comp=Z,18nm,0.5s									
OJC	**Ojcow**	**50.80**	**306**	*e*P		**P**	**20 03 17.4**	**-0.1**		
	comp=Z,18nm,0.5s									
NIE	**Niedzica**	**50.88**	**304**	*e*P		**P**	**20 03 19.2**	**+1.1**		
NIE	**Niedzica**	**50.88**	**304**	*e*P		**P**	**20 03 19.2**	**+1.1**		
KECS	**Kecovo**	**51.20**	**303**	*e*P		**P**	**20 03 21.5**	**+1.0**		
KECS				pmax	pmax					
	comp=Z,3.0nm,0.7s									
KECS	**Kecovo**	**51.20**	**303**	*e*P		**P**	**20 03 21.5**	**+1.0**		
BSD	**Bornholm Skovb**	**51.27**	**313**	*i* P		**P**	**20 03 20.4**	**-0.5**		
	comp=Z,123nm,0.6s									
BSD	**Bornholm Skovb**	**51.27**	**313**	*i* P		**P**	**20 03 20.4**	**-0.5**		
BSD				pmax	pmax					
	comp=Z,120nm,0.6s									
GZR	**Gura Zlata**	**51.29**	**299**	⇓*i*P		**P**	**20 03 22.2**	**+0.8**		
GZR	**Gura Zlata**	**51.29**	**299**	⇓P		**P**	**20 03 22.2**	**+0.8**		
LANS	**Liptovska Anna**	**51.48**	**304**	*e*P		**P**	**20 03 23.6**	**+0.9**		
LANS	**Liptovska Anna**	**51.48**	**304**	*e*P		**P**	**20 03 23.6**	**+0.9**		
KONO	**Kongsberg**	**51.83**	**320**	*e*P		**P**	**20 03 26.7**	**+1.6**		
AKN	**Aaknes**	**51.84**	**323**	*e*P		**P**	**20 03 25.8**	**+0.7**		
BZS	**Buzias**	**51.90**	**300**	⇑*i*P		**P**	**20 03 26.1**	**+0.3**		
BZS	**Buzias**	**51.90**	**300**	⇑P		**P**	**20 03 26.1**	**+0.3**		
DAG	**Danmarks Havn**	**51.92**	**345**	*i* P		**P**	**20 03 24.7**	**-0.8**		
	comp=Z,4.4nm,0.7s									
DAG	**Danmarks Havn**	**51.92**	**345**	*i* P		**P**	**20 03 24.7**	**-0.8**		
DAG				pmax	pmax					
	comp=Z,3.0nm,0.7s									
OKC	**Ostrava-Krasne**	**51.92**	**306**	⇑*i*P		**P**	**20 03 26.1**	**+0.2**		
OKC	**Ostrava-Krasne**	**51.92**	**306**	⇑P		**P**	**20 03 26.1**	**+0.2**		
VYHS	**Vyhne**	**52.16**	**304**	*e*P		**P**	**20 03 28.5**	**+0.8**		
VYHS				pmax	pmax					
	comp=Z,5.0nm,0.8s									
VYHS	**Vyhne**	**52.16**	**304**	*e*P		**P**	**20 03 28.5**	**+0.8**		
MDVR	**Moldovita**	**52.25**	**299**	⇓*i*P		**P**	**20 03 29.1**	**+0.6**		
MORC	**Moravsky Berou**	**52.30**	**306**	*e*P		**P**	**20 03 29.0**	**+0.3**		
MORC				pmax	pmax					
	comp=Z,48nm,1.2s									
MORC	**Moravsky Berou**	**52.30**	**306**	*e*P		**P**	**20 03 29.0**	**+0.3**		
	comp=Z,48nm,1.2s									
VTS	**Vitosha**	**52.42**	**296**	⇓*i*P		**P**	**20 03 30.2**	**+0.3**		
VTS	**Vitosha**	**52.42**	**296**	*e*P		**P**	**20 03 29.9**	**0.0**		
VTS				pmax	pmax					
	comp=Z,10.0nm,0.7s									
VTS	**Vitosha**	**52.42**	**296**	*e*P		**P**	**20 03 29.9**	**0.0**		
	comp=Z,9.5nm,0.7s									
KSP	**Ksiaz**	**52.49**	**308**	*e*P		**P**	**20 03 30.8**	**+0.7**		
KSP	**Ksiaz**	**52.49**	**308**	*e*P		**P**	**20 03 30.9**	**+0.8**		
KRLC	**Kraliky**	**52.59**	**307**	⇑*i*P		**P**	**20 03 31.3**	**+0.4**		
KRLC	**Kraliky**	**52.59**	**307**	⇑*i*P		**P**	**20 03 31.3**	**+0.4**		
DPC	**Dobruska-Polom**	**52.71**	**307**	⇑*i*P		**P**	**20 03 32.7**	**+0.9**		
DPC				*ep*P		**sP**	**20 03 37.8**	**+0.2**		
DPC	**Dobruska-Polom**	**52.71**	**307**	⇑*i*P		**P**	**20 03 32.7**	**+0.9**		
DPC				*e*			20 03 37.8			
UPC	**Upice**	**52.81**	**307**	⇑*i*P		**P**	**20 03 33.1**	**+0.6**		
UPC	**Upice**	**52.81**	**307**	⇑*i*P		**P**	**20 03 33.1**	**+0.6**		
HOMB	**Homborsund**	**52.97**	**319**	*e*P		**P**	**20 03 32.5**	**-1.0**		
VRAC	**Vranov**	**53.06**	**306**	⇑*i*P		**P**	**20 03 35.2**	**+0.8**		
VRAC	**Vranov**	**53.06**	**306**	⇑P		**P**	**20 03 35.2**	**+0.8**		
PKSM	**Moragy**	**53.40**	**302**	P		**P**	**20 03 36.8**	**-0.1**		
PKSM				pmax	pmax					
	comp=Z,20nm,1.3s									
MUD	**Monsted U'grnd**	**53.52**	**316**	*i* P		**P**	**20 03 37.9**	**+0.3**		
	comp=Z,15nm,0.6s									
MUD	**Monsted U'grnd**	**53.52**	**316**	*i* P		**P**	**20 03 37.9**	**+0.3**		
MUD				pmax	pmax					
	comp=Z,15nm,0.6s									
SNART	**Snartemo**	**53.54**	**319**	*e*P		**P**	**20 03 38.1**	**+0.4**		
SNART				IAmb	IAmb		20 03 38.9			
	comp=Z,19nm,0.7s									
PVCC	**Panska Ves**	**53.60**	**308**	⇑*i*P		**P**	**20 03 39.1**	**+0.8**		
PVCC	**Panska Ves**	**53.60**	**308**	⇑*i*P		**P**	**20 03 39.1**	**+0.8**		
TREC	**Trest**	**53.70**	**306**	P		**P**	**20 03 39.9**	**+0.8**		
TREC				pmax	pmax					
	comp=Z,13nm,1.0s									
BRG	**Berggiesshubel**	**53.78**	**309**	*e*P		**P**	**20 03 39.7**	**+0.1**		
	comp=Z,9.4nm,1.0s									
BRG	**Berggiesshubel**	**53.78**	**309**	*e*P		**P**	**20 03 39.7**	**+0.1**		
BRG				pmax	pmax					
	comp=Z,5.0nm,1.0s									
GOPC	**GO Pecny, Ondr**	**53.79**	**307**	⇑*e*P		**P**	**20 03 40.2**	**+0.5**		
GOPC	**GO Pecny, Ondr**	**53.79**	**307**	*e*P		**P**	**20 03 40.2**	**+0.5**		
PRU	**Pruhonice**	**53.89**	**307**	⇑*i*P		**P**	**20 03 40.9**	**+0.5**		
PRU	**Pruhonice**	**53.89**	**307**	⇑*i*P		**P**	**20 03 40.9**	**+0.5**		
PRA	**Prague**	**53.91**	**308**	⇑*e*P		**P**	**20 03 41.3**	**+0.8**		
PRA	**Prague**	**53.91**	**308**	*e*P		**P**	**20 03 41.3**	**+0.8**		
CLL	**Collm**	**54.08**	**309**	⇑*i*P		**P**	**20 03 41.8**	**0.0**		
	comp=Z,15nm,0.6s									
CLL				*es*P		**sP**	**20 03 48.0**	**+0.5**		
CLL	**Collm**	**54.08**	**309**	⇑*i*P		**P**	**20 03 41.8**	**0.0**		
CLL				*e**SP		**sP**	**20 03 48.0**	**+0.5**		
CLL				pmax	pmax					
	comp=Z,5.0nm,0.6s									
CLL	**Collm**	**54.08**	**309**	*e*P		**P**	**20 03 41.7**	**0.0**		
	comp=Z,15nm,0.6s									
CONA	**Conrad Observa**	**54.17**	**305**	*i* pP		**P**	**20 03 43.8**	**+1.2**		
	comp=Z,29nm,1.3s,SNR=10									
ATKA	**Atka Island**	**54.48**	**49**	*e*P		**P**	**20 03 44.9**	**+0.2**		
	comp=Z,135nm,1.1s									
KHC	**Kasperske Hory**	**54.86**	**307**	⇑*i*P		**P**	**20 03 47.8**	**+0.2**		
KHC				*e*PCP		**PcP**	**20 04 48.5**	**-1.1**		
KHC	**Kasperske Hory**	**54.86**	**307**	*e*P		**P**	**20 03 47.6**	**0.0**		
KHC				pmax	pmax					
	comp=Z,3.0nm,1.0s									
KHC	**Kasperske Hory**	**54.86**	**307**	*e*P		**P**	**20 03 47.6**	**0.0**		
	comp=Z,3.3nm,1.0s									
NKC	**Novy Kostel**	**54.93**	**308**	⇑*e*P		**P**	**20 03 48.5**	**+0.5**		
NKC	**Novy Kostel**	**54.93**	**308**	*e*P		**P**	**20 03 48.5**	**+0.5**		
GEC2	**GERESS Array S**	**54.94**	**307**	*e*P		**P**	**20 03 48.4**	**+0.2**		
GEC2				pmax	pmax					
	comp=Z,5.0nm,1.0s									
GEC2	**GERESS Array S**	**54.94**	**307**	*e*P		**P**	**20 03 48.4**	**+0.2**		
	comp=Z,5.0nm,1.0s									
GERES	**GERESS Array B**	**54.94**	**307**	P		**P**	**20 03 47.9**	**-0.4**		
	comp=Z,2.5nm,0.8s,baz=60,slow=7.9,SNR=13									
GERES				PcP		**PcP**	**20 04 49.8**	**-0.2**		
	comp=Z,2.0nm,0.9s,baz=54,slow=2.5,SNR=7.1									
GEA0	**GERESS Array S**	**54.95**	**306**	*e*P		**P**	**20 03 47.9**	**-0.3**		
PERS	**Pernice**	**55.27**	**304**	*i* P		**P**	**20 03 50.6**	**0.0**		
SOKA	**Soboth**	**55.30**	**304**	*i* P		**P**	**20 03 50.9**	**0.0**		
	comp=Z,13nm,1.1s,SNR=6.0									
OBKA	**Obir**	**55.67**	**304**	*i* P		**P**	**20 03 54.1**	**+0.6**		
	comp=Z,19nm,1.3s,SNR=5.1									
VNDS	**Vrh nad Dolski**	**55.80**	**303**	*i* P		**P**	**20 03 54.1**	**-0.3**		
VISS	**Visnje**	**55.88**	**303**	*i* P		**P**	**20 03 54.6**	**-0.3**		
GRFO	**Grafenberg**	**55.88**	**308**	*e*P		**P**	**20 03 55.6**	**+0.7**		
GRFO				pmax	pmax					
	comp=Z,26nm,1.0s									
GRFO	**Grafenberg**	**55.88**	**308**	*e*P		**P**	**20 03 55.6**	**+0.7**		
	comp=Z,26nm,1.0s									
KBA	**Koelnbreinsper**	**56.07**	**305**	*i* P		**P**	**20 03 57.2**	**+0.8**		
	comp=Z,18nm,0.8s,SNR=5.6									
COLD	**Coldfoot**	**56.28**	**26**	*e*P		**P**	**20 03 57.1**	**-0.3**		
	comp=Z,70nm,1.0s									
SCO	**Scoresbysund**	**56.73**	**340**	*i* P		**P**	**20 04 01.2**	**+0.6**		
SCO	**Scoresbysund**	**56.73**	**340**	*i* P		**P**	**20 04 01.2**	**+0.6**		
ABTA	**Abfaltersbach**	**56.73**	**305**	*i* P		**P**	**20 04 01.1**	**0.0**		
	comp=Z,15nm,1.2s,SNR=5.3									
MOTA	**Moosalm**	**57.21**	**306**	*i* pP		**P**	**20 04 06.0**	**+1.4**		
	comp=Z,21nm,1.2s,SNR=10									
MLY	**Manley**	**57.48**	**28**	*e*P		**P**	**20 04 06.9**	**+0.9**		
	comp=Z,99nm,1.2s									
FETA	**Feichten**	**57.60**	**306**	*i* P		**P**	**20 04 07.3**	**0.0**		
	comp=Z,12nm,1.0s,SNR=6.9									
BPAW	**Bear Paw Mtn.**	**57.98**	**29**	*e*P		**P**	**20 04 10.1**	**+0.6**		
	comp=Z,63nm,1.2s									
CAST	**Castle Rocks**	**58.02**	**30**	*e*P		**P**	**20 04 10.2**	**+0.3**		
	comp=Z,44nm,0.8s									
FUORN	**Ofenpass-Fuorn**	**58.09**	**306**	*e*P		**P**	**20 04 10.9**	**0.0**		
	comp=Z,14nm,0.6s									
HGN	**Heimansgroeve**	**58.15**	**312**	*e*P		**P**	**20 04 11.3**	**+0.5**		
	comp=Z,20n

PCAS	**Casmilo, Conde**	**72.77**	**310**	*eP*		**P**	**20 05 46.5**	**+0.8**
PESTR	**Estremoz**	**73.11**	**308**	*eP*		**P**	**20 05 48.3**	**+0.6**
PBAR	**Barrancos**	**73.30**	**308**	*eP*		**P**	**20 05 48.8**	**0.0**
EVO	**Evora**	**73.58**	**308**	*eP*		**P**	**20 05 51.2**	**+0.7**
PBEJ	**Beja**	**73.86**	**308**	*eP*		**P**	**20 05 52.5**	**+0.4**
PNCL	**Nicolau / Gran**	**74.17**	**308**	*eP*		**P**	**20 05 54.2**	**+0.3**
MESJ	**Messejana**	**74.19**	**308**	*eP*		**P**	**20 05 54.9**	**+0.9**
PVAQ	**Vaqueiros**	**74.22**	**307**	*eP*		**P**	**20 05 54.6**	**+0.4**
PBDV	**Barranco-do-Ve**	**74.45**	**307**	*eP*		**P**	**20 05 57.3**	**+1.7**
FCC	**Fort Churchill**	**75.63**	**7**	*eP*		**P**	**20 06 01.0**	**-0.9**
FCC					pmax	pmax		
	comp=Z,58nm,1.0s							
FCC	**Fort Churchill**	**75.63**	**7**	*eP*		**P**	**20 06 01.0**	**-0.9**
	comp=Z,59nm,1.0s							
ASAR	**Alice Springs**	**75.91**	**147**	P		**P**	**20 06 02.4**	**-1.6**
	comp=Z,1.6nm,0.9s,baz=333,slow=5.6,SNR=12							
AS01	**Alice Springs**	**75.93**	**147**	*eP*		**P**	**20 06 02.9**	**-1.2**
AS01				*e*PcP		**pP**	**20 06 07.1**	**-1.3**
TAM	**Tamanrasset**	**76.20**	**288**	*eP*		**P**	**20 06 06.0**	**-0.1**
TAM					pmax	pmax		
	comp=Z,4.0nm,0.9s							
TAM	**Tamanrasset**	**76.20**	**288**	*eP*		**P**	**20 06 06.0**	**-0.1**
	comp=Z,3.8nm,0.9s							
FFC	**Flin Flon**	**78.69**	**12**	*eP*		**P**	**20 06 18.5**	**-0.7**
FFC					pmax	pmax		
	comp=Z,75nm,0.8s							
FFC	**Flin Flon**	**78.69**	**12**	*eP*		**P**	**20 06 18.5**	**-0.7**
	comp=Z,75nm,0.8s							
YBMT	**Yellow Bay**	**82.78**	**21**	*eP*		**P**	**20 06 41.6**	**+0.2**
JTMT	**Jette**	**82.81**	**22**	*eP*		**P**	**20 06 42.4**	**+0.8**
SWMT	**Swartz Lake**	**83.11**	**22**	*eP*		**P**	**20 06 43.6**	**+0.5**
I03D	**Drain, OR**	**83.73**	**29**	P		**P**	**20 06 47.5**	**+1.3**
	baz=332							
MSO	**Missoula**	**83.75**	**22**	P		**P**	**20 06 47.2**	**+0.7**
	baz=338							
ULM	**Lac du Bonnet**	**83.86**	**9**	P		**P**	**20 06 45.2**	**-1.6**
	comp=Z,5.3nm,0.7s,baz=346,slow=7.5,SNR=7.2							
ULM					LR	LR	20 47 03.3	
	comp=Z,6μm,18.2s,baz=341,slow=38							
I04A	**Tendick Farm,**	**83.97**	**29**	P		**P**	**20 06 48.0**	**+0.5**
	baz=332							
A29A	**Manning Farm,**	**84.73**	**12**	P		**P**	**20 06 51.2**	**0.0**
	baz=348							
A30A	**Hoffart Farm,**	**84.85**	**11**	P		**P**	**20 06 51.5**	**-0.3**
	baz=348							
A33A	**Warroad**	**85.21**	**9**	P		**P**	**20 06 52.5**	**-1.2**
	baz=350							
B30A	**Myrvik Farm, E**	**85.32**	**11**	P		**P**	**20 06 53.5**	**-0.8**
	baz=348							
TOA0	**Torodi Ar. Sit**	**85.53**	**284**	*eP*		**P**	**20 06 54.8**	**-1.0**
TORD	**Torodi Ar. Bea**	**85.53**	**284**	P		**P**	**20 06 54.8**	**-1.0**
	comp=Z,2.4nm,0.4s,baz=37,slow=3.9,SNR=79							
B32A	**Ashes, Strandq**	**85.61**	**10**	P		**P**	**20 06 53.9**	**-1.8**
	baz=349							
B34A	**Aery, Baudette**	**85.74**	**9**	P		**P**	**20 06 55.4**	**-0.8**
	baz=351							
B35A	**Bob, Littlefor**	**85.96**	**8**	P		**P**	**20 06 56.4**	**-1.0**
	baz=351							
STKA	**Stephens Creek**	**86.28**	**144**	P		**P**	**20 06 56.8**	**-2.1**
	comp=Z,5.1nm,0.8s,baz=322,slow=6.5,SNR=9.9							
STKA	**Stephens Creek**	**86.28**	**144**	*eP*		**P**	**20 06 57.6**	**-1.3**
STKA					pmax	pmax		
	comp=Z,9.0nm,1.1s							
STKA	**Stephens Creek**	**86.28**	**144**	*eP*		**P**	**20 06 57.5**	**-1.3**
	comp=Z,8.7nm,1.1s							
MOD	**Modoc Plateau**	**86.35**	**28**	*eP*		**P**	**20 07 00.3**	**+0.6**
	comp=Z,2.1nm,0.6s							
WVOR	**Wild Horse Val**	**86.41**	**27**	*eP*		**P**	**20 07 00.6**	**+0.7**
WVOR					pmax	pmax		
	comp=Z,127nm,1.2s							
WVOR	**Wild Horse Val**	**86.41**	**27**	*eP*		**P**	**20 07 00.6**	**+0.7**
	comp=Z,127nm,1.2s							
HLID	**Hailey**	**86.64**	**23**	*eP*		**P**	**20 06 58.9**	**-2.2**
	comp=Z,35nm,0.9s							
C36A	**Pine Crest Far**	**86.64**	**8**	P		**P**	**20 06 59.9**	**-0.8**
	baz=352							
FLWY	**Flagg Ranch**	**87.14**	**21**	*eP*		**P**	**20 07 03.5**	**-0.1**
	comp=Z,298nm,1.8s							
D36A	**Goodland**	**87.19**	**8**	P		**P**	**20 07 02.5**	**-0.9**
	baz=352							
IMW	**Indian Meadow**	**87.25**	**21**	*eP*		**P**	**20 07 03.5**	**-0.7**
	comp=Z,69nm,0.9s							
D37A	**Cotton**	**87.28**	**8**	P		**P**	**20 07 03.2**	**-0.7**
	baz=352							
FXWY	**Fox Creek**	**87.47**	**21**	*eP*		**P**	**20 07 05.9**	**+0.8**
	comp=Z,51nm,1.0s							
G26A	**Maurine**	**87.72**	**15**	P		**P**	**20 07 06.1**	**0.0**
	baz=345							
G27A	**Dupree**	**87.75**	**14**	P		**P**	**20 07 06.4**	**+0.2**
	baz=346							
E36A	**McGregor**	**87.83**	**8**	P		**P**	**20 07 06.1**	**-0.4**
	baz=352							
ORV	**Oroville**	**88.04**	**30**	*eP*		**P**	**20 07 07.9**	**+0.2**
ORV					pmax	pmax		
	comp=Z,78nm,1.2s							
ORV	**Oroville**	**88.04**	**30**	*eP*		**P**	**20 07 07.9**	**+0.2**
	comp=Z,78nm,1.2s							
F33A	**5 Mile Ranch,**	**88.15**	**10**	P		**P**	**20 07 05.6**	**-2.5**
	baz=350							
F36A	**Milaca**	**88.45**	**8**	P		**P**	**20 07 08.8**	**-0.7**
	baz=352							
G32A	**Webster**	**88.57**	**11**	P		**P**	**20 07 09.7**	**-0.3**
	baz=349							
RSSD	**Black Hills**	**88.58**	**16**	P		**P**	**20 07 10.2**	**-0.3**
	baz=344							
RSSD	**Black Hills**	**88.58**	**16**	*eP*		**P**	**20 07 10.6**	**+0.2**
RSSD					pmax	pmax		
	comp=Z,54nm,0.8s							
RSSD	**Black Hills**	**88.58**	**16**	*eP*		**P**	**20 07 10.6**	**+0.2**
	comp=Z,54nm,0.8s							
BW06	**Boulder Array**	**88.66**	**20**	*eP*		**P**	**20 07 09.8**	**-1.1**
PDAR	**Pinedale Array**	**88.66**	**20**	P		**P**	**20 07 09.8**	**-1.0**
	comp=Z,0.8nm,0.8s,baz=56,slow=4.0,SNR=4.7							
I25A	**Rochford**	**88.74**	**16**	P		**P**	**20 07 10.9**	**-0.2**
	baz=344							
SPMN	**Marine on St.**	**89.15**	**8**	P		**P**	**20 07 12.7**	**-0.1**
	baz=352							
HWUT	**Hardware Ranch**	**89.23**	**22**	*eP*		**P**	**20 07 13.5**	**0.0**
	comp=Z,102nm,1.2s							
H33A	**Prehn Over Nor**	**89.23**	**11**	P		**P**	**20 07 13.4**	**+0.2**
	baz=349							
RSUT	**Red Spur Mount**	**89.24**	**22**	*eP*		**P**	**20 07 14.3**	**+0.6**
NVAR	**Mina Array Bea**	**90.14**	**28**	P		**P**	**20 07 19.0**	**+1.1**
	comp=Z,2.0nm,0.6s,baz=307,slow=4.4,SNR=6.0							
ECSD	**EROS Data Cent**	**90.18**	**11**	P		**P**	**20 07 17.0**	**-0.6**
	baz=349							
ECSD	**EROS Data Cent**	**90.18**	**11**	*eP*		**P**	**20 07 17.4**	**-0.3**
	comp=Z,75nm,0.9s							
DUG	**Dugway, Tooele**	**90.21**	**24**	P		**P**	**20 07 20.6**	**+2.6**
DUG					pmax	pmax		
	comp=Z,5.0nm,2.5s							
NLU	**North Lily Min**	**90.64**	**23**	*eP*		**P**	**20 07 20.6**	**+0.5**
	comp=Z,54nm,1.2s							
PHWY	**Pilot Hill**	**91.00**	**18**	*eP*		**P**	**20 07 21.8**	**0.0**
	comp=Z,36nm,1.1s							
LRV	**Little Rabbit**	**91.00**	**31**	*eP*		P	20 07 25.1	+3.5
R11A	**Troy Canyon, C**	**91.09**	**26**	P		**P**	**20 07 22.2**	**0.0**
	baz=337							
R11A	**Troy Canyon, C**	**91.09**	**26**	*eP*		**P**	**20 07 23.3**	**+1.1**
	comp=Z,99nm,1.3s							
N23A	**Red Feather La**	**91.28**	**18**	*eP*		**P**	**20 07 24.8**	**+1.6**
	comp=Z,126nm,1.2s							
P17A	**Butcher Ranch,**	**91.45**	**22**	*eP*		**P**	**20 07 24.9**	**+1.1**
	comp=Z,121nm,1.2s							
SMCO	**Snowmass**	**92.68**	**20**	*eP*		**P**	**20 07 30.9**	**+1.1**
	comp=Z,59nm,1.1s							
KNB	**Kanab**	**93.16**	**25**	*eP*		**P**	**20 07 34.6**	**+2.8**
KNB					pmax	pmax		
	comp=Z,130nm,1.3s							
KNB	**Kanab**	**93.16**	**25**	*eP*		**P**	**20 07 34.6**	**+2.8**
	comp=Z,130nm,1.3s							
DBIC	**Dimbokro**	**94.64**	**284**	P		**P**	**20 07 37.1**	**-1.6**
	comp=Z,2.7nm,0.9s,baz=30,slow=9.3,SNR=5.5							
R39A	**Chumby, Stover**	**95.97**	**9**	P		**P**	**20 07 44.3**	**-0.1**
	baz=352							
S40A	**Lebanon**	**96.73**	**9**	P		**P**	**20 07 47.3**	**-0.6**
	baz=352							
LPAZ	**La Paz**	**148.88**	**335**	PKPbc		**PKPdf**	**20 14 03.3**	**+1.1**
	comp=Z,1.4nm,0.5s,baz=11,slow=9.0,SNR=4.2							
CPUP	**Villa Florida**	**152.90**	**307**	PKPbc		**PKPbc**	**20 14 12.2**	**-2.4**
	comp=Z,3.7nm,0.8s,baz=15,slow=5.3,SNR=6.4							
CPUP				PKPab		**PKPab**	**20 14 24.8**	**-0.9**
	comp=Z,10.0nm,1.0s,baz=49,slow=3.6,SNR=7.4							

NIED ***13*** *19:57:00, 39.°70N×143.°80E, h17km, Mw6.1 Best double couple: M₀1.39000×10¹⁸ NP1:φ₈196.00000°, δ32.00000°, λ85.00000°. NP2:φ₈22.00000°, δ58.00000°, λ93.00000°.*

JMA ***13*** *19:57:18.5±0.2, 39.°65N×143.°81E, h0km, M6.3*

JMA Felt III J1.

ISCJB ***13*** *19:57:21.0±0.5, 39.°58N±0.°02×143.°45E±0.°01, h5km±3km, mb5.8/336, MS6.2/211, Error ellipse: s-maj=2.7km s-min=1.7km az=157.5*

BJI ***13*** *19:57:21.6, 39.°65N×143.°50E, h20km, mb6.0/73, mB6.3/64, Ms6.5/94, Ms7 6.5/82*

IDC ***13*** *19:57:21.3±0.3, 39.°54N×143.°46E, h0km, mb5.4/45, mb1 5.5/50, mb1mx5.5/57, mbtmp5.5/50, ML4.7/4, MS6.0/47, Ms1 6.0/47, ms1mx5.8/62, Error ellipse: s-maj=10.5km s-min=9.3km az=128.0*

NEIC ***13*** *19:57:23.0±0.0, 39.°39N×143.°76E, h15km, Moment Tensor Solution. s19 Moment tensor: Scale 10¹⁸Nm; Mrr0.63; Mθθ-0.10; Mφφ-0.53; Mrθ 0.46; Mθφ-0.08; Mφr 1.10; Best double couple: M₀1.30000×10¹⁸ NP1:φ₈21.00000°, δ77.00000°, λ94.00000°. NP2:φ₈184.00000°, δ13.00000°, λ74.00000°. Principal axes: T 1.3800, Plg57.0000°, Azm296.0000°; N -0.1000, Plg3.0000°, Azm200.0000°; P -1.2800, Plg31.0000°, Azm107.0000°;*

NEIC ***13*** *19:57:25.4±0.1, 39.°58N×143.°34E, h22km, mb5.8/142, ME5.8, MS6.0/92, MW6.1, MW6.0 Error ellipse: s-maj=3.1km s-min=2.0km az=141.0, Moment Tensor Solution. s12 Moment tensor: Scale 10¹⁸Nm; Mrr0.73; Mθθ0.03; Mφφ-0.77; Mrθ0.67; Mθφ-0.18; Mφr1.32; Best double couple: M₀1.70000×10¹⁸ NP1:φ₈178.00000°, δ15.00000°, λ63.00000°. NP2:φ₈25.00000°, δ77.00000°, λ97.00000°. Principal axes: T 1.6600, Plg58.0000°, Azm304.0000°; N 0.0200, Plg7.0000°, Azm204.0000°; P -1.6800, Plg31.0000°, Azm110.0000°; Broadband fault plane solution: P waves. NP1:φ₈190.00000°, δ5.00000°, λ90.00000°. NP2:φ₈10.00000°, δ85.00000°, λ90.00000°. Principal axes: T Plg50.0000°, Azm280.0000°; N Plg0.0000°, Azm0.0000°; P Plg40.0000°, Azm100.0000°; Depth from synthetics of broadband displacement seismograms. Energy computed from BB mechanism.*

NEIC Felt at Misawa, Soma and Yokohama. Also felt at Obihiro, Hokkaido. Recorded [3 JMA] in Akita, Iwate, Miyagi and Yamagata, Honshu.

GCMT ***13*** *19:57:25.4±0.1, 39.°63N×143.°59E, h15km, MW6.0/138, Moment Tensor Solution. s126,c274; s138,c466; Duration: 2ᵗ6 Moment tensor: Scale 10¹⁸Nm; Mrr0.81±.01; Mθθ0.04±.01; Mφφ-0.85±.01; Mrθ0.42±.01; Mθφ-0.18±.00; Mφr1.12±.02; Best double couple: M₀1.46600×10¹⁸ NP1:φ₈19.00000°, δ72.00000°, λ95.00000°. NP2:φ₈182.00000°, δ18.00000°, λ74.00000°. Principal axes: T 1.4370, Plg62.0000°, Azm297.0000°; N 0.0590, Plg5.0000°, Azm197.0000°; P -1.4960, Plg27.0000°, Azm105.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface/mantle waves, cutoff=50s.*

MOS ***13*** *19:57:25.9±0.9, 39.°71N×143.°36E, h33km, mb6.0/108, MS6.3/76 Error ellipse: s-maj=5.6km s-min=3.4km az=103.2*

ISC 13 19:57:23.8±0.4, 39.°59N±0.°03×143.°56E±0.°02, h16km±2km, h16km:pP-P, n1918, σ1°67/2086, mb5.8/376, MS6.2/221, 174C-39D, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op	ISC		h m s	ISC
MIYJ	**Miyakonagasawa**	**1.35**	**270**	↑P	**Pn**		**19 57 47.4**	**-0.5**
MIYJ				S	**Sg**		**19 58 08.3**	**+1.0**
JTH	**Tanohata**	**1.35**	**286**	↑P	**Pn**		**19 57 47.1**	**-1.0**
JTH				*e*S	**Sg**		**19 58 08.2**	**+0.6**
OFUJ	**Ofunato**	**1.55**	**252**	↑P	**Pn**		**19 57 50.3**	**-0.5**
OFUJ				S	**Sg**		**19 58 13.3**	**-0.6**
JANG	**Nango**	**1.76**	**297**	↑P	**Pn**		**19 57 52.4**	**-1.2**
JANG				*e*S	**Sb**		**19 58 17.6**	**+0.1**
JOM	**Ohasama**	**1.76**	**267**	↑P	**Pn**		**19 57 53.7**	**+0.1**
JOM				*e*S	**Sg**		**19 58 19.5**	**-1.0**
JMK	**Ichinoseki**	**1.92**	**252**	↑P	**Pn**		**19 57 55.7**	**-0.2**
JMK				*e*S	**Sg**		**19 58 23.5**	**-2.3**
ERM	**Erimo**	**2.45**	**353**	*d* iP	**Pn**		**19 58 02.2**	**-0.9**
ERM				pmax	pmax			
	comp=Z,2μm,1.2s							
ERM	**Erimo**	**2.45**	**353**	*e*Pn	**Pn**		**19 58 02.2**	**-0.9**
JYK	**Kaneyama**	**2.57**	**256**	↑P	**Pn**		**19 58 05.2**	**+0.4**
JYK				*e*S	**Sb**		**19 58 40.8**	**-0.2**
JOT	**Ohata**	**2.62**	**314**	↑P	**Pn**		**19 58 04.7**	**-0.8**
JNBK	**Urakawa-nobuka**	**2.76**	**347**	↑P	**Pn**		**19 58 06.3**	**-1.1**
JNBK				*e*S	**Sn**		**19 58 39.3**	**-1.1**
JKB	**Kayabe**	**3.00**	**321**	↑P	**Pn**		**19 58 09.7**	**-0.9**
JCH	**Churui**	**3.03**	**357**	↑P	**Pn**		**19 58 09.6**	**-1.5**
JFT	**Otama**	**3.26**	**232**	↑P	**Pn**		**19 58 14.1**	**-0.2**
JFT				*e*S	**Sn**		**19 58 56.4**	**+3.6**
JFR	**Furan**	**3.65**	**349**	P	**Pn**		**19 58 18.1**	**-1.5**
ASAJ	**Asahikawa**	**4.58**	**351**	Pn	**Pn**		**19 58 32.1**	**-0.3**
	comp=Z,32nm,0.3s,baz=192,slow=14,SNR=199							
ASAJ				Sn	**Sn**		**19 59 26.6**	**+1.2**
	comp=Z,105nm,0.3s,baz=226,slow=18,SNR=5.9							
ASAJ	**Asahikawa**	**4.58**	**351**	*e*Pn	**Pn**		**19 58 31.8**	**-0.7**
ASAJ				Sn	**Sn**		**19 59 26.6**	**+1.2**
YUK	**Yuzh-Kuril'sk**	**4.77**	**20**	*e*P	**Pn**		**19 58 33.5**	**-1.4**
YUK				*e*S	**Sn**		**19 59 25.8**	**-4.0**
YUK				pmax	pmax			
	comp=Z,5μm,0.5s							
YUK				pmax	pmax			
	comp=N,957nm,0.2s							
YUK				pmax	pmax			
	comp=E,2μm,0.5s							
YUK				MLR	MLR			
	comp=Z,111μm,20.0s							
YUK				MLR	MLR			
	comp=E,149μm,17.0s							
YUK				MLR	MLR			
	comp=N,159μm,15.0s							
SHO	**Shikotan**	**4.93**	**29**	*e*P	**Pn**		**19 58 34.7**	**-2.5**
SHO				*e*S	**Sn**		**19 59 27.2**	**-6.7**
SHO				pmax	pmax			
	comp=Z,2μm,0.7s							
SHO				pmax	pmax			
	comp=N,341nm,0.6s							
SHO				pmax	pmax			
	comp=E,1μm,0.5s							
MJAR	**Matsushiro Arr**	**5.20**	**236**	Pn	**Pn**		**19 58 41.7**	**+0.7**
	comp=E,62nm,0.3s,baz=41,slow=12,SNR=1425							
MJAR				LR	LR		20 00 58.0	
	comp=E,117μm,19.2s,baz=70,slow=42							
MAJO	**Matsushiro**	**5.20**	**236**	*c* iP	**Pn**		**19 58 42.5**	**+1.5**
MAJO	**Matsushiro**	**5.20**	**236**	*e*Pn	**Pn**		**19 58 42.3**	**+1.3**
MAT	**Matsushiro**	**5.20**	**236**	P	**Pn**		**19 58 41.8**	**+0.8**
MAT				S	**Sn**		**19 59 48.5**	**+7.8**
KUR	**Kuril'sk**	**6.48**	**28**	*e*P	**Pn**		**19 58 58.2**	**-0.3**
KUR				*e*S	**Sn**		**20 00 07.7**	**-4.3**
KUR				pmax	pmax			
	comp=Z,2μm,0.7s							
KUR				pmax	pmax			
	comp=N,565nm,0.6s							
KUR				pmax	pmax			
	comp=E,264nm,0.3s							
KUR				MLR	MLR			
	comp=Z,87μm,14.0s							
KUR				MLR	MLR			
	comp=N,54μm,11.0s							
KUR				MLR	MLR			
	comp=E,119μm,15.0s							
INU	**Inuyama**	**6.71**	**233**	*e*Pn	**Pn**		**19 59 01.3**	**-0.3**
JHJ2	**Mitsune**	**7.13**	**206**	*e*Pn	**Pn**		**19 59 05.0**	**-2.5**
JHJ	**Hachijo jima 2**	**7.14**	**206**	Pn	**Pn**		**19 59 05.0**	**-2.6**
	comp=E,111nm,0.3s,baz=323,slow=22,SNR=52							
JHJ				Sn	**Sn**		**20 00 21.1**	**-7.1**
	comp=E,528nm,0.3s,baz=236,slow=21,SNR=8.4							
YSS	**Yuzh-Sakhalins**	**7.39**	**356**	⇑iP	**Pn**		**19 59 10.6**	**-0.3**
YSS				*e*S	**Sn**		**20 00 30.6**	**-3.8**
YSS				pmax	pmax			
	comp=N,300nm,1.1s							
YSS				pmax	pmax			
	comp=Z,400nm,1.1s							
YSS				pmax	pmax			
	comp=Z,7μm,12.0s							
YSS				MLR	MLR			
	comp=N,168μm,15.0s							
YSS				MLR	MLR			
	comp=Z,184μm,15.0s							
YSS	**Yuzh-Sakhalins**	**7.39**	**356**	*e*Pn	**Pn**		**19 59 10.2**	**-0.7**
VLA	**Vladivostok**	**9.46**	**296**	*c* iP	**Pn**		**19 59 39.4**	**0.0**
VLA				pmax	pmax			
	comp=Z,493nm,1.4s							
UGL	**Uglegorsk**	**9.55**	**354**	*e*P	**Pn**		**19 59 40.0**	**-0.6**
UGL				*e*			20 01 28.0	
UGL				pmax	pmax			
	comp=Z,336nm,1.0s							
UGL				pmax	pmax			
	comp=N,8μm,13.0s							
UGL				pmax	pmax			
	comp=E,1μm,13.0s							
UGL				pmax	pmax			
	comp=Z,10μm,13.0s							
UGL				smax	smax			
	comp=E,17μm,10.0s							
UGL				smax	smax			
	comp=N,25μm,13.0s							
USRK	**Ussuriysk Ar.**	**9.78**	**302**	Pn	**Pn**		**19 59 46.0**	**+2.2**
	comp=N,7.8nm,0.3s,baz=107,slow=10,SNR=119							
USRK				LR	LR		20 03 32.5	
	comp=N,149μm,18.3s,baz=102,slow=38							
HABR	**Khabarovsk**	**10.78**	**328**	*c* iP	**Pn**		**19 59 55.9**	**-1.6**
HABR				*e*S	**Sn**		**20 01 54.4**	**-3.3**
HABR				pmax	pmax			
	comp=N,124nm,1.4s							
HABR				pmax	pmax			
	comp=E,121nm,1.4s							
HABR				pmax	pmax			
	comp=Z,281nm,1.4s							
HABR				MLR	MLR			
	comp=Z,165μm,15.0s							
TYV	**Tymovskoe**	**11.30**	**357**	*e*P	**Pn**		**20 00 04.0**	**-0.5**
TYV				pmax	pmax			
	comp=Z,6μm,10.0s							
TYV				pmax	pmax			
	comp=N,220nm,1.0s							
TYV				pmax	pmax			
	comp=Z,246nm,1.0s							
MDJ	**Mudanjiang**	**11.53**	**300**	P	**Pn**		**20 00 08.6**	**+0.9**
MDJ				S	**Sn**		**20 02 20.3**	**+4.3**
MDJ				ScP	**ScP**		**20 09 31.4**	**+0.6**
MDJ				PcS	**PcS**		**20 09 33.8**	**+1.1**
MDJ				pmax	pmax			
	comp=Z,18μm,8.6s							
MDJ				LR	LR			
	comp=Z,90μm,13.8s							
MDJ				LR	LR			
	comp=Z,168μm,14.3s							
MDJ				LR	LR			
	comp=Z,229μm,13.8s							
MDJ	**Mudanjiang**	**11.53**	**300**	*e*P	**Pn**		**20 00 08.8**	**+1.2**
	comp=Z,1μm,1.2s							
JNU	**Nakatsue**	**12.08**	**242**	Pn	**Pn**		**20 00 14.7**	**-0.7**
	comp=Z,3.7nm,0.3s,baz=50,slow=7.9,SNR=65							
JNU				LR	LR		20 05 24.6	
	comp=Z,161μm,18.2s,baz=49,slow=40							
JNU	**Nakatsue**	**12.08**	**242**	*e*Pn	**Pn**		**20 00 14.0**	**-1.4**
KSRS	**Korea Array**	**12.43**	**265**	Pn	**Pn**		**20 00 21.3**	**+1.2**
	comp=Z,2.0nm,0.3s,baz=86,slow=11,SNR=81							
KSRS				Sn	**Sn**		**20 02 41.4**	**+3.2**
	baz=68,slow=23,SNR=1.9							
KSRS				LR	LR		20 04 51.3	
	comp=Z,103μm,18.4s,baz=77,slow=36							
KS01	**Wonju Array Si**	**12.45**	**265**	*e*Pn	**Pn**		**20 00 21.9**	**+1.6**
KS15	**Wonju Array Si**	**12.47**	**265**	*e*Pn	**Pn**		**20 00 22.7**	**+2.2**
KSAR	**Wonju Array Be**	**12.47**	**265**	P	**Pn**		**20 00 21.3**	**+0.8**
KSAR							20 02 41.4	
KSAR	**Wonju Array Be**	**12.47**	**265**	Pn	**Pn**		**20 00 21.3**	**+0.8**
KSAR				Sn	**Sn**		**20 02 41.4**	**+2.4**
CBIJ	**Chichi jima**	**12.51**	**186**	*e*Pn	Pn		20 00 16.3	-4.9
CBIJ				Sn	Sn		20 02 26.1	-14
JCJ	**Chichijima**	**12.51**	**186**	Pn	**Pn**		**20 00 18.6**	**-2.6**
	baz=11,slow=5.2							
JCJ				Sn	Sn		20 02 26.1	-14
	comp=Z,25nm,0.3s,baz=72,slow=20,SNR=6.1							
KLR	**Kul'dur**	**12.80**	**323**	Pn	**Pn**		**20 00 23.9**	**-1.1**
	comp=Z,2.3nm,0.3s,baz=132,slow=13,SNR=56							
KLR				LR	LR		20 05 41.7	
	comp=Z,163μm,18.1s,baz=136,slow=39							
KLR	**Kul'dur**	**12.80**	**323**	P	**Pn**		**20 00 24.0**	**-1.1**
KLR				pmax	pmax			
	comp=Z,2.0nm,0.3s							
KLR				MLR	MLR			
	comp=Z,163μm,18.1s							
INCN	**Inchon**	**13.42**	**266**	*e*Pn	**Pn**		**20 00 36.6**	**+3.0**
INCN	**Inchon**	**13.42**	**266**	Pn	**Pn**		**20 00 34.1**	**+0.5**
	SNR=20							
INCN	**Inchon**	**13.42**	**266**	P	**Pn**		**20 00 34.1**	**+0.5**
	SNR=20							
NKL	**Nikolayevsk**	**13.71**	**353**	*i* P	**Pn**		**20 00 35.0**	**-2.4**
NKL				*i* S	**Sn**		**20 03 06.0**	**-3.2**
NKL				pmax	pmax			
	comp=N,170nm,1.2s							
NKL				pmax	pmax			
	comp=E,50nm,1.2s							
NKL				pmax	pmax			
	comp=Z,330nm,1.2s							
NKL				smax	smax			
	comp=E,15μm,12.0s							
NKL				MLR	MLR			
	comp=N,60μm,17.0s							
NKL				MLR	MLR			
	comp=E,38μm,17.0s							
NKL				MLR	MLR			
	comp=Z,88μm,14.0s							
OKH	**Okha**	**13.98**	**358**	*e*P	**Pn**		**20 00 38.0**	**-3.0**
OKH				*i* S	**Sn**		**20 03 14.2**	**-1.5**
OKH				pmax	pmax			
	comp=Z,5μm,12.0s							
OKH				smax	smax			
	comp=E,8μm,12.0s							
OKH				MLR	MLR			
	comp=Z,142μm,18.0s							
CN2	**Changchun**	**14.17**	**293**	*e*P	**Pn**		**20 00 42.3**	**-1.5**
CN2				*e*S	**Sn**		**20 03 20.1**	**-0.5**
CN2				pmax	pmax			
	comp=Z,40nm,1.2s							
CN2				LR	LR			
	comp=Z,91μm,16.0s							
CN2				LR	LR			
	comp=Z,70μm,16.0s							
CN2				LR	LR			
	comp=Z,77μm,14

HIA	**Hailar**	**19.50**	**308**	*e*P		**P**	**20 01 47.7**	**-2.4**
	comp=Z,552nm,1.0s								
SSE	**Sheshan**	**20.09**	**252**	⇑P		**P**	**20 01 54.1**	**-2.5**
SSE				PP		**PnPn**	**20 02 14.0**	**+1.2**
SSE				S		**S**	**20 05 38.9**	**-2.8**
SSE				pmax	pmax			
	comp=Z,6μm,11.0s							
MA2	**Magadan**	**20.52**	**10**	P		**P**	**20 02 01.9**	**+0.8**
	comp=Z,384nm,0.8s,baz=214,slow=9.0,SNR=206							
MA2				LR	LR		20 10 55.1		
	comp=Z,43μm,18.7s,baz=220,slow=40								
BJI	**Beijing**	**21.02**	**280**	P		**P**	**20 02 04.3**	**-2.3**
BJI				S		**S**	**20 05 56.4**	**-3.7**
BJI				pmax	pmax			
	comp=Z,8μm,11.5s							
BJI				LR	LR			
	comp=Z,59μm,13.4s							
BJI				LR	LR			
	comp=Z,114μm,15.7s							
BJT	**Baijiatuau**	**21.02**	**280**	*e*P		**P**	**20 02 03.6**	**-3.1**
BJT				pmax	pmax			
	comp=Z,445nm,1.0s							
BJT				MLR	MLR			
	comp=Z,97μm,19.0s							
BJT	**Baijiatuau**	**21.02**	**280**	*e*P		**P**	**20 02 03.6**	**-3.1**
	comp=Z,445nm,1.0s							
BJT				LR	LR			
	comp=Z,97μm,19.0s							
TIA	**Tai'an**	**21.11**	**269**	⇑P		**P**	**20 02 05.1**	**-2.6**
TIA				S		**S**	**20 05 53.4**	**-8.6**
TIA				PcP		**PcP**	**20 06 14.1**	**+0.6**
TIA				SS		**SnSn**	**20 06 23.5**	**+0.1**
TIA				pmax	pmax			
	comp=Z,240nm,1.2s							
TIA				pmax	pmax			
	comp=Z,13μm,11.0s							
TIA				LR	LR			
	comp=Z,79nm,13.5s							
TIA				LR	LR			
	comp=Z,127μm,14.4s							
TIA				LR	LR			
	comp=Z,195μm,14.3s							
NJ2	**Nanjing**	**21.36**	**257**	*e*P		**P**	**20 02 08.1**	**-2.2**
NJ2				S		**S**	**20 06 09.9**	**+3.0**
NJ2				pmax	pmax			
	comp=Z,110nm,0.8s							
NJ2				pmax	pmax			
	comp=Z,9μm,8.1s							
NJ2				LR	LR			
	comp=Z,71μm,15.2s							
NJ2				LR	LR			
	comp=Z,44μm,9.8s							
NJ2				LR	LR			
	comp=Z,70μm,11.4s							
YOJ	**Yonaguni jima**	**22.96**	**235**	*e*P		**P**	**20 02 25.6**	**-1.9**
YOJ				pmax	pmax			
	comp=Z,187nm,1.0s							
YOJ	**Yonaguni jima**	**22.96**	**235**	*e*P		**P**	**20 02 25.6**	**-1.9**
	comp=Z,187nm,1.0s							
TATO	**Taipei**	**23.59**	**238**	*e*P		**P**	**20 02 32.0**	**-1.8**
	comp=Z,774nm,1.1s							
TATO	**Taipei**	**23.59**	**238**	P		**P**	**20 02 31.7**	**-2.2**
	SNR=10							
TATO	**Taipei**	**23.59**	**238**	P		**P**	**20 02 31.7**	**-2.2**
	SNR=10							
YHNB	**Yeheng**	**23.87**	**238**	*e*P		**P**	**20 02 33.7**	**-3.0**
	comp=Z,192nm,0.8s							
YHNB				LR	LR			
	comp=Z,24μm,19.0s							
SEY	**Seymchan**	**23.98**	**10**	P		**P**	**20 02 36.8**	**-0.4**
	comp=Z,307nm,0.9s,baz=197,slow=8.9,SNR=168								
SEY				LR	LR		20 13 42.3		
	comp=Z,44μm,18.9s,baz=190,slow=41								
YAK	**Yakutsk**	**24.02**	**344**	P		**P**	**20 02 35.2**	**-2.4**
	comp=Z,136nm,0.5s,baz=151,slow=3.8,SNR=87								
YAK				S		**S**	**20 06 52.4**	**-1.4**
	comp=Z,31nm,0.7s,baz=144,slow=19,SNR=4.4								
YAK				LR	LR		20 12 34.9		
	comp=Z,30μm,21.3s,baz=150,slow=38								
YAK	**Yakutsk**	**24.02**	**344**	*c i*P		**P**	**20 02 35.5**	**-2.1**
YAK				*e*			20 03 03.4		
YAK				*e*			20 06 21.0		
YAK				*e*S		**S**	**20 06 50.3**	**-3.5**
YAK				*e*SS		**SnSn**	**20 07 40.4**	**+6.1**
YAK				pmax	pmax			
	comp=Z,390nm,1.2s							
YAK				pmax	pmax			
	comp=N,232nm,1.1s							
YAK				pmax	pmax			
	comp=E,92nm,1.2s							
YAK				pmax	pmax			
	comp=Z,548nm,1.2s							
YAK				pmax	pmax			
	comp=N,561nm,1.1s							
YAK				pmax	pmax			
	comp=E,424nm,1.3s							
YAK				smax	smax			
	comp=E,16μm,8.9s							
YAK				smax	smax			
	comp=N,6μm,5.2s							
YAK				MLR	MLR			
	comp=Z,37μm,13.0s							
YAK				MLR	MLR			
	comp=E,29μm,14.0s							
YAK				MLR	MLR			
	comp=N,27μm,12.0s							
YAK	**Yakutsk**	**24.02**	**344**	*e*P		**P**	**20 02 35.5**	**-2.1**
	comp=N,688nm,0.9s							
YAK				S		**S**	**20 06 52.4**	**-1.4**
NACB	**Ninganchiao**	**24.07**	**237**	*e*P		**P**	**20 02 33.6**	**-4.9**
	comp=N,234nm,0.9s							
CIT	**Chita**	**24.14**	**311**	*e*P		**P**	**20 02 36.8**	**-2.2**
CIT				*e*			20 02 48.0		
CIT				*e*			20 03 23.7		
CIT				pmax	pmax			
	comp=Z,2μm,2.1s							
TIY	**Taiyuan**	**24.32**	**276**	*e*P		**P**	**20 02 42.3**	**+1.5**
TIY				pmax	pmax			
	comp=Z,270nm,1.1s							
TIY				LR	LR			
	comp=Z,58μm,13.7s							
TIY				LR	LR			
	comp=Z,44μm,15.1s							
TIY				LR	LR			
	comp=Z,69μm,17.4s							
SSLB	**Suanglung**	**24.76**	**237**	*e*P		**P**	**20 02 41.6**	**-3.2**
	comp=Z,247nm,0.8s							
YULB	**Yu-li**	**24.82**	**236**	*e*P		**P**	**20 02 41.6**	**-3.7**
	comp=Z,281nm,0.9s							
TPUB	**Ta-pu**	**25.32**	**237**	*e*P		**P**	**20 02 47.5**	**-2.3**
	comp=Z,348nm,0.9s							
TWG	**Pinlang**	**25.37**	**235**	*e*P		**P**	**20 02 48.3**	**-2.0**
	comp=Z,2μm,1.1s							
WHN	**Wuhan**	**25.46**	**258**	⇓P		**P**	**20 02 49.3**	**-1.8**
WHN				S		**S**	**20 07 10.8**	**-6.7**
WHN				LR	LR			
	comp=Z,101μm,13.3s							
WHN				LR	LR			
	comp=Z,109μm,15.5s							
WHN				LR	LR			
	comp=Z,146μm,17.6s							
QZH	**Quanzhou**	**25.56**	**243**	⇑*i*P		**P**	**20 02 48.4**	**-3.6**
QZH				S		**S**	**20 07 13.5**	**-5.6**
QZH				pmax	pmax			
	comp=Z,1μm,1.8s							
QZH				pmax	pmax			
	comp=Z,11μm,3.8s							
QZH				LR	LR			
	comp=Z,69μm,14.1s							
QZH				LR	LR			
	comp=Z,31μm,14.5s							
QZH				LR	LR			
	comp=Z,81μm,13.0s							
BTO	**Baotou**	**25.59**	**283**	*e*P		P	20 02 40.5	-12
BTO				pmax	pmax			
	comp=Z,3μm,15.2s							
GUMO	**Guam**	**25.92**	**177**	LR		LR	20 11 51.5	
	comp=Z,13μm,21.8s,baz=6.0,slow=34								
ULN	**Ulaanbaatar**	**27.44**	**300**	*c i*P		**P**	**20 03 09.6**	**+0.6**
ULN				pmax	pmax			
	comp=Z,685nm,1.2s							
ULN				MLR	MLR			
	comp=Z,114μm,16.0s							
ULN	**Ulaanbaatar**	**27.44**	**300**	P		**P**	**20 03 09.6**	**+0.6**
	SNR=14							
ULN	**Ulaanbaatar**	**27.44**	**300**	P		**P**	**20 03 09.6**	**+0.6**
	SNR=14							

SONM	**Songino Array**	**27.88**	**300**	P		**P**	**20 03 13.5**	**+0.6**
	comp=Z,92nm,0.9s,baz=99,slow=9.5,SNR=14							
SONM				LR	LR		20 14 57.1	
	comp=Z,84μm,19.9s,baz=86,slow=38							
SONM	**Songino Array**	**27.88**	**300**	P		**P**	**20 03 13.5**	**+0.6**
SONM				pmax	pmax			
	comp=Z,93nm,0.9s							
SONM				MLR	MLR			
	comp=Z,84μm,19.9s							
XAN	**Xi'an**	**28.16**	**270**	P		**P**	**20 03 14.4**	**-1.1**
XAN				pP	pP		20 03 19.3	-1.1
XAN				S		**S**	**20 08 06.6**	**+6.4**
XAN				pmax	pmax			
	comp=Z,220nm,1.2s							
XAN				pmax	pmax			
	comp=Z,7μm,13.2s							
XAN				LR	LR			
	comp=Z,79μm,15.5s							
XAN				LR	LR			
	comp=Z,75μm,14.5s							
H11N2	**WAKE ISLAND Hy**	**28.19**	**128**	T		T	20 34 10.7	
	baz=318,slow=76,SNR=807								
H11N1	**WAKE ISLAND Hy**	**28.20**	**128**	T		T	20 34 10.7	
	baz=318,slow=76,SNR=698								
H11N3	**WAKE ISLAND Hy**	**28.21**	**128**	T		T	20 34 14.2	
	baz=318,slow=76,SNR=545								
H11S1	**WAKE ISLAND Hy**	**29.01**	**130**	T		T	20 33 52.4	
	baz=325,slow=74								
H11S3	**WAKE ISLAND Hy**	**29.01**	**130**	T		T	20 33 57.7	
	baz=325								
H11S2	**WAKE ISLAND Hy**	**29.02**	**130**	T		T	20 33 47.3	
	baz=325,slow=74								
ENH	**Enshi**	**29.30**	**262**	*e*P		**P**	**20 03 25.1**	**-0.5**
ENH				LR	LR			
	comp=Z,41μm,20.0s							
IRK	**Irkutsk**	**29.74**	**308**	*e*P		**P**	**20 03 28.7**	**-0.5**
IRK				pmax	pmax			
	comp=Z,477nm,1.8s							
TLY	**Talaya**	**30.04**	**307**	P		**P**	**20 03 32.3**	**+0.4**
	comp=Z,73nm,1.0s,baz=113,slow=6.3,SNR=4.9								
TLY				LR	LR		20 15 58.3		
	comp=Z,19μm,19.3s,baz=88,slow=37								
TLY	**Talaya**	**30.04**	**307**	*c i*P		**P**	**20 03 31.8**	**-0.1**
TLY				*e*			20 04 39.3		
TLY				*e*SS		SS	20 10 17.8	-19	
TLY				pmax	pmax			
	comp=Z,228nm,1.4s							
TLY				MLR	MLR			
	comp=Z,50μm,16.0s							
TLY	**Talaya**	**30.04**	**307**	P		**P**	**20 03 32.2**	**+0.3**
	SNR=8.5							
TLY	**Talaya**	**30.04**	**307**	P		**P**	**20 03 32.2**	**+0.3**
	SNR=8.5							
ZAK	**Zakamensk**	**30.12**	**304**	*e*P		**P**	**20 03 32.6**	**-0.1**
ZAK				pmax	pmax			
	comp=Z,247nm,1.3s							
HKC	**Hong Kong Obse**	**30.34**	**244**	⇑*i*P		**P**	**20 03 37.0**	**+2.3**
GZH	**Guangzhou**	**30.41**	**246**	P		P	20 03 30.6	-4.8
GZH				PP		**PnPn**	**20 04 30.6**	**-3.3**
GZH				S		S	20 08 26.8	-8.8
GZH				pmax	pmax			
	comp=Z,9μm,8.6s							
BCPH	**Baguio City Da**	**30.59**	**227**	⇓*e*P		**P**	**20 03 34.2**	**-3.0**
BCPH				*e*S		**S**	**20 08 39.8**	**+1.1**
BILL	**Bilibino**	**31.11**	**16**	*c i*P		**P**	**20 03 40.8**	**-0.3**
BILL				*i*			20 04 42.0		
BILL				*i* S		**S**	**20 08 44.7**	**-0.9**
BILL				pmax	pmax			
	comp=Z,140nm,1.0s							
BILL				MLR	MLR			
	comp=Z,21μm,16.0s							
BILL	**Bilibino**	**31.11**	**16**	*e*P		**P**	**20 03 40.7**	**-0.3**
	comp=Z,159nm,1.1s							
BILL				LR	LR			
	comp=Z,17μm,20.0s							
LZH	**Lanzhou**	**31.39**	**276**	⇑P		**P**	**20 03 44.1**	**0.0**
LZH				pP	sP		20 03 49.3	-1.8
LZH				sP	pP		20 03 52.3	+3.2
LZH				S		**S**	**20 08 51.5**	**+0.5**
LZH				SS		**SnSn**	**20 10 36.3**	**+1.5**
LZH				pmax	pmax			
	comp=Z,320nm,1.0s							
LZH				pmax	pmax			
	comp=Z,2μm,4.3s							
LZH				LR	LR			
	comp=Z,62μm,12.9s							
LZH				LR	LR			
	comp=Z,116μm,13.7s							
LZH				LR	LR			
	comp=Z,121μm,14.3s							
TIXI	**Tiksi**	**32.99**	**352**	P		**P**	**20 03 56.4**	**-1.1**
	comp=Z,22nm,1.0s,baz=141,slow=9.2,SNR=20								
TIXI	**Tiksi**	**32.99**	**352**	*i* P		**P**	**20 03 56.4**	**-1.1**
TIXI				pmax	pmax			
	comp=Z,53nm,1.3s							
GYA	**Guiyang**	**33.36**	**258**	⇑*i*P		**P**	**20 04 00.8**	**-0.6**
GYA				PP		**PnPn**	**20 05 12.4**	**+0.3**
GYA				PcP		**PcP**	**20 06 44.8**	**+1.8**
GYA				S		**S**	**20 09 20.3**	**-1.4**
GYA				ScP		**ScP**	**20 10 28.0**	**+1.3**
GYA				SS		**SnSn**	**20 11 20.6**	**-2.3**
GYA				ScS		**ScS**	**20 14 27.4**	**-0.4**
GYA				pmax	pmax			
	comp=Z,350nm,1.0s							
GYA				LR	LR			
	comp=Z,27μm,15.1s							
GYA				LR	LR			
	comp=Z,29μm,16.9s							
GYA				LR	LR			
	comp=Z,26μm,18.2s							
CD2	**Chengdu**	**33.42**	**267**	P		**P**	**20 03 59.6**	**-2.2**
CD2				PP		**PnPn**	**20 05 14.8**	**+2.1**
CD2				S		**S**	**20 09 26.1**	**+3.6**
CD2				pmax	pmax			
	comp=Z,390nm,1.1s							
CD2				pmax	pmax			
	comp=Z,6μm,13.2s							
CD2				LR	LR			
	comp=Z,16μm,13.2s							
CD2				LR	LR			
	comp=Z,106μm,14.2s							
GTA	**Gaotai**	**33.51**	**284**	*e*P		**P**	**20 04 02.9**	**+0.3**
GTA				pP	sP		20 04 07.1	-2.5
GTA				sP	pP		20 04 10.6	+3.0
GTA				PcP		**PcP**	**20 06 44.8**	**+1.5**
GTA				S		**S**	**20 09 22.0**	**-1.9**
GTA				sS	sS		20 09 31.8	-0.3
GTA				SS		**SnSn**	**20 11 25.0**	**-1.2**
GTA				pmax	pmax			
	comp=Z,310nm,1.1s							
GTA				pmax	pmax			
	comp=Z,6μm,6.2s							
GTA				LR	LR			
	comp=Z,33μm,18.5s							
GTA				LR	LR			
	comp=Z,117μm,17.1s							
GTA				LR	LR			
	comp=Z,120μm,15.7s							
CGP	**Cagayan de Oro**	**35.30**	**214**	⇓*e*P		**P**	**20 04 17.6**	**-0.6**
QIZ	**Qiongzhong**	**35.53**	**245**	P		**P**	**20 04 21.1**	**+0.9**
QIZ				S		**S**	**20 09 57.0**	**+1.8**
QIZ				LR	LR			
	comp=Z,7μm,13.3s							
QIZ				LR	LR			
	comp=Z,16μm,19.9s							
GAMB	**Gambell**	**35.66**	**32**	*e*P		**P**	**20 04 22.8**	**+2.0**
	comp=Z,27nm,1.0s							
BUKP	**Musuan**	**35.66**	**213**	*e*P		**P**	**20 04 21.1**	**-0.2**
DAV	**Davao City (W)**	**36.19**	**211**	⇑*e*P		P	20 04 39.5	+14
DAV	**Davao City (W)**	**36.19**	**211**	PFAKE			20 04 40.0	+14
DAV				LR	LR			
	comp=Z,12μm,20.0s							
PAGZ	**Pagadian**	**36.42**	**215**	*e*P		**P**	**20 04 27.5**	**-0.2**
CTBH	**Cotabato--PC H**	**36.60**	**213**	*e*P		**P**	**20 04 29.9**	**+0.6**
KRAR	**Krasnoyarsk**	**36.86**	**314**	*c i*P		**P**	**20 04 31.3**	**+0.2**
KRAR				pmax	pmax			
	comp=Z,359nm,1.3s							
KRAR				MLR	MLR			
	comp=Z,32μm,16.0s							
KMI	**Kunming**	**37.05**	**260**	P		**P**	**20 04 33.3**	**-0.1**
KMI				pP	sP		20 04 38.0	-2.4
KMI				sP	pP		20 04 40.8	+2.4
KMI				PP		**PnPn**	**20 05 57.9**	**-0.2**
KMI				S		**S**	**20 10 17.4**	**-1.4**
KMI				SS		**SnSn**	**20 12 44.3**	**-8.2**

KMI				pmax	pmax			
	comp=Z,190nm,1.2s							
KMI				pmax	pmax			
	comp=Z,3μm,4.7s							
KMI				LR	LR			
	comp=Z,19μm,14.3s							
KMI				LR	LR			
	comp=Z,46μm,16.3s							
KMI				LR	LR			
	comp=Z,37μm,16.1s							
KDM	**Kudat**	**40.43**	**224**	⇓P		**P**	**20 05 03.4**	**+1.9**
SKNT	**Sakolnakorn**	**41.05**	**248**	P		**P**	**20 05 06.6**	**0.0**
	comp=Z,190nm,1.2s,comp=Z,5μm								
MYLDM	**Lahad Datu**	**41.05**	**220**	⇓P		**P**	**20 05 07.9**	**+1.2**
MYLDM	**Lahad Datu**	**41.05**	**220**	*e*P		**P**	**20 05 09.0**	**+2.4**
	comp=Z,272nm,1.1s							
UBPT	**Khong Chiam**	**41.13**	**245**	P		**P**	**20 05 07.6**	**+0.3**
	comp=Z,252nm,1.1s							
WMQ	**Urumqi**	**41.25**	**295**	P		**P**	**20 05 08.0**	**-0.1**
WMQ				sP		sP	20 05 13.1	-2.1
WMQ				PP		**PnPn**	**20 06 46.3**	**-1.5**
WMQ				ScP		**ScP**	**20 10 56.0**	**+0.1**
WMQ				S		**S**	**20 11 18.9**	**-2.5**
WMQ				SS		**SS**	**20 14 15.8**	**-8.7**
WMQ				ScS		**ScS**	**20 15 09.0**	**-2.7**
WMQ				pmax	pmax			
	comp=Z,210nm,1.2s							
WMQ				pmax	pmax			
	comp=Z,3μm,4.0s							
WMQ				LR	LR			
	comp=Z,18μm,15.2s							
WMQ				LR	LR			
	comp=Z,17μm,15.2s							
WMQ				LR	LR			
	comp=Z,9μm,17.4s							
SDKM	**Sandakan**	**41.32**	**222**	⇓P		**P**	**20 05 09.8**	**+0.9**
TNTI	**Ternate**	**41.36**	**205**	P		**P**	**20 05 10.6**	**+1.4**
	comp=Z,207nm,1.7s,comp=Z,4μm								
TNTI	**Ternate**	**41.36**	**205**	*e*P		**P**	**20 05 09.5**	**+0.3**
	comp=Z,326nm,1.2s								
KKM	**Kota Kinabalu**	**41.49**	**224**	⇑P		**P**	**20 05 12.2**	**+1.8**
KKM	**Kota Kinabalu**	**41.49**	**224**	*e*P		**P**	**20 05 11.3**	**+1.0**
	comp=Z,394nm,1.8s								
KKM				LR	LR				
	comp=Z,13μm,19.0s								
ZALV	**Zalesovo Beam**	**41.50**	**310**	P		**P**	**20 05 09.6**	**-0.3**
	comp=Z,117nm,0.8s,baz=96,slow=8.2,SNR=40								
ZALV				PcP		**PcP**	**20 07 07.1**	**-0.1**
	comp=Z,79nm,0.8s,baz=95,slow=2.9,SNR=5.6								
ZALV				LR	LR		20 23 12.4		
	comp=Z,29μm,18.9s,baz=78,slow=37								
CRAI	**Chiangrai**	**41.65**	**255**	P		**P**	**20 05 13.4**	**+1.9**
	comp=Z,185nm,0.8s								
NRIK	**Noril'sk**	**41.69**	**334**	P		**P**	**20 05 11.0**	**-0.3**
	comp=Z,44nm,1.0s,baz=104,slow=8.4,SNR=39								
NRIK				LR	LR		20 24 16.2		
	comp=Z,41μm,18.1s,baz=103,slow=39								
NRIK	**Noril'sk**	**41.69**	**334**	P		**P**	**20 05 11.0**	**-0.3**
NRIK				pmax	pmax				
	comp=Z,44nm,1.0s								
NRIK				MLR	MLR				
	comp=Z,41μm,18.1s								
SWI	**Sorong**	**41.80**	**199**	P		**P**	**20 05 13.5**	**+0.8**
	comp=Z,117nm,1.0s,comp=Z,2μm								
JAY	**Jayapura**	**41.98**	**184**	P		**P**	**20 05 14.9**	**+0.7**
	comp=Z,7.2nm,0.9s,baz=299,slow=19,SNR=4.3								
JAY				LR	LR		20 19 49.6		
	comp=Z,266nm,21.9s,baz=344,slow=32								
JAY	**Jayapura**	**41.98**	**184**	P		**P**	**20 05 16.2**	**+2.0**
	comp=Z,86nm,1.0s,comp=Z,1μm								
GENI	**Genyem**	**42.09**	**185**	P		**P**	**20 05 17.5**	**+2.4**
	comp=Z,146nm,0.9s,comp=Z,4μm								
TSM	**Tawau**	**42.13**	**220**	⇓P		**P**	**20 05 16.3**	**+0.9**
KHON	**Khomkaen**	**42.30**	**249**	P		**P**	**20 05 16.9**	**0.0**
	comp=Z,88nm,0.9s,comp=Z,691nm								
NVS	**Novosibirsk**	**42.35**	**312**	*e*P		**P**	**20 05 16.5**	**-0.4**
NVS				*e*S		**S**	**20 11 37.3**	**+0.2**
NVS				pmax	pmax				
	comp=N,134nm,2.3s								
NVS				pmax	pmax				
	comp=E,44nm,2.3s								
NVS				pmax	pmax				
	comp=Z,701nm,2.3s								
NVS				smax	smax				
	comp=N,118nm,2.9s								
NVS				smax	smax				
	comp=E,358nm,2.9s								
TT01	**Tatalina**	**42.36**	**36**	*e*P		**P**	**20 05 17.8**	**+1.0**
TTA	**Tatalina**	**42.37**	**36**	*e*P		**P**	**20 05 18.4**	**+1.4**
	comp=E,56nm,1.1s								
SVW2	**Sparrevohn**	**42.48**	**39**	*e*P		**P**	**20 05 20.0**	**+2.2**
	comp=E,68nm,1.2s								
LBMI	**Labuha**	**42.65**	**204**	P		**P**	**20 05 20.8**	**+1.2**
	comp=E,141nm,2.2s,comp=E,4μm								
ZSN	**Zaisan**	**42.69**	**301**	⇑*i*P		**P**	**20 05 18.1**	**-1.7**
	comp=E,2μm,1.1s								
ZSN				*i* S		**S**	**20 11 38.6**	**-3.9**
ZSN				LR	LR		20 23 19.8		
	comp=E,34μm,15.1s								
UTTA	**Uttaradit**	**43.05**	**252**	P		**P**	**20 05 23.0**	**+0.1**
	comp=E,51nm,0.9s,comp=E,386nm								
LAMP	**Lampang**	**43.24**	**254**	P		**P**	**20 05 24.9**	**+0.4**
	comp=E,69nm,0.9s,comp=E,508nm								
WAMI	**Wamena**	**43.49**	**187**	P		**P**	**20 05 29.4**	**+3.0**
PBKT	**Sadao Pong**	**43.49**	**251**	P		**P**	**20 05 26.4**	**-0.1**
	comp=E,123nm,1.1s,comp=E,3μm								
PHIT	**Phitsanulok**	**43.50**	**252**	P		**P**	**20 05 27.3**	**+0.7**
	comp=E,92nm,0.9s,comp=E,908nm								
FAKI	**Fak Fak**	**43.56**	**197**	P		**P**	**20 05 27.4**	**+0.4**
FAKI	**Fak Fak**	**43.56**	**197**	*e*P		**P**	**20 05 27.2**	**+0.2**
	comp=E,460nm,1.9s								
CMMT	**Chiang Mai**	**43.57**	**255**	P		**P**	**20 05 27.0**	**-0.2**
	comp=E,143nm,1.0s,comp=E,3μm								
CHTO	**Chiang Mai**	**43.57**	**255**	P		**P**	**20 05 27.1**	**-0.1**
	comp=E,640nm,1.0s,comp=E,14μm								
CHTO	**Chiang Mai**	**43.57**	**255**	*e*P		**P**	**20 05 27.4**	**+0.2**
CHTO				pmax	pmax				
	comp=Z,99nm,0.8s								
CHTO				MLR	MLR				
	comp=Z,25μm,19.0s								
CHTO	**Chiang Mai**	**43.57**	**255**	*e*P		**P**	**20 05 27.4**	**+0.2**
	comp=Z,100nm,0.8s								
CHTO				LR	LR				
	comp=Z,25μm,19.0s								
CHTO	**Chiang Mai**	**43.57**	**255**	P		**P**	**20 05 27.6**	**+0.4**
	SNR=66								
CHTO	**Chiang Mai**	**43.57**	**255**	P		**P**	**20 05 27.6**	**+0.4**
	SNR=66								
MRSI	**Marisa**	**43.65**	**212**	P		**P**	**20 05 28.2**	**+0.5**
LSA	**Lhasa**	**43.70**	**274**	P		**P**	**20 05 29.3**	**+0.6**
LSA				LR	LR				
	comp=Z,37μm,16.5s								
LSA				LR	LR				
	comp=Z,18μm,16.5s								
LSA				LR	LR				
	comp=Z,66μm,16.5s								
LSA	**Lhasa**	**43.70**	**274**	*e*P		**P**	**20 05 29.5**	**+0.8**
LSA	**Lhasa**	**43.70**	**274**	*e*P		**P**	**20 05 29.5**	**+0.8**
OHAK	**Old Harbor**	**43.75**	**45**	*e*P		**P**	**20 05 28.6**	**+0.5**
	comp=Z,81nm,1.0s								
CM31	**Chiang Mai Arr**	**43.79**	**254**	*e*P		**P**	**20 05 29.5**	**+0.6**
CMAR	**Chiang Mai Arr**	**43.79**	**254**	P		**P**	**20 05 29.4**	**+0.4**
	comp=Z,42nm,0.8s,baz=46,slow=6.8,SNR=288								
CMAR				LR	LR		20 24 58.9		
	comp=Z,12μm,18.1s,baz=60,slow=38								
CM01	**Chiang Mai Arr**	**43.80**	**254**	*e*P		**P**	**20 05 28.5**	**-0.5**
KMPI	**Kaimana, Papua**	**43.98**	**194**	P		**P**	**20 05 31.7**	**+1.3**
KDAK	**Kodiak Island**	**44.08**	**44**	P		P	20 05 46.1	+15
	comp=Z,94nm,0.9s,baz=248,slow=4.3,SNR=7.2								
KDAK				LR	LR		20 27 07.2		
	comp=Z,5μm,18.5s,baz=242,slow=40								
**KDA

comp=Z,42µm,18.4s,baz=76,slow=37
MKAR Makanchi Array 44.24 300 P **P** **20 05 32.4 +0.1**
MKAR pmax pmax
comp=Z,167nm,0.9s
MKAR MLR MLR
comp=Z,42µm,18.4s
RABL Rabaul 44.28 168 *e*P **P** **20 05 33.2 +0.4**
comp=Z,193nm,1.0s
MAKZ Makanchi 44.45 300 *i* P **P** **20 05 33.1 -0.9**
MAKZ pmax pmax
comp=Z,321nm,1.2s
SANI Sanana 44.46 206 P **P** **20 05 35.9 +1.6**
BPAW Bear Paw Mtn. 44.67 35 *e*P **P** **20 05 37.1 +1.7**
comp=Z,63nm,1.2s
KTH Kantishna Hill 44.69 35 *e*P **P** **20 05 37.6 +1.9**
comp=Z,121nm,1.0s
LUWI Luwuk 44.69 210 *e*P **P** **20 05 34.2 -1.9**
comp=Z,160nm,0.8s
SEM Semipalatinsk 44.78 306⇑ *i*P **P** **20 05 36.2 -0.3**
comp=Z,2µm,1.1s
SEM *e*S **S** **20 12 10.9 -1.8**
SEM LR LR 20 24 48.2
comp=Z,12µm,15.4s
MLY Manley 44.79 33 *e*P **P** **20 05 38.1 +1.6**
comp=Z,99nm,1.2s
MSAI Masohi 44.79 201 P **P** **20 05 39.3 +2.4**
BRLK Bradley Lake 44.83 41 *e*P **P** **20 05 38.7 +2.0**
comp=Z,52nm,0.9s
TRF Thorofare Moun 44.98 36 *e*P **P** **20 05 39.3 +1.2**
comp=Z,58nm,1.0s
APSI Ampana 45.02 212 P **P** **20 05 39.3 +0.6**
CHBT CHBT 45.07 245 P **P** **20 05 39.5 +0.3**
comp=Z,241nm,1.0s,comp=Z,4µm
COLD Coldfoot 45.10 30 *e*P **P** **20 05 40.1 +1.3**
comp=Z,70nm,1.0s
SHL Shillong 45.15 268 *e*P **P** **20 05 38.4 -1.6**
SHL IAmb IAmb 20 05 46.4
comp=Z,137nm,0.9s
SEW Seward 45.52 40 *e*P **P** **20 05 46.1 +3.9**
comp=Z,105nm,1.1s
BTM Bintulu 45.56 225 ⇓P **P** **20 05 43.8 +0.7**
PMR Palmer 45.58 38 *e*P **P** **20 05 43.6 +1.0**
PMR pmax pmax
comp=Z,59nm,1.0s
PMR Palmer 45.58 38 *e*P **P** **20 05 43.6 +1.0**
comp=Z,59nm,1.0s
MCK McKinley 45.58 35 *e*P **P** **20 05 43.4 +0.7**
MCK pmax pmax
comp=Z,88nm,1.0s
MCK McKinley 45.58 35 *e*P **P** **20 05 43.4 +0.7**
comp=Z,88nm,1.0s
RND Reindeer 45.62 36 *e*P **P** **20 05 43.9 +0.8**
RND pmax pmax
comp=Z,122nm,1.2s
RND Reindeer 45.62 36 *e*P **P** **20 05 43.9 +0.8**
comp=Z,122nm,1.2s
BNDI Bandanaira 45.66 199 P **P** **20 05 45.4 +1.6**
KURK Kurchatov 45.73 306 P **P** **20 05 44.6 +0.6**
KURK pmax pmax
comp=Z,279nm,0.9s
KURK Kurchatov 45.73 306 P **P** **20 05 44.6 +0.6**
KURK LR LR
comp=Z,22µm,21.0s
KURK Kurchatov 45.73 306 P **P** **20 05 44.2 +0.1**
SNR=27
KURK Kurchatov 45.73 306 P **P** **20 05 44.2 +0.1**
SNR=27
KURBB Kurchatov Arra 45.81 306 P **P** **20 05 44.6 0.0**
comp=Z,279nm,0.9s,baz=81,slow=8.2,SNR=56
MDM Murphy Dome 45.86 33 *e*P **P** **20 05 46.3 +1.4**
comp=Z,124nm,1.0s
WRH Wood River Hil 45.93 34 *e*P **P** **20 05 46.6 +1.1**
comp=Z,52nm,0.9s
SML Sawmill 45.94 38 *e*P **P** **20 05 46.8 +1.2**
SML pmax pmax
comp=Z,164nm,1.1s
SML Sawmill 45.94 38 *e*P **P** **20 05 46.8 +1.2**
comp=Z,164nm,1.1s
PATY Pattaya 45.99 247 P **P** **20 05 47.2 +0.8**
comp=Z,34nm,1.0s,comp=Z,1µm
COLA College 46.02 34 *e*P **P** **20 05 47.8 +1.7**
COLA pmax pmax
comp=Z,153nm,1.0s
COLA MLR MLR
comp=Z,10µm,20.0s
COLA College 46.02 34 *e*P **P** **20 05 47.8 +1.7**
comp=Z,154nm,1.0s
COLA LR LR
comp=Z,10µm,20.0s
CCB Clear Creek Bu 46.05 34 *e*P **P** **20 05 47.3 +1.0**
comp=Z,47nm,1.0s
SRDT SRDT 46.29 250 P **P** **20 05 49.0 +0.2**
comp=Z,339nm,1.1s,comp=Z,7µm
KHLT Khaolaem Dam 46.38 251 P **P** **20 05 50.2 +0.7**
comp=Z,62nm,1.3s,comp=Z,1µm
SCM Sheep Creek Mo 46.41 38 *e*P **P** **20 05 50.6 +1.2**
SCM pmax pmax
comp=Z,97nm,1.0s
SCM Sheep Creek Mo 46.41 38 *e*P **P** **20 05 50.6 +1.2**
comp=Z,97nm,1.0s
HDA Harding Lake 46.43 34 *e*P **P** **20 05 49.9 +0.6**
comp=Z,59nm,1.0s
IL1 Eielson Array 46.44 34 *e*P **P** **20 05 49.6 +0.2**
ILAR Eielson Array 46.44 34 P **P** **20 05 49.9 +0.5**
comp=Z,30nm,0.7s,baz=263,slow=6.1,SNR=121
ILB Eielson Array 46.44 34 *e*P **P** **20 05 50.2 +0.7**
TARA Tarawa 46.51 137 *e*P **P** **20 05 51.6 +1.1**
SBUM Sibu 46.66 226 ⇓P **P** **20 05 52.2 +0.6**
SBUM Sibu 46.66 226 *e*P **P** **20 05 52.2 +0.6**
comp=Z,78nm,1.2s
SHLS Shalkode 46.90 296⇑ *i*P **P** **20 05 53.6 0.0**
comp=Z,824nm,1.0s
SHLS *e*S **S** **20 12 41.9 -2.0**
SHLS LRM MLR 20 27 22.9
comp=Z,16µm,15.3s
FYU Fort Yukon 47.06 31 *e*P **P** **20 05 51.3 -2.9**
FYU *ep*P **pP** **20 05 56.4 -2.9**
KLU Klutina 47.12 38 *e*P **P** **20 05 56.4 +1.5**
comp=Z,106nm,1.0s
PDGK Podgornoye 47.12 296 *i* P **P** **20 05 54.7 -0.3**
PDGK pmax pmax
comp=Z,196nm,1.2s
PAX Paxson 47.18 36 *e*P **P** **20 05 56.5 +1.1**
PAX pmax pmax
comp=Z,34nm,0.9s
PAX Paxson 47.18 36 *e*P **P** **20 05 56.5 +1.1**
comp=Z,34nm,0.9s
DIV Divide 47.23 39 *e*P **P** **20 05 57.3 +1.6**
comp=Z,139nm,1.0s
EYAK Cordova Ski Ar 47.31 39 *e*P **P** **20 05 58.0 +1.8**
comp=Z,99nm,1.1s
TAPN Taplejung 47.48 273 *e*P **P** **20 05 59.0 +0.6**
comp=Z,1µm,1.2s
UZB Uzynbulak 47.50 296⇑ *i*P **P** **20 05 58.2 0.0**
comp=Z,788nm,0.7s
UZB *e*S **S** **20 12 51.0 -1.3**
UZB LR LR 20 26 21.9
comp=Z,21µm,16.5s
TTSI Tana Toraja 47.71 213 P **P** **20 06 00.4 +0.6**
DOT Dot Lake 47.75 35 *e*P **P** **20 06 00.1 +0.4**
comp=Z,81nm,0.9s
RAGM Ragged Mountai 47.86 40 *e*P **P** **20 06 02.2 +1.6**
comp=Z,113nm,1.1s
SATY Saty 47.95 296⇑ *i*P **P** **20 06 02.1 +0.4**
comp=Z,2µm,1.2s
SATY *e*S **S** **20 12 57.0 -1.8**
SATY LR LR 20 26 42.1
comp=Z,30µm,16.1s
ODAN Odare 47.97 272 *e*P **P** **20 06 02.4 +0.3**
comp=Z,1µm,1.0s
MENT Mentasta 47.98 36 *e*P **P** **20 06 03.1 +1.6**
comp=Z,75nm,0.8s
KSM Kuching 48.53 227 ⇓P **P** **20 06 07.5 +1.3**
KSM Kuching 48.53 227 *e*P **P** **20 06 07.1 +0.9**
comp=Z,145nm,1.0s
KSM LR LR
comp=Z,5µm,19.0s
RAMN Ramite 48.53 273 *e*P **P** **20 06 06.9 +0.4**
comp=Z,2µm,1.1s
SPSI Sidrap Palu 48.56 212 P **P** **20 06 06.4 0.0**
comp=Z,62nm,1.1s,comp=Z,2µm
GUN Gumba 48.61 275 *e*P **P** **20 06 07.5 +0.3**
comp=Z,2µm,0.9s
CHKK Chushkaly 48.65 298⇑ *i*P **P** **20 06 07.2 +0.2**
comp=Z,2µm,1.0s
SAUI Saumlaki 48.67 196 P **P** **20 06 08.4 +1.1**
SAUI Saumlaki 48.67 196 *e*P **P** **20 06 08.3 +1.1**
comp=Z,496nm,1.4s
MDOK Medeo 48.85 297⇑ *i*P **P** **20 06 09.4 +0.7**
comp=Z,488nm,1.2s
MDOK *i* PP **PP** **20 08 00.1 -1.7**
MDOK *e*S **S** **20 13 11.0 -0.6**
MDOK LR LR 20 26 46.1
comp=Z,19µm,19.0s
PMG Port Moresby 48.85 175*c i*P **P** **20 06 10.4 +1.8**
PMG pmax pmax
comp=Z,117nm,1.0s
PMG Port Moresby 48.85 175 *e*P **P** **20 06 10.5 +1.8**
comp=Z,32nm,0.8s
EGAK Eagle 48.88 33 *e*P **P** **20 06 09.3 +0.9**
comp=Z,84nm,0.9s
EGAK LR LR
comp=Z,7µm,20.0s
AAA Alma-Ata 48.89 297 *i* P **P** **20 06 09.6 +0.8**
AAA *i* S S 20 13 20.9 +9.1
AAA pmax pmax
comp=Z,6µm,4.8s
AAA smax smax
comp=E,9µm,10.7s
AAA MLR MLR
comp=Z,79µm,14.0s
AAA Alma-Ata 48.89 297⇑ *i*P **P** **20 06 10.1 +1.3**
comp=Z,1µm,1.0s
AAA *ep*P **pP** **20 08 02.9 +0.9**
AAA *e*S **S** **20 13 11.7 -0.1**
AAA LR LR 20 26 56.7
comp=Z,28µm,17.2s
STKI Sintang 49.05 225 P **P** **20 06 10.8 +0.6**
comp=Z,165nm,1.2s,comp=Z,10µm
KUU Kurty 49.09 298⇑ *i*P **P** **20 06 10.1 -0.3**
comp=Z,3µm,1.0s
KUU *i* PP **PP** **20 08 04.1 +0.3**
KUU *e*S **S** **20 13 13.1 -1.5**
KUU LR LR 20 27 22.1
comp=Z,30µm,15.4s
KKN Kakani 49.13 275 *e*P **P** **20 06 11.5 +0.4**
comp=Z,937nm,0.8s
PKIN Phulchoki 49.15 274 *e*P **P** **20 06 11.1 -0.2**
comp=Z,231nm,0.8s
DMN Daman 49.36 275 *e*P **P** **20 06 13.2 +0.4**
comp=Z,1µm,1.4s
KAPI Kappang 49.52 212 *e*P **P** **20 06 14.1 +0.4**
comp=Z,665nm,1.8s
KAPI LR LR
comp=Z,5µm,20.0s
KAPI Kappang 49.52 212 P **P** **20 06 14.5 +0.7**
SNR=23
KAPI Kappang 49.52 212 P **P** **20 06 14.5 +0.7**
SNR=23
GKN Gorkha 49.52 275 *e*P **P** **20 06 14.1 +0.1**
comp=Z,1µm,1.1s
KBKI Kotabaru 49.56 217 P **P** **20 06 13.8 -0.3**
comp=Z,68nm,1.5s,comp=Z,2µm
BRZS Berezniki 49.60 307⇑ *i*P **P** **20 06 14.1 0.0**
comp=Z,312nm,1.0s
BRZS *i* PP **PP** **20 08 08.9 +0.7**
BRZS *e*S **S** **20 13 20.4 -1.2**
BRZS LR LR 20 27 24.4
comp=Z,432nm,12.4s
CHKZ Chkalovo 49.84 312 *i* P **P** **20 06 15.1 -0.7**
CHKZ pmax pmax
comp=Z,258nm,1.1s
VOSK Vostochnaya 49.87 311 *i* P **P** **20 06 13.4 -2.7**
VOSK pmax pmax
comp=Z,272nm,1.1s
TKM2 Tokmak 2 49.94 297 *e*P **P** **20 06 17.4 +0.4**
TKM2 pmax pmax
comp=Z,358nm,0.9s
TKM2 MLR MLR
comp=Z,42µm,22.0s
TKM2 Tokmak 2 49.94 297 *e*P **P** **20 06 17.4 +0.4**
comp=Z,358nm,0.9s
TKM2 LR LR
comp=Z,42µm,22.0s
BVAR Borovoye Array 50.14 311 P **P** **20 06 18.4 +0.2**
comp=Z,162nm,0.9s,baz=69,slow=8.7,SNR=76
BVAR Borovoye Array 50.14 311 P **P** **20 06 18.4 +0.2**
BVAR pmax pmax
comp=Z,163nm,0.9s
BRVK Borovoye 50.19 311*c i*P **P** **20 06 18.8 +0.3**
BRVK pmax pmax
comp=Z,163nm,0.8s
BRVK MLR MLR
comp=Z,33µm,15.0s
BRVK Borovoye 50.19 311 PFAKE 20 06 30.0 +11
BRVK LR LR
comp=Z,32µm,22.0s
BRVK Borovoye 50.19 311 P **P** **20 06 19.1 +0.6**
SNR=5.8
BRVK Borovoye 50.19 311 P **P** **20 06 19.1 +0.6**
SNR=5.8
SURT Suratani 50.19 245 P **P** **20 06 19.9 +0.9**
comp=Z,97nm,1.2s,comp=Z,1µm
BSSI Bau Bau, Buton 50.25 210 P **P** **20 06 20.3 +1.0**
BBKI Banjar Baru 50.33 219 P **P** **20 06 19.6 -0.3**
comp=Z,296nm,1.0s,comp=Z,6µm
OTUK Ortayu 50.33 305 *i* P **P** **20 06 19.1 -0.6**
OTUK pmax pmax
comp=Z,196nm,1.3s
TRTT Trang 50.36 243 P **P** **20 06 21.1 +0.8**
comp=Z,86nm,1.1s,comp=Z,3µm
KOLN Koldanda 50.44 276 *e*P **P** **20 06 21.4 +0.4**
comp=Z,946nm,1.2s
FRU Bishkek 50.64 297⇑ *i*P **P** **20 06 21.0 -1.1**
FRU *i* S **S** **20 13 37.0 +0.7**
FRU pmax pmax
comp=Z,720nm,2.0s
FRU smax smax
comp=E,8µm,20.0s
FRU smax smax
comp=E,580nm,2.8s
FRU MLR MLR
comp=E,30µm,14.0s
BOK Bokaro 50.72 270 *e*P **P** **20 06 22.0 -0.9**
BOK IAmb IAmb 20 06 23.6
comp=Z,77nm,0.9s
BOK IAMs_20 IAMs_20 20 30 07.5
comp=Z,17µm,19.2s
PYUN Piuthan 50.74 276 *e*P **P** **20 06 23.8 +0.5**
comp=Z,3µm,1.1s
AAK Ala-Archa 50.80 297 P **P** **20 06 23.5 0.0**
comp=Z,54nm,0.9s,baz=108,slow=5.6,SNR=18
AAK Ala-Archa 50.80 297 *i* P **P** **20 06 22.3 -1.2**
AAK pmax pmax
comp=Z,137nm,1.2s
AAK MLR MLR
comp=Z,83µm,18.0s
AAK Ala-Archa 50.80 297 P **P** **20 06 23.5 0.0**
AAK LR LR
comp=Z,41µm,19.0s
AAK Ala-Archa 50.80 297 P **P** **20 06 23.7 +0.2**
SNR=9.0
AAK Ala-Archa 50.80 297 P **P** **20 06 23.7 +0.2**
SNR=9.0
KSH Kashi 50.94 293 P **P** **20 06 28.8 +4.3**
KSH *ep*P sP 20 06 33.5 +1.8
KSH *e*PP **PP** **20 08 26.8 +6.0**
KSH S **S** **20 13 45.3 +4.6**
KSH SS **SS** **20 17 21.5 +6.3**
KSH pmax pmax
comp=Z,160nm,1.1s
KSH pmax pmax
comp=Z,2µm,4.9s
KSH LR LR
comp=Z,33µm,15.0s
KSH LR LR
comp=Z,42µm,15.2s
KSH LR LR
comp=Z,66µm,16.2s
ZRNK Zerenda 50.96 311 *i* P **P** **20 06 23.5 -0.9**
ZRNK pmax pmax
comp=Z,295nm,1.1s
HNR Honiara 51.09 159 LR LR 20 26 20.6
comp=Z,6µm,21.4s,baz=324,slow=34
PKDT Phuket 51.26 244 P **P** **20 06 27.9 +0.9**
comp=Z,462nm,1.0s,comp=Z,4µm
PBKI Pangkalan Bun 51.27 223 P **P** **20 06 27.5 +0.4**
comp=Z,232nm,1.1s,comp=Z,3µm
EKS2 Erkin-Say 51.28 297 *e*P **P** **20 06 27.2 +0.1**
EKS2 pmax pmax
comp=Z,70nm,0.7s
EKS2 MLR MLR
comp=Z,25µm,20.0s
EKS2 Erkin-Say 51.28 297 *e*P **P** **20 06 27.2 +0.1**
comp=Z,70nm,0.7s
EKS2 LR LR
comp=Z,25µm,20.0s
INK Inuvik 51.35 28 P **P** **20 06 28.0 +1.0**
comp=Z,48nm,0.8s,baz=289,slow=6.9,SNR=99
INK Inuvik 51.35 28 *e*P **P** **20 06 28.2 +1.2**
INK pmax pmax
comp=Z,111nm,0.9s
INK Inuvik 51.35 28 *e*P **P** **20 06 28.2 +1.2**
comp=Z,111nm,0.9s
KULM Kulim 51.56 240 ⇓P **P** **20 06 30.3 +1.1**
KULM Kulim 51.56 240 *e*P **P** **20 06 29.1 -0.1**
comp=Z,94nm,1.1s
KULM LR LR
comp=Z,11µm,19.0s
DGPR DIGLIPUR 51.59 254 *e*P **P** **20 06 29.6 +0.1**
MMRI Maumere 51.89 207 P **P** **20 06 32.5 +0.8**
comp=Z,180nm,0.9s,comp=Z,4µm
MMRI Maumere 51.89 207 *e*P **P** **20 06 30.9 -0.8**
comp=Z,317nm,1.2s
IPM Ipoh 51.91 239 ⇓P **P** **20 06 32.2 +0.3**
IPM Ipoh 51.91 239 *e*P **P** **20 06 31.9 0.0**
comp=Z,162nm,1.3s
MYKOM Kota Tinggi 52.13 234 ⇓P **P** **20 06 34.6 +1.1**
MYKOM Kota Tinggi 52.13 234 *e*P **P** **20 06 34.4 +0.9**
comp=Z,71nm,1.0s
LGTI Lohaghat 52.18 279 *e*P **P** **20 06 35.1 +1.3**
EDFI Ende, Flores 52.19 208 P **P** **20 06 33.6 -0.4**
MNAS Manas 52.22 298 *i* P **P** **20 06 32.5 -1.6**
MNAS pmax pmax
comp=Z,238nm,0.9s
SOEI Soe 52.26 204 P **P** **20 06 35.6 +1.1**
comp=Z,130nm,0.9s,comp=Z,4µm
SOEI Soe 52.26 204 *e*P **P** **20 06 34.1 -0.4**
comp=Z,598nm,1.5s
KGM Kluang 52.29 235 ⇓P **P** **20 06 35.9 +1.3**
TPRI Tanjung Pinang 52.39 233 P **P** **20 06 36.4 +1.0**
comp=Z,157nm,1.1s,comp=Z,3µm
FRIM Kepong 52.44 237 ⇓P **P** **20 06 36.5 +0.7**
OPA Opana 52.45 92 *e*P **P** **20 06 37.7 +1.8**
OPA Opana 52.45 92 *e*P **P** **20 06 37.7 +1.8**
SFK Sufi-Kurgan 52.49 294 *i* P **P** **20 06 36.2 -0.1**
SFK pmax pmax
comp=Z,223nm,1.1s
KIP Kipapa 52.59 92 *e*P **P** **20 06 38.3 +1.4**
KIP pmax pmax
comp=Z,143nm,0.9s
KIP Kipapa 52.59 92 *e*P **P** **20 06 36.2 -0.7**
KIP pmax pmax
comp=Z,774nm,0.9s
KIP MLR MLR
comp=Z,23µm,16.0s
KIP Kipapa 52.59 92 *e*P **P** **20 06 38.3 +1.4**
comp=Z,143nm,0.9s
SKAG Skagway 52.65 39 *e*P **P** **20 06 39.6 +2.8**
comp=Z,94nm,1.4s
PBA Port Blair 52.72 253 *e*P P 20 06 37.3 -0.6
PBA IAmb IAmb 20 06 44.3
comp=Z,201nm,1.2s
COEN Coen 53.27 180 *e*P **P** **20 06 42.2 +0.5**
comp=Z,47nm,0.8s
KK31 Karatay Array 53.33 299 *i* P **P** **20 06 41.8 -0.4**
KK31 pmax pmax
comp=Z,113nm,1.0s
DDI Dehra Dun 53.42 282 *e*P **P** **20 06 42.4 -0.7**
MTN Manton Dam 53.43 195 *e*P **P** **20 06 42.9 -0.1**
comp=Z,75nm,0.8s
WSI Waingapu 53.55 209 P **P** **20 06 45.2 +1.3**
comp=Z,173nm,1.0s,comp=Z,3µm
SMLA Simla 53.71 283 *i* P **P** **20 06 45.3 +0.3**
SMLA *i* S **S** **20 14 17.6 -0.9**
PLAI Plampang 53.78 212 P **P** **20 06 47.5 +1.9**
DHRM DHARAMSHALA 53.83 285 *e*P **P** **20 06 45.5 -0.7**
PPBI Pangkal Pinang 53.88 229 P **P** **20 06 47.2 +0.8**
comp=Z,235nm,1.1s,comp=Z,3µm
IUG Iuzhnay 54.04 298⇑ *i*P **P** **20 06 47.9 +0.5**
comp=Z,2µm,1.4s
IUG *e*S **S** **20 14 21.3 -1.6**
IUG LR LR 20 30 28.0
comp=Z,12µm,15.7s
TWSI Taliwang, Sumb 54.07 213 P **P** **20 06 46.7 -1.0**
LHMI Lhok Sumawe 54.12 243 P **P** **20 06 49.4 +1.2**
LHMI Lhok Sumawe 54.12 243 *e*P **P** **20 06 46.3 -1.9**
comp=Z,231nm,1.0s
TSI Tuntungan 54.27 240 P **P** **20 06 49.6 +0.3**
comp=Z,104nm,1.1s,comp=Z,3µm
SVE Sverdlovsk 54.37 318*d i*P **P** **20 06 50.3 +0.8**
SVE *e* 20 08 55.4
SVE *e*S **S** **20 14 26.5 -0.3**
SVE *e* 20 16 35.1
SVE pmax pmax
comp=Z,383nm,1.0s
SVE pmax pmax
comp=Z,3µm,16.5s
SVE MLR MLR
comp=Z,133µm,15.0s
SVE MLR MLR
comp=E,94µm,14.0s
SVE MLR MLR
comp=N,28µm,14.0s
ABJI Asem Bagus 54.40 217 P **P** **20 06 50.2 0.0**
comp=N,110nm,1.0s,comp=N,4µm
KKR Kurukshetra 54.53 282 *e*P **P** **20 06 50.9 -0.2**
PSI Prapat 54.55 239 P **P** **20 06 51.0 -0.4**
comp=N,56nm,0.9s,baz=17,slow=4.7,SNR=43
PSI Prapat 54.55 239 *e*P **P** **20 06 51.5 0.0**
comp=N,67nm,0.9s
DNP Denpasar 54.74 215 P **P** **20 06 52.8 +0.2**
comp=N,243nm,1.0s,comp=N,7µm
BISR Bishrakh 54.75 280 *e*P **P** **20 06 49.5 -3.2**
KCSI Kotacane, Aceh 54.79 241 P **P** **20 06 52.1 -1.0**
UWJI Ujung Watu 54.80 221 P **P** **20 06 54.6 +1.5**
comp=N,229nm,1.3s,comp=N,3µm
NDI New Delhi 54.87 280 *ex* **P** **20 06 49.0 -4.5**
JMBI JAMBI 54.94 232 P **P** **20 06 54.0 -0.1**
CMBY CAMPBELL BAY 54.99 247 *e*P **P** **20 06 53.7 -0.8**
CMBY IAMs_20 IAMs_20 20 33 35.8
comp=Z,21µm,8.0s
BKNI Bangkinang 55.03 236 P **P** **20 06 55.6 +0.8**
comp=Z,491nm,1.1s,comp=Z,5µm
BKNI Bangkinang 55.03 236 *e*P **P** **20 06 55.0 +0.3**
comp=Z,471nm,1.0s
AYAN Aya Nagar 55.03 280 *e*P **P** **20 06 53.0 -1.7**
AYAN IAmb IAmb 20 06 55.7
comp=Z,145nm,0.9s
JAGI Jajag, Banyuwa 55.03 216 P **P** **20 06 53.4 -1.4**
JAGI Jajag, Banyuwa 55.03 216 *e*P **P** **20 06 52.6 -2.2**
comp=Z,80nm,1.1s
CRAG Craig 55.04 44 *e*P **P** **20 06 56.5 +2.1**
comp=Z,89nm,1.3s
BHGR Bahadurgarh 55.08 280 *e*P **P** **20 06 54.8 -0.2**
CHLP Challavanipeta 55.08 266 *e*P **P** **20 06 54.9 -0.3**
CHLP IAmb IAmb 20 07 01.1
comp=Z,299nm,1.7s
CHLP *e*PP **PP** **20 09 00.3 +1.9**
CHLP *e*S S **20 14 37.6 +0.3**
CHLP IVMs_BB IVMs_BB 20 32 36.8
comp=Z,5µm,20.7s
WRAK Wrangell Islan 55.12 42 *e*P P 20 07 00.3 +5.4
comp=Z,46nm,1.0s
GMJI Gumukmas 55.19 217 P **P** **20 06 55.3 -0.6**
PMBI Palembang 55.29 230 P **P** **20 06 58.8 +2.1**
RTK Rohtak 55.30 281 *e*P **P** **20 06 56.0 -0.7**
RTK IAmb IAmb 20 06 56.8
comp=Z,81nm,0.7s
SOKR Solikamsk 55.35 322*c i*P **P** **20 06 55.4 -1.1**
SOKR 20 09 02.8
SOKR S **S** **20 14 39.6 -0.1**
SOKR SS **SS** **20 18 26.2 +2.6**
SOKR pmax pmax
comp=Z,164nm,1.1s
SOKR MLR MLR
comp=Z,29µm,15.0s
NGJI Ngawi 55.36 220 P **P** **20 06 58.1 +1.0**
comp=Z,266nm,1.0s,comp=Z,4µm
MLOA Mauna Loa Obse 55.54 92 *e*P **P** **20 07 00.6 +1.7**
DLBC Dease Lake 55.58 40 P **P** **20 07 00.4 +2.1**
comp=Z,18nm,0.8s,baz=284,slow=8.7,SNR=24
DLBC LR LR 20 34 48.6
comp=Z,4µm,18.1s,baz=308,slow=40
DLBC Dease Lake 55.58 40 *e*P **P** **20 07 01.0 +2.6**
comp=Z,55nm,1.2s
ARU Arti 55.59 318 P **P** **20 06 58.6 +0.3**
comp=Z,272nm,0.9s,baz=71,slow=3.9,SNR=144
ARU Arti 55.59 318*c i*P **P** **20 06 58.5 +0.2**
ARU 20 07 57.8

ARU 20 09 04.5
ARU eS S 20 14 41.3 -1.8
ARU 20 16 42.2
ARU pmax pmax
comp=Z,452nm,1.0s
ARU pmax pmax
comp=Z,3μm,13.9s
ARU smax smax
comp=N,4μm,16.0s
ARU MLR MLR
comp=Z,94μm,15.0s
ARU Arti 55.59 318 P P **20 06 58.6 +0.3**
ARU LR LR
comp=Z,34μm,20.0s
MNSI Mandailing Nat 55.61 237 P P **20 06 58.6 -0.4**
comp=Z,98nm,0.9s,comp=Z,2μm
KUDL Kundal 55.69 280 eP P **20 06 58.1 -1.3**
KUDL IAmb IAmb 20 06 59.6
comp=Z,76nm,1.0s
SDSI Sungai Dareh 55.75 234 P P **20 07 00.7 +0.7**
comp=Z,381nm,1.1s,comp=Z,22μm
WOJI Wonogiri, Jawa 56.03 220 P P **20 07 02.7 +0.8**
comp=Z,102nm,1.4s,comp=Z,8μm
PPI Padang Panjang 56.04 236 P P **20 07 02.3 +0.3**
comp=Z,58nm,1.3s,comp=Z,2μm
VIS Vishakhapatnam 56.10 265 eP P **20 07 01.9 -0.6**
VIS IAmb IAmb 20 07 03.3
PCJI Pacitan 56.21 220 P P **20 07 03.8 +0.6**
comp=Z,99nm,1.5s
KHET Khetri 56.24 280 eP P **20 07 03.0 -0.5**
KHET IAmb IAmb 20 07 04.1
comp=Z,81nm,0.9s
UGM Wanagama 56.29 220 P P **20 07 02.9 -0.9**
UGM Wanagama 56.29 220 eP P **20 07 02.6 -1.2**
comp=Z,477nm,1.1s
PDSI Padang 56.35 235 P P **20 07 04.7 +0.4**
comp=Z,88nm,0.9s,comp=Z,19μm
GSI Gunungsitoli 56.55 240 P P **20 07 06.7 +1.0**
comp=Z,258nm,1.5s,comp=Z,6μm
GSI Gunungsitoli 56.55 240 eP P **20 07 05.7 0.0**
comp=Z,513nm,1.3s
KPJI Karang Pucung 56.62 222 P P **20 07 05.2 -0.9**
LHSI Lahat 56.75 230 P P **20 07 07.6 +0.5**
comp=Z,513nm,1.2s,comp=Z,7μm
KLI Kotabumi 56.81 228 P P **20 07 07.0 -0.5**
comp=Z,310nm,1.1s,comp=Z,4μm
TNG Tangerang 56.87 225 P P **20 07 09.3 +1.4**
LEM Lembang 56.89 224 P P **20 07 08.9 +0.7**
MDSI Maura Dua 56.90 229 P P **20 07 07.4 -0.7**
MASI Maura Aman, Be 56.98 232 P P **20 07 09.2 +0.4**
comp=Z,632nm,1.3s,comp=Z,7μm
BLSI Bandar Lampung 56.99 227 P P **20 07 08.3 -0.5**
comp=Z,230nm,1.1s,comp=Z,3μm
DBJI Dramaga 57.13 225 P P **20 07 09.1 -0.7**
CMJI Cimerak 57.25 223 P P **20 07 12.4 +1.8**
CISI Cisompet, Garu 57.39 223 P P **20 07 12.8 +1.1**
CISI Cisompet, Garu 57.39 223 eP P **20 07 08.3 -3.4**
comp=Z,62nm,0.9s
LWLI Liwa 57.39 229 P P **20 07 10.4 -1.4**
MNAI Manna 57.51 230 P P **20 07 14.7 +2.2**
BHPL Bhopal 57.55 275 eP P **20 07 10.5 -2.3**
BHPL IAmb IAmb 20 07 17.0
BHPL comp=Z,145nm,0.9s IAMs_20 IAMs_20 20 40 48.9
comp=Z,6μm,12.9s
KASI Kota Agung 57.55 228 P P **20 07 10.7 -2.0**
CNJI Cibinong 57.55 224 P P **20 07 13.9 +1.2**
AB31 Akbulak array 57.60 310 *i* P P **20 07 10.5 -2.3**
AB31 pmax pmax
comp=Z,71nm,0.7s
ABKAR Akbulak array 57.60 310 eP P **20 07 12.9 +0.2**
SKJI Sukabumi 57.61 225 P P 20 07 19.6 +6.5
PVM Polavaram 57.69 266 eP P **20 07 12.7 -1.1**
PVM IAmb IAmb 20 07 19.6
comp=Z,137nm,0.9s
PVM ePP PP **20 09 19.6 -2.1**
PVM eS S **20 15 12.0 +0.1**
PVM eSS SS **20 19 04.4 +2.2**
PVM IVMs_BB IVMs_BB 20 33 43.9
comp=Z,4μm,19.3s
CGJI Cibinong 57.76 226 P P **20 07 14.3 +0.1**
HOPEN Hopen 57.98 346⇑ *i*P P **20 07 15.9 +0.9**
HOPEN eS S **20 15 15.7 +1.5**
HOPEN IAMs_20 IAMs_20 20 32 03.5
comp=Z,19μm,19.0s
PPSI Pulau Pagai 58.06 234 P P **20 07 17.4 +1.1**
comp=Z,418nm,1.2s,comp=Z,6μm
KBL Kabul 58.09 290 eP P **20 07 16.1 -0.6**
KBL pmax pmax
comp=Z,240nm,0.9s
KBL Kabul 58.09 290 eP P **20 07 16.1 -0.6**
comp=Z,240nm,0.9s
FUNA Funafuti 58.15 137 PFAKE 20 07 30.0 +13
FUNA LR LR
comp=Z,13μm,22.0s
AKTO Aktyubinsk 58.24 311 P P **20 07 17.1 -0.2**
comp=Z,106nm,0.9s,baz=71,slow=7.8,SNR=42
SPA0 Spitsbergen Ar 58.35 349 eP P **20 07 17.7 +0.1**
SPA0 eS S **20 15 20.8 +1.7**
SPA0 IVMs_BB IVMs_BB 20 35 21.3
comp=Z,8μm,16.9s
SPA0 Spitsbergen Ar 58.35 349 eP P **20 07 17.8 +0.1**
SPITS Spitsbergen Ar 58.35 349 P P **20 07 17.6 0.0**
SPITS pmax pmax
comp=Z,39nm,1.1s
KBS Kingsbay 58.43 350 eP P **20 07 18.5 +0.4**
KBS eS S **20 15 22.5 +2.4**
KBS Kingsbay 58.43 350 eP P **20 07 19.3 +1.2**
KBS pmax pmax
comp=Z,185nm,1.1s
KBS Kingsbay 58.43 350 eP P **20 07 19.3 +1.2**
comp=Z,185nm,1.1s
RPR Rampur 58.56 269 eP P **20 07 19.2 -0.7**
RPR IAmb IAmb 20 07 25.2
comp=Z,197nm,1.2s
RPR ePP PP **20 09 29.4 0.0**
RPR eS S **20 15 22.4 -0.8**
RPR eSS SS **20 19 14.9 -0.9**
RPR IVMs_BB IVMs_BB 20 36 52.8
comp=Z,5μm,13.9s
BBB Bella Bella 59.07 46 P P **20 07 25.2 +2.3**
comp=Z,19nm,0.8s,baz=247,slow=12,SNR=4.2
BBB LR LR 20 29 24.3
comp=Z,3μm,22.0s,baz=314,slow=32
SRSP Sriramsagar 59.25 270 eP P **20 07 23.5 -1.2**
SRSP IAmb IAmb 20 07 29.8
comp=Z,419nm,1.2s
SRSP ePP PP **20 09 33.9 -1.7**
SRSP eS S **20 15 31.0 -1.3**
SRSP IVMs_BB IVMs_BB 20 34 59.8
comp=Z,6μm,16.4s
HSPB Hornsund (broa 59.31 348 eP P **20 07 25.5 +1.3**
HSPB IVMs_BB IVMs_BB 20 36 32.0
comp=Z,5μm,22.1s
HSPB Hornsund (broa 59.31 348 eP P **20 07 25.1 +0.9**
HSPB eS S **20 15 31.1 -0.3**
HSPB MLR MLR
comp=Z,16μm,26.2s
CTAO Charters Tower 59.41 177 eP P **20 07 25.8 +0.2**
CTAO pmax pmax
comp=Z,47nm,1.5s
CTAO MLR MLR
comp=Z,5μm,20.0s
CTAO Charters Tower 59.41 177 eP P **20 07 25.8 +0.2**
comp=Z,47nm,1.5s
CTAO LR LR
comp=Z,5μm,20.0s
RES Resolute Bay 59.71 15 P P **20 07 27.0 0.0**
comp=Z,62nm,0.8s,baz=308,slow=6.8,SNR=92
RES LR LR 20 37 06.2
comp=Z,11μm,19.3s,baz=324,slow=40
RES Resolute Bay 59.71 15 P P **20 07 27.0 0.0**
RES pmax pmax
comp=Z,62nm,0.8s
RES MLR MLR
comp=Z,11μm,19.3s
FITZ Fitzroy Crossi 59.78 200 LR LR 20 33 10.4
comp=Z,2μm,19.8s,slow=36
FITZ Fitzroy Crossi 59.78 200 eP P **20 07 28.4 +0.2**
comp=Z,102nm,1.1s
ADKI Addanki 59.80 266 eP P **20 07 28.1 -0.3**
ADKI IAmb IAmb 20 07 29.6
comp=Z,123nm,1.1s
ADKI ePP PP **20 09 38.4 -2.0**
ADKI eS S **20 15 40.8 +1.4**
ADKI eSS SS **20 19 35.1 -0.3**
ADKI IVMs_BB IVMs_BB 20 36 07.0
comp=Z,4μm,17.7s
WRAB Tennant Creek 59.83 190 *c* P P **20 07 27.4 -1.1**
WRAB pmax pmax
comp=Z,186nm,1.2s
WRAB MLR MLR
comp=Z,10μm,19.0s
WRAB Tennant Creek 59.83 190 eP P **20 07 27.7 -0.7**
comp=Z,78nm,0.9s
WRAB LR LR
comp=Z,5μm,22.0s
WB2 Warramunga Arr 59.84 190 eP P **20 07 27.9 -0.7**
comp=Z,70nm,0.8s
WRA Warramunga Arr 59.84 190 P P **20 07 27.3 -1.2**
comp=Z,41nm,0.9s,baz=7.5,slow=7.0,SNR=46
WRA S S **20 15 35.2 -4.3**
comp=Z,1.9nm,1.1s,baz=9.2,slow=12,SNR=6.0
WRA PKP2bc 20 37 03.2
comp=Z,3.5nm,1.2s,baz=190,slow=1.9,SNR=6.6
WRA Warramunga Arr 59.84 190 P P **20 07 27.3 -1.2**
WRA S S **20 15 35.2 -4.3**
WRA pmax pmax
comp=Z,25nm,0.6s
WRA smax smax
comp=N,2.0nm,1.1s
NJS Nagarjunasagar 59.89 267 eP P **20 07 27.9 -1.2**
NJS IAmb IAmb 20 07 30.0
comp=Z,68nm,1.0s
NJS ePP PP **20 09 38.9 -2.3**
NJS eS S **20 15 39.7 -0.8**
NJS eSS SS **20 19 41.4 +4.6**
NJS IVMs_BB IVMs_BB 20 35 34.8
comp=Z,4μm,16.4s
HYB Hyderabad 59.97 268 *i* P P **20 07 29.0 -0.7**
HYB ePcP PcP **20 08 18.0 +2.2**
HYB ePP PP **20 09 42.0 +0.1**
HYB eS S **20 15 42.0 +0.5**
HYB eSS SS **20 19 40.0 +2.0**
HYB Hyderabad 59.97 268 eP P **20 07 28.7 -0.9**
HYB IAmb IAmb 20 07 30.1
comp=Z,74nm,0.4s
HYBB Hyderabad (bro 59.97 268 eP P **20 07 29.2 -0.5**
HYBB IAmb IAmb 20 07 35.2
comp=Z,86nm,1.0s
HYBB ePP PP **20 09 39.2 -2.7**
HYBB eS S **20 15 40.7 -0.9**
HYBB eSS SS **20 19 37.0 -1.0**
HYBB IVMs_BB IVMs_BB 20 40 30.2
comp=Z,4μm,14.8s
BJO Bjornoya 60.39 345 eP P **20 07 32.9 +1.2**
BJO IVMs_BB IVMs_BB 20 38 17.3
comp=Z,11μm,12.1s
SRLM Srisailam 60.48 267 eP P **20 07 32.3 -0.9**
SRLM IAmb IAmb 20 07 34.8
comp=Z,94nm,1.0s
SRLM ePP PP **20 09 43.7 -2.7**
SRLM eS S **20 15 48.0 -0.1**
SRLM IVMs_BB IVMs_BB 20 38 58.5
comp=Z,4μm,15.3s
LVZ Lovozero 60.48 336 *c* P P **20 07 32.1 -0.4**
LVZ pmax pmax
comp=Z,68nm,1.0s
LVZ MLR MLR
comp=Z,21μm,17.0s
LVZ Lovozero 60.48 336 eP P **20 07 31.8 -0.7**
comp=Z,94nm,1.0s
LVZ LR LR
comp=Z,21μm,22.0s
YKW3 Yellowknife Ar 60.72 31 eP P **20 07 34.6 +0.6**
comp=Z,52nm,1.0s
YKA Yellowknife Ar 60.76 31 P P **20 07 34.7 +0.4**
comp=Z,19nm,0.7s,baz=302,slow=6.6,SNR=88
YKB5 Yellowknife Ar 60.76 31 eP P **20 07 33.8 -0.5**
RCLA Racherla 60.81 266 eP P **20 07 34.3 -1.1**
RCLA IAmb IAmb 20 07 36.0
comp=Z,119nm,1.0s
RCLA ePP PP **20 09 46.7 -2.7**
RCLA eS S **20 15 51.4 -1.0**
RCLA eSS SS **20 19 53.2 +1.9**
RCLA IVMs_BB IVMs_BB 20 36 36.6
comp=Z,5μm,17.0s
XMIS Christmas Isla 60.99 224 eP P **20 07 34.8 -1.7**
comp=Z,122nm,1.2s
APA Apatity 61.06 336⇓ *i*P P **20 07 37.2 +0.9**
APA *i* 20 07 45.2
APA *i* S S **20 15 52.0 -2.1**
APA *i* 20 17 28.0
APA *i* SS SS **20 19 48.0 -5.0**
APA pmax pmax
comp=Z,88nm,1.0s
APA MLR MLR
comp=Z,24μm,18.0s
KLRI Killari 61.10 270 eP P **20 07 36.3 -1.1**
KLRI IAmb IAmb 20 07 42.1
comp=Z,591nm,1.5s
KLRI ePP PP **20 09 51.3 -0.6**
KLRI eS S **20 15 54.2 -1.8**
KLRI IVMs_BB IVMs_BB 20 35 42.2
comp=Z,5μm,15.3s
MDRS Chennai 61.26 263 eP P **20 07 38.7 +0.3**
MDRS IAmb IAmb 20 07 39.7
comp=Z,108nm,0.5s
SKHT Srikalahasti 61.27 264 eP P **20 07 37.0 -1.4**
SKHT eP pP **20 07 38.1 -5.6**
SKHT IAmb IAmb 20 07 44.5
comp=Z,185nm,1.1s
SKHT ePP PP **20 09 51.8 -1.6**
SKHT eS S **20 15 57.0 -1.1**
SKHT IVMs_BB IVMs_BB 20 36 02.7
comp=Z,3μm,18.8s
TMCR Tamitsa 61.32 331 eP P **20 07 38.7 +0.6**
TMCR eS S **20 15 57.5 0.0**
TMCR pmax pmax
comp=Z,310nm,1.0s
KEV Kevo 61.66 339 eP P **20 07 40.7 +0.4**
KEV pmax pmax
comp=Z,130nm,1.0s
KEV Kevo 61.66 339 eP P **20 07 40.7 +0.4**
comp=Z,130nm,1.0s
HAMF Hammerfest 61.97 341 eP P **20 07 42.5 +0.1**
HAMF IAmb IAmb 20 07 43.5
comp=Z,99nm,1.0s
HAMF IVMs_BB IVMs_BB 20 41 28.0
comp=Z,9μm,13.3s
ARA0 ARCESS Array S 62.20 339 eP P **20 07 44.4 +0.3**
ARCES ARCESS Array B 62.20 339 P P **20 07 44.1 +0.1**
comp=Z,34nm,0.9s,baz=52,slow=7.9,SNR=34
ARCES PP PP **20 09 59.5 -1.0**
comp=Z,19nm,0.9s,baz=60,slow=7.4,SNR=3.8
ARCES LR LR 20 37 25.5
comp=Z,24μm,21.7s,baz=34,slow=39
ARE0 ARCESS Array S 62.20 339 eP P **20 07 44.9 +0.9**
ARE0 eS S **20 16 09.5 +0.9**
ARE0 eSS SS **20 20 14.2 +3.3**
ARE0 ARCESS Array S 62.20 339 eP P **20 07 45.0 +0.9**
comp=Z,118nm,1.1s
URV Uravakonda 62.43 267 eP P **20 07 45.4 -0.9**
URV IAmb IAmb 20 07 46.6
comp=Z,68nm,1.0s
URV ePP PP **20 10 01.4 -2.2**
URV eS S **20 16 11.8 -1.1**
URV IVMs_BB IVMs_BB 20 37 35.0
comp=Z,3μm,17.6s
KLMR Klimovskoe 62.51 328 eP P **20 07 42.5 -3.7**
KLMR eS S **20 16 04.1 -8.5**
KLMR *e* 20 17 31.8
KLMR eSS SS **20 20 09.2 -6.6**
KLMR eSSS SSS 20 22 58.4
KLMR pmax pmax
comp=Z,234nm,1.3s
KLMR MLR MLR
comp=Z,35μm,17.0s
POO Poona 62.95 272 eP P **20 07 49.3 -0.5**
POO IAmb IAmb 20 07 50.4
POO ePP PP **20 10 08.0 -0.3**
POO *i* S S **20 16 19.0 -0.5**
KTK1 Kautokeino 63.16 340 eP P **20 07 50.8 +0.4**
KTK1 IAmb IAmb 20 07 51.9
comp=Z,96nm,0.9s
KTK1 eS S **20 16 21.8 +1.2**
PGC Sidney 63.36 48 eP P **20 07 53.8 +1.8**
comp=Z,54nm,1.0s
DAG Danmarks Havn 63.37 355⇑ *i*P P **20 07 51.8 +0.1**
comp=Z,101nm,0.9s
comp=Z,9μm,16.0s
DAG Danmarks Havn 63.37 355⇑ *i*P P **20 07 51.8 +0.1**
DAG pmax pmax
comp=Z,85nm,0.9s
DAG MLR MLR
comp=Z,10μm,16.0s
BHJ Bhuj 63.50 279 eP P **20 07 51.6 -1.8**
BHJ IAmb IAmb 20 07 58.0
comp=Z,106nm,0.8s
AS01 Alice Springs 63.56 190 eP P **20 07 52.8 -0.7**
AS31 Alice Springs 63.56 190 eP P **20 07 53.9 +0.3**
comp=Z,8.3nm,0.9s
ASAR Alice Springs 63.57 190 P P **20 07 53.5 -0.2**
comp=Z,17nm,0.8s,baz=8.8,slow=5.9,SNR=53
ASAR PKPPKP **P'P'df**
comp=Z,0.6nm,0.6s,baz=182,slow=2.8,SNR=4.7
ASAR PKP2bc 20 36 55.2
comp=Z,3.1nm,1.0s,baz=183,slow=3.4,SNR=10
A04D Lummi Island 63.75 47 P P **20 07 55.0 +0.4**
baz=301
NLWA Neilton Lookou 63.76 49 eP P **20 07 57.2 +2.4**
comp=Z,99nm,1.1s
TRO Tromso 63.85 341 eP P **20 07 55.2 +0.2**
TRO IAmb IAmb 20 08 05.1
comp=Z,163nm,0.9s
TRO eS S **20 16 30.7 +1.6**
TRO IVMs_BB IVMs_BB 20 42 05.5
comp=Z,16μm,10.6s
GEYT Alibeck 64.08 299 P P **20 07 57.0 -0.1**
comp=Z,68nm,0.9s,baz=29,slow=3.4,SNR=87
GEYT LR LR 20 38 03.7
comp=Z,20μm,18.3s,baz=85,slow=38
B05A Bryant 64.34 48 P P **20 07 59.2 +0.8**
baz=301
E03A Lebam 64.37 50 eP P **20 08 01.6 +2.8**
comp=Z,222nm,1.2s
MBWA Marble Bar 64.40 205 eP P **20 07 58.7 -0.4**
comp=Z,48nm,0.9s
MBWA Marble Bar 64.40 205 P P **20 07 58.8 -0.4**
SNR=5.4
MBWA Marble Bar 64.40 205 P P **20 07 58.8 -0.4**
SNR=5.4
JCW Jim Creek 64.47 48 eP P **20 08 01.3 +1.9**
B06A Marblemount 64.55 47 eP P **20 08 01.4 +1.6**
comp=Z,75nm,1.1s
RPW Rockport 64.57 47 P P **20 08 01.4 +1.3**
GOA Goa 64.75 270 eP P **20 08 01.1 -0.6**
F04D Rainier, OR 64.94 50 P P **20 08 02.0 -0.5**
baz=302
D05A Enumclaw 64.96 49 eP P **20 08 04.7 +2.1**
comp=Z,115nm,1.1s
EIDS Eidsvold 65.00 172 eP P **20 08 03.7 +0.8**
comp=Z,95nm,1.4s
C06D Leavenworth 65.20 48 P P **20 08 05.3 +1.1**
baz=302,SNR=8.9
OBSR Observation Ro 65.21 49 eP P **20 08 06.9 +2.3**
G03D McMinnville, O 65.25 51 P P **20 08 02.8 -1.7**
baz=302
TDL Tradedollar La 65.27 50 P P **20 08 07.0 +2.2**
KULLO Kullorsuaq 65.28 6⇑ *i*P P **20 08 03.9 -0.3**
comp=Z,90nm,1.0s
comp=Z,19μm,20.0s
KULLO Kullorsuaq 65.28 6⇑ *i*P P **20 08 03.9 -0.3**
KULLO pmax pmax
comp=Z,90nm,1.0s
KULLO MLR MLR
comp=Z,19μm,20.0s
LON Longmire 65.30 49 eP P **20 08 06.9 +2.0**
LON pmax pmax
comp=Z,53nm,1.2s
LON Longmire 65.30 49 eP P **20 08 06.9 +2.0**
comp=Z,53nm,1.2s
F04A Amboy 65.37 50 eP P **20 08 07.3 +2.0**
comp=Z,153nm,1.2s
MSVF Nonsavu 65.49 144 eP P **20 08 08.1 +1.8**
MSVF pmax pmax
comp=Z,63nm,1.0s
MSVF MLR MLR
comp=Z,6μm,19.0s
MSVF Nonsavu 65.49 144 eP P **20 08 08.1 +1.8**
comp=Z,63nm,1.0s
MSVF LR LR
comp=Z,6μm,19.0s
COR Corvallis 65.56 52 eP P **20 08 09.7 +3.2**
COR pmax pmax
comp=Z,155nm,1.1s
COR Corvallis 65.56 52 eP P **20 08 09.7 +3.2**
comp=Z,154nm,1.1s
LTY Liberty 65.68 48 eP P **20 08 09.0 +1.6**
comp=Z,87nm,1.2s
ETW Entiat 65.69 48 P P **20 08 09.1 +1.5**
B08A Colville Reser 65.85 46 eP P **20 08 09.9 +1.5**
comp=Z,95nm,1.1s
WTV Waterville 65.86 47 P P **20 08 10.1 +1.6**
NAC Naches 65.88 49 P P **20 08 10.6 +2.0**
EBG Ellensburg 65.93 48 P P **20 08 11.1 +2.2**
I03D Drain, OR 66.00 52 P P **20 08 09.3 -0.1**
baz=303
STEI Steigen 66.01 341 eP P **20 08 09.3 +0.3**
H04A Detroit Lake 66.18 51 eP P **20 08 12.7 +2.1**
comp=Z,152nm,1.2s
MOS Moscow 66.21 324 eP P **20 08 09.6 -0.9**
MOS *e* 20 08 40.0
MOS *e* 20 10 35.6
MOS ePPP PPP 20 12 10.1
MOS eS S **20 16 56.0 -2.5**
MOS eSS SS **20 21 09.5 -4.1**
MOS pmax pmax
comp=Z,226nm,1.4s
MOS pmax pmax
comp=E,81nm,1.1s
MOS pmax pmax
comp=N,100nm,1.0s
MOS pmax pmax
comp=Z,2μm,3.8s
MOS MLR MLR
comp=Z,54μm,16.0s
MOS MLR MLR
comp=N,38μm,15.0s
MOS MLR MLR
comp=E,38μm,16.0s
LOF Lofoten 66.28 342 eP P **20 08 11.3 +0.6**
TRW Toppenish Ridg 66.28 49 P P **20 08 13.2 +1.9**
G05D Wamic, OR 66.39 50 P P **20 08 11.5 -0.4**
baz=303
I04A Tendick Farm, 66.52 52 P P **20 08 14.0 +1.2**
baz=303,SNR=9.1
TRD Trivandrum 66.62 261 eP P **20 08 13.3 -0.5**
TRD IAmb IAmb 20 08 14.1
comp=Z,93nm,0.7s
L02D Cave Junction, 66.67 54 P P **20 08 13.9 +0.2**
baz=303
C09A Chrisman Ranch 66.75 47 eP P **20 08 15.8 +1.6**
comp=Z,138nm,1.0s
D08A Wollman Farm, 66.80 48 eP P **20 08 16.0 +1.6**
comp=Z,90nm,1.1s
G06A Carlson Farm, 66.80 50 eP P **20 08 16.9 +2.3**
comp=Z,107nm,1.3s
HAWA Hanford 66.81 48 eP P **20 08 16.4 +1.9**
comp=Z,85nm,1.2s
VRH Novokhopyorsk 66.82 318 eP P **20 08 13.7 -0.8**
VRH eS S **20 17 02.0 -4.1**
VRH eSS SS **20 21 22.0 -1.4**
VRH pmax pmax
comp=Z,150nm,1.0s
VRH pmax pmax
comp=Z,360nm,1.6s
VRH smax smax
comp=E,2μm,8.3s
VRH MLR MLR
comp=Z,72μm,16.0s
HUMO Hull Mountain 66.83 53 eP P **20 08 17.4 +2.6**
comp=Z,65nm,1.4s
PUL Pulkovo 66.85 330 eP P **20 08 13.9 -0.6**
PUL pmax pmax
comp=Z,225nm,1.0s
PUL MLR MLR
comp=Z,33μm,18.0s
I05D Terrebonne, OR 66.87 51 P P **20 08 14.5 -0.6**
baz=303,SNR=6.4
VTHM Trough 66.88 50 P P **20 08 17.0 +1.9**
OBN Obninsk 67.06 323 *c* P P **20 08 15.9 0.0**
OBN *i* 20 10 40.2
OBN *i* S S 20 16 57.3 -12
OBN pmax pmax
comp=Z,164nm,1.0s

OBN MLR MLR
comp=Z,50µm,16.0s
OBN Obninsk 67.06 323 *e*P **P 20 08 16.0 +0.1**
comp=Z,238nm,1.2s
OBN LR LR
comp=Z,15µm,20.0s
NEW Newport 67.13 46 P **P 20 08 17.5 +0.9**
comp=Z,30nm,0.8s,baz=303,slow=5.0,SNR=23
NEW LR LR 20 37 19.2
comp=Z,2µm,20.4s,baz=319,slow=36
NEW Newport 67.13 46 P **P 20 08 17.0 +0.4**
baz=304,SNR=32
NEW Newport 67.13 46 *e*P **P 20 08 17.8 +1.2**
NEW pmax pmax
comp=Z,124nm,1.1s
NEW Newport 67.13 46 *e*P **P 20 08 17.8 +1.2**
comp=Z,124nm,1.1s
KHMM Horse Mountain 67.29 55 *e*P **P 20 08 20.8 +2.9**
comp=Z,123nm,1.1s
FIA1 FINESS Array S 67.34 332 *e*P **P 20 08 17.0 -0.6**
FINES FINESS Array B 67.34 332 P **P 20 08 17.5 -0.1**
comp=Z,111nm,0.9s,baz=53,slow=7.4,SNR=162
FINES LR LR 20 40 45.9
comp=Z,63µm,18.4s,baz=30,slow=39
COCO West Island 67.37 230 *e*P **P 20 08 19.8 +1.5**
COCO pmax pmax
comp=Z,308nm,1.1s
COCO MLR MLR
comp=Z,4µm,21.0s
COCO West Island 67.37 230 *e*P **P 20 08 19.8 +1.5**
comp=Z,308nm,1.1s
COCO LR LR
comp=Z,4µm,21.0s
LPSR Galich'ya Gora 67.42 320 *e*P **P 20 08 18.1 -0.2**
LPSR *e*S **S 20 17 11.8 -1.5**
LPSR *e*SS **SS 20 21 38.5 +5.9**
LPSR pmax pmax
comp=Z,150nm,1.1s
LPSR pmax pmax
comp=Z,290nm,1.5s
LPSR smax smax
comp=N,680nm,3.9s
LPSR MLR MLR
comp=Z,45µm,14.0s
YBH Yreka Blue Hor 67.46 54 P **P 20 08 21.3 +2.4**
comp=Z,21nm,0.9s,baz=355,slow=2.4,SNR=20
YBH LR LR 20 31 12.9
comp=Z,2µm,22.0s,baz=320,slow=30
YBH Yreka Blue Hor 67.46 54 *e*P **P 20 08 21.6 +2.7**
YBH pmax pmax
comp=Z,64nm,1.1s
YBH Yreka Blue Hor 67.46 54 *e*P **P 20 08 21.6 +2.7**
comp=Z,64nm,1.1s
J05D Fort Rock, OR 67.52 52 P **P 20 08 20.1 +0.8**
baz=304,SNR=13
MOR8 Moi Rana 67.55 340⇑ *i*P **P 20 08 17.8 -1.2**
MOR8 IAmb IAmb 20 08 18.8
comp=Z,128nm,0.9s
M02C Callahan 67.56 54 P **P 20 08 20.4 +0.9**
baz=304,SNR=8.7
K04D Chiloquin, OR 67.56 53 P **P 20 08 19.8 +0.2**
baz=304
N02D Trinity Center 67.89 55 P **P 20 08 22.1 +0.6**
baz=304,SNR=8.9
JMIC Jan Mayen 67.92 350 *e*P **P 20 08 24.2 +3.1**
M04C Macdoel 67.98 54 P **P 20 08 23.2 +1.0**
baz=304,SNR=13
K05A Summer Lake 68.03 52 *e*P **P 20 08 25.4 +2.8**
comp=Z,278nm,1.0s
VSR Storozhevoye 68.12 319 *e*P **P 20 08 22.0 -0.7**
VSR *e* 20 10 48.9
VSR *e*S **S 20 17 16.4 -5.3**
VSR *e*SS **SS 20 21 41.2 -2.3**
VSR pmax pmax
comp=Z,150nm,1.1s
VSR pmax pmax
comp=Z,430nm,1.6s
VSR smax smax
comp=E,2µm,8.4s
VSR MLR MLR
comp=Z,40µm,16.0s
SUMG Summit 68.13 1⇑ *i*P **P 20 08 24.0 +1.1**
comp=Z,144nm,1.0s
comp=Z,21µm,22.0s
SUMG Summit 68.13 1⇑ *i*P **P 20 08 24.0 +1.1**
SUMG pmax pmax
comp=Z,140nm,1.0s
SUMG MLR MLR
comp=Z,21µm,22.0s
SUMG Summit 68.13 1 *e*P **P 20 08 23.9 +0.9**
comp=Z,137nm,1.0s
WDC Whiskeytown Da 68.21 55 *e*P **P 20 08 25.6 +2.1**
WDC pmax pmax
comp=Z,69nm,1.2s
WDC Whiskeytown Da 68.21 55 *e*P **P 20 08 25.6 +2.1**
comp=Z,69nm,1.2s
F10A Beach Ranch, E 68.37 48 *e*P **P 20 08 26.5 +2.0**
comp=Z,42nm,1.0s
WALA Waterton Lakes 68.42 44 *e*P **P 20 08 26.3 +1.5**
BSMT Bassoo Peak 68.65 45 *e*P **P 20 08 28.1 +1.7**
BLMT Blacktail Moun 68.79 45 *e*P **P 20 08 29.1 +1.8**
O03D Paynes Creek 68.83 55 P **P 20 08 28.2 +0.7**
baz=304,SNR=22
MOD Modoc Plateau 68.86 53 *e*P **P 20 08 29.8 +2.1**
comp=Z,65nm,1.1s
BMO Blue Mountains 68.97 49 *e*P **P 20 08 30.0 +1.7**
comp=Z,63nm,1.1s
BMO LR LR
comp=Z,3µm,20.0s
JTMT Jette 68.99 45 *e*P **P 20 08 30.2 +1.8**
YBMT Yellow Bay 69.07 45 *e*P **P 20 08 30.6 +1.7**
VSU Vasula 69.11 330*c i*P **P 20 08 29.0 +0.3**
VSU pmax pmax
comp=Z,604nm,1.0s
VSU MLR MLR
comp=Z,61µm,18.0s
SWMT Swartz Lake 69.28 45 *e*P **P 20 08 31.5 +1.3**
ORV Oroville 69.44 55 *e*P **P 20 08 32.6 +1.4**
ORV pmax pmax
comp=Z,78nm,1.2s
ORV Oroville 69.44 55 *e*P **P 20 08 32.6 +1.4**
comp=Z,78nm,1.2s
NSS Namsos 69.48 340 *e*P **P 20 08 31.1 +0.2**
NSS IVMs_BB IVMs_BB 20 44 52.4
comp=Z,8µm,10.3s
WVOR Wild Horse Val 69.57 52 *e*P **P 20 08 34.3 +2.2**
WVOR pmax pmax
comp=Z,127nm,1.2s
WVOR Wild Horse Val 69.57 52 *e*P **P 20 08 34.3 +2.2**
comp=Z,127nm,1.2s
GOF Gofitskoye 69.65 312⇑ *e*P **P 20 08 33.2 +0.8**
GOF *e*S **S 20 17 39.9 -0.2**
GOF pmax pmax
comp=Z,409nm,1.0s
GOF smax smax
comp=N,50nm,1.3s
GOF smax smax
comp=E,117nm,1.7s
MSO Missoula 69.72 46 P **P 20 08 34.0 +1.1**
baz=307,SNR=36
MSO Missoula 69.72 46 *e*P **P 20 08 34.2 +1.2**
comp=E,89nm,1.0s
SCO Scoresbysund 69.74 355 *i*P **P 20 08 33.5 +1.1**
comp=Z,14µm,17.0s
SCO Scoresbysund 69.74 355 *i*P **P 20 08 33.5 +1.1**
SCO MLR MLR
comp=Z,14µm,17.0s
CHMT Chamberlain Mo 70.05 45 *e*P **P 20 08 35.7 +0.6**
ARMA Armidale 70.05 173 *e*P **P 20 08 37.2 +2.3**
comp=Z,86nm,1.3s
AFDM Forest Hills D 70.13 56 *e*P **P 20 08 37.2 +1.7**
comp=Z,78nm,1.4s
NCK Nalchik 70.25 310*c i*P **P 20 08 36.5 +0.4**
NCK pmax pmax
comp=Z,160nm,1.1s
GUDG Gudauri 70.33 309 P **P 20 08 38.1 +1.3**
DGRG David-gareji 70.38 308 P **P 20 08 35.8 -1.2**
DGRG David-gareji 70.38 308 *e*P **P 20 08 35.7 -1.2**
DUS Dusheti 70.41 309 P **P 20 08 38.8 +1.5**
DUS Dusheti 70.41 309 *e*P **P 20 08 38.7 +1.5**
ZEI Tsey 70.48 310 *e*P **P 20 08 37.6 -0.2**
ZEI *e*S **S 20 17 47.3 -3.0**
ZEI pmax pmax
comp=Z,533nm,1.1s
KIV Kislovodsk 70.51 311 *e*P **P 20 08 39.5 +1.7**
KIV Kislovodsk 70.51 311 *i*P **P 20 08 38.1 +0.3**
SNR=89
KIV Kislovodsk 70.51 311 *e*P **P 20 08 38.4 +0.6**
KIV *e* 20 11 13.3
KIV *e*PPP PPP 20 12 57.7
KIV *e*S **S 20 17 49.2 -1.1**
KIV *e*SS **SS 20 22 20.8 0.0**
KIV pmax pmax
comp=Z,562nm,1.0s
KIV pmax pmax
comp=Z,1µm,5.7s
KIV MLR MLR
comp=Z,35µm,17.0s
KIV Kislovodsk 70.51 311 *e*P **P 20 08 38.8 +1.1**
comp=Z,522nm,1.0s
KIV LR LR
comp=Z,36µm,19.0s
KIV Kislovodsk 70.51 311 P **P 20 08 38.8 +1.1**
SNR=98
KIV Kislovodsk 70.51 311 P **P 20 08 38.8 +1.1**
SNR=98
KBZ Khabaz 70.52 311 P **P 20 08 38.2 +0.6**
comp=Z,147nm,0.9s,baz=65,slow=5.1,SNR=123
KBZ LR LR 20 40 37.1
comp=Z,12µm,18.7s,baz=26,slow=37
TBLG Delisi 70.60 308 *e*P **P 20 08 41.9 +3.6**
TBLG Delisi 70.60 308 P **P 20 08 41.3 +3.0**
TBLG Delisi 70.60 308 *e*P **P 20 08 41.3 +3.0**
FFC Flin Flon 70.65 34 *e*P **P 20 08 38.9 +0.6**
FFC pmax pmax
comp=Z,75nm,0.8s
FFC MLR MLR
comp=Z,5µm,20.0s
FFC Flin Flon 70.65 34 *e*P **P 20 08 38.9 +0.6**
comp=Z,75nm,0.8s
FFC LR LR
comp=Z,5µm,20.0s
MFID Camas Ranch 70.67 49 *e*P **P 20 08 40.6 +1.8**
comp=Z,63nm,1.3s
NEY Neytrino 70.91 311*c i*P **P 20 08 41.2 +0.9**
NEY pmax pmax
comp=Z,20nm,1.0s
NEY MLR MLR
comp=Z,14µm,15.0s
FCC Fort Churchill 70.96 28 *e*P **P 20 08 40.2 +0.1**
FCC Fort Churchill 70.96 28 *e*P **P 20 08 40.2 +0.1**
TBLU Trondheim 70.96 340 *e*P **P 20 08 38.5 -1.6**
TBLU *e*S **S 20 17 53.2 -1.5**
ILULI Ilulissat 70.97 5 *i*P **P 20 08 40.3 +0.3**
comp=Z,79nm,1.0s
comp=Z,21µm,19.0s
ILULI Ilulissat 70.97 5 *i*P **P 20 08 40.3 +0.3**
ILULI pmax pmax
comp=Z,79nm,1.0s
ILULI MLR MLR
comp=Z,21µm,19.0s
CMB Columbia Colle 71.03 56 *e*P **P 20 08 42.8 +1.8**
CMB pmax pmax
comp=Z,66nm,1.0s
CMB Columbia Colle 71.03 56 *e*P **P 20 08 42.8 +1.8**
comp=Z,66nm,1.0s
SAO San Andreas Ge 71.08 58 *e*P **P 20 08 41.9 +0.6**
SAO pmax pmax
comp=Z,27nm,1.0s
SAO San Andreas Ge 71.08 58 *e*P **P 20 08 41.9 +0.6**
comp=Z,27nm,1.0s
STKA Stephens Creek 71.12 182 P **P**
comp=Z,33nm,1.1s,baz=343,slow=7.6,SNR=20
STKA Stephens Creek 71.12 182 P **P 20 08 41.2 -0.1**
STKA pmax pmax
comp=Z,22nm,0.9s
STKA Stephens Creek 71.12 182 *e*P **P 20 08 41.6 +0.3**
LRM Limekiln Ridge 71.15 46 *e*P **P 20 08 43.2 +1.4**
IZAR Zarasai 71.16 328 *e*P **P 20 08 42.0 +0.6**
IZAR IAmb IAmb 20 08 43.4
comp=Z,52nm,0.9s
EGMT Eagleton 71.25 43 P **P 20 08 41.7 -0.5**
baz=309
EGMT Eagleton 71.25 43 *e*P **P 20 08 43.3 +1.1**
comp=Z,166nm,1.0s
EGMT LR LR
comp=Z,5µm,19.0s
IDID Didziasalis 71.25 327 *e*P **P 20 08 42.6 +0.7**
IDID IAmb IAmb 20 08 44.1
comp=Z,85nm,1.0s
MICGM Minsk 71.32 326⇑ *i*P **P 20 08 42.0 -0.4**
MICGM ⇑ *i*P **P 20 08 42.0 -0.4**
MICGM PM 20 08 43.0
comp=Z,0.5nm,1.0s
MICGM PM 20 08 44.0
comp=N,0.3nm,1.5s
MICGM PM 20 08 44.0
comp=E,0.2nm,1.5s
MICGM *e*PcP PcP 20 09 12.0 +10
MICGM *e*PP **PP 20 11 18.0 -2.0**
MICGM *e*PPP PPP 20 13 00.0
MICGM *e*S **S 20 18 00.0 +0.8**
MICGM SM 20 18 05.0
comp=E,9.2nm,12.0s
MICGM *e*PS **PnS 20 18 34.0 +6.0**
MICGM *e*SS **SS 20 22 40.0 +7.5**
MICGM *e*SSS SSS 20 26 28.0
MICGM *e*LQ LQ 20 32 30.0
MICGM LQM 20 37 45.0
comp=E,27nm,20.0s
MICGM LQM 20 37 58.0
comp=N,13nm,18.0s
MICGM *e*LR LR 20 38 50.0
MICGM LRM MLR 20 42 54.0
comp=Z,94nm,16.0s
MICGM LRM MLR 20 42 56.0
comp=N,31nm,14.0s
MICGM LRM MLR 20 42 56.0
comp=Z,102nm,18.0s
MICGM LRM MLR 20 42 57.0
comp=N,32nm,13.0s
MICGM LRM MLR 20 42 58.0
comp=E,40nm,14.0s
MICGM LRM MLR 20 43 50.0
comp=E,55nm,16.0s
MNK Minsk 71.32 326*c i*P **P 20 08 42.0 -0.4**
MNK *e* 20 11 18.0
MNK *e*PPP PPP 20 13 00.0
MNK *e*S **S 20 18 00.0 +0.8**
MNK *e*PS **PnS 20 18 34.0 +6.0**
MNK pmax pmax
comp=Z,480nm,1.0s
MNK pmax pmax
comp=N,280nm,1.5s
MNK pmax pmax
comp=E,180nm,1.5s
MNK smax smax
comp=E,9µm,12.0s
MNK MLR MLR
comp=Z,94µm,16.0s
MNK MLR MLR
comp=Z,102µm,18.0s
MNK MLR MLR
comp=N,31µm,14.0s
MNK MLR MLR
comp=N,32µm,13.0s
MNK MLR MLR
comp=E,40µm,14.0s
MNK MLR MLR
comp=E,55µm,16.0s
ISAL Salakas 71.33 328 *e*P **P 20 08 43.1 +0.7**
ISAL IAmb IAmb 20 08 44.7
comp=Z,127nm,0.9s
DLMT Dillon 71.35 46 *e*P **P 20 08 45.0 +2.1**
HLID Hailey 71.41 49 P **P 20 08 44.4 +1.1**
baz=307,SNR=50
HLID Hailey 71.41 49 *e*P **P 20 08 45.2 +1.8**
comp=Z,35nm,0.9s
IIGN Ignalina 71.44 328 *e*P **P 20 08 43.8 +0.7**
IIGN IAmb IAmb 20 08 45.4
comp=Z,100nm,1.0s
LCCM Lewis and Clar 71.46 46 *e*P **P 20 08 45.1 +1.5**
NACGM Naroch 71.52 327 *e*P **P 20 08 42.0 -1.5**
NACGM PM 20 08 44.0
comp=Z,0.9nm,1.0s
NACGM *e*PcP **sP 20 08 54.0 +3.2**
NACGM *e*PP PP 20 11 13.0 -8.7
NACGM *e*PPP PPP 20 12 55.0
NACGM *e*S **S 20 18 04.0 +2.6**
NACGM *e*PS **PnS 20 18 36.0 +5.5**
NACGM *e*SS **SS 20 22 44.0 +8.6**
NACGM *e*SSS SSS 20 25 50.0
NACGM *e*LQ LQ 20 33 30.0
NACGM *e*LR LR 20 38 48.0
NACGM LRM MLR 20 42 48.0
comp=Z,61nm,18.0s
GNI Garni 71.53 307 *i*P **P 20 08 44.6 +0.5**
SNR=43
GNI Garni 71.53 307*c i*P **P 20 08 45.0 +0.9**
GNI pmax pmax
comp=Z,636nm,1.2s
GNI MLR MLR
comp=Z,35µm,15.0s
GNI Garni 71.53 307 *e*P **P 20 08 45.4 +1.3**
GNI LR LR
comp=Z,11µm,22.0s
GNI Garni 71.53 307 P **P 20 08 45.8 +1.7**
SNR=30
GNI Garni 71.53 307 P **P 20 08 45.8 +1.7**
SNR=30
MCMT McKenzie Canyo 71.54 47 *e*P **P 20 08 44.9 +0.7**
AKH Akhalkalaki 71.54 309 P **P 20 08 45.3 +1.0**
AKH Akhalkalaki 71.54 309⇑ *i*P **P 20 08 45.7 +1.5**
AKH Akhalkalaki 71.54 309 *e*P **P 20 08 45.2 +1.0**
CHVG Ch'k'valeri 71.60 310 *e*P **P 20 08 45.2 +0.9**
CHVG Ch'k'valeri 71.60 310⇑ *i*P **P 20 08 45.2 +0.9**
BMN Battle Mountai 71.61 53 *e*P **P 20 08 46.2 +1.6**
BMN Battle Mountai 71.61 53 *e*P **P 20 08 46.2 +1.6**
BOZ Bozeman (W) 71.71 46 P **P 20 08 46.4 +1.3**
baz=308,SNR=59
BOZ Bozeman (W) 71.71 46 *e*P **P 20 08 47.0 +1.9**
BOZ pmax pmax
comp=Z,92nm,0.9s
BOZ MLR MLR
comp=Z,5µm,19.0s
BOZ Bozeman (W) 71.71 46 *e*P **P 20 08 47.0 +1.9**
comp=Z,92nm,0.9s
BOZ LR LR
comp=Z,5µm,19.0s
BGMT Barton Gulch 71.74 46 *e*P **P 20 08 47.0 +1.6**
EAK Akyaka 71.91 308 *i*P **P 20 08 46.9 +0.5**
EPOS Posof 71.95 309 *i*P **P 20 08 48.1 +1.5**
BANOM Banah 71.99 289 *i*P **P 20 08 47.1 +0.1**
SNR=62
BANOM Banah 71.99 289 P **P 20 08 47.2 +0.3**
SNR=32
BANOM Banah 71.99 289 P **P 20 08 47.2 +0.3**
SNR=32
BIDO Bidbid 72.04 286 P **P 20 08 47.7 +0.5**
SNR=13
BIDO Bidbid 72.04 286 P **P 20 08 47.7 +0.5**
SNR=13
NVAR Mina Array Bea 72.12 55 P **P 20 08 49.8 +2.0**
comp=Z,22nm,0.8s,baz=285,slow=6.7,SNR=42
NVAR LR LR 20 34 13.7
comp=Z,3µm,21.5s,baz=310,slow=31
MLAC Mammoth, Mammo 72.26 56 P **P 20 08 49.0 +0.4**
baz=307
KARS Kars 72.26 308 *e*P **P 20 08 50.2 +1.7**
QLMT Earthquake Lak 72.33 46 *e*P **P 20 08 50.6 +1.7**
BBOO Buckleboo 72.37 187 *e*P **P 20 08 49.1 +0.4**
SOC Sochi 72.44 312*c i*P **P 20 08 49.4 +0.1**
SOC *e*PP **sP 20 08 57.3 +0.7**
SOC *e*SP **PcP 20 09 02.3 -4.8**
SOC *e* 20 11 26.8
SOC *e*PPP PPP 20 13 12.2
SOC *i*S **S 20 18 12.4 -0.1**
SOC *e* 20 18 50.5
SOC *e*SS **SS 20 22 47.9 -2.3**
SOC pmax pmax
comp=Z,217nm,1.1s
SOC pmax pmax
comp=Z,1µm,3.7s
NB2 NORSAR Subarra 72.48 338 P **P 20 08 49.5 +0.2**
comp=Z,139nm,0.9s,baz=39,slow=6.2
NB2 NORSAR Subarra 72.48 338 P **P 20 08 49.5 +0.2**
baz=39,slow=6.2
NOA NORSAR Array B 72.48 338 P **P 20 08 49.4 +0.1**
comp=Z,100nm,0.9s,baz=39,slow=6.0,SNR=174
NOA LR LR 20 44 53.4
comp=Z,19µm,18.8s,baz=25,slow=39
NOA NORSAR Array B 72.48 338 P **P 20 08 49.4 +0.1**
NOA pmax pmax
comp=Z,100nm,0.9s
NOA MLR MLR
comp=Z,19µm,18.8s
YHB Horse Butte 72.51 46 *e*P **P 20 08 51.8 +1.7**
DYDN Diyadin 72.54 307 *i*P **P 20 08 49.6 -0.7**
YMC Maple Creek 72.61 46 *e*P **P 20 08 51.7 +1.1**
ARTV Artvin 72.62 309 *i*P **P 20 08 49.6 -1.1**
NC602 NORSAR Array S 72.62 338 *e*P **P 20 08 49.9 -0.2**
NC602 *e*S **S 20 18 14.9 +0.9**
NC602 *e*SS **SS 20 22 55.9 +3.8**
NC602 IVMs_BB IVMs_BB 20 43 37.9
comp=Z,9µm,22.0s
ELK Elko 72.63 51 *e*P **P 20 08 52.7 +1.9**
ELK Elko 72.63 51 *e*P **P 20 08 52.7 +1.9**
UOSS Minazif 72.63 288 *e*P **P 20 08 50.7 0.0**
CRMT Chrome Mountai 72.65 45 *e*P **P 20 08 52.2 +1.3**
YMR Madison River 72.69 46 *e*P **P 20 08 53.2 +2.1**
DAGI Agillar 72.69 309 *i*P **P 20 08 50.8 -0.2**
GCMT Greycliff 72.70 45 *e*P **P 20 08 52.7 +1.7**
AKN Aaknes 72.71 340 *e*P **P 20 08 51.5 +0.9**
AKN IVMs_BB IVMs_BB 20 45 55.1
comp=Z,6µm,13.9s
HATD Hatta, Dubai 72.75 288 *i*P **P 20 08 51.7 +0.1**
SNR=33
HATD Hatta, Dubai 72.75 288 P **P 20 08 51.6 +0.1**
SNR=26
HATD Hatta, Dubai 72.75 288 P **P 20 08 51.6 +0.1**
SNR=26
DBAD Bademkaya 72.86 309 *i*P **P 20 08 51.0 -1.0**
SMMC Simmler 72.88 58 P **P 20 08 52.8 +0.7**
baz=307
ASHO Ashiyiah 72.89 288 *i*P **P 20 08 52.4 0.0**
SNR=24
ASHO Ashiyiah 72.89 288 P **P 20 08 52.6 +0.2**
SNR=23
ASHO Ashiyiah 72.89 288 P **P 20 08 52.6 +0.2**
SNR=23
YFT Old Faithful 72.90 46 *e*P **P 20 08 56.0 +3.6**
DDEM Demirkent 72.90 309 *i*P **P 20 08 53.0 +0.7**
VMUR Van-Muradiye 72.95 307 *i*P **P 20 08 53.9 +1.3**
AGRB Hanur-Agry 72.95 307 *e*P **P 20 08 54.3 +1.7**
ANN Anapa 72.97 314 *e*P **P 20 08 51.1 -1.3**
ANN *e* 20 11 32.1
ANN *e*PPP PPP 20 13 20.0
ANN *e*S **S 20 18 15.4 -3.0**
ANN *e*SS **SS 20 22 55.9 -2.2**
ANN pmax pmax
comp=Z,218nm,1.3s
TIN Tinemaha, Big 72.99 56 P **P 20 08 53.0 +0.1**
baz=307
NAZ Nazwa, Dubai 73.00 289 *i*P **P 20 08 52.7 -0.3**
SNR=9.9
NAZ Nazwa, Dubai 73.00 289 P **P 20 08 53.0 +0.1**
SNR=11
NAZ Nazwa, Dubai 73.00 289 P **P 20 08 53.0 +0.1**
SNR=11
LKWY Lake 73.07 46 *e*P **P 20 08 56.3 +2.9**
LKWY pmax pmax
comp=Z,82nm,1.1s
LKWY MLR MLR
comp=Z,13µm,19.0s
LKWY Lake 73.07 46 *e*P **P 20 08 56.3 +2.9**
comp=Z,82nm,1.1s
LKWY LR LR
comp=Z,13µm,19.0s
H17A Grant Village 73.08 46 P **P 20 08 54.8 +1.4**
baz=309,SNR=31
H17A Grant Village 73.08 46 *e*P **P 20 08 54.7 +1.3**
EATA Eleskirt 73.08 308 *i*P **P 20 08 54.2 +0.6**
IMW Indian Meadow 73.19 47 *e*P **P 20 08 56.5 +2.3**
SFJD Kangerlussuaq 73.19 6 *i*P **P 20 08 53.7 +0.4**
comp=Z,16µm,18.0s
SFJD Kangerlussuaq 73.19 6 *i*P **P 20 08 53.7 +0.4**
SFJD MLR MLR
comp=Z,16µm,18.0s
SFJD Kangerlussuaq 73.19 6 *e*P **P 20 08 53.8 +0.5**
FAQ Al Faqa, Dubai 73.19 288 *i*P **P 20 08 53.7 -0.4**
SNR=24
FAQ Al Faqa, Dubai 73.19 288 P **P 20 08 53.9 -0.2**
SNR=14
FAQ Al Faqa, Dubai 73.19 288 P **P 20 08 53.9 -0.2**
SNR=14
FLWY Flagg Ranch 73.20 46 *e*P **P 20 08 56.7 +2.5**
PKM Mcpherson Peak 73.26 59 P **P 20 08 54.5 0.0**

baz=307
VANB Van 73.30 306 *e*P **P 20 08 56.3 +1.6**
FXWY Fox Creek 73.30 47 *e*P **P 20 08 56.5 +1.8**
AKASG Malin Array Be 73.30 323 P **P 20 08 54.0 -0.3**
comp=Z,68nm,0.9s,baz=43,slow=6.0,SNR=210
AKASG LR LR 20 46 05.2
comp=Z,17µm,18.0s,baz=40,slow=40
AKASG Malin Array Be 73.30 323 P **P 20 08 54.0 -0.3**
AKASG pmax pmax
comp=Z,65nm,0.9s
AKASG MLR MLR
comp=Z,17µm,18.0s
AKBB Malin Array Si 73.30 323 *e*P **P 20 08 54.2 -0.1**
AKBB Malin Array Si 73.30 323 *e*P **P 20 08 54.2 -0.1**
KIEV Kiev 73.31 323 *c i*P **P 20 08 54.1 -0.2**
KIEV pmax pmax
comp=Z,94nm,0.9s
KIEV MLR MLR
comp=Z,30µm,16.0s
KIEV Kiev 73.31 323 *e*P **P 20 08 54.2 -0.1**
RLMT Red Lodge 73.34 45 P **P 20 08 56.3 +1.4**
baz=310,SNR=9.7
RLMT Red Lodge 73.34 45 *e*P **P 20 08 56.7 +1.8**
RLMT LR LR
comp=Z,5µm,19.0s
ARQ Araqi 73.34 287 P **P 20 08 55.2 +0.2**
SNR=41
ARQ Araqi 73.34 287 P **P 20 08 55.2 +0.2**
SNR=41
AK11 Malin Array Si 73.34 323 *e*P **P 20 08 54.2 -0.3**
MOOW Moose Ponds 73.39 47 *e*P **P 20 08 56.8 +1.6**
HVU Hansel Valley 73.46 49 *e*P **P 20 08 57.7 +2.1**
HVU Hansel Valley 73.46 49 *e*P **P 20 08 57.7 +2.1**
ASUD Al Ashush, Dub 73.46 288 *i*P **P 20 08 55.9 +0.3**
SNR=18
ASUD Al Ashush, Dub 73.46 288 P **P 20 08 56.0 +0.3**
SNR=9.5
ASUD Al Ashush, Dub 73.46 288 P **P 20 08 56.0 +0.3**
SNR=9.5
OSL Oslo 73.51 337 *e*P **P 20 08 55.9 +0.6**
OSL IAmb IAmb 20 09 05.8
comp=Z,182nm,1.0s
LOHW Long Hollow 73.56 47 *e*P **P 20 08 58.3 +2.0**
SNOW Snow King Moun 73.56 47 *e*P **P 20 08 58.6 +2.3**
REDW Red Top Meadow 73.57 47 *e*P **P 20 08 58.1 +1.7**
GRAC Grapevine Rang 73.58 56 P **P 20 08 57.7 +1.5**
baz=308,SNR=16
SBC Santa Barbara 73.59 59 P **P 20 08 57.6 +1.3**
baz=307
SUW Suwalki 73.64 328 *e*P **P 20 08 56.2 +0.1**
SUW *e*S **SKiKP 20 18 24.0 -1.2**
SUW LMZ LR 20 43 45.8
SUW Suwalki 73.64 328⇑ *e*P **P 20 08 56.3 +0.1**
SUW *e*S **SKiKP 20 18 24.0 -1.2**
SUW MLR MLR
comp=Z,30µm,18.3s
ISA Isabella, Lake 73.67 57 P **P 20 08 55.9 -0.9**
baz=307
ISA Isabella, Lake 73.67 57 *e*P **P 20 08 58.3 +1.5**
ISA Isabella, Lake 73.67 57 *e*P **P 20 08 58.3 +1.5**
GEVA Gevas 73.68 306 *i*P **P 20 08 56.4 -0.6**
HKR Hakkari 73.70 305 *e*P **P 20 08 57.5 +0.3**
FOO Floro 73.70 341 *e*P **P 20 08 56.9 +0.5**
HAKT HAKKARI 73.73 305 *i*P **P 20 08 56.8 -0.5**
ERZM Erzurum 73.74 308 *i*P **P 20 08 58.3 +0.9**
EZM Erzurum 73.74 308 *e*P **P 20 08 58.8 +1.4**
ARVC Arvin 73.76 58 P **P 20 08 55.6 -1.7**
baz=307
HYA Hoyanger 73.77 340 *e*P **P 20 08 56.7 -0.1**
HYA IAmb IAmb 20 09 07.4
comp=Z,125nm,0.9s
DGMT Dagmar 73.80 40 P **P 20 08 57.8 +0.5**
baz=312,SNR=7.9
DGMT Dagmar 73.80 40 *e*P **P 20 08 58.3 +1.0**
DGMT LR LR
comp=Z,5µm,19.0s
AHID Auburn Hatcher 73.81 48 *e*P **P 20 08 59.5 +1.8**
AHID LR LR
comp=Z,3µm,20.0s
BGU Big Grassy Mou 73.84 50 *e*P **P 20 08 59.8 +1.9**
DAC Darwin (Calif) 73.87 56 *e*P **P 20 08 58.9 +0.8**
DAC Darwin (Calif) 73.87 56 *e*P **P 20 08 58.9 +0.8**
R11A Troy Canyon, C 73.87 53 P **P 20 08 59.4 +1.2**
baz=308,SNR=51
R11A Troy Canyon, C 73.87 53 *e*P **P 20 08 59.8 +1.7**
FRB Frobisher Bay 73.90 14 P **P 20 08 57.5 0.0**
comp=Z,118nm,0.8s,baz=337,slow=6.4,SNR=136
FRB LR LR 20 45 55.3
comp=Z,15µm,19.0s,baz=348,slow=39
SCZ2 Santa Cruz Isl 73.91 59 P **P 20 08 58.2 0.0**
baz=307
EPU East Promontor 73.91 49 *e*P **P 20 08 57.4 -0.8**
SPUT South Promonto 73.94 50 *e*P **P 20 09 00.4 +2.0**
LAO LASA Array 73.95 42 P **P 20 08 57.9 -0.4**
baz=311
LAO LASA Array 73.95 42 *e*P **P 20 09 00.5 +2.2**
CUKT Cukurca 73.98 305 *e*P **P 20 08 59.2 +0.5**
A25A Svangstu Ranch 74.01 39 P **P 20 08 57.8 -0.8**
baz=313
KTUT Trabzon 74.03 310 *e*P **P 20 08 59.3 +0.6**
MACK Trabzon 74.05 310 *i*P **P 20 08 57.3 -1.6**
MPMC Manual Prospec 74.07 56 P **P 20 08 59.9 +0.5**
baz=308,SNR=24
KONO Kongsberg 74.08 338 *e*P **P 20 08 59.2 +0.5**
KONO *e*S **S 20 18 32.8 +2.3**
KONO IVMs_BB IVMs_BB 20 45 28.1
comp=Z,11µm,21.2s
KONO Kongsberg 74.08 338 *e*P **P 20 08 59.0 +0.3**
KONO Kongsberg 74.08 338 *e*P **P 20 08 59.0 +0.3**
OSI Osito Audit: C 74.14 58 P **P 20 08 58.7 -0.9**
baz=308
OSI Osito Audit: C 74.14 58 *e*P **P 20 09 01.6 +2.1**
VRTB Varto-Mus 74.15 308 *e*P **P 20 09 01.4 +1.8**
BAYT Ayd¯ntepe-Bay 74.17 309 *e*P **P 20 09 01.3 +1.5**
BLG Laguna Peak, P 74.22 59 P **P 20 09 00.4 +0.4**
baz=307
FURC Furnace Creek, 74.22 56 P **P 20 09 00.3 +0.4**
baz=308
HWUT Hardware Ranch 74.27 49 *e*P **P 20 09 01.9 +1.5**
HWUT LR LR
comp=Z,4µm,19.0s
LRMC Laurel Mtn Rad 74.29 57 P **P 20 09 00.4 -0.2**
baz=308
TPNV Topopah Spring 74.31 55 P **P 20 09 01.6 +0.9**
baz=308,SNR=25
TPNV Topopah Spring 74.31 55 *e*P **P 20 09 02.6 +1.9**
TPNV Topopah Spring 74.31 55 *e*P **P 20 09 02.6 +1.9**
RSUT Red Spur Mount 74.34 49 *e*P **P 20 09 03.0 +2.0**
DUG Dugway, Tooele 74.42 51 P **P 20 09 02.4 +1.1**
baz=309,SNR=26
DUG Dugway, Tooele 74.42 51 *e*P **P 20 09 03.2 +2.0**
DUG MLR MLR
comp=Z,4µm,19.0s
DUG Dugway, Tooele 74.42 51 *e*P **P 20 09 03.2 +2.0**
DUG LR LR
comp=Z,4µm,19.0s
SNCC San Nicolas Is 74.43 60 P **P 20 09 02.9 +1.7**
baz=307
B25A Knox Farm, Ray 74.44 40 P **P 20 09 02.8 +1.7**
baz=313
EDW2 Edwards Air Fo 74.45 58 P **P 20 09 02.8 +1.4**
baz=308,SNR=20
BNGL BINGOL 74.46 308 *i*P **P 20 09 01.4 -0.1**
A26A Wade Farm, Ken 74.56 39 P **P 20 09 02.3 +0.6**
baz=313,SNR=7.4
ASK Askoy 74.61 340 *e*P **P 20 09 03.0 +1.3**
DECC Green Verdugo 74.61 58 P **P 20 09 03.1 +0.8**
baz=308
BER Bergen 74.66 340 *e*P **P 20 09 02.9 +0.9**
BER *e*S **S 20 18 40.6 +3.7**
BER IVMs_BB IVMs_BB 20 46 05.1
comp=Z,8µm,14.0s
SIM Simferopol' 74.68 316 *c e*P **P 20 09 03.1 +0.6**
SIM *e* 20 11 46.0
SIM *i*S **S 20 18 38.0 +0.2**
SIM pmax pmax
comp=Z,108nm,1.0s
SIM MLR MLR
comp=Z,16µm,14.0s
ESPY Espiye-Giresun 74.68 311 *e*P **P 20 09 02.8 +0.3**
BW06 Boulder Array 74.68 47 P **P 20 09 03.4 +0.6**
baz=310,SNR=15
BW06 Boulder Array 74.68 47 *e*P **P 20 09 02.2 -0.7**
BW06 LR LR
comp=Z,4µm,19.0s
PD31 Pinedale Array 74.68 47 *e*P **P 20 09 04.0 +1.2**
PDAR Pinedale Array 74.68 47 P **P 20 09 03.4 +0.5**
comp=Z,13nm,0.7s,baz=262,slow=2.5,SNR=86
CAN Canberra 74.70 175 *e*P **P 20 09 03.8 +1.3**
CAN MLR MLR
comp=Z,3µm,21.0s
CAN Canberra 74.70 175 *e*P **P 20 09 03.8 +1.3**
CAN LR LR
comp=Z,3µm,21.0s
ODD1 Odda 74.70 339 *e*P **P 20 09 03.3 +0.9**
BNGB Bing¯l 74.72 308 *e*P **P 20 09 04.6 +1.6**
CTU Camp Tracy 74.74 50 *e*P **P 20 09 05.3 +2.1**
PASC Pasadena Art C 74.76 58 *e*P **P 20 09 04.3 +1.1**
C25A Freed Ranch, W 74.77 40 P **P 20 09 02.2 -0.8**
baz=313
MWC Mount Wilson 74.81 58 *e*P **P 20 09 05.2 +1.6**
MWC Mount Wilson 74.81 58 *e*P **P 20 09 05.2 +1.6**
PSUT Pine Spring 74.83 52 *e*P **P 20 09 05.8 +2.1**
KELT Kelkit 74.86 310 *i*P **P 20 09 05.1 +1.3**
EUZM Uzumlu 74.87 309 *i*P **P 20 09 05.1 +1.3**
A27A Ledoux Ranch, 74.91 38 P **P 20 09 04.2 +0.5**
baz=314,SNR=6.7
ERZN Erzincan 74.93 309 *e*P **P 20 09 05.3 +1.1**
SVAN Silvan-Diyarba 74.93 307 *e*P **P 20 09 04.2 +0.1**
SHOC Shoshone, Teco 74.94 56 P **P 20 09 05.4 +1.2**
baz=308
FMP Fort Macarthur 74.97 59 P **P 20 09 05.2 +0.9**
baz=308
GSC Goldstone, Bar 74.97 57 P **P 20 09 05.1 +0.7**
baz=308
GSC Goldstone, Bar 74.97 57 *e*P **P 20 09 06.1 +1.7**
GSC Goldstone, Bar 74.97 57 *e*P **P 20 09 06.1 +1.7**
JLU Jordanelle 74.97 50 *e*P **P 20 09 06.9 +2.3**
NLU North Lily Min 75.01 50 *e*P **P 20 09 06.5 +1.8**
BTMN Batman 75.05 307 *i*P **P 20 09 04.1 -0.7**
BFSC Mount Baldy Ra 75.06 58 P **P 20 09 06.0 +0.9**
baz=308,SNR=12
CIS Catalina Islan 75.08 59 P **P 20 09 06.7 +1.7**
baz=308
D25A Fairfield 75.12 41 P **P 20 09 05.5 +0.4**
baz=313
BLS5 Blasjo 75.16 339 *e*P **P 20 09 05.6 +0.6**
BLS5 IAmb IAmb 20 09 10.8
comp=Z,176nm,1.5s
BLS5 *e*S **S 20 18 47.4 +4.7**
BLS5 IVMs_BB IVMs_BB 20 45 38.1
comp=Z,7µm,18.0s
MPU Maple Canyon 75.24 50 *e*P **P 20 09 07.9 +1.9**
SCI2 San Clemente I 75.25 59 P **P 20 09 06.4 +0.5**
baz=308
C26A Wahner Farm, P 75.27 39 P **P 20 09 06.4 +0.6**
baz=314,SNR=5.3
B27A Peters Farms, 75.28 39 P **P 20 09 06.7 +0.9**
baz=314
BORG Borgarnes 75.33 353 *e*P **P 20 09 07.5 +1.7**
BORG MLR MLR
comp=Z,4µm,20.0s
BORG Borgarnes 75.33 353 *e*P **P 20 09 07.5 +1.7**
BORG LR LR
comp=Z,4µm,20.0s
A28A Rude Farm, Bot 75.40 38 P **P 20 09 07.1 +0.5**
baz=314,SNR=10.0
LEVU Levan 75.45 51 *e*P **P 20 09 09.3 +2.0**
TUQ Turquoise Moun 75.45 56 P **P 20 09 07.5 +0.2**
baz=308
SORM Soroca 75.48 321⇑ *i*P **P 20 09 06.9 -0.1**
E25A Miller Ranch, 75.52 41 P **P 20 09 07.8 +0.4**
baz=313,SNR=10
BBRC Big Bear Solar 75.53 58 P **P 20 09 08.4 +0.5**
baz=308
HOMB Homborsund 75.54 337 *e*P **P 20 09 07.4 +0.3**
HOMB *e*S **S 20 18 47.6 +0.9**
HOMB IVMs_BB IVMs_BB 20 48 07.0
comp=Z,12µm,16.6s
HEC Hector,Ludlow 75.56 57 P **P 20 09 09.8 +2.0**
baz=308
PTK Pertek 75.57 309 *e*P **P 20 09 09.5 +1.5**
REFA Refahiye_ERZ¯ 75.62 309 *i*P **P 20 09 05.3 -2.9**
C27A Sayler Ranch, 75.64 39 P **P 20 09 08.4 +0.5**
baz=314
D26A Manning 75.65 40 P **P 20 09 08.1 0.0**
baz=313
B28A Dugan Ranch, T 75.68 38 P **P 20 09 08.6 +0.5**
baz=314,SNR=9.3
DYBB Diyarbakir 75.70 307 *e*P **P 20 09 10.0 +1.5**
ILIC ilic-Erzincan 75.71 309 *e*P **P 20 09 09.3 +0.7**
MARD Mardin 75.71 307 *i*P **P 20 09 07.3 -1.4**
DIYA Diyarbakir 75.73 307 *i*P **P 20 09 08.3 -0.5**
MURC Murrieta 75.76 58 P **P 20 09 09.7 +0.8**
baz=308
STAV Stavanger 75.79 339 *e*P **P 20 09 09.1 +0.6**
STAV IVMs_BB IVMs_BB 20 45 55.1
comp=Z,6µm,17.3s
MAZI Mazidag 75.83 307 *e*P **P 20 09 10.4 +1.0**
RSDY Resadiye-TOKAT 75.83 311 *e*P **P 20 09 10.5 +1.2**
SNART Snartemo 75.86 338 *e*P **P 20 09 09.1 +0.1**
SNART IAmb IAmb 20 09 10.6
comp=Z,74nm,1.1s
MSU Marysvale 75.86 52 *e*P **P 20 09 11.4 +1.7**
MSU Marysvale 75.86 52 *e*P **P 20 09 11.4 +1.7**
KEMA Kemaliye 75.87 309 *i*P **P 20 09 09.7 +0.2**
A29A Manning Farm, 75.88 37 P **P 20 09 09.6 +0.3**
baz=315,SNR=17
F25A Bowman 75.88 41 P **P 20 09 09.9 +0.4**
baz=313
SVRC Sivrice-ELAZID 75.94 308 *e*P **P 20 09 11.8 +1.7**
TMUT Trail Mountain 75.95 51 *e*P **P 20 09 12.0 +1.8**
BSD Bornholm Skovb 75.98 332⇑ *i*P **P 20 09 09.8 +0.1**
comp=Z,148nm,1.0s
comp=Z,26µm,18.0s
BSD Bornholm Skovb 75.98 332⇑ *i*P **P 20 09 09.8 +0.1**
BSD pmax pmax
comp=Z,150nm,1.0s
BSD MLR MLR
comp=Z,26µm,18.0s
ERBA Erbaa 75.98 311 *i*P **P 20 09 10.4 +0.3**
SNOP Sinop 76.00 313 *e*P **P 20 09 11.1 +1.1**
E26A Carlson Angus 76.02 41 P **P 20 09 10.2 0.0**
baz=314
GMRC Granite Mounta 76.03 56 P **P 20 09 11.3 +0.7**
baz=309,SNR=25
KIS Kishinev 76.03 320 *i*P **P 20 09 10.0 -0.2**
comp=Z,400nm,2.0s
KIS Kishinev 76.03 320 *i* PcP **PcP 20 09 21.0 -1.5**
KIS Kishinev 76.03 320 *e*PP PP 20 12 02.0 +1.7
comp=Z,2µm,12.0s
KIS Kishinev 76.03 320 *i* PPP PPP 20 13 44.0
KIS *e*S **S 20 18 48.0 -4.7**
comp=Z,4µm,13.0s
KIS *e*ScS **SKSac 20 19 20.0 -0.2**
KIS Kishinev 76.03 320 *e*PS 20 19 25.0
KIS *e*SS SS 20 23 46.0 +1.4
KIS *e*SSS SSS 20 27 15.0
KIS *e*LQ LQ 20 36 00.0
comp=Z,16µm,15.0s
KIS *e*LR LR 20 43 56.0
comp=Z,40µm,16.0s
KIS Kishinev 76.03 320⇑ *i*P **P 20 09 10.0 -0.2**
KIS *i* 20 09 21.0
KIS *e* 20 12 02.0
KIS *e*PPP PPP 20 13 44.0
KIS *e*S **S 20 18 48.0 -4.7**
KIS *e* 20 19 20.0
KIS *e*PS **PnS 20 19 25.0 -4.8**
KIS *e*SS **SS 20 23 46.0 +1.4**
KIS pmax pmax
comp=Z,380nm,2.0s
KIS pmax pmax
comp=Z,3µm,12.0s
KIS pmax pmax
comp=Z,3µm,16.0s
KIS MLR MLR
comp=Z,43µm,15.0s
KIS MLR MLR
comp=N,25µm,16.0s
KIS MLR MLR
comp=E,21µm,16.0s
KIS MLR MLR
comp=Z,40µm,16.0s
D27A Center 76.04 40 P **P 20 09 10.8 +0.4**
baz=314
KBSD Kabsdagh 76.06 307 *e*P **P 20 09 11.1 +0.6**
ELZG Elazig 76.06 309 *i*P **P 20 09 11.2 +0.4**
P17A Butcher Ranch, 76.11 50 *e*P **P 20 09 13.0 +1.9**
KVT Kavak 76.13 312 *e*P **P 20 09 12.3 +1.4**
B29A Wagenman Farm, 76.14 38 P **P 20 09 11.3 +0.4**
baz=315,SNR=7.3
MTPU Mount Pierson 76.16 52 *e*P **P 20 09 14.1 +2.6**
LCMT Little Creek M 76.16 53 *e*P **P 20 09 13.6 +2.3**
NWAO Narrogin (SRO) 76.16 203 *e*P **P 20 09 10.9 0.0**
NWAO Narrogin (SRO) 76.16 203 *e*P **P 20 09 10.9 0.0**
C28A Hausauer Farms 76.18 39 P **P 20 09 11.9 +0.9**
baz=315
DIKM Dikmen 76.21 313 *e*P **P 20 09 12.5 +1.2**
BEL Belsk 76.22 328 *e*P **P 20 09 12.1 +0.9**
BEL *e*S **S 20 18 58.1 +3.5**
BEL LMZ LR 20 45 27.8
BEL Belsk 76.22 328⇑ *e*P **P 20 09 12.1 +0.9**
BEL *e*S **S 20 18 58.2 +3.6**
PFO Pinyon Flats O 76.23 58 P **P 20 09 12.5 +0.7**
comp=Z,8.4nm,0.8s,baz=311,slow=5.6,SNR=9.7
PFO LR LR 20 36 27.4
comp=Z,3µm,20.1s,baz=300,slow=31
PFO Pinyon Flats O 76.23 58 P **P 20 09 12.8 +1.1**
baz=309
PFO Pinyon Flats O 76.23 58 P **P 20 09 12.5 +0.7**
PFO pmax pmax
comp=Z,18nm,1.0s
PFO MLR MLR
comp=Z,3µm,20.1s
PFO Pinyon Flats O 76.23 58 *e*P **P 20 09 12.9 +1.1**
109C Camp Elliot, M 76.26 59 P **P 20 09 12.2 +0.5**
baz=308
BELC Belle Mtn. Jos 76.29 57 P **P 20 09 13.2 +1.0**
baz=309
A30A Hoffart Farm, 76.30 37 P **P 20 09 12.1 +0.4**
baz=316,SNR=17
LVV L'vov 76.30 325 *e*P **P 20 09 11.1 -0.6**
LVV *e* 20 12 07.1
LVV *i*S **S 20 18 52.9 -2.6**
LVV *e* 20 23 45.3
LVV MLR MLR
comp=N,23µm,15.0s
LVV MLR MLR
comp=E,37µm,15.0s
LVV MLR MLR
comp=Z,37µm,15.0s
P18A Preston Nutter 76.31 50 *e*P **P 20 09 14.1 +1.8**
HAVZ Havza 76.33 312 *i*P **P 20 09 11.9 -0.1**
F26A Lodgepole 76.34 41 P **P 20 09 12.6 +0.6**
baz=314,SNR=6.4
SVSK Karacayir 76.34 311 *e*P **P 20 09 13.6 +1.6**
TOKT Tokat 76.34 311 *e*P **P 20 09 12.5 +0.4**
COP Copenhagen 76.39 334⇑ *i*P **P 20 09 12.6 +0.6**
comp=Z,110nm,1.0s
comp=Z,24µm,17.0s
COP Copenhagen 76.39 334⇑ *i*P **P 20 09 12.6 +0.6**
COP pmax pmax
comp=Z,110nm,1.0s
COP MLR MLR
comp=Z,24µm,17.0s
G25A Newell 76.40 42 P **P 20 09 12.5 0.0**
baz=313
KNB Kanab 76.42 53 *e*P **P 20 09 15.1 +2.3**
KNB Kanab 76.42 53 *e*P **P 20 09 15.1 +2.3**
ULM Lac du Bonnet 76.45 35 P **P 20 09 12.4 0.0**
comp=Z,28nm,0.8s,baz=313,slow=6.2,SNR=31
CUKAN kangal_SIVAS 76.45 310 *i*P **P 20 09 11.4 -1.5**
K22A Casper 76.45 46 P **P 20 09 13.3 +0.4**
baz=312
K22A Casper 76.45 46 *e*P **P 20 09 14.0 +1.1**
D28A Regan 76.45 39 P **P 20 09 12.9 +0.3**
baz=315,SNR=5.8
MDND Maddock 76.46 38 P **P 20 09 13.3 +0.7**
baz=315,SNR=6.8
MDND Maddock 76.46 38 *e*P **P 20 09 13.8 +1.2**
SRU San Rafael Swe 76.47 50 *e*P **P 20 09 14.6 +1.5**
SRU San Rafael Swe 76.47 50 *e*P **P 20 09 14.6 +1.5**
IAS Iasi 76.52 321⇑ *i*P **P 20 09 12.8 -0.1**
BOYT Boyabat 76.56 313 *i*P **P 20 09 13.4 0.0**
MMU Miners Mountai 76.60 51 *e*P **P 20 09 16.1 +2.2**
BYBT Boyabat 76.61 313 *e*P **P 20 09 15.4 +1.8**
B30A Myrvik Farm, E 76.63 37 P **P 20 09 13.9 +0.3**
baz=316,SNR=24
F27A Lemmon 76.65 41 P **P 20 09 15.1 +1.3**
baz=314
BAR Barrett 76.67 59 *e*P **P 20 09 15.7 +1.6**
LEOM Leova 76.68 320⇑ *i*P **P 20 09 14.5 +0.6**
SFNV Sufian 76.69 306 *e*P **P 20 09 15.7 +1.5**
H25A Fruitdale 76.70 43 P **P 20 09 14.6 +0.4**
baz=313
MONP2 Monument Peak 76.70 58 P **P 20 09 15.5 +1.0**
baz=309
NEE2 Needles Airpor 76.70 56 P **P 20 09 14.6 +0.4**
baz=309
BZK Bozkurt 76.71 314 *e*P **P 20 09 12.8 -1.3**
MZRK Al-Mazaregh 76.73 306 *e*P **P 20 09 14.1 -0.2**
IRM Iron Mountain 76.75 57 P **P 20 09 15.2 +0.6**
baz=309,SNR=20
G26A Maurine 76.75 42 P **P 20 09 14.7 +0.3**
baz=314,SNR=5.4
RSSD Black Hills 76.81 43 P **P 20 09 16.0 +1.1**
baz=313
E28A Huff 76.83 40 P **P 20 09 16.0 +1.3**
baz=315
AKCD Akcadag 76.83 309 *i*P **P 20 09 14.6 -0.5**
MUD Monsted U'grnd 76.83 336⇑ *i*P **P 20 09 15.0 +0.5**
comp=Z,92nm,1.1s
comp=Z,19µm,16.0s
MUD Monsted U'grnd 76.83 336⇑ *i*P **P 20 09 15.0 +0.5**
MUD pmax pmax
comp=Z,92nm,1.1s
MUD MLR MLR
comp=Z,19µm,16.0s
BC3 Big Chuckawall 76.86 57 P **P 20 09 16.8 +1.5**
baz=309
CUALT Altinyayla-SIV 76.89 310 *i*P **P 20 09 16.5 +1.1**
DARE Darende-Malaty 76.92 309 *e*P **P 20 09 17.4 +1.9**
CUGUR Gurin_S¯VAS 76.95 310 *i*P **P 20 09 17.5 +1.8**
B31A Greenbush Farm 76.97 37 P **P 20 09 16.8 +1.3**
baz=316
RGN Rugen 77.00 333 *e*P **P 20 09 16.6 +1.1**
D29A Pettibone, Tap 77.02 39 P **P 20 09 16.7 +0.9**
baz=315
KWP Kalwaria Pacla 77.03 325 *e*P **P 20 09 16.7 +1.0**
KWP *e*S **S 20 19 03.7 +0.2**
KWP LMZ LR 20 47 42.6
KWP Kalwaria Pacla 77.03 325⇑ *e*P **P 20 09 16.8 +1.0**
KWP *e*S **S 20 19 03.8 +0.2**
G27A Dupree 77.04 41 P **P 20 09 15.7 -0.3**
baz=314,SNR=5.6
I25A Rochford 77.04 43 P **P 20 09 16.5 +0.3**
baz=313
PRAR RASCA 77.04 322⇓ *i*P **P 20 09 16.4 +0.5**
SWSC Sam W. Stewart 77.08 58 P **P 20 09 14.3 -2.1**
baz=309
C30A Mose, Pekin 77.10 38 P **P 20 09 16.0 -0.2**
baz=316,SNR=11
CUSAR Sarkisla-SIVAS 77.10 311 *i*P **P 20 09 16.0 -0.6**
H26A Fairpoint 77.13 42 P **P 20 09 17.8 +1.3**
baz=314
ATAB Bozova 77.14 308 *i*P **P 20 09 17.7 +1.0**
A32A Rocking H Ranc 77.14 36 P **P 20 09 16.2 -0.2**
baz=317,SNR=10
O20A White River Ci 77.14 48 P **P 20 09 15.6 -1.3**
baz=311
O20A White River Ci 77.14 48 *e*P **P 20 09 18.1 +1.2**
GIRR Girov 77.20 321⇓ *i*P **P 20 09 17.2 +0.4**
F28A McLaughlin 77.28 40 P **P 20 09 17.4 0.0**
baz=315
COAL Corum-Alaca 77.28 312 *i*P **P 20 09 17.7 +0.2**
TLCR 77.29 319⇓ *i*P **P 20 09 17.6 +0.3**
PDMCI Parker Dam,Lak 77.30 56 P **P 20 09 17.8 +0.2**
baz=310,SNR=15
TOS Tosya 77.31 313 *e*P **P 20 09 19.7 +2.0**
BUR08 Bucovina Ar. S 77.33 322 *e*P **P 20 09 18.4 +0.7**
BURAR Bucovina Array 77.34 322⇑ *i*P **P 20 09 18.2 +0.5**
BURAR Bucovina Array 77.34 322 P **P 20 09 18.2 +0.5**
E29A Napoleon 77.34 39 P **P 20 09 17.3 -0.4**
baz=315
C31A Landman Farms, 77.38 37 P **P 20 09 17.6 -0.2**
baz=316,SNR=8.7
D30A Buchanan 77.39 38 P **P 20 09 17.4 -0.4**
baz=316,SNR=7.5
Y12C Blythe 77.41 57 P **P 20 09 17.7 -0.4**
baz=309
Y12C Blythe 77.41 57 *e*P **P 20 09 20.1 +1.9**
ILGA Ilgaz 77.48 313 *i*P **P 20 09 19.9 +1.2**
H27A Howes 77.48 42 P **P 20 09 15.6 -2.9**
baz=314

I26A New Underwood 77.49 43 P P 20 09 18.2 -0.4
baz=314
B32A Ashes, Strandq 77.50 36 P P 20 09 18.0 -0.4
baz=317,SNR=14
A33A Warroad 77.62 35 P P 20 09 18.7 -0.5
baz=318,SNR=24
CFR Carcaliu 77.64 319⇑ *i*P P 20 09 19.6 +0.3
GLA Glamis 77.65 57 P P 20 09 20.0 +0.3
baz=309
GLA Glamis 77.65 57 *e*P P 20 09 21.4 +1.8
GLA Glamis 77.65 57 *e*P P 20 09 21.4 +1.8
GZT Gaziantep 77.66 308 *i*P P 20 09 20.2 +0.4
PV09 Paradox Valley 77.70 50 *e*P P 20 09 21.8 +1.7
BNN Bunyan 77.71 310 *e*P P 20 09 21.1 +1.2
KOLS Kolonicke sedl 77.73 325 *e*P P 20 09 20.4 +0.6
KOLS pmax pmax
comp=Z,63nm,1.1s
KOLS Kolonicke sedl 77.73 325 *e*P P 20 09 20.4 +0.6
KOLS *e*S S 20 19 10.8 -0.4
KOLS *e*L L 20 47 07.5
KSRV Kasrt alli 77.74 306 *e*P P 20 09 20.4 +0.3
E30A Jud 77.75 39 P P 20 09 19.7 -0.2
baz=316,SNR=8.7
G28A Parade 77.76 41 P P 20 09 20.0 -0.1
baz=315,SNR=7.4
ODBI Odobesti 77.77 320⇑ *i*P P 20 09 22.0 +2.0
F29A Eureka 77.77 40 P P 20 09 20.1 0.0
baz=315
STHS Stebnicka Huta 77.83 326 *e*P P 20 09 21.4 +1.1
STHS pmax pmax
comp=Z,69nm,1.0s
STHS Stebnicka Huta 77.83 326 *e*P P 20 09 21.4 +1.1
CANT Cankiri 77.83 313 *e*P P 20 09 21.8 +1.3
PV10 Paradox Valley 77.83 50 *e*P P 20 09 23.2 +2.4
OJC Ojcow 77.85 327 *e*P P 20 09 21.0 +0.6
OJC *e*S S 20 19 11.9 -0.5
OJC LMZ LR 20 46 46.7
OJC Ojcow 77.85 327⇑ *e*P P 20 09 21.0 +0.6
OJC *e*S S 20 19 11.9 -0.5
OJC Ojcow 77.85 327 *e*P P 20 09 21.0 +0.6
VRI Vrincioaia 77.86 320⇓ *i*P P 20 09 21.4 +0.9
VRI Vrincioaia 77.86 320 P P 20 09 21.3 +0.8
J26A Sides Ranch, S 77.87 43 P P 20 09 19.5 -1.2
baz=314
AGMN Agassiz Nation 77.88 36 P P 20 09 20.3 -0.3
baz=317,SNR=9.2
AGMN Agassiz Nation 77.88 36 *e*P P 20 09 20.8 +0.3
AGMN LR LR
comp=Z,6μm,19.0s
I27A Quinn 77.88 42 P P 20 09 20.9 +0.2
baz=314,SNR=6.5
BTIN Bart¯–n 77.90 314 *i*P P 20 09 20.2 -0.7
PLOR Plostina 77.91 320⇓ *i*P P 20 09 21.9 +1.1
C32A Crookston 77.92 37 P P 20 09 21.7 +0.9
baz=317
D31A Mcclaflin, Tow 77.92 38 P P 20 09 22.1 +1.3
baz=316
SAFT Safranbolu 77.93 314 *e*P P 20 09 22.2 +1.2
UZH Uzhgorod 77.95 325 *e*P P 20 09 18.3 -2.6
UZH *e* 20 09 28.3
UZH *i* 20 12 17.6
UZH *i*S S 20 19 05.4 -8.1
UZH MLR MLR
comp=N,25μm,15.0s
UZH MLR MLR
comp=E,21μm,15.0s
UZH MLR MLR
comp=Z,24μm,15.0s
N23A Red Feather La 77.95 47 P P 20 09 22.1 +0.7
baz=312
KMRS Kahramanmaras 77.96 309 *e*P P 20 09 22.6 +1.3
H28A Mission Ridge 77.99 41 P P 20 09 21.8 +0.4
baz=315,SNR=17
PV05 Paradox Valley 77.99 50 *e*P P 20 09 23.5 +1.8
TIRR Tirgusor 78.00 318⇑ *i*P P 20 09 21.7 +0.5
TIRR Tirgusor 78.00 318 *e*P P 20 09 21.8 +0.5
TIRR Tirgusor 78.00 318 *e*P P 20 09 21.8 +0.5
ELDT Eldivan 78.02 313 *i*P P 20 09 22.1 +0.4
B33A Robert and Kas 78.02 36 P P 20 09 21.2 -0.2
baz=318,SNR=5.8
CDAG Cicekdag 78.06 312 *i*P P 20 09 19.9 -1.9
AYKD Aykdinkavak 78.08 309 *i*P P 20 09 21.1 -0.8
BMR Baia Mare 78.10 323⇓ *i*P P 20 09 23.2 +1.4
CRVS Cervenica-Dubn 78.12 325 *e*P P 20 09 22.8 +0.9
CRVS *e*S S 20 19 13.4 -2.0
CRVS Cervenica-Dubn 78.12 325 *e*P P 20 09 22.8 +0.9
CRVS *e*S S 20 19 13.4 -2.0
CRVS *e*SS SS 20 24 05.0 -11
ARCR ARCALIA 78.13 322⇑ *i*P P 20 09 23.4 +1.4
F30A Leola 78.17 39 P P 20 09 23.1 +0.8
baz=316
G29A Hoven 78.18 40 P P 20 09 23.2 +0.9
baz=315
E31A Nome 78.20 38 P P 20 09 22.4 0.0
baz=316
TRPA Tarpa 78.20 324⇑ *e*P P 20 09 23.5 +1.1
NIE Niedzica 78.24 326 *e*P P 20 09 23.8 +1.2
NIE *e*S S 20 19 17.6 +0.9
NIE LMZ LR 20 47 14.5
NIE Niedzica 78.24 326⇑ *e*P P 20 09 23.8 +1.2
NIE *e*S S 20 19 17.6 +0.9
ANDN Andirin 78.25 309 *i*P P 20 09 22.4 -0.6
PV01 Paradox Valley 78.27 50 *e*P P 20 09 24.8 +1.6
WUAZ Wupatki 78.28 54 P P 20 09 24.0 +0.8
baz=311,SNR=25
WUAZ Wupatki 78.28 54 *e*P P 20 09 25.5 +2.3
B34A Aery, Baudette 78.29 35 P P 20 09 22.7 -0.1
baz=318,SNR=8.7
KAMA Osmaniye 78.31 309 *i*P P 20 09 20.9 -2.4
C33A Trail 78.32 36 P P 20 09 22.9 -0.1
baz=318,SNR=8.8
AVNS Nevsehir-Avano 78.32 311 *i*P P 20 09 23.6 +0.2
KUZU Kuzuini 78.33 308 *i*P P 20 09 23.3 -0.1
I28A Midland 78.39 42 P P 20 09 23.7 +0.2
baz=315,SNR=28
BR131 Keskin Array S 78.41 312 *e*P P 20 09 24.2 +0.3
BRTR Keskin Array B 78.41 312 P P 20 09 24.1 +0.3
comp=Z,57nm,1.1s,baz=86,slow=3.8,SNR=79
BRTR PKKPbc **PKKPbc** 20 28 21.1 +1.6
comp=Z,0.4nm,0.6s,baz=250,slow=3.7,SNR=3.8
BRTR LR LR 20 48 59.7
comp=Z,10μm,18.9s,baz=10,slow=40
BRTR Keskin Array B 78.41 312 P P 20 09 24.2 +0.3
BRTR pmax pmax
comp=Z,58nm,1.1s
BRTR MLR MLR
comp=Z,10μm,18.9s
PGOR Pogoanele 78.41 320⇓ *i*P P 20 09 25.5 +1.9
H29A Onida 78.44 41 P P 20 09 24.1 +0.3
baz=315,SNR=5.7
DOPR Dopca 78.44 321⇑ *i*P P 20 09 25.2 +1.4
AMRR Amara 78.45 319⇑ *i*P P 20 09 25.6 +1.9
J27A Elkhorn Farm, 78.47 43 P P 20 09 24.6 +0.5
baz=314,SNR=5.6
ISR Istrita 78.48 320⇓ *i*P P 20 09 25.7 +1.7
SMCO Snowmass 78.51 48 *e*P P 20 09 26.4 +1.6
MLR Muntele Rosu 78.51 321⇑ *i*P P 20 09 24.8 +0.5
MLR Muntele Rosu 78.51 321 *e*P P 20 09 24.8 +0.5
MLR Muntele Rosu 78.51 321 *e*P P 20 09 24.8 +0.5
F31A Hecla 78.53 39 P P 20 09 24.0 -0.2
baz=316,SNR=6.0
BCAM Yenicaga 78.56 314 *i*P P 20 09 23.1 -1.6
MSAB Monastry St. A 78.56 319⇑ *i*P P 20 09 25.4 +1.0
E32A Braaten, Kindr 78.56 38 P P 20 09 24.0 -0.4
baz=317
RBK Rabkut 78.58 283 P P 20 09 24.0 -1.0
SNR=12
RBK Rabkut 78.58 283 P P 20 09 24.0 -1.0
SNR=12
KAMT Kaman 78.60 312 *e*P P 20 09 25.6 +0.7
G30A Faulkton 78.61 40 P P 20 09 24.7 -0.1
baz=316,SNR=21
KOZT Kozan 78.62 309 *e*P P 20 09 26.0 +1.1
RAC Raciborz 78.62 328 *e*P P 20 09 26.0 +1.4
RAC *e*S S 20 19 19.4 -1.3
RAC MLR MLR
comp=Z,38μm,19.6s
DRWC Darouich 78.68 308 *e*P P 20 09 26.4 +1.0
D33A AnnSam, Waubun 78.74 37 P P 20 09 25.4 0.0
baz=318
CJR Cluj-Napoca 78.76 323⇑ *i*P P 20 09 27.0 +1.5
J28A Allard Ranch, 78.76 42 P P 20 09 26.2 +0.5
baz=315,SNR=12
SECR 78.78 320⇓ *i*P P 20 09 27.1 +1.5

B35A Bob, Littlefor 78.79 35 P P 20 09 25.6 0.0
baz=319,SNR=16
ANTO Ankara 78.79 313 *e*P P 20 09 26.8 +0.9
ANTO MLR MLR
comp=Z,86nm,21.0s
ANTO Ankara 78.79 313 *e*P P 20 09 26.8 +0.9
ANTO LR LR
comp=Z,86nm,21.0s
LANS Liptovska Anna 78.80 326 *e*P P 20 09 27.2 +1.5
LANS *e* 20 09 36.8
LANS Liptovska Anna 78.80 326 *e*P P 20 09 27.2 +1.5
LANS *e* 20 09 36.8
LOD Lodumlu 78.80 313 *e*P P 20 09 26.9 +1.0
KSP Ksiaz 78.81 329 *e*P P 20 09 26.5 +0.9
KSP *e*S S 20 19 25.0 +2.4
KSP LMZ LR 20 47 15.9
KSP Ksiaz 78.81 329⇑ *e*P P 20 09 26.5 +0.9
KSP *e*S S 20 19 25.0 +2.4
I29A Vivian Onida 78.82 41 P P 20 09 25.8 -0.1
baz=315,SNR=7.6
BR231 Keskin MP Arra 78.82 313 *e*P P 20 09 24.5 -1.6
OKC Ostrava-Krasne 78.83 327⇑ *i*P P 20 09 26.6 +0.8
OKC *e*pP PcP 20 09 35.8 +1.3
OKC *e*S S 20 19 23.1 +0.2
OKC AMS AMS 20 50 20.0
comp=Z,27μm,14.4s
OKC Ostrava-Krasne 78.83 327⇑ *i*P P 20 09 26.6 +0.8
OKC *e* 20 09 35.8
OKC *e*S S 20 19 23.1 +0.2
OKC MLR MLR
comp=Z,27μm,14.4s
KECS Kecovo 78.86 325 *e*P P 20 09 27.1 +1.1
KECS *e* 20 12 22.4
KECS pmax pmax
comp=Z,21nm,1.1s
KECS Kecovo 78.86 325 *e*P P 20 09 27.1 +1.1
KECS *e* 20 09 36.4
KECS *e*PP PP 20 12 22.4 -1.5
ISCO Idaho Springs 78.87 47 P P 20 09 26.9 +0.3
baz=313,SNR=15
AFSR Af˙ar-Bala (A 78.92 312 *e*P P 20 09 27.4 +0.8
MVCO Mesa Verde 78.92 51 P P 20 09 27.6 +0.7
baz=312,SNR=6.1
MVCO Mesa Verde 78.92 51 *e*P P 20 09 27.5 +0.6
NIG Nigde 78.92 311 *e*P P 20 09 28.2 +1.3
SULR 78.94 320⇓ *i*P P 20 09 27.7 +1.2
SERE Sereflikochisa 78.97 312 *e*P P 20 09 28.2 +1.2
CEYT Ceyhan 78.98 309 *e*P P 20 09 28.4 +1.6
G31A Conde 79.00 39 P P 20 09 27.4 +0.6
baz=316,SNR=8.9
AKSY AKSARAY - Alti 79.06 311 *i*P P 20 09 24.1 -3.3
F32A Veblen 79.06 38 P P 20 09 27.2 0.0
baz=317
D34A Park Rapids 79.08 37 P P 20 09 26.9 -0.4
baz=318,SNR=8.3
DRGR 79.11 323⇑ *i*P P 20 09 28.2 +0.7
MORC Moravsky Berou 79.13 328 *e*P P 20 09 28.4 +0.9
MORC Moravsky Berou 79.13 328 *e*P P 20 09 28.4 +0.9
E33A Westby DABS, E 79.13 37 P P 20 09 27.7 +0.2
baz=318,SNR=11
C35A Jirik Farms, M 79.17 35 P P 20 09 27.2 -0.5
baz=319,SNR=12
DPC Dobruska-Polom 79.18 329⇑ *i*P P 20 09 28.9 +1.1
DPC *e*pP PcP 20 09 36.8 +0.7
DPC *e*S S 20 19 28.8 +2.1
DPC AMS AMS 20 49 50.0
comp=Z,35μm,14.3s
DPC Dobruska-Polom 79.18 329⇑ *i*P P 20 09 28.9 +1.1
DPC *e* 20 09 36.8
DPC *e*S S 20 19 28.8 +2.1
DPC MLR MLR
comp=Z,35μm,14.3s
UPC Upice 79.18 329⇑ *i*P P 20 09 28.6 +0.9
UPC *e*S S 20 19 27.8 +1.1
UPC AMS AMS 20 49 50.0
comp=Z,33μm,14.8s
UPC Upice 79.18 329⇑ *i*P P 20 09 28.6 +0.9
UPC *e*S S 20 19 27.8 +1.1
UPC MLR MLR
comp=Z,33μm,14.8s
BTCH Batrach 79.19 308 *e*P P 20 09 28.2 +0.1
KKUL Konya-Kulu 79.19 312 *i*P P 20 09 26.7 -1.4
SUSD Miller 79.20 40 P P 20 09 28.1 +0.2
baz=316,SNR=11
KRLC Kraliky 79.21 328⇑ *i*P P 20 09 28.7 +0.8
KRLC *e*pP PcP 20 09 38.1 +1.9
KRLC Kraliky 79.21 328⇑ *i*P P 20 09 28.7 +0.8
KRLC *e* 20 09 38.1
SAHE Sakarya_HENDEK 79.21 315 *i*P P 20 09 23.3 -4.7
J29A Okreek 79.24 42 P P 20 09 28.7 +0.4
baz=315
ARR Arges 79.24 321⇑ *i*P P 20 09 29.8 +1.6
MCD Coleburn Disti 79.26 343 *e*P P 20 09 27.8 -0.2
MDUB Mudurnu 79.28 314 *e*P P 20 09 29.3 +0.7
BTAS Taskesti 79.32 314 *i*P P 20 09 27.2 -1.5
G32A Webster 79.33 39 P P 20 09 28.8 +0.2
baz=317,SNR=9.4
I30A Oacoma 79.34 41 P P 20 09 28.6 -0.2
baz=316,SNR=12
KAND Kocaeli-Kandir 79.40 315 *i*P P 20 09 27.4 -1.6
YAYL Yayladag 79.41 308 *i*P P 20 09 28.4 -0.9
PRD Provadia 79.41 318 *i*P P 20 09 29.9 +0.8
MME1 Meikle Cairn 79.43 342 *e*P P 20 09 28.9 -0.1
MME1 *e*P P 20 09 29.0 +0.1
F33A 5 Mile Ranch, 79.48 38 P P 20 09 29.0 -0.4
baz=317
KRTS Karatas 79.49 309 *e*P P 20 09 31.3 +1.7
E34A Wadena 79.51 37 P P 20 09 28.8 -0.9
baz=318
KFRA Kufra 79.52 307 *e*P P 20 09 29.8 -0.1
PSZ Piszkesteto 79.55 325⇑ *e*P P 20 09 30.8 +0.9
PSZ Piszkesteto 79.55 325 *e*P P 20 09 30.7 +0.9
PSZ MLR MLR
comp=Z,19μm,20.0s
PSZ Piszkesteto 79.55 325 *e*P P 20 09 30.7 +0.9
PSZ LR LR
comp=Z,19μm,20.0s
W18A Petrified Fore 79.55 53 P P 20 09 31.1 +0.9
baz=311
W18A Petrified Fore 79.55 53 *e*P P 20 09 32.3 +2.0
comp=Z,37nm,1.0s
S22A 4UR Ranch, Cre 79.55 49 P P 20 09 30.9 +0.5
baz=312,SNR=20
S22A 4UR Ranch, Cre 79.55 49 *e*P P 20 09 32.1 +1.7
VYHS Vyhne 79.57 326 *e*P P 20 09 30.8 +0.9
VYHS pmax pmax
comp=Z,51nm,1.2s
VYHS Vyhne 79.57 326 *e*P P 20 09 30.8 +0.9
VYHS Vyhne 79.57 326 *e*S S 20 19 31.2 +0.3
VYHS *e*SS SS 20 24 42.9 +5.3
VYHS *e*L L 20 48 09.8
WRDH Warideh 79.57 308 *e*P P 20 09 29.8 -0.4
DED Mersin 79.58 310 *i*P P 20 09 28.4 -1.7
LOT Lotru 79.60 322 *e*P P 20 09 30.9 +0.6
LOT Lotru 79.60 322⇓ *i*P P 20 09 31.1 +0.9
ARNB Al Arnab 79.60 308 *e*P P 20 09 30.2 -0.2
D35A Remer 79.60 36 P P 20 09 30.5 +0.4
baz=319
CHBY Cihanbeyli 79.61 312 *e*P P 20 09 30.0 -0.4
SPNC Sapanca-Adapaz 79.62 315 *e*P P 20 09 30.9 +0.6
SLNF Slenfeh 79.62 308 *e*P P 20 09 30.3 -0.3
C36A Pine Crest Far 79.64 35 P P 20 09 30.0 -0.3
baz=319,SNR=13
MDO Dochfour 79.64 343 *e*P P 20 09 30.2 +0.1
214A Organ Pipe Nat 79.66 57 P P 20 09 31.2 +0.5
baz=310,SNR=17
214A Organ Pipe Nat 79.66 57 *e*P P 20 09 32.2 +1.5
comp=Z,116nm,1.0s
KERG Konya-Eregli 79.67 310 *i*P P 20 09 29.1 -1.7
HUMR Humele 79.68 320⇑ *i*P P 20 09 31.7 +1.2
DRUM Mains of Drumt 79.68 342 *e*P P 20 09 30.6 +0.3
DRUM AMS AMS 20 49 42.1
comp=Z,8μm,17.3s
GULT Gulveren 79.68 314 *e*P P 20 09 31.4 +0.7
BRG Berggiesshubel 79.70 330 *i*P P 20 09 31.9 +1.4
comp=Z,75nm,1.1s
BRG *i* 20 09 42.9
comp=Z,84nm,1.2s
BRG PP PP 20 12 24.2 -6.6
comp=Z,48nm,1.5s
BRG S S 20 19 33.0 +0.9
BRG SS SS 20 24 52.0 +13
comp=N,19μm,16.3s
comp=E,13μm,17.1s

comp=Z,23μm,17.5s
BRG Berggiesshubel 79.70 330 *i*P P 20 09 31.9 +1.4
BRG *i* 20 09 42.9
BRG S S 20 19 33.0 +0.9
BRG pmax pmax
comp=Z,9.0nm,1.1s
BRG pmax pmax
comp=Z,75nm,1.3s
BRG pmax pmax
comp=Z,84nm,1.5s
BRG MLR MLR
comp=N,48μm,16.3s
BRG MLR MLR
comp=E,19μm,17.1s
BRG MLR MLR
comp=Z,13μm,17.5s
Q24A Divide 79.70 48 P P 20 09 31.9 +0.7
baz=313,SNR=5.8
Q24A Divide 79.70 48 *e*P P 20 09 32.5 +1.3
I31A Royce, Wessing 79.70 40 P P 20 09 31.6 +0.9
baz=316
CLL Collm 79.71 331⇑ *i*P P 20 09 30.6 0.0
comp=Z,118nm,1.1s
CLL *e*Pmax 20 09 33.0
CLL *i* 20 09 34.8
CLL *i* 20 09 40.0
CLL *i* 20 09 45.7
CLL *i* 20 09 55.2
CLL *e* 20 10 22.0
CLL *e*PP PP 20 12 28.0 -2.8
CLL *e*PPP PPP 20 14 23.0
CLL *e*S S 20 19 31.0 -1.2
comp=N,2μm,20.8s
CLL *e*S S 20 19 31.0 -1.2
comp=E,5μm,22.1s
CLL *e*PS PnS 20 20 19.0 +2.8
CLL *e*SS SS 20 24 36.0 -3.5
CLL *e* 20 25 42.0
CLL *e*SSS SSS 20 28 06.0
CLL LmH 20 43 00.0
comp=N,23μm,20.0s
CLL LmH 20 43 00.0
comp=E,40μm,20.8s
CLL Lmax 20 50 00.0
CLL Collm 79.71 331⇑ *i*P P 20 09 30.6 0.0
CLL *i* 20 09 40.0
CLL *e*S S 20 19 31.0 -1.2
CLL pmax pmax
comp=Z,15nm,1.1s
CLL MLR MLR
comp=Z,26μm,20.1s
CLL Collm 79.71 331 *e*P P 20 09 30.6 0.0
J30A Dallas 79.72 41 P P 20 09 31.3 +0.4
baz=316
PVCC Panska Ves 79.73 330⇑ *i*P P 20 09 31.7 +1.0
PVCC *e*S S 20 19 34.1 +1.6
PVCC AMS AMS 20 48 00.0
comp=Z,27μm,17.0s
PVCC Panska Ves 79.73 330⇑ *i*P P 20 09 31.7 +1.0
PVCC *e*S S 20 19 34.1 +1.6
PVCC MLR MLR
comp=Z,27μm,17.0s
RABH Abou Rabah 79.78 306 *e*P P 20 09 31.4 +0.1
KAC Achnashellach 79.80 344 *e*P P 20 09 31.4 +0.5
KAC *e*P P 20 09 31.5 +0.5
SVRH Sivrihisar-ESK 79.80 313 *e*P P 20 09 31.1 -0.3
MERS Mersin 79.81 310 *e*P P 20 09 32.2 +0.7
E35A Pequot Lakes 79.83 36 P P 20 09 31.3 0.0
baz=318
HRT Hereke 79.88 315 *e*P P 20 09 32.4 +0.6
VRAC Vranov 79.88 328 LR LR 20 48 26.0
comp=Z,30μm,18.7s,baz=14,slow=38
VRAC Vranov 79.88 328⇑ *i*P P 20 09 32.8 +1.2
G33A Ortonville 79.89 38 P P 20 09 32.0 +0.3
baz=317,SNR=14
ROOS tl_alroos 79.90 306⇓ *e*P P 20 09 31.8 -0.3
H32A Carlson Farm, 79.91 39 P P 20 09 31.8 0.0
baz=317
KLYT Kilyos 79.92 316 *e*P P 20 09 32.4 +0.6
D36A Goodland 79.93 35 P P 20 09 31.6 -0.3
baz=319,SNR=5.4
C37A Embarrass 79.95 35 P P 20 09 31.9 0.0
baz=320,SNR=8.2
BIDA Albida 79.95 307 *e*P P 20 09 31.7 -0.5
KIZT Kizilcal 79.98 313 *e*P P 20 09 32.9 +0.5
SIRR Siria 79.99 323⇓ *i*P P 20 09 33.4 +1.2
F34A Alexandria 80.00 37 P P 20 09 32.4 +0.1
baz=318,SNR=5.4
KPL Plockton 80.02 344 *e*P P 20 09 32.6 +0.5
KPL AMS AMS 20 54 06.3
comp=Z,6μm,16.8s
ISK Istanbul-Kandi 80.04 316 *e*P P 20 09 32.2 -0.3
OGNE Ogallala 80.07 44 P P 20 09 33.4 +0.5
baz=315,SNR=6.0
OGNE Ogallala 80.07 44 *e*P P 20 09 34.1 +1.2
EYMN Ely 80.08 34 P P 20 09 32.5 -0.2
baz=320,SNR=7.5
EYMN Ely 80.08 34 *e*P P 20 09 32.8 +0.1
EYMN LR LR
comp=Z,6μm,19.0s
KSB Sheil Bridge 80.09 343 *e*P P 20 09 33.0 +0.6
KSB *e*P P 20 09 33.1 +0.6
KDHN Kadinhani 80.09 312 *i*P P 20 09 32.5 -0.5
ADVT Abdulvahap 80.11 315 *e*P P 20 09 33.5 +0.6
BGKT Bogazkoy 80.11 316 *e*P P 20 09 33.4 +0.5
SZH Strazhica 80.11 319 *i*P P 20 09 33.3 +0.4
GZR Gura Zlata 80.11 322⇓ *i*P P 20 09 33.5 +0.5
H33A Prehn Over Nor 80.11 39 P P 20 09 33.1 +0.1
baz=317,SNR=28
ZIMR 80.12 320⇑ *i*P P 20 09 33.2 +0.3
K30A Basset 80.13 42 P P 20 09 33.5 +0.4
baz=316,SNR=7.8
GOPC GO Pecny, Ondr 80.13 329⇑ *i*P P 20 09 33.6 +0.7
GOPC *e*S S 20 19 37.8 +1.0
GOPC AMS AMS 20 50 30.0
comp=Z,32μm,14.0s
GOPC GO Pecny, Ondr 80.13 329⇑ *i*P P 20 09 33.6 +0.7
GOPC *e*S S 20 19 37.8 +1.0
GOPC MLR MLR
comp=Z,32μm,14.0s
J31A Geddes 80.13 41 P P 20 09 33.9 +0.9
baz=316
EDU Dundee 80.14 342 *e*P P 20 09 33.0 +0.2
PRA Prague 80.15 330⇑ *i*P P 20 09 33.8 +0.8
PRA *e*S S 20 19 37.7 +0.8
PRA AMS AMS 20 48 10.0
comp=Z,33μm,16.3s
PRA Prague 80.15 330⇑ *i*P P 20 09 33.8 +0.8
PRA *e*S S 20 19 37.7 +0.8
PRA MLR MLR
comp=Z,33μm,16.3s
SMOL Smolenice 80.15 327 *e*P P 20 09 34.3 +1.2
SMOL Smolenice 80.15 327 *e*P P 20 09 34.2 +1.2
CTYL Yalikoy Yolu 80.16 316 *e*P P 20 09 33.9 +0.7
LADK Ladik-KONYA 80.17 312 *e*P P 20 09 33.8 +0.4
PRU Pruhonice 80.17 329⇑ *i*P P 20 09 33.9 +0.8
PRU *e*pP PcP 20 09 43.4 +3.0
PRU *e*PP PP 20 12 33.8 -0.9
PRU *e*S S 20 19 38.9 +1.8
PRU AMS AMS 20 48 00.0
comp=Z,29μm,17.1s
PRU Pruhonice 80.17 329⇑ *i*P P 20 09 33.9 +0.8
PRU *e* 20 09 43.4
PRU *e* 20 12 33.8
PRU *e*S S 20 19 38.9 +1.8
PRU MLR MLR
comp=Z,29μm,17.1s
CTKS Kestanelik-??a 80.21 316 *e*P P 20 09 34.0 +0.5
G34A Benson 80.23 38 P P 20 09 34.0 +0.4
baz=318
I32A Karley and Nic 80.24 40 P P 20 09 34.0 +0.4
baz=317
BUD Budapest 80.26 325⇑ *e*P P 20 09 34.4 +0.8
D37A Cotton 80.28 35 P P 20 09 33.7 -0.1
baz=320
F35A Swanville 80.28 37 P P 20 09 35.0 +1.2
baz=318
KIZK Mersin 80.29 310 *i*P P 20 09 33.0 -0.9
IZI Iznik 80.32 315 *e*P P 20 09 34.7 +0.5
SDCO Great Sand Dun 80.33 49 P P 20 09 34.9 +0.4
baz=313,SNR=15
SDCO Great Sand Dun 80.33 49 *e*P P 20 09 36.2 +1.6
SDCO LR LR
comp=Z,4μm,19.0s

TREC **Trest** 80.34 328⇑ *e*S **S** 20 19 40.1 +1.1
TREC AMS AMS 20 49 40.0
comp=Z,25µm,15.3s
KONT Konya--Tatoy 80.35 312 *e*P **P** 20 09 34.9 +0.6
C38A Sawbill Land. 80.35 34 P **P** 20 09 33.7 -0.4
baz=320,SNR=10
JMB Yambol 80.35 318 *i* P **P** 20 09 34.9 +0.7
E36A McGregor 80.39 36 P **P** 20 09 34.3 0.0
baz=319,SNR=13
DGAR Diego Garcia 80.40 252 *e*P **P** 20 09 34.5 -0.3
DGAR MLR MLR
comp=Z,4µm,20.0s
DGAR Diego Garcia 80.40 252 *e*P **P** 20 09 34.5 -0.3
DGAR LR LR
comp=Z,4µm,20.0s
GEMT Gemlik 80.41 315 *e*P **P** 20 09 34.1 -0.5
PHSR Pinarhisar 80.46 317 *e*P **P** 20 09 34.9 +0.1
KMER Konya-Meram 80.46 311 *i* P **P** 20 09 34.2 -0.8
ARMT Armutlu 80.49 315 *e*P **P** 20 09 35.5 +0.5
BZS Buzias 80.50 323⇑ *i* P **P** 20 09 35.3 +0.4
MARH Ras Al Marh 80.50 306 *e*P **P** 20 09 35.1 -0.4
IGD Bursa 80.52 315 *i* P **P** 20 09 33.8 -1.4
J32A Parkston 80.52 40 P **P** 20 09 35.2 0.0
baz=317
PKS7 Kunszentmiklos 80.53 325 *e*P **P** 20 09 36.3 +1.2
I33A Coleman 80.55 39 P **P** 20 09 35.3 0.0
baz=317,SNR=5.6
H34A Spellman Lake, 80.59 38 P **P** 20 09 35.5 0.0
baz=318
PKSG 80.60 326⇑ *e*P **P** 20 09 36.2 +0.7
K31A O'Neill 80.61 41 P **P** 20 09 37.3 +1.7
baz=316
ESY Stoneypath 80.61 341 *e*P **P** 20 09 35.8 +0.4
MDNY Mudanya-Bursa 80.62 315 *e*P **P** 20 09 35.2 -0.5
CSKK Cs^ţkako 80.68 326 *e*P **P** 20 09 37.0 +1.1
PKS6 Bocsa 80.69 325⇑ *e*P **P** 20 09 36.0 +0.1
ZALF Zalf 80.69 305 *e*P **P** 20 09 35.4 -0.9
CRLT Corlu 80.70 316 *e*P **P** 20 09 37.6 +1.5
EDRB Edirne 80.71 317 *e*P **P** 20 09 37.4 +1.3
EDRB Edirne 80.71 317 P **P** 20 09 36.7 +0.5
EDRB Edirne 80.71 317 P **P** 20 09 36.7 +0.5
IKL Isikli 80.73 310 *e*P **P** 20 09 34.1 -2.2
TUC Tucson 80.73 56 P **P** 20 09 37.6 +1.1
baz=311
TUC Tucson 80.73 56 *e*P **P** 20 09 38.2 +1.6
TUC Tucson 80.73 56 *e*P **P** 20 09 38.2 +1.6
C39A Grand Marais 80.77 33 P **P** 20 09 37.5 +1.2
baz=321
EAB Aberfoyle 80.78 342 *e*P **P** 20 09 37.5 +1.2
NKC Novy Kostel 80.78 331⇑ *i*P **P** 20 09 36.9 +0.5
NKC *e*pP **PcP** 20 09 46.5 +3.4
NKC *e*S **S** 20 19 44.4 +0.8
NKC AMS AMS 20 48 20.0
comp=Z,21µm,16.6s
NKC Novy Kostel 80.78 331⇑ *i*P **P** 20 09 36.9 +0.5
NKC *e* 20 09 46.5
NKC *e*S **S** 20 19 44.4 +0.8
NKC MLR MLR
comp=Z,21µm,16.6s
G35A Watkins 80.80 37 P **P** 20 09 36.1 -0.4
baz=319
PKST T^'s 80.86 326⇑ *e*P **P** 20 09 37.2 +0.3
ECSD EROS Data Cent 80.87 40 P **P** 20 09 37.4 +0.4
baz=318,SNR=40
ECSD EROS Data Cent 80.87 40 *e*P **P** 20 09 37.2 +0.2
ECSD LR LR
comp=Z,5µm,19.0s
L31A Butterfield Fa 80.88 42 P **P** 20 09 36.9 -0.2
baz=316,SNR=9.6
BANR Banloc 80.89 323⇑ *i*P **P** 20 09 38.3 +1.3
TKR Tekirdag 80.91 316 *e*P **P** 20 09 37.9 +0.7
EREN Erenkoy 80.91 309 *e*P **P** 20 09 37.9 +0.5
TVSB Tavsanli 80.95 314 *e*P **P** 20 09 38.1 +0.5
QASN Qassioun 80.96 306 *e*P **P** 20 09 37.2 -0.5
SHUT Suhut-Afyon 80.96 313 *e*P **P** 20 09 38.6 +0.9
TOTH TOTAH 80.97 306 *e*P **P** 20 09 36.2 -1.6
K32A Verdigre 80.98 41 P **P** 20 09 38.5 +0.8
baz=317
KCTX Karacabey (Bur 80.98 315 *e*P **P** 20 09 37.3 -0.3
J33A Davis 81.00 40 P **P** 20 09 39.0 +1.3
baz=317
I34A Hadley 81.02 39 P **P** 20 09 37.8 0.0
baz=318
H35A Sunnyside Ranc 81.02 38 P **P** 20 09 38.0 +0.3
baz=318,SNR=8.5
MDVR Moldovita 81.07 322⇑ *i*P **P** 20 09 38.4 +0.3
KSCO Kaye Shedlock' 81.09 46 P **P** 20 09 39.2 +0.8
baz=314
KSCO Kaye Shedlock' 81.09 46 *e*P **P** 20 09 40.0 +1.6
G36A St. Michael 81.13 37 P **P** 20 09 37.9 -0.4
baz=319
MPEP Malo Peshtene 81.15 320 *i* P **P** 20 09 39.4 +0.9
MRMT Marmara Adasi 81.15 316 *e*P **P** 20 09 38.4 -0.2
PGBU Glenifferbraes 81.16 342 *e*P **P** 20 09 38.9 +0.7
PGBU AMB AMB 20 09 40.4
comp=Z,170nm,1.2s
PGBU AMS AMS 20 47 20.1
comp=Z,6µm,18.2s
SOP Sopron 81.16 327⇑ *e*P **P** 20 09 39.8 +1.4
EDC Edincik 81.19 316 *e*P **P** 20 09 39.7 +1.0
GDZ Gediz 81.19 314 *i* P **P** 20 09 38.1 -0.8
SALA Sala 81.21 305 *e*P **P** 20 09 37.9 -1.3
BAGO Egridir - ISPA 81.22 313 *i* P **P** 20 09 36.7 -2.4
RAYN Ar Rayn 81.23 293 *e*P **P** 20 09 39.3 0.0
RAYN LR LR
comp=Z,7µm,21.0s
KHC Kasperske Hory 81.23 329⇑ *i*P **P** 20 09 39.5 +0.6
KHC *e*pP **PcP** 20 09 49.0 +3.9
KHC *e*PP **PP** 20 12 46.2 +2.6
KHC *e*S **S** 20 19 49.2 +0.8
KHC AMS AMS 20 49 50.0
comp=Z,36µm,15.0s
KHC Kasperske Hory 81.23 329⇑ *i*P **P** 20 09 39.5 +0.6
KHC *e* 20 09 49.0
KHC *e* 20 12 46.2
KHC *e*S **S** 20 19 49.2 +0.8
KHC MLR MLR
comp=Z,36µm,15.0s
KHC Kasperske Hory 81.23 329 *e*P **P** 20 09 38.9 0.0
BRBR Barbar 81.24 306 *e*P **P** 20 09 39.3 -0.1
CONA Conrad Observa 81.26 327 *i* P **P** 20 09 40.0 +0.9
comp=Z,89nm,1.1s,SNR=46
PKS9 Tamasi 81.27 325⇑ *e*P **P** 20 09 39.1 +0.1
ESK Eskdalemuir 81.30 342 *e*P **P** 20 09 38.5 -0.5
ESK AMS AMS 20 50 39.6
comp=Z,10µm,17.6s
ESK Eskdalemuir 81.30 342 *e*P **P** 20 09 40.1 +1.1
ESK MLR MLR
comp=Z,11µm,22.0s
ESK Eskdalemuir 81.30 342 *e*P **P** 20 09 40.1 +1.1
ESK LR LR
comp=Z,11µm,22.0s
RKY Sarkoy-Tekirda 81.31 316 *e*P **P** 20 09 38.9 -0.5
WTSB Winterswijk 81.35 335 *e*P **P** 20 09 39.3 -0.1
comp=Z,106nm,1.1s
T25A Trinidad 81.38 49 P **P** 20 09 40.4 +0.3
baz=314,SNR=31
T25A Trinidad 81.38 49 *e*P **P** 20 09 41.4 +1.3
DURS Dursunbey 81.38 315 *i* P **P** 20 09 39.8 -0.1
PKSM Moragy 81.40 325⇑ *e*P **P** 20 09 39.7 0.0
ECK Cauldkaine Hil 81.40 341 *e*P **P** 20 09 39.8 +0.2
M31A Lambtecht Ranc 81.41 43 P **P** 20 09 40.0 0.0
baz=316
GEC2 GERESS Array S 81.41 329 *e*P **P** 20 09 40.3 +0.4
GEC2 GERESS Array S 81.41 329 *e*P **P** 20 09 40.2 +0.4
GERES GERESS Array B 81.41 329 P **P** 20 09 40.0 +0.1
comp=Z,19nm,0.9s,baz=38,slow=5.0,SNR=77
GERES PKKPbc **PKKPbc** 20 28 15.4 +2.4
comp=Z,0.9nm,0.8s,baz=151,slow=2.2,SNR=5.7
GERES LR LR 20 49 22.1
comp=Z,23µm,18.9s,baz=14,slow=38
GEA0 GERESS Array S 81.42 329 *e*P **P** 20 09 39.3 -0.6
L32A Elgin 81.44 42 P **P** 20 09 40.1 0.0
baz=317
KRBG Karabiga-Canak 81.46 316 *e*P **P** 20 09 40.8 +0.7
ASF Jabal al Asfar 81.47 305 LR LR 20 51 15.5
comp=Z,6µm,18.1s,slow=40
LFK Lefkose 81.47 309 *e*P **P** 20 09 41.0 +0.7
KESN Edirne-Kesan 81.48 317 *i* P **P** 20 09 40.1 -0.6
ISP Isparta 81.48 313 *e*P **P** 20 09 41.0 +0.5
ISP Isparta 81.48 313 *i* P **P** 20 09 39.9 -0.6
ISP pmax pmax
comp=Z,35nm,0.9s
ISP Isparta 81.48 313 PFAKE 20 09 50.0 +10
ISP LR LR
comp=Z,9µm,21.0s
BHH Howats Hill 81.50 341 *e*P **P** 20 09 40.9 +0.8
PGB Panagyurishte 81.53 319 *i* P **P** 20 09 41.2 +0.6
J34A George 81.53 40 P **P** 20 09 41.3 +0.8
baz=318
H36A Jessenland, He 81.54 38 P **P** 20 09 41.0 +0.5
baz=319,SNR=10.0
KDZ Kurdzhali 81.55 318 *i* P **P** 20 09 41.5 +0.9
SPMN Marine on St. 81.57 36 P **P** 20 09 40.6 0.0
baz=320
SPMN Marine on St. 81.57 36 *e*P **P** 20 09 41.1 +0.4
I35A Creekview Farm 81.58 39 P **P** 20 09 40.6 -0.1
baz=318,SNR=5.2
LAZ Ladron 81.62 52 *e*P **P** 20 09 43.4 +2.0
DEMI Demirci 81.64 314 *i* P **P** 20 09 39.8 -1.4
ANMO Albuquerque 81.66 51 P **P** 20 09 43.0 +1.4
comp=Z,15nm,0.8s,baz=310,slow=7.4,SNR=23
ANMO Albuquerque 81.66 51 P **P** 20 09 42.4 +0.8
baz=313
ANMO Albuquerque 81.66 51 *d* *i*P **P** 20 09 43.4 +1.8
ANMO pmax pmax
comp=Z,60nm,1.7s
ANMO Albuquerque 81.66 51 *e*P **P** 20 09 43.5 +1.9
ANMO LR LR
comp=Z,3µm,19.0s
BALB Balikesir 81.68 315 *e*P **P** 20 09 42.0 +0.6
KHAL Karahalli 81.69 314 *i* P **P** 20 09 41.8 +0.2
GRFO Grafenberg 81.69 331 *e*P **P** 20 09 42.2 +1.0
GRFO Grafenberg 81.69 331 *e*P **P** 20 09 42.1 +1.0
L33A Hoskins 81.69 41 P **P** 20 09 42.7 +1.2
baz=317
BCK Bucak 81.70 312 *e*P **P** 20 09 40.8 -0.8
MAMC Mammari 81.73 309 P **P** 20 09 42.0 +0.3
ALN Alexandroupoli 81.76 317 *e*P **P** 20 09 39.6 -2.1
BGNE Belgrade 81.80 42 P **P** 20 09 41.1 -0.8
baz=317
BGNE Belgrade 81.80 42 *e*P **P** 20 09 42.6 +0.7
N31A Bailey Ranch, 81.80 43 P **P** 20 09 42.0 0.0
baz=316
CSS Mathiatis 81.80 309 *e*P **P** 20 09 42.4 +0.2
CSS Mathiatis 81.80 309 P **P** 20 09 42.5 +0.4
CSS Mathiatis 81.80 309 P **P** 20 09 42.3 +0.2
CSS Mathiatis 81.80 309 *e*P **P** 20 09 42.1 0.0
CSS LR LR
comp=Z,2µm,19.0s
J35A Milford 81.83 39 P **P** 20 09 41.7 -0.4
baz=318
MMAI Mount Meron Ar 81.84 306 LR LR 20 50 22.6
comp=Z,15µm,18.6s,baz=45,slow=39
RZN Rozhen 81.88 318 *i* P **P** 20 09 43.6 +1.0
GELI Tayfur-Gelibol 81.89 317 *e*P **P** 20 09 43.4 +1.0
K34A Le Mars 81.90 40 P **P** 20 09 43.3 +0.8
baz=318
I36A Fitzsimmons Fa 81.92 38 P **P** 20 09 43.8 +1.2
baz=319
KESW Keswick, Cumbr 81.93 341 *e*P **P** 20 09 42.1 -0.3
KESW AMB AMB 20 09 47.9
comp=Z,168nm,1.7s
ARSA Arzberg 81.94 327 *i* P **P** 20 09 43.3 +0.7
SNR=22
LEF Lefka 81.96 309 *e*P **P** 20 09 41.9 -1.0
VTS Vitosha 81.97 320⇑ *i*P **P** 20 09 43.9 +0.9
VTS Vitosha 81.97 320 P **P** 20 09 43.8 +0.8
VTS Vitosha 81.97 320 ⇑P **P** 20 09 43.9 +0.9
VTS Vitosha 81.97 320 *i* P **P** 20 09 43.4 +0.4
VTS Vitosha 81.97 320 *e*P **P** 20 09 43.9 +0.9
MOA Molln 81.98 328 *i* P **P** 20 09 43.5 +0.7
comp=Z,69nm,1.4s,SNR=31
LPM Los Pinos Moun 81.99 52 *e*P **P** 20 09 45.0 +1.6
H37A Dierke Farm, C 82.01 37 P **P** 20 09 43.8 +0.8
baz=320
BEHE Becsehely 82.02 326⇑ *e*P **P** 20 09 43.5 +0.5
KULA Kula-Manisa 82.05 314 *e*P **P** 20 09 43.2 -0.2
ANTB Antalya 82.05 312 *e*P **P** 20 09 40.0 -3.3
GAL1 Galloway 82.07 342 *e*P **P** 20 09 43.5 +0.4
GAL1 AMB AMB 20 09 45.1
comp=Z,43nm,1.0s
O31A Woolen Ranch, 82.08 44 P **P** 20 09 43.6 0.0
baz=316
BNM Barren Site 82.10 52 *e*P **P** 20 09 45.6 +1.6
ALFC Alefka 82.11 309 P **P** 20 09 43.5 -0.2
HPK Haverah Park 82.12 340 *e*P **P** 20 09 43.8 +0.4
HPK AMS AMS 20 50 14.5
comp=Z,9µm,18.0s
KORT Korkueli 82.15 312 *i* P **P** 20 09 41.8 -2.3
M33A Taylor Creek F 82.17 41 P **P** 20 09 44.3 +0.4
baz=317
TAU Tasmania Unive 82.19 177 PFAKE 20 10 00.0 +16
TAU LR LR
comp=Z,5µm,22.0s
I37A Lemond, Waseca 82.21 38 P **P** 20 09 44.5 +0.4
baz=319,SNR=20
SZAC Souni 82.21 309 P **P** 20 09 45.0 +0.7
AKHS Akhisar 82.26 315 *i* P **P** 20 09 42.8 -1.7
KOGS Kog 82.26 326⇑ *e*P **P** 20 09 44.1 -0.2
comp=Z,427nm,2.1s
KOGS *e*PP **PP** 20 12 52.3 +0.2
KOGS *e*S **S** 20 19 57.4 -1.6
L34A Svendsen Farm, 82.29 41 P **P** 20 09 46.2 +1.7
baz=318
AKMC Akamas 82.36 309 P **P** 20 09 45.2 +0.2
DENT Denizli 82.38 313 *e*P **P** 20 09 45.1 0.0
SCHQ Schefferville 82.41 17 P **P** 20 09 45.1 +0.1
comp=Z,26nm,0.8s,baz=336,slow=6.1,SNR=16
SCHQ LR LR 20 49 37.8
comp=Z,6µm,20.0s,baz=354,slow=38
SCHQ Schefferville 82.41 17 *e*P **P** 20 09 45.7 +0.8
PPCY Paphos 82.45 309 P **P** 20 09 45.7 +0.3
MMB Musomiste 82.45 319 *i* P **P** 20 09 46.0 +0.6
121A Cookes Peak, D 82.48 54 P **P** 20 09 46.6 +0.7
baz=313,SNR=18
121A Cookes Peak, D 82.48 54 *e*P **P** 20 09 47.5 +1.6
comp=Z,72nm,1.1s
M34A Aspy Farms, Fr 82.53 41 P **P** 20 09 46.2 +0.4
baz=318
COWI Conover 82.53 34 *e*P **P** 20 09 45.9 +0.2
COWI LR LR
comp=Z,12µm,19.0s
LHO Holmfirth 82.55 340 *e*P **P** 20 09 46.1 +0.4
NVR Nevrokopi 82.56 319 P **P** 20 09 46.5 +0.5
NVR Nevrokopi 82.56 319 P **P** 20 09 46.5 +0.5
O32A Brockman Farm, 82.56 43 P **P** 20 09 46.4 +0.4
baz=317
GROS Grobnik 82.57 327 *i* P **P** 20 09 46.1 +0.2
KKB Krupnik 82.57 320 *i* P **P** 20 09 46.5 +0.5
ELL Elmali 82.58 312 *e*P **P** 20 09 46.7 +0.4
PERS Pernice 82.59 327⇑ *i*P **P** 20 09 46.4 +0.3
comp=Z,391nm,1.5s
SOKA Soboth 82.60 327 *i* P **P** 20 09 46.5 +0.3
comp=Z,192nm,1.1s,SNR=85
HGN Heimansgroeve 82.66 334 *e*P **P** 20 09 46.3 0.0
comp=Z,114nm,1.3s
HGN *e*PP **PP** 20 13 00.4 +5.2
HGN *e*S **S** 20 20 04.5 +1.6
HGN *e*SS **SS** 20 25 27.8 +4.4
J37A Redenius Farm, 82.67 38 P **P** 20 09 46.5 0.0
baz=319,SNR=6.1
I38A Scanlan Farm, 82.69 37 P **P** 20 09 46.3 -0.3
baz=320,SNR=8.4
BEBN Eben Emael 82.72 335 P **P** 20 09 46.8 +0.2
comp=Z,36nm,1.4s
MEM Membach 82.77 334 P **P** 20 09 46.9 0.0
comp=Z,38nm,1.3s
CBKS Cedar Bluff 82.82 45 P **P** 20 09 47.9 +0.4
baz=316
CBKS Cedar Bluff 82.82 45 *e*P **P** 20 09 48.1 +0.7
CBKS MLR MLR
comp=Z,6µm,20.0s
CBKS Cedar Bluff 82.82 45 *e*P **P** 20 09 48.1 +0.7
CBKS LR LR
comp=Z,6µm,20.0s
P32A Huiting Farm, 82.85 43 P **P** 20 09 47.1 -0.4
baz=317,SNR=8.6
SRS Serrai 82.87 319 P **P** 20 09 47.8 +0.2
SRS Serrai 82.87 319 P **P** 20 09 47.8 +0.2
SRS Serrai 82.87 319 P **P** 20 09 47.8 +0.2
AYDB Zeytinkoy-Aydi 82.88 314 *e*P **P** 20 09 48.4 +0.6
IZM Izmir 82.90 315 *e*P **P** 20 09 47.8 0.0
OBKA Obir 82.93 327 *i* P **P** 20 09 47.9 0.0
SNR=16
GMM Mts of Mourne 82.94 343 *e*P **P** 20 09 48.1 +0.5
KBA Koelnbreinsper 82.97 328 *i* P **P** 20 09 48.5 +0.3
comp=Z,147nm,1.3s,SNR=37
BLCB Balcova 83.03 315 *e*P **P** 20 09 45.9 -2.5
L36A Harm Buss Farm 83.04 40 P **P** 20 09 49.3 +0.8
baz=319
K37A Belmond 83.04 39 P **P** 20 09 48.3 -0.1
baz=319,SNR=6.3
O33A Hebron 83.06 43 P **P** 20 09 48.2 -0.4
baz=317
N34A Lincoln 83.06 41 P **P** 20 09 48.6 0.0
baz=318
AYDN Tasoluk 83.09 314 *i* P **P** 20 09 49.3 +0.5
AKAS Kas 83.12 312 *i* P **P** 20 09 45.2 -3.9
CWF Charnwood Fore 83.13 339 *e*P **P** 20 09 48.8 +0.2
CWF AMS AMS 20 56 02.1
comp=Z,10µm,15.3s
CWF Charnwood Fore 83.13 339 *e*P **P** 20 09 49.5 +0.9
FETY Fethiye 83.13 312 *e*P **P** 20 09 49.3 +0.3
FETY Fethiye 83.13 312 P **P** 20 09 49.0 0.0
FETY Fethiye 83.13 312 P **P** 20 09 49.0 0.0
BCLA Clavier 83.17 335 P **P** 20 09 48.9 0.0
comp=Z,46nm,1.4s
J38A Wedel Dairy, R 83.18 38 P **P** 20 09 49.0 -0.1
baz=320,SNR=5.1
KNT Kendrikon 83.19 319 *e*P **P** 20 09 48.4 -0.8
STU Stuttgart 83.20 332 *e*P **P** 20 09 49.6 +0.5
STU Stuttgart 83.20 332 *e*P **P** 20 09 49.6 +0.5
MYKA Terra Mystica 83.21 328 *i* P **P** 20 09 49.0 -0.3
SNR=22
YER Yerkesik 83.23 313 *e*P **P** 20 09 50.2 +0.7
YER Yerkesik 83.23 313 P **P** 20 09 50.4 +0.8
YER Yerkesik 83.23 313 P **P** 20 09 50.4 +0.8
YER Yerkesik 83.23 313 P **P** 20 09 50.4 +0.8
VAY Valandovo 83.24 319 P **P** 20 09 50.0 +0.6
VAY Valandovo 83.24 319⇑ *i*P **P** 20 09 50.1 +0.6
VAY Valandovo 83.24 319 P **P** 20 09 50.0 +0.6
VAY Valandovo 83.24 319 P **P** 20 09 50.0 +0.6
OUR Ouranopolis 83.25 318 *e*P **P** 20 09 47.6 -1.8
DALY Dalyan (Mu^la 83.25 313 *e*P **P** 20 09 50.4 +0.8
PLE Pljevlja 83.27 323⇑ *i*P **P** 20 09 50.7 +1.0
SKO Skopje 83.31 321 P **P** 20 09 50.8 +1.0
SKO Skopje 83.31 321⇑ *i*P **P** 20 09 50.9 +1.1
SKO Skopje 83.31 321 P **P** 20 09 50.8 +1.0
SKO Skopje 83.31 321 P **P** 20 09 50.8 +1.0
LJU Ljubljana 83.31 327⇑ *e*P **P** 20 09 49.5 -0.3
comp=Z,59nm,1.0s
LJU *e*PP **PP** 20 13 03.5 +2.8
LJU *e*PPP PPP 20 14 56.1
LJU *e*S **S** 20 20 08.3 -1.5
Q32A Meitler Ranch, 83.33 44 P **P** 20 09 49.8 -0.2
baz=317,SNR=8.5
WPM1 Penmaenmawr 83.34 341 *e*P **P** 20 09 50.1 +0.4
IVA Berane 83.38 322⇑ *i*P **P** 20 09 50.9 +0.6
GCAM G?zelcaml? 83.42 314 *i* P **P** 20 09 49.3 -1.1
SNF Seneffe 83.42 335 P **P** 20 09 50.3 +0.1
O34A Beatrice 83.44 42 P **P** 20 09 50.2 -0.4
baz=318
M36A Felix, Anita 83.46 40 P **P** 20 09 50.8 +0.1
baz=319,SNR=6.0
P33A Williams Farm, 83.47 43 P **P** 20 09 50.8 +0.1
baz=317,SNR=6.4
L37A Phoenix Point, 83.47 39 P **P** 20 09 50.4 -0.2
baz=319,SNR=10
WATA Walderalm 83.47 329 *i* PcP **P** 20 09 51.5 +0.8
comp=Z,55nm,1.2s,SNR=11
N35A Tabor 83.48 41 P **P** 20 09 51.1 +0.4
baz=318,SNR=7.8
PLG Polygyros 83.49 318 P **P** 20 09 50.6 -0.2
PLG Polygyros 83.49 318 P **P** 20 09 50.6 -0.2
PLG Polygyros 83.49 318 P **P** 20 09 50.6 -0.2
FOEL Foel Wylfa 83.50 340 *e*P **P** 20 09 51.1 +0.5
FOEL AMS AMS 20 52 51.0
comp=Z,10µm,17.7s
HORT Hortiatis 83.50 319 *e*P **P** 20 09 50.2 -0.7
WTTA Wattenberg 83.51 329 *i* P **P** 20 09 51.2 +0.3
comp=Z,51nm,1.2s,SNR=15
YLL Llanberis 83.52 341 *e*P **P** 20 09 51.3 +0.7
WLF Walferdange 83.53 334 P **P** 20 09 51.1 +0.3
comp=Z,72nm,2.6s
WLF Walferdange 83.53 334 *e*P **P** 20 09 51.8 +1.0
WLF MLR MLR
comp=Z,30µm,19.0s
WLF Walferdange 83.53 334 *e*P **P** 20 09 51.8 +1.0
WLF LR LR
comp=Z,30µm,19.0s
LANF Langenberg 83.53 332⇑ *e*P **P** 20 09 51.2 +0.4
K38A Parkersburg 83.55 38 P **P** 20 09 51.0 0.0
baz=320
PVY Plav 83.56 322⇑ *i*P **P** 20 09 51.3 +0.1
ABTA Abfaltersbach 83.58 329 *i* P **P** 20 09 50.6 -0.6
SNR=20
UPM Unac-Piva 83.59 323⇑ *i*P **P** 20 09 51.5 0.0
GRG Griva 83.59 319 *e*P **P** 20 09 51.6 +0.3
JAVS Javornik 83.63 327⇑ *i*P **P** 20 09 50.6 -0.9
comp=Z,326nm,1.5s
JAVS *e*PP **PP** 20 13 04.0 +0.6
JAVS *e*PPP PPP 20 14 57.9
JAVS *e* 20 16 40.2
JAVS *e*S **S** 20 20 11.0 -2.2
comp=Z,35µm,17.8s
MOTA Moosalm 83.65 330 *i* PcP **P** 20 09 53.1 +1.4
comp=Z,91nm,1.0s,SNR=52
RETA Reutte 83.67 330 *i* P **P** 20 09 52.2 +0.6
comp=Z,128nm,1.1s,SNR=52
DOU Dourbes 83.68 335 P **P** 20 09 51.5 0.0
comp=Z,35nm,2.0s
PMOR Pomariorio Ree 83.69 115 *e*T T 21 42 03.5
comp=Z,29nm,0.2s
Q33A Connelly Farm, 83.72 43 P **P** 20 09 51.8 -0.2
baz=317,SNR=9.4
YRE Yr Eifl 83.72 341 *e*P **P** 20 09 51.3 -0.4
HLM1 Long Mynd 83.75 340 *e*P **P** 20 09 52.3 +0.5
O35A Humboldt 83.79 42 P **P** 20 09 52.3 0.0
baz=318
BODT Bodrum 83.83 314 *e*P **P** 20 09 53.2 +0.6
P34A Walnut Farm, R 83.84 43 P **P** 20 09 52.3 -0.3
baz=318,SNR=10
L38A Oak Wood Farm, 83.84 39 P **P** 20 09 52.6 0.0
baz=320,SNR=5.1
NKY Niksic 83.85 322⇑ *i*P **P** 20 09 52.5 -0.2
N36A Muff Farm, Cla 83.86 41 P **P** 20 09 53.5 +0.8
baz=319
M37A Trindle Farm, 83.87 40 P **P** 20 09 53.5 +0.8
baz=319
BFO Black Forest 83.88 332 *e*P **P** 20 09 52.7 0.0
BFO pmax pmax
comp=Z,307nm,1.7s
BFO MLR MLR
comp=Z,16µm,20.0s
BFO Black Forest 83.88 332 *e*P **P** 20 09 52.7 0.0
comp=Z,307nm,1.7s
BFO LR LR
comp=Z,16µm,20.0s
SCIA State Center 83.90 39 *e*P **P** 20 09 54.0 +1.1
SKP1 Kophill 83.90 339 *e*P **P** 20 09 52.4 -0.2
TRI Trieste 83.90 327 *e*P **P** 20 09 52.1 -0.7
TRI Trieste 83.90 327 *e*P **P** 20 09 52.1 -0.7
NKME Niksic 83.90 322⇑ *i*P **P** 20 09 52.6 -0.3
DSB Dublin 83.95 342 *e*P **P** 20 09 53.9 +1.0
SSW Stow on the Wo 83.97 339 *e*P **P** 20 09 53.0 0.0
BKZ Black Stump Fm 83.97 155 *e*P **P** 20 09 54.5 +1.5
BRY Bratogost 83.99 323⇑ *i*P **P** 20 09 53.1 -0.4
PDG Podgorica 84.02 322 P **P** 20 09 53.5 +0.1
TTG Podgorica 84.02 322⇑ *i*P **P** 20 09 53.6 +0.1
TTG Podgorica 84.02 322 P **P** 20 09 53.5 +0.1
TTG Podgorica 84.02 322 P **P** 20 09 53.5 +0.1
MENF Mencas 84.06 336⇑ *e*P **P** 20 09 53.6 +0.2
FETA Feichten 84.06 330 *i* P **P** 20 09 54.2 +0.4
comp=Z,73nm,1.0s,SNR=31
S32A Newby Ranch, P 84.06 45 P **P** 20 09 53.8 0.0
baz=317
BIA Bitola 84.08 320 *i* P **P** 20 09 53.8 -0.1
CEME Cevo 84.09 322⇑ *i*P **P** 20 09 53.7 -0.2
R33A Olander Ranch, 84.14 44 P **P** 20 09 54.2 +0.1
baz=317,SNR=5.4
WLS Welschbruch 84.17 332 *e*P **P** 20 09 54.4 +0.3
DAVA Damuels 84.17 330 *i* PcP **P** 20 09 54.8 +0.4
comp=Z,119nm,1.0s,SNR=35
LIT Litokhoron 84.19 319 P **P** 20 09 54.0 -0.4
LIT Litokhoron 84.19 319 P **P** 20 09 54.0 -0.4
LIT Litokhoron 84.19 319 P **P** 20 09 54.0 -0.4
STRD Stroud 84.23 339 *e*P **P** 20 09 54.9 +0.6
STRD AMB AMB 20 09 55.7
comp=Z,266nm,1.2s
STRD AMS AMS 20 46 50.0
comp=Z,9µm,24.0s
FNA Florina 84.24 320 *e*P **P** 20 09 54.1 -0.6

DRME Dracevica, Mon 84.24 322⇑ *i*P P 20 09 54.8 +0.2
Q34A Chapman 84.24 43 P P 20 09 55.1 +0.4
baz=318
MCH1 Michaelchurch 84.25 340 *e*P P 20 09 54.8 +0.4
MCH1 AMB AMB 20 09 56.4
comp=Z,142nm,1.2s
MCH1 AMS AMS 20 51 37.7
comp=Z,8µm,20.1s
OHR Ohrid 84.28 320 *i* P P 20 09 54.9 +0.1
P35A Duane Minner, 84.28 42 P P 20 09 55.7 +0.8
baz=318
N37A Lee Faris, Mou 84.28 40 P P 20 09 55.2 +0.4
baz=319,SNR=6.5
M38A Pleasantville 84.28 39 P P 20 09 54.9 +0.1
baz=320,SNR=12
KSU1 Kansas State U 84.29 43 P P 20 09 55.3 +0.4
baz=318
BUM Brajici-Budva 84.29 322⇑ *i*P P 20 09 54.8 -0.1
PPT Papeete 84.30 118 LR LR 20 40 07.1
comp=Z,7µm,21.8s,baz=284,slow=30
PPT2 Papeete2 84.32 118 *e*PP PP 20 13 01.3 -9.1
PPT2 comp=Z,539nm,24.8s
*e*S S 20 20 14.4 -6.1
PPT2 comp=Z,9µm,32.5s
*e*SS SS 20 25 50.6 -0.3
comp=Z,2µm,24.0s
PPT2 Papeete2 84.32 118 *e*LR LR 20 36 22.8
comp=Z,14µm,22.5s,baz=316
PPT2 Papeete2 84.32 118 *e*T T 21 42 48.7
comp=Z,10nm,0.3s
HMNX Herstmonceux 84.33 338 *e*P P 20 09 55.6 +0.8
HMNX AMB AMB 20 10 01.4
comp=Z,223nm,1.5s
HMNX AMS AMS 20 48 50.1
comp=Z,17µm,21.0s
MONM Monmouth 84.34 340 *e*P P 20 09 55.2 +0.4
MONM AMB AMB 20 09 56.2
comp=Z,167nm,1.3s
MONM AMS AMS 20 51 52.5
comp=Z,9µm,18.3s
SWN1 Swindon 84.36 339 *e*P P 20 09 55.7 +0.7
SWN1 AMB AMB 20 09 56.6
comp=Z,284nm,1.3s
SWN1 AMS AMS 20 51 38.6
comp=Z,11µm,17.5s
HCY Herceg Novi 84.37 323⇑ *i*P P 20 09 54.8 -0.4
O36A Bolckow 84.37 41 P P 20 09 55.4 +0.2
baz=319,SNR=11
XOR Xorichti 84.37 318 P P 20 09 54.9 -0.4
XOR Xorichti 84.37 318 P P 20 09 54.9 -0.4
EIL Elat 84.38 304 LR LR 20 52 21.7
comp=Z,7µm,18.3s,baz=40,slow=39
ULC Ulcinj 84.38 322⇑ *i*P P 20 09 56.2 +0.9
WOL Wolverton 84.38 339 *e*P P 20 09 53.5 -1.5
WOL AMB AMB 20 10 00.9
comp=Z,175nm,2.0s
WOL AMS AMS 20 48 05.4
comp=Z,11µm,21.6s
ECH Echery 84.40 332⇑ *e*P P 20 09 55.4 +0.1
LPW Lampeter 84.42 341 *e*P P 20 09 55.8 +0.5
LPW AMS AMS 20 53 27.8
comp=Z,10µm,17.2s
T32A Huddler Ranch, 84.45 45 P P 20 09 55.8 +0.1
baz=317,SNR=12
TIAR Tiarei 84.45 118 *e*T T 21 42 58.1
comp=Z,4.1nm,0.3s
FYTO Fytoko, Volos 84.47 318 P P 20 09 55.4 -0.4
FYTO Fytoko, Volos 84.47 318 P P 20 09 55.4 -0.4
AMTX Amarillo 84.53 49 P P 20 09 57.6 +1.2
baz=315
AMTX Amarillo 84.53 49 *e*P P 20 09 57.5 +1.2
MNTX Cornudas Mount 84.54 53 P P 20 09 56.7 +0.4
baz=314,SNR=13
MNTX Cornudas Mount 84.54 53 *e*P P 20 09 57.5 +1.2
MNTX LR LR
comp=Z,4µm,20.0s
MSTX Muleshoe 84.54 50 P P 20 09 56.3 -0.1
baz=315,SNR=14
MSTX Muleshoe 84.54 50 *e*P P 20 09 57.3 +0.9
R34A Isabella, Hill 84.54 44 P P 20 09 57.0 +0.9
baz=318
TIR Tirane 84.55 321 *e*P P 20 09 56.5 +0.3
TIR MLR MLR
comp=Z,22µm,19.0s
TIR Tirane 84.55 321 *e*P P 20 09 56.5 +0.3
TIR LR LR
comp=Z,22µm,19.0s
FUORN Ofenpass-Fuorn 84.57 330 *e*P P 20 09 57.1 +0.6
DAVOX Davos/Dischmat 84.59 330 LR LR 20 51 42.6
comp=Z,27µm,18.4s,baz=24,slow=39
P36A Good Intent, A 84.63 42 P P 20 09 56.8 +0.2
baz=319,SNR=8.1
S33A Kaszmaul Farm, 84.65 45 P P 20 09 57.2 +0.4
baz=317
NEST Nestorio 84.68 320 P P 20 09 56.8 -0.2
MOF Molkenrain 84.72 332⇑ *e*P P 20 09 57.1 +0.1
N38A Joes South For 84.73 40 P P 20 09 57.5 +0.4
baz=320,SNR=11
O37A Wolven Farm, M 84.76 41 P P 20 09 57.7 +0.5
baz=319,SNR=11
Q35A Mercer Eighty, 84.77 43 P P 20 09 58.1 +0.8
baz=318
THEF They Montfort 84.81 333⇑ *e*P P 20 09 57.5 +0.2
T33A Patterson Ranc 84.89 45 P P 20 09 58.9 +0.9
baz=317
U32A Winter Ranch, 84.98 46 P P 20 09 59.8 +1.3
baz=317
Q36A Arnold C. Orve 84.99 42 P P 20 09 58.8 +0.4
baz=319
KARP Karpathos 85.00 313 *e*P P 20 09 59.5 +0.9
KARP Karpathos 85.00 313 *e*P P 20 09 58.8 +0.3
LKR Lokris 85.00 317 P P 20 09 57.4 -1.1
LKR Lokris 85.00 317 P P 20 09 57.4 -1.1
N39A Derby Farms, D 85.03 39 P P 20 09 58.6 0.0
baz=320,SNR=11
S34A Willow Spring 85.05 44 P P 20 09 58.0 -0.8
baz=318
TUE Stuetta 85.05 330 *e*P P 20 09 59.1 +0.2
TUE LR LR
comp=Z,32µm,20.0s
R35A Emporia Munici 85.08 43 P P 20 09 59.2 +0.3
baz=318,SNR=11
P37A Lathrop 85.09 41 P P 20 09 59.1 +0.2
baz=319,SNR=7.1
O38A Galt 85.13 40 P P 20 09 59.5 +0.4
baz=320
TAOE Nuku Hiva Isla 85.19 106 *e*PP PP 20 13 13.6 -3.9
comp=Z,622nm,23.5s
TAOE *e*S S 20 20 22.9 -6.5
comp=Z,7µm,24.2s
TAOE Nuku Hiva Isla 85.19 106 *e*LR LR 20 37 00.9
comp=Z,12µm,21.5s,baz=320
THZ Tophouse 85.25 158 *e*P P 20 10 01.5 +2.2
LOMF Lomont 85.25 332⇑ *e*P P 20 09 59.9 +0.2
SANT Santorini 85.36 314 PFAKE 20 10 10.0 +10
SANT LR LR
comp=Z,10µm,19.0s
VLDQ Val d'Or 85.39 26 *e*P P 20 09 59.3 -0.9
U33A Lingo Farm, Me 85.44 45 P P 20 10 00.8 +0.1
baz=317,SNR=6.6
V32A Arapaho 85.44 46 P P 20 10 00.8 +0.1
baz=317,SNR=14
R36A Gordon, Harris 85.44 43 P P 20 10 01.0 +0.3
baz=319,SNR=24
P38A Dawn 85.47 41 P P 20 10 01.1 +0.3
baz=320,SNR=11
O39A Kirksville 85.49 40 P P 20 10 02.1 +1.2
baz=320
S35A Otter Creek Ra 85.49 44 P P 20 10 01.4 +0.4
baz=318,SNR=30
T34A McClaskey Farm 85.51 44 P P 20 10 01.4 +0.3
baz=318,SNR=11
MEH Mehetia 85.55 117 *e*T T 21 44 20.7
comp=Z,48nm,0.3s
Q37A Longview Farm, 85.57 42 P P 20 10 01.3 0.0
baz=319
DSL Palaion Diasel 85.62 319 P P 20 10 01.4 -0.2
DSL Palaion Diasel 85.62 319 P P 20 10 01.4 -0.2
U34A Anderson Ranch 85.75 45 P P 20 10 02.7 +0.5
baz=318,SNR=9.7
U34A Anderson Ranch 85.75 45 *e*P P 20 10 02.6 +0.3
W32A Sentinel 85.75 47 P P 20 10 03.3 +1.0
baz=317,SNR=15
V33A Lossen Ranch, 85.79 46 P P 20 10 02.5 +0.1
baz=317
R37A Teagarden Farm 85.80 42 P P 20 10 02.5 0.0
baz=319
S36A Lake Cedric, C 85.84 43 P P 20 10 02.9 +0.2
baz=319,SNR=10
SENIN Lac Senin/Sane 85.92 331 *e*P P 20 10 03.4 +0.2
DYA Yadsworthy 85.92 340 *e*P P 20 10 02.7 -0.1
DYA AMB AMB 20 10 03.9
comp=Z,101nm,1.5s
DYA AMS AMS 20 57 53.0
comp=Z,10µm,13.5s
DYA Yadsworthy 85.92 340 *e*P P 20 10 03.6 +0.8
O40A La Belle 85.92 39 P P 20 10 03.1 +0.1
baz=321,SNR=7.0
Q38A Cooks Store, C 85.93 41 P P 20 10 03.3 +0.2
baz=320,SNR=12
T35A Sooner Cattle 85.95 44 P P 20 10 03.5 +0.2
baz=318,SNR=7.2
P39A Salisbury 85.97 40 P P 20 10 03.5 +0.3
baz=320,SNR=5.7
VAL Valentia 86.03 344 *e*P P 20 10 05.1 +1.8
VAL Valentia 86.03 344 *i*/S S 20 20 41.3 +4.8
VAL Valentia 86.03 344⇑ *i*/SS SS 20 26 14.5 +1.6
OG01 Vacheresse 86.17 332⇑ *e*P P 20 10 04.6 +0.3
W33A Caddo, Fort Co 86.17 46 P P 20 10 05.1 +0.7
baz=317
T36A Boggs Farm, Ca 86.18 44 P P 20 10 04.7 +0.3
baz=318,SNR=11
Q39A Willow Grove F 86.19 41 P P 20 10 04.8 +0.4
baz=320
V34A Guthrie 86.20 45 P P 20 10 05.0 +0.5
baz=318
V34A Guthrie 86.20 45 *e*P P 20 10 05.7 +1.2
S37A Fort Scott 86.22 43 P P 20 10 04.6 +0.1
baz=319,SNR=14
LAST Lasithi 86.23 314 P P 20 10 04.5 -0.2
LAST Lasithi 86.23 314 *e*P P 20 10 05.0 +0.3
U35A Pawnee 86.24 45 P P 20 10 05.1 +0.4
baz=318
X32A Elmer 86.24 47 P P 20 10 04.5 -0.3
baz=317,SNR=11
P40A Paris 86.29 40 P P 20 10 05.0 +0.1
baz=320,SNR=16
WMOK Wichita Mounta 86.30 47 *e*P P 20 10 05.9 +0.9
WMOK Wichita Mounta 86.30 47 *e*P P 20 10 05.9 +0.9
R38A Fenwick Farm, 86.37 42 P P 20 10 05.0 -0.3
baz=320,SNR=7.3
OXZ Oxford 86.46 160 *e*P P 20 10 07.4 +2.1
IDI Anoyia 86.46 314 *e*P P 20 10 05.2 -0.7
LPIG La Paz 86.47 62 LR LR 20 40 19.5
comp=Z,2µm,20.7s,baz=304,slow=30
W34A Bridge Creek, 86.50 46 P P 20 10 06.7 +0.7
baz=317
W34A Bridge Creek, 86.50 46 *e*P P 20 10 07.5 +1.5
JQE Queens East 86.51 338 *e*P P 20 10 05.9 +0.2
VLC Villacollemand 86.56 328 PFAKE 20 10 20.0 +14
VLC LR LR
comp=Z,10µm,20.0s
JSA Saint Aubin 86.56 338 *e*P P 20 10 05.9 -0.1
RPZ Rata Peaks 86.56 160 *e*P P 20 10 07.0 +1.2
X33A Lawton 86.60 47 P P 20 10 07.8 +1.3
baz=317
V35A Meyer Ranch, C 86.63 45 P P 20 10 07.1 +0.5
baz=318
T37A Chenevville 18 86.65 43 P P 20 10 06.7 +0.1
baz=319,SNR=10
Q40A Laux Farm, Aux 86.68 40 P P 20 10 07.1 +0.2
baz=320,SNR=12
R39A Chumby, Stover 86.72 41 P P 20 10 06.8 -0.2
baz=320,SNR=18
RSL Roselend 86.74 331⇑ *e*P P 20 10 07.1 -0.1
S38A Stockton 86.79 42 P P 20 10 07.2 -0.2
baz=320,SNR=8.2
HDIL Hopedale 86.82 37 P P 20 10 07.8 +0.3
baz=322
HDIL Hopedale 86.82 37 *e*P P 20 10 08.4 +0.9
comp=Z,24nm,0.6s
Y33A Hilltop Ranch, 86.92 47 P P 20 10 08.0 0.0
baz=317,SNR=12
X34A Smith Ranch, M 86.93 46 P P 20 10 07.6 -0.5
baz=317,SNR=8.7
LBZ Lake Benmore 86.97 161 *e*P P 20 10 10.6 +2.8
SLBS Sierra La Lagu 87.00 62 *e*P P 20 10 10.7 +2.0
T38A Diamond 87.04 43 P P 20 10 08.6 0.0
baz=319,SNR=19
S39A Bolivar 87.05 42 P P 20 10 08.3 -0.4
baz=320,SNR=15
W35A Tecumseh 87.06 46 P P 20 10 09.4 +0.7
baz=318
U37A Salina 87.08 44 P P 20 10 08.6 -0.2
baz=319,SNR=5.2
TUL1 Leonard 87.09 44 P P 20 10 09.3 +0.4
baz=318
TUL1 Leonard 87.09 44 *e*P P 20 10 09.3 +0.4
V36A Jenks 87.10 45 P P 20 10 09.6 +0.7
baz=318
R40A Maddies Statio 87.13 41 P P 20 10 09.4 +0.4
baz=320,SNR=15
TX31 Lajitas Ar. Si 87.24 54 *e*P P 20 10 10.8 +0.9
TXAR Lajitas Array 87.24 54 P P 20 10 10.2 +0.4
comp=Z,5.1nm,0.8s,baz=292,slow=3.4,SNR=48
TXAR PKKPbc PKKPbc 20 28 02.0 +2.8
comp=Z,0.3nm,0.8s,baz=155,slow=6.2,SNR=3.4
TXAR LR LR 20 50 17.0
comp=Z,2µm,18.1s,baz=0.0,slow=36
TXAR Lajitas Array 87.24 54 P P 20 10 10.2 +0.4
TXAR pmax pmax
comp=Z,11nm,1.0s
TXAR MLR MLR
comp=Z,2µm,18.1s
BNI Bardonecchia 87.26 331 PFAKE 20 10 20.0 +10
BNI LR LR
comp=Z,13µm,20.0s
ABTX Abilene, Hawle 87.33 49 P P 20 10 10.6 +0.5
baz=317
ABTX Abilene, Hawle 87.33 49 *e*P P 20 10 10.7 +0.6
GDM Grand'Maison 87.34 331⇑ *e*P P 20 10 10.8 +0.7
Z33A Whitaker Ranch 87.36 48 P P 20 10 11.0 +0.8
baz=317
W36A Wetumka 87.42 45 P P 20 10 10.4 -0.1
baz=318
GRN Grenoble 87.44 332⇑ *e*P P 20 10 11.3 +0.8
U38A Gravette 87.44 43 P P 20 10 10.1 -0.4
baz=319
Y34A Reagan Ranch, 87.44 47 P P 20 10 11.4 +0.8
baz=318
V37A Hulbert 87.46 44 P P 20 10 10.5 -0.2
baz=319,SNR=6.3
T39A Clever 87.53 42 P P 20 10 10.5 -0.4
baz=320
S40A Lebanon 87.54 41 P P 20 10 10.6 -0.4
baz=320,SNR=14
CUC Castrocucco 87.54 323 PFAKE 20 10 20.0 +9.0
CUC LR LR
comp=Z,8µm,19.0s
X35A Drake 87.56 46 P P 20 10 10.8 -0.4
baz=318
PLDF La Plantade 87.57 333 *e*P P 20 10 11.6 +0.5
SADO Sadowa 87.65 29 P P 20 10 10.6 -0.8
comp=Z,3.1nm,0.4s,baz=330,slow=3.3,SNR=5.1
AGO Saint Agoulin 87.67 334⇑ *e*P P 20 10 12.2 +0.7
TIP Timpagrande 87.73 321 PFAKE 20 10 20.0 +8.0
TIP LR LR
comp=Z,17µm,20.0s
DAMY Dhamar 87.74 287 *e*P P 20 10 13.7 +1.1
133A Hamilton Ranch 87.77 49 P P 20 10 12.4 +0.2
baz=317
X36A Centrahoma 87.78 46 P P 20 10 12.4 +0.2
baz=318
Z34A Collier Ranch, 87.78 47 P P 20 10 11.9 -0.3
baz=317
HHAR Hobbs 87.80 43 *e*P P 20 10 12.6 +0.3
SSB Saint Sauveur 87.85 332⇑ *e*P P 20 10 12.8 +0.4
SSB Saint Sauveur 87.85 332 *e*P P 20 10 11.9 -0.5
SSB MLR MLR
comp=Z,10µm,19.0s
SSB Saint Sauveur 87.85 332 *e*P P 20 10 11.9 -0.5
SSB LR LR
comp=Z,10µm,19.0s
W37B Quinton 87.86 45 P P 20 10 13.3 +0.7
baz=319
V38A Canehill 87.86 44 P P 20 10 12.4 -0.2
baz=319,SNR=11
SLM Saint Louis 87.87 39 *e*P P 20 10 13.4 +0.9
SLM Saint Louis 87.87 39 *e*P P 20 10 13.4 +0.9
T40A Mansfield 87.87 42 P P 20 10 12.2 -0.4
baz=320,SNR=11
Y35A Marietta 87.89 46 P P 20 10 13.2 +0.5
baz=318
AAM Ann Arbor 87.92 33 PFAKE 20 10 30.0 +17
AAM LR LR
comp=Z,7µm,20.0s
U39A Green Forest 87.96 43 P P 20 10 12.7 -0.4
baz=320,SNR=17
PYM Petit Puy Mans 87.98 334⇑ *e*P P 20 10 13.7 +0.7
SFIN Lafayette 87.98 36 P P 20 10 14.1 +1.1
baz=324
SFIN Lafayette 87.98 36 *e*P P 20 10 13.2 +0.2
VIVF Saint-Julien-I 88.16 332 P P 20 10 13.6 -0.3
VIVF pmax pmax
comp=Z,72nm,1.4s
OG26 St.-Nazaire-De 88.17 332⇑ *e*P P 20 10 14.3 +0.3
Z35A Perchaven, San 88.19 47 P P 20 10 14.6 +0.5
baz=318
233A Rising Star 88.20 49 P P 20 10 15.6 +1.3
baz=317
134A White-Moore Ra 88.27 48 P P 20 10 15.1 +0.5
baz=317
V39A Pettigrew 88.29 43 P P 20 10 14.0 -0.7
baz=320,SNR=10.0
X37A Clayton 88.30 45 P P 20 10 14.8 +0.2
baz=319
U40A Yellville 88.31 42 P P 20 10 14.2 -0.5
baz=320,SNR=30
Y36A Durant 88.31 46 P P 20 10 16.3 +1.6
baz=318
LBL Lubilhac 88.34 333 *e*P P 20 10 15.4 +0.6
W38A Poteau 88.40 44 P P 20 10 15.2 +0.1
baz=319,SNR=7.0
TBI Tubuai 88.42 122 *e*PP PP 20 13 42.8 -0.6
comp=Z,423nm,25.2s
TBI *e*S S 20 20 54.8 -5.3
comp=Z,5µm,24.5s
TBI *e*SS SS 20 26 46.8 -4.0
comp=Z,909nm,26.2s
TBI Tubuai 88.42 122 *e*LR LR 20 37 49.2
comp=Z,6µm,26.8s,baz=322
TBI Tubuai 88.42 122 *e*T T 21 47 52.5
comp=Z,41nm,0.4s
X38A Whitesboro 88.54 45 P P 20 10 16.1 +0.3
baz=319,SNR=7.3
Y37A Hugo 88.62 46 P P 20 10 16.9 +0.7
baz=319
234A Clairette 88.66 48 P P 20 10 17.7 +1.3
baz=317
333A Richland Sprin 88.66 49 P P 20 10 16.7 +0.2
baz=317,SNR=10
135A Vickery Place, 88.67 48 P P 20 10 16.9 +0.5
baz=318
Z36A Blue Ridge 88.69 47 P P 20 10 16.7 +0.2
baz=318
W39A Magazine 88.70 44 P P 20 10 16.4 -0.1
baz=320
V40A Witts Springs 88.75 43 P P 20 10 17.1 +0.3
baz=320
LMR La Mourre 88.78 330 P P 20 10 17.0 +0.2
LMR pmax pmax
comp=Z,102nm,1.6s
JCT Junction City 88.78 51 P P 20 10 17.6 +0.5
baz=317
JCT Junction City 88.78 51 *e*P P 20 10 17.7 +0.6
JCT Junction City 88.78 51 *e*P P 20 10 17.7 +0.6
OLIL Olney 88.82 38 *e*P P 20 10 18.1 +1.1
433A Art 89.01 50 P P 20 10 18.6 +0.5
baz=317
CAF Calviac 89.02 334 P P 20 10 18.2 +0.3
CAF pmax pmax
comp=Z,93nm,1.3s
X39A Fountain Ranch 89.04 44 P P 20 10 18.7 +0.5
baz=320,SNR=12
WHTX Lake Whitney, 89.06 48 P P 20 10 19.3 +1.0
baz=318
WHTX Lake Whitney, 89.06 48 *e*P P 20 10 19.2 +0.9
comp=Z,30nm,0.9s
W40A Ferguson Farm, 89.08 43 P P 20 10 18.5 +0.1
baz=320
334A Lometa 89.09 49 P P 20 10 18.7 +0.2
baz=317,SNR=17
SIUC Southern Illin 89.09 39 *e*P P 20 10 19.3 +1.0
Z37A Pogue Cattle C 89.20 46 P P 20 10 19.7 +0.7
baz=319
136A Ennis 89.23 47 P P 20 10 20.4 +1.3
baz=318
MIAR Mount Ida 89.31 44 P P 20 10 19.1 -0.4
baz=320,SNR=14
MIAR Mount Ida 89.31 44 *e*P P 20 10 19.0 -0.4
MIAR Mount Ida 89.31 44 *e*P P 20 10 19.0 -0.4
X201 Greenbrier Sit 89.38 43 *e*P P 20 10 20.2 +0.5
X301 Greenbrier Sit 89.40 43 *e*P P 20 10 20.2 +0.4
WHAR Wooly Hollow 89.42 43 *e*P P 20 10 19.9 0.0
434A Burnet 89.45 49 P P 20 10 20.4 +0.2
baz=317
LFF La Frestale 89.45 335 P P 20 10 20.1 +0.2
LFF pmax pmax
comp=Z,88nm,1.2s
Y39A Lockesburg 89.49 45 P P 20 10 20.4 +0.2
baz=320
W41B Gary Mavity, V 89.53 43 P P 20 10 20.3 -0.1
baz=320
W41A Tony Mavity, V 89.53 43 P P 20 10 21.1 +0.7
baz=320
ERPA Erie 89.58 31 *e*P P 20 10 21.6 +1.1
335A Moody 89.59 48 P P 20 10 20.5 -0.3
baz=318
PARMO Parma 89.65 40 *e*P P 20 10 22.4 +1.5
X40A Basin Creek Fa 89.75 43 P P 20 10 21.9 +0.4
baz=320
UALR University of 89.78 43 *e*P P 20 10 26.8 +5.2
336A Riesel 89.85 48 P P 20 10 22.8 +0.8
baz=318
MMNY Mt. Morris Dam 89.86 29 *e*P P 20 10 22.6 +0.8
Y40A Okolona 89.87 44 P P 20 10 22.2 +0.1
baz=320
435B Jarrell 89.87 49 P P 20 10 22.6 +0.5
baz=318
633A Saathoff Ranch 89.89 51 P P 20 10 22.5 +0.2
baz=317
534A Blanco 89.90 50 P P 20 10 22.2 -0.1
baz=317,SNR=12
ALLY Alegheny Colle 89.91 31 *e*P P 20 10 23.2 +1.0
ACSO Alum Creek Sta 89.92 34 *e*P P 20 10 22.8 +0.6
ACSO LR LR
comp=Z,7µm,19.0s
NCB Newcomb 90.11 26 PFAKE 20 10 40.0 +17
NCB LR LR
comp=Z,10µm,20.0s
WLAR White Oak Lake 90.21 44 *e*P P 20 10 24.9 +1.3
M54A Oil Creek Stat 90.22 31 P P 20 10 23.7 +0.1
baz=328
436A Wall Ranch, Ga 90.34 48 P P 20 10 24.5 +0.2
baz=318
733A Divot King Ran 90.36 51 P P 20 10 25.2 +0.8
baz=317
N54A Moraine State 90.56 31 P P 20 10 25.6 +0.4
baz=328
CLTB Caltabellotta 90.69 323 PFAKE 20 10 40.0 +14
CLTB LR LR
comp=Z,8µm,20.0s
536A Bastrop 90.69 49 P P 20 10 25.9 0.0
baz=318
ACCN Adirondack Com 90.81 26 *e*P P 20 10 27.2 +0.9
VSL Villasalto 90.84 326 PFAKE 20 10 40.0 +13
VSL LR LR
comp=Z,11µm,20.0s
ATD Arta Tunnel 90.84 286 LR LR 20 54 04.6
comp=Z,4µm,21.5s,slow=38
WVT Waverly 91.02 39 *e*P P 20 10 28.1 +0.8
WVT Waverly 91.02 39 *e*P P 20 10 28.1 +0.8
BINY Binghamton 91.03 28 *e*P P 20 10 28.2 +0.8
BINY LR LR
comp=Z,9µm,19.0s
636A Smothers Creek 91.14 49 P P 20 10 29.1 +1.1
baz=318
933A Laredo 91.17 52 P P 20 10 29.3 +1.1
baz=317,SNR=7.2
WDD Wied Dalam 91.44 321 PFAKE 20 10 40.0 +11
WDD LR LR
comp=Z,11µm,19.0s
HKT Hockley 91.50 48 *e*P P 20 10 30.9 +1.3
HKT Hockley 91.50 48 *e*P P 20 10 30.9 +1.3
OXF Oxford 91.51 41 *e*P P 20 10 30.4 +0.7
OXF Oxford 91.51 41 *e*P P 20 10 30.4 +0.7
VIEF Viey 91.52 334⇑ *e*P P 20 10 30.6 +0.9
736A Circle Diamond 91.52 50 P P 20 10 31.7 +1.9

	baz=318						
KSPA	**Keystone Colle**	**91.67**	**28**	*e*P	**P**	**20 10 31.1 +0.9**
O56A	**Blue Knob Stat**	**91.71**	**31**	P	**P**	**20 10 31.5 +0.9**
	baz=329						
034A	**Hebbronville**	**91.93**	**52**	P	**P**	**20 10 33.1 +1.4**
	baz=317						
N59A	**State Game Lan**	**92.23**	**29**	P	**P**	**20 10 33.5 +0.6**
	baz=331						
SWET	**Sewanee**	**92.67**	**39**	*e*P	**P**	**20 10 35.4 +0.3**
BLA	**Blacksburg**	**93.54**	**34**	PFAKE		
BLA				LR	LR	20 10 50.0 +11
	comp=Z,8µm,21.0s					
CBN	**Corbin Frederi**	**93.96**	**31**	PFAKE		
CBN				LR	LR	20 10 50.0 +9.1
	comp=Z,10µm,19.0s					
KEST	**Kesra**	**93.98**	**324**	P	**P**	**20 10 40.4 -0.8**
	comp=Z,7.9nm,1.0s,baz=334,slow=6.2,SNR=4.4					
KEST				LR	LR	20 58 04.3
	comp=Z,22µm,18.4s,baz=328,slow=39					
PBRG	**Braganca**	**94.61**	**338**	*e*P	**P**	**20 10 43.7 -0.2**
PBRG	**Braganca**	**94.61**	**338**	*e*PP	PP	20 14 32.7 +1.8
PBRG				*e*SKS	**SKSac**	**20 21 20.6 +1.9**
PBRG				*e*SS	**SS**	**20 28 27.4 +10**
KMSC	**Kings Mountain**	**94.87**	**35**	P	**P**	**20 10 45.6 +0.4**
	baz=327						
PGAV	**Gavieira, Arco**	**94.89**	**339**	*e*P	P	20 10 36.0 -9.2
	comp=Z,38nm,1.6s						
PGAV	**Gavieira, Arco**	**94.89**	**339**	*e*PP	PP	20 14 29.3 -3.8
PGAV				*e*SKS	**SKSac**	**20 21 20.9 +0.6**
PGAV				*e*SS	**SS**	**20 28 25.8 +4.4**
PGAV	**Gavieira, Arco**	**94.89**	**339**	*e*LQ	LQ	20 40 10.5
PGAV				*e*LR	LR	20 46 36.5
	comp=Z,5µm,18.0s						
PCAB	**Cabril**	**95.06**	**339**	*e*P	**P**	**20 10 48.3 +2.4**
	comp=Z,42nm,1.8s						
PCAB	**Cabril**	**95.06**	**339**	*e*PP	PP	20 14 40.5 +6.2
MVO	**Moncorvo**	**95.28**	**338**	*e*P	**P**	**20 10 47.3 +0.3**
	comp=Z,31nm,1.6s						
MVO	**Moncorvo**	**95.28**	**338**	*e*PP	PP	20 14 39.0 +2.9
MVO				*e*SKS	**SKSac**	**20 21 28.0 +5.6**
MVO				*e*SS	**SS**	**20 28 33.9 +6.9**
MVO	**Moncorvo**	**95.28**	**338**	*e*LQ	LQ	20 41 02.9
MVO				*e*LR	LR	20 48 14.4
	comp=Z,14µm,18.0s						
POLO	**Lamas de Olo**	**95.31**	**339**	*e*P	**P**	**20 10 49.0 +1.8**
	comp=Z,17nm,1.4s						
POLO	**Lamas de Olo**	**95.31**	**339**	*e*PP	PP	20 14 40.2 +3.9
POLO	**Lamas de Olo**	**95.31**	**339**	*e*SS	SS	20 28 35.7 +8.3
GOGA	**Godfrey**	**95.32**	**38**	PFAKE		20 11 00.0 +13
GOGA				LR	LR	
	comp=Z,6µm,19.0s						
BRAL	**Brewton**	**95.36**	**42**	PFAKE		
BRAL				LR	LR	20 11 00.0 +13
	comp=Z,6µm,20.0s						
PVRL	**Vila Real**	**95.38**	**339**	*e*P	**P**	**20 10 47.6 +0.2**
	comp=Z,39nm,2.0s						
PVRL	**Vila Real**	**95.38**	**339**	*e*PP	PP	20 14 43.6 +6.8
FURI	**Furi**	**95.66**	**286**	P	**P**	**20 10 49.3 -0.2**
FURI				S	**SKSac**	**20 21 30.3 +4.7**
ESDC	**Sonseca Array**	**95.71**	**335**	P	**P**	**20 10 48.4 -0.6**
	comp=Z,5.0nm,1.0s,baz=22,slow=4.1,SNR=14						
ESDC				PP	**PP**	**20 14 33.1 -6.4**
	comp=Z,7.1nm,1.0s,baz=25,slow=6.8,SNR=4.7						
ESDC				LR	LR	20 59 40.5
	comp=Z,13µm,18.5s,baz=30,slow=39						
PVIS	**Viseu**	**95.95**	**339**	*e*P	**P**	**20 10 50.2 +0.2**
PVIS	**Viseu**	**95.95**	**339**	*e*PP	PP	20 14 42.6 +1.4
MTE	**Manteigas**	**96.14**	**338**	*e*P	**P**	**20 10 51.2 +0.3**
	comp=Z,26nm,1.2s						
MTE	**Manteigas**	**96.14**	**338**	*e*PP	PP	20 14 45.4 +2.6
MTE				*e*SKS	**SKSac**	**20 21 28.4 +1.5**
MTE				*e*SS	**SS**	**20 28 43.0 +3.9**
MTE	**Manteigas**	**96.14**	**338**	*e*LQ	LQ	20 40 42.5
MTE				*e*LR	LR	20 47 21.2
	comp=Z,14µm,18.0s						
MTE	**Manteigas**	**96.14**	**338**	PFAKE		20 11 00.0 +9.1
MTE				LR	LR	
	comp=Z,9µm,20.0s						
CNNC	**Cliffs of the**	**96.29**	**33**	PFAKE		20 11 00.0 +8.4
CNNC				LR	LR	
	comp=Z,9µm,19.0s						
PCBR	**Castelo Branco**	**96.64**	**338**	*e*PP	PP	20 14 46.6 +0.1
PCAS	**Casmilo, Conde**	**96.73**	**339**	*e*P	**P**	**20 10 57.5 +4.0**
PCAS	**Casmilo, Conde**	**96.73**	**339**	*e*PP	PP	20 14 51.7 +4.4
PCAS				*e*SKS	**SKSac**	**20 21 35.6 +5.7**
PCAS				*e*SS	**SS**	**20 28 54.2 +6.8**
PMRV	**Marv??o**	**96.99**	**338**	*e*P	**P**	**20 10 57.0 +2.2**
PMRV	**Marv??o**	**96.99**	**338**	*e*PP	PP	20 14 51.7 +2.4
PMRV				*e*SKS	**SKSac**	**20 21 36.9 +5.6**
PMRV				*e*SS	**SS**	**20 28 55.3 +4.2**
PMRV	**Marv??o**	**96.99**	**338**	*e*LQ	LQ	20 43 06.1
PMRV				*e*LR	LR	20 48 37.7
	comp=Z,11µm,20.0s						
NHSC	**New Hope**	**97.10**	**36**	PFAKE		20 11 10.0 +15
NHSC				LR	LR	
	comp=Z,8µm,20.0s						
PTOM	**Tomar**	**97.11**	**339**	*e*P	Pdif	20 10 58.2 +2.9
PTOM	**Tomar**	**97.11**	**339**	*e*PP	PP	20 14 48.8 -1.4
PMTG	**Montargil**	**97.57**	**338**	*e*P	**P**	**20 10 56.8 -0.5**
PMTG	**Montargil**	**97.57**	**338**	*e*PP	PP	20 14 56.4 +2.7
PMTG				*e*SKS	**SKSac**	**20 21 37.0 +2.8**
PMTG				*e*SS	**SS**	**20 29 06.5 +7.3**
PESTR	**Estremoz**	**97.57**	**338**	*e*P	**P**	**20 10 57.1 -0.3**
PESTR	**Estremoz**	**97.57**	**338**	*e*PP	PP	20 14 51.8 -2.0
PESTR				*e*SKS	**SKSac**	**20 21 38.8 +4.5**
PESTR				*e*SS	**SS**	**20 29 05.4 +6.1**
PMAFR	**Mafra**	**97.97**	**339**	*e*P	Pdif	20 11 00.0 +0.8
PMAFR	**Mafra**	**97.97**	**339**	*e*PP	PP	20 14 58.4 +1.6
PMAFR				*e*SKS	**SKSac**	**20 21 39.4 +3.1**
PMAFR				*e*SS	SS	20 29 18.0 +13
EVO	**Evora**	**98.00**	**338**	*e*P	Pdif	20 11 00.4 +1.1
EVO	**Evora**	**98.00**	**338**	*e*PP	PP	20 14 58.6 +1.5
PBAR	**Barrancos**	**98.05**	**337**	*e*P	**P**	**20 10 59.1 -0.4**
PBAR	**Barrancos**	**98.05**	**337**	*e*PP	PP	20 14 58.0 +0.6
PBAR				*e*SKS	**SKSac**	**20 21 39.2 +2.5**
PBAR				*e*SS	SS	20 29 19.4 +13
PMST	**Lisbon--Monsan**	**98.15**	**339**	*e*P	Pdif	20 11 01.3 +1.3
PMST	**Lisbon--Monsan**	**98.15**	**339**	*e*PP	PP	20 15 07.2 +9.1
LIS	**Lisbon**	**98.16**	**339**	*e*P	Pdif	20 11 00.4 +0.4
LIS				*e*S	**SKSac**	**20 21 38.0 +0.8**
LIS				AMS	AMS	20 56 25.0
	comp=E,15µm,20.3s						
LIS	**Lisbon**	**98.16**	**339**	*e*P	Pdif	20 11 00.3 +0.3
LIS				*e*S	**SKSac**	**20 21 37.9 +0.8**
RKT	**Rikitea**	**98.18**	**113**	*e*PP	PP	20 14 59.4 -0.6
	comp=E,501nm,26.5s						
RKT				*e*SKSac	**SKSac**	**20 21 33.0 -4.3**
	comp=E,4µm,26.2s						
RKT	**Rikitea**	**98.18**	**113**	*e*PS	PS	20 23 49.8 -3.3
	comp=E,2µm,29.5s						
RKT				*e*SS	SS	20 29 09.9 -0.7
	comp=E,3µm,26.0s						
RKT	**Rikitea**	**98.18**	**113**	*e*LR	LR	20 42 39.5
	comp=E,7µm,24.5s,baz=308						
PBEJ	**Beja**	**98.43**	**338**	*e*P	Pdif	20 11 01.5 +0.3
PBEJ	**Beja**	**98.43**	**338**	*e*PP	PP	20 15 04.1 +3.8
PNCL	**Nicolau / Gran**	**98.54**	**338**	*e*P	**P**	**20 11 00.4 -1.3**
PNCL	**Nicolau / Gran**	**98.54**	**338**	*e*PP	PP	20 15 03.7 +2.5
PNCL				*e*SKS	**SKSac**	**20 21 45.2 +6.0**
PNCL				*e*SS	**SS**	**20 29 19.3 +6.4**
MESJ	**Messejana**	**98.71**	**338**	*e*P	Pdif	20 11 03.4 +0.9
MESJ				*e*S	**SKSac**	**20 21 41.0 +1.0**
MESJ				AMS	AMS	20 56 28.5
	comp=E,12µm,19.7s						
MESJ	**Messejana**	**98.71**	**338**	*e*P	Pdif	20 11 07.8 +5.3
MESJ	**Messejana**	**98.71**	**338**	*e*PP	PP	20 15 02.4 0.0
MESJ	**Messejana**	**98.71**	**338**	*e*P	Pdif	20 11 03.3 +0.8
MESJ				*e*S	**SKSac**	**20 21 41.0 +1.0**
PCVE	**Castro Verde**	**98.85**	**338**	*e*P	Pdif	20 11 03.4 +0.3
PCVE	**Castro Verde**	**98.85**	**338**	*e*PP	PP	20 15 05.0 +1.5
PCVE				*e*SKS	**SKSac**	**20 21 43.7 +3.0**
PVAQ	**Vaqueiros**	**98.96**	**337**	*e*P	Pdif	20 11 04.0 +0.4
PVAQ	**Vaqueiros**	**98.96**	**337**	*e*PP	PP	20 15 07.2 +2.8
PVAQ				*e*SKS	**SKSac**	**20 21 43.9 +2.6**
PVAQ				*e*SS	**SS**	**20 29 25.3 +6.5**
PVAQ	**Vaqueiros**	**98.96**	**337**	*e*LQ	LQ	20 43 22.3
PVAQ				*e*LR	LR	20 47 31.6
	comp=E,24µm,18.0s						
PBDV	**Barranco-do-Ve**	**99.17**	**337**	*e*P	**Pdif**	**20 11 10.1 +5.5**
PBDV	**Barranco-do-Ve**	**99.17**	**337**	*e*PP	PP	20 15 08.9 +2.8
PBDV				*e*SKS	**SKSac**	**20 21 47.7 +5.2**
PBDV				*e*SS	**SS**	**20 29 32.3 +10**
MORF	**Marmelete**	**99.33**	**338**	*e*P	**Pdif**	**20 11 05.5 +0.1**
MORF				*e*S	**SKSac**	**20 21 44.0 +0.8**
MORF				AMS	AMS	20 56 53.7
	comp=E,20µm,22.3s						
MORF	**Marmelete**	**99.33**	**338**	*e*P	**Pdif**	**20 11 07.0 +1.7**
MORF	**Marmelete**	**99.33**	**338**	*e*PP	PP	20 15 07.2 -0.1
MORF				*e*SKS	**SKSac**	**20 21 47.5 +4.2**
MORF				*e*SS	**SS**	**20 29 32.5 +8.5**
MORF	**Marmelete**	**99.33**	**338**	*e*P	**Pdif**	**20 11 05.4 +0.1**
MORF				*e*S	**SKSac**	**20 21 44.0 +0.8**
PFVI	**Vila Bisbo**	**99.54**	**338**	*e*P	**Pdif**	**20 11 10.2 +4.0**
PFVI	**Vila Bisbo**	**99.54**	**338**	*e*PP	PP	20 15 11.2 +2.4
CMLA	**Cha da Macela**	**102.38**	**351**	PFAKE		20 11 30.0 +11
CMLA				LR	LR	
	comp=Z,4µm,20.0s						
KMBO	**Kilima Mbogo**	**103.26**	**280**	Pdiff	**Pdif**	**20 11 23.1 -0.3**
	comp=Z,5.4nm,0.8s,baz=33,slow=9.0,SNR=9.6						
KMBO				PP	**PP**	**20 15 34.1 -4.5**
	comp=Z,3.4nm,0.7s,baz=50,slow=6.6,SNR=3.4						
BBSR	**BB Station**	**103.76**	**24**	PFAKE		20 11 40.0 +15
BBSR				LR	LR	
	comp=Z,4µm,20.0s						
PMOZ	**Porto Moniz, M**	**105.78**	**343**	*e*P	**Pdif**	**20 11 37.3 +3.1**
PMOZ	**Porto Moniz, M**	**105.78**	**343**	*e*PP	PP	20 16 01.7 +6.0
PMOZ	**Porto Moniz, M**	**105.78**	**343**	*e*LR	LR	20 50 09.9
	comp=Z,4µm,18.0s						
TAM	**Tamanrasset**	**106.61**	**320**	PFAKE		20 16 00.0
TAM				LR	LR	
	comp=Z,5µm,20.0s						
CASY	**Casey**	**108.56**	**193**	PFAKE		20 16 00.0
CASY				LR	LR	
	comp=Z,285nm,19.0s						
JTS	**JuntasAbangare**	**113.03**	**53**	PFAKE		20 16 10.0
JTS				LR	LR	
	comp=Z,2µm,20.0s						
TORD	**Torodi Ar. Bea**	**116.66**	**318**	PKP	**PKPdf**	**20 16 06.8 -0.9**
	comp=Z,3.4nm,0.9s,baz=27,slow=2.0,SNR=11						
TORD				PP	**PP**	**20 17 11.6 -2.9**
	comp=Z,25nm,1.1s,baz=26,slow=6.3,SNR=7.2						
TORD				PKKPbc	**PKKPbc**	**20 26 35.2 +1.8**
	comp=Z,1.9nm,0.9s,baz=224,slow=2.4,SNR=5.4						
BCIP	**Isla Barro Col**	**117.00**	**50**	PFAKE		20 16 20.0 +12
BCIP				LR	LR	
	comp=Z,3µm,19.0s						
VNDA	**Vanda**	**117.38**	**176**	PKP	**PKPdf**	**20 16 06.5 -0.6**
	comp=Z,2.3nm,0.8s,baz=311,slow=4.1,SNR=7.9						
VNDA				PKKPbc	**PKKPbc**	**20 26 35.5 +3.5**
	comp=Z,2.3nm,1.0s,baz=192,slow=5.4,SNR=4.0						
VNDA	**Vanda**	**117.38**	**176**	PKIKP	**PKPdf**	**20 16 06.6 -0.6**
VNDA				pmax	pmax	
	comp=Z,2.0nm,0.8s						
VNDA				pmax	pmax	
	comp=Z,2.0nm,1.0s						
ANWB	**Willy Bob**	**118.32**	**28**	PFAKE		20 16 20.0 +9.2
ANWB				LR	LR	
	comp=Z,3µm,21.0s						
LSZ	**Lusaka**	**119.06**	**274**	*e*PKIKP	**PKPdf**	**20 16 12.4 0.0**
LSZ	**Lusaka**	**119.06**	**274**	*e*PKPdf	**PKPdf**	**20 16 12.4 0.0**
RPN	**Rapa Nui**	**119.37**	**102**	PFAKE		20 16 30.0 +18
RPN				LR	LR	
	comp=Z,727µm,19.0s						
FDF	**Fort de France**	**121.25**	**28**	PFAKE		20 16 30.0 +13
FDF				LR	LR	
	comp=Z,5µm,20.0s						
SDV	**Santo Domingo**	**122.29**	**41**	*e*PKPdf	**PKPdf**	**20 16 18.4 -0.4**
MAW	**Mawson**	**122.57**	**207**	PKP	**PKPdf**	**20 16 17.1 -0.2**
	comp=Z,4.8nm,0.8s,baz=345,slow=3.1,SNR=5.4						
BBGH	**Gun Hill**	**123.29**	**27**	PFAKE		20 16 30.0 +10
BBGH				LR	LR	
	comp=Z,5µm,22.0s						
GRGR	**Grenville**	**123.45**	**30**	PFAKE		20 16 30.0 +9.2
GRGR				LR	LR	
	comp=Z,5µm,20.0s						
ROSC	**El Rosal**	**123.68**	**47**	PKP	**PKPdf**	**20 16 20.1 -1.6**
	comp=Z,4.4nm,0.4s,baz=231,slow=14,SNR=3.2						
OTAV	**Otavalo**	**124.86**	**55**	*e*PKPdf	**PKPdf**	**20 16 22.4 -1.7**
DBIC	**Dimbokro**	**125.50**	**320**	PKP	**PKPdf**	**20 16 23.8 -0.9**
	comp=Z,8.7nm,0.9s,baz=293,slow=2.0,SNR=11						
DBIC				PP	**PP**	**20 18 12.4 -2.4**
	comp=Z,23nm,1.1s,baz=16,slow=6.8,SNR=7.2						
TIC	**Toumodi**	**125.60**	**320**	*e*PKIKP	**PKPdf**	**20 16 24.1 -0.8**
KIC	**Kosan Boka**	**125.71**	**320**	*e*PKIKP	**PKPdf**	**20 16 24.5 -0.6**
	comp=Z,31nm,1.1s						
LIC	**Lamto**	**125.97**	**320**	*e*PKIKP	**PKPdf**	**20 16 24.8 -0.8**
	comp=Z,24nm,1.1s						
BOSA	**Boshof**	**128.65**	**262**	PKP	**PKPdf**	**20 16 28.5 -1.9**
	comp=Z,2.9nm,0.8s,baz=53,slow=5.1,SNR=2.9						
BOSA				PP	**PP**	**20 18 36.1 -0.7**
	comp=Z,12nm,1.1s,baz=24,slow=6.5,SNR=3.2						
TSUM	**Tsumeb**	**129.53**	**277**	*e*P	**PKPdf**	**20 16 30.8 -1.6**
SYO	**Syowa Base**	**131.24**	**208**	‖*e*PKPdf	pPKPdf	20 16 45.4 +6.0
SUR	**Sutherland**	**133.79**	**260**	PFAKE		20 16 50.0 +10
SUR				LR	LR	
	comp=Z,5µm,20.0s						
NNA	**Nana**	**134.97**	**64**	PFAKE		20 17 00.0 +17
NNA				LR	LR	
	comp=Z,2µm,20.0s						
NVL	**N'lazarevskaya**	**140.29**	**203**	*e*PKHKP	PKPpre	20 16 44.1
NVL				MLR	MLR	
	comp=Z,4µm,26.0s						
SAML	**Samuel**	**141.25**	**45**	*e*PKPpre	PKPpre	20 16 49.9
ASCN	**Ascension**	**142.78**	**322**	PFAKE		20 17 10.0 +13
ASCN				LR	LR	
	comp=Z,4µm,20.0s						
SNAA	**Sanae**	**143.68**	**197**	PKP	PKPab	20 16 53.6 0.0
SNAA	**Sanae**	**143.68**	**197**	*e*PKHKP	PKPab	20 16 53.4 -0.2
SNAA	**Sanae**	**143.68**	**197**	*e*PKPpre	PKPab	20 16 53.4 -0.2
LPAZ	**La Paz**	**143.94**	**59**	PKP	PKPbc	20 16 57.5 +0.2
	comp=Z,4.0nm,0.8s,baz=339,slow=4.3,SNR=8.8						
SHEL	**Horse Pasture**	**144.36**	**303**	*e*PKIKP	PKPbc	20 16 58.8 +0.8
SHEL				MLR	MLR	
	comp=Z,2µm,20.0s						
SHEL	**Horse Pasture**	**144.36**	**303**	*e*PKPdf	PKPbc	20 16 58.8 +0.8
SHEL				LR	LR	
	comp=Z,2µm,20.0s						
VNA2	**Neumayer--Watz**	**145.24**	**196**	PKP	**PKPbc**	**20 16 59.0 -0.2**
	baz=107,slow=3.2						
VNA3	**Neumayer Olymp**	**145.46**	**195**	PKP	**PKPdf**	**20 16 58.6 -1.2**
VNA1	**Neumayer--Stat**	**145.63**	**196**	PKP	**PKPdf**	**20 17 00.4 +0.3**
RCBR	**Riachuelo**	**146.39**	**359**	*e*PKPdf	**PKPbc**	**20 17 04.6 +0.1**
LCO	**Las Campanas**	**149.96**	**80**	*e*PKPdf	**PKPbc**	**20 17 13.9 0.0**
PLCA	**Paso Flores**	**154.00**	**104**	PKPbc	**PKPbc**	**20 17 23.4 +1.0**
	comp=Z,9.9nm,1.0s,baz=299,slow=5.8,SNR=6.6						
BDFB	**Brasilia**	**154.08**	**26**	PKPbc	**PKPbc**	**20 17 23.8 +0.4**
	comp=Z,15nm,0.8s,baz=358,slow=1.5,SNR=15						
CPUP	**Villa Florida**	**158.11**	**59**	PKP	**PKPdf**	**20 17 20.1 0.0**
	comp=Z,4.2nm,1.1s,baz=20,slow=1.3,SNR=3.5						
EFI	**East Falkland**	**160.73**	**136**	PFAKE		20 17 30.0 +7.7
EFI				LR	LR	
	comp=Z,6µm,19.0s						
SPB	**Sao Paulo**	**161.53**	**34**	PFAKE		20 17 40.0 +16
SPB				LR	LR	
	comp=Z,3µm,19.0s						
LPA	**La Plata**	**162.27**	**81**	*ce*PKP	**PKPab**	**20 18 16.0 +4.3**
LPA				SKIKP		20 20 57.0
LPA				pPP		20 22 02.0
LPA				SKIKS		20 24 32.0
HOPE	**Hope Point**	**165.30**	**180**	PFAKE		20 17 40.0 +13
HOPE				LR	LR	
	comp=Z,3µm,20.0s						

JMA 13 20:01:00.5±0.2, 39.64N×143.68E, h23km, M4.5, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JTH	**Tanohata**	**1.43**	**283**	P	Pn	20 01 25.3	+0.3
JTH				*e*S	Sb	20 01 44.1	-0.2
MIYJ	**Miyakonagasawa**	**1.44**	**268**	P	Pn	20 01 25.8	+0.7
MIYJ				*e*S	Sb	20 01 43.9	-0.6
OFUJ	**Ofunato**	**1.66**	**251**	P	Pn	20 01 28.4	+0.3
OFUJ				S	Sb	20 01 50.1	-0.6
JANG	**Nango**	**1.82**	**294**	*e*S	Sn	20 01 53.0	+0.3
JOM	**Ohasama**	**1.85**	**266**	P	Pn	20 01 31.7	+0.8
JOM				*e*S	Sb	20 01 55.2	-1.2
JMK	**Ichinoseki**	**2.03**	**251**	*e*S	Sn	20 01 59.1	+1.2

*IDC **13** 20:02:28.8±0.6, 39.57N×143.37E, h0km, mb4.7/29, mb1 4.8/33, mb1mx4.7/51, mbtmp4.7/33, ML4.3/4, Error ellipse: s-maj=15.4km s-min=12.3km az=122.0*
*ISCJB **13** 20:02:29.7±1.1, 39.52N±0.03×143.51E±0.04, h19km±7km, mb4.8/41, Error ellipse: s-maj=6.5km s-min=4.7km az=139.6*

*JMA **13** 20:02:29.9±0.2, 39.57N×143.48E, h15km, M5.3*
JMA Felt II J1.
*BJI **13** 20:02:30.0, 39.90N×143.10E, h5km, mb5.3/16, mB5.6/8, Ms5.8/1, Ms7 5.5/3*
*NEIC **13** 20:02:31.0±3.2, 39.57N×143.41E, h15km±20km, mb5.0/3, Error ellipse: s-maj=9.3km s-min=6.2km az=115.0*
*MOS **13** 20:02:30.9±1.0, 39.56N×143.47E, h26km, mb5.0/26, Error ellipse: s-maj=9.8km s-min=6.8km az=85.7*

ISC 13 20:02:30.3±2.3, 39.54N±0.04×143.49E±0.04, h15km±14km, n93, σ2s09/108, mb4.9/41, 7C-2D, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MIYJ	**Miyakonagasawa**	**1.29**	**272**	⇑P	**Pn**	**20 02 53.4**	**-0.4**
MIYJ				S	**Sb**	**20 03 09.3**	**-1.5**
JTH	**Tanohata**	**1.32**	**288**	P	**Pn**	**20 02 53.3**	**-0.9**
JTH				*e*S	**Sb**	**20 03 09.7**	**-1.7**
OFUJ	**Ofunato**	**1.49**	**252**	P	**Pn**	**20 02 56.0**	**-0.5**
OFUJ				S	**Sn**	**20 03 14.6**	**-1.1**
JOM	**Ohasama**	**1.70**	**268**	P	**Pn**	**20 02 59.4**	**-0.1**
JOM				*e*S	**Sb**	**20 03 21.3**	**-1.3**
JANG	**Nango**	**1.73**	**299**	P	**Pn**	**20 02 58.9**	**-1.0**
JMK	**Ichinoseki**	**1.86**	**252**	P	**Pn**	**20 03 01.8**	**+0.2**
JIO	**Ouri**	**1.99**	**238**	P	**Pn**	**20 03 03.4**	**0.0**
JIO				*e*S	**Sn**	**20 03 28.0**	**-0.1**
JRG	**Rokugo**	**2.22**	**267**	P	**Pb**	**20 03 07.8**	**-2.3**
JTM	**Tenmabayashi**	**2.23**	**305**	P	**Pn**	**20 03 06.9**	**+0.1**
JTM				*e*S	**Sb**	**20 03 35.2**	**-2.6**
JYK	**Kaneyama**	**2.51**	**257**	P	**Pn**	**20 03 10.7**	**+0.1**
JYK				S	**Sn**	**20 03 39.7**	**-1.3**
JOT	**Ohata**	**2.62**	**315**	*e*S	**Sb**	**20 03 45.4**	**-3.4**
ASAJ	**Asahikawa**	**4.62**	**352**	Pn	**Pn**	**20 03 40.2**	**+0.7**
	7.6nm,0.3s,baz=175,slow=11,SNR=3.0						
ASAJ				Sn	**Sn**	**20 04 31.4**	**-1.5**
	6.9nm,0.3s,baz=297,slow=18,SNR=2.6						
YUK	**Yuzh-Kuril'sk**	**4.82**	**21**	*e*P	**Pn**	**20 03 45.1**	**+2.8**
YUK				*e*S	**Sn**	**20 04 32.8**	**-5.1**
YUK				pmax	pmax		
	comp=N,167nm,0.3s						
YUK				pmax	pmax		
	comp=Z,381nm,0.3s						
YUK				MLR	MLR		
	comp=Z,85µm,12.0s						
YUK				MLR	MLR		
	comp=E,41µm,11.0s						
YUK				MLR	MLR		
	comp=N,81µm,10.0s						
SHO	**Shikotan**	**4.99**	**29**	P	**Pn**	**20 03 48.2**	**+3.6**
SHO				*e*S	**Sn**	**20 04 36.6**	**-5.5**
SHO				pmax	pmax		
	comp=Z,192nm,0.6s						
SHO				pmax	pmax		
	comp=N,230nm,0.5s						
SHO				pmax	pmax		
	comp=E,128nm,0.4s						
MJAR	**Matsushiro Arr**	**5.13**	**236**	Pn	**Pn**	**20 03 47.8**	**+1.2**
	comp=E,22nm,0.3s,baz=37,slow=12,SNR=14						
MAJO	**Matsushiro**	**5.14**	**236**	*e*P	**Pn**	**20 03 48.4**	**+1.7**
MAJO	**Matsushiro**	**5.14**	**236**	*e*Pn	**Pn**	**20 03 48.4**	**+1.7**
MAT	**Matsushiro**	**5.14**	**236**	P	**Pn**	**20 03 48.5**	**+1.8**
MAT				*e*S	**Sb**	**20 04 53.7**	**-7.7**
KUR	**Kuril'sk**	**6.54**	**28**	*e*P	**Pn**	**20 04 06.2**	**+0.3**
KUR				*e*S	**Sn**	**20 05 15.7**	**-4.5**
KUR				pmax	pmax		
	comp=Z,110nm,0.6s						
KUR				pmax	pmax		
	comp=N,41nm,0.2s						
KUR				pmax	pmax		
	comp=E,52nm,0.6s						
KUR				MLR	MLR		
	comp=Z,96µm,14.0s						
KUR				MLR	MLR		
	comp=N,119µm,13.0s						
KUR				MLR	MLR		
	comp=E,81µm,13.0s						
JHJ2	**Mitsune**	**7.07**	**206**	*e*Pn	**Pn**	**20 04 12.8**	**-0.5**
JHJ	**Hachijo jima 2**	**7.08**	**206**	Pn	**Pn**	**20 04 13.3**	**0.0**
	comp=E,40nm,0.3s,baz=54,slow=19,SNR=7.7						
JHJ				Sn	**Sn**	**20 05 25.2**	**-8.2**
	comp=E,76nm,0.3s,baz=37,slow=24,SNR=8.6						
YSS	**Yuzh-Sakhalins**	**7.43**	**356**	*e*P	**Pn**	**20 04 14.5**	**-3.6**
YSS				pmax	pmax		
	comp=Z,295nm,2.5s						
USRK	**Ussuriysk Ar.**	**9.76**	**302**	Pn	**Pn**	**20 04 52.0**	**+2.0**
	comp=Z,2.1nm,0.3s,baz=96,slow=13,SNR=8.9						
MDJ	**Mudanjiang**	**11.50**	**301**	*e*P	**Pn**	**20 05 15.2**	**+1.3**
JNU	**Nakatsue**	**12.02**	**242**	Pn	**Pn**	**20 05 21.2**	**+0.2**
	comp=Z,1.1nm,0.3s,baz=74,slow=5.4,SNR=6.2						
KSRS	**Korea Array**	**12.38**	**265**	Pn	**Pn**	**20 05 30.1**	**+4.2**
	comp=Z,0.4nm,0.3s,baz=86,slow=13,SNR=6.1			

ARU				S	S	20 19 48.6	-1.2
ARU				SS	SS	20 23 31.9	-2.4
ARU				pmax	pmax		
	comp=Z,62nm,1.0s						
ABKAR	**Akbulak array**	57.59	310	*e*P	P	20 12 19.4	+0.1
	comp=Z,6.7nm,0.5s						
AKTO	**Aktyubinsk**	58.23	311	P	P	20 12 23.6	-0.3
	comp=Z,12nm,0.7s,baz=80,slow=14,SNR=6.4						
RES	**Resolute Bay**	59.76	15	P	P	20 12 34.4	+0.3
	comp=Z,7.0nm,0.9s,baz=289,slow=7.1,SNR=4.7						
WRA	**Warramunga Arr**	59.79	190	P	P	20 12 34.6	-0.2
	comp=Z,4.2nm,0.7s,baz=8.4,slow=6.9,SNR=5.6						
YKA	**Yellowknife Ar**	60.82	31	P	P	20 12 42.4	+1.0
	comp=Z,1.0nm,0.7s,baz=300,slow=6.0,SNR=4.1						
ASAR	**Alice Springs**	63.52	190	P	P	20 13 00.7	+0.8
	comp=Z,2.6nm,0.8s,baz=9.4,slow=6.4,SNR=5.0						
GEYT	**Alibeck**	64.06	299	P	P	20 13 03.4	-0.2
	comp=Z,9.8nm,0.8s,baz=4.8,slow=3.6,SNR=4.2						
FINES	**FINESS Array B**	67.35	332	P	P	20 13 24.6	+0.3
	comp=Z,14nm,0.7s,baz=54,slow=9.7,SNR=6.0						
VSU	**Vasula**	69.12	330	*ce*P	P	20 13 35.7	+0.3
VSU				pmax	pmax		
	comp=Z,129nm,1.7s						
GOF	**Gofitskoye**	69.64	312	*e*P	P	20 13 40.1	+1.1
GOF				pmax	pmax		
	comp=Z,56nm,0.8s						
KIV	**Kislovodsk**	70.49	311	*e*P	P	20 13 45.9	+1.6
KIV				pmax	pmax		
	comp=Z,70nm,1.1s						
KBZ	**Khabaz**	70.50	311	P	P	20 13 45.3	+1.0
	comp=Z,20nm,0.8s,baz=37,slow=3.9,SNR=5.0						
NEY	**Neytrino**	70.89	311	*i* P	P	20 13 47.8	+0.9
NEY				pmax	pmax		
	comp=Z,3.0nm,0.9s						
STKA	**Stephens Creek**	71.08	182	P	P	20 13 48.6	+1.0
	comp=Z,2.3nm,0.8s,baz=333,slow=11,SNR=2.6						
NVAR	**Mina Array Bea**	72.19	55	P	P	20 13 57.5	+2.6
	comp=Z,3.7nm,0.9s,baz=298,slow=5.7,SNR=2.4						
NB2	**NORSAR Subarra**	72.50	338	P	P	20 13 56.4	+0.3
	comp=Z,22nm,0.9s,baz=40,slow=6.2						
NB2	**NORSAR Subarra**	72.50	338	P	P	20 13 56.4	+0.3
	baz=40,slow=6.2						
NOA	**NORSAR Array B**	72.50	338	P	P	20 13 56.4	+0.3
	comp=Z,15nm,0.8s,baz=38,slow=5.9,SNR=10.0						
AKASG	**Malin Array Be**	73.30	323	P	P	20 14 00.9	-0.1
	comp=Z,9.0nm,0.8s,baz=45,slow=5.9,SNR=6.7						
KIEV	**Kiev**	73.32	323	*i* P	P	20 14 01.0	0.0
KIEV				pmax	pmax		
	comp=Z,10.0nm,0.6s						
FRB	**Frobisher Bay**	73.95	14	P	P	20 14 04.8	+0.4
	comp=Z,5.5nm,0.7s,baz=338,slow=4.2,SNR=3.7						
PDAR	**Pinedale Array**	74.75	47	P	P	20 14 11.6	+1.7
	comp=Z,1.2nm,0.6s,baz=270,slow=0.9,SNR=4.7						
BRTR	**Keskin Array B**	78.40	312	P	P	20 14 31.2	+0.7
	comp=Z,3.6nm,1.0s,baz=81,slow=4.2,SNR=2.5						
GERES	**GERESS Array B**	81.42	329	P	P	20 14 47.3	+0.7
	comp=Z,3.5nm,0.8s,baz=39,slow=6.3,SNR=5.0						
ANMO	**Albuquerque**	81.73	51	*ce*P	P	20 14 52.1	+3.5
ANMO				pmax	pmax		
	comp=Z,3.0nm,1.1s						
TXAR	**Lajitas Array**	87.31	54	P	P	20 15 18.1	+1.3
	comp=Z,1.0nm,0.7s,baz=292,slow=3.9,SNR=4.5						
QSPA	**South Pole Qui**	129.28	180	*e*PKPdf	PKPdf	20 21 39.1	+2.1
SYO	**Syowa Base**	131.18	208	*e*X	Pdif	20 18 30.0	-2.5

MAN 13 20:03:41.8°47N×125°51E, h268km, mb4.6, ML3.4, MS3.4, Mindanao

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MATI	**Mati**	1.68	154	*e*P	Pn	20 04 23.3	+0.8
MATI				*e*S	S	20 04 56.1	+0.9

*ISCJB **13** 20:03:48.0±0.4, 39°.45N×0°.04×143°.61E±0°.04, h11km, mb4.6/24, Error ellipse: s-maj=5.5km s-min=4.2km az=163.4*
*IDC **13** 20:03:49.2±0.7, 39°.59N×143°.31E, h0km, mb4.5/19, mb1 4.7/20, mb1mx4.5/48, mbtmp4.6/20, ML3.9/1, Error ellipse: s-maj=19.3km s-min=16.4km az=114.0*
*NEIC **13** 20:03:49.7±4.1, 39°.50N×143°.37E, h7km±26km, mb5.0/4, Error ellipse: s-maj=12.8km s-min=7.9km az=104.0*
*JMA **13** 20:03:50.6±0.2, 39°.56N×143°.49E, h14km±4km, M4.9*
*MOS **13** 20:03:51.0±1.0, 39°.55N×143°.52E, h29km, mb4.8/16, Error ellipse: s-maj=12.6km s-min=8.3km az=82.4*

ISC 13 20:03:49.8±0.6, **39°.41N**±0°.05×**143°.46E**±0°.05, **h11**km, **n55, σ1s09/57, mb4.6/24, 1C, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MIYJ	**Miyakonagasawa**	1.28	278	P	Pg	20 04 14.0	-0.3
MIYJ				*e*S	Sb	20 04 29.9	-0.4
JTH	**Tanohata**	1.34	294	P	Pn	20 04 13.9	-0.5
JTH				*e*S	Sg	20 04 32.1	-0.7
OFUJ	**Ofunato**	1.43	257	P	Pg	20 04 17.0	-0.2
OFUJ				*e*S	Sg	20 04 36.8	+1.1
JOM	**Ohasama**	1.68	273	P	Pb	20 04 20.2	-0.5
JOM				S	Sb	20 04 41.7	-0.1
JANG	**Nango**	1.77	303	P	Pn	20 04 20.4	-0.1
JMK	**Ichinoseki**	1.80	256	*e*S	Sb	20 04 45.2	0.0
JTM	**Tenmabayashi**	2.29	308	*e*S	Sn	20 04 56.5	+0.8
JAH	**Hinai**	2.31	291	*e*S	Sb	20 04 58.3	-1.6
JOT	**Ohata**	2.69	318	*e*S	Sn	20 05 06.1	+0.5
ASAJ	**Asahikawa**	4.75	353	Pn	Pn	20 05 00.4	-0.9
	4.9nm,0.3s,baz=26,slow=31,SNR=4.2						
ASAJ				Sn	Sn	20 05 56.2	0.0
	3.7nm,0.3s,baz=73,slow=19,SNR=1.9						
YUK	**Yuzh-Kuril'sk**	4.96	21	*e*P	Pn	20 05 03.7	-0.5
YUK				*e*S	Sn	20 05 53.9	-7.6
YUK				pmax	pmax		
	comp=N,253nm,0.5s						
YUK				pmax	pmax		
	comp=E,142nm,0.5s						
YUK				pmax	pmax		
	comp=Z,502nm,0.5s						
MAJO	**Matsushiro**	5.04	237	*e*P	Pn	20 05 05.8	+0.4
MAJO	**Matsushiro**	5.04	237	*e*Pn	Pn	20 05 05.8	+0.4
SHO	**Shikotan**	5.12	28	P	Pn	20 05 04.9	-1.5
SHO				*e*S	Sn	20 05 55.3	-10
KUR	**Kuril'sk**	6.67	28	P	Pn	20 05 27.0	-0.7
KUR				*e*S	Sn	20 06 34.7	-9.0
JHJ2	**Mitsune**	6.94	206	*e*Pn	Pn	20 05 26.3	-5.1
JHJ	**Hachijo jima 2**	6.94	206	Sn	Sn	20 06 47.0	-3.5
	comp=Z,57nm,0.3s,baz=45,slow=19,SNR=2.9						
CBIJ	**Chichi jima**	12.33	185	P	Pn	20 06 46.2	+1.0
CBIJ				Sn	Sn	20 08 53.5	-9.1
JCJ	**Chichijima**	12.33	185	Pn	Pn	20 06 44.4	-0.9
	comp=Z,4.2nm,0.3s,baz=315,slow=20,SNR=1.8						
JCJ				Sn	Sn	20 08 53.5	-9.1
	comp=Z,4.1nm,0.3s,baz=73,slow=19,SNR=2.8						
KSRS	**Korea Array**	12.34	266	Pn	Pn	20 06 50.2	+4.9
	baz=88,slow=12,SNR=2.5						
KSAR	**Wonju Array Be**	12.37	266	P	Pn	20 06 50.2	+4.4
KSAR	**Wonju Array Be**	12.37	266	Pn	Pn	20 06 50.2	+4.4
MA2	**Magadan**	20.71	11	P	P	20 08 29.2	-0.6
	comp=Z,36nm,0.8s,baz=202,slow=8.8,SNR=7.3						
TATO	**Taipei**	23.43	239	*e*P	P	20 09 00.4	+1.4
	comp=Z,16nm,0.5s						
SEY	**Seymchan**	24.16	10	P	P	20 09 05.6	-0.1
	comp=Z,29nm,0.9s,baz=195,slow=7.0,SNR=4.4						
SONM	**Songino Array**	27.90	300	P	P	20 09 39.8	0.0
	comp=Z,9.0nm,0.8s,baz=81,slow=7.0,SNR=3.5						
ZALV	**Zalesovo Beam**	41.55	310	P	P	20 11 36.8	-0.3
	comp=Z,8.2nm,0.7s,baz=91,slow=7.0,SNR=2.6						
ZALV				PcP	PcP	20 13 34.8	+0.6
	comp=Z,5.7nm,0.8s,baz=76,slow=2.0,SNR=4.8						
CMAR	**Chiang Mai Arr**	43.67	255	P	P	20 11 56.3	+1.6
	comp=Z,1.8nm,0.7s,baz=44,slow=6.6,SNR=2.7						
MKAR	**Makanchi Array**	44.26	300	P	P	20 11 58.9	-0.4
	comp=Z,14nm,0.9s,baz=80,slow=10.0,SNR=3.7						
KURK	**Kurchatov**	45.77	307	*e*P	P	20 12 09.3	-1.8
KURK				pmax	pmax		
	comp=Z,67nm,0.9s						
KURK	**Kurchatov**	45.77	307	*e*P	P	20 12 09.3	-1.8
	comp=Z,67nm,0.9s						
KURBB	**Kurchatov Arra**	45.85	306	P	P	20 12 11.2	-0.5
	comp=Z,21nm,0.8s,baz=83,slow=8.5,SNR=4.7						
ILAR	**Eielson Array**	46.63	34	P	P	20 12 18.1	+0.4
	comp=Z,3.0nm,0.8s,baz=263,slow=6.3,SNR=3.2						
BVAR	**Borovoye Array**	50.19	311	P	P	20 12 45.0	-0.3
	comp=Z,4.6nm,0.6s,baz=69,slow=9.9,SNR=2.7						
BVAR	**Borovoye Array**	50.19	311	P	P	20 12 45.0	-0.3
BVAR				pmax	pmax		
	comp=Z,5.0nm,0.6s						
BVAR	**Borovoye Array**	50.19	311	P	P	20 12 45.0	-0.3
BRVK	**Borovoye**	50.24	311	*e*P	P	20 12 45.8	+0.1
BRVK				pmax	pmax		
	comp=Z,24nm,0.9s						
BRVK	**Borovoye**	50.24	311	*e*P	P	20 12 45.8	+0.1
	comp=Z,24nm,0.9s						
WRAB	**Tennant Creek**	59.64	190	*e*P	P	20 13 51.8	-2.2
WRAB				pmax	pmax		
	comp=Z,3.0nm,0.7s						
WRAB	**Tennant Creek**	59.64	190	*e*P	P	20 13 51.8	-2.2
	comp=Z,3.4nm,0.7s						
WRA	**Warramunga Arr**	59.65	190	P	P	20 13 56.0	+2.0
	comp=Z,3.0nm,0.7s,baz=6.2,slow=6.9,SNR=3.3						
ASAR	**Alice Springs**	63.38	190	P	P	20 14 21.1	+1.9
	comp=Z,1.1nm,0.6s,baz=5.9,slow=5.1,SNR=2.5						
FINES	**FINESS Array B**	67.46	332	P	P	20 14 44.6	-0.5
	comp=Z,13nm,0.8s,baz=54,slow=9.7,SNR=5.6						
GOF	**Gofitskoye**	69.71	312	*e*P	P	20 14 59.4	-0.1
GOF				pmax	pmax		
	comp=Z,24nm,0.8s						
KIV	**Kislovodsk**	70.56	311	*e*P	P	20 15 06.3	+1.4
KIV				pmax	pmax		
	comp=Z,46nm,1.1s						
NVAR	**Mina Array Bea**	72.29	55	P	P	20 15 17.6	+2.0
	comp=Z,2.7nm,0.9s,baz=296,slow=6.6,SNR=2.2						
NB2	**NORSAR Subarra**	72.61	338	P	P	20 15 16.4	-0.5
	comp=Z,12nm,0.8s,baz=39,slow=6.2						
NOA	**NORSAR Array B**	72.61	338	P	P	20 15 16.8	-0.1
	comp=Z,9.7nm,0.8s,baz=38,slow=6.0,SNR=6.6						
AKASG	**Malin Array Be**	73.39	323	P	P	20 15 21.1	-0.5
	comp=Z,3.8nm,0.6s,baz=43,slow=6.0,SNR=3.6						
FRB	**Frobisher Bay**	74.09	14	P	P	20 15 24.9	-0.5
	comp=Z,9.5nm,0.8s,baz=339,slow=4.8,SNR=6.7						
PDAR	**Pinedale Array**	74.86	47	P	P	20 15 32.2	+1.5
	comp=Z,0.7nm,0.6s,baz=242,slow=1.9,SNR=3.5						
BRTR	**Keskin Array B**	78.47	312	P	P	20 15 51.0	0.0
	comp=Z,2.4nm,0.9s,baz=79,slow=4.2,SNR=3.2						
BRTR	**Keskin Array B**	78.47	312	P	P	20 15 51.0	0.0
BRTR				pmax	pmax		
	comp=Z,2.0nm,1.0s						
GERES	**GERESS Array B**	81.52	329	P	P	20 16 07.0	-0.3
	comp=Z,1.8nm,0.8s,baz=42,slow=6.6,SNR=3.1						
GERES	**GERESS Array B**	81.52	329	P	P	20 16 07.0	-0.3
GERES				pmax	pmax		
	comp=Z,2.0nm,0.8s						

*IDC **13** 20:08:02.3±1.8, 39°.49N×143°.99E, h0km, mb3.7/7, mb1 3.8/11, mb1mx3.5/48, mbtmp3.8/11, ML3.2/4, Error ellipse: s-maj=45.0km s-min=20.8km az=83.0*
*ISCJB **13** 20:08:03.7±0.8, 39°.52N±0°.05×143°.69E±0°.07, h11km, mb3.6/7, Error ellipse: s-maj=8.2km s-min=6.2km az=44.4*
*JMA **13** 20:08:04.9±0.2, 39°.61N×143°.62E, h15km, M3.9*

ISC 13 20:08:05.7±1.2, **39°.58N**±0°.06×**143°.57E**±0°.09, **h11**km, **n20, σ0s79/24, mb3.7/7, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MIYJ	**Miyakonagasawa**	1.35	271	P	Pn	20 08 30.1	-0.4
MIYJ				*e*S	Sn	20 08 48.5	+0.1
JTH	**Tanohata**	1.36	286	P	Pn	20 08 30.0	-0.7
JTH				*e*S	Sb	20 08 48.5	-0.1
OFUJ	**Ofunato**	1.55	252	P	Pn	20 08 32.8	-0.5
JOM	**Ohasama**	1.76	267	P	Pn	20 08 36.3	+0.1
JOM				*e*S	Sn	20 08 58.2	-0.4
JANG	**Nango**	1.77	297	P	Pn	20 08 35.3	-0.9
JMK	**Ichinoseki**	1.93	252	P	Pn	20 08 38.5	+0.1
JRG	**Rokugo**	2.28	266	S	Sn	20 09 12.0	+0.7
JOU	**Okura**	2.56	243	P	Pn	20 08 47.8	+0.6
JOU				S	Sn	20 09 19.0	+0.6
JNBK	**Urakawa-nobuka**	2.77	347	P	Pn	20 08 50.8	+0.8
JNBK				*e*S	Sn	20 09 23.7	+0.2
ASAJ	**Asahikawa**	4.60	351	Pn	Pn	20 09 16.4	+1.3
	1.3nm,0.3s,baz=194,slow=18,SNR=8.3						
MJAR	**Matsushiro Arr**	5.20	236	Pn	Pn	20 09 25.1	+1.7
	1.4nm,0.3s,baz=41,slow=12,SNR=4.8						
JHJ	**Hachijo jima 2**	7.13	206	Pn	Pn	20 09 49.7	-0.3
	4.4nm,0.3s,baz=18,slow=18,SNR=3.0						
JHJ				Sn	Sn	20 11 02.5	-8.4
	7.0nm,0.3s,baz=100,slow=17,SNR=2.6						
USRK	**Ussuriysk Ar.**	9.79	302	Pn	Pn	20 10 30.7	+4.3
	0.2nm,0.3s,baz=109,slow=13,SNR=3.6						
SONM	**Songino Array**	27.89	300	P	P	20 13 56.3	+0.7
	1.3nm,0.9s,baz=93,slow=7.7,SNR=4.0						
ZALV	**Zalesovo Beam**	41.51	310	P	P	20 15 52.9	+0.2
	0.7nm,0.5s,baz=85,slow=8.4,SNR=3.0						
MKAR	**Makanchi Array**	44.25	300	P	P	20 16 15.5	+0.5
	0.3nm,0.4s,baz=83,slow=10,SNR=4.4						
KURBB	**Kurchatov Arra**	45.82	306	P	P	20 16 27.2	-0.1
	0.7nm,0.4s,baz=80,slow=8.7,SNR=4.4						
BVAR	**Borovoye Array**	50.15	311	P	P	20 17 01.4	+0.5
	0.5nm,0.5s,baz=74,slow=7.9,SNR=4.8						
WRA	**Warramunga Arr**	59.83	190	P	P	20 18 09.2	-1.9
	0.1nm,0.4s,baz=7.4,slow=6.9,SNR=3.3						
FINES	**FINESS Array B**	67.35	332	P	P	20 19 00.6	+0.2
	1.2nm,0.8s,baz=57,slow=5.1,SNR=2.6						

*IDC **13** 20:08:35.4±2.0, 39°.45N×144°.11E, h0km, mb3.8/6, mb1 3.9/10, mb1mx3.6/47, mbtmp3.9/10, ML3.7/3, Error ellipse: s-maj=47.2km s-min=22.1km az=83.0*
*ISCJB **13** 20:08:37.9±0.9, 39°.60N±0°.05×143°.71E±0°.07, h11km, mb3.8/6, Error ellipse: s-maj=8.8km s-min=6.1km az=140.7*
*JMA **13** 20:08:40.9±0.3, 39°.53N×143°.47E, h5km±4km, M4.1*

ISC 13 20:08:40.0±1.5, **39°.58N**±0°.07×**143°.61E**±0°.10, **h11**km, **n19, σ0s95/23, mb3.9/6, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MIYJ	**Miyakonagasawa**	1.39	270	P	Pn	20 09 05.0	-0.3
MIYJ				*e*S	Sb	20 09 22.4	-1.2
JTH	**Tanohata**	1.40	285	P	Pn	20 09 05.4	0.0
JTH				S	Sn	20 09 23.0	-0.8
OFUJ	**Ofunato**	1.59	252	P	Pn	20 09 07.6	-0.5
JOM	**Ohasama**	1.80	267	P	Pn	20 09 11.0	+0.1
JOM				*e*S	Sn	20 09 32.6	-1.2
JKZ	**Kuzumaki**	1.81	284	*e*S	Sn	20 09 34.8	+0.8
JMK	**Ichinoseki**	1.96	252	P	Pn	20 09 14.5	+1.3
JMK				*e*S	Sn	20 09 38.5	+0.7
JIO	**Ouri**	2.09	238	*e*S	Sn	20 09 41.4	+0.4
JRG	**Rokugo**	2.31	266	*e*S	Sn	20 09 47.8	+1.3
JAH	**Hinai**	2.37	286	S	Sn	20 09 48.2	+0.3
ASAJ	**Asahikawa**	4.59	351	Pn	Pn	20 09 49.6	+0.2
	3.0nm,0.3s,baz=190,slow=12,SNR=3.8						
ASAJ				Sn	Sn	20 10 41.8	-1.0
	3.4nm,0.3s,baz=342,slow=20,SNR=4.1						
MJAR	**Matsushiro Arr**	5.23	236	Pn	Pn	20 09 59.2	+1.0
	2.0nm,0.3s,baz=39,slow=13,SNR=4.9						
JHJ	**Hachijo jima 2**	7.15	207	Pn	Pn	20 10 22.9	-1.6
	2.6nm,0.3s,baz=57,slow=18,SNR=2.0						
JHJ				Sn	Sn	20 11 38.2	-7.5
	7.6nm,0.3s,baz=58,slow=19,SNR=2.4						
USRK	**Ussuriysk Ar.**	9.82	302	Pn	Pn	20 11 03.1	+2.1
	0.2nm,0.3s,baz=107,slow=12,SNR=2.3						
SONM	**Songino Array**	27.92	300	P	P	20 14 30.6	+0.4
	0.8nm,0.6s,baz=92,slow=9.3,SNR=3.3						
ZALV	**Zalesovo Beam**	41.53	310	P	P	20 16 27.0	-0.1
	1.4nm,0.5s,baz=92,slow=8.3,SNR=3.6						
MKAR	**Makanchi Array**	44.28	300	P	P	20 16 49.5	-0.1
	0.7nm,0.6s,baz=78,slow=9.7,SNR=3.1						
KURBB	**Kurchatov Arra**	45.84	306	P	P	20 17 01.7	-0.2
	1.0nm,0.5s,baz=79,slow=8.7,SNR=3.7						
WRA	**Warramunga Arr**	59.84	190	P	P	20 18 41.9	-3.7
	0.7nm,0.9s,baz=6.0,slow=7.5,SNR=5.0						
FINES	**FINESS Array B**	67.36	333	P	P	20 19 34.6	-0.1
	1.2nm,0.8s,baz=51,slow=10.0,SNR=3.5						

*IDC **13** 20:15:04.4±2.3, 39°.43N×143°.59E, h0km, mb3.3/3, mb1 3.4/5, mb1mx3.2/51, mbtmp3.3/5, ML3.3/2, Error ellipse: s-maj=55.4km s-min=26.9km az=79.0*
*JMA **13** 20:15:08.3±0.2, 39°.57N×143°.54E, h62km, M3.7*

ISC 13 20:15:04.6±2.1, **39°.52N**±0°.07×**143°.58E**±0°.07, **h6**km±12km, **n18, σ1s26/25, mb3.4/3, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MIYJ	**Miyakonagasawa**	1.36	273	P	Pb	20 15 31.2	+0.7
MIYJ				*e*S	Sg	20 15 48.4	+0.1
JTH	**Tanohata**	1.39	288	P	Pn	20 15 31.2	+0.7
JTH				*e*S	Sg	20 15 48.6	-0.6
OFUJ	**Ofunato**	1.54	254	P	Pg	20 15 34.0	-0.1
JOM	**Ohasama**	1.77	269	P	Pn	20 15 37.0	+1.2
JOM				*e*S	Sn	20 15 57.8	-0.8
JANG	**Nango**	1.80	299	P	Pn	20 15 36.1	-0.1
JANG				*e*S	Sn	20 15 57.6	-1.9
JTM	**Tenmabayashi**	2.31	304	P	Pn	20 15 44.1	+1.0
JTM				*e*S	Sn	20 16 10.1	-1.7
JAH	**Hinai**	2.36	287	P	Pn	20 15 45.4	+1.5
JYK	**Kaneyama**	2.57	258	P	Pb	20 15 49.4	-1.7
JNBK	**Urakawa-nobuka**	2.83	347	P	Pn	20 15 52.3	+1.9
JNBK				*e*S	Sn	20 16 24.0	-0.8
JCH	**Churui**	3.10	357	P	Pn	20 15 54.7	+0.6
JCH				*e*S	Sn	20 16 27.8	-3.6
JAR	**Ashorobuto**	3.78	2	P	Pn	20 16 03.6	+0.2
JAR				*e*S	Sn	20 16 44.7	-3.5
NEM2	**Nemuro 2**	4.18	22	P	Pn	20 16 08.2	-0.6
NEM2				*e*S	Sn	20 16 52.6	-5.3
JTKR	**Abashiri--Tokyo**	4.46	3	P	Pn	20 16 13.1	+0.4
ASAJ	**Asahikawa**	4.66	351	Pn	Pn	20 16 17.9	+2.4
	0.8nm,0.3s,baz=195,slow=17,SNR=8.7						
ASAJ				Sn	Sn	20 17 07.8	-2.0
	1.0nm,0.3s,baz=229,slow=20,SNR=3.1						
MJAR	**Matsushiro Arr**	5.17	237	Pn	Pn	20 16 23.0	+0.4
	2.1nm,0.3s,baz=76,slow=16,SNR=10.0						
SONM	**Songino Array**	27.93	300	P	P	20 20 56.6	+1.0
	0.2nm,0.8s,baz=93,slow=8.4,SNR=2.2						
MKAR	**Makanchi Array**	44.29	300	P	P	20 23 15.8	+0.7
	0.4nm,0.8s,baz=83,slow=7.3,SNR=3.6						
WRA	**Warramunga Arr**	59.77	190	P	P	20 25 10.5	0.0
	0.3nm,0.8s,baz=7.1,slow=6.7,SNR=3.0						

*IDC **13** 20:17:43.4±0.7, 39°.49N×143°.57E, h0km, mb3.9/16, mb1 4.1/20, mb1mx3.9/59, mbtmp3.9/20, ML3.8/3, Error ellipse: s-maj=19.5km s-min=13.9km az=122.0*
*ISCJB **13** 20:17:44.1±0.4, 39°.57N±0°.05×143°.57E±0°.04, h11km, mb3.9/18, Error ellipse: s-maj=7.0km s-min=4.7km az=172.6*
*JMA **13** 20:17:46.2±0.2, 39°.55N×143°.52E, h28km, M4.1*
*NEIC **13** 20:17:47.4±2.2, 39°.52N×143°.56E, h25km±16km, mb4.2/3, Error ellipse: s-maj=10.2km s-min=6.1km az=114.0*

ISC 13 20:17:45.9±0.6, **39°.63N**±0°.06×**143°.54E**±0°.06, **h11**km, **n51, σ1s71/53, mb4.0/18, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JTH	**Tanohata**	1.33	284	P	Pn	20 18 09.3	-1.0
JTH				*e*S	Sb	20 18 26.5	-0.9
MIYJ	**Miyakonagasawa**	1.33	268	P	Pn	20 18 09.2	-1.1
MIYJ				*e*S	Sb	20 18 26.3	-1.5
OFUJ	**Ofunato**	1.55	250	P	Pn	20 18 11.9	-1.5
JANG	**Nango**	1.72	296	P	Pn	20 18 14.5	-1.3
JKZ	**Kuzumaki**	1.74	282	P	Pn	20 18 15.8	-0.2
JKZ				*e*S	Sn	20 18 37.2	-1.0
JOM	**Ohasama**	1.74	266	P	Pn	20 18 15.4	-0.6
JOM				*e*S	Sn	20 18 36.6	-1.7
JMK	**Ichinoseki**	1.92	250	P	Pn	20 18 17.6	-0.9
JIO	**Ouri**	2.07	236	P	Pn	20 18 18.9	-1.6
JTM	**Tenmabayashi**	2.22	302	P	Pn	20 18 22.7	+0.2
JTM				*e*S	Sn	20 18 48.9	-1.0
JAH	**Hinai**	2.30	285	P	Pn	20 18 23.9	+0.2
JAH				*e*S	Sn	20 18 51.2	-0.8
ERM	**Erimo**	2.40	353	P	Pg	20 18 41.4	+9.5
ASAJ	**Asahikawa**	4.54	351	Pn	Pn	20 18 55.8	+1.3
	3.0nm,0.3s,baz=203,slow=16,SNR=8.2						
ASAJ				Sn	Sn	20 19 44.0	-3.1
	1.4nm,0.3s,baz=177,slow=17,SNR=2.8						
MAJO	**Matsushiro**	5.21	235	*e*Pn	Pn	20 19 03.8	+0.1
	42nm,0.5s						
MAT	**Matsushiro**	5.21	235	P	Pn	20 19 03.6	-0.2
MAT				*e*S	Sn	20 20 08.2	+4.3
MJAR	**Matsushiro Arr**	5.21	235	Pn	Pn	20 19 03.6	-0.2
	3.0nm,0.3s,baz=39,slow=12,SNR=24						
JHJ2	**Mitsune**	7.16	206	P	Pn	20 19 28.6	-1.9
JHJ	**Hachijo jima 2**	7.17	206	Pn	Pn	20 19 26.7	-3.9
	5.4nm,0.3s,baz=36,slow=17,SNR=3.3						
JHJ				Sn	Sn	20 20 41.5	-10
	13nm,0.3s,baz=240,slow=20,SNR=3.5						
USRK	**Ussuriysk Ar.**	9.74	302	Pn	P

OFUJ	**Ofunato**	**1.51 251**	P		**Pn**	**20 20 28.2**	**-0.4**
JOM	**Ohasama**	**1.71 267**	P		**Pn**	**20 20 31.7**	**+0.3**
JOM			*eS*		**Sn**	**20 20 53.0**	**-0.2**
JANG	**Nango**	**1.71 298**	P		**Pn**	**20 20 30.6**	**-0.8**
JMK	**Ichinoseki**	**1.88 251**	P		**Pn**	**20 20 34.3**	**+0.6**
JTM	**Tenmabayashi**	**2.21 303**	P		**Pn**	**20 20 38.5**	**+0.2**
JRG	**Rokugo**	**2.23 266**	P		**Pn**	**20 20 39.6**	**+1.1**
JAH	**Hinai**	**2.28 286**	P		**Pn**	**20 20 40.0**	**+0.8**
JOU	**Okura**	**2.53 242**	P		**Pn**	**20 20 43.2**	**+0.6**
JYK	**Kaneyama**	**2.53 256**	P		**Pn**	**20 20 43.2**	**+0.6**
JOT	**Ohata**	**2.59 315**	*eS*		**Sn**	**20 21 14.5**	**-0.4**
JCH	**Churui**	**3.02 358**	P		**Pn**	**20 20 48.9**	**-0.5**
JCH			S		**Sn**	**20 21 23.4**	**-2.2**
ASAJ	**Asahikawa**	**4.57 352**	Pn		**Pn**	**20 21 11.2**	**+0.5**
	5.3nm,0.3s,baz=193,slow=17,SNR=12						
ASAJ			Sn		**Sn**	**20 22 01.6**	**-2.1**
	6.0nm,0.3s,baz=313,slow=19,SNR=2.9						
MJAR	**Matsushiro Arr**	**5.17 236**	Pn		**Pn**	**20 21 19.0**	**+0.1**
	4.6nm,0.3s,baz=38,slow=13,SNR=9.0						
MAJO	**Matsushiro**	**5.17 236**	*ePn*		**Pn**	**20 21 20.1**	**+1.2**
MAT	**Matsushiro**	**5.17 236**	P		**Pn**	**20 21 19.9**	**+1.0**
MAT			*eS*		Sb	20 22 26.6	-7.5
JHJ	**Hachijo jima 2**	**7.12 206**	Pn		**Pn**	**20 21 43.4**	**-2.3**
	18nm,0.3s,baz=49,slow=20,SNR=5.0						
JHJ			Sn		Sn	20 22 58.2	-8.4
	21nm,0.3s,baz=252,slow=19,SNR=3.9						
USRK	**Ussuriysk Ar.**	**9.74 302**	Pn		**Pn**	**20 22 23.8**	**+2.2**
	0.8nm,0.3s,baz=92,slow=13,SNR=11						
MDJ	**Mudanjiang**	**11.48 300**	Pn		**Pn**	**20 22 46.7**	**+1.3**
KSRS	**Korea Array**	**12.39 265**	Pn		Pn	20 23 02.5	+4.7
	0.2nm,0.3s,baz=73,slow=14,SNR=3.8						
KSAR	**Wonju Array Be**	**12.42 265**	Pn		Pn	20 23 02.5	+4.2
KLR	**Kul'dur**	**12.77 323**	Pn		**Pn**	**20 23 03.7**	**+0.7**
	0.2nm,0.3s,baz=123,slow=10,SNR=3.6						
HIA	**Hailar**	**19.46 308**	*eP*		**P**	**20 24 26.5**	**-1.7**
MA2	**Magadan**	**20.53 11**	P		**P**	**20 24 39.8**	**+0.1**
	3.4nm,0.4s,baz=213,slow=13,SNR=3.6						
MA2	**Magadan**	**20.53 11**	*eP*		**P**	**20 24 40.6**	**+0.9**
	64nm,0.8s						
SEY	**Seymchan**	**23.98 10**	P		**P**	**20 25 16.1**	**+0.3**
	3.9nm,0.6s,baz=183,slow=7.1,SNR=13						
YAK	**Yakutsk**	**24.00 344**	P		**P**	**20 25 15.7**	**-0.3**
	8.3nm,0.4s,baz=132,slow=1.4,SNR=4.5						
YAK	**Yakutsk**	**24.00 344**	*eP*		**P**	**20 25 14.7**	**-1.3**
	11nm,0.6s						
SSLB	**Suanglung**	**24.73 237**	*eP*		**P**	**20 25 20.7**	**-2.4**
ULN	**Ulaanbaatar**	**27.40 300**	*eP*		**P**	**20 25 47.7**	**+0.5**
	3.2nm,0.8s						
SONM	**Songino Array**	**27.84 299**	P		**P**	**20 25 51.2**	**+0.1**
	1.3nm,0.5s,baz=98,slow=8.8,SNR=10.0						
H11N2	**WAKE ISLAND Hy 28.23 128**		T		T	20 55 21.4	
	baz=319,slow=74,SNR=5.5						
H11N1	**WAKE ISLAND Hy 28.24 128**		T		T	20 55 24.3	
	baz=319,slow=74,SNR=6.9						
H11N3	**WAKE ISLAND Hy 28.25 128**		T		T	20 55 29.9	
	baz=319,slow=74,SNR=6.6						
H11S1	**WAKE ISLAND Hy 29.05 130**		T		T	20 56 22.4	
	baz=322,slow=76,SNR=4.5						
H11S3	**WAKE ISLAND Hy 29.05 130**		T		T	20 56 35.1	
	baz=322,slow=76,SNR=4.8						
H11S2	**WAKE ISLAND Hy 29.06 130**		T		T	20 56 31.3	
	baz=322,slow=76,SNR=5.1						
ZALV	**Zalesovo Beam**	**41.46 310**	P		**P**	**20 27 48.2**	**+0.1**
	1.9nm,0.4s,baz=84,slow=6.5,SNR=7.3						
ZALV			PcP		**PcP**	**20 29 45.8**	**0.0**
	0.7nm,0.5s,baz=98,slow=2.9,SNR=3.2						
NRIK	**Noril'sk**	**41.67 334**	P		**P**	**20 27 52.1**	**+2.4**
	1.7nm,0.4s,baz=110,slow=2.6,SNR=3.6						
LSA	**Lhasa**	**43.65 274**	P		**P**	**20 28 05.7**	**-1.2**
CMAR	**Chiang Mai Arr**	**43.75 254**	P		**P**	**20 28 07.2**	**0.0**
	0.3nm,0.4s,baz=45,slow=7.4,SNR=5.7						
MKAR	**Makanchi Array**	**44.20 300**	P		**P**	**20 28 10.5**	**-0.1**
	3.3nm,0.8s,baz=82,slow=6.2,SNR=10						
KURK	**Kurchatov**	**45.69 306**	*eP*		**P**	**20 28 22.0**	**-0.3**
	495nm,2.6s						
ILAR	**Eielson Array**	**46.46 34**	P		**P**	**20 28 28.0**	**-0.2**
	1.4nm,0.7s,baz=260,slow=6.5,SNR=12						
TAPN	**Taplejung**	**47.43 273**	*eP*		**P**	**20 28 36.6**	**0.0**
	4.1nm,0.5s						
RAMN	**Ramite**	**48.48 273**	*eP*		**P**	**20 28 44.3**	**-0.4**
	12nm,0.6s						
GUN	**Gumba**	**48.56 275**	*eP*		**P**	**20 28 45.6**	**+0.1**
	21nm,0.6s						
KKN	**Kakani**	**49.09 275**	*eP*		**P**	**20 28 50.4**	**+1.1**
	12nm,0.5s						
GKN	**Gorkha**	**49.48 275**	*eP*		**P**	**20 28 52.3**	**+0.1**
	4.8nm,0.3s						
TKM2	**Tokmak 2**	**49.89 297**	*eP*		**P**	**20 28 55.6**	**+0.3**
	3.9nm,0.8s						
BRVK	**Borovoye**	**50.15 311**	*eP*		**P**	**20 28 57.1**	**+0.3**
KOLN	**Koldanda**	**50.39 276**	*eP*		**P**	**20 29 00.5**	**+1.3**
	5.4nm,0.5s						
PYUN	**Piuthan**	**50.69 276**	*eP*		**P**	**20 29 02.7**	**+1.2**
EKS2	**Erkin-Say**	**51.23 297**	*eP*		**P**	**20 29 05.3**	**0.0**
	29nm,1.8s						
INK	**Inuvik**	**51.36 28**	P		**P**	**20 29 06.2**	**+0.4**
	1.4nm,0.6s,baz=254,slow=3.8,SNR=5.7						
ABKAR	**Akbulak array**	**57.56 310**	*eP*		**P**	**20 29 50.2**	**-0.9**
WRA	**Warramunga Arr**	**59.84 190**	P		**P**	**20 30 05.3**	**-1.8**
	1.0nm,0.8s,baz=9.3,slow=6.9,SNR=7.0						
YKA	**Yellowknife Ar**	**60.77 31**	P		**P**	**20 30 13.3**	**+0.2**
	0.5nm,0.8s,baz=302,slow=6.3,SNR=9.0						
ASAR	**Alice Springs**	**63.56 190**	P		**P**	**20 30 30.6**	**-1.6**
	0.7nm,0.7s,baz=13,slow=6.3,SNR=7.5						
FINES	**FINESS Array B**	**67.31 332**	P		**P**	**20 30 55.5**	**-0.6**
	1.0nm,0.6s,baz=51,slow=7.6,SNR=7.9						
NVAR	**Mina Array Bea**	**72.16 55**	P		**P**	**20 31 27.6**	**+0.9**
	2.2nm,0.9s,baz=263,slow=5.2,SNR=3.7						
NB2	**NORSAR Subarra**	**72.45 338**	P		**P**	**20 31 28.2**	**+0.4**
	comp=Z,4.3nm,1.0s,baz=38,slow=5.9						
NOA	**NORSAR Array B**	**72.45 339**	P		**P**	**20 31 27.9**	**+0.2**
	comp=Z,0.6nm,0.6s,baz=36,slow=6.1,SNR=3.0						
PDAR	**Pinedale Array**	**74.71 47**	P		**P**	**20 31 42.0**	**+0.3**
	comp=Z,0.6nm,0.5s,baz=248,slow=2.4,SNR=5.6						
TXAR	**Lajitas Array**	**87.27 54**	P		**P**	**20 32 48.8**	**+0.2**
	comp=Z,0.2nm,0.5s,baz=328,slow=3.2,SNR=2.8						
LPAZ	**La Paz**	**143.98 59**	PKP		**PKPdf**	**20 39 39.7**	**+1.4**
	comp=Z,0.4nm,0.4s,baz=286,slow=3.9,SNR=3.5						

JMA 13 20:20:28.4±0.1, 36°.27N×140°.05E, h56km±1km, M2.6, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JYT	**Yasato**	**0.12**	**110**	P	Pn	20 20 37.2	+0.2
JYT				S	Sn	20 20 43.4	+0.2
JAG	**Ashikaga**	**0.51**	**288**	P	Pn	20 20 40.3	+0.2
JAG				*i* S	Sn	20 20 48.6	0.0
JKT	**Katashina**	**0.81**	**308**	P	Pn	20 20 44.2	+0.2
JKT				S	Sn	20 20 55.6	+0.2

IDC 13 20:29:02.6±1.7, 8°.37S×124°.85E, h0km, mb3.2/1, mb1 3.7/5, mb1mx3.4/52, mbtmp3.5/5, ML3.6/4, Error ellipse: s-maj=49.6km s-min=24.4km az=78.0, Timor region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
BATI	**Baumata**	**2.17**	**213**	Pn	Pn	20 29 40.4	+0.3
	28nm,0.3s,baz=292,slow=24,SNR=74						
BATI				Sn	Sn	20 29 57.7	-10
	21nm,0.3s,baz=352,slow=24,SNR=4.3						
FITZ	**Fitzroy Crossi**	**9.70**	**176**	Pn	Pn	20 31 21.7	-1.9
	0.3nm,0.3s,baz=358,slow=9.2,SNR=19						
FITZ				Sn	Sn	20 32 58.2	-15
	2.0nm,0.3s,baz=134,slow=14,SNR=14						
WRA	**Warramunga Arr**	**14.72**	**142**	Pn	Pn	20 32 33.5	+1.1
	0.3nm,0.3s,baz=319,slow=14,SNR=14						
WRA				Sn	Sn	20 35 06.2	-10
	0.5nm,0.3s,baz=314,slow=24,SNR=12						
ASAR	**Alice Springs**	**17.51**	**151**	P	Pn	20 33 09.1	+0.6
	0.2nm,0.3s,baz=320,slow=11,SNR=10						
ASAR				S	Sn	20 36 12.4	-12
	0.1nm,0.3s,baz=313,slow=22,SNR=6.3						
MKAR	**Makanchi Array**	**66.69**	**330**	P	P	20 39 55.5	0.0
	0.2nm,0.7s,baz=125,slow=7.0,SNR=2.2						

IDC 13 20:30:18.5±2.0, 37°.41N×142°.60E, h0km, mb3.6/6, mb1 3.7/8, mb1mx3.4/68, mbtmp3.6/8, ML3.4/2, Error ellipse: s-maj=53.7km s-min=20.5km az=69.0
JMA 13 20:30:22.7±0.2, 37°.45N×142°.10E, h7km±2km, M3.8
ISC 13 20:30:20.2±2.0, 37°.37N±0°.05×142°.14E±0°.08, h4km±11km, n19, σ1s41/23, mb3.7/6, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JFK	**Kawauchi**	**1.00**	**270**	P	**Pn**	**20 30 41.5**	**+0.4**
JFK				*eS*	**Sn**	**20 30 54.9**	**-0.8**
JMM	**Marumori**	**1.17**	**295**	P	**Pn**	**20 30 43.9**	**+0.5**
JMM				S	**Sn**	**20 30 58.9**	**-1.0**
JIO	**Ouri**	**1.25**	**330**	P	**Pg**	**20 30 44.5**	**+0.4**
JIO				S	**Sg**	**20 30 59.8**	**-0.5**
JFT	**Otama**	**1.44**	**276**	P	**Pg**	**20 30 48.8**	**+1.0**
JFT				S	**Sg**	**20 31 07.5**	**+1.1**
JHO	**Hitachi**	**1.47**	**239**	P	**Pg**	**20 30 49.5**	**+1.2**
JOU	**Okura**	**1.53**	**311**	P	**Pg**	**20 30 49.5**	**0.0**
JOU				S	**Sg**	**20 31 09.0**	**-0.3**
MJAR	**Matsushiro Arr**	**3.25**	**256**	Pn	**Pb**	**20 31 15.7**	**-2.8**
	1.9nm,0.3s,baz=80,slow=16,SNR=14						
MJAR				Sn	**Sb**	**20 31 57.6**	**-0.8**
	1.7nm,0.3s,baz=84,slow=29,SNR=4.8						
MAT	**Matsushiro**	**3.25**	**256**	P	**Pb**	**20 31 16.4**	**-2.1**
MAT				*eS*	**Sn**	**20 31 53.0**	**+1.8**
JHJ	**Hachijo jima 2**	**4.66**	**205**	Pn	**Pn**	**20 31 32.4**	**+1.1**
	6.3nm,0.3s,baz=74,slow=23,SNR=9.2						
JHJ				Sn	**Sn**	**20 32 23.1**	**-2.8**
	19nm,0.3s,baz=47,slow=22,SNR=7.2						
USRK	**Ussuriysk Ar.**	**10.28**	**315**	Pn	Pn	20 32 54.6	+6.3
	0.2nm,0.3s,baz=126,slow=14,SNR=7.6						
SONM	**Songino Array**	**28.08**	**303**	P	**P**	**20 36 14.4**	**+1.5**
	0.7nm,0.9s,baz=96,slow=8.5,SNR=4.9						
H11S1	**WAKE ISLAND Hy 28.57 124**			T	T	21 06 03.1	
	baz=316,slow=76,SNR=27						
H11S3	**WAKE ISLAND Hy 28.57 124**			T	T	21 05 59.0	
	baz=316,slow=76,SNR=28						
H11S2	**WAKE ISLAND Hy 28.58 124**			T	T	21 06 03.1	
	baz=316,slow=76,SNR=23						
ZALV	**Zalesovo Beam**	**42.11**	**312**	P	**P**	**20 38 14.3**	**+1.0**
	0.6nm,0.6s,baz=77,slow=6.2,SNR=3.1						
MKAR	**Makanchi Array**	**44.43**	**302**	P	**P**	**20 38 33.4**	**+1.3**
	0.3nm,0.7s,baz=92,slow=8.0,SNR=3.3						
KURBB	**Kurchatov Arra**	**46.25**	**308**	P	**P**	**20 38 46.7**	**+0.3**
	0.7nm,0.5s,baz=82,slow=8.0,SNR=9.6						
WRA	**Warramunga Arr**	**57.48**	**189**	P	**P**	**20 40 09.6**	**-0.9**
	0.7nm,0.7s,baz=7.0,slow=7.2,SNR=6.9						
ASAR	**Alice Springs**	**61.20**	**189**	P	**P**	**20 40 36.0**	**-0.1**
	0.8nm,0.8s,baz=1.0,slow=3.3,SNR=7.6						

IDC 13 20:30:54.2±21.0, 39°.90N×142°.45E, h0km, mb3.6/5, mb1 3.5/6, mb1mx3.3/67, mbtmp3.5/6, ML3.0/1, Error ellipse: s-maj=379.0km s-min=55.4km az=129.0, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ASAJ	**Asahikawa**	**4.21**	**1**	Pn	Pn	20 31 60.0	+0.2
	0.7nm,0.3s,baz=193,slow=13,SNR=6.7						
SONM	**Songino Array**	**26.98**	**299**	P	P	20 36 37.5	-0.2
	0.2nm,0.4s,baz=86,slow=8.1,SNR=2.5						
ZALV	**Zalesovo Beam**	**40.64**	**310**	P	P	20 38 35.7	-0.1
	0.8nm,0.5s,baz=89,slow=8.6,SNR=4.2						
MKAR	**Makanchi Array**	**43.35**	**300**	P	P	20 38 58.5	+0.5
	0.6nm,0.7s,baz=79,slow=9.9,SNR=4.0						
KURBB	**Kurchatov Arra**	**44.93**	**306**	P	P	20 39 10.4	-0.2
	1.2nm,0.5s,baz=80,slow=8.3,SNR=5.9						
BVAR	**Borovoye Array**	**49.29**	**311**	P	P	20 39 44.1	-0.5
	0.4nm,0.5s,baz=76,slow=6.5,SNR=3.3						

PGC 13 20:31:18.2±0.0, 56°.54N×122°.22W, h10km, ML3.1/7, 89km Wnw of Fort St. John, Bc British Columbia, Canada, British Columbia

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
WAPA	**Wapiti River**	**2.15**	**128**	Pn	Pn	20 31 55.0	+0.9
WAPA				Sg	Sb	20 32 24.5	+0.5
FNBB	**Fort Nelson**	**2.40**	**350**	Pn	Pn	20 31 57.7	+0.1
FNBB				Sn	Sn	20 32 27.6	+0.7
FNBB				Sg	Sg	20 32 34.1	-1.1
MANA	**Manning**	**2.54**	**81**	Sg	Sb	20 32 37.3	+2.0
UBRB	**Upper Baezaeko**	**3.81**	**197**	Pn	Pn	20 32 16.8	-0.2
UBRB				Pg	Pb	20 32 26.8	+1.2
UBRB				Sg	Sg	20 33 16.3	-4.2
DLBC	**Dease Lake**	**4.62**	**298**	Pg	Pb	20 32 41.4	+2.0
DLBC				Sg	Sb	20 33 40.1	+4.9
BLBC	**Blue River**	**4.83**	**158**	Sg	Sg	20 33 48.1	-5.0
MNB	**Mounoet Dainar**	**4.89**	**151**	Pn	Pn	20 32 32.2	+0.2
DOWB	**Downie Slide**	**5.48**	**155**	Sg	Sg	20 34 08.3	-5.7
LLLB	**Lillooet**	**5.94**	**178**	Sg	Sg	20 34 22.3	-6.6
YKR1	**Yellowknife Ar**	**7.02**	**29**	Pn	Pn	20 32 59.2	-1.7
YKR2	**Yellowknife Ar**	**7.03**	**29**	Pn	Pn	20 32 59.4	-1.7
YKR2				Sn	Sn	20 34 16.3	-4.7
YKB1	**Yellowknife Ar**	**7.04**	**30**	Sn	Sn	20 34 15.4	-5.7
YKR3	**Yellowknife Ar**	**7.05**	**29**	Pn	Pn	20 32 59.8	-1.5
YKR4	**Yellowknife Ar**	**7.06**	**29**	Pn	Pn	20 32 59.6	-1.9
YKR5	**Yellowknife Ar**	**7.07**	**29**	Pn	Pn	20 32 59.2	-2.4
YKB3	**Yellowknife Ar**	**7.08**	**30**	Sn	Sn	20 34 17.0	-5.1
YKR6	**Yellowknife Ar**	**7.09**	**29**	Pn	Pn	20 32 59.5	-2.3
YKB4	**Yellowknife Ar**	**7.09**	**30**	Pn	Pn	20 33 00.5	-1.5
YKR7	**Yellowknife Ar**	**7.10**	**30**	Pn	Pn	20 33 00.4	-1.7
YKR8	**Yellowknife Ar**	**7.11**	**30**	Pn	Pn	20 33 00.9	-1.3
YKR9	**Yellowknife Ar**	**7.13**	**30**	Pn	Pn	20 33 01.1	-1.3
YKR9				Sn	Sn	20 34 17.3	-6.0
YKB6	**Yellowknife Ar**	**7.13**	**30**	Pn	Pn	20 33 01.2	-1.2
YKB7	**Yellowknife Ar**	**7.15**	**30**	Pn	Pn	20 33 01.2	-1.5
YKB7				Sn	Sn	20 34 18.6	-5.2
YKW3	**Yellowknife Ar**	**7.17**	**29**	Pn	Pn	20 33 01.5	-1.5
YKW3				Sn	Sn	20 34 18.8	-5.4
YKB8	**Yellowknife Ar**	**7.17**	**29**	Pn	Pn	20 33 01.1	-1.9
YKB9	**Yellowknife Ar**	**7.19**	**29**	Pn	Pn	20 33 01.4	-1.8
YKB9				Sn	Sn	20 34 17.8	-7.0
YKB0	**Yellowknife Ar**	**7.21**	**29**	Pn	Pn	20 33 01.4	-2.1
YKB0				Sn	Sn	20 34 19.5	-5.7

NIED 13 20:32:00, 39°.60N×143°.50E, h14km, Mw5.5 Best double couple: M0 2.14000×10^17 NP1:φs175.00000°, δ20.00000°, λ50.00000°. NP2:φs37.00000°, δ75.00000°, λ103.00000°.
IDC 13 20:32:17.9±0.4, 39°.57N×143°.34E, h0km, mb5.5/53, mb1 5.5/59, mb1mx5.4/68, mbtmp5.4/59, ML4.6/6, MS5.3/35, Ms1 5.3/35, ms1mx4.9/62, Error ellipse: s-maj=10.4km s-min=9.1km az=128.0
ISCJB 13 20:32:18.0±0.7, 39°.62N±0°.02×143°.28E±0°.02, h7km±4km, mb5.7/315, MS5.7/72, Error ellipse: s-maj=2.9km s-min=1.9km az=159.4
JMA 13 20:32:20.0±0.2, 39°.65N×143°.47E, h33km, M5.7
JMA Felt II J1.
BJI 13 20:32:20.5, 39°.58N×142°.98E, h20km, mb5.7/81, mB6.1/52, Ms5.7/82, Ms7 5.7/74
NEIC 13 20:32:21.4±0.3, 39°.62N×143°.19E, h18km±1km, mb5.7/120, Error ellipse: s-maj=3.4km s-min=2.3km az=146.0
MOS 13 20:32:21.6±0.9, 39°.81N×143°.20E, h25km, mb6.0/94, MS5.7/37, Error ellipse: s-maj=5.7km s-min=3.4km az=103.7
GCMT 13 20:32:21.4±0.1, 39°.64N×143°.48E, h24km, MW5.5/114, Moment Tensor Solution. s77,c127; s114,c237; Duration: 1s3 Moment tensor: Scale 10^17 Nm; Mrr 1.40±.03; Mθθ -0.17±.02; Mφφ -1.23±.02; Mrθ 0.72±.03; Mθφ -0.31±.01; Mφr 1.45±.03; Best double couple: M0 2.11300×10^17 NP1:φs24.00000°, δ70.00000°, λ95.00000°. NP2:φs189.00000°, δ21.00000°, λ76.00000°. Principal axes: T 2.1680, Plg65.0000°, Azm302.0000°; N -0.1130, Plg5.0000°, Azm202.0000°; P -2.0570, Plg25.0000°, Azm110.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface/mantle waves, cutoff=50s.
ISC 13 20:32:20.9±0.5, 39°.70N±0°.03×143°.30E±0°.03, h18km±2km, h17km: pP-P, n1463, σ1925/1515, mb5.8/331, MS5.7/75, 200C-21D, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JTH	**Tanohata**	**1.13**	**283**	↑P	**Pn**	**20 32 42.2**	**+0.3**
JTH				*eS*	**Sn**	**20 32 58.5**	**+1.5**
MIYJ	**Miyakonagasawa**	**1.15**	**264**	↑P	**Pn**	**20 32 42.3**	**+0.2**
MIYJ				*eS*	**Sn**	**20 32 57.9**	**+0.4**
OFUJ	**Ofunato**	**1.41**	**244**	↑P	**Pn**	**20 32 45.3**	**-0.4**
JANG	**Nango**	**1.53**	**297**	↑P	**Pn**	**20 32 47.4**	**+0.1**
JOM	**Ohasama**	**1.57**	**262**	↑P	**Pb**	**20 32 48.6**	**-0.8**
JOM				*eS*	**Sn**	**20 33 08.3**	**+0.5**
JMK	**Ichinoseki**	**1.78**	**246**	↑P	**Pn**	**20 32 50.7**	**-0.1**
JIO	**Ouri**	**1.96**	**231**	↑P	**Pn**	**20 32 52.3**	**-1.0**
JTM	**Tenmabayashi**	**2.03**	**303**	↑P	**Pn**	**20 32 55.4**	**+1.2**
ERM	**Erimo**	**2.32**	**357**	*ceP*	**Pn**	**20 32 58.6**	**+0.5**
ERM				pmax	pmax		
	comp=Z,2μm,1.2s						
ERM	**Erimo**	**2.32**	**357**	*ePn*	**Pn**	**20 32 58.4**	**+0.2**
JOT	**Ohata**	**2.40**	**315**	P	**Pn**	**20 33 00.2**	**+0.9**
JYK	**Kaneyama**	**2.41**	**252**	↑P	**Pn**	**20 33 00.2**	**+0.7**
JNBK	**Urakawa-nobuka**	**2.61**	**351**	↑P	**Pn**	**20 33 02.9**	**+0.7**
JNBK				*eS*	**Sb**	**20 33 36.9**	**-2.0**
JKB	**Kayabe**	**2.78**	**322**	P	**Pn**	**20 33 05.4**	**+0.8**
JCH	**Churui**	**2.91**	**1**	↑P	**Pn**	**20 33 06.6**	**+0.3**
JCH				S	**Sn**	**20 33 40.4**	**-0.5**
ASAJ	**Asahikawa**	**4.45**	**353**	Pn	**Pn**	**20 33 28.8**	**+1.3**
	comp=Z,49nm,0.3s,baz=202,slow=15,SNR=241						
ASAJ				Sn	**Sn**	**20 34 20.0**	**+1.3**
	comp=Z,189nm,0.3s,baz=152,slow=28,SNR=7.2						
YUK	**Yuzh-Kuril'sk**	**4.73**	**23**	*cP*	**Pn**	**20 33 30.4**	**-1.0**
YUK				*i* S	**Sn**	**20 34 21.8**	**-4.0**
YUK				pmax	pmax		
	comp=N,2μm,0.6s						
YUK				pmax	pmax		
	comp=E,733nm,0.6s						
YUK				pmax	pmax		
	comp=Z,2μm,0.6s						
SHO	**Shikotan**	**4.93**	**31**	*cP*	**Pn**	**20 33 32.2**	**-1.9**
SHO				*i* S	**Sn**	**20 34 24.4**	**-6.2**
SHO				pmax	pmax		
	comp=Z,2μm,0.5s						
SHO				pmax	pmax		
	comp=E,795nm,0.6s						
SHO				pmax	pmax		
	comp=N,292nm,0.4s						
MJAR	**Matsushiro Arr**	**5.11**	**233**	Pn	**Pn**	**20 33 36.6**	**+0.1**
	comp=N,25nm,0.3s,baz=44,slow=11,SNR=212						
MJAR				LR	LR	20 35 48.8	
	comp=N,23μm,18.9s,baz=50,slow=42						
MAJO	**Matsushiro**	**5.11**	**233**	*eP*	**Pn**	**20 33 37.5**	**+0.9**
MAJO	**Matsushiro**	**5.11**	**233**	*ePn*	**Pn**	**20 33 37.5**	**+0.9**
MAT	**Matsushiro**	**5.11**	**233**	P	**Pn**	**20 33 37.3**	**+0.8**
MAT				*eS*	**Sn**	**20 34 37.8**	**+2.7**
KUR	**Kuril'sk**	**6.48**	**30**	*eP*	**Pn**	**20 33 55.0**	**-0.3**
KUR				*i* S	**Sn**	**20 35 05.8**	**-2.9**
KUR				pmax	pmax		
	comp=Z,514μm,0.5s						
KUR				pmax	pmax		
	comp=N,122nm,0.5s						
KUR				pmax	pmax		
	comp=E,231nm,0.5s						
KUR				pmax	pmax		
	comp=Z,2μm,2.5s						
KUR				smax	smax		
	comp=N,1μm,0.6s						
KUR				smax	smax		
	comp=E,567nm,0.6s						
KUR				pmax	pmax		
	comp=N,7μm,2.4s						
KUR				pmax	pmax		
	comp=E,5μm,2.3s						
KUR				MLR	MLR		
	comp=N,7μm,15.0s						
KUR				MLR	MLR		
	comp=E,5μm,15.0s						
KUR				MLR	MLR		
	comp=Z,7μm,15.0s						
JHJ2	**Mitsune**	**7.15**	**204**	*ePn*	**Pn**	**20 34 02.7**	**-1.9**
	comp=Z,213nm,0.6s						
JHJ	**Hachijo jima 2**	**7.15**	**204**	Pn	**Pn**	**20 34 02.5**	**-2.1**
	comp=Z,134nm,0.3s,baz=332,slow=2.8,SNR=30						
JHJ				Sn	Sn	20 35 16.2	-9.3
	comp=Z,107nm,0.3s,baz=87,slow=22,SNR=5.9						
JHJ				LR	LR	20 37 07.7	
	comp=Z,8μm,19.8s,baz=63,slow=41						
YSS	**Yuzh-Sakhalins**	**7.26**	**357**	*iP*	**Pn**	**20 34 06.9**	**+0.8**
YSS				*eS*	**Sn**	**20 35 27.0**	**-1.0**
YSS				pmax	pmax		
	comp=N,530nm,0.8s						
YSS				pmax	pmax		
	comp=E,580nm,0.8s						
YSS				pmax	pmax		
	comp=Z,610nm,0.8s						
YSS				pmax	pmax		
	comp=Z,9μm,12.0s						
YSS				MLR	MLR		
	comp=Z,21μm,14.0s						
YSS				MLR	MLR		
	comp=N,18μm,15.0s						
YSS	**Yuzh-Sakhalins**	**7.26**	**357**	*ePn*	**Pn**	**20 34 06.4**	**+0.3**
VLA	**Vladivostok**	**9.23**	**295**	*eP*	**Pn**	**20 34 36.9**	**+3.8**
VLA				pmax	pmax		
	comp=Z,747nm,1.5s						

CN2					LR	LR				
	comp=Z,15μm,16.0s									
CN2					LR	LR				
	comp=Z,18μm,16.0s									
SKR	**Severo-Kuril's**	**14.20**	**35**	*i* P	**Pn**		**20**	**35**	**42.4**	**+1.5**
SNY	**Shenyang**	**15.10**	**284**	⇑P	**Pn**		**20**	**35**	**53.0**	**-0.2**
SNY				pmax	pmax					
	comp=Z,74nm,1.1s									
PEA0	**Petropavlovsk-**	**16.64**	**32**	*e*Pn	**Pn**		**20**	**36**	**09.8**	**-3.3**
PEA0B	**Petropavlovsk-**	**16.64**	**32**	*e*Pn	**P**		**20**	**36**	**15.7**	**+0.3**
	comp=Z,244nm,1.1s									
PETK	**Petropavlovsk-**	**16.64**	**32**	Pn	**Pn**		**20**	**36**	**09.0**	**-4.1**
	comp=Z,0.5nm,0.3s,baz=203,slow=11,SNR=11									
PETK				LR	LR	20 43 50.6				
	comp=Z,4μm,18.4s,baz=207,slow=41									
DL2	**Dalian**	**16.80**	**274**	⇑P	**Pn**		**20**	**36**	**14.6**	**-0.5**
DL2				*e*S	**Sn**		**20**	**39**	**23.3**	**+2.1**
DL2				pmax	pmax					
	comp=Z,330nm,1.1s									
DL2				pmax	pmax					
	comp=Z,4μm,4.7s									
DL2				LR	LR					
	comp=Z,12μm,13.9s									
DL2				LR	LR					
	comp=Z,12μm,17.0s									
DL2				LR	LR					
	comp=Z,16μm,16.1s									
PET	**Petropavlovsk**	**16.97**	**33**	*e*P	**P**		**20**	**36**	**19.9**	**+0.8**
PET				pmax	pmax					
	comp=Z,419nm,1.2s									
PET	**Petropavlovsk**	**16.97**	**33**	*e*Pn	**P**		**20**	**36**	**19.8**	**+0.7**
	comp=Z,519nm,1.2s									
JOW	**Kunigami**	**17.93**	**229**	*e*P	**Pn**		**20**	**36**	**28.2**	**-1.1**
	comp=Z,39nm,1.3s									
HIA	**Hailar**	**19.27**	**308**	*e*P	**P**		**20**	**36**	**42.5**	**-2.0**
HIA				pmax	pmax					
	comp=Z,368nm,0.9s									
HIA	**Hailar**	**19.27**	**308**	*e*P	**P**		**20**	**36**	**42.5**	**-2.0**
	comp=Z,368nm,0.9s									
SSE	**Sheshan**	**19.93**	**251**	⇑P	**P**		**20**	**36**	**49.4**	**-2.4**
SSE				pmax	pmax					
	comp=Z,46nm,0.8s									
SSE				pmax	pmax					
	comp=Z,1μm,9.5s									
SSE				LR	LR					
	comp=Z,5μm,17.5s									
SSE				LR	LR					
	comp=Z,1μm,17.4s									
SSE				LR	LR					
	comp=Z,3μm,19.6s									
MA2	**Magadan**	**20.45**	**11**	P	**P**		**20**	**36**	**57.1**	**-0.1**
	comp=Z,505nm,0.8s,baz=218,slow=9.1,SNR=221									
MA2				LR	LR	20 43 58.8				
	comp=Z,4μm,19.9s,baz=220,slow=34									
MA2	**Magadan**	**20.45**	**11**	P	**P**		**20**	**36**	**57.1**	**-0.1**
MA2				pmax	pmax					
	comp=Z,505nm,0.8s									
MA2				MLR	MLR					
	comp=Z,4μm,19.9s									
BJI	**Beijing**	**20.80**	**280**	P	**P**		**20**	**36**	**59.3**	**-1.8**
BJI				S	**S**		**20**	**40**	**50.5**	**-2.0**
BJI				pmax	pmax					
	comp=Z,210nm,1.3s									
BJI				LR	LR					
	comp=Z,7μm,13.2s									
BJI				LR	LR					
	comp=Z,16μm,15.2s									
BJT	**Baijiatuau**	**20.81**	**280**	*e*P	**P**		**20**	**36**	**59.0**	**-2.2**
BJT				pmax	pmax					
	comp=Z,261nm,1.1s									
BJT	**Baijiatuau**	**20.81**	**280**	*e*P	**P**		**20**	**36**	**59.0**	**-2.2**
	comp=Z,261nm,1.1s									
TIA	**Tai'an**	**20.91**	**269**	⇑P	**P**		**20**	**37**	**00.3**	**-2.1**
TIA				S	**S**		**20**	**40**	**52.9**	**-1.9**
TIA				pmax	pmax					
	comp=Z,180nm,1.4s									
TIA				pmax	pmax					
	comp=Z,3μm,10.6s									
TIA				LR	LR					
	comp=Z,8μm,12.4s									
TIA				LR	LR					
	comp=Z,28μm,16.4s									
TIA				LR	LR					
	comp=Z,28μm,17.7s									
CLNS	**Chul'man**	**20.96**	**331**	*e*P	**P**		**20**	**37**	**03.6**	**+0.8**
CLNS				*e**PP	**sP**		**20**	**37**	**12.2**	**+2.2**
CLNS				*e*		20 37 22.9				
CLNS				*e*S	**S**		**20**	**40**	**56.5**	**+1.0**
CLNS				*e*		20 41 08.9				
CLNS				*e*		20 48 23.7				
CLNS				pmax	pmax					
	comp=Z,343nm,0.9s									
CLNS				pmax	pmax					
	comp=N,272nm,1.1s									
CLNS				pmax	pmax					
	comp=E,201nm,1.3s									
CLNS				pmax	pmax					
	comp=Z,178nm,1.1s									
CLNS				pmax	pmax					
	comp=N,355nm,1.0s									
CLNS				pmax	pmax					
	comp=E,401nm,1.0s									
CLNS				smax	smax					
	comp=N,2μm,11.8s									
CLNS				smax	smax					
	comp=E,2μm,11.0s									
CLNS				MLR	MLR					
	comp=Z,13μm,16.0s									
CLNS				MLR	MLR					
	comp=N,11μm,15.0s									
CLNS				MLR	MLR					
	comp=E,4μm,15.0s									
NJ2	**Nanjing**	**21.19**	**257**	*e*P	**P**		**20**	**37**	**03.3**	**-2.1**
NJ2				pP	**sP**		**20**	**37**	**09.4**	**-3.2**
NJ2				pmax	pmax					
	comp=E,72nm,0.6s									
NJ2				pmax	pmax					
	comp=E,3μm,8.1s									
NJ2				LR	LR					
	comp=E,10μm,11.9s									
NJ2				LR	LR					
	comp=E,8μm,11.9s									
NJ2				LR	LR					
	comp=E,12μm,17.3s									
TATO	**Taipei**	**23.48**	**238**	*e*P	**P**		**20**	**37**	**28.0**	**-1.6**
	comp=E,424nm,1.2s									
TATO	**Taipei**	**23.48**	**238**	P	**P**		**20**	**37**	**27.9**	**-1.7**
	SNR=7.1									
TATO	**Taipei**	**23.48**	**238**	P	**P**		**20**	**37**	**27.9**	**-1.7**
	SNR=7.1									
YHNB	**Yeheng**	**23.76**	**237**	*e*P	**P**		**20**	**37**	**28.6**	**-3.9**
	comp=E,130nm,1.1s									
YAK	**Yakutsk**	**23.86**	**344**	P	**P**		**20**	**37**	**31.9**	**-0.9**
	comp=E,631nm,0.8s,baz=153,slow=4.0,SNR=246									
YAK				S	**S**		**20**	**41**	**47.8**	**0.0**
	comp=E,51nm,0.7s,baz=112,slow=19,SNR=4.6									
YAK				LR	LR	20 47 17.4				
	comp=E,5μm,18.5s,baz=152,slow=38									
YAK	**Yakutsk**	**23.86**	**344**	*c i*P	**P**		**20**	**37**	**31.7**	**-1.2**
YAK				*e*		20 38 00.3				
YAK				*e*		20 41 16.0				
YAK				*e*S	**S**		**20**	**41**	**46.6**	**-1.2**
YAK				*e*SS	**SnSn**		**20**	**42**	**28.1**	**+1.0**
YAK				pmax	pmax					
	comp=Z,693nm,0.9s									
YAK				pmax	pmax					
	comp=N,329nm,1.0s									
YAK				pmax	pmax					
	comp=E,107nm,1.3s									
YAK				pmax	pmax					
	comp=Z,567nm,1.0s									
YAK				pmax	pmax					
	comp=N,151nm,1.0s									
YAK				pmax	pmax					
	comp=E,176nm,0.9s									
YAK				smax	smax					
	comp=E,1μm,2.7s									
YAK				smax	smax					
	comp=N,2μm,2.8s									
YAK				MLR	MLR					
	comp=Z,9μm,15.0s									
YAK				MLR	MLR					
	comp=N,5μm,14.0s									
YAK				MLR	MLR					
	comp=E,5μm,14.0s									
YAK	**Yakutsk**	**23.86**	**344**	*e*P	**P**		**20**	**37**	**31.6**	**-1.2**
	comp=E,1μm,0.8s									
YAK				S	**S**		**20**	**41**	**47.8**	**0.0**
SEY	**Seymchan**	**23.90**	**10**	P	**P**		**20**	**37**	**33.9**	**+0.6**
	comp=E,443nm,0.9s,baz=194,slow=7.5,SNR=193									
CIT	**Chita**	**23.92**	**311**	*e*P	**P**		**20**	**37**	**32.2**	**-1.5**
CIT				*e*		20 37 43.7				
CIT				*e*S	**S**		**20**	**41**	**46.6**	**-2.6**
CIT				pmax	pmax					
	comp=Z,1μm,1.2s									
NACB	**Ninganchiao**	**23.97**	**236**	*e*P	**P**		**20**	**37**	**30.8**	**-3.6**
	comp=E,127nm,1.0s									
TIY	**Taiyuan**	**24.11**	**275**	*e*P	**P**		**20**	**37**	**33.3**	**-2.4**
TIY				pmax	pmax					
	comp=Z,280nm,1.3s									
TIY				LR	LR					
	comp=Z,10μm,14.9s									
TIY				LR	LR					
	comp=Z,7μm,15.9s									
TIY				LR	LR					
	comp=Z,10μm,18.9s									
HHC	**Hu-ho-hao-te**	**24.18**	**283**	*e*P	**P**		**20**	**37**	**34.1**	**-2.2**
HHC				pP	pP		20	37	39.8	-1.8
HHC				sP	sP		20	37	43.3	-0.5
HHC				S	**S**		**20**	**41**	**48.8**	**-4.9**
HHC				pmax	pmax					
	comp=Z,68nm,0.8s									
HHC				pmax	pmax					
	comp=Z,3μm,13.1s									
HHC				LR	LR					
	comp=Z,4μm,15.5s									
HHC				LR	LR					
	comp=Z,15μm,15.9s									
HHC				LR	LR					
	comp=Z,18μm,15.1s									
SSLB	**Suanglung**	**24.66**	**237**	*e*P	**P**		**20**	**37**	**36.3**	**-4.4**
	comp=Z,155nm,1.0s									
YULB	**Yu-li**	**24.72**	**235**	*e*P	**P**		**20**	**37**	**37.5**	**-3.7**
	comp=Z,117nm,1.1s									
TPUB	**Ta-pu**	**25.21**	**236**	*e*P	**P**		**20**	**37**	**42.6**	**-3.1**
	comp=Z,208nm,1.1s									
TWG	**Pinlang**	**25.27**	**235**	*e*P	**P**		**20**	**37**	**45.3**	**-0.9**
	comp=Z,2μm,1.4s									
WHN	**Wuhan**	**25.29**	**258**	⇑P	**P**		**20**	**37**	**46.3**	**0.0**
WHN				pmax	pmax					
	comp=Z,1μm,1.0s									
BTO	**Baotou**	**25.37**	**283**	*e*P	**P**		**20**	**37**	**45.6**	**-1.5**
QZH	**Quanzhou**	**25.43**	**242**	⇑*i*P	**P**		**20**	**37**	**43.6**	**-4.0**
QZH				S	**S**		**20**	**42**	**07.3**	**-6.5**
QZH				pmax	pmax					
	comp=Z,410nm,1.4s									
QZH				pmax	pmax					
	comp=Z,5μm,5.6s									
QZH				LR	LR					
	comp=Z,11μm,15.0s									
QZH				LR	LR					
	comp=Z,7μm,13.9s									
QZH				LR	LR					
	comp=Z,15μm,16.8s									
GUMO	**Guam**	**26.05**	**177**	LR	LR	20 46 56.5				
	comp=Z,2μm,21.2s,baz=9.5,slow=34									
BOD	**Bodaibo**	**26.17**	**324**	*e*P	**P**		**20**	**37**	**54.6**	**+0.6**
BOD				pmax	pmax					
	comp=Z,652nm,1.0s									
ULN	**Ulaanbaatar**	**27.21**	**299**	*c i*P	**P**		**20**	**38**	**04.5**	**+0.7**
ULN				pmax	pmax					
	comp=Z,501nm,1.2s									
ULN	**Ulaanbaatar**	**27.21**	**299**	*e*P	**P**		**20**	**38**	**04.7**	**+0.9**
	comp=Z,483nm,1.2s									
ULN	**Ulaanbaatar**	**27.21**	**299**	P	**P**		**20**	**38**	**04.9**	**+1.1**
	SNR=173									
ULN	**Ulaanbaatar**	**27.21**	**299**	P	**P**		**20**	**38**	**04.9**	**+1.1**
	SNR=173									
SONA1	**Songino Array**	**27.65**	**299**	*e*P	**P**		**20**	**38**	**07.8**	**+0.1**
SONM	**Songino Array**	**27.65**	**299**	P	**P**		**20**	**38**	**08.8**	**+1.1**
	comp=Z,126nm,0.9s,baz=88,slow=11,SNR=584									
SONM				LR	LR	20 49 48.5				
	comp=Z,18μm,18.2s,baz=95,slow=38									
SONM	**Songino Array**	**27.65**	**299**	P	**P**		**20**	**38**	**08.8**	**+1.1**
SONM				pmax	pmax					
	comp=Z,120nm,0.9s									
SONM				MLR	MLR					
	comp=Z,18μm,18.2s									
XAN	**Xi'an**	**27.97**	**269**	P	**P**		**20**	**38**	**09.5**	**-1.0**
XAN				pP	sP	20 38 16.0			-2.0	
XAN				pmax	pmax					
	comp=Z,160nm,1.2s									
XAN				LR	LR					
	comp=Z,12μm,14.5s									
XAN				LR	LR					
	comp=Z,75μm,14.5s									
H11N2	**WAKE ISLAND Hy**	**28.41**	**128**	T	T	21 08 38.8				
	baz=320,slow=74,SNR=108									
H11N1	**WAKE ISLAND Hy**	**28.43**	**128**	T	T	21 08 33.2				
	baz=320,slow=74,SNR=92									
H11N3	**WAKE ISLAND Hy**	**28.43**	**128**	T	T	21 08 40.1				
	baz=320,slow=74,SNR=98									
ENH	**Enshi**	**29.11**	**262**	*e*P	**P**		**20**	**38**	**20.2**	**-0.5**
	comp=Z,413nm,1.1s									
H11S1	**WAKE ISLAND Hy**	**29.23**	**130**	T	T	21 09 29.7				
	baz=321									
H11S3	**WAKE ISLAND Hy**	**29.23**	**130**	T	T	21 09 23.8				
	baz=321									
H11S2	**WAKE ISLAND Hy**	**29.25**	**130**	T	T	21 09 31.0				
	baz=321									
IRK	**Irkutsk**	**29.51**	**308**	*e*P	**P**		**20**	**38**	**24.1**	**+0.1**
IRK				pmax	pmax					
	comp=Z,270nm,1.4s									
TLY	**Talaya**	**29.81**	**307**	P	**P**		**20**	**38**	**27.5**	**+0.8**
	comp=Z,78nm,1.1s,baz=108,slow=5.7,SNR=89									
TLY				LR	LR	20 51 18.6				
	comp=Z,7μm,18.5s,baz=101,slow=38									
TLY	**Talaya**	**29.81**	**307**	*c i*P	**P**		**20**	**38**	**27.7**	**+1.0**
TLY				pmax	pmax					
	comp=Z,157nm,1.2s									
TLY				MLR	MLR					
	comp=Z,4μm,9.0s									
TLY	**Talaya**	**29.81**	**307**	*e*P	**P**		**20**	**38**	**27.5**	**+0.8**
	comp=Z,183nm,1.3s									
TLY	**Talaya**	**29.81**	**307**	P	**P**		**20**	**38**	**28.1**	**+1.4**
	SNR=82									
TLY	**Talaya**	**29.81**	**307**	P	**P**		**20**	**38**	**28.1**	**+1.4**
	SNR=82									
ZAK	**Zakamensk**	**29.89**	**304**	*e*P	**P**		**20**	**38**	**27.6**	**+0.1**
ZAK				pmax	pmax					
	comp=Z,127nm,1.5s									
GZH	**Guangzhou**	**30.28**	**246**	P	P	20 38 26.1			-4.9	
BILL	**Bilibino**	**31.05**	**17**	*c i*P	**P**		**20**	**38**	**38.1**	**+0.7**
BILL				pmax	pmax					
	comp=Z,112nm,1.0s									
BILL	**Bilibino**	**31.05**	**17**	*e*P	**P**		**20**	**38**	**37.6**	**+0.1**
	comp=Z,86nm,0.9s									
LZH	**Lanzhou**	**31.18**	**276**	⇑P	**P**		**20**	**38**	**39.1**	**0.0**
LZH				pP	sP		20	38	44.3	-2.3
LZH				sP	pP		20	38	47.8	+3.4
LZH				PP	**PnPn**		**20**	**39**	**44.3**	**+3.5**
LZH				S	**S**		**20**	**43**	**42.0**	**-2.4**
LZH				sS	sS		20	43	54.0	+0.8
LZH				SS	**SnSn**		**20**	**45**	**26.4**	**-0.1**
LZH				pmax	pmax					
	comp=Z,170nm,1.0s									
LZH				pmax	pmax					
	comp=Z,450nm,4.6s									
LZH				LR	LR					
	comp=Z,8μm,13.0s									
LZH				LR	LR					
	comp=Z,15μm,13.6s									
LZH				LR	LR					
	comp=Z,18μm,14.8s									
MOY	**Mondy**	**31.45**	**307**	*e*P	**P**		**20**	**38**	**41.9**	**+0.6**
MOY				pmax	pmax					
	comp=Z,202nm,1.9s									
TIXI	**Tiksi**	**32.85**	**352**	P	**P**		**20**	**38**	**53.2**	**+0.1**
	comp=Z,32nm,1.0s,baz=144,slow=7.6,SNR=90									
TIXI	**Tiksi**	**32.85**	**352**	*i* P	**P**		**20**	**38**	**53.3**	**+0.1**
TIXI				pmax	pmax					
	comp=Z,76nm,1.7s									
TIXI	**Tiksi**	**32.85**	**352**	*e*P	**P**		**20**	**38**	**52.8**	**-0.3**
	comp=Z,43nm,0.9s									
GYA	**Guiyang**	**33.19**	**258**	⇑*i*P	**P**		**20**	**38**	**56.3**	**-0.4**
GYA				pP	sP		20	39	03.4	-0.9
GYA				PP	**PnPn**		**20**	**40**	**07.6**	**+0.8**
GYA				PcP	**PcP**		**20**	**41**	**41.0**	**+1.7**
GYA				S	**S**		**20**	**44**	**13.8**	**-2.0**
GYA				ScP	**ScP**		**20**	**45**	**22.8**	**+0.1**
GYA				SS	**SnSn**		**20**	**46**	**15.0**	**-0.5**
GYA				ScS	**ScS**		**20**	**49**	**22.3**	**-1.2**
GYA				pmax	pmax					
	comp=Z,290nm,1.2s									
GYA				pmax	pmax					
	comp=Z,410nm,6.8s									
GYA				LR	LR					
	comp=Z,7μm,19.5s									
GYA				LR	LR					
	comp=Z,5μm,15.1s									
GYA				LR	LR					
	comp=Z,5μm,17.6s									
CD2	**Chengdu**	**33.22**	**267**	P	**P**		**20**	**38**	**56.1**	**-0.8**
CD2				sP	sP		20	39	05.3	+0.8
CD2				PP	**PP**		**20**	**40**	**11.1**	**-1.0**
CD2				S	**S**		**20**	**44**	**14.8**	**-1.4**
CD2				sS	sS		20	44	25.8	+0.8
CD2				pmax	pmax					
	comp=Z,240nm,1.2s									
CD2				pmax	pmax					
	comp=Z,5μm,12.7s									
CD2				LR	LR					
	comp=Z,16μm,13.2s									
CD2				LR	LR					
	comp=Z,16μm,13.2s									
GTA	**Gaotai**	**33.29**	**284**	⇑P	**P**		**20**	**38**	**58.1**	**+0.6**
GTA				pP	sP		20	39	03.4	-1.7
GTA				sP	pP		20	39	06.4	+3.5
GTA				PcP	**PcP**		**20**	**41**	**40.8**	**+1.4**
GTA				S	**S**		**20**	**44**	**16.9**	**-0.3**
GTA				sS	sS		20	44	26.6	+0.6
GTA				SS	**SnSn**		**20**	**46**	**16.8**	**-0.9**
GTA				pmax	pmax					
	comp=Z,210nm,1.1s									
GTA				pmax	pmax					
	comp=Z,5μm,6.4s									
GTA				LR	LR					
	comp=Z,4μm,18.3s									
GTA				LR	LR					
	comp=Z,17μm,16.4s									
GTA				LR	LR					
	comp=Z,20μm,16.6s									
QIZ	**Qiongzhong**	**35.40**	**244**	P	**P**		**20**	**39**	**16.8**	**+0.9**
QIZ				LR	LR					
	comp=Z,2μm,19.3s									
QIZ				LR	LR					
	comp=Z,2μm,13.6s									
DAV	**Davao City (W)**	**36.18**	**211**	LR	LR	20 51 34.3				
	comp=Z,3μm,21.5s,baz=60,slow=32									
KRAR	**Krasnoyarsk**	**36.64**	**313**	*c i*P	**P**		**20**	**39**	**27.1**	**+1.1**
KRAR				pmax	pmax					
	comp=Z,577nm,1.3s									
KMI	**Kunming**	**36.88**	**259**	P	**P**		**20**	**39**	**28.6**	**-0.1**
KMI				pP	sP		20	39	35.8	-0.5
KMI				sP	pP		20	39	38.6	+4.5
KMI				S	**S**		**20**	**45**	**12.5**	**-0.3**
KMI				SS	**SnSn**		**20**	**47**	**39.3**	**-5.8**
KMI				pmax	pmax					
	comp=Z,170nm,1.3s									
KMI				pmax	pmax					
	comp=Z,1μm,5.2s									
KMI				LR	LR					
	comp=Z,4μm,15.3s									
KMI				LR	LR					
	comp=Z,7μm,16.1s									
KMI				LR	LR					
	comp=Z,6μm,15.0s									
SKNT	**Sakolnakorn**	**40.91**	**248**	P	**P**		**20**	**40**	**02.3**	**0.0**
	comp=Z,171nm,1.1s									
MYLDM	**Lahad Datu**	**41.01**	**220**	⇓P	**P**		**20**	**40**	**06.6**	**+3.5**
WMQ	**Urumqi**	**41.03**	**294**	⇑*i*P	**P**		**20**	**40**	**04.3**	**+1.2**
WMQ				pP	sP		20	40	10.5	-0.2
WMQ				sP	pP		20	40	13.4	+4.9
WMQ				S	**S**		**20**	**46**	**16.5**	**+1.9**
WMQ				pmax	pmax					
	comp=Z,210nm,0.8s									
WMQ				LR	LR					
	comp=Z,3μm,16.2s									
WMQ				LR	LR					
	comp=Z,2μm,15.0s									
WMQ				LR	LR					
	comp=Z,1μm,19.6s									
SDKM	**Sandakan**	**41.27**	**222**	⇑P	**P**		**20**	**40**	**07.0**	**+1.7**
ZAA0	**Zalesovo Array**	**41.27**	**310**	*e*P	**P**		**20**	**40**	**04.0**	**-0.9**
ZALV	**Zalesovo Beam**	**41.27**	**310**	P	**P**		**20**	**40**	**05.4**	**+0.5**
	comp=Z,104nm,0.8s,baz=86,slow=7.5,SNR=413									
ZALV				PcP	**PcP**		**20**	**42**	**03.6**	**+0.3**
	comp=Z,53nm,0.9s,baz=94,slow=4.8,SNR=5.0									
ZALV				LR	LR	20 58 03.5				
	comp=Z,4μm,19.2s,baz=60,slow=37									
CRAI	**Chiangrai**	**41.48**	**255**	P	**P**		**20**	**40**	**08.2**	**+1.2**
	comp=Z,186nm,1.4s,comp=Z,6μm									
NRIK	**Noril'sk**	**41.50**	**334**	P	**P**		**20**	**40**	**07.2**	**+0.6**
	comp=Z,46nm,1.1s,baz=108,slow=9.0,SNR=73									
NRIK				LR	LR	20 58 34.2				
	comp=Z,7μm,18.1s,baz=104,slow=38									
SWI	**Sorong**	**41.85**	**198**	P	**P**		**20**	**40**	**10.8**	**+0.9**
	comp=Z,63nm,1.3s									
JAY	**Jayapura**	**42.08**	**184**	P	**P**		**20**	**40**	**11.1**	**-0.7**
	comp=Z,1.9nm,0.9s,baz=301,slow=22,SNR=6.0									
JAY	**Jayapura**	**42.08**	**184**	P	**P**		**20**	**40**	**13.3**	**+1.5**
JAY	**Jayapura**	**42.08**	**184**	P	**P**		**20**	**40**	**11.1**	**-0.7**
JAY				pmax	pmax					
	comp=Z,5.0nm,1.1s									
TSM	**Tawau**	**42.09**	**220**	⇑P	**P**		**20**	**40**	**13.6**	**+1.7**
NVS	**Novosibirsk**	**42.13**	**312**	⇑*i*P	**P**		**20**	**40**	**12.2**	**+0.4**
NVS				pmax	pmax					
	comp=N,81nm,2.0s									
NVS				pmax	pmax					
	comp=E,229nm,2.0s									
NVS				pmax	pmax					
	comp=Z,349nm,2.0s									
KHON	**Khomkaen**	**42.16**	**248**	P	**P**		**20**	**40**	**12.4**	**-0.1**
	comp=Z,36nm,1.2s,comp=Z,401nm									
GENI	**Genyem**	**42.18**	**185**	P	**P**		**20**	**40**	**14.7**	**+2.0**
TT01	**Tatalina**	**42.39**	**36**	*e*P	**P**		**20**	**40**	**15.0**	**+1.1**
TTA	**Tatalina**	**42.39**	**36**	*e*P	**P**		**20**	**40**	**15.2**	**+1.2**
TTA				pmax	pmax					
	comp=Z,43nm,1.0s									
TTA	**Tatalina**	**42.39**	**36**	*e*P	**P**		**20**	**40**	**15.2**	**+1.2**
	comp=Z,43nm,1.0s									
ZSN	**Zaisan**	**42.46**	**301**	⇑*i*P	**P**		**20**	**40**	**13.6**	**-1.2**
	comp=Z,2μm,1.3s									
ZSN				LR	LR	20 58 15.1				
	comp=Z,5μm,15.1s									
SVW2	**Sparrevohn**	**42.51**	**39**	*e*P	**P**		**20**	**40**	**16.0**	**+1.1**
	comp=Z,47nm,1.1s									
LBMI	**Labuha**	**42.67**	**204**	P	**P**		**20**	**40**	**16.8**	**+0.2**
	comp=Z,118nm,1.5s,comp=Z,2μm									
UTTA	**Uttaradit**	**42.89**	**252**	P	**P**		**20**	**40**	**18.4**	**-0.1**
	comp=Z,23nm,1.2s,comp=Z,218nm									
LAMP	**Lampang**	**43.08**	**254**	P	**P**		**20**	**40**	**20.3**	**+0.3**
	comp=Z,26nm,1.0s,comp=Z,264nm									
PBKT	**Sadao Pong**	**43.34**	**250**	P	**P**		**20**	**40**	**21.8**	**-0.3**
	comp=Z,76nm,1.4s									
PHIT	**Phitsanulok**	**43.35**	**251**	P	**P**		**20**	**40**	**23.3**	**+1.2**
	comp=Z,50nm,1.2s									

comp=Z,11nm,0.8s
CMAR MLR MLR

comp=Z,3µm,18.2s
MRSI Marisa 43.64 212 P **P** **20 40 24.8 +0.3**
comp=Z,113nm,1.3s,comp=Z,2µm
CM01 Chiang Mai Arr 43.64 254 *eP* **P** **20 40 24.4 -0.2**
OHAK Old Harbor 43.80 45 *eP* **P** **20 40 25.4 0.0**
comp=Z,118nm,1.3s
MK31 Makanchi Array 44.02 300 *eP* **P** **20 40 27.7 +0.4**
MK31 pmax pmax

comp=Z,238nm,0.9s
MKAR Makanchi Array 44.02 300 P **P** **20 40 27.9 +0.6**
comp=Z,176nm,0.9s,baz=82,slow=9.1,SNR=640
MKAR LR LR 20 59 37.4

comp=Z,7µm,19.6s,baz=52,slow=37
MKAR Makanchi Array 44.02 300 P **P** **20 40 27.9 +0.6**
MKAR pmax pmax

comp=Z,178nm,0.9s
MKAR MLR MLR

comp=Z,7µm,19.6s
KDAK Kodiak Island 44.14 44 *eP* **P** **20 40 28.7 +0.7**
KDAK pmax pmax

comp=Z,190nm,1.4s
KDAK Kodiak Island 44.14 44 *eP* **P** **20 40 28.7 +0.7**
comp=Z,190nm,1.4s
MAKZ Makanchi 44.22 300 *i* P **P** **20 40 28.9 0.0**
MAKZ pmax pmax

comp=Z,336nm,1.1s
MAKZ Makanchi 44.22 300 *eP* **P** **20 40 29.3 +0.4**
comp=Z,299nm,1.0s
SPU Mount Spurr 44.22 39 *eP* **P** **20 40 30.4 +1.6**
RABL Rabaul 44.43 167 *eP* **P** **20 40 30.0 -0.8**
comp=Z,138nm,1.3s
SANI Sanana 44.48 205 P **P** **20 40 32.1 +0.9**
comp=Z,90nm,1.2s,comp=Z,1µm
SEM Semipalatinsk 44.55 306⇑ *iP* **P** **20 40 31.7 +0.2**
comp=Z,2µm,1.2s
SEM *i* S **S** **20 47 05.8 -0.2**
SEM LR LR 20 59 16.2

comp=Z,2µm,14.3s
MSAI Masohi 44.83 201 P **P** **20 40 35.2 +1.2**
CHBT CHBT 44.94 245 P **P** **20 40 35.2 +0.3**
comp=Z,144nm,1.2s,comp=Z,3µm
SHL Shillong 44.96 268 *eP* **P** **20 40 33.3 -1.9**
KURK Kurchatov 45.51 306 *eP* **P** **20 40 39.5 +0.5**
KURK pmax pmax

comp=Z,414nm,1.0s
KURK Kurchatov 45.51 306 *eP* **P** **20 40 39.5 +0.5**
comp=Z,414nm,1.0s
KURK Kurchatov 45.51 306 P **P** **20 40 39.8 +0.8**
SNR=231
KURK Kurchatov 45.51 306 P **P** **20 40 39.8 +0.8**
SNR=231
KURBB Kurchatov Arra 45.58 306 P **P** **20 40 40.1 +0.5**
comp=Z,308nm,1.0s,baz=81,slow=8.2,SNR=704
PMR Palmer 45.61 38 *eP* **P** **20 40 40.1 +0.4**
PMR pmax pmax

comp=Z,39nm,0.9s
PMR Palmer 45.61 38 *eP* **P** **20 40 40.0 +0.4**
comp=Z,39nm,0.9s
BNDI Bandanaira 45.70 199 P **P** **20 40 41.8 +0.9**
comp=Z,166nm,1.7s,comp=Z,4µm
COLA College 46.04 34 *eP* **P** **20 40 44.3 +1.2**
COLA pmax pmax

comp=Z,107nm,0.8s
COLA College 46.04 34 *eP* **P** **20 40 44.2 +1.2**
comp=Z,107nm,0.8s
SRDT SRDT 46.14 250 P **P** **20 40 44.7 +0.3**
comp=Z,328nm,1.3s
KHLT Khaolaem Dam 46.23 250 P **P** **20 40 45.9 +0.7**
comp=Z,24nm,2.1s
ILAR Eielson Array 46.45 34 P **P** **20 40 46.8 +0.4**
comp=Z,26nm,0.8s,baz=264,slow=6.4,SNR=212
ILAR LR LR 21 02 46.1

comp=Z,1µm,18.3s,baz=313,slow=39
ILAR Eielson Array 46.45 34 P **P** **20 40 46.8 +0.4**
ILAR pmax pmax

comp=Z,25nm,0.8s
ILAR MLR MLR

comp=Z,1µm,18.3s
ILB Eielson Array 46.45 34 *eP* **P** **20 40 46.6 +0.2**
IL1 Eielson Array 46.45 34 *eP* **P** **20 40 46.6 +0.2**
SBUM Sibu 46.59 225⇓ P **P** **20 40 48.6 +0.6**
SHLS Shalkode 46.67 296⇑ *iP* **P** **20 40 49.0 +0.4**
comp=Z,916nm,1.4s
SHLS LR LR 21 00 50.6

comp=Z,2µm,16.2s
PDGK Podgornoye 46.89 296 *i* P **P** **20 40 49.7 -0.3**
PDGK pmax pmax

comp=Z,260nm,1.3s
UZB Uzynbulak 47.27 296⇑ *iP* **P** **20 40 53.7 +0.5**
comp=Z,1µm,1.3s
UZB *i* PP **PP** **20 42 43.3 -0.9**
UZB LR LR 21 01 18.1

comp=Z,3µm,15.0s
TAPN Taplejung 47.27 273 *eP* **P** **20 40 54.3 +0.7**
comp=Z,598nm,1.1s
KPKS Kokpek 47.40 297⇑ *iP* **P** **20 40 54.8 +0.6**
comp=Z,3µm,1.3s
KPKS *i* PP **PP** **20 42 46.4 +1.1**
KPKS LR LR 21 01 18.4

comp=Z,6µm,15.6s
KDI Kendari 47.43 209 P **P** **20 40 55.9 +1.4**
comp=Z,52nm,0.9s
ZHN Zhinishke 47.67 296⇑ *iP* **P** **20 40 57.0 +0.7**
comp=Z,1µm,1.3s
ZHN LR LR 21 01 18.6

comp=Z,3µm,14.5s
TTSI Tana Toraja 47.70 213 P **P** **20 40 56.8 +0.2**
comp=Z,15nm,1.4s
SATY Saty 47.72 296⇑ *iP* **P** **20 40 57.6 +0.9**
comp=Z,2µm,1.5s
SATY *i* PP **PP** **20 42 49.4 +1.1**
SATY LR LR 21 01 29.9

comp=Z,5µm,15.1s
ODAN Odare 47.76 272 *eP* **P** **20 40 57.8 +0.4**
comp=Z,362nm,1.0s
MENT Mentasta 48.00 36 *eP* **P** **20 40 59.7 +1.2**
comp=Z,71nm,1.0s
RAMN Ramite 48.33 273 *eP* **P** **20 41 02.1 +0.4**
comp=Z,832nm,1.0s
GUN Gumba 48.40 274 *eP* **P** **20 41 03.0 +0.6**
comp=Z,1µm,1.0s
KSM Kuching 48.46 227⇑ P **P** **20 41 03.4 +0.9**
KSM Kuching 48.46 227 *eP* **P** **20 41 02.6 0.0**
comp=Z,119nm,1.3s
SPSI Sidrap Palu 48.55 212 P **P** **20 41 03.5 +0.4**
comp=Z,32nm,1.1s
MDOK Medeo 48.62 297⇓ *iP* **P** **20 41 04.8 +1.1**
comp=Z,1µm,1.3s
MDOK *e*S **S** **20 48 04.7 -0.3**
MDOK LR LR 21 02 15.8

comp=Z,5µm,17.4s
SAUI Saumlaki 48.73 196 P **P** **20 41 06.1 +1.6**
comp=Z,76nm,1.4s
SAUI Saumlaki 48.73 196 *eP* **P** **20 41 04.5 +0.1**
comp=Z,166nm,1.3s
KUU Kurty 48.87 298⇑ *iP* **P** **20 41 05.7 +0.3**
comp=Z,3µm,1.1s
KUU *i* PP **PP** **20 43 00.2 +1.6**
KUU *e*S **S** **20 48 07.1 -0.9**
KUU LR LR 21 01 45.9

comp=Z,4µm,15.6s
EGAK Eagle 48.90 33 *eP* **P** **20 41 05.3 0.0**
comp=Z,67nm,0.8s
KKN Kakani 48.92 275 *eP* **P** **20 41 06.8 +0.5**
comp=Z,1µm,1.2s
PKIN Phulchoki 48.94 274 *eP* **P** **20 41 06.4 -0.1**
comp=Z,197nm,0.9s
PMG Port Moresby 48.99 175 LR LR 21 03 42.0
comp=Z,704nm,18.1s,baz=335,slow=39
STKI Sintang 48.99 224 P **P** **20 41 05.6 -1.0**
DMN Daman 49.15 274 *eP* **P** **20 41 08.6 +0.5**
comp=Z,622nm,1.3s
GKN Gorkha 49.31 275 *eP* **P** **20 41 09.4 +0.2**
comp=Z,877nm,1.3s
BRZS Berezniki 49.37 307⇑ *iP* **P** **20 41 09.7 +0.5**
comp=Z,298nm,1.2s
BRZS *i* PP **PP** **20 43 04.1 +1.1**
BRZS *e*S **S** **20 48 15.7 +0.6**
KAPI Kappang 49.51 212 *eP* **P** **20 41 10.2 -0.3**
comp=Z,226nm,1.8s
KAPI Kappang 49.51 212 P **P** **20 41 10.6 +0.1**
SNR=13
KAPI Kappang 49.51 212 P **P** **20 41 10.6 +0.1**
SNR=13
KBKI Kotabaru 49.53 217 P **P** **20 41 10.7 +0.1**

comp=Z,90nm,2.0s
BMNS Besmoynak 49.59 297⇑ *iP* **P** **20 41 12.1 +1.0**
comp=Z,6µm,1.1s
BMNS *i* PP **PP** **20 43 07.0 +1.6**
BMNS LR LR 21 02 31.3

comp=Z,2µm,13.1s
CHKZ Chkalovo 49.61 312 *i* P **P** **20 41 11.2 +0.3**
CHKZ pmax pmax

comp=Z,261nm,1.1s
VOSK Vostochnaya 49.65 310 *cP* **P** **20 41 11.6 +0.4**
VOSK pmax pmax

comp=Z,304nm,1.1s
TKM2 Tokmak 2 49.71 297 *i* P **P** **20 41 13.1 +1.0**
TKM2 pmax pmax

comp=Z,476nm,1.2s
TKM2 Tokmak 2 49.71 297 *eP* **P** **20 41 13.3 +1.2**
comp=Z,362nm,1.0s
BVAR Borovoye Array 49.91 311 P **P** **20 41 14.2 +0.9**
comp=Z,136nm,0.9s,baz=78,slow=8.2,SNR=473
BVAR LR LR 21 01 51.0

comp=Z,4µm,18.5s,baz=344,slow=35
BRVK Borovoye 49.97 311⇑ *iP* **P** **20 41 14.4 +0.8**
BRVK pmax pmax

comp=Z,335nm,1.0s
BRVK Borovoye 49.97 311 *eP* **P** **20 41 14.6 +1.0**
comp=Z,187nm,0.9s
BRVK Borovoye 49.97 311 P **P** **20 41 14.9 +1.3**
SNR=92
SURT Suratani 50.06 245 P **P** **20 41 15.6 +0.8**
comp=Z,66nm,0.7s
OTUK Ortayu 50.10 305 *i* P **P** **20 41 15.5 +0.7**
OTUK pmax pmax

comp=Z,133nm,0.9s
KOLN Koldanda 50.23 275 *eP* **P** **20 41 16.8 +0.6**
comp=Z,334nm,0.9s
TRTT Trang 50.24 243 P **P** **20 41 16.8 +0.7**
comp=Z,45nm,1.5s
BBKI Banjar Baru 50.29 218 P **P** **20 41 15.6 -0.9**
KRAB Krabi 50.30 244 P **P** **20 41 14.6 -2.0**
comp=Z,14µm,0.8s,comp=Z,520µm
FRU Bishkek 50.41 297⇑ *iP* **P** **20 41 17.5 +0.3**
FRU *e*S **S** **20 48 27.5 -2.3**
FRU pmax pmax

comp=Z,440nm,1.8s
FRU smax smax

comp=E,230nm,2.7s
FRU MLR MLR

comp=E,8µm,15.0s
BOK Bokaro 50.52 270 *eP* **P** **20 41 16.8 -1.4**
PYUN Piuthan 50.53 276 *eP* **P** **20 41 19.1 +0.6**
comp=E,2µm,1.2s
AAK Ala-Archa 50.57 297 *cP* **P** **20 41 19.2 +0.6**
AAK pmax pmax

comp=Z,346nm,1.4s
AAK Ala-Archa 50.57 297 *eP* **P** **20 41 19.0 +0.5**
comp=Z,153nm,1.3s
AAK Ala-Archa 50.57 297 P **P** **20 41 19.5 +0.9**
SNR=64
AAK Ala-Archa 50.57 297 P **P** **20 41 19.5 +0.9**
SNR=64
KSH Kashi 50.71 293 P **P** **20 41 24.3 +4.7**
KSH *e*pP sP 20 41 31.0 +3.7
KSH *e*sP pP 20 41 33.8 +8.6
KSH S **S** **20 48 38.0 +3.8**
KSH pmax pmax

comp=Z,170nm,1.2s
KSH pmax pmax

comp=Z,2µm,8.8s
KSH LR LR

comp=Z,7µm,15.3s
KSH LR LR

comp=Z,5µm,13.3s
KSH LR LR

comp=Z,12µm,16.5s
ZRNK Zerenda 50.74 311 *i* P **P** **20 41 19.5 0.0**
ZRNK pmax pmax

comp=Z,277nm,1.0s
PKDT Phuket 51.13 244 P **P** **20 41 23.7 +0.8**
comp=Z,136nm,1.2s
PBKI Pangkalan Bun 51.22 222 P **P** **20 41 24.5 +1.0**
comp=Z,105nm,1.2s,comp=Z,2µm
INK Inuvik 51.34 28 P **P** **20 41 25.0 +1.3**
comp=Z,30nm,0.9s,baz=287,slow=7.3,SNR=93
INK LR LR 21 07 09.5

comp=Z,2µm,18.6s,baz=292,slow=41
INK Inuvik 51.34 28 *eP* **P** **20 41 25.1 +1.3**
INK pmax pmax

comp=Z,65nm,0.7s
INK Inuvik 51.34 28 *eP* **P** **20 41 25.1 +1.3**
comp=Z,65nm,0.7s
DGPR DIGLIPUR 51.44 254 *eP* **P** **20 41 25.2 0.0**
KULM Kulim 51.44 240⇓ P **P** **20 41 26.5 +1.3**
IPM Ipoh 51.80 239 *eP* **P** **20 41 27.3 -0.6**
comp=Z,62nm,1.1s
MMRI Maumere 51.90 207 P **P** **20 41 28.8 +0.3**
comp=Z,107nm,1.5s
MMRI Maumere 51.90 207 *eP* **P** **20 41 28.6 +0.1**
comp=Z,142nm,1.2s
MNAS Manas 51.99 298 *i* P **P** **20 41 29.1 -0.1**
MNAS pmax pmax

comp=Z,255nm,1.0s
EDFI Ende, Flores 52.20 207 P **P** **20 41 32.1 +1.2**
SFK Sufi-Kurgan 52.26 294 *i* P **P** **20 41 31.2 -0.2**
SFK pmax pmax

comp=Z,283nm,1.1s
SOEI Soe 52.28 204 P P 20 41 39.5 +8.0
SOEI Soe 52.28 204 *eP* **P** **20 41 30.6 -0.9**
comp=Z,167nm,1.2s
TPRI Tanjung Pinang 52.30 232 P **P** **20 41 33.0 +1.4**
PBA Port Blair 52.57 252 *eP* P 20 41 33.8 +0.3
OPA Opana 52.65 92 *eP* **P** **20 41 35.5 +1.4**
OPA pmax pmax

comp=Z,178nm,1.0s
OPA Opana 52.65 92 *eP* **P** **20 41 35.5 +1.4**
comp=Z,178nm,1.0s
SKAG Skagway 52.69 39 P **P** **20 41 36.3 +2.4**
comp=Z,73nm,1.4s
KK31 Karatay Array 53.10 299 *eP* **P** **20 41 36.7 -0.6**
KK31 pmax pmax

comp=Z,69nm,0.9s
KKAR Karatay Array 53.10 299 *eP* **P** **20 41 37.4 +0.1**
KKAR pmax pmax

comp=Z,79nm,0.9s
KKAR Karatay Array 53.10 299 *eP* **P** **20 41 37.4 +0.1**
comp=Z,79nm,0.9s
DDI Dehra Dun 53.21 281 *eP* **P** **20 41 38.2 0.0**
DSRI Dabo 53.37 231 P **P** **20 41 40.8 +1.3**
MTN Manton Dam 53.49 195 *eP* **P** **20 41 39.5 -0.7**
comp=Z,72nm,1.1s
SMLA Simla 53.49 283 *i* P **P** **20 41 40.8 +0.5**
SMLA *i* x x 20 49 17.2
DHRM DHARAMSHALA 53.61 284 *eP* **P** **20 41 41.1 -0.3**
PPBI Pangkal Pinang 53.80 228 P **P** **20 41 43.0 +0.3**
comp=Z,86nm,1.3s
IUG Iuzhnay 53.81 298⇑ *iP* **P** **20 41 43.3 +0.8**
comp=Z,2µm,1.4s
TWSI Taliwang, Sumb 54.06 213 P **P** **20 41 43.3 -1.1**
TSI Tuntungan 54.15 240 P **P** **20 41 46.1 +0.9**
comp=Z,69nm,1.2s
SVE Sverdlovsk 54.16 318 *dP* **P** **20 41 46.2 +1.5**
SVE pmax pmax

comp=Z,380nm,1.0s
SVE pmax pmax

comp=Z,8µm,12.4s
SVE MLR MLR

comp=Z,17µm,15.0s
SVE MLR MLR

comp=E,10µm,15.0s
KKR Kurukshetra 54.32 282 *eP* **P** **20 41 46.5 +0.2**
ABJI Asem Bagus 54.38 216 P **P** **20 41 47.3 +0.5**
comp=E,96nm,1.1s
PSI Prapat 54.43 239 P **P** **20 41 47.0 -0.4**
comp=E,32nm,1.0s,baz=2.8,slow=5.5,SNR=25
BISR Bishrakh 54.54 280 *eP* **P** **20 41 44.9 -3.0**
NDI New Delhi 54.65 280 *ex* **P** **20 41 44.5 -4.3**
KCSI Kotacane, Aceh 54.67 241 P **P** **20 41 48.6 -0.4**
comp=E,38nm,1.1s
UWJI Ujung Watu 54.76 221 P **P** **20 41 51.3 +1.7**
AYAN Aya Nagar 54.82 280 *eP* **P** **20 41 49.5 -0.5**
AYAN *eP* **P** **20 41 49.5 -0.5**
AYAN IAmb IAmb 20 41 50.2

comp=Z,88nm,0.9s
CMBY CAMPBELL BAY 54.85 247 *eP* **P** **20 41 48.1 -2.2**
BHGR Bahadurgarh 54.86 280 *eP* **P** **20 41 50.4 +0.2**
CHLP Challavanipeta 54.89 265 *eP* **P** **20 41 50.9 +0.3**
BKNI Bangkinang 54.93 235 P **P** **20 41 51.9 +1.0**

comp=Z,250nm,1.2s
BKNI Bangkinang 54.93 235 *eP* **P** **20 41 51.2 +0.4**
comp=Z,358nm,1.2s
JAGI Jajag, Banyuwa 55.01 216 P **P** **20 41 51.6 +0.2**
comp=Z,47nm,1.0s
JAGI Jajag, Banyuwa 55.01 216 *eP* **P** **20 41 50.6 -0.7**
comp=Z,42nm,1.1s
RTK Rohtak 55.08 281 *eP* **P** **20 41 51.6 -0.3**
RTK *eP* **P** **20 41 51.6 -0.3**
SOKR Solikamsk 55.13 322 *cP* **P** **20 41 50.8 -0.9**
SOKR pmax pmax

comp=Z,113nm,0.8s
GMJI Gumukmas 55.16 217 P **P** **20 41 52.3 -0.2**
comp=Z,43nm,1.4s
PMBI Palembang 55.22 229 P **P** **20 41 55.9 +3.0**
NGJI Ngawi 55.32 220 P **P** **20 41 55.0 +1.4**
comp=Z,366nm,1.9s
ARU Arti 55.37 318 P **P** **20 41 54.4 +0.9**
comp=Z,238nm,0.9s,baz=76,slow=4.5,SNR=305
ARU LR LR 21 08 14.4

comp=Z,8µm,19.2s,baz=63,slow=39
ARU Arti 55.37 318 *cP* **P** **20 41 54.3 +0.8**
ARU 20 42 56.4
ARU 20 43 53.2
ARU S **S** **20 49 39.1 +2.2**
ARU SS **SS** **20 53 19.6 -1.2**
ARU pmax pmax

comp=Z,464nm,1.0s
ARU MLR MLR

comp=Z,13µm,16.0s
ARU Arti 55.37 318 *eP* **P** **20 41 54.4 +0.9**
comp=Z,491nm,1.1s
KUDL Kundal 55.47 280 *eP* **P** **20 41 53.7 -1.0**
KUDL *eP* **P** **20 41 53.7 -1.0**
DLBC Dease Lake 55.62 40 P **P** **20 41 57.6 +2.2**
comp=Z,9.8nm,0.8s,baz=306,slow=8.0,SNR=15
DLBC Dease Lake 55.62 40 *eP* **P** **20 41 58.0 +2.6**
comp=Z,57nm,1.1s
SDSI Sungai Dareh 55.66 234 P **P** **20 41 56.4 +0.3**
comp=Z,166nm,1.3s,comp=Z,59µm
PWJI Pegerwojo 55.72 219 P **P** **20 41 54.7 -1.8**
PPI Padang Panjang 55.94 235 P **P** **20 42 01.2 +3.1**
WOJI Wonogiri, Jawa 55.99 220 P **P** **20 41 58.7 +0.3**
comp=Z,90nm,1.0s,comp=Z,6µm
KHET Khetri 56.03 280 *eP* **P** **20 41 58.1 -0.6**
PCJI Pacitan 56.17 219 P **P** **20 42 00.9 +1.2**
comp=Z,66nm,1.4s
PDSI Padang 56.25 235 P **P** **20 42 00.3 -0.1**
comp=Z,17nm,1.3s
UGM Wanagama 56.25 220 P **P** **20 41 59.6 -0.7**
GSI Gunungsitoli 56.44 239 P **P** **20 42 02.8 +1.1**
comp=Z,178nm,1.4s
GSI Gunungsitoli 56.44 239 *eP* **P** **20 42 01.4 -0.3**
comp=Z,279nm,1.3s
KPJI Karang Pucung 56.56 222 P **P** **20 42 02.2 -0.3**
comp=Z,111nm,1.2s
LHSI Lahat 56.67 230 P **P** **20 42 03.3 0.0**
comp=Z,219nm,1.2s
KLI Kotabumi 56.73 228 P **P** **20 42 03.3 -0.5**
comp=Z,227nm,1.2s
MDSI Maura Dua 56.82 229 P **P** **20 42 03.5 -0.9**
MASI Maura Aman, Be 56.89 232 P **P** **20 42 05.9 +0.9**
comp=Z,284nm,1.1s
DBJI Dramaga 57.07 225 P **P** **20 42 05.4 -0.8**
LWLI Liwa 57.32 228 P **P** **20 42 07.1 -1.0**
BHPL Bhopal 57.34 274 *eP* **P** **20 42 07.3 -0.8**
AB31 Akbulak array 57.38 309 *eP* **P** **20 42 07.9 -0.1**
AB31 pmax pmax

comp=Z,91nm,0.7s
ABKAR Akbulak array 57.38 309 *eP* **P** **20 42 08.5 +0.6**
comp=Z,92nm,0.7s
KASI Kota Agung 57.48 228 P **P** **20 42 07.1 -1.9**
PVM Polavaram 57.50 266 *eP* **P** **20 42 08.6 -0.6**
HOPEN Hopen 57.82 346 *eP* **P** **20 42 11.8 +1.1**
KBL Kabul 57.87 290 *eP* **P** **20 42 11.8 -0.1**
KBL pmax pmax

comp=Z,190nm,1.0s
KBL Kabul 57.87 290 *eP* **P** **20 42 11.8 -0.1**
comp=Z,190nm,1.0s
AKTO Aktyubinsk 58.02 311 P **P** **20 42 12.9 +0.4**
comp=Z,80nm,0.8s,baz=75,slow=7.6,SNR=112
AKTO LR LR 21 08 03.9

comp=Z,3µm,19.4s,baz=259,slow=37
SPA0 Spitsbergen Ar 58.20 349 *eP* **P** **20 42 14.2 +0.9**
SPA0 Spitsbergen Ar 58.20 349 *eP* **P** **20 42 14.7 +1.4**
SPITS Spitsbergen Ar 58.20 349 P **P** **20 42 14.0 +0.6**
comp=Z,37nm,1.0s,baz=117,slow=6.9,SNR=13
SPITS LR LR 21 09 03.8

comp=Z,4µm,18.8s,baz=50,slow=38
SPITS Spitsbergen Ar 58.20 349 P **P** **20 42 14.0 +0.6**
SPITS pmax pmax

comp=Z,37nm,1.0s
SPITS MLR MLR

comp=Z,4µm,18.8s
KBS Kingsbay 58.29 350 *eP* **P** **20 42 15.4 +1.5**
KBS IAmb IAmb 20 42 16.6

comp=Z,182nm,1.1s
KBS Kingsbay 58.29 350 *eP* **P** **20 42 15.5 +1.5**
KBS pmax pmax

comp=Z,160nm,1.0s
KBS Kingsbay 58.29 350 *eP* **P** **20 42 15.5 +1.5**
comp=Z,160nm,1.0s
RPR Rampur 58.36 269 *eP* **P** **20 42 15.1 -0.1**
SRSP Sriamsagar 59.05 270 *eP* **P** **20 42 19.4 -0.8**
BBB Bella Bella 59.13 46 P **P** **20 42 20.9 +0.7**
comp=Z,15nm,0.9s,baz=4.9,slow=3.0,SNR=3.8
HSPB Hornsund (broa 59.15 348 *eP* **P** **20 42 21.2 +1.2**
HSPB IAmb IAmb 20 42 22.4

comp=Z,280nm,1.1s
ADKI Addanki 59.61 266 *eP* **P** **20 42 24.0 +0.1**
RES Resolute Bay 59.65 15 *eP* **P** **20 42 24.0 +0.6**
RES pmax pmax

comp=Z,89nm,0.9s
RES Resolute Bay 59.65 15 *eP* **P** **20 42 24.0 +0.6**
comp=Z,89nm,0.9s
NJS Nagarjunasagar 59.70 267 *eP* **P** **20 42 24.1 -0.5**
HYB Hyderabad 59.77 268 *i* P **P** **20 42 24.5 -0.6**
HYB *eP*cP **PcP** **20 43 13.0 +1.2**
HYB Hyderabad 59.77 268 *eP* **P** **20 42 24.2 -0.9**
HYBB Hyderabad (bro 59.77 268 *eP* **P** **20 42 24.7 -0.4**
FITZ Fitzroy Crossi 59.82 200 *eP* **P** **20 42 25.7 +0.5**
comp=Z,100nm,1.4s
WRAB Tennant Creek 59.91 190⇑ *iP* **P** **20 42 23.2 -2.6**
WRAB pmax pmax

comp=Z,140nm,1.2s
WRAB Tennant Creek 59.91 190 *eP* **P** **20 42 24.0 -1.8**
comp=Z,71nm,1.3s
WB2 Warramunga Arr 59.92 190 *eP* **P** **20 42 24.1 -1.8**
comp=Z,73nm,1.2s
WRA Warramunga Arr 59.92 190 P **P** **20 42 23.8 -2.1**
comp=Z,29nm,1.0s,baz=7.9,slow=6.9,SNR=97
WRA PKP2bc 21 12 04.1

comp=Z,4.4nm,1.0s,baz=203,slow=2.1,SNR=11
WRA Warramunga Arr 59.92 190 P **P** **20 42 23.8 -2.1**
WRA pmax pmax

comp=Z,28nm,0.9s
SRLM Srisailam 60.29 267 *eP* **P** **20 42 27.8 -0.9**
LVZ Lovozero 60.30 336 *cP* **P** **20 42 28.3 +0.3**
LVZ pmax pmax

comp=Z,66nm,0.8s
LVZ Lovozero 60.30 336 *eP* **P** **20 42 27.9 -0.1**
comp=Z,70nm,1.0s
RCLA Racherla 60.62 266 *eP* **P** **20 42 30.0 -0.9**
YKW3 Yellowknife Ar 60.72 31 *eP* **P** **20 42 31.3 +0.4**
comp=Z,31nm,1.1s
YKA Yellowknife Ar 60.76 31 P **P** **20 42 31.7 +0.5**
comp=Z,15nm,0.8s,baz=301,slow=6.7,SNR=165
YKA PKP2bc 21 11 59.9

comp=Z,0.9nm,1.1s,baz=104,slow=3.1,SNR=3.9
YKB5 Yellowknife Ar 60.76 31 *eP* **P** **20 42 30.0 -1.1**
KLRI Killari 60.90 270 *eP* **P** **20 42 32.3 -0.5**
MDRS Chennai 61.08 263 *eP* **P** **20 42 34.0 -0.1**
SKHT Srikalahasti 61.08 264 *eP* **P** **20 42 33.7 -0.3**
TMCR Tamitsa 61.13 331 *eP* **P** **20 42 32.2 -1.4**
TMCR pmax pmax

comp=Z,243nm,0.9s
KEV Kevo 61.48 339 *eP* **P** **20 42 36.8 +0.9**
KEV pmax pmax

comp=Z,95nm,0.9s
KEV Kevo 61.48 339 *eP* **P** **20 42 36.8 +0.9**
comp=Z,95nm,0.9s
HAMF Hammerfest 61.79 341 *eP* **P** **20 42 38.6 +0.6**
ARA0 ARCESS Array S 62.03 339 *eP* **P** **20 42 40.5 +0.8**
ARCES ARCESS Array B 62.03 339 P **P** **20 42 40.5 +0.8**
comp=Z,39nm,0.9s,baz=58,slow=7.3,SNR=45

ARCES PP **PP** **20 44 55.1 -0.6**
comp=Z,26nm,1.0s,baz=65,slow=9.0,SNR=4.1
ARCES LR LR 21 11 56.8
comp=Z,4µm,20.4s,baz=84,slow=38
ARE0 ARCESS Array S 62.03 339 *eP* **P** **20 42 40.3 +0.6**
ARE0 ARCESS Array S 62.03 339 *eP* **P** **20 42 41.0 +1.3**
comp=Z,104nm,1.1s
URV Uravakonda 62.23 267 *eP* **P** **20 42 41.1 -0.7**
KLMR Klimovskoe 62.30 328 *eP* **P** **20 42 38.4 -3.2**
KLMR *e*SP **sP** **20 42 52.9 +3.5**
KLMR *e* 20 43 16.8
KLMR pmax pmax
comp=Z,260nm,1.3s
KLMR MLR MLR
comp=Z,4µm,17.0s
POO Poona 62.75 272 *eP* **P** **20 42 44.0 -1.3**
KTK1 Kautokeino 62.98 340 *eP* **P** **20 42 47.1 +1.1**
DAG Danmarks Havn 63.24 355 *i* P **P** **20 42 48.3 +0.6**
comp=Z,136nm,1.0s
DAG Danmarks Havn 63.24 355 *i* P **P** **20 42 48.3 +0.6**
DAG pmax pmax
comp=Z,140nm,1.0s
BHJ Bhuj 63.29 279 *eP* **P** **20 42 49.0 +0.3**
BHJ IAmb IAmb 20 42 49.8
comp=Z,84nm,0.9s
AS01 Alice Springs 63.64 190 *eP* **P** **20 42 49.3 -1.6**
AS31 Alice Springs 63.64 190 *eP* **P** **20 42 50.1 -0.8**
comp=Z,6.5nm,0.8s
ASAR Alice Springs 63.65 190 P **P** **20 42 49.7 -1.2**
comp=Z,9.8nm,0.9s,baz=9.7,slow=5.7,SNR=76
ASAR PKP2bc 21 11 50.5
comp=Z,2.4nm,1.1s,baz=189,slow=3.5,SNR=4.8
TRO Tromso 63.68 341 *eP* **P** **20 42 50.7 +0.2**
TRO IAmb IAmb 20 42 52.3
comp=Z,150nm,0.9s
NLWA Neilton Lookou 63.84 49 *eP* **P** **20 42 54.7 +2.6**
comp=Z,59nm,1.2s
GEYT Alibeck 63.85 299 P **P** **20 42 52.4 0.0**
comp=Z,70nm,1.0s,baz=29,slow=3.4,SNR=93
MBW Mount Baker 64.25 47 P **P** **20 42 55.8 +0.9**
B05A Bryant 64.41 48 P **P** **20 42 56.3 +0.5**
baz=302
MBWA Marble Bar 64.42 204 *eP* **P** **20 42 55.7 -0.4**
comp=Z,100nm,1.8s
MBWA Marble Bar 64.42 204 P **P** **20 42 54.7 -1.3**
SNR=5.3
MBWA Marble Bar 64.42 204 P **P** **20 42 54.7 -1.3**
SNR=5.3
E03A Lebam 64.45 50 *e*pP pP 20 43 03.1 +1.4
JCW Jim Creek 64.54 48 P **P** **20 42 58.2 +1.6**
GOA Goa 64.56 269 *eP* **P** **20 42 56.9 -0.3**
B06A Marblemount 64.62 47 *eP* **P** **20 42 58.5 +1.3**
comp=Z,38nm,1.0s
F04D Rainier, OR 65.02 50 P **P** **20 43 00.1 +0.3**
baz=302
D05A Enumclaw 65.03 49 *eP* **P** **20 43 02.3 +2.4**
comp=Z,337nm,1.9s
EIDS Eidsvold 65.14 172 *eP* **P** **20 43 00.1 -0.5**
comp=Z,37nm,1.3s
KULLO Kullorsuaq 65.18 6 *i* P **P** **20 43 00.8 +0.4**
comp=Z,78nm,1.0s
KULLO Kullorsuaq 65.18 6 *i* P **P** **20 43 00.8 +0.4**
KULLO pmax pmax
comp=Z,78nm,1.0s
C06D Leavenworth 65.27 47 P **P** **20 43 02.3 +0.8**
baz=302
G03D McMinnville, O 65.33 51 P **P** **20 43 02.4 +0.5**
baz=302
TDL Tradedollar La 65.35 49 P **P** **20 43 04.0 +1.9**
LON Longmire 65.37 49 *eP* **P** **20 43 04.0 +1.8**
LON pmax pmax
comp=Z,28nm,1.2s
LON Longmire 65.37 49 *eP* **P** **20 43 04.0 +1.8**
comp=Z,28nm,1.2s
F04A Amboy 65.45 50 *eP* **P** **20 43 04.5 +1.9**
comp=Z,223nm,1.8s
MSVF Nonsavu 65.70 143 *eP* **P** **20 43 05.0 +0.5**
MSVF pmax pmax
comp=Z,45nm,1.3s
MSVF Nonsavu 65.70 143 *eP* **P** **20 43 05.0 +0.5**
comp=Z,45nm,1.3s
LTY Liberty 65.76 48 *eP* **P** **20 43 06.0 +1.3**
comp=Z,56nm,1.2s
STEI Steigen 65.84 341 *eP* **P** **20 43 05.2 +0.4**
TBM Table Mountain 65.84 48 P **P** **20 43 06.8 +1.5**
B08A Colville Reser 65.92 46 *eP* **P** **20 43 06.6 +1.0**
comp=Z,89nm,1.5s
MOS Moscow 66.00 323 *eP* **P** **20 43 06.1 +0.2**
MOS *e* 20 43 35.4
MOS *e* 20 45 29.3
MOS *e*S **S** **20 51 52.6 0.0**
MOS pmax pmax
comp=Z,300nm,1.4s
MOS MLR MLR
comp=Z,7µm,16.0s
MOS MLR MLR
comp=E,4µm,15.0s
EBG Ellensburg 66.00 48 P **P** **20 43 08.1 +1.9**
I03D Drain, OR 66.09 52 P **P** **20 43 05.7 -1.1**
baz=303
LOF Lofoten 66.11 342 *eP* **P** **20 43 07.0 +0.6**
H04A Detroit Lake 66.26 51 *eP* **P** **20 43 09.2 +1.3**
comp=E,94nm,1.2s
TRD Trivandrum 66.44 261 *eP* **P** **20 43 08.4 -0.9**
G05D Wamic, OR 66.47 50 P **P** **20 43 08.4 -0.9**
baz=303
VRH Novokhopyorsk 66.60 318 *eP* **P** **20 43 09.6 -0.3**
VRH pmax pmax
comp=Z,210nm,1.0s
VRH MLR MLR
comp=Z,8µm,15.0s
I04A Tendick Farm, 66.61 52 P **P** **20 43 10.3 +0.1**
baz=303,SNR=7.2
PUL Pulkovo 66.65 330 *ce*P **P** **20 43 10.2 +0.1**
PUL pmax pmax
comp=Z,266nm,1.0s
L02D Cave Junction, 66.77 54 P **P** **20 43 11.4 +0.3**
baz=303
C09A Chrisman Ranch 66.81 47 *eP* **P** **20 43 12.4 +1.1**
comp=Z,262nm,1.9s
DPW Davenport 66.82 46 P **P** **20 43 12.7 +1.2**
DPW Davenport 66.82 46 P **P** **20 43 12.7 +1.2**
OBN Obninsk 66.85 323 P **P** **20 43 11.7 +0.3**
comp=Z,125nm,1.1s,baz=16,slow=1.1,SNR=44
OBN Obninsk 66.85 323 *c* iP **P** **20 43 12.1 +0.7**
OBN *i* 20 43 25.6
OBN *i* 20 43 45.0
OBN *i* 20 45 38.8
OBN pmax pmax
comp=Z,160nm,1.2s
OBN MLR MLR
comp=Z,6µm,15.0s
OBN Obninsk 66.85 323 *eP* **P** **20 43 11.9 +0.5**
comp=Z,227nm,1.2s
D08A Wollman Farm, 66.86 47 *eP* **P** **20 43 13.0 +1.3**
comp=Z,142nm,1.7s
G06A Carlson Farm, 66.88 50 *eP* **P** **20 43 13.6 +1.7**
comp=Z,217nm,1.8s
HAWA Hanford 66.88 48 *eP* **P** **20 43 14.0 +2.1**
comp=Z,171nm,1.9s
HUMO Hull Mountain 66.92 53 *e*pP pP 20 43 19.3 +1.4
I05D Terrebonne, OR 66.96 51 P **P** **20 43 13.5 +1.1**
baz=304
FIA1 FINESS Array S 67.15 332 *eP* **P** **20 43 12.9 -0.2**
FINES FINESS Array B 67.15 332 P **P** **20 43 13.7 +0.5**
comp=Z,109nm,0.8s,baz=46,slow=8.2,SNR=263
FINES LR LR 21 15 29.7
comp=Z,9µm,18.1s,baz=34,slow=38
NEW Newport 67.19 46 P **P** **20 43 14.4 +0.6**
comp=Z,23nm,1.0s,baz=300,slow=5.2,SNR=21
NEW Newport 67.19 46 P **P** **20 43 14.6 +0.8**
baz=304
NEW Newport 67.19 46 *eP* **P** **20 43 14.8 +0.9**
NEW pmax pmax
comp=Z,209nm,1.9s
NEW Newport 67.19 46 *eP* **P** **20 43 14.8 +0.9**
comp=Z,208nm,1.9s
LPSR Galich'ya Gora 67.21 320 *eP* **P** **20 43 14.3 +0.6**
LPSR pmax pmax
comp=Z,200nm,1.0s
LPSR pmax pmax
comp=Z,140nm,2.0s
LPSR MLR MLR
comp=Z,5µm,14.0s
COCO West Island 67.29 230 *eP* **P** **20 43 15.6 +1.0**
COCO pmax pmax
comp=Z,425nm,1.4s
COCO West Island 67.29 230 *eP* **P** **20 43 15.6 +1.0**
comp=Z,425nm,1.4s
MOR8 Moi Rana 67.38 340 ⇑*i*P **P** **20 43 13.9 -0.7**
MOR8 IAmb IAmb 20 43 14.8
comp=Z,183nm,0.9s
KHMM Horse Mountain 67.39 55 *eP* **P** **20 43 19.7 +4.3**
comp=Z,62nm,1.0s
YBH Yreka Blue Hor 67.56 54 P **P** **20 43 18.0 +1.7**
comp=Z,4.3nm,0.7s,baz=263,slow=2.3,SNR=7.4
YBH Yreka Blue Hor 67.56 54 *eP* **P** **20 43 18.5 +2.2**
YBH pmax pmax
comp=Z,105nm,1.6s
YBH Yreka Blue Hor 67.56 54 *eP* **P** **20 43 18.5 +2.2**
comp=Z,105nm,1.6s
J05D Fort Rock, OR 67.60 52 P **P** **20 43 16.5 -0.2**
baz=304
VORR Voronezh 67.62 319 *eP* **P** **20 43 16.0 -0.3**
VORR pmax pmax
comp=Z,300nm,1.2s
M02C Callahan 67.66 54 P **P** **20 43 16.8 -0.1**
baz=304
AFI Afiamalu 67.76 132 LR LR 21 07 17.0
comp=Z,1µm,21.1s,baz=320,slow=31
VSR Storozhevoye 67.91 319 *eP* **P** **20 43 18.1 -0.1**
VSR pmax pmax
comp=Z,150nm,1.0s
VSR MLR MLR
comp=Z,5µm,15.0s
N02D Trinity Center 67.98 55 P **P** **20 43 19.4 +0.4**
baz=304
SUMG Summit 68.02 1 ⇑*i*P **P** **20 43 20.5 +1.5**
comp=Z,139nm,0.9s
SUMG Summit 68.02 1 *eP* **P** **20 43 20.5 +1.5**
SUMG pmax pmax
comp=Z,170nm,1.0s
SUMG Summit 68.02 1 *eP* **P** **20 43 20.5 +1.5**
comp=Z,170nm,1.0s
M04C Macdoel 68.07 53 P **P** **20 43 19.1 -0.5**
baz=304
K05A Summer Lake 68.12 52 *eP* **P** **20 43 22.2 +2.2**
comp=Z,240nm,1.5s
WDC Whiskeytown Da 68.30 55 *eP* **P** **20 43 22.6 +1.7**
WDC pmax pmax
comp=Z,31nm,1.0s
WDC Whiskeytown Da 68.30 55 *eP* **P** **20 43 22.6 +1.7**
comp=Z,31nm,1.0s
F10A Beach Ranch, E 68.44 48 *eP* **P** **20 43 23.1 +1.3**
comp=Z,34nm,1.1s
WALA Waterton Lakes 68.48 44 *eP* **P** **20 43 23.0 +1.0**
BSMT Bassoo Peak 68.71 45 P **P** **20 43 25.0 +1.4**
BLMT Blacktail Moun 68.85 45 *eP* **P** **20 43 25.8 +1.3**
VSU Vasula 68.91 330 ⇑*i*P **P** **20 43 24.9 +0.6**
VSU pmax pmax
comp=Z,643nm,1.0s
O03D Paynes Creek 68.93 55 P **P** **20 43 25.6 +0.7**
baz=305,SNR=7.6
MOD Modoc Plateau 68.95 53 *eP* **P** **20 43 27.1 +2.0**
comp=Z,70nm,1.5s
BMO Blue Mountains 69.04 49 *eP* **P** **20 43 27.1 +1.5**
comp=Z,43nm,1.3s
JTMT Jette 69.05 45 *eP* **P** **20 43 26.8 +1.2**
YBMT Yellow Bay 69.13 45 *eP* **P** **20 43 27.6 +1.5**
NSS Namsos 69.31 340 *eP* **P** **20 43 27.4 +0.7**
SWMT Swartz Lake 69.35 45 *eP* **P** **20 43 28.4 +1.0**
GOF Gofitskoye 69.43 312 ⇑*i*P **P** **20 43 28.9 +1.1**
GOF *e*S **S** **20 52 31.7 -2.4**
GOF pmax pmax
comp=Z,486nm,1.1s
ORV Oroville 69.54 55 *eP* **P** **20 43 29.9 +1.3**
ORV pmax pmax
comp=Z,42nm,1.2s
ORV Oroville 69.54 55 *eP* **P** **20 43 29.9 +1.3**
comp=Z,42nm,1.2s
SCO Scoresbysund 69.61 355 ⇑*i*P **P** **20 43 29.6 +1.2**
comp=Z,68nm,1.2s
SCO Scoresbysund 69.61 355 ⇑*i*P **P** **20 43 29.6 +1.2**
SCO pmax pmax
comp=Z,68nm,1.2s
WVOR Wild Horse Val 69.66 51 *eP* **P** **20 43 30.8 +1.4**
WVOR pmax pmax
comp=Z,68nm,1.4s
WVOR Wild Horse Val 69.66 51 *eP* **P** **20 43 30.8 +1.4**
comp=Z,68nm,1.4s
MSO Missoula 69.78 46 P **P** **20 43 30.2 +0.1**
baz=307
MSO Missoula 69.78 46 *eP* **P** **20 43 31.1 +1.0**
comp=Z,45nm,1.2s
NCK Nalchik 70.02 310 ⇑*i*P **P** **20 43 32.5 +1.0**
NCK pmax pmax
comp=Z,229nm,1.2s
GUDG Gudauri 70.10 309 P **P** **20 43 33.9 +1.6**
CHMT Chamberlain Mo 70.11 45 *eP* **P** **20 43 31.4 -0.8**
ARMA Armidale 70.19 172 *eP* **P** **20 43 32.6 0.0**
comp=Z,67nm,1.3s
AFDM Forest Hills D 70.23 56 *eP* **P** **20 43 35.9 +3.0**
comp=Z,72nm,1.8s
ZEI Tsey 70.25 310 *eP* **P** **20 43 33.2 0.0**
ZEI pmax pmax
comp=Z,336nm,1.1s
KVAR Kislovodsk Arr 70.28 311 P **P** **20 43 34.5 +1.3**
comp=Z,398nm,1.1s,baz=17,slow=3.3
KIV Kislovodsk 70.28 311 *i* P **P** **20 43 34.6 +1.4**
SNR=6.9
KIV Kislovodsk 70.28 311 *eP* **P** **20 43 34.6 +1.4**
KIV pmax pmax
comp=Z,581nm,1.1s
KIV MLR MLR
comp=Z,5µm,17.0s
KIV Kislovodsk 70.28 311 *eP* **P** **20 43 34.6 +1.4**
comp=Z,525nm,1.0s
KIV Kislovodsk 70.28 311 P **P** **20 43 34.4 +1.2**
SNR=81
KIV Kislovodsk 70.28 311 P **P** **20 43 34.4 +1.2**
SNR=81
KBZ Khabaz 70.29 311 P **P** **20 43 34.3 +1.2**
comp=Z,154nm,0.9s,baz=63,slow=4.8,SNR=142
TBLG Delisi 70.37 308 P **P** **20 43 36.3 +2.6**
TBLG Delisi 70.37 308 *eP* **P** **20 43 36.3 +2.6**
FFC Flin Flon 70.67 34 *eP* **P** **20 43 35.6 +0.4**
FFC pmax pmax
comp=Z,53nm,0.9s
FFC Flin Flon 70.67 34 *eP* **P** **20 43 35.6 +0.4**
comp=Z,52nm,0.9s
NEY Neytrino 70.68 310 *c* iP **P** **20 43 37.1 +1.4**
NEY pmax pmax
comp=Z,29nm,1.2s
MFID Camas Ranch 70.75 49 *eP* **P** **20 43 37.6 +1.5**
comp=Z,202nm,2.0s
TBLU Trondheim 70.79 340 *eP* **P** **20 43 35.1 -0.7**
TBLU IAmb IAmb 20 43 36.3
comp=Z,97nm,1.0s
ILULI Ilulissat 70.88 5 *i* P **P** **20 43 36.3 +0.1**
comp=Z,70nm,0.9s
ILULI Ilulissat 70.88 5 *i* P **P** **20 43 36.3 +0.1**
ILULI pmax pmax
comp=Z,70nm,0.9s
IZAR Zarasai 70.95 328 *eP* **P** **20 43 38.0 +1.0**
IZAR IAmb IAmb 20 43 39.4
comp=Z,66nm,1.0s
FCC Fort Churchill 70.95 28 *eP* **P** **20 43 37.1 +0.3**
FCC Fort Churchill 70.95 28 *eP* **P** **20 43 37.1 +0.3**
IDID Didziasalis 71.05 327 *eP* **P** **20 43 38.6 +1.1**
IDID IAmb IAmb 20 43 40.0
comp=Z,80nm,0.9s
MICGM Minsk 71.12 326 ⇑*i*P **P** **20 43 38.0 +0.1**
MICGM PM 20 43 39.0
comp=Z,0.5nm,1.0s
MICGM PM 20 43 40.0
comp=N,0.2nm,1.2s
MICGM PM 20 43 40.0
comp=E,0.3nm,1.5s
MICGM *e*PcP **PcP** **20 43 53.0 -5.0**
MICGM *e*PP **PP** **20 46 14.0 -1.1**
MICGM *e*PPP PPP 20 48 00.0
MICGM *e*S **S** **20 52 47.0 -6.5**
MICGM *e*LR LR 21 13 45.0
MICGM LRM MLR 21 17 47.0
comp=Z,10nm,17.0s
MICGM LRM MLR 21 17 48.0
comp=Z,17nm,15.0s
MNK Minsk 71.12 326 ⇑*i*P **P** **20 43 38.0 +0.1**
MNK *e* 20 43 53.0
MNK *e* 20 46 14.0
MNK *e*PPP PPP 20 48 00.0
MNK *e*S **S** **20 52 47.0 -6.5**
MNK pmax pmax
comp=Z,480nm,1.0s
MNK pmax pmax
comp=E,280nm,1.5s
MNK pmax pmax
comp=N,210nm,1.2s
MNK MLR MLR
comp=Z,10µm,17.0s
MNK MLR MLR
comp=Z,17µm,15.0s
ISAL Salakas 71.12 328 *eP* **P** **20 43 39.1 +1.1**
ISAL IAmb IAmb 20 43 40.6
comp=Z,136nm,1.0s
CMB Columbia Colle 71.13 56 *eP* **P** **20 43 41.6 +3.2**
CMB pmax pmax
comp=Z,49nm,1.3s
CMB Columbia Colle 71.13 56 *eP* **P** **20 43 41.6 +3.2**
comp=Z,49nm,1.3s
LRM Limekiln Ridge 71.21 46 *eP* **P** **20 43 40.0 +1.0**
STKA Stephens Creek 71.23 182 P **P** **20 43 37.2 -1.6**
comp=Z,6.9nm,0.9s,baz=348,slow=9.8,SNR=9.7
STKA Stephens Creek 71.23 182 P **P** **20 43 37.2 -1.6**
STKA pmax pmax
comp=Z,16nm,1.0s
STKA Stephens Creek 71.23 182 *eP* **P** **20 43 38.0 -0.8**
IIGN Ignalina 71.24 328 *eP* **P** **20 43 39.8 +1.1**
IIGN IAmb IAmb 20 43 41.3
comp=Z,104nm,1.0s
EGMT Eagleton 71.30 43 P **P** **20 43 39.9 +0.5**
baz=309
EGMT Eagleton 71.30 43 *eP* **P** **20 43 40.7 +1.4**
comp=Z,70nm,1.0s
GNI Garni 71.30 307 P **P** **20 43 40.9 +1.4**
comp=Z,97nm,1.3s,baz=147,slow=4.5,SNR=32
GNI LR LR 21 18 04.4
comp=Z,2µm,18.5s,baz=34,slow=38
GNI Garni 71.30 307 *i* P **P** **20 43 41.3 +1.8**
SNR=26
GNI Garni 71.30 307 ⇑*i*P **P** **20 43 41.2 +1.6**
GNI pmax pmax
comp=Z,532nm,1.5s
GNI Garni 71.30 307 *eP* **P** **20 43 41.1 +1.6**
comp=Z,161nm,1.2s
GNI Garni 71.30 307 P **P** **20 43 41.5 +2.0**
SNR=24
GNI Garni 71.30 307 P **P** **20 43 41.5 +2.0**
SNR=24
NACGM Naroch 71.31 327 *eP* **P** **20 43 39.0 -0.1**
NACGM PM 20 43 40.0
comp=Z,0.9nm,1.0s
AKH Akhalkalaki 71.32 309 P **P** **20 43 41.4 +1.7**
AKH Akhalkalaki 71.32 309 ⇑*i*P **P** **20 43 41.5 +1.9**
AKH Akhalkalaki 71.32 309 *eP* **P** **20 43 41.3 +1.7**
CHVG Ch'k'valeri 71.37 310 ⇑*i*P **P** **20 43 41.1 +1.4**
DLMT Dillon 71.42 46 *eP* **P** **20 43 41.3 +1.1**
WAKR Walker 71.46 55 *eP* **P** **20 43 42.9 +2.3**
HLID Hailey 71.48 49 P **P** **20 43 41.2 +0.6**
baz=307
HLID Hailey 71.48 49 *eP* **P** **20 43 41.8 +1.1**
comp=Z,17nm,0.9s
LCCM Lewis and Clar 71.52 45 *eP* **P** **20 43 41.8 +1.0**
MCMT McKenzie Canyo 71.60 47 *eP* **P** **20 43 42.3 +0.9**
WSAR Wadi Sarin 71.61 285 P **P** **20 43 41.8 +0.3**
comp=Z,25nm,1.0s,baz=90,slow=3.8,SNR=12
EAK Akyaka 71.68 308 *i* P **P** **20 43 42.7 +0.8**
EPOS Posof 71.72 309 *i* P **P** **20 43 43.3 +1.3**
BANOM Banah 71.76 289 *i* P **P** **20 43 42.8 +0.4**
SNR=33
BANOM Banah 71.76 289 P **P** **20 43 43.2 +0.8**
SNR=21
BANOM Banah 71.76 289 P **P** **20 43 43.2 +0.8**
SNR=21
BOZ Bozeman (W) 71.78 45 P **P** **20 43 43.0 +0.7**
baz=308
BOZ Bozeman (W) 71.78 45 *eP* **P** **20 43 43.3 +1.0**
BOZ Bozeman (W) 71.78 45 *eP* **P** **20 43 43.3 +1.0**
BGMT Barton Gulch 71.81 46 *eP* **P** **20 43 43.7 +1.1**
BIDO Bidbid 71.82 286 P **P** **20 43 44.0 +1.3**
SNR=11
BIDO Bidbid 71.82 286 P **P** **20 43 44.0 +1.3**
SNR=11
SMDO Samad 72.15 285 P **P** **20 43 46.0 +1.2**
SNR=13
SMDO Samad 72.15 285 P **P** **20 43 46.0 +1.2**
SNR=13
NV01 Mina Array Sit 72.22 55 *eP* **P** **20 43 46.5 +1.3**
NVAR Mina Array Bea 72.22 55 P **P** **20 43 46.2 +1.0**
comp=Z,5.8nm,0.8s,baz=291,slow=6.4,SNR=11
SOC Sochi 72.22 312 *i* P **P** **20 43 45.3 +0.5**
SOC pmax pmax
comp=Z,109nm,0.9s
HFS Hagfors 72.27 336 P **P** **20 43 45.2 +0.4**
comp=Z,158nm,0.9s,baz=44,slow=6.6,SNR=156
HFS Hagfors 72.27 336 P **P** **20 43 45.2 +0.4**
HFS pmax pmax
comp=Z,157nm,0.9s
NB2 NORSAR Subarra 72.30 338 P **P** **20 43 45.3 +0.3**
comp=Z,202nm,0.9s,baz=38,slow=6.2
NB2 NORSAR Subarra 72.30 338 P **P** **20 43 45.3 +0.3**
baz=38,slow=6.2
NOA NORSAR Array B 72.30 338 P **P** **20 43 45.5 +0.6**
comp=Z,146nm,0.9s,baz=39,slow=5.9,SNR=338
NOA PP PP 20 46 17.2 -7.9
comp=Z,6.8nm,0.8s,baz=34,slow=8.0,SNR=3.2
NOA LR LR 21 19 37.4
comp=Z,3µm,19.4s,baz=75,slow=39
NOA NORSAR Array B 72.30 338 P **P** **20 43 45.6 +0.6**
NOA pmax pmax
comp=Z,139nm,0.9s
NOA pmax pmax
comp=Z,7.0nm,0.8s
NOA MLR MLR
comp=Z,3µm,19.4s
NV11 Mina Array Sit 72.31 55 *eP* **P** **20 43 47.8 +2.2**
DYDN Diyadin 72.31 307 *i* P **P** **20 43 47.2 +1.5**
ARTV Artvin 72.39 309 *i* P **P** **20 43 45.9 -0.2**
QLMT Earthquake Lak 72.39 46 *eP* **P** **20 43 47.7 +1.6**
UOSS Minazif 72.40 288 *eP* **P** **20 43 46.5 +0.3**
comp=Z,6.1nm,0.9s
NC602 NORSAR Array S 72.44 337 *eP* **P** **20 43 45.7 -0.1**
DBOC Borcka 72.45 309 *i* P **P** **20 43 46.6 +0.3**
BBOO Buckleboo 72.46 186 *eP* **P** **20 43 46.0 -0.1**
DAGI Agillar 72.47 309 *i* P **P** **20 43 47.1 +0.7**
HATD Hatta, Dubai 72.53 288 *i* P **P** **20 43 47.5 +0.6**
SNR=16
HATD Hatta, Dubai 72.53 288 P **P** **20 43 47.7 +0.7**
SNR=16
HATD Hatta, Dubai 72.53 288 P **P** **20 43 47.7 +0.7**
SNR=16
AKN Aaknes 72.53 340 *eP* **P** **20 43 45.0 -1.4**
DBAD Bademkaya 72.63 309 *i* P **P** **20 43 48.4 +1.0**
ASHO Ashiyiah 72.67 288 *i* P **P** **20 43 48.7 +0.9**
SNR=15
ASHO *i* P **P** **20 43 48.7 +0.9**
SNR=21
ASHO Ashiyiah 72.67 288 P **P** **20 43 48.4 +0.6**
SNR=19
ASHO Ashiyiah 72.67 288 P **P** **20 43 48.4 +0.6**
SNR=19
DDEM Demirkent 72.68 309 *i* P **P** **20 43 48.4 +0.7**
ELK Elko 72.71 51 *eP* **P** **20 43 50.4 +2.3**
ELK Elko 72.71 51 *eP* **P** **20 43 50.4 +2.3**
ANN Anapa 72.75 314 *eP* **P** **20 43 47.0 -0.9**
ANN pmax pmax
comp=Z,137nm,0.9s
YMR Madison River 72.75 46 *eP* **P** **20 43 50.0 +1.7**
GCMT Greycliff 72.75 44 *eP* **P** **20 43 49.9 +1.7**
NAZ Nazwa, Dubai 72.78 288 *i* P **P** **20 43 48.6 +0.2**
SNR=9.6
NAZ Nazwa, Dubai 72.78 288 P **P** **20 43 48.8 +0.4**
SNR=12
NAZ Nazwa, Dubai 72.78 288 P **P** **20 43 48.8 +0.4**
SNR=12
EATA Eleskirt 72.86 308 *i* P **P** **20 43 50.9 +1.8**
YFT Old Faithful 72.96 46 *eP* **P** **20 43 52.9 +3.4**
FAQ Al Faqa, Dubai 72.97 288 *i* P **P** **20 43 49.5 -0.1**
SNR=11
FAQ Al Faqa, Dubai 72.97 288 P **P** **20 43 49.7 +0.2**
SNR=8.8
FAQ Al Faqa, Dubai 72.97 288 P **P** **20 43 49.7 +0.2**
SNR=8.8
SMMC Simmler 72.99 58 P **P** **20 43 49.5 -0.1**
baz=307
AKASG Malin Array Be 73.09 323 P **P** **20 43 50.1 +0.3**
comp=Z,60nm,0.8s,baz=42,slow=6.0,SNR=259
AKASG PP PP 20 46 41.1 +9.1

KIS e 20 47 04.0
KIS pmax pmax
comp=Z,250nm,1.4s
KIS MLR MLR
comp=Z,6µm,15.0s
KIS MLR MLR
comp=Z,6µm,15.0s
KBSD Kabsdagh 75.83 306 *e*P **P** 20 44 06.5 +0.4
ELZG Elazig 75.84 308 *i* P **P** 20 44 07.8 +1.5
A29A Manning Farm, 75.91 37 P **P** 20 44 06.6 +0.3
baz=315,SNR=25
F25A Bowman 75.93 41 P **P** 20 44 07.1 +0.5
baz=313
MSU Marysvale 75.95 52 *e*P pP 20 44 13.5 +0.8
MSU Marysvale 75.95 52 *e*pP pP 20 44 13.5 +0.8
BEL Belsk 76.02 327 *e*P **P** 20 44 08.4 +1.7
BEL Belsk 76.02 327 *e*P **P** 20 44 08.5 +1.7
BEL MLR MLR
comp=Z,31µm,18.3s
TMUT Trail Mountain 76.03 50 *e*P **P** 20 44 08.9 +1.4
E26A Carlson Angus 76.06 40 P **P** 20 44 07.5 +0.3
baz=314
D27A Center 76.08 40 P **P** 20 44 07.6 +0.3
baz=314
LVV L'vov 76.09 324 *e*P **P** 20 44 06.9 -0.4
LVV *e*S **S** 20 53 47.1 -2.8
LVV MLR MLR
comp=N,4µm,15.0s
LVV MLR MLR
comp=E,4µm,15.0s
LVV MLR MLR
comp=Z,5µm,15.0s
HAVZ Havza 76.10 312 *i* P **P** 20 44 08.0 +0.5
GMRC Granite Mounta 76.13 56 P **P** 20 44 08.8 +0.9
baz=309
B29A Wagenman Farm, 76.17 38 P **P** 20 44 08.1 +0.3
baz=315,SNR=7.9
P17A Butcher Ranch, 76.19 50 *e*P **P** 20 44 09.9 +1.6
NWAO Narrogin (SRO) 76.19 202 P **P** 20 44 06.8 -1.0
baz=Z,31nm,1.1s,baz=75,slow=0.0,SNR=6.4
NWAO Narrogin (SRO) 76.19 202 *e*P **P** 20 44 07.5 -0.3
COP Copenhagen 76.20 334⇑*i*P **P** 20 44 08.9 +1.1
comp=Z,134nm,0.9s
COP Copenhagen 76.20 334⇑*i*P **P** 20 44 08.9 +1.1
COP pmax pmax
comp=Z,130nm,0.9s
C28A Hausauer Farms 76.21 39 P **P** 20 44 08.1 +0.1
baz=315
CUKAN kangal_SIVAS 76.22 310 *i* P **P** 20 44 09.2 +0.8
MTPU Mount Pierson 76.25 52 *e*P **P** 20 44 11.3 +2.5
LCMT Little Creek M 76.25 53 *e*P **P** 20 44 10.4 +1.8
IAS Iasi 76.30 321⇓*i*P **P** 20 44 09.5 +1.0
A30A Hoffart Farm, 76.33 37 P **P** 20 44 09.0 +0.3
baz=316,SNR=12
BOYT Boyabat 76.34 313 *i* P **P** 20 44 10.3 +1.4
PFO Pinyon Flats O 76.34 58 P **P** 20 44 08.4 -0.7
baz=309
PFO Pinyon Flats O 76.34 58 *e*P pP 20 44 16.8 +1.9
PFO Pinyon Flats O 76.34 58 *e*pP pP 20 44 16.8 +1.9
F26A Lodgepole 76.38 41 P **P** 20 44 09.1 0.0
baz=314
P18A Preston Nutter 76.38 50 *e*P **P** 20 44 11.2 +1.6
G25A Newell 76.45 42 P **P** 20 44 09.3 -0.2
baz=313
SFNV Sufian 76.46 306 *e*P **P** 20 44 10.7 +0.9
ULM Lac du Bonnet 76.47 35 P **P** 20 44 09.2 -0.2
comp=Z,16nm,0.9s,baz=306,slow=7.1,SNR=16
ULM Lac du Bonnet 76.47 35 *e*P **P** 20 44 09.3 0.0
LEOM Leova 76.47 320⇑*i*P **P** 20 44 10.2 +0.8
D28A Regan 76.49 39 P **P** 20 44 10.2 +0.5
baz=315
MDND Maddock 76.49 38 P **P** 20 44 10.2 +0.6
baz=315,SNR=6.8
MDND Maddock 76.49 38 *e*P **P** 20 44 10.4 +0.8
comp=Z,83nm,1.0s
MZRK Al-Mazaregh 76.50 305 *e*P **P** 20 44 10.7 +0.8
KNB Kanab 76.51 53 *e*P **P** 20 44 12.5 +2.4
KNB Kanab 76.51 53 *e*P **P** 20 44 12.5 +2.4
K22A Casper 76.52 45 P **P** 20 44 10.5 +0.4
baz=312,SNR=7.4
K22A Casper 76.52 45 *e*P **P** 20 44 10.7 +0.6
comp=Z,125nm,1.6s
E27A Carson 76.54 40 P **P** 20 44 10.6 +0.7
baz=314
PKCU Pink Cliffs 76.55 52 *e*sP sP 20 44 19.4 +1.0
SRU San Rafael Swe 76.55 50 *e*P **P** 20 44 11.7 +1.4
SRU San Rafael Swe 76.55 50 *e*P **P** 20 44 11.7 +1.4
AKCD Akcadag 76.61 309 *i* P **P** 20 44 11.7 +1.1
MUD Monsted U'grnd 76.65 336⇑*i*P **P** 20 44 11.2 +0.9
comp=Z,103nm,1.0s
MUD Monsted U'grnd 76.65 336⇑*i*P **P** 20 44 11.2 +0.9
MUD pmax pmax
comp=Z,100nm,1.0s
B30A Myrvik Farm, E 76.66 37 P **P** 20 44 10.9 +0.3
baz=316,SNR=8.4
CUALT Altinyayla-SIV 76.67 310 *i* P **P** 20 44 12.9 +1.9
F27A Lemmon 76.69 41 P **P** 20 44 11.4 +0.5
baz=314
H25A Fruitdale 76.75 42 P **P** 20 44 11.7 +0.5
baz=313
BAR Barrett 76.78 59 *e*pP pP 20 44 19.2 +1.9
G26A Maurine 76.80 41 P **P** 20 44 11.6 +0.2
baz=314,SNR=15
RGN Rugen 76.80 333 *e*P **P** 20 44 13.0 +1.8
MONP2 Monument Peak 76.81 58 P **P** 20 44 12.6 +0.7
baz=309
KWP Kalwaria Pacla 76.82 325 *e*P **P** 20 44 12.8 +1.4
KWP Kalwaria Pacla 76.82 325⇓*i*P **P** 20 44 13.3 +1.9
KWP Kalwaria Pacla 76.82 325 *e*P **P** 20 44 12.9 +1.5
KWP MLR MLR
comp=Z,48µm,16.8s
PRAR RASCA 76.83 322⇑*i*P **P** 20 44 12.4 +0.9
IRM Iron Mountain 76.85 57 P **P** 20 44 12.7 +0.7
baz=309
RSSD Black Hills 76.86 43 P **P** 20 44 12.0 0.0
baz=313
RSSD Black Hills 76.86 43 *e*P **P** 20 44 12.4 +0.4
RSSD Black Hills 76.86 43 *e*P **P** 20 44 12.4 +0.4
E28A Huff 76.86 40 P **P** 20 44 12.6 +0.8
baz=315
CUSAR Sarkisla-SIVAS 76.88 311 *i* P **P** 20 44 12.8 +0.6
BC3 Big Chuckawall 76.97 57 P **P** 20 44 12.5 -0.2
baz=309
GIRR Girov 76.98 321⇑*i*P **P** 20 44 13.5 +1.1
B31A Greenbush Farm 77.00 37 P **P** 20 44 12.9 +0.5
baz=316
D29A Pettibone, Tap 77.06 39 P **P** 20 44 13.2 +0.4
baz=315
COAL Corum-Alaca 77.06 312 *i* P **P** 20 44 14.2 +1.1
TLCR 77.08 319⇓*i*P **P** 20 44 13.8 +0.9
G27A Dupree 77.08 41 P **P** 20 44 13.2 +0.2
baz=314,SNR=7.0
I25A Rochford 77.09 43 P **P** 20 44 13.4 +0.1
baz=313,SNR=8.9
SURC SANLIURFA_SURC 77.10 307 *i* P **P** 20 44 13.9 +0.7
BUR08 Bucovina Ar. S 77.12 322 *e*P **P** 20 44 14.2 +0.9
C30A Mose, Pekin 77.13 38 P **P** 20 44 13.4 +0.2
baz=316,SNR=10.0
BURAR Bucovina Array 77.13 322⇓*i*P **P** 20 44 14.2 +0.9
A32A Rocking H Ranc 77.17 36 P **P** 20 44 13.7 +0.3
baz=317
O20A White River Ci 77.22 48 P **P** 20 44 14.3 +0.2
baz=312
O20A White River Ci 77.22 48 *e*P **P** 20 44 14.9 +0.8
comp=Z,44nm,1.2s
ILGA Ilgaz 77.25 313 *i* P **P** 20 44 15.0 +0.7
MNKR ALMNKUR 77.29 306 *e*P **P** 20 44 15.0 +0.7
F28A McLaughlin 77.32 40 P **P** 20 44 14.8 +0.4
baz=315
E29A Napoleon 77.38 39 P **P** 20 44 14.7 0.0
baz=315
PDMCI Parker Dam,Lak 77.40 56 P **P** 20 44 16.4 +1.4
baz=310
C31A Landman Farms, 77.41 37 P **P** 20 44 14.9 +0.1
baz=316,SNR=6.0
D30A Buchanan 77.42 38 P **P** 20 44 14.7 -0.2
baz=316,SNR=7.0
CFR Carcaliu 77.42 319⇑*i*P **P** 20 44 15.5 +0.6
J25A Sunshine Ranch 77.48 43 P **P** 20 44 15.1 -0.3
baz=313
KSRV Kasrt alli 77.51 306 *e*P **P** 20 44 16.4 +0.9
KOLS Kolonicke sedl 77.53 325 *e*P **P** 20 44 16.3 +0.9
KOLS pmax pmax
comp=Z,52nm,1.0s
KOLS Kolonicke sedl 77.53 325 *e*P **P** 20 44 16.3 +0.9
H27A Howes 77.53 42 P **P** 20 44 15.8 +0.3
baz=314
B32A Ashes, Strandq 77.53 36 P **P** 20 44 15.6 +0.2
baz=317,SNR=7.5
I26A New Underwood 77.54 43 P **P** 20 44 16.1 +0.4
baz=314
ODBI Odobesti 77.56 320⇑*i*P **P** 20 44 17.8 +2.2
STHS Stebnicka Huta 77.62 325 *e*P **P** 20 44 17.4 +1.5
STHS pmax pmax
comp=Z,59nm,1.1s
STHS Stebnicka Huta 77.62 325 *e*P **P** 20 44 17.4 +1.5
STHS *e*PP PP 20 47 00.7 -10
OJC Ojcow 77.64 327 *e*P **P** 20 44 17.3 +1.3
OJC Ojcow 77.64 327 *e*P **P** 20 44 17.4 +1.4
OJC MLR MLR
comp=Z,36µm,18.3s
OJC Ojcow 77.64 327 *e*P **P** 20 44 16.4 +0.4
VRI Vrincioaia 77.64 320⇑*i*P **P** 20 44 17.3 +1.2
VRI Vrincioaia 77.64 320 P **P** 20 44 17.3 +1.2
VRI pmax pmax
comp=Z,551nm,1.6s
BTIN Bart¯–n 77.68 314 *i* P **P** 20 44 16.6 +0.2
PLOR Plostina 77.69 320⇑*i*P **P** 20 44 17.5 +1.1
PLOR Plostina 77.69 320 P **P** 20 44 17.5 +1.1
UZH Uzhgorod 77.74 324*d i*P **P** 20 44 16.9 +0.3
UZH *e*S **S** 20 54 07.0 -0.9
UZH MLR MLR
comp=Z,10µm,14.6s
E30A Jud 77.78 39 P **P** 20 44 17.1 +0.2
baz=316,SNR=8.3
TIRR Tirgusor 77.79 318⇑*i*P **P** 20 44 17.6 +0.7
TIRR Tirgusor 77.79 318 *e*P **P** 20 44 17.5 +0.7
TIRR pmax pmax
comp=Z,26nm,1.0s
TIRR Tirgusor 77.79 318 *e*P **P** 20 44 17.4 +0.6
comp=Z,26nm,1.0s
G28A Parade 77.81 41 P **P** 20 44 17.1 0.0
baz=315
F29A Eureka 77.81 40 P **P** 20 44 17.6 +0.5
baz=315
CDAG Cicekdag 77.83 312 *i* P **P** 20 44 18.2 +0.8
AYKD Aykdinkavak 77.85 309 *i* P **P** 20 44 18.5 +1.0
BMR Baia Mare 77.89 323⇓*i*P **P** 20 44 19.3 +1.9
AGMN Agassiz Nation 77.91 36 P **P** 20 44 17.6 +0.1
baz=318
AGMN Agassiz Nation 77.91 36 *e*P **P** 20 44 17.2 -0.3
CRVS Cervenica-Dubn 77.91 325 *e*P **P** 20 44 18.5 +1.0
CRVS Cervenica-Dubn 77.91 325 *e*P **P** 20 44 18.5 +1.0
ARCR ARCALIA 77.92 322⇑*i*P **P** 20 44 19.9 +2.3
J26A Sides Ranch, S 77.92 43 P **P** 20 44 17.8 0.0
baz=314,SNR=6.8
I27A Quinn 77.93 42 P **P** 20 44 18.4 +0.5
baz=314,SNR=7.9
EFOR EFORIE 77.94 318⇑*i*P **P** 20 44 19.6 +1.9
SLMH Al Salmeh 77.95 307 *e*P **P** 20 44 16.2 -1.8
D31A Mcclaflin, Tow 77.96 38 P **P** 20 44 17.9 +0.1
baz=316
TRPA Tarpa 78.00 324⇑*e*P **P** 20 44 19.4 +1.4
N23A Red Feather La 78.01 46 P **P** 20 44 19.7 +1.0
baz=313,SNR=18
ANDN Andirin 78.02 309 *i* P **P** 20 44 19.6 +1.1
NIE Niedzica 78.03 326 *e*P **P** 20 44 19.8 +1.6
NIE Niedzica 78.03 326 *e*P **P** 20 44 19.8 +1.6
NIE MLR MLR
comp=Z,29µm,18.1s
H28A Mission Ridge 78.04 41 P **P** 20 44 18.9 +0.5
baz=315,SNR=12
B33A Robert and Kas 78.05 36 P **P** 20 44 18.1 -0.2
baz=318
KAMA Osmaniye 78.08 309 *i* P **P** 20 44 19.9 +1.1
AVNS Nevsehir-Avano 78.10 311 *i* P **P** 20 44 19.2 +0.3
KUZU Kuzuini 78.11 308 *i* P **P** 20 44 20.2 +1.3
BR131 Keskin Array S 78.18 312 *e*P **P** 20 44 20.2 +0.8
BRTR Keskin Array B 78.18 312 P **P** 20 44 20.1 +0.7
comp=Z,32nm,1.0s,baz=84,slow=3.8,SNR=111
BRTR PP **PP** 20 47 18.9 +3.3
comp=Z,8.2nm,0.9s,baz=57,slow=5.3,SNR=4.9
BRTR LR LR 21 24 13.8
comp=Z,2µm,18.8s,baz=349,slow=40
PGOR Pogoanele 78.20 319⇑*i*P **P** 20 44 21.2 +2.0
F30A Leola 78.20 39 P **P** 20 44 19.3 0.0
baz=316
D32A Dogwood Acres, 78.23 37 P **P** 20 44 19.5 +0.2
baz=317
DOPR Dopca 78.23 321⇑*i*P **P** 20 44 21.3 +1.9
E31A Nome 78.23 38 P **P** 20 44 19.7 +0.3
baz=316
ISR Istrita 78.27 320⇑*i*P **P** 20 44 21.5 +1.8
MLR Muntele Rosu 78.30 320⇑*i*P **P** 20 44 21.0 +1.1
MLR Muntele Rosu 78.30 320 *e*P **P** 20 44 20.7 +0.8
MLR Muntele Rosu 78.30 320 *e*P **P** 20 44 20.7 +0.8
B34A Aery, Baudette 78.31 35 P **P** 20 44 19.3 -0.5
baz=318,SNR=6.0
BCAM Yenicaga 78.34 314 *i* P **P** 20 44 21.4 +1.2
C33A Trail 78.34 36 P **P** 20 44 20.0 0.0
baz=318,SNR=5.5
MSAB Monastry St. A 78.34 318⇑*i*P **P** 20 44 21.5 +1.5
PV01 Paradox Valley 78.35 50 *e*P **P** 20 44 21.9 +1.5
RBK Rabkut 78.36 283 P **P** 20 44 20.1 -0.5
SNR=8.0
RBK Rabkut 78.36 283 P **P** 20 44 20.1 -0.5
SNR=8.0
WUAZ Wupatki 78.37 53 P **P** 20 44 20.8 +0.3
baz=311
WUAZ Wupatki 78.37 53 *e*P **P** 20 44 22.3 +1.8
RAC Raciborz 78.42 327 *e*P **P** 20 44 21.9 +1.6
RAC MLR MLR
comp=Z,6µm,18.9s
I28A Midland 78.44 42 P **P** 20 44 21.1 +0.5
baz=315,SNR=14
DRWC Darouich 78.45 308 *e*P **P** 20 44 21.8 +0.9
MLA1 Latheron 78.46 343⇑*e*P **P** 20 44 21.0 +0.7
H29A Onida 78.48 41 P **P** 20 44 20.9 +0.1
baz=315
J27A Elkhorn Farm, 78.53 43 P **P** 20 44 22.0 +0.8
baz=314,SNR=5.4
CJR Cluj-Napoca 78.55 322⇑*i*P **P** 20 44 22.7 +1.5
F31A Hecla 78.56 39 P **P** 20 44 21.2 -0.1
baz=316
SECR 78.56 320⇓*i*P **P** 20 44 23.2 +2.0
ANTO Ankara 78.57 313 *e*P **P** 20 44 22.6 +1.2
ANTO Ankara 78.57 313 *e*P **P** 20 44 22.6 +1.2
SMCO Snowmass 78.58 48 *e*P **P** 20 44 22.9 +1.0
LANS Liptovska Anna 78.59 326 *e*P **P** 20 44 23.2 +1.8
LANS Liptovska Anna 78.59 326 *e*P **P** 20 44 23.2 +1.8
E32A Braaten, Kindr 78.60 38 P **P** 20 44 21.6 +0.2
baz=317
BR231 Keskin MP Arra 78.60 313 *e*P **P** 20 44 20.8 -0.8
KSP Ksiaz 78.61 329 *e*P **P** 20 44 22.6 +1.3
KSP Ksiaz 78.61 329 *e*P **P** 20 44 22.6 +1.3
KSP MLR MLR
comp=Z,27µm,19.9s
OKC Ostrava-Krasne 78.63 327⇑*i*P **P** 20 44 22.5 +1.0
OKC AMS AMS 21 21 50.0
comp=Z,4µm,17.8s
OKC Ostrava-Krasne 78.63 327⇑*i*P **P** 20 44 22.5 +1.0
OKC MLR MLR
comp=Z,4µm,17.8s
KECS Kecovo 78.65 325 *e*P **P** 20 44 22.9 +1.3
KECS pmax pmax
comp=Z,19nm,1.0s
KECS Kecovo 78.65 325 *e*P **P** 20 44 22.9 +1.3
KECS *e*PP PP 20 47 09.5 -9.5
G30A Faulkton 78.65 40 P **P** 20 44 22.0 +0.3
baz=316,SNR=13
SULR 78.72 320⇑*i*P **P** 20 44 23.4 +1.3
D33A AnnSam, Waubun 78.77 37 P **P** 20 44 21.4 -1.0
baz=318
J28A Allard Ranch, 78.81 42 P **P** 20 44 23.3 +0.6
baz=315,SNR=12
B35A Bob, Littlefor 78.81 35 P **P** 20 44 22.7 +0.2
baz=319,SNR=8.6
C34A RKJ Ranch, Bem 78.81 36 P **P** 20 44 21.9 -0.7
baz=318
AKSY AKSARAY - Alti 78.83 311 *i* P **P** 20 44 23.0 0.0
I29A Vivian Onida 78.86 41 P **P** 20 44 23.8 +0.9
baz=315
DRGR 78.90 323⇑*i*P **P** 20 44 24.2 +1.0
MORC Moravsky Berou 78.92 328⇑*i*P **P** 20 44 24.2 +1.0
MORC Moravsky Berou 78.92 328 *e*P **P** 20 44 24.4 +1.2
MORC Moravsky Berou 78.92 328 *e*P **P** 20 44 24.4 +1.2
ISCO Idaho Springs 78.94 47 P **P** 20 44 24.4 +0.6
baz=313
ISCO Idaho Springs 78.94 47 *e*P **P** 20 44 24.9 +1.1

13d 20h

comp=Z,9.0nm,0.8s,baz=40,slow=9.1,SNR=4.1
AKBB Malin Array Si 73.09 323 *e*P **P** 20 43 50.3 +0.4
AKBB Malin Array Si 73.09 323 *e*P **P** 20 43 50.2 +0.4
SFJD Kangerlussuaq 73.10 6 *i* P **P** 20 43 50.0 +0.4
comp=Z,63nm,0.9s
SFJD Kangerlussuaq 73.10 6 *i* P **P** 20 43 50.0 +0.4
SFJD pmax pmax
comp=Z,63nm,0.9s
SFJD Kangerlussuaq 73.10 6 *e*P **P** 20 43 50.6 +1.1
KIEV Kiev 73.10 323⇑*i*P **P** 20 43 50.2 +0.3
KIEV pmax pmax
comp=Z,116nm,1.0s
KIEV Kiev 73.10 323 *e*P **P** 20 43 50.2 +0.3
ARQ Araqi 73.12 286 P **P** 20 43 51.2 +0.7
SNR=22
ARQ Araqi 73.12 286 P **P** 20 43 51.2 +0.7
SNR=22
AK11 Malin Array Si 73.13 323 *e*P **P** 20 43 50.2 +0.1
H17A Grant Village 73.14 46 P **P** 20 43 53.3 +2.7
baz=309,SNR=27
H17A Grant Village 73.14 46 *e*P **P** 20 43 53.1 +2.5
comp=Z,116nm,1.4s
ASUD Al Ashush, Dub 73.23 288 *i* P **P** 20 43 51.6 +0.5
SNR=10
IMW Indian Meadow 73.25 47 *e*P **P** 20 43 53.2 +1.8
FLWY Flagg Ranch 73.27 46 *e*P **P** 20 43 53.7 +2.4
OSL Oslo 73.33 337 *e*P **P** 20 43 51.5 +0.5
OSL IAmb IAmb 20 43 52.9
comp=Z,171nm,0.9s
FXWY Fox Creek 73.37 47 *e*P **P** 20 43 53.6 +1.6
RLMT Red Lodge 73.40 45 P **P** 20 43 52.9 +0.9
baz=310
RLMT Red Lodge 73.40 45 *e*P **P** 20 43 53.3 +1.3
SUW Suwalki 73.44 328 *e*P **P** 20 43 52.1 +0.3
SUW Suwalki 73.44 328 *e*P **P** 20 43 52.2 +0.4
MOOW Moose Ponds 73.46 47 *e*P **P** 20 43 54.0 +1.6
HAKT HAKKARI 73.50 305 *i* P **P** 20 43 53.5 +0.7
HVU Hansel Valley 73.53 49 *e*P **P** 20 43 54.7 +1.9
HVU Hansel Valley 73.53 49 *e*P **P** 20 43 54.7 +1.9
HYA Hoyanger 73.59 340 *e*P **P** 20 43 53.6 +1.0
HYA IAmb IAmb 20 43 54.4
comp=Z,155nm,1.0s
LOHW Long Hollow 73.62 47 *e*P **P** 20 43 55.2 +1.8
SNOW Snow King Moun 73.63 47 *e*P **P** 20 43 55.6 +2.0
REDW Red Top Meadow 73.64 47 *e*P **P** 20 43 55.4 +1.8
FRB Frobisher Bay 73.84 14 P **P** 20 43 54.1 +0.2
comp=Z,81nm,0.8s,baz=340,slow=6.4,SNR=85
DGMT Dagmar 73.84 40 P **P** 20 43 54.9 +0.6
baz=312
DGMT Dagmar 73.84 40 *e*P **P** 20 43 55.3 +0.9
AHID Auburn Hatcher 73.88 48 *e*P **P** 20 43 56.4 +1.5
KONO Kongsberg 73.90 338 *e*P **P** 20 43 54.8 +0.4
KONO IAmb IAmb 20 43 56.0
comp=Z,85nm,1.1s
KONO Kongsberg 73.90 338 *e*P **P** 20 43 55.1 +0.7
KONO Kongsberg 73.90 338 *e*P **P** 20 43 55.1 +0.7
BGU Big Grassy Mou 73.92 50 *e*P **P** 20 43 56.6 +1.5
R11A Troy Canyon, C 73.97 53 P **P** 20 43 56.6 +1.1
baz=308,SNR=22
R11A Troy Canyon, C 73.97 53 *e*P **P** 20 43 56.3 +0.8
comp=Z,113nm,1.7s
DAC Darwin (Calif) 73.97 56 *e*P **P** 20 43 57.2 +1.7
DAC Darwin (Calif) 73.97 56 *e*P **P** 20 43 57.2 +1.7
EPU East Promontor 73.99 49 *e*P **P** 20 43 55.9 +0.4
LAO LASA Array 74.00 42 P **P** 20 43 56.4 +1.0
baz=311
SCZ2 Santa Cruz Isl 74.02 59 P **P** 20 43 56.3 +0.7
baz=307
SUE Sulen 74.06 340 *e*P **P** 20 43 56.7 +1.4
MPMC Manual Prospec 74.17 56 P **P** 20 43 57.4 +0.6
baz=308
HWUT Hardware Ranch 74.34 49 *e*P **P** 20 43 59.2 +1.6
TPNV Topopah Spring 74.41 55 P **P** 20 43 59.2 +1.2
baz=308
TPNV Topopah Spring 74.41 55 *e*P **P** 20 43 59.9 +1.8
TPNV Topopah Spring 74.41 55 *e*P **P** 20 43 59.9 +1.8
ASK Askoy 74.43 340 *e*P **P** 20 43 58.8 +1.3
SIM Simferopol' 74.46 316 *i* P **P** 20 43 59.2 +1.2
SIM pmax pmax
comp=Z,111nm,0.9s
BER Bergen 74.48 340 *e*P **P** 20 43 58.6 +0.9
DUG Dugway, Tooele 74.50 51 P **P** 20 43 59.5 +1.0
baz=309
DUG Dugway, Tooele 74.50 51 *e*P **P** 20 43 59.8 +1.3
DUG Dugway, Tooele 74.50 51 *e*P **P** 20 43 59.8 +1.3
ODD1 Odda 74.53 339 *e*P **P** 20 43 58.9 +0.8
ODD1 IAmb IAmb 20 44 00.1
comp=Z,91nm,1.1s
EDW2 Edwards Air Fo 74.56 57 P **P** 20 43 59.6 +0.7
baz=308
A26A Wade Farm, Ken 74.60 38 P **P** 20 43 58.9 +0.2
baz=313,SNR=7.1
KELT Kelkit 74.63 310 *i* P **P** 20 44 00.1 +0.7
EUZM Uzumlu 74.64 309 *i* P **P** 20 44 01.2 +1.9
BW06 Boulder Array 74.75 47 P **P** 20 44 01.0 +1.0
baz=310
BW06 Boulder Array 74.75 47 *e*P **P** 20 43 60.0 0.0
PD31 Pinedale Array 74.75 47 *e*P **P** 20 44 00.6 +0.6
PDAR Pinedale Array 74.75 47 P **P** 20 44 00.2 +0.2
comp=Z,6.5nm,0.8s,baz=268,slow=2.5,SNR=48
CTU Camp Tracy 74.82 50 *e*P **P** 20 44 02.3 +2.0
BTMN Batman 74.82 307 *i* P **P** 20 44 00.1 -0.3
B26A Jensen Ranch, 74.86 39 P **P** 20 44 01.6 +1.3
baz=313
PSUT Pine Spring 74.92 52 *e*P **P** 20 44 03.0 +2.0
ORDU Ordu-Boztepe 74.92 311 *i* P **P** 20 44 01.9 +1.1
MWC Mount Wilson 74.92 58 *e*P P 20 44 06.9 +5.8
MWC Mount Wilson 74.92 58 *e*P P 20 44 06.9 +5.8
A27A Ledoux Ranch, 74.94 38 P **P** 20 44 01.4 +0.7
baz=314,SNR=5.0
BLS5 Blasjo 74.99 339 *e*P **P** 20 44 02.0 +1.2
GSC Goldstone, Bar 75.07 57 P **P** 20 44 03.5 +1.7
baz=308
GSC Goldstone, Bar 75.07 57 *e*P **P** 20 44 04.7 +2.9
GSC Goldstone, Bar 75.07 57 *e*P **P** 20 44 04.7 +2.9
NLU North Lily Min 75.09 50 *e*P **P** 20 44 03.5 +1.5
TNCL Tunceli-Merkez 75.11 309 *i* P **P** 20 44 02.8 +0.8
D25A Fairfield 75.16 40 P **P** 20 44 02.9 +0.8
baz=313
BFSC Mount Baldy Ra 75.17 58 P **P** 20 44 03.1 +0.6
baz=308
BORG Borgarnes 75.19 353 *i* P **P** 20 44 05.2 +3.4
SUSE Susehri 75.22 310 *i* P **P** 20 44 02.9 +0.3
SORM Soroca 75.26 321⇑*i*P **P** 20 44 03.1 +0.6
C26A Wahner Farm, P 75.31 39 P **P** 20 44 03.6 +0.7
baz=314,SNR=5.4
MPU Maple Canyon 75.32 50 *e*P **P** 20 44 04.9 +1.6
HOMB Homborsund 75.35 337 *e*P **P** 20 44 03.9 +1.0
REFA Refahiye_ERZ¯ 75.40 309 *i* P **P** 20 44 03.3 -0.4
A28A Rude Farm, Bot 75.43 38 P **P** 20 44 04.4 +0.8
baz=315,SNR=12
MARD Mardin 75.48 306 *i* P **P** 20 44 05.4 +0.3
DIYA Diyarbakir 75.51 307 *i* P **P** 20 44 04.9 +0.6
E25A Miller Ranch, 75.57 41 P **P** 20 44 04.8 +0.4
baz=313,SNR=11
STAV Stavanger 75.61 339 *e*P **P** 20 44 05.0 +0.7
STAV IAmb IAmb 20 44 06.2
comp=Z,105nm,1.2s
KEMA Kemaliye 75.64 309 *i* P **P** 20 44 06.2 +1.2
SAMS Samsun-Alacam 75.65 312 *i* P **P** 20 44 05.7 +0.8
C27A Sayler Ranch, 75.67 39 P **P** 20 44 05.5 +0.6
baz=314
CUZAR Zara_SIVAS 75.67 310 *i* P **P** 20 44 05.6 +0.3
SNART Snartemo 75.68 338 *e*P **P** 20 44 06.3 +1.6
SNART IAmb IAmb 20 44 06.7
comp=Z,88nm,1.0s
D26A Manning 75.69 40 P **P** 20 44 05.6 +0.5
baz=314
B28A Dugan Ranch, T 75.71 38 P **P** 20 44 05.2 +0.1
baz=315
ERBA Erbaa 75.76 311 *i* P **P** 20 44 06.2 +0.6
BSD Bornholm Skovb 75.79 332⇑*i*P **P** 20 44 05.9 +0.5
comp=Z,180nm,1.0s
BSD Bornholm Skovb 75.79 332⇑*i*P **P** 20 44 05.9 +0.5
BSD pmax pmax
comp=Z,180nm,1.0s
KIS Kishinev 75.82 320 *i* P **P** 20 44 06.0 +0.2
comp=Z,300nm,1.4s
KIS Kishinev 75.82 320 *e*PP PP 20 47 04.0 +8.7
KIS LRM MLR 21 20 50.0
comp=Z,6µm,15.0s
KIS Kishinev 75.82 320 *i* P **P** 20 44 06.0 +0.2
KIS *i* 20 44 13.0
KIS *i* 20 44 20.0

ISCO Idaho Springs 78.94 47 eP P 20 44 24.9 +1.1
BTCH Batrach 78.96 308 eP P 20 44 23.8 +0.2
KKUL Konya-Kulu 78.97 312 i P P 20 44 24.5 +0.8
DPC Dobruska-Polom 78.98 329⇑ iP P 20 44 24.8 +1.3
DPC esP PcP 20 44 35.0 +3.0
DPC AMS AMS 21 23 20.0
comp=Z,3µm,16.5s
DPC Dobruska-Polom 78.98 329⇑ iP P 20 44 24.8 +1.3
DPC e 20 44 35.0
DPC MLR MLR
comp=Z,3µm,16.5s
UPC Upice 78.98 329⇑ iP P 20 44 24.6 +1.2
UPC AMS AMS 21 23 30.0
comp=Z,4µm,15.7s
UPC Upice 78.98 329⇑ iP P 20 44 24.6 +1.2
UPC MLR MLR
comp=Z,4µm,15.7s
SAHE Sakarya_HENDEK 78.98 314 i P P 20 44 23.6 0.0
MVH1 Achvaich 78.99 343⇑ eP P 20 44 24.0 +0.7
MVCO Mesa Verde 79.00 51 P P 20 44 24.9 +0.7
baz=312
MVCO Mesa Verde 79.00 51 eP P 20 44 25.4 +1.3
KRLC Kraliky 79.00 328⇑ iP P 20 44 24.7 +1.1
KRLC Kraliky 79.00 328⇑ iP P 20 44 24.7 +1.1
ARR Arges 79.03 321⇑ iP P 20 44 25.8 +1.9
G31A Conde 79.04 39 P P 20 44 24.3 +0.4
baz=316
MCD Coleburn Disti 79.09 342⇑ eP P 20 44 24.5 +0.6
D34A Park Rapids 79.11 36 P P 20 44 24.2 0.0
baz=318,SNR=5.3
E33A Westby DABS, E 79.16 37 P P 20 44 24.5 0.0
baz=318,SNR=6.6
YAYL Yayladag 79.18 308 i P P 20 44 25.3 +0.4
KAND Kocaeli-Kandir 79.18 315 i P P 20 44 24.4 -0.3
C35A Jirik Farms, M 79.20 35 P P 20 44 24.3 -0.4
baz=319
SUSD Miller 79.24 40 P P 20 44 25.0 0.0
baz=316
GOLR 79.25 320⇑ iP P 20 44 26.5 +1.5
MME1 Meikle Cairn 79.26 342⇑ eP P 20 44 25.4 +0.5
MME1 eP pP 20 44 25.7 -5.0
J29A Okreek 79.29 42 P P 20 44 25.2 -0.1
baz=315
KFRA Kufra 79.30 307 eP P 20 44 25.9 +0.4
AUMIH MIHALICIK 79.31 313 i P P 20 44 26.1 +0.5
PSZ Piszkesteto 79.34 325⇓ iP P 20 44 26.4 +0.9
PSZ Piszkesteto 79.34 325⇓ eP P 20 44 26.9 +1.4
PSZ Piszkesteto 79.34 325 eP P 20 44 26.1 +0.6
PSZ Piszkesteto 79.34 325 eP P 20 44 26.1 +0.6
WRDH Warideh 79.34 307 eP P 20 44 25.9 +0.2
DED Mersin 79.35 309 i P P 20 44 24.5 -1.2
VYHS Vyhne 79.36 326 eP P 20 44 26.8 +1.2
VYHS pmax pmax
comp=Z,45nm,1.1s
VYHS Vyhne 79.36 326 eP P 20 44 26.8 +1.2
VYHS ePP PP 20 47 09.8 -15
G32A Webster 79.37 39 P P 20 44 25.9 +0.3
baz=317,SNR=8.0
ARNB Al Arnab 79.38 308 eP P 20 44 26.4 +0.4
I30A Oacoma 79.38 41 P P 20 44 26.2 +0.4
baz=316
LOT Lotru 79.39 321⇑ iP P 20 44 26.5 +0.6
SLNF Slenfeh 79.40 308 eP P 20 44 25.9 -0.3
KERG Konya-Eregli 79.45 310 i P P 20 44 25.4 -0.9
HUMR Humele 79.47 320⇓ iP P 20 44 26.4 +0.2
MDO Dochfour 79.47 343 eP P 20 44 26.2 +0.2
MDO ⇑eP pP 20 44 26.4 -5.3
BRG Berggiesshubel 79.50 330 i P P 20 44 27.1 +0.9
comp=Z,74nm,1.1s
BRG PP PP 20 47 14.7 -11
comp=Z,12nm,1.0s
comp=N,3µm,15.5s
comp=E,1µm,18.0s
comp=Z,5µm,14.3s
BRG Berggiesshubel 79.50 330 i P P 20 44 27.1 +0.9
BRG pmax pmax
comp=Z,23nm,1.1s
BRG pmax pmax
comp=Z,74nm,1.0s
BRG MLR MLR
comp=N,12µm,15.5s
BRG MLR MLR
comp=E,3µm,18.0s
BRG MLR MLR
comp=Z,1µm,14.3s
CLL Collm 79.51 331⇑ iP P 20 44 26.6 +0.3
comp=Z,130nm,1.0s
CLL e 20 44 30.0
CLL i 20 44 32.5
CLL e 20 44 55.0
CLL e 20 47 05.0
CLL ePP PP 20 47 24.0 -2.0
CLL i 20 47 36.9
CLL LmH 21 18 00.0
comp=N,2µm,20.4s
CLL LmH 21 18 00.0
comp=E,4µm,21.4s
CLL Collm 79.51 331⇑ iP P 20 44 26.6 +0.3
CLL e 20 44 30.0
CLL i 20 44 32.5
CLL pmax pmax
comp=Z,37nm,1.0s
CLL Collm 79.51 331 eP P 20 44 26.6 +0.3
DRUM Mains of Drumt 79.51 342 eP P 20 44 27.0 +0.9
DRUM AMB AMB 20 44 27.6
comp=Z,88nm,1.1s
F33A 5 Mile Ranch, 79.52 38 P P 20 44 26.5 +0.1
baz=318
PVCC Panska Ves 79.53 330⇑ iP P 20 44 27.7 +1.3
PVCC epP PcP 20 44 36.0 +1.6
PVCC AMS AMS 21 22 50.0
comp=Z,4µm,17.3s
PVCC Panska Ves 79.53 330⇑ iP P 20 44 27.7 +1.3
PVCC e 20 44 36.0
PVCC MLR MLR
comp=Z,4µm,17.3s
RABH Abou Rabah 79.55 306 eP P 20 44 32.1 +5.2
D35A Remer 79.63 36 P P 20 44 26.7 -0.4
baz=319
KAC Achnashellach 79.63 343⇑ eP P 20 44 27.6 +0.8
KAC ⇑eP P 20 44 27.7 +0.9
S22A 4UR Ranch, Cre 79.63 49 P P 20 44 28.2 +0.6
baz=313
W18A Petrified Fore 79.64 53 P P 20 44 28.6 +1.1
baz=312
W18A Petrified Fore 79.64 53 eP P 20 44 28.8 +1.3
comp=Z,35nm,1.2s
C36A Pine Crest Far 79.66 35 P P 20 44 27.2 0.0
baz=320,SNR=5.4
ROOS tl_alroos 79.68 306 eP P 20 44 28.0 +0.4
VRAC Vranov 79.68 328 P P 20 44 28.6 +1.4
comp=Z,103nm,1.0s,baz=46,slow=5.2,SNR=101
VRAC Vranov 79.68 328⇑ iP P 20 44 28.8 +1.5
BIDA Albida 79.72 307 eP P 20 44 28.9 +1.1
214A Organ Pipe Nat 79.76 57 P P 20 44 29.7 +1.6
baz=311
214A Organ Pipe Nat 79.76 57 eP P 20 44 29.9 +1.9
comp=Z,168nm,1.3s
J30A Dallas 79.77 41 P P 20 44 28.2 +0.3
baz=316
Q24A Divide 79.77 47 P P 20 44 28.7 +0.4
baz=313
SIRR Siria 79.78 323⇑ iP P 20 44 29.2 +1.3
KPL Plockton 79.85 343⇑ eP P 20 44 29.0 +1.0
KPL AMB AMB 20 44 29.8
comp=Z,149nm,1.4s
E35A Pequot Lakes 79.86 36 P P 20 44 28.3 0.0
baz=319
KDHN Kadinhani 79.87 312 i P P 20 44 28.6 0.0
GZR Gura Zlata 79.90 322⇑ iP P 20 44 29.3 +0.7
ESKT Eskisehir 79.90 313 i P P 20 44 28.9 0.0
ZIMR 79.90 319⇓ iP P 20 44 29.3 +0.8
G33A Ortonville 79.92 38 P P 20 44 28.7 0.0
baz=318,SNR=7.7
KSB Sheil Bridge 79.92 343⇑ eP P 20 44 28.7 +0.4
GOPC GO Pecny, Ondr 79.93 329⇑ iP P 20 44 29.8 +1.2
GOPC AMS AMS 21 24 00.0
comp=Z,5µm,15.2s
GOPC GO Pecny, Ondr 79.93 329⇑ iP P 20 44 29.8 +1.2
GOPC MLR MLR
comp=Z,5µm,15.2s
H32A Carlson Farm, 79.94 39 P P 20 44 30.0 +1.1
baz=317
SMOL Smolenice 79.95 327 eP P 20 44 30.3 +1.5
SMOL Smolenice 79.95 327 eP P 20 44 30.2 +1.5
PRA Prague 79.95 329⇑ iP P 20 44 30.0 +1.3
PRA AMS AMS 21 23 00.0
comp=Z,4µm,17.3s
PRA Prague 79.95 329⇑ iP P 20 44 30.0 +1.3
PRA MLR MLR
comp=Z,4µm,17.3s
D36A Goodland 79.95 35 P P 20 44 28.7 -0.1
baz=319
C37A Embarrass 79.97 34 P P 20 44 28.7 -0.1
baz=320,SNR=6.0
EDU Dundee 79.97 342⇑ eP P 20 44 29.5 +0.8
PRU Pruhonice 79.97 329⇑ iP P 20 44 29.9 +1.1
PRU esP PcP 20 44 40.3 +4.0
PRU AMS AMS 21 23 40.0
comp=Z,4µm,17.5s
PRU Pruhonice 79.97 329⇑ iP P 20 44 29.9 +1.1
PRU e 20 44 40.3
PRU MLR MLR
comp=Z,4µm,17.5s
F34A Alexandria 80.03 37 P P 20 44 29.3 0.0
baz=318
BUD Budapest 80.05 325⇑ eP P 20 44 30.5 +1.2
KIZK Mersin 80.06 309 i P P 20 44 24.9 -4.6
EYMN Ely 80.10 34 P P 20 44 29.4 -0.1
baz=320
EYMN Ely 80.10 34 eP P 20 44 29.4 -0.1
OGNE Ogallala 80.13 44 P P 20 44 30.4 +0.5
baz=315
OGNE Ogallala 80.13 44 eP P 20 44 31.4 +1.4
TREC Trest 80.14 328⇑ iP P 20 44 30.9 +1.1
TREC AMS AMS 21 24 20.0
comp=Z,4µm,15.9s
TREC Trest 80.14 328⇑ iP P 20 44 30.9 +1.1
TREC MLR MLR
comp=Z,4µm,15.9s
H33A Prehn Over Nor 80.15 39 P P 20 44 30.2 +0.3
baz=317,SNR=11
K30A Basset 80.18 42 P P 20 44 30.8 +0.6
baz=316
J31A Geddes 80.18 41 P P 20 44 30.1 0.0
baz=316
KMER Konya-Meram 80.24 311 i P P 20 44 30.8 +0.2
DGAR Diego Garcia 80.24 252 eP P 20 44 30.3 -0.5
DGAR Diego Garcia 80.24 252 eP P 20 44 30.3 -0.5
G34A Benson 80.27 38 P P 20 44 31.2 +0.7
baz=318
MARH Ras Al Marh 80.27 306 eP P 20 44 31.2 +0.1
I32A Karley and Nic 80.28 40 P P 20 44 30.4 -0.2
baz=317
BZS Buzias 80.28 323⇑ iP P 20 44 31.2 +0.6
D37A Cotton 80.30 35 P P 20 44 30.0 -0.6
baz=320
F35A Swanville 80.31 37 P P 20 44 30.6 -0.1
baz=319
PKS7 Kunszentmiklos 80.32 325⇓ eP P 20 44 32.2 +1.5
C38A Sawbill Land. 80.37 34 P P 20 44 30.6 -0.4
baz=320
BOLV Bolvadin 80.40 313 i P P 20 44 32.2 +0.7
PKSG 80.40 326⇑ eP P 20 44 32.2 +1.1
SDCO Great Sand Dun 80.40 49 P P 20 44 32.0 +0.3
baz=313
SDCO Great Sand Dun 80.40 49 eP P 20 44 33.1 +1.3
E36A McGregor 80.41 36 P P 20 44 31.4 +0.1
baz=319,SNR=9.1
ESY Stoneypath 80.44 341⇑ eP P 20 44 31.9 +0.7
ZALF Zalf 80.47 305 eP P 20 44 32.1 +0.3
CSKK Cs˘˙tkako 80.48 326⇑ eP P 20 44 32.7 +1.1
PKS6 Bocsa 80.48 324⇓ eP P 20 44 32.8 +1.2
J32A Parkston 80.57 40 P P 20 44 32.8 +0.7
baz=317
NKC Novy Kostel 80.58 331⇑ iP P 20 44 32.9 +0.7
NKC AMS AMS 21 23 20.0
comp=Z,3µm,18.3s
NKC Novy Kostel 80.58 331⇑ iP P 20 44 32.9 +0.7
NKC MLR MLR
comp=Z,3µm,18.3s
I33A Coleman 80.59 39 P P 20 44 32.9 +0.6
baz=317
EAB Aberfoyle 80.61 342⇑ eP P 20 44 32.3 +0.2
H34A Spellman Lake, 80.63 38 P P 20 44 32.7 +0.3
baz=318
K31A O'Neill 80.65 41 P P 20 44 33.4 +0.8
baz=316
PKST T˘˙s 80.66 326⇑ eP P 20 44 33.4 +0.8
BANR Banloc 80.68 323⇑ iP P 20 44 34.1 +1.4
ERMK Ermenek 80.69 310 i P P 20 44 32.5 -0.7
QASN Qassioun 80.73 306 eP P 20 44 31.2 -2.1
TOTH TOTAH 80.75 306 eP P 20 44 34.0 +0.6
F36A Milaca 80.79 36 P P 20 44 33.2 -0.1
baz=319
G35A Watkins 80.83 37 P P 20 44 34.4 +0.9
baz=319
TUC Tucson 80.83 56 P P 20 44 35.6 +1.7
baz=311
TUC Tucson 80.83 56 eP P 20 44 36.3 +2.4
TUC Tucson 80.83 56 eP P 20 44 36.3 +2.4
MDVR Moldovita 80.86 322⇑ iP P 20 44 34.3 +0.5
ECSD EROS Data Cent 80.91 39 P P 20 44 34.2 +0.1
baz=318
ECSD EROS Data Cent 80.91 39 eP P 20 44 34.0 -0.1
L31A Butterfield Fa 80.93 42 P P 20 44 34.7 +0.5
baz=316,SNR=6.2
SOP Sopron 80.96 327⇑ eP P 20 44 35.9 +1.7
GDZ Gediz 80.97 314 i P P 20 44 35.0 +0.4
SALA Sala 80.98 305 eP P 20 44 35.4 +0.6
PGBU Glenifferbraes 80.99 342⇑ eP P 20 44 35.2 +1.1
PGBU AMB AMB 20 44 36.1
comp=Z,182nm,1.1s
RAYN Ar Rayn 81.00 293 eP P 20 44 35.0 +0.1
BRBR Barbar 81.01 306 eP P 20 44 34.9 0.0
KHC Kasperske Hory 81.03 329⇑ iP P 20 44 35.7 +1.1
KHC ex x 20 44 45.9
KHC AMS AMS 21 24 30.0
comp=Z,6µm,16.4s
KHC Kasperske Hory 81.03 329⇑ iP P 20 44 35.7 +1.1
KHC e 20 44 45.9
KHC MLR MLR
comp=Z,6µm,16.4s
KHC Kasperske Hory 81.03 329 eP P 20 44 35.5 +1.0
J33A Davis 81.04 40 P P 20 44 35.5 +0.8
baz=317
I34A Hadley 81.05 39 P P 20 44 34.9 +0.1
baz=318
H35A Sunnyside Ranc 81.05 38 P P 20 44 35.4 +0.6
baz=319,SNR=8.9
CONA Conrad Observa 81.06 327 i P P 20 44 36.3 +1.5
comp=Z,93nm,1.1s,SNR=65
PKS9 Tamasi 81.06 325⇑ eP P 20 44 35.2 +0.5
EKA Eskdalemuir Ar 81.10 341 PP PP 20 47 40.3 +1.3
comp=Z,14nm,1.0s,baz=27,slow=7.5,SNR=5.4
ESK Eskdalemuir 81.13 341⇑ eP P 20 44 35.7 +0.8
ESK Eskdalemuir 81.13 341 eP P 20 44 35.9 +1.0
ESK Eskdalemuir 81.13 341 eP P 20 44 35.9 +1.0
G36A St. Michael 81.16 37 P P 20 44 35.4 +0.1
baz=319
KSCO Kaye Shedlock' 81.16 46 P P 20 44 36.4 +0.8
baz=315
KSCO Kaye Shedlock' 81.16 46 eP P 20 44 36.7 +1.1
comp=Z,73nm,1.3s
DURS Dursunbey 81.16 315 i P P 20 44 35.5 0.0
WTSB Winterswijk 81.17 334 eP P 20 44 35.5 +0.4
comp=Z,160nm,1.3s
PKSM Moragy 81.19 325⇑ iP P 20 44 35.8 +0.4
PKSM Moragy 81.19 325⇑ eP P 20 44 35.9 +0.5
LCP Canop 81.21 340⇑ eP P 20 44 36.0 +0.7
GEC2 GERESS Array S 81.21 329 eP P 20 44 36.2 +0.6
GEC2 GERESS Array S 81.21 329 eP P 20 44 36.2 +0.6
GERES GERESS Array B 81.21 329 P P 20 44 36.2 +0.6
comp=Z,21nm,0.9s,baz=35,slow=4.9,SNR=144
GERES PP PP 20 47 42.7 +2.4
comp=Z,3.2nm,0.8s,baz=52,slow=8.0,SNR=3.4
GERES LR LR 21 23 45.1
comp=Z,3µm,18.2s,baz=18,slow=38
GEA0 GERESS Array S 81.22 329 eP P 20 44 35.5 -0.2
ECK Cauldkaine Hil 81.23 341⇑ eP P 20 44 36.2 +0.7
ASF Jabal al Asfar 81.24 305 P P 20 44 36.9 +0.9
comp=Z,29nm,1.0s,baz=1.1,slow=2.4,SNR=36
BHH Howats Hill 81.33 341⇑ eP P 20 44 36.9 +0.9
BWH Wardlaw 81.36 342⇑ eP P 20 44 37.0 +0.8
DEMI Demirci 81.42 314 i P P 20 44 36.7 -0.2
T25A Trinidad 81.45 48 P P 20 44 37.9 +0.6
baz=314,SNR=9.0
KHAL Karahalli 81.46 313 i P P 20 44 37.4 +0.2
M31A Lambtecht Ranc 81.46 42 P P 20 44 37.3 +0.3
baz=316
GRFO Grafenberg 81.49 331 eP P 20 44 38.3 +1.3
GRFO Grafenberg 81.49 331 eP P 20 44 38.3 +1.3
MAMC Mammari 81.50 309 P P 20 44 37.8 +0.5
H36A Jessenland, He 81.57 37 P P 20 44 38.1 +0.6
baz=319,SNR=5.7
CSS Mathiatis 81.58 309 P P 20 44 38.6 +0.9
CSS Mathiatis 81.58 309 eP P 20 44 38.3 +0.6
SPMN Marine on St. 81.60 36 P P 20 44 37.5 -0.1
baz=320
I35A Creekview Farm 81.61 38 P P 20 44 37.5 -0.2
baz=319
MMAI Mount Meron Ar 81.62 306 P P 20 44 39.2 +1.2
comp=Z,94nm,1.0s,baz=39,slow=5.7,SNR=72
GMK Mull of Kintyr 81.67 343⇑ eP P 20 44 38.4 +0.6
LAZ Ladron 81.70 52 eP P 20 44 41.0 +2.4
ARSA Arzberg 81.73 327 i P P 20 44 39.5 +1.2
SNR=27
ANMO Albuquerque 81.75 51 P P 20 44 40.0 +1.2
baz=313
ANMO Albuquerque 81.75 51⇓ iP P 20 44 39.8 +0.9
ANMO pmax pmax
comp=Z,21nm,1.2s
ANMO Albuquerque 81.75 51 eP P 20 44 40.4 +1.6
VTS Vitosha 81.76 320⇑ iP P 20 44 39.8 +1.0
VTS Vitosha 81.76 320 eP P 20 44 39.7 +1.0
VTS Vitosha 81.76 320 eP P 20 44 39.7 +1.0
KESW Keswick, Cumbr 81.76 341 eP P 20 44 38.7 +0.4
KESW AMB AMB 20 44 40.1
comp=Z,136nm,1.3s
MOA Molln 81.78 328 i P P 20 44 39.5 +0.9
comp=Z,46nm,1.2s,SNR=27
BEHE Becsehely 81.81 326⇑ eP P 20 44 39.4 +0.7
BGNE Belgrade 81.84 42 P P 20 44 39.5 +0.5
baz=317
BGNE Belgrade 81.84 42 eP P 20 44 38.9 -0.1
comp=Z,119nm,1.1s
N31A Bailey Ranch, 81.85 43 P P 20 44 39.2 +0.1
baz=316
ALFC Alefka 81.88 309 P P 20 44 39.3 0.0
GAL1 Galloway 81.90 342⇑ eP P 20 44 39.8 +0.8
GAL1 AMB AMB 20 44 40.9
comp=Z,53nm,1.0s
K34A Le Mars 81.94 40 P P 20 44 39.6 +0.1
baz=318
HPK Haverah Park 81.95 340 eP P 20 44 39.9 +0.6
HPK AMB AMB 20 44 43.2
comp=Z,124nm,0.9s
I36A Fitzsimmons Fa 81.95 38 P P 20 44 40.1 +0.6
baz=319
SZAC Souni 81.99 309 P P 20 44 41.0 +1.1
H37A Dierke Farm, C 82.04 37 P P 20 44 40.6 +0.6
baz=320
KOGS Kog 82.06 326⇑ iP P 20 44 40.1 +0.1
LPM Los Pinos Moun 82.07 52 eP P 20 44 42.0 +1.4
AKMC Akamas 82.13 309 P P 20 44 41.2 +0.6
O31A Woolen Ranch, 82.14 43 P P 20 44 40.3 -0.4
baz=316
BNM Barren Site 82.19 52 eP P 20 44 42.7 +1.5
M33A Taylor Creek F 82.21 41 P P 20 44 40.1 -0.9
baz=317
PPCY Paphos 82.22 309 P P 20 44 41.2 +0.2
I37A Lemond, Waseca 82.24 37 P P 20 44 41.3 +0.3
baz=320,SNR=14
J36A Seneca 1, Swea 82.32 38 P P 20 44 41.1 -0.4
baz=319
SCHQ Schefferville 82.36 17 P P 20 44 41.2 -0.2
comp=Z,23nm,0.9s,baz=333,slow=3.8,SNR=11
SCHQ LR LR 21 25 04.3
comp=Z,2µm,19.4s,baz=47,slow=38
SCHQ Schefferville 82.36 17 eP P 20 44 42.3 +0.8
GROS Grobnik 82.37 327 i P P 20 44 42.3 +0.5
LHO Holmfirth 82.38 340⇑ eP P 20 44 42.4 +0.9
PERS Pernice 82.39 327⇑ iP P 20 44 42.5 +0.7
comp=Z,247nm,1.0s
SOKA Soboth 82.39 327 i P P 20 44 42.8 +0.9
comp=Z,187nm,1.1s,SNR=79
HGN Heimansgroeve 82.47 334 eP P 20 44 42.2 +0.2
comp=Z,102nm,1.2s
HGN eL L 20 51 00.5
comp=Z,30µm,18.8s
BEBN Eben Emael 82.53 334 P P 20 44 42.9 +0.6
comp=Z,32nm,1.2s
COWI Conover 82.55 34 eP P 20 44 42.8 +0.2
121A Cookes Peak, D 82.57 54 eP P 20 44 44.7 +1.6
comp=Z,39nm,1.2s
M34A Aspy Farms, Fr 82.57 41 P P 20 44 43.2 +0.4
baz=318
MEM Membach 82.58 334 P P 20 44 43.1 +0.4
comp=Z,44nm,1.1s
O32A Brockman Farm, 82.61 43 P P 20 44 42.5 -0.6
baz=317
J37A Redenius Farm, 82.71 38 P P 20 44 43.5 0.0
baz=320
I38A Scanlan Farm, 82.72 37 P P 20 44 43.4 -0.1
baz=320,SNR=5.5
OBKA Obir 82.73 327 i P P 20 44 44.2 +0.6
SNR=13
GMM Mts of Mourne 82.77 342⇑ eP P 20 44 44.2 +0.7
KBA Koelnbreinsper 82.77 328 i P P 20 44 44.6 +0.6
comp=Z,94nm,1.1s,SNR=46
K36A Gilmore City 82.78 39 P P 20 44 43.9 0.0
baz=319
AYDN Tasoluk 82.86 314 i P P 20 44 45.7 +1.3
CBKS Cedar Bluff 82.88 45 P P 20 44 43.9 -0.6
baz=316
CBKS Cedar Bluff 82.88 45 eP P 20 44 44.7 +0.2
CBKS Cedar Bluff 82.88 45 eP P 20 44 44.7 +0.2
AKAS Kas 82.89 312 i P P 20 44 42.2 -2.5
P32A Huiting Farm, 82.91 43 P P 20 44 44.1 -0.5
baz=317
CWF Charnwood Fore 82.95 339 eP P 20 44 44.8 +0.2
CWF AMB AMB 20 44 46.5
comp=Z,86nm,1.1s
BCLA Clavier 82.98 334 P P 20 44 45.0 +0.3
comp=Z,44nm,1.4s
STU Stuttgart 83.00 331 eP P 20 44 45.3 +0.4
STU Stuttgart 83.00 331 eP P 20 44 45.3 +0.4
MYKA Terra Mystica 83.01 328 i P P 20 44 45.3 +0.3
SNR=30
VAY Valandovo 83.02 319⇑ iP P 20 44 46.0 +0.9
M35A Neola 83.05 40 P P 20 44 46.0 +0.8
baz=318
PLE Pljevlja 83.06 322⇑ iP P 20 44 46.5 +1.1
K37A Belmond 83.08 38 P P 20 44 45.2 -0.2
baz=320,SNR=6.0
SKO Skopje 83.10 320⇑ iP P 20 44 46.9 +1.4
N34A Lincoln 83.11 41 P P 20 44 45.8 +0.1
baz=318
LJU Ljubljana 83.11 327⇑ iP P 20 44 45.6 +0.1
comp=Z,154nm,1.2s
O33A Hebron 83.11 42 P P 20 44 45.7 0.0
baz=317
IVA Berane 83.17 322⇑ iP P 20 44 46.7 +0.7
WPM1 Penmaenmawr 83.17 341⇑ eP P 20 44 46.1 +0.5
GCAM G?zelcaml? 83.19 314 i P P 20 44 46.5 +0.4
J38A Wedel Dairy, R 83.21 37 P P 20 44 46.3 +0.2
baz=320
SNF Seneffe 83.24 335 P P 20 44 46.6 +0.6
WATA Walderalm 83.27 329 i P P 20 44 47.3 +0.8
comp=Z,65nm,1.1s,SNR=22
WTTA Wattenberg 83.31 329 i P P 20 44 47.4 +0.6
comp=Z,73nm,1.5s,SNR=18
FOEL Foel Wylfa 83.32 340⇑ eP P 20 44 47.6 +1.2
FOEL AMB AMB 20 44 48.3
comp=Z,170nm,1.1s
LANF Langenberg 83.33 332⇑ eP P 20 44 47.2 +0.6
WLF Walferdange 83.33 334 P P 20 44 47.3 +0.8
comp=Z,48nm,2.0s
WLF Walferdange 83.33 334 eP P 20 44 47.4 +0.8
WLF Walferdange 83.33 334 eP P 20 44 47.4 +0.9
YLL Llanberis 83.34 341⇑ eP P 20 44 47.6 +1.0
PVY Plav 83.34 322⇑ iP P 20 44 46.7 -0.2
ABTA Abfaltersbach 83.38 328 i P P 20 44 46.8 -0.2
SNR=32
UPM Unac-Piva 83.38 323 eP P 20 44 46.6 -0.6
Q32A Meitler Ranch, 83.39 44 P P 20 44 46.8 -0.3
baz=317,SNR=7.3
JAVS Javornik 83.42 327⇑ iP P 20 44 46.9 -0.4
comp=Z,231nm,1.2s
MOTA Moosalm 83.45 330 i PcP P 20 44 49.5 +2.1
comp=Z,124nm,1.0s,SNR=35
RETA Reutte 83.47 330 i P P 20 44 48.4 +0.9
comp=Z,160nm,1.1s,SNR=50
DOU Dourbes 83.49 335 P P 20 44 48.1 +0.8
O34A Beatrice 83.49 42 P P 20 44 47.4 -0.2

baz=318
M36A Felix, Anita 83.50 40 P P 20 44 48.1 +0.5
baz=319
L37A Phoenix Point, 83.51 39 P P 20 44 47.4 -0.2
baz=320,SNR=7.4
P33A Williams Farm, 83.52 43 P P 20 44 47.6 -0.2
baz=317
N35A Tabor 83.53 41 P P 20 44 48.5 +0.8
baz=318
BDRM Kayabasi 83.53 314 iP P 20 44 48.1 +0.2
YRE Yr Eifl 83.55 341⇑eP P 20 44 48.5 +0.9
K38A Parkersburg 83.58 38 P P 20 44 48.1 +0.1
baz=320
NKY Niksic 83.64 322⇑iP P 20 44 47.7 -0.7
BFO Black Forest 83.69 332 eP P 20 44 48.9 +0.4
BFO Black Forest 83.69 332 eP P 20 44 48.9 +0.4
TRI Trieste 83.70 327 eP P 20 44 48.0 -0.5
TRI Trieste 83.70 327 eP P 20 44 48.0 -0.5
SKP1 Kophill 83.72 338⇑eP P 20 44 48.5 0.0
Q33A Connelly Farm, 83.77 43 P P 20 44 48.7 -0.3
baz=317,SNR=7.7
BRY Bratogost 83.78 323⇑iP P 20 44 47.9 -1.3
DSB Dublin 83.78 342 eP P 20 44 49.7 +0.9
SSW Stow on the Wo 83.79 339⇑eP P 20 44 49.7 +0.9
TTG Podgorica 83.81 322⇑iP P 20 44 49.6 +0.5
O35A Humboldt 83.83 41 P P 20 44 49.4 0.0
baz=318
FETA Feichten 83.86 330 i P P 20 44 50.3 +0.7
comp=Z,96nm,1.0s,SNR=41
MENF Mencas 83.87 336⇑eP P 20 44 49.8 +0.5
L38A Oak Wood Farm, 83.88 38 P P 20 44 49.4 -0.1
baz=320
P34A Walnut Farm, R 83.89 42 P P 20 44 49.1 -0.6
baz=318,SNR=7.1
M37A Trindle Farm, 83.91 40 P P 20 44 49.7 0.0
baz=319
PMOR Pomariorio Ree 83.92 115 eT T 22 17 11.7
comp=Z,22nm,0.3s
SCIA State Center 83.94 39 eP P 20 44 50.4 +0.6
WLS Welschbruch 83.97 332 eP P 20 44 50.6 +0.6
DAVA Damuels 83.97 330 i P P 20 44 50.8 +0.7
comp=Z,156nm,1.0s,SNR=51
STRD Stroud 84.05 339⇑eP P 20 44 51.1 +0.9
STRD AMB AMB 20 44 52.4
comp=Z,205nm,1.7s
OHR Ohrid 84.06 320⇑iP P 20 44 50.8 +0.2
MCH1 Michaelchurch 84.08 340 eP P 20 44 51.2 +0.9
MCH1 AMB AMB 20 44 51.9
comp=Z,124nm,1.1s
BUM Brajici-Budva 84.08 322⇑iP P 20 44 50.6 0.0
S32A Newby Ranch, P 84.12 45 P P 20 44 50.4 -0.5
baz=317
EIL Elat 84.15 304 P P 20 44 51.5 +0.3
comp=Z,111nm,1.1s,baz=48,slow=3.0,SNR=49
HCY Herceg Novi 84.15 322⇑iP P 20 44 50.6 -0.3
MONM Monmouth 84.17 340⇑eP P 20 44 51.2 +0.4
MONM AMB AMB 20 44 52.4
comp=Z,152nm,1.2s
ULC Ulcinj 84.17 322⇑iP P 20 44 51.3 +0.3
SWN1 Swindon 84.19 339⇑eP P 20 44 51.5 +0.6
SWN1 AMB AMB 20 44 52.7
comp=Z,319nm,1.3s
R33A Olander Ranch, 84.19 44 P P 20 44 50.8 -0.5
baz=317
WOL Wolverton 84.20 339⇑eP P 20 44 51.3 +0.3
WOL AMB AMB 20 44 52.3
comp=Z,144nm,1.4s
ECH Echery 84.21 332⇑eP P 20 44 51.5 +0.4
LPW Lampeter 84.25 340 eP P 20 44 51.9 +0.7
LPW AMB AMB 20 44 52.8
comp=Z,161nm,1.1s
Q34A Chapman 84.30 43 P P 20 44 51.4 -0.3
baz=318
M38A Pleasantville 84.32 39 P P 20 44 52.1 +0.4
baz=320,SNR=11
P35A Duane Minner, 84.33 42 P P 20 44 51.5 -0.4
baz=318
KSU1 Kansas State U 84.34 43 eP P 20 44 51.5 -0.5
comp=Z,23nm,0.7s
TIR Tirane 84.34 321 eP P 20 44 52.9 +1.0
TIR Tirane 84.34 321 eP P 20 44 52.9 +1.0
DAVOX Davos/Dischmat 84.39 330 P P 20 44 52.7 +0.4
comp=Z,59nm,0.9s,baz=36,slow=3.5,SNR=57
DAVOX PP PP 20 48 08.1 +1.6
comp=Z,14nm,1.1s,baz=3.6,slow=7.1,SNR=4.1
O36A Bolckow 84.41 41 P P 20 44 52.6 +0.3
baz=319
T32A Huddler Ranch, 84.51 45 P P 20 44 53.1 +0.3
baz=317
MOF Molkenrain 84.53 332⇑eP P 20 44 53.3 +0.5
PPT Papeete 84.53 118 LR LR 21 15 16.5
comp=Z,1μm,21.7s,baz=314,slow=30
PPT2 Papeete2 84.55 118 eLR LR 21 11 41.1
comp=Z,3μm,22.8s,baz=317
JFWS Jewell Farm 84.55 36 eP P 20 44 52.6 -0.4
JFWS Jewell Farm 84.55 36 eP P 20 44 52.6 -0.4
R34A Isabella, Hill 84.59 43 P P 20 44 53.5 +0.3
baz=318
AMTX Amarillo 84.61 48 P P 20 44 54.2 +0.7
baz=316
AMTX Amarillo 84.61 48 eP P 20 44 54.8 +1.3
MSTX Muleshoe 84.62 50 P P 20 44 54.0 +0.5
baz=315,SNR=7.6
MSTX Muleshoe 84.62 50 eP P 20 44 52.7 -0.8
comp=Z,40nm,1.1s
THEF They Montfort 84.62 333⇑eP P 20 44 53.8 +0.6
MNTX Cornudas Mount 84.63 53 P P 20 44 54.3 +0.8
baz=314
MNTX Cornudas Mount 84.63 53 eP P 20 44 54.5 +0.9
P36A Good Intent, A 84.67 41 P P 20 44 53.5 -0.1
baz=319,SNR=6.1
S33A Kaszmaul Farm, 84.71 44 P P 20 44 54.1 +0.3
baz=317
N38A Joes South For 84.77 39 P P 20 44 54.6 +0.5
baz=320,SNR=6.2
KARP Karpathos 84.78 313 eP P 20 44 54.6 +0.3
O37A Wolven Farm, M 84.80 40 P P 20 44 54.4 +0.1
baz=319,SNR=6.1
Q35A Mercer Eighty, 84.81 42 P P 20 44 54.6 +0.3
baz=318
TUE Stuetta 84.85 330 eP P 20 44 54.8 +0.2
T33A Patterson Ranc 84.95 45 P P 20 44 55.5 +0.4
baz=317
Q36A Arnold C. Orve 85.04 42 P P 20 44 55.4 -0.1
baz=319
LOMF Lomont 85.06 332⇑eP P 20 44 56.3 +0.8
N39A Derby Farms, D 85.07 39 P P 20 44 56.1 +0.5
baz=320
S34A Willow Spring 85.11 44 P P 20 44 55.7 -0.1
baz=318
R35A Emporia Munici 85.13 43 P P 20 44 56.2 +0.3
baz=318,SNR=8.9
P37A Lathrop 85.13 41 P P 20 44 55.4 -0.5
baz=319
O38A Galt 85.17 40 P P 20 44 56.6 +0.5
baz=320
HTL Hartland 85.38 340 eP P 20 44 58.6 +1.7
VLDQ Val d'Or 85.38 26 eP P 20 44 56.1 -0.8
TAOE Nuku Hiva Isla 85.41 105 eLR LR 21 11 51.4
comp=Z,2μm,21.3s
THZ Tophouse 85.43 158 eP P 20 44 59.6 +2.6
R36A Gordon, Harris 85.49 42 P P 20 44 58.1 +0.4
baz=319,SNR=12
U33A Lingo Farm, Me 85.50 45 P P 20 44 58.0 +0.2
baz=317
V32A Arapaho 85.50 46 P P 20 44 58.8 +0.9
baz=317
P38A Dawn 85.52 40 P P 20 44 58.2 +0.4
baz=320,SNR=8.4
O39A Kirksville 85.53 39 P P 20 44 58.2 +0.4
baz=320
S35A Otter Creek Ra 85.54 43 P P 20 44 58.0 0.0
baz=318,SNR=13
T34A McClaskey Farm 85.57 44 P P 20 44 58.4 +0.3
baz=318,SNR=7.2
Q37A Longview Farm, 85.62 41 P P 20 44 58.1 -0.2
baz=319
MEH Mehetia 85.78 117 eT T 22 19 30.1
comp=Z,23nm,0.3s
U34A Anderson Ranch 85.81 45 P P 20 45 00.0 +0.7
baz=318
U34A Anderson Ranch 85.81 45 eP P 20 44 59.5 +0.2
comp=Z,217nm,1.6s
W32A Sentinel 85.82 47 P P 20 44 59.8 +0.3
baz=317
V33A Lossen Ranch, 85.85 46 P P 20 44 59.9 +0.3
baz=317
R37A Teagarden Farm 85.85 42 P P 20 44 59.4 -0.1
baz=319
S36A Lake Cedric, C 85.89 43 P P 20 44 59.8 0.0
baz=319,SNR=6.9
O40A La Belle 85.95 39 P P 20 45 00.2 +0.2
baz=321
OG01 Vacheresse 85.98 332⇑eP P 20 45 00.6 +0.5
Q38A Cooks Store, C 85.98 41 P P 20 45 00.0 -0.1
baz=320,SNR=6.6
LAST Lasithi 86.00 313 eP P 20 45 00.5 0.0
T35A Sooner Cattle 86.01 44 P P 20 45 00.9 +0.5
baz=318
P39A Salisbury 86.01 40 P P 20 45 00.3 0.0
baz=320,SNR=5.4
Q39A Willow Grove F 86.24 40 P P 20 45 01.7 +0.2
baz=320,SNR=15
W33A Caddo, Fort Co 86.24 46 P P 20 45 02.7 +1.2
baz=317
T36A Boggs Farm, Ca 86.24 44 P P 20 45 01.7 +0.3
baz=318,SNR=7.2
IDI Anoyia 86.24 314 P P 20 45 01.1 -0.5
comp=Z,21nm,1.0s,baz=21,slow=4.4,SNR=14
IDI Anoyia 86.24 314 eP P 20 45 00.7 -0.9
V34A Guthrie 86.26 45 P P 20 45 02.2 +0.5
baz=318
V34A Guthrie 86.26 45 eP P 20 45 02.4 +0.7
comp=Z,177nm,1.6s
S37A Fort Scott 86.27 42 P P 20 45 01.2 -0.4
baz=319,SNR=8.6
U35A Pawnee 86.29 44 P P 20 45 02.3 +0.5
baz=318
X32A Elmer 86.31 47 P P 20 45 02.3 +0.4
baz=317,SNR=7.0
P40A Paris 86.33 40 P P 20 45 01.7 -0.1
baz=321,SNR=15
WMOK Wichita Mounta 86.36 47 eP P 20 45 02.7 +0.5
WMOK Wichita Mounta 86.36 47 eP P 20 45 02.7 +0.5
JSA Saint Aubin 86.38 338 eP P 20 45 01.9 +0.1
JSA AMB AMB 20 45 03.3
comp=Z,108nm,1.1s
R38A Fenwick Farm, 86.42 42 P P 20 45 01.3 -1.0
baz=320,SNR=6.6
RSL Roselend 86.54 331⇑eP P 20 45 03.3 +0.3
W34A Bridge Creek, 86.56 46 P P 20 45 03.6 +0.5
baz=318
OXZ Oxford 86.64 159 eP P 20 45 05.0 +2.1
X33A Lawton 86.67 47 P P 20 45 03.8 +0.2
baz=317
T37A Cheneyville 18 86.70 43 P P 20 45 03.6 -0.1
baz=319
Q40A Laux Farm, Aux 86.72 40 P P 20 45 03.7 -0.1
baz=321,SNR=9.0
R39A Chumby, Stover 86.77 41 P P 20 45 04.0 0.0
baz=320,SNR=9.6
U36A Oologah 86.81 44 P P 20 45 04.2 -0.1
baz=319
S38A Stockton 86.84 42 P P 20 45 04.4 0.0
baz=320
HDIL Hopedale 86.85 37 P P 20 45 04.7 +0.3
baz=322
HDIL Hopedale 86.85 37 eP P 20 45 05.5 +1.2
Y33A Hilltop Ranch, 86.98 47 P P 20 45 05.6 +0.4
baz=317
X34A Smith Ranch, M 87.00 46 P P 20 45 05.6 +0.4
baz=318
T38A Diamond 87.09 43 P P 20 45 05.7 0.0
baz=319,SNR=9.9
S39A Bolivar 87.10 42 P P 20 45 05.4 -0.3
baz=320,SNR=7.8
W35A Tecumseh 87.12 45 P P 20 45 06.2 +0.4
baz=318
U37A Salina 87.13 43 P P 20 45 06.1 +0.3
baz=319
LBZ Lake Benmore 87.14 161 eP P 20 45 08.0 +2.7
GDM Grand'Maison 87.14 331⇑eP P 20 45 06.9 +1.0
TUL1 Leonard 87.14 44 P P 20 45 06.3 +0.4
baz=319
TUL1 Leonard 87.14 44 eP P 20 45 07.0 +1.1
comp=Z,86nm,1.6s
V36A Jenks 87.16 44 P P 20 45 05.9 -0.1
baz=318
R40A Maddies Statio 87.17 41 P P 20 45 05.4 -0.6
baz=321,SNR=8.9
GRN Grenoble 87.25 331⇑eP P 20 45 07.2 +0.8
TX31 Lajitas Ar. Si 87.33 54 eP P 20 45 07.0 0.0
TXAR Lajitas Array 87.33 54 P P 20 45 07.0 0.0
comp=Z,10nm,0.8s,baz=289,slow=3.8,SNR=16
PLDF La Plantade 87.38 333 eP P 20 45 07.7 +0.7
ABTX Abilene, Hawle 87.41 49 P P 20 45 07.1 -0.2
baz=317
ABTX Abilene, Hawle 87.41 49 eP P 20 45 08.5 +1.2
comp=Z,39nm,1.3s
Z33A Whitaker Ranch 87.43 48 P P 20 45 07.9 +0.6
baz=317
AGO Saint Agoulin 87.48 333⇑eP P 20 45 08.4 +1.0
W36A Wetumka 87.48 45 P P 20 45 07.5 -0.1
baz=319
U38A Gravette 87.50 43 P P 20 45 07.6 0.0
baz=319
Y34A Reagan Ranch, 87.51 47 P P 20 45 08.0 +0.3
baz=318
V37A Hulbert 87.51 44 P P 20 45 07.8 +0.2
baz=319
DAMY Dhamar 87.52 287 eP P 20 45 09.3 +1.0
T39A Clever 87.58 42 P P 20 45 07.9 -0.1
baz=320
S40A Lebanon 87.58 41 P P 20 45 07.9 -0.1
baz=320
X35A Drake 87.62 46 P P 20 45 08.8 +0.5
baz=318
SSB Saint Sauveur 87.65 332⇑eP P 20 45 08.7 +0.4
SSB Saint Sauveur 87.65 332 eP P 20 45 08.7 +0.4
SSB pmax pmax
comp=Z,22nm,1.1s
SSB Saint Sauveur 87.65 332 eP P 20 45 08.7 +0.4
comp=Z,22nm,1.1s
PYM Petit Puy Mans 87.79 333⇑eP P 20 45 09.9 +1.0
133A Hamilton Ranch 87.84 48 P P 20 45 09.1 -0.2
baz=317
X36A Centrahoma 87.84 45 P P 20 45 08.8 -0.5
baz=318
HHAR Hobbs 87.85 43 eP P 20 45 09.5 +0.2
Z34A Collier Ranch, 87.85 47 P P 20 45 09.6 +0.2
baz=318
W37B Quinton 87.92 45 P P 20 45 09.3 -0.4
baz=319
V38A Canehill 87.92 43 P P 20 45 09.8 +0.1
baz=319,SNR=6.7
T40A Mansfield 87.92 41 P P 20 45 09.2 -0.4
baz=320
Y35A Marietta 87.95 46 P P 20 45 10.0 +0.2
baz=318
SFIN Lafayette 88.00 36 P P 20 45 10.0 +0.1
baz=324
U39A Green Forest 88.01 42 P P 20 45 09.8 -0.3
baz=320,SNR=8.0
LMQ La Malbaie 88.12 22 eP P 20 45 10.8 +0.5
LBL Lubilhac 88.15 333 eP P 20 45 11.4 +0.7
Z35A Perchaven, San 88.26 47 P P 20 45 10.7 -0.6
baz=318
233A Rising Star 88.28 49 P P 20 45 11.2 -0.2
baz=317
V39A Pettigrew 88.34 43 P P 20 45 11.4 -0.3
baz=320
134A White-Moore Ra 88.34 48 P P 20 45 11.9 +0.2
baz=318
U40A Yellville 88.36 42 P P 20 45 11.7 0.0
baz=320,SNR=14
X37A Clayton 88.36 45 P P 20 45 11.5 -0.2
baz=319
Y36A Durant 88.38 46 P P 20 45 11.9 0.0
baz=318
W38A Poteau 88.46 44 P P 20 45 12.1 -0.1
baz=319
X38A Whitesboro 88.59 44 P P 20 45 13.0 +0.1
baz=319,SNR=5.2
TBI Tubuai 88.65 122 eLR LR 21 13 07.4
comp=Z,1μm,21.8s,baz=317
Y37A Hugo 88.68 45 P P 20 45 13.7 +0.4
baz=319
234A Clairette 88.73 48 P P 20 45 13.7 +0.2
baz=318
333A Richland Sprin 88.73 49 P P 20 45 13.9 +0.3
baz=317
W39A Magazine 88.75 43 P P 20 45 13.7 +0.1
baz=320
Z36A Blue Ridge 88.76 46 P P 20 45 14.0 +0.3
baz=318
V40A Witts Springs 88.80 42 P P 20 45 14.0 +0.2
baz=320
CAF Calviac 88.83 334 P P 20 45 14.3 +0.5
CAF pmax pmax
comp=Z,86nm,1.4s
OLIL Olney 88.85 38 eP P 20 45 15.0 +1.0
JCT Junction City 88.86 50 P P 20 45 13.9 -0.3
baz=317
JCT Junction City 88.86 50 eP P 20 45 13.9 -0.3
JCT Junction City 88.86 50 eP P 20 45 13.9 -0.3
433A Art 89.09 50 P P 20 45 14.6 -0.7
baz=317
X39A Fountain Ranch 89.10 44 P P 20 45 14.9 -0.4
baz=320
SIUC Southern Illin 89.12 39 eP P 20 45 16.2 +0.9
WHTX Lake Whitney, 89.13 48 P P 20 45 14.6 -0.8
baz=318
WHTX Lake Whitney, 89.13 48 eP P 20 45 15.6 +0.1
comp=Z,28nm,1.1s
W40A Ferguson Farm, 89.14 43 P P 20 45 14.4 -1.0
baz=320
334A Lometa 89.16 49 P P 20 45 15.7 0.0
baz=317
PBMO Poplar Bluff 89.26 40 eP P 20 45 16.7 +0.8
Z37A Pogue Cattle C 89.27 46 P P 20 45 16.7 +0.7
baz=319
MIAR Mount Ida 89.36 44 P P 20 45 17.3 +0.9
baz=320
MIAR Mount Ida 89.36 44 eP P 20 45 17.2 +0.7
MIAR Mount Ida 89.36 44 eP P 20 45 17.2 +0.7
X201 Greenbrier Sit 89.43 42 eP P 20 45 16.4 -0.3
X301 Greenbrier Sit 89.45 43 eP P 20 45 17.6 +0.8
WHAR Wooly Hollow 89.47 42 eP P 20 45 17.4 +0.4
434A Burnet 89.52 49 P P 20 45 17.0 -0.3
baz=317
Y39A Lockesburg 89.54 44 P P 20 45 17.6 +0.3
baz=320
W41A Tony Mavity, V 89.58 42 P P 20 45 17.3 -0.1
baz=321
W41B Gary Mavity, V 89.58 42 P P 20 45 17.5 0.0
baz=321
ERPA Erie 89.58 31 eP P 20 45 18.3 +0.9
MMNY Mt. Morris Dam 89.86 29 eP P 20 45 19.3 +0.7
ALLY Alegheny Colle 89.92 31 eP P 20 45 20.0 +1.0
ACSO Alum Creek Sta 89.94 34 eP P 20 45 19.8 +0.8
534A Blanco 89.98 50 P P 20 45 19.4 -0.1
baz=317
M54A Oil Creek Stat 90.23 31 P P 20 45 20.1 -0.3
baz=328
N54A Moraine State 90.56 31 P P 20 45 20.8 -1.2
baz=328
ATD Arta Tunnel 90.62 285 P P 20 45 23.7 +1.0
comp=Z,67nm,1.1s,baz=8.7,slow=5.3,SNR=18
536A Bastrop 90.77 49 P P 20 45 22.0 -1.1
baz=318
BINY Binghamton 91.03 28 eP P 20 45 24.8 +0.7
LMN Caledonia Moun 91.18 19 eP P 20 45 25.7 +1.0
636A Smothers Creek 91.21 49 P P 20 45 24.9 -0.3
baz=318
KSPA Keystone Colle 91.67 28 eP P 20 45 28.3 +1.2
N59A State Game Lan 92.22 29 P P 20 45 29.8 +0.1
baz=331
BLA Blacksburg 93.56 34 eP P 20 45 36.1 +0.1
BLA pmax pmax
comp=Z,11nm,0.8s
BLA Blacksburg 93.56 34 eP P 20 45 36.0 +0.1
comp=Z,11nm,0.8s
KEST Kesra 93.77 324 P P 20 45 36.8 -0.2
comp=Z,10nm,0.9s,baz=358,slow=2.9,SNR=5.8
KEST LR LR 21 32 56.9
comp=Z,3μm,18.8s,baz=324,slow=39
PBRG Braganca 94.43 338 eP P 20 45 39.7 -0.2
PGAV Gavieira, Arco 94.71 339 eP P 20 45 41.0 -0.2
MVO Moncorvo 95.10 338 eP P 20 45 42.7 -0.3
POLO Lamas de Olo 95.13 339 eP P 20 45 43.3 +0.2
PVRL Vila Real 95.20 338 eP P 20 45 43.9 +0.5
ES19 SONSECA Array 95.48 335 eP P 20 45 44.8 0.0
ESDC Sonseca Array 95.53 335 P P 20 45 44.5 -0.4
comp=Z,4.9nm,0.9s,baz=19,slow=4.2,SNR=18
ESDC PP PP 20 49 33.1 -1.8
comp=Z,7.7nm,1.1s,baz=22,slow=7.4,SNR=5.0
ESDC LR LR 21 34 25.3
comp=Z,2μm,19.4s,baz=10.0,slow=39
MTE Manteigas 95.96 338 eP P 20 45 46.7 -0.2
PBEJ Beja 98.25 337 eP Pdif 20 45 57.7 +0.5
RKT Rikitea 98.40 113 eLR LR 21 18 12.8
comp=Z,2μm,25.0s,baz=315
MDT Midelt 101.96 333 P Pdif 20 46 14.4 +0.3
comp=Z,1.9nm,1.0s,baz=336,slow=12,SNR=3.6
MDT PP PP 20 50 23.9 -0.4
comp=Z,3.2nm,0.9s,baz=20,slow=11,SNR=3.7
KMBO Kilima Mbogo 103.04 280 Pdif Pdif 20 46 18.9 -0.4
comp=Z,5.9nm,0.9s,baz=31,slow=7.3,SNR=7.4
TORD Torodi Ar. Bea 116.44 317 PKP PKPdf 20 51 02.7 -1.4
comp=Z,4.0nm,1.1s,baz=11,slow=0.9,SNR=8.1
TORD PKKPab PKKPab 21 01 37.4 -1.3
comp=Z,1.3nm,1.0s,baz=236,slow=3.3,SNR=5.0
LSZ Lusaka 118.86 274 ePKIKP PKPdf 20 51 08.5 -0.3
LSZ Lusaka 118.86 274 ePKPdf PKPdf 20 51 08.5 -0.3
SDV Santo Domingo 122.33 41 ePKPdf PKPdf 20 51 14.8 -0.8
DBIC Dimbokro 125.28 320 PKP PKPdf 20 51 20.5 -0.6
comp=Z,8.8nm,1.0s,baz=353,slow=1.9,SNR=7.4
TIC Toumodi 125.39 320 ePKP1 PP 20 53 07.8 -3.1
KIC Kosan Boka 125.49 320 ePKP1 PP 20 53 07.9 -3.7
comp=Z,124nm,1.4s
LIC Lamto 125.75 320 ePKP1 PP 20 53 07.0 -6.3
comp=Z,53nm,1.4s
PTGA Pitinga 135.79 35 PKP PKPdf 20 51 40.6 -0.4
comp=Z,2.3nm,0.5s,baz=315,slow=2.9
SAML Samuel 141.31 45 ePKPpre PKPpre 20 51 48.9
SNAA Sanae 143.73 197 ePKHKP PKPpre 20 51 49.7
SNAA Sanae 143.73 197 ePKPpre PKPpre 20 51 49.7
LPAZ La Paz 144.05 59 PKP PKPab 20 51 54.2 +0.2
comp=Z,8.9nm,1.0s,baz=344,slow=4.9,SNR=14
LPAZ La Paz 144.05 59 PKIKP PKPab 20 51 54.2 +0.2
LPAZ pmax pmax
comp=Z,7.0nm,0.9s
VNA2 Neumayer--Watz 145.29 196 PKP PKPbc 20 51 55.2 -0.9
baz=120,slow=3.4
VNA3 Neumayer Olymp 145.52 195 PKP PKPdf 20 51 56.0 -0.7
VNA1 Neumayer--Stat 145.69 196 PKP PKPdf 20 51 57.0 0.0
RCBR Riachuelo 146.27 359 PKPbc PKPdf 20 52 00.4 +0.5
comp=Z,44nm,1.0s,baz=9.0,slow=3.1,SNR=16
SIV San Ignacio 148.22 49 PKPbc PKPbc 20 52 05.8 -0.4
comp=Z,22nm,1.0s,baz=338,slow=2.6,SNR=16
YJA Yavi 149.92 63 iP PKPbc 20 52 11.4 +0.5
LCO Las Campanas 150.13 80 ePKPbc PKPbc 20 52 10.0 -1.1
HJA Humahuaca 150.67 64 iP PKPbc 20 52 12.0 -0.7
AZAP Zapla 151.57 66 iP PKPbc 20 52 12.7 -1.8
SLA San Lorenzo 151.57 67⇓iP PKPbc 20 52 12.8 -1.6
SLA IAML 20 52 31.3
comp=Z,10.0nm,0.6s
VCA Vinchina 151.88 77 iP PKPdf 20 52 11.8 +3.3
AGUA GUANDACOL 152.04 78 iP PKPbc 20 52 12.7 -2.6
ALOL LOMAS DE OLMED 152.06 64 iP PKPbc 20 52 13.9 -1.4
FSA Cafayete 152.07 70 iP PKPbc 20 52 12.7 -2.8
RTLS Leoncito 152.50 84 iP PKPdf 20 52 12.8 +3.3
AUSP Uspallata 152.62 84 iP PKPdf 20 52 12.4 +2.7
ACLC CERRO LA CRUZ 153.17 77 iP PKPbc 20 52 15.0 -2.9
ASAL Salagasta 153.19 85 iP PKPdf 20 52 14.2 +3.9
BDFB Brasilia 154.07 26 PKP PKPdf 20 52 12.9 +0.9
comp=Z,4.0nm,0.7s,baz=15,slow=17,SNR=4.2
BDFB PKPbc PKPbc 20 52 20.2 +0.1
comp=Z,12nm,0.9s,baz=306,slow=2.0,SNR=9.6
BDFB Brasilia 154.07 26 PKIKP PKPdf 20 52 12.9 +0.9
BDFB 20 52 20.2
BDFB pmax pmax
comp=Z,7.0nm,1.0s
BDFB pmax pmax
comp=Z,12nm,0.9s
PLCA Paso Flores 154.22 103 PKPbc PKPbc 20 52 21.2 +1.6
comp=Z,4.0nm,0.9s,baz=213,slow=3.3,SNR=2.4
CPUP Villa Florida 158.22 58 PKP PKPdf 20 52 16.4 -0.7
comp=Z,1.7nm,0.4s,baz=13,slow=5.0,SNR=3.4
CPUP Villa Florida 158.22 58 PKIKP PKPdf 20 52 16.4 -0.7
CPUP pmax pmax
comp=Z,5.0nm,1.1s

*ISCJB **13** 20:39:31.9±0.7,37°37′N±0′.03×141°38E±0′.06,h36km±6km, mb4.1/22, Error ellipse: s-maj=8.1km s-min=4.6km az=5.9*
*JMA **13** 20:39:33.4±0.1,37°42′N×141°27E,h31km±1km,M4.1*

JMA Felt III J1.
NEIC ***13*** *20:39:34.6±0.9, 37.37N×141.33E, h43km±9km, mb4.4/1, Error ellipse: s-maj=11.2km s-min=8.8km az=100.0*
NEIC Recorded [3 JMA] in Fukushima.
IDC ***13*** *20:39:36.5±2.0, 37.31N×141.21E, h62km±19km, mb3.8/21, mb1 3.9/24, mb1mx3.7/72, mbtmp4.1/24, Error ellipse: s-maj=15.3km s-min=12.1km az=78.0*

ISC 13 20:39:31.8±0.8, 37.40N±0.03×141.31E±0.06, h20km±6km, n49, σ0.96/51, mb4.2/22, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JFK	**Kawauchi**	**0.35**	**265**	P	**Pn**	**20 39 41.1**	**-0.7**
JFK				S	**Sn**	**20 39 46.3**	**-1.9**
ONAJ	**Iwakimizuishiy**	**0.51**	**235**	P	**Pn**	**20 39 43.4**	**-0.5**
ONAJ				S	**Sn**	**20 39 50.2**	**-1.8**
JMM	**Marumori**	**0.62**	**319**	P	**Pb**	**20 39 44.6**	**+0.5**
JMM				S	**Sb**	**20 39 52.6**	**+0.2**
JFT	**Otama**	**0.79**	**279**	P	**Pn**	**20 39 48.0**	**+0.2**
JFT				S	**Sn**	**20 39 57.9**	**-1.0**
JHO	**Hitachi**	**0.98**	**217**	P	**Pb**	**20 39 50.6**	**+0.5**
JHO				*e*S	**Sb**	**20 40 02.1**	**-0.6**
JIO	**Ouri**	**1.06**	**2**	P	**Pn**	**20 39 51.2**	**-0.2**
JIO				S	**Sn**	**20 40 03.9**	**-1.7**
JOU	**Okura**	**1.10**	**332**	P	**Pn**	**20 39 52.2**	**+0.2**
JOU				S	**Sn**	**20 40 06.3**	**-0.3**
JFY	**Yanaizu**	**1.28**	**271**	P	**Pb**	**20 39 55.2**	**0.0**
JFY				*e*S	**Sb**	**20 40 11.5**	**+0.2**
JYS	**Shirataka**	**1.29**	**310**	P	**Pb**	**20 39 55.3**	**0.0**
JYS				*e*S	**Sb**	**20 40 11.6**	**+0.2**
MJAR	**Matsushiro Arr**	**2.63**	**252**	P	**Pn**	**20 40 14.8**	**+1.7**
	5.0nm,0.3s,baz=80,slow=16,SNR=11						
MJAR				S	**Sn**	**20 40 46.1**	**+1.7**
	11nm,0.3s,baz=80,slow=28,SNR=5.2						
MAJO	**Matsushiro**	**2.63**	**252**	*e*Pn	**Pn**	**20 40 14.8**	**+1.7**
JHJ	**Hachijo jima 2**	**4.45**	**197**	P	**Pn**	**20 40 39.0**	**+0.9**
	28nm,0.3s,baz=317,slow=23,SNR=19						
JHJ				S	**Sn**	**20 41 28.2**	**-1.0**
	47nm,0.3s,baz=246,slow=23,SNR=9.9						
JHJ2	**Mitsune**	**4.45**	**196**	*e*Pn	**Pn**	**20 40 39.0**	**+1.0**
ASAJ	**Asahikawa**	**6.78**	**8**	P	**Pn**	**20 41 10.1**	**-0.1**
	1.6nm,0.3s,baz=212,slow=13,SNR=6.5						
USRK	**Ussuriysk Ar.**	**9.80**	**317**	P	Pn	20 41 55.3	+3.8
	0.3nm,0.3s,baz=134,slow=13,SNR=6.6						
CBIJ	**Chichi jima**	**10.30**	**176**	Pn	**Pn**	**20 41 58.5**	**+0.1**
CBIJ				S	Sn	20 43 43.5	-10
JCJ	**Chichijima**	**10.30**	**176**	P	**Pn**	**20 41 56.7**	**-1.7**
	6.6nm,0.3s,baz=300,slow=20,SNR=5.0						
JCJ				S	Sn	20 43 43.5	-10
	3.2nm,0.3s,baz=264,slow=19,SNR=2.9						
KSRS	**Korea Array**	**10.65**	**274**	P	Pn	20 42 08.1	+4.9
	0.2nm,0.3s,baz=81,slow=14,SNR=4.7						
KSAR	**Wonju Array Be**	**10.68**	**274**	P	Pn	20 42 08.1	+4.5
MA2	**Magadan**	**23.02**	**12**	P	**P**	**20 44 35.8**	**+0.6**
	3.7nm,0.5s,baz=225,slow=11,SNR=5.7						
SEY	**Seymchan**	**26.45**	**11**	P	**P**	**20 45 09.2**	**+2.2**
	4.5nm,0.8s,baz=198,slow=9.6,SNR=3.5						
SONM	**Songino Array**	**27.52**	**303**	P	**P**	**20 45 16.1**	**-0.9**
	3.3nm,0.8s,baz=99,slow=7.8,SNR=3.6						
H11N2	**WAKE ISLAND Hy**	**28.40**	**121**	T	T	21 15 26.8	
	baz=314,slow=75,SNR=29						
H11N1	**WAKE ISLAND Hy**	**28.41**	**121**	T	T	21 15 28.4	
	baz=314,slow=75,SNR=57						
H11N3	**WAKE ISLAND Hy**	**28.42**	**121**	T	T	21 15 29.1	
	baz=314,slow=75,SNR=31						
H11S1	**WAKE ISLAND Hy**	**29.12**	**123**	T	T	21 16 21.3	
	baz=316,slow=76,SNR=30						
H11S3	**WAKE ISLAND Hy**	**29.12**	**123**	T	T	21 16 22.4	
	baz=316,slow=76,SNR=16						
H11S2	**WAKE ISLAND Hy**	**29.14**	**123**	T	T	21 16 27.2	
	baz=316,slow=76,SNR=12						
ZALV	**Zalesovo Beam**	**41.61**	**312**	P	**P**	**20 47 17.1**	**-1.1**
	4.4nm,0.7s,baz=96,slow=7.3,SNR=4.4						
MKAR	**Makanchi Array**	**43.86**	**302**	P	**P**	**20 47 36.2**	**-0.4**
	2.8nm,0.7s,baz=82,slow=12,SNR=6.1						
KURK	**Kurchatov**	**45.65**	**308**	P	**P**	**20 47 50.5**	**-0.2**
KURBB	**Kurchatov Arra**	**45.72**	**308**	P	**P**	**20 47 50.5**	**-0.8**
	1.9nm,0.4s,baz=82,slow=8.2,SNR=15						
ILAR	**Eielson Array**	**49.23**	**33**	P	**P**	**20 48 19.2**	**+0.8**
	0.8nm,0.8s,baz=266,slow=6.3,SNR=5.9						
TKM2	**Tokmak 2**	**49.39**	**298**	P	**P**	**20 48 21.1**	**+1.0**
	2.7nm,0.7s						
BVAR	**Borovoye Array**	**50.27**	**312**	P	**P**	**20 48 25.9**	**-0.5**
	3.1nm,0.9s,baz=79,slow=7.6,SNR=3.5						
INK	**Inuvik**	**54.10**	**27**	P	**P**	**20 48 55.5**	**+0.8**
	1.1nm,0.7s,baz=271,slow=5.2,SNR=2.8						
ARU	**Arti**	**56.04**	**318**	P	**P**	**20 49 07.9**	**-1.0**
	2.0nm,0.5s,baz=90,slow=14,SNR=3.6						
WRA	**Warramunga Arr**	**57.41**	**188**	P	**P**	**20 49 18.6**	**-0.4**
	1.0nm,0.7s,baz=1.5,slow=7.1,SNR=4.5						
SPITS	**Spitsbergen Ar**	**60.15**	**349**	P	**P**	**20 49 38.7**	**+1.3**
	13nm,1.2s,baz=103,slow=6.5,SNR=5.4						
ASAR	**Alice Springs**	**61.13**	**188**	P	**P**	**20 49 44.8**	**+0.1**
	0.6nm,0.7s,baz=3.8,slow=5.7,SNR=4.8						
YKA	**Yellowknife Ar**	**63.53**	**30**	P	**P**	**20 50 00.8**	**+0.4**
	0.2nm,0.6s,baz=303,slow=6.4,SNR=2.5						
ARCES	**ARCESS Array B**	**63.63**	**339**	P	**P**	**20 50 00.0**	**-0.9**
	3.1nm,1.0s,baz=46,slow=8.7,SNR=5.6						
FINES	**FINESS Array B**	**68.46**	**332**	P	**P**	**20 50 31.6**	**-0.4**
	2.9nm,0.6s,baz=38,slow=9.6,SNR=5.6						
HFS	**Hagfors**	**73.72**	**336**	P	**P**	**20 51 04.0**	**+0.1**
	1.2nm,0.4s,baz=76,slow=6.3,SNR=8.6						
NB2	**NORSAR Subarra**	**73.82**	**337**	P	**P**	**20 51 04.1**	**-0.5**
	comp=Z,1.9nm,0.6s,baz=41,slow=6.2						
NOA	**NORSAR Array B**	**73.82**	**337**	P	**P**	**20 51 04.1**	**-0.5**
	comp=Z,2.0nm,0.7s,baz=40,slow=5.9,SNR=7.1						
AKASG	**Malin Array Be**	**73.96**	**322**	P	**P**	**20 51 04.8**	**-0.6**
	comp=Z,1.8nm,0.5s,baz=46,slow=5.8,SNR=6.1						
PDAR	**Pinedale Array**	**77.47**	**45**	P	**P**	**20 51 27.0**	**+0.9**
	comp=Z,0.4nm,0.7s,baz=318,slow=2.6,SNR=3.0						
GERES	**GERESS Array B**	**82.36**	**328**	P	**P**	**20 51 51.9**	**-0.4**
	comp=Z,0.6nm,0.5s,baz=38,slow=6.6,SNR=5.4						

JMA ***13*** *20:40:58.7±0.3, 39.52N×143.76E, h4km±5km, M4.5*
ISCJB ***13*** *20:40:59.2±1.9, 39.49N±0.04×143.77E±0.05, h8km±12km, mb4.0/22, Error ellipse: s-maj=7.3km s-min=6.3km az=166.1*
IDC ***13*** *20:41:00.4±0.7, 39.52N×143.51E, h0km, mb4.0/21, mb1 4.1/24, mb1mx4.0/72, mbtmp4.0/24, ML3.8/3, Error ellipse: s-maj=18.2km s-min=14.1km az=120.0*
NEIC ***13*** *20:41:06.0±1.0, 39.55N×143.55E, h38km±8km, mb4.4/2, Error ellipse: s-maj=10.6km s-min=6.7km az=124.0*

ISC 13 20:41:03.5±0.8, 39.52N±0.06×143.66E±0.08, h21km±7km, n44, σ1.16/51, mb3.9/22, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MIYJ	**Miyakonagasawa**	**1.43**	**273**	P	**Pn**	**20 41 26.6**	**-1.5**
MIYJ				*e*S	**Sn**	**20 41 47.1**	**+0.9**
JTH	**Tanohata**	**1.45**	**287**	P	**Pn**	**20 41 26.8**	**-1.6**
JTH				*e*S	**Sn**	**20 41 47.0**	**+0.2**
OFUJ	**Ofunato**	**1.61**	**255**	P	**Pn**	**20 41 29.0**	**-1.6**
JOM	**Ohasama**	**1.83**	**269**	P	**Pn**	**20 41 32.6**	**-1.1**
JOM				*e*S	**Sn**	**20 41 57.8**	**+1.5**
JANG	**Nango**	**1.86**	**298**	P	**Pn**	**20 41 32.0**	**-2.1**
JMK	**Ichinoseki**	**1.98**	**254**	P	**Pn**	**20 41 34.7**	**-1.0**
JTM	**Tenmabayashi**	**2.35**	**303**	P	**Pn**	**20 41 40.0**	**-0.9**
JTM				*e*S	**Sn**	**20 42 12.4**	**+3.2**
JAH	**Hinai**	**2.42**	**287**	P	**Pn**	**20 41 41.1**	**-0.7**
JYK	**Kaneyama**	**2.63**	**258**	P	**Pn**	**20 41 44.2**	**-0.6**
JNBK	**Urakawa-nobuka**	**2.84**	**346**	P	**Pn**	**20 41 46.6**	**-1.0**
JNBK				S	**Sn**	**20 42 20.2**	**-0.9**
ASAJ	**Asahikawa**	**4.66**	**351**	Pn	**Pn**	**20 42 12.2**	**-0.3**
	3.2nm,0.3s,baz=189,slow=12,SNR=8.1						
ASAJ				Sn	**Sn**	**20 43 05.8**	**-0.2**
	2.7nm,0.3s,baz=53,slow=20,SNR=3.6						
MJAR	**Matsushiro Arr**	**5.23**	**237**	Pn	**Pn**	**20 42 20.3**	**-0.2**
	3.2nm,0.3s,baz=40,slow=12,SNR=7.1						
MAJO	**Matsushiro**	**5.23**	**237**	*e*P	**Pn**	**20 42 20.9**	**+0.4**
MAT	**Matsushiro**	**5.23**	**237**	P	**Pn**	**20 42 20.7**	**+0.2**
MAT				S	**Sb**	**20 43 36.3**	**-0.3**
JHJ2	**Mitsune**	**7.11**	**207**	*e*Pn	**Pn**	**20 42 44.1**	**-2.2**
JHJ	**Hachijo jima 2**	**7.11**	**207**	Pn	**Pn**	**20 42 44.2**	**-2.1**
	6.7nm,0.3s,baz=53,slow=20,SNR=1.7						
JHJ				Sn	Sn	20 43 59.5	-7.0
	10nm,0.3s,baz=73,slow=19,SNR=4.7						
USRK	**Ussuriysk Ar.**	**9.88**	**302**	Pn	Pn	20 43 26.9	+2.7
	0.6nm,0.3s,baz=91,slow=13,SNR=8.1						
KSRS	**Korea Array**	**12.51**	**265**	Pn	**Pn**	**20 44 02.5**	**+2.4**
	0.2nm,0.3s,baz=84,slow=13,SNR=5.0						
KSAR	**Wonju Array Be**	**12.54**	**265**	Pn	**Pn**	**20 44 02.5**	**+2.0**
MA2	**Magadan**	**20.57**	**10**	P	**P**	**20 45 40.8**	**+0.2**
	6.3nm,0.6s,baz=204,slow=7.9,SNR=4.1						
SEY	**Seymchan**	**24.03**	**10**	P	**P**	**20 46 16.9**	**+0.2**
	2.7nm,0.6s,baz=170,slow=11,SNR=4.3						
SONM	**Songino Array**	**27.98**	**300**	P	**P**	**20 46 52.3**	**-0.4**
	1.3nm,0.5s,baz=103,slow=9.6,SNR=12						
ZALV	**Zalesovo Beam**	**41.60**	**310**	P	**P**	**20 48 49.3**	**-0.4**
	2.5nm,0.5s,baz=98,slow=8.7,SNR=8.3						
ZALV				PcP	**PcP**	**20 50 46.1**	**-0.3**
	1.3nm,0.6s,baz=94,slow=2.2,SNR=3.8						
CMAR	**Chiang Mai Arr**	**43.85**	**255**	P	**P**	**20 49 07.3**	**-1.0**
	0.8nm,0.7s,baz=41,slow=7.9,SNR=7.9						
MKAR	**Makanchi Array**	**44.34**	**300**	P	**P**	**20 49 11.3**	**-0.7**
	2.1nm,0.6s,baz=85,slow=10,SNR=11						
KURK	**Kurchatov**	**45.83**	**307**	P	**P**	**20 49 23.7**	**0.0**
KURBB	**Kurchatov Arra**	**45.91**	**306**	P	**P**	**20 49 23.7**	**-0.6**
	5.4nm,0.5s,baz=82,slow=8.8,SNR=15						
ILAR	**Eielson Array**	**46.45**	**34**	P	**P**	**20 49 29.2**	**+0.8**
	0.8nm,0.7s,baz=263,slow=6.3,SNR=3.9						
TKM2	**Tokmak 2**	**50.03**	**297**	*e*P	**P**	**20 49 56.5**	**-0.2**
BVAR	**Borovoye Array**	**50.24**	**311**	P	**P**	**20 49 57.4**	**-0.4**
	2.6nm,0.5s,baz=62,slow=8.4,SNR=8.7						
BRVK	**Borovoye**	**50.29**	**311**	*e*P	**P**	**20 49 58.5**	**+0.3**
	3.1nm,0.7s						
AAK	**Ala-Archa**	**50.90**	**297**	P	**P**	**20 50 02.3**	**-0.9**
	0.6nm,0.4s,baz=75,slow=3.8,SNR=4.2						
INK	**Inuvik**	**51.37**	**28**	P	**P**	**20 50 07.1**	**+1.1**
	1.5nm,0.5s,baz=308,slow=6.4,SNR=6.1						
ABKAR	**Akbulak array**	**57.70**	**310**	*e*P	**P**	**20 50 51.7**	**-0.7**
	1.7nm,0.6s						
WRA	**Warramunga Arr**	**59.79**	**190**	P	**P**	**20 51 05.8**	**-1.3**
	0.3nm,0.5s,baz=7.9,slow=6.9,SNR=2.6						
YKA	**Yellowknife Ar**	**60.77**	**31**	P	**P**	**20 51 13.8**	**+0.5**
	0.6nm,0.8s,baz=303,slow=6.3,SNR=5.4						
ASAR	**Alice Springs**	**63.52**	**190**	P	**P**	**20 51 33.6**	**+1.4**
	0.5nm,0.8s,baz=5.8,slow=5.2,SNR=3.0						
FINES	**FINESS Array B**	**67.43**	**333**	P	**P**	**20 51 56.5**	**-0.5**
	1.6nm,0.5s,baz=62,slow=4.5,SNR=5.3						
HFS	**Hagfors**	**72.54**	**336**	P	**P**	**20 52 28.1**	**-0.4**
	1.3nm,0.5s,baz=46,slow=8.5,SNR=4.6						
NOA	**NORSAR Array B**	**72.57**	**338**	P	**P**	**20 52 28.3**	**-0.4**
	0.8nm,0.7s,baz=41,slow=6.2,SNR=3.2						
AKASG	**Malin Array Be**	**73.40**	**323**	P	**P**	**20 52 33.1**	**-0.6**
	0.9nm,0.4s,baz=45,slow=6.2,SNR=3.3						
PDAR	**Pinedale Array**	**74.67**	**47**	P	**P**	**20 52 42.4**	**+0.8**
	0.4nm,0.5s,baz=179,slow=0.4,SNR=8.1						
BRTR	**Keskin Array B**	**78.51**	**312**	P	**P**	**20 53 02.9**	**-0.4**
	0.7nm,0.8s,baz=45,slow=4.5,SNR=2.9						
TXAR	**Lajitas Array**	**87.22**	**54**	P	**P**	**20 53 49.8**	**+1.2**
	0.3nm,0.5s,baz=296,slow=2.1,SNR=3.7						

IDC 13 20:45:05.0±2.0, 2.44N×125.89E, h0km, mb3.4/3, mb1 3.6/3, mb1mx3.3/52, mbtmp3.4/3, MS3.2/1, Ms1 3.2/1, ms1mx2.7/37, Error ellipse: s-maj=188.4km s-min=25.0km az=65.0, Talaud Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JAY	**Jayapura**	**15.61**	**108**	LR	LR	20 53 50.7	
	comp=Z,80nm,18.3s,baz=357,slow=34						
WRA	**Warramunga Arr**	**23.74**	**160**	P	P	20 50 18.6	-0.5
	0.3nm,0.3s,baz=338,slow=11,SNR=4.9						
ASAR	**Alice Springs**	**27.10**	**164**	P	P	20 50 50.3	+0.6
	0.3nm,0.7s,baz=344,slow=6.4,SNR=3.7						
MKAR	**Makanchi Array**	**58.14**	**326**	P	P	20 55 00.4	-0.2
	0.3nm,0.6s,baz=128,slow=6.8,SNR=2.4						

ISCJB ***13*** *20:45:43.6±1.3, 34.07N±0.03×25.26E±0.04, h3km±9km, mb3.9/14, MS4.8/1, Error ellipse: s-maj=6.2km s-min=4.5km az=34.3*
ATH ***13*** *20:45:44.7, 34.14N×25.29E, h11km±2km, ML3.6/6, Error ellipse: s-maj=3.1km s-min=1.4km az=357.0*
IDC ***13*** *20:45:44.9±0.7, 34.21N×25.22E, h0km, mb4.0/14, mb1 4.1/24, mb1mx4.0/68, mbtmp4.0/24, ML3.7/9, MS4.9/1, Ms1 4.9/1, ms1mx3.8/65, Error ellipse: s-maj=14.3km s-min=12.6km az=31.0*
THE ***13*** *20:45:45.9, 34.23N×25.31E, h0km±1km, ML3.7/6, Error ellipse: s-maj=3.9km s-min=1.0km az=168.0*
CSEM ***13*** *20:45:46.8±0.6, 34.24N×25.22E, h2km, ML3.7, Error ellipse: s-maj=11.2km s-min=5.8km az=8.0*
ISK ***13*** *20:45:59.1, 34.98N×25.63E, h74km, ML3.4*

ISC 13 20:45:45.2±1.6, 34.18N±0.05×25.27E±0.03, h3km±9km, n85, σ1.26/109, mb3.9/14, Crete

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SIVA	**Sivas**	**0.92**	**336**	P	**Pg**	**20 46 02.8**	**0.0**
SIVA				S	**Sb**	**20 46 16.5**	**+0.2**
SIVA	**Sivas**	**0.92**	**336**	P	**Pg**	**20 46 03.0**	**+0.2**
SIVA				S	**Sb**	**20 46 16.3**	**0.0**
SIVA	**Sivas**	**0.92**	**336**	P	**Pg**	**20 46 03.0**	**+0.2**
SIVA				S	**Sb**	**20 46 16.3**	**0.0**
SIVA				AML	AML	20 46 18.7	
	comp=E,69579µm,0.5s						
SIVA				AML	AML	20 46 19.2	
	comp=N,64854µm,0.5s						
LAST	**Lasithi**	**0.99**	**10**	P	**Pg**	**20 46 03.9**	**-0.4**
LAST				S	**Sb**	**20 46 18.5**	**-0.1**
LAST	**Lasithi**	**0.99**	**10**	P	**Pg**	**20 46 03.9**	**-0.4**
LAST				S	**Sb**	**20 46 18.5**	**-0.1**
LAST	**Lasithi**	**0.99**	**10**	P	**Pg**	**20 46 03.7**	**-0.6**
NPS	**Neapolis**	**1.11**	**15**	P	**Pg**	**20 46 06.0**	**-0.6**
NPS				S	**Sn**	**20 46 22.4**	**-1.2**
NPS	**Neapolis**	**1.11**	**15**	P	**Pg**	**20 46 06.0**	**-0.6**
NPS				S	**Sn**	**20 46 23.0**	**-0.6**
NPS	**Neapolis**	**1.11**	**15**	P	**Pg**	**20 46 06.0**	**-0.6**
NPS				S	**Sn**	**20 46 23.0**	**-0.6**
NPS				AML	AML	20 46 25.5	
	comp=N,2798µm,0.7s						
NPS				AML	AML	20 46 26.9	
	comp=E,3561µm,0.6s						
IACM	**Heraklion**	**1.13**	**352**	P	**Pb**	**20 46 07.0**	**-0.5**
IACM	**Heraklion**	**1.13**	**352**	P	**Pn**	**20 46 08.0**	**0.0**
IACM	**Heraklion**	**1.13**	**352**	P	**Pn**	**20 46 08.0**	**0.0**
IDI	**Anoyia**	**1.15**	**344**	Pg	**Pg**	**20 46 06.6**	**-0.7**
	comp=E,20nm,0.3s,baz=156,slow=12,SNR=69						
IDI				Lg	Lg	20 46 22.8	
	comp=E,176nm,0.3s,baz=227,slow=16,SNR=28						
IDI	**Anoyia**	**1.15**	**344**	P	**Pg**	**20 46 06.7**	**-0.5**
IDI				S	**Sb**	**20 46 22.7**	**-0.4**
IDI	**Anoyia**	**1.15**	**344**	P	**Pg**	**20 46 06.7**	**-0.5**
IDI				S	**Sb**	**20 46 22.7**	**-0.4**
IDI	**Anoyia**	**1.15**	**344**	P	**Pg**	**20 46 06.6**	**-0.7**
IDI				S	**Sb**	**20 46 22.7**	**-0.4**
IDI				AML	AML	20 46 27.7	
	comp=E,3971µm,0.6s						
IDI				AML	AML	20 46 28.1	
	comp=N,3418µm,0.4s						
GVD	**Gavdhos**	**1.18**	**304**	P	**Pg**	**20 46 07.5**	**-0.3**
GVD				S	**Sn**	**20 46 25.9**	**+0.8**
GVD	**Gavdhos**	**1.18**	**304**	P	**Pg**	**20 46 07.5**	**-0.3**
GVD				S	**Sb**	**20 46 24.8**	**+0.9**
GVD	**Gavdhos**	**1.18**	**304**	P	**Pg**	**20 46 07.7**	**-0.1**
GVD				S	**Sb**	**20 46 24.8**	**+0.9**
GVD				AML	AML	20 46 27.8	
	comp=E,10778µm,0.5s						
GVD				AML	AML	20 46 28.0	
	comp=N,9768µm,0.5s						
ZKR	**Zakros**	**1.21**	**40**	P	**Pg**	**20 46 08.0**	**-0.5**
ZKR				S	**Sb**	**20 46 25.0**	**0.0**
ZKR	**Zakros**	**1.21**	**40**	P	**Pg**	**20 46 07.7**	**-0.8**
ZKR				S	**Sn**	**20 46 26.5**	**+0.4**
ZKR	**Zakros**	**1.21**	**40**	P	**Pg**	**20 46 07.7**	**-0.8**
ZKR				S	**Sn**	**20 46 26.5**	**+0.4**
ZKR				AML	AML	20 46 34.0	
	comp=N,4139µm,0.7s						
ZKR				AML	AML	20 46 34.0	
	comp=E,3630µm,0.6s						
VAM	**Vamos**	**1.50**	**325**	P	**Pn**	**20 46 12.9**	**-0.2**
VAM				S	**Sn**	**20 46 33.9**	**+0.6**
VAM	**Vamos**	**1.50**	**325**	P	**Pn**	**20 46 13.1**	**0.0**
VAM				S	**Sn**	**20 46 33.9**	**+0.6**
IMMV	**Iera Moni Meta**	**1.66**	**321**	P	**Pn**	**20 46 15.2**	**0.0**
IMMV				S	**Sg**	**20 46 37.8**	**-0.7**
IMMV	**Iera Moni Meta**	**1.66**	**321**	P	**Pn**	**20 46 15.2**	**0.0**
IMMV				S	**Sg**	**20 46 37.8**	**-0.7**
IMMV	**Iera Moni Meta**	**1.66**	**321**	P	**Pn**	**20 46 14.8**	**-0.4**
IMMV				S	**Sg**	**20 46 39.8**	**+1.2**
IMMV				AML	AML	20 46 45.0	
	comp=E,3335µm,0.6s						
IMMV				AML	AML	20 46 54.5	
	comp=N,3030µm,0.8s						

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
KARP	**Karpathos**	**2.07**	**48**	*e*PN	**Pb**	**20 46 23.5**	**+0.1**
KARP				*e*SN	Sn	20 46 41.1	-6.1
KARP	**Karpathos**	**2.07**	**48**	P	**Pb**	**20 46 23.0**	**-0.5**
KARP	**Karpathos**	**2.07**	**48**	*e*Pn	**Pb**	**20 46 23.5**	**+0.1**
KARP	**Karpathos**	**2.07**	**48**	P	**Pb**	**20 46 22.9**	**-0.5**
SANT	**Santorini**	**2.19**	**4**	P	**Pn**	**20 46 23.0**	**+0.4**
SANT	**Santorini**	**2.19**	**4**	P	**Pn**	**20 46 23.0**	**+0.4**
THR5	**Thira Island,**	**2.23**	**2**	*e*PN	**Pb**	**20 46 24.6**	**-1.6**
THR5	**Thira Island,**	**2.23**	**2**	*e*Pn	**Pb**	**20 46 24.6**	**-1.6**
THR2	**Thira island,**	**2.26**	**3**	P	**Pn**	**20 46 23.2**	**-0.4**
THR2	**Thira island,**	**2.26**	**3**	P	**Pn**	**20 46 23.2**	**-0.4**
ANKY	**Antikythira Is**	**2.33**	**317**	P	**Pn**	**20 46 23.6**	**-0.9**
ANKY	**Antikythira Is**	**2.33**	**317**	P	**Pn**	**20 46 23.6**	**-0.9**
ANKY	**Antikythira Is**	**2.33**	**317**	P	**Pb**	**20 46 26.5**	**-1.4**
KYTH	**Kithira**	**2.78**	**319**	P	**Pn**	**20 46 33.1**	**+2.4**
KYTH	**Kithira**	**2.78**	**319**	P	**Pn**	**20 46 33.1**	**+2.4**
APE	**Apeiranthos**	**2.89**	**4**	*e*PN	**Pn**	**20 46 33.0**	**+0.8**
APE	**Apeiranthos**	**2.89**	**4**	*e*Pn	**Pn**	**20 46 33.0**	**+0.8**
ARG	**Arkhangelos**	**3.10**	**48**	P	**Pn**	**20 46 37.5**	**+2.5**
VLI	**Veliai**	**3.17**	**324**	P	**Pn**	**20 46 37.0**	**+1.0**
VLI	**Veliai**	**3.17**	**324**	P	**Pn**	**20 46 37.0**	**+1.0**
DALY	**Dalyan (Mu˘la**	**3.81**	**45**	*e*PN	**Pn**	**20 46 46.8**	**+2.0**
DALY	**Dalyan (Mu˘la**	**3.81**	**45**	*e*Pn	**Pn**	**20 46 46.8**	**+2.0**
YER	**Yerkesik**	**3.83**	**39**	*e*PN	**Pn**	**20 46 47.6**	**+2.4**
YER	**Yerkesik**	**3.83**	**39**	*e*Pn	**Pn**	**20 46 47.6**	**+2.4**
PYL	**PYLOS**	**3.95**	**314**	P	**Pn**	**20 46 48.6**	**+1.9**
PYL	**PYLOS**	**3.95**	**314**	P	**Pn**	**20 46 48.6**	**+1.9**
FETY	**Fethiye**	**3.96**	**51**	*e*PN	**Pn**	**20 46 49.7**	**+2.8**
FETY	**Fethiye**	**3.96**	**51**	*e*Pn	**Pn**	**20 46 49.7**	**+2.8**
KSL	**Kastellorizon**	**4.04**	**60**	P	**Pn**	**20 46 48.1**	**+0.1**
AYDB	**Zeytinkoy-Aydi**	**4.31**	**29**	*e*PN	**Pn**	**20 46 52.9**	**+1.0**
AYDB	**Zeytinkoy-Aydi**	**4.31**	**29**	*e*Pn	**Pn**	**20 46 52.9**	**+1.0**
ELL	**Elmali**	**4.57**	**55**	*e*PN	**Pn**	**20 46 58.5**	**+3.1**
ELL	**Elmali**	**4.57**	**55**	*e*Pn	**Pn**	**20 46 58.5**	**+3.1**
MMAI	**Mount Meron Ar**	**8.53**	**95**	Pn	**Pn**	**20 47 49.4**	**-0.4**
	comp=N,1.4nm,0.3s,baz=264,slow=12,SNR=8.0						
MMAI				Sn	Sn	20 49 18.2	-8.4
	comp=N,0.5nm,0.3s,baz=274,slow=22,SNR=2.7						
BRTR	**Keskin Array B**	**8.69**	**48**	Pn	**Pn**	**20 47 54.7**	**+2.8**
	comp=N,0.1nm,0.3s,baz=227,slow=5.7,SNR=2.6						
EIL	**Elat**	**9.38**	**116**	Pn	**Pn**	**20 48 00.4**	**-0.9**
	comp=N,1.3nm,0.3s,baz=329,slow=10,SNR=10						
EIL				Sn	**Sn**	**20 49 43.1**	**-4.2**
	comp=N,0.5nm,0.3s,baz=258,slow=19,SNR=2.2						
VAE	**Valguarnera**	**9.41**	**294**	Pn	**Pn**	**20 48 03.2**	**+1.4**
	comp=N,0.7nm,0.3s,baz=155,slow=14,SNR=2.9						
VAE				Sn	**Sn**	**20 49 46.0**	**-2.1**
	comp=N,0.4nm,0.3s,baz=194,slow=19,SNR=1.7						
ASF	**Jabal al Asfar**	**9.95**	**98**	Pn	**Pn**	**20 48 09.3**	**+0.1**
	comp=N,0.2nm,0.3s,baz=209,slow=10,SNR=2.4						
ASF				Sn	**Sn**	**20 49 58.4**	**-3.1**
	comp=N,0

ESL				eS		Sn	20 50 27.3	-1.0
	baz=233							
NSTT	**Nanjuang**	**1.31**	**270**	*eP*		**Pn**	**20 50 12.0**	**-0.6**
	baz=267							
NSTT				eS		Sn	20 50 29.5	-0.5
	baz=267							
HATJ	**Hateruma jima**	**1.37**	**115**	*eS*		**Sn**	**20 50 32.8**	**+1.4**
JKRS	**Kuro-shima**	**1.48**	**105**	P		**Pn**	**20 50 14.9**	**+0.1**
JKRS				S		**Sn**	**20 50 34.5**	**+0.6**
EHY	**Hungye**	**1.52**	**223**	*eP*		**Pn**	**20 50 14.1**	**-1.2**
	baz=219							
EHY				eS		Sn	20 50 32.9	-1.9
	baz=219							
TWQ1	**Liyutan**	**1.55**	**260**	P		**Pn**	**20 50 15.2**	**-0.5**
	baz=257							
TWQ1				S		Sn	20 50 35.0	-0.4
	baz=257							
JIJ	**Ishigaki jima**	**1.57**	**100**	P		**Pn**	**20 50 15.6**	**-0.4**
JIJ				S		**Sn**	**20 50 35.5**	**-0.5**
SMLT	**Sun Moon Lake**	**1.59**	**242**	*eP*		**Pn**	**20 50 16.8**	**+0.4**
	baz=233							
SMLT				eS		Sn	20 50 37.4	+0.8
	baz=233							
TYC	**Yuchr**	**1.62**	**244**	*eP*		**Pn**	**20 50 17.1**	**+0.6**
	baz=240							
TYC				eS		Sn	20 50 38.5	+1.5
	baz=240							
TWF1	**Yuli**	**1.65**	**220**	*eP*		**Pn**	**20 50 15.8**	**-1.2**
	baz=224							
TWF1				eS		Sn	20 50 37.0	-0.8
	baz=224							
JISG	**Ishigakijimahi**	**1.70**	**91**	P		**Pn**	**20 50 17.2**	**-0.4**
JISG				eS		**Sn**	**20 50 38.8**	**-0.2**
WNT	**Mingjian**	**1.77**	**245**	*eP*		**Pn**	**20 50 18.8**	**+0.3**
	baz=242							
WNT				eS		Sn	20 50 43.2	+2.6
	baz=242							
YUS	**Yu-Shan**	**1.78**	**230**	*eP*		**Pn**	**20 50 19.0**	**-0.1**
	baz=227							
CHKT	**Chengkung**	**1.82**	**213**	*eP*		**Pn**	**20 50 18.1**	**-1.1**
	baz=204							
CHKT				eS		Sn	20 50 40.1	-1.6
	baz=204							
ALS	**Alishan**	**1.87**	**234**	*eP*		**Pn**	**20 50 20.9**	**+0.7**
	baz=224							
ALS				eS		Sn	20 50 44.8	+1.5
	baz=224							
CHN5	**Tsauling**	**1.91**	**238**	*eP*		**Pn**	**20 50 20.8**	**+0.3**
	baz=245							
CHN5				eS		Sn	20 50 45.9	+1.8
	baz=245							
ELDTW	**Lidau**	**1.94**	**222**	*eP*		**Pn**	**20 50 19.9**	**-1.1**
	baz=219							
ELDTW				eS		Sn	20 50 43.4	-1.4
	baz=219							
WGK	**Gukeng**	**1.96**	**242**	*eP*		**Pn**	**20 50 22.3**	**+1.3**
	baz=249							
WGK				eS		Sn	20 50 48.0	+3.0
	baz=249							
JTJ	**Tarama**	**2.06**	**89**	P		**Pn**	**20 50 22.2**	**-0.1**
JTJ				eS		**Sn**	**20 50 47.2**	**-0.1**
CHN4	**Tsaushan**	**2.12**	**233**	*eP*		**Pn**	**20 50 23.7**	**+0.6**
	baz=231							
CHN4				eS		Sn	20 50 50.4	+1.5
	baz=231							
STYT	**Tauyuan**	**2.13**	**227**	*eP*		**Pn**	**20 50 24.2**	**+0.9**
	baz=217							
STYT				eS		Sn	20 50 50.3	+1.2
	baz=217							
WTP	**Ta-pu**	**2.17**	**231**	*eP*		**Pn**	**20 50 24.3**	**+0.4**
	baz=228							
WTP				eS		Sn	20 50 51.8	+1.7
	baz=228							
TWG	**Pinlang**	**2.20**	**215**	*eP*		**Pn**	**20 50 22.9**	**-1.4**
	baz=212							
TWK	**Hsinying**	**2.25**	**233**	*eP*		**Pn**	**20 50 25.3**	**+0.4**
	baz=230							
TWK				eS		Sn	20 50 52.3	+0.4
	baz=230							
CHN1	**Nanshi**	**2.27**	**231**	*eP*		**Pn**	**20 50 25.5**	**+0.3**
	baz=228							
CHN1				eS		Sn	20 50 53.1	+0.7
	baz=228							
SGST	**Jiashian**	**2.30**	**228**	*eP*		**Pn**	**20 50 26.2**	**+0.7**
	baz=225							
SGST				eS		Sn	20 50 53.3	+0.2
	baz=225							
ECL	**Taimali**	**2.44**	**214**	*eP*		**Pn**	**20 50 25.8**	**-1.7**
	baz=205							
ECL				eS		Sn	20 50 54.3	-2.3
	baz=205							
SSD	**Sandimen**	**2.51**	**222**	*eP*		**Pn**	**20 50 29.0**	**+0.6**
	baz=219							
SSD				eS		Sn	20 50 58.9	+0.8
	baz=219							
EAST	**Anshuo**	**2.68**	**213**	*eP*		**Pn**	**20 50 30.3**	**-0.4**
	baz=206							

IDC ***13*** *20:55:09.3±1.1, 39.°43N× 143.°69E, h0km, mb3.6/11, mb1 3.7/15, mb1mx3.5/62, mbtmp3.6/15, ML3.5/3, Error ellipse: s-maj=24.2km s-min=18.3km az=111.0*

JMA ***13*** *20:55:12.6±0.2, 39.°61N× 143.°57E, h34km, M3.8*

ISC 13 20:55:11.0±3.0, 39.°49N±0.°06×143.°51E±0.°08, h6km±17km, **n26,** σ1§**28**/35**, mb3.5**/11**, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
MIYJ	**Miyakonagasawa**	**1.31**	**274**	P	**Pn**	**20 55 36.0**	**+0.2**
MIYJ				S	**Sg**	**20 55 53.2**	**+0.2**
JTH	**Tanohata**	**1.34**	**290**	P	**Pn**	**20 55 36.1**	**-0.2**
JTH				*eS*	**Sg**	**20 55 53.3**	**-0.9**
OFUJ	**Ofunato**	**1.48**	**255**	P	**Pn**	**20 55 38.7**	**+0.5**
OFUJ				*eS*	**Sn**	**20 55 57.7**	**-0.1**
JOM	**Ohasama**	**1.71**	**270**	P	**Pn**	**20 55 42.0**	**+0.7**
JOM				*eS*	**Sn**	**20 56 03.5**	**0.0**
JANG	**Nango**	**1.77**	**301**	P	**Pn**	**20 55 41.1**	**-1.0**
JMK	**Ichinoseki**	**1.85**	**254**	P	**Pn**	**20 55 44.3**	**+1.0**
JMK				*eS*	**Sn**	**20 56 07.6**	**+0.6**
JRG	**Rokugo**	**2.23**	**269**	P	**Pn**	**20 55 50.3**	**+1.9**
JRG				*eS*	**Sn**	**20 56 16.7**	**+0.5**
JTM	**Tenmabayashi**	**2.27**	**306**	P	**Pn**	**20 55 49.1**	**0.0**
JTM				S	**Sn**	**20 56 15.6**	**-1.8**
JAH	**Hinai**	**2.32**	**288**	P	**Pn**	**20 55 50.5**	**+0.8**
JAH				*eS*	**Sn**	**20 56 17.9**	**-0.5**
JYK	**Kaneyama**	**2.51**	**258**	P	**Pn**	**20 55 53.9**	**+1.6**
ASAJ	**Asahikawa**	**4.67**	**352**	Pn	**Pn**	**20 56 21.9**	**-0.1**
	1.5nm,0.3s,baz=201,slow=16,SNR=12						
ASAJ				Sn	**Sn**	**20 57 18.9**	**+2.4**
	3.5nm,0.3s,baz=294,slow=30,SNR=4.1						
MJAR	**Matsushiro Arr**	**5.11**	**237**	Pn	**Pn**	**20 56 30.3**	**+2.1**
	1.0nm,0.3s,baz=39,slow=12,SNR=18						
MAT	**Matsushiro**	**5.11**	**237**	P	**Pn**	**20 56 30.6**	**+2.5**
MAT				*eS*	Sg	20 58 09.8	+15
JHJ	**Hachijo jima 2**	**7.03**	**206**	Pn	**Pn**	**20 56 51.9**	**-2.6**
	6.3nm,0.3s,baz=102,slow=20,SNR=3.0						
USRK	**Ussuriysk Ar.**	**9.79**	**302**	Pn	**Pn**	**20 57 35.1**	**+2.8**
	0.2nm,0.3s,baz=96,slow=16,SNR=4.3						
SEY	**Seymchan**	**24.08**	**10**	P	**P**	**21 00 26.1**	**-0.8**
	0.4nm,0.2s,baz=182,slow=8.6,SNR=5.9						
SONM	**Songino Array**	**27.89**	**300**	P	**P**	**21 01 01.8**	**+0.1**
	0.4nm,0.7s,baz=113,slow=9.8,SNR=3.4						
ZALV	**Zalesovo Beam**	**41.53**	**310**	P	**P**	**21 03 00.4**	**+1.5**
	0.3nm,0.3s,baz=94,slow=9.3,SNR=2.8						
NRIK	**Noril'sk**	**41.76**	**334**	P	**P**	**21 03 01.6**	**+1.0**
	2.4nm,0.4s,baz=111,slow=7.1,SNR=4.2						
MKAR	**Makanchi Array**	**44.26**	**300**	P	**P**	**21 03 21.1**	**0.0**
	0.2nm,0.6s,baz=85,slow=10,SNR=3.7						
KURBB	**Kurchatov Arra**	**45.83**	**306**	P	**P**	**21 03 33.1**	**-0.5**
	0.4nm,0.5s,baz=79,slow=8.7,SNR=5.0						
ILAR	**Eielson Array**	**46.54**	**34**	P	**P**	**21 03 38.2**	**-0.8**
	0.4nm,0.8s,baz=268,slow=7.4,SNR=5.6						
BVAR	**Borovoye Array**	**50.17**	**311**	P	**P**	**21 04 07.1**	**0.0**
	0.3nm,0.5s,baz=60,slow=8.5,SNR=2.7						
WRA	**Warramunga Arr**	**59.74**	**190**	P	**P**	**21 05 15.7**	**-0.9**
	0.4nm,0.8s,baz=7.3,slow=7.1,SNR=4.1						
YKA	**Yellowknife Ar**	**60.86**	**31**	P	**P**	**21 05 23.4**	**-0.4**
	0.2nm,0.6s,baz=298,slow=6.3,SNR=4.4						
FINES	**FINESS Array B**	**67.41**	**332**	P	**P**	**21 06 06.3**	**-0.5**
	0.9nm,0.8s,baz=40,slow=11,SNR=2.7						

IDC ***13*** *20:55:58.6±1.7, 39.°55N× 143.°65E, h0km, mb3.6/4, mb1 3.8/6, mb1mx3.5/60, mbtmp3.8/6, ML3.6/2, Error ellipse: s-maj=42.2km s-min=25.7km az=132.0*

ISCJB ***13*** *20:55:59.3±0.8, 39.°51N±0.°08×143.°65E±0.°06, h11km, mb3.5/4, Error ellipse: s-maj=11.1km s-min=6.8km az=179.6*

JMA ***13*** *20:56:02.2±0.2, 39.°55N× 143.°54E, h23km, M4.1*

ISC 13 20:56:00.3±1.2, 39.°57N±0.°08×143.°67E±0.°08, h11km**, n21,** σ1§**17**/20**, mb3.6**/4**, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
MIYJ	**Miyakonagasawa**	**1.43**	**271**	P	**Pn**	**20 56 25.8**	**-0.3**
MIYJ				*eS*	**Sn**	**20 56 42.9**	**-1.9**
JTH	**Tanohata**	**1.44**	**286**	P	**Pn**	**20 56 26.1**	**-0.2**
JTH				S	**Sn**	**20 56 43.7**	**-1.4**
OFUJ	**Ofunato**	**1.62**	**253**	P	**Pn**	**20 56 28.5**	**-0.3**
JOM	**Ohasama**	**1.84**	**268**	P	**Pn**	**20 56 32.0**	**+0.2**
JOM				*eS*	**Sn**	**20 56 53.2**	**-1.8**
JKZ	**Kuzumaki**	**1.85**	**284**	P	**Pn**	**20 56 32.2**	**+0.3**
JKZ				*eS*	**Sn**	**20 56 54.5**	**-0.8**
JMK	**Ichinoseki**	**2.00**	**253**	S	**Sn**	**20 56 57.5**	**-1.4**
JRG	**Rokugo**	**2.35**	**267**	*eS*	**Sn**	**20 57 07.6**	**-0.1**
JAH	**Hinai**	**2.41**	**286**	*eS*	**Sn**	**20 57 09.3**	**+0.1**
MJAR	**Matsushiro Arr**	**5.26**	**237**	Pn	**Pn**	**20 57 20.2**	**+1.4**
	1.9nm,0.3s,baz=38,slow=13,SNR=6.2						
MAT	**Matsushiro**	**5.26**	**237**	P	**Pn**	**20 57 20.3**	**+1.5**
MAT				*eS*	**Sb**	**20 58 37.3**	**+1.9**
JHJ	**Hachijo jima 2**	**7.15**	**207**	Pn	**Pn**	**20 57 43.4**	**-1.5**
	4.5nm,0.3s,baz=104,slow=19,SNR=4.2						
JHJ				Sn	Sn	20 58 58.0	-8.0
	3.4nm,0.3s,baz=30,slow=17,SNR=2.2						
SEY	**Seymchan**	**23.98**	**10**	P	**P**	**21 01 15.5**	**+1.0**
	1.4nm,0.6s,baz=180,slow=6.7,SNR=4.6						
H11N2	**WAKE ISLAND Hy**	**28.11**	**128**	T	T	21 31 25.6	
	baz=320,slow=74						
H11N1	**WAKE ISLAND Hy**	**28.12**	**128**	T	T	21 31 26.0	
	baz=320,slow=74						
H11N3	**WAKE ISLAND Hy**	**28.13**	**128**	T	T	21 31 19.4	
	baz=320						
H11S1	**WAKE ISLAND Hy**	**28.93**	**130**	T	T	21 32 34.2	
	baz=319						
H11S3	**WAKE ISLAND Hy**	**28.93**	**130**	T	T	21 32 25.7	
	baz=319,slow=74						
H11S2	**WAKE ISLAND Hy**	**28.95**	**130**	T	T	21 32 27.5	
	baz=319,slow=74						
MKAR	**Makanchi Array**	**44.32**	**300**	P	**P**	**21 04 09.6**	**-0.6**
	0.3nm,0.6s,baz=82,slow=8.8,SNR=2.2						
KURBB	**Kurchatov Arra**	**45.88**	**306**	P	**P**	**21 04 22.2**	**-0.3**
	1.0nm,0.7s,baz=80,slow=8.6,SNR=2.7						
PDAR	**Pinedale Array**	**74.64**	**47**	P	**P**	**21 07 40.0**	**+0.2**
	0.2nm,0.5s,baz=298,slow=4.0,SNR=3.6						

ISCJB ***13*** *20:57:34.9±0.4, 0.°85N±0.°08×26.°74W±0.°06, h17km, mb4.5/41, Error ellipse: s-maj=13.0km s-min=6.9km az=152.9*

IDC ***13*** *20:57:34.0±0.5, 0.°88N×26.°75W, h0km, mb4.4/27, mb1 4.5/28, mb1mx4.3/50, mbtmp4.4/28, ML4.8/1, MS4.5/1, Ms1 4.5/1, ms1mx3.5/41, Error ellipse: s-maj=19.2km s-min=11.2km az=141.0*

NEIC ***13*** *20:57:35.5±0.3, 0.°83N×26.°74W, h10km, mb4.6/7, Error ellipse: s-maj=10.5km s-min=6.0km az=150.0*

GCMT ***13*** *20:57:35.5±0.4, 0.°85N×26.°75W, h12km, MW5.1/91, Moment Tensor Solution. s8,c10; s91,c121; Duration: 0 Moment tensor: Scale 10^16Nm; Mrr=0.70±.22; Mθθ=0.83±.21; Mϕϕ=-0.12±.21; Mrθ=-0.19±.65; Mrϕ=-5.29±.14; Mθϕ=-0.01±.61; Best double couple: Mo5.31500×10^16 NP1:κs=87.00000°, δ90.00000°, λ=-178.00000°. NP2: ϕs=357.00000°, δ88.00000°, λ0.00000°. Principal axes: T 5.6670, Plg1.0000°, Azm222.0000°; N -0.7040, Plg88.0000°, Azm98.0000°; P -4.9630, Plg2.0000°, Azm312.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

ISC 13 20:57:36.5±0.5, 0.°8N±0.°1×26.°75W±0.°08, h17km**, n75,** σ0§**96**/61**, mb4.5**/41**, 3C-7D, Central Mid-Atlantic Ridge**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
RCBR	**Riachuelo**	**11.28**	**234**	Pn	Pn	21 00 13.6	-3.5
	22nm,0.3s,baz=47,slow=12,SNR=99						
RCBR				Sn	Sn	21 02 08.5	-14
	2.0nm,0.3s,baz=317,slow=19,SNR=2.5						
RCBR				LR	LR	21 03 29.8	
	comp=Z,2μm,21.3s,baz=5.5,slow=32						
H10N3	**ASCENSION HYDR**	**14.94**	**125**	T	T	21 16 35.6	
	baz=304,slow=75,SNR=310						
H10N2	**ASCENSION HYDR**	**14.94**	**125**	T	T	21 16 35.9	
	baz=304,slow=75,SNR=229						
H10N1	**ASCENSION HYDR**	**14.96**	**125**	T	T	21 16 37.1	
	baz=304,slow=75,SNR=256						
H10S3	**ASCENSION HYDR**	**15.46**	**129**	T	T	21 17 10.5	
	baz=308,slow=74,SNR=138						
H10S1	**ASCENSION HYDR**	**15.47**	**129**	T	T	21 17 10.7	
	baz=308,slow=74,SNR=141						
H10S2	**ASCENSION HYDR**	**15.48**	**129**	T	T	21 17 11.8	
	baz=308,slow=74,SNR=152						
BBTS	**Babate**	**17.06**	**36**	Pn	**Pn**	**21 01 34.1**	**-0.4**
	3.5nm,0.3s,baz=161,slow=0.8,SNR=8.9						
BBTS				Sn	Sn	21 04 27.0	-17
	2.1nm,0.3s,baz=52,slow=20,SNR=2.0						
LIC	**Lamto**	**22.33**	**76**	*eP*	**P**	**21 02 34.9**	**+1.2**
TIC	**Toumodi**	**22.43**	**75**	*eP*	**P**	**21 02 36.8**	**+1.9**
DBIC	**Dimbokro**	**22.59**	**75**	P	**P**	**21 02 35.9**	**-0.7**
	8.2nm,0.5s,baz=245,slow=11,SNR=40						
KIC	**Kosan Boka**	**22.63**	**75**	*eP*	**P**	**21 02 36.5**	**-0.5**
	87nm,1.4s						
BDFB	**Brasilia**	**26.63**	**231**	P	**P**	**21 03 14.1**	**-0.5**
	9.4nm,0.8s,baz=59,slow=7.6,SNR=10						
TORD	**Torodi Ar. Bea**	**30.72**	**65**	P	**P**	**21 03 50.7**	**-0.3**
	11nm,0.8s,baz=253,slow=9.2,SNR=53						
PTGA	**Pitinga**	**33.25**	**267**	P	**P**	**21 04 15.3**	**+1.9**
	2.9nm,0.7s,baz=85,slow=9.9,SNR=4.1						
H05S1	**Guadeloupe/Mar**	**36.31**	**294**	T	T	21 42 52.4	
	SNR=23						
H05N1	**Guadeloupe/Mar**	**37.15**	**296**	T	T	21 43 50.3	
	SNR=5.8						
SAML	**Samuel**	**37.57**	**254**	*eP*	**P**	**21 04 50.9**	**+0.4**
	5.5nm,0.8s						
SIV	**San Ignacio**	**37.78**	**242**	P	**P**	**21 04 52.2**	**-0.1**
	4.4nm,0.8s,baz=98,slow=8.2,SNR=6.7						
TAM	**Tamanrasset**	**38.22**	**53**	*eP*	**P**	**21 04 57.0**	**+1.0**
	11nm,1.2s						
CPUP	**Villa Florida**	**39.98**	**225**	P	**P**	**21 05 10.8**	**+0.3**
	3.4nm,0.8s,baz=91,slow=9.3,SNR=5.3						
H09N1	**TRISTAN DA CUN**	**40.00**	**162**	T	T	21 47 54.4	
	SNR=9.9						
H09W1	**TRISTAN DA CUN**	**40.02**	**162**	T	T	21 47 48.8	
	SNR=6.2						
ESDC	**Sonseca Array**	**43.90**	**26**	P	**P**	**21 05 42.3**	**-0.2**
	2.9nm,0.9s,baz=217,slow=8.9,SNR=18						
LPAZ	**La Paz**	**44.23**	**246**	P	**P**	**21 05 46.0**	**-0.1**
	16nm,0.8s,baz=68,slow=5.0,SNR=23						
SDV	**Santo Domingo**	**44.41**	**282**	*eP*	**P**	**21 05 46.9**	**-0.3**
	11nm,0.9s						
KEST	**Kesra**	**48.27**	**40**	P	**P**	**21 06 15.8**	**-1.2**
	4.7nm,0.9s,baz=217,slow=10,SNR=3.2						
OTAV	**Otavalo**	**51.70**	**270**	P	**P**	**21 06 43.4**	**-0.5**
	6.5nm,1.1s						
DAVOX	**Davos/Dischmat**	**55.82**	**30**	P	**P**	**21 07 12.9**	**-0.3**
	5.2nm,0.9s,baz=292,slow=11,SNR=5.9						
FETA	**Feichten**	**56.41**	**30**	*i P*	**P**	**21 07 17.3**	**-0.1**
	11nm,1.0s						
LSZ	**Lusaka**	**56.59**	**109**	P	**P**	**21 07 17.8**	**-1.3**
	12nm,1.4s						
LBTB	**Lobatse**	**56.75**	**121**	P	**P**	**21 07 20.9**	**+0.8**
	8.8nm,1.2s,baz=294,slow=14,SNR=3.1						
ABTA	**Abfaltersbach**	**57.13**	**31**	*i P*	**P**	**21 07 23.5**	**+1.0**
	14nm,1.1s						
EKA	**Eskdalemuir Ar**	**57.64**	**16**	P	**P**	**21 07 25.7**	**0.0**
	2.9nm,0.8s,baz=201,slow=7.6,SNR=5.7						
BOSA	**Boshof**	**57.69**	**125**	P	**P**	**21 07 26.9**	**+0.1**
	3.2nm,0.9s,baz=293,slow=11,SNR=4.0						
SOKA	**Soboth**	**58.42**	**33**	*i P*	**P**	**21 07 32.5**	**+1.1**
	7.9nm,1.2s						
GERES	**GERESS Array B**	**59.12**	**30**	P	**P**	**21 07 36.2**	**0.0**
	2.7nm,0.9s,baz=208,slow=5.4,SNR=15						
CONA	**Conrad Observa**	**59.64**	**32**	*i P*	**P**	**21 07 40.8**	**+0.9**
	4.3nm,1.2s						
BRG	**Berggiesshubel**	**60.57**	**28**	*eP*	**P**	**21 07 46.3**	**+0.2**
	8.4nm,1.4s						
VRAC	**Vranov**	**60.88**	**31**	P	**P**	**21 07 47.9**	**-0.4**
	1.8nm,0.4s,baz=218,slow=3.6,SNR=5.0						
MDVR	**Moldovita**	**61.17**	**37**	*i P*	**P**	**21 07 50.0**	**-0.4**
BLA	**Blacksburg**	**61.22**	**313**	*eP*	**P**	**21 07 51.1**	**+0.2**
	28nm,0.7s						
BZS	**Buzias**	**61.55**	**37**	*i P*	**P**	**21 07 49.8**	**-3.1**
VYHS	**Vyhne**	**61.57**	**33**	*eP*	**P**	**21 07 53.4**	**+0.4**
GZR	**Gura Zlata**	**62.13**	**37**	*i P*	**P**	**21 07 58.2**	**+1.3**
LANS	**Liptovska Anna**	**62.29**	**32**	*eP*	**P**	**21 07 59.5**	**+1.7**
ARR	**Arges**	**63.26**	**38**	*i P*	**P**	**21 08 04.1**	**-0.3**
DOPR	**Dopca**	**64.01**	**38**	*i P*	**P**	**21 08 09.2**	**-0.1**
MLR	**Muntele Rosu**	**64.13**	**38**	*i P*	**P**	**21 08 10.9**	**+0.7**
BURAR	**Bucovina Array**	**64.70**	**36**	*i P*	**P**	21 08 18.5	+4.6
PLOR	**Plostina**	**64.73**	**38**	*i P*	**P**	**21 08 12.5**	**-1.6**
VRI	**Vrincioaia**	**64.79**	**38**	*i P*	**P**	**21 08 14.4**	**0.0**
CFR	**Carcaliu**	**65.36**	**40**	*i P*	**P**	21 08 21.3	+3.2
NB2	**NORSAR Subarra**	**66.67**	**19**	P	**P**	**21 08 27.1**	**+0.9**
	comp=Z,0.8nm,0.8s,baz=219,slow=6.5						
NOA	**NORSAR Array B**	**66.67**	**19**	P	**P**	**21 08 26.2**	**0.0**
	comp=Z,2.0nm,0.9s,baz=219,slow=6.3,SNR=4.4						
HFS	**Hagfors**	**66.85**	**21**	P	**P**	**21 08 26.8**	**-0.6**
	comp=Z,0.9nm,0.7s,baz=201,slow=7.6,SNR=2.0						
BRTR	**Keskin Array B**	**67.04**	**47**	P	**P**	**21 08 28.6**	**-0.5**
	comp=Z,2.8nm,0.8s,baz=239,slow=6.7,SNR=16						
AKASG	**Malin Array Be**	**68.48**	**35**	P	**P**	**21 08 37.6**	**-0.2**
	comp=Z,2.6nm,0.7s,baz=241,slow=6.7,SNR=16						
FINES	**FINESS Array B**	**72.38**	**24**	P	**P**	**21 09 01.9**	**+0.5**
	comp=Z,4.0nm,0.9s,baz=132,slow=2.8,SNR=11						
KBZ	**Khabaz**	**74.82**	**45**	P	**P**	**21 09 16.1**	**-0.1**
	comp=Z,4.7nm,1.0s,baz=284,slow=4.6,SNR=5.2						
TXAR	**Lajitas Array**	**78.20**	**300**	P	**P**	**21 09 35.4**	**-0.3**
	comp=Z,2.5nm,1.0s,baz=126,slow=9.2,SNR=8.5						
PDAR	**Pinedale Array**	**84.16**	**313**	P	**P**	**21 10 07.1**	**-0.3**
	comp=Z,0.3nm,0.5s,baz=82,slow=6.5,SNR=3.9						
AKTO	**Aktyubinsk**	**86.03**	**40**	P	**P**	**21 10 17.2**	**+1.0**
	comp=Z,2.4nm,0.9s,baz=261,slow=5.0,SNR=5.0						
ARU	**Arti**	**86.72**	**34**	P	**P**	**21 10 20.4**	**+0.9**
	comp=Z,1.0nm,0.2s,baz=216,slow=8.3,SNR=3.6						
ABKAR	**Akbulak array**	**87.22**	**41**	*eP*	**P**	**21 10 23.5**	**+1.4**
	comp=Z,0.9nm,0.6s						
YKA	**Yellowknife Ar**	**88.29**	**332**	P	**P**	**21 10 26.2**	**-0.7**
	comp=Z,1.7nm,1.0s,baz=97,slow=5.0,SNR=13						
QSPA	**South Pole Qui**	**90.89**	**180**	*eP*	P	21 10 44.1	+4.9
	comp=Z,47nm,1.1s						
INK	**Inuvik**	**95.40**	**339**	P	**P**	**21 10 59.6**	**-0.1**
	comp=Z,1.2nm,0.9s,baz=56,slow=7.3,SNR=3.6						
SONM	**Songino Array**	**116.76**	**33**	PKP	**PKPdf**	**21 16 21.6**	**+1.1**
	comp=Z,0.4nm,1.0s,baz=336,slow=3.2,SNR=3.5						
CMAR	**Chiang Mai Arr**	**123.31**	**67**	PKP	**PKPdf**	**21 16 35.4**	**+1.7**
	comp=Z,0.5nm,0.8s,baz=272,slow=3.4,SNR=2.5						
KLR	**Kul'dur**	**126.81**	**17**	PKP	**PKPdf**	**21 16 39.5**	**-0.1**
	comp=Z,0.5nm,0.5s,baz=39,slow=6.5,SNR=3.6						
STKA	**Stephens Creek**	**147.20**	**161**	PKPbc	**PKPab**	**21 17 21.5**	**+0.3**
	comp=Z,3.0nm,1.0s,baz=235,slow=1.9,SNR=4.3						
MSVF	**Nonsavu**	**150.39**	**234**	*e*PKPbc	**PKPbc**	**21 17 27.5**	**-0.7**
ASAR	**Alice Springs**	**150.54**	**142**	PKPbc	**PKPbc**	**21 17 26.2**	**-2.2**
	comp=Z,1.0nm,0.8s,baz=207,slow=2.0,SNR=6.5						
WRA	**Warramunga Arr**	**153.47**	**137**	PKPbc	**PKPbc**	**21 17 36.0**	**+0.9**
	comp=Z,0.8nm,1.1s,baz=240,slow=2.2,SNR=3.4						

JMA 13 21:04:01.4, 36.°23N×137.°56E, h3km**, M1.5, Eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JGN	**Niukaw**	**0.20**	**268**	P	Pg	21 04 05.4	+0.1
JGN				S	Sg	21 04 08.3	+0.4
JTT	**Ttatey**	**0.42**	**334**	P	Pg	21 04 09.9	+0.5
JTT				S	Sg	21 04 16.0	+1.1
JNG	**Nsakai**	**0.47**	**68**	P	Pg	21 04 10.9	+0.4
JNG				S	Sg	21 04 17.3	+0.7
JNT	**Takato**	**0.59**	**127**	P	Pg	21 04 12.8	+0.1
JNT				S	Sg	21 04 20.4	+0.1
MAT	**Matsushiro**	**0.61**	**59**	P	Pg	21 04 13.2	+0.1
MAT				S	Sg	21 04 21.3	+0.3
MAT	**Matsushiro**	**0.61**	**59**	P	Pg	21 04 13.4	+0.3
MAT				S	Sg	21 04 21.2	+0.2

ISCJB ***13*** *21:05:00.7±0.6, 39.°58N±0.°05×143.°64E±0.°06, h11km, mb3.6/11, Error ellipse: s-maj=8.2km s-min=5.8km az=148.9*

JMA ***13*** *21:05:01.3±0.2, 39.°63N× 143.°65E, h17km, M4.0*

IDC ***13*** *21:05:06.9±2.3, 39.°62N× 143.°30E, h42km±21km, mb3.4/11, mb1 3.6/16, mb1mx3.5/43, mbtmp3.7/16, ML3.6/4, Error ellipse: s-maj=20.6km s-min=17.0km az=111.0*

ISC 13 21:05:02.9±0.8, 39.°62N±0.°07×143.°52E±0.°07, h11km**, n35,** σ1§**19**

n11,σ0ᵍ50/17,5C,Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.18**	**59**	⇑P	**Pg**	**21 13 02.1**	**0.0**
ONAJ				S	**Sg**	**21 13 05.0**	**0.0**
JHO	**Hitachi**	**0.40**	**184**	⇑P	**Pg**	**21 13 05.9**	**+0.2**
JHO				S	**Sg**	**21 13 11.2**	**+0.1**
JFK	**Kawauchi**	**0.42**	**31**	⇑P	**Pg**	**21 13 06.2**	**+0.1**
JFK				S	**Sg**	**21 13 12.0**	**+0.2**
JFT	**Otama**	**0.55**	**337**	S	**Sg**	**21 13 16.4**	**+0.5**
JFY	**Yanaizu**	**0.82**	**299**	⇑P	**Pg**	**21 13 13.9**	**+0.3**
JFY				S	**Sb**	**21 13 24.3**	**-0.1**
JYT	**Yasato**	**0.85**	**203**	⇑P	**Pb**	**21 13 13.9**	**0.0**
JYT				S	**Sb**	**21 13 24.8**	**-0.3**
MJAR	**Matsushiro Arr**	**1.98**	**257**	Pn	**Pb**	**21 13 32.0**	**-1.3**
	7.5nm,0.3s,baz=86,slow=16,SNR=26						
MJAR				Sn	**Sb**	**21 13 57.7**	**0.0**
	12nm,0.3s,baz=84,slow=18,SNR=16						
MAT	**Matsushiro**	**1.98**	**257**	P	**Pb**	**21 13 32.7**	**-0.6**
MAT				S	**Sb**	**21 13 58.6**	**+0.8**
JHJ	**Hachijo jima 2**	**3.94**	**190**	Pn	**Pn**	**21 13 57.5**	**0.0**
	3.3nm,0.3s,baz=159,slow=18,SNR=3.6						
ZALV	**Zalesovo Beam**	**41.45**	**312**	P	P	21 20 48.1	+4.7
	0.3nm,0.3s,baz=96,slow=11,SNR=2.5						
WRA	**Warramunga Arr**	**56.95**	**187**	P	**P**	**21 22 42.5**	**+0.2**
	0.3nm,0.8s,baz=4.6,slow=7.5,SNR=5.0						

*ISCJB **13** 21:16:16.7±0.5,39°.54N±0'.05×143°.71E±0'.06,h11km, mb3.8/15, Error ellipse: s-maj=7.2km s-min=5.6km az=136.8*
*IDC **13** 21:16:17.0±0.8,39°.56N×143°.65E,h0km,mb3.8/14, mb1 4.0/19,mb1mx3.8/52,mbtmp3.8/19,ML3.6/4, Error ellipse: s-maj=19.6km s-min=14.5km az=118.0*
*JMA **13** 21:16:17.2±0.4,39°.62N×143°.66E,h10km,M4.1*
*NEIC **13** 21:16:21.8±2.4,39°.58N×143°.59E,h31km±16km,mb4.3/2, Error ellipse: s-maj=12.5km s-min=6.2km az=119.0*

ISC 13 21:16:18.4±0.7,39°.55N±0'.06×143°.71E±0'.08,h11km,n38, σ1ᵍ67/40,**mb3.9**/15,**Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MIYJ	**Miyakonagasawa**	**1.46**	**272**	P	**Pn**	**21 16 43.3**	**-1.4**
MIYJ				*e*S	**Sn**	**21 17 02.1**	**-1.7**
JTH	**Tanohata**	**1.47**	**286**	P	**Pn**	**21 16 43.2**	**-1.7**
JOM	**Ohasama**	**1.87**	**269**	P	**Pn**	**21 16 49.7**	**-0.6**
JANG	**Nango**	**1.88**	**297**	P	**Pn**	**21 16 48.3**	**-2.1**
JTM	**Tenmabayashi**	**2.37**	**302**	P	**Pn**	**21 16 56.1**	**-1.1**
JAH	**Hinai**	**2.45**	**286**	P	**Pn**	**21 16 57.5**	**-0.8**
JAH				S	**Sn**	**21 17 28.4**	**+0.2**
ERM	**Erimo**	**2.50**	**351**	*e*Pn	**Pn**	**21 16 59.5**	**+0.5**
JYK	**Kaneyama**	**2.67**	**258**	P	**Pn**	**21 17 01.7**	**+0.3**
JNBK	**Urakawa-nobuka**	**2.83**	**345**	P	**Pn**	**21 17 03.6**	**+0.2**
JNBK				S	**Sn**	**21 17 36.1**	**-1.4**
ASAJ	**Asahikawa**	**4.64**	**350**	Pn	**Pn**	**21 17 28.6**	**+0.2**
	2.3nm,0.3s,baz=191,slow=18,SNR=14						
ASAJ	**Asahikawa**	**4.64**	**350**	*e*Pn	**Pn**	**21 17 28.4**	**0.0**
MJAR	**Matsushiro Arr**	**5.27**	**237**	Pn	**Pn**	**21 17 37.7**	**+0.5**
	2.0nm,0.3s,baz=37,slow=12,SNR=22						
MAJO	**Matsushiro**	**5.28**	**237**	*e*Pn	**Pn**	**21 17 37.2**	**0.0**
MAJO				Sn	**Sn**	**21 18 42.9**	**+5.0**
MAT	**Matsushiro**	**5.28**	**237**	P	**Pn**	**21 17 38.5**	**+1.4**
JHJ	**Hachijo jima 2**	**7.15**	**207**	Pn	**Pn**	**21 18 01.9**	**-1.0**
	5.8nm,0.3s,baz=144,slow=23,SNR=8.0						
JHJ				Sn	**Sn**	**21 19 17.4**	**-6.7**
	4.9nm,0.3s,baz=122,slow=19,SNR=3.1						
USRK	**Ussuriysk Ar.**	**9.90**	**302**	Pn	**Pn**	**21 18 39.7**	**-0.8**
	0.3nm,0.3s,baz=95,slow=13,SNR=13						
KSRS	**Korea Array**	**12.54**	**265**	Pn	**Pn**	**21 19 18.4**	**+1.6**
	0.2nm,0.3s,baz=89,slow=14,SNR=4.3						
KSAR	**Wonju Array Be**	**12.57**	**265**	Pn	**Pn**	**21 19 18.4**	**+1.2**
MA2	**Magadan**	**20.54**	**10**	P	**P**	**21 20 57.1**	**+0.5**
	4.5nm,0.4s,baz=232,slow=21,SNR=5.5						
SEY	**Seymchan**	**24.00**	**10**	P	**P**	**21 21 33.2**	**+0.5**
	2.3nm,0.7s,baz=172,slow=7.2,SNR=11						
SONM	**Songino Array**	**28.00**	**300**	P	**P**	**21 22 09.5**	**+0.2**
	1.2nm,0.7s,baz=92,slow=8.2,SNR=11						
H11N2	**WAKE ISLAND Hy**	**28.07**	**128**	T	T	21 51 49.2	
	baz=318,slow=75,SNR=5.8						
H11N1	**WAKE ISLAND Hy**	**28.08**	**128**	T	T	21 51 49.2	
	baz=318,slow=75,SNR=8.8						
H11N3	**WAKE ISLAND Hy**	**28.09**	**128**	T	T	21 51 49.2	
	baz=318,slow=75,SNR=11						
ZALV	**Zalesovo Beam**	**41.61**	**310**	P	**P**	**21 24 06.1**	**-0.1**
	1.3nm,0.5s,baz=86,slow=8.1,SNR=8.0						
CMAR	**Chiang Mai Arr**	**43.89**	**255**	P	**P**	**21 24 24.6**	**-0.4**
	0.3nm,0.5s,baz=39,slow=7.5,SNR=6.0						
MKAR	**Makanchi Array**	**44.36**	**300**	P	**P**	**21 24 28.4**	**-0.2**
	1.5nm,0.8s,baz=84,slow=9.2,SNR=16						
KURK	**Kurchatov**	**45.85**	**307**	*e*P	**P**	**21 24 38.8**	**-1.5**
	5.3nm,0.8s						
ILAR	**Eielson Array**	**46.41**	**34**	P	**P**	**21 24 46.5**	**+1.9**
	0.5nm,0.7s,baz=264,slow=6.3,SNR=5.7						
ABKAR	**Akbulak array**	**57.72**	**310**	*e*P	**P**	**21 26 09.0**	**+0.1**
	0.8nm,0.4s						
WRA	**Warramunga Arr**	**59.82**	**190**	P	**P**	**21 26 24.4**	**+0.7**
	0.8nm,0.8s,baz=7.6,slow=6.9,SNR=5.9						
YKA	**Yellowknife Ar**	**60.73**	**31**	P	**P**	**21 26 30.7**	**+1.2**
	0.1nm,0.5s,baz=297,slow=6.9,SNR=3.1						
ASAR	**Alice Springs**	**63.55**	**190**	P	**P**	**21 26 49.5**	**+0.6**
	0.3nm,0.7s,baz=3.3,slow=6.5,SNR=3.3						
FINES	**FINESS Array B**	**67.43**	**333**	P	**P**	**21 27 13.0**	**-0.5**
	1.8nm,0.8s,baz=54,slow=9.7,SNR=6.6						
NVAR	**Mina Array Bea**	**72.05**	**55**	P	**P**	**21 27 42.2**	**-0.5**
	0.4nm,0.2s,baz=300,slow=7.1,SNR=3.0						
NB2	**NORSAR Subarra**	**72.56**	**338**	P	**P**	**21 27 45.4**	**+0.3**
	comp=Z,0.7nm,0.7s,baz=38,slow=6.2						
NOA	**NORSAR Array B**	**72.56**	**338**	P	**P**	**21 27 45.0**	**-0.1**
	comp=Z,1.3nm,0.8s,baz=39,slow=5.9,SNR=5.0						
AKASG	**Malin Array Be**	**73.40**	**323**	P	**P**	**21 27 50.0**	**-0.2**
	comp=Z,0.2nm,0.3s,baz=43,slow=5.4,SNR=4.0						

*ISCJB **13** 21:17:58.4±2.1,39°.59N±0'.06×143°.63E±0'.05, h14km±14km,mb3.4/10,Error ellipse: s-maj=10.1km s-min=6.7km az=171.6*
*IDC **13** 21:17:58.1±0.8,39°.57N×143°.59E,h0km,mb3.5/11, mb1 3.7/14,mb1mx3.6/50,mbtmp3.5/14,ML3.3/2,Error ellipse: s-maj=21.4km s-min=16.0km az=118.0*
*JMA **13** 21:17:59.2±0.2,39°.66N×143°.63E,h21km,M4.0*

ISC 13 21:17:59.2±2.5,39°.63N±0'.06×143°.49E±0'.08,h6km±14km**, n21,**σ1ᵍ07/26,**mb3.6**/10,**Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JTH	**Tanohata**	**1.29**	**284**	P	**Pg**	**21 18 23.6**	**-0.4**
JTH				*e*S	**Sg**	**21 18 41.4**	**+0.6**
MIYJ	**Miyakonagasawa**	**1.29**	**268**	P	**Pg**	**21 18 23.9**	**-0.1**
MIYJ				*e*S	**Sg**	**21 18 41.8**	**+1.0**
OFUJ	**Ofunato**	**1.52**	**249**	P	**Pb**	**21 18 27.0**	**-0.7**
JANG	**Nango**	**1.69**	**297**	P	**Pb**	**21 18 29.4**	**-1.3**
JANG				*e*S	**Sb**	**21 18 51.7**	**-0.5**
JOM	**Ohasama**	**1.71**	**266**	P	**Pb**	**21 18 30.3**	**-0.7**
JOM				*e*S	**Sb**	**21 18 51.8**	**-0.9**
JTM	**Tenmabayashi**	**2.19**	**303**	P	**Pn**	**21 18 36.5**	**+0.4**
JTM				*e*S	**Sb**	**21 19 05.3**	**-1.2**
JOU	**Okura**	**2.54**	**241**	S	**Sb**	**21 19 13.2**	**-3.4**
ASAJ	**Asahikawa**	**4.54**	**352**	Pn	**Pn**	**21 19 08.6**	**+0.3**
	1.6nm,0.3s,baz=197,slow=17,SNR=8.3						
MJAR	**Matsushiro Arr**	**5.18**	**235**	Pn	**Pn**	**21 19 18.0**	**+0.8**
	0.6nm,0.3s,baz=37,slow=13,SNR=3.1						
USRK	**Ussuriysk Ar.**	**9.71**	**302**	Pn	**Pn**	**21 20 21.3**	**+1.9**
	0.1nm,0.3s,baz=124,slow=17,SNR=4.7						
MA2	**Magadan**	**20.49**	**11**	P	**P**	**21 22 37.3**	**-0.3**
	3.6nm,0.5s,baz=183,slow=10,SNR=4.1						
SEY	**Seymchan**	**23.94**	**10**	P	**P**	**21 23 14.6**	**+0.8**
	0.7nm,0.3s,baz=213,slow=6.6,SNR=4.6						
SONM	**Songino Array**	**27.82**	**299**	P	**P**	**21 23 49.7**	**+0.5**
	0.2nm,0.5s,baz=89,slow=9.4,SNR=2.6						
ZALV	**Zalesovo Beam**	**41.43**	**310**	P	**P**	**21 25 46.4**	**+0.1**
	0.3nm,0.3s,baz=120,slow=7.2,SNR=2.1						
CMAR	**Chiang Mai Arr**	**43.75**	**254**	P	**P**	**21 26 05.7**	**+0.1**
	0.1nm,0.3s,baz=45,slow=9.0,SNR=2.8						
MKAR	**Makanchi Array**	**44.18**	**300**	P	**P**	**21 26 09.2**	**+0.5**
	0.4nm,0.7s,baz=77,slow=8.5,SNR=2.1						
ILAR	**Eielson Array**	**46.43**	**34**	P	**P**	**21 26 26.5**	**+0.2**
	0.5nm,0.7s,baz=268,slow=6.4,SNR=4.8						
WRA	**Warramunga Arr**	**59.87**	**190**	P	**P**	**21 28 05.5**	**-0.3**
	0.4nm,0.6s,baz=8.5,slow=6.7,SNR=4.0						
YKA	**Yellowknife Ar**	**60.75**	**31**	P	**P**	**21 28 10.9**	**-0.3**
	0.2nm,0.7s,baz=299,slow=6.3,SNR=3.2						
ASAR	**Alice Springs**	**63.60**	**190**	P	**P**	**21 28 30.0**	**-0.8**
	0.3nm,0.7s,baz=19,slow=5.9,SNR=3.8						
PDAR	**Pinedale Array**	**74.69**	**47**	P	**P**	**21 29 39.8**	**0.0**
	0.4nm,0.7s,baz=356,slow=3.6,SNR=3.0						

MEX 13 21:21:31.1±0.7,32°.26N×115°.18W,h10km±78km,MD3.5, California-Baja California border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SPIG	**San Pedro Mart**	**1.23**	**192**	*e*P	Pb	21 21 50.9	-3.7
SPIG				*i* S	Sb	21 22 05.9	-4.7
CBX	**Cerro Bola**	**1.26**	**273**	*e*P	Pn	21 21 51.3	-3.6
CBX				*i* S	Sb	21 22 06.3	-5.1

*JMA **13** 21:21:45.9±0.2,39°.49N×143°.58E,h17km,M4.5*
*IDC **13** 21:21:46.0±0.6,39°.45N×143°.40E,h0km,mb4.4/25, mb1 4.5/33,mb1mx4.4/53,mbtmp4.4/33,ML3.7/8,Error ellipse: s-maj=15.6km s-min=11.7km az=124.0*
*ISCJB **13** 21:21:46.0±1.0,39°.41N±0'.03×143°.52E±0'.04,h16km±6km, mb4.6/78,MS4.6/2,Error ellipse: s-maj=6.6km s-min=4.3km az=40.9*
*MOS **13** 21:21:49.0±0.9,39°.59N×143°.28E,h27km,mb4.8/53,Error ellipse: s-maj=7.7km s-min=4.8km az=105.4*
*NEIC **13** 21:21:49.2±1.7,39°.48N×143°.35E,h20km±11km,mb4.7/18, Error ellipse: s-maj=8.3km s-min=4.8km az=119.0*
*BJI **13** 21:21:49.4,39°.48N×143°.18E,h31km,mb4.7/44,mB5.4/17, Ms4.9/8,Ms7 4.8/7*

ISC 13 21:21:48.0±1.6,39°.45N±0'.05×143°.49E±0'.04,h18km±9km**, n185,**σ1ᵍ45/194,**mb4.7**/83,**15C-4D,Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MIYJ	**Miyakonagasawa**	**1.30**	**276**	P	**Pn**	**21 22 10.4**	**-0.9**
MIYJ				*e*S	**Sg**	**21 22 27.2**	**-2.9**
JTH	**Tanohata**	**1.35**	**292**	P	**Pn**	**21 22 11.0**	**-0.9**
JTH				*e*S	**Sb**	**21 22 29.6**	**-0.1**
OFUJ	**Ofunato**	**1.46**	**256**	P	**Pn**	**21 22 13.0**	**-0.5**
JOM	**Ohasama**	**1.70**	**271**	P	**Pn**	**21 22 16.8**	**0.0**
JKZ	**Kuzumaki**	**1.75**	**288**	P	**Pn**	**21 22 17.3**	**-0.2**
JKZ				S	**Sn**	**21 22 40.2**	**+0.8**
JANG	**Nango**	**1.78**	**302**	P	**Pn**	**21 22 16.4**	**-1.5**
JMK	**Ichinoseki**	**1.84**	**255**	P	**Pn**	**21 22 18.5**	**-0.1**
JMK				*e*S	**Sn**	**21 22 41.4**	**0.0**
JIO	**Ouri**	**1.95**	**240**	P	**Pn**	**21 22 19.6**	**-0.6**
JRG	**Rokugo**	**2.21**	**269**	P	**Pn**	**21 22 24.1**	**+0.2**
JTM	**Tenmabayashi**	**2.29**	**306**	P	**Pn**	**21 22 24.4**	**-0.5**
JAH	**Hinai**	**2.32**	**289**	P	**Pn**	**21 22 25.4**	**+0.1**
JYK	**Kaneyama**	**2.49**	**259**	P	**Pn**	**21 22 28.0**	**+0.3**
JYK				S	**Sn**	**21 22 59.0**	**+1.3**
ERM	**Erimo**	**2.57**	**354**	*e*P	**Pn**	**21 22 28.2**	**-0.6**
ERM				*e*		21 23 00.6	
ERM	**Erimo**	**2.57**	**354**	*e*Pn	**Pn**	**21 22 28.2**	**-0.6**
ERM				*e*Sn	**Sn**	**21 23 00.6**	**+1.0**
ASAJ	**Asahikawa**	**4.71**	**352**	Pn	**Pn**	**21 22 58.9**	**+0.7**
	4.5nm,0.3s,baz=213,slow=13,SNR=18						
ASAJ				Sn	**Sn**	**21 23 55.5**	**+3.2**
	7.1nm,0.3s,baz=56,slow=16,SNR=3.6						
YUK	**Yuzh-Kuril'sk**	**4.91**	**20**	*i* P	**Pn**	**21 23 02.8**	**+1.9**
SHO	**Shikotan**	**5.07**	**28**	*e*P	**Pn**	**21 23 01.8**	**-1.3**
SHO				*e*S	**Sn**	**21 23 56.4**	**-4.8**
SHO				pmax	pmax		
	comp=Z,141nm,0.6s						
SHO				pmax	pmax		
	comp=N,56nm,0.3s						
SHO				pmax	pmax		
	comp=E,120nm,0.3s						
MJAR	**Matsushiro Arr**	**5.08**	**237**	Pn	**Pn**	**21 23 03.9**	**+0.6**
	comp=E,16nm,0.3s,baz=41,slow=12,SNR=122						
MAJO	**Matsushiro**	**5.09**	**237**	*e*P	**Pn**	**21 23 03.9**	**+0.5**
MAJO				pmax	pmax		
	comp=Z,300nm,0.6s						
MAJO	**Matsushiro**	**5.09**	**237**	*e*Pn	**Pn**	**21 23 03.9**	**+0.5**
	comp=Z,300nm,0.6s						
KUR	**Kuril'sk**	**6.62**	**28**	*e*P	**Pn**	**21 23 24.8**	**+0.4**
KUR				*e*S	**Sn**	**21 24 35.5**	**-3.9**
KUR				pmax	pmax		
	comp=N,66nm,0.3s						
KUR				pmax	pmax		
	comp=Z,105nm,0.3s						
KUR				pmax	pmax		
	comp=E,67nm,0.1s						
JHJ2	**Mitsune**	**6.99**	**206**	*e*Pn	**Pn**	**21 23 29.0**	**-0.4**
JHJ	**Hachijo jima 2**	**6.99**	**206**	Pn	**Pn**	**21 23 27.9**	**-1.6**
	comp=E,24nm,0.3s,baz=263,slow=22,SNR=8.6						
JHJ				Sn	**Sn**	**21 24 41.5**	**-7.1**
	comp=E,26nm,0.3s,baz=198,slow=20,SNR=4.4						
YSS	**Yuzh-Sakhalins**	**7.52**	**356**	*e*P	**Pn**	**21 23 38.0**	**+1.3**
YSS				pmax	pmax		
	comp=Z,20nm,0.6s						
USRK	**Ussuriysk Ar.**	**9.81**	**303**	Pn	**Pn**	**21 24 08.8**	**+0.7**
	comp=Z,1.5nm,0.3s,baz=104,slow=12,SNR=30						
MDJ	**Mudanjiang**	**11.55**	**301**	*e*Pn	**Pn**	**21 24 30.8**	**-1.2**
	comp=Z,52nm,1.1s						
JNU	**Nakatsue**	**11.97**	**242**	Pn	**Pn**	**21 24 38.0**	**+0.2**
	comp=Z,0.4nm,0.3s,baz=94,slow=6.0,SNR=5.6						
KSRS	**Korea Array**	**12.37**	**266**	Pn	**Pn**	**21 24 44.3**	**+1.1**
	comp=Z,0.4nm,0.3s,baz=85,slow=13,SNR=19						
KSAR	**Wonju Array Be**	**12.40**	**266**	P	**Pn**	**21 24 44.3**	**+0.7**
KSAR	**Wonju Array Be**	**12.40**	**266**	Pn	**Pn**	**21 24 44.3**	**+0.7**
KLR	**Kul'dur**	**12.88**	**323**	Pn	**Pn**	**21 24 49.0**	**-1.1**
	comp=Z,0.3nm,0.3s,baz=128,slow=13,SNR=8.9						
KLR	**Kul'dur**	**12.88**	**323**	⇓*i*P	**Pn**	**21 24 49.8**	**-0.2**
NKL	**Nikolayevsk**	**13.84**	**353**	*e*P	**Pn**	**21 25 03.0**	**-0.1**
NKL				pmax	pmax		
	comp=N,10.0nm,1.0s						
NKL				pmax	pmax		
	comp=Z,20nm,1.0s						
PETK	**Petropavlovsk-**	**16.77**	**31**	Pn	**P**	**21 25 44.5**	**+0.5**
	comp=Z,0.2nm,0.3s,baz=183,slow=12,SNR=4.1						
HIA	**Hailar**	**19.54**	**308**	*e*P	**P**	**21 26 10.7**	**-3.8**
HIA				pmax	pmax		
	comp=Z,25nm,0.9s						
HIA	**Hailar**	**19.54**	**308**	*e*Pn	**P**	**21 26 10.7**	**-3.8**
	comp=Z,25nm,0.9s						
MA2	**Magadan**	**20.66**	**11**	P	**P**	**21 26 27.5**	**+0.9**
	comp=Z,15nm,0.7s,baz=220,slow=9.0,SNR=12						
MA2	**Magadan**	**20.66**	**11**	*e*P	**P**	**21 26 26.0**	**-0.6**
MA2				pmax	pmax		
	comp=Z,51nm,0.8s						
MA2	**Magadan**	**20.66**	**11**	*e*P	**P**	**21 26 26.0**	**-0.6**
	comp=Z,51nm,0.8s						
TIA	**Tai'an**	**21.05**	**269**	*e*P	**P**	**21 26 29.1**	**-1.9**
TIA				pmax	pmax		
	comp=Z,30nm,1.0s						
YHNB	**Yeheng**	**23.76**	**238**	*e*P	**P**	**21 26 57.1**	**-2.4**
	comp=Z,18nm,0.7s						
SEY	**Seymchan**	**24.12**	**10**	P	**P**	**21 27 02.2**	**-0.2**
	comp=Z,18nm,0.9s,baz=194,slow=8.2,SNR=42						
SEY	**Seymchan**	**24.12**	**10**	P	**P**	**21 27 02.2**	**-0.2**
SEY				pmax	pmax		
	comp=Z,15nm,0.8s						
YAK	**Yakutsk**	**24.13**	**344**	P	**P**	**21 27 01.5**	**-1.1**
	comp=Z,27nm,0.5s,baz=204,slow=0.9,SNR=9.1						
YAK	**Yakutsk**	**24.13**	**344**	*e*P	**P**	**21 27 01.5**	**-1.1**
YAK				*e*		21 27 29.1	
YAK				*e*S	**S**	**21 31 16.5**	**-2.9**
YAK				*e*SS	**SnSn**	**21 31 58.3**	**-2.7**
YAK				*e*		21 38 09.6	
YAK				pmax	pmax		
	comp=Z,26nm,0.8s						
YAK				pmax	pmax		
	comp=N,16nm,1.0s						
YAK				pmax	pmax		
	comp=E,4.0nm,1.0s						
YAK				pmax	pmax		
	comp=Z,18nm,0.9s						
YAK				pmax	pmax		
	comp=N,18nm,1.0s						
YAK				smax	smax		
	comp=N,445nm,8.1s						
YAK				smax	smax		
	comp=E,84nm,4.9s						
YAK				MLR	MLR		
	comp=Z,1μm,16.0s						
YAK				MLR	MLR		
	comp=N,271nm,18.0s						
YAK				MLR	MLR		
	comp=E,244nm,18.0s						
YAK	**Yakutsk**	**24.13**	**344**	*e*P	**P**	**21 27 01.0**	**-1.6**
	comp=E,18nm,0.6s						
CIT	**Chita**	**24.19**	**311**	*e*P	**P**	**21 27 02.1**	**-1.3**
CIT				*e*		21 27 12.3	
WHN	**Wuhan**	**25.39**	**259**	⇑P	**P**	**21 27 14.3**	**0.0**
WHN				pmax	pmax		
	comp=E,120nm,0.8s						
BOD	**Bodaibo**	**26.45**	**324**	*e*P	**P**	**21 27 23.6**	**-0.1**
BOD				pmax	pmax		
	comp=Z,16nm,0.9s						
ULN	**Ulaanbaatar**	**27.46**	**300**	⇑*i*P	**P**	**21 27 33.6**	**+0.5**
ULN				pmax	pmax		
	comp=Z,26nm,1.4s						
ULN	**Ulaanbaatar**	**27.46**	**300**	*e*P	**P**	**21 27 32.6**	**-0.5**
	comp=Z,24nm,1.2s						
SONM	**Songino Array**	**27.90**	**300**	P	**P**	**21 27 37.6**	**+0.6**
	comp=Z,7.1nm,0.8s,baz=91,slow=8.9,SNR=39						
XAN	**Xi'an**	**28.11**	**270**	P	**P**	**21 27 38.3**	**-0.6**
XAN				pP	sP	21 27 43.8	-2.6
XAN				pmax	pmax		
	comp=Z,8.0nm,1.0s						
H11N2	**WAKE ISLAND Hy**	**28.15**	**128**	T	T	21 57 10.4	
	SNR=39						
H11N1	**WAKE ISLAND Hy**	**28.16**	**128**	T	T	21 57 42.5	
	baz=194,slow=74,SNR=25						
H11N3	**WAKE ISLAND Hy**	**28.17**	**128**	T	T	21 57 16.5	
	baz=318,slow=74,SNR=39						
H11S1	**WAKE ISLAND Hy**	**28.96**	**129**	T	T	21 58 16.4	
	baz=321,slow=76,SNR=6.8						
H11S3	**WAKE ISLAND Hy**	**28.96**	**129**	T	T	21 58 42.0	
	baz=321,slow=76,SNR=5.1						
H11S2	**WAKE ISLAND Hy**	**28.98**	**129**	T	T	21 58 42.4	
	baz=321,slow=76,SNR=6.2						
ENH	**Enshi**	**29.23**	**262**	*e*P	**P**	**21 27 48.5**	**-0.3**
	comp=Z,24nm,0.8s						
TLY	**Talaya**	**30.08**	**307**	P	**P**	**21 27 56.9**	**+0.7**
	comp=Z,1.4nm,0.4s,baz=119,slow=9.2,SNR=7.4						
TLY	**Talaya**	**30.08**	**307**	*e*P	**P**	**21 27 56.5**	**+0.3**
TLY				pmax	pmax		
	comp=Z,11nm,1.4s						
TLY	**Talaya**	**30.08**	**307**	*e*P	**P**	**21 27 55.6**	**-0.5**
	comp=Z,11nm,1.3s						
ZAK	**Zakamensk**	**30.15**	**305**	*e*P	**P**	**21 27 56.0**	**-0.9**
ZAK				pmax	pmax		
	comp=Z,8.0nm,1.3s						
BILL	**Bilibino**	**31.25**	**16**	*e*P	**P**	**21 28 05.4**	**-0.9**
BILL				pmax	pmax		
	comp=Z,4.0nm,1.2s						
MOY	**Mondy**	**31.71**	**307**	*e*P	**P**	**21 28 11.1**	**+0.4**
TIXI	**Tiksi**	**33.11**	**352**	*ce*P	**P**	**21 28 22.6**	**+0.1**
TIXI				pmax	pmax		
	comp=Z,4.0nm,1.4s						
TIXI	**Tiksi**	**33.11**	**352**	*e*P	**P**	**21 28 22.3**	**-0.3**
	comp=Z,4.0nm,0.4s						
GYA	**Guiyang**	**33.28**	**258**	⇑*i*P	**P**	**21 28 24.0**	**-0.7**
GYA				pmax	pmax		
	comp=Z,20nm,0.9s						
GTA	**Gaotai**	**33.49**	**284**	*e*P	**P**	**21 28 26.8**	**+0.4**
GTA				pP	sP	21 28 31.6	-2.4
GTA				sP	pP	21 28 34.8	+3.0
GTA				pmax	pmax		
	comp=Z,18nm,1.0s						
KMI	**Kunming**	**36.98**	**260**	P	**P**	**21 28 56.4**	**-0.3**
KMI				pP	sP	21 29 08.3	+4.1
KMI				pmax	pmax		
	comp=Z,14nm,1.2s						
ZALV	**Zalesovo Beam**	**41.55**	**310**	P	**P**	**21 29 34.7**	**+0.5**
	comp=Z,7.8nm,0.5s,baz=94,slow=7.6,SNR=32						
ZALV				PcP	**PcP**	**21 31 32.3**	**+1.0**
	comp=Z,3.8nm,0.8s,baz=92,slow=2.7,SNR=4.2						
NVS	**Novosibirsk**	**42.40**	**312**	*e*P	**P**	**21 29 41.7**	**+0.5**
NVS				pmax	pmax		
	comp=E,10.0nm,1.2s						
NVS				pmax	pmax		
	comp=Z,14nm,1.2s						
CHTO	**Chiang Mai**	**43.49**	**255**	*e*P	**P**	**21 29 50.7**	**+0.2**
CHTO				pmax	pmax		
	comp=Z,4.0nm,0.6s						
CHTO	**Chiang Mai**	**43.49**	**255**	*e*P	**P**	**21 29 50.6**	**+0.2**
	comp=Z,4.5nm,0.6s						
LSA	**Lhasa**	**43.65**	**274**	*e*P	**P**	**21 29 52.9**	**+0.7**
LSA				pmax	pmax		
	comp=Z,6.0nm,0.8s						
LSA	**Lhasa**	**43.65**	**274**	*e*P	**P**	**21 29 52.9**	**+0.7**
	comp=Z,6.4nm,0.8s						
CMAR	**Chiang Mai Arr**	**43.71**	**255**	P	**P**	**21 29 52.7**	**+0.5**
	comp=Z,2.1nm,0.7s,baz=44,slow=7.4,SNR=32						
MK31	**Makanchi Array**	**44.27**	**300**	*e*P	**P**	**21 29 56.1**	**-0.3**
MK31				pmax	pmax		
	comp=Z,15nm,0.9s						
MKAR	**Makanchi Array**	**44.27**	**300**	P	**P**	**21 29 56.6**	**+0.2**
	comp=Z,7.9nm,0.7s,baz=84,slow=9.5,SNR=70						
MAKZ

KKAR	**Karatay Array**	**53.35**	**299**	*e*P		**P**	**21 31 05.6**	**-0.6**
	comp=Z,2.7nm,0.7s								
SVE	**Sverdlovsk**	**54.44**	**318**	*e*P		**P**	**21 31 14.4**	**+0.5**
SVE					pmax	pmax			
	comp=Z,23nm,0.9s								
ARU	**Arti**	**55.65**	**318**	*c i*P		**P**	**21 31 23.0**	**+0.3**
ARU							21 33 24.5		
ARU					PPP	PPP	21 34 36.3		
ARU					S	**S**	**21 39 07.3**	**-0.4**
ARU					SS	**SS**	**21 42 56.3**	**+3.9**
ARU					pmax	pmax			
	comp=Z,30nm,1.2s								
ARU	**Arti**	**55.65**	**318**	*e*P		**P**	**21 31 22.8**	**+0.2**
	comp=Z,27nm,1.0s								
AB31	**Akbulak array**	**57.65**	**310**	*e*P		**P**	**21 31 37.1**	**+0.1**
AB31					pmax	pmax			
	comp=Z,4.0nm,0.6s								
ABKAR	**Akbulak array**	**57.65**	**310**	*e*P		**P**	**21 31 37.2**	**+0.2**
	comp=Z,5.3nm,0.6s								
KBL	**Kabul**	**58.09**	**290**	P		**P**	**21 31 40.7**	**+0.1**
FITZ	**Fitzroy Crossi**	**59.64**	**200**	P		**P**	**21 31 51.2**	**+0.1**
WRAB	**Tennant Creek**	**59.69**	**190**	*c*eP		P	21 31 58.2	+6.8
WRAB					pmax	pmax			
	comp=Z,40nm,2.5s								
WRA	**Warramunga Arr**	**59.70**	**190**	P		**P**	**21 31 51.0**	**-0.4**
	comp=Z,1.5nm,0.7s,baz=8.3,slow=7.0,SNR=13								
RES	**Resolute Bay**	**59.85**	**15**	P		**P**	**21 31 53.3**	**+1.4**
	comp=Z,4.9nm,0.8s,baz=301,slow=6.1,SNR=8.8								
YKA	**Yellowknife Ar**	**60.90**	**31**	P		**P**	**21 32 00.9**	**+1.7**
	comp=Z,0.9nm,0.6s,baz=300,slow=6.4,SNR=18								
ARCES	**ARCESS Array B**	**62.31**	**339**	P		**P**	**21 32 09.6**	**+0.9**
	comp=Z,2.9nm,0.8s,baz=50,slow=8.1,SNR=9.5								
KLMR	**Klimovskoe**	**62.59**	**328**	*e*P		**P**	**21 32 08.6**	**-2.0**
KLMR					pmax	pmax			
	comp=Z,16nm,1.6s								
ASAR	**Alice Springs**	**63.43**	**190**	P		**P**	**21 32 18.2**	**+1.6**
	comp=Z,1.1nm,0.8s,baz=11,slow=5.9,SNR=10								
DAG	**Danmarks Havn**	**63.50**	**355**	*i* P		**P**	**21 32 17.0**	**+0.5**
	comp=Z,4.1nm,0.9s								
DAG	**Danmarks Havn**	**63.50**	**355**	*i* P		**P**	**21 32 17.0**	**+0.5**
DAG					pmax	pmax			
	comp=Z,3.0nm,0.9s								
GEYT	**Alibeck**	**64.10**	**299**	P		**P**	**21 32 21.3**	**+0.1**
	comp=Z,3.6nm,1.0s,baz=29,slow=6.8,SNR=4.7								
VRH	**Novokhoyorsk**	**66.89**	**318**	*e*P		**P**	**21 32 38.6**	**-0.2**
VRH					pmax	pmax			
	comp=Z,7.0nm,0.7s								
OBN	**Obninsk**	**67.14**	**323**	*i* P		**P**	**21 32 40.1**	**-0.2**
OBN					pmax	pmax			
	comp=Z,7.0nm,0.9s								
FINES	**FINESS Array B**	**67.43**	**332**	P		**P**	**21 32 42.8**	**+0.6**
	comp=Z,5.1nm,0.6s,baz=46,slow=8.1,SNR=40								
LPSR	**Galich'ya Gora**	**67.49**	**320**	*e*P		**P**	**21 32 41.4**	**-1.2**
LPSR					pmax	pmax			
	comp=Z,10.0nm,0.9s								
VSR	**Storozhevoye**	**68.19**	**319**	*e*P		**P**	**21 32 46.7**	**-0.4**
VSR					pmax	pmax			
	comp=Z,8.0nm,0.8s								
VSU	**Vasula**	**69.19**	**330**	*c*eP		**P**	**21 32 53.6**	**+0.4**
VSU					pmax	pmax			
	comp=Z,84nm,2.5s								
GOF	**Gofitskoye**	**69.70**	**312**	⇑eP		**P**	**21 32 57.2**	**+0.6**
NCK	**Nalchik**	**70.29**	**310**	*e*P		**P**	**21 33 00.3**	**0.0**
NCK					pmax	pmax			
	comp=Z,6.0nm,1.0s								
KIV	**Kislovodsk**	**70.55**	**311**	*e*P		**P**	**21 33 03.3**	**+1.3**
KIV					pmax	pmax			
	comp=Z,26nm,0.9s								
KIV	**Kislovodsk**	**70.55**	**311**	*e*P		**P**	**21 33 02.6**	**+0.6**
	comp=Z,27nm,1.0s								
KBZ	**Khabaz**	**70.56**	**311**	P		**P**	**21 33 02.6**	**+0.7**
	comp=Z,9.6nm,1.0s,baz=60,slow=4.5,SNR=10								
FFC	**Flin Flon**	**70.79**	**34**	*i* P		**P**	**21 33 05.6**	**+2.5**
NEY	**Neytrino**	**70.95**	**311**	*i* P		**P**	**21 33 03.4**	**-1.1**
NEY					pmax	pmax			
	comp=Z,3.0nm,1.4s								
NB2	**NORSAR Subarra**	**72.58**	**338**	P		**P**	**21 33 14.4**	**+0.6**
	comp=Z,3.5nm,0.6s,baz=39,slow=6.2								
NOA	**NORSAR Array B**	**72.58**	**338**	P		**P**	**21 33 14.4**	**+0.6**
	comp=Z,5.2nm,0.7s,baz=39,slow=6.0,SNR=20								
AKASG	**Malin Array Be**	**73.38**	**323**	P		**P**	**21 33 18.9**	**+0.3**
	comp=Z,2.9nm,0.6s,baz=44,slow=6.1,SNR=16								
KIEV	**Kiev**	**73.39**	**323**	*i* P		**P**	**21 33 18.5**	**-0.2**
KIEV					pmax	pmax			
	comp=Z,8.0nm,1.2s								
FRB	**Frobisher Bay**	**74.04**	**14**	P		**P**	**21 33 22.6**	**+0.4**
	comp=Z,2.8nm,0.6s,baz=340,slow=7.5,SNR=6.8								
PDAR	**Pinedale Array**	**74.81**	**47**	P		**P**	**21 33 28.4**	**+0.9**
	comp=Z,0.5nm,0.6s,baz=282,slow=2.2,SNR=7.0								
BURAR	**Bucovina Array**	**77.42**	**322**	⇑*i*P		**P**	**21 33 42.8**	**+0.8**
BURAR	**Bucovina Array**	**77.42**	**322**	⇑P		**P**	**21 33 42.8**	**+0.8**
KOLS	**Kolonicke sedl**	**77.81**	**325**	*e*P		**P**	**21 33 45.1**	**+1.0**
KOLS					pmax	pmax			
	comp=Z,4.0nm,1.1s								
KOLS	**Kolonicke sedl**	**77.81**	**325**	*e*P		**P**	**21 33 45.1**	**+1.0**
STHS	**Stebnicka Huta**	**77.91**	**326**	*e*P		**P**	**21 33 46.5**	**+1.8**
STHS					pmax	pmax			
	comp=Z,3.0nm,1.1s								
STHS	**Stebnicka Huta**	**77.91**	**326**	*e*P		**P**	**21 33 46.5**	**+1.8**
BRTR	**Keskin Array B**	**78.46**	**312**	P		**P**	**21 33 49.0**	**+1.0**
	comp=Z,1.4nm,0.8s,baz=90,slow=3.7,SNR=9.3								
DPC	**Dobruska-Polom**	**79.26**	**329**	*e*P		**P**	**21 33 53.5**	**+1.4**
DPC	**Dobruska-Polom**	**79.26**	**329**	*e*P		**P**	**21 33 53.5**	**+1.4**
ARR	**Arges**	**79.31**	**321**	⇑*i*P		**P**	**21 33 55.1**	**+2.6**
VYHS	**Vyhne**	**79.65**	**326**	*e*P		**P**	**21 33 55.5**	**+1.3**
VYHS					pmax	pmax			
	comp=Z,2.0nm,1.1s								
VYHS	**Vyhne**	**79.65**	**326**	*e*P		**P**	**21 33 55.5**	**+1.3**
BRG	**Berggiesshubel**	**79.79**	**330**	*e*P		**P**	**21 33 56.2**	**+1.3**
	comp=Z,6.3nm,1.1s								
BRG	**Berggiesshubel**	**79.79**	**330**	*e*P		**P**	**21 33 56.2**	**+1.3**
BRG					pmax	pmax			
	comp=Z,8.0nm,1.1s								
CLL	**Collm**	**79.80**	**331**	*i* P		**P**	**21 33 55.4**	**+0.5**
	comp=Z,8.0nm,1.3s								
CLL				*i*			21 34 17.6		
CLL	**Collm**	**79.80**	**331**	*i* P		**P**	**21 33 55.4**	**+0.5**
CLL					pmax	pmax			
	comp=Z,130nm,1.3s								
PVCC	**Panska Ves**	**79.82**	**330**	*e*P		**P**	**21 33 56.7**	**+1.6**
PVCC	**Panska Ves**	**79.82**	**330**	*e*P		**P**	**21 33 56.7**	**+1.6**
VRAC	**Vranov**	**79.97**	**328**	⇑*i*P		**P**	**21 33 57.5**	**+1.6**
VRAC	**Vranov**	**79.97**	**328**	⇑P		**P**	**21 33 57.5**	**+1.6**
PRU	**Pruhonice**	**80.26**	**329**	*e*P		**P**	**21 33 58.9**	**+1.4**
PRU	**Pruhonice**	**80.26**	**329**	*e*P		**P**	**21 33 58.9**	**+1.4**
KHC	**Kasperske Hory**	**81.32**	**329**	*e*P		**P**	**21 34 04.4**	**+1.2**
KHC				*ex*		x	21 34 25.2		
KHC	**Kasperske Hory**	**81.32**	**329**	*e*P		**P**	**21 34 04.4**	**+1.2**
CONA	**Conrad Observa**	**81.35**	**327**	*i* P		**P**	**21 34 05.1**	**+1.6**
	comp=Z,5.0nm,1.0s								
GERES	**GERESS Array B**	**81.50**	**329**	P		**P**	**21 34 03.6**	**-0.6**
	comp=Z,1.4nm,0.7s,baz=15,slow=5.5,SNR=8.7								
VTS	**Vitosha**	**82.04**	**320**	⇓*i*P		**P**	**21 34 07.7**	**+0.4**
VTS	**Vitosha**	**82.04**	**320**	⇓P		**P**	**21 34 07.7**	**+0.4**
SOKA	**Soboth**	**82.68**	**327**	*i* P		**P**	**21 34 11.5**	**+1.0**
	comp=Z,7.2nm,0.8s								
KBA	**Koelnbreinsper**	**83.06**	**328**	*i* PcP		**P**	**21 34 14.6**	**+2.0**
	comp=Z,3.9nm,0.8s								
MOTA	**Moosalm**	**83.74**	**330**	*i* PcP		**P**	**21 34 18.5**	**+2.4**
	comp=Z,7.7nm,1.1s								
RETA	**Reutte**	**83.75**	**330**	*i* PcP		**P**	**21 34 17.1**	**+1.1**
	comp=Z,8.6nm,1.1s								
FETA	**Feichten**	**84.15**	**330**	*i* PcP		**P**	**21 34 19.8**	**+1.7**
	comp=Z,4.1nm,1.0s								
DAVA	**Damuels**	**84.26**	**330**	*i* PcP		**P**	**21 34 20.4**	**+1.7**
	comp=Z,7.8nm,0.8s								
TXAR	**Lajitas Array**	**87.36**	**54**	P		**P**	**21 34 36.1**	**+1.8**
	comp=Z,0.9nm,0.9s,baz=307,slow=3.1,SNR=6.2								
TORD	**Torodi Ar. Bea**	**116.72**	**318**	PP		PP	21 41 35.0	-3.8
	comp=Z,0.4nm,0.7s,baz=14,slow=5.7,SNR=7.2								
LPAZ	**La Paz**	**144.05**	**59**	PKP		PKPbc	21 41 23.6	+2.0
	comp=Z,0.7nm,0.5s,baz=1.6,slow=6.3,SNR=5.0								

JMA 13 21:29:59.7±0.2, 39.41N×143.52E, h14km±4km, M3.5, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MIYJ	**Miyakonagasawa**	**1.33**	**278**	P	Pn	21 30 23.7	-0.1
MIYJ				*e*S	Sb	21 30 40.9	-0.3
JTH	**Tanohata**	**1.38**	**293**	P	Pn	21 30 24.2	-0.4
JTH				*e*S	Sb	21 30 42.8	-0.1
OFUJ	**Ofunato**	**1.48**	**258**	P	Pn	21 30 26.0	+0.2
OFUJ				S	Sn	21 30 44.2	-0.7
JOM	**Ohasama**	**1.73**	**273**	P	Pn	21 30 29.9	+0.6
JANG	**Nango**	**1.82**	**303**	P	Pn	21 30 31.3	+0.7
JMK	**Ichinoseki**	**1.84**	**256**	P	Pn	21 30 31.5	+0.6
JRG	**Rokugo**	**2.24**	**271**	P	Pn	21 30 37.3	+1.0
JTM	**Tenmabayashi**	**2.33**	**307**	P	Pb	21 30 39.6	-1.9
JAH	**Hinai**	**2.35**	**290**	P	Pn	21 30 39.4	+1.5
JOU	**Okura**	**2.46**	**246**	P	Pn	21 30 40.5	+1.1
JYK	**Kaneyama**	**2.51**	**260**	P	Pn	21 30 41.3	+1.3
JNBK	**Urakawa-nobuka**	**2.93**	**349**	P	Pn	21 30 47.3	+1.5
MAT	**Matsushiro**	**5.08**	**237**	P	Pn	21 31 18.0	+2.6

NIED ***13*** *21:36:00, 39.50N×143.50E, h23km, Mw4.7 Best double couple: M0 1.37000×10^16 NP1:ϕs188.00000°, δ35.00000°, λ81.00000°. NP2:ϕs19.00000°, δ56.00000°, λ96.00000°.*
IDC ***13*** *21:36:52.0±0.6, 39.49N×143.35E, h0km, mb4.5/32, mb1 4.6/40, mb1mx4.5/65, mbtmp4.5/40, ML3.5/7, MS4.3/14, Ms1 4.3/14, ms1mx3.9/50, Error ellipse: s-maj=14.5km s-min=12.0km az=120.0*
ISCJB ***13*** *21:36:51.7±0.9, 39.51N±0.03×143.39E±0.03, h7km±5km, mb4.7/133, MS4.5/22, Error ellipse: s-maj=4.9km s-min=3.0km az=146.1*
BJI ***13*** *21:36:53.6, 39.54N×143.15E, h19km, mb4.8/70, mB5.2/35, Ms4.7/37, Ms7 4.6/37*
JMA ***13*** *21:36:53.2±0.2, 39.49N×143.52E, h29km, M4.7*
JMA Felt I J1.
MOS ***13*** *21:36:55.9±1.0, 39.66N×143.23E, h30km, mb5.0/75, MS4.4/9, Error ellipse: s-maj=6.8km s-min=4.1km az=108.5*
NEIC ***13*** *21:36:55.4±0.8, 39.52N×143.20E, h18km±4km, mb4.8/52, Error ellipse: s-maj=5.6km s-min=3.8km az=139.0*
ISC 13 21:36:54.1±1.1, 39.52N±0.04×143.37E±0.03, h16km±6km, n364, σ1 53/398, mb4.8/135, MS4.5/22, 12C-16D, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MIYJ	**Miyakonagasawa**	**1.20**	**273**	P	**Pg**	**21 37 16.1**	**-1.1**
MIYJ				*e*S	**Sn**	**21 37 32.1**	**0.0**
JTH	**Tanohata**	**1.23**	**290**	P	**Pg**	**21 37 16.7**	**-1.2**
JTH				*e*S	**Sn**	**21 37 33.8**	**+0.9**
OFUJ	**Ofunato**	**1.39**	**252**	P	**Pn**	**21 37 18.6**	**-0.2**
JOM	**Ohasama**	**1.60**	**269**	P	**Pb**	**21 37 22.5**	**-0.9**
JOM				*e*S	**Sg**	**21 37 44.0**	**-1.9**
JANG	**Nango**	**1.66**	**302**	P	**Pn**	**21 37 22.2**	**-0.3**
JMK	**Ichinoseki**	**1.76**	**252**	P	**Pn**	**21 37 24.1**	**+0.2**
JMK				*e*S	**Sb**	**21 37 46.9**	**-0.9**
JIO	**Ouri**	**1.90**	**237**	P	**Pn**	**21 37 25.2**	**-0.6**
JIO				*e*S	**Sn**	**21 37 48.5**	**-0.8**
JRG	**Rokugo**	**2.12**	**268**	P	**Pn**	**21 37 29.7**	**+0.9**
JRG				*e*S	**Sb**	**21 37 56.5**	**-1.6**
JTM	**Tenmabayashi**	**2.17**	**306**	P	**Pn**	**21 37 30.3**	**+0.8**
JAH	**Hinai**	**2.20**	**289**	P	**Pn**	**21 37 30.9**	**+0.9**
JAH				*e*S	**Sb**	**21 37 59.4**	**-1.2**
JYK	**Kaneyama**	**2.41**	**257**	P	**Pn**	**21 37 33.7**	**+0.8**
ERM	**Erimo**	**2.50**	**356**	*e*P	**Pn**	**21 37 33.7**	**-0.4**
ERM				*e*		21 38 05.3	
ERM	**Erimo**	**2.50**	**356**	*e*Pn	**Pn**	**21 37 33.7**	**-0.4**
ERM				*e*Sn	**Sn**	**21 38 05.2**	**+1.1**
JOT	**Ohata**	**2.57**	**317**	P	**Pn**	**21 37 35.8**	**+0.8**
ASAJ	**Asahikawa**	**4.63**	**353**	Pn	**Pn**	**21 38 02.9**	**-0.5**
	4.2nm,0.3s,baz=219,slow=14,SNR=27						
ASAJ				Sn	**Sn**	**21 39 01.1**	**+4.4**
	1.9nm,0.3s,baz=47,slow=19,SNR=3.0						
ASAJ				LR	LR	21 40 05.8	
	comp=Z,908nm,19.1s,baz=182,slow=42						
ASAJ	**Asahikawa**	**4.63**	**353**	*e*Pn	**Pn**	**21 38 03.5**	**+0.1**
ASAJ				*e*Sn	**Sn**	**21 38 56.6**	**-0.1**
YUK	**Yuzh-Kuril'sk**	**4.88**	**22**	*e*P	**Pn**	**21 38 06.9**	**+0.1**
YUK				*e*S	**Sn**	**21 39 01.0**	**-1.9**
YUK				pmax	pmax		
	comp=Z,505nm,0.2s						
YUK				pmax	pmax		
	comp=E,297nm,0.1s						
YUK				pmax	pmax		
	comp=N,273nm,0.3s						
MJAR	**Matsushiro Arr**	**5.04**	**235**	Pn	**Pn**	**21 38 09.8**	**+0.8**
	comp=N,12nm,0.3s,baz=40,slow=12,SNR=266						
MAJO	**Matsushiro**	**5.04**	**235**	*c i*P	**Pn**	**21 38 10.4**	**+1.3**
MAJO	**Matsushiro**	**5.04**	**235**	*e*Pn	**Pn**	**21 38 10.6**	**+1.5**
MAT	**Matsushiro**	**5.04**	**235**	P	**Pn**	**21 38 10.4**	**+1.3**
MAT				*e*S	**Sn**	**21 39 10.8**	**+3.8**
SHO	**Shikotan**	**5.06**	**30**	*e*P	**Pn**	**21 38 07.6**	**-1.7**
SHO				*e*S	**Sn**	**21 39 01.6**	**-5.8**
SHO				pmax	pmax		
	comp=N,58nm,0.6s						
SHO				pmax	pmax		
	comp=E,33nm,0.6s						
SHO				pmax	pmax		
	comp=Z,89nm,0.6s						
INU	**Inuyama**	**6.54**	**232**	*e*Pn	**Pn**	**21 38 30.3**	**+0.6**
KUR	**Kuril'sk**	**6.61**	**29**	*e*P	**Pn**	**21 38 29.3**	**-1.2**
KUR				*e*S	**Sn**	**21 39 42.1**	**-3.4**
KUR				pmax	pmax		
	comp=Z,100nm,0.8s						
KUR				pmax	pmax		
	comp=N,49nm,0.1s						
KUR				pmax	pmax		
	comp=E,46nm,0.1s						
JHJ2	**Mitsune**	**7.01**	**205**	*e*Pn	**Pn**	**21 38 33.9**	**-2.1**
JHJ2				*e*Sn	**Sn**	**21 39 50.4**	**-4.9**
JHJ	**Hachijo jima 2**	**7.01**	**205**	Pn	**Pn**	**21 38 34.4**	**-1.7**
	comp=E,37nm,0.3s,baz=100,slow=23,SNR=25						
JHJ				Sn	**Sn**	**21 39 49.1**	**-6.4**
	comp=E,50nm,0.3s,baz=56,slow=23,SNR=9.6						
YSS	**Yuzh-Sakhalins**	**7.44**	**357**	*e*P	**Pn**	**21 38 43.2**	**+1.2**
YSS				pmax	pmax		
	comp=Z,30nm,0.8s						
YSS	**Yuzh-Sakhalins**	**7.44**	**357**	*e*Pn	**Pn**	**21 38 43.7**	**+1.7**
VLA	**Vladivostok**	**9.36**	**296**	*e*P	**Pn**	**21 39 10.2**	**+2.0**
VLA				pmax	pmax		
	comp=Z,41nm,1.2s						
USRK	**Ussuriysk Ar.**	**9.69**	**303**	Pn	**Pn**	**21 39 14.2**	**+1.4**
	comp=Z,0.5nm,0.3s,baz=116,slow=14,SNR=23						
USRK				LR	LR	21 42 59.1	
	comp=Z,2μm,18.1s,baz=122,slow=38						
MDJ	**Mudanjiang**	**11.43**	**301**	P	**Pn**	**21 39 35.6**	**-1.0**
MDJ				S	**Sn**	**21 41 40.9**	**-3.0**
MDJ				pmax	pmax		
	comp=Z,21nm,1.3s						
MDJ				pmax	pmax		
	comp=Z,910nm,10.3s						
MDJ				LR	LR		
	comp=Z,1μm,11.9s						
MDJ				LR	LR		
	comp=Z,2μm,15.5s						
MDJ				LR	LR		
	comp=Z,2μm,16.0s						
MDJ	**Mudanjiang**	**11.43**	**301**	*e*Pn	**Pn**	**21 39 35.9**	**-0.8**
	comp=Z,81nm,1.1s						
JNU	**Nakatsue**	**11.92**	**241**	Pn	**Pn**	**21 39 43.7**	**+0.3**
	comp=Z,0.3nm,0.3s,baz=142,slow=8.5,SNR=4.8						
JNU				LR	LR	21 44 48.2	
	comp=Z,2μm,18.0s,baz=30,slow=40						
KSRS	**Korea Array**	**12.28**	**265**	Pn	**Pn**	**21 39 50.1**	**+1.9**
	comp=Z,0.3nm,0.3s,baz=84,slow=13,SNR=26						
KSRS				LR	LR	21 44 14.3	
	comp=Z,909nm,18.0s,baz=352,slow=36						
KS01	**Wonju Array Si**	**12.29**	**265**	*e*Pn	**Pn**	**21 39 49.0**	**+0.5**
KS15	**Wonju Array Si**	**12.31**	**265**	*e*Pn	Pn	21 39 53.4	+4.7
KSAR	**Wonju Array Be**	**12.31**	**265**	P	**Pn**	**21 39 50.1**	**+1.4**
KSAR	**Wonju Array Be**	**12.31**	**265**	Pn	**Pn**	**21 39 50.1**	**+1.4**
KLR	**Kul'dur**	**12.76**	**323**	Pn	**Pn**	**21 39 55.7**	**+0.9**
	comp=Z,0.1nm,0.3s,baz=132,slow=9.7,SNR=12						
KLR				LR	LR	21 44 13.0	
	comp=Z,775nm,19.5s,baz=14,slow=34						
NKL	**Nikolayevsk**	**13.76**	**353**	*e*P	**Pn**	**21 40 09.0**	**+0.7**
NKL				pmax	pmax		
	comp=N,30nm,1.1s						
NKL				pmax	pmax		
	comp=E,10.0nm,1.1s						
NKL				pmax	pmax		
	comp=Z,40nm,1.1s						
CN2	**Changchun**	**14.06**	**294**	*e*P	**Pn**	**21 40 15.8**	**+3.3**
CN2				pmax	pmax		
	comp=Z,10.0nm,1.0s						
PEA0	**Petropavlovsk-**	**16.77**	**31**	*e*Pn	**Pn**	**21 40 45.4**	**-2.8**
PEA0B	**Petropavlovsk-**	**16.77**	**31**	*e*Pn	**Pn**	**21 40 45.1**	**-3.0**
	comp=Z,67nm,1.3s						
PETK	**Petropavlovsk-**	**16.77**	**31**	Pn	**P**	**21 40 49.6**	**-0.7**
	comp=Z,0.2nm,0.3s,baz=216,slow=9.1,SNR=6.9						
DL2	**Dalian**	**16.86**	**275**	P	**P**	**21 40 51.8**	**+0.5**
DL2				*e*S	**Sn**	**21 43 57.4**	**+1.2**
DL2				pmax	pmax		
	comp=Z,38nm,1.3s						
DL2				LR	LR		
	comp=Z,1μm,13.0s						
DL2				LR	LR		
	comp=Z,800nm,12.8s						
DL2				LR	LR		
	comp=Z,1μm,13.2s						
PET	**Petropavlovsk**	**17.10**	**33**	*e*P	**Pn**	**21 40 49.5**	**-2.7**
PET				pmax	pmax		
	comp=Z,223nm,1.5s						
PET	**Petropavlovsk**	**17.10**	**33**	*e*Pn	**Pn**	**21 40 49.5**	**-2.7**
	comp=Z,223nm,1.5s						
HIA	**Hailar**	**19.42**	**308**	*e*P	**P**	**21 41 16.9**	**-2.7**
HIA				pmax	pmax		
	comp=Z,42nm,1.0s						
HIA	**Hailar**	**19.42**	**308**	*e*P	**P**	**21 41 16.9**	**-2.7**
	comp=Z,42nm,1.0s						
MA2	**Magadan**	**20.62**	**11**	P	Pn	21 41 34.0	-0.7
	comp=Z,16nm,0.8s,baz=222,slow=8.2,SNR=15						
MA2	**Magadan**	**20.62**	**11**	*e*P	**P**	**21 41 32.9**	**+0.5**
MA2				pmax	pmax		
	comp=Z,82nm,0.8s						
MA2	**Magadan**	**20.62**	**11**	*e*P	**P**	**21 41 32.9**	**+0.5**
	comp=Z,82nm,0.8s						
BJI	**Beijing**	**20.88**	**280**	P	**P**	**21 41 33.8**	**-1.6**
BJI				S	S	21 45 11.9	-16
BJI				pmax	pmax		
	comp=Z,25nm,1.3s						
BJI				LR	LR		
	comp=Z,720nm,17.7s						
BJI				LR	LR		
	comp=Z,720nm,25.7s						
BJI				LR	LR		
	comp=Z,820nm,22.7s						
BJT	**Baijiatuau**	**20.89**	**280**	*e*P	**P**	**21 41 33.2**	**-2.4**
BJT				pmax	pmax		
	comp=Z,20nm,0.8s						
BJT	**Baijiatuau**	**20.89**	**280**	*e*P	**P**	**21 41 33.1**	**-2.4**
	comp=Z,20nm,0.8s						
TIA	**Tai'an**	**20.95**	**269**	⇓P	**P**	**21 41 34.8**	**-1.5**
TIA				pmax	pmax		
	comp=Z,50nm,1.1s						
NJ2	**Nanjing**	**21.19**	**257**	*e*P	**P**	**21 41 37.0**	**-1.9**
NJ2				S	**S**	**21 45 31.8**	**-2.2**
NJ2				pmax	pmax		
	comp=Z,24nm,0.5s						
NJ2				LR	LR		
	comp=Z,960nm,11.9s						
NJ2				LR	LR		
	comp=Z,800nm,10.8s						
NJ2				LR	LR		
	comp=Z,1μm,11.9s						
YHNB	**Yeheng**	**23.71**	**238**	*e*P	**P**	**21 42 03.6**	**-1.7**
	comp=Z,21nm,0.8s						
YAK	**Yakutsk**	**24.04**	**344**	P	**P**	**21 42 07.3**	**-0.8**
	comp=Z,14nm,0.3s,baz=179,slow=2.5,SNR=11						
YAK	**Yakutsk**	**24.04**	**344**	*e*P	**P**	**21 42 06.6**	**-1.5**
YAK				*e*		21 45 49.4	
YAK				*e*S	**S**	**21 46 19.9**	**-4.5**
YAK				*e*		21 53 10.6	
YAK				pmax	pmax		
	comp=Z,39nm,0.9s						
YAK				pmax	pmax		
	comp=N,22nm,1.0s						
YAK				pmax	pmax		
	comp=E,8.0nm,1.1s						
YAK				pmax	pmax		
	comp=Z,57nm,1.1s						
YAK				pmax	pmax		
	comp=N,21nm,1.3s						
YAK				pmax	pmax		
	comp=E,27nm,1.6s						
YAK				smax	smax		
	comp=N,274nm,4.3s						
YAK				smax	smax		
	comp=E,168nm,3.8s						
YAK				MLR	MLR		
	comp=Z,521nm,14.0s						
YAK				MLR	MLR		
	comp=N,270nm,13.0s						
YAK				MLR	MLR		
	comp=E,120nm,13.0s						
YAK	**Yakutsk**	**24.04**	**344**	*e*P	**P**	**21 42 06.8**	**-1.3**
	comp=E,38nm,0.8s						
SEY	**Seymchan**	**24.07**	**10**	P	**P**	**21 42 08.5**	**+0.2**
	comp=E,31nm,1.0s,baz=185,slow=7.8,SNR=41						
CIT	**Chita**	**24.07**	**311**	*e*P	**P**	**21 42 08.4**	**-0.2**
CIT				*e*		21 42 23.9	
HHC	**Hu-ho-hao-te**	**24.27**	**283**	*e*P	**P**	**21 42 10.5**	**-0.1**
HHC				pP	sP	21 42 18.1	+0.5
HHC				sP	pP	21 42 21.3	+5.8
HHC				S	**S**	**21 46 25.4**	**-3.3**
HHC				pmax	pmax		
	comp=E,14nm,0.9s						
HHC				pmax	pmax		
	comp=E,990nm,13.4s						
HHC				LR	LR		
	comp=E,470nm,12.6s						
HHC				LR	LR		
	comp=E,1μm,14.1s						
HHC				LR	LR		
	comp=E,1μm,13.9s						
SSLB	**Suanglung**	**24.60**	**237**	*e*P	**P**	**21 42 11

comp=Z,6.0nm,1.1s
BILL Bilibino 31.21 16 *e*P P **21 43 13.1 +0.8**
comp=Z,6.6nm,1.1s
LZH Lanzhou 31.24 276 ⇑P P **21 43 14.0 +0.9**
LZH pP sP 21 43 23.0 +2.8
LZH sP pP 21 43 26.8 +8.7
LZH PP **PnPn 21 44 15.3 +0.2**
LZH S **S 21 48 18.1 -0.9**
LZH sS sS 21 48 29.6 +2.4
LZH SS **SnSn 21 49 58.0 -3.6**
LZH pmax pmax
comp=Z,33nm,1.0s
LZH pmax pmax
comp=Z,160nm,4.4s
LZH LR LR
comp=Z,910nm,12.8s
LZH LR LR
comp=Z,1μm,13.0s
LZH LR LR
comp=Z,1μm,14.6s
MOY Mondy 31.59 307 *e*P P **21 43 16.5 +0.5**
TIXI Tiksi 33.03 352 *i*P P **21 43 27.9 -0.3**
TIXI pmax pmax
comp=Z,5.0nm,1.2s
TIXI Tiksi 33.03 352 *e*P P **21 43 28.4 +0.2**
comp=Z,5.3nm,1.2s
GYA Guiyang 33.20 258⇑ *i*P P **21 43 29.3 -1.0**
GYA pP sP 21 43 37.8 +0.5
GYA PP **PnPn 21 44 42.0 +1.7**
GYA PcP **PcP 21 46 15.5 +2.7**
GYA S **S 21 48 47.3 -2.2**
GYA ScP **ScP 21 49 56.0 -0.4**
GYA SS **SnSn 21 50 47.8 -1.4**
GYA ScS **ScS 21 53 55.4 -1.8**
GYA pmax pmax
comp=Z,60nm,0.8s
GYA pmax pmax
comp=Z,140nm,5.1s
GYA LR LR
comp=Z,530nm,16.5s
GYA LR LR
comp=Z,490nm,17.1s
GYA LR LR
comp=Z,510nm,16.6s
CD2 Chengdu 33.26 267 P P **21 43 29.8 -1.0**
CD2 pmax pmax
comp=Z,30nm,0.8s
GTA Gaotai 33.38 284 *e*P P **21 43 33.3 +1.5**
GTA pP sP 21 43 38.6 -0.2
GTA sP pP 21 43 42.0 +5.2
GTA S **S 21 48 48.4 -3.7**
GTA sS sS 21 49 00.1 -0.3
GTA SS **SnSn 21 50 50.3 -3.0**
GTA pmax pmax
comp=Z,33nm,1.1s
GTA pmax pmax
comp=Z,130nm,5.2s
GTA LR LR
comp=Z,470nm,15.0s
GTA LR LR
comp=Z,1μm,17.3s
GTA LR LR
comp=Z,1μm,13.5s
KMI Kunming 36.89 259 P P **21 44 02.1 -0.2**
KMI pP sP 21 44 09.1 -0.3
KMI sP pP 21 44 12.5 +5.2
KMI S **S 21 49 47.0 +0.4**
KMI pmax pmax
comp=Z,18nm,1.2s
KMI pmax pmax
comp=Z,170nm,5.1s
KMI LR LR
comp=Z,400nm,15.5s
KMI LR LR
comp=Z,460nm,17.5s
KMI LR LR
comp=Z,610nm,16.1s
WMQ Urumqi 41.14 295 P P **21 44 38.3 +0.8**
WMQ pP sP 21 44 46.1 +1.5
WMQ sP pP 21 44 49.5 +6.9
WMQ PP **PnPn 21 46 17.3 +0.5**
WMQ pmax pmax
comp=Z,18nm,1.0s
WMQ pmax pmax
comp=Z,92nm,9.6s
WMQ LR LR
comp=Z,500nm,15.0s
WMQ LR LR
comp=Z,290nm,15.0s
WMQ LR LR
comp=Z,150nm,21.4s
TNTI Ternate 41.24 205 P P **21 44 40.4 +2.0**
ZAA0 Zalesovo Array 41.43 310 *e*P P **21 44 39.7 +0.1**
ZALV Zalesovo Beam 41.43 310 P P **21 44 40.3 +0.7**
comp=Z,7.7nm,0.7s,baz=89,slow=7.3,SNR=41
ZALV PcP **PcP 21 46 38.0 +0.7**
comp=Z,5.6nm,0.8s,baz=85,slow=3.7,SNR=5.7
ZALV LR LR 22 02 06.3
comp=Z,408nm,18.5s,baz=54,slow=36
CRAI Chiangrai 41.48 255 P P **21 44 42.2 +1.7**
comp=Z,30nm,1.0s
NRIK Noril'sk 41.69 334 P P **21 44 42.2 +0.7**
comp=Z,1.2nm,0.3s,baz=99,slow=8.3,SNR=7.3
SWI Sorong 41.69 198 P P **21 44 45.3 +3.2**
KHON Khomkaen 42.14 248 P P **21 44 46.9 +1.1**
comp=Z,8.2nm,0.9s,comp=Z,320nm
NVS Novosibirsk 42.28 312 *e*P P **21 44 46.8 +0.2**
NVS pmax pmax
comp=N,5.0nm,0.9s
NVS pmax pmax
comp=E,10.0nm,0.9s
NVS pmax pmax
comp=Z,14nm,0.9s
UTTA Uttaradit 42.88 252 P P **21 44 52.9 +1.1**
comp=Z,3.3nm,1.1s
LAMP Lampang 43.08 254 P P **21 44 54.5 +1.0**
comp=Z,3.7nm,0.9s
PBKT Sadao Pong 43.33 250 P P **21 44 55.8 +0.4**
comp=Z,8.4nm,1.3s
CHTO Chiang Mai 43.41 255 P P **21 44 56.4 +0.2**
comp=Z,43nm,1.0s
CHTO Chiang Mai 43.41 255 *e*P P **21 44 56.4 +0.2**
CHTO pmax pmax
comp=Z,8.0nm,0.8s
CHTO Chiang Mai 43.41 255 *e*P P **21 44 56.4 +0.2**
comp=Z,7.7nm,0.8s
LSA Lhasa 43.55 274 *e*P P **21 44 57.8 0.0**
LSA pmax pmax
comp=Z,10.0nm,0.9s
LSA Lhasa 43.55 274 *e*P P **21 44 57.8 0.0**
comp=Z,10.0nm,0.9s
CM31 Chiang Mai Arr 43.63 254 *e*P P **21 44 58.8 +0.8**
CMAR Chiang Mai Arr 43.63 254 P P **21 44 58.4 +0.4**
comp=Z,2.1nm,0.8s,baz=47,slow=6.7,SNR=35
CMAR LR LR 22 02 21.0
comp=Z,122nm,21.4s,baz=270,slow=35
CM01 Chiang Mai Arr 43.64 254 *e*P P **21 44 58.2 +0.2**
MK31 Makanchi Array 44.15 300 *e*P P **21 45 02.0 +0.2**
MK31 Makanchi Array 44.15 300 *e*P P **21 45 02.0 +0.2**
MKAR Makanchi Array 44.15 300 P P **21 45 02.2 +0.4**
comp=Z,14nm,0.9s,baz=83,slow=8.7,SNR=120
SANI Sanana 44.34 205 P P **21 45 04.6 +1.0**
MAKZ Makanchi 44.35 300 *e*P P **21 45 04.0 +0.6**
MAKZ pmax pmax
comp=Z,24nm,1.0s
MAKZ Makanchi 44.35 300 *e*P P **21 45 04.0 +0.6**
comp=Z,24nm,1.0s
CHBT CHBT 44.91 245 P P **21 45 10.6 +2.5**
comp=Z,31nm,1.2s
KURK Kurchatov 45.65 306 *e*P P **21 45 14.0 +0.4**
KURK pmax pmax
comp=Z,29nm,0.9s
KURK Kurchatov 45.65 306 *e*P P **21 45 14.0 +0.4**
comp=Z,29nm,0.9s
KURK Kurchatov 45.65 306 P P **21 45 14.1 +0.4**
SNR=17
KURK Kurchatov 45.65 306 P P **21 45 14.1 +0.4**
SNR=17
COLA College 46.16 33 *e*P P **21 45 18.8 +1.3**
COLA pmax pmax
comp=Z,2.0nm,0.8s
IL1 Eielson Array 46.58 34 *e*P P **21 45 21.7 +0.9**
ILAR Eielson Array 46.58 34 P P **21 45 21.8 +1.0**
comp=Z,2.9nm,0.8s,baz=267,slow=6.5,SNR=32
ILB Eielson Array 46.58 34 *e*P P **21 45 22.1 +1.3**
PDGK Podgornoye 47.01 296 *i*P P **21 45 23.4 -1.0**
PDGK pmax pmax
comp=Z,20nm,1.3s
TAPN Taplejung 47.33 273 *e*P P **21 45 27.9 +0.4**
comp=Z,57nm,1.1s
ODAN Odare 47.82 272 *e*P P **21 45 31.6 +0.3**
comp=Z,38nm,1.1s
RAMN Ramite 48.38 273 *e*P P **21 45 36.0 +0.4**
comp=Z,95nm,1.0s
GUN Gumba 48.47 274 *e*P P **21 45 36.9 +0.5**
comp=Z,142nm,1.1s
KKN Kakani 48.99 275 *e*P P **21 45 40.8 +0.6**
comp=Z,80nm,0.9s
PKIN Phulchoki 49.00 274 *e*P P **21 45 41.0 +0.6**
GKN Gorkha 49.38 275 *e*P P **21 45 43.1 -0.1**
comp=Z,42nm,0.9s
CHKZ Chkalovo 49.77 312 *i*P P **21 45 44.6 -0.9**
CHKZ pmax pmax
comp=Z,24nm,1.0s
VOSK Vostochnaya 49.80 311 *i*P P **21 45 45.7 -0.2**
VOSK pmax pmax
comp=Z,26nm,1.1s
TKM2 Tokmak 2 49.83 297 *i*P P **21 45 47.8 +1.3**
TKM2 pmax pmax
comp=Z,35nm,1.2s
TKM2 Tokmak 2 49.83 297 *e*P P **21 45 46.1 -0.4**
comp=Z,26nm,0.7s
BVAR Borovoye Array 50.07 311 P P **21 45 48.5 +0.7**
comp=Z,6.7nm,0.6s,baz=77,slow=8.4,SNR=41
BRVK Borovoye 50.12 311*c i*P P **21 45 48.9 +0.6**
BRVK pmax pmax
comp=Z,23nm,1.2s
BRVK Borovoye 50.12 311 *e*P P **21 45 49.2 +0.9**
comp=Z,15nm,0.9s
BRVK Borovoye 50.12 311 P P **21 45 49.4 +1.1**
SNR=6.5
BRVK Borovoye 50.12 311 P P **21 45 49.4 +1.1**
SNR=6.5
OTUK Ortayu 50.24 305 *i*P P **21 45 49.4 +0.1**
OTUK pmax pmax
comp=Z,10.0nm,1.0s
KOLN Koldanda 50.29 276 *e*P P **21 45 50.7 +0.5**
comp=Z,32nm,1.1s
FRU Bishkek 50.54 297 *e*P P **21 45 51.0 -0.6**
PYUN Piuthan 50.60 276 *e*P P **21 45 53.3 +0.8**
comp=Z,111nm,1.1s
AAK Ala-Archa 50.69 297 *e*P P **21 45 53.3 +0.3**
AAK pmax pmax
comp=Z,14nm,1.4s
AAK Ala-Archa 50.69 297 *e*P P **21 45 53.3 +0.3**
comp=Z,14nm,1.4s
AAK Ala-Archa 50.69 297 P P **21 45 53.6 +0.6**
SNR=5.3
AAK Ala-Archa 50.69 297 P P **21 45 53.6 +0.6**
SNR=5.3
KSH Kashi 50.83 293 P P **21 45 58.4 +4.4**
KSH *e*pP sP 21 46 05.6 +4.5
KSH *e*PP **PP 21 47 55.8 +5.8**
KSH S **S 21 53 12.1 +2.7**
KSH pmax pmax
comp=Z,10.0nm,1.0s
KSH pmax pmax
comp=Z,320nm,9.0s
KSH LR LR
comp=Z,360nm,8.9s
KSH LR LR
comp=Z,270nm,8.3s
KSH LR LR
comp=Z,420nm,17.7s
ZRNK Zerenda 50.89 311 *i*P P **21 45 54.2 +0.1**
ZRNK pmax pmax
comp=Z,27nm,1.1s
EKS2 Erkin-Say 51.17 297 *e*P P **21 45 56.7 +0.2**
EKS2 pmax pmax
comp=Z,13nm,0.6s
EKS2 Erkin-Say 51.17 297 *e*P P **21 45 56.7 +0.2**
comp=Z,13nm,0.6s
INK Inuvik 51.48 28 *e*P P **21 46 00.0 +1.8**
INK pmax pmax
comp=Z,5.0nm,0.9s
INK Inuvik 51.48 28 *e*P P **21 45 60.0 +1.8**
comp=Z,4.7nm,0.9s
MNAS Manas 52.11 298 *i*P P **21 46 03.2 -0.4**
MNAS pmax pmax
comp=Z,18nm,1.0s
SFK Sufi-Kurgan 52.38 294 *i*P P **21 46 06.4 +0.7**
SFK pmax pmax
comp=Z,23nm,1.2s
KK31 Karatay Array 53.23 299 *i*P P **21 46 10.7 -1.0**
KK31 pmax pmax
comp=Z,8.0nm,1.0s
KKAR Karatay Array 53.23 299 *e*P P **21 46 10.6 -1.1**
KKAR pmax pmax
comp=Z,6.0nm,0.9s
KKAR Karatay Array 53.23 299 *e*P P **21 46 10.6 -1.1**
comp=Z,6.5nm,0.9s
SVE Sverdlovsk 54.32 318*de*P P **21 46 20.6 +1.2**
SVE pmax pmax
comp=Z,44nm,1.2s
SVE MLR MLR
comp=Z,1μm,15.0s
SOKR Solikamsk 55.30 322 *e*P P **21 46 23.2 -3.2**
SOKR pmax pmax
comp=Z,32nm,1.3s
ARU Arti 55.53 318 P P **21 46 28.9 +0.7**
comp=Z,25nm,1.0s,baz=77,slow=3.9,SNR=36
ARU Arti 55.53 318*c i*P P **21 46 28.6 +0.4**
ARU 21 48 30.6
ARU S **S 21 54 13.8 +1.1**
ARU SS **SS 21 57 55.9 -1.1**
ARU pmax pmax
comp=Z,50nm,1.2s
ARU MLR MLR
comp=Z,944nm,18.0s
ARU Arti 55.53 318 *e*P P **21 46 28.9 +0.7**
comp=Z,36nm,1.0s
PWJI Pagerwojo 55.61 219 P P **21 46 28.7 -0.5**
LHSI Lahat 56.59 230 P P **21 46 37.6 +1.4**
LEM Lembang 56.73 224 P P 21 46 43.7 +6.3
MDSI Maura Dua 56.74 229 P P **21 46 37.2 -0.1**
MNAI Manna 57.36 230 *e*P P **21 46 40.7 -1.0**
comp=Z,182nm,1.2s
AB31 Akbulak array 57.53 310 *i*P P **21 46 41.9 -0.6**
AB31 pmax pmax
comp=Z,7.0nm,0.8s
ABKAR Akbulak array 57.53 310 *e*P P **21 46 42.8 +0.3**
comp=Z,3.4nm,0.4s
KBL Kabul 57.98 290 *e*P P **21 46 46.4 +0.2**
KBL pmax pmax
comp=Z,16nm,1.0s
KBL Kabul 57.98 290 *e*P P **21 46 46.4 +0.2**
comp=Z,16nm,1.0s
AKTO Aktyubinsk 58.17 311 P P **21 46 47.0 0.0**
comp=Z,5.5nm,0.8s,baz=69,slow=12,SNR=16
AKTO Aktyubinsk 58.17 311 P P **21 46 47.0 0.0**
AKTO pmax pmax
comp=Z,6.0nm,0.8s
WRAB Tennant Creek 59.74 190 *e*P P **21 46 58.2 +0.1**
WRAB pmax pmax
comp=Z,19nm,1.4s
WRAB Tennant Creek 59.74 190 *e*P P **21 46 58.2 +0.1**
comp=Z,19nm,1.4s
WB2 Warramunga Arr 59.75 190 *e*P P **21 46 58.3 +0.1**
comp=Z,9.2nm,0.9s
WRA Warramunga Arr 59.75 190 P P **21 46 57.4 -0.8**
comp=Z,2.0nm,0.8s,baz=8.9,slow=7.0,SNR=28
RES Resolute Bay 59.81 15 *e*P P **21 46 58.9 +0.9**
RES pmax pmax
comp=Z,8.0nm,1.0s
RES Resolute Bay 59.81 15 *e*P P **21 46 58.9 +0.9**
comp=Z,8.4nm,1.0s
YKA Yellowknife Ar 60.89 31 P P **21 47 06.4 +0.9**
comp=Z,1.9nm,0.9s,baz=298,slow=6.8,SNR=24
YKB5 Yellowknife Ar 60.89 31 *e*P P **21 47 06.0 +0.5**
TMCR Tamitsa 61.31 331 *e*P P **21 47 08.7 +0.4**
TMCR pmax pmax
comp=Z,13nm,0.7s
ARCES ARCESS Array B 62.21 339 P P **21 47 14.0 -0.4**
comp=Z,3.2nm,0.7s,baz=28,slow=13,SNR=4.5
ARCES ARCESS Array B 62.21 339 P P **21 47 14.0 -0.4**
ARCES pmax pmax
comp=Z,4.0nm,0.8s
KLMR Klimovskoe 62.48 328 *e*P P **21 47 15.5 -0.8**
KLMR *e* 21 49 34.0
KLMR pmax pmax
comp=Z,15nm,1.2s
DAG Danmarks Havn 63.43 355 *i*P P **21 47 22.7 +0.4**
comp=Z,13nm,1.1s
DAG Danmarks Havn 63.43 355 *i*P P **21 47 22.7 +0.4**
DAG pmax pmax
comp=Z,16nm,1.1s
AS01 Alice Springs 63.47 190 *e*P P **21 47 23.8 +0.6**
AS31 Alice Springs 63.47 190 *e*pP pP 21 47 30.1 +1.5
ASAR Alice Springs 63.48 190 P P **21 47 23.9 +0.7**
comp=Z,1.4nm,0.8s,baz=9.4,slow=6.0,SNR=13
ASAR Alice Springs 63.48 190 P P **21 47 24.0 +0.7**
ASAR pmax pmax
comp=Z,2.0nm,0.9s
GEYT Alibeck 63.98 299 P P **21 47 26.0 -0.7**
comp=Z,4.0nm,0.9s,baz=337,slow=3.4,SNR=8.0
LON Longmire 65.45 49 *e*P P **21 47 37.0 +0.8**
LON pmax pmax
comp=Z,21nm,1.8s
LON Longmire 65.45 49 *e*P P **21 47 37.0 +0.8**
comp=Z,21nm,1.8s
VRH Novokhopyorsk 66.77 318 *e*P P **21 47 43.7 -0.7**
VRH pmax pmax
comp=Z,10.0nm,1.0s
OBN Obninsk 67.03 323 *i*P P **21 47 46.4 +0.4**
OBN *i* 21 50 14.5
OBN pmax pmax
comp=Z,10.0nm,1.0s
OBN MLR MLR
comp=Z,443nm,15.0s
NEW Newport 67.29 46 *e*P P **21 47 49.4 +1.5**
NEW pmax pmax
comp=Z,10.0nm,1.4s
NEW Newport 67.29 46 *e*P P **21 47 49.4 +1.5**
comp=Z,9.5nm,1.4s
FIA1 FINESS Array S 67.33 332 *e*P P **21 47 48.0 +0.2**
FINES FINESS Array B 67.33 332 P P **21 47 48.4 +0.5**
comp=Z,7.9nm,0.8s,baz=48,slow=8.5,SNR=26
LPSR Galich'ya Gora 67.38 320 *e*P P **21 47 48.8 +0.5**
LPSR pmax pmax
comp=Z,10.0nm,1.0s
VSR Storozhevoye 68.07 319 *e*P P **21 47 52.1 -0.6**
VSR pmax pmax
comp=Z,10.0nm,1.3s
K05A Summer Lake 68.19 52 *e*P P **21 47 58.1 +4.3**
comp=Z,26nm,1.4s
SUMG Summit 68.20 1 *i*P P **21 47 55.0 +1.4**
SUMG Summit 68.20 1 *e*P P **21 47 55.0 +1.4**
SUMG pmax pmax
comp=Z,19nm,1.3s
SUMG Summit 68.20 1 *e*P P **21 47 55.0 +1.4**
comp=Z,19nm,1.3s
VSU Vasula 69.09 330*c i*P P **21 47 58.9 0.0**
VSU pmax pmax
comp=Z,49nm,1.7s
GOF Gofitskoye 69.58 312⇑ *i*P P **21 48 03.0 +0.8**
GOF pmax pmax
comp=Z,29nm,0.9s
WVOR Wild Horse Val 69.73 51 *e*P P **21 48 07.1 +3.7**
WVOR pmax pmax
comp=Z,24nm,0.8s
WVOR Wild Horse Val 69.73 51 *e*P P **21 48 07.1 +3.7**
comp=Z,24nm,0.8s
NCK Nalchik 70.17 310 *e*P P **21 48 06.8 +0.9**
NCK pmax pmax
comp=Z,14nm,1.1s
ZEI Tsey 70.41 310 *e*P P **21 48 07.0 -0.6**
ZEI pmax pmax
comp=Z,22nm,0.9s
KVAR Kislovodsk Arr 70.43 311 P P **21 48 07.8 +0.2**
comp=Z,28nm,1.1s,baz=178,slow=2.5,SNR=12
KIV Kislovodsk 70.44 311 *e*P P **21 48 08.7 +1.1**
KIV pmax pmax
comp=Z,53nm,1.1s
KIV Kislovodsk 70.44 311 *e*P P **21 48 09.3 +1.7**
comp=Z,45nm,1.0s
KIV Kislovodsk 70.44 311 P P **21 48 09.6 +2.0**
SNR=6.6
KIV Kislovodsk 70.44 311 P P **21 48 09.6 +2.0**
SNR=6.6
KBZ Khabaz 70.45 311 P P **21 48 08.6 +1.1**
comp=Z,12nm,0.9s,baz=46,slow=2.8,SNR=16
KBZ LR LR 22 20 23.5
comp=Z,333nm,18.9s,baz=199,slow=37
FFC Flin Flon 70.79 34 *e*P P **21 48 10.4 +1.0**
FFC pmax pmax
comp=Z,4.0nm,0.8s
FFC Flin Flon 70.79 34 *e*P P **21 48 10.4 +1.0**
comp=Z,4.3nm,0.8s
NEY Neytrino 70.83 311 *e*P P **21 48 11.2 +1.1**
NEY pmax pmax
comp=Z,2.0nm,0.8s
LRM Limekiln Ridge 71.31 46 *e*P P **21 48 15.0 +1.9**
GNI Garni 71.45 307 *e*P P **21 48 14.4 +0.5**
GNI pmax pmax
comp=Z,28nm,1.2s
AKH Akhalkalaki 71.47 309⇑ *i*P P **21 48 15.8 +1.8**
DLMT Dillon 71.51 46 *e*P P **21 48 17.1 +2.9**
comp=Z,12nm,1.3s
CHVG Ch'k'valeri 71.53 310⇑ *i*P P **21 48 14.9 +0.8**
BOZ Bozeman (W) 71.87 45 *e*P P **21 48 18.4 +2.1**
BOZ pmax pmax
comp=Z,4.0nm,1.0s
BOZ Bozeman (W) 71.87 45 *e*P P **21 48 18.4 +2.1**
comp=Z,4.4nm,1.0s
NC405 NORSAR Array S 72.28 338 *e*P P **21 48 19.2 +0.9**
NV01 Mina Array Sit 72.28 55 *e*P P **21 48 21.4 +2.3**
NVAR Mina Array Bea 72.28 55 P P **21 48 20.7 +1.6**
comp=Z,0.8nm,0.3s,baz=286,slow=7.1,SNR=5.0
NC303 NORSAR Array S 72.29 338 *e*P P **21 48 19.8 +1.4**
NC204 NORSAR Array S 72.42 338 *e*P P **21 48 19.5 +0.2**
HFS Hagfors 72.45 336 P P **21 48 20.0 +0.7**
comp=Z,5.8nm,0.7s,baz=34,slow=6.3,SNR=15
NB2 NORSAR Subarra 72.48 338 P P **21 48 19.7 +0.1**
comp=Z,12nm,0.9s,baz=36,slow=6.2
NOA NORSAR Array B 72.48 338 P P **21 48 20.0 +0.4**
comp=Z,8.3nm,0.8s,baz=38,slow=6.0,SNR=20
NOA LR LR 22 24 14.6
comp=Z,204nm,18.9s,baz=225,slow=39
NBO02 NORSAR Array S 72.58 338 *e*P P **21 48 20.7 +0.6**
NBO00 NORSAR Array S 72.61 338 *e*P P **21 48 21.3 +1.0**
AKASG Malin Array Be 73.26 323 P P **21 48 24.3 0.0**
comp=Z,2.5nm,0.6s,baz=42,slow=6.2,SNR=17
AKASG LR LR 22 22 38.9
comp=Z,300nm,18.0s,baz=90,slow=38
AKASG Malin Array Be 73.26 323 P P **21 48 24.3 0.0**
AKASG pmax pmax
comp=Z,4.0nm,0.7s
AKASG MLR MLR
comp=Z,300nm,18.0s
KIEV Kiev 73.28 323*d i*P P **21 48 24.7 +0.3**
KIEV pmax pmax
comp=Z,9.0nm,1.0s
IMW Indian Meadow 73.34 47 *e*P P **21 48 28.1 +2.8**
comp=Z,4.4nm,0.9s
FXWY Fox Creek 73.46 47 *e*P P **21 48 28.5 +2.6**
comp=Z,3.0nm,0.9s
MOOW Moose Ponds 73.55 47 *e*P P **21 48 28.8 +2.3**
comp=Z,2.9nm,1.0s
SUW Suwalki 73.61 328 *e*P P **21 48 27.0 +0.7**
SUW Suwalki 73.61 328 *e*P P **21 48 27.0 +0.7**
EPU East Promontor 74.07 49 *e*P P 21 48 35.2 +5.8
DUG Dugway, Tooele 74.58 50 *e*P P **21 48 34.9 +2.5**
DUG pmax pmax
comp=Z,30nm,2.0s
DUG Dugway, Tooele 74.58 50 *e*P P **21 48 34.9 +2.5**
comp=Z,30nm,2.0s
BW06 Boulder Array 74.84 47 *e*P P **21 48 35.0 +1.0**
PD31 Pinedale Array 74.84 47 *e*P P **21 48 35.1 +1.0**
PDAR Pinedale Array 74.84 47 P P **21 48 35.0 +1.0**
comp=Z,1.0nm,0.7s,baz=278,slow=1.9,SNR=12
SRU San Rafael Swe 76.63 50 *e*P P **21 48 46.8 +2.5**
SRU pmax pmax
comp=Z,6.0nm,0.7s
SRU San Rafael Swe 76.63 50 *e*P P **21 48 46.8 +2.5**
comp=Z,5.6nm,0.7s
KWP Kalwaria Pacla 76.99 325 *e*P P **21 48 47.6 +1.7**
KWP Kalwaria Pacla 76.99 325 *e*P P **21 48 47.7 +1.8**
BUR08 Bucovina Ar. S 77.29 322 *e*P P **21 48 48.9 +1.1**
BURAR Bucovina Array 77.30 322 ⇑ *i*P P **21 48 49.2 +1.4**
BURAR Bucovina Array 77.30 322 P P **21 48 49.1 +1.3**
CFR Carcaliu 77.59 319⇓ *i*P P **21 48 50.0 +0.7**
CFR Carcaliu 77.59 319⇓ *i*P P **21 48 50.0 +0.7**
KOLS Kolonicke sedl 77.70 325 *e*P P **21 48 50.7 +0.8**
KOLS pmax pmax
comp=Z,31nm,2.4s
KOLS Kolonicke sedl 77.70 325 *e*P P **21 48 50.7 +0.8**
STHS Stebnicka Huta 77.80 326 *e*P P **21 48 52.2 +1.8**

STHS				pmax	pmax			
	comp=Z,4.0nm,1.0s							
STHS	**Stebnicka Huta**	**77.80**	**326**	*e*P	**P**	**21**	**48**	**52.2 +1.8**
VRI	**Vrincioaia**	**77.81**	**320**	⇓*i*P	**P**	**21**	**48**	**52.6 +2.0**
OJC	**Ojcow**	**77.82**	**327**	*e*P	**P**	**21**	**48**	**52.1 +1.6**
OJC	**Ojcow**	**77.82**	**327**	*e*P	**P**	**21**	**48**	**52.1 +1.6**
PLOR	**Plostina**	**77.86**	**320**	⇑*i*P	**P**	**21**	**48**	**53.3 +2.4**
PLOR	**Plostina**	**77.86**	**320**	P	**P**	**21**	**48**	**53.2 +2.4**
CRVS	**Cervenica-Dubn**	**78.08**	**325**	*e*P	**P**	**21**	**48**	**53.0 +1.0**
CRVS	**Cervenica-Dubn**	**78.08**	**325**	*e*P	**P**	**21**	**48**	**53.0 +1.0**
PV05	**Paradox Valley**	**78.15**	**50**	*e*P	**P**	**21**	**48**	**54.8 +1.9**
NIE	**Niedzica**	**78.21**	**326**	*e*P	**P**	**21**	**48**	**54.5 +1.8**
NIE	**Niedzica**	**78.21**	**326**	*e*P	**P**	**21**	**48**	**54.5 +1.8**
BR131	**Keskin Array S**	**78.34**	**312**	*e*P	**P**	**21**	**48**	**54.8 +1.0**
BRTR	**Keskin Array B**	**78.34**	**312**	P	**P**	**21**	**48**	**54.6 +0.9**
	comp=Z,3.9nm,1.1s,baz=88,slow=4.2,SNR=16							
BRTR				PP	**PP**	**21**	**51**	**51.2 +0.9**
	comp=Z,1.3nm,1.1s,baz=77,slow=5.6,SNR=3.6							
DOPR	**Dopca**	**78.40**	**321**	⇑*i*P	**P**	**21**	**48**	**55.5 +1.7**
MLR	**Muntele Rosu**	**78.47**	**320**	⇓*i*P	**P**	**21**	**48**	**56.5 +2.1**
MLR	**Muntele Rosu**	**78.47**	**320**	P	**P**	**21**	**48**	**56.4 +2.1**
MLR	**Muntele Rosu**	**78.47**	**320**	⇓*i*P	**P**	**21**	**48**	**56.5 +2.1**
ANTO	**Ankara**	**78.73**	**313**	*e*P	**P**	**21**	**48**	**57.3 +1.5**
ANTO				pmax	pmax			
	comp=Z,14nm,0.9s							
ANTO	**Ankara**	**78.73**	**313**	*e*P	**P**	**21**	**48**	**57.3 +1.5**
	comp=Z,14nm,0.9s							
BR231	**Keskin MP Arra**	**78.75**	**313**	*e*P	**P**	**21**	**48**	**54.9 -1.1**
LANS	**Liptovska Anna**	**78.77**	**326**	*e*P	**P**	**21**	**48**	**57.4 +1.6**
LANS	**Liptovska Anna**	**78.77**	**326**	*e*P	**P**	**21**	**48**	**57.4 +1.6**
OKC	**Ostrava-Krasne**	**78.80**	**327**	*e*P	**P**	**21**	**48**	**57.2 +1.3**
OKC				*e*pP	**PcP**	**21**	**49**	**04.4 -0.3**
OKC	**Ostrava-Krasne**	**78.80**	**327**	*e*P	**P**	**21**	**48**	**57.2 +1.3**
OKC				*e*		21	49	04.4
MORC	**Moravsky Berou**	**79.10**	**328**	*e*P	**P**	**21**	**48**	**58.8 +1.1**
MORC				pmax	pmax			
	comp=Z,37nm,1.0s							
MORC	**Moravsky Berou**	**79.10**	**328**	*e*P	**P**	**21**	**48**	**58.8 +1.1**
	comp=Z,37nm,1.0s							
DPC	**Dobruska-Polom**	**79.16**	**329**	*e*P	**P**	**21**	**48**	**59.1 +1.2**
DPC				*e*pP	**PcP**	**21**	**49**	**05.3 -1.0**
DPC	**Dobruska-Polom**	**79.16**	**329**	*e*P	**P**	**21**	**48**	**59.1 +1.2**
DPC				*e*		21	49	05.3
UPC	**Upice**	**79.16**	**329**	*e*P	**P**	**21**	**48**	**58.9 +1.0**
UPC	**Upice**	**79.16**	**329**	*e*P	**P**	**21**	**48**	**58.9 +1.0**
KRLC	**Kraliky**	**79.18**	**328**	*e*P	**P**	**21**	**48**	**59.3 +1.2**
KRLC	**Kraliky**	**79.18**	**328**	*e*P	**P**	**21**	**48**	**59.3 +1.2**
ARR	**Arges**	**79.20**	**321**	⇓*i*P	**P**	**21**	**49**	**00.9 +2.6**
ARR	**Arges**	**79.20**	**321**	⇓*i*P	**P**	**21**	**49**	**00.9 +2.6**
PSZ	**Piszkesteto**	**79.51**	**325**	P	**P**	**21**	**49**	**02.1 +2.2**
PSZ				pmax	pmax			
	comp=Z,10μm,1.9s							
VYHS	**Vyhne**	**79.54**	**326**	*e*P	**P**	**21**	**49**	**01.3 +1.3**
VYHS				pmax	pmax			
	comp=Z,5.0nm,1.3s							
VYHS	**Vyhne**	**79.54**	**326**	*e*P	**P**	**21**	**49**	**01.3 +1.3**
BRG	**Berggiesshubel**	**79.68**	**330**	*e*P	**P**	**21**	**49**	**01.5 +0.8**
	comp=Z,12nm,1.4s							
BRG	**Berggiesshubel**	**79.68**	**330**	*e*P	**P**	**21**	**49**	**01.5 +0.8**
BRG				pmax	pmax			
	comp=Z,6.0nm,1.4s							
CLL	**Collm**	**79.69**	**331**	*i*P	**P**	**21**	**49**	**01.1 +0.4**
	comp=Z,12nm,1.1s							
CLL				*i*		21	49	12.8
CLL				*e*		21	49	23.0
CLL	**Collm**	**79.69**	**331**	*i*P	**P**	**21**	**49**	**01.1 +0.4**
CLL				*i*		21	49	12.8
CLL				pmax	pmax			
	comp=Z,8.0nm,1.1s							
PVCC	**Panska Ves**	**79.71**	**330**	*e*P	**P**	**21**	**49**	**02.2 +1.3**
PVCC	**Panska Ves**	**79.71**	**330**	*e*P	**P**	**21**	**49**	**02.2 +1.3**
VRAC	**Vranov**	**79.86**	**328**	P	**P**	**21**	**49**	**03.0 +1.3**
	comp=Z,8.2nm,0.9s,baz=47,slow=3.6,SNR=10							
VRAC	**Vranov**	**79.86**	**328**	⇓*i*P	**P**	**21**	**49**	**03.3 +1.6**
VRAC	**Vranov**	**79.86**	**328**	P	**P**	**21**	**49**	**03.0 +1.3**
VRAC				pmax	pmax			
	comp=Z,8.0nm,0.9s							
ZIMR		**80.07**	**319**	P	**P**	**21**	**49**	**04.5 +1.6**
GZR	**Gura Zlata**	**80.07**	**322**	⇓*i*P	**P**	**21**	**49**	**03.9 +0.9**
GZR	**Gura Zlata**	**80.07**	**322**	⇓*i*P	**P**	**21**	**49**	**03.9 +0.9**
GOPC	**GO Pecny, Ondr**	**80.11**	**329**	*e*P	**P**	**21**	**49**	**04.0 +0.9**
GOPC	**GO Pecny, Ondr**	**80.11**	**329**	*e*P	**P**	**21**	**49**	**04.0 +0.9**
PRU	**Pruhonice**	**80.15**	**329**	*e*P	**P**	**21**	**49**	**04.3 +1.0**
PRU	**Pruhonice**	**80.15**	**329**	*e*P	**P**	**21**	**49**	**04.3 +1.0**
TREC	**Trest**	**80.32**	**328**	*e*P	**P**	**21**	**49**	**05.6 +1.4**
TREC	**Trest**	**80.32**	**328**	*e*P	**P**	**21**	**49**	**05.6 +1.4**
BZS	**Buzias**	**80.45**	**323**	⇓*i*P	**P**	**21**	**49**	**05.5 +0.5**
SDCO	**Great Sand Dun**	**80.49**	**49**	*e*P	**P**	**21**	**49**	**05.7 0.0**
	comp=Z,11nm,1.3s							
NKC	**Novy Kostel**	**80.77**	**331**	*e*P	**P**	**21**	**49**	**07.7 +1.1**
NKC	**Novy Kostel**	**80.77**	**331**	*e*P	**P**	**21**	**49**	**07.7 +1.1**
MDVR	**Moldovita**	**81.03**	**322**	⇓*i*P	**P**	**21**	**49**	**08.9 +0.7**
MDVR	**Moldovita**	**81.03**	**322**	⇓*i*P	**P**	**21**	**49**	**08.9 +0.7**
RAYN	**Ar Rayn**	**81.12**	**293**	*e*P	**P**	**21**	**49**	**09.1 +0.2**
	comp=Z,13nm,1.1s							
KHC	**Kasperske Hory**	**81.21**	**329**	*e*P	**P**	**21**	**49**	**09.2 +0.2**
KHC	**Kasperske Hory**	**81.21**	**329**	*e*P	**P**	**21**	**49**	**09.3 +0.2**
KHC				pmax	pmax			
	comp=Z,4.0nm,1.0s							
KHC	**Kasperske Hory**	**81.21**	**329**	*e*P	**P**	**21**	**49**	**09.2 +0.2**
	comp=Z,3.7nm,1.0s							
CONA	**Conrad Observa**	**81.24**	**327**	*i*P	**P**	**21**	**49**	**11.0 +1.8**
	comp=Z,9.4nm,1.1s,SNR=5.4							
EKA	**Eskdalemuir Ar**	**81.29**	**341**	P	**P**	**21**	**49**	**09.9 +0.6**
	comp=Z,3.5nm,1.0s,baz=50,slow=6.6,SNR=4.0							
GERES	**GERESS Array B**	**81.39**	**329**	P	**P**	**21**	**49**	**10.5 +0.5**
	comp=Z,1.8nm,0.9s,baz=52,slow=5.2,SNR=12							
GERES	**GERESS Array B**	**81.39**	**329**	P	**P**	**21**	**49**	**10.5 +0.5**
GERES				pmax	pmax			
	comp=Z,1.0nm,0.8s							
GEA0	**GERESS Array S**	**81.40**	**329**	*e*P	**P**	**21**	**49**	**10.5 +0.4**
GRFO	**Grafenberg**	**81.67**	**331**	*e*P	**P**	**21**	**49**	**13.1 +1.7**
GRFO				pmax	pmax			
	comp=Z,13nm,1.0s							
GRFO	**Grafenberg**	**81.67**	**331**	*e*P	**P**	**21**	**49**	**13.1 +1.7**
	comp=Z,12nm,1.0s							
ANMO	**Albuquerque**	**81.82**	**51**	*e*P	**P**	**21**	**49**	**12.2 -0.5**
ANMO				pmax	pmax			
	comp=Z,1.0nm,1.0s							
SCHQ	**Schefferville**	**82.52**	**17**	LR	LR	22	29	06.1
	comp=Z,159nm,18.9s,baz=106,slow=38							
SOKA	**Soboth**	**82.57**	**327**	*i*P	**P**	**21**	**49**	**17.1 +0.9**
	comp=Z,13nm,1.0s,SNR=7.0							
MOTA	**Moosalm**	**83.63**	**330**	*i*PcP	**PcP**	**21**	**49**	**24.2 -1.8**
	comp=Z,8.8nm,0.9s,SNR=6.4							
RETA	**Reutte**	**83.65**	**330**	*i*P	**P**	**21**	**49**	**22.9 +1.1**
	comp=Z,15nm,1.1s							
FETA	**Feichten**	**84.04**	**330**	*i*PcP	**P**	**21**	**49**	**25.0 +1.0**
	comp=Z,8.8nm,1.0s							
DAVA	**Damuels**	**84.15**	**330**	*i*PcP	**P**	**21**	**49**	**25.9 +1.4**
	comp=Z,13nm,0.9s							
DAVOX	**Davos/Dischmat**	**84.57**	**330**	P	**P**	**21**	**49**	**27.7 +1.0**
	comp=Z,5.2nm,0.9s,baz=9.6,slow=6.9,SNR=7.6							
LOR	**Lormes**	**86.36**	**334**	P	**P**	**21**	**49**	**35.4 0.0**
LOR				pmax	pmax			
	comp=Z,10.0nm,1.0s							
LDF	**La Druitiere**	**86.49**	**337**	P	**P**	**21**	**49**	**35.9 0.0**
LDF				pmax	pmax			
	comp=Z,32nm,1.4s							
TX31	**Lajitas Ar. Si**	**87.40**	**54**	*e*P	**P**	**21**	**49**	**43.2 +2.3**
TXAR	**Lajitas Array**	**87.40**	**54**	P	**P**	**21**	**49**	**41.4 +0.5**
	comp=Z,0.9nm,0.9s,baz=299,slow=4.8,SNR=6.8							
TXAR				LR	LR	22	26	49.0
	comp=Z,288nm,20.1s,baz=0.0,slow=34							
CAF	**Calviac**	**89.01**	**334**	P	**P**	**21**	**49**	**49.0 +0.8**
TORD	**Torodi Ar. Bea**	**116.60**	**317**	PP	PP	21	56	43.5 -0.8
	comp=Z,3.0nm,1.0s,baz=28,slow=4.8,SNR=12							
SNAA	**Sanae**	**143.57**	**197**	PKP	PKPab	21	56	22.6 -0.8
VNA2	**Neumayer--Watz**	**145.13**	**196**	PKP	**PKPbc**	**21**	**56**	**28.9 -0.3**
	baz=84,slow=1.6							
VNA3	**Neumayer Olymp**	**145.36**	**195**	PKP	**PKPbc**	**21**	**56**	**28.7 -1.2**
VNA1	**Neumayer--Stat**	**145.53**	**196**	PKP	**PKPdf**	**21**	**56**	**29.0 -1.2**

*SOF **13** 21:39:39.1,42°.27N×26°.22E,h2km,MD2.5*
*CSEM **13** 21:39:39.3±0.1,42°.07N×26°.08E,h2km,ML2.8, Error ellipse: s-maj=4.2km s-min=2.5km az=57.0*
*ISK **13** 21:39:40.6,41°.96N×26°.30E,h5km,ML2.8*
*DDA **13** 21:39:41.5,42°.04N×26°.53E,h5km,Md2.9*

ISC 13 21:39:38.1±0.7, 42°.23N±0°.02×26°.25E±0°.02, h5km±7km, n96, σ1§33/96, 18C-16D, Bulgaria

Code	Station Name	Δ°	AZ°	Phase	ID	Time			Res
					Op	ISC	h	m	s	ISC
JMB	**Yambol**	**0.34**	**46**	*i*P		**Pg**	**21**	**39**	**45.5 +0.7**
EDRB	**Edirne**	**0.53**	**136**	*e*PG		**Pg**	**21**	**39**	**48.7 +0.3**
EDRB				*e*SG		**Sg**	**21**	**39**	**54.8 -0.4**
EDRB	**Edirne**	**0.53**	**136**	*e*Pg		**Pg**	**21**	**39**	**48.7 +0.3**
EDRB				*e*Sg		**Sg**	**21**	**39**	**54.8 -0.4**
DIM	**Dimitrovgrad**	**0.56**	**252**	*i*P		**Pg**	**21**	**39**	**49.4 +0.4**
KDZ	**Kurdzhali**	**0.85**	**227**	*i*P		**Pn**	**21**	**39**	**57.7 +0.9**
PHSR	**Pinarhisar**	**1.12**	**122**	*e*PG		**Pb**	**21**	**40**	**00.3 +0.3**
PHSR	**Pinarhisar**	**1.12**	**122**	*e*Pg		**Pb**	**21**	**40**	**00.3 +0.3**
PLD	**Plovdiv**	**1.16**	**264**	P		**Pb**	**21**	**40**	**00.0 -0.6**
PVL	**Pavlikeni**	**1.20**	**326**	P		**Pn**	**21**	**40**	**02.2 +0.7**
RZN	**Rozhen**	**1.27**	**245**	*i*P		**Pb**	**21**	**40**	**03.1 +0.5**
PRD	**Provadia**	**1.29**	**41**	P		**Pn**	**21**	**40**	**02.8 +0.1**
ALN	**Alexandroupoli**	**1.34**	**187**	*e*PN		**Pn**	**21**	**40**	**02.5 -1.0**
ALN	**Alexandroupoli**	**1.34**	**187**	*e*Pn		**Pn**	**21**	**40**	**02.5 -1.0**
KESN	**Edirne-Kesan**	**1.44**	**167**	*i*P		**Pn**	**21**	**40**	**04.1 -1.1**
KESN				*i*S		**Sn**	**21**	**40**	**23.6 -1.0**
KESN	**Edirne-Kesan**	**1.44**	**167**	P		**Pn**	**21**	**40**	**04.1 -1.1**
KESN				S		**Sn**	**21**	**40**	**23.6 -1.0**
ENEZ	**Enez**	**1.50**	**183**	*e*PN		**Pn**	**21**	**40**	**05.3 -0.3**
ENEZ	**Enez**	**1.50**	**183**	*e*Pn		**Pn**	**21**	**40**	**05.3 -0.3**
CRLT	**Corlu**	**1.56**	**134**	*e*PN		**Pn**	**21**	**40**	**07.7 +1.2**
CRLT	**Corlu**	**1.56**	**134**	*e*Pn		**Pn**	**21**	**40**	**07.7 +1.2**
ZIMR		**1.57**	**336**	⇑*i*P		**Pg**	**21**	**40**	**09.3 +1.1**
ZIMR		**1.57**	**336**	S		**Sg**	**21**	**40**	**31.7 +3.2**
TKR	**Tekirdag**	**1.57**	**142**	*e*PN		**Pn**	**21**	**40**	**07.4 +0.8**
TKR	**Tekirdag**	**1.57**	**142**	*e*Pn		**Pn**	**21**	**40**	**07.4 +0.8**
ERIK	**Erikli-Kesan**	**1.57**	**173**	*e*PN		**Pn**	**21**	**40**	**06.7 0.0**
ERIK	**Erikli-Kesan**	**1.57**	**173**	*e*Pn		**Pn**	**21**	**40**	**06.7 0.0**
RKY	**Sarkoy-Tekirda**	**1.69**	**155**	*e*PN		**Pn**	**21**	**40**	**08.7 +0.4**
RKY	**Sarkoy-Tekirda**	**1.69**	**155**	*e*Pn		**Pn**	**21**	**40**	**08.7 +0.4**
CTYL	**Yalikoy Yolu**	**1.70**	**116**	*e*PN		**Pb**	**21**	**40**	**10.9 +1.1**
CTYL	**Yalikoy Yolu**	**1.70**	**116**	*e*Pn		**Pb**	**21**	**40**	**10.9 +1.1**
GELI	**Tayfur-Gelibol**	**1.84**	**175**	*e*PN		**Pn**	**21**	**40**	**10.8 +0.5**
GELI	**Tayfur-Gelibol**	**1.84**	**175**	*e*Pn		**Pn**	**21**	**40**	**10.8 +0.5**
MRMT	**Marmara Adasi**	**1.91**	**148**	*e*PN		**Pn**	**21**	**40**	**11.9 +0.5**
MRMT	**Marmara Adasi**	**1.91**	**148**	*e*Pn		**Pn**	**21**	**40**	**12.0 +0.5**
CTKS	**Kestanelik-??a**	**1.96**	**120**	*e*PN		**Pb**	**21**	**40**	**14.2 0.0**
CTKS	**Kestanelik-??a**	**1.96**	**120**	*e*Pn		**Pb**	**21**	**40**	**14.2 0.0**
PSN	**Preselentsi**	**2.03**	**44**	P		**Pb**	**21**	**40**	**15.5 0.0**
GADA	**Gvkgeada**	**2.06**	**188**	*e*PN		**Pn**	**21**	**40**	**14.0 +0.7**
GADA	**Gvkgeada**	**2.06**	**188**	*e*Pn		**Pn**	**21**	**40**	**14.0 +0.7**
BUC1	**Bucharest**	**2.12**	**356**	S		**Sg**	**21**	**40**	**47.8 +1.5**
BUC1	**Bucharest**	**2.12**	**356**	S		**Sg**	**21**	**40**	**47.8 +1.5**
BGKT	**Bogazkoy**	**2.16**	**118**	*e*PN		**Pn**	**21**	**40**	**17.0 +2.3**
BGKT	**Bogazkoy**	**2.16**	**118**	*e*Pn		**Pn**	**21**	**40**	**17.0 +2.3**
MSAB	**Monastry St. A**	**2.19**	**31**	⇓*i*P		**Pg**	**21**	**40**	**19.5 -0.6**
MSAB	**Monastry St. A**	**2.19**	**31**	⇓*i*P		**Pg**	**21**	**40**	**19.5 -0.6**
MSAB				S		**Sb**	**21**	**40**	**44.9 -0.6**
VTS	**Vitosha**	**2.28**	**280**	⇓*i*P		**Pn**	**21**	**40**	**17.7 +1.1**
VTS	**Vitosha**	**2.28**	**280**	S		**Sn**	**21**	**40**	**45.4 +0.2**
VTS	**Vitosha**	**2.28**	**280**	⇓*i*P		**Pn**	**21**	**40**	**17.7 +1.1**
KLYT	**Kilyos**	**2.31**	**114**	*e*PN		**Pn**	**21**	**40**	**19.3 +2.6**
KLYT	**Kilyos**	**2.31**	**114**	*e*Pn		**Pn**	**21**	**40**	**19.3 +2.6**
ISK	**Istanbul-Kandi**	**2.40**	**118**	*e*PN		**Pn**	**21**	**40**	**20.5 +2.4**
ISK	**Istanbul-Kandi**	**2.40**	**118**	*e*Pn		**Pn**	**21**	**40**	**20.5 +2.4**
SULR		**2.45**	**0**	⇑*i*P		**Pg**	**21**	**40**	**25.7 +0.7**
SULR		**2.45**	**0**	⇑*i*P		**Pg**	**21**	**40**	**25.7 +0.7**
CVDA	**Cernavoda**	**2.47**	**31**	S		**Sg**	**21**	**40**	**56.8 -0.8**
CVDA	**Cernavoda**	**2.47**	**31**	S		**Sg**	**21**	**40**	**56.8 -0.8**
HUMR	**Humele**	**2.48**	**338**	⇑*i*P		**Pg**	**21**	**40**	**26.1 +0.5**
HUMR	**Humele**	**2.48**	**338**	⇑*i*P		**Pg**	**21**	**40**	**26.1 +0.5**
HUMR				S		**Sg**	**21**	**40**	**59.3 +1.6**
AMRR	**Amara**	**2.51**	**18**	S		**Sg**	**21**	**40**	**57.0 -1.6**
AMRR	**Amara**	**2.51**	**18**	S		**Sg**	**21**	**40**	**57.0 -1.6**
KCTX	**Karacabey (Bur**	**2.52**	**140**	*e*PN		**Pn**	**21**	**40**	**21.0 +1.2**
KCTX	**Karacabey (Bur**	**2.52**	**140**	*e*Pn		**Pn**	**21**	**40**	**21.0 +1.2**
OUR	**Ouranopolis**	**2.55**	**223**	*e*PN		**Pn**	**21**	**40**	**22.7 +2.5**
TIRR	**Tirgusor**	**2.73**	**35**	⇑*i*P		**Pb**	**21**	**40**	**27.6 +0.2**
TIRR	**Tirgusor**	**2.73**	**35**	⇑*i*P		**Pb**	**21**	**40**	**27.6 +0.2**
TIRR				S		**Sb**	**21**	**41**	**03.3 +2.2**
GOLR		**2.77**	**341**	⇑*i*P		**Pb**	**21**	**40**	**26.3 -1.8**
GOLR		**2.77**	**341**	⇑*i*P		**Pb**	**21**	**40**	**26.3 -1.8**
SECR		**2.81**	**357**	⇓*i*P		**Pb**	**21**	**40**	**27.6 -1.1**
SECR		**2.81**	**357**	⇓*i*P		**Pb**	**21**	**40**	**27.6 -1.1**
BALB	**Balikesir**	**2.87**	**154**	*e*PN		**Pn**	**21**	**40**	**25.7 +1.2**
BALB	**Balikesir**	**2.87**	**154**	*e*Pn		**Pn**	**21**	**40**	**25.7 +1.2**
HORT	**Hortiatis**	**2.88**	**237**	*e*PN		**Pb**	**21**	**40**	**28.4 -1.6**
HRT	**Hereke**	**2.92**	**118**	*e*PN		**Pn**	**21**	**40**	**28.1 +2.8**
HRT	**Hereke**	**2.92**	**118**	*e*Pn		**Pn**	**21**	**40**	**28.1 +2.8**
CFR	**Carcaliu**	**3.25**	**24**	⇓*i*P		**Pb**	**21**	**40**	**34.9 -1.3**
CFR	**Carcaliu**	**3.25**	**24**	⇓*i*P		**Pb**	**21**	**40**	**34.9 -1.3**
CFR				S		**Sb**	**21**	**41**	**16.0 0.0**
MLR	**Muntele Rosu**	**3.27**	**356**	⇑*i*P		**Pb**	**21**	**40**	**33.4 -3.3**
MLR	**Muntele Rosu**	**3.27**	**356**	⇑*i*P		**Pb**	**21**	**40**	**33.4 -3.3**
ARR	**Arges**	**3.35**	**340**	⇑*i*P		**Pg**	**21**	**40**	**41.0 -1.3**
PLOR	**Plostina**	**3.63**	**4**	⇓*i*P		**Pb**	**21**	**40**	**39.1 -3.7**
PLOR	**Plostina**	**3.63**	**4**	⇓*i*P		**Pb**	**21**	**40**	**39.1 -3.7**
VRI	**Vrincioaia**	**3.65**	**5**	⇓*i*P		**Pb**	**21**	**40**	**39.9 -3.2**
VRI	**Vrincioaia**	**3.65**	**5**	⇓*i*P		**Pb**	**21**	**40**	**39.9 -3.2**
LOT	**Lotru**	**3.68**	**332**	⇓*i*P		**Pn**	**21**	**40**	**39.4 +3.6**
LOT	**Lotru**	**3.68**	**332**	⇓*i*P		**Pn**	**21**	**40**	**39.4 +3.6**
DOPR	**Dopca**	**3.79**	**351**	⇓*i*P		**Pn**	**21**	**40**	**39.5 +2.3**
DOPR	**Dopca**	**3.79**	**351**	⇓*i*P		**Pn**	**21**	**40**	**39.5 +2.3**
KUBS	**Kucevo**	**3.99**	**305**	*e*Pn		**Pn**	**21**	**40**	**39.3 -0.6**
GZR	**Gura Zlata**	**4.04**	**323**	⇑*i*P		**Pn**	**21**	**40**	**43.0 +2.3**
GZR	**Gura Zlata**	**4.04**	**323**	⇑*i*P		**Pn**	**21**	**40**	**43.0 +2.3**
MDVR	**Moldovita**	**4.17**	**309**	⇑*i*P		**Pn**	**21**	**40**	**43.4 +0.9**
MDVR	**Moldovita**	**4.17**	**309**	⇑*i*P		**Pn**	**21**	**40**	**43.4 +0.9**
GRUS	**Gruza**	**4.38**	**294**	*e*Pn		**Pn**	**21**	**40**	**46.6 +1.3**
TRUS	**Trudelj**	**4.71**	**297**	*e*Pn		**Pn**	**21**	**40**	**50.5 +0.1**
BZS	**Buzias**	**4.76**	**317**	⇑*i*P		**Pn**	**21**	**41**	**51.6 +1.1**
BZS	**Buzias**	**4.76**	**317**	⇑*i*P		**Pn**	**21**	**41**	**51.6 +1.1**
DIVS	**Divibare**	**4.95**	**294**	*e*Pn		**Pn**	**21**	**40**	**54.0 +0.9**

JMA 13 21:42:14.8±0.1, 38°.06N×141°.78E, h53km±1km, M3.5, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time			Res
					Op	ISC	h	m	s	ISC
JIO	**Ouri**	**0.52**	**319**	P		Pn	21	42	26.6	+0.1
JIO				S		Sn	21	42	34.8	-0.1
JMM	**Marumori**	**0.80**	**256**	P		Pn	21	42	29.9	-0.1
JMM				*e*S		Sn	21	42	41.4	+0.3
JOU	**Okura**	**0.93**	**289**	P		Pn	21	42	31.9	+0.2
JOU				S		Sn	21	42	44.5	+0.4
JMK	**Ichinoseki**	**0.99**	**334**	P		Pn	21	42	32.6	+0.1
JMK				S		Sn	21	42	45.9	+0.4
JFK	**Kawauchi**	**1.00**	**226**	P		Pn	21	42	32.8	+0.2
JFK				S		Sn	21	42	45.8	+0.1
JFT	**Otama**	**1.27**	**245**	P		Pn	21	42	36.9	+0.7
JFT				*e*S		Sn	21	42	52.9	+0.8
JYS	**Shirataka**	**1.36**	**277**	P		Pn	21	42	38.1	+0.6
JYK	**Kaneyama**	**1.41**	**308**	P		Pn	21	42	38.5	+0.4
JOM	**Ohasama**	**1.46**	**345**	P		Pn	21	42	39.9	+1.1
JOM				S		Sn	21	42	57.6	+0.7
JYA	**Atsumi**	**1.71**	**289**	P		Pn	21	42	42.8	+0.6
MAT	**Matsushiro**	**3.23**	**243**	P		Pn	21	43	00.6	-2.4
MAT				*e*S		Sn	21	43	12.8	-27

IDC 13 21:42:31.5±1.7, 37°.03N×140°.07E, h0km, mb3.7/4, mb1 3.8/6, mb1mx3.4/64, mbtmp3.8/6, ML3.0/1, Error ellipse: s-maj=38.6km s-min=21.3km az=63.0, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time			Res
					Op	ISC	h	m	s	ISC
MJAR	**Matsushiro Arr**	**1.57**	**252**	Pg		Pn	21	42	59.8	-0.8
	1.4nm,0.3s,baz=86,slow=16,SNR=4.2									
JHJ	**Hachijo jima 2**	**3.91**	**183**	Pn		Pn	21	43	30.9	-2.0
	2.6nm,0.3s,baz=354,slow=18,SNR=4.6									
USRK	**Ussuriysk Ar.**	**9.43**	**322**	Pn		Pn	21	44	50.0	+1.5
	baz=122,slow=13,SNR=7.1									
ZALV	**Zalesovo Beam**	**41.12**	**312**	P		P	21	50	15.6	-1.4
	0.5nm,0.3s,baz=99,slow=9.2,SNR=3.7									
MKAR	**Makanchi Array**	**43.20**	**302**	P		P	21	50	34.1	0.0
	1.1nm,0.9s,baz=88,slow=8.9,SNR=4.0									
WRA	**Warramunga Arr**	**56.93**	**186**	P		P	21	52	18.8	+0.3
	0.7nm,0.8s,baz=2.8,slow=6.9,SNR=4.8									
ASAR	**Alice Springs**	**60.65**	**186**	P		P	21	52	44.7	+0.3
	0.4nm,0.8s,baz=22,slow=8.0,SNR=4.3									

*IDC **13** 21:43:42.9±5.7, 14°.03S×170°.79E, h597km±60km, mb2.9/6, mb1 3.2/6, mb1mx2.8/45, mbtmp3.9/6, Error ellipse: s-maj=58.0km s-min=32.4km az=131.0*

*ISCJB **13** 21:42:51.2±1.8, 14°.1S±0°.5×170°.7E±0°.4, h635km, mb3.5/6, Error ellipse: s-maj=76.5km s-min=20.3km az=138.7*

ISC 13 21:42:52.7±1.5, 14°.1S±0°.4×170°.7E±0°.4, h635km, n8, σ0§72/10, mb3.5/6, Vanuatu Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time			Res
					Op	ISC	h	m	s	ISC
STKA	**Stephens Creek**	**31.96**	**231**	P		**P**	**21**	**48**	**29.4 +0.2**
	1.9nm,0.5s,baz=54,slow=7.4,SNR=6.3									
WRA	**Warramunga Arr**	**35.19**	**255**	P		**P**	**21**	**48**	**55.6 -0.8**
	0.3nm,0.4s,baz=82,slow=7.2,SNR=3.5									
WRA				PcP		**PcP**	**21**	**51**	**08.6 -0.2**
	0.3nm,0.7s,baz=89,slow=3.4,SNR=3.3									
ASAR	**Alice Springs**	**36.00**	**249**	P		**P**	**21**	**49**	**02.5 -0.4**
	0.9nm,0.5s,baz=74,slow=9.0,SNR=8.3									
ASAR				PcP		**PcP**	**21**	**51**	**11.5

DJR	**Jarkent**	**1.68**	**180**	*e*P		**Pg**	**21 47 19.4**	**-0.4**
	6.4nm,0.2s							
DJR				*e*S		**Sg**	**21 47 40.1**	**-1.4**
	19nm,0.3s							
MAKZ	**Makanchi**	**1.72**	**62**	⇓S		**Sg**	**21 47 42.2**	**-0.6**
	2.7nm,0.5s							
MK31	**Makanchi Array**	**1.91**	**65**	⇑Pn		**Pg**	**21 47 23.1**	**-1.1**
	0.9nm,0.6s,baz=235,slow=18,SNR=34							
MK31				Sn		**Sg**	**21 47 48.1**	**-0.8**
	2.2nm,0.5s,baz=242,slow=29,SNR=13							
ARXS	**Arharly**	**2.27**	**218**	*e*P		**Pg**	**21 47 30.2**	**-0.7**
	3.5nm,0.2s							
ARXS				*e*S		**Sb**	**21 47 58.0**	**+1.3**
	14nm,0.3s							
KPKS	**Kokpek**	**2.66**	**197**	*e*P		**Pb**	**21 47 36.5**	**+1.2**
	6.0nm,0.2s							
KPKS				*e*S		**Sb**	**21 48 08.8**	**+0.7**
	11nm,0.4s							
PDGK	**Podgornoye**	**2.69**	**184**	⇑Pg		**Pg**	**21 47 37.3**	**-1.8**
	2.4nm,0.7s							
PDGK				⇓Lg		Lg	21 48 11.2	
	5.6nm,0.6s							
KURS	**Kuram**	**2.77**	**205**	*e*P		**Pb**	**21 47 37.9**	**+0.8**
	2.0nm,0.3s							
KURS				*e*S		**Sb**	**21 48 12.3**	**+1.1**
	3.4nm,0.5s							
SHLS	**Shalkode**	**2.86**	**178**	*e*P		**Pb**	**21 47 40.0**	**+1.2**
	1.9nm,0.5s							
SHLS				*e*S		**Sb**	**21 48 15.0**	**+1.2**
	6.8nm,0.8s							
CHKK	**Chushkaly**	**2.91**	**224**	*e*P		**Pg**	**21 47 41.9**	**-1.4**
	0.9nm,0.2s							
CHKK				*e*S		**Sg**	**21 48 18.6**	**-2.3**
	10nm,0.3s							
UZB	**Uzynbulak**	**2.92**	**191**	*e*P		**Pb**	**21 47 40.4**	**+0.7**
	1.4nm,0.2s							
UZB				*e*S		**Sb**	**21 48 16.2**	**+0.7**
	2.9nm,0.4s							
SATY	**Saty**	**3.11**	**199**	*e*P		**Pb**	**21 47 44.4**	**+1.4**
	3.2nm,0.1s							
SATY				*e*S		**Sb**	**21 48 23.1**	**+2.1**
	7.1nm,0.1s							
KUU	**Kurty**	**3.23**	**230**	*e*P		**Pb**	**21 47 46.8**	**+1.8**
	3.7nm,0.6s							
KUU				*e*S		**Sb**	**21 48 27.0**	**+2.7**
	13nm,0.4s							

ISCJB ***13*** *21:47:55.8₀0.4, 42°.09N₀0.07×26°.26E₀0.04, h10ᵏᵐ, Error ellipse: s-maj=4.9km s-min=4.3km az=39.4*
SOF ***13*** *21:47:55.3, 42°.22N×26°.23E, h4ᵏᵐ, MD2.7*
CSEM ***13*** *21:48:00.9₀0.5, 41°.82N×26°.50E, h16ᵏᵐ±3ᵏᵐ, ML2.3, Error ellipse: s-maj=9.4km s-min=8.2km az=52.0*
ISK ***13*** *21:48:00.2, 41°.83N×26°.49E, h18ᵏᵐ, ML2.3*

ISC 13 21:47:54.9±0.8**, 42°.15N**±0°.02×**26°.32E**±0°.02**, h10**ᵏᵐ**, n48,** σ0⁰**78**/53**, 1C-4D, Bulgaria**

Code	Station Name	Δ°	AZ°	Phase ID			Time		Res
				Op		ISC	h	m s	ISC
JMB	**Yambol**	**0.38**	**32**	*i* P		**Pg**	**21 48 01.9**		**-0.5**
JMB	**Yambol**	**0.38**	**32**	*i* P		**Pg**	**21 48 01.9**		**-0.5**
JMB	**Yambol**	**0.38**	**32**	*i* P		**Pg**	**21 48 01.9**		**-0.5**
EDRB	**Edirne**	**0.44**	**133**	*e*Pg		**Pb**	**21 48 05.2**		**+0.5**
EDRB	**Edirne**	**0.44**	**133**	*e*Pg		**Pb**	**21 48 05.2**		**+0.5**
DIM	**Dimitrovgrad**	**0.59**	**261**	*i* P		**Pg**	**21 48 05.2**		**-1.2**
DIM	**Dimitrovgrad**	**0.59**	**261**	*i* P		**Pg**	**21 48 05.2**		**-1.2**
DIM	**Dimitrovgrad**	**0.59**	**261**	*i* P		**Pg**	**21 48 05.2**		**-1.2**
KDZ	**Kurdzhali**	**0.83**	**234**	*i* P		**Pn**	**21 48 13.0**		**+0.2**
KDZ	**Kurdzhali**	**0.83**	**234**	*i* P		**Pn**	**21 48 13.0**		**+0.2**
KDZ	**Kurdzhali**	**0.83**	**234**	*i* P		**Pn**	**21 48 13.0**		**+0.2**
PHSR	**Pinarhisar**	**1.04**	**119**	*e*PG		**Pn**	**21 48 16.0**		**+0.5**
PHSR				*e*SG		**Sb**	**21 48 27.9**		**-0.7**
PHSR	**Pinarhisar**	**1.04**	**119**	*e*Pg		**Pn**	**21 48 16.0**		**+0.5**
PHSR				*e*Sg		**Sb**	**21 48 27.9**		**-0.7**
SZH	**Strazhica**	**1.16**	**346**	P		**Pb**	**21 48 16.5**		**-0.5**
SZH	**Strazhica**	**1.16**	**346**	P		**Pb**	**21 48 16.5**		**-0.5**
SZH	**Strazhica**	**1.16**	**346**	P		**Pb**	**21 48 16.5**		**-0.5**
ROIA	**ROIAK**	**1.23**	**39**	P		**Pg**	**21 48 18.9**		**+0.4**
ROIA	**ROIAK**	**1.23**	**39**	P		**Pg**	**21 48 18.9**		**+0.4**
ROIA	**ROIAK**	**1.23**	**39**	P		**Pg**	**21 48 18.9**		**+0.4**
ALN	**Alexandroupoli**	**1.26**	**189**	*e*PG		**Pg**	**21 48 20.0**		**+0.8**
ALN	**Alexandroupoli**	**1.26**	**189**	*e*Pg		**Pg**	**21 48 20.0**		**+0.8**
RZN	**Rozhen**	**1.28**	**250**	*i* P		**Pg**	**21 48 20.8**		**+1.3**
RZN	**Rozhen**	**1.28**	**250**	*i* P		**Pg**	**21 48 20.8**		**+1.3**
RZN	**Rozhen**	**1.28**	**250**	*i* P		**Pg**	**21 48 20.8**		**+1.3**
PVL	**Pavlikeni**	**1.29**	**326**	P		**Pg**	**21 48 19.2**		**-0.6**
PVL	**Pavlikeni**	**1.29**	**326**	P		**Pg**	**21 48 19.2**		**-0.6**
PVL	**Pavlikeni**	**1.29**	**326**	P		**Pg**	**21 48 19.2**		**-0.6**
PRD	**Provadia**	**1.32**	**37**	P		**Pg**	**21 48 20.8**		**+0.5**
PRD	**Provadia**	**1.32**	**37**	P		**Pg**	**21 48 20.8**		**+0.5**
PRD	**Provadia**	**1.32**	**37**	P		**Pg**	**21 48 20.8**		**+0.5**
ERIK	**Erikli-Kesan**	**1.48**	**174**	*e*PN		**Pb**	**21 48 21.6**		**-0.9**
ERIK	**Erikli-Kesan**	**1.48**	**174**	*e*Pn		**Pb**	**21 48 21.6**		**-0.9**
RKY	**Sarkoy-Tekirda**	**1.59**	**156**	*e*PN		**Pb**	**21 48 23.2**		**-1.2**
RKY	**Sarkoy-Tekirda**	**1.59**	**156**	*e*Pn		**Pb**	**21 48 23.3**		**-1.2**
CTYL	**Yalikoy Yolu**	**1.62**	**114**	*e*PN		**Pg**	**21 48 25.3**		**-0.7**
CTYL	**Yalikoy Yolu**	**1.62**	**114**	*e*Pn		**Pg**	**21 48 25.3**		**-0.7**
ZIMR		**1.67**	**336**	S		**Sg**	**21 48 34.4**		**-0.1**
CTKS	**Kestanelik-??a**	**1.88**	**118**	*e*PN		**Pb**	**21 48 29.0**		**-0.2**
CTKS	**Kestanelik-??a**	**1.88**	**118**	*e*Pn		**Pb**	**21 48 29.0**		**-0.2**
BGKT	**Bogazkoy**	**2.08**	**117**	*e*PN		**Pb**	**21 48 31.8**		**-0.9**
BGKT	**Bogazkoy**	**2.08**	**117**	*e*Pn		**Pb**	**21 48 31.8**		**-0.9**
KLYT	**Kilyos**	**2.23**	**113**	*e*PN		**Pb**	**21 48 34.4**		**-0.8**
KLYT	**Kilyos**	**2.23**	**113**	*e*Pn		**Pb**	**21 48 34.4**		**-0.8**
MSAB	**Monastry St. A**	**2.24**	**29**	⇓*i*P		**Pb**	**21 48 35.5**		**+0.1**
MSAB	**Monastry St. A**	**2.24**	**29**	⇓*i*P		**Pb**	**21 48 35.5**		**+0.1**
MSAB				S		**Sb**	**21 49 04.2**		**+1.1**
VTS	**Vitosha**	**2.35**	**282**	⇑*i*P		**Pn**	**21 48 34.4**		**+0.7**
VTS				S		**Sn**	**21 49 02.7**		**+0.1**
TIRR	**Tirgusor**	**2.77**	**33**	⇓*i*P		**Pb**	**21 48 43.5**		**-1.0**
TIRR	**Tirgusor**	**2.77**	**33**	⇓*i*P		**Pb**	**21 48 43.5**		**-1.0**
TIRR				S		**Sb**	**21 49 19.9**		**+1.4**

IDC ***13*** *21:49:33.7±0.8, 8°.87N×126°.35E, h0ᵏᵐ, mb3.8/9, mb1 3.9/9, mb1mx3.7/48, mbtmp3.8/9, MS4.5/2, Ms1 4.5/2, ms1mx3.3/42, Error ellipse: s-maj=41.2km s-min=16.5km az=75.0*
ISCJB ***13*** *21:49:39.1±0.7, 8°.87N±0°.06×126°.62E±0°.06, h54ᵏᵐ, mb3.7/9, MS4.5/2, Error ellipse: s-maj=9.9km s-min=7.4km az=40.7*
MAN ***13*** *21:49:42, 8°.89N×126°.37E, h37ᵏᵐ, mb4.2, ML3.0, MS2.8*

ISC 13 21:49:41.1±0.8**, 8°.88N**±0°.06×**126°.51E**±0°.09**, h54**ᵏᵐ**, n22,** σ1⁰**55**/21**, mb3.7**/9**, 2C-1D, Mindanao**

Code	Station Name	Δ°	AZ°	Phase ID			Time		Res
				Op		ISC	h	m s	ISC
SCPH	**Surigao**	**1.35**	**312**	*e*P		**Pn**	**21 50 03.4**		**-0.2**
SCPH				*e*S		**Sn**	**21 50 19.9**		**-0.6**
BUKP	**Musuan**	**1.74**	**235**	*e*P		**Pn**	**21 50 10.0**		**+1.0**
BUKP				*e*S		Sn	21 50 22.5		-7.6
CGP	**Cagayan de Oro**	**1.84**	**257**	⇑*i*P		**Pn**	**21 50 09.8**		**-0.5**
CGP				*i* S		**Sn**	**21 50 31.8**		**-0.7**
MATI	**Mati**	**1.94**	**187**	*e*P		**Pn**	**21 50 13.8**		**+2.2**
TBP	**Tagbilaran**	**2.73**	**287**	⇑*e*P		Pn	21 50 26.4		+3.8
LLP	**Lapu-Lapu**	**2.89**	**300**	*e*P		**Pn**	**21 50 26.9**		**+2.3**
LLP				*e*S		**Sn**	**21 51 01.5**		**+3.4**
PAGZ	**Pagadian**	**3.26**	**252**	*e*P		**Pn**	**21 50 31.2**		**+1.5**
RCP	**Roxas**	**4.56**	**306**	⇓*e*P		**Pn**	**21 50 50.1**		**+2.5**
FITZ	**Fitzroy Crossi**	**26.82**	**182**	P		**P**	**21 55 17.5**		**+1.0**
	0.9nm,0.3s,baz=7.8,slow=7.0,SNR=10								
CMAR	**Chiang Mai Arr**	**28.39**	**293**	P		**P**	**21 55 28.8**		**-1.9**
	0.3nm,0.7s,baz=96,slow=7.6,SNR=4.7								
WRA	**Warramunga Arr**	**29.66**	**165**	P		**P**	**21 55 40.4**		**-1.4**
	0.3nm,0.6s,baz=345,slow=8.1,SNR=7.0								
ASAR	**Alice Springs**	**33.14**	**168**	P		**P**	**21 56 11.7**		**-0.8**
	0.3nm,0.3s,baz=349,slow=7.3,SNR=5.9								
ASAR				PcP		**PcP**	**21 58 55.0**		**+0.4**
	0.2nm,0.5s,baz=346,slow=2.6,SNR=4.1								
USRK	**Ussuriysk Ar.**	**35.51**	**7**	P		**P**	**21 56 33.2**		**+0.6**
	2.7nm,0.7s,baz=189,slow=7.8,SNR=9.0								
ASAJ	**Asahikawa**	**37.79**	**19**	LR		LR	22 11 10.9		
	comp=Z,748nm,19.6s,baz=170,slow=34								
H11S3	**WAKE ISLAND Hy**	**40.11**	**72**	T		T	22 40 15.5		
	baz=262,slow=75,SNR=51								
H11S1	**WAKE ISLAND Hy**	**40.12**	**72**	T		T	22 40 15.7		
	baz=262,slow=75,SNR=43								
H11S2	**WAKE ISLAND Hy**	**40.13**	**72**	T		T	22 40 15.3		
	baz=262,slow=75,SNR=53								
MKAR	**Makanchi Array**	**53.27**	**323**	P		**P**	**21 58 54.1**		**-0.4**
	1.7nm,0.8s,baz=121,slow=7.7,SNR=21								
MKAR				PcP		**PcP**	**22 00 01.6**		**0.0**
	0.3nm,0.6s,baz=107,slow=5.3,SNR=3.0								

ZALV	**Zalesovo Beam**	**55.95**	**332**	P		**P**	**21 59 12.6**	**-1.1**
	0.2nm,0.3s,baz=76,slow=6.7,SNR=4.2							
FINES	**FINESS Array B**	**87.22**	**332**	P		**P**	**22 02 20.2**	**-1.3**
	0.5nm,0.4s,baz=77,slow=4.8,SNR=8.1							
DLBC	**Dease Lake**	**89.46**	**31**	LR		LR	22 44 02.2	
	comp=Z,194nm,18.8s,baz=152,slow=36							
YKA	**Yellowknife Ar**	**94.93**	**24**	P		**P**	**22 02 58.1**	**+0.8**
	0.2nm,0.6s,baz=301,slow=4.3,SNR=4.0							

IDC ***13*** *22:04:03.0±1.9, 37°.55N×144°.10E, h0ᵏᵐ, mb3.6/3, mb1 3.8/6, mb1mx3.4/50, mbtmp3.7/6, ML3.5/3, Error ellipse: s-maj=46.7km s-min=25.5km az=78.0*
ISCJB ***13*** *22:04:06.0±0.9, 37°.60N±0°.06×143°.97E±0°.07, h33ᵏᵐ, mb3.5/3, Error ellipse: s-maj=9.8km s-min=7.1km az=42.3*
JMA ***13*** *22:04:07.6±0.2, 37°.71N×143°.88E, h39ᵏᵐ, M3.6*

ISC 13 22:04:08.2±1.4**, 37°.67N**±0°.08×**143°.96E**±0°.10**, h35**ᵏᵐ**, n18,** σ0⁰**74**/22**, mb3.4**/3**, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID			Time		Res
				Op		ISC	h	m s	ISC
JIO	**Ouri**	**2.20**	**292**	P		**Pn**	**22 04 41.9**		**-0.4**
JIO				S		**Sn**	**22 05 07.2**		**-1.1**
OFUJ	**Ofunato**	**2.29**	**309**	P		**Pn**	**22 04 43.1**		**-0.3**
JFK	**Kawauchi**	**2.47**	**264**	P		**Pn**	**22 04 45.4**		**-0.6**
JMK	**Ichinoseki**	**2.50**	**302**	P		**Pn**	**22 04 46.3**		**-0.1**
JMK				S		**Sn**	**22 05 15.7**		**-0.1**
JMM	**Marumori**	**2.51**	**275**	*e*S		**Sn**	**22 05 14.6**		**-1.4**
JOU	**Okura**	**2.69**	**286**	P		**Pn**	**22 04 49.3**		**+0.3**
JOU				S		**Sn**	**22 05 20.6**		**+0.2**
JOM	**Ohasama**	**2.76**	**312**	P		**Pn**	**22 04 50.2**		**+0.3**
JOM				*e*S		**Sn**	**22 05 21.7**		**-0.3**
JFT	**Otama**	**2.88**	**268**	S		**Sn**	**22 05 24.5**		**-0.5**
JYK	**Kaneyama**	**3.09**	**295**	P		**Pn**	**22 04 55.1**		**+0.6**
JYK				*e*S		**Sn**	**22 05 30.9**		**+0.6**
JRG	**Rokugo**	**3.12**	**305**	P		**Pn**	**22 04 55.5**		**+0.5**
JANG	**Nango**	**3.30**	**326**	P		**Pn**	**22 04 57.4**		**0.0**
MJAR	**Matsushiro Arr**	**4.73**	**258**	Pn		**Pn**	**22 05 17.3**		**+0.2**
	1.1nm,0.3s,baz=82,slow=14,SNR=12								
MAT	**Matsushiro**	**4.73**	**258**	P		**Pn**	**22 05 19.0**		**+1.9**
JHJ	**Hachijo jima 2**	**5.67**	**218**	Pn		Pn	22 05 27.6		-2.4
	7.5nm,0.3s,baz=337,slow=21,SNR=16								
ASAJ	**Asahikawa**	**6.52**	**351**	Pn		**Pn**	**22 05 41.8**		**+0.1**
	0.9nm,0.3s,baz=212,slow=13,SNR=6.3								
MKAR	**Makanchi Array**	**45.50**	**302**	P		**P**	**22 12 25.0**		**+0.9**
	0.1nm,0.4s,baz=76,slow=8.5,SNR=5.2								
WRA	**Warramunga Arr**	**58.01**	**191**	P		**P**	**22 13 56.9**		**-0.6**
	0.9nm,0.6s,baz=11,slow=7.3,SNR=13								
ASAR	**Alice Springs**	**61.74**	**190**	P		**P**	**22 14 22.6**		**-0.5**
	0.2nm,0.6s,baz=16,slow=7.7,SNR=4.4								

NIED ***13*** *22:05:00, 36°.40N×142°.50E, h8ᵏᵐ, Mw4.6 Best double couple: M₀7.93000×10¹⁵ NP1:φ₀34.00000°, δ45.00000°, λ113.00000°. NP2:φ₀183.00000°, δ49.00000°, λ69.00000°.*
IDC ***13*** *22:05:02.1±0.7, 36°.37N×142°.70E, h0ᵏᵐ, mb4.1/18, mb1 4.1/24, mb1mx4.0/53, mbtmp4.0/24, ML3.8/5, MS4.0/1, Ms1 4.0/1, ms1mx3.2/44, Error ellipse: s-maj=18.2km s-min=14.8km az=104.0*
ISCJB ***13*** *22:05:02.6±0.4, 36°.44N±0°.04×142°.71E±0°.05, h15ᵏᵐ, mb4.3/43, MS4.2/1, Error ellipse: s-maj=6.8km s-min=4.3km az=136.4*
MOS ***13*** *22:05:03.0±1.1, 36°.43N×142°.71E, h20ᵏᵐ, mb4.6/29, Error ellipse: s-maj=10.5km s-min=6.2km az=118.0*
JMA ***13*** *22:05:04.0±0.2, 36°.39N×142°.54E, h6ᵏᵐ, M4.5*
NEIC ***13*** *22:05:07.3±0.5, 36°.49N×142°.63E, h35ᵏᵐ, mb4.7/11, Error ellipse: s-maj=9.8km s-min=7.6km az=118.0*

ISC 13 22:05:04.3±0.6**, 36°.39N**±0°.06×**142°.70E**±0°.07**, h15**ᵏᵐ**, n95,** σ1⁰**29**/96**, mb4.5**/43**, 3C-1D, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID			Time		Res
				Op		ISC	h	m s	ISC
CHOJ	**Chosi**	**1.65**	**246**	P		**Pn**	**22 05 31.8**		**-0.9**
CHOJ				*e*S		**Sn**	**22 05 51.7**		**-1.9**
JHO	**Hitachi**	**1.73**	**278**	P		**Pn**	**22 05 33.1**		**-0.8**
JHO				*e*S		**Sn**	**22 05 54.1**		**-1.7**
BSO1	**Boso 1**	**2.24**	**220**	P		**Pn**	**22 05 40.6**		**+0.3**
BSO3	**Boso 3**	**2.39**	**229**	P		**Pn**	**22 05 44.1**		**+1.4**
BSO3				*e*S		**Sn**	**22 06 12.5**		**+0.9**
JAG	**Ashikaga**	**2.62**	**272**	P		**Pn**	**22 05 45.6**		**-0.5**
JAG				*e*S		**Sn**	**22 06 16.5**		**-1.2**
JRY	**Ryogami san**	**3.10**	**264**	P		**Pn**	**22 05 52.0**		**-0.7**
JYK	**Kaneyama**	**3.13**	**324**	P		**Pn**	**22 05 53.2**		**+0.1**
JOD2	**Odawara 2**	**3.15**	**250**	P		**Pn**	**22 05 52.6**		**-0.8**
MJAR	**Matsushiro Arr**	**3.63**	**274**	Pn		**Pn**	**22 05 59.7**		**-0.3**
	7.0nm,0.3s,baz=108,slow=9.3,SNR=34								
MAJO	**Matsushiro**	**3.63**	**274**	*c* *i*P		**Pn**	**22 06 00.8**		**+0.8**
MAJO	**Matsushiro**	**3.63**	**274**	*e*Pn		**Pn**	**22 06 00.3**		**+0.3**
MAT	**Matsushiro**	**3.63**	**274**	P		**Pn**	**22 06 00.7**		**+0.7**
MAT				*e*S		**Sn**	**22 06 40.7**		**-1.8**
JHJ	**Hachijo jima 2**	**4.06**	**217**	Pn		**Pn**	**22 06 05.2**		**-0.6**
	25nm,0.3s,baz=269,slow=23,SNR=7.9								
JHJ				Sn		**Sn**	**22 06 49.1**		**-4.0**
	59nm,0.3s,baz=98,slow=22,SNR=6.2								
ERM	**Erimo**	**5.62**	**3**	*e*P		**Pn**	**22 06 28.2**		**+0.9**
ERM	**Erimo**	**5.62**	**3**	*e*Pn		**Pn**	**22 06 25.4**		**-2.0**
	34nm,0.6s								
ASAJ	**Asahikawa**	**7.71**	**359**	Pn		**Pn**	**22 06 54.2**		**-1.8**
	3.1nm,0.3s,baz=221,slow=13,SNR=7.9								
ASAJ				Sn		**Sn**	**22 08 20.8**		**-2.4**
	1.2nm,0.3s,baz=47,slow=10,SNR=5.3								
ASAJ	**Asahikawa**	**7.71**	**359**	*e*Pn		**Pn**	**22 06 53.3**		**-2.7**
	9.4nm,0.8s								
ASAJ				*e*Sn		**Sn**	**22 08 20.4**		**-2.8**
SHO	**Shikotan**	**8.11**	**22**	*e*P		Pn	22 06 47.6		-14
SHO				*e*S		Sn	22 08 25.2		-7.6
YSS	**Yuzh-Sakhalins**	**10.55**	**0**	*e*P		**Pn**	**22 07 35.0**		**+0.1**
YSS	**Yuzh-Sakhalins**	**10.55**	**0**	*e*P		**Pn**	**22 07 34.1**		**-0.8**
	19nm,0.6s								
USRK	**Ussuriysk Ar.**	**11.29**	**317**	Pn		**Pn**	**22 07 46.0**		**+0.9**
	0.1nm,0.3s,baz=140,slow=9.9,SNR=5.8								
USRK				LR		LR	22 11 44.5		
	comp=Z,790nm,18.5s,baz=193,slow=36								
KSRS	**Korea Array**	**11.88**	**280**	Pn		**Pn**	**22 07 53.8**		**+0.6**
	0.2nm,0.3s,baz=96,slow=13,SNR=10								
KSAR	**Wonju Array Be**	**11.91**	**279**	P		**Pn**	**22 07 53.8**		**+0.2**
KSAR	**Wonju Array Be**	**11.91**	**279**	Pn		**Pn**	**22 07 53.8**		**+0.2**
KLR	**Kul'dur**	**15.12**	**331**	Pn		**Pn**	**22 08 35.1**		**-2.1**
	0.1nm,0.3s,baz=141,slow=13,SNR=2.5								
NKL	**Nikolayevsk**	**16.82**	**356**	*e*P		**Pn**	**22 08 56.8**		**-2.2**
NKL				pmax		pmax			
	comp=Z,11nm,1.1s								
YAK	**Yakutsk**	**26.93**	**346**	P		**P**	**22 10 45.1**		**+0.5**
	comp=Z,9.3nm,0.4s,baz=5.2,slow=2.9,SNR=6.9								
YAK	**Yakutsk**	**26.93**	**346**	*e*P		**P**	**22 10 44.9**		**+0.3**
YAK				pmax		pmax			
	comp=Z,31nm,1.2s								
YAK				pmax		pmax			
	comp=N,27nm,1.4s								
YAK				pmax		pmax			
	comp=E,11nm,1.5s								
H11N2	**WAKE ISLAND Hy**	**26.93**	**122**	T		T	22 39 05.6		
	baz=313,slow=75,SNR=8.3								
H11N1	**WAKE ISLAND Hy**	**26.94**	**122**	T		T	22 39 08.0		
	baz=313,slow=75,SNR=7.0								
H11N3	**WAKE ISLAND Hy**	**26.95**	**122**	T		T	22 39 06.1		
	baz=313,slow=75,SNR=7.4								
SEY	**Seymchan**	**27.23**	**10**	P		**P**	**22 10 48.1**		**+0.7**
	comp=E,1.4nm,0.6s,baz=196,slow=9.9,SNR=6.1								
ENH	**Enshi**	**28.32**	**267**	*e*P		**P**	**22 10 56.7**		**-0.9**
	comp=E,29nm,1.2s								
ULN	**Ulaanbaatar**	**28.57**	**305**	*c* *i*P		**P**	**22 11 01.0**		**+1.2**
ULN				pmax		pmax			
	comp=Z,14nm,1.2s								
ULN	**Ulaanbaatar**	**28.57**	**305**	*e*P		**P**	**22 11 00.2**		**+0.4**
	comp=Z,16nm,1.4s								
BOD	**Bodaibo**	**28.62**	**328**	*e*P		**P**	**22 11 04.5**		**+4.6**
BOD				pmax		pmax			
	comp=Z,17nm,1.4s								
SONM	**Songino Array**	**29.00**	**305**	P		**P**	**22 11 05.1**		**+1.5**
	comp=Z,2.3nm,0.6s,baz=107,slow=7.9,SNR=29								
ZAK	**Zakamensk**	**31.48**	**309**	*e*P		**P**	**22 11 26.0**		**+0.6**
ZAK				pmax		pmax			
	comp=Z,5.0nm,1.4s								
TLY	**Talaya**	**31.53**	**311**	*e*P		**P**	**22 11 28.2**		**+2.5**
TLY				pmax		pmax			
	comp=Z,10.0nm,1.6s								
TLY				MLR		MLR			
	comp=Z,375nm,15.0s								
MOY	**Mondy**	**33.14**	**311**	*e*P		P	22 11 52.5		+13
BILL	**Bilibino**	**34.36**	**15**	*i* P		P	22 11 44.8		-5.4
BILL				pmax		pmax			

	comp=Z,2.0nm,1.0s							
CMAR	**Chiang Mai Arr**	**42.35**	**257**	P		**P**	**22 12 58.0**	**+0.1**
	comp=Z,0.2nm,0.5s,baz=43,slow=6.7,SNR=3.9							
ZALV	**Zalesovo Beam**	**43.11**	**313**	P		**P**	**22 13 03.6**	**-0.1**
	comp=Z,2.5nm,0.8s,baz=90,slow=6.1,SNR=12							
LSA	**Lhasa**	**43.31**	**277**	*e*P		**P**	**22 13 05.1**	**-1.1**
LSA				pmax		pmax		
	comp=Z,4.0nm,1.0s							
LSA	**Lhasa**	**43.31**	**277**	*e*P		**P**	**22 13 05.1**	**-1.1**
	comp=Z,4.4nm,1.0s							
NVS	**Novosibirsk**	**44.03**	**314**	*e*P		**P**	**22 13 11.6**	**+0.5**
NVS				pmax		pmax		
	comp=E,9.0nm,1.4s							
NVS				pmax		pmax		
	comp=Z,14nm,1.4s							
NRIK	**Noril'sk**	**44.28**	**335**	P		**P**	**22 13 12.7**	**-0.2**
	comp=Z,1.1nm,0.3s,baz=126,slow=8.0,SNR=5.2							
MKAR	**Makanchi Array**	**45.34**	**303**	P		**P**	**22 13 22.5**	**+0.8**
	comp=Z,4.3nm,1.0s,baz=88,slow=8.6,SNR=22							
KURK	**Kurchatov**	**47.14**	**309**	*e*P		**P**	**22 13 35.1**	**-0.7**
KURK				pmax		pmax		
	comp=Z,29nm,1.1s							
KURK	**Kurchatov**	**47.14**	**309**	*e*P		**P**	**22 13 35.1**	**-0.7**
	comp=Z,29nm,1.1s							
ODAN	**Odare**	**47.49**	**275**	*e*P		**P**	**22 13 39.0**	**-0.2**
	comp=Z,6.6nm,0.6s							
RAMN	**Ramite**	**48.09**	**275**	*e*P		**P**	**22 13 43.5**	**-0.3**
KKN	**Kakani**	**48.79**	**277**	*e*P		**P**	**22 13 49.7**	**+0.6**
GKN	**Gorkha**	**49.21**	**278**	*e*P		**P**	**22 13 52.9**	**+0.6**
ILAR	**Eielson Array**	**49.48**	**32**	P		**P**	**22 13 53.7**	**0.0**
	comp=Z,1.1nm,1.0s,baz=259,slow=5.6,SNR=6.8							
KOLN	**Koldanda**	**50.14**	**278**	*e*P		**P**	**22 14 00.0**	**+0.6**
PYUN	**Piuthan**	**50.48**	**279**	*e*P		**P**	**22 14 02.6**	**+0.5**
TKM2	**Tokmak 2**	**50.85**	**299**	*e*P		**P**	**22 14 04.0**	**-0.6**
TKM2				pmax		pmax		
	comp=Z,17nm,1.3s							
TKM2	**Tokmak 2**	**50.85**	**299**	*e*P		**P**	**22 14 04.0**	**-0.6**
	comp=Z,17nm,1.3s							
FRU	**Bishkek**	**51.56**	**299**	*e*P		**P**	**22 14 10.0**	**+0.2**
AAK	**Ala-Archa**	**51.71**	**299**	*e*P		**P**	**22 14 10.3**	**-0.7**
AAK				pmax		pmax		
	comp=Z,4.0nm,0.7s		

GRAC				S		Sn	22 11 02.3	-0.3
	baz=322							
AFDM	**Forest Hills D**	**1.85**	**290**	*e*Pn		**Pn**	**22 10 41.5**	**-0.4**
AFDM				*e*Sn		**Sn**	**22 11 04.7**	**-1.3**
RCTC	**Rector, Farmer**	**2.06**	**191**	P		**Pn**	**22 10 45.3**	**+0.7**
	baz=11							
RCTC				Sb		**Sg**	**22 11 15.2**	**+0.3**
	baz=11							
WLHM	**Little Horse**	**2.20**	**171**	*e*Pn		**Pb**	**22 10 49.2**	**-0.4**
DAC	**Darwin (Calif)**	**2.24**	**156**	*e*Pn		**Pn**	**22 10 47.4**	**+0.1**
DAC				*e*Sn		**Sg**	**22 11 20.5**	**-0.3**
OHCM	**Honcut**	**2.37**	**296**	*e*Pn		**Pn**	**22 10 50.0**	**+1.2**
FURC	**Furnace Creek,**	**2.38**	**141**	P		**Pn**	**22 10 49.1**	**+0.1**
	baz=322							
FURC				Sg		**Sg**	**22 11 27.8**	**+2.5**
	baz=322							
TPNV	**Topopah Spring**	**2.41**	**124**	P		**Pn**	**22 10 49.1**	**-0.5**
	baz=306							
TPNV				Sg		**Sg**	**22 11 28.5**	**+2.4**
	baz=306							
TPNV	**Topopah Spring**	**2.41**	**124**	*e*Pn		**Pn**	**22 10 49.4**	**-0.2**
MPMC	**Manual Prospec**	**2.48**	**156**	P		**Pn**	**22 10 50.2**	**-0.3**
	baz=337							
MPMC				Sg		**Sg**	**22 11 31.0**	**+2.7**
	baz=337							
ORV	**Oroville**	**2.48**	**301**	*e*Pn		**Pn**	**22 10 49.8**	**-0.6**
R11A	**Troy Canyon, C**	**2.48**	**89**	P		**Pn**	**22 10 49.6**	**-1.0**
	baz=272							
R11A				Sb		**Sb**	**22 11 26.9**	**+1.4**
	baz=272							
R11A	**Troy Canyon, C**	**2.48**	**89**	*e*Pn		**Pn**	**22 10 49.2**	**-1.4**
R11A				*e*Pg		**Pb**	**22 10 55.3**	**+1.0**
RCWM	**Renegade Canyo**	**2.53**	**159**	*e*Pn		**Pb**	**22 10 53.5**	**-1.6**
SAO	**San Andreas Ge**	**2.66**	**235**	*e*Pn		**Pn**	**22 10 53.1**	**+0.2**
SAO				*e*Sg		**Sb**	**22 11 30.9**	**+0.5**
ISA	**Isabella, Lake**	**2.67**	**175**	P		**Pn**	**22 10 54.0**	**+0.9**
	baz=356							
ISA				Sb		**Sg**	**22 11 33.5**	**-1.0**
	baz=356							
ISA	**Isabella, Lake**	**2.67**	**175**	*e*Pn		**Pn**	**22 10 54.8**	**+1.7**
PTRM	**Twissleman Ran**	**2.92**	**204**	*e*Pn		**Pn**	**22 10 58.2**	**+1.8**
LRMC	**Laurel Mtn Rad**	**2.97**	**163**	Pb		**Pb**	**22 11 02.8**	**+0.2**
	baz=344							
LRMC				Sb		**Sg**	**22 11 42.3**	**-1.8**
	baz=344							
O03D	**Paynes Creek**	**3.08**	**311**	P		**Pn**	**22 10 58.7**	**-0.1**
	baz=128,SNR=71							
O03D				Sb		**Sb**	**22 11 44.7**	**+2.0**
	baz=128							
SHOC	**Shoshone, Teco**	**3.12**	**140**	Pb		**Pb**	**22 11 06.0**	**+0.9**
	baz=322							
SHOC				Sg		**Sg**	**22 11 52.4**	**+3.3**
	baz=322							
SMMC	**Simmler**	**3.17**	**199**	P		**Pn**	**22 11 00.6**	**+0.7**
	baz=18							
ARVC	**Arvin**	**3.19**	**181**	P		**Pn**	**22 11 01.4**	**+1.2**
	baz=1.2							
ARVC				Sb		**Sg**	**22 11 49.1**	**-2.3**
	baz=1.2							
GSC	**Goldstone, Bar**	**3.40**	**152**	Pb		**Pb**	**22 11 10.5**	**+0.7**
	baz=334							
GSC				Sg		**Sg**	**22 12 01.0**	**+3.1**
	baz=334							
GSC	**Goldstone, Bar**	**3.40**	**152**	*e*Pn		**Pn**	**22 11 03.7**	**+0.7**
HOPS	**Hopland Field**	**3.46**	**282**	*e*Pn		**Pn**	**22 11 02.8**	**-1.0**
EDW2	**Edwards Air Fo**	**3.49**	**170**	Pb		**Pb**	**22 11 12.3**	**+0.9**
	baz=350							
ELK	**Elko**	**3.63**	**47**	Pn		**Pn**	**22 11 07.8**	**+1.4**
	16nm,0.3s,baz=142,slow=0.2,SNR=6.4							
ELK				Lg		Lg	22 12 02.0	
	193nm,0.3s,baz=199,slow=0.0,SNR=18							
ELK	**Elko**	**3.63**	**47**	*e*Pg		**Pg**	**22 11 16.7**	**-1.6**
ELK				*e*Sn		**Sn**	**22 11 46.1**	**-3.9**
ELK				Lg		Lg	22 12 02.0	
WDC	**Whiskeytown Da**	**3.70**	**309**	*e*Pn		**Pn**	**22 11 04.8**	**-2.4**
WDC				*e*Pg		**Pb**	**22 11 16.9**	**+1.8**
WDC				*e*Sg		**Sb**	**22 12 02.8**	**+2.3**
OSI	**Osito Audit: C**	**3.71**	**180**	P		**Pn**	**22 11 09.2**	**+1.9**
	baz=360							
OSI				Sb		**Sg**	**22 12 04.2**	**-3.6**
	baz=360							
RRX	**Edison Barstow**	**3.72**	**157**	Pb		**Pb**	**22 11 16.6**	**+1.2**
	baz=339							
MOD	**Modoc Plateau**	**3.77**	**342**	*e*Pn		**Pn**	**22 11 09.8**	**+1.5**
MOD				S		**Sb**	**22 12 03.6**	**+1.1**
PSUT	**Pine Spring**	**3.84**	**85**	*e*Pn		**Pn**	**22 11 11.4**	**+2.0**
SBC	**Santa Barbara**	**3.96**	**192**	Sb		**Sg**	**22 12 11.6**	**-4.3**
	baz=11							
N02D	**Trinity Center**	**4.04**	**312**	P		**Pn**	**22 11 11.6**	**-0.3**
	baz=129,SNR=6.6							
N02D				Sb		**Sb**	**22 12 12.9**	**+2.5**
	baz=129							
MWC	**Mount Wilson**	**4.13**	**172**	*e*Pg		**Pb**	**22 11 23.2**	**+0.7**
M04C	**Macdoel**	**4.19**	**326**	P		**Pn**	**22 11 14.8**	**+0.8**
	baz=144,SNR=40							
BLG	**Laguna Peak, P**	**4.22**	**184**	P		**Pn**	**22 11 14.7**	**+0.4**
	baz=3.4							
KMRM	**Mail Ridge**	**4.29**	**298**	*e*Pn		Pn	22 11 19.8	+4.4
CCUT	**Cedar City**	**4.32**	**99**	*e*Pg		**Pg**	**22 11 29.6**	**-2.0**
LDFC	**Landfair**	**4.36**	**137**	*e*Pg		**Pg**	**22 11 33.0**	**+0.6**
FSU	**Fish Springs**	**4.39**	**70**	*e*Pn		**Pn**	**22 11 16.6**	**-0.3**
M02C	**Callahan**	**4.40**	**315**	P		**Pn**	**22 11 17.6**	**+0.7**
	baz=132,SNR=10							
LCMT	**Little Creek M**	**4.55**	**105**	*e*Pn		**Pn**	**22 11 20.8**	**+1.8**
YBH	**Yreka Blue Hor**	**4.57**	**319**	Pn		**Pn**	**22 11 20.2**	**+1.1**
	2.0nm,0.3s,baz=131,slow=6.7,SNR=52							
YBH				LR		LR	22 13 20.4	
	comp=Z,2µm,18.0s,baz=150,slow=42							
YBH	**Yreka Blue Hor**	**4.57**	**319**	*e*Pn		**Pn**	**22 11 20.4**	**+1.2**
KHMM	**Horse Mountain**	**4.62**	**305**	*e*Pg		**Pb**	**22 11 30.2**	**-0.5**
K05A	**Summer Lake**	**4.69**	**340**	*e*Pn		**Pn**	**22 11 23.5**	**+2.5**
JCC	**Jacoby Creek,**	**4.78**	**303**	*e*Pg		**Pb**	**22 11 36.4**	**+3.0**
K04D	**Chiloquin, OR**	**4.87**	**333**	P		**Pn**	**22 11 25.0**	**+1.6**
	baz=151,SNR=14							
KNB	**Kanab**	**4.87**	**104**	*e*Pn		**Pn**	**22 11 24.0**	**+0.5**
DUG	**Dugway, Tooele**	**4.96**	**66**	*e*Pn		**Pn**	**22 11 22.9**	**-1.8**
DUG				*e*Pg		**Pg**	**22 11 42.5**	**-1.4**
PFO	**Pinyon Flats O**	**5.06**	**158**	Pn		**Pn**	**22 11 27.9**	**+1.9**
	1.0nm,0.3s,baz=360,slow=12,SNR=5.5							
PFO				LR		LR	22 13 38.6	
	comp=Z,915nm,19.0s,baz=42,slow=42							
BGU	**Big Grassy Mou**	**5.12**	**58**	*e*Pn		**Pn**	**22 11 26.5**	**-0.2**
MSU	**Marysvale**	**5.16**	**86**	*e*Pn		Pn	22 11 32.5	+5.1
PKCU	**Pink Cliffs**	**5.16**	**98**	*e*Pg		**Pg**	**22 11 47.3**	**-0.4**
MTPU	**Mount Pierson**	**5.17**	**91**	*e*Pn		Pn	22 11 33.2	+5.5
J05D	**Fort Rock, OR**	**5.30**	**340**	P		**Pn**	**22 11 31.3**	**+2.0**
	baz=158,SNR=22							
L02D	**Cave Junction,**	**5.34**	**317**	P		**Pn**	**22 11 32.7**	**+3.0**
	baz=134,SNR=8.0							
HUMO	**Hull Mountain**	**5.35**	**324**	*e*Pn		**Pn**	**22 11 28.4**	**-1.5**
NLU	**North Lily Min**	**5.43**	**71**	*e*Pn		**Pn**	**22 11 32.9**	**+1.7**
U15A	**North Rim**	**5.47**	**108**	*e*Pn		**Pn**	**22 11 33.5**	**+1.7**
MFID	**Camas Ranch**	**5.54**	**23**	*e*Pn		Pn	22 11 29.8	-2.8
SPUT	**South Promonto**	**5.69**	**56**	*e*Pn		Pn	22 11 38.7	+4.1
EPU	**East Promontor**	**5.75**	**56**	*e*Pn		Pn	22 11 39.8	+4.3
MPU	**Maple Canyon**	**5.77**	**71**	*e*Pn		Pn	22 11 43.0	+7.1
GLA	**Glamis**	**6.15**	**148**	*e*Pg		**Pg**	**22 12 07.7**	**+1.0**
HLID	**Hailey**	**6.17**	**31**	*e*Pn		Pn	22 11 38.5	-2.8
I05D	**Terrebonne, OR**	**6.32**	**343**	P		**Pn**	**22 11 45.1**	**+2.0**
	baz=161,SNR=19							
I03D	**Drain, OR**	**6.40**	**328**	P		Pn	22 11 48.1	+3.9
	baz=145,SNR=35							
HWUT	**Hardware Ranch**	**6.41**	**57**	*e*Pn		Pn	22 11 41.0	-3.6
DCM	**Dugout Coal Mi**	**6.50**	**75**	*e*Pn		**Pn**	**22 11 43.5**	**-2.4**
WUAZ	**Wupatki**	**6.53**	**113**	*e*Pg		Pg	22 12 11.1	-2.9
BMO	**Blue Mountains**	**6.61**	**9**	*e*Pn		Pn	22 11 44.2	-3.0
H04A	**Detroit Lake**	**6.86**	**339**	*e*Pn		Pn	22 11 54.6	+4.0
G06A	**Carlson Farm,**	**7.05**	**349**	*e*Pn		Pn	22 11 58.4	+5.2
X16A	**Lo Mia Camp, P**	**7.06**	**121**	*e*Pn		Pn	22 12 00.8	+7.2
AHID	**Auburn Hatcher**	**7.31**	**50**	*e*Pn		Pn	22 11 52.9	-4.1
AHID				*e*Sg		**Sg**	**22 14 02.1**	**-1.5**
G03D	**McMinnville, O**	**7.66**	**335**	P		Pn	22 12 05.7	+4.1
	baz=152,SNR=6.7							
F10A	**Beach Ranch, E**	**7.72**	**8**	*e*Pn		Pn	22 12 07.0	+4.4
REDW	**Red Top Meadow**	**7.81**	**47**	*e*Pn		**Pn**	**22 12 02.6**	**-1.2**
REDW				Sn		**Sn**	**22 13 31.1**	**-1.9**
MCMT	**McKenzie Canyo**	**7.85**	**32**	*e*Pn		Pn	22 12 08.8	+4.4
SNOW	**Snow King Moun**	**7.93**	**47**	*e*Pn		**Pn**	**22 12 02.9**	**-2.6**
	24nm,0.8s							
F04A	**Amboy**	**8.07**	**341**	*e*Pn		Pn	22 12 13.0	+5.7
HAWA	**Hanford**	**8.08**	**356**	*e*Pn		**Pn**	**22 12 05.0**	**-2.3**
IMW	**Indian Meadow**	**8.10**	**44**	*e*Pn		Pn	22 12 04.9	-3.0
	16nm,0.6s							
LOHW	**Long Hollow**	**8.11**	**47**	*e*Pn		Pn	22 12 05.1	-2.8
MOOW	**Moose Ponds**	**8.11**	**46**	*e*Pn		Pn	22 12 05.2	-2.8
MVCO	**Mesa Verde**	**8.19**	**95**	*e*Pn		**Pn**	**22 12 07.0**	**-2.0**
	120nm,1.1s							
BW06	**Boulder Array**	**8.28**	**55**	*e*Pn		**Pn**	**22 12 12.7**	**+2.5**
PD31	**Pinedale Array**	**8.28**	**55**	*e*Pn		**Pn**	**22 12 12.8**	**+2.5**
PDAR	**Pinedale Array**	**8.28**	**55**	Pn		**Pn**	**22 12 12.6**	**+2.4**
	0.2nm,0.3s,baz=229,slow=11,SNR=12							
PDAR				Lg		Lg	22 14 29.6	
	1.4nm,0.3s,baz=225,slow=29,SNR=6.4							
PDAR				LR		LR	22 15 40.9	
	comp=Z,1µm,18.5s,baz=252,slow=40							
O20A	**White River Ci**	**8.35**	**74**	*e*Pn		Pn	22 12 05.4	-5.7
	82nm,1.2s							
O20A				*e*Sn		**Sn**	**22 13 45.2**	**-1.0**
FLWY	**Flagg Ranch**	**8.35**	**44**	*e*Pn		Pn	22 12 04.0	-7.3
DLMT	**Dillon**	**8.39**	**31**	*e*Pn		Pn	22 12 08.0	-3.8
LRM	**Limekiln Ridge**	**8.83**	**30**	*e*Pn		Pn	22 12 22.0	+4.2
TUC	**Tucson**	**8.85**	**130**	Pn		**Pn**	**22 12 17.1**	**-0.8**
	4.8nm,0.9s							
BOZ	**Bozeman (W)**	**9.03**	**34**	*e*Pn		Pn	22 12 17.2	-3.2
LTY	**Liberty**	**9.04**	**352**	*e*Pn		Pn	22 12 25.6	+5.0
D05A	**Enumclaw**	**9.17**	**346**	*e*Pn		Pn	22 12 29.2	+6.9
MSO	**Missoula**	**9.20**	**21**	*e*Pn		Pn	22 12 27.1	+4.3
SMCO	**Snowmass**	**9.23**	**81**	*e*Pn		Pn	22 12 20.7	-2.8
C09A	**Chrisman Ranch**	**9.47**	**2**	*e*Pn		Pn	22 12 31.1	+4.7
CHMT	**Chamberlain Mo**	**9.48**	**23**	*e*Pn		Pn	22 12 30.4	+3.6
SWMT	**Swartz Lake**	**9.81**	**19**	*e*Pn		Pn	22 12 35.3	+4.2
BSMT	**Bassoo Peak**	**9.95**	**16**	*e*Pn		Pn	22 12 36.9	+3.8
JTMT	**Jette**	**9.96**	**18**	*e*Pn		Pn	22 12 37.9	+4.7
NEW	**Newport**	**10.00**	**6**	Pn		**Pn**	**22 12 35.8**	**+2.1**
	0.4nm,0.3s,baz=183,slow=15,SNR=6.0							
NEW	**Newport**	**10.00**	**6**	*e*Pn		**Pn**	**22 12 31.2**	**-2.5**
B08A	**Colville Reser**	**10.04**	**358**	*e*Pn		Pn	22 12 39.5	+5.3
YBMT	**Yellow Bay**	**10.14**	**18**	*e*Pn		Pn	22 12 40.1	+4.5
BLMT	**Blacktail Moun**	**10.19**	**17**	*e*Pn		Pn	22 12 41.2	+4.8
K22A	**Casper**	**10.26**	**61**	*e*Pn		**Pn**	**22 12 38.0**	**+0.7**
	26nm,1.0s							
ANMO	**Albuquerque**	**10.43**	**105**	LR		LR	22 17 11.8	
	comp=Z,580nm,20.7s,baz=346,slow=40							
121A	**Cookes Peak, D**	**10.64**	**120**	*e*Pn		Pn	22 12 37.2	-5.4
	8.2nm,1.0s							
WALA	**Waterton Lakes**	**11.28**	**16**	*e*Pn		Pn	22 12 47.9	-3.4
RSSD	**Black Hills**	**12.49**	**58**	*e*Pn		**Pn**	**22 13 05.2**	**-2.7**
AMTX	**Amarillo**	**14.13**	**99**	*e*Pn		**Pn**	**22 13 27.6**	**-2.6**
TX31	**Lajitas Ar. Si**	**15.39**	**121**	*e*Pn		**P**	**22 13 52.4**	**+0.2**
TXAR	**Lajitas Array**	**15.39**	**121**	Pn		**P**	**22 13 50.5**	**-1.6**
	0.1nm,0.3s,baz=336,slow=5.8,SNR=12							
TUL1	**Leonard**	**18.45**	**90**	*e*P		**P**	**22 14 23.8**	**-2.2**
	22nm,1.1s							
AGMN	**Agassiz Nation**	**19.34**	**52**	*e*Pn		**P**	**22 14 31.9**	**-3.7**
	30nm,1.4s							
HHAR	**Hobbs**	**19.82**	**88**	*e*P		**Pn**	**22 14 43.6**	**+1.2**
	17nm,0.5s							
FFC	**Flin Flon**	**19.96**	**29**	*e*P		**P**	**22 14 39.0**	**-3.3**
	12nm,1.1s							
ULM	**Lac du Bonnet**	**20.16**	**46**	P		**P**	**22 14 43.8**	**-0.7**
	6.9nm,0.9s,baz=238,slow=1,SNR=6.1							
ULM	**Lac du Bonnet**	**20.16**	**46**	*e*P		**P**	**22 14 44.6**	**+0.1**
	51nm,1.8s							
X301	**Greenbrier Sit**	**21.30**	**90**	*e*P		**P**	**22 14 58.7**	**+1.8**
	44nm,1.8s							
X201	**Greenbrier Sit**	**21.31**	**90**	*e*P		**P**	**22 15 01.2**	**+4.1**
	54nm,1.9s							
WHAR	**Wooly Hollow**	**21.37**	**90**	*e*P		**P**	**22 14 59.0**	**+1.2**
	8.6nm,1.0s							
DLBC	**Dease Lake**	**21.42**	**344**	P		**P**	**22 15 00.0**	**+1.9**
	4.7nm,0.9s,baz=244,slow=12,SNR=6.3							
DLBC	**Dease Lake**	**21.42**	**344**	*e*P		**P**	**22 14 54.5**	**-3.6**
	17nm,1.4s							
JFWS	**Jewell Farm**	**22.05**	**69**	*e*P		P	22 15 10.2	+5.1
	32nm,1.3s							
YKA	**Yellowknife Ar**	**24.33**	**5**	P		**P**	**22 15 28.2**	**+0.4**
	2.4nm,0.8s,baz=183,slow=9.8,SNR=46							
YKA				PcP		**PcP**	**22 19 07.5**	**+0.2**
	0.3nm,0.8s,baz=186,slow=3.2,SNR=3.7							
YKB5	**Yellowknife Ar**	**24.33**	**5**	*e*P		**P**	**22 15 27.8**	**0.0**
YKW3	**Yellowknife Ar**	**24.39**	**5**	*e*P		**P**	**22 15 28.4**	**-0.1**
	9.7nm,1.2s							
FCC	**Fort Churchill**	**25.89**	**30**	*e*P		**P**	**22 15 45.2**	**+3.2**
	12nm,1.3s							
TKL	**Tuckaleechee C**	**27.96**	**85**	LR		LR	22 27 36.5	
	comp=Z,726nm,19.8s,baz=204,slow=37							
SPU	**Mount Spurr**	**30.83**	**329**	*e*P		P	22 16 30.1	+4.0
INK	**Inuvik**	**31.12**	**349**	P		**P**	**22 16 29.4**	**+0.8**
	5.6nm,1.1s,baz=148,slow=11,SNR=7.4							
INK	**Inuvik**	**31.12**	**349**	*e*P		**P**	**22 16 30.0**	**+1.4**
	13nm,1.3s							
IL1	**Eielson Array**	**31.22**	**337**	*e*P		**P**	**22 16 31.0**	**+1.5**
ILAR	**Eielson Array**	**31.22**	**337**	P		**P**	**22 16 30.9**	**+1.4**
	2.8nm,0.9s,baz=152,slow=7.5,SNR=23							
ILAR				PcP		**PcP**	**22 19 24.1**	**+0.1**
	0.8nm,0.9s,baz=149,slow=2.1,SNR=6.0							
ILB	**Eielson Array**	**31.22**	**337**	*e*P		**P**	**22 16 32.4**	**+2.9**
GAMB	**Gambell**	**40.20**	**327**	*e*P		**P**	**22 17 48.0**	**+1.5**
	6.0nm,1.2s							
SEY	**Seranchan**	**56.20**	**327**	P		**P**	**22 19 50.1**	**0.0**
	1.0nm,0.3s,baz=119,slow=7.5,SNR=7.3							
MA2	**Magadan**	**58.12**	**323**	P		**P**	**22 20 04.9**	**+1.2**
	1.7nm,0.3s,baz=89,slow=4.8,SNR=4.3							
TIXI	**Tiksi**	**60.60**	**340**	*e*P		**P**	**22 20 22.1**	**+1.4**
	5.8nm,1.3s							
NRIK	**Noril'sk**	**70.91**	**350**	P		**P**	**22 21 26.9**	**-0.2**
	0.6nm,0.3s,baz=5.8,slow=3.7,SNR=5.1							
LPAZ	**La Paz**	**72.11**	**129**	P		**P**	**22 21 34.7**	**-1.1**
	1.0nm,0.8s,baz=345,slow=7.1,SNR=3.9							
USRK	**Ussuriysk Ar.**	**75.97**	**316**	P		**P**	**22 21 57.6**	**+0.1**
	6.3nm,1.2s,baz=50,slow=6.0,SNR=7.4							
MJAR	**Matsushiro Arr**	**77.11**	**306**	P		**P**	**22 22 04.4**	**+0.3**
	2.5nm,0.9s,baz=41,slow=4.0,SNR=5.0							
KSRS	**Korea Array**	**82.76**	**313**	P		**P**	**22 22 35.0**	**+0.4**
	0.6nm,0.3s,baz=60,slow=3.3,SNR=3.8							
KSAR	**Wonju Array Be**	**82.79**	**313**	P		**P**	**22 22 35.0**	**+0.2**
BDFB	**Brasilia**	**85.14**	**114**	LR		LR	23 05 30.5	
	comp=Z,169nm,19.1s,baz=294,slow=39							
SONA1	**Songino Array**	**85.25**	**331**	*e*P		**P**	**22 22 48.6**	**+1.3**
SONM	**Songino Array**	**85.26**	**331**	P		**P**	**22 22 46.6**	**-0.8**
	1.1nm,0.9s,baz=46,slow=4.3,SNR=10.0							
ARU	**Arti**	**85.58**	**2**	*e*P		**P**	**22 22 48.6**	**-0.1**
	8.1nm,1.2s							
ZALV	**Zalesovo Beam**	**85.87**	**346**	P		**P**	**22 22 48.9**	**-1.2**
	0.3nm,0.4s,baz=336,slow=3.3,SNR=4.9							
AKASG	**Malin Array Be**	**86.98**	**20**	P		**P**	**22 22 55.1**	**-0.5**
	0.2nm,0.3s,baz=320,slow=4.0,SNR=5.7							
BRVK	**Borovoye**	**88.65**	**355**	*e*P		**P**	**22 23 04.2**	**+0.6**
	6.4nm,1.0s							
KURK	**Kurchatov**	**90.03**	**349**	*e*P		**P**	**22 23 11.6**	**+1.6**
	14nm,1.6s							
MKAR	**Makanchi Array**	**93.19**	**346**	P		**P**	**22 23 24.3**	**-0.6**
	0.7nm,0.8s,baz=4.1,slow=5.1,SNR=6.8							
WMQ	**Urumqi**	**94.80**	**341**	*e*P		**P**	**22 23 31.3**	**-1.1**
BRTR	**Keskin Array B**	**98.30**	**21**	P		**P**	**22 23 47.4**	**-1.1**
	0.4nm,0.7s,baz=294,slow=1.4,SNR=3.0							
CD2	**Chengdu**	**100.53**	**324**	P		**Pdif**	**22 23 54.6**	**-3.8**
CD2				pmax		pmax		
	comp=Z,1.0nm,0.5s							
BOSA	**Boshof**	**148.61**	**83**	PKPbc		**PKPbc**	**22 29 57.1**	**-0.8**
	comp=Z,4.6nm,0.9s,baz=190,slow=5.0,SNR=3.8							

JMA 13 22:10:20.9, 36.96N×140.71E, h9km±1km, M2.9, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.16**	**27**	P	Pg	22 10 24.6	+0.2
ONAJ				*e*S	Sg	22 10 27.2	+0.5
JHO	**Hitachi**	**0.37**	**198**	P	Pg	22 10 28.0	-0.1
JHO				S	Sg	22 10 33.1	+0.1
JFK	**Kawauchi**	**0.43**	**18**	P	Pg	22 10 29.3	0.0
JFK				S	Sg	22 10 35.3	+0.4
JFT	**Otama**	**0.63**	**332**	S	Sg	22 10 41.7	+0.3
JMM	**Marumori**	**0.91**	**4**	P	Sg	22 10 37.7	-0.7
JMM				S	Sg	22 10 49.9	-0.3
MAT	**Matsushiro**	**2.05**	**259**	P	Pb	22 10 58.8	+0.4
MAT				S	Sb	22 11 23.5	-0.5

*ISCJB **13** 22:12:05.6±1.7, 15°.49N±0°.04×87°.38W±0°.10, h8km±13km, mb3.4/1, Error ellipse: s-maj=16.4km s-min=6.1km az=13.3*
*IDC **13** 22:12:07.3±3.0, 15°.52N×87°.51W, h0km, mb3.1/2, mb1 3.7/4, mb1mx3.4/40, mbtmp3.4/4, ML3.5/2, Error ellipse: s-maj=52.4km s-min=47.2km az=103.0*
*CASC **13** 22:12:07.5±1.3, 15°.42N×87°.36W, h15km, MD3.9, ML2.7*

ISC 13 22:12:07.0±2.8, 15°.45N±0°.05×87°.41W±0°.10, h8km±21km, n20, σ1§04/27, Honduras

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CAHU	**Cacacuatique**	**1.84**	**205**	*e*P	**Pn**	**22 12 37.9**	**-1.2**
PACA	**Pacayal**	**2.15**	**204**	*e*P	**Pn**	**22 12 42.7**	**-0.8**
PACA				*e*S	**Sn**	**22 13 10.7**	**+0.2**
VSM	**San Miguel**	**2.17**	**203**	*e*P	**Pn**	**22 12 42.2**	**-1.6**
LCY	**Lacayo**	**2.19**	**203**	*e*P	**Pn**	**22 12 43.6**	**-0.3**
TECA	**Tecapa**	**2.21**	**209**	*e*P	**Pn**	**22 12 43.2**	**-1.0**
TECA				*e*S	**Sn**	**22 13 12.4**	**+0.5**
LFRS	**El Faro**	**2.42**	**222**	*e*P	**Pn**	**22 12 46.1**	**-0.9**
CSGN	**Cosiguina Volc**	**2.46**	**183**	*e*P	**Pb**	**22 12 49.4**	**-2.2**
BOQS	**Boqueron**	**2.48**	**227**	*e*P	**Pn**	**22 12 48.1**	**+0.1**
BOQS				*e*S	**Sn**	**22 13 18.4**	**-0.3**
SNJE	**San Jose**	**2.64**	**234**	*e*P	**Pn**	**22 12 50.2**	**0.0**
RTR	**El Retiro**	**2.66**	**235**	*e*P	**Pn**	**22 12 51.3**	**+0.9**
RTR				*e*S	**Sn**	**22 13 23.6**	**+0.7**
SBLS	**San Blas**	**2.67**	**234**	*e*P	**Pn**	**22 12 50.9**	**+0.2**
SBLS				*e*S	**Sn**	**22 13 23.3**	**-0.1**
CNGN	**Cerro Negro**	**3.01**	**167**	*e*P	**Pb**	**22 13 01.1**	**+0.1**
MOMN	**Momotombo**	**3.14**	**164**	*e*P	**Pb**	**22 13 03.6**	**+0.5**
MOMN				*e*S	**Sg**	**22 13 49.4**	**+1.5**
MOMN				AML	AML	22 13 49.9	
	comp=Z,34nm,0.5s						
IXG	**Ixpaco**	**3.20**	**247**	*e*P	**Pn**	**22 12 58.4**	**+0.5**
IXG				*e*S	**Sn**	**22 13 38.7**	**+2.2**
TEIG	**Tepich**	**4.83**	**350**	Pn	**Pn**	**22 13 20.0**	**-0.1**
	comp=Z,2.6nm,0.3s,baz=89,slow=24,SNR=15						
TEIG				Sn	**Sn**	**22 14 16.0**	**-0.2**
	comp=Z,4.2nm,0.3s,baz=261,slow=23,SNR=5.1						
TEIG	**Tepich**	**4.83**	**350**	*e*P	**Pn**	**22 13 19.8**	**-0.2**
CMIG	**Matias Romero**	**7.36**	**284**	Pn	**Pn**	**22 13 53.1**	**-1.8**
	comp=Z,0.5nm,0.3s,baz=96,slow=11,SNR=4.6						
TXAR	**Lajitas Array**	**20.38**	**315**	P	Pn	22 16 46.0	-0.6
	comp=Z,1.2nm,0.9s,baz=137,slow=6.7,SNR=5.4						
YKA	**Yellowknife Ar**	**50.75**	**344**	P	**P**	**22 21 07.7**	**+0.4**
	comp=Z,0.4nm,0.8s,baz=139,slow=7.9,SNR=8.0						
CMAR	**Chiang Mai Arr**	**145.73**	**349**	PKPbc	**PKPab**	**22 31 48.0**	**+0.1**
	comp=Z,0.3nm,0.6s,baz=344,slow=2.9,SNR=5.0						

*ISCJB **13** 22:15:20.1±0.6, 38°.44N±

baz=356

MCCM	**Marconi Confer**	**3.28**	**266**	*e*Pn	**Pn**	**22 16 59.1**	**-0.6**
HOPS	**Hopland Field**	**3.44**	**281**	*e*Pn	**Pn**	**22 17 01.9**	**-0.1**
GSC	**Goldstone, Bar**	**3.49**	**153**	*e*Pn	**Pn**	**22 17 00.3**	**-2.5**
ELK	**Elko**	**3.55**	**48**	Lg	Lg	22 18 02.5	
	28nm,0.3s,baz=348,slow=0.1,SNR=6.4						
ELK	**Elko**	**3.55**	**48**	*e*Pn	**Pn**	**22 17 02.2**	**-1.4**
ELK				Lg	Lg	22 18 02.5	
WDC	**Whiskeytown Da**	**3.64**	**307**	*e*Pn	**Pn**	**22 17 05.3**	**+0.6**
MOD	**Modoc Plateau**	**3.67**	**341**	Pn	**Pn**	**22 17 06.1**	**+0.9**
MWC	**Mount Wilson**	**4.24**	**172**	*e*Pn	**Pn**	**22 17 15.8**	**+2.6**
MWC				*e*Pg	**Pg**	**22 17 28.3**	**-0.9**
YBH	**Yreka Blue Hor**	**4.49**	**318**	Pn	**Pn**	**22 17 19.2**	**+2.7**
	1.2nm,0.3s,baz=20,slow=4.1,SNR=7.1						
YBH				Lg	Lg	22 18 35.8	
	0.8nm,0.3s,baz=68,slow=22,SNR=3.6						
YBH	**Yreka Blue Hor**	**4.49**	**318**	*e*Pn	**Pn**	**22 17 16.4**	**-0.1**
YBH				Lg	Lg	22 18 35.8	
BGU	**Big Grassy Mou**	**5.05**	**59**	*e*Pn	**Pn**	**22 17 21.0**	**-3.2**
PFO	**Pinyon Flats O**	**5.16**	**158**	Pg	**Pb**	**22 17 38.9**	**+0.2**
	0.5nm,0.3s,baz=356,slow=16,SNR=2.6						
PFO				Lg	Lg	22 18 53.5	
	1.0nm,0.3s,baz=61,slow=19,SNR=3.9						
PFO	**Pinyon Flats O**	**5.16**	**158**	*e*Pn	**Pn**	**22 17 24.8**	**-0.9**
	36nm,1.4s						
PFO				Pg	**Pb**	**22 17 38.9**	**+0.2**
PFO				*e*Pg	**Pg**	**22 17 46.4**	**-0.5**
PFO				Lg	Lg	22 18 53.5	
MTPU	**Mount Pierson**	**5.17**	**92**	*e*Pn	**Pn**	**22 17 25.2**	**-0.8**
HUMO	**Hull Mountain**	**5.26**	**324**	*e*Pn	**Pn**	**22 17 25.9**	**-1.2**
JLU	**Jordanelle**	**6.03**	**67**	*e*Pg	**Pb**	**22 17 54.7**	**+1.2**
HAWA	**Hanford**	**7.97**	**356**	*e*Pn	**Pn**	**22 18 03.7**	**-0.4**
RSSD	**Black Hills**	**12.42**	**58**	*e*Pn	**Pn**	**22 19 04.2**	**-1.1**
ULM	**Lac du Bonnet**	**20.07**	**47**	P	Pn	22 20 46.1	+2.6
	3.6nm,0.8s,baz=258,slow=8.0,SNR=3.6						
YKA	**Yellowknife Ar**	**24.22**	**5**	P	**P**	**22 21 28.8**	**+3.8**
	1.0nm,0.9s,baz=183,slow=10.0,SNR=8.3						
ILAR	**Eielson Array**	**31.12**	**337**	P	P	22 22 31.7	+5.0
	0.6nm,0.9s,baz=155,slow=7.7,SNR=5.2						

BKK ***13*** *22:34:55.4±1.3,25˚N±7˚×9˚7E±2˚0, h10km, M5.0/6, mb4.8/6, mB5.5/5, MLv5.1/5, Mw(mB)5.0/5*

IDC ***13*** *22:35:15.6±1.4,23˚41N×98˚61E, h0km, mb3.3/3, mb1 3.3/4, mb1mx3.2/62, mbtmp3.2/4, ML3.5/1, Error ellipse: s-maj=40.9km s-min=16.9km az=85.0*

BJI ***13*** *22:35:19.7,23˚40N×98˚42E, h10km, ML4.0/7, Ms3.8/1*

ISC 13 22:35:16.4±1.1,23˚27N±0˚05×98˚50E±0˚09, h10km, n13, σ1§98/18, mb3.2/3, Myanmar-China border region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CRAI	**Chiangrai**	**3.49**	**150**	P	**Pn**	**22 36 13.5**	**+2.7**
	96nm,0.5s,12µm0.9nm						
CRAI				S	**Sb**	**22 37 01.0**	**+0.2**
	96nm,0.5s,12µm0.9nm						
KMI	**Kunming**	**4.29**	**64**	Pg	**Pg**	**22 36 37.6**	**-1.0**
KMI				Sg	**Sg**	**22 37 32.8**	**-1.5**
KMI				smax	smax		
	comp=N,320nm,1.0s						
KMI				smax	smax		
	comp=E,210nm,0.8s						
KMI				LR	LR		
	comp=N,940nm,7.6s						
KMI				LR	LR		
	comp=E,630nm,7.7s						
CHTO	**Chiang Mai**	**4.45**	**175**	P	**Pn**	**22 36 25.9**	**+1.9**
	200nm,0.6s,15µm5.7nm						
CHTO				S	**Sg**	**22 37 37.6**	**-1.8**
	200nm,0.6s,15µm5.7nm						
CMMT	**Chiang Mai**	**4.45**	**175**	P	**Pn**	**22 36 26.0**	**+2.0**
	49nm,0.9s,3µm1.3nm						
CMMT				S	**Sg**	**22 37 37.4**	**-2.1**
	49nm,0.9s,3µm1.3nm						
CMAR	**Chiang Mai Arr**	**4.80**	**175**	Pn	**Pn**	**22 36 31.1**	**+2.3**
	0.5nm,0.3s,baz=349,slow=13,SNR=12						
CMAR				Pg	**Pg**	**22 36 47.0**	**-1.4**
	3.9nm,0.3s,baz=348,slow=17,SNR=72						
CMAR				Lg	Lg	22 37 50.6	
	13nm,0.3s,baz=355,slow=30,SNR=13						
LAMP	**Lampang**	**4.84**	**167**	P	Pg	22 36 47.2	-1.9
LAMP				S	**Sg**	**22 37 49.5**	**-2.4**
UTTA	**Uttaradit**	**5.82**	**160**	P	**Pn**	**22 36 45.3**	**+2.4**
	8.2nm,0.7s,71nm0.1nm						
UTTA				S	**Sg**	**22 38 24.7**	**+1.2**
	8.2nm,0.7s,71nm0.1nm						
PHIT	**Phitsanulok**	**6.31**	**163**	S	**Sg**	**22 38 37.5**	**-1.6**
UMPA	**Umpang Tak**	**7.03**	**177**	S	Sg	22 38 57.5	-4.8
PBKT	**Sadao Pong**	**7.06**	**160**	P	**Pn**	**22 37 02.7**	**+2.9**
SONM	**Songino Array**	**25.31**	**13**	P	**P**	**22 40 42.4**	**-0.9**
	0.2nm,0.6s,baz=198,slow=9.1,SNR=2.6						
MKAR	**Makanchi Array**	**26.86**	**335**	P	**P**	**22 40 56.3**	**-0.9**
	0.4nm,0.7s,baz=133,slow=8.5,SNR=5.6						
ZALV	**Zalesovo Beam**	**32.33**	**345**	P	**P**	**22 41 46.1**	**+0.6**
	0.2nm,0.3s,baz=156,slow=7.3,SNR=2.6						

IDC 13 22:35:16.0±2.7,7.72S×119.17E, h256km, 23km, mb3.5/4, mb1 3.4/8, mb1mx3.1/47, mbtmp3.9/8, Error ellipse: s-maj=72.1km s-min=14.0km az=57.0, Flores Sea

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
KAPI	**Kappang**	**2.75**	**12**	P	Pn	22 36 06.6	+0.4
	5.6nm,0.3s,baz=179,slow=7.4,SNR=13						
BATI	**Baumata**	**5.09**	**119**	P	Pn	22 36 32.6	-0.5
	3.0nm,0.3s,baz=109,slow=24,SNR=15						
FITZ	**Fitzroy Crossi**	**12.10**	**149**	P	P	22 38 02.6	-0.8
	0.3nm,0.3s,baz=313,slow=4.9,SNR=8.3						
WRA	**Warramunga Arr**	**19.08**	**121**	P	P	22 39 18.8	-1.2
	0.3nm,0.3s,baz=303,slow=12,SNR=24						
ASAR	**Alice Springs**	**21.25**	**140**	P	P	22 39 42.9	+0.2
	1.0nm,0.3s,baz=312,slow=8.7,SNR=16						
CTA	**Charters Tower**	**28.97**	**118**	P	P	22 40 53.1	+0.9
	9.9nm,0.9s,baz=309,slow=13,SNR=6.4						
STKA	**Stephens Creek**	**31.85**	**142**	P	P	22 41 18.0	+0.7
	0.7nm,0.5s,baz=341,slow=0.5,SNR=2.8						
MKAR	**Makanchi Array**	**63.40**	**333**	P	P	22 45 18.2	-0.2
	0.9nm,0.5s,baz=151,slow=6.3,SNR=2.5						

NIED ***13*** *22:35:00,36˚80N×140˚60E, h5km, Mw4.9 Best double couple: M₀2.41000×10¹⁶ NP1:φs314.00000°,δ29.00000°, λ-109.00000°. NP2:φs155.00000°,δ63.00000°, λ-80.00000°.*

BJI ***13*** *22:35:47.5,36˚65N×140˚94E, h26km, mb4.7/73, mB5.0/43, Ms4.6/71, Ms7 4.4/59*

JMA ***13*** *22:35:49.7,36˚78N×140˚57E, h9km±1km, M5.1 Broadband fault plane solution: P waves. NP1: φs285.00000°,δ51.00000°,λ-119.00000°. NP2: φs146.00000°,δ47.00000°,λ-59.00000°. Principal axes: T Plg2.0000°, Azm35.0000°; N Plg22.0000°, Azm304.0000°; P Plg68.0000°, Azm130.0000°;*

JMA Felt IV J1.

ISCJB ***13*** *22:35:49.5±0.4,36˚80N±0˚02×140˚50E±0˚02, h10km±2km, mb5.1/203, MS4.4/34 Error ellipse: s-maj=2.9km s-min=2.1km az=141.5*

IDC ***13*** *22:35:49.1±0.3,36˚83N×140˚44E, h0km, mb5.0/49, mb1 5.0/52, mb1mx5.0/62, mbtmp4.9/52, ML4.5/3, MS4.2/21, Ms1 4.2/21, ms1mx4.0/45, Error ellipse: s-maj=9.5km s-min=7.6km az=117.0*

GCMT ***13*** *22:35:53.3±0.3,36˚89N×140˚49E, h15km±1km, MW5.0/98, Moment Tensor Solution. s26,c30; s98,c135; Duration: 0 Moment tensor: Scale 10¹⁶Nm; Mrr=3.58±.22; Mθθ1.84±.14; Mφφ1.74±.14; Mrθ0.11±.42; Mθφ-1.41±.07; Mφr0.33±.53; Best double couple: M₀3.40700×10¹⁶ NP1:φs139.00000°,δ46.00000°,λ-84.00000°. NP2: φs309.00000°,δ44.00000°,λ-97.00000°. Principal axes: T 3.2040, Plg1.0000°, Azm224.0000°; N 0.4050, Plg5.0000°, Azm314.0000°; P -3.6090, Plg85.0000°, Azm119.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

MOS ***13*** *22:35:53.8±1.2,36˚98N×140˚37E, h35km, mb5.3/96, MS4.1/21 Error ellipse: s-maj=6.0km s-min=3.9km az=104.6*

NEIC ***13*** *22:35:53.3±0.7,36˚80N×140˚37E, h25km±4km, mb5.2/86, Error ellipse: s-maj=4.2km s-min=2.8km az=137.0*

NEIC Recorded [4 JMA] in Ibaraki.

ISC 13 22:35:51.6±0.6,36.79N±0˚02×140˚52E±0˚03, h17km±3km,

2011 APR

n958, σ1§50/998, mb5.2/208, MS4.3/34, 32C-22D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JHO	**Hitachi**	**0.19**	**167**	⇑P	**Pg**	**22 35 53.3**	**-2.9**
JHO				S	**Sg**	**22 35 55.9**	**-3.4**
ONAJ	**Iwakimizuishiy**	**0.38**	**36**	⇑P	**Pg**	**22 35 57.1**	**-2.4**
ONAJ				S	**Sg**	**22 36 03.1**	**-1.8**
JSB	**Shiboa**	**0.51**	**290**	⇑P	**Pb**	**22 36 01.1**	**-1.1**
JSB				*e*S	**Sb**	**22 36 09.2**	**-0.2**
JYT	**Yasato**	**0.62**	**205**	⇑P	**Pg**	**22 36 01.6**	**-2.3**
JYT				S	**Sg**	**22 36 10.8**	**-1.4**
JFK	**Kawauchi**	**0.64**	**26**	⇑P	**Pg**	**22 36 01.7**	**-2.6**
JFK				S	**Sg**	**22 36 10.9**	**-1.9**
JFT	**Otama**	**0.74**	**349**	⇑P	**Pg**	**22 36 04.4**	**-1.7**
JFT				S	**Sg**	**22 36 14.8**	**-1.1**
JFY	**Yanaizu**	**0.89**	**314**	P	**Pg**	**22 36 07.6**	**-1.4**
JAG	**Ashikaga**	**0.93**	**247**	⇑P	**Pg**	**22 36 07.3**	**-2.4**
I30JP	**ISUMI INFRASON**	**1.49**	**186**	Pg	**Pg**	**22 36 17.9**	**-2.5**
	baz=20,slow=19,SNR=1.3						
I30JP				Lg	Lg	22 36 36.1	
I30JP				*i*		22 43 20.0	
	baz=8.4,slow=324,SNR=0.6						
MJAR	**Matsushiro Arr**	**1.87**	**263**	Pn	**Pn**	**22 36 22.1**	**-0.9**
	575nm,0.3s,baz=86,slow=15,SNR=1487						
MJAR				Lg	Lg	22 36 46.9	
	672nm,0.3s,baz=91,slow=24,SNR=10.0						
MJAR				LR		22 37 24.9	
	comp=Z,5µm,21.2s,baz=100,slow=54						
MAJO	**Matsushiro**	**1.88**	**263**	*e*P	**Pn**	**22 36 23.1**	**+0.1**
MAJO				*e*		22 36 47.0	
MAJO	**Matsushiro**	**1.88**	**263**	*e*Pn	**Pn**	**22 36 23.1**	**+0.1**
MAJO				*e*Sn	**Sn**	**22 36 47.0**	**+0.6**
MAT	**Matsushiro**	**1.88**	**263**	P	**Pn**	**22 36 23.2**	**+0.2**
MAT				S	**Sb**	**22 36 49.3**	**+0.7**
INU	**Inuyama**	**3.18**	**244**	*e*Pn	**Pn**	**22 36 42.2**	**+1.3**
INU				*e*Sn	**Sn**	**22 37 18.1**	**-0.4**
JHJ	**Hachijo jima 2**	**3.71**	**190**	Pn	**Pn**	**22 36 47.2**	**-1.1**
	201nm,0.3s,baz=45,slow=1.4,SNR=87						
JHJ				Sn	**Sn**	**22 37 30.7**	**-1.0**
	240nm,0.3s,baz=56,slow=23,SNR=7.2						
JHJ				LR	LR	22 38 04.7	
	comp=Z,2µm,19.6s,baz=25,slow=36						
JHJ2	**Mitsune**	**3.72**	**189**	*e*Pn	**Pn**	**22 36 47.7**	**-0.6**
ERM	**Erimo**	**5.60**	**21**	*e*P	**Pn**	**22 37 13.6**	**-0.6**
ERM				*e*		22 38 14.6	
ERM	**Erimo**	**5.60**	**21**	*e*Pn	**Pn**	**22 37 13.6**	**-0.6**
ERM				*e*Sn	**Sn**	**22 38 14.6**	**-3.5**
ASAJ	**Asahikawa**	**7.49**	**12**	Pn	**Pn**	**22 37 39.6**	**-0.4**
	11nm,0.3s,baz=231,slow=12,SNR=54						
ASAJ				Sn	**Sn**	**22 39 06.5**	**+2.0**
	5.8nm,0.3s,baz=333,slow=29,SNR=6.5						
ASAJ				LR	LR	22 40 25.9	
	comp=Z,1µm,21.5s,baz=168,slow=37						
YUK	**Yuzh-Kuril'sk**	**8.30**	**28**	*e*P	**Pn**	**22 37 49.2**	**-2.0**
YUK				*e*S	**Sn**	**22 39 21.3**	**-3.2**
SHO	**Shikotan**	**8.55**	**32**	*e*P	**Pn**	**22 37 51.1**	**-3.6**
SHO				pmax	pmax		
	comp=Z,119nm,0.5s						
SHO				pmax	pmax		
	comp=E,63nm,0.6s						
SHO				pmax	pmax		
	comp=N,39nm,0.5s						
JNU	**Nakatsue**	**8.72**	**248**	Pn	**Pn**	**22 37 59.3**	**+2.2**
	comp=N,1.6nm,0.3s,baz=87,slow=3.6,SNR=17						
JNU	**Nakatsue**	**8.72**	**248**	*e*Pn	Pn	22 38 02.1	+5.0
VLA	**Vladivostok**	**9.15**	**316**	*i* P	**Pn**	**22 38 03.5**	**+0.6**
CBIJ	**Chichi jima**	**9.77**	**171**	*e*Pn	**Pn**	**22 38 06.8**	**-4.7**
JCJ	**Chichijima**	**9.77**	**171**	Pn	**Pn**	**22 38 07.1**	**-4.4**
	comp=N,42nm,0.3s,baz=333,slow=11,SNR=22						
USRK	**Ussuriysk Ar.**	**9.84**	**321**	Pn	**Pn**	**22 38 15.1**	**+2.7**
	comp=N,1.3nm,0.3s,baz=139,slow=9.1,SNR=63						
USRK				LR	LR	22 41 09.1	
	comp=N,280nm,21.1s,baz=129,slow=33						
KSRS	**Korea Array**	**10.08**	**278**	Pn	**Pn**	**22 38 19.0**	**+3.4**
	comp=N,1.4nm,0.3s,baz=101,slow=14,SNR=38						
KSRS				LR	LR	22 41 56.7	
	comp=N,1µm,20.5s,baz=90,slow=37						
KSRS				PcP	**PcP**	**22 44 25.9**	**+0.7**
	comp=N,0.2nm,0.3s,baz=148,slow=0.6,SNR=5.5						
KUR	**Kuril'sk**	**10.09**	**31**	*e*P	**Pn**	**22 38 14.0**	**-1.7**
KUR				*e*S	**Sn**	**22 40 03.2**	**-5.3**
KUR				pmax	pmax		
	comp=Z,101nm,0.7s						
KUR				pmax	pmax		
	comp=N,29nm,0.5s						
KUR				pmax	pmax		
	comp=E,39nm,0.5s						
KS01	**Wonju Array Si**	**10.10**	**278**	*e*Pn	Pn	22 38 21.2	+5.3
KS15	**Wonju Array Si**	**10.11**	**277**	*e*Pn	Pn	22 38 23.0	+6.9
KSAR	**Wonju Array Be**	**10.11**	**277**	P	**Pn**	**22 38 19.0**	**+2.9**
KSAR	**Wonju Array Be**	**10.11**	**277**	Pn	**Pn**	**22 38 19.0**	**+2.9**
KSAR				PcP	**PcP**	**22 44 25.9**	**+0.6**
YSS	**Yuzh-Sakhalins**	**10.29**	**9**	*i* P	**Pn**	**22 38 19.6**	**+1.2**
YSS				*e*S	**Sn**	**22 40 18.3**	**+5.0**
YSS				pmax	pmax		
	comp=Z,180nm,0.8s						
YSS				MLR	MLR		
	comp=Z,1µm,14.0s						
YSS				MLR	MLR		
	comp=N,2µm,15.0s						
YSS				MLR	MLR		
	comp=E,2µm,15.0s						
YSS	**Yuzh-Sakhalins**	**10.29**	**9**	*e*Pn	**Pn**	**22 38 19.0**	**+0.5**
MDJ	**Mudanjiang**	**11.39**	**317**	P	**Pn**	**22 38 33.8**	**+0.3**
MDJ				S	**Sn**	**22 40 37.3**	**-3.0**
MDJ				pmax	pmax		
	comp=E,4.0nm,0.8s						
MDJ				pmax	pmax		
	comp=E,38nm,3.6s						
MDJ				LR	LR		
	comp=E,830nm,15.9s						
MDJ				LR	LR		
	comp=E,1µm,14.6s						
MDJ				LR	LR		
	comp=E,2µm,15.3s						
MDJ	**Mudanjiang**	**11.39**	**317**	Pn	**Pn**	**22 38 33.3**	**-0.2**
	comp=E,54nm,1.0s						
HABR	**Khabarovsk**	**12.34**	**343**	*e*P	**Pn**	**22 38 44.4**	**-2.1**
HABR				*e*S	**Sn**	**22 41 00.7**	**-2.9**
HABR				pmax	pmax		
	comp=Z,15nm,1.0s						
HABR				MLR	MLR		
	comp=Z,935nm,15.0s						
CN2	**Changchun**	**13.45**	**306**	*e*P	**P**	**22 39 06.6**	**-4.4**
CN2				*e*S	**Sn**	**22 41 34.4**	**+3.5**
CN2				pmax	pmax		
	comp=Z,20nm,1.0s						
CN2				pmax	pmax		
	comp=Z,200nm,3.0s						
CN2				LR	LR		
	comp=Z,1µm,14.0s						
CN2				LR	LR		
	comp=Z,1µm,14.0s						
CN2				LR	LR		
	comp=Z,600nm,17.0s						
KLR	**Kul'dur**	**13.97**	**336**	Pn	**Pn**	**22 39 09.3**	**+0.5**
	comp=Z,0.3nm,0.3s,baz=136,slow=14,SNR=13						
KLR				LR	LR	22 44 39.8	
	comp=Z,839nm,18.4s,baz=145,slow=38						
KLR	**Kul'dur**	**13.97**	**336**	⇑*e*P	**Pn**	**22 39 10.9**	**+2.1**
SNY	**Shenyang**	**14.04**	**296**	⇓P	**P**	**22 39 14.3**	**-3.2**
SNY				pmax	pmax		
	comp=Z,21nm,0.8s						
SNY				pmax	pmax		
	comp=Z,200nm,3.5s						
SNY				LR	LR		
	comp=Z,2µm,12.6s						
SNY				LR	LR		
	comp=Z,930nm,15.1s						
SNY				LR	LR		
	comp=Z,1µm,22.6s						
TYV	**Tymovskoe**	**14.15**	**6**	*e*P	**Pn**	**22 39 11.0**	**-0.2**
TYV				pmax	pmax		
	comp=E,66nm,1.0s						
TYV				pmax	pmax		
	comp=Z,101nm,1.0s						
DL2	**Dalian**	**15.07**	**284**	P	**P**	**22 39 27.8**	**-1.2**
DL2				S	**S**	**22 42 20.3**	**-7.3**
DL2				pmax	pmax		
	comp=Z,58nm,0.9s						
DL2				pmax	pmax		
	comp=Z,400nm,4.7s						
DL2				LR	LR		
	comp=Z,2µm,11.5s						
DL2				LR	LR		
	comp=Z,1µm,13.1s						
DL2				LR	LR		
	comp=Z,1µm,13.9s						
NKL	**Nikolayevsk**	**16.36**	**0**	*e*P	**Pn**	**22 39 37.7**	**-2.6**
NKL				pmax	pmax		
	comp=Z,20nm,1.0s						
NJ2	**Nanjing**	**18.48**	**262**	*e*P	**Pn**	**22 40 07.8**	**+0.9**
NJ2				S	**Sn**	**22 43 29.3**	**-3.7**
NJ2				pmax	pmax		
	comp=Z,23nm,0.6s						
NJ2				pmax	pmax		
	comp=Z,320nm,5.4s						
NJ2				LR	LR		
	comp=Z,760nm,16.5s						
NJ2				LR	LR		
	comp=Z,1µm,13.0s						
NJ2				LR	LR		
	comp=Z,1µm,14.1s						
TIA	**Tai'an**	**18.81**	**275**	⇓P	**Pn**	**22 40 11.4**	**+0.4**
TIA				pmax	pmax		
	comp=Z,20nm,1.2s						
BJI	**Beijing**	**19.33**	**287**	P	**Pn**	**22 40 16.6**	**-0.6**
BJI				S	**Sn**	**22 43 50.8**	**-2.8**
BJI				pmax	pmax		
	comp=Z,24nm,1.2s						
BJI				pmax	pmax		
	comp=Z,250nm,4.6s						
BJI				LR	LR		
	comp=Z,740nm,15.2s						
BJI				LR	LR		
	comp=Z,410nm,18.4s						
BJT	**Baijiatuan**	**19.34**	**287**	*e*P	**Pn**	**22 40 18.4**	**+1.1**
BJT				pmax	pmax		
	comp=Z,22nm,0.6s						
BJT	**Baijiatuan**	**19.34**	**287**	*e*P	**Pn**	**22 40 18.4**	**+1.1**
	comp=Z,22nm,0.6s						
PEA0	**Petropavlovsk-**	**20.26**	**31**	*e*P	Pn	22 40 28.4	+0.3
PEA0B	**Petropavlovsk-**	**20.26**	**31**	*e*P	Pn	22 40 30.4	+2.3
	comp=Z,89nm,1.3s						
PETK	**Petropavlovsk-**	**20.26**	**31**	P	Pn	22 40 26.6	-1.5
	comp=Z,15nm,0.9s,baz=224,slow=9.7,SNR=7.6						
PETK				LR	LR	22 47 39.4	
	comp=Z,554nm,21.1s,baz=222,slow=35						
PET	**Petropavlovsk**	**20.60**	**32**	*e*P	Pn	22 40 32.5	+0.4
PET				pmax	pmax		
	comp=Z,95nm,1.6s						
PET				MLR	MLR		
	comp=Z,1µm,18.0s						
SSLB	**Suanglung**	**21.24**	**238**	*e*P	**P**	**22 40 35.4**	**-1.5**
	comp=Z,13nm,0.6s						
YULB	**Yu-li**	**21.28**	**236**	*e*P	**P**	**22 40 33.3**	**-4.0**
	comp=Z,14nm,0.6s						
TPUB	**Ta-pu**	**21.79**	**237**	*e*P	**P**	**22 40 40.6**	**-2.2**
	comp=Z,28nm,0.6s						
TWG	**Pinlang**	**21.82**	**236**	*e*P	**P**	**22 40 40.5**	**-2.7**
	comp=Z,95nm,0.6s						
QZH	**Quanzhou**	**22.16**	**244**	*e*P	**P**	**22 40 49.8**	**+3.0**
QZH				S	**S**	**22 44 45.0**	**-5.4**
QZH				LR	LR		
	comp=Z,540nm,9.3s						
QZH				LR	LR		
	comp=Z,1µm,14.3s						
QZH				LR	LR		
	comp=Z,1µm,17.1s						
WHN	**Wuhan**	**22.61**	**262**	P	**P**	**22 40 52.3**	**+0.7**
WHN				pmax	pmax		
	comp=Z,50nm,0.5s						
WHN				LR	LR		
	comp=Z,1µm,12.6s						
WHN				LR	LR		
	comp=Z,1µm,12.7s						
WHN				LR	LR		
	comp=Z,3µm,18.6s						
CLNS	**Chul'man**	**22.62**	**337**	*e*P	**P**	**22 40 53.9**	**+2.4**
CLNS				pmax	pmax		
	comp=N,13nm,1.2s						
CLNS				pmax	pmax		
	comp=Z,29nm,0.9s						
CLNS				pmax	pmax		
	comp=E,6.0nm,0.8s						
HHC	**Hu-ho-hao-te**	**22.87**	**289**	*e*P	**P**	**22 40 53.9**	**-0.5**
HHC				pP	sP	22 41 01.3	0.0
HHC				sP	pP	22 41 04.5	+5.4
HHC				S	**S**	**22 44 57.3**	**-6.1**
HHC				pmax	pmax		
	comp=E,22nm,0.8s						
HHC				pmax	pmax		
	comp=E,190nm,10.3s						
HHC				LR	LR		
	comp=E,2µm,12.0s						
HHC				LR	LR		
	comp=E,3µm,11.3s						
HHC				LR	LR		
	comp=E,3µm,13.2s						
GUMO	**Guam**	**23.43**	**169**	P	**P**	**22 41 01.3**	**+1.2**
	comp=E,43nm,0.5s,baz=198,slow=20,SNR=3.1						
GUMO	**Guam**	**23.43**	**169**	*e*P	P	22 41 06.6	+6.5
MA2	**Magadan**	**23.74**	**13**	P	**P**	**22 41 02.7**	**-0.1**
	comp=E,61nm,0.7s,baz=222,slow=9.0,SNR=33						
XAN	**Xi'an**	**25.84**	**273**	P	**P**	**22 41 22.3**	**0.0**
XAN				pP	sP	22 41 29.5	+0.1
XAN				S	**S**	**22 45 42.8**	**-8.5**
XAN				pmax	pmax		
	comp=E,16nm,0.5s						
XAN				LR	LR		
	comp=E,830nm,14.5s						
XAN				LR	LR		
	comp=E,650nm,11.6s						
YAK	**Yakutsk**	**26.15**	**348**	P	**P**	**22 41 24.3**	**-0.4**
	comp=E,47nm,0.6s,baz=346,slow=3.8,SNR=12						
YAK				LR	LR	22 51 43.3	
	comp=E,687nm,20.4s,baz=106,slow=37						
YAK	**Yakutsk**	**26.15**	**348**	*e*P	**P**	**22 41 25.2**	**+0.4**
YAK				*e**PP	**sP**	**22 41 35.3**	**+3.4**
YAK				*e*		22 42 04.9	
YAK				*e*PPP	PPP	22 42 13.9	
YAK				*e*		22 44 49.6	
YAK				*e*S	**S**	**22 45 58.0**	**+2.4**
YAK				*e**SS	sS	22 46 11.4	+7.5
YAK				*e*SS	**SnSn**	**22 47 01.9**	**+7.6**
YAK				*e*SSS	SSS	22 47 20.5	
YAK				*e*		22 52 17.5	
YAK				pmax	pmax		
	comp=Z,88nm,0.9s						
YAK				pmax	pmax		
	comp=N,32nm,1.0s						
YAK				pmax	pmax		
	comp=E,11nm,1.2s						
YAK				pmax	pmax		
	comp=Z,31nm,1.6s						
YAK				pmax	pmax		
	comp=N,16nm,0.8s						
YAK				pmax	pmax		
	comp=E,16nm,0.8s						
YAK				smax	smax		
	comp=E,235nm,4.3s						
YAK				smax	smax		
	comp=N,145nm,2.3s						
YAK				MLR	MLR		
	comp=E,693nm,19.0s						
YAK				MLR	MLR		
	comp=Z,659nm,19.0s						
YAK				MLR	MLR		
	comp=N,526nm,15.0s						
YAK	**Yakutsk**	**26.15**	**348**	*e*P	**P**	**22 41 25.3**	**+0.6**
	comp=N,111nm

comp=Z,1.8nm,0.6s,baz=120,slow=2.1,SNR=4.5
BOD Bodaibo 27.36 329 *e*P P **22 41 34.8 -0.9**
BOD pmax pmax
comp=Z,14nm,0.9s
H11N2 WAKE ISLAND Hy 28.65 119 T T 23 11 33.1
baz=313,slow=75,SNR=5779
H11N1 WAKE ISLAND Hy 28.66 119 T T 23 11 33.7
baz=313,slow=75
H11N3 WAKE ISLAND Hy 28.67 119 T T 23 11 34.4
baz=313,slow=75,SNR=6297
H11S1 WAKE ISLAND Hy 29.34 121 T T 23 12 24.6
baz=314,slow=76
H11S3 WAKE ISLAND Hy 29.34 121 T T 23 12 24.7
baz=314,slow=76
H11S2 WAKE ISLAND Hy 29.36 121 T T 23 12 25.9
baz=314,slow=76
LZH Lanzhou 29.40 280 *e*P P 22 42 00.1 +5.8
LZH pP sP 22 42 07.5 +6.0
LZH sP pP 22 42 11.5 +12
LZH PP **PP** **22 43 02.4 +1.8**
LZH S S 22 46 57.5 +10
LZH sS sS 22 47 07.4 +11
LZH SS **SnSn** **22 48 27.8 +14**
LZH pmax pmax
comp=Z,45nm,1.2s
LZH pmax pmax
comp=Z,250nm,4.5s
LZH LR LR
comp=N,960nm,12.7s
LZH LR LR
comp=E,1μm,14.0s
LZH LR LR
comp=Z,2μm,15.7s
ZAK Zakamensk 29.86 309 *e*P **P** **22 41 56.9 -1.3**
ZAK pmax pmax
comp=Z,5.0nm,1.1s
ZAK pmax pmax
comp=Z,5.0nm,1.2s
TLY Talaya 29.95 312 P **P** **22 41 58.6 -0.3**
comp=Z,4.3nm,0.6s,baz=116,slow=8.6,SNR=9.1
TLY Talaya 29.95 312 *e*P **P** **22 41 58.3 -0.6**
TLY pmax pmax
comp=Z,6.0nm,1.0s
TLY MLR MLR
comp=Z,292nm,10.0s
TLY Talaya 29.95 312 *e*P **P** **22 41 59.3 +0.5**
comp=Z,6.6nm,0.7s
GYA Guiyang 30.47 260⇑ *i*P **P** **22 42 04.3 +0.5**
GYA pP sP 22 42 12.4 +1.4
GYA PcP **PcP** **22 45 05.5 +2.5**
GYA ScS ScS 22 52 38.9 -2.2
GYA pmax pmax
comp=Z,40nm,0.8s
GYA pmax pmax
comp=Z,140nm,5.4s
GYA LR LR
comp=Z,530nm,16.5s
GYA LR LR
comp=Z,490nm,17.1s
GYA LR LR
comp=Z,510nm,16.6s
CD2 Chengdu 30.95 270 P **P** **22 42 06.5 -1.5**
CD2 PP **PP** **22 43 16.3 -1.6**
CD2 S **S** **22 47 09.1 -2.8**
CD2 pmax pmax
comp=Z,20nm,0.8s
CD2 pmax pmax
comp=Z,310nm,4.9s
CD2 LR LR
comp=Z,1μm,17.4s
CD2 LR LR
comp=Z,1μm,14.4s
MOY Mondy 31.55 311 *e*P **P** **22 42 14.5 +1.4**
GTA Gaotai 31.95 287 *e*P **P** **22 42 16.4 -0.4**
GTA S **S** **22 47 21.4 -6.0**
GTA pmax pmax
comp=Z,4.0nm,1.1s
GTA pmax pmax
comp=Z,190nm,5.9s
GTA LR LR
comp=Z,510nm,15.7s
GTA LR LR
comp=Z,380nm,16.9s
GTA LR LR
comp=Z,420nm,15.2s
QIZ Qiongzhong 32.18 245 P **P** **22 42 20.9 +2.2**
QIZ S **S** **22 47 30.3 -0.7**
QIZ LR LR
comp=Z,280nm,15.9s
QIZ LR LR
comp=Z,230nm,16.9s
KMI Kunming 34.22 261 P **P** **22 42 36.6 -0.2**
KMI pP sP 22 42 44.3 +0.3
KMI sP pP 22 42 48.1 +6.2
KMI PP **PP** **22 43 54.3 0.0**
KMI S **S** **22 48 04.1 +1.1**
KMI pmax pmax
comp=Z,24nm,0.9s
KMI pmax pmax
comp=Z,110nm,5.3s
KMI LR LR
comp=Z,560nm,15.2s
KMI LR LR
comp=Z,510nm,15.4s
KMI LR LR
comp=Z,670nm,19.0s
BILL Bilibino 34.46 17*c i*P **P** **22 42 37.8 -0.4**
BILL *i* 22 42 49.7
BILL *i* 22 45 12.6
BILL pmax pmax
comp=Z,44nm,1.1s
BILL MLR MLR
comp=Z,397nm,23.0s
BILL Bilibino 34.46 17 *e*P **P** **22 42 37.3 -0.9**
ATKA Atka Island 35.15 49 *e*P **P** **22 42 43.4 -0.9**
comp=Z,33nm,0.8s
TIXI Tiksi 35.45 354 P **P** **22 42 45.5 -1.1**
comp=Z,10nm,0.7s,baz=153,slow=4.6,SNR=26
TIXI Tiksi 35.45 354 *i* P **P** **22 42 45.9 -0.7**
TIXI pmax pmax
comp=Z,12nm,0.9s
TIXI Tiksi 35.45 354 *e*P **P** **22 42 45.1 -1.4**
comp=Z,14nm,1.0s
UBPT Khong Chiam 37.78 245 P P 22 43 11.7 +4.6
comp=Z,24nm,0.8s
TNTI Ternate 37.85 202 P **P** **22 43 09.1 +1.4**
SWI Sorong 38.44 195 P **P** **22 43 15.5 +2.9**
comp=Z,53nm,0.8s
CRAI Chiangrai 38.63 256 P **P** **22 43 18.6 +4.3**
comp=Z,73nm,0.7s
KHON Khomkaen 39.05 249 P **P** **22 43 20.7 +2.9**
comp=Z,9.7nm,0.9s,comp=Z,721nm
LBMI Labuha 39.15 201 P **P** **22 43 20.6 +2.0**
comp=Z,50nm,0.7s
GENI Genyem 39.19 181 P P 22 43 23.3 +4.4
GAMB Gambell 39.30 31 *e*P **P** **22 43 20.5 +1.3**
comp=Z,5.5nm,0.8s
MRSI Marisa 40.02 210 P **P** **22 43 28.7 +2.9**
comp=Z,42nm,0.6s,comp=Z,1μm
FAKI Fak Fak 40.25 193 P **P** **22 43 30.3 +2.5**
comp=Z,72nm,1.2s,comp=Z,1μm
FAKI Fak Fak 40.25 193 *e*P **P** **22 43 27.1 -0.6**
comp=Z,49nm,0.6s
WMQ Urumqi 40.31 297 P **P** **22 43 28.5 +0.4**
WMQ pP sP 22 43 35.0 -0.3
WMQ sP pP 22 43 39.3 +6.0
WMQ PcP **PcP** **22 45 32.8 +1.3**
WMQ S **S** **22 49 34.3 -0.7**
WMQ SS **SS** **22 52 26.8 -6.7**
WMQ ScS **ScS** **22 53 31.8 -2.0**
WMQ pmax pmax
comp=Z,6.0nm,0.6s
WMQ pmax pmax
comp=Z,65nm,3.6s
WMQ LR LR
comp=Z,390nm,18.2s
WMQ LR LR
comp=Z,76nm,23.2s
CHTO Chiang Mai 40.54 255 *e*P **P** **22 43 30.6 +0.4**
CHTO *e* 22 45 34.7
CHTO pmax pmax
comp=Z,6.0nm,0.7s
CHTO Chiang Mai 40.54 255 *e*P **P** **22 43 30.6 +0.4**
comp=Z,6.2nm,0.7s
CHTO *e*PcP **PcP** **22 45 34.7 +2.2**
CM31 Chiang Mai Arr 40.74 255 *e*P **P** **22 43 33.3 +1.4**
CMAR Chiang Mai Arr 40.74 255 P **P** **22 43 31.6 -0.3**
comp=Z,3.2nm,0.7s,baz=53,slow=6.3,SNR=9.5
CMAR PcP **PcP** **22 45 34.3 +1.2**
comp=Z,4.1nm,1.0s,baz=13,slow=2.6,SNR=11
CMAR LR LR 23 01 12.2
comp=Z,211nm,19.0s,baz=130,slow=37
KMPI Kaimana, Papua 40.74 190 P **P** **22 43 33.7 +1.9**
CM01 Chiang Mai Arr 40.75 255 *e*P **P** **22 43 34.1 +2.2**
CM01 *e*PcP **PcP** **22 45 33.8 +0.7**
SANI Sanana 40.94 202 P **P** **22 43 34.1 +0.7**
comp=Z,109nm,0.6s,comp=Z,1μm
LUWI Luwuk 41.09 208 *e*P **P** **22 43 33.1 -1.6**
comp=Z,30nm,0.6s
MSAI Masohi 41.37 198 P **P** **22 43 38.5 +1.5**
APSI Ampana 41.40 209 P **P** **22 43 39.5 +2.3**
LSA Lhasa 41.52 275 *e*P **P** **22 43 38.1 -0.6**
LSA pmax pmax
comp=Z,8.0nm,0.8s
LSA Lhasa 41.52 275 *e*P **P** **22 43 38.1 -0.6**
comp=Z,7.7nm,0.8s
ZAA0 Zalesovo Array 41.55 313 *e*P **P** **22 43 36.4 -1.7**
ZALV Zalesovo Beam 41.55 313 P **P** **22 43 37.3 -0.8**
comp=Z,20nm,0.7s,baz=92,slow=6.3,SNR=42
ZALV PcP **PcP** **22 45 35.8 +0.7**
comp=Z,8.6nm,0.6s,baz=103,slow=3.3,SNR=9.0
ZALV ScP **ScP** **22 49 27.8 +3.3**
comp=Z,1.0nm,0.8s,baz=132,slow=4.4,SNR=3.6
ZALV Zalesovo Beam 41.55 313 P **P** **22 43 37.3 -0.8**
ZALV 22 45 35.8
ZALV pmax pmax
comp=Z,21nm,0.7s
ZALV pmax pmax
comp=Z,9.0nm,0.6s
ZALV pmax pmax
comp=N,1.0nm,0.8s
BNDI Bandanaira 42.28 196 P **P** **22 43 44.9 +0.5**
comp=N,476nm,0.9s,comp=N,6μm
NVS Novosibirsk 42.49 314 *e*P **P** **22 43 45.3 -0.4**
NVS pmax pmax
comp=N,3.0nm,0.5s
NVS pmax pmax
comp=E,10.0nm,0.5s
NVS pmax pmax
comp=Z,15nm,0.5s
SBUM Sibu 42.99 224 *e*P **P** **22 43 52.0 +1.8**
comp=Z,10nm,1.1s
NRIK Noril'sk 43.19 336 P **P** **22 43 50.9 -0.4**
comp=Z,29nm,1.3s,baz=102,slow=9.8,SNR=12
NRIK PcP **PcP** **22 45 41.9 +1.5**
comp=Z,8.1nm,0.7s,baz=92,slow=3.5,SNR=6.1
NRIK LR LR 23 03 04.6
comp=Z,543nm,18.4s,baz=59,slow=38
MK31 Makanchi Array 43.64 302 *i* P **P** **22 43 54.9 -0.3**
MK31 pmax pmax
comp=Z,9.0nm,0.7s
MKAR Makanchi Array 43.64 302 P **P** **22 43 55.0 -0.2**
comp=Z,9.4nm,0.6s,baz=89,slow=10,SNR=70
MKAR PcP **PcP** **22 45 43.8 +1.5**
comp=Z,5.5nm,0.8s,baz=69,slow=6.6,SNR=5.6
MKAR LR LR 23 01 26.6
comp=Z,326nm,18.6s,baz=78,slow=35
MKAR Makanchi Array 43.64 302 P **P** **22 43 55.0 -0.2**
MKAR 22 45 43.8
MKAR pmax pmax
comp=Z,10.0nm,0.6s
MKAR pmax pmax
comp=Z,6.0nm,0.8s
MKAR MLR MLR
comp=Z,326nm,18.6s
BKB Balikpapan 43.76 215 P **P** **22 43 56.3 -0.1**
KDI Kendari 43.85 206 P **P** **22 43 59.4 +2.3**
comp=Z,16nm,1.5s,comp=Z,458nm
MAKZ Makanchi 43.85 302 *e*P **P** **22 43 56.6 -0.3**
MAKZ Makanchi 43.85 302 *e*P **P** **22 43 56.6 -0.3**
TTSI Tana Toraja 44.08 210 P **P** **22 44 01.5 +2.5**
CHGN Chignik 44.64 44 *e*P **P** **22 44 02.8 -0.2**
KSM Kuching 44.87 225 *e*P **P** **22 44 07.6 +2.3**
comp=Z,24nm,0.8s
SPSI Sidrap Palu 44.93 210 P **P** **22 44 07.7 +1.9**
comp=Z,32nm,1.2s
TAPN Taplejung 45.24 274 *e*P **P** **22 44 08.5 -0.1**
comp=Z,16nm,0.5s
SAUI Saumlaki 45.37 193 P P 22 44 13.5 +4.3
comp=Z,162nm,1.3s
SAUI Saumlaki 45.37 193 *e*P **P** **22 44 13.0 +3.7**
comp=Z,232nm,1.2s
STKI Sintang 45.37 223 P **P** **22 44 11.7 +2.4**
comp=Z,26nm,0.7s,comp=Z,7μm
KURK Kurchatov 45.52 308 *e*P **P** **22 44 08.2 -1.9**
KURK pmax pmax
comp=Z,61nm,1.1s
KURK Kurchatov 45.52 308 *e*P **P** **22 44 08.2 -1.9**
comp=Z,61nm,1.1s
ODAN Odare 45.71 273 *e*P **P** **22 44 12.0 -0.2**
comp=Z,16nm,0.5s
KBKI Kotabaru 45.89 215 P **P** **22 44 16.5 +3.1**
KAPI Kappang 45.90 209 P **P** **22 44 13.3 -0.1**
comp=Z,42nm,0.9s,baz=18,slow=6.3,SNR=14
KAPI Kappang 45.90 209 *e*P **P** **22 44 13.8 +0.4**
comp=Z,99nm,1.1s
TT01 Tatalina 46.02 35 *e*P **P** **22 44 14.8 +0.8**
TTA Tatalina 46.03 35 *e*P **P** **22 44 14.9 +0.8**
TTA *e* 22 45 53.6
TTA Tatalina 46.03 35 *e*P **P** **22 44 14.9 +0.8**
TTA *e*PcP **PcP** **22 45 53.6 +3.3**
SVW2 Sparrevohn 46.15 37 *e*P **P** **22 44 16.0 +1.0**
comp=Z,29nm,0.8s
PDGK Podgornoye 46.26 298 *i* P **P** **22 44 13.5 -2.5**
PDGK pmax pmax
comp=Z,55nm,0.8s
RAMN Ramite 46.30 274 *e*P **P** **22 44 16.5 -0.4**
comp=Z,76nm,0.6s
PMG Port Moresby 46.38 171 P **P** **22 44 18.3 +1.1**
comp=Z,11nm,0.6s,baz=311,slow=9.3,SNR=3.6
GUN Gumba 46.46 275 *e*P **P** **22 44 18.4 +0.1**
comp=Z,47nm,0.7s
BSSI Bau Bau, Buton 46.65 208 P **P** **22 44 21.2 +1.9**
KKN Kakani 46.99 276 *e*P **P** **22 44 21.8 -0.5**
comp=Z,32nm,0.7s
GKN Gorkha 47.42 276 *e*P **P** **22 44 25.5 0.0**
comp=Z,63nm,0.8s
PBKI Pangkalan Bun 47.59 221 P **P** **22 44 29.1 +2.4**
KDAK Kodiak Island 47.76 42 P P 22 44 41.9 +14
comp=Z,42nm,0.8s,baz=298,slow=3.4,SNR=16
KDAK Kodiak Island 47.76 42 *e*P **P** **22 44 29.3 +1.8**
KDAK pmax pmax
comp=Z,48nm,0.8s
KDAK Kodiak Island 47.76 42 *e*P **P** **22 44 29.2 +1.8**
comp=Z,48nm,0.8s
PPLA Purkeypile 47.78 35 *e*P **P** **22 44 29.9 +2.0**
comp=Z,28nm,1.1s
CAST Castle Rocks 47.83 34 *e*P **P** **22 44 29.5 +1.4**
comp=Z,14nm,0.8s
SPU Mount Spurr 47.86 37 *e*P **P** **22 44 29.5 +1.1**
BPAW Bear Paw Mtn. 48.32 33 *e*P **P** **22 44 32.8 +0.9**
comp=Z,11nm,1.1s
MMRI Maumere 48.34 205 P **P** **22 44 34.6 +2.1**
MMRI Maumere 48.34 205 *e*P **P** **22 44 32.0 -0.5**
comp=Z,28nm,0.6s
KOLN Koldanda 48.34 276 *e*P **P** **22 44 32.9 +0.1**
comp=Z,25nm,0.7s
KTH Kantishna Hill 48.35 34 *e*P **P** **22 44 33.5 +1.3**
comp=Z,29nm,1.0s
IPM Ipoh 48.40 238 *e*P **P** **22 44 33.6 +0.6**
comp=Z,12nm,0.6s
MLY Manley 48.43 32 *e*P **P** **22 44 33.9 +1.2**
comp=Z,19nm,0.9s
BRLK Bradley Lake 48.50 39 *e*P P 22 44 37.7 +4.4
comp=Z,36nm,1.0s
EDFI Ende, Flores 48.63 205 P **P** **22 44 36.1 +1.3**
TRF Thorofare Moun 48.63 34 *e*P **P** **22 44 37.2 +2.8**
comp=Z,19nm,0.8s
PYUN Piuthan 48.69 277 *e*P **P** **22 44 35.7 +0.3**
comp=Z,135nm,0.9s
COLD Coldfoot 48.71 29 *e*P **P** **22 44 36.3 +1.5**
comp=Z,9.1nm,1.1s
SOEI Soe 48.76 202 P **P** **22 44 37.9 +2.1**
comp=Z,152nm,1.1s,comp=Z,2μm
SOEI Soe 48.76 202 *e*P **P** **22 44 37.4 +1.6**
comp=Z,156nm,1.1s
RC01 Rabbit Creek A 48.99 37 *e*P **P** **22 44 37.6 +0.7**
comp=Z,26nm,0.9s
TKM2 Tokmak 2 49.11 298 *e*P **P** **22 44 38.5 0.0**
TKM2 pmax pmax
comp=Z,27nm,0.6s
TKM2 Tokmak 2 49.11 298 *e*P **P** **22 44 38.5 0.0**
comp=Z,27nm,0.6s
SEW Seward 49.20 38 *e*P **P** **22 44 41.0 +2.4**
comp=Z,60nm,1.3s
MCK McKinley 49.23 34 *e*P **P** **22 44 39.8 +0.9**
MCK *e* 22 46 04.4
MCK pmax pmax
comp=Z,19nm,0.8s
MCK McKinley 49.23 34 *e*P **P** **22 44 39.8 +0.9**
comp=Z,19nm,0.8s
MCK *e*PcP **PcP** **22 46 04.4 +2.7**
PMR Palmer 49.25 36 *e*P **P** **22 44 39.4 +0.5**
PMR pmax pmax
comp=Z,20nm,0.8s
PMR Palmer 49.25 36 *e*P **P** **22 44 39.4 +0.5**
comp=Z,20nm,0.8s
RND Reindeer 49.28 34 *e*P **P** **22 44 40.0 +0.7**
RND pmax pmax
comp=Z,22nm,0.9s
RND Reindeer 49.28 34 *e*P **P** **22 44 40.0 +0.7**
comp=Z,22nm,0.9s
BATI Baumata 49.36 202 P **P** **22 44 40.6 +0.3**
comp=Z,51nm,0.8s,baz=282,slow=24,SNR=9.6
BATI Baumata 49.36 202 P **P** **22 44 42.9 +2.5**
MDM Murphy Dome 49.50 32 *e*P **P** **22 44 41.8 +0.9**
comp=Z,34nm,1.0s
WRH Wood River Hil 49.58 33 *e*P **P** **22 44 42.3 +0.9**
comp=Z,25nm,0.9s
SML Sawmill 49.61 36 *e*P **P** **22 44 42.8 +1.0**
SML pmax pmax
comp=Z,31nm,0.8s
SML Sawmill 49.61 36 *e*P **P** **22 44 42.8 +1.0**
comp=Z,31nm,0.8s
COLA College 49.66 32⇑ *i*P **P** **22 44 43.0 +0.9**
COLA pmax pmax
comp=Z,18nm,0.8s
CCB Clear Creek Bu 49.69 32 *e*P **P** **22 44 45.0 +2.6**
comp=Z,18nm,1.4s
FRU Bishkek 49.83 299 *e*P **P** **22 44 43.0 -0.8**
FRU pmax pmax
comp=Z,80nm,2.2s
KSH Kashi 49.85 294 P **P** **22 44 48.4 +4.3**
KSH *es*P sP 22 44 59.6 +8.2
KSH *e*PP **PP** **22 46 44.3 +5.6**
KSH PcS **PcS** **22 50 05.1 +3.6**
KSH S **S** **22 51 56.3 +3.0**
KSH pmax pmax
comp=Z,9.0nm,0.8s
KSH pmax pmax
comp=Z,240nm,6.7s
KSH LR LR
comp=Z,520nm,16.9s
KSH LR LR
comp=Z,160nm,8.8s
KSH LR LR
comp=Z,350nm,12.9s
VOSK Vostochnaya 49.91 312 *i* P **P** **22 44 42.4 -1.8**
VOSK pmax pmax
comp=Z,34nm,0.8s
CHKZ Chkalovo 49.95 313 *i* P **P** **22 44 40.1 -4.3**
CHKZ pmax pmax
comp=Z,44nm,1.3s
AAK Ala-Archa 49.97 298 P **P** **22 44 43.3 -1.7**
comp=Z,8.3nm,0.7s,baz=124,slow=5.2,SNR=23
AAK Ala-Archa 49.97 298⇓ *i*P **P** **22 44 44.4 -0.6**
AAK pmax pmax
comp=Z,19nm,0.7s
AAK Ala-Archa 49.97 298 *e*P **P** **22 44 44.3 -0.8**
comp=Z,7.7nm,0.6s
OTUK Ortayu 49.98 306 *i* P **P** **22 44 42.5 -2.4**
OTUK pmax pmax
comp=Z,32nm,0.8s
HDA Harding Lake 50.07 33 *e*P **P** **22 44 45.7 +0.4**
comp=Z,26nm,0.9s
IL1 Eielson Array 50.08 32 *e*P **P** **22 44 44.5 -0.8**
ILAR Eielson Array 50.08 32 P **P** **22 44 45.3 0.0**
comp=Z,21nm,0.8s,baz=267,slow=6.1,SNR=44
ILAR LR LR 23 06 29.2
comp=Z,179nm,20.6s,baz=204,slow=37
ILAR Eielson Array 50.08 32 P **P** **22 44 45.3 0.0**
ILAR pmax pmax
comp=Z,20nm,0.8s
ILAR MLR MLR
comp=Z,179nm,20.6s
ILB Eielson Array 50.08 32 *e*P **P** **22 44 45.8 +0.4**
SCM Sheep Creek Mo 50.08 36 *e*P **P** **22 44 46.6 +1.1**
SCM pmax pmax
comp=Z,29nm,0.8s
SCM Sheep Creek Mo 50.08 36 *e*P **P** **22 44 46.6 +1.1**
comp=Z,29nm,0.8s
PLAI Plampang 50.15 210 P **P** **22 44 47.3 +0.9**
comp=Z,62nm,0.8s
MTN Manton Dam 50.16 192 *e*P **P** **22 44 48.3 +2.0**
comp=Z,26nm,1.4s
PPBI Pangkal Pinang 50.23 227 P **P** **22 44 50.1 +3.1**
comp=Z,22nm,1.0s
BRVK Borovoye 50.26 312*c i*P **P** **22 44 46.0 -0.8**
BRVK pmax pmax
comp=Z,24nm,1.0s
BRVK Borovoye 50.26 312 *e*P **P** **22 44 44.9 -1.9**
comp=Z,17nm,0.8s
TWSI Taliwang, Sumb 50.43 211 P **P** **22 44 49.5 +1.0**
comp=Z,48nm,0.9s,comp=Z,592nm
EKS2 Erkin-Say 50.47 299 *e*P **P** **22 44 48.5 -0.2**
EKS2 pmax pmax
comp=Z,9.0nm,0.6s
EKS2 Erkin-Say 50.47 299 *e*P **P** **22 44 48.5 -0.2**
comp=Z,9.4nm,0.6s
COEN Coen 50.54 177 *e*P **P** **22 44 49.4 +0.1**
comp=Z,35nm,0.9s
KLU Klutina 50.79 36 *e*P **P** **22 44 52.1 +1.3**
comp=Z,15nm,0.7s
PAX Paxson 50.84 35 *e*P **P** **22 44 52.3 +1.1**
PAX pmax pmax
comp=Z,18nm,0.8s
PAX Paxson 50.84 35 *e*P **P** **22 44 52.2 +1.1**
comp=Z,18nm,0.8s
DIV Divide 50.90 37 *e*P **P** **22 44 53.1 +1.5**
comp=Z,22nm,0.8s
EYAK Cordova Ski Ar 50.98 38 *e*P **P** **22 44 55.9 +3.8**
comp=Z,26nm,0.8s
ZRNK Zerenda 51.04 312 *i* P **P** **22 44 50.6 -2.1**
ZRNK pmax pmax
comp=Z,39nm,0.9s
PSI Prapat 51.05 238 P **P** **22 44 53.3 -0.1**
comp=Z,7.4nm,0.6s,baz=24,slow=5.8,SNR=6.8
PSI PcP **PcP** **22 46 09.9 +0.7**
comp=Z,2.8nm,0.3s,baz=356,slow=4.0,SNR=3.9
PSI Prapat 51.05 238 P **P** **22 44 53.3 -0.1**
PSI 22 46 09.9
PSI pmax pmax
comp=Z,4.0nm,0.3s
PSI pmax pmax
comp=Z,3.0nm,0.3s
JMBI JAMBI 51.32 230 P **P** **22 44 54.2 -1.0**
comp=Z,838nm,0.5s
DOT Dot Lake 51.40 34 *e*P **P** **22 44 55.5 +0.2**
comp=Z,36nm,0.8s
MNAS Manas 51.42 299 *i* P **P** **22 44 54.1 -1.8**
MNAS pmax pmax
comp=Z,25nm,0.7s
BMRM Bremner River 51.48 37 *e*P **P** **22 44 57.5 +1.5**
comp=Z,32nm,0.9s
SFK Sufi-Kurgan 51.49 295 *i* P **P** **22 44 56.4 -0.2**
SFK pmax pmax
comp=Z,28nm,0.7s
GMJI Gumukmas 51.52 215 P **P** **22 44 59.1 +2.4**
comp=Z,35nm,1.1s,comp=Z,1μm
RAGM Ragged Mountai 51.53 38 *e*P **P** **22 45 00.1 +3.8**
comp=Z,33nm,1.0s
MENT Mentasta 51.64 34 *e*P **P** **22 44 58.7 +1.6**
comp=Z,26nm,1.0s
MNSI Mandailing Nat 52.08 236 P **P** **22 45 02.8 +1.9**
comp=Z,20nm,0.9s
PWJI Pagerwojo 52.08 217 P **P** **22 45 01.5 +0.7**
comp=Z,84nm,0.6s
EGAK Eagle 52.52 32 *e*P **P** **22 45 03.9 +0.3**
UGM Wanagama 52.62 219 *e*P **P** **22 45 05.1 +0.2**
comp=Z,77nm,0.9s
KK31 Karatay Array 52.62 300 *i* P **P** **22 45 04.6 -0.1**
KK31 pmax pmax
comp=Z,32nm,1.1s
KKAR Karatay Array 52.62 300 *e*P **P** **22 45 03.9 -0.8**
KKAR Karatay Array 52.62 300 *e*P **P** **22 45 03.9 -0.8**
GSI Gunungsitoli 53.06 238 *e*P **P** **22 45 07.9 -0.3**
comp=Z,188nm,1.4s
LHSI Lahat 53.12 229 P **P** **22 45 10.5 +1.9**
comp=Z,60nm,1.0s

KLI **Kotabumi** 53.15 227 P P 22 45 11.0 +2.2
comp=Z,81nm,1.0s,comp=Z,6µm
LEM **Lembang** 53.21 222 P P 22 45 14.9 +5.5
comp=Z,70nm,0.8s,baz=324,slow=20,SNR=15
LEM LR LR 23 09 33.2
comp=Z,210nm,18.5s,baz=62,slow=38
LEM **Lembang** 53.21 222 P P 22 45 16.2 +6.8
LEM **Lembang** 53.21 222 P P 22 45 15.0 +5.6
LEM pmax pmax
comp=Z,70nm,0.9s
LEM MLR MLR
comp=Z,210nm,18.5s
SVE **Sverdlovsk** 54.85 319↓ *e*P P 22 45 20.2 -0.6
SVE pmax pmax
comp=Z,40nm,0.9s
INK **Inuvik** 54.93 27 P P 22 45 21.9 +0.7
comp=Z,20nm,1.0s,baz=282,slow=6.8,SNR=24
INK LR LR 23 10 33.3
comp=Z,166nm,18.3s,baz=242,slow=38
INK **Inuvik** 54.93 27 *e*P P 22 45 21.8 +0.7
comp=Z,18nm,0.9s
ARU **Arti** 56.06 318 *d i*P P 22 45 28.3 -1.2
ARU 22 46 27.6
ARU 22 47 31.4
ARU S S 22 53 16.1 -1.1
ARU SS SS 22 57 02.9 0.0
ARU pmax pmax
comp=Z,52nm,1.0s
ARU **Arti** 56.06 318 *e*P P 22 45 27.4 -2.1
comp=Z,43nm,0.9s
SOKR **Solikamsk** 56.08 322 *e*P P 22 45 27.0 -2.5
SOKR pmax pmax
comp=Z,7.0nm,0.9s
SKAG **Skagway** 56.33 38 *e*P P 22 45 36.1 +4.8
comp=Z,18nm,1.0s
FITZ **Fitzroy Crossi** 56.38 197 P P 22 45 33.1 +1.1
comp=Z,12nm,0.6s,baz=29,slow=7.9,SNR=7.8
FITZ **Fitzroy Crossi** 56.38 197 *e*P P 22 45 32.6 +0.6
comp=Z,44nm,1.5s
WRAB **Tennant Creek** 56.72 187 *e*P P 22 45 33.7 -0.8
WRAB pmax pmax
comp=Z,25nm,0.7s
WRAB **Tennant Creek** 56.72 187 *e*P P 22 45 33.7 -0.8
comp=Z,25nm,0.7s
WB2 **Warramunga Arr** 56.73 187 *e*P P 22 45 34.0 -0.5
comp=Z,29nm,0.6s
WRA **Warramunga Arr** 56.73 187 P P 22 45 33.1 -1.5
comp=Z,20nm,0.5s,baz=2.2,slow=7.2,SNR=30
WRA PcP PcP 22 46 32.6 +2.2
comp=Z,6.5nm,0.5s,baz=360,slow=4.4,SNR=7.1
WRA **Warramunga Arr** 56.73 187 P P 22 45 33.1 -1.5
WRA 22 46 32.6
WRA pmax pmax
comp=Z,22nm,0.5s
WRA pmax pmax
comp=Z,7.0nm,0.5s
KBL **Kabul** 56.83 291 *e*P P 22 45 35.3 -0.3
KBL pmax pmax
comp=Z,15nm,0.8s
KBL **Kabul** 56.83 291 *e*P P 22 45 35.3 -0.3
comp=Z,15nm,0.8s
CTA **Charters Tower** 56.83 174 P P 22 45 34.0 -1.2
comp=Z,3.3nm,0.6s,baz=232,slow=20,SNR=3.4
HYB **Hyderabad** 57.48 268 *i* P P 22 45 41.0 +0.9
HYB *e*PcP PcP 22 46 35.0 +1.3
AB31 **Akbulak array** 57.55 310 *i* P P 22 45 37.1 -3.0
AB31 pmax pmax
comp=Z,32nm,0.8s
ABKAR **Akbulak array** 57.55 310 *e*P P 22 45 38.9 -1.2
AKTO **Aktyubinsk** 58.30 312 *i* P P 22 45 45.2 -0.2
AKTO pmax pmax
comp=Z,21nm,0.9s
DLBC **Dease Lake** 59.26 38 P P 22 45 52.9 +0.8
comp=Z,16nm,0.8s,baz=298,slow=6.9,SNR=26
DLBC **Dease Lake** 59.26 38 *e*P P 22 45 53.5 +1.5
AS01 **Alice Springs** 60.45 187 *e*P P 22 45 59.5 -1.0
AS31 **Alice Springs** 60.46 187 *e*P P 22 46 00.4 -0.1
comp=Z,5.2nm,0.6s
ASAR **Alice Springs** 60.46 187 P P 22 45 59.8 -0.8
comp=Z,15nm,0.8s,baz=8.0,slow=6.7,SNR=16
ASAR PKP2bc 23 15 32.5
comp=Z,1.3nm,0.8s,baz=188,slow=2.6,SNR=9.3
KBS **Kingsbay** 60.77 350 *e*P P 22 46 04.8 +2.8
KBS pmax pmax
comp=Z,29nm,0.8s
KBS **Kingsbay** 60.77 350 *e*P P 22 46 04.8 +2.8
comp=Z,28nm,0.8s
MBWA **Marble Bar** 60.89 202 *e*P P 22 46 04.3 +0.8
comp=Z,13nm,0.8s
LVZ **Lovozero** 62.03 336 *ce*P P 22 46 11.0 +0.2
LVZ pmax pmax
comp=Z,22nm,1.3s
APA **Apatity** 62.61 336⇑ *i*P P 22 46 16.5 +2.0
APA pmax pmax
comp=Z,10.0nm,0.6s
APA MLR MLR
comp=Z,500nm,17.0s
TMCR **Tamitsa** 62.61 331 *e*P P 22 46 14.2 -0.4
TMCR pmax pmax
comp=Z,34nm,1.2s
EIDS **Eidsvold** 62.63 169 *e*P P 22 46 15.0 -0.1
comp=Z,13nm,0.8s
RES **Resolute Bay** 63.01 14 P P 22 46 16.4 -0.6
comp=Z,7.0nm,0.7s,baz=310,slow=5.1,SNR=14
RES PcP PcP 22 46 57.0 +2.1
comp=Z,7.1nm,0.8s,baz=314,slow=4.6,SNR=5.9
GEYT **Alibeck** 63.32 299 P P 22 46 18.9 -0.9
comp=Z,7.5nm,0.6s,baz=46,slow=4.3,SNR=18
KLMR **Klimovskoe** 63.58 328 *e*P P 22 46 19.3 -1.7
KLMR *e* 22 46 56.6
KLMR pmax pmax
comp=Z,22nm,0.9s
ARCES **ARCESS Array B** 63.97 339 P P 22 46 22.6 -1.0
comp=Z,12nm,0.9s,baz=54,slow=6.9,SNR=16
ARCES LR LR 23 17 60.0
comp=Z,157nm,18.1s,baz=31,slow=40
YKW3 **Yellowknife Ar** 64.34 30 *e*P P 22 46 25.8 -0.2
YKA **Yellowknife Ar** 64.38 30 P P 22 46 26.3 0.0
comp=Z,7.3nm,0.9s,baz=301,slow=6.5,SNR=36
YKA PKP2bc 23 15 14.3
comp=Z,0.5nm,0.9s,baz=136,slow=1.7,SNR=5.7
YKB5 **Yellowknife Ar** 64.38 30 *e*P P 22 46 26.1 -0.1
MSVF **Nonsavu** 64.78 140 *e*P P 22 46 31.5 +2.0
MSVF **Nonsavu** 64.78 140 *e*P P 22 46 31.5 +2.0
DAG **Danmarks Havn** 65.95 355 *i* P P 22 46 35.2 -1.1
comp=Z,16nm,0.8s
DAG **Danmarks Havn** 65.95 355 *i* P P 22 46 35.2 -1.1
DAG pmax pmax
comp=Z,12nm,0.8s
VRH **Novokhopyorsk** 67.28 318 *e*P P 22 46 43.9 -1.2
VRH pmax pmax
comp=Z,20nm,0.6s
NLWA **Neilton Lookou** 67.41 47 *e*P P 22 46 48.5 +2.4
ARMA **Armidale** 67.67 170 *e*P P 22 46 48.8 +1.0
OBN **Obninsk** 67.86 323 *i* P P 22 46 47.3 -1.4
OBN *i* 22 47 14.1
OBN *i* 22 49 15.8
OBN pmax pmax
comp=Z,21nm,1.0s
OBN MLR MLR
comp=Z,262nm,16.0s
B05A **Bryant** 67.99 46 P P 22 46 50.0 +0.3
baz=301
E03A **Lebam** 68.01 48 *e*P P 22 46 52.0 +2.1
LPSR **Galich'ya Gora** 68.02 320 *e*P P 22 46 49.5 -0.4
LPSR pmax pmax
comp=Z,30nm,0.9s
B06A **Marblemount** 68.21 45 *e*P P 22 46 52.1 +1.1
RPW **Rockport** 68.23 45 P P 22 46 51.8 +0.5
STKA **Stephens Creek** 68.32 179 P P 22 46 51.0 -0.8
comp=Z,11nm,0.8s,baz=346,slow=6.6,SNR=11
STKA **Stephens Creek** 68.32 179 *e*P P 22 46 51.9 +0.1
VSR **Storozhevoye** 68.64 319 *e*P P 22 46 52.8 -0.9
VSR pmax pmax
comp=Z,40nm,1.0s
FIA1 **FINESS Array S** 68.69 332 *e*P P 22 46 53.5 -0.4
FINES **FINESS Array B** 68.69 332 P P 22 46 52.2 -1.6
comp=Z,20nm,0.8s,baz=57,slow=7.0,SNR=49
FINES LR LR 23 17 58.1
comp=Z,238nm,19.4s,baz=20,slow=37
G03D **McMinnville, O** 68.88 49 P P 22 46 55.9 +0.6
baz=301
TDL **Tradedollar La** 68.91 47 P P 22 46 57.2 +1.5
LON **Longmire** 68.94 47 *e*P P 22 46 57.3 +1.5
LON **Longmire** 68.94 47 *e*P P 22 46 57.3 +1.5
F04A **Amboy** 69.01 48 *e*P P 22 46 58.0 +1.8

NLW **Nelson Butte** 69.09 45 P P 22 46 57.6 +0.8
LTY **Liberty** 69.34 46 *e*P P 22 46 59.5 +1.2
BBOO **Buckleboo** 69.37 184 *e*P P 22 46 58.4 +0.1
B08A **Colville Reser** 69.51 44 *e*P P 22 46 60.0 +0.7
I03D **Drain, OR** 69.61 50 P P 22 47 00.7 +0.7
baz=302
GOF **Gofitskoye** 69.72 311↓ *i*P P 22 47 02.1 +1.6
GOF pmax pmax
comp=Z,31nm,0.9s
H04A **Detroit Lake** 69.81 49 *e*P P 22 47 02.4 +1.2
G05D **Wamic, OR** 70.03 48 P P 22 47 02.8 +0.2
baz=302
I04A **Tendick Farm,** 70.14 50 P P 22 47 04.0 +0.7
baz=302
NCK **Nalchik** 70.21 310 *i* P P 22 47 05.3 +1.7
NCK pmax pmax
comp=Z,17nm,1.2s
L02D **Cave Junction,** 70.27 52 P P 22 47 04.6 +0.6
baz=302
VSU **Vasula** 70.30 329 *ce*P P 22 47 05.1 +1.3
VSU pmax pmax
comp=Z,78nm,0.8s
CROR **Criterion Ridg** 70.37 48 P P 22 47 05.9 +1.2
ZEI **Tsey** 70.39 309 *e*P P 22 47 04.9 -0.1
ZEI pmax pmax
comp=Z,12nm,0.8s
C09A **Chrisman Ranch** 70.41 45 *e*P P 22 47 05.8 +1.0
RSW **Rattlesnake Hi** 70.43 46 P P 22 47 06.3 +1.3
G06A **Carlson Farm,** 70.44 48 *e*P P 22 47 06.4 +1.3
D08A **Wollman Farm,** 70.45 45 *e*P P 22 47 06.4 +1.3
HAWA **Hanford** 70.46 46 *e*P P 22 47 06.5 +1.4
I05D **Terrebonne, OR** 70.50 49 P P 22 47 05.9 +0.5
baz=303
KBZ **Khabaz** 70.51 310 P P 22 47 05.0 -0.4
comp=Z,9.8nm,0.7s,baz=33,slow=3.9,SNR=19
KIV **Kislovodsk** 70.52 311 *i* P P 22 47 06.7 +1.1
SNR=9.5
KIV **Kislovodsk** 70.52 311 *e*P P 22 47 06.1 +0.5
KIV pmax pmax
comp=Z,37nm,1.1s
KIV **Kislovodsk** 70.52 311 *e*P P 22 47 05.9 +0.3
BANOM **Banah** 70.60 288 *i* P P 22 47 08.1 +1.8
SNR=13
NEW **Newport** 70.80 44 P P 22 47 07.7 +0.5
comp=Z,12nm,0.9s,baz=317,slow=5.0,SNR=14
NEW **Newport** 70.80 44 P P 22 47 07.4 +0.2
baz=304
NEW **Newport** 70.80 44 *e*P P 22 47 07.8 +0.6
NEY **Neytrino** 70.88 310 *i* P P 22 47 07.2 -0.7
NEY pmax pmax
comp=Z,2.0nm,1.0s
SUMG **Summit** 70.92 360 *i* P P 22 47 09.4 +1.4
comp=Z,18nm,0.9s
SUMG **Summit** 70.92 360 *i* P P 22 47 09.4 +1.4
SUMG pmax pmax
comp=Z,18nm,0.9s
SUMG **Summit** 70.92 360 *e*P P 22 47 08.7 +0.8
YBH **Yreka Blue Hor** 71.06 52 P P 22 47 10.5 +1.5
comp=Z,10nm,0.9s,baz=97,slow=1.4,SNR=9.2
YBH **Yreka Blue Hor** 71.06 52 *e*P P 22 47 10.6 +1.7
J05D **Fort Rock, OR** 71.14 50 P P 22 47 10.6 +1.1
baz=303,SNR=6.0
M02C **Callahan** 71.15 52 P P 22 47 09.1 -0.4
baz=303
UOSS **Minazif** 71.20 287 *e*P P 22 47 11.5 +1.5
GNI **Garni** 71.27 306 *i* P P 22 47 10.6 +0.2
GNI pmax pmax
comp=Z,18nm,0.9s
HATD **Hatta, Dubai** 71.31 287 *i* P P 22 47 12.6 +1.9
SNR=13
AKH **Akhalkalaki** 71.39 308⇑ *i*P P 22 47 13.4 +2.3
N02D **Trinity Center** 71.47 52 P P 22 47 10.8 -0.6
baz=303
CHVG **Ch'k'valeri** 71.56 310⇑ *i*P P 22 47 14.1 +2.3
M04C **Macdoel** 71.58 51 P P 22 47 12.4 +0.3
baz=303
NAZ **Nazwa, Dubai** 71.59 288 P P 22 47 13.4 +1.1
K05A **Summer Lake** 71.65 50 *e*P P 22 47 14.0 +1.3
FAQ **Al Faqa, Dubai** 71.77 288 *i* P P 22 47 14.4 +1.0
SNR=7.4
WDC **Whiskeytown Da** 71.79 53 *e*P P 22 47 14.5 +1.2
WDC **Whiskeytown Da** 71.79 53 *e*P P 22 47 14.5 +1.2
F10A **Beach Ranch, E** 72.03 46 *e*P P 22 47 15.4 +0.7
ASUD **Al Ashush, Dub** 72.04 288 P P 22 47 15.6 +0.6
WALA **Waterton Lakes** 72.09 42 *e*P P 22 47 15.8 +0.6
SCO **Scoresbysund** 72.28 354 *i* P P 22 47 15.8 +0.2
SCO **Scoresbysund** 72.28 354 *i* P P 22 47 15.8 +0.2
BSMT **Bassoo Peak** 72.32 43 *e*P P 22 47 17.7 +1.1
O03D **Paynes Creek** 72.42 53 P P 22 47 17.1 0.0
baz=304
BLMT **Blacktail Moun** 72.46 43 *e*P P 22 47 19.2 +1.8
MOD **Modoc Plateau** 72.47 51 *e*P P 22 47 18.7 +1.2
NACGM **Naroch** 72.53 326 *e* P P 22 47 18.0 +0.6
BMO **Blue Mountains** 72.62 47 *e*P P 22 47 18.9 +0.6
JTMT **Jette** 72.66 43 *e*P P 22 47 19.7 +1.1
NWAO **Narrogin (SRO)** 72.69 200 P P 22 47 19.4 +0.9
comp=Z,6.4nm,0.6s,baz=18,slow=0.1,SNR=8.0
NWAO **Narrogin (SRO)** 72.69 200 *e*P P 22 47 18.5 0.0
YBMT **Yellow Bay** 72.74 43 *e*P P 22 47 20.6 +1.6
SWMT **Swartz Lake** 72.96 43 *e*P P 22 47 21.1 +0.8
ORV **Oroville** 73.02 53 *e*P P 22 47 20.7 +0.1
ORV **Oroville** 73.02 53 *e*P P 22 47 20.7 +0.1
ANN **Anapa** 73.18 314 *e*P P 22 47 18.3 -3.1
ANN pmax pmax
comp=Z,124nm,1.2s
MSO **Missoula** 73.39 44 P P 22 47 22.7 -0.1
baz=306
MSO **Missoula** 73.39 44 *e*P P 22 47 23.5 +0.7
AFDM **Forest Hills D** 73.70 53 *e*P P 22 47 26.1 +1.4
CHMT **Chamberlain Mo** 73.72 43 *e*P P 22 47 25.6 +0.7
AKASG **Malin Array Be** 74.05 322 P P 22 47 25.4 -1.0
comp=Z,9.7nm,0.6s,baz=47,slow=6.0,SNR=41
AKASG LR LR 23 22 50.2
comp=Z,233nm,18.3s,baz=75,slow=38
AKASG **Malin Array Be** 74.05 322 P P 22 47 25.4 -1.0
AKASG pmax pmax
comp=Z,9.0nm,0.6s
AKASG MLR MLR
comp=Z,233nm,18.3s
AKBB **Malin Array Si** 74.05 322 *e*P P 22 47 27.7 +1.3
AKBB **Malin Array Si** 74.05 322 *e*P P 22 47 27.7 +1.3
KIEV **Kiev** 74.06 322 *i* P P 22 47 26.5 0.0
KIEV pmax pmax
comp=Z,19nm,0.8s
KIEV **Kiev** 74.06 322 *e*P P 22 47 26.2 -0.3
NB2 **NORSAR Subarra** 74.13 337 P P 22 47 25.9 -0.9
comp=Z,20nm,1.0s,baz=41,slow=5.9
NB2 **NORSAR Subarra** 74.13 337 P P 22 47 25.9 -0.9
baz=41,slow=5.9
NOA **NORSAR Array B** 74.13 337 P P 22 47 25.9 -0.9
comp=Z,14nm,0.9s,baz=40,slow=5.8,SNR=37
NOA LR LR 23 23 04.9
comp=Z,162nm,20.0s,baz=30,slow=38
FFC **Flin Flon** 74.29 32 *e*P P 22 47 27.9 +0.1
FFC **Flin Flon** 74.29 32 *e*P P 22 47 27.9 +0.1
MFID **Camas Ranch** 74.32 47 *e*P P 22 47 28.5 +0.1
FCC **Fort Churchill** 74.53 26 *e*P P 22 47 28.9 -0.2
FCC **Fort Churchill** 74.53 26 *e*P P 22 47 28.9 -0.2
CMB **Columbia Colle** 74.59 54 *e*P P 22 47 30.6 +0.7
CMB **Columbia Colle** 74.59 54 *e*P P 22 47 30.6 +0.7
SUW **Suwalki** 74.70 327 *e*P P 22 47 29.1 -1.1
SUW **Suwalki** 74.70 327 *e*P P 22 47 29.2 -1.0
LRM **Limekiln Ridge** 74.82 44 *e*P P 22 47 32.2 +0.8
EGMT **Eagleton** 74.92 41 P P 22 47 31.4 -0.3
baz=309
EGMT **Eagleton** 74.92 41 *e*P P 22 47 35.1 +3.4
WAKR **Walker** 74.94 53 *e*P P 22 47 33.5 +1.4
DLMT **Dillon** 75.02 44 *e*P P 22 47 33.1 +0.7
HLID **Hailey** 75.06 47 P P 22 47 33.6 +0.9
baz=307,SNR=28
HLID **Hailey** 75.06 47 *e*P P 22 47 33.2 +0.5
MCMT **McKenzie Canyo** 75.20 45 *e*P P 22 47 34.1 +0.5
BOZ **Bozeman (W)** 75.38 44 P P 22 47 34.6 +0.1
baz=308
BOZ **Bozeman (W)** 75.38 44 *e*P P 22 47 35.1 +0.6
BOZ pmax pmax
comp=Z,27nm,0.9s
BOZ **Bozeman (W)** 75.38 44 *e*P P 22 47 35.1 +0.6
comp=Z,27nm,0.9s
NVAR **Mina Array Bea** 75.71 53 P P 22 47 36.8 +0.2
comp=Z,22nm,0.8s,baz=283,slow=6.6,SNR=22
QLMT **Earthquake Lak** 76.00 44 *e*P P 22 47 39.3 +1.2
ELK **Elko** 76.25 49 *e*P P 22 47 40.3 +0.6
ELK **Elko** 76.25 49 *e*P P 22 47 40.3 +0.6

YMR **Madison River** 76.36 44 *e*P P 22 47 41.7 +1.5
GCMT **Greycliff** 76.37 43 *e*P P 22 47 41.4 +1.3
YFT **Old Faithful** 76.56 44 *e*P P 22 47 44.6 +3.3
H17A **Grant Village** 76.74 44 P P 22 47 43.5 +1.1
baz=309,SNR=32
H17A **Grant Village** 76.74 44 *e*P P 22 47 42.9 +0.5
comp=Z,30nm,0.9s
PKM **Mcpherson Peak** 76.78 56 P P 22 47 42.8 +0.1
baz=306
IMW **Indian Meadow** 76.85 45 *e*P P 22 47 44.9 +1.8
FLWY **Flagg Ranch** 76.87 44 *e*P P 22 47 45.0 +2.0
FXWY **Fox Creek** 76.96 45 *e*P P 22 47 45.0 +1.4
RLMT **Red Lodge** 77.01 43 P P 22 47 44.1 +0.2
baz=310,SNR=15
RLMT **Red Lodge** 77.01 43 *e*P P 22 47 44.3 +0.5
MOOW **Moose Ponds** 77.05 45 *e*P P 22 47 45.5 +1.4
HVU **Hansel Valley** 77.10 47 *e*P P 22 47 46.1 +1.8
HVU **Hansel Valley** 77.10 47 *e*P P 22 47 46.1 +1.8
IAS **Iasi** 77.14 320↓ *i*P P 22 47 45.8 +1.6
LVV **L'vov** 77.15 324 *e*P P 22 47 44.4 +0.2
GRAC **Grapevine Rang** 77.15 53 P P 22 47 44.3 -0.2
baz=307
FRB **Frobisher Bay** 77.17 13 P P 22 47 44.0 0.0
comp=Z,12nm,0.7s,baz=334,slow=5.5,SNR=12
ISA **Isabella, Lake** 77.21 55 P P 22 47 45.1 +0.1
baz=306
LOHW **Long Hollow** 77.22 45 *e*P P 22 47 46.4 +1.4
SNOW **Snow King Moun** 77.23 45 *e*P P 22 47 47.0 +1.9
REDW **Red Top Meadow** 77.23 45 *e*P P 22 47 46.5 +1.3
BEL **Belsk** 77.25 326 *e*P P 22 47 47.0 +2.2
BEL **Belsk** 77.25 326 *e*P P 22 47 47.0 +2.2
BSD **Bornholm Skovb** 77.31 331 *i* P P 22 47 46.4 +1.4
comp=Z,25nm,0.9s
BSD **Bornholm Skovb** 77.31 331 *i* P P 22 47 46.4 +1.4
BSD pmax pmax
comp=Z,25nm,0.9s
DAC **Darwin (Calif)** 77.43 54 *e*P P 22 47 46.2 -0.1
DAC **Darwin (Calif)** 77.43 54 *e*P P 22 47 46.2 -0.1
AHID **Auburn Hatcher** 77.47 46 *e*P P 22 47 47.9 +1.5
DGMT **Dagmar** 77.47 38 P P 22 47 46.3 +0.2
baz=312
BGU **Big Grassy Mou** 77.47 48 *e*P P 22 47 48.2 +1.8
R11A **Troy Canyon, C** 77.47 51 P P 22 47 47.1 +0.5
baz=307
R11A **Troy Canyon, C** 77.47 51 *e*P P 22 47 46.8 +0.3
comp=Z,27nm,0.9s
LAO **LASA Array** 77.62 40 P P 22 47 47.2 +0.1
baz=311
LAO **LASA Array** 77.62 40 *e*P P 22 47 48.8 +1.7
MPMC **Manual Prospec** 77.62 54 P P 22 47 47.0 -0.4
baz=307,SNR=12
OSI **Osito Audit: C** 77.67 56 *e*P P 22 47 50.7 +3.2
TLCR 77.78 318↓ *i*P P 22 47 49.3 +1.5
FURC **Furnace Creek,** 77.79 54 P P 22 47 48.4 +0.4
baz=307
GIRR **Girov** 77.84 320⇑ *i*P P 22 47 48.7 +0.5
LRMC **Laurel Mtn Rad** 77.84 55 P P 22 47 48.9 +0.3
baz=307
TPNV **Topopah Spring** 77.89 53 P P 22 47 48.3 -0.5
baz=307,SNR=16
TPNV **Topopah Spring** 77.89 53 *e*P P 22 47 49.3 +0.4
TPNV **Topopah Spring** 77.89 53 *e*P P 22 47 49.3 +0.4
KWP **Kalwaria Pacla** 77.90 324 *e*P P 22 47 48.8 +0.3
KWP **Kalwaria Pacla** 77.90 324 *e*P P 22 47 48.8 +0.3
HWUT **Hardware Ranch** 77.92 47 *e*P P 22 47 50.1 +1.2
EDW2 **Edwards Air Fo** 77.99 55 P P 22 47 49.5 +0.1
baz=307,SNR=6.6
BUR08 **Bucovina Ar. S** 78.04 321 *e*P P 22 47 48.8 -0.6
BURAR **Bucovina Array** 78.05 321↓ *i*P P 22 47 50.5 +1.0
DUG **Dugway, Tooele** 78.05 49 P P 22 47 50.2 +0.5
baz=306
DUG **Dugway, Tooele** 78.05 49 *e*P P 22 47 50.5 +0.8
DUG **Dugway, Tooele** 78.05 49 *e*P P 22 47 50.5 +0.8
B25A **Knox Farm, Ray** 78.12 38 P P 22 47 49.9 +0.1
baz=313
CFR **Carcaliu** 78.15 318⇑ *i*P P 22 47 51.3 +1.4
A26A **Wade Farm, Ken** 78.23 37 P P 22 47 50.5 +0.1
baz=314,SNR=8.5
ODBI **Odobesti** 78.34 319↓ *i*P P 22 47 51.7 +0.8
MWC **Mount Wilson** 78.34 56 *e*P P 22 47 55.3 +3.9
MWC **Mount Wilson** 78.34 56 *e*P P 22 47 55.3 +3.9
BW06 **Boulder Array** 78.34 45 P P 22 47 51.3 0.0
baz=310
BW06 **Boulder Array** 78.34 45 *e*P P 22 47 51.2 -0.2
PD31 **Pinedale Array** 78.34 45 *e*P P 22 47 51.4 0.0
PDAR **Pinedale Array** 78.34 45 P P 22 47 51.4 0.0
comp=Z,12nm,0.7s,baz=270,slow=3.0,SNR=28
CTU **Camp Tracy** 78.38 48 *e*P P 22 47 53.1 +1.6
PSUT **Pine Spring** 78.44 50 *e*P P 22 47 52.9 +1.0
VRI **Vrincioaia** 78.44 319⇑ *i*P P 22 47 52.6 +1.1
C25A **Freed Ranch, W** 78.45 38 P P 22 47 51.5 -0.1
baz=313
TIRR **Tirgusor** 78.47 317↓ *i*P P 22 47 53.4 +1.8
BR131 **Keskin Array S** 78.47 311 *e*P P 22 47 52.1 +0.1
BRTR **Keskin Array B** 78.47 311 P P 22 47 52.0 +0.1
comp=Z,3.8nm,0.8s,baz=37,slow=3.5,SNR=25
PLOR **Plostina** 78.49 319↓ *i*P P 22 47 54.1 +2.2
B26A **Jensen Ranch,** 78.50 37 P P 22 47 51.8 0.0
baz=313
SHOC **Shoshone, Teco** 78.51 54 P P 22 47 52.4 +0.3
baz=307
GSC **Goldstone, Bar** 78.52 55 P P 22 47 52.5 +0.2
baz=307
A27A **Ledoux Ranch,** 78.58 36 P P 22 47 52.9 +0.7
baz=314
CIS **Catalina Islan** 78.59 57 P P 22 47 53.1 +0.5
baz=307
KOLS **Kolonicke sedl** 78.59 324 *e*P P 22 47 54.1 +1.8
KOLS pmax pmax
comp=Z,10.0nm,1.1s
KOLS **Kolonicke sedl** 78.59 324 *e*P P 22 47 54.1 +1.8
BFSC **Mount Baldy Ra** 78.60 56 P P 22 47 52.7 -0.1
baz=307
JLU **Jordanelle** 78.61 48 *e*P P 22 47 54.2 +1.3
NLU **North Lily Min** 78.65 48 *e*P P 22 47 54.8 +1.8
STHS **Stebnicka Huta** 78.74 324 *e*P P 22 47 55.9 +2.8
STHS pmax pmax
comp=Z,8.0nm,1.1s
STHS **Stebnicka Huta** 78.74 324 *e*P P 22 47 55.9 +2.8
UZH **Uzhgorod** 78.79 323 *e*P P 22 47 53.0 -0.4
D25A **Fairfield** 78.80 39 P P 22 47 53.7 +0.1
baz=313
OJC **Ojcow** 78.84 326 *e*P P 22 47 53.8 +0.2
OJC **Ojcow** 78.84 326 *e*P P 22 47 54.2 +0.6
OJC **Ojcow** 78.84 326 *e*P P 22 47 54.2 +0.6
ARCR **ARCALIA** 78.84 321↓ *i*P P 22 47 55.6 +1.9
MPU **Maple Canyon** 78.87 48 *e*P P 22 47 55.4 +1.1
ANTO **Ankara** 78.89 312 *e*P P 22 47 56.2 +2.1
ANTO **Ankara** 78.89 312 *e*P P 22 47 56.3 +2.1
BR231 **Keskin MP Arra** 78.92 312 *e*P P 22 47 56.8 +2.3
PGOR **Pogoanele** 78.94 318⇑ *i*P P 22 47 56.5 +2.2
C26A **Wahner Farm, P** 78.94 38 P P 22 47 54.4 +0.1
baz=314
CRVS **Cervenica-Dubn** 79.00 324 *e*P P 22 47 56.6 +2.1
CRVS **Cervenica-Dubn** 79.00 324 *e*P P 22 47 56.6 +2.1
TRPA **Tarpa** 79.02 323↓ *e*P P 22 47 56.9 +2.3
MSAB **Monastry St. A** 79.03 317⇑ *i*P P 22 47 57.0 +2.3
A28A **Rude Farm, Bot** 79.07 36 P P 22 47 54.7 -0.3
baz=315,SNR=5.1
DOPR **Dopca** 79.07 320↓ *i*P P 22 47 56.4 +1.4
MLR **Muntele Rosu** 79.10 319⇑ *i*P P 22 47 56.0 +0.7
MLR **Muntele Rosu** 79.10 319 *e*P P 22 47 55.8 +0.5
MLR **Muntele Rosu** 79.10 319 *e*P P 22 47 55.8 +0.5
HEC **Hector,Ludlow** 79.11 55 P P 22 47 55.6 +0.1
baz=307
NIE **Niedzica** 79.18 325 *e*P P 22 47 55.9 +0.4
NIE **Niedzica** 79.18 325 *e*P P 22 47 55.9 +0.4
E25A **Miller Ranch,** 79.20 39 P P 22 47 56.2 +0.5
baz=313
MURC **Murrieta** 79.29 56 P P 22 47 57.0 +0.5
baz=307
C27A **Sayler Ranch,** 79.31 37 P P 22 47 55.8 -0.5
baz=314
D26A **Manning** 79.32 38 P P 22 47 56.4 0.0
baz=314
B28A **Dugan Ranch, T** 79.35 36 P P 22 47 56.2 -0.2
baz=315,SNR=5.2
CJR **Cluj-Napoca** 79.48 321⇑ *i*P P 22 47 59.4 +2.2
MSU **Marysvale** 79.49 50 *e*P P 22 47 59.2 +1.5
MSU **Marysvale** 79.49 50 *e*P P 22 47 59.2 +1.5
A29A **Manning Farm,** 79.54 35 P P 22 47 57.0 -0.5
baz=315,SNR=25
F25A **Bowman** 79.56 40 P P 22 47 58.1 +0.4
baz=313

TMUT Trail Mountain 79.58 49 eP P 22 47 59.5 +1.2
GMRC Granite Mounta 79.58 54 P P 22 47 58.2 0.0
baz=308,SNR=19
E26A Carlson Angus 79.69 39 P P 22 47 58.7 +0.2
baz=314
D27A Center 79.72 38 P P 22 47 58.8 +0.2
baz=314
LANS Liptovska Anna 79.75 325 eP P 22 48 01.3 +2.6
LANS Liptovska Anna 79.75 325 eP P 22 48 01.3 +2.6
P17A Butcher Ranch, 79.75 48 eP P 22 47 60.0 +0.9
KECS Kecovo 79.75 324 eP P 22 47 59.9 +1.3
KECS pmax pmax
comp=Z,3.0nm,0.9s
KECS Kecovo 79.75 324 eP P 22 47 59.9 +1.3
PFO Pinyon Flats O 79.77 56 P P 22 47 59.0 -0.1
comp=Z,12nm,0.9s,baz=287,slow=4.6,SNR=9.4
PFO Pinyon Flats O 79.77 56 P P 22 47 59.7 +0.5
baz=308
PFO Pinyon Flats O 79.77 56 eP P 22 47 59.8 +0.7
109C Camp Elliot, M 79.78 57 P P 22 48 00.0 +1.0
baz=307
MTPU Mount Pierson 79.78 50 eP P 22 48 01.3 +1.9
B29A Wagenman Farm, 79.81 36 P P 22 47 59.4 +0.4
baz=315
BELC Belle Mtn. Jos 79.84 55 P P 22 47 59.8 +0.3
baz=308
C28A Hausauer Farms 79.85 37 P P 22 47 59.6 +0.4
baz=315
OKC Ostrava-Krasne 79.85 326 eP P 22 47 58.7 -0.4
OKC Ostrava-Krasne 79.85 326‖ eP P 22 47 58.7 -0.4
DRGR 79.86 322‖ iP P 22 47 59.8 +0.4
ARR Arges 79.87 320⇑ iP P 22 48 01.0 +1.6
KSP Ksiaz 79.92 328 eP P 22 48 01.2 +1.7
KSP Ksiaz 79.92 328 eP P 22 48 01.2 +1.7
P18A Preston Nutter 79.95 48 eP P 22 48 01.5 +1.2
A30A Hoffart Farm, 79.96 35 P P 22 47 59.4 -0.4
baz=316,SNR=18
F26A Lodgepole 80.01 39 P P 22 48 00.4 +0.2
baz=314
KNB Kanab 80.02 51 eP P 22 48 02.4 +1.8
KNB Kanab 80.02 51 eP P 22 48 02.4 +1.8
PKCU Pink Cliffs 80.07 51 epP pP 22 48 10.2 +3.7
G25A Newell 80.08 40 P P 22 48 01.1 +0.5
baz=313
RAYN Ar Rayn 80.08 292 eP P 22 48 00.2 -0.7
ULM Lac du Bonnet 80.10 33 P P 22 48 00.1 -0.4
comp=Z,15nm,1.0s,baz=317,slow=6.3,SNR=11
SRU San Rafael Swe 80.11 48 eP P 22 48 01.7 +0.7
SRU San Rafael Swe 80.11 48 eP P 22 48 01.7 +0.7
K22A Casper 80.12 44 P P 22 48 00.8 -0.2
baz=312
D28A Regan 80.13 37 P P 22 48 00.9 +0.1
baz=315
MDND Maddock 80.13 36 P P 22 48 01.0 +0.3
baz=315
MDND Maddock 80.13 36 eP P 22 48 00.4 -0.3
comp=Z,52nm,0.9s
MORC Moravsky Berou 80.17 326 eP P 22 48 01.6 +0.7
MORC Moravsky Berou 80.17 326 eP P 22 48 01.6 +0.7
E27A Carson 80.17 38 P P 22 48 01.5 +0.5
baz=314
BAR Barrett 80.19 57 eP P 22 48 01.5 +0.1
MMU Miners Mountai 80.22 49 eP P 22 48 02.6 +0.9
MONP2 Monument Peak 80.23 56 P P 22 48 01.6 -0.2
baz=308
LOT Lotru 80.26 320⇑ iP P 22 48 01.2 -0.4
DPC Dobruska-Polom 80.28 327 eP P 22 48 02.3 +0.8
DPC Dobruska-Polom 80.28 327 eP P 22 48 02.3 +0.8
KRLC Kraliky 80.28 327 eP P 22 48 01.2 -0.3
KRLC ex x 22 48 03.6
KRLC Kraliky 80.28 327 eP P 22 48 01.2 -0.3
UPC Upice 80.29 328 eP P 22 48 02.2 +0.7
UPC Upice 80.29 328 eP P 22 48 02.2 +0.7
B30A Myrvik Farm, E 80.30 35 P P 22 48 01.2 -0.4
baz=316,SNR=27
IRM Iron Mountain 80.30 55 P P 22 48 01.9 0.0
baz=308,SNR=18
F27A Lemmon 80.33 39 P P 22 48 01.5 -0.4
baz=314,SNR=13
H25A Fruitdale 80.38 41 P P 22 48 02.5 +0.4
baz=313
BC3 Big Chuckawall 80.41 55 P P 22 48 02.5 -0.1
baz=308,SNR=5.0
G26A Maurine 80.43 40 P P 22 48 01.7 -0.8
baz=314,SNR=10
PSZ Piszkesteto 80.43 324‖ eP P 22 48 03.2 +0.7
PSZ Piszkesteto 80.43 324 eP P 22 48 03.1 +0.7
PSZ Piszkesteto 80.43 324 eP P 22 48 03.1 +0.7
RSSD Black Hills 80.48 41 P P 22 48 02.9 -0.1
baz=313
RSSD Black Hills 80.48 41 eP P 22 48 02.8 -0.1
RSSD Black Hills 80.48 41 eP P 22 48 02.8 -0.2
VYHS Vyhne 80.51 325 eP P 22 48 04.6 +1.8
VYHS pmax pmax
comp=Z,6.0nm,1.1s
VYHS Vyhne 80.51 325 eP P 22 48 04.6 +1.8
SWSC Sam W. Stewart 80.61 56 P P 22 48 04.0 +0.5
baz=308
B31A Greenbush Farm 80.63 35 P P 22 48 03.8 +0.4
baz=316
D29A Pettibone, Tap 80.69 37 P P 22 48 03.6 -0.1
baz=315
G27A Dupree 80.71 39 P P 22 48 04.1 +0.1
baz=314
I25A Rochford 80.71 41 P P 22 48 04.4 +0.2
baz=313,SNR=13
C30A Mose, Pekin 80.77 36 P P 22 48 03.6 -0.5
baz=316,SNR=8.5
O20A White River Ci 80.80 46 P P 22 48 04.2 -0.5
baz=311,SNR=7.6
A32A Rocking H Ranc 80.80 34 P P 22 48 03.8 -0.5
baz=317,SNR=5.2
H26A Fairpoint 80.81 40 P P 22 48 04.6 +0.1
baz=314
PDMCI Parker Dam,Lak 80.87 54 P P 22 48 04.7 -0.2
baz=309,SNR=23
BRG Berggiesshubel 80.89 329 eP P 22 48 03.9 -0.8
comp=Z,4.3nm,0.8s
BRG Berggiesshubel 80.89 329 eP P 22 48 03.9 -0.8
BRG pmax pmax
comp=Z,1.0nm,0.8s
PVCC Panska Ves 80.89 328 eP P 22 48 05.5 +0.8
PVCC ex x 22 48 06.9
PVCC Panska Ves 80.89 328 eP P 22 48 05.5 +0.8
VRAC Vranov 80.93 327⇑ iP P 22 48 06.3 +1.3
CLL Collm 80.94 330 eP P 22 48 04.0 -1.0
comp=Z,26nm,0.8s
CLL i Pmax 22 48 06.2
CLL i 22 48 14.8
comp=Z,26nm,0.8s
CLL ePP PP 22 51 09.0 +0.1
CLL Collm 80.94 330 eP P 22 48 04.0 -1.0
CLL i 22 48 14.8
CLL pmax pmax
comp=Z,12nm,0.8s
CLL Collm 80.94 330 eP P 22 48 04.1 -1.0
Y12C Blythe 80.96 55 P P 22 48 06.1 +0.7
baz=308
C31A Landman Farms, 81.05 35 P P 22 48 05.4 -0.3
baz=316,SNR=7.2
D30A Buchanan 81.06 36 P P 22 48 05.8 +0.1
baz=316
J25A Sunshine Ranch 81.11 42 P P 22 48 06.1 -0.1
baz=313
SMOL Smolenice 81.14 326 eP P 22 48 08.9 +2.8
SMOL Smolenice 81.14 326 eP P 22 48 08.8 +2.7
H27A Howes 81.16 40 P P 22 48 05.8 -0.5
baz=314,SNR=14
B32A Ashes, Strandq 81.16 34 P P 22 48 05.6 -0.6
baz=317,SNR=16
I26A New Underwood 81.17 41 P P 22 48 06.3 -0.2
baz=314,SNR=5.5
GLA Glamis 81.19 55 P P 22 48 07.6 +0.9
baz=308
BZS Buzias 81.23 322‖ iP P 22 48 08.2 +1.6
GOPC GO Pecny, Ondr 81.26 328 eP P 22 48 06.4 -0.4
GOPC ex x 22 48 08.8
GOPC GO Pecny, Ondr 81.26 328 eP P 22 48 06.4 -0.4
A33A Warroad 81.28 34 P P 22 48 06.8 0.0
baz=318,SNR=16
PRA Prague 81.29 328 eP P 22 48 07.1 +0.2
PRA Prague 81.29 328 eP P 22 48 07.1 +0.2
PRU Pruhonice 81.31 328 eP P 22 48 07.4 +0.4
PRU ex x 22 48 09.0
PRU Pruhonice 81.31 328 eP P 22 48 07.4 +0.4

PV09 Paradox Valley 81.33 48 eP P 22 48 09.0 +1.2
E30A Jud 81.42 37 P P 22 48 08.1 +0.5
baz=316
G28A Parade 81.44 39 P P 22 48 08.1 +0.2
baz=315
F29A Eureka 81.45 38 P P 22 48 08.1 +0.2
baz=315
AGMN Agassiz Nation 81.54 34 P P 22 48 07.5 -0.8
baz=313,SNR=8.8
AGMN Agassiz Nation 81.54 34 eP P 22 48 08.1 -0.1
J26A Sides Ranch, S 81.55 41 P P 22 48 08.7 +0.2
baz=314
I27A Quinn 81.56 40 P P 22 48 09.1 +0.6
baz=314
D31A Mcclaflin, Tow 81.59 36 P P 22 48 08.8 +0.2
baz=317
N23A Red Feather La 81.61 45 P P 22 48 09.2 +0.1
baz=312,SNR=14
PV05 Paradox Valley 81.63 48 eP P 22 48 10.5 +1.3
BANR Banloc 81.63 322‖ iP P 22 48 09.6 +0.9
CSS Mathiatis 81.64 308 eP P 22 48 10.2 +1.1
H28A Mission Ridge 81.67 39 P P 22 48 09.1 +0.1
baz=315
MDVR Moldovita 81.77 321‖ iP P 22 48 11.1 +1.5
D32A Dogwood Acres, 81.86 36 P P 22 48 09.9 0.0
baz=317
E31A Nome 81.87 36 P P 22 48 09.5 -0.5
baz=316,SNR=5.1
WUAZ Wupatki 81.87 52 P P 22 48 10.3 -0.1
baz=310,SNR=6.8
WUAZ Wupatki 81.87 52 eP P 22 48 11.7 +1.3
PV01 Paradox Valley 81.91 48 eP P 22 48 11.8 +1.1
B34A Aery, Baudette 81.94 33 P P 22 48 10.6 +0.2
baz=318
C33A Trail 81.98 35 P P 22 48 10.9 +0.3
baz=318
NKC Novy Kostel 82.00 329 eP P 22 48 11.2 +0.6
NKC ex x 22 48 12.5
NKC Novy Kostel 82.00 329 eP P 22 48 11.2 +0.6
I28A Midland 82.06 40 P P 22 48 10.5 -0.6
baz=315,SNR=10
H29A Onida 82.11 39 P P 22 48 11.8 +0.5
baz=315
J27A Elkhorn Farm, 82.15 41 P P 22 48 11.6 -0.1
baz=314
SMCO Snowmass 82.16 46 eP P 22 48 12.8 +0.6
F31A Hecla 82.20 37 P P 22 48 11.6 -0.1
baz=316
CONA Conrad Observa 82.28 326 iP P 22 48 13.3 +1.1
comp=Z,14nm,1.4s,SNR=5.9
G30A Faulkton 82.29 38 P P 22 48 11.4 -0.9
baz=316,SNR=12
KHC Kasperske Hory 82.37 328 eP P 22 48 12.0 -0.6
KHC ex x 22 48 14.6
KHC Kasperske Hory 82.37 328 eP P 22 48 12.0 -0.6
KHC Kasperske Hory 82.37 328 eP P 22 48 12.0 -0.6
J28A Allard Ranch, 82.43 40 P P 22 48 13.6 +0.5
baz=315
B35A Bob, Littlefor 82.44 33 P P 22 48 13.1 +0.1
baz=319
I29A Vivian Onida 82.49 39 P P 22 48 13.4 0.0
baz=315
VTS Vitosha 82.52 319‖ iP P 22 48 15.9 +2.2
VTS Vitosha 82.52 319 eP P 22 48 15.9 +2.2
VTS Vitosha 82.52 319 eP P 22 48 15.8 +2.2
ISCO Idaho Springs 82.53 45 P P 22 48 14.1 +0.1
baz=312,SNR=18
ISCO Idaho Springs 82.53 45 eP P 22 48 15.1 +1.1
ISCO Idaho Springs 82.53 45 eP P 22 48 15.1 +1.1
GEC2 GERESS Array S 82.53 328 eP P 22 48 13.2 -0.4
GEC2 GERESS Array S 82.53 328 eP P 22 48 13.2 -0.4
GERES GERESS Array B 82.53 328 P P 22 48 12.3 -1.2
comp=Z,3.0nm,0.5s,baz=37,slow=5.7,SNR=34
GERES PKKPbc PKKPbc 23 06 40.9 +2.4
comp=Z,0.6nm,0.8s,baz=202,slow=1.4,SNR=3.6
GERES LR LR 23 29 22.8
comp=Z,178nm,18.6s,baz=44,slow=39
GEA0 GERESS Array S 82.54 328 eP P 22 48 12.2 -1.4
MVCO Mesa Verde 82.55 49 P P 22 48 13.9 -0.1
baz=311,SNR=18
MVCO Mesa Verde 82.55 49 eP P 22 48 14.4 +0.3
G31A Conde 82.68 38 P P 22 48 14.0 -0.2
baz=316
D34A Park Rapids 82.74 35 P P 22 48 14.0 -0.5
baz=318,SNR=5.2
E33A Westby DABS, E 82.80 36 P P 22 48 14.3 -0.5
baz=318
C35A Jirik Farms, M 82.83 34 P P 22 48 14.7 -0.3
baz=319,SNR=8.5
J29A Okreek 82.92 40 P P 22 48 15.8 +0.2
baz=315
GRFO Grafenberg 82.92 330 eP P 22 48 16.4 +1.0
GRFO Grafenberg 82.92 330 eP P 22 48 16.4 +1.0
G32A Webster 83.00 37 P P 22 48 16.2 +0.2
baz=317
I30A Oacoma 83.02 39 P P 22 48 16.6 +0.5
baz=316
F33A 5 Mile Ranch, 83.15 36 P P 22 48 16.8 +0.1
baz=318,SNR=6.6
W18A Petrified Fore 83.16 51 P P 22 48 17.3 +0.1
baz=311
S22A 4UR Ranch, Cre 83.20 47 P P 22 48 16.6 -0.9
baz=312,SNR=25
214A Organ Pipe Nat 83.20 55 P P 22 48 17.9 +0.6
baz=309
214A Organ Pipe Nat 83.20 55 eP P 22 48 17.2 0.0
comp=Z,41nm,1.0s
D35A Remer 83.26 34 P P 22 48 17.3 +0.1
baz=319
C36A Pine Crest Far 83.29 33 P P 22 48 16.9 -0.4
baz=320,SNR=7.9
Q24A Divide 83.36 46 P P 22 48 18.4 +0.1
baz=313
J30A Dallas 83.40 40 P P 22 48 18.1 0.0
baz=316
E35A Pequot Lakes 83.50 35 P P 22 48 18.2 -0.3
baz=319
G33A Ortonville 83.56 37 P P 22 48 18.5 -0.3
baz=318
D36A Goodland 83.59 34 P P 22 48 18.6 -0.3
baz=320
SOKA Soboth 83.59 326 iP P 22 48 19.4 +0.4
comp=Z,17nm,0.8s,SNR=14
C37A Embarrass 83.60 33 P P 22 48 18.9 -0.1
baz=320
EYMN Ely 83.72 32 P P 22 48 19.2 -0.5
baz=321
EYMN Ely 83.72 32 eP P 22 48 19.9 +0.3
H33A Prehn Over Nor 83.79 37 P P 22 48 20.1 +0.1
baz=317,SNR=5.6
K30A Basset 83.80 40 P P 22 48 20.0 -0.2
baz=316
G34A Benson 83.90 36 P P 22 48 20.1 -0.5
baz=318
I32A Karley and Nic 83.91 38 P P 22 48 20.5 -0.2
baz=317
F35A Swanville 83.94 35 P P 22 48 20.6 -0.2
baz=319
SDCO Great Sand Dun 83.98 47 P P 22 48 21.0 -0.5
baz=313,SNR=8.9
SDCO Great Sand Dun 83.98 47 eP P 22 48 21.9 +0.4
C38A Sawbill Land. 84.00 32 P P 22 48 20.7 -0.4
baz=321
KBA Koelnbreinsper 84.04 327 iP PcP P 22 48 22.1 +0.6
comp=Z,8.2nm,0.7s
E36A McGregor 84.05 34 P P 22 48 21.1 -0.2
baz=320
BEBN Eben Emael 84.17 333 P P 22 48 23.6 +1.9
MEM Membach 84.20 333 P P 22 48 23.3 +1.3
J32A Parkston 84.20 39 P P 22 48 22.1 0.0
baz=317
I33A Coleman 84.23 38 P P 22 48 22.2 0.0
baz=317
MYKA Terra Mystica 84.25 326 iP PcP P 22 48 24.5 +2.1
comp=Z,9.0nm,0.6s,SNR=5.2
H34A Spellman Lake, 84.26 37 P P 22 48 22.7 +0.2
baz=318
K31A O'Neill 84.28 40 P P 22 48 22.8 +0.2
baz=316
TUC Tucson 84.30 54 P P 22 48 23.6 +0.6
baz=310
TUC Tucson 84.30 54 eP P 22 48 23.5 +0.6
TUC Tucson 84.30 54 eP P 22 48 23.5 +0.6
E37A Wrenshall 84.39 34 P P 22 48 22.8 -0.2
baz=320
F36A Milaca 84.42 35 P P 22 48 23.2 -0.1
baz=319

STU Stuttgart 84.46 330 eP P 22 48 24.4 +1.0
STU Stuttgart 84.46 330 eP P 22 48 24.4 +1.0
G35A Watkins 84.46 36 P P 22 48 23.4 0.0
baz=319
ECSD EROS Data Cent 84.55 38 P P 22 48 23.1 -0.8
baz=318,SNR=24
ECSD EROS Data Cent 84.55 38 eP P 22 48 23.4 -0.5
L31A Butterfield Fa 84.56 40 P P 22 48 24.0 0.0
baz=316
BCLA Clavier 84.61 333 P P 22 48 25.4 +1.4
J33A Davis 84.68 38 P P 22 48 24.4 -0.1
baz=317
H35A Sunnyside Ranc 84.69 36 P P 22 48 24.2 -0.4
baz=319,SNR=30
MOTA Moosalm 84.80 328 iP PcP P 22 48 26.3 +1.0
comp=Z,8.4nm,1.0s
RETA Reutte 84.83 328 iP PcP P 22 48 25.7 +0.4
comp=Z,14nm,0.7s,SNR=6.9
LANF Langenberg 84.84 331⇑ eP P 22 48 26.7 +1.4
WLF Walferdange 84.92 332 P P 22 48 27.1 +1.5
T25A Trinidad 85.03 47 P P 22 48 26.7 -0.1
baz=313,SNR=29
DOU Dourbes 85.14 333 P P 22 48 27.6 +0.9
BFO Black Forest 85.16 330 eP P 22 48 25.9 -1.0
BFO pmax pmax
comp=Z,24nm,0.9s
BFO Black Forest 85.16 330 eP P 22 48 25.9 -1.0
comp=Z,24nm,0.9s
H36A Jessenland, He 85.21 36 P P 22 48 27.0 -0.2
baz=319,SNR=5.3
LAZ Ladron 85.23 50 eP P 22 48 28.2 +0.4
SPMN Marine on St. 85.24 35 P P 22 48 27.2 -0.1
baz=320
SPMN Marine on St. 85.24 35 eP P 22 48 27.6 +0.3
comp=Z,21nm,0.9s
I35A Creekview Farm 85.25 37 P P 22 48 27.7 +0.3
baz=319
ANMO Albuquerque 85.29 49 P P 22 48 29.2 +1.2
comp=Z,15nm,0.8s,baz=308,slow=6.4,SNR=18
ANMO Albuquerque 85.29 49 P P 22 48 28.4 +0.4
baz=312
DAVA Damuels 85.36 329 iP PcP P 22 48 28.3 +0.2
comp=Z,17nm,0.8s,SNR=8.0
BGNE Belgrade 85.47 40 P P 22 48 29.1 +0.5
baz=317
WLS Welschbruch 85.48 331⇑ eP P 22 48 30.0 +1.5
K34A Le Mars 85.58 38 P P 22 48 29.5 +0.5
baz=318
I36A Fitzsimmons Fa 85.59 36 P P 22 48 29.3 +0.2
baz=319
LPM Los Pinos Moun 85.61 50 eP P 22 48 30.5 +0.9
H37A Dierke Farm, C 85.67 35 P P 22 48 29.7 +0.2
baz=320
ECH Echery 85.71 331⇑ eP P 22 48 30.8 +1.1
BNM Barren Site 85.72 50 eP P 22 48 30.9 +0.7
O31A Woolen Ranch, 85.76 42 P P 22 48 30.3 +0.2
baz=316
SCHQ Schefferville 85.76 15 P P 22 48 29.7 -0.1
comp=Z,5.5nm,0.9s,baz=9.5,slow=6.1,SNR=2.7
SCHQ LR LR 23 32 04.4
comp=Z,76nm,18.2s,baz=268,slow=39
I37A Lemond, Waseca 85.88 36 P P 22 48 30.4 -0.2
baz=320,SNR=13
MOF Molkenrain 86.02 331 eP P 22 48 32.4 +1.1
121A Cookes Peak, D 86.07 52 P P 22 48 32.4 +0.5
baz=312
121A Cookes Peak, D 86.07 52 eP P 22 48 32.4 +0.5
comp=Z,16nm,0.8s
THEF They Montfort 86.16 331⇑ eP P 22 48 32.9 +1.0
COWI Conover 86.17 32 eP P 22 48 32.2 +0.3
I38A Scanlan Farm, 86.36 35 P P 22 48 31.7 -1.2
baz=320,SNR=6.0
K36A Gilmore City 86.42 37 P P 22 48 33.4 +0.2
baz=319
CBKS Cedar Bluff 86.50 43 P P 22 48 34.0 +0.2
baz=316
P32A Huiting Farm, 86.53 42 P P 22 48 33.8 0.0
baz=317
K37A Belmond 86.71 37 P P 22 48 35.0 +0.3
baz=320
O33A Hebron 86.74 41 P P 22 48 34.6 -0.3
baz=317
N34A Lincoln 86.74 40 P P 22 48 34.6 -0.3
baz=318
J38A Wedel Dairy, R 86.84 36 P P 22 48 35.2 -0.1
baz=320
Q32A Meitler Ranch, 87.01 42 P P 22 48 36.0 -0.3
baz=317
O34A Beatrice 87.12 40 P P 22 48 36.5 -0.3
baz=318
M36A Felix, Anita 87.14 38 P P 22 48 36.7 -0.1
baz=319
P33A Williams Farm, 87.14 41 P P 22 48 36.8 0.0
baz=317
L37A Phoenix Point, 87.14 37 P P 22 48 36.9 +0.1
baz=320
N35A Tabor 87.16 39 P P 22 48 37.0 +0.1
baz=318
Q33A Connelly Farm, 87.39 42 P P 22 48 38.2 +0.1
baz=317
O35A Humboldt 87.46 40 P P 22 48 38.6 +0.2
baz=318
L38A Oak Wood Farm, 87.52 37 P P 22 48 38.8 +0.2
baz=320
P34A Walnut Farm, R 87.52 41 P P 22 48 38.4 -0.3
baz=318
N36A Muff Farm, Cla 87.53 39 P P 22 48 38.4 -0.3
baz=319
M37A Trindle Farm, 87.54 38 P P 22 48 38.9 +0.2
baz=319
SCIA State Center 87.57 37 eP P 22 48 40.0 +1.1
S32A Newby Ranch, P 87.73 43 P P 22 48 39.7 0.0
baz=316
R33A Olander Ranch, 87.81 42 P P 22 48 40.2 +0.1
baz=317
Q34A Chapman 87.92 41 P P 22 48 40.7 +0.1
baz=318
M38A Pleasantville 87.95 37 P P 22 48 40.9 +0.2
baz=320
P35A Duane Minner, 87.95 40 P P 22 48 40.8 +0.1
baz=318
KSU1 Kansas State U 87.96 41 P P 22 48 40.9 +0.1
baz=318
KSU1 Kansas State U 87.96 41 eP P 22 48 41.1 +0.3
O36A Bolckow 88.05 39 P P 22 48 41.1 0.0
baz=319
T32A Huddler Ranch, 88.11 43 P P 22 48 42.2 +0.6
baz=316
MNTX Cornudas Mount 88.14 51 P P 22 48 42.3 +0.5
baz=313
MNTX Cornudas Mount 88.14 51 eP P 22 48 42.2 +0.5
MSTX Muleshoe 88.18 48 P P 22 48 42.2 +0.2
baz=314
AMTX Amarillo 88.18 47 P P 22 48 42.6 +0.6
baz=315
AMTX Amarillo 88.18 47 eP P 22 48 42.3 +0.3
JFWS Jewell Farm 88.19 35 eP P 22 48 43.7 +1.9
JFWS Jewell Farm 88.19 35 eP P 22 48 43.7 +1.9
R34A Isabella, Hill 88.21 42 P P 22 48 42.7 +0.7
baz=317
P36A Good Intent, A 88.30 40 P P 22 48 42.7 +0.3
baz=319
S33A Kaszmaul Farm, 88.32 43 P P 22 48 42.9 +0.3
baz=317
N38A Joes South For 88.41 38 P P 22 48 43.3 +0.4
baz=320
O37A Wolven Farm, M 88.43 39 P P 22 48 43.1 +0.1
baz=319
Q35A Mercer Eighty, 88.44 41 P P 22 48 43.5 +0.5
baz=318
U32A Winter Ranch, 88.65 44 P P 22 48 44.9 +0.7
baz=316
Q36A Arnold C. Orve 88.67 40 P P 22 48 44.9 +0.8
baz=318
N39A Derby Farms, D 88.70 37 P P 22 48 43.2 -1.1
baz=320,SNR=6.3
S34A Willow Spring 88.72 42 P P 22 48 44.9 +0.5
baz=318
R35A Emporia Munici 88.75 41 P P 22 48 45.3 +0.7
baz=318
P37A Lathrop 88.77 39 P P 22 48 45.1 +0.6
baz=319
O38A Galt 88.80 38 P P 22 48 45.5 +0.8
baz=320
V32A Arapaho 89.10 45 P P 22 48 46.5 +0.2
baz=316
U33A Lingo Farm, Me 89.10 44 P P 22 48 46.6 +0.4

baz=317
R36A **Gordon, Harris** 89.12 41 P P 22 48 46.6 +0.3
baz=318
P38A **Dawn** 89.15 39 P P 22 48 46.6 +0.2
baz=320
O39A **Kirksville** 89.16 38 P P 22 48 46.8 +0.4
baz=320
S35A **Otter Creek Ra** 89.16 42 P P 22 48 47.1 +0.6
baz=318
T34A **McCluskey Farm** 89.18 43 P P 22 48 46.9 +0.4
baz=318
W32A **Sentinel** 89.42 45 P P 22 48 48.6 +0.9
baz=316
U34A **Anderson Ranch** 89.42 43 P P 22 48 48.5 +0.7
baz=317
U34A **Anderson Ranch** 89.42 43 *e*P P 22 48 48.3 +0.6
comp=Z,28nm,0.8s
V33A **Lossen Ranch,** 89.45 44 P P 22 48 48.4 +0.5
baz=317
R37A **Teagarden Farm** 89.48 40 P P 22 48 48.3 +0.3
baz=319
S36A **Lake Cedric, C** 89.52 41 P P 22 48 48.2 +0.1
baz=318
O40A **La Belle** 89.59 37 P P 22 48 48.2 -0.2
baz=321
Q38A **Cooks Store, C** 89.61 39 P P 22 48 48.0 -0.5
baz=320
T35A **Sooner Cattle** 89.62 42 P P 22 48 48.9 +0.2
baz=318
P39A **Salisbury** 89.64 38 P P 22 48 48.7 +0.1
baz=320
W33A **Caddo, Fort Co** 89.83 45 P P 22 48 49.8 +0.1
baz=317
T36A **Boggs Farm, Ca** 89.86 42 P P 22 48 49.6 -0.1
baz=318,SNR=9.4
Q39A **Willow Grove F** 89.87 39 P P 22 48 49.7 -0.1
baz=320
V34A **Guthrie** 89.87 44 P P 22 48 49.9 +0.1
baz=317
V34A **Guthrie** 89.87 44 *e*P P 22 48 49.7 -0.1
comp=Z,48nm,0.8s
S37A **Fort Scott** 89.89 41 P P 22 48 49.2 -0.7
baz=319,SNR=8.2
X32A **Elmer** 89.90 46 P P 22 48 50.0 0.0
baz=316
WMOK **Wichita Mounta** 89.96 45 *e*P P 22 48 50.5 +0.2
WMOK **Wichita Mounta** 89.96 45 *e*P P 22 48 50.5 +0.2
P40A **Paris** 89.96 38 P P 22 48 50.1 -0.1
baz=321
R38A **Fenwick Farm,** 90.05 40 P P 22 48 50.1 -0.5
baz=319
W34A **Bridge Creek,** 90.17 44 P P 22 48 51.5 +0.2
baz=317
W34A **Bridge Creek,** 90.17 44 *e*P P 22 48 51.4 +0.2
comp=Z,21nm,0.8s
X33A **Lawton** 90.26 45 P P 22 48 51.9 +0.3
baz=317
V35A **Meyer Ranch, C** 90.30 43 P P 22 48 51.8 0.0
baz=318
T37A **Cheneyville 18** 90.32 41 P P 22 48 51.2 -0.7
baz=319,SNR=6.9
Q40A **Laux Farm, Aux** 90.36 38 P P 22 48 52.2 +0.2
baz=321
R39A **Chumby, Stover** 90.40 39 P P 22 48 51.7 -0.6
baz=320
U36A **Oologah** 90.43 42 P P 22 48 52.7 +0.2
baz=318
S38A **Stockton** 90.47 40 P P 22 48 51.9 -0.7
baz=319
HDIL **Hopedale** 90.48 36 P P 22 48 52.8 +0.3
baz=322
Y33A **Hilltop Ranch,** 90.57 45 P P 22 48 53.2 0.0
baz=317
X34A **Smith Ranch, M** 90.59 45 P P 22 48 53.0 -0.3
baz=317
T38A **Diamond** 90.72 41 P P 22 48 52.7 -1.1
baz=319,SNR=15
W35A **Tecumseh** 90.72 44 P P 22 48 53.7 -0.1
baz=318,SNR=5.7
S39A **Bolivar** 90.73 40 P P 22 48 52.5 -1.3
baz=320,SNR=9.3
U37A **Salina** 90.75 42 P P 22 48 53.3 -0.7
baz=319,SNR=7.5
TUL1 **Leonard** 90.76 42 P P 22 48 52.8 -1.1
baz=318,SNR=5.2
TUL1 **Leonard** 90.76 42 *e*P P 22 48 53.3 -0.7
comp=Z,17nm,0.6s
V36A **Jenks** 90.77 43 P P 22 48 53.6 -0.4
baz=318,SNR=5.9
R40A **Maddies Statio** 90.80 39 P P 22 48 54.0 -0.1
baz=320
TXAR **Lajitas Array** 90.83 52 P P 22 48 54.7 +0.1
comp=Z,12nm,0.7s,baz=297,slow=3.0,SNR=38
TXAR LR LR 23 23 27.8
comp=Z,89nm,21.9s,baz=0.0,slow=32
ABTX **Abilene, Hawle** 90.98 47 P P 22 48 55.6 +0.5
baz=316
ABTX **Abilene, Hawle** 90.98 47 *e*P P 22 48 55.7 +0.6
comp=Z,20nm,0.9s
W36A **Wetumka** 91.09 43 P P 22 48 55.6 +0.1
baz=318,SNR=5.2
Y34A **Reagan Ranch,** 91.11 45 P P 22 48 55.9 +0.3
baz=317
U38A **Gravette** 91.12 41 P P 22 48 55.1 -0.6
baz=319,SNR=16
V37A **Hulbert** 91.13 42 P P 22 48 54.7 -1.0
baz=319,SNR=17
T39A **Clever** 91.20 40 P P 22 48 55.7 -0.3
baz=320
S40A **Lebanon** 91.22 39 P P 22 48 56.0 -0.1
baz=320
X35A **Drake** 91.22 44 P P 22 48 56.0 -0.1
baz=318
SADO **Sadowa** 91.24 27 P P 22 48 55.9 -0.2
comp=Z,7.3nm,0.9s,baz=356,slow=6.9,SNR=5.1
133A **Hamilton Ranch** 91.42 47 P P 22 48 56.7 -0.4
baz=316
Z34A **Collier Ranch,** 91.44 45 P P 22 48 57.2 0.0
baz=317
X36A **Centrahoma** 91.44 44 P P 22 48 56.8 -0.4
baz=318,SNR=16
W37B **Quinton** 91.53 43 P P 22 48 57.0 -0.5
baz=318
V38A **Canehill** 91.54 42 P P 22 48 57.2 -0.4
baz=319,SNR=15
Y35A **Marietta** 91.55 45 P P 22 48 57.5 -0.1
baz=318
T40A **Mansfield** 91.55 40 P P 22 48 57.5 -0.1
baz=320
SFIN **Lafayette** 91.64 34 P P 22 48 57.9 0.0
baz=324
U39A **Green Forest** 91.64 41 P P 22 48 57.2 -0.8
baz=320,SNR=22
Z35A **Perchaven, San** 91.85 45 P P 22 48 58.6 -0.5
baz=317,SNR=10
233A **Rising Star** 91.85 47 P P 22 48 59.4 +0.2
baz=316
134A **White-Moore Ra** 91.93 46 P P 22 48 59.8 +0.4
baz=317
V39A **Pettigrew** 91.96 41 P P 22 48 59.0 -0.6
baz=320,SNR=14
X37A **Clayton** 91.97 43 P P 22 48 59.7 +0.1
baz=318
Y36A **Durant** 91.98 44 P P 22 48 59.8 +0.1
baz=318
U40A **Yellville** 91.98 40 P P 22 48 59.3 -0.3
baz=320,SNR=22
W38A **Poteau** 92.08 42 P P 22 49 00.4 +0.3
baz=319
X38A **Whitesboro** 92.21 43 P P 22 49 00.4 -0.3
baz=319,SNR=7.9
Y37A **Hugo** 92.29 44 P P 22 49 01.5 +0.5
baz=318
333A **Richland Sprin** 92.30 48 P P 22 49 01.0 -0.2
baz=316,SNR=10
234A **Clairette** 92.31 47 P P 22 49 01.3 +0.1
baz=317,SNR=8.2
135A **Vickery Place,** 92.33 46 P P 22 49 01.7 +0.4
baz=317
Z36A **Blue Ridge** 92.36 45 P P 22 49 01.6 +0.2
baz=318
W39A **Magazine** 92.38 42 P P 22 49 01.8 +0.3
baz=320
JCT **Junction City** 92.42 49 P P 22 49 01.8 0.0
baz=316
V40A **Witts Springs** 92.42 41 P P 22 49 01.3 -0.4
baz=320
433A **Art** 92.65 48 P P 22 49 03.1 +0.3
baz=316
WHTX **Lake Whitney,** 92.71 46 P P 22 49 03.7 +0.6
baz=317
X39A **Fountain Ranch** 92.72 42 P P 22 49 02.9 -0.2
baz=319,SNR=9.7
334A **Lometa** 92.73 47 P P 22 49 03.6 +0.4
baz=317
W40A **Ferguson Farm,** 92.76 41 P P 22 49 03.3 +0.1
baz=320
Z37A **Pogue Cattle C** 92.87 44 P P 22 49 04.4 +0.6
baz=318
136A **Ennis** 92.89 45 P P 22 49 04.4 +0.5
baz=318
MIAR **Mount Ida** 92.98 42 P P 22 49 04.1 -0.2
baz=320,SNR=16
434A **Burnet** 93.09 47 P P 22 49 04.7 -0.1
baz=317
Y39A **Lockesburg** 93.16 43 P P 22 49 05.4 +0.3
baz=319
533A **Kerrville** 93.17 48 P P 22 49 05.1 -0.1
baz=316
335A **Moody** 93.25 47 P P 22 49 04.9 -0.6
baz=317
X40A **Basin Creek Fa** 93.42 42 P P 22 49 06.5 +0.2
baz=320
336A **Riesel** 93.51 46 P P 22 49 06.9 +0.1
baz=318
435B **Jarrell** 93.52 47 P P 22 49 07.2 +0.4
baz=317
633A **Saathoff Ranch** 93.52 49 P P 22 49 06.7 -0.2
baz=316
534A **Blanco** 93.54 48 P P 22 49 06.9 0.0
baz=317
Y40A **Okolona** 93.54 42 P P 22 49 07.3 +0.4
baz=320
832A **Faith Ranch, C** 93.88 50 P P 22 49 09.2 +0.7
baz=316
N54A **Moraine State** 94.17 30 P P 22 49 09.8 +0.2
baz=329
833A **Chaparral WMA,** 94.20 50 P P 22 49 10.3 +0.3
baz=316
933A **Laredo** 94.79 50 P P 22 49 13.7 +1.0
baz=316
O56A **Blue Knob Stat** 95.33 29 P P 22 49 15.0 0.0
baz=330
034A **Hebbronville** 95.55 50 P P 22 49 17.3 +1.1
baz=316,SNR=5.3
N59A **State Game Lan** 95.81 27 P P 22 49 17.4 +0.2
baz=332
TKL **Tuckaleechee C** 97.00 35 P P 22 49 22.1 -0.6
comp=Z,5.4nm,0.8s,baz=86,slow=2.1,SNR=9.0
ESDC **Sonseca Array** 97.18 333 P P 22 49 22.7 -0.7
comp=Z,1.7nm,0.7s,baz=19,slow=4.6,SNR=13
ESDC LR LR 23 35 36.2
comp=Z,80nm,19.6s,baz=110,slow=37
KMSC **Kings Mountain** 98.53 34 P Pdif 22 49 29.6 +0.1
baz=327
VNDA **Vanda** 114.80 175 PKP PKPdf 22 54 30.0 0.0
comp=Z,1.4nm,0.8s,baz=342,slow=4.6,SNR=7.4
LSZ **Lusaka** 116.78 271 *e*PKIKP **PKPdf** 22 54 35.4 -0.4
LSZ **Lusaka** 116.78 271 *e*PKPdf **PKPdf** 22 54 35.4 -0.4
TORD **Torodi Ar. Bea** 116.99 314 PKP **PKPdf** 22 54 36.0 -0.2
comp=Z,0.6nm,0.5s,baz=32,slow=2.5,SNR=10
TORD PP **PP** 22 55 39.0 -5.6
comp=Z,1.6nm,0.9s,baz=33,slow=8.0,SNR=5.2
TORD PKKPbc **PKKPbc** 23 05 00.5 +0.3
comp=Z,1.1nm,0.9s,baz=217,slow=3.4,SNR=5.5
MAW **Mawson** 119.01 205 PKP **PKPdf** 22 54 40.1 +1.8
comp=Z,2.2nm,0.9s,baz=229,slow=4.1,SNR=6.7
BOSA **Boshof** 125.83 259 PKP **PKPdf** 22 54 53.2 +0.4
comp=Z,4.9nm,0.8s,baz=62,slow=3.4,SNR=10
SDV **Santo Domingo** 125.97 39 *e*PKPdf **PKPdf** 22 54 52.6 -1.1
DBIC **Dimbokro** 125.97 316 PKP **PKPdf** 22 54 54.1 +0.7
comp=Z,1.5nm,0.6s,baz=32,slow=2.2,SNR=5.4
QSPA **South Pole Qui** 126.54 180 *e*PKPdf **PKPdf** 22 54 52.8 -0.1
VNA2 **Neumayer--Watz** 141.89 196 PKP **PKPdf** 22 55 17.1 -4.3
baz=111,slow=2.5
VNA3 **Neumayer Olymp** 142.15 195 PKP **PKPdf** 22 55 17.5 -4.3
SAML **Samuel** 144.92 44 *e*P PKPbc 22 55 27.2 -0.4
LPAZ **La Paz** 147.43 59 PKPbc **PKPbc** 22 55 34.1 -1.8
comp=Z,13nm,0.9s,baz=358,slow=3.3,SNR=25
SIV **San Ignacio** 151.78 48 PKP **PKPdf** 22 55 39.7 +0.2
comp=Z,3.7nm,0.8s,baz=217,slow=0.9,SNR=6.0
SIV PKPbc **PKiKP** 22 55 46.1 -0.2
comp=Z,12nm,0.8s,baz=307,slow=1.2,SNR=13
USHA **Ushuaia** 153.23 142 PKPbc **PKPbc** 22 55 47.5 -0.5
comp=Z,62nm,0.9s,baz=259,slow=6.3,SNR=3.9
PLCA **Paso Flores** 155.52 109 PKPab **PKPab** 22 56 10.7 +0.4
comp=Z,3.1nm,0.9s,baz=321,slow=4.1,SNR=3.2
BDFB **Brasilia** 157.61 22 PKPab **PKPab** 22 56 20.1 +0.5
comp=Z,3.5nm,0.9s,baz=273,slow=5.3,SNR=5.6
CPUP **Villa Florida** 161.59 61 PKP **PKPdf** 22 55 49.7 -2.2
comp=Z,1.2nm,0.4s,baz=74,slow=2.9,SNR=4.5

IDC ***13*** *22:36:19.5±2.3, 6°.07S×131°.90E, h0km, mb3.9/1, mb1 4.4/5, mb1mx3.9/38, mbtmp4.3/5, ML4.4/4, MS3.6/1, Ms1 3.6/1, ms1mx3.0/43, Error ellipse: s-maj=102.8km s-min=24.9km az=84.0*
ISCJB ***13*** *22:36:20.7±0.7, 6°.23S±0°.05×131°.93E±0°.09, h10km, mb3.8/1, MS3.5/1, Error ellipse: s-maj=13.1km s-min=7.9km az=178.6*
DJA ***13*** *22:36:24.6±0.4, 6°.5±3°×13°.2E±°, h10km, M4.8/12, mb5.0/5, mB5.7/3, MLv4.7/12, Mw(mB)5.2/3*
ISC 13 22:36:19.9±0.9, 6°.01S±0°.06×131°.96E±0°.09, h10km, n15, σ1°81/10, Tanimbar Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SAUI	**Saumlaki**	**2.06**	**198**	P	**Pg**	**22 36 58.4**	**-1.1**
BNDI	**Bandanaira**	**2.53**	**306**	P	**Pb**	**22 37 05.7**	**+0.3**
KMPI	**Kaimana, Papua**	**2.91**	**37**	P	**Pb**	**22 37 12.1**	**+0.1**
FAKI	**Fak Fak**	**3.09**	**5**	P	**Pb**	**22 37 13.4**	**-1.6**
MSAI	**Masohi**	**4.02**	**311**	P	Pb	22 37 25.7	-5.2
RKPI	**Ransiki, Papua**	**4.99**	**26**	P	Pn	22 37 40.8	+5.8
	213nm,0.9s,7μm1.9nm						
SIJI	**Sorong**	**5.16**	**352**	Pn	**Pn**	**22 37 40.0**	**+2.7**
	28nm,0.3s,baz=360,slow=0.9,SNR=3.6						
SIJI				Sn	**Sn**	**22 38 33.7**	**-3.2**
	33nm,0.3s,baz=90,slow=24,SNR=20						
SWI	**Sorong**	**5.16**	**352**	P	Pn	22 37 42.0	+4.7
	59nm,0.6s,7μm1.7nm						
LBMI	**Labuha**	**6.95**	**320**	P	Pn	22 38 10.2	+8.3
SANI	**Sanana**	**7.14**	**303**	P	Pn	22 38 09.4	+4.9
FITZ	**Fitzroy Crossi**	**13.51**	**207**	Pn	**Pn**	**22 39 31.2**	**-0.5**
	4.7nm,0.3s,baz=36,slow=14,SNR=51						
FITZ				Sn	Sn	22 41 50.3	-12
	4.0nm,0.3s,baz=209,slow=18,SNR=12						
WRA	**Warramunga Arr**	**14.04**	**171**	Pn	**Pn**	**22 39 39.5**	**+0.4**
	0.9nm,0.3s,baz=356,slow=13,SNR=18						
WRA				Sn	Sn	22 42 04.5	-11
	3.5nm,0.3s,baz=347,slow=24,SNR=11						
ASAR	**Alice Springs**	**17.65**	**174**	P	**P**	**22 40 26.9**	**-0.2**
	0.7nm,0.3s,baz=356,slow=11,SNR=15						
ASAR				S	Sn	22 43 32.5	-10
	0.8nm,0.3s,baz=357,slow=28,SNR=8.5						
GUMO	**Guam**	**23.32**	**33**	LR	LR	22 50 08.9	
	comp=Z,176nm,21.8s,baz=170,slow=36						
MKAR	**Makanchi Array**	**68.49**	**326**	P	**P**	**22 47 23.4**	**+0.9**
	0.8nm,0.7s,baz=119,slow=5.2,SNR=3.8						

CSEM ***13*** *22:45:58.6, 43°.36N×12°.50E, h10km, MD1.3/5*
ROM 13 22:45:58.6±0.5, 43°.36N×12°.50E, h10km±4km, Md1.3/5, Ml0.7/4, Error ellipse: s-maj=2.3km s-min=1.5km az=75.0, Central Italy

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ATVO	**AVT- Monte Val**	**0.07**	**285**	Pg	Pg	22 46 01.2	+0.2
ATVO				Sg	Sg	22 46 02.7	0.0
	19nm,0.5s						
ATVO	**AVT- Monte Val**	**0.07**	**285**	Pg	Pg	22 46 01.2	+0.2
ATVO				Sg	Sg	22 46 02.7	0.0
	19nm,0.5s						
MURB	**Monte Urbino**	**0.10**	**171**	Pg	Pg	22 46 01.6	+0.3
MURB				Sg	Sg	22 46 04.4	+1.2
	21nm,0.4s						
MURB	**Monte Urbino**	**0.10**	**171**	Pg	Pg	22 46 01.6	+0.3
MURB				Sg	Sg	22 46 04.4	+1.2
	21nm,0.4s						
ATPC	**Poggio Castell**	**0.12**	**344**	Pg	Pg	22 46 02.1	+0.5
ATPC				Sg	Sg	22 46 04.8	+1.0
	36nm,1.0s						
ATPC	**Poggio Castell**	**0.12**	**344**	Pg	Pg	22 46 02.1	+0.5
ATPC				Sg	Sg	22 46 04.8	+1.0
	36nm,1.0s						
PIEI	**Pieia**	**0.17**	**7**	Pg	Pb	22 46 03.2	-0.8
PIEI				Sg	Sg	22 46 06.5	+1.4
	31nm,1.4s						
PIEI	**Pieia**	**0.17**	**7**	Pg	Pb	22 46 03.2	-0.8
PIEI				Sg	Sg	22 46 06.5	+1.4
	31nm,1.4s						
SSFR	**Montelago di S**	**0.22**	**70**	Pg	Pg	22 46 03.6	+0.5
SSFR				Sg	Sg	22 46 07.3	+1.1
	32nm,0.2s						
SSFR	**Montelago di S**	**0.22**	**70**	Pg	Pg	22 46 03.6	+0.5
SSFR				Sg	Sg	22 46 07.3	+1.1
	32nm,0.2s						

IDC ***13*** *22:50:00.5±7.6, 36°.28N×142°.13E, h34km±61km, mb3.2/4, mb1 3.5/6, mb1mx3.2/37, mbtmp3.5/6, ML3.6/2, Error ellipse: s-maj=39.6km s-min=24.1km az=83.0*
JMA ***13*** *22:50:01.5±0.2, 36°.41N×141°.81E, h49km, M3.2*
ISC 13 22:49:59.6±2.4, 36°.35N±0°.05×141°.94E±0°.09, h25km±16km, n12, σ1°16/19, mb3.5/4, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CHOJ	**Chosi**	**1.09**	**234**	P	**Pb**	**22 50 20.4**	**+0.6**
CHOJ				*e*S	**Sn**	**22 50 34.1**	**+0.6**
JHO	**Hitachi**	**1.14**	**284**	P	**Pn**	**22 50 19.6**	**-0.4**
JHO				S	**Sb**	**22 50 33.2**	**-1.8**
JFK	**Kawauchi**	**1.33**	**320**	P	**Pn**	**22 50 22.5**	**-0.1**
JFK				*e*S	**Sn**	**22 50 38.3**	**-1.3**
JFT	**Otama**	**1.74**	**313**	P	**Pn**	**22 50 29.4**	**+1.2**
JFT				*e*S	**Sn**	**22 50 49.3**	**-0.3**
JAG	**Ashikaga**	**2.01**	**273**	P	**Pn**	**22 50 32.2**	**+0.2**
JAG				S	**Sn**	**22 50 54.8**	**-1.5**
MJAR	**Matsushiro Arr**	**3.02**	**275**	Pn	**Pn**	**22 50 47.5**	**+1.7**
	7.8nm,0.3s,baz=98,slow=9.0,SNR=36						
MAT	**Matsushiro**	**3.02**	**275**	P	**Pn**	**22 50 47.4**	**+1.6**
MAT				*e*S	**Sn**	**22 51 20.6**	**-0.6**
JHJ	**Hachijo jima 2**	**3.68**	**210**	Pn	**Pn**	**22 50 55.0**	**0.0**
	12nm,0.3s,baz=349,slow=22,SNR=6.5						
JHJ				Sn	**Sn**	**22 51 36.1**	**-1.4**
	20nm,0.3s,baz=155,slow=22,SNR=7.2						
SONM	**Songino Array**	**28.52**	**305**	P	**P**	**22 55 54.4**	**+1.2**
	0.7nm,0.6s,baz=101,slow=9.2,SNR=5.8						
MKAR	**Makanchi Array**	**44.84**	**303**	P	**P**	**22 58 12.5**	**+0.8**
	0.3nm,0.6s,baz=85,slow=10,SNR=4.4						
WRA	**Warramunga Arr**	**56.45**	**180**	P	**P**	**22 59 38.6**	**-0.7**
	0.4nm,0.6s,baz=6.3,slow=6.8,SNR=7.3						
YKA	**Yellowknife Ar**	**64.19**	**30**	P	**P**	**23 00 31.0**	**-0.8**
	0.1nm,0.7s,baz=302,slow=5.6,SNR=3.2						

JMA ***13*** *22:50:36.6±0.3, 39°.62N×143°.75E, h4km, M4.2*
ISCJB ***13*** *22:50:37.9±1.8, 39°.58N±0°.04×143°.75E±0°.06, h18km±12km, mb3.8/17, Error ellipse: s-maj=8.1km s-min=6.4km az=41.5*
IDC ***13*** *22:50:42.5±3.2, 39°.58N×143°.61E, h37km±26km, mb3.6/18, mb1 3.9/23, mb1mx3.8/39, mbtmp3.9/23, ML3.5/5, Error ellipse: s-maj=19.9km s-min=13.9km az=120.0*
ISC 13 22:50:38.9±1.3, 39°.50N±0°.06×143°.78E±0°.08, h9km±15km, n46, σ2°04/53, mb3.8/17, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MIYJ	**Miyakonagasawa**	**1.52**	**273**	P	**Pn**	**22 51 04.1**	**-2.2**
MIYJ				*e*S	**Sn**	**22 51 24.2**	**-2.0**
JTH	**Tanohata**	**1.54**	**287**	P	**Pn**	**22 51 03.9**	**-2.7**
JTH				*e*S	**Sn**	**22 51 23.0**	**-3.7**
OFUJ	**Ofunato**	**1.69**	**256**	P	**Pn**	**22 51 06.9**	**-1.8**
JOM	**Ohasama**	**1.93**	**270**	P	**Pn**	**22 51 10.5**	**-1.4**
JOM				*e*S	**Sn**	**22 51 34.0**	**-2.2**
JANG	**Nango**	**1.95**	**297**	P	**Pn**	**22 51 09.3**	**-2.9**
JANG				*e*S	**Sn**	**22 51 33.1**	**-3.7**
JMK	**Ichinoseki**	**2.07**	**255**	P	**Pn**	**22 51 12.4**	**-1.4**
JRG	**Rokugo**	**2.44**	**268**	P	**Pn**	**22 51 18.6**	**-0.3**
JTM	**Tenmabayashi**	**2.44**	**302**	P	**Pn**	**22 51 17.2**	**-1.8**
JAH	**Hinai**	**2.52**	**287**	P	**Pn**	**22 51 18.6**	**-1.4**
JYK	**Kaneyama**	**2.72**	**259**	P	**Pn**	**22 51 22.2**	**-0.6**
JOT	**Ohata**	**2.81**	**313**	P	**Pn**	**22 51 21.9**	**-2.0**
JNBK	**Urakawa-nobuka**	**2.88**	**345**	P	**Pn**	**22 51 23.9**	**-1.1**
JNBK				S	**Sn**	**22 51 57.7**	**-2.1**
ASAJ	**Asahikawa**	**4.69**	**350**	Pn	**Pn**	**22 51 48.0**	**-1.8**
	4.2nm,0.3s,baz=184,slow=6.2,SNR=27						
ASAJ				Sn	**Sn**	**22 52 40.9**	**-3.6**
	4.3nm,0.3s,baz=251,slow=26,SNR=6.6						
MJAR	**Matsushiro Arr**	**5.30**	**238**	Pn	**Pn**	**22 51 57.2**	**-1.1**
	3.1nm,0.3s,baz=44,slow=12,SNR=15						
MAT	**Matsushiro**	**5.30**	**238**	P	**Pn**	**22 51 58.4**	**+0.1**
JHJ	**Hachijo jima 2**	**7.14**	**208**	Sn	**Sn**	**22 53 37.2**	**-7.6**
	11nm,0.3s,baz=234,slow=24,SNR=6.5						
USRK	**Ussuriysk Ar.**	**9.97**	**302**	Pn	**Pn**	**22 53 01.1**	**-1.2**
	0.6nm,0.3s,baz=94,slow=14,SNR=12						
KSRS	**Korea Array**	**12.60**	**266**	Pn	**Pn**	**22 53 39.1**	**+0.9**
	0.2nm,0.3s,baz=84,slow=14,SNR=5.9						
KLR	**Kul'dur**	**12.97**	**322**	Pn	**Pn**	**22 53 41.2**	**-2.1**
	0.1nm,0.3s,baz=137,slow=12,SNR=4.2						
MA2	**Magadan**	**20.57**	**10**	P	**P**	**22 55 18.1**	**+0.3**
	3.7nm,0.4s,baz=190,slow=12,SNR=4.6						
SEY	**Seymchan**	**24.03**	**10**	P	**P**	**22 55 53.9**	**0.0**
	3.5nm,0.6s,baz=178,slow=6.9,SNR=13						
SONM	**Songino Array**	**28.07**	**300**	P	**P**	**22 56 29.1**	**-1.7**
	1.2nm,0.7s,baz=91,slow=8.9,SNR=9.0						
ZALV	**Zalesovo Beam**	**41.68**	**310**	P	**P**	**22 58 26.6**	**-1.0**
	2.0nm,0.6s,baz=86,slow=8.7,SNR=11						
ZALV				PcP	**PcP**	**23 00 22.2**	**-1.9**
	1.3nm,0.5s,baz=88,slow=2.6,SNR=4.9						
CMAR	**Chiang Mai Arr**	**43.94**	**255**	P	**P**	**22 58 45.8**	**-0.6**
	1.0nm,0.8s,baz=44,slow=7.2,SNR=14						
MKAR	**Makanchi Array**	**44.43**	**300**	P	**P**	**22 58 48.9**	**-1.2**
	2.3nm,0.7s,baz=83,slow=9.4,SNR=27						
ILAR	**Eielson Array**	**46.41**	**34**	P	**P**	**22 59 05.4**	**0.0**
	0.6nm,0.8s,baz=269,slow=6.3,SNR=6.2						
TAPN	**Taplejung**	**47.65**	**273**	*e*P	**P**	**22 59 15.9**	**-0.1**
ODAN	**Odare**	**48.14**	**273**	*e*P	**P**	**22 59 19.2**	**-0.5**
RAMN	**Ramite**	**48.71**	**273**	*e*P	**P**	**22 59 23.2**	**-0.9**
	18nm,0.9s						
GUN	**Gumba**	**48.79**	**275**	*e*P	**P**	**22 59 24.1**	**-0.7**
	22nm,0.7s						
KKN	**Kakani**	**49.31**	**275**	*e*P	**P**	**22 59 27.7**	**-0.9**
GKN	**Gorkha**	**49.70**	**276**	*e*P	**P**	**22 59 30.6**	**-1.0**
KOLN	**Koldanda**	**50.62**	**276**	*e*P	**P**	**22 59 37.8**	**-0.7**
PYUN	**Pyuthan**	**50.92**	**277**	*e*P	**P**	**22 59 40.6**	**-0.3**
INK	**Inuvik**	**51.34**	**28**	P	**P**	**22 59 42.3**	**-0.8**
	0.9nm,0.8s,baz=308,slow=5.0,SNR=4.4						
WRA	**Warramunga Arr**	**59.79**	**190**	P	**P**	**23 00 43.1**	**-1.3**
	0.6nm,0.5s,baz=8.9,slow=7.1,SNR=6.7						
YKA	**Yellowknife Ar**	**60.73**	**31**	P	**P**	**23 00 49.4**	**-1.0**
	0.3nm,0.6s,baz=302,slow=6.6,SNR=5.5						
ASAR	**Alice Springs**	**63.52**	**190**	P	**P**	**23 01 09.7**	**+0.1**
	0.6nm,0.8s,baz=7.3,slow=5.4,SNR=7.3						
FINES	**FINESS Array B**	**67.49**	**333**	P	**P**	**23 01 32.8**	**-2.0**
	1.7nm,0.8s,baz=72,slow=12,SNR=5.8						
KBZ	**Khabaz**	**70.70**	**311**	P	**P**	**23 01 51.9**	**-3.1**
	3.3nm,0.9s,baz=17,slow=1.8,SNR=4.1						
NB2	**NORSAR Subarra**	**72.62**	**338**	P	**P**	**23 02 05.2**	**-1.2**
	comp=Z,3.9nm,1.1s,baz=38,slow=6.2						
NOA	**NORSAR Array B**	**72.62**	**338**	P	**P**	**23 02 05.0**	**-1.3**
	comp=Z,1.0nm,0.8s,baz=42,slow=5.4,SNR=4.4						
AKASG	**Malin Array Be**	**73.47**	**323**	P	**P**	**23 02 08.9**	**-2.6**
	comp=Z,0.4nm,0.5s,baz=46,slow=5.8,SNR=5.4						
PDAR	**Pinedale Array**	**74.61**	**47**	P	**P**	**23 02 17.4**	**-1.2**
	comp=Z,0.3nm,0.6s,baz=230,slow=3.7,SNR=3.5						
GERES	**GERESS Array B**	**81.57**	**329**	P	**P**	**23 02 55.8**	**-1.2**
	comp=Z,0.4nm,0.8s,baz=353,slow=7.2,SNR=2.8						
TXAR	**Lajitas Array**	**87.15**	**54**	P	**P**	**23 03 26.7**	**+1.1**
	comp=Z,0.2nm,0.6s,baz=261,slow=4.5,SNR=3.4						

JMA 13 22:52:18.0, 36°.81N×140°.57E, h8km±1km, M2.6, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JHO	**Hitachi**	**0.20**	**180**	P	Pg	22 52 22.2	+0.2
JHO				S	Sg	22 52 25.1	+0.3
JFK	**Kawauchi**	**0.61**	**24**	P	Pg	22 52 29.8	+0.1
JFK				*e*S	Sg	22 52 37.6	-0.1
JFT	**Otama**	**0.73**	**345**	S	Sg	22 52 41.7	+0.1
JMM	**Marumori**	**1.07**	**10**	S	Sg	22 52 51.9	-0.5
MAT	**Matsushiro**	**1.92**	**263**	P	Pb	22 52 53.8	+0.6
MAT				S	Sb	22 53 17.4	0.0

*ISCJB **13** 22:56:49.4±0.6,38°.59N×118°.04×31°.83E±0°.04, h3km±9km, Error ellipse: s-maj=7.6km s-min=4.4km az=29.7*
*DDA **13** 22:56:49.6,38°.59N×31°.82E, h7km, Md2.5*
*CSEM **13** 22:56:49.6±0.2,38°.58N×31°.85E, h8km, MD2.5, Error ellipse: s-maj=4.1km s-min=2.9km az=39.0*
*ISK **13** 22:56:49.4,38°.59N×31°.89E, h9km, MD2.7*

ISC 13 22:56:49.7±0.9,38°.57N±0°.03×31°.84E±0°.03, h12km±7km, n24, σ0°47/34, Turkey

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
KDHN	**Kadinhani**	**0.22**	**103**	*i* P	**Pg**	**22 56 54.4**	**-0.2**
KDHN				*i* S	**Sg**	**22 56 58.1**	**+0.3**
KDHN	**Kadinhani**	**0.22**	**103**	P	**Pg**	**22 56 54.4**	**-0.2**
KDHN				S	**Sg**	**22 56 58.1**	**+0.3**
KIZT	**Kizilcal**	**0.31**	**6**	*e*PG	**Pg**	**22 56 55.7**	**-0.5**
KIZT	**Kizilcal**	**0.31**	**6**	*e*Pg	**Pg**	**22 56 55.7**	**-0.5**
LADK	**Ladik-KONYA**	**0.55**	**132**	*e*PG	**Pg**	**22 57 00.3**	**-0.3**
LADK				*e*SG	**Sg**	**22 57 08.2**	**+0.3**
LADK	**Ladik-KONYA**	**0.55**	**132**	*e*Pg	**Pg**	**22 57 00.3**	**-0.3**
LADK				*e*Sg	**Sg**	**22 57 08.2**	**+0.3**
BOLV	**Bolvadin**	**0.71**	**282**	*i* P	**Pg**	**22 57 03.0**	**-0.6**
BOLV				*i* S	**Sg**	**22 57 13.3**	**+0.3**
BOLV	**Bolvadin**	**0.71**	**282**	P	**Pg**	**22 57 03.0**	**-0.6**
BOLV				S	**Sg**	**22 57 13.3**	**+0.3**
KONT	**Konya--Tatoy**	**0.75**	**147**	*e*PG	**Pg**	**22 57 03.9**	**-0.3**
KONT	**Konya--Tatoy**	**0.75**	**147**	*e*Pg	**Pg**	**22 57 03.9**	**-0.3**
CHBY	**Cihanbeyli**	**0.82**	**89**	*e*PG	**Pg**	**22 57 04.6**	**-1.1**
CHBY	**Cihanbeyli**	**0.82**	**89**	*e*Pg	**Pg**	**22 57 04.6**	**-1.1**
KMER	**Konya-Meram**	**0.90**	**152**	*i* P	**Pb**	**22 57 07.3**	**0.0**
KMER				*i* S	**Sn**	**22 57 24.7**	**+0.2**
KMER	**Konya-Meram**	**0.90**	**152**	P	**Pb**	**22 57 09.4**	**-0.2**
KMER				S	**Sn**	**22 57 24.7**	**+0.2**
AFSR	**Afˆar-Bala (A**	**1.30**	**47**	*e*PN	**Pb**	**22 57 13.8**	**-0.3**
AFSR	**Afˆar-Bala (A**	**1.30**	**47**	*e*Pn	**Pb**	**22 57 13.8**	**-0.3**
GULT	**Gulveren**	**2.12**	**332**	*e*PN	**Pn**	**22 57 26.1**	**+1.0**
GULT	**Gulveren**	**2.12**	**332**	*e*Pn	**Pn**	**22 57 26.1**	**+1.0**

*NEIC **13** 22:59:19.2, 38°.39N×118°.74W, h16km, ML3.3(REN), After REN.*

ISC 13 22:59:18.8±1.2,38°.41N±0°.03×118°.74W±0°.03, h13km±12km, n16, σ1°45/30, California-Nevada border region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
MLAC	**Mammoth, Mammo**	**0.78**	**186**	P	**Pg**	**22 59 34.0**	**0.0**
	baz=5.7						
MLAC				S	**Sb**	**22 59 44.7**	**-0.3**
	baz=5.7						
CMB	**Columbia Colle**	**1.35**	**255**	*e*P	**Pb**	**22 59 43.8**	**-0.2**
CMB				*e*S	**Sn**	**22 59 59.5**	**-1.7**
GRAC	**Grapevine Rang**	**1.78**	**142**	Sg	**Sg**	**23 00 17.4**	**+1.4**
	baz=322						
DAC	**Darwin (Calif)**	**2.31**	**156**	*e*Pn	**Pn**	**22 59 57.0**	**+0.3**
DAC				*e*Sg	**Sg**	**23 00 31.8**	**-1.4**
FURC	**Furnace Creek,**	**2.44**	**142**	Sg	**Sg**	**23 00 39.3**	**+1.9**
	baz=323						
TPNV	**Topopah Spring**	**2.45**	**126**	Pg	**Pg**	**23 00 05.4**	**-0.4**
	baz=307						
R11A	**Troy Canyon, C**	**2.48**	**90**	Pb	**Pb**	**23 00 04.4**	**+1.1**
	baz=272						
R11A				Sb	**Sg**	**23 00 38.0**	**-0.4**
	baz=272						
R11A	**Troy Canyon, C**	**2.48**	**90**	*e*Pn	**Pn**	**22 59 58.6**	**-0.4**
R11A				*e*Pg	**Pg**	**23 00 06.0**	**-0.3**
R11A				*e*Sg	**Sg**	**23 00 38.9**	**+0.5**
MPMC	**Manual Prospec**	**2.55**	**157**	Sb	**Sg**	**23 00 39.3**	**-1.4**
	baz=337						
SAO	**San Andreas Ge**	**2.71**	**234**	*e*Pn	**Pn**	**23 00 02.4**	**+0.4**
SAO				*e*Sg	**Sg**	**23 00 44.3**	**-1.4**
ISA	**Isabella, Lake**	**2.75**	**176**	Pb	**Pb**	**23 00 08.9**	**+1.1**
	baz=356						
ISA				Sb	**Sg**	**23 00 44.7**	**-2.4**
	baz=356						
HOPS	**Hopland Field**	**3.44**	**281**	*e*Pn	**Pn**	**23 00 10.2**	**-1.9**
HOPS				*e*Sg	**Sb**	**23 01 04.6**	**+3.2**
ELK	**Elko**	**3.57**	**48**	*e*Pn	**Pn**	**23 00 13.7**	**-0.4**
ELK				*e*Sg	**Sg**	**23 01 11.1**	**-2.4**
WDC	**Whiskeytown Da**	**3.66**	**308**	*e*Pn	**Pn**	**23 00 14.8**	**-0.3**
WDC				*e*Pg	**Pg**	**23 00 30.5**	**+1.7**
MOD	**Modoc Plateau**	**3.69**	**342**	*e*Pn	**Pn**	**23 00 16.0**	**+0.3**
MOD				*e*Pg	**Pg**	**23 00 29.3**	**-0.2**
DUG	**Dugway, Tooele**	**4.93**	**67**	*e*Pn	**Pn**	**23 00 32.2**	**-0.5**
DUG				*e*Pg	**Pg**	**23 00 54.1**	**+0.9**
DUG				*e*Sg	**Sg**	**23 01 54.4**	**-2.6**

JMA 13 23:00:55.6,36°.94N×140°.69E, h8km±1km, M2.6, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.18**	**28**	P	Pg	23 00 59.7	+0.3
ONAJ				S	Sg	23 01 02.7	+0.7
JHO	**Hitachi**	**0.34**	**197**	P	Pg	23 01 02.3	0.0
JHO				*e*S	Sg	23 01 06.7	-0.2
JFK	**Kawauchi**	**0.45**	**19**	P	Pg	23 01 04.5	+0.1
JFK				S	Sg	23 01 10.6	+0.3
JSB	**Shiboa**	**0.62**	**273**	P	Pb	23 01 08.2	-0.5
JSB				S	Sb	23 01 16.7	-0.8
JFT	**Otama**	**0.64**	**334**	P	Pg	23 01 08.3	+0.3
JFT				S	Sg	23 01 16.9	+0.5
JYT	**Yasato**	**0.81**	**209**	P	Pg	23 01 10.9	-0.4
JFY	**Yanaizu**	**0.92**	**301**	P	Pg	23 01 13.2	0.0
JFY				S	Sg	23 01 24.9	-0.2
JMM	**Marumori**	**0.93**	**5**	P	Pg	23 01 13.0	-0.4
JMM				S	Sg	23 01 25.5	0.0
MAT	**Matsushiro**	**2.03**	**259**	P	Pn	23 01 31.4	+1.2

*IDC **13** 23:01:14.6±1.2,36°.55N×140°.59E, h0km, mb3.4/4, mb1 3.6/6, mb1mx3.4/49, mbtmp3.5/6, ML3.5/2, MS4.1/1, Ms1 4.1/1, ms1mx2.9/38, Error ellipse: s-maj=23.1km s-min=15.5km az=179.0*
*ISCJB **13** 23:01:15.6±0.7,36°.72N±0°.04×140°.65E±0°.07, h16km±6km, mb3.2/4, MS4.0/1, Error ellipse: s-maj=10.7km s-min=5.8km az=26.3*
*JMA **13** 23:01:16.4,36°.77N×140°.58E, h9km±1km, M3.7 Broadband fault plane solution: P waves. NP1: ϕs=339.00000°, δ52.00000°, λ-100.00000°. NP2: ϕs=175.00000°, δ40.00000°, λ-78.00000°. Principal axes: T Plg6.0000°, Azm76.0000°; N Plg8.0000°, Azm345.0000°; P Plg80.0000°, Azm203.0000°;*
JMA Felt II J1.

ISC 13 23:01:16.3±0.9,36°.73N±0°.04×140°.62E±0°.06, h12km±6km, n19, σ1°39/16, mb3.3/4, 4C, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JHO	**Hitachi**	**0.12**	**198**	↑P	**Pg**	**23 01 19.8**	**+0.4**
JHO				S	**Sg**	**23 01 21.8**	**+0.2**
ONAJ	**Iwakimizuishiy**	**0.40**	**21**	↑P	**Pg**	**23 01 23.8**	**-0.5**
ONAJ				S	**Sg**	**23 01 29.2**	**-0.4**
JYT	**Yasato**	**0.60**	**214**	P	**Pg**	**23 01 28.3**	**+0.3**
JSB	**Shiboa**	**0.61**	**294**	↑P	**Pg**	**23 01 27.8**	**-0.3**
JSB				S	**Sg**	**23 01 35.5**	**-0.6**
JFK	**Kawauchi**	**0.67**	**18**	↑P	**Pg**	**23 01 28.5**	**-0.8**
JFK				S	**Sg**	**23 01 37.0**	**-1.1**
MJAR	**Matsushiro Arr**	**1.94**	**265**	Pg	**Pn**	**23 01 49.5**	**+0.4**
	53nm,0.3s,baz=86,slow=15,SNR=131						
MJAR				Lg	Lg	23 02 14.0	
	34nm,0.3s,baz=80,slow=30,SNR=14						
JHJ	**Hachijo jima 2**	**3.66**	**191**	Pn	**Pn**	**23 02 10.3**	**-2.5**
	9.2nm,0.3s,baz=51,slow=17,SNR=1.3						
ASAJ	**Asahikawa**	**7.53**	**11**	Pn	**Pn**	**23 03 08.9**	**+3.0**
	0.8nm,0.3s,baz=173,slow=15,SNR=4.2						
SONM	**Songino Array**	**27.43**	**305**	P	**P**	**23 07 02.3**	**+0.3**
	0.2nm,0.5s,baz=110,slow=12,SNR=2.0						
H11N2	**WAKE ISLAND Hy**	**28.55**	**119**	T	T	23 36 57.8	
	baz=313,slow=75,SNR=102						
H11N1	**WAKE ISLAND Hy**	**28.56**	**119**	T	T	23 36 58.3	
	baz=313,slow=75,SNR=91						
H11N3	**WAKE ISLAND Hy**	**28.57**	**119**	T	T	23 36 59.2	
	baz=313,slow=75,SNR=85						
H11S1	**WAKE ISLAND Hy**	**29.24**	**121**	T	T	23 37 50.1	
	baz=314,slow=76,SNR=305						
H11S3	**WAKE ISLAND Hy**	**29.24**	**121**	T	T	23 37 50.1	
	baz=314,slow=76,SNR=292						
H11S2	**WAKE ISLAND Hy**	**29.25**	**121**	T	T	23 37 51.4	
	baz=314,slow=76,SNR=164						
TIXI	**Tiksi**	**35.52**	**354**	LR	LR	23 22 11.7	
	comp=Z,257nm,19.4s,baz=100,slow=35						
MKAR	**Makanchi Array**	**43.74**	**302**	P	**P**	**23 09 23.1**	**+1.6**
	0.1nm,0.5s,baz=87,slow=9.2,SNR=2.2						
WRA	**Warramunga Arr**	**56.67**	**187**	P	**P**	**23 10 58.2**	**-1.4**
	0.5nm,0.6s,baz=2.6,slow=7.2,SNR=7.2						
PDAR	**Pinedale Array**	**78.34**	**45**	P	**P**	**23 13 17.3**	**+0.6**
	0.2nm,0.5s,baz=318,slow=1.2,SNR=3.9						

*ISCJB **13** 23:05:28.5±1.4, 37°.15N±0°.06×141°.40E±0°.08, h20km±8km, mb3.6/11, Error ellipse: s-maj=12.4km s-min=8.3km az=37.9*
*JMA **13** 23:05:30.1±0.1, 37°.12N×141°.26E, h27km±1km, M3.7*
JMA Felt II J1.
*IDC **13** 23:05:34.4±4.2, 37°.11N×141°.07E, h53km±38km, mb3.4/11, mb1 3.6/12, mb1mx3.4/44, mbtmp3.7/12, ML3.0/1, Error ellipse: s-maj=29.1km s-min=24.2km az=57.0*

ISC 13 23:05:30.3±0.9,37°.14N±0°.06×141°.26E±0°.09, h22km±5km, n27, σ0°71/27, mb3.7/11, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.37**	**264**	P	**Pb**	**23 05 38.4**	**+0.2**
ONAJ				S	**Sb**	**23 05 43.7**	**+0.1**
JFK	**Kawauchi**	**0.39**	**306**	P	**Pb**	**23 05 38.5**	**+0.1**
JHO	**Hitachi**	**0.77**	**227**	P	**Pb**	**23 05 44.2**	**-0.8**
JMM	**Marumori**	**0.82**	**333**	P	**Pb**	**23 05 45.2**	**-0.6**
JMM				S	**Sb**	**23 05 55.8**	**-0.6**
JFT	**Otama**	**0.83**	**297**	P	**Pb**	**23 05 46.1**	**+0.1**
JFT				*e*S	**Sb**	**23 05 56.8**	**0.0**
JSB	**Shiboa**	**1.09**	**261**	P	**Pb**	**23 05 50.6**	**+0.2**
JSB				*e*S	**Sn**	**23 06 04.6**	**-0.1**
JFY	**Yanaizu**	**1.27**	**283**	P	**Pn**	**23 05 53.2**	**+0.4**
MJAR	**Matsushiro Arr**	**2.52**	**257**	P	**Pn**	**23 06 11.1**	**+1.1**
	3.5nm,0.3s,baz=90,slow=5.9,SNR=9.9						
MJAR				S	**Sb**	**23 06 45.7**	**+0.2**
	6.9nm,0.3s,baz=64,slow=18,SNR=5.7						
MAT	**Matsushiro**	**2.52**	**257**	P	**Pn**	**23 06 11.4**	**+1.4**
MAT				S	**Sb**	**23 06 44.2**	**-1.3**
SONM	**Songino Array**	**27.63**	**304**	P	**P**	**23 11 14.6**	**-1.7**
	0.3nm,0.6s,baz=111,slow=8.2,SNR=2.6						
H11N2	**WAKE ISLAND Hy**	**28.30**	**121**	T	T	23 40 59.8	
	baz=314,slow=75,SNR=37						
H11N1	**WAKE ISLAND Hy**	**28.31**	**121**	T	T	23 41 00.1	
	baz=314,slow=75,SNR=47						
H11N3	**WAKE ISLAND Hy**	**28.32**	**121**	T	T	23 40 59.4	
	baz=314,slow=75,SNR=45						
H11S1	**WAKE ISLAND Hy**	**29.02**	**123**	T	T	23 41 48.9	
	baz=316,slow=76,SNR=18						
H11S3	**WAKE ISLAND Hy**	**29.02**	**123**	T	T	23 41 55.3	
	baz=316,slow=76,SNR=17						
H11S2	**WAKE ISLAND Hy**	**29.03**	**123**	T	T	23 41 52.4	
	baz=316,slow=76,SNR=14						
ZALV	**Zalesovo Beam**	**41.76**	**312**	P	**P**	**23 13 17.8**	**+0.1**
	0.8nm,0.6s,baz=104,slow=6.1,SNR=4.0						
MKAR	**Makanchi Array**	**43.96**	**302**	P	**P**	**23 13 35.5**	**-0.3**
	0.5nm,0.6s,baz=87,slow=9.3,SNR=6.5						
ILAR	**Eielson Array**	**49.47**	**32**	P	**P**	**23 14 19.4**	**+0.9**
	0.7nm,0.8s,baz=272,slow=6.2,SNR=7.9						
WRA	**Warramunga Arr**	**57.15**	**188**	P	**P**	**23 15 14.9**	**-0.5**
	0.7nm,0.5s,baz=5.7,slow=7.3,SNR=6.9						
FINES	**FINESS Array B**	**68.67**	**332**	P	**P**	**23 16 32.0**	**+0.4**
	1.7nm,0.8s,baz=26,slow=9.1,SNR=4.7						
NOA	**NORSAR Array B**	**74.04**	**337**	P	**P**	**23 17 03.5**	**-0.7**
	0.7nm,0.9s,baz=42,slow=5.4,SNR=3.0						
AKASG	**Malin Array Be**	**74.14**	**322**	P	**P**	**23 17 04.6**	**-0.2**
	0.6nm,0.4s,baz=46,slow=5.7,SNR=7.2						
PDAR	**Pinedale Array**	**77.68**	**45**	P	**P**	**23 17 26.1**	**+0.6**
	0.2nm,0.7s,baz=283,slow=5.5,SNR=2.5						
GERES	**GERESS Array B**	**82.56**	**328**	P	**P**	**23 17 51.4**	**-0.1**
	0.2nm,0.3s,baz=35,slow=5.3,SNR=4.5						
TXAR	**Lajitas Array**	**90.15**	**52**	P	**P**	**23 18 29.4**	**+0.1**
	0.7nm,1.1s,baz=297,slow=4.8,SNR=2.3						
LPAZ	**La Paz**	**146.74**	**59**	PKPbc	**PKPab**	**23 25 13.0**	**+0.1**
	1.0nm,0.7s,baz=27,slow=4.5,SNR=4.4						

*JMA **13** 23:09:05.8±0.1, 39°.52N×142°.68E, h23km±1km, M3.8*
*IDC **13** 23:09:14.2±2.0, 39°.54N×142°.56E, h77km±17km, mb3.4/12, mb1 3.5/14, mb1mx3.3/51, mbtmp3.7/14, MS4.0/1, Ms1 4.0/1, ms1mx2.9/41, Error ellipse: s-maj=20.9km s-min=10.8km az=117.0*

ISC 13 23:09:04.8±2.0,39°.49N±0°.04×142°.61E±0°.07, h2km±11km, n32, σ1°68/32, mb3.8/12, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
MIYJ	**Miyakonagasawa**	**0.62**	**278**	P	**Pb**	**23 09 18.6**	**+0.3**
MIYJ				S	**Sb**	**23 09 27.9**	**+0.5**
JTH	**Tanohata**	**0.73**	**308**	P	**Pb**	**23 09 20.1**	**-0.1**
JTH				*e*S	**Sb**	**23 09 30.7**	**0.0**
OFUJ	**Ofunato**	**0.84**	**241**	P	**Pn**	**23 09 22.4**	**-1.2**
OFUJ				S	**Sb**	**23 09 34.1**	**+0.4**
JOM	**Ohasama**	**1.02**	**269**	P	**Pn**	**23 09 25.4**	**-0.7**
JOM				S	**Sn**	**23 09 39.5**	**-1.5**
JKZ	**Kuzumaki**	**1.10**	**297**	P	**Pg**	**23 09 26.2**	**+0.3**
JKZ				S	**Sb**	**23 09 41.1**	**-0.4**
JMK	**Ichinoseki**	**1.21**	**244**	P	**Pg**	**23 09 28.4**	**+0.5**
JMK				S	**Sg**	**23 09 44.3**	**+0.8**
JANG	**Nango**	**1.22**	**317**	P	**Pn**	**23 09 27.8**	**-1.1**
JIO	**Ouri**	**1.43**	**224**	P	**Pb**	**23 09 31.5**	**-0.6**
JIO				S	**Sn**	**23 09 49.5**	**-1.5**
JRG	**Rokugo**	**1.53**	**267**	P	**Pb**	**23 09 33.6**	**-0.3**
JAH	**Hinai**	**1.67**	**295**	P	**Pb**	**23 09 35.4**	**-0.9**
MAT	**Matsushiro**	**4.55**	**231**	S	**Sn**	**23 11 12.2**	**+3.9**
MJAR	**Matsushiro Arr**	**4.55**	**231**	S	**Sn**	**23 11 13.5**	**+5.3**
	1.9nm,0.3s,baz=40,slow=31,SNR=4.6						
ASAJ	**Asahikawa**	**4.62**	**360**	P	Pn	23 10 19.7	+4.0
	1.0nm,0.3s,baz=214,slow=11,SNR=3.5						
ASAJ				S	**Sn**	**23 11 14.6**	**+4.7**
	0.7nm,0.3s,baz=90,slow=19,SNR=2.0						
SEY	**Seymchan**	**24.20**	**11**	P	**P**	**23 14 22.3**	**-0.2**
	0.6nm,0.2s,baz=215,slow=7.9,SNR=4.5						
SONM	**Songino Array**	**27.29**	**300**	P	**P**	**23 14 51.0**	**+0.3**
	0.4nm,0.6s,baz=86,slow=7.3,SNR=3.0						
H11N2	**WAKE ISLAND Hy**	**28.72**	**126**	T	T	23 45 36.4	
	baz=319,slow=76,SNR=87						
H11N1	**WAKE ISLAND Hy**	**28.73**	**126**	T	T	23 45 37.1	
	baz=319,slow=76,SNR=99						
H11N3	**WAKE ISLAND Hy**	**28.74**	**126**	T	T	23 45 37.7	
	baz=319,slow=76,SNR=80						
H11S1	**WAKE ISLAND Hy**	**29.52**	**128**	T	T	23 46 20.4	
	baz=320,slow=76,SNR=15						
H11S3	**WAKE ISLAND Hy**	**29.52**	**128**	T	T	23 46 13.6	
	baz=320,slow=76,SNR=11						
H11S2	**WAKE ISLAND Hy**	**29.54**	**128**	T	T	23 46 11.0	
	baz=320,slow=76,SNR=13						
ZALV	**Zalesovo Beam**	**41.00**	**310**	P	**P**	**23 16 48.7**	**-0.3**
	0.8nm,0.4s,baz=98,slow=6.0,SNR=4.6						
MKAR	**Makanchi Array**	**43.66**	**300**	P	**P**	**23 17 10.5**	**-0.3**
	0.3nm,0.5s,baz=88,slow=12,SNR=7.3						
KURBB	**Kurchatov Arra**	**45.27**	**306**	P	**P**	**23 17 23.1**	**-0.4**
	1.2nm,0.5s,baz=81,slow=8.4,SNR=17						
ILAR	**Eielson Array**	**46.92**	**34**	P	**P**	**23 17 36.5**	**0.0**
	0.1nm,0.6s,baz=249,slow=7.4,SNR=2.5						
AKTO	**Aktyubinsk**	**57.75**	**311**	LR	LR	23 45 42.3	
	comp=Z,132nm,18.4s,baz=60,slow=38						
WRA	**Warramunga Arr**	**59.62**	**189**	P	**P**	**23 19 10.8**	**+0.5**
	0.3nm,0.6s,baz=8.1,slow=7.7,SNR=2.9						
GEYT	**Alibeck**	**63.48**	**298**	P	**P**	**23 19 36.1**	**-0.3**
	0.6nm,0.5s,baz=15,slow=6.3,SNR=2.2						
FINES	**FINESS Array B**	**67.08**	**332**	P	**P**	**23 19 58.1**	**-1.2**
	0.8nm,0.5s,baz=26,slow=9.3,SNR=5.7						
NOA	**NORSAR Array B**	**72.28**	**337**	P	**P**	**23 20 30.8**	**-0.6**
	1.2nm,0.8s,baz=40,slow=5.9,SNR=4.1						
NVAR	**Mina Array Bea**	**72.78**	**54**	P	**P**	**23 20 34.9**	**-0.1**
	0.5nm,0.5s,baz=308,slow=4.4,SNR=1.7						
AKASG	**Malin Array Be**	**72.93**	**322**	P	**P**	**23 20 34.8**	**-0.6**
	0.6nm,0.5s,baz=49,slow=6.5,SNR=3.4						

JMA 13 23:12:56.2±0.2,38°.38N×143°.26E, h22km, M3.9, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
OFUJ	**Ofunato**	**1.43**	**300**	P	Pn	23 13 21.3	+0.5
OFUJ				*e*S	Sn	23 13 39.3	+0.4
JIO	**Ouri**	**1.50**	**273**	P	Pn	23 13 22.2	+0.4
JIO				*e*S	Sn	23 13 41.0	+0.3
JMK	**Ichinoseki**	**1.70**	**290**	P	Pn	23 13 25.3	+0.8
JOM	**Ohasama**	**1.88**	**306**	P	Pn	23 13 28.0	+0.9
JMM	**Marumori**	**2.01**	**256**	P	Pn	23 13 29.2	+0.4
JOU	**Okura**	**2.04**	**270**	P	Pn	23 13 30.5	+1.3
JRG	**Rokugo**	**2.29**	**297**	P	Pn	23 13 34.4	+1.8
JYK	**Kaneyama**	**2.33**	**284**	P	Pn	23 13 34.8	+1.5
JFT	**Otama**	**2.47**	**250**	P	Pn	23 13 36.4	+1.3
JNBK	**Urakawa-nobuka**	**3.92**	**354**	P	Pn	23 13 56.3	+1.3
JCH	**Churui**	**4.23**	**1**	P	Pn	23 13 58.9	-0.4
MAT	**Matsushiro**	**4.42**	**247**	P	Pn	23 14 04.7	+2.8
MAT				*e*S	Sb	23 15 10.6	+4.7

*MOS **13** 23:16:36.7±0.8,4°.68N×127°.10E, h45km, mb4.7/33, Error ellipse: s-maj=20.4km s-min=7.3km az=107.0*
*BJI **13** 23:16:37.0,4°.80N×127°.80E, h60km, mb4.6/7, mB4.8/2, Ms4.1/2, Ms7 4.0/1*
*ISCJB **13** 23:16:40.5±0.3,4°.63N±0°.05×127°.0E±0°.1, h81km, mb4.3/50, Error ellipse: s-maj=14.6km s-min=7.0km az=170.0*
*NEIC **13** 23:16:40.3±0.9,4°.64N×127°.05E, h64km±8km, mb4.4/9, Error ellipse: s-maj=12.6km s-min=4.7km az=79.0*
*IDC **13** 23:16:40.0±2.9,4°.65N×127°.02E, h60km±27km, mb3.9/24, mb1 4.0/25, mb1mx3.9/45, mbtmp4.2/25, ML3.8/1, MS3.8/4, Ms1 3.8/4, ms1mx3.2/47, Error ellipse: s-maj=27.0km s-min=10.3km az=74.0*

ISC 13 23:16:42.3±0.5,4°.64N±0°.06×127°.0E±0°.1, h81km, n76, σ0°97/72, mb4.4/50, 1C-1D, Talaud Islands

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
DAV	**Davao City (W)**	**2.78**	**330**	P	**Pn**	**23 17 23.0**	**-1.8**
	16nm,0.3s,baz=45,slow=10.0,SNR=3.4						
DAV				S	Sn	23 18 03.9	+6.6
	40nm,0.3s,baz=80,slow=23,SNR=8.2						
LUWI	**Luwuk**	**7.03**	**217**	*e*Pn	**Pn**	**23 18 21.3**	**-1.4**
	245nm,1.1s						
SSLB	**Suanglung**	**19.90**	**344**	*e*P	**P**	**23 21 07.4**	**0.0**
	7.3nm,0.8s						
FITZ	**Fitzroy Crossi**	**22.64**	**183**	P	**P**	**23 21 34.9**	**-2.0**
	3.4nm,0.5s,baz=9.8,slow=12,SNR=10						
WRAB	**Tennant Creek**	**25.48**	**164**	*e*P	**P**	**23 22 02.6**	**-0.6**
WRAB				pmax	pmax		
	comp=Z,13nm,0.8s						
WRAB	**Tennant Creek**	**25.48**	**164**	*e*P	**P**	**23 22 02.5**	**-0.6**
	comp=Z,12nm,0.8s						
WRA	**Warramunga Arr**	**25.49**	**164**	P	**P**	**23 22 02.0**	**-1.2**
	comp=Z,9.3nm,0.7s,baz=344,slow=10.0,SNR=37						
WRA				LR	LR	23 34 28.7	
	comp=Z,155nm,18.9s,baz=25,slow=42						
WRA	**Warramunga Arr**	**25.49**	**164**	P	**P**	**23 22 02.0**	**-1.2**
WRA				pmax	pmax		
	comp=Z,10.0nm,0.7s						
WRA				MLR	MLR		
	comp=Z,155nm,18.9s						
JCJ	**Chichijima**	**26.64**	**31**	LR	LR	23 31 34.0	
	comp=Z,152nm,20.9s,baz=111,slow=34						
ASAR	**Alice Springs**	**28.94**	**167**	P	**P**	**23 22 34.5**	**+0.3**
	comp=Z,2.0nm,0.6s,baz=354,slow=7.9,SNR=33						
ASAR				PcP	**PcP**	**23 25 42.6**	**+1.1**
	comp=Z,0.9nm,0.6s,baz=353,slow=2.6,SNR=5.5						
ASAR	**Alice Springs**	**28.94**	**167**	P	**P**	**23 22 34.5**	**+0.3**
ASAR						23 25 42.6	
ASAR				pmax	pmax		
	comp=Z,4.0nm,0.7s						
ASAR				pmax	pmax		
	comp=Z,1.0nm,0.6s						
CMAR	**Chiang Mai Arr**	**30.62**	**299**	P	**P**	**23 22 49.6**	**+0.5**
	comp=Z,0.8nm,0.8s,baz=117,slow=7.4,SNR=8.9						
CMAR				LR	LR	23 35 39.6	
	comp=Z,76nm,18.2s,baz=265,slow=37						
KSAR	**Wonju Array Be**	**32.65**	**1**	P	**P**	**23 23 06.4**	**-0.3**
KSAR	**Wonju Array Be**	**32.65**	**1**	P	**P**	**23 23 06.4**	**-0.3**
KSRS	**Korea Array**	**32.67**	**1**	P	**P**	**23 23 06.4**	**-0.3**
	comp=Z,1.1nm,0.7s,baz=173,slow=9.7,SNR=5.1						
XAN	**Xi'an**	**33.72**	**332**	P	**P**	**23 23 16.1**	**+0.1**
XAN				pmax	pmax		
	comp=Z,7.0nm,0.8s						
BJI	**Beijing**	**36.56**	**346**	P	P	23 23 35.3	-5.0
BJI				pmax	pmax		
	comp=Z,7.0nm,0.9s						
STKA	**Stephens Creek**	**38.90**	**160**	P	**P**	**23 24 00.1**	**-0.1**
	comp=Z,5.2nm,0.4s,baz=340,slow=8.6,SNR=14						
KLR	**Kul'dur**	**44.61**	**4**	P	**P**	**23 24 46.3**	**-0.2**
	comp=Z,1.3nm,0.6s,baz=198,slow=4.2,SNR=7.9						
ULN	**Ulaanbaatar**	**46.33**	**342**	*d* P	**P**	**23 25 01.1**	**+0.8**
ULN				pmax	pmax		
	comp=Z,13nm,1.1s

TIXI	**Tiksi**	**66.93**	**1**	*e*P		**P**	**23 27 25.7**	**-0.1**
	comp=Z,3.6nm,0.8s							
BILL	**Bilibino**	**68.61**	**15**	*i* P		**P**	**23 27 37.8**	**+1.4**
BILL				pmax	pmax			
	comp=Z,1.0nm,0.8s							
NRIK	**Noril'sk**	**69.60**	**346**	P		**P**	**23 27 42.9**	**+0.4**
	comp=Z,5.9nm,0.8s,baz=130,slow=5.8,SNR=15							
GEYT	**Alibeck**	**70.51**	**309**	P		**P**	**23 27 48.9**	**+0.1**
	comp=Z,0.4nm,0.4s,baz=116,slow=16,SNR=2.8							
ABKAR	**Akbulak array**	**71.60**	**321**	*e*P		**P**	**23 27 54.7**	**-0.3**
	comp=Z,2.2nm,0.8s							
AKTO	**Aktyubinsk**	**73.09**	**321**	P		**P**	**23 28 04.3**	**+0.3**
	comp=Z,2.2nm,0.7s,baz=99,slow=11,SNR=4.2							
ARU	**Arti**	**74.29**	**328**	*c i*P		**P**	**23 28 11.2**	**+0.4**
ARU				S		**SKiKP**	**23 37 33.5**	**+3.1**
ARU				SS		**SS**	**23 42 23.5**	**-2.1**
ARU				pmax	pmax			
	comp=Z,9.0nm,1.2s							
ARU	**Arti**	**74.29**	**328**	*e*P		**P**	**23 28 10.2**	**-0.6**
	comp=Z,3.8nm,0.6s							
RAR	**Rarotonga**	**76.18**	**113**	LR		LR	00 01 16.0	
	comp=Z,176nm,18.1s,baz=240,slow=35							
ZEI	**Tsey**	**81.78**	**312**	*e*P		**P**	**23 28 52.7**	**-0.1**
ZEI				pmax	pmax			
	comp=Z,5.0nm,0.8s							
VRH	**Novokhopyorsk**	**83.42**	**321**	*e*P		**P**	**23 29 01.1**	**+0.2**
VRH				pmax	pmax			
	comp=Z,9.0nm,0.7s							
COLA	**College**	**83.77**	**25**	*e*P		**P**	**23 29 00.4**	**-2.0**
COLA				pmax	pmax			
	comp=Z,2.0nm,0.9s							
ILAR	**Eielson Array**	**84.18**	**25**	P		**P**	**23 29 03.9**	**-0.6**
	comp=Z,0.7nm,1.0s,baz=236,slow=6.4,SNR=4.9							
VNDA	**Vanda**	**84.30**	**173**	P		**P**	**23 29 05.2**	**+0.4**
	comp=Z,2.1nm,0.8s,baz=330,slow=3.4,SNR=7.2							
KLMR	**Klimovskoe**	**84.73**	**331**	P		**P**	**23 29 08.4**	**+1.1**
KLMR				pmax	pmax			
	comp=Z,21nm,1.2s							
VSR	**Storozhevoye**	**85.03**	**321**	*e*P		**P**	**23 29 09.4**	**+0.4**
VSR				pmax	pmax			
	comp=Z,10.0nm,0.9s							
LPSR	**Galich'ya Gora**	**85.15**	**322**	*e*P		**P**	**23 29 10.3**	**+0.7**
LPSR				pmax	pmax			
	comp=Z,10.0nm,0.9s							
OBN	**Obninsk**	**86.45**	**325**	*i* P		**P**	**23 29 16.4**	**+0.5**
OBN				pmax	pmax			
	comp=Z,7.0nm,1.0s							
INK	**Inuvik**	**89.23**	**22**	P		**P**	**23 29 28.6**	**-0.3**
	comp=Z,2.3nm,1.1s,baz=293,slow=5.0,SNR=4.4							
BRTR	**Keskin Array B**	**89.62**	**310**	P		**P**	**23 29 31.9**	**+0.3**
	comp=Z,1.6nm,0.9s,baz=106,slow=4.1,SNR=7.7							
BRTR	**Keskin Array B**	**89.62**	**310**	P		**P**	**23 29 32.0**	**+0.3**
BRTR				pmax	pmax			
	comp=Z,2.0nm,0.9s							
ARCES	**ARCESS Array B**	**89.68**	**340**	P		**P**	**23 29 30.2**	**-0.9**
	comp=Z,2.4nm,0.8s,baz=75,slow=6.4,SNR=7.7							
ARCES	**ARCESS Array B**	**89.68**	**340**	P		**P**	**23 29 30.2**	**-0.9**
ARCES				pmax	pmax			
	comp=Z,3.0nm,0.8s							
FINES	**FINESS Array B**	**91.14**	**332**	P		**P**	**23 29 37.7**	**-0.3**
	comp=Z,0.4nm,0.7s,baz=39,slow=7.1,SNR=3.6							
KIEV	**Kiev**	**91.35**	**321**	*e*P		**P**	**23 29 39.2**	**0.0**
KIEV				pmax	pmax			
	comp=Z,2.0nm,0.8s							
YKA	**Yellowknife Ar**	**98.58**	**24**	P		**P**	**23 30 10.8**	**-1.1**
	comp=Z,0.2nm,0.8s,baz=306,slow=4.2,SNR=3.8							
TXAR	**Lajitas Array**	**120.86**	**52**	PKP		**PKPdf**	**23 35 25.9**	**-0.2**
	comp=Z,0.4nm,1.0s,baz=350,slow=4.8,SNR=2.2							
TORD	**Torodi Ar. Bea**	**122.85**	**289**	PKP		**PKPdf**	**23 35 31.2**	**+1.0**
	comp=Z,0.5nm,0.9s,baz=91,slow=2.5,SNR=3.6							

JMA 13 23:23:15.0±0.3, 39°56N×143°89E, h10km, M3.9, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
MIYJ	**Miyakonagasawa**	**1.60**	**271**	P		P	23 23 43.6	+0.3
JTH	**Tanohata**	**1.61**	**284**	P		Pb	23 23 44.2	-0.6
JTH				*e*S		Sb	23 24 05.0	-0.1
OFUJ	**Ofunato**	**1.79**	**255**	P		Pn	23 23 46.4	+0.5
JANG	**Nango**	**2.00**	**295**	P		Pn	23 23 49.1	+0.3
JOM	**Ohasama**	**2.01**	**268**	P		Pn	23 23 49.9	+0.9
JMK	**Ichinoseki**	**2.16**	**255**	P		Pn	23 23 51.9	+0.9
JTM	**Tenmabayashi**	**2.48**	**300**	P		Pn	23 23 57.1	+1.6
JAH	**Hinai**	**2.58**	**285**	P		Pn	23 23 58.3	+1.5
MAT	**Matsushiro**	**5.40**	**238**	P		Pn	23 24 38.4	+2.8

MAN 13 23:27:23, 7°28N×124°01E, h20km, mb4.5, ML3.3, MS3.2, 1C, Mindanao

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
CTBH	**Cotabato--PC H**	**0.24**	**103**	⇑*e*P		Pb	23 27 29.9	+1.2
CTBH				*i* S		Sb	23 27 43.1	+10

NIED ***13*** *23:36:00, 39°50N×143°60E, h23km, Mw3.8 Best double couple: M₀4.75000×10¹⁴ NP1:φ₈173.00000°, δ26.00000°, λ51.00000°. NP2:φ₈35.00000°, δ70.00000°, λ107.00000°.*
IDC ***13*** *23:36:04.6±1.1, 39°28N×143°36E, h0km, mb3.7/11, mb1 3.8/12, mb1mx3.6/53, mbtmp3.7/12, ML3.3/1, Error ellipse: s-maj=31.0km s-min=21.4km az=79.0*
ISCJB ***13*** *23:36:05.2±0.9, 39°51N±0°07×143°6E±0°1, h11km, mb3.8/12, Error ellipse: s-maj=14.3km s-min=7.0km az=35.0*
JMA ***13*** *23:36:06.0±0.3, 39°50N×143°56E, h21km±5km, M3.9*
ISC 13 23:36:08.3±1.2, 39°59N±0°09×143°3E±0°1, h11km, n30, σ0°73/22, mb3.8/12, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
MIYJ	**Miyakonagasawa**	**1.14**	**270**	P		**Pn**	**23 36 29.9**	**-0.3**
JTH	**Tanohata**	**1.16**	**288**	P		**Pn**	**23 36 30.4**	**0.0**
JOM	**Ohasama**	**1.56**	**266**	P		**Pn**	**23 36 36.3**	**+0.4**
JANG	**Nango**	**1.58**	**300**	P		**Pn**	**23 36 36.3**	**+0.1**
JMK	**Ichinoseki**	**1.73**	**249**	P		**Pn**	**23 36 38.1**	**-0.2**
JIO	**Ouri**	**1.89**	**234**	P		**Pn**	**23 36 39.4**	**-1.1**
JRG	**Rokugo**	**2.07**	**266**	P		**Pn**	**23 36 43.6**	**+0.7**
JYK	**Kaneyama**	**2.38**	**255**	P		**Pn**	**23 36 47.7**	**+0.5**
JCH	**Churui**	**3.02**	**1**	P		**Pn**	**23 36 55.7**	**-0.4**
JCH				S		**Sn**	**23 37 31.2**	**-1.1**
ASAJ	**Asahikawa**	**4.56**	**354**	Pn		**Pn**	**23 37 18.2**	**+1.1**
	1.0nm,0.3s,baz=225,slow=13,SNR=4.4							
ASAJ				Sn		Sn	23 38 07.1	-2.9
	0.9nm,0.3s,baz=108,slow=20,SNR=4.1							
MJAR	**Matsushiro Arr**	**5.04**	**234**	Pn		**Pn**	**23 37 24.9**	**+1.1**
	1.8nm,0.3s,baz=38,slow=11,SNR=11							
USRK	**Ussuriysk Ar.**	**9.61**	**302**	Pn		Pn	23 38 33.0	+6.5
	0.3nm,0.3s,baz=105,slow=14,SNR=4.0							
SEY	**Seymchan**	**24.01**	**10**	P		**P**	**23 41 23.5**	**+0.8**
	1.3nm,0.5s,baz=63,slow=23,SNR=4.1							
SONM	**Songino Array**	**27.70**	**300**	P		**P**	**23 41 56.3**	**-0.3**
	0.8nm,0.7s,baz=79,slow=7.7,SNR=4.9							
H11N2	**WAKE ISLAND Hy**	**28.35**	**127**	T		T	00 11 31.7	
	baz=317							
H11N1	**WAKE ISLAND Hy**	**28.36**	**127**	T		T	00 11 39.2	
	baz=317							
H11N3	**WAKE ISLAND Hy**	**28.37**	**127**	T		T	00 11 42.5	
	baz=317							
H11S1	**WAKE ISLAND Hy**	**29.16**	**129**	T		T	00 12 34.8	
	baz=322							
H11S3	**WAKE ISLAND Hy**	**29.17**	**129**	T		T	00 12 43.2	
	baz=322							
H11S2	**WAKE ISLAND Hy**	**29.18**	**129**	T		T	00 12 37.5	
	baz=322							
ZALV	**Zalesovo Beam**	**41.34**	**310**	P		**P**	**23 43 52.4**	**-1.5**
	0.8nm,0.4s,baz=94,slow=9.1,SNR=5.0							
MKAR	**Makanchi Array**	**44.07**	**300**	P		**P**	**23 44 16.0**	**-0.1**
	0.9nm,0.7s,baz=84,slow=10,SNR=11							
KURBB	**Kurchatov Arra**	**45.64**	**306**	P		**P**	**23 44 28.6**	**0.0**
	4.8nm,0.2s,baz=79,slow=8.5,SNR=9.9							
BVAR	**Borovoye Array**	**49.98**	**311**	P		**P**	**23 45 02.5**	**+0.3**
	0.8nm,0.5s,baz=68,slow=8.7,SNR=6.7							
CTA	**Charters Tower**	**59.43**	**177**	P		P	23 46 06.6	-4.3
	1.6nm,0.4s,baz=4.3,slow=5.7,SNR=2.7							
WRA	**Warramunga Arr**	**59.81**	**190**	P		P	23 46 09.5	-4.1
	0.3nm,0.7s,baz=7.0,slow=7.1,SNR=3.0							
YKA	**Yellowknife Ar**	**60.86**	**31**	P		**P**	**23 46 20.1**	**-0.2**
	0.1nm,0.5s,baz=300,slow=6.5,SNR=3.0							
ARCES	**ARCESS Array B**	**62.13**	**339**	P		**P**	**23 46 29.8**	**+1.0**
	1.4nm,0.8s,baz=37,slow=9.1,SNR=2.6							
FINES	**FINESS Array B**	**67.25**	**332**	P		**P**	**23 47 02.0**	**-0.3**
	0.8nm,0.6s,baz=46,slow=8.4,SNR=5.9							
NOA	**NORSAR Array B**	**72.40**	**338**	P		**P**	**23 47 33.8**	**-0.3**
	0.4nm,0.5s,baz=38,slow=6.0,SNR=3.0							

JMA 13 23:40:33.9±0.2, 39°46N×143°53E, h14km±4km, M3.5, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
MIYJ	**Miyakonagasawa**	**1.33**	**276**	P		Pn	23 40 58.0	0.0
MIYJ				*e*S		Sn	23 41 15.6	+0.1
JTH	**Tanohata**	**1.37**	**291**	P		Pn	23 40 58.6	0.0
JOM	**Ohasama**	**1.73**	**271**	P		Pn	23 41 04.2	+0.6
JTM	**Tenmabayashi**	**2.31**	**306**	P		Pn	23 41 12.0	+0.5
JOU	**Okura**	**2.49**	**245**	P		Pn	23 41 15.4	+1.4
JYK	**Kaneyama**	**2.52**	**259**	P		Pn	23 41 15.7	+1.2
JCH	**Churui**	**3.15**	**358**	P		Pn	23 41 24.0	+0.9
JAR	**Ashorobuto**	**3.84**	**3**	P		Pn	23 41 32.8	+0.3

IDC ***13*** *23:43:36.4±1.2, 37°27N×141°07E, h0km, mb3.5/6, mb1 3.6/7, mb1mx3.4/55, mbtmp3.4/7, ML3.4/1, Error ellipse: s-maj=32.9km s-min=24.2km az=76.0*
ISCJB ***13*** *23:43:40.5±0.5, 37°07N±0°03×140°73E±0°05, h26km±4km, mb3.5/6, Error ellipse: s-maj=7.3km s-min=4.7km az=16.8*
JMA ***13*** *23:43:41.4, 37°07N×140°65E, h15km±1km, M3.8 Broadband fault plane solution: P waves. NP1: φ₈37.00000°, δ65.00000°, λ68.00000°. NP2:φ₈261.00000°, δ33.00000°, λ129.00000°. Principal axes: T Plg63.0000°, Azm270.0000°; N Plg20.0000°, Azm47.0000°; P Plg17.0000°, Azm143.0000°;*
JMA Felt II J1.
ISC 13 23:43:40.3±0.9, 37°10N±0°03×140°80E±0°05, h25km±6km, n23, σ1°49/28, mb3.6/6, 4C-4D, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.01**	**333**	⇑P		**Pb**	**23 43 45.1**	**+0.4**
ONAJ				S		**Sb**	**23 43 47.6**	**-0.1**
JFK	**Kawauchi**	**0.28**	**12**	⇑P		**Pn**	**23 43 48.5**	**-0.3**
JFK				S		**Sn**	**23 43 53.3**	**-0.9**
JHO	**Hitachi**	**0.52**	**201**	⇓P		**Pb**	**23 43 50.4**	**-0.5**
JHO				S		**Sb**	**23 43 56.6**	**-1.5**
JFT	**Otama**	**0.56**	**319**	⇓P		**Pb**	**23 43 51.6**	**0.0**
JFT				S		**Sb**	**23 43 58.6**	**-0.7**
JSB	**Shiboa**	**0.72**	**260**	⇑P		**Pb**	**23 43 53.4**	**-0.8**
JSB				S		**Sb**	**23 44 01.4**	**-2.3**
JMM	**Marumori**	**0.77**	**360**	⇓P		**Pn**	**23 43 56.2**	**+0.6**
JMM				S		**Sn**	**23 44 06.9**	**+0.6**
JFY	**Yanaizu**	**0.93**	**290**	⇓P		**Pb**	**23 43 56.9**	**-0.9**
JFY				S		**Sb**	**23 44 07.5**	**-2.2**
JYT	**Yasato**	**1.00**	**210**	P		**Pn**	**23 43 58.3**	**-0.4**
JYT				S		**Sb**	**23 44 10.5**	**-1.1**
JAG	**Ashikaga**	**1.27**	**239**	⇑P		**Pn**	**23 44 02.2**	**-0.3**
JAG				S		**Sn**	**23 44 16.9**	**-1.9**
MJAR	**Matsushiro Arr**	**2.15**	**256**	Pn		**Pn**	**23 44 16.1**	**+1.4**
	10.0nm,0.3s,baz=97,slow=16,SNR=25							
MJAR				Sn		**Sn**	**23 44 42.9**	**+2.4**
	18nm,0.3s,baz=90,slow=27,SNR=16							
MAT	**Matsushiro**	**2.15**	**256**	P		**Pn**	**23 44 16.2**	**+1.6**
MAT				S		**Sn**	**23 44 43.5**	**+2.9**
H11N2	**WAKE ISLAND Hy**	**28.60**	**120**	T		T	00 19 30.5	
	baz=313,slow=75,SNR=25							
H11N1	**WAKE ISLAND Hy**	**28.61**	**120**	T		T	00 19 31.1	
	baz=313,slow=75,SNR=35							
H11N3	**WAKE ISLAND Hy**	**28.62**	**120**	T		T	00 19 31.9	
	baz=313,slow=75,SNR=28							
H11S1	**WAKE ISLAND Hy**	**29.31**	**122**	T		T	00 20 23.3	
	baz=314,slow=75,SNR=22							
H11S3	**WAKE ISLAND Hy**	**29.31**	**122**	T		T	00 20 22.9	
	baz=314,slow=75,SNR=28							
H11S2	**WAKE ISLAND Hy**	**29.32**	**122**	T		T	00 20 19.9	
	baz=314,slow=75,SNR=17							
ZALV	**Zalesovo Beam**	**41.51**	**312**	P		**P**	**23 51 26.2**	**+1.0**
	0.3nm,0.2s,baz=76,slow=6.1,SNR=1.7							
MKAR	**Makanchi Array**	**43.67**	**302**	P		**P**	**23 51 44.5**	**+1.5**
	0.3nm,0.5s,baz=90,slow=9.0,SNR=4.5							
KURBB	**Kurchatov Arra**	**45.58**	**308**	P		**P**	**23 51 57.0**	**-1.0**
	0.3nm,0.4s,baz=80,slow=7.6,SNR=2.0							
WRA	**Warramunga Arr**	**57.06**	**187**	P		**P**	**23 53 25.4**	**+1.1**
	0.6nm,0.5s,baz=4.0,slow=7.3,SNR=13							
ASAR	**Alice Springs**	**60.79**	**187**	P		**P**	**23 53 52.1**	**+1.9**
	0.4nm,0.7s,baz=13,slow=6.1,SNR=2.4							
YKA	**Yellowknife Ar**	**64.00**	**30**	P		**P**	**23 54 09.2**	**-1.9**
	0.2nm,0.9s,baz=293,slow=8.0,SNR=2.1							

MOS ***13*** *23:45:38.9±1.3, 55°31N×110°25E, h15km, mb4.3/1, Error ellipse: s-maj=15.2km s-min=9.5km az=76.9*
BYKL ***13*** *23:45:39.1±0.2, 55°29N×110°21E*
IDC ***13*** *23:45:40.0±3.8, 55°33N×110°13E, h0km, mb3.4/1, mb1 3.4/7, mb1mx3.2/62, mbtmp3.4/7, ML2.9/5, MS3.1/1, Ms1 3.1/1, ms1mx2.6/41, Error ellipse: s-maj=51.5km s-min=19.7km az=104.0*
ISC 13 23:45:39.5±1.1, 55°31N±0°03×110°31E±0°02, h8km±9km, n43, σ2°02/84, 6C, Lake Baykal region

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
NIZ	**Nizh Angarsk**	**0.64**	**317**	*e*Pg		**Pg**	**23 45 51.0**	**-0.8**
NIZ				*e*Sg		**Sg**	**23 45 59.6**	**-0.6**
NIZ				Pmax				
	49nm,0.1s							
NIZ				Smax				
	638nm,0.2s							
NIZ	**Nizh Angarsk**	**0.64**	**317**	*e*PG		**Pg**	**23 45 51.0**	**-0.8**
NIZ				*e*			23 45 59.7	
NIZ				pmax	pmax			
	comp=N,633nm,0.2s							
NIZ				smax	smax			
	comp=N,778nm,0.5s							
YLYR	**Ulyunkhan**	**0.66**	**131**	⇑*i*Pg		**Pg**	**23 45 51.4**	**-0.7**
YLYR				*e*Sg		**Sg**	**23 46 00.5**	**-0.2**
YLYR				Pmax				
	comp=N,112nm,0.2s							
YLYR				Smax				
	comp=N,778nm,0.5s							
YLYR	**Ulyunkhan**	**0.66**	**131**	⇑*i*PG		**Pg**	**23 45 51.4**	**-0.7**
YLYR				*i*			23 45 59.9	
YLYR				pmax	pmax			
	comp=Z,112nm,0.2s							
YLYR				smax	smax			
	comp=N,785nm,0.4s							
KMO	**Kumora**	**0.77**	**41**	⇑*i*Pg		**Pg**	**23 45 53.8**	**-0.6**
KMO				*e*Sg		**Sg**	**23 46 04.7**	**+0.3**
KMO				Pmax				
	comp=N,168nm,0.3s							
KMO				Smax				
	comp=N,485nm,1.0s							
KMO	**Kumora**	**0.77**	**41**	*e*PG		**Pg**	**23 45 53.7**	**-0.6**
KMO				*e*			23 46 04.4	
KMO				pmax	pmax			
	comp=Z,167nm,0.3s							
KMO				smax	smax			
	comp=N,483nm,1.0s							
YOA	**Uoyan**	**1.15**	**44**	*e*Pg		**Pg**	**23 46 01.2**	**-0.4**
YOA				*e*Sg		**Sb**	**23 46 17.1**	**+0.4**
YOA				Pmax				
	comp=N,197nm,0.3s							
YOA				Smax				
	comp=N,1μm,0.4s							
YOA	**Uoyan**	**1.15**	**44**	*e*PG		**Pg**	**23 46 00.9**	**-0.7**
YOA				*i*			23 46 17.6	
YOA				pmax	pmax			
	comp=Z,155nm,0.2s							
YOA				smax	smax			
	comp=E,1μm,0.4s							
SYVR	**Suvo**	**1.66**	**186**	⇑*i*Pg		**Pn**	**23 46 09.1**	**+0.2**
SYVR				*e*			23 46 11.2	
SYVR				*e*Sg		**Sb**	**23 46 31.5**	**+0.1**
SYVR				max				
	comp=E,76nm,0.4s							
SYVR				Smax				
	comp=E,463nm,0.5s							
SYVR	**Suvo**	**1.66**	**186**	*e*PN		**Pn**	**23 46 09.0**	**+0.2**
SYVR				*e*			23 46 31.5	
SYVR				pmax	pmax			
	comp=Z,75nm,0.4s							
SYVR				smax	smax			
	comp=N,468nm,0.5s							
UKT	**Uakit**	**1.90**	**83**	⇑*i*Pg		**Pb**	**23 46 13.8**	**-0.7**
UKT				*e*Sg		**Sg**	**23 46 39.9**	**-0.7**
UKT				*e*			23 46 42.3	
UKT				Pmax				
	comp=N,182nm,0.3s							
UKT				max				
	comp=N,394nm,0.5s							
UKT	**Uakit**	**1.90**	**83**	⇑*i*PN		**Pb**	**23 46 13.8**	**-0.7**
UKT				*e*			23 46 39.0	
UKT				pmax	pmax			
	comp=Z,181nm,0.3s							
UKT				smax	smax			
	comp=N,392nm,0.4s							
SVKR	**Severomuysk**	**2.01**	**65**	*e*Pg		**Pb**	**23 46 16.1**	**-0.2**
SVKR				*e*Sg		**Sg**	**23 46 43.5**	**-0.6**
SVKR				Pmax				
	comp=N,123nm,0.2s							
SVKR				Smax				
	comp=N,985nm,0.6s							
OGRR	**Ongureny**	**2.30**	**225**	*e*Pn		**Pn**	**23 46 18.3**	**+0.7**
OGRR				*e*Pg		**Pb**	**23 46 20.3**	**-0.9**
OGRR				*e*			23 46 22.0	
OGRR				*e*			23 46 47.7	
OGRR				*e*Sg		**Sb**	**23 46 49.6**	**-0.1**
OGRR				max				
	comp=N,53nm,0.3s							
OGRR				Smax				
	comp=N,397nm,0.3s							
OGRR	**Ongureny**	**2.30**	**225**	*e*PN		**Pn**	**23 46 18.3**	**+0.7**
OGRR				*e*			23 46 20.9	
OGRR				*e*			23 46 49.6	
OGRR				pmax	pmax			
	comp=Z,53nm,0.4s							
OGRR				smax	smax			
	comp=N,395nm,0.4s							
BOD	**Bodaibo**	**3.24**	**38**	*e*Pn		**Pn**	**23 46 31.4**	**+0.8**
BOD				*e*Pg		**Pb**	**23 46 37.8**	**+0.6**
BOD				*e*Sn		**Sn**	**23 47 10.0**	**+0.7**
BOD				*e*Sg		**Sb**	**23 47 20.0**	**+3.2**
BOD				Pmax				
	comp=N,14nm,0.3s							
BOD				Smax				
	comp=N,92nm,0.6s							
NLYR	**Nelyaty**	**3.26**	**66**	*e*Pn		**Pn**	**23 46 32.2**	**+1.3**
NLYR				*e*			23 46 40.9	
NLYR				*e*Sn		**Sn**	**23 47 08.0**	**-1.8**
NLYR				*e*Sg		**Sb**	**23 47 20.6**	**+3.2**
NLYR				Smax				
	comp=N,226nm,1.4s							
ZRHB	**Zarechye**	**3.33**	**215**	*e*Pg		**Pb**	**23 46 38.2**	**-0.5**
ZRHB				*e*			23 46 45.3	
ZRHB				*e*Sn		**Sn**	**23 47 07.9**	**-3.6**
ZRHB				*e*Sg		**Sb**	**23 47 20.7**	**+1.4**
ZRHB				max				
	comp=N,209nm,0.3s							
ZRHB				Smax				
	comp=N,323nm,1.1s							
TRG	**Tyrgan**	**3.46**	**224**	*e*Pn		**Pn**	**23 46 34.2**	**+0.6**
TRG				*e*			23 46 36.4	
TRG				*e*Pg		**Pb**	**23 46 39.7**	**-1.2**
TRG				*e*Sn		**Sn**	**23 47 13.1**	**-1.6**
TRG				*e*Sg		**Sb**	**23 47 24.5**	**+1.4**
TRG				Pmax				
	comp=N,12nm,0.3s							
TRG				Smax				
	comp=N,89nm,0.3s							
CIT	**Chita**	**3.82**	**148**	*e*Pg		**Pb**	**23 46 48.5**	**+1.4**
CIT				*e*Sg		**Sb**	**23 47 37.5**	**+4.1**
CIT				Pmax				
	comp=N,61nm,0.1s							
CIT				Smax				
	comp=N,151nm,0.3s							
HRMR	**Khuramsha**	**4.20**	**210**	*e*Pn		**Pn**	**23 46 43.9**	**+0.2**
HRMR				*e*			23 46 46.3	
HRMR				*e*Pg		**Pb**	**23 46 54.3**	**+0.8**
HRMR				*e*			23 46 57.2	
HRMR				*e*Sn		**Sn**	**23 47 31.1**	**-1.7**
HRMR				*e*Sg		**Sb**	**23 47 48.2**	**+4.0**
HRMR				max				
	comp=N,23nm,0.5s							
HRMR				Smax				
	comp=N,206nm,0.7s							
CRS	**Chara**	**4.74**	**67**	*e*Pn		**Pn**	**23 46 53.2**	**+2.1**
CRS				*e*Pg		**Pb**	**23 47 05.8**	**+3.1**
CRS				*e*Sg		**Sg**	**23 48 07.3**	**-4.1**
CRS				*e*			23 48 18.1	
CRS				Pmax				
	comp=N,42nm,1.2s							
CRS				max				
	comp=N,96nm,1.0s							
CRS	**Chara**	**4.74**	**67**	*e*PN		Pb	23 47 05.9	+3.2
CRS				*e*			23 48 07.9	
CRS				pmax	pmax			
	comp=Z,41nm,1.0s							
CRS				smax	smax			
	comp=E,94nm,1.2s							
LSTR	**Listvyanka**	**4.74**	**226**	*e*Pn		**Pn**	**23 46 51.8**	**+0.6**
LSTR				*e*Pg		**Pb**	**23 47 03.6**	**+0.8**
LSTR				*e*Sn		**Sn**	**23 47 43.4**	**-2.9**
LSTR				*e*Sg		**Sb**	**23 48 03.3**	**+3.3**
LSTR				Pmax				
	comp=E,6.0nm,0.3s							
LSTR				Smax				
	comp=E,52nm,0.5s							
TLY	**Talaya**	**5.38**	**230**	Pn		**Pn**	**23 47 00.8**	**+0.8**
	comp=E,0.0nm,0.3s,baz=53,slow=18,SNR=2.3							
TLY				Pg		**Pb**	**23 47 15.5**	**+1.8**
	comp=E,0.0nm,0.3s,baz=30,slow=14,SNR=6.8							
TLY				Sn		**Sn**	**23 48 00.2**	**-1.9**
	comp=E,0.0nm,0.3s,baz=240,slow=18,SNR=8.0							
TLY				Lg	Lg		23 48 22.2	
	comp=E,0.1nm,0.3s,baz=88,slow=24,SNR=14							
TLY	**Talaya**	**5.38**	**230**	*e*Pn		**Pn**	**23 46 59.8**	**-0.2**
TLY				*e*Pg		**Pb**	**23 47 14.4**	**+0.7**
TLY				*e*			23 47 18.6	
TLY				*e*Sn		**Sn**	**23 47 58.8**	**-3.4**
TLY				*e*Sg		**Sb**	**23 48 22.0**	**+3.5**
TLY				max				
	comp=E,7.0nm,0.4s							
TLY				Smax				
	comp=E,71nm,1.0s							
TLY	**Talaya**	**

ORL				Smax				
	comp=E,44nm,1.0s							
ORL	**Orlik**	**6.79**	**250**	*e*PN	**Pn**	**23**	**47**	**20.8 +1.3**
ORL				*e*		23	47	41.8
ORL				*e*S	**Sn**	**23**	**48**	**35.7 -1.2**
ORL				*e*		23	49	08.1
ORL				pmax	pmax			
	comp=Z,4.0nm,0.4s							
ORL				smax	smax			
	comp=N,40nm,0.6s							
SONM	**Songino Array**	**7.87**	**200**	Pn	**Pn**	**23**	**47**	**34.1 -0.2**
	comp=N,0.5nm,0.3s,baz=5.3,slow=14,SNR=2.6							
SONM				Lg	Lg	23	49	48.2
	comp=N,0.7nm,0.3s,baz=14,slow=31,SNR=8.3							
ZALV	**Zalesovo Beam**	**14.80**	**275**	Pn	**Pn**	**23**	**49**	**09.0 +0.2**
	comp=N,0.1nm,0.3s,baz=74,slow=11,SNR=6.4							
NRIK	**Noril'sk**	**17.42**	**333**	P	**Pn**	**23**	**49**	**42.4 -0.1**
	baz=127,slow=10,SNR=1.4							
NRIK				S	Sn	23	52	46.5 -10
	comp=N,0.2nm,0.3s,baz=152,slow=17,SNR=1.7							
MKAR	**Makanchi Array**	**19.45**	**256**	P	**P**	**23**	**50**	**06.5 +0.2**
	comp=N,0.1nm,0.3s,baz=65,slow=11,SNR=2.4							
KURK	**Kurchatov**	**19.51**	**270**	P	**Pn**	**23**	**50**	**07.7 -0.3**
KURBB	**Kurchatov Arra**	**19.60**	**269**	P	**P**	**23**	**50**	**07.7 -0.1**
	comp=N,0.0nm,0.3s,baz=63,slow=12,SNR=4.4							
KSRS	**Korea Array**	**21.49**	**139**	LR	LR	00	00	13.9
	comp=N,46nm,19.3s,baz=10.0,slow=40							
BVAR	**Borovoye Array**	**23.26**	**281**	P	**P**	**23**	**50**	**47.9 +0.8**
	comp=N,0.8nm,0.6s,baz=52,slow=15,SNR=6.0							

CSEM ***13*** *23:49:14.9±0.1, 37.˚33N×28.˚99E, h10km, MD2.7, Error ellipse: s-maj=3.4km s-min=2.9km az=88.0*
ISK ***13*** *23:49:14.4, 37.˚32N×28.˚95E, h7km, MD2.7*
DDA ***13*** *23:49:15.6, 37.˚30N×28.˚93E, h7km, Md2.8*

ISC 13 23:49:15.0±1.1, 37˚33N±0˚02×28˚95E±0˚03, h4km±10km, n27, σ1§11/39, Turkey

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
DENT	**Denizli**	**0.43**	**9**	*e*PG	**Pg**	**23 49 23.5**	**+0.2**
DENT				*e*SG	**Sg**	**23 49 30.0**	**+1.1**
DENT	**Denizli**	**0.43**	**9**	*e*Pg	**Pg**	**23 49 23.5**	**+0.2**
DENT				*e*Sg	**Sg**	**23 49 30.0**	**+1.1**
TURN	**Turunc**	**0.53**	**211**	*i* P	**Pn**	**23 49 29.5**	**+0.2**
TURN				*i* S	Sb	23 49 42.1	+7.3
TURN	**Turunc**	**0.53**	**211**	P	**Pn**	**23 49 29.5**	**+0.2**
DALY	**Dalyan (Mu˘la**	**0.56**	**205**	*e*PG	**Pg**	**23 49 25.8**	**+0.1**
DALY				*e*SG	**Sb**	**23 49 34.2**	**-1.5**
DALY	**Dalyan (Mu˘la**	**0.56**	**205**	*e*Pg	**Pg**	**23 49 25.8**	**+0.1**
DALY				*e*Sg	**Sb**	**23 49 34.2**	**-1.5**
YER	**Yerkesik**	**0.56**	**250**	*e*PG	**Pg**	**23 49 26.0**	**+0.2**
YER				*e*SG	**Sg**	**23 49 34.0**	**+0.9**
YER	**Yerkesik**	**0.56**	**250**	*e*Pg	**Pg**	**23 49 26.0**	**+0.2**
YER				*e*Sg	**Sg**	**23 49 34.0**	**+0.9**
FETY	**Fethiye**	**0.70**	**171**	*e*PG	**Pg**	**23 49 28.3**	**-0.1**
FETY	**Fethiye**	**0.70**	**171**	*e*Pg	**Pg**	**23 49 28.3**	**-0.1**
AYDN	**Tasoluk**	**0.91**	**292**	*i* P	**Pg**	**23 49 33.0**	**+0.6**
AYDN				*i* S	**Sn**	**23 49 47.1**	**-1.0**
ELL	**Elmali**	**0.96**	**127**	*e*PG	**Pg**	**23 49 33.0**	**-0.4**
ELL	**Elmali**	**0.96**	**127**	*e*Pg	**Pg**	**23 49 33.0**	**-0.4**
AYDB	**Zeytinkoy-Aydi**	**1.04**	**307**	*e*PG	**Pg**	**23 49 35.1**	**+0.2**
AYDB	**Zeytinkoy-Aydi**	**1.04**	**307**	*e*Pg	**Pg**	**23 49 35.1**	**+0.2**
KHL	**Karahalli**	**1.09**	**25**	*e*PN	**Pb**	**23 49 35.9**	**-0.6**
KHL	**Karahalli**	**1.09**	**25**	*e*Pn	**Pb**	**23 49 35.9**	**-0.6**
KHAL	**Karahalli**	**1.13**	**22**	*i* P	**Pb**	**23 49 36.3**	**-0.8**
KHAL				*i* S	**Sn**	**23 49 55.3**	**+1.7**
KHAL	**Karahalli**	**1.13**	**22**	P	**Pb**	**23 49 36.3**	**-0.8**
KHAL				S	**Sn**	**23 49 55.3**	**+1.7**
KORT	**Korkueli**	**1.17**	**106**	*i* P	**Pb**	**23 49 36.3**	**-1.5**
KORT				*i* S	**Sn**	**23 49 56.1**	**+1.5**
KORT	**Korkueli**	**1.17**	**106**	P	**Pb**	**23 49 36.3**	**-1.5**
KORT				S	**Sn**	**23 49 56.1**	**+1.5**
KULA	**Kula-Manisa**	**1.21**	**349**	*e*PN	**Pn**	**23 49 37.7**	**-1.0**
KULA	**Kula-Manisa**	**1.21**	**349**	*e*Pn	**Pn**	**23 49 37.7**	**-1.0**
AKAS	**Kas**	**1.22**	**154**	*i* P	**Pg**	**23 49 38.6**	**+0.3**
AKAS				*i* S	**Sn**	**23 49 59.6**	**+3.8**
AKAS	**Kas**	**1.22**	**154**	P	**Pg**	**23 49 38.6**	**+0.3**
BODT	**Bodrum**	**1.33**	**259**	*e*PN	**Pg**	**23 49 40.7**	**+0.2**
BODT	**Bodrum**	**1.33**	**259**	*e*Pn	**Pg**	**23 49 40.7**	**+0.2**

IDC 13 23:57:16.5±5.7, 19˚99S×68˚82W, h129km±36km, mb3.2/2, mb1 3.3/5, mb1mx3.1/34, mbtmp3.5/5, Error ellipse: s-maj=76.5km s-min=30.9km az=45.0, Chile-Bolivia border region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
LPAZ	**La Paz**	**3.74**	**10**	P	Pn	23 58 13.8	+0.4
	0.6nm,0.3s,baz=190,slow=7.5,SNR=25						
LPAZ				S	Sn	23 58 50.4	-6.8
	0.2nm,0.3s,baz=214,slow=21,SNR=2.3						
SIV	**San Ignacio**	**8.38**	**63**	P	Pn	23 59 14.3	-0.8
	0.8nm,0.3s,baz=270,slow=11,SNR=6.5						
CPUP	**Villa Florida**	**12.31**	**123**	P	Pn	00 00 07.6	+0.1
	0.1nm,0.3s,baz=283,slow=14,SNR=3.3						
TORD	**Torodi Ar. Bea**	**76.77**	**71**	P	P	00 08 54.7	+0.3
	0.2nm,0.4s,baz=239,slow=5.5,SNR=6.2						
YKA	**Yellowknife Ar**	**89.79**	**341**	P	P	00 09 59.6	-0.3
	0.3nm,0.7s,baz=134,slow=4.6,SNR=8.6						

ISCJB ***13*** *23:58:03.4±0.6, 3.˚35S±0.˚06×146.˚8E±0.˚1, h25km, mb4.0/12, MS3.9/25, Error ellipse: s-maj=14.5km s-min=9.0km az=176.3*
IDC ***13*** *23:58:07.6±2.7, 3.˚35S×146.˚84E, h50km±26km, mb3.8/11, mb1 4.1/13, mb1mx3.8/49, mbtmp4.1/13, ML3.0/3, MS3.9/27, Ms1 3.9/27, ms1mx3.8/47, Error ellipse: s-maj=23.7km s-min=17.3km az=78.0*
NEIC ***13*** *23:58:07.7±1.3, 3.˚36S×146.˚82E, h49km±12km, mb4.4/3, Error ellipse: s-maj=14.0km s-min=8.7km az=78.0*
GCMT ***13*** *23:58:07.7±0.2, 3.˚22S×146.˚95E, h24km±1km, MW5.0/94, Moment Tensor Solution. s35,c42; s94,c135; Duration: 0 Moment tensor: Scale 10^16 Nm; Mrr-0.73±.17; Mθθ0.20±.12; Mφφ0.52±.14; Mrθ-0.73±.19; Mφθ3.71±.10; Mφr-0.13±.19; Best double couple: Mo3.78800×10^16 NP1:φs88.00000°, δ88.00000°, λ-12.00000°. NP2: φs179.00000°, δ78.00000°, λ-178.00000°. Principal axes: T 4.1520, Plg7.0000°, Azm134.0000°; N -0.7300, Plg78.0000°, Azm260.0000°; P -3.4230, Plg9.0000°, Azm43.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

ISC 13 23:58:04.6±0.7, 3˚37S±0˚07×146˚9E±0˚1, h25km, n39, σ0§95/23, mb4.2/12, MS4.0/25, Bismarck Sea

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
PMG	**Port Moresby**	**6.00**	**177**	P	**Pn**	**23 59 32.8**	**+0.9**
	12nm,0.3s,baz=36,slow=5.4,SNR=17						
PMG				S	**Sn**	**00 00 37.6**	**-2.3**
	0.8nm,0.3s,baz=322,slow=19,SNR=2.1						
JAY	**Jayapura**	**6.24**	**278**	P	**Pn**	**23 59 35.5**	**+0.3**
	0.1nm,0.3s,baz=90,slow=20,SNR=3.7						
HNR	**Honiara**	**14.30**	**116**	LR	LR	00 07 07.3	
	comp=Z,750nm,18.4s,baz=294,slow=38						
CTA	**Charters Tower**	**16.63**	**182**	P	**P**	**00 01 59.0**	**+0.6**
	0.3nm,0.3s,baz=2.5,slow=18,SNR=3.2						
GUMO	**Guam**	**16.97**	**353**	P	**P**	**00 02 02.5**	**+0.3**
	12nm,0.3s,baz=193,slow=15,SNR=5.6						
GUMO				LR	LR	00 08 11.7	
	comp=Z,364nm,19.3s,baz=169,slow=36						
WRAB	**Tennant Creek**	**20.51**	**216**	*e*P	**P**	**00 02 41.9**	**+0.7**
	43nm,0.8s						
WRA	**Warramunga Arr**	**20.52**	**216**	P	**P**	**00 02 42.0**	**+0.7**
	23nm,0.8s,baz=40,slow=11,SNR=121						
WRA				LR	LR	00 10 58.8	
	comp=Z,427nm,18.7s,baz=35,slow=38						
DAV	**Davao City (W)**	**23.66**	**296**	LR	LR	00 12 21.2	
	comp=Z,350nm,19.4s,baz=130,slow=36						
ASAR	**Alice Springs**	**23.76**	**211**	P	**P**	**00 03 16.3**	**+0.9**
	7.6nm,0.8s,baz=39,slow=9.5,SNR=87						
ASAR				LR	LR	00 13 29.2	
	comp=Z,848nm,18.6s,baz=40,slow=39						
BATI	**Baumata**	**24.03**	**252**	LR	LR	00 12 17.3	
	comp=Z,361nm,20.8s,baz=154,slow=35						
FITZ	**Fitzroy Crossi**	**25.45**	**233**	P	**P**	**00 03 30.7**	**-0.1**
	7.3nm,0.7s,baz=49,slow=8.1,SNR=18						
FITZ				LR	LR	00 14 12.2	
	comp=Z,628nm,19.7s,baz=52,slow=38						
FITZ	**Fitzroy Crossi**	**25.45**	**233**	*e*P	**P**	**00 03 30.4**	**-0.3**
	12nm,0.8s						

DZM	**Mont Dzumac**	**26.57**	**136**	P	**P**	**00**	**03**	**41.8 +0.8**
	3.3nm,0.5s,baz=137,slow=15,SNR=5.2							
STKA	**Stephens Creek**	**28.79**	**189**	LR	LR	00	15	56.0
	comp=Z,377nm,22.0s,baz=9.7,slow=37							
JCJ	**Chichijima**	**30.63**	**352**	LR	LR	00	15	39.2
	comp=Z,235nm,19.6s,baz=123,slow=34							
LEM	**Lembang**	**39.26**	**263**	LR	LR	00	23	27.6
	comp=Z,49nm,18.9s,baz=116,slow=39							
KSRS	**Korea Array**	**44.28**	**338**	LR	LR	00	22	36.9
	comp=Z,188nm,18.8s,baz=146,slow=33							
USRK	**Ussuriysk Ar.**	**49.21**	**346**	LR	LR	00	27	07.5
	comp=Z,99nm,18.1s,baz=142,slow=35							
CMAR	**Chiang Mai Arr**	**51.95**	**296**	P	**P**	**00**	**07**	**12.6 +0.6**
	4.2nm,0.9s,baz=117,slow=5.9,SNR=12							
CMAR				LR	LR	00	26	56.0
	comp=Z,35nm,21.7s,baz=108,slow=33							
CHTO	**Chiang Mai**	**52.07**	**297**	*e*P	**P**	**00**	**07**	**13.2 +0.3**
	5.1nm,1.1s							
KLR	**Kul'dur**	**54.01**	**348**	LR	LR	00	28	18.7
	comp=Z,57nm,21.5s,baz=158,slow=34							
RAR	**Rarotonga**	**54.75**	**114**	LR	LR	00	27	53.6
	comp=Z,59nm,20.6s,baz=276,slow=33							
SONM	**Songino Array**	**62.08**	**330**	P	**P**	**00**	**08**	**23.4 0.0**
	0.6nm,0.8s,baz=154,slow=6.3,SNR=2.6							
SONM				LR	LR	00	34	05.1
	comp=Z,155nm,20.6s,baz=91,slow=35							
MA2	**Magadan**	**62.83**	**2**	LR	LR	00	33	24.9
	comp=Z,27nm,21.6s,baz=214,slow=34							
PPT	**Papeete**	**63.77**	**108**	LR	LR	00	32	51.2
	comp=Z,79nm,19.6s,baz=316,slow=33							
VNDA	**Vanda**	**74.53**	**177**	LR	LR	00	40	35.3
	comp=Z,98nm,19.5s,baz=2.5,slow=34							
MKAR	**Makanchi Array**	**75.42**	**320**	P	**P**	**00**	**09**	**46.3 -0.2**
	1.0nm,0.9s,baz=113,slow=5.9,SNR=4.5							
MKAR				LR	LR	00	42	35.6
	comp=Z,94nm,19.8s,baz=48,slow=35							
ZALV	**Zalesovo Beam**	**76.75**	**328**	P	**P**	**00**	**09**	**52.0 -1.8**
	0.4nm,0.4s,baz=116,slow=6.6,SNR=3.3							
ZALV				LR	LR	00	42	00.6
	comp=Z,113nm,21.9s,baz=70,slow=34							
KKAR	**Karatay Array**	**82.39**	**314**	*e*P	**P**	**00**	**10**	**24.6 -0.2**
	1.8nm,0.8s							
NRIK	**Noril'sk**	**82.76**	**342**	P	**P**	**00**	**10**	**25.6 -0.4**
	1.0nm,0.5s,baz=112,slow=7.4,SNR=4.4							
NRIK				LR	LR	00	46	20.6
	comp=Z,60nm,20.0s,baz=121,slow=35							
ILAR	**Eielson Array**	**83.12**	**23**	P	**P**	**00**	**10**	**28.1 0.0**
	0.6nm,0.8s,baz=270,slow=3.6,SNR=5.0							
ILAR				LR	LR	00	42	42.2
	comp=Z,48nm,20.1s,baz=280,slow=32							
MAW	**Mawson**	**84.62**	**203**	LR	LR	00	46	23.3
	comp=Z,54nm,19.5s,baz=60,slow=34							
GEYT	**Alibeck**	**91.08**	**308**	LR	LR	00	54	03.9
	comp=Z,152nm,20.3s,baz=45,slow=37							
NVAR	**Mina Array Bea**	**95.85**	**52**	LR	LR	00	47	19.5
	comp=Z,104nm,20.6s,baz=266,slow=31							
YKA	**Yellowknife Ar**	**96.91**	**28**	P	**P**	**00**	**11**	**34.1 +0.6**
	0.4nm,0.9s,baz=274,slow=4.7,SNR=4.9							
PFO	**Pinyon Flats O**	**97.40**	**57**	LR	LR	00	43	38.1
	comp=Z,68nm,21.8s,baz=230,slow=28							
KBZ	**Khabaz**	**102.43**	**314**	P	**Pdif**	**00**	**11**	**58.6 0.0**
	2.7nm,0.9s,baz=99,slow=13,SNR=2.9							
TORD	**Torodi Ar. Bea**	**144.26**	**288**	PKP	**PKPab**	**00**	**17**	**38.3 +0.8**
	1.2nm,0.8s,baz=74,slow=3.0,SNR=5.3							
DBIC	**Dimbokro**	**151.67**	**278**	PKPbc	**PKPbc**	**00**	**17**	**56.1 -2.0**
	2.4nm,0.9s,baz=135,slow=4.3,SNR=2.3							

IDC 14 00:09:54.7±3.6, 2˚15S×100˚07E, h0km, mb3.7/4, mb1 3.8/4, mb1mx3.4/52, mbtmp3.7/4, Error ellipse: s-maj=162.2km s-min=26.2km az=58.0, Southern Sumatera

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
CMAR	**Chiang Mai Arr**	**20.50**	**357**	P	P	00 14 35.3	+0.7
	0.7nm,0.5s,baz=185,slow=10,SNR=7.6						
ASAR	**Alice Springs**	**39.11**	**126**	P	P	00 17 24.2	0.0
	0.3nm,0.5s,baz=311,slow=8.5,SNR=3.7						
MKAR	**Makanchi Array**	**51.19**	**344**	P	P	00 18 59.7	-0.1
	1.3nm,0.6s,baz=162,slow=8.0,SNR=5.0						
ZALV	**Zalesovo Beam**	**57.33**	**349**	P	P	00 19 43.8	-0.5
	1.1nm,0.5s,baz=178,slow=5.5,SNR=5.7						

NIED ***14*** *00:10:00, 38.˚30N×142.˚20E, h23km, Mw4.2 Best double couple: Mo2.13000×10^15 NP1:φs101.00000°, δ33.00000°, λ-113.00000°. NP2:φs308.00000°, δ60.00000°, λ-76.00000°.*
ISCJB ***14*** *00:10:03.2±1.2, 38.˚25N±0.˚03×142.˚38E±0.˚03, h15km±7km, mb4.2/42, MS3.8/3, Error ellipse: s-maj=5.0km s-min=3.6km az=39.8*
MOS ***14*** *00:10:05.1±1.2, 38.˚36N×142.˚28E, h26km, mb4.5/31, Error ellipse: s-maj=9.9km s-min=5.9km az=90.7*
NEIC ***14*** *00:10:06.6±1.7, 38.˚29N×142.˚22E, h24km±12km, mb4.5/9, Error ellipse: s-maj=8.9km s-min=5.3km az=118.0*
JMA ***14*** *00:10:06.7±0.2, 38.˚35N×142.˚25E, h35km±3km, M4.2*
JMA Felt II J1.
IDC ***14*** *00:10:07.8±0.6, 38.˚26N×142.˚17E, h30km±3km, mb3.9/22, mb1 4.1/27, mb1mx4.0/57, mbtmp4.2/27, ML4.1/5, MS3.6/6, Ms1 3.6/6, ms1mx3.1/47, Error ellipse: s-maj=15.3km s-min=11.2km az=109.0*

ISC 14 00:10:06.6±0.5, 38˚30N±0˚04×142˚28E±0˚04, h24km±3km, h24km:pP-P,n111, σ1§30/124, mb4.3/42, MS3.7/3, 4C-1D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**0.75**	**282**	P	**Pb**	**00 10 20.3**	**-0.6**
JIO				S	**Sb**	**00 10 29.5**	**-1.2**
OFUJ	**Ofunato**	**0.91**	**329**	P	**Pn**	**00 10 22.3**	**-1.6**
OFUJ				S	**Sb**	**00 10 33.3**	**-2.2**
JMK	**Ichinoseki**	**1.05**	**308**	P	**Pn**	**00 10 24.7**	**-1.1**
JMK				S	**Sn**	**00 10 37.2**	**-2.5**
JMM	**Marumori**	**1.25**	**250**	P	**Pn**	**00 10 27.5**	**-1.0**
JMM				S	**Sn**	**00 10 42.2**	**-2.3**
JOU	**Okura**	**1.27**	**273**	P	**Pn**	**00 10 28.5**	**-0.3**
JOU				S	**Sn**	**00 10 44.2**	**-0.9**
JOM	**Ohasama**	**1.40**	**327**	P	**Pn**	**00 10 29.9**	**-0.7**
JOM				*e*S	**Sn**	**00 10 46.6**	**-1.7**
JFK	**Kawauchi**	**1.45**	**230**	P	**Pn**	**00 10 30.1**	**-1.2**
JFK				S	**Sn**	**00 10 46.7**	**-2.9**
JYK	**Kaneyama**	**1.62**	**293**	P	**Pn**	**00 10 34.4**	**-0.3**
JRG	**Rokugo**	**1.69**	**311**	P	**Pn**	**00 10 34.7**	**+0.2**
JFT	**Otama**	**1.72**	**244**	P	**Pn**	**00 10 35.2**	**+0.2**
JFT				S	**Sn**	**00 10 56.1**	**-0.2**
JYS	**Shirataka**	**1.74**	**268**	P	**Pn**	**00 10 35.5**	**+0.2**
MJAR	**Matsushiro Arr**	**3.68**	**243**	Pn	**Pn**	**00 11 02.9**	**+0.9**
	4.4nm,0.3s,baz=68,slow=10,SNR=26						
MJAR				Sn	**Sn**	**00 11 47.4**	**+2.7**
	9.3nm,0.3s,baz=92,slow=12,SNR=5.0						
MJAR				LR	LR	00 12 40.0	
	comp=Z,994nm,18.1s,baz=70,slow=43						
MAJO	**Matsushiro**	**3.69**	**243**	*e*P	**Pn**	**00 11 02.5**	**+0.5**
MAJO				*e*		00 11 43.2	
MAJO	**Matsushiro**	**3.69**	**243**	*e*Pn	**Pn**	**00 11 02.5**	**+0.5**
MAJO				*e*Sn	**Sn**	**00 11 43.1**	**-1.6**
MAT	**Matsushiro**	**3.69**	**243**	P	**Pn**	**00 11 03.8**	**+1.8**
MAT				*e*S	**Sn**	**00 11 48.3**	**+3.6**
ERM	**Erimo**	**3.77**	**10**	*e*P	**Pn**	**00 11 02.6**	**-0.5**
ERM				*e*		00 11 48.2	
ERM	**Erimo**	**3.77**	**10**	*e*Pn	**Pn**	**00 11 02.6**	**-0.5**
ERM				*e*Sn	**Sn**	**00 11 48.2**	**+1.5**
JHJ	**Hachijo jima 2**	**5.55**	**202**	Pn	**Pn**	**00 11 27.0**	**-0.7**
	37nm,0.3s,baz=232,slow=18,SNR=4.0						
JHJ				Sn	**Sn**	**00 12 28.2**	**-2.5**
	38nm,0.3s,baz=352,slow=23,SNR=6.9						
ASAJ	**Asahikawa**	**5.81**	**2**	Pn	**Pn**	**00 11 31.6**	**+0.4**
	6.9nm,0.3s,baz=201,slow=8.6,SNR=12						
ASAJ				Sn	Sn	00 12 42.2	+5.0
	2.7nm,0.3s,baz=323,slow=20,SNR=2.6						
YUK	**Yuzh-Kuril'sk**	**6.33**	**24**	*e*P	**Pn**	**00 11 36.7**	**-1.6**
YUK				*e*S	**Sn**	**00 12 46.2**	**-3.6**
YUK				pmax	pmax		
	comp=Z,202nm,0.7s						
YUK				pmax	pmax		
	comp=N,181nm,0.4s						
YUK				pmax	pmax		
	comp=E,168nm,0.5s						
SHO	**Shikotan**	**6.54**	**30**	*e*P	**Pn**	**00 11 38.3**	**-2.9**
SHO				*e*S	Sn	00 12 47.8	-7.1
SHO				pmax	pmax		
	comp=Z,73nm,0.7s						
SHO				pmax	pmax		
	comp=E,37nm,0.4s						
SHO				pmax	pmax		
	comp=N,29nm,0.3s						
KUR	**Kuril'sk**	**8.09**	**29**	*e*P	**Pn**	**00**	**12**	**01.8 -0.6**
KUR				*e*S	**Sn**	**00**	**13**	**29.7 -3.3**
KUR				pmax	pmax			
	comp=Z,74nm,0.8s							
KUR				pmax	pmax			
	comp=E,55nm,0.1s							
KUR				pmax	pmax			
	comp=N,67nm,0.4s							
YSS	**Yuzh-Sakhalins**	**8.65**	**2↑**	*e*P	**Pn**	**00**	**12**	**10.8 +0.6**
YSS				*e*S	**Sn**	**00**	**13**	**45.7 -1.2**
YSS				pmax	pmax			
	comp=Z,30nm,0.6s							
YSS	**Yuzh-Sakhalins**	**8.65**	**2**	*e*Pn	**Pn**	**00**	**12**	**10.6 +0.4**
	comp=Z,24nm,0.4s							
USRK	**Ussuriysk Ar.**	**9.73**	**311**	Pn	Pn	00	12	28.3 +3.4
	comp=Z,0.4nm,0.3s,baz=142,slow=14,SNR=8.0							
USRK				LR	LR	00	16	04.5
	comp=Z,120nm,20.1s,baz=129,slow=37							
JNU	**Nakatsue**	**10.61**	**244**	Pn	**Pn**	**00**	**12**	**36.5 -0.6**
	comp=Z,0.5nm,0.3s,baz=196,slow=18,SNR=2.8							
CBIJ	**Chichi jima**	**11.18**	**180**	Pn	**Pn**	**00**	**12**	**43.1 -1.7**
CBIJ				Sn	Sn	00	14	41.6 -7.3
JCJ	**Chichijima**	**11.18**	**180**	Pn	**Pn**	**00**	**12**	**43.1 -1.7**
	comp=Z,8.3nm,0.3s,baz=293,slow=17,SNR=5.2							
JCJ				Sn	Sn	00	14	41.6 -7.3
	comp=Z,8.0nm,0.3s,baz=114,slow=22,SNR=4.6							
KSRS	**Korea Array**	**11.38**	**270**	Pn	Pn	00	12	53.5 +6.0
	comp=Z,0.2nm,0.3s,baz=87,slow=12,SNR=6.4							
KSAR	**Wonju Array Be**	**11.41**	**270**	P	Pn	00	12	53.5 +5.5
KSAR	**Wonju Array Be**	**11.41**	**270**	Pn	Pn	00	12	53.5 +5.5
NKL	**Nikolayevsk**	**14.89**	**356**	*e*P	**Pn**	**00**	**13**	**33.7 -1.7**
PETK	**Petropavlovsk-**	**18.25**	**31**	LR	LR	00	21	04.7
	comp=Z,71nm,20.9s,baz=205,slow=36							
MA2	**Magadan**	**21.98**	**12**	P	**P**	**00**	**14**	**59.0 +0.6**
	comp=Z,6.3nm,0.5s,baz=215,slow=12,SNR=6.7							
MA2	**Magadan**	**21.98**	**12**	P	**P**	**00**	**14**	**59.0 +0.6**
MA2				*e*Pn	pP	00	14	59.3 -5.9
SEY	**Seymchan**	**25.42**	**11**	P	**P**	**00**	**15**	**33.4 +1.4**
	comp=Z,4.5nm,0.7s,baz=207,slow=6.3,SNR=14							
SEY				pP	**sP**	**00**	**15**	**43.0 +0.8**
	comp=Z,5.0nm,0.6s,baz=167,slow=3.6,SNR=6.7							
BOD	**Bodaibo**	**26.84**	**326**	*e*P	**P**	**00**	**15**	**43.2 -1.7**
BOD				pmax	pmax			
	comp=Z,3.0nm,1.2s							
ULN	**Ulaanbaatar**	**27.24**	**302**	*ce*P	**P**	**00**	**15**	**50.1 +1.3**
ULN				pmax	pmax			
	comp=Z,2.0nm,0.8s							
SONM	**Songino Array**	**27.67**	**302**	P	**P**	**00**	**15**	**53.9 +1.3**
	comp=Z,0.8nm,0.5s,baz=107,slow=9.4,SNR=6.0							
ENH	**Enshi**	**28.14**	**263**	*e*Pn	**P**	**00**	**15**	**55.8 -1.1**
	comp=Z,42nm,1.1s							
H11N2	**WAKE ISLAND Hy**	**28.25**	**124**	T	T	00	45	47.5
	baz=316,slow=75,SNR=978							
H11N1	**WAKE ISLAND Hy**	**28.25**	**124**	T	T	00	46	14.8
	baz=316,slow=75,SNR=680							
H11N3	**WAKE ISLAND Hy**	**28.26**	**124**	T	T	00	45	48.4
	baz=316,slow=75,SNR=627							
H11S1	**WAKE ISLAND Hy**	**29.01**	**126**	T	T	00	46	41.6
	baz=318							
H11S3	**WAKE ISLAND Hy**	**29.01**	**126**	T	T	00	46	42.2
	baz=318,slow=74							
H11S2	**WAKE ISLAND Hy**	**29.03**	**126**	T	T	00	46	42.1
	baz=318,slow=74							
TLY	**Talaya**	**30.04**	**309**	*e*P	P	00	16	15.8 +2.3
TLY				pmax	pmax			
	comp=Z,1.0nm,0.6s							
ZAK	**Zakamensk**	**30.05**	**306**	*e*P	**P**	**00**	**16**	**13.4 -0.2**
ZAK				pmax	pmax			
	comp=Z,3.0nm,1.0s							
BILL	**Bilibino**	**32.62**	**16**	P	**P**	**00**	**16**	**38.0 +2.0**
BILL				*PP	**sP**	**00**	**16**	**46.0 -0.3**
BILL				*SP	pP	00	16	51.0 +7.7
BILL				pmax	pmax			
	comp=Z,2.0nm,0.8s							
TIXI	**Tiksi**	**34.12**	**352**	P	**P**	**00**	**16**	**46.7 -2.3**
	comp=Z,2.7nm,0.3s,baz=3.2,slow=0.9,SNR=4.0							

comp=Z,2.5nm,0.7s,baz=15,slow=6.2,SNR=5.3
OBN Obninsk 67.49 323 P **P 00 21 00.0 -0.2**
OBN *e* 00 21 06.3
OBN 00 21 31.0
OBN pmax pmax
comp=Z,18nm,2.0s
FINES FINESS Array B 68.01 332 P **P 00 21 03.2 -0.2**
comp=Z,3.9nm,0.6s,baz=36,slow=9.1,SNR=17
FINES pP **pP 00 21 12.7 +1.5**
comp=Z,3.3nm,0.6s,baz=57,slow=8.0,SNR=7.5
NEW Newport 68.75 45 P **P 00 21 09.6 +1.3**
comp=Z,0.8nm,0.4s,baz=42,slow=14,SNR=2.8
GOF Gofitskoye 69.76 312 *eP* **P 00 21 15.1 +0.5**
STKA Stephens Creek 69.82 181 P **P 00 21 15.2 +0.4**
comp=Z,2.4nm,0.7s,baz=320,slow=7.3,SNR=3.8
KIV Kislovodsk 70.59 311 *eP* **P 00 21 19.9 +0.1**
KIV pmax pmax
comp=Z,14nm,0.9s
KBZ Khabaz 70.60 311 P **P 00 21 20.2 +0.5**
comp=Z,4.9nm,0.9s,baz=93,slow=4.3,SNR=7.2
FFC Flin Flon 72.27 33 *i* P **P 00 21 31.7 +2.1**
NB2 NORSAR Subarra 73.28 337 P **P 00 21 35.4 -0.2**
comp=Z,2.0nm,0.7s,baz=38,slow=6.2
NOA NORSAR Array B 73.28 337 P **P 00 21 35.5 0.0**
comp=Z,1.9nm,0.7s,baz=40,slow=6.0,SNR=7.9
AKASG Malin Array Be 73.71 322 P **P 00 21 38.0 -0.2**
comp=Z,2.8nm,0.5s,baz=45,slow=5.9,SNR=25
AKASG pP **pP 00 21 47.4 +1.4**
comp=Z,1.6nm,0.5s,baz=45,slow=6.5,SNR=5.1
KIEV Kiev 73.73 322 *eP* **P 00 21 38.3 0.0**
KIEV pmax pmax
comp=Z,2.0nm,0.6s
KIEV Kiev 73.73 322 *eP* **P 00 21 38.2 0.0**
comp=Z,2.1nm,0.6s
PDAR Pinedale Array 76.29 46 P **P 00 21 54.3 +0.7**
comp=Z,0.6nm,0.5s,baz=307,slow=1.5,SNR=9.6
ULM Lac du Bonnet 78.07 34 LR LR 00 56 20.8
comp=Z,106nm,20.2s,baz=332,slow=36
BRTR Keskin Array B 78.52 312 P **P 00 22 05.8 -0.2**
comp=Z,0.6nm,0.7s,baz=131,slow=2.6,SNR=5.3
VYHS Vyhne 80.07 326 *eP* **P 00 22 15.0 +0.9**
VYHS pmax pmax
comp=Z,11nm,2.3s
VYHS Vyhne 80.07 326 *eP* **P 00 22 15.0 +0.9**
CLL Collm 80.34 330 *eP* **P 00 22 13.0 -2.4**
CLL *i* 00 22 15.8
CLL *i* 00 22 23.5
CLL Collm 80.34 330 *eP* **P 00 22 13.0 -2.4**
CLL *i* 00 22 23.5
KHC Kasperske Hory 81.82 329 *eP* **P 00 22 23.5 +0.1**
KHC Kasperske Hory 81.82 329 *eP* **P 00 22 23.5 +0.1**
GERES GERESS Array B 81.99 329 P **P 00 22 24.5 0.0**
comp=Z,0.8nm,0.8s,baz=23,slow=7.2,SNR=4.9
GERES pP **pP 00 22 33.6 +1.2**
comp=Z,0.6nm,0.5s,baz=29,slow=6.1,SNR=4.8
SOKA Soboth 83.12 326 *i* P **P 00 22 30.2 -0.1**
TXAR Lajitas Array 88.81 53 P **P 00 22 59.7 +1.0**
comp=Z,0.5nm,0.6s,baz=301,slow=4.1,SNR=7.2
TXAR pP **sP 00 23 09.8 +0.2**
comp=Z,1.0nm,0.6s,baz=295,slow=3.2,SNR=8.8

IDC ***14*** *00:15:10.7±0.6, 34.92N×140.94E, h0km, mb3.8/16, mb1 3.9/19, mb1mx3.8/52, mbtmp3.8/19, ML3.7/3, MS3.8/4, Ms1 3.8/4, ms1mx3.0/38, Error ellipse: s-maj=19.7km s-min=13.8km az=83.0*
JMA ***14*** *00:15:11.7±0.2, 34.90N×141.20E, h43km±3km, M3.5*
ISCJB ***14*** *00:15:14.6±0.4, 34.81N±0.04×140.93E±0.07, h48km, mb3.8/19, MS3.9/4, Error ellipse: s-maj=8.3km s-min=5.0km az=153.2*
NEIC ***14*** *00:15:14.1±3.3, 34.91N×140.88E, h23km±23km, mb4.4/3, Error ellipse: s-maj=15.3km s-min=8.3km az=69.0*
ISC 14 00:15:17.1±0.6, 34.84N±0.05×140.82E±0.09, h48km, n44, σ1s25/38, mb3.8/19, MS3.9/4, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
BSO1	**Boso 1**	**0.23**	**145**	P	Pn	00 15 20.1	-4.7
BSO3	**Boso 3**	**0.25**	**261**	P	**Pn**	**00 15 23.9**	**-1.4**
BSO3				X		00 15 33.2	
BSO4	**Boso 4**	**0.42**	**291**	P	**Pn**	**00 15 26.0**	**-1.1**
BSO4				X		00 15 37.2	
KTR	**Katsuura**	**0.51**	**307**	P	**Pn**	**00 15 26.4**	**-1.9**
KTR				*eS*	**Sn**	**00 15 36.9**	**+0.5**
JCN	**Nagara**	**0.76**	**319**	P	**Pn**	**00 15 29.8**	**-1.8**
JCN				S	**Sn**	**00 15 42.7**	**+0.6**
CHOJ	**Chosi**	**0.86**	**2**	P	Pn	00 15 27.5	-5.3
JIM2	**Oshima 3**	**1.15**	**264**	P	**Pn**	**00 15 35.6**	**-1.2**
JHJ	**Hachijo jima 2**	**1.92**	**207**	Pn	**Pn**	**00 15 45.8**	**-1.5**
	19nm,0.3s,baz=246,slow=20,SNR=5.7						
JHJ				Sn	**Sn**	**00 16 09.2**	**-1.1**
	79nm,0.3s,baz=146,slow=23,SNR=14						
MJAR	**Matsushiro Arr**	**2.71**	**309**	Pn	**Pn**	**00 15 57.5**	**-0.7**
	6.9nm,0.3s,baz=123,slow=13,SNR=15						
MJAR				Sn	**Sn**	**00 16 30.7**	**+0.9**
	15nm,0.3s,baz=19,slow=15,SNR=28						
MAJO	**Matsushiro**	**2.72**	**309**	*ePn*	**Pn**	**00 15 55.6**	**-2.6**
MAT	**Matsushiro**	**2.72**	**309**	P	**Pn**	**00 15 57.2**	**-1.1**
CBIJ	**Chichi jima**	**7.81**	**171**	Pn	**Pn**	**00 17 06.5**	**-1.6**
JCJ	**Chichijima**	**7.81**	**171**	Pn	**Pn**	**00 17 06.6**	**-1.6**
	4.5nm,0.3s,baz=248,slow=19,SNR=2.8						
H11N2	**WAKE ISLAND Hy**	**27.53**	**116**	T	T	00 50 01.8	
	baz=305						
H11N1	**WAKE ISLAND Hy**	**27.54**	**116**	T	T	00 50 02.1	
	baz=305						
H11N3	**WAKE ISLAND Hy**	**27.55**	**116**	T	T	00 50 01.9	
	baz=305						
H11S3	**WAKE ISLAND Hy**	**28.16**	**119**	T	T	00 50 52.6	
	baz=310						
H11S1	**WAKE ISLAND Hy**	**28.16**	**119**	T	T	00 50 52.2	
	baz=310						
H11S2	**WAKE ISLAND Hy**	**28.17**	**119**	T	T	00 50 50.3	
	baz=310						
SONM	**Songino Array**	**28.67**	**307**	P	**P**	**00 21 09.5**	**+0.2**
	0.8nm,0.7s,baz=92,slow=9.3,SNR=3.6						
TLY	**Talaya**	**31.45**	**314**	LR	LR	00 35 34.9	
	comp=Z,118nm,19.0s,baz=120,slow=39						
CMAR	**Chiang Mai Arr**	**40.51**	**257**	P	**P**	**00 22 52.9**	**+1.3**
	0.3nm,0.5s,baz=58,slow=8.7,SNR=3.9						
ZALV	**Zalesovo Beam**	**43.06**	**314**	P	**P**	**00 23 12.2**	**+0.2**
	2.1nm,0.6s,baz=92,slow=5.6,SNR=10						
ZALV				PcP	**PcP**	**00 25 01.3**	**+0.1**
	0.6nm,0.5s,baz=102,slow=1.9,SNR=3.5						
MKAR	**Makanchi Array**	**44.90**	**304**	P	**P**	**00 23 27.5**	**+0.6**
	0.7nm,0.6s,baz=86,slow=10.0,SNR=8.5						
KURK	**Kurchatov**	**46.93**	**310**	*eP*	**P**	**00 23 42.6**	**-0.1**
	6.7nm,0.8s						
ILAR	**Eielson Array**	**51.61**	**31**	P	**P**	**00 24 18.2**	**0.0**
	0.4nm,0.7s,baz=277,slow=6.2,SNR=3.7						
FITZ	**Fitzroy Crossi**	**54.59**	**198**	P	**P**	**00 24 42.6**	**+1.9**
	1.5nm,0.7s,baz=154,slow=19,SNR=12						
FITZ	**Fitzroy Crossi**	**54.59**	**198**	*eP*	**P**	**00 24 43.3**	**+2.6**
WRAB	**Tennant Creek**	**54.82**	**187**	*eP*	**P**	**00 24 41.8**	**-0.5**
	3.0nm,0.8s						
WRA	**Warramunga Arr**	**54.83**	**187**	P	**P**	**00 24 42.2**	**-0.2**
	0.8nm,0.5s,baz=6.1,slow=7.6,SNR=9.5						
INK	**Inuvik**	**56.56**	**26**	P	**P**	**00 24 54.3**	**+0.1**
	0.7nm,0.8s,baz=342,slow=2.7,SNR=5.2						
ASAR	**Alice Springs**	**58.56**	**187**	P	**P**	**00 25 09.0**	**+0.2**
	0.3nm,0.4s,baz=21,slow=13,SNR=3.6						
ASAR	**Alice Springs**	**58.56**	**187**	P	**P**	**00 25 09.0**	**+0.2**
ABKAR	**Akbulak array**	**58.99**	**311**	*eP*	**P**	**00 25 09.6**	**-2.0**
	0.5nm,0.4s						
YKA	**Yellowknife Ar**	**65.95**	**29**	P	**P**	**00 25 57.2**	**-0.6**
	0.2nm,0.7s,baz=304,slow=5.9,SNR=4.3						
FINES	**FINESS Array B**	**70.53**	**332**	P	**P**	**00 26 25.6**	**-0.8**
	1.6nm,0.8s,baz=14,slow=16,SNR=4.5						
KBZ	**Khabaz**	**71.96**	**311**	LR	LR	01 01 23.5	
	comp=Z,80nm,18.2s,baz=94,slow=38						
AKASG	**Malin Array Be**	**75.73**	**322**	P	**P**	**00 26 57.2**	**-0.2**
	0.2nm,0.2s,baz=44,slow=6.7,SNR=4.2						
NOA	**NORSAR Array B**	**76.02**	**337**	P	**P**	**00 26 59.2**	**+0.2**
	0.9nm,0.7s,baz=41,slow=5.9,SNR=3.9						
PDAR	**Pinedale Array**	**79.55**	**45**	P	**P**	**00 27 18.9**	**-0.3**
	0.3nm,0.6s,baz=132,slow=2.2,SNR=3.8						
BRTR	**Keskin Array B**	**79.94**	**312**	P	**P**	**00 27 22.2**	**+0.9**
	0.8nm,0.8s,baz=116,slow=3.4,SNR=5.0						
BRTR				LR	LR	01 04 39.8	
	comp=Z,44nm,20.6s,baz=65,slow=37						
URZ	**Urewera**	**80.14**	**152**	P	**P**	**00 27 24.2**	**+2.3**
	2.8nm,0.3s,baz=333,slow=18,SNR=3.9						
SCHQ	**Schefferville**	**87.57**	**16**	**182**	LR	LR	01 09 34.8
	comp=Z,55nm,18.7s,baz=51,slow=37						
TORD	**Torodi Ar. Bea**	**118.51**	**313**	PKP	**PKPdf**	**00 33 59.7**	**-0.4**
	0.3nm,0.6s,baz=128,slow=0.7,SNR=4.2						

NIED ***14*** *00:18:00, 39.60N×143.60E, h11km, Mw4.0 Best double couple: M₀1.22000×10¹⁵ NP1:φs145.00000°, δ49.00000°, λ13.00000°. NP2:φs46.00000°, δ80.00000°, λ139.00000°.*
IDC ***14*** *00:18:28.8±1.2, 39.63N×143.75E, h0km, mb3.6/7, mb1 3.7/8, mb1mx3.5/49, mbtmp3.6/8, ML3.2/1, Error ellipse: s-maj=32.3km s-min=22.2km az=115.0*
ISCJB ***14*** *00:18:29.1±0.8, 39.62N±0.09×143.77E±0.08, h11km, mb3.4/6, Error ellipse: s-maj=13.2km s-min=7.1km az=154.5*
JMA ***14*** *00:18:32.4±0.3, 39.64N×143.65E, h33km, M3.5*
ISC 14 00:18:30.4±1.1, 39.59N±0.08×143.64E±0.09, h11km, n21, σ1s64/23, mb3.6/6, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MIYJ	**Miyakonagasawa**	**1.41**	**270**	P	**Pb**	**00 18 56.7**	**+0.1**
MIYJ				*eS*	**Sn**	**00 19 13.8**	**-0.6**
JTH	**Tanohata**	**1.41**	**285**	P	**Pb**	**00 18 56.7**	**0.0**
OFUJ	**Ofunato**	**1.61**	**252**	P	**Pn**	**00 18 59.5**	**+0.8**
JANG	**Nango**	**1.81**	**296**	P	**Pn**	**00 19 01.6**	**+0.1**
JOM	**Ohasama**	**1.82**	**267**	P	**Pn**	**00 19 02.8**	**+1.2**
JOM				*eS*	**Sn**	**00 19 25.2**	**+0.6**
JMK	**Ichinoseki**	**1.98**	**252**	P	**Pn**	**00 19 04.8**	**+1.0**
JMK				*eS*	**Sn**	**00 19 29.1**	**+0.5**
JTM	**Tenmabayashi**	**2.31**	**302**	P	**Pn**	**00 19 09.5**	**+1.2**
JRG	**Rokugo**	**2.33**	**266**	P	**Pb**	**00 19 10.8**	**-1.6**
JAH	**Hinai**	**2.39**	**286**	P	**Pn**	**00 19 11.2**	**+1.8**
JOU	**Okura**	**2.62**	**243**	P	**Pn**	**00 19 14.3**	**+1.7**
JYK	**Kaneyama**	**2.63**	**256**	P	**Pn**	**00 19 14.7**	**+1.9**
MJAR	**Matsushiro Arr**	**5.25**	**236**	Pn	**Pn**	**00 19 51.3**	**+2.5**
	0.8nm,0.3s,baz=39,slow=12,SNR=7.2						
MAT	**Matsushiro**	**5.25**	**236**	S	**Sn**	**00 20 44.9**	**-4.5**
USRK	**Ussuriysk Ar.**	**9.83**	**302**	Pn	Pn	00 20 55.3	+3.7
	0.1nm,0.3s,baz=92,slow=8.7,SNR=3.3						
MA2	**Magadan**	**20.51**	**10**	P	**P**	**00 23 06.7**	**-1.6**
	1.7nm,0.3s,baz=194,slow=19,SNR=2.1						
SEY	**Seymchan**	**23.97**	**10**	P	**P**	**00 23 42.6**	**-1.9**
	1.1nm,0.3s,baz=323,slow=20,SNR=2.6						
SONM	**Songino Array**	**27.93**	**299**	P	**P**	**00 24 19.8**	**-0.9**
	0.2nm,0.3s,baz=101,slow=7.8,SNR=3.1						
ZALV	**Zalesovo Beam**	**41.55**	**310**	P	**P**	**00 26 18.4**	**+0.8**
	0.4nm,0.4s,baz=77,slow=9.0,SNR=3.0						
MKAR	**Makanchi Array**	**44.30**	**300**	P	**P**	**00 26 41.3**	**+1.3**
	1.1nm,0.8s,baz=86,slow=8.4,SNR=4.3						
WRA	**Warramunga Arr**	**59.85**	**190**	P	**P**	**00 28 35.8**	**-0.2**
	0.6nm,0.9s,baz=7.9,slow=6.7,SNR=4.6						
YKA	**Yellowknife Ar**	**60.72**	**31**	P	**P**	**00 28 42.3**	**+0.8**
	0.1nm,0.7s,baz=300,slow=6.6,SNR=2.8						

SJA 14 00:27:17.5±0.7, 30.29S×68.90W, h18km±2km, ML3.3, MW3.7, San Juan Province

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
AMOG	**MOGNA**	**0.73**	**152**	*i* P	Pn	00 27 32.6	-0.5
AMOG				*i* S	Sn	00 27 43.2	-0.6
AGUA	**GUANDACOL**	**0.87**	**24**	*i* P	Pg	00 27 34.6	0.0
AGUA				*i* S	Sn	00 27 47.0	-0.3
RTLL	**Cerro Villicun**	**1.10**	**161**	*i* P	Pg	00 27 38.5	-0.4
RTLL				*i* S	Sg	00 27 53.3	+0.1
RTLS	**Leoncito**	**1.54**	**193**	*i* P	Pg	00 27 47.1	-0.2
RTLS				*i* S	Sg	00 28 08.3	+0.8
RTCV	**Cerro Valdivia**	**1.60**	**169**	*i* P	Pb	00 27 47.2	+0.7
RTCV				*i* S	Sg	00 28 08.9	-0.2
VCA	**Vinchina**	**1.66**	**21**	*i* P	Pb	00 27 48.1	+0.4
VCA				*i* S	Sg	00 28 10.6	-0.6
VCA				IAML		00 28 14.9	
	comp=Z,317nm,0.3s						
ACLC	**CERRO LA CRUZ**	**1.90**	**63**	*i* P	Pb	00 27 51.4	-0.2
ACLC				*i* S	Sb	00 28 16.4	+1.4
AUSP	**Uspallata**	**1.97**	**192**	*i* P	Pb	00 27 53.1	+0.1
APLL	**PUNTA DE LOS L**	**2.05**	**94**	*i* P	Pb	00 27 53.2	-1.0
APLL				*i* S	Sb	00 28 20.2	+0.8
ASAL	**Salagasta**	**2.29**	**179**	*i* P	Pb	00 27 56.8	-1.6
ACAN	**Cantantal**	**2.46**	**144**	*i* P	Pb	00 27 59.5	-1.7
ACAN				*i* S	Sb	00 28 30.1	-1.1

JMA 14 00:32:26.6±0.2, 37.23N×142.25E, h0km, M3.6, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JFK	**Kawauchi**	**1.10**	**277**	P	Pg	00 32 48.2	+0.4
JMM	**Marumori**	**1.32**	**299**	P	Pg	00 32 51.5	-0.4
JMM				*eS*	Sb	00 33 09.6	-0.1
JIO	**Ouri**	**1.42**	**330**	P	Pn	00 32 53.6	0.0
JIO				*eS*	Sg	00 33 12.0	0.1
JFT	**Otama**	**1.55**	**281**	P	Pn	00 32 55.7	+0.2
JOU	**Okura**	**1.69**	**313**	P	Pb	00 32 58.3	-0.3
JOU				*eS*	Sn	00 33 19.7	-0.1

IDC ***14*** *00:44:58.5±1.8, 37.86N×143.09E, h0km, mb3.7/5, mb1 3.7/7, mb1mx3.5/41, mbtmp3.7/7, ML2.7/2, MS3.0/1, Ms1 3.0/1, ms1mx2.5/48, Error ellipse: s-maj=44.4km s-min=27.7km az=75.0*
ISCJB ***14*** *00:45:05.3±1.1, 39.74N±0.08×143.60E±0.08, h11km, mb3.6/4, Error ellipse: s-maj=13.0km s-min=8.2km az=154.2*
JMA ***14*** *00:45:05.2±0.3, 39.78N×143.57E, h10km±5km, M4.0*
ISC 14 00:45:07.1±1.6, 39.74N±0.09×143.48E±0.09, h11km, n20, σ0s56/21, mb3.6/4, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JTH	**Tanohata**	**1.26**	**279**	P	**Pn**	**00 45 29.6**	**-1.0**
JTH				*eS*	**Sb**	**00 45 47.1**	**+0.1**
MIYJ	**Miyakonagasawa**	**1.29**	**263**	P	**Pn**	**00 45 30.3**	**-0.8**
MIYJ				S	**Sg**	**00 45 48.5**	**-0.1**
OFUJ	**Ofunato**	**1.55**	**245**	P	**Pn**	**00 45 34.1**	**-0.5**
JANG	**Nango**	**1.63**	**293**	P	**Pn**	**00 45 34.5**	**-1.3**
JKZ	**Kuzumaki**	**1.67**	**279**	P	**Pn**	**00 45 36.3**	**0.0**
JKZ				*eS*	**Sn**	**00 45 57.9**	**+0.1**
JOM	**Ohasama**	**1.71**	**262**	P	**Pn**	**00 45 36.8**	**0.0**
JOM				*eS*	**Sb**	**00 46 00.1**	**+0.1**
JMK	**Ichinoseki**	**1.92**	**246**	P	**Pn**	**00 45 39.5**	**-0.2**
JIO	**Ouri**	**2.10**	**233**	P	**Pn**	**00 45 41.5**	**-0.6**
JTM	**Tenmabayashi**	**2.12**	**300**	P	**Pn**	**00 45 42.4**	**0.0**
JRG	**Rokugo**	**2.23**	**262**	P	**Pn**	**00 45 44.7**	**+0.8**
JAH	**Hinai**	**2.23**	**282**	P	**Pn**	**00 45 44.2**	**+0.2**
JYK	**Kaneyama**	**2.56**	**252**	P	**Pn**	**00 45 49.1**	**+0.6**
JCH	**Churui**	**2.87**	**358**	P	**Pn**	**00 45 52.6**	**-0.2**
USRK	**Ussuriysk Ar.**	**9.64**	**301**	Pn	Pn	00 47 29.5	+3.7
	0.2nm,0.3s,baz=94,slow=16,SNR=3.5						
KSRS	**Korea Array**	**12.38**	**264**	LR	LR	00 52 21.9	
	comp=Z,65nm,19.9s,baz=80,slow=37						
KLR	**Kul'dur**	**12.64**	**322**	Pn	**P**	**00 48 18.7**	**+0.5**
	0.1nm,0.3s,baz=112,slow=14,SNR=4.8						
SEY	**Seymchan**	**23.83**	**10**	P	P	00 50 30.4	+11
	1.1nm,0.5s,baz=222,slow=12,SNR=5.9						
SONM	**Songino Array**	**27.75**	**299**	P	**P**	**00 50 55.8**	**0.0**
	0.9nm,0.8s,baz=90,slow=7.7,SNR=4.4						
ZALV	**Zalesovo Beam**	**41.35**	**310**	P	**P**	**00 52 52.8**	**+0.1**
	1.1nm,0.4s,baz=94,slow=7.0,SNR=5.9						
MKAR	**Makanchi Array**	**44.11**	**300**	P	**P**	**00 53 15.0**	**-0.3**
	0.7nm,0.8s,baz=86,slow=9.4,SNR=6.7						

IDC ***14*** *00:56:06.0±1.1, 3.45S×146.73E, h0km, mb3.9/8, mb1 4.1/10, mb1mx3.8/48, mbtmp3.9/10, ML3.0/2, MS3.5/7, Ms1 3.5/7, ms1mx3.1/48, Error ellipse: s-maj=37.3km s-min=19.2km az=104.0*
ISCJB ***14*** *00:56:07.8±0.8, 3.49S±0.08×146.76E±0.2, h20km, mb3.7/7, MS3.5/5, Error ellipse: s-maj=25.5km s-min=12.1km az=0.8*
ISC 14 00:56:08.7±1.1, 3.4S±0.1×146.8E±0.3, h20km, n19, σ1s01/9, mb3.9/6, MS3.5/5, Bismarck Sea

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PMG	**Port Moresby**	**5.95**	**177**	Pn	**Pn**	**00 57 36.0**	**+0.3**
	3.4nm,0.3s,baz=8.7,slow=3.7,SNR=10						
HNR	**Honiara**	**14.35**	**115**	LR	LR	01 04 10.2	
	comp=Z,148nm,19.2s,baz=291,slow=34						
CTA	**Charters Tower**	**16.56**	**182**	Pn	**Pn**	**01 00 00.3**	**+0.4**
	0.2nm,0.3s,baz=14,slow=14,SNR=2.0						

GUMO Guam 17.02 354 LR LR 01 06 13.9
comp=Z,86nm,18.8s,baz=96,slow=36
WRA Warramunga Arr 20.42 216 P Pn 01 00 44.7 -2.3
7.6nm,0.7s,baz=39,slow=11,SNR=51
ASAR Alice Springs 23.66 211 P **P 01 01 18.9 -0.2**
2.2nm,0.6s,baz=38,slow=9.3,SNR=27
ASAR LR LR 01 11 32.6
comp=Z,173nm,19.6s,baz=45,slow=39
FITZ Fitzroy Crossi 25.34 233 P **P 01 01 33.6 -0.9**
2.8nm,0.6s,baz=59,slow=6.8,SNR=10.0
FITZ LR LR 01 12 23.9
comp=Z,122nm,18.3s,baz=50,slow=39
STKA Stephens Creek 28.72 189 LR LR 01 14 06.5
comp=Z,98nm,18.0s,baz=24,slow=38
H11S3 WAKE ISLAND Hy 29.30 41 T T 01 32 35.6
baz=223,slow=76,SNR=12
H11S2 WAKE ISLAND Hy 29.31 41 T T 01 32 35.1
baz=223,slow=76,SNR=6.2
H11S1 WAKE ISLAND Hy 29.32 41 T T 01 32 39.0
baz=223,slow=76,SNR=7.1
JCJ Chichijima 30.67 352 LR LR 01 11 59.1
comp=Z,211nm,19.3s,baz=78,slow=31
JNU Nakatsue 39.36 339 LR LR 01 16 47.2
comp=Z,48nm,21.1s,baz=115,slow=32
CMAR Chiang Mai Arr 51.90 297 P **P 01 05 16.3 -0.1**
2.0nm,0.9s,baz=98,slow=6.5,SNR=13
MKAR Makanchi Array 75.41 320 P **P 01 07 52.5 +1.3**
0.4nm,0.7s,baz=92,slow=8.5,SNR=3.7
ZALV Zalesovo Beam 76.75 328 P **P 01 07 59.7 +1.1**
0.6nm,0.6s,baz=93,slow=6.2,SNR=2.9
ILAR Eielson Array 83.22 23 P **P 01 08 32.7 -0.6**
0.6nm,0.7s,baz=249,slow=4.9,SNR=6.4
YKA Yellowknife Ar 97.00 28 P Pdif 01 09 41.1 +2.2
0.1nm,0.6s,baz=278,slow=4.4,SNR=4.7
TORD Torodi Ar. Bea 144.19 288 PKP **PKPdf 01 15 42.9 -1.3**
0.7nm,0.7s,baz=85,slow=2.5,SNR=6.0

IDC ***14*** *00:59:42.9±1.4, 33.90N×78.41E, h0km, mb3.4/6, mb1 3.6/9, mb1mx3.4/60, mbtmp3.5/9, ML3.4/3, Error ellipse: s-maj=32.8km s-min=24.3km az=58.0*
ISCJB ***14*** *00:59:43.6±0.8, 34.04N±0.09×78.15E±0.1, h10km, mb3.3/5, Error ellipse: s-maj=17.3km s-min=12.4km az=26.4*
ISC 14 00:59:44.1±1.0, 33.9N±0.1×78.4E±0.1, h10km, n10, σ1s72/10, mb3.5/5, Kashmir-Xizang border region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
THN	**Thein Dam**	**2.70**	**238**	*ePN*	**Pb**	**01 00 29.6**	**-2.9**
THN				*eSN*	**Sg**	**01 01 14.0**	**+3.1**
MKAR	**Makanchi Array**	**13.20**	**12**	Pn	**Pn**	**01 02 52.2**	**+0.6**
	0.2nm,0.3s,baz=188,slow=14,SNR=9.7						
KURBB	**Kurchatov Arra**	**16.70**	**0**	Pn	**Pn**	**01 03 37.5**	**-0.6**
	0.1nm,0.3s,baz=187,slow=12,SNR=11						
BVAR	**Borovoye Array**	**19.95**	**346**	P	**Pn**	**01 04 17.8**	**-0.1**
	0.3nm,0.3s,baz=150,slow=12,SNR=12						
ZALV	**Zalesovo Beam**	**20.54**	**11**	P	Pn	01 04 22.7	-2.0
	1.0nm,0.5s,baz=194,slow=9.8,SNR=6.3						
AKTO	**Aktyubinsk**	**22.27**	**324**	P	**P**	**01 04 41.5**	**+0.3**
	1.1nm,0.5s,baz=108,slow=13,SNR=2.2						
CMAR	**Chiang Mai Arr**	**23.93**	**125**	P	**P**	**01 04 59.4**	**+1.0**
	0.6nm,0.8s,baz=317,slow=9.9,SNR=6.5						
SONM	**Songino Array**	**25.15**	**48**	P	**P**	**01 05 08.9**	**-0.6**
	0.4nm,0.5s,baz=242,slow=9.1,SNR=2.8						
TORD	**Torodi Ar. Bea**	**71.84**	**274**	P	**P**	**01 11 07.4**	**-0.1**
	0.3nm,0.7s,baz=52,slow=4.8,SNR=2.5						
YKA	**Yellowknife Ar**	**83.36**	**6**	P	**P**	**01 12 11.6**	**+0.6**
	0.3nm,0.7s,baz=344,slow=5.4,SNR=7.7						

NIED ***14*** *01:00:00, 38.40N×141.80E, h56km, Mw3.7 Best double couple: M₀4.06000×10¹⁴ NP1:φs73.00000°, δ26.00000°, λ58.00000°. NP2:φs287.00000°, δ68.00000°, λ104.00000°.*
JMA 14 01:00:07.3±0.1, 38.39N×141.77E, h58km±1km, M3.7, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**0.34**	**281**	P	Pn	01 00 17.6	+0.1
JIO				S	Sn	01 00 24.8	-0.1
OFUJ	**Ofunato**	**0.69**	**353**	P	Pn	01 00 21.3	-0.1
OFUJ				S	Sn	01 00 31.2	-0.4
JMK	**Ichinoseki**	**0.71**	**323**	P	Pn	01 00 21.8	+0.3
JMK				S	Sn	01 00 32.0	+0.1
JOU	**Okura**	**0.87**	**269**	P	Pn	01 00 23.8	+0.2
JOU				S	Sn	01 00 36.0	+0.4
JMM	**Marumori**	**0.93**	**236**	P	Pn	01 00 24.2	-0.1
JMM				S	Sn	01 00 36.5	-0.4
JOM	**Ohasama**	**1.14**	**341**	P	Pn	01 00 27.4	+0.2
JOM				S	Sn	01 00 42.5	+0.6
JYK	**Kaneyama**	**1.22**	**296**	P	Pn	01 00 28.6	+0.4
JYK				S	Sn	01 00 44.4	+0.6
JFK	**Kawauchi**	**1.24**	**215**	P	Pn	01 00 28.6	+0.1
JFK				S	Sn	01 00 44.3	-0.1
JRG	**Rokugo**	**1.34**	**319**	P	Pn	01 00 30.3	+0.5
JYS	**Shirataka**	**1.35**	**263**	P	Pn	01 00 30.6	+0.7
JYS				S	Sn	01 00 47.7	+0.8
JFT	**Otama**	**1.43**	**233**	P	Pn	01 00 31.7	+0.7
JFT				S	Sn	01 00 49.0	+0.2

NIED ***14*** *01:02:00, 37.00N×140.60E, h5km, Mw3.4 Best double couple: M₀1.33000×10¹⁴ NP1:φs317.00000°, δ29.00000°, λ-82.00000°. NP2:φs128.00000°, δ61.00000°, λ-94.00000°.*
IDC ***14*** *01:02:11.1±2.1, 36.98N×140.79E, h0km, mb3.6/3, mb1 3.7/4, mb1mx3.3/53, mbtmp3.5/4, ML3.5/1, Error ellipse: s-maj=40.0

WRA	**Warramunga Arr**	**56.96**	**187**	P		**P**	**01 11 58.1**	**-0.2**
	0.8nm,0.6s,baz=2.3,slow=7.2,SNR=8.1							

NIED ***14*** *01:06:00,38.60N×141.60E,h59km,Mw4.1 Best double couple: M₀1.53000×10¹⁵ NP1:φ₀=359.00000°,δ80.00000°, λ170.00000°. NP2:φ₀=91.00000°,δ80.00000°,λ10.00000°.*
ISCJB ***14*** *01:06:47.3±0.5,38.56N±0.03×141.69E±0.06,h60km±3km, mb3.9/22,Error ellipse: s-maj=9.0km s-min=4.4km az=22.4*
JMA ***14*** *01:06:48.7±0.1,38.56N×141.60E,h54km±1km,M4.1*
JMA Felt III J1.
IDC ***14*** *01:06:48.8±0.7,38.56N×141.59E,h55km±7km, mb3.6/19, mb1 3.7/21,mb1mx3.6/53,mbtmp3.9/21,MS2.6/2, Ms1 2.6/2,ms1mx2.3/62,Error ellipse: s-maj=17.3km s-min=11.8km az=106.0*
NEIC ***14*** *01:06:49.6±0.8,38.59N×141.64E,h63km±7km,mb4.3/3, Error ellipse: s-maj=12.0km s-min=6.8km az=123.0*
NEIC Recorded [3 JMA] in Miyagi.

ISC 14 01:06:48.6±0.7,38.55N±0.04×141.69E±0.06,h54km±5km, n47,σ0°78/56,mb3.9/22,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	Op	ID ISC	Time h m s	Res ISC
JIO	**Ouri**	**0.28**	**251**	P		**Pn**	**01 06 57.6**	**-0.3**
JIO				S		**Sn**	**01 07 03.7**	**-0.9**
OFUJ	**Ofunato**	**0.53**	**359**	P		**Pn**	**01 07 00.3**	**-0.2**
OFUJ				S		**Sn**	**01 07 08.4**	**-0.7**
JMK	**Ichinoseki**	**0.54**	**318**	P		**Pn**	**01 07 00.3**	**-0.3**
JMK				S		**Sn**	**01 07 08.3**	**-1.0**
JOU	**Okura**	**0.82**	**258**	P		**Pn**	**01 07 03.5**	**-0.6**
JOU				S		**Sn**	**01 07 14.4**	**-1.0**
JOM	**Ohasama**	**0.97**	**342**	P		**Pn**	**01 07 05.7**	**-0.3**
JOM				S		**Sn**	**01 07 18.4**	**-0.5**
JMM	**Marumori**	**0.98**	**226**	P		**Pn**	**01 07 05.3**	**-0.8**
JMM				S		**Sn**	**01 07 18.0**	**-1.0**
JYK	**Kaneyama**	**1.10**	**290**	P		**Pn**	**01 07 07.2**	**-0.5**
JYK				S		**Sn**	**01 07 21.4**	**-0.6**
JRG	**Rokugo**	**1.18**	**316**	P		**Pn**	**01 07 08.4**	**-0.4**
JRG				S		**Sn**	**01 07 24.0**	**+0.2**
JYS	**Shirataka**	**1.31**	**256**	P		**Pn**	**01 07 10.4**	**-0.2**
JYS				S		**Sn**	**01 07 27.1**	**0.0**
JFK	**Kawauchi**	**1.34**	**209**	P		**Pn**	**01 07 10.8**	**-0.2**
JFK				S		**Sn**	**01 07 26.9**	**-0.9**
JFT	**Otama**	**1.48**	**226**	P		**Pn**	**01 07 12.8**	**-0.1**
MJAR	**Matsushiro Arr**	**3.41**	**235**	P		**Pn**	**01 07 40.5**	**+1.2**
	23nm,0.3s,baz=40,slow=13,SNR=116							
MJAR				LR		LR	01 09 21.5	
	comp=Z,94nm,21.1s,baz=55,slow=46							
MAJO	**Matsushiro**	**3.41**	**235**	*e*P		**Pn**	**01 07 40.6**	**+1.3**
ERM	**Erimo**	**3.64**	**18**	*e*P		**Pn**	**01 07 41.6**	**-0.7**
ERM				*e*S		**Sn**	**01 08 22.6**	**-1.4**
ASAJ	**Asahikawa**	**5.61**	**7**	P		**Pn**	**01 08 09.1**	**-0.2**
	4.1nm,0.3s,baz=222,slow=7.3,SNR=6.6							
ASAJ				S		**Sn**	**01 09 11.9**	**-0.4**
	2.4nm,0.3s,baz=306,slow=19,SNR=3.0							
ASAJ				LR		LR	01 10 21.9	
	comp=Z,58nm,20.5s,baz=3.5,slow=38							
ASAJ	**Asahikawa**	**5.61**	**7**	*e*Pn		**Pn**	**01 08 09.1**	**-0.2**
	5.0nm,0.5s							
USRK	**Ussuriysk Ar.**	**9.22**	**311**	P		**Pn**	**01 08 59.2**	**+0.4**
	1.4nm,0.3s,baz=116,slow=14,SNR=25							
KLR	**Kul'dur**	**12.85**	**329**	P		**Pn**	**01 09 50.4**	**+2.1**
	0.1nm,0.3s,baz=135,slow=13,SNR=4.7							
MA2	**Magadan**	**21.83**	**12**	P		**P**	**01 11 35.8**	**-0.2**
	2.4nm,0.4s,baz=331,slow=19,SNR=3.7							
SEY	**Seymchan**	**25.27**	**11**	P		**P**	**01 12 10.8**	**+1.4**
	0.9nm,0.4s,baz=196,slow=10.0,SNR=5.6							
SEY				pP		**pP**	**01 12 23.7**	**+0.8**
	1.1nm,0.3s,baz=200,slow=9.0,SNR=3.6							
H11N2	**WAKE ISLAND Hy**	**28.77**	**124**	T		T	01 42 58.6	
	baz=316,slow=75,SNR=120							
H11N1	**WAKE ISLAND Hy**	**28.78**	**124**	T		T	01 42 59.3	
	baz=316,slow=75,SNR=165							
H11N3	**WAKE ISLAND Hy**	**28.79**	**124**	T		T	01 42 57.0	
	baz=316,slow=75,SNR=155							
H11S1	**WAKE ISLAND Hy**	**29.53**	**126**	T		T	01 43 54.8	
	baz=318,slow=76,SNR=142							
H11S3	**WAKE ISLAND Hy**	**29.53**	**126**	T		T	01 43 54.9	
	baz=318,slow=76,SNR=201							
H11S2	**WAKE ISLAND Hy**	**29.55**	**126**	T		T	01 43 56.0	
	baz=318,slow=76,SNR=177							
ZALV	**Zalesovo Beam**	**41.07**	**311**	P		**P**	**01 14 26.2**	**-0.4**
	1.7nm,0.5s,baz=90,slow=6.9,SNR=11							
MKAR	**Makanchi Array**	**43.51**	**301**	P		**P**	**01 14 46.2**	**-0.4**
	3.3nm,0.8s,baz=66,slow=9.6,SNR=31							
KURK	**Kurchatov**	**45.18**	**307**	*e*P		**P**	**01 14 59.3**	**-0.5**
	11nm,0.7s							
KURBB	**Kurchatov Arra**	**45.26**	**307**	P		**P**	**01 14 59.7**	**-0.7**
	3.2nm,0.4s,baz=82,slow=8.5,SNR=33							
ILAR	**Eielson Array**	**48.11**	**33**	P		**P**	**01 15 23.2**	**+0.7**
	0.6nm,0.6s,baz=264,slow=6.1,SNR=7.7							
TKM2	**Tokmak 2**	**49.11**	**297**	*e*P		**P**	**01 15 30.8**	**0.0**
	1.8nm,0.8s							
BVAR	**Borovoye Array**	**49.72**	**311**	P		**P**	**01 15 34.7**	**-0.4**
	0.6nm,0.3s,baz=84,slow=9.0,SNR=5.1							
INK	**Inuvik**	**52.95**	**28**	P		**P**	**01 15 59.5**	**+0.6**
	0.6nm,0.5s,baz=284,slow=4.3,SNR=4.4							
ARU	**Arti**	**55.38**	**318**	P		**P**	**01 16 16.3**	**-0.4**
	2.9nm,0.5s,baz=34,slow=3.5,SNR=7.8							
ARU	**Arti**	**55.38**	**318**	*e*P		**P**	**01 16 16.0**	**-0.8**
	2.1nm,0.6s							
ABKAR	**Akbulak array**	**57.14**	**309**	*e*P		**P**	**01 16 28.6**	**-0.8**
	1.6nm,0.6s							
WRA	**Warramunga Arr**	**58.59**	**188**	P		**P**	**01 16 39.5**	**-0.3**
	0.3nm,0.4s,baz=4.3,slow=6.8,SNR=6.5							
WRA				pP		**pP**	**01 16 54.5**	**0.0**
	2.4nm,0.7s,baz=5.5,slow=7.4,SNR=13							
RES	**Resolute Bay**	**61.08**	**15**	P		**P**	**01 16 56.3**	**0.0**
	0.5nm,0.4s,baz=81,slow=12,SNR=3.3							
ASAR	**Alice Springs**	**62.31**	**188**	P		**P**	**01 17 05.4**	**+0.1**
	0.3nm,0.6s,baz=10,slow=6.6,SNR=3.0							
ASAR				pP		**pP**	**01 17 20.3**	**+0.2**
	1.0nm,0.8s,baz=12,slow=6.5,SNR=6.5							
YKA	**Yellowknife Ar**	**62.40**	**31**	P		**P**	**01 17 05.8**	**+0.5**
	0.3nm,0.6s,baz=304,slow=6.8,SNR=6.4							
FINES	**FINESS Array B**	**67.58**	**332**	P		**P**	**01 17 38.1**	**-0.9**
	0.7nm,0.7s,baz=56,slow=7.1,SNR=4.1							
AKASG	**Malin Array Be**	**73.23**	**322**	P		**P**	**01 18 12.4**	**-1.2**
	0.2nm,0.3s,baz=45,slow=6.3,SNR=3.6							
PDAR	**Pinedale Array**	**76.45**	**46**	P		**P**	**01 18 33.7**	**+0.9**
	0.2nm,0.7s,baz=12,slow=4.6,SNR=2.9							
BRTR	**Keskin Array B**	**78.01**	**311**	P		**P**	**01 18 41.2**	**-0.2**
	0.4nm,0.6s,baz=56,slow=5.8,SNR=3.5							
SCHQ	**Schefferville**	**83.83**	**16**	P		**P**	**01 19 10.6**	**-1.4**
	2.6nm,0.7s,baz=238,slow=1.7,SNR=3.8							
TXAR	**Lajitas Array**	**89.03**	**53**	P		**P**	**01 19 39.0**	**+1.0**
	0.2nm,0.8s,baz=270,slow=0.9,SNR=3.1							

NIED ***14*** *01:15:00,37.10N×142.60E,h38km,Mw3.7 Best double couple: M₀4.71000×10¹⁴ NP1:φ₀=265.00000°,δ43.00000°, λ164.00000°. NP2:φ₀=7.00000°,δ79.00000°,λ48.00000°.*
IDC ***14*** *01:15:02.4±12.0,36.37N×142.21E,h0km,mb3.6/2, mb1 3.5/3,mb1mx3.2/51,mbtmp3.4/3,ML2.9/1,MS2.7/1, Ms1 2.7/1,ms1mx2.2/62,Error ellipse: s-maj=223.5km s-min=82.3km az=146.0*
JMA ***14*** *01:15:03.6±0.3,37.14N×142.56E,h0km,M3.6*

ISC 14 01:15:05.7±2.2,37.2N±0.1×142.5E±0.1,h9km,n15, σ0°59/10,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	Op	ID ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**1.32**	**279**	P		**Pn**	**01 15 29.7**	**-0.7**
JMM	**Marumori**	**1.54**	**297**	P		**Pn**	**01 15 33.0**	**-0.3**
JMM				*e*S		**Sb**	**01 15 54.8**	**+0.9**
JIO	**Ouri**	**1.58**	**325**	P		**Pn**	**01 15 33.7**	**-0.2**
JIO				*e*S		**Sb**	**01 15 55.3**	**+0.1**
JOU	**Okura**	**1.89**	**310**	P		**Pn**	**01 15 38.5**	**+0.3**
MJAR	**Matsushiro Arr**	**3.51**	**261**	Pn		Pn	01 15 54.1	-6.4
	1.3nm,0.3s,baz=92,slow=10,SNR=7.6							
MAT	**Matsushiro**	**3.51**	**261**	P		**Pn**	**01 16 01.2**	**+0.7**
MAT				*e*S		**Sg**	**01 16 57.9**	**-0.6**
KLR	**Kul'dur**	**14.37**	**330**	LR		LR	01 23 50.1	
	comp=Z,31nm,22.0s,baz=142,slow=35							
H11N2	**WAKE ISLAND Hy**	**27.47**	**123**	T		T	01 49 39.8	
	baz=317							
H11N1	**WAKE ISLAND Hy**	**27.48**	**123**	T		T	01 49 39.4	
	baz=317							
H11N3	**WAKE ISLAND Hy**	**27.49**	**123**	T		T	01 49 44.6	
	baz=317							
H11S1	**WAKE ISLAND Hy**	**28.20**	**125**	T		T	01 50 33.7	
	baz=320							
H11S3	**WAKE ISLAND Hy**	**28.20**	**125**	T		T	01 50 41.9	
	baz=320							
H11S2	**WAKE ISLAND Hy**	**28.22**	**125**	T		T	01 50 35.3	
	baz=320							
SONM	**Songino Array**	**28.44**	**303**	P		**P**	**01 21 01.0**	**+0.1**
	0.6nm,0.3s,baz=99,slow=8.5,SNR=4.2							
MKAR	**Makanchi Array**	**44.79**	**302**	P		**P**	**01 23 19.6**	**-0.1**
	0.4nm,0.7s,baz=90,slow=8.1,SNR=5.5							

MAN 14 01:17:54,13.53N×120.75E,h53km,mb4.1,ML2.9,MS2.6, 1C-2D,Mindoro

Code	Station Name	Δ°	AZ°	Phase	Op	ID ISC	Time h m s	Res ISC
PGP	**Puerto Galera**	**0.20**	**98**	*e*P		Pn	01 18 05.1	+2.4
LQP	**Lukban**	**0.96**	**53**	*e*P		Pn	01 18 15.8	+4.3
SJMP	**San Jose**	**1.12**	**161**	*e*P		Pn	01 18 17.1	+3.6
SJMP				*e*S		Sn	01 18 34.7	+6.7
BUSP	**Coron**	**1.61**	**199**	*e*P		Pn	01 18 22.4	+2.3
BUSP				*e*S		Sn	01 18 44.1	+4.4
GQP	**Guinayangan**	**1.69**	**77**	*e*P		Pn	01 18 21.9	+0.7
GQP				*e*S		Sn	01 18 47.2	+5.5
OTRP	**Odiongan**	**1.70**	**133**	*e*P		Pn	01 18 23.0	+1.7
ENPP	**El Nido**	**2.65**	**209**	*e*P		Pn	01 18 35.8	+1.6

AUST ***14*** *01:18:22.6±0.4,18.20S×123.73E,h20km,Error ellipse: s-maj=6.1km s-min=4.2km az=149.0*
IDC ***14*** *01:18:22.4±2.8,17.80S×123.90E,h0km,mb3.3/1, mb1 3.9/3,mb1mx3.5/44,mbtmp3.7/3,ML4.1/2,Error ellipse: s-maj=94.0km s-min=24.0km az=27.0*

ISC 14 01:18:23.9±1.3,18.1S±0.1×124.03E±0.09,h10km,n25, σ2°03/26,Western Australia

Code	Station Name	Δ°	AZ°	Phase	Op	ID ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**1.53**	**92**	Pn		**Pg**	**01 18 54.5**	**+1.2**
	28nm,0.3s,baz=275,slow=10.0,SNR=1017							
FITZ				Sn		**Sg**	**01 19 15.6**	**+2.4**
	34nm,0.3s,baz=9.2,slow=19,SNR=27							
FITZ	**Fitzroy Crossi**	**1.53**	**92**	P		**Pg**	**01 18 54.7**	**+1.4**
	baz=1.8							
KNRA	**Kununurra**	**5.11**	**63**	P		**Pn**	**01 19 43.3**	**+2.8**
	baz=5.4							
WRKA	**Warakurna**	**8.00**	**151**	P		**Pn**	**01 20 23.3**	**+3.0**
	baz=8.2,SNR=7.9							
SOEI	**Soe**	**8.25**	**2**	P		**Pn**	**01 20 24.0**	**+0.1**
	baz=8.5							
MTN	**Manton Dam**	**8.59**	**54**	P		**Pn**	**01 20 30.0**	**+1.7**
	baz=8.9,SNR=13							
KDU	**Kakadu**	**9.73**	**58**	P		**Pn**	**01 20 44.9**	**+0.9**
	baz=10							
WC1	**Warramunga Arr**	**9.93**	**102**	P		**Pn**	**01 20 47.3**	**+0.5**
	baz=10							
WRA	**Warramunga Arr**	**9.93**	**103**	Pn		**Pn**	**01 20 47.5**	**+0.7**
	2.2nm,0.3s,baz=284,slow=14,SNR=80							
WRA				Sn		**Sn**	**01 22 31.8**	**-6.6**
	5.0nm,0.3s,baz=280,slow=24,SNR=21							
WR1	**Warramunga Arr**	**9.93**	**103**	P		**Pn**	**01 20 47.6**	**+0.8**
	baz=10							
WB3	**Warramunga Arr**	**9.94**	**102**	P		**Pn**	**01 20 47.7**	**+0.7**
	baz=10							
WB4	**Warramunga Arr**	**9.94**	**102**	P		**Pn**	**01 20 47.6**	**+0.6**
	baz=10							
WB6	**Warramunga Arr**	**9.94**	**102**	P		**Pn**	**01 20 47.5**	**+0.6**
	baz=10							
WB7	**Warramunga Arr**	**9.95**	**102**	P		**Pn**	**01 20 47.6**	**+0.5**
	baz=10							
WC2	**Warramunga Arr**	**9.95**	**102**	P		**Pn**	**01 20 47.8**	**+0.7**
	baz=10							
WB0	**Warramunga Arr**	**9.96**	**101**	P		**Pn**	**01 20 47.5**	**+0.4**
	baz=10							
WR5	**Warramunga Arr**	**10.02**	**103**	P		**Pn**	**01 20 48.8**	**+0.8**
	baz=10							
WR9	**Warramunga Arr**	**10.10**	**102**	P		**Pn**	**01 20 49.7**	**+0.6**
	baz=10							
WR0	**Warramunga Arr**	**10.12**	**102**	P		**Pn**	**01 20 50.0**	**+0.6**
	baz=10							
ASAR	**Alice Springs**	**10.79**	**123**	Pn		**Pn**	**01 21 01.3**	**+2.8**
	0.9nm,0.3s,baz=299,slow=12,SNR=24							
ASAR				Sn		**Sn**	**01 22 57.3**	**-2.1**
	2.0nm,0.3s,baz=296,slow=24,SNR=11							
BLDU	**Ballidu**	**14.16**	**207**	P		Pn	01 21 39.2	-5.4
	baz=14							
KLBR	**Kellerberrin**	**14.63**	**202**	P		Pn	01 21 46.0	-5.0
	baz=14							
QIS	**Mount Isa**	**14.91**	**102**	P		**Pn**	**01 21 56.1**	**+1.2**
	baz=15,SNR=3.5							
MMPI	**Merauke**	**18.54**	**61**	P		**P**	**01 22 39.6**	**-1.2**
	baz=19,SNR=3.1							
MKAR	**Makanchi Array**	**74.70**	**332**	P		**P**	**01 30 02.2**	**-1.5**
	0.2nm,0.5s,baz=142,slow=7.3,SNR=2.7							

IDC ***14*** *01:20:12.2±4.2,7.21S×128.14E,h82km±42km,mb3.7/9, mb1 4.0/13,mb1mx3.7/54,mbtmp4.2/13,ML4.3/4,Error ellipse: s-maj=46.5km s-min=26.0km az=55.0*
ISCJB ***14*** *01:20:19.8±0.4,7.88S±0.05×127.61E±0.05,h200km, mb3.7/9,Error ellipse: s-maj=7.8km s-min=5.4km az=38.8*
DJA ***14*** *01:20:21.0±0.7,8°S±4°×12°8E±°,h203km±18km,M4.8/7, mB5.4/1,mb4.9/1,MLv4.8/7,Mw(mB)4.9/1*

ISC 14 01:20:22.3±0.7,7.79S±0.08×127.52E±0.08,h200km,n28, σ2°25/24,mb3.8/9,Banda Sea

Code	Station Name	Δ°	AZ°	Phase	Op	ID ISC	Time h m s	Res ISC
SAUI	**Saumlaki**	**3.75**	**93**	P		**Pn**	**01 21 19.0**	**-2.0**
SOEI	**Soe**	**3.76**	**238**	P		**Pn**	**01 21 20.2**	**-1.0**
BNDI	**Bandanaira**	**4.02**	**36**	P		**Pn**	**01 21 21.9**	**-2.5**
BATI	**Baumata**	**4.50**	**237**	P		**Pn**	**01 21 29.5**	**-0.9**
	8.6nm,0.3s,baz=152,slow=24,SNR=32							
BATI				S		**Sn**	**01 22 21.2**	**-2.8**
	77nm,0.3s,baz=45,slow=23,SNR=20							
BATI	**Baumata**	**4.50**	**237**	P		**Pn**	**01 21 29.4**	**-1.0**
MSAI	**Masohi**	**4.63**	**18**	P		**Pn**	**01 21 29.5**	**-2.6**
MMRI	**Maumere**	**5.29**	**260**	P		**Pn**	**01 21 39.5**	**-1.0**
SANI	**Sanana**	**5.90**	**345**	P		**Pn**	**01 21 45.6**	**-2.7**
FAKI	**Fak Fak**	**6.70**	**44**	P		**Pn**	**01 21 56.2**	**-3.2**
BSSI	**Liau Bau, Buton**	**7.16**	**283**	P		**Pn**	**01 22 03.2**	**-1.5**
BASI	**Baing, Sumba**	**7.27**	**250**	P		**Pn**	**01 22 04.7**	**-1.3**
KMPI	**Kaimana, Papua**	**7.40**	**57**	P		**Pn**	**01 22 05.4**	**-2.3**
SWI	**Sorong**	**7.83**	**29**	P		**Pn**	**01 22 10.4**	**-2.9**
PLAI	**Plampang**	**9.69**	**263**	P		**Pn**	**01 22 35.3**	**-2.3**
FITZ	**Fitzroy Crossi**	**10.41**	**190**	P		**Pn**	**01 22 46.2**	**-0.6**
	1.1nm,0.3s,baz=335,slow=17,SNR=2.2							
FITZ				S		Sn	01 24 35.7	-7.5
	4.1nm,0.3s,baz=77,slow=21,SNR=12							
WRA	**Warramunga Arr**	**13.77**	**152**	P		**Pn**	**01 23 27.5**	**-2.0**
	1.9nm,0.3s,baz=330,slow=15,SNR=9.1							
WRA				S		S	01 25 48.8	-14
	1.5nm,0.3s,baz=330,slow=23,SNR=6.8							
ASAR	**Alice Springs**	**16.93**	**160**	P		**Pn**	**01 24 10.1**	**+2.2**
	2.3nm,0.3s,baz=340,slow=12,SNR=41							
ASAR				S		S	01 27 02.0	-11
	0.3nm,0.3s,baz=336,slow=17,SNR=5.7							
CMAR	**Chiang Mai Arr**	**38.41**	**313**	P		**P**	**01 27 26.4**	**+1.7**
	1.6nm,0.7s,baz=142,slow=7.1,SNR=14							
KSRS	**Korea Array**	**45.01**	**0**	P		P	01 28 13.2	-4.6
	0.4nm,0.3s,baz=176,slow=18,SNR=4.9							
SONM	**Songino Array**	**58.45**	**343**	P		**P**	**01 29 58.3**	**+1.1**
	1.5nm,0.7s,baz=146,slow=6.5,SNR=5.3							
MKAR	**Makanchi Array**	**67.56**	**328**	P		**P**	**01 30 58.9**	**+1.7**
	1.9nm,0.8s,baz=130,slow=8.1,SNR=22							
AAK	**Ala-Archa**	**69.58**	**321**	P		P	01 31 12.4	+2.5
	1.2nm,0.8s,baz=79,slow=5.2,SNR=4.5							
ZALV	**Zalesovo Beam**	**71.22**	**335**	P		**P**	**01 31 20.7**	**+1.4**
	2.0nm,0.7s,baz=117,slow=5.7,SNR=10.0							
KURBB	**Kurchatov Arra**	**71.92**	**330**	P		P	01 31 25.6	+2.1
	2.2nm,0.8s,baz=136,slow=5.2,SNR=19							
BVAR	**Borovoye Array**	**77.43**	**329**	P		P	01 31 57.9	+2.6
	1.4nm,0.7s,baz=272,slow=39,SNR=4.3							
AKTO	**Aktyubinsk**	**83.20**	**323**	P		P	01 32 29.0	+2.9
	0.9nm,0.6s,baz=109,slow=12,SNR=3.5							
YKA	**Yellowknife Ar**	**109.53**	**26**	PKiKP		**PKiKP**	**01 38 31.4**	**+2.8**
	0.3nm,0.8s,baz=254,slow=1.5,SNR=4.7							
TORD	**Torodi Ar. Bea**	**126.54**	**281**	PKP		**PKPdf**	**01 39 06.1**	**+3.5**
	0.6nm,0.9s,baz=50,slow=1.3,SNR=3.6							

IDC ***14*** *01:23:50.7±1.1,10.66S×164.95E,h0km,mb3.9/8, mb1 4.2/10,mb1mx3.8/59,mbtmp4.1/10,ML4.5/2,MS3.7/6, Ms1 3.7/6,ms1mx3.2/44,Error ellipse: s-maj=27.7km s-min=23.4km az=97.0*

ISCJB ***14*** *01:23:54.1±0.8,10.85S±0.1×164.96E±0.09,h35km, mb3.8/7,MS3.7/5,Error ellipse: s-maj=17.1km s-min=10.6km az=34.5*

ISC 14 01:23:55.9±1.0,10.7S±0.1×165.0E±0.1,h35km,n22, σ1°26/11,mb3.8/7,MS3.6/5,Santa Cruz Islands region

Code	Station Name	Δ°	AZ°	Phase	Op	ID ISC	Time h m s	Res ISC
HNR	**Honiara**	**5.12**	**284**	Pn		**Pn**	**01 25 08.9**	**-1.3**
	28nm,0.3s,baz=140,slow=8.1,SNR=4.9							
HNR				Sn		**Sn**	**01 26 10.5**	**+2.3**
	30nm,0.3s,baz=179,slow=14,SNR=3.2							
DZM	**Mont Dzumac**	**11.37**	**173**	Pn		**Pn**	**01 26 36.2**	**+0.3**
	2.1nm,0.3s,baz=335,slow=11,SNR=23							
PMG	**Port Moresby**	**17.60**	**273**	LR		LR	01 34 17.4	
	comp=Z,225nm,18.7s,baz=112,slow=36							
CTA	**Charters Tower**	**20.30**	**240**	P		**P**	**01 28 28.7**	**-0.1**
	1.7nm,0.2s,baz=45,slow=7.1,SNR=2.8							
AFI	**Afiamalu**	**22.92**	**100**	LR		LR	01 36 13.2	
	comp=Z,162nm,18.7s,baz=274,slow=32							
H11S2	**WAKE ISLAND Hy**	**29.08**	**3**	T		T	02 00 04.6	
	baz=183,slow=76,SNR=171							
H11S3	**WAKE ISLAND Hy**	**29.08**	**3**	T		T	02 00 11.0	
	baz=183,slow=76,SNR=110							
H11S1	**WAKE ISLAND Hy**	**29.10**	**3**	T		T	02 00 11.2	
	baz=183,slow=76,SNR=115							
STKA	**Stephens Creek**	**30.17**	**222**	P		**P**	**01 30 03.0**	**+0.2**
	3.4nm,0.8s,baz=60,slow=8.7,SNR=4.0							
H11N1	**WAKE ISLAND Hy**	**30.30**	**4**	T		T	02 01 40.2	
	baz=184,slow=76							
H11N3	**WAKE ISLAND Hy**	**30.31**	**4**	T		T	02 01 39.3	
	baz=184,slow=76							
H11N2	**WAKE ISLAND Hy**	**30.32**	**4**	T		T	02 01 41.6	
	baz=184,slow=76							
WRA	**Warramunga Arr**	**30.89**	**249**	P		**P**	**01 30 07.5**	**-1.9**
	0.9nm,0.6s,baz=80,slow=10,SNR=2.5							
ASAR	**Alice Springs**	**32.27**	**242**	LR		LR	01 42 47.2	
	comp=Z,56nm,19.1s,baz=73,slow=35							
FITZ	**Fitzroy Crossi**	**38.74**	**254**	LR		LR	01 47 11.9	
	comp=Z,82nm,18.3s,slow=36							
VNDA	**Vanda**	**66.80**	**181**	P		**P**	**01 34 44.5**	**+1.1**
	1.4nm,0.9s,baz=335,slow=6.2,SNR=4.6							
PSI	**Prapat**	**67.09**	**278**	LR		LR	02 06 08.6	
	comp=Z,177nm,21.8s,baz=54,slow=38							
CMAR	**Chiang Mai Arr**	**71.30**	**294**	P		**P**	**01 35 12.5**	**0.0**
	0.3nm,0.3s,baz=117,slow=4.1,SNR=4.9							
SONM	**Songino Array**	**77.97**	**324**	P		**P**	**01 35 51.6**	**+0.9**
	0.3nm,0.5s,baz=96,slow=9.0,SNR=3.6							
ILAR	**Eielson Array**	**83.45**	**19**	P		**P**	**01 36 19.1**	**-0.4**
	0.3nm,0.6s,baz=244,slow=5.3,SNR=5.3							
DLBC	**Dease Lake**	**86.49**	**29**	LR		LR	02 10 18.2	
	comp=Z,48nm,18.5s,baz=251,slow=32							
MKAR	**Makanchi Array**	**92.78**	**317**	P		**P**	**01 37 04.8**	**0.0**
	0.8nm,0.7s,baz=102,slow=5.8,SNR=7.8							

ISCJB ***14*** *01:24:25.8±0.7,18.6N±0.1×145.3E±0.2,h450km, mb3.4/11,Error ellipse: s-maj=30.6km s-min=13.8km az=4.8*
IDC ***14*** *01:24:28.8±6.8,18.55N×145.32E,h472km±86km, mb3.1/11,mb1 3.2/11,mb1mx2.9/70,mbtmp3.9/11,Error ellipse: s-maj=28.6km s-min=17.8km az=101.0*

ISC 14 01:24:27.3±0.8,18.5N±0.1×145.2E±0.3,h450km,n11, σ0°59/10,mb3.4/11,Mariana Islands

Code	Station Name	Δ°	AZ°	Phase	Op	ID ISC	Time h m s	Res ISC
PETK	**Petropavlovsk-**	**35.86**	**13**	P		**P**	**01 30 48.1**	**+0.8**
	3.1nm,0.7s,baz=226,slow=5.4,SNR=2.9							
CTA	**Charters Tower**	**38.39**	**178**	P		**P**	**01 31 08.4**	**-0.3**
	5.0nm,0.8s,baz=217,slow=15,SNR=2.9							
WRA	**Warramunga Arr**	**39.69**	**196**	P		**P**	**01 31 19.9**	**+0.6**
	3.8nm,0.6s,baz=20,slow=9.0,SNR=10							
ASAR	**Alice Springs**	**43.37**	**195**	P		**P**	**01 31 48.6**	**+0.1**
	0.6nm,0.7s,baz=19,slow=5.9,SNR=2.8							
MKAR	**Makanchi Array**	**58.26**	**314**	P		**P**	**01 33 37.4**	**0.0**
	0.1nm,0.4s,baz=88,slow=8.4,SNR=2.2							
KURBB	**Kurchatov Arra**	**61.15**	**318**	P		**P**	**01 33

DBAD	**Bademkaya**	**1.54 265**	*i* P		**Pb**	**01 33 42.4**	**0.0**		
DBAD			*i* S		**Sn**	**01 34 01.0**	**-0.4**		
DBAD	**Bademkaya**	**1.54 265**	P		**Pb**	**01 33 42.4**	**0.0**		
DBAD			S		**Sn**	**01 34 01.0**	**-0.4**		
DBOC	**Borcka**	**1.55 277**	*i* P		**Pn**	**01 33 41.9**	**+0.4**		
DBOC			*i* S		**Sb**	**01 34 02.7**	**+0.3**		
DBOC	**Borcka**	**1.55 277**	P		**Pn**	**01 33 41.9**	**+0.4**		
DBOC			S		**Sb**	**01 34 02.7**	**+0.3**		

NIED **14** *01:33:00,39˚80N×143˚60E,h23km,Mw4.7 Best double couple: M₀1.37000×10¹⁶ NP1:φs200.00000°,δ32.00000°, λ84.00000°. NP2:φs27.00000°,δ58.00000°,λ94.00000°.*
JMA **14** *01:33:16.9±0.2,39˚75N×143˚57E,h0km,M4.6*
JMA Felt I J1.
IDC **14** *01:33:18.4±0.5,39˚72N×143˚38E,h0km,mb4.4/37, mb1 4.5/43,mb1mx4.4/79,mbtmp4.5/43,ML4.0/5,MS4.1/25, Ms1 4.1/25,ms1mx3.8/49,Error ellipse: s-maj=14.1km s-min=11.2km az=112.0*
MOS **14** *01:33:21.2±1.0,39˚94N×143˚24E,h21km,mb4.9/72, MS4.1/16,Error ellipse: s-maj=7.5km s-min=4.4km az=107.8*
ISCJB **14** *01:33:23.0±1.0,39˚91N±0˚04×143˚10E±0˚04,h29km±6km, mb4.7/137,MS4.3/39,Error ellipse: s-maj=7.1km s-min=4.0km az=138.5*
BJI **14** *01:33:25.3,39˚72N×142˚92E,h43km,mb4.8/65,mB5.0/49, Ms4.6/58,Ms7 4.4/57*
NEIC **14** *01:33:26.6±0.8,40˚01N×142˚87E,h38km±7km,mb4.7/49, Error ellipse: s-maj=8.7km s-min=5.8km az=148.0*
ISC 14 01:33:22.2±0.6,39˚81N±0˚04×143˚31E±0˚04,h23km±3km, h23km:pP-P,n326,σ1s50/313,mb4.7/145,MS4.3/39, 10C-23D,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
JTH	**Tanohata**	**1.12**	**277**	P			**Pn**	**01 33 42.3**	**-0.1**
JTH						*e*S	**Sn**	**01 34 01.0**	**+4.0**
MIYJ	**Miyakonagasawa**	**1.17**	**259**	P			**Pn**	**01 33 43.1**	**0.0**
MIYJ						*e*S	**Sb**	**01 34 01.4**	**+3.0**
JANG	**Nango**	**1.49**	**293**	P			**Pn**	**01 33 47.3**	**-0.2**
JOM	**Ohasama**	**1.59**	**259**	P			**Pn**	**01 33 49.6**	**+0.7**
JOM						*e*S	**Sb**	**01 34 12.3**	**+1.8**
JMK	**Ichinoseki**	**1.83**	**243**	P			**Pn**	**01 33 52.2**	**+0.1**
JTM	**Tenmabayashi**	**1.97**	**301**	P			**Pn**	**01 33 54.9**	**+0.8**
JIO	**Ouri**	**2.03**	**229**	P			**Pn**	**01 33 54.0**	**-1.0**
ERM	**Erimo**	**2.21**	**357**	⇓*i*P			**Pn**	**01 33 57.7**	**+0.3**
ERM	**Erimo**	**2.21**	**357**	*e*Pn			**Pn**	**01 33 57.4**	**0.0**
JOT	**Ohata**	**2.33**	**313**	P			**Pn**	**01 34 00.0**	**+0.9**
JYK	**Kaneyama**	**2.45**	**250**	P			**Pn**	**01 34 01.5**	**+0.8**
JNBK	**Urakawa-nobuka**	**2.51**	**351**	P			**Pn**	**01 34 01.6**	**+0.1**
JNBK						*e*S	**Sn**	**01 34 34.0**	**+2.7**
JKB	**Kayabe**	**2.70**	**321**	P			**Pb**	**01 34 07.8**	**-2.0**
JCH	**Churui**	**2.81**	**1**	P			**Pn**	**01 34 05.2**	**-0.4**
JCH						*e*S	**Sn**	**01 34 38.2**	**-0.5**
ASAJ	**Asahikawa**	**4.34**	**353**	Pn			**Pn**	**01 34 27.6**	**+0.9**
	3.9nm,0.3s,baz=220,slow=16,SNR=14								
ASAJ				Sn			**Sn**	**01 35 20.5**	**+4.0**
	7.6nm,0.3s,baz=281,slow=26,SNR=5.5								
ASAJ	**Asahikawa**	**4.34**	**353**	*e*Pn			**Pn**	**01 34 27.0**	**+0.4**
ASAJ				*e*Sn			Sn	01 35 06.5	-10
YUK	**Yuzh-Kuril'sk**	**4.64**	**23**	P			**Pn**	**01 34 29.6**	**-1.1**
YUK				*e*S			**Sn**	**01 35 19.7**	**-4.1**
YUK				pmax	pmax				
	comp=Z,397nm,0.6s								
YUK				pmax	pmax				
	comp=E,85nm,0.2s								
YUK				pmax	pmax				
	comp=N,2μm,9.2s								
YUK				MLR	MLR				
	comp=Z,1μm,13.0s								
SHO	**Shikotan**	**4.84**	**32**	*e*P			Pn	01 34 30.3	-3.2
SHO				*e*S			Sn	01 35 21.9	-6.9
SHO				pmax	pmax				
	comp=Z,166nm,0.6s								
SHO				pmax	pmax				
	comp=N,66nm,0.4s								
SHO				pmax	pmax				
	comp=E,76nm,0.3s								
MJAR	**Matsushiro Arr**	**5.17**	**233**	Pn			**Pn**	**01 34 38.7**	**+0.5**
	comp=E,9.3nm,0.3s,baz=41,slow=12,SNR=77								
MJAR				LR			LR	01 36 52.9	
	comp=E,2μm,18.9s,baz=40,slow=42								
MAJO	**Matsushiro**	**5.17**	**233**	*c*P			**Pn**	**01 34 39.3**	**+1.2**
MAJO	**Matsushiro**	**5.17**	**233**	*e*Pn			**Pn**	**01 34 39.3**	**+1.2**
MAT	**Matsushiro**	**5.17**	**233**	P			**Pn**	**01 34 39.2**	**+1.1**
MAT				*e*S			Sb	01 35 45.6	-8.0
KUR	**Kuril'sk**	**6.38**	**30**	*e*P			**Pn**	**01 34 53.4**	**-1.3**
KUR				*e*S			**Sn**	**01 36 03.0**	**-3.8**
KUR				pmax	pmax				
	comp=N,36nm,0.3s								
KUR				pmax	pmax				
	comp=E,23nm,0.3s								
KUR				pmax	pmax				
	comp=Z,40nm,0.3s								
KUR				smax	smax				
	comp=N,138nm,0.6s								
KUR				smax	smax				
	comp=E,168nm,0.6s								
INU	**Inuyama**	**6.69**	**230**	*e*Pn			**Pn**	**01 34 59.9**	**+0.9**
YSS	**Yuzh-Sakhalins**	**7.16**	**357**	⇑*e*P			**Pn**	**01 35 06.6**	**+1.3**
YSS				*e*S			**Sn**	**01 36 24.2**	**-1.6**
YSS				pmax	pmax				
	comp=Z,40nm,0.9s								
YSS				smax	smax				
	comp=N,40nm,0.8s								
YSS				MLR	MLR				
	comp=N,2μm,14.0s								
YSS				MLR	MLR				
	comp=E,2μm,14.0s								
YSS				MLR	MLR				
	comp=E,2μm,16.0s								
YSS	**Yuzh-Sakhalins**	**7.16**	**357**	*e*Pn			**Pn**	**01 35 04.9**	**-0.4**
JHJ2	**Mitsune**	**7.25**	**204**	*e*Pn			Pn	01 35 13.7	+7.1
JHJ	**Hachijo jima 2**	**7.25**	**204**	Pn			**Pn**	**01 35 04.3**	**-2.3**
	comp=E,32nm,0.3s,baz=236,slow=6.3,SNR=8.6								
JHJ				Sn			Sn	01 36 19.9	-8.3
	comp=E,57nm,0.3s,baz=76,slow=22,SNR=11								
JHJ				LR			LR	01 38 02.2	
	comp=E,628nm,20.4s,baz=92,slow=40								
USRK	**Ussuriysk Ar.**	**9.50**	**301**	Pn			**Pn**	**01 35 40.2**	**+2.8**
	comp=E,1.4nm,0.3s,baz=102,slow=14,SNR=43								
USRK				LR			LR	01 39 22.5	
	comp=E,1μm,18.6s,baz=95,slow=38								
TYV	**Tymovskoe**	**11.07**	**358**	*e*P			**Pn**	**01 35 56.5**	**-2.4**
TYV				pmax	pmax				
	comp=Z,18nm,1.0s								
TYV				MLR	MLR				
	comp=E,2μm,18.0s								
TYV				MLR	MLR				
	comp=Z,2μm,16.0s								
MDJ	**Mudanjiang**	**11.25**	**300**	P			**Pn**	**01 36 03.3**	**+1.9**
MDJ				S			Sn	01 37 59.3	-7.0
MDJ				pmax	pmax				
	comp=Z,22nm,1.2s								
MDJ				pmax	pmax				
	comp=Z,220nm,5.8s								
MDJ				LR	LR				
	comp=Z,750nm,13.8s								
MDJ				LR	LR				
	comp=Z,1μm,17.3s								
MDJ				LR	LR				
	comp=Z,2μm,17.3s								
MDJ	**Mudanjiang**	**11.25**	**300**	*e*Pn			**Pn**	**01 35 58.6**	**-2.8**
	comp=Z,39nm,1.4s								
JNU	**Nakatsue**	**12.02**	**240**	Pn			**Pn**	**01 36 10.6**	**-1.4**
	comp=Z,0.8nm,0.3s,baz=24,slow=19,SNR=3.1								
JNU				LR			LR	01 41 10.5	
	comp=Z,2μm,18.8s,baz=61,slow=39								
KSRS	**Korea Array**	**12.26**	**264**	Pn			Pn	01 36 19.0	+3.7
	comp=Z,0.7nm,0.3s,baz=85,slow=13,SNR=18								
KSRS				LR			LR	01 40 44.3	
	comp=Z,1μm,18.3s,baz=78,slow=36								
KSRS	**Korea Array**	**12.26**	**264**	P			Pn	01 36 19.0	+3.8
KSRS				pmax	pmax				
	comp=Z,1.0nm,0.3s								
KSRS				MLR	MLR				
	comp=Z,1μm,18.3s								
KS01	**Wonju Array Si**	**12.28**	**264**	*e*Pn			**Pn**	**01 36 18.2**	**+2.7**
KSAR	**Wonju Array Be**	**12.29**	**264**	P			Pn	01 36 19.0	+3.3
KSAR	**Wonju Array Be**	**12.29**	**264**	Pn			Pn	01 36 19.0	+3.3
KLR	**Kul'dur**	**12.51**	**323**	Pn			**Pn**	**01 36 19.6**	**+1.1**
	comp=Z,0.2nm,0.3s,baz=132,slow=12,SNR=11								
KLR				LR			LR	01 41 22.8	
	comp=Z,984nm,20.3s,baz=134,slow=38								
CBIJ	**Chichi jima**	**12.71**	**185**	Pn			**Pn**	**01 36 20.8**	**-0.7**
CBIJ				Sn			Sn	01 38 24.4	-18
JCJ	**Chichijima**	**12.71**	**185**	Pn			**Pn**	**01 36 20.8**	**-0.7**
	baz=280,slow=19								
JCJ				Sn			Sn	01 38 24.4	-18
	comp=Z,5.4nm,0.3s,baz=143,slow=20,SNR=3.6								
NKL	**Nikolayevsk**	**13.47**	**353**	*e*P			**Pn**	**01 36 32.2**	**+0.5**
NKL				*e*				01 39 10.0	
NKL				pmax	pmax				
	comp=N,20nm,1.0s								
NKL				pmax	pmax				
	comp=E,10.0nm,1.0s								
NKL				pmax	pmax				
	comp=Z,24nm,1.0s								
NKL				MLR	MLR				
	comp=N,500nm,15.0s								
NKL				MLR	MLR				
	comp=E,300nm,15.0s								
NKL				MLR	MLR				
	comp=Z,1μm,15.0s								
CN2	**Changchun**	**13.90**	**292**	*e*P			**Pn**	**01 36 37.8**	**+0.1**
CN2				*es*P			P	01 36 52.8	+7.1
CN2				*e*S			**Sn**	**01 39 06.1**	**-5.1**
CN2				pmax	pmax				
	comp=Z,10.0nm,1.0s								
CN2				LR	LR				
	comp=Z,1μm,18.0s								
CN2				LR	LR				
	comp=Z,1μm,18.0s								
CN2				LR	LR				
	comp=Z,900nm,18.0s								
SNY	**Shenyang**	**15.07**	**284**	⇓P			**P**	**01 36 56.9**	**-1.8**
SNY				pmax	pmax				
	comp=Z,200nm,5.5s								
SNY				LR	LR				
	comp=Z,980nm,15.5s								
SNY				LR	LR				
	comp=Z,1μm,16.7s								
SNY				LR	LR				
	comp=Z,2μm,16.7s								
PETK	**Petropavlovsk-**	**16.55**	**32**	LR			LR	01 43 04.8	
	comp=Z,307nm,20.7s,baz=216,slow=35								
DL2	**Dalian**	**16.79**	**274**	P			**Pn**	**01 37 13.3**	**-2.4**
DL2				S			Sn	01 40 12.3	-9.2
DL2				pmax	pmax				
	comp=Z,32nm,1.0s								
DL2				pmax	pmax				
	comp=Z,200nm,6.2s								
DL2				LR	LR				
	comp=Z,820nm,12.9s								
DL2				LR	LR				
	comp=Z,670nm,16.3s								
DL2				LR	LR				
	comp=Z,1μm,15.4s								
PET	**Petropavlovsk**	**16.88**	**33**	*i* P			**Pn**	**01 37 12.2**	**-4.5**
MA2	**Magadan**	**20.34**	**11**	P			**P**	**01 37 57.0**	**+0.5**
	comp=E,20nm,0.7s,baz=214,slow=8.4,SNR=23								
MA2				LR			LR	01 46 37.7	
	comp=Z,291nm,18.5s,baz=219,slow=39								
MA2	**Magadan**	**20.34**	**11**	*e*P			**P**	**01 37 57.1**	**+0.5**
	comp=Z,95nm,0.8s								
BJI	**Beijing**	**20.79**	**279**	P			**P**	**01 37 59.4**	**-2.1**
BJI				S			**S**	**01 41 51.0**	**-1.3**
BJI				pmax	pmax				
	comp=Z,15nm,1.2s								
BJI				pmax	pmax				
	comp=Z,150nm,7.4s								
BJI				LR	LR				
	comp=Z,340nm,16.2s								
BJI				LR	LR				
	comp=Z,970nm,16.2s								
BJI				LR	LR				
	comp=Z,590nm,16.9s								
CLNS	**Chul'man**	**20.87**	**331**	*e*P			**P**	**01 38 02.0**	**-0.3**
CLNS				pmax	pmax				
	comp=N,15nm,1.2s								
CLNS				pmax	pmax				
	comp=Z,25nm,1.1s								
CLNS				pmax	pmax				
	comp=E,11nm,1.2s								
CLNS				MLR	MLR				
	comp=E,363nm,12.0s								
CLNS				MLR	MLR				
	comp=Z,793nm,13.0s								
CLNS				MLR	MLR				
	comp=N,761nm,14.0s								
TIA	**Tai'an**	**20.91**	**268**	⇓P			**P**	**01 38 01.8**	**-1.2**
TIA				S			**S**	**01 41 52.3**	**-2.7**
TIA				pmax	pmax				
	comp=N,50nm,1.1s								
TIA				LR	LR				
	comp=N,690nm,13.4s								
TIA				LR	LR				
	comp=N,2μm,15.2s								
TIA				LR	LR				
	comp=N,2μm,15.3s								
NJ2	**Nanjing**	**21.22**	**256**	*e*P			**P**	**01 38 06.8**	**+0.6**
NJ2				pP			**sP**	**01 38 15.8**	**0.0**
NJ2				S			**S**	**01 41 54.1**	**-6.8**
NJ2				pmax	pmax				
	comp=N,15nm,0.5s								
NJ2				pmax	pmax				
	comp=N,180nm,7.5s								
NJ2				LR	LR				
	comp=N,690nm,15.5s								
NJ2				LR	LR				
	comp=N,750nm,15.5s								
NJ2				LR	LR				
	comp=N,840nm,16.0s								
YAK	**Yakutsk**	**23.75**	**344**	LR			LR	01 48 02.4	
	comp=N,251nm,21.8s,baz=165,slow=37								
YAK	**Yakutsk**	**23.75**	**344**	*e*P			**P**	**01 38 30.5**	**-1.9**
YAK				pmax	pmax				
	comp=Z,23nm,0.9s								
YAK				pmax	pmax				
	comp=N,22nm,1.5s								
YAK				pmax	pmax				
	comp=E,13nm,1.7s								
SEY	**Seymchan**	**23.80**	**10**	P			**P**	**01 38 32.5**	**-0.3**
	comp=E,33nm,1.1s,baz=193,slow=7.6,SNR=45								
HHC	**Hu-ho-hao-te**	**24.16**	**283**	*e*P			**P**	**01 38 34.1**	**-2.5**
HHC				pP			pP	01 38 44.0	+0.4
HHC				PP			**PnPn**	**01 39 07.8**	**+1.7**
HHC				PcP			PcP	01 42 23.5	+6.5
HHC				S			S	01 42 42.3	-11
HHC				pmax	pmax				
	comp=E,22nm,0.8s								
HHC				pmax	pmax				
	comp=E,81nm,4.8s								
HHC				LR	LR				
	comp=E,360nm,11.7s								
HHC				LR	LR				
	comp=E,940nm,13.4s								
HHC				LR	LR				
	comp=E,1μm,14.3s								
WHN	**Wuhan**	**25.32**	**258**	⇓P			**P**	**01 38 47.3**	**+0.3**
WHN				S			**S**	**01 43 07.1**	**-4.7**
WHN				pmax	pmax				
	comp=E,250nm,1.4s								
WHN				LR	LR				
	comp=E,2μm,16.3s								
WHN				LR	LR				
	comp=E,540nm,10.4s								
WHN				LR	LR				
	comp=E,2μm,17.7s								
QZH	**Quanzhou**	**25.49**	**242**	*e*P			**P**	**01 38 44.8**	**-3.8**
QZH				S			**S**	**01 43 11.3**	**-3.3**
QZH				LR	LR				
	comp=E,1μm,18.2s								
BOD	**Bodaibo**	**26.08**	**323**	*e*P			**P**	**01 38 53.7**	**0.0**
BOD				*e*				01 43 18.8	
BOD				pmax	pmax				
	comp=Z,27nm,0.9s								
GUMO	**Guam**	**26.15**	**177**	LR			LR	01 48 01.8	
	comp=Z,169nm,21.7s,baz=20,slow=34								
ULN	**Ulaanbaatar**	**27.16**	**299**	⇓*i*P			**P**	**01 39 04.9**	**+1.1**
ULN				pmax	pmax				
	comp=Z,34nm,1.2s								
ULN	**Ulaanbaatar**	**27.16**	**299**	*e*P			**P**	**01 39 04.2**	**+0.4**
	comp=Z,28nm,1.1s								
SONA1	**Songino Array**	**27.60**	**299**	*e*P			**P**	**01 39 08.0**	**+0.3**
SONM	**Songino Array**	**27.60**	**299**	P			**P**	**01 39 08.5**	**+0.8**
	comp=Z,11nm,0.8s,baz=93,slow=7.2,SNR=35								
SONM				LR			LR	01 50 47.8	
	comp=Z,918nm,19.3s,baz=75,slow=38								
XAN	**Xi'an**	**27.97**	**269**	P			**P**	**01 39 10.6**	**-0.4**
XAN				pP			pP	01 39 19.5	+1.5
XAN				pmax	pmax				
	comp=Z,16nm,1.3s								
XAN				pmax	pmax				
	comp=Z,81nm,5.0s								
XAN				LR	LR				
	comp=Z,800nm,14.6s								
XAN				LR	LR				
	comp=Z,760nm,14.6s								
ENH	**Enshi**	**29.13**	**262**	*e*P			**P**	**01 39 21.4**	**0.0**
	comp=Z,77nm,1.3s								
TLY	**Talaya**	**29.75**	**307**	P			**P**	**01 39 27.9**	**+1.2**
	comp=Z,1.8nm,0.4s,baz=146,slow=7.6,SNR=4.5								
TLY	**Talaya**	**29.75**	**307**	*e*P			**P**	**01 39 27.4**	**+0.8**
TLY				pmax	pmax				
	comp=Z,9.0nm,1.4s								
TLY				MLR	MLR				
	comp=Z,273nm,11.0s								
TLY	**Talaya**	**29.75**	**307**	*e*P			**P**	**01 39 26.3**	**-0.3**
	comp=Z,15nm,1.3s								
ZAK	**Zakamensk**	**29.83**	**304**	*e*P			**P**	**01 39 28.0**	**+0.5**
ZAK				pmax	pmax				
	comp=Z,12nm,1.3s								
BILL	**Bilibino**	**30.95**	**17**	⇓*i*P			**P**	**01 39 37.1**	**+0.1**
BILL				*PP			**sP**	**01 39 47.0**	**0.0**
BILL				*i*				01 42 33.9	
BILL				S			**S**	**01 44 45.0**	**+5.2**
BILL				SS			**SnSn**	**01 46 19.0**	**-1.4**
BILL				MLR	MLR				
	comp=Z,268nm,16.0s								
BILL	**Bilibino**	**30.95**	**17**	*e*P			**P**	**01 39 37.3**	**+0.3**
	comp=Z,4.8nm,0.8s								
LZH	**Lanzhou**	**31.17**	**276**	*e*P			**P**	**01 39 41.3**	**+1.8**
LZH				pP			sP	01 39 49.8	+0.4
LZH				sP			pP	01 39 54.4	+7.9
LZH				pmax	pmax				
	comp=Z,24nm,1.0s								
LZH				pmax	pmax				
	comp=Z,89nm,4.5s								
MOY	**Mondy**	**31.39**	**306**	*e*P			**P**	**01 39 42.5**	**+1.3**
TIXI	**Tiksi**	**32.74**	**352**	*ce*P			**P**	**01 39 52.2**	**-0.5**
TIXI				pmax	pmax				
	comp=Z,4.0nm,1.7s								
GYA	**Guiyang**	**33.21**	**258**	P			**P**	**01 39 58.8**	**+1.4**
GYA				pP			sP	01 40 10.3	+2.9
GYA				PP			**PnPn**	**01 41 10.0**	**+2.3**
GYA				PcP			**PcP**	**01 42 42.5**	**+2.7**
GYA				S			**S**	**01 45 11.4**	**-4.7**
GYA				sS			sS	01 45 33.3	+5.6
GYA				pmax	pmax				
	comp=Z,10.0nm,0.8s								
CD2	**Chengdu**	**33.23**	**267**	P			**P**	**01 39 55.8**	**-1.7**
CD2				pmax	pmax				
	comp=Z,1.0nm,0.5s								
GTA	**Gaotai**	**33.26**	**284**	*e*P			**P**	**01 39 59.3**	**+1.5**
GTA				pP			sP	01 40 11.3	+3.5
GTA				sP			pP	01 40 16.8	+12
GTA				S			**S**	**01 45 14.5**	**-2.3**
GTA				SS			**SnSn**	**01 47 18.3**	**+0.8**
GTA				pmax	pmax				
	comp=Z,14nm,1.0s								
GTA				pmax	pmax				
	comp=Z,29nm,6.4s								
GTA				LR	LR				
	comp=Z,280nm,17.8s								
GTA				LR	LR				
	comp=Z,1μm,16.2s								
GTA				LR	LR				
	comp=Z,1μm,15.7s								
KMI	**Kunming**	**36.90**	**259**	P			**P**	**01 40 30.3**	**+0.9**
KMI				pP			sP	01 40 40.1	+0.8
KMI				sP			pP	01 40 44.6	+8.1
KMI				S			**S**	**01 46 13.0**	**-0.1**
KMI				sS			sS	01 46 30.3	+5.5
KMI				pmax	pmax				
	comp=Z,12nm,0.6s								
KMI				pmax	pmax				
	comp=Z,120nm,5.3s								
KMI				LR	LR				
	comp=Z,320nm,14.7s								
KMI				LR	LR				
	comp=Z,480nm,17.6s								
KMI				LR	LR				
	comp=Z,560nm,17.2s								
WMQ	**Urumqi**	**40.98**	**294**	P			**P**	**01 41 04.1**	**+0.9**
WMQ				pP			sP	01 41 14.4	+1.2
WMQ				sP			pP	01 41 20.5	+10
WMQ				pmax	pmax				
	comp=Z,19nm,0.8s								
WMQ				pmax	pmax				
	comp=Z,130nm,5.8s								
WMQ				LR	LR				
	comp=Z,57nm,17.0s								
WMQ				LR	LR				
	comp=Z,64nm,21.8s								
WMQ				LR	LR				
	comp=Z,60nm,21.8s								
ZAA0	**Zalesovo Array**	**41.21**	**310**	*e*P			**P**	**01 41 05.0**	**+0.2**
ZALV	**Zalesovo Beam**	**41.21**	**310**	P			**P**	**01 41 05.0**	**+0.2**
	comp=Z,8.0nm,0.5s,baz=94,slow=7.8,SNR=45								
ZALV				PcP			**PcP**	**01 43 04.1**	**+0.7**
	comp=Z,2.6nm,0.6s,baz=84,slow=4.6,SNR=3.7								
ZALV				LR			LR	01 59 01.6	
	comp=Z,236nm,21.1s,baz=70,slow=37								
NRIK	**Noril'sk**	**41.41**	**334**	LR			LR	01 59 23.0	
	comp=Z,299nm,18.7s,baz=112,slow=38								
NVS	**Novosibirsk**	**42.06**	**312**	*e*P			**P**	**01 41 12.2**	**+0.5**
NVS				pmax	pmax				
	comp=E,12nm,1.0s								
NVS				pmax	pmax				
	comp=Z,12nm,1.0s								
CHTO	**Chiang Mai**	**43.44**	**254**	*e*P			**P**	**01 41 24.3**	**+0.9**
CHTO				pmax	pmax				
	comp=Z,6.0nm,0.8s								
CHTO	**Chiang Mai**	**43.44**	**254**	*e*P			**P**	**01 41 24.3**	**+0.9**
	comp=Z,5.5nm,0.8s								
CMAR	**Chiang Mai Arr**	**43.66**	**254**	P			**P**	**01 41 25.4**	**+0.2**
	comp=Z,0.8nm,0.5s,baz=61,slow=6.0,SNR=9.1								
CMAR				LR			LR	02 01 32.8	
	comp=Z,187nm,18.4s,baz=54,slow=39								
CM01	**Chiang Mai Arr**	**43.67**	**254**	*e*P			**P**	**01 41 24.9**	**-0.3**
MK31	**Makanchi Array**	**43.96**	**300**	*i* P			**P**	**01 41 27.2**	**-0.1**
MK31				pmax	pmax				
	comp=Z,10.0nm,0.8s								
MKAR	**Makanchi Array**	**43.96**	**300**	P			**P**	**01 41 27.7**	**+0.4**
	comp=Z,13nm,1.0s,baz=83,slow=9.4,SNR=68								
MKAR				LR			LR	02 00 54.4	
	comp=Z,463nm,18.1s,baz=64,slow=38								
MKAR	**Makanchi Array**	**43.96**	**300**	*e*P			**P**	**01 41 27.2**	**-0.1**
KDAK	**Kodiak Island**	**44.06**	**44**	P			P	01 41 42.1	+14
	comp=Z,1.9nm,0.4s,baz=346,slow=5.2,SNR=5.6								
KDAK	**Kodiak Island**	**44.06**	**44**	*i* P			**P**	**01 41 27.7**	**-0.2**
CAST	**Castle Rocks**	**44.11**	**36**	*e*P			P	01 41 31.7	+3.5
	comp=Z,12nm,1.4s								
MAKZ	**Makanchi**	**44.17**	**300**	*e*P			**P**	**01 41 28.5**	**-0.5**
MAKZ				pmax	pmax				
	comp=Z,20nm,1.1s								
MAKZ	**Makanchi**	**44.17**	**300**	*e*P			**P**	**01 41 28.5**	**-0.5**
	comp=Z,20nm,1.1s								
KTH	**Kantishna Hill**	**44.63**	**36**	*e*P			P	01 41 37.2	+4.7
	comp=Z,14nm,1.1s								
MLY	**Manley**	**44.72**	**33**	*e*P			P	01 41 38.4	+5.3
	comp=Z,12nm,1.4s								
KURK	**Kurchatov**	**45.44**	**306**	P			**P**	**01

RAMN Ramite 48.33 273 *e*P P **01 42 02.7 +0.5**
comp=Z,44nm,0.6s
GUN Gumba 48.40 274 *e*P P **01 42 03.4 +0.5**
comp=Z,50nm,0.5s
EGAK Eagle 48.81 33 *e*P P 01 42 09.8 +4.7
comp=Z,5.3nm,0.9s
KKN Kakani 48.92 274 *e*P P **01 42 07.1 +0.4**
comp=Z,74nm,0.9s
PKIN Phulchoki 48.94 274 *e*P P **01 42 07.1 +0.2**
DMN Daman 49.14 274 *e*P P **01 42 09.2 +0.7**
GKN Gorkha 49.31 275 *e*P P **01 42 10.1 +0.5**
CHKZ Chkalovo 49.54 312 P P **01 42 10.7 -0.1**
CHKZ pmax pmax
comp=Z,19nm,1.3s
VOSK Vostochnaya 49.58 310 P P **01 42 10.7 -0.5**
VOSK pmax pmax
comp=Z,18nm,1.2s
TKM2 Tokmak 2 49.66 297 *e*P P **01 42 13.2 +1.0**
TKM2 pmax pmax
comp=Z,28nm,0.8s
TKM2 Tokmak 2 49.66 297 *e*P P **01 42 13.2 +1.0**
comp=Z,28nm,0.8s
BVAR Borovoye Array 49.84 311 P P **01 42 13.8 +0.7**
comp=Z,5.0nm,0.5s,baz=75,slow=7.8,SNR=28
BRVK Borovoye 49.90 311 *ce*P P **01 42 12.9 -0.7**
BRVK pmax pmax
comp=Z,21nm,1.1s
BRVK Borovoye 49.90 311 *e*P P **01 42 13.4 -0.2**
comp=Z,13nm,1.0s
OTUK Ortayu 50.05 304 P P **01 42 13.8 -1.0**
OTUK pmax pmax
comp=Z,8.0nm,0.9s
FRU Bishkek 50.37 297 *e*P P **01 42 16.0 -1.3**
AAK Ala-Archa 50.52 297 P P **01 42 19.2 +0.5**
comp=Z,3.3nm,0.4s,baz=99,slow=5.7,SNR=16
AAK Ala-Archa 50.52 297 *c i*P P **01 42 17.3 -1.4**
AAK pmax pmax
comp=Z,30nm,1.5s
AAK Ala-Archa 50.52 297 *e*P P **01 42 18.2 -0.5**
comp=Z,12nm,1.1s
PYUN Piuthan 50.52 276 *e*P P **01 42 19.6 +0.7**
comp=Z,129nm,1.1s
ZRNK Zerenda 50.67 311 P P **01 42 20.0 +0.6**
ZRNK pmax pmax
comp=Z,13nm,0.9s
KSH Kashi 50.67 293 P P 01 42 24.5 +4.7
KSH *ep*P sP 01 42 34.6 +4.7
KSH *es*P pP 01 42 43.3 +16
KSH *e*ScP **ScP 01 47 32.8 +1.3**
KSH S **S 01 49 34.3 +0.8**
KSH pmax pmax
comp=Z,93nm,3.5s
KSH LR LR
comp=Z,180nm,7.5s
KSH LR LR
comp=Z,260nm,12.1s
KSH LR LR
comp=Z,640nm,15.8s
EKS2 Erkin-Say 51.00 297 *e*P P **01 42 22.2 -0.1**
EKS2 pmax pmax
comp=Z,8.0nm,0.8s
EKS2 Erkin-Say 51.00 297 *e*P P **01 42 22.1 -0.1**
comp=Z,7.6nm,0.8s
INK Inuvik 51.25 28 P P **01 42 24.0 +0.5**
comp=Z,1.1nm,0.5s,baz=289,slow=7.5,SNR=8.9
INK Inuvik 51.25 28 *e*P P **01 42 24.6 +1.1**
INK pmax pmax
comp=Z,6.0nm,1.1s
INK Inuvik 51.25 28 *e*P P **01 42 24.6 +1.1**
comp=Z,6.3nm,1.1s
MNAS Manas 51.94 297 P P **01 42 29.3 0.0**
MNAS pmax pmax
comp=Z,15nm,0.8s
SFK Sufi-Kurgan 52.22 294 P P **01 42 32.1 +0.6**
KK31 Karatay Array 53.05 299 *e*P P **01 42 37.5 +0.1**
KK31 pmax pmax
comp=Z,4.0nm,0.6s
KKAR Karatay Array 53.05 299 *e*P P **01 42 36.5 -0.9**
KKAR Karatay Array 53.05 299 *e*P P **01 42 36.5 -0.9**
SVE Sverdlovsk 54.08 318 *e*P P **01 42 46.0 +1.4**
SVE pmax pmax
comp=Z,31nm,1.5s
SVE MLR MLR
comp=Z,972nm,14.0s
SOKR Solikamsk 55.05 322 *e*P P 01 42 59.1 +7.5
SOKR pmax pmax
comp=Z,20nm,1.2s
SOKR MLR MLR
comp=Z,300nm,14.0s
ARU Arti 55.29 318 P P **01 42 53.9 +0.5**
comp=Z,5.9nm,0.5s,baz=77,slow=6.4,SNR=17
ARU Arti 55.29 318 *c i*P P **01 42 54.0 +0.5**
ARU 01 44 54.4
ARU S **S 01 50 37.1 +1.4**
ARU SS **SS 01 54 20.5 +1.0**
ARU pmax pmax
comp=Z,34nm,1.7s
ARU MLR MLR
comp=Z,841nm,16.0s
ARU Arti 55.29 318 *e*P P **01 42 52.9 -0.5**
comp=Z,14nm,0.9s
MDSI Maura Dua 56.89 229 P P **01 43 05.6 +0.3**
AB31 Akbulak array 57.31 309 *i*P P **01 43 08.3 +0.4**
AB31 pmax pmax
comp=Z,5.0nm,0.6s
ABKAR Akbulak array 57.31 309 *e*P P **01 43 07.3 -0.6**
KBL Kabul 57.83 290 *e*P P **01 43 11.5 -0.6**
KBL pmax pmax
comp=Z,12nm,0.8s
KBL Kabul 57.83 290 *e*P P **01 43 11.5 -0.6**
comp=Z,12nm,0.8s
AKTO Aktyubinsk 57.95 311 P P **01 43 12.9 +0.5**
comp=Z,3.1nm,0.7s,baz=85,slow=13,SNR=9.3
AKTO Aktyubinsk 57.95 311 P P **01 43 12.9 +0.5**
AKTO pmax pmax
comp=Z,4.0nm,0.8s
SPITS Spitsbergen Ar 58.10 349 LR LR 02 09 16.0
comp=Z,113nm,20.5s,baz=40,slow=37
RES Resolute Bay 59.55 15 P P **01 43 23.2 +0.1**
comp=Z,4.1nm,0.8s,baz=328,slow=6.2,SNR=7.7
RES Resolute Bay 59.55 15 *e*P P **01 43 23.6 +0.5**
FITZ Fitzroy Crossi 59.92 199 P P **01 43 25.9 -0.4**
comp=Z,2.4nm,0.9s,baz=354,slow=7.1,SNR=5.1
FITZ LR LR 02 09 38.4
comp=Z,23nm,18.4s,baz=69,slow=36
WRA Warramunga Arr 60.02 190 P P **01 43 25.7 -1.4**
comp=Z,2.8nm,0.7s,baz=7.6,slow=7.0,SNR=30
YKA Yellowknife Ar 60.67 31 P P **01 43 31.1 +0.1**
comp=Z,0.4nm,0.7s,baz=297,slow=7.3,SNR=6.9
TMCR Tamitsa 61.03 331 *e*P P **01 43 34.3 +0.9**
TMCR pmax pmax
comp=Z,16nm,1.0s
ARCES ARCESS Array B 61.93 339 P P **01 43 39.9 +0.4**
comp=Z,5.1nm,1.0s,baz=46,slow=6.9,SNR=7.5
ARCES LR LR 02 13 38.4
comp=Z,205nm,20.4s,baz=37,slow=39
KLMR Klimovskoe 62.22 327 *e*P P **01 43 39.2 -2.3**
KLMR *e* 01 45 55.8
KLMR pmax pmax
comp=Z,15nm,1.4s
DAG Danmarks Havn 63.14 355 P P **01 43 48.3 +0.9**
DAG pmax pmax
comp=Z,16nm,2.4s
ASAR Alice Springs 63.75 190 P P **01 43 50.9 -1.1**
comp=Z,1.4nm,0.6s,baz=7.1,slow=5.9,SNR=16
GEYT Alibeck 63.81 299 P P **01 43 52.8 +0.3**
comp=Z,5.8nm,0.9s,baz=74,slow=6.3,SNR=8.0
GEYT LR LR 02 14 36.6
comp=Z,166nm,18.0s,baz=70,slow=39
VRH Novokhopyorsk 66.53 318 *e*P P **01 44 08.7 -1.1**
VRH pmax pmax
comp=Z,6.0nm,0.7s
OBN Obninsk 66.77 323 ⇓ *i*P P **01 44 11.8 +0.5**
OBN *e**PP **pP 01 44 19.3 +0.5**
OBN 01 44 40.0
OBN pmax pmax
comp=Z,19nm,1.5s
OBN MLR MLR
comp=Z,482nm,16.0s
FIA1 FINESS Array S 67.05 332 *e*P P **01 44 12.1 -0.9**
FINES FINESS Array B 67.06 332 P P **01 44 13.1 +0.1**
FINES pmax pmax
comp=Z,5.9nm,0.7s,baz=52,slow=7.8,SNR=27
FINES LR LR 02 16 46.1
comp=Z,510nm,18.6s,baz=28,slow=39
LPSR Galich'ya Gora 67.13 320 *e*P P **01 44 12.9 -0.8**
LPSR pmax pmax
comp=Z,10.0nm,0.8s
VSR Storozhevoye 67.83 319 *e*P P **01 44 17.9 -0.2**
VSR pmax pmax
comp=Z,10.0nm,1.3s
K05A Summer Lake 68.06 52 *e*P P 01 44 24.0 +4.0
comp=Z,70nm,2.0s
WDC Whiskeytown Da 68.24 55 *e*P P 01 44 27.2 +6.3
WDC *e* 01 46 55.0
WDC pmax pmax
comp=Z,10.0nm,1.2s
WDC Whiskeytown Da 68.24 55 *e*P P 01 44 27.2 +6.3
comp=Z,10nm,1.2s
WDC *e*PP **PP 01 46 55.0 +3.8**
VSU Vasula 68.82 330 *ce*P P **01 44 24.7 +0.6**
VSU pmax pmax
comp=Z,40nm,1.7s
SWMT Swartz Lake 69.27 45 *e*P P 01 44 31.4 +4.1
GOF Gofitskoye 69.36 312 ⇓ *i*P P **01 44 29.2 +1.4**
GOF pmax pmax
comp=Z,61nm,1.6s
ZEI Tsey 70.19 309 *e*P P **01 44 32.0 -1.2**
ZEI pmax pmax
comp=Z,53nm,1.5s
KVAR Kislovodsk Arr 70.21 311 P P **01 44 34.6 +1.4**
comp=Z,26nm,1.1s,baz=294,slow=2.2,SNR=9.5
KIV Kislovodsk 70.21 311 *e*P P **01 44 33.7 +0.5**
KIV pmax pmax
comp=Z,39nm,1.0s
KIV MLR MLR
comp=Z,342nm,17.0s
KIV Kislovodsk 70.21 311 *e*P P **01 44 34.5 +1.3**
comp=Z,44nm,1.1s
KBZ Khabaz 70.22 311 P P **01 44 34.0 +1.0**
comp=Z,9.7nm,0.9s,baz=44,slow=3.7,SNR=12
FFC Flin Flon 70.58 34 *i* P P **01 44 35.9 +0.8**
MFID Camas Ranch 70.68 49 *e*P P 01 44 39.6 +3.6
comp=Z,4.6nm,1.1s
IZAR Zarasai 70.86 328 IAmb IAmb 01 44 39.7
comp=Z,10nm,0.6s
IDID Didziasalis 70.96 327 *e*P P **01 44 37.0 -0.4**
IDID IAmb IAmb 01 44 39.5
comp=Z,5.9nm,0.9s
ISAL Salakas 71.04 328 *e*P P **01 44 37.5 -0.3**
ISAL IAmb IAmb 01 44 40.1
comp=Z,8.1nm,0.7s
CMB Columbia Colle 71.07 56 *e*P P 01 44 42.1 +3.6
CMB pmax pmax
comp=Z,11nm,1.3s
CMB Columbia Colle 71.07 56 *e*P P 01 44 42.1 +3.6
comp=Z,11nm,1.3s
LRM Limekiln Ridge 71.14 46 *e*P P **01 44 39.9 +0.9**
IIGN Ignalina 71.15 327 *e*P P **01 44 38.3 -0.3**
IIGN IAmb IAmb 01 44 40.7
comp=Z,5.4nm,0.7s
STKA Stephens Creek 71.34 182 LR LR 02 21 24.1
comp=Z,34nm,18.0s,baz=25,slow=40
HLID Hailey 71.41 49 *e*P P **01 44 43.7 +3.1**
comp=Z,5.8nm,1.3s
BOZ Bozeman (W) 71.70 46 *e*P P 01 44 46.6 +4.3
BOZ pmax pmax
comp=Z,10.0nm,1.4s
BOZ Bozeman (W) 71.70 46 *e*P P 01 44 46.6 +4.3
comp=Z,10nm,1.4s
NC303 NORSAR Array S 72.00 338 *e*P P **01 44 44.3 +0.7**
NC204 NORSAR Array S 72.14 338 *e*P P **01 44 44.8 +0.3**
NV01 Mina Array Sit 72.16 55 *e*P P 01 44 51.1 +5.9
NVAR Mina Array Bea 72.16 55 P P **01 44 46.3 +1.1**
comp=Z,1.2nm,0.7s,baz=304,slow=6.4,SNR=2.9
NB2 NORSAR Subarra 72.20 338 P P **01 44 44.9 +0.1**
comp=Z,9.3nm,0.8s,baz=39,slow=6.2
NOA NORSAR Array B 72.20 338 P P **01 44 45.3 +0.4**
comp=Z,4.4nm,0.8s,baz=39,slow=6.0,SNR=20
NBO02 NORSAR Array S 72.30 338 *e*P P **01 44 45.8 +0.4**
ANN Anapa 72.67 314 *e*P P **01 44 45.2 -2.7**
ANN *e**PP **pP 01 44 54.1 -1.3**
ANN *e*PPP PPP 01 49 12.1
ANN *e*S **S 01 54 07.1 -4.4**
ANN pmax pmax
comp=Z,102nm,1.5s
AKASG Malin Array Be 73.01 323 P P **01 44 49.8 0.0**
comp=Z,2.0nm,0.5s,baz=44,slow=6.1,SNR=23
KIEV Kiev 73.02 323 *e*P P **01 44 50.0 +0.2**
KIEV pmax pmax
comp=Z,10.0nm,1.2s
KIEV Kiev 73.02 323 *e*P P **01 44 50.0 +0.2**
comp=Z,10nm,1.2s
AK11 Malin Array Si 73.05 323 *e*P P **01 44 50.5 +0.5**
H17A Grant Village 73.07 46 *e*P P 01 44 54.5 +3.9
comp=Z,11nm,1.3s
IMW Indian Meadow 73.18 47 *e*P P **01 44 54.5 +3.2**
comp=Z,6.9nm,1.2s
FXWY Fox Creek 73.29 47 *e*P P 01 44 55.5 +3.6
comp=Z,8.6nm,1.5s
MOOW Moose Ponds 73.38 47 *e*P P 01 44 57.0 +4.5
comp=Z,8.2nm,1.4s
REDW Red Top Meadow 73.57 47 *e*P P 01 44 58.7 +5.2
comp=Z,7.2nm,1.3s
FRB Frobisher Bay 73.73 14 P P **01 44 54.0 +0.3**
comp=Z,3.9nm,0.6s,baz=331,slow=4.5,SNR=9.1
R11A Troy Canyon, C 73.90 53 *e*P P 01 44 59.4 +3.9
comp=Z,13nm,1.4s
DUG Dugway, Tooele 74.43 51 *e*P P **01 45 01.7 +3.2**
DUG pmax pmax
comp=Z,14nm,1.4s
DUG Dugway, Tooele 74.43 51 *e*P P **01 45 01.7 +3.2**
comp=Z,14nm,1.4s
BW06 Boulder Array 74.68 47 *e*P P **01 45 02.7 +2.7**
PDAR Pinedale Array 74.68 47 P P **01 45 00.3 +0.3**
comp=Z,0.4nm,0.5s,baz=270,slow=1.5,SNR=5.6
LVV L'vov 76.01 324 *e*P P **01 45 07.6 +0.4**
KWP Kalwaria Pacla 76.73 325 *e*P P **01 45 12.8 +1.4**
KWP Kalwaria Pacla 76.73 325 *e*P P **01 45 12.9 +1.6**
BUR08 Bucovina Ar. S 77.03 322 *e*P P **01 45 13.3 +0.1**
BURAR Bucovina Array 77.05 322 ⇓ *i*P P **01 45 14.4 +1.1**
BURAR Bucovina Array 77.05 322 ⇓ *i*P P **01 45 14.4 +1.1**
KOLS Kolonicke sedl 77.44 325 *e*P P **01 45 16.0 +0.7**
KOLS *e* 01 45 22.2
KOLS pmax pmax
comp=Z,6.0nm,1.4s
KOLS Kolonicke sedl 77.44 325 *e*P P **01 45 16.0 +0.7**
KOLS *e* 01 45 22.1
STHS Stebnicka Huta 77.54 325 *e*P P **01 45 17.3 +1.4**
STHS pmax pmax
comp=Z,3.0nm,0.7s
STHS Stebnicka Huta 77.54 325 *e*P P **01 45 17.3 +1.4**
OJC Ojcow 77.56 327 *e*P P **01 45 17.2 +1.3**
OJC Ojcow 77.56 327 *e*P P **01 45 16.4 +0.4**
OJC pmax pmax
comp=Z,18nm,1.1s
OJC Ojcow 77.56 327 *e*P P **01 45 16.4 +0.4**
comp=Z,18nm,1.1s
CRVS Cervenica-Dubn 77.82 325 *e*P P **01 45 18.4 +0.9**
CRVS Cervenica-Dubn 77.82 325 *e*P P **01 45 18.4 +0.9**
ARCR ARCALIA 77.84 322 ⇑ *i*P P 01 45 14.1 -3.5
NIE Niedzica 77.94 326 *e*P P **01 45 20.0 +1.9**
NIE Niedzica 77.94 326 *e*P P **01 45 20.1 +1.9**
PV05 Paradox Valley 78.00 50 *e*P P 01 45 23.6 +4.6
BRTR Keskin Array B 78.11 312 P P **01 45 19.7 +0.2**
comp=Z,2.2nm,1.0s,baz=104,slow=5.2,SNR=11
BRTR LR LR 02 25 20.4
comp=Z,99nm,18.9s,baz=7.5,slow=40
BRTR Keskin Array B 78.11 312 P P **01 45 19.7 +0.2**
BRTR pmax pmax
comp=Z,4.0nm,1.2s
LANS Liptovska Anna 78.50 326 *e*P P **01 45 23.3 +2.0**
LANS Liptovska Anna 78.50 326 *e*P P **01 45 23.3 +2.0**
BR231 Keskin MP Arra 78.53 313 *e*P P **01 45 20.9 -0.8**
OKC Ostrava-Krasne 78.54 327 ⇓ *e*P P **01 45 22.6 +1.2**
OKC Ostrava-Krasne 78.54 327 *e*P P **01 45 22.6 +1.2**
MORC Moravsky Berou 78.83 328 *e*P P **01 45 22.9 -0.2**
MORC pmax pmax
comp=Z,37nm,1.1s
MORC Moravsky Berou 78.83 328 *e*P P **01 45 22.9 -0.2**
comp=Z,37nm,1.1s
DPC Dobruska-Polom 78.89 329 *e*P P **01 45 24.9 +1.5**
DPC *e*PCP **PcP 01 45 32.2 +0.2**
DPC Dobruska-Polom 78.89 329 *e*P P **01 45 24.9 +1.5**
DPC *e* 01 45 32.2
UPC Upice 78.89 329 ⇓ *e*P P **01 45 24.7 +1.4**
UPC Upice 78.89 329 *e*P P **01 45 24.7 +1.4**
KRLC Kraliky 78.92 328 ⇓ *i*P P **01 45 24.9 +1.4**
KRLC Kraliky 78.92 328 ⇓ *i*P P **01 45 24.9 +1.4**
ARR Arges 78.95 321 ⇑ *i*P P **01 45 26.3 +2.5**
PSZ Piszkesteto 79.25 325 *e*P P **01 45 26.4 +1.0**
PSZ pmax pmax
comp=Z,12nm,1.1s
PSZ Piszkesteto 79.25 325 *e*P P **01 45 26.4 +1.0**
comp=Z,12nm,1.1s
VYHS Vyhne 79.28 326 *e*P P **01 45 26.7 +1.2**
VYHS pmax pmax
comp=Z,3.0nm,1.2s
VYHS Vyhne 79.28 326 *e*P P **01 45 26.7 +1.2**
BRG Berggiesshubel 79.41 330 *e*P P **01 45 27.7 +1.6**
comp=Z,5.3nm,0.9s
BRG *i* 01 45 46.8
comp=Z,4.4nm,0.9s
BRG Berggiesshubel 79.41 330 *e*P P **01 45 27.7 +1.6**
BRG pmax pmax
comp=Z,4.0nm,0.9s
BRG pmax pmax
comp=Z,5.0nm,0.9s
CLL Collm 79.42 331 ⇓ *i*P P **01 45 26.9 +0.7**
comp=Z,12nm,1.0s
CLL *i* 01 45 32.9
CLL *e* 01 45 39.0
CLL *e* 01 45 43.0
CLL Lm MLR 02 23 00.0
comp=N,200nm,22.0s
CLL Lm MLR 02 23 00.0
comp=E,200nm,18.4s
CLL Lm MLR 02 23 00.0
comp=Z,200nm,19.8s
CLL Collm 79.42 331 ⇓ *i*P P **01 45 26.9 +0.7**
CLL *i* 01 45 32.9
CLL pmax pmax
comp=Z,26nm,1.0s
CLL MLR MLR
comp=Z,200nm,19.8s
PVCC Panska Ves 79.44 330 ⇓ *e*P P **01 45 27.7 +1.4**
PVCC Panska Ves 79.44 330 *e*P P **01 45 27.7 +1.4**
S22A 4UR Ranch, Cre 79.56 49 *e*P P 01 45 31.4 +3.8
comp=Z,7.6nm,1.4s
VRAC Vranov 79.59 328 P P **01 45 28.3 +1.1**
comp=Z,5.7nm,0.9s,baz=40,slow=7.0,SNR=7.7
VRAC Vranov 79.59 328 ⇓ *i*P P **01 45 28.6 +1.4**
SIRR Siria 79.69 323 ⇓ *i*P P **01 45 29.0 +1.2**
GZR Gura Zlata 79.82 322 ⇓ *i*P P **01 45 29.4 +0.8**
GZR Gura Zlata 79.82 322 ⇓ P P **01 45 29.4 +0.8**
PRU Pruhonice 79.88 329 ⇓ *e*P P **01 45 30.1 +1.4**
PRU *e*PCP **PcP 01 45 35.8 -0.5**
PRU Pruhonice 79.88 329 *e*P P **01 45 30.1 +1.4**
PRU *e* 01 45 35.8
SDCO Great Sand Dun 80.33 49 *e*P P **01 45 34.9 +3.1**
comp=Z,9.1nm,1.5s
NKC Novy Kostel 80.49 330 ⇓ *e*P P **01 45 33.0 +0.9**
NKC Novy Kostel 80.49 330 *e*P P **01 45 33.0 +0.9**
KHC Kasperske Hory 80.94 329 *e*P P **01 45 35.0 +0.5**
KHC *e*PCP **pP 01 45 41.9 -0.3**
KHC *ex* x 01 46 03.0
KHC AMS AMS 02 25 40.0
comp=Z,400nm,16.7s
KHC Kasperske Hory 80.94 329 *e*P P **01 45 32.4 -2.1**
KHC pmax pmax
comp=Z,3.0nm,1.0s
KHC Kasperske Hory 80.94 329 *e*P P **01 45 32.4 -2.1**
comp=Z,3.1nm,1.0s
RAYN Ar Rayn 80.96 293 *e*P P **01 45 34.0 -1.0**
comp=Z,8.1nm,1.1s
CONA Conrad Observa 80.97 327 *i*P P **01 45 36.4 +1.7**
comp=Z,6.7nm,1.1s
GERES GERESS Array B 81.12 329 P P **01 45 35.8 +0.2**
comp=Z,1.0nm,0.4s,baz=33,slow=5.1,SNR=12
GEA0 GERESS Array S 81.13 329 *e*P P **01 45 35.8 +0.2**
GRFO Grafenberg 81.40 331 *e*P P **01 45 37.2 +0.3**
GRFO pmax pmax
comp=Z,16nm,1.1s
GRFO Grafenberg 81.40 331 *e*P P **01 45 37.2 +0.3**
comp=Z,16nm,1.1s
MMAI Mount Meron Ar 81.56 306 P P **01 45 38.5 +0.3**
comp=Z,1.0nm,0.3s,baz=51,slow=6.6,SNR=3.9
ARSA Arzberg 81.65 327 *i*P P **01 45 39.6 +1.3**
comp=Z,3.1nm,0.9s
ANMO Albuquerque 81.68 51 *e*P P 01 45 43.1 +4.2
ANMO pmax pmax
comp=Z,6.0nm,1.1s
ANMO Albuquerque 81.68 51 *e*P P 01 45 43.1 +4.2
comp=Z,5.9nm,1.1s
VTS Vitosha 81.68 320 ⇑ *i*P P **01 45 40.3 +1.6**
VTS Vitosha 81.68 320 *e*P P **01 45 38.3 -0.4**
VTS pmax pmax
comp=Z,6.0nm,0.8s
VTS Vitosha 81.68 320 *e*P P **01 45 38.3 -0.4**
comp=Z,6.1nm,0.8s
MOA Molln 81.69 328 *i*P P **01 45 40.4 +1.9**
comp=Z,4.6nm,1.1s
SOKA Soboth 82.31 327 *i*P P **01 45 42.7 +0.9**
comp=Z,14nm,1.2s,SNR=6.8
OBKA Obir 82.64 327 *i*P P **01 45 44.1 +0.5**
comp=Z,3.9nm,0.8s
KBA Koelnbreinsper 82.68 328 *i*P P **01 45 44.8 +0.9**
comp=Z,12nm,1.4s
MYKA Terra Mystica 82.92 328 *i*P P **01 45 45.5 +0.5**
comp=Z,6.0nm,1.0s
WTTA Wattenberg 83.22 329 *i*PcP P **01 45 48.4 +1.7**
comp=Z,4.4nm,1.3s
ABTA Abfaltersbach 83.29 328 *i*P P **01 45 46.9 0.0**
comp=Z,5.3nm,1.4s
MOTA Moosalm 83.36 330 *i*PcP P **01 45 49.2 +1.8**
comp=Z,6.8nm,0.8s,SNR=6.3
RETA Reutte 83.38 330 *i*PcP P **01 45 48.7 +1.4**
comp=Z,16nm,1.6s
SQTA Sankt Quirin 83.42 329 *i*P P **01 45 48.6 +1.0**
BFO Black Forest 83.59 332 *i*P P **01 45 49.8 +1.4**
FETA Feichten 83.77 330 *i*P P **01 45 50.5 +0.9**
comp=Z,7.5nm,1.0s
DAVA Damuels 83.88 330 *i*PcP P **01 45 51.1 +1.1**
comp=Z,7.8nm,1.2s
PMOR Pomariorio Ree 83.96 115 *e*T T 03 18 25.1
comp=Z,5.4nm,0.2s
EIL Elat 84.09 304 P P **01 45 51.8 +0.6**
comp=Z,3.9nm,0.8s,baz=63,slow=7.8,SNR=3.5
FUORN Ofenpass-Fuorn 84.28 330 *e*P P **01 45 51.9 -0.3**
comp=Z,11nm,0.8s
DAVOX Davos/Dischmat 84.30 330 P P **01 45 52.9 +0.7**
comp=Z,4.2nm,0.8s,baz=310,slow=3.3,SNR=3.1
MSTX Muleshoe 84.55 50 *e*P P 01 45 57.9 +4.2
comp=Z,10nm,1.1s
MNTX Cornudas Mount 84.56 53 *e*P P **01 45 55.8 +2.2**
comp=Z,3.2nm,1.0s
PPT Papeete 84.58 118 LR LR 02 19 39.0
comp=Z,104nm,18.7s,baz=307,slow=33
PPT2 Papeete2 84.60 118 *e*LR LR 02 12 38.3
comp=Z,203nm,22.8s
TAOE Nuku Hiva Isla 85.43 105 *e*LR LR 02 13 03.5
comp=Z,204nm,23.6s
LOR Lormes 86.08 334 P P **01 46 01.3 +0.4**
LOR pmax pmax
comp=Z,13nm,1.1s
IDI Anoyia 86.17 314 P P **01 46 00.6 -1.0**
comp=Z,7.5nm,0.9s,baz=254,slow=7.4,SNR=5.3
LPL La Plagne 86.56 331 P P **01 46 04.1 +0.6**
LPL pmax pmax
comp=Z,10.0nm,1.3s
LPG La Plagne 86.56 331 P P **01 46 04.3 +0.6**
LPG pmax pmax
comp=Z,8.0nm,1.1s
TXAR Lajitas Array 87.27 54 P P **01 46 07.8 +0.6**
comp=Z,0.3nm,0.5s,baz=299,slow=4.1,SNR=8.9
CAF Calviac 88.74 334 P P **01 46 14.7 +0.9**
CAF pmax pmax
comp=Z,23nm,1.7s
LFF La Frestale 89.17 334 P P **01 46 16.8 +1.0**
LFF pmax pmax
comp=Z,21nm,1.4s
KEST Kesra 93.69 324 LR LR 02 33 54.3
comp=Z,166nm,18.2s,baz=306,slow=39
ESDC Sonseca Array 95.43 335 LR LR 02 35 22.3
comp=Z,96nm,19.5s,baz=30,slow=39
TORD Torodi Ar. Bea 116.36 318 PP PP 01 53 07.1 -2.5
comp=Z,2.0nm,1.1s,baz=38,slow=4.2,SNR=8.1
SNAA Sanae 143.83 197 PKP PKPdf 01 53 00.8 +6.5
VNA2 Neumayer--Watz 145.39 196 PKP **PKPbc 01 52 56.3 -0.6**
baz=96,slow=0.7
VNA3 Neumayer Olymp 145.62 195 PKP **PKPdf 01 52 56.4 -0.9**

BJI ***14*** *01:34:38.1, 40.70N×126.50W, h10km, mb4.7/5*
ISCJB ***14*** *01:34:39.0±0.5, 40.82N±0.03×126.32W±0.04, h10km, mb4.1/15, MS3.4/3, Error ellipse: s-maj=4.9km s-min=3.7km az=41.8*

NEIC ***14*** *01:34:39.8±0.6, 40.74N×126.40W, h10km, mb4.4/6, Error ellipse: s-maj=8.1km s-min=4.6km az=64.0*

IDC ***14*** *01:34:40.4±2.0, 41.01N×126.30W, h0km, mb3.8/7, mb1 3.9/9, mb1mx3.6/64, mbtmp3.8/9, ML4.3/2, MS3.3/6, Ms1 3.3/6, ms1mx2.9/54, Error ellipse: s-maj=36.8km s-min=15.5km az=13.0*

ISC 14 01:34:39.9±0.8, 40.77N±0.05×126.47W±0.06, h10km, n93, σ1§89/100, mb4.3/14, MS3.3/3, Off coast of northern California

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JCC	**Jacoby Creek,**	**1.85**	**88**	*e*Pn	**Pn**	**01 35 09.2**	**-2.4**
JCC				*e*Sn	**Sn**	**01 35 31.9**	**-3.2**
KHMM	**Horse Mountain**	**2.08**	**86**	*e*Pn	**Pn**	**01 35 13.4**	**-1.6**
KHMM				*e*Sn	**Sn**	**01 35 37.9**	**-3.0**
KMRM	**Mail Ridge**	**2.17**	**104**	*e*Pn	**Pn**	**01 35 15.4**	**-0.8**
KMRM				*e*Sn	**Sn**	**01 35 41.3**	**-1.9**
KSXB	**Camp Six Broad**	**2.22**	**61**	P	**Pn**	**01 35 15.1**	**-1.7**
KIPM	**Iron Peak**	**2.48**	**112**	*e*Pn	**Pn**	**01 35 20.2**	**-0.2**
L02D	**Cave Junction,**	**2.56**	**56**	P	**Pn**	**01 35 20.0**	**-1.4**
	baz=236,SNR=316						
L02D				S	**Sn**	**01 35 48.5**	**-4.0**
	baz=236						
KTRM	**Thompson Ridge**	**2.59**	**63**	P	**Pn**	**01 35 20.8**	**-1.1**
M02C	**Callahan**	**2.80**	**76**	P	**Pn**	**01 35 23.3**	**-1.5**
	baz=257,SNR=128						
M02C				S	**Sn**	**01 35 55.6**	**-3.0**
	baz=257						
N02D	**Trinity Center**	**2.86**	**85**	P	**Pn**	**01 35 23.3**	**-2.3**
	baz=267,SNR=24						
N02D				S	**Sn**	**01 35 56.0**	**-4.0**
	baz=267						
YBH	**Yreka Blue Hor**	**2.99**	**70**	Pn	**Pn**	**01 35 27.0**	**-0.4**
	36nm,0.3s,baz=264,slow=12,SNR=356						
YBH				Sn	**Sn**	**01 36 01.8**	**-1.5**
	12nm,0.3s,baz=53,slow=10,SNR=3.2						
YBH				LR	LR	01 36 28.8	
	comp=Z,262nm,21.1s,baz=326,slow=39						
YBH	**Yreka Blue Hor**	**2.99**	**70**	*e*Pn	**Pn**	**01 35 26.9**	**-0.5**
YBH				*e*S	**Sn**	**01 36 02.1**	**-1.3**
WDC	**Whiskeytown Da**	**2.99**	**92**	*e*Pn	**Pn**	**01 35 26.3**	**-1.0**
WDC				*e*S	**Sn**	**01 36 01.0**	**-2.2**
HOPS	**Hopland Field**	**3.16**	**123**	*e*Pn	**Pn**	**01 35 28.2**	**-1.4**
HOPS				*e*S	**Sn**	**01 36 05.4**	**-2.0**
HUMO	**Hull Mountain**	**3.20**	**54**	*e*Pn	**Pn**	**01 35 29.4**	**-0.9**
HUMO				*e*S	**Sn**	**01 36 03.8**	**-4.7**
LHEM	**Herd Peak**	**3.32**	**74**	P	**Pn**	**01 35 32.1**	**+0.1**
DBO	**Dodson Butte**	**3.36**	**45**	P	**Pn**	**01 35 31.2**	**-1.3**
UMPQ	**Umpqua Communi**	**3.43**	**42**	P	**Pn**	**01 35 32.0**	**-1.4**
O03D	**Paynes Creek**	**3.59**	**96**	P	**Pn**	**01 35 34.1**	**-1.5**
	baz=279,SNR=14						
O03D				S	**Sn**	**01 36 15.5**	**-2.6**
	baz=279						
M04C	**Macdoel**	**3.63**	**72**	P	**Pn**	**01 35 36.5**	**+0.3**
	baz=254,SNR=127						
HSO	**Harness Mounta**	**3.72**	**41**	P	**Pn**	**01 35 36.3**	**-1.2**
I03D	**Drain, OR**	**3.73**	**37**	P	**Pn**	**01 35 35.1**	**-2.3**
	baz=217,SNR=64						
I03D				S	**Sn**	**01 36 17.6**	**-3.8**
	baz=217						
VSP	**Spence Mountai**	**3.73**	**64**	P	**Pn**	**01 35 38.1**	**+0.4**
MCCM	**Marconi Confer**	**3.82**	**132**	*e*Pn	**Pn**	**01 35 36.7**	**-2.0**
MCCM				*e*S	**Sn**	**01 36 19.4**	**-4.3**
K04D	**Chiloquin, OR**	**3.98**	**61**	P	**Pn**	**01 35 41.0**	**-0.1**
	baz=242,SNR=39						
ORV	**Oroville**	**3.99**	**106**	*e*Pn	**Pn**	**01 35 41.1**	**0.0**
ORV				*e*Sn	**Sn**	**01 36 26.2**	**-1.8**
I04A	**Tendick Farm,**	**4.26**	**44**	P	**Pn**	**01 35 44.4**	**-0.4**
	baz=224,SNR=20						
I04A				S	**Sn**	**01 36 32.2**	**-2.5**
	baz=224						
COR	**Corvallis**	**4.47**	**30**	*e*Pn	**Pn**	**01 35 47.5**	**0.0**
K05A	**Summer Lake**	**4.60**	**63**	*e*Pn	**Pn**	**01 35 49.8**	**+0.1**
AFDM	**Forest Hills D**	**4.60**	**112**	*e*Pn	**Pn**	**01 35 49.5**	**0.0**
J05D	**Fort Rock, OR**	**4.63**	**55**	P	**Pn**	**01 35 49.8**	**-0.3**
	baz=238,SNR=36						
J05D				S	**Sn**	**01 36 41.0**	**-3.0**
	baz=238						
MOD	**Modoc Plateau**	**4.78**	**74**	*e*Pn	**Pn**	**01 35 51.7**	**-0.3**
MOD				*e*S	**Sb**	**01 37 05.2**	**+3.9**
H04A	**Detroit Lake**	**5.02**	**37**	*e*Pn	**Pn**	**01 35 54.5**	**-0.7**
I05D	**Terrebonne, OR**	**5.20**	**45**	P	**Pn**	**01 35 57.1**	**-0.6**
	baz=227,SNR=9.3						
CMB	**Columbia Colle**	**5.44**	**118**	*e*Pn	**Pn**	**01 36 01.3**	**+0.2**
CMB				*e*S	Sn	01 36 51.5	-12
SAO	**San Andreas Ge**	**5.60**	**134**	*e*Pn	**Pn**	**01 36 00.5**	**-2.7**
SAO				*e*S	**Sn**	**01 37 05.1**	**-2.5**
F04A	**Amboy**	**5.94**	**28**	*e*Pn	**Pn**	**01 36 07.3**	**-0.5**
WVOR	**Wild Horse Val**	**6.10**	**72**	*e*Pn	**Pn**	**01 36 09.0**	**-1.1**
G06A	**Carlson Farm,**	**6.18**	**42**	*e*Pn	**Pn**	**01 36 11.0**	**-0.2**
NV01	**Mina Array Sit**	**6.72**	**108**	*e*Pn	**Pn**	**01 36 16.6**	**-2.2**
NVAR	**Mina Array Bea**	**6.72**	**108**	LR	LR	01 39 10.1	
	comp=Z,109nm,18.4s,baz=263,slow=40						
NV11	**Mina Array Sit**	**6.83**	**107**	*e*Pn	**Pn**	**01 36 20.5**	**+0.3**
LON	**Longmire**	**6.86**	**28**	*e*Pn	**Pn**	**01 36 16.4**	**-4.1**
HAWA	**Hanford**	**7.54**	**40**	*e*Pn	**Pn**	**01 36 28.7**	**-1.1**
LTY	**Liberty**	**7.71**	**31**	*e*Pn	**Pn**	**01 36 31.4**	**-0.8**
BMO	**Blue Mountains**	**7.87**	**56**	*e*Pn	**Pn**	**01 36 34.7**	**+0.3**
ISA	**Isabella, Lake**	**8.10**	**127**	*e*Pn	**Pn**	**01 36 37.4**	**-0.1**
MFID	**Camas Ranch**	**8.34**	**68**	*e*Pn	**Pn**	**01 36 40.3**	**-0.6**
F10A	**Beach Ranch, E**	**8.50**	**49**	*e*Pn	**Pn**	**01 36 42.7**	**-0.4**
B08A	**Colville Reser**	**9.13**	**31**	*e*Pn	**Pn**	**01 36 51.7**	**+0.1**
HLID	**Hailey**	**9.37**	**69**	*e*Pn	**Pn**	**01 36 56.0**	**+0.9**
NEW	**Newport**	**10.02**	**39**	LR	LR	01 40 55.5	
	comp=Z,140nm,19.6s,baz=228,slow=38						
ARUT	**Antelope Range**	**10.53**	**102**	*e*Pn	**Pn**	**01 37 08.8**	**-2.1**
NPI	**North Pocatell**	**10.56**	**78**	*e*Pn	Pn	01 37 05.1	-6.3
NPI				*e*Sn	**Sn**	**01 39 12.0**	**+2.3**
NPI				*e*Lg	Lg	01 40 40.9	
MSO	**Missoula**	**10.88**	**52**	*e*Pn	**Pn**	**01 37 16.6**	**+0.8**
BSMT	**Bassoo Peak**	**10.95**	**46**	*e*Pn	**Pn**	**01 37 16.3**	**-0.4**
MCU	**Monte Cristo P**	**11.31**	**82**	*e*Pn	**Pn**	**01 37 18.2**	**-3.6**
MCU				*e*Sn	Sn	01 39 43.5	+15
CHMT	**Chamberlain Mo**	**11.34**	**53**	*e*Pn	**Pn**	**01 37 22.3**	**+0.2**
LRM	**Limekiln Ridge**	**11.39**	**59**	*e*Pn	**Pn**	**01 37 23.6**	**+0.9**
TCUT	**Toone Canyon**	**11.40**	**83**	*e*Pn	Pn	01 37 18.3	-4.6
TCUT				*e*Sn	Sn	01 39 44.5	+14
TCUT				*e*Lg	Lg	01 40 52.7	
REDW	**Red Top Meadow**	**11.89**	**72**	*e*Pn	**Pn**	**01 37 33.0**	**+3.4**
REDW				*e*Lg	Lg	01 41 09.6	
IMW	**Indian Meadow**	**11.91**	**70**	*e*Pn	**Pn**	**01 37 30.5**	**+0.6**
PDAR	**Pinedale Array**	**12.78**	**75**	Pn	**Pn**	**01 37 44.2**	**+2.4**
	0.1nm,0.3s,baz=261,slow=12,SNR=11						
PV05	**Paradox Valley**	**13.69**	**96**	*e*Pn	**Pn**	**01 37 57.8**	**+3.6**
ANMO	**Albuquerque**	**16.82**	**104**	Pn	**P**	**01 38 39.9**	**+2.1**
	0.1nm,0.3s,baz=294,slow=11,SNR=4.8						
ANMO	**Albuquerque**	**16.82**	**104**	*e*Pn	**P**	**01 38 58.8**	**+1.0**
	2.8nm,1.0s						
DLBC	**Dease Lake**	**17.83**	**354**	P	**P**	**01 38 51.8**	**+3.2**
	0.1nm,0.3s,baz=171,slow=9.8,SNR=4.0						
FFC	**Flin Flon**	**21.43**	**41**	*e*P	**P**	**01 39 27.9**	**0.0**
	28nm,1.7s						
TX31	**Lajitas Ar. Si**	**21.81**	**114**	*e*P	**P**	**01 39 31.3**	**-1.0**
TXAR	**Lajitas Array**	**21.81**	**114**	P	**P**	**01 39 34.8**	**+2.6**
	0.7nm,0.8s,baz=306,slow=6.6,SNR=9.7						
ECSD	**EROS Data Cent**	**22.24**	**72**	*e*P	**P**	**01 39 36.2**	**-0.4**
	23nm,1.6s						
WMOK	**Wichita Mounta**	**22.65**	**97**	*e*P	**P**	**01 39 40.1**	**-1.1**
	19nm,1.0s						
YKA	**Yellowknife Ar**	**22.89**	**14**	P	**P**	**01 39 42.5**	**-0.9**
	1.3nm,0.9s,baz=201,slow=10,SNR=10						
AGMN	**Agassiz Nation**	**22.96**	**61**	*e*P	**P**	**01 39 44.7**	**+0.4**
	8.1nm,1.1s						
ULM	**Lac du Bonnet**	**23.29**	**56**	P	**P**	**01 39 47.5**	**-0.1**
	8.8nm,0.8s,baz=262,slow=9.5,SNR=11						
ULM				LR	LR	01 49 11.5	
	comp=Z,101nm,18.8s,baz=328,slow=38						
ULM	**Lac du Bonnet**	**23.29**	**56**	P	**P**	**01 39 47.5**	**-0.1**
	10.0nm,0.8s						
HDA	**Harding Lake**	**26.49**	**340**	*e*P	**P**	**01 40 17.3**	**+0.2**
	8.2nm,1.1s						
IL1	**Eielson Array**	**26.77**	**341**	*e*P	**P**	**01 40 20.6**	**+1.1**
ILAR	**Eielson Array**	**26.77**	**341**	P	**P**	**01 40 20.5**	**+1.0**
	0.6nm,0.7s,baz=158,slow=7.9,SNR=7.3						
TKL	**Tuckaleechee C**	**33.68**	**85**	LR	LR	01 55 56.0	
	comp=Z,30nm,21.3s,baz=223,slow=38						
RES	**Resolute Bay**	**36.95**	**13**	P	**P**	**01 41 48.6**	**-0.1**
	1.0nm,0.7s,baz=229,slow=11						
H11N3	**WAKE ISLAND Hy**	**59.86**	**271**	T	T	02 49 36.0	
	baz=53,slow=75,SNR=12						
H11N2	**WAKE ISLAND Hy**	**59.87**	**271**	T	T	02 49 36.9	
	baz=53,slow=75,SNR=10						
H11N1	**WAKE ISLAND Hy**	**59.88**	**271**	T	T	02 49 34.0	
	baz=53,slow=75,SNR=13						
H11S1	**WAKE ISLAND Hy**	**60.74**	**270**	T	T	02 50 45.6	
	baz=49						
H11S2	**WAKE ISLAND Hy**	**60.75**	**270**	T	T	02 50 50.5	
	baz=49						
H11S3	**WAKE ISLAND Hy**	**60.76**	**270**	T	T	02 50 45.0	
	baz=49						
HHC	**Hu-ho-hao-te**	**83.18**	**320**	*e*P	**P**	**01 47 05.8**	**-0.5**
HHC				pmax	pmax		
	comp=Z,29nm,1.3s						
KURK	**Kurchatov**	**86.28**	**344**	P	**P**	**01 47 22.5**	**+0.9**
KURBB	**Kurchatov Arra**	**86.39**	**344**	P	**P**	**01 47 22.5**	**+0.4**
	0.6nm,0.6s,baz=19,slow=4.1,SNR=3.2						
AKASG	**Malin Array Be**	**86.45**	**15**	LR	LR	02 23 43.9	
	comp=Z,74nm,21.5s,baz=55,slow=34						
WMQ	**Urumqi**	**90.34**	**336**	*e*P	**P**	**01 47 42.1**	**+0.9**
WMQ				pmax	pmax		
	comp=Z,3.0nm,0.6s						
CD2	**Chengdu**	**94.88**	**318**	P	**P**	**01 48 00.5**	**-1.9**
CD2				pmax	pmax		
	comp=Z,1.0nm,0.5s						
BRTR	**Keskin Array B**	**97.85**	**15**	P	Pdif	01 48 16.8	+1.0
	1.1nm,1.0s,baz=59,slow=4.2,SNR=3.7						

IDC ***14*** *01:37:32.3±0.8, 38.09N×143.59E, h0km, mb3.8/13, mb1 4.0/17, mb1mx3.8/72, mbtmp3.9/17, ML4.0/3, Error ellipse: s-maj=23.5km s-min=15.7km az=102.0*

ISCJB ***14*** *01:37:33.4±0.5, 38.07N±0.05×143.49E±0.06, h19km, mb3.9/17, Error ellipse: s-maj=8.4km s-min=4.5km az=44.2*

NEIC ***14*** *01:37:35.9±2.6, 38.13N×143.59E, h23km±18km, mb4.2/2, Error ellipse: s-maj=13.4km s-min=6.9km az=115.0*

JMA ***14*** *01:37:35.6±0.3, 38.06N×143.43E, h49km, M3.9*

ISC 14 01:37:35.2±0.8, 38.05N±0.06×143.50E±0.08, h19km, n40, σ1§17/38, mb4.0/17, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**1.74**	**284**	*e*S	**Sn**	**01 38 23.5**	**-2.5**
JMM	**Marumori**	**2.14**	**266**	P	**Pn**	**01 38 09.5**	**-0.4**
JFK	**Kawauchi**	**2.19**	**253**	*e*S	**Sn**	**01 38 35.4**	**-1.7**
JHO	**Hitachi**	**2.74**	**239**	P	**Pn**	**01 38 17.6**	**-0.5**
JHO				*e*S	**Sn**	**01 38 49.2**	**-1.5**
CHOJ	**Chosi**	**3.15**	**223**	P	**Pn**	**01 38 24.2**	**+0.4**
JYT	**Yasato**	**3.20**	**236**	P	**Pn**	**01 38 24.5**	**0.0**
JYT				*e*S	**Sn**	**01 39 00.7**	**-1.4**
JAG	**Ashikaga**	**3.61**	**245**	P	**Pn**	**01 38 30.4**	**+0.3**
BSO1	**Boso 1**	**3.95**	**212**	P	**Pn**	**01 38 34.7**	**+0.4**
ERM	**Erimo**	**3.97**	**356**	*e*Pn	**Pn**	**01 38 34.0**	**-1.1**
ERM				*e*S	Sn	01 39 13.2	-8.0
JRY	**Ryogami san**	**4.20**	**243**	P	**Pn**	**01 38 38.8**	**+0.6**
JNBK	**Urakawa-nobuka**	**4.27**	**353**	P	**Pn**	**01 38 39.0**	**-0.2**
MJAR	**Matsushiro Arr**	**4.47**	**252**	Pn	**Pn**	**01 38 43.9**	**+1.8**
	2.9nm,0.3s,baz=75,slow=14,SNR=11						
MAJO	**Matsushiro**	**4.47**	**252**	*e*Pn	**Pn**	**01 38 44.2**	**+2.2**
MAJO				*e*S	**Sn**	**01 39 34.4**	**+0.8**
MAT	**Matsushiro**	**4.47**	**252**	P	**Pn**	**01 38 44.3**	**+2.3**
MAT				*e*S	**Sn**	**01 39 33.8**	**+0.2**
JHJ	**Hachijo jima 2**	**5.77**	**213**	Pn	**Pn**	**01 38 59.2**	**-0.6**
	35nm,0.3s,baz=356,slow=18,SNR=5.7						
JHJ				Sn	**Sn**	**01 40 02.9**	**-2.6**
	22nm,0.3s,baz=72,slow=19,SNR=3.8						
ASAJ	**Asahikawa**	**6.10**	**354**	Pn	**Pn**	**01 39 02.5**	**-1.8**
	2.7nm,0.3s,baz=25,slow=14,SNR=4.4						
ASAJ				Sn	Sn	01 40 06.9	-6.8
	2.0nm,0.3s,baz=129,slow=18,SNR=2.2						
USRK	**Ussuriysk Ar.**	**10.63**	**309**	Pn	**Pn**	**01 40 08.2**	**+1.7**
	0.1nm,0.3s,baz=112,slow=16,SNR=3.9						
SEY	**Seymchan**	**25.50**	**9**	P	**P**	**01 43 02.9**	**+0.8**
	1.0nm,0.4s,baz=176,slow=13,SNR=4.4						
H11N2	**WAKE ISLAND Hy**	**27.31**	**125**	T	T	02 10 16.2	
	baz=318,slow=75,SNR=250						
H11N1	**WAKE ISLAND Hy**	**27.32**	**125**	T	T	02 10 16.7	
	baz=318,slow=75,SNR=256						
H11N3	**WAKE ISLAND Hy**	**27.33**	**125**	T	T	02 10 17.4	
	baz=318,slow=75,SNR=223						
H11S1	**WAKE ISLAND Hy**	**28.09**	**127**	T	T	02 11 04.8	
	baz=321,slow=76,SNR=38						
H11S3	**WAKE ISLAND Hy**	**28.09**	**127**	T	T	02 11 01.1	
	baz=321,slow=76,SNR=29						
H11S2	**WAKE ISLAND Hy**	**28.10**	**127**	T	T	02 10 42.8	
	baz=321,slow=76,SNR=23						
ZALV	**Zalesovo Beam**	**42.47**	**312**	P	**P**	**01 45 29.0**	**+0.3**
	0.5nm,0.4s,baz=90,slow=5.8,SNR=3.1						
CMAR	**Chiang Mai Arr**	**43.35**	**256**	P	**P**	**01 45 37.5**	**+1.2**
	0.2nm,0.4s,baz=42,slow=7.3,SNR=2.7						
MKAR	**Makanchi Array**	**44.99**	**302**	P	**P**	**01 45 49.5**	**+0.3**
	0.5nm,0.7s,baz=87,slow=5.9,SNR=3.8						
KDAK	**Kodiak Island**	**45.24**	**43**	P	P	01 46 06.6	+16
	12nm,1.1s,baz=229,slow=8.5,SNR=5.0						
KURK	**Kurchatov**	**46.62**	**308**	*e*P	**P**	**01 46 01.9**	**-0.1**
	5.3nm,0.8s						
KURBB	**Kurchatov Arra**	**46.69**	**308**	P	**P**	**01 46 02.5**	**0.0**
	1.7nm,0.6s,baz=81,slow=8.1,SNR=5.9						
ILAR	**Eielson Array**	**47.75**	**33**	P	**P**	**01 46 10.6**	**0.0**
	1.5nm,0.7s,baz=264,slow=6.4,SNR=11						
BVAR	**Borovoye Array**	**51.12**	**312**	P	**P**	**01 46 36.7**	**+0.2**
	0.5nm,0.6s,baz=99,slow=8.9,SNR=3.1						
WRAB	**Tennant Creek**	**58.31**	**190**	*e*P	**P**	**01 47 28.8**	**-0.1**
	2.5nm,0.6s						
WRA	**Warramunga Arr**	**58.32**	**190**	P	**P**	**01 47 29.4**	**+0.4**
	3.7nm,0.8s,baz=9.7,slow=7.3,SNR=20						
ABKAR	**Akbulak array**	**58.55**	**310**	*e*P	**P**	**01 47 30.0**	**-0.3**
	0.8nm,0.6s						
ASAR	**Alice Springs**	**62.04**	**190**	P	**P**	**01 47 55.1**	**+0.7**
	1.0nm,0.8s,baz=5.6,slow=6.6,SNR=8.6						
YKA	**Yellowknife Ar**	**62.10**	**31**	P	**P**	**01 47 53.9**	**-0.5**
	0.1nm,0.6s,baz=302,slow=6.6,SNR=4.1						
FINES	**FINESS Array B**	**68.68**	**333**	P	**P**	**01 48 36.7**	**-0.2**
	1.6nm,0.6s,baz=71,slow=8.3,SNR=5.4						
NOA	**NOSAR Array B**	**73.88**	**338**	P	**P**	**01 49 07.7**	**-0.8**
	0.3nm,0.8s,baz=28,slow=7.8,SNR=2.9						
AKASG	**Malin Array Be**	**74.50**	**323**	P	**P**	**01 49 11.8**	**-0.4**
	1.0nm,0.5s,baz=45,slow=5.5,SNR=8.0						

IDC 14 01:45:54.8±4.7, 20.73N×143.59E, h0km, mb3.7/5, mb1 3.8/5, mb1mx3.4/57, mbtmp3.7/5, Error ellipse: s-maj=122.5km s-min=52.1km az=2.0, Mariana Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
KLR	**Kul'dur**	**29.98**	**344**	P	P	01 52 04.8	-0.1
	0.7nm,0.6s,baz=153,slow=9.0,SNR=2.6						
MKAR	**Makanchi Array**	**55.64**	**313**	P	P	01 55 33.4	+0.7
	0.1nm,0.5s,baz=92,slow=8.7,SNR=1.9						
BVAR	**Borovoye Array**	**63.66**	**320**	P	P	01 56 28.1	+0.3
	0.9nm,0.4s,baz=84,slow=7.2,SNR=6.3						
YKA	**Yellowknife Ar**	**77.13**	**28**	P	P	01 57 50.5	+0.5
	0.3nm,0.5s,baz=292,slow=5.8,SNR=7.4						
FINES	**FINESS Array B**	**84.22**	**335**	P	P	01 58 26.7	-1.3
	0.3nm,0.3s,baz=59,slow=5.4,SNR=6.5						

IDC ***14*** *01:51:47.2±3.0, 27.12N×44.56W, h0km, mb3.8/14, mb1 4.0/14, mb1mx3.8/60, mbtmp3.8/14, MS3.7/15, Ms1 3.7/15, ms1mx3.6/33, Error ellipse: s-maj=83.8km s-min=20.9km az=176.0*

ISCJB ***14*** *01:51:48.5±2.4, 27.3N±0.5×44.6W±0.1, h16km, mb3.9/14, MS3.8/15, Error ellipse: s-maj=68.0km s-min=16.6km az=174.9*

ISC 14 01:51:49.6±2.9, 27.1N±0.6×44.6W±0.2, h16km, n32, σ0§97/14, mb3.9/14, MS3.9/15, Northern Mid-Atlantic Ridge

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SJG	**San Juan**	**21.82**	**250**	LR	LR	02 03 04.6	
	comp=Z,175nm,21.3s,baz=74,slow=31						
SCHQ	**Schefferville**	**32.13**	**336**	LR	LR	02 09 50.3	
	comp=Z,90nm,20.9s,baz=82,slow=34						
ESDC	**Sonseca Array**	**35.85**	**59**	LR	LR	02 10 06.8	
	comp=Z,53nm,19.0s,baz=315,slow=31						
ROSC	**El Rosal**	**35.99**	**237**	LR	LR	02 13 15.9	
	comp=Z,59nm,20.4s,baz=160,slow=36						
BDFB	**Brasilia**	**42.62**	**185**	LR	LR	02 16 21.4	
	comp=Z,47nm,18.5s,baz=18,slow=35						
DBIC	**Dimbokro**	**42.82**	**111**	LR	LR	02 14 43.1	
	comp=Z,162nm,18.4s,baz=301,slow=32						
H10N2	**ASCENSION HYDR**	**45.33**	**136**	T	T	02 47 54.4	
	baz=320,slow=75,SNR=96						
H10N3	**ASCENSION HYDR**	**45.33**	**136**	T	T	02 47 54.5	
	baz=320,slow=75,SNR=120						
TORD	**Torodi Ar. Bea**	**45.34**	**98**	LR	LR	02 18 19.7	
	comp=Z,183nm,18.4s,baz=290,slow=35						
H10N1	**ASCENSION HYDR**	**45.35**	**136**	T	T	02 47 55.8	
	baz=320,slow=75,SNR=144						
H10S1	**ASCENSION HYDR**	**46.10**	**137**	T	T	02 48 47.1	
	baz=321,slow=75,SNR=82						
H10S3	**ASCENSION HYDR**	**46.10**	**137**	T	T	02 48 47.2	
	baz=321,slow=75,SNR=92						
H10S2	**ASCENSION HYDR**	**46.11**	**137**	T	T	02 48 48.3	
	baz=321,slow=75,SNR=80						
GERES	**GERESS Array B**	**49.46**	**48**	P	**P**	**02 00 38.7**	**-0.4**
	0.4nm,0.8s,baz=262,slow=6.8,SNR=4.2						
NOA	**NORSAR Array B**	**50.22**	**32**	P	**P**	**02 00 44.5**	**-0.1**
	1.5nm,0.9s,baz=253,slow=7.6,SNR=3.5						
TXAR	**Lajitas Array**	**51.65**	**287**	P	**P**	**02 00 56.1**	**+0.2**
	0.4nm,0.9s,baz=146,slow=5.0,SNR=4.0						
PDAR	**Pinedale Array**	**54.27**	**305**	P	**P**	**02 01 14.1**	**-1.1**
	0.3nm,0.6s,baz=59,slow=11,SNR=3.0						
PDAR				LR	LR	02 22 08.2	
	comp=Z,104nm,21.0s,baz=72,slow=34						
YKA	**Yellowknife Ar**	**57.14**	**329**	P	**P**	**02 01 34.1**	**-1.1**
	0.6nm,0.8s,baz=94,slow=7.3,SNR=8.5						
FINES	**FINESS Array B**	**57.35**	**33**	P	**P**	**02 01 36.8**	**+0.1**
	2.5nm,0.9s,baz=285,slow=9.7,SNR=6.5						
ARCES	**ARCESS Array B**	**57.92**	**23**	P	**P**	**02 01 41.7**	**+1.0**
	1.9nm,0.6s,baz=280,slow=3.5,SNR=13						
NEW	**Newport**	**58.96**	**312**	P	**P**	**02 01 49.9**	**+1.6**
	1.3nm,0.5s,baz=166,slow=4.2						
NEW				LR	LR	02 25 13.8	
	comp=Z,99nm,19.2s,baz=80,slow=34						
AKASG	**Malin Array Be**	**59.47**	**45**	P	**P**	**02 01 50.5**	**-1.2**
	0.3nm,0.5s,baz=278,slow=6.3,SNR=5.0						
NVAR	**Mina Array Bea**	**61.54**	**301**	LR	LR	02 27 20.1	
	comp=Z,116nm,19.7s,baz=90,slow=35						
BRTR	**Keskin Array B**	**64.59**	**57**	P	**P**	**02 02 27.3**	**+0.8**
	0.7nm,0.7s,baz=276,slow=4.8,SNR=4.3						
INK	**Inuvik**	**64.74**	**336**	P	**P**	**02 02 27.7**	**+0.9**
	1.2nm,0.8s,baz=70,slow=10,SNR=4.5						
ILAR	**Eielson Array**	**70.86**	**334**	P	**P**	**02 03 04.6**	**-0.8**
	0.8nm,0.8s,baz=68,slow=4.5,SNR=7.4						
ILAR				LR	LR	02 33 22.5	
	comp=Z,40nm,20.5s,baz=88,slow=35						
TIXI	**Tiksi**	**81.41**	**2**	P	**P**	**02 04 05.9**	**+0.6**
	1.2nm,0.4s,baz=15,slow=5.2,SNR=4.3						
BVAR	**Borovoye Array**	**82.30**	**34**	P	**P**	**02 04 10.5**	**+0.1**
	0.9nm,0.6s,baz=316,slow=4.1,SNR=6.1						
GEYT	**Alibeck**	**82.95**	**51**	LR	LR	02 43 00.1	
	comp=Z,29nm,18.4s,baz=140,slow=37						
KMBO	**Kilima Mbogo**	**83.22**	**95**	LR	LR	02 41 04.5	
	comp=Z,118nm,19.2s,baz=272,slow=36						
BOSA	**Boshof**	**86.87**	**124**	LR	LR	02 37 24.6	
	comp=Z,61nm,19.6s,baz=322,slow=32						
ZALV	**Zalesovo Beam**	**88.21**	**27**	LR	LR	02 42 00.8	
	comp=Z,47nm,19.4s,baz=248,slow=34						

ISCJB ***14*** *01:56:29.6±0.4, 12.61N±0.04×87.98W±0.03, h72km±2km, mb4.3/47, Error ellipse: s-maj=7.4km s-min=3.2km az=33.8*

CASC ***14*** *01:56:30.2±1.1, 12.64N×88.00W, h64km±12km, ML4.1, mb4.4(NEIC)*

IDC ***14*** *01:56:30.9±0.8, 12.81N×87.76W, h68km±6km, mb3.7/15, mb1 4.0/17, mb1mx3.7/45, mbtmp4.0/17, MS2.8/1, Ms1 2.8/1, ms1mx2.3/33, Error ellipse: s-maj=26.8km s-min=9.3km az=51.0*

NEIC ***14*** *01:56:33.7±0.9, 12.81

245A	Little AP, Sta baz=174	19.37	355	P	Pn	02 00 52.6	0.0
243A	Waterproof baz=170	19.41	351	P	Pn	02 00 52.8	-0.2
244A	Avery, Jackson baz=172	19.46	353	P	Pn	02 00 54.1	+0.5
VBMS	Vicksburg baz=173	19.61	354	P	Pn	02 00 56.1	+0.7
633A	Saathoff Ranch baz=146	19.70	330	P	P	02 00 55.5	+0.9
338A	Crockett baz=158	19.81	341	P	Pn	02 00 58.0	+0.2
241A	Mo Tay, Goldon baz=166	19.81	347	P	Pn	02 00 58.4	+0.7
147A	Livingston baz=179	19.93	359	P	Pn	02 01 00.1	+0.9
145A	Houston Renfro baz=174	19.94	355	P	Pn	02 00 59.5	+0.3
LRAL	Lakeview Retre comp=N,8.6nm,0.9s	20.30	2	eP	P	02 01 00.8	-0.2
141A	Papa Simpson, baz=166	20.37	348	P	Pn	02 01 03.5	-0.8
JCT	Junction City baz=146	20.85	330	P	Pn	02 01 09.5	-0.6
JCT	Junction City comp=N,6.6nm,0.6s	20.85	330	eP	P	02 01 06.5	-0.4
GOGA	Godfrey comp=N,13nm,0.6s	21.06	11	eP	P	02 01 11.0	+1.8
Z40A	Long Farm, Mag baz=165	21.10	347	P	P	02 01 12.3	+2.7
WHTX	Lake Whitney, comp=N,74nm,2.0s	21.13	337	eP	P	02 01 10.9	+1.0
Y47A	UCPARC, Winfie baz=180	21.15	0	P	P	02 01 12.6	+2.4
333A	Richland Sprin baz=149	21.18	333	P	P	02 01 12.3	+1.8
136A	Ennis baz=156	21.23	340	P	P	02 01 13.4	+2.4
233A	Rising Star baz=150	21.74	334	P	P	02 01 17.9	+1.5
TXAR	Lajitas Array comp=N,3.1nm,0.5s,baz=141,slow=11,SNR=67	22.10	321	P	P	02 01 21.6	+1.1
TXAR				pP	pP	02 01 36.2	+1.2
TX31	comp=N,2.9nm,0.9s,baz=144,slow=11,SNR=5.2 Lajitas Ar. Si	22.10	321	eP	P	02 01 21.6	+1.2
MIAR	Mount Ida baz=166,SNR=11	22.38	348	P	P	02 01 24.6	+1.2
MIAR	Mount Ida comp=N,9.8nm,0.9s	22.38	348	eP	P	02 01 23.6	+0.3
X39A	Fountain Ranch baz=164	22.46	347	P	P	02 01 25.9	+1.7
Y35A	Marietta baz=157	22.71	340	P	P	02 01 29.0	+2.1
W41A	Tony Mavity, V baz=169	22.75	351	P	P	02 01 28.3	+1.0
W41B	Gary Mavity, V baz=169	22.75	351	P	P	02 01 28.4	+1.2
Z33A	Whitaker Ranch baz=152	22.79	336	P	P	02 01 28.9	+1.3
X37A	Clayton baz=161	22.85	344	P	P	02 01 29.6	+1.3
W40A	Ferguson Farm, baz=167	22.91	349	P	P	02 01 29.6	+0.8
W39A	Magazine baz=165	23.05	348	P	P	02 01 31.4	+1.2
W38A	Poteau baz=164,SNR=5.3	23.09	346	P	P	02 01 31.7	+1.0
X36A	Centrahoma baz=159	23.11	342	P	P	02 01 31.4	+0.6
X35A	Drake baz=157	23.14	341	P	P	02 01 32.1	+0.9
KMSC	Kings Mountain baz=197	23.18	14	P	P	02 01 32.3	+0.8
KMSC	Kings Mountain comp=N,8.2nm,0.8s	23.18	14	eP	P	02 01 32.8	+1.3
TKL	Tuckaleechee C comp=N,4.0nm,0.7s,baz=164,slow=5.2,SNR=6.6	23.21	9	P	P	02 01 32.2	+0.3
Y33A	Hilltop Ranch, baz=153	23.37	337	P	P	02 01 34.0	+0.7
W37B	Quinton baz=161	23.38	344	P	P	02 01 35.1	+1.6
V40A	Witts Springs baz=168	23.46	350	P	P	02 01 34.8	+0.6
W36A	Wetumka baz=160	23.60	343	P	P	02 01 36.1	+0.6
X34A	Smith Ranch, M baz=155,SNR=6.6	23.61	339	P	P	02 01 35.8	+0.2
V39A	Pettigrew baz=166,SNR=12	23.64	348	P	P	02 01 36.5	+0.6
X33A	Lawton baz=154,SNR=12	23.80	338	P	P	02 01 37.7	+0.4
W35A	Tecumseh baz=158	23.81	342	P	P	02 01 38.0	+0.7
V38A	Canehill baz=164	23.83	347	P	P	02 01 38.1	+0.7
X32A	Elmer baz=152,SNR=7.6	23.99	336	P	P	02 01 39.9	+0.9
U40A	Yellville baz=168,SNR=6.7	24.01	350	P	P	02 01 39.8	+0.8
V37A	Hulbert baz=163	24.02	346	P	P	02 01 39.7	+0.6
V36A	Jenks baz=161	24.13	344	P	P	02 01 41.0	+0.8
HHAR	Hobbs comp=N,5.5nm,0.5s	24.13	348	eP	P	02 01 40.3	+0.1
U39A	Green Forest baz=167	24.14	349	P	P	02 01 40.8	+0.5
W34A	Bridge Creek, baz=156,SNR=5.6	24.17	340	P	P	02 01 41.0	+0.4
W34A	Bridge Creek, comp=N,17nm,0.6s	24.17	340	eP	P	02 01 39.7	-0.9
TUL1	Leonard baz=161	24.21	344	P	P	02 01 41.8	+1.0
TUL1	Leonard comp=N,11nm,0.8s	24.21	344	eP	P	02 01 40.4	-0.5
W33A	Caddo, Fort Co baz=154	24.33	339	P	P	02 01 43.2	+1.1
U38A	Gravette baz=165	24.38	347	P	P	02 01 42.9	+0.5
U37A	Salina baz=163	24.51	346	P	P	02 01 44.9	+1.2
W32A	Sentinel baz=153,SNR=5.2	24.59	337	P	P	02 01 44.4	0.0
V34A	Guthrie baz=157	24.64	341	P	P	02 01 45.1	+0.3
V34A	Guthrie comp=N,11nm,0.8s	24.64	341	eP	P	02 01 44.6	-0.2
U36A	Oologah baz=162	24.65	345	P	P	02 01 45.5	+0.6
T40A	Mansfield baz=169	24.73	351	P	P	02 01 46.6	+0.9
T39A	Clever baz=167	24.75	350	P	P	02 01 46.1	+0.3
MNTX	Cornudas Mount baz=136	24.82	323	P	P	02 01 47.1	+0.5
MNTX	Cornudas Mount comp=N,10nm,1.9s	24.82	323	eP	P	02 01 47.2	+0.7
U35A	Pawnee baz=159	24.90	343	P	P	02 01 48.5	+1.3
T38A	Diamond baz=165	24.93	348	P	P	02 01 48.5	+1.0
MSTX	Muleshoe baz=144	25.14	330	P	P	02 01 50.3	+0.8
MSTX	Muleshoe comp=N,7.3nm,0.5s	25.14	330	eP	P	02 01 48.7	-0.9
T37A	Cheneyville 18 baz=164,SNR=9.8	25.15	347	P	P	02 01 51.2	+1.7
S40A	Lebanon baz=170	25.17	351	P	P	02 01 50.3	+0.7
U34A	Anderson Ranch baz=158	25.20	342	P	P	02 01 50.0	+0.1
T36A	Boggs Farm, Ca baz=162	25.32	345	P	P	02 01 52.0	+1.0
AMTX	Amarillo baz=147	25.39	333	P	P	02 01 52.3	+0.6
AMTX	Amarillo comp=N,8.8nm,0.6s	25.39	333	eP	P	02 01 53.1	+1.3
S39A	Bolivar baz=168,SNR=6.4	25.39	350	P	P	02 01 51.5	-0.1
S38A	Stockton baz=166	25.43	349	P	P	02 01 52.4	+0.4
R40A	Maddies Statio baz=170	25.82	352	P	P	02 01 55.2	-0.3
R39A	Chumby, Stover baz=169	25.95	351	P	P	02 01 56.4	-0.3
R38A	Fenwick Farm, baz=167	25.97	349	P	P	02 01 56.8	-0.1
Q38A	Cooks Store, C	26.68	350	P	P	02 02 03.7	+0.4
P40A	Paris baz=171	27.01	353	P	P	02 02 07.2	+1.0
P38A	Dawn baz=168	27.31	351	P	P	02 02 08.7	-0.2
ANMO	Albuquerque comp=N,0.7nm,0.4s,baz=122,slow=12,SNR=3.1	27.81	326	P	P	02 02 15.8	+2.1
P34A	Walnut Farm, R baz=161	27.91	345	P	P	02 02 14.7	+0.4
N39A	Derby Farms, D baz=171	28.39	353	P	P	02 02 19.7	+1.1
O34A	Beatrice baz=162	28.48	346	P	P	02 02 20.0	+0.6
M38A	Pleasantville baz=170	29.02	352	P	P	02 02 25.4	+1.4
N54A	Moraine State baz=196	29.05	12	P	P	02 02 25.0	+0.6
M54A	Oil Creek Stat baz=197	29.64	13	P	P	02 02 30.3	+0.6
N59A	State Game Lan baz=204	30.11	19	P	P	02 02 34.9	+1.1
S22A	4UR Ranch, Cre baz=141,SNR=5.1	30.14	329	P	P	02 02 35.1	+0.7
S22A	4UR Ranch, Cre comp=N,2.3nm,0.6s	30.14	329	eP	P	02 02 35.7	+1.3
M31A	Lambtecht Ranc baz=158	30.16	343	P	P	02 02 35.6	+1.3
K37A	Belmond baz=169	30.40	352	P	P	02 02 36.3	0.0
OGNE	Ogallala baz=152	30.76	339	P	P	02 02 40.5	+0.8
SMCO	Snowmass comp=N,10nm,1.7s	31.33	331	eP	P	02 02 46.5	+1.5
I38A	Scanlan Farm, baz=172	31.50	354	P	P	02 02 45.8	-0.2
ECSD	EROS Data Cent baz=164	31.85	348	P	P	02 02 48.5	-0.6
H36A	Jessenland, He baz=169	32.22	352	P	P	02 02 52.7	+0.4
H35A	Sunnyside Ranc baz=168	32.47	351	P	P	02 02 54.1	-0.4
O20A	White River Ci baz=141	32.69	331	P	P	02 02 57.8	+1.1
O20A	White River Ci comp=N,5.0nm,0.9s	32.69	331	eP	P	02 02 55.2	-1.5
J28A	Allard Ranch, baz=156	32.73	342	P	P	02 02 57.6	+0.8
G33A	Ortonville baz=165	33.23	349	P	P	02 03 00.8	-0.3
F36A	Milaca baz=170	33.43	353	P	P	02 03 02.0	-0.9
P17A	Butcher Ranch, comp=N,5.6nm,0.6s	33.45	327	eP	P	02 03 04.0	+0.7
MSU	Marysvale	33.56	324	eP	P	02 03 03.2	-1.2
ICU	Indian Springs	33.69	321	eP	P	02 03 04.3	-1.1
F33A	5 Mile Ranch, baz=165,SNR=5.2	33.82	350	P	P	02 03 05.1	-1.2
I25A	Rochford baz=152	34.07	340	P	P	02 03 08.1	-0.6
PSUT	Pine Spring comp=N,40nm,1.4s	34.55	323	eP	P	02 03 14.7	+1.8
D37A	Cotton baz=172	34.60	355	P	P	02 03 12.3	-0.7
JLU	Jordanelle comp=N,27nm,2.0s	34.65	328	eP	P	02 03 15.4	+1.6
G27A	Dupree baz=156	34.72	343	P	P	02 03 14.1	0.0
LPAZ	La Paz comp=N,0.5nm,0.7s,baz=346,slow=4.2,SNR=2.4	34.81	145	P	P	02 03 16.7	+0.9
D33A	AnnSam, Waubun baz=167	35.01	351	P	P	02 03 16.4	-0.1
C35A	Jirik Farms, M baz=170	35.30	353	P	P	02 03 18.3	-0.7
PDAR	Pinedale Array comp=N,1.2nm,0.6s,baz=126,slow=9.7,SNR=9.2	35.36	332	P	P	02 03 20.6	+0.7
HWUT	Hardware Ranch comp=N,6.2nm,0.8s	35.44	329	eP	P	02 03 20.8	+0.3
ISA	Isabella, Lake baz=122	35.80	315	P	P	02 03 24.2	+0.6
C31A	Landman Farms, baz=164	35.97	349	P	P	02 03 24.1	-0.6
D28A	Regan baz=159	36.02	345	P	P	02 03 24.8	-0.4
AHID	Auburn Hatcher comp=N,7.3nm,0.6s	36.08	331	eP	P	02 03 26.1	+0.1
AGMN	Agassiz Nation baz=167	36.14	351	P	P	02 03 25.6	-0.6
B34A	Aery, Baudette baz=169	36.15	352	P	P	02 03 25.0	-1.3
B32A	Ashes, Strandq comp=N,166,SNR=9.0	36.34	350	P	P	02 03 26.9	-1.0
REDW	Red Top Meadow comp=N,10nm,0.6s	36.42	331	eP	P	02 03 30.1	+1.2
SNOW	Snow King Moun comp=N,12nm,0.6s	36.45	332	eP	P	02 03 30.4	+1.2
LOHW	Long Hollow comp=N,3.0nm,0.6s	36.49	332	eP	P	02 03 31.0	+1.4
B31A	Greenbush Farm baz=164	36.56	349	P	P	02 03 29.2	-0.6
MOOW	Moose Ponds comp=N,3.6nm,0.8s	36.67	332	eP	P	02 03 32.0	+0.9
A33A	Warroad baz=168,SNR=5.2	36.69	352	P	P	02 03 29.7	-1.2
FXWY	Fox Creek comp=N,1.6nm,0.8s	36.71	332	eP	P	02 03 30.7	-0.7
B30A	Myrvik Farm, E baz=163	36.71	348	P	P	02 03 30.5	-0.6
A32A	Rocking H Ranc baz=166	36.84	351	P	P	02 03 31.3	-0.8
IMW	Indian Meadow comp=N,2.8nm,0.6s	36.87	332	eP	P	02 03 33.0	+0.2
FLWY	Flagg Ranch comp=N,3.6nm,0.6s	36.90	332	eP	P	02 03 33.5	+0.5
A31A	Linda, St. Vin baz=165	36.97	350	P	P	02 03 33.5	+0.3
RLMT	Red Lodge baz=144	37.11	335	P	P	02 03 35.6	+0.9
B28A	Dugan Ranch, T baz=160	37.15	346	P	P	02 03 35.4	+0.6
A30A	Hoffart Farm, baz=163	37.18	349	P	P	02 03 34.6	-0.4
C25A	Freed Ranch, W baz=155	37.22	343	P	P	02 03 35.0	-0.4
A29A	Manning Farm, baz=162	37.35	348	P	P	02 03 36.4	0.0
B25A	Knox Farm, Ray baz=155	37.70	343	P	P	02 03 40.3	+0.9
ULM	Lac du Bonnet comp=N,1.7nm,0.4s,baz=176,slow=9.7,SNR=3.2	38.04	352	P	P	02 03 40.8	-1.5
DGMT	Dagmar baz=154	38.17	342	P	P	02 03 44.3	+0.9
DGMT	Dagmar comp=N,12nm,0.4s	38.17	342	eP	P	02 03 42.3	-1.2
HLID	Hailey baz=136	38.31	329	P	P	02 03 45.6	+0.8
HLID	Hailey comp=N,1.7nm,0.9s	38.31	329	eP	P	02 03 44.8	-0.1
MCMT	McKenzie Canyo	38.47	331	eP	P	02 03 47.9	+1.6
BOZ	Bozeman (W) baz=141,SNR=5.1	38.54	333	P	P	02 03 46.9	+0.2
BOZ	Bozeman (W) comp=N,2.7nm,0.8s	38.54	333	eP	P	02 03 47.1	+0.4
M04C	Macdoel baz=125	41.36	321	P	P	02 04 09.2	-1.0
F10A	Beach Ranch, E comp=N,17nm,1.5s	41.43	329	eP	P	02 04 10.4	-0.1
NEW	Newport comp=N,2.0nm,0.8s,baz=130,slow=11,SNR=3.4	42.99	331	P	P	02 04 22.6	-0.6
NEW	Newport baz=136	42.99	331	P	P	02 04 23.7	+0.5
G05D	Wamic, OR baz=128	43.11	325	P	P	02 04 24.9	+0.7
SCHQ	Schefferville comp=N,2.5nm,0.4s,baz=218,slow=6.3,SNR=12	45.23	17	P	P	02 04 39.9	-1.0
FCC	Fort Churchill comp=N,4.4nm,0.6s	46.25	356	eP	P	02 04 48.2	-0.6
CPUP	Villa Florida comp=N,1.5nm,0.6s,baz=350,slow=8.1,SNR=3.4	48.88	143	P	P	02 05 09.3	-0.4
FRB	Frobisher Bay comp=N,4.4nm,0.6s,baz=218,slow=8.7,SNR=18	52.81	11	P	P	02 05 37.1	-1.6
YKA	Yellowknife Ar comp=N,0.7nm,0.5s,baz=135,slow=8.3,SNR=24	53.28	345	P	P	02 05 41.4	-0.8
YKA				pP	pP	02 05 58.1	-1.7
YKA	comp=N,1.2nm,0.8s,baz=139,slow=7.6,SNR=8.2			PcP	PcP	02 06 48.1	-1.0
DLBC	comp=N,0.3nm,0.5s,baz=147,slow=3.8,SNR=5.7 Dease Lake comp=N,2.2nm,0.7s,baz=161,slow=8.9,SNR=6.2	55.51	335	P	P	02 05 58.9	+0.3
DLBC				pP	pP	02 06 17.1	+0.9
PLCA	comp=N,2.9nm,0.8s,baz=164,slow=5.0,SNR=4.8 Paso Flores comp=N,6.1nm,1.2s,baz=109,slow=23,SNR=3.0	55.51	164	P	P	02 05 59.9	+1.1
PTCN	Pitcairn Islan comp=N,566nm,0.6s	55.62	227	eP	P	02 05 59.9	+0.1
INK	Inuvik comp=N,0.6nm,0.8s,baz=180,slow=2.3,SNR=2.9	62.86	343	P	P	02 06 48.0	-1.1
INK				pP	pP	02 07 06.2	-0.9
ILAR	comp=N,1.0nm,0.9s,baz=126,slow=8.6,SNR=2.8 Eielson Array comp=N,0.3nm,0.5s,baz=174,slow=5.2,SNR=5.8	65.63	336	P	P	02 07 06.6	-0.7
ILAR				pP	pP	02 07 24.6	-0.8
TORD	comp=N,0.9nm,0.9s,baz=118,slow=5.9,SNR=4.9 Torodi Ar. Bea	86.85	77	pP	pP	02 09 23.3	-4.1
CD2	comp=N,0.2nm,0.4s,baz=265,slow=4.9,SNR=1.7 Chengdu	135.24	346	PKP	PKPdf	02 15 41.8	-1.4
WRA	Warramunga Arr comp=N,0.7nm,0.8s,baz=77,slow=1.5,SNR=4.0	138.85	254	PKP	PKPdf	02 15 50.9	+0.9
CMAR	Chiang Mai Arr comp=N,0.3nm,0.4s,baz=3.8,slow=2.7,SNR=3.4	148.34	347	PKPbc	PKPbc	02 16 08.7	-1.4

NIED **14** *01:56:00,38.20N×143.00E,h11km,Mw3.7 Best double couple: M₀4.32000×10¹⁴ NP1:φs321.00000°,δ39.00000°, λ-108.00000°. NP2:φs165.00000°,δ53.00000°, λ-75.00000°.*

IDC **14** *01:56:41.4±1.0,38.09N×143.30E,h0km,mb3.6/8, mb1 3.8/9,mb1mx3.6/57,mbtmp3.6/9,ML3.6/1,MS2.9/1, Ms1 2.9/1,ms1mx2.3/44,Error ellipse: s-maj=28.5km s-min=20.6km az=102.0*

ISCJB **14** *01:56:42.9±0.7,38.17N±0.05×143.08E±0.06,h18km, mb3.6/8,Error ellipse: s-maj=7.8km s-min=6.5km az=26.7*

JMA **14** *01:56:42.7±0.3,38.19N×142.98E,h6km±4km, M4.1*

ISC 14 01:56:44.5±0.9,38.21N±0.07×143.06E±0.09,h18km,n29,
σ1s02/26,mb3.6/8,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JIO	Ouri	1.36	281	P	Pn	01 57 07.2	-1.4
JIO				eS	Sn	01 57 24.5	-1.7
OFUJ	Ofunato	1.39	309	P	Pn	01 57 08.1	-0.9
OFUJ				eS	Sn	01 57 26.0	-0.9
JMK	Ichinoseki	1.62	298	P	Pn	01 57 11.2	-0.9
JMK				S	Sn	01 57 31.7	-0.8
JMM	Marumori	1.82	260	P	Pn	01 57 13.8	-1.1
JOM	Ohasama	1.87	313	P	Pn	01 57 15.6	+0.1
JOM				eS	Sn	01 57 38.7	0.0
JOU	Okura	1.89	275	P	Pn	01 57 15.7	-0.1
JFK	Kawauchi	1.92	245	P	Pn	01 57 15.0	-1.3
JYK	Kaneyama	2.23	289	P	Pn	01 57 20.8	+0.3
JRG	Rokugo	2.23	303	P	Pn	01 57 20.9	+0.3
JFT	Otama	2.26	253	P	Pn	01 57 20.9	0.0
JYS	Shirataka	2.36	271	P	Pn	01 57 22.4	+0.1
MJAR	Matsushiro Arr 3.4nm,0.3s,baz=59,slow=9.9,SNR=11	4.20	248	Pn	Pn	01 57 48.6	+0.9
MAT	Matsushiro	4.21	248	P	Pn	01 57 49.5	+1.8
MAT				eS	Sn	01 58 36.5	+0.1
USRK	Ussuriysk Ar. 0.1nm,0.3s,baz=112,slow=14,SNR=5.0	10.26	309	Pn	Pn	01 59 16.4	+5.6
JNU	Nakatsue comp=Z,61nm,18.0s,baz=120,slow=39	11.13	247	LR	LR	02 03 58.0	
SEY	Seymchan 1.2nm,0.5s,baz=190,slow=8.6,SNR=7.3	25.40	10	P	P	02 02 11.8	+1.3
H11N2	WAKE ISLAND Hy 27.69 baz=317,slow=76,SNR=41	125		T	T	02 31 23.9	
H11N1	WAKE ISLAND Hy 27.70 baz=317,slow=76,SNR=29	125		T	T	02 31 38.7	
H11N3	WAKE ISLAND Hy 27.71 baz=317,slow=76,SNR=38	125		T	T	02 31 28.1	
H11S1	WAKE ISLAND Hy 28.46 baz=319,slow=76,SNR=18	127		T	T	02 32 34.8	
H11S3	WAKE ISLAND Hy 28.46 baz=319,slow=76,SNR=18	127		T	T	02 32 51.3	
H11S2	WAKE ISLAND Hy 28.48 baz=319,slow=76,SNR=14	127		T	T	02 32 32.9	
ZALV	Zalesovo Beam 0.5nm,0.4s,baz=92,slow=10,SNR=3.3	42.10	311	P	P	02 04 36.2	+1.0
MKAR	Makanchi Array 0.3nm,0.3s,baz=86,slow=9.0,SNR=5.1	44.61	301	P	P	02 04 56.8	+1.2
ILAR	Eielson Array 0.4nm,0.8s,baz=266,slow=6.1,SNR=4.8	47.80	33	P	P	02 05 19.7	-0.7
BVAR	Borovoye Array 0.3nm,0.5s,baz=69,slow=7.7,SNR=2.9	50.75	312	P	P	02 05 44.5	+1.3
WRA	Warramunga Arr 0.7nm,0.6s,baz=7.2,slow=6.9,SNR=11	58.42	190	P	P	02 06 38.4	-0.6
ASAR	Alice Springs 0.2nm,0.5s,baz=15,slow=7.7,SNR=4.3	62.15	189	P	P	02 07 03.8	-0.8
TXAR	Lajitas Array 0.2nm,0.7s,baz=250,slow=2.7,SNR=3.2	88.37	53	P	P	02 09 34.4	-1.2

IDC **14** *02:05:17.4±2.4,5.71S×130.82E,h0km,mb3.9/2, mb1 4.3/5,mb1mx3.8/39,mbtmp4.1/5,ML4.2/3,MS3.2/1, Ms1 3.2/1,ms1mx2.3/52,Error ellipse: s-maj=92.5km s-min=25.2km az=74.0*

ISCJB **14** *02:05:27.2±0.7,6.29S±0.05×130.2E±0.1,h90km,mb3.8/2, Error ellipse: s-maj=19.2km s-min=6.6km az=174.5*

DJA **14** *02:05:41.4±0.6,5.5°S±5.5°×13.0E±°,h74km±15km,M4.5/6, mb4.9/1,MLv4.3/6*

ISC 14 02:05:26.6±1.0,6.44S±0.07×130.3E±0.1,h90km,n11,
σ1s76/10,Banda Sea

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
BNDI	Bandanaira	1.95	347	P	Pn	02 05 58.2	0.0
MSAI	Masohi	3.38	335	P	Pn	02 06 14.1	-3.1
FAKI	Fak Fak	3.98	29	P	Pn	02 06 31.5	+6.1
NLAI	Namlea	4.53	314	P	Pn	02 06 31.9	-0.9
SWI	Sorong	5.62	10	P	Pn	02 06 48.2	+0.6
FITZ	Fitzroy Crossi 1.4nm,0.3s,baz=31,slow=10,SNR=65	12.46	201	Pn	P	02 08 26.5	-2.4
FITZ				Sn	Sn	02 10 41.1	+3.4
WRA	1.2nm,0.3s,baz=99,slow=20,SNR=5.6 Warramunga Arr 1.1nm,0.3s,baz=351,slow=12,SNR=49	13.98	164	Pn	P	02 08 44.1	-1.6
WRA				Sn	Sn	02 11 14.4	-0.1
ASAR	1.3nm,0.3s,baz=348,slow=22,SNR=6.0 Alice Springs 0.8nm,0.3s,baz=345,slow=9.1,SNR=30	17.47	169	P	Pn	02 09 31.7	+7.1
ASAR				S	Sn	02 12 38.9	0.0
CMAR	0.2nm,0.3s,baz=355,slow=28,SNR=3.6 Chiang Mai Arr 0.4nm,0.5s,baz=137,slow=8.2,SNR=5.3	39.63	309	P	P	02 12 50.8	+1.0
KLR	Kul'dur comp=Z,20nm,18.3s,baz=3.0,slow=37	55.45	1	LR	LR	02 39 07.0	
MKAR	Makanchi Array 1.3nm,0.3s,baz=120,slow=8.0,SNR=24	67.94	327	P	P	02 16 15.9	+0.1

ISCJB **14** *02:08:57.2±1.2,37.08N±0.08×143.9E±0.1,h33km, mb3.9/2,MS3.3/2,Error ellipse: s-maj=13.5km s-min=8.4km az=139.1*

IDC **14** *02:08:58.8±10.0,36.41N×143.69E,h0km,mb3.7/2, mb1 3.9/3,mb1mx3.4/45,mbtmp3.6/3,ML3.3/1,MS3.3/2, Ms1 3.3/2,ms1mx2.5/52,Error ellipse: s-maj=237.3km s-min=46.7km az=32.0*

JMA **14** *02:08:59.8±0.3,37.13N×143.79E,h46km,M3.3*

ISC 14 02:08:59.2±1.8,37.11N±0.09×143.9E±0.1,h35km,n11,
σ0s64/12,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JIO	Ouri	2.44	304	P	Pn	02 09 37.2	+0.7
JIO				eS	Sn	02 10 04.8	-0.4
ONAJ	Iwakimizuishiy	2.50	271	S	Sn	02 10 05.8	-0.9
JMM	Marumori	2.60	288	eS	Sn	02 10 08.8	-0.4
OFUJ	Ofunato	2.65	319	P	Pn	02 09 39.7	+0.3
OFUJ				S	Sn	02 10 09.4	-1.0
JOU	Okura	2.87	297	P	Pn	02 09 43.3	+0.8
JFT	Otama	2.89	279	eS	Sn	02 10 16.5	+0.2
JOM	Ohasama	3.14	319	eS	Sn	02 10 22.3	-0.1
MJAR	Matsushiro Arr 1.6nm,0.3s,baz=88,slow=13,SNR=5.7	4.62	265	Pn	Pn	02 10 07.0	+0.4
WRA	Warramunga Arr 0.9nm,0.7s,baz=11,slow=7.2,SNR=6.4	57.46	191	P	P	02 18 44.2	-0.5
WRA				LR	LR	02 47 33.5	
ASAR	comp=Z,19nm,18.2s,baz=210,slow=41 Alice Springs 0.4nm,0.4s,baz=8.2,slow=8.4,SNR=4.5	61.19	190	P	P	02 19 10.5	+0.1
ASF	Jabal al Asfar comp=Z,17nm,21.1s,slow=38	83.12	305	LR	LR	03 02 10.5	

BER ***14*** *02:13:47.7± 1.1, 80.65N× 0.29W, h10km, MD2.3, ML1.7*
CSEM ***14*** *02:13:48.9± 0.5, 80.43N× 0.55E, h10km, ML2.8, Error ellipse: s-maj=26.8km s-min=10.9km az=36.0*

ISC 14 02:13:43.3±2.3, 80.3N±0.2× 1.98W±0.06, h10km, n10, σ1§72/17, 1C, North of Svalbard

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KBS	**Kingsbay**	**2.87**	**111**	*eP*	**Pn**	**02 14 29.7**	**+0.7**
KBS				*eS*	**Sn**	**02 15 01.3**	**-2.1**
KBS				IAML		02 15 02.6	
	comp=Z,11nm,0.1s						
KBS	**Kingsbay**	**2.87**	**111**	*iP*	**Pn**	**02 14 29.9**	**+0.9**
	SNR=56						
KBS				*eS*	**Sn**	**02 15 01.3**	**-2.1**
	SNR=50						
SPA0	**Spitsbergen Ar**	**4.03**	**112**	*eP*	**Pn**	**02 14 46.5**	**+1.6**
SPA0				*eS*	**Sn**	**02 15 30.2**	**-1.8**
SPA0	**Spitsbergen Ar**	**4.03**	**112**	*eP*	**Pn**	**02 14 46.5**	**+1.6**
	SNR=49						
SPA0				*eS*	**Sn**	**02 15 30.2**	**-1.8**
	SNR=49						
HSPB	**Hornsund (broa**	**4.76**	**125**	*eP*	**Pn**	**02 14 57.4**	**+2.5**
HSPB				*eS*	**Sn**	**02 15 49.4**	**-0.6**
HSPB				IAML		02 15 54.5	
	comp=Z,2.1nm,0.3s						
HSPB	**Hornsund (broa**	**4.76**	**125**	*eP*	**Pn**	**02 14 57.4**	**+2.5**
	SNR=49						
HSPB				*eS*	**Sn**	**02 15 49.4**	**-0.6**
	SNR=49						
DAG	**Danmarks Havn**	**4.83**	**232**	*i* P	**Pn**	**02 14 56.3**	**+0.4**
DAG				*i* S	**Sn**	**02 15 49.7**	**-2.0**
HOPEN	**Hopen**	**6.56**	**111**	*eP*	**Pn**	**02 15 20.6**	**+1.0**
HOPEN	**Hopen**	**6.56**	**111**	*eP*	**Pn**	**02 15 20.6**	**+1.0**
	SNR=47						
SUMG	**Summit**	**11.24**	**247**	*i* P	**Pn**	**02 16 24.2**	**+0.2**

NIED ***14*** *02:15:00, 39.70N× 143.70E, h23km, Mw4.0 Best double couple: M0 1.09000×10^15 NP1:φs207.00000°, δ45.00000°, λ95.00000°. NP2:φs20.00000°, δ45.00000°, λ85.00000°.*
JMA ***14*** *02:15:37.0± 0.2, 39.66N× 143.67E, h15km, M4.1*
ISCJB ***14*** *02:15:37.1± 0.5, 39.63N± 0.05× 143.64E± 0.05, h11km, mb4.1/25, MS3.2/2, Error ellipse: s-maj=7.7km s-min=4.3km az=142.9*
MOS ***14*** *02:15:40.2± 1.1, 39.63N× 143.59E, h34km, mb4.4/19, Error ellipse: s-maj=10.1km s-min=6.6km az=91.1*
NEIC ***14*** *02:15:43.3± 0.7, 39.70N× 143.39E, h35km, mb4.3/4, Error ellipse: s-maj=14.6km s-min=7.5km az=128.0*
IDC ***14*** *02:15:43.5± 4.4, 39.70N× 143.39E, h35km± 31km, mb3.8/15, mb1 3.9/19, mb1mx3.7/55, mbtmp4.0/19, ML3.6/3, MS3.1/7, Ms1 3.1/7, ms1mx2.8/56, Error ellipse: s-maj=34.9km s-min=17.9km az=141.0*

ISC 14 02:15:39.2±0.7, 39.65N±0.06× 143.55E±0.06, h11km, n68, σ1§47/71, mb4.1/25, 4C-1D, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JTH	**Tanohata**	**1.33**	**283**	P	**Pn**	**02 16 02.3**	**-1.4**
JTH				*eS*	**Sn**	**02 16 21.1**	**-0.3**
MIYJ	**Miyakonagasawa**	**1.34**	**268**	P	**Pn**	**02 16 02.6**	**-1.2**
MIYJ				*eS*	**Sn**	**02 16 21.1**	**-0.5**
OFUJ	**Ofunato**	**1.56**	**249**	P	**Pn**	**02 16 05.9**	**-1.0**
JANG	**Nango**	**1.73**	**296**	P	**Pn**	**02 16 07.7**	**-1.4**
JOM	**Ohasama**	**1.75**	**265**	P	**Pn**	**02 16 09.2**	**-0.3**
JOM				*eS*	**Sb**	**02 16 32.3**	**-1.1**
JMK	**Ichinoseki**	**1.94**	**250**	P	**Pn**	**02 16 11.5**	**-0.5**
JIO	**Ouri**	**2.09**	**236**	P	**Pn**	**02 16 13.0**	**-1.1**
ERM	**Erimo**	**2.39**	**353**	*eP*	**Pn**	**02 16 19.1**	**+0.9**
ERM				*eS*	**Sn**	**02 16 47.0**	**-0.4**
ERM	**Erimo**	**2.39**	**353**	*ePn*	**Pn**	**02 16 19.1**	**+0.9**
ERM				*eS*	**Sn**	**02 16 47.0**	**-0.4**
JYK	**Kaneyama**	**2.58**	**255**	P	**Pn**	**02 16 20.8**	**-0.1**
JCH	**Churui**	**2.97**	**357**	P	**Pn**	**02 16 25.8**	**-0.4**
ASAJ	**Asahikawa**	**4.53**	**351**	Pn	**Pn**	**02 16 48.7**	**+1.1**
	3.3nm,0.3s,baz=205,slow=13,SNR=11						
ASAJ				Sn	**Sn**	**02 17 37.9**	**-2.3**
	2.9nm,0.3s,baz=194,slow=12,SNR=5.2						
ASAJ				LR	LR	02 18 09.0	
	comp=Z,72nm,18.4s,baz=86,slow=33						
ASAJ	**Asahikawa**	**4.53**	**351**	Pn	**Pn**	**02 16 47.0**	**-0.6**
ASAJ				Sn	**Sn**	**02 17 37.9**	**-2.3**
YUK	**Yuzh-Kuril'sk**	**4.71**	**21**	*eP*	**Pn**	**02 16 51.9**	**+1.7**
YUK				*eS*	**Sn**	**02 17 40.1**	**-4.7**
YUK				pmax	pmax		
	comp=Z,175nm,0.6s						
YUK				pmax	pmax		
	comp=N,144nm,0.2s						
YUK				pmax	pmax		
	comp=E,55nm,0.2s						
SHO	**Shikotan**	**4.88**	**29**	*eP*	**Pn**	**02 16 50.9**	**-1.6**
SHO				*eS*	Sn	02 17 41.8	-7.1
SHO				pmax	pmax		
	comp=Z,30nm,0.9s						
SHO				pmax	pmax		
	comp=N,20nm,0.5s						
SHO				pmax	pmax		
	comp=E,16nm,0.8s						
MAJO	**Matsushiro**	**5.23**	**235**	*eP*	**Pn**	**02 16 57.8**	**+0.5**
MAJO	**Matsushiro**	**5.23**	**235**	*ePn*	Pn	02 16 53.1	-4.3
MAT	**Matsushiro**	**5.23**	**235**	S	**Pn**	**02 16 58.7**	**+1.4**
MJAR	**Matsushiro Arr**	**5.23**	**235**	Pn	**Pn**	**02 16 57.9**	**+0.7**
	comp=E,7.1nm,0.3s,baz=39,slow=12,SNR=18						
MJAR				LR	LR	02 19 10.5	
	comp=E,156nm,18.8s,baz=30,slow=40						
MJAR	**Matsushiro Arr**	**5.23**	**235**	P	**Pn**	**02 16 58.0**	**+0.7**
KUR	**Kuril'sk**	**6.43**	**28**	*eP*	**Pn**	**02 17 13.9**	**+0.2**
KUR				*eS*	**Sn**	**02 18 22.1**	**-5.0**
KUR				pmax	pmax		
	comp=Z,12nm,0.5s						
KUR				smax	smax		
	comp=N,41nm,0.6s						
KUR				smax	smax		
	comp=E,22nm,0.6s						
YSS	**Yuzh-Sakhalins**	**7.33**	**356**	*eP*	Pn	02 17 32.3	+6.2
YSS				pmax	pmax		
	comp=Z,10.0nm,0.4s						
USRK	**Ussuriysk Ar.**	**9.74**	**302**	Pn	**Pn**	**02 17 59.3**	**+0.1**
	comp=Z,0.2nm,0.3s,baz=128,slow=18,SNR=4.5						
JNU	**Nakatsue**	**12.10**	**241**	LR	LR	02 23 38.5	
	comp=Z,130nm,18.4s,baz=115,slow=40						
KSRS	**Korea Array**	**12.43**	**265**	Pn	Pn	02 18 39.5	+3.5
	comp=Z,0.5nm,0.3s,baz=89,slow=12,SNR=4.6						
KSRS				LR	LR	02 23 03.9	
	comp=Z,87nm,19.2s,baz=85,slow=36						
KSAR	**Wonju Array Be**	**12.46**	**265**	P	Pn	02 18 39.5	+3.1
KSAR	**Wonju Array Be**	**12.46**	**265**	Pn	Pn	02 18 39.5	+3.0
KLR	**Kul'dur**	**12.75**	**323**	Pn	**Pn**	**02 18 41.4**	**+1.1**
	comp=Z,0.1nm,0.3s,baz=136,slow=12,SNR=5.2						
KLR				LR	LR	02 23 44.5	
	comp=Z,113nm,18.6s,baz=106,slow=38						
NKL	**Nikolayevsk**	**13.65**	**353**	*eP*	**Pn**	**02 18 52.0**	**-0.5**
MA2	**Magadan**	**20.47**	**11**	P	**P**	**02 20 17.4**	**+0.8**
	comp=Z,4.2nm,0.4s,baz=203,slow=8.8,SNR=9.2						
MA2	**Magadan**	**20.47**	**11**	*eP*	**P**	**02 20 17.2**	**+0.6**
MA2				pmax	pmax		
	comp=Z,7.0nm,0.4s						
MA2	**Magadan**	**20.47**	**11**	*eP*	**P**	**02 20 17.1**	**+0.6**
	comp=Z,6.8nm,0.4s						
SEY	**Seymchan**	**23.92**	**10**	P	**P**	**02 20 53.7**	**+0.9**
	comp=Z,5.9nm,0.9s,baz=180,slow=7.2,SNR=15						
ULN	**Ulaanbaatar**	**27.41**	**300**	*ic iP*	**P**	**02 21 24.5**	**-0.3**
ULN				pmax	pmax		
	comp=Z,4.0nm,1.2s						
SONM	**Songino Array**	**27.85**	**299**	P	**P**	**02 21 27.3**	**-1.4**
	comp=Z,2.3nm,0.7s,baz=83,slow=8.2,SNR=4.8						
H11N2	**WAKE ISLAND Hy**	**28.23**	**128**	T	T	02 51 11.2	
	baz=318						
H11N1	**WAKE ISLAND Hy**	**28.24**	**128**	T	T	02 51 12.7	
	baz=318,slow=74						
H11N3	**WAKE ISLAND Hy**	**28.25**	**128**	T	T	02 51 10.6	
	baz=318,slow=74						
BILL	**Bilibino**	**31.05**	**16**	*eP*	**P**	**02 21 57.4**	**+0.7**
BILL				*e*PP	**sP**	**02 22 05.9**	**+4.4**
BILL				*e*SP	pP	02 22 10.9	+11
BILL				SSS	SSS	02 29 06.0	
BILL				pmax	pmax		
	comp=Z,3.0nm,1.2s						
ZALV	**Zalesovo Beam**	**41.46**	**310**	P	**P**	**02 23 25.8**	**+0.1**
	comp=Z,1.7nm,0.6s,baz=90,slow=8.9,SNR=9.0						
CMAR	**Chiang Mai Arr**	**43.80**	**254**	P	**P**	**02 23 44.9**	**-0.3**
	comp=Z,0.5nm,0.5s,baz=43,slow=7.2,SNR=6.0						

MKAR	**Makanchi Array**	**44.21**	**300**	P	**P**	**02 23 47.8**	**-0.4**
	comp=Z,2.2nm,0.8s,baz=82,slow=9.9,SNR=18						
MKAR				LR	LR	02 43 07.9	
	comp=Z,41nm,18.6s,baz=1.0,slow=37						
KURK	**Kurchatov**	**45.69**	**306**	*eP*	**P**	**02 23 59.3**	**-0.5**
KURK				pmax	pmax		
	comp=Z,7.0nm,0.8s						
KURK	**Kurchatov**	**45.69**	**306**	*eP*	**P**	**02 23 59.3**	**-0.5**
	comp=Z,7.4nm,0.8s						
ILAR	**Eielson Array**	**46.39**	**34**	P	**P**	**02 24 06.0**	**+0.8**
	comp=Z,0.4nm,0.7s,baz=263,slow=6.7,SNR=6.3						
TKM2	**Tokmak 2**	**49.90**	**297**	*eP*	**P**	**02 24 33.1**	**+0.2**
TKM2				pmax	pmax		
	comp=Z,4.0nm,0.6s						
TKM2	**Tokmak 2**	**49.90**	**297**	*eP*	**P**	**02 24 33.1**	**+0.2**
	comp=Z,3.8nm,0.6s						
BVAR	**Borovoye Array**	**50.09**	**311**	P	**P**	**02 24 33.8**	**-0.1**
	comp=Z,1.6nm,0.7s,baz=96,slow=8.0,SNR=9.5						
BRVK	**Borovoye**	**50.15**	**311**	*i* P	**P**	**02 24 33.9**	**-0.4**
BRVK				pmax	pmax		
	comp=Z,2.0nm,0.8s						
AAK	**Ala-Archa**	**50.76**	**297**	*eP*	**P**	**02 24 36.8**	**-2.6**
AAK				pmax	pmax		
	comp=Z,2.0nm,0.8s						
AAK	**Ala-Archa**	**50.76**	**297**	*eP*	**P**	**02 24 37.4**	**-2.0**
	comp=Z,0.4nm,0.5s						
ARU	**Arti**	**55.54**	**318**	*d iP*	**P**	**02 25 14.4**	**+0.3**
ARU						02 27 16.0	
ARU				S	**S**	**02 33 00.4**	**+1.3**
ARU				SS	**SS**	**02 36 41.4**	**-2.0**
ARU				pmax	pmax		
	comp=Z,6.0nm,1.0s						
ABKAR	**Akbulak array**	**57.56**	**310**	*eP*	**P**	**02 25 28.3**	**-0.3**
	comp=Z,2.4nm,0.7s						
AKTO	**Aktyubinsk**	**58.20**	**311**	P	**P**	**02 25 32.5**	**-0.6**
	comp=Z,1.7nm,0.8s,baz=60,slow=13,SNR=8.2						
WRAB	**Tennant Creek**	**59.89**	**190**	*i* P	**P**	**02 25 43.8**	**-1.2**
WRAB				pmax	pmax		
	comp=Z,11nm,0.8s						
YKA	**Yellowknife Ar**	**60.71**	**31**	P	**P**	**02 25 50.8**	**+0.6**
	comp=Z,0.3nm,0.9s,baz=297,slow=6.5,SNR=4.0						
OBN	**Obninsk**	**67.01**	**323**	*eP*	**P**	**02 26 32.3**	**+0.5**
OBN				*ePP	**sP**	**02 26 40.0**	**+3.3**
OBN				*eSP	pP	02 26 46.0	+11
OBN						02 26 59.0	
OBN				pmax	pmax		
	comp=Z,26nm,2.0s						
FINES	**FINESS Array B**	**67.28**	**332**	P	**P**	**02 26 33.5**	**+0.1**
	comp=Z,2.6nm,0.7s,baz=45,slow=5.9,SNR=8.5						
KIV	**Kislovodsk**	**70.46**	**311**	*eP*	**P**	**02 26 54.8**	**+1.1**
KIV				pmax	pmax		
	comp=Z,6.0nm,0.9s						
KBZ	**Khabaz**	**70.47**	**311**	P	**P**	**02 26 54.4**	**+0.8**
	comp=Z,3.1nm,0.8s,baz=36,slow=3.9,SNR=6.1						
NB2	**NORSAR Subarra**	**72.42**	**338**	P	**P**	**02 27 05.0**	**-0.1**
	comp=Z,1.1nm,0.8s,baz=39,slow=6.2						
NOA	**NORSAR Array B**	**72.42**	**338**	P	**P**	**02 27 05.2**	**+0.1**
	comp=Z,1.7nm,0.8s,baz=38,slow=5.9,SNR=7.3						
AKASG	**Malin Array Be**	**73.25**	**323**	P	**P**	**02 27 10.0**	**-0.2**
	comp=Z,0.8nm,0.6s,baz=41,slow=5.7,SNR=6.6						
AKASG	**Malin Array Be**	**73.25**	**323**	P	**P**	**02 27 10.0**	**-0.2**
AKASG				pmax	pmax		
	comp=Z,1.0nm,0.6s						
CLL	**Collm**	**79.65**	**331**	*i* P	**P**	**02 27 44.3**	**-2.1**
CLL	**Collm**	**79.65**	**331**	*i* P	**P**	**02 27 44.3**	**-2.1**
GERES	**GERESS Array B**	**81.36**	**329**	P	**P**	**02 27 55.9**	**+0.1**
	comp=Z,0.3nm,0.6s,baz=40,slow=7.7,SNR=4.1						
DAVOX	**Davos/Dischmat**	**84.54**	**330**	LR	LR	03 12 47.3	
	comp=Z,6.6nm,20.1s,baz=351,slow=41						

IDC ***14*** *02:20:25.8± 6.1, 4.75S× 153.55E, h45km± 52km, mb3.8/6, mb1 4.0/7, mb1mx3.6/41, mbtmp4.1/7, ML2.2/1, MS3.6/3, Ms1 3.6/3, ms1mx2.8/39, Error ellipse: s-maj=42.9km s-min=24.3km az=22.0*
ISCJB ***14*** *02:20:26.3± 0.8, 4.95S± 0.1× 153.50E± 0.10, h56km, mb3.9/9, MS3.9/2, Error ellipse: s-maj=18.1km s-min=11.9km az=145.9*
NEIC ***14*** *02:20:26.7± 2.6, 4.81S× 153.56E, h50km± 21km, mb4.1/4, Error ellipse: s-maj=20.7km s-min=13.3km az=214.0*

ISC 14 02:20:27.3±1.1, 4.8S±0.2× 153.5E±0.1, h56km, n16, σ0§67/15, mb4.0/9, New Ireland region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**7.79**	**234**	*eP*	**Pn**	**02 22 17.8**	**-0.2**
	2.1nm,0.3s,baz=90,slow=17,SNR=3.5						
PMG				S	**Sn**	**02 23 46.1**	**+1.2**
	2.6nm,0.3s,baz=230,slow=6.0,SNR=3.0						
PMG	**Port Moresby**	**7.79**	**234**	*ePn*	**Pn**	**02 22 17.9**	**-0.2**
PMG				*eS*	**Sn**	**02 23 43.9**	**-0.9**
HNR	**Honiara**	**7.84**	**126**	LR	LR	02 25 26.0	
	comp=Z,114nm,19.4s,baz=216,slow=38						
DZM	**Mont Dzumac**	**21.22**	**145**	P	**P**	**02 25 08.7**	**0.0**
	8.6nm,0.6s,baz=323,slow=15,SNR=13						
WRAB	**Tennant Creek**	**23.96**	**230**	*eP*	**P**	**02 25 37.7**	**+1.1**
	4.1nm,0.6s						
WRA	**Warramunga Arr**	**23.98**	**230**	P	**P**	**02 25 37.0**	**+0.3**
	1.6nm,0.5s,baz=55,slow=9.8,SNR=33						
ASAR	**Alice Springs**	**26.62**	**223**	P	**P**	**02 26 01.2**	**+0.4**
	0.4nm,0.3s,baz=58,slow=8.9,SNR=5.3						
FITZ	**Fitzroy Crossi**	**30.29**	**242**	P	**P**	**02 26 32.8**	**-0.6**
	1.7nm,0.5s,baz=67,slow=8.1,SNR=5.6						
FITZ	**Fitzroy Crossi**	**30.29**	**242**	*eP*	**P**	**02 26 33.3**	**-0.1**
	2.9nm,0.8s						
JCJ	**Chichijima**	**33.58**	**342**	LR	LR	02 38 48.0	
	comp=Z,124nm,20.7s,baz=112,slow=33						
RPZ	**Rata Peaks**	**41.71**	**161**	P	**P**	**02 28 10.6**	**0.0**
	5.1nm,0.6s,baz=304,slow=3.6,SNR=5.6						
MKAR	**Makanchi Array**	**80.82**	**319**	P	**P**	**02 32 35.2**	**0.0**
	0.4nm,0.6s,baz=98,slow=7.4,SNR=3.4						
TKM2	**Tokmak 2**	**84.47**	**314**	*eP*	**P**	**02 32 55.1**	**+0.6**
	1.0nm,0.4s						
AAK	**Ala-Archa**	**85.21**	**313**	P	**P**	**02 32 58.7**	**+0.6**
	0.6nm,0.7s						
NEW	**Newport**	**93.13**	**42**	LR	LR	03 10 05.3	
	comp=Z,90nm,19.6s,baz=140,slow=32						
TORD	**Torodi Ar. Bea**	**151.00**	**288**	PKPbc	**PKPbc**	**02 40 14.4**	**-0.7**
	0.6nm,0.5s,baz=91,slow=2.3,SNR=14						

NIED ***14*** *02:24:00, 37.00N× 140.70E, h5km, Mw3.7 Best double couple: M0 4.29000×10^14 NP1:φs146.00000°, δ28.00000°, λ-77.00000°. NP2:φs311.00000°, δ63.00000°, λ-97.00000°.*
ISCJB ***14*** *02:24:08.8± 0.6, 36.91N± 0.02× 140.82E± 0.04, h15km± 4km, mb3.9/16, Error ellipse: s-maj=6.1km s-min=3.6km az=23.6*
IDC ***14*** *02:24:08.7± 0.7, 36.93N× 140.66E, h0km, mb3.9/13, mb1 4.1/14, mb1mx3.9/46, mbtmp3.9/14, ML4.0/1, Error ellipse: s-maj=20.6km s-min=15.1km az=111.0*
JMA ***14*** *02:24:09.9, 36.95N× 140.67E, h7km± 1km, M3.9 Broadband fault plane solution: P waves. NP1: φs284.00000°, δ75.00000°, λ-94.00000°. NP2: φs121.00000°, δ16.00000°, λ-74.00000°. Principal axes: T Plg30.0000°, Azm18.0000°; N Plg4.0000°, Azm286.0000°; P Plg60.0000°, Azm188.0000°;*
JMA Felt II J1.
NEIC ***14*** *02:24:09.7± 0.4, 36.87N× 140.73E, h10km, mb4.2/3 Error ellipse: s-maj=11.0km s-min=7.8km az=109.0*

ISC 14 02:24:09.8±1.0, 36.95N±0.03× 140.66E±0.04, h8km±6km, n42, σ0§69/45, mb3.9/16, 7C, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.19**	**36**	⇑P	**Pg**	**02 24 14.0**	**+0.2**
ONAJ				S	**Sg**	**02 24 16.7**	**+0.2**
JHO	**Hitachi**	**0.34**	**192**	⇑P	**Pg**	**02 24 16.9**	**+0.4**
JHO				S	**Sg**	**02 24 21.2**	**+0.1**
JFK	**Kawauchi**	**0.45**	**23**	⇑P	**Pg**	**02 24 18.6**	**-0.1**
JFK				S	**Sg**	**02 24 24.6**	**-0.1**
JSB	**Shiboa**	**0.59**	**272**	⇑P	**Pb**	**02 24 22.3**	**-0.1**
JSB				S	**Sb**	**02 24 30.6**	**-0.4**
JFT	**Otama**	**0.62**	**336**	⇑P	**Pg**	**02 24 22.1**	**+0.2**
JFT				S	**Sg**	**02 24 30.7**	**+0.6**
JYT	**Yasato**	**0.81**	**208**	P	**Pg**	**02 24 25.3**	**-0.1**
JYT				S	**Sg**	**02 24 36.0**	**+0.1**
JFY	**Yanaizu**	**0.89**	**301**	⇑P	**Pg**	**02 24 27.0**	**+0.1**
JFY				S	**Sg**	**02 24 38.5**	**0.0**
JMM	**Marumori**	**0.92**	**7**	⇑P	**Pg**	**02 24 26.9**	**-0.7**
JMM				S	**Sg**	**02 24 39.4**	**-0.2**
MJAR	**Matsushiro Arr**	**2.01**	**259**	Pn	**Pn**	**02 24 44.9**	**+0.8**
	43nm,0.3s,baz=75,slow=17,SNR=115						
MJAR				Sn	**Sb**	**02 25 10.8**	**-0.9**
	119nm,0.3s,baz=307,slow=14,SNR=21						
MAJO	**Matsushiro**	**2.01**	**259**	*ePn*	**Pn**	**02 24 45.3**	**+1.2**
MAJO				*eS*	**Sb**	**02 25 12.3**	**+0.5**
MAT	**Matsushiro**	**2.01**	**259**	P	**Pb**	**02 24 45.4**	**-1.2**
MAT				S	**Sb**	**02 25 12.2**	**+0.4**
ERM	**Erimo**	**5.42**	**20**	*ePn*	**Pn**	**02 25 30.6**	**-0.2**
ERM				*eS*	**Sn**	**02 26 35.6**	**+2.2**
ASAJ	**Asahikawa**	**7.31**	**11**	Pn	**Pn**	**02 25 57.4**	**+0.5**
	2.3nm,0.3s,baz=216,slow=16,SNR=5.7						
USRK	**Ussuriysk Ar.**	**9.79**	**320**	Pn	Pn	02 26 37.8	+6.9
	0.2nm,0.3s,baz=135,slow=13,SNR=11						
CBIJ	**Chichi jima**	**9.91**	**172**	Pn	Pn	02 26 28.3	-4.3
CBIJ				Sn	**Sn**	**02 28 23.5**	**-0.4**
JCJ	**Chichijima**	**9.91**	**172**	Pn	Pn	02 26 28.3	-4.3
	7.1nm,0.3s,baz=84,slow=21,SNR=7.9						
JCJ				Sn	**Sn**	**02 28 23.5**	**-0.4**
	baz=287,slow=19						
KSRS	**Korea Array**	**10.17**	**277**	Pn	Pn	02 26 41.4	+5.2
	0.2nm,0.3s,baz=90,slow=14,SNR=8.9						
KSAR	**Wonju Array Be**	**10.20**	**277**	Pn	Pn	02 26 41.4	+4.8
SEY	**Seymchan**	**27.00**	**12**	P	**P**	**02 29 52.2**	**+0.4**
	0.9nm,0.3s,baz=149,slow=1.1,SNR=4.6						
H11N2	**WAKE ISLAND Hy**	**28.63**	**120**	T	T	02 59 55.5	
	baz=312,slow=75,SNR=185						
H11N1	**WAKE ISLAND Hy**	**28.64**	**120**	T	T	02 59 54.7	
	baz=312,slow=75,SNR=171						
H11N3	**WAKE ISLAND Hy**	**28.65**	**120**	T	T	02 59 56.9	
	baz=312,slow=75,SNR=156						
H11S1	**WAKE ISLAND Hy**	**29.32**	**122**	T	T	03 00 46.2	
	baz=314,slow=75,SNR=580						
H11S3	**WAKE ISLAND Hy**	**29.33**	**122**	T	T	03 00 46.3	
	baz=314,slow=75,SNR=358						
H11S2	**WAKE ISLAND Hy**	**29.34**	**122**	T	T	03 00 46.5	
	baz=314,slow=75,SNR=379						
ZALV	**Zalesovo Beam**	**41.53**	**312**	P	**P**	**02 31 57.2**	**-0.3**
	0.9nm,0.4s,baz=88,slow=7.0,SNR=4.1						
MKAR	**Makanchi Array**	**43.65**	**302**	P	**P**	**02 32 14.7**	**-0.2**
	0.4nm,0.6s,baz=90,slow=9.5,SNR=4.3						
KURK	**Kurchatov**	**45.51**	**308**	P	**P**	**02 32 29.3**	**-0.3**
	3.5nm,0.7s						
ILAR	**Eielson Array**	**49.89**	**32**	P	**P**	**02 33 02.1**	**-1.3**
	0.6nm,0.6s,baz=271,slow=4.6,SNR=7.0						
FITZ	**Fitzroy Crossi**	**56.56**	**197**	P	**P**	**02 33 53.1**	**+0.2**
	1.3nm,0.7s,baz=17,slow=14,SNR=4.1						
WRAB	**Tennant Creek**	**56.88**	**187**	*eP*	**P**	**02 33 54.6**	**-0.7**
	2.3nm,0.7s						
WRA	**Warramunga Arr**	**56.90**	**187**	P	**P**	**02 33 54.5**	**-0.8**
	3.2nm,0.6s,baz=3.8,slow=7.3,SNR=57						
ABKAR	**Akbulak array**	**57.53**	**310**	*eP*	**P**	**02 33 58.5**	**-1.1**
	0.4nm,0.6s						
ASAR	**Alice Springs**	**60.62**	**187**	P	**P**	**02 34 21.0**	**-0.2**
	1.9nm,0.8s,baz=11,slow=6.4,SNR=19						
ARCES	**ARCESS Array B**	**63.86**	**339**	P	**P**	**02 34 42.7**	**+0.3**
	3.0nm,1.1s,baz=50,slow=8.3,SNR=5.0						
YKA	**Yellowknife Ar**	**64.19**	**30**	P	**P**	**02 34 45.2**	**+0.6**
	0.2nm,0.7s,baz=302,slow=6.6,SNR=5.3						
FINES	**FINESS Array B**	**68.61**	**332**	P	**P**	**02 35 13.0**	**+0.1**
	2.1nm,0.8s,baz=48,slow=5.7,SNR=5.9						
AKASG	**Malin Array Be**	**73.99**	**322**	P	**P**	**02 35 44.9**	**-0.8**
	0.1nm,0.3s,baz=47,slow=6.4,SNR=3.3						
PDAR	**Pinedale Array**	**78.16**	**45**	P	**P**	**02 36 10.7**	**+0.8**
	0.2nm,0.4s,baz=343,slow=0.9,SNR=3.4						
TXAR	**Lajitas Array**	**90.65**	**52**	P	**P**	**02 37 14.2**	**+0.9**
	0.2nm,0.6s,baz=304,slow=2.3,SNR=4.2						
TORD	**Torodi Ar. Bea**	**116.96**	**314**	PKP	**PKPdf**	**02 42 56.3**	**+0.5**
	0.2nm,0.8s,baz=318,slow=5.0,SNR=2.6						
LPAZ	**La Paz**	**147.26**	**59**	PKPbc	**PKPbc**	**02 43 55.5**	**+0.5**
	1.7nm,0.8s,baz=286,slow=3.9,SNR=6.1						

NIED ***14*** *03:04:00, 36.40N× 139.90E, h83km, Mw3.9 Best double couple: M0 7.33000×10^14 NP1:φs4.00000°, δ24.00000°, λ-66.00000°. NP2:φs158.00000°, δ68.00000°, λ-100.00000°.*
ISCJB ***14*** *03:04:05.2± 0.4, 36.44N± 0.04× 139.90E± 0.05, h94km± 3km, mb3.7/15, Error ellipse: s-maj=7.5km s-min=6.0km az=19.9*
IDC ***14*** *03:04:06.8± 1.0, 36.43N× 139.82E, h94km± 11km, mb3.5/15, mb1 3.7/18, mb1mx3.5/45, mbtmp3.8/18, Error ellipse: s-maj=15.9km s-min=9.6km az=73.0*
JMA ***14*** *03:04:06.5± 0.1, 36.42N× 139.85E, h84km± 1km, M3.5 Broadband fault plane solution: P waves. NP1: φs148.00000°, δ66.00000°, λ-104.00000°. NP2:φs0.00000°, δ28.00000°, λ-61.00000°. Principal axes: T Plg20.0000°, Azm249.0000°; N Plg13.0000°, Azm154.0000°; P Plg66.0000°, Azm33.0000°;*
JMA Felt II J1.

ISC 14 03:04:06.2±0.8, 36.44N±0.05× 139.88E±0.06, h89km±6km, n36, σ0§86/38, mb3.7/15, 5D, Eastern Honshu

| Code | Station Name | Δ° | AZ° | Phase ID Op | ISC | Time h

TXAR **Lajitas Array** 91.45 51 P **P** 03 17 03.2 +0.2
0.2nm,0.6s,baz=305,slow=3.2,SNR=3.3

TORD **Torodi Ar. Bea** 116.86 313 PKP **PKPdf** 03 22 39.6 -1.4
0.2nm,0.8s,baz=28,slow=2.3,SNR=2.9

NIED **14** *03:08:00,37.00N×140.80E,h8km,Mw5.0 Best double couple: M◎3.80000×10^16 NP1:φs79.00000°,δ46.00000°, λ-66.00000°. NP2:φs227.00000°,δ49.00000°, λ-113.00000°.*

BJI **14** *03:08:56.7,36.99N×141.04E,h29km,mb4.9/74,mB5.0/53, Ms4.9/81,Ms7 4.7/72*

IDC **14** *03:08:57.8±2.2,37.03N×140.66E,h8km±13km,mb5.1/46, mb1 5.2/50,mb1mx5.1/61,mbtmp5.2/50,ML4.4/4,MS4.2/37, Ms1 4.2/37,ms1mx4.1/56,Error ellipse: s-maj=9.8km s-min=8.1km az=106.0*

NEIC **14** *03:08:58.0±0.1,36.99N×140.60E,h10km,mb5.4/241, Error ellipse: s-maj=2.8km s-min=2.0km az=135.0*

NEIC Felt at Aizubange, Narita and Utsunomiya. Recorded [4 JMA] in Fukushima and Ibaraki.

JMA **14** *03:08:58.3,36.98N×140.77E,h11km±1km,M5.4 Broadband fault plane solution: P waves. NP1: φs102.00000°,δ60.00000°,λ-56.00000°. NP2: φs228.00000°,δ44.00000°,λ-135.00000°. Principal axes: T Plg9.0000°, Azm168.0000°; N Plg29.0000°, Azm263.0000°; P Plg59.0000°, Azm63.0000°;*

JMA Felt IV J1.

ISCJB **14** *03:08:58.3±0.3,37.02N±0.02×140.69E±0.02,h20km±2km, mb5.3/373,MS4.5/139 Error ellipse: s-maj=2.8km s-min=2.0km az=144.6*

GCMT **14** *03:08:58.0±0.2,37.02N×140.74E,h12km,MW5.1/91, Moment Tensor Solution. s60,c97; s91,c165; Duration: 0 Moment tensor: Scale 10^16Nm; Mrr-3.61±.09; Mθθ3.70±.08; Mφφ-0.09±.09; Mrθ-0.35±.21; Mθφ2.02±.07; Mφr3.21±.27; Best double couple: M◎5.20900×10^16 NP1:φs216.00000°,δ61.00000°,λ-127.00000°. NP2: φs94.00000°,δ46.00000°,λ-43.00000°. Principal axes: T 4.7120, Plg8.0000°, Azm332.0000°; N 0.9920, Plg32.0000°, Azm237.0000°; P -5.7050, Plg57.0000°, Azm75.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

MOS **14** *03:08:58.8±0.9,37.15N×140.65E,h21km,mb5.6/142, MS4.4/53 Error ellipse: s-maj=6.0km s-min=3.7km az=102.3*

ISC 14 03:08:58.8±0.4,37.02N±0.02×140.78E±0.03,h17km±2km, h17km:pP-P,n1369,σ1.925/1412,mb5.4/380,MS4.5/140, 52C-71D,Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res	ISC
ONAJ	**Iwakimizuishiy**	**0.08**	**8**	⇑P			**Pg**	**03 09 01.4**	**-0.8**	
ONAJ				S			**Sg**	**03 09 03.6**	**-0.9**	
JFK	**Kawauchi**	**0.35**	**12**	⇑P			**Pg**	**03 09 06.0**	**-0.2**	
JFK				S			**Sb**	**03 09 12.1**	**+0.2**	
JHO	**Hitachi**	**0.45**	**203**	⇑P			**Pg**	**03 09 06.3**	**-1.5**	
JHO				S			**Sg**	**03 09 11.9**	**-2.0**	
JFT	**Otama**	**0.61**	**324**	⇑P			**Pg**	**03 09 10.7**	**-0.2**	
JFT				S			**Sb**	**03 09 19.5**	**+0.1**	
JSB	**Shiboa**	**0.69**	**266**	⇑P			**Pg**	**03 09 12.1**	**-0.3**	
JSB				S			**Sb**	**03 09 21.6**	**-0.2**	
JMM	**Marumori**	**0.84**	**0**	⇑P			**Pb**	**03 09 14.7**	**-0.3**	
JMM				S			**Sg**	**03 09 26.7**	**+0.3**	
JYT	**Yasato**	**0.92**	**211**	⇑P			**Pb**	**03 09 14.7**	**-1.7**	
JYT				S			**Sb**	**03 09 27.4**	**-0.9**	
MJAR	**Matsushiro Arr**	**2.12**	**258**	Pn			**Pn**	**03 09 34.0**	**+0.5**	
	299nm,0.3s,baz=91,slow=14,SNR=519									
MJAR				Lg			Lg	03 10 02.2		
	393nm,0.3s,baz=78,slow=31,SNR=16									
MAJO	**Matsushiro**	**2.12**	**258**	*e*P			**Pb**	**03 09 35.7**	**-1.2**	
MAJO				*e*				03 09 58.5		
MAJO	**Matsushiro**	**2.12**	**258**	*e*Pn			**Pb**	**03 09 35.6**	**-1.2**	
MAJO				*e*Sn			**Sn**	**03 09 58.5**	**-1.1**	
MAT	**Matsushiro**	**2.12**	**258**	P			**Pn**	**03 09 34.8**	**+1.3**	
MAT				S			**Sb**	**03 10 03.1**	**+0.2**	
MJB9	**Matsu-Tunnel**	**2.12**	**258**	*e*Pn			**Pn**	**03 09 34.9**	**+1.3**	
MJB9				*e*Sn			**Sn**	**03 09 58.1**	**-1.5**	
INU	**Inuyama**	**3.48**	**242**	*e*Pn			**Pn**	**03 09 54.3**	**+2.3**	
INU				*e*Sn			Sn	03 10 24.4	-8.4	
JHJ	**Hachijo jima 2**	**3.98**	**192**	Pn			**Pn**	**03 09 59.7**	**+0.6**	
	70nm,0.3s,baz=86,slow=20,SNR=24									
JHJ				Sn			**Sn**	**03 10 46.6**	**+1.3**	
	266nm,0.3s,baz=60,slow=20,SNR=4.8									
JHJ				LR			LR	03 11 48.7		
	comp=Z,4μm,19.5s,baz=62,slow=43									
JHJ2	**Mitsune**	**3.98**	**192**	*e*Pn			**Pn**	**03 09 58.8**	**-0.3**	
JHJ2				*e*Sn			**Sn**	**03 10 43.0**	**-2.3**	
ERM	**Erimo**	**5.31**	**19**	*e*P			**Pn**	**03 10 17.2**	**-0.1**	
ERM				*e*				03 11 12.9		
ERM	**Erimo**	**5.31**	**19**	*e*Pn			**Pn**	**03 10 17.2**	**-0.1**	
ERM				*e*Sn			**Sn**	**03 11 12.9**	**-5.2**	
ASAJ	**Asahikawa**	**7.22**	**10**	Pn			**Pn**	**03 10 43.9**	**+0.3**	
	13nm,0.3s,baz=222,slow=9.3,SNR=64									
ASAJ				Sn			**Sn**	**03 12 08.1**	**+3.0**	
	3.3nm,0.3s,baz=267,slow=29,SNR=3.7									
ASAJ				LR			LR	03 14 20.7		
	comp=Z,966nm,18.4s,baz=279,slow=45									
ASAJ	**Asahikawa**	**7.22**	**10**	*e*Pn			**Pn**	**03 10 43.8**	**+0.3**	
ASAJ				*e*Sn			**Sn**	**03 12 05.2**	**+0.1**	
YUK	**Yuzh-Kuril'sk**	**8.00**	**27**	*e*P			**Pn**	**03 10 53.9**	**-0.3**	
YUK				*i* S			**Sn**	**03 12 19.8**	**-4.4**	
YUK					pmax	pmax				
	comp=Z,446nm,0.7s									
YUK					pmax	pmax				
	comp=E,196nm,0.4s									
YUK					pmax	pmax				
	comp=N,309nm,0.7s									
YUK					MLR	MLR				
	comp=Z,3μm,14.0s									
YUK					MLR	MLR				
	comp=E,3μm,13.0s									
YUK					MLR	MLR				
	comp=N,4μm,14.0s									
SHO	**Shikotan**	**8.25**	**32**	*e*P			**Pn**	**03 10 55.9**	**-1.7**	
SHO				*i* S			Sn	03 12 23.2	-7.1	
SHO					pmax	pmax				
	comp=N,115nm,0.7s									
SHO					pmax	pmax				
	comp=Z,270nm,0.7s									
SHO					pmax	pmax				
	comp=E,161nm,0.8s									
JNU	**Nakatsue**	**9.00**	**247**	Pn			**Pn**	**03 11 10.4**	**+2.3**	
	comp=E,1.7nm,0.3s,baz=51,slow=8.9,SNR=22									
JNU	**Nakatsue**	**9.00**	**247**	*e*Pn			**Pn**	**03 11 09.5**	**+1.4**	
KUR	**Kuril'sk**	**9.79**	**31**	*e*P			**Pn**	**03 11 17.9**	**-0.8**	
KUR				*i* S			**Sn**	**03 13 02.8**	**-5.3**	
KUR					pmax	pmax				
	comp=Z,249nm,0.5s									
KUR					pmax	pmax				
	comp=E,116nm,0.3s									
KUR					pmax	pmax				
	comp=N,114nm,0.4s									
USRK	**Ussuriysk Ar.**	**9.80**	**320**	Pn			Pn	03 11 24.1	+5.2	
	comp=N,2.4nm,0.3s,baz=135,slow=13,SNR=104									
USRK				LR			LR	03 15 02.1		
	comp=N,935nm,18.6s,baz=126,slow=37									
CBIJ	**Chichi jima**	**9.97**	**173**	*e*Pn			**Pn**	**03 11 19.3**	**-2.0**	
CBIJ				*e*Sn			Sn	03 13 01.8	-11	
JCJ	**Chichijima**	**9.97**	**173**	Pn			Pn	03 11 17.4	-3.9	
	baz=341,slow=7.3									
JCJ				Sn			Sn	03 13 00.2	-13	
	comp=N,22nm,0.3s,baz=287,slow=19,SNR=5.3									
YSS	**Yuzh-Sakhalins**	**10.03**	**8**	⇓*i*P			**Pn**	**03 11 21.8**	**-0.2**	
YSS				*i* S			**Sn**	**03 13 15.0**	**+0.9**	
YSS					pmax	pmax				
	comp=Z,190nm,0.9s									
YSS					pmax	pmax				
	comp=Z,600nm,5.8s									
YSS					MLR	MLR				
	comp=Z,2μm,14.0s									
YSS					MLR	MLR				
	comp=N,4μm,17.0s									
YSS					MLR	MLR				
	comp=E,3μm,18.0s									
YSS	**Yuzh-Sakhalins**	**10.03**	**8**	*e*Pn			**Pn**	**03 11 21.9**	**-0.1**	
KSRS	**Korea Array**	**10.27**	**276**	Pn			Pn	03 11 30.9	+5.6	
	comp=E,1.1nm,0.3s,baz=92,slow=13,SNR=88									
KSRS				PcP			**PcP**	**03 17 33.2**	**+0.7**	
	comp=E,0.3nm,0.3s,baz=78,slow=0.6,SNR=4.1									
KS01	**Wonju Array Si**	**10.29**	**276**	*e*Pn			Pn	03 11 30.5	+4.9	
KS01				*e*Sn			**Sn**	**03 13 16.3**	**-4.2**	
KS15	**Wonju Array Si**	**10.30**	**276**	*e*Pn			Pn	03 11 31.7	+6.0	
KSAR	**Wonju Array Be**	**10.30**	**276**	P			Pn	03 11 30.9	+5.2	
KSAR	**Wonju Array Be**	**10.30**	**276**	Pn			Pn	03 11 30.9	+5.2	
KSAR				PcP			**PcP**	**03 17 33.2**	**+0.7**	
INCN	**Inchon**	**11.29**	**277**	*e*Pn			Pn	03 11 44.9	+5.6	
MDJ	**Mudanjiang**	**11.37**	**315**	P			**Pn**	**03 11 42.8**	**+2.4**	
MDJ				S			**Sn**	**03 13 46.8**	**-0.2**	
MDJ					pmax	pmax				
	comp=E,17nm,2.0s									
MDJ					pmax	pmax				
	comp=E,910nm,5.6s									
MDJ					LR	LR				
	comp=E,2μm,23.4s									
MDJ					LR	LR				
	comp=E,1μm,20.7s									
MDJ					LR	LR				
	comp=E,2μm,20.7s									
MDJ	**Mudanjiang**	**11.37**	**315**	*e*Pn			Pn	03 11 45.4	+5.0	
UGL	**Uglegorsk**	**12.09**	**4**	P			Pn	03 11 42.0	-8.1	
UGL					pmax	pmax				
	comp=Z,73nm,0.5s									
UGL					MLR	MLR				
	comp=Z,2μm,16.0s									
UGL					MLR	MLR				
	comp=N,2μm,15.0s									
UGL					MLR	MLR				
	comp=E,2μm,14.0s									
HABR	**Khabarovsk**	**12.19**	**342**	*de*P			**Pn**	**03 11 49.2**	**-2.3**	
HABR				*e*S			**Sn**	**03 14 03.0**	**-4.0**	
HABR					pmax	pmax				
	comp=Z,38nm,1.2s									
HABR					MLR	MLR				
	comp=Z,2μm,14.0s									
CN2	**Changchun**	**13.49**	**305**	*e*P			**Pn**	**03 12 12.1**	**+2.7**	
CN2				*es*P			P	03 12 20.1	+1.5	
CN2				*e*S			**Sn**	**03 14 41.3**	**+2.4**	
CN2					pmax	pmax				
	comp=Z,30nm,1.2s									
CN2					pmax	pmax				
	comp=Z,200nm,10.0s									
CN2					LR	LR				
	comp=Z,3μm,15.0s									
CN2					LR	LR				
	comp=Z,2μm,15.0s									
CN2					LR	LR				
	comp=Z,2μm,14.0s									
KLR	**Kul'dur**	**13.86**	**335**	Pn			**Pn**	**03 12 15.5**	**+1.2**	
	comp=Z,0.3nm,0.3s,baz=128,slow=12,SNR=15									
KLR					LR		LR	03 17 17.8		
	comp=E,858nm,21.0s,baz=136,slow=36									
TYV	**Tymovskoe**	**13.90**	**5**	*e*P			**Pn**	**03 12 14.8**	**-0.1**	
TYV				*e*				03 14 46.0		
TYV					pmax	pmax				
	comp=Z,500nm,5.0s									
TYV					pmax	pmax				
	comp=Z,136nm,0.8s									
TYV					MLR	MLR				
	comp=E,5μm,14.0s									
TYV					MLR	MLR				
	comp=Z,2μm,14.0s									
SNY	**Shenyang**	**14.13**	**295**	⇑P			**Pn**	**03 12 21.0**	**+2.9**	
SNY				S			Sn	03 15 01.8	+7.3	
SNY					pmax	pmax				
	comp=Z,420nm,2.5s									
SNY					pmax	pmax				
	comp=Z,380nm,5.3s									
SNY					LR	LR				
	comp=Z,5μm,12.4s									
SNY					LR	LR				
	comp=Z,3μm,15.5s									
SNY					LR	LR				
	comp=Z,4μm,13.9s									
DL2	**Dalian**	**15.23**	**283**	⇓P			**Pn**	**03 12 34.8**	**+1.8**	
DL2				S			Sn	03 15 28.5	+7.3	
DL2					pmax	pmax				
	comp=Z,58nm,1.5s									
DL2					pmax	pmax				
	comp=Z,410nm,7.4s									
DL2					LR	LR				
	comp=Z,3μm,14.4s									
DL2					LR	LR				
	comp=Z,2μm,15.6s									
DL2					LR	LR				
	comp=Z,2μm,11.5s									
NKL	**Nikolayevsk**	**16.13**	**360**	*e*P			**Pn**	**03 12 41.0**	**-3.5**	
NKL				*e*S			**S**	**03 15 50.0**	**-6.0**	
NKL					pmax	pmax				
	comp=N,10.0nm,1.1s									
NKL					pmax	pmax				
	comp=Z,30nm,1.1s									
NKL					smax	smax				
	comp=E,450nm,6.0s									
NKL					MLR	MLR				
	comp=N,2μm,16.0s									
NKL					MLR	MLR				
	comp=E,2μm,16.0s									
NKL					MLR	MLR				
	comp=Z,4μm,14.0s									
SSE	**Sheshan**	**17.27**	**256**	⇑P			**P**	**03 13 01.6**	**+1.1**	
SSE				PP			PnPn	03 13 16.3	+7.2	
SSE				S			**Sn**	**03 16 14.6**	**+3.7**	
SSE				sS			**sS**	**03 16 25.8**	**-1.5**	
SSE					pmax	pmax				
	comp=Z,18nm,0.6s									
SSE					pmax	pmax				
	comp=Z,320nm,4.2s									
SSE					LR	LR				
	comp=Z,1μm,19.6s									
SSE					LR	LR				
	comp=Z,960nm,19.6s									
SSE					LR	LR				
	comp=Z,1μm,16.9s									
SKR	**Severo-Kuril's**	**17.52**	**34**	*e*P			Pn	03 12 55.0	-7.1	
SKR					pmax	pmax				
	comp=E,80nm,0.6s									
SKR					pmax	pmax				
	comp=Z,80nm,0.6s									
NJ2	**Nanjing**	**18.72**	**261**	*e*P			**P**	**03 13 16.1**	**-0.4**	
NJ2				pP			**pP**	**03 13 20.6**	**-0.8**	
NJ2				S			**Sn**	**03 16 46.1**	**+0.1**	
NJ2				sS			**sS**	**03 16 55.3**	**-1.5**	
NJ2					pmax	pmax				
	comp=Z,25nm,0.5s									
NJ2					pmax	pmax				
	comp=Z,460nm,11.8s									
NJ2					LR	LR				
	comp=Z,2μm,13.9s									
NJ2					LR	LR				
	comp=Z,2μm,16.6s									
NJ2					LR	LR				
	comp=Z,2μm,14.4s									
TIA	**Tai'an**	**19.00**	**275**	⇑P			**P**	**03 13 18.8**	**-0.8**	
TIA				S			**S**	**03 16 54.3**	**-0.5**	
TIA					pmax	pmax				
	comp=Z,50nm,1.1s									
TIA					LR	LR				
	comp=Z,1μm,9.6s									
TIA					LR	LR				
	comp=Z,2μm,13.8s									
TIA					LR	LR				
	comp=Z,2μm,14.2s									
BJI	**Beijing**	**19.47**	**286**	P			**P**	**03 13 24.9**	**+0.2**	
BJI				S			**Sn**	**03 17 00.6**	**-3.4**	
BJI				sS			**sS**	**03 17 11.6**	**-0.1**	
BJI					pmax	pmax				
	comp=Z,41nm,1.1s									
BJI					LR	LR				
	comp=Z,1μm,11.6s									
BJI					LR	LR				
	comp=Z,1μm,12.4s									
BJT	**Baijiatuau**	**19.48**	**286**	*e*P			**P**	**03 13 23.3**	**-1.5**	
BJT					pmax	pmax				
	comp=Z,71nm,1.2s									
BJT	**Baijiatuau**	**19.48**	**286**	*e*P			**P**	**03 13 23.3**	**-1.5**	
BJT				*e*S			**S**	**03 17 07.8**	**+3.6**	
PEA0	**Petropavlovsk-**	**19.95**	**31**	*e*P			**P**	**03 13 30.6**	**+0.8**	
PEA0B	**Petropavlovsk-**	**19.95**	**31**	*e*P			**Pn**	**03 13 31.6**	**0.0**	
	comp=Z,193nm,1.2s									
PETK	**Petropavlovsk-**	**19.95**	**31**	P			**P**	**03 13 30.3**	**+0.4**	
	comp=Z,0.4nm,0.3s,baz=205,slow=6.6,SNR=22									
PET	**Petropavlovsk**	**20.29**	**32**	*e*P			**P**	**03 13 33.2**	**-0.3**	
PET				*e*S			**S**	**03 17 14.0**	**-6.3**	
PET					pmax	pmax				
	comp=Z,600nm,10.6s									
PET					pmax	pmax				
	comp=Z,157nm,1.4s									
PET					pmax	pmax				
	comp=Z,1μm,8.6s									
PET					MLR	MLR				
	comp=Z,2μm,17.0s									
PET					MLR	MLR				
	comp=Z,1μm,15.0s									
PET	**Petropavlovsk**	**20.29**	**32**	*e*P			**P**	**03 13 34.0**	**+0.5**	
	comp=Z,412nm,1.6s									
PET					LR	LR				
	comp=Z,908nm,19.0s									
TATO	**Taipei**	**20.39**	**239**	PFAKE				03 13 50.0	+13	
TATO					LR	LR				
	comp=Z,525nm,19.0s									
YHNB	**Yeheng**	**20.67**	**239**	*e*P			Pn	03 13 41.2	+0.9	
	comp=Z,20nm,0.8s									
YHNB					LR	LR				
	comp=Z,556nm,19.0s									
SSLB	**Suanglung**	**21.54**	**238**	*e*P			**P**	**03 13 45.0**	**-2.4**	
	comp=Z,16nm,0.9s									
YULB	**Yu-li**	**21.58**	**236**	*e*P			**P**	**03 13 46.7**	**-1.0**	
	comp=Z,12nm,0.7s									
TPUB	**Ta-pu**	**22.09**	**237**	*e*P			**P**	**03 13 52.0**	**-1.2**	
	comp=Z,49nm,0.9s									
QZH	**Quanzhou**	**22.45**	**244**	*e*P			**P**	**03 13 58.8**	**+1.8**	
QZH				S			**S**	**03 17 58.3**	**-4.6**	
QZH					LR	LR				
	comp=Z,2μm,10.9s									
QZH					LR	LR				
	comp=Z,2μm,12.6s									
QZH					LR	LR				
	comp=Z,3μm,12.8s									
CLNS	**Chul'man**	**22.49**	**337**	*e*P			**P**	**03 13 54.7**	**-2.5**	
CLNS				*e**PP			**pP**	**03 14 02.5**	**+0.4**	
CLNS				*e*S			S	03 17 53.9	-9.3	
CLNS				*e*SS			**SnSn**	**03 18 41.7**	**+10**	
CLNS					pmax	pmax				
	comp=Z,66nm,1.0s									
CLNS					pmax	pmax				
	comp=N,37nm,1.0s									
CLNS					pmax	pmax				
	comp=E,14nm,0.9s									
CLNS					pmax	pmax				
	comp=Z,27nm,0.9s									
CLNS					pmax	pmax				
	comp=N,44nm,1.0s									
CLNS					pmax	pmax				
	comp=E,10.0nm,0.8s									
CLNS					smax	smax				
	comp=N,134nm,9.4s									
CLNS					smax	smax				
	comp=E,419nm,12.9s									
CLNS					MLR	MLR				
	comp=Z,1μm,12.0s									
CLNS					MLR	MLR				
	comp=N,1μm,11.0s									
CLNS					MLR	MLR				
	comp=E,1μm,13.0s									
WHN	**Wuhan**	**22.86**	**261**	P			**P**	**03 14 00.6**	**-0.7**	
WHN				S			S	03 17 58.8	-11	
WHN				LR			LR			
	comp=E,4μm,14.7s									
WHN				LR			LR			
	comp=E,5μm,11.5s									
WHN				LR			LR			
	comp=E,7μm,12.9s									
HHC	**Hu-ho-hao-te**	**23.00**	**289**	*e*P			**P**	**03 14 02.1**	**-0.7**	
HHC				pP			pP	03 14 08.4	+0.7	
HHC				sP			sP	03 14 12.5	+2.6	
HHC				PP			**PnPn**	**03 14 32.1**	**+4.5**	
HHC				S			S	03 18 03.9	-8.7	
HHC					pmax	pmax				
	comp=E,15nm,0.9s									
HHC					pmax	pmax				
	comp=E,100nm,4.1s									
HHC					LR	LR				
	comp=E,740nm,12.0s									
HHC					LR	LR				
	comp=E,830nm,11.0s									
HHC					LR	LR				
	comp=E,620nm,11.2s									
MA2	**Magadan**	**23.47**	**13**	P			**P**	**03 14 06.6**	**-0.6**	
	comp=E,130nm,0.8s,baz=220,slow=10.0,SNR=111									
MA2	**Magadan**	**23.47**	**13**	P			**P**	**03 14 06.6**	**-0.6**	
MA2					LR	LR				
	comp=Z,802nm,21.0s									
GUMO	**Guam**	**23.62**	**170**	*e*P			**P**	**03 14 07.1**	**-1.9**	
GUMO					pmax	pmax				
	comp=Z,511nm,1.4s									
GUMO					MLR	MLR				
	comp=Z,1μm,20.0s									
GUMO	**Guam**	**23.62**	**170**	*e*P			**P**	**03 14 07.1**	**-1.9**	
	comp=Z,511nm,1.4s									
GUMO					LR	LR				
	comp=Z,1μm,20.0s									
YAK	**Yakutsk**	**25.97**	**348**	P			**P**	**03 14 29.4**	**-0.8**	
	comp=Z,160nm,0.7s,baz=207,slow=2.1,SNR=32									
YAK					LR	LR		03 24 49.9		
	comp=Z,694nm,18.8s,baz=138,slow=37									
YAK	**Yakutsk**	**25.97**	**348**	*d*P			**P**	**03 14 29.4**	**-0.8**	
YAK				*e**PP			**sP**	**03 14 37.0**	**-0.5**	
YAK				*e*PPP			PPP	03 15 14.9		
YAK				*e*				03 17 58.6		
YAK				*e*S			**S**	**03 18 56.3**	**-3.5**	
YAK				*e*SSS			SSS	03 20 06.7		
YAK				*e*				03 25 24.4		
YAK					pmax	pmax				
	comp=N,141nm,1.2s									
YAK					pmax	pmax				
	comp=Z,329nm,1.1s									
YAK					pmax	pmax				
	comp=E,68nm,1.1s									
YAK					pmax	pmax				
	comp=Z,65nm,1.1s									
YAK					pmax	pmax				
	comp=E,134nm,1.6s									
YAK					pmax	pmax				
	comp=N,153nm,1.6s									
YAK					smax	smax				
	comp=N,568nm,1.5s									
YAK					smax	smax				
	comp=E,329nm,1.4s									
YAK					MLR	MLR				
	comp=E,2μm,18.0s									
YAK					MLR	MLR				
	comp=Z,2μm,13.0s									
YAK					MLR	MLR				
	comp=N,1μm,12.0s									
YAK	**Yakutsk**	**25.97**	**348**	*e*P			**P**	**03 14 29.7**	**-0.5**	
	comp=N,243nm,0.9s									
XAN	**Xi'an**	**26.04**	**273**	P			**P**	**03 14 33.0**	**+1.8**	
XAN				pP			sP	03 14 40.0	+1.5	
XAN				S			S	03 18 51.4	-10	
XAN					pmax	pmax				
	comp=N,10.0nm,1.1s									
XAN					pmax	pmax				
	comp=N,140nm,5.8s									
XAN					LR	LR				
	comp=N,1μm,16.5s									
XAN					LR	LR				
	comp=N,720nm,15.5s									
XAN					LR	LR				
	comp=N,1μm,13.6s									
ENH	**Enshi**	**26.83**	**265**	*e*P			**P**	**03 14 36.7**	**-1.7**	
	comp=N,39nm,0.7s									
ENH				*e*PcP			**PcP**	**03 18 01.7**	**+0.9**	
ENH					LR	LR				
	comp=Z,1μm,20.0s									
SEY	**Seymchan**	**26.90**	**12**	P			**P**	**03 14 39.3**	**+0.7**	
	comp=Z,133nm,1.0s,baz=208,slow=7.4,SNR=82									
ULN	**Ulaanbaatar**	**26.95**	**304**	*e*P			**P**	**03 14 38.5**	**-0.9**	
ULN				*e*				03 18 01.5		
ULN					pmax	pmax				
	comp=Z,35nm,1.1s									
ULN					MLR	MLR				
	comp=Z,347nm,20.0s									
ULN	**Ulaanbaatar**	**26.95**	**304**	*e*P			**P**	**03 14 38.5**	**-0.9**	
	comp=Z,35nm,1.1s									
ULN				*e*PcP			**PcP**	**03 18 01.5**	**+0.6**	
ULN					LR	LR				
	comp=Z,347nm,20.0s									
ULN	**Ulaanbaatar**	**26.95**	**304**	P	

BOD pmax pmax
comp=Z,30nm,1.4s
SONA1 Songino Array 27.37 304 *e*P **P** **03 14 41.9 -1.3**
SONA1 *e*PcP **PcP** **03 18 02.5 +0.6**
SONM Songino Array 27.37 304 P **P** **03 14 41.7 -1.5**
comp=Z,15nm,0.7s,baz=108,slow=7.4,SNR=36
SONM PcP **PcP** **03 18 02.3 +0.4**
comp=Z,10nm,0.7s,baz=116,slow=2.7,SNR=12
SONM LR LR 03 25 27.6
comp=Z,480nm,19.6s,baz=92,slow=36
GZH Guangzhou 27.40 247 P **P** **03 14 38.9 -4.5**
GZH S S 03 19 11.5 -11
GZH pmax pmax
comp=Z,180nm,4.5s
H11N2 WAKE ISLAND Hy 28.58 120 T T 03 44 41.6
baz=313,slow=75,SNR=5858
H11N1 WAKE ISLAND Hy 28.58 120 T T 03 44 39.6
baz=313,slow=75,SNR=6609
H11N3 WAKE ISLAND Hy 28.59 120 T T 03 44 42.8
baz=313,slow=75,SNR=4812
H11S1 WAKE ISLAND Hy 29.28 122 T T 03 45 34.2
baz=314,slow=76,SNR=6560
H11S3 WAKE ISLAND Hy 29.28 122 T T 03 45 34.3
baz=314,slow=76,SNR=5911
H11S2 WAKE ISLAND Hy 29.29 122 T T 03 45 35.4
baz=314,slow=76,SNR=6835
LZH Lanzhou 29.57 279 *e*P **P** **03 15 04.8 +1.9**
LZH pP sP 03 15 10.1 -0.2
LZH sP pP 03 15 13.5 +5.4
LZH S **S** **03 20 02.1 +4.7**
LZH sS sS 03 20 13.0 +7.1
LZH SS **SnSn** **03 21 33.0 +7.5**
LZH pmax pmax
comp=Z,37nm,1.0s
LZH pmax pmax
comp=Z,130nm,4.7s
LZH LR LR
comp=Z,2µm,13.5s
LZH LR LR
comp=Z,2µm,15.0s
LZH LR LR
comp=Z,2µm,15.7s
ZAK Zakamensk 29.88 309 *e*P **P** **03 15 02.7 -2.8**
ZAK pmax pmax
comp=Z,11nm,1.3s
TLY Talaya 29.96 311 P **P** **03 15 05.1 -1.0**
comp=Z,10nm,0.8s,baz=128,slow=4.8,SNR=13
TLY PcP **PcP** **03 18 08.6 +0.5**
comp=Z,11nm,0.8s,baz=63,slow=2.3,SNR=9.0
TLY LR LR 03 27 19.7
comp=Z,694nm,18.6s,baz=106,slow=37
TLY Talaya 29.96 311 *e*P **P** **03 15 06.8 +0.8**
TLY *e* 03 16 11.4
TLY *e*S **S** **03 20 01.5 -1.3**
TLY *e*SS **SnSn** **03 21 36.8 +2.4**
TLY *e*SSS SSS 03 21 50.7
TLY pmax pmax
comp=Z,17nm,0.8s
TLY MLR MLR
comp=Z,960nm,16.0s
TLY Talaya 29.96 311 *e*P **P** **03 15 05.0 -1.0**
comp=Z,16nm,0.9s
TLY *e*PcP **PcP** **03 18 09.2 +1.1**
TLY Talaya 29.96 311 P **P** **03 15 05.6 -0.4**
SNR=11
TLY Talaya 29.96 311 P **P** **03 15 05.6 -0.4**
SNR=11
GYA Guiyang 30.72 260⇑ *i*P **P** **03 15 14.3 +1.2**
GYA pP sP 03 15 22.0 +1.5
GYA PP **PnPn** **03 16 16.4 +3.4**
GYA PcP **PcP** **03 18 13.8 +3.1**
GYA S **S** **03 20 15.6 +0.1**
GYA ScP **ScP** **03 21 52.9 +0.4**
GYA ScS **ScS** **03 25 48.0 -1.3**
GYA pmax pmax
comp=Z,30nm,0.8s
GYA pmax pmax
comp=Z,140nm,5.0s
GYA LR LR
comp=Z,730nm,16.5s
GYA LR LR
comp=Z,690nm,17.1s
GYA LR LR
comp=Z,710nm,16.6s
CD2 Chengdu 31.17 270 P **P** **03 15 15.8 -1.2**
CD2 sP sP 03 15 26.0 +1.7
CD2 PP **PP** **03 16 26.0 -1.3**
CD2 S **S** **03 20 20.3 -2.0**
CD2 sS sS 03 20 32.4 +1.6
CD2 pmax pmax
comp=Z,20nm,0.5s
CD2 pmax pmax
comp=Z,60nm,3.9s
CD2 LR LR
comp=Z,2µm,14.4s
CD2 LR LR
comp=Z,2µm,13.2s
MOY Mondy 31.56 310 *e*P **P** **03 15 21.2 +0.9**
GTA Gaotai 32.09 287 *e*P **P** **03 15 23.8 -1.2**
GTA pP pP 03 15 30.9 +0.7
GTA sP sP 03 15 34.3 +1.9
GTA PcP **PcP** **03 18 15.4 +1.2**
GTA S **S** **03 20 31.8 -4.8**
GTA pmax pmax
comp=Z,4.0nm,0.6s
GTA pmax pmax
comp=Z,45nm,5.2s
GTA LR LR
comp=Z,990nm,15.2s
GTA LR LR
comp=Z,570nm,11.4s
GTA LR LR
comp=Z,710nm,11.9s
QIZ Qiongzhong 32.47 245 P **P** **03 15 30.4 +2.0**
QIZ S **S** **03 20 48.3 +5.8**
QIZ LR LR
comp=Z,240nm,13.1s
QIZ LR LR
comp=Z,410nm,15.3s
DAV Davao City (W) 32.88 209 LR LR 03 27 38.7
comp=Z,404nm,20.3s,baz=37,slow=34
BILL Bilibino 34.18 17*d i*P **P** **03 15 42.7 -0.1**
BILL *i* 03 15 47.0
BILL *i* 03 17 01.7
BILL *e*PPP PPP 03 17 10.4
BILL *i* 03 18 20.6
BILL *e*S **S** **03 21 02.9 -5.3**
BILL SS **SnSn** **03 23 20.0 +3.5**
BILL *e*SSS SSS 03 23 44.9
BILL pmax pmax
comp=Z,81nm,1.2s
BILL MLR MLR
comp=Z,352nm,15.0s
BILL Bilibino 34.18 17 *e*P **P** **03 15 42.8 0.0**
comp=Z,56nm,1.0s
BILL *e*PcP **PcP** **03 18 20.9 +1.6**
BILL LR LR
comp=Z,228nm,20.0s
KMI Kunming 34.46 261 P **P** **03 15 46.3 +0.3**
KMI pP pP 03 15 51.4 +0.2
KMI sP sP 03 15 53.8 +0.4
KMI S **S** **03 21 09.8 -4.1**
KMI pmax pmax
comp=Z,23nm,0.6s
KMI pmax pmax
comp=Z,120nm,3.6s
KMI LR LR
comp=Z,750nm,15.0s
KMI LR LR
comp=Z,870nm,13.4s
KMI LR LR
comp=Z,1µm,15.0s
TIXI Tiksi 35.24 353 P **P** **03 15 51.6 -0.4**
comp=Z,26nm,0.7s,baz=147,slow=7.5,SNR=68
TIXI PcP **PcP** **03 18 23.1 +0.8**
comp=Z,3.3nm,0.7s,baz=118,slow=2.3,SNR=3.2
TIXI Tiksi 35.24 353*d i*P **P** **03 15 51.5 -0.4**
TIXI pmax pmax
comp=Z,29nm,0.7s
TIXI Tiksi 35.24 353 *e*P **P** **03 15 51.6 -0.4**
comp=Z,29nm,0.7s
TIXI *e*PcP **PcP** **03 18 22.0 -0.3**
TIXI LR LR
comp=Z,636nm,19.0s
MYLDM Lahad Datu 37.69 218 *e*P **P** **03 16 13.9 +0.5**
comp=Z,46nm,1.1s
SDKM Sandakan 37.95 220⇑ P **P** **03 16 16.3 +0.6**
SKNT Sakolnakorn 38.07 248 P **P** **03 16 16.8 +0.1**
comp=Z,33nm,1.8s
TNTI Ternate 38.15 202 *e*P **P** **03 16 17.0 -0.3**
comp=Z,95nm,1.0s
SWI Sorong 38.72 195 P **P** **03 16 24.2 +2.2**
comp=Z,63nm,0.9s,comp=Z,1µm
GAMB Gambell 38.99 31 *e*P **P** **03 16 25.1 +1.3**
comp=Z,68nm,1.6s
KHON Khomkaen 39.33 249 P **P** **03 16 27.9 +0.7**
comp=Z,8.7nm,0.8s
JAY Jayapura 39.34 180 P **P** **03 16 27.5 +0.2**
comp=Z,1.8nm,0.8s,baz=18,slow=19,SNR=3.0
GENI Genyem 39.42 181 P P 03 16 34.3 +6.4
UTTA Uttaradit 40.19 253 P P 03 16 40.9 +6.6
comp=Z,4.5nm,0.9s,comp=Z,132nm
MRSI Marisa 40.33 210 P **P** **03 16 37.3 +1.9**
comp=Z,72nm,1.5s
WMQ Urumqi 40.40 297 P **P** **03 16 37.0 +1.1**
WMQ pP sP 03 16 44.0 +0.7
WMQ sP pP 03 16 49.0 +7.8
WMQ PcP **PcP** **03 18 39.6 +0.8**
WMQ S **S** **03 22 43.0 -0.4**
WMQ sS sS 03 22 54.0 +1.9
WMQ SS **SS** **03 25 36.0 -6.3**
WMQ pmax pmax
comp=Z,33nm,0.8s
WMQ pmax pmax
comp=Z,240nm,3.8s
WMQ LR LR
comp=Z,1µm,18.2s
WMQ LR LR
comp=Z,390nm,19.6s
WMQ LR LR
comp=Z,280nm,21.2s
LAMP Lampang 40.44 254 P P 03 16 46.0 +10
FAKI Fak Fak 40.52 193 P **P** **03 16 37.9 +0.8**
comp=Z,51nm,0.7s,comp=Z,852nm
FAKI Fak Fak 40.52 193 *e*P **P** **03 16 36.9 -0.1**
comp=Z,35nm,0.7s
CMMT Chiang Mai 40.80 255 P **P** **03 16 40.7 +1.3**
comp=Z,12nm,1.8s
CHTO Chiang Mai 40.80 255 P **P** **03 16 40.5 +1.1**
comp=Z,35nm,2.2s
CHTO Chiang Mai 40.80 255 *e*P **P** **03 16 38.4 -1.0**
CHTO *e* 03 18 41.5
CHTO pmax pmax
comp=Z,9.0nm,1.0s
CHTO MLR MLR
comp=Z,231nm,19.0s
CHTO Chiang Mai 40.80 255 *e*P **P** **03 16 38.4 -1.0**
comp=Z,9.1nm,1.0s
CHTO *e*PcP **PcP** **03 18 41.5 +1.1**
CHTO LR LR
comp=Z,231nm,19.0s
CHTO Chiang Mai 40.80 255 P **P** **03 16 39.5 +0.1**
SNR=5.6
CHTO Chiang Mai 40.80 255 P **P** **03 16 39.5 +0.1**
SNR=5.6
CMAR Chiang Mai Arr 41.01 255 P **P** **03 16 40.2 -0.9**
comp=Z,1.1nm,0.9s,baz=50,slow=3.6,SNR=7.2
CMAR PcP **PcP** **03 18 41.6 +0.5**
comp=Z,9.4nm,0.8s,baz=16,slow=2.3,SNR=19
CMAR ScP **ScP** **03 22 31.3 +1.3**
comp=Z,0.7nm,0.6s,baz=30,slow=3.4,SNR=5.1
CMAR LR LR 03 35 33.4
comp=Z,424nm,18.9s,baz=54,slow=39
CM01 Chiang Mai Arr 41.02 255 *e*P **P** **03 16 39.2 -2.0**
CM01 *e*PcP **PcP** **03 18 41.4 +0.3**
SANI Sanana 41.23 203 P **P** **03 16 44.2 +1.3**
comp=Z,76nm,1.0s,comp=Z,887nm
LUWI Luwuk 41.40 208 *e*P **P** **03 16 42.3 -1.9**
comp=Z,49nm,0.6s
ZAA0 Zalesovo Array 41.55 312 *e*P **P** **03 16 44.9 -0.3**
ZALV Zalesovo Beam 41.55 312 P **P** **03 16 44.2 -1.0**
comp=Z,38nm,0.9s,baz=94,slow=6.6,SNR=95
ZALV PcP **PcP** **03 18 42.4 +0.1**
comp=Z,58nm,1.0s,baz=97,slow=2.7,SNR=16
ZALV ScP **ScP** **03 22 32.6 +1.1**
comp=Z,3.8nm,0.8s,baz=111,slow=3.3,SNR=5.1
ZALV LR LR 03 34 08.8
comp=Z,346nm,18.9s,baz=70,slow=36
MSAI Masohi 41.65 198 P P 03 16 49.7 +3.3
APSI Ampana 41.71 210 P **P** **03 16 47.3 +0.5**
comp=Z,144nm,1.2s,comp=Z,3µm
LSA Lhasa 41.71 275 P **P** **03 16 48.3 +0.9**
LSA pmax pmax
comp=Z,23nm,1.2s
LSA Lhasa 41.71 275 *e*P **P** **03 16 47.9 +0.5**
LSA pmax pmax
comp=Z,27nm,1.1s
LSA MLR MLR
comp=Z,308nm,22.0s
LSA Lhasa 41.71 275 *e*P **P** **03 16 47.9 +0.5**
comp=Z,27nm,1.1s
LSA LR LR
comp=Z,308nm,22.0s
CHBT CHBT 42.01 245 P **P** **03 16 49.8 +0.4**
comp=Z,30nm,1.1s
NLAI Namlea 42.03 201 P P 03 16 52.9 +3.4
AAI Ambon 42.17 199 P **P** **03 16 52.8 +2.2**
comp=Z,1.0nm,0.3s
NVS Novosibirsk 42.48 314 *e*P **P** **03 16 51.5 -1.3**
NVS *e* 03 18 45.4
NVS *e*S **S** **03 23 13.6 -0.3**
NVS pmax pmax
comp=N,12nm,1.2s
NVS pmax pmax
comp=E,45nm,1.2s
NVS pmax pmax
comp=Z,60nm,1.2s
NVS smax smax
comp=N,20nm,2.1s
NVS smax smax
comp=E,24nm,2.1s
BNDI Bandanaira 42.56 196 P **P** **03 16 52.7 -1.1**
NRIK Noril'sk 43.07 335 P **P** **03 16 57.1 -0.2**
comp=E,13nm,0.5s,baz=107,slow=9.2,SNR=30
NRIK PcP **PcP** **03 18 47.3 +0.3**
comp=E,17nm,0.7s,baz=216,slow=2.9,SNR=5.5
NRIK LR LR 03 36 12.9
comp=E,499nm,19.5s,baz=92,slow=38
SBUM Sibu 43.30 224⇓ P **P** **03 17 02.2 +2.4**
SBUM Sibu 43.30 224 *e*P **P** **03 17 00.4 +0.6**
comp=E,16nm,0.9s
KHLT Khaolaem Dam 43.47 251 P **P** **03 17 02.5 +1.3**
comp=E,8.3nm,1.0s
MK31 Makanchi Array 43.70 302 *i* P **P** **03 17 02.3 -0.5**
MK31 pmax pmax
comp=Z,21nm,0.8s
MKAR Makanchi Array 43.70 302 P **P** **03 17 02.8 0.0**
comp=Z,19nm,0.8s,baz=88,slow=9.8,SNR=143
MKAR PcP **PcP** **03 18 49.8 +0.2**
comp=Z,18nm,0.8s,baz=68,slow=5.1,SNR=9.0
MKAR ScP **ScP** **03 22 41.1 +0.7**
comp=Z,4.4nm,1.0s,baz=83,slow=4.5,SNR=5.0
MKAR LR LR 03 35 24.3
comp=Z,418nm,19.2s,baz=89,slow=36
MAKZ Makanchi 43.91 302 *e*P **P** **03 17 04.7 +0.2**
MAKZ pmax pmax
comp=Z,21nm,0.8s
MAKZ Makanchi 43.91 302 *e*P **P** **03 17 04.7 +0.2**
comp=Z,21nm,0.8s
KDI Kendari 44.15 207 P **P** **03 17 07.8 +1.2**
comp=Z,44nm,1.0s,comp=Z,842nm
TTSI Tana Toraja 44.38 211 P **P** **03 17 11.2 +2.7**
MTKI Muara Teweh, K 44.75 218 P **P** **03 17 13.6 +2.1**
comp=Z,128nm,1.1s,comp=Z,7µm
KSM Kuching 45.18 226⇑ P **P** **03 17 16.4 +1.5**
KSM Kuching 45.18 226 *e*P **P** **03 17 14.8 -0.1**
comp=Z,46nm,1.0s
KSM LR LR
comp=Z,177nm,20.0s
SPSI Sidrap Palu 45.24 210 P **P** **03 17 16.3 +1.0**
comp=Z,36nm,1.1s,comp=Z,626nm
TAPN Taplejung 45.44 274 *e*P **P** **03 17 17.3 0.0**
comp=Z,56nm,0.9s
KURK Kurchatov 45.54 308 *e*P **P** **03 17 17.0 -0.4**
KURK 03 18 55.8
KURK pmax pmax
comp=Z,118nm,1.0s
KURK MLR MLR
comp=Z,1µm,20.0s
KURK Kurchatov 45.54 308 *e*P **P** **03 17 17.0 -0.4**
comp=Z,118nm,1.0s
KURK PcP **PcP** **03 18 55.8 0.0**
KURK LR LR
comp=Z,1µm,20.0s
KURK Kurchatov 45.54 308 P **P** **03 17 17.4 0.0**
SNR=64
KURK Kurchatov 45.54 308 P **P** **03 17 17.4 0.0**
SNR=64
KURBB Kurchatov Arra 45.61 308 P **P** **03 17 17.6 -0.4**
comp=Z,68nm,0.9s,baz=83,slow=8.0,SNR=381
KURBB PcP **PcP** **03 18 55.8 -0.3**
comp=Z,12nm,0.8s,baz=93,slow=3.3,SNR=7.5
SAUI Saumlaki 45.64 193 P **P** **03 17 20.6 +2.1**
comp=Z,160nm,1.3s
STKI Sintang 45.69 223 P **P** **03 17 20.7 +1.8**
comp=Z,73nm,0.9s
TT01 Tatalina 45.71 35 *e*P **P** **03 17 19.9 +1.3**
TTA Tatalina 45.72 35 *e*P **P** **03 17 20.2 +1.5**
TTA pmax pmax
comp=Z,39nm,1.3s
TTA Tatalina 45.72 35 *e*P **P** **03 17 20.2 +1.5**
comp=Z,39nm,1.3s
SVW2 Sparrevohn 45.84 37 *e*P **P** **03 17 22.0 +2.4**
comp=Z,72nm,1.1s
ODAN Odare 45.91 273 *e*P **P** **03 17 20.6 -0.3**
comp=Z,126nm,1.2s
KAPI Kappang 46.20 210 LR LR 03 36 53.4
comp=Z,108nm,21.7s,baz=41,slow=36
KAPI Kappang 46.20 210 *e*P **P** **03 17 23.8 +0.9**
comp=Z,160nm,1.2s
KAPI Kappang 46.20 210 P **P** **03 17 24.1 +1.2**
SNR=27
KAPI Kappang 46.20 210 P **P** **03 17 24.1 +1.2**
SNR=27
PDGK Podgornoye 46.34 298 P **P** **03 17 23.2 -0.5**
PDGK pmax pmax
comp=Z,97nm,1.2s
RAMN Ramite 46.50 274 *e*P **P** **03 17 25.6 0.0**
comp=Z,206nm,0.9s
PMG Port Moresby 46.57 171 P **P** **03 17 27.5 +1.8**
comp=Z,4.9nm,0.5s,baz=355,slow=8.4,SNR=2.7
PMG LR LR 03 36 40.2
comp=Z,143nm,20.2s,baz=360,slow=36
GUN Gumba 46.66 275 *e*P **P** **03 17 27.0 +0.1**
comp=Z,113nm,0.9s
KTGM Kuala Trenggan 46.66 237⇑ P P 03 17 31.2 +4.6
BBKI Banjar Baru 46.97 217 P **P** **03 17 29.4 +0.5**
comp=Z,160nm,1.2s
OHAK Old Harbor 47.10 43 *e*P **P** **03 17 29.6 0.0**
comp=Z,95nm,1.2s
KKN Kakani 47.19 276 *e*P **P** **03 17 30.9 0.0**
comp=Z,95nm,0.9s
DMN Daman 47.40 275 *e*P **P** **03 17 32.6 0.0**
KDAK Kodiak Island 47.44 42 P P 03 17 47.6 +15
comp=Z,63nm,1.0s,baz=268,slow=6.6,SNR=13
KDAK Kodiak Island 47.44 42 *e*P **P** **03 17 33.4 +1.2**
KDAK pmax pmax
comp=Z,208nm,1.4s
KDAK MLR MLR
comp=Z,603nm,22.0s
KDAK Kodiak Island 47.44 42 *e*P **P** **03 17 33.4 +1.2**
comp=Z,208nm,1.4s
KDAK LR LR
comp=Z,603nm,22.0s
PPLA Purkeypile 47.47 35 *e*P **P** **03 17 34.8 +2.3**
comp=Z,113nm,1.4s
CAST Castle Rocks 47.52 34 *e*P **P** **03 17 34.7 +2.0**
comp=Z,72nm,1.4s
SPU Mount Spurr 47.55 37 *e*P **P** **03 17 34.8 +1.7**
SPU *e*PcP **PcP** **03 19 02.1 -0.7**
GKN Gorkha 47.60 276 *e*P **P** **03 17 34.0 -0.1**
comp=Z,309nm,1.1s
BPAW Bear Paw Mtn. 48.01 33 *e*P **P** **03 17 38.4 +1.8**
comp=Z,68nm,1.5s
KTH Kantishna Hill 48.04 34 *e*P **P** **03 17 38.6 +1.7**
comp=Z,103nm,1.2s
MLY Manley 48.13 32 *e*P **P** **03 17 39.5 +2.0**
comp=Z,36nm,1.0s
MLY *e*PcP **PcP** **03 19 05.2 +0.4**
TRF Thorofare Moun 48.33 34 *e*P **P** **03 17 40.8 +1.6**
comp=Z,28nm,1.2s
KULM Kulim 48.38 239⇑ P **P** **03 17 41.4 +1.4**
KULM Kulim 48.38 239 *e*P **P** **03 17 39.1 -0.9**
comp=Z,49nm,1.5s
COLD Coldfoot 48.41 29 *e*P **P** **03 17 41.6 +2.1**
comp=Z,57nm,1.8s
KOLN Koldanda 48.53 276 *e*P **P** **03 17 41.3 0.0**
comp=Z,161nm,1.2s
MMRI Maumere 48.63 205 P **P** **03 17 43.8 +2.0**
comp=Z,130nm,1.2s
RC01 Rabbit Creek A 48.67 37 *e*P **P** **03 17 41.7 0.0**
comp=Z,53nm,1.0s
IPM Ipoh 48.71 238⇑ P **P** **03 17 42.8 +0.2**
IPM Ipoh 48.71 238 *e*P **P** **03 17 41.2 -1.3**
comp=Z,32nm,1.1s
PYUN Piuthan 48.87 277 *e*P **P** **03 17 44.1 +0.2**
comp=Z,381nm,1.2s
SEW Seward 48.89 39 *e*P **P** **03 17 44.4 +1.1**
comp=Z,39nm,1.0s
MCK McKinley 48.92 34 *e*P **P** **03 17 44.6 +1.0**
MCK pmax pmax
comp=Z,53nm,1.3s
MCK McKinley 48.92 34 *e*P **P** **03 17 44.6 +1.0**
comp=Z,53nm,1.3s
EDFI Ende, Flores 48.93 205 P **P** **03 17 45.6 +1.4**
comp=Z,75nm,1.5s,comp=Z,2µm
PMR Palmer 48.94 37 *e*P **P** **03 17 44.4 +0.8**
PMR pmax pmax
comp=Z,78nm,1.4s
PMR Palmer 48.94 37 *e*P **P** **03 17 44.4 +0.8**
comp=Z,78nm,1.4s
RND Reindeer 48.97 34 *e*P **P** **03 17 44.9 +0.9**
RND *e* 03 19 07.2
RND pmax pmax
comp=Z,111nm,1.4s
RND Reindeer 48.97 34 *e*P **P** **03 17 44.9 +0.9**
comp=Z,111nm,1.4s
RND *e*PcP **PcP** **03 19 07.2 -0.7**
KGM Kluang 49.02 234⇑ P **P** **03 17 46.1 +1.2**
SOEI Soe 49.05 202 P **P** **03 17 45.0 -0.2**
comp=Z,171nm,1.4s,comp=Z,3µm
SOEI Soe 49.05 202 *e*P **P** **03 17 44.9 -0.2**
comp=Z,166nm,1.0s
TKM2 Tokmak 2 49.19 298 *e*P **P** **03 17 47.0 +0.8**
TKM2 pmax pmax
comp=Z,114nm,1.3s
TKM2 MLR MLR
comp=Z,610nm,21.0s
TKM2 Tokmak 2 49.19 298 *e*P **P** **03 17 47.0 +0.8**
comp=Z,114nm,1.3s
TKM2 LR LR
comp=Z,610nm,21.0s
MDM Murphy Dome 49.19 32 *e*P **P** **03 17 47.4 +1.8**
comp=Z,75nm,1.1s
WRH Wood River Hil 49.27 33 *e*P **P** **03 17 47.8 +1.6**
WRH *e*PcP **PcP** **03 19 08.8 -0.1**
SML Sawmill 49.30 36 *e*P **P** **03 17 47.7 +1.2**
SML pmax pmax
comp=Z,177nm,1.8s
SML Sawmill 49.30 36 *e*P **P** **03 17 47.7 +1.2**
comp=Z,177nm,1.8s
COLA College 49.36 32 *e*P **P** **03 17 48.4 +1.6**
COLA pmax pmax
comp=Z,27nm,0.8s
COLA MLR MLR
comp=Z,241nm,20.0s
COLA College 49.36 32 *e*P **P** **03 17 48.4 +1.6**
comp=Z,27nm,0.8s
COLA LR LR
comp=Z,241nm,20.0s
CCB Clear Creek Bu 49.38 33 *e*P **P** **03 17 47.4 +0.4**
CCB *e*PcP **PcP** **03 19 09.0 -0.2**
HNR Honiara 49.59 155 LR LR 03 41 11.3
comp=Z,104nm,18.2s,baz=327,slow=39
BATI Baumata 49.66 202 P **P** **03 17 51.1 +1.4**
comp=Z,42nm,1.3s
ILAR Eielson Array 49.77 32 P **P** **03 17 50.6 +0.5**
comp=Z,12nm,0.7s,baz=267,slow=5.9,SNR=89
ILAR PcP **PcP** **03 19 10.4 -0.2**
comp=Z,3.3nm,0.9s,baz=294,slow=3.6,SNR=4.1
ILAR LR LR 03 40 44.3
comp=Z,176nm,18.6s,baz=294,slow=38
ILB Eielson Array 49.77 32 *e*P **P** **03 17 50.8 +0.7**
SCM Sheep Creek Mo 49.77 36 *e*P **P** **03 17 51.6 +1.4**
SCM pmax pmax
comp=Z,122nm,1.4s
SCM Sheep Creek Mo 49.77 36 *e*P **P** **03 17 51.6 +1.4**
comp=Z,122nm,1.4s
IL1 Eielson Array 49.77 32 *e*P **P** **03 17 49.9 -0.1**

FRU	**Bishkek**	**49.91**	**298**	⇓	*e*P	**P**	**03 17 51.5**	**+0.1**
FRU					*e*		03 19 12.0	
FRU					pmax	pmax		
	comp=Z,110nm,1.8s							
VOSK	**Vostochnaya**	**49.91**	**312**		*e*P	**P**	**03 17 51.0**	**-0.3**
VOSK					*e*		03 19 11.8	
VOSK					pmax	pmax		
	comp=Z,69nm,0.9s							
VOSK	**Vostochnaya**	**49.91**	**312**		*e*P	**P**	**03 17 51.0**	**-0.3**
	comp=Z,68nm,0.9s							
VOSK					*e*PcP	**PcP**	**03 19 11.8**	**+0.3**
KSH	**Kashi**	**49.95**	**294**		P	P	03 17 56.1	+4.2
KSH					*e*PP	sP	03 18 03.5	+4.1
KSH					*e*PP	PP	03 19 52.5	+5.8
KSH					PcS	**PcS**	**03 23 12.5**	**+3.5**
KSH					S	**S**	**03 25 05.9**	**+4.2**
KSH					ScS	**ScS**	**03 27 42.9**	**+0.1**
KSH					pmax	pmax		
	comp=Z,23nm,1.0s							
KSH					pmax	pmax		
	comp=Z,170nm,3.5s							
KSH					LR	LR		
	comp=Z,780nm,17.4s							
KSH					LR	LR		
	comp=Z,1μm,17.8s							
KSH					LR	LR		
	comp=Z,530nm,18.5s							
CHKZ	**Chkalovo**	**49.95**	**313**		P	**P**	**03 17 51.0**	**-0.5**
CHKZ					pmax	pmax		
	comp=Z,93nm,1.4s							
OTUK	**Ortayu**	**50.02**	**306**		P	**P**	**03 17 52.1**	**-0.1**
OTUK					pmax	pmax		
	comp=Z,55nm,0.9s							
AAK	**Ala-Archa**	**50.05**	**298**	⇓	*i*P	**P**	**03 17 52.9**	**+0.2**
AAK					pmax	pmax		
	comp=Z,69nm,1.3s							
AAK	**Ala-Archa**	**50.05**	**298**		*e*P	**P**	**03 17 53.0**	**+0.2**
AAK					*e*PcP	**PcP**	**03 19 11.8**	**-0.6**
AAK					LR	LR		
	comp=Z,821nm,20.0s							
AAK	**Ala-Archa**	**50.05**	**298**		P	**P**	**03 17 53.2**	**+0.5**
	SNR=13							
AAK	**Ala-Archa**	**50.05**	**298**		P	**P**	**03 17 53.2**	**+0.5**
	SNR=13							
AAK					P	**P**	**03 17 53.2**	**+0.5**
	SNR=13							
BWJI	**Bawean**	**50.10**	**218**		P	**P**	**03 17 54.3**	**+1.3**
	comp=Z,62nm,0.8s							
BVA0	**Borovoye Array**	**50.21**	**312**		P	**P**	**03 17 53.5**	**0.0**
BVA0					pmax	pmax		
	comp=Z,46nm,1.2s							
BVAR	**Borovoye Array**	**50.21**	**312**		P	**P**	**03 17 53.5**	**0.0**
	comp=Z,40nm,1.0s,baz=79,slow=7.7,SNR=85							
BVAR					PcP	**PcP**	**03 19 12.6**	**+0.1**
	comp=Z,30nm,0.7s,baz=90,slow=4.4,SNR=17							
BRVK	**Borovoye**	**50.26**	**312**		*e*P	**P**	**03 17 54.1**	**+0.2**
BRVK					*e*		03 19 12.8	
BRVK					pmax	pmax		
	comp=Z,48nm,1.0s							
BRVK					MLR	MLR		
	comp=Z,600nm,21.0s							
BRVK	**Borovoye**	**50.26**	**312**		*e*P	**P**	**03 17 54.1**	**+0.2**
	comp=Z,48nm,1.0s							
BRVK					*e*PcP	**PcP**	**03 19 12.8**	**+0.2**
BRVK					LR	LR		
	comp=Z,600nm,21.0s							
BRVK	**Borovoye**	**50.26**	**312**		P	**P**	**03 17 54.4**	**+0.5**
	SNR=21							
BRVK	**Borovoye**	**50.26**	**312**		P	**P**	**03 17 54.4**	**+0.5**
	SNR=21							
BRVK					P	**P**	**03 17 54.4**	**+0.5**
	SNR=21							
WSI	**Waingapu**	**50.27**	**207**		P	P	03 17 50.3	-4.0
FYU	**Fort Yukon**	**50.37**	**30**		*e*P	**P**	**03 17 56.5**	**+1.9**
	comp=Z,264nm,2.0s							
MTN	**Manton Dam**	**50.42**	**192**		*e*P	**P**	**03 17 56.0**	**+0.6**
	comp=Z,34nm,0.9s							
PLAI	**Plampang**	**50.46**	**210**		P	**P**	**03 17 54.4**	**-1.3**
KLU	**Klutina**	**50.48**	**37**		*e*P	**P**	**03 17 57.2**	**+1.7**
	comp=Z,57nm,1.3s							
PAX	**Paxson**	**50.53**	**35**		*e*P	**P**	**03 17 57.6**	**+1.7**
PAX					*e*		03 19 15.2	
PAX	**Paxson**	**50.53**	**35**		*e*P	**P**	**03 17 57.6**	**+1.7**
PAX					*e*PcP	**PcP**	**03 19 15.2**	**+1.5**
PPBI	**Pangkal Pinang**	**50.54**	**227**		P	**P**	**03 17 57.2**	**+0.7**
	comp=Z,53nm,1.1s,comp=Z,5μm							
EKS2	**Erkin-Say**	**50.55**	**298**		*e*P	**P**	**03 17 56.8**	**+0.4**
EKS2					*e*		03 19 14.6	
EKS2					MLR	MLR		
	comp=Z,705nm,19.0s							
EKS2	**Erkin-Say**	**50.55**	**298**		*e*P	**P**	**03 17 56.8**	**+0.4**
EKS2					*e*PcP	**PcP**	**03 19 14.6**	**+0.4**
EKS2					LR	LR		
	comp=Z,705nm,19.0s							
DIV	**Divide**	**50.59**	**37**		*e*P	**P**	**03 17 58.1**	**+1.8**
	comp=Z,100nm,1.2s							
EYAK	**Cordova Ski Ar**	**50.67**	**38**		*e*P	**P**	**03 17 57.9**	**+1.0**
	comp=Z,90nm,1.6s							
TWSI	**Taliwang, Sumb**	**50.74**	**211**		P	**P**	**03 17 56.7**	**-1.2**
COEN	**Coen**	**50.76**	**177**		*e*P	**P**	**03 17 57.6**	**-0.3**
	comp=Z,49nm,1.3s							
SRBI	**Singaraja**	**50.87**	**213**		P	**P**	**03 17 58.7**	**-0.1**
	comp=Z,89nm,1.7s,comp=Z,1μm							
LHMI	**Lhok Sumawe**	**51.01**	**243**		P	**P**	**03 18 02.3**	**+2.3**
ZRNK	**Zerenda**	**51.04**	**312**		*e*P	**P**	**03 17 59.9**	**+0.1**
ZRNK					*e*		03 19 14.8	
ZRNK					pmax	pmax		
	comp=Z,67nm,0.9s							
ZRNK	**Zerenda**	**51.04**	**312**		*e*P	**P**	**03 17 59.9**	**+0.1**
	comp=Z,67nm,0.9s							
ZRNK					*e*PcP	**PcP**	**03 19 14.8**	**-0.8**
ABJI	**Asem Bagus**	**51.05**	**215**		P	**P**	**03 18 00.8**	**+0.6**
	comp=Z,106nm,1.3s,comp=Z,2μm							
DOT	**Dot Lake**	**51.09**	**34**		*e*P	**P**	**03 18 00.8**	**+0.7**
	comp=Z,166nm,1.6s							
DOT					*e*PcP	**PcP**	**03 19 16.7**	**+1.1**
GRJI	**Gresik**	**51.10**	**217**		P	P	03 18 03.9	+3.3
BMRM	**Bremner River**	**51.17**	**37**		*e*P	**P**	**03 18 01.6**	**+0.9**
	comp=Z,125nm,1.6s							
RAGM	**Ragged Mountai**	**51.22**	**38**		*e*P	**P**	**03 18 02.4**	**+1.3**
	comp=Z,94nm,1.4s							
MENT	**Mentasta**	**51.33**	**35**		*e*P	**P**	**03 18 03.9**	**+2.0**
	comp=Z,135nm,1.9s							
PSI	**Prapat**	**51.36**	**239**		LR	LR	03 40 46.1	
	comp=Z,179nm,19.4s,baz=38,slow=37							
PSI	**Prapat**	**51.36**	**239**		*e*P	**P**	**03 18 02.2**	**-0.5**
PSI					*e*		03 19 17.7	
PSI	**Prapat**	**51.36**	**239**		*e*P	**P**	**03 18 02.2**	**-0.5**
PSI					*e*PcP	**PcP**	**03 19 17.7**	**+0.2**
UWJI	**Ujung Watu**	**51.44**	**219**		P	P	03 18 11.6	+8.5
MNAS	**Manas**	**51.50**	**299**		P	**P**	**03 18 04.1**	**+0.5**
MNAS					pmax	pmax		
	comp=Z,44nm,0.9s							
SFK	**Sufi-Kurgan**	**51.58**	**295**		P	**P**	**03 18 04.4**	**0.0**
SFK					pmax	pmax		
	comp=Z,94nm,1.4s							
KCSI	**Kotacane, Aceh**	**51.63**	**240**		P	P	03 18 10.2	+5.5
JAGI	**Jajag, Banyuwa**	**51.68**	**214**		P	**P**	**03 18 06.9**	**+1.9**
	comp=Z,49nm,1.1s							
JAGI	**Jajag, Banyuwa**	**51.68**	**214**		*e*P	**P**	**03 18 03.7**	**-1.3**
	comp=Z,47nm,1.0s							
GMJI	**Gumukmas**	**51.84**	**215**		P	**P**	**03 18 05.0**	**-1.1**
NGJI	**Ngawi**	**51.99**	**218**		P	**P**	**03 18 08.9**	**+1.6**
	comp=Z,70nm,1.5s							
EGAK	**Eagle**	**52.22**	**32**		*e*P	**P**	**03 18 09.2**	**+0.9**
	comp=Z,73nm,1.6s							
EGAK					LR	LR		
	comp=Z,170nm,21.0s							
SMRI	**Semarang**	**52.23**	**219**		P	**P**	**03 18 10.6**	**+1.5**
	comp=Z,90nm,1.7s							
MNSI	**Mandailing Nat**	**52.38**	**236**		P	**P**	**03 18 10.1**	**-0.2**
	comp=Z,35nm,0.8s,comp=Z,12μm							
SDSI	**Sungai Dareh**	**52.48**	**233**		P	**P**	**03 18 11.1**	**+0.2**
	comp=Z,63nm,1.6s,comp=Z,41μm							
KK31	**Karatay Array**	**52.69**	**300**		*i* P	**P**	**03 18 12.2**	**-0.1**
KK31					pmax	pmax		
	comp=Z,77nm,1.4s							
KKAR	**Karatay Array**	**52.69**	**300**		*e*P	**P**	**03 18 12.3**	**0.0**
KKAR	**Karatay Array**	**52.69**	**300**		*e*P	**P**	**03 18 12.3**	**0.0**
UGM	**Wanagama**	**52.93**	**219**		P	**P**	**03 18 13.6**	**-0.7**
	comp=Z,318nm,1.3s,comp=Z,4μm							
UGM	**Wanagama**	**52.93**	**219**		*e*P	**P**	**03 18 13.6**	**-0.7**
	comp=Z,386nm,1.2s							
NDI	**New Delhi**	**53.18**	**281**		*e*P	P	03 18 12.0	-4.1
KPJI	**Karang Pucung**	**53.25**	**221**		P	**P**	**03 18 18.9**	**+2.3**
GSI	**Gunungsitoli**	**53.36**	**239**		P	**P**	**03 18 18.0**	**+0.5**
	comp=Z,179nm,1.5s,comp=Z,2μm							
GSI	**Gunungsitoli**	**53.36**	**239**		*e*P	**P**	**03 18 16.9**	**-0.7**
	comp=Z,363nm,1.5s							
LHSI	**Lahat**	**53.43**	**229**		P	**P**	**03 18 18.9**	**+1.0**
	comp=Z,125nm,1.2s							
KLI	**Kotabumi**	**53.47**	**227**		P	**P**	**03 18 18.4**	**+0.2**
	comp=Z,123nm,1.0s,comp=Z,8μm							
MDSI	**Maura Dua**	**53.56**	**228**		P	**P**	**03 18 17.8**	**-1.1**
	comp=Z,72nm,1.4s,comp=Z,1μm							
BLSI	**Bandar Lampung**	**53.65**	**226**		P	**P**	**03 18 22.1**	**+2.5**
MASI	**Maura Aman, Be**	**53.67**	**231**		P	**P**	**03 18 19.8**	**0.0**
	comp=Z,198nm,1.3s,comp=Z,3μm							
KSI	**Kapahiang**	**53.85**	**230**		P	**P**	**03 18 22.6**	**+1.4**
	comp=Z,9.6nm,0.7s							
CISI	**Cisompet, Garu**	**54.03**	**222**		P	**P**	**03 18 20.9**	**-1.5**
CISI	**Cisompet, Garu**	**54.03**	**222**		*e*P	**P**	**03 18 21.3**	**-1.1**
	comp=Z,24nm,0.6s							
CNJI	**Cibinong**	**54.19**	**223**		P	P	03 18 19.7	-3.8
KASI	**Kota Agung**	**54.21**	**227**		P	**P**	**03 18 22.0**	**-1.6**
INK	**Inuvik**	**54.63**	**27**		P	**P**	**03 18 26.7**	**+0.7**
	comp=Z,21nm,1.0s,baz=287,slow=7.9,SNR=44							
INK	**Inuvik**	**54.63**	**27**		*e*P	**P**	**03 18 26.9**	**+0.9**
INK					pmax	pmax		
	comp=Z,54nm,1.4s							
INK	**Inuvik**	**54.63**	**27**		*e*P	**P**	**03 18 26.9**	**+0.9**
	comp=Z,54nm,1.4s							
SVE	**Sverdlovsk**	**54.82**	**318**	*c*	*i*P	**P**	**03 18 28.2**	**+0.6**
SVE					pmax	pmax		
	comp=Z,80nm,1.1s							
SKAG	**Skagway**	**56.01**	**38**		*e*P	**P**	**03 18 36.9**	**+0.8**
	comp=Z,116nm,1.8s							
SOKR	**Solikamsk**	**56.03**	**322**	*d*	*i*P	**P**	**03 18 33.4**	**-2.8**
SOKR					pmax	pmax		
	comp=Z,51nm,1.4s							
SOKR					MLR	MLR		
	comp=Z,417nm,16.0s							
ARU	**Arti**	**56.03**	**318**	*d*	*i*P	**P**	**03 18 36.2**	**-0.2**
ARU					*e*		03 19 34.6	
ARU							03 20 42.4	
ARU					S	**S**	**03 26 22.9**	**-1.0**
ARU					SS	**SS**	**03 30 03.0**	**-6.5**
ARU					pmax	pmax		
	comp=Z,100nm,1.2s							
ARU	**Arti**	**56.03**	**318**		*e*P	**P**	**03 18 36.0**	**-0.3**
	comp=Z,82nm,1.1s							
ARU					LR	LR		
	comp=Z,432nm,19.0s							
FITZ	**Fitzroy Crossi**	**56.66**	**197**		LR	LR	03 42 41.9	
	comp=Z,123nm,19.0s,baz=27,slow=36							
FITZ	**Fitzroy Crossi**	**56.66**	**197**		*e*P	**P**	**03 18 41.8**	**+0.6**
	comp=Z,124nm,1.8s							
KBL	**Kabul**	**56.95**	**291**		*e*P	**P**	**03 18 42.7**	**-0.8**
KBL					*e*		03 19 37.0	
KBL					pmax	pmax		
	comp=Z,48nm,1.1s							
KBL	**Kabul**	**56.95**	**291**		*e*P	**P**	**03 18 42.7**	**-0.8**
	comp=Z,48nm,1.1s							
KBL					*e*PcP	**PcP**	**03 19 37.0**	**-1.7**
WRAB	**Tennant Creek**	**56.97**	**187**		*e*P	**P**	**03 18 42.3**	**-1.1**
WRAB					pmax	pmax		
	comp=Z,29nm,0.8s							
WRAB					MLR	MLR		
	comp=Z,290nm,20.0s							
WRAB	**Tennant Creek**	**56.97**	**187**		*e*P	**P**	**03 18 42.3**	**-1.1**
	comp=Z,29nm,0.8s							
WRAB					LR	LR		
	comp=Z,290nm,20.0s							
WB2	**Warramunga Arr**	**56.98**	**187**		*e*P	**P**	**03 18 42.8**	**-0.7**
	comp=Z,28nm,0.8s							
WRA	**Warramunga Arr**	**56.98**	**187**		P	**P**	**03 18 42.7**	**-0.7**
	comp=Z,21nm,0.6s,baz=4.3,slow=7.3,SNR=316							
WRA	**Warramunga Arr**	**56.98**	**187**		P	**P**	**03 18 42.7**	**-0.7**
WRA					pmax	pmax		
	comp=Z,20nm,0.6s							
CTA	**Charters Tower**	**57.04**	**174**		P	**P**	**03 18 43.4**	**-0.4**
	comp=Z,4.6nm,0.6s,baz=17,slow=9.5,SNR=8.7							
CTAO	**Charters Tower**	**57.04**	**174**		PFAKE		03 19 00.0	+16
CTAO					LR	LR		
	comp=Z,469nm,22.0s							
AB31	**Akbulak array**	**57.56**	**310**		P	**P**	**03 18 46.9**	**-0.4**
AB31					pmax	pmax		
	comp=Z,51nm,1.0s							
ABKAR	**Akbulak array**	**57.56**	**310**		*e*P	**P**	**03 18 47.1**	**-0.2**
HYB	**Hyderabad**	**57.70**	**268**		*i* P	**P**	**03 18 49.0**	**+0.2**
HYB					*e*PcP	**PcP**	**03 19 41.5**	**-0.2**
AKTO	**Aktyubinsk**	**58.31**	**312**		P	**P**	**03 18 52.1**	**-0.4**
	comp=Z,22nm,1.0s,baz=66,slow=11,SNR=23							
AKTO	**Aktyubinsk**	**58.31**	**312**		P	**P**	**03 18 51.9**	**-0.6**
AKTO					pmax	pmax		
	comp=Z,37nm,1.1s							
WRAK	**Wrangell Islan**	**58.48**	**41**		*e*P	**P**	**03 18 55.2**	**+1.5**
	comp=Z,60nm,1.5s							
DLBC	**Dease Lake**	**58.94**	**38**		P	**P**	**03 18 57.9**	**+1.0**
	comp=Z,14nm,0.9s,baz=290,slow=8.6,SNR=17							
DLBC	**Dease Lake**	**58.94**	**38**		*e*P	**P**	**03 18 59.5**	**+2.5**
	comp=Z,44nm,1.1s							
SPA0	**Spitsbergen Ar**	**60.44**	**349**		*e*P	**P**	**03 19 07.8**	**+1.0**
SPITS	**Spitsbergen Ar**	**60.44**	**349**		P	**P**	**03 19 06.9**	**+0.1**
	comp=Z,29nm,0.9s,baz=80,slow=9.4,SNR=34							
KBS	**Kingsbay**	**60.58**	**350**		*e*P	**P**	**03 19 08.9**	**+1.1**
KBS					pmax	pmax		
	comp=Z,107nm,0.9s							
KBS					MLR	MLR		
	comp=Z,275nm,21.0s							
KBS	**Kingsbay**	**60.58**	**350**		*e*P	**P**	**03 19 08.9**	**+1.1**
	comp=Z,107nm,0.9s							
KBS					LR	LR		
	comp=Z,275nm,21.0s							
AS01	**Alice Springs**	**60.70**	**187**		*e*P	**P**	**03 19 08.7**	**-0.5**
AS31	**Alice Springs**	**60.71**	**187**		*e*P	**P**	**03 19 08.5**	**-0.8**
	comp=Z,4.1nm,0.6s							
ASAR	**Alice Springs**	**60.71**	**187**		P	**P**	**03 19 08.9**	**-0.5**
	comp=Z,9.8nm,0.7s,baz=12,slow=6.6,SNR=80							
ASAR					LR	LR	03 44 51.6	
	comp=Z,182nm,19.8s,baz=12,slow=36							
MBWA	**Marble Bar**	**61.18**	**203**		*e*P	**P**	**03 19 11.7**	**-0.8**
	comp=Z,32nm,0.9s							
HSPB	**Hornsund (broa**	**61.35**	**348**		*e*P	**P**	**03 19 14.1**	**+1.1**
HSPB					*e*S	S	03 27 42.0	+10
HSPB					MLR	MLR		
	comp=Z,400nm,23.1s							
LVZ	**Lovozero**	**61.91**	**336**	*c*	*e*P	**P**	**03 19 16.5**	**-0.5**
LVZ					pmax	pmax		
	comp=Z,45nm,1.0s							
LVZ	**Lovozero**	**61.91**	**336**		*e*P	**P**	**03 19 16.7**	**-0.3**
	comp=Z,68nm,1.3s							
LVZ					LR	LR		
	comp=Z,232nm,19.0s							
TMCR	**Tamitsa**	**62.51**	**331**		*e*P	**P**	**03 19 19.7**	**-1.3**
TMCR					pmax	pmax		
	comp=Z,68nm,0.9s							
RES	**Resolute Bay**	**62.74**	**14**		P	**P**	**03 19 22.7**	**+0.3**
	comp=Z,15nm,0.9s,baz=318,slow=6.4,SNR=41							
EIDS	**Eidsvold**	**62.81**	**170**		*e*P	**P**	**03 19 24.0**	**+0.6**
	comp=Z,20nm,1.1s							
KEV	**Kevo**	**63.27**	**339**		*e*P	**P**	**03 19 25.0**	**-1.0**
KEV					pmax	pmax		
	comp=Z,46nm,0.8s							
KEV					MLR	MLR		
	comp=Z,657nm,22.0s							
KEV	**Kevo**	**63.27**	**339**		*e*P	**P**	**03 19 25.0**	**-1.0**
	comp=Z,46nm,0.8s							
KEV					LR	LR		
	comp=Z,657nm,22.0s							
GEYT	**Alibeck**	**63.40**	**299**		P	**P**	**03 19 27.3**	**-0.2**
	comp=Z,34nm,0.8s,baz=46,slow=4.3,SNR=48							
GEYT					LR	LR	03 47 46.7	
	comp=Z,241nm,18.4s,baz=85,slow=37							
KLMR	**Klimovskoe**	**63.50**	**328**		*e*P	**P**	**03 19 25.3**	**-2.3**
KLMR					*e**PP	**sP**	**03 19 35.7**	**+0.5**
KLMR					*e*		03 20 02.1	
KLMR					*e*SS	SS	03 32 03.5	-2.6
KLMR					pmax	pmax		
	comp=Z,64nm,0.9s							
DZM	**Mont Dzumac**	**63.56**	**153**		P	**P**	**03 19 29.8**	**+1.3**
	comp=Z,13nm,1.0s,baz=355,slow=11,SNR=4.0							
ARA0	**ARCESS Array S**	**63.83**	**339**		*e*P	**P**	**03 19 29.4**	**-0.4**
ARCES	**ARCESS Array B**	**63.83**	**339**		P	**P**	**03 19 29.9**	**+0.2**
	comp=Z,35nm,0.8s,baz=57,slow=7.7,SNR=87							
ARCES					LR	LR	03 52 19.2	
	comp=Z,304nm,18.1s,baz=42,slow=41							
ARE0	**ARCESS Array S**	**63.83**	**339**		*e*P	**P**	**03 19 29.2**	**-0.6**
	comp=Z,47nm,0.9s							
YKW3	**Yellowknife Ar**	**64.03**	**30**		*e*P	**P**	**03 19 31.6**	**+0.5**
	comp=Z,14nm,1.0s							
YKW3					*e*PcP	**PcP**	**03 20 05.2**	**-1.1**
YKA	**Yellowknife Ar**	**64.07**	**30**		P	**P**	**03 19 31.9**	**+0.5**
	comp=Z,8.6nm,0.8s,baz=302,slow=6.6,SNR=163							
YKB5	**Yellowknife Ar**	**64.07**	**30**		*e*P	**P**	**03 19 31.0**	**-0.3**
YKB5					*e*PcP	**PcP**	**03 20 06.7**	**+0.2**
MSVF	**Nonsavu**	**64.81**	**140**		*e*P	**P**	**03 19 38.7**	**+1.8**
MSVF					pmax	pmax		
	comp=Z,54nm,1.3s							
MSVF	**Nonsavu**	**64.81**	**140**		*e*P	**P**	**03 19 38.7**	**+1.8**
	comp=Z,54nm,1.3s							
DAG	**Danmarks Havn**	**65.74**	**355**	⇓	*i*P	**P**	**03 19 42.4**	**+0.4**
	comp=Z,86nm,0.8s							
DAG	**Danmarks Havn**	**65.74**	**355**	⇓	*i*P	**P**	**03 19 42.4**	**+0.4**
DAG					pmax	pmax		
	comp=Z,64nm,0.8s							
XMAS	**Kiritimati**	**66.45**	**106**		PFAKE		03 20 00.0	+13
XMAS					LR	LR		
	comp=Z,2.0nm,21.0s							
MOS	**Moscow**	**66.96**	**323**		*e*P	**P**	**03 19 49.8**	**-0.3**
MOS					*e*		03 20 18.2	
MOS					*e*S	**S**	**03 28 41.2**	**-1.2**
MOS					pmax	pmax		
	comp=Z,76nm,0.7s							
A04D	**Lummi Island**	**67.10**	**46**		P	**P**	**03 19 52.8**	**+1.7**
	baz=300							
VRH	**Novokhopyorsk**	**67.25**	**318**		*e*P	**P**	**03 19 51.0**	**-1.1**
VRH					pmax	pmax		
	comp=Z,60nm,0.7s							
B05A	**Bryant**	**67.68**	**46**		P	**P**	**03 19 56.7**	**+1.9**
	baz=301							
OBN	**Obninsk**	**67.80**	**323**	*d*	*i*P	**P**	**03 19 55.5**	**0.0**
OBN					*e**PP	**sP**	**03 20 04.4**	**+1.3**
OBN					*i*		03 20 22.0	
OBN					*e*		03 22 22.6	
OBN					*e*S	**S**	**03 28 53.2**	**+0.7**
OBN					*e*SS	**SS**	**03 33 19.9**	**+6.7**
OBN					pmax	pmax		
	comp=Z,80nm,1.0s							
OBN					MLR	MLR		
	comp=Z,421nm,16.0s							
OBN	**Obninsk**	**67.80**	**323**		*e*P	**P**	**03 19 55.4**	**-0.1**
	comp=Z,56nm,0.8s							
OBN					LR	LR		
	comp=Z,583nm,19.0s							
ARMA	**Armidale**	**67.85**	**170**		*e*P	**P**	**03 19 56.6**	**+0.5**
	comp=Z,21nm,1.1s							
B06A	**Marblemount**	**67.90**	**45**		*e*P	**P**	**03 19 56.9**	**+0.6**
	comp=Z,43nm,1.4s							
PUL	**Pulkovo**	**67.94**	**329**	*c*	*e*P	**P**	**03 19 57.4**	**+1.1**
PUL					pmax	pmax		
	comp=Z,56nm,0.5s							
LPSR	**Galich'ya Gora**	**67.99**	**320**		*e*P	**P**	**03 19 56.2**	**-0.5**
LPSR					pmax	pmax		
	comp=Z,70nm,0.8s							
KULLO	**Kullorsuaq**	**68.03**	**5**	⇑	*i*P	**P**	**03 19 57.3**	**+0.6**
	comp=Z,60nm,1.0s							
KULLO	**Kullorsuaq**	**68.03**	**5**	⇑	*i*P	**P**	**03 19 57.3**	**+0.6**
KULLO					pmax	pmax		
	comp=Z,60nm,1.0s							
F04D	**Rainier, OR**	**68.27**	**48**		P	**P**	**03 19 60.0**	**+1.4**
	baz=301							
D05A	**Enumclaw**	**68.30**	**47**		*e*P	**P**	**03 20 01.5**	**+2.7**
	comp=Z,40nm,1.0s							
C06D	**Leavenworth**	**68.55**	**46**		P	**P**	**03 20 02.2**	**+1.8**
	baz=302							
STKA	**Stephens Creek**	**68.55**	**179**		P	**P**	**03 20 00.4**	**+0.2**
	comp=Z,7.7nm,0.8s,baz=343,slow=8.7,SNR=13							
STKA					LR	LR	03 49 54.3	
	comp=Z,98nm,21.4s,baz=9.7,slow=36							
STKA	**Stephens Creek**	**68.55**	**179**		*e*P	**P**	**03 20 00.5**	**+0.2**
	comp=Z,2.3nm,0.9s							
G03D	**McMinnville, O**	**68.57**	**49**		P	**P**	**03 20 02.3**	**+1.8**
	baz=301							
FIA1	**FINESS Array S**	**68.59**	**332**		*e*P	**P**	**03 20 00.2**	**-0.1**
FIA1					*e*PP	**PP**	**03 22 30.6**	**-0.6**
FINES	**FINESS Array B**	**68.59**	**332**		P	**P**	**03 20 00.4**	**+0.1**
	comp=Z,92nm,0.8s,baz=58,slow=7.6,SNR=264							
VSR	**Storozhevoye**	**68.61**	**319**		*e*P	**P**	**03 20 00.2**	**-0.4**
VSR					pmax	pmax		
	comp=Z,60nm,0.7s							
F04A	**Amboy**	**68.70**	**48**		*e*P	**P**	**03 20 02.9**	**+1.6**
	comp=Z,36nm,1.0s							
LTY	**Liberty**	**69.03**	**46**		*e*P	**P**	**03 20 04.7**	**+1.2**
	comp=Z,10nm,0.9s							
B08A	**Colville Reser**	**69.20**	**45**		*e*P	**P**	**03 20 05.0**	**+0.5**
	comp=Z,18nm,1.0s							
H04A	**Detroit Lake**	**69.50**	**49**		*e*P	**P**	**03 20 07.4**	**+1.1**
	comp=Z,46nm,1.1s							
G05D	**Wamic, OR**	**69.72**	**48**		P	**P**	**03 20 09.4**	**+1.7**
	baz=302							
GOF	**Gofitskoye**	**69.72**	**312**	⇓	*i*P	**P**	**03 20 07.8**	**+0.1**
GOF					pmax	pmax		
	comp=Z,141nm,1.4s							
I04A	**Tendick Farm,**	**69.83**	**50**		P	**P**	**03 20 10.0**	**+1.6**
	baz=302,SNR=5.5							
L02D	**Cave Junction,**	**69.96**	**52**		P	**P**	**03 20 11.2**	**+2.0**
	baz=302							
C09A	**Chrisman Ranch**	**70.10**	**45**		*e*P	**P**	**03 20 10.7**	**+0.7**
	comp=Z,18nm,0.8s							
G06A	**Carlson Farm,**	**70.13**

YBH Yreka Blue Hor 70.75 52 *e*P P 03 20 16.0 +1.9
comp=Z,22nm,1.2s
J05D Fort Rock, OR 70.83 50 P P 03 20 16.5 +1.8
baz=303
M02C Callahan 70.84 52 P P 03 20 17.0 +2.3
baz=303,SNR=6.0
K04D Chiloquin, OR 70.86 51 P P 03 20 16.6 +1.7
baz=303
NEY Neytrino 70.89 310⇑ *i*P P 03 20 15.8 +0.7
NEY pmax pmax
comp=Z,12nm,1.6s
SMDO Samad 70.93 285 P P 03 20 16.1 +0.5
SNR=6.0
SMDO Samad 70.93 285 P P 03 20 16.1 +0.5
SNR=6.0
N02D Trinity Center 71.16 53 P P 03 20 18.9 +2.3
baz=303,SNR=5.3
M04C Macdoel 71.27 52 P P 03 20 19.4 +2.1
baz=303,SNR=8.4
GNI Garni 71.31 306 *e*P P 03 20 18.5 +0.8
GNI pmax pmax
comp=Z,47nm,1.3s
GNI MLR MLR
comp=Z,373nm,22.0s
GNI Garni 71.31 306 *e*P P 03 20 18.5 +0.8
comp=Z,47nm,1.3s
GNI LR LR
comp=Z,373nm,22.0s
UOSS Minazif 71.33 287 *e*P P 03 20 18.1 +0.2
comp=Z,2.6nm,1.0s
K05A Summer Lake 71.34 50 *e*P P 03 20 20.2 +2.3
comp=Z,56nm,1.1s
AKH Akhalkalaki 71.42 308 P P 03 20 19.6 +1.2
AKH Akhalkalaki 71.42 308⇓ *i*P P 03 20 19.4 +1.1
AKH Akhalkalaki 71.42 308 *e*P P 03 20 19.5 +1.2
HATD Hatta, Dubai 71.45 287 *i* P P 03 20 18.8 +0.3
SNR=8.8
HATD Hatta, Dubai 71.45 287 P P 03 20 18.6 0.0
SNR=5.7
HATD Hatta, Dubai 71.45 287 P P 03 20 18.6 0.0
SNR=5.7
HATD P P 03 20 18.6 0.0
SNR=5.7
WDC Whiskeytown Da 71.48 53 *e*P P 03 20 20.7 +2.2
WDC pmax pmax
comp=Z,22nm,1.3s
WDC Whiskeytown Da 71.48 53 *e*P P 03 20 20.7 +2.2
comp=Z,22nm,1.3s
CHVG Ch'k'valeri 71.58 310⇓ *i*P P 03 20 20.1 +1.1
ASHO Ashiyiah 71.58 287 *i* P P 03 20 19.6 +0.2
SNR=10
ASHO Ashiyiah 71.58 287 P P 03 20 19.6 +0.2
SNR=10.0
ASHO Ashiyiah 71.58 287 P P 03 20 19.6 +0.2
SNR=10.0
ASHO P P 03 20 19.6 +0.2
SNR=10.0
F10A Beach Ranch, E 71.72 46 *e*P P 03 20 21.0 +1.1
comp=Z,14nm,1.1s
NAZ Nazwa, Dubai 71.72 288 P P 03 20 20.2 +0.1
WALA Waterton Lakes 71.78 42 *e*P P 03 20 21.7 +1.4
comp=Z,55nm,1.4s
ARQ Araqi 71.96 286 P P 03 20 22.3 +0.6
SNR=8.4
ARQ Araqi 71.96 286 P P 03 20 22.3 +0.6
SNR=8.4
BSMT Bassoo Peak 72.01 43 P P 03 20 23.7 +1.9
SCO Scoresbysund 72.07 354 *i* P P 03 20 22.6 +1.1
comp=Z,51nm,1.1s
SCO Scoresbysund 72.07 354 *i* P P 03 20 22.6 +1.1
SCO pmax pmax
comp=Z,51nm,1.1s
O03D Paynes Creek 72.11 53 P P 03 20 23.4 +1.0
baz=304,SNR=11
IZAR Zarasai 72.15 327 *e*P P 03 20 22.8 +0.6
IZAR IAmb IAmb 03 20 23.7
comp=Z,25nm,0.7s
BLMT Blacktail Moun 72.15 43 *e*P P 03 20 23.6 +0.9
MOD Modoc Plateau 72.16 51 *e*P P 03 20 23.9 +1.2
comp=Z,16nm,1.0s
IDID Didziasalis 72.21 327 *e*P P 03 20 23.2 +0.6
IDID IAmb IAmb 03 20 24.1
comp=Z,34nm,0.8s
ISAL Salakas 72.31 327 *e*P P 03 20 24.0 +0.8
ISAL IAmb IAmb 03 20 24.8
comp=Z,56nm,0.8s
JTMT Jette 72.35 43 *e*P P 03 20 25.4 +1.6
CAN Canberra 72.38 173 PFAKE 03 20 40.0 +16
CAN LR LR
comp=Z,172nm,19.0s
IIGN Ignalina 72.41 327 *e*P P 03 20 24.4 +0.6
IIGN IAmb IAmb 03 20 25.4
comp=Z,40nm,0.8s
YBMT Yellow Bay 72.43 43 *e*P P 03 20 26.1 +1.9
NACGM Naroch 72.46 326 *e*P P 03 20 24.0 0.0
NACGM PM 03 20 25.0
comp=Z,0.3nm,1.0s
SOC Sochi 72.53 312 *e*P P 03 20 23.9 -0.8
SOC *e* 03 20 40.8
SOC *e* 03 23 00.6
SOC *e*S **S** **03 29 44.1 -4.2**
SOC *e*SS **SS** **03 34 24.9 -1.5**
SOC pmax pmax
comp=Z,35nm,0.8s
SOC MLR MLR
comp=Z,536nm,18.0s
SWMT Swartz Lake 72.64 43 *e*P P 03 20 26.9 +1.4
ORV Oroville 72.71 53 *e*P P 03 20 26.9 +1.0
ORV pmax pmax
comp=Z,42nm,1.5s
ORV Oroville 72.71 53 *e*P P 03 20 26.9 +1.0
comp=Z,42nm,1.5s
WVOR Wild Horse Val 72.89 50 *e*P P 03 20 28.1 +1.1
WVOR pmax pmax
comp=Z,54nm,1.6s
WVOR MLR MLR
comp=Z,177nm,20.0s
WVOR Wild Horse Val 72.89 50 *e*P P 03 20 28.1 +1.1
comp=Z,54nm,1.6s
WVOR LR LR
comp=Z,177nm,20.0s
NWAO Narrogin (SRO) 72.98 201 P P 03 20 26.9 -0.3
comp=Z,11nm,0.8s,baz=149,slow=0.0,SNR=5.6
NWAO Narrogin (SRO) 72.98 201 P P 03 20 27.0 -0.3
NWAO pmax pmax
comp=Z,11nm,0.8s
MSO Missoula 73.08 44 P P 03 20 28.9 +0.9
baz=306,SNR=10
MSO Missoula 73.08 44 *e*P P 03 20 29.1 +1.0
comp=Z,29nm,1.3s
MSO *e*PP **PP** **03 23 07.6 -2.7**
ANN Anapa 73.17 314 *e*P P 03 20 23.6 -4.9
ANN *e*'PP pP 03 20 33.3 -0.7
ANN *e* 03 20 41.9
ANN *e*S S 03 29 46.3 -9.3
ANN *e*SS **SS** **03 34 31.5 -4.7**
ANN pmax pmax
comp=Z,106nm,1.2s
AFDM Forest Hills D 73.39 54 *e*P P 03 20 30.9 +0.9
comp=Z,24nm,1.3s
CHMT Chamberlain Mo 73.41 43 *e*P P 03 20 31.0 +0.9
ILULI Ilulissat 73.71 4 *i* P P 03 20 31.8 +0.6
comp=Z,39nm,0.9s
ILULI Ilulissat 73.71 4 *i* P P 03 20 31.8 +0.6
ILULI pmax pmax
comp=Z,39nm,0.9s
NC405 NORSAR Array S 73.79 337 *e*P P 03 20 32.2 +0.4
NC303 NORSAR Array S 73.81 337 *e*P P 03 20 32.3 +0.3
HFS Hagfors 73.89 335 LR LR 03 55 31.6
comp=Z,519nm,18.5s,baz=28,slow=38
NC204 NORSAR Array S 73.96 337 *e*P P 03 20 33.8 +0.9
NB201 NORSAR Array S 73.97 337 *e*P P 03 20 33.3 +0.3
FFC Flin Flon 73.99 32 *e*P P 03 20 33.9 +0.8
FFC pmax pmax
comp=Z,36nm,0.9s
FFC Flin Flon 73.99 32 *e*P P 03 20 33.9 +0.8
comp=Z,36nm,0.9s
AKASG Malin Array Be 74.00 322 P P 03 20 33.0 -0.2
comp=Z,44nm,0.8s,baz=46,slow=6.1,SNR=170
AKASG LR LR 03 54 10.1
comp=Z,363nm,21.1s,baz=50,slow=37
AKASG Malin Array Be 74.00 322 P P 03 20 33.0 -0.2
AKASG pmax pmax
comp=Z,44nm,0.8s
AKASG MLR MLR
comp=Z,363nm,21.1s

AKBB Malin Array Si 74.00 322 *e*P P 03 20 33.1 -0.1
AKBB pmax pmax
comp=Z,63nm,0.9s
AKBB Malin Array Si 74.00 322 *e*P P 03 20 33.0 -0.1
comp=Z,63nm,0.9s
NB2 NORSAR Subarra 74.00 337 P P 03 20 33.2 +0.1
comp=Z,49nm,0.8s,baz=40,slow=6.2
NB2 NORSAR Subarra 74.00 337 P P 03 20 33.2 +0.1
baz=40,slow=6.2
NOA NORSAR Array B 74.00 337 P P 03 20 33.2 +0.1
comp=Z,44nm,0.8s,baz=42,slow=5.4,SNR=141
NOA LR LR 03 56 07.8
comp=Z,302nm,19.7s,baz=40,slow=38
NOA NORSAR Array B 74.00 337 P P 03 20 33.3 +0.1
NOA pmax pmax
comp=Z,39nm,0.8s
NOA MLR MLR
comp=Z,302nm,19.7s
MFID Camas Ranch 74.00 48 *e*P P 03 20 34.6 +1.0
comp=Z,63nm,1.5s
KIEV Kiev 74.01 322 *e*P P 03 20 33.0 -0.3
KIEV pmax pmax
comp=Z,62nm,0.9s
KIEV MLR MLR
comp=Z,635nm,19.0s
KIEV Kiev 74.01 322 *e*P P 03 20 33.0 -0.3
comp=Z,62nm,0.9s
KIEV LR LR
comp=Z,635nm,19.0s
AK11 Malin Array Si 74.04 322 *e*P P 03 20 33.0 -0.4
NBO02 NORSAR Array S 74.11 337 *e*P P 03 20 33.9 +0.2
NC602 NORSAR Array S 74.13 337 *e*P P 03 20 33.3 -0.6
NBO00 NORSAR Array S 74.14 337 *e*P P 03 20 34.6 +0.7
FCC Fort Churchill 74.23 26 *e*P P 03 20 34.9 +0.5
FCC pmax pmax
comp=Z,53nm,1.0s
FCC Fort Churchill 74.23 26 *e*P P 03 20 34.9 +0.5
comp=Z,53nm,1.0s
NAO01 NORSAR Array S 74.25 337 *e*P P 03 20 35.0 +0.4
CMB Columbia Colle 74.28 54 *e*P P 03 20 36.8 +1.6
CMB pmax pmax
comp=Z,42nm,1.1s
CMB Columbia Colle 74.28 54 *e*P P 03 20 36.8 +1.6
comp=Z,42nm,1.1s
LRM Limekiln Ridge 74.51 44 *e*P P 03 20 38.0 +1.4
EGMT Eagleton 74.61 41 P P 03 20 37.9 +0.9
baz=309
EGMT Eagleton 74.61 41 PFAKE 03 20 50.0 +13
EGMT LR LR
comp=Z,336nm,19.0s
SUW Suwalki 74.62 327 *e*P P 03 20 36.7 -0.1
SUW Suwalki 74.62 327 *e*P P 03 20 36.8 -0.1
WAKR Walker 74.63 53 *e*P P 03 20 39.3 +1.9
DLMT Dillon 74.70 44 *e*P P 03 20 39.4 +1.7
comp=Z,32nm,0.8s
DLMT *e*PP PP 03 23 17.8 -6.4
HLID Hailey 74.75 47 P P 03 20 39.4 +1.4
baz=307,SNR=24
HLID Hailey 74.75 47 *e*P P 03 20 39.7 +1.7
comp=Z,23nm,1.3s
HLID LR LR
comp=Z,135nm,19.0s
MCMT McKenzie Canyo 74.89 45 *e*P P 03 20 38.3 -0.5
BMN Battle Mountai 74.91 51 *e*P P 03 20 41.0 +2.0
BMN pmax pmax
comp=Z,47nm,1.4s
BMN Battle Mountai 74.91 51 *e*P P 03 20 41.0 +2.0
comp=Z,47nm,1.4s
SIM Simferopol' 74.98 315 *c* *i*P P 03 20 39.5 +0.4
SIM pmax pmax
comp=Z,49nm,0.9s
SIM MLR MLR
comp=N,190nm,18.7s
BOZ Bozeman (W) 75.07 44 P P 03 20 41.2 +1.4
baz=308,SNR=27
BOZ Bozeman (W) 75.07 44 *e*P P 03 20 40.9 +1.1
BOZ *e* 03 23 27.1
BOZ pmax pmax
comp=Z,70nm,1.5s
BOZ Bozeman (W) 75.07 44 *e*P P 03 20 40.9 +1.1
comp=Z,70nm,1.5s
BOZ *e*PP **PP** **03 23 27.1 -0.2**
NV01 Mina Array Sit 75.40 53 *e*P P 03 20 43.1 +1.2
NVAR Mina Array Bea 75.40 53 P P 03 20 43.5 +1.6
comp=Z,16nm,0.9s,baz=284,slow=6.2,SNR=67
NVAR LR LR 03 52 07.3
comp=Z,55nm,18.2s,baz=268,slow=34
NV11 Mina Array Sit 75.49 53 *e*P P 03 20 44.0 +1.7
comp=Z,47nm,1.4s
MLAC Mammoth, Mammo 75.52 54 P P 03 20 44.3 +1.7
baz=306
KONO Kongsberg 75.59 337 *e*P P 03 20 42.1 -0.2
KONO pmax pmax
comp=Z,21nm,0.8s
KONO MLR MLR
comp=Z,535nm,19.0s
KONO Kongsberg 75.59 337 *e*P P 03 20 42.1 -0.2
comp=Z,21nm,0.8s
KONO LR LR
comp=Z,535nm,19.0s
QLMT Earthquake Lak 75.68 44 *e*P P 03 20 45.1 +1.7
KBSD Kabsdagh 75.80 306 *e*P P 03 20 44.0 +0.1
SFJD Kangerlussuaq 75.94 5 P P 03 20 45.0 +1.0
comp=Z,22nm,0.8s,baz=339,slow=5.0,SNR=9.3
SFJD Kangerlussuaq 75.94 5 *i* P P 03 20 44.6 +0.5
comp=Z,30nm,1.0s
SFJD Kangerlussuaq 75.94 5 *e*P P 03 20 45.1 +1.0
SFJD pmax pmax
comp=Z,28nm,0.9s
SFJD Kangerlussuaq 75.94 5 *e*P P 03 20 45.1 +1.0
comp=Z,28nm,0.9s
ELK Elko 75.94 49 *e*P P 03 20 46.2 +1.2
ELK pmax pmax
comp=Z,12nm,1.0s
ELK Elko 75.94 49 *e*P P 03 20 46.2 +1.2
comp=Z,12nm,1.0s
ERBA Erbaa 76.01 311 *i* P P 03 20 45.8 +0.7
RCTC Rector, Farmer 76.03 55 P P 03 20 46.2 +1.0
baz=306
YMR Madison River 76.04 44 *e*P P 03 20 47.5 +2.0
comp=Z,96nm,1.7s
GCMT Greycliff 76.06 43 *e*P P 03 20 47.5 +2.1
SORM Soroca 76.08 320⇑ *i*P P 03 20 45.6 +0.3
SMMC Simrler 76.11 56 P P 03 20 47.5 +1.8
baz=306
YFT Old Faithful 76.25 44 *e*P P 03 20 49.5 +2.8
comp=Z,19nm,1.0s
HAVZ Havza 76.40 311 *i* P P 03 20 48.0 +0.7
HAVZ Havza 76.40 311 P P 03 20 48.0 +0.7
MZRK Al-Mazaregh 76.41 305 *e*P P 03 20 47.9 +0.4
SFNV Sufian 76.42 305 *e*P P 03 20 48.0 +0.5
LKWY Lake 76.42 44 PFAKE 03 21 00.0 +12
LKWY LR LR
comp=Z,239nm,19.0s
H17A Grant Village 76.43 44 P P 03 20 50.6 +2.9
baz=309,SNR=45
H17A Grant Village 76.43 44 *e*P P 03 20 50.3 +2.6
comp=Z,98nm,1.4s
PKM Mcpherson Peak 76.47 57 P P 03 20 49.7 +1.7
baz=306,SNR=5.2
IMW Indian Meadow 76.54 45 *e*P P 03 20 50.6 +2.3
comp=Z,86nm,1.6s
FLWY Flagg Ranch 76.56 45 *e*P P 03 20 50.9 +2.5
comp=Z,98nm,1.7s
KIS Kishinev 76.57 319 *i* P P 03 20 48.0 -0.1
KIS LRM MLR 03 59 08.0
comp=Z,600nm,16.0s
KIS Kishinev 76.57 319⇑ *i*P P 03 20 48.0 -0.1
KIS *e* 03 21 03.0
KIS MLR MLR
comp=Z,600nm,16.0s
KIS MLR MLR
comp=N,800nm,14.0s
KIS MLR MLR
comp=E,500nm,14.0s
KIS MLR MLR
comp=Z,600nm,16.0s
FXWY Fox Creek 76.65 45 *e*P P 03 20 51.1 +2.1
comp=Z,24nm,1.1s
BOYT Boyabat 76.68 312 *i* P P 03 20 50.0 +1.1
RLMT Red Lodge 76.70 43 P P 03 20 50.7 +1.6
baz=310,SNR=12
RLMT Red Lodge 76.70 43 *e*P P 03 20 50.2 +1.0
comp=Z,17nm,0.9s
AKCD Akcadag 76.71 308 *i* P P 03 20 50.6 +1.3
MOOW Moose Ponds 76.74 45 *e*P P 03 20 50.9 +1.4
comp=Z,44nm,1.4s
HVU Hansel Valley 76.79 47 *e*P P 03 20 51.4 +1.7
HVU pmax pmax
comp=Z,15nm,0.9s
HVU Hansel Valley 76.79 47 *e*P P 03 20 51.4 +1.7
comp=Z,15nm,0.9s
GRAC Grapevine Rang 76.84 54 P P 03 20 51.2 +1.3
baz=307
CUALT Altinyayla-SIV 76.85 309 *i* P P 03 20 51.1 +1.0
CUALT Altinyayla-SIV 76.85 309 P P 03 20 51.1 +1.0
LOHW Long Hollow 76.91 45 *e*P P 03 20 52.1 +1.7
comp=Z,25nm,1.4s
ISA Isabella, Lake 76.91 55 *e*P P 03 20 51.6 +1.3
ISA pmax pmax
comp=Z,10.0nm,1.0s
ISA Isabella, Lake 76.91 55 *e*P P 03 20 51.6 +1.3
comp=Z,10nm,1.0s
SNOW Snow King Moun 76.91 45 *e*P P 03 20 52.2 +1.8
comp=Z,39nm,1.4s
REDW Red Top Meadow 76.92 45 *e*P P 03 20 52.0 +1.5
comp=Z,36nm,1.3s
ARVC Arvin 76.99 56 P P 03 20 52.1 +1.4
baz=306
CUSAR Sarkisla-SIVAS 77.08 310 *i* P P 03 20 52.3 +0.9
LVV L'vov 77.09 324⇑ *i*P P 03 20 51.4 +0.4
IAS Iasi 77.10 320⇑ *i*P P 03 20 51.7 +0.6
DAC Darwin (Calif) 77.12 54 *e*P P 03 20 52.2 +0.5
DAC pmax pmax
comp=Z,20nm,1.1s
DAC Darwin (Calif) 77.12 54 *e*P P 03 20 52.2 +0.5
comp=Z,20nm,1.1s
AHID Auburn Hatcher 77.15 46 *e*P P 03 20 52.9 +1.1
comp=Z,59nm,1.6s
AHID LR LR
comp=Z,225nm,20.0s
DGMT Dagmar 77.16 38 P P 03 20 52.1 +0.6
baz=312,SNR=5.3
DGMT Dagmar 77.16 38 *e*P P 03 20 52.6 +1.1
comp=Z,7nm,0.3s
BGU Big Grassy Mou 77.16 48 *e*P P 03 20 54.0 +2.2
comp=Z,14nm,1.1s
R11A Troy Canyon, C 77.16 52 P P 03 20 53.5 +1.6
baz=307,SNR=55
R11A Troy Canyon, C 77.16 52 *e*P P 03 20 53.4 +1.6
comp=Z,56nm,1.3s
BEL Belsk 77.18 327 *e*P P 03 20 52.4 +1.0
BEL Belsk 77.18 327 *e*P P 03 20 52.5 +1.0
BSD Bornholm Skovb 77.22 331⇓ *i*P P 03 20 51.6 +0.1
comp=Z,92nm,0.9s
BSD Bornholm Skovb 77.22 331⇓ *i*P P 03 20 51.6 +0.1
BSD pmax pmax
comp=Z,92nm,0.9s
MNKR ALMNKUR 77.25 305 *e*P P 03 20 45.2 -6.9
LAO LASA Array 77.31 41 P P 03 20 53.8 +1.4
baz=311
LAO LASA Array 77.31 41 PFAKE 03 21 00.0 +7.6
LAO LR LR
comp=Z,280nm,19.0s
MPMC Manual Prospec 77.32 54 P P 03 20 54.1 +1.3
baz=307,SNR=16
COAL Corum-Alaca 77.34 311 *i* P P 03 20 53.7 +1.0
A25A Svangstu Ranch 77.38 37 P P 03 20 53.8 +1.1
baz=313,SNR=6.5
BLG Laguna Peak, P 77.43 57 P P 03 20 55.0 +1.8
baz=306
KSRV Kasrt alli 77.47 305 *e*P P 03 20 53.7 +0.3
FURC Furnace Creek, 77.48 54 P P 03 20 55.0 +1.6
baz=307,SNR=7.8
LRMC Laurel Mtn Rad 77.54 55 P P 03 20 54.9 +1.0
baz=307
TPNV Topopah Spring 77.59 53 P P 03 20 55.5 +1.3
baz=307,SNR=17
TPNV Topopah Spring 77.59 53 *e*P P 03 20 55.4 +1.2
TPNV pmax pmax
comp=Z,42nm,1.0s
TPNV Topopah Spring 77.59 53 *e*P P 03 20 55.4 +1.2
comp=Z,42nm,1.0s
HWUT Hardware Ranch 77.61 47 *e*P P 03 20 55.5 +1.2
comp=Z,60nm,1.3s
ILGA Ilgaz 77.61 312 *i* P P 03 20 55.7 +1.4
PRAR RASCA 77.67 321⇑ *i*P P 03 20 55.0 +0.7
MOUT Mount Ogden 77.69 48 *e*P P 03 20 55.9 +1.0
EDW2 Edwards Air Fo 77.69 56 P P 03 20 56.2 +1.5
baz=307,SNR=7.7
COP Copenhagen 77.71 333⇓ *i*P P 03 20 54.7 +0.4
comp=Z,68nm,0.8s
COP Copenhagen 77.71 333⇓ *i*P P 03 20 54.7 +0.4
COP pmax pmax
comp=Z,68nm,0.8s
DUG Dugway, Tooele 77.74 49 P P 03 20 56.5 +1.5
baz=308,SNR=21
DUG Dugway, Tooele 77.74 49 *e*P P 03 20 56.8 +1.8
DUG pmax pmax
comp=Z,67nm,1.4s
DUG MLR MLR
comp=Z,130nm,19.0s
DUG Dugway, Tooele 77.74 49 *e*P P 03 20 56.8 +1.8
comp=Z,67nm,1.4s
DUG LR LR
comp=Z,130nm,19.0s
TLCR 77.75 318⇑ *i*P P 03 20 55.1 +0.4
B25A Knox Farm, Ray 77.80 38 P P 03 20 56.1 +1.0
baz=313
DECC Green Verdugo 77.83 56 P P 03 20 56.4 +0.9
baz=307
KWP Kalwaria Pacla 77.84 324 *e*P P 03 20 56.2 +1.0
KWP Kalwaria Pacla 77.84 324⇑ *i*P P 03 20 56.0 +0.8
KWP Kalwaria Pacla 77.84 324 *e*P P 03 20 56.2 +1.0
A26A Wade Farm, Ken 77.92 37 P P 03 20 56.6 +0.9
baz=313,SNR=11
JHLN Al Jahlan 77.95 306 *e*P P 03 21 00.2 +4.1
BUR08 Bucovina Ar. S 78.00 321 *e*P P 03 20 56.7 +0.5
TCUT Toone Canyon 78.00 47 *e*P P 03 20 58.6 +2.0
comp=Z,147nm,1.6s
BURAR Bucovina Array 78.01 321⇓ *i*P P 03 20 56.9 +0.6
BW06 Boulder Array 78.03 45 P P 03 20 57.7 +0.9
baz=310,SNR=16
BW06 Boulder Array 78.03 45 *e*P P 03 20 57.6 +0.9
comp=Z,43nm,1.6s
PD31 Pinedale Array 78.03 45 *e*P P 03 20 57.6 +0.9
PDAR Pinedale Array 78.03 45 P P 03 20 57.6 +0.9
comp=Z,5.8nm,0.7s,baz=264,slow=2.3,SNR=37
PDAR LR LR 03 51 21.4
comp=Z,51nm,21.9s,baz=344,slow=33
CTU Camp Tracy 78.07 48 *e*P P 03 20 56.9 0.0
comp=Z,37nm,1.4s
CDAG Cicekdag 78.10 311 *i* P P 03 20 57.4 +0.4
CFR Carcaliu 78.12 318⇓ *i*P P 03 20 57.0 +0.2
PSUT Pine Spring 78.13 51 *e*P P 03 20 58.2 +0.9
comp=Z,47nm,1.3s
C25A Freed Ranch, W 78.14 38 P P 03 20 57.9 +1.0
baz=313
ANDN Andirin 78.14 308 *i* P P 03 20 58.0 +0.8
FMP Fort Macarthur 78.18 57 P P 03 20 58.1 +0.7
baz=307
B26A Jensen Ranch, 78.19 37 P P 03 20 58.4 +1.2
baz=313,SNR=5.6
GSC Goldstone, Bar 78.22 55 P P 03 20 58.7 +1.0
baz=307,SNR=7.6
GSC Goldstone, Bar 78.22 55 *e*P P 03 20 58.7 +1.0
GSC pmax pmax
comp=Z,31nm,1.3s
GSC Goldstone, Bar 78.22 55 *e*P P 03 20 58.7 +1.0
comp=Z,31nm,1.3s
MUD Monsted U'grnd 78.25 335 *i* P P 03 20 58.0 +0.7
comp=Z,42nm,0.9s
MUD Monsted U'grnd 78.25 335 *i* P P 03 20 58.0 +0.7
MUD pmax pmax
comp=Z,42nm,0.9s
A27A Ledoux Ranch, 78.27 36 P P 03 20 58.4 +0.8
baz=314
BFSC Mount Baldy Ra 78.29 56 P P 03 20 59.2 +1.0
baz=307,SNR=6.4
ODBI Odobesti 78.31 319⇓ *i*P P 03 20 59.7 +1.9
NLU North Lily Min 78.33 49 *e*P P 03 20 59.7 +1.3
comp=Z,33nm,1.3s
VRI Vrincioaia 78.41 319⇑ *i*P P 03 20 59.5 +1.1
TIRR Tirgusor 78.44 317⇑ *i*P P 03 20 59.1 +0.5
TIRR Tirgusor 78.44 317⇑ *i*P P 03 20 59.1 +0.5
PLOR Plostina 78.46 319⇑ *i*P P 03 20 59.7 +0.9
BR131 Keskin Array S 78.48 311 *e*P P 03 20 59.4 +0.2
BRTR Keskin Array B 78.48 311 P P 03 20 59.3 +0.2
comp=Z,19nm,0.9s,baz=96,slow=5.0,SNR=66
BRTR LR LR 03 59 05.8
comp=Z,124nm,19.1s,baz=44,slow=38
D25A Fairfield 78.48 39 P P 03 20 59.9 +1.0

baz=313
DRWC Darouich 78.52 307 *e*P P 03 20 59.2 -0.1
KOLS Kolonicke sedl 78.53 324 *e*P P 03 20 59.8 +0.7
KOLS pmax pmax
comp=Z,27nm,1.1s
KOLS Kolonicke sedl 78.53 324 *e*P P 03 20 59.8 +0.7
MPU Maple Canyon 78.56 48 *e*P P 03 21 01.4 +1.7
comp=Z,62nm,1.4s
C26A Wahner Farm, P 78.63 38 P P 03 21 01.0 +1.4
baz=314,SNR=6.9
STHS Stebnicka Huta 78.68 325 *e*P P 03 21 01.0 +1.1
STHS pmax pmax
comp=Z,32nm,1.2s
STHS Stebnicka Huta 78.68 325 *e*P P 03 21 01.0 +1.1
TUQ Turquoise Moun 78.71 54 P P 03 21 01.8 +1.3
baz=308,SNR=6.5
UZH Uzhgorod 78.73 324 *e*P P 03 21 00.5 +0.4
UZH *e* 03 21 07.1
A28A Rude Farm, Bot 78.76 36 P P 03 21 01.1 +0.7
baz=315,SNR=8.4
BBRC Big Bear Solar 78.77 56 P P 03 21 01.5 +0.6
baz=307
OJC Ojcow 78.77 326 *e*P P 03 21 01.0 +0.7
OJC Ojcow 78.77 326 *e*P P 03 21 00.4 +0.1
OJC pmax pmax
comp=Z,102nm,1.1s
OJC Ojcow 78.77 326 *e*P P 03 21 00.4 +0.1
comp=Z,102nm,1.1s
ARCR ARCALIA 78.80 321⇓ *i*P P 03 21 02.0 +1.5
HEC Hector,Ludlow 78.81 55 P P 03 21 02.5 +1.6
baz=308
BMR Baia Mare 78.82 322⇓ *i*P P 03 21 01.2 +0.6
E25A Miller Ranch, 78.89 39 P P 03 21 02.1 +1.0
baz=313,SNR=7.8
ANTO Ankara 78.90 312 *e*P P 03 21 01.3 0.0
ANTO pmax pmax
comp=Z,35nm,0.8s
ANTO MLR MLR
comp=Z,130nm,21.0s
ANTO Ankara 78.90 312 *e*P P 03 21 01.3 0.0
comp=Z,35nm,0.8s
ANTO LR LR
comp=Z,130nm,21.0s
PGOR Pogoanele 78.91 319⇓ *i*P P 03 21 03.0 +1.8
BR231 Keskin MP Arra 78.92 312 *e*P P 03 20 60.0 -1.5
CRVS Cervenica-Dubn 78.94 324 *e*P P 03 21 02.3 +1.0
CRVS Cervenica-Dubn 78.94 324 *e*P P 03 21 02.3 +1.0
TRPA Tarpa 78.97 323⇓ *e*P P 03 21 02.2 +0.8
MURC Murrieta 78.98 56 P P 03 21 03.0 +1.1
baz=307
C27A Sayler Ranch, 79.00 38 P P 03 21 02.9 +1.2
baz=314,SNR=5.5
MSAB Monastry St. A 79.00 317⇓ *i*P P 03 21 02.5 +0.8
ISR Istrita 79.00 319⇓ *i*P P 03 21 03.6 +1.8
ISR Istrita 79.00 319 P P 03 21 03.6 +1.8
BTCH Batrach 79.01 307 *e*P P 03 21 01.8 -0.2
D26A Manning 79.01 38 P P 03 21 02.8 +1.0
baz=314
B28A Dugan Ranch, T 79.03 36 P P 03 21 02.7 +0.9
baz=315,SNR=9.5
MLR Muntele Rosu 79.07 319⇑ *i*P P 03 21 03.0 +0.8
MLR Muntele Rosu 79.07 319 *e*P P 03 21 02.7 +0.5
MLR pmax pmax
comp=Z,23nm,1.1s
MLR Muntele Rosu 79.07 319 *e*P P 03 21 02.7 +0.5
comp=Z,23nm,1.1s
NIE Niedzica 79.11 325 *e*P P 03 21 03.3 +1.0
NIE Niedzica 79.11 325 *e*P P 03 21 03.3 +1.0
MSU Marysvale 79.17 50 *e*P P 03 21 05.3 +2.2
MSU Marysvale 79.17 50 *e*P P 03 21 05.3 +2.2
A29A Manning Farm, 79.23 36 P P 03 21 04.0 +1.1
baz=315,SNR=24
F25A Bowman 79.25 40 P P 03 21 03.7 +0.6
baz=313
KKUL Konya-Kulu 79.26 311 *i*P P 03 21 04.1 +0.7
TMUT Trail Mountain 79.27 49 *e*P P 03 21 05.4 +1.7
comp=Z,20nm,1.0s
GMRC Granite Mounta 79.28 55 P P 03 21 05.0 +1.5
baz=308,SNR=9.3
KFRA Kufra 79.29 306 *e*P P 03 21 00.2 -3.4
SECR 79.31 319⇓ *i*P P 03 21 04.8 +1.4
WRDH Warideh 79.36 306 *e*P P 03 21 03.0 -0.9
E26A Carlson Angus 79.38 39 P P 03 21 04.5 +0.7
baz=314,SNR=6.0
D27A Center 79.41 38 P P 03 21 05.0 +1.1
baz=314,SNR=5.4
ARNB Al Arnab 79.43 307 *e*P P 03 21 05.0 +0.7
CJR Cluj-Napoca 79.43 321⇓ *i*P P 03 21 05.5 +1.4
SLNF Slenfeh 79.43 307 *e*P P 03 21 03.0 -1.4
P17A Butcher Ranch, 79.44 48 *e*P P 03 21 06.3 +1.9
comp=Z,115nm,1.4s
SULR 79.45 319⇓ *i*P P 03 21 04.8 +0.7
SULR 79.45 319⇓ *i*P P 03 21 04.8 +0.7
LDFC Landfair 79.45 54 *e*P P 03 21 05.3 +0.8
comp=Z,37nm,0.9s
PFO Pinyon Flats O 79.46 56 P P 03 21 05.7 +1.1
baz=308,SNR=8.9
PFO Pinyon Flats O 79.46 56 *e*P P 03 21 05.4 +0.8
PFO pmax pmax
comp=Z,37nm,1.2s
PFO MLR MLR
comp=Z,351nm,22.0s
PFO Pinyon Flats O 79.46 56 *e*P P 03 21 05.4 +0.8
comp=Z,37nm,1.2s
PFO LR LR
comp=Z,351nm,22.0s
MTPU Mount Pierson 79.47 50 *e*P P 03 21 05.3 +0.5
comp=Z,43nm,1.3s
109C Camp Elliot, M 79.47 57 P P 03 21 05.6 +1.1
baz=307
B29A Wagenman Farm, 79.50 36 P P 03 21 05.2 +0.9
baz=315,SNR=7.4
BELC Belle Mtn. Jos 79.53 55 P P 03 21 05.7 +0.7
baz=308,SNR=5.6
C28A Hausauer Farms 79.54 37 P P 03 21 05.2 +0.6
baz=315
KERG Konya-Eregli 79.63 309 *i*P P 03 21 05.6 +0.1
P18A Preston Nutter 79.63 48 *e*P P 03 21 07.4 +1.7
comp=Z,32nm,1.0s
A30A Hoffart Farm, 79.65 35 P P 03 21 05.9 +0.7
baz=316,SNR=24
LANS Liptovska Anna 79.68 325 *e*P P 03 21 06.9 +1.5
LANS *e* 03 24 07.7
LANS Liptovska Anna 79.68 325 *e*P P 03 21 06.9 +1.5
LANS *e*PP PP 03 24 07.7 +2.0
KECS Kecovo 79.69 324 *e*P P 03 21 05.8 +0.4
KECS pmax pmax
comp=Z,7.0nm,1.0s
KECS Kecovo 79.69 324 *e*P P 03 21 05.8 +0.4
F26A Lodgepole 79.70 39 P P 03 21 06.5 +1.0
baz=314
KNB Kanab 79.71 51 *e*P P 03 21 08.5 +2.6
KNB pmax pmax
comp=Z,89nm,1.3s
KNB Kanab 79.71 51 *e*P P 03 21 08.5 +2.6
comp=Z,89nm,1.3s
BIDA Albida 79.72 306 *e*P P 03 21 07.2 +1.3
PKCU Pink Cliffs 79.76 51 *e*P P 03 21 06.8 +0.4
comp=Z,39nm,1.4s
G25A Newell 79.77 40 P P 03 21 06.6 +0.6
baz=313
OKC Ostrava-Krasne 79.78 326⇓ *i*P P 03 21 06.4 +0.6
OKC *ex* x 03 21 20.7
OKC Ostrava-Krasne 79.78 326⇓ *i*P P 03 21 06.4 +0.6
OKC *e* 03 21 20.7
ULM Lac du Bonnet 79.79 33 P P 03 21 06.3 +0.5
comp=Z,18nm,0.9s,baz=302,slow=6.2,SNR=19
ULM Lac du Bonnet 79.79 33 *e*P P 03 21 06.2 +0.3
ULM pmax pmax
comp=Z,25nm,0.9s
ULM Lac du Bonnet 79.79 33 *e*P P 03 21 06.2 +0.3
comp=Z,25nm,0.9s
SRU San Rafael Swe 79.80 48 *e*P P 03 21 07.3 +0.9
SRU pmax pmax
comp=Z,99nm,1.5s
SRU San Rafael Swe 79.80 48 *e*P P 03 21 07.3 +0.9
comp=Z,99nm,1.5s
K22A Casper 79.81 44 P P 03 21 07.1 +0.8
baz=312
DRGR 79.81 322⇑ *i*P P 03 21 07.0 +0.8
D28A Regan 79.82 37 P P 03 21 06.9 +0.7
baz=315
MDND Maddock 79.82 37 P P 03 21 07.0 +0.9
baz=315
MDND Maddock 79.82 37 *e*P P 03 21 06.3 +0.2
comp=Z,72nm,1.0s
ARR Arges 79.83 320⇑ *i*P P 03 21 07.9 +1.6
KSP Ksiaz 79.84 328 *e*P P 03 21 06.9 +0.7
KSP Ksiaz 79.84 328 *e*P P 03 21 06.9 +0.7
E27A Carson 79.86 38 P P 03 21 07.5 +1.1
baz=314,SNR=8.4
BAR Barrett 79.89 57 *e*P P 03 21 08.4 +1.6
comp=Z,106nm,0.1s
MONP2 Monument Peak 79.92 56 P P 03 21 08.6 +1.4
baz=308,SNR=6.1
NEE2 Needles Airpor 79.96 54 P P 03 21 08.1 +1.0
baz=308
HAWK Haweek 79.97 306 *e*P P 03 21 07.4 +0.1
B30A Myrvik Farm, E 79.99 35 P P 03 21 07.6 +0.6
baz=316,SNR=25
IRM Iron Mountain 80.00 55 P P 03 21 08.6 +1.2
baz=308,SNR=8.8
F27A Lemmon 80.02 39 P P 03 21 08.4 +1.1
baz=314,SNR=8.5
H25A Fruitdale 80.06 41 P P 03 21 08.2 +0.6
baz=313,SNR=7.3
MORC Moravsky Berou 80.09 327 *e*P P 03 21 08.2 +0.6
MORC pmax pmax
comp=Z,196nm,1.0s
MORC Moravsky Berou 80.09 327 *e*P P 03 21 08.2 +0.6
comp=Z,196nm,1.0s
BC3 Big Chuckawall 80.10 55 P P 03 21 08.9 +0.9
baz=308,SNR=6.7
G26A Maurine 80.12 40 P P 03 21 08.7 +0.8
baz=314,SNR=9.8
RSSD Black Hills 80.17 41 P P 03 21 09.0 +0.7
baz=313
RSSD Black Hills 80.17 41 *e*P P 03 21 09.4 +1.0
RSSD pmax pmax
comp=Z,56nm,1.7s
RSSD Black Hills 80.17 41 *e*P P 03 21 09.4 +1.0
comp=Z,56nm,1.7s
E28A Huff 80.19 38 P P 03 21 09.0 +0.9
baz=315
RAYN Ar Rayn 80.19 292 *e*P P 03 21 08.6 0.0
comp=Z,43nm,0.9s
RAYN LR LR
comp=Z,182nm,20.0s
DPC Dobruska-Polom 80.20 328 *i*P P 03 21 09.1 +0.9
DPC *e*PP PP 03 24 09.9 0.0
DPC AMS AMS 04 00 40.0
comp=Z,500nm,18.7s
DPC Dobruska-Polom 80.20 328 *i*P P 03 21 09.1 +0.9
DPC *e* 03 24 09.9
DPC MLR MLR
comp=Z,500nm,18.7s
KRLC Kraliky 80.20 327⇓ *i*P P 03 21 08.9 +0.7
KRLC Kraliky 80.20 327⇓ *i*P P 03 21 08.9 +0.7
UPC Upice 80.21 328⇓ *i*P P 03 21 08.9 +0.7
UPC AMS AMS 04 00 40.0
comp=Z,700nm,15.3s
UPC Upice 80.21 328⇓ *i*P P 03 21 08.9 +0.7
UPC MLR MLR
comp=Z,700nm,15.3s
LOT Lotru 80.22 320⇑ *i*P P 03 21 09.0 +0.6
HUMR Humele 80.22 319⇑ *i*P P 03 21 09.3 +1.0
HUMR Humele 80.22 319⇑ *i*P P 03 21 09.3 +1.0
MARH Ras Al Marh 80.23 305 *e*P P 03 21 08.2 -0.7
SWSC Sam W. Stewart 80.31 56 P P 03 21 10.1 +1.1
baz=308
B31A Greenbush Farm 80.32 35 P P 03 21 09.3 +0.5
baz=316,SNR=11
ZALF Zalf 80.34 304 *e*P P 03 21 06.4 -2.8
DEV Deva 80.35 321⇑ *i*P P 03 21 10.4 +1.4
PSZ Piszkesteto 80.37 324⇓ *e*P P 03 21 10.1 +0.9
PSZ Piszkesteto 80.37 324 *e*P P 03 21 09.5 +0.3
PSZ pmax pmax
comp=Z,66nm,1.1s
PSZ MLR MLR
comp=Z,476nm,19.0s
PSZ Piszkesteto 80.37 324 *e*P P 03 21 09.5 +0.3
comp=Z,66nm,1.1s
PSZ LR LR
comp=Z,476nm,19.0s
D29A Pettibone, Tap 80.38 37 P P 03 21 09.8 +0.6
baz=315
I25A Rochford 80.40 41 P P 03 21 10.4 +0.8
baz=313,SNR=8.6
G27A Dupree 80.40 39 P P 03 21 10.1 +0.7
baz=314
U15A North Rim 80.41 51 *e*P P 03 21 11.1 +1.2
comp=Z,61nm,1.3s
VYHS Vyhne 80.45 325 *e*P P 03 21 10.3 +0.7
VYHS pmax pmax
comp=Z,29nm,1.5s
VYHS Vyhne 80.45 325 *e*P P 03 21 10.2 +0.7
C30A Mose, Pekin 80.46 36 P P 03 21 10.2 +0.6
baz=316,SNR=8.7
O20A White River Ci 80.48 47 P P 03 21 10.6 +0.5
baz=311,SNR=12
O20A White River Ci 80.48 47 *e*P P 03 21 11.2 +1.1
comp=Z,56nm,1.4s
A32A Rocking H Ranc 80.49 34 P P 03 21 09.8 +0.1
baz=317,SNR=20
H26A Fairpoint 80.50 40 P P 03 21 10.7 +0.8
baz=314,SNR=6.7
PDMCI Parker Dam,Lak 80.56 54 P P 03 21 10.7 +0.4
baz=309,SNR=15
F28A McLaughlin 80.64 39 P P 03 21 11.1 +0.5
baz=315,SNR=6.7
Y12C Blythe 80.65 55 P P 03 21 11.9 +1.0
baz=308,SNR=15
Y12C Blythe 80.65 55 *e*P P 03 21 11.2 +0.4
comp=Z,45nm,1.1s
Y12C *e*PP PP 03 24 15.3 +1.1
TOTH TOTAH 80.67 305 *e*P P 03 21 11.3 +0.2
SIRR Siria 80.70 322⇓ *i*P P 03 21 11.8 +0.9
E29A Napoleon 80.71 37 P P 03 21 11.3 +0.3
baz=315
C31A Landman Farms, 80.74 36 P P 03 21 11.3 +0.2
baz=316,SNR=10
D30A Buchanan 80.75 37 P P 03 21 11.6 +0.5
baz=316,SNR=8.5
GZR Gura Zlata 80.76 321⇓ *i*P P 03 21 11.7 +0.4
J25A Sunshine Ranch 80.79 42 P P 03 21 12.0 +0.4
baz=313
BRG Berggiesshubel 80.80 329 *i*P P 03 21 11.8 +0.4
comp=Z,46nm,1.0s
BRG Berggiesshubel 80.80 329 *i*P P 03 21 11.8 +0.4
BRG pmax pmax
comp=Z,4.0nm,1.0s
PVCC Panska Ves 80.81 329⇓ *i*P P 03 21 12.2 +0.8
PVCC Panska Ves 80.81 329⇓ *i*P P 03 21 12.2 +0.8
H27A Howes 80.84 40 P P 03 21 12.0 +0.2
baz=314,SNR=21
I26A New Underwood 80.85 41 P P 03 21 12.5 +0.7
baz=314,SNR=8.8
B32A Ashes, Strandq 80.85 35 P P 03 21 11.8 +0.1
baz=317
CLL Collm 80.85 330⇓ *i*P P 03 21 11.8 +0.2
comp=Z,83nm,0.9s
CLL *e*PP PP 03 24 01.0 -14
CLL *e*SS SS 03 36 30.0 -1.5
CLL *e*SSS SSS 03 40 18.0
CLL LmH 03 58 00.0
comp=N,200nm,20.1s
CLL LmH 03 58 00.0
comp=E,600nm,19.7s
CLL LmH 03 58 00.0
comp=Z,200nm,19.0s
CLL Collm 80.85 330 *e*P P 03 21 11.5 -0.1
CLL pmax pmax
comp=Z,89nm,0.9s
CLL Collm 80.85 330 *e*P P 03 21 11.5 -0.1
comp=Z,89nm,0.9s
VRAC Vranov 80.86 327⇓ *i*P P 03 21 12.8 +1.1
SALA Sala 80.87 304 *e*P P 03 21 10.7 -1.6
GLA Glamis 80.89 55 P P 03 21 13.5 +1.4
baz=308,SNR=6.1
GLA Glamis 80.89 55 *e*P P 03 21 13.6 +1.4
GLA pmax pmax
comp=Z,41nm,1.0s
GLA Glamis 80.89 55 *e*P P 03 21 13.6 +1.5
comp=Z,41nm,1.0s
A33A Warroad 80.97 34 P P 03 21 12.2 0.0
baz=318,SNR=26
PV09 Paradox Valley 81.02 48 *e*P P 03 21 14.9 +1.7
SRE Strehaia 81.05 320⇑ *i*P P 03 21 14.5 +1.7
SMOL Smolenice 81.07 326 *e*P P 03 21 14.3 +1.5
SMOL Smolenice 81.07 326 *e*P P 03 21 14.3 +1.5
BUD Budapest 81.09 324⇓ *e*P P 03 21 13.9 +1.0
E30A Jud 81.11 37 P P 03 21 13.4 +0.3
baz=316
G28A Parade 81.13 39 P P 03 21 13.8 +0.6
baz=315,SNR=5.7
F29A Eureka 81.14 38 P P 03 21 14.1 +0.9
baz=315
PV10 Paradox Valley 81.16 48 *e*P P 03 21 15.8 +2.0
GOPC GO Pecny, Ondr 81.18 328⇓ *i*P P 03 21 14.2 +0.8
GOPC *ex* x 03 21 29.3
GOPC GO Pecny, Ondr 81.18 328⇓ *i*P P 03 21 14.2 +0.8
BZS Buzias 81.18 322⇓ *i*P P 03 21 13.8 +0.4
PRA Prague 81.21 328⇓ *e*P P 03 21 14.7 +1.2
PRA Prague 81.21 328 *e*P P 03 21 14.7 +1.2
PRU Pruhonice 81.23 328⇓ *i*P P 03 21 14.2 +0.6
PRU *ex* x 03 21 29.2
PRU AMS AMS 04 01 00.0
comp=Z,500nm,18.5s
PRU Pruhonice 81.23 328⇓ *i*P P 03 21 14.2 +0.6
PRU MLR MLR
comp=Z,500nm,18.5s
AGMN Agassiz Nation 81.23 34 P P 03 21 13.5 -0.1
baz=318,SNR=11
AGMN Agassiz Nation 81.23 34 *e*P P 03 21 12.9 -0.8
comp=Z,19nm,0.8s
AGMN *e*PP PP 03 24 14.3 -4.2
J26A Sides Ranch, S 81.23 42 P P 03 21 14.8 +0.9
baz=314,SNR=9.8
I27A Quinn 81.25 40 P P 03 21 14.8 +0.8
baz=314,SNR=18
C32A Crookston 81.27 35 P P 03 21 14.1 +0.2
baz=317
D31A Mcclaflin, Tow 81.28 36 P P 03 21 14.5 +0.5
baz=316
N23A Red Feather La 81.30 45 P P 03 21 16.0 +1.5
baz=312,SNR=20
N23A Red Feather La 81.30 45 *e*P P 03 21 15.6 +1.0
comp=Z,71nm,1.4s
PHWY Pilot Hill 81.30 44 *e*P P 03 21 15.3 +0.8
comp=Z,42nm,1.4s
PV05 Paradox Valley 81.32 49 *e*P P 03 21 16.4 +1.7
PKS7 Kunszentmiklos 81.34 324⇑ *e*P P 03 21 15.7 +1.4
TREC Trest 81.35 327⇓ *i*P P 03 21 15.2 +0.9
TREC Trest 81.35 327⇓ *i*P P 03 21 15.2 +0.9
H28A Mission Ridge 81.36 39 P P 03 21 15.3 +0.9
baz=315,SNR=5.6
B33A Robert and Kas 81.37 34 P P 03 21 14.5 +0.1
baz=318
TCHB Talchebab 81.40 304 *e*P P 03 21 04.6 -10
PKSG 81.45 325⇓ *e*P P 03 21 15.7 +0.8
F30A Leola 81.53 38 P P 03 21 15.6 +0.2
baz=316
CSKK Cs˙‡kako 81.54 325⇑ *e*P P 03 21 16.4 +1.1
G29A Hoven 81.54 39 P P 03 21 15.3 -0.1
baz=315
D32A Dogwood Acres, 81.55 36 P P 03 21 15.8 +0.4
baz=317
E31A Nome 81.56 37 P P 03 21 15.9 +0.5
baz=316,SNR=9.0
MMAI Mount Meron Ar 81.56 305 P P 03 21 16.2 +0.4
comp=Z,26nm,0.8s,baz=37,slow=5.8,SNR=18
MMAI LR LR 04 00 36.7
comp=Z,177nm,20.7s,baz=15,slow=38
WUAZ Wupatki 81.56 52 P P 03 21 17.3 +1.3
baz=310,SNR=11
WUAZ Wupatki 81.56 52 *e*P P 03 21 17.2 +1.3
comp=Z,45nm,1.0s
ISP Isparta 81.57 311 PFAKE 03 21 30.0 +14
ISP LR LR
comp=Z,208nm,20.0s
PV01 Paradox Valley 81.60 48 *e*P P 03 21 17.6 +1.5
B34A Aery, Baudette 81.63 34 P P 03 21 16.0 +0.2
baz=318,SNR=7.9
C33A Trail 81.67 35 P P 03 21 16.2 +0.2
baz=318,SNR=9.1
CSS Mathiatis 81.67 308 *e*P P 03 21 15.4 -0.9
comp=Z,6.5nm,0.7s
CSS LR LR
comp=Z,66nm,20.0s
PKST T˙'s 81.72 325⇓ *e*P P 03 21 16.8 +0.5
MDVR Moldovita 81.72 321⇑ *i*P P 03 21 16.8 +0.4
I28A Midland 81.75 40 P P 03 21 17.2 +0.6
baz=315,SNR=18
113A Mohawk Valley, 81.76 55 *e*P P 03 21 17.3 +0.5
comp=Z,20nm,1.0s
H29A Onida 81.80 39 P P 03 21 17.3 +0.5
baz=315,SNR=7.1
J27A Elkhorn Farm, 81.84 41 P P 03 21 18.4 +1.3
baz=314,SNR=11
SMCO Snowmass 81.85 47 *e*P P 03 21 19.1 +1.5
comp=Z,19nm,1.0s
F31A Hecla 81.89 37 P P 03 21 17.6 +0.4
baz=316,SNR=6.0
NKC Novy Kostel 81.91 329⇓ *i*P P 03 21 17.9 +0.7
NKC Novy Kostel 81.91 329 *i*P P 03 21 17.9 +0.7
E32A Braaten, Kindr 81.92 36 P P 03 21 17.5 +0.1
baz=317
G30A Faulkton 81.98 38 P P 03 21 18.2 +0.5
baz=316,SNR=13
SOP Sopron 82.08 326⇓ *e*P P 03 21 19.2 +1.1
D33A AnnSam, Waubun 82.09 35 P P 03 21 18.1 -0.2
baz=318,SNR=6.5
PKS9 Tamasi 82.10 324⇓ *e*P P 03 21 18.5 +0.2
J28A Allard Ranch, 82.12 41 P P 03 21 19.5 +0.9
baz=315,SNR=9.1
B35A Bob, Littlefor 82.14 33 P P 03 21 18.5 +0.1
baz=319,SNR=9.1
C34A RKJ Ranch, Bem 82.14 34 P P 03 21 18.4 -0.1
baz=318,SNR=6.7
I29A Vivian Onida 82.18 40 P P 03 21 19.4 +0.6
baz=315,SNR=10.0
PKSM Moragy 82.20 324⇓ *e*P P 03 21 18.6 -0.2
CONA Conrad Observa 82.21 326 *i*P P 03 21 20.0 +1.1
comp=Z,52nm,1.5s,SNR=20
ISCO Idaho Springs 82.22 45 P P 03 21 20.3 +0.8
baz=312,SNR=16
ISCO Idaho Springs 82.22 45 *e*P P 03 21 20.9 +1.5
ISCO pmax pmax
comp=Z,12nm,0.9s
ISCO Idaho Springs 82.22 45 *e*P P 03 21 20.9 +1.5
comp=Z,12nm,0.9s
X16A Lo Mia Camp, P 82.22 53 *e*P P 03 21 21.2 +1.8
comp=Z,31nm,1.0s
MVCO Mesa Verde 82.24 49 P P 03 21 20.5 +1.0
baz=311,SNR=15
MVCO Mesa Verde 82.24 49 *e*P P 03 21 21.0 +1.5
comp=Z,49nm,1.2s
MVCO LR LR
comp=Z,250nm,21.0s
BOLS Boljevac 82.28 320 *e*P P 03 21 18.3 -1.0
KHC Kasperske Hory 82.29 328⇓ *i*P P 03 21 19.9 +0.6
KHC AMS AMS 04 02 30.0
comp=Z,400nm,16.9s
KHC Kasperske Hory 82.29 328 *e*P P 03 21 19.4 +0.1
KHC pmax pmax
comp=Z,21nm,1.0s
KHC Kasperske Hory 82.29 328 *e*P P 03 21 19.4 +0.1
comp=Z,21nm,1.0s
G31A Conde 82.37 38 P P 03 21 20.0 +0.2
baz=316
F32A Veblen 82.42 37 P P 03 21 20.1 +0.1
baz=317
D34A Park Rapids 82.43 35 P P 03 21 20.1 +0.1
baz=318,SNR=10
GEC2 GERESS Array S 82.45 328 *e*P P 03 21 19.8 -0.4
GEC2 pmax pmax
comp=Z,39nm,1.2s
GEC2 GERESS Array S 82.45 328 *e*P P 03 21 19.8 -0.4
comp=Z,39nm,1.2s
GERES GERESS Array B 82.45 328 P P 03 21 20.4 +0.2
comp=Z,13nm,0.7s,baz=38,slow=5.0,SNR=108
GERES LR LR 04 02 29.1
comp=Z,265nm,18.5s,baz=36,slow=39
GEA0 GERESS Array S 82.46 328 *e*P P 03 21 19.9 -0.4
E33A Westby DABS, E 82.49 36 P P 03 21 20.6 +0.2
baz=318,SNR=12
VTS Vitosha 82.49 319⇓ *i*P P 03 21 21.6 +1.0
VTS Vitosha 82.49 319 *e*P P 03 21 20.4 -0.2
VTS pmax pmax
comp=Z,22nm,0.8s
VTS Vitosha 82.49 319 *e*P P 03 21 20.4 -0.2
comp=Z,22nm,0.8s
C35A Jirik Farms, M 82.52 34 P P 03 21 20.4 -0.1
baz=319,SNR=14
BOVS Bovan 82.54 320 *e*P P 03 21 20.8 +0.2
SUSD Miller 82.56 39 P P 03 21 21.5 +0.7
baz=316

J29A **Okreek** 82.61 40 P P 03 21 21.0 0.0
baz=315
G32A **Webster** 82.69 37 P P 03 21 21.8 +0.3
baz=317
WTSB **Winterswijk** 82.69 333 *e*P P 03 21 21.1 -0.1
comp=Z,32nm,0.8s
I30A **Oacoma** 82.70 39 P P 03 21 22.1 +0.6
baz=316
H31A **Wolsey** 82.77 38 P P 03 21 22.1 +0.2
baz=316
GRFO **Grafenberg** 82.83 330 *e*P P 03 21 22.4 +0.3
GRFO pmax pmax
comp=Z,85nm,0.9s
GRFO **Grafenberg** 82.83 330 *e*P P 03 21 22.4 +0.3
comp=Z,85nm,0.9s
F33A **5 Mile Ranch,** 82.84 36 P P 03 21 22.4 +0.2
baz=318,SNR=12
W18A **Petrified Fore** 82.84 51 P P 03 21 23.7 +1.1
baz=311
E34A **Wadena** 82.87 35 P P 03 21 22.5 +0.2
baz=318
ARSA **Arzberg** 82.87 326 *i* pP P 03 21 22.9 +0.6
SNR=14
BEHE **Becsehely** 82.88 325⇑ *e*P P 03 21 23.6 +1.2
S22A **4UR Ranch, Cre** 82.89 48 P P 03 21 24.4 +1.5
baz=312,SNR=32
S22A **4UR Ranch, Cre** 82.89 48 *e*P P 03 21 24.9 +1.9
comp=Z,42nm,1.3s
214A **Organ Pipe Nat** 82.90 55 P P 03 21 23.7 +1.0
baz=310,SNR=9.6
D35A **Remer** 82.95 34 P P 03 21 22.4 -0.3
baz=319,SNR=5.1
MOA **Molln** 82.97 327 *i* pP P 03 21 23.5 +0.6
comp=Z,39nm,1.4s,SNR=22
EKA **Eskdalemuir Ar** 82.97 340 P P 03 21 23.0 +0.4
comp=Z,16nm,0.8s,baz=29,slow=5.2,SNR=35
C36A **Pine Crest Far** 82.98 33 P P 03 21 23.2 +0.3
baz=320,SNR=12
ESK **Eskdalemuir** 83.00 340 *e*P P 03 21 23.8 +1.0
ESK pmax pmax
comp=Z,33nm,0.9s
ESK **Eskdalemuir** 83.00 340 *e*P P 03 21 23.8 +1.0
comp=Z,33nm,0.9s
Q24A **Divide** 83.05 46 P P 03 21 24.5 +0.7
baz=313,SNR=6.9
Q24A **Divide** 83.05 46 *e*P P 03 21 25.0 +1.2
comp=Z,34nm,1.6s
J30A **Dallas** 83.09 40 P P 03 21 24.3 +0.7
baz=316,SNR=5.9
X18A **Snowflake** 83.09 52 *e*P P 03 21 25.6 +1.6
comp=Z,31nm,1.1s
E35A **Pequot Lakes** 83.19 35 P P 03 21 24.3 +0.3
baz=319,SNR=8.2
G33A **Ortonville** 83.25 37 P P 03 21 24.8 +0.5
baz=318,SNR=6.3
H32A **Carlson Farm,** 83.27 38 P P 03 21 24.4 0.0
baz=317
D36A **Goodland** 83.28 34 P P 03 21 24.1 -0.3
baz=320
C37A **Embarrass** 83.29 33 P P 03 21 24.6 +0.2
baz=320,SNR=10
F34A **Alexandria** 83.36 36 P P 03 21 25.0 +0.1
baz=318
EYMN **Ely** 83.42 32 P P 03 21 25.2 0.0
baz=321,SNR=8.5
EYMN **Ely** 83.42 32 *e*P P 03 21 24.5 -0.6
comp=Z,34nm,0.9s
OGNE **Ogallala** 83.43 43 P P 03 21 26.1 +0.6
baz=314
OGNE **Ogallala** 83.43 43 *e*P P 03 21 26.1 +0.6
comp=Z,144nm,1.7s
OGNE LR LR
comp=Z,238nm,20.0s
H33A **Prehn Over Nor** 83.48 37 P P 03 21 25.8 +0.3
baz=317,SNR=18
K30A **Basset** 83.49 40 P P 03 21 26.5 +0.8
baz=316,SNR=11
J31A **Geddes** 83.50 39 P P 03 21 26.2 +0.6
baz=316
PERS **Pernice** 83.52 326 *i* P P 03 21 26.2 +0.5
SOKA **Soboth** 83.52 326 *i* pP P 03 21 26.1 +0.3
comp=Z,84nm,1.1s,SNR=46
G34A **Benson** 83.59 36 P P 03 21 26.8 +0.7
baz=318,SNR=6.7
D37A **Cotton** 83.62 33 P P 03 21 26.4 +0.2
baz=320
F35A **Swanville** 83.63 35 P P 03 21 26.1 -0.2
baz=319
SDCO **Great Sand Dun** 83.67 47 P P 03 21 28.3 +1.3
baz=313,SNR=12
SDCO **Great Sand Dun** 83.67 47 *e*P P 03 21 27.9 +0.9
comp=Z,28nm,1.3s
SDCO LR LR
comp=Z,127nm,19.0s
C38A **Sawbill Land.** 83.69 32 P P 03 21 26.3 -0.2
baz=321,SNR=13
VAY **Valandovo** 83.72 318 *i* P P 03 21 27.1 +0.3
E36A **McGregor** 83.74 34 P P 03 21 27.0 +0.2
baz=320,SNR=8.6
SKO **Skopje** 83.86 319 *i* P P 03 21 28.5 +1.0
OBKA **Obir** 83.87 326 *i* P P 03 21 27.7 +0.1
SNR=7.0
J32A **Parkston** 83.89 39 P P 03 21 27.9 +0.2
baz=317,SNR=6.2
I33A **Coleman** 83.92 38 P P 03 21 27.5 -0.3
baz=317
H34A **Spellman Lake,** 83.95 37 P P 03 21 28.3 +0.3
baz=318
EIL **Elat** 83.96 303 LR LR 04 00 44.2
comp=Z,158nm,21.0s,baz=56,slow=37
KBA **Koelnbreinsper** 83.97 327 *i* pP P 03 21 29.6 +1.5
SNR=13
K31A **O'Neill** 83.97 40 P P 03 21 28.7 +0.6
baz=316,SNR=6.2
HGN **Heimansgroeve** 83.99 333 *e*P P 03 21 27.9 -0.1
comp=Z,35nm,0.9s
TUC **Tucson** 83.99 54 P P 03 21 29.1 +0.6
baz=310
TUC **Tucson** 83.99 54 *e*P P 03 21 30.0 +1.5
TUC pmax pmax
comp=Z,27nm,1.1s
TUC **Tucson** 83.99 54 *e*P P 03 21 30.0 +1.5
comp=Z,27nm,1.1s
BEBN **Eben Emael** 84.06 333 P P 03 21 28.7 +0.4
MEM **Membach** 84.09 333 P P 03 21 28.6 +0.1
comp=Z,22nm,1.1s
C39A **Grand Marais** 84.10 32 P P 03 21 28.4 -0.2
baz=322
G35A **Watkins** 84.15 36 P P 03 21 29.9 +0.9
baz=319
MYKA **Terra Mystica** 84.18 326 *i* P P 03 21 28.8 -0.4
SNR=9.0
ECSD **EROS Data Cent** 84.24 38 P P 03 21 30.0 +0.6
baz=318,SNR=18
ECSD **EROS Data Cent** 84.24 38 *e*P P 03 21 29.4 -0.1
comp=Z,31nm,1.1s
ECSD LR LR
comp=Z,165nm,21.0s
L31A **Butterfield Fa** 84.25 40 P P 03 21 29.7 +0.2
baz=316,SNR=7.9
VISS **Visnje** 84.27 325 *i* P P 03 21 29.4 -0.1
BOJS **Bojanci** 84.31 325 *i* P P 03 21 30.0 +0.3
K32A **Verdigre** 84.34 39 P P 03 21 30.2 +0.2
baz=317
J33A **Davis** 84.37 38 P P 03 21 30.4 +0.3
baz=317
STU **Stuttgart** 84.37 330 *e*P P 03 21 30.3 +0.3
STU pmax pmax
comp=Z,77nm,0.9s
STU **Stuttgart** 84.37 330 *e*P P 03 21 30.3 +0.3
comp=Z,77nm,0.9s
I34A **Hadley** 84.38 37 P P 03 21 30.3 +0.2
baz=318
H35A **Sunnyside Ranc** 84.38 36 P P 03 21 30.6 +0.5
baz=319,SNR=20
KSCO **Kaye Shedlock'** 84.45 44 P P 03 21 31.2 +0.5
baz=314
KSCO **Kaye Shedlock'** 84.45 44 *e*P P 03 21 31.5 +0.7
comp=Z,49nm,1.3s
BCLA **Clavier** 84.50 333 P P 03 21 30.6 0.0
comp=Z,24nm,1.6s
JAVS **Javornik** 84.56 326 *i* P P 03 21 30.4 -0.6
ABTA **Abfaltersbach** 84.58 327 *i* P P 03 21 30.9 -0.3
SNR=13
BIA **Bitola** 84.60 319 *i* P P 03 21 31.0 -0.3
PMOR **Pomariorio Ree** 84.64 113 *e*T T 04 54 22.9
comp=Z,34nm,0.2s
PDG **Podgorica** 84.65 321 ⇓ *i* P P 03 21 31.6 +0.1

T25A **Trinidad** 84.72 47 P P 03 21 33.3 +1.1
baz=313,SNR=29
T25A **Trinidad** 84.72 47 *e*P P 03 21 33.7 +1.5
comp=Z,71nm,1.4s
MOTA **Moosalm** 84.72 328 *i* pP P 03 21 33.3 +1.3
SNR=18
CWF **Charnwood Fore** 84.72 338 *e*P P 03 21 31.3 -0.3
comp=Z,82nm,1.4s
LANF **Langenberg** 84.75 331 *e*P P 03 21 32.2 +0.3
RETA **Reutte** 84.75 329 *i* pP P 03 21 32.4 +0.4
SNR=27
M31A **Lambtecht Ranc** 84.78 41 P P 03 21 32.4 +0.2
baz=316
SNF **Seneffe** 84.79 334 P P 03 21 32.3 +0.3
L32A **Elgin** 84.80 40 P P 03 21 32.8 +0.4
baz=317
OHR **Ohrid** 84.81 319 *i* P P 03 21 32.3 -0.1
WLF **Walferdange** 84.81 332 P P 03 21 33.2 +1.0
comp=Z,37nm,1.8s
WLF **Walferdange** 84.81 332 *e*P P 03 21 32.4 +0.2
WLF pmax pmax
comp=Z,153nm,1.9s
WLF **Walferdange** 84.81 332 *e*P P 03 21 32.4 +0.2
comp=Z,153nm,1.9s
K33A **Hardington** 84.87 39 P P 03 21 32.5 -0.2
baz=317
J34A **George** 84.89 38 P P 03 21 33.0 +0.3
baz=318
H36A **Jesseland, He** 84.90 36 P P 03 21 33.6 +0.9
baz=319,SNR=10
LAZ **Ladron** 84.92 50 *e*P P 03 21 35.1 +1.8
SPMN **Marine on St.** 84.93 35 P P 03 21 33.3 +0.4
baz=320
SPMN **Marine on St.** 84.93 35 *e*P P 03 21 33.7 +0.9
comp=Z,17nm,1.0s
I35A **Creekview Farm** 84.94 37 P P 03 21 33.4 +0.4
baz=319
ANMO **Albuquerque** 84.98 50 P P 03 21 34.9 +1.4
baz=312
ANMO **Albuquerque** 84.98 50 *c e*P P 03 21 34.4 +0.8
ANMO pmax pmax
comp=Z,59nm,1.7s
ANMO **Albuquerque** 84.98 50 *e*P P 03 21 35.2 +1.7
comp=Z,44nm,1.2s
DOU **Dourbes** 85.03 333 P P 03 21 33.0 -0.2
L33A **Hoskins** 85.06 39 P P 03 21 33.9 +0.3
baz=317
BFO **Black Forest** 85.07 330 *e*P P 03 21 32.8 -0.7
BFO pmax pmax
comp=Z,84nm,1.0s
BFO **Black Forest** 85.07 330 *e*P P 03 21 32.8 -0.7
comp=Z,84nm,1.0s
PPT **Papeete** 85.08 116 LR LR 03 55 15.0
comp=Z,118nm,19.3s,baz=304,slow=33
PPT2 **Papeete2** 85.09 116 *e*LR LR 03 47 33.0
comp=Z,227nm,22.0s,baz=314
PPT2 **Papeete2** 85.09 116 *e*T T 04 54 57.9
comp=Z,8.2nm,0.3s
KARP **Karpathos** 85.10 311 *e*P P 03 21 33.7 -0.2
comp=Z,32nm,0.9s
STON **Ston** 85.11 322 P P 03 21 32.2 -1.6
TIR **Tirane** 85.13 320 PFAKE 03 21 50.0 +16
TIR LR LR
comp=Z,701nm,21.0s
FETA **Feichten** 85.13 328 *i* PcP P 03 21 34.3 +0.2
SNR=13
BGNE **Belgrade** 85.16 40 P P 03 21 34.3 +0.2
baz=317
N31A **Bailey Ranch,** 85.16 41 P P 03 21 34.1 -0.1
baz=316
J35A **Milford** 85.19 37 P P 03 21 34.7 +0.4
baz=318
NVLJ **Novalja** 85.20 324 P P 03 21 33.1 -1.1
TIAR **Tiarei** 85.24 116 *e*T T 04 55 08.2
comp=Z,4.5nm,0.3s
K34A **Le Mars** 85.26 38 P P 03 21 35.2 +0.6
baz=318
DAVA **Damuels** 85.27 329 *i* PcP P 03 21 35.1 +0.3
SNR=25
I36A **Fitzsimmons Fa** 85.28 36 P P 03 21 35.1 +0.4
baz=319
Y22D **IRIS PASSCAL I** 85.28 50 P P 03 21 35.1 +0.1
baz=312
LPM **Los Pinos Moun** 85.30 50 *e*P P 03 21 36.7 +1.6
H37A **Dierke Farm, C** 85.36 35 P P 03 21 35.7 +0.7
baz=320,SNR=5.1
WLS **Welschbruch** 85.38 331 *e*P P 03 21 35.2 +0.1
BNM **Barren Site** 85.41 50 *e*P P 03 21 37.3 +1.5
O31A **Woolen Ranch,** 85.45 42 P P 03 21 35.6 0.0
baz=316
SCHQ **Schefferville** 85.48 16 P P 03 21 35.9 +0.5
comp=Z,14nm,0.9s,baz=344,slow=6.2,SNR=14
SCHQ LR LR 04 01 32.5
comp=Z,99nm,20.7s,baz=334,slow=37
SCHQ **Schefferville** 85.48 16 *e*P P 03 21 36.2 +0.7
comp=Z,19nm,0.9s
MENF **Mencas** 85.49 335 *e*P P 03 21 35.5 0.0
M33A **Taylor Creek F** 85.53 40 P P 03 21 36.2 +0.2
baz=317
SANT **Santorini** 85.55 313 PFAKE 03 21 50.0 +14
SANT LR LR
comp=Z,129nm,22.0s
N32A **Stulken Farm,** 85.55 41 P P 03 21 35.9 -0.2
baz=317
I37A **Lemond, Waseca** 85.57 36 P P 03 21 36.9 +0.8
baz=320,SNR=13
319A **Douglas** 85.57 54 *e*P P 03 21 38.0 +1.5
comp=Z,46nm,1.1s
ECH **Echery** 85.62 331 ⇓ *e*P P 03 21 36.4 +0.1
J36A **Seneca 1, Swea** 85.64 37 P P 03 21 36.5 +0.1
baz=319
FUORN **Ofenpass-Fuorn** 85.64 328 *e*P P 03 21 37.1 +0.3
comp=Z,62nm,0.9s
L34A **Svendsen Farm,** 85.66 39 P P 03 21 36.3 -0.3
baz=318
K35A **Storm Lake** 85.66 38 P P 03 21 36.4 -0.2
baz=318
DAVOX **Davos/Dischmat** 85.68 329 P P 03 21 36.9 0.0
comp=Z,19nm,0.9s,baz=54,slow=2.6,SNR=25
DSB **Dublin** 85.69 341 *e*P P 03 21 37.5 +1.0
comp=Z,50nm,0.9s
121A **Cookes Peak, D** 85.76 52 P P 03 21 38.7 +1.2
baz=312,SNR=28
M34A **Aspy Farms, Fr** 85.89 39 P P 03 21 38.0 +0.2
baz=318
MOF **Molkenrain** 85.92 331 *e*P P 03 21 37.7 -0.2
N33A **J Bar K, Exete** 86.01 40 P P 03 21 38.1 -0.3
baz=317
J37A **Redenius Farm,** 86.03 36 P P 03 21 38.8 +0.4
baz=320
I38A **Scanlan Farm,** 86.05 35 P P 03 21 38.8 +0.3
baz=320,SNR=8.6
THEF **They Montfort** 86.06 332 ⇓ *e*P P 03 21 38.6 +0.1
K36A **Gilmore City** 86.11 37 P P 03 21 39.4 +0.6
baz=319,SNR=5.4
TUE **Stuetta** 86.14 329 *e*P P 03 21 39.5 +0.4
comp=Z,30nm,1.1s
TUE LR LR
comp=Z,497nm,19.0s
CBKS **Cedar Bluff** 86.18 43 P P 03 21 39.3 0.0
baz=316
P32A **Huiting Farm,** 86.22 42 P P 03 21 39.4 0.0
baz=317
DAMY **Dhamar** 86.35 285 *e*P P 03 21 42.4 +1.6
comp=Z,66nm,1.2s
LAST **Lasithi** 86.36 312 ⇑ *i* P P 03 21 41.1 +0.8
LAST **Lasithi** 86.36 312 *e*P P 03 21 40.5 +0.2
comp=Z,85nm,0.8s
MEH **Mehetia** 86.37 115 *e*T T 04 56 32.7
comp=Z,70nm,0.3s
M35A **Neola** 86.37 39 P P 03 21 40.6 +0.5
baz=318
K37A **Belmond** 86.40 37 P P 03 21 40.7 +0.4
baz=320,SNR=8.5
L36A **Harm Buss Farm** 86.41 38 P P 03 21 40.5 +0.2
baz=319
O33A **Hebron** 86.42 41 P P 03 21 39.6 -0.8
baz=317
N34A **Lincoln** 86.42 40 P P 03 21 40.5 +0.1
baz=318
LOMF **Lomont** 86.45 331 *e*P P 03 21 40.5 0.0
J38A **Wedel Dairy, R** 86.53 36 P P 03 21 41.2 +0.3
baz=320
IDI **Anoyia** 86.62 313 P P 03 21 40.9 -0.7
comp=Z,38nm,0.8s,baz=11,slow=10.0,SNR=20
IDI **Anoyia** 86.62 313 ⇑ *i* P P 03 21 41.2 -0.3
IDI **Anoyia** 86.62 313 *e*P P 03 21 41.1 -0.5

comp=Z,51nm,0.9s
TAOE **Nuku Hiva Isla** 86.66 104 *e*LR LR 03 48 39.9
comp=Z,287nm,31.7s
Q32A **Meitler Ranch,** 86.69 42 P P 03 21 42.2 +0.5
baz=317
O34A **Beatrice** 86.81 40 P P 03 21 41.9 -0.4
baz=318
M36A **Felix, Anita** 86.82 38 P P 03 21 42.7 +0.3
baz=319
P33A **Williams Farm,** 86.83 41 P P 03 21 42.2 -0.3
baz=317
L37A **Phoenix Point,** 86.83 37 P P 03 21 42.6 +0.2
baz=319
N35A **Tabor** 86.84 39 P P 03 21 42.7 +0.2
baz=318
K38A **Parkersburg** 86.91 36 P P 03 21 42.9 +0.2
baz=320
R32A **Long Quarter,** 87.02 43 P P 03 21 43.1 -0.3
baz=316
SENIN **Lac Senin/Sane** 87.07 330 *e*P P 03 21 43.1 -0.6
comp=Z,20nm,1.3s
Q33A **Connelly Farm,** 87.08 42 P P 03 21 43.9 +0.2
baz=317,SNR=6.1
O35A **Humboldt** 87.15 40 P P 03 21 43.8 -0.2
baz=318
L38A **Oak Wood Farm,** 87.20 37 P P 03 21 44.2 +0.1
baz=320
P34A **Walnut Farm, R** 87.21 41 P P 03 21 44.2 0.0
baz=318,SNR=9.4
N36A **Muff Farm, Cla** 87.22 39 P P 03 21 44.7 +0.5
baz=319
M37A **Trindle Farm,** 87.23 38 P P 03 21 44.9 +0.6
baz=319
SCIA **State Center** 87.26 37 *e*P P 03 21 45.2 +0.7
comp=Z,38nm,0.9s
SCIA LR LR
comp=Z,268nm,20.0s
S32A **Newby Ranch, P** 87.42 43 P P 03 21 45.4 +0.1
baz=316,SNR=6.5
R33A **Olander Ranch,** 87.50 42 P P 03 21 45.8 +0.1
baz=317
VLC **Villacollemand** 87.54 327 PFAKE 03 22 00.0 +14
VLC LR LR
comp=Z,382nm,21.0s
Q34A **Chapman** 87.61 41 P P 03 21 46.7 +0.5
baz=318,SNR=7.8
P35A **Duane Minner,** 87.64 40 P P 03 21 46.3 0.0
baz=318
M38A **Pleasantville** 87.64 38 P P 03 21 47.0 +0.7
baz=320,SNR=8.8
N37A **Lee Faris, Mou** 87.64 39 P P 03 21 47.1 +0.8
baz=319,SNR=11
KSU1 **Kansas State U** 87.65 41 P P 03 21 46.5 +0.1
baz=318,SNR=5.4
KSU1 **Kansas State U** 87.65 41 *e*P P 03 21 46.1 -0.3
comp=Z,26nm,0.9s
LOR **Lormes** 87.66 332 P P 03 21 45.9 -0.4
LOR pmax pmax
comp=Z,50nm,1.1s
O36A **Bolckow** 87.73 39 P P 03 21 47.2 +0.5
baz=319,SNR=5.2
T32A **Huddler Ranch,** 87.80 44 P P 03 21 47.2 0.0
baz=316
MNTX **Cornudas Mount** 87.83 51 P P 03 21 48.4 +1.0
baz=313,SNR=10
MNTX **Cornudas Mount** 87.83 51 *e*P P 03 21 48.2 +0.8
comp=Z,19nm,1.4s
MNTX LR LR
comp=Z,112nm,21.0s
MSTX **Muleshoe** 87.86 48 P P 03 21 48.3 +0.7
baz=314,SNR=7.3
MSTX **Muleshoe** 87.86 48 *e*P P 03 21 48.1 +0.5
comp=Z,18nm,1.3s
AMTX **Amarillo** 87.87 47 P P 03 21 48.3 +0.7
baz=315
AMTX **Amarillo** 87.87 47 *e*P P 03 21 48.5 +0.9
comp=Z,47nm,1.3s
R34A **Isabella, Hill** 87.90 42 P P 03 21 47.6 0.0
baz=317
LDF **La Druitiere** 87.94 335 P P 03 21 47.1 -0.4
LDF pmax pmax
comp=Z,44nm,1.2s
P36A **Good Intent, A** 87.99 40 P P 03 21 48.2 +0.2
baz=319,SNR=7.3
LPG **La Plagne** 88.00 330 P P 03 21 47.7 -0.6
LPG pmax pmax
comp=Z,8.0nm,0.7s
S33A **Kaszmaul Farm,** 88.01 43 P P 03 21 48.5 +0.3
baz=317
N38A **Joes South For** 88.10 38 P P 03 21 49.2 +0.7
baz=320,SNR=6.6
O37A **Wolven Farm, M** 88.12 39 P P 03 21 49.0 +0.5
baz=319
Q35A **Mercer Eighty,** 88.13 41 P P 03 21 49.5 +0.8
baz=318
CUC **Castrocucco** 88.20 321 PFAKE 03 22 00.0 +11
CUC LR LR
comp=Z,210nm,20.0s
T33A **Patterson Ranc** 88.25 43 P P 03 21 49.1 -0.1
baz=317
TIP **Timpagrande** 88.33 320 *e*P P 03 21 49.7 0.0
comp=Z,64nm,1.5s
TIP LR LR
comp=Z,630nm,22.0s
U32A **Winter Ranch,** 88.34 44 P P 03 21 50.5 +0.7
baz=316
Q36A **Arnold C. Orve** 88.35 40 P P 03 21 50.2 +0.5
baz=318
BNI **Bardonecchia** 88.39 329 PFAKE 03 22 00.0 +10
BNI LR LR
comp=Z,426nm,19.0s
N39A **Derby Farms, D** 88.39 37 P P 03 21 50.3 +0.4
baz=320,SNR=7.9
S34A **Willow Spring** 88.41 42 P P 03 21 50.4 +0.4
baz=318
R35A **Emporia Munici** 88.44 41 P P 03 21 51.0 +0.8
baz=318
P37A **Lathrop** 88.45 39 P P 03 21 50.6 +0.5
baz=319
O38A **Galt** 88.49 39 P P 03 21 50.8 +0.4
baz=320
VLDQ **Val d'Or** 88.64 25 *e*P P 03 21 49.7 -1.2
comp=Z,40nm,1.0s
V32A **Arapaho** 88.79 45 P P 03 21 52.5 +0.6
baz=316,SNR=6.8
U33A **Lingo Farm, Me** 88.79 44 P P 03 21 53.0 +1.1
baz=317
R36A **Gordon, Harris** 88.81 41 P P 03 21 52.2 +0.3
baz=318
PLDF **La Plantade** 88.83 332 ⇓ *e*P P 03 21 52.3 +0.4
P38A **Dawn** 88.84 39 P P 03 21 52.4 +0.4
baz=320,SNR=6.8
O39A **Kirksville** 88.85 38 P P 03 21 53.0 +0.9
baz=320
S35A **Otter Creek Ra** 88.85 42 P P 03 21 52.9 +0.8
baz=318,SNR=5.1
T34A **McClaskey Farm** 88.87 43 P P 03 21 53.0 +0.9
baz=318
Q37A **Longview Farm,** 88.94 40 P P 03 21 52.5 +0.1
baz=319
AGO **Saint Agoulin** 88.95 332 *e*P P 03 21 52.8 +0.4
TBI **Tubuai** 88.95 120 *e*LR LR 03 49 13.6
comp=Z,285nm,29.8s,baz=312
TBI **Tubuai** 88.95 120 *e*T T 04 59 46.8
comp=Z,165nm,0.3s
W32A **Sentinel** 89.10 45 P P 03 21 54.2 +0.9
baz=316,SNR=6.5
U34A **Anderson Ranch** 89.11 43 P P 03 21 53.8 +0.5
baz=317
V33A **Lossen Ranch,** 89.14 44 P P 03 21 53.4 -0.1
baz=317
R37A **Teagarden Farm** 89.16 40 P P 03 21 53.8 +0.2
baz=319
S36A **Lake Cedric, C** 89.20 41 P P 03 21 54.1 +0.3
baz=318
PYM **Petit Puy Mans** 89.25 332 *e*P P 03 21 54.3 +0.4
O40A **La Belle** 89.28 38 P P 03 21 54.7 +0.7
baz=321,SNR=7.6
Q38A **Cooks Store, C** 89.30 39 P P 03 21 54.2 +0.1
baz=320
T35A **Sooner Cattle** 89.31 42 P P 03 21 55.1 +0.8
baz=318,SNR=6.4
P39A **Salisbury** 89.33 38 P P 03 21 55.2 +0.9
baz=320,SNR=5.7
W33A **Caddo, Fort Co** 89.52 45 P P 03 21 56.9 +1.6
baz=317
T36A **Boggs Farm, Ca** 89.55 42 P P 03 21 56.1 +0.7
baz=318

V34A	Guthrie	89.56	44	P		P		03 21 56.2	+0.7	
	baz=317,SNR=6.4									
V34A	Guthrie	89.56	44	*e*P		P		03 21 55.5	+0.1	
	comp=Z,65nm,1.4s									
Q39A	Willow Grove F	89.56	39	P		P		03 21 55.9	+0.6	
	baz=320,SNR=6.6									
S37A	Fort Scott	89.58	41	P		P		03 21 55.7	+0.2	
	baz=319,SNR=8.2									
X32A	Elmer	89.58	46	P		P		03 21 56.5	+0.9	
	baz=316,SNR=8.9									
U35A	Pawnee	89.59	43	P		P		03 21 56.2	+0.6	
	baz=318									
LBL	Lubilhac	89.60	332	‖*e*P		P		03 21 56.0	+0.5	
WMOK	Wichita Mounta	89.64	45	*e*P		P		03 21 55.7	-0.2	
WMOK				pmax	pmax					
	comp=Z,31nm,1.4s									
WMOK	Wichita Mounta	89.64	45	*e*P		P		03 21 55.7	-0.2	
	comp=Z,31nm,1.4s									
P40A	Paris	89.65	38	P		P		03 21 56.3	+0.6	
	baz=321,SNR=12									
MFF	Saint Martin d	89.67	334	*e*P		P		03 21 55.8	+0.1	
MFF				pmax	pmax					
	comp=Z,24nm,0.9s									
R38A	Fenwick Farm,	89.74	40	P		P		03 21 55.7	-0.5	
	baz=319									
W34A	Bridge Creek,	89.85	44	P		P		03 21 58.0	+1.1	
	baz=317									
W34A	Bridge Creek,	89.85	44	*e*P		P		03 21 58.6	+1.8	
	comp=Z,54nm,1.4s									
X33A	Lawton	89.95	45	P		P		03 21 58.2	+0.9	
	baz=317									
V35A	Meyer Ranch, C	89.98	43	P		P		03 21 58.3	+0.9	
	baz=318									
T37A	Cheneyville 18	90.01	41	P		P		03 21 58.0	+0.5	
	baz=319									
Q40A	Laux Farm, Aux	90.05	38	P		P		03 21 58.2	+0.5	
	baz=321,SNR=5.9									
R39A	Chumby, Stover	90.08	39	P		P		03 21 58.3	+0.4	
	baz=320,SNR=6.6									
U36A	Oologah	90.12	42	P		P		03 21 58.5	+0.5	
	baz=318									
SLBS	Sierra La Lagu	90.15	60	*e*P		P		03 21 57.4	-1.1	
	comp=Z,46nm,1.5s									
S38A	Stockton	90.16	40	P		P		03 21 57.9	-0.3	
	baz=319									
HDIL	Hopedale	90.17	36	P		P		03 21 58.6	+0.4	
	baz=322									
HDIL	Hopedale	90.17	36	*e*P		P		03 21 58.9	+0.7	
	comp=Z,34nm,1.1s									
Y33A	Hilltop Ranch,	90.26	46	P		P		03 21 58.9	+0.1	
	baz=317									
X34A	Smith Ranch, M	90.28	45	P		P		03 21 60.0	+1.1	
	baz=317,SNR=7.6									
CAF	Calviac	90.30	332	*e*P		P		03 21 59.2	+0.4	
CAF				pmax	pmax					
	comp=Z,34nm,1.2s									
T38A	Diamond	90.41	41	P		P		03 21 59.8	+0.4	
	baz=319,SNR=12									
S39A	Bolivar	90.41	40	P		P		03 21 59.5	+0.1	
	baz=320,SNR=5.9									
W35A	Tecumseh	90.41	44	P		P		03 21 59.8	+0.4	
	baz=318									
U37A	Salina	90.44	42	P		P		03 22 00.0	+0.5	
	baz=319,SNR=7.1									
TUL1	Leonard	90.45	43	P		P		03 22 00.2	+0.6	
	baz=318,SNR=7.2									
TUL1	Leonard	90.45	43	*e*P		P		03 22 00.2	+0.6	
	comp=Z,82nm,1.8s									
V36A	Jenks	90.46	43	P		P		03 21 59.6	0.0	
	baz=318,SNR=6.7									
R40A	Maddies Statio	90.49	39	P		P		03 21 59.9	+0.2	
	baz=320,SNR=8.5									
TX31	Lajitas Ar. Si	90.53	52	*e*P		P		03 22 01.0	+0.8	
TXAR	Lajitas Array	90.53	52	P		P		03 22 00.9	+0.8	
	comp=Z,15nm,1.0s,baz=296,slow=3.0,SNR=84									
TXAR				PKKPbc		PKKPbc		03 39 25.1	-1.1	
	comp=Z,0.3nm,0.8s,baz=146,slow=5.4,SNR=4.1									
TXAR				LR		LR		03 56 44.7		
	comp=Z,80nm,21.8s,baz=0.0,slow=32									
TXAR	Lajitas Array	90.53	52	P		P		03 22 01.0	+0.8	
TXAR				pmax	pmax					
	comp=Z,15nm,1.0s									
ABTX	Abilene, Hawle	90.67	47	P		P		03 22 01.3	+0.6	
	baz=316,SNR=7.9									
ABTX	Abilene, Hawle	90.67	47	*e*P		P		03 22 01.3	+0.6	
	comp=Z,53nm,1.3s									
Z33A	Whitaker Ranch	90.70	46	P		P		03 22 01.7	+0.9	
	baz=317,SNR=6.9									
W36A	Wetumka	90.78	43	P		P		03 22 01.6	+0.5	
	baz=318,SNR=6.2									
LFF	La Frestale	90.78	333	*e*P		P		03 22 00.7	-0.2	
LFF				pmax	pmax					
	comp=Z,28nm,1.0s									
Y34A	Reagan Ranch,	90.79	45	P		P		03 22 01.7	+0.5	
	baz=317,SNR=5.5									
U38A	Gravette	90.81	41	P		P		03 22 01.3	+0.1	
	baz=319,SNR=7.9									
V37A	Hulbert	90.82	42	P		P		03 22 02.0	+0.7	
	baz=319,SNR=10.0									
HPIG		90.88	55	*e*P		P		03 22 02.6	+0.5	
	comp=Z,17nm,0.9s									
T39A	Clever	90.89	40	P		P		03 22 01.9	+0.3	
	baz=320,SNR=6.3									
S40A	Lebanon	90.90	40	P		P		03 22 02.1	+0.4	
	baz=320,SNR=7.2									
X35A	Drake	90.91	44	P		P		03 22 02.0	+0.2	
	baz=318,SNR=6.1									
SADO	Sadowa	90.94	27	*e*P		P		03 22 02.4	+0.7	
	comp=Z,22nm,1.1s									
133A	Hamilton Ranch	91.10	47	P		P		03 22 03.2	+0.5	
	baz=316,SNR=7.4									
Z34A	Collier Ranch,	91.13	46	P		P		03 22 03.4	+0.6	
	baz=317									
X36A	Centrahoma	91.13	44	P		P		03 22 03.5	+0.7	
	baz=318,SNR=12									
HHAR	Hobbs	91.16	41	*e*P		P		03 22 03.5	+0.6	
W37B	Quinton	91.22	43	P		P		03 22 03.9	+0.7	
	baz=318,SNR=8.9									
V38A	Canehill	91.23	42	P		P		03 22 03.7	+0.4	
	baz=319,SNR=15									
Y35A	Marietta	91.24	45	P		P		03 22 03.5	+0.3	
	baz=318									
T40A	Mansfield	91.24	40	P		P		03 22 03.3	0.0	
	baz=320,SNR=7.4									
U39A	Green Forest	91.33	41	P		P		03 22 03.7	0.0	
	baz=320,SNR=17									
SFIN	Lafayette	91.33	35	P		P		03 22 03.3	-0.3	
	baz=324									
SFIN	Lafayette	91.33	35	*e*P		P		03 22 04.5	+0.9	
	comp=Z,15nm,1.0s									
LMQ	La Malbaie	91.33	20	*e*P		P		03 22 03.2	-0.3	
	comp=Z,31nm,1.1s									
CLTB	Caltabellotta	91.35	321	PFAKE				03 22 20.0	+16	
CLTB				LR		LR				
	comp=Z,162nm,20.0s									
Z35A	Perchaven, San	91.54	45	P		P		03 22 04.9	+0.3	
	baz=317,SNR=9.9									
233A	Rising Star	91.54	47	P		P		03 22 05.4	+0.6	
	baz=316,SNR=17									
134A	White-Moore Ra	91.61	46	P		P		03 22 05.8	+0.8	
	baz=317									
V39A	Pettigrew	91.65	41	P		P		03 22 05.1	-0.1	
	baz=320,SNR=10									
X37A	Clayton	91.66	43	P		P		03 22 05.6	+0.3	
	baz=318									
Y36A	Durant	91.66	44	P		P		03 22 05.6	+0.4	
	baz=318									
U40A	Yellville	91.67	41	P		P		03 22 05.7	+0.4	
	baz=320,SNR=14									
VSL	Villasalto	91.71	325	PFAKE				03 22 20.0	+15	
VSL				LR		LR				
	comp=Z,235nm,19.0s									
W38A	Poteau	91.76	42	P		P		03 22 06.4	+0.7	
	baz=319,SNR=7.3									
X38A	Whitesboro	91.89	43	P		P		03 22 06.4	+0.1	
	baz=319,SNR=8.4									
Y37A	Hugo	91.97	44	P		P		03 22 06.9	+0.2	
	baz=318									
333A	Richland Sprin	91.99	48	P		P		03 22 07.5	+0.6	
	baz=316,SNR=25									
234A	Clairette	92.00	47	P		P		03 22 07.5	+0.6	
	baz=317,SNR=20									
135A	Vickery Place,	92.01	46	P		P		03 22 07.8	+0.9	
	baz=317									
Z36A	Blue Ridge	92.05	45	P		P		03 22 07.5	+0.5	
	baz=318,SNR=8.1									
W39A	Magazine	92.06	42	P		P		03 22 07.4	+0.3	
	baz=320									
JCT	Junction City	92.11	49	P		P		03 22 07.8	+0.4	
	baz=316,SNR=6.8									
JCT	Junction City	92.11	49	*e*P		P		03 22 07.2	-0.3	
JCT				pmax	pmax					
	comp=Z,102nm,1.9s									
JCT				MLR		MLR				
	comp=Z,134nm,22.0s									
JCT	Junction City	92.11	49	*e*P		P		03 22 07.2	-0.3	
	comp=Z,102nm,1.9s									
JCT				LR		LR				
	comp=Z,134nm,22.0s									
V40A	Witts Springs	92.11	41	P		P		03 22 07.1	-0.3	
	baz=320									
FILF	Fillols	92.12	330	‖*e*P		P		03 22 07.7	+0.4	
OLIL	Olney	92.18	36	*e*P		P		03 22 08.6	+1.1	
	comp=Z,14nm,0.9s									
433A	Art	92.33	48	P		P		03 22 08.8	+0.4	
	baz=316,SNR=7.2									
WHTX	Lake Whitney,	92.40	46	P		P		03 22 09.5	+0.8	
	baz=317,SNR=12									
WHTX	Lake Whitney,	92.40	46	*e*P		P		03 22 10.2	+1.5	
	comp=Z,48nm,1.1s									
X39A	Fountain Ranch	92.40	43	P		P		03 22 09.0	+0.3	
	baz=319,SNR=10									
334A	Lometa	92.42	47	P		P		03 22 09.7	+0.9	
	baz=317,SNR=21									
W40A	Ferguson Farm,	92.45	41	P		P		03 22 09.0	+0.2	
	baz=320,SNR=5.1									
SIUC	Southern Illin	92.45	37	*e*P		P		03 22 08.5	-0.3	
	comp=Z,37nm,1.4s									
VALF	Valcebollere	92.46	331	‖*e*P		P		03 22 09.5	+0.5	
Y38A	Idabel	92.50	43	P		P		03 22 09.2	+0.1	
	baz=319									
Z37A	Pogue Cattle C	92.55	44	P		P		03 22 09.6	+0.2	
	baz=318									
136A	Ennis	92.58	45	P		P		03 22 10.1	+0.6	
	baz=318									
MIAR	Mount Ida	92.67	42	P		P		03 22 10.4	+0.6	
	baz=320,SNR=12									
MIAR	Mount Ida	92.67	42	*e*P		P		03 22 09.9	0.0	
MIAR				pmax	pmax					
	comp=Z,28nm,1.2s									
MIAR	Mount Ida	92.67	42	*e*P		P		03 22 09.9	0.0	
	comp=Z,28nm,1.2s									
X201	Greenbrier Sit	92.74	41	*e*P		P		03 22 10.1	-0.2	
434A	Burnet	92.78	48	P		P		03 22 10.6	+0.1	
	baz=317,SNR=6.4									
Y39A	Lockesburg	92.84	43	P		P		03 22 11.3	+0.6	
	baz=319,SNR=10									
533A	Kerrville	92.86	49	P		P		03 22 11.5	+0.6	
	baz=316									
W41A	Tony Mavity, V	92.89	41	P		P		03 22 10.6	-0.3	
	baz=320									
W41B	Gary Mavity, V	92.89	41	P		P		03 22 10.7	-0.2	
	baz=320									
236A	Katherine and	92.93	46	P		P		03 22 11.7	+0.6	
	baz=318									
335A	Moody	92.93	47	P		P		03 22 12.2	+1.0	
	baz=317									
X40A	Basin Creek Fa	93.11	42	P		P		03 22 12.5	+0.6	
	baz=320									
336A	Riesel	93.19	46	P		P		03 22 12.5	+0.1	
	baz=318									
435B	Jarrell	93.20	47	P		P		03 22 13.0	+0.5	
	baz=317									
633A	Seatbaff Ranch	93.21	49	P		P		03 22 13.0	+0.5	
	baz=316									
534A	Blanco	93.22	48	P		P		03 22 12.9	+0.4	
	baz=317,SNR=13									
Y40A	Okolona	93.23	42	P		P		03 22 12.9	+0.4	
	baz=320									
138A	Matatall Enter	93.25	44	P		P		03 22 13.7	+1.1	
	baz=319									
ACSO	Alum Creek Sta	93.25	32	*e*P		P		03 22 12.2	-0.3	
	comp=Z,12nm,0.8s									
Z39A	Irene McRaven,	93.32	43	P		P		03 22 13.6	+0.7	
	baz=319									
237A	Washetta, Mont	93.34	45	P		P		03 22 13.5	+0.5	
	baz=318									
NCB	Newcomb	93.35	25	PFAKE				03 22 20.0	+7.1	
NCB				LR		LR				
	comp=Z,298nm,21.0s									
832A	Faith Ranch, C	93.56	50	P		P		03 22 15.1	+0.9	
	baz=316,SNR=7.2									
733A	Divot King Ran	93.67	50	P		P		03 22 15.3	+0.7	
	baz=316									
436A	Wall Ranch, Ga	93.68	47	P		P		03 22 15.2	+0.6	
	baz=318									
Z40A	Long Farm, Mag	93.74	43	P		P		03 22 15.4	+0.6	
	baz=320									
634A	China Grove, S	93.77	49	P		P		03 22 15.2	+0.1	
	baz=317									
N54A	Moraine State	93.87	30	P		P		03 22 15.0	-0.3	
	baz=329									
833A	Chaparral WMA,	93.89	50	P		P		03 22 16.7	+1.0	
	baz=316,SNR=6.7									
536A	Bastrop	94.03	47	P		P		03 22 17.1	+0.9	
	baz=317									
Y42A	Garnett, Star	94.16	42	P		P		03 22 16.6	-0.2	
	baz=321									
537A	Green Hill Far	94.46	47	P		P		03 22 18.6	+0.4	
	baz=318									
636A	Smothers Creek	94.47	48	P		P		03 22 19.6	+1.4	
	baz=317									
735A	Kenedy	94.47	49	P		P		03 22 19.1	+0.8	
	baz=317									
933A	Laredo	94.48	50	P		P		03 22 20.0	+1.7	
	baz=316,SNR=7.1									
834A	Tilden	94.55	50	P		P		03 22 19.3	+0.7	
	baz=316									
KEST	Kesra	94.72	322	P		P		03 22 18.9	-0.5	
	comp=Z,13nm,1.1s,baz=254,slow=8.4,SNR=5.4									
KEST				LR		LR		04 08 41.2		
	comp=Z,167nm,18.1s,baz=336,slow=38									
KEST	Kesra	94.72	322	*e*P		P		03 22 19.7	+0.3	
	comp=Z,22nm,1.2s									
736A	Circle Diamond	94.84	48	P		P		03 22 20.9	+0.9	
	baz=317									
340A	Bronson	94.86	44	P		P		03 22 20.7	+0.7	
	baz=319									
835A	Beeville	94.87	49	P		P		03 22 20.2	0.0	
	baz=317									
637A	Eagle Lake	94.92	47	P		P		03 22 21.8	+1.5	
	baz=318									
934A	Benavides	94.95	50	P		P		03 22 20.9	+0.4	
	baz=316									
O56A	Blue Knob Stat	95.02	29	P		P		03 22 21.0	+0.4	
	baz=330									
034A	Hebbronville	95.23	50	P		P		03 22 22.3	+0.5	
	baz=316,SNR=5.4									
N59A	State Game Lan	95.51	27	P		P		03 22 23.1	+0.2	
	baz=332									
035A	Encino	95.68	50	P		P		03 22 24.5	+0.7	
	baz=317									
ZAIG	Zacatecas	95.78	56	*e*P		P		03 22 25.7	+0.9	
	comp=Z,21nm,1.2s									
Y47A	UCPARC, Winfie	96.14	39	P		P		03 22 25.3	-0.6	
	baz=323									
ES19	SONSECA Array	97.03	333	*e*P		P		03 22 29.0	-0.8	
ESDC	Sonseca Array	97.08	333	P		P		03 22 29.6	-0.4	
	comp=Z,2.7nm,0.8s,baz=21,slow=4.6,SNR=20									
ESDC				LR		LR		04 09 02.3		
	comp=Z,211nm,20.6s,baz=350,slow=37									
CBN	Corbin Frederi	97.27	29	PFAKE				03 22 40.0	+9.1	
CBN				LR		LR				
	comp=Z,173nm,20.0s									
PAB	San Pablo	97.33	334	PFAKE				03 22 40.0	+8.7	
PAB				LR		LR				
	comp=Z,381nm,21.0s									
MTE	Manteigas	97.65	336	PFAKE				03 22 40.0	+7.3	
MTE				LR		LR				
	comp=Z,336nm,19.0s									
KMSC	Kings Mountain	98.22	34	P		P		03 22 35.2	0.0	
	baz=327									
GOGA	Godfrey	98.68	36	PFAKE				03 22 50.0	+13	
GOGA				LR		LR				
	comp=Z,158nm,20.0s									
RKT	Rikitea	99.22	112	*e*LR		LR		03 54 26.8		
	comp=Z,242nm,27.0s									
NHSC	New Hope	100.45	34	PFAKE				03 23 00.0	+15	
NHSC				LR		LR				
	comp=Z,111nm,19.0s									
KMBO	Kilima Mbogo	101.47	277	P		Pdif		03 22 49.9	-0.4	
	comp=Z,1.9nm,0.7s,baz=56,slow=5.9,SNR=4.5									
KMBO	Kilima Mbogo	101.47	277	P		Pdif		03 22 49.9	-0.4	
KMBO				pmax	pmax					
	comp=Z,1.0nm,0.5s									
KMBO	Kilima Mbogo	101.47	277	P		Pdif		03 22 49.9	-0.4	
KMBO				LR		LR				
	comp=Z,146nm,20.0s									
MDT	Midelt	103.38	331	Pdiff		Pdif		03 22 58.1	-0.3	
	comp=Z,1.1nm,0.9s,baz=349,slow=5.2,SNR=3.6									
TEIG	Tepich	106.64	48	PFAKE				03 27 40.0		
TEIG				LR		LR				
	comp=Z,74nm,22.0s									
TAM	Tamanrasset	107.08	317	PFAKE				03 27 40.0		
TAM				LR		LR				
	comp=Z,202nm,21.0s									
GTBY	Guantanamo Bay	114.01	37	PFAKE				03 27 50.0	+13	
GTBY				LR		LR				
	comp=Z,11303µm,22.0s									
MTDJ	Mount Denham	114.23	40	PFAKE				03 27 50.0	+12	
MTDJ				LR		LR				
	comp=Z,84nm,21.0s									
VNDA	Vanda	115.01	175	PKP		PKPdf		03 27 37.5	0.0	
	comp=Z,1.1nm,0.8s,baz=290,slow=2.2,SNR=4.0									
JTS	JuntasAbangare	116.32	52	PFAKE				03 27 50.0	+8.0	
JTS				LR		LR				
	comp=Z,104nm,21.0s									
SDDR	Presa de Saban	116.61	34	PFAKE				03 27 50.0	+7.5	
SDDR				LR		LR				
	comp=Z,235nm,20.0s									
TOA0	Torodi Ar. Sit	116.98	314	*e*PKPdf		PKPdf		03 27 42.7	-0.5	
TORD	Torodi Ar. Bea	116.98	314	PKP		PKPdf		03 27 42.6	-0.6	
	comp=Z,2.3nm,0.7s,baz=38,slow=2.1,SNR=25									
TORD				PP		PP		03 28 41.0	-11	
	comp=Z,2.4nm,1.0s,baz=31,slow=6.2,SNR=7.8									
TORD				PKKPbc		PKKPbc		03 38 08.5	+1.2	
	comp=Z,1.6nm,1.0s,baz=210,slow=2.5,SNR=6.7									
LSZ	Lusaka	116.99	271	*e*PKIKP		PKPdf		03 27 42.9	-0.4	
LSZ				MLR		MLR				
	comp=Z,208nm,20.0s									
LSZ	Lusaka	116.99	271	*e*PKPdf		PKPdf		03 27 42.9	-0.4	
LSZ				LR		LR				
	comp=Z,208nm,20.0s									
MAW	Mawson	119.31	205	PKP		PKPdf		03 27 46.2	+0.3	
	comp=Z,4.9nm,0.8s,baz=178,slow=2.8,SNR=7.3									
BCIP	Isla Barro Col	120.33	48	PFAKE				03 28 00.0	+10	
BCIP				LR		LR				
	comp=Z,146nm,22.0s									
LBTB	Lobatse	124.14	263	*e*PKIKP		PKPdf		03 27 56.8	+0.1	
LBTB	Lobatse	124.14	263	*e*PKPdf		PKPdf		03 27 56.8	+0.1	
BBTS	Babate	124.33	333	PKP		PKPdf		03 27 57.5	+0.2	
	comp=Z,24nm,1.0s,baz=345,slow=1.9,SNR=4.0									
SDV	Santo Domingo	125.66	39	PFAKE				03 28 10.0	+10	
SDV				LR		LR				
	comp=Z,161nm,21.0s									
DBIC	Dimbokro	125.95	316	PKP		PKPdf		03 28 00.5	+0.1	
	comp=Z,12nm,0.7s,baz=17,slow=2.2,SNR=29									
DBIC				PP		PP		03 29 48.9	-3.9	
	comp=Z,6.7nm,1.0s,baz=34,slow=8.6,SNR=4.0									
TIC	Toumodi	126.06	316	*e*PKP1		PKPdf		03 28 00.2	-0.5	
BOSA	Boshof	126.08	259	PKP		PKPdf		03 28 00.4	0.0	
	comp=Z,12nm,0.9s,baz=52,slow=1.3,SNR=14									
KIC	Kosan Boka	126.14	316	*e*PKP1		PKPdf		03 28 00.5	-0.4	
	comp=Z,33nm,0.9s									
LIC	Lamto	126.41	316	*e*PKP1		PKPdf		03 28 01.0	-0.4	
	comp=Z,38nm,1.3s									
GRGR	Grenville	126.74	28	PFAKE				03 28 10.0	+8.0	
GRGR				LR		LR				
	comp=Z,153nm,20.0s									
ROSC	El Rosal	127.03	46	PKP		PKPdf		03 28 03.7	+0.6	
	comp=Z,5.5nm,0.4s,baz=353,slow=2.9,SNR=8.4									
ROSC	El Rosal	127.03	46	*e*PKPdf		PKPdf		03 28 03.6	+0.5	
TSUM	Tsumeb	127.60	274	*e*PKPdf		PKPdf		03 28 00.5	-3.1	
OTAV	Otavalo	128.13	54	*e*PKPdf		PKPdf		03 28 05.1	-0.1	
OTAV				LR		LR				
	comp=Z,106nm,22.0s									
PTGA	Pitinga	139.11	33	*e*PKPpre		PKPpre		03 28 20.9		
PTGA				LR		LR				
	comp=Z,46µm,22.0s									
SNAA	Sanae	140.59	197	PKP		PKPpre		03 28 16.0		
SNAA	Sanae	140.59	197	*e*PKIKP		PKPdf		03 28 24.0	-2.2	
SNAA	Sanae	140.59	197	*e*PKPdf		PKPdf		03 28 24.0	-2.2	
VNA2	Neumayer--Watz	142.17	196	PKP		PKPpre		03 28 24.1		
	baz=85,slow=2.2									
VNA3	Neumayer Olymp	142.42	195	PKP		PKPpre		03 28 24.1		
ASCN	Ascension	143.28	316	PFAKE				03 28 40.0	+7.3	
ASCN				LR		LR				
	comp=Z,2µm,19.0s									
SAML	Samuel	144.61	44	*e*PKPdf		PKPab		03 28 33.4	-0.1	
SAML				LR		LR				
	comp=Z,160nm,21.0s									
LPAZ	La Paz	147.13	59	PKPbc		PKPbc		03 28 41.9	-0.2	
	comp=Z,32nm,0.8s,baz=332,slow=2.7,SNR=116									
LPAZ	La Paz	147.13	59	*e*PKPbc		PKPbc		03 28 42.7	+0.5	
PB11	IPOC Station P	148.36	65	*e*PKPbc		PKPbc		03 28 46.1	+1.3	
RCBR	Riachuelo	148.80	354	PKPbc		PKPbc		03 28 46.1	+0.1	
	comp=Z,43nm,1.0s,baz=8.3,slow=2.5,SNR=13									
RCBR	Riachuelo	148.80	354	*e*PKPdf		PKPdf		03 28 40.5	-1.6	
RCBR				*e*PKPbc		PKPbc		03 28 46.0	0.0	
RCBR				LR		LR				
	comp=Z,308nm,19.0s									
PB01	IPOC Station P	149.28	67	*e*PKPbc		PKPbc		03 28 47.2	+0.1	
PB04	IPOC Station P	149.56	70	*e*PKPdf		PKPdf		03 28 43.3	+0.1	
PB04				*e*PKPbc		PKiKP		03 28 49.2	+0.3	
LCO	Las Campanas	152.51	82	*e*PKPbc		PKPbc		03 28 55.3	+0.6	
PLCA	Paso Flores	155.40	108	PKPab		PKPab		03 29 18.3	+1.6	
	comp=Z,7.5nm,1.0s,baz=14,slow=1.5,SNR=6.0									

0.4nm,0.3s,baz=264,slow=8.7,SNR=9.4
ILAR Eielson Array 21.59 38 P P 03 16 47.0 -1.3
0.2nm,0.5s,baz=242,slow=8.5,SNR=7.6
H11N2 WAKE ISLAND Hy 33.19 205 T T 03 53 52.8
baz=18
H11N3 WAKE ISLAND Hy 33.20 205 T T 03 53 53.3
baz=18
H11N1 WAKE ISLAND Hy 33.21 205 T T 03 53 52.8
baz=18
YKA Yellowknife Ar 35.57 46 P P 03 18 54.5 -1.3
0.5nm,0.4s,baz=281,slow=7.9,SNR=18
PDAR Pinedale Array 46.58 72 P P 03 20 26.6 -0.2
1.3nm,0.6s,baz=300,slow=3.0,SNR=16

NIED ***14*** *03:13:00,39.00N×142.50E,h11km,Mw4.0 Best double couple: M0 1.16000×10^15 NP1:ϕs=277.00000°,δ33.00000°, λ=-126.00000°. NP2:ϕs=138.00000°,δ64.00000°, λ=-69.00000°.*

ISCJB ***14*** *03:13:59.4±0.9,38.98N±0.04×142.45E±0.08,h42km±8km, mb4.1/16,MS3.9/1,Error ellipse: s-maj=10.6km s-min=5.4km az=22.4*

JMA ***14*** *03:13:59.0±0.1,39.02N×142.46E,h29km±2km,M4.2*

JMA Felt I J1.

IDC ***14*** *03:14:01.9±2.0,38.91N×142.44E,h47km±20km,mb3.8/12, mb1 4.0/16,mb1mx3.7/70,mbtmp4.0/16,ML3.8/3,MS3.8/1, Ms1 3.8/1,ms1mx3.0/51,Error ellipse: s-maj=22.3km s-min=12.9km az=101.0*

NEIC ***14*** *03:14:02.5±0.9,38.98N×142.40E,h53km±8km,mb4.3/4, Error ellipse: s-maj=12.6km s-min=6.4km az=119.0*

ISC 14 03:13:59.2±1.8,38.96N±0.04×142.39E±0.07,h26km±13km, n33,σ1s03/37,mb4.1/16,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**0.58**	**283**	P		**Pb**	**03 14 11.1**	**+0.3**
OFUJ				S		**Sn**	**03 14 19.6**	**-0.8**
JMK	**Ichinoseki**	**0.91**	**270**	P		**Pb**	**03 14 16.6**	**+0.2**
JMK				S		**Sn**	**03 14 29.0**	**+0.3**
JIO	**Ouri**	**0.96**	**239**	P		**Pn**	**03 14 16.9**	**-0.1**
JIO				S		**Sn**	**03 14 29.2**	**-0.6**
JOM	**Ohasama**	**1.00**	**302**	P		**Pn**	**03 14 17.5**	**-0.1**
JOM				S		**Sb**	**03 14 30.9**	**+0.3**
JTH	**Tanohata**	**1.06**	**338**	P		**Pn**	**03 14 17.8**	**-0.7**
JKZ	**Kuzumaki**	**1.31**	**322**	P		**Pn**	**03 14 22.0**	**0.0**
JKZ				*e*S		**Sn**	**03 14 38.4**	**-0.4**
JOU	**Okura**	**1.48**	**247**	P		**Pb**	**03 14 25.4**	**-0.6**
JOU				S		**Sb**	**03 14 44.9**	**+0.6**
ERM	**Erimo**	**3.11**	**11**	*e*Pn		**Pn**	**03 14 47.6**	**+1.0**
ERM				*e*S		**Sn**	**03 15 21.9**	**-1.1**
MJAR	**Matsushiro Arr**	**4.10**	**235**	P		**Pn**	**03 15 02.7**	**+2.5**
	7.3nm,0.3s,baz=36,slow=12,SNR=7.4							
MAJO	**Matsushiro**	**4.10**	**235**	*e*Pn		Pn	03 15 04.1	+3.9
MAT	**Matsushiro**	**4.10**	**235**	P		Pn	03 15 04.0	+3.7
MAT				*e*S		**Sb**	**03 15 56.3**	**-3.5**
ASAJ	**Asahikawa**	**5.16**	**2**	P		**Pn**	**03 15 16.7**	**+1.9**
	1.8nm,0.3s,baz=162,slow=20,SNR=4.6							
ASAJ				S		**Sn**	**03 16 12.0**	**-1.5**
	1.3nm,0.3s,baz=159,slow=17,SNR=4.1							
JHJ	**Hachijo jima 2**	**6.20**	**201**	P		**Pn**	**03 15 29.8**	**+0.7**
	15nm,0.3s,baz=72,slow=20,SNR=3.8							
JHJ				S		**Sn**	**03 16 38.8**	**-0.3**
	12nm,0.3s,baz=78,slow=20,SNR=4.3							
USRK	**Ussuriysk Ar.**	**9.39**	**307**	P		Pn	03 16 17.1	+4.3
	0.1nm,0.3s,baz=125,slow=14,SNR=3.1							
KSRS	**Korea Array**	**11.48**	**267**	P		Pn	03 16 49.9	+8.3
	0.2nm,0.3s,baz=86,slow=13,SNR=2.6							
KSAR	**Wonju Array Be**	**11.52**	**267**	P		Pn	03 16 49.9	+7.9
MA2	**Magadan**	**21.32**	**12**	P		**P**	**03 18 45.2**	**+1.3**
	2.9nm,0.3s,baz=225,slow=8.1,SNR=4.4							
ZALV	**Zalesovo Beam**	**41.22**	**311**	P		**P**	**03 21 42.2**	**+0.5**
	2.0nm,0.7s,baz=81,slow=9.1,SNR=4.2							
MKAR	**Makanchi Array**	**43.78**	**301**	P		**P**	**03 22 03.1**	**+0.5**
	1.8nm,0.7s,baz=85,slow=9.8,SNR=4.3							
KURK	**Kurchatov**	**45.38**	**307**	*e*P		**P**	**03 22 15.2**	**-0.1**
	5.4nm,0.6s							
KURBB	**Kurchatov Arra**	**45.45**	**307**	P		**P**	**03 22 16.2**	**+0.4**
	6.9nm,0.7s,baz=80,slow=8.2,SNR=14							
ILAR	**Eielson Array**	**47.46**	**33**	P		**P**	**03 22 31.6**	**+0.1**
	1.6nm,0.8s,baz=270,slow=6.4,SNR=5.6							
TKM2	**Tokmak 2**	**49.42**	**297**	*e*P		**P**	**03 22 45.8**	**-1.4**
	0.9nm,0.5s							
INK	**Inuvik**	**52.33**	**28**	P		**P**	**03 23 08.6**	**+0.2**
	1.4nm,0.7s,baz=296,slow=3.3,SNR=5.1							
ABKAR	**Akbulak array**	**57.30**	**309**	*e*P		**P**	**03 23 44.9**	**+0.2**
	1.1nm,0.6s							
AKTO	**Aktyubinsk**	**57.98**	**311**	LR		LR	03 49 35.9	
	comp=Z,87nm,19.2s,baz=70,slow=37							
WRAB	**Tennant Creek**	**59.06**	**189**	*e*P		**P**	**03 23 56.3**	**-0.8**
	3.6nm,0.8s							
WRA	**Warramunga Arr**	**59.07**	**189**	P		**P**	**03 23 57.6**	**+0.4**
	4.2nm,0.8s,baz=6.4,slow=7.0,SNR=12							
YKA	**Yellowknife Ar**	**61.76**	**31**	P		**P**	**03 24 15.1**	**-0.1**
	0.6nm,0.8s,baz=300,slow=6.4,SNR=5.0							
ASAR	**Alice Springs**	**62.80**	**189**	P		**P**	**03 24 22.2**	**-0.3**
	1.0nm,0.7s,baz=8.6,slow=6.8,SNR=6.2							
AKASG	**Malin Array Be**	**73.25**	**322**	P		**P**	**03 25 27.6**	**-0.3**
	1.1nm,0.6s,baz=43,slow=6.0,SNR=4.5							
PDAR	**Pinedale Array**	**75.78**	**46**	P		**P**	**03 25 43.1**	**0.0**
	0.6nm,0.7s,baz=309,slow=2.9,SNR=4.6							
TXAR	**Lajitas Array**	**88.34**	**53**	P		**P**	**03 26 49.2**	**+0.1**
	0.2nm,0.5s,baz=306,slow=3.6,SNR=3.7							

ISK ***14*** *03:19:18.4,37.79N×29.30E,h8km,MD3.0*

CSEM ***14*** *03:19:19.0±0.2,37.78N×29.28E,h5km,MD3.0,Error ellipse: s-maj=5.0km s-min=4.5km az=128.0*

DDA ***14*** *03:19:19.2,37.82N×29.26E,h3km,Md2.6*

ISC 14 03:19:19.7±1.1,37.82N±0.02×29.26E±0.02,h6km±9km, n49,σ1s05/62,Turkey

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
DENT	**Denizli**	**0.19**	**252**	*e*PG		**Pg**	**03 19 23.2**	**-0.4**
DENT	**Denizli**	**0.19**	**252**	*e*Pg		**Pg**	**03 19 23.2**	**-0.4**
UZP	**Denizli**	**0.23**	**342**	*i*P		**Pg**	**03 19 24.0**	**-0.3**
UZP				*i*S		**Sg**	**03 19 28.3**	**+0.9**
KHL	**Karahalli**	**0.55**	**22**	*e*PG		**Pg**	**03 19 29.7**	**-0.6**
KHL	**Karahalli**	**0.55**	**22**	*e*Pg		**Pg**	**03 19 29.7**	**-0.6**
KHAL	**Karahalli**	**0.58**	**18**	*i*P		**Pg**	**03 19 30.6**	**-0.4**
KHAL				*i*S		**Sg**	**03 19 39.0**	**+0.4**
KHAL	**Karahalli**	**0.58**	**18**	P		**Pg**	**03 19 30.6**	**-0.4**
KHAL				S		**Sg**	**03 19 39.0**	**+0.4**
KULA	**Kula-Manisa**	**0.84**	**326**	*e*PG		**Pg**	**03 19 36.0**	**0.0**
KULA				*e*SG		**Sb**	**03 19 48.3**	**-0.2**
KULA	**Kula-Manisa**	**0.84**	**326**	*e*Pg		**Pg**	**03 19 36.0**	**0.0**
KULA				*e*Sg		**Sb**	**03 19 48.3**	**-0.2**
ISP	**Isparta**	**1.00**	**89**	*e*PG		**Pg**	**03 19 37.4**	**-1.5**
ISP	**Isparta**	**1.00**	**89**	*e*Pg		**Pg**	**03 19 37.4**	**-1.5**
YER	**Yerkesik**	**1.03**	**229**	*e*PG		**Pg**	**03 19 38.4**	**-1.2**
YER	**Yerkesik**	**1.03**	**229**	*e*Pg		**Pg**	**03 19 38.4**	**-1.2**
TURN	**Turunc**	**1.08**	**209**	*i*P		Pn	03 19 44.1	+2.8
TURN				*i*S		Sn	03 20 04.0	+7.4
AYDB	**Zeytinkoy-Aydi**	**1.09**	**277**	*e*PN		**Pg**	**03 19 40.1**	**-0.6**
AYDB	**Zeytinkoy-Aydi**	**1.09**	**277**	*e*Pn		**Pg**	**03 19 40.1**	**-0.6**
AYDN	**Tasoluk**	**1.11**	**262**	*i*P		**Pg**	**03 19 40.5**	**-0.5**
AYDN				*i*S		**Sb**	**03 19 56.2**	**+0.1**
AYDN	**Tasoluk**	**1.11**	**262**	P		**Pg**	**03 19 40.5**	**-0.5**
AYDN				S		**Sb**	**03 19 56.2**	**+0.1**
DALY	**Dalyan (Mu˘la**	**1.11**	**206**	*e*PN		**Pg**	**03 19 40.1**	**-0.9**
DALY	**Dalyan (Mu˘la**	**1.11**	**206**	*e*Pn		**Pg**	**03 19 40.1**	**-0.9**
ELL	**Elmali**	**1.18**	**154**	*e*PN		**Pg**	**03 19 41.1**	**-1.3**
ELL	**Elmali**	**1.18**	**154**	*e*Pn		**Pg**	**03 19 41.1**	**-1.3**
FETY	**Fethiye**	**1.19**	**187**	*e*PN		**Pg**	**03 19 41.3**	**-1.2**
FETY	**Fethiye**	**1.19**	**187**	*e*Pn		**Pg**	**03 19 41.3**	**-1.2**
KORT	**Korkueli**	**1.19**	**133**	*i*P		**Pn**	**03 19 43.2**	**+0.2**
KORT				*i*S		**Sn**	**03 20 00.0**	**+0.5**
KORT	**Korkueli**	**1.19**	**133**	P		**Pn**	**03 19 43.2**	**+0.2**
BAGO	**Egridir - ISPA**	**1.22**	**81**	*i*P		**Pg**	**03 19 41.9**	**-1.3**
BAGO				*i*S		**Sn**	**03 20 02.6**	**+2.4**
SHUT	**Suhut-Afyon**	**1.25**	**54**	*e*PN		**Pg**	**03 19 42.6**	**-1.2**
SHUT	**Suhut-Afyon**	**1.25**	**54**	*e*Pn		**Pg**	**03 19 42.6**	**-1.2**
GDZ	**Gediz**	**1.28**	**8**	*i*P		**Pg**	**03 19 43.7**	**-0.7**
GDZ				*i*S		**Sn**	**03 20 02.3**	**+0.4**
GDZ	**Gediz**	**1.28**	**8**	P		**Pg**	**03 19 43.7**	**-0.7**
GDZ				S		**Sn**	**03 20 02.3**	**+0.4**
DEMI	**Demirci**	**1.30**	**341**	*i*P		**Pg**	**03 19 44.5**	**-0.2**
DEMI				*i*S		**Sg**	**03 20 01.2**	**-0.3**
DEMI	**Demirci**	**1.30**	**341**	P		**Pg**	**03 19 44.5**	**-0.2**
DEMI				S		**Sg**	**03 20 01.2**	**-0.3**
AKS	**Akhisar**	**1.56**	**313**	*e*PN		**Pn**	**03 19 47.6**	**-0.4**
AKS	**Akhisar**	**1.56**	**313**	*e*Pn		**Pn**	**03 19 47.6**	**-0.4**
AKAS	**Kas**	**1.60**	**170**	*i*P		**Pg**	**03 19 51.0**	**+0.5**
AKAS				*i*S		Sg	03 20 17.4	+6.2
AKAS	**Kas**	**1.60**	**170**	P		**Pg**	**03 19 51.0**	**+0.5**
BOLV	**Bolvadin**	**1.60**	**55**	*i*P		Pn	03 19 44.4	-4.3
BOLV				*i*S		**Sg**	**03 20 16.0**	**+4.6**
BOLV	**Bolvadin**	**1.60**	**55**	P		Pn	03 19 44.4	-4.4
BDRM	**Kayabasi**	**1.63**	**243**	*i*P		**Pb**	**03 19 49.5**	**-0.7**
BDRM				*i*S		**Sg**	**03 20 13.9**	**+1.8**
BDRM	**Kayabasi**	**1.63**	**243**	P		**Pb**	**03 19 49.5**	**-0.7**
BDRM				S		**Sg**	**03 20 13.9**	**+1.8**
TVSB	**Tavsanli**	**1.64**	**5**	*e*PN		**Pn**	**03 19 48.3**	**-0.9**
TVSB	**Tavsanli**	**1.64**	**5**	*e*Pn		**Pn**	**03 19 48.3**	**-0.9**
IZM	**Izmir**	**1.68**	**291**	*e*PN		**Pn**	**03 19 49.5**	**-0.2**
IZM	**Izmir**	**1.68**	**291**	*e*Pn		**Pn**	**03 19 49.5**	**-0.2**
BODT	**Bodrum**	**1.73**	**245**	*e*PN		**Pn**	**03 19 49.5**	**-0.8**
BODT	**Bodrum**	**1.73**	**245**	*e*Pn		**Pn**	**03 19 49.5**	**-0.8**
BLCB	**Balcova**	**1.84**	**289**	*e*PN		**Pn**	**03 19 51.7**	**-0.2**
BLCB	**Balcova**	**1.84**	**289**	*e*Pn		**Pn**	**03 19 51.7**	**-0.2**

ISCJB ***14*** *03:26:26.5±0.9,3.5S±0.1×146.9E±0.2,h25km,mb3.7/6, Error ellipse: s-maj=28.6km s-min=14.9km az=8.6*

IDC ***14*** *03:26:32.0±6.4,3.6SS×146.9E,h62km±63km,mb3.6/7, mb1 3.9/8,mb1mx3.5/36,mbtmp3.9/8,ML1.8/1,Error ellipse: s-maj=47.1km s-min=30.1km az=138.0*

ISC 14 03:26:28.1±1.0,3.5S±0.1×146.9E±0.2,h25km,n9,σ1s13/9, mb3.7/6,Bismarck Sea

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**5.90**	**178**	P		**Pn**	**03 27 54.8**	**+0.8**
	1.8nm,0.3s,baz=32,slow=9.2,SNR=3.8							
WRA	**Warramunga Arr**	**20.47**	**216**	P		**P**	**03 31 03.6**	**-0.6**
	9.1nm,0.8s,baz=41,slow=11,SNR=49							
ASAR	**Alice Springs**	**23.70**	**211**	P		**P**	**03 31 37.7**	**-0.5**
	2.6nm,0.8s,baz=42,slow=7.9,SNR=27							
FITZ	**Fitzroy Crossi**	**25.43**	**234**	P		**P**	**03 31 52.4**	**-1.6**
	2.4nm,0.5s,baz=53,slow=9.0,SNR=12							
CMAR	**Chiang Mai Arr**	**52.03**	**297**	P		**P**	**03 35 36.5**	**+0.4**
	1.0nm,0.6s,baz=116,slow=5.3,SNR=7.4							
MKAR	**Makanchi Array**	**75.52**	**320**	P		**P**	**03 38 12.1**	**+1.6**
	0.2nm,0.4s,baz=100,slow=6.9,SNR=4.3							
ILAR	**Eielson Array**	**83.20**	**23**	P		**P**	**03 38 50.9**	**-1.1**
	0.4nm,0.8s,baz=253,slow=5.5,SNR=4.4							
YKA	**Yellowknife Ar**	**96.97**	**28**	P		**P**	**03 39 57.3**	**0.0**
	0.2nm,0.9s,baz=277,slow=4.9,SNR=2.6							
TORD	**Torodi Ar. Bea**	**144.33**	**288**	PKP		**PKPdf**	**03 46 02.6**	**-0.5**
	0.5nm,0.8s,baz=72,slow=2.3,SNR=5.3							

JMA 14 03:27:22.0±0.2,39.69N×143.61E,h9km,M3.9,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
MIYJ	**Miyakonagasawa**	**1.39**	**266**	P		Pn	03 27 47.6	+0.1
MIYJ				*e*S		Sb	03 28 05.3	-0.6
OFUJ	**Ofunato**	**1.62**	**249**	P		Pn	03 27 50.9	+0.1
OFUJ				*e*S		Sn	03 28 12.1	+0.3
JANG	**Nango**	**1.75**	**294**	P		Pn	03 27 53.1	+0.6
JKZ	**Kuzumaki**	**1.78**	**280**	P		Pn	03 27 53.3	+0.3
JOM	**Ohasama**	**1.80**	**264**	P		Pn	03 27 53.8	+0.5
JOM				*e*S		Sn	03 28 16.9	+0.6
JMK	**Ichinoseki**	**2.00**	**249**	P		Pn	03 27 56.4	+0.5
JMK				*e*S		Sn	03 28 22.0	+1.0
JIO	**Ouri**	**2.15**	**236**	P		Pn	03 27 58.2	+0.2
JIO				*e*S		Sn	03 28 24.8	0.0
JRG	**Rokugo**	**2.32**	**264**	P		Pb	03 28 02.2	-1.8
JYK	**Kaneyama**	**2.64**	**254**	P		Pn	03 28 06.1	+1.4

ISCJB ***14*** *03:28:47.4±0.5,1.94N±0.05×127.68E±0.08,h112km, mb4.2/15,Error ellipse: s-maj=11.1km s-min=6.9km az=13.3*

NEIC ***14*** *03:28:52.5±2.3,1.77N×127.60E,h149km±21km,mb4.3/6, Error ellipse: s-maj=24.2km s-min=7.2km az=65.0*

IDC ***14*** *03:28:53.5±5.5,1.72N×127.49E,h156km±53km,mb3.8/9, mb1 3.9/11,mb1mx3.6/38,mbtmp4.2/11,Error ellipse: s-maj=39.7km s-min=13.1km az=63.0*

DJA ***14*** *03:28:54.8±0.8,2.2N±5.2×12.7E±?,h100km±7km,M4.2/7, mb4.2/3,MLv4.2/7*

ISC 14 03:28:49.2±0.7,1.90N±0.07×127.6E±0.1,h112km,n25, σ1s45/25,mb4.2/15,Halmahera

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
TNTI	**Ternate**	**1.14**	**192**	P		Pn	03 29 15.7	+3.6
TNTI				S		**Sn**	**03 29 31.7**	**+2.3**
SGSI	**Sangihe**	**2.73**	**311**	P		Pn	03 29 38.3	+6.6
SANI	**Sanana**	**4.24**	**202**	P		**Pn**	**03 29 53.9**	**+2.1**
MSAI	**Masohi**	**5.37**	**166**	P		Pn	03 30 11.9	+4.7
	17nm,0.8s,0.2nm							
LUWI	**Luwuk**	**5.64**	**239**	*e*Pn		**Pn**	**03 30 12.7**	**+1.9**
	71nm,0.8s							
LUWI				*e*S		**Sn**	**03 31 14.5**	**+0.1**
APSI	**Ampana**	**6.57**	**245**	P		**Pn**	**03 30 23.9**	**+0.5**
KAPI	**Kappang**	**10.42**	**229**	P		**Pn**	**03 31 18.2**	**+2.6**
	1.9nm,0.3s,baz=45,slow=14,SNR=8.9							
KAPI				S		**Sn**	**03 33 07.1**	**-3.4**
	2.6nm,0.3s,baz=94,slow=19,SNR=7.7							
FITZ	**Fitzroy Crossi**	**19.97**	**185**	P		**P**	**03 33 11.6**	**-1.1**
	0.5nm,0.3s,baz=13,slow=9.3,SNR=7.8							
WRAB	**Tennant Creek**	**22.68**	**163**	*e*P		**P**	**03 33 40.3**	**-1.2**
	5.2nm,0.4s							
WRA	**Warramunga Arr**	**22.69**	**163**	P		**P**	**03 33 40.1**	**-1.4**
	5.5nm,0.6s,baz=342,slow=11,SNR=55							
ASAR	**Alice Springs**	**26.14**	**167**	P		**P**	**03 34 11.7**	**-1.4**
	1.4nm,0.4s,baz=343,slow=7.4,SNR=24							
CMAR	**Chiang Mai Arr**	**32.56**	**302**	P		**P**	**03 35 10.1**	**0.0**
	1.1nm,0.8s,baz=111,slow=6.9,SNR=7.4							
KSAR	**Wonju Array Be**	**35.37**	**0**	P		**P**	**03 35 34.9**	**+0.8**
KSRS	**Korea Array**	**35.39**	**0**	P		**P**	**03 35 34.9**	**+0.7**
	0.9nm,0.5s,baz=186,slow=9.7,SNR=3.3							
STKA	**Stephens Creek**	**36.12**	**160**	P		**P**	**03 35 40.2**	**-0.3**
	3.3nm,0.7s,baz=321,slow=9.3,SNR=6.6							
ULN	**Ulaanbaatar**	**49.12**	**342**	*e*P		**P**	**03 37 26.3**	**+0.7**
	5.4nm,0.9s							
SONM	**Songino Array**	**49.30**	**341**	P		**P**	**03 37 27.9**	**+1.0**
	1.9nm,0.7s,baz=154,slow=7.9,SNR=5.0							
MKAR	**Makanchi Array**	**59.55**	**325**	P		**P**	**03 38 41.8**	**+0.7**
	5.3nm,0.5s,baz=120,slow=8.7,SNR=66							
TKM2	**Tokmak 2**	**61.69**	**319**	*e*P		**P**	**03 38 56.1**	**+0.2**
	2.6nm,0.6s							
ZALV	**Zalesovo Beam**	**62.61**	**333**	P		**P**	**03 39 00.3**	**-1.2**
	0.6nm,0.4s,baz=128,slow=9.3,SNR=2.8							
KURK	**Kurchatov**	**63.74**	**328**	*e*P		**P**	**03 39 09.2**	**+0.1**
	10nm,0.5s							
BRVK	**Borovoye**	**69.39**	**327**	*e*P		**P**	**03 39 44.7**	**-0.3**
	2.8nm,0.6s							
ABKAR	**Akbulak array**	**74.11**	**321**	*e*P		**P**	**03 40 12.9**	**-0.4**
	0.4nm,0.5s							
ARCES	**ARCESS Array B**	**92.46**	**340**	P		**P**	**03 41 46.0**	**-1.2**
	3.8nm,1.1s,baz=60,slow=5.3,SNR=3.9							
TORD	**Torodi Ar. Bea**	**124.30**	**287**	PKP		**PKPdf**	**03 47 34.6**	**-1.4**
	0.4nm,0.8s,baz=40,slow=2.4,SNR=2.9							

ISCJB ***14*** *03:34:16.9±0.5,2.05S±0.05×140.97E±0.09,h20km, mb4.3/18,MS3.6/1,Error ellipse: s-maj=13.0km s-min=7.7km az=176.9*

NEIC ***14*** *03:34:19.2±1.8,2.03S×140.92E,h25km±11km,mb4.5/4, Error ellipse: s-maj=12.5km s-min=9.1km az=77.0*

IDC ***14*** *03:34:20.3±0.6,2.07S×140.91E,h31km±3km,mb4.1/15, mb1 4.2/18,mb1mx4.0/47,mbtmp4.3/18,ML4.5/3,MS3.4/2, Ms1 3.4/2,ms1mx2.8/35,Error ellipse: s-maj=19.8km s-min=8.6km az=100.0*

ISC 14 03:34:18.6±0.6,2.03S±0.07×141.0E±0.1,h20km,n41, σ0s81/43,mb4.4/18,Near north coast of Irian Jaya

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
JAY	**Jayapura**	**0.55**	**209**	LR		LR	03 34 24.2	
	comp=Z,10nm,18.0s,baz=303,slow=8.1							
JAY				Pg		**Pb**	**03 34 29.9**	**+0.3**
	22nm,0.3s,baz=345,slow=20,SNR=567							
JAY				Lg		Lg	03 34 38.3	
	82nm,0.3s,baz=347,slow=23,SNR=85							
GUMO	**Guam**	**15.99**	**14**	LR		LR	03 43 05.5	
	comp=Z,91nm,20.6s,baz=96,slow=33							
SOEI	**Soe**	**18.29**	**245**	*e*Pn		**Pn**	**03 38 31.3**	**-0.2**
	34nm,0.6s							
CTA	**Charters Tower**	**18.68**	**164**	P		**Pn**	**03 38 37.5**	**+1.4**
	0.3nm,0.3s,baz=347,slow=11,SNR=4.1							
WRAB	**Tennant Creek**	**18.93**	**200**	*e*P		**P**	**03 38 37.8**	**-0.7**
WRA	**Warramunga Arr**	**18.94**	**200**	P		**P**	**03 38 37.9**	**-0.7**
	1.9nm,0.3s,baz=24,slow=12,SNR=65							
BATI	**Baumata**	**19.01**	**244**	P		**Pn**	**03 38 40.6**	**+0.4**
	3.0nm,0.3s,baz=107,slow=19,SNR=6.6							
FITZ	**Fitzroy Crossi**	**21.94**	**222**	P		**P**	**03 39 09.8**	**-1.3**
	2.7nm,0.3s,baz=39,slow=8.8,SNR=21							
FITZ	**Fitzroy Crossi**	**21.94**	**222**	*e*P		**P**	**03 39 08.9**	**-2.2**
	5.2nm,0.7s							
ASAR	**Alice Springs**	**22.57**	**197**	P		**P**	**03 39 17.2**	**-0.7**
	4.8nm,0.4s,baz=32,slow=11,SNR=50							
EIDS	**Eidsvold**	**25.17**	**158**	*e*P		**P**	**03 39 43.5**	**+0.7**
	13nm,0.8s							
MBWA	**Marble Bar**	**28.10**	**226**	*e*P		**P**	**03 40 08.6**	**-0.7**
	4.1nm,0.6s							
STKA	**Stephens Creek**	**29.69**	**179**	P		**P**	**03 40 22.9**	**-0.4**
	2.2nm,0.3s,baz=346,slow=11,SNR=7.7							
PSI	**Prapat**	**42.30**	**276**	P		**P**	**03 42 11.0**	**-0.6**
	3.5nm,0.4s,baz=83,slow=5.8,SNR=5.3							
CMAR	**Chiang Mai Arr**	**46.08**	**298**	P		**P**	**03 42 41.8**	**+0.1**
	0.8nm,0.6s,baz=120,slow=7.2,SNR=5.3							
SONM	**Songino Array**	**58.10**	**333**	LR		LR	04 08 11.8	
	comp=Z,50nm,21.6s,baz=222,slow=35							
TAPN	**Taplejung**	**58.96**	**304**	*e*P		**P**	**03 44 18.2**	**+0.8**
ODAN	**Odare**	**59.05**	**303**	*e*P		**P**	**03 44 18.8**	**+0.8**
	10nm,0.7s							
GUN	**Gumba**	**60.67**	**304**	*e*P		**P**	**03 44 30.1**	**+0.8**
KKN	**Kakani**	**61.13**	**303**	*e*P		**P**	**03 44 32.9**	**+0.7**
DMN	**Daman**	**61.22**	**303**	*e*P		**P**	**03 44 33.8**	**+0.9**
GKN	**Gorkha**	**61.74**	**303**	*e*P		**P**	**03 44 37.0**	**+0.7**
KOLN	**Koldanda**	**62.53**	**303**	*e*P		**P**	**03 44 42.5**	**+0.8**
	18nm,0.9s							
PYUN	**Piuthan**	**63.15**	**303**	*e*P		**P**	**03 44 46.6**	**+0.8**
	49nm,0.8s							
SEY	**Seymchan**	**65.37**	**6**	P		**P**	**03 44 59.4**	**+0.1**
	0.6nm,0.4s,baz=176,slow=7.3,SNR=3.6							
MKAR	**Makanchi Array**	**70.65**	**322**	P		**P**	**03 45 33.3**	**+0.4**
	1.1nm,0.6s,baz=104,slow=7.8,SNR=12							
MKAR				pP		**sP**	**03 45 42.6**	**+0.7**
	1.7nm,0.8s,baz=99,slow=7.8,SNR=5.8							
ZALV	**Zalesovo Beam**	**72.50**	**329**	P		**P**	**03 45 43.3**	**-0.6**
	1.1nm,0.7s,baz=127,slow=3.9,SNR=4.5							
ZALV				pP		**sP**	**03 45 52.9**	**0.0**
	1.6nm,0.6s,baz=111,slow=6.5,SNR=4.2							
VNDA	**Vanda**	**76.26**	**175**	P		**P**	**03 46 05.6**	**+0.2**
	2.0nm,0.6s,baz=333,slow=6.8,SNR=16							
NRIK	**Noril'sk**	**79.72**	**343**	P		**P**	**03 46 25.0**	**+0.3**
	2.0nm,0.5s,baz=119,slow=4.4,SNR=4.4							
BVAR	**Borovoye Array**	**80.06**	**325**	P		**P**	**03 46 27.2**	**+0.3**
	2.0nm,0.5s,baz=109,slow=8.0,SNR=4.5							
BVAR				pP		**sP**	**03 46 36.7**	**+0.8**
	1.5nm,0.5s,baz=115,slow=6.5,SNR=3.1							
MAW	**Mawson**	**83.60**	**202**	P		**P**	**03 46 45.6**	**+0.4**
	3.4nm,0.7s,baz=92,slow=6.3,SNR=6.4							
ILAR	**Eielson Array**	**84.29**	**24**	P		**P**	**03 46 47.2**	**-1.6**
	0.7nm,0.8s,baz=265,slow=4.6,SNR=7.1							
GEYT	**Alibeck**	**85.59**	**308**	P		**P**	**03 46 56.1**	**+0.1**
	2.7nm,0.6s,baz=119,slow=1.8,SNR=3.8							
GEYT				pP		**sP**	**03 47 06.7**	**+1.6**
	1.9nm,0.5s,baz=62,sl

KNT				S	Sb	03 41 14.8	+0.1	
KNT				AML	AML	03 41 18.3		
	comp=N,649μm,0.2s							
KNT				AML	AML	03 41 18.5		
	comp=E,492μm,0.2s							
PGB	**Panagyurishte**	**0.99**	**6**	*i* Pg	**Pg**	**03 41 02.8**	**-0.2**	
KDZ	**Kurdzhali**	**1.05**	**85**	Pg	**Pg**	**03 41 03.3**	**-0.9**	
VAY	**Valandovo**	**1.11**	**258**	P	**Pn**	**03 41 06.5**	**+0.8**	
VAY				S	**Sn**	**03 41 21.1**	**0.0**	
VAY	**Valandovo**	**1.11**	**258**	*i* Pg	**Pn**	**03 41 06.9**	**+1.2**	
VAY				*i* Sg	**Sg**	**03 41 19.9**	**+0.2**	
VAY				eLg	Lg	03 41 22.5		
	comp=N,78nm,0.5s							
VAY				eLg	Lg	03 41 22.7		
	comp=E,140nm,0.5s							
VAY	**Valandovo**	**1.11**	**258**	*e*Pg	**Pn**	**03 41 07.0**	**+1.3**	
VAY	**Valandovo**	**1.11**	**258**	P	**Pn**	**03 41 06.5**	**+0.8**	
VAY	**Valandovo**	**1.11**	**258**	*i* Pg	**Pn**	**03 41 06.8**	**+1.2**	
VAY				*i* Sg	**Sg**	**03 41 19.9**	**+0.2**	
VAY				S	**Sn**	**03 41 21.1**	**0.0**	
VAY				eLg	Lg	03 41 22.5		
	comp=E,78nm,0.5s							
HORT	**Hortiatis**	**1.19**	**216**	P	**Pg**	**03 41 06.5**	**-0.1**	
HORT				S	**Sn**	**03 41 22.7**	**-0.4**	
HORT	**Hortiatis**	**1.19**	**216**	P	**Pg**	**03 41 06.5**	**-0.1**	
HORT				S	**Sn**	**03 41 22.7**	**-0.4**	
HORT	**Hortiatis**	**1.19**	**216**	P	**Pg**	**03 41 05.2**	**-1.5**	
VTS	**Vitosha**	**1.19**	**330** ⇑	*i* P	**Sn**	**03 41 24.2**	**+0.8**	
VTS				S	**Sn**	**03 41 25.7**	**+2.3**	
VTS	**Vitosha**	**1.19**	**330**	P	**Pg**	**03 41 06.7**	**0.0**	
VTS				S	**Sn**	**03 41 24.0**	**+0.6**	
VTS	**Vitosha**	**1.19**	**330**	*e*Pg	**Pg**	**03 41 06.8**	**0.0**	
VTS				*e*Sg	**Sn**	**03 41 24.4**	**+1.0**	
VTS	**Vitosha**	**1.19**	**330**	*e*Pg	**Pg**	**03 41 06.8**	**0.0**	
VTS				S	**Sn**	**03 41 24.0**	**+0.6**	
VTS	**Vitosha**	**1.19**	**330**	Pg	**Pg**	**03 41 06.6**	**-0.2**	
THE	**Thessaloniki**	**1.22**	**221**	P	**Pn**	**03 41 07.0**	**-0.1**	
THE				S	**Sg**	**03 41 23.5**	**+0.4**	
THE	**Thessaloniki**	**1.22**	**221**	P	**Pg**	**03 41 07.4**	**+0.1**	
THE				S	**Sg**	**03 41 23.5**	**+0.4**	
THE	**Thessaloniki**	**1.22**	**221**	P	**Pg**	**03 41 07.4**	**+0.1**	
OUR	**Ouranopolis**	**1.23**	**181**	P	**Pb**	**03 41 07.0**	**-0.2**	
OUR				S	**Sn**	**03 41 23.5**	**-0.4**	
OUR	**Ouranopolis**	**1.23**	**181**	P	**Pb**	**03 41 07.0**	**-0.2**	
OUR				S	**Sn**	**03 41 23.5**	**-0.4**	
OUR	**Ouranopolis**	**1.23**	**181**	P	**Pb**	**03 41 07.0**	**-0.2**	
DIM	**Dimitrovgrad**	**1.24**	**66**	P	**Pg**	**03 41 08.9**	**+1.3**	
PLG	**Polygyros**	**1.26**	**200**	P	**Pn**	**03 41 07.3**	**-0.5**	
PLG	**Polygyros**	**1.26**	**200**	P	**Pn**	**03 41 07.3**	**-0.5**	
GRG	**Griva**	**1.36**	**244**	P	**Pb**	**03 41 09.6**	**+0.1**	
GRG	**Griva**	**1.36**	**244**	P	**Pb**	**03 41 09.6**	**+0.1**	
SMTH	**Samothraki Isl**	**1.58**	**133**	P	**Pg**	**03 41 14.9**	**+0.7**	
SMTH	**Samothraki Isl**	**1.58**	**133**	P	**Pg**	**03 41 14.9**	**+0.7**	
ALN	**Alexandroupoli**	**1.67**	**113**	P	**Pn**	**03 41 13.6**	**+0.3**	
ALN	**Alexandroupoli**	**1.67**	**113**	P	**Pn**	**03 41 13.6**	**+0.3**	
MPEP	**Malo Peshtene**	**1.81**	**354**	P	**Pg**	**03 41 18.7**	**+0.2**	
ZAPS	**Zavoj**	**1.99**	**330**	*e*Pn	**Pg**	**03 41 22.5**	**+0.4**	
ZAPS				*e*Sn	**Sg**	**03 41 47.8**	**-0.2**	
FYTO	**Fytoko, Volos**	**2.30**	**201**	P	**Pn**	**03 41 21.5**	**-0.5**	
FYTO	**Fytoko, Volos**	**2.30**	**201**	P	**Pn**	**03 41 21.5**	**-0.5**	
KUBS	**Kucevo**	**3.33**	**330**	*e*Pn	**Pb**	**03 41 40.1**	**-3.0**	
KUBS				*e*Sn	**Sn**	**03 42 19.4**	**+3.6**	
KUBS	**Kucevo**	**3.33**	**330**	*e*Pn	**Pb**	**03 41 40.1**	**-3.0**	
KUBS				*e*Sn	**Sn**	**03 42 19.4**	**+3.6**	
MDVR	**Moldovita**	**3.63**	**333** ⇑	*i* P	**Pg**	**03 41 53.2**	**-0.3**	
MDVR	**Moldovita**	**3.63**	**333**	S	**Sg**	**03 42 41.1**	**+0.6**	
GZR	**Gura Zlata**	**3.94**	**347**	S	**Sg**	**03 42 50.4**	**+0.2**	
MLR	**Muntele Rosu**	**4.17**	**19** ⇑	*i* P	Pg	03 42 07.6	+3.8	
MLR	**Muntele Rosu**	**4.17**	**19**	S	**Sg**	**03 42 59.8**	**+2.0**	
BZS	**Buzias**	**4.41**	**338** ⇑	*i* P	**Pg**	**03 42 07.8**	**-0.6**	
BZS	**Buzias**	**4.41**	**338**	S	**Sg**	**03 43 00.9**	**-4.6**	

NEIC ***14*** *03:49:09.0,51.°09N×179.°17W,h19km,ML3.3(AEIC),After AEIC.*
IDC ***14*** *03:49:11.5±22.0,51.°19N×177.°54W,h0km,mb3.3/3, mb1 3.8/3,mb1mx3.3/57,mbtmp3.4/3,Error ellipse: s-maj=408.0km s-min=83.7km az=77.0*
ISC 14 03:49:06.1±2.6,51.°1N±0.°2×179.°62W±0.°09,h28km±19km, n26,σ0°90/28,mb3.6/3,Andreanof Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GALAA	**Gareloi Lava P**	**0.84**	**39**	P	**Pn**	**03 49 23.2**	**+1.1**
GAEA	**Gareloi East**	**0.87**	**39**	P	**Pn**	**03 49 23.3**	**+0.8**
GAEA				S	**Sb**	**03 49 34.0**	**+0.1**
TASE	**Tanaga Southea**	**1.23**	**53**	P	**Pn**	**03 49 27.6**	**+0.2**
TANO	**Tanaga North**	**1.24**	**49**	P	**Pn**	**03 49 28.0**	**+0.4**
TAFL	**Tanaga Flats**	**1.26**	**58**	P	**Pn**	**03 49 27.8**	**0.0**
TAFP	**Tanaga Falls P**	**1.29**	**52**	P	**Pn**	**03 49 28.8**	**+0.5**
TAFP				S	**Sn**	**03 49 44.6**	**-0.1**
TAPA	**Tanaga Point A**	**1.33**	**57**	P	**Pn**	**03 49 28.8**	**-0.1**
KIKV	**Kanaga Island**	**1.72**	**62**	P	**Pn**	**03 49 33.8**	**-0.3**
KIKV				S	**Sn**	**03 49 54.7**	**-0.4**
KICM	**Kanaga Island**	**1.72**	**61**	P	**Pn**	**03 49 34.6**	**+0.5**
KIRH	**Kanaga Island**	**1.77**	**62**	P	**Pn**	**03 49 35.2**	**+0.4**
ETKA	**Kagalaska Isla**	**2.15**	**68**	P	**Pn**	**03 49 40.6**	**+0.5**
ETKA				S	**Sn**	**03 50 04.8**	**-0.9**
GSCK	**Great Sitkin C**	**2.34**	**66**	P	**Pn**	**03 49 43.5**	**+0.8**
GSMY	**Great Sitkin M**	**2.41**	**66**	P	**Pn**	**03 49 44.8**	**+1.1**
GSMY				S	**Sn**	**03 50 11.4**	**-0.9**
ATKA	**Atka Island**	**3.55**	**70**	P	**Pn**	**03 49 60.0**	**+0.7**
ATKA				S	**Sn**	**03 50 38.5**	**-1.9**
KOWE	**Korovin West**	**3.57**	**67**	P	**Pn**	**03 50 01.4**	**+1.8**
KOKL	**Mount Kliuchef**	**3.58**	**68**	P	**Pn**	**03 50 01.6**	**+1.8**
KOFP	**Korovin Flat P**	**3.63**	**69**	P	**Pn**	**03 50 01.8**	**+1.4**
SMY	**Shemya**	**4.21**	**295**	*e*Pn	**Pb**	**03 50 18.9**	**-0.5**
UNV	**Unalaska Valle**	**8.47**	**66**	*e*Pn	**Pn**	**03 51 07.4**	**+0.7**
KDAK	**Kodiak Island**	**17.00**	**56**	Pn	P	03 53 14.5	+11
	0.5nm,0.3s,baz=310,slow=16,SNR=7.7						
ILAR	**Eielson Array**	**21.78**	**39**	P	**P**	**03 53 55.4**	**+0.1**
	0.3nm,0.7s,baz=235,slow=8.1,SNR=5.8						
H11N2	**WAKE ISLAND Hy**	**33.07**	**204**	T	T	04 30 58.4	
	baz=16,slow=76,SNR=7.0						
H11N3	**WAKE ISLAND Hy**	**33.08**	**204**	T	T	04 30 59.2	
	baz=16,slow=76,SNR=8.2						
H11N1	**WAKE ISLAND Hy**	**33.09**	**204**	T	T	04 30 59.7	
	baz=16,slow=76,SNR=8.7						
YKA	**Yellowknife Ar**	**35.79**	**46**	P	**P**	**03 56 02.7**	**+0.3**
	0.4nm,0.5s,baz=282,slow=7.7,SNR=14						
PDAR	**Pinedale Array**	**46.88**	**72**	P	**P**	**03 57 33.8**	**-0.2**
	0.6nm,0.4s,baz=303,slow=4.2,SNR=10						

ISCJB ***14*** *03:54:53.5±0.7,36.°98N±0.°05×28.°23E±0.°05,h9km±7km, Error ellipse: s-maj=9.1km s-min=5.3km az=36.2*
CSEM ***14*** *03:54:53.9±0.1,37.°00N×28.°20E,h8km,MD2.6,Error ellipse: s-maj=2.7km s-min=1.6km az=29.0*
ISK ***14*** *03:54:53.5,36.°99N×28.°21E,h6km,MD2.6*
DDA ***14*** *03:54:53.2,36.°98N×28.°23E,h7km,Md2.4*
ISC 14 03:54:52.8±1.3,36.°93N±0.°05×28.°26E±0.°03,h3km±14km, n18,σ0°70/26,Dodecanese Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
YER	**Yerkesik**	**0.21**	**5**	*e*PG	**Pg**	**03 54 57.2**	**+0.3**
YER				*e*SG	**Sg**	**03 55 00.2**	**+0.6**
YER	**Yerkesik**	**0.21**	**5**	*e*Pg	**Pg**	**03 54 57.2**	**+0.3**
YER				*e*Sg	**Sg**	**03 55 00.2**	**+0.6**
TURN	**Turunc**	**0.28**	**101**	*i* P	**Pg**	**03 54 57.6**	**-0.6**
TURN				*i* S	**Sg**	**03 55 01.3**	**-0.6**
TURN	**Turunc**	**0.28**	**101**	P	**Pg**	**03 54 57.6**	**-0.6**
TURN				S	**Sg**	**03 55 01.3**	**-0.6**
DALY	**Dalyan (Mu¨la**	**0.34**	**109**	*e*PG	**Pb**	**03 55 01.6**	**+0.2**
DALY				*e*SG	**Sb**	**03 55 07.6**	**+0.4**
DALY	**Dalyan (Mu¨la**	**0.34**	**109**	*e*Pg	**Pb**	**03 55 01.6**	**+0.2**
DALY				*e*Sg	**Sb**	**03 55 07.6**	**+0.4**
BDRM	**Kayabasi**	**0.67**	**282**	*i* P	**Pg**	**03 55 05.7**	**+0.1**
BDRM				*i* S	**Sb**	**03 55 17.6**	**+0.8**
BDRM	**Kayabasi**	**0.67**	**282**	P	**Pg**	**03 55 05.7**	**+0.1**
FETY	**Fethiye**	**0.72**	**113**	*e*PG	**Pn**	**03 55 09.1**	**-0.9**
FETY	**Fethiye**	**0.72**	**113**	*e*Pg	**Pn**	**03 55 09.1**	**-0.9**
BODT	**Bodrum**	**0.77**	**280**	*e*PG	**Pg**	**03 55 08.0**	**+0.4**
BODT	**Bodrum**	**0.77**	**280**	*e*Pg	**Pg**	**03 55 08.0**	**+0.4**
AYDN	**Tasoluk**	**0.79**	**338**	*i* P	**Pg**	**03 55 07.6**	**-0.4**
AYDN				*i* S	**Sg**	**03 55 17.9**	**-0.4**
AYDN	**Tasoluk**	**0.79**	**338**	P	**Pg**	**03 55 07.6**	**-0.4**
AYDB	**Zeytinkoy-Aydi**	**1.06**	**344**	*e*PG	**Pg**	**03 55 12.9**	**-0.2**
AYDB	**Zeytinkoy-Aydi**	**1.06**	**344**	*e*Pg	**Pg**	**03 55 12.9**	**-0.2**
ELL	**Elmali**	**1.34**	**97**	*e*PN	**Pg**	**03 55 20.0**	**+1.6**
ELL	**Elmali**	**1.34**	**97**	*e*Pn	**Pg**	**03 55 20.0**	**+1.6**

ISCJB ***14*** *03:57:48.7±0.7,26.°41S±0.°03×27.°46E±0.°03,h13km±4km, mb3.5/2,Error ellipse: s-maj=5.6km s-min=4.6km az=153.4*
PRE ***14*** *03:57:48.6±2.5,26.°43S×27.°43E,h2km,ML3.3*
IDC ***14*** *03:57:50.2±4.1,26.°34S×27.°09E,h0km,mb3.5/2, mb1 3.6/3,mb1mx3.4/27,mbtmp3.5/3,ML3.3/1,Error ellipse: s-maj=105.0km s-min=18.3km az=112.0*
ISC 14 03:57:48.8±1.1,26.°43S±0.°03×27.°42E±0.°03,h6km±8km, n17,σ1°§57/29,South Africa

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KLOF	**Kloof**	**0.19**	**67**	*e*P	**Pg**	**03 57 52.8**	**+0.1**
KLOF				*e*S	**Sg**	**03 57 54.1**	**-1.2**
KLOF				AML	AML	03 57 54.7	
	comp=Z,5μm,0.2s						
PRYS	**Parys**	**0.50**	**186**	*e*P	**Pg**	**03 57 58.9**	**+0.4**
PRYS				*e*S	**Sg**	**03 58 05.0**	**-0.1**
PRYS				AML	AML	03 58 11.3	
	comp=Z,748nm,0.6s						
KSR	**Koster**	**0.74**	**321**	*e*P	**Pb**	**03 58 04.6**	**+0.5**
KSR				*e*S	**Sg**	**03 58 11.6**	**-1.0**
KSR				AML	AML	03 58 18.7	
	comp=Z,120nm,0.5s						
ERPM	**east rand prop**	**0.75**	**84**	*e*P	**Pg**	**03 58 02.9**	**-0.3**
ERPM				*e*S	**Sg**	**03 58 12.1**	**-0.7**
ERPM				AML	AML	03 58 20.2	
	comp=Z,300nm,0.7s						
MOAB	**Moab Khotsong**	**0.79**	**224**	*e*P	**Pb**	**03 58 05.0**	**+0.1**
MOAB				*e*S	**Sg**	**03 58 14.7**	**+0.5**
SWZ	**Schweizer**	**2.01**	**247**	*e*P	**Pn**	**03 58 24.2**	**+0.8**
SWZ				*e*S	**Sn**	**03 58 49.7**	**+0.8**
SWZ				AML	AML	03 58 53.8	
	comp=Z,563nm,0.4s						
BOSA	**Boshof**	**2.90**	**221**	*i* P	**Pb**	**03 58 40.2**	**-0.8**
BOSA				*i*		03 58 40.3	
	baz=50,slow=28						
BOSA				*i* S	**Sg**	**03 59 20.1**	**-2.0**
BOSA	**Boshof**	**2.90**	**221**	Pn	**Pn**	**03 58 36.6**	**+1.0**
	comp=Z,3.1nm,0.3s,baz=34,slow=12,SNR=106						
BOSA				Lg	Lg	03 59 18.9	
	comp=Z,27nm,0.3s,baz=139,slow=19,SNR=21						
POGA	**Pongola**	**3.86**	**105**	*e*P	**Pn**	**03 58 50.7**	**+1.9**
POGA				*e*S	**Sn**	**03 59 34.5**	**+0.1**
POGA				AML	AML	03 59 55.6	
	comp=Z,118nm,0.8s						
KSD	**Kokstad**	**4.46**	**157**	*e*P	**Pn**	**03 58 59.2**	**+2.1**
KSD				*e*S	**Sn**	**03 59 49.0**	**-0.4**
KSD				AML	AML	04 00 08.0	
	comp=Z,20nm,0.5s						
MSNA	**Messina**	**4.71**	**31**	*e*P	**Pn**	**03 59 00.6**	**+0.2**
MSNA				*e*S	**Sn**	**03 59 53.8**	**-1.5**
MSNA				AML	AML	04 00 25.5	
	comp=Z,32nm,0.7s						
UPI	**Upington**	**5.81**	**249**	*e*P	**Pn**	**03 59 17.0**	**+1.4**
UPI				*e*S	**Sn**	**04 00 20.8**	**-1.7**
UPI				AML	AML	04 00 58.9	
	comp=Z,41nm,0.7s						
MATP	**Matopo**	**6.05**	**10**	*i* P	Pn	03 59 15.3	-3.7
MATP				*i*		03 59 15.4	
	baz=198,slow=18						
MATP				*i* S	Sn	04 00 20.1	-8.6
KEIM	**Keimoes**	**6.16**	**247**	*e*P	**Pn**	**03 59 22.7**	**+2.4**
KEIM				*e*S	**Sn**	**04 00 28.3**	**-2.8**
KEIM				AML	AML	04 01 01.7	
	comp=Z,33nm,0.5s						
BUFB	**Buffelsbos**	**8.04**	**196**	*e*P	**Pn**	**03 59 45.9**	**-0.2**
BUFB				*e*S	**Sn**	**04 01 12.8**	**-4.5**
BUFB				AML	AML	04 01 18.6	
	comp=Z,5.5nm,0.7s						
TORD	**Torodi Ar. Bea**	**46.61**	**324**	P	**P**	**04 06 18.6**	**+0.6**
	comp=Z,0.5nm,0.5s,baz=144,slow=7.3,SNR=14						
ESDC	**Sonseca Array**	**71.98**	**335**	P	**P**	**04 09 14.2**	**+1.0**
	comp=Z,0.2nm,0.5s,baz=155,slow=4.7,SNR=3.2						

JMA 14 04:07:40.6±0.1,38.°92N×142.°28E,h33km±1km,M3.5, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**0.50**	**289**	P	Pb	04 07 51.1	-0.1
OFUJ				S	Sb	04 07 58.2	-0.3
MIYJ	**Miyakonagasawa**	**0.75**	**332**	P	Pn	04 07 54.3	-0.5
JMK	**Ichinoseki**	**0.83**	**273**	P	Pn	04 07 56.0	+0.1
JMK				S	Sb	04 08 07.2	-0.2
JIO	**Ouri**	**0.86**	**238**	P	Pn	04 07 55.9	-0.5
JIO				S	Sn	04 08 07.4	-0.5
JOM	**Ohasama**	**0.95**	**306**	P	Pn	04 07 57.9	+0.3
JOM				S	Sn	04 08 10.3	+0.4
JKZ	**Kuzumaki**	**1.29**	**326**	P	Pn	04 08 03.3	+0.9
JKZ				S	Sb	04 08 20.1	-0.6
JRG	**Rokugo**	**1.36**	**291**	P	Pb	04 08 04.8	-0.8
JRG				S	Sb	04 08 22.7	0.0
JOU	**Okura**	**1.38**	**247**	P	Pn	04 08 04.5	+0.9
JOU				S	Sn	04 08 21.9	+1.2
JYK	**Kaneyama**	**1.50**	**271**	P	Pn	04 08 06.4	+1.2
JYK				S	Sb	04 08 25.5	-1.0
JANG	**Nango**	**1.57**	**338**	P	Pn	04 08 07.4	+1.3
JANG				S	Sb	04 08 27.0	-1.5
JMM	**Marumori**	**1.57**	**228**	P	Pn	04 08 06.5	+0.3
JMM				S	Sn	04 08 25.7	+0.3
MAT	**Matsushiro**	**4.01**	**235**	P	Pn	04 08 43.9	+4.2
MAT				*e*S	Sn	04 09 15.6	-10

NIED ***14*** *04:13:00,36.°10N×142.°20E,h11km,Mw4.3 Best double couple: M0 3.75000×10^15 NP1:φ=227.00000°,δ36.00000°, λ122.00000°. NP2:φ=10.00000°,δ60.00000°,λ69.00000°.*
IDC ***14*** *04:13:40.2±0.6,36.°05N×142.°05E,h0km,mb4.1/21, mb1 4.3/27,mb1mx4.2/44,mbtmp4.2/27,ML4.0/4,MS3.7/17, Ms1 3.7/17,ms1mx3.4/51,Error ellipse: s-maj=16.5km s-min=13.6km az=108.0*
BJI ***14*** *04:13:41.3,35.°70N×141.°78E,h7km,mb4.7/28,mB4.8/15, Ms4.2/13,Ms7 4.1/10*
NEIC ***14*** *04:13:41.8±2.6,36.°07N×142.°18E,h13km±16km,mb4.6/13, Error ellipse: s-maj=7.9km s-min=6.6km az=110.0*
MOS ***14*** *04:13:41.4±0.8,36.°08N×142.°18E,h24km,mb4.5/29,Error ellipse: s-maj=10.6km s-min=6.7km az=119.8*
ISCJB ***14*** *04:13:42.2±1.4,36.°08N±0.°03×142.°13E±0.°05, h27km±10km,mb4.2/42,MS3.7/16,Error ellipse: s-maj=7.1km s-min=4.6km az=22.5*
JMA ***14*** *04:13:42.1±0.2,36.°11N×142.°17E,h65km,M4.3*
ISC 14 04:13:42.3±3.1,36.°09N±0.°04×142.°14E±0.°05,h16km±19km, n121,σ1°§23/119,mb4.4/42,MS3.7/16,1D,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**1.11**	**250**	P	**Pb**	**04 14 02.5**	**-0.6**
CHOJ				*e*S	**Sb**	**04 14 17.5**	**+0.1**
JHO	**Hitachi**	**1.37**	**293**	P	**Pn**	**04 14 05.5**	**-1.3**
JFK	**Kawauchi**	**1.63**	**322**	P	**Pn**	**04 14 09.3**	**-1.2**
BSO1	**Boso 1**	**1.72**	**214**	P	**Pn**	**04 14 10.8**	**-0.3**
BSO1				S	**Sn**	**04 14 32.9**	**+0.5**
BSO3	**Boso 3**	**1.85**	**227**	P	**Pn**	**04 14 12.6**	**-0.5**
BSO3				S	**Sn**	**04 14 34.3**	**-1.8**
JFT	**Otama**	**2.03**	**315**	P	**Pn**	**04 14 16.0**	**0.0**
JFT				S	**Sn**	**04 14 38.1**	**-2.9**
JMM	**Marumori**	**2.08**	**329**	P	**Pn**	**04 14 15.5**	**-1.0**
JAG	**Ashikaga**	**2.20**	**280**	P	**Pn**	**04 14 17.3**	**-0.9**
JOD2	**Odawara 2**	**2.62**	**253**	P	**Pn**	**04 14 23.7**	**-0.3**
JOD2				*e*S	**Sn**	**04 14 54.7**	**-0.8**
JRY	**Ryogami san**	**2.63**	**269**	P	**Pn**	**04 14 23.4**	**-0.7**
JYN	**Shimob**	**2.98**	**260**	P	**Pn**	**04 14 29.6**	**+0.5**
MJAR	**Matsushiro Arr**	**3.21**	**279**	Pn	**Pn**	**04 14 32.0**	**-0.1**
	24nm,0.3s,baz=99,slow=8.0,SNR=128						
MJAR	**Matsushiro Arr**	**3.21**	**279**	P	**Pn**	**04 14 32.0**	**-0.1**
MJAR				pmax	pmax		
	comp=Z,24nm,0.3s						
MAJO	**Matsushiro**	**3.21**	**279**	*e*P	**Pn**	**04 14 32.7**	**+0.6**
MAJO	**Matsushiro**	**3.21**	**279**	*e*Pn	**Pn**	**04 14 32.7**	**+0.6**
MAT	**Matsushiro**	**3.21**	**279**	P	**Pn**	**04 14 32.7**	**+0.6**
MAT				S	**Sn**	**04 15 10.6**	**+0.5**
MJB9	**Matsu-Tunnel**	**3.21**	**279**	*e*Pn	**Pn**	**04 14 32.7**	**+0.6**
JHJ2	**Mitsune**	**3.53**	**214**	*e*Pn	**Pn**	**04 14 36.5**	**0.0**
JHJ2				*e*S	**Sn**	**04 15 17.1**	**-1.0**
JHJ	**Hachijo jima 2**	**3.54**	**214**	Pn	**Pn**	**04 14 36.1**	**-0.6**
	comp=Z,72nm,0.3s,baz=51,slow=14,SNR=11						
JHJ				Sn	**Sn**	**04 15 14.6**	**-3.7**
	comp=Z,111nm,0.3s,baz=73,slow=19,SNR=8.5						
INU	**Inuyama**	**4.23**	**261**	*e*Pn	**Pn**	**04 14 47.1**	**+0.9**
ERM	**Erimo**	**5.97**	**7**	*e*P	**Pn**	**04 15 08.1**	**-1.9**
ERM				*e*S	**Sn**	**04 16 13.8**	**-4.3**
ERM	**Erimo**	**5.97**	**7**	*e*Pn	**Pn**	**04 15 08.1**	**-1.9**
ERM				*e*S	**Sn**	**04 16 13.8**	**-4.3**
ASAJ	**Asahikawa**	**8.03**	**2**	Pn	**Pn**	**04 15 37.3**	**-0.9**
	comp=Z,4.0nm,0.3s,baz=211,slow=13,SNR=8.0						
ASAJ				Sn	**Sn**	**04 17 05.9**	**-2.7**
	comp=Z,1.7nm,0.3s,baz=120,slow=20,SNR=3.0						
ASAJ				LR	LR	04 19 19.3	
	comp=Z,470nm,20.1s,baz=155,slow=42						
ASAJ	**Asahikawa**	**8.03**	**2**	*e*Pn	**Pn**	**04 15 36.9**	**-1.4**
ASAJ				*e*S	Sn	04 17 01.2	-7.5
CBIJ	**Chichi jima**	**8.96**	**180**	*e*Pn	**Pn**	**04 15 49.2**	**-2.0**
CBIJ				*e*S	Sn	04 17 10.2	-22
JCJ	**Chichijima**	**8.96**	**180**	Pn	**Pn**	**04 15 49.0**	**-2.2**
	comp=Z,14nm,0.3s,baz=286,slow=22,SNR=12						
JCJ				Sn	Sn	04 17 23.2	-8.6
	baz=287,slow=19						
JNU	**Nakatsue**	**9.74**	**256**	Pn	**Pn**	**04 16 02.1**	**+0.3**
	comp=Z,0.5nm,0.3s,baz=82,slow=15,SNR=4.6						
JNU	**Nakatsue**	**9.74**	**256**	*e*Pn	**Pn**	**04 16 03.1**	**+1.3**
	comp=Z,22nm,1.6s						
USRK	**Ussuriysk Ar.**	**11.22**	**319**	Pn	**Pn**	**04 16 22.1**	**+0.1**
	comp=Z,0.2nm,0.3s,baz=135,slow=14,SNR=9.6						
USRK				LR	LR	04 20 40.1	
	comp=Z,274nm,18.1s,baz=100,slow=38						
KSRS	**Korea Array**	**11.49**	**281**	Pn	**Pn**	**04 16 28.3**	**+2.7**
	comp=Z,0.5nm,0.3s,baz=99,slow=13,SNR=17						
KSRS				LR	LR	04 20 55.4	
	comp=Z,233nm,18.6s,baz=76,slow=38						
KS15	**Wonju Array Si**	**11.52**	**281**	*e*Pn	**Pn**	**04 16 29.0**	**+2.9**
KSAR	**Wonju Array Be**	**11.52**	**281**	P	**Pn**	**04 16 28.3**	**+2.2**
KSAR	**Wonju Array Be**	**11.52**	**281**	Pn	**Pn**	**04 16 28.3**	**+2.2**
MDJ	**Mudanjiang**	**12.80**	**316**	P	**Pn**	**04 16 45.1**	**+1.5**
MDJ				S	**Sn**	**04 19 05.4**	**-0.3**
MDJ				pmax	pmax		
	comp=Z,4.0nm,0.6s						
MDJ				pmax	pmax		
	comp=Z,90nm,6.2s						
MDJ				LR	LR		
	comp=Z,360nm,16.6s						
MDJ				LR	LR		
	comp=Z,68nm,12.8s						
KLR	**Kul'dur**	**15.18**	**333**	Pn	**Pn**	**04 17 12.8**	**-3.1**
	comp=Z,0.2nm,0.3s,baz=139,slow=10.0,SNR=4.6						
NKL	**Nikolayevsk**	**17.09**	**357**	*e*P	**P**	**04 17 42.0**	**-0.1**
BJI	**Beijing**	**20.80**	**289**	P	Pn	04 18 29.8	+4.6
BJI				pmax	pmax		
	comp=Z,7.0nm,0.6s						
YULB	**Yu-li**	**22.03**	**241**	*e*Pn	P	04 18 31.1	-5.1
MA2	**Magadan**	**24.16**	**11**	LR	LR	04 29 09.0	
	comp=Z,101nm,18.8s,baz=196,slow=38						
YAK	**Yakutsk**	**27.12**	**347**	LR	LR	04 30 54.8	
	comp=Z,208nm,18.7s,baz=150,slow=38						
YAK	**Yakutsk**	**27.12**	**347**	*e*P	**P**	**04 19 26.1**	**+1.8**
YAK				pmax	pmax		
	comp=Z,24nm,1.1s						
YAK				pmax	pmax		
	comp=N,20nm,1.3s						
YAK				pmax	pmax		
	comp=E,9.0nm,1.2s						
H11N2	**WAKE ISLAND Hy**	**27.16**	**120**	T	T	04 47 57.0	
	baz=312,slow=75,SNR=14						
H11N1	**WAKE ISLAND Hy**	**27.17**	**120**	T	T	04 47 57.0	
	baz=312,slow=75,SNR=18						
H11N3	**WAKE ISLAND Hy**	**27.18**	**120**	T	T	04 48 09.7	
	baz=312,slow=75,SNR=14						
XAN	**Xi'an**	**27.20**	**276**	P	**P**	**04 19 24.4**	**-0.9**
XAN				pP	pP	04 19 30.4	+0.2
XAN				pmax	pmax		
	comp=E,10.0nm,0.8s						
XAN				LR	LR		
	comp=E,200nm,15.5s					

TKM2	**Tokmak 2**	**50.60**	**299**	*e*P		**P**		**04 22 41.3**	**+0.7**
TKM2	comp=Z,13nm,1.3s			pmax	pmax				
TKM2	**Tokmak 2**	**50.60**	**299**	*e*P		**P**		**04 22 41.3**	**+0.7**
	comp=Z,13nm,1.3s								
VOSK	**Vostochnaya**	**51.35**	**313**	*e*P		**P**		**04 22 45.8**	**0.0**
VOSK	comp=Z,8.0nm,0.8s			pmax	pmax				
VOSK	**Vostochnaya**	**51.35**	**313**	*e*P		**P**		**04 22 45.8**	**0.0**
	comp=Z,7.9nm,0.8s								
AAK	**Ala-Archa**	**51.46**	**299**	*e*P		**P**		**04 22 47.8**	**+0.8**
AAK	comp=Z,2.0nm,0.8s			pmax	pmax				
AAK	**Ala-Archa**	**51.46**	**299**	*e*P		**P**		**04 22 47.8**	**+0.8**
	comp=Z,2.2nm,0.8s								
EKS2	**Erkin-Say**	**51.96**	**299**	*e*P		**P**		**04 22 51.0**	**+0.3**
EKS2	comp=Z,2.0nm,0.8s			pmax	pmax				
EKS2	**Erkin-Say**	**51.96**	**299**	*e*P		**P**		**04 22 51.0**	**+0.3**
	comp=Z,1.8nm,0.8s								
ZRNK	**Zerenda**	**52.48**	**313**	*e*P		**P**		**04 22 54.5**	**+0.3**
ZRNK	comp=Z,4.0nm,0.8s			pmax	pmax				
ZRNK	**Zerenda**	**52.48**	**313**	*e*P		**P**		**04 22 54.5**	**+0.3**
	comp=Z,4.1nm,0.8s								
KKAR	**Karatay Array**	**54.11**	**301**	*e*P		**P**		**04 23 06.5**	**+0.1**
KKAR	comp=Z,3.0nm,0.8s			pmax	pmax				
KKAR	**Karatay Array**	**54.11**	**301**	*e*P		**P**		**04 23 06.5**	**+0.1**
	comp=Z,3.1nm,0.8s								
INK	**Inuvik**	**54.96**	**27**	P		**P**		**04 23 13.6**	**+1.4**
	comp=Z,0.9nm,0.6s,baz=305,slow=6.1,SNR=9.7								
INK	**Inuvik**	**54.96**	**27**	*e*P		**P**		**04 23 14.1**	**+1.9**
WRAB	**Tennant Creek**	**56.20**	**189**	*e*P		**P**		**04 23 21.1**	**-0.5**
WRAB	**Tennant Creek**	**56.20**	**189**	*e*P		**P**		**04 23 21.1**	**-0.5**
WRA	**Warramunga Arr**	**56.21**	**189**	P		**P**		**04 23 21.3**	**-0.4**
	comp=Z,1.6nm,0.8s,baz=6.8,slow=6.9,SNR=11								
ARU	**Arti**	**57.46**	**319**	P		**P**		**04 23 29.8**	**-0.4**
ARU	**Arti**	**57.46**	**319**	*e*P		**P**		**04 23 30.3**	**+0.1**
	comp=Z,8.8nm,0.9s								
ABKAR	**Akbulak array**	**59.00**	**311**	*e*P		**P**		**04 23 40.9**	**-0.1**
	comp=Z,2.0nm,0.3s								
AKTO	**Aktyubinsk**	**59.74**	**313**	LR		LR		04 49 14.9	
	comp=Z,23nm,18.5s,slow=36								
ASAR	**Alice Springs**	**59.94**	**189**	P		**P**		**04 23 47.8**	**0.0**
	comp=Z,0.8nm,0.8s,baz=15,slow=6.6,SNR=8.1								
ASAR				LR		LR		04 50 15.4	
	comp=Z,30nm,18.6s,baz=45,slow=37								
RES	**Resolute Bay**	**63.37**	**14**	*e*P		**P**		**04 24 10.7**	**+0.4**
RES	comp=Z,1.0nm,0.9s			pmax	pmax				
RES	**Resolute Bay**	**63.37**	**14**	*e*P		**P**		**04 24 10.7**	**+0.4**
	comp=Z,1.5nm,0.9s								
YKA	**Yellowknife Ar**	**64.33**	**30**	P		**P**		**04 24 17.7**	**+1.0**
	comp=Z,0.7nm,0.8s,baz=298,slow=6.7,SNR=8.9								
ARCES	**ARCESS Array B**	**65.09**	**340**	P		**P**		**04 24 22.3**	**+0.6**
	comp=Z,5.8nm,1.2s,baz=51,slow=7.1,SNR=2.7								
ARCES				LR		LR		04 59 16.7	
	comp=Z,68nm,19.0s,baz=32,slow=42								
OBN	**Obninsk**	**69.20**	**324**	LR		LR		04 55 41.1	
	comp=Z,51nm,19.3s,baz=90,slow=36								
FIA1	**FINESS Array S**	**69.92**	**333**	*e*P		**P**		**04 24 50.3**	**-2.0**
FINES	**FINESS Array B**	**69.92**	**333**	P		**P**		**04 24 52.6**	**+0.3**
	comp=Z,2.2nm,0.7s,baz=74,slow=7.4,SNR=7.8								
FINES				LR		LR		04 58 34.1	
	comp=Z,96nm,18.2s,baz=14,slow=38								
KBZ	**Khabaz**	**71.96**	**311**	P		**P**		**04 25 05.5**	**+0.5**
	comp=Z,5.0nm,0.9s,baz=74,slow=3.1,SNR=7.0								
NV01	**Mina Array Sit**	**75.08**	**53**	*e*P		**P**		**04 25 24.4**	**+0.6**
NB2	**NORSAR Subarra**	**75.28**	**338**	P		**P**		**04 25 24.6**	**+0.3**
	comp=Z,4.3nm,1.0s,baz=41,slow=5.9								
NOA	**NORSAR Array B**	**75.28**	**338**	P		**P**		**04 25 24.6**	**+0.3**
	comp=Z,2.2nm,0.8s,baz=40,slow=5.7,SNR=8.6								
NOA				LR		LR		05 02 19.3	
	comp=Z,78nm,19.0s,baz=10.0,slow=39								
AKASG	**Malin Array Be**	**75.40**	**323**	P		**P**		**04 25 25.0**	**-0.1**
	comp=Z,1.1nm,0.4s,baz=46,slow=6.0,SNR=13								
AKASG				LR		LR		05 01 42.4	
	comp=Z,62nm,18.1s,baz=355,slow=38								
PDAR	**Pinedale Array**	**77.91**	**46**	P		**P**		**04 25 40.7**	**+1.0**
	comp=Z,0.3nm,0.8s,baz=289,slow=2.8,SNR=2.8								
BRTR	**Keskin Array B**	**79.92**	**312**	P		**P**		**04 25 51.0**	**+0.3**
	comp=Z,1.1nm,0.8s,baz=122,slow=4.5,SNR=6.8								
BRTR	**Keskin Array B**	**79.92**	**312**	P		**P**		**04 25 51.0**	**+0.3**
BRTR	comp=Z,1.0nm,0.8s			pmax	pmax				
BR231	**Keskin MP Arra**	**80.36**	**313**	*e*P		**P**		**04 25 51.7**	**-1.4**
GERES	**GERESS Array B**	**83.82**	**329**	P		**P**		**04 26 10.5**	**-0.5**
	comp=Z,0.6nm,0.5s,baz=38,slow=5.0,SNR=5.2								
GERES				LR		LR		05 04 56.2	
	comp=Z,32nm,20.9s,baz=354,slow=37								
ANMO	**Albuquerque**	**84.75**	**50**	LR		LR		04 57 23.9	
	comp=Z,27nm,21.0s,baz=346,slow=31								
TXAR	**Lajitas Array**	**90.23**	**53**	P		**P**		**04 26 44.8**	**+2.2**
	comp=Z,0.3nm,0.7s,baz=308,slow=3.4,SNR=4.6								
LPAZ	**La Paz**	**146.65**	**62**	PKPbc		**PKPab**		**04 33 25.0**	**-0.6**
	comp=Z,1.0nm,0.7s,baz=38,slow=3.2,SNR=7.3								

IDC 14 04:31:09.1±8.1, **7°.67S**×**128°.54E**, **h175**km±87km, **mb3.2**/1, **mb1 3.2**/5, **mb1mx3.0**/49, **mbtmp3.7**/5, **Error ellipse: s-maj=84.2km s-min=23.8km az=38.0, Banda Sea**

Code	Station Name	Δ°	AZ°	Phase ID		Time		Res
				Op	ISC	h	m s	ISC
BATI	**Baumata**	**5.44**	**242**	P	Pn	04	32 28.9	+0.2
	10nm,0.3s,baz=198,slow=19,SNR=16							
BATI				S	Sn	04	33 32.0	+0.7
	28nm,0.3s,baz=106,slow=22,SNR=12							
FITZ	**Fitzroy Crossi**	**10.75**	**195**	P	Pn	04	33 37.7	-0.8
	0.7nm,0.3s,baz=27,slow=12,SNR=23							
FITZ				S	Sn	04	35 31.1	-6.8
	1.1nm,0.3s,baz=284,slow=23,SNR=8.1							
WRA	**Warramunga Arr**	**13.43**	**156**	P	Pn	04	34 12.0	-1.0
	0.2nm,0.3s,baz=325,slow=14,SNR=19							
WRA				S	Sn	04	36 33.3	-9.0
	0.9nm,0.3s,baz=324,slow=25,SNR=9.9							
ASAR	**Alice Springs**	**16.71**	**163**	P	Pn	04	34 54.4	+1.0
	0.1nm,0.3s,baz=339,slow=10.0,SNR=6.0							
ASAR				S	S	04	37 54.9	-3.0
	0.3nm,0.3s,baz=316,slow=17,SNR=5.2							
MKAR	**Makanchi Array**	**68.00**	**328**	P	P	04	41 49.4	-0.1
	0.5nm,0.6s,baz=122,slow=8.2,SNR=5.9							

IDC 14 04:32:50.7±8.2, **36°.45N**×**143°.44E**, **h0**km, **mb3.6**/2, **mb1 3.9**/3, **mb1mx3.3**/53, **mbtmp3.6**/3, **ML3.6**/1, **Error ellipse: s-maj=179.7km s-min=45.1km az=33.0, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID		Time		Res
				Op	ISC	h	m s	ISC
MJAR	**Matsushiro Arr**	**4.21**	**273**	Pn	Pn	04	33 55.8	-0.4
	3.5nm,0.3s,baz=89,slow=16,SNR=13							
MAT	**Matsushiro**	**4.21**	**273**	P	Pn	04	33 56.1	-0.1
MAT				eS	Sn	04	34 47.4	+1.2
WRA	**Warramunga Arr**	**56.74**	**190**	P	P	04	42 36.1	-0.2
	0.6nm,0.6s,baz=7.9,slow=7.3,SNR=7.2							
ASAR	**Alice Springs**	**60.46**	**190**	P	P	04	43 02.4	+0.1
	0.5nm,0.8s,baz=10,slow=7.6,SNR=4.4							

KRNET **14** *04:36:12.4*±*0.1, 41°.93N*×*72°.30E, h12km, mb2.6*
NNC **14** *04:36:13.1*±*1.3, 41°.96N*×*72°.27E, h0km, mb3.1, mpv2.8, Error ellipse: s-maj=10.7km s-min=6.6km az=95.0*
SOME **14** *04:36:13.4, 41°.92N*×*72°.30E, h5km*
ISC 14 04:36:12.8±1.2, **41°.93N**±0°.03×**72°.31E**±0°.02, **h3**km±12km, **n20**, **σ0°51**/36, **18C-12D, Kyrgyzstan**

Code	Station Name	Δ°	AZ°	Phase ID		Time		Res
				Op	ISC	h	m s	ISC
ARK	**Arkit**	**0.29**	**243**↑	*e*P	**Pg**	**04**	**36 18.0**	**-0.4**
	baz=237							
ARK				↑*e*S	**Sg**	**04**	**36 22.4**	**+0.3**
	baz=237							
TOKL	**Toktogul**	**0.42**	**88**↑	*e*P	**Pg**	**04**	**36 21.2**	**+0.3**
	baz=89							
TOKL				↑*e*S	**Sg**	**04**	**36 27.4**	**+1.0**
	baz=89							
MNAS	**Manas**	**0.58**	**15**↓	*e*P	**Pg**	**04**	**36 23.8**	**-0.1**
	baz=16							
MNAS				↓*e*S	**Sg**	**04**	**36 31.9**	**+0.6**
	baz=16							
MNAS	**Manas**	**0.58**	**15**	↓P	**Pg**	**04**	**36 23.9**	**-0.1**
	9.0nm,0.2s							
MNAS				↓S	**Sg**	**04**	**36 32.0**	**+0.6**
	24nm,0.1s							
AML	**Almayashu**	**1.05**	**78**↑	*i*P	**Pg**	**04**	**36 32.5**	**-0.5**
	baz=79							
AML				↑*i*S	**Sg**	**04**	**36 46.5**	**-0.2**
	baz=79							
MRKS	**Merke**	**1.06**	**40**	*e*P	**Pg**	**04**	**36 32.6**	**-0.6**
	6.8nm,0.1s							
MRKS				*e*S	**Sg**	**04**	**36 46.5**	**-0.4**
	11nm,0.2s							
ARLS	**Aral**	**1.51**	**92**↑	*e*P	**Pn**	**04**	**36 40.6**	**-0.3**
	baz=92							
ARLS				↑*e*S	**Sb**	**04**	**37 00.6**	**-0.5**
	baz=92							
UCH	**Uchtor**	**1.67**	**79**↓	*i*P	**Pg**	**04**	**36 44.7**	**-0.1**
	baz=79							
UCH				↓*i*S	**Sb**	**04**	**37 05.8**	**-0.3**
	baz=79							
IUG	**Iuzhnay**	**1.71**	**278**	*e*P	**Pb**	**04**	**36 44.8**	**-0.1**
	12nm,0.2s							
IUG				*e*S	**Sb**	**04**	**37 06.9**	**0.0**
	36nm,0.4s							
AAK	**Ala-Archa**	**1.77**	**66**↓	*i*P	**Pb**	**04**	**36 46.0**	**0.0**
	baz=66							
AAK				↓*i*S	**Sb**	**04**	**37 08.5**	**-0.2**
	baz=66							
AAK	**Ala-Archa**	**1.77**	**66**	Pg	**Pg**	**04**	**36 47.3**	**+0.6**
	1.8nm,0.2s							
AAK				↑Lg	Lg	04	37 11.5	
	2.1nm,0.2s							
KK31	**Karatay Array**	**1.77**	**312**	Pg	**Pn**	**04**	**36 44.9**	**+0.5**
	2.2nm,0.2s,baz=140,slow=17,SNR=17							
KK31				↑Lg	Lg	04	37 11.1	
	3.5nm,0.2s,baz=130,slow=27,SNR=5.3							
USP	**Ospenovka**	**2.10**	**50**↑	*i*P	**Pb**	**04**	**36 50.8**	**-0.8**
	baz=50							
USP				↑*i*S	**Sb**	**04**	**37 17.7**	**-0.4**
	baz=50							
SFK	**Sufi-Kurgan**	**2.12**	**154**↑	*e*P	**Pn**	**04**	**36 49.4**	**0.0**
	baz=154							
SFK				↑*e*S	**Sn**	**04**	**37 16.7**	**+0.4**
	baz=154							
SFK	**Sufi-Kurgan**	**2.12**	**154**	↓Pg	**Pb**	**04**	**36 52.0**	**+0.1**
	0.9nm,0.2s							
SFK				↓Lg	Lg	04	37 20.6	
	5.7nm,0.2s							
BRLS	**Borolday**	**2.12**	**295**	*e*P	**Pb**	**04**	**36 52.3**	**+0.3**
	2.1nm,0.3s							
BRLS				*e*S	**Sg**	**04**	**37 20.4**	**-0.7**
	9.1nm,0.5s							
KZA	**Kyzart**	**2.20**	**85**↑	*i*P	**Pb**	**04**	**36 53.1**	**-0.4**
	baz=85							
KZA				↑*i*S	**Sb**	**04**	**37 21.3**	**0.0**
	baz=85							
TKM2	**Tokmak 2**	**2.63**	**67**	↓Pg	**Pb**	**04**	**37 01.5**	**+0.8**
	1.1nm,0.2s							
TKM2				↓Lg	Lg	04	37 36.0	
	1.7nm,0.2s							
BMNS	**Besmoynak**	**2.75**	**64**	*e*P	**Pb**	**04**	**37 03.8**	**+1.1**
	9.3nm,0.2s							
BMNS				*e*S	**Sg**	**04**	**37 40.1**	**-1.1**
	13nm,0.4s							
BOOM	**Boomskoye usch**	**2.76**	**77**↑	*e*P	**Pb**	**04**	**37 02.7**	**-0.1**
	baz=77							
BOOM				↑*e*S	**Sg**	**04**	**37 41.5**	**+0.1**
	baz=77							

JMA 14 04:42:55.4±0.1, **35°.83N**×**140°.96E**, **h16**km±1km, **M3.4**, **2C-1D Broadband fault plane solution: P waves. NP1**:ϕ_s338.00000°,δ69.00000°,λ-114.00000°. **NP2:** ϕ_s209.00000°,δ31.00000°,λ-43.00000°. **Principal axes:** T Plg21.0000°, Azm86.0000°; N Plg22.0000°, Azm347.0000°; P Plg59.0000°, Azm215.0000°; **Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID		Time		Res
				Op	ISC	h	m s	ISC
CHOJ	**Chosi**	**0.15**	**213**	P	Pg	04	42 59.2	-0.2
CHOJ				S	Sg	04	43 01.9	-0.2
JYT	**Yasato**	**0.74**	**303**	P	Pg	04	43 09.0	-0.8
JYT				S	Sg	04	43 19.5	-0.1
JCN	**Nagara**	**0.74**	**237**	P	Pn	04	43 10.6	-0.6
JCN				S	Sn	04	43 21.9	-0.2
JHO	**Hitachi**	**0.84**	**338**	↑P	Pb	04	43 10.7	-0.9
JHO				S	Sb	04	43 22.7	0.0
BSO4	**Boso 4**	**0.98**	**211**	↑P	Pn	04	43 14.6	+0.2
BSO4				*e*S	Sn	04	43 28.4	+0.5
BSO3	**Boso 3**	**1.09**	**200**	↓P	Pb	04	43 15.0	-0.7
MAT	**Matsushiro**	**2.34**	**289**	P	Pn	04	43 33.1	-0.1
MAT				*e*S	Sb	04	44 07.2	+1.4

NIED **14** *04:43:00, 37°.60N*×*141°.60E, h41km, Mw3.9 Best double couple: M*$_0$*9.13000*×*10*^{14} *NP1:*ϕ_s*85.00000°,*δ*39.00000°,*λ*109.00000°. NP2:*ϕ_s*241.00000°,*δ*53.00000°,*λ*75.00000°.*
ISCJB **14** *04:43:23.0*±*0.9, 37°.61N*±*0°.04*×*141°.62E*±*0°.09, h55*$^{+7}_{-7}$*km, mb3.8/12, Error ellipse: s-maj=12.6km s-min=6.4km az=20.3*
IDC **14** *04:43:24.6*±*0.8, 37°.59N*×*141°.51E, h54km*±*7km, mb3.5/13, mb1 3.7/13, mb1mx3.5/59, mbtmp3.8/13, Error ellipse: s-maj=22.1km s-min=14.8km az=103.0*
JMA **14** *04:43:24.1*±*0.1, 37°.63N*×*141°.59E, h41km*±*2km, M3.8*
JMA Felt I J1.
ISC 14 04:43:24.2±0.8, **37°.62N**±0°.05×**141°.60E**±0°.07, **h50**km±7km, **n28**, **σ0°74**/36, **mb3.8**/12, **Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID		Time		Res
				Op	ISC	h	m s	ISC
JFK	**Kawauchi**	**0.63**	**246**	P	**Pn**	**04**	**43 36.6**	**-0.5**
JFK				S	**Sn**	**04**	**43 45.4**	**-1.0**
JMM	**Marumori**	**0.68**	**291**	P	**Pn**	**04**	**43 37.4**	**-0.3**
JMM				S	**Sn**	**04**	**43 46.3**	**-1.2**
ONAJ	**Iwakimizuishiy**	**0.82**	**231**	P	**Pn**	**04**	**43 39.2**	**-0.4**
ONAJ				S	**Sn**	**04**	**43 49.8**	**-1.0**
JIO	**Ouri**	**0.85**	**347**	P	**Pn**	**04**	**43 39.5**	**-0.5**
JIO				S	**Sn**	**04**	**43 50.2**	**-1.3**
JFT	**Otama**	**1.01**	**264**	P	**Pn**	**04**	**43 42.5**	**+0.4**
JFT				S	**Sn**	**04**	**43 55.4**	**+0.2**
JOU	**Okura**	**1.04**	**316**	P	**Pn**	**04**	**43 42.2**	**-0.4**
JOU				S	**Sn**	**04**	**43 55.5**	**-0.7**
JYS	**Shirataka**	**1.35**	**297**	P	**Pn**	**04**	**43 47.0**	**+0.3**
JYS				S	**Sn**	**04**	**44 04.4**	**+0.9**
JMK	**Ichinoseki**	**1.36**	**348**	P	**Pn**	**04**	**43 47.0**	**+0.2**
JMK				S	**Sn**	**04**	**44 03.0**	**-0.7**
JFY	**Yanaizu**	**1.52**	**262**	P	**Pn**	**04**	**43 49.5**	**+0.5**
JFY				S	**Sn**	**04**	**44 08.0**	**+0.3**
JYK	**Kaneyama**	**1.62**	**323**	P	**Pn**	**04**	**43 50.6**	**+0.2**
USRK	**Ussuriysk Ar.**	**9.80**	**315**	P	Pn	04	45 46.5	+4.1
	0.3nm,0.3s,baz=123,slow=13,SNR=7.9							
SEY	**Seymchan**	**26.19**	**11**	P	**P**	**04**	**48 55.5**	**+1.8**
	6μm,100.0s,baz=197,slow=11,SNR=4.4							
H11S1	**WAKE ISLAND Hy**	**29.06**	**124**	T	T	05	20 36.6	
	baz=316,slow=76,SNR=4.6							
H11S3	**WAKE ISLAND Hy**	**29.06**	**124**	T	T	05	20 30.5	
	baz=316,slow=76,SNR=5.9							
H11S2	**WAKE ISLAND Hy**	**29.08**	**124**	T	T	05	20 29.4	
	baz=316,slow=76,SNR=32							
ZALV	**Zalesovo Beam**	**41.63**	**312**	P	**P**	**04**	**51 07.8**	**+0.5**
	0.5nm,0.4s,baz=76,slow=6.1,SNR=2.6							
MKAR	**Makanchi Array**	**43.93**	**302**	P	**P**	**04**	**51 25.7**	**-0.4**
	0.6nm,0.6s,baz=92,slow=8.7,SNR=5.7							
KURBB	**Kurchatov Arra**	**45.76**	**308**	P	**P**	**04**	**51 39.9**	**-0.5**
	1.6nm,0.6s,baz=84,slow=8.2,SNR=8.1							
ILAR	**Eielson Array**	**48.92**	**33**	P	**P**	**04**	**52 04.3**	**-0.6**
	0.6nm,0.8s,baz=272,slow=6.8,SNR=6.5							
INK	**Inuvik**	**53.80**	**27**	P	**P**	**04**	**52 41.9**	**+0.7**
	0.6nm,0.5s,baz=289,slow=7.2,SNR=7.3							
WRA	**Warramunga Arr**	**57.66**	**188**	P	**P**	**04**	**53 09.0**	**-0.5**
	1.2nm,0.7s,baz=4.7,slow=6.9,SNR=17							
WRA				pP	**pP**	**04**	**53 23.9**	**+0.6**
	0.9nm,0.6s,baz=4.7,slow=7.3,SNR=5.4							
ASAR	**Alice Springs**	**61.39**	**188**	P	**P**	**04**	**53 34.9**	**-0.3**
	0.9nm,0.8s,baz=15,slow=4.6,SNR=9.5							
ASAR				pP	**pP**	**04**	**53 49.8**	**+0.7**
	0.7nm,0.8s,baz=3.4,slow=6.4,SNR=4.8							
YKA	**Yellowknife Ar**	**63.23**	**30**	P	**P**	**04**	**53 47.1**	**+0.2**
	0.3nm,0.7s,baz=295,slow=6.2,SNR=7.1							
YKA				pP	**pP**	**04**	**54 01.9**	**+1.0**
	0.1nm,0.6s,baz=305,slow=7.1,SNR=3.2							
FINES	**FINESS Array B**	**68.36**	**332**	P	**P**	**04**	**54 19.5**	**-0.6**
	1.0nm,0.6s,baz=38,slow=9.3,SNR=3.5							
AKASG	**Malin Array Be**	**73.92**	**322**	P	**P**	**04**	**54 52.7**	**-1.2**
	0.7nm,0.5s,baz=48,slow=6.3,SNR=4.9							
PDAR	**Pinedale Array**	**77.15**	**46**	P	**P**	**04**	**55 13.2**	**+0.3**
	0.4nm,0.8s,baz=309,slow=5.7,SNR=4.0							
TXAR	**Lajitas Array**	**89.65**	**52**	P	**P**	**04**	**56 17.4**	**+0.4**
	0.2nm,0.5s,baz=316,slow=3.5,SNR=4.0							
LPAZ	**La Paz**	**146.27**	**59**	PKPbc	**PKPbc**	**05**	**03 00.3**	**-0.1**
	1.0nm,0.9s,baz=315,slow=1.4,SNR=4.4							

IDC **14** *04:45:22.4*±*1.6, 39°.65N*×*143°.45E, h0km, mb3.9/8, mb1 4.0/9, mb1mx3.6/60, mbtmp3.9/9, ML3.4/1, Error ellipse: s-maj=39.0km s-min=25.4km az=93.0*
ISC 14 04:45:24.0±1.6, **39°.7N**±0°.2×**143°.5E**±0°.2, **h10**km, **n12**, **σ0°98**/11, **mb3.8**/8, **Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID		Time		Res
				Op	ISC	h	m s	ISC
MAT	**Matsushiro**	**5.21**	**235**	P	**Pn**	**04**	**46 42.7**	**+0.7**
MJAR	**Matsushiro Arr**	**5.21**	**235**	Pn	**Pn**	**04**	**46 42.5**	**+0.5**
	1.2nm,0.3s,baz=40,slow=12,SNR=4.0							
USRK	**Ussuriysk Ar.**	**9.69**	**302**	Pn	Pn	04	47 47.3	+3.9
	0.2nm,0.3s,baz=97,slow=16,SNR=4.4							
SEY	**Seymchan**	**23.89**	**10**	P	**P**	**04**	**50 39.5**	**+2.0**
	2.1nm,0.8s,baz=183,slow=12,SNR=5.8							
SONM	**Songino Array**	**27.79**	**299**	P	**P**	**04**	**51 13.1**	**-0.1**
	1.4nm,0.7s,baz=69,slow=8.3,SNR=3.9							
ZALV	**Zalesovo Beam**	**41.40**	**310**	P	**P**	**04**	**53 10.0**	**-0.2**
	0.9nm,0.4s,baz=105,slow=9.2,SNR=4.0							
MKAR	**Makanchi Array**	**44.15**	**300**	P	**P**	**04**	**53 32.5**	**-0.2**
	1.2nm,0.7s,baz=86,slow=9.1,SNR=7.9							
KURBB	**Kurchatov Arra**	**45.71**	**306**	P	**P**	**04**	**53 44.6**	**-0.4**
	1.5nm,0.6s,baz=81,slow=8.2,SNR=6.6							
BVAR	**Borovoye Array**	**50.04**	**311**	P	**P**	**04**	**54 18.5**	**0.0**
	0.9nm,0.5s,baz=69,slow=8.4,SNR=5.2							
WRA	**Warramunga Arr**	**59.92**	**190**	P	**P**	**04**	**55 29.9**	**-0.4**
	0.6nm,1.1s,baz=7.6,slow=7.0,SNR=5.0							
NB2	**NORSAR Subarra**	**72.37**	**338**	P	**P**	**04**	**56 49.0**	**-0.8**
	comp=Z,1.4nm,0.8s,baz=38,slow=6.2							
NOA	**NORSAR Array B**	**72.37**	**338**	P	**P**	**04**	**56 48.4**	**-1.4**
	comp=Z,1.0nm,0.8s,baz=38,slow=6.0,SNR=4.6							

NIED **14** *04:46:00, 39°.70N*×*143°.30E, h20km, Mw4.7 Best double couple: M*$_0$*1.34000*×*10*^{16} *NP1:*ϕ_s*192.00000°,*δ*18.00000°,*λ*77.00000°. NP2:*ϕ_s*26.00000°,*δ*72.00000°,*λ*94.00000°.*
JMA **14** *04:46:29.9*±*0.3, 39°.65N*×*143°.31E, h22km*±*5km, M4.7*
JMA Felt I J1.
MOS **14** *04:46:31.4*±*0.8, 39°.88N*×*142°.96E, h22km, mb5.1/81, Error ellipse: s-maj=7.2km s-min=4.1km az=108.4*
BJI **14** *04:46:31.2, 39°.58N*×*142°.86E, h26km, mb4.9/70, mB5.0/49, Ms4.5/64, Ms7 4.4/60*
ISCJB **14** *04:46:32.0*±*0.9, 39°.79N*±*0°.03*×*143°.00E*±*0°.04, h29km*±*6km, mb4.8/166, MS4.3/21, Error ellipse: s-maj=6.0km s-min=3.3km az=41.4*
IDC **14** *04:46:31.7*±*5.1, 39°.60N*×*143°.23E, h27km*±*34km, mb4.4/34, mb1 4.5/41, mb1mx4.4/63, mbtmp4.6/41, ML3.7/7, MS4.0/9, Ms1 4.0/9, ms1mx3.6/31, Error ellipse: s-maj=13.7km s-min=10.5km az=113.0*
NEIC **14** *04:46:33.8*±*0.7, 39°.67N*×*143°.01E, h36km*±*6km, mb4.8/83, Error ellipse: s-maj=6.7km s-min=4.2km az=132.0*
ISC 14 04:46:31.7±0.5, **39°.74N**±0°.03×**143°.00E**±0°.04, **h19**km±1km, **h19**km:**pP-P, n398**, **σ1s34**/399, **mb4.9**/171, **MS4.4**/22, **21C-6D, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID		Time		Res
				Op	ISC	h	m s	ISC
JTH	**Tanohata**	**0.89**	**283**	P	**Pn**	**04**	**46 50.6**	**+1.3**
JTH				S	**Sn**	**04**	**47 05.8**	**+4.1**
MIYJ	**Miyakonagasawa**	**0.92**	**260**	P	**Pg**	**04**	**46 50.6**	**+0.9**
OFUJ	**Ofunato**	**1.22**	**238**	P	**Pb**	**04**	**46 54.1**	**-0.1**
OFUJ				S	**Sg**	**04**	**47 12.0**	**+0.6**
JANG	**Nango**	**1.30**	**300**	P	**Pb**	**04**	**46 56.3**	**+0.7**
JOM	**Ohasama**	**1.34**	**259**	P	**Pg**	**04**	**46 57.2**	**-0.5**
JMK	**Ichinoseki**	**1.59**	**241**	P	**Pn**	**04**	**46 59.6**	**+0.8**
JTM	**Tenmabayashi**	**1.81**	**306**	P	**Pb**	**04**	**47 04.2**	**0.0**
JIO	**Ouri**	**1.81**	**225**	P	**Pn**	**04**	**47 01.5**	**-0.4**
JRG	**Rokugo**	**1.86**	**260**	P	**Pb**	**04**	**47 05.3**	**+0.2**
JAH	**Hinai**	**1.87**	**285**	P	**Pb**	**04**	**47 05.

comp=Z,2µm,14.0s
MDJ Mudanjiang 11.07 300 *e*Pn Pn 04 49 13.1 +4.2
comp=Z,41nm,0.9s
TYV Tymovskoe 11.12 359 *e*P **Pn** **04 49 09.8 +0.1**
TYV pmax pmax
comp=Z,22nm,1.0s
TYV MLR MLR
comp=N,2µm,17.0s
TYV MLR MLR
comp=Z,2µm,17.0s
JNU Nakatsue 11.78 240 Pn **Pn** **04 49 19.1 +0.4**
comp=Z,0.2nm,0.3s,baz=34,slow=7.8,SNR=6.0
JNU LR LR 04 54 14.0
comp=Z,2µm,18.8s,baz=60,slow=39
KSRS Korea Array 12.01 264 Pn **Pn** **04 49 24.6 +2.7**
comp=Z,0.4nm,0.3s,baz=86,slow=13,SNR=27
KSRS LR LR 04 53 48.3
comp=Z,1µm,18.5s,baz=78,slow=36
KS01 Wonju Array Si 12.03 264 *e*Pn Pn 04 49 26.4 +4.2
KS15 Wonju Array Si 12.05 264 *e*Pn Pn 04 49 26.6 +4.2
KSAR Wonju Array Be 12.05 264 P **Pn** **04 49 24.6 +2.3**
KSAR Wonju Array Be 12.05 264 Pn **Pn** **04 49 24.6 +2.3**
KLR Kul'dur 12.41 324 Pn **Pn** **04 49 28.9 +1.6**
comp=Z,0.2nm,0.3s,baz=130,slow=11,SNR=11
KLR LR LR 04 54 31.2
comp=Z,1µm,20.2s,baz=130,slow=38
CBIJ Chichi jima 12.63 183 Pn Pn 04 49 26.1 -4.2
CBIJ Sn Sn 04 51 33.8 -17
JCJ Chichijima 12.63 183 Pn Pn 04 49 26.1 -4.2
comp=Z,3.5nm,0.3s,baz=310,slow=18,SNR=3.3
JCJ Sn Sn 04 51 33.8 -17
comp=Z,7.9nm,0.3s,baz=315,slow=20,SNR=4.2
NKL Nikolayevsk 13.51 354 *e*P **Pn** **04 49 41.8 -0.3**
NKL pmax pmax
comp=N,20nm,1.0s
NKL pmax pmax
comp=Z,24nm,1.0s
NKL MLR MLR
comp=N,350nm,14.0s
NKL MLR MLR
comp=Z,500nm,14.0s
CN2 Changchun 13.71 293 *e*P **Pn** **04 49 46.4 +1.4**
CN2 *es*P P 04 49 56.0 +2.4
CN2 *e*S **Sn** **04 52 14.5 -2.2**
CN2 pmax pmax
comp=Z,10.0nm,1.2s
CN2 pmax pmax
comp=Z,200nm,5.0s
CN2 LR LR
comp=Z,1µm,15.0s
CN2 LR LR
comp=Z,1µm,15.0s
CN2 LR LR
comp=Z,1µm,18.0s
SNY Shenyang 14.86 284 ⇓P **P** **04 50 05.0 -1.3**
SNY S Sn 04 52 52.6 +7.9
SNY pmax pmax
comp=Z,270nm,8.4s
SNY LR LR
comp=Z,720nm,15.1s
SNY LR LR
comp=Z,1µm,17.8s
SNY LR LR
comp=Z,2µm,17.5s
DL2 Dalian 16.56 274 P **Pn** **04 50 20.8 -1.9**
DL2 S **Sn** **04 53 20.8 -5.2**
DL2 pmax pmax
comp=Z,27nm,1.0s
DL2 pmax pmax
comp=Z,270nm,5.3s
DL2 LR LR
comp=Z,770nm,13.8s
DL2 LR LR
comp=Z,710nm,14.9s
DL2 LR LR
comp=Z,890nm,15.3s
PETK Petropavlovsk- 16.73 32 LR LR 04 56 19.6
comp=Z,239nm,21.1s,baz=215,slow=35
PET Petropavlovsk 17.07 34 *e*P **Pn** **04 50 28.7 -0.4**
PET *e*S **Sn** **04 53 34.9 -3.3**
PET pmax pmax
comp=Z,86nm,1.4s
PET MLR MLR
comp=Z,600nm,20.0s
HIA Hailar 19.06 308 *e*P **P** **04 50 51.7 -1.1**
HIA pmax pmax
comp=Z,32nm,0.8s
HIA Hailar 19.06 308 *e*P **P** **04 50 51.7 -1.1**
comp=Z,32nm,0.8s
MA2 Magadan 20.45 11 P **P** **04 51 07.3 -0.6**
comp=Z,42nm,0.8s,baz=209,slow=10,SNR=32
MA2 LR LR 05 00 41.1
comp=Z,154nm,18.4s,baz=217,slow=41
MA2 Magadan 20.45 11 *e*P **P** **04 51 07.7 -0.2**
MA2 pmax pmax
comp=Z,204nm,0.8s
MA2 Magadan 20.45 11 *e*P **P** **04 51 07.7 -0.2**
comp=Z,204nm,0.8s
BJI Beijing 20.56 279 P **P** **04 51 07.9 -1.3**
BJI pP **pP** **04 51 13.8 -0.8**
BJI S **S** **04 54 56.1 -2.1**
BJI pmax pmax
comp=Z,25nm,1.1s
BJI pmax pmax
comp=Z,74nm,3.5s
BJI LR LR
comp=Z,390nm,14.1s
BJT Baijiatuau 20.57 279 *e*P **P** **04 51 08.1 -1.2**
BJT pmax pmax
comp=Z,37nm,0.9s
BJT Baijiatuau 20.57 279 *e*P **P** **04 51 08.1 -1.2**
comp=Z,38nm,0.9s
TIA Tai'an 20.67 268 *e*P **P** **04 51 10.1 -0.4**
TIA pmax pmax
comp=Z,70nm,1.0s
TIA LR LR
comp=Z,400nm,13.4s
TIA LR LR
comp=Z,2µm,14.7s
TIA LR LR
comp=Z,2µm,14.6s
CLNS Chul'man 20.81 331 *e*P **P** **04 51 11.4 -0.4**
CLNS pmax pmax
comp=Z,33nm,0.8s
CLNS pmax pmax
comp=N,17nm,1.0s
CLNS pmax pmax
comp=E,14nm,1.0s
NJ2 Nanjing 20.97 256 *e*P Pn 04 51 15.6 -0.7
NJ2 pmax pmax
comp=E,18nm,0.5s
YHNB Yeheng 23.59 237 *e*P **P** **04 51 38.8 -2.6**
comp=E,21nm,0.9s
CIT Chita 23.71 311 *e*P **P** **04 51 42.8 +0.4**
CIT *e* 04 51 48.0
CIT *e* 04 51 53.2
CIT pmax pmax
comp=Z,133nm,1.1s
YAK Yakutsk 23.75 344 P **P** **04 51 41.4 -1.1**
comp=Z,38nm,0.6s,baz=137,slow=2.6,SNR=9.2
YAK Yakutsk 23.75 344*c i*P **P** **04 51 40.7 -1.8**
YAK *e**PP **sP** **04 51 50.1 -0.5**
YAK *e* 04 52 10.8
YAK *e*PPP PPP 04 52 19.5
YAK *e*S **S** **04 55 57.4 +0.7**
YAK *e*SS **SnSn** **04 56 41.4 +6.3**
YAK *e*SSS SSS 04 56 56.6
YAK *e* 05 02 48.3
YAK pmax pmax
comp=Z,53nm,0.8s
YAK pmax pmax
comp=N,24nm,1.0s
YAK pmax pmax
comp=E,14nm,1.4s
YAK pmax pmax
comp=Z,28nm,1.0s
YAK pmax pmax
comp=N,24nm,1.1s
YAK pmax pmax
comp=E,74nm,2.2s
YAK smax smax
comp=E,69nm,2.3s
YAK smax smax
comp=N,87nm,1.8s
YAK MLR MLR
comp=Z,433nm,13.0s
YAK MLR MLR
comp=N,477nm,17.0s
YAK MLR MLR
comp=E,178nm,15.0s
YAK Yakutsk 23.75 344 *e*P **P** **04 51 41.2 -1.3**
comp=E,88nm,0.7s
SEY Seymchan 23.90 11 P **P** **04 51 43.7 -0.2**
comp=E,36nm,0.9s,baz=196,slow=8.8,SNR=44
HHC Hu-ho-hao-te 23.94 283 *e*P **P** **04 51 42.9 -1.8**
HHC S S 04 55 46.6 -14
HHC pmax pmax
comp=E,21nm,0.9s
HHC pmax pmax
comp=E,160nm,4.5s
HHC LR LR
comp=E,320nm,11.5s
HHC LR LR
comp=E,1µm,13.9s
HHC LR LR
comp=E,1µm,13.8s
SSLB Suanglung 24.48 236 *e*P **P** **04 51 47.1 -2.6**
comp=E,40nm,1.0s
YULB Yu-li 24.55 235 *e*P **P** **04 51 47.1 -3.2**
comp=E,18nm,0.9s
TPUB Ta-pu 25.04 236 *e*P **P** **04 51 52.6 -2.1**
comp=E,28nm,0.9s
WHN Wuhan 25.07 257 ⇓P **P** **04 51 55.3 +0.3**
WHN pmax pmax
comp=E,170nm,0.8s
WHN LR LR
comp=E,970nm,14.6s
WHN LR LR
comp=E,2µm,17.2s
WHN LR LR
comp=E,2µm,17.8s
BOD Bodaibo 25.99 324⇓*i*P **P** **04 52 03.1 0.0**
BOD pmax pmax
comp=Z,38nm,1.0s
GUMO Guam 26.10 176 LR LR 05 01 08.4
comp=Z,163nm,21.1s,baz=91,slow=34
ULN Ulaanbaatar 26.99 299*c i*P **P** **04 52 12.9 +0.5**
ULN pmax pmax
comp=Z,45nm,1.2s
ULN Ulaanbaatar 26.99 299 *e*P **P** **04 52 13.5 +1.1**
comp=Z,37nm,1.1s
ULN Ulaanbaatar 26.99 299 P **P** **04 52 13.6 +1.3**
SNR=15
ULN Ulaanbaatar 26.99 299 P **P** **04 52 13.6 +1.3**
SNR=15
ULN P **P** **04 52 13.6 +1.3**
SNR=15
SONM Songino Array 27.43 299 P **P** **04 52 17.2 +0.9**
comp=Z,17nm,0.8s,baz=100,slow=9.8,SNR=37
XAN Xi'an 27.73 269 P **P** **04 52 18.3 -0.7**
XAN pP pP 04 52 23.5 -1.3
XAN pmax pmax
comp=Z,16nm,1.2s
XAN LR LR
comp=Z,700nm,15.5s
XAN LR LR
comp=Z,700nm,15.5s
ENH Enshi 28.89 261 *e*P **P** **04 52 29.1 -0.3**
comp=Z,58nm,0.8s
H11S1 WAKE ISLAND Hy 29.44 129 T T 05 23 18.5
baz=321,slow=76,SNR=25
H11S3 WAKE ISLAND Hy 29.45 129 T T 05 23 19.3
baz=321,slow=76,SNR=20
H11S2 WAKE ISLAND Hy 29.46 129 T T 05 23 21.5
baz=321,slow=76,SNR=22
TLY Talaya 29.60 307 P **P** **04 52 36.2 +0.7**
comp=Z,7.0nm,1.0s,baz=122,slow=10,SNR=10
TLY Talaya 29.60 307 *e*P **P** **04 52 36.4 +1.0**
TLY pmax pmax
comp=Z,11nm,1.0s
TLY MLR MLR
comp=Z,369nm,16.0s
TLY Talaya 29.60 307 *e*P **P** **04 52 36.3 +0.9**
comp=Z,9.5nm,1.0s
TLY Talaya 29.60 307 P **P** **04 52 36.8 +1.4**
SNR=8.3
TLY Talaya 29.60 307 P **P** **04 52 36.8 +1.4**
SNR=8.3
TLY P **P** **04 52 36.8 +1.4**
SNR=8.3
ZAK Zakamensk 29.67 304 *e*P **P** **04 52 36.1 -0.1**
ZAK pmax pmax
comp=Z,13nm,1.3s
LZH Lanzhou 30.93 276 *e*P **P** **04 52 48.3 +0.7**
LZH pP sP 04 52 55.8 0.0
LZH sP pP 04 52 59.8 +6.4
LZH PP **PnPn** **04 53 49.1 +0.8**
LZH S **S** **04 57 47.0 -4.1**
LZH pmax pmax
comp=Z,47nm,1.2s
LZH pmax pmax
comp=Z,140nm,4.7s
LZH LR LR
comp=Z,790nm,12.8s
LZH LR LR
comp=Z,1µm,14.2s
LZH LR LR
comp=Z,1µm,14.5s
BILL Bilibino 31.08 17⇓*i*P **P** **04 52 47.9 -0.5**
BILL *e* 04 52 53.9
BILL *e**PP **sP** **04 52 57.7 +1.2**
BILL *e* 04 53 47.3
BILL *e*SS SS 04 59 39.0 -26
BILL pmax pmax
comp=Z,11nm,2.5s
BILL MLR MLR
comp=Z,168nm,17.0s
BILL Bilibino 31.08 17 *e*P **P** **04 52 47.8 -0.5**
comp=Z,7.7nm,1.0s
MOY Mondy 31.23 307 *e*P **P** **04 52 51.0 +1.0**
MOY pmax pmax
comp=Z,25nm,2.8s
TIXI Tiksi 32.77 352 P **P** **04 53 02.8 -0.4**
comp=Z,1.7nm,0.4s,baz=305,slow=21,SNR=6.7
TIXI Tiksi 32.77 352 *i* P **P** **04 53 02.7 -0.4**
TIXI pmax pmax
comp=Z,4.0nm,1.0s
TIXI Tiksi 32.77 352 *e*P **P** **04 53 02.2 -0.9**
comp=Z,4.9nm,0.8s
GYA Guiyang 32.96 257⇑*i*P **P** **04 53 05.1 -0.3**
GYA pP sP 04 53 12.8 -0.8
GYA PP **PnPn** **04 54 17.0 +2.4**
GYA PcP **PcP** **04 55 51.4 +2.1**
GYA S **S** **04 58 21.6 -1.2**
GYA ScP **ScP** **04 59 35.3 +2.9**
GYA ScS **ScS** **05 03 33.0 +0.2**
GYA pmax pmax
comp=Z,30nm,0.8s
GYA pmax pmax
comp=Z,120nm,5.4s
GYA LR LR
comp=Z,530nm,16.2s
GYA LR LR
comp=Z,490nm,17.0s
GYA LR LR
comp=Z,510nm,16.6s
CD2 Chengdu 32.99 267 P **P** **04 53 04.1 -1.4**
CD2 pmax pmax
comp=Z,2.0nm,0.6s
GTA Gaotai 33.05 284 *e*P **P** **04 53 07.1 +1.0**
GTA pP sP 04 53 14.4 +0.2
GTA sP pP 04 53 17.8 +5.9
GTA PcP **PcP** **04 55 50.1 +0.7**
GTA S **S** **04 58 20.6 -3.3**
GTA sS sS 04 58 33.0 -0.5
GTA SS **SnSn** **05 00 17.0 -5.4**
GTA pmax pmax
comp=Z,16nm,1.0s
GTA pmax pmax
comp=Z,120nm,5.9s
GTA LR LR
comp=Z,430nm,15.0s
GTA LR LR
comp=Z,1µm,16.4s
GTA LR LR
comp=Z,1µm,15.9s
DAV Davao City (W) 36.10 210 LR LR 05 05 55.8
comp=Z,120nm,20.3s,baz=14,slow=32
DAV Davao City (W) 36.10 210 *e*P **P** **04 53 32.9 +0.5**
comp=Z,350nm,0.4s
KRAR Krasnoyarsk 36.44 313 *e*P **P** **04 53 35.7 +0.8**
KRAR pmax pmax
comp=Z,38nm,1.1s
KMI Kunming 36.65 259 P **P** **04 53 38.1 +0.7**
KMI pP pP 04 53 42.3 -1.0
KMI sP sP 04 53 45.1 -0.5
KMI S **S** **04 59 19.8 -0.1**
KMI pmax pmax
comp=Z,27nm,0.9s
KMI pmax pmax
comp=Z,90nm,3.1s
KMI LR LR
comp=Z,310nm,15.0s
KMI LR LR
comp=Z,340nm,18.9s
KMI LR LR
comp=Z,380nm,16.5s
SKNT Sakolnakorn 40.70 247 P **P** **04 54 11.5 +0.3**
comp=Z,41nm,0.9s
WMQ Urumqi 40.79 294 P **P** **04 54 13.3 +1.5**
WMQ pP pP 04 54 18.5 +0.8
WMQ sP sP 04 54 21.4 +1.4
WMQ pmax pmax
comp=Z,28nm,1.0s
WMQ pmax pmax
comp=Z,66nm,3.8s
WMQ LR LR
comp=Z,37nm,17.4s
WMQ LR LR
comp=Z,81nm,23.2s
WMQ LR LR
comp=Z,72nm,21.4s
ZAA0 Zalesovo Array 41.07 310 *e*P **P** **04 54 14.2 +0.4**
ZALV Zalesovo Beam 41.07 310 P **P** **04 54 14.2 +0.5**
comp=Z,12nm,0.6s,baz=88,slow=7.4,SNR=40
ZALV PcP **PcP** **04 56 12.8 -0.4**
comp=Z,4.0nm,0.7s,baz=102,slow=1.5,SNR=4.4
CRAI Chiangrai 41.27 255 P **P** **04 54 17.4 +1.6**
comp=Z,14nm,0.8s
NRIK Noril'sk 41.36 334 P **P** **04 54 16.4 +0.4**
comp=Z,2.6nm,0.5s,baz=107,slow=9.1,SNR=9.4
NVS Novosibirsk 41.92 312 *e*P **P** **04 54 21.4 +0.6**
NVS pmax pmax
comp=Z,19nm,1.1s
NVS pmax pmax
comp=N,3.0nm,0.4s
NVS pmax pmax
comp=E,15nm,0.8s
KHON Khomkaen 41.95 248 P **P** **04 54 22.2 +0.7**
comp=E,9.0nm,1.0s,comp=E,879nm
CMAI Chiengmai2 42.43 255 P **P** **04 54 26.6 +1.0**
comp=E,11nm,1.3s,comp=E,2µm
UTTA Uttaradit 42.68 252 P **P** **04 54 28.1 +0.7**
comp=E,5.9nm,0.9s
LAMP Lampang 42.87 253 P **P** **04 54 29.9 +1.0**
comp=E,7.6nm,0.8s
PBKT Sadao Pong 43.13 250 P **P** **04 54 31.3 +0.3**
comp=E,14nm,1.4s
CMMT Chiang Mai 43.19 254 P **P** **04 54 31.7 +0.1**
comp=E,18nm,0.9s,comp=E,513nm
CHTO Chiang Mai 43.19 254 P **P** **04 54 31.8 +0.2**
comp=E,77nm,0.9s
CHTO Chiang Mai 43.19 254 *e*P **P** **04 54 32.0 +0.4**
CHTO pmax pmax
comp=Z,12nm,0.8s
CHTO Chiang Mai 43.19 254 *e*P **P** **04 54 32.0 +0.4**
comp=Z,12nm,0.8s
CHTO Chiang Mai 43.19 254 P **P** **04 54 31.9 +0.4**
SNR=6.7
CHTO Chiang Mai 43.19 254 P **P** **04 54 31.9 +0.4**
SNR=6.7
CHTO P **P** **04 54 31.9 +0.4**
SNR=6.7
LSA Lhasa 43.25 273 P **P** **04 54 33.9 +1.4**
LSA pmax pmax
comp=Z,10.0nm,0.9s
LSA Lhasa 43.25 273 *e*P **P** **04 54 33.6 +1.1**
LSA pmax pmax
comp=Z,13nm,0.8s
LSA Lhasa 43.25 273 *e*P **P** **04 54 33.6 +1.1**
comp=Z,13nm,0.8s
CM31 Chiang Mai Arr 43.42 254 *e*P **P** **04 54 34.2 +0.8**
CMAR Chiang Mai Arr 43.42 254 P **P** **04 54 33.1 -0.3**
comp=Z,5.5nm,0.9s,baz=47,slow=6.6,SNR=31
CM01 Chiang Mai Arr 43.43 254 *e*P **P** **04 54 33.5 0.0**
FAKI Fak Fak 43.59 196 P **P** **04 54 34.2 -0.5**
comp=Z,12nm,1.7s
MKAR Makanchi Array 43.79 300 P **P** **04 54 36.5 +0.4**
comp=Z,20nm,0.8s,baz=82,slow=9.9,SNR=74
MKAR Makanchi Array 43.79 300 *e*P **P** **04 54 36.8 +0.6**
MAKZ Makanchi 43.99 300 *e*P **P** **04 54 38.4 +0.7**
MAKZ pmax pmax
comp=Z,27nm,0.9s
MAKZ Makanchi 43.99 300 *e*P **P** **04 54 38.4 +0.7**
comp=Z,27nm,0.9s
PPLA Purkeypile 44.25 36 *e*P P 04 54 44.0 +4.3
CAST Castle Rocks 44.30 36 *e*P **P** **04 54 41.0 +1.0**
comp=Z,27nm,1.8s
CHBT CHBT 44.74 245 P **P** **04 54 44.7 +0.7**
comp=Z,30nm,1.1s,comp=Z,5µm
BPAW Bear Paw Mtn. 44.79 35 *e*P P 04 54 47.3 +3.4
comp=Z,1.5nm,1.1s
KTH Kantishna Hill 44.82 36 *e*P P 04 54 49.0 +4.8
comp=Z,22nm,1.3s
MLY Manley 44.90 33 *e*P P 04 54 50.1 +5.3
comp=Z,5.2nm,0.9s
COLD Coldfoot 45.19 30 *e*P **P** **04 54 49.4 +2.4**
comp=Z,6.1nm,1.0s
KURK Kurchatov 45.29 306 *e*P **P** **04 54 48.3 +0.3**
KURK pmax pmax
comp=Z,40nm,0.9s
KURK Kurchatov 45.29 306 *e*P **P** **04 54 48.3 +0.3**
comp=Z,40nm,0.9s
KURK Kurchatov 45.29 306 P **P** **04 54 48.5 +0.6**
SNR=17
KURK Kurchatov 45.29 306 P **P** **04 54 48.5 +0.6**
SNR=17
KURK P **P** **04 54 48.5 +0.6**
SNR=17
KURBB Kurchatov Arra 45.37 306 P **P** **04 54 49.0 +0.4**
comp=Z,31nm,0.8s,baz=81,slow=8.2,SNR=73
RND Reindeer 45.75 36 *e*P P 04 54 55.4 +3.8
RND pmax pmax
comp=Z,32nm,1.8s
RND Reindeer 45.75 36 *e*P P 04 54 55.4 +3.8
comp=Z,32nm,1.8s
MDM Murphy Dome 45.97 33 *e*P **P** **04 54 54.1 +0.8**
comp=Z,8.6nm,1.1s
SML Sawmill 46.09 38 *e*P P 04 54 57.8 +3.6
SML pmax pmax
comp=Z,17nm,1.1s
SML Sawmill 46.09 38 *e*P P 04 54 57.8 +3.6
comp=Z,17nm,1.1s
COLA College 46.13 34 *e*P P 04 54 58.7 +4.3
COLA pmax pmax
comp=Z,12nm,0.9s
COLA College 46.13 34 *e*P P 04 54 58.6 +4.2
comp=Z,12nm,0.9s
CCB Clear Creek Bu 46.16 34 *e*P P 04 55 02.1 +7.4
comp=Z,6.6nm,1.2s
SBUM Sibu 46.46 225 *e*P **P** **04 54 57.0 -0.5**
comp=Z,5.2nm,0.7s
ILAR Eielson Array 46.55 34 P **P** **04 54 56.6 -1.1**
comp=Z,1.5nm,0.8s,baz=266,slow=6.4,SNR=14
ILB Eielson Array 46.55 34 *e*P **P** **04 54 57.6 -0.1**
IL1 Eielson Array 46.55 34 *e*P **P** **04 54 56.8 -0.9**
PDGK Podgornoye 46.66 296 P **P** **04 54 59.3 +0.5**
PDGK pmax pmax
comp=Z,21nm,1.0s
TAPN Taplejung 47.03 272 *e*P **P** **04 55 03.3 +0.9**
comp=Z,7.7nm,1.1s
KLU Klutina 47.26 38 *e*P P 04 55 08.5 +5.0
comp=Z,19nm,1.3s
ODAN Odare 47.53 272 *e*P **P** **04 55 06.9 +0.8**
DOT Dot Lake 47.87 35 *e*P P 04 55 11.8 +3.7
comp=Z,10nm,0.8s
RAMN Ramite 48.09 273 *e*P **P** **04 55 11.1 +0.6**
comp=Z,131nm,0.9s
MENT Mentasta 48.11 36 *e*P P 04 55 16.8 +6.8
comp=Z,26nm,1.5s
GUN Gumba 48.16 274 *e*P **P** **04 55 12.0 +0.8**
comp=Z,106nm,0.7s
KKN Kakani 48.69 274 *e*P **P** **04 55 15.8 +0.7**
comp=Z,113nm,0.7s
PKIN Phulchoki 48.70 274 *e*P **P** **04 55 15.4 +0.1**
comp=Z,24nm,0.7s
DMN Daman 48.91 274 *e*P **P** **04 55 17.5 +0.6**
comp=Z,44nm,0.7s
EGAK Eagle 48.99 33 *e*P P 04 55 22.4 +5.8

	comp=Z,6.0nm,0.8s								
GKN	**Gorkha**	**49.08**	**275**	*e*P		**P**	04 55 18.4	**+0.4**
	comp=Z,39nm,0.7s								
VOSK	**Vostochnaya**	**49.44**	**310**	*e*P		**P**	04 55 20.8	**+0.5**
VOSK				pmax	pmax				
	comp=Z,28nm,1.0s								
VOSK	**Vostochnaya**	**49.44**	**310**	*e*P		**P**	04 55 20.8	**+0.5**
	comp=Z,28nm,1.0s								
TKM2	**Tokmak 2**	**49.48**	**297**	*e*P		**P**	04 55 22.1	**+1.2**
TKM2				pmax	pmax				
	comp=Z,48nm,0.9s								
TKM2	**Tokmak 2**	**49.48**	**297**	*e*P		**P**	04 55 22.1	**+1.2**
	comp=Z,48nm,0.9s								
BVAR	**Borovoye Array**	**49.71**	**311**	P		**P**	04 55 22.7	**+0.4**
	comp=Z,16nm,0.8s,baz=79,slow=9.2,SNR=60								
BRVK	**Borovoye**	**49.76**	**311**	*c i*P		**P**	04 55 23.3	**+0.6**
BRVK				pmax	pmax				
	comp=Z,25nm,0.8s								
BRVK	**Borovoye**	**49.76**	**311**	*e*P		**P**	04 55 22.7	**0.0**
	comp=Z,25nm,0.9s								
BRVK	**Borovoye**	**49.76**	**311**	P		**P**	04 55 23.8	**+1.1**
	SNR=9.4								
BRVK	**Borovoye**	**49.76**	**311**	P		**P**	04 55 23.8	**+1.1**
	SNR=9.4								
BRVK				P		**P**	04 55 23.8	**+1.1**
	SNR=9.4								
OTUK	**Ortayu**	**49.88**	**304**	P		**P**	04 55 24.2	**+0.4**
OTUK				pmax	pmax				
	comp=Z,16nm,1.4s								
KOLN	**Koldanda**	**49.99**	**275**	*e*P		**P**	04 55 25.6	**+0.6**
	comp=Z,56nm,0.8s								
FRU	**Bishkek**	**50.18**	**297**	*e*P		**P**	04 55 26.0	**-0.1**
PYUN	**Piuthan**	**50.29**	**276**	*e*P		**P**	04 55 28.0	**+0.7**
	comp=Z,147nm,1.0s								
AAK	**Ala-Archa**	**50.34**	**297**	P		**P**	04 55 27.8	**+0.4**
	comp=Z,7.0nm,0.7s,baz=99,slow=6.1,SNR=19								
AAK	**Ala-Archa**	**50.34**	**297**	*c i*P		**P**	04 55 27.7	**+0.2**
AAK				pmax	pmax				
	comp=Z,23nm,1.0s								
AAK	**Ala-Archa**	**50.34**	**297**	*e*P		**P**	04 55 27.5	**+0.1**
	comp=Z,17nm,1.1s								
AAK	**Ala-Archa**	**50.34**	**297**	P		**P**	04 55 28.3	**+0.9**
	SNR=7.7								
AAK	**Ala-Archa**	**50.34**	**297**	P		**P**	04 55 28.3	**+0.9**
	SNR=7.7								
AAK				P		**P**	04 55 28.3	**+0.9**
	SNR=7.7								
KSH	**Kashi**	**50.48**	**293**	P		P	04 55 32.9	+4.4
KSH				*e*pP		sP	04 55 38.8	+2.0
KSH				*e*sP		pP	04 55 41.1	+6.6
KSH				*e*ScP		**ScP**	**05 00 43.6**	**+2.2**
KSH				S		**S**	**05 02 43.6**	**+2.2**
KSH				SS		**SS**	**05 06 15.5**	**+0.4**
KSH				pmax	pmax				
	comp=Z,15nm,0.9s								
KSH				pmax	pmax				
	comp=Z,110nm,5.0s								
KSH				LR	LR				
	comp=Z,220nm,8.8s								
KSH				LR	LR				
	comp=Z,200nm,8.6s								
KSH				LR	LR				
	comp=Z,590nm,14.9s								
ZRNK	**Zerenda**	**50.53**	**311**	*e*P		**P**	04 55 29.3	**+0.8**
ZRNK				pmax	pmax				
	comp=Z,32nm,0.9s								
ZRNK	**Zerenda**	**50.53**	**311**	*e*P		**P**	04 55 29.3	**+0.8**
	comp=Z,32nm,0.9s								
EKS2	**Erkin-Say**	**50.82**	**297**	*e*P		**P**	04 55 31.6	**+0.5**
EKS2				pmax	pmax				
	comp=Z,15nm,0.8s								
EKS2	**Erkin-Say**	**50.82**	**297**	*e*P		**P**	04 55 31.6	**+0.5**
	comp=Z,15nm,0.8s								
INK	**Inuvik**	**51.42**	**28**	P		**P**	04 55 34.5	**-0.5**
	comp=Z,1.8nm,0.8s,baz=282,slow=6.6,SNR=8.1								
INK	**Inuvik**	**51.42**	**28**	*e*P		**P**	04 55 35.2	**+0.3**
INK				pmax	pmax				
	comp=Z,4.0nm,0.9s								
INK	**Inuvik**	**51.42**	**28**	*e*P		**P**	04 55 35.2	**+0.3**
	comp=Z,4.3nm,0.9s								
MNAS	**Manas**	**51.76**	**297**	P		**P**	04 55 38.9	**+0.8**
MNAS				pmax	pmax				
	comp=Z,36nm,0.9s								
KKAR	**Karatay Array**	**52.88**	**299**	*e*P		**P**	04 55 46.5	**+0.3**
KKAR	**Karatay Array**	**52.88**	**299**	*e*P		**P**	04 55 46.5	**+0.3**
MTN	**Manton Dam**	**53.47**	**194**	*e*P		P	04 55 55.1	+4.4
	comp=Z,12nm,0.8s								
SVE	**Sverdlovsk**	**53.96**	**318**	*e*P		**P**	04 55 55.2	**+1.2**
SVE				pmax	pmax				
	comp=Z,37nm,1.1s								
SVE				MLR	MLR				
	comp=Z,920nm,15.0s								
PSI	**Prapat**	**54.25**	**239**	P		**P**	04 55 56.1	**-0.6**
	comp=Z,4.7nm,0.6s,baz=3.5,slow=5.5,SNR=5.1								
SOKR	**Solikamsk**	**54.95**	**322**	*e*P		**P**	04 55 59.9	**-1.2**
SOKR				pmax	pmax				
	comp=Z,8.0nm,0.7s								
SOKR				MLR	MLR				
	comp=Z,282nm,15.0s								
ARU	**Arti**	**55.18**	**318**	P		**P**	04 56 03.2	**+0.4**
	comp=Z,21nm,0.8s,baz=79,slow=3.6,SNR=31								
ARU	**Arti**	**55.18**	**318**	*c i*P		**P**	04 56 03.4	**+0.6**
ARU							04 58 06.3		
ARU				S		**S**	**05 03 45.5**	**+0.7**
ARU				SS		**SS**	**05 07 26.5**	**-1.8**
ARU				pmax	pmax				
	comp=Z,47nm,1.2s								
ARU				MLR	MLR				
	comp=Z,734nm,16.0s								
ARU	**Arti**	**55.18**	**318**	*e*P		**P**	04 56 03.4	**+0.6**
	comp=Z,34nm,1.0s								
KBL	**Kabul**	**57.63**	**290**	*e*P		**P**	04 56 21.2	**+0.3**
KBL				pmax	pmax				
	comp=Z,26nm,0.9s								
KBL	**Kabul**	**57.63**	**290**	*e*P		**P**	04 56 21.2	**+0.3**
	comp=Z,26nm,0.9s								
AKTO	**Aktyubinsk**	**57.81**	**311**	P		**P**	04 56 22.1	**+0.4**
	comp=Z,11nm,0.8s,baz=63,slow=9.0,SNR=26								
KBS	**Kingsbay**	**58.21**	**350**	*i*P		**P**	04 56 23.8	**-0.2**
KBS				pmax	pmax				
	comp=Z,134nm,2.5s								
HYB	**Hyderabad**	**59.53**	**268**	*i*P		**P**	04 56 33.0	**-1.1**
RES	**Resolute Bay**	**59.67**	**15**	P		**P**	04 56 33.6	**-0.6**
	comp=Z,6.0nm,0.8s,baz=308,slow=6.3,SNR=17								
RES	**Resolute Bay**	**59.67**	**15**	*e*P		**P**	04 56 33.8	**-0.4**
RES				pmax	pmax				
	comp=Z,10.0nm,1.0s								
RES	**Resolute Bay**	**59.67**	**15**	*e*P		**P**	04 56 33.8	**-0.4**
	comp=Z,10nm,1.0s								
FITZ	**Fitzroy Crossi**	**59.78**	**199**	P		**P**	04 56 33.5	**-2.0**
	comp=Z,3.6nm,0.8s,baz=16,slow=7.4,SNR=4.4								
WRAB	**Tennant Creek**	**59.91**	**189**	*i*P		P	04 56 40.2	+3.8
WRAB				pmax	pmax				
	comp=Z,22nm,0.8s								
WRAB	**Tennant Creek**	**59.91**	**189**	*e*P		**P**	04 56 34.7	**-1.7**
	comp=Z,7.1nm,0.8s								
WRA	**Warramunga Arr**	**59.92**	**189**	P		**P**	04 56 33.8	**-2.7**
	comp=Z,1.7nm,0.5s,baz=6.7,slow=6.9,SNR=22								
YKA	**Yellowknife Ar**	**60.85**	**31**	P		**P**	04 56 41.4	**-1.0**
	comp=Z,1.1nm,0.8s,baz=301,slow=6.7,SNR=17								
TMCR	**Tamitsa**	**60.98**	**331**	*e*P		**P**	04 56 43.3	**+0.1**
TMCR				pmax	pmax				
	comp=Z,20nm,0.8s								
ARCES	**ARCESS Array B**	**61.91**	**339**	P		**P**	04 56 49.6	**+0.1**
	comp=Z,4.3nm,0.8s,baz=43,slow=9.0,SNR=5.0								
KLMR	**Klimovskoe**	**62.14**	**327**	*e*P		**P**	04 56 49.3	**-1.9**
KLMR				pmax	pmax				
	comp=Z,21nm,1.3s								
DAG	**Danmarks Havn**	**63.18**	**355**	*i*P		**P**	04 56 57.3	**-0.6**
	comp=Z,13nm,1.0s								
DAG	**Danmarks Havn**	**63.18**	**355**	*i*P		**P**	04 56 57.3	**-0.6**
DAG				pmax	pmax				
	comp=Z,13nm,1.0s								
GEYT	**Alibeck**	**63.63**	**298**	P		**P**	04 57 02.0	**+0.5**
	comp=Z,10nm,0.8s,baz=46,slow=4.3,SNR=13								
AS31	**Alice Springs**	**63.65**	**189**	*e*P		P	04 57 07.0	+5.4
	comp=Z,2.0nm,0.8s								
ASAR	**Alice Springs**	**63.65**	**189**	P		**P**	04 56 59.5	**-2.0**
	comp=Z,1.0nm,0.6s,baz=9.3,slow=6.0,SNR=12								
MSVF	**Nonsavu**	**65.87**	**143**	*e*P		**P**	04 57 19.1	**+2.9**
MSVF				pmax	pmax				
	comp=Z,10.0nm,1.2s								
VRH	**Novokhopyorsk**	**66.41**	**318**	*e*P		**P**	04 57 19.1	**-0.2**
VRH				*e*PP		**pP**	04 57 26.1	**+0.6**
VRH				pmax	pmax				
	comp=Z,30nm,1.1s								
OBN	**Obninsk**	**66.68**	**323**	⇓*i*P		**P**	04 57 21.3	**+0.4**
OBN				*e**PP		**sP**	04 57 28.4	**-1.0**
OBN				*e**SP		pP	04 57 32.9	+5.8
OBN				*e*			04 57 45.7		
OBN							04 59 51.0		
OBN				S		**S**	**05 06 16.0**	**+4.7**
OBN				pmax	pmax				
	comp=Z,10.0nm,0.6s								
OBN				MLR	MLR				
	comp=Z,408nm,16.0s								
FIA1	**FINESS Array S**	**67.00**	**332**	*e*P		**P**	04 57 23.2	**+0.4**
FINES	**FINESS Array B**	**67.00**	**332**	P		**P**	04 57 22.8	**-0.1**
	comp=Z,9.0nm,0.8s,baz=51,slow=7.6,SNR=25								
LPSR	**Galich'ya Gora**	**67.03**	**320**	*e*P		**P**	04 57 23.4	**+0.2**
LPSR				*e**PP		**pP**	04 57 30.2	**+0.8**
LPSR				pmax	pmax				
	comp=Z,20nm,0.9s								
VSR	**Storozhevoye**	**67.72**	**319**	*e*P		**P**	04 57 27.7	**+0.1**
VSR				*e**PP		**pP**	04 57 34.9	**+1.1**
VSR				pmax	pmax				
	comp=Z,20nm,1.0s								
SUMG	**Summit**	**67.98**	**0**	*i*P		**P**	04 57 29.5	**+0.1**
	comp=Z,15nm,0.8s								
SUMG	**Summit**	**67.98**	**0**	*e*P		**P**	04 57 30.0	**+0.6**
SUMG				pmax	pmax				
	comp=Z,15nm,0.9s								
SUMG	**Summit**	**67.98**	**0**	*e*P		**P**	04 57 30.0	**+0.6**
	comp=Z,15nm,0.9s								
K05A	**Summer Lake**	**68.28**	**52**	*e*P		P	04 57 38.0	+6.3
	comp=Z,18nm,0.9s								
VSU	**Vasula**	**68.75**	**330**	*d i*P		**P**	04 57 34.6	**+0.7**
VSU				pmax	pmax				
	comp=Z,33nm,0.8s								
GOF	**Gofitskoye**	**69.22**	**312**	⇑*i*P		**P**	04 57 38.0	**+0.9**
GOF				pmax	pmax				
	comp=Z,39nm,0.8s								
SWMT	**Swartz Lake**	**69.48**	**45**	*e*P		**P**	04 57 39.7	**+0.8**
ORV	**Oroville**	**69.71**	**55**	*e*P		P	04 57 44.7	+4.4
ORV				pmax	pmax				
	comp=Z,5.0nm,1.0s								
ORV	**Oroville**	**69.71**	**55**	*e*P		P	04 57 44.7	+4.5
	comp=Z,5.1nm,1.0s								
WVOR	**Wild Horse Val**	**69.82**	**51**	*e*P		P	04 57 45.3	+4.3
WVOR				pmax	pmax				
	comp=Z,7.0nm,1.1s								
WVOR	**Wild Horse Val**	**69.82**	**51**	*e*P		P	04 57 45.3	+4.3
	comp=Z,7.2nm,1.1s								
ZEI	**Tsey**	**70.05**	**309**	*e*P		**P**	04 57 41.7	**-0.8**
ZEI				pmax	pmax				
	comp=Z,39nm,1.1s								
KIV	**Kislovodsk**	**70.08**	**311**	*e*P		**P**	04 57 42.8	**+0.3**
KIV				pmax	pmax				
	comp=Z,64nm,1.1s								
KIV	**Kislovodsk**	**70.08**	**311**	*e*P		**P**	04 57 43.8	**+1.3**
	comp=Z,70nm,1.1s								
KIV	**Kislovodsk**	**70.08**	**311**	P		**P**	04 57 43.5	**+1.0**
	SNR=9.6								
KIV	**Kislovodsk**	**70.08**	**311**	P		**P**	04 57 43.5	**+1.0**
	SNR=9.6								
KIV				P		**P**	04 57 43.5	**+1.0**
	SNR=9.6								
KBZ	**Khabaz**	**70.08**	**311**	P		**P**	04 57 43.4	**+0.9**
	comp=Z,16nm,0.9s,baz=64,slow=4.7,SNR=21								
KBZ				LR		LR	05 32 22.9		
	comp=Z,142nm,18.1s,baz=71,slow=39								
AFDM	**Forest Hills D**	**70.40**	**55**	*e*P		P	04 57 49.0	+4.4
	comp=Z,19nm,1.9s								
NEY	**Neytrino**	**70.47**	**310**	*e*P		**P**	04 57 45.8	**+0.7**
NEY				pmax	pmax				
	comp=Z,2.0nm,0.8s								
FFC	**Flin Flon**	**70.76**	**34**	*e*P		**P**	04 57 45.7	**-0.7**
FFC				pmax	pmax				
	comp=Z,6.0nm,0.8s								
FFC	**Flin Flon**	**70.76**	**34**	*e*P		**P**	04 57 45.7	**-0.7**
	comp=Z,5.9nm,0.8s								
GNI	**Garni**	**71.09**	**307**	*i*P		**P**	04 57 49.5	**+0.6**
GNI				pmax	pmax				
	comp=Z,110nm,1.2s								
NACGM	**Naroch**	**71.15**	**327**	*e*		**P**	04 57 49.0	**+0.3**
CMB	**Columbia Colle**	**71.30**	**56**	*e*P		**P**	04 57 51.9	**+1.8**
CMB				pmax	pmax				
	comp=Z,15nm,1.2s								
CMB	**Columbia Colle**	**71.30**	**56**	*e*P		**P**	04 57 51.9	**+1.8**
	comp=Z,15nm,1.2s								
LRM	**Limekiln Ridge**	**71.36**	**46**	*e*P		**P**	04 57 50.7	**+0.2**
DLMT	**Dillon**	**71.56**	**46**	*e*P		**P**	04 57 51.3	**-0.3**
	comp=Z,7.3nm,1.1s								
BMN	**Battle Mountai**	**71.86**	**52**	*e*P		P	04 57 59.2	+5.7
BMN				pmax	pmax				
	comp=Z,6.0nm,0.9s								
BMN	**Battle Mountai**	**71.86**	**52**	*e*P		P	04 57 59.2	+5.7
	comp=Z,5.5nm,0.9s								
NC405	**NORSAR Array S**	**71.96**	**337**	*e*P		**P**	04 57 53.7	**+0.1**
NC303	**NORSAR Array S**	**71.97**	**338**	*e*P		**P**	04 57 54.1	**+0.5**
NC204	**NORSAR Array S**	**72.11**	**338**	*e*P		**P**	04 57 55.1	**+0.6**
NB201	**NORSAR Array S**	**72.14**	**338**	*e*P		**P**	04 57 55.0	**+0.4**
NB2	**NORSAR Subarra**	**72.17**	**338**	P		**P**	04 57 54.8	**-0.1**
	comp=Z,19nm,0.9s,baz=39,slow=6.2								
NB2	**NORSAR Subarra**	**72.17**	**338**	P		**P**	04 57 54.8	**-0.1**
	baz=39,slow=6.2								
NOA	**NORSAR Array B**	**72.17**	**338**	P		**P**	04 57 55.0	**+0.1**
	comp=Z,12nm,0.8s,baz=38,slow=5.9,SNR=42								
NOA	**NORSAR Array B**	**72.17**	**338**	P		**P**	04 57 55.0	**+0.1**
NOA				pmax	pmax				
	comp=Z,12nm,0.8s								
NBO02	**NORSAR Array S**	**72.27**	**338**	*e*P		**P**	04 57 55.5	**+0.1**
NBO00	**NORSAR Array S**	**72.30**	**338**	*e*P		**P**	04 57 55.6	**0.0**
NV01	**Mina Array Sit**	**72.39**	**55**	*e*P		**P**	04 57 57.2	**+0.4**
NVAR	**Mina Array Bea**	**72.39**	**55**	P		**P**	04 57 56.0	**-0.8**
	comp=Z,1.8nm,0.8s,baz=292,slow=6.0,SNR=6.2								
BBOO	**Buckleboo**	**72.47**	**186**	*e*P		P	04 58 02.0	+5.2
	comp=Z,15nm,0.9s								
ANN	**Anapa**	**72.55**	**314**	*e*P		P	04 57 53.2	-4.1
ANN				*e**PP		sP	04 58 04.7	-1.1
ANN				*e*			04 58 12.3		
ANN				*e*PPP		PPP	05 02 19.7		
ANN				*e*S		S	05 07 12.5	-8.2
ANN				*e*SS		**SS**	**05 11 55.5**	**-3.4**
ANN				pmax	pmax				
	comp=Z,144nm,1.5s								
AKASG	**Malin Array Be**	**72.91**	**322**	P		**P**	04 57 59.2	**-0.2**
	comp=Z,4.1nm,0.6s,baz=43,slow=6.0,SNR=26								
AKBB	**Malin Array Si**	**72.91**	**322**	*e*P		**P**	04 57 59.7	**+0.3**
AKBB				pmax	pmax				
	comp=Z,13nm,0.9s								
AKBB	**Malin Array Si**	**72.91**	**322**	*e*P		**P**	04 57 59.7	**+0.3**
	comp=Z,13nm,0.9s								
KIEV	**Kiev**	**72.93**	**322**	*i*P		**P**	04 57 59.6	**+0.1**
KIEV				pmax	pmax				
	comp=Z,12nm,1.0s								
KIEV	**Kiev**	**72.93**	**322**	*e*P		**P**	04 57 59.2	**-0.3**
	comp=Z,5.8nm,0.8s								
AK11	**Malin Array Si**	**72.96**	**323**	*e*P		**P**	04 57 59.7	**+0.1**
H17A	**Grant Village**	**73.28**	**46**	*e*P		**P**	04 58 04.0	**+1.9**
	comp=Z,4.3nm,0.9s								
IMW	**Indian Meadow**	**73.40**	**46**	*e*P		**P**	04 58 03.5	**+0.7**
IMW				*e*PcP		**pP**	04 58 08.6	**-0.5**
FXWY	**Fox Creek**	**73.51**	**47**	*e*P		**P**	04 58 04.3	**+0.8**
	comp=Z,5.8nm,1.3s								
MOOW	**Moose Ponds**	**73.60**	**46**	*e*P		**P**	04 58 04.8	**+0.9**
	comp=Z,3.0nm,0.9s								
HVU	**Hansel Valley**	**73.68**	**49**	*e*P		P	04 58 10.1	+5.7
HVU				pmax	pmax				
	comp=Z,6.0nm,1.1s								
HVU	**Hansel Valley**	**73.68**	**49**	*e*P		P	04 58 10.1	+5.7
	comp=Z,5.5nm,1.1s								
KONO	**Kongsberg**	**73.77**	**337**	*e*P		**P**	04 58 03.7	**-0.6**
KONO				pmax	pmax				
	comp=Z,55nm,1.0s								
R11A	**Troy Canyon, C**	**74.13**	**53**	*e*P		**P**	04 58 07.3	**+0.2**
	comp=Z,8.8nm,1.3s								
DUG	**Dugway, Tooele**	**74.66**	**50**	*e*P		**P**	04 58 10.4	**+0.4**
DUG				pmax	pmax				
	comp=Z,5.0nm,0.9s								
DUG	**Dugway, Tooele**	**74.66**	**50**	*e*P		**P**	04 58 10.4	**+0.4**
	comp=Z,5.3nm,0.9s								
BW06	**Boulder Array**	**74.89**	**47**	*e*P		**P**	04 58 10.5	**-1.0**
PD31	**Pinedale Array**	**74.89**	**47**	*e*P		**P**	04 58 11.2	**-0.2**
PD31				*e*PcP		**pP**	04 58 16.2	**-1.5**
PDAR	**Pinedale Array**	**74.89**	**47**	P		**P**	04 58 10.2	**-1.3**
	comp=Z,0.9nm,0.8s,baz=262,slow=1.5,SNR=9.0								
PSUT	**Pine Spring**	**75.08**	**52**	*e*P		P	04 58 17.4	+4.8
	comp=Z,4.8nm,0.9s								
P17A	**Butcher Ranch,**	**76.35**	**50**	*e*P		P	04 58 24.1	+4.4
	comp=Z,6.4nm,0.9s								
P18A	**Preston Nutter**	**76.54**	**49**	*e*P		P	04 58 26.5	+5.5
	comp=Z,18nm,1.8s								
KWP	**Kalwaria Pacla**	**76.65**	**325**	*e*P		**P**	04 58 22.0	**+1.0**
KWP	**Kalwaria Pacla**	**76.65**	**325**	⇑*i*P		**P**	04 58 22.1	**+1.0**
KWP	**Kalwaria Pacla**	**76.65**	**325**	⇑P		**P**	04 58 22.1	**+1.0**
KNB	**Kanab**	**76.67**	**53**	*e*P		**P**	04 58 22.9	**+1.2**
KNB				pmax	pmax				
	comp=Z,6.0nm,0.9s								
KNB	**Kanab**	**76.67**	**53**	*e*P		**P**	04 58 22.9	**+1.2**
	comp=Z,5.5nm,0.9s								
SRU	**San Rafael Swe**	**76.71**	**50**	*e*P		**P**	04 58 22.9	**+1.0**
SRU				pmax	pmax				
	comp=Z,7.0nm,0.9s								
SRU	**San Rafael Swe**	**76.71**	**50**	*e*P		**P**	04 58 22.9	**+1.0**
	comp=Z,7.1nm,0.9s								
BUR08	**Bucovina Ar. S**	**76.94**	**322**	*e*P		**P**	04 58 23.7	**+0.8**
BURAR	**Bucovina Array**	**76.95**	**322**	⇑*i*P		**P**	04 58 23.4	**+0.5**
BURAR	**Bucovina Array**	**76.95**	**322**	⇑P		**P**	04 58 23.4	**+0.5**
STHS	**Stebnicka Huta**	**77.45**	**325**	*e*P		**P**	04 58 27.2	**+1.6**
STHS				pmax	pmax				
	comp=Z,5.0nm,1.0s								
STHS	**Stebnicka Huta**	**77.45**	**325**	*e*P		**P**	04 58 27.2	**+1.6**
OJC	**Ojcow**	**77.48**	**327**	*e*P		**P**	04 58 26.5	**+0.8**
OJC	**Ojcow**	**77.48**	**327**	*e*P		**P**	04 58 26.4	**+0.7**
OJC				pmax	pmax				
	comp=Z,18nm,1.0s								
OJC	**Ojcow**	**77.48**	**327**	*e*P		**P**	04 58 26.4	**+0.7**
	comp=Z,18nm,1.0s								
CRVS	**Cervenica-Dubn**	**77.74**	**325**	*e*P		**P**	04 58 28.0	**+0.8**
CRVS	**Cervenica-Dubn**	**77.74**	**325**	*e*P		**P**	04 58 28.0	**+0.8**
BR131	**Keskin Array S**	**77.98**	**312**	*e*P		**P**	04 58 29.6	**+0.8**
BRTR	**Keskin Array B**	**77.98**	**312**	P		**P**	04 58 29.1	**+0.2**
	comp=Z,1.9nm,0.7s,baz=109,slow=3.0,SNR=12								
MSAB	**Monastry St. A**	**78.16**	**318**	⇑*i*P		**P**	04 58 29.6	**0.0**
BR231	**Keskin MP Arra**	**78.39**	**312**	*e*P		**P**	04 58 29.9	**-1.3**
LANS	**Liptovska Anna**	**78.42**	**326**	*e*P		**P**	04 58 32.7	**+1.6**
LANS	**Liptovska Anna**	**78.42**	**326**	*e*P		**P**	04 58 32.7	**+1.6**
WUAZ	**Wupatki**	**78.53**	**53**	*e*P		P	04 58 36.9	+4.8
WUAZ				*e*PcP		**PcP**	04 58 42.4	**+1.2**
DRGR		**78.73**	**323**	⇑*i*P		**P**	04 58 30.8	**-2.0**
DRGR		**78.73**	**323**	⇑P		**P**	04 58 30.8	**-2.0**
SMCO	**Snowmass**	**78.73**	**48**	*e*P		P	04 58 37.3	+3.9
SMCO				*e*PcP		**PcP**	04 58 43.3	**+1.0**
MORC	**Moravsky Berou**	**78.76**	**327**	⇑*i*P		**P**	04 58 33.7	**+0.8**
MORC	**Moravsky Berou**	**78.76**	**327**	*e*P		**P**	04 58 33.6	**+0.7**
MORC				pmax	pmax				
	comp=Z,49nm,1.0s								
MORC	**Moravsky Berou**	**78.76**	**327**	*e*P		**P**	04 58 33.6	**+0.7**
	comp=Z,49nm,1.0s								
DPC	**Dobruska-Polom**	**78.82**	**328**	*i*P		**P**	04 58 34.2	**+1.0**
DPC	**Dobruska-Polom**	**78.82**	**328**	*i*P		**P**	04 58 34.2	**+1.0**
PSZ	**Piszkesteto**	**79.17**	**325**	⇑*i*P		**P**	04 58 33.9	**-1.3**
PSZ	**Piszkesteto**	**79.17**	**325**	⇑P		**P**	04 58 33.9	**-1.3**
VYHS	**Vyhne**	**79.19**	**326**	*e*P		**P**	04 58 36.3	**+1.0**
VYHS				pmax	pmax				
	comp=Z,4.0nm,1.0s								
VYHS	**Vyhne**	**79.19**	**326**	*e*P		**P**	04 58 36.3	**+1.0**
BRG	**Berggiesshubel**	**79.35**	**330**	*e*P		**P**	04 58 36.2	**+0.2**
	comp=Z,5.9nm,0.9s								
BRG	**Berggiesshubel**	**79.35**	**330**	*e*P		**P**	04 58 36.2	**+0.2**
BRG				pmax	pmax				
	comp=Z,1.0nm,0.9s								
CLL	**Collm**	**79.36**	**331**	*e*P		**P**	04 58 36.0	**-0.1**
CLL				*i*			04 58 43.9		
CLL				*e*			04 58 50.0		
CLL				*e*PP		**PP**	**05 01 40.0**	**+4.6**
CLL				LmV			05 36 00.0		
	comp=Z,100nm,20.3s								
CLL	**Collm**	**79.36**	**331**	*e*P		**P**	04 58 36.0	**-0.1**
CLL				*i*			04 58 43.9		
PVCC	**Panska Ves**	**79.38**	**329**	*e*P		**P**	04 58 37.2	**+1.0**
PVCC	**Panska Ves**	**79.38**	**329**	*e*P		**P**	04 58 37.2	**+1.0**
VRAC	**Vranov**	**79.52**	**328**	P		**P**	04 58 37.0	**0.0**
	comp=Z,4.3nm,0.5s,baz=66,slow=5.4,SNR=9.8								
GZR	**Gura Zlata**	**79.72**	**322**	⇑*i*P		**P**

LOR	**Lormes**	**86.03**	**333**	*e*P	**P**	**04 59 10.3**	**-0.6**
LOR				pmax	pmax		
	comp=Z,13nm,0.9s						
LDF	**La Druitiere**	**86.17**	**336**	*e*P	**P**	**04 59 10.7**	**-0.8**
LDF				pmax	pmax		
	comp=Z,71nm,2.1s						
LPL	**La Plagne**	**86.50**	**331**	*e*P	**P**	**04 59 13.1**	**-0.4**
LPL				pmax	pmax		
	comp=Z,8.0nm,0.9s						
LPG	**La Plagne**	**86.50**	**331**	*e*P	**P**	**04 59 13.3**	**-0.3**
LPG				pmax	pmax		
	comp=Z,8.0nm,0.8s						
TX31	**Lajitas Ar. Si**	**87.50**	**53**	*e*P	P	04 59 23.3	+4.8
TXAR	**Lajitas Array**	**87.50**	**53**	P	**P**	**04 59 17.4**	**-1.1**
	comp=Z,0.4nm,0.8s,baz=269,slow=3.2,SNR=4.9						
MFF	**Saint Martin d**	**87.95**	**336**	*e*P	P	04 59 29.2	+9.0
MFF				pmax	pmax		
	comp=Z,24nm,1.4s						
CAF	**Calviac**	**88.69**	**333**	*e*P	**P**	**04 59 24.2**	**+0.4**
CAF				pmax	pmax		
	comp=Z,28nm,1.8s						
TBI	**Tubuai**	**88.87**	**122**	*e*LR	LR	05 28 05.5	
	comp=Z,97nm,25.5s						
LFF	**La Frestale**	**89.13**	**334**	*e*P	**P**	**04 59 25.2**	**-0.6**
LFF				pmax	pmax		
	comp=Z,7.0nm,0.7s						
TORD	**Torodi Ar. Bea**	**116.25**	**317**	PKP	**PKPdf**	**05 05 11.9**	**-2.4**
	comp=Z,0.2nm,0.6s,baz=88,slow=1.9,SNR=4.1						
VNA2	**Neumayer--Watz**	**145.26**	**197**	PKP	**PKPbc**	**05 06 04.8**	**-1.8**
	baz=78,slow=1.6						
VNA3	**Neumayer Olymp**	**145.50**	**195**	PKP	**PKPdf**	**05 06 05.4**	**-2.0**

MEX ***14*** *04:51:07.1±0.8, 14°.37N×92°.45W, h27*$^{km}_{\pm}$*28*^{km}*, MD4.0*
NEIC ***14*** *04:51:07.5, 14°.39N×92°.46W, h27*^{km}*, MD4.0(MEX), After MEX.*

ISC 14 04:51:00.0±1.9, 14°.26N±0°.06×92°.34W±0°.04, h14$^{km}_{\pm}$**13**^{km}**, n19, σ1**^{s}**56/31, 1D, Near coast of Chiapas**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
THIG		**0.65**	**6**	*e*P	**Pn**	**04 51 16.7**	**+2.0**
THIG				*i* S	**Sn**	**04 51 23.7**	**-1.0**
PCIG		**1.67**	**329**	*e*P	**Pn**	**04 51 30.9**	**+0.5**
PCIG				*i* S	**Sn**	**04 51 48.0**	**-1.9**
PCIG		**1.67**	**329**	*e*P	**Pb**	**04 51 30.9**	**+0.5**
PCIG				*i* S	**Sn**	**04 51 48.0**	**-1.9**
IXG	**Ixpaco**	**1.83**	**93**	*e*P	**Pn**	**04 51 31.9**	**+0.7**
IXG				*e*S	**Sn**	**04 51 52.7**	**-1.6**
CCIG	**Comitan**	**2.02**	**6**	*e*P	**Pg**	**04 51 37.7**	**-1.0**
CCIG				*i* S	**Sn**	**04 51 59.5**	**+0.6**
CCIG	**Comitan**	**2.02**	**6**	*e*P	**Pg**	**04 51 37.7**	**-1.0**
CCIG				*e*S	**Sn**	**04 51 58.4**	**-0.5**
TGIG		**2.61**	**343**	*e*P	**Pn**	**04 51 43.7**	**+1.9**
TGIG				*i* S	**Sn**	**04 52 11.8**	**-1.7**
TGIG		**2.61**	**343**	*e*P	**Pn**	**04 51 43.7**	**+1.9**
TGIG				*i* S	**Sn**	**04 52 11.8**	**-1.7**
RTR	**El Retiro**	**2.64**	**98**	*e*P	**Pn**	**04 51 44.5**	**+2.2**
RTR				*e*S	**Sn**	**04 52 13.5**	**-0.8**
SBLS	**San Blas**	**2.67**	**99**	*e*P	**Pn**	**04 51 43.9**	**+1.0**
SNJE	**San Jose**	**2.68**	**98**	*e*P	**Pn**	**04 51 44.2**	**+1.2**
MRL	**Marmol**	**2.68**	**72**	*i*P	**Pn**	**04 51 44.5**	**+1.5**
SNET	**Serv Nac Est T**	**3.07**	**100**	*e*S	**Sn**	**04 52 23.2**	**-1.5**
SNET				AML	AML	04 52 28.7	
	comp=Z,400nm,0.3s						
LBRS	**Las Brisas**	**3.24**	**99**	*e*P	**Pn**	**04 51 52.0**	**+1.5**
LFRS	**El Faro**	**3.25**	**101**	*e*P	**Pn**	**04 51 52.3**	**+1.7**
LFRS				*e*S	**Sn**	**04 52 27.6**	**-1.5**
TECA	**Tecapa**	**3.80**	**101**	*e*P	**Pn**	**04 52 00.1**	**+1.7**
HUIG	**Huatulco**	**3.94**	**293**	*i*P	**Pn**	**04 52 01.8**	**+1.8**
HUIG				*i* S	**Sn**	**04 52 44.4**	**-1.7**
HUIG	**Huatulco**	**3.94**	**293**	*e*P	**Pn**	**04 52 01.6**	**+1.5**
HUIG				*i* S	**Sn**	**04 52 44.4**	**-1.7**
TEIG	**Tepich**	**7.09**	**33**	*e*Pn	**Pn**	**04 52 44.2**	**+0.9**
	comp=Z,16nm,0.4s						

MAN ***14*** *04:52:41, 7°.62N×127°.15E, h15*^{km}*, mb4.5, ML3.4, MS3.3*
ISCJB ***14*** *04:52:43.2±0.9, 7°.73N±0°.09×127°.17E±0°.06, h35*$^{km}_{\pm}$*, mb3.5/4, Error ellipse: s-maj=12.3km s-min=8.6km az=1.2*
IDC ***14*** *04:52:57.1±2.1, 7°.69N×126°.74E, h160*$^{km}_{\pm}$*22*^{km}*, mb3.2/5, mb1 3.4/5, mb1mx3.1/42, mbtmp3.7/5, Error ellipse: s-maj=50.4km s-min=21.3km az=83.0*

ISC 14 04:52:43.3±1.3, 7°.7N±0°.1×127°.2E±0°.1, h35^{km}**, n10, σ1**^{s}**80/9, mb3.4/4, 3C, Philippine Islands region**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
BIPH	**Bislig**	**0.93**	**300**	*e*P	**Pn**	**04 52 59.6**	**-0.2**
BIPH				*e*S	**Sn**	**04 53 10.6**	**-1.4**
DAV	**Davao City (W)**	**1.71**	**248**	P	Pn	04 53 25.6	+15
	baz=73,slow=20,SNR=3.7						
DMPH	**Davao City--Mi**	**1.77**	**249**	*e*P	**Pn**	**04 53 11.4**	**+0.1**
DMPH				*e*S	**Sn**	**04 53 33.0**	**+0.3**
CGP	**Cagayan de Oro**	**2.56**	**287**	*e*P	Pn	04 53 23.7	+1.4
CGP				*e*S	**Sn**	**04 53 54.8**	**+2.5**
WRA	**Warramunga Arr**	**28.37**	**166**	P	P	04 58 36.9	+2.5
	0.6nm,0.7s,baz=345,slow=10,SNR=5.4						
USRK	**Ussuriysk Ar.**	**36.59**	**6**	P	P	04 59 47.9	+1.9
	1.8nm,0.8s,baz=177,slow=7.2,SNR=4.6						
KLR	**Kul'dur**	**41.55**	**5**	P	**P**	**05 00 29.0**	**+1.6**
	0.4nm,0.5s,baz=198,slow=6.2,SNR=4.2						
MKAR	**Makanchi Array**	**54.59**	**323**	P	**P**	**05 02 06.6**	**-1.7**
	0.2nm,0.5s,baz=124,slow=7.9,SNR=2.9						
ILAR	**Eielson Array**	**81.34**	**26**	P	**P**	**05 04 57.1**	**+1.1**
	0.6nm,100.0s,baz=246,slow=4.6,SNR=4.8						
TORD	**Torodi Ar. Bea**	**122.02**	**291**	PKP	**PKPdf**	**05 11 33.0**	**-2.1**
	0.2nm,0.5s,baz=61,slow=1.8,SNR=5.9						

JMA 14 04:54:48.1±0.1, 37°.83N×141°.81E, h47$^{km}_{\pm}$**2**^{km}**, M3.8, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**0.72**	**330**	P	Pn	04 55 02.2	+0.2
JIO				S	Sn	04 55 11.9	-0.2
JMM	**Marumori**	**0.81**	**273**	P	Pn	04 55 03.3	+0.2
JMM				S	Sn	04 55 13.9	-0.2
JFK	**Kawauchi**	**0.88**	**238**	P	Pn	04 55 04.1	0.0
JFK				S	Sn	04 55 15.6	-0.2
JOU	**Okura**	**1.05**	**301**	P	Pn	04 55 06.8	+0.3
JOU				S	Sn	04 55 20.0	0.0
ONAJ	**Iwakimizuishiy**	**1.08**	**228**	P	Pn	04 55 06.4	-0.6
ONAJ				S	Sn	04 55 21.1	+0.2
JFT	**Otama**	**1.21**	**256**	P	Pn	04 55 09.6	+1.0
JFT				S	Sn	04 55 25.0	+1.1
JMK	**Ichinoseki**	**1.21**	**338**	P	Pn	04 55 09.0	+0.4
JMK				S	Sn	04 55 24.0	+0.1
JYS	**Shirataka**	**1.43**	**286**	P	Pn	04 55 12.2	+0.6
JYS				S	Sn	04 55 30.7	+1.4
JYK	**Kaneyama**	**1.57**	**314**	P	Pn	04 55 14.2	+0.6
JYK				S	Sn	04 55 33.3	+0.5
JOM	**Ohasama**	**1.69**	**346**	P	Pn	04 55 16.2	+1.0
JOM				S	Sn	04 55 36.4	+0.8
JFY	**Yanaizu**	**1.72**	**256**	P	Pn	04 55 16.2	+0.5
JRG	**Rokugo**	**1.81**	**330**	P	Pn	04 55 17.8	+0.9
JRG				S	Sn	04 55 40.7	+2.0
JYA	**Atsumi**	**1.82**	**295**	P	Pn	04 55 17.6	+0.7
JYA				S	Sn	04 55 40.8	+2.0

CSEM ***14*** *04:57:00.5±0.1, 47°.22N×14°.69E, h10*^{km}*, ML2.1/6, Error ellipse: s-maj=3.2km s-min=2.0km az=74.0*

VIE 14 04:57:00.5±0.2, 47°.22N×14°.70E, h8^{km}**, mb1.3/3, ml1.7/4, 2C, Error ellipse: s-maj=1.9km s-min=1.1km az=73.0, Austria**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
ARSA	**Arzberg**	**0.56**	**86**	*e*Pg	Pg	04 57 11.4	0.0
	3.5nm,0.1s						
ARSA				*e*Sg	Sg	04 57 19.6	+0.8
	1.3nm,0.1s						
ARSA	**Arzberg**	**0.56**	**86**	Pg	Pg	04 57 11.4	0.0
	3.5nm,0.1s						
ARSA				Sg	Sg	04 57 19.6	+0.8
	1.3nm,0.1s						
SOKA	**Soboth**	**0.58**	**157**	*e*Pg	Pg	04 57 11.9	+0.1
	1.2nm,0.1s						
SOKA				*i* Sg	Sg	04 57 19.6	+0.2
	3.5nm,0.1s						
SOKA	**Soboth**	**0.58**	**157**	Pg	Pg	04 57 11.9	+0.1
	1.2nm,0.1s						
SOKA				Sg	Sg	04 57 19.6	+0.2
	3.5nm,0.1s						
PERS	**Pernice**	**0.65**	**153**	*i* Pg	Pg	04 57 13.4	+0.4
PERS				*i* Sg	Sg	04 57 21.9	+0.6
	comp=Z,5.0nm,0.1s						
PERS	**Pernice**	**0.65**	**153**	Pg	Pg	04 57 13.4	+0.5
PERS				*i* Sg	Sg	04 57 21.9	+0.5
	comp=Z,5.0nm,0.1s						
MOA	**Molln**	**0.70**	**336**	*i* Pg	Pg	04 57 14.0	+0.1
	comp=Z,0.7nm,0.1s						
MOA				*i* Sg	Sg	04 57 23.6	+0.6
	comp=Z,4.8nm,0.2s						
MOA	**Molln**	**0.70**	**336**	Pg	Pg	04 57 14.0	+0.1
	comp=Z,0.7nm,0.1s						
MOA				Sg	Sg	04 57 23.6	+0.5
	comp=Z,4.8nm,0.2s						
OBKA	**Obir**	**0.71**	**188**	*e*Pg	Pg	04 57 14.2	0.0
	comp=Z,5.6nm,0.1s						
OBKA				*i* Sg	Sb	04 57 24.6	-0.5
	comp=Z,3.4nm,0.1s						
OBKA	**Obir**	**0.71**	**188**	Pg	Pg	04 57 14.2	0.0
	comp=Z,5.6nm,0.1s						
OBKA				Sg	Sb	04 57 24.6	-0.5
	comp=Z,3.4nm,0.1s						
GROS	**Grobnik**	**0.94**	**143**	*i* Pg	Pb	04 57 19.4	+0.4
GROS				*i* Sg	Sb	04 57 31.1	-0.5
	comp=Z,4.0nm,0.1s						
GROS	**Grobnik**	**0.94**	**143**	*i* Pg	Pb	04 57 19.4	+0.4
GROS				*i* Sg	Sb	04 57 31.1	-0.4
	comp=Z,4.0nm,0.1s						
MOZS	**Mozjanca**	**0.94**	**191**	*i*Pg	Pb	04 57 18.7	-0.2
MOZS	**Mozjanca**	**0.94**	**191**	*i*Pg	Pg	04 57 18.7	+0.3

ISCJB ***14*** *04:58:42.0±1.0, 39°.5N±0°.2×143°.9E±0°.2, h11*^{km}*, mb3.6/5, Error ellipse: s-maj=31.3km s-min=15.4km az=140.0*
IDC ***14*** *04:58:42.1±1.2, 39°.51N×143°.96E, h0*^{km}*, mb3.3/4, mb1 3.7/5, mb1mx3.4/46, mbtmp3.3/5, ML3.7/1, Error ellipse: s-maj=36.8km s-min=29.0km az=138.0*

ISC 14 04:58:43.9±1.1, 39°.5N±0°.2×143°.9E±0°.2, h11^{km}**, n7, σ0**^{s}**30/7, mb3.5/5, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
MJAR	**Matsushiro Arr**	**5.40**	**239**	Pn	**Pn**	**05 00 03.9**	**-0.4**
	2.2nm,0.3s,baz=44,slow=11,SNR=9.0						
MAT	**Matsushiro**	**5.40**	**239**	P	**Pn**	**05 00 04.4**	**+0.1**
MKAR	**Makanchi Array**	**44.54**	**300**	P	**P**	**05 06 55.7**	**+0.3**
	0.2nm,0.3s,baz=80,slow=8.1,SNR=3.3						
WRA	**Warramunga Arr**	**59.80**	**190**	P	**P**	**05 08 49.3**	**+0.2**
	0.5nm,0.9s,baz=7.2,slow=6.8,SNR=3.8						
YKA	**Yellowknife Ar**	**60.68**	**31**	P	**P**	**05 08 54.5**	**-0.2**
	0.1nm,0.6s,baz=300,slow=6.4,SNR=3.0						
GEYT	**Alibeck**	**64.38**	**299**	P	**P**	**05 09 19.8**	**0.0**
	2.3nm,0.3s,baz=73,slow=9.7,SNR=2.7						
TXAR	**Lajitas Array**	**87.06**	**54**	P	**P**	**05 11 29.8**	**0.0**
	0.1nm,0.7s,baz=297,slow=4.0,SNR=2.6						

ISCJB ***14*** *04:59:37.9±0.8, 36°.84N±0°.04×140°.78E±0°.07, h20*$^{km}_{\pm}$*7*^{km}*, mb3.8/2, Error ellipse: s-maj=9.5km s-min=5.3km az=19.1*
IDC ***14*** *04:59:38.8±3.5, 36°.54N×140°.66E, h0*^{km}*, mb3.6/2, mb1 3.9/2, mb1mx3.3/46, mbtmp3.6/2, Error ellipse: s-maj=70.0km s-min=18.1km az=16.0*
JMA ***14*** *04:59:38.7, 36°.88N×140°.70E, h5*$^{km}_{\pm}$*1*^{km}*, M3.6 Broadband fault plane solution: P waves. NP1: ϕ±176.00000°, δ49.00000°, λ-114.00000°. NP2: ϕ±30.00000°, δ47.00000°, λ-65.00000°. Principal axes: T Plg1.0000°, Azm283.0000°; N Plg18.0000°, Azm193.0000°; P Plg72.0000°, Azm16.0000°;*
JMA Felt I J1.

ISC 14 04:59:38.8±1.1, 36°.88N±0°.03×140°.69E±0°.05, h12$^{km}_{\pm}$**8**^{km}**, n11, σ0**^{s}**42/18, 3C-1D, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.24**	**21**	P	**Pg**	**04 59 43.7**	**-0.1**
ONAJ				S	**Sg**	**04 59 47.5**	**+0.2**
JHO	**Hitachi**	**0.29**	**200**	⇓P	**Pg**	**04 59 44.4**	**-0.3**
JHO				S	**Sg**	**04 59 48.5**	**-0.1**
JFK	**Kawauchi**	**0.51**	**17**	P	**Pg**	**04 59 48.5**	**-0.2**
JFK				S	**Sg**	**04 59 56.0**	**+0.5**
JSB	**Shiboa**	**0.63**	**278**	⇑P	**Pb**	**04 59 51.6**	**0.0**
JSB				S	**Sb**	**05 00 00.7**	**+0.3**
JFT	**Otama**	**0.70**	**336**	⇑P	**Pg**	**04 59 51.6**	**-0.7**
JFT				S	**Sg**	**05 00 01.8**	**+0.3**
JYT	**Yasato**	**0.77**	**212**	P	**Pg**	**04 59 53.5**	**-0.1**
JFY	**Yanaizu**	**0.95**	**304**	⇑P	**Pg**	**04 59 56.8**	**-0.3**
JFY				S	**Sg**	**05 00 09.4**	**-0.1**
JMM	**Marumori**	**0.99**	**5**	P	**Pg**	**04 59 57.5**	**-0.3**
JMM				S	**Sg**	**05 00 10.7**	**0.0**
MJAR	**Matsushiro Arr**	**2.02**	**261**	Pn	**Pn**	**05 00 13.5**	**+0.8**
	19nm,0.3s,baz=88,slow=16,SNR=6.4						
MJAR				Lg	Lg	05 00 40.4	
	37nm,0.3s,baz=77,slow=30,SNR=15						
WRA	**Warramunga Arr**	**56.83**	**187**	P	**P**	**05 09 22.9**	**-0.2**
	0.7nm,0.7s,baz=3.7,slow=7.3,SNR=7.5						
ASAR	**Alice Springs**	**60.56**	**187**	P	**P**	**05 09 48.4**	**-0.7**
	0.5nm,0.8s,baz=8.5,slow=7.5,SNR=5.9						

MAN 14 05:02:34, 15°.32N×119°.99E, h23^{km}**, mb4.1, ML3.0, MS2.7, 1C, Luzon**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
SCZP	**Santa Cruz**	**0.46**	**351**	*e*P	Pb	05 02 44.1	+0.7
SCZP				*e*S	Sn	05 02 52.8	+0.1
BOLP	**Bolinao**	**1.06**	**356**	*e*P	Pn	05 02 53.3	-0.1
BOLP				*e*S	Sn	05 03 08.6	+1.2
BCPH	**Baguio City Da**	**1.20**	**28**	⇑*i*P	Pb	05 03 00.5	+4.3
BCPH				*i* S	Sb	05 03 18.5	+7.2
BALP	**Baler**	**1.59**	**75**	*e*P	Pn	05 02 59.9	-0.8
ABRA	**Dolores**	**2.42**	**17**	*e*P	Pn	05 03 13.2	+1.1

JMA 14 05:14:17.9, 37°.02N×140°.67E, h12$^{km}_{\pm}$**1**^{km}**, M3.5, 3C-3D Broadband fault plane solution: P waves. NP1: ϕ±6.00000°, δ89.00000°, λ63.00000°. NP2: ϕ±274.00000°, δ27.00000°, λ178.00000°. Principal axes:** T Plg40.0000°, Azm251.0000°; N Plg27.0000°, Azm6.0000°; P Plg38.0000°, Azm120.0000°; **Eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.13**	**51**	P	Pg	05 14 21.4	+0.2
ONAJ				S	Sg	05 14 23.8	+0.2
JFK	**Kawauchi**	**0.38**	**25**	⇑P	Pg	05 14 25.5	-0.1
JFK				S	Sg	05 14 30.7	0.0
JHO	**Hitachi**	**0.42**	**191**	⇓P	Pg	05 14 26.1	-0.1
JHO				S	Sg	05 14 31.8	+0.1
JFT	**Otama**	**0.56**	**332**	⇓P	Pg	05 14 29.0	+0.1
JFT				S	Sg	05 14 36.5	+0.1
JSB	**Shiboa**	**0.60**	**265**	⇑P	Pb	05 14 30.1	-0.3
JSB				S	Sg	05 14 37.9	+0.3
JMM	**Marumori**	**0.85**	**7**	⇑P	Pg	05 14 33.6	-0.7
JMM				S	Sg	05 14 45.0	-0.5
JFY	**Yanaizu**	**0.86**	**297**	P	Pg	05 14 34.3	-0.3
JFY				S	Sg	05 14 45.2	-0.6
JYT	**Yasato**	**0.88**	**206**	⇓P	Pg	05 14 34.2	-0.7
JYT				S	Sg	05 14 45.8	-0.5

IDC 14 05:24:46.3±7.1, 19°.02S×176°.45W, h0^{km}**, mb3.9/2, mb1 4.2/2, mb1mx3.6/22, mbtmp3.9/2 Error ellipse: s-maj=299.9km s-min=112.1km az=153.0, Fiji Islands region**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
WRA	**Warramunga Arr**	**46.27**	**260**	P	P	05 33 13.9	0.0
	0.5nm,0.3s,baz=96,slow=7.6,SNR=34						
ASAR	**Alice Springs**	**46.29**	**255**	P	P	05 33 13.9	-0.2
	0.9nm,0.5s,baz=97,slow=7.5,SNR=12						
AKASG	**Malin Array Be**	**142.39**	**333**	PKP	PKPdf	05 44 20.2	-0.7
	0.5nm,0.5s,baz=43,slow=4.2,SNR=6.2						

ISCJB ***14*** *05:34:07.2±0.8, 6°.83N±0°.05×73°.08W±0°.05, h162*$^{km}_{\pm}$*6*^{km}*, Error ellipse: s-maj=10.0km s-min=6.1km az=135.7*

FUNV ***14*** *05:34:08.2, 6°.74N×73°.12W, h165*^{km}*, MW2.8*
RSNC ***14*** *05:34:09.9±0.9, 6°.79N×73°.11W, h145*$^{km}_{\pm}$*8*^{km}*, ML2.4*

ISC 14 05:34:07.2±1.6, 6°.81N±0°.06×73°.09W±0°.05, h163$^{km}_{\pm}$**9**^{km}**, n19, σ1**^{s}**02/29, 1C, Northern Colombia**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
BTLC	**Betulia, Santa**	**0.21**	**301**	*i* P	**Pn**	**05 34 29.4**	**0.0**
BARC	**Barichara**	**0.23**	**204**	*e*P	**Pn**	**05 34 29.3**	**-0.2**
BARC				*e*S	**Sn**	**05 34 44.0**	**-2.6**
BARC				*i*		05 34 45.6	
	comp=Z,93nm,0.4s						
GIRC	**Giron, Santand**	**0.29**	**338**	*e*P	**Pn**	**05 34 29.5**	**0.0**
PAMC	**Pamplona, Colo**	**0.65**	**36**	*e*P	**Pn**	**05 34 32.2**	**+0.7**
PAMC				*e*S	**Sn**	**05 34 49.6**	**-0.5**
BRRC	**Barranca, Sant**	**0.69**	**296**	*e*P	**Pn**	**05 34 31.3**	**+0.3**
BRRC				*e*S	**Sn**	**05 34 48.9**	**-0.5**
BRRC				*i*		05 34 51.1	
	comp=Z,100nm,0.2s						
GRMC	**Gramalote, San**	**0.95**	**17**	*e*P	**Pn**	**05 34 35.3**	**+2.2**
GRMC				*e*S	**Sn**	**05 34 54.0**	**+1.1**
GRMC				*i*		05 34 59.9	
	comp=Z,35nm,0.3s						
CAPV	**Capacho**	**1.30**	**36**	⇑*e*P	**Pn**	**05 34 37.3**	**+1.2**
CAPV				*e*S	**Sn**	**05 34 58.4**	**0.0**
YOPC	**Yopal, Colombi**	**1.59**	**155**	*e*P	**Pn**	**05 34 39.8**	**+0.9**
YOPC				*i*		05 34 41.1	
	comp=Z,21nm,0.1s						
YOPC				*e*S	**Sn**	**05 35 03.3**	**0.0**
NORC	**Norcasia**	**2.16**	**235**	*e*P	**Pn**	**05 34 45.2**	**+0.1**
NORC				*i*		05 35 18.1	
	comp=Z,5.2nm,0.3s						
HELC	**Santa Helena**	**2.50**	**256**	*e*P	**Pn**	**05 34 50.6**	**+1.2**
HELC				*e*S	**Sn**	**05 35 22.1**	**+0.1**
HELC				*i*		05 35 30.0	
	comp=Z,30nm,0.3s						
VIGV	**El Vigia**	**2.64**	**40**	*e*P	**Pn**	**05 34 51.8**	**+1.1**
VIGV				*e*S	**Sn**	**05 35 23.7**	**-0.8**
SOCV	**Socops**	**2.65**	**56**	*e*P	**Pn**	**05 34 51.8**	**+0.9**
SOCV				*e*S	**Sn**	**05 35 23.8**	**-0.9**
ELOV	**Elorza**	**3.58**	**87**	*e*P	**Pn**	**05 35 03.3**	**+0.9**
VIRV	**Villa del Rosa**	**3.73**	**10**	*e*P	**Pn**	**05 35 04.4**	**0.0**
VIRV				*e*S	**Sn**	**05 35 47.6**	**-1.4**
QARV	**Quebrada Arrib**	**4.22**	**37**	*e*P	**Pn**	**05 35 11.7**	**+0.9**
SANV	**Sanarito**	**4.42**	**52**	*e*P	**Pn**	**05 35 14.1**	**+0.8**
CURV	**Curarigua**	**4.44**	**44**	*e*P	**Pn**	**05 35 14.0**	**+0.4**
BAUV	**El Baul**	**5.43**	**67**	*e*P	**Pn**	**05 35 25.6**	**-0.9**
MONV	**Montecano**	**5.97**	**31**	*e*P	**Pn**	**05 35 33.3**	**-0.4**

ISCJB ***14*** *05:34:54.4±0.8, 8°.55S±0°.09×108°.65E±0°.05, h55*^{km}*, mb3.4/3, Error ellipse: s-maj=13.0km s-min=5.2km az=17.8*
DJA ***14*** *05:34:57.6±0.9, 8°.S±9°×10°9E±°, h38*$^{km}_{\pm}$*7*^{km}*, M3.8/17, MLv3.8/17*
IDC ***14*** *05:35:18.7±8.5, 9°.77S×111°.98E, h0*^{km}*, mb3.5/3, mb1 3.7/3, mb1mx3.4/41, mbtmp3.5/3, Error ellipse: s-maj=145.8km s-min=120.6km az=170.0*

ISC 14 05:34:55.7±1.1, 8°.5S±0°.1×108°.66E±0°.05, h55^{km}**, n17, σ1**^{s}**00/17, mb3.2/3, Jawa**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
CMJI	**Cimerak**	**0.69**	**343**	P	**Pn**	**05 35 09.4**	**-0.1**
KPJI	**Karang Pucung**	**1.14**	**14**	P	**Pn**	**05 35 15.8**	**+0.4**
CISI	**Cisompet, Garu**	**1.22**	**317**	P	**Pn**	**05 35 16.5**	**0.0**
CNJI	**Cibinong**	**1.89**	**307**	P	**Pn**	**05 35 26.4**	**+0.9**
CNJI				S	**Sn**	**05 35 47.7**	**-0.5**
LEM	**Lembang**	**1.91**	**327**	P	**Pn**	**05 35 27.7**	**+1.7**
UGM	**Wanagama**	**1.92**	**74**	P	**Pn**	**05 35 26.0**	**0.0**
UGM				S	**Sn**	**05 35 48.0**	**-1.1**
SMRI	**Semarang**	**2.25**	**52**	P	**Pn**	**05 35 31.8**	**+1.3**
WOJI	**Wonogiri, Jawa**	**2.32**	**75**	P	**Pn**	**05 35 32.7**	**+1.2**
PCJI	**Pacitan**	**2.51**	**84**	P	**Pn**	**05 35 34.6**	**+0.6**
PCJI				S	**Sn**	**05 36 02.6**	**-0.8**
SKJI	**Sukabumi**	**2.53**	**304**	P	Pn	05 35 41.6	+7.3
NGJI	**Ngawi**	**2.98**	**69**	P	Pn	05 35 45.4	+5.0
PWJI	**Pagerwojo**	**3.14**	**83**	P	**Pn**	**05 35 43.6**	**+0.9**
CGJI	**Cibinong**	**3.46**	**302**	P	**Pn**	**05 35 47.3**	**+0.3**
GMJI	**Gumukmas**	**4.74**	**88**	P	Pn	05 36 08.5	+3.9
WRA	**Warramunga Arr**	**27.35**	**117**	P	**P**	**05 40 34.0**	**-1.8**
	0.5nm,0.7s,baz=291,slow=11,SNR=8.7						
ASAR	**Alice Springs**	**28.52**	**125**	P	**P**	**05 40 45.9**	**-0.3**
	0.4nm,0.6s,baz=308,slow=9.6,SNR=4.8						
STKA	**Stephens Creek**	**38.46**	**132**	P	**P**	**05 42 13.1**	**+0.7**
	1.3nm,0.5s,baz=322,slow=12,SNR=3.8						

IDC ***14*** *05:45:14.2±0.4, 32°.84S×178°.42W, h0*^{km}*, mb4.8/22, mb1 4.9/25, mb1mx4.8/41, mbtmp4.8/25, ML5.1/3, MS5.1/16, Ms1 5.1/16, ms1mx4.8/34, Error ellipse: s-maj=16.1km s-min=13.8km az=133.0*
BJI ***14*** *05:45:16.9, 32°.37S×177°.92W, h23*^{km}*, mb5.5/25, mB5.7/31, Ms6.3/16, Ms7 5.9/20*
*NE

RAGZ	Rawiri	6.41	210	PN		Pn	05 46 49.5	-2.1
RIGZ	Rimuhau	6.45	207	PN		Pn	05 46 49.3	-2.7
WIAZ	Waiheke Island	6.47	233	PN		Pn	05 46 54.9	+2.5
WCZ	Waipu Caves	6.62	242	PN		Pn	05 46 57.9	+3.5
MKAZ	Moumakai	6.63	230	PN		Pn	05 46 57.3	+2.7
KMRZ	Kaimai	6.64	222	PN		Pn	05 46 54.8	+0.2
SNGZ	Shannon Statio	6.68	210	PN		Pn	05 46 53.9	-1.4
MUGZ	Murupara	6.68	214	PN		Pn	05 46 54.3	-1.0
KNZ	Kokohu	6.76	207	PN		Pn	05 46 53.1	-3.1
KNZ				eSN		Sn	05 48 12.1	+0.1
MHGZ	Mahia Peninsul	6.79	205	PN		Pn	05 46 54.0	-2.6
TOZ	Tahuroa Road	6.81	225	PN		Pn	05 46 58.5	+1.5
PRRZ	Plateau Road	6.88	216	PN		Pn	05 46 57.1	-0.9
RAHZ	Arahi	6.90	210	PN		Pn	05 46 58.2	-0.1
OUZ	Omahuta	6.95	249	ePn		Pn	05 47 02.6	+3.7
WHHZ	Waihua	6.97	209	PN		Pn	05 46 58.6	-0.7
WPRZ	Whakapapatarin	7.01	217	PN		Pn	05 47 01.1	+1.3
MRHZ	Matea Rd	7.13	214	PN		Pn	05 46 59.7	-1.7
NMHZ	Naumai	7.17	211	PN		Pn	05 47 01.8	-0.2
ARHZ	Aropaoanui	7.23	209	PN		Pn	05 47 01.2	-1.6
BKZ	Black Stump Fm	7.37	212	PN		Pn	05 47 02.6	-2.1
BKZ				eSN		Sn	05 48 26.2	-1.0
BKZ	Black Stump Fm	7.37	212	ePn		Pn	05 47 02.8	-1.9
BKZ				eSn		Sn	05 48 26.0	-1.2
RATZ	Rangitukua	7.48	217	PN		Pn	05 47 06.0	-0.2
MCHZ	McNeill Hill	7.51	210	PN		Pn	05 47 04.4	-2.2
CKHZ	Cape Kidnapper	7.54	207	PN		Pn	05 47 03.3	-3.7
KWHZ	Kaweka Forest	7.61	212	PN		Pn	05 47 06.1	-2.0
HIZ	Hauiti	7.72	223	PN		Pn	05 47 10.3	+0.9
HIZ	Hauiti	7.72	223	ePn		Pn	05 47 10.3	+0.9
KAHZ	Kahuranaki	7.73	208	PN		Pn	05 47 05.4	-4.3
NGZ	Ngauruhoe	7.80	216	PN		Pn	05 47 06.5	-4.2
KRHZ	Kereru	7.81	211	PN		Pn	05 47 08.3	-2.5
BHHZ	Black Hill Sta	7.82	213	PN		Pn	05 47 09.3	-1.6
PXZ	Pawanui	7.94	207	PN		Pn	05 47 09.2	-3.3
PNHZ	Pukenui	8.11	211	PN		Pn	05 47 12.3	-2.6
TSZ	Takapari Road	8.33	211	PN		Pn	05 47 14.0	-3.9
WAZ	Wanganui	8.55	216	PN		Pn	05 47 19.1	-1.7
NEZ	North Egmont	8.67	222	PN		Pn	05 47 24.3	+1.8
BFZ	Birch Farm	8.74	208	ePn		Pn	05 47 20.6	-2.8
TIWZ	Tintock	8.96	209	PN		Pn	05 47 23.2	-3.3
MRZ	Mangatainoka R	8.99	210	ePN		Pn	05 47 22.3	-4.7
MRZ				SN		Sn	05 49 01.4	-5.7
HOWZ	Holdsworth Sta	9.22	210	PN		Pn	05 47 25.7	-4.4
OGWZ	Otaki Gorge	9.30	211	PN		Pn	05 47 27.5	-3.6
MTW	Mount Morrison	9.44	209	PN		Pn	05 47 28.2	-4.9
SNZO	South Karori	9.90	211	ePn		Pn	05 47 36.7	-2.7
SNZO				eSn		Sn	05 49 23.1	-6.3
NNZ	Nelson	10.45	216	ePN		Pn	05 47 42.5	-4.4
NNZ				eSN		Sn	05 49 36.9	-6.0
QRZ	Quartz Range	10.61	220	eSN		Sn	05 49 41.0	-5.8
CTZ	Chatham Island	10.79	173	PN		Pn	05 47 47.3	-4.2
CTZ				eSN		Sn	05 49 36.9	-14
THZ	Tophouse	11.10	216	ePN		Pn	05 47 49.5	-6.3
THZ				eSN		Sn	05 49 51.8	-7.0
THZ	Tophouse	11.10	216	ePn		Pn	05 47 51.5	-4.3
KHZ	Kahutara	11.31	212	ePn		Pn	05 47 56.2	-2.4
LTZ	Lake Taylor	12.18	214	PN		Pn	05 48 06.7	-3.9
LTZ	Lake Taylor	12.18	214	ePn		Pn	05 48 09.6	-1.0
INZ	Inchbonnie	12.54	217	PN		Pn	05 48 11.6	-3.8
OXZ	Oxford	12.71	213	ePn		Pn	05 48 14.3	-3.4
MQZ	McQueen's Vall	12.73	211	eSN		Sn	05 50 25.7	-13
WVZ	Waitaha Valley	13.15	217	eSN		Sn	05 50 37.0	-12
RPZ	Rata Peaks	13.46	215	Pn		Pn	05 48 23.3	-4.8
	4.2nm,0.3s,baz=330,slow=8.1,SNR=11							
RPZ				Sn		Sn	05 50 44.3	-12
	2.9nm,0.3s,baz=324,slow=20,SNR=14							
RPZ	Rata Peaks	13.46	215	ePn		Pn	05 48 26.6	-1.5
RPZ				eSn		Sn	05 50 46.7	-10
ODZ	Otahua Downs	14.67	212	ePn		P	05 48 47.6	-2.7
ODZ				eSn		Sn	05 51 14.5	-11
MSVF	Nonsavu	15.55	347	eP		Pn	05 48 53.3	-3.1
MSVF				pmax		pmax		
	comp=Z,319nm,1.7s							
MSVF	Nonsavu	15.55	347	ePn		Pn	05 48 53.3	-3.1
	comp=Z,319nm,1.7s							
MLZ	Mavora Lakes	16.10	216	ePn		Pn	05 49 04.1	+0.8
	comp=Z,67nm,1.2s							
WHZ	Wether Hill Ro	16.57	215	ePn		Pn	05 49 07.6	-1.5
	comp=Z,63nm,1.0s							
DZM	Mont Dzumac	17.26	305	Pn		P	05 49 21.3	+1.9
	comp=Z,1.5nm,0.3s,baz=122,slow=13,SNR=41							
DZM				LR		LR	05 54 54.7	
	comp=Z,14µm,18.3s,baz=126,slow=34							
LHI	Lord Howe Isla	19.08	268	P		Pn	05 49 43.8	+3.6
	baz=19							
LHI	Lord Howe Isla	19.08	268	eP		Pn	05 49 43.7	+3.6
LHI				esP		sP	05 49 50.0	-1.7
AFI	Afiamalu	19.98	19	P		P	05 49 45.2	-4.0
	comp=Z,5.8nm,0.3s,baz=197,slow=14,SNR=6.9							
AFI				S		S	05 53 10.0	-22
	comp=Z,2.1nm,0.3s,baz=180,slow=20,SNR=3.9							
RAR	Rarotonga	20.33	59	P		P	05 49 50.5	-2.4
	comp=Z,38nm,0.7s,baz=209,slow=7.8,SNR=7.1							
RAR				LR		LR	05 57 26.0	
	comp=Z,3µm,18.9s,baz=220,slow=36							
RAR	Rarotonga	20.33	59	eP		P	05 49 52.4	-0.4
RAR				pmax		pmax		
	comp=Z,451nm,1.9s							
RAR	Rarotonga	20.33	59	eP		P	05 49 52.4	-0.4
	comp=Z,451nm,1.9s							
FUNA	Funafuti	24.48	354	PFAKE			05 50 50.0	+14
FUNA				LR		LR		
	comp=Z,7µm,19.0s							
MGCD	Mangrove Creek	25.46	261	P		P	05 50 48.2	+3.8
	baz=26,SNR=8.0							
ARMA	Armidale	25.55	268	P		P	05 50 48.5	+3.1
	baz=26,SNR=12							
ARMA	Armidale	25.55	268	eP		P	05 50 42.9	-2.5
	comp=Z,78nm,1.3s							
CNB	Canberra Magne	26.67	256	P		P	05 50 58.6	+3.1
	baz=27,SNR=6.4							
CAN	Canberra	26.97	256	P		P	05 51 00.9	+2.8
	baz=27							
CAN	Canberra	26.97	256	P		P	05 50 58.7	+0.6
CAN				pmax		pmax		
	comp=Z,120nm,1.7s							
CAN	Canberra	26.97	256	PFAKE			05 51 10.0	+12
CAN				LR		LR		
	comp=Z,8µm,19.0s							
TBI	Tubuai	27.23	77	eS		S	05 55 37.1	-0.5
	comp=Z,3µm,25.2s							
TBI				eLR		LR	05 57 57.0	
	comp=Z,3µm,21.8s,baz=240							
TBI	Tubuai	27.23	77	eT		T	06 18 39.1	
	comp=Z,10nm,0.3s							
YNG	Young	27.56	258	P		P	05 51 06.1	+2.7
	baz=28,SNR=10							
EIDS	Eidsvold	27.61	278	P		P	05 51 06.1	+2.2
	baz=28,SNR=21							
EIDS	Eidsvold	27.61	278	eP		P	05 51 05.0	+1.1
	comp=Z,54nm,0.9s							
EIDS				eScP		ScP	05 58 03.3	+4.1
TAU	Tasmania Unive	28.57	240	PFAKE			05 51 20.0	+7.8
TAU				LR		LR		
	comp=Z,4µm,19.0s							
MOO	Moorlands	28.59	241	P		P	05 51 14.2	+1.7
	baz=29,SNR=4.5							
RMQ	Roma	29.13	274	P		P	05 51 20.7	+3.2
	baz=30,SNR=8.3							
TOO	Toolangi	29.66	251	P		P	05 51 24.4	+2.3
	baz=30,SNR=8.3							
PAE	Paea	30.11	67	eT		T	06 22 15.2	
	comp=Z,4.4nm,0.3s							
PPT2	Papeete2	30.16	66	eS		S	05 56 24.4	+0.6
	comp=Z,399nm,24.8s							
PPT2				eLR		LR	05 59 12.7	
	comp=Z,2µm,20.8s,baz=227							
PPT2	Papeete2	30.16	66	eT		T	06 22 18.9	
	comp=Z,5.8nm,0.3s							
PPT	Papeete	30.17	66	LR		LR	06 03 47.4	
	comp=Z,2µm,18.3s,baz=242,slow=37							
CMSA	Cobar Meteorol	30.27	263	P		P	05 51 29.6	+2.1
	baz=31,SNR=60							
HNR	Honiara	30.80	315	LR		LR	06 02 59.1	
	comp=Z,2µm,18.2s,baz=165,slow=35							
ARPS	Mount Arapiles	32.63	252	P		P	05 51 50.0	+1.9
	baz=33,SNR=7.8							
QLP	Quilpie	32.89	271	P		P	05 51 52.2	+1.6
	baz=33,SNR=46							
STKA	Stephens Creek	33.60	261	P		P	05 51 57.8	+1.1
	comp=Z,6.1nm,0.8s,baz=108,slow=10,SNR=10							
STKA				PcP		PcP	05 54 36.6	0.0
	comp=Z,8.0nm,0.8s,baz=102,slow=4.9,SNR=4.1							
STKA				LR		LR	06 05 17.8	
	comp=Z,7µm,18.0s,baz=95,slow=36							
STKA	Stephens Creek	33.60	261	P		P	05 51 58.6	+1.8
	baz=34,SNR=7.5							
STKA	Stephens Creek	33.60	261	eP		P	05 51 57.6	+0.8
	comp=Z,7.4nm,1.4s							
STKA				PcP		PcP	05 54 36.6	0.0
CTA	Charters Tower	33.94	283	P		P	05 52 00.9	+1.1
	comp=Z,44nm,0.6s,baz=111,slow=11,SNR=71							
CTA				S		S	05 57 19.4	-3.2
	comp=Z,1.2nm,0.3s,baz=111,slow=17,SNR=2.9							
CTA				LR		LR	06 04 15.3	
	comp=Z,2µm,18.7s,baz=130,slow=34							
CTAO	Charters Tower	33.94	283	eP		P	05 52 00.9	+1.1
CTAO				pmax		pmax		
	comp=Z,248nm,1.5s							
CTAO				MLR		MLR		
	comp=Z,2µm,19.0s							
CTAO	Charters Tower	33.94	283	eP		P	05 52 00.9	+1.1
	comp=Z,248nm,1.5s							
CTAO				LR		LR		
	comp=Z,2µm,19.0s							
HTT	Hallett	35.48	257	P		P	05 52 13.5	+0.5
	baz=36,SNR=11							
MTSU	Mount Surprise	36.50	285	P		P	05 52 23.6	+1.7
	baz=37,SNR=51							
BBOO	Buckleboo	37.96	258	P		P	05 52 33.8	-0.3
	baz=38,SNR=17							
BBOO	Buckleboo	37.96	258	eP		P	05 52 33.9	-0.3
	comp=Z,22nm,0.9s							
QIS	Mount Isa	39.21	278	P		P	05 52 45.5	+0.7
	baz=40,SNR=6.9							
RKT	Rikitea	39.37	87	eS		S	05 58 48.9	+3.5
	comp=Z,517nm,28.5s							
RKT				eLR		LR	06 03 21.7	
	comp=Z,3µm,23.2s,baz=251							
PMG	Port Moresby	39.46	299	LR		LR	06 08 36.1	
	comp=Z,3µm,18.1s,baz=117,slow=36							
PMG	Port Moresby	39.46	299	c iP		P	05 52 47.1	+0.3
PMG				pmax		pmax		
	comp=Z,124nm,1.0s							
PMG	Port Moresby	39.46	299	eP		P	05 52 46.5	-0.3
	comp=Z,34nm,0.9s							
COEN	Coen	39.70	289	P		P	05 52 50.5	+1.7
	baz=40,SNR=34							
COEN	Coen	39.70	289	eP		P	05 52 49.1	+0.2
	comp=Z,194nm,1.6s							
COEN				ePP		PP	05 54 14.5	-5.9
ASAR	Alice Springs	42.66	270	P		P	05 53 12.6	-0.6
	comp=Z,45nm,0.7s,baz=111,slow=7.6,SNR=402							
ASAR				S		S	05 59 29.9	-4.6
	comp=Z,5.2nm,0.9s,baz=116,slow=15,SNR=11							
ASAR				LR		LR	06 11 33.6	
	comp=Z,1µm,19.1s,baz=118,slow=37							
ASAR	Alice Springs	42.66	270	P		P	05 53 12.6	-0.6
ASAR				S		S	05 59 29.9	-4.6
ASAR				pmax		pmax		
	comp=Z,45nm,0.7s							
ASAR				smax		smax		
	comp=N,5.0nm,0.9s							
ASAR				MLR		MLR		
	comp=Z,1µm,19.1s							
TAOE	Nuku Hiva Isla	42.73	64	eS		S	05 59 36.2	+0.4
	comp=Z,570nm,24.2s							
TAOE				eLQ		LQ	06 02 57.2	
	comp=Z,2µm,28.5s							
TAOE				eLR		LR	06 05 03.6	
	comp=Z,1µm,22.9s,baz=235							
WC3	Warramunga Arr	43.85	275	P		P	05 53 22.4	-0.3
	baz=44							
WB2	Warramunga Arr	43.87	275	eP		P	05 53 22.5	-0.5
	comp=Z,88nm,0.6s							
WRAB	Tennant Creek	43.88	275	c iP		P	05 53 22.4	-0.6
WRAB				pmax		pmax		
	comp=Z,221nm,1.0s							
WRAB	Tennant Creek	43.88	275	eP		P	05 53 22.4	-0.6
	comp=Z,69nm,0.6s							
WRAB				LR		LR		
	comp=Z,2µm,21.0s							
WRA	Warramunga Arr	43.88	275	P		P	05 53 22.2	-0.8
	comp=Z,59nm,0.5s,baz=115,slow=7.7,SNR=908							
WRA				ScP		ScP	05 59 01.4	+3.1
	comp=Z,2.8nm,1.0s,baz=119,slow=4.0,SNR=4.9							
WRA				S		S	05 59 50.5	-1.9
	comp=Z,7.1nm,1.0s,baz=118,slow=12,SNR=8.0							
WRA				PKiKP		PKiKP	06 02 10.3	-0.1
	comp=Z,0.3nm,0.5s,baz=109,slow=0.4,SNR=5.9							
WRA				LR		LR	06 10 35.0	
	comp=Z,1µm,20.1s,baz=110,slow=35							
SBA	Scott Base	45.40	184	PFAKE			05 53 50.0	+16
SBA				LR		LR		
	comp=Z,2µm,19.0s							
VNDA	Vanda	45.45	186	P		P	05 53 36.8	+2.0
	comp=Z,1.7nm,0.6s,baz=23,slow=6.9,SNR=14							
VNDA	Vanda	45.45	186	eP		P	05 53 37.9	+3.1
VNDA				pmax		pmax		
	comp=Z,21nm,1.4s							
VNDA	Vanda	45.45	186	eP		P	05 53 37.9	+3.1
	comp=Z,21nm,1.4s							
WRKA	Warakurna	46.83	265	P		P	05 53 45.0	-1.4
	baz=47,SNR=82							
JAY	Jayapura	48.82	300	LR		LR	06 14 45.6	
	comp=Z,39nm,18.6s,baz=135,slow=36							
KDU	Kakadu	49.05	282	P		P	05 54 03.0	-0.6
	baz=49,SNR=6.9							
KMBL	Kambalda	49.92	255	P		P	05 54 09.2	-0.9
	baz=50,SNR=10							
MTN	Manton Dam	50.07	281	P		P	05 54 10.6	-0.8
	baz=50,SNR=10							
MTN	Manton Dam	50.07	281	eP		P	05 54 10.8	-0.6
	comp=Z,104nm,1.4s							
KNRA	Kununurra	50.58	277	P		P	05 54 14.8	-0.5
	baz=51							
FITZ	Fitzroy Crossi	52.03	272	LR		LR	06 16 46.7	
	comp=Z,3µm,18.4s,baz=118,slow=36							
FITZ	Fitzroy Crossi	52.03	272	P		P	05 54 25.5	-0.6
	baz=52,SNR=36							
FITZ	Fitzroy Crossi	52.03	272	eP		P	05 54 25.7	-0.4
	comp=Z,43nm,0.8s							
CASY	Casey	52.65	209	eP		P	05 54 29.7	-0.3
	comp=Z,407nm,2.0s							
CASY				LR		LR		
	comp=Z,388nm,19.0s							
NWAO	Narrogin (SRO)	53.16	251	P		P	05 54 33.0	-1.3
	comp=Z,7.3nm,0.7s,baz=215,slow=0.1,SNR=6.8							
NWAO	Narrogin (SRO)	53.16	251	P		P	05 54 33.0	-1.3
NWAO				LR		LR		
	comp=Z,2µm,19.0s							
KLBR	Kellerberrin	53.18	253	P		P	05 54 33.6	-0.9
	baz=53,SNR=20							
BLDU	Ballidu	54.36	254	P		P	05 54 41.9	-1.2
	baz=55							
FAKI	Fak Fak	54.94	292	eP		P	05 54 45.8	-1.7
	comp=Z,68nm,0.9s							
MORW	Morawa	55.46	255	P		P	05 54 49.7	-1.4
	baz=56,SNR=5.5							
MBWA	Marble Bar	55.60	266	eP		P	05 54 51.2	-1.1
	comp=Z,64nm,1.4s							
MBWA				LR		LR		
	comp=Z,2µm,19.0s							
POHA	Pohakuloa	56.87	26	PFAKE			05 55 10.0	+8.6
POHA				LR		LR		
	comp=Z,1µm,19.0s							
QSPA	South Pole Qui	57.09	180	eP		P	05 55 04.0	+1.7
	comp=Z,864nm,1.1s							
QSPA				LR		LR		
	comp=Z,2µm,19.0s							
SOEI	Soe	57.40	280	eP		P	05 55 06.1	+0.9
	comp=Z,126nm,1.0s							
BATI	Baumata	57.65	279	LR		LR	06 20 35.6	
	comp=Z,819nm,18.3s,baz=34,slow=37							
GUMO	Guam	58.10	317	PFAKE			05 55 20.0	+10
GUMO				LR		LR		
	comp=Z,8µm,19.0s							
RPN	Rapa Nui	59.14	104	PFAKE			05 55 30.0	+13
RPN				LR		LR		
	comp=Z,866nm,19.0s							
GIRL	Giralia	59.54	261	P		P	05 55 20.3	+0.3
	baz=60,SNR=7.3							
MIR	Mirnyy	59.62	208	i iP		P	05 55 21.0	+1.3
MIR				i S		S	06 03 32.0	+4.5
MIR				e			06 05 06.0	
MIR				pmax		pmax		
	comp=Z,8.0nm,2.5s							
MIR				smax		smax		
	comp=N,2µm,10.0s							
MIR				MLR		MLR		
	comp=Z,2µm,16.0s							
MMRI	Maumere	59.68	280	eP		P	05 55 20.1	-0.9
	comp=Z,284nm,1.3s							
MIDW	Midway	60.92	1	PFAKE			05 55 40.0	+11
MIDW				LR		LR		
	comp=Z,5µm,21.0s							
KAPI	Kappang	63.73	282	LR		LR	06 24 23.3	
	comp=Z,1µm,18.4s,baz=132,slow=37							
KAPI	Kappang	63.73	282	eP		P	05 55 47.0	-1.3
	comp=Z,31nm,0.9s							
DAV	Davao City (W)	66.41	296	PFAKE			05 56 20.0	+14
DAV				LR		LR		
	comp=Z,5µm,19.0s							
MAW	Mawson	69.72	201	P		P	05 56 27.0	+1.4
	comp=Z,32nm,1.1s,baz=141,slow=8.2,SNR=12							
MAW	Mawson	69.72	201	P		P	05 56 27.0	+1.4
MAW				pmax		pmax		
	comp=Z,17nm,0.8s							
MAW	Mawson	69.72	201	eP		P	05 56 27.1	+1.4
	comp=Z,9.3nm,1.2s							
PMSA	Palmer Station	70.03	155	PFAKE			05 56 40.0	+12
PMSA				LR		LR		
	comp=Z,971nm,19.0s							
KKM	Kota Kinabalu	73.03	289	PFAKE			05 57 00.0	+13
KKM				LR		LR		
	comp=Z,4µm,21.0s							
SBUM	Sibu	74.15	284	eP		P	05 56 52.0	-1.0
SYO	Syowa Base	74.48	193	‖ eX		P	05 56 50.0	-4.0
SYO	Syowa Base	74.48	193	‖ epP		P	05 56 58.2	+4.2
KSM	Kuching	75.16	282	PFAKE			05 57 10.0	+11
KSM				LR		LR		
	comp=Z,2µm,20.0s							
SNAA	Sanae	75.55	179	P		P	05 56 59.7	-0.6
SNAA	Sanae	75.55	179	eP		P	05 57 01.0	+0.7
SNAA	Sanae	75.55	179	eP		P	05 57 01.0	+0.7
	comp=Z,5µm,1.2s							
VNA3	Neumayer Olymp	75.71	176	P		P	05 57 00.9	-0.3
VNA2	Neumayer--Watz	76.14	177	P		P	05 57 04.7	+1.0
	baz=170,slow=4.6							
VNA1	Neumayer--Stat	76.38	177	P		P	05 57 05.3	+0.4
PAF	Port-aux-Franc	77.85	219	PFAKE			05 57 20.0	+6.5
PAF				LR		LR		
	comp=Z,2µm,19.0s							
COCO	West Island	79.08	263	PFAKE			05 57 30.0	+9.1
COCO				LR		LR		
	comp=Z,2µm,19.0s							
MJAR	Matsushiro Arr	80.19	326	P		P	05 57 23.6	-2.8
	comp=Z,2.4nm,0.6s,baz=160,slow=5.1,SNR=8.4							
MAJO	Matsushiro	80.19	326	‖ eP		P	05 57 25.8	-0.6
MAJO				pmax		pmax		
	comp=Z,151nm,1.8s							
MAJO	Matsushiro	80.19	326	eP		P	05 57 26.6	+0.2
MAJO				LR		LR		
	comp=Z,2µm,21.0s							
MJB9	Matsu-Tunnel	80.20	326	eP		P	05 57 26.6	+0.1
EFI	East Falkland	80.80	147	PFAKE			05 57 40.0	+10
EFI				LR		LR		
	comp=Z,1µm,19.0s							
PLCA	Paso Flores	81.00	133	P		P	05 57 31.2	+0.1
	comp=Z,7.2nm,1.0s,baz=245,slow=2.9,SNR=5.7							
PLCA				LR		LR	06 28 02.3	
	comp=Z,1µm,18.1s,baz=212,slow=32							
PLCA	Paso Flores	81.00	133	eP		P	05 57 34.6	+3.6
YHNB	Yeheng	81.09	307	PFAKE			05 57 40.0	+8.4
YHNB				LR		LR		
	comp=Z,3µm,20.0s							
TATO	Taipei	81.22	307	PFAKE			05 57 40.0	+7.9
TATO				LR		LR		
	comp=Z,3µm,21.0s							
JNU	Nakatsue	81.27	319	P		P	05 57 31.1	-1.2
	comp=Z,13nm,1.0s,baz=100,slow=7.0,SNR=4.7							
ERM	Erimo	82.60	332	PFAKE			05 57 50.0	+11
ERM				LR		LR		
	comp=Z,21µm,19.0s							
QZH	Quanzhou	83.16	305	↑ iP		P	05 57 36.4	-5.9
QZH	Quanzhou	83.16	305	S		S	06 07 56.4	-3.8
QZH				pmax		pmax		
	comp=Z,620nm,12.1s							
ASAJ	Asahikawa	84.60	333	P		P	05 57 48.6	-0.6
	comp=Z,8.4nm,0.8s,baz=187,slow=12,SNR=4.3							
ASAJ	Asahikawa	84.60	333	eP		P	05 57 49.8	+0.6
KULM	Kulim	85.27	279	PFAKE			05 58 00.0	+6.7
KULM				LR		LR		
	comp=Z,3µm,19.0s							
SSE	Sheshan	85.56	312	eP		P	05 57 53.8	-0.5
SSE				sP		pP	05 58 03.3	-1.2
SSE				S		S	06 08 22.9	-1.0
SSE				sS		ScS	06 08 36.3	+2.7
SSE				pmax		pmax		
	comp=Z,43nm,0.7s							
SSE				pmax		pmax		
	comp=Z,180nm,5.9s							
SSE				LR		LR		
	comp=Z,28µm,16.0s							
GSI	Gunungsitoli	85.65	274	eP		P	05 57 54.6	-0.6
	comp=Z,42nm,0.9s							
QIZ	Qiongzhong	85.78	296	P		P	05 57 57.8	+2.1
QIZ				LR		LR		
	comp=Z,4µm,15.5s							
QIZ				LR		LR		
	comp=Z,3µm,16.1s							
KSRS	Korea Array	86.11	320	P		P	05 57 56.4	-0.5
	comp=Z,9.2nm,0.8s,baz=142,slow=5.7,SNR=16							
KS15	Wonju Array Si	86.12	320	eP		P	05 57 58.2	+1.3
KSAR	Wonju Array Be	86.12	320	P		P	05 57 56.4	-0.6
KSAR	Wonju Array Be	86.12	320	P		P	05 57 56.4	-0.6
KS01	Wonju Array Si	86.14	320	eP		P	05 57 56.5	-0.6
YSS	Yuzh-Sakhalins	86.95	335	i P		P	05 58 00.3	-0.4
YSS				pmax		pmax		
	comp=Z,56nm,1.1s							
YSS	Yuzh-Sakhalins	86.95	335	eP		P	05 58 01.5	+0.7
HOPE	Hope Point	87.05	159	PFAKE			05 58 10.0	+8.6
HOPE				LR		LR		
	comp=Z,707nm,20.0s							
TRTT	Trang	87.46	281	P		P	05 58 04.5	+0

USRK Ussuriysk Ar. 89.14 327 P P 05 58 11.1 -0.2
comp=Z,12nm,0.8s,baz=143,slow=3.4,SNR=24
GSC Goldstone, Bar 89.18 46 P P 05 58 12.7 +0.8
baz=228
GSC Goldstone, Bar 89.18 46 eP P 05 58 13.2 +1.3
GSC Goldstone, Bar 89.18 46 eP P 05 58 13.2 +1.3
AFDM Forest Hills D 89.28 41 eP P 05 58 16.9 +4.8
MPMC Manual Prospec 89.28 45 P P 05 58 12.6 +0.1
baz=227
214A Organ Pipe Nat 89.49 51 eP P 05 58 13.6 +0.2
comp=Z,64nm,1.3s
GMRC Granite Mounta 89.53 47 P P 05 58 14.7 +1.1
baz=228
Y12C Blythe 89.56 48 P P 05 58 14.9 +1.4
baz=229
Y12C Blythe 89.56 48 eP P 05 58 17.8 +4.3
WDC Whiskeytown Da 89.59 39 eP P 05 58 15.1 +1.6
WDC Whiskeytown Da 89.59 39 eP P 05 58 15.1 +1.6
KHON Khomkaen 89.66 290 P P 05 58 16.5 +2.1
O03D Paynes Creek 89.78 40 P P 05 58 15.5 +1.0
baz=224
N02D Trinity Center 89.79 39 P P 05 58 15.4 +0.8
baz=224
TUQ Turquoise Moun 89.81 46 P P 05 58 16.1 +1.2
baz=228
WAKR Walker 89.83 42 eP P 05 58 19.6 +4.6
LDFC Landfair 90.07 47 eP P 05 58 18.1 +2.1
TYV Tymovskoe 90.31 337 eP P 05 58 18.0 +1.4
TYV pmax pmax
comp=Z,66nm,1.0s
YBH Yreka Blue Hor 90.33 38 P P 05 58 17.3 +0.2
comp=Z,5.6nm,1.0s,baz=170,slow=6.1,SNR=2.4
NVAR Mina Array Bea 90.42 43 P P 05 58 18.0 +0.3
comp=Z,6.5nm,1.0s,baz=224,slow=4.8,SNR=4.3
MDJ Mudanjiang 90.58 326 P P 05 58 18.5 +0.5
MDJ S **S 06 09 15.8 +4.7**
MDJ pmax pmax
comp=Z,14nm,0.9s
MDJ pmax pmax
comp=Z,220nm,7.2s
MDJ Mudanjiang 90.58 326 PFAKE 05 58 30.0 +12
MDJ LR LR
comp=Z,1μm,19.0s
DL2 Dalian 90.62 318 P P 05 58 18.0 -0.3
DL2 S **S 06 09 14.9 +3.1**
DL2 pmax pmax
comp=Z,160nm,4.3s
DL2 LR LR
comp=Z,3μm,12.0s
DL2 LR LR
comp=Z,4μm,11.9s
DL2 LR LR
comp=Z,3μm,11.7s
TUC Tucson 91.04 52 P P 05 58 22.5 +1.9
baz=231
TUC Tucson 91.04 52 eP P 05 58 20.8 +0.2
TUC MLR MLR
comp=Z,1μm,21.0s
TUC Tucson 91.04 52 eP P 05 58 20.8 +0.2
TUC LR LR
comp=Z,1μm,21.0s
TIA Tai'an 91.48 313 eP P 05 58 22.8 +0.3
TIA pmax pmax
comp=Z,20nm,0.9s
MOD Modoc Plateau 91.72 39 eP P 05 58 24.7 +1.1
K05A Summer Lake 91.98 38 eP P 05 58 29.9 +5.0
CN2 Changchun 92.00 323 eP P 05 58 24.3 -0.4
CN2 epP pP 05 58 33.1 -1.8
CN2 pmax pmax
comp=Z,20nm,0.8s
CN2 pmax pmax
comp=Z,200nm,7.0s
BMN Battle Mountai 92.39 42 eP P 05 58 26.8 0.0
BMN pmax pmax
comp=Z,3.0nm,0.9s
BMN Battle Mountai 92.39 42 eP P 05 58 26.8 0.0
comp=Z,3.4nm,0.9s
GYA Guiyang 92.53 300 P P 05 58 29.3 +1.6
GYA PP **PP 06 02 13.5 +3.9**
GYA SKS **SKSac 06 09 00.8 +1.7**
GYA S **S 06 09 29.4 -0.5**
GYA SS **SS 06 15 45.0 +2.4**
GYA pmax pmax
comp=Z,30nm,1.0s
GYA pmax pmax
comp=Z,140nm,7.2s
GYA LR LR
comp=Z,830nm,21.8s
GYA LR LR
comp=Z,790nm,22.0s
GYA LR LR
comp=Z,810nm,22.0s
WUAZ Wupatki 92.68 49 PFAKE 05 58 40.0 +12
WUAZ LR LR
comp=Z,2μm,20.0s
KNB Kanab 92.73 47 eP P 05 58 33.4 +4.9
KNB Kanab 92.73 47 eP P 05 58 33.4 +5.0
ENH Enshi 92.77 305 eP P 05 58 27.9 -0.7
comp=Z,15nm,1.0s
ENH LR LR
comp=Z,6μm,19.0s
NKL Nikolayevsk 92.89 337 eP P 05 58 28.0 -0.5
NKL pmax pmax
comp=Z,15nm,0.9s
WVOR Wild Horse Val 92.98 40 eP P 05 58 30.1 +0.7
WVOR MLR MLR
comp=Z,2μm,19.0s
WVOR Wild Horse Val 92.98 40 eP P 05 58 30.1 +0.7
WVOR LR LR
comp=Z,2μm,19.0s
KDAK Kodiak Island 93.05 14 PFAKE 05 58 40.0 +11
KDAK LR LR
comp=Z,5μm,19.0s
NNA Nana 93.06 106 LR LR 06 34 01.3
comp=Z,1μm,18.3s,baz=278,slow=31
KLR Kul'dur 93.11 330 P P 05 58 28.9 -0.7
comp=Z,4.6nm,0.9s,baz=104,slow=4.4,SNR=12
PB01 IPOC Station P 93.51 118 eP P 05 58 28.9 -3.6
NLWA Neilton Lookou 93.85 34 PFAKE 05 58 40.0 +6.8
NLWA LR LR
comp=Z,1μm,19.0s
CMAR Chiang Mai Arr 93.91 289 P P 05 58 33.7 -0.4
comp=Z,0.9nm,0.8s,baz=141,slow=3.2,SNR=3.7
CMAR PP **PP 06 02 19.0 -1.4**
comp=Z,4.7nm,1.0s,baz=139,slow=6.5,SNR=16
CHTO Chiang Mai 94.10 290 PFAKE 05 58 50.0 +15
CHTO LR LR
comp=Z,4μm,20.0s
TX31 Lajitas Ar. Si 94.12 58 eP P 05 58 37.9 +2.9
TXAR Lajitas Array 94.12 58 P P 05 58 35.1 +0.2
comp=Z,1.0nm,1.0s,baz=205,slow=5.5,SNR=6.6
TXAR PKKPbc **PKKPdf 06 15 35.7 -0.5**
comp=Z,0.2nm,0.7s,baz=92,slow=3.8,SNR=3.7
MNTX Cornudas Mount 94.31 55 PFAKE 05 58 50.0 +14
MNTX LR LR
comp=Z,1μm,19.0s
BJT Baijiatuau 94.52 316 PFAKE 05 58 50.0 +14
BJT LR LR
comp=Z,5μm,19.0s
BJI Beijing 94.53 316 P P 05 58 39.3 +2.9
BJI pmax pmax
comp=Z,8.0nm,1.4s
BJI pmax pmax
comp=Z,240nm,10.6s
DUG Dugway, Tooele 94.78 44 PFAKE 05 58 50.0 +12
DUG LR LR
comp=Z,1μm,19.0s
MFID Camas Ranch 95.16 41 eP P 05 58 39.9 +0.5
HAWA Hanford 95.24 37 PFAKE 05 58 50.0 +10
HAWA LR LR
comp=Z,2μm,19.0s
BMO Blue Mountains 95.33 39 PFAKE 05 58 50.0 +10
BMO LR LR
comp=Z,2μm,20.0s
ANMO Albuquerque 95.51 52 P P 05 58 40.7 -0.5
comp=Z,0.8nm,1.0s,baz=163,slow=7.3,SNR=3.6
ANMO Albuquerque 95.51 52 P P 05 58 40.7 -0.5
ANMO LR LR
comp=Z,1μm,20.0s
MVCO Mesa Verde 95.55 49 PFAKE 05 58 50.0 +8.5
MVCO LR LR
comp=Z,1μm,19.0s
MA2 Magadan 95.72 345 PFAKE 05 58 50.0 +8.7
MA2 LR LR
comp=Z,4μm,20.0s
HLID Hailey 96.03 41 P P 05 58 43.6 +0.2
baz=229
HLID Hailey 96.03 41 eP P 05 58 44.1 +0.7
HLID LR LR
comp=Z,2μm,19.0s
HWUT Hardware Ranch 96.40 44 PFAKE 05 59 00.0 +15
HWUT LR LR
comp=Z,2μm,19.0s
CD2 Chengdu 97.16 302 P P 05 58 48.4 -0.3
CD2 sP pP 05 58 59.4 +0.4
CD2 PP **PP 06 02 44.8 -0.7**
CD2 SKS **SKSac 06 09 23.8 +0.2**
CD2 S **ScS 06 10 10.4 +0.1**
CD2 sS sS 06 10 24.0 -3.0
CD2 SS **SS 06 16 49.8 +1.4**
CD2 LR LR
comp=Z,19μm,15.6s
KVTX Kingsville 97.30 62 PFAKE 05 59 00.0 +11
KVTX LR LR
comp=Z,1μm,19.0s
WRAK Wrangell Islan 97.31 24 PFAKE 05 59 00.0 +11
WRAK LR LR
comp=Z,2μm,19.0s
AHID Auburn Hatcher 97.40 43 PFAKE 05 59 00.0 +10
AHID LR LR
comp=Z,1μm,19.0s
LPAZ La Paz 97.41 115 P Pdif 05 58 50.9 -0.1
comp=Z,0.6nm,0.5s,baz=204,slow=6.9,SNR=3.8
LPAZ LR LR 06 38 59.7
comp=Z,299nm,18.1s,baz=245,slow=33
JCT Junction City 97.53 59 PFAKE 05 59 00.0 +10
JCT LR LR
comp=Z,1μm,19.0s
NEW Newport 97.72 36 PFAKE 05 59 00.0 +9.2
NEW LR LR
comp=Z,2μm,20.0s
SDCO Great Sand Dun 97.78 50 PFAKE 05 59 00.0 +8.3
SDCO LR LR
comp=Z,984nm,19.0s
HHC Hu-ho-hao-te 97.78 314 eP Pdif 05 58 52.5 +1.1
HHC SKS **SKSac 06 09 28.8 +2.4**
HHC S **ScS 06 10 19.6 +4.5**
HHC pmax pmax
comp=Z,40nm,1.5s
HHC pmax pmax
comp=Z,170nm,7.1s
HHC LR LR
comp=Z,4μm,17.1s
HHC LR LR
comp=Z,4μm,17.2s
HHC LR LR
comp=Z,2μm,17.9s
SNOW Snow King Moun 98.03 43 eP Pdif 05 58 53.4 +0.8
comp=Z,1.5nm,0.6s
BW06 Boulder Array 98.29 44 PFAKE 05 59 10.0 +16
BW06 LR LR
comp=Z,2μm,19.0s
JTS JuntasAbangare 98.43 83 PFAKE 05 59 10.0 +15
JTS LR LR
comp=Z,621nm,20.0s
SEY Seymchan 98.44 347 ||| iP P 05 58 53.3 -0.3
OTAV Otavalo 98.51 95 PFAKE 05 59 10.0 +14
OTAV LR LR
comp=Z,466nm,19.0s
HIA Hailar 98.62 324 PFAKE 05 59 10.0 +15
HIA LR LR
comp=Z,2μm,19.0s
CPUP Villa Florida 98.64 129 LR LR 06 38 33.3
comp=Z,1μm,18.3s,baz=222,slow=32
BOZ Bozeman (W) 98.90 41 PFAKE 05 59 10.0 +14
BOZ LR LR
comp=Z,2μm,20.0s
ISCO Idaho Springs 98.91 48 PFAKE 05 59 10.0 +13
ISCO LR LR
comp=Z,2μm,19.0s
LKWY Lake 98.91 42 PFAKE 05 59 10.0 +13
LKWY LR LR
comp=Z,4μm,19.0s
RLMT Red Lodge 99.89 42 PFAKE 05 59 10.0 +9.2
RLMT LR LR
comp=Z,2μm,19.0s
COLA College 100.48 13 PFAKE 05 59 10.0 +7.4
COLA LR LR
comp=Z,2μm,20.0s
WMOK Wichita Mounta 100.58 56 PFAKE 05 59 20.0 +16
WMOK LR LR
comp=Z,649nm,19.0s
TEIG Tepich 100.88 73 PFAKE 05 59 20.0 +15
TEIG LR LR
comp=Z,252nm,20.0s
EGMT Eagleton 101.37 40 P Pdif 05 59 09.9 +2.7
baz=233
EGMT Eagleton 101.37 40 PFAKE 05 59 20.0 +13
EGMT LR LR
comp=Z,2μm,20.0s
BILL Bilibino 101.41 354 ||| eP Pdif 05 59 07.9 +1.2
BILL *i* 06 03 19.4
BILL *e* 06 13 02.1
BILL eSS SS 06 17 52.2 +5.9
BILL pmax pmax
comp=Z,2.0nm,1.2s
BILL Bilibino 101.41 354 PFAKE 05 59 20.0 +13
BILL LR LR
comp=Z,12μm,20.0s
DGAR Diego Garcia 101.72 253 PFAKE 05 59 20.0 +11
DGAR LR LR
comp=Z,2μm,19.0s
EGAK Eagle 101.76 15 PFAKE 05 59 20.0 +12
EGAK LR LR
comp=Z,2μm,20.0s
OGNE Ogallala 101.81 49 PFAKE 05 59 20.0 +11
OGNE LR LR
comp=Z,2μm,20.0s
NATX Nacogdoches 101.93 60 PFAKE 05 59 20.0 +10
NATX LR LR
comp=Z,883nm,20.0s
BCIP Isla Barro Col 102.12 87 PFAKE 05 59 20.0 +8.8
BCIP LR LR
comp=Z,1μm,19.0s
CBKS Cedar Bluff 102.13 52 PFAKE 05 59 20.0 +9.3
CBKS LR LR
comp=Z,1μm,20.0s
LAO LASA Array 102.53 42 PFAKE 05 59 20.0 +7.7
LAO LR LR
comp=Z,1μm,19.0s
YAK Yakutsk 103.53 338 PFAKE 05 59 30.0 +14
YAK LR LR
comp=Z,1μm,20.0s
MIAR Mount Ida 104.14 58 PFAKE 05 59 30.0 +10
MIAR LR LR
comp=Z,1μm,19.0s
KSU1 Kansas State U 104.36 53 PFAKE 05 59 30.0 +9.5
KSU1 LR LR
comp=Z,1μm,19.0s
ULN Ulaanbaatar 104.47 318 PFAKE 05 59 30.0 +9.0
ULN LR LR
comp=Z,1μm,20.0s
DGMT Dagmar 104.66 41 PFAKE 05 59 30.0 +8.3
DGMT LR LR
comp=Z,2μm,19.0s
SAML Samuel 105.69 112 PFAKE 06 03 50.0
SAML LR LR
comp=Z,953nm,19.0s
LSA Lhasa 105.82 295 PFAKE 06 03 50.0
LSA LR LR
comp=Z,4μm,19.0s
ECSD EROS Data Cent 106.69 49 PFAKE 06 03 50.0
ECSD LR LR
comp=Z,2μm,21.0s
SPB Sao Paulo 106.85 134 PFAKE 06 03 50.0
SPB LR LR
comp=Z,835nm,19.0s
BRAL Brewton 107.27 64 PFAKE 06 03 50.0
BRAL LR LR
comp=Z,735nm,19.0s
YKA Yellowknife Ar 107.97 26 PKiKP PKiKP 06 03 42.1 -0.7
comp=Z,0.4nm,0.5s,baz=252,slow=1.4,SNR=13
YKA PKKPbc **PKKPbc 06 14 54.3 -2.9**
comp=Z,0.9nm,0.8s,baz=45,slow=3.3,SNR=13
SCIA State Center 107.99 51 PFAKE 06 04 00.0
SCIA LR LR
comp=Z,2μm,19.0s
TLY Talaya 108.36 320 PFAKE 06 04 00.0
TLY LR LR
comp=Z,932nm,19.0s
MTDJ Mount Denham 108.65 80 PFAKE 06 04 00.0
MTDJ LR LR
comp=Z,750nm,21.0s
FFC Flin Flon 109.14 37 PFAKE 06 04 00.0
FFC LR LR
comp=Z,1μm,20.0s
AGMN Agassiz Nation 109.35 45 PFAKE 06 04 00.0
AGMN LR LR
comp=Z,2μm,20.0s
SDV Santo Domingo 109.70 92 PFAKE 06 04 00.0
SDV LR LR
comp=Z,927nm,19.0s
HDIL Hopedale 109.99 54 PFAKE 06 04 00.0
HDIL LR LR
comp=Z,2μm,20.0s
JFWS Jewell Farm 110.40 52 PFAKE 06 04 00.0
JFWS LR LR
comp=Z,2μm,19.0s
TIXI Tiksi 110.69 344 ||| iPKIKP PKiKP 06 03 46.8 -0.9
TIXI pmax pmax
comp=Z,7.0nm,2.5s
TIXI Tiksi 110.69 344 PFAKE 06 04 00.0
TIXI LR LR
comp=Z,2μm,20.0s
GOGA Godfrey 111.00 63 PFAKE 06 04 00.0
GOGA LR LR
comp=Z,1μm,20.0s
EYMN Ely 111.81 46 PFAKE 06 04 00.0
EYMN LR LR
comp=Z,2μm,19.0s
SUR Sutherland 112.45 198 PFAKE 06 04 00.0
SUR LR LR
comp=Z,2μm,19.0s
COWI Conover 112.49 49 PFAKE 06 04 00.0
COWI LR LR
comp=Z,2μm,19.0s
PTGA Pitinga 113.18 107 PFAKE 06 04 10.0
PTGA LR LR
comp=Z,37μm,20.0s
NHSC New Hope 113.35 65 PFAKE 06 04 10.0
NHSC LR LR
comp=Z,2μm,20.0s
SDDR Presa de Saban 114.20 82 PFAKE 06 04 10.0 +14
SDDR LR LR
comp=Z,464nm,20.0s
ACSO Alum Creek Sta 114.22 57 PFAKE 06 04 10.0 +15
ACSO LR LR
comp=Z,3μm,19.0s
WMQ Urumqi 114.53 307 ePKP PKPdf 06 03 55.9 -0.1
WMQ PP **PP 06 04 57.0 +3.4**
WMQ SKS **SKSdf 06 11 05.3 -0.3**
WMQ AMB AMB
comp=Z,38nm,11.8s
WMQ LR LR
comp=Z,1μm,17.6s
WMQ LR LR
comp=Z,730nm,20.4s
WMQ LR LR
comp=Z,270nm,18.0s
AAM Ann Arbor 114.57 54 PFAKE 06 04 10.0 +14
AAM LR LR
comp=Z,3μm,19.0s
BLA Blacksburg 114.85 61 PFAKE 06 04 10.0 +13
BLA LR LR
comp=Z,3μm,19.0s
GRTK Grand Turk 115.50 80 PFAKE 06 04 10.0 +12
GRTK LR LR
comp=Z,979nm,21.0s
CNNC Cliffs of the 115.95 64 PFAKE 06 04 10.0 +11
CNNC LR LR
comp=Z,2μm,20.0s
CBN Corbin Frederi 117.47 61 PFAKE 06 04 10.0 +8.3
CBN LR LR
comp=Z,3μm,20.0s
SJG San Juan 118.08 86 PFAKE 06 04 20.0 +17
SJG LR LR
comp=Z,483nm,20.0s
GRGR Grenville 118.92 94 PFAKE 06 04 20.0 +15
GRGR LR LR
comp=Z,472nm,19.0s
MKAR Makanchi Array 119.15 309 PKP PKPdf 06 04 04.0 -0.7
comp=Z,1.7nm,0.7s,baz=112,slow=1.3,SNR=16
MKAR Makanchi Array 119.15 309 PKIKP PKPdf 06 04 04.0 -0.7
MKAR pmax pmax
comp=Z,2.0nm,0.7s
ZALV Zalesovo Beam 119.72 317 PKP PKPdf 06 04 04.4 -1.1
comp=Z,2.6nm,0.7s,baz=136,slow=1.9,SNR=13
BINY Binghamton 119.85 57 PFAKE 06 04 20.0 +14
BINY LR LR
comp=Z,3μm,19.0s
RES Resolute Bay 119.86 18 ePKIKP PKPdf 06 04 04.7 -0.5
RES *e* 06 05 30.2
RES Resolute Bay 119.86 18 ePKPdf PKPdf 06 04 04.7 -0.5
RES *e*PP **PP 06 05 30.2 +0.4**
FDF Fort de France 120.65 92 PFAKE 06 04 20.0 +11
FDF LR LR
comp=Z,728nm,22.0s
NVS Novosibirsk 120.85 318 ePKIKP PKPdf 06 04 06.0 -1.6
NVS pmax pmax
comp=Z,34nm,2.1s
KSH Kashi 121.22 299 PKP PKPdf 06 04 10.6 +1.5
KSH SKS **SKSdf 06 11 17.1 -1.7**
KSH AMB AMB
comp=Z,83nm,4.3s
ANWB Willy Bob 121.53 89 PFAKE 06 04 20.0 +10
ANWB LR LR
comp=Z,737nm,21.0s
LONY Lake Ozonia 121.57 54 PFAKE 06 04 20.0 +11
LONY LR LR
comp=Z,2μm,19.0s
NCB Newcomb 121.62 55 PFAKE 06 04 20.0 +10
NCB LR LR
comp=Z,4μm,19.0s
NRIK Noril'sk 121.87 335 PKP PKPdf 06 04 08.8 -0.4
comp=Z,5.3nm,0.6s,baz=74,slow=2.6,SNR=15
TKM2 Tokmak 2 122.53 303 ePKIKP PKPdf 06 04 11.0 -0.6
TKM2 MLR MLR
comp=Z,6μm,19.0s
TKM2 Tokmak 2 122.53 303 ePKPdf PKPdf 06 04 11.0 -0.6
TKM2 LR LR
comp=Z,6μm,19.0s
KURK Kurchatov 122.57 313 ePKIKP PKPdf 06 04 10.2 -0.9
KURK MLR MLR
comp=Z,8μm,19.0s
KURK Kurchatov 122.57 313 ePKPdf PKPdf 06 04 10.2 -0.9
KURK LR LR
comp=Z,8μm,19.0s
FRU Bishkek 123.20 303 ePKIKP PKPdf 06 04 12.0 -0.6
AAK Ala-Archa 123.23 302 ePKIKP PKPdf 06 04 12.7 -0.2
AAK MLR MLR
comp=Z,4μm,21.0s
AAK Ala-Archa 123.23 302 ePKPdf PKPdf 06 04 12.7 -0.2
AAK LR LR
comp=Z,4μm,21.0s
EKS2 Erkin-Say 123.74 302 PFAKE 06 04 30.0 +16
EKS2 LR LR
comp=Z,1μm,19.0s
BBSR BB Station 125.12 71 PFAKE 06 04 30.0 +13
BBSR LR LR
comp=Z,1μm,19.0s
PKME Peaks-Kenny Pk 125.36 55 PFAKE 06 04 30.0 +13
PKME LR LR
comp=Z,3μm,19.0s
LSZ Lusaka 125.64 212 PFAKE 06 04 30.0 +12
LSZ LR LR
comp=Z,2μm,19.0s
TSUM Tsumeb 125.85 199 PFAKE 06 04 30.0 +11
TSUM LR LR
comp=Z,1μm,19.0s
KKAR Karatay Array 126.18 302 ePKIKP PKPdf 06 04 17.9 -0.4
KKAR Karatay Array 126.18 302 ePKPdf PKPdf 06 04 17.9 -0.4
RCBR Riachuelo 127.50 130 PFAKE 06 04 30.0 +8.2
RCBR LR LR
comp=Z,2μm,19.0s
BVAR Borovoye Array 127.99 314 PKP PKPdf 06 04 20.6 -0.8
comp=Z,5.1nm,0.7s,baz=90,slow=2.1,SNR=25
BRVK Borovoye 128.06 314 ePKIKP PKPdf 06 04 21.3 -0.3
BRVK MLR MLR
comp=Z,6μm,19.0s
BRVK Borovoye 128.06 314 ePKPdf PKPdf 06 04 21.2 -0.3
BRVK LR LR
comp=Z,6μm,19.0s
KMBO Kilima Mbogo 132.18 232 SKPbc SKPab 06 07 59.5 +3.5
comp=Z,24nm,1.1s,baz=117,slow=5.1,SNR=33
KMBO Kilima Mbogo 132.18 232 SKPbc SKPab 06 07 59.5 +3.5
KMBO LR LR

	comp=Z,808nm,19.0s								
KBS	**Kingsbay**	**133.79 357**	*i*	PKIKP	**PKPdf**	**06 04 31.9**	**+0.2**
KBS	**Kingsbay**	**133.79 357**		PFAKE		06 04 40.0	+8.3
KBS				LR	LR		
	comp=Z,4μm,19.0s						
GEYT	**Alibeck**	**134.28 293**		PKP	**PKPdf**	**06 04 33.7**	**-0.2**
	comp=Z,1.6nm,0.3s,baz=325,slow=2.3,SNR=3.7						
GEYT				SKPbc	**SKPab**	**06 08 03.8**	**-0.4**
	comp=Z,6.0nm,0.8s,baz=247,slow=3.1,SNR=5.2						
SPITS	**Spitsberger Ar**	**134.29 356**		PKP	**PKPdf**	**06 04 30.3**	**-2.4**
	comp=Z,5.0nm,0.7s,baz=230,slow=3.4,SNR=11						
SFJD	**Kangerlussuaq**	**134.53 26**		PFAKE		06 04 50.0	+17
SFJD				LR	LR		
	comp=Z,4μm,19.0s						
ARU	**Arti**	**134.85 319**	*i*	PKIKP	**PKPdf**	**06 04 34.3**	**+0.1**
ARU	**Arti**	**134.85 319**	*e*	PKPdf	**PKPdf**	**06 04 33.7**	**-0.6**
ARU			*e*	SKPbc	**SKPab**	**06 08 04.9**	**-1.0**
ARU				LR	LR		
	comp=Z,6μm,19.0s						
ASCN	**Ascension**	**136.54 157**		PFAKE		06 04 50.0	+11
ASCN				LR	LR		
	comp=Z,2μm,20.0s						
LVZ	**Lovozero**	**140.22 341**		PKIKP	**PKPdf**	**06 04 42.0**	**-1.9**
LVZ	**Lovozero**	**140.22 341**		PFAKE		06 05 00.0	+16
LVZ				LR	LR		
	comp=Z,8μm,19.0s						
RAYN	**Ar Rayn**	**140.39 268**		PFAKE		06 05 00.0	+14
RAYN				LR	LR		
	comp=Z,2μm,21.0s						
KEV	**Kevo**	**140.59 346**		PFAKE		06 05 00.0	+16
KEV				LR	LR		
	comp=Z,7μm,19.0s						
ARCES	**ARCESS Array B**	**141.06 347**		PKhKP	PKPpre	06 04 40.4	
	comp=Z,8.7nm,0.9s,baz=49,slow=2.0,SNR=19						
ARE0	**ARCESS Array S**	**141.06 347**	*e*	P	PKPpre	06 04 41.1	
TMCR	**Tamitsa**	**141.59 335**	*e*	PKIKP	**PKPdf**	**06 04 49.8**	**+3.4**
TMCR				pmax	pmax		
	comp=Z,37nm,1.2s						
KTK1	**Kautokeino**	**141.93 348**	*e*	P	PKPpre	06 04 43.1	
HEF	**Hetta**	**142.38 347**	*e*	P	PKPpre	06 04 44.2	
KLMR	**Klimovskoe**	**142.87 330**	*e*	PKHKP	PKPpre	06 04 42.2	
KLMR				pmax	pmax		
	comp=Z,47nm,1.3s						
MSF	**Maaselka**	**143.18 342**		PKIKP	**PKPdf**	**06 04 48.8**	**-0.4**
STEI	**Steigen**	**144.17 351**	*e*	P	**PKPdf**	**06 04 52.9**	**+2.0**
DGRG	**David-gareji**	**144.43 297**		P	**PKPab**	**06 04 50.1**	**-0.4**
DGRG	**David-gareji**	**144.43 297**	*e*	PKIKP	**PKPab**	**06 04 50.1**	**-0.4**
GNI	**Garni**	**144.88 294**	*e*	PKIKP	**PKPab**	**06 04 51.3**	**-1.0**
GNI				MLR	MLR		
	comp=Z,4μm,22.0s						
GNI	**Garni**	**144.88 294**	*e*	PKPdf	**PKPab**	**06 04 51.3**	**-1.0**
GNI				LR	LR		
	comp=Z,4μm,22.0s						
TBLG	**Delisi**	**144.91 297**		P	PKPbc	06 04 52.4	+0.1
TBLG	**Delisi**	**144.91 297**	*e*	PKIKP	PKPbc	06 04 52.3	0.0
GUDG	**Gudauri**	**145.09 298**		P	**PKPbc**	**06 04 52.7**	**-0.4**
HAKT	**HAKKARI**	**145.51 290**	*i*	P	**PKPdf**	**06 04 53.4**	**-1.1**
ZEI	**Tsey**	**145.51 299**	*i*	PKIKP	**PKPdf**	**06 04 53.6**	**-0.7**
ZEI				pmax	pmax		
	comp=Z,216nm,1.8s						
VRH	**Novokhopyorsk**	**145.64 314**	*e*	PKIKP	**PKPdf**	**06 04 53.5**	**-0.4**
VRH				pmax	pmax		
	comp=Z,110nm,1.1s						
DYDN	**Diyadin**	**145.66 293**	*i*	P	**PKPbc**	**06 04 54.8**	**-0.2**
NCK	**Nalchik**	**145.70 300**⇓	*e*	PKP2	**PKPbc**	**06 04 54.6**	**-0.1**
VMUR	**Van-Muradiye**	**145.72 292**	*i*	P	**PKPdf**	**06 04 53.1**	**-1.7**
EAK	**Akyaka**	**145.75 295**	*i*	P	**PKPdf**	**06 04 54.4**	**-0.3**
KONS	**Konsvik**	**145.79 352**	*e*	P	**PKPdf**	**06 04 53.9**	**+0.2**
KONS				IAmb	IAmb	06 04 54.8	
	comp=Z,104nm,0.8s						
TVAN	**Van**	**145.82 291**	*i*	P	**PKPdf**	**06 04 53.6**	**-1.3**
AKH	**Akhalkalaki**	**145.84 296**		P	**PKPdf**	**06 04 54.8**	**0.0**
AKH	**Akhalkalaki**	**145.84 296**⇑	*i*	P	**PKPab**	**06 04 55.8**	**-0.1**
AKH	**Akhalkalaki**	**145.84 296**	*e*	PKP2	**PKPdf**	**06 04 54.8**	**0.0**
MOR8	**Moi Rana**	**145.94 351**	*e*	P	**PKPdf**	**06 04 53.7**	**-0.3**
MOR8				IAmb	IAmb	06 04 54.2	
	comp=Z,425nm,1.9s						
STOK	**Stokkvaagen**	**145.96 352**	*e*	P	**PKPab**	**06 04 55.3**	**0.0**
STOK				IAmb	IAmb	06 05 00.6	
	comp=N,48nm,1.0s						
GOF	**Gofitskoye**	**145.97 303**⇓	*i*	PKP2	**PKPbc**	**06 04 55.6**	**+0.1**
GOF				pmax	pmax		
	comp=Z,92nm,0.8s						
GEVA	**Gevas**	**146.08 291**	*i*	P	**PKPdf**	**06 04 55.3**	**0.0**
KBZ	**Khabaz**	**146.19 301**		PKPbc	**PKPbc**	**06 04 55.9**	**-0.2**
	comp=Z,20nm,1.0s,baz=47,slow=3.0,SNR=24						
MOS	**Moscow**	**146.25 323**	*e*	PKIKP	**PKPdf**	**06 04 54.3**	**-0.5**
MOS				pmax	pmax		
	comp=Z,369nm,1.1s						
MOS				pmax	pmax		
	comp=Z,700nm,1.5s						
KIV	**Kislovodsk**	**146.32 301**	*i*	PKP2	**PKPdf**	**06 04 56.0**	**+0.5**
KIV				pmax	pmax		
	comp=Z,43nm,1.1s						
KIV	**Kislovodsk**	**146.32 301**	*e*	PKPbc	**PKPbc**	**06 04 56.6**	**-0.1**
KIV				LR	LR		
	comp=Z,8μm,19.0s						
NEY	**Neytrino**	**146.35 300**	*d*	PKP2	**PKPbc**	**06 04 57.2**	**+0.3**
EPOS	**Posof**	**146.42 297**	*i*	P	**PKPdf**	**06 04 55.0**	**-0.7**
EATA	**Eleskirt**	**146.59 294**	*i*	P	**PKPbc**	**06 04 57.3**	**-0.7**
LPSR	**Galich'ya Gora**	**146.83 317**	*e*	PKP2	**PKPbc**	**06 04 56.8**	**-0.9**
LPSR				pmax	pmax		
	comp=Z,140nm,1.0s						
CHVG	**Ch'k'valeri**	**146.85 299**⇑	*i*	P	**PKPbc**	**06 04 58.5**	**+0.3**
ARTV	**Artvin**	**147.03 296**	*i*	P	**PKPbc**	**06 04 58.0**	**-1.0**
DAGI	**Agillar**	**147.04 296**	*i*	P	**PKPbc**	**06 04 58.0**	**-0.9**
OBN	**Obninsk**	**147.07 323**	*de*	PKIKP	**PKPdf**	**06 04 56.3**	**+0.1**
OBN			*i*			06 05 01.2	
OBN			*e*			06 08 30.8	
OBN			*e*	PPP	PPP	06 11 39.3	
OBN				SSS	SSS	06 32 55.0	
OBN				pmax	pmax		
	comp=Z,357nm,2.0s						
OBN				pmax	pmax		
	comp=Z,89nm,1.1s						
OBN	**Obninsk**	**147.07 323**	*e*	PKPbc	**PKPbc**	**06 04 58.7**	**+0.4**
OBN				LR	LR		
	comp=Z,6μm,19.0s						
DDEM	**Demirkent**	**147.16 296**	*i*	P	**PKPbc**	**06 04 58.7**	**-0.5**
VSR	**Storozhevoye**	**147.17 315**	*e*	PKIKP	**PKPdf**	**06 04 57.1**	**+0.6**
VSR				pmax	pmax		
	comp=Z,100nm,0.9s						
PUL	**Pulkovo**	**147.20 333**⇑	*i*	PKIKP	**PKPdf**	**06 04 56.9**	**+0.7**
DBAD	**Bademkaya**	**147.21 296**	*i*	P	**PKPbc**	**06 04 58.2**	**-1.2**
DBOC	**Borcka**	**147.22 296**	*i*	P	**PKPdf**	**06 04 57.7**	**+0.7**
FINES	**FINESS Array B**	**147.46 338**		PKP	**PKPdf**	**06 04 56.2**	**-0.5**
	comp=Z,31nm,1.0s,baz=182,slow=36,SNR=204						
FINES				PKPbc	**PKPbc**	**06 04 58.9**	**-0.3**
	comp=Z,54nm,0.6s,baz=49,slow=3.4,SNR=197						
FINES	**FINESS Array B**	**147.46 338**		PKIKP	**PKPdf**	**06 04 56.2**	**-0.5**
FINES						06 04 58.9	
FINES				pmax	pmax		
	comp=Z,37nm,0.5s						
FINES				pmax	pmax		
	comp=Z,54nm,0.6s						
ERZM	**Erzurum**	**147.46 294**	*i*	P	**PKPbc**	**06 05 00.8**	**+0.5**
BTMN	**Batman**	**147.46 290**	*i*	P	**PKPbc**	**06 04 59.1**	**-1.1**
BNGL	**BINGOL**	**147.61 292**	*i*	P	**PKPbc**	**06 05 00.5**	**-0.2**
MARD	**Mardin**	**147.81 289**	*i*	P	**PKPbc**	**06 05 00.0**	**-1.1**
NSS	**Namsos**	**147.82 352**	*e*	P	**PKPbc**	**06 05 00.1**	**-0.1**
KOPT	**Kop Dagi**	**148.13 294**	*i*	P	**PKPdf**	**06 04 59.5**	**+0.7**
SOC	**Sochi**	**148.50 301**	*i*	PKIKP	**PKPdf**	**06 05 00.5**	**+1.6**
SOC				pmax	pmax		
	comp=Z,58nm,1.0s						
KELT	**Kelkit**	**149.08 294**	*i*	P	**PKPdf**	**06 05 02.2**	**+1.9**
TBLU	**Trondheim**	**149.26 352**	*e*	P	**PKPbc**	**06 05 03.6**	**-0.3**
ELZG	**Elazig**	**149.29 291**	*i*	P	**PKPbc**	**06 05 04.6**	**-0.4**
VSU	**Vasula**	**149.44 334**	*c*	PKP2	**PKPbc**	**06 05 03.4**	**-1.0**
SURC	**SANLIURFA_SURC**	**149.51 288**	*i*	P	**PKPbc**	**06 05 04.9**	**-0.5**
KEMA	**Kemaliye**	**149.68 292**	*i*	P	**PKPbc**	**06 05 05.8**	**0.0**
ATAB	**Bozova**	**149.80 289**	*i*	P	**PKPbc**	**06 05 05.6**	**-0.5**
SUSE	**Susehri**	**149.88 294**	*i*	P	**PKPbc**	**06 05 05.8**	**-0.6**
ANN	**Anapa**	**149.95 304**	*i*	PKIKP	**PKPdf**	**06 05 00.3**	**-0.9**
ANN			*e*			06 05 17.0	
ANN			*e*	PPP	PPP	06 11 59.2	
ANN				pmax	pmax		
	comp=Z,129nm,1.5s						
SLMH	**Al Salmeh**	**150.01 286**	*e*	P	**PKPdf**	**06 05 01.6**	**0.0**
AKCD	**Akcadag**	**150.12 291**	*i*	P	**PKPbc**	**06 05 06.7**	**-0.3**
MOL	**Molde**	**150.19 354**	*e*	P	**PKPbc**	**06 05 06.3**	**+0.1**
CUZAR	**Zara_SIVAS**	**150.23 294**	*i*	P	**PKPbc**	**06 05 07.8**	**+0.6**
GZT	**Gaziantep**	**150.37 289**	*i*	P	**PKPbc**	**06 05 07.4**	**-0.2**
CUKAN	**kangal_SIVAS**	**150.47 293**	*i*	P	**PKPbc**	**06 05 07.0**	**-0.8**
CUGUR	**Gurin_S¨VAS**	**150.63 291**	*i*	P	**PKPbc**	**06 05 08.0**	**-0.2**
TOTH	**TOTAH**	**150.90 280**	*e*	P	**PKPbc**	**06 05 08.8**	**-0.1**
AYKD	**Aykdinkavak**	**150.98 289**	*i*	P	**PKPbc**	**06 05 08.4**	**-0.5**
CUALT	**Altinyayla-SIV**	**151.03 293**	*i*	P	**PKPbc**	**06 05 09.7**	**+0.6**
DRWC	**Darouich**	**151.05 287**	*e*	P	**PKPbc**	**06 05 08.3**	**-0.8**
HAWK	**Haweek**	**151.07 283**	*e*	P	**PKPbc**	**06 05 08.2**	**-1.1**
TCHB	**Talchebab**	**151.16 279**	*e*	P	**PKPbc**	**06 05 07.9**	**-1.5**
WRDH	**Warideh**	**151.18 285**	*e*	P	**PKPbc**	**06 05 08.5**	**-1.0**
BIDA	**Albida**	**151.20 284**	*e*	P	**PKPbc**	**06 05 09.3**	**-0.3**
NB2	**NORSAR Subarra**	**151.28 350**		PKP	**PKPbc**	**06 05 08.6**	**-0.2**
	comp=Z,39nm,0.8s,baz=18,slow=2.6						
NB2	**NORSAR Subarra**	**151.28 350**		PKP	**PKPbc**	**06 05 08.6**	**-0.2**
	baz=18,slow=2.6						
NOA	**NORSAR Array B**	**151.28 350**		PKP	**PKPdf**	**06 05 02.4**	**-0.4**
	comp=Z,0.9nm,0.7s,baz=213,slow=22,SNR=8.2						
NOA				PKPbc	**PKPbc**	**06 05 08.7**	**-0.2**
	comp=Z,27nm,0.9s,baz=15,slow=4.1,SNR=56						
BRBR	**Barbar**	**151.30 280**	*e*	P	**PKPbc**	**06 05 09.2**	**-0.9**
CUSAR	**Sarkisla-SIVAS**	**151.42 293**	*i*	P	**PKPbc**	**06 05 09.2**	**-0.9**
IZAR	**Zarasai**	**151.52 330**	*e*	P	**PKPbc**	**06 05 10.0**	**+0.6**
IZAR				IAmb	IAmb	06 05 28.0	
	comp=Z,24nm,0.9s						
IDID	**Didziasalis**	**151.60 329**	*e*	P	**PKPbc**	**06 05 10.1**	**+0.4**
IDID				IAmb	IAmb	06 05 29.4	
	comp=Z,28nm,1.0s						
MICGM	**Minsk**	**151.62 327**⇓	*e*	P	**PKPbc**	**06 05 10.0**	**+0.3**
MICGM				PM		06 05 11.0	
	comp=Z,0.2nm,1.5s						
MNK	**Minsk**	**151.62 327**⇓	*e*	PKIKP	**PKPbc**	**06 05 10.0**	**+0.3**
MNK				pmax	pmax		
	comp=Z,200nm,1.5s						
ISAL	**Salakas**	**151.69 330**	*e*	P	**PKPbc**	**06 05 10.3**	**+0.4**
ISAL				IAmb	IAmb	06 05 28.5	
	comp=Z,18nm,0.9s						
IIGN	**Ignalina**	**151.80 330**	*e*	P	**PKPbc**	**06 05 10.7**	**+0.6**
IIGN				IAmb	IAmb	06 05 28.8	
	comp=Z,39nm,1.0s						
NACGM	**Naroch**	**151.86 329**	*e*	P	**PKPbc**	**06 05 10.0**	**-0.3**
NACGM				PM		06 05 12.0	
	comp=Z,0.3nm,1.0s						
SIM	**Simferopol'**	**152.22 305**	*e*	PKIKP	**PKPbc**	**06 05 09.1**	**-2.4**
SIM				pmax	pmax		
	comp=Z,27nm,0.7s						
BOYT	**Boyabat**	**152.29 297**	*i*	P	**PKPbc**	**06 05 12.0**	**+0.2**
COAL	**Corum-Alaca**	**152.34 295**	*i*	P	**PKPbc**	**06 05 11.1**	**-0.9**
DED	**Mersin**	**152.56 288**	*i*	P	**PKPbc**	**06 05 10.8**	**-1.7**
LIC	**Lamto**	**152.63 166**	*e*	PKP1	**PKPdf**	**06 05 07.0**	**+0.7**
	comp=Z,89nm,1.5s						
KIC	**Kosan Boka**	**152.83 166**	*e*	PKP1	**PKPdf**	**06 05 06.4**	**-0.2**
	comp=Z,130nm,1.2s						
KONO	**Kongsberg**	**152.84 351**	*e*	PKIKP	**PKPdf**	**06 05 06.2**	**+1.1**
KONO			*e*			06 05 12.3	
KONO			*e*			06 05 23.2	
KONO				MLR	MLR		
	comp=Z,8μm,21.0s						
KONO	**Kongsberg**	**152.84 351**	*e*	PKPdf	**PKPdf**	**06 05 06.2**	**+1.1**
KONO			*e*	PKPbc	**PKPbc**	**06 05 12.3**	**0.0**
KONO			*e*	PKPab	**PKPab**	**06 05 23.2**	**-0.2**
KONO				LR	LR		
	comp=Z,8μm,21.0s						
CDAG	**Cicekdag**	**152.86 293**	*i*	P	**PKPbc**	**06 05 10.2**	**-3.0**
TIC	**Toumodi**	**153.04 165**	*e*	PKP1	**PKPdf**	**06 05 07.1**	**+0.2**
AKASG	**Malin Array Be**	**153.10 319**		PKP	**PKPdf**	**06 05 05.2**	**-0.6**
	comp=Z,0.2nm,0.4s,baz=47,slow=1.6,SNR=6.4						
AKASG				PKPbc	**PKPbc**	**06 05 12.5**	**-0.7**
	comp=Z,3.9nm,0.5s,baz=51,slow=1.9,SNR=39						
DBIC	**Dimbokro**	**153.10 166**		PKP	**PKPdf**	**06 05 07.2**	**+0.3**
	comp=Z,3.1nm,0.9s,baz=196,slow=4.4,SNR=4.7						
DBIC				PKPab	**PKPab**	**06 05 24.6**	**-1.1**
	comp=Z,3.2nm,0.5s,baz=136,slow=2.8,SNR=10						
KIEV	**Kiev**	**153.11 319**	*c*	PKIKP	**PKPbc**	**06 05 11.8**	**-1.4**
KIEV	**Kiev**	**153.11 319**	*e*	PKPbc	**PKPbc**	**06 05 13.0**	**-0.2**
KIEV				LR	LR		
	comp=Z,4μm,19.0s						
KERG	**Konya-Eregli**	**153.11 289**	*i*	P	**PKPbc**	**06 05 10.2**	**-3.7**
BRTR	**Keskin Array B**	**153.41 294**		PKP	**PKPdf**	**06 05 05.5**	**-1.4**
	comp=Z,0.6nm,0.8s,baz=116,slow=11,SNR=2.9						
BRTR				PKPbc	**PKPbc**	**06 05 14.0**	**-0.4**
	comp=Z,8.6nm,0.5s,baz=138,slow=3.6,SNR=37						
CSS	**Mathiatis**	**153.64 283**	*e*	PKPbc	**PKPbc**	**06 05 15.3**	**+0.4**
CSS				LR	LR		
	comp=Z,383nm,19.0s						
SUW	**Suwalki**	**154.00 330**	*e*	PKP	**PKPbc**	**06 05 15.1**	**+0.1**
ANTO	**Ankara**	**154.05 294**		PFAKE		06 05 20.0	+4.3
ANTO				LR	LR		
	comp=Z,80nm,21.0s						
ISP	**Isparta**	**155.97 290**		PFAKE		06 05 20.0	+10
ISP				LR	LR		
	comp=Z,1μm,20.0s						
KORT	**Korkueli**	**156.13 288**	*i*	P	**PKPdf**	**06 05 10.0**	**-0.7**
VRI	**Vrincioaia**	**156.83 311**⇑	*i*	P	**PKPab**	**06 05 38.1**	**-2.9**
VRI	**Vrincioaia**	**156.83 311**⇑	*i*	PKP2	**PKPab**	**06 05 38.1**	**-2.9**
PLOR	**Plostina**	**156.88 311**⇑	*i*	P	**PKPab**	**06 05 48.0**	**+6.8**
KWP	**Kalwaria Pacla**	**157.16 323**	*e*	PKP	**PKPab**	**06 05 41.5**	**-0.7**
KWP	**Kalwaria Pacla**	**157.16 323**⇑	*i*	P	**PKPab**	**06 05 40.9**	**-1.3**
KWP	**Kalwaria Pacla**	**157.16 323**⇑	*i*	PKP2	**PKPab**	**06 05 40.9**	**-1.3**
ESK	**Eskdalemuir**	**157.47 7**		PFAKE		06 05 20.0	+8.4
ESK				LR	LR		
	comp=Z,5μm,19.0s						
CRVS	**Cervenica-Dubn**	**158.25 323**	*e*	PKP2	**PKPab**	**06 05 47.0**	**0.0**
CRVS	**Cervenica-Dubn**	**158.25 323**	*e*	PKP	**PKPab**	**06 05 47.0**	**0.0**
ARR	**Arges**	**158.37 311**⇑	*i*	P	**PKPdf**	**06 05 13.3**	**+0.2**
NIE	**Niedzica**	**158.49 325**	*e*	PKP	**PKPdf**	**06 05 13.4**	**+0.4**
NIE	**Niedzica**	**158.49 325**	*e*	PKIKP	**PKPdf**	**06 05 13.5**	**+0.4**
DRGR		**158.82 317**⇑	*i*	P	**PKPab**	**06 05 49.5**	**-0.1**
DRGR		**158.82 317**⇑	*i*	PKP2	**PKPab**	**06 05 49.6**	**-0.1**
KECS	**Kecovo**	**159.02 323**	*e*	PKP2	**PKPab**	**06 05 50.3**	**0.0**
KECS	**Kecovo**	**159.02 323**	*e*	PKP	**PKPab**	**06 05 50.2**	**0.0**
LANS	**Liptovska Anna**	**159.07 326**	*e*	PKP2	**PKPab**	**06 05 51.0**	**+0.4**
LANS	**Liptovska Anna**	**159.07 326**	*e*	PKP	**PKPab**	**06 05 51.0**	**+0.4**
LANS			*e*	PCP		06 21 14.5	
LANS			*e*			06 21 23.4	
OKC	**Ostrava-Krasne**	**159.18 329**	*e*	PKPAB	**PKPab**	**06 05 50.3**	**-0.6**
OKC	**Ostrava-Krasne**	**159.18 329**	*e*	PKP2	**PKPab**	**06 05 50.3**	**-0.6**
UPC	**Upice**	**159.54 333**	*e*	PKPAB	**PKPab**	**06 05 52.5**	**0.0**
UPC	**Upice**	**159.54 333**	*e*	PKP2	**PKPab**	**06 05 52.5**	**0.0**
DPC	**Dobruska-Polom**	**159.54 332**	*e*	PKPDF	**PKPdf**	**06 05 13.9**	**-0.4**
DPC			*e*	PKPAB	**PKPab**	**06 05 52.3**	**-0.3**
DPC	**Dobruska-Polom**	**159.54 332**	*e*	PKIKP	**PKPdf**	**06 05 13.9**	**-0.4**
DPC			*e*			06 05 52.3	
KRLC	**Kraliky**	**159.58 331**	*e*	PKPAB	**PKPab**	**06 05 52.6**	**-0.1**
KRLC	**Kraliky**	**159.58 331**	*e*	PKP2	**PKPab**	**06 05 52.6**	**-0.1**
PSZ	**Piszkesteto**	**159.68 322**		PFAKE		06 05 30.0	+15
PSZ				LR	LR		
	comp=Z,9μm,21.0s						
VYHS	**Vyhne**	**159.82 325**	*e*	PKP2	**PKPab**	**06 05 53.4**	**-0.4**
VYHS	**Vyhne**	**159.82 325**	*e*	PKP	**PKPab**	**06 05 53.4**	**-0.4**
CLL	**Collm**	**159.90 339**	*e*	PKPdf	**PKPdf**	**06 05 17.0**	**+2.4**
CLL			⇓	*i* PKPab	**PKPab**	**06 05 53.4**	**-0.6**
	comp=Z,133nm,2.1s						
CLL			*i*			06 06 04.6	
CLL			*e*	PP	**PP**	**06 09 35.0**	**-0.5**
CLL	**Collm**	**159.90 339**	*e*	(P)		06 09 48.0	
CLL			*e*			06 09 56.0	
CLL			*e*			06 10 07.0	
CLL	**Collm**	**159.90 339**⇓	*e*	PKIKP	**PKPdf**	**06 05 17.0**	**+2.4**
CLL			*i*			06 05 53.4	
CLL				pmax	pmax		
	comp=Z,83nm,2.1s						
BRG	**Berggiesshubel**	**159.98 337**	*e*	PKP	**PKPdf**	**06 05 14.2**	**-0.5**
	comp=Z,7.9nm,1.4s						
BRG			*i*			06 05 53.8	
	comp=Z,20nm,1.1s						
BRG	**Berggiesshubel**	**159.98 337**	*e*	PKIKP	**PKPdf**	**06 05 14.2**	**-0.5**
BRG			*i*			06 05 53.8	
BRG				pmax	pmax		
	comp=Z,5.0nm,1.4s						
BRG				pmax	pmax		
	comp=Z,8.0nm,1.1s						
PVCC	**Panska Ves**	**160.06 335**	*e*	PKPAB	**PKPab**	**06 05 54.7**	**0.0**
PVCC			*e*	pPKP	pPKP	06 06 00.7	
PVCC	**Panska Ves**	**160.06 335**	*e*	PKP2	**PKPab**	**06 05 54.7**	**0.0**
SANT	**Santorini**	**160.08 286**		PFAKE		06 05 30.0	+15
SANT				LR	LR		
	comp=Z,1μm,20.0s						
TORD	**Torodi Ar. Bea**	**160.21 180**		PKP	**PKPdf**	**06 05 16.2**	**+0.1**
	comp=Z,2.9nm,1.1s,baz=333,slow=0.7,SNR=6.4						
TORD				PKPab	**PKPab**	**06 05 55.2**	**-0.9**
	comp=Z,3.4nm,0.8s,baz=166,slow=2.9,SNR=7.1						
VRAC	**Vranov**	**160.25 330**⇑	*i*	P	**PKPab**	**06 05 55.1**	**-0.5**
VRAC	**Vranov**	**160.25 330**⇑	*i*	PKP2	**PKPab**	**06 05 55.1**	**-0.5**
MDVR	**Moldovita**	**160.47 313**⇓	*i*	P	**PKPab**	**06 05 55.1**	**-1.7**
GOPC	**GO Pecny, Ondr**	**160.48 334**	*e*	PKPAB	**PKPab**	**06 05 56.3**	**-0.3**
GOPC	**GO Pecny, Ondr**	**160.48 334**	*e*	PKP2	**PKPab**	**06 05 56.3**	**-0.3**
PRU	**Pruhonice**	**160.51 334**	*e*	PKPAB	**PKPab**	**06 05 56.6**	**-0.1**
PRU	**Pruhonice**	**160.51 334**	*e*	PKP2	**PKPab**	**06 05 56.6**	**-0.1**
TREC	**Trest**	**160.71 331**	*e*	PKPAB	**PKPab**	**06 05 57.3**	**-0.3**
TREC	**Trest**	**160.71 331**	*e*	PKP2	**PKPab**	**06 05 57.3**	**-0.3**
NKC	**Novy Kostel**	**161.02 338**	*e*	PKPAB	**PKPab**	**06 05 59.0**	**+0.1**
NKC	**Novy Kostel**	**161.02 338**	*e*	PKP2	**PKPab**	**06 05 59.0**	**+0.1**
PKSM	**Moragy**	**161.44 320**⇓	*i*	P	**PKPdf**	**06 05 16.0**	**-0.4**
PKSM	**Moragy**	**161.44 320**⇓	*i*	PKIKP	**PKPdf**	**06 05 16.0**	**-0.4**
KHC	**Kasperske Hory**	**161.57 334**	*e*	PKPDF	**PKPdf**	**06 05 16.0**	**-0.6**
KHC			*e*	PKPAB	**PKPab**	**06 06 01.2**	**-0.2**
KHC	**Kasperske Hory**	**161.57 334**	*e*	PKIKP	**PKPdf**	**06 05 16.0**	**-0.6**
KHC			*e*			06 06 01.2	
CONA	**Conrad Observa**	**161.61 328**	*i*	PKPdf	**PKPdf**	**06 05 16.5**	**-0.2**
CONA			*i*	PKPab	**PKPab**	**06 06 01.5**	**-0.2**
	comp=Z,12nm,0.8s						
GERES	**GERESS Array B**	**161.77 334**		PKP	**PKPdf**	**06 05 16.0**	**-0.9**
	comp=Z,0.3nm,0.3s,baz=76,slow=0.6,SNR=6.3						
GERES				PKPab	**PKPab**	**06 06 01.6**	**-0.8**
	comp=Z,4.0nm,0.8s,baz=35,slow=4.9,SNR=13						
GERES	**GERESS Array B**	**161.77 334**		PKIKP	**PKPdf**	**06 05 16.0**	**-0.9**
GERES						06 06 01.6	
GERES				pmax	pmax		
	comp=Z,1.0nm,0.8s						
GERES				pmax	pmax		
	comp=Z,4.0nm,0.8s						
GRFO	**Grafenberg**	**161.87 339**	*e*	PKIKP	**PKPdf**	**06 05 15.1**	**-1.7**
GRFO			*e*			06 06 03.1	
GRFO	**Grafenberg**	**161.87 339**	*e*	PKPdf	**PKPdf**	**06 05 15.1**	**-1.7**
GRFO			*e*	PKPab	**PKPab**	**06 06 03.1**	**+0.4**
ARSA	**Arzberg**	**162.27 327**	*i*	PKPab	**PKPab**	**06 06 04.3**	**-0.2**
	comp=Z,4.5nm,0.7s						
MOA	**Molln**	**162.35 331**	*i*	PKPab	**PKPab**	**06 06 04.4**	**-0.4**
	comp=Z,7.0nm,0.8s						
SOKA	**Soboth**	**162.92 327**	*i*	PKPdf	**PKPdf**	**06 05 17.2**	**-0.8**
SOKA			*i*	PKPab	**PKPab**	**06 06 06.7**	**-0.8**
	comp=Z,6.4nm,1.0s						
WLF	**Walferdange**	**163.03 350**		PFAKE		06 05 30.0	+12
WLF				LR	LR		
	comp=Z,5μm,21.0s						
TIR	**Tirane**	**163.24 305**		PFAKE		06 05 30.0	+12
TIR				LR	LR		
	comp=Z,6μm,20.0s						
KBA	**Koelnbreinsper**	**163.34 331**	*i*	PKPdf	**PKPdf**	**06 05 17.2**	**-1.4**
KBA			*i*	PKPab	**PKPab**	**06 06 06.9**	**-2.5**
	comp=Z,3.1nm,0.7s						
MYKA	**Terra Mystica**	**163.57 329**		PKPdf	**PKPdf**	**06 05 17.9**	**-0.8**
MYKA			*

ASAJ Asahikawa 6.11 1 P **Pn 05 48 13.8 +0.9**
1.8nm,0.3s,baz=101,slow=15,SNR=3.9
ASAJ S **Sn 05 49 22.9 +0.3**
0.9nm,0.3s,baz=127,slow=20,SNR=4.0
USRK Ussuriysk Ar. 10.01 311 P Pn 05 49 10.3 +3.8
0.6nm,0.3s,baz=127,slow=15,SNR=13
KSRS Korea Array 11.50 272 P Pn 05 49 32.2 +5.4
0.4nm,0.3s,baz=89,slow=13,SNR=7.4
KLR Kul'dur 13.61 329 P **Pn 05 49 55.6 0.0**
0.2nm,0.3s,baz=134,slow=13,SNR=4.2
SONM Songino Array 27.93 302 P **P 05 52 33.6 +0.7**
2.9nm,0.6s,baz=106,slow=8.5,SNR=7.0
H11N2 WAKE ISLAND Hy 27.98 124 T T 06 21 36.7
baz=316,slow=75,SNR=356
H11N1 WAKE ISLAND Hy 27.99 124 T T 06 21 41.3
baz=316,slow=75,SNR=263
H11N3 WAKE ISLAND Hy 28.00 124 T T 06 21 49.7
baz=316,slow=75,SNR=196
ZALV Zalesovo Beam 41.86 312 P **P 05 54 32.9 +0.4**
2.9nm,0.5s,baz=87,slow=7.4,SNR=12
CMAR Chiang Mai Arr 42.52 255 P **P 05 54 39.0 +0.7**
0.3nm,0.3s,baz=34,slow=7.2,SNR=4.6
MKAR Makanchi Array 44.29 301 P **P 05 54 52.6 +0.3**
1.6nm,0.6s,baz=85,slow=9.9,SNR=18
ILAR Eielson Array 48.25 33 P **P 05 55 22.7 -0.4**
0.4nm,0.7s,baz=261,slow=7.3,SNR=6.4
INK Inuvik 53.16 28 P **P 05 56 00.1 +0.1**
0.3nm,0.5s,baz=312,slow=4.4,SNR=3.5
YKA Yellowknife Ar 62.57 31 P **P 05 57 05.7 -0.5**
0.2nm,0.6s,baz=304,slow=6.7,SNR=6.0
GEYT Alibeck 64.07 299 P **P 05 57 16.4 -0.2**
1.7nm,0.4s,baz=20,slow=4.7,SNR=3.6
FINES FINESS Array B 68.33 332 P **P 05 57 43.4 -0.1**
2.2nm,0.9s,baz=1.4,slow=7.8,SNR=5.4
AKASG Malin Array Be 74.02 323 P **P 05 58 18.0 -0.1**
0.6nm,0.4s,baz=43,slow=6.3,SNR=5.5
PDAR Pinedale Array 76.42 46 P **P 05 58 32.1 -0.3**
0.3nm,0.7s,baz=230,slow=3.3,SNR=3.4

*IASPEI **14** 05:48:48.0±1.0,33.19N±0.03×115.59W±0.03,h14km±8km, Error ellipse: s-maj=4.4km s-min=3.5km az=133.2,GT5 selection from ISC bulletin GT5 identified by Bond¨ı¡r and McLaughlin (2009) selection criteria Bond¨ı¡r and McLaughlin, A new ground truth data set for seismic studies, Seism. Res. Let., 80, 465-472, 2009*
*ISCJB **14** 05:48:48.4±0.4,33.15N±0.02×115.58W±0.03,h11km±4km, Error ellipse: s-maj=4.2km s-min=3.1km az=31.2*
*ECX **14** 05:48:49.5±0.6,33.18N×115.60W,h5km, MD2.9,ML3.0*
ISC 14 05:48:47.8±0.9,33.19N±0.02×115.59W±0.03,h14km±7km, n31,σ0°41/43,4C-3D,Southern California

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
					Op	ISC	h m s	ISC
CLIC	**Calipatria**	**0.07**	**132**	⇑*i*	P	**Pg**	**05 48 50.8**	**+0.1**
FRK	**Frink**	**0.21**	**350**	⇓*i*	P	**Pb**	**05 48 53.4**	**-0.2**
SWSC	**Sam W. Stewart**	**0.30**	**214**	⇑*i*	P	**Pb**	**05 48 55.2**	**+0.2**
SWSC	**Sam W. Stewart**	**0.30**	**214**		P	**Pb**	**05 48 55.2**	**+0.2**
	baz=35,SNR=126							
BATC	**Bat Cave Butte**	**0.34**	**322**	⇑*i*	P	**Pb**	**05 48 56.2**	**+0.6**
BTCC	**Brunts Corner**	**0.36**	**120**	*i*	P	**Pb**	**05 48 56.2**	**+0.2**
DREC	**Desert Rsrch C**	**0.40**	**162**	*e*	P	**Pb**	**05 48 57.1**	**+0.4**
WESC	**Westside Schoo**	**0.45**	**195**	*e*	P	**Pb**	**05 48 57.6**	**+0.1**
BC3	**Big Chuckawall**	**0.48**	**14**		P	**Pb**	**05 48 58.2**	**+0.1**
	baz=193,SNR=129							
BC3					S	**Sb**	**05 49 04.8**	**-0.2**
	baz=193							
GLA	**Glamis**	**0.66**	**102**	⇑*i*	P	**Pb**	**05 49 01.1**	**0.0**
GLA	**Glamis**	**0.66**	**102**		P	**Pb**	**05 49 01.2**	**+0.1**
	baz=284,SNR=43							
GLA					S	**Sb**	**05 49 10.0**	**-0.2**
	baz=284							
RMX	**La Rumorosa**	**0.71**	**215**	*e*	P	**Pg**	**05 49 01.8**	**0.0**
RMX				*e*	S	**Sg**	**05 49 11.4**	**+0.2**
MONP2	**Monument Peak**	**0.76**	**247**		P	**Pb**	**05 49 03.1**	**+0.2**
	baz=66,SNR=18							
MONP2					S	**Sb**	**05 49 13.8**	**+0.6**
	baz=66							
CPBX	**Cerro Prieto**	**0.81**	**162**	⇓*e*		Pn	05 49 43.2	+38
CPBX					AML	AML	05 49 43.2	
	comp=E,2µm,0.3s							
PFO	**Pinyon Flats O**	**0.83**	**300**		P	**Pb**	**05 49 04.4**	**+0.3**
	baz=118,SNR=56							
PFO					S	**Sb**	**05 49 16.3**	**+1.0**
	baz=118							
BELC	**Belle Mtn. Jos**	**0.88**	**337**		P	**Pb**	**05 49 05.2**	**+0.3**
	baz=156,SNR=7.1							
BELC					S	**Sb**	**05 49 17.2**	**+0.7**
	baz=156							
IRM	**Iron Mountain**	**1.03**	**21**		P	**Pn**	**05 49 08.1**	**+0.1**
	baz=201,SNR=32							
IRM					Sb	**Sn**	**05 49 23.0**	**+0.7**
	baz=201							
BAR	**Barrett**	**1.04**	**241**	*e*	P	**Pb**	**05 49 07.4**	**-0.2**
Y12C	**Blythe**	**1.05**	**58**		P	**Pn**	**05 49 08.2**	**+0.1**
	baz=239,SNR=201							
Y12C					S	**Sn**	**05 49 22.6**	**-0.1**
	baz=239							
TJIG	**Tijuana**	**1.18**	**231**	*e*	P	**Pn**	**05 49 09.6**	**-0.3**
SDRC	**San Diego Road**	**1.22**	**249**	*e*	P	**Pn**	**05 49 10.2**	**-0.2**
CBX	**Cerro Bola**	**1.26**	**226**	*e*	P	**Pn**	**05 49 11.0**	**-0.1**
CBX				*e*	S	**Sb**	**05 49 27.6**	**+0.2**
CBX					AML	AML	05 49 30.6	
	comp=E,266nm,0.5s							
CBX				⇓*e*			05 49 30.6	
109C	**Camp Elliot, M**	**1.30**	**257**		P	**Pn**	**05 49 11.3**	**-0.3**
	baz=76,SNR=16							
109C					S	**Sb**	**05 49 28.5**	**-0.2**
	baz=76							
MURC	**Murrieta**	**1.40**	**287**		P	**Pn**	**05 49 12.5**	**-0.5**
	baz=106,SNR=20							
MURC					Sb	**Sg**	**05 49 32.9**	**-0.3**
	baz=106							
GMRC	**Granite Mounta**	**1.59**	**358**		Pb	**Pg**	**05 49 18.1**	**-0.3**
	baz=177							
GMRC					Sb	**Sg**	**05 49 38.7**	**-0.3**
	baz=177							
HEC	**Hector,Ludlow**	**1.75**	**340**		Sb	**Sg**	**05 49 44.2**	**+0.1**
	baz=158							
ECNX	**Esteban Cantu**	**1.75**	**209**	*e*	P	**Pb**	**05 49 19.4**	**-0.4**
NEE2	**Needles Airpor**	**1.77**	**27**		P	**Pn**	**05 49 18.8**	**+0.7**
	baz=207,SNR=14							
TUQ	**Turquoise Moun**	**2.26**	**353**		Pb	**Pg**	**05 49 30.3**	**-0.8**
	baz=172							
TUQ					Sb	**Sg**	**05 49 59.6**	**-0.8**
	baz=172							
GSC	**Goldstone, Bar**	**2.33**	**335**		Sb	**Sg**	**05 50 02.6**	**-0.2**
	baz=154							
214A	**Organ Pipe Nat**	**2.65**	**117**		P	**Pn**	**05 49 30.0**	**-0.2**
	baz=299							

JMA 14 05:49:00.5,36.98N×140.60E,h8km±1km,M3.5,7C,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
					Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.20**	**53**	⇑P		Pg	05 49 04.8	+0.2
ONAJ					S	Sg	05 49 08.0	+0.6
JHO	**Hitachi**	**0.37**	**184**	⇑P		Pg	05 49 07.7	0.0
JHO					S	Sg	05 49 12.9	+0.3
JFK	**Kawauchi**	**0.44**	**30**	⇑P		Pg	05 49 09.1	-0.1
JFK					S	Sg	05 49 15.1	+0.1
JSB	**Shiboa**	**0.55**	**269**		P	Pb	05 49 11.8	-0.5
JSB					S	Sb	05 49 19.6	-0.7
JFT	**Otama**	**0.58**	**339**	⇑P		Pg	05 49 11.9	+0.2
JFT					S	Sg	05 49 19.9	+0.7
JYT	**Yasato**	**0.82**	**204**	⇑P		Pg	05 49 15.7	-0.5
JYT					S	Sg	05 49 26.5	-0.4
JFY	**Yanaizu**	**0.83**	**301**	⇑P		Pg	05 49 16.4	-0.1
JFY					S	Sg	05 49 27.1	-0.2
JMM	**Marumori**	**0.90**	**10**	⇑P		Pg	05 49 17.1	-0.7
JMM					S	Sg	05 49 29.0	-0.4
MAT	**Matsushiro**	**1.97**	**258**		P	Pn	05 49 34.8	+0.6
MAT					S	Sb	05 50 00.3	-1.1

*NIED **14** 05:58:00,38.20N×143.00E,h11km,Mw3.5 Best double couple: M₀2.33000×10¹⁴ NP1:φs10.00000°,δ47.00000°, λ-120.00000°. NP2:φs231.00000°,δ51.00000°, λ-62.00000°.*
JMA 14 05:58:17.2±0.3,38.18N×143.02E,h7km±5km,M3.8,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
					Op	ISC	h m s	ISC
JIO	**Ouri**	**1.34**	**282**		P	Pn	05 58 42.1	-0.2
JIO					S	Sb	05 58 59.5	-0.6
OFUJ	**Ofunato**	**1.39**	**311**		P	Pn	05 58 42.8	-0.2
OFUJ					*e*S	Sb	05 59 00.9	-0.5
JMK	**Ichinoseki**	**1.61**	**299**		P	Pn	05 58 45.9	-0.1
JMK					*e*S	Sn	05 59 07.1	+0.1
JMM	**Marumori**	**1.79**	**261**		P	Pn	05 58 48.7	+0.2
JMM					S	Sn	05 59 11.7	+0.3
JOU	**Okura**	**1.86**	**276**		P	Pb	05 58 50.6	-1.0
JOU					S	Sn	05 59 13.6	+0.2
JOM	**Ohasama**	**1.87**	**314**		P	Pn	05 58 50.2	+0.6
JOM					*e*S	Sn	05 59 13.7	+0.3
JFK	**Kawauchi**	**1.88**	**245**		P	Pn	05 58 49.6	-0.2
JFK					*e*S	Sn	05 59 13.7	-0.2
JTH	**Tanohata**	**1.97**	**333**		P	Pn	05 58 50.5	-0.5
JYK	**Kaneyama**	**2.21**	**290**		P	Pn	05 58 55.5	+1.2
JFT	**Otama**	**2.22**	**254**		P	Pn	05 58 55.7	+1.2
JFT					S	Sb	05 59 24.4	-1.1
JRG	**Rokugo**	**2.23**	**304**		P	Pb	05 58 57.1	-0.6
JANG	**Nango**	**2.48**	**332**		P	Pb	05 59 00.3	-1.8
JTM	**Tenmabayashi**	**3.01**	**330**		P	Pn	05 59 06.0	+0.7

*ISCJB **14** 06:01:05.5±0.5,32.19N±0.03×115.21W±0.04,h21km±5km, Error ellipse: s-maj=5.0km s-min=4.8km az=20.9*
*ECX **14** 06:01:06.9±0.6,32.19N×115.26W,h8km,MD3.1,ML3.3*
*MEX **14** 06:01:07.9±0.6,32.24N×115.19W,h16km±78km,MD3.8*
ISC 14 06:01:05.3±1.0,32.19N±0.03×115.23W±0.03,h20km±3km, n27,σ0°72/40,6C-3D,California-Baja California border region

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
					Op	ISC	h m s	ISC
MBIG	**Mexicali**	**0.22**	**6**	*e*P		**Pb**	**06 01 11.3**	**+0.3**
MBIG	**Mexicali**	**0.22**	**6**	*i* P		**Pb**	**06 01 11.3**	**+0.3**
MBIG				*i* S		**Sb**	**06 01 14.4**	**-0.5**
CPBX	**Cerro Prieto**	**0.24**	**344**	*e*P		**Pb**	**06 01 11.4**	**+0.1**
CPBX				*e*S		**Sb**	**06 01 15.0**	**-0.3**
CPBX				⇓*e*			06 01 16.6	
CPBX					AML	AML	06 01 16.6	
	comp=N,19µm,0.2s							
EMSC	**East Mesa**	**0.59**	**20**	⇑*i* P		**Pb**	**06 01 17.6**	**+0.6**
SGL	**Mount Signal**	**0.62**	**318**	⇑*i* P		**Pb**	**06 01 17.9**	**+0.3**
COA	**Coachella**	**0.68**	**7**	*i* P		**Pn**	**06 01 19.5**	**-0.2**
YMD	**Yuma Desert**	**0.68**	**58**	⇑*i* P		**Pb**	**06 01 18.9**	**+0.4**
ECDX	**El Chinero**	**0.73**	**168**	*e*P		**Pb**	**06 01 17.7**	**+0.3**
YUH	**Yuha Desert**	**0.75**	**308**	⇑*i* P		**Pb**	**06 01 19.6**	**0.0**
RMX	**La Rumorosa**	**0.83**	**300**	*e*P		**Pb**	**06 01 20.8**	**-0.3**
RMX				*e*S		**Sb**	**06 01 31.6**	**-0.3**
RMX				⇑*e*			06 01 32.3	
RMX					AML	AML	06 01 32.3	
	comp=N,781nm,0.5s							
IKP	**In-Ko-Pah, Jac**	**0.88**	**302**	⇑*i* P		**Pn**	**06 01 22.3**	**-0.3**
GLA	**Glamis**	**0.93**	**21**		P	**Pb**	**06 01 22.1**	**-0.6**
	baz=200							
GLA					S	**Sb**	**06 01 33.6**	**-1.0**
	baz=200							
ZAX	**El Zacaton**	**1.12**	**233**	*e*P		**Pb**	**06 01 26.1**	**+0.1**
ZAX				*e*S		**Sn**	**06 01 40.7**	**0.0**
ZAX				*i* S		**Sn**	**06 01 40.7**	**0.0**
SPIG	**San Pedro Mart**	**1.16**	**190**	*e*P		**Pb**	**06 01 26.9**	**0.0**
SPIG				*e*S		**Sn**	**06 01 42.5**	**+0.4**
SPIG	**San Pedro Mart**	**1.16**	**190**	*i* P		**Pb**	**06 01 27.2**	**+0.4**
SPIG				*e*S		**Sb**	**06 01 41.2**	**-0.3**
SPX	**San Pedro Mart**	**1.16**	**190**	*e*P		**Pn**	**06 01 26.3**	**-0.4**
SPX				⇓*e*			06 01 44.0	
SPX					AML	AML	06 01 44.0	
	comp=E,345nm,0.5s							
CBX	**Cerro Bola**	**1.22**	**276**	*e*P		**Pb**	**06 01 27.7**	**-0.2**
CBX				*e*S		**Sn**	**06 01 43.9**	**+0.5**
CBX				⇓*e*			06 01 46.4	
CBX					AML	AML	06 01 46.4	
	comp=N,673nm,0.4s							
CBX	**Cerro Bola**	**1.22**	**276**	*i* P		**Pb**	**06 01 27.6**	**-0.2**
CBX				*i* S		**Sb**	**06 01 41.7**	**-1.6**
MONP2	**Monument Peak**	**1.23**	**305**		P	**Pb**	**06 01 28.3**	**+0.3**
	baz=129							
MONP2					S	**Sn**	**06 01 43.8**	**+0.2**
	baz=129							
TJIG	**Tijuana**	**1.25**	**282**	*e*P		**Pn**	**06 01 27.6**	**0.0**
TJIG	**Tijuana**	**1.25**	**282**	*e*P		**Pn**	**06 01 27.6**	**0.0**
TJIG				*i* S		**Sn**	**06 01 42.0**	**-1.9**
ECNX	**Esteban Cantu**	**1.28**	**246**	*e*P		**Pb**	**06 01 28.8**	**0.0**
PBX	**Punta Banda**	**1.35**	**251**	*e*P		**Pb**	**06 01 29.6**	**-0.3**
109C	**Camp Elliot, M**	**1.73**	**294**		P	**Pn**	**06 01 34.7**	**+0.4**
	baz=117							
109C					S	**Sb**	**06 01 58.6**	**+0.9**
	baz=117							
PFO	**Pinyon Flats O**	**1.75**	**324**		P	**Pn**	**06 01 34.1**	**-0.6**
	baz=146							
214A	**Organ Pipe Nat**	**2.06**	**96**		P	**Pn**	**06 01 38.6**	**-0.3**
	baz=274							
MURC	**Murrieta**	**2.18**	**311**		Sb	**Sb**	**06 02 13.3**	**+2.7**
	baz=132							

*NIED **14** 06:03:00,38.30N×141.50E,h65km,Mw4.0 Best double couple: M₀1.03000×10¹⁵ NP1:φs176.00000°,δ36.00000°, λ83.00000°. NP2:φs5.00000°,δ55.00000°,λ95.00000°.*
*ISCJB **14** 06:03:13.0±0.5,38.32N±0.04×141.57E±0.07,h72km±4km, mb3.7/13, Error ellipse: s-maj=9.9km s-min=4.8km az=23.0*
*JMA **14** 06:03:14.2,38.33N×141.49E,h66km±1km,M3.5*
JMA Felt I J1.
*IDC **14** 06:03:17.8±2.4,38.28N×141.40E,h104km±21km, mb3.5/13,mb1 3.7/17,mb1mx3.5/53,mbtmp3.8/17, Error ellipse: s-maj=19.8km s-min=14.1km az=101.0*
ISC 14 06:03:13.8±0.8,38.33N±0.04×141.54E±0.07,h66km±6km, n38,σ0°74/43,mb3.9/13,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
					Op	ISC	h m s	ISC
JIO	**Ouri**	**0.19**	**309**		P	**Pn**	**06 03 24.3**	**+0.3**
JIO					S	**Sn**	**06 03 31.5**	**+0.2**
JMK	**Ichinoseki**	**0.67**	**338**		P	**Pn**	**06 03 28.6**	**+0.5**
JMK					S	**Sn**	**06 03 38.6**	**0.0**
JOU	**Okura**	**0.69**	**273**		P	**Pn**	**06 03 28.5**	**+0.1**
JOU					S	**Sn**	**06 03 38.9**	**-0.1**
JMM	**Marumori**	**0.75**	**232**		P	**Pn**	**06 03 28.9**	**-0.1**
JMM					S	**Sn**	**06 03 39.7**	**-0.5**
OFUJ	**Ofunato**	**0.75**	**8**		P	**Pn**	**06 03 29.5**	**+0.4**
OFUJ					S	**Sn**	**06 03 40.7**	**+0.3**
JYK	**Kaneyama**	**1.09**	**303**		P	**Pn**	**06 03 33.5**	**+0.2**
JYK					S	**Sn**	**06 03 47.8**	**-0.1**
JFK	**Kawauchi**	**1.10**	**209**		P	**Pn**	**06 03 33.8**	**+0.4**
JFK					S	**Sn**	**06 03 47.8**	**-0.2**
JOM	**Ohasama**	**1.16**	**351**		P	**Pn**	**06 03 34.7**	**+0.6**
JOM					S	**Sn**	**06 03 49.8**	**+0.5**
JYS	**Shirataka**	**1.16**	**265**		P	**Pn**	**06 03 34.4**	**+0.1**
JYS					S	**Sn**	**06 03 49.9**	**+0.4**
JFT	**Otama**	**1.25**	**230**		P	**Pn**	**06 03 36.0**	**+0.6**
JFT					S	**Sn**	**06 03 52.5**	**+1.0**
JRG	**Rokugo**	**1.28**	**327**		P	**Pn**	**06 03 36.4**	**+0.7**
JRG					S	**Sn**	**06 03 53.4**	**+1.3**
JYA	**Atsumi**	**1.46**	**281**		P	**Pn**	**06 03 38.3**	**+0.2**
MJAR	**Matsushiro Arr**	**3.20**	**237**		P	**Pn**	**06 04 03.5**	**+1.8**
	5.9nm,0.3s,baz=38,slow=12,SNR=21							
MAT	**Matsushiro**	**3.20**	**237**		P	**Pn**	**06 04 03.0**	**+1.3**
MAT					*e*S	**Sn**	**06 04 40.3**	**+1.7**
USRK	**Ussuriysk Ar.**	**9.27**	**312**		P	Pn	06 05 28.6	+3.9
	0.6nm,0.3s,baz=120,slow=15,SNR=10							
KSRS	**Korea Array**	**10.80**	**270**		P	Pn	06 05 49.0	+3.5
	0.6nm,0.3s,baz=76,slow=14,SNR=5.3							
KLR	**Kul'dur**	**12.97**	**330**		P	P	06 06 19.8	-3.5
	0.1nm,0.3s,baz=164,slow=19,SNR=2.2							
SEY	**Seymchan**	**25.50**	**12**		P	**P**	**06 08 36.2**	**+0.5**
	1.2nm,0.6s,baz=179,slow=10.0,SNR=4.0							
H11N2	**WAKE ISLAND Hy 28.75**	**123**			T	T	06 39 28.0	
	baz=316,slow=75,SNR=15							
H11N1	**WAKE ISLAND Hy 28.76**	**123**			T	T	06 39 28.7	
	baz=316,slow=75,SNR=16							
H11N3	**WAKE ISLAND Hy 28.77**	**123**			T	T	06 39 29.4	
	baz=316,slow=75,SNR=14							
H11S1	**WAKE ISLAND Hy 29.50**	**125**			T	T	06 40 25.6	
	baz=318,slow=76,SNR=9.2							
H11S3	**WAKE ISLAND Hy 29.50**	**125**			T	T	06 40 17.7	
	baz=318,slow=76,SNR=20							
H11S2	**WAKE ISLAND Hy 29.52**	**125**			T	T	06 40 25.8	
	baz=318,slow=76,SNR=7.5							
ZALV	**Zalesovo Beam**	**41.12**	**311**		P	**P**	**06 10 50.9**	**-0.2**
	1.6nm,0.5s,baz=96,slow=7.9,SNR=9.0							
ZALV					PcP	**PcP**	**06 12 48.7**	**-0.6**
	0.3nm,0.3s,baz=29,slow=3.4,SNR=3.8							
MKAR	**Makanchi Array**	**43.52**	**301**		P	**P**	**06 11 10.7**	**-0.1**
	1.9nm,0.6s,baz=87,slow=10,SNR=19							
MKAR					PcP	**PcP**	**06 12 57.2**	**-0.3**
	0.1nm,0.3s,baz=98,slow=2.9,SNR=2.9							
KURBB	**Kurchatov Arra**	**45.29**	**307**		PcP	**PcP**	**06 13 02.5**	**-0.9**
	0.5nm,0.7s,baz=81,slow=3.9,SNR=5.6							
ILAR	**Eielson Array**	**48.35**	**33**		P	**P**	**06 11 48.9**	**+0.4**
	1.0nm,0.7s,baz=271,slow=6.0,SNR=10							
INK	**Inuvik**	**53.19**	**28**		P	**P**	**06 12 25.5**	**+0.8**
	0.6nm,0.5s,baz=290,slow=7.7,SNR=6.8							
WRA	**Warramunga Arr**	**58.36**	**188**		P	**P**	**06 13 01.4**	**-0.9**
	1.4nm,0.6s,baz=5.3,slow=6.9,SNR=20							
ASAR	**Alice Springs**	**62.09**	**188**		P	**P**	**06 13 27.3**	**-0.4**
	0.9nm,0.8s,baz=4.7,slow=6.6,SNR=7.2							
YKA	**Yellowknife Ar**	**62.64**	**31**		P	**P**	**06 13 31.2**	**+0.3**
	0.3nm,0.6s,baz=304,slow=6.6,SNR=8.5							
FINES	**FINESS Array B**	**67.71**	**332**		P	**P**	**06 14 02.7**	**-1.1**
	1.5nm,0.8s,baz=44,slow=8.2,SNR=3.8							
NOA	**NORSAR Array B**	**73.03**	**337**		P	**P**	**06 14 35.9**	**-0.4**
	1.0nm,0.8s,baz=41,slow=5.9,SNR=3.1							
AKASG	**Malin Array Be**	**73.33**	**322**		P	**P**	**06 14 36.5**	**-1.6**
	0.4nm,0.3s,baz=46,slow=5.7,SNR=4.2							
PDAR	**Pinedale Array**	**76.69**	**46**		P	**P**	**06 14 58.6**	**+0.6**
	0.4nm,0.6s,baz=273,slow=2.8,SNR=5.6							
TXAR	**Lajitas Array**	**89.25**	**52**		P	**P**	**06 16 03.5**	**+0.6**
	0.1nm,0.6s,baz=294,slow=3.8,SNR=7.3							
LPAZ	**La Paz**	**145.94**	**58**		PKPbc	**PKPbc**	**06 22 47.0**	**-0.1**
	0.8nm,0.7s,baz=14,slow=5.2,SNR=5.5							

*NIED **14** 06:07:00,36.70N×141.60E,h26km,Mw4.3 Best double couple: M₀3.51000×10¹⁵ NP1:φs281.00000°,δ78.00000°, λ172.00000°. NP2:φs12.00000°,δ82.00000°,λ13.00000°.*
*IDC **14** 06:07:03.7±0.4,36.71N×141.67E,h0km,mb4.3/29, mb1 4.5/34,mb1mx4.4/50,mbtmp4.4/34,ML4.1/5,MS5.0/2, Ms1 4.9/2,ms1mx4.0/21,Error ellipse: s-maj=13.3km s-min=10.4km az=107.0*
*MOS **14** 06:07:05.9±0.9,36.69N×141.62E,h24km,mb4.7/40,Error ellipse: s-maj=8.6km s-min=6.0km az=101.9*
*JMA **14** 06:07:06.3±0.3,36.74N×141.64E,h33km±4km,M4.3*
JMA Felt I J1.
*ISCJB **14** 06:07:06.9±0.8,36.69N±0.03×141.56E±0.03,h29km±5km, mb4.8/104,MS5.0/6,Error ellipse: s-maj=5.1km s-min=3.6km az=138.2*
*BJI **14** 06:07:07.2,36.41N×141.64E,h44km,mb4.7/35,mB5.0/23, Ms5.5/14,Ms7 5.2/14*
*NEIC **14** 06:07:09.4±0.4,36.69N×141.58E,h36km±4km,mb5.1/48, Error ellipse: s-maj=4.0km s-min=3.2km az=128.0*
ISC 14 06:07:07.5±0.4,36.73N±0.04×141.60E±0.04,h24km±2km, h24km:pP-P,n328,σ1°39/342,mb4.9/104,MS5.1/6,3C-6D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
					Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.75**	**300**		P	**Pb**	**06 07 20.8**	**-1.1**
JHO	**Hitachi**	**0.84**	**262**		P	**Pb**	**06 07 22.0**	**-1.4**
JFK	**Kawauchi**	**0.86**	**318**		P	**Pb**	**06 07 22.2**	**-1.7**
JFK					S	**Sb**	**06 07 34.0**	**-1.1**
JFT	**Otama**	**1.28**	**308**		P	**Pn**	**06 07 29.7**	**-0.2**
JMM	**Marumori**	**1.31**	**331**		P	**Pn**	**06 07 28.7**	**-1.6**
JFY	**Yanaizu**	**1.66**	**295**		P	**Pn**	**06 07 35.3**	**+0.1**
JIO	**Ouri**	**1.74**	**353**		P	**Pn**	**06 07 34.3**	**-1.8**
JAG	**Ashikaga**	**1.76**	**261**		P	**Pn**	**06 07 35.5**	**-0.9**
JOU	**Okura**	**1.80**	**336**		P	**Pn**	**06 07 36.5**	**-0.5**
JOU					S	**Sn**	**06 07 58.8**	**-0.3**
MJAR	**Matsushiro Arr**	**2.74**	**267**		Pn	**Pn**	**06 07 50.2**	**+0.3**
	30nm,0.3s,baz=90,slow=8.5,SNR=68							
MAJO	**Matsushiro**	**2.74**	**267**	*e*	P**n**	**Pn**	**06 07 50.8**	**+0.9**
MAJO	**Matsushiro**	**2.74**	**267**	*e*	P**n**	**Pn**	**06 07 50.8**	**+0.9**
MAT	**Matsushiro**	**2.74**	**267**		P	**Pn**	**06 07 50.6**	**+0.7**
MAT				*e*	S	**Sn**	**06 08 22.4**	**+0.1**
MJB9	**Matsu-Tunnel**	**2.74**	**267**	*e*	P**n**	**Pn**	**06 07 50.8**	**+0.9**
JHJ2	**Mitsune**	**3.89**	**203**	*e*	P**n**	**Pn**	**06 08 07.6**	**+1.9**
JHJ2				*e*	S**n**	**Sn**	**06 08 48.1**	**-2.6**
JHJ	**Hachijo jima 2**	**3.90**	**203**		P**n**	**Pn**	**06 08 05.5**	**-0.4**
	100nm,0.3s,baz=83,slow=22,SNR=11							
JHJ					Sn	**Sn**	**06 08 48.8**	**-2.0**
	107nm,0.3s,baz=61,slow=22,SNR=8.9							
INU	**Inuyama**	**3.96**	**251**	*e*	P**n**	**Pn**	**06 08 09.0**	**+2.3**
ERM	**Erimo**	**5.42**	**12**	*e*	P**n**	**Pn**	**06 08 28.0**	**+1.3**
ERM				*e*			06 09 29.3	
ERM	**Erimo**	**5.42**	**12**	*e*	P**n**	**Pn**	**06 08 28.0**	**+1.3**
ERM				*e*	S**n**	**Sn**	**06 09 29.3**	**+1.1**
ASAJ	**Asahikawa**	**7.42**	**6**		P**n**	**Pn**	**06 08 52.9**	**-1.3**
	3.4nm,0.3s,baz=217,slow=7.7,SNR=7.4							
ASAJ					Sn	**Sn**	**06 10 15.6**	**-2.0**
	4.9nm,0.3s,baz=153,slow=33,SNR=7.7							
ASAJ	**Asahikawa**	**7.42**	**6**	*e*	P**n**	**Pn**	**06 08 56.6**	**+2.4**
ASAJ					Sn	**Sn**

MA2 Magadan 23.62 12 P **P** 06 12 15.4 -1.1
comp=Z,8.3nm,0.7s,baz=204,slow=7.4,SNR=8.3
MA2 Magadan 23.62 12 *e*P **P** 06 12 14.1 -2.4
MA2 pmax pmax
comp=Z,33nm,0.8s
MA2 Magadan 23.62 12 *e*P **P** 06 12 14.1 -2.4
comp=Z,33nm,0.8s
HHC Hu-ho-hao-te 23.71 289 *e*P **P** 06 12 17.3 -0.4
HHC pmax pmax
comp=Z,26nm,1.0s
HHC pmax pmax
comp=Z,130nm,4.8s
YAK Yakutsk 26.40 347 *e*P **P** 06 12 44.6 +2.8
YAK pmax pmax
comp=N,10.0nm,1.0s
YAK pmax pmax
comp=Z,19nm,0.9s
YAK pmax pmax
comp=E,9.0nm,1.3s
SEY Seymchan 27.06 11 P **P** 06 12 48.4 +0.6
comp=E,5.0nm,0.7s,baz=208,slow=7.3,SNR=17
ENH Enshi 27.46 266 *e*P **P** 06 12 51.2 -0.5
comp=E,21nm,0.4s
ULN Ulaanbaatar 27.65 305⇑ *i*P **P** 06 12 53.8 +0.4
ULN pmax pmax
comp=Z,7.0nm,0.9s
ULN Ulaanbaatar 27.65 305 *e*P **P** 06 12 53.8 +0.4
comp=Z,4.9nm,0.8s
H11N2 WAKE ISLAND Hy 27.86 121 T T 06 42 10.7
baz=313,slow=75,SNR=187
H11N1 WAKE ISLAND Hy 27.87 121 T T 06 42 08.5
baz=313,slow=75,SNR=230
BOD Bodaibo 27.87 328 *e*P **P** 06 12 53.2 -1.8
BOD pmax pmax
comp=Z,8.0nm,0.9s
H11N3 WAKE ISLAND Hy 27.88 121 T T 06 42 09.2
baz=313,slow=75,SNR=195
SONA1 Songino Array 28.08 304 *e*P **P** 06 12 57.8 +0.6
SONM Songino Array 28.08 304 P **P** 06 12 58.2 +0.9
comp=Z,5.0nm,0.7s,baz=112,slow=9.2,SNR=12
H11S1 WAKE ISLAND Hy 28.57 123 T T 06 43 03.3
baz=315,slow=76,SNR=172
H11S3 WAKE ISLAND Hy 28.57 123 T T 06 43 01.9
baz=315,slow=76,SNR=111
H11S2 WAKE ISLAND Hy 28.58 123 T T 06 43 11.9
baz=315,slow=76,SNR=107
TGY Tagaytay City 29.13 225 LR LR 06 23 58.0
comp=Z,2µm,20.0s,baz=24,slow=35
ZAK Zakamensk 30.58 309 *e*P **P** 06 13 19.1 -0.2
ZAK pmax pmax
comp=Z,3.0nm,1.2s
TLY Talaya 30.65 311 P **P** 06 13 19.8 0.0
comp=Z,2.2nm,0.6s,baz=204,slow=20,SNR=3.8
TLY Talaya 30.65 311 *e*P **P** 06 13 20.0 +0.2
TLY pmax pmax
comp=Z,3.0nm,0.8s
TLY Talaya 30.65 311 *e*P **P** 06 13 20.1 +0.3
comp=Z,4.3nm,1.0s
GYA Guiyang 31.32 261⇑ *i*P **P** 06 13 26.8 +0.7
GYA pP sP 06 13 38.9 +2.6
GYA PP **PnPn** **06 14 31.0 +2.3**
GYA PcP **PcP** **06 16 20.5 +0.6**
GYA S **S** **06 18 29.3 -2.5**
GYA sS sS 06 18 48.8 +5.0
GYA ScP **ScP** **06 19 58.6 -2.7**
GYA ScS **ScS** **06 23 55.0 -4.0**
GYA pmax pmax
comp=Z,30nm,0.8s
GYA pmax pmax
comp=Z,120nm,5.2s
GYA LR LR
comp=Z,530nm,16.2s
GYA LR LR
comp=Z,490nm,17.0s
GYA LR LR
comp=Z,510nm,16.6s
CD2 Chengdu 31.83 271 P **P** 06 13 29.3 -1.1
CD2 pmax pmax
comp=Z,10.0nm,0.5s
CD2 pmax pmax
comp=Z,150nm,5.4s
DAV Davao City (W) 32.94 210⇑ *e*P P 06 13 47.4 +7.2
BILL Bilibino 34.28 16⇓ *i*P **P** **06 13 51.4 0.0**
BILL *e* 06 13 57.0
BILL *e**PP **sP** **06 14 02.5 +0.9**
BILL pmax pmax
comp=Z,4.0nm,0.8s
KMI Kunming 35.07 262 P **P** 06 14 00.4 +1.5
KMI pmax pmax
comp=Z,18nm,0.7s
KMI pmax pmax
comp=Z,120nm,5.8s
TIXI Tiksi 35.61 353 P **P** 06 14 02.8 0.0
comp=Z,0.9nm,0.5s,baz=92,slow=6.1,SNR=3.2
TIXI Tiksi 35.61 353 P **P** 06 14 06.0 +3.2
TIXI pmax pmax
comp=Z,1.0nm,0.6s
TIXI Tiksi 35.61 353 *e*P **P** 06 14 03.2 +0.4
comp=Z,9.0nm,1.4s
WMQ Urumqi 41.12 297 *e*P **P** 06 14 49.4 -0.1
WMQ pP sP 06 15 02.6 +2.8
WMQ sP pP 06 15 08.3 +11
WMQ pmax pmax
comp=Z,8.0nm,0.8s
WMQ pmax pmax
comp=Z,52nm,4.0s
WMQ LR LR
comp=Z,3µm,19.0s
WMQ LR LR
comp=Z,2µm,14.2s
WMQ LR LR
comp=Z,2µm,20.2s
CHTO Chiang Mai 41.36 256 *e*P **P** 06 14 52.5 +0.7
CHTO pmax pmax
comp=Z,4.0nm,1.2s
CHTO Chiang Mai 41.36 256 *e*P **P** 06 14 52.5 +0.7
comp=Z,4.3nm,1.2s
CMAR Chiang Mai Arr 41.57 256 P **P** 06 14 54.2 +0.8
comp=Z,1.1nm,0.6s,baz=43,slow=7.4,SNR=13
CM01 Chiang Mai Arr 41.58 256 *e*P **P** 06 14 53.6 +0.2
ZAA0 Zalesovo Array 42.23 313 *e*P **P** 06 14 58.8 +0.4
ZALV Zalesovo Beam 42.23 313 P **P** 06 14 58.8 +0.4
comp=Z,6.4nm,0.7s,baz=100,slow=7.1,SNR=29
ZALV Zalesovo Beam 42.23 313 P **P** 06 14 58.8 +0.4
ZALV pmax pmax
comp=Z,7.0nm,0.7s
NVS Novosibirsk 43.16 314 *e*P **P** 06 15 05.7 -0.2
NVS pmax pmax
comp=E,13nm,1.2s
NVS pmax pmax
comp=Z,18nm,1.2s
NRIK Noril'sk 43.61 335 P **P** 06 15 09.3 0.0
comp=Z,1.8nm,0.5s,baz=162,slow=19,SNR=2.3
MKAR Makanchi Array 44.41 302 P **P** 06 15 16.6 +0.4
comp=Z,6.2nm,0.7s,baz=88,slow=9.7,SNR=30
MKAR Makanchi Array 44.41 302 *e*P **P** 06 15 16.3 +0.1
MAKZ Makanchi 44.62 302 *e*P **P** 06 15 18.6 +0.7
MAKZ pmax pmax
comp=Z,6.0nm,0.8s
MAKZ Makanchi 44.62 302 *e*P **P** 06 15 18.6 +0.7
comp=Z,6.4nm,0.8s
KURK Kurchatov 46.24 308 *e*P **P** 06 15 30.5 -0.1
KURK pmax pmax
comp=Z,30nm,0.8s
KURK Kurchatov 46.24 308 *e*P **P** 06 15 30.5 -0.1
comp=Z,30nm,0.8s
KURBB Kurchatov Arra 46.31 308 P **P** 06 15 31.0 -0.1
comp=Z,13nm,0.8s,baz=82,slow=7.7,SNR=49
PDGK Podgornoye 47.06 298 P **P** 06 15 37.9 +0.9
PDGK pmax pmax
comp=Z,12nm,1.1s
KDAK Kodiak Island 47.23 42 P P 06 15 51.7 +14
comp=Z,9.3nm,0.9s,baz=230,slow=3.8,SNR=4.4
KDAK Kodiak Island 47.23 42 *i*P **P** **06 15 38.0 -0.1**
GUN Gumba 47.34 276 *e*P **P** **06 15 41.6 +1.7**
KKN Kakani 47.87 276 *e*P **P** **06 15 43.8 0.0**
GKN Gorkha 48.29 277 *e*P **P** **06 15 47.6 +0.6**
comp=Z,45nm,0.8s
RND Reindeer 48.85 34 *e*P **P** 06 15 51.0 +0.2
RND pmax pmax
comp=Z,25nm,1.1s
RND Reindeer 48.85 34 *e*P **P** 06 15 51.0 +0.2
comp=Z,24nm,1.1s
SOEI Soe 49.02 203 *e*P **P** 06 15 52.8 +0.1
SOEI *e*pP **sP** **06 16 03.7 +0.7**
SOEI *e*PP PP 06 17 37.5 -8.9
MDM Murphy Dome 49.10 32 *e*P **P** 06 15 53.8 +1.3
comp=Z,37nm,1.0s
KOLN Koldanda 49.22 277 *e*P **P** 06 15 54.8 +0.6
comp=Z,23nm,1.0s
PYUN Piuthan 49.56 278 *e*P **P** 06 15 57.2 +0.4
comp=Z,107nm,1.1s
ILAR Eielson Array 49.67 32 P **P** 06 15 57.0 +0.1
comp=Z,2.4nm,0.8s,baz=266,slow=6.4,SNR=24
ILAR Eielson Array 49.67 32 P **P** 06 15 57.0 +0.1
ILAR pmax pmax
comp=Z,2.0nm,0.8s
ILB Eielson Array 49.67 32 *e*P **P** **06 15 57.0 +0.1**
IL1 Eielson Array 49.67 32 *e*P **P** **06 15 56.6 -0.3**
TKM2 Tokmak 2 49.91 299 *e*P **P** **06 16 00.4 +1.1**
TKM2 pmax pmax
comp=Z,82nm,1.5s
TKM2 Tokmak 2 49.91 299 *e*P **P** 06 16 00.4 +1.1
comp=Z,82nm,1.5s
KSH Kashi 50.67 294 *e*P P 06 16 10.5 +5.5
KSH *e*pP sP 06 16 22.4 +7.0
KSH *e*PcP **PcP** **06 17 25.1 +2.9**
KSH S **S** **06 23 24.5 +5.8**
KSH pmax pmax
comp=Z,81nm,3.8s
KSH LR LR
comp=Z,2µm,15.8s
KSH LR LR
comp=Z,1µm,11.3s
KSH LR LR
comp=Z,2µm,16.1s
OTUK Ortayu 50.73 306 P **P** 06 16 05.9 +0.7
OTUK pmax pmax
comp=Z,9.0nm,0.8s
AAK Ala-Archa 50.77 299⇓ *e*P **P** 06 16 06.7 +0.9
AAK pmax pmax
comp=Z,2.0nm,0.5s
BRVK Borovoye 50.95 313⇓ *e*P **P** 06 16 07.4 +0.6
BRVK pmax pmax
comp=Z,2.0nm,0.7s
BRVK Borovoye 50.95 313 *e*P **P** 06 16 07.3 +0.6
comp=Z,62nm,1.9s
DOT Dot Lake 50.98 34 *e*P **P** 06 16 06.7 -0.2
comp=Z,15nm,0.8s
ZRNK Zerenda 51.73 313 *e*P **P** 06 16 12.7 +0.1
ZRNK pmax pmax
comp=Z,76nm,1.7s
ZRNK Zerenda 51.73 313 *e*P **P** 06 16 12.7 +0.1
comp=Z,76nm,1.7s
JAGI Jajag, Banyuwa 51.82 215 *e*P **P** 06 16 13.4 -0.2
JAGI *e*PP PP 06 17 59.2 -12
MNAS Manas 52.22 299 P **P** 06 16 17.6 +1.0
MNAS pmax pmax
comp=Z,5.0nm,0.7s
SFK Sufi-Kurgan 52.30 296 P **P** 06 16 19.2 +1.8
SFK pmax pmax
comp=Z,9.0nm,0.7s
KKAR Karatay Array 53.41 300 *e*P **P** **06 16 25.8 +0.5**
KKAR Karatay Array 53.41 300 *e*P **P** **06 16 25.8 +0.5**
INK Inuvik 54.59 27 P **P** **06 16 33.9 +0.5**
comp=Z,2.5nm,0.7s,baz=296,slow=7.0,SNR=15
INK Inuvik 54.59 27 *e*P **P** **06 16 34.0 +0.6**
INK *e*pP **pP** **06 16 38.2 -2.7**
FITZ Fitzroy Crossi 56.58 198 P **P** **06 16 48.8 +0.6**
comp=Z,3.3nm,0.5s,baz=16,slow=6.7,SNR=17
CTA Charters Tower 56.68 175 P **P** **06 16 48.5 -0.4**
comp=Z,1.3nm,0.2s,baz=294,slow=7.9,SNR=2.8
ARU Arti 56.69 319*d i*P **P** **06 16 49.6 +0.9**
ARU 06 17 43.9
ARU 06 18 55.7
ARU S **S** **06 24 42.6 +3.1**
ARU SS **SS** **06 28 31.3 +4.5**
ARU pmax pmax
comp=Z,6.0nm,1.0s
ARU Arti 56.69 319 *e*P **P** **06 16 48.9 +0.2**
comp=Z,42nm,1.1s
WRAB Tennant Creek 56.77 188 *e*P **P** **06 16 49.5 0.0**
WRAB pmax pmax
comp=Z,86nm,1.1s
WRAB Tennant Creek 56.77 188 *e*P **P** **06 16 49.5 0.0**
comp=Z,86nm,1.1s
WB2 Warramunga Arr 56.78 188 *e*P **P** **06 16 49.0 -0.6**
comp=Z,57nm,0.9s
WRA Warramunga Arr 56.78 188 P **P** **06 16 48.7 -0.9**
comp=Z,6.0nm,0.9s,baz=5.2,slow=7.4,SNR=30
ABKAR Akbulak array 58.25 310 *e*P **P** **06 16 59.8 -0.1**
DLBC Dease Lake 58.77 38 P **P** **06 17 03.7 +0.3**
baz=302,slow=9.8
AS01 Alice Springs 60.50 188 *e*P **P** **06 17 14.9 -0.6**
AS31 Alice Springs 60.50 188 *e*P **P** **06 17 15.6 0.0**
AS31 *e*pP **pP** **06 17 23.1 -0.1**
ASAR Alice Springs 60.50 188 P **P** **06 17 15.2 -0.3**
comp=Z,3.2nm,0.7s,baz=9.9,slow=6.4,SNR=39
RES Resolute Bay 62.86 14 P **P** 06 17 30.6 -0.2
comp=Z,3.2nm,0.9s,baz=312,slow=4.9,SNR=8.0
RES Resolute Bay 62.86 14 *e*P **P** **06 17 30.7 -0.1**
RES *e**PP **pP** **06 17 38.8 +0.4**
RES pmax pmax
comp=Z,4.0nm,1.0s
RES Resolute Bay 62.86 14 *e*P **P** 06 17 30.7 -0.1
comp=Z,4.3nm,1.0s
RES *e*pP **pP** **06 17 38.8 +0.4**
YKA Yellowknife Ar 64.00 30 P **P** **06 17 38.4 -0.1**
comp=Z,2.0nm,0.8s,baz=300,slow=6.6,SNR=28
YKB5 Yellowknife Ar 64.00 30 *e*P **P** **06 17 38.2 -0.3**
KLMR Klimovskoe 64.10 328 *e*P P 06 17 46.0 +6.8
KLMR pmax pmax
comp=Z,17nm,1.4s
ARCES ARCESS Array B 64.34 339 P **P** **06 17 41.2 +0.5**
comp=Z,0.9nm,0.6s,baz=48,slow=7.2,SNR=7.1
STKA Stephens Creek 68.25 180 LR LR 06 47 59.0
comp=Z,1µm,19.9s,baz=0.7,slow=36
OBN Obninsk 68.43 323 P **P** **06 18 08.0 +1.0**
OBN *e*PP **pP** **06 18 15.1 +0.4**
OBN *e**SP **sP** **06 18 18.5 +0.9**
OBN S **S** **06 27 08.0 +1.0**
OBN pmax pmax
comp=Z,7.0nm,0.4s
OBN MLR MLR
comp=Z,2µm,17.0s
FIA1 FINESS Array S 69.16 332 *e*P **P** **06 18 11.8 +0.3**
FINES FINESS Array B 69.16 332 P **P** **06 18 11.8 +0.3**
comp=Z,2.1nm,0.7s,baz=86,slow=5.9,SNR=6.8
I04A Tendick Farm, 69.52 50 P **P** **06 18 14.6 +0.5**
baz=302
NEW Newport 70.24 44 P **P** **06 18 18.9 +0.4**
baz=303
J05D Fort Rock, OR 70.51 50 P **P** **06 18 21.6 +1.2**
baz=302
N02D Trinity Center 70.82 53 P **P** **06 18 23.3 +1.1**
baz=302
M04C Macdoel 70.94 52 P **P** **06 18 24.1 +1.1**
baz=302
K05A Summer Lake 71.02 51 *e*P **P** **06 18 25.2 +1.7**
comp=Z,153nm,1.9s
KBZ Khabaz 71.22 311 P **P** **06 18 25.1 +0.7**
comp=Z,1.6nm,0.6s,baz=70,slow=8.6,SNR=3.3
O03D Paynes Creek 71.76 53 P **P** **06 18 28.3 +0.4**
baz=303
ORV Oroville 72.36 54 *e*P **P** **06 18 31.8 +0.4**
ORV pmax pmax
comp=Z,19nm,1.4s
ORV Oroville 72.36 54 *e*P **P** **06 18 31.8 +0.4**
comp=Z,19nm,1.4s
SWMT Swartz Lake 72.41 44 *e*P **P** **06 18 32.6 +0.9**
MSO Missoula 72.83 44 P **P** **06 18 34.6 +0.4**
baz=306
ANN Anapa 73.85 314 *e*P **P** **06 18 41.1 +1.0**
ANN *e**PP **sP** **06 18 51.7 +1.0**
ANN *e*PPP PPP 06 23 10.4
ANN *e*S **S** **06 28 10.2 +0.1**
ANN pmax pmax
comp=Z,97nm,1.2s
FFC Flin Flon 73.88 33 *e*P **P** **06 18 39.7 -0.4**
FFC pmax pmax
comp=Z,46nm,1.4s
FFC Flin Flon 73.88 33 *e*P **P** **06 18 39.7 -0.4**
comp=Z,46nm,1.4s
CMB Columbia Colle 73.92 54 *e*P **P** **06 18 41.4 +0.7**
CMB pmax pmax
comp=Z,50nm,1.8s
CMB Columbia Colle 73.92 54 *e*P **P** **06 18 41.4 +0.7**
comp=Z,50nm,1.8s
FCC Fort Churchill 74.21 27 *e*P **P** **06 18 41.7 -0.2**
FCC pmax pmax
comp=Z,96nm,1.6s
FCC Fort Churchill 74.21 27 *e*P **P** **06 18 41.7 -0.2**
comp=Z,96nm,1.6s
LRM Limekiln Ridge 74.26 44 *e*P **P** **06 18 43.8 +1.0**
DLMT Dillon 74.45 45 *e*P **P** **06 18 44.1 +0.3**
comp=Z,38nm,1.3s
HLID Hailey 74.47 47 P **P** **06 18 44.5 +0.6**
baz=306
HLID Hailey 74.47 47 *e*P **P** **06 18 44.8 +0.8**
comp=Z,18nm,1.4s
NB2 NORSAR Subarra 74.53 337 P **P** **06 18 43.8 0.0**
comp=Z,4.8nm,0.8s,baz=39,slow=6.2
NOA NORSAR Array B 74.53 337 P **P** **06 18 44.2 +0.4**
comp=Z,2.9nm,0.7s,baz=40,slow=5.8,SNR=11
BMN Battle Mountai 74.59 51 *e*P **P** **06 18 45.5 +0.8**
BMN pmax pmax
comp=Z,33nm,1.5s
BMN Battle Mountai 74.59 51 *e*P **P** **06 18 45.5 +0.8**
comp=Z,33nm,1.5s
AKASG Malin Array Be 74.63 322 P **P** **06 18 44.4 -0.1**
comp=Z,1.3nm,0.4s,baz=46,slow=6.2,SNR=6.5
BOZ Bozeman (W) 74.83 44 P **P** **06 18 46.5 +0.6**
baz=307
BOZ Bozeman (W) 74.83 44 *e*P **P** **06 18 46.8 +0.8**
BOZ pmax pmax
comp=Z,51nm,1.8s
BOZ Bozeman (W) 74.83 44 *e*P **P** **06 18 46.8 +0.8**
comp=Z,51nm,1.8s
NV01 Mina Array Sit 75.05 53 *e*P **P** **06 18 48.3 +0.8**
NVAR Mina Array Bea 75.05 53 P **P** **06 18 48.6 +1.2**
comp=Z,6.2nm,0.7s,baz=289,slow=6.1,SNR=28
NV11 Mina Array Sit 75.14 53 *e*P **P** **06 18 48.7 +0.8**
comp=Z,65nm,1.9s
ELK Elko 75.63 50 *e*P **P** **06 18 51.5 +0.7**
ELK pmax pmax
comp=Z,40nm,1.7s
ELK Elko 75.63 50 *e*P **P** **06 18 51.5 +0.7**
comp=Z,40nm,1.7s
H17A Grant Village 76.18 45 P **P** **06 18 56.6 +2.7**
baz=308
H17A Grant Village 76.18 45 *e*P **P** **06 18 56.8 +2.8**
comp=Z,62nm,1.5s
IMW Indian Meadow 76.28 45 *e*P **P** **06 18 55.8 +1.3**
comp=Z,23nm,1.3s
FXWY Fox Creek 76.39 45 *e*P **P** **06 18 56.6 +1.5**
comp=Z,27nm,1.4s
MOOW Moose Ponds 76.48 45 *e*P **P** **06 18 56.8 +1.2**
comp=Z,65nm,1.9s
HVU Hansel Valley 76.50 48 *e*P **P** **06 18 57.0 +1.3**
HVU pmax pmax
comp=Z,14nm,1.0s
HVU Hansel Valley 76.50 48 *e*P **P** **06 18 57.0 +1.3**
comp=Z,14nm,1.0s
SNOW Snow King Moun 76.66 45 *e*P **P** **06 18 57.3 +0.7**
comp=Z,24nm,1.4s
REDW Red Top Meadow 76.66 46 *e*P **P** **06 18 58.0 +1.4**
comp=Z,7.7nm,1.4s
DAC Darwin (Calif) 76.76 55 *e*P **P** **06 18 57.6 +0.4**
DAC pmax pmax
comp=Z,12nm,1.1s
DAC Darwin (Calif) 76.76 55 *e*P **P** **06 18 57.6 +0.4**
comp=Z,12nm,1.1s
R11A Troy Canyon, C 76.83 52 P **P** **06 18 58.3 +0.7**
baz=306
R11A Troy Canyon, C 76.83 52 *e*P **P** **06 18 58.3 +0.7**
comp=Z,16nm,1.3s
MPMC Manual Prospec 76.95 55 P **P** **06 18 58.7 +0.3**
baz=306
FURC Furnace Creek, 77.12 54 P **P** **06 19 00.0 +1.0**
baz=306
LRMC Laurel Mtn Rad 77.17 55 P **P** **06 18 59.9 +0.4**
baz=306
TPNV Topopah Spring 77.24 53 P **P** **06 19 00.3 +0.4**
baz=306
HWUT Hardware Ranch 77.33 47 *e*P **P** **06 19 00.8 +0.4**
comp=Z,86nm,1.9s
DUG Dugway, Tooele 77.44 49 P **P** **06 19 01.8 +0.8**
baz=308
DUG Dugway, Tooele 77.44 49 *e*P **P** **06 19 02.3 +1.3**
DUG pmax pmax
comp=Z,47nm,1.5s
DUG Dugway, Tooele 77.44 49 *e*P **P** **06 19 02.3 +1.3**
comp=Z,47nm,1.5s
BW06 Boulder Array 77.77 45 P **P** **06 19 03.1 +0.2**
baz=309
BW06 Boulder Array 77.77 45 *e*P **P** **06 19 02.8 0.0**
PD31 Pinedale Array 77.77 45 *e*P **P** **06 19 03.0 +0.1**
PDAR Pinedale Array 77.77 45 P **P** **06 19 03.0 +0.1**
comp=Z,1.6nm,0.7s,baz=269,slow=1.9,SNR=15
PSUT Pine Spring 77.81 51 *e*P **P** **06 19 04.2 +1.1**
comp=Z,14nm,1.0s
NLU North Lily Min 78.04 49 *e*P **P** **06 19 05.2 +0.8**
comp=Z,39nm,1.7s
BUR08 Bucovina Ar. S 78.64 322 *e*P **P** **06 19 08.2 +0.8**
MSU Marysvale 78.86 50 *e*P **P** **06 19 10.6 +1.6**
MSU Marysvale 78.86 50 *e*P **P** **06 19 10.6 +1.6**
B28A Dugan Ranch, T 78.88 37 P **P** **06 19 09.1 +0.5**
baz=314
GMRC Granite Mounta 78.91 55 P **P** **06 19 09.7 +0.5**
baz=307
A29A Manning Farm, 79.09 36 P **P** **06 19 10.0 +0.3**
baz=314
P17A Butcher Ranch, 79.14 49 *e*P **P** **06 19 11.2 +0.8**
comp=Z,21nm,1.0s
BRTR Keskin Array B 79.17 312 P **P** **06 19 09.7 -0.8**
comp=Z,1.1nm,0.8s,baz=140,slow=4.0,SNR=4.6
BRTR Keskin Array B 79.17 312 P **P** **06 19 09.7 -0.8**
BRTR pmax pmax
comp=Z,2.0nm,1.1s
P18A Preston Nutter 79.34 48 *e*P **P** **06 19 12.2 +0.5**
comp=Z,82nm,2.0s
OJC Ojcow 79.38 326 *e*P **P** **06 19 11.6 +0.3**
OJC Ojcow 79.38 326 *e*P **P** **06 19 11.6 +0.3**
KNB Kanab 79.38 52 *e*P **P** **06 19 12.5 +0.8**
KNB pmax pmax
comp=Z,51nm,1.4s
KNB Kanab 79.38 52 *e*P **P** **06 19 12.5 +0.8**
comp=Z,51nm,1.4s
SRU San Rafael Swe 79.50 49 *e*P **P** **06 19 12.5 +0.1**
SRU pmax pmax
comp=Z,13nm,0.9s
SRU San Rafael Swe 79.50 49 *e*P **P** **06 19 12.5 +0.1**
comp=Z,13nm,0.9s
A30A Hoffart Farm, 79.51 35 P **P** **06 19 12.7 +0.7**
baz=315
BR231 Keskin MP Arra 79.61 312 *e*P **P** **06 19 10.3 -2.6**
ULM Lac du Bonnet 79.68 33 P **P** **06 19 11.6 -1.3**
comp=Z,3.0nm,0.6s,baz=330,slow=8.3,SNR=4.1
E27A Carson 79.68 39 P **P** **06 19 13.4 +0.3**
baz=313
F27A Lemmon 79.83 39 P **P** **06 19 14.3 +0.5**
baz=313
B30A Myrvik Farm, E 79.85 36 P **P** **06 19 14.4 +0.5**
baz=315
G26A Maurine 79.92 40 P **P** **06 19 14.9 +0.5**
baz=313
RSSD Black Hills 79.96 42 P **P** **06 19 15.3 +0.5**
baz=312
B31A Greenbush Farm 80.19 36 P **P** **06 19 16.1 +0.4**
baz=316
PDMCI Parker Dam,Lak 80.20 55 P **P** **06 19 16.7 +0.8**
baz=308
G27A Dupree 80.21 40 P **P** **06 19 16.2 +0.3**
baz=313
H26A Fairpoint 80.29 41 P **P** **06 19 16.7 +0.3**
baz=313
A32A Rocking H Ranc 80.36 35 P **P** **06 19 16.1 -0.5**
baz=316
F28A McLaughlin 80.46 39 P **P** **06 19 17.6 +0.4**
baz=314
I26A New Underwood 80.64 41 P **P** **06 19 18.7 +0.4**
baz=313
H27A Howes 80.65 40 P **P** **06 19 18.4 +0.2**
baz=313
MORC Moravsky Berou 80.70 327 *e*P **P** **06 19 18.9 +0.4**
MORC pmax pmax
comp=Z,82nm,1.2s
MORC Moravsky Berou 80.70 327 *e*P **P** **06 19 18.9 +0.4**
comp=Z,82nm,1.2s
B32A Ashes, Strandq 80.72 35 P **P** **06 19 18.1 -0.5**
baz=316
A33A Warroad 80.85 34 P **P** **06 19 19.0 -0.2**
baz=317
PV10 Paradox Valley 80.86 49 *e*P **P** **06 19 21.3 +1.5**
J26A Sides Ranch, S 81.02 42 P **P** **06 19 20.4 +0.1**
baz=313
PV05 Paradox Valley 81.02 49 *e*P **P** **06 19 21.8 +1.2**
I27A Quinn 81.04 41 P **P** **06 19 20.7 +0.2**
baz=313

N23A	**Red Feather La**	**81.04**	**45**	P		**P**	**06 19 21.6**	**+0.8**
	baz=311							
N23A	**Red Feather La**	**81.04**	**45**	*e*P		**P**	**06 19 21.1**	**+0.3**
	comp=Z,66nm,1.6s							
H28A	**Mission Ridge**	**81.16**	**40**	P		**P**	**06 19 21.3**	**+0.3**
	baz=314							
PV01	**Paradox Valley**	**81.30**	**49**	*e*P		**P**	**06 19 22.9**	**+0.8**
BRG	**Berggiesshubel**	**81.39**	**330**	*e*P		pP	06 19 31.2	+1.3
	comp=Z,7.2nm,1.2s							
BRG	**Berggiesshubel**	**81.39**	**330**	*e*P		**pP**	**06 19 31.2**	**+1.3**
BRG				pmax		pmax		
	comp=Z,20nm,1.2s							
CLL	**Collm**	**81.44**	**330**	*e*P		**P**	**06 19 22.0**	**-0.3**
	comp=Z,7.0nm,1.4s							
CLL				⇓*i*			06 19 31.3	
	comp=Z,9.0nm,1.1s							
CLL				*i*			06 19 47.5	
CLL	**Collm**	**81.44**	**330**	⇓*e*P		**P**	**06 19 22.0**	**-0.3**
CLL				*i*			06 19 31.3	
CLL				pmax		pmax		
	comp=Z,133nm,1.4s							
B34A	**Aery, Baudette**	**81.51**	**34**	P		**P**	**06 19 22.4**	**-0.4**
	baz=318							
I28A	**Midland**	**81.55**	**40**	P		**P**	**06 19 23.2**	**+0.1**
	baz=314							
SMCO	**Snowmass**	**81.58**	**47**	*e*P		**P**	**06 19 24.3**	**+0.5**
	comp=Z,46nm,1.9s							
G30A	**Faulkton**	**81.80**	**39**	P		**P**	**06 19 24.6**	**+0.3**
	baz=315							
MVCO	**Mesa Verde**	**81.94**	**49**	P		**P**	**06 19 26.4**	**+0.9**
	baz=310							
ISCO	**Idaho Springs**	**81.96**	**46**	P		**P**	**06 19 26.5**	**+0.8**
	baz=312							
ISCO	**Idaho Springs**	**81.96**	**46**	*e*P		**P**	**06 19 26.3**	**+0.6**
ISCO				pmax		pmax		
	comp=Z,57nm,1.8s							
ISCO	**Idaho Springs**	**81.96**	**46**	*e*P		**P**	**06 19 26.3**	**+0.6**
	comp=Z,57nm,1.8s							
I29A	**Vivian Onida**	**81.99**	**40**	P		**P**	**06 19 25.8**	**+0.4**
	baz=314							
B35A	**Bob, Littlefor**	**82.02**	**34**	P		**P**	**06 19 25.2**	**-0.3**
	baz=318							
D34A	**Park Rapids**	**82.30**	**35**	P		**P**	**06 19 26.5**	**-0.4**
	baz=317							
E33A	**Westby DABS, E**	**82.34**	**36**	P		**P**	**06 19 27.2**	**0.0**
	baz=317							
S22A	**4UR Ranch, Cre**	**82.60**	**48**	P		**P**	**06 19 30.4**	**+1.4**
	baz=311							
S22A	**4UR Ranch, Cre**	**82.60**	**48**	*e*P		**P**	**06 19 30.5**	**+1.4**
	comp=Z,21nm,1.3s							
Q24A	**Divide**	**82.78**	**46**	P		**P**	**06 19 30.6**	**+0.6**
	baz=312							
Q24A	**Divide**	**82.78**	**46**	*e*P		**P**	**06 19 30.3**	**+0.3**
	comp=Z,7.1nm,0.9s							
C36A	**Pine Crest Far**	**82.87**	**34**	P		**P**	**06 19 29.6**	**-0.2**
	baz=319							
KHC	**Kasperske Hory**	**82.89**	**329**	*e*P		**P**	**06 19 30.0**	**+0.1**
KHC				*e*pP		**pP**	**06 19 39.0**	**+1.2**
KHC	**Kasperske Hory**	**82.89**	**329**	*e*P		**P**	**06 19 30.1**	**+0.1**
KHC				pmax		pmax		
	comp=Z,7.0nm,1.2s							
KHC	**Kasperske Hory**	**82.89**	**329**	*e*P		**P**	**06 19 30.1**	**+0.1**
	comp=Z,7.2nm,1.2s							
J30A	**Dallas**	**82.90**	**40**	P		**P**	**06 19 30.1**	**-0.1**
	baz=315							
GERES	**GERESS Array B**	**83.05**	**328**	P		**P**	**06 19 31.1**	**+0.2**
	comp=Z,1.2nm,0.6s,baz=46,slow=5.8,SNR=9.8							
GEA0	**GERESS Array S**	**83.06**	**328**	*e*P		**P**	**06 19 30.9**	**0.0**
K30A	**Basset**	**83.29**	**41**	P		**P**	**06 19 32.4**	**+0.2**
	baz=315							
H33A	**Prehn Over Nor**	**83.31**	**38**	P		**P**	**06 19 32.7**	**+0.4**
	baz=317							
EYMN	**Ely**	**83.31**	**33**	P		**P**	**06 19 32.2**	**0.0**
	baz=320							
C38A	**Sawbill Land.**	**83.59**	**33**	P		**P**	**06 19 33.1**	**-0.5**
	baz=320							
TUC	**Tucson**	**83.64**	**54**	P		**P**	**06 19 33.9**	**-0.3**
	baz=310							
TUC	**Tucson**	**83.64**	**54**	*e*P		**P**	**06 19 33.9**	**-0.3**
TUC				pmax		pmax		
	comp=Z,20nm,1.1s							
TUC	**Tucson**	**83.64**	**54**	*e*P		**P**	**06 19 33.9**	**-0.3**
	comp=Z,20nm,1.1s							
L31A	**Butterfield Fa**	**84.05**	**41**	P		**P**	**06 19 36.3**	**+0.2**
	baz=315							
ECSD	**EROS Data Cent**	**84.06**	**38**	P		**P**	**06 19 36.0**	**-0.1**
	baz=317							
ECSD	**EROS Data Cent**	**84.06**	**38**	*e*P		**P**	**06 19 36.0**	**-0.1**
	comp=Z,23nm,1.5s							
H35A	**Sunnyside Ranc**	**84.23**	**37**	P		**P**	**06 19 37.5**	**+0.6**
	baz=318							
T25A	**Trinidad**	**84.44**	**47**	P		**P**	**06 19 39.2**	**+0.8**
	baz=313							
T25A	**Trinidad**	**84.44**	**47**	*e*P		**P**	**06 19 38.9**	**+0.5**
	comp=Z,42nm,1.5s							
ANMO	**Albuquerque**	**84.67**	**50**	P		**P**	**06 19 40.4**	**+0.8**
	baz=312							
ANMO	**Albuquerque**	**84.67**	**50**	*e*P		**P**	**06 19 40.1**	**+0.5**
ANMO				pmax		pmax		
	comp=Z,22nm,1.3s							
ANMO	**Albuquerque**	**84.67**	**50**	*e*P		**P**	**06 19 40.1**	**+0.5**
	comp=Z,22nm,1.3s							
I37A	**Lemond, Waseca**	**85.42**	**36**	P		**P**	**06 19 43.5**	**+0.6**
	baz=319							
BFO	**Black Forest**	**85.65**	**331**	*i* P		**P**	**06 19 44.7**	**+0.7**
P32A	**Huiting Farm,**	**86.00**	**42**	P		**P**	**06 19 45.6**	**-0.3**
	baz=316							
N35A	**Tabor**	**86.66**	**40**	P		**P**	**06 19 50.0**	**+0.8**
	baz=318							
P34A	**Walnut Farm, R**	**87.00**	**41**	P		**P**	**06 19 50.5**	**-0.3**
	baz=317							
KSU1	**Kansas State U**	**87.44**	**41**	P		**P**	**06 19 52.7**	**-0.3**
	baz=317							
KSU1	**Kansas State U**	**87.44**	**41**	*e*P		**P**	**06 19 52.0**	**-0.9**
	comp=Z,16nm,1.1s							
M38A	**Pleasantville**	**87.47**	**38**	P		**P**	**06 19 53.4**	**+0.3**
	baz=319							
P36A	**Good Intent, A**	**87.80**	**40**	P		**P**	**06 19 54.1**	**-0.5**
	baz=318							
Q35A	**Mercer Eighty,**	**87.92**	**41**	P		**P**	**06 19 55.3**	**0.0**
	baz=317							
P38A	**Dawn**	**88.65**	**39**	P		**P**	**06 19 58.7**	**0.0**
	baz=319							
Q39A	**Willow Grove F**	**89.37**	**39**	P		**P**	**06 20 02.2**	**+0.2**
	baz=319							
P40A	**Paris**	**89.47**	**39**	P		**P**	**06 20 02.7**	**+0.2**
	baz=320							
TX31	**Lajitas Ar. Si**	**90.19**	**52**	*e*P		**P**	**06 20 06.7**	**+0.5**
TXAR	**Lajitas Array**	**90.19**	**52**	P		**P**	**06 20 06.4**	**+0.2**
	comp=Z,1.0nm,0.6s,baz=302,slow=3.1,SNR=21							
T38A	**Diamond**	**90.19**	**41**	P		**P**	**06 20 05.7**	**-0.3**
	baz=318							
S39A	**Bolivar**	**90.22**	**40**	P		**P**	**06 20 05.7**	**-0.3**
	baz=319							
U37A	**Salina**	**90.22**	**42**	P		**P**	**06 20 05.9**	**-0.2**
	baz=318							
V37A	**Hulbert**	**90.59**	**43**	P		**P**	**06 20 07.8**	**0.0**
	baz=318							
W37B	**Quinton**	**90.98**	**43**	P		**P**	**06 20 09.6**	**-0.1**
	baz=318							
V38A	**Canehill**	**91.01**	**42**	P		**P**	**06 20 09.5**	**-0.3**
	baz=318							
U39A	**Green Forest**	**91.12**	**41**	P		**P**	**06 20 09.9**	**-0.4**
	baz=319							
U40A	**Yellville**	**91.47**	**41**	P		**P**	**06 20 11.5**	**-0.4**
	baz=319							
MIAR	**Mount Ida**	**92.44**	**43**	P		**P**	**06 20 16.2**	**-0.2**
	baz=319							
VNDA	**Vanda**	**114.66**	**175**	PKP		PKPdf	06 25 44.3	-0.1
	comp=Z,1.0nm,0.9s,baz=259,slow=5.2,SNR=3.4							
DBIC	**Dimbokro**	**126.62**	**317**	PKP		**PKPdf**	**06 26 09.4**	**+0.1**
	comp=Z,1.8nm,0.8s,baz=337,slow=4.8,SNR=4.3							
LPAZ	**La Paz**	**146.72**	**60**	PKPbc		**PKPbc**	**06 26 48.2**	**-0.3**
	comp=Z,6.8nm,0.6s,baz=345,slow=2.3,SNR=48							
LPAZ	**La Paz**	**146.72**	**60**	*e*PKPdf		**PKPbc**	**06 26 47.8**	**-0.7**
PB11	**IPOC Station P**	**147.88**	**67**	*e*PKPbc		**PKPbc**	**06 26 51.6**	**+0.5**
SIV	**San Ignacio**	**151.17**	**50**	PKPbc		**PKPbc**	**06 26 59.0**	**-0.2**
	comp=Z,7.2nm,0.7s,baz=296,slow=0.8,SNR=12							
LCO	**Las Campanas**	**151.90**	**84**	*e*PKPbc		**PKPbc**	**06 27 01.3**	**+0.5**
LCO				*e*PKPab		PKPab	06 27 21.7	+12

NIED ***14*** *06:08:00, 35.˚50N×142.˚50E, h5km, Mw5.7 Best double couple: M₀4.17000×10¹⁷ NP1:φs191.00000°, δ19.00000°, λ81.00000°. NP2:φs20.00000°, δ71.00000°, λ93.00000°.*
JMA ***14*** *06:08:42.6±0.3, 35.˚52N×142.˚47E, h28km, M6.0*

JMA Felt I J1.
IDC ***14*** *06:08:44.4±0.5, 35.˚46N×142.˚26E, h0km, mb4.5/29, mb1 4.6/36, mb1mx4.5/48, mbtmp4.5/36, ML4.1/6, MS5.2/12, Ms1 5.2/12, ms1mx5.0/23, Error ellipse: s-maj=13.8km s-min=10.3km az=92.0*
BJI ***14*** *06:08:45.1, 35.˚65N×141.˚80E, h10km, mb5.0/65, mB5.7/70, Ms6.0/96, Ms7 5.9/86*
ISCJB ***14*** *06:08:47.7±0.1, 35.˚56N±0.˚02×141.˚92E±0.˚02, h22km, mb5.1/237, MS5.6/208, Error ellipse: s-maj=3.3km s-min=2.3km az=160.3*
NEIC ***14*** *06:08:47.3±0.2, 35.˚56N×141.˚88E, h10km, mb5.3/147, MS5.5/162, MW5.8, MW5.7, Error ellipse: s-maj=5.5km s-min=3.7km az=140.0, Moment Tensor Solution. s53 Moment tensor: Scale 10¹⁷Nm; Mrr3.65; Mθθ-1.72; Mφφ-1.93; Mrθ2.00; Mθφ-2.07; Mφr4.16; Best double couple: M₀6.00000×10¹⁷ NP1:φs237.00000°, δ21.00000°, λ116.00000°. NP2:φs30.00000°, δ71.00000°, λ80.00000°. Principal axes: T 5.9600, Plg63.0000°, Azm284.0000°; N 0.0200, Plg9.0000°, Azm33.0000°; P -5.9800, Plg25.0000°, Azm127.0000°;*
GCMT ***14*** *06:08:47.3±0.1, 35.˚50N×142.˚25E, h12km, MW5.6/129, Moment Tensor Solution. s93,c179; s129,c338; Duration: 1s6 Moment tensor: Scale 10¹⁷Nm; Mrr2.36±.02; Mθθ-0.34±.02; Mφφ-2.02±.02; Mrθ0.91±.07; Mθφ-0.79±.02; Mφr2.38±.07; Best double couple: M₀3.46400×10¹⁷ NP1:φs21.00000°, δ69.00000°, λ90.00000°. NP2:φs202.00000°, δ21.00000°, λ91.00000°. Principal axes: T 3.4770, Plg66.0000°, Azm290.0000°; N -0.0220, Plg0.0000°, Azm21.0000°; P -3.4520, Plg24.0000°, Azm111.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface/mantle waves, cutoff=50s.*
NEIC ***14*** *06:08:48.0±0.0, 35.˚08N×141.˚87E, h15km, Moment Tensor Solution. s11 Moment tensor: Scale 10¹⁷Nm; Mrr1.20; Mθθ0.20; Mφφ-1.30; Mrθ1.20; Mθφ-0.90; Mφr3.90; Best double couple: M₀4.00000×10¹⁷ NP1:φs16.00000°, δ80.00000°, λ85.00000°. NP2:φs223.00000°, δ11.00000°, λ117.00000°. Principal axes: T 4.1000, Plg54.0000°, Azm280.0000°; N 0.6000, Plg4.0000°, Azm17.0000°; P -4.6000, Plg35.0000°, Azm110.0000°;*
ISC 14 06:08:49.1±0.4, 35.˚65N±0.˚03×141.˚90E±0.˚03, h20km±1km, h20km:pP-P,n722,σ1s86/622, mb5.3/256, MS5.5/212, 29C-16D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.85**	**274**	⇑P		**Pg**	**06 09 05.7**	**0.0**
CHOJ				*e*S		**Sn**	**06 09 22.1**	**+4.4**
JAG	**Ashikaga**	**2.12**	**292**	P		**Pn**	**06 09 23.5**	**0.0**
JFT	**Otama**	**2.25**	**327**	P		**Pn**	**06 09 24.5**	**-0.7**
JFT				*e*S		**Sn**	**06 09 54.2**	**+1.8**
JNS	**Sasagawa**	**3.00**	**317**	*e*S		**Sn**	**06 10 14.5**	**+3.7**
JHJ	**Hachijo jima 2**	**3.07**	**215**	Pn		**Pn**	**06 09 35.5**	**-0.9**
	44nm,0.3s,baz=66,slow=19,SNR=1.4							
JHJ				Sn		**Sn**	**06 10 09.5**	**-3.1**
	188nm,0.3s,baz=16,slow=16,SNR=5.1							
MJAR	**Matsushiro Arr**	**3.12**	**288**	Pn		**Pn**	**06 09 38.6**	**+1.4**
	15nm,0.3s,baz=93,slow=8.8,SNR=4.3							
MJAR				Sn		**Sn**	**06 10 17.8**	**+3.9**
	19nm,0.3s,baz=141,slow=13,SNR=5.6							
MJAR				LR		LR	06 10 36.0	
	comp=Z,23μm,22.0s,baz=110,slow=33							
MAJO	**Matsushiro**	**3.12**	**288**	*ce*P		**Pn**	**06 09 39.3**	**+2.1**
MAT	**Matsushiro**	**3.12**	**288**	P		**Pn**	**06 09 38.8**	**+1.6**
MAT				*e*S		**Sb**	**06 10 19.7**	**-1.8**
MAT	**Matsushiro**	**3.12**	**288**	P		**Pn**	**06 09 36.3**	**-0.9**
MAT				*e*S		**Sb**	**06 10 18.0**	**-3.5**
ERM	**Erimo**	**6.43**	**8**	*e*P		**Pn**	**06 10 23.5**	**+0.9**
ERM				*e*			06 11 33.2	
ERM	**Erimo**	**6.43**	**8**	*e*Pn		**Pn**	**06 10 23.5**	**+0.9**
ERM				*e*Sn		**Sn**	**06 11 33.1**	**-2.3**
ASAJ	**Asahikawa**	**8.47**	**3**	Pn		**Pn**	**06 10 49.4**	**-1.3**
	9.4nm,0.3s,baz=25,slow=16,SNR=3.6							
ASAJ				Sn		**Sn**	**06 12 21.4**	**-4.2**
	baz=19,slow=28,SNR=4.5							
ASAJ	**Asahikawa**	**8.47**	**3**	*e*Pn		**Pn**	**06 10 49.1**	**-1.5**
ASAJ				*e*Sn		**Sn**	**06 12 22.0**	**-3.7**
CBIJ	**Chichi jima**	**8.53**	**178**	Sn		Sn	06 12 16.0	-11
JCJ	**Chichijima**	**8.53**	**178**	Sn		Sn	06 12 16.0	-11
	baz=286,slow=20							
YUK	**Yuzh-Kuril'sk**	**8.91**	**19**	*e*P		**Pn**	**06 10 59.3**	**+2.6**
YUK				*e*S		**Sn**	**06 12 41.2**	**+4.8**
YUK				pmax		pmax		
	comp=Z,294nm,1.0s							
JNU	**Nakatsue**	**9.45**	**258**	Pn		**Pn**	**06 11 06.2**	**+2.1**
	comp=Z,0.9nm,0.3s,baz=65,slow=12,SNR=4.6							
JNU				LR		LR	06 14 51.8	
	comp=Z,25μm,20.0s,baz=84,slow=38							
JNU	**Nakatsue**	**9.45**	**258**	*e*Pn		**Pn**	**06 11 03.5**	**-0.7**
KUR	**Kuril'sk**	**10.60**	**24**	*e*P		Pn	06 11 06.0	-14
KUR				*e*S		**Sn**	**06 13 16.7**	**-1.0**
KUR				smax		smax		
	comp=N,27nm,0.8s							
KUR				smax		smax		
	comp=E,57nm,0.8s							
KUR				smax		smax		
	comp=N,2μm,8.2s							
KUR				smax		smax		
	comp=E,825nm,8.2s							
KUR				MLR		MLR		
	comp=N,13μm,14.0s							
KUR				MLR		MLR		
	comp=Z,14μm,14.0s							
VLA	**Vladivostok**	**10.75**	**317**	*ce*P		**Pn**	**06 11 23.3**	**+1.5**
VLA				pmax		pmax		
	comp=Z,79nm,1.7s							
YSS	**Yuzh-Sakhalins**	**11.31**	**3**	⇑*e*P		**Pn**	**06 11 28.0**	**-1.5**
YSS				*e*S		**Sn**	**06 13 31.0**	**-4.3**
YSS				pmax		pmax		
	comp=Z,600nm,5.0s							
YSS				pmax		pmax		
	comp=Z,100nm,0.8s							
YSS				MLR		MLR		
	comp=Z,38μm,15.0s							
YSS				MLR		MLR		
	comp=N,22μm,18.0s							
YSS				MLR		MLR		
	comp=E,53μm,15.0s							
YSS	**Yuzh-Sakhalins**	**11.31**	**3**	*e*		**Pn**	**06 11 27.5**	**-2.0**
YSS	**Yuzh-Sakhalins**	**11.31**	**3**	*e*Sn		**Pn**	**06 11 27.5**	**-2.0**
KSRS	**Korea Array**	**11.38**	**283**	Pn		Pn	06 11 35.1	+4.6
	comp=E,0.3nm,0.3s,baz=93,slow=13,SNR=6.9							
KSRS				LR		LR	06 15 53.3	
	comp=E,20μm,19.4s,baz=92,slow=36							
KS01	**Wonju Array Si**	**11.41**	**283**	*e*Pn		**Pn**	**06 11 33.4**	**+2.5**
KSAR	**Wonju Array Be**	**11.41**	**283**	P		Pn	06 11 35.1	+4.1
KSAR	**Wonju Array Be**	**11.41**	**283**	Pn		Pn	06 11 35.1	+4.1
USRK	**Ussuriysk Ar.**	**11.43**	**321**	Pn		Pn	06 11 35.1	+4.0
	comp=E,0.6nm,0.3s,baz=137,slow=11,SNR=8.9							
USRK				LR		LR	06 15 39.9	
	comp=E,17μm,18.2s,baz=130,slow=35							
MDJ	**Mudanjiang**	**12.98**	**317**	P		**Pn**	**06 11 52.8**	**+0.4**
MDJ				S		**Sn**	**06 14 21.8**	**+5.7**
MDJ				pmax		pmax		
	comp=E,4μm,11.2s							
MDJ				LR		LR		
	comp=E,58μm,12.8s							
MDJ				LR		LR		
	comp=E,22μm,11.8s							
MDJ				LR		LR		
	comp=E,49μm,13.9s							
UGL	**Uglegorsk**	**13.42**	**0**	*e*P		Pn	06 11 54.0	-4.3
UGL				pmax		pmax		
	comp=Z,2μm,8.0s							
UGL				MLR		MLR		
	comp=Z,39μm,16.0s							
UGL				MLR		MLR		
	comp=N,45μm,15.0s							
UGL				MLR		MLR		
	comp=E,28μm,15.0s							
HABR	**Khabarovsk**	**13.78**	**341**	*ce*P		**Pn**	**06 12 01.2**	**-2.0**
HABR				*e*S		**Sn**	**06 14 33.6**	**-1.9**
HABR				pmax		pmax		
	comp=N,74nm,2.8s							
HABR				pmax		pmax		
	comp=Z,90nm,2.8s							
HABR				pmax		pmax		
	comp=E,69nm,2.8s							
HABR				MLR		MLR		
	comp=Z,19μm,15.0s							

CN2	**Changchun**	**15.03**	**308**	*e*P		**Pn**	**06 12 17.3**	**-3.0**
CN2				*es*P		sP	06 12 32.4	-1.3
CN2				*e*S		**Sn**	**06 15 02.4**	**-3.7**
CN2				pmax		pmax		
	comp=Z,50nm,1.2s							
CN2				pmax		pmax		
	comp=Z,200nm,10.0s							
CN2				LR		LR		
	comp=Z,33μm,14.0s							
CN2				LR		LR		
	comp=Z,61μm,14.0s							
CN2				LR		LR		
	comp=Z,59μm,14.0s							
TYV	**Tymovskoe**	**15.22**	**2**	*e*P		**Pn**	**06 12 19.8**	**-2.9**
TYV				*e*S		**Sn**	**06 15 08.0**	**-2.6**
TYV				pmax		pmax		
	comp=E,2μm,8.0s							
TYV				pmax		pmax		
	comp=Z,2μm,9.0s							
TYV				pmax		pmax		
	comp=Z,197nm,1.4s							
TYV				smax		smax		
	comp=E,14μm,12.0s							
TYV				MLR		MLR		
	comp=Z,45μm,14.0s							
KLR	**Kul'dur**	**15.48**	**334**	Pn		**Pn**	**06 12 27.9**	**+1.7**
	comp=Z,0.4nm,0.3s,baz=148,slow=12,SNR=3.3							
KLR				LR		LR	06 18 22.9	
	comp=Z,27μm,18.7s,baz=144,slow=37							
SNY	**Shenyang**	**15.56**	**299**	⇑P		**Pn**	**06 12 26.4**	**-0.8**
SNY				pmax		pmax		
	comp=Z,5μm,11.5s							
SNY				LR		LR		
	comp=Z,40μm,14.2s							
SNY				LR		LR		
	comp=Z,43μm,13.8s							
SNY				LR		LR		
	comp=Z,59μm,14.1s							
DL2	**Dalian**	**16.45**	**287**	P		**P**	**06 12 41.4**	**0.0**
DL2				pmax		pmax		
	comp=Z,48nm,1.2s							
DL2				pmax		pmax		
	comp=Z,6μm,10.2s							
DL2				LR		LR		
	comp=Z,42μm,14.9s							
DL2				LR		LR		
	comp=Z,22μm,15.0s							
DL2				LR		LR		
	comp=Z,30μm,17.4s							
NKL	**Nikolayevsk**	**17.52**	**358**	*e*P		**Pn**	**06 12 51.0**	**-1.0**
NKL				*e*S		**Sn**	**06 16 03.0**	**-3.4**
NKL				pmax		pmax		
	comp=N,20nm,0.9s							
NKL				pmax		pmax		
	comp=Z,30nm,0.9s							
NKL				pmax		pmax		
	comp=N,2μm,6.0s							
NKL				pmax		pmax		
	comp=Z,2μm,8.0s							
NKL				smax		smax		
	comp=N,1μm,11.0s							
NKL				smax		smax		
	comp=E,1μm,11.0s							
NKL				MLR		MLR		
	comp=N,39μm,16.0s							
NKL				MLR		MLR		
	comp=E,32μm,16.0s							
NKL				MLR		MLR		
	comp=Z,62μm,16.0s							
SSE	**Sheshan**	**17.88**	**261**	⇑P		**Pn**	**06 12 54.0**	**-2.6**
SSE				pP		**P**	**06 12 57.4**	**+0.2**
SSE				S		**Sn**	**06 16 12.0**	**-3.4**
SSE				pmax		pmax		
	comp=Z,28nm,0.8s							
SSE				LR		LR		
	comp=Z,45μm,16.0s							
SSE				LR		LR		
	comp=Z,27μm,16.0s							
SSE				LR		LR		
	comp=Z,28μm,16.0s							
SKR	**Severo-Kuril's**	**18.21**	**30**	*e*P		Pn	06 12 52.0	-8.5
SKR				*e*S		**S**	**06 16 27.0**	**-1.1**
SKR				pmax		pmax		
	comp=Z,3μm,8.0s							
SKR				MLR		MLR		
	comp=Z,11μm,12.0s							
NJ2	**Nanjing**	**19.46**	**266**	*e*P		**P**	**06 13 13.0**	**-1.6**
NJ2				pP		**pP**	**06 13 18.9**	**-1.3**
NJ2				pmax		pmax		
	comp=Z,16nm,0.5s							
NJ2				pmax		pmax		
	comp=Z,3μm,11.8s							
NJ2				LR		LR		
	comp=Z,31μm,19.3s							
NJ2				LR		LR		
	comp=Z,22μm,16.0s							
NJ2				LR		LR		
	comp=Z,18μm,16.0s							
TIA	**Tai'an**	**20.06**	**279**	⇓P		**P**	**06 13 17.8**	**-3.3**
TIA				S		**S**	**06 17 03.9**	**-1.8**
TIA				pmax		pmax		
	comp=Z,4μm,12.4s							
TIA				LR		LR		
	comp=Z,26μm,13.8s							
TIA				LR		LR		
	comp=Z,17μm,14.9s							
TIA				LR		LR		
	comp=Z,24μm,15.2s							
TATO	**Taipei**	**20.54**	**244**	PFAKE			06 13 40.0	+11
TATO				LR		LR		
	comp=Z,7μm,18.0s							
PEA0	**Petropavlovsk-**	**20.71**	**28**	*e*P		**P**	**06 13 26.6**	**-1.4**
PEA0B	**Petropavlovsk-**	**20.71**	**28**	*e*P		**P**	**06 13 27.0**	**-1.0**
	comp=Z,163nm,1.4s							
PEA0B				LR		LR		
	comp=Z,8μm,19.0s							
PETK	**Petropavlovsk-**	**20.71**	**28**	P		Pn	06 13 31.9	+1.5
	comp=Z,23nm,1.1s,baz=209,slow=12,SNR=6.9							
PETK				LR		LR	06 23 06.9	
	comp=Z,6μm,18.6s,baz=214,slow=42							
PETK	**Petropavlovsk-**	**20.71**	**28**	P		Pn	06 13 31.9	+1.5
PETK				pmax		pmax		
	comp=Z,22nm,1.0s							
PETK				MLR		MLR		
	comp=Z,6μm,18.6s							
BJI	**Beijing**	**20.75**	**290**	P		**P**	**06 13 26.3**	**-2.2**
BJI				sP		**pP**	**06 13 33.8**	**-0.4**
BJI				S		**S**	**06 17 18.6**	**-0.7**
BJI				pmax		pmax		
	comp=Z,24nm,2.8s							
BJI				LR		LR		
	comp=Z,18μm,13.3s							
BJT	**Baijiatuau**	**20.75**	**290**	*e*P		**P**	**06 13 26.9**	**-1.7**
BJT				*e*S		**S**	**06 17 15.1**	**-4.3**
BJT				pmax		pmax		
	comp=Z,361nm,1.6s							
BJT				MLR		MLR		
	comp=Z,11μm,19.0s							
BJT	**Baijiatuau**	**20.75**	**290**	*e*P		**P**	**06 13 26.9**	**-1.7**
	comp=Z,361nm,1.6s							
BJT				*e*S		**S**	**06 17 15.1**	**-4.3**
BJT				LR		LR		
	comp=Z,11μm,19.0s							
YHNB	**Yeheng**	**20.80**	**244**	PFAKE			06 13 40.0	+8.2
YHNB				LR		LR		
	comp=Z,6μm,18.0s							
NACB	**Ninganchiao**	**20.94**	**242**	PFAKE			06 13 40.0	+6.7
NACB				LR		LR		
	comp=Z,4μm,20.0

HIA MLR MLR
comp=Z,6μm,19.0s
HIA Hailar 21.16 317 *e*P **P 06 13 31.8 -1.2**
comp=Z,92nm,1.3s
HIA LR LR
comp=Z,6μm,19.0s
YULB Yu-li 21.64 241 *e*P **P 06 13 42.0 +3.7**
comp=Z,67nm,1.5s
SSLB Suanglung 21.64 243 *e*P **P 06 13 38.7 +0.4**
comp=Z,39nm,1.0s
SSLB LR LR
comp=Z,5μm,20.0s
GUMO Guam 22.13 172 LR LR 06 24 53.9
comp=Z,2μm,19.8s,baz=9.5,slow=44
GUMO Guam 22.13 172 *e*P **P 06 13 47.0 +3.5**
GUMO pmax pmax
comp=Z,575nm,1.3s
GUMO Guam 22.13 172 *e*P **P 06 13 47.0 +3.5**
comp=Z,575nm,1.3s
TWG Pinlang 22.16 240 *e*P **P 06 13 40.3 -3.6**
comp=Z,85nm,0.8s
TWG LR LR
comp=Z,12μm,19.0s
TPUB Ta-pu 22.18 242 *e*P **P 06 13 43.5 -0.5**
TPUB LR LR
comp=Z,6μm,18.0s
QZH Quanzhou 22.72 248 ⇓*i*P **P 06 13 46.6 -3.2**
QZH S S 06 17 46.5 -11
QZH LR LR
comp=Z,26μm,14.8s
QZH LR LR
comp=Z,42μm,14.1s
QZH LR LR
comp=Z,36μm,14.6s
WHN Wuhan 23.59 265 P **P 06 13 57.0 -1.6**
WHN S **S 06 18 11.8 -0.2**
WHN pmax pmax
comp=Z,3μm,7.2s
WHN LR LR
comp=Z,52μm,12.8s
WHN LR LR
comp=Z,46μm,12.6s
WHN LR LR
comp=Z,62μm,12.9s
TIY Taiyuan 23.68 284 *e*P **P 06 14 00.3 +0.8**
TIY pmax pmax
comp=Z,2μm,10.3s
TIY LR LR
comp=Z,17μm,14.1s
TIY LR LR
comp=Z,29μm,13.5s
TIY LR LR
comp=Z,31μm,14.0s
CLNS Chul'man 24.10 337 *e*P **P 06 14 03.0 -0.3**
CLNS *e**PP **sP 06 14 13.6 +1.8**
CLNS *e* 06 17 51.6
CLNS *e*S **S 06 18 13.7 -6.1**
CLNS *e*SS **SnSn 06 18 59.7 -1.6**
CLNS pmax pmax
comp=Z,43nm,0.9s
CLNS pmax pmax
comp=N,35nm,1.2s
CLNS pmax pmax
comp=E,11nm,1.2s
CLNS pmax pmax
comp=Z,97nm,1.0s
CLNS pmax pmax
comp=N,112nm,1.3s
CLNS pmax pmax
comp=E,63nm,1.2s
CLNS smax smax
comp=N,13μm,13.0s
CLNS smax smax
comp=E,7μm,11.5s
CLNS MLR MLR
comp=N,33μm,15.0s
CLNS MLR MLR
comp=Z,27μm,13.0s
CLNS MLR MLR
comp=E,11μm,16.0s
HHC Hu-ho-hao-te 24.31 291 *e*P **P 06 14 04.3 -1.1**
HHC pP pP 06 14 08.8 -2.6
HHC sP sP 06 14 12.1 -1.8
HHC PP **PnPn 06 14 34.8 -0.8**
HHC S **S 06 18 22.0 -1.5**
HHC sS sS 06 18 29.8 -3.6
HHC pmax pmax
comp=E,25nm,0.9s
HHC pmax pmax
comp=E,2μm,4.4s
HHC LR LR
comp=E,11μm,11.9s
HHC LR LR
comp=E,11μm,12.5s
HHC LR LR
comp=E,13μm,11.9s
MA2 Magadan 24.63 11 P **P 06 14 08.7 +0.7**
comp=E,16nm,0.9s,baz=202,slow=8.1,SNR=9.3
MA2 Magadan 24.63 11 *e*P **P 06 14 07.6 -0.4**
MA2 pmax pmax
comp=Z,388nm,1.1s
MA2 MLR MLR
comp=Z,6μm,20.0s
MA2 Magadan 24.63 11 *e*P **P 06 14 07.6 -0.4**
comp=Z,388nm,1.1s
MA2 LR LR
comp=Z,6μm,20.0s
BTO Baotou 25.48 291 *e*P **P 06 14 16.8 +0.8**
CIT Chita 25.95 318 *e*P **P 06 14 20.5 +0.3**
CIT *e* 06 14 34.2
CIT *e* 06 15 08.2
CIT *e*S **S 06 18 53.8 +4.3**
CIT pmax pmax
comp=Z,348nm,3.7s
XAN Xi'an 27.04 276 P **P 06 14 28.8 -1.4**
XAN pP sP 06 14 40.3 +1.7
XAN S **S 06 19 03.1 -3.9**
XAN pmax pmax
comp=Z,57nm,1.2s
XAN pmax pmax
comp=Z,2μm,10.7s
XAN LR LR
comp=Z,24μm,14.6s
XAN LR LR
comp=Z,25μm,14.6s
YAK Yakutsk 27.50 348 P **P 06 14 34.7 +0.8**
comp=Z,39nm,0.5s,baz=7.2,slow=4.1,SNR=8.4
YAK LR LR 06 25 45.3
comp=Z,12μm,18.5s,baz=158,slow=37
YAK Yakutsk 27.50 348 *e*P **P 06 14 33.0 -0.9**
YAK *e**PP **sP 06 14 42.1 -0.3**
YAK *e* 06 15 19.4
YAK *e*PPP PPP 06 15 28.0
YAK *e*S **S 06 19 10.6 -2.9**
YAK *e*SS **SnSn 06 20 30.1 +6.0**
YAK *e*SSS SSS 06 20 50.5
YAK pmax pmax
comp=Z,83nm,0.9s
YAK pmax pmax
comp=N,25nm,1.0s
YAK pmax pmax
comp=E,20nm,1.0s
YAK pmax pmax
comp=N,665nm,2.5s
YAK pmax pmax
comp=Z,516nm,2.2s
YAK pmax pmax
comp=E,267nm,2.5s
YAK smax smax
comp=E,8μm,9.3s
YAK smax smax
comp=N,6μm,3.7s
YAK MLR MLR
comp=N,48μm,17.0s
YAK MLR MLR
comp=E,14μm,11.0s
YAK MLR MLR
comp=Z,54μm,15.0s
YAK Yakutsk 27.50 348 *e*P **P 06 14 33.9 0.0**
comp=Z,151nm,1.0s
HKC Hong Kong Obse 27.55 249 P P 06 14 40.0 +5.3
ENH Enshi 27.64 268 *e*P **P 06 14 34.5 -1.0**
comp=Z,79nm,0.9s
ENH LR LR
comp=Z,12μm,20.0s
GZH Guangzhou 27.75 251 P **P 06 14 35.8 -0.7**
GZH PP **PnPn 06 15 24.9 +2.3**
GZH S **S 06 19 19.3 +1.2**
GZH pmax pmax
comp=Z,2μm,10.4s
SEY Seymchan 28.08 10 P **P 06 14 39.5 +0.5**
comp=Z,4.3nm,0.6s,baz=201,slow=4.8,SNR=5.6
SMY Shemya 28.39 43 PFAKE 06 14 50.0 +8.1
SMY LR LR
comp=Z,4μm,20.0s
ULN Ulaanbaatar 28.47 306 *e*P **P 06 14 43.1 +0.2**
ULN pmax pmax
comp=Z,65nm,1.3s
ULN MLR MLR
comp=Z,6μm,20.0s
ULN Ulaanbaatar 28.47 306 *e*P **P 06 14 43.0 +0.2**
comp=Z,65nm,1.3s
ULN LR LR
comp=Z,6μm,20.0s
ULN Ulaanbaatar 28.47 306 P **P 06 14 43.2 +0.3**
SNR=29
SONA1 Songino Array 28.89 306 *e*P **P 06 14 47.2 +0.6**
SONM Songino Array 28.89 306 P **P 06 14 48.0 +1.3**
comp=Z,13nm,0.9s,baz=109,slow=9.4,SNR=10.0
SONM LR LR 06 26 10.2
comp=Z,5μm,20.2s,baz=99,slow=36
BOD Bodaibo 28.91 329 *e*P **P 06 14 49.0 +2.5**
BOD pmax pmax
comp=Z,82nm,1.9s
LZH Lanzhou 30.71 282 ⇑P **P 06 15 02.4 -0.5**
LZH pP pP 06 15 06.3 -2.6
LZH PP **PnPn 06 16 04.0 +1.3**
LZH S **S 06 20 05.6 +0.7**
LZH sS sS 06 20 16.4 +1.6
LZH pmax pmax
comp=Z,93nm,1.2s
LZH pmax pmax
comp=Z,1μm,4.8s
LZH LR LR
comp=Z,19μm,13.4s
LZH LR LR
comp=Z,20μm,13.7s
LZH LR LR
comp=Z,21μm,13.8s
IRK Irkutsk 31.32 314 *e*P **P 06 15 09.0 +1.0**
IRK *e*S **S 06 20 17.1 +3.3**
IRK pmax pmax
comp=Z,111nm,3.4s
GYA Guiyang 31.41 263 ⇑*i*P **P 06 15 06.8 -2.3**
GYA PP **PnPn 06 16 14.0 +2.1**
GYA PcP **PcP 06 18 04.3 +1.9**
GYA S **S 06 20 15.6 -0.2**
GYA ScS **ScS 06 25 41.4 -0.8**
GYA pmax pmax
comp=Z,40nm,1.1s
GYA LR LR
comp=Z,20μm,17.5s
GYA LR LR
comp=Z,12μm,16.2s
GYA LR LR
comp=Z,20μm,17.0s
ZAK Zakamensk 31.44 310 *e*P **P 06 15 09.4 +0.3**
ZAK pmax pmax
comp=Z,29nm,1.6s
TLY Talaya 31.54 313 P **P 06 15 10.8 +0.9**
comp=Z,2.0nm,0.6s,baz=119,slow=5.8,SNR=10
TLY Talaya 31.54 313*c i*P **P 06 15 10.3 +0.4**
TLY *e*PPP PPP 06 16 15.2
TLY *e*S **S 06 20 17.3 +0.1**
TLY 06 25 43.9
TLY pmax pmax
comp=Z,30nm,0.8s
TLY MLR MLR
comp=Z,18μm,13.0s
TLY Talaya 31.54 313 *e*P **P 06 15 11.1 +1.2**
comp=Z,72nm,1.4s
TLY LR LR
comp=Z,6μm,19.0s
TLY Talaya 31.54 313 P **P 06 15 10.8 +0.9**
SNR=23
CD2 Chengdu 32.09 273 P **P 06 15 13.8 -1.2**
CD2 sP pP 06 15 20.1 -1.0
CD2 S **S 06 20 27.0 +0.6**
CD2 sS sS 06 20 33.4 -2.9
CD2 pmax pmax
comp=Z,60nm,0.9s
CD2 pmax pmax
comp=Z,2μm,12.0s
CD2 LR LR
comp=Z,32μm,15.6s
CD2 LR LR
comp=Z,19μm,13.2s
QIZ Qiongzhong 32.74 248 P **P 06 15 21.6 +0.9**
QIZ S **S 06 20 40.1 +3.6**
QIZ LR LR
comp=Z,5μm,15.5s
QIZ LR LR
comp=Z,4μm,15.3s
MOY Mondy 33.14 312 *e*P **P 06 15 23.2 -0.8**
MOY pmax pmax
comp=Z,176nm,4.7s
GTA Gaotai 33.36 289 *e*P **P 06 15 26.1 0.0**
GTA pP pP 06 15 30.3 -1.9
GTA sP sP 06 15 33.3 -1.4
GTA S **S 06 20 45.4 -0.7**
GTA pmax pmax
comp=Z,19nm,1.8s
GTA pmax pmax
comp=Z,2μm,7.6s
GTA LR LR
comp=Z,13μm,13.8s
GTA LR LR
comp=Z,7μm,15.0s
GTA LR LR
comp=Z,12μm,15.0s
MIDW Midway 35.16 90 PFAKE 06 15 50.0 +8.4
MIDW LR LR
comp=Z,5μm,21.0s
KMI Kunming 35.17 264 P **P 06 15 42.9 +0.9**
KMI pP pP 06 15 47.1 -1.0
KMI sP sP 06 15 49.3 -1.2
KMI PP **PP 06 17 01.4 -0.4**
KMI S **S 06 21 14.5 +0.1**
KMI pmax pmax
comp=Z,12nm,0.7s
KMI pmax pmax
comp=Z,590nm,6.1s
KMI LR LR
comp=Z,9μm,14.8s
KMI LR LR
comp=Z,21μm,15.6s
KMI LR LR
comp=Z,23μm,15.6s
BILL Bilibino 35.25 16*ce*P **P 06 15 40.9 -1.0**
BILL *i* *PP **sP 06 15 49.7 -0.8**
BILL *i* *SP pP 06 15 56.2 +8.2
BILL *e* 06 17 03.2
BILL *e*PPP PPP 06 17 13.6
BILL *i* S **S 06 21 14.9 +0.6**
BILL *e*SSS SSS 06 23 52.7
BILL pmax pmax
comp=Z,17nm,1.2s
BILL MLR MLR
comp=Z,12μm,18.0s
BILL Bilibino 35.25 16 *e*P **P 06 15 41.4 -0.5**
comp=Z,68nm,1.2s
BILL LR LR
comp=Z,12μm,20.0s
TIXI Tiksi 36.71 353 P **P 06 15 55.3 +0.9**
comp=Z,6.2nm,0.7s,baz=145,slow=4.7,SNR=11
TIXI Tiksi 36.71 353 *e*P **P 06 15 54.5 +0.1**
TIXI pmax pmax
comp=Z,8.0nm,0.8s
TIXI Tiksi 36.71 353 *e*P **P 06 15 53.7 -0.7**
comp=Z,54nm,1.2s
TIXI LR LR
comp=Z,14μm,19.0s
TNTI Ternate 37.24 204 P P 06 16 08.6 +9.1
comp=Z,285nm,1.5s
TNTI Ternate 37.24 204 P P 06 16 07.9 +8.4
TNTI Ternate 37.24 204 *e*P **P 06 15 58.9 -0.6**
TNTI epwP **sP 06 16 07.9 -0.1**
SDKM Sandakan 37.53 223 ⇓P **P 06 16 04.2 +2.2**
SWI Sorong 37.66 198 P P 06 16 11.1 +8.1
comp=Z,42nm,1.0s
KKM Kota Kinabalu 37.75 225 PFAKE 06 16 10.0 +6.0
KKM LR LR
comp=Z,4μm,21.0s
TSM Tawau 38.28 221 ⇓P **P 06 16 09.8 +1.5**
SKNT Sakolnakorn 38.44 251 P P 06 16 13.9 +4.2
comp=Z,52nm,1.9s,comp=Z,3μm
FAKI Fak Fak 39.42 195 P P 06 16 26.8 +9.0
CRAI Chiangrai 39.46 258 P P 06 16 21.5 +3.3
comp=Z,24nm,2.0s,comp=Z,1μm
MRSI Marisa 39.62 212 P **P 06 16 20.6 +1.1**
comp=Z,117nm,1.3s,comp=Z,5μm
GAMB Gambell 39.70 30 *e*P P 06 16 24.9 +5.3
comp=Z,17nm,1.4s
KHON Khomkaen 39.71 251 P P 06 16 28.8 +8.5
comp=Z,9.2nm,1.1s
UTTA Uttaradit 40.67 255 P P 06 16 32.3 +4.1
comp=Z,7.1nm,0.9s
LAMP Lampang 40.96 257 P P 06 16 39.3 +8.6
comp=Z,7.7nm,1.0s
APSI Ampana 40.99 212 P **P 06 16 31.1 +0.3**
comp=Z,139nm,1.3s,comp=Z,2μm
PBKT Sadao Pong 41.01 253 P **P 06 16 33.3 +2.3**
comp=Z,33nm,1.2s,comp=Z,1μm
CMMT Chiang Mai 41.35 258 P **P 06 16 36.2 +2.3**
comp=Z,35nm,1.2s
CHTO Chiang Mai 41.35 258 P **P 06 16 36.2 +2.3**
comp=Z,191nm,3.0s,comp=Z,4μm
CHTO Chiang Mai 41.35 258 *e*P **P 06 16 32.8 -1.1**
CHTO pmax pmax
comp=Z,31nm,1.4s
CHTO MLR MLR
comp=Z,4μm,19.0s
CHTO Chiang Mai 41.35 258 *e*P **P 06 16 32.8 -1.1**
comp=Z,31nm,1.4s
CHTO LR LR
comp=Z,4μm,19.0s
CHTO Chiang Mai 41.35 258 P **P 06 16 32.6 -1.3**
SNR=10
CM31 Chiang Mai Arr 41.55 257 *e*P **P 06 16 36.0 +0.5**
CMAR Chiang Mai Arr 41.55 257 P **P 06 16 35.8 +0.3**
comp=Z,0.9nm,0.7s,baz=46,slow=7.9,SNR=5.0
CM01 Chiang Mai Arr 41.55 257 *e*P **P 06 16 35.7 +0.2**
WMQ Urumqi 41.82 298 P **P 06 16 38.8 +1.2**
WMQ sP sP 06 16 45.8 -0.4
WMQ PP **PP 06 18 15.5 +1.2**
WMQ ScP **ScP 06 22 23.9 +1.4**
WMQ S **S 06 22 55.6 +1.4**
WMQ sS sS 06 23 05.5 +1.1
WMQ SS **SS 06 25 54.3 -6.1**
WMQ ScS **ScS 06 26 41.8 +2.3**
WMQ pmax pmax
comp=Z,18nm,2.0s
WMQ pmax pmax
comp=Z,470nm,4.0s
WMQ LR LR
comp=Z,8μm,15.6s
WMQ LR LR
comp=Z,5μm,13.8s
WMQ LR LR
comp=Z,2μm,20.8s
LSA Lhasa 42.74 277 P **P 06 16 47.3 +1.6**
LSA S **S 06 23 10.4 +1.5**
LSA LR LR
comp=Z,4μm,15.0s
LSA LR LR
comp=Z,8μm,16.6s
LSA LR LR
comp=Z,14μm,16.1s
LSA Lhasa 42.74 277 *e*P **P 06 16 46.1 +0.4**
LSA pmax pmax
comp=Z,38nm,1.0s
LSA MLR MLR
comp=Z,4μm,19.0s
LSA Lhasa 42.74 277 *e*P **P 06 16 46.1 +0.4**
comp=Z,38nm,1.0s
LSA LR LR
comp=Z,4μm,19.0s
SBUM Sibu 42.98 227 ⇓P **P 06 16 48.6 +1.5**
SBUM Sibu 42.98 227 *e*P **P 06 16 46.6 -0.5**
comp=Z,22nm,1.1s
ZAA0 Zalesovo Array 43.14 313 *e*P **P 06 16 48.4 +0.4**
ZALV Zalesovo Beam 43.14 313 P **P 06 16 49.2 +1.2**
comp=Z,7.5nm,0.6s,baz=86,slow=7.0,SNR=9.5
ZALV LR LR 06 33 13.6
comp=Z,2μm,21.3s,baz=82,slow=34
TTSI Tana Toraja 43.69 213 P P 06 17 01.7 +8.9
SRDT SRDT 43.75 252 P P 06 17 01.9 +8.5
comp=Z,118nm,1.1s
SHL Shillong 43.80 271 *e*P **P 06 16 54.0 +0.1**
SHL *e*P PcS 06 22 25.0 -8.6
NVS Novosibirsk 44.08 315 *e*P **P 06 16 55.5 -0.1**
NVS *e*S **S 06 23 27.2 +0.3**
NVS pmax pmax
comp=N,53nm,2.1s
NVS pmax pmax
comp=E,132nm,2.1s
NVS pmax pmax
comp=Z,218nm,2.1s
NVS smax smax
comp=N,190nm,3.8s
NVS smax smax
comp=E,343nm,3.8s
TARA Tarawa 44.66 133 PFAKE 06 17 10.0 +9.4
TARA LR LR
comp=Z,304nm,19.0s
NRIK Noril'sk 44.69 336 P **P 06 17 02.0 +1.8**
comp=Z,5.0nm,0.7s,baz=107,slow=8.8,SNR=8.1
KSM Kuching 44.90 228 ⇓P **P 06 17 03.6 +1.1**
KSM Kuching 44.90 228 *e*P **P 06 17 00.9 -1.6**
comp=Z,166nm,2.0s
KSM LR LR
comp=Z,2μm,20.0s
PMG Port Moresby 45.09 173 *e*P **P 06 17 03.2 -0.7**
PMG pmax pmax
comp=Z,70nm,1.3s
PMG MLR MLR
comp=Z,2μm,19.0s
PMG Port Moresby 45.09 173 *e*P **P 06 17 03.2 -0.7**
comp=Z,70nm,1.3s
PMG LR LR
comp=Z,2μm,19.0s
MKAR Makanchi Array 45.19 303 P **P 06 17 05.3 +0.7**
comp=Z,4.8nm,0.7s,baz=92,slow=9.0,SNR=12
MKAR Makanchi Array 45.19 303 *e*P **P 06 17 04.7 +0.1**
STKI Sintang 45.33 225 P P 06 17 14.6 +8.6
MAKZ Makanchi 45.40 303 *e*P **P 06 17 07.5 +1.2**
MAKZ pmax pmax
comp=Z,50nm,1.0s
MAKZ Makanchi 45.40 303 *e*P **P 06 17 07.5 +1.2**
comp=Z,50nm,1.0s
KAPI Kappang 45.48 212 P **P 06 17 06.8 -0.3**
comp=Z,13nm,0.3s,baz=41,slow=16,SNR=6.2
KAPI Kappang 45.48 212 *e*P **P 06 17 07.0 -0.1**
comp=Z,169nm,1.3s
KAPI LR LR
comp=Z,2μm,19.0s
TT01 Tatalina 46.34 34 *e*P **P 06 17 12.6 -0.8**
TT01 *e*pP **pP 06 17 17.6 -1.9**
TTA Tatalina 46.34 34 *e*P P 06 17 17.6 +4.1
TTA pmax pmax
comp=Z,15nm,1.1s
TTA Tatalina 46.34 34 *e*P P 06 17 17.6 +4.1
comp=Z,15nm,1.1s
SVW2 Sparrevohn 46.39 37 *e*P **P 06 17 15.9 +2.0**
comp=Z,41nm,1.1s
BBKI Banjar Baru 46.43 219 P **P 06 17 15.3 +0.6**
comp=Z,114nm,1.2s,comp=Z,6μm
JOHN Johnston Islan 46.97 101 PFAKE 06 17 30.0 +11
JOHN LR LR
comp=Z,394nm,21.0s
KURK Kurchatov 47.10 309 P **P 06 17 18.5 -1.0**
KURK pmax pmax
comp=Z,254nm,1.2s
KURK Kurchatov 47.10 309 P **P 06 17 21.6 +2.0**
KURK LR LR
comp=Z,8μm,19.0s
KURK Kurchatov 47.10 309 P **P 06 17 19.1 -0.4**
SNR=28
KURBB Kurchatov Arra 47.17 309 P **P 06 17 21.6 +1.5**
comp=Z,16nm,0.7s,baz=86,slow=8.7,SNR=11
TRTT Trang 47.44 245 P P 06 17 30.4 +7.8
comp=Z,25nm,1.9s,comp=Z,1μm
GUN Gumba 47.70 277 *e*P **P 06 17 25.7 +0.8**
comp=Z,784nm,1.9s
RSO Redoubt South 47.75 37 *e*P **P 06 17 25.7 +1.0**
PDGK Podgornoye 47.78 299 P P **P 06 17 24.3 -0.6**
PDGK pmax pmax

KDAK **Kodiak Island** 47.88 41 *i* P P 06 17 25.7 +0.3
KDAK **Kodiak Island** 47.88 41 PFAKE 06 17 40.0 +15
KDAK LR LR
comp=Z,5μm,19.0s
HNR **Honiara** 47.97 156 PFAKE 06 17 40.0 +13
HNR LR LR
comp=Z,3μm,19.0s
PPLA **Purkeypile** 48.09 34 *e*P P 06 17 27.5 +0.3
comp=Z,141nm,1.6s
SPU **Mount Spurr** 48.10 37 *e*P P 06 17 28.7 +1.5
CAST **Castle Rocks** 48.16 33 *e*P P 06 17 27.3 -0.2
comp=Z,125nm,2.0s
PKIN **Phulchoki** 48.22 277 *e*P P 06 17 29.3 +0.4
comp=Z,79nm,1.2s
KKN **Kakani** 48.23 277 *e*P P 06 17 29.5 +0.6
comp=Z,93nm,1.0s
PKDT **Phuket** 48.41 246 P P 06 17 36.9 +6.8
comp=Z,69nm,1.0s,comp=Z,7μm
DMN **Daman** 48.44 277 *e*P P 06 17 30.4 -0.2
KULM **Kulim** 48.48 241 ⇑P P 06 17 29.3 -1.3
KULM **Kulim** 48.48 241 *e*P P 06 17 29.7 -0.9
comp=Z,93nm,1.6s
KULM LR LR
comp=Z,3μm,19.0s
GKN **Gorkha** 48.66 278 *e*P P 06 17 32.0 -0.1
comp=Z,278nm,1.1s
BPAW **Bear Paw Mtn.** 48.67 33 *e*P P 06 17 32.3 +0.8
comp=Z,37nm,1.4s
KTH **Kantishna Hill** 48.68 33 *e*P P 06 17 33.4 +1.7
comp=Z,75nm,1.5s
IPM **Ipoh** 48.77 240 ⇓P P 06 17 33.0 +0.1
IPM **Ipoh** 48.77 240 *e*P P 06 17 31.6 -1.3
comp=Z,46nm,1.0s
MLY **Manley** 48.82 31 *e*P P 06 17 34.3 +1.6
comp=Z,35nm,1.2s
KGM **Kluang** 48.96 236 ⇓P P 06 17 34.7 +0.4
COLD **Coldfoot** 49.18 28 *e*P P 06 17 37.4 +2.0
comp=Z,31nm,1.6s
RC01 **Rabbit Creek A** 49.23 37 *e*P P 06 17 36.8 +1.0
comp=Z,64nm,1.3s
FRIM **Kepong** 49.23 238 ⇑P P 06 17 39.2 +2.7
DGPR **DIGLIPUR** 49.29 256 *e*P P 06 17 36.2 -0.6
MTN **Manton Dam** 49.29 194 *e*P P 06 17 35.8 -0.9
comp=Z,54nm,1.0s
COEN **Coen** 49.35 178 *e*P P 06 17 37.6 +0.4
comp=Z,36nm,1.0s
SEW **Seward** 49.41 38 *e*P P 06 17 38.4 +1.2
comp=Z,68nm,1.2s
BOK **Bokaro** 49.47 272 *e*P P 06 17 37.7 -0.5
BOK IAmb IAmb 06 17 48.1
comp=Z,27nm,0.7s
PMR **Palmer** 49.51 36 *e*P P 06 17 38.3 +0.4
PMR pmax pmax
comp=Z,64nm,1.4s
PMR **Palmer** 49.51 36 *e*P P 06 17 38.3 +0.4
comp=Z,64nm,1.4s
MCK **McKinley** 49.57 33 *e*P P 06 17 39.2 +0.8
MCK pmax pmax
comp=Z,22nm,1.0s
MCK **McKinley** 49.57 33 *e*P P 06 17 39.2 +0.8
comp=Z,22nm,1.0s
AAA **Alma-Ata** 49.59 300 *e*P P 06 17 42.0 +3.0
AAA *e*S S 06 24 47.5 +1.4
AAA pmax pmax
comp=Z,2μm,10.2s
AAA smax smax
comp=E,6μm,17.9s
AAA MLR MLR
comp=Z,15μm,13.0s
KOLN **Koldanda** 49.59 278 *e*P P 06 17 38.9 -0.4
comp=Z,236nm,1.4s
RND **Reindeer** 49.61 34 *e*P P 06 17 39.6 +0.8
RND pmax pmax
comp=Z,38nm,1.1s
RND **Reindeer** 49.61 34 *e*P P 06 17 39.6 +0.8
comp=Z,38nm,1.1s
SML **Sawmill** 49.88 36 *e*P P 06 17 41.8 +1.0
SML pmax pmax
comp=Z,146nm,1.8s
SML **Sawmill** 49.88 36 *e*P P 06 17 41.8 +1.0
comp=Z,146nm,1.8s
MDM **Murphy Dome** 49.88 32 *e*P P 06 17 40.4 -0.4
comp=Z,64nm,1.1s
WRH **Wood River Hil** 49.94 32 *e*P P 06 17 44.9 +3.7
comp=Z,20nm,1.1s
PYUN **Piuthan** 49.95 279 *e*P P 06 17 42.1 0.0
comp=Z,241nm,1.1s
COLA **College** 50.05 32 *e*P P 06 17 41.0 -0.9
COLA pmax pmax
comp=Z,23nm,0.9s
COLA MLR MLR
comp=Z,2μm,20.0s
COLA **College** 50.05 32 *e*P P 06 17 41.0 -0.9
comp=Z,23nm,0.9s
COLA LR LR
comp=Z,2μm,20.0s
TWSI **Taliwang, Sumb** 50.06 213 P P 06 17 51.5 +8.9
comp=Z,56nm,1.3s,comp=Z,1μm
CCB **Clear Creek Bu** 50.06 32 *e*P P 06 17 42.8 +0.7
comp=Z,22nm,1.3s
PPBI **Pangkal Pinang** 50.30 229 P P 06 17 52.5 +8.0
comp=Z,39nm,1.1s,comp=Z,5μm
PBA **Port Blair** 50.33 254 *e*P P 06 17 44.0 -0.7
SCM **Sheep Creek Mo** 50.36 36 *e*P P 06 17 48.5 +4.0
SCM pmax pmax
comp=Z,66nm,1.1s
SCM **Sheep Creek Mo** 50.36 36 *e*P P 06 17 48.5 +4.0
comp=Z,66nm,1.1s
IL1 **Eielson Array** 50.46 32 *e*P P 06 17 42.1 -3.0
ILAR **Eielson Array** 50.46 32 P P 06 17 42.9 -2.3
comp=Z,3.5nm,0.9s,baz=263,slow=5.6,SNR=8.4
ILAR LR LR 06 40 28.5
comp=Z,1μm,20.9s,baz=288,slow=38
ILB **Eielson Array** 50.46 32 *e*P P 06 17 44.0 -1.1
TKM2 **Tokmak 2** 50.64 300 P P 06 17 47.2 +0.1
TKM2 pmax pmax
comp=Z,170nm,1.6s
TKM2 **Tokmak 2** 50.64 300 PFAKE 06 18 00.0 +13
TKM2 LR LR
comp=Z,6μm,20.0s
KLU **Klutina** 51.05 36 *e*P P 06 17 51.0 +1.3
comp=Z,38nm,1.2s
JAGI **Jajag, Banyuwa** 51.09 216 *e*P P 06 17 50.2 -0.2
comp=Z,68nm,1.3s
DIV **Divide** 51.15 36 *e*P P 06 17 49.5 -0.9
comp=Z,93nm,1.3s
PAX **Paxson** 51.16 34 *e*P P 06 17 51.8 +1.3
PAX pmax pmax
comp=Z,38nm,1.5s
PAX **Paxson** 51.16 34 *e*P P 06 17 51.8 +1.3
comp=Z,38nm,1.5s
EYAK **Cordova Ski Ar** 51.21 37 *e*P P 06 17 51.8 +1.0
comp=Z,105nm,1.8s
KSH **Kashi** 51.34 295 P P 06 17 58.3 +6.0
KSH *es*P sP 06 18 05.6 +4.6
KSH *e*PP PP 06 19 57.6 +8.4
KSH S S 06 25 19.0 +8.4
KSH pmax pmax
comp=Z,20nm,1.2s
KSH pmax pmax
comp=Z,1μm,7.5s
KSH LR LR
comp=Z,9μm,13.7s
KSH LR LR
comp=Z,10μm,14.4s
KSH LR LR
comp=Z,17μm,14.2s
FRU **Bishkek** 51.36 300 *e*P P 06 17 53.0 +0.7
FRU *e*S S 06 25 12.0 +1.4
FRU pmax pmax
comp=Z,210nm,2.0s
FRU smax smax
comp=E,4μm,16.0s
FRU MLR MLR
comp=E,12μm,14.0s
PSI **Prapat** 51.44 241 *e*P P 06 17 52.6 -0.6
PSI pmax pmax
comp=Z,35nm,0.9s
PSI **Prapat** 51.44 241 *e*P P 06 17 52.6 -0.6
comp=Z,35nm,0.9s
AAK **Ala-Archa** 51.50 299 *e*P P 06 17 52.8 -0.7
AAK *e*SP pP 06 17 58.8 -1.0
AAK pmax pmax
comp=Z,38nm,1.2s
AAK MLR MLR
comp=Z,5μm,20.0s

AAK **Ala-Archa** 51.50 299 *e*P P 06 17 52.8 -0.7
comp=Z,38nm,1.2s
AAK *es*P pP 06 17 58.8 -1.0
AAK LR LR
comp=Z,5μm,20.0s
AAK **Ala-Archa** 51.50 299 P P 06 17 53.9 +0.4
SNR=13
CHKZ **Chkalovo** 51.55 314 P P 06 17 52.3 -1.1
CHKZ pmax pmax
comp=Z,74nm,1.4s
BMRM **Bremner River** 51.73 37 *e*P P 06 17 53.8 -1.0
comp=Z,37nm,1.0s
BKNI **Bangkinang** 51.74 236 *e*P P 06 17 56.0 +0.6
comp=Z,217nm,1.0s
DOT **Dot Lake** 51.74 33 *e*P P 06 17 53.5 -1.3
comp=Z,81nm,1.3s
RAGM **Ragged Mountai** 51.76 37 *e*P P 06 17 56.8 +1.8
comp=Z,37nm,1.0s
KCSI **Kotacane, Aceh** 51.76 242 P P 06 18 02.5 +7.0
comp=Z,25nm,1.6s
SMRI **Semarang** 51.77 221 *e*P P 06 17 56.5 +0.9
BVA0 **Borovoye Array** 51.80 313 *i* P P 06 17 55.5 +0.2
BVA0 pmax pmax
comp=Z,91nm,2.4s
BRVK **Borovoye** 51.85 313 *e*P P 06 17 55.6 -0.2
BRVK pmax pmax
comp=Z,51nm,1.2s
BRVK MLR MLR
comp=Z,6μm,19.0s
BRVK **Borovoye** 51.85 313 *e*P P 06 17 55.6 -0.2
comp=Z,51nm,1.2s
BRVK LR LR
comp=Z,6μm,19.0s
BRVK **Borovoye** 51.85 313 P P 06 17 55.7 0.0
SNR=24
PWJI **Pagerwojo** 51.87 219 P P 06 18 01.0 +4.7
MENT **Mentasta** 51.96 34 *e*P P 06 17 56.7 +0.3
comp=Z,32nm,1.1s
EKS2 **Erkin-Say** 52.00 300 *e*P P 06 17 56.6 -0.6
EKS2 pmax pmax
comp=Z,35nm,1.3s
EKS2 MLR MLR
comp=Z,5μm,19.0s
EKS2 **Erkin-Say** 52.00 300 *e*P P 06 17 56.6 -0.6
comp=Z,34nm,1.3s
EKS2 LR LR
comp=Z,5μm,19.0s
CMBY **CAMPBELL BAY** 52.29 249 *e*P P 06 18 00.5 +1.0
TPTI **Tupi** 52.37 243 P P 06 18 07.4 +7.4
comp=Z,35nm,1.2s
MNSI **Mandailing Nat** 52.40 238 P P 06 18 09.0 +8.7
comp=Z,40nm,1.0s
SDSI **Sungai Dareh** 52.40 235 P P 06 18 06.2 +5.9
comp=Z,77nm,1.3s,comp=Z,37μm
UGM **Wanagama** 52.45 221 P P 06 18 06.2 +5.6
comp=Z,258nm,1.4s,comp=Z,4μm
UGM **Wanagama** 52.45 221 *e*P P 06 17 59.9 -0.7
comp=Z,723nm,1.6s
ZRNK **Zerenda** 52.63 313 P P 06 18 00.0 -1.6
ZRNK pmax pmax
comp=Z,110nm,2.0s
ZRNK **Zerenda** 52.63 313 *e*P P 06 18 00.9 -0.7
comp=Z,38nm,0.9s
EGAK **Eagle** 52.91 32 *e*P P 06 18 05.7 +2.3
comp=Z,60nm,1.7s
EGAK LR LR
comp=Z,2μm,20.0s
MNAS **Manas** 52.95 300 P P 06 18 03.4 -0.9
MNAS pmax pmax
comp=Z,52nm,1.3s
DDI **Dehra Dun** 52.99 284 *e*P P 06 18 03.9 -0.7
DDI IAmb IAmb 06 18 17.4
comp=Z,32nm,1.1s
SFK **Sufi-Kurgan** 52.99 297 P P 06 18 04.1 -0.6
SFK pmax pmax
comp=Z,82nm,1.3s
PDSI **Padang** 53.03 236 P P 06 18 13.6 +8.6
comp=Z,18nm,1.5s
KLI **Kotabumi** 53.21 229 P P 06 18 08.1 +1.9
LHSI **Lahat** 53.23 231 P P 06 18 07.4 +1.0
MDSI **Maura Dua** 53.33 230 P P 06 18 06.6 -0.5
SMLA **Simla** 53.37 285 *e*P P 06 18 09.2 +1.9
SMLA IAmb IAmb 06 18 17.3
comp=Z,26nm,1.1s
GSI **Gunungsitoli** 53.44 240 P P 06 18 09.0 +1.0
GSI **Gunungsitoli** 53.44 240 *e*P P 06 18 06.8 -1.1
comp=Z,309nm,1.2s
MASI **Maura Aman, Be** 53.52 232 P P 06 18 17.2 +8.6
comp=Z,218nm,1.4s,comp=Z,5μm
CHLP **Challavanipeta** 53.53 267 *e*P P 06 18 07.9 -0.7
CHLP IAmb IAmb 06 18 20.8
comp=Z,107nm,1.6s
CHLP *e*S S 06 25 43.0 +2.3
CHLP IVMs_BB IVMs_BB 06 43 34.7
comp=Z,2μm,18.6s
DHRM **DHARAMSHALA** 53.61 287 *e*P P 06 18 09.3 0.0
DHRM IAmb IAmb 06 18 19.8
comp=Z,1μm,3.2s
CISI **Cisompet, Garu** 53.63 224 P P 06 18 18.3 +8.9
comp=Z,50nm,1.3s
KIP **Kipapa** 53.91 88 PFAKE 06 18 20.0 +8.6
KIP LR LR
comp=Z,4μm,19.0s
KASI **Kota Agung** 53.95 228 P P 06 18 16.1 +4.5
THN **Thein Dam** 53.99 287 *e*P P 06 18 13.0 +1.2
KKAR **Karatay Array** 54.16 301 *e*P P 06 18 12.3 -0.7
KKAR **Karatay Array** 54.16 301 *e*P P 06 18 12.2 -0.7
NDI **New Delhi** 54.33 282 *e*P P 06 18 12.0 -2.4
NDI *e*S S 06 25 54.0 +2.6
VIS **Vishakhapatnam** 54.52 267 *e*P P 06 18 15.4 -0.5
INK **Inuvik** 55.44 27 P P 06 18 20.5 -1.3
comp=Z,2.5nm,0.9s,baz=294,slow=5.1,SNR=4.9
INK **Inuvik** 55.44 27 *e*P P 06 18 23.0 +1.2
INK pmax pmax
comp=Z,25nm,1.1s
INK **Inuvik** 55.44 27 *e*P P 06 18 23.0 +1.2
comp=Z,25nm,1.1s
CTA **Charters Tower** 55.59 175 P P 06 18 23.6 +0.3
comp=Z,1.0nm,0.4s,baz=6.3,slow=9.2,SNR=2.6
CTAO **Charters Tower** 55.59 175 PFAKE 06 18 30.0 +6.6
CTAO LR LR
comp=Z,2μm,19.0s
FITZ **Fitzroy Crossi** 55.63 199 P P 06 18 21.7 -2.0
comp=Z,9.9nm,0.9s,baz=29,slow=9.6,SNR=6.1
FITZ **Fitzroy Crossi** 55.63 199 *e*P P 06 18 21.8 -1.9
comp=Z,88nm,1.3s
WRAB **Tennant Creek** 55.74 189 *e*P P 06 18 21.4 -3.0
WRAB pmax pmax
comp=Z,86nm,1.1s
WRAB MLR MLR
comp=Z,2μm,19.0s
WRAB **Tennant Creek** 55.74 189 *e*P P 06 18 21.4 -3.0
comp=Z,86nm,1.1s
WRAB LR LR
comp=Z,2μm,19.0s
WB2 **Warramunga Arr** 55.75 189 *e*P P 06 18 21.5 -3.1
comp=Z,57nm,0.9s
WRA **Warramunga Arr** 55.75 189 P P 06 18 21.0 -3.6
comp=Z,54nm,1.3s,baz=6.5,slow=7.4,SNR=19
WRA **Warramunga Arr** 55.75 189 P P 06 18 21.0 -3.6
WRA pmax pmax
comp=Z,54nm,1.3s
PVM **Polavaram** 56.16 268 *e*P P 06 18 27.2 -0.4
PVM IAmb IAmb 06 18 37.6
comp=Z,30nm,1.1s
PVM *e*S S 06 26 17.8 +1.8
PVM IVMs_BB IVMs_BB 06 45 00.8
comp=Z,1μm,19.0s
FUNA **Funafuti** 56.27 134 PFAKE 06 18 40.0 +12
FUNA LR LR
comp=Z,6μm,19.0s
SKAG **Skagway** 56.55 37 *e*P P 06 18 29.1 -0.8
BHPL **Bhopal** 56.60 276 *e*P P 06 18 29.6 -1.2
BHPL IAmb IAmb 06 18 35.6
comp=Z,73nm,1.6s
POHA **Pohakuloa** 56.75 88 PFAKE 06 18 40.0 +7.9
POHA LR LR
comp=Z,3μm,19.0s
RPR **Rampur** 57.23 271 *e*P P 06 18 34.5 -0.8
RPR IAmb IAmb 06 18 44.8
comp=Z,126nm,1.6s
RPR *e*S S 06 26 31.8 +1.6
RPR IVMs_BB IVMs_BB 06 47 45.1
comp=Z,2μm,14.9s
ARU **Arti** 57.66 319 *d i*P P 06 18 38.4 +0.7
ARU 06 19 29.7

ARU 06 20 45.9
ARU PPP PPP 06 22 12.4
ARU S S 06 26 36.3 +1.4
ARU 06 28 23.8
ARU SS SS 06 30 20.7 -3.9
ARU SSS SSS 06 32 49.1
ARU pmax pmax
comp=Z,38nm,1.7s
ARU MLR MLR
comp=Z,12μm,16.0s
ARU **Arti** 57.66 319 *e*P P 06 18 36.6 -1.1
comp=Z,85nm,1.4s
ARU LR LR
comp=Z,6μm,19.0s
SRSP **Sriramsagar** 57.96 271 *e*P P 06 18 39.3 -1.2
SRSP IAmb IAmb 06 18 50.0
comp=Z,88nm,1.1s
SRSP *e*S S 06 26 41.8 +1.9
SRSP IVMs_BB IVMs_BB 06 46 46.9
comp=Z,1μm,15.3s
ADKI **Addanki** 58.24 267 *e*P P 06 18 42.2 -0.2
ADKI IAmb IAmb 06 18 52.6
comp=Z,20nm,1.0s
ADKI *e*S S 06 26 45.2 +1.7
ADKI IVMs_BB IVMs_BB 06 42 42.1
comp=Z,1μm,23.5s
NJS **Nagarjunasagar** 58.41 268 *e*P P 06 18 42.6 -1.0
NJS IAmb IAmb 06 18 53.2
comp=Z,30nm,1.1s
NJS *e*S S 06 26 47.4 +1.7
NJS IVMs_BB IVMs_BB 06 47 53.7
comp=Z,1μm,17.2s
HYB **Hyderabad** 58.57 270 *i* P P 06 18 45.0 +0.3
HYB **Hyderabad** 58.57 270 *e*P P 06 18 45.0 +0.3
HYBB **Hyderabad (bro** 58.57 270 *e*P P 06 18 43.8 -1.0
HYBB IAmb IAmb 06 18 54.2
comp=Z,48nm,1.0s
HYBB *e*S S 06 26 49.1 +1.2
HYBB IVMs_BB IVMs_BB 06 49 44.4
comp=Z,1μm,16.3s
WRAK **Wrangell Islan** 58.94 40 PFAKE 06 19 00.0 +13
WRAK LR LR
comp=Z,2μm,19.0s
SRLM **Srisailam** 58.98 268 *e*P P 06 18 46.6 -1.0
SRLM IAmb IAmb 06 18 57.1
comp=Z,32nm,1.1s
SRLM *e*S S 06 26 55.5 +2.2
AB31 **Akbulak array** 59.13 311 P P 06 18 48.5 +0.3
AB31 pmax pmax
comp=Z,12nm,0.9s
ABKAR **Akbulak array** 59.13 311 *e*P P 06 18 47.0 -1.2
RCLA **Racherla** 59.27 267 *e*P P 06 18 48.4 -1.2
RCLA IAmb IAmb 06 18 59.2
comp=Z,33nm,1.2s
RCLA *e*S S 06 26 59.0 +2.0
RCLA IVMs_BB IVMs_BB 06 46 55.8
comp=Z,1μm,18.4s
AS01 **Alice Springs** 59.47 188 *e*P P 06 18 47.2 -3.5
AS31 **Alice Springs** 59.48 189 *e*P P 06 18 50.4 -0.3
ASAR **Alice Springs** 59.48 189 P P 06 18 47.9 -2.9
comp=Z,6.8nm,1.0s,baz=9.7,slow=5.5,SNR=13
MDRS **Chennai** 59.52 264 *e*P P 06 18 51.0 -0.3
SKHT **Srikalahasti** 59.59 265 *e*P P 06 18 51.7 0.0
SKHT *e*S S 06 27 04.5 +3.4
SKHT IVMs_BB IVMs_BB 06 48 11.6
comp=Z,1μm,18.8s
KLRI **Killari** 59.82 271 *e*P P 06 18 52.3 -1.1
KLRI IAmb IAmb 06 18 58.1
comp=Z,48nm,0.9s
KLRI *e*S S 06 27 08.1 +3.9
KLRI IVMs_BB IVMs_BB 06 48 02.3
comp=Z,2μm,15.0s
AKTO **Aktyubinsk** 59.89 313 P P 06 18 53.3 -0.1
AKTO pmax pmax
comp=Z,42nm,1.5s
MBWA **Marble Bar** 60.28 204 *e*P P 06 18 53.9 -2.4
comp=Z,51nm,1.1s
MBWA LR LR
comp=Z,1μm,19.0s
URV **Uravakonda** 60.92 268 *e*P P 06 19 00.1 -0.8
URV IAmb IAmb 06 19 12.1
comp=Z,70nm,1.8s
URV *e*S S 06 27 19.3 +1.0
URV IVMs_BB IVMs_BB 06 53 36.0
comp=Z,983nm,13.4s
POO **Poona** 61.82 273 *e*P P 06 19 05.4 -1.7
DZM **Mont Dzumac** 61.94 154 P P 06 19 03.5 -4.1
comp=Z,12nm,1.1s,baz=51,slow=18,SNR=2.6
KBS **Kingsbay** 62.08 350 *e*P P 06 19 12.9 +5.1
KBS pmax pmax
comp=Z,54nm,1.3s
KBS MLR MLR
comp=Z,4μm,19.0s
KBS **Kingsbay** 62.08 350 *e*P P 06 19 12.9 +5.0
comp=Z,54nm,1.3s
KBS LR LR
comp=Z,4μm,19.0s
HSPB **Hornsund (broa** 62.88 348 *e*P P 06 19 14.7 +1.5
HSPB *e*S S 06 27 44.1 +2.8
HSPB *e*SS SS 06 31 45.1 -0.5
HSPB MLR MLR
comp=Z,5μm,21.4s
MSVF **Nonsavu** 63.19 141 *e*P P 06 19 16.1 +0.1
MSVF pmax pmax
comp=Z,69nm,1.6s
MSVF MLR MLR
comp=Z,3μm,19.0s
MSVF **Nonsavu** 63.19 141 *e*P P 06 19 16.1 +0.1
comp=Z,69nm,1.6s
MSVF LR LR
comp=Z,3μm,19.0s
GOA **Goa** 63.43 270 *e*P P 06 19 18.9 +1.1
LVZ **Lovozero** 63.53 336 PFAKE 06 19 30.0 +12
LVZ LR LR
comp=Z,8μm,19.0s
RES **Resolute Bay** 63.84 14 P P 06 19 18.1 -1.4
comp=Z,4.9nm,0.8s,baz=310,slow=7.3,SNR=7.7
RES **Resolute Bay** 63.84 14 *e*P P 06 19 18.3 -1.3
RES pmax pmax
comp=Z,48nm,1.3s
RES **Resolute Bay** 63.84 14 *e*P P 06 19 18.2 -1.3
comp=Z,48nm,1.3s
COCO **West Island** 63.85 230 PFAKE 06 19 30.0 +10
COCO LR LR
comp=Z,1μm,19.0s
TMCR **Tamitsa** 64.14 332 *e*P P 06 19 26.2 +4.5
TMCR pmax pmax
comp=Z,36nm,1.0s
YKW3 **Yellowknife Ar** 64.77 30 *e*P P 06 19 26.2 +0.4
comp=Z,53nm,1.7s
YKA **Yellowknife Ar** 64.81 30 P P 06 19 24.4 -1.6
comp=Z,0.5nm,0.6s,baz=301,slow=6.5,SNR=4.4
YKB5 **Yellowknife Ar** 64.81 30 *e*P P 06 19 25.4 -0.6
GEYT **Alibeck** 64.85 300 P P 06 19 26.7 -0.2
comp=Z,1.6nm,0.5s,baz=52,slow=5.7,SNR=2.4
KEV **Kevo** 64.87 340 PFAKE 06 19 40.0 +14
KEV LR LR
comp=Z,7μm,19.0s
KLMR **Klimovskoe** 65.13 328 *e*P P 06 19 27.9 -0.3
KLMR *e*SP sP 06 19 41.3 +4.3
KLMR *e*S S 06 28 08.5 -1.1
KLMR *e*SS SS 06 32 21.7 +0.4
KLMR pmax pmax
comp=Z,42nm,1.6s
ARCES **ARCESS Array B** 65.43 340 P P 06 19 30.1 +0.1
comp=Z,2.4nm,0.9s,baz=35,slow=11,SNR=2.2
STKA **Stephens Creek** 67.17 180 P P 06 19 39.8 -1.8
comp=Z,1.7nm,0.9s,baz=22,slow=19,SNR=2.1
STKA LR LR 06 56 40.8
comp=Z,1μm,18.0s,baz=0.7,slow=43
DAG **Danmarks Havn** 67.18 355 *i* P P 06 19 51.1 +10
DAG **Danmarks Havn** 67.18 355 *e*P P 06 19 51.1 +10
NLWA **Neilton Lookou** 67.36 47 PFAKE 06 20 00.0 +17
NLWA LR LR
comp=Z,1μm,21.0s
MOS **Moscow** 68.59 324 *e*P P 06 19 48.8 -1.5
MOS *e* 06 20 13.7
MOS *e* 06 22 20.8
MOS *e*S S 06 28 50.6 -1.0
MOS *e* 06 29 45.1
MOS *e*SS SS 06 33 14.2 -0.9
MOS pmax pmax
comp=Z,31nm,0.7s
MOS MLR MLR
comp=Z,11μm,14.0s

VRH	**Novokhopyorsk**	**68.87**	**318**	*e*P	**P**	**06 19 50.4**	**-1.7**
VRH				*e*S	**S**	**06 28 56.4**	**+1.4**
VRH				pmax	pmax		
	comp=Z,10.0nm,1.3s						
VRH				smax	smax		
	comp=E,1µm,11.0s						
VRH				MLR	MLR		
	comp=Z,15µm,14.0s						
OBN	**Obninsk**	**69.44**	**324**⇓	*e*P	**P**	**06 19 56.4**	**+0.8**
OBN				*i* *PP	**sP**	**06 20 04.0**	**-0.4**
OBN				*e*		06 20 19.4	
OBN				*e*		06 22 35.6	
OBN				*i* S	**S**	**06 29 02.0**	**+0.4**
OBN				*i*		06 29 53.8	
OBN				*e*SS	**SS**	**06 33 26.9**	**-1.2**
OBN				pmax	pmax		
	comp=Z,44nm,1.9s						
OBN				MLR	MLR		
	comp=Z,7µm,15.0s						
OBN	**Obninsk**	**69.44**	**324**	PFAKE		06 20 10.0	+14
OBN				LR	LR		
	comp=Z,6µm,19.0s						
B08A	**Colville Reser**	**69.54**	**45**	*e*P	**P**	**06 19 57.9**	**+1.4**
	comp=Z,26nm,1.3s						
LPSR	**Galich'ya Gora**	**69.61**	**321**	*e*P	**P**	**06 19 56.4**	**-0.3**
LPSR				pmax	pmax		
	comp=Z,20nm,0.9s						
FIA1	**FINESS Array S**	**70.22**	**333**	*e*P	**P**	**06 20 02.6**	**+2.4**
	comp=Z,58nm,1.4s						
FINES	**FINESS Array B**	**70.22**	**333**	P	**P**	**06 20 00.1**	**-0.2**
	comp=Z,5.4nm,0.8s,baz=64,slow=9.4,SNR=4.8						
C09A	**Chrisman Ranch**	**70.44**	**45**	*e*P	P	06 20 06.1	+4.2
C09A				*e*PcP	**PcP**	**06 20 23.8**	**+0.5**
HAWA	**Hanford**	**70.44**	**47**	PFAKE		06 20 10.0	+8.1
HAWA				LR	LR		
	comp=Z,2µm,19.0s						
NEW	**Newport**	**70.85**	**44**	P	**P**	**06 20 04.1**	**-0.4**
	baz=302						
NEW	**Newport**	**70.85**	**44**	*e*P	**P**	**06 20 03.7**	**-0.8**
NEW				pmax	pmax		
	comp=Z,29nm,1.4s						
NEW				MLR	MLR		
	comp=Z,2µm,20.0s						
NEW	**Newport**	**70.85**	**44**	*e*P	**P**	**06 20 03.7**	**-0.8**
	comp=Z,29nm,1.4s						
NEW				LR	LR		
	comp=Z,2µm,20.0s						
CAN	**Canberra**	**70.92**	**174**	PFAKE		06 20 20.0	+15
CAN				LR	LR		
	comp=Z,2µm,19.0s						
GOF	**Gofitskoye**	**71.31**	**312**⇑	*e*P	**P**	**06 20 08.4**	**+1.2**
GOF				pmax	pmax		
	comp=Z,19nm,0.8s						
K05A	**Summer Lake**	**71.52**	**50**	*e*P	**P**	**06 20 12.0**	**+3.2**
	comp=Z,153nm,1.9s						
DGRG	**David-gareji**	**71.75**	**308**	P	**P**	**06 20 10.6**	**+0.5**
DGRG	**David-gareji**	**71.75**	**308**	*e*P	**P**	**06 20 10.5**	**+0.5**
NCK	**Nalchik**	**71.80**	**311**⇓	*e*P	**P**	**06 20 09.4**	**-0.8**
NCK				pmax	pmax		
	comp=Z,53nm,0.5s						
ZEI	**Tsey**	**71.98**	**310**	*e*P	P	06 20 08.2	-3.4
ZEI				pmax	pmax		
	comp=Z,60nm,1.5s						
TBLG	**Delisi**	**72.01**	**309**	P	**P**	**06 20 12.3**	**+0.7**
TBLG	**Delisi**	**72.01**	**309**	*e*P	**P**	**06 20 12.3**	**+0.7**
NWAO	**Narrogin (SRO)**	**72.03**	**202**	PFAKE		06 20 20.0	+8.5
NWAO				LR	LR		
	comp=Z,925nm,19.0s						
SUMG	**Summit**	**72.07**	**0**	*i* P	P	06 20 16.5	+4.7
SUMG	**Summit**	**72.07**	**0**	*e*P	P	06 20 17.7	+5.9
SUMG				pmax	pmax		
	comp=Z,76nm,1.5s						
SUMG	**Summit**	**72.07**	**0**	*e*P	P	06 20 17.7	+5.9
	comp=Z,76nm,1.5s						
KBZ	**Khabaz**	**72.10**	**311**	P	**P**	**06 20 13.6**	**+1.6**
	comp=Z,9.3nm,0.9s,baz=74,slow=9.4,SNR=5.7						
KIV	**Kislovodsk**	**72.11**	**311**	*e*P	**P**	**06 20 12.3**	**+0.1**
KIV				pmax	pmax		
	comp=Z,12nm,1.0s						
KIV	**Kislovodsk**	**72.11**	**311**	*e*P	**P**	**06 20 12.0**	**-0.2**
	comp=Z,44nm,1.0s						
KIV				LR	LR		
	comp=Z,8µm,19.0s						
KIV	**Kislovodsk**	**72.11**	**311**	P	**P**	**06 20 12.3**	**+0.1**
	SNR=11						
KIV				P	**P**	**06 20 12.3**	**+0.1**
	SNR=11						
WALA	**Waterton Lakes**	**72.20**	**42**	*e*P	**P**	**06 20 13.5**	**+0.8**
	comp=Z,46nm,1.6s						
NEY	**Neytrino**	**72.47**	**311**	P	**P**	**06 20 15.0**	**+0.6**
BMO	**Blue Mountains**	**72.58**	**47**	PFAKE		06 20 30.0	+15
BMO				LR	LR		
	comp=Z,2µm,19.0s						
UOSS	**Minazif**	**72.61**	**288**	*e*P	P	06 20 20.2	+4.8
	comp=Z,2.7nm,1.1s						
JTMT	**Jette**	**72.73**	**43**	*e*P	**P**	**06 20 17.1**	**+1.2**
ORV	**Oroville**	**72.81**	**54**	*e*P	**P**	**06 20 17.3**	**+1.0**
ORV				*e*		06 20 36.0	
ORV				pmax	pmax		
	comp=Z,19nm,1.4s						
ORV	**Oroville**	**72.81**	**54**	*e*P	**P**	**06 20 17.3**	**+1.0**
	comp=Z,19nm,1.4s						
ORV				*e*PcP	**PcP**	**06 20 36.0**	**+2.5**
GNI	**Garni**	**72.85**	**307**	*c* *i*P	**P**	**06 20 17.1**	**+0.3**
GNI				pmax	pmax		
	comp=Z,102nm,1.8s						
GNI	**Garni**	**72.85**	**307**	PFAKE		06 20 30.0	+13
GNI				LR	LR		
	comp=Z,4µm,22.0s						
AKH	**Akhalkalaki**	**72.97**	**309**	P	**P**	**06 20 20.3**	**+2.8**
AKH	**Akhalkalaki**	**72.97**	**309**	*e*P	**P**	**06 20 20.3**	**+2.8**
SWMT	**Swartz Lake**	**73.02**	**43**	*e*P	**P**	**06 20 18.6**	**+1.0**
WVOR	**Wild Horse Val**	**73.09**	**50**	*e*P	**P**	**06 20 19.0**	**+0.9**
WVOR				pmax	pmax		
	comp=Z,75nm,1.8s						
WVOR				MLR	MLR		
	comp=Z,1µm,19.0s						
WVOR	**Wild Horse Val**	**73.09**	**50**	*e*P	**P**	**06 20 19.0**	**+0.9**
	comp=Z,75nm,1.8s						
WVOR				LR	LR		
	comp=Z,1µm,19.0s						
MSO	**Missoula**	**73.44**	**44**	P	**P**	**06 20 18.2**	**-1.8**
	baz=305						
MSO	**Missoula**	**73.44**	**44**	*e*P	**P**	**06 20 20.5**	**+0.4**
	comp=Z,15nm,1.2s						
SCO	**Scoresbysund**	**73.53**	**354**	*i* P	P	06 20 30.7	+11
IZAR	**Zarasai**	**73.78**	**328**	*e*P	**P**	**06 20 22.7**	**+0.9**
IDID	**Didziasalis**	**73.85**	**327**	*e*P	P	06 20 25.7	+3.6
MICGM	**Minsk**	**73.86**	**326**	*e*P	P	06 20 26.0	+3.8
MICGM				*e*PcP	PcP	06 20 52.0	+14
MICGM				*e*PP	**PP**	**06 23 04.0**	**-2.5**
MICGM				*e*PPP	PPP	06 25 08.0	
MICGM				*e*S	S	06 30 00.0	+7.4
MICGM				*e*PS	**PnS**	**06 30 20.0**	**-6.3**
MICGM				*e*SS	SS	06 34 22.0	-14
MICGM				*e*SSS	SSS	06 37 38.0	
MICGM				*e*LQ	LQ	06 48 50.0	
MICGM				LQM		06 53 54.0	
	comp=E,20nm,14.0s						
MICGM				LQM		06 53 56.0	
	comp=N,9.5nm,14.0s						
MICGM				*e*LR	LR	06 55 30.0	
MICGM				LRM	MLR	06 57 52.0	
	comp=Z,20nm,14.0s						
MICGM				LRM	MLR	06 58 05.0	
	comp=E,15nm,14.0s						
MNK	**Minsk**	**73.86**	**326**	*e*P	P	06 20 26.0	+3.8
MNK				*e*		06 23 04.0	
MNK				*e*S	S	06 30 00.0	+7.4
MNK				*e*PS	**PnS**	**06 30 20.0**	**-6.3**
MNK				MLR	MLR		
	comp=Z,20µm,14.0s						
MNK				MLR	MLR		
	comp=E,15µm,14.0s						
ISAL	**Salakas**	**73.95**	**328**	*e*P	**P**	**06 20 24.6**	**+1.8**
IIGN	**Ignalina**	**74.05**	**328**	*e*P	**P**	**06 20 26.5**	**+3.2**
NACGM	**Naroch**	**74.09**	**327**	*e*P	**P**	**06 20 24.0**	**+0.4**
NACGM				*e*PP	PP	06 23 16.0	+7.5
NACGM				*e*PPP	PPP	06 24 28.0	
NACGM				*e*S	S	06 30 02.0	+6.8
NACGM				*e*PS	**PnS**	**06 30 36.0**	**+6.7**
NACGM				*e*SS	SS	06 34 52.0	+13
NACGM				*e*SSS	SSS	06 38 14.0	
NACGM				*e*LQ	LQ	06 46 22.0	
NACGM				*e*LR	LR	06 50 18.0	
NACGM				LRM	MLR	06 56 56.0	
	comp=Z,28nm,14.0s						
SOC	**Sochi**	**74.11**	**312**	*e*P	**P**	**06 20 26.1**	**+2.2**
SOC				*e*		06 23 07.4	
SOC				*e*PPP	PPP	06 24 53.9	
SOC				*e*S	**S**	**06 29 56.2**	**+0.4**
SOC				*e*SS	**SS**	**06 34 34.0**	**-6.2**
SOC				pmax	pmax		
	comp=Z,14nm,0.4s						
MFID	**Camas Ranch**	**74.27**	**48**	*e*P	**P**	**06 20 25.8**	**+0.8**
CMB	**Columbia Colle**	**74.36**	**54**	*e*P	**P**	**06 20 24.4**	**-1.1**
CMB				pmax	pmax		
	comp=Z,214nm,1.6s						
CMB	**Columbia Colle**	**74.36**	**54**	*e*P	**P**	**06 20 24.4**	**-1.1**
	comp=Z,214nm,1.6s						
FFC	**Flin Flon**	**74.66**	**33**	*e*P	**P**	**06 20 27.4**	**+0.5**
FFC				pmax	pmax		
	comp=Z,46nm,1.4s						
FFC				MLR	MLR		
	comp=Z,1µm,20.0s						
FFC	**Flin Flon**	**74.66**	**33**	*e*P	**P**	**06 20 27.4**	**+0.5**
	comp=Z,46nm,1.4s						
FFC				LR	LR		
	comp=Z,1µm,20.0s						
ANN	**Anapa**	**74.77**	**314**	*e*P	P	06 20 24.1	-3.6
ANN				*e**PP	pP	06 20 34.4	+0.2
ANN				*e*		06 20 37.9	
ANN				*e*S	**S**	**06 29 57.9**	**-5.2**
ANN				pmax	pmax		
	comp=Z,73nm,1.1s						
RAO	**Raoul Island**	**74.83**	**144**	PFAKE		06 20 40.0	+12
RAO				LR	LR		
	comp=Z,5µm,20.0s						
LRM	**Limekiln Ridge**	**74.86**	**44**	*e*P	**P**	**06 20 27.4**	**-1.2**
HLID	**Hailey**	**75.03**	**47**	P	**P**	**06 20 27.7**	**-1.8**
	baz=305						
HLID	**Hailey**	**75.03**	**47**	*e*P	**P**	**06 20 28.4**	**-1.0**
	comp=Z,18nm,1.4s						
HLID				LR	LR		
	comp=Z,2µm,19.0s						
DLMT	**Dillon**	**75.05**	**45**	*e*P	**P**	**06 20 30.3**	**+0.8**
	comp=Z,38nm,1.3s						
EGMT	**Eagleton**	**75.05**	**41**	PFAKE		06 20 40.0	+11
EGMT				LR	LR		
	comp=Z,2µm,20.0s						
FCC	**Fort Churchill**	**75.06**	**27**	*e*P	**P**	**06 20 27.9**	**-1.2**
FCC				pmax	pmax		
	comp=Z,96nm,1.6s						
FCC	**Fort Churchill**	**75.06**	**27**	*e*P	**P**	**06 20 27.9**	**-1.2**
	comp=Z,96nm,1.6s						
BMN	**Battle Mountai**	**75.08**	**51**	*e*P	**P**	**06 20 31.0**	**+1.2**
BMN				pmax	pmax		
	comp=Z,33nm,1.5s						
BMN	**Battle Mountai**	**75.08**	**51**	*e*P	**P**	**06 20 31.0**	**+1.2**
	comp=Z,33nm,1.5s						
NC405	**NORSAR Array S**	**75.40**	**337**	*e*P	P	06 20 35.2	+4.1
NC405				*e*PcP	**PcP**	**06 20 43.9**	**-0.3**
BOZ	**Bozeman (W)**	**75.43**	**44**	P	**P**	**06 20 30.7**	**-1.0**
	baz=306						
BOZ	**Bozeman (W)**	**75.43**	**44**	*e*P	**P**	**06 20 32.8**	**+1.0**
BOZ				pmax	pmax		
	comp=Z,51nm,1.8s						
BOZ				MLR	MLR		
	comp=Z,2µm,20.0s						
BOZ	**Bozeman (W)**	**75.43**	**44**	*e*P	**P**	**06 20 32.8**	**+1.0**
	comp=Z,51nm,1.8s						
BOZ				LR	LR		
	comp=Z,2µm,20.0s						
NV01	**Mina Array Sit**	**75.51**	**53**	*e*P	**P**	**06 20 30.6**	**-1.8**
NVAR	**Mina Array Bea**	**75.51**	**53**	P	**P**	**06 20 34.0**	**+1.6**
	comp=Z,2.6nm,0.8s,baz=284,slow=5.1,SNR=6.3						
NC204	**NORSAR Array S**	**75.57**	**338**	*e*P	P	06 20 36.4	+4.3
NV11	**Mina Array Sit**	**75.60**	**53**	*e*P	**P**	**06 20 33.6**	**+0.7**
	comp=Z,65nm,1.9s						
NB2	**NORSAR Subarra**	**75.61**	**338**	P	**P**	**06 20 32.5**	**+0.2**
	comp=Z,78nm,2.0s,baz=40,slow=5.6						
NB2	**NORSAR Subarra**	**75.61**	**338**	P	**P**	**06 20 32.5**	**+0.2**
	baz=40,slow=5.6						
NOA	**NORSAR Array B**	**75.61**	**338**	P	**P**	**06 20 32.1**	**-0.2**
	comp=Z,6.0nm,0.9s,baz=39,slow=5.7,SNR=8.7						
AKASG	**Malin Array Be**	**75.63**	**323**	P	**P**	**06 20 32.1**	**-0.5**
	comp=Z,4.5nm,0.7s,baz=47,slow=6.1,SNR=9.4						
KIEV	**Kiev**	**75.64**	**323**	*d* *i*P	**P**	**06 20 32.8**	**+0.2**
KIEV				pmax	pmax		
	comp=Z,21nm,1.4s						
KIEV	**Kiev**	**75.64**	**323**	*e*P	**P**	**06 20 32.2**	**-0.4**
	comp=Z,22nm,1.0s						
KIEV				LR	LR		
	comp=Z,4µm,19.0s						
AK11	**Malin Array Si**	**75.67**	**323**	*e*P	P	06 20 36.1	+3.3
NBO02	**NORSAR Array S**	**75.71**	**338**	*e*P	P	06 20 36.8	+3.9
ELK	**Elko**	**76.14**	**50**	*e*P	**P**	**06 20 37.2**	**+1.2**
ELK				pmax	pmax		
	comp=Z,40nm,1.7s						
ELK	**Elko**	**76.14**	**50**	*e*P	**P**	**06 20 37.2**	**+1.2**
	comp=Z,40nm,1.7s						
YMR	**Madison River**	**76.39**	**45**	*e*P	**P**	**06 20 38.6**	**+1.2**
	comp=Z,39nm,1.5s						
GCMT	**Greycliff**	**76.45**	**43**	*e*P	P	06 20 41.8	+4.2
SIM	**Simferopol'**	**76.59**	**316**	*e*P	**P**	**06 20 39.0**	**+0.9**
SIM				pmax	pmax		
	comp=Z,44nm,0.7s						
SIM				MLR	MLR		
	comp=Z,3.0nm,15.9s						
LKWY	**Lake**	**76.78**	**44**	*e*P	**P**	**06 20 41.9**	**+2.3**
LKWY				pmax	pmax		
	comp=Z,44nm,1.4s						
LKWY				MLR	MLR		
	comp=Z,4µm,19.0s						
LKWY	**Lake**	**76.78**	**44**	*e*P	**P**	**06 20 41.9**	**+2.3**
	comp=Z,44nm,1.4s						
LKWY				LR	LR		
	comp=Z,4µm,19.0s						
H17A	**Grant Village**	**76.78**	**45**	P	**P**	**06 20 40.3**	**+0.7**
	baz=307						
H17A	**Grant Village**	**76.78**	**45**	*e*P	**P**	**06 20 40.4**	**+0.8**
	comp=Z,62nm,1.5s						
IMW	**Indian Meadow**	**76.87**	**45**	*e*P	**P**	**06 20 41.8**	**+1.6**
	comp=Z,23nm,1.3s						
FLWY	**Flagg Ranch**	**76.90**	**45**	*e*P	**P**	**06 20 40.2**	**+0.1**
	comp=Z,115nm,1.7s						
FXWY	**Fox Creek**	**76.97**	**45**	*e*P	**P**	**06 20 40.1**	**-0.6**
	comp=Z,27nm,1.4s						
HVU	**Hansel Valley**	**77.05**	**48**	*e*P	**P**	**06 20 42.3**	**+1.3**
HVU				pmax	pmax		
	comp=Z,14nm,1.0s						
HVU	**Hansel Valley**	**77.05**	**48**	*e*P	**P**	**06 20 42.3**	**+1.3**
	comp=Z,14nm,1.0s						
MOOW	**Moose Ponds**	**77.07**	**45**	*e*P	**P**	**06 20 41.4**	**+0.2**
	comp=Z,65nm,1.9s						
RLMT	**Red Lodge**	**77.08**	**43**	P	**P**	**06 20 40.8**	**-0.4**
	baz=308						
RLMT	**Red Lodge**	**77.08**	**43**	*e*P	**P**	**06 20 40.5**	**-0.7**
	comp=Z,44nm,1.6s						
RLMT				LR	LR		
	comp=Z,2µm,19.0s						
KONO	**Kongsberg**	**77.20**	**337**	PFAKE		06 20 50.0	+8.7
KONO				LR	LR		
	comp=Z,8µm,21.0s						
SFJD	**Kangerlussuaq**	**77.23**	**5**	PFAKE		06 20 50.0	+8.7
SFJD				LR	LR		
	comp=Z,4µm,19.0s						
LOHW	**Long Hollow**	**77.24**	**45**	*e*P	**P**	**06 20 42.9**	**+0.8**
	comp=Z,12nm,1.4s						
SNOW	**Snow King Moun**	**77.24**	**45**	*e*P	**P**	**06 20 41.5**	**-0.7**
	comp=Z,24nm,1.4s						
REDW	**Red Top Meadow**	**77.24**	**46**	*e*P	**P**	**06 20 43.5**	**+1.3**
	comp=Z,27nm,1.3s						
R11A	**Troy Canyon, C**	**77.31**	**52**	P	**P**	**06 20 41.5**	**-1.0**
	baz=306						
R11A	**Troy Canyon, C**	**77.31**	**52**	*e*P	**P**	**06 20 41.6**	**-1.0**
	comp=Z,16nm,1.3s						
AHID	**Auburn Hatcher**	**77.46**	**46**	*e*P	**P**	**06 20 43.6**	**+0.2**
	comp=Z,30nm,1.6s						
AHID				LR	LR		
	comp=Z,1µm,19.0s						
FURC	**Furnace Creek,**	**77.56**	**54**	P	**P**	**06 20 44.3**	**+0.6**
	baz=305						
LRMC	**Laurel Mtn Rad**	**77.58**	**55**	P	**P**	**06 20 44.3**	**+0.2**
	baz=305						
DGMT	**Dagmar**	**77.68**	**39**	PFAKE		06 21 00.0	+16
DGMT				LR	LR		
	comp=Z,2µm,19.0s						
LAO	**LASA Array**	**77.77**	**41**	PFAKE		06 21 00.0	+15
LAO				LR	LR		
	comp=Z,2µm,20.0s						
HWUT	**Hardware Ranch**	**77.88**	**47**	*e*P	**P**	**06 20 47.3**	**+1.6**
	comp=Z,86nm,1.9s						
HWUT				LR	LR		
	comp=Z,2µm,19.0s						
DGAR	**Diego Garcia**	**77.92**	**252**	PFAKE		06 21 00.0	+14
DGAR				LR	LR		
	comp=Z,2µm,19.0s						
DUG	**Dugway, Tooele**	**77.97**	**49**	P	**P**	**06 20 45.4**	**-0.8**
	baz=307						
DUG	**Dugway, Tooele**	**77.97**	**49**	*e*P	**P**	**06 20 45.3**	**-0.8**
DUG				pmax	pmax		
	comp=Z,47nm,1.5s						
DUG				MLR	MLR		
	comp=Z,2µm,19.0s						
DUG	**Dugway, Tooele**	**77.97**	**49**	*e*P	**P**	**06 20 45.3**	**-0.8**
	comp=Z,47nm,1.5s						
DUG				LR	LR		
	comp=Z,2µm,19.0s						
KIS	**Kishinev**	**78.20**	**320**	*e*P	**P**	**06 20 48.0**	**+0.9**
KIS	**Kishinev**	**78.20**	**320**	*e*PP	PP	06 23 46.0	+2.7
KIS	**Kishinev**	**78.20**	**320**	*e*PPP	PPP	06 25 37.0	
KIS				*e*S	**S**	**06 30 42.0**	**+1.3**
KIS				*e*ScS	**SKSac**	**06 31 00.0**	**-0.4**
KIS	**Kishinev**	**78.20**	**320**	*e*PS		06 31 14.0	
KIS				*e*SS	SS	06 35 35.0	-6.8
KIS				*e*SSS	SSS	06 39 04.0	
KIS				*e*LQ	LQ	06 51 04.0	
KIS				LRM	MLR	06 59 14.0	
	comp=Z,22µm,15.0s						
KIS	**Kishinev**	**78.20**	**320**	*e*P	**P**	**06 20 48.0**	**+0.9**
KIS				*e*		06 20 54.0	
KIS				*e*		06 23 46.0	
KIS				*e*PPP	PPP	06 25 37.0	
KIS				*e*S	**S**	**06 30 42.0**	**+1.3**
KIS				*e*		06 31 00.0	
KIS				*e*PS	**PnS**	**06 31 14.0**	**-8.3**
KIS				*e*SSS	SSS	06 39 04.0	
KIS				MLR	MLR		
	comp=Z,23µm,15.0s						
KIS				MLR	MLR		
	comp=N,13µm,14.0s						
KIS				MLR	MLR		
	comp=E,14µm,15.0s						
KIS				MLR	MLR		
	comp=Z,22µm,15.0s						
TCUT	**Toone Canyon**	**78.27**	**48**	*e*P	**P**	**06 20 49.6**	**+1.7**
	comp=Z,28nm,0.9s						
PSUT	**Pine Spring**	**78.30**	**51**	*e*P	**P**	**06 20 49.0**	**+0.9**
	comp=Z,14nm,1.0s						
CTU	**Camp Tracy**	**78.32**	**48**	*e*P	P	06 20 52.7	+4.5
	comp=Z,33nm,1.5s						
TAU	**Tasmania Unive**	**78.34**	**176**	PFAKE		06 21 00.0	+12
TAU				LR	LR		
	comp=Z,1µm,19.0s						
BW06	**Boulder Array**	**78.36**	**45**	P	**P**	**06 20 47.3**	**-1.0**
	baz=308						
BW06	**Boulder Array**	**78.36**	**45**	*e*P	**P**	**06 20 49.1**	**+0.7**
	comp=Z,13nm,1.2s						
BW06				LR	LR		
	comp=Z,2µm,19.0s						
PD31	**Pinedale Array**	**78.36**	**45**	*e*P	**P**	**06 20 50.1**	**+1.7**
PDAR	**Pinedale Array**	**78.36**	**45**	P	**P**	**06 20 47.9**	**-0.5**
	comp=Z,2.2nm,0.9s,baz=270,slow=2.7,SNR=7.5						
JLU	**Jordanelle**	**78.55**	**48**	*e*P	P	06 20 54.3	+4.8
	comp=Z,47nm,1.5s						
NLU	**North Lily Min**	**78.56**	**49**	*e*P	**P**	**06 20 51.1**	**+1.5**
	comp=Z,39nm,1.7s						
LVV	**L'vov**	**78.72**	**324**	*e*P	**P**	**06 20 50.0**	**0.0**
LVV				*e*S	**S**	**06 30 43.2**	**-3.0**
LVV				*e*		06 31 36.2	
LVV				MLR	MLR		
	comp=Z,12µm,14.0s						
LVV				MLR	MLR		
	comp=N,8µm,13.0s						
LVV				MLR	MLR		
	comp=E,8µm,14.0s						
MPU	**Maple Canyon**	**78.80**	**49**	*e*P	**P**	**06 20 52.0**	**+1.2**
	comp=E,27nm,1.3s						
RAR	**Rarotonga**	**79.03**	**126**	PFAKE		06 21 00.0	+8.1
RAR				LR	LR		
	comp=Z,4µm,19.0s						
MSU	**Marysvale**	**79.37**	**50**	*e*P	**P**	**06 20 53.0**	**-1.0**
MSU	**Marysvale**	**79.37**	**50**	*e*P	**P**	**06 20 53.0**	**-1.0**
KWP	**Kalwaria Pacla**	**79.48**	**325**⇓	*i*P	**P**	**06 20 54.7**	**+0.6**
KWP	**Kalwaria Pacla**	**79.48**	**325**	⇓P	**P**	**06 20 54.7**	**+0.6**
PFO	**Pinyon Flats O**	**79.48**	**56**	PFAKE		06 21 10.0	+15
PFO				LR	LR		
	comp=Z,2µm,19.0s						
LCMT	**Little Creek M**	**79.59**	**52**	*e*P	P	06 20 60.0	+4.8
	comp=Z,68nm,1.8s						
BUR08	**Bucovina Ar. S**	**79.63**	**322**	*e*P	**P**	**06 20 55.9**	**+0.8**
BURAR	**Bucovina Array**	**79.64**	**322**⇑	*i*P	**P**	**06 20 56.3**	**+1.2**
BURAR	**Bucovina Array**	**79.64**	**322**	⇑P	**P**	**06 20 56.4**	**+1.3**
P17A	**Butcher Ranch,**	**79.67**	**49**	*e*P	**P**	**06 20 56.9**	**+1.3**
	comp=Z,21nm,1.0s						
KNB	**Kanab**	**79.86**	**52**	*e*P	**P**	**06 20 58.1**	**+1.4**
KNB				pmax	pmax		
	comp=Z,51nm,1.4s						
KNB	**Kanab**	**79.86**	**52**	*e*P	**P**	**06 20 58.1**	**+1.4**
	comp=Z,51nm,1.4s						
P18A	**Preston Nutter**	**79.88**	**48**	*e*P	**P**	**06 20 58.0**	**+1.1**
	comp=Z,82nm,2.0s						
SRU	**San Rafael Swe**	**80.03**	**49**	*e*P	**P**	**06 20 56.9**	**-0.6**
SRU				pmax	pmax		
	comp=Z,13nm,0.9s						
SRU	**San Rafael Swe**	**80.03**	**49**	*e*P	**P**	**06 20 56.9**	**-0.6**
	comp=Z,13nm,0.9s						
VRI	**Vrincioaia**	**80.03**	**320**⇑	*i*P	P	06 21 01.2	+4.0
VRI	**Vrincioaia**	**80.03**	**320**	⇑P	P	06 21 01.2	+4.0
BR131	**Keskin Array S**	**80.06**	**312**	*e*P	**P**	**06 20 59.6**	**+2.0**
BRTR	**Keskin Array B**	**80.06**	**312**	P	**P**	**06 20 58.0**	**+0.3**
	comp=Z,5.8nm,1.0s,baz=99,slow=3.1,SNR=12						
BRTR	**Keskin Array B**	**80.06**	**312**	P	**P**	**06 20 58.0**	**+0.3**
BRTR				pmax	pmax		
	comp=Z,6.0nm,1.0s						
UZH	**Uzhgorod**	**80.37**	**324**	*e*P	**P**	**06 20 59.5**	**+0.6**
UZH				*e*		06 21 07.1	
UZH				*e*		06 21 12.0	
UZH				*e*		06 24 02.7	
UZH				*e*PPP	PPP	06 25 56.5	
UZH				*e*S	**S**	**06 31 05.3**	**+1.7**
UZH				*e*PS	**PnS**	**06 31 56.9**	**+7.4**
UZH				*e*SS	**SS**	**06 36 14.9**	**+0.8**
UZH				MLR	MLR		
	comp=N,8µm,14.5s						
UZH				MLR	MLR		
	comp=E,12µm,14.5s						
UZH				MLR	MLR		
	comp=Z,10µm,14.5s						
OJC	**Ojcow**	**80.40**	**327**	*e*P	P	06 21 03.0	+3.9
OJC				LMZ	LR	07 00 59.0	
OJC	**Ojcow**	**80.40**	**327**	*e*P	P	06 21 03.8	+4.7
OJC				pmax	pmax		
	comp=Z,29nm,1.1s						
OJC	**Ojcow**	**80.40**	**327**	*e*P	P	06 21 03.8	+4.7
	com

OKC AMS AMS 07 04 50.0
comp=Z,8µm,13.3s
OKC Ostrava-Krasne 81.42 327 *e*P **P 06 21 07.4 +2.9**
OKC *e*S **S 06 31 20.0 +5.4**
OKC MLR MLR
comp=Z,8µm,13.3s
ARR Arges 81.46 321⇑ *i*P P 06 21 10.3 +5.4
B32A Ashes, Strandq 81.47 35 P **P 06 21 04.3 -0.5**
baz=316
PV04 Paradox Valley 81.47 49 *e*P **P 06 21 06.0 +0.8**
PV05 Paradox Valley 81.54 49 *e*P **P 06 21 05.0 -0.7**
RAYN Ar Rayn 81.54 293 *e*P **P 06 21 06.5 +0.8**
comp=Z,28nm,1.2s
RAYN LR LR
comp=Z,2µm,21.0s
N23A Red Feather La 81.63 45 P **P 06 21 05.6 -0.6**
baz=310
N23A Red Feather La 81.63 45 *e*P **P 06 21 06.1 -0.1**
comp=Z,66nm,1.6s
WUAZ Wupatki 81.70 52 *e*P **P 06 21 05.9 -0.6**
WUAZ LR LR
comp=Z,2µm,20.0s
MORC Moravsky Berou 81.73 327⇑ *i*P P 06 21 10.7 +4.5
MORC Moravsky Berou 81.73 327⇑ P P 06 21 10.7 +4.5
PV01 Paradox Valley 81.83 49 *e*P **P 06 21 08.1 +0.9**
DPC Dobruska-Polom 81.83 328 *e*P **P 06 21 08.6 +1.8**
DPC *ex* x 06 21 14.8
DPC *e*S **S 06 31 23.3 +4.3**
DPC AMS AMS 07 02 50.0
comp=Z,13µm,13.4s
DPC Dobruska-Polom 81.83 328 *e*P **P 06 21 08.6 +1.8**
DPC *e* 06 21 14.8
DPC *e*S **S 06 31 23.3 +4.3**
DPC MLR MLR
comp=Z,13µm,13.4s
AGMN Agassiz Nation 81.85 35 *e*P P 06 21 10.1 +3.3
comp=Z,33nm,1.6s
AGMN LR LR
comp=Z,2µm,20.0s
UPC Upice 81.85 328 *e*P P 06 21 11.4 +4.6
UPC *e*S **S 06 31 21.7 +2.6**
UPC AMS AMS 07 02 20.0
comp=Z,13µm,13.6s
UPC Upice 81.85 328 *e*P P 06 21 11.4 +4.6
UPC *e*S **S 06 31 21.7 +2.6**
UPC MLR MLR
comp=Z,13µm,13.6s
PSZ Piszkesteto 82.01 325⇑ *i*P **P 06 21 08.7 +0.9**
PSZ Piszkesteto 82.01 325 *e*P **P 06 21 07.4 -0.3**
PSZ pmax pmax
comp=Z,35nm,1.2s
PSZ MLR MLR
comp=Z,9µm,21.0s
PSZ Piszkesteto 82.01 325 *e*P **P 06 21 07.4 -0.3**
comp=Z,35nm,1.2s
PSZ LR LR
comp=Z,9µm,21.0s
VYHS Vyhne 82.08 326 *e*P **P 06 21 08.4 +0.3**
VYHS pmax pmax
comp=Z,75nm,2.4s
VYHS Vyhne 82.08 326 *e*P **P 06 21 08.4 +0.3**
VYHS *e*PP **PP 06 24 20.3 +4.9**
VYHS *e*S **S 06 31 16.9 -4.6**
SMCO Snowmass 82.13 47 *e*P **P 06 21 10.6 +1.6**
comp=Z,46nm,1.9s
SNZO South Karori 82.30 156 PFAKE 06 21 20.0 +11
SNZO LR LR
comp=Z,2µm,20.0s
GZR Gura Zlata 82.39 322⇓ *i*P P 06 21 13.9 +4.1
GZR Gura Zlata 82.39 322⇓ P P 06 21 13.9 +4.1
BRG Berggiesshubel 82.44 330 *e*P **P 06 21 13.0 +3.1**
comp=Z,12nm,1.3s
BRG *i* 06 21 34.8
comp=Z,9.9nm,1.0s
BRG PP **PP 06 24 17.1 -1.1**
comp=Z,95nm,2.5s
BRG S S 06 31 39.0 +14
BRG SS **SS 06 36 39.0 -5.8**
comp=N,14µm,13.6s
comp=E,6µm,14.0s
comp=Z,21µm,14.3s
BRG Berggiesshubel 82.44 330 *e*P **P 06 21 13.0 +3.1**
BRG 06 24 17.1
BRG pmax pmax
comp=Z,7.0nm,1.3s
BRG pmax pmax
comp=Z,12nm,1.0s
BRG pmax pmax
comp=Z,10.0nm,2.5s
BRG MLR MLR
comp=N,95µm,13.6s
BRG MLR MLR
comp=E,14µm,14.0s
BRG MLR MLR
comp=Z,6µm,14.3s
PVCC Panska Ves 82.44 329 AMS AMS 07 03 00.0
comp=Z,10µm,14.0s
MVCO Mesa Verde 82.46 49 *e*P **P 06 21 10.4 -0.1**
MVCO LR LR
comp=Z,2µm,20.0s
CLL Collm 82.49 330 *e*P **P 06 21 10.0 -0.1**
comp=Z,19nm,1.4s
CLL *i* 06 21 13.3
comp=Z,19nm,1.4s
CLL *e*Plp 06 21 19.0
comp=Z,700nm,16.6s
CLL *e* 06 21 34.0
comp=Z,21nm,1.2s
CLL *e* 06 21 44.0
CLL *i* 06 21 52.0
CLL *e* 06 22 03.0
CLL *e*PP **PP 06 24 23.0 +4.4**
CLL *e* 06 24 42.0
CLL *e*PPP PPP 06 26 08.0
CLL *e*S **S 06 31 26.0 +0.5**
comp=N,700nm,14.5s
CLL *e*S **S 06 31 26.0 +0.5**
comp=E,700nm,21.1s
CLL *e*PS **PnS 06 32 16.0 +0.3**
CLL *e*PPS PPS 06 32 55.0
CLL *e* 06 33 59.0
CLL *e*SS **SS 06 36 48.0 +2.5**
CLL *e*SSS SSS 06 40 18.0
CLL *e* 06 41 18.0
CLL Lmax 07 02 00.0
CLL Collm 82.49 330 *e*P **P 06 21 10.0 -0.1**
CLL *e*S **S 06 31 26.0 +0.5**
CLL pmax pmax
comp=Z,7.0nm,1.4s
ISCO Idaho Springs 82.53 46 P **P 06 21 10.8 -0.2**
baz=311
ISCO Idaho Springs 82.53 46 PFAKE 06 21 20.0 +9.0
ISCO LR LR
comp=Z,2µm,19.0s
GOPC GO Pecny, Ondr 82.82 329 *e*P P 06 21 16.2 +4.3
GOPC AMS AMS 07 05 40.0
comp=Z,13µm,13.7s
GOPC GO Pecny, Ondr 82.82 329 *e*P P 06 21 16.2 +4.3
GOPC MLR MLR
comp=Z,13µm,13.7s
PRA Prague 82.85 329 AMS AMS 07 03 00.0
comp=Z,16µm,13.4s
PRU Pruhonice 82.86 329 *e*P P 06 21 16.5 +4.4
PRU *e*S **S 06 31 31.0 +1.6**
PRU AMS AMS 07 03 00.0
comp=Z,13µm,13.3s
PRU Pruhonice 82.86 329 *e*P P 06 21 16.5 +4.4
PRU *e*S **S 06 31 31.0 +1.6**
PRU MLR MLR
comp=Z,13µm,13.3s
214A Organ Pipe Nat 82.93 56 *e*P **P 06 21 11.6 -1.2**
comp=Z,14nm,0.6s
TREC Trest 82.98 328 AMS AMS 07 03 30.0
comp=Z,13µm,14.1s
S22A 4UR Ranch, Cre 83.14 48 P **P 06 21 14.6 +0.4**
baz=310
S22A 4UR Ranch, Cre 83.14 48 *e*P **P 06 21 14.8 +0.7**
comp=Z,21nm,1.3s
ISP Isparta 83.15 312 PFAKE 06 21 30.0 +16
ISP LR LR
comp=Z,1µm,19.0s
CSS Mathiatis 83.22 308 PFAKE 06 21 30.0 +16
CSS LR LR
comp=Z,383nm,19.0s

X18A Snowflake 83.23 52 *e*P **P 06 21 15.5 +1.0**
comp=Z,46nm,1.6s
PMOR Pomariorio Ree 83.27 114 *e*T T 07 52 08.2
comp=Z,4.3nm,0.2s
MDVR Moldovita 83.35 322⇑ *i*P P 06 21 18.9 +4.1
NKC Novy Kostel 83.54 330 *e*P P 06 21 19.2 +3.6
NKC *e*S **S 06 31 41.2 +4.8**
NKC AMS AMS 07 02 50.0
comp=Z,17µm,14.6s
NKC Novy Kostel 83.54 330 *e*P P 06 21 19.2 +3.6
NKC *e*S **S 06 31 41.2 +4.8**
NKC MLR MLR
comp=Z,17µm,14.6s
PPT2 Papeete2 83.68 117 *e*S S 06 31 31.7 -6.9
comp=Z,3µm,33.5s
PPT2 Papeete2 83.68 117 *e*LR LR 06 47 16.7
comp=Z,6µm,28.5s,baz=311
OGNE Ogallala 83.82 43 PFAKE 06 21 30.0 +13
OGNE LR LR
comp=Z,2µm,20.0s
PKSM Moragy 83.83 324⇑ *i*P **P 06 21 18.1 +1.0**
PKSM Moragy 83.83 324⇑ P **P 06 21 18.1 +1.0**
CONA Conrad Observa 83.85 327 *i* pP **P 06 21 19.2 +1.9**
comp=Z,19nm,1.3s
KHC Kasperske Hory 83.92 329 *e*P **P 06 21 18.9 +1.3**
KHC *ex* x 06 21 29.6
KHC *e*S **S 06 31 43.5 +3.2**
KHC AMS AMS 07 04 50.0
comp=Z,12µm,14.0s
KHC Kasperske Hory 83.92 329 *e*P **P 06 21 18.9 +1.3**
KHC *e* 06 21 29.6
KHC *e*S **S 06 31 43.5 +3.2**
KHC MLR MLR
comp=Z,12µm,14.0s
KHC Kasperske Hory 83.92 329 *e*P P 06 21 21.6 +4.0
comp=Z,7.2nm,1.2s
SDCO Great Sand Dun 83.94 47 *e*P **P 06 21 18.4 +0.2**
comp=Z,92nm,2.1s
SDCO LR LR
comp=Z,2µm,19.0s
TUC Tucson 84.07 54 *e*P **P 06 21 19.7 +1.0**
TUC pmax pmax
comp=Z,20nm,1.1s
TUC MLR MLR
comp=Z,1µm,19.0s
TUC Tucson 84.07 54 *e*P **P 06 21 19.7 +1.0**
comp=Z,20nm,1.1s
TUC LR LR
comp=Z,1µm,19.0s
EYMN Ely 84.09 33 PFAKE 06 21 30.0 +12
EYMN LR LR
comp=Z,2µm,19.0s
GERES GERESS Array B 84.09 329 P **P 06 21 18.4 -0.1**
comp=Z,1.9nm,0.7s,baz=38,slow=5.0,SNR=10
GEA0 GERESS Array S 84.10 329 *e*P **P 06 21 19.0 +0.5**
VTS Vitosha 84.11 319⇑ *i*P **P 06 21 21.0 +2.1**
VTS Vitosha 84.11 319 *e*P P 06 21 23.6 +4.7
VTS pmax pmax
comp=Z,39nm,1.3s
VTS Vitosha 84.11 319 *e*P P 06 21 23.6 +4.7
comp=Z,39nm,1.3s
GRFO Grafenberg 84.46 330 *e*P P 06 21 16.3 -4.0
GRFO pmax pmax
comp=Z,69nm,1.4s
GRFO Grafenberg 84.46 330 *e*P P 06 21 16.3 -4.0
comp=Z,69nm,1.4s
ESK Eskdalemuir 84.59 341 PFAKE 06 21 30.0 +9.2
ESK LR LR
comp=Z,5µm,19.0s
MOA Molln 84.61 328 *i* pP **P 06 21 22.6 +1.5**
comp=Z,13nm,1.6s
ECSD EROS Data Cent 84.76 38 *e*P **P 06 21 24.0 +2.1**
comp=Z,23nm,1.5s
ECSD LR LR
comp=Z,2µm,21.0s
KSCO Kaye Shedlock' 84.79 45 *e*P **P 06 21 22.6 +0.3**
comp=Z,21nm,1.1s
LAZ Ladron 85.10 51 *e*P **P 06 21 24.6 +0.5**
SOKA Soboth 85.16 326 *e*PcP **P 06 21 24.9 +0.9**
comp=Z,12nm,1.2s
ANMO Albuquerque 85.18 50 P **P 06 21 23.4 -1.0**
baz=311
ANMO Albuquerque 85.18 50 *e*P **P 06 21 23.4 -1.0**
ANMO pmax pmax
comp=Z,22nm,1.3s
ANMO MLR MLR
comp=Z,1µm,19.0s
ANMO Albuquerque 85.18 50 *e*P **P 06 21 23.4 -1.0**
comp=Z,22nm,1.3s
ANMO LR LR
comp=Z,1µm,19.0s
TAOE Nuku Hiva Isla 85.46 104 *e*S S 06 31 50.2 -6.4
comp=Z,627nm,24.0s
TAOE Nuku Hiva Isla 85.46 104 *e*LR LR 06 48 12.4
comp=Z,4µm,29.4s,baz=313
BNM Barren Site 85.59 51 *e*P **P 06 21 26.8 +0.3**
319A Douglas 85.65 54 *e*P **P 06 21 25.6 -1.1**
comp=Z,22nm,1.1s
121A Cookes Peak, D 85.89 53 P **P 06 21 27.5 -0.5**
baz=310
RETA Reutte 86.39 329 *i* PcP **P 06 21 31.1 +1.0**
comp=Z,6.5nm,1.4s
WLF Walferdange 86.44 333 PFAKE 06 21 40.0 +10
WLF LR LR
comp=Z,5µm,21.0s
COWI Conover 86.54 33 PFAKE 06 21 40.0 +9.3
COWI LR LR
comp=Z,2µm,19.0s
SCHQ Schefferville 86.56 16 P **P 06 21 33.8 +3.2**
comp=Z,4.8nm,0.9s,baz=341,slow=5.7,SNR=4.0
CBKS Cedar Bluff 86.56 44 PFAKE 06 21 40.0 +9.0
CBKS LR LR
comp=Z,3µm,19.0s
BFO Black Forest 86.70 331 *e*P P 06 21 35.0 +3.5
BFO pmax pmax
comp=Z,29nm,1.4s
BFO MLR MLR
comp=Z,4µm,21.0s
BFO Black Forest 86.70 331 *e*P P 06 21 35.0 +3.5
comp=Z,29nm,1.4s
BFO LR LR
comp=Z,4µm,21.0s
TIR Tirane 86.75 320 PFAKE 06 21 40.0 +8.2
TIR LR LR
comp=Z,6µm,20.0s
SANT Santorini 87.14 314 PFAKE 06 21 50.0 +16
SANT LR LR
comp=Z,1µm,20.0s
TBI Tubuai 87.48 121 *e*S S 06 32 08.7 -6.9
comp=Z,1µm,28.0s
TBI Tubuai 87.48 121 *e*LR LR 06 49 10.0
comp=Z,4µm,27.0s,baz=315
TBI Tubuai 87.48 121 *e*T T 07 57 24.8
comp=Z,15nm,0.3s
TUE Stuetta 87.78 329 PFAKE 06 21 50.0 +13
TUE LR LR
comp=Z,4µm,20.0s
SCIA State Center 87.80 38 PFAKE 06 21 50.0 +13
SCIA LR LR
comp=Z,2µm,19.0s
MNTX Cornudas Mount 87.98 52 *e*P **P 06 21 39.8 +1.9**
comp=Z,43nm,2.0s
MNTX LR LR
comp=Z,1µm,19.0s
Q34A Chapman 88.03 42 P **P 06 21 39.2 +1.1**
baz=316
KSU1 Kansas State U 88.09 42 *e*P **P 06 21 36.6 -1.7**
comp=Z,16nm,1.1s
KSU1 LR LR
comp=Z,1µm,19.0s
M38A Pleasantville 88.17 38 P **P 06 21 38.8 +0.1**
baz=318
JFWS Jewell Farm 88.48 35 PFAKE 06 21 50.0 +10
JFWS LR LR
comp=Z,2µm,19.0s
Q35A Mercer Eighty, 88.57 41 P **P 06 21 40.5 -0.1**
baz=316
VLC Villacollemand 89.18 327 PFAKE 06 21 50.0 +6.6
VLC LR LR
comp=Z,2µm,19.0s
CUC Castrocucco 89.83 322 PFAKE 06 22 00.0 +13
CUC LR LR
comp=Z,2µm,19.0s
TIP Timpagrande 89.96 321 PFAKE 06 22 00.0 +13
TIP LR LR
comp=Z,3µm,19.0s

WMOK Wichita Mounta 89.96 46 PFAKE 06 22 00.0 +13
WMOK LR LR
comp=Z,1µm,19.0s
BNI Bardonecchia 90.03 330 PFAKE 06 22 00.0 +12
BNI LR LR
comp=Z,4µm,19.0s
TX31 Lajitas Ar. Si 90.65 53 *e*P **P 06 21 49.1 -1.5**
TXAR Lajitas Array 90.65 53 P **P 06 21 49.1 -1.6**
comp=Z,6.3nm,0.9s,baz=294,slow=3.5,SNR=12
SSB Saint Sauveur 90.69 331 PFAKE 06 22 00.0 +10
SSB LR LR
comp=Z,4µm,19.0s
HDIL Hopedale 90.75 36 PFAKE 06 22 00.0 +9.2
HDIL LR LR
comp=Z,2µm,20.0s
W35A Tecumseh 90.77 44 P **P 06 21 49.1 -1.9**
baz=316
T38A Diamond 90.84 42 P **P 06 21 49.0 -2.3**
baz=318
HPIG 90.92 56 *e*P **P 06 21 52.1 0.0**
comp=Z,8.6nm,0.9s
R40A Maddies Statio 90.98 40 P **P 06 21 50.0 -1.9**
baz=319
V37A Hulbert 91.22 43 P **P 06 21 50.7 -2.4**
baz=317
HHAR Hobbs 91.59 42 *e*P **P 06 21 54.6 -0.2**
comp=Z,7.4nm,0.9s
V38A Canehill 91.64 43 P **P 06 21 52.6 -2.4**
baz=317
U39A Green Forest 91.76 42 P **P 06 21 52.7 -2.9**
baz=318
AAM Ann Arbor 91.95 32 PFAKE 06 22 10.0 +14
AAM LR LR
comp=Z,3µm,19.0s
U40A Yellville 92.12 41 P **P 06 21 55.4 -1.8**
baz=318
333A Richland Sprin 92.23 48 P **P 06 21 55.2 -2.7**
baz=315
X38A Whitesboro 92.28 44 P **P 06 21 56.4 -1.5**
baz=317
JCT Junction City 92.32 50 PFAKE 06 22 10.0 +12
JCT LR LR
comp=Z,1µm,22.0s
X39A Fountain Ranch 92.80 43 P **P 06 22 00.2 -0.2**
baz=318
CLTB Caltabellotta 92.98 322 PFAKE 06 22 10.0 +8.7
CLTB LR LR
comp=Z,3µm,19.0s
MIAR Mount Ida 93.07 43 P **P 06 22 01.9 +0.3**
baz=318
MIAR Mount Ida 93.07 43 *e*P **P 06 22 01.4 -0.2**
MIAR pmax pmax
comp=Z,14nm,1.1s
MIAR MLR MLR
comp=Z,2µm,20.0s
MIAR Mount Ida 93.07 43 *e*P **P 06 22 01.4 -0.2**
comp=Z,14nm,1.1s
MIAR LR LR
comp=Z,2µm,20.0s
WHAR Wooly Hollow 93.22 42 *e*P P 06 22 05.9 +3.6
comp=Z,39nm,1.4s
VSL Villasalto 93.34 325 PFAKE 06 22 10.0 +7.2
VSL LR LR
comp=Z,3µm,22.0s
LONY Lake Ozonia 93.53 25 PFAKE 06 22 10.0 +6.4
LONY LR LR
comp=Z,2µm,19.0s
WDD Wied Dalam 93.62 320 PFAKE 06 22 20.0 +16
WDD LR LR
comp=Z,2µm,19.0s
ACSO Alum Creek Sta 93.93 33 PFAKE 06 22 20.0 +15
ACSO LR LR
comp=Z,3µm,19.0s
NCB Newcomb 94.22 25 PFAKE 06 22 20.0 +13
NCB LR LR
comp=Z,4µm,19.0s
NATX Nacogdoches 94.50 45 PFAKE 06 22 20.0 +12
NATX LR LR
comp=Z,2µm,20.0s
PKME Peaks-Kenny Pk 94.66 22 PFAKE 06 22 20.0 +11
PKME LR LR
comp=Z,3µm,19.0s
BINY Binghamton 95.12 27 PFAKE 06 22 20.0 +9.1
BINY LR LR
comp=Z,3µm,19.0s
KVTX Kingsville 95.56 50 PFAKE 06 22 20.0 +6.8
KVTX LR LR
comp=Z,1µm,19.0s
BLA Blacksburg 97.55 33 PFAKE 06 22 30.0 +7.9
BLA LR LR
comp=Z,3µm,19.0s
RKT Rikitea 97.87 113 *e*SKSac **SKSac 06 32 57.3 -2.9**
comp=Z,658nm,26.5s
RKT *e*SP **SP 06 35 10.6 -1.6**
comp=Z,410nm,30.8s
RKT *e*SS SS 06 40 23.5 -7.3
comp=Z,417nm,29.2s
RKT Rikitea 97.87 113 *e*LR LR 06 53 56.1
comp=Z,3µm,26.8s,baz=310
CBN Corbin Frederi 98.01 30 PFAKE 06 22 40.0 +16
CBN LR LR
comp=Z,3µm,20.0s
PAB San Pablo 98.95 334 PFAKE 06 22 40.0 +12
PAB LR LR
comp=Z,4µm,19.0s
BRAL Brewton 99.19 41 PFAKE 06 22 40.0 +11
BRAL LR LR
comp=Z,2µm,19.0s
GOGA Godfrey 99.24 37 PFAKE 06 22 40.0 +10
GOGA LR LR
comp=Z,1µm,20.0s
MTE Manteigas 99.26 337 PFAKE 06 22 40.0 +10
MTE LR LR
comp=Z,6µm,19.0s
CNNC Cliffs of the 100.31 32 PFAKE 06 22 50.0 +16
CNNC LR LR
comp=Z,2µm,20.0s
NHSC New Hope 101.07 35 PFAKE 06 22 50.0 +12
NHSC LR LR
comp=Z,2µm,19.0s
KMBO Kilima Mbogo 102.54 278 PFAKE 06 23 00.0 +15
KMBO LR LR
comp=Z,808nm,19.0s
TEIG Tepich 106.88 49 PFAKE 06 27 30.0
TEIG LR LR
comp=Z,621nm,19.0s
BBSR BB Station 107.89 23 PFAKE 06 27 30.0
BBSR LR LR
comp=Z,1µm,19.0s
TAM Tamanrasset 108.69 318 PFAKE 06 27 30.0
TAM LR LR
comp=Z,2µm,19.0s
SBA Scott Base 114.24 174 PFAKE 06 27 40.0 +14
SBA LR LR
comp=Z,500nm,21.0s
MTDJ Mount Denham 114.68 42 PFAKE 06 27 40.0 +11
MTDJ LR LR
comp=Z,1µm,20.0s
GRTK Grand Turk 115.11 34 PFAKE 06 27 40.0 +11
GRTK LR LR
comp=Z,2µm,20.0s
JTS JuntasAbangare 116.44 53 PFAKE 06 27 40.0 +7.9
JTS LR LR
comp=Z,951nm,20.0s
SDDR Presa de Saban 117.22 36 PFAKE 06 27 50.0 +16
SDDR LR LR
comp=Z,3µm,19.0s
LSZ Lusaka 117.90 271 PFAKE 06 27 50.0 +15
LSZ LR LR
comp=Z,2µm,19.0s
TORD Torodi Ar. Bea 118.58 315 PKP **PKPdf 06 27 35.5 -0.6**
comp=Z,0.8nm,0.9s,baz=16,slow=3.9,SNR=3.7
TORD PP **PP 06 28 48.1 -4.5**
comp=Z,0.9nm,0.9s,baz=28,slow=3.9,SNR=4.1
RPN Rapa Nui 119.78 104 PFAKE 06 27 50.0 +12
RPN LR LR
comp=Z,732nm,19.0s
SJG San Juan 120.29 31 PFAKE 06 27 50.0 +11
SJG LR LR
comp=Z,1µm,20.0s
PAYG Puerto Ayora 120.41 66 PFAKE 06 27 50.0 +10
PAYG LR LR
comp=Z,2µm,19.0s
BCIP Isla Barro Col 120.55 50 PFAKE 06 27 50.0 +10
BCIP LR LR
comp=Z,645nm,19.0s

ANWB	**Willy Bob**	**122.42**	**27**	PFAKE			06 27 50.0	+6.5
ANWB				LR	LR				
	comp=Z,922nm,21.0s								
LBTB	**Lobatse**	**124.85**	**262**	*e*PKIKP	**PKPdf**		**06 27 52.1**	**+4.1**
LBTB	**Lobatse**	**124.85**	**262**	*e*PKPdf	**PKPdf**		**06 27 52.1**	**+4.1**
FDF	**Fort de France**	**125.34**	**28**	PFAKE			06 28 00.0	+11
FDF				LR	LR				
	comp=Z,1μm,21.0s								
QSPA	**South Pole Qui**	**125.40**	**180**	*e*PKPdf	**PKPdf**		**06 27 46.5**	**-1.1**
QSPA				LR	LR				
	comp=Z,895nm,22.0s								
SDV	**Santo Domingo**	**126.12**	**41**	PFAKE			06 28 00.0	+9.1
SDV				LR	LR				
	comp=Z,1μm,20.0s								
BOSA	**Boshof**	**126.69**	**259**	PKP	**PKPdf**		**06 27 54.8**	**+3.3**
	comp=Z,4.9nm,1.1s,baz=40,slow=7.9,SNR=3.3								
BBGH	**Gun Hill**	**127.39**	**27**	PFAKE			06 28 00.0	+6.9
BBGH				LR	LR				
	comp=Z,2μm,19.0s								
GRGR	**Grenville**	**127.52**	**30**	PFAKE			06 28 00.0	+6.7
GRGR				LR	LR				
	comp=Z,1μm,22.0s								
OTAV	**Otavalo**	**128.19**	**55**	PFAKE			06 28 10.0	+15
OTAV				LR	LR				
	comp=Z,811nm,20.0s								
TSUM	**Tsumeb**	**128.58**	**273**	PFAKE			06 28 10.0	+15
TSUM				LR	LR				
	comp=Z,1μm,22.0s								
SUR	**Sutherland**	**131.69**	**256**	PFAKE			06 28 10.0	+9.1
SUR				LR	LR				
	comp=Z,2μm,21.0s								
NNA	**Nana**	**137.85**	**66**	PFAKE			06 28 20.0	+7.2
NNA				LR	LR				
	comp=Z,627nm,19.0s								
PTGA	**Pitinga**	**139.74**	**35**	PFAKE			06 28 30.0	+14
PTGA				LR	LR				
	comp=Z,39μm,20.0s								
ASCN	**Ascension**	**144.89**	**316**	PFAKE			06 28 40.0	+15
ASCN				LR	LR				
	comp=Z,1μm,20.0s								
SAML	**Samuel**	**144.93**	**47**	*e*PKPdf	**PKPab**		**06 28 23.7**	**-0.9**
SAML				LR	LR				
	comp=Z,973nm,19.0s								
PMSA	**Palmer Station**	**146.94**	**160**	PFAKE			06 28 40.0	+9.3
PMSA				LR	LR				
	comp=Z,851nm,19.0s								
LPAZ	**La Paz**	**147.03**	**62**	PKPbc	**PKPdf**		**06 28 30.0**	**+0.3**
	comp=Z,3.1nm,0.6s,baz=336,slow=1.3,SNR=8.5								
LPAZ	**La Paz**	**147.03**	**62**	PKP2	**PKPdf**		**06 28 30.0**	**+0.3**
LPAZ				pmax	pmax				
	comp=Z,3.0nm,0.6s								
LPAZ	**La Paz**	**147.03**	**62**	*e*PKPdf	**PKPbc**		**06 28 31.2**	**-0.5**
PB11	**IPOC Station P**	**148.07**	**69**	*e*PKPdf	**PKPdf**		**06 28 31.9**	**+1.2**
PB01	**IPOC Station P**	**148.94**	**71**	*e*PKPbc	**PKPab**		**06 28 39.4**	**-0.7**
RCBR	**Riachuelo**	**150.25**	**356**	PFAKE			06 28 50.0	+4.6
RCBR				LR	LR				
	comp=Z,943nm,20.0s								
SIV	**San Ignacio**	**151.65**	**52**	PKPbc	**PKPdf**		**06 28 39.3**	**+3.0**
	comp=Z,5.2nm,1.0s,baz=320,slow=1.6,SNR=3.8								
LCO	**Las Campanas**	**151.76**	**86**	*e*PKPbc	**PKPbc**		**06 28 42.7**	**-0.1**
LCO				LR	LR				
	comp=Z,1μm,19.0s								
ROC1	**El Roble**	**152.75**	**94**	*e*PKPbc	PKPbc		06 28 50.4	+5.5
EFI	**East Falkland**	**158.54**	**144**	PFAKE			06 29 00.0	+15
EFI				LR	LR				
	comp=Z,2μm,19.0s								
TRQA	**Tornquist**	**160.75**	**104**	PFAKE			06 29 00.0	+12
TRQA				LR	LR				
	comp=Z,1μm,19.0s								
HOPE	**Hope Point**	**161.33**	**183**	PFAKE			06 29 00.0	+12
HOPE				LR	LR				
	comp=Z,900nm,19.0s								
SPB	**Sao Paulo**	**165.51**	**36**	PFAKE			06 29 00.0	+7.4
SPB				LR	LR				
	comp=Z,965nm,19.0s								

TIF ***14*** *06:15:37.6, 42°.55N×43°.55E, h16km±1km*

CSEM ***14*** *06:15:38.4±0.3, 42°.52N×43°.51E, h2km, ML2.4, Error ellipse: s-maj=6.7km s-min=3.7km az=1.0*

DDA ***14*** *06:15:38.6, 42°.11N×44°.02E, h30km, Md3.1*

ISC 14 06:15:38.4±1.4**, 42°.51N**±0°.04×**43°.54E**±0°.03**, h4**km±12km**, n19,** σ0**°56/38, Western Caucasus**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
GUDG	**Gudauri**	**0.70**	**93**	P	**Pg**	**06 15 52.1**	**+0.3**
GUDG				S	**Sb**	**06 16 01.9**	**-1.4**
GUDG	**Gudauri**	**0.70**	**93**	P	**Pg**	**06 15 52.1**	**+0.3**
GUDG				S	**Sb**	**06 16 01.9**	**-1.4**
CHVG	**Ch'k'valeri**	**1.09**	**281**	P	**Pg**	**06 15 58.6**	**-0.7**
CHVG				S	**Sb**	**06 16 14.8**	**+0.3**
CHVG	**Ch'k'valeri**	**1.09**	**281**	P	**Pg**	**06 15 58.6**	**-0.7**
CHVG				S	**Sb**	**06 16 14.8**	**+0.3**
AKH	**Akhalkalaki**	**1.10**	**182**	P	**Pg**	**06 15 59.2**	**-0.3**
AKH				S	**Sb**	**06 16 14.5**	**-0.4**
AKH	**Akhalkalaki**	**1.10**	**182**	P	**Pg**	**06 15 59.2**	**-0.3**
AKH				S	**Sb**	**06 16 14.5**	**-0.4**
EPOS	**Posof**	**1.17**	**211**	*i* P	**Pg**	**06 16 00.3**	**-0.6**
EPOS				*i* S	**Sb**	**06 16 16.6**	**-0.3**
EPOS	**Posof**	**1.17**	**211**	P	**Pg**	**06 16 00.3**	**-0.6**
EPOS				S	**Sb**	**06 16 16.6**	**-0.3**
TBLG	**Delisi**	**1.19**	**131**	P	**Pg**	**06 16 00.7**	**-0.4**
TBLG				S	**Sn**	**06 16 18.2**	**-0.2**
TBLG	**Delisi**	**1.19**	**131**	P	**Pg**	**06 16 00.7**	**-0.4**
TBLG				S	**Sn**	**06 16 18.2**	**-0.2**
DGRG	**David-gareji**	**1.73**	**127**	P	**Pb**	**06 16 10.8**	**+0.1**
DGRG				S	**Sg**	**06 16 34.7**	**+0.7**
DGRG	**David-gareji**	**1.73**	**127**	P	**Pb**	**06 16 10.8**	**+0.1**
DGRG				S	**Sg**	**06 16 34.7**	**+0.7**
ARTV	**Artvin**	**1.79**	**223**	*i* P	**Pn**	**06 16 10.5**	**+0.3**
ARTV				*i* S	**Sb**	**06 16 34.5**	**-0.2**
ARTV	**Artvin**	**1.79**	**223**	P	**Pn**	**06 16 10.5**	**+0.3**
ARTV				S	**Sb**	**06 16 34.5**	**-0.2**
DBOC	**Borcka**	**1.82**	**231**	*i* P	**Pn**	**06 16 10.5**	**0.0**
DBOC				*i* S	**Sn**	**06 16 34.4**	**+0.5**
DBOC	**Borcka**	**1.82**	**231**	P	**Pn**	**06 16 10.5**	**0.0**
DBOC				S	**Sn**	**06 16 34.4**	**+0.5**
DAGI	**Agillar**	**1.88**	**221**	*i* P	**Pn**	**06 16 12.2**	**+0.9**
DAGI				*i* S	**Sb**	**06 16 37.2**	**+0.1**
DBAD	**Bademkaya**	**2.03**	**223**	*i* P	**Pn**	**06 16 13.8**	**+0.3**
DBAD				*i* S	**Sb**	**06 16 40.8**	**-0.7**
DBAD	**Bademkaya**	**2.03**	**223**	P	**Pn**	**06 16 13.8**	**+0.3**
DBAD				S	**Sb**	**06 16 40.8**	**-0.7**

JMA 14 06:15:58.4±0.1**, 40°.31N×139°.33E, h16**km±1km**, M2.5, Near west coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JOG2	**Oga 2**	**0.53**	**138**	S	Sg	06 16 16.1	+0.2
JIW	**Iwasaki**	**0.59**	**61**	P	Pg	06 16 09.7	-0.3
JAH	**Hinai**	**1.01**	**96**	P	Pb	06 16 16.9	-0.5
JAH				S	Sb	06 16 30.2	-0.2
JTM	**Tenmabayashi**	**1.41**	**70**	P	Pb	06 16 23.9	-0.4

MAN 14 06:19:43, 18°.01N×119°.10E, h27km, mb4.5, ML3.3, MS3.2, 1C, Philippine Islands region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
SIPP	**Brgy, Tapao**	**1.29**	**94⇑**	*e*P	Pn	06 20 05.4	+0.1

IDC 14 06:22:16.3±3.1**, 38°.50N×142°.83E, h0**km**, mb3.5**/2**, mb1 3.6**/3**, mb1mx3.2**/30**, mbtmp3.3**/3**, ML2.9**/1**, Error ellipse: s-maj=70.3km s-min=39.1km az=63.0, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
MJAR	**Matsushiro Arr**	**4.16**	**243**	Pn	Pn	06 23 20.5	-0.6
	0.7nm,0.3s,baz=64,slow=12,SNR=4.0						
MKAR	**Makanchi Array**	**44.31**	**301**	P	P	06 30 27.7	-0.2
	0.3nm,0.4s,baz=83,slow=9.9,SNR=5.3						
WRA	**Warramunga Arr**	**58.67**	**189**	P	P	06 32 15.6	+0.1
	0.3nm,0.5s,baz=8.5,slow=7.1,SNR=5.0						

ISCJB ***14*** *06:25:58.6±0.5, 37°.26N×0°.03×27°.68E±0°.04, h10km±7km, Error ellipse: s-maj=5.6km s-min=5.0km az=40.1*

CSEM ***14*** *06:25:58.9±0.2, 37°.27N×27°.67E, h8km, MD2.6, Error ellipse: s-maj=3.8km s-min=3.4km az=118.0*

ISK ***14*** *06:25:58.3, 37°.28N×27°.67E, h5km, MD2.6*

DDA ***14*** *06:25:58.5, 37°.26N×27°.67E, h7km, Md2.6*

ISC 14 06:25:58.3±0.9**, 37°.23N**±0°.03×**27°.69E**±0°.03**, h16**km±8km**, n23,** σ0**°87/34, Turkey**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
BDRM	**Kayabasi**	**0.26**	**230**	*i* P	**Pg**	**06 26 03.9**	**0.0**
BDRM				*i* S	**Sg**	**06 26 08.1**	**+0.3**
BDRM	**Kayabasi**	**0.26**	**230**	P	**Pg**	**06 26 03.9**	**0.0**
BDRM				S	**Sg**	**06 26 08.1**	**+0.3**
BODT	**Bodrum**	**0.35**	**241**	*e*PG	**Pg**	**06 26 05.5**	**0.0**
BODT				*e*SG	**Sb**	**06 26 11.3**	**-0.2**
BODT	**Bodrum**	**0.35**	**241**	*e*Pg	**Pg**	**06 26 05.5**	**0.0**
BODT				*e*Sg	**Sb**	**06 26 11.3**	**-0.2**
AYDN	**Tasoluk**	**0.45**	**19**	*i* P	**Pg**	**06 26 07.3**	**-0.1**
AYDN				*i* S	**Sg**	**06 26 13.4**	**-0.2**
AYDN	**Tasoluk**	**0.45**	**19**	P	**Pg**	**06 26 07.3**	**-0.1**
AYDN				S	**Sg**	**06 26 13.4**	**-0.2**
YER	**Yerkesik**	**0.48**	**101**	*e*PG	**Pb**	**06 26 08.6**	**+0.2**
YER				*e*SG	**Sb**	**06 26 15.9**	**+0.6**
YER	**Yerkesik**	**0.48**	**101**	*e*Pg	**Pb**	**06 26 08.6**	**+0.2**
YER				*e*Sg	**Sb**	**06 26 15.9**	**+0.6**
GCAM	**G?zelcaml?**	**0.59**	**322**	*i* P	**Pb**	**06 26 10.6**	**+0.3**
GCAM				*i* S	**Sg**	**06 26 18.1**	**+0.2**
GCAM	**G?zelcaml?**	**0.59**	**322**	P	**Pb**	**06 26 10.6**	**+0.3**
GCAM				S	**Sg**	**06 26 18.1**	**+0.2**
AYDB	**Zeytinkoy-Aydi**	**0.73**	**12**	*e*PG	**Pg**	**06 26 12.1**	**-0.5**
AYDB	**Zeytinkoy-Aydi**	**0.73**	**12**	*e*Pg	**Pg**	**06 26 12.1**	**-0.5**
NIS1	**Nisyros Isl.**	**0.75**	**213**	*e*PG	**Pn**	**06 26 14.2**	**0.0**
NIS1	**Nisyros Isl.**	**0.75**	**213**	*e*Pg	**Pn**	**06 26 14.3**	**0.0**
TURN	**Turunc**	**0.81**	**116**	*i* P	**Pb**	**06 26 11.7**	**-2.3**
TURN				*i* S	**Sb**	**06 26 21.4**	**-3.3**
DALY	**Dalyan (Mu¨la**	**0.87**	**118**	*e*PG	**Pn**	**06 26 16.5**	**+0.6**
DALY	**Dalyan (Mu¨la**	**0.87**	**118**	*e*Pg	**Pn**	**06 26 16.5**	**+0.6**
IZM	**Izmir**	**1.21**	**344**	*e*PN	**Pb**	**06 26 20.9**	**0.0**
IZM	**Izmir**	**1.21**	**344**	*e*Pn	**Pb**	**06 26 20.9**	**0.0**
FETY	**Fethiye**	**1.26**	**118**	*e*PN	**Pg**	**06 26 24.0**	**+1.4**
FETY	**Fethiye**	**1.26**	**118**	*e*Pn	**Pg**	**06 26 24.0**	**+1.4**
KULA	**Kula-Manisa**	**1.49**	**31**	*e*PN	**Pb**	**06 26 26.0**	**+0.3**
KULA	**Kula-Manisa**	**1.49**	**31**	*e*Pn	**Pb**	**06 26 26.0**	**+0.3**

IDC 14 06:55:60.0±2.3**, 4°.62N×126°.72E, h0**km**, mb3.5**/3**, mb1 3.8**/3**, mb1mx3.5**/35**, mbtmp3.5**/3**, Error ellipse: s-maj=190.8km s-min=26.7km az=66.0, Talaud Islands**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
WRA	**Warramunga Arr**	**25.54**	**163**	P	P	07 01 29.9	-0.6
	0.9nm,0.7s,baz=343,slow=10,SNR=7.2						
ASAR	**Alice Springs**	**28.98**	**166**	P	P	07 02 02.2	+0.8
	0.3nm,0.5s,baz=353,slow=9.0,SNR=4.0						
MKAR	**Makanchi Array**	**56.82**	**325**	P	P	07 05 46.2	-0.1
	0.2nm,0.4s,baz=120,slow=7.4,SNR=6.4						

IDC ***14*** *07:24:07.7±2.7, 33°.13S×178°.18W, h0km, mb4.3/3, mb1 4.4/5, mb1mx3.9/37, mbtmp4.3/5, ML3.6/2, Error ellipse: s-maj=54.3km s-min=34.3km az=113.0*

ISCJB ***14*** *07:24:09.1±1.3, 33°.14S±0°.06×178°.0W±0°.2, h34km, mb4.4/7, Error ellipse: s-maj=25.4km s-min=7.0km az=12.9*

NEIC ***14*** *07:24:11.5±1.1, 33°.24S×178°.04W, h35km, mb4.4/4, Error ellipse: s-maj=23.0km s-min=12.3km az=102.0*

ISC 14 07:24:12.1±1.7**, 33°.1S**±0°.1×**178°.1W**±0°.2**, h34**km**, n22,** σ1**°26/28, mb4.3/7, South of Kermadec Islands**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
WMGZ	**Waiomatatini S**	**5.52**	**210**	PN	**Pn**	**07 25 32.5**	**+0.6**
HAZ	**Te Kaha**	**5.75**	**214**	PN	**Pn**	**07 25 36.2**	**+1.2**
HAZ				SN	**Sn**	**07 26 43.2**	**+3.4**
PUZ	**Puketiti**	**5.80**	**210**	PN	**Pn**	**07 25 35.0**	**-0.7**
PUZ				SN	**Sn**	**07 26 42.4**	**+1.4**
TWGZ	**Tauwhareparae**	**6.00**	**211**	PN	**Pn**	**07 25 38.9**	**+0.3**
MWZ	**Matawai**	**6.33**	**213**	*e*PN	**Pn**	**07 25 41.3**	**-1.8**
MWZ				SN	**Sn**	**07 26 54.8**	**+0.5**
URZ	**Urewera**	**6.47**	**215**	Pn	**Pn**	**07 25 44.0**	**-0.8**
	2.2nm,0.3s,baz=102,slow=2.7,SNR=18						
URZ				Sn	**Sn**	**07 26 57.2**	**-0.3**
	7.7nm,0.3s,baz=82,slow=23,SNR=10						
URZ	**Urewera**	**6.47**	**215**	PN	**Pn**	**07 25 43.8**	**-1.0**
URZ				SN	**Sn**	**07 26 57.2**	**-0.3**
URZ	**Urewera**	**6.47**	**215**	*e*Pn	**Pn**	**07 25 43.9**	**-1.0**
	16nm,0.5s						
URZ				*e*Sn	**Sn**	**07 26 55.3**	**-2.2**
RIGZ	**Rimuhau**	**6.54**	**209**	PN	**Pn**	**07 25 46.2**	**+0.3**
SNGZ	**Shannon Statio**	**6.79**	**212**	PN	**Pn**	**07 25 49.7**	**+0.4**
MUGZ	**Murupara**	**6.81**	**216**	PN	**Pn**	**07 25 48.7**	**-0.8**
BKZ	**Black Stump Fm**	**7.48**	**214**	PN	**Pn**	**07 25 57.8**	**-1.0**
RPZ	**Rata Peaks**	**13.59**	**215**	*e*Pn	**Pn**	**07 27 19.8**	**-2.6**
DZM	**Mont Dzumac**	**17.50**	**305**	P	**P**	**07 28 15.3**	**+0.8**
	0.1nm,0.3s,baz=138,slow=17,SNR=4.7						
CTA	**Charters Tower**	**34.21**	**283**	P	**P**	**07 30 55.6**	**+1.0**
	3.3nm,0.6s,baz=105,slow=12,SNR=3.9						
ASAR	**Alice Springs**	**42.92**	**270**	P	**P**	**07 32 07.7**	**-0.1**
	2.4nm,0.7s,baz=111,slow=7.5,SNR=26						
WRAB	**Tennant Creek**	**44.15**	**275**	*e*P	**P**	**07 32 17.0**	**-0.6**
	15nm,1.4s						
WRA	**Warramunga Arr**	**44.15**	**275**	P	**P**	**07 32 17.0**	**-0.7**
	3.0nm,0.6s,baz=115,slow=7.6,SNR=43						
FITZ	**Fitzroy Crossi**	**52.29**	**272**	*e*P	**P**	**07 33 20.1**	**-0.5**
	1.7nm,0.6s						
MBWA	**Marble Bar**	**55.87**	**266**	*e*P	**P**	**07 33 46.4**	**-0.2**
	1.2nm,0.6s						
GAMB	**Gambell**	**96.65**	**3**	*e*P	**P**	**07 37 37.3**	**-0.6**
	5.4nm,0.5s						
FINES	**FINESS Array B**	**147.59**	**338**	PKPbc	**PKPbc**	**07 43 52.7**	**+0.7**
	4.9nm,0.7s,baz=50,slow=3.4,SNR=11						

JMA 14 07:26:07.7, 37°.00N×140°.74E, h7km±1km, M3.0, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.11**	**25**	P	Pg	07 26 10.5	+0.3
ONAJ				S	Sg	07 26 12.5	+0.5
JFK	**Kawauchi**	**0.38**	**16**	P	Pg	07 26 15.1	-0.1
JFK				S	Sg	07 26 20.4	+0.2
JHO	**Hitachi**	**0.41**	**200**	P	Pg	07 26 15.7	0.0
JHO				S	Sg	07 26 21.0	-0.1
JFT	**Otama**	**0.61**	**328**	P	Pg	07 26 19.6	+0.1
JFT				S	Sg	07 26 28.1	+0.7
MAT	**Matsushiro**	**2.08**	**258**	P	Pn	07 26 43.9	+0.8
MAT				S	Sb	07 27 11.1	-0.9

JMA 14 07:28:49.5, 36°.95N×140°.67E, h7km±1km, M3.0, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.18**	**34**	P	Pg	07 28 53.6	+0.4
JHO	**Hitachi**	**0.35**	**194**	P	Pg	07 28 56.3	0.0
JFK	**Kawauchi**	**0.45**	**21**	P	Pg	07 28 58.3	+0.1
JFT	**Otama**	**0.63**	**335**	P	Pg	07 29 01.9	+0.3
MAT	**Matsushiro**	**2.02**	**259**	P	Pn	07 29 24.5	+0.5
MAT				S	Sb	07 29 51.3	-0.6

ISCJB ***14*** *07:31:58.9±0.8, 37°.11N±0°.03×141°.52E±0°.07, h39km±8km, mb3.7/13, Error ellipse: s-maj=9.8km s-min=5.3km az=14.0*

JMA ***14*** *07:32:00.5±0.1, 37°.16N×141°.40E, h44km±1km, M4.0*

JMA Felt III J1.

NIED ***14*** *07:32:00, 37°.20N×141°.50E, h53km, Mw4.1 Best double couple: Mo1.78000×10¹⁵ NP1:φs248.00000°, δ21.00000°, λ139.00000°. NP2:φs17.00000°, δ76.00000°, λ74.00000°.*

IDC ***14*** *07:32:01.6±0.6, 37°.11N×141°.36E, h45km±6km, mb3.5/13, mb1 3.7/16, mb1mx3.6/40, mbtmp3.8/16, ML3.7/2, Error ellipse: s-maj=18.2km s-min=9.5km az=112.0*

ISC 14 07:31:59.8±0.6**, 37°.13N**±0°.04×**141°.49E**±0°.05**, h31**km±3km**, n35,** σ1**°11/43, mb3.8/13, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JFK	**Kawauchi**	**0.54**	**297**	P	**Pb**	**07 32 10.8**	**-0.2**
JFK				S	**Sb**	**07 32 18.1**	**-0.6**
ONAJ	**Iwakimizuishiy**	**0.55**	**268**	P	**Pn**	**07 32 11.4**	**-0.1**
ONAJ				S	**Sb**	**07 32 18.8**	**-0.1**
JHO	**Hitachi**	**0.90**	**235**	P	**Pn**	**07 32 15.9**	**-0.3**
JHO				S	**Sn**	**07 32 26.4**	**-1.7**
JMM	**Marumori**	**0.92**	**324**	P	**Pn**	**07 32 16.0**	**-0.6**
JMM				S	**Sn**	**07 32 27.0**	**-1.8**
JFT	**Otama**	**1.00**	**294**	P	**Pn**	**07 32 17.7**	**+0.1**
JFT				S	**Sn**	**07 32 29.8**	**-0.8**
JIO	**Ouri**	**1.33**	**355**	P	**Pn**	**07 32 22.0**	**-0.2**
JIO				S	**Sn**	**07 32 36.9**	**-2.0**
JOU	**Okura**	**1.40**	**333**	P	**Pn**	**07 32 23.4**	**+0.2**
JOU				S	**Sn**	**07 32 40.8**	**+0.2**
MJAR	**Matsushiro Arr**	**2.69**	**258**	P	**Pn**	**07 32 42.0**	**+1.1**
	11nm,0.3s,baz=78,slow=17,SNR=25						
MJAR				S	**Sb**	**07 33 17.5**	**-2.4**
	12nm,0.3s,baz=352,slow=20,SNR=8.1						
MAT	**Matsushiro**	**2.69**	**259**	P	**Pn**	**07 32 42.0**	**+1.0**
MAT				S	**Sn**	**07 33 13.8**	**+1.3**
JHJ	**Hachijo jima 2**	**4.23**	**200**	P	**Pn**	**07 33 03.5**	**+1.4**
	baz=246,slow=19,SNR=1.9						
JHJ				S	**Sn**	**07 33 50.1**	**-0.4**
	33nm,0.3s,baz=102,slow=20,SNR=2.5						
ASAJ	**Asahikawa**	**7.04**		P	**Pn**	**07 33 41.4**	**+0.8**
	1.4nm,0.3s,baz=246,slow=14,SNR=5.6						
ASAJ				S	**Sn**	**07 34 57.6**	**-1.8**
	0.8nm,0.3s,baz=248,slow=19,SNR=2.1						
JCJ	**Chichijima**	**10.02**	**176**	P	**Pn**	**07 34 20.1**	**-1.5**
	3.4nm,0.3s,baz=352,slow=22,SNR=7.1						
JCJ				S	Sn	07 36 05.8	-7.0
	7.2nm,0.3s,baz=336,slow=20,SNR=5.1						
USRK	**Ussuriysk Ar.**	**10.09**	**317**	P	Pn	07 34 27.1	+4.6
	0.3nm,0.3s,baz=128,slow=13,SNR=15						
KSRS	**Korea Array**	**10.81**	**276**	P	Pn	07 34 36.5	+4.1
	0.4nm,0.3s,baz=91,slow=13,SNR=6.6						
KLR	**Kul'dur**	**14.01**	**333**	P	**Pn**	**07 35 19.2**	**+3.1**
	0.1nm,0.3s,baz=163,slow=17,SNR=1.9						
SEY	**Seymchan**	**26.69**	**11**	P	**P**	**07 37 36.7**	**+0.9**
	1.4nm,0.9s,baz=352,slow=14,SNR=3.1						
SONM	**Songino Array**	**27.78**	**304**	P	**P**	**07 37 45.9**	**0.0**
	1.5nm,0.5s,baz=97,slow=8.9,SNR=3.8						
H11N2	**WAKE ISLAND Hy 28.14**	**121**		T	T	08 07 18.6	
	baz=322,slow=75,SNR=30						
H11N3	**WAKE ISLAND Hy 28.16**	**121**		T	T	08 07 19.5	
	baz=312,slow=75,SNR=36						
H11S1	**WAKE ISLAND Hy 28.86**	**123**		T	T	08 08 51.4	
	baz=315,slow=76,SNR=22						
H11S3	**WAKE ISLAND Hy 28.86**	**123**		T	T	08 08 52.7	
	baz=315,slow=76,SNR=112						
H11S2	**WAKE ISLAND Hy 28.88**	**123**		T	T	08 08 31.5	
	baz=315,slow=76,SNR=22						
CMAR	**Chiang Mai Arr**	**41.58**	**255**	P	**P**	**07 39 45.1**	**+0.3**
	0.7nm,0.7s,baz=44,slow=5.9,SNR=7.8						
ZALV	**Zalesovo Beam**	**41.90**	**312**	P	**P**	**07 39 46.4**	**-0.6**
	3.7nm,0.7s,baz=90,slow=7.4,SNR=14						
MKAR	**Makanchi Array**	**44.12**	**302**	P	**P**	**07 40 04.3**	**-0.8**
	1.2nm,0.8s,baz=88,slow=9.9,SNR=13						
ILAR	**Eielson Array**	**49.39**	**32**	P	**P**	**07 40 46.6**	**+0.5**
	0.5nm,0.6s,baz=270,slow=6.2,SNR=9.8						
ILAR				pP	**sP**	**07 40 59.4**	**+0.2**
	1.6nm,0.7s,baz=269,slow=6.7,SNR=13						
INK	**Inuvik**	**54.28**	**27**	P	**P**	**07 41 23.1**	**+0.7**
	0.3nm,0.4s,baz=286,slow=7.7,SNR=5.1						
INK				pP	**sP**	**07 41 35.9**	**+0.3**
	1.8nm,0.9s,baz=324,slow=7.9,SNR=5.0						
WRA	**Warramunga Arr**	**57.16**	**188**	P	**P**	**07 41 43.3**	**-0.3**
	0.7nm,0.7s,baz=6.7,slow=7.3,SNR=7.2						
ASAR	**Alice Springs**	**60.89**	**188**	P	**P**	**07 42 09.2**	**-0.2**
	0.4nm,0.6s,baz=11,slow=4.2,SNR=5.2						
ASAR				pP	**sP**	**07 42 21.9**	**-0.8**
	0.5nm,0.6s,baz=9.2,slow=6.5,SNR=3.7						
YKA	**Yellowknife Ar**	**63.70**	**30**	P	**P**	**07 42 28.0**	**+0.2**
	0.1nm,0.6s,baz=304,slow=6.7,SNR=4.1						
YKA				pP	**sP**	**07 42 40.9**	**-0.3**
	0.8nm,0.7s,baz=302,slow=6.6,SNR=15						
FINES	**FINESS Array B**	**68.76**	**332**	P	**P**	**07 42 59.5**	**-0.7**
	1.4nm,0.8s,baz=357,slow=7.6,SNR=4.4						
AKASG	**Malin Array Be**	**74.26**	**322**	P	**P**	**07 43 32.1**	**-1.5**
	0.9nm,0.4s,baz=47,slow=6.8,SNR=5.1						
PDAR	**Pinedale Array**	**77.56**	**45**	pP	pP	07 44 07.0	+4.2
	0.6nm,0.7s,baz=275,slow=4.1,SNR=6.9						
TXAR	**Lajitas Array**	**90.02**	**52**	P	**P**	**07 44 58.0**	**+1.3**
	0.1nm,0.3s,baz=354,slow=6.6,SNR=6.0						
TXAR				pP	**sP**	**07 45 11.2**	**+0.9**
	0.5nm,0.7s,baz=295,slow=3.1,SNR=5.2						
LPAZ	**La Paz**	**146.60**	**60**	PKPbc	**PKPbc**	**07 51 39.3**	**0.0**
	0.6nm,0.4s,baz=40,slow=7.3,SNR=7.0						

ISCJB ***14*** *07:41:30.9±0.9, 37°.00N±0°.04×140°.84E

H10S3	**ASCENSION HYDR** baz=311,slow=74,SNR=39	**13.87**	**132**	T	T	07 59 56.7		
H10S1	**ASCENSION HYDR** baz=311,slow=74,SNR=50	**13.87**	**132**	T	T	07 59 54.4		
H10S2	**ASCENSION HYDR** baz=311,slow=74,SNR=41	**13.88**	**132**	T	T	07 59 59.2		
LIC	**Lamto**	**20.71**	**73**	*e*PKP1	Pn	07 47 16.0	+1.3	
TIC	**Toumodi**	**20.84**	**72**	*e*PKP1	**P**	**07 47 15.4**	**+1.7**	
DBIC	**Dimbokro** 3.9nm,0.8s,baz=237,slow=11,SNR=8.3	**21.00**	**72**	P	**P**	**07 47 15.4**	**0.0**	
KIC	**Kosan Boka** 20nm,1.0s	**21.02**	**73**	*e*PKP1	**P**	**07 47 15.0**	**-0.7**	
TORD	**Torodi Ar. Bea** 1.0nm,0.8s,baz=250,slow=9.2,SNR=8.9	**29.28**	**63**	P	**P**	**07 48 34.5**	**+0.1**	
ESDC	**Sonseca Array** 0.2nm,0.3s,baz=231,slow=8.6,SNR=3.3	**43.51**	**24**	P	**P**	**07 50 36.8**	**+1.4**	
LPAZ	**La Paz** 2.0nm,1.0s,baz=67,slow=5.0,SNR=6.6	**45.70**	**247**	P	**P**	**07 50 54.2**	**+0.2**	
NNA	**Nana** comp=Z,391nm,18.5s,baz=112,slow=34	**52.95**	**255**	LR	LR	08 12 08.9		
BOSA	**Boshof** 4.6nm,0.9s,baz=295,slow=4.7,SNR=6.2	**56.02**	**125**	P	**P**	**07 52 09.9**	**-1.1**	
GERES	**GERESS Array B** 0.2nm,0.3s,baz=218,slow=12,SNR=4.1	**58.57**	**29**	P	**P**	**07 52 27.2**	**-1.4**	
BRTR	**Keskin Array B** 1.7nm,0.9s,baz=239,slow=5.7,SNR=6.3	**66.01**	**46**	P	**P**	**07 53 18.7**	**-0.1**	
AKASG	**Malin Array Be** 0.7nm,0.5s,baz=239,slow=6.6,SNR=3.9	**67.80**	**34**	P	**P**	**07 53 29.4**	**-0.3**	
FINES	**FINESS Array B** 1.2nm,0.7s,baz=232,slow=4.6,SNR=4.6	**72.02**	**23**	P	**P**	**07 53 55.9**	**+0.5**	
PDAR	**Pinedale Array** 0.6nm,1.0s,baz=113,slow=6.9,SNR=2.5	**85.73**	**313**	P	**P**	**07 55 10.8**	**-0.6**	
MAW	**Mawson** 3.3nm,0.9s,baz=282,slow=11,SNR=4.0	**89.57**	**157**	P	**P**	**07 55 30.5**	**+1.5**	
STKA	**Stephens Creek** 3.3nm,0.9s,baz=185,slow=0.8,SNR=5.3	**146.24**	**159**	PKPbc	**PKPdf**	**08 02 12.0**	**0.0**	
ASAR	**Alice Springs** 2.5nm,0.8s,baz=190,slow=2.5,SNR=22	**149.12**	**140**	PKPbc	**PKPbc**	**08 02 20.4**	**-0.8**	

*IDC **14** 07:54:13.7±1.9,33°.05S×178°.28W,h0km,mb4.2/2, mb1 4.5/3,mb1mx3.8/39,mbtmp4.2/3,ML4.2/1, Error ellipse: s-maj=57.5km s-min=30.9km az=133.0*
*ISCJB **14** 07:54:18.1±0.7,33°.16S±0°.06×178°.14W±0°.1,h32km, mb4.6/8, Error ellipse: s-maj=17.5km s-min=5.7km az=23.0*
*NEIC **14** 07:54:20.1±0.6,33°.22S×178°.48W,h35km,mb4.6/7, Error ellipse: s-maj=19.5km s-min=12.0km az=136.0*

ISC 14 07:54:19.1±1.1,33°.2S±0°.1×178°.3W±0°.2,h32km,n24, σ1§04/28,mb4.5/8,South of Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
WMGZ	**Waiomatatini S**	**5.40**	**209**	PN		**Pn**		**07 55 38.3**	**+0.9**
HAZ	**Te Kaha**	**5.62**	**214**	PN		**Pn**		**07 55 39.9**	**-0.5**
HAZ				*e*SN		**Sn**		**07 56 46.5**	**+2.6**
PUZ	**Puketiti**	**5.68**	**209**	PN		**Pn**		**07 55 39.9**	**-1.3**
PUZ				SN		**Sn**		**07 56 46.1**	**+0.7**
MWZ	**Matawai**	**6.21**	**212**	PN		**Pn**		**07 55 47.0**	**-1.5**
MWZ				*e*SN		**Sn**		**07 56 58.6**	**+0.2**
URZ	**Urewera** 4.7nm,0.3s,baz=64,slow=3.0,SNR=27	**6.34**	**215**	Pn		**Pn**		**07 55 49.5**	**-0.9**
URZ				Sn		**Sn**		**07 57 02.3**	**+0.7**
	3.0nm,0.3s,baz=189,slow=23,SNR=8.8								
URZ	**Urewera**	**6.34**	**215**	PN		**Pn**		**07 55 49.8**	**-0.6**
URZ				SN		**Sn**		**07 57 01.9**	**+0.2**
URZ	**Urewera** 17nm,0.5s	**6.34**	**215**	*e*Pn		**Pn**		**07 55 49.5**	**-0.9**
URZ				*e*Sn		**Sn**		**07 57 02.4**	**+0.7**
RIGZ	**Rimuhau**	**6.42**	**209**	PN		**Pn**		**07 55 51.1**	**-0.4**
RIGZ				SN		**Sn**		**07 57 04.6**	**+1.0**
SNGZ	**Shannon Statio**	**6.66**	**211**	PN		**Pn**		**07 55 54.7**	**-0.1**
OUZ	**Omahuta** 19nm,0.7s	**7.07**	**251**	*e*Pn		Pn		07 56 03.5	+3.2
RPZ	**Rata Peaks** 0.2nm,0.3s,baz=90,slow=20,SNR=3.6	**13.46**	**215**	Sn		Sn		07 59 44.2	-12
RAR	**Rarotonga** 7.8nm,0.3s	**20.25**	**59**	*e*P		P		07 58 56.1	+2.3
FUNA	**Funafuti** 44nm,0.7s	**24.62**	**354**	*e*P		**P**		**07 59 38.1**	**+1.5**
HNR	**Honiara** 42nm,0.4s	**31.00**	**315**	*e*P		**P**		**08 00 35.1**	**+1.3**
ASAR	**Alice Springs** 1.7nm,0.6s,baz=110,slow=7.4,SNR=27	**42.82**	**270**	P		**P**		**08 02 13.6**	**-0.7**
WRAB	**Tennant Creek** 2.7nm,0.5s	**44.05**	**275**	*e*P		**P**		**08 02 23.0**	**-1.2**
WRA	**Warramunga Arr** 2.6nm,0.6s,baz=115,slow=7.7,SNR=71	**44.06**	**275**	P		**P**		**08 02 23.1**	**-1.1**
FITZ	**Fitzroy Crossi** 11nm,1.3s	**52.20**	**272**	*e*P		**P**		**08 03 26.1**	**-1.0**
CASY	**Casey** 2.4nm,0.6s	**52.63**	**209**	*e*P		**P**		**08 03 29.6**	**0.0**
WUAZ	**Wupatki** 1.8nm,0.6s	**92.64**	**49**	*e*P		**P**		**08 07 28.4**	**+0.6**
KURK	**Kurchatov**	**122.77**	**313**	PKP		**PKPdf**		**08 13 10.6**	**-0.7**
KURBB	**Kurchatov Arra** 0.3nm,0.7s,baz=108,slow=1.9,SNR=4.4	**122.80**	**312**	PKP		**PKPdf**		**08 13 10.6**	**-0.7**
FINES	**FINESS Array B** 2.3nm,0.6s,baz=65,slow=4.4,SNR=11	**147.63**	**338**	PKPbc		**PKPbc**		**08 13 58.5**	**-0.9**
NOA	**NORSAR Array B** 0.7nm,0.5s,baz=14,slow=4.2,SNR=3.6	**151.42**	**350**	PKPbc		**PKPbc**		**08 14 08.2**	**-0.8**

GUC 14 07:55:18.5±0.7,21°.51S×68°.56W,h150km±8km,ML3.6,7C, Chile-Bolivia border region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
PB01	**IPOC Station P**	**0.98**	**298**	⇑*i*P		Pn		07 55 44.0	+0.8
PB01				*i*S		Sn		07 56 03.0	+1.0
PB01				AML		AML		07 56 04.8	
	comp=E,2μm,0.2s								
PB07	**IPOC Station P**	**1.25**	**260**	⇑*i*P		Pn		07 55 47.2	+1.4
PB07				*i*S		Sn		07 56 07.9	+1.4
PB07				AML		AML		07 56 09.0	
	comp=E,1μm,0.3s								
PB08	**IPOC Station P**	**1.47**	**338**	⇑*i*P		Pn		07 55 49.5	+1.3
PB08				*i*S		Sn		07 56 12.2	+1.3
PB08				AML		AML		07 56 14.2	
	comp=E,346nm,0.3s								
PB06	**IPOC Station P**	**1.52**	**218**	⇑*i*P		Pn		07 55 49.2	+0.8
PB06				*i*S		Sn		07 56 12.2	+0.9
PB06				AML		AML		07 56 13.5	
	comp=E,310nm,0.8s								
HMBC	**Humberstone**	**1.74**	**314**	⇑*i*P		Pn		07 55 52.0	+1.1
HMBC				*i*S		Sn		07 56 16.8	+1.2
HMBC				AML		AML		07 56 18.1	
	comp=N,1μm,0.5s								
PB11	**IPOC Station P**	**2.02**	**329**	⇑*i*P		Pn		07 55 54.9	+0.9
PB11				*i*S		Sn		07 56 22.3	+1.0
PSGC	**Pisagua**	**2.40**	**322**	⇑*i*P		Pn		07 55 59.2	+0.6
PSGC				*i*S		Sn		07 56 29.6	+0.3
PSGC				AML		AML		07 56 32.2	
	comp=E,266nm,0.4s								

*NEIC **14** 08:04:34.7,16°.99N×94°.14W,h131km,mb4.1/1, MD4.0(MEX),After MEX.*

MEX 14 08:04:34.7±0.5,16°.99N×94°.14W,h131km±8km,MD4.0, Oaxaca

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
TGIG		**0.99**	**102**	*i*P		Pn		08 04 56.8	-0.9
TGIG				*e*S		Sn		08 05 13.2	-2.0
TGIG		**0.99**	**102**	*i*P		Pn		08 04 56.8	-0.9
TGIG				*e*S		Sn		08 05 13.2	-2.0
TUIG	**Tuzandepetl**	**1.07**	**345**	*i*P		Pn		08 04 57.2	-1.3
TUIG				*i*S		Sn		08 05 14.4	-2.0
TUIG	**Tuzandepetl**	**1.07**	**345**	*i*P		Pn		08 04 57.2	-1.3
TUIG				*i*S		Sn		08 05 14.4	-2.0
PCIG		**1.55**	**145**	*e*P		Pn		08 05 02.7	-0.7
PCIG				*e*S		Sn		08 05 23.4	-2.0
PCIG		**1.55**	**145**	*e*P		Pn		08 05 02.7	-0.7
PCIG				*e*S		Sn		08 05 23.4	-2.0
CCIG	**Comitan**	**2.04**	**110**	*e*P		Pn		08 05 07.8	-1.6
CCIG				*i*S		Sn		08 05 33.9	-2.1
CCIG	**Comitan**	**2.04**	**110**	*e*P		Pn		08 05 07.8	-1.6
CCIG				*i*S		Sn		08 05 33.9	-2.1
HUIG	**Huatulco**	**2.25**	**238**	*e*P		Pn		08 05 08.4	-3.4
HUIG				*e*S		Sn		08 05 38.4	-1.9
HUIG	**Huatulco**	**2.25**	**238**	*e*P		Pn		08 05 08.4	-3.4
HUIG				*e*S		Sn		08 05 38.4	-1.9
VHO	**Vista Hermosa**	**2.49**	**272**	*i*P		Pn		08 05 13.9	-1.1
VHO				*e*S		Sn		08 05 44.1	-1.8
VHO	**Vista Hermosa**	**2.49**	**272**	*i*P		Pn		08 05 13.9	-1.1
VHO				*e*S		Sn		08 05 44.1	-1.8
PNIG	**Pinotepa**	**3.87**	**262**	*i*P		Pn		08 05 29.0	-3.8
PNIG				*i*S		Sn		08 06 09.2	-8.7
PNIG	**Pinotepa**	**3.87**	**262**	*i*P		Pn		08 05 29.0	-3.8
PNIG				*i*S		Sn		08 06 09.2	-8.7
TEIG	**Tepich**	**6.42**	**59**	*e*Pn		Pn		08 06 01.4	-5.5
TEIG				*e*Sn		Sn		08 07 18.0	-0.9
WMOK	**Wichita Mounta** 7.2nm,0.7s	**18.16**	**348**	*e*P		P		08 08 37.2	+0.2
OTAV	**Otavalo** 1.0nm,0.6s	**22.71**	**136**	*e*P		P		08 09 26.8	+0.7

*IDC **14** 08:06:14.7±1.0,25°.60N×90°.68E,h0km,mb3.5/6, mb1 3.7/6,mb1mx3.4/52,mbtmp3.6/6, Error ellipse: s-maj=60.5km s-min=19.1km az=57.0*
*ISCJB **14** 08:06:18.1±0.9,25°.6N±0°.2×90°.69E±0°.10,h34km,mb3.5/6, Error ellipse: s-maj=24.5km s-min=10.2km az=20.4*

ISC 14 08:06:19.8±1.2,25°.7N±0°.2×90°.8E±0°.1,h34km,n8,σ0§91/8, mb3.4/6,India-Bangladesh border region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
SHL	**Shillong**	**0.98**	**95**	*i*PG		**Pb**		**08 06 38.5**	**0.0**
SHL				*i*SG		**Sn**		**08 06 50.0**	**-0.2**
CMAR	**Chiang Mai Arr** 0.1nm,0.3s,baz=313,slow=13,SNR=5.4	**10.40**	**132**	Pn		Pn		08 08 53.0	+6.3
MKAR	**Makanchi Array** 0.7nm,0.6s,baz=156,slow=11,SNR=8.9	**22.16**	**344**	P		**P**		**08 11 14.3**	**+1.6**
KURBB	**Kurchatov Arra** 0.2nm,0.7s,baz=158,slow=9.9,SNR=2.7	**26.66**	**342**	P		**P**		**08 11 54.3**	**-1.1**
ARCES	**ARCESS Array B** 2.2nm,0.9s,baz=108,slow=8.6,SNR=2.5	**57.61**	**338**	P		**P**		**08 16 05.6**	**-0.4**
WRA	**Warramunga Arr** 0.2nm,0.5s,baz=324,slow=6.9,SNR=10	**62.00**	**133**	P		**P**		**08 16 37.3**	**+0.5**
ASAR	**Alice Springs** 0.5nm,0.6s,baz=319,slow=6.5,SNR=12	**64.38**	**136**	P		**P**		**08 16 53.0**	**+0.3**
TORD	**Torodi Ar. Bea** 0.1nm,0.3s,baz=71,slow=4.4,SNR=2.6	**83.62**	**281**	P		**P**		**08 18 45.1**	**-0.2**

MEX 14 08:11:03.1±0.4,14°.79N×92°.54W,h142km±11km,MD3.8, Near coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
PCIG		**1.12**	**324**	*i*P		Pn		08 11 26.8	-1.4
PCIG				*i*S		Sn		08 11 45.7	-1.8
CCIG	**Comitan**	**1.53**	**15**	*i*P		Pn		08 11 31.4	-1.3
CCIG				*i*S		Sn		08 11 53.5	-1.8
TGIG		**2.06**	**344**	*e*P		Pn		08 11 37.5	-1.0
TGIG				*i*S		Sn		08 12 03.6	-2.1

*NIED **14** 08:14:00,37°.00N×140°.70E,h5km,Mw3.8 Best double couple: M0 5.72000×10^14 NP1:φ§137.00000°,δ§24.00000°, λ-99.00000°. NP2:φ§327.00000°,δ§66.00000°, λ-86.00000°.*
*IDC **14** 08:14:48.9±1.3,37°.04N×140°.75E,h0km,mb3.8/3, mb1 3.8/6,mb1mx3.5/50,mbtmp3.8/6,ML3.4/3,Error ellipse: s-maj=29.8km s-min=23.3km az=77.0*
*JMA **14** 08:14:51.7,36°.96N×140°.69E,h11km±1km,M3.9 Broadband fault plane solution: P waves. NP1: φ§336.00000°,δ§55.00000°,λ-97.00000°. NP2: φ§168.00000°,δ§36.00000°,λ-81.00000°. Principal axes: T Plg10.0000°, Azm71.0000°; N Plg5.0000°, Azm340.0000°; P Plg79.0000°, Azm221.0000°;*
JMA Felt II J1.
*NEIC **14** 08:14:56.5±1.0,36°.95N×140°.54E,h54km±12km,mb4.2/2 Error ellipse: s-maj=18.1km s-min=10.5km az=116.0*

ISC 14 08:14:50.8±1.0,37°.03N±0°.04×140°.55E±0°.04,h10km±7km, n26,σ1§07/31,mb4.0/5,6C,Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.21**	**71**	⇑P		**Pg**		**08 14 55.6**	**+0.4**
ONAJ				*e*S		**Sg**		**08 14 58.2**	**0.0**
JFK	**Kawauchi**	**0.42**	**38**	⇑P		**Pb**		**08 15 00.2**	**-0.2**
JFK				S		**Sb**		**08 15 06.3**	**-0.6**
JHO	**Hitachi**	**0.42**	**178**	⇑P		**Pg**		**08 14 58.7**	**-0.4**
JHO				S		**Sg**		**08 15 03.9**	**-0.7**
JSB	**Shiboa**	**0.51**	**263**	⇑P		**Pn**		**08 15 04.2**	**+0.1**
JSB				S		**Sn**		**08 15 12.5**	**-0.4**
JFT	**Otama**	**0.51**	**341**	⇑P		**Pn**		**08 15 04.0**	**-0.2**
JFT				S		**Sn**		**08 15 12.5**	**-0.6**
JYT	**Yasato**	**0.85**	**199**	⇑P		**Pg**		**08 15 07.1**	**-0.1**
JYT				S		**Sg**		**08 15 17.8**	**-0.5**
MJAR	**Matsushiro Arr** 20nm,0.3s,baz=83,slow=15,SNR=35	**1.94**	**256**	Pn		**Pb**		**08 15 26.7**	**+0.4**
MJAR				Sn		**Sg**		**08 15 52.2**	**-0.9**
	38nm,0.3s,baz=112,slow=14,SNR=9.5								
MAJO	**Matsushiro**	**1.94**	**256**	*e*Pn		**Pb**		**08 15 26.5**	**+0.2**
MAJO				*e*Sn		**Sg**		**08 15 52.3**	**-0.9**
MAT	**Matsushiro**	**1.94**	**256**	P		**Pb**		**08 15 26.7**	**+0.4**
MAT				S		**Sg**		**08 15 53.4**	**+0.2**
JHJ	**Hachijo jima 2** 11nm,0.3s,baz=269,slow=23,SNR=5.6	**3.96**	**189**	Pn		**Pn**		**08 15 51.8**	**+0.2**
JHJ				Sn		**Sn**		**08 16 35.8**	**-2.2**
	11nm,0.3s,baz=253,slow=19,SNR=3.6								
JHJ2	**Mitsune**	**3.96**	**189**	*e*Pn		**Pn**		**08 15 53.5**	**+1.9**
JHJ2				*e*Sn		**Sn**		**08 16 41.2**	**+3.1**
ERM	**Erimo**	**5.37**	**21**	*e*Pn		Pn		08 16 17.1	+6.1
ASAJ	**Asahikawa** 0.5nm,0.3s,baz=247,slow=7.7,SNR=4.3	**7.25**	**12**	Pn		**Pn**		**08 16 36.9**	**+0.2**
ASAJ	**Asahikawa**	**7.25**	**12**	*e*Pn		**Pn**		**08 16 39.0**	**+2.3**
H11N2	**WAKE ISLAND Hy** baz=313,slow=75,SNR=54	**28.75**	**120**	T		T		08 50 34.8	
H11N1	**WAKE ISLAND Hy** baz=313,slow=75,SNR=56	**28.75**	**120**	T		T		08 50 35.0	
H11N3	**WAKE ISLAND Hy** baz=313,slow=75,SNR=45	**28.77**	**120**	T		T		08 50 37.1	
H11S1	**WAKE ISLAND Hy** baz=314,slow=75,SNR=3.5	**29.45**	**122**	T		T		08 51 28.9	
H11S3	**WAKE ISLAND Hy** baz=314,slow=75,SNR=57	**29.45**	**122**	T		T		08 51 30.6	
H11S2	**WAKE ISLAND Hy** baz=314,slow=75,SNR=60	**29.46**	**122**	T		T		08 51 31.8	
KURK	**Kurchatov**	**45.38**	**308**	P		**P**		**08 23 09.4**	**+0.1**
KURBB	**Kurchatov Arra** 0.4nm,0.4s,baz=83,slow=7.7,SNR=5.1	**45.45**	**308**	P		**P**		**08 23 09.4**	**-0.5**
TKM2	**Tokmak 2** 0.9nm,0.5s	**49.02**	**298**	*e*P		**P**		**08 23 39.5**	**+1.4**
WRA	**Warramunga Arr** 1.2nm,0.7s,baz=3.5,slow=7.3,SNR=18	**56.97**	**187**	P		**P**		**08 24 36.0**	**-0.5**
WRA				PcP		**PcP**		**08 25 32.0**	**+0.3**
	0.3nm,0.6s,baz=0.4,slow=4.2,SNR=4.7								
DLBC	**Dease Lake** 1.0nm,0.3s	**59.05**	**38**	*e*P		**P**		**08 24 50.1**	**-0.8**
ASAR	**Alice Springs** 0.6nm,0.8s,baz=9.1,slow=7.0,SNR=7.9	**60.70**	**187**	P		**P**		**08 25 02.0**	**-0.4**

*JMA **14** 08:22:18.3±0.2,39°.43N×143°.95E,h3km±4km,M4.3*
*ISCJB **14** 08:22:20.6±0.5,39°.38N±0°.03×143°.84E±0°.05,h11km, mb3.9/18, Error ellipse: s-maj=6.0km s-min=4.5km az=35.2*
*IDC **14** 08:22:21.5±0.7,39°.33N×143°.63E,h0km,mb3.8/13, mb1 4.0/14,mb1mx3.8/44,mbtmp3.8/14,ML3.4/1, Error ellipse: s-maj=21.3km s-min=16.4km az=119.0*
*NEIC **14** 08:22:25.5±3.1,39°.39N×143°.65E,h25km±23km,mb4.2/5, Error ellipse: s-maj=14.8km s-min=8.4km az=112.0*

ISC 14 08:22:22.5±0.6,39°.39N±0°.05×143°.83E±0°.06,h11km,n41, σ1§80/51,mb3.9/18,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
MIYJ	**Miyakonagasawa**	**1.57**	**278**	P		**Pn**		**08 22 48.5**	**-1.8**
MIYJ				S		**Sg**		**08 23 10.6**	**-2.4**
JTH	**Tanohata**	**1.61**	**290**	P		**Pn**		**08 22 48.8**	**-2.2**
JOM	**Ohasama**	**1.97**	**273**	P		**Pn**		**08 22 54.6**	**-1.2**
JANG	**Nango**	**2.04**	**300**	P		**Pn**		**08 22 54.7**	**-2.1**
JANG				S		**Sn**		**08 23 21.7**	**-0.5**
JRG	**Rokugo**	**2.48**	**271**	P		**Pn**		**08 23 01.9**	**-0.9**
JTM	**Tenmabayashi**	**2.54**	**304**	P		**Pn**		**08 23 02.2**	**-1.5**
JAH	**Hinai**	**2.59**	**289**	P		**Pn**		**08 23 03.2**	**-1.1**
JAH				*e*S		**Sn**		**08 23 36.7**	**+0.9**
ERM	**Erimo**	**2.67**	**349**	*e*Pn		**Pn**		**08 23 05.2**	**-0.3**
JYK	**Kaneyama**	**2.74**	**261**	P		**Pn**		**08 23 05.6**	**-0.8**
JCH	**Churui**	**3.24**	**354**	P		**Pn**		**08 23 12.0**	**-1.3**
JCH				S		**Sn**		**08 23 49.9**	**-2.0**
JKB	**Kayabe**	**3.28**	**320**	P		**Pn**		**08 23 12.5**	**-1.4**
JAR	**Ashorobuto**	**3.91**	**359**	P		**Pn**		**08 23 20.9**	**-1.5**
JAR				S		**Sn**		**08 24 05.0**	**-3.3**
NEM2	**Nemuro 2**	**4.22**	**19**	P		**Pn**		**08 23 25.5**	**-1.3**
NEM2				S		**Sn**		**08 24 11.4**	**-4.7**
JTKR	**Abashiri--Toko**	**4.58**	**1**	P		**Pn**		**08 23 30.8**	**-0.9**
JTKR				S		**Sn**		**08 24 21.9**	**-2.9**
ASAJ	**Asahikawa** 1.2nm,0.3s,baz=205,slow=9.5,SNR=7.8	**4.81**	**349**	Pn		**Pn**		**08 23 35.0**	**+0.1**
ASAJ	**Asahikawa**	**4.81**	**349**	*e*Pn		**Pn**		**08 23 35.1**	**+0.2**
ASAJ				*e*Sn		**Sn**		**08 24 31.9**	**+1.2**
MJAR	**Matsushiro Arr** 3.2nm,0.3s,baz=33,slow=14,SNR=40	**5.27**	**239**	Pn		**Pn**		**08 23 42.1**	**+0.8**
MAJO	**Matsushiro** 74nm,0.6s	**5.28**	**239**	*e*Pn		**Pn**		**08 23 41.0**	**-0.3**
MAJO				*e*Sn		**Sn**		**08 24 38.3**	**-3.8**
MAT	**Matsushiro**	**5.28**	**239**	P		**Pn**		**08 23 41.1**	**-0.2**
MAT				*e*S		**Sn**		**08 24 40.7**	**-1.4**
JHJ2	**Mitsune**	**7.05**	**209**	*e*Pn		**Pn**		**08 24 05.2**	**-0.5**
JHJ2				*e*Sn		**Sn**		**08 25 20.7**	**-5.2**
KSRS	**Korea Array** 0.2nm,0.3s,baz=82,slow=13,SNR=5.3	**12.63**	**266**	Pn		**Pn**		**08 25 24.5**	**+2.5**
KSAR	**Wonju Array Be**	**12.66**	**266**	Pn		**Pn**		**08 25 24.5**	**+2.0**
KLR	**Kul'dur** 0.7nm,0.3s,baz=330,slow=20,SNR=3.1	**13.08**	**323**	Pn		Pn		08 25 32.5	+4.3
SEY	**Seymchan** 2.1nm,0.7s,baz=191,slow=5.7,SNR=13	**24.14**	**10**	P		**P**		**08 27 39.9**	**+1.8**
SONM	**Songino Array** 1.7nm,0.7s,baz=94,slow=12,SNR=4.0	**28.16**	**300**	P		**P**		**08 28 14.0**	**-0.9**
ZALV	**Zalesovo Beam** 3.2nm,0.7s,baz=90,slow=8.2,SNR=12	**41.79**	**310**	P		**P**		**08 30 11.3**	**-0.4**
ZALV				PcP		**PcP**		**08 32 08.5**	**+0.8**
	0.6nm,0.4s,baz=98,slow=2.9,SNR=2.9								
CMAR	**Chiang Mai Arr** 0.4nm,0.3s,baz=50,slow=6.0,SNR=3.1	**43.94**	**255**	P		**P**		**08 30 30.2**	**+0.5**
MKAR	**Makanchi Array** 1.7nm,0.8s,baz=85,slow=9.4,SNR=20	**44.52**	**301**	P		**P**		**08 30 33.8**	**-0.2**
KURK	**Kurchatov** 5.8nm,0.5s	**46.02**	**307**	*e*P		**P**		**08 30 45.0**	**-0.8**
ILAR	**Eielson Array** 0.4nm,0.6s,baz=258,slow=6.9,SNR=5.3	**46.48**	**34**	P		**P**		**08 30 50.9**	**+1.5**
TKM2	**Tokmak 2** 1.9nm,0.6s	**50.21**	**297**	*e*P		**P**		**08 31 18.6**	**0.0**
INK	**Inuvik** 0.7nm,0.5s,baz=317,slow=7.1,SNR=12	**51.42**	**28**	P		**P**		**08 31 29.1**	**+2.1**
ABKAR	**Akbulak array** 0.5nm,0.3s	**57.89**	**310**	P		**P**		**08 32 13.9**	**-0.3**
WRAB	**Tennant Creek** 1.2nm,0.7s	**59.67**	**190**	*e*P		**P**		**08 32 26.2**	**-0.7**
WRA	**Warramunga Arr** 0.8nm,0.7s,baz=7.0,slow=6.9,SNR=9.9	**59.69**	**190**	P		**P**		**08 32 26.4**	**-0.6**
YKA	**Yellowknife Ar** 0.4nm,0.6s,baz=303,slow=6.5,SNR=9.6	**60.81**	**31**	P		**P**		**08 32 35.7**	**+1.5**
ASAR	**Alice Springs** 0.3nm,0.7s,baz=0.0,slow=5.7,SNR=5.0	**63.41**	**190**	P		**P**		**08 32 52.2**	**0.0**
FINES	**FINESS Array B** 1.3nm,0.8s,baz=93,slow=10,SNR=3.8	**67.61**	**333**	P		**P**		**08 33 18.6**	**-0.3**
DUG	**Dugway, Tooele** 0.7nm,0.6s	**74.38**	**51**	*e*P		P		08 34 05.2	+4.6
PDAR	**Pinedale Array** 0.3nm,0.6s,baz=282,slow=1.4,SNR=4.3	**74.66**	**47**	P		**P**		**08 34 04.0**	**+1.7**
TXAR	**Lajitas Array** 0.3nm,0.8s,baz=306,slow=4.2,SNR=3.6	**87.19**	**54**	P		**P**		**08 35 10.6**	**+1.5**

*DDA **14** 08:44:10.7,36°.54N×28°.78E,h6km,Ml2.9*
*ISCJB **14** 08:44:11.7±0.6,36°.54N±0°.05×28°.81E±0°.04,h14km,Error ellipse: s-maj=7.7km s-min=4.6km az=22.2*
*ISK **14** 08:44:11.6,36°.66N×28°.88E,h23km,MD2.5*
*CSEM **14** 08:44:11.8±0.4,36°.59N×28°.87E,h20km,MD2.5,Error ellipse: s-maj=13.1km s-min=7.3km az=21.0*

ISC 14 08:44:09.9±0.9,36°.50N±0°.04×28°.80E±0°.03,h14km,n26, σ0§60/34,Dodecanese Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
FETY	**Fethiye**	**0.27**	**59**	*e*PG		**Pb**		**08 44 16.5**	**0.0**
FETY				*e*SG		**Sb**		**08 44 21.0**	**0.0**
FETY	**Fethiye**	**0.27**	**59**	*e*Pg		**Pb**		**08 44 16.5**	**0.0**
FETY				*e*Sg		**Sb**		**08 44 21.0**	**0.0**
DALY	**Dalyan (Mu¨la**	**0.34**	**340**	*e*PG		**Pb**		**08 44 18.1**	**+0.3**
DALY				*e*SG		**Sb**		**08 44 22.7**	**-0.3**
DALY	**Dalyan (Mu¨la**	**0.34**	**340**	*e*Pg		**Pb**		**08 44 18.1**	**+0.3**
DALY				*e*Sg		**Sb**		**08 44 22.7**	**-0.3**
TURN	**Turunc**	**0.40**	**337**	*i*P		**Pn**		**08 44 20.6**	**-0.8**
TURN				*i*S		**Sn**		**08 44 28.4**	**-0.3**
TURN	**Turunc**	**0.40**	**337**	P		**Pn**		**08 44 20.6**	**-0.8**
TURN				S		**Sn**		**08 44 28.4**	**-0.3**
AKAS	**Kas**	**0.70**	**112**	*i*P

JFT S Sn 08 47 57.3 -0.3
JMM Marumori 1.54 327 P Pn 08 47 37.5 -0.4
JMM eS Sn 08 47 56.2 -1.6
JFY Yanaizu 1.90 297 P Pn 08 47 43.7 +0.8
JFY S Sn 08 48 07.4 +0.5
JIO Ouri 1.92 348 P Pn 08 47 43.0 -0.1
JIO S Sn 08 48 06.3 -0.9
JAG Ashikaga 1.93 266 P Pn 08 47 42.9 -0.4
MJAR Matsushiro Arr 2.92 270 Pn Pn 08 47 57.6 +0.6
90nm,0.3s,baz=84,slow=10.0,SNR=471
MJAR Sn Sn 08 48 34.3 +2.2
66nm,0.3s,baz=89,slow=14,SNR=13
MJAR LR LR 08 49 23.0
comp=Z,1µm,18.0s,baz=115,slow=47
MAJO Matsushiro 2.92 270 eP Pn 08 47 58.5 +1.5
MAJO e 08 48 29.7
MAJO Matsushiro 2.92 270 ePn Pn 08 47 58.5 +1.5
MAJO eSn Sn 08 48 29.7 -2.5
MAT Matsushiro 2.92 270 P Pn 08 47 58.0 +1.0
MAT S Sn 08 48 32.2 +0.1
MJB9 Matsu-Tunnel 2.92 271 ePn Pn 08 47 58.2 +1.2
JHJ2 Mitsune 3.83 206 ePn Pn 08 48 09.8 +0.3
JHJ2 eSn Sn 08 48 52.6 -1.9
JHJ Hachijo jima 2 3.84 207 Pn Pn 08 48 09.6 0.0
63nm,0.3s,baz=106,slow=22,SNR=29
JHJ Sn Sn 08 48 51.9 -2.8
194nm,0.3s,baz=268,slow=24,SNR=10
INU Inuyama 4.10 254 ePn Pn 08 48 15.1 +1.9
ERM Erimo 5.53 10 eP Pn 08 48 32.5 -0.3
ERM e 08 49 35.2
ERM Erimo 5.53 10 ePn Pn 08 48 32.5 -0.3
ERM eSn Sn 08 49 35.1 -1.1
ASAJ Asahikawa 7.56 4 Pn Pn 08 49 00.9 +0.3
2.3nm,0.3s,baz=216,slow=8.1,SNR=13
ASAJ Sn Sn 08 50 24.4 -1.8
1.1nm,0.3s,baz=119,slow=18,SNR=3.6
ASAJ Asahikawa 7.56 4 ePn Pn 08 49 01.8 +1.2
ASAJ eSn Sn 08 50 24.1 -2.1
ASAJ Sn Sn 08 50 24.4 -1.8
YUK Yuzh-Kuril'sk 8.06 21 eP Pn 08 49 08.7 +1.2
YUK *i* S Sn 08 50 33.7 -4.9
YUK pmax pmax
comp=Z,112nm,0.3s
YUK pmax pmax
comp=E,49nm,0.1s
YUK pmax pmax
comp=N,52nm,0.3s
SHO Shikotan 8.22 26 *i* P Pn 08 49 08.6 -1.2
SHO pmax pmax
comp=Z,66nm,0.8s
SHO pmax pmax
comp=N,26nm,0.7s
SHO pmax pmax
comp=E,27nm,0.7s
CBIJ Chichi jima 9.46 178 ePn Pn 08 49 28.0 +1.3
CBIJ eSn Sn 08 51 06.9 -6.1
JCJ Chichijima 9.46 178 Pn Pn 08 49 24.8 -2.0
comp=E,7.1nm,0.3s,baz=278,slow=20,SNR=10
JCJ Sn Sn 08 51 02.2 -11
baz=127,slow=20
JCJ LR LR 08 54 18.3
comp=E,81nm,19.7s,baz=70,slow=46
JNU Nakatsue 9.64 252 Pn Pn 08 49 32.2 +2.9
comp=E,0.7nm,0.3s,baz=354,slow=9.6,SNR=6.2
JNU LR LR 08 54 03.0
comp=E,340nm,18.1s,baz=86,slow=43
KUR Kuril'sk 9.78 26 eP Pn 08 49 30.9 -0.1
KUR eS Sn 08 51 12.3 -8.4
KUR pmax pmax
comp=Z,37nm,0.7s
KUR pmax pmax
comp=N,17nm,0.1s
KUR pmax pmax
comp=E,25nm,0.5s
YSS Yuzh-Sakhalins 10.39 3 eP Pn 08 49 41.0 +1.5
USRK Ussuriysk Ar. 10.69 318 Pn Pn 08 49 46.2 +2.6
comp=E,1.7nm,0.3s,baz=128,slow=12,SNR=100
USRK LR LR 08 53 47.4
comp=E,498nm,18.2s,baz=99,slow=37
KSRS Korea Array 11.16 279 Pn Pn 08 49 54.6 +4.6
comp=E,0.2nm,0.3s,baz=96,slow=13,SNR=8.0
KSRS LR LR 08 53 55.9
comp=E,463nm,19.5s,baz=90,slow=36
KSAR Wonju Array Be 11.19 279 P Pn 08 49 54.6 +4.1
KSAR Wonju Array Be 11.19 279 Pn Pn 08 49 54.6 +4.1
MDJ Mudanjiang 12.28 315 P Pn 08 50 11.3 +5.9
MDJ S Sn 08 52 24.6 +2.4
MDJ pmax pmax
comp=E,24nm,0.8s
MDJ pmax pmax
comp=E,96nm,6.8s
MDJ LR LR
comp=E,270nm,16.4s
MDJ LR LR
comp=E,240nm,14.7s
MDJ LR LR
comp=E,470nm,13.6s
TYV Tymovskoe 14.30 2 eP P 08 50 40.0 0.0
TYV pmax pmax
comp=Z,11nm,0.8s
CN2 Changchun 14.44 305 eP P 08 50 39.0 -2.7
CN2 eS Sn 08 53 17.6 +2.6
CN2 pmax pmax
comp=Z,10.0nm,1.0s
CN2 LR LR
comp=Z,500nm,16.0s
CN2 LR LR
comp=Z,400nm,16.0s
CN2 LR LR
comp=Z,500nm,18.0s
KLR Kul'dur 14.63 333 Pn Pn 08 50 37.7 +0.3
comp=Z,0.2nm,0.3s,baz=152,slow=9.3,SNR=5.4
KLR LR LR 08 56 14.3
comp=Z,357nm,18.3s,baz=154,slow=37
NKL Nikolayevsk 16.59 358 eP Pn 08 50 55.0 -8.0
NJ2 Nanjing 19.50 263 eP Pn 08 51 40.3 +1.4
NJ2 pmax pmax
comp=Z,10.0nm,0.5s
PETK Petropavlovsk- 19.92 29 LR LR 08 59 21.6
comp=Z,84nm,20.6s,baz=256,slow=37
BJI Beijing 20.41 288 P Pn 08 51 52.5 +2.9
BJI pmax pmax
comp=Z,9.0nm,1.2s
WHN Wuhan 23.64 263 P P 08 52 23.3 +1.5
MA2 Magadan 23.73 11 P P 08 52 21.6 -0.9
comp=Z,4.4nm,0.7s,baz=184,slow=15,SNR=3.2
MA2 LR LR 09 03 13.0
comp=Z,86nm,18.0s,baz=150,slow=40
HHC Hu-ho-hao-te 23.94 290 eP P 08 52 25.0 +0.2
HHC pmax pmax
comp=Z,21nm,0.9s
HHC pmax pmax
comp=Z,140nm,4.1s
YAK Yakutsk 26.59 347 eP P 08 52 48.9 +0.4
YAK pmax pmax
comp=Z,16nm,0.8s
XAN Xi'an 26.91 274 P P 08 52 56.8 +5.0
XAN pP sP 08 53 02.3 +5.7
XAN pmax pmax
comp=Z,6.0nm,0.7s
SEY Seymchan 27.18 11 P P 08 52 54.8 +1.0
comp=Z,5.5nm,0.7s,baz=190,slow=7.9,SNR=22
H11N2 WAKE ISLAND Hy 27.62 121 T T 09 22 18.5
baz=313,slow=75,SNR=55
H11N1 WAKE ISLAND Hy 27.63 121 T T 09 22 25.6
baz=313,slow=75,SNR=65
ENH Enshi 27.64 266 eP P 08 52 57.1 -1.2
comp=Z,15nm,0.6s
H11N3 WAKE ISLAND Hy 27.64 121 T T 09 22 26.0
baz=313,slow=75,SNR=61
ULN Ulaanbaatar 27.89 305 P P 08 53 01.0 +0.5
ULN pmax pmax
comp=Z,8.0nm,1.2s
ULN Ulaanbaatar 27.89 305 eP P 08 53 01.1 +0.5
comp=Z,6.4nm,0.6s
BOD Bodaibo 28.10 328 eP P 08 53 00.7 -1.4
BOD pmax pmax
comp=Z,7.0nm,1.4s
SONA1 Songino Array 28.32 305 eP P 08 53 05.0 +0.6
SONM Songino Array 28.32 305 P P 08 53 04.8 +0.4
comp=Z,5.2nm,0.7s,baz=105,slow=8.7,SNR=10
H11S1 WAKE ISLAND Hy 28.32 123 T T 09 23 33.5
baz=314,slow=75,SNR=134
H11S3 WAKE ISLAND Hy 28.33 123 T T 09 23 10.9
baz=314,slow=75,SNR=88
H11S2 WAKE ISLAND Hy 28.34 123 T T 09 23 19.7
baz=314,slow=75,SNR=66
ZAK Zakamensk 30.82 309 eP P 08 53 25.2 -1.2
ZAK pmax pmax
comp=Z,2.0nm,1.1s
TLY Talaya 30.89 311 eP P 08 53 25.2 -1.7
TLY pmax pmax
comp=Z,2.0nm,0.6s
TLY MLR MLR
comp=Z,149nm,11.0s
GYA Guiyang 31.48 261 eP P 08 53 34.6 +2.1
GYA pmax pmax
comp=Z,10.0nm,0.8s
CD2 Chengdu 32.02 271 P P 08 53 36.3 -0.8
CD2 pmax pmax
comp=Z,1.0nm,0.5s
BILL Bilibino 34.37 16 eP P 08 53 57.2 0.0
BILL *e* 08 54 01.3
BILL *e* 08 54 11.5
BILL 08 55 18.0
BILL *e* 08 56 33.4
BILL pmax pmax
comp=Z,3.0nm,1.1s
BILL MLR MLR
comp=Z,75nm,16.0s
TIXI Tiksi 35.78 353 P P 08 54 09.0 -0.3
TIXI pmax pmax
comp=Z,5.0nm,1.7s
WMQ Urumqi 41.35 297 eP P 08 54 57.6 +1.1
WMQ pP sP 08 55 10.8 +9.4
WMQ sP pP 08 55 17.5 +18
WMQ pmax pmax
comp=Z,6.0nm,0.8s
WMQ pmax pmax
comp=Z,22nm,4.6s
WMQ LR LR
comp=Z,47nm,18.8s
WMQ LR LR
comp=Z,41nm,21.8s
WMQ LR LR
comp=Z,33nm,21.8s
CMAR Chiang Mai Arr 41.71 256 P P 08 54 59.3 -0.4
comp=Z,1.9nm,0.8s,baz=46,slow=7.0,SNR=16
CMAR LR LR 09 14 29.9
comp=Z,72nm,18.6s,baz=160,slow=39
CM01 Chiang Mai Arr 41.72 256 eP P 08 54 59.8 +0.1
ZAA0 Zalesovo Array 42.48 313 eP P 08 55 05.6 +0.1
ZALV Zalesovo Beam 42.48 313 P P 08 55 05.5 +0.1
comp=Z,3.5nm,0.5s,baz=92,slow=6.5,SNR=18
ZALV PcP PcP 08 56 57.8 -0.3
comp=Z,2.1nm,0.6s,baz=105,slow=2.4,SNR=3.5
NVS Novosibirsk 43.40 314 eP P 08 55 12.5 -0.4
NVS pmax pmax
comp=E,10.0nm,1.1s
NVS pmax pmax
comp=Z,13nm,1.1s
MKAR Makanchi Array 44.65 303 P P 08 55 23.0 -0.1
comp=Z,2.8nm,0.7s,baz=88,slow=9.7,SNR=27
MKAR LR LR 09 14 02.4
comp=Z,94nm,18.8s,baz=338,slow=36
MKAR Makanchi Array 44.65 303 P P 08 55 23.0 -0.1
MKAR pmax pmax
comp=Z,3.0nm,0.7s
MKAR MLR MLR
comp=Z,94nm,18.8s
MKAR Makanchi Array 44.65 303 eP P 08 55 23.0 -0.1
MAKZ Makanchi 44.86 303 eP P 08 55 25.1 +0.3
MAKZ pmax pmax
comp=Z,6.0nm,0.8s
MAKZ Makanchi 44.86 303 eP P 08 55 25.1 +0.3
comp=Z,6.0nm,0.8s
KURK Kurchatov 46.48 308 eP P 08 55 37.1 -0.4
KURK pmax pmax
comp=Z,13nm,0.8s
KURK Kurchatov 46.48 308 eP P 08 55 37.0 -0.4
comp=Z,13nm,0.8s
KDAK Kodiak Island 47.21 42 *i* P P 08 55 44.6 +1.5
PDGK Podgornoye 47.29 298 P P 08 55 44.1 +0.2
PDGK pmax pmax
comp=Z,14nm,1.2s
MLY Manley 48.06 32 eP P 08 55 51.5 +1.8
comp=Z,4.4nm,1.1s
MDM Mundy Dome 49.12 32 eP P 08 55 59.7 +1.9
comp=Z,4.6nm,0.9s
SML Sawmill 49.16 36 eP P 08 55 58.6 +0.4
SML pmax pmax
comp=Z,1.0nm,0.8s
SML Sawmill 49.16 36 eP P 08 55 58.6 +0.4
comp=Z,0.7nm,0.8s
HDA Harding Lake 49.68 33 eP P 08 56 01.4 -0.7
comp=Z,40nm,1.2s
IL1 Eielson Array 49.70 32 eP P 08 56 02.8 +0.6
ILAR Eielson Array 49.70 32 P P 08 56 02.9 +0.7
comp=Z,1.4nm,0.8s,baz=261,slow=6.4,SNR=15
TKM2 Tokmak 2 50.15 299 eP P 08 56 06.9 +0.7
TKM2 pmax pmax
comp=Z,7.0nm,0.8s
TKM2 Tokmak 2 50.15 299 eP P 08 56 06.9 +0.7
comp=Z,6.8nm,0.8s
OTUK Ortayu 50.97 306 P P 08 56 13.6 +1.5
OTUK pmax pmax
comp=Z,6.0nm,0.8s
AAK Ala-Archa 51.01 299 LR LR 09 19 16.3
comp=Z,218nm,18.3s,baz=40,slow=38
AAK Ala-Archa 51.01 299 P P 08 56 12.0 -0.7
AAK pmax pmax
comp=Z,4.0nm,0.9s
BVAR Borovoye Array 51.13 313 P P 08 56 13.0 -0.2
comp=Z,1.1nm,0.5s,baz=73,slow=7.4,SNR=8.4
BVAR PcP PcP 08 57 28.9 +0.2
comp=Z,2.6nm,0.6s,baz=77,slow=3.2,SNR=5.3
BRVK Borovoye 51.19 313 eP P 08 56 13.5 -0.1
BRVK pmax pmax
comp=Z,7.0nm,0.8s
BRVK Borovoye 51.19 313 eP P 08 56 13.5 -0.1
comp=Z,7.2nm,0.8s
ZRNK Zerenda 51.97 313 eP P 08 56 18.8 -0.7
ZRNK pmax pmax
comp=Z,8.0nm,0.8s
ZRNK Zerenda 51.97 313 eP P 08 56 18.8 -0.7
comp=Z,7.8nm,0.8s
MNAS Manas 52.45 299 P P 08 56 24.2 +0.8
MNAS pmax pmax
comp=Z,8.0nm,0.8s
SFK Sufi-Kurgan 52.54 296 P P 08 56 24.5 +0.3
SFK pmax pmax
comp=Z,10.0nm,0.8s
KKAR Karatay Array 53.65 301 eP P 08 56 32.2 +0.1
KKAR pmax pmax
comp=Z,1.0nm,0.4s
KKAR Karatay Array 53.65 301 eP P 08 56 32.2 +0.1
comp=Z,0.7nm,0.4s
INK Inuvik 54.64 27 eP P 08 56 40.0 +1.1
INK pmax pmax
comp=Z,3.0nm,0.8s
INK Inuvik 54.64 27 eP P 08 56 40.0 +1.1
comp=Z,3.4nm,0.8s
FITZ Fitzroy Crossi 56.49 199 eP P 08 56 53.0 +0.3
comp=Z,4.8nm,0.5s
WRAB Tennant Creek 56.65 188 *c iP* P 08 56 53.4 -0.4
WRAB pmax pmax
comp=Z,60nm,1.7s
WRAB Tennant Creek 56.65 188 eP P 08 56 53.3 -0.5
comp=Z,16nm,1.1s
WB2 Warramunga Arr 56.65 188 eP P 08 56 53.2 -0.6
comp=Z,15nm,1.0s
WRA Warramunga Arr 56.66 188 P P 08 56 53.1 -0.7
comp=Z,10.0nm,0.9s,baz=6.9,slow=7.4,SNR=50
ARU Arti 56.93 319 *c iP* P 08 56 55.1 -0.3
ARU S S 09 04 47.5 -1.5
ARU SS SS 09 08 31.1 -5.7
ARU pmax pmax
comp=Z,8.0nm,1.2s
ARU Arti 56.93 319 eP P 08 56 55.1 -0.3
comp=Z,12nm,0.9s
ABKAR Akbulak array 58.49 310 eP P 08 57 06.2 -0.4
comp=Z,3.0nm,0.5s
AKTO Aktyubinsk 59.23 312 P P 08 57 11.3 -0.5
comp=Z,1.8nm,0.7s,baz=76,slow=14,SNR=7.0
AKTO LR LR 09 23 43.9
comp=Z,57nm,20.3s,baz=83,slow=37
AS01 Alice Springs 60.38 188 eP P 08 57 19.2 -0.5
AS31 Alice Springs 60.38 188 eP P 08 57 19.7 -0.2
comp=Z,1.9nm,0.8s
ASAR Alice Springs 60.38 188 P P 08 57 19.4 -0.4
comp=Z,5.8nm,0.7s,baz=14,slow=6.7,SNR=70
KBS Kingsbay 61.17 350 eP P 08 57 25.9 +1.4
KBS pmax pmax
comp=Z,60nm,1.7s
YKW3 Yellowknife Ar 63.99 30 eP P 08 57 43.7 +0.1
comp=Z,23nm,1.9s
YKA Yellowknife Ar 64.03 30 P P 08 57 44.4 +0.6
comp=Z,3.1nm,0.7s,baz=302,slow=6.7,SNR=73
YKB5 Yellowknife Ar 64.03 30 eP P 08 57 43.4 -0.5
GEYT Alibeck 64.36 299 P P 08 57 46.3 -0.2
comp=Z,0.9nm,0.3s,baz=48,slow=2.1,SNR=3.9
ARCES ARCESS Array B 64.55 340 LR LR 09 32 01.8
comp=Z,76nm,19.4s,baz=46,slow=42
STKA Stephens Creek 68.10 180 P P 08 58 10.4 +0.2
comp=Z,2.6nm,0.7s,baz=339,slow=8.4,SNR=7.7
STKA Stephens Creek 68.10 180 eP P 08 58 09.9 -0.3
comp=Z,1.2nm,0.8s
OBN Obninsk 68.67 323 P P 08 58 14.0 +0.4
FIA1 FINESS Array S 69.38 332 eP P 08 58 18.1 +0.1
FINES FINESS Array B 69.38 332 P P 08 58 18.0 +0.1
comp=Z,4.2nm,0.7s,baz=58,slow=7.2,SNR=15
FINES LR LR 09 29 57.0
comp=Z,52nm,18.5s,baz=71,slow=37
VSU Vasula 71.02 330 P P 08 58 28.0 -0.1
VSU pmax pmax
comp=Z,16nm,0.8s
NCK Nalchik 71.16 310 eP P 08 58 30.8 +1.5
NCK pmax pmax
comp=Z,55nm,0.6s
WSAR Wadi Sarin 71.32 285 LR LR 09 33 56.1
comp=Z,49nm,18.2s,slow=39
KBZ Khabaz 71.46 311 P P 08 58 31.4 +0.4
comp=Z,4.0nm,0.9s,baz=110,slow=3.6,SNR=5.0
KIV Kislovodsk 71.46 311 eP P 08 58 32.0 +0.8
KIV pmax pmax
comp=Z,8.0nm,1.0s
JTMT Jette 72.09 44 eP P 08 58 36.6 +1.7
ORV Oroville 72.30 54 eP P 08 58 37.4 +1.2
ORV pmax pmax
comp=Z,4.0nm,0.9s
ORV Oroville 72.30 54 eP P 08 58 37.4 +1.2
comp=Z,3.7nm,0.9s
SWMT Swartz Lake 72.39 44 eP P 08 58 38.1 +1.4
CMB Columbia Colle 73.86 55 eP P 08 58 47.1 +1.6
CMB pmax pmax
comp=Z,5.0nm,1.0s
CMB Columbia Colle 73.86 55 eP P 08 58 47.1 +1.6
comp=Z,4.8nm,1.0s
FFC Flin Flon 73.91 33 eP P 08 58 46.4 +1.0
FFC pmax pmax
comp=Z,9.0nm,0.7s
FFC Flin Flon 73.91 33 eP P 08 58 46.4 +1.0
comp=Z,9.1nm,0.7s
LRM Limekiln Ridge 74.24 44 eP P 08 58 49.4 +1.6
FCC Fort Churchill 74.26 27 eP P 08 58 47.7 +0.4
FCC pmax pmax
comp=Z,10.0nm,1.1s
FCC Fort Churchill 74.26 27 eP P 08 58 47.7 +0.4
comp=Z,10.0nm,1.1s
DLMT Dillon 74.43 45 eP P 08 58 50.5 +1.6
comp=Z,6.4nm,0.8s
HLID Hailey 74.43 47 eP P 08 58 50.1 +1.2
comp=Z,1.4nm,0.8s
BMN Battle Mountai 74.53 51 eP P 08 58 51.3 +1.8
BMN pmax pmax
comp=Z,5.0nm,0.8s
BMN Battle Mountai 74.53 51 eP P 08 58 51.3 +1.8
comp=Z,4.6nm,0.8s
HFS Hagfors 74.64 336 P P 08 58 49.2 -0.4
comp=Z,5.2nm,0.9s,baz=10,slow=8.8,SNR=4.6
NC204 NORSAR Array S 74.69 338 eP P 08 58 50.8 +0.9
NB2 NORSAR Subarra 74.74 337 P P 08 58 49.8 -0.4
comp=Z,6.1nm,0.7s,baz=40,slow=5.9
NOA NORSAR Array B 74.74 337 P P 08 58 50.5 +0.3
comp=Z,5.2nm,0.7s,baz=39,slow=5.8,SNR=24
NOA LR LR 09 35 14.5
comp=Z,83nm,18.9s,baz=355,slow=39
BOZ Bozeman (W) 74.80 44 eP P 08 58 52.3 +1.3
BOZ pmax pmax
comp=Z,5.0nm,0.8s
BOZ Bozeman (W) 74.80 44 eP P 08 58 52.3 +1.3
comp=Z,4.9nm,0.8s
NBO02 NORSAR Array S 74.84 338 eP P 08 58 50.9 +0.1
AKASG Malin Array Be 74.87 323 P P 08 58 50.7 -0.3
comp=Z,4.1nm,0.6s,baz=46,slow=5.9,SNR=17
AKASG LR LR 09 34 27.9
comp=Z,86nm,18.2s,baz=65,slow=38
KIEV Kiev 74.88 323 eP P 08 58 51.0 -0.1
KIEV pmax pmax
comp=Z,5.0nm,0.7s
KIEV Kiev 74.88 323 eP P 08 58 51.0 -0.1
comp=Z,5.2nm,0.7s
NV01 Mina Array Sit 74.99 53 eP P 08 58 53.7 +1.4
NVAR Mina Array Bea 74.99 53 P P 08 58 53.9 +1.6
comp=Z,4.3nm,0.8s,baz=286,slow=6.1,SNR=16
NV11 Mina Array Sit 75.08 53 eP P 08 58 54.5 +1.8
comp=Z,22nm,1.7s
H17A Grant Village 76.16 45 eP P 08 59 02.2 +3.3
comp=Z,6.9nm,0.8s
IMW Indian Meadow 76.25 45 eP P 08 59 01.8 +2.2
comp=Z,3.8nm,0.8s
MOOW Moose Ponds 76.46 45 eP P 08 59 02.7 +2.1
comp=Z,6.3nm,1.3s
SNOW Snow King Moun 76.63 46 eP P 08 59 03.2 +1.6
comp=Z,2.1nm,0.9s
R11A Troy Canyon, C 76.78 52 eP P 08 59 03.7 +1.3
comp=Z,6.5nm,1.1s
HWUT Hardware Ranch 77.29 47 eP P 08 59 07.2 +2.0
comp=Z,7.6nm,1.3s
DUG Dugway, Tooele 77.40 49 eP P 08 59 07.5 +1.7
DUG pmax pmax
comp=Z,4.0nm,0.8s
DUG Dugway, Tooele 77.40 49 eP P 08 59 07.5 +1.7
comp=Z,4.0nm,0.8s
PDAR Pinedale Array 77.75 46 P P 08 59 08.6 +0.7
comp=Z,0.8nm,0.6s,baz=253,slow=2.0,SNR=8.4
PSUT Pine Spring 77.76 51 eP P 08 59 09.5 +1.5
comp=Z,6.6nm,1.3s
NLU North Lily Min 77.99 49 eP P 08 59 11.1 +1.8
comp=Z,3.7nm,0.9s
BUR08 Bucovina Ar. S 78.87 322 eP P 08 59 14.3 +0.5
LCMT Little Creek M 79.06 52 eP P 08 59 17.0 +1.9
comp=Z,5.5nm,1.1s
BRTR Keskin Array B 79.41 312 P P 08 59 18.0 +1.0
comp=Z,1.6nm,0.8s,baz=39,slow=4.4,SNR=6.2
BR231 Keskin MP Arra 79.85 312 eP P 08 59 17.2 -2.2
PV05 Paradox Valley 80.97 49 eP P 08 59 27.3 +1.8
WUAZ Wupatki 81.17 52 eP P 08 59 24.7 -1.9
PV01 Paradox Valley 81.26 49 eP P 08 59 28.1 +1.0
CLL Collm 81.66 330 eP P 08 59 29.0 +0.4
CLL *e* 08 59 36.0
CLL *e* 08 59 40.0
CLL Collm 81.66 330 eP P 08 59 29.0 +0.4
CLL *e* 08 59 36.0
CLL *e* 08 59 40.0
KHC Kasperske Hory 83.11 329 eP P 08 59 36.7 +0.4
KHC epP sP 08 59 48.1 +6.7
KHC Kasperske Hory 83.11 329 eP P 08 59 36.7 +0.4
KHC *e* 08 59 48.1
GERES GERESS Array B 83.28 328 P P 08 59 37.1 -0.2
comp=Z,1.1nm,0.5s,baz=35,slow=4.9,SNR=9.0
GEA0 GERESS Array S 83.29 328 eP P 08 59 37.0 -0.3
ANMO Albuquerque 84.62 50 eP P 08 59 45.8 +1.3
ANMO pmax pmax
comp=Z,2.0nm,1.2s
SCHQ Schefferville 85.68 16 P P 08 59 49.6 +0.4
comp=Z,2.0nm,1.0s,baz=293,slow=13,SNR=3.7
BFO Black Forest 85.87 331 *i* P P 08 59 50.7 +0.4
TX31 Lajitas Ar. Si 90.13 53 eP P 09 00 11.8 +0.7
TXAR Lajitas Array 90.13 53 P P 09 00 11.7 +0.6
comp=Z,1.1nm,0.6s,baz=298,slow=3.2,SNR=20
LPAZ La Paz 146.63 61 PKPbc **PKPbc** 09 06 53.6 +0.2
comp=Z,6.5nm,0.6s,baz=353,slow=3.0,SNR=16

IDC **14** *08:56:00.3±0.9, 39.01N×144.83E, h0km, mb3.5/7, mb1 3.7/10, mb1mx3.5/52, mbtmp3.6/10, ML3.3/3, Error ellipse: s-maj=26.6km s-min=18.6km az=109.0*
ISCJB **14** *08:56:01.1±0.8, 39.04N±0.09×144.6E±0.1, h19km, mb3.6/7, Error ellipse: s-maj=16.0km s-min=9.3km az=137.9*
ISC 14 08:56:03.4±1.0, 39.1N±0.1×144.7E±0.1, h19km, n12, σ1§38/12, mb3.7/7, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC

ASAJ Asahikawa 5.27 343 Pn **Pn** 08 57 20.1 -1.1
1.2nm,0.3s,baz=195,slow=20,SNR=11
ASAJ Sn Sn 08 58 15.9 -5.5
0.6nm,0.3s,baz=0.0,slow=20,SNR=2.8
MJAR Matsushiro Arr 5.74 246 Pn **Pn** 08 57 27.9 +0.3
1.9nm,0.3s,baz=55,slow=11,SNR=12
MAT Matsushiro 5.74 246 P **Pn** 08 57 27.9 +0.2
MAT *eS* **Sn** 08 58 29.5 -3.5
JHJ Hachijo jima 2 7.17 215 Sn Sn 08 59 00.7 -7.3
5.5nm,0.3s,baz=90,slow=20,SNR=3.6
USRK Ussuriysk Ar. 10.81 302 Pn **Pn** 08 58 37.7 +0.7
0.4nm,0.3s,baz=103,slow=14,SNR=13
MKAR Makanchi Array 45.27 301 P **P** 09 04 20.9 +1.3
0.2nm,0.2s,baz=88,slow=7.6,SNR=2.4
ILAR Eielson Array 46.36 33 P **P** 09 04 28.2 +0.2
0.7nm,0.7s,baz=264,slow=6.5,SNR=8.2
INK Inuvik 51.37 28 P **P** 09 05 06.5 +0.2
0.5nm,0.6s,baz=303,slow=5.5,SNR=5.2
WRA Warramunga Arr 59.51 191 P **P** 09 06 04.5 -0.9
0.5nm,0.6s,baz=9.0,slow=7.0,SNR=10
YKA Yellowknife Ar 60.72 32 P **P** 09 06 13.1 -0.1
0.2nm,0.7s,baz=301,slow=6.2,SNR=5.4
ASAR Alice Springs 63.24 191 P **P** 09 06 30.1 -0.4
0.3nm,0.7s,baz=15,slow=6.4,SNR=4.5
FINES FINESS Array B 68.20 333 P **P** 09 07 02.4 +0.2
0.3nm,0.5s,baz=67,slow=4.7,SNR=3.2

JMA 14 09:05:20.1,36.87N×140.70E,h6km±1km,M2.5,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.24**	**19**	P	Pg	09 05 25.3	+0.4
ONAJ				S	Sg	09 05 28.7	+0.5
JHO	**Hitachi**	**0.28**	**202**	P	Pg	09 05 25.7	+0.1
JHO				S	Sg	09 05 29.8	+0.6
JFK	**Kawauchi**	**0.52**	**16**	P	Pg	09 05 30.0	0.0
JFK				S	Sg	09 05 37.2	+0.4
JFT	**Otama**	**0.71**	**336**	P	Pg	09 05 33.9	+0.2
JFT				S	Sg	09 05 43.2	+0.2
JMM	**Marumori**	**1.00**	**4**	P	Pg	09 05 38.7	-0.5
JMM				S	Sg	09 05 51.7	-0.5
JOU	**Okura**	**1.49**	**359**	S	Sn	09 06 07.1	-0.2
MAT	**Matsushiro**	**2.03**	**261**	P	Pn	09 05 55.3	+0.4
MAT				S	Sb	09 06 22.3	-0.6

JMA 14 09:08:41.4±0.3,39.54N×143.68E,h8km±4km,M3.6,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MIYJ	**Miyakonagasawa**	**1.44**	**272**	P	Pn	09 09 07.7	-0.1
JTH	**Tanohata**	**1.46**	**286**	P	Pn	09 09 07.8	-0.2
JTH				S	Sb	09 09 27.5	+0.1
OFUJ	**Ofunato**	**1.63**	**254**	P	Pn	09 09 10.4	+0.1
JOM	**Ohasama**	**1.85**	**269**	P	Pn	09 09 14.0	+0.6
JANG	**Nango**	**1.86**	**297**	P	Pn	09 09 13.4	-0.2
JMK	**Ichinoseki**	**2.00**	**254**	P	Pn	09 09 15.9	+0.5
JTM	**Tenmabayashi**	**2.36**	**303**	P	Pn	09 09 21.4	+1.0
JTM				S	Sn	09 09 50.7	+1.2
JRG	**Rokugo**	**2.36**	**267**	P	Pn	09 09 21.5	+1.0
JAH	**Hinai**	**2.43**	**286**	P	Pn	09 09 22.5	+1.1
JAH				*eS*	Sn	09 09 52.3	+1.0
JOU	**Okura**	**2.63**	**244**	P	Pn	09 09 25.2	+1.1
JYK	**Kaneyama**	**2.65**	**258**	P	Pn	09 09 25.7	+1.2
JNBK	**Urakawa-nobuka**	**2.83**	**346**	P	Pn	09 09 29.2	+2.4
JCH	**Churui**	**3.08**	**356**	P	Pn	09 09 31.9	+1.6
JCH				S	Sn	09 10 06.9	-0.4
JAR	**Ashorobuto**	**3.75**	**1**	P	Pn	09 09 41.2	+1.6
JAR				S	Sn	09 10 23.9	-0.1
NEM2	**Nemuro 2**	**4.12**	**21**	P	Pn	09 09 46.0	+1.3
NEM2				S	Sn	09 10 31.5	-1.5
JTKR	**Abashiri--Toko**	**4.43**	**2**	P	Pn	09 09 50.9	+2.0
JTKR				S	Sn	09 10 40.2	-0.4
MAT	**Matsushiro**	**5.25**	**237**	P	Pn	09 10 01.9	+1.6

IDC 14 09:09:55.5±2.8,53.53N×87.82E,h0km,mb1 3.0/2, mb1mx2.9/39,mbtmp3.0/2,ML2.6/2,Error ellipse: s-maj=23.6km s-min=17.2km az=60.0,Southwestern Siberia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
I46RU	**ZALESOVO INFRA 1.83 284** *i*					09 22 16.7	
	baz=99,slow=324,SNR=13						
ZALV	**Zalesovo Beam 1.83 284**			Pn	Pn	09 10 27.1	-1.1
	2.0nm,0.3s,baz=102,slow=14,SNR=38						
ZALV				Lg	Lg	09 10 54.0	
	3.0nm,0.3s,baz=106,slow=24,SNR=35						
KURBB	**Kurchatov Arra 6.42 247**			Pn	Pn	09 11 32.1	+0.8
	0.1nm,0.3s,baz=62,slow=14,SNR=10						
KURBB				Sn	Sn	09 12 43.4	-1.8
	baz=64,slow=25,SNR=2.4						
KURBB				Lg	Lg	09 13 20.4	
	0.0nm,0.3s,baz=63,slow=33,SNR=4.5						
MKAR	**Makanchi Array 7.62 210**			Pn	Pn	09 11 49.2	+1.4
	0.1nm,0.3s,baz=30,slow=13,SNR=3.8						
MKAR				Lg	Lg	09 13 57.6	
	0.1nm,0.3s,baz=31,slow=31,SNR=4.3						

MAN 14 09:19:34,8.58N×126.41E,h33km,mb4.2,ML3.0,MS2.7, 2C-1D,Mindanao

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SCPH	**Surigao**	**1.50**	**323**	*eP*	Pn	09 19 59.9	+1.3
SCPH				*eS*	Sn	09 20 17.5	+0.5
BUKP	**Musuan**	**1.50**	**243**	*eP*	Pb	09 20 00.2	-1.2
BUKP				*eS*	Sn	09 20 18.3	+1.1
MATI	**Mati**	**1.63**	**185**	*eP*	Pb	09 20 03.6	+0.1
MATI				*eS*	Sb	09 20 24.9	+1.1
CGP	**Cagayan de Oro**	**1.70**	**266**↑	*eP*	Pn	09 20 02.8	+1.4
CGP				*eS*	Sn	09 20 22.6	+0.6
DMPH	**Davao City--Mi**	**1.73**	**211**↑	*eP*	Pb	09 20 07.0	+1.7
TBP	**Tagbilaran**	**2.75**	**294**↓	*iP*	Pn	09 20 18.0	+2.2
PAGZ	**Pagadian**	**3.08**	**257**	*eP*	Pb	09 20 25.1	-3.1
GUIM	**Jordan**	**4.28**	**299**	*eP*	Pn	09 20 39.6	+2.7

IDC 14 09:26:57.4±2.3,53.53N×87.71E,h0km,mb1 3.6/3, mb1mx3.2/54,mbtmp3.6/3,ML3.2/3,4C-1D,Error ellipse: s-maj=20.4km s-min=12.8km az=63.0,Southwestern Siberia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
I46RU	**ZALESOVO INFRA 1.77 285** *i*					09 38 40.0	
	baz=101,slow=323,SNR=55						
ZALV	**Zalesovo Beam 1.77 285**			Pn	Pn	09 27 27.5	-1.7
	9.3nm,0.3s,baz=100,slow=14,SNR=88						
ZALV				Lg	Lg	09 27 51.6	
	14nm,0.3s,baz=108,slow=25,SNR=19						
KURK	**Kurchatov 6.26 247**			↑Pn	Pn	09 28 30.6	-0.4
	4.1nm,0.6s						
KURK				↑Sn	Sn	09 29 40.7	-2.5
	2.3nm,0.5s						
KURK				↑Lg	Lg	09 30 12.7	
	15nm,0.5s						
KURBB	**Kurchatov Arra 6.36 247**			Pn	Pn	09 28 32.3	0.0
	0.3nm,0.3s,baz=62,slow=14,SNR=37						
KURBB				Sn	Sn	09 29 46.5	+1.0
	0.1nm,0.3s,baz=63,slow=25,SNR=4.2						
KURBB				Lg	Lg	09 30 18.1	
	0.2nm,0.3s,baz=69,slow=32,SNR=6.7						
MK31	**Makanchi Array 7.58 209**			Pn	Pn	09 28 50.0	+1.0
	0.9nm,0.5s,baz=28,slow=12,SNR=18						
MK31				↓Sn	Sn	09 30 14.4	-1.3
	0.9nm,0.5s,baz=27,slow=24,SNR=4.6						
MK31				↑Lg	Lg	09 30 53.5	
	4.8nm,0.7s,baz=41,slow=32,SNR=7.5						
MKAR	**Makanchi Array 7.58 209**			Pn	Pn	09 28 50.2	+1.2
	0.5nm,0.3s,baz=24,slow=12,SNR=23						
MKAR				Sn	Sn	09 30 15.3	-0.3
	0.6nm,0.3s,baz=28,slow=27,SNR=7.5						
MKAR				Lg	Lg	09 30 56.9	
	0.4nm,0.3s,baz=36,slow=29,SNR=11						
BVAR	**Borovoye Array 10.39 274**			Pn	Pn	09 29 27.6	+0.1
	0.3nm,0.3s,baz=88,slow=15,SNR=4.5						
BVAR				Sn	Sn	09 31 20.6	-3.9
	0.8nm,0.3s,baz=74,slow=27,SNR=6.9						

NIED ***14*** *09:31:00,37.10N×140.90E,h5km,Mw3.6 Best double couple: M₀2.98000×10¹⁴ NP1:ϕ₁9.00000°,δ27.00000°, λ-114.00000°. NP2:ϕ₂215.00000°,δ66.00000°, λ-78.00000°.*

ISCJB ***14*** *09:31:04.4±1.1,37.12N±0.04×141.04E±0.07,h6km±5km, mb3.7/4,Error ellipse: s-maj=9.4km s-min=6.0km az=17.9*

IDC ***14*** *09:31:04.1±1.5,37.23N×141.09E,h0km,mb3.6/4, mb1 3.7/5,mb1mx3.4/51,mbtmp3.6/5,ML3.4/1,Error ellipse: s-maj=34.7km s-min=24.7km az=67.0*

JMA ***14*** *09:31:06.6,37.14N×140.88E,h7km,M3.6 Broadband fault plane solution: P waves. NP1:ϕ₁207.00000°, δ47.00000°,λ-71.00000°. NP2:ϕ₂359.00000°,δ47.00000°, λ-109.00000°. Principal axes: T Plg0.0000°, Azm283.0000°; N Plg14.0000°, Azm13.0000°; P Plg76.0000°, Azm193.0000°;*

JMA Felt II J1.

ISC 14 09:31:06.2±1.4,37.13N±0.04×140.91E±0.07,h8km±7km, n12,σ0=68/19,mb3.7/4,4C,Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.09**	**251**	↑P	**Pg**	09 31 08.4	-0.2
ONAJ				S	**Sg**	09 31 09.8	-0.4
JFK	**Kawauchi**	**0.24**	**354**	P	**Pg**	09 31 11.4	+0.4
JHO	**Hitachi**	**0.59**	**208**	P	**Pg**	09 31 17.8	+0.2
JHO				S	**Sg**	09 31 25.7	+0.5
JFT	**Otama**	**0.60**	**311**	↑P	**Pg**	09 31 17.9	+0.1
JFT				S	**Sg**	09 31 25.9	+0.3
JMM	**Marumori**	**0.74**	**353**	↑P	**Pg**	09 31 20.5	0.0
JMM				S	**Sg**	09 31 30.4	+0.3
JSB	**Shiboa**	**0.81**	**259**	↑P	**Pb**	09 31 22.2	-0.3
JSB				S	**Sb**	09 31 33.2	-0.3
MJAR	**Matsushiro Arr**	**2.24**	**256**	Pn	**Pn**	09 31 44.4	+0.7
	8.4nm,0.3s,baz=77,slow=15,SNR=42						
MJAR				Sn	**Sb**	09 32 14.6	-0.3
	15nm,0.3s,baz=89,slow=30,SNR=18						
MAT	**Matsushiro**	**2.24**	**256**	P	**Pn**	09 31 44.9	+1.2
MAT				S	**Sb**	09 32 15.1	+0.2
MKAR	**Makanchi Array**	**43.72**	**302**	P	**P**	09 39 12.4	+0.6
	0.3nm,0.3s,baz=87,slow=10.0,SNR=5.4						
WRA	**Warramunga Arr**	**57.10**	**187**	P	**P**	09 40 52.7	-0.4
	0.7nm,0.7s,baz=3.3,slow=7.2,SNR=16						
ASAR	**Alice Springs**	**60.83**	**187**	P	**P**	09 41 19.5	+0.5
	0.2nm,0.7s,baz=3.3,slow=6.6,SNR=3.4						
FINES	**FINESS Array B**	**68.54**	**332**	P	**P**	09 42 07.1	-1.7
	1.5nm,0.7s,baz=46,slow=6.0,SNR=4.9						

IDC ***14*** *09:32:12.2±0.6,51.66N×175.30W,h0km,mb4.1/22, mb1 4.2/23,mb1mx4.1/55,mbtmp4.1/23,ML4.8/1,MS3.4/10, Ms1 3.4/10,ms1mx3.0/49,Error ellipse: s-maj=21.3km s-min=10.7km az=165.0*

ISCJB ***14*** *09:32:16.4±0.2,51.48N±0.04×175.20W±0.03,h47km, mb4.1/30,MS3.4/10,Error ellipse: s-maj=6.1km s-min=2.8km az=177.9*

NEIC ***14*** *09:32:17.5,51.55N×175.26W,h26km,mb4.2/18, ML4.2(AEIC),After AEIC.*

ISC 14 09:32:18.8±0.5,51.62N±0.09×175.32W±0.04,h47km, n270,σ0=93/267,mb4.2/30,MS3.4/10,Andreanof Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GSMY	**Great Sitkin M**	**0.63**	**313**	P	**Pn**	09 32 30.9	-0.5
GSCK	**Great Sitkin C**	**0.66**	**307**	P	**Pn**	09 32 31.3	-0.5
GSTD	**Great Sitkin T**	**0.68**	**311**	P	**Pn**	09 32 31.7	-0.5
ETKA	**Kagalaska Isla**	**0.72**	**290**	P	**Pn**	09 32 32.0	-0.6
ADAG	**Mount Adagdak**	**0.88**	**295**	P	**Pn**	09 32 35.1	+0.4
ATKA	**Atka Island**	**0.91**	**49**	P	**Pn**	09 32 33.3	-1.9
ATKA				S	**Sn**	09 32 44.9	-2.3
KOKL	**Mount Kliuchef**	**0.99**	**44**	P	**Pn**	09 32 35.8	-0.5
KOWE	**Korovin West**	**1.00**	**41**	P	**Pn**	09 32 36.2	-0.2
KOFP	**Korovin Flat P**	**1.00**	**48**	P	**Pn**	09 32 35.9	-0.6
KOKV	**Korovin Volcan**	**1.03**	**43**	P	**Pn**	09 32 36.7	-0.2
KIRH	**Kanaga Island**	**1.14**	**285**	P	**Pn**	09 32 38.0	-0.3
KIKV	**Kanaga Island**	**1.18**	**284**	P	**Pn**	09 32 38.5	-0.4
TAPA	**Tanaga Point A**	**1.57**	**278**	P	**Pn**	09 32 44.0	-0.1
TAFL	**Tanaga Flats**	**1.61**	**276**	P	**Pn**	09 32 44.7	-0.1
TAFP	**Tanaga Falls P**	**1.68**	**281**	P	**Pn**	09 32 45.9	+0.2
TAFP				S	**Sn**	09 33 07.8	+1.8
GAEA	**Gareloi East**	**2.14**	**276**	P	**Pn**	09 32 53.5	+1.5
GALAA	**Gareloi Lava P**	**2.16**	**275**	P	**Pn**	09 32 53.5	+1.4
NIKH	**Nikolski High**	**4.19**	**69**	P	**Pn**	09 33 20.6	+0.5
NIKH				S	**Sn**	09 34 09.3	+1.5
OKTU	**Okmok Mt. Tuli**	**4.78**	**65**	P	**Pn**	09 33 30.0	+1.8
OKFG	**Magazine Ridge**	**4.87**	**65**	P	**Pn**	09 33 31.0	+1.7
OKFG				S	**Sn**	09 34 27.3	+3.0
MSOM	**Makushin Julie**	**5.54**	**63**	P	**Pn**	09 33 40.5	+2.0
UNV	**Unalaska Valle**	**5.80**	**64**	P	**Pn**	09 33 43.4	+1.3
UNV				S	**Sn**	09 34 50.3	+3.0
SPIA	**Saint Paul Isl**	**6.31**	**26**	P	**Pn**	09 33 51.4	+2.4
SMY	**Shemya**	**6.61**	**284**	P	**Pn**	09 33 55.6	+2.5
ISLZ	**Isanotski Laza**	**7.64**	**61**	P	**Pn**	09 34 09.5	+2.2
GAMB	**Gambell**	**12.34**	**8**	*e*Pn	**Pn**	09 35 12.3	+0.8
	6.1nm,0.7s						
KDAK	**Kodiak Island**	**14.48**	**56**	Pn	P	09 35 53.8	+7.6
	0.8nm,0.3s,baz=299,slow=4.1,SNR=20						
KDAK				Sn	S	09 38 42.3	+5.1
	0.2nm,0.3s,baz=266,slow=16,SNR=6.0						
KDAK	**Kodiak Island**	**14.48**	**56**	*e*Pn	**Pn**	09 35 40.9	+0.4
	21nm,0.4s						
KDAK				Pn	P	09 35 53.9	+7.6
KDAK				Sn	**S**	09 38 42.3	+5.1
SEW	**Seward**	**16.72**	**49**	*e*Pn	**Pn**	09 36 06.8	-2.5
	62nm,1.5s						
PPLA	**Purkeypile**	**16.74**	**39**	*e*Pn	**P**	09 36 11.7	+0.3
	8.6nm,0.8s						
KTH	**Kantishna Hill**	**17.57**	**38**	*e*Pn	**P**	09 36 20.7	+0.1
	22nm,1.0s						
TRF	**Thorofare Moun**	**17.77**	**39**	*e*Pn	**P**	09 36 22.8	0.0
	3.9nm,0.4s						
BPAW	**Bear Paw Mtn.**	**17.84**	**36**	*e*Pn	**P**	09 36 24.4	+0.9
	1.0nm,0.4s						
BILL	**Bilibino**	**18.75**	**338**	*e*P	**Pn**	09 36 34.9	+0.7
	11nm,1.0s						
COLA	**College**	**19.41**	**36**	*e*P	**P**	09 36 40.0	-0.5
	6.6nm,0.8s						
PAX	**Paxson**	**19.52**	**43**	*e*P	**P**	09 36 41.9	0.0
	8.3nm,0.9s						
ILAR	**Eielson Array**	**19.72**	**37**	P	**P**	09 36 41.4	-2.6
	1.3nm,0.3s,baz=231,slow=9.3,SNR=44						
COLD	**Coldfoot**	**19.96**	**29**	*e*P	**P**	09 36 47.3	+0.7
	14nm,1.1s						
DOT	**Dot Lake**	**20.36**	**42**	*e*P	**P**	09 36 49.9	-1.1
	32nm,0.8s						
SEY	**Seymchan**	**20.56**	**316**	P	**P**	09 36 53.4	+0.3
	5.4nm,0.9s,baz=90,slow=11,SNR=15						
EGAK	**Eagle**	**21.95**	**40**	*e*P	**P**	09 37 07.2	-0.8
	10nm,0.6s						
INK	**Inuvik**	**26.02**	**34**	P	**P**	09 37 46.6	-0.3
	1.5nm,0.5s,baz=238,slow=10,SNR=16						
INK				PcP	**PcP**	09 41 13.5	-0.1
	0.4nm,0.4s,baz=293,slow=1.9,SNR=4.5						
DLBC	**Dease Lake**	**26.41**	**57**	P	**P**	09 37 51.2	+0.6
	1.0nm,0.5s,baz=225,slow=6.4,SNR=5.1						
BBB	**Bella Bella**	**28.73**	**70**	P	**P**	09 38 09.2	-2.1
	28nm,1.0s,baz=329,slow=12,SNR=3.2						
BBB				LR	LR	09 49 12.2	
	comp=Z,81nm,18.4s,baz=318,slow=36						
ASAJ	**Asahikawa**	**28.88**	**272**	P	**P**	09 38 14.1	+1.3
	5.5nm,0.8s,baz=90,slow=8.8,SNR=5.3						
ASAJ				LR	LR	09 49 55.5	
	comp=Z,52nm,21.5s,baz=146,slow=37						
YAK	**Yakutsk**	**30.90**	**311**	LR	LR	09 50 38.3	
	comp=Z,73nm,21.7s,baz=84,slow=36						
TIXI	**Tiksi**	**31.51**	**330**	PcP	**PcP**	09 41 27.0	-0.3
	3.6nm,0.5s,baz=141,slow=3.0,SNR=5.2						
TIXI				LR	LR	09 53 00.5	
	comp=Z,34nm,18.1s,baz=100,slow=40						
KLR	**Kul'dur**	**33.20**	**287**	P	**P**	09 38 49.6	-1.1
	2.1nm,0.5s,baz=64,slow=7.4,SNR=6.8						
KLR				LR	LR	09 52 35.3	
	comp=Z,55nm,18.4s,baz=108,slow=37						
YKA	**Yellowknife Ar**	**33.48**	**47**	P	**P**	09 38 52.6	-0.4
	0.4nm,0.4s,baz=276,slow=8.8,SNR=16						
YKA				PcP	**PcP**	09 41 33.2	+0.4
	0.4nm,0.6s,baz=287,slow=3.3,SNR=9.2						
H11N2	**WAKE ISLAND Hy 34.75 210**			T	T	10 16 24.0	
	baz=20,slow=76,SNR=189						
H11N3	**WAKE ISLAND Hy 34.76 210**			T	T	10 16 24.7	
	baz=20,slow=76,SNR=212						
H11N1	**WAKE ISLAND Hy 34.77 210**			T	T	10 16 25.4	
	baz=20,slow=76,SNR=150						
USRK	**Ussuriysk Ar.**	**35.42**	**279**	P	**P**	09 39 09.4	-0.5
	2.7nm,0.7s,baz=62,slow=7.1,SNR=9.2						
USRK				LR	LR	09 54 38.8	
	comp=Z,64nm,18.7s,baz=25,slow=38						
H11S1	**WAKE ISLAND Hy 35.96 210**			T	T	10 18 22.4	
	baz=16,SNR=875						
MJAR	**Matsushiro Arr**	**35.97**	**264**	P	**P**	09 39 15.7	+0.9
	0.9nm,0.5s,baz=46,slow=10,SNR=4.1						
H11S2	**WAKE ISLAND Hy 35.98 210**			T	T	10 18 00.2	
	baz=16,slow=74,SNR=557						
H11S3	**WAKE ISLAND Hy 35.98 210**			T	T	10 17 47.3	
	baz=16,slow=74,SNR=220						
NEW	**Newport**	**36.75**	**72**	P	**P**	09 39 21.6	+0.2
	baz=298,SNR=5.3						
NEW	**Newport**	**36.75**	**72**	*e*P	**P**	09 39 21.9	+0.5
	3.2nm,0.6s						
MSO	**Missoula**	**39.33**	**72**	P	**P**	09 39 42.9	-0.3
	baz=300						
HLID	**Hailey**	**40.77**	**77**	P	**P**	09 39 55.3	0.0
	baz=303						
BOZ	**Bozeman (W)**	**41.32**	**72**	P	**P**	09 39 58.8	-0.8
	baz=302,SNR=5.8						
BOZ	**Bozeman (W)**	**41.32**	**72**	*e*P	P	09 39 56.1	-3.6
	2.8nm,0.5s						
NVAR	**Mina Array Bea**	**41.36**	**86**	P	**P**	09 40 01.1	+0.8
	0.2nm,0.5s,baz=297,slow=8.6,SNR=3.1						
KSRS	**Korea Array**	**41.81**	**273**	P	**P**	09 40 03.7	+0.2
	2.8nm,0.8s,baz=59,slow=8.6,SNR=9.3						
KSAR	**Wonju Array Be**	**41.84**	**273**	P	**P**	09 40 03.7	-0.1
H17A	**Grant Village**	**42.62**	**73**	P	**P**	09 40 10.5	0.0
	baz=304						
H17A	**Grant Village**	**42.62**	**73**	*e*P	**P**	09 40 12.3	+1.9
	2.4nm,0.5s						
PKM	**Mcpherson Peak**	**42.65**	**91**	P	**P**	09 40 10.3	-0.4
	baz=311						
RLMT	**Red Lodge**	**43.00**	**72**	P	**P**	09 40 13.4	-0.1
	baz=303,SNR=5.5						
RLMT	**Red Lodge**	**43.00**	**72**	*e*P	**P**	09 40 13.8	+0.3
	3.8nm,0.6s						
DUG	**Dugway, Tooele**	**43.69**	**80**	P	**P**	09 40 19.4	+0.4
	baz=307						
BW06	**Boulder Array**	**44.15**	**75**	P	**P**	09 40 22.7	-0.1
	baz=305,SNR=10						
BW06	**Boulder Array**	**44.15**	**75**	*e*P	**P**	09 40 22.9	0.0
	4.6nm,0.6s						
PDAR	**Pinedale Array**	**44.15**	**75**	P	**P**	09 40 23.0	+0.2
	5.1nm,0.6s,baz=301,slow=4.1,SNR=74						
A25A	**Svangstu Ranch**	**44.48**	**64**	P	**P**	09 40 24.9	-0.2
	baz=302,SNR=6.3						
A26A	**Wade Farm, Ken**	**45.10**	**63**	P	**P**	09 40 30.0	-0.1
	baz=302						
D25A	**Fairfield**	**45.34**	**66**	P	**P**	09 40 31.8	-0.1
	baz=304						
A27A	**Ledoux Ranch,**	**45.52**	**63**	P	**P**	09 40 33.0	-0.3
	baz=303						
PFO	**Pinyon Flats O**	**45.58**	**90**	P	**P**	09 40 34.2	0.0
	baz=312						
E25A	**Miller Ranch,**	**45.65**	**67**	P	**P**	09 40 34.2	-0.2
	baz=304						
C26A	**Wahner Farm, P**	**45.66**	**64**	P	**P**	09 40 34.2	-0.2
	baz=303						
K22A	**Casper**	**46.04**	**73**	P	**P**	09 40 37.1	-0.6
	baz=306						
C27A	**Sayler Ranch,**	**46.05**	**64**	P	**P**	09 40 37.4	-0.2
	baz=304						
A28A	**Rude Farm, Bot**	**46.08**	**62**	P	**P**	09 40 37.4	-0.3
	baz=303						
E26A	**Carlson Angus**	**46.20**	**66**	P	**P**	09 40 38.7	-0.1
	baz=304						
B28A	**Dugan Ranch, T**	**46.28**	**63**	P	**P**	09 40 38.8	-0.5
	baz=304						
SWSC	**Sam W. Stewart**	**46.44**	**90**	P	**P**	09 40 40.7	0.0
	baz=312						
O20A	**White River Ci**	**46.51**	**77**	P	**P**	09 40 41.3	-0.1
	baz=308,SNR=6.1						
O20A	**White River Ci**	**46.51**	**77**	*e*P	**P**	09 40 41.4	-0.1
	3.3nm,0.4s						
A29A	**Manning Farm,**	**46.64**	**62**	P	**P**	09 40 41.7	-0.4
	baz=304						
E27A	**Carson**	**46.74**	**66**	P	**P**	09 40 42.4	-0.6
	baz=305						
G26A	**Maurine**	**46.80**	**68**	P	**P**	09 40 43.1	-0.4
	baz=305						
I25A	**Rochford**	**46.88**	**70**	P	**P**	09 40 42.9	-1.4
	baz=306						
MDND	**Maddock**	**47.04**	**63**	P	**P**	09 40 44.0	-1.3
	baz=304						
H26A	**Fairpoint**	**47.09**	**68**	P	**P**	09 40 45.4	-0.4
	baz=306						
G27A	**Dupree**	**47.13**	**67**	P	**P**	09 40 45.5	-0.6
	baz=305						
A30A	**Hoffart Farm,**	**47.14**	**61**	P	**P**	09 40 45.3	-0.8
	baz=304						
E28A	**Huff**	**47.15**	**65**	P	**P**	09 40 45.6	-0.6
	baz=305						
I26A	**New Underwood**	**47.38**	**69**	P	**P**	09 40 47.4	-0.6
	baz=306						
B30A	**Myrvik Farm, E**	**47.40**	**62**	P	**P**	09 40 47.7	-0.4
	baz=304,SNR=7.2						
N23A	**Red Feather La**	**47.44**	**74**	P	**P**	09 40 48.3	-0.5
	baz=308						
ULM	**Lac du Bonnet**	**47.72**	**59**	P	**P**	09 40 49.8	-0.7
	1.8nm,0.5s,baz=328,slow=9.5,SNR=3.2						
C30A	**Mose, Pekin**	**47.74**	**63**	P	**P**	09 40 50.1	-0.7
	baz=305						
B31A	**Greenbush Farm**	**47.79**	**61**	P	**P**	09 40 50.5	-0.5
	baz=305						
I27A	**Quinn**	**47.83**	**69**	P	**P**	09 40 51.4	-0.1
	baz=306						
SMCO	**Snowmass**	**47.87**	**77**	*e*P	**P**	09 40 52.2	-0.1
	1.1nm,0.6s						
**D

C35A	Jirik Farms, M baz=307	50.21	60	P		P	09 41 08.5	-1.1
H32A	Carlson Farm, baz=308	50.22	66	P		P	09 41 08.9	-0.8
SPITS	Spitsbergen Ar 3.9nm,0.8s,baz=54,slow=8.4,SNR=7.2	50.27	357	P		P	09 41 08.7	-1.0
H33A	Prehn Over Nor baz=308	50.51	65	P		P	09 41 11.0	-0.9
D35A	Remer baz=307	50.54	61	P		P	09 41 11.4	-0.8
KSCO	Kaye Shedlock' baz=310	50.60	74	P		P	09 41 12.2	-0.7
E35A	Pequot Lakes baz=307,SNR=8.7	50.67	62	P		P	09 41 12.3	-0.8
J32A	Parkston baz=308	50.68	67	P		P	09 41 12.2	-1.0
T25A	Trinidad baz=310,SNR=5.3	50.73	77	P		P	09 41 13.9	0.0
C36A	Pine Crest Far baz=307	50.79	60	P		P	09 41 12.9	-1.1
D36A	Goodland baz=307	50.97	60	P		P	09 41 14.4	-0.9
F35A	Swanville baz=308	51.00	63	P		P	09 41 14.6	-1.0
ECSD	EROS Data Cent baz=308	51.16	66	P		P	09 41 16.0	-0.8
C37A	Embarrass baz=307	51.16	59	P		P	09 41 16.0	-0.8
M31A	Lambtecht Ranc baz=309	51.29	70	P		P	09 41 16.7	-1.2
E36A	McGregor baz=308	51.32	61	P		P	09 41 17.1	-0.9
H35A	Sunnyside Ranc baz=308	51.57	64	P		P	09 41 18.6	-1.2
F36A	Milaca baz=308	51.58	62	P		P	09 41 18.9	-1.0
G36A	St. Michael baz=308	51.84	63	P		P	09 41 21.2	-0.6
K34A	Le Mars baz=309	52.11	67	P		P	09 41 23.5	-0.4
H36A	Jessenland, He baz=309	52.15	63	P		P	09 41 23.9	-0.2
SPMN	Marine on St. baz=309	52.37	62	P		P	09 41 25.2	-0.6
CBKS	Cedar Bluff baz=310	52.46	73	P		P	09 41 25.7	-0.9
P32A	Huiting Farm, baz=310	52.61	71	P		P	09 41 27.2	-0.5
H37A	Dierke Farm, C baz=309	52.71	63	P		P	09 41 27.8	-0.5
I37A	Lemond, Waseca baz=309	52.80	64	P		P	09 41 28.7	-0.3
O33A	Hebron baz=310	52.91	70	P		P	09 41 29.3	-0.6
Q32A	Meitler Ranch, baz=311	53.04	72	P		P	09 41 30.7	-0.1
J37A	Redenius Farm, baz=310	53.16	65	P		P	09 41 30.8	-0.9
R32A	Long Quarter, baz=311	53.32	72	P		P	09 41 32.3	-0.6
I38A	Scanlan Farm, baz=310	53.38	63	P		P	09 41 32.9	-0.4
K37A	Belmond baz=310	53.46	65	P		P	09 41 33.2	-0.6
Q33A	Connelly Farm, baz=311	53.47	71	P		P	09 41 33.0	-1.0
N35A	Tabor baz=310	53.54	68	P		P	09 41 33.5	-1.0
S32A	Newby Ranch, P baz=311	53.66	73	P		P	09 41 34.8	-0.6
L37A	Phoenix Point, baz=310	53.80	66	P		P	09 41 35.8	-0.6
MSTX	Muleshoe baz=313	53.82	79	P		P	09 41 36.6	-0.2
M37A	Trindle Farm, baz=310	54.10	67	P		P	09 41 38.2	-0.4
L38A	Oak Wood Farm, baz=310	54.24	65	P		P	09 41 39.1	-0.5
N37A	Lee Faris, Mou baz=311	54.43	67	P		P	09 41 40.6	-0.3
M38A	Pleasantville baz=311	54.58	66	P		P	09 41 41.7	-0.3
O37A	Wolven Farm, M baz=311	54.85	68	P		P	09 41 43.8	-0.2
N38A	Joes South For baz=311	54.97	67	P		P	09 41 43.6	-1.2
U33A	Lingo Farm, Me baz=312	54.99	74	P		P	09 41 43.4	-1.7
P37A	Lathrop baz=311	55.12	68	P		P	09 41 44.8	-1.2
T34A	McClaskey Farm baz=312	55.15	73	P		P	09 41 44.7	-1.6
W32A	Sentinel baz=313	55.19	76	P		P	09 41 46.3	-0.3
S35A	Otter Creek Ra baz=312	55.23	71	P		P	09 41 46.2	-0.6
O38A	Galt baz=311	55.27	67	P		P	09 41 46.5	-0.6
R36A	Gordon, Harris baz=312	55.28	70	P		P	09 41 46.2	-0.9
N39A	Derby Farms, D baz=311	55.33	66	P		P	09 41 46.9	-0.6
ZALV	Zalesovo Beam comp=Z,49nm,20.0s,baz=70,slow=38	55.42	315	LR		LR	10 06 49.6	
P38A	Dawn baz=312	55.57	68	P		P	09 41 48.9	-0.3
S36A	Lake Cedric, C baz=312	55.63	71	P		P	09 41 48.6	-1.1
W33A	Caddo, Fort Co baz=313	55.64	75	P		P	09 41 49.4	-0.4
X32A	Elmer baz=313	55.64	76	P		P	09 41 49.3	-0.5
V34A	Guthrie baz=312	55.75	74	P		P	09 41 49.7	-0.9
T36A	Boggs Farm, Ca baz=312	55.90	72	P		P	09 41 50.7	-0.9
X33A	Lawton baz=313	56.04	76	P		P	09 41 51.7	-0.9
S37A	Fort Scott baz=312	56.05	70	P		P	09 41 51.5	-1.2
P39A	Salisbury baz=312	56.11	68	P		P	09 41 52.1	-0.9
O40A	La Belle baz=312	56.19	66	P		P	09 41 52.9	-0.7
V35A	Meyer Ranch, C baz=313	56.21	74	P		P	09 41 52.8	-1.0
Q39A	Willow Grove F baz=312	56.27	68	P		P	09 41 53.1	-1.2
T37A	Cheneyville 18 baz=312	56.43	71	P		P	09 41 54.2	-1.2
TXAR	Lajitas Array 0.3nm,0.5s,baz=307,slow=6.0,SNR=8.6	56.46	84	P		P	09 41 55.4	-0.5
TXAR	comp=Z,28nm,18.4s,baz=0.0,slow=35			LR		LR	10 05 27.5	
P40A	Paris baz=312,SNR=6.9	56.48	67	P		P	09 41 54.5	-1.2
W35A	Tecumseh baz=313	56.60	74	P		P	09 41 56.3	-0.3
S38A	Stockton baz=312	56.68	70	P		P	09 41 56.1	-1.0
Z33A	Whitaker Ranch baz=314	56.73	77	P		P	09 41 57.0	-0.6
U37A	Salina baz=313	56.80	72	P		P	09 41 57.1	-0.9
Q40A	Laux Farm, Aux baz=312	56.83	68	P		P	09 41 57.1	-1.1
T38A	Diamond baz=313	56.86	71	P		P	09 41 57.0	-1.4
Y34A	Reagan Ranch, baz=313	56.88	76	P		P	09 41 57.9	-0.7
S39A	Bolivar baz=313	56.98	70	P		P	09 41 59.0	-0.3
W36A	Wetumka baz=313	57.00	74	P		P	09 41 58.8	-0.6
X35A	Drake baz=313	57.05	75	P		P	09 41 59.3	-0.5
133A	Hamilton Ranch baz=314	57.11	78	P		P	09 41 59.9	-0.4
V37A	Hulbert baz=313	57.14	72	P		P	09 41 59.8	-0.6
Z34A	Collier Ranch, baz=314	57.19	76	P		P	09 41 60.0	-0.9
U38A	Gravette baz=313	57.21	71	P		P	09 41 60.0	-0.9
X36A	Centrahoma baz=313	57.31	74	P		P	09 42 00.5	-1.1
Y35A	Marietta baz=314	57.35	75	P		P	09 42 01.5	-0.5
HDIL	Hopedale baz=312	57.36	65	P		P	09 42 00.4	-1.5
T39A	Clever baz=313	57.40	70	P		P	09 42 00.9	-1.4
W37B	Quinton baz=313	57.47	73	P		P	09 42 02.6	-0.1
S40A	Lebanon baz=313	57.52	69	P		P	09 42 02.5	-0.7
233A	Rising Star baz=314	57.53	78	P		P	09 42 02.4	-0.9
V38A	Canehill baz=313	57.59	72	P		P	09 42 03.1	-0.5
Z35A	Perchaven, San baz=314	57.62	76	P		P	09 42 02.7	-1.1
134A	White-Moore Ra baz=314	57.64	77	P		P	09 42 03.9	-0.1
Y36A	Durant baz=314	57.81	75	P		P	09 42 03.6	-1.6
T40A	Mansfield baz=313	57.82	69	P		P	09 42 03.7	-1.5
X37A	Clayton baz=314	57.88	74	P		P	09 42 05.1	-0.6
333A	Richland Sprin baz=314	57.96	79	P		P	09 42 05.8	-0.5
234A	Clairette baz=314	58.00	78	P		P	09 42 06.5	-0.1
JCT	Junction City baz=315	58.05	80	P		P	09 42 06.6	-0.3
V39A	Pettigrew baz=313	58.05	71	P		P	09 42 06.5	-0.5
W38A	Poteau baz=314	58.06	73	P		P	09 42 06.6	-0.4
X38A	Whitesboro baz=314	58.15	73	P		P	09 42 07.6	0.0
U40A	Yellville baz=313	58.16	70	P		P	09 42 06.6	-1.0
433A	Art baz=315	58.29	79	P		P	09 42 08.7	+0.1
334A	Lometa baz=314	58.41	78	P		P	09 42 09.1	-0.3
W39A	Magazine baz=314	58.41	72	P		P	09 42 08.9	-0.5
WHTX	Lake Whitney, baz=314	58.42	77	P		P	09 42 08.7	-0.8
SCHQ	Schefferville 1.9nm,0.7s,baz=355,slow=11,SNR=4.0	58.44	40	P		P	09 42 08.7	-0.6
V40A	Witts Springs baz=314	58.56	71	P		P	09 42 09.4	-1.0
X39A	Fountain Ranch baz=314	58.69	73	P		P	09 42 10.9	-0.4
SFIN	Lafayette baz=313	58.71	63	P		P	09 42 10.6	-0.8
434A	Burnet baz=315	58.75	79	P		P	09 42 11.9	+0.1
533A	Kerrville baz=315	58.80	80	P		P	09 42 11.3	-0.9
MIAR	Mount Ida baz=314	58.98	72	P		P	09 42 12.7	-0.6
534A	Blanco baz=315	59.18	80	P		P	09 42 14.1	-0.7
W41A	Tony Mavity, V baz=314	59.34	71	P		P	09 42 15.7	-0.1
W41B	Gary Mavity, V baz=314	59.34	71	P		P	09 42 15.2	-0.6
832A	Faith Ranch, C baz=316	59.49	82	P		P	09 42 16.7	-0.2
MKAR	Makanchi Array 0.2nm,0.2s,baz=52,slow=6.3,SNR=4.8	61.57	310	P		P	09 42 28.9	-1.9
M54A	Oil Creek Stat baz=315	61.96	58	P		P	09 42 33.0	-0.5
N54A	Moraine State baz=315,SNR=6.6	62.18	58	P		P	09 42 34.6	-0.4
244A	Avery, Jackson baz=316	62.46	72	P		P	09 42 37.0	0.0
145A	Houston Renfro baz=316	62.51	72	P		P	09 42 37.3	0.0
146A	Union baz=316	63.00	71	P		P	09 42 40.3	-0.3
347A	Saraland baz=316	64.19	72	P		P	09 42 48.0	-0.5
N59A	State Game Lan baz=317	64.42	56	P		P	09 42 49.4	-0.5
KMSC	Kings Mountain baz=317	65.64	64	P		P	09 42 57.9	+0.1
AKTO	Aktyubinsk 0.9nm,0.4s,baz=353,slow=6.0,SNR=5.0	68.72	327	P		P	09 43 17.2	+0.1
CMAR	Chiang Mai Arr 2.4nm,0.9s,baz=24,slow=6.5,SNR=17	73.14	278	P		P	09 43 45.0	+0.6
KBZ	Khabaz comp=Z,34nm,20.0s,baz=40,slow=38	79.43	333	LR		LR	10 22 53.1	
WRA	Warramunga Arr 0.9nm,0.5s,baz=36,slow=6.2,SNR=11	83.73	227	P		P	09 44 42.2	-0.3
BRTR	Keskin Array B 0.7nm,0.7s,baz=53,slow=5.6,SNR=3.3	85.59	338	P		P	09 44 52.7	+0.7
BRTR	comp=Z,16nm,18.3s,baz=60,slow=40			LR		LR	10 29 03.7	
ASAR	Alice Springs 1.3nm,0.8s,baz=22,slow=5.8,SNR=17	87.17	225	P		P	09 44 59.8	+0.2
STKA	Stephens Creek 1.6nm,0.8s,baz=350,slow=9.0,SNR=3.9	91.35	216	P		P	09 45 19.4	+0.4
TORD	Torodi Ar. Bea 0.3nm,0.5s,baz=346,slow=2.0,SNR=4.9	115.46	3	PKP		PKPdf	09 50 54.7	-0.8
MAW	Mawson 2.2nm,0.5s,baz=124,slow=1.8,SNR=8.1	148.01	218	PKPbc		PKPbc	09 51 57.8	+0.4
BOSA	Boshof 3.6nm,0.5s,baz=8.8,slow=2.5,SNR=16	152.34	318	PKPbc		PKPbc	09 52 09.2	-0.1

*ISCJB **14** 09:34:56.1±1.0,8°.12N±0°.05×72°.14W±0°.04, h2km±9km, Error ellipse: s-maj=9.7km s-min=4.9km az=144.4*
*FUNV **14** 09:34:57.8, 8°.01N×72°.07W, h5km, MW3.1*
*RSNC **14** 09:34:58.4±1.0,8°.15N×72°.20W, h4km±11km, ML2.3*

ISC 14 09:34:55.9±1.2, 8°.08N±0°.05×72°.14W±0°.04, h6km±11km, n17, σ1s05/28, 1C, Venezuela

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
CAPV	Capacho	0.27	219	*i* P	Pb	09 35 03.2	-0.1
CAPV				*e*S	Sb	09 35 07.5	-0.8
GRMC	Gramalote, San	0.75	242	*i* P	Pg	09 35 09.7	-0.6
GRMC				*e*S	Sg	09 35 19.0	-1.1
GRMC				*i*		09 35 28.0	
	comp=Z,146nm,0.2s						
PAMC	Pamplona, Colo	0.92	217	*i* P	Pb	09 35 15.1	+0.6
PAMC				*i*		09 35 19.3	
	comp=Z,37nm,0.2s						
PAMC				*e*S	Sb	09 35 28.1	+0.9
VIGV	El Vigia	1.08	45	*e*P	Pb	09 35 17.0	0.0
VIGV				*e*S	Sn	09 35 32.5	-0.3
OCAC	Ocana	1.18	278	*i* P	Pg	09 35 18.2	-0.4
OCAC				*i*		09 35 36.6	
	comp=Z,104nm,0.2s						
SOCV	Socops	1.29	81	*e*P	Pb	09 35 20.6	+0.1
SOCV				*e*S	Sg	09 35 37.2	-0.1
GIRC	Giron, Santand	1.44	227	*e*P	Pg	09 35 24.2	+0.6
BTLC	Betulia, Santa	1.61	224	*e*P	Pg	09 35 27.1	+0.4
SDV	Santo Domingo	1.69	62	*e*P	Pb	09 35 27.9	+0.4
SDV				*e*S	Sg	09 35 50.4	0.0
VIRV	Villa del Rosa	2.42	354	*e*S	Sb	09 36 08.9	-1.1
QARV	Quebrada Arrib	2.65	37	*e*P	Pn	09 35 40.3	+1.1
QARV				*e*S	Sn	09 36 12.7	+1.1
CURV	Curarigua	2.89	48	*e*P	Pn	09 35 44.0	+1.5
CURV				*e*S	Sn	09 36 17.6	+0.1
SANV	Sanarito	2.94	61	*e*P	Pn	09 35 44.3	+1.1
DABV	Dabajuro	3.19	28	*e*P	Pn	09 35 47.4	+0.8
DABV				*e*S	Sn	09 36 25.4	+0.4
SIQV	Siquisique	3.44	42	*e*P	Pn	09 35 50.8	+0.7
BAUV	El Baul	4.14	78	*e*P	Pn	09 35 59.7	0.0
BAUV				*e*S	Sn	09 36 45.8	-2.7
TURV	Turiamo	4.86	61	*e*P	Pn	09 36 10.3	+0.8
TURV				*e*S	Sn	09 37 03.5	-2.5

*ISCJB **14** 09:35:36.5±0.6,31°.24N±0°.04×115°.63W±0°.04, h3km±8km, Error ellipse: s-maj=7.3km s-min=5.0km az=22.7*
*ECX **14** 09:35:37.5±0.6,31°.22N×115°.61W, h5km, MD2.8, ML3.0*
*MEX **14** 09:35:39.0±0.4,31°.17N×115°.57W, h10km±15km, MD3.6*

ISC 14 09:35:36.3±1.0,31°.28N±0°.04×115°.61W±0°.04, h8km±11km, n19, σ0s55/31, 4C-4D, Baja California

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
SPIG	San Pedro Mart	0.26	152	*e*P	Pg	09 35 41.5	0.0
SPIG				*e*S	Sg	09 35 44.9	-0.1
SPIG	San Pedro Mart	0.26	152	*i* P	Pg	09 35 41.9	+0.4
SPIG				*i* S	Sg	09 35 44.5	-0.5
SPX	San Pedro Mart	0.26	152⇓	*e*P	Pg	09 35 41.9	+0.4
SPX				*e*S	Sg	09 35 45.1	0.0
SPX				AML	AML	09 35 45.9	
	comp=E,2μm,0.2s						
SPX			⇑	*e*		09 35 45.9	
SPX			⇓	*e*		09 35 46.0	
SPX				AML	AML	09 35 46.0	
	comp=N,2μm,0.1s						
ECBX	El Chinero	0.51	67⇑	*e*P	Pb	09 35 47.1	-0.4
ECBX				*e*S	Sb	09 35 54.3	-0.8
ECBX			⇓	*e*		09 35 54.6	
ECBX				AML	AML	09 35 54.6	
	comp=E,941nm,0.2s						
ZAX	El Zacaton	0.62	293	*e*P	Pg	09 35 48.3	+0.1
ZAX				*e*S	Sb	09 35 57.5	-0.8
ZAX			⇑	*e*		09 35 58.7	
ZAX				AML	AML	09 35 58.7	
	comp=E,996nm,0.6s						
ECNX	Esteban Cantu	0.93	294	*e*P	Pg	09 35 54.2	+0.1
ECNX				*e*S	Sb	09 36 07.3	0.0
PBX	Punta Banda	1.06	296	*e*P	Pg	09 35 56.4	-0.3
PBX				*e*S	Sb	09 36 11.1	+0.1
CBX	Cerro Bola	1.37	319	*e*P	Pn	09 36 02.0	+0.2
CBX				*e*S	Sg	09 36 20.4	0.0
CBX			⇑	*e*		09 36 21.9	
CBX				AML	AML	09 36 21.9	
	comp=N,221nm,0.3s						
CBX	Cerro Bola	1.37	319	*e*P	Pb	09 36 02.1	-0.1
CBX				*i* S	Sb	09 36 19.8	-0.3
RMX	La Rumorosa	1.38	343	*e*P	Pg	09 36 02.7	-0.1
RMX				*e*S	Sg	09 36 21.3	+0.5
RMX			⇓	*e*		09 36 24.0	
RMX				AML	AML	09 36 24.0	
	comp=E,178nm,0.1s						
TJIG	Tijuana	1.47	322	*e*P	Pb	09 36 03.7	-0.2
TJIG	Tijuana	1.47	322	*e*P	Pb	09 36 03.7	-0.2
TJIG				*i* S	Sn	09 36 22.1	-0.5
SWSC	Sam W. Stewart baz=170	1.67	354	P	Pg	09 36 08.5	+0.1
MONP2	Monument Peak baz=152	1.76	337	P	Pb	09 36 09.0	+0.1
MONP2				S	Sg	09 36 32.4	-0.4
	baz=152						
109C	Camp Elliot, M baz=137	2.05	322	S	Sb	09 36 39.5	+0.1
BC3	Big Chuckawall baz=180	2.38	3	P	Pn	09 36 16.7	+1.0
PFO	Pinyon Flats O baz=160	2.44	343	Sb	Sg	09 36 53.5	-1.2
214A	Organ Pipe Nat baz=256	2.48	73	P	Pn	09 36 17.3	+0.3
MURC	Murrieta baz=146	2.68	330	Sb	Sb	09 36 59.2	+1.6

IDC 14 09:35:54.3±8.2, 17°.78S×175°.97W, h0km, mb3.3/3, mb1 3.6/3, mb1mx3.4/40, mbtmp3.3/3, Error ellipse: s-maj=361.0km s-min=37.2km az=142.0, Tonga Islands

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
WRA	Warramunga Arr 0.1nm,0.3s,baz=96,slow=7.3,SNR=5.3	46.94	259	P	P	09 44 27.4	+0.2
ASAR	Alice Springs 0.2nm,0.4s,baz=85,slow=8.6,SNR=6.1	47.06	254	P	P	09 44 27.7	-0.4
ILAR	Eielson Array 0.4nm,1.0s,baz=198,slow=5.7,SNR=3.0	85.26	12	P	P	09 48 32.5	0.0

IDC 14 09:37:26.7±3.1, 55°.63S×29°.53W, h0km, mb3.7/2, mb1 3.8/2, mb1mx3.6/20, mbtmp3.7/2, Error ellipse: s-maj=113.8km s-min=48.5km az=173.0, South Sandwich Islands region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
LPAZ	La Paz 0.8nm,0.6s,baz=135,slow=7.1,SNR=6.5	49.06	308	P	P	09 46 16.0	-0.2
TORD	Torodi Ar. Bea 0.4nm,0.8s,baz=191,slow=7.5,SNR=2.8	73.36	32	P	P	09 49 00.2	0.0
INK	Inuvik 0.4nm,0.6s,baz=77,slow=2.9,SNR=3.5	144.64	321	PKP	PKPab	09 57 02.0	-0.2
ILAR	Eielson Array 0.7nm,0.7s,baz=129,slow=1.7,SNR=12	148.85	313	PKPbc	PKPbc	09 57 14.5	-0.2

*NIED **14** 09:45:00,38°.20N×143°.30E, h8km, Mw3.8 Best double couple: M₀5.74000×10¹⁴ NP1:φs186.00000°, δ36.00000°, λ-107.00000°. NP2:φs27.00000°, δ56.00000°, λ-78.00000°.*
*IDC **14** 09:45:33.3±0.6,38°.10N×143°.38E, h0km, mb3.9/17, mb1 4.0/22, mb1mx3.9/50, mbtmp3.9/22, ML3.4/4, Error ellipse: s-maj=17.7km s-min=13.5km az=113.0*
*ISCJB **14** 09:45:34.3±0.5, 38°.15N±0°.04×143°.37E±0°.05, h19km, mb3.8/19, Error ellipse: s-maj=6.3km s-min=4.8km az=143.6*
*JMA **14** 09:45:35.7±0.2, 38°.22N×143°.25E, h18km, M3.6*
*NEIC **14** 09:45:38.1±0.5, 38°.08N×143°.35E, h35km, mb4.3/2, Error ellipse: s-maj=11.3km s-min=7.6km az=111.0*

ISC 14 09:45:35.5±0.6, 38°.13N±0°.05×143°.44E±0°.07, h19km, n44, σ1s80/53, mb3.8/19, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JIO	Ouri	1.68	282	P	Pn	09 46 02.5	-1.3
JIO				S	Sn	09 46 21.1	-3.7
OFUJ	Ofunato	1.69	305	P	Pn	09 46 02.2	-1.7
JMK	Ichinoseki	1.93	296	P	Pn	09 46 06.0	-1.2
JMM	Marumori	2.11	264	P	Pn	09 46 08.8	-1.0
JOM	Ohasama	2.15	309	P	Pn	09 46 09.3	-1.0
JOM				*e*S	Sn	09 46 33.8	-2.7
JFK	Kawauchi	2.17	250	P	Pn	09 46 09.5	-1.2
JTH	Tanohata	2.19	326	P	Pn	09 46 09.6	-1.2
JOU	Okura	2.20	277	P	Pn	09 46 10.6	-0.4
JFT	Otama	2.53	257	P	Pn	09 46 16.0	+0.4
JFT				S	Sn	09 46 45.0	-1.0
JRG	Rokugo	2.54	301	P	Pn	09 46 14.9	-0.7
JYK	Kaneyama	2.54	289	P	Pn	09 46 15.4	-0.3
JYK				S	Sn	09 46 44.2	-2.0
JANG	Nango	2.70	327	P	Pn	09 46 17.8	0.0
JRY	Ryogami san	4.20	241	P	Pn	09 46 38.6	+0.1
JRY				S	Sn	09 47 25.0	-2.1
MJAR	Matsushiro Arr 2.5nm,0.3s,baz=78,slow=14,SNR=26	4.46	251	Pn	Pn	09 46 42.8	+0.7
MAJO	Matsushiro	4.46	251	*e*Pn	Pn	09 46 43.1	+1.0
MAT	Matsushiro	4.46	251	P	Pn	09 46 42.6	+0.5
MAT				S	Sn	09 47 35.2	+1.6
JCH	Churui	4.48	359	P	Pn	09 46 40.6	-1.8
JHJ2	Mitsune	5.81	212	Pn	Pn	09 47 00.4	-0.2
JHJ	Hachijo jima 2 6.0nm,0.3s,baz=149,slow=24,SNR=10	5.82	212	Pn	Pn	09 47 00.2	-0.5
JHJ				Sn	Sn	09 48 00.2	-6.7
	31nm,0.3s,baz=66,slow=21,SNR=8.9						
ASAJ	Asahikawa 1.0nm,0.3s,baz=215,slow=10,SNR=11	6.02	354	Pn	Pn	09 47 03.6	+0.2
ASAJ				Sn	Sn	09 48 06.4	-5.4
	0.5nm,0.3s,baz=81,slow=19,SNR=2.0						
USRK	Ussuriysk Ar. 0.2nm,0.3s,baz=112,slow=12,SNR=11	10.55	309	Pn	Pn	09 48 07.9	+2.3
CBIJ	Chichi jima	11.05	186	Pn	Pn	09 48 10.0	-2.5
CBIJ				Sn	Sn	09 50 05.8	-10
JCJ	Chichijima 5.2nm,0.3s,baz=2.2,slow=20,SNR=7.9	11.05	186	Pn	Pn	09 48 10.0	-2.5
JCJ				Sn	Sn	09 50 05.8	-10
	2.7nm,0.3s,baz=90,slow=20,SNR=3.0						
KLR	Kul'dur 0.1nm,0.3s,baz=140,slow=13,SNR=5.1	13.94	327	Pn	Pn	09 48 50.7	-1.2
SEY	Seymchan 2.8nm,0.7s,baz=199,slow=6.8,SNR=13	25.43	10	P	P	09 51 03.8	+2.1
SONM	Songino Array 1.2nm,0.6s,baz=94,slow=8.0,SNR=3.3	28.55	302	P	P	09 51 30.6	+0.6
ZALV	Zalesovo Beam 1.1nm,0.5s,baz=74,slow=11,SNR=4.5	42.38	312	P	P	09 53 28.9	+0.6
CMAR	Chiang Mai Arr 0.6nm,0.7s,baz=44,slow=6.3,SNR=5.8	43.33	256	P	P	09 53 37.1	+0.6
MKAR	Makanchi Array 0.6nm,0.5s,baz=88,slow=9.6,SNR=5.1	44.91	302	P	P	09 53 49.3	+0.4
KURK	Kurchatov 8.0nm,0.7s	46.54	308	*e*P	P	09 54 01.3	-0.2
KURK				P	P	09 54 02.4	+0.9
KURBB	Kurchatov Arra 3.8nm,0.7s,baz=82,slow=8.1,SNR=43	46.61	307	P	P	09 54 02.4	+0.3
ILAR	Eielson Array	47.70	33	P	P	09 54 11.8	+1.3

0.9nm,0.7s,baz=264,slow=6.2,SNR=12
BVAR Borovoye Array 51.03 312 P **P 09 54 36.6 +0.4**
0.8nm,0.7s,baz=54,slow=7.7,SNR=3.7
INK Inuvik 52.68 28 P **P 09 54 49.6 +1.6**
0.8nm,0.9s,baz=270,slow=4.0,SNR=2.7
WRA Warramunga Arr 58.39 190 P **P 09 55 30.2 +0.5**
3.5nm,0.7s,baz=7.7,slow=7.1,SNR=43
ABKAR Akbulak array 58.47 310 *eP* **P 09 55 29.8 -0.2**
0.6nm,0.6s
YKA Yellowknife Ar 62.05 31 P **P 09 55 54.7 +0.4**
0.2nm,0.7s,baz=300,slow=6.3,SNR=5.9
ASAR Alice Springs 62.12 190 P **P 09 55 56.0 +0.8**
0.9nm,0.8s,baz=11,slow=6.7,SNR=13
FINES FINESS Array B 68.59 333 P **P 09 56 36.8 +0.1**
0.8nm,0.7s,baz=48,slow=2.8,SNR=5.3
NVAR Mina Array Bea 73.04 54 P **P 09 57 05.4 +0.9**
0.3nm,0.7s,baz=299,slow=6.1,SNR=3.7
NB2 NORSAR Subarra 73.79 338 P **P 09 57 07.5 -0.7**
comp=Z,2.7nm,0.9s,baz=41,slow=6.2
NOA NORSAR Array B 73.79 338 P **P 09 57 08.9 +0.6**
comp=Z,1.8nm,0.8s,baz=39,slow=5.7,SNR=5.1
AKASG Malin Array Be 74.41 323 P **P 09 57 12.6 +0.7**
comp=Z,0.2nm,0.3s,baz=44,slow=5.4,SNR=4.7
PDAR Pinedale Array 75.75 47 P **P 09 57 22.0 +1.9**
comp=Z,0.1nm,0.5s,baz=199,slow=1.9,SNR=3.1

ISCJB ***14*** *09:53:59.3±1.3, 39°13'N±0'.04×142°45'E±0'.08, h22km±7km, mb3.5/4, Error ellipse: s-maj=10.8km s-min=5.6km az=15.2*

JMA ***14*** *09:54:00.3±0.1, 39°15'N×142°40'E, h26km±2km, M3.8*

JMA Felt I J1.

NIED ***14*** *09:54:00, 39°20'N×142°40'E, h8km, Mw3.7 Best double couple: M₀3.96000×10¹⁴ NP1:φ=232.00000°, δ33.00000°, λ=-122.00000°. NP2:φ=88.00000°, δ62.00000°, λ=-71.00000°.*

IDC ***14*** *09:54:05.5±3.1, 39°09'N×142°36'E, h67km±29km, mb3.2/4, mb1 3.4/6, mb1mx3.1/50, mbtmp3.4/6, ML3.1/2, Error ellipse: s-maj=32.0km s-min=20.7km az=105.0*

ISC 14 09:53:59.3±2.1, 39°13'N±0'.04×142°41'E±0'.08, h17km±11km, n19, σ=0.963/27, mb3.7/4, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**0.58**	**265**	P	**Pb**	**09 54 11.9**	**+0.9**
OFUJ				S	**Sb**	**09 54 19.7**	**+0.7**
MIYJ	**Miyakonagasawa**	**0.64**	**314**	P	**Pb**	**09 54 12.3**	**+0.2**
MIYJ				S	**Sg**	**09 54 20.4**	**-0.1**
JOM	**Ohasama**	**0.93**	**292**	P	**Pg**	**09 54 17.4**	**0.0**
JOM				S	**Sb**	**09 54 29.4**	**+0.2**
JMK	**Ichinoseki**	**0.94**	**260**	P	**Pb**	**09 54 17.5**	**+0.2**
JMK				S	**Sg**	**09 54 30.2**	**+0.1**
JIO	**Ouri**	**1.07**	**231**	P	**Pb**	**09 54 18.9**	**-0.5**
JIO				S	**Sb**	**09 54 31.8**	**-1.3**
JKZ	**Kuzumaki**	**1.20**	**316**	P	**Pn**	**09 54 21.2**	**-0.2**
JKZ				S	**Sb**	**09 54 35.8**	**-1.0**
JRG	**Rokugo**	**1.41**	**281**	P	**Pb**	**09 54 25.2**	**+0.1**
JANG	**Nango**	**1.42**	**331**	P	**Pn**	**09 54 24.3**	**-0.1**
JANG				S	**Sn**	**09 54 41.7**	**-1.1**
JOU	**Okura**	**1.56**	**241**	P	**Pb**	**09 54 27.4**	**-0.5**
JOU				S	**Sn**	**09 54 46.6**	**+0.3**
JYK	**Kaneyama**	**1.61**	**263**	P	**Pb**	**09 54 28.0**	**-0.7**
JMM	**Marumori**	**1.79**	**226**	P	**Pn**	**09 54 29.9**	**+0.4**
JMM				S	**Sn**	**09 54 51.6**	**-0.2**
JYS	**Shirataka**	**2.05**	**244**	P	**Pn**	**09 54 33.8**	**+0.8**
JYS				S	**Sb**	**09 55 00.5**	**-0.8**
JFK	**Kawauchi**	**2.14**	**215**	P	**Pn**	**09 54 34.4**	**+0.1**
MJAR	**Matsushiro Arr**	**4.21**	**233**	P	Pn	09 55 07.2	+4.4
	0.9nm,0.3s,baz=41,slow=11,SNR=17						
ASAJ	**Asahikawa**	**4.99**	**2**	P	Pn	09 55 17.2	+3.9
	0.7nm,0.3s,baz=267,slow=13,SNR=4.8						
MKAR	**Makanchi Array**	**43.70**	**300**	P	**P**	**10 02 03.8**	**+0.4**
	0.2nm,0.3s,baz=83,slow=12,SNR=3.9						
KURBB	**Kurchatov Arra**	**45.36**	**307**	P	**P**	**10 02 16.4**	**-0.1**
	0.6nm,0.5s,baz=81,slow=8.3,SNR=6.1						
ILAR	**Eielson Array**	**47.31**	**33**	P	**P**	**10 02 32.8**	**+1.1**
	0.3nm,0.6s,baz=274,slow=5.3,SNR=3.9						
WRA	**Warramunga Arr**	**59.24**	**189**	P	**P**	**10 03 59.3**	**-0.5**
	0.5nm,0.6s,baz=6.4,slow=7.1,SNR=14						

NIED ***14*** *09:56:00, 38°40'N×141°80'E, h59km, Mw4.0 Best double couple: M₀1.15000×10¹⁵ NP1:φ=23.00000°, δ31.00000°, λ97.00000°. NP2:φ=195.00000°, δ59.00000°, λ86.00000°.*

ISCJB ***14*** *09:56:58.5±0.7, 38°37'N±0'.04×141°85'E±0'.08, h59km±5km, mb3.9/13, MS2.8/2, Error ellipse: s-maj=10.8km s-min=5.3km az=17.1*

JMA ***14*** *09:56:59.8±0.1, 38°39'N×141°76'E, h57km±1km, M4.1*

JMA Felt II J1.

IDC ***14*** *09:57:00.1±2.2, 38°35'N×141°80'E, h60km±21km, mb3.6/13, mb1 3.9/17, mb1mx3.7/50, mbtmp3.9/17, ML3.7/4, MS2.7/6, Ms1 2.7/6, ms1mx2.5/58, Error ellipse: s-maj=21.3km s-min=12.4km az=114.0*

ISC 14 09:56:59.1±1.2, 38°36'N±0'.04×141°88'E±0'.09, h49km±11km, n39, σ=1.902/39, mb3.9/13, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**0.43**	**283**	P	**Pn**	**09 57 09.9**	**+0.5**
JIO				S	**Sn**	**09 57 16.9**	**+0.1**
OFUJ	**Ofunato**	**0.74**	**347**	P	**Pn**	**09 57 13.7**	**+0.4**
OFUJ				S	**Sn**	**09 57 23.7**	**+0.1**
JMK	**Ichinoseki**	**0.79**	**319**	P	**Pn**	**09 57 14.1**	**+0.2**
JMK				S	**Sn**	**09 57 24.3**	**-0.4**
JOU	**Okura**	**0.95**	**271**	P	**Pn**	**09 57 16.0**	**-0.2**
JOU				S	**Sn**	**09 57 28.0**	**-0.8**
JMM	**Marumori**	**0.99**	**240**	P	**Pn**	**09 57 16.5**	**-0.1**
JMM				S	**Sn**	**09 57 28.7**	**-0.8**
JOM	**Ohasama**	**1.20**	**338**	P	**Pn**	**09 57 19.8**	**+0.3**
JOM				S	**Sn**	**09 57 34.6**	**-0.2**
JFK	**Kawauchi**	**1.27**	**219**	P	**Pn**	**09 57 20.9**	**+0.4**
JFK				S	**Sn**	**09 57 36.7**	**+0.3**
JYK	**Kaneyama**	**1.31**	**296**	P	**Pn**	**09 57 20.9**	**-0.1**
JYK				S	**Sn**	**09 57 36.6**	**-0.8**
JRG	**Rokugo**	**1.42**	**317**	P	**Pn**	**09 57 22.6**	**+0.1**
JRG				S	**Sn**	**09 57 39.6**	**-0.4**
MJAR	**Matsushiro Arr**	**3.44**	**239**	P	**Pn**	**09 57 52.0**	**+1.9**
	6.3nm,0.3s,baz=36,slow=13,SNR=45						
MJAR				LR	LR	09 59 27.6	
	comp=Z,148nm,20.5s,baz=40,slow=44						
MAT	**Matsushiro**	**3.44**	**239**	P	**Pn**	**09 57 51.5**	**+1.3**
MAT				*eS*	**Sn**	**09 58 33.6**	**+4.0**
JHJ	**Hachijo jima 2**	**5.50**	**199**	P	**Pn**	**09 58 18.4**	**-0.1**
	8.9nm,0.3s,baz=319,slow=23,SNR=7.3						
JHJ				S	**Sn**	**09 59 18.1**	**-2.2**
	13nm,0.3s,baz=55,slow=19,SNR=4.7						
ASAJ	**Asahikawa**	**5.78**	**5**	P	**Pn**	**09 58 21.7**	**-0.5**
	3.2nm,0.3s,baz=224,slow=9.2,SNR=21						
ASAJ				LR	LR	10 01 18.3	
	comp=Z,20nm,18.2s,baz=148,slow=45						
USRK	**Ussuriysk Ar.**	**9.45**	**311**	P	**Pn**	**09 59 13.3**	**+0.7**
	1.5nm,0.3s,baz=126,slow=14,SNR=28						
JNU	**Nakatsue**	**10.35**	**243**	LR	LR	10 03 38.1	
	comp=Z,86nm,19.5s,baz=238,slow=39						
KSRS	**Korea Array**	**11.06**	**270**	P	Pn	09 59 38.0	+3.4
	0.2nm,0.3s,baz=94,slow=14,SNR=4.4						
KLR	**Kul'dur**	**13.09**	**329**	P	Pn	10 00 06.2	+4.1
	0.1nm,0.3s,baz=128,slow=11,SNR=4.2						
KLR				LR	LR	10 04 01.5	
	comp=Z,27nm,21.4s,baz=132,slow=32						
MA2	**Magadan**	**21.98**	**12**	P	**P**	**10 01 50.3**	**+1.7**
	4.6nm,0.8s,baz=226,slow=7.6,SNR=3.9						
GUMO	**Guam**	**74.81**	**173**	LR	LR	10 15 42.3	
	comp=Z,9.2nm,19.2s,baz=92,slow=45						
SEY	**Seymchan**	**25.42**	**11**	P	**P**	**10 02 21.9**	**+0.1**
	1.5nm,0.8s,baz=207,slow=3.3,SNR=5.5						
H11N2	**WAKE ISLAND Hy 28.54 124**			T	T	10 33 06.4	
	baz=316,slow=75,SNR=88						
H11N1	**WAKE ISLAND Hy 28.55 124**			T	T	10 33 07.1	
	baz=316,slow=75,SNR=114						
H11N3	**WAKE ISLAND Hy 28.56 124**			T	T	10 33 07.8	
	baz=316,slow=75,SNR=93						
H11S1	**WAKE ISLAND Hy 29.30 126**			T	T	10 34 04.6	
	baz=318,slow=76,SNR=139						
H11S3	**WAKE ISLAND Hy 29.30 126**			T	T	10 34 04.8	
	baz=318,slow=76,SNR=155						
H11S2	**WAKE ISLAND Hy 29.32 126**			T	T	10 34 07.6	
	baz=318,slow=76,SNR=104						
ZALV	**Zalesovo Beam 41.31 311**			P	**P**	**10 04 38.6**	**-0.9**
	0.9nm,0.3s,baz=99,slow=9.2,SNR=4.4						
CMAR	**Chiang Mai Arr 42.20 254**			P	**P**	**10 04 47.0**	**-0.2**
	0.3nm,0.5s,baz=42,slow=9.8,SNR=4.0						
MKAR	**Makanchi Array 43.74 301**			P	**P**	**10 04 58.4**	**-1.1**
	1.7nm,0.7s,baz=87,slow=9.7,SNR=18						
ILAR	**Eielson Array 48.18 33**			P	**P**	**10 05 34.4**	**+0.2**
	0.7nm,0.7s,baz=266,slow=6.9,SNR=8.4						
INK	**Inuvik 53.04 28**			P	**P**	**10 06 11.1**	**+0.4**
	1.3nm,0.8s,baz=288,slow=5.7,SNR=6.5						
WRA	**Warramunga Arr 58.42 188**			P	**P**	**10 06 48.9**	**-0.8**
	2.6nm,0.7s,baz=5.8,slow=7.1,SNR=34						
ASAR	**Alice Springs 62.15 188**			P	**P**	**10 07 15.0**	**-0.2**
	1.2nm,0.7s,baz=7.1,slow=5.6,SNR=16						
YKA	**Yellowknife Ar 62.48 31**			P	**P**	**10 07 16.8**	**-0.1**
	0.5nm,0.6s,baz=302,slow=6.6,SNR=11						
HFS	**Hagfors 73.03 336**			LR	LR	10 46 08.4	
	comp=Z,17nm,18.1s,baz=340,slow=40						
NVAR	**Mina Array Bea 73.90 54**			P	**P**	**10 08 28.8**	**-0.4**
	0.2nm,0.3s,baz=286,slow=6.5,SNR=4.5						
PDAR	**Pinedale Array 76.48 46**			P	**P**	**10 08 44.3**	**+0.3**
	0.8nm,0.6s,baz=263,slow=1.6,SNR=13						
TXAR	**Lajitas Array 89.02 53**			P	**P**	**10 09 49.5**	**+0.5**
	0.8nm,0.6s,baz=301,slow=3.0,SNR=14						
LPAZ	**La Paz 145.70 58**			PKPbc	**PKPbc**	**10 16 33.5**	**-0.1**
	2.1nm,0.6s,baz=356,slow=4.6,SNR=8.6						

IDC 14 09:59:46.5±27.0, 22°53S×173°31W, h0km, mb4.1/4, mb1 4.2/4, mb1mx3.8/31, mbtmp4.1/4, Error ellipse: s-maj=501.6km s-min=153.9km az=77.0, Tonga Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CTA	**Charters Tower**	**37.67**	**266**	P	P	10 07 04.5	+0.7
	3.4nm,0.4s,baz=94,slow=12,SNR=10						
STKA	**Stephens Creek**	**40.93**	**247**	P	P	10 07 29.9	-1.0
	1.5nm,0.8s,baz=95,slow=11,SNR=4.4						
ASAR	**Alice Springs**	**48.33**	**258**	P	P	10 08 29.9	-0.3
	0.5nm,0.4s,baz=96,slow=7.3,SNR=12						
WRA	**Warramunga Arr**	**48.66**	**263**	P	P	10 08 32.8	0.0
	1.3nm,0.3s,baz=98,slow=8.4,SNR=36						

IDC ***14*** *10:06:21.8±1.4, 14°87S×167°92E, h0km, mb4.1/5, mb1 4.3/6, mb1mx3.9/29, mbtmp4.0/6, ML3.7/1, MS3.1/2, Ms1 3.1/2, ms1mx2.8/33, Error ellipse: s-maj=53.5km s-min=26.0km az=132.0*

ISCJB ***14*** *10:06:25.4±1.1, 15°1S±0'.1×167°9E±0'.2, h36km, mb4.0/5, MS3.1/1, Error ellipse: s-maj=33.3km s-min=18.2km az=20.9*

ISC 14 10:06:27.1±1.1, 15°0S±0'.2×168°0E±0'.3, h36km, n8, σ=0.674/7, mb4.1/5, Vanuatu Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**7.19**	**191**	Pn	**Pn**	**10 08 09.8**	**0.0**
	1.2nm,0.3s,baz=118,slow=20,SNR=13						
HNR	**Honiara**	**9.57**	**304**	LR	LR	10 11 47.6	
	comp=Z,66nm,18.6s,baz=128,slow=34						
PMG	**Port Moresby**	**21.06**	**283**	LR	LR	10 18 23.5	
	comp=Z,77nm,19.1s,baz=52,slow=34						
WRA	**Warramunga Arr**	**32.40**	**256**	P	**P**	**10 12 53.1**	**-0.7**
	0.7nm,0.6s,baz=85,slow=8.9,SNR=9.0						
ASAR	**Alice Springs**	**33.20**	**251**	P	**P**	**10 13 00.6**	**-0.2**
	2.5nm,0.8s,baz=82,slow=8.7,SNR=22						
ASAR				PcP	**PcP**	**10 15 43.6**	**+0.6**
	0.2nm,0.8s,baz=98,slow=1.9,SNR=2.8						
ILAR	**Eielson Array**	**86.57**	**18**	P	**P**	**10 19 05.5**	**-0.7**
	1.0nm,0.8s,baz=239,slow=5.3,SNR=8.8						
YKA	**Yellowknife Ar**	**97.47**	**27**	P	**P**	**10 19 56.7**	**-0.1**
	0.3nm,0.7s,baz=251,slow=4.5,SNR=7.1						
MKAR	**Makanchi Array**	**97.84**	**316**	P	**P**	**10 19 59.9**	**+0.9**
	0.5nm,0.7s,baz=99,slow=7.8,SNR=4.0						

IDC ***14*** *10:11:16.2±12.0, 38°87N×143°86E, h0km, mb3.5/2, mb1 3.6/3, mb1mx3.3/42, mbtmp3.4/3, ML3.0/1, MS2.4/1, Ms1 2.4/1, ms1mx2.1/39, Error ellipse: s-maj=270.8km s-min=59.1km az=5.0*

ISCJB ***14*** *10:11:20.1±1.2, 38°56N±0'.10×143°5E±0'.1, h20km, mb3.6/2, Error ellipse: s-maj=15.5km s-min=11.0km az=37.0*

JMA ***14*** *10:11:20.2±0.5, 38°69N×143°27E, h0km, M3.4*

ISC 14 10:11:21.1±1.7, 38°8N±0'.1×143°4E±0'.1, h20km, n10, σ=0.993/12, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**1.38**	**283**	P	**Pn**	**10 11 45.3**	**+0.1**
OFUJ				S	**Sb**	**10 12 03.2**	**-0.2**
JIO	**Ouri**	**1.64**	**259**	P	**Pn**	**10 11 48.5**	**-0.2**
JIO				S	**Sn**	**10 12 09.4**	**+0.2**
JTH	**Tanohata**	**1.66**	**315**	P	**Pb**	**10 11 51.8**	**+0.8**
JMK	**Ichinoseki**	**1.71**	**276**	P	**Pn**	**10 11 50.4**	**+0.7**
JOM	**Ohasama**	**1.77**	**294**	P	**Pn**	**10 11 51.1**	**+0.4**
JANG	**Nango**	**2.15**	**318**	P	**Pb**	**10 11 59.3**	**-0.2**
JRG	**Rokugo**	**2.23**	**287**	P	**Pb**	**10 11 59.8**	**-1.0**
MJAR	**Matsushiro Arr**	**4.68**	**243**	Pn	**Pn**	**10 12 32.7**	**+2.1**
	0.6nm,0.3s,baz=60,slow=13,SNR=3.4						
MJAR				LR	LR	10 14 45.5	
	comp=Z,40nm,18.2s,baz=150,slow=42						
WRA	**Warramunga Arr**	**59.03**	**190**	P	**P**	**10 21 18.7**	**-0.9**
	0.7nm,0.7s,baz=8.4,slow=7.1,SNR=10						
ASAR	**Alice Springs**	**62.75**	**190**	P	**P**	**10 21 44.4**	**-0.5**
	0.2nm,0.5s,baz=17,slow=6.8,SNR=3.6						

WEL 14 10:14:52.9±0.1, 40°30S×176°58E, h25km, ML3.6/35, 9C-9D, Error ellipse: s-maj=1.9km s-min=1.0km az=90.0, North Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PRHZ	**Porangahau**	**0.05**	**57**	↑P*	Pb	10 14 56.6	-0.6
PRHZ				S*	Sb	10 15 00.0	-0.1
ANWZ	**Angora Road**	**0.18**	**205**	↑P*	Pb	10 14 59.1	+0.8
ANWZ				S*	Sb	10 15 04.4	+2.4
WPHZ	**Waipukurau**	**0.25**	**336**	↓P*	Pb	10 14 58.2	-1.0
WPHZ				S*	Sb	10 15 02.6	-0.9
DVHZ	**Dannevirke**	**0.31**	**269**	↓P*	Pb	10 14 59.9	-0.2
PXZ	**Pawanui**	**0.34**	**40**	↓P*	Pb	10 15 00.4	-0.1
PXZ				S*	Sb	10 15 07.0	+1.3
PXZ				AML	AML	10 15 09.6	
PXZ				AML	AML	10 15 09.9	
PXZ				AML	AML	10 15 09.9	
BFZ	**Birch Farm**	**0.46**	**213**	P*	Pn	10 15 03.5	-0.4
BFZ				S*	Sn	10 15 12.4	+1.0
BFZ				AML	AML	10 15 14.6	
BFZ				AML	AML	10 15 14.6	
BFZ				AML	AML	10 15 15.5	
PNHZ	**Pukenui**	**0.48**	**323**	↑P*	Pb	10 15 02.0	-0.8
PNHZ				S*	Sb	10 15 08.7	-0.7
TSZ	**Takapari Road**	**0.53**	**296**	↑P*	Pb	10 15 02.9	-0.6
TSZ				AML	AML	10 15 11.9	
TSZ				AML	AML	10 15 13.3	
PRWZ	**Pori Road**	**0.53**	**241**	P*	Pn	10 15 04.7	-0.2
KAHZ	**Kahuranaki**	**0.55**	**25**	↓P*	Pb	10 15 04.1	+0.2
POWZ	**Post Office Ro**	**0.63**	**261**	↑P*	Pn	10 15 05.7	-0.5
KRHZ	**Kereru**	**0.67**	**346**	↑P*	Pb	10 15 05.4	-0.5
CPWZ	**Castlepoint**	**0.68**	**205**	P*	Pn	10 15 07.8	+0.9
TIWZ	**Tintock**	**0.71**	**227**	P*	Pn	10 15 07.5	0.0
TIWZ				AML	AML	10 15 22.0	
TIWZ				AML	AML	10 15 28.6	
CKHZ	**Cape Kidnapper**	**0.74**	**31**	P*	Pb	10 15 07.1	0.0
MRZ	**Mangatainoka R**	**0.84**	**244**	P*	Pb	10 15 09.0	+0.1
MCHZ	**McNeill Hill**	**0.85**	**6**	P*	Pb	10 15 09.0	-0.1
KWHZ	**Kaweka Forest**	**0.88**	**352**	PN	Pb	10 15 08.7	-0.8
BHHZ	**Black Hill Sta**	**0.90**	**334**	↑PN	Pb	10 15 09.3	-0.5
TMWZ	**Te Maipa**	**0.96**	**213**	↑P*	Pn	10 15 10.5	-0.3
OHWZ	**Ohakea**	**0.97**	**275**	P*	Pb	10 15 11.9	+1.0
HOWZ	**Holdsworth Sta**	**1.01**	**233**	↓P*	Pn	10 15 11.2	-0.3
ARHZ	**Aropaoanui**	**1.08**	**18**	↑PN	Pn	10 15 12.1	-0.3
MOVZ	**Moawhango**	**1.09**	**324**	PN	Pn	10 15 12.6	-0.1
MOVZ				AML	AML	10 15 27.6	
MOVZ				AML	AML	10 15 29.2	
BKZ	**Black Stump Fm**	**1.13**	**357**	↓PN	Pn	10 15 12.4	-0.8
BKZ				AML	AML	10 15 31.6	
BKZ				AML	AML	10 15 39.0	
MTW	**Mount Morrison**	**1.19**	**223**	P*	Pn	10 15 13.2	-0.7
MTW				AML	AML	10 15 37.6	
MTW				AML	AML	10 15 45.8	
OGWZ	**Otaki Gorge**	**1.19**	**244**	P*	Pn	10 15 13.9	-0.1
NMHZ	**Naumai**	**1.21**	**8**	PN	Pn	10 15 13.9	-0.3
WNVZ	**Wahianoa**	**1.23**	**322**	PN	Pb	10 15 15.1	-0.4
MTVZ	**Mangateitei**	**1.25**	**317**	PN	Pb	10 15 15.4	-0.4
MTVZ				AML	AML	10 15 34.6	
MTVZ				AML	AML	10 15 41.7	
TUVZ	**Tukino**	**1.25**	**325**	PN	Pb	10 15 15.5	-0.3
TUVZ				AML	AML	10 15 37.2	
TUVZ				AML	AML	10 15 39.4	
WHVZ	**Whangaehu Hut**	**1.27**	**323**	PN	Pb	10 15 15.8	-0.3
TRVZ	**Turoa**	**1.27**	**321**	PN	Pb	10 15 15.9	-0.4
TRVZ				AML	AML	10 15 34.8	
TRVZ				AML	AML	10 15 35.3	
TRWZ	**Traveller**	**1.29**	**211**	*eP**	Pn	10 15 14.3	-1.1
TRWZ				AML	AML	10 15 47.2	
TRWZ				AML	AML	10 15 52.8	
FWVZ	**Far West T-bar**	**1.30**	**322**	PN	Pb	10 15 16.4	-0.4
FWVZ				AML	AML	10 15 35.1	
FWVZ				AML	AML	10 15 35.8	
OTVZ	**Oturere**	**1.33**	**328**	PN	Pb	10 15 16.9	-0.4
OTVZ				AML	AML	10 15 37.4	
OTVZ				AML	AML	10 15 41.4	
WAZ	**Wanganui**	**1.34**	**293**	PN	Pb	10 15 16.6	-0.6
WAZ				AML	AML	10 15 40.0	
WAZ				AML	AML	10 15 40.4	
NGZ	**Ngauruhoe**	**1.35**	**326**	PN	Pb	10 15 17.2	-0.4
NGZ				AML	AML	10 15 40.3	
NGZ				AML	AML	10 15 46.9	
PKVZ	**Pokaka**	**1.38**	**316**	PN	Pb	10 15 17.7	-0.4
PKVZ				AML	AML	10 15 38.5	
PKVZ				AML	AML	10 15 43.5	
KIW	**Kapiti Island**	**1.39**	**245**	PN	Pn	10 15 16.5	-0.2
KIW				AML	AML	10 15 39.3	
KIW				AML	AML	10 15 40.7	
PAWZ	**Paruwai Farm**	**1.39**	**218**	PN	Pn	10 15 18.8	-0.9
PAWZ				AML	AML	10 15 49.3	
PAWZ				AML	AML	10 15 55.3	
KRVZ	**Karewarewa**	**1.40**	**329**	PN	Pb	10 15 17.9	-0.5
KRVZ				AML	AML	10 15 42.4	
KRVZ				AML	AML	10 15 44.2	
WTVZ	**West Tongariro**	**1.40**	**327**	↓PN	Pb	10 15 18.1	-0.3
WTVZ				AML	AML	10 15 44.4	
WTVZ				AML	AML	10 15 46.3	
CAW	**Cannon Point**	**1.41**	**234**	PN	Pn	10 15 16.3	-0.6
CAW				AML	AML	10 15 42.4	
CAW				AML	AML	10 15 45.5	
RITZ	**Rihia Road**	**1.43**	**337**	PN	Pb	10 15 18.5	-0.3
RITZ				AML	AML	10 15 45.4	
RITZ				AML	AML	10 15 50.4	
RAHZ	**Arahi**	**1.43**	**16**	PN	Pn	10 15 16.6	-0.7
MRHZ	**Matea Rd**	**1.47**	**355**	PN	Pn	10 15 17.6	-0.2
KATZ	**Kakaramea**	**1.48**	**332**	AML	AML	10 15 49.1	
MSWZ	**Moikau Station**	**1.51**	**222**	PN	Pn	10 15 17.0	-1.3
MSWZ				AML	AML	10 15 52.0	
MSWZ				AML	AML	10 15 54.5	
TWVZ	**Taurewa**	**1.51**	**324**	PN	Pb	10 15 19.4	-0.8
TWVZ				AML	AML	10 15 42.8	
TWVZ				AML	AML	10 15 43.9	
KNZ	**Kokohu**	**1.53**	**34**	↓PN	Pn	10 15 17.2	-1.3
MHGZ	**Mahia Peninsul**	**1.53**	**42**	PN	Pn	10 15 17.2	-1.4
RATZ	**Rangitukua**	**1.56**	**336**	↓PN	Pb	10 15 21.0	-0.1
RATZ				AML	AML	10 15 49.4	
RATZ				AML	AML	10 15 55.4	
PLWZ	**Palliser**	**1.62**	**218**	PN	Pn	10 15 18.6	-1.3
SNGZ	**Shannon Statio**	**1.62**	**22**	PN	Pn	10 15 18.8	-1.1
WEL	**Wellington**	**1.69**	**234**	AML	AML	10 15 42.6	
WEL				AML	AML	10 15 51.4	
VRZ	**Vera Road**	**1.83**	**309**	AML	AML	10 15 54.6	
VRZ				AML	AML	10 15 58.4	
TCW	**Tory Channel**	**1.97**	**242**	PN	Pn	10 15 23.9	-0.8
TCW				AML	AML	10 15 59.4	
TCW				AML	AML	10 16 00.5	
URZ	**Urewera**	**2.08**	**12**	PN	Pn	10 15 24.6	-1.5
DUWZ	**D'Urville Isla**	**2.09**	**255**	PN	Pn	10 15 26.5	+0.2
DUWZ				AML	AML	10 16 03.0	
DUWZ				AML	AML	10 16 04.6	
PREZ	**Palmer Road**	**2.09**	**296**	PN	Pb	10 15 28.3	-1.9
MWZ	**Matawai**	**2.09**	**21**	PN	Pn	10 15 24.5	-1.9
MWZ				AML	AML	10 16 26.3	
TKGZ	**Te Karaka**	**2.10**	**28**	PN	Pn	10 15 24.5	-1.9
NEZ	**North Egmont**	**2.17**	**297**	PN	Pn	10 15 29.2	+1.7
HIZ	**Hauiti**	**2.22**	**323**	AML	AML	10 16 10.3	
HIZ				AML	AML	10 16 10.5	
PKE	**Pukeiti**	**2.28**	**298**	PN	Pn	10 15 31.1	+2.2
TUWZ	**Tuamarina**	**2.30**	**240**	PN	Pn	10 15 28.1	-1.0
TUWZ				AML	AML	10 16 14.9	
TUWZ				AML	AML	10 16 15.8	
NNZ	**Nelson**	**2.60**	**248**	PN	Pn	10 15 33.0	-0.3
HAZ	**Te Kaha**	**2.70**	**21**	PN	Pn	10 15 32.9	-1.8
WMGZ	**Waiomatatini S**	**2.86**	**31**	PN	Pn	10 15 34.4	-2.5
QRZ	**Quartz Range**	**3.13**	**259**	PN	Pn	10 15 40.0	-0.6
QRZ				AML	AML	10 16 34.1	
THZ	**Tophouse**	**3.14**	**241**	PN	Pn	10 15 39.4	-1.4
THZ				AML	AML	10 16 42.9	

**IDC 14 10:17:21.4±7.0, 20°17S×169°46E, h55km±57km,

JHJ Sn **Sn** **10 31 05.5 -0.9**
4.8nm,0.3s,baz=62,slow=13,SNR=2.3
ASAJ Asahikawa 7.05 1 Pn **Pn** **10 30 49.0 +0.1**
0.6nm,0.3s,baz=212,slow=10,SNR=5.8
H11N2 WAKE ISLAND Hy 27.44 122 T T 11 03 38.4
baz=315,slow=75,SNR=19
H11N1 WAKE ISLAND Hy 27.45 122 T T 11 03 39.1
baz=315,slow=75,SNR=14
H11N3 WAKE ISLAND Hy 27.46 122 T T 11 03 42.6
baz=315,slow=75,SNR=12
H11S1 WAKE ISLAND Hy 28.17 124 T T 11 04 35.2
baz=317,slow=76,SNR=13
H11S3 WAKE ISLAND Hy 28.17 124 T T 11 04 37.7
baz=317,slow=76,SNR=13
H11S2 WAKE ISLAND Hy 28.18 124 T T 11 04 37.7
baz=317,slow=76,SNR=14
KURBB Kurchatov Arra 46.66 308 P **P** **10 37 35.8 +1.7**
0.3nm,0.6s,baz=88,slow=7.6,SNR=3.2
WRA Warramunga Arr 57.21 189 P **P** **10 38 51.6 -1.4**
0.3nm,0.6s,baz=6.9,slow=7.5,SNR=5.2
ASAR Alice Springs 60.93 189 P **P** **10 39 18.4 -0.4**
0.3nm,1.1s,baz=4.4,slow=7.0,SNR=4.4

NIED ***14*** *10:32:00.39˚80N×143˚40E,h11km,Mw4.9 Best double couple: M₀2.93000×10¹⁶ NP1:φs199.00000°,δ14.00000°, λ-27.00000°. NP2:φs226.00000°,δ84.00000°, λ-103.00000°.*

ISCJB ***14*** *10:32:30.3±0.8,39˚73N±0˚02×143˚39E±0˚02,h10km±5km, mb5.0/257,MS4.6/54,Error ellipse: s-maj=4.0km s-min=2.2km az=161.6*

BJI ***14*** *10:32:31.8,39˚85N×143˚38E,h26km,mb5.0/73,mB4.9/52, Ms4.8/81,Ms7 4.8/76*

JMA ***14*** *10:32:32.1±0.2,39˚79N×143˚43E,h32km,M5.0*

JMA Felt III J1.

GCMT ***14*** *10:32:33.7±0.4,39˚81N×143˚39E,h17km±2km,MW4.8/75, Moment Tensor Solution. s12,c15; s75,c93; Duration: 0 Moment tensor: Scale 10¹⁶Nm; Mrr-0.33±.08; Mθθ0.69±.08; Mφφ-0.36±.07; Mrθ0.66±.21; Mθφ1.18±.06; Mφr1.78±.40; Best double couple: M₀2.30500×10¹⁶ NP1:φs199.00000°,δ85.00000°,λ-123.00000°. NP2: φs101.00000°,δ33.00000°,λ-9.00000°. Principal axes: T 2.4260, Plg32.0000°, Azm316.0000°; N -0.2420, Plg33.0000°, Azm202.0000°; P -2.1840, Plg41.0000°, Azm78.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

NEIC ***14*** *10:32:33.7±1.1,39˚70N×143˚31E,h22km±8km,mb5.1/172 Error ellipse: s-maj=3.9km s-min=2.4km az=136.0*

NEIC Felt at Misawa. Recorded [3 JMA] in Iwate.

MOS ***14*** *10:32:33.4±0.9,39˚91N×143˚26E,h26km,mb5.2/105, MS4.4/25,Error ellipse: s-maj=6.2km s-min=3.8km az=96.0*

IDC ***14*** *10:32:34.2±0.6,39˚66N×143˚39E,h28km±3km,mb4.5/44, mb1 4.6/52,mb1mx4.6/67,mbtmp4.7/52,ML4.2/8,MS4.2/32, Ms1 4.2/32,ms1mx4.1/39,Error ellipse: s-maj=11.4km s-min=10.2km az=130.0*

ISC 14 10:32:34.3±0.4,39.74N±0˚04×143˚44E±0˚03,h29km±2km, h28km:pP-P,n846,σ1$46/910,mb5.0/263,MS4.7/55, 29C-19D,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
JTH	**Tanohata**	**1.23**	**280**	⇑P		**Pn**	**10 32 53.4**	**-2.2**
JTH				*e*S		**Sn**	**10 33 09.0**	**-2.2**
MIYJ	**Miyakonagasawa**	**1.26**	**263**	⇑P		**Pn**	**10 32 54.2**	**-1.8**
MIYJ				*e*S		**Sn**	**10 33 09.9**	**-2.1**
OFUJ	**Ofunato**	**1.52**	**245**	⇑P		**Pn**	**10 32 57.9**	**-1.7**
OFUJ				*e*S		**Sn**	**10 33 16.1**	**-2.4**
JANG	**Nango**	**1.61**	**294**	⇑P		**Pn**	**10 32 58.5**	**-2.2**
JOM	**Ohasama**	**1.68**	**261**	⇑P		**Pn**	**10 33 00.8**	**-1.0**
JMK	**Ichinoseki**	**1.90**	**246**	P		**Pn**	**10 33 03.5**	**-1.2**
JMK				*e*S		**Sn**	**10 33 26.0**	**-1.6**
JIO	**Ouri**	**2.08**	**232**	P		**Pn**	**10 33 05.3**	**-1.9**
JTM	**Tenmabayashi**	**2.10**	**301**	⇑P		**Pn**	**10 33 06.0**	**-1.4**
JRG	**Rokugo**	**2.20**	**262**	⇑P		**Pn**	**10 33 07.6**	**-1.3**
JAH	**Hinai**	**2.20**	**283**	⇑P		**Pn**	**10 33 08.2**	**-0.7**
ERM	**Erimo**	**2.28**	**355**	*e*P		**Pn**	**10 33 09.9**	**-0.1**
ERM	**Erimo**	**2.28**	**355**	*e*Pn		**Pn**	**10 33 09.9**	**-0.1**
JOT	**Ohata**	**2.45**	**313**	⇓P		**Pn**	**10 33 10.9**	**-1.4**
JYK	**Kaneyama**	**2.53**	**252**	⇓P		**Pn**	**10 33 12.6**	**-0.8**
JNBK	**Urakawa-nobuka**	**2.59**	**349**	⇓P		**Pn**	**10 33 13.1**	**-1.1**
ASAJ	**Asahikawa**	**4.42**	**352**	Pn		**Pn**	**10 33 38.8**	**-0.6**
	18nm,0.3s,baz=200,slow=15,SNR=113							
ASAJ				LR		LR	10 35 36.1	
	comp=Z,1μm,18.7s,baz=186,slow=40							
ASAJ	**Asahikawa**	**4.42**	**352**	*e*Pn		**Pn**	**10 33 38.9**	**-0.5**
YUK	**Yuzh-Kuril'sk**	**4.65**	**22**	*e*P		**Pn**	**10 33 40.9**	**-1.7**
YUK				*e*S		**Sn**	**10 34 33.0**	**-2.6**
YUK				pmax	pmax			
	comp=N,140nm,0.2s							
YUK				pmax	pmax			
	comp=Z,820nm,0.2s							
YUK				pmax	pmax			
	comp=E,45nm,0.1s							
SHO	**Shikotan**	**4.84**	**30**	*d i*P		**Pn**	**10 33 42.5**	**-2.6**
SHO				*i* S		**Sn**	**10 34 34.7**	**-5.5**
SHO				pmax	pmax			
	comp=Z,581nm,0.8s							
SHO				pmax	pmax			
	comp=N,190nm,0.7s							
SHO				pmax	pmax			
	comp=E,377nm,0.8s							
MAJO	**Matsushiro**	**5.22**	**234**	*de*P		**Pn**	**10 33 50.4**	**0.0**
MAJO	**Matsushiro**	**5.22**	**234**	*e*Pn		**Pn**	**10 33 50.6**	**+0.2**
MAT	**Matsushiro**	**5.22**	**234**	P		**Pn**	**10 33 50.4**	**0.0**
MAT				*e*S		**Sn**	**10 34 51.7**	**+2.1**
MJAR	**Matsushiro Arr**	**5.22**	**234**	Pn		**Pn**	**10 33 50.6**	**+0.2**
	comp=E,23nm,0.3s,baz=38,slow=12,SNR=105							
MJB9	**Matsu-Tunnel**	**5.22**	**234**	*e*Pn		**Pn**	**10 33 50.4**	**0.0**
KUR	**Kuril'sk**	**6.39**	**29**	*c i*P		**Pn**	**10 34 05.3**	**-1.1**
KUR				*i* S		**Sn**	**10 35 15.1**	**-3.2**
KUR				pmax	pmax			
	comp=N,23nm,0.5s							
KUR				pmax	pmax			
	comp=E,49nm,0.5s							
KUR				pmax	pmax			
	comp=Z,152nm,0.5s							
KUR				smax	smax			
	comp=N,176nm,0.7s							
KUR				smax	smax			
	comp=E,267nm,0.7s							
INU	**Inuyama**	**6.73**	**231**	*e*Pn		**Pn**	**10 34 10.3**	**-0.8**
YSS	**Yuzh-Sakhalins**	**7.22**	**356**	‖*e*P		**Pn**	**10 34 18.0**	**+0.1**
YSS				*e*S		**Sn**	**10 35 41.0**	**+2.1**
YSS				pmax	pmax			
	comp=Z,300nm,3.4s							
YSS				pmax	pmax			
	comp=Z,60nm,1.0s							
YSS				MLR	MLR			
	comp=Z,3μm,16.0s							
YSS				MLR	MLR			
	comp=N,3μm,13.0s							
YSS				MLR	MLR			
	comp=E,900nm,18.0s							
YSS	**Yuzh-Sakhalins**	**7.22**	**356**	*e*Pn		**Pn**	**10 34 17.9**	**+0.1**
JHJ2	**Mitsune**	**7.23**	**205**	*e*Pn		**Pn**	**10 34 15.1**	**-2.9**
JHJ	**Hachijo jima 2**	**7.24**	**205**	Pn		**Pn**	**10 34 14.8**	**-3.3**
	comp=E,56nm,0.3s,baz=73,slow=22,SNR=21							
JHJ				Sn		Sn	10 35 29.5	-10
	comp=E,77nm,0.3s,baz=75,slow=20,SNR=3.8							
JHJ				LR		LR	10 37 00.3	
	comp=E,483nm,18.6s,baz=320,slow=37							
VLA	**Vladivostok**	**9.31**	**295**	‖*e*P		Pn	10 34 51.2	+4.7
UGL	**Uglegorsk**	**9.38**	**354**	P		**Pn**	**10 34 48.0**	**+0.5**
UGL				pmax	pmax			
	comp=Z,63nm,0.6s							
UGL				MLR	MLR			
	comp=N,1μm,14.0s							
UGL				MLR	MLR			
	comp=Z,2μm,14.0s							
UGL				MLR	MLR			
	comp=E,2μm,16.0s							
USRK	**Ussuriysk Ar.**	**9.62**	**301**	Pn		**Pn**	**10 34 50.8**	**+0.1**
	comp=E,5.7nm,0.3s,baz=101,slow=13,SNR=56							
USRK				LR		LR	10 38 34.7	
	comp=E,3μm,18.3s,baz=107,slow=37							
HABR	**Khabarovsk**	**10.60**	**328**	*ce*P		**Pn**	**10 35 02.1**	**-2.1**
HABR				*e*S		**Sn**	**10 37 00.0**	**-1.8**
HABR				pmax	pmax			
	comp=E,33nm,1.5s							
HABR				pmax	pmax			
	comp=N,22nm,1.5s							
HABR				pmax	pmax			
	comp=Z,44nm,1.5s							
HABR				MLR	MLR			
	comp=Z,922nm,11.0s							
TYV	**Tymovskoe**	**11.13**	**357**	*e*P		**Pn**	**10 35 11.5**	**+0.1**
TYV				*e*			10 37 18.0	
TYV				pmax	pmax			
	comp=N,22nm,0.8s							
TYV				pmax	pmax			
	comp=Z,31nm,0.8s							
TYV				MLR	MLR			
	comp=N,4μm,16.0s							
TYV				MLR	MLR			
	comp=E,5μm,17.0s							
MDJ	**Mudanjiang**	**11.37**	**300**	P		**Pn**	**10 35 15.5**	**+0.8**
MDJ				S		**Sn**	**10 37 21.9**	**+1.2**
MDJ				PcP		**PcP**	**10 41 08.9**	**+1.8**
MDJ				ScP		**ScP**	**10 44 40.3**	**+2.6**
MDJ				PcS		**PcS**	**10 44 43.3**	**+2.4**
MDJ				pmax	pmax			
	comp=Z,42nm,1.0s							
MDJ				pmax	pmax			
	comp=Z,300nm,5.9s							
MDJ				LR	LR			
	comp=Z,2μm,14.7s							
MDJ				LR	LR			
	comp=Z,2μm,16.5s							
MDJ				LR	LR			
	comp=Z,3μm,16.5s							
JNU	**Nakatsue**	**12.08**	**241**	Pn		**Pn**	**10 35 23.1**	**-1.4**
	comp=Z,0.8nm,0.3s,baz=31,slow=4.9,SNR=7.8							
JNU				LR		LR	10 40 20.8	
	comp=Z,2μm,18.2s,baz=54,slow=39							
JNU	**Nakatsue**	**12.08**	**241**	*e*Pn		**Pn**	**10 35 24.1**	**-0.4**
KSRS	**Korea Array**	**12.36**	**264**	Pn		**Pn**	**10 35 28.9**	**+0.7**
	comp=Z,2.6nm,0.3s,baz=83,slow=13,SNR=24							
KSRS				Sn		Sn	10 37 55.4	+11
	comp=Z,1.4nm,0.3s,baz=69,slow=23,SNR=4.3							
KS01	**Wonju Array Si**	**12.37**	**264**	*e*Pn		**Pn**	**10 35 29.7**	**+1.2**
KS15	**Wonju Array Si**	**12.39**	**264**	*e*Pn		**Pn**	**10 35 31.3**	**+2.7**
KS15				*e*Sn		Sn	10 37 55.6	+10
KLR	**Kul'dur**	**12.62**	**323**	Pn		**Pn**	**10 35 30.4**	**-1.4**
	comp=Z,1.1nm,0.3s,baz=131,slow=12,SNR=21							
KLR				LR		LR	10 40 44.4	
	comp=Z,2μm,18.7s,baz=138,slow=39							
JCJ	**Chichijima**	**12.66**	**185**	Pn		Pn	10 35 25.9	-6.5
	comp=Z,5.4nm,0.3s,baz=287,slow=19,SNR=4.5							
JCJ				Sn		Sn	10 37 36.2	-16
	comp=Z,13nm,0.3s,baz=280,slow=23,SNR=6.2							
NKL	**Nikolayevsk**	**13.54**	**353**	*e*P		**Pn**	**10 35 42.0**	**-2.3**
NKL				*e*			10 38 12.0	
NKL				pmax	pmax			
	comp=N,22nm,1.0s							
NKL				pmax	pmax			
	comp=Z,43nm,1.0s							
NKL				MLR	MLR			
	comp=N,1μm,15.0s							
NKL				MLR	MLR			
	comp=E,1μm,15.0s							
NKL				MLR	MLR			
	comp=Z,2μm,15.0s							
CN2	**Changchun**	**14.03**	**293**	*e*P		**Pn**	**10 35 53.4**	**+2.4**
CN2				*es*P		P	10 36 03.3	+4.8
CN2				*e*S		**Sn**	**10 38 29.1**	**+3.5**
CN2				pmax	pmax			
	comp=Z,20nm,0.7s							
CN2				LR	LR			
	comp=Z,2μm,15.0s							
CN2				LR	LR			
	comp=Z,2μm,15.0s							
CN2				LR	LR			
	comp=Z,2μm,18.0s							
SKR	**Severo-Kuril's**	**14.10**	**35**	*e*P		Pn	10 35 46.0	-5.9
SKR				pmax	pmax			
	comp=Z,180nm,1.0s							
SNY	**Shenyang**	**15.19**	**284**	⇓P		**P**	**10 36 09.3**	**-2.1**
SNY				S		**Sn**	**10 38 59.8**	**+5.8**
SNY				pmax	pmax			
	comp=Z,320nm,10.6s							
SNY				LR	LR			
	comp=Z,2μm,14.1s							
SNY				LR	LR			
	comp=Z,3μm,15.7s							
SNY				LR	LR			
	comp=Z,4μm,16.7s							
PETK	**Petropavlovsk-**	**16.55**	**31**	Pn		**Pn**	**10 36 24.9**	**+0.9**
	comp=Z,0.4nm,0.3s,baz=204,slow=9.3,SNR=7.8							
PETK				LR		LR	10 42 25.4	
	comp=Z,318nm,20.3s,baz=222,slow=36							
PETK	**Petropavlovsk-**	**16.55**	**31**	P		**Pn**	**10 36 25.0**	**+0.9**
PETK				MLR	MLR			
	comp=Z,318nm,20.3s							
PET	**Petropavlovsk**	**16.88**	**33**	*e*P		**P**	**10 36 29.4**	**-0.7**
PET				*e*S		**Sn**	**10 39 35.9**	**+1.2**
PET				pmax	pmax			
	comp=Z,126nm,1.4s							
PET				MLR	MLR			
	comp=Z,1μm,19.0s							
PET				MLR	MLR			
	comp=Z,2μm,18.0s							
PET	**Petropavlovsk**	**16.88**	**33**	*e*Pn		**P**	**10 36 30.3**	**+0.2**
	comp=Z,279nm,1.5s							
DL2	**Dalian**	**16.90**	**274**	P		**P**	**10 36 30.1**	**-0.3**
DL2				S		**Sn**	**10 39 37.3**	**+1.8**
DL2				pmax	pmax			
	comp=Z,140nm,1.0s							
DL2				pmax	pmax			
	comp=Z,330nm,7.8s							
DL2				LR	LR			
	comp=Z,1μm,13.6s							
DL2				LR	LR			
	comp=Z,1μm,15.6s							
DL2				LR	LR			
	comp=Z,2μm,15.7s							
MA2	**Magadan**	**20.39**	**11**	P		**P**	**10 37 09.2**	**+0.7**
	comp=Z,41nm,0.7s,baz=217,slow=9.2,SNR=32							
BJI	**Beijing**	**20.90**	**280**	P		**P**	**10 37 10.8**	**-3.4**
BJI				pP		**pP**	**10 37 19.8**	**-2.2**
BJI				S		**S**	**10 41 08.5**	**+2.9**
BJI				pmax	pmax			
	comp=Z,20nm,1.1s							
BJI				pmax	pmax			
	comp=Z,190nm,3.7s							
BJI				LR	LR			
	comp=Z,2μm,16.6s							
CLNS	**Chul'man**	**20.97**	**331**	*e*P		**P**	**10 37 14.7**	**-0.3**
CLNS				*e*PP		**pP**	**10 37 22.6**	**-0.1**
CLNS				*e*			10 37 32.3	
CLNS				*e*S		**S**	**10 41 08.7**	**+1.7**
CLNS				*e*			10 41 19.6	
CLNS				*e*SS		**SnSn**	**10 41 43.0**	**+14**
CLNS				pmax	pmax			
	comp=Z,28nm,1.0s							
CLNS				pmax	pmax			
	comp=E,9.0nm,1.0s							
CLNS				pmax	pmax			
	comp=N,15nm,0.9s							
CLNS				pmax	pmax			
	comp=Z,37nm,0.8s							
CLNS				pmax	pmax			
	comp=E,24nm,0.9s							
CLNS				pmax	pmax			
	comp=N,29nm,1.0s							
CLNS				smax	smax			
	comp=E,317nm,12.3s							
CLNS				smax	smax			
	comp=N,231nm,10.5s							
CLNS				MLR	MLR			
	comp=E,773nm,14.0s							
CLNS				MLR	MLR			
	comp=N,2μm,15.0s							
CLNS				MLR	MLR			
	comp=Z,2μm,14.0s							
TIA	**Tai'an**	**21.02**	**269**	⇓P		**P**	**10 37 12.8**	**-2.8**
TIA				S		**S**	**10 41 03.3**	**-4.8**
TIA				pmax	pmax			
	comp=Z,50nm,1.1s							
TIA				LR	LR			
	comp=Z,970nm,11.5s							
TIA				LR	LR			
	comp=Z,3μm,12.5s							
TIA				LR	LR			
	comp=Z,3μm,12.8s							
NJ2	**Nanjing**	**21.30**	**257**	*e*P		**P**	**10 37 19.3**	**+0.7**
NJ2				pP		**pP**	**10 37 25.4**	**-1.0**
NJ2				S		**S**	**10 41 10.8**	**-3.0**
NJ2				sS		**sS**	**10 41 26.3**	**+0.1**
NJ2				pmax	pmax			
	comp=Z,20nm,0.7s							
NJ2				pmax	pmax			
	comp=Z,190nm,10.7s							
NJ2				LR	LR			
	comp=Z,1μm,17.1s							
NJ2				LR	LR			
	comp=Z,1μm,16.1s							
NJ2				LR	LR			
	comp=Z,2μm,16.1s							
TATO	**Taipei**	**23.59**	**238**	*e*P		**P**	**10 37 40.9**	**-1.7**
	comp=Z,82nm,0.8s							
SEY	**Seymchan**	**23.84**	**10**	P		**P**	**10 37 45.1**	**+0.5**
	comp=Z,45nm,1.1s,baz=186,slow=7.7,SNR=56							
YAK	**Yakutsk**	**23.84**	**344**	P		**P**	**10 37 44.3**	**-0.3**
	comp=Z,32nm,0.4s,baz=332,slow=0.9,SNR=8.3							
YAK	**Yakutsk**	**23.84**	**344**	*e*P		**P**	**10 37 41.6**	**-3.1**
YAK				*e*PP		**pP**	**10 37 50.6**	**-2.4**
YAK				*e*PPP		PPP	10 38 17.0	
YAK				*e*S		**S**	**10 41 55.4**	**-3.1**
YAK				*e*SS		**sS**	**10 42 11.9**	**-0.4**
YAK				*e*SS		**SnSn**	**10 42 37.0**	**-1.6**
YAK				pmax	pmax			
	comp=E,7.0nm,1.0s							
YAK				pmax	pmax			
	comp=N,17nm,1.0s							
YAK				pmax	pmax			
	comp=Z,36nm,1.0s							
YAK				pmax	pmax			
	comp=Z,64nm,0.8s							
YAK				pmax	pmax			
	comp=N,71nm,1.3s							
YAK				pmax	pmax			
	comp=E,35nm,1.1s							
YAK				smax	smax			
	comp=N,602nm,3.5s							
YAK				smax	smax			
	comp=E,246nm,1.7s							
YAK				MLR	MLR			
	comp=N,641nm,15.0s							
YAK				MLR	MLR			
	comp=Z,608nm,12.0s							
YAK				MLR	MLR			
	comp=E,305nm,13.0s							
YAK	**Yakutsk**	**23.84**	**344**	*e*P		**P**	**10 37 43.3**	**-1.4**
	comp=E,146nm,0.8s							
YHNB	**Yeheng**	**23.88**	**238**	*e*P		**P**	**10 37 42.4**	**-3.1**
	comp=E,35nm,0.8s							
CIT	**Chita**	**23.97**	**311**	*e*P		**P**	**10 37 43.7**	**-2.4**
CIT				*e*			10 37 57.1	
CIT				*e*			10 38 11.0	
CIT				pmax	pmax			
	comp=Z,125nm,1.1s							
NACB	**Ninganchiao**	**24.09**	**236**	*e*P		**P**	**10 37 44.7**	**-2.6**
	comp=Z,45nm,0.8s							
HHC	**Hu-ho-hao-te**	**24.27**	**283**	*e*P		**P**	**10 37 46.6**	**-2.5**
HHC				sP		pP	10 37 58.8	+1.3
HHC				S		**S**	**10 42 03.3**	**-2.8**
HHC				sS		sS	10 42 16.6	-3.3
HHC				SS		**SnSn**	**10 42 49.3**	**-0.3**
HHC				pmax	pmax			
	comp=Z,30nm,0.8s							
HHC				pmax	pmax			
	comp=Z,130nm,4.2s							
HHC				LR	LR			
	comp=Z,550nm,13.1s							
HHC				LR	LR			
	comp=Z,2μm,13.9s							
HHC				LR	LR			
	comp=Z,2μm,12.6s							
SSLB	**Suanglung**	**24.77**	**237**	*e*P		**P**	**10 37 51.5**	**-2.1**
	comp=Z,41nm,0.7s							
YULB	**Yu-li**	**24.83**	**236**	*e*P		**P**	**10 37 54.8**	**+0.6**
	comp=Z,34nm,0.7s							
TPUB	**Ta-pu**	**25.32**	**236**	*e*P		**P**	**10 37 56.9**	**-1.7**
	comp=Z,49nm,0.7s							
TWG	**Pinlang**	**25.39**	**235**	*e*P		**P**	**10 37 59.3**	**+0.2**
	comp=Z,474nm,1.3s							
WHN	**Wuhan**	**25.41**	**258**	P		**P**	**10 37 58.5**	**-0.8**
WHN				S		**S**	**10 42 17.4**	**-6.8**
WHN				pmax	pmax			
	comp=Z,96nm,0.7s							
WHN				pmax	pmax			
	comp=Z,300nm,2.8s							
WHN				LR	LR			
	comp=Z,2μm,14.8s							
WHN				LR	LR			
	comp=Z,2μm,15.0s							
WHN				LR	LR			
	comp=Z,2μm,13.6s							
QZH	**Quanzhou**	**25.55**	**242**	P		**P**	**10 38 04.3**	**+3.7**
QZH				S		**S**	**10 42 23.3**	**-3.2**
QZH				LR	LR			
	comp=Z,850nm,12.8s							
QZH				LR	LR			
	comp=Z,660nm,13.8s							
QZH				LR	LR			
	comp=Z,2μm,17.7s							
GUMO	**Guam**	**26.08**	**177**	LR		LR	10 47 10.7	
	comp=Z,280nm,21.7s,baz=9.5,slow=34							
BOD	**Bodaibo**	**26.20**	**323**	⇓*i*P		**P**	**10 38 05.1**	**-1.1**
BOD				pmax	pmax			
	comp=Z,42nm,1.1s							
ULN	**Ulaanbaatar**	**27.29**	**299**	*e*P		**P**	**10 38 15.5**	**-0.8**
ULN				pmax	pmax			
	comp=Z,53nm,1.4s							
ULN	**Ulaanbaatar**	**27.29**	**299**	*e*P		**P**	**10 38 15.5**	**-0.8**
	comp=Z,53nm,1.4s							
ULN	**Ulaanbaatar**	**27.29**	**299**	P		**P**	**10 38 16.3**	**0.0**
	SNR=16							
SONA1	**Songino Array**	**27.72**	**299**	*e*P		**P**	**10 38 19.6**	**-0.6**
SONM	**Songino Array**	**27.73**	**299**	P		**P**	**10 38 20.1**	**-0.1**
	comp=Z,16nm,0.7s,baz=96,slow=10.0,SNR=28							
SONM				LR		LR	10 50 00.0	
	comp=Z,2μm,18.2s,baz=70,slow=38							
XAN	**Xi'an**	**28.07**	**269**	P		**P**	**10 38 21.3**	**-2.1**
XAN				pP		pP	10 38 29.0	-2.8
XAN				sP		sP	10 38 32.9	-2.4
XAN				S		**S**	**10 43 11.5**	**+5.1**
XAN				pmax	pmax			
	comp=Z,27nm,0.7s							
XAN				pmax	pmax			
	comp=Z,130nm,6.1s							
XAN				LR	LR			
	comp=Z,2μm,14.6s							
XAN				LR	LR			
	comp=Z,1μm,14.6s							
H11N2	**WAKE ISLAND Hy 28.36 128**			T		T	11 09 21.8	
	baz=318,slow=75,SNR=2209							
H11N1	**WAKE ISLAND Hy 28.37 128**			T		T	11 09 20.0	
	baz=318,slow=75,SNR=1712							
H11N3	**WAKE ISLAND Hy 28.37 128**			T		T	11 09 20.7	
	baz=318,slow=75,SNR=2054							
H11S1	**WAKE ISLAND Hy 29.18 130**			T		T	11 10 33.3	
	baz=320,slow=76,SNR=229							
H11S3	**WAKE ISLAND Hy 29.18 130**			T		T	11 10 36.3	
	baz=320,slow=76,SNR=225							
H11S2	**WAKE ISLAND Hy 29.19 130**			T		T	11 10 21.6	
	baz=320,slow=76,SNR=241							
IRK	**Irkutsk**	**29.57**	**308**	*e*P		**P**	**10 38 35.7**	**-0.7**
IRK				pmax	pmax			
	comp=Z,40nm,1.3s							
TLY	**Talaya**	**29.87**	**307**	P		**P**	**10 38 39.3**	**+0.2**
	comp=Z,3.6nm,0.5s,baz=94,slow=6.6,SNR=5.8							
TLY				LR		LR	10 51 19.8	
	comp=Z,635nm,18.2s,baz=94,slow=38							
TLY	**Talaya**	**29.87**	**307**	*e*P		**P**	**10 38 38.7**	**-0.4**
TLY				*e*			10 39 45.0	
TLY				*e*S		**S**	**10 43 39.8**	**+5.5**
TLY				*e*SS		**SnSn**	**10 45 07.6**	**+1.7**
TLY				pmax	pmax			
	comp=Z,32nm,1.6s							
TLY				MLR	MLR			
	comp=Z,887nm,16.0s							
TLY	**Talaya**	**29.87**	**307**	*e*P		**P**	**10 38 39.4**	**+0.2**
	comp=Z,38nm,1.5s							
TLY	**Talaya**	**29.87**	**307**	P		**P**	**10 38 39.7**	**+0.6**
	SNR=13							
ZAK	**Zakamensk**	**29.95**	**304**	*e*P		**P**	**10 38 39.2**	**-0.8**
ZAK				pmax	pmax			
	comp=Z,30nm,1.5s							
GZH	**Guangzhou**	**30.39**	**246**	P		**P**	**10 38 46.3**	**+2.4**
GZH				S		**S**	**10 43 51.4**	**+8.6**

GZH LR LR
comp=Z,3µm,13.3s
BILL Bilibino 30.98 16*c iP* **P 10 38 48.9 +0.2**
BILL *e**PP **pP 10 38 55.2 -1.9**
BILL *e**SP **sP 10 39 03.2 +2.5**
BILL *e* 10 41 52.4
BILL SSS SSS 10 46 00.0
BILL pmax pmax
comp=Z,15nm,1.2s
BILL MLR MLR
comp=Z,364nm,16.0s
BILL Bilibino 30.98 16 *eP* **P 10 38 48.9 +0.2**
comp=Z,15nm,0.8s
LZH Lanzhou 31.28 276 *eP* **P 10 38 52.8 +0.9**
LZH pP pP 10 39 00.4 +0.1
LZH sP sP 10 39 05.6 +1.8
LZH PP **PnPn 10 39 57.4 +3.0**
LZH S **S 10 43 51.1 -5.8**
LZH pmax pmax
comp=Z,33nm,1.0s
LZH pmax pmax
comp=Z,150nm,4.6s
LZH LR LR
comp=Z,920nm,13.9s
LZH LR LR
comp=Z,2µm,14.2s
LZH LR LR
comp=Z,2µm,14.7s
MOY Mondy 31.51 306 *eP* **P 10 38 53.3 -0.4**
MOY pmax pmax
comp=Z,39nm,2.3s
TIXI Tiksi 32.82 352 P **P 10 39 03.9 -0.9**
comp=Z,2.0nm,0.7s,baz=152,slow=6.3,SNR=4.0
TIXI LR LR 10 53 37.5
comp=Z,575nm,19.2s,baz=160,slow=38
TIXI Tiksi 32.82 352⇓ *eP* **P 10 39 04.2 -0.5**
TIXI pmax pmax
comp=Z,4.0nm,1.0s
TIXI Tiksi 32.82 352 *eP* **P 10 39 04.3 -0.5**
comp=Z,7.4nm,0.9s
GYA Guiyang 33.30 258⇑ *iP* **P 10 39 11.0 +1.4**
GYA pP pP 10 39 18.8 +0.7
GYA PP **PnPn 10 40 22.3 +1.9**
GYA PcP **PcP 10 41 52.0 +0.7**
GYA S **S 10 44 28.9 +0.5**
GYA sS sS 10 44 41.5 -0.9
GYA ScP **ScP 10 45 33.0 -0.6**
GYA ScS **ScS 10 49 32.4 -2.2**
GYA pmax pmax
comp=Z,30nm,0.8s
GYA pmax pmax
comp=Z,140nm,5.2s
GYA LR LR
comp=Z,550nm,16.2s
GYA LR LR
comp=Z,510nm,17.0s
GYA LR LR
comp=Z,530nm,16.6s
CD2 Chengdu 33.33 267 P **P 10 39 08.4 -1.4**
CD2 sP sP 10 39 21.0 -0.8
CD2 PP **PP 10 40 23.8 -1.5**
CD2 S **S 10 44 27.3 -1.4**
CD2 sS sS 10 44 42.0 -0.7
CD2 pmax pmax
comp=Z,30nm,0.8s
CD2 pmax pmax
comp=Z,110nm,4.3s
CD2 LR LR
comp=Z,2µm,13.2s
CD2 LR LR
comp=Z,2µm,13.2s
GTA Gaotai 33.38 284 *eP* **P 10 39 09.9 -0.3**
GTA pP pP 10 39 19.5 +0.8
GTA sP sP 10 39 23.3 +1.1
GTA S **S 10 44 23.8 -5.7**
GTA pmax pmax
comp=Z,14nm,0.9s
GTA pmax pmax
comp=Z,82nm,5.7s
GTA LR LR
comp=Z,550nm,17.6s
GTA LR LR
comp=Z,2µm,18.1s
GTA LR LR
comp=Z,2µm,16.4s
GAMB Gambell 35.58 33 *eP* **P 10 39 29.3 +0.5**
comp=Z,14nm,1.4s
KRAR Krasnoyarsk 36.69 313⇑ *eP* **P 10 39 39.2 +0.9**
KRAR pmax pmax
comp=Z,59nm,1.4s
KMI Kunming 36.99 259 P **P 10 39 42.8 +1.3**
KMI pP pP 10 39 50.1 0.0
KMI sP sP 10 39 53.0 -0.6
KMI PP **PP 10 41 03.9 -2.1**
KMI S **S 10 45 21.3 -4.1**
KMI SS **SnSn 10 47 52.8 -6.7**
KMI pmax pmax
comp=Z,62nm,1.1s
KMI pmax pmax
comp=Z,110nm,3.4s
KMI LR LR
comp=Z,550nm,15.7s
KMI LR LR
comp=Z,650nm,14.8s
KMI LR LR
comp=Z,950nm,15.2s
WMQ Urumqi 41.10 294 P **P 10 40 15.8 +0.2**
WMQ pP pP 10 40 25.4 +1.2
WMQ sP sP 10 40 29.9 +2.2
WMQ PP **PnPn 10 41 55.5 +0.5**
WMQ ScP **ScP 10 46 02.8 +0.4**
WMQ S **S 10 46 29.9 +3.2**
WMQ ScS **ScS 10 50 16.5 -1.4**
WMQ pmax pmax
comp=Z,22nm,0.6s
WMQ pmax pmax
comp=Z,78nm,4.2s
WMQ LR LR
comp=Z,80nm,21.2s
WMQ LR LR
comp=Z,130nm,17.0s
WMQ LR LR
comp=Z,130nm,14.8s
MYLDM Lahad Datu 41.11 220 *eP* **P 10 40 16.9 +1.1**
comp=Z,37nm,1.1s
ZAA0 Zalesovo Array 41.33 310 *eP* **P 10 40 16.5 -0.7**
ZAA0 *eP* **P 10 40 16.7 -0.5**
ZALV Zalesovo Beam 41.33 310 P **P 10 40 17.1 -0.1**
comp=Z,20nm,0.5s,baz=96,slow=7.8,SNR=108
ZALV PcP **PcP 10 42 15.3 +0.2**
comp=Z,5.6nm,0.7s,baz=106,slow=3.1,SNR=3.1
ZALV LR LR 10 58 12.9
comp=Z,442nm,21.5s,baz=70,slow=37
NRIK Noril'sk 41.51 334 P **P 10 40 17.8 -0.7**
comp=Z,2.9nm,0.5s,baz=112,slow=8.4,SNR=5.0
NRIK LR LR 10 58 43.9
comp=Z,993nm,18.6s,baz=107,slow=38
NVS Novosibirsk 42.18 312 *eP* **P 10 40 23.3 -0.8**
NVS *eS* **S 10 46 35.4 -6.7**
NVS pmax pmax
comp=Z,19nm,0.9s
NVS smax smax
comp=E,37nm,2.2s
TT01 Tatalina 42.29 36 *eP* **P 10 40 25.2 +0.3**
TTA Tatalina 42.29 36 *eP* **P 10 40 26.3 +1.2**
TTA pmax pmax
comp=Z,17nm,1.4s
TTA Tatalina 42.29 36 *eP* **P 10 40 26.3 +1.2**
comp=Z,17nm,1.4s
SVW2 Sparrevohn 42.41 39 *eP* **P 10 40 27.4 +1.5**
comp=Z,30nm,1.4s
CHTO Chiang Mai 43.53 255 *eP* **P 10 40 35.3 -0.2**
CHTO pmax pmax
comp=Z,24nm,0.7s
CHTO Chiang Mai 43.53 255 *eP* **P 10 40 35.3 -0.2**
comp=Z,24nm,0.7s
CHTO Chiang Mai 43.53 255 P **P 10 40 35.9 +0.4**
SNR=7.9
LSA Lhasa 43.60 273 P **P 10 40 38.9 +2.4**
LSA pmax pmax
comp=Z,11nm,1.1s
CM31 Chiang Mai Arr 43.75 254 *eP* **P 10 40 38.0 +0.7**
CMAR Chiang Mai Arr 43.75 254 P **P 10 40 37.3 0.0**
comp=Z,2.2nm,0.5s,baz=46,slow=7.0,SNR=19
CMAR LR LR 11 00 12.3
comp=Z,149nm,18.8s,baz=54,slow=38
CM01 Chiang Mai Arr 43.76 254 *eP* **P 10 40 37.1 -0.2**
RSO Redoubt South 43.80 40 *eP* **P 10 40 38.5 +1.1**
KDAK Kodiak Island 44.03 44 P P 10 40 53.5 +15
comp=Z,21nm,0.7s,baz=232,slow=4.1,SNR=9.9
KDAK Kodiak Island 44.03 44 *eP* **P 10 40 38.8 -0.2**
KDAK pmax pmax
comp=Z,40nm,0.9s
KDAK Kodiak Island 44.03 44 *eP* **P 10 40 38.8 -0.2**
comp=Z,40nm,0.9s
PPLA Purkeypile 44.04 36 *eP* **P 10 40 41.0 +1.7**
comp=Z,17nm,1.0s
MK31 Makanchi Array 44.09 300 *eP* **P 10 40 39.2 -0.5**
MK31 pmax pmax
comp=Z,24nm,0.7s
MKAR Makanchi Array 44.09 300 P **P 10 40 39.2 -0.5**
comp=Z,8.9nm,0.6s,baz=83,slow=10,SNR=60
CAST Castle Rocks 44.09 36 *eP* **P 10 40 41.4 +1.9**
comp=Z,13nm,1.0s
SPU Mount Spurr 44.12 39 *eP* **P 10 40 41.3 +1.5**
MAKZ Makanchi 44.29 300 *eP* **P 10 40 40.9 -0.4**
MAKZ pmax pmax
comp=Z,24nm,0.8s
MAKZ Makanchi 44.29 300 *eP* **P 10 40 40.9 -0.4**
comp=Z,24nm,0.8s
BPAW Bear Paw Mtn. 44.59 35 *eP* **P 10 40 44.7 +1.2**
comp=Z,22nm,1.5s
KTH Kantishna Hill 44.62 36 *eP* **P 10 40 45.4 +1.6**
comp=Z,25nm,1.0s
MLY Maley 44.71 33 *eP* **P 10 40 45.5 +1.0**
comp=Z,13nm,0.9s
TRF Thorofare Moun 44.90 36 *eP* **P 10 40 47.1 +1.0**
comp=Z,11nm,0.9s
COLD Coldfoot 45.01 30 *eP* **P 10 40 48.0 +1.2**
comp=Z,11nm,0.8s
SHL Shillong 45.07 268 *eP* **P 10 40 50.0 +2.0**
MCK McKinley 45.50 35 *eP* **P 10 40 51.6 +0.9**
MCK pmax pmax
comp=Z,19nm,1.0s
MCK McKinley 45.50 35 *eP* **P 10 40 51.6 +0.9**
comp=Z,19nm,1.0s
PMR Palmer 45.51 38 *eP* **P 10 40 51.2 +0.4**
PMR pmax pmax
comp=Z,22nm,1.2s
PMR Palmer 45.51 38 *eP* **P 10 40 51.1 +0.4**
comp=Z,22nm,1.2s
RND Reindeer 45.55 36 *eP* **P 10 40 51.5 +0.3**
RND pmax pmax
comp=Z,19nm,1.0s
RND Reindeer 45.55 36 *eP* **P 10 40 51.5 +0.3**
comp=Z,18nm,1.0s
KURK Kurchatov 45.57 306 P **P 10 40 50.6 -0.8**
KURK pmax pmax
comp=Z,76nm,0.6s
KURK Kurchatov 45.57 306 *eP* **P 10 40 50.8 -0.6**
comp=Z,58nm,0.8s
KURK Kurchatov 45.57 306 P **P 10 40 50.8 -0.6**
SNR=22
KURBB Kurchatov Arra 45.64 306 P **P 10 40 51.4 -0.6**
comp=Z,26nm,0.5s,baz=81,slow=8.5,SNR=84
MDM Murphy Dome 45.78 33 *eP* **P 10 40 54.1 +1.2**
comp=Z,40nm,1.2s
WRH Wood River Hil 45.85 34 *eP* **P 10 40 54.4 +1.0**
comp=Z,11nm,0.8s
SML Sawmill 45.87 38 *eP* **P 10 40 54.6 +0.9**
SML pmax pmax
comp=Z,15nm,0.8s
SML Sawmill 45.87 38 *eP* **P 10 40 54.6 +0.9**
comp=Z,15nm,0.8s
COLA College 45.94 34⇑ *eP* **P 10 40 55.6 +1.5**
COLA pmax pmax
comp=Z,26nm,1.7s
COLA College 45.94 34 *eP* **P 10 40 54.8 +0.7**
comp=Z,569nm,0.2s
CCB Clear Creek Bu 45.97 34 *eP* **P 10 40 55.2 +0.9**
comp=Z,18nm,1.5s
SCM Sheep Creek Mo 46.35 38 *eP* **P 10 40 58.5 +1.0**
SCM pmax pmax
comp=Z,19nm,0.9s
SCM Sheep Creek Mo 46.35 38 *eP* **P 10 40 58.5 +1.0**
comp=Z,19nm,0.9s
IL1 Eielson Array 46.36 34 *eP* **P 10 40 57.7 +0.2**
ILAR Eielson Array 46.36 34 P **P 10 40 57.5 +0.1**
comp=Z,10nm,0.7s,baz=264,slow=6.5,SNR=135
ILB Eielson Array 46.36 34 *eP* **P 10 40 58.0 +0.6**
PDGK Podgornoye 46.97 296 P **P 10 41 01.7 -0.8**
PDGK pmax pmax
comp=Z,33nm,0.7s
FYU Fort Yukon 46.97 31 *eP* **P 10 41 03.4 +1.2**
comp=Z,67nm,1.4s
KLU Klutina 47.05 38 *eP* **P 10 41 03.8 +0.9**
comp=Z,46nm,1.4s
PAX Paxson 47.11 36 *eP* **P 10 41 05.2 +1.8**
PAX pmax pmax
comp=Z,10.0nm,0.7s
PAX Paxson 47.11 36 *eP* **P 10 41 05.2 +1.8**
comp=Z,10nm,0.7s
DIV Divide 47.16 39 *eP* **P 10 41 04.6 +0.7**
comp=Z,49nm,1.3s
EYAK Cordova Ski Ar 47.25 39 *eP* **P 10 41 05.4 +1.0**
comp=Z,44nm,1.4s
DOT Dot Lake 47.67 35 *eP* **P 10 41 07.8 0.0**
comp=Z,16nm,0.8s
BMRM Bremner River 47.75 39 *eP* **P 10 41 09.5 +1.1**
comp=Z,34nm,1.1s
MENT Mentasta 47.91 36 *eP* **P 10 41 11.1 +1.5**
comp=Z,11nm,0.7s
GUN Gumba 48.51 274 *eP* **P 10 41 14.9 -0.2**
comp=Z,269nm,0.8s
EGAK Eagle 48.80 33 *eP* **P 10 41 17.0 +0.6**
comp=Z,9.3nm,0.9s
KKN Kakani 49.03 275 *eP* **P 10 41 18.8 -0.1**
comp=Z,186nm,0.8s
DMN Daman 49.25 274 *eP* **P 10 41 20.3 -0.4**
comp=Z,87nm,0.8s
GKN Gorkha 49.42 275 *eP* **P 10 41 21.4 -0.4**
comp=Z,79nm,0.7s
CHKZ Chkalovo 49.66 312 P **P 10 41 22.5 -0.6**
CHKZ pmax pmax
comp=Z,22nm,0.6s
TKM2 Tokmak 2 49.78 297 P **P 10 41 24.7 +0.2**
TKM2 pmax pmax
comp=Z,49nm,0.7s
TKM2 Tokmak 2 49.78 297 *eP* **P 10 41 24.7 +0.2**
comp=Z,53nm,0.7s
BVA0 Borovoye Array 49.97 311 P **P 10 41 25.2 -0.3**
BVA0 pmax pmax
comp=Z,17nm,0.6s
BVAR Borovoye Array 49.97 311 P **P 10 41 25.4 -0.1**
comp=Z,7.2nm,0.4s,baz=68,slow=8.4,SNR=54
BRVK Borovoye 50.02 311 *eP* **P 10 41 25.7 -0.1**
BRVK pmax pmax
comp=Z,23nm,0.5s
BRVK Borovoye 50.02 311 *eP* **P 10 41 25.7 -0.1**
comp=Z,23nm,0.5s
BRVK Borovoye 50.02 311 P **P 10 41 26.0 +0.2**
SNR=14
OTUK Ortayu 50.17 305 P **P 10 41 26.5 -0.6**
OTUK pmax pmax
comp=Z,13nm,0.8s
KOLN Koldanda 50.33 276 *eP* **P 10 41 28.6 -0.2**
comp=Z,74nm,0.7s
FRU Bishkek 50.49 297 *eP* P 10 41 22.5 -7.1
PYUN Piuthan 50.63 276 *eP* **P 10 41 31.2 +0.1**
comp=Z,276nm,1.1s
AAK Ala-Archa 50.64 297 P **P 10 41 30.6 -0.3**
comp=Z,6.5nm,0.3s,baz=117,slow=14,SNR=3.1
AAK Ala-Archa 50.64 297 *eP* **P 10 41 30.4 -0.6**
comp=Z,10nm,0.8s
AAK *eP* **P 10 41 30.5 -0.4**
AAK Ala-Archa 50.64 297 P **P 10 41 30.9 0.0**
SNR=6.7
ZRNK Zerenda 50.79 311 P **P 10 41 31.6 -0.1**
ZRNK pmax pmax
comp=Z,45nm,0.8s
ZRNK Zerenda 50.79 311 *eP* **P 10 41 31.6 -0.1**
comp=Z,51nm,0.8s
KSH Kashi 50.79 293 P **P 10 41 36.3 +4.2**
KSH *ep*P sP 10 41 46.3 +2.0
KSH *es*P pP 10 41 49.4 +8.6
KSH *eP*P **PP 10 43 33.3 +5.1**
KSH PcS **PcS 10 46 48.1 +1.8**
KSH S **S 10 48 49.3 +3.2**
KSH ScS **ScS 10 51 21.0 +0.1**
KSH pmax pmax
comp=Z,16nm,0.6s
KSH pmax pmax
comp=Z,110nm,3.9s
KSH LR LR
comp=Z,500nm,11.7s
KSH LR LR
comp=Z,480nm,13.9s
KSH LR LR
comp=Z,1µm,16.8s
EKS2 Erkin-Say 51.13 297 *eP* **P 10 41 34.3 -0.2**
EKS2 pmax pmax
comp=Z,17nm,0.8s
EKS2 Erkin-Say 51.13 297 *eP* **P 10 41 34.3 -0.2**
comp=Z,17nm,0.8s
INK Inuvik 51.25 28 P **P 10 41 35.9 +1.0**
comp=Z,5.5nm,0.6s,baz=301,slow=6.9,SNR=41
INK Inuvik 51.25 28 *eP* **P 10 41 35.8 +1.0**
INK pmax pmax
comp=Z,8.0nm,0.7s
INK Inuvik 51.25 28 *eP* **P 10 41 35.8 +1.0**
comp=Z,8.1nm,0.7s
KULM Kulim 51.56 240 *eP* **P 10 41 37.8 -0.1**
comp=Z,17nm,0.8s
IPM Ipoh 51.91 239 *eP* **P 10 41 40.1 -0.4**
comp=Z,17nm,0.7s
MNAS Manas 52.06 298 P **P 10 41 41.5 -0.1**
MNAS pmax pmax
comp=Z,33nm,0.7s
SFK Sufi-Kurgan 52.34 294 P **P 10 41 43.3 -0.5**
SFK pmax pmax
comp=Z,43nm,1.1s
KK31 Karatay Array 53.18 299 *eP* **P 10 41 48.9 -0.7**
KK31 pmax pmax
comp=Z,8.0nm,0.6s
KKAR Karatay Array 53.18 299 *eP* **P 10 41 49.0 -0.6**
KKAR Karatay Array 53.18 299 *eP* **P 10 41 49.0 -0.6**
COEN Coen 53.42 180 *eP* **P 10 41 51.4 -0.1**
MTN Manton Dam 53.56 195 *eP* **P 10 41 51.9 -0.6**
comp=Z,22nm,0.8s
SVE Sverdlovsk 54.20 318⇓ *eP* **P 10 41 57.2 +0.4**
SVE pmax pmax
SVE comp=Z,36nm,0.9s MLR MLR
comp=Z,2µm,15.0s
NDI New Delhi 54.75 280 *eP* **P 10 41 57.0 -4.3**
ARU Arti 55.41 318 P **P 10 42 05.6 -0.1**
comp=Z,9.6nm,0.5s,baz=60,slow=5.1,SNR=22
ARU Arti 55.41 318*c iP* **P 10 42 05.5 -0.1**
ARU 10 44 08.2
ARU S **S 10 49 49.3 +1.2**
ARU SS **SS 10 53 25.6 -6.7**
ARU pmax pmax
comp=Z,14nm,0.8s
ARU MLR MLR
comp=Z,2µm,16.0s
ARU Arti 55.41 318 *eP* **P 10 42 05.6 -0.1**
comp=Z,22nm,0.8s
DLBC Dease Lake 55.52 40 P **P 10 42 08.2 +1.7**
comp=Z,3.7nm,0.9s,baz=272,slow=7.9,SNR=6.0
DLBC Dease Lake 55.52 40 *eP* **P 10 42 08.2 +1.7**
comp=Z,11nm,1.2s
AB31 Akbulak array 57.43 309 *eP* **P 10 42 20.0 -0.2**
AB31 pmax pmax
comp=Z,17nm,0.6s
ABKAR Akbulak array 57.43 309 *eP* **P 10 42 19.9 -0.3**
KBL Kabul 57.95 290 *eP* **P 10 42 22.9 -1.4**
KBL pmax pmax
comp=Z,49nm,0.8s
KBL Kabul 57.95 290 *eP* **P 10 42 22.9 -1.4**
comp=Z,49nm,0.8s
AKTO Aktyubinsk 58.07 311 P **P 10 42 24.1 -0.5**
comp=Z,5.4nm,0.6s,baz=63,slow=11,SNR=16
AKTO Aktyubinsk 58.07 311 P **P 10 42 24.5 -0.1**
AKTO pmax pmax
comp=Z,26nm,0.9s
SPITS Spitsbergen Ar 58.18 349 P **P 10 42 26.0 +1.0**
comp=Z,2.8nm,0.7s,baz=82,slow=14,SNR=4.4
RES Resolute Bay 59.58 15 *eP* **P 10 42 34.8 +0.1**
RES pmax pmax
comp=Z,12nm,0.8s
RES Resolute Bay 59.58 15 *eP* **P 10 42 34.8 +0.1**
comp=Z,12nm,0.8s
HYB Hyderabad 59.88 268 *i P* **P 10 42 39.0 +1.3**
FITZ Fitzroy Crossi 59.90 200 *eP* **P 10 42 37.3 -0.2**
comp=Z,30nm,1.3s
WRAB Tennant Creek 59.97 190*d iP* **P 10 42 36.5 -1.5**
WRAB pmax pmax
comp=Z,76nm,0.9s
WRAB Tennant Creek 59.97 190 *eP* **P 10 42 36.5 -1.5**
comp=Z,27nm,0.8s
WB2 Warramunga Arr 59.98 190 *eP* **P 10 42 36.7 -1.4**
comp=Z,27nm,0.8s
WRA Warramunga Ar 59.98 190 P **P 10 42 36.6 -1.5**
comp=Z,22nm,0.8s,baz=8.5,slow=7.2,SNR=104
LVZ Lovozero 60.30 336 P **P 10 42 41.0 +1.2**
LVZ pmax pmax
comp=Z,18nm,1.7s
LVZ Lovozero 60.30 336 *eP* **P 10 42 39.0 -0.8**
comp=Z,10nm,0.7s
YKW3 Yellowknife Ar 60.63 31 *eP* **P 10 42 42.5 +0.4**
comp=Z,13nm,1.4s
YKA Yellowknife Ar 60.67 31 P **P 10 42 42.5 +0.2**
comp=Z,2.0nm,0.7s,baz=301,slow=6.2,SNR=34
YKB5 Yellowknife Ar 60.67 31 *eP* **P 10 42 41.8 -0.5**
TMCR Tamitsa 61.14 331 *eP* **P 10 42 46.2 +0.7**
TMCR pmax pmax
comp=Z,20nm,0.9s
ARCES ARCESS Array B 62.03 339 P **P 10 42 51.7 +0.2**
comp=Z,2.0nm,0.6s,baz=43,slow=8.0,SNR=17
ARCES LR LR 11 12 18.2
comp=Z,325nm,21.5s,baz=36,slow=38
KLMR Klimovskoe 62.33 328 *eP* **P 10 42 53.4 -0.1**
KLMR *e* 10 43 31.5
KLMR pmax pmax
comp=Z,16nm,1.1s
DAG Danmarks Havn 63.21 355 *i P* **P 10 42 59.3 +0.1**
comp=Z,5.3nm,0.8s
DAG Danmarks Havn 63.21 355 *i P* **P 10 42 59.3 +0.1**
DAG pmax pmax
comp=Z,4.0nm,0.8s
AS01 Alice Springs 63.70 190 *eP* **P 10 43 02.0 -1.0**
AS31 Alice Springs 63.70 190 *eP* **P 10 43 02.2 -0.9**
comp=Z,3.2nm,0.8s
ASAR Alice Springs 63.70 190 P **P 10 43 02.2 -0.9**
comp=Z,9.6nm,0.7s,baz=10,slow=5.8,SNR=160
ASAR LR LR 11 09 06.2
comp=Z,96nm,22.0s,baz=357,slow=34
GEYT Alibeck 63.93 299 P **P 10 43 03.9 -0.8**
comp=Z,4.4nm,0.6s,baz=5.7,slow=3.0,SNR=7.1
GEYT LR LR 11 12 59.0
comp=Z,374nm,18.0s,baz=90,slow=38
B05A Bryant 64.30 48 P **P 10 43 07.7 +0.9**
baz=302
MBWA Marble Bar 64.51 205 *eP* **P 10 43 07.7 -0.7**
comp=Z,59nm,1.8s
D05A Enumclaw 64.92 49 *eP* **P 10 43 12.3 +1.3**
comp=Z,42nm,1.3s
EIDS Eidsvold 65.17 172 *eP* **P 10 43 12.5 -0.1**
comp=Z,16nm,0.8s
LTY Liberty 65.65 48 *eP* **P 10 43 17.0 +1.2**
comp=Z,9.7nm,0.8s
B08A Colville Reser 65.81 46 *eP* **P 10 43 17.5 +0.8**
comp=Z,36nm,1.5s
I03D Drain, OR 65.98 52 P **P 10 43 18.7 +0.9**
baz=303
MOS Moscow 66.03 323 *eP* **pP 10 43 24.9 -2.0**
MOS *e* 10 43 31.9
MOS *e* 10 52 18.6
G05D Wamic, OR 66.36 50 P **P 10 43 21.3 +0.9**
baz=303
I04A Tendick Farm, 66.50 52 P **P 10 43 22.2 +0.9**
baz=303
VRH Novokhopyorsk 66.64 318 *eP* **P 10 43 20.8 -1.1**
VRH *e**PP **pP 10 43 29.7 -1.2**
VRH pmax pmax
comp=Z,10.0nm,0.6s
L02D Cave Junction, 66.65 54 P **P 10 43 23.4 +1.2**
baz=303
C09A Chrisman Ranch 66.71 47 *eP* **P 10 43 23.1 +0.6**
comp=Z,43nm,1.4s
D08A Wollman Farm, 66.76 48 *eP* **P 10 43 24.1 +1.3**
comp=Z,12nm,0.8s
I05D Terrebonne, OR 66.85 51 P **P 10 43 24.4 +0.9**
baz=304
OBN Obninsk 66.88 323⇑ *eP* **P 10 43 24.2 +0.8**
OBN *i* *PP **pP 10 43 32.4 0.0**
OBN *SP **sP 10 43 37.0 +1.2**
OBN *e* 10 43 48.9

OBN eS S 10 52 08.1 -5.9
OBN pmax pmax
comp=Z,7.0nm,0.5s
OBN MLR MLR
comp=Z,778nm,15.0s
NEW Newport 67.09 46 P P 10 43 25.2 +0.3
baz=304,SNR=6.8
NEW Newport 67.09 46 eP P 10 43 25.8 +0.9
NEW pmax pmax
comp=Z,25nm,1.3s
NEW Newport 67.09 46 eP P 10 43 25.8 +0.9
comp=Z,25nm,1.3s
FIA1 FINESS Array S 67.16 332 eP P 10 43 24.6 -0.4
FIA1 eP P 10 43 25.1 +0.1
FINES FINESS Array B 67.16 332 P P 10 43 25.1 0.0
comp=Z,7.7nm,0.6s,baz=47,slow=8.0,SNR=46
FINES LR LR 11 15 39.7
comp=Z,935nm,18.3s,baz=32,slow=38
LPSR Galich'ya Gora 67.25 320 eP P 10 43 25.9 +0.2
LPSR e*PP pP 10 43 34.6 -0.2
LPSR pmax pmax
comp=Z,10.0nm,0.9s
KHMM Horse Mountain 67.28 55 eP P 10 43 28.8 +2.5
comp=Z,70nm,1.4s
YBH Yreka Blue Hor 67.44 54 eP P 10 43 29.2 +1.9
YBH pmax pmax
comp=Z,25nm,1.3s
YBH Yreka Blue Hor 67.44 54 eP P 10 43 29.2 +1.9
comp=Z,25nm,1.3s
J05D Fort Rock, OR 67.49 52 P P 10 43 29.2 +1.5
baz=304,SNR=8.6
K04D Chiloquin, OR 67.54 53 P P 10 43 28.8 +0.8
baz=304
M02C Callahan 67.54 54 P P 10 43 29.5 +1.5
baz=304,SNR=5.8
AFI Afiamalu 67.71 132 LR LR 11 06 49.0
comp=Z,126nm,21.4s,baz=342,slow=30
N02D Trinity Center 67.87 55 P P 10 43 31.2 +1.2
baz=304,SNR=6.1
VSR Storozhevoye 67.94 319 eP P 10 43 28.3 -1.9
VSR e*PP pP 10 43 37.3 -1.9
VSR pmax pmax
comp=Z,6.0nm,0.7s
M04C Macdoel 67.96 54 P P 10 43 31.9 +1.3
baz=304,SNR=7.9
SUMG Summit 67.97 1 *i* P P 10 43 31.4 +0.9
comp=Z,14nm,0.9s
SUMG Summit 67.97 1 eP P 10 43 31.8 +1.3
SUMG pmax pmax
comp=Z,30nm,0.8s
SUMG Summit 67.97 1 eP P 10 43 31.8 +1.3
comp=Z,30nm,0.8s
K05A Summer Lake 68.01 52 eP P 10 43 33.3 +2.3
comp=Z,61nm,1.0s
WDC Whiskeytown Da 68.19 55 eP P 10 43 33.7 +1.8
WDC pmax pmax
comp=Z,21nm,1.1s
WDC Whiskeytown Da 68.19 55 eP P 10 43 33.7 +1.8
comp=Z,21nm,1.1s
F10A Beach Ranch, E 68.33 48 eP P 10 43 33.8 +1.0
comp=Z,7.7nm,1.0s
WALA Waterton Lakes 68.37 44 eP P 10 43 34.3 +1.2
comp=Z,31nm,1.5s
BSMT Bassoo Peak 68.61 45 eP P 10 43 35.9 +1.2
O03D Paynes Creek 68.82 55 P P 10 43 36.7 +0.8
baz=305,SNR=10.0
MOD Modoc Plateau 68.84 53 eP P 10 43 37.5 +1.4
comp=Z,15nm,1.0s
VSU Vasula 68.92 330↓ eP P 10 43 36.4 +0.3
VSU pmax pmax
comp=Z,21nm,0.7s
BMO Blue Mountains 68.93 49 eP P 10 43 37.8 +1.1
comp=Z,13nm,1.0s
JTMT Jette 68.94 45 eP P 10 43 38.2 +1.5
YBMT Yellow Bay 69.02 45 eP P 10 43 38.6 +1.5
SWMT Swartz Lake 69.24 45 eP P 10 43 39.5 +1.0
ORV Oroville 69.43 55 eP P 10 43 40.5 +0.8
ORV pmax pmax
comp=Z,20nm,1.1s
ORV Oroville 69.43 55 eP P 10 43 40.5 +0.8
comp=Z,20nm,1.1s
GOF Gofitskoye 69.48 312↑ eP pP 10 43 49.3 +0.4
GOF pmax pmax
comp=Z,67nm,0.5s
WVOR Wild Horse Val 69.55 51 eP P 10 43 41.8 +1.3
WVOR pmax pmax
comp=Z,24nm,1.2s
WVOR Wild Horse Val 69.55 51 eP P 10 43 41.8 +1.3
comp=Z,24nm,1.2s
MSO Missoula 69.68 46 P P 10 43 41.7 +0.5
baz=307,SNR=6.9
MSO Missoula 69.68 46 eP P 10 43 42.0 +0.8
comp=Z,17nm,1.1s
CHMT Chamberlain Mo 70.00 45 eP P 10 43 44.2 +0.8
AFDM Forest Hills D 70.11 56 eP P 10 43 45.2 +1.3
comp=Z,15nm,1.2s
GUDG Gudauri 70.16 309 P P 10 43 46.1 +1.7
ARMA Armidale 70.22 172 eP P 10 43 44.7 +0.2
comp=Z,26nm,1.3s
ZEI Tsey 70.31 310 eP P 10 43 44.1 -1.2
ZEI pmax pmax
comp=Z,23nm,0.6s
KVAR Kislovodsk Arr 70.33 311 P P 10 43 46.0 +0.8
comp=Z,11nm,0.7s,baz=237,slow=7.7,SNR=5.7
KIV Kislovodsk 70.33 311 eP P 10 43 46.4 +1.1
KIV pmax pmax
comp=Z,83nm,1.0s
KIV MLR MLR
comp=Z,673nm,18.0s
KIV Kislovodsk 70.33 311 eP P 10 43 46.6 +1.4
comp=Z,69nm,0.9s
KBZ Khabaz 70.34 311 P P 10 43 45.5 +0.3
comp=Z,9.2nm,0.8s,baz=104,slow=3.5,SNR=14
KBZ LR LR 11 19 44.6
comp=Z,226nm,18.1s,baz=42,slow=40
FFC Flin Flon 70.57 34 eP P 10 43 46.8 +0.4
FFC pmax pmax
comp=Z,14nm,0.9s
FFC Flin Flon 70.57 34 eP P 10 43 46.8 +0.4
comp=Z,14nm,0.9s
MFID Camas Ranch 70.64 49 eP P 10 43 48.3 +1.2
comp=Z,14nm,1.1s
ONI Oni 70.69 310 P P 10 43 48.3 +0.8
ONI Oni 70.69 310 eP P 10 43 48.2 +0.8
NEY Neytrino 70.73 310↓ eP P 10 43 48.5 +0.7
NEY pmax pmax
comp=Z,2.0nm,1.1s
FCC Fort Churchill 70.87 28 eP P 10 43 48.2 +0.1
FCC pmax pmax
comp=Z,17nm,1.3s
FCC Fort Churchill 70.87 28 eP P 10 43 48.2 +0.1
comp=Z,17nm,1.3s
CMB Columbia Colle 71.02 56 eP P 10 43 50.7 +1.2
CMB pmax pmax
comp=Z,25nm,1.1s
CMB Columbia Colle 71.02 56 eP P 10 43 50.7 +1.2
comp=Z,25nm,1.1s
EGMT Eagleton 71.19 43 P P 10 43 51.2 +0.8
baz=309
STKA Stephens Creek 71.28 182 P P 10 43 50.2 -0.6
comp=Z,6.0nm,0.7s,baz=325,slow=10.0,SNR=18
STKA LR LR 11 19 47.2
comp=Z,54nm,18.7s,baz=21,slow=40
STKA Stephens Creek 71.28 182 eP P 10 43 50.3 -0.5
comp=Z,1.3nm,0.8s
DLMT Dillon 71.31 46 eP P 10 43 52.0 +0.8
comp=Z,17nm,0.9s
WAKR Walker 71.35 55 eP P 10 43 53.1 +1.4
AKH Akhalkalaki 71.37 309↑ *i* P P 10 43 51.8 +0.1
HLID Hailey 71.37 49 P P 10 43 52.7 +1.0
baz=307,SNR=14
HLID Hailey 71.37 49 eP P 10 43 52.9 +1.2
comp=Z,11nm,1.0s
CHVG Ch'k'valeri 71.43 310 P P 10 43 56.2 +4.4
BMN Battle Mountai 71.58 53 eP P 10 43 54.9 +1.9
BMN pmax pmax
comp=Z,24nm,1.1s
BMN Battle Mountai 71.58 53 eP P 10 43 54.9 +1.9
comp=Z,24nm,1.1s
BOZ Bozeman (W) 71.67 46 P P 10 43 54.3 +0.8
baz=308,SNR=23
BOZ Bozeman (W) 71.67 46 eP P 10 43 54.6 +1.2
BOZ pmax pmax
comp=Z,14nm,0.8s
BOZ Bozeman (W) 71.67 46 eP P 10 43 54.6 +1.2
comp=Z,14nm,0.8s
WBK Wadi Bani Khal 71.82 285 P P 10 43 55.3 +0.8
SNR=8.6
NC405 NORSAR Array S 72.09 338 eP P 10 43 56.2 +0.7
NC303 NORSAR Array S 72.10 338 eP P 10 43 56.7 +1.2
NV01 Mina Array Sit 72.11 55 eP P 10 43 57.5 +1.2
NVAR Mina Array Bea 72.11 55 P P 10 43 57.6 +1.3
comp=Z,15nm,0.8s,baz=287,slow=6.5,SNR=87
NVAR LR LR 11 16 22.6
comp=Z,34nm,18.5s,baz=316,slow=36
NV11 Mina Array Sit 72.20 55 eP P 10 43 58.1 +1.4
comp=Z,15nm,0.6s
NC204 NORSAR Array S 72.24 338 eP P 10 43 57.5 +1.1
MLAC Mammoth, Mammo 72.25 56 P P 10 43 58.4 +1.3
baz=307,SNR=8.3
NB201 NORSAR Array S 72.27 338 eP P 10 43 57.4 +0.9
HFS Hagfors 72.27 336 P P 10 43 57.0 +0.5
comp=Z,9.9nm,0.5s,baz=46,slow=6.4,SNR=46
QLMT Earthquake Lak 72.29 46 eP P 10 43 58.7 +1.5
NB2 NORSAR Subarra 72.30 338 P P 10 43 56.6 -0.2
comp=Z,8.6nm,0.6s,baz=39,slow=6.2
NOA NORSAR Array B 72.30 338 P P 10 43 57.0 +0.3
comp=Z,6.4nm,0.6s,baz=40,slow=6.0,SNR=38
NOA LR LR 11 20 47.7
comp=Z,222nm,18.5s,baz=35,slow=40
NBO02 NORSAR Array S 72.39 338 eP P 10 43 58.2 +0.9
NBO00 NORSAR Array S 72.43 338 eP P 10 43 58.5 +0.9
UOSS Minazif 72.49 288 eP P 10 43 59.3 +0.8
comp=Z,2.1nm,1.1s
BBOO Buckleboo 72.51 187 eP P 10 43 58.2 0.0
comp=Z,20nm,0.8s
NAO01 NORSAR Array S 72.55 338 eP P 10 43 59.5 +1.3
ELK Elko 72.60 51 eP P 10 44 00.9 +1.7
ELK pmax pmax
comp=Z,9.0nm,1.2s
ELK Elko 72.60 51 eP P 10 44 00.9 +1.7
comp=Z,8.7nm,1.2s
JMDO Jabal Madar 72.60 285 P P 10 43 59.1 -0.1
SNR=6.3
YMR Madison River 72.65 46 eP P 10 44 00.4 +1.0
comp=Z,30nm,1.6s
RCTC Rector, Farmer 72.78 57 P P 10 44 00.9 +0.9
baz=307
ANN Anapa 72.79 314 eP P 10 43 58.6 -1.3
ANN e*PP pP 10 44 09.3 +0.3
ANN e 10 44 25.1
ANN ePPP PPP 10 48 26.6
ANN eS S 10 53 20.9 -2.8
ANN pmax pmax
comp=Z,123nm,1.4s
YFT Old Faithful 72.86 46 eP P 10 44 02.1 +1.5
comp=Z,8.6nm,0.9s
SMMC Simmler 72.88 58 P P 10 44 01.7 +1.0
baz=307
H17A Grant Village 73.03 46 P P 10 44 03.7 +1.9
baz=309,SNR=7.8
H17A Grant Village 73.03 46 eP P 10 44 04.5 +2.8
comp=Z,20nm,1.0s
SFJD Kangerlussuaq 73.05 6 *i* P P 10 44 00.6 -0.4
SFJD Kangerlussuaq 73.05 6 eP P 10 44 01.5 +0.5
SFJD pmax pmax
comp=Z,20nm,1.0s
SFJD Kangerlussuaq 73.05 6 eP P 10 44 01.5 +0.5
comp=Z,20nm,1.0s
AKASG Malin Array Be 73.12 323 P P 10 44 01.6 -0.1
comp=Z,4.4nm,0.5s,baz=44,slow=6.2,SNR=19
AKASG LR LR 11 21 09.2
comp=Z,193nm,19.1s,baz=65,slow=40
KIEV Kiev 73.13 323 eP P 10 44 01.8 0.0
KIEV pmax pmax
comp=Z,13nm,0.7s
KIEV Kiev 73.13 323 eP P 10 44 01.8 0.0
comp=Z,13nm,0.7s
IMW Indian Meadow 73.15 47 eP P 10 44 04.3 +1.8
comp=Z,9.8nm,0.8s
FLWY Flagg Ranch 73.16 46 eP P 10 44 04.3 +1.9
comp=Z,59nm,2.0s
PKM Mcpherson Peak 73.25 58 P P 10 44 04.1 +1.0
baz=307
RLMT Red Lodge 73.29 45 P P 10 44 04.2 +1.0
baz=310,SNR=6.7
RLMT Red Lodge 73.29 45 eP P 10 44 04.3 +1.1
comp=Z,5.6nm,0.8s
MOOW Moose Ponds 73.35 47 eP P 10 44 04.6 +1.0
comp=Z,11nm,1.1s
HVU Hansel Valley 73.42 49 eP P 10 44 05.7 +1.8
HVU pmax pmax
comp=Z,10.0nm,0.9s
HVU Hansel Valley 73.42 49 eP P 10 44 05.7 +1.8
comp=Z,10nm,0.9s
LOHW Long Hollow 73.51 47 eP P 10 44 05.6 +1.0
comp=Z,5.2nm,0.9s
SNOW Snow King Moun 73.53 47 eP P 10 44 06.7 +2.0
comp=Z,9.8nm,0.9s
REDW Red Top Meadow 73.53 47 eP P 10 44 06.1 +1.4
comp=Z,8.6nm,0.9s
GRAC Grapevine Rang 73.56 55 P P 10 44 05.8 +1.1
baz=308,SNR=16
ISA Isabella, Lake 73.66 57 eP P 10 44 05.9 +0.6
ISA pmax pmax
comp=Z,35nm,0.6s
ISA Isabella, Lake 73.66 57 eP P 10 44 05.9 +0.6
comp=Z,35nm,0.6s
DGMT Dagmar 73.73 40 P P 10 44 05.6 +0.1
baz=312
DGMT Dagmar 73.73 40 eP P 10 44 06.1 +0.6
comp=Z,49nm,1.6s
ARVC Arvin 73.75 58 P P 10 44 06.4 +0.7
baz=307
AHID Auburn Hatcher 73.77 48 eP P 10 44 07.5 +1.4
comp=Z,9.2nm,0.6s
R11A Troy Canyon, C 73.85 53 P P 10 44 07.5 +1.0
baz=308,SNR=24
R11A Troy Canyon, C 73.85 53 eP P 10 44 07.8 +1.2
comp=Z,20nm,1.2s
MPMC Manual Prospec 74.06 56 P P 10 44 08.7 +0.9
baz=308,SNR=15
FURC Furnace Creek, 74.21 56 P P 10 44 09.7 +1.3
baz=308,SNR=17
BLG Laguna Peak, P 74.22 59 P P 10 44 09.5 +1.0
baz=308
HWUT Hardware Ranch 74.24 49 eP P 10 44 10.4 +1.7
comp=Z,22nm,1.3s
LRMC Laurel Mtn Rad 74.28 57 P P 10 44 09.9 +0.8
baz=308
TPNV Topopah Spring 74.30 55 P P 10 44 09.9 +0.8
baz=308,SNR=30
TPNV Topopah Spring 74.30 55 eP P 10 44 10.1 +0.9
TPNV pmax pmax
comp=Z,27nm,1.0s
TPNV Topopah Spring 74.30 55 eP P 10 44 10.1 +0.9
comp=Z,27nm,1.0s
DUG Dugway, Tooele 74.39 51 P P 10 44 10.8 +1.1
baz=309,SNR=14
DUG Dugway, Tooele 74.39 51 eP P 10 44 11.1 +1.5
DUG pmax pmax
comp=Z,23nm,1.1s
DUG Dugway, Tooele 74.39 51 eP P 10 44 11.1 +1.5
comp=Z,23nm,1.1s
SNCC San Nicolas Is 74.43 60 P P 10 44 11.1 +1.3
baz=308
EDW2 Edwards Air Fo 74.45 58 P P 10 44 10.9 +0.9
baz=308,SNR=7.4
A26A Wade Farm, Ken 74.50 39 P P 10 44 10.5 +0.6
baz=313
SIM Simferopol' 74.50 316 eP pP 10 44 17.5 -1.6
SIM pmax pmax
comp=Z,23nm,1.2s
TCUT Toone Canyon 74.64 49 eP P 10 44 12.8 +1.7
comp=Z,78nm,1.7s
BW06 Boulder Array 74.64 47 P P 10 44 11.6 +0.4
baz=310,SNR=12
BW06 Boulder Array 74.64 47 eP P 10 44 11.5 +0.4
BW06 eP P 10 44 11.8 +0.6
PD31 Pinedale Array 74.64 47 eP P 10 44 11.8 +0.7
PDAR Pinedale Array 74.64 47 P P 10 44 11.7 +0.6
comp=Z,5.0nm,0.6s,baz=258,slow=2.3,SNR=66
PDAR LR LR 11 13 00.8
comp=Z,26nm,21.2s,baz=344,slow=32
B26A Jensen Ranch, 74.76 39 P P 10 44 12.2 +0.7
baz=313
PSUT Pine Spring 74.81 52 eP P 10 44 13.6 +1.5
comp=Z,11nm,1.0s
A27A Ledoux Ranch, 74.84 38 P P 10 44 12.6 +0.7
baz=314
SHOC Shoshone, Teco 74.93 56 P P 10 44 13.6 +1.0
baz=308
JLU Jordanelle 74.94 50 eP P 10 44 14.4 +1.5
comp=Z,8.8nm,1.1s
GSC Goldstone, Bar 74.96 57 P P 10 44 13.7 +0.8
baz=308,SNR=7.0
GSC Goldstone, Bar 74.96 57 eP P 10 44 14.2 +1.3
GSC pmax pmax
comp=Z,15nm,1.1s
GSC Goldstone, Bar 74.96 57 eP P 10 44 14.2 +1.3
comp=Z,15nm,1.1s
NLU North Lily Min 74.98 50 eP P 10 44 14.7 +1.5
comp=Z,8.7nm,1.0s
BFSC Mount Baldy Ra 75.06 58 P P 10 44 14.4 +0.9
baz=308
CIS Catalina Islan 75.07 59 P P 10 44 14.3 +0.8
baz=308
C26A Wahner Farm, P 75.20 39 P P 10 44 14.7 +0.7
baz=314
A28A Rude Farm, Bot 75.33 38 P P 10 44 15.3 +0.6
baz=314
TUQ Turquoise Moun 75.44 56 P P 10 44 16.7 +1.0
baz=309
E25A Miller Ranch, 75.46 41 P P 10 44 16.6 +1.0
baz=313
BBRC Big Bear Solar 75.53 57 P P 10 44 16.6 +0.2
baz=308
HEC Hector,Ludlow 75.55 57 P P 10 44 17.1 +0.8
baz=308,SNR=7.5
C27A Sayler Ranch, 75.57 39 P P 10 44 16.8 +0.7
baz=314
D26A Manning 75.58 40 P P 10 44 16.9 +0.7
baz=314
B28A Dugan Ranch, T 75.61 38 P P 10 44 16.4 +0.1
baz=314
MURC Murrieta 75.75 58 P P 10 44 17.8 +0.4
baz=308
BSD Bornholm Skovb 75.80 332 *i* P P 10 44 14.8 -2.4
BSD Bornholm Skovb 75.80 332 eP P 10 44 14.8 -2.4
A29A Manning Farm, 75.81 37 P P 10 44 17.8 +0.3
baz=315,SNR=5.7
F25A Bowman 75.83 41 P P 10 44 18.0 +0.3
baz=313
MSU Marysvale 75.84 52 eP P 10 44 20.2 +2.1
MSU Marysvale 75.84 52 eP P 10 44 20.2 +2.1
E26A Carlson Angus 75.96 41 P P 10 44 18.9 +0.5
baz=314
D27A Center 75.98 40 P P 10 44 19.3 +0.8
baz=314
GMRC Granite Mounta 76.02 56 P P 10 44 19.6 +0.6
baz=309
B29A Wagenman Farm, 76.07 38 P P 10 44 19.4 +0.5
baz=315
P17A Butcher Ranch, 76.08 50 eP P 10 44 21.2 +1.8
comp=Z,25nm,1.1s
LVV L'vov 76.12 324 eP P 10 44 27.6 +8.4
MTPU Mount Pierson 76.13 52 eP P 10 44 20.9 +1.0
comp=Z,20nm,0.9s
LCMT Little Creek M 76.14 53 eP P 10 44 21.2 +1.5
comp=Z,19nm,0.9s
A30A Hoffart Farm, 76.23 37 P P 10 44 19.9 +0.1
baz=316,SNR=5.1
PFO Pinyon Flats O 76.23 58 P P 10 44 20.8 +0.5
baz=309
PFO Pinyon Flats O 76.23 58 eP P 10 44 21.2 +0.9
PFO pmax pmax
comp=Z,22nm,1.4s
PFO Pinyon Flats O 76.23 58 eP P 10 44 21.2 +0.9
comp=Z,22nm,1.4s
P18A Preston Nutter 76.27 50 eP P 10 44 22.2 +1.6
comp=Z,12nm,1.0s
F26A Lodgepole 76.28 41 P P 10 44 20.3 0.0
baz=314
BELC Belle Mtn. Jos 76.29 57 P P 10 44 20.6 0.0
baz=309
G25A Newell 76.35 42 P P 10 44 20.9 +0.3
baz=313
ULM Lac du Bonnet 76.37 35 P P 10 44 19.8 -0.8
comp=Z,5.5nm,0.9s,baz=326,slow=5.8,SNR=4.8
D28A Regan 76.39 39 P P 10 44 21.1 +0.3
baz=315
MDND Maddock 76.39 38 P P 10 44 21.0 +0.2
baz=315
MDND Maddock 76.39 38 eP P 10 44 21.9 +1.1
comp=Z,40nm,1.1s
KNB Kanab 76.40 53 eP P 10 44 23.0 +1.7
KNB pmax pmax
comp=Z,55nm,1.6s
KNB Kanab 76.40 53 eP P 10 44 22.9 +1.7
comp=Z,55nm,1.6s
K22A Casper 76.41 45 P P 10 44 21.2 +0.1
baz=312,SNR=5.0
K22A Casper 76.41 45 eP P 10 44 22.0 +0.8
comp=Z,14nm,1.2s
E27A Carson 76.43 40 P P 10 44 20.8 -0.3
baz=314
SRU San Rafael Swe 76.44 50 eP P 10 44 22.4 +0.9
SRU pmax pmax
comp=Z,25nm,1.0s
SRU San Rafael Swe 76.44 50 eP P 10 44 22.4 +0.9
comp=Z,25nm,1.0s
B30A Myrvik Farm, E 76.56 37 P P 10 44 21.7 0.0
baz=316,SNR=5.3
F27A Lemmon 76.59 41 P P 10 44 22.3 +0.3
baz=314
H25A Fruitdale 76.64 43 P P 10 44 21.9 -0.5
baz=313
G26A Maurine 76.70 42 P P 10 44 22.6 -0.1
baz=314
MONP2 Monument Peak 76.70 58 P P 10 44 23.2 +0.1
baz=309
IRM Iron Mountain 76.74 57 P P 10 44 23.4 +0.3
baz=309
RSSD Black Hills 76.76 43 P P 10 44 23.2 0.0
baz=313
RSSD Black Hills 76.76 43 eP P 10 44 23.6 +0.4
RSSD pmax pmax
comp=Z,13nm,1.0s
RSSD Black Hills 76.76 43 eP P 10 44 23.6 +0.4
comp=Z,13nm,1.0s
E28A Huff 76.76 40 P P 10 44 23.0 +0.1
baz=315
KWP Kalwaria Pacla 76.84 325↓ *i* P P 10 44 24.9 +1.6
BC3 Big Chuckawall 76.86 57 P P 10 44 23.6 -0.2
baz=309
B31A Greenbush Farm 76.90 37 P P 10 44 23.5 -0.1
baz=316
G27A Dupree 76.98 41 P P 10 44 23.9 -0.3
baz=314,SNR=5.3
I25A Rochford 76.99 43 P P 10 44 24.2 -0.2
baz=313
A32A Rocking H Ranc 77.07 36 P P 10 44 24.5 0.0
baz=317
H26A Fairpoint 77.08 42 P P 10 44 24.8 0.0
baz=314
O20A White River Ci 77.11 48 P P 10 44 25.6 +0.4
baz=312,SNR=5.3
O20A White River Ci 77.11 48 eP P 10 44 26.2 +1.0
comp=Z,19nm,1.3s
BUR08 Bucovina Ar. S 77.15 322 eP P 10 44 25.8 +0.6
BURAR Bucovina Array 77.16 322↑ *i* P P 10 44 26.3 +1.1
PDMCI Parker Dam,Lak 77.29 56 P P 10 44 27.1 +1.0
baz=310
C31A Landman Farms, 77.31 37 P P 10 44 25.9 0.0
baz=316
D30A Buchanan 77.32 38 P P 10 44 26.3 +0.2
baz=316
J25A Sunshine Ranch 77.38 44 P P 10 44 26.7 +0.1
baz=313
Y12C Blythe 77.40 57 P P 10 44 27.8 +1.2
baz=310
Y12C Blythe 77.40 57 eP P 10 44 28.1 +1.5
comp=Z,17nm,1.0s
H27A Howes 77.42 42 P P 10 44 26.6 -0.1
baz=314
B32A Ashes, Strandq 77.43 36 P P 10 44 26.7 +0.1
baz=317,SNR=5.7
I26A New Underwood 77.44 43 P P 10 44 27.2 +0.4
baz=314
CFR Carcaliu 77.46 319↑ *i* P P 10 44 26.9 +0.1
A33A Warroad 77.55 35 P P 10 44 27.5 +0.2
baz=318
GLA Glamis 77.64 57 P P 10 44 28.8 +0.7
baz=310
OJC Ojcow 77.67 327 eP P 10 44 28.3 +0.4
OJC pmax pmax
comp=Z,42nm,1.0s
OJC Ojcow 77.67 327 eP P 10 44 28.3 +0.4
comp=Z,42nm,1.0s
PV09 Paradox Valley 77.67 50 eP P 10 44 30.0 +1.5
VRI Vrincioaia 77.68 320↑ *i* P P 10 44 29.0 +0.9

G28A	**Parade**	**77.70**	**41**	P		**P**		**10 44 28.6**	**+0.3**
	baz=315									
UZH	**Uzhgorod**	**77.77**	**324**	*e*P		**pP**		**10 44 37.0**	**-0.6**
UZH				*e*				10 44 42.7		
UZH				*e*				10 44 51.3		
PV10	**Paradox Valley**	**77.80**	**50**	*e*P		**P**		**10 44 30.7**	**+1.5**
AGMN	**Agassiz Nation**	**77.81**	**36**	P		**P**		**10 44 28.8**	**+0.1**
	baz=317									
J26A	**Sides Ranch, S**	**77.82**	**43**	P		**P**		**10 44 29.2**	**+0.3**
	baz=314									
I27A	**Quinn**	**77.83**	**42**	P		**P**		**10 44 29.2**	**+0.2**
	baz=314,SNR=8.4									
N23A	**Red Feather La**	**77.91**	**47**	P		**P**		**10 44 30.6**	**+0.8**
	baz=313,SNR=8.4									
N23A	**Red Feather La**	**77.91**	**47**	*e*P		**P**		**10 44 31.4**	**+1.6**
	comp=Z,14nm,1.0s									
H28A	**Mission Ridge**	**77.93**	**41**	P		**P**		**10 44 30.1**	**+0.6**
	baz=315									
CRVS	**Cervenica-Dubn**	**77.93**	**325**	*e*P		**P**		**10 44 30.7**	**+1.3**
CRVS				*e*				10 44 44.8		
CRVS	**Cervenica-Dubn**	**77.93**	**325**	*e*P		**P**		**10 44 30.7**	**+1.3**
CRVS				*e*				10 44 44.8		
PV05	**Paradox Valley**	**77.96**	**50**	*e*P		**P**		**10 44 31.7**	**+1.7**
E31A	**Nome**	**78.13**	**38**	P		**P**		**10 44 30.5**	**0.0**
	baz=316									
B34A	**Aery, Baudette**	**78.21**	**35**	P		**P**		**10 44 30.3**	**-0.7**
	baz=318									
BRTR	**Keskin Array B**	**78.23**	**312**	P		**P**		**10 44 31.7**	**+0.3**
	comp=Z,1.2nm,0.6s,baz=84,slow=4.4,SNR=6.5									
BRTR				LR		LR		11 23 01.0		
	comp=Z,129nm,18.3s,baz=30,slow=39									
PV01	**Paradox Valley**	**78.24**	**50**	*e*P		**P**		**10 44 32.6**	**+1.0**
C33A	**Trail**	**78.25**	**36**	P		**P**		**10 44 30.5**	**-0.7**
	baz=318									
WUAZ	**Wupatki**	**78.25**	**54**	P		**P**		**10 44 32.7**	**+1.0**
	baz=311									
I28A	**Midland**	**78.33**	**42**	P		**P**		**10 44 32.3**	**+0.6**
	baz=315,SNR=7.7									
MLR	**Muntele Rosu**	**78.33**	**320**	⇑*i*P		**P**		**10 44 32.3**	**+0.5**
MSAB	**Monastry St. A**	**78.38**	**318**	⇓*i*P		**P**		**10 44 32.3**	**+0.3**
J27A	**Elkhorn Farm,**	**78.42**	**43**	P		**P**		**10 44 32.8**	**+0.5**
	baz=314,SNR=7.2									
SMCO	**Snowmass**	**78.48**	**48**	*e*P		**P**		**10 44 34.0**	**+0.9**
	comp=Z,16nm,1.4s									
G30A	**Faulkton**	**78.55**	**40**	P		**P**		**10 44 32.7**	**-0.2**
	baz=316									
LANS	**Liptovska Anna**	**78.61**	**326**	*e*P		**P**		**10 44 33.9**	**+0.7**
LANS				*e*				10 44 44.0		
LANS	**Liptovska Anna**	**78.61**	**326**	*e*P		**P**		**10 44 33.9**	**+0.7**
LANS				*e*				10 44 44.0		
BR231	**Keskin MP Arra**	**78.65**	**313**	*e*P		**P**		**10 44 32.5**	**-1.1**
D33A	**AnnSam, Waubun**	**78.67**	**37**	P		**P**		**10 44 33.2**	**-0.3**
	baz=318									
KECS	**Kecovo**	**78.68**	**325**	*e*P		**P**		**10 44 37.9**	**+4.4**
KECS				*e*				10 44 43.2		
KECS				pmax		pmax				
	comp=Z,2.0nm,0.7s									
KECS	**Kecovo**	**78.68**	**325**	*e*P		**P**		**10 44 37.9**	**+4.4**
KECS				*e*				10 44 43.2		
J28A	**Allard Ranch,**	**78.70**	**42**	P		**P**		**10 44 34.5**	**+0.7**
	baz=315,SNR=8.1									
B35A	**Bob, Littlefor**	**78.72**	**35**	P		**P**		**10 44 33.1**	**-0.7**
	baz=319									
C34A	**RKJ Ranch, Bem**	**78.72**	**36**	P		**P**		**10 44 33.1**	**-0.7**
	baz=318									
I29A	**Vivian Onida**	**78.76**	**41**	P		**P**		**10 44 34.3**	**+0.2**
	baz=315									
ISCO	**Idaho Springs**	**78.83**	**47**	P		**P**		**10 44 35.6**	**+0.6**
	baz=313,SNR=6.5									
ISCO	**Idaho Springs**	**78.83**	**47**	*e*P		**P**		**10 44 36.0**	**+1.1**
ISCO				pmax		pmax				
	comp=Z,6.0nm,1.0s									
ISCO	**Idaho Springs**	**78.83**	**47**	*e*P		**P**		**10 44 36.0**	**+1.1**
	comp=Z,6.4nm,1.0s									
MVCO	**Mesa Verde**	**78.89**	**51**	P		**P**		**10 44 36.4**	**+1.1**
	baz=312									
MVCO	**Mesa Verde**	**78.89**	**51**	*e*P		**P**		**10 44 36.8**	**+1.5**
	comp=Z,45nm,1.6s									
MORC	**Moravsky Berou**	**78.94**	**328**	*e*P		**P**		**10 44 36.5**	**+1.4**
MORC				pmax		pmax				
	comp=Z,81nm,1.0s									
MORC	**Moravsky Berou**	**78.94**	**328**	*e*P		**P**		**10 44 36.5**	**+1.4**
	comp=Z,81nm,1.0s									
DPC	**Dobruska-Polom**	**79.00**	**329**	*e*P		**P**		**10 44 36.8**	**+1.5**
DPC				*ep*P		**pP**		**10 44 45.2**	**+0.7**
DPC	**Dobruska-Polom**	**79.00**	**329**	*e*P		**P**		**10 44 36.8**	**+1.5**
DPC				*e*				10 44 45.2		
UPC	**Upice**	**79.00**	**329**	AMS		AMS		11 23 20.0		
	comp=Z,600nm,17.2s									
D34A	**Park Rapids**	**79.01**	**36**	P		**P**		**10 44 35.3**	**-0.1**
	baz=318									
ARR	**Arges**	**79.06**	**321**	⇑*i*P		**P**		**10 44 36.6**	**+0.8**
E33A	**Westby DABS, E**	**79.06**	**37**	P		**P**		**10 44 35.9**	**+0.2**
	baz=316									
C35A	**Jirik Farms, M**	**79.10**	**35**	P		**P**		**10 44 35.8**	**-0.1**
	baz=319									
SUSD	**Miller**	**79.14**	**40**	P		**P**		**10 44 36.3**	**+0.2**
	baz=316									
J29A	**Okreek**	**79.18**	**42**	P		**P**		**10 44 36.6**	**+0.2**
	baz=315									
G32A	**Webster**	**79.27**	**39**	P		**P**		**10 44 36.3**	**-0.6**
	baz=317									
I30A	**Oacoma**	**79.28**	**41**	P		**P**		**10 44 37.3**	**+0.3**
	baz=316,SNR=5.6									
H31A	**Wolsey**	**79.35**	**40**	P		**P**		**10 44 37.5**	**+0.2**
	baz=316									
PSZ	**Piszkesteto**	**79.36**	**325**	⇑*i*P		**P**		**10 44 39.3**	**+1.9**
VYHS	**Vyhne**	**79.39**	**326**	*e*P		**P**		**10 44 38.8**	**+1.4**
VYHS				*e*				10 44 47.5		
VYHS				pmax		pmax				
	comp=Z,8.0nm,1.2s									
VYHS	**Vyhne**	**79.39**	**326**	*e*P		**P**		**10 44 38.8**	**+1.4**
VYHS				*e*				10 44 47.5		
F33A	**5 Mile Ranch,**	**79.42**	**38**	P		**P**		**10 44 37.8**	**+0.2**
	baz=318									
BRG	**Berggiesshubel**	**79.52**	**330**	*e*P		**pP**		**10 44 47.3**	**+0.1**
	comp=Z,9.7nm,0.9s									
BRG				*e*				10 44 56.5		
	comp=Z,12nm,1.1s									
	comp=N,386nm,19.0s									
	comp=E,309nm,20.6s									
	comp=Z,439nm,18.6s									
BRG	**Berggiesshubel**	**79.52**	**330**	*e*P		**pP**		**10 44 47.3**	**+0.1**
BRG				*e*				10 44 56.5		
BRG								10 47 34.8		
BRG				pmax		pmax				
	comp=Z,1.0nm,0.9s									
BRG				pmax		pmax				
	comp=Z,10.0nm,1.1s									
BRG				MLR		MLR				
	comp=N,12µm,19.0s									
BRG				MLR		MLR				
	comp=E,386nm,20.6s									
BRG				MLR		MLR				
	comp=Z,309nm,18.6s									
S22A	**4UR Ranch, Cre**	**79.52**	**49**	P		**P**		**10 44 39.6**	**+0.9**
	baz=313,SNR=12									
S22A	**4UR Ranch, Cre**	**79.52**	**49**	*e*P		**P**		**10 44 40.1**	**+1.4**
	comp=Z,11nm,1.0s									
CLL	**Collm**	**79.53**	**331**	*e*P		**P**		**10 44 39.0**	**+0.9**
	comp=Z,4.0nm,0.6s									
CLL				*i*				10 44 47.1		
	comp=Z,19nm,0.9s									
CLL				*i*				10 44 56.1		
CLL				LmH				11 18 00.0		
	comp=N,200nm,18.7s									
CLL				LmH				11 18 00.0		
	comp=E,500nm,19.9s									
CLL				LmV				11 22 00.0		
	comp=Z,500nm,18.8s									
CLL	**Collm**	**79.53**	**331**	*e*P		**P**		**10 44 39.0**	**+0.9**
CLL				*i*				10 44 47.1		
CLL				pmax		pmax				
	comp=Z,19nm,0.6s									
CLL				MLR		MLR				
	comp=Z,500nm,18.8s									
CLL	**Collm**	**79.53**	**331**	*e*P		**P**		**10 44 39.2**	**+1.1**
	comp=Z,23nm,0.9s									
W18A	**Petrified Fore**	**79.53**	**53**	P		**P**		**10 44 39.8**	**+1.1**
	baz=312									
D35A	**Remer**	**79.53**	**36**	P		**P**		**10 44 37.9**	**-0.3**
	baz=319									
PVCC	**Panska Ves**	**79.55**	**330**	*e*P		**P**		**10 44 39.7**	**+1.5**
PVCC				AMS		AMS		11 22 40.0		
	comp=Z,400nm,19.6s									
PVCC	**Panska Ves**	**79.55**	**330**	*e*P		**P**		**10 44 39.7**	**+1.5**
PVCC				MLR		MLR				
	comp=Z,400nm,19.6s									
C36A	**Pine Crest Far**	**79.56**	**35**	P		**P**		**10 44 37.9**	**-0.5**
	baz=319									
214A	**Organ Pipe Nat**	**79.65**	**57**	P		**P**		**10 44 40.2**	**+1.0**
	baz=311									
Q24A	**Divide**	**79.67**	**48**	P		**P**		**10 44 39.8**	**+0.2**
	baz=313,SNR=6.7									
Q24A	**Divide**	**79.67**	**48**	*e*P		**P**		**10 44 40.6**	**+1.1**
	comp=Z,6.1nm,0.9s									
J30A	**Dallas**	**79.67**	**41**	P		**P**		**10 44 39.4**	**+0.3**
	baz=316									
VRAC	**Vranov**	**79.70**	**328**	P		**P**		**10 44 39.9**	**+0.8**
	comp=Z,2.4nm,0.3s,baz=94,slow=8.0,SNR=3.7									
VRAC	**Vranov**	**79.70**	**328**	⇑*i*P		**P**		**10 44 40.6**	**+1.5**
E35A	**Pequot Lakes**	**79.76**	**36**	P		**P**		**10 44 39.3**	**-0.2**
	baz=319									
X18A	**Snowflake**	**79.78**	**54**	*e*P		**P**		**10 44 41.3**	**+1.2**
G33A	**Ortonville**	**79.82**	**38**	P		**P**		**10 44 40.0**	**+0.2**
	baz=318									
D36A	**Goodland**	**79.86**	**35**	P		**P**		**10 44 39.7**	**-0.3**
	baz=319									
C37A	**Embarrass**	**79.87**	**34**	P		**P**		**10 44 39.7**	**-0.3**
	baz=320									
GZR	**Gura Zlata**	**79.93**	**322**	⇓*i*P		**P**		**10 44 41.6**	**+1.1**
GOPC	**GO Pecny, Ondr**	**79.95**	**329**	*e*P		**P**		**10 44 41.7**	**+1.2**
GOPC				*ep*P		**pP**		**10 44 50.5**	**+0.8**
GOPC				AMS		AMS		11 22 30.0		
	comp=Z,500nm,17.2s									
GOPC	**GO Pecny, Ondr**	**79.95**	**329**	*e*P		**P**		**10 44 41.7**	**+1.2**
GOPC				*e*				10 44 50.5		
GOPC				MLR		MLR				
	comp=Z,500nm,17.2s									
PRA	**Prague**	**79.97**	**329**	*e*P		**P**		**10 44 41.1**	**+0.6**
PRA	**Prague**	**79.97**	**329**	*e*P		**P**		**10 44 41.1**	**+0.6**
PRU	**Pruhonice**	**79.99**	**329**	*e*P		**P**		**10 44 42.2**	**+1.6**
PRU				*ep*P		**pP**		**10 44 50.4**	**+0.6**
PRU				AMS		AMS		11 22 50.0		
	comp=Z,400nm,20.5s									
PRU	**Pruhonice**	**79.99**	**329**	*e*P		**P**		**10 44 42.2**	**+1.6**
PRU				*e*				10 44 50.4		
PRU				MLR		MLR				
	comp=Z,400nm,20.5s									
OGNE	**Ogallala**	**80.02**	**44**	P		**P**		**10 44 42.0**	**+0.9**
	baz=315									
OGNE	**Ogallala**	**80.02**	**44**	*e*P		**P**		**10 44 42.5**	**+1.4**
	comp=Z,33nm,0.9s									
H33A	**Prehn Over Nor**	**80.05**	**39**	P		**P**		**10 44 41.3**	**+0.2**
	baz=317,SNR=8.9									
K30A	**Basset**	**80.07**	**42**	P		**P**		**10 44 41.7**	**+0.4**
	baz=316									
J31A	**Geddes**	**80.07**	**41**	P		**P**		**10 44 41.6**	**+0.3**
	baz=316									
G34A	**Benson**	**80.17**	**38**	P		**P**		**10 44 41.5**	**-0.2**
	baz=318									
F35A	**Swanville**	**80.21**	**37**	P		**P**		**10 44 41.2**	**-0.7**
	baz=318									
C38A	**Sawbill Land.**	**80.27**	**34**	P		**P**		**10 44 42.4**	**+0.1**
	baz=320									
SDCO	**Great Sand Dun**	**80.30**	**49**	P		**P**		**10 44 43.7**	**+0.8**
	baz=313,SNR=6.7									
SDCO	**Great Sand Dun**	**80.30**	**49**	*e*P		**P**		**10 44 44.3**	**+1.4**
	comp=Z,7.1nm,1.1s									
BZS	**Buzias**	**80.31**	**323**	⇓*i*P		**P**		**10 44 43.7**	**+1.2**
E36A	**McGregor**	**80.31**	**36**	P		**P**		**10 44 42.3**	**-0.2**
	baz=319									
J32A	**Parkston**	**80.46**	**40**	P		**P**		**10 44 43.5**	**+0.2**
	baz=317									
RAR	**Rarotonga**	**80.50**	**128**	LR		LR		11 12 26.3		
	comp=Z,128nm,20.4s,baz=288,slow=30									
K31A	**O'Neill**	**80.55**	**41**	P		**P**		**10 44 43.8**	**-0.1**
	baz=316									
TUC	**Tucson**	**80.72**	**56**	P		**P**		**10 44 45.4**	**+0.4**
	baz=311									
TUC	**Tucson**	**80.72**	**56**	*e*P		**P**		**10 44 46.3**	**+1.3**
TUC				pmax		pmax				
	comp=Z,12nm,1.4s									
TUC	**Tucson**	**80.72**	**56**	*e*P		**P**		**10 44 46.3**	**+1.3**
	comp=Z,12nm,1.4s									
ECSD	**EROS Data Cent**	**80.81**	**40**	P		**P**		**10 44 45.3**	**0.0**
	baz=318,SNR=10									
ECSD	**EROS Data Cent**	**80.81**	**40**	*e*P		**P**		**10 44 45.1**	**-0.1**
	comp=Z,10nm,0.8s									
L31A	**Butterfield Fa**	**80.83**	**42**	P		**P**		**10 44 45.3**	**-0.1**
	baz=316,SNR=13									
MDVR	**Moldovita**	**80.89**	**322**	⇑*i*P		**P**		**10 44 46.2**	**+0.5**
H35A	**Sunnyside Ranc**	**80.95**	**38**	P		**P**		**10 44 46.4**	**+0.4**
	baz=318									
KHC	**Kasperske Hory**	**81.05**	**329**	*e*P		**P**		**10 44 47.6**	**+1.2**
KHC				*ep*P		**pP**		**10 44 56.1**	**+0.5**
KHC				*ex*		x		10 45 04.5		
KHC				*e*PP		**PP**		**10 47 48.0**	**-2.7**
KHC				AMS		AMS		11 23 20.0		
	comp=Z,400nm,15.9s									
KHC	**Kasperske Hory**	**81.05**	**329**	*e*P		**P**		**10 44 47.8**	**+1.4**
KHC				pmax		pmax				
	comp=Z,7.0nm,0.8s									
KHC	**Kasperske Hory**	**81.05**	**329**	*e*P		**P**		**10 44 47.8**	**+1.4**
	comp=Z,6.6nm,0.8s									
KSCO	**Kaye Shedlock'**	**81.05**	**46**	P		**P**		**10 44 47.3**	**+0.6**
	baz=315									
CONA	**Conrad Observa**	**81.08**	**327**	*i* PcP		**P**		**10 44 48.8**	**+2.1**
	comp=Z,4.4nm,0.9s									
CONA				*i* sP		**pP**		**10 44 57.1**	**+1.2**
	comp=Z,19nm,1.0s									
RAYN	**Ar Rayn**	**81.08**	**293**	*e*P		**P**		**10 44 47.3**	**+0.2**
	comp=Z,8.9nm,0.8s									
EKA	**Eskdalemuir Ar**	**81.09**	**341**	P		**P**		**10 44 47.4**	**+0.9**
	comp=Z,0.8nm,0.5s,baz=29,slow=4.6,SNR=6.2									
EKA				pP		**pP**		**10 44 55.8**	**+0.1**
	comp=Z,5.9nm,0.6s,baz=28,slow=5.3,SNR=14									
PKSM	**Moragy**	**81.22**	**325**	⇑*i*P		**P**		**10 44 48.1**	**+0.8**
GEC2	**GERESS Array S**	**81.23**	**329**	*e*P		**P**		**10 44 48.0**	**+0.6**
GEC2				pmax		pmax				
	comp=Z,7.0nm,0.8s									
GEC2	**GERESS Array S**	**81.23**	**329**	*e*P		**P**		**10 44 48.0**	**+0.6**
	comp=Z,6.8nm,0.8s									
GERES	**GERESS Array B**	**81.23**	**329**	P		**P**		**10 44 47.7**	**+0.2**
	comp=Z,1.7nm,0.6s,baz=38,slow=6.8,SNR=12									
GERES				pP		**pP**		**10 44 56.9**	**+0.2**
	comp=Z,3.9nm,0.6s,baz=34,slow=5.0,SNR=14									
GERES				LR		LR		11 25 21.7		
	comp=Z,351nm,18.4s,baz=14,slow=39									
GEA0	**GERESS Array S**	**81.24**	**329**	*e*P		**P**		**10 44 48.0**	**+0.5**
T25A	**Trinidad**	**81.34**	**48**	P		**P**		**10 44 49.0**	**+0.6**
	baz=314,SNR=12									
T25A	**Trinidad**	**81.34**	**48**	*e*P		**P**		**10 44 49.4**	**+0.9**
	comp=Z,17nm,0.9s									
M31A	**Lambtecht Ranc**	**81.36**	**42**	P		**P**		**10 44 47.6**	**-0.6**
	baz=316									
K33A	**Hardington**	**81.45**	**40**	P		**P**		**10 44 49.0**	**+0.4**
	baz=317									
H36A	**Jessenland, He**	**81.47**	**37**	P		**P**		**10 44 49.4**	**+0.7**
	baz=319									
SPMN	**Marine on St.**	**81.50**	**36**	P		**P**		**10 44 49.0**	**+0.2**
	baz=320									
LAZ	**Ladron**	**81.59**	**52**	*e*P		**P**		**10 44 51.1**	**+1.3**
L33A	**Hoskins**	**81.63**	**41**	P		**P**		**10 44 49.8**	**+0.2**
	baz=317									
ANMO	**Albuquerque**	**81.64**	**51**	P		**P**		**10 44 51.7**	**+1.7**
	baz=313									
ANMO	**Albuquerque**	**81.64**	**51**	*e*P		**P**		**10 44 51.4**	**+1.4**
ANMO				pmax		pmax				
	comp=Z,17nm,1.1s									
ANMO	**Albuquerque**	**81.64**	**51**	*e*P		**P**		**10 44 51.4**	**+1.4**
	comp=Z,17nm,1.1s									
MMAI	**Mount Meron Ar**	**81.68**	**306**	P		**P**		**10 44 51.8**	**+1.7**
	comp=Z,1.0nm,0.3s,baz=43,slow=6.5,SNR=4.1									
BGNE	**Belgrade**	**81.74**	**42**	P		**P**		**10 44 50.4**	**+0.2**
	baz=317									
N31A	**Bailey Ranch,**	**81.75**	**43**	P		**P**		**10 44 50.4**	**+0.2**
	baz=316									
ARSA	**Arzberg**	**81.76**	**327**	*i* PcP		**P**		**10 44 52.3**	**+2.1**
	comp=Z,2.4nm,0.7s									
ARSA				*i* sP		**pP**		**10 44 59.2**	**-0.2**
	comp=Z,6.0nm,0.7s									
VTS	**Vitosha**	**81.80**	**320**	⇑*i*P		**P**		**10 44 51.3**	**+0.7**
VTS	**Vitosha**	**81.80**	**320**	*e*P		**P**		**10 44 52.3**	**+1.6**
VTS				pmax		pmax				
	comp=Z,19nm,0.7s									
VTS	**Vitosha**	**81.80**	**320**	*e*P		**P**		**10 44 52.2**	**+1.6**
	comp=Z,19nm,0.7s									
K34A	**Le Mars**	**81.84**	**40**	P		**P**		**10 44 51.1**	**+0.4**
	baz=318									
I36A	**Fitzsimmons Fa**	**81.85**	**38**	P		**P**		**10 44 50.7**	**+0.1**
	baz=319									
O31A	**Woolen Ranch,**	**82.03**	**43**	P		**P**		**10 44 51.3**	**-0.5**
	baz=316									
BNM	**Barren Site**	**82.08**	**52**	*e*P		**P**		**10 44 53.5**	**+1.2**
M33A	**Taylor Creek F**	**82.11**	**41**	P		**P**		**10 44 52.2**	**0.0**
	baz=317									
I37A	**Lemond, Waseca**	**82.14**	**38**	P		**P**		**10 44 52.4**	**+0.2**
	baz=320									
J36A	**Seneca 1, Swea**	**82.22**	**39**	P		**P**		**10 44 52.7**	**0.0**
	baz=319									
L34A	**Svendsen Farm,**	**82.23**	**41**	P		**P**		**10 44 52.7**	**-0.1**
	baz=318									
SCHQ	**Schefferville**	**82.29**	**17**	P		**P**		**10 44 53.1**	**+0.3**
	comp=Z,3.2nm,0.8s,baz=0.0,slow=2.0,SNR=3.3									
319A	**Douglas**	**82.30**	**56**	*e*P		**P**		**10 44 54.8**	**+1.4**
PERS	**Pernice**	**82.41**	**327**	*i* P		**P**		**10 44 54.2**	**+0.6**
PERS				*i*				10 45 03.0		
SOKA	**Soboth**	**82.42**	**327**	*i* P		**P**		**10 44 54.6**	**+0.9**
	comp=Z,4.6nm,0.6s									
SOKA				*i* sP		**pP**		**10 45 01.6**	**-1.3**
	comp=Z,42nm,1.2s									
121A	**Cookes Peak, D**	**82.46**	**54**	P		**P**		**10 44 55.3**	**+1.0**
	baz=313,SNR=8.5									
J37A	**Redenius Farm,**	**82.61**	**38**	P		**P**		**10 44 54.8**	**+0.2**
	baz=319									
I38A	**Scanlan Farm,**	**82.62**	**37**	P		**P**		**10 44 54.7**	**-0.1**
	baz=320									
K36A	**Gilmore City**	**82.68**	**39**	P		**P**		**10 44 54.9**	**-0.2**
	baz=319									
OBKA	**Obir**	**82.75**	**327**	*i* P		**P**		**10 44 56.6**	**+1.2**
	comp=Z,4.9nm,0.7s									
OBKA				*i* sP		**pP**		**10 45 04.8**	**+0.1**
	comp=Z,13nm,0.7s									
KBA	**Koelnbreinsper**	**82.79**	**328**	*i* PcP		**P**		**10 44 57.5**	**+1.7**
	comp=Z,4.9nm,0.7s									
KBA				*i* sP		**pP**		**10 45 06.2**	**+1.2**
	comp=Z,11nm,0.7s									
P32A	**Huiting Farm,**	**82.80**	**43**	P		**P**		**10 44 55.3**	**-0.4**
	baz=317,SNR=8.0									
M35A	**Neola**	**82.94**	**41**	P		**P**		**10 44 56.8**	**+0.3**
	baz=318									
K37A	**Belmond**	**82.98**	**39**	P		**P**		**10 44 56.8**	**+0.2**
	baz=319									
L36A	**Harm Buss Farm**	**82.98**	**40**	P		**P**		**10 44 56.8**	**+0.2**
	baz=319									
N34A	**Lincoln**	**83.00**	**41**	P		**P**		**10 44 56.3**	**-0.4**
	baz=318									
O33A	**Hebron**	**83.01**	**43**	P		**P**		**10 44 56.5**	**-0.3**
	baz=317									
MYKA	**Terra Mystica**	**83.03**	**328**	*i* P		**P**		**10 44 56.9**	**0.0**
	comp=Z,2.1nm,0.4s									
MYKA				*i* sP		**pP**		**10 45 06.1**	**0.0**
	comp=Z,11nm,0.9s									
J38A	**Wedel Dairy, R**	**83.11**	**38**	P		**P**		**10 44 57.2**	**-0.1**
	baz=320									
VISS	**Visnje**	**83.19**	**327**	*i* P		**P**		**10 44 57.6**	**0.0**
VISS				*i*				10 45 06.4		
BOJS	**Bojanci**	**83.25**	**326**	*i* P		**P**		**10 44 59.2**	**+1.2**
BOJS				*i*				10 45 06.9		
Q32A	**Meitler Ranch,**	**83.28**	**44**	P		**P**		**10 44 57.8**	**-0.4**
	baz=317,SNR=5.3									
WATA	**Walderalm**	**83.29**	**329**	*e*sP		sP		10 45 08.1	-2.8
	comp=Z,3.6nm,0.5s									
WTTA	**Wattenberg**	**83.33**	**329**	*i* sP		sP		10 45 06.9	-4.2
	comp=Z,4.6nm,0.8s									
O34A	**Beatrice**	**83.39**	**42**	P		**P**		**10 44 58.2**	**-0.6**
	baz=318									
ABTA	**Abfaltersbach**	**83.40**	**328**	*i* PcP		**PcP**		**10 45 02.1**	**-1.1**
	comp=Z,2.4nm,0.8s									
ABTA				*i* sP		**pP**		**10 45 08.1**	**0.0**
	comp=Z,13nm,1.0s									
M36A	**Felix, Anita**	**83.40**	**40**	P		**P**		**10 44 59.0**	**+0.2**
	baz=319									
L37A	**Phoenix Point,**	**83.41**	**39**	P		**P**		**10 44 59.0**	**+0.2**
	baz=319									
P33A	**Williams Farm,**	**83.42**	**43**	P		**P**		**10 44 58.6**	**-0.3**
	baz=317									
N35A	**Tabor**	**83.42**	**41**	P		**P**		**10 44 58.7**	**-0.2**
	baz=318,SNR=7.4									
JAVS	**Javornik**	**83.45**	**327**	*i* P		**P**		**10 44 58.8**	**-0.3**
JAVS				*i*				10 45 07.5		
MOTA	**Moosalm**	**83.47**	**330**	*i* PcP		**PcP**		**10 45 01.5**	**-2.1**
	comp=Z,2.2nm,0.7s									
MOTA				*i* sP		**sP**		**10 45 10.5**	**-1.3**
	comp=Z,24nm,0.9s									
RETA	**Reutte**	**83.48**	**330**	*i* PcP		**P**		**10 45 00.4**	**+1.2**

baz=319
O38A Galt 85.07 40 P P 10 45 07.6 +0.3
baz=320
LOMF Lomont 85.07 332 eP pP 10 45 12.4 -4.1
VLDQ Val d'Or 85.29 26 eP P 10 45 07.4 -0.9
comp=Z,11nm,0.8s
TAOE Nuku Hiva Isla 85.32 105 eLR LR 11 12 36.2
comp=Z,270nm,21.4s,baz=327
R36A Gordon, Harris 85.39 43 P P 10 45 08.6 -0.3
baz=319,SNR=14
U33A Lingo Farm, Me 85.39 45 P P 10 45 09.4 +0.4
baz=317
V32A Arapaho 85.39 46 P P 10 45 10.1 +1.0
baz=317
P38A Dawn 85.41 41 P P 10 45 09.3 +0.3
baz=320
O39A Kirksville 85.42 40 P P 10 45 09.5 +0.4
baz=320
S35A Otter Creek Ra 85.44 43 P P 10 45 09.4 +0.2
baz=318,SNR=12
T34A McClaskey Farm 85.46 44 P P 10 45 09.8 +0.4
baz=318,SNR=5.5
Q37A Longview Farm, 85.52 42 P P 10 45 09.4 -0.2
baz=319
MEH Mehetia 85.70 117 eT T 12 21 06.8
comp=Z,48nm,0.3s
U34A Anderson Ranch 85.70 45 P P 10 45 11.0 +0.4
baz=318
W32A Sentinel 85.71 47 P P 10 45 11.1 +0.4
baz=317,SNR=6.6
SENIN Lac Senin/Sane 85.73 331 eP P 10 45 11.1 +0.3
comp=Z,12nm,0.8s
V33A Lossen Ranch, 85.74 46 P P 10 45 11.0 +0.2
baz=317
R37A Teagarden Farm 85.75 42 P P 10 45 10.6 -0.1
baz=319
S36A Lake Cedric, C 85.79 43 P P 10 45 11.3 +0.3
baz=319
O40A La Belle 85.85 39 P P 10 45 11.5 +0.3
baz=321
Q38A Cooks Store, C 85.88 41 P P 10 45 11.4 0.0
baz=320
T35A Sooner Cattle 85.90 44 P P 10 45 11.7 +0.2
baz=318
P39A Salisbury 85.91 40 P P 10 45 10.9 -0.6
baz=320
W33A Caddo, Fort Co 86.13 46 P P 10 45 13.0 +0.3
baz=317
T36A Boggs Farm, Ca 86.13 44 P P 10 45 13.6 +0.9
baz=318
Q39A Willow Grove F 86.13 41 P P 10 45 12.7 0.0
baz=320,SNR=6.5
V34A Guthrie 86.16 45 P P 10 45 13.0 +0.2
baz=318
V34A Guthrie 86.16 45 eP P 10 45 13.4 +0.6
comp=Z,13nm,0.8s
S37A Fort Scott 86.16 43 P P 10 45 12.5 -0.3
baz=319,SNR=5.5
U35A Pawnee 86.19 45 P P 10 45 13.1 +0.2
baz=318
X32A Elmer 86.20 47 P P 10 45 13.1 +0.1
baz=317
P40A Paris 86.22 40 P P 10 45 13.0 -0.1
baz=321,SNR=7.5
WMOK Wichita Mounta 86.26 47 eP P 10 45 14.1 +0.7
WMOK pmax pmax
comp=Z,7.0nm,0.8s
WMOK Wichita Mounta 86.26 47 eP P 10 45 14.1 +0.7
comp=Z,6.6nm,0.8s
IDI Anoyia 86.29 314 P P 10 45 14.5 +0.9
comp=Z,2.6nm,0.4s,baz=24,slow=20,SNR=4.6
R38A Fenwick Farm, 86.32 42 P P 10 45 13.2 -0.3
baz=320
V35A Meyer Ranch, C 86.58 45 P P 10 45 15.1 +0.2
baz=318
T37A Cheneyville 18 86.59 43 P P 10 45 15.4 +0.4
baz=319
Q40A Laux Farm, Aux 86.62 40 P P 10 45 14.9 -0.1
baz=321
LPL La Plagne 86.66 331 eP P 10 45 19.1 +3.7
LPL pmax pmax
comp=Z,13nm,0.8s
R39A Chumby, Stover 86.66 41 P P 10 45 15.3 0.0
baz=320
LPG La Plagne 86.67 331 eP P 10 45 19.9 +4.4
LPG pmax pmax
comp=Z,24nm,0.8s
S38A Stockton 86.74 42 P P 10 45 15.3 -0.3
baz=320
RPZ Rata Peaks 86.74 160 LR LR 11 24 24.3
comp=Z,134nm,18.2s,baz=206,slow=36
HDIL Hopedale 86.75 37 P P 10 45 15.2 -0.4
baz=322
Y33A Hilltop Ranch, 86.88 47 P P 10 45 16.3 0.0
baz=317,SNR=6.4
X34A Smith Ranch, M 86.89 46 P P 10 45 16.4 -0.1
baz=318
T38A Diamond 86.99 43 P P 10 45 16.5 -0.3
baz=319,SNR=6.8
S39A Bolivar 86.99 42 P P 10 45 16.6 -0.2
baz=320
W35A Tecumseh 87.01 45 P P 10 45 16.6 -0.4
baz=318
U37A Salina 87.03 44 P P 10 45 16.6 -0.4
baz=319
TUL1 Leonard 87.04 44 P P 10 45 17.1 -0.1
baz=319
TUL1 Leonard 87.04 44 eP P 10 45 17.5 +0.4
comp=Z,13nm,1.2s
V36A Jenks 87.05 44 P P 10 45 17.2 +0.1
baz=318
R40A Maddies Statio 87.07 41 P P 10 45 17.4 +0.2
baz=320
TX31 Lajitas Ar. Si 87.22 54 eP P 10 45 18.6 +0.3
TX31 eP P 10 45 19.0 +0.7
TXAR Lajitas Array 87.22 54 P P 10 45 18.6 +0.3
comp=Z,1.9nm,0.6s,baz=293,slow=3.8,SNR=18
TXAR pP pP 10 45 28.1 +0.6
comp=Z,3.3nm,0.7s,baz=293,slow=4.3,SNR=14
TXAR LR LR 11 18 51.9
comp=Z,45nm,22.0s,baz=0.0,slow=32
ABTX Abilene, Hawle 87.30 49 P P 10 45 18.8 +0.3
baz=317
Z33A Whitaker Ranch 87.32 48 P P 10 45 18.8 +0.2
baz=317
W36A Wetumka 87.38 45 P P 10 45 18.3 -0.4
baz=318
U38A Gravette 87.39 43 P P 10 45 18.9 0.0
baz=319
PLDF La Plantade 87.39 333 eP P 10 45 27.1 +8.4
Y34A Reagan Ranch, 87.40 47 P P 10 45 19.0 +0.1
baz=318
V37A Hulbert 87.41 44 P P 10 45 19.2 +0.3
baz=319
T39A Clever 87.47 42 P P 10 45 19.0 -0.2
baz=320
S40A Lebanon 87.48 41 P P 10 45 18.8 -0.5
baz=320
AGO Saint Agoulin 87.49 334 eP pP 10 45 27.7 -0.7
X35A Drake 87.52 46 P P 10 45 19.7 +0.2
baz=318
HPIG 87.62 57 eP P 10 45 21.2 +0.9
comp=Z,4.9nm,0.8s
133A Hamilton Ranch 87.73 48 P P 10 45 19.0 -1.5
baz=317
X36A Centrahoma 87.73 46 P P 10 45 20.4 0.0
baz=318
PYM Petit Puy Mans 87.80 333 eP pP 10 45 29.2 -0.8
W37B Quinton 87.81 45 P P 10 45 21.2 +0.3
baz=319
V38A Canehill 87.81 43 P P 10 45 21.0 +0.2
baz=319
T40A Mansfield 87.82 41 P P 10 45 20.4 -0.5
baz=320
SFIN Lafayette 87.90 36 P P 10 45 20.6 -0.6
baz=324
U39A Green Forest 87.91 43 P P 10 45 21.0 -0.4
baz=320,SNR=5.0
Z35A Perchaven, San 88.15 47 P P 10 45 21.9 -0.5
baz=318
LBL Lubilhac 88.16 333 eP pP 10 45 29.6 -2.1
233A Rising Star 88.17 49 P P 10 45 22.6 -0.1
baz=317
V39A Pettigrew 88.23 43 P P 10 45 22.6 -0.3
baz=320
134A White-Moore Ra 88.24 48 P P 10 45 23.5 +0.6
baz=318
U40A Yellville 88.25 42 P P 10 45 22.7 -0.2
baz=320,SNR=6.4
Y36A Durant 88.27 46 P P 10 45 22.9 -0.2
baz=318
X38A Whitesboro 88.49 45 P P 10 45 23.5 -0.6
baz=319
TBI Tubuai 88.58 122 eLR LR 11 13 05.2
comp=Z,151nm,28.0s
TBI Tubuai 88.58 122 eT T 12 24 36.5
comp=Z,20nm,0.3s
234A Clairette 88.62 48 P P 10 45 24.8 +0.1
baz=317
333A Richland Sprin 88.62 49 P P 10 45 24.6 -0.2
baz=317
W39A Magazine 88.65 44 P P 10 45 24.2 -0.6
baz=320
Z36A Blue Ridge 88.65 46 P P 10 45 23.6 -1.3
baz=318
OLIL Olney 88.75 38 eP P 10 45 26.1 +0.8
comp=Z,14nm,0.8s
JCT Junction City 88.75 50 P P 10 45 25.3 -0.2
baz=317
JCT Junction City 88.75 50 eP P 10 45 25.5 0.0
JCT pmax pmax
comp=Z,7.0nm,0.7s
JCT Junction City 88.75 50 eP P 10 45 25.4 0.0
comp=Z,6.6nm,0.7s
433A Art 88.98 50 P P 10 45 26.2 -0.3
baz=317
X39A Fountain Ranch 88.99 44 P P 10 45 26.7 +0.3
baz=320
WHTX Lake Whitney, 89.02 48 P P 10 45 26.7 +0.1
baz=318
SIUC Southern Illin 89.02 39 eP P 10 45 27.2 +0.7
comp=Z,22nm,0.7s
W40A Ferguson Farm, 89.03 43 P P 10 45 26.2 -0.4
baz=320
334A Lometa 89.05 49 P P 10 45 26.8 0.0
baz=317,SNR=7.6
Z37A Pogue Cattle C 89.16 46 P P 10 45 27.9 +0.7
baz=319
MIAR Mount Ida 89.25 44 P P 10 45 28.2 +0.5
baz=320
MIAR Mount Ida 89.25 44 eP P 10 45 28.5 +0.8
MIAR pmax pmax
comp=Z,8.0nm,0.9s
MIAR Mount Ida 89.25 44 eP P 10 45 28.5 +0.8
comp=Z,7.7nm,0.9s
X201 Greenbrier Sit 89.33 43 eP P 10 45 28.6 +0.6
comp=Z,14nm,1.0s
WHAR Wooly Hollow 89.36 43 eP P 10 45 28.5 +0.4
comp=Z,14nm,0.9s
434A Burnet 89.41 49 P P 10 45 28.6 +0.1
baz=317
Y39A Lockesburg 89.44 45 P P 10 45 28.6 +0.1
baz=320
Z38A Mt. Pleasant 89.47 46 P P 10 45 28.7 0.0
baz=319
W41A Tony Mavity, V 89.48 43 P P 10 45 28.9 +0.2
baz=321
W41B Gary Mavity, V 89.48 43 P P 10 45 28.9 +0.2
baz=321
533A Kerrville 89.50 50 P P 10 45 28.8 -0.2
baz=317
X40A Basin Creek Fa 89.69 43 P P 10 45 29.4 -0.3
baz=320
336A Riesel 89.82 48 P P 10 45 30.4 +0.1
baz=318
ACSO Alum Creek Sta 89.84 34 eP P 10 45 31.1 +0.8
comp=Z,14nm,0.7s
633A Saathoff Ranch 89.87 51 P P 10 45 30.7 +0.1
baz=317
534A Blanco 89.87 50 P P 10 45 30.7 +0.1
baz=317
N54A Moraine State 90.47 31 P P 10 45 31.3 -2.0
baz=328
636A Smothers Creek 91.10 49 P P 10 45 36.8 +0.5
baz=318
933A Laredo 91.15 52 P P 10 45 37.1 +0.5
baz=317
736A Circle Diamond 91.49 50 P P 10 45 38.8 +0.6
baz=318
835A Beeville 91.53 51 P P 10 45 39.3 +1.0
baz=318
O56A Blue Knob Stat 91.63 31 P P 10 45 38.9 +0.2
baz=329
035Z Hargill 92.72 52 P P 10 45 44.1 +0.3
baz=317
KEST Kesra 93.80 324 LR LR 11 33 07.4
comp=Z,360nm,18.8s,baz=337,slow=39
ESDC Sonseca Array 95.53 335 LR LR 11 34 43.7
comp=Z,215nm,18.6s,baz=355,slow=39
TORD Tondi Ar. Bea 116.48 318 PKP PKPdf 10 51 14.1 -1.7
comp=Z,0.3nm,0.7s,baz=352,slow=3.5,SNR=2.5
TORD pPKP pPKPdf 10 51 23.9 -1.5
comp=Z,0.6nm,0.5s,baz=359,slow=1.9,SNR=5.5
TORD PP PP 10 52 24.4 +2.6
comp=Z,2.4nm,1.0s,baz=35,slow=5.8,SNR=7.9
LPAZ La Paz 143.94 59 PKP PKPab 10 52 05.3 +0.1
comp=Z,2.0nm,0.7s,baz=329,slow=5.4,SNR=6.1

*ISCJB **14** 10:38:38.4±0.4, 63.07N±0.02×27.72E±0.06, h0km, Error ellipse: s-maj=3.9km s-min=3.1km az=16.1*
*CSEM **14** 10:38:39.4±0.4, 63.05N×27.70E, h1km, ML1.8, Error ellipse: s-maj=8.1km s-min=6.8km az=81.0, Mining explosion.*
*IDC **14** 10:38:39.0±1.5, 63.06N×28.02E, h0km, mb1 3.1/2, mb1mx2.9/50, mbtmp3.0/2, ML2.6/2, Error ellipse: s-maj=23.8km s-min=6.8km az=105.0*
*HEL **14** 10:38:40.5±0.1, 63.08N×27.70E, h0km, ML1.8, ML1.8(UPP), Explosion*
*UPP **14** 10:38:41.9±2.6, 63.14N×27.56E, h0km, ML1.8, Explosion*

ISC 14 10:38:40.0±0.8, 63.02N±0.03×27.72E±0.03, h0km, n53, σ0s87/84, Finland

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
SUF	**Sumiainen**	**0.78**	**248**	*eP*	**Pg**	**10 38 54.9**	**0.0**
SUF				*eSB*	**Sg**	**10 39 05.9**	**+0.9**
KEF	**Keuruu**	**1.57**	**238**	*ePG*	**Pn**	**10 39 09.3**	**+0.2**
baz=53							
KEF				MSG		10 39 28.1	
comp=Z,5.6nm,0.2s							
KEF				*eSN*	**Sg**	**10 39 30.6**	**+0.2**
KEF	**Keuruu**	**1.57**	**238**	Pn	**Pn**	**10 39 09.3**	**+0.2**
KEF				Sn	**Sg**	**10 39 30.6**	**+0.2**
JOF	**Joensuu**	**1.65**	**92**	*ePG*	**Pn**	**10 39 10.1**	**-0.1**
baz=278							
JOF				*eSG*	**Sn**	**10 39 31.4**	**-0.5**
JOF	**Joensuu**	**1.65**	**92**	Pg	**Pn**	**10 39 10.0**	**-0.1**
JOF				Sg	**Sn**	**10 39 31.4**	**-0.5**
FIA0	**FINESS Array S**	**1.76**	**207**	*ePN*	**Pb**	**10 39 12.8**	**-0.3**
baz=19							
FIA0				*eSN*	**Sg**	**10 39 37.0**	**+0.5**
FIA0	**FINESS Array S**	**1.76**	**207**	Pg	**Pb**	**10 39 12.8**	**-0.3**
FIA0				Sg	**Sg**	**10 39 37.0**	**+0.5**
FINES	**FINESS Array B**	**1.76**	**207**	Pn	**Pb**	**10 39 13.2**	**0.0**
comp=Z,0.4nm,0.3s,baz=28,slow=17,SNR=22							
FINES				Lg	Lg	10 39 37.6	
comp=Z,2.3nm,0.3s,baz=25,slow=29,SNR=44							
OUFX	**Oulainen**	**1.90**	**316**	*eP*	**Pn**	**10 39 12.9**	**-0.8**
OUFX				*eSG*	**Sn**	**10 39 38.2**	**0.0**
OUFX	**Oulainen**	**1.90**	**316**	Pg	**Pn**	**10 39 12.8**	**-0.8**
OUFX				Sg	**Sn**	**10 39 38.2**	**0.0**
OUL	**Oulu**	**2.22**	**340**	*ePB*	**Pn**	**10 39 18.6**	**+0.6**
OUL				*eSG*	**Sn**	**10 39 46.9**	**+0.9**
OUL	**Oulu**	**2.22**	**340**	Pg	**Pn**	**10 39 18.6**	**+0.6**
OUL				Sg	**Sn**	**10 39 46.9**	**+0.9**
VAF	**Ylistaro**	**2.30**	**273**	*ePB*	**Pn**	**10 39 20.6**	**+1.5**
baz=89							
VAF				MSG		10 39 47.8	
comp=Z,8.4nm,0.2s							
VAF				*eSG*	**Sb**	**10 39 51.0**	**-0.2**
VAF	**Ylistaro**	**2.30**	**273**	Pg	**Pn**	**10 39 20.6**	**+1.5**
VAF				Sg	**Sb**	**10 39 51.0**	**-0.2**
VJF	**Virojoki**	**2.50**	**182**	*ePB*	**Pb**	**10 39 25.0**	**-0.6**
VJF				MSG		10 39 56.1	
comp=Z,3.7nm,0.2s							
VJF				*eSB*	**Sb**	**10 39 57.2**	**+0.4**
VJF	**Virojoki**	**2.50**	**182**	Pb	**Pb**	**10 39 25.0**	**-0.6**
VJF				Sb	**Sb**	**10 39 57.2**	**+0.4**
PVF	**Pernaja**	**2.64**	**200**	*ePB*	**Pb**	**10 39 27.1**	**-1.0**
PVF				MSG		10 39 60.0	
comp=Z,3.2nm,0.2s							
PVF				*eSG*	**Sg**	**10 40 03.1**	**-1.6**
PVF	**Pernaja**	**2.64**	**200**	Pb	**Pb**	**10 39 27.1**	**-1.0**
MSF	**Maaselka**	**2.96**	**11**	*eP*	**Pn**	**10 39 27.9**	**-0.2**
MSF				*eS*	**Sn**	**10 40 04.7**	**+0.4**
MSF	**Maaselka**	**2.96**	**11**	Pn	**Pn**	**10 39 27.9**	**-0.2**
MSF				Sb	**Sn**	**10 40 04.6**	**+0.4**
KU6	**Riekki**	**3.16**	**16**	*eP*	**Pn**	**10 39 30.6**	**-0.3**
baz=199							
KU6				*eS*	**Sn**	**10 40 09.4**	**+0.2**
KU6				MSG		10 40 11.3	
comp=Z,1.6nm,0.2s							
KU6	**Riekki**	**3.16**	**16**	Pn	**Pn**	**10 39 30.6**	**-0.3**
KU6				Sb	**Sn**	**10 40 09.4**	**+0.2**
BURU	**Burvik**	**3.22**	**302**	P	**Pn**	**10 39 31.2**	**-0.5**
BURU	**Burvik**	**3.22**	**302**	*eP*	**Pn**	**10 39 31.2**	**-0.5**
BURU	**Burvik**	**3.22**	**302**	P	**Pn**	**10 39 31.2**	**-0.5**
UMAU	**Umeaa**	**3.28**	**288**	*eP*	**Pn**	**10 39 32.4**	**-0.1**
baz=105							
UMAU				*eS*	**Sn**	**10 40 13.7**	**+1.6**
UMAU	**Umeaa**	**3.28**	**288**	Pn	**Pn**	**10 39 32.4**	**-0.1**
UMAU				Sb	**Sn**	**10 40 13.7**	**+1.6**
TOF	**Tornio**	**3.40**	**336**	*eP*	**Pn**	**10 39 35.0**	**+0.8**
TOF	**Tornio**	**3.40**	**336**	Pb	**Pn**	**10 39 35.0**	**+0.8**
SJUU	**Sjulsmark**	**3.65**	**316**	P	**Pn**	**10 39 38.1**	**+0.5**
SJUU				S	**Sn**	**10 40 20.0**	**-1.3**
SJUU	**Sjulsmark**	**3.65**	**316**	*eP*	**Pn**	**10 39 38.1**	**+0.5**
SJUU				*eS*	**Sn**	**10 40 20.0**	**-1.3**
SJUU	**Sjulsmark**	**3.65**	**316**	P	**Pn**	**10 39 38.1**	**+0.5**
SJUU				S	**Sn**	**10 40 20.0**	**-1.3**
RNF	**Rovaniemi**	**3.67**	**349**	*ePB*	**Pn**	**10 39 40.5**	**+2.5**
RNF	**Rovaniemi**	**3.67**	**349**	Pb	**Pn**	**10 39 40.4**	**+2.5**
HUSU	**Husum**	**3.86**	**279**	P	**Pn**	**10 39 41.4**	**+0.8**
HUSU	**Husum**	**3.86**	**279**	*eP*	**Pn**	**10 39 41.4**	**+0.8**
HUSU	**Husum**	**3.86**	**279**	P	**Pn**	**10 39 41.4**	**+0.8**
LILU	**Lilltraesk**	**4.12**	**307**	P	**Pn**	**10 39 43.5**	**-0.6**
LILU				S	**Sn**	**10 40 31.6**	**-1.4**
LILU	**Lilltraesk**	**4.12**	**307**	*eP*	**Pn**	**10 39 43.5**	**-0.6**
LILU				*eS*	**Sn**	**10 40 31.6**	**-1.4**
LILU	**Lilltraesk**	**4.12**	**307**	P	**Pn**	**10 39 43.5**	**-0.6**
LILU				S	**Sn**	**10 40 31.6**	**-1.4**
BREU	**Bredtraesk**	**4.19**	**286**	P	**Pn**	**10 39 45.4**	**+0.3**
BREU	**Bredtraesk**	**4.19**	**286**	*eP*	**Pn**	**10 39 45.4**	**+0.3**
BREU	**Bredtraesk**	**4.19**	**286**	P	**Pn**	**10 39 45.4**	**+0.3**
HARU	**Harads**	**4.28**	**320**	P	**Pn**	**10 39 46.2**	**-0.1**
HARU	**Harads**	**4.28**	**320**	*eP*	**Pn**	**10 39 46.2**	**-0.1**
HARU	**Harads**	**4.28**	**320**	P	**Pn**	**10 39 46.2**	**-0.1**
HEMU	**Hemsoen**	**4.45**	**270**	P	**Pn**	**10 39 49.0**	**+0.5**
HEMU				S	**Sn**	**10 40 41.7**	**+0.7**
HEMU	**Hemsoen**	**4.45**	**270**	*eP*	**Pn**	**10 39 49.1**	**+0.5**
HEMU				*eS*	**Sn**	**10 40 41.8**	**+0.8**
HEMU	**Hemsoen**	**4.45**	**270**	Pn	**Pn**	**10 39 49.1**	**+0.5**
HEMU				S	**Sn**	**10 40 41.7**	**+0.7**
SGF	**Sodankyl**	**4.46**	**354**	*eP*	**Pn**	**10 39 50.2**	**+1.4**
baz=170							
SGF	**Sodankyl**	**4.46**	**354**	Pn	**Pn**	**10 39 50.2**	**+1.4**
ARCES	**ARCESS Array B**	**6.60**	**353**	Pn	**Pn**	**10 40 16.6**	**-1.6**
comp=Z,0.1nm,0.3s,baz=167,slow=14,SNR=12							
ARCES				Sn	Sn	10 41 26.7	-7.3
comp=Z,0.1nm,0.3s,baz=170,slow=22,SNR=5.2							
NOA	**NORSAR Array B**	**8.01**	**263**	Pn	**Pn**	**10 40 36.4**	**-1.1**
comp=Z,0.1nm,0.3s,baz=360,slow=18,SNR=2.6							

*IDC **14** 10:39:00.4±2.2, 37.42N×142.73E, h0km, mb4.0/3, mb1 4.0/5, mb1mx3.5/58, mbtmp3.9/5, ML3.3/2, Error ellipse: s-maj=54.7km s-min=28.9km az=64.0*
*ISCJB **14** 10:39:01.7±1.0, 37.38N±0.06×142.67E±0.08, h21km, mb4.0/3, Error ellipse: s-maj=9.7km s-min=7.5km az=138.5*
*JMA **14** 10:39:01.0±0.2, 37.41N×142.51E, h0km, M4.0*

ISC 14 10:39:04.1±1.4, 37.39N±0.06×142.52E±0.09, h21km, n19, σ1s23/18, mb4.1/3, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JFK	**Kawauchi**	**1.31**	**269**	P	**Pn**	**10 39 26.1**	**-1.0**
JFK				S	**Sn**	**10 39 43.5**	**-0.4**
ONAJ	**Iwakimizuishiy**	**1.40**	**259**	S	**Sb**	**10 39 47.7**	**+0.8**
JIO	**Ouri**	**1.41**	**319**	P	**Pn**	**10 39 28.1**	**-0.3**
JIO				S	**Sn**	**10 39 46.6**	**+0.2**
JMM	**Marumori**	**1.45**	**290**	S	**Sb**	**10 39 48.6**	**+0.4**
JFT	**Otama**	**1.74**	**275**	P	**Pn**	**10 39 33.6**	**+0.6**
JFT				*eS*	**Sb**	**10 39 56.2**	**-0.4**
JHO	**Hitachi**	**1.74**	**244**	S	**Sb**	**10 39 56.0**	**-0.7**
JOU	**Okura**	**1.76**	**304**	P	**Pn**	**10 39 32.7**	**-0.6**
JOU				*eS*	**Sb**	**10 39 56.6**	**-0.7**
MJAR	**Matsushiro Arr**	**3.55**	**258**	Pn	**Pn**	**10 39 59.3**	**+1.3**
1.0nm,0.3s,baz=86,slow=15,SNR=8.4							
MAT	**Matsushiro**	**3.55**	**258**	P	**Pn**	**10 40 00.9**	**+2.9**
MAT				S	**Sb**	**10 40 46.1**	**-2.8**
JHJ	**Hachijo jima 2**	**4.81**	**208**	Pn	**Pn**	**10 40 14.6**	**-0.7**
7.1nm,0.3s,baz=325,slow=21,SNR=7.1							
H11N2	**WAKE ISLAND Hy 27.59**	**123**		T	T	11 13 36.8	
baz=315,slow=75,SNR=41							
H11N1	**WAKE ISLAND Hy 27.60**	**123**		T	T	11 13 37.8	
baz=315,slow=75,SNR=33							
H11N3	**WAKE ISLAND Hy 27.61**	**123**		T	T	11 13 38.4	
baz=315,slow=75,SNR=38							
H11S1	**WAKE ISLAND Hy 28.33**	**125**		T	T	11 14 35.6	
baz=317,slow=76,SNR=30							
H11S3	**WAKE ISLAND Hy 28.33**	**125**		T	T	11 14 35.5	
baz=317,slow=76,SNR=30							
H11S2	**WAKE ISLAND Hy 28.34**	**125**		T	T	11 14 35.0	
baz=317,slow=76,SNR=30							
KURBB	**Kurchatov Arra**	**46.48**	**308**	P	**P**	**10 47 29.7**	**+0.3**
0.7nm,0.5s,baz=82,slow=7.7,SNR=3.2							
WRA	**Warramunga Arr**	**57.54**	**189**	P	**P**	**10 48 51.9**	**-0.1**
1.3nm,0.5s,baz=7.8,slow=6.7,SNR=22							
ASAR	**Alice Springs**	**61.27**	**189**	P	**P**	**10 49 18.2**	**+0.5**
1.1nm,0.7s,baz=6.4,slow=7.5,SNR=13							

DDA 14 10:41:56.7, 38.27N×38.08E, h7km, Md1.8, Turkey

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
AKCD	**Akcadag**	**0.12**	**283**	*iP*	Pg	10 41 59.8	+0.3
AKCD				*iS*	Sg	10 42 02.6	+1.2

*GUC **14** 10:45:23.9±0.4, 33.63S×72.01W, h47km±11km, ML3.5*

ISC 14 10:45:22.7±2.2, 33.76S±0.05×71.9W±0.1, h8km±11km, n13, σ1s40/21, 3C, Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
ROC1	**El Roble**	**1.09**	**45**	*eP*	**Pg**	**10 45 43.5**	**-0.1**
ROC1				*eS*	**Sn**	**10 46 01.8**	**+1.8**
ANTU	**Antumapu**	**1.10**	**81**	*eP*	**Pn**	**10 45 44.3**	**-0.1**
ANTU				*i* S	**Sn**	**10 45 59.9**	**+0.1**
ANTU				AML	AML	10 46 01.4	
comp=N,3μm,0.2s							
ROCH	**El Roble**	**1.10**	**45**	*eP*	**Pg**	**10 45 43.6**	**-0.2**
ROCH				*i* S	**Sb**	**10 45 58.3**	**-0.3**
ROCH				AML	AML	10 46 05.1	
comp=E,2μm,0.4s							
PEL	**Peldehue**	**1.21**	**60↑**	*iP*	**Pb**	**10 45 45.2**	**-0.7**
PEL				*i* S	**Sg**	**10 46 01.5**	**0.0**
PEL				AML	AML	10 46 09.8	
comp=E,2μm,0.3s							
CLCH	**Cerro Calan**	**1.22**	**73↑**	*iP*	**Pn**	**10 45 46.0**	**-0.1**
CLCH				*i* S	**Sn**	**10 46 03.0**	**+0.2**
CLCH				AML	AML	10 46 05.3	
comp=E,1μm,0.4s							
NICH	**Los Niches**	**1.37**	**155**	*i* P	**Pg**	**10 45 49.8**	**+0.8**
NICH				*i* S	**Sg**	**10 46 09.0**	**+2.2**
TALC	**Talca**	**1.66**	**172↑**	*iP*	**Pn**	**10 45 51.4**	**-0.6**
TALC				*i* S	**Sn**	**10 46 11.5**	**-2.0**
AUSP	**Uspallata**	**2.63**	**55**	*eP*	**Pb**	**10 46 08.8**	**-1.4**
AUSP				*eS*	**Sg**	**10 46 45.0**	**-2.2**
AAGR	**Agrelo**	**2.68**	**76**	*eP*	**Pb**	**10 46 10.9**	**-0.1**
ASAL	**Salagasta**	**2.84**	**67**	*eP*	**Pb**	**10 46 12.2**	**-1.6**
RTLS	**Leoncito**	**2.96**	**49**	*eP*	**Pn**	**10 46 12.3**	**+2.1**
RTLL	**Cerro Villicun**	**3.79**	**51**	*eP*	**Pn**	**10 46 23.5**	**+2.0**
AMOG	**MOGNA**	**4.04**	**47**	*eP*	**Pn**	**10 46 26.4**	**+1.4**

CASC 14 10:55:40.9±1.0, 12.05N×87.09W, h60km±9km, MD3.8, ML3.8, Near coast of Nicaragua

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
COPN	**Copaltepe**	**0.51**	**75**	*eP*	Pn	10 55 52.9	-0.1
COPN				*i* P	Pn	10 55 52.9	-0.1

TEL3	**Telica 3**	**0.58**	**25**	*eP*		Pn	10 55 54.0	+0.2
CNGN	**Cerro Negro**	**0.59**	**40**	*eP*		Pn	10 55 53.5	-0.5
CNGN				*eP*		Pn	10 55 53.8	-0.2
CNGN				*eS*		Sn	10 56 03.9	+0.4
TELN	**Telica**	**0.61**	**25**	*eP*		Pn	10 55 54.5	+0.3
MOMN	**Momotombo**	**0.65**	**56**	*eP*		Pn	10 55 54.4	-0.2
CRIN	**San Cristobal**	**0.65**	**4**	*eP*		Pn	10 55 54.9	+0.2
CRIN					AML	AML	10 56 08.9	
	comp=N,3μm,0.2s							
APYN	**Apoyeque**	**0.75**	**75**	*eP*		Pn	10 55 55.7	-0.1
XAVN	**Gruta Xavier**	**0.76**	**82**	*eP*		Pn	10 55 55.8	0.0
CRUN	**El Crucero**	**0.78**	**94**	*eP*		Pn	10 55 56.9	+0.7
TISN	**Laguna Tiscapa**	**0.81**	**83**	*eP*		Pn	10 55 56.4	-0.1
MGAN	**Managua**	**0.83**	**83**	*eP*		Pn	10 55 56.8	0.0
MGAN				*eS*		Sn	10 56 08.7	+0.2
MASN	**Masaya**	**0.92**	**93**	*eP*		Pn	10 55 58.2	+0.2
CSGN	**Cosiguina Volc**	**1.03**	**334**	*eP*		Pn	10 55 59.7	+0.2
ESTN	**Estel**	**1.27**	**34**	*eP*		Pn	10 56 02.8	+0.2
ESTN				*eP*		Pn	10 56 02.9	+0.3
ESTN				*eS*		Sn	10 56 19.6	+0.8
ESTN				*eS*		Sn	10 56 19.7	+0.9
BOAB	**BOACO BROADBAN**	**.45**	**74**	*eP*		Pn	10 56 04.5	-0.5
BOAB				*eS*		Sn	10 56 23.0	0.0
LCY	**Lacayo**	**1.80**	**320**	*eP*		Pn	10 56 10.6	+0.8
LCY				*eS*		Sn	10 56 32.3	+0.6
PACA	**Pacayal**	**1.86**	**320**	*eP*		Pn	10 56 11.0	+0.4
PACA				*eS*		Sn	10 56 33.8	+0.8
TECA	**Tecapa**	**1.99**	**316**	*eS*		Sn	10 56 37.0	+0.6
LFRS	**El Faro**	**2.48**	**309**	*eS*		Sn	10 56 48.8	+0.6
JTS	**JuntasAbangare**	**2.73**	**129**	*eP*		Pn	10 56 22.0	-0.3
ESPN	**Las Esperanzas**	**2.73**	**87**	*eP*		Pn	10 56 22.9	+0.5

IDC 14 10:56:13.5±12.0, 58°00'S×25°65'W, h0km, mb3.6/1, mb1 3.6/1, mb1mx3.4/24, mbtmp3.6/1, Error ellipse: s-maj=712.1km s-min=65.2km az=142.0, South Sandwich Islands region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
TORD	**Torodi Ar. Bea**	**74.37**	**28**	P	P	11 07 52.9	0.0
	0.3nm,0.5s,baz=208,slow=7.1,SNR=2.7						
YKA	**Yellowknife Ar**	**138.18**	**316**	PKP	PKPdf	11 15 37.7	-1.1
	0.2nm,0.6s,baz=135,slow=2.2,SNR=4.8						
INK	**Inuvik**	**147.84**	**318**	PKPbc	PKPbc	11 15 57.6	-1.0
	0.8nm,0.7s,baz=110,slow=4.6,SNR=4.8						
ILAR	**Eielson Array**	**152.02**	**309**	PKPbc	PKPbc	11 16 09.2	+0.2
	0.5nm,0.5s,baz=139,slow=4.1,SNR=8.0						

NIED ***14*** *11:02:00, 36°.80N×140°.60E, h5km, Mw4.1 Best double couple: M₀1.57000×10¹⁵ NP1:φs344.00000°, δ18.00000°, λ-120.00000°. NP2:φs196.00000°, δ75.00000°, λ-81.00000°.*

IDC ***14*** *11:02:25.8±0.6, 36°.81N×140°.60E, h0km, mb4.1/16, mb1 4.2/20, mb1mx4.1/40, mbtmp4.0/20, ML3.5/4, MS3.0/3, Ms1 3.1/3, ms1mx2.7/34, Error ellipse: s-maj=16.0km s-min=12.5km az=110.0*

ISCJB ***14*** *11:02:26.9±0.5, 36°.82N±0°.02×140°.68E±0°.04, h19km±3km, mb4.0/20, MS2.9/1, Error ellipse: s-maj=5.5km s-min=3.3km az=27.2*

JMA ***14*** *11:02:27.6, 36°.85N×140°.59E, h9km±1km, M4.2 Broadband fault plane solution: P waves. NP1: φs329.00000°, δ53.00000°, λ-129.00000°. NP2: φs202.00000°, δ51.00000°, λ-50.00000°. Principal axes: T Plg1.0000°, Azm85.0000°; N Plg30.0000°, Azm354.0000°; P Plg60.0000°, Azm177.0000°;*

JMA Felt III J1.

NEIC ***14*** *11:02:30.4±0.5, 36°.77N×140°.63E, h35km, mb4.6/3 Error ellipse: s-maj=10.3km s-min=8.2km az=114.0*

NEIC Recorded [3 JMA] in Fukushima.

ISC 14 11:02:27.1±1.1, 36°.85N±0°.03×140°.63E±0°.04, h7km±7km, n53, σ1s01/60, mb4.1/20, 7C, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JHO	**Hitachi**	**0.24**	**192**	P	**Pg**	**11 02 32.5**	**+0.6**
JHO				S	**Sg**	**11 02 35.9**	**+0.8**
ONAJ	**Iwakimizuishiy**	**0.28**	**27**	↑P	**Pb**	**11 02 33.9**	**-0.7**
ONAJ				*eS*	**Sb**	**11 02 38.4**	**-1.2**
JFK	**Kawauchi**	**0.55**	**20**	↑P	**Pb**	**11 02 38.5**	**-0.7**
JFK				S	**Sb**	**11 02 46.3**	**-1.0**
JSB	**Shiboa**	**0.58**	**282**	↑P	**Pg**	**11 02 38.9**	**+0.5**
JSB				*eS*	**Sg**	**11 02 46.8**	**+0.8**
JFT	**Otama**	**0.71**	**341**	P	**Pg**	**11 02 41.1**	**+0.3**
JFT				S	**Sg**	**11 02 50.5**	**+0.5**
JYT	**Yasato**	**0.71**	**210**	↑P	**Pg**	**11 02 40.8**	**0.0**
JYT				S	**Sg**	**11 02 49.9**	**-0.2**
JFY	**Yanaizu**	**0.93**	**307**	↑P	**Pg**	**11 02 44.5**	**-0.5**
JFY				S	**Sg**	**11 02 56.5**	**-0.5**
JMM	**Marumori**	**1.02**	**7**	↑P	**Pg**	**11 02 46.6**	**-0.2**
JMM				*eS*	**Sg**	**11 02 59.7**	**-0.4**
JAG	**Ashikaga**	**1.04**	**246**	↑P	**Pg**	**11 02 46.0**	**-1.1**
JAG				S	**Sg**	**11 02 59.3**	**-1.2**
MJAR	**Matsushiro Arr**	**1.97**	**262**	Pn	**Pn**	**11 03 00.9**	**0.0**
	132nm,0.3s,baz=84,slow=16,SNR=354						
MJAR				Sn	**Sn**	**11 03 25.2**	**-0.7**
	97nm,0.3s,baz=79,slow=12,SNR=11						
MJAR				LR	LR	11 04 04.5	
	comp=Z,279nm,18.6s,baz=105,slow=52						
MAJO	**Matsushiro**	**1.97**	**262**	*e*Pn	**Pn**	**11 03 01.4**	**+0.5**
MAJO				*e*Sn	**Sn**	**11 03 26.3**	**+0.3**
MAT	**Matsushiro**	**1.97**	**262**	P	**Pn**	**11 03 01.5**	**+0.5**
MAT				S	**Sn**	**11 03 27.0**	**+1.0**
JHJ	**Hachijo jima 2**	**3.79**	**191**	Pn	**Pn**	**11 03 26.3**	**+0.4**
	14nm,0.3s,baz=290,slow=23,SNR=9.0						
JHJ				Sn	**Sn**	**11 04 09.6**	**-1.0**
	18nm,0.3s,baz=61,slow=18,SNR=3.5						
JHJ2	**Mitsune**	**3.79**	**190**	*e*Pn	**Pn**	**11 03 24.2**	**-1.7**
ERM	**Erimo**	**5.52**	**20**	*e*Pn	**Pn**	**11 03 48.8**	**-0.8**
ASAJ	**Asahikawa**	**7.41**	**11**	Pn	**Pn**	**11 04 16.3**	**+0.6**
	1.9nm,0.3s,baz=222,slow=11,SNR=17						
ASAJ				Sn	**Sn**	**11 05 41.5**	**+1.4**
	0.9nm,0.3s,baz=52,slow=18,SNR=3.2						
ASAJ	**Asahikawa**	**7.41**	**11**	*e*Pn	**Pn**	**11 04 16.0**	**+0.3**
	4.0nm,0.6s						
ASAJ				Pn	**Pn**	**11 04 16.3**	**+0.6**
ASAJ				Sn	**Sn**	**11 05 41.5**	**+1.4**
JNU	**Nakatsue**	**8.82**	**248**	LR	LR	11 08 40.2	
	comp=Z,90nm,19.6s,baz=115,slow=43						
JNU	**Nakatsue**	**8.82**	**248**	*e*Pn	**Pn**	**11 04 35.0**	**-0.1**
CBIJ	**Chichi jima**	**9.81**	**172**	Pn	Pn	11 04 45.0	-3.6
CBIJ				Sn	Sn	11 06 31.0	-8.1
JCJ	**Chichijima**	**9.81**	**172**	Pn	Pn	11 04 45.0	-3.6
	7.6nm,0.3s,baz=278,slow=23,SNR=7.5						
JCJ				Sn	Sn	11 06 31.0	-8.1
	baz=278,slow=18						
USRK	**Ussuriysk Ar.**	**9.86**	**321**	Pn	**Pn**	**11 04 52.1**	**+3.0**
	0.2nm,0.3s,baz=138,slow=9.1,SNR=5.8						
KSRS	**Korea Array**	**10.17**	**277**	Pn	**Pn**	**11 04 54.5**	**+1.1**
	0.1nm,0.3s,baz=92,slow=10,SNR=3.4						
KSRS				LR	LR	11 08 23.9	
	comp=Z,111nm,20.9s,baz=78,slow=35						
KSAR	**Wonju Array Be**	**10.20**	**277**	Pn	**Pn**	**11 04 54.5**	**+0.7**
KLR	**Kul'dur**	**13.96**	**335**	Pn	**Pn**	**11 05 44.4**	**-0.9**
	0.1nm,0.3s,baz=63,slow=6.8,SNR=1.8						
SEY	**Seymchan**	**27.10**	**12**	P	**P**	**11 08 09.4**	**-0.8**
	1.1nm,0.5s,baz=192,slow=7.8,SNR=8.4						
SONM	**Songino Array**	**27.37**	**304**	P	**P**	**11 08 12.4**	**-0.6**
	2.3nm,0.8s,baz=98,slow=9.8,SNR=7.1						
H11N2	**WAKE ISLAND Hy**	**28.59**	**119**	T	T	11 38 08.8	
	baz=313,slow=75,SNR=169						
H11N1	**WAKE ISLAND Hy**	**28.60**	**119**	T	T	11 38 09.4	
	baz=313,slow=75,SNR=186						
H11N3	**WAKE ISLAND Hy**	**28.61**	**119**	T	T	11 38 10.2	
	baz=313,slow=75,SNR=139						
H11S1	**WAKE ISLAND Hy**	**29.29**	**122**	T	T	11 39 04.9	
	baz=314,slow=76,SNR=260						
H11S3	**WAKE ISLAND Hy**	**29.29**	**122**	T	T	11 39 03.4	
	baz=314,slow=76,SNR=172						
H11S2	**WAKE ISLAND Hy**	**29.30**	**122**	T	T	11 39 03.8	
	baz=314,slow=76,SNR=154						
CMAR	**Chiang Mai Arr**	**40.84**	**255**	P	**P**	**11 10 12.0**	**+2.3**
	0.3nm,0.5s,baz=50,slow=8.4,SNR=3.1						
CMAR				LR	LR	11 27 53.5	
	comp=Z,17nm,19.4s,baz=240,slow=37						
ZALV	**Zalesovo Beam**	**41.58**	**313**	P	**P**	**11 10 14.8**	**-0.6**
	1.2nm,0.5s,baz=94,slow=6.2,SNR=6.8						
MKAR	**Makanchi Array**	**43.69**	**302**	P	**P**	**11 10 32.4**	**-0.3**
	0.3nm,0.4s,baz=82,slow=12,SNR=4.6						

KURK	**Kurchatov**	**45.55**	**308**	*e*P	**P**	**11 10 46.7**	**-0.7**
	7.6nm,0.8s						
TKM2	**Tokmak 2**	**49.17**	**298**	*e*P	**P**	**11 11 16.1**	**+0.2**
	7.3nm,1.3s						
ILAR	**Eielson Array**	**49.98**	**32**	P	**P**	**11 11 19.9**	**-1.7**
	1.4nm,0.9s,baz=270,slow=5.8,SNR=14						
KKAR	**Karatay Array**	**52.68**	**300**	P	**P**	**11 11 42.5**	**+0.4**
INK	**Inuvik**	**54.84**	**27**	P	**P**	**11 11 58.0**	**+0.6**
	1.2nm,0.8s,baz=291,slow=6.2,SNR=5.5						
WRA	**Warramunga Arr**	**56.80**	**187**	P	**P**	**11 12 10.9**	**-1.1**
	3.3nm,0.5s,baz=4.6,slow=7.4,SNR=46						
ABKAR	**Akbulak array**	**57.58**	**310**	*e*P	**P**	**11 12 18.2**	**+0.8**
	3.4nm,0.8s						
ASAR	**Alice Springs**	**60.52**	**187**	P	**P**	**11 12 37.3**	**-0.7**
	1.8nm,0.8s,baz=9.3,slow=6.2,SNR=19						
ARCES	**ARCESS Array B**	**63.95**	**339**	P	**P**	**11 12 58.9**	**-1.5**
	4.9nm,0.9s,baz=42,slow=9.6,SNR=3.3						
YKA	**Yellowknife Ar**	**64.28**	**30**	P	**P**	**11 13 02.7**	**+0.1**
	0.6nm,0.7s,baz=302,slow=6.5,SNR=11						
STKA	**Stephens Creek**	**68.37**	**179**	P	**P**	**11 13 27.8**	**-1.4**
	0.7nm,0.5s,baz=324,slow=9.0,SNR=4.1						
FINES	**FINESS Array B**	**68.69**	**332**	P	**P**	**11 13 32.8**	**+1.9**
	3.4nm,0.8s,baz=70,slow=11,SNR=7.3						
AKASG	**Malin Array Be**	**74.06**	**322**	P	**P**	**11 14 03.0**	**-0.6**
	0.2nm,0.3s,baz=41,slow=7.3,SNR=6.1						
NVAR	**Mina Array Bea**	**75.60**	**53**	P	**P**	**11 14 14.4**	**+1.4**
	2.7nm,0.7s,baz=310,slow=5.6,SNR=5.4						
PDAR	**Pinedale Array**	**78.24**	**45**	P	**P**	**11 14 28.6**	**+0.8**
	0.9nm,0.7s,baz=257,slow=2.7,SNR=9.9						
TXAR	**Lajitas Array**	**90.73**	**52**	P	**P**	**11 15 32.0**	**+0.9**
	1.2nm,0.6s,baz=297,slow=3.2,SNR=18						
LPAZ	**La Paz**	**147.32**	**59**	PKPbc	**PKPbc**	**11 22 12.2**	**-0.4**
	1.6nm,0.6s,baz=5.9,slow=6.2,SNR=6.1						

IDC 14 11:02:55.4±2.8, 32°.88S×178°.43W, h0km, mb3.9/2, mb1 4.1/3, mb1mx3.8/21, mbtmp3.9/3, ML3.7/1, Error ellipse: s-maj=69.4km s-min=43.8km az=127.0, South of Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
URZ	**Urewera**	**6.48**	**213**	Pn	Pn	11 04 31.4	-0.6
	1.6nm,0.3s,baz=261,slow=4.2,SNR=13						
URZ				Sn	Sn	11 05 42.2	-4.4
	2.8nm,0.3s,baz=202,slow=18,SNR=7.4						
ASAR	**Alice Springs**	**42.67**	**270**	P	P	11 10 54.0	0.0
	0.6nm,0.6s,baz=112,slow=7.7,SNR=17						
WRA	**Warramunga Arr**	**43.88**	**275**	P	P	11 11 03.8	-0.1
	1.2nm,0.4s,baz=107,slow=7.6,SNR=48						
FINES	**FINESS Array B**	**147.32**	**338**	PKPbc	PKPbc	11 22 39.4	-0.7
	1.5nm,0.4s,baz=57,slow=5.3,SNR=12						

JMA 14 11:06:38.5, 36°.92N×140°.69E, h17km±1km, M2.5, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.20**	**26**	P	Pg	11 06 43.3	-0.1
ONAJ				S	Sg	11 06 46.6	-0.1
JHO	**Hitachi**	**0.32**	**198**	P	Pg	11 06 45.2	-0.2
JHO				S	Sg	11 06 49.7	-0.3
JFK	**Kawauchi**	**0.47**	**18**	P	Pg	11 06 47.6	-0.4
JFK				S	Sg	11 06 53.9	-0.5
JFT	**Otama**	**0.66**	**335**	P	Pg	11 06 51.3	-0.2
JFT				S	Sg	11 07 00.0	-0.3
JMM	**Marumori**	**0.95**	**5**	P	Pb	11 06 55.8	-0.7
JMM				S	Sb	11 07 08.2	-0.6
MAT	**Matsushiro**	**2.03**	**260**	P	Pb	11 07 13.6	-1.3
MAT				S	Sb	11 07 40.4	+0.5

IDC 14 11:20:22.0±44.0, 15°.50S×170°.67W, h0km, mb4.5/3, mb1 4.7/3, mb1mx3.7/37, mbtmp4.5/3, Error ellipse: s-maj=864.4km s-min=192.9km az=79.0, Samoa Islands region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
STKA	**Stephens Creek**	**46.27**	**241**	P	P	11 28 50.4	+0.8
	1.2nm,0.3s,baz=111,slow=8.6,SNR=3.5						
WRA	**Warramunga Arr**	**52.38**	**257**	P	P	11 29 35.8	-0.7
	1.3nm,0.5s,baz=97,slow=6.9,SNR=53						
ASAR	**Alice Springs**	**52.58**	**252**	P	P	11 29 37.9	-0.1
	14nm,0.6s,baz=89,slow=8.1,SNR=364						

ISK ***14*** *11:21:26.6, 37°.91N×27°.43E, h8km, MD2.3*

CSEM ***14*** *11:21:27.3±0.1, 37°.91N×27°.43E, h2km, MD2.6, Error ellipse: s-maj=3.1km s-min=2.2km az=63.0*

DDA ***14*** *11:21:27.4, 37°.88N×27°.40E, h7km, Md2.6*

ISC 14 11:21:27.0±0.9, 37°.90N±0°.02×27°.42E±0°.03, h11km±8km, n22, σ0s36/37, Turkey

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
GCAM	**G?zelcaml?**	**0.24**	**216**	*i* P	**Pg**	**11 21 32.1**	**0.0**
GCAM				*i* S	**Sg**	**11 21 35.6**	**+0.1**
GCAM	**G?zelcaml?**	**0.24**	**216**	P	**Pg**	**11 21 32.1**	**0.0**
GCAM				S	**Sg**	**11 21 35.6**	**+0.1**
AYDB	**Zeytinkoy-Aydi**	**0.38**	**82**	PG	**Pg**	**11 21 34.3**	**-0.3**
AYDB				*e*SG	**Sg**	**11 21 40.0**	**+0.3**
AYDB	**Zeytinkoy-Aydi**	**0.38**	**82**	*i* Pg	**Pg**	**11 21 34.3**	**-0.3**
AYDB				*e*Sg	**Sg**	**11 21 40.0**	**+0.3**
AYDN	**Tasoluk**	**0.44**	**122**	*i* P	**Pg**	**11 21 35.7**	**0.0**
AYDN				*i* S	**Sg**	**11 21 41.3**	**-0.2**
AYDN	**Tasoluk**	**0.44**	**122**	P	**Pg**	**11 21 35.7**	**0.0**
AYDN				S	**Sg**	**11 21 41.3**	**-0.2**
IZM	**Izmir**	**0.52**	**347**	*e*PG	**Pg**	**11 21 36.9**	**-0.3**
IZM				*e*SG	**Sg**	**11 21 44.3**	**+0.3**
IZM	**Izmir**	**0.52**	**347**	*e*Pg	**Pg**	**11 21 36.9**	**-0.3**
IZM				*e*Sg	**Sg**	**11 21 44.3**	**+0.3**
BLCB	**Balcova**	**0.57**	**329**	*e*PG	**Pg**	**11 21 38.0**	**-0.2**
BLCB	**Balcova**	**0.57**	**329**	*e*Pg	**Pg**	**11 21 38.0**	**-0.2**
URLA	**Izmir**	**0.80**	**306**	*i* P	**Pb**	**11 21 42.7**	**-0.2**
URLA				*i* S	**Sb**	**11 21 53.7**	**0.0**
URLA	**Izmir**	**0.80**	**306**	P	**Pb**	**11 21 42.7**	**-0.2**
URLA				S	**Sb**	**11 21 53.7**	**0.0**
ZEY	**˜zmir**	**0.80**	**296**	*i* P	**Pb**	**11 21 43.2**	**+0.3**
ZEY				*i* S	**Sb**	**11 21 53.8**	**+0.1**
BDRM	**Kayabasi**	**0.83**	**178**	*i* P	**Pn**	**11 21 44.5**	**-0.2**
BDRM				*i* S	**Sn**	**11 21 57.2**	**+0.3**
BDRM	**Kayabasi**	**0.83**	**178**	P	**Pn**	**11 21 44.5**	**-0.2**
BODT	**Bodrum**	**0.84**	**186**	*e*PG	**Pb**	**11 21 43.5**	**-0.1**
BODT	**Bodrum**	**0.84**	**186**	*e*Pg	**Pb**	**11 21 43.5**	**-0.1**
YER	**Yerkesik**	**1.03**	**138**	*e*PG	**Pb**	**11 21 47.0**	**+0.1**
YER	**Yerkesik**	**1.03**	**138**	*e*Pg	**Pb**	**11 21 47.0**	**+0.1**
AKHS	**Akhisar**	**1.03**	**18**	*i* P	**Pb**	**11 21 46.7**	**-0.2**
AKHS				*i* S	**Sn**	**11 22 01.5**	**-0.4**
AKHS	**Akhisar**	**1.03**	**18**	P	**Pb**	**11 21 46.7**	**-0.2**
AKHS				S	**Sn**	**11 22 01.5**	**-0.4**
DURS	**Dursunbey**	**1.89**	**26**	*i* P	**Pg**	**11 22 05.0**	**+1.6**
DURS				*i* S	**Sg**	**11 22 27.6**	**-0.3**

NIED ***14*** *11:24:00, 37°.10N×140°.80E, h5km, Mw4.0 Best double couple: M₀1.28000×10¹⁵ NP1:φs178.00000°, δ39.00000°, λ-122.00000°. NP2:φs236.00000°, δ58.00000°, λ-67.00000°.*

IDC ***14*** *11:24:29.3±0.5, 37°.15N×140°.74E, h0km, mb4.1/19, mb1 4.3/22, mb1mx4.1/46, mbtmp4.1/22, ML4.0/3, MS3.0/3, Ms1 3.1/3, ms1mx2.6/44, Error ellipse: s-maj=17.1km s-min=11.7km az=107.0*

ISCJB ***14*** *11:24:30.6±1.0, 37°.12N±0°.03×140°.88E±0°.04, h15km±6km, mb4.1/23, MS2.9/1, Error ellipse: s-maj=5.6km s-min=4.1km az=31.1*

JMA ***14*** *11:24:30.8, 37°.12N×140°.77E, h9km±1km, M4.4 Broadband fault plane solution: P waves. NP1: φs85.00000°, δ60.00000°, λ-37.00000°. NP2:φs196.00000°, δ59.00000°, λ-144.00000°. Principal axes: T Plg1.0000°, Azm141.0000°; N Plg44.0000°, Azm232.0000°; P Plg46.0000°, Azm50.0000°;*

JMA Felt III J1.

NEIC ***14*** *11:24:32.8±2.1, 37°.06N×140°.86E, h25km±15km, mb4.5/3 Error ellipse: s-maj=9.7km s-min=6.7km az=105.0*

NEIC Recorded [3 JMA] in Fukushima.

ISC 14 11:24:30.8±0.8, 37°.12N±0°.03×140°.78E±0°.04, h10km±4km, n55, σ0s80/53, mb4.1/23, 6C-1D, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.02**	**125**	↓P	**Pg**	**11 24 32.5**	**-0.1**
ONAJ				S	**Sg**	**11 24 33.7**	**-0.2**
JFK	**Kawauchi**	**0.26**	**17**	↑P	**Pg**	**11 24 36.2**	**0.0**
JHO	**Hitachi**	**0.53**	**198**	↑P	**Pg**	**11 24 41.1**	**0.0**
JHO				S	**Sg**	**11 24 48.2**	**+0.2**
JFT	**Otama**	**0.53**	**319**	↑P	**Pg**	**11 24 41.4**	**+0.2**
JFT				S	**Sg**	**11 24 48.3**	**+0.1**
JSB	**Shiboa**	**0.70**	**258**	↑P	**Pb**	**11 24 45.0**	**-0.1**
JSB				S	**Sb**	**11 24 54.2**	**-0.6**
JMM	**Marumori**	**0.75**	**1**	↑P	**Pg**	**11 24 44.9**	**-0.4**
JMM				S	**Sg**	**11 24 54.9**	**-0.2**
JFY	**Yanaizu**	**0.90**	**289**	↑P	**Pg**	**11 24 48.0**	**-0.2**
JFY				S	**Sg**	**11 24 59.7**	**-0.2**
MJAR	**Matsushiro Arr**	**2.14**	**255**	Pn	**Pn**	**11 25 07.5**	**+0.9**
	48nm,0.3s,baz=76,slow=16,SNR=154						
MJAR				Sn	**Sb**	**11 25 34.8**	**-1.4**
	157nm,0.3s,baz=220,slow=37,SNR=16						
MAJO	**Matsushiro**	**2.14**	**255**	*e*Pn	**Pb**	**11 25 08.8**	**-0.9**
MAT	**Matsushiro**	**2.14**	**255**	P	**Pn**	**11 25 07.7**	**+1.1**
MAT				S	**Sb**	**11 25 37.0**	**+0.8**
JHJ	**Hachijo jima 2**	**4.07**	**192**	Pn	**Pn**	**11 25 33.5**	**+0.4**
	30nm,0.3s,baz=50,slow=7.6,SNR=13						
JHJ				Sn	**Sn**	**11 26 20.4**	**-0.3**
	56nm,0.3s,baz=94,slow=19,SNR=3.3						
JHJ2	**Mitsune**	**4.07**	**191**	*e*Pn	**Pn**	**11 25 33.5**	**+0.4**
ASAJ	**Asahikawa**	**7.13**	**11**	Pn	**Pn**	**11 26 15.2**	**+0.1**
	2.5nm,0.3s,baz=218,slow=13,SNR=10						
ASAJ				Sn	**Sn**	**11 27 34.8**	**-1.4**
	0.4nm,0.3s,baz=254,slow=18,SNR=1.6						
JNU	**Nakatsue**	**9.03**	**247**	Pn	Pn	11 26 45.2	+3.9
	0.4nm,0.3s,baz=63,slow=5.3,SNR=6.0						
JNU	**Nakatsue**	**9.03**	**247**	*e*Pn	**Pn**	**11 26 42.0**	**+0.7**
JNU				Pn	Pn	11 26 45.2	+3.9
USRK	**Ussuriysk Ar.**	**9.72**	**319**	Pn	Pn	11 26 53.9	+3.2
	0.3nm,0.3s,baz=124,slow=14,SNR=7.9						
USRK				LR	LR	11 30 46.6	
	comp=Z,84nm,18.3s,baz=118,slow=39						
YSS	**Yuzh-Sakhalins**	**9.94**	**8**	*e*P	**Pn**	**11 26 55.4**	**+1.8**
	16nm,0.8s						
CBIJ	**Chichi jima**	**10.06**	**173**	Pn	Pn	11 26 52.1	-3.2
CBIJ				Sn	Sn	11 28 37.4	-11
JCJ	**Chichijima**	**10.06**	**173**	Pn	Pn	11 26 52.1	-3.2
	9.6nm,0.3s,baz=296,slow=16,SNR=6.4						
JCJ				Sn	Sn	11 28 37.4	-11
	6.8nm,0.3s,baz=319,slow=19,SNR=4.2						
KSRS	**Korea Array**	**10.25**	**276**	Pn	Pn	11 27 01.6	+3.7
	0.6nm,0.3s,baz=92,slow=13,SNR=15						
KSAR	**Wonju Array Be**	**10.28**	**276**	Pn	Pn	11 27 01.6	+3.2
KLR	**Kul'dur**	**13.77**	**334**	Pn	**Pn**	**11 27 48.3**	**+2.3**
	0.0nm,0.3s,baz=138,slow=15,SNR=2.1						
KLR				LR	LR	11 32 37.7	
	comp=Z,68nm,21.1s,baz=145,slow=36						
MA2	**Magadan**	**23.39**	**13**	P	**P**	**11 29 39.3**	**-0.1**
	4.6nm,0.6s,baz=202,slow=14,SNR=3.5						
SEY	**Seymchan**	**26.81**	**12**	P	**P**	**11 30 09.3**	**-1.5**
	1.6nm,0.7s,baz=107,slow=19,SNR=2.5						
SONM	**Songino Array**	**27.32**	**304**	P	**P**	**11 30 15.0**	**-0.8**
	1.7nm,0.7s,baz=106,slow=9.7,SNR=8.2						
H11N2	**WAKE ISLAND Hy**	**28.63**	**120**	T	T	12 00 14.9	
	baz=313,slow=75,SNR=194						
H11N1	**WAKE ISLAND Hy**	**28.64**	**120**	T	T	12 00 28.4	
	baz=313,slow=75,SNR=169						
H11N3	**WAKE ISLAND Hy**	**28.65**	**120**	T	T	12 00 24.7	
	baz=313,slow=75,SNR=106						
H11S1	**WAKE ISLAND Hy**	**29.33**	**122**	T	T	12 01 16.9	
	baz=314,slow=76,SNR=224						
H11S3	**WAKE ISLAND Hy**	**29.33**	**122**	T	T	12 01 11.5	
	baz=314,slow=76,SNR=232						
H11S2	**WAKE ISLAND Hy**	**29.35**	**122**	T	T	12 01 16.7	
	baz=314,slow=76,SNR=85						
CMAR	**Chiang Mai Arr**	**41.02**	**255**	LR	LR	11 48 28.5	
	comp=Z,19nm,21.3s,baz=80,slow=35						
ZALV	**Zalesovo Beam**	**41.48**	**312**	P	**P**	**11 32 16.8**	**-0.9**
	2.5nm,0.6s,baz=94,slow=5.9,SNR=11						
MKAR	**Makanchi Array**	**43.64**	**302**	P	**P**	**11 32 34.9**	**-0.5**
	2.0nm,0.6s,baz=87,slow=9.8,SNR=14						
KURK	**Kurchatov**	**45.48**	**308**	*e*P	**P**	**11 32 49.4**	**-0.6**
	21nm,1.0s						
TKM2	**Tokmak 2**	**49.14**	**298**	*e

KHAL	**Karahalli**	**2.00**	**17**	P	**Pb**	**11 35 09.0**		**-1.2**

NIED ***14*** *11:40:00,35.°30N×141.°20E,h35km,Mw4.1 Best double couple: M₀1.60000×10¹⁵ NP1:φs209.00000°,δ26.00000°, λ155.00000°. NP2:φs322.00000°,δ80.00000°,λ66.00000°.*
IDC ***14*** *11:40:50.3±0.7,35.°25N×141.°22E,h0km,mb3.7/11, mb1 3.9/15,mb1mx3.8/49,mbtmp3.8/15,ML3.9/3,MS3.1/3, Ms1 3.1/3,ms1mx2.6/49,Error ellipse: s-maj=22.6km s-min=13.8km az=95.0*
ISCJB ***14*** *11:40:52.7±0.9,35.°26N±0.°04×141.°24E±0.°07,h30km±6km, mb3.7/11,Error ellipse: s-maj=10.3km s-min=6.1km az=173.9*
JMA ***14*** *11:40:53.1±0.1,35.°33N×141.°20E,h36km±2km,M3.8*

ISC 14 11:40:53.6±0.7,35.°28N±0.°04×141.°20E±0.°09,h21km±5km, n30,σ0°81/25,mb3.7/11,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.50**	**327**	P	**Pb**	**11 41 03.1**	**-0.7**
CHOJ				*eS*	**Sb**	**11 41 10.3**	**-0.3**
BSO1	**Boso 1**	**0.65**	**196**	P	**Pb**	**11 41 06.4**	**+0.4**
KTR	**Katsuura**	**0.73**	**260**	P	**Pb**	**11 41 07.2**	**-0.5**
KTR				*eS*	**Sb**	**11 41 17.7**	**+0.4**
BSO3	**Boso 3**	**0.74**	**230**	P	**Pb**	**11 41 07.6**	**0.0**
BSO4	**Boso 4**	**0.76**	**248**	P	**Pb**	**11 41 08.0**	**-0.1**
JCN	**Nagara**	**0.83**	**280**	P	**Pb**	**11 41 09.1**	**-0.1**
JCN				*eS*	**Sb**	**11 41 21.2**	**+1.3**
JYT	**Yasato**	**1.25**	**319**	P	Pn	11 41 14.1	-1.7
JYT				*eS*	**Sn**	**11 41 30.5**	**-1.5**
JHJ	**Hachijo jima 2**	**2.46**	**209**	Pn	Pn	11 41 30.8	-1.7
	36nm,0.3s,baz=337,slow=22,SNR=21						
JHJ				Sn	**Sn**	**11 42 00.3**	**-1.5**
	72nm,0.3s,baz=40,slow=23,SNR=5.8						
JHJ				LR	LR	11 42 39.5	
	comp=Z,363nm,18.9s,baz=26,slow=45						
MJAR	**Matsushiro Arr**	**2.73**	**298**	Pn	**Pn**	**11 41 36.1**	**-0.2**
	11nm,0.3s,baz=294,slow=25,SNR=52						
MAT	**Matsushiro**	**2.73**	**298**	P	**Pn**	**11 41 37.5**	**+1.2**
MAT				*eS*	Sn	11 42 05.2	-3.6
JCJ	**Chichijima**	**8.21**	**174**	Pn	**Pn**	**11 42 50.1**	**-1.4**
	baz=319,slow=18						
JCJ				Sn	Sn	11 44 18.1	-5.5
	4.0nm,0.3s,baz=270,slow=20,SNR=2.4						
JNU	**Nakatsue**	**8.82**	**259**	LR	LR	11 46 32.9	
	comp=Z,134nm,21.6s,baz=121,slow=39						
ASAJ	**Asahikawa**	**8.89**	**7**	Pn	Pn	11 42 58.4	-2.4
	2.5nm,0.3s,baz=231,slow=10,SNR=21						
ASAJ				Sn	Sn	11 44 34.7	-5.6
	0.2nm,0.3s,baz=288,slow=20,SNR=1.9						
ASAJ				LR	LR	11 47 14.5	
	comp=Z,115nm,19.7s,baz=166,slow=43						
H11N2	**WAKE ISLAND Hy 27.45**	**118**		T	T	12 15 39.2	
	baz=310,slow=75,SNR=31						
H11N1	**WAKE ISLAND Hy 27.45**	**118**		T	T	12 15 39.7	
	baz=310,slow=75,SNR=53						
H11N3	**WAKE ISLAND Hy 27.46**	**118**		T	T	12 15 49.9	
	baz=310,slow=75,SNR=54						
H11S1	**WAKE ISLAND Hy 28.10**	**120**		T	T	12 16 26.7	
	baz=312,slow=75,SNR=165						
H11S3	**WAKE ISLAND Hy 28.10**	**120**		T	T	12 16 28.6	
	baz=312,slow=75,SNR=218						
H11S2	**WAKE ISLAND Hy 28.11**	**120**		T	T	12 16 29.7	
	baz=312,slow=75,SNR=193						
SEY	**Seymchan**	**28.54**	**11**	P	**P**	**11 46 48.7**	**+1.1**
	0.6nm,0.3s,baz=170,slow=1.9,SNR=4.0						
SONM	**Songino Array**	**28.65**	**307**	P	**P**	**11 46 49.5**	**+0.6**
	0.3nm,0.4s,baz=101,slow=7.5,SNR=2.8						
ZALV	**Zalesovo Beam**	**42.98**	**314**	P	**P**	**11 48 51.3**	**+0.2**
	0.6nm,0.3s,baz=104,slow=8.1,SNR=4.1						
MKAR	**Makanchi Array**	**44.92**	**304**	P	**P**	**11 49 06.3**	**-0.5**
	0.3nm,0.4s,baz=83,slow=11,SNR=3.0						
ILAR	**Eielson Array**	**51.07**	**32**	P	**P**	**11 49 54.9**	**+0.7**
	0.7nm,0.7s,baz=266,slow=6.6,SNR=9.7						
FITZ	**Fitzroy Crossi**	**55.11**	**198**	P	**P**	**11 50 24.8**	**+0.5**
	1.3nm,0.5s,baz=12,slow=9.1,SNR=8.3						
WRA	**Warramunga Arr**	**55.30**	**188**	P	**P**	**11 50 25.4**	**-0.3**
	2.6nm,0.6s,baz=2.1,slow=7.5,SNR=34						
ASAR	**Alice Springs**	**59.03**	**188**	P	**P**	**11 50 51.5**	**-0.6**
	0.4nm,0.6s,baz=17,slow=11,SNR=8.4						
YKA	**Yellowknife Ar**	**65.41**	**30**	P	**P**	**11 51 34.0**	**-0.3**
	0.3nm,0.9s,baz=304,slow=6.7,SNR=3.7						
FINES	**FINESS Array B**	**70.28**	**332**	P	**P**	**11 52 05.1**	**0.0**
	0.2nm,0.3s,baz=54,slow=7.1,SNR=4.6						
PDAR	**Pinedale Array**	**79.02**	**45**	P	**P**	**11 52 56.4**	**-0.1**
	0.2nm,0.6s,baz=252,slow=3.8,SNR=3.6						

IDC 14 11:42:46.8±1.2,0.°59N×124.°18E,h0km,mb3.6/6, mb1 3.7/7,mb1mx3.5/43,mbtmp3.6/7,ML3.7/1,Error ellipse: s-maj=84.3km s-min=17.3km az=63.0, Minahassa Peninsula, Sulawesi

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**18.63**	**176**	P	P	11 47 05.2	-0.9
	0.2nm,0.3s,baz=354,slow=10,SNR=5.8						
WRA	**Warramunga Arr**	**22.71**	**155**	P	P	11 47 51.5	+1.1
	0.6nm,0.3s,baz=336,slow=9.7,SNR=20						
ASAR	**Alice Springs**	**25.90**	**159**	P	P	11 48 19.9	-0.8
	0.3nm,0.8s,baz=340,slow=15,SNR=4.1						
CMAR	**Chiang Mai Arr**	**30.48**	**307**	P	P	11 49 02.9	+1.1
	0.4nm,0.7s,baz=142,slow=7.7,SNR=4.3						
STKA	**Stephens Creek**	**36.26**	**154**	P	P	11 49 52.0	+0.1
	0.9nm,0.4s,baz=313,slow=9.5,SNR=4.2						
SONM	**Songino Array**	**49.53**	**344**	P	P	11 51 39.9	+0.4
	0.5nm,0.5s,baz=168,slow=9.4,SNR=3.6						
MKAR	**Makanchi Array**	**58.74**	**328**	P	P	11 52 45.6	-1.1
	0.3nm,0.4s,baz=134,slow=8.5,SNR=3.6						

NIED ***14*** *11:46:00,37.°00N×140.°60E,h8km,Mw3.8 Best double couple: M₀5.59000×10¹⁴ NP1:φs126.00000°,δ25.00000°, λ-74.00000°. NP2:φs288.00000°,δ66.00000°, λ-98.00000°.*
IDC ***14*** *11:46:48.9±0.7,36.°96N×140.°45E,h0km,mb3.9/16, mb1 4.0/19,mb1mx3.9/44,mbtmp3.9/19,ML3.2/3,Error ellipse: s-maj=18.7km s-min=14.9km az=110.0*
ISCJB ***14*** *11:46:49.4±0.5,36.°99N±0.°03×140.°68E±0.°04,h18km±3km, mb3.9/18,Error ellipse: s-maj=5.8km s-min=4.2km az=29.5*
JMA ***14*** *11:46:49.9,37.°02N×140.°59E,h9km±1km,M4.1 Broadband fault plane solution: P waves. NP1: φs78.00000°,δ53.00000°,λ-102.00000°. NP2: φs278.00000°,δ39.00000°,λ-74.00000°. Principal axes: T Plg7.0000°, Azm177.0000°; N Plg10.0000°, Azm86.0000°; P Plg78.0000°, Azm301.0000°;*
JMA Felt III J1.
NEIC ***14*** *11:46:53.2±0.5,36.°87N×140.°54E,h35km,mb4.1/1 Error ellipse: s-maj=12.3km s-min=9.5km az=116.0*
NEIC Recorded [3 JMA] in Fukushima.

ISC 14 11:46:48.4±1.3,36.°96N±0.°03×140.°54E±0.°03,h0km±8km, n44,σ1°803/45,mb3.9/18,5C-1D,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.25**	**55**	P	**Pg**	**11 46 54.1**	**+0.8**
ONAJ				S	**Sg**	**11 46 57.0**	**+0.4**
JHO	**Hitachi**	**0.35**	**176**	⇑P	**Pb**	**11 46 58.0**	**+0.5**
JHO				S	**Sb**	**11 47 03.6**	**+0.1**
JFK	**Kawauchi**	**0.49**	**33**	⇑P	**Pg**	**11 46 57.9**	**+0.1**
JFK				S	**Sg**	**11 47 03.7**	**-0.5**
JSB	**Shiboa**	**0.50**	**272**	⇓P	**Pb**	**11 47 01.1**	**+1.0**
JSB				S	**Sb**	**11 47 08.5**	**+0.6**
JFT	**Otama**	**0.58**	**344**	⇑P	**Pg**	**11 47 00.4**	**+0.7**
JFT				S	**Sg**	**11 47 07.8**	**+0.6**
JFY	**Yanaizu**	**0.81**	**304**	⇑P	**Pb**	**11 47 05.3**	**0.0**
JFY				S	**Sb**	**11 47 15.7**	**-1.1**
JMM	**Marumori**	**0.93**	**12**	⇑P	**Pg**	**11 47 05.8**	**-0.5**
JMM				S	**Sg**	**11 47 17.4**	**-0.9**
MJAR	**Matsushiro Arr**	**1.92**	**258**	Pn	**Pb**	**11 47 23.7**	**-0.6**
	55nm,0.3s,baz=76,slow=15,SNR=109						
MJAR				Sn	**Sg**	**11 47 50.3**	**+0.2**
	47nm,0.3s,baz=93,slow=23,SNR=11						
MAJO	**Matsushiro**	**1.92**	**258**	*e*Pn	**Pb**	**11 47 24.3**	**0.0**
MAT	**Matsushiro**	**1.92**	**258**	P	**Pb**	**11 47 24.4**	**+0.1**
MAT				S	**Sg**	**11 47 50.9**	**+0.8**
JHJ	**Hachijo jima 2**	**3.88**	**189**	Pn	**Pn**	**11 47 50.2**	**+0.9**
	16nm,0.3s,baz=131,slow=24,SNR=12						
JHJ				Sn	**Sn**	**11 48 34.4**	**-1.1**
	9.7nm,0.3s,baz=234,slow=19,SNR=2.0						
JHJ2	**Mitsune**	**3.88**	**189**	*e*Pn	**Pn**	**11 47 47.8**	**-1.5**
ASAJ	**Asahikawa**	**7.32**	**12**	Pn	**Pn**	**11 48 35.8**	**-0.8**
	1.1nm,0.3s,baz=210,slow=15,SNR=8.7						
JNU	**Nakatsue**	**8.80**	**247**	Pn	**Pn**	**11 48 57.6**	**+0.7**
	0.1nm,0.3s,baz=30,slow=8.1,SNR=2.8						
USRK	**Ussuriysk Ar.**	**9.72**	**321**	Pn	Pn	11 49 14.6	+5.1
	0.2nm,0.3s,baz=130,slow=12,SNR=14						
CBIJ	**Chichi jima**	**9.93**	**171**	Pn	**Pn**	**11 49 10.2**	**-2.2**
JCJ	**Chichijima**	**9.93**	**171**	Pn	**Pn**	**11 49 10.2**	**-2.2**
	baz=90,slow=20						
KSRS	**Korea Array**	**10.08**	**277**	Pn	Pn	11 49 19.8	+5.4
	0.2nm,0.3s,baz=93,slow=14,SNR=12						
KSAR	**Wonju Array Be**	**10.11**	**277**	Pn	Pn	11 49 19.8	+4.9
SONM	**Songino Array**	**27.25**	**304**	P	**P**	**11 52 34.1**	**-0.2**
	1.0nm,0.7s,baz=99,slow=8.9,SNR=5.3						
H11N2	**WAKE ISLAND Hy 28.71**	**119**		T	T	12 22 37.2	
	baz=313,slow=75,SNR=48						
H11N1	**WAKE ISLAND Hy 28.72**	**120**		T	T	12 22 37.8	
	baz=313,slow=75,SNR=82						
H11N3	**WAKE ISLAND Hy 28.73**	**119**		T	T	12 22 38.5	
	baz=313,slow=75,SNR=72						
H11S1	**WAKE ISLAND Hy 29.41**	**122**		T	T	12 23 30.2	
	baz=314,slow=76,SNR=197						
H11S3	**WAKE ISLAND Hy 29.41**	**122**		T	T	12 23 30.8	
	baz=314,slow=76,SNR=80						
H11S2	**WAKE ISLAND Hy 29.43**	**122**		T	T	12 23 28.0	
	baz=314,slow=76,SNR=53						
AKUT	**Akutan**	**40.26**	**47**	P	**P**	**11 54 26.1**	**-0.6**
ZALV	**Zalesovo Beam**	**41.45**	**312**	P	**P**	**11 54 37.3**	**+0.7**
	1.1nm,0.5s,baz=81,slow=9.2,SNR=4.6						
MKAR	**Makanchi Array**	**43.57**	**302**	P	**P**	**11 54 54.2**	**+0.2**
	0.4nm,0.4s,baz=82,slow=10,SNR=5.0						
KURK	**Kurchatov**	**45.43**	**308**	*e*P	**P**	**11 55 07.7**	**-1.1**
	5.1nm,0.7s						
ILAR	**Eielson Array**	**49.93**	**32**	P	**P**	**11 55 45.5**	**+1.9**
	0.7nm,0.8s,baz=269,slow=7.0,SNR=9.3						
BVAR	**Borovoye Array**	**50.11**	**312**	P	**P**	**11 55 44.1**	**-1.0**
	0.4nm,0.4s,baz=46,slow=10,SNR=3.7						
INK	**Inuvik**	**54.77**	**27**	P	**P**	**11 56 19.9**	**+0.5**
	0.6nm,0.6s,baz=234,slow=7.2,SNR=4.4						
WRA	**Warramunga Arr**	**56.89**	**187**	P	**P**	**11 56 34.8**	**-0.4**
	2.6nm,0.6s,baz=3.7,slow=7.3,SNR=28						
ABKAR	**Akbulak array**	**57.45**	**310**	*e*P	**P**	**11 56 38.0**	**-0.8**
	1.1nm,0.5s						
ASAR	**Alice Springs**	**60.62**	**187**	P	**P**	**11 57 00.8**	**-0.2**
	1.1nm,0.7s,baz=8.6,slow=6.0,SNR=9.1						
ARCES	**ARCESS Array B**	**63.82**	**339**	P	**P**	**11 57 23.1**	**+1.1**
	2.2nm,0.8s,baz=57,slow=8.8,SNR=9.2						
YKA	**Yellowknife Ar**	**64.22**	**30**	P	**P**	**11 57 25.2**	**+0.5**
	0.3nm,0.8s,baz=305,slow=7.0,SNR=6.7						
FINES	**FINESS Array B**	**68.56**	**332**	P	**P**	**11 57 51.2**	**-1.3**
	2.3nm,0.7s,baz=57,slow=7.0,SNR=8.3						
AKASG	**Malin Array Be**	**73.93**	**322**	P	**P**	**11 58 23.9**	**-1.3**
	0.9nm,0.6s,baz=48,slow=6.0,SNR=4.8						
NOA	**NORSAR Array B**	**73.98**	**337**	P	**P**	**11 58 24.9**	**-0.5**
	1.3nm,0.7s,baz=41,slow=5.5,SNR=5.0						
PDAR	**Pinedale Array**	**78.22**	**45**	P	**P**	**11 58 52.5**	**+2.4**
	0.4nm,0.7s,baz=325,slow=1.8,SNR=5.0						
GERES	**GERESS Array B**	**82.41**	**328**	P	**P**	**11 59 14.0**	**+1.5**
	0.4nm,0.3s,baz=45,slow=4.7,SNR=3.4						
TXAR	**Lajitas Array**	**90.72**	**52**	P	**P**	**11 59 54.2**	**+0.7**
	0.2nm,0.6s,baz=312,slow=3.1,SNR=3.8						

JMA 14 11:54:15.3,37.°02N×140.°60E,h9km±1km,M2.5,Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.18**	**63**	P	Pg	11 54 19.2	+0.1
ONAJ				S	Sg	11 54 22.2	+0.5
JFK	**Kawauchi**	**0.41**	**32**	P	Pg	11 54 23.4	+0.1
JHO	**Hitachi**	**0.41**	**183**	P	Pg	11 54 23.1	-0.2
JHO				S	Sg	11 54 28.9	+0.2
JFT	**Otama**	**0.54**	**337**	P	Pg	11 54 26.0	+0.2
JFT				S	Sg	11 54 33.4	+0.5
JMM	**Marumori**	**0.86**	**10**	P	Pg	11 54 31.5	-0.3
JMM				S	Sg	11 54 42.7	-0.3
JOU	**Okura**	**1.34**	**2**	S	Sb	11 54 57.9	-0.1
MAT	**Matsushiro**	**1.98**	**257**	P	Pn	11 54 49.0	0.0
MAT				S	Sb	11 55 16.2	-0.1

IDC ***14*** *11:55:16.5±2.3,39.°51N×143.°65E,h0km,mb3.3/2, mb1 3.3/4,mb1mx3.1/36,mbtmp3.2/4,ML3.0/2,MS2.4/1, Ms1 2.4/1,ms1mx2.1/23,Error ellipse: s-maj=59.4km s-min=28.6km az=83.0*
JMA ***14*** *11:55:19.3±0.3,39.°55N×143.°40E,h17km±4km,M3.6*

ISC 14 11:55:19.1±3.1,39.°53N±0.°06×143.°38E±0.°08,h12km±17km, n16,σ0°974/21,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MIYJ	**Miyakonagasawa**	**1.21**	**273**	P	**Pn**	**11 55 41.5**	**-0.3**
MIYJ				S	**Sg**	**11 55 58.0**	**-0.1**
JTH	**Tanohata**	**1.24**	**290**	P	**Pn**	**11 55 41.7**	**-0.6**
JTH				*eS*	**Sb**	**11 55 58.0**	**-0.4**
OFUJ	**Ofunato**	**1.40**	**252**	P	**Pn**	**11 55 44.6**	**+0.1**
JOM	**Ohasama**	**1.62**	**269**	P	**Pn**	**11 55 47.5**	**+0.1**
JKZ	**Kuzumaki**	**1.65**	**287**	P	**Pn**	**11 55 48.5**	**+0.6**
JKZ				S	**Sn**	**11 56 09.3**	**+0.3**
JANG	**Nango**	**1.67**	**301**	P	**Pn**	**11 55 47.5**	**-0.6**
JMK	**Ichinoseki**	**1.78**	**252**	S	**Sn**	**11 56 11.8**	**-0.2**
JTM	**Tenmabayashi**	**2.17**	**306**	P	**Pn**	**11 55 55.4**	**+0.3**
JTM				*eS*	**Sn**	**11 56 22.8**	**+0.9**
JAH	**Hinai**	**2.22**	**288**	P	**Pn**	**11 55 56.8**	**+1.2**
JNBK	**Urakawa-nobuka**	**2.79**	**350**	P	**Pn**	**11 56 04.2**	**+0.7**
JNBK				S	**Sn**	**11 56 36.8**	**-0.3**
JCH	**Churui**	**3.08**	**360**	P	**Pn**	**11 56 07.4**	**-0.2**
ASAJ	**Asahikawa**	**4.62**	**353**	Pn	**Pn**	**11 56 29.4**	**+0.7**
	0.6nm,0.3s,baz=207,slow=12,SNR=8.7						
MJAR	**Matsushiro Arr**	**5.06**	**236**	Pn	**Pn**	**11 56 36.7**	**+2.0**
	0.6nm,0.3s,baz=38,slow=13,SNR=7.3						
MJAR				LR	LR	11 58 16.6	
	comp=Z,36nm,19.8s,baz=85,slow=35						
MAT	**Matsushiro**	**5.06**	**236**	P	**Pn**	**11 56 34.3**	**-0.4**
MKAR	**Makanchi Array**	**44.16**	**300**	P	**P**	**12 03 27.6**	**+0.1**
	0.1nm,0.2s,baz=93,slow=8.1,SNR=3.0						
WRA	**Warramunga Arr**	**59.76**	**190**	P	**P**	**12 05 23.2**	**-0.6**
	0.2nm,0.6s,baz=6.5,slow=6.9,SNR=3.2						

ISCJB ***14*** *11:56:60.0±1.2,37.°58N±0.°03×141.°92E±0.°06,h17km±8km, mb3.6/11,MS3.5/2,Error ellipse: s-maj=8.6km s-min=5.4km az=13.3*
JMA ***14*** *11:57:01.4±0.2,37.°61N×141.°84E,h26km±4km,M4.0*
IDC ***14*** *11:57:03.1±0.7,37.°57N×141.°84E,h26km±4km,mb3.5/10, mb1 3.7/14,mb1mx3.6/42,mbtmp3.6/14,ML3.6/3,MS3.1/6, Ms1 3.1/6,ms1mx2.7/41,Error ellipse: s-maj=18.5km s-min=14.3km az=104.0*

ISC 14 11:57:02.4±0.7,37.59N±0.°04×141.°85E±0.°05,h26km±4km, n45,σ1°824/48,mb3.6/11,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**0.81**	**254**	P	**Pb**	**11 57 16.5**	**-1.3**
JFK				S	**Sb**	**11 57 26.1**	**-2.2**
JMM	**Marumori**	**0.88**	**288**	P	**Pb**	**11 57 17.3**	**-1.7**
JMM				S	**Sb**	**11 57 28.2**	**-2.2**
JIO	**Ouri**	**0.95**	**336**	P	**Pn**	**11 57 18.5**	**-1.5**
JIO				S	**Sb**	**11 57 30.0**	**-2.3**
JFT	**Otama**	**1.20**	**267**	P	**Pn**	**11 57 23.3**	**-0.2**
JFT				S	**Sn**	**11 57 38.8**	**-0.2**
JOU	**Okura**	**1.21**	**310**	P	**Pn**	**11 57 23.5**	**-0.2**
JOU				S	**Sn**	**11 57 38.6**	**-0.7**
JMK	**Ichinoseki**	**1.45**	**340**	P	**Pn**	**11 57 26.2**	**-0.6**
OFUJ	**Ofunato**	**1.49**	**355**	P	**Pn**	**11 57 26.5**	**-1.0**
JYS	**Shirataka**	**1.54**	**295**	P	**Pn**	**11 57 28.6**	**+0.4**
JYS				S	**Sn**	**11 57 48.1**	**+0.7**
JYK	**Kaneyama**	**1.77**	**319**	P	**Pn**	**11 57 30.9**	**-0.4**
JOM	**Ohasama**	**1.93**	**347**	P	**Pn**	**11 57 33.1**	**-0.4**
JOM				*eS*	**Sn**	**11 57 56.6**	**-0.3**
MIYJ	**Miyakonagasawa**	**1.98**	**359**	P	**Pn**	**11 57 33.0**	**-1.2**
JRG	**Rokugo**	**2.04**	**332**	P	**Pn**	**11 57 35.1**	**+0.1**
JRG				S	**Sn**	**11 57 59.9**	**+0.3**
JKZ	**Kuzumaki**	**2.42**	**351**	P	**Pn**	**11 57 40.7**	**+0.4**
JKZ				*eS*	**Sn**	**11 58 09.2**	**0.0**
JANG	**Nango**	**2.79**	**355**	P	**Pn**	**11 57 45.5**	**+0.2**
MJAR	**Matsushiro Arr**	**3.09**	**251**	Pn	**Pn**	**11 57 50.2**	**+0.7**
	4.9nm,0.3s,baz=80,slow=16,SNR=28						
MAT	**Matsushiro**	**3.10**	**251**	P	**Pn**	**11 57 50.9**	**+1.3**
MAT				*eS*	Sb	11 58 44.3	+10
JHJ	**Hachijo jima 2**	**4.77**	**201**	Pn	**Pn**	**11 58 12.4**	**-0.1**
	18nm,0.3s,baz=87,slow=23,SNR=12						
JHJ				Sn	**Sn**	**11 59 04.7**	**-2.3**
	11nm,0.3s,baz=90,slow=20,SNR=2.2						
ASAJ	**Asahikawa**	**6.54**	**5**	Pn	**Pn**	**11 58 36.7**	**-0.2**
	0.8nm,0.3s,baz=216,slow=20,SNR=7.3						
ASAJ				Sn	**Sn**	**11 59 47.4**	**-3.2**
	baz=253,slow=19,SNR=2.2						
USRK	**Ussuriysk Ar.**	**9.96**	**315**	Pn	**Pn**	**11 59 26.4**	**+2.7**
	0.2nm,0.3s,baz=121,slow=14,SNR=2.7						
USRK				LR	LR	12 02 17.7	
	comp=Z,68nm,21.3s,baz=280,slow=32						
JNU	**Nakatsue**	**10.01**	**247**	LR	LR	12 03 40.1	
	comp=Z,82nm,18.8s,baz=132,slow=40						
JCJ	**Chichijima**	**10.47**	**178**	Pn	**Pn**	**11 59 28.2**	**-2.6**
	2.0nm,0.3s,baz=300,slow=20,SNR=3.5						
KSRS	**Korea Array**	**11.06**	**274**	Pn	Pn	11 59 43.0	+4.1
	0.0nm,0.3s,baz=90,slow=15,SNR=2.3						
KSRS				LR	LR	12 03 26.4	
	comp=Z,84nm,20.6s,baz=60,slow=35						
KLR	**Kul'dur**	**13.74**	**331**	LR	LR	12 04 59.6	
	comp=Z,33nm,19.1s,baz=172,slow=35						
SEY	**Seymchan**	**26.18**	**11**	P	**P**	**12 02 35.7**	**+1.3**
	0.4nm,0.4s,baz=162,slow=20,SNR=3.1						
H11N2	**WAKE ISLAND Hy 28.14**	**122**		T	T	12 32 25.5	
	baz=315,slow=75,SNR=37						
H11N1	**WAKE ISLAND Hy 28.15**	**122**		T	T	12 32 25.8	
	baz=315,slow=75,SNR=41						
H11N3	**WAKE ISLAND Hy 28.16**	**122**		T	T	12 32 26.8	
	baz=315,slow=75,SNR=33						
H11S1	**WAKE ISLAND Hy 28.88**	**124**		T	T	12 33 22.3	
	baz=316,slow=76,SNR=52						
H11S3	**WAKE ISLAND Hy 28.88**	**124**		T	T	12 33 21.3	
	baz=316,slow=76,SNR=62						
H11S2	**WAKE ISLAND Hy 28.89**	**124**		T	T	12 33 18.3	
	baz=316,slow=76,SNR=54						
ZALV	**Zalesovo Beam**	**41.80**	**312**	P	**P**	**12 04 49.3**	**-0.2**
	0.7nm,0.6s,baz=88,slow=7.4,SNR=3.4						
ZALV				pP	**pP**	**12 04 57.8**	**+0.4**
	2.5nm,0.6s,baz=85,slow=6.5,SNR=6.6						
MKAR	**Makanchi Array**	**44.12**	**302**	P	**P**	**12 05 09.1**	**+0.7**
	0.3nm,0.3s,baz=84,slow=11,SNR=7.6						
MKAR				pP	**pP**	**12 05 17.2**	**+0.9**
	1.5nm,0.8s,baz=83,slow=11,SNR=5.6						
ILAR	**Eielson Array**	**48.84**	**33**	P	**P**	**12 05 46.0**	**+0.8**
	0.6nm,0.9s,baz=271,slow=6.8,SNR=4.9						
BVAR	**Borovoye Array**	**50.45**	**312**	LR	LR	12 28 24.4	
	comp=Z,84nm,20.0s,baz=253,slow=37						
INK	**Inuvik**	**53.73**	**27**	LR	LR	12 31 41.1	
	comp=Z,18nm,19.1s,baz=274,slow=39						
WRA	**Warramunga Arr**	**57.66**	**188**	P	**P**	**12 06 50.5**	**+0.1**
	0.4nm,0.6s,baz=6.1,slow=7.4,SNR=9.9						
WRA				pP	**pP**	**12 06 59.1**	**+0.5**
	0.5nm,0.4s,baz=5.8,slow=7.3,SNR=4.1						
ASAR	**Alice Springs**	**61.39**	**188**	P	**P**	**12 07 17.2**	**+1.0**
	0.3nm,0.7s,baz=20,slow=6.8,SNR=4.1						
YKA	**Yellowknife Ar**	**63.15**	**30**	P	**P**	**12 07 28.2**	**+0.7**
	0.4nm,0.7s,baz=302,slow=6.7,SNR=8.4						
YKA				pP	**pP**	**12 07 36.9**	**+1.2**
	0.3nm,0.7s,baz=302,slow=6.7,SNR=4.4						
FINES	**FINESS Array B**	**68.48**	**332**	P	**P**	**12 08 02.4**	**+0.5**
	0.8nm,0.8s,baz=68,slow=12,SNR=2.6						
FINES				pP	**pP**	**12 08 11.1**	**+1.0**
	2.5nm,0.7s,baz=94,slow=8.4,SNR=6.6						
HFS	**Hagfors**	**73.72**	**336**	pP	pP	12 08 42.8	+0.9
	3.7nm,0.9s,baz=345,slow=5.2,SNR=5.0						
NB2	**NORSAR Subarra**	**73.81**	**337**	P	P	12 08 43.5	+9.3
	comp=Z,1.0nm,0.7s,baz=40,slow=5.9						
NOA	**NORSAR Array B**	**73.81**	**337**	pP	pP	12 08 43.6	+1.2
	comp=Z,1.6nm,0.7s,baz=39,slow=5.9,SNR=5.1						
PDAR	**Pinedale Array**	**77.03**	**46**	P	**P**	**12 08 54.3**	**+1.0**
	comp=Z,0.4nm,0.6s,baz=318,slow=2.0,SNR=4.6						
TXAR	**Lajitas Array**	**89.51**	**53**	P	**P**	**12 09 57.4**	**-0.2**
	comp=Z,0.3nm,0.6s,baz=312,slow=2.2,SNR=4.0						
TXAR				pP	**pP**	**12 10 06.7**	**+0.6**
	comp=Z,0.3nm,0.6s,baz=296

BNGB	**Bing**[ll]	**1.71**	**285**	*e*PN	**Pb**	**12 17 08.1**	**-0.6**
BINT	**Bingol**	**1.83**	**280**	*e*Pn	**Pn**	**12 17 08.1**	**-0.6**
MAZI	**Mazidag**	**2.16**	**240**	*e*PN	**Pn**	**12 17 13.3**	**+0.1**
MAZI	**Mazidag**	**2.16**	**240**	*e*Pn	**Pn**	**12 17 13.3**	**+0.1**

NIED ***14*** *12:17:00,36˚70N×140˚60E,h5km,Mw3.7 Best double couple: M₀4.23000×10¹⁴ NP1:φₛ359.00000°, δ28.00000°, λ-52.00000°. NP2:φₛ137.00000°, δ69.00000°, λ-108.00000°.*

ISCJB ***14*** *12:17:35.6±0.8,36˚67N±0˚03×140˚74E±0˚05,h12km±4km, mb3.6/12,Error ellipse: s-maj=7.7km s-min=4.7km az=35.4*

JMA ***14*** *12:17:36.9,36˚71N×140˚63E,h7km±1km,M3.6 Broadband fault plane solution: P waves. NP1: φₛ334.00000°, δ54.00000°, λ-88.00000°. NP2: φₛ150.00000°, δ36.00000°, λ-93.00000°. Principal axes: T Plg9.0000°, Azm62.0000°; N Plg2.0000°, Azm152.0000°; P Plg81.0000°, Azm255.0000°;*

JMA Felt II J1.

IDC ***14*** *12:17:42.0±3.4,36˚68N×140˚47E,h49km±33km,mb3.4/12, mb1 3.7/12,mb1mx3.5/45,mbtmp3.7/12,MS2.7/1, Ms1 2.7/1,ms1mx2.0/42 Error ellipse: s-maj=24.3km s-min=17.4km az=98.0*

ISC 14 12:17:36.5±0.9,36˚73N±0˚03×140˚51E±0˚05,h9km±6km, n27,σ0ˢ63/28,mb3.6/12,5C,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
JHO	**Hitachi**	**0.12**	**158**		⇑P		**Pg**	**12 17 39.5**	**+0.2**
JHO					S		**Sg**	**12 17 41.1**	**-0.1**
ONAJ	**Iwakimizuishiy**	**0.44**	**31**		⇑P		**Pg**	**12 17 45.1**	**0.0**
ONAJ					S		**Sg**	**12 17 50.6**	**-0.3**
JSB	**Shiboa**	**0.53**	**297**		⇑P		**Pn**	**12 17 49.6**	**-0.8**
JSB					S		**Sn**	**12 17 58.4**	**-1.1**
JYT	**Yasato**	**0.56**	**207**		⇑P		**Pb**	**12 17 48.4**	**-0.1**
JYT					eS		**Sb**	**12 17 56.3**	**-0.3**
JFK	**Kawauchi**	**0.70**	**24**		⇑P		**Pg**	**12 17 49.8**	**-0.3**
JFK					S		**Sg**	**12 17 59.0**	**-0.3**
JFT	**Otama**	**0.80**	**350**		P		**Pb**	**12 17 53.0**	**+0.3**
JFT					S		**Sb**	**12 18 04.2**	**+0.5**
MJAR	**Matsushiro Arr**	**1.86**	**265**		P		**Pb**	**12 18 10.6**	**-0.1**
	27nm,0.3s,baz=84,slow=11,SNR=108								
MJAR					S		**Sg**	**12 18 36.3**	**0.0**
	22nm,0.3s,baz=95,slow=28,SNR=10.0								
MAT	**Matsushiro**	**1.86**	**265**		P		**Pb**	**12 18 10.9**	**+0.1**
MAT					S		**Sg**	**12 18 37.3**	**+0.9**
JNU	**Nakatsue**	**8.69**	**248**		LR		LR	12 23 11.5	
	comp=Z,49nm,21.1s,baz=54,slow=38								
SONM	**Songino Array**	**27.36**	**305**		P		**P**	**12 23 21.9**	**-0.1**
	0.7nm,0.7s,baz=106,slow=8.5,SNR=5.3								
H11N2	**WAKE ISLAND Hy 28.62**	**119**			T		T	12 53 16.2	
	baz=312,slow=75,SNR=86								
H11N1	**WAKE ISLAND Hy 28.63**	**119**			T		T	12 53 16.7	
	baz=312,slow=75,SNR=108								
H11N3	**WAKE ISLAND Hy 28.64**	**119**			T		T	12 53 17.5	
	baz=312,slow=75,SNR=92								
H11S1	**WAKE ISLAND Hy 29.31**	**121**			T		T	12 54 08.6	
	baz=314,slow=76,SNR=967								
H11S3	**WAKE ISLAND Hy 29.31**	**121**			T		T	12 54 08.8	
	baz=314,slow=76,SNR=403								
H11S2	**WAKE ISLAND Hy 29.32**	**121**			T		T	12 54 09.8	
	baz=314,slow=76,SNR=632								
ZALV	**Zalesovo Beam**	**41.59**	**313**		P		**P**	**12 25 25.2**	**+0.7**
	1.6nm,0.6s,baz=94,slow=6.5,SNR=6.4								
MKAR	**Makanchi Array**	**43.67**	**302**		P		**P**	**12 25 42.6**	**+1.0**
	0.4nm,0.8s,baz=86,slow=8.8,SNR=3.4								
ILAR	**Eielson Array**	**50.14**	**32**		P		**P**	**12 26 31.5**	**-0.4**
	0.4nm,0.9s,baz=264,slow=4.0,SNR=4.0								
INK	**Inuvik**	**54.99**	**27**		P		**P**	**12 27 08.2**	**+0.6**
	0.5nm,0.8s,baz=273,slow=3.1,SNR=3.0								
WRA	**Warramunga Arr**	**56.66**	**187**		P		**P**	**12 27 19.9**	**-0.3**
	1.5nm,0.6s,baz=3.6,slow=7.1,SNR=21								
ASAR	**Alice Springs**	**60.39**	**187**		P		**P**	**12 27 45.8**	**-0.4**
	0.9nm,0.8s,baz=15,slow=7.1,SNR=12								
YKA	**Yellowknife Ar**	**64.44**	**30**		P		**P**	**12 28 13.3**	**+0.5**
	0.2nm,0.8s,baz=303,slow=7.1,SNR=3.9								
FINES	**FINESS Array B**	**68.75**	**332**		P		**P**	**12 28 39.7**	**-0.6**
	1.4nm,0.8s,baz=39,slow=7.3,SNR=4.3								
NVAR	**Mina Array Bea**	**75.75**	**53**		P		**P**	**12 29 24.3**	**+1.3**
	0.4nm,0.5s,baz=311,slow=5.8,SNR=3.3								
PDAR	**Pinedale Array**	**78.40**	**45**		P		**P**	**12 29 38.5**	**+0.7**
	0.2nm,0.4s,baz=254,slow=5.5,SNR=3.6								
TXAR	**Lajitas Array**	**90.88**	**52**		P		**P**	**12 30 40.1**	**-0.8**
	0.2nm,0.6s,baz=292,slow=2.8,SNR=2.7								

ISCJB ***14*** *12:19:45.9±0.8,0˚03S±0˚08×79˚91W±0˚07,h15km, mb3.4/6,MS2.8/2,Error ellipse: s-maj=12.3km s-min=9.1km az=162.4*

IDC ***14*** *12:19:55.3±2.8,0˚08N×79˚70W,h88km±28km,mb2.9/5, mb1 3.4/9,mb1mx3.3/37,mbtmp3.5/9,MS2.9/5,Ms1 2.9/5, ms1mx2.8/11,Error ellipse: s-maj=30.1km s-min=18.7km az=49.0*

ISC 14 12:19:48.0±0.7,0˚10N±0˚07×79˚92W±0˚09,h15km,n26, σ2ˢ53/24,mb3.5/6,Near coast of Ecuador

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
OTAV	**Otavalo**	**1.47**	**85**	*e*P			**Pn**	**12 20 11.0**	**-3.5**
TUMC	**Tumaco**	**2.08**	**35**	*e*P			**Pn**	**12 20 21.8**	**-0.7**
CMBC	**Cumbal**	**2.25**	**68**	*e*P			**Pn**	**12 20 23.3**	**-1.9**
CRUC	**La Cruz**	**3.31**	**64**	*e*P			**Pn**	**12 20 39.8**	**+0.2**
GRGC	**Isla de Gorgon**	**3.37**	**31**	*e*P			Pn	12 20 35.5	-4.7
FLOC	**Florencia**	**4.51**	**71**	*e*P			**Pn**	**12 20 56.8**	**+0.9**
MALC	**Bahia Malaga**	**4.66**	**34**	*e*P			**Pn**	**12 21 00.5**	**+2.5**
PRAC	**Prado**	**6.18**	**54**	*e*P			**Pn**	**12 21 17.9**	**-0.9**
TOLC	**Tolima**	**6.40**	**46**	*e*P			**Pn**	**12 21 23.1**	**+1.0**
SJAC	**San Juan de Ar**	**6.75**	**62**	*e*P			**Pn**	**12 21 27.4**	**+0.7**
ROSC	**El Rosal**	**7.31**	**50**	P			**Pn**	**12 21 37.3**	**+2.6**
	6.0nm,0.3s,baz=289,slow=17,SNR=6.0								
ROSC					S		**Sn**	**12 23 00.9**	**+3.3**
	1.3nm,0.3s,baz=72,slow=20,SNR=2.6								
ROSC					LR		LR	12 25 22.1	
	comp=Z,41nm,19.3s,baz=114,slow=46								
ATAH	**Atahualpa**	**7.35**	**168**	P			**Pn**	**12 21 38.9**	**+3.6**
	0.8nm,0.3s,baz=356,slow=8.6,SNR=6.1								
ATAH					S		**Sn**	**12 23 04.8**	**+6.2**
	0.6nm,0.3s,baz=112,slow=5.0,SNR=2.9								
ATAH					LR		LR	12 24 51.3	
	comp=Z,161nm,19.9s,baz=345,slow=41								
JTS	**JuntasAbangare**	**11.29**	**334**		LR		LR	12 25 55.3	
	comp=Z,61nm,19.3s,baz=193,slow=32								
PTGA	**Pitinga**	**19.97**	**92**		P		**P**	**12 24 19.2**	**-0.8**
	0.4nm,0.3s,baz=308,slow=19,SNR=3.4								
LPAZ	**La Paz**	**20.01**	**145**		P		**P**	**12 24 20.6**	**-0.5**
	0.1nm,0.3s,baz=328,slow=11,SNR=6.4								
TEIG	**Tepich**	**21.61**	**339**		LR		LR	12 31 48.2	
	comp=Z,27nm,19.3s,baz=54,slow=33								
SIV	**San Ignacio**	**24.53**	**132**		LR		LR	12 34 55.5	
	comp=Z,34nm,18.4s,baz=183,slow=37								
TXAR	**Lajitas Array**	**36.86**	**324**		P		**P**	**12 26 57.2**	**+1.1**
	0.1nm,0.4s,baz=134,slow=12,SNR=2.2								
PDAR	**Pinedale Array**	**50.12**	**332**		P		**P**	**12 28 43.6**	**+0.6**
	0.2nm,0.7s,baz=108,slow=6.0,SNR=2.3								
NVAR	**Mina Array Bea**	**51.92**	**322**		P		**P**	**12 28 56.2**	**-0.5**
	0.2nm,0.3s,baz=133,slow=7.5,SNR=3.3								
YKA	**Yellowknife Ar**	**67.46**	**343**		P		**P**	**12 30 41.3**	**-1.6**
	0.3nm,0.7s,baz=136,slow=5.8,SNR=8.3								
INK	**Inuvik**	**77.16**	**342**		P		**P**	**12 31 43.1**	**+2.4**
	0.6nm,0.7s,baz=109,slow=5.2,SNR=3.6								
TORD	**Torodi Ar. Bea**	**81.81**	**77**		P		**P**	**12 32 04.2**	**-3.0**
	0.3nm,0.8s,baz=258,slow=7.2,SNR=2.6								
SONM	**Songino Array**	**131.94**	**354**		PKP		**PKPdf**	**12 38 57.7**	**-3.6**
	0.1nm,0.3s,baz=0.0,slow=1.4,SNR=2.7								
ASAR	**Alice Springs**	**139.68**	**232**		PKP		**PKPdf**	**12 39 14.0**	**-2.3**
	0.4nm,1.0s,baz=79,slow=1.6,SNR=3.3								
WRA	**Warramunga Arr**	**141.09**	**237**		PKP		**PKPdf**	**12 39 18.1**	**-0.8**
	0.3nm,0.8s,baz=108,slow=2.5,SNR=4.6								

IDC 14 12:20:22.0±0.9,30˚49N×141˚01E,h0km,mb3.8/11, mb1 3.9/11,mb1mx3.7/47,mbtmp3.8/11,MS3.2/3, Ms1 3.2/3,ms1mx2.5/63,Error ellipse: s-maj=38.4km s-min=16.8km az=82.0,Southeast of Honshu

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
ASAJ	**Asahikawa**	**13.66**	**5**		LR		LR	12 28 47.3	
	comp=Z,49nm,21.7s,baz=229,slow=37								
MA2	**Magadan**	**29.82**	**10**		P		P	12 26 29.1	-1.4
	3.8nm,0.4s,baz=217,slow=5.2,SNR=4.7								
SONM	**Songino Array**	**31.60**	**313**		P		P	12 26 46.1	-0.5
	0.2nm,0.5s,baz=102,slow=6.6,SNR=2.4								
TIXI	**Tiksi**	**41.74**	**354**		LR		LR	12 45 09.1	
	comp=Z,27nm,21.4s,baz=184,slow=36								
ZALV	**Zalesovo Beam**	**46.28**	**317**		P		P	12 28 49.7	+0.7
	0.4nm,0.4s,baz=95,slow=9.0,SNR=3.3								
MKAR	**Makanchi Array**	**47.56**	**307**		P		P	12 28 57.8	-1.5
	0.3nm,0.5s,baz=87,slow=8.8,SNR=2.9								
WRA	**Warramunga Arr**	**50.55**	**188**		P		P	12 29 22.5	+0.2
	0.2nm,0.3s,baz=3.0,slow=7.7,SNR=14								
ASAR	**Alice Springs**	**54.28**	**188**		P		P	12 29 49.2	-0.9
	0.2nm,0.4s,baz=3.8,slow=6.9,SNR=6.6								
INK	**Inuvik**	**60.39**	**25**		P		P	12 30 32.4	-0.3
	0.4nm,0.5s,baz=251,slow=8.2,SNR=3.6								
STKA	**Stephens Creek**	**62.03**	**179**		P		P	12 30 44.4	+0.3
	0.7nm,0.4s,baz=331,slow=7.7,SNR=4.6								
ARCES	**ARCESS Array B**	**70.00**	**340**		P		P	12 31 36.7	+1.7
	4.7nm,1.1s,baz=64,slow=8.4,SNR=8.9								
FINES	**FINESS Array B**	**74.46**	**333**		P		P	12 32 02.0	+0.2
	0.5nm,0.3s,baz=68,slow=5.3,SNR=6.8								
AKASG	**Malin Array Be**	**79.28**	**323**		LR		LR	13 08 13.6	
	comp=Z,29nm,20.6s,baz=65,slow=36								
HFS	**Hagfors**	**79.91**	**336**		P		P	12 32 32.5	0.0
	1.0nm,0.4s,baz=83,slow=4.9,SNR=5.8								

JMA ***14*** *12:23:41.8±0.2,23˚34N×122˚05E,h47km,M2.5*

TAP ***14*** *12:23:42.6,23˚33N×122˚07E,h41km,ML3.0,C*

ISC 14 12:23:41.0±1.2,23˚32N±0˚04×122˚10E±0˚03,h26km±13km, n40,σ0ˢ57/64,1C,Taiwan region

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
TEGC	**Jichi Village**	**0.64**	**307**	*e*P			**Pn**	**12 23 54.6**	**+0.3**
	baz=308								
CHKT	**Chengkung**	**0.71**	**252**	*e*P			**Pb**	**12 23 54.9**	**+0.1**
	baz=244								
CHKT				*e*S			**Sb**	**12 24 03.6**	**-0.5**
	baz=244								
EHY	**Hungye**	**0.73**	**285**	*e*P			**Pn**	**12 23 55.6**	**0.0**
	baz=284								
EHY				*e*S			**Sn**	**12 24 05.8**	**-0.3**
	baz=284								
TWF1	**Yuli**	**0.74**	**272**	*i*P			**Pn**	**12 23 55.7**	**0.0**
	baz=267								
TWF1				*e*S			**Sb**	**12 24 05.4**	**+0.5**
	baz=267								
ESL	**Shilin**	**0.78**	**309**	P			**Pb**	**12 23 56.0**	**0.0**
	baz=310								
ESL				*e*S			**Sb**	**12 24 05.7**	**-0.5**
	baz=310								
TWD	**Chiawan**	**0.88**	**329**	P			**Pb**	**12 23 57.6**	**0.0**
	baz=330								
TWD				*e*S			**Sb**	**12 24 08.4**	**-0.7**
	baz=330								
WDT	**Danda**	**0.98**	**296**	P			**Pb**	**12 23 59.7**	**+0.1**
	baz=296								
WDT				S			**Sb**	**12 24 11.7**	**-0.6**
	baz=296								
ELDTW	**Lidau**	**1.00**	**263**	*e*P			**Pn**	**12 23 59.2**	**-0.3**
	baz=261								
ELDTW				*e*S			**Sn**	**12 24 10.9**	**-1.9**
	baz=261								
TTN	**Taitung**	**1.04**	**237**	*e*P			**Pn**	**12 24 00.2**	**+0.3**
	baz=235								
YUS	**Yu-Shan**	**1.06**	**279**	*e*P			**Pb**	**12 24 01.5**	**+0.4**
	baz=287								
YUS				*e*S			**Sn**	**12 24 14.6**	**-0.3**
	baz=287								
TWG	**Pinlang**	**1.07**	**242**	*e*P			**Pn**	**12 24 00.6**	**+0.3**
	baz=235								
TWG				S			**Sn**	**12 24 13.2**	**-1.0**
	baz=235								
WHF	**Hehuan Shan**	**1.12**	**317**	*e*P			**Pn**	**12 24 01.6**	**+0.2**
	baz=318								
WHF				*e*S			**Sn**	**12 24 15.4**	**-0.7**
	baz=318								
ENA	**Nanau**	**1.15**	**344**	*e*P			**Pb**	**12 24 02.1**	**-0.1**
	baz=345								
ENA				*e*S			**Sb**	**12 24 16.0**	**-0.2**
	baz=345								
ALS	**Alishan**	**1.20**	**279**	*e*P			**Pb**	**12 24 03.7**	**+0.4**
	baz=279								
ALS				S			**Sb**	**12 24 18.6**	**+0.1**
	baz=279								
SMLT	**Sun Moon Lake**	**1.23**	**297**	*e*P			**Pb**	**12 24 03.8**	**+0.1**
	baz=298								
STYT	**Tauyuan**	**1.24**	**263**	*e*P			**Pb**	**12 24 04.1**	**+0.2**
	baz=258								
STYT				*e*S			**Sn**	**12 24 18.7**	**0.0**
	baz=258								
TYC	**Yuchr**	**1.28**	**297**	*e*P			**Pb**	**12 24 04.4**	**+0.1**
	baz=304								
TYC				*e*S			**Sb**	**12 24 20.6**	**+0.3**
	baz=304								
ECL	**Taimali**	**1.28**	**236**	*e*P			**Pn**	**12 24 03.0**	**-0.1**
	baz=244								
CHN5	**Tsauling**	**1.33**	**282**	*e*P			**Pb**	**12 24 05.8**	**+0.4**
	baz=288								
CHN5				*e*S			**Sb**	**12 24 22.5**	**+0.4**
	baz=288								
JYNG	**Yonagunijimaku**	**1.36**	**34**	P			**Pb**	**12 24 05.3**	**-0.6**
JYNG				*e*S			**Sn**	**12 24 21.9**	**+0.3**
WTP	**Ta-pu**	**1.37**	**267**	*e*P			**Pb**	**12 24 06.4**	**+0.4**
	baz=262								
WTP				*e*S			**Sb**	**12 24 23.3**	**+0.3**
	baz=262								
LAY	**Lan-yu**	**1.37**	**202**	*e*P			**Pn**	**12 24 04.3**	**-0.2**
	baz=200								
CHN4	**Tsaushan**	**1.38**	**271**	*e*P			**Pb**	**12 24 06.6**	**+0.4**
	baz=271								
CHN4				*e*S			**Sb**	**12 24 24.4**	**+0.9**
	baz=271								
ENTT	**Nioudou**	**1.40**	**340**	*e*P			**Pb**	**12 24 06.0**	**-0.5**
	baz=341								
YOJ	**Yonaguni jima**	**1.41**	**36**	P			**Pb**	**12 24 06.6**	**0.0**
YOJ				*e*S			**Sb**	**12 24 24.0**	**-0.2**
SGST	**Jiashian**	**1.41**	**261**	*e*P			**Pb**	**12 24 06.1**	**-0.6**
	baz=254								
CHN1	**Nanshi**	**1.45**	**265**	*e*P			**Pb**	**12 24 07.5**	**+0.2**
	baz=264								
CHN1				*e*S			**Sb**	**12 24 26.1**	**+0.8**
	baz=264								
WGK	**Gukeng**	**1.46**	**285**	*e*P			**Pb**	**12 24 09.1**	**+1.7**
	baz=285								
SSD	**Sandimen**	**1.47**	**247**	*e*P			**Pb**	**12 24 07.5**	**-0.1**
	baz=246								
TWK	**Hsinying**	**1.48**	**268**	*e*P			**Pb**	**12 24 08.2**	**+0.3**
	baz=267								
TWK				*e*S			**Sb**	**12 24 26.5**	**+0.2**
	baz=267								
EAST	**Anshuo**	**1.48**	**231**	*e*P			**Pn**	**12 24 06.3**	**+0.3**
	baz=237								
NSK	**Sanguang**	**1.51**	**334**	*e*P			**Pb**	**12 24 09.3**	**+1.0**
	baz=343								
TWQ1	**Liyutan**	**1.58**	**310**	*e*P			**Pb**	**12 24 09.8**	**+0.1**
	baz=321								
TWQ1				*e*S			**Sb**	**12 24 29.8**	**+0.6**
	baz=321								
NSTT	**Nanjuang**	**1.64**	**323**	*e*P			**Pb**	**12 24 11.1**	**+0.4**
	baz=323								
NSTT				*e*S			**Sb**	**12 24 30.1**	**-0.9**
	baz=323								
HATJ	**Hateruma jima**	**1.73**	**65**	*e*S			**Sn**	**12 24 30.4**	**-0.1**
IRIF	**Iriomote-Funau**	**1.80**	**56**	*e*S			**Sn**	**12 24 33.5**	**+1.1**
JKRS	**Kuro-shima**	**1.97**	**62**	*e*S			**Sn**	**12 24 36.9**	**+0.3**
JIJ	**Ishigaki jima**	**2.14**	**61**	*e*S			**Sn**	**12 24 40.1**	**-0.6**
JISG	**Ishigakijimahi**	**2.38**	**58**	P			**Pn**	**12 24 18.8**	**+0.4**
JISG				*e*S			**Sn**	**12 24 46.0**	**-0.7**
JTJ	**Tarama**	**2.72**	**61**	*e*S			**Sn**	**12 24 54.9**	**-0.1**

NIED ***14*** *12:24:00,37˚10N×140˚90E,h5km,Mw3.9 Best double couple: M₀9.27000×10¹⁴ NP1:φₛ46.00000°, δ30.00000°, λ-119.00000°. NP2:φₛ258.00000°, δ64.00000°, λ-75.00000°.*

ISCJB ***14*** *12:24:04.7±0.9,37˚07N±0˚03×141˚01E±0˚05,h7km±4km, mb4.0/24,MS3.1/5,Error ellipse: s-maj=7.7km s-min=4.8km az=32.1*

IDC ***14*** *12:24:05.2±0.6,37˚08N×140˚89E,h0km,mb4.0/21, mb1 4.1/24,mb1mx4.0/56,mbtmp4.0/24,ML3.5/3,MS2.9/7, Ms1 3.0/7,ms1mx2.7/68,Error ellipse: s-maj=17.5km s-min=13.9km az=107.0*

JMA ***14*** *12:24:06.6,37˚09N×140˚82E,h6km±1km,M3.9*

JMA Felt III J1.

NEIC ***14*** *12:24:10.3±0.9,37˚06N×140˚93E,h35km±8km,mb4.4/2, Error ellipse: s-maj=11.1km s-min=7.8km az=123.0*

NEIC Recorded [3 JMA] in Fukushima.

ISC 14 12:24:06.4±0.8,37˚10N±0˚05×140˚79E±0˚07,h6km±5km, n48,σ0ˢ86/45,mb4.1/24,MS3.2/5,1C-1D,Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.01**	**64**		⇓P		**Pg**	**12 24 07.7**	**0.0**
ONAJ					S		**Sg**	**12 24 08.6**	**0.0**
JFK	**Kawauchi**	**0.28**	**15**		⇑P		**Pg**	**12 24 12.3**	**+0.4**
JFK					S		**Sg**	**12 24 16.6**	**+1.0**
JHO	**Hitachi**	**0.52**	**200**		S		**Sg**	**12 24 23.7**	**+0.6**
MJAR	**Matsushiro Arr**	**2.14**	**256**		Pn		**Pb**	**12 24 44.2**	**-1.4**
	19nm,0.3s,baz=81,slow=16,SNR=59								
MJAR					Sn		**Sb**	**12 25 13.1**	**+0.6**
	28nm,0.3s,baz=84,slow=28,SNR=20								
MJAR					LR		LR	12 25 45.0	
	comp=Z,45nm,18.4s,baz=65,slow=46								
MAJO	**Matsushiro**	**2.14**	**256**	*e*Pn			**Pb**	**12 24 45.1**	**-0.6**
MAJO				*e*Sn			**Sb**	**12 25 12.5**	**+0.1**
MAT	**Matsushiro**	**2.14**	**256**	P			**Pb**	**12 24 44.4**	**-1.2**
MAT				S			**Sb**	**12 25 13.8**	**+1.3**
JHJ	**Hachijo jima 2**	**4.05**	**192**	Pn			**Pn**	**12 25 09.1**	**+0.2**
	4.6nm,0.3s,baz=258,slow=17,SNR=4.9								
JHJ					Sn		**Sn**	**12 25 58.9**	**+2.1**
	20nm,0.3s,baz=253,slow=22,SNR=6.8								
JHJ2	**Mitsune**	**4.05**	**192**	*e*Pn			**Pn**	**12 25 09.1**	**+0.1**
ERM	**Erimo**	**5.24**	**20**	*e*Pn			**Pn**	**12 25 25.9**	**+0.6**
ASAJ	**Asahikawa**	**7.15**	**11**	Pn			**Pn**	**12 25 52.6**	**+1.2**
	0.8nm,0.3s,baz=259,slow=8.0,SNR=7.8								
ASAJ	**Asahikawa**	**7.15**	**11**	*e*Pn			**Pn**	**12 25 52.2**	**+0.8**
ASAJ				Pn			**Pn**	**12 25 52.6**	**+1.2**
USRK	**Ussuriysk Ar.**	**9.74**	**319**	Pn			Pn	12 26 33.4	+6.3
	0.2nm,0.3s,baz=131,slow=13,SNR=15								
KSRS	**Korea Array**	**10.26**	**276**	Pn			Pn	12 26 39.9	+5.7
	0.2nm,0.3s,baz=92,slow=13,SNR=12								
KSRS					LR		LR	12 30 01.7	
	comp=Z,43nm,18.9s,baz=59,slow=34								
KSAR	**Wonju Array Be**	**10.29**	**276**	Pn			Pn	12 26 39.9	+5.3
GUMO	**Guam**	**23.69**	**170**	LR			LR	12 39 44.9	
	comp=Z,8.6nm,18.2s,baz=52,slow=40								
SEY	**Seymchan**	**26.83**	**12**	P			**P**	**12 29 45.6**	**-1.6**
	1.6nm,0.8s,baz=214,slow=10,SNR=5.8								
SONM	**Songino Array**	**27.33**	**304**	P			**P**	**12 29 51.2**	**-0.9**
	1.7nm,1.0s,baz=94,slow=11,SNR=5.6								
H11N2	**WAKE ISLAND Hy 28.61**	**120**		T			T	12 59 48.9	
	baz=313,slow=75,SNR=282								
H11N1	**WAKE ISLAND Hy 28.62**	**120**		T			T	12 59 46.6	
	baz=313,slow=75,SNR=197								
H11N3	**WAKE ISLAND Hy 28.63**	**120**		T			T	12 59 47.9	
	baz=313,slow=75,SNR=169								
H11S1	**WAKE ISLAND Hy 29.32**	**122**		T			T	13 00 39.1	
	baz=314,slow=75,SNR=58								
H11S3	**WAKE ISLAND Hy 29.32**	**122**		T			T	13 00 39.2	
	baz=314,slow=75,SNR=94								
H11S2	**WAKE ISLAND Hy 29.33**	**122**		T			T	13 00 40.6	
	baz=314,slow=75,SNR=46								
CMAR	**Chiang Mai Arr**	**41.03**	**255**	LR			LR	12 48 28.3	
	comp=Z,51nm,20.6s,baz=149,slow=36								
ZALV	**Zalesovo Beam**	**41.50**	**312**	P			**P**	**12 31 54.7**	**+0.6**
	1.7nm,0.7s,baz=74,slow=6.5,SNR=8.5								
MKAR	**Makanchi Array**	**43.66**	**302**	P			**P**	**12 32 12.7**	**+0.9**
	0.9nm,0.7s,baz=89,slow=10,SNR=9.1								
MKAR					PcP		**PcP**	**12 33 58.7**	**-0.3**
	0.2nm,0.3s,baz=93,slow=2.6,SNR=3.7								
MKAR					LR		LR	12 51 00.2	
	comp=Z,25nm,18.2s,baz=108,slow=37								
KURK	**Kurchatov**	**45.50**	**308**	*e*P			**P**	**12 32 26.2**	**-0.1**
	19nm,0.9s								
KURK					P		**P**	**12 32 27.5**	**+1.1**
KURBB	**Kurchatov Arra**	**45.57**	**308**	P			**P**	**12 32 27.5**	**+0.6**
	5.0nm,0.7s,baz=84,slow=8.2,SNR=25								
TKM2	**Tokmak 2**	**49.16**	**298**	*e*P			**P**	**12 32 55.9**	**+0.7**
	7.0nm,1.3s								
ILAR	**Eielson Array**	**49.71**	**32**	P			**P**	**12 32 59.0**	**+0.1**
	0.7nm,0.8s,baz=277,slow=6.6,SNR=12								
AAK	**Ala-Archa**	**50.02**	**298**	LR			LR	12 55 13.6	
	comp=Z,28nm,21.6s,baz=52,slow=37

JCJI	Jatiwangi	4.64 266	P	P	12 41 34.9	-0.4
TWSI	Taliwang, Sumb	4.66 123	P	P	12 41 33.1	-2.3
CMJI	Cimerak	4.72 250	P	P	12 41 33.5	-2.4
CISI	Cisompet, Garu	5.25 255	P	P	12 41 38.1	-2.1
	651nm,0.5s,15µm6.0nm					
LEM	Lembang	5.32 263	P	P	12 41 45.1	+4.3
	18nm,0.3s,baz=76,slow=8.7,SNR=27					
LEM			S	S	12 42 50.9	-7.5
	8.0nm,0.3s,baz=143,slow=20,SNR=2.3					
LEM	Lembang	5.32 263	P	P	12 41 45.9	+5.0
PLAI	Plampang	5.47 119	P	P	12 41 39.9	-2.0
	37nm,0.6s,0.7nm					
CNJI	Cibinong	5.87 259	P	P	12 41 43.2	-2.1
	243nm,0.4s,4µm3.9nm					
CBJI	Citeko	6.05 268	P	P	12 41 45.6	-1.3
	641nm,0.9s,64µm					
TNG	Tangerang	6.25 270	P	P	12 41 47.5	-1.1
	788nm,0.7s					
TNG			P	P	12 41 47.8	-0.8
	491nm,0.7s,18µm					
TPI	Tanjungpandan	6.28 303	P	P	12 41 49.8	+0.9
	2.9nm,1.4s,85nm0.0nm					
BKB	Balikpapan	6.30 39	P	P	12 41 51.6	+2.4
	146nm,0.9s,2µm					
SKJI	Sukabumi	6.38 262	P	P	12 41 47.7	-2.1
	260nm,0.7s,5µm					
STKI	Sintang	6.39 347	P	P	12 41 50.5	+0.5
	239nm,0.6s					
CGJI	Cibinong	7.21 266	P	P	12 41 54.7	-2.6
KSM	Kuching	8.06 341	⇓P	P	12 42 05.7	+0.3
SBUM	Sibu	8.62 355	⇓P	P	12 42 11.6	+0.8
BTM	Bintulu	9.34 1	⇑P	P	12 42 18.6	+0.7
BATI	Baumata	11.34 111	P	P	12 42 36.3	-1.6
	baz=308,slow=20					
BATI			S	S	12 44 38.0	-4.9
	8.4nm,0.3s,baz=171,slow=23,SNR=7.4					
MYKOM	Kota Tinggi	12.05 311	⇓P	P	12 42 44.8	-0.3
SDKM	Sandakan	12.51 20	⇓P	P	12 42 49.7	-0.2
KKM	Kota Kinabalu	12.60 15	⇑P	P	12 42 49.5	-1.3
KGM	Kluang	12.60 310	⇓P	P	12 42 50.5	-0.2
MYLDM	Lahad Datu	12.60 26	⇓P	P	12 42 52.3	+1.7
KDM	Kudat	13.60 17	⇑P	P	12 43 01.1	+0.2
FRIM	Kepong	14.68 309	⇑P	P	12 43 11.6	+0.2
PSI	Prapat	16.60 302	P	P	12 43 29.1	-0.3
	2.3nm,0.3s,baz=127,slow=9.7,SNR=5.7					
FITZ	Fitzroy Crossi	17.14 135	P	P	12 43 34.6	+0.6
	3.5nm,0.3s,baz=334,slow=8.0,SNR=84					
KHON	Khomkaen	24.53 336	P	P	12 44 41.0	+0.5
	6.2nm,0.7s					
SRDT	SRDT	24.59 326	P	P	12 44 42.2	+1.2
	29nm,0.8s,5µm					
SKNT	Sakolnakorn	24.67 339	P	P	12 44 41.7	0.0
	28nm,0.8s					
WRA	Warramunga Arr	24.88 125	P	P	12 44 43.9	+0.2
	20nm,0.6s,baz=307,slow=9.4,SNR=229					
WRA			PcP	PcP	12 47 58.3	-0.5
	1.4nm,0.7s,baz=323,slow=2.2,SNR=4.8					
WRA			ScP	ScP	12 50 43.0	+0.3
	1.6nm,0.6s,baz=299,slow=2.5,SNR=10					
PBKT	Sadao Pong	25.53 333	P	P	12 44 49.8	+0.5
	12nm,0.9s					
ASAR	Alice Springs	26.61 133	P	P	12 44 59.4	+0.5
	16nm,0.5s,baz=311,slow=8.8,SNR=454					
ASAR			PcP	PcP	12 48 03.4	+0.5
	1.8nm,0.5s,baz=327,slow=1.7,SNR=9.3					
ASAR			S	S	12 48 52.9	-0.6
	1.5nm,1.0s,baz=335,slow=25,SNR=4.8					
ASAR			ScP	ScP	12 50 48.9	+1.2
	1.7nm,0.7s,baz=320,slow=2.2,SNR=13					
NWAO	Narrogin (SRO)	26.89 176	P	P	12 45 01.8	+0.7
	2.6nm,0.5s,baz=26,slow=0.1,SNR=6.4					
CMAR	Chiang Mai Arr	28.12 331	P	P	12 45 12.7	+0.7
	5.2nm,0.8s,baz=160,slow=7.7,SNR=41					
CMAR			ScP	ScP	12 50 52.9	+0.5
	0.9nm,0.7s,baz=189,slow=3.1,SNR=8.8					
CMMT	Chiang Mai	28.42 331	P	P	12 45 15.2	+0.6
	7.3nm,0.9s					
CHTO	Chiang Mai	28.43 331	P	P	12 45 15.3	+0.7
	31nm,0.9s					
CRAI	Chiangrai	29.02 335	P	P	12 45 21.3	+1.5
	6.8nm,1.3s					
PMG	Port Moresby	34.05 98	P	P	12 46 03.2	+0.6
	23nm,0.7s,baz=209,slow=2.2,SNR=15					
CTA	Charters Tower	35.17 116	P	P	12 46 13.2	+1.3
	16nm,0.8s,baz=291,slow=12,SNR=19					
STKA	Stephens Creek	37.00 137	P	P	12 46 27.7	+0.9
	13nm,0.5s,baz=318,slow=7.7,SNR=76					
STKA			ScP	ScP	12 51 23.1	0.0
	1.4nm,0.7s,baz=328,slow=6.0,SNR=3.5					
JIRN	Jiri	42.44 324	*e*P	P	12 47 10.7	+0.1
	0.4nm,0.5s					
GUN	Gumba	42.81 324	*e*P	P	12 47 13.4	-0.1
	54nm,0.5s					
PKIN	Phulchoki	42.85 323	*e*P	P	12 47 13.1	-0.6
	11nm,0.4s					
DMN	Daman	43.05 323	*e*P	P	12 47 14.9	-0.3
KKN	Kakani	43.08 323	*e*P	P	12 47 15.1	-0.3
GKN	Gorkha	43.62 323	*e*P	P	12 47 19.1	-0.4
	43nm,0.3s					
KOLN	Koldanda	44.09 321	*e*P	P	12 47 22.7	-0.5
	38nm,0.5s					
PYUN	Piuthan	44.70 321	*e*P	P	12 47 27.5	-0.4
	32nm,0.6s					
KSRS	Korea Array	45.63 17	P	P	12 47 34.7	+0.2
	6.8nm,0.8s,baz=204,slow=8.2,SNR=22					
HNR	Honiara	46.66 97	P	P	12 47 42.3	-0.5
	62nm,0.8s,baz=184,slow=2.3,SNR=4.6					
USRK	Ussuriysk Ar.	53.03 17	P	P	12 48 28.3	-0.4
	6.0nm,0.7s,baz=193,slow=5.0,SNR=18					
DZM	Mont Dzumac	53.95 113	P	P	12 48 36.4	+0.6
	4.1nm,0.5s,baz=253,slow=10,SNR=9.1					
SONM	Songino Array	54.11 355	P	P	12 48 36.3	-0.2
	7.1nm,0.5s,baz=175,slow=8.4,SNR=43					
KLR	Kul'dur	57.60 15	P	P	12 48 59.0	-1.3
	1.6nm,0.5s,baz=204,slow=3.8,SNR=10					
MKAR	Makanchi Array	59.35 336	P	P	12 49 11.8	-0.3
	4.2nm,0.5s,baz=151,slow=7.4,SNR=55					
AAK	Ala-Archa	59.85 328	P	P	12 49 15.2	-0.5
	3.7nm,0.9s,baz=114,slow=6.3,SNR=8.8					
RPZ	Rata Peaks	62.96 136	P	P	12 49 36.2	+0.4
	17nm,1.0s,baz=299,slow=2.4,SNR=4.9					
KURBB	Kurchatov Arra	63.91 336	P	P	12 49 41.2	-0.5
	0.6nm,0.3s,baz=117,slow=6.8,SNR=4.9					
ZALV	Zalesovo Beam	64.42 342	P	P	12 49 43.7	-1.1
	4.5nm,0.6s,baz=154,slow=3.6,SNR=16					
URZ	Urewera	65.98 129	P	P	12 49 55.0	+0.1
	10nm,0.6s,baz=238,slow=3.0,SNR=9.0					
GEYT	Alibeck	67.21 315	P	P	12 50 02.8	+0.3
	1.0nm,0.4s,baz=191,slow=5.6,SNR=3.9					
BVAR	Borovoye Array	69.09 334	P	P	12 50 12.2	-1.3
	1.9nm,0.7s,baz=134,slow=8.4,SNR=11					
MAW	Mawson	69.90 198	P	P	12 50 19.3	+1.2
	1.4nm,0.6s,baz=86,slow=3.5,SNR=6.6					
AKTO	Aktyubinsk	73.56 327	P	P	12 50 39.6	-0.1
	1.9nm,0.5s,baz=103,slow=4.3,SNR=7.9					
SEY	Seymchan	75.18 17	P	P	12 50 48.9	+0.4
	2.2nm,0.4s,baz=244,slow=3.4,SNR=12					
VNDA	Vanda	75.71 170	P	P	12 50 52.3	+1.1
	3.5nm,0.5s,baz=315,slow=6.5,SNR=39					
NRIK	Noril'sk	77.38 351	P	P	12 51 01.2	+0.9
	1.1nm,0.3s,baz=149,slow=1.9,SNR=4.1					
TIXI	Tiksi	78.40 5	P	P	12 51 05.0	-0.8
	3.3nm,0.7s,baz=135,slow=1.7,SNR=10					
CPUP	Villa Florida	146.31 196	PKPbc	PKPbc	12 58 42.8	+0.8
	3.6nm,0.4s,baz=150,slow=3.0,SNR=8.1					

IDC ***14*** *12:41:41.0±2.7,0°.48S×112°.22E,h0km,mb3.9/6, mb1 3.9/6,mb1mx3.6/70,mbtmp3.9/6,Error ellipse: s-maj=90.4km s-min=43.6km az=41.0*

ISC 14 12:41:47.4±2.8,0°.3S±0°.5×112°.2E±0°.4,h35km,n8,σ0s55/8, mb4.0/6,Borneo

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
CMAR	Chiang Mai Arr	22.73 326		P	P	12 46 46.5	0.0
	1.3nm,0.9s,baz=162,slow=7.9,SNR=4.6						
KLR	Kul'dur	52.09 16		P	P	12 50 53.7	-0.2
	1.2nm,0.7s,baz=314,slow=9.3,SNR=3.9						
MKAR	Makanchi Array	53.70 335		P	P	12 51 06.5	+0.7
	0.9nm,0.8s,baz=151,slow=6.8,SNR=4.1						
KURBB	Kurchatov Arra	58.23 335		P	P	12 51 38.5	+0.3
	0.5nm,0.4s,baz=150,slow=6.3,SNR=5.2						
ZALV	Zalesovo Beam	58.59 341		P	P	12 51 41.0	+0.4
	3.4nm,0.7s,baz=154,slow=5.4,SNR=13						
BVAR	Borovoye Array	63.49 333		P	P	12 52 13.2	-0.7
	0.9nm,0.8s,baz=115,slow=5.5,SNR=4.5						
ANMO	Albuquerque	130.08	42	PKP	PKPdf	13 00 54.2	-0.2
	1.9nm,0.7s,baz=284,slow=4.6,SNR=6.6						
TXAR	Lajitas Array	135.20	47	PKP	PKPdf	13 01 04.7	+0.5
	0.3nm,0.8s,baz=241,slow=1.3,SNR=4.8						

IDC 14 12:45:59.4±2.5,54°.12N×86°.45E,h0km,mb1 3.2/2, mb1mx3.0/72,mbtmp3.2/2,ML3.0/2,Error ellipse: s-maj=20.1km s-min=12.7km az=55.0,Southwestern Siberia

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
I46RU	ZALESOVO INFRA	0.98 260		*i*		12 53 20.0	
	baz=81,slow=311,SNR=6.3						
ZALV	Zalesovo Beam	0.98 260		Pg	Pg	12 46 16.8	-1.4
	1.7nm,0.3s,baz=77,slow=17,SNR=14						
ZALV				Lg	Lg	12 46 31.7	
	2.2nm,0.3s,baz=79,slow=30,SNR=17						
ZALV				Rg	Rg	12 46 37.8	
	14nm,0.9s,baz=75,slow=34,SNR=19						
KURBB	Kurchatov Arra	5.98 237		Pn	Pn	12 47 30.7	+1.6
	0.3nm,0.3s,baz=54,slow=13,SNR=5.7						
KURBB				Lg	Lg	12 49 11.4	
	0.1nm,0.3s,baz=52,slow=32,SNR=5.5						
MKAR	Makanchi Array	7.80 202		Pn	Pn	12 47 55.0	+0.9
	0.3nm,0.3s,baz=15,slow=14,SNR=12						
MKAR				Lg	Lg	12 50 05.5	
	baz=20,slow=31,SNR=3.9						

IDC ***14*** *12:46:12.8±0.7,37°.79N×144°.46E,h0km,mb3.8/15, mb1 3.9/19,mb1mx3.8/79,mbtmp3.8/19,ML3.8/3,MS2.9/1, Ms1 2.9/1,ms1mx2.2/51,Error ellipse: s-maj=18.8km s-min=14.9km az=128.0*

ISCJB ***14*** *12:46:16.7±0.5,37°.91N±0°.05×144°.28E±0°.04,h33km, mb3.8/18,Error ellipse: s-maj=6.8km s-min=4.7km az=177.8*

JMA ***14*** *12:46:16.8±0.2,38°.00N×144°.02E,h5km,M4.1*

NEIC ***14*** *12:46:18.1±0.5,37°.84N×144°.42E,h35km,mb4.0/2,Error ellipse: s-maj=9.9km s-min=7.4km az=131.0*

ISC 14 12:46:18.7±0.7,37°.93N±0°.07×144°.29E±0°.07,h35km,n41, σ1s03/50,mb3.9/18,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
OFUJ	Ofunato	2.35 300		P	Pn	12 46 53.8	-1.0
OFUJ				S	Sn	12 47 21.8	-0.7
JIO	Ouri	2.38 284		P	Pn	12 46 54.1	-1.0
JIO				S	Sn	12 47 20.8	-2.2
JMK	Ichinoseki	2.62 294		P	Pn	12 46 58.3	-0.1
JTH	Tanohata	2.76 317		P	Pn	12 47 00.5	+0.1
JTH				S	Sn	12 47 31.1	-1.3
JMM	Marumori	2.77 270		P	Pn	12 46 59.4	-1.1
JMM				S	Sn	12 47 30.9	-1.8
JOM	Ohasama	2.81 304		P	Pn	12 47 01.2	+0.2
JOM				*e*S	Sn	12 47 32.4	-1.2
JOU	Okura	2.89 280		P	Pn	12 47 02.0	-0.2
JOU				S	Sn	12 47 35.4	-0.4
JFT	Otama	3.16 264		P	Pn	12 47 06.2	+0.2
JFT				S	Sn	12 47 42.2	-0.3
JRG	Rokugo	3.21 298		P	Pn	12 47 07.1	+0.4
JRG				*e*S	Sn	12 47 42.1	-1.6
JYK	Kaneyama	3.24 289		P	Pn	12 47 06.9	-0.1
JYK				*e*S	Sn	12 47 43.0	-1.4
JANG	Nango	3.26 319		P	Pn	12 47 06.8	-0.4
JTM	Tenmabayashi	3.79 320		P	Pn	12 47 15.1	+0.5
ERM	Erimo	4.17 348		*e*Pn	Pn	12 47 20.0	+0.2
JKB	Kayabe	4.68 329		P	Pn	12 47 27.5	+0.7
MJAR	Matsushiro Arr	5.05 256		Pn	Pn	12 47 31.9	0.0
	2.8nm,0.3s,baz=84,slow=12,SNR=43						
MJAR				LR	LR	12 49 47.9	
	comp=Z,118nm,21.0s,baz=90,slow=42						
MAJO	Matsushiro	5.05 256		*e*Pn	Pn	12 47 32.0	+0.1
	30nm,0.6s						
MAT	Matsushiro	5.05 256		P	Pn	12 47 32.3	+0.4
MAT				S	Sn	12 48 29.8	+0.8
JHJ	Hachijo jima 2	6.04 219		Pn	Pn	12 47 41.5	-4.1
	12nm,0.3s,baz=102,slow=23,SNR=7.6						
ASAJ	Asahikawa	6.31 349		Pn	Pn	12 47 48.5	-0.7
	1.5nm,0.3s,baz=174,slow=7.8,SNR=14						
ASAJ	Asahikawa	6.31 349		Pn	Pn	12 47 48.5	-0.7
ASAJ				*e*Pn	Pn	12 47 49.2	0.0
KSRS	Korea Array	12.98 273		Pn	Pn	12 49 22.2	+1.8
	baz=91,slow=13,SNR=7.1						
KSAR	Wonju Array Be	13.01 273		Pn	Pn	12 49 22.2	+1.3
SEY	Seymchan	25.52 9		P	P	12 51 42.2	-1.3
	0.7nm,0.5s,baz=268,slow=0.3,SNR=17						
SONM	Songino Array	29.22 302		P	P	12 52 17.9	+0.8
	0.2nm,0.3s,baz=81,slow=8.9,SNR=3.0						
ZALV	Zalesovo Beam	43.01 312		P	P	12 54 15.1	+0.6
	0.8nm,0.5s,baz=89,slow=7.7,SNR=4.9						
CMAR	Chiang Mai Arr	43.93 257		P	P	12 54 23.2	+0.9
	0.6nm,0.8s,baz=56,slow=6.7,SNR=4.6						
MKAR	Makanchi Array	45.59 302		P	P	12 54 36.2	+1.0
	1.6nm,0.7s,baz=83,slow=9.9,SNR=13						
KURK	Kurchatov	47.19 308		P	P	12 54 49.1	+1.5
KURBB	Kurchatov Arra	47.26 308		P	P	12 54 49.1	+0.9
	2.3nm,0.5s,baz=82,slow=7.8,SNR=9.2						
ILAR	Eielson Array	47.51 33		P	P	12 54 49.8	-0.2
	0.6nm,0.9s,baz=267,slow=5.5,SNR=7.4						
BVAR	Borovoye Array	51.66 312		P	P	12 55 21.9	+0.1
	0.9nm,0.6s,baz=78,slow=11,SNR=6.4						
WRAB	Tennant Creek	58.31 191		*e*P	P	12 56 08.1	-1.9
	1.2nm,0.7s						
WRA	Warramunga Arr	58.32 191		P	P	12 56 08.0	-2.1
	1.6nm,0.7s,baz=14,slow=7.3,SNR=12						
ABKAR	Akbulak array	59.10 311		*e*P	P	12 56 15.9	+0.5
	0.6nm,0.6s						
BBB	Bella Bella	59.82 45		P	P	12 56 20.6	+0.4
	38nm,1.1s,baz=319,slow=5.1,SNR=3.4						
YKA	Yellowknife Ar	61.87 31		P	P	12 56 33.4	-0.7
	0.3nm,0.7s,baz=303,slow=6.8,SNR=6.4						
ASAR	Alice Springs	62.04 191		P	P	12 56 33.7	-1.9
	0.3nm,0.8s,baz=14,slow=9.7,SNR=5.9						
FINES	FINESS Array B	69.07 333		P	P	12 57 21.0	+0.5
	0.8nm,0.7s,baz=29,slow=8.7,SNR=3.9						
NVAR	Mina Array Bea	72.61 55		P	P	12 57 43.4	+0.6
	1.1nm,0.8s,baz=280,slow=9.7,SNR=7.4						
HFS	Hagfors	74.19 337		P	P	12 57 52.0	+0.6
	0.5nm,0.5s,baz=46,slow=6.2,SNR=4.2						
NOA	NORSAR Array B	74.22 338		P	P	12 57 52.1	+0.5
	1.1nm,0.9s,baz=32,slow=5.2,SNR=4.1						

IDC 14 12:47:19.3±6.4,32°.38S×178°.66W,h0km,mb3.5/2, mb1 3.7/2,mb1mx3.5/44,mbtmp3.5/2,Error ellipse: s-maj=274.8km s-min=63.2km az=160.0,South of Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
ASAR	Alice Springs	42.48 269		P	P	12 55 15.5	-0.9
	0.3nm,0.6s,baz=111,slow=7.4,SNR=4.6						
WRA	Warramunga Arr	43.65 275		P	P	12 55 26.4	+0.5
	0.4nm,0.4s,baz=115,slow=7.9,SNR=9.3						
FINES	FINESS Array B	146.79 338		PKPbc	PKPbc	13 07 01.6	-0.9
	0.4nm,0.5s,baz=54,slow=2.4,SNR=3.4						

ISCJB ***14*** *12:51:01.4±0.5,39°.70N±0°.04×143°.48E±0°.05,h11km, mb3.9/21,MS3.2/6,Error ellipse: s-maj=6.0km s-min=4.5km az=135.3*

JMA ***14*** *12:51:04.2±0.2,39°.74N×143°.36E,h24km,M4.0*

IDC ***14*** *12:51:07.9±2.2,39°.73N×143°.36E,h44km±20km,mb3.7/22, mb1 3.9/27,mb1mx3.7/80,mbtmp3.9/27,ML3.2/5,MS3.2/9, Ms1 3.2/9,ms1mx2.9/58,Error ellipse: s-maj=16.8km s-min=13.5km az=130.0*

ISC 14 12:51:03.4±0.7,39°.71N±0°.06×143°.37E±0°.06,h11km,n53, σ0s94/51,mb4.1/21,MS3.2/6,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JTH	Tanohata	1.19 281		P	Pb	12 51 24.9	-1.0
JTH				S	Sb	12 51 40.5	-0.7
MIYJ	Miyakonagasawa	1.21 264		P	Pn	12 51 25.6	-0.6
MIYJ				*e*S	Sb	12 51 40.8	-1.1
OFUJ	Ofunato	1.47 245		P	Pn	12 51 29.5	-0.2
JANG	Nango	1.57 295		P	Pn	12 51 30.3	-0.9
JKZ	Kuzumaki	1.60 280		P	Pn	12 51 31.8	+0.2
JOM	Ohasama	1.63 262		P	Pn	12 51 32.2	+0.2
JMK	Ichinoseki	1.84 246		P	Pn	12 51 34.8	0.0
JIO	Ouri	2.02 232		P	Pn	12 51 36.8	-0.5
JTM	Tenmabayashi	2.06 302		P	Pn	12 51 38.1	+0.1
JTM				*e*S	Sn	12 52 03.6	-0.1
JRG	Rokugo	2.14 262		P	Pn	12 51 40.0	+0.9
JAH	Hinai	2.16 284		P	Pn	12 51 39.9	+0.6
JEM	Erimo	2.31 356		P	Pn	12 51 41.5	+0.2
JEM				S	Sn	12 52 09.7	+0.1
JOT	Ohata	2.43 314		P	Pn	12 51 43.0	0.0
JYK	Kaneyama	2.47 252		P	Pn	12 51 44.2	+0.6
JNBK	Urakawa-nobuka	2.61 350		P	Pn	12 51 45.9	+0.5
JNBK				S	Sn	12 52 15.7	-1.4
JCH	Churui	2.90 360		P	Pn	12 51 49.1	-0.3
ASAJ	Asahikawa	4.44 353		P	Pn	12 52 11.3	+0.7
	1.4nm,0.3s,baz=214,slow=13,SNR=13						
ASAJ				LR	LR	12 53 32.4	
	comp=Z,71nm,18.8s,baz=184,slow=33						
MJAR	Matsushiro Arr	5.16 234		P	Pn	12 52 22.0	+1.5
	2.0nm,0.3s,baz=44,slow=12,SNR=12						
MAT	Matsushiro	5.16 234		P	Pn	12 52 21.9	+1.3
JHJ	Hachijo jima 2	7.19 205		P	Pn	12 52 46.7	-1.7
	6.9nm,0.3s,baz=67,slow=17,SNR=3.5						
JHJ				S	Sn	12 54 01.9	-8.1
	5.2nm,0.3s,baz=78,slow=18,SNR=3.1						
USRK	Ussuriysk Ar.	9.59 302		P	Pn	12 53 24.0	+2.7
	0.5nm,0.3s,baz=105,slow=14,SNR=11						
KSRS	Korea Array	12.30 264		P	Pn	12 54 01.1	+2.7
	0.2nm,0.3s,baz=92,slow=12,SNR=5.4						
KSRS				LR	LR	12 58 25.1	
	comp=Z,109nm,18.5s,baz=82,slow=36						
KLR	Kul'dur	12.61 323		P	Pn	12 54 04.5	+1.9
	0.1nm,0.3s,baz=128,slow=14,SNR=3.7						
KLR				LR	LR	12 59 05.3	
	comp=Z,128nm,19.4s,baz=121,slow=38						
MA2	Magadan	20.43 11		P	P	12 55 41.0	+0.7
	6.7nm,0.7s,baz=214,slow=8.7,SNR=5.6						
MA2				LR	LR	13 04 23.3	
	comp=Z,42nm,18.6s,baz=100,slow=39						
YAK	Yakutsk	23.86 344		LR	LR	13 05 20.5	
	comp=Z,39nm,20.4s,baz=159,slow=36						
SEY	Seymchan	23.88 10		P	P	12 56 16.2	-0.4
	5.3nm,0.7s,baz=182,slow=7.0,SNR=15						
SONM	Songino Array	27.69 299		P	P	12 56 51.9	+0.3
	2.3nm,0.8s,baz=92,slow=8.3,SNR=12						
SONM				LR	LR	13 08 29.0	
	comp=Z,128nm,18.2s,baz=82,slow=38						
H11N2	WAKE ISLAND Hy	28.38 128		T	T	13 26 42.6	
	baz=321,slow=74,SNR=4.0						
H11N1	WAKE ISLAND Hy	28.39 128		T	T	13 26 54.9	
	baz=73,slow=74,SNR=22						
H11N3	WAKE ISLAND Hy	28.40 128		T	T	13 26 03.7	
	SNR=4.5						
TLY	Talaya	29.85 307		LR	LR	13 09 07.2	
	comp=Z,44nm,18.9s,baz=70,slow=36						
ZALV	Zalesovo Beam	41.31 310		P	P	12 58 48.5	-0.1
	3.0nm,0.5s,baz=92,slow=7.6,SNR=15						
NRIK	Noril'sk	41.52 334		LR	LR	13 17 49.4	
	comp=Z,45nm,18.6s,baz=74,slow=39						
CMAR	Chiang Mai Arr	43.69 254		P	P	12 59 08.3	-0.1
	0.7nm,0.8s,baz=45,slow=6.8,SNR=5.8						
MKAR	Makanchi Array	44.05 300		P	P	12 59 11.0	-0.1
	2.8nm,0.8s,baz=81,slow=10.0,SNR=17						
KURBB	Kurchatov Arra	45.62 306		P	P	12 59 22.9	-0.5
	5.0nm,0.8s,baz=80,slow=8.3,SNR=20						
ILAR	Eielson Array	46.41 34		P	P	12 59 29.9	+0.4
	0.7nm,0.7s,baz=265,slow=6.5,SNR=11						
BVAR	Borovoye Array	49.95 311		P	P	12 59 57.1	0.0
	2.3nm,0.7s,baz=80,slow=9.2,SNR=14						
AAK	Ala-Archa	50.61 297		P	P	13 00 01.7	-0.8
	1.0nm,0.4s,baz=112,slow=4.6,SNR=4.0						
INK	Inuvik	51.30 28		P	P	13 00 07.2	+0.2
	1.4nm,1.0s,baz=262,slow=4.6,SNR=5.3						
ARU	Arti	55.40 318		P	P	13 00 37.4	+0.1
	1.1nm,0.4s,baz=60,slow=2.3,SNR=4.4						
AKTO	Aktyubinsk	58.05 311		P	P	13 00 55.7	-0.5
	1.5nm,0.6s,baz=72,slow=12,SNR=5.8						
WRA	Warramunga Arr	59.94 190		P	P	13 01 09.4	-0.2
	1.0nm,0.9s,baz=7.9,slow=6.9,SNR=7.5						
YKA	Yellowknife Ar	60.72 31		P	P	13 01 14.1	-0.4
	0.2nm,0.7s,baz=305,slow=7.1,SNR=4.4						
ARCES	ARCESS Array B	62.03 339		LR	LR	13 30 36.1	
	comp=Z,51nm,18.5s,baz=26,slow=38						
ASAR	Alice Springs	63.67 190		P	P	13 01 34.7	0.0
	0.3nm,0.7s,baz=14,slow=9.1,SNR=7.7						
FINES	FINESS Array B	67.16 332		P	P	13 01 55.7	-1.1
	2.1nm,0.8s,baz=38,slow=9.6,SNR=5.2						
KBZ	Khabaz	70.32 311		P	P	13 02 16.9	+0.1
	3.2nm,0.9s,baz=340,slow=5.2,SNR=5.7						
NVAR	Mina Array Bea	72.17 55		P	P	13 02 29.6	+1.2
	0.4nm,0.8s,baz=294,slow=6.8,SNR=2.7						
HFS	Hagfors	72.27 336		P	P	13 02 28.3	-0.1
	1.5nm,0.5s,baz=20,slow=4.7,SNR=7.2						
NB2	NORSAR Subarra	72.30 338		P	P	13 02 28.5	-0.1
	comp=Z,0.8nm,0.6s,baz=39,slow=6.2						
NOA	NORSAR Array B	72.30 338		P	P	13 02 28.6	-0.1
	comp=Z,1.9nm,0.8s,baz=39,slow=5.9,SNR=7.0						
PDAR	Pinedale Array	74.70 47		P	P	13 02 41.4	-2.0
	comp=Z,0.4nm,0.7s,baz=270,slow=3.0,SNR=4.6

	21nm,0.8s							
BATI	**Baumata**	**24.46**	**260**	P	**P**	**13 02 38.1**	**-0.1**	
	10nm,0.7s,baz=107,slow=20,SNR=3.1							
BATI				LR	LR	13 14 06.7		
	comp=Z,306nm,18.5s,baz=158,slow=41							
FITZ	**Fitzroy Crossi**	**24.76**	**240**	P	**P**	**13 02 39.4**	**-1.4**	
	27nm,0.5s,baz=59,slow=7.6,SNR=128							
FITZ				LR	LR	13 14 00.8		
	comp=Z,245nm,18.4s,baz=62,slow=41							
FITZ	**Fitzroy Crossi**	**24.76**	**240**	P	**P**	**13 02 39.4**	**-1.4**	
FITZ				*e*P	**P**	**13 02 39.5**	**-1.3**	
STKA	**Stephens Creek**	**25.97**	**193**	P	**P**	**13 02 50.6**	**-1.0**	
	2.3nm,0.6s,baz=0.0,slow=12,SNR=5.3							
STKA				LR	LR	13 14 01.3		
	comp=Z,306nm,18.5s,baz=15,slow=39							
KAPI	**Kappang**	**28.25**	**271**	LR	LR	13 16 47.9		
	comp=Z,107nm,20.5s,baz=113,slow=41							
MBWA	**Marble Bar**	**31.08**	**239**	*e*P	**P**	**13 03 35.6**	**-1.8**	
	8.5nm,0.6s							
CISI	**Cisompet, Garu**	**39.99**	**266**	P	**P**	**13 04 52.3**	**-1.7**	
MJAR	**Matsushiro Arr**	**43.81**	**348**	P	**P**	**13 05 25.8**	**+1.1**	
	1.5nm,0.8s,baz=170,slow=8.8,SNR=5.1							
KSRS	**Korea Array**	**47.62**	**338**	P	**P**	**13 05 54.7**	**0.0**	
	0.4nm,0.3s,baz=164,slow=8.9,SNR=3.3							
KSRS				LR	LR	13 24 33.3		
	comp=Z,115nm,19.3s,baz=142,slow=34							
KSAR	**Wonju Array Be**	**47.62**	**338**	P	**P**	**13 05 54.7**	**-0.1**	
IPM	**Ipoh**	**48.25**	**282**	*e*P	**P**	**13 05 59.3**	**-0.8**	
	4.7nm,0.6s							
USRK	**Ussuriysk Ar.**	**52.52**	**345**	LR	LR	13 27 37.4		
	comp=Z,52nm,19.0s,baz=140,slow=34							
CMAR	**Chiang Mai Arr**	**54.46**	**298**	P	**P**	**13 06 47.1**	**+0.6**	
	0.8nm,0.6s,baz=123,slow=5.8,SNR=10							
KLR	**Kul'dur**	**57.31**	**347**	LR	LR	13 29 25.6		
	comp=Z,26nm,21.0s,baz=156,slow=34							
PETK	**Petropavlovsk-**	**59.94**	**7**	P	**P**	**13 07 26.1**	**+1.6**	
	3.7nm,0.9s,baz=177,slow=13,SNR=3.0							
SONM	**Songino Array**	**65.38**	**330**	P	**P**	**13 08 01.8**	**+0.7**	
	1.0nm,1.0s,baz=134,slow=6.4,SNR=3.6							
SONM				LR	LR	13 35 59.3		
	comp=Z,76nm,20.0s,baz=119,slow=35							
TLY	**Talaya**	**69.30**	**332**	LR	LR	13 39 25.8		
	comp=Z,48nm,18.6s,baz=126,slow=36							
VNDA	**Vanda**	**71.35**	**177**	P	**P**	**13 08 38.4**	**+0.6**	
	0.8nm,0.8s,baz=329,slow=6.8,SNR=4.5							
MKAR	**Makanchi Array**	**78.59**	**320**	P	**P**	**13 09 19.9**	**-0.1**	
	0.3nm,0.5s,baz=105,slow=6.7,SNR=4.9							
ZALV	**Zalesovo Beam**	**80.02**	**328**	P	**P**	**13 09 27.5**	**-0.1**	
	0.5nm,0.3s,baz=121,slow=5.0,SNR=6.3							
ZALV				LR	LR	13 44 22.3		
	comp=Z,73nm,20.6s,baz=72,slow=35							
ILAR	**Eielson Array**	**85.51**	**23**	P	**P**	**13 09 54.2**	**-1.7**	
	1.1nm,1.0s,baz=252,slow=5.0,SNR=6.7							
NVAR	**Mina Array Bea**	**96.81**	**52**	LR	LR	13 48 06.9		
	comp=Z,46nm,21.4s,baz=260,slow=31							
TORD	**Torodi Ar. Bea**	**146.28**	**284**	PKPbc	**PKPab**	**13 17 00.8**	**+0.2**	
	0.9nm,0.6s,baz=75,slow=2.9,SNR=13							

JMA 14 13:02:25.5±0.2, 27°.19N×127°.46E, h90km±2km, M3.5, Ryukyu Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIH	**Iheya**	**0.48**	**109**	P	Pn	13 02 40.4	+0.4
JIH				S	Sn	13 02 51.0	+0.1
JAGN	**Aguni-jima**	**0.63**	**198**	P	Pn	13 02 41.4	+0.1
JAGN				S	Sn	13 02 53.6	+0.5
JOW	**Kunigami**	**0.81**	**116**	P	Pn	13 02 43.2	+0.1
JOW				S	Sn	13 02 55.9	-0.4
JNTH	**Nagotoyohara**	**0.84**	**143**	P	Pn	13 02 43.7	+0.3
JNTH				S	Sn	13 02 56.5	-0.2
JOKE	**Okinoerabujima**	**1.00**	**80**	P	Pn	13 02 45.4	+0.2
JOKE				S	Sn	13 02 59.9	-0.1
JKE	**Kume jima 2**	**1.05**	**215**	P	Pn	13 02 45.8	0.0
JKE				S	Sn	13 03 00.8	-0.2
JJT2	**Tamagusuku 2**	**1.07**	**166**	P	Pn	13 02 47.0	+0.9
JJT2				*e*S	Sn	13 03 01.4	-0.1
JTK	**Tokunoshima**	**1.45**	**66**	P	Pn	13 02 50.9	+0.3
JTK				S	Sn	13 03 09.5	-0.1
JAMN	**Amaminishikomi**	**1.85**	**55**	P	Pn	13 02 55.6	-0.1
JAMN				*e*S	Sn	13 03 18.3	-0.4
JAM	**Amami Oshima**	**2.26**	**57**	P	Pn	13 03 01.2	+0.1
JAM				S	Sn	13 03 28.5	+0.2
JTAJ	**Takarajima**	**2.49**	**38**	P	Pn	13 03 05.1	+0.9
JZK	**Kikaishima**	**2.49**	**63**	P	Pn	13 03 04.7	+0.5
JZK				S	Sn	13 03 34.8	+0.9
JIKM	**Ikemajima**	**3.01**	**222**	P	Pn	13 03 11.1	0.0
JOGS	**Gusukube**	**3.04**	**218**	P	Pn	13 03 11.7	+0.1
JMJ	**Miyako jima 2**	**3.06**	**220**	P	Pn	13 03 11.0	-0.9
JIRB	**Irabujima**	**3.12**	**222**	P	Pn	13 03 12.1	-0.6
JTJ	**Tarama**	**3.55**	**225**	P	Pn	13 03 17.6	-0.9
JMZ	**Minamidaito 2**	**3.64**	**111**	P	Pn	13 03 17.5	-2.1
JMZ				*e*S	Sn	13 03 55.8	-5.7
JISG	**Ishigakijimahi**	**3.84**	**228**	P	Pn	13 03 20.9	-1.5
JIJ	**Ishigaki jima**	**4.11**	**227**	P	Pn	13 03 24.3	-1.7
JKRS	**Kuro-shima**	**4.28**	**227**	P	Pn	13 03 26.9	-1.5
IRIF	**Iriomote-Funau**	**4.40**	**231**	P	Pn	13 03 28.5	-1.5
YOJ	**Yonaguni jima**	**4.84**	**237**	P	Pn	13 03 35.5	-0.5
JYNG	**Yonagunijimaku**	**4.90**	**237**	P	Pn	13 03 36.2	-0.5

MEX 14 13:04:07.9±0.5, 15°.45N×94°.55W, h25km±17km, MD3.7, Near coast of Oaxaca

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PCIG		**1.31**	**79**	*e*P	Pn	13 04 28.2	-2.5
PCIG				*e*S	Sn	13 04 43.4	-3.9
HUIG	**Huatulco**	**1.53**	**282**	*e*P	Pn	13 04 30.8	-2.9
HUIG				*e*S	Sn	13 04 49.8	-3.1
TGIG		**1.91**	**46**	*i* P	Pn	13 04 36.6	-2.3
TGIG				*i* S	Sn	13 04 58.9	-3.3
CCIG	**Comitan**	**2.47**	**70**	*i* P	Pn	13 04 44.9	-1.8
CCIG				*i* S	Sn	13 05 13.2	-3.0

*ISCJB **14** 13:06:17.9±0.6, 35°.89N±0°.04×140°.96E±0°.10, h47km±5km, mb3.7/9, MS3.5/4, Error ellipse: s-maj=13.3km s-min=6.0km az=172.7*
*NEIC **14** 13:06:18.7±0.7, 35°.90N×141°.01E, h35km, mb4.3/1, Error ellipse: s-maj=17.8km s-min=10.2km az=86.0*
*IDC **14** 13:06:18.6±3.7, 35°.82N×141°.01E, h34km±30km, mb3.4/8, mb1 3.7/12, mb1mx3.5/52, mbtmp3.8/12, ML3.9/4, MS3.3/9, Ms1 3.3/9, ms1mx2.9/40, Error ellipse: s-maj=25.3km s-min=14.4km az=87.0*
*JMA **14** 13:06:19.3±0.1, 35°.88N×140°.85E, h40km±1km, M3.4 Broadband fault plane solution: P waves. NP1: φs=343.00000°, δ87.00000°, λ73.00000°. NP2: φs=244.00000°, δ17.00000°, λ171.00000°. Principal axes: T Plg45.0000°, Azm236.0000°; N Plg17.0000°, Azm343.0000°; P Plg40.0000°, Azm88.0000°;*
JMA Felt I J1.

ISC 14 13:06:19.3±1.4, 35°.92N±0°.04×140°.85E±0°.09, h34km±3km, n36, σ1°.04/24, mb3.7/9, MS3.4/4, 1C-3D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.22**	**178**	⇓P	**Pn**	**13 06 26.2**	**+0.9**
CHOJ				S	**Sb**	**13 06 31.3**	**+0.5**
JYT	**Yasato**	**0.61**	**300**	⇓P	**Pn**	**13 06 31.6**	**+0.1**
JYT				*e*S	**Sb**	**13 06 40.7**	**+0.5**
JHO	**Hitachi**	**0.72**	**342**	⇑P	**Pn**	**13 06 33.5**	**+0.3**
BSO3	**Boso 3**	**1.15**	**194**	P	**Pn**	**13 06 39.0**	**+0.2**
JAG	**Ashikaga**	**1.24**	**294**	⇓P	**Pn**	**13 06 40.4**	**+0.2**
BSO1	**Boso 1**	**1.27**	**175**	P	**Pn**	**13 06 40.6**	**+0.5**
MJAR	**Matsushiro Arr**	**2.22**	**287**	Pn	**Pn**	**13 06 54.9**	**+1.1**
MJAR	10nm,0.3s,baz=13,slow=28,SNR=42			LR	LR	13 07 56.3	
	comp=Z,358nm,20.1s,baz=100,slow=42						
JHJ2	**Mitsune**	**2.93**	**197**	*e*Pn	**Pn**	**13 07 04.9**	**+1.4**
JHJ	**Hachijo jima 2**	**2.93**	**198**	Pn	**Pn**	**13 07 02.9**	**-0.6**
	12nm,0.3s,baz=341,slow=21,SNR=21						
JHJ				Sn	**Sn**	**13 07 35.7**	**-1.8**
	25nm,0.3s,baz=90,slow=20,SNR=4.0						
ASAJ	**Asahikawa**	**8.30**	**9**	Pn	**Pn**	**13 08 15.7**	**-1.5**
	1.9nm,0.3s,baz=205,slow=15,SNR=17						
ASAJ				Sn	**Sn**	**13 09 50.9**	**+1.3**
	0.3nm,0.3s,baz=139,slow=20,SNR=3.5						
JNU	**Nakatsue**	**8.69**	**254**	LR	LR	13 12 05.0	
	comp=Z,282nm,18.1s,baz=121,slow=39						
CBIJ	**Chichi jima**	**8.87**	**172**	Pn	Pn	13 08 22.2	-2.9
JCJ	**Chichijima**	**8.87**	**172**	Pn	Pn	13 08 22.2	-2.9
	6.1nm,0.3s,baz=297,slow=22,SNR=10						
KSRS	**Korea Array**	**10.49**	**282**	Pn	Pn	13 08 54.5	+7.3
	0.2nm,0.3s,baz=98,slow=12,SNR=2.8						
KSRS				LR	LR	13 12 55.4	
	comp=Z,70nm,20.0s,baz=96,slow=37						
USRK	**Ussuriysk Ar.**	**10.69**	**323**	Pn	Pn	13 08 53.8	+3.9
	0.1nm,0.3s,baz=133,slow=12,SNR=3.3						
USRK				LR	LR	13 12 35.2	
	comp=Z,58nm,20.3s,baz=95,slow=35						
KLR	**Kul'dur**	**14.88**	**336**	LR	LR	13 15 16.5	
	comp=Z,51nm,19.2s,baz=132,slow=36						
GUMO	**Guam**	**22.53**	**170**	LR	LR	13 21 33.9	
	comp=Z,173nm,18.1s,baz=186,slow=41						
H11N2	**WAKE ISLAND Hy**	**28.00**	**118**	T	T	13 41 05.7	
	baz=311,slow=75,SNR=42						
H11N1	**WAKE ISLAND Hy**	**28.00**	**118**	T	T	13 41 06.2	
	baz=311,slow=75,SNR=48						
H11N3	**WAKE ISLAND Hy**	**28.02**	**118**	T	T	13 41 06.9	
	baz=311,slow=75,SNR=58						
SONM	**Songino Array**	**28.05**	**306**	P	**P**	**13 12 09.0**	**+1.5**
	0.5nm,0.5s,baz=106,slow=9.6,SNR=3.8						
H11S1	**WAKE ISLAND Hy**	**28.66**	**120**	T	T	13 42 06.7	
	baz=313,slow=75,SNR=52						
H11S3	**WAKE ISLAND Hy**	**28.66**	**120**	T	T	13 42 05.5	
	baz=313,slow=75,SNR=52						
H11S2	**WAKE ISLAND Hy**	**28.68**	**120**	T	T	13 42 08.4	
	baz=313,slow=75,SNR=52						
ZALV	**Zalesovo Beam**	**42.34**	**313**	P	**P**	**13 14 09.7**	**-0.1**
	0.6nm,0.3s,baz=74,slow=5.3,SNR=3.6						
MKAR	**Makanchi Array**	**44.33**	**303**	P	**P**	**13 14 26.3**	**+0.3**
	1.3nm,0.7s,baz=94,slow=9.5,SNR=13						
MKAR				LR	LR	13 33 28.8	
	comp=Z,36nm,18.5s,baz=104,slow=37						
KURK	**Kurchatov**	**46.27**	**309**	*e*P	P	13 14 39.1	-2.1
	1.2nm,0.3s						
AAK	**Ala-Archa**	**50.62**	**299**	LR	LR	13 37 40.1	
	comp=Z,33nm,19.8s,baz=68,slow=37						
ILAR	**Eielson Array**	**50.68**	**32**	P	**P**	**13 15 15.4**	**+0.4**
	0.4nm,0.7s,baz=267,slow=5.8,SNR=4.9						
WRAB	**Tennant Creek**	**55.89**	**187**	P	**P**	**13 15 54.2**	**+0.5**
WRA	**Warramunga Arr**	**55.90**	**187**	P	**P**	**13 15 52.2**	**-1.6**
	0.6nm,0.4s,baz=2.8,slow=7.6,SNR=12						
ASAR	**Alice Springs**	**59.63**	**187**	P	**P**	**13 16 18.2**	**-1.8**
	0.3nm,0.7s,baz=16,slow=11,SNR=7.5						
YKA	**Yellowknife Ar**	**65.00**	**30**	P	**P**	**13 16 55.0**	**-0.5**
	0.2nm,0.7s,baz=300,slow=6.7,SNR=4.1						
YKA	**Yellowknife Ar**	**65.00**	**30**	P	**P**	**13 16 55.0**	**-0.5**
NOA	**NORSAR Array B**	**75.03**	**337**	P	**P**	**13 17 56.7**	**-0.5**
	0.6nm,0.7s,baz=40,slow=5.8,SNR=2.3						
TXAR	**Lajitas Array**	**91.16**	**52**	LR	LR	13 54 17.7	
	comp=Z,44nm,21.8s,baz=0.0,slow=32						

IDC 14 13:08:27.5±9.4, 3°.06N×97°.13E, h66km±64km, mb3.4/4, mb1 3.5/4, mb1mx3.1/52, mbtmp3.7/4, Error ellipse: s-maj=140.4km s-min=26.5km az=58.0, Northern Sumatera

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PSI	**Prapat**	**1.81**	**98**	P	Pn	13 08 56.8	+0.1
	1.8nm,0.3s,baz=180,slow=11,SNR=6.9						
CMAR	**Chiang Mai Arr**	**15.41**	**6**	P	P	13 12 06.1	+1.7
	0.0nm,0.3s,baz=198,slow=11,SNR=3.9						
H08S2	**Diego Garcia H**	**26.78**	**246**	T	T	13 40 31.4	
	baz=70,slow=75,SNR=47						
H08S3	**Diego Garcia H**	**26.78**	**247**	T	T	13 40 32.1	
	baz=70,slow=75,SNR=44						
H08S1	**Diego Carcia H**	**26.80**	**247**	T	T	13 40 34.1	
	baz=70,slow=75,SNR=51						
WRA	**Warramunga Arr**	**43.09**	**124**	P	P	13 16 21.3	-0.2
	0.3nm,0.6s,baz=303,slow=9.2,SNR=5.3						
SONM	**Songino Array**	**45.32**	**9**	P	P	13 16 39.0	0.0
	0.4nm,0.6s,baz=195,slow=9.0,SNR=2.8						
MKAR	**Makanchi Array**	**45.44**	**346**	P	P	13 16 39.6	-0.2
	0.7nm,0.7s,baz=160,slow=7.4,SNR=7.3						
ZALV	**Zalesovo Beam**	**51.73**	**351**	P	P	13 17 27.8	-0.1
	2.8nm,0.7s,baz=179,slow=6.4,SNR=17						

JMA 14 13:14:05.0±0.2, 36°.37N×142°.53E, h51km, M3.5, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**1.51**	**244**	P	Pn	13 14 30.3	+0.7
CHOJ				S	Sn	13 14 48.8	+0.7
JHO	**Hitachi**	**1.60**	**279**	P	Pn	13 14 31.5	+0.6
JHO				S	Sn	13 14 50.6	+0.2
JFK	**Kawauchi**	**1.66**	**307**	*e*S	Sn	13 14 52.3	+0.4
JMM	**Marumori**	**2.04**	**318**	P	Pn	13 14 38.1	+1.2
JMM				S	Sn	13 15 02.6	+1.5
JFT	**Otama**	**2.10**	**304**	*e*S	Sn	13 15 04.4	+1.8
BSO1	**Boso 1**	**2.13**	**217**	P	Pn	13 14 38.7	+1.1
JAG	**Ashikaga**	**2.48**	**272**	P	Pn	13 14 44.3	+1.3
JAG				S	Sn	13 15 12.5	+0.4
JRY	**Ryogami san**	**2.96**	**264**	P	Pn	13 14 50.5	+1.0
JOD2	**Odawara 2**	**3.01**	**249**	P	Pn	13 14 51.1	+0.9
MAT	**Matsushiro**	**3.49**	**274**	P	Pn	13 14 59.0	+2.2
MAT				S	Sn	13 15 39.4	+2.6

*NIED **14** 13:15:00, 39°.30N×142°.30E, h11km, Mw3.6 Best double couple: M₀2.60000×10¹⁴ NP1:φs289.00000°, δ54.00000°, λ-155.00000°. NP2:φs184.00000°, δ70.00000°, λ-39.00000°*

JMA 14 13:15:20.7±0.1, 39°.28N×142°.34E, h30km±1km, M3.7, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MIYJ	**Miyakonagasawa**	**0.50**	**306**	P	Pb	13 15 30.6	-0.5
MIYJ				S	Sb	13 15 37.8	-0.5
OFUJ	**Ofunato**	**0.56**	**249**	P	Pb	13 15 31.6	-0.5
OFUJ				S	Sb	13 15 39.4	-0.4
JOM	**Ohasama**	**0.83**	**284**	P	Pn	13 15 36.1	-0.3
JOM				S	Sb	13 15 47.3	-0.3
JMK	**Ichinoseki**	**0.93**	**250**	P	Pn	13 15 37.5	-0.2
JMK				S	Sn	13 15 49.4	-0.6
JKZ	**Kuzumaki**	**1.05**	**312**	P	Pn	13 15 39.7	+0.3
JKZ				S	Sn	13 15 53.3	+0.2
JIO	**Ouri**	**1.13**	**223**	P	Pn	13 15 40.1	-0.4
JANG	**Nango**	**1.26**	**330**	P	Pn	13 15 42.4	+0.1
JANG				S	Sn	13 15 58.3	0.0
JRG	**Rokugo**	**1.33**	**276**	P	Pb	13 15 44.5	-0.5
JRG				*e*S	Sn	13 16 00.6	+0.7
JYK	**Kaneyama**	**1.58**	**257**	P	Pb	13 15 48.4	-0.9
JOU	**Okura**	**1.60**	**236**	P	Pn	13 15 47.9	+1.0
JOU				*e*S	Sb	13 16 08.0	-1.3
JMM	**Marumori**	**1.86**	**221**	P	Pn	13 15 50.8	+0.3
JMM				*e*S	Sn	13 16 13.9	+0.9
JFK	**Kawauchi**	**2.23**	**212**	P	Pn	13 15 56.0	+0.3

*CSEM **14** 13:22:17.9±0.1, 38°.33N×37°.79E, h13km±1km, MD2.7*
*ISK **14** 13:22:17.3, 38°.33N×37°.80E, h10km, MD2.7*
*ISCJB **14** 13:22:18.3±0.7, 38°.34N±0°.07×37°.77E±0°.08, h17km±8km, Error ellipse: s-maj=13.7km s-min=8.0km az=33.0*
*DDA **14** 13:22:19.9, 38°.40N×37°.92E, h6km, Ml2.6*

ISC 14 13:22:17.8±1.2, 38°.40N±0°.07×37°.82E±0°.05, h18km±4km, n12, σ0°.19/16, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AKCD	**Akcadag**	**0.13**	**143**	*i* P	**Pg**	**13 22 21.9**	**-0.1**
AKCD				*i* S	**Sg**	**13 22 25.0**	**+0.3**
AKCD	**Akcadag**	**0.13**	**143**	P	**Pg**	**13 22 21.9**	**-0.1**
AKCD				S	**Sg**	**13 22 25.0**	**+0.3**
DARE	**Darende-Malaty**	**0.32**	**303**	*e*PG	**Pg**	**13 22 24.7**	**-0.1**
DARE				*e*SG	**Sb**	**13 22 30.1**	**+0.2**
DARE	**Darende-Malaty**	**0.32**	**303**	*e*Pg	**Pg**	**13 22 24.7**	**-0.1**
DARE				*e*Sg	**Sb**	**13 22 30.1**	**+0.2**
KMRS	**Kahramanmaras**	**1.15**	**220**	*e*PN	**Pn**	**13 22 38.8**	**-0.2**
KMRS	**Kahramanmaras**	**1.15**	**220**	*e*Pn	**Pn**	**13 22 38.8**	**-0.2**
SVRC	**Sivrice-ELAZID**	**1.17**	**90**	*e*PN	**Pg**	**13 22 40.4**	**0.0**
SVRC	**Sivrice-ELAZID**	**1.17**	**90**	*e*Pn	**Pg**	**13 22 40.4**	**0.0**
GAZ	**Gaziantep**	**1.32**	**202**	*e*PN	**Pn**	**13 22 41.2**	**-0.1**
GAZ	**Gaziantep**	**1.32**	**202**	*e*Pn	**Pn**	**13 22 41.2**	**-0.1**
PTK	**Pertek**	**1.32**	**68**	*e*PN	**Pg**	**13 22 43.3**	**-0.1**
PTK	**Pertek**	**1.32**	**68**	*e*Pn	**Pg**	**13 22 43.3**	**-0.1**

*MOS **14** 13:22:35.5±1.6, 52°.69N×170°.25E, h33km, mb4.0/6, Error ellipse: s-maj=15.4km s-min=10.6km az=128.0*
*KRSC **14** 13:22:38.8±1.7, 52°.74N×169°.30E, h6km±3km, ML4.5*
*IDC **14** 13:22:40.9±7.2, 53°.35N×170°.06E, h34km±60km, mb3.5/12, mb1 3.7/13, mb1mx3.4/67, mbtmp3.7/13, ML3.3/1, MS3.7/3, Ms1 3.7/3, ms1mx2.8/41, Error ellipse: s-maj=33.3km s-min=16.5km az=164.0*

ISC 14 13:22:38.6±1.2, 52°.9N±0°.2×170°.06E±0°.07, h35km, n49, σ1°.76/44, mb3.7/12, MS3.7/3, 1D, Near Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BKI	**Bering**	**3.33**	**315**	*e*P	Pn	13 23 32.4	+4.3
BKI	**Bering**	**3.33**	**315**	P	Pn	13 23 32.4	+4.3
KMNR	**Kamenistaya**	**6.42**	**300**	*e*P	**Pn**	**13 24 13.6**	**+3.1**
KMNR	**Kamenistaya**	**6.42**	**300**	P	**Pn**	**13 24 13.6**	**+3.1**
NLC	**Nalytchevo**	**6.47**	**277**	*e*S	**Sn**	**13 25 22.1**	**-1.6**
SDLR	**Sedlovina**	**6.74**	**278**	*e*P	**Pn**	**13 24 16.8**	**+1.7**
SDLR	**Sedlovina**	**6.74**	**278**	P	**Pn**	**13 24 16.8**	**+1.7**
UGLR	**Uglovaya**	**6.78**	**277**	*e*P	**Pn**	**13 24 17.6**	**+2.0**
SMAR	**Somma**	**6.79**	**278**	*e*P	**Pn**	**13 24 16.8**	**+1.0**
SMAR	**Somma**	**6.79**	**278**	P	**Pn**	**13 24 16.8**	**+1.0**
AVH	**Avacha**	**6.83**	**278**	*e*P	**Pn**	**13 24 18.3**	**+2.1**
AVH	**Avacha**	**6.83**	**278**	P	**Pn**	**13 24 18.3**	**+2.1**
DALK	**Dalny**	**6.83**	**276**	*e*P	**Pn**	**13 24 18.0**	**+1.9**
DALK				*e*S	**Sn**	**13 25 31.8**	**-0.8**
KRX	**Arik**	**6.88**	**278**	*e*P	**Pn**	**13 24 18.5**	**+1.5**
PET	**Petropavlovsk**	**6.89**	**276**	*e*S	**Sn**	**13 25 33.4**	**-0.7**
RUS	**Russkaya**	**7.04**	**271**	*e*S	**Sn**	**13 25 34.5**	**-3.2**
KRMR	**Karymshinskiy**	**7.22**	**274**	*e*P	**Pn**	**13 24 23.1**	**+1.6**
KRMR				*e*S	**Sn**	**13 25 41.1**	**-1.1**
MTVR	**Mutnovka**	**7.23**	**271**	*e*S	**Sn**	**13 25 41.6**	**-1.1**
GNL	**Ganaly**	**7.31**	**281**	*e*P	**Pn**	**13 24 25.4**	**+2.6**
GNL				*e*S	**Sn**	**13 25 45.1**	**+0.6**
GNL	**Ganaly**	**7.31**	**281**	P	**Pn**	**13 24 25.4**	**+2.6**
GNL				S	**Sn**	**13 25 45.1**	**+0.6**
ASAK	**Asacha**	**7.42**	**271**	*e*P	**Pn**	**13 24 27.0**	**+2.7**
PETK	**Petropavlovsk-**	**7.46**	**276**	Pn	**Pn**	**13 24 26.9**	**+2.1**
	2.6nm,0.3s,baz=99,slow=19,SNR=38						
PETK				Sn	**Sn**	**13 25 47.8**	**-0.3**
	3.6nm,0.3s,baz=203,slow=27,SNR=14						
APC	**Apacha**	**7.80**	**275**	*e*P	**Pn**	**13 24 32.5**	**+3.0**
APC				*e*S	**Sn**	**13 25 55.4**	**-1.0**
APC	**Apacha**	**7.80**	**275**	P	**Pn**	**13 24 32.5**	**+3.0**
APC				S	**Sn**	**13 25 55.4**	**-1.0**
SKR	**Severo-Kuril's**	**8.92**	**261**	*e*S	**Sn**	**13 26 22.1**	**-1.9**
BILL	**Bilibino**	**15.29**	**355**	⇓*e*P	**P**	**13 26 14.1**	**-1.8**
BILL				pmax	pmax		
	comp=Z,2.0nm,0.6s						
ILAR	**Eielson Array**	**24.69**	**44**	P	**P**	**13 27 54.5**	**-1.3**
	comp=Z,1.6nm,0.9s,baz=251,slow=7.2,SNR=14						
ILAR	**Eielson Array**	**24.69**	**44**	*e*P	**P**	**13 27 56.7**	**+0.9**
ILAR				pmax	pmax		
	comp=Z,2.0nm,0.9s						
TIXI	**Tiksi**	**25.96**	**332**	P	**P**	**13 28 06.8**	**-0.5**
	comp=Z,1.8nm,0.7s,baz=118,slow=15,SNR=10						
INK	**Inuvik**	**30.32**	**38**	P	**P**	**13 28 46.9**	**+0.7**
	comp=Z,0.4nm,0.3s,baz=253,slow=8.6,SNR=7.2						
H11N2	**WAKE ISLAND Hy**	**33.20**	**185**	T	T	14 04 34.4	
	baz=4.5,slow=76						
H11N3	**WAKE ISLAND Hy**	**33.21**	**185**	T	T	14 04 36.1	
	baz=4.5,slow=76						
H11N1	**WAKE ISLAND Hy**	**33.22**	**185**	T	T	14 04 33.0	
	baz=4.5,slow=76						
JNU	**Nakatsue**	**34.23**	**250**	P	P	13 29 25.5	+4.7
	comp=Z,1.9nm,0.3s,baz=83,slow=17,SNR=27						
H11S1	**WAKE ISLAND Hy**	**34.43**	**186**	T	T	14 06 03.8	
	baz=4.6,slow=76						
H11S3	**WAKE ISLAND Hy**	**34.44**	**186**	T	T	14 06 11.8	
	baz=4.6,slow=76						
H11S2	**WAKE ISLAND Hy**	**34.44**	**186**	T	T	14 06 18.4	
	baz=4.6,slow=76						
YKA	**Yellowknife Ar**	**39.11**	**45**	P	**P**	**13 30 01.5**	**-0.5**
	comp=Z,0.2nm,0.4s,baz=292,slow=7.9,SNR=6.2						
SONM	**Songino Array**	**39.73**	**289**	P	**P**	**13 30 08.8**	**+1.3**
	comp=Z,0.2nm,0.4s,baz=72,slow=4.7,SNR=2.7						
SPITS	**Spitsbergen Ar**	**48.19**	**353**	P	**P**	**13 31 14.2**	**-0.6**
	comp=Z,0.7nm,0.4s,baz=63,slow=7.9,SNR=10						
PDAR	**Pinedale Array**	**52.20**	**67**	LR	LR	13 54 32.5	
	comp=Z,62

SNR=156
FAQ Al Faqa, Dubai 0.67 254 P Pg 13 30 15.0 +0.4
SNR=156
ASUD Al Ashush, Dub 0.94 251 eP Pg 13 30 20.0 +0.3
SNR=30
ASUD Al Ashush, Dub 0.94 251 P Pg 13 30 20.0 +0.4
SNR=30
ASUD Al Ashush, Dub 0.94 251 P Pg 13 30 20.0 +0.3
SNR=30
BANOM Banah 0.99 360 eP Pg 13 30 20.5 -0.2
SNR=62

SOME **14** *13:45:31.2, 40.83N × 69.28E, h10km*
NNC **14** *13:45:33.4 ± 5.6, 40.98N × 69.54E, h0km, mb3.1, mpv2.7, Error ellipse: s-maj=40.3km s-min=28.0km az=36.0*
ISC 14 13:45:27.4 ± 5.6, 40.6N ± 0.2 × 69.3E ± 0.2, h10km, n5, σ2.9 03/7, 4C-3D, Tajikistan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
IUG	**Iuzhnay**	**1.59**	**19**	*eP*	**Pg**	**13 45 59.0**	**+1.1**
	39nm,0.5s						
IUG				*eS*	**Sn**	**13 46 19.4**	**+2.9**
	62nm,0.5s						
BRLS	**Borolday**	**2.16**	**7**	⇑*iP*	**Pg**	**13 46 07.9**	**-0.9**
	10nm,0.6s						
BRLS				⇓*iS*	**Sg**	**13 46 34.4**	**-2.4**
	18nm,0.6s						
KK31	**Karatay Array**	**2.61**	**19**	⇓Pg	**Pb**	**13 46 14.4**	**+0.1**
	1.9nm,0.5s,baz=204,slow=16,SNR=19						
KK31				Lg	Lg	13 46 45.2	
	10.0nm,0.5s,baz=199,slow=22,SNR=18						
MNAS	**Manas**	**3.01**	**51**	⇑Pg	**Pb**	**13 46 21.0**	**-0.2**
	2.8nm,0.7s						
MNAS				⇑Lg	Lg	13 46 58.6	
	3.6nm,0.5s						
AAK	**Ala-Archa**	**4.35**	**61**	⇑Pg	**Pg**	**13 46 50.1**	**-0.6**
	1.1nm,0.5s						
AAK				⇓Lg	Lg	13 47 42.4	
	2.1nm,0.7s						

NIED **14** *14:05:00, 39.00N × 142.40E, h47km, Mw4.2 Best double couple: M0 2.10000 × 10^15 NP1:φs 22.00000°, δ26.00000°, λ -15.00000°. NP2:φs 126.00000°, δ84.00000°, λ -115.00000°.*
JMA **14** *14:05:55.9 ± 0.1, 39.02N × 142.39E, h32km, 2km, M3.7*
IDC **14** *14:05:57.0 ± 3.0, 39.04N × 142.69E, h45km, 24km, mb3.3/4, mb1 3.5/8, mb1mx3.1/63, mbtmp3.6/8, ML3.0/4, Error ellipse: s-maj=42.4km s-min=20.2km az=81.0*
ISC 14 14:05:53.5 ± 2.0, 39.00N ± 0.04 × 142.49E ± 0.08, h15km ± 11km, n28, σ0.96/33, mb3.7/4, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**0.64**	**278**	P	**Pb**	**14 06 07.2**	**+0.7**
OFUJ				S	**Sb**	**14 06 15.0**	**-0.3**
MIYJ	**Miyakonagasawa**	**0.78**	**318**	P	**Pb**	**14 06 09.0**	**+0.2**
MIYJ				S	**Sg**	**14 06 18.3**	**-0.6**
JMK	**Ichinoseki**	**0.99**	**268**	P	**Pg**	**14 06 12.7**	**0.0**
JMK				S	**Sb**	**14 06 24.7**	**-0.6**
JOM	**Ohasama**	**1.04**	**297**	P	**Pn**	**14 06 13.7**	**0.0**
JOM				S	**Sb**	**14 06 26.5**	**-0.3**
JIO	**Ouri**	**1.04**	**239**	P	**Pb**	**14 06 13.1**	**-0.2**
JIO				S	**Sb**	**14 06 25.4**	**-1.4**
JKZ	**Kuzumaki**	**1.33**	**318**	P	**Pn**	**14 06 18.1**	**+0.4**
JKZ				S	**Sn**	**14 06 34.7**	**-0.5**
JRG	**Rokugo**	**1.49**	**286**	P	**Pb**	**14 06 21.0**	**0.0**
JRG				*eS*	**Sn**	**14 06 38.8**	**-0.3**
JOU	**Okura**	**1.56**	**247**	P	**Pb**	**14 06 21.5**	**-0.7**
JOU				*eS*	**Sn**	**14 06 40.5**	**-0.3**
JANG	**Nango**	**1.56**	**332**	P	**Pb**	**14 06 21.9**	**-0.3**
JANG				S	**Sn**	**14 06 40.9**	**0.0**
JYK	**Kaneyama**	**1.66**	**268**	P	**Pb**	**14 06 23.2**	**-0.7**
JYK				*eS*	**Sn**	**14 06 43.5**	**+0.2**
JMM	**Marumori**	**1.75**	**230**	P	**Pn**	**14 06 23.6**	**+0.3**
JYS	**Shirataka**	**2.05**	**248**	P	**Pn**	**14 06 28.8**	**+1.3**
JFK	**Kawauchi**	**2.07**	**218**	P	**Pn**	**14 06 28.1**	**+0.3**
JFT	**Otama**	**2.25**	**230**	P	**Pn**	**14 06 31.7**	**+1.4**
JFT				*eS*	**Sn**	**14 06 57.6**	**-0.2**
MJAR	**Matsushiro Arr**	**4.18**	**235**	P	**Pn**	**14 06 59.5**	**+2.6**
	1.6nm,0.3s,baz=42,slow=11,SNR=14						
ASAJ	**Asahikawa**	**5.11**	**1**	P	**Pn**	**14 07 10.4**	**+0.7**
	0.1nm,0.3s,baz=135,slow=19,SNR=2.9						
JHJ	**Hachijo jima 2**	**6.26**	**201**	P	**Pn**	**14 07 27.9**	**+2.5**
	5.0nm,0.3s,baz=66,slow=15,SNR=3.1						
JHJ				S	**Sn**	**14 08 34.7**	**-2.0**
	5.5nm,0.3s,baz=70,slow=18,SNR=3.6						
KSRS	**Korea Array**	**11.56**	**267**	P	Pn	14 08 42.7	+4.7
	0.1nm,0.3s,baz=82,slow=14,SNR=2.9						
H11N2	**WAKE ISLAND Hy**	**28.51**	**125**	T	T	14 42 16.7	
	baz=317,slow=75,SNR=56						
H11N1	**WAKE ISLAND Hy**	**28.52**	**125**	T	T	14 42 17.5	
	baz=317,slow=75,SNR=62						
H11N3	**WAKE ISLAND Hy**	**28.52**	**125**	T	T	14 42 18.1	
	baz=317,slow=75,SNR=38						
H11S1	**WAKE ISLAND Hy**	**29.29**	**127**	T	T	14 43 14.3	
	baz=318,slow=76,SNR=14						
H11S3	**WAKE ISLAND Hy**	**29.30**	**127**	T	T	14 43 13.6	
	baz=318,slow=76,SNR=12						
H11S2	**WAKE ISLAND Hy**	**29.31**	**127**	T	T	14 43 14.7	
	baz=318,slow=76,SNR=11						
MKAR	**Makanchi Array**	**43.82**	**301**	P	**P**	**14 13 59.1**	**+0.3**
	0.2nm,0.5s,baz=79,slow=8.1,SNR=5.0						
KURBB	**Kurchatov Arra**	**45.49**	**307**	P	**P**	**14 14 12.2**	**+0.2**
	0.7nm,0.5s,baz=80,slow=8.2,SNR=5.9						
WRA	**Warramunga Arr**	**59.13**	**189**	P	**P**	**14 15 53.1**	**-0.4**
	0.9nm,0.9s,baz=6.8,slow=6.9,SNR=11						
ASAR	**Alice Springs**	**62.85**	**189**	P	**P**	**14 16 18.8**	**-0.1**
	0.2nm,0.7s,baz=4.7,slow=5.0,SNR=6.2						

IDC **14** *14:31:41.9 ± 1.8, 1.19N × 97.05E, h0km, mb3.6/7, mb1 3.6/9, mb1mx3.5/54, mbtmp3.5/9, ML3.2/2, Error ellipse: s-maj=46.7km s-min=21.4km az=62.0*
ISCJB **14** *14:31:44.0 ± 0.9, 1.23N ± 0.05 × 96.92E ± 0.10, h28km, mb3.6/7, Error ellipse: s-maj=14.6km s-min=5.7km az=160.5*
DJA **14** *14:31:45.7 ± 0.9, 1°N ± 3' × 97°E ± ', h29km ± 7km, M3.5/8, MLv3.5/8*
ISC 14 14:31:46.2 ± 1.1, 1.27N ± 0.06 × 97.0E ± 0.1, h28km, n18, σ1.9 00/18, mb3.8/7, Northern Sumatera

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GSI	**Gunungsitoli**	**0.57**	**87**	P	**Pb**	**14 31 57.4**	**-0.4**
PBSI	**Pulau Batu**	**1.83**	**136**	P	**Pn**	**14 32 15.3**	**-0.5**
PBSI				S	**Sn**	**14 32 37.1**	**-1.0**
TPTI		**1.99**	**5**	P	**Pn**	**14 32 17.0**	**-1.0**
TPTI				S	**Sn**	**14 32 42.1**	**+0.2**
KCSI	**Kotacane, Aceh**	**2.37**	**19**	P	**Pn**	**14 32 23.5**	**+0.3**
KCSI				S	**Sn**	**14 32 51.4**	**+0.1**
PSI	**Prapat**	**2.45**	**52**	Pn	**Pn**	**14 32 24.2**	**-0.2**
	2.2nm,0.3s,baz=166,slow=7.9,SNR=7.7						
MNSI	**Mandailing Nat**	**2.62**	**100**	P	**Pn**	**14 32 26.6**	**-0.1**
TNG	**Tangerang**	**12.14**	**128**	P	**Pn**	**14 34 40.0**	**+2.6**
CMAR	**Chiang Mai Arr**	**17.19**	**6**	P	**Pn**	**14 35 43.7**	**-0.8**
	0.1nm,0.3s,baz=189,slow=11,SNR=3.5						
H08S2	**Diego Garcia H**	**26.00**	**250**	T	T	15 04 10.3	
	baz=76						
H08S3	**Diego Garcia H**	**26.00**	**250**	T	T	15 04 09.7	
	baz=76						
H08S1	**Diego Carcia H**	**26.02**	**250**	T	T	15 04 09.4	
	baz=76						
WRA	**Warramunga Arr**	**42.24**	**122**	P	**P**	**14 39 36.5**	**-0.8**
	0.3nm,0.7s,baz=302,slow=9.1,SNR=5.3						
ASAR	**Alice Springs**	**43.59**	**127**	P	**P**	**14 39 47.4**	**-1.0**
	0.3nm,0.8s,baz=300,slow=7.8,SNR=6.6						
KSRS	**Korea Array**	**45.90**	**35**	P	**P**	**14 40 05.3**	**-1.1**
	1.0nm,0.8s,baz=219,slow=11,SNR=3.6						
SONM	**Songino Array**	**47.09**	**9**	P	**P**	**14 40 15.8**	**0.0**
	0.5nm,0.7s,baz=195,slow=9.9,SNR=2.9						
MKAR	**Makanchi Array**	**47.13**	**346**	P	**P**	**14 40 17.3**	**+1.4**
	0.5nm,0.5s,baz=160,slow=8.8,SNR=7.6						
ZALV	**Zalesovo Beam**	**53.46**	**351**	P	**P**	**14 41 04.4**	**+0.7**
	1.1nm,0.5s,baz=180,slow=8.3,SNR=5.9						
KLR	**Kul'dur**	**56.28**	**27**	P	**P**	**14 41 24.2**	**-0.1**
	1.1nm,0.8s,baz=258,slow=8.6,SNR=4.2						

MEX 14 14:32:25.1 ± 0.5, 16.19N × 91.27W, h40km, MD3.7,
Mexico-Guatemala border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CCIG	**Comitan**	**0.84**	**277**	*eP*	Pn	14 32 38.4	-2.2
CCIG				*eS*	Sn	14 32 50.4	-1.5
TGIG		**1.87**	**289**	*eP*	Pn	14 32 52.9	-1.8
TGIG				*i S*	Sn	14 33 14.9	-2.3
PCIG		**1.94**	**256**	*eP*	Pn	14 32 54.2	-1.3
PCIG				*i S*	Sn	14 33 16.2	-2.4

IDC **14** *14:33:15.6 ± 1.9, 1.00N × 96.59E, h0km, mb3.4/4, mb1 3.5/5, mb1mx3.3/51, mbtmp3.4/5, ML2.9/1, Error ellipse: s-maj=55.5km s-min=24.3km az=57.0*
ISCJB **14** *14:33:19.2 ± 1.0, 1.22N ± 0.07 × 96.85E ± 0.08, h28km, mb3.4/4, Error ellipse: s-maj=12.1km s-min=8.4km az=147.0*
DJA **14** *14:33:22.8 ± 1.3, 1°N ± 5' × 97°E ± 1', h34km ± 8km, M3.1/6, MLv3.1/6*
ISC 14 14:33:19.8 ± 1.7, 1.40N ± 0.08 × 96.9E ± 0.1, h28km, n12, σ0.66/9, mb3.4/4, Off west coast of northern Sumatera

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GSI	**Gunungsitoli**	**0.68**	**98**	P	**Pn**	**14 33 33.3**	**-0.2**
GSI				S	**Sb**	**14 33 42.4**	**+0.3**
TPTI		**1.87**	**8**	P	**Pb**	**14 33 53.8**	**+0.5**
TPTI				S	**Sb**	**14 34 16.7**	**+0.5**
PBSI	**Pulau Batu**	**2.00**	**136**	P	**Pn**	**14 33 51.5**	**-0.1**
PBSI				S	Sn	14 34 01.5	-14
KCSI	**Kotacane, Aceh**	**2.28**	**22**	P	**Pb**	**14 33 59.0**	**-1.3**
PSI	**Prapat**	**2.45**	**55**	Pn	**Pb**	**14 34 03.6**	**+0.3**
	1.7nm,0.3s,baz=355,slow=11,SNR=2.6						
H08S2	**Diego Garcia H**	**25.95**	**249**	T	T	15 05 45.9	
	baz=71,slow=76						
H08S3	**Diego Garcia H**	**25.96**	**249**	T	T	15 05 46.1	
	baz=71,slow=76						
H08S1	**Diego Carcia H**	**25.97**	**249**	T	T	15 05 51.6	
	baz=71,slow=76						
WRA	**Warramunga Arr**	**42.39**	**122**	P	**P**	**14 41 11.9**	**-0.3**
	0.2nm,0.5s,baz=303,slow=9.0,SNR=3.9						
ASAR	**Alice Springs**	**43.75**	**127**	P	**P**	**14 41 23.6**	**+0.4**
	0.3nm,1.0s,baz=301,slow=7.3,SNR=4.3						
MKAR	**Makanchi Array**	**46.98**	**346**	P	P	14 41 50.5	+2.2
	0.4nm,0.5s,baz=154,slow=8.8,SNR=5.3						
ZALV	**Zalesovo Beam**	**53.32**	**351**	P	P	14 42 38.9	+2.7
	0.9nm,0.5s,baz=160,slow=7.1,SNR=3.5						

ISCJB **14** *14:34:15.7 ± 0.6, 36.93N ± 0.03 × 140.72E ± 0.05, h20km ± 5km, mb3.5/2, Error ellipse: s-maj=7.5km s-min=4.5km az=20.6*
IDC **14** *14:34:15.1 ± 5.5, 38.22N × 136.43E, h59km ± 56km, mb3.1/2, mb1 3.3/4, mb1mx2.9/51, mbtmp3.3/4, ML3.2/2, Error ellipse: s-maj=72.6km s-min=21.8km az=78.0*
JMA **14** *14:34:16.4, 36.95N × 140.62E, h8km ± 1km, M3.6 Broadband fault plane solution: P waves. NP1: φs 238.00000°, δ60.00000°, λ -98.00000°. NP2:φs 74.00000°, δ31.00000°, λ -77.00000°. Principal axes: T Plg14.0000°, Azm334.0000°; N Plg7.0000°, Azm242.0000°; P Plg74.0000°, Azm127.0000°;*
JMA Felt I J1.
ISC 14 14:34:16.1 ± 1.1, 36.94N ± 0.03 × 140.65E ± 0.04, h19km ± 3km, n13, σ0.58/23, 7C, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.20**	**35**	⇑P	**Pg**	**14 34 21.0**	**-0.2**
ONAJ				S	**Sg**	**14 34 24.3**	**-0.4**
JHO	**Hitachi**	**0.33**	**192**	⇑P	**Pb**	**14 34 23.1**	**-0.5**
JHO				S	**Sg**	**14 34 27.8**	**-0.4**
JFK	**Kawauchi**	**0.46**	**22**	P	**Pb**	**14 34 25.4**	**-0.3**
JFK				S	**Sg**	**14 34 31.8**	**-0.2**
JSB	**Shiboa**	**0.59**	**273**	⇑P	**Pg**	**14 34 27.8**	**-0.1**
JSB				S	**Sg**	**14 34 35.6**	**-0.2**
JFT	**Otama**	**0.63**	**336**	⇑P	**Pb**	**14 34 28.3**	**-0.2**
JFT				S	**Sb**	**14 34 36.2**	**-0.7**
JYT	**Yasato**	**0.80**	**208**	⇑P	**Pg**	**14 34 31.3**	**-0.5**
JYT				S	**Sb**	**14 34 41.5**	**-0.3**
JFY	**Yanaizu**	**0.89**	**302**	⇑P	**Pb**	**14 34 32.8**	**-0.2**
JFY				S	**Sb**	**14 34 43.7**	**-0.8**
JMM	**Marumori**	**0.93**	**7**	⇑P	**Pb**	**14 34 33.6**	**-0.1**
JMM				S	**Sb**	**14 34 45.5**	**-0.2**
MJAR	**Matsushiro Arr**	**2.00**	**259**	P	**Pn**	**14 34 49.5**	**+0.5**
	7.5nm,0.3s,baz=320,slow=16,SNR=14						
MJAR				S	**Sb**	**14 35 16.7**	**+0.1**
	14nm,0.3s,baz=87,slow=28,SNR=15						
MAT	**Matsushiro**	**2.00**	**259**	P	**Pb**	**14 34 51.1**	**-0.9**
MAT				S	**Sb**	**14 35 17.3**	**+0.7**
ASAJ	**Asahikawa**	**7.32**	**11**	P	**Pn**	**14 36 02.0**	**+0.1**
	0.4nm,0.3s,baz=249,slow=13,SNR=5.1						
WRA	**Warramunga Arr**	**56.89**	**187**	P	**P**	**14 44 00.1**	**+0.4**
	0.4nm,0.7s,baz=3.6,slow=7.5,SNR=7.0						
ASAR	**Alice Springs**	**60.62**	**187**	P	**P**	**14 44 27.2**	**+1.5**
	0.2nm,0.6s,baz=10,slow=5.7,SNR=5.0						

NIED **14** *14:41:00, 37.30N × 144.30E, h8km, Mw3.6 Best double couple: M0 2.62000 × 10^14 NP1:φs 3.00000°, δ32.00000°, λ -64.00000°. NP2:φs 153.00000°, δ62.00000°, λ -105.00000°.*
ISCJB **14** *14:41:05.9 ± 0.6, 37.35N ± 0.04 × 144.35E ± 0.05, h33km, mb3.6/7, Error ellipse: s-maj=6.3km s-min=5.3km az=154.4*
JMA **14** *14:41:06.8 ± 0.5, 37.30N × 144.27E, h46km, M3.8*
IDC **14** *14:41:08.2 ± 5.3, 37.19N × 144.50E, h36km ± 45km, mb3.3/7, mb1 3.6/11, mb1mx3.4/48, mbtmp3.6/11, ML3.5/4, Error ellipse: s-maj=32.0km s-min=19.5km az=100.0*
ISC 14 14:41:07.9 ± 0.8, 37.36N ± 0.05 × 144.33E ± 0.08, h35km, n32, σ1.9 47/39, mb3.6/7, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**2.60**	**296**	P	**Pn**	**14 41 47.6**	**+0.2**
JIO				S	**Sn**	**14 42 17.6**	**-0.1**
OFUJ	**Ofunato**	**2.71**	**310**	P	**Pn**	**14 41 49.4**	**+0.4**
JFK	**Kawauchi**	**2.75**	**271**	P	**Pn**	**14 41 48.0**	**-1.6**
JFK				*eS*	**Sn**	**14 42 18.3**	**-3.3**
ONAJ	**Iwakimizuishiy**	**2.83**	**266**	P	**Pn**	**14 41 50.7**	**0.0**
ONAJ				S	**Sn**	**14 42 23.2**	**-0.3**
JFT	**Otama**	**3.18**	**274**	*eS*	**Sn**	**14 42 32.8**	**+0.6**
JOM	**Ohasama**	**3.18**	**312**	P	**Pn**	**14 41 56.5**	**+1.0**
JOM				*eS*	**Sn**	**14 42 32.2**	**0.0**
JYK	**Kaneyama**	**3.50**	**298**	P	**Pn**	**14 42 01.0**	**+1.2**
JYK				*eS*	**Sn**	**14 42 39.7**	**-0.2**
JANG	**Nango**	**3.73**	**325**	P	**Pn**	**14 42 08.8**	**-0.2**
JANG				*eS*	**Sn**	**14 42 45.9**	**+0.3**
JAG	**Ashikaga**	**4.02**	**258**	P	**Pn**	**14 42 07.6**	**+0.7**
JAG				S	**Sn**	**14 42 52.7**	**-0.1**
JRY	**Ryogami san**	**4.56**	**255**	P	**Pn**	**14 42 14.6**	**+0.1**
JOD2	**Odawara 2**	**4.72**	**245**	P	**Pn**	**14 42 16.6**	**0.0**
MJAR	**Matsushiro Arr**	**4.97**	**262**	Pn	**Pn**	**14 42 21.7**	**+1.7**
	2.8nm,0.3s,baz=90,slow=15,SNR=21						
MJAR				Sn	**Sn**	**14 43 15.8**	**-0.5**
	1.3nm,0.3s,baz=96,slow=26,SNR=8.6						
MAT	**Matsushiro**	**4.97**	**262**	P	**Pn**	**14 42 22.3**	**+2.2**
MAT				S	**Sn**	**14 43 18.2**	**+1.9**
JKB	**Kayabe**	**5.19**	**332**	P	**Pn**	**14 42 23.3**	**+0.3**
JKB				*eS*	**Sn**	**14 43 19.5**	**-2.1**
JHJ2	**Mitsune**	**5.62**	**222**	*eS*	**Sn**	**14 43 29.4**	**-2.9**
JHJ	**Hachijo jima 2**	**5.63**	**223**	Pn	**Pn**	**14 42 28.4**	**-0.7**
	12nm,0.3s,baz=133,slow=23,SNR=6.0						
JHJ				Sn	**Sn**	**14 43 29.4**	**-3.2**
	24nm,0.3s,baz=287,slow=21,SNR=6.6						
NEM2	**Nemuro 2**	**6.10**	**10**	S	Sn	14 43 34.3	-10
JTKR	**Abashiri--Toko**	**6.61**	**357**	P	**Pn**	**14 42 40.0**	**-2.6**
JTKR				S	Sn	14 43 49.0	-7.7
JHR	**Hokuryu**	**6.68**	**344**	P	**Pn**	**14 42 44.3**	**+0.8**
JHR				*eS*	**Sn**	**14 43 56.0**	**-2.3**
ASAJ	**Asahikawa**	**6.88**	**350**	Pn	**Pn**	**14 42 45.2**	**-1.0**
	2.0nm,0.3s,baz=190,slow=8.7,SNR=26						
KSRS	**Korea Array**	**13.05**	**275**	Pn	Pn	14 44 14.1	+3.4
	0.1nm,0.3s,baz=91,slow=15,SNR=2.9						
KLR	**Kul'dur**	**14.96**	**326**	Pn	**P**	**14 44 40.2**	**-1.6**
	0.1nm,0.3s,baz=147,slow=8.4,SNR=4.3						
H11N2	**WAKE ISLAND Hy**	**26.38**	**126**	T	T	15 13 59.5	
	baz=317,slow=74,SNR=25						
H11N1	**WAKE ISLAND Hy**	**26.39**	**126**	T	T	15 13 59.0	
	baz=317,slow=74,SNR=5.3						
H11N3	**WAKE ISLAND Hy**	**26.39**	**126**	T	T	15 13 56.8	
	baz=317,slow=74,SNR=16						
MKAR	**Makanchi Array**	**45.91**	**302**	P	**P**	**14 49 29.0**	**+1.9**
	0.6nm,0.7s,baz=81,slow=11,SNR=8.5						
ILAR	**Eielson Array**	**47.97**	**33**	P	**P**	**14 49 42.8**	**0.0**
	0.6nm,0.9s,baz=269,slow=6.6,SNR=5.2						
WRA	**Warramunga Arr**	**57.77**	**191**	P	**P**	**14 50 54.8**	**-0.7**
	0.6nm,0.7s,baz=9.0,slow=7.9,SNR=6.5						
ASAR	**Alice Springs**	**61.49**	**191**	P	**P**	**14 51 19.9**	**-1.2**
	0.3nm,0.8s,baz=3.2,slow=5.8,SNR=2.9						
YKA	**Yellowknife Ar**	**62.35**	**31**	P	**P**	**14 51 26.0**	**-0.4**
	0.2nm,0.8s,baz=276,slow=6.1,SNR=4.0						
FINES	**FINESS Array B**	**69.59**	**333**	P	**P**	**14 52 14.2**	**+1.1**
	0.7nm,0.6s,baz=24,slow=11,SNR=3.0						
NVAR	**Mina Array Bea**	**72.92**	**55**	P	**P**	**14 52 35.4**	**+1.5**
	0.7nm,0.7s,baz=276,slow=7.3,SNR=5.0						

IDC **14** *14:43:11.8 ± 2.5, 6.97S × 155.63E, h75km ± 22km, mb3.9/16, mb1 4.0/20, mb1mx3.8/45, mbtmp4.2/20, MS3.3/8, Ms1 3.2/8, ms1mx2.9/33, Error ellipse: s-maj=17.0km s-min=14.6km az=124.0*
NEIC **14** *14:43:12.4 ± 1.0, 6.96S × 155.60E, h81km ± 9km, mb4.5/3, Error ellipse: s-maj=9.2km s-min=7.6km az=176.0*
ISC 14 14:43:09.3 ± 0.5, 6.87S ± 0.09 × 155.37E ± 0.08, h50km, n39, σ10000.00/35, mb4.1/19, MS3.2/5, Bougainville-Solomon Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HNR	**Honiara**	**5.20**	**120**	P	**Pn**	**14 44 22.6**	**-1.9**
	6.2nm,0.3s,baz=36,slow=16,SNR=3.1						
HNR				S	**Sn**	**14 45 26.5**	**+3.3**
	17nm,0.3s,baz=144,slow=21,SNR=4.9						
HNR				LR	LR	14 46 24.0	
	comp=Z,404nm,18.6s,baz=307,slow=39						
HNR	**Honiara**	**5.20**	**120**	*eP*	**Pn**	**14 44 25.0**	**+0.5**
HNR				*eS*	Sn	14 45 31.0	+7.8
HNR	**Honiara**	**5.20**	**120**	*eP*	**Pn**	**14 44 24.3**	**-0.2**
HNR				S	**Sn**	**14 45 26.5**	**+3.3**
PMG	**Port Moresby**	**8.51**	**252**	P	Pn	14 45 15.4	+5.4
	1.4nm,0.3s,baz=25,slow=12,SNR=6.2						
PMG				S	Sn	14 46 54.8	+10
	1.0nm,0.3s,baz=200,slow=18,SNR=3.5						
PMG				LR	LR	14 48 34.7	
	comp=Z,115nm,20.9s,baz=338,slow=37						
CTA	**Charters Tower**	**15.84**	**213**	P	**P**	**14 46 51.3**	**-0.8**
	0.1nm,0.3s,baz=60,slow=15,SNR=3.6						
DZM	**Mont Dzumac**	**18.51**	**146**	P	**P**	**14 47 20.2**	**-1.5**
	0.4nm,0.3s,baz=308,slow=17,SNR=8.0						
DZM				LR	LR	14 52 44.6	
	comp=Z,169nm,18.5s,baz=258,slow=31						
GUMO	**Guam**	**22.84**	**333**	LR	LR	14 55 46.1	
	comp=Z,30nm,22.0s,baz=155,slow=33						
WRA	**Warramunga Arr**	**24.20**	**235**	P	**P**	**14 48 22.9**	**+1.6**
	1.5nm,0.6s,baz=59,slow=9.1,SNR=23						
WRA				PcP	**PcP**	**14 52 01.5**	**+0.3**
	0.3nm,0.6s,baz=57,slow=2.3,SNR=5.0						
MSVF	**Nonsavu**	**24.62**	**118**	*eP*	**P**	**14 48 22.9**	**-2.3**
	47nm,1.4s						
ASAR	**Alice Springs**	**26.54**	**229**	P	**P**	**14 48 43.0**	**+0.5**
	0.7nm,0.8s,baz=59,slow=9.6,SNR=21						
ASAR				PcP	**PcP**	**14 52 06.5**	**+0.1**
	0.3nm,0.5s,baz=74,slow=2.3,SNR=4.5						
ASAR				LR	LR	14 58 29.0	
	comp=Z,73nm,19.1s,baz=104,slow=34						
H11S3	**WAKE ISLAND Hy**	**27.56**	**24**	T	T	15 17 19.2	
	baz=202,slow=75,SNR=148						
H11S2	**WAKE ISLAND Hy**	**27.57**	**24**	T	T	15 17 19.0	
	baz=202,slow=75,SNR=116						
H11S1	**WAKE ISLAND Hy**	**27.58**	**24**	T	T	15 17 21.4	
	baz=202,slow=75,SNR=91						
STKA	**Stephens Creek**	**28.01**	**206**	P	**P**	**14 48 55.7**	**+0.1**
	2.2nm,1.0s,baz=32,slow=9.7,SNR=3.5						
STKA				LR	LR	14 59 34.9	
	comp=Z,85nm,20.7s,baz=26,slow=35						
H11N1	**WAKE ISLAND Hy**	**28.75**	**23**	T	T	15 18 55.0	
	baz=194,slow=76,SNR=17						
H11N3	**WAKE ISLAND Hy**	**28.76**	**23**	T	T	15 19 08.2	
	baz=194,slow=76,SNR=17						
H11N2	**WAKE ISLAND Hy**	**28.76**	**23**	T	T	15 19 16.3	
	baz=194,slow=76,SNR=9.7						
JHJ	**Hachijo jima 2**	**42.44**	**340**	LR	LR	15 08 18.1	
	comp=Z,32nm,18.1s,baz=36,slow=35						
PETK	**Petropavlovsk-**	**59.78**	**2**	P	**P**	**14 53 10.1**	**+1.0**
	7.6nm,1.1s,baz=148,slow=8.8,SNR=3.4						
CMAR	**Chiang Mai Arr**	**61.07**	**295**	P	**P**	**14 53 20.9**	**+2.4**
	4.3nm,0.9s,baz=116,slow=5.4,SNR=37						
CHTO	**Chiang Mai**	**61.18**	**296**	*eP*	**P**	**14 53 20.5**	**+1.2**
	5.3nm,1.3s						
SONM	**Songino Array**	**69.43**	**327**	P	**P**	**14 54 14.0**	**+1.6**
	1.6nm,0.8s,baz=125,slow=4.0,SNR=10						
SEY	**Seymchan**	**69.64**	**359**	P	**P**	**14 54 14.3**	**+1.3**
	1.0nm,0.7s,baz=102,slow=4.7,SNR=4.6						
VNDA	**Vanda**	**70.70**	**179**	P	**P**	**14 54 19.3**	**-0.2**
	1.5nm,0.9s,baz=357,slow=5.9,SNR=5.0						
BILL	**Bilibino**	**75.13**	**4**	*eP*	**P**	**14 54 44.3**	**-1.4**
	5.3nm,1.1s						
ILAR	**Eielson Array**	**83.12**	**21**	P	**P**	**14 55 28.1**	**-1.4**
	1.1nm,0.9s,baz=248,slow=5.5,SNR=8.8						
MKAR	**Makanchi Array**	**83.56**	**319**	P	**P**	**14 55 32.9**	**+0.8**
	1.0nm,0.6s,baz=114,slow=5.0,SNR=10						
MKAR				LR	LR	15 31 09.1	
	comp=Z,8.8nm,20.7s,baz=176,slow=34						
ZALV	**Zalesovo Beam**	**84.28**	**326**	P	**P**	**14 55 34.8**	**-0.8**
	0.6nm,0.3s,baz=64,slow=3.

Ms1 3.0/2,ms1mx2.2/37, Error ellipse: s-maj=22.3km s-min=15.2km az=113.0

JMA **14** *15:00:59.5±0.2, 39°.61N×143°.56E, h22km, M3.7*

ISC 14 15:00:58.1±3.5, **39°.58N**±0°.05×**143°.48E**±0°.08, **h1**km±21km, **n38**, σ1§**05**/38, **mb3.6**/12, **Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MIYJ	**Miyakonagasawa**	**1.28**	**270**	P	**Pn**	**15 01 23.4**	**+0.3**
JTH	**Tanohata**	**1.29**	**287**	P	**Pb**	**15 01 23.2**	**0.0**
OFUJ	**Ofunato**	**1.49**	**251**	P	**Pn**	**15 01 26.2**	**+0.3**
OFUJ				*eS*	**Sn**	**15 01 45.2**	**-0.7**
JOM	**Ohasama**	**1.69**	**267**	P	**Pb**	**15 01 29.6**	**-0.4**
JOM				S	**Sn**	**15 01 51.3**	**+0.3**
JKZ	**Kuzumaki**	**1.70**	**284**	P	**Pb**	**15 01 29.9**	**-0.3**
JANG	**Nango**	**1.70**	**298**	P	**Pn**	**15 01 28.5**	**-0.4**
JMK	**Ichinoseki**	**1.86**	**251**	P	**Pn**	**15 01 32.1**	**+1.1**
JIO	**Ouri**	**2.00**	**237**	P	**Pn**	**15 01 33.2**	**+0.2**
JIO				*eS*	**Sn**	**15 01 57.0**	**-1.6**
JTM	**Tenmabayashi**	**2.21**	**304**	P	**Pn**	**15 01 36.4**	**+0.6**
JTM				S	**Sn**	**15 02 03.8**	**+0.2**
JRG	**Rokugo**	**2.21**	**266**	P	**Pb**	**15 01 37.9**	**-0.8**
JAH	**Hinai**	**2.27**	**286**	P	**Pn**	**15 01 38.0**	**+1.4**
JEM	**Erimo**	**2.45**	**354**	P	**Pn**	**15 01 39.6**	**+0.5**
JYK	**Kaneyama**	**2.51**	**256**	P	**Pb**	**15 01 42.1**	**-1.8**
JNBK	**Urakawa-nobuka**	**2.75**	**349**	P	**Pn**	**15 01 44.2**	**+0.9**
JNBK				S	**Sn**	**15 02 17.3**	**+0.1**
JKB	**Kayabe**	**2.96**	**322**	P	**Pn**	**15 01 47.3**	**+1.1**
JCH	**Churui**	**3.03**	**358**	P	**Pn**	**15 01 46.9**	**-0.3**
JCH				S	**Sn**	**15 02 21.5**	**-2.6**
ASAJ	**Asahikawa**	**4.58**	**352**	Pn	**Pn**	**15 02 09.5**	**+1.1**
	1.3nm,0.3s,baz=186,slow=10,SNR=17						
ASAJ				Sn	**Sn**	**15 03 00.0**	**-2.3**
	baz=158,slow=30,SNR=3.2						
MJAR	**Matsushiro Arr**	**5.14**	**236**	Pn	**Pn**	**15 02 18.3**	**+2.1**
	1.5nm,0.3s,baz=42,slow=12,SNR=17						
MJAR				LR	LR	15 04 26.0	
	comp=Z,52nm,20.8s,baz=60,slow=40						
MAT	**Matsushiro**	**5.14**	**236**	P	Pn	15 02 19.8	+3.6
MAT				S	Sb	15 03 25.1	-6.0
JHJ	**Hachijo jima 2**	**7.10**	**206**	Pn	**Pn**	**15 02 41.8**	**-1.3**
	3.6nm,0.3s,baz=139,slow=23,SNR=3.6						
JHJ				Sn	Sn	15 03 56.9	-7.5
	8.5nm,0.3s,baz=230,slow=23,SNR=5.6						
SEY	**Seymchan**	**24.00**	**10**	P	**P**	**15 06 13.9**	**0.0**
	3.7nm,0.9s,baz=75,slow=22,SNR=8.7						
SONM	**Songino Array**	**27.83**	**300**	P	**P**	**15 06 48.7**	**-0.2**
	0.4nm,0.4s,baz=81,slow=9.3,SNR=3.7						
H11N2	**WAKE ISLAND Hy**	**28.23**	**128**	T	T	15 36 25.0	
	baz=320,slow=74,SNR=6.9						
H11N1	**WAKE ISLAND Hy**	**28.24**	**128**	T	T	15 36 19.1	
	baz=320,slow=74,SNR=4.7						
H11N3	**WAKE ISLAND Hy**	**28.25**	**128**	T	T	15 36 20.0	
	baz=320,slow=74,SNR=6.9						
H11S1	**WAKE ISLAND Hy**	**29.05**	**130**	T	T	15 37 28.5	
	baz=313,slow=74						
H11S3	**WAKE ISLAND Hy**	**29.05**	**130**	T	T	15 37 20.6	
	baz=313						
H11S2	**WAKE ISLAND Hy**	**29.07**	**130**	T	T	15 37 25.6	
	baz=313,slow=74						
ZALV	**Zalesovo Beam**	**41.45**	**310**	P	**P**	**15 08 46.6**	**+0.5**
	0.6nm,0.4s,baz=101,slow=7.7,SNR=2.9						
CMAR	**Chiang Mai Arr**	**43.73**	**254**	P	**P**	**15 09 06.1**	**+1.1**
	0.1nm,0.5s,baz=25,slow=6.9,SNR=2.6						
MKAR	**Makanchi Array**	**44.19**	**300**	P	**P**	**15 09 07.8**	**-0.6**
	0.3nm,0.5s,baz=79,slow=12,SNR=5.1						
ILAR	**Eielson Array**	**46.48**	**34**	P	**P**	**15 09 26.3**	**0.0**
	0.7nm,0.7s,baz=264,slow=6.5,SNR=11						
ILAR				LR	LR	15 27 31.3	
	comp=Z,32nm,21.6s,baz=247,slow=34						
WRA	**Warramunga Arr**	**59.82**	**190**	P	**P**	**15 11 03.8**	**-1.3**
	0.3nm,0.8s,baz=8.4,slow=6.8,SNR=3.3						
YKA	**Yellowknife Ar**	**60.80**	**31**	P	**P**	**15 11 11.3**	**+0.1**
	0.3nm,0.6s,baz=302,slow=6.7,SNR=6.0						
ASAR	**Alice Springs**	**63.55**	**190**	P	**P**	**15 11 30.9**	**+0.8**
	0.2nm,0.8s,baz=360,slow=6.2,SNR=3.1						
FINES	**FINESS Array B**	**67.32**	**332**	P	**P**	**15 11 54.4**	**+0.3**
	0.9nm,0.8s,baz=46,slow=8.0,SNR=4.4						
NVAR	**Mina Array Bea**	**72.18**	**55**	P	**P**	**15 12 25.1**	**+0.3**
	0.1nm,0.3s,baz=286,slow=6.0,SNR=3.8						
NOA	**NORSAR Array B**	**72.46**	**338**	P	**P**	**15 12 25.8**	**-0.1**
	0.6nm,0.6s,baz=30,slow=5.9,SNR=3.9						

CRAAG **14** *15:17:15.2, 36°.15N×1°.65E, Ml3.1*

ISCJB **14** *15:17:16.7±0.8, 36°.26N±0°.06×1°.59E±0°.05, h14km±7km, Error ellipse: s-maj=9.6km s-min=6.7km az=4.8*

CSEM **14** *15:17:16.6±0.2, 36°.21N×1°.62E, h5km, ML3.1, Error ellipse: s-maj=5.9km s-min=4.8km az=7.0*

MDD **14** *15:17:17.3±0.6, 36°.19N×1°.61E, h0km, mb3.8/4, Error ellipse: s-maj=7.6km s-min=5.6km az=166.0, PRXIMO*

ISC 14 15:17:16.7±1.1, **36°.20N**±0°.05×**1°.64E**±0°.03, **h13**km±8km, **n32**, σ1§**12**/44, **Northern Algeria**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
EBNR	**Beni Rached**	**0.13**	**318**	P	**Pg**	**15 17 20.0**	**-0.2**
EBNR	**Beni Rached**	**0.13**	**318**	P	**Pg**	**15 17 20.0**	**-0.2**
ECHA	**Ech Chlef**	**0.22**	**259**	P	**Pg**	**15 17 21.0**	**-0.5**
ECHA	**Ech Chlef**	**0.22**	**259**	P	**Pg**	**15 17 21.0**	**-0.5**
ECHF	**Ech Chlef**	**0.24**	**261**	P	**Pg**	**15 17 21.0**	**-0.9**
ECHF	**Ech Chlef**	**0.24**	**261**	P	**Pg**	**15 17 21.0**	**-0.9**
EANR	**'Ain N'Sour**	**0.50**	**241**	P	**Pg**	**15 17 25.8**	**-0.7**
EANR	**'Ain N'Sour**	**0.50**	**241**	P	**Pg**	**15 17 25.8**	**-0.7**
EANR	**'Ain N'Sour**	**0.50**	**241**	P	**Pg**	**15 17 25.8**	**-0.7**
ETRT	**Tiaret**	**0.85**	**199**	P	**Pb**	**15 17 33.1**	**-0.2**
ETRT	**Tiaret**	**0.85**	**199**	P	**Pb**	**15 17 33.1**	**-0.2**
ETRT	**Tiaret**	**0.85**	**199**	P	**Pb**	**15 17 33.1**	**-0.2**
EMHD	**Djebel Mahouad**	**1.06**	**89**	P	**Pg**	**15 17 37.0**	**-0.2**
EMHD	**Djebel Mahouad**	**1.06**	**89**	P	**Pg**	**15 17 37.0**	**-0.2**
EMHD	**Djebel Mahouad**	**1.06**	**89**	P	**Pg**	**15 17 37.0**	**-0.2**
ADJB	**Djebel Djouab**	**1.46**	**91**	P	**Pb**	**15 17 44.1**	**+0.4**
ADJB	**Djebel Djouab**	**1.46**	**91**	P	**Pb**	**15 17 44.1**	**+0.4**
ADJB	**Djebel Djouab**	**1.46**	**91**	P	**Pb**	**15 17 44.1**	**+0.4**
EMUR	**La Murta**	**2.83**	**306**	S	**Sn**	**15 18 33.5**	**-2.0**
	5.1nm,0.3s,SNR=7.9						
EMUR	**La Murta**	**2.83**	**306**	S	**Sn**	**15 18 33.5**	**-2.0**
	5.1nm,0.3s,SNR=7.9						
ETOB	**Tobarra**	**3.52**	**315**	P	**Pn**	**15 18 11.5**	**+0.4**
	1.8nm,0.3s,SNR=7.9						
ETOB				S	**Sn**	**15 18 53.1**	**+0.4**
	3.4nm,0.5s,SNR=7.9						
ETOB	**Tobarra**	**3.52**	**315**	P	**Pn**	**15 18 11.5**	**+0.4**
	1.8nm,0.3s,SNR=7.9						
ETOB				S	**Sn**	**15 18 53.1**	**+0.4**
	3.4nm,0.5s,SNR=7.9						
ETOS	**Mallorca**	**3.69**	**14**	P	**Pn**	**15 18 14.0**	**+0.7**
	22nm,1.0s,SNR=7.9						
ETOS				S	**Sn**	**15 18 54.3**	**-2.4**
	4.1nm,0.5s,SNR=7.9						
ETOS	**Mallorca**	**3.69**	**14**	P	**Pn**	**15 18 14.0**	**+0.7**
	22nm,1.0s,SNR=7.9						
ETOS				S	**Sn**	**15 18 54.3**	**-2.4**
	4.1nm,0.5s,SNR=7.9						
SESP	**Santiago Espad**	**3.85**	**301**	P	**Pn**	**15 18 17.2**	**+1.4**
	3.5nm,0.3s,SNR=7.9						
SESP				S	**Sn**	**15 19 00.7**	**-0.3**
	11nm,0.2s,SNR=7.9						
SESP	**Santiago Espad**	**3.85**	**301**	P	**Pn**	**15 18 17.2**	**+1.4**
	3.5nm,0.3s,SNR=7.9						
SESP				S	**Sn**	**15 19 00.7**	**-0.3**
	11nm,0.2s,SNR=7.9						
EQES	**Quesada**	**4.10**	**294**	P	**Pn**	**15 18 21.3**	**+2.2**
	0.7nm,0.2s,SNR=5.4						
EQES				S	**Sn**	**15 19 07.4**	**+0.5**
	11nm,0.4s,SNR=5.3						
EQES	**Quesada**	**4.10**	**294**	P	**Pn**	**15 18 21.3**	**+2.2**
	0.7nm,0.2s,SNR=5.4						
EQES				S	**Sn**	**15 19 07.4**	**+0.5**
	11nm,0.4s,SNR=5.3						
EQUE	**Quentar**	**4.20**	**285**	P	**Pn**	**15 18 21.1**	**+0.6**
	1.1nm,0.2s,SNR=7.9						
EQUE				S	**Sn**	**15 19 09.8**	**+0.3**
	4.1nm,0.5s,SNR=7.9						
EQUE	**Quentar**	**4.20**	**285**	P	**Pn**	**15 18 21.1**	**+0.6**
	1.1nm,0.2s,SNR=7.9						
EQUE				S	**Sn**	**15 19 09.8**	**+0.3**
	4.1nm,0.5s,SNR=7.9						
EMOS	**Mosqueruela**	**4.48**	**339**	P	**Pn**	**15 18 25.9**	**+1.5**
	0.5nm,0.1s,SNR=7.9						
EMOS				S	**Sn**	**15 19 14.9**	**-1.6**
	15nm,0.8s,SNR=7.9						
EMOS	**Mosqueruela**	**4.48**	**339**	P	**Pn**	**15 18 25.9**	**+1.5**
	0.5nm,0.1s,SNR=7.9						
EMOS				S	**Sn**	**15 19 14.9**	**-1.6**

15nm,0.8s,SNR=7.9

IDC 14 15:24:48.7±3.5, **50°.26S**×**112°.30E**, **h0**km, **mb3.5**/3, **mb1 3.7**/3, **mb1mx3.6**/21, **mbtmp3.5**/3, **Error ellipse: s-maj=138.2km s-min=28.7km az=101.0, Southeast Indian Ridge**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
H01W2	**Cape Leeuwin H**	**15.41**	**6**	T	T	15 44 18.4	
	baz=183,slow=74,SNR=12						
H01W1	**Cape Leeuwin H**	**15.42**	**6**	T	T	15 44 21.0	
	baz=183,slow=74,SNR=14						
H01W3	**Cape Leeuwin H**	**15.43**	**6**	T	T	15 44 21.1	
	baz=183,slow=74,SNR=12						
ASAR	**Alice Springs**	**31.44**	**40**	P	P	15 31 12.8	+1.1
	0.2nm,1.0s,baz=205,slow=10,SNR=3.8						
VNDA	**Vanda**	**32.96**	**162**	P	P	15 31 24.4	-0.1
	1.4nm,0.8s,baz=300,slow=8.4,SNR=7.1						
WRA	**Warramunga Arr**	**34.95**	**38**	P	P	15 31 41.2	-1.1
	0.6nm,0.9s,baz=203,slow=10,SNR=3.1						
YKA	**Yellowknife Ar**	**151.98**	**46**	PKPbc	PKPbc	15 44 44.2	-0.1
	0.3nm,0.7s,baz=283,slow=2.1,SNR=5.9						

ISCJB **14** *15:25:00.3±0.6, 39°.81N±0°.04×40°.78E±0°.05, h11km, Error ellipse: s-maj=6.3km s-min=5.0km az=167.3*

CSEM **14** *15:25:00.0±0.5, 39°.78N×40°.65E, h10km, MD2.5, Error ellipse: s-maj=14.0km s-min=10.8km az=168.0*

ISK **14** *15:25:00.1, 39°.89N×40°.78E, h20km, MD2.5*

DDA **14** *15:25:01.5, 40°.00N×40°.85E, h7km, Md2.6*

ISC 14 15:24:59.7±0.9, **39°.80N**±0°.04×**40°.70E**±0°.03, **h11**km, **n14**, σ0§**85**/18, **Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KOPT	**Kop Dagi**	**0.27**	**325**	*i* P	**Pb**	**15 25 06.9**	**+0.2**
KOPT				*i* S	**Sb**	**15 25 11.8**	**+0.3**
KOPT	**Kop Dagi**	**0.27**	**325**	P	**Pb**	**15 25 06.9**	**+0.2**
KOPT				S	**Sb**	**15 25 11.8**	**+0.3**
EZM	**Erzurum**	**0.52**	**78**	*e*PG	**Pg**	**15 25 09.8**	**-0.1**
EZM				*e*SG	**Sg**	**15 25 16.9**	**0.0**
ERZM	**Erzurum**	**0.52**	**78**	*i* P	**Pg**	**15 25 09.7**	**-0.2**
ERZM	**Erzurum**	**0.52**	**78**	P	**Pg**	**15 25 09.7**	**-0.2**
BAYT	**Ayd¨–ntepe-Bay**	**0.73**	**324**	*e*PG	**Pg**	**15 25 14.3**	**+0.4**
BAYT	**Ayd¨–ntepe-Bay**	**0.73**	**324**	*e*Pg	**Pg**	**15 25 14.3**	**+0.4**
ERZN	**Erzincan**	**0.78**	**255**	*e*PG	**Pn**	**15 25 17.5**	**+0.8**
BNGB	**Bing¶ll**	**0.81**	**181**	*e*PG	**Pn**	**15 25 17.9**	**+0.9**
BINT	**Bingol**	**0.94**	**190**	*e*Pg	**Pb**	**15 25 17.9**	**-0.1**
EZC	**Erzincan**	**1.04**	**268**	*e*Pg	**Pg**	**15 25 17.5**	**-2.2**
PTK	**Pertek**	**1.36**	**229**	*e*PN	**Pg**	**15 25 26.0**	**+0.2**
PTK	**Pertek**	**1.36**	**229**	*e*Pn	**Pg**	**15 25 26.0**	**+0.2**
DAGI	**Agillar**	**1.58**	**36**	*i* P	**Pn**	**15 25 28.2**	**+0.5**
DAGI				*i* S	**Sn**	**15 25 46.2**	**-2.0**

NIED **14** *15:27:00, 38°.60N×142°.40E, h65km, Mw3.6 Best double couple: M₀2.91000×10¹⁴ NP1:φ₀97.00000°, δ24.00000°, λ116.00000°. NP2:φ₀248.00000°, δ69.00000°, λ79.00000°.*

JMA 14 15:27:44.7±0.1, **38°.64N×142°.41E, h39**km±2km, **M3.5, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**0.73**	**307**	P	Pn	15 27 58.6	+0.1
OFUJ				S	Sn	15 28 08.4	0.0
JIO	**Ouri**	**0.85**	**258**	P	Pn	15 28 00.3	+0.1
JIO				S	Sn	15 28 11.2	-0.3
JMK	**Ichinoseki**	**0.98**	**289**	P	Pn	15 28 02.3	+0.4
JMK				S	Sn	15 28 14.9	+0.3
MIYJ	**Miyakonagasawa**	**1.04**	**334**	P	Pn	15 28 02.8	0.0
MIYJ				S	Sn	15 28 16.0	-0.1
JOM	**Ohasama**	**1.20**	**314**	P	Pn	15 28 05.7	+0.7
JOM				S	Sn	15 28 21.4	+1.3
JOU	**Okura**	**1.40**	**259**	P	Pn	15 28 08.6	+0.9
JOU				S	Sn	15 28 26.8	+1.9
JRG	**Rokugo**	**1.58**	**299**	P	Pn	15 28 11.1	+1.0
JRG				S	Sn	15 28 31.6	+2.3
JKZ	**Kuzumaki**	**1.58**	**328**	P	Pn	15 28 11.2	+0.9
JYK	**Kaneyama**	**1.63**	**280**	P	Pn	15 28 11.7	+0.9

DDA **14** *15:35:22.9, 39°.08N×40°.37E, h7km, Md2.6*

ISK **14** *15:35:22.3, 39°.12N×40°.38E, h3km, MD2.7*

ISCJB **14** *15:35:23.1±0.5, 39°.11N±0°.04×40°.38E±0°.03, h7km, Error ellipse: s-maj=6.1km s-min=3.7km az=174.8*

CSEM **14** *15:35:23.1±0.2, 39°.10N×40°.39E, h8km, MD2.6, Error ellipse: s-maj=5.3km s-min=3.2km az=159.0*

ISC 14 15:35:22.6±0.8, 39°.13N±0°.04×**40°.35E**±0°.03, **h7**km, **n22**, σ0§**43**/30, **Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BINT	**Bingol**	**0.28**	**157**	*e*Pg	**Pg**	**15 35 28.3**	**+0.2**
BGOL	**Bingol**	**0.29**	**120**	*i* P	**Pg**	**15 35 28.2**	**-0.1**
BGOL				*i* S	**Sg**	**15 35 32.2**	**+0.1**
BGOL	**Bingol**	**0.29**	**120**	P	**Pg**	**15 35 28.2**	**-0.1**
BGOL				S	**Sg**	**15 35 32.2**	**+0.1**
BNGB	**Bing¶ll**	**0.29**	**119**	*e*PG	**Pg**	**15 35 28.3**	**-0.1**
TNCL	**Tunceli-Merkez**	**0.63**	**269**	*i* P	**Pb**	**15 35 36.2**	**+0.2**
TNCL				*i* S	**Sb**	**15 35 45.0**	**0.0**
TNCL	**Tunceli-Merkez**	**0.63**	**269**	P	**Pb**	**15 35 36.2**	**+0.2**
TNCL				S	**Sb**	**15 35 45.0**	**0.0**
ERZN	**Erzincan**	**0.67**	**313**	*e*PG	**Pb**	**15 35 36.4**	**-0.2**
PTK	**Pertek**	**0.78**	**252**	*e*PG	**Pb**	**15 35 38.5**	**-0.2**
PTK				*e*SG	**Sb**	**15 35 50.3**	**+0.7**
PTK	**Pertek**	**0.78**	**252**	*e*Pg	**Pb**	**15 35 38.5**	**-0.2**
PTK				*e*Sg	**Sb**	**15 35 50.3**	**+0.7**
VRTB	**Varto-Mus**	**0.86**	**88**	*e*PG	**Pg**	**15 35 39.2**	**+0.1**
VRTB	**Varto-Mus**	**0.86**	**88**	*e*Pg	**Pg**	**15 35 39.2**	**+0.1**
EZM	**Erzurum**	**1.10**	**45**	*e*PN	**Pb**	**15 35 44.0**	**-0.1**
ERZM	**Erzurum**	**1.10**	**45**	*i* P	**Pn**	**15 35 44.4**	**-0.3**
ERZM				*i* S	**Sn**	**15 35 59.6**	**-0.7**
ERZM	**Erzurum**	**1.10**	**45**	P	**Pn**	**15 35 44.4**	**-0.3**
ERZM				S	**Sn**	**15 35 59.6**	**-0.7**
SVRC	**Sivrice-ELAZID**	**1.11**	**228**	*e*PN	**Pn**	**15 35 44.5**	**-0.2**
SVRC	**Sivrice-ELAZID**	**1.11**	**228**	*e*Pn	**Pn**	**15 35 44.5**	**-0.2**
DYBB	**Diyarbakir**	**1.19**	**188**	*e*PN	**Pn**	**15 35 45.9**	**+0.2**
DIY	**Diyarbakir**	**1.24**	**185**	*e*Pn	**Pb**	**15 35 45.9**	**-0.5**
MAZI	**Mazidag**	**1.67**	**177**	*e*PN	**Pb**	**15 35 53.5**	**-0.3**
MAZI	**Mazidag**	**1.67**	**177**	*e*Pn	**Pb**	**15 35 53.5**	**-0.3**
AGRB	**Hanur-Agry**	**2.10**	**77**	*e*PN	**Pn**	**15 35 59.3**	**+1.0**
AGRB	**Hanur-Agry**	**2.10**	**77**	*e*Pn	**Pn**	**15 35 59.3**	**+1.0**

JMA 14 15:36:14.9, 36°.90N×140°.71E, h9km, **M3.0, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.21**	**19**	P	Pg	15 36 19.4	+0.1
ONAJ				S	Sg	15 36 22.7	+0.4
JHO	**Hitachi**	**0.31**	**201**	S	Sg	15 36 25.4	+0.2
MAT	**Matsushiro**	**2.04**	**261**	P	Pn	15 36 50.2	+0.7
MAT				S	Sb	15 37 18.2	+0.5

ISCJB **14** *15:37:38.7±1.0, 33°.12S±0°.07×68°.99W±0°.06, h10km, Error ellipse: s-maj=11.3km s-min=5.1km az=150.4*

GUC **14** *15:37:38.5±0.3, 34°.12S×69°.54W, h23km±7km, ML2.5*

SJA **14** *15:37:38.2±0.7, 33°.09S×68°.98W, h19km±2km, ML3.3, MW3.5*

ISC 14 15:37:34.3±1.5, **33°.29S**±0°.08×**68°.95W**±0°.06, **h10**km, **n16**, σ1§**34**/18, **Mendoza Province**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AAGR	**Agrelo**	**0.23**	**26**	*e*P	**Pg**	**15 37 42.7**	**+3.6**
ARCO	**CERRO ARCO**	**0.45**	**2**	*e*P	**Pb**	**15 37 44.6**	**+0.2**
ARCO				*e*S	**Sg**	**15 37 49.1**	**0.0**
ARCO				IAML		15 37 50.3	
	comp=Z,3μm,0.1s						
ASAL	**Salagasta**	**0.70**	**8**	*e*P	**Pn**	**15 37 49.4**	**-1.1**
AUSP	**Uspallata**	**1.13**	**341**	*e*P	**Pn**	**15 37 56.3**	**-0.1**
CLCH	**Cerro Calan**	**1.33**	**265**	*i* P	**Pb**	**15 37 59.2**	**-0.3**
CLCH				*i* S	**Sb**	**15 38 15.0**	**-1.6**
CLCH				IAML		15 38 28.3	
	comp=E,239nm,0.9s						
PEL	**Peldehue**	**1.46**	**275**	*i* P	**Pg**	**15 38 03.5**	**+1.1**
PEL				*i* S	**Sg**	**15 38 22.4**	**+1.0**
PEL				IAML		15 38 24.1	
	comp=N,135nm,0.2s						
RTCV	**Cerro Valdivia**	**1.47**	**14**	*e*P	**Pg**	**15 38 02.3**	**-0.2**
RTLS	**Leoncito**	**1.52**	**349**	*e*P	**Pg**	**15 38 03.7**	**+0.2**
RCDM	**Rinconada Maip**	**1.57**	**262**	*i* P	**Pn**	**15 38 01.1**	**-1.1**
ROCH	**El Roble**	**1.76**	**280**	*i* P	**Pg**	**15 38 09.1**	**+1.0**
ROCH				*i* S	**Sg**	**15 38 32.2**	**+1.3**
ROC1	**El Roble**	**1.76**	**280**	*e*P	**Pg**	**15 38 09.8**	**+1.6**
ACAN	**Cantantal**	**1.80**	**56**	*e*P	**Pg**	**15 38 09.3**	**+0.5**
RTLL	**Cerro Villicun**	**2.00**	**12**	*e*P	**Pb**	**15 38 10.3**	**-0.5**
AMOG	**MOGNA**	**2.38**	**10**	*e*P	**Pb**	**15 38 16.3**	**-1.0**
ACLC	**CERRO LA CRUZ**	**4.22**	**24**	IAML		15 39 51.5	
	comp=Z,49nm,0.3s						
VCA	**Vinchina**	**4.58**	**8**	IAML		15 40 01.9	
	comp=Z,40nm,0.4s						

ISCJB **14** *15:38:14.1±0.6, 37°.78N±0°.04×27°.37E±0°.05, h4km±6km, Error ellipse: s-maj=7.1km s-min=4.9km az=44.5*

CSEM **14** *15:38:14.6±0.1, 37°.78N×27°.40E, h8km, MD2.9, Error ellipse: s-maj=4.6km s-min=3.0km az=62.0*

ISK **14** *15:38:14.2, 37°.80N×27°.44E, h7km, ML2.6*

DDA **14** *15:38:14.1, 37°.78N×27°.38E, h7km, Md2.9*

ISC 14 15:38:14.3±1.2, **37°.77N**±0°.03×**27°.41E**±0°.03, **h6**km±13km, **n42**, σ0§**46**/49, **Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GCAM	**G?zelcaml?**	**0.15**	**243**	*i* P	**Pg**	**15 38 17.0**	**-0.4**
GCAM	**G?zelcaml?**	**0.15**	**243**	P	**Pg**	**15 38 17.0**	**-0.4**
AYDN	**Tasoluk**	**0.39**	**106**	*i* P	**Pg**	**15 38 22.6**	**+0.7**
AYDN				*i* S	**Sb**	**15 38 29.1**	**-0.9**
AYDN	**Tasoluk**	**0.39**	**106**	P	**Pg**	**15 38 22.6**	**+0.7**
AYDN				S	**Sb**	**15 38 29.1**	**-0.9**
IZM	**Izmir**	**0.64**	**350**	*e*PG	**Pg**	**15 38 26.6**	**0.0**
IZM	**Izmir**	**0.64**	**350**	*e*Pg	**Pg**	**15 38 26.6**	**0.0**
BLCB	**Balcova**	**0.68**	**335**	*e*PG	**Pg**	**15 38 27.3**	**0.0**
BLCB	**Balcova**	**0.68**	**335**	*e*Pg	**Pg**	**15 38 27.3**	**0.0**
BODT	**Bodrum**	**0.71**	**186**	*e*PG	**Pb**	**15 38 29.0**	**-0.1**
BODT	**Bodrum**	**0.71**	**186**	*e*Pg	**Pb**	**15 38 29.0**	**-0.1**
YER	**Yerkesik**	**0.94**	**132**	*e*PG	**Pb**	**15 38 32.8**	**-0.3**
YER				*e*SG	**Sb**	**15 38 46.1**	**+0.2**
YER	**Yerkesik**	**0.94**	**132**	*e*Pg	**Pb**	**15 38 32.8**	**-0.3**
YER				*e*Sg	**Sb**	**15 38 46.1**	**+0.2**
AKHS	**Akhisar**	**1.15**	**16**	*i* P	**Pg**	**15 38 36.3**	**-0.1**
AKHS				*i* S	**Sb**	**15 38 52.1**	**+0.2**
AKHS	**Akhisar**	**1.15**	**16**	P	**Pg**	**15 38 36.3**	**-0.1**
AKHS				S	**Sb**	**15 38 52.1**	**+0.2**
AKS	**Akhisar**	**1.15**	**16**	*e*PN	**Pg**	**15 38 36.0**	**-0.4**
AKS	**Akhisar**	**1.15**	**16**	*e*Pn	**Pg**	**15 38 36.0**	**-0.4**
NIS1	**Nisyros Isl.**	**1.18**	**189**	*e*PN	**Pn**	**15 38 37.7**	**+0.3**
NIS1	**Nisyros Isl.**	**1.18**	**189**	*e*Pn	**Pn**	**15 38 37.7**	**+0.3**
CHOS	**Chios island**	**1.23**	**300**	*e*PN	**Pn**	**15 38 38.3**	**+0.1**
CHOS	**Chios island**	**1.23**	**300**	*e*Pn	**Pn**	**15 38 38.3**	**+0.1**
KULA	**Kula-Manisa**	**1.24**	**53**	*e*PN	**Pg**	**15 38 37.6**	**-0.4**
KULA	**Kula-Manisa**	**1.24**	**53**	*e*Pn	**Pg**	**15 38 37.6**	**-0.4**
DENT	**Denizli**	**1.29**	**90**	*e*PN	**Pg**	**15 38 38.1**	**-0.9**
DENT	**Denizli**	**1.29**	**90**	*e*Pn	**Pg**	**15 38 38.1**	**-0.9**
DKL	**Dikili**	**1.36**	**343**	*e*PN	**Pn**	**15 38 39.7**	**-0.1**
DKL	**Dikili**	**1.36**	**343**	*e*Pn	**Pn**	**15 38 39.7**	**-0.1**
DALY	**Dalyan (Mu¨la**	**1.38**	**133**	*e*PN	**Pg**	**15 38 40.6**	**-0.1**
DALY	**Dalyan (Mu¨la**	**1.38**	**133**	*e*Pn	**Pg**	**15 38 40.6**	**-0.1**
KHAL	**Karahalli**	**1.75**	**69**	*i* P	**Pn**	**15 38 45.1**	**-0.2**
KHAL				*i* S	**Sg**	**15 39 11.1**	**+0.5**
KHAL	**Karahalli**	**1.75**	**69**	P	**Pn**	**15 38 45.2**	**-0.2**
FETY	**Fethiye**	**1.75**	**130**	*e*PN	**Pn**	**15 38 45.9**	**+0.6**

KUR					A	A	15 50 59.2	
	comp=N,120nm,0.3s							
KUR	**Kuril'sk**	**2.44**	**31**	*e*PN	**Pn**	**Pn**	**15 50 28.0**	**+1.6**
KUR				*e*S	**Sn**	**Sn**	**15 50 55.2**	**-0.1**
KUR				pmax	pmax			
	comp=N,7.0nm,0.4s							
KUR				pmax	pmax			
	comp=Z,18nm,0.4s							
KUR				pmax	pmax			
	comp=E,8.0nm,0.3s							
KUR				smax	smax			
	comp=N,59nm,0.5s							
KUR				smax	smax			
	comp=E,53nm,0.3s							
ASAJ	**Asahikawa**	**2.73**	**292**	Pn	**Pn**	**15 50 32.3**	**+2.0**	
	comp=E,12nm,0.3s,baz=112,slow=11,SNR=202							
ASAJ	**Asahikawa**	**2.73**	**292**	PN	**Pn**	**15 50 32.3**	**+2.0**	
ASAJ				pmax	pmax			
	comp=Z,13nm,0.3s							
YSS	**Yuzh-Sakhalins**	**4.49**	**329**	*e*P	Pn	15 50 57.7	+3.4	
TYV	**Tymovskoe**	**8.08**	**344**	*e*P	Pn	15 51 46.8	+3.6	
JHJ	**Hachijo jima 2**	**11.17**	**209**	LR	LR	15 58 38.0		
	comp=Z,126nm,21.8s,baz=114,slow=40							
SONM	**Songino Array**	**28.01**	**294**	P	**P**	**15 55 32.1**	**-0.8**	
	comp=Z,0.6nm,0.5s,baz=89,slow=7.4,SNR=3.6							
SONM	**Songino Array**	**28.01**	**294**	P	**P**	**15 55 32.1**	**-0.8**	
ZALV	**Zalesovo Beam**	**40.76**	**307**	P	**P**	**15 57 19.8**	**-2.6**	
	comp=Z,0.4nm,0.3s,baz=55,slow=9.4,SNR=2.5							
ZALV	**Zalesovo Beam**	**40.76**	**307**	P	**P**	**15 57 19.8**	**-2.6**	
MKAR	**Makanchi Array**	**44.20**	**298**	P	**P**	**15 57 51.0**	**+0.5**	
	comp=Z,0.3nm,0.4s,baz=86,slow=8.4,SNR=9.2							
MKAR	**Makanchi Array**	**44.20**	**298**	P	**P**	**15 57 51.0**	**+0.5**	
KURK	**Kurchatov**	**45.24**	**304**	P	**P**	**15 57 58.1**	**-0.6**	
KURK				pmax	pmax			
	comp=Z,1.0nm,0.6s							
KURBB	**Kurchatov Arra**	**45.33**	**304**	P	**P**	**15 57 58.1**	**-1.2**	
	comp=Z,0.7nm,0.6s,baz=70,slow=8.6,SNR=5.0							
JAY	**Jayapura**	**45.71**	**188**	LR	LR	16 19 36.7		
	comp=Z,10.0nm,18.5s,baz=149,slow=37							
RES	**Resolute Bay**	**55.77**	**16**	P	**P**	**15 59 18.0**	**+0.4**	
	comp=Z,0.9nm,0.4s,baz=331,slow=3.0,SNR=5.1							
RES	**Resolute Bay**	**55.77**	**16**	P	**P**	**15 59 18.0**	**+0.4**	
RES				pmax	pmax			
	comp=Z,1.0nm,0.4s							
FINES	**FINESS Array B**	**65.07**	**333**	P	**P**	**16 00 21.1**	**+0.1**	
	comp=Z,0.9nm,0.4s,baz=46,slow=8.5,SNR=12							
FINES	**FINESS Array B**	**65.07**	**333**	P	**P**	**16 00 21.2**	**+0.1**	
FINES				pmax	pmax			
	comp=Z,1.0nm,0.4s							
ASAR	**Alice Springs**	**67.42**	**192**	LR	LR	16 30 14.5		
	comp=Z,130nm,21.9s,baz=320,slow=35							
NOA	**NORSAR Array B**	**69.89**	**338**	P	**P**	**16 00 52.1**	**+0.5**	
	comp=Z,0.4nm,0.5s,baz=33,slow=6.4,SNR=3.4							
NOA	**NORSAR Array B**	**69.89**	**338**	P	**P**	**16 00 52.1**	**+0.5**	
HFS	**Hagfors**	**69.95**	**337**	P	**P**	**16 00 52.1**	**+0.2**	
	comp=Z,0.7nm,0.3s,baz=55,slow=6.2,SNR=7.2							
HFS	**Hagfors**	**69.95**	**337**	P	**P**	**16 00 52.1**	**+0.2**	
HFS				pmax	pmax			
	comp=Z,1.0nm,0.4s							

*ISCJB **14** 15:50:41.8±0.6,38˚.48N±0˚.03×28˚.47E±0˚.03,h8km±8km, Error ellipse: s-maj=5.7km s-min=4.4km az=157.5*
*DDA **14** 15:50:41.7,38˚.51N×28˚.48E,h7km,Md2.6*
*CSEM **14** 15:50:41.9±0.2,38˚.48N×28˚.48E,h8km,MD2.8,Error ellipse: s-maj=5.2km s-min=4.1km az=158.0*
*ISK **14** 15:50:41.1,38˚.45N×28˚.47E,h7km,MD2.8*

ISC 14 15:50:41.4±1.2,38˚.46N±0˚.03×28˚.44E±0˚.03,h3km±11km, n30,σ0ᵗ41/42,Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
KULA	**Kula-Manisa**	**0.18**	**71**	*e*PG		**Pg**	**15 50 44.9**	**-0.1**
KULA				*e*SG		**Sg**	**15 50 47.9**	**+0.5**
KULA	**Kula-Manisa**	**0.18**	**71**	*e*Pg		**Pg**	**15 50 44.9**	**-0.1**
KULA				*e*Sg		**Sg**	**15 50 47.9**	**+0.5**
DEMI	**Demirci**	**0.62**	**20**	*i* P		**Pg**	**15 50 53.2**	**-0.2**
DEMI				*i* S		**Sg**	**15 51 01.1**	**-0.5**
DEMI	**Demirci**	**0.62**	**20**	P		**Pg**	**15 50 53.2**	**-0.2**
DEMI				S		**Sg**	**15 51 01.1**	**-0.5**
AKS	**Akhisar**	**0.65**	**311**	*e*PG		**Pg**	**15 50 54.3**	**+0.4**
AKS				*e*SG		**Sb**	**15 51 04.3**	**-0.5**
AKS	**Akhisar**	**0.65**	**311**	*e*Pg		**Pg**	**15 50 54.3**	**+0.4**
AKS				*e*Sg		**Sb**	**15 51 04.3**	**-0.5**
KHAL	**Karahalli**	**0.83**	**96**	*i* P		**Pg**	**15 50 57.4**	**+0.1**
KHAL				*i* S		**Sg**	**15 51 08.1**	**0.0**
KHAL	**Karahalli**	**0.83**	**96**	P		**Pg**	**15 50 57.4**	**+0.1**
KHAL				S		**Sg**	**15 51 08.1**	**0.0**
KHL	**Karahalli**	**0.86**	**98**	*e*PG		**Pg**	**15 50 57.6**	**-0.2**
KHL	**Karahalli**	**0.86**	**98**	*e*Pg		**Pg**	**15 50 57.7**	**-0.2**
AYDN	**Tasoluk**	**0.91**	**209**	*i* P		**Pn**	**15 51 01.4**	**+0.2**
AYDN				*i* S		**Sn**	**15 51 14.5**	**-0.3**
AYDN	**Tasoluk**	**0.91**	**209**	P		**Pn**	**15 51 01.4**	**+0.2**
AYDN				S		**Sn**	**15 51 14.5**	**-0.3**
IZM	**Izmir**	**0.93**	**267**	*e*PG		**Pb**	**15 50 59.9**	**-0.2**
IZM	**Izmir**	**0.93**	**267**	*e*Pg		**Pb**	**15 50 59.9**	**-0.2**
GDZ	**Gediz**	**1.03**	**52**	*i* P		**Pg**	**15 51 00.4**	**-0.8**
GDZ				*i* S		**Sb**	**15 51 16.9**	**+0.9**
GDZ	**Gediz**	**1.03**	**52**	P		**Pg**	**15 51 00.4**	**-0.8**
GDZ				S		**Sb**	**15 51 16.9**	**+0.9**
BLCB	**Balcova**	**1.10**	**267**	*e*PN		**Pg**	**15 51 02.7**	**+0.2**
BLCB	**Balcova**	**1.10**	**267**	*e*Pn		**Pg**	**15 51 02.7**	**+0.2**
BALB	**Balikesir**	**1.26**	**340**	*e*PN		**Pb**	**15 51 05.8**	**-0.1**
BALB	**Balikesir**	**1.26**	**340**	*e*Pn		**Pb**	**15 51 05.8**	**-0.1**
TVSB	**Tavsanli**	**1.27**	**38**	*e*PN		**Pg**	**15 51 05.5**	**-0.3**
TVSB	**Tavsanli**	**1.27**	**38**	*e*Pn		**Pg**	**15 51 05.5**	**-0.3**
YER	**Yerkesik**	**1.32**	**185**	*e*PN		**Pg**	**15 51 06.5**	**-0.3**
YER	**Yerkesik**	**1.32**	**185**	*e*Pn		**Pg**	**15 51 06.5**	**-0.3**
KCTX	**Karacabey (Bur**	**1.81**	**358**	*e*PN		**Pn**	**15 51 13.6**	**+0.1**
KCTX	**Karacabey (Bur**	**1.81**	**358**	*e*Pn		**Pn**	**15 51 13.6**	**+0.1**
IZI	**Iznik**	**2.04**	**23**	*e*PN		**Pn**	**15 51 17.1**	**+0.3**
IZI	**Iznik**	**2.04**	**23**	*e*Pn		**Pn**	**15 51 17.1**	**+0.3**
CAVI	**Cavuskoy**	**2.06**	**31**	*e*PN		**Pn**	**15 51 17.4**	**+0.5**
CAVI	**Cavuskoy**	**2.06**	**31**	*e*Pn		**Pn**	**15 51 17.4**	**+0.5**

*BJI **14** 15:52:03.6,75˚.57N×7˚.83E,h9km,mb4.5/20,mB5.0/11, Ms4.8/5,Ms7 4.6/4*
*IDC **14** 15:52:04.2±0.5,75˚.38N×7˚.62E,h0km,mb4.0/24, mb1 4.2/29,mb1mx4.0/58,mbtmp4.1/29,ML3.7/4,MS3.8/33, Ms1 3.8/33,ms1mx3.7/57,Error ellipse: s-maj=13.6km s-min=9.5km az=66.0*
*MOS **14** 15:52:04.8±1.4,75˚.37N×8˚.31E,h10km,mb4.4/45,Error ellipse: s-maj=22.2km s-min=4.4km az=95.2*
*CSEM **14** 15:52:04.0±0.1,75˚.40N×7˚.99E,h2km,mb4.5/45,Ms3.4, Error ellipse: s-maj=5.0km s-min=3.1km az=66.0*
*NEIC **14** 15:52:05.7±0.2,75˚.36N×7˚.87E,h10km,mb4.5/49,Error ellipse: s-maj=6.0km s-min=3.8km az=65.0*
*NAO **14** 15:52:08.7±4.5,75˚.41N×8˚.96E,h27km±48km,ML4.3*
*BER **14** 15:52:08.3±4.3,75˚.54N×9˚.12E,h3km±35km,MD2.9,ML2.8, ML4.3(NAO)*

ISC 14 15:52:06.7±0.5,75˚.46N±0˚.04×8˚.11E±0˚.04,h14km±2km, h13km:pP-P,n384,σ1ᵗ93/405,mb4.4/93,MS3.9/27,4C-5D, Greenland Sea

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
HSPB	**Hornsund (broa**	**2.36**	**45**	Pn		**Pn**	**15 52 42.9**	**-1.9**
HSPB				*e*S		**Sn**	**15 53 06.6**	**-6.9**
HSPB				IAML			15 53 14.7	
	comp=Z,65nm,0.3s							
HSPB	**Hornsund (broa**	**2.36**	**45**	*e*P		**Pn**	**15 52 43.1**	**-1.8**
HSPB				*e*			15 53 14.7	
HSPB	**Hornsund (broa**	**2.36**	**45**	*e*P		**Pn**	**15 52 43.1**	**-1.8**
HSPB	**Hornsund (broa**	**2.36**	**45**	*e*Pg		**Pn**	**15 52 43.6**	**-1.3**
HSPB				*e*Sn		**Sn**	**15 53 09.1**	**-4.4**
HSPB				*e*S		**Sb**	**15 53 14.7**	**-3.0**
HSP	**Hornsund**	**2.37**	**45**	Pn		**Pn**	**15 52 42.9**	**-2.0**
BRBA	**Barentsburg A**	**2.97**	**25**	Pn		**Pn**	**15 52 51.5**	**-1.7**
	SNR=50							
BJO1	**Bjornoya**	**2.99**	**103**	Pn		**Pn**	**15 52 51.3**	**-2.3**
BJO	**Bjornoya**	**3.04**	**103**	*e*P		**Pn**	**15 52 51.0**	**-3.2**
BJO				*e*S		**Sn**	**15 53 24.4**	**-5.9**
BJO				IAML			15 53 26.0	
	comp=Z,96nm,0.7s							
BJO	**Bjornoya**	**3.04**	**103**	*e*P		**Pn**	**15 52 51.0**	**-3.2**
	SNR=50							
BJO	**Bjornoya**	**3.04**	**103**	Pn		**Pn**	**15 52 51.3**	**-2.9**
SPA0	**Spitsbergen Ar**	**3.32**	**31**	Pn		**Pn**	**15 52 57.3**	**-0.8**
	baz=221,slow=14							
SPA0				Sn		**Sn**	**15 53 34.5**	**-2.8**
	baz=195,slow=37							
SPA0	**Spitsbergen Ar**	**3.32**	**31**	*e*P		**Pn**	**15 52 57.4**	**-0.7**
SPA0				Sn		**Sn**	**15 53 34.5**	**-2.8**
	baz=195,slow=37							
SPA0				IAML			15 53 40.5	
	comp=Z,88nm,0.6s							
SPA0	**Spitsbergen Ar**	**3.32**	**31**	*e*P		**Pn**	**15 52 57.4**	**-0.7**
	SNR=50							
SPA0				*e*Sn		**Sn**	**15 53 37.0**	**-0.3**
SPA0	**Spitsbergen Ar**	**3.32**	**31**	*e*Pn		**Pn**	**15 52 57.4**	**-0.8**
SPA0				*e*Sn		**Sn**	**15 53 37.0**	**-0.3**
SPITS	**Spitsbergen Ar**	**3.32**	**31**	Pn		**Pn**	**15 52 57.3**	**-0.8**
	baz=210,slow=16,SNR=2464							
SPITS				Sn		**Sn**	**15 53 34.9**	**-2.4**
	baz=229,slow=20,SNR=10							
SPITS				LR		LR	15 54 18.4	
	comp=Z,964nm,19.8s,baz=205,slow=39							
KBS	**Kingsbay**	**3.59**	**12**	Pn		**Pn**	**15 52 59.7**	**-2.1**
KBS				Sn		**Sn**	**15 53 38.7**	**-5.2**
KBS	**Kingsbay**	**3.59**	**12**	Pn		**Pn**	**15 52 59.7**	**-2.1**
KBS				*e*P		**Pn**	**15 52 59.8**	**-2.0**
KBS				Sn		**Sn**	**15 53 38.7**	**-5.2**
KBS				*e*S		**Sn**	**15 53 40.2**	**-3.7**
KBS				IAML			15 53 44.3	
	comp=Z,56nm,0.5s							
KBS	**Kingsbay**	**3.59**	**12**	*e*P		**Pn**	**15 52 58.5**	**-3.3**
KBS				*e*			15 53 39.8	
KBS	**Kingsbay**	**3.59**	**12**	*e*Pn		**Pn**	**15 52 58.5**	**-3.3**
KBS	**Kingsbay**	**3.59**	**12**	*i* P		**Pn**	**15 52 59.7**	**-2.1**
	SNR=56							
KBS				*e*Sn		**Sn**	**15 53 39.8**	**-4.1**
KBS				*i* S		**Sn**	**15 53 41.2**	**-2.7**
	SNR=56							
KBS	**Kingsbay**	**3.59**	**12**	*e*Pn		**Pn**	**15 52 58.5**	**-3.3**
KBS				*e*Sn		**Sn**	**15 53 39.8**	**-4.1**
HOPEN	**Hopen**	**4.24**	**67**	Pn		**Pn**	**15 53 09.3**	**-1.3**
HOPEN				Sn		**Sn**	**15 53 54.5**	**-5.3**
HOPEN	**Hopen**	**4.24**	**67**	Pn		**Pn**	**15 53 09.3**	**-1.3**
HOPEN				Sn		**Sn**	**15 53 54.5**	**-5.3**
HOPEN				IAML			15 54 00.2	
	comp=Z,124nm,0.2s							
HOPEN	**Hopen**	**4.24**	**67**	Pn		**Pn**	**15 53 09.3**	**-1.3**
	SNR=50							
HOPEN				Sn		**Sn**	**15 53 54.5**	**-5.3**
JNW	**Jan Mayen West**	**6.50**	**235**	*e*		Pn	15 53 36.9	-4.9
DAG	**Danmarks Havn**	**6.54**	**294**	*i* P		Pn	15 53 36.9	-6.3
DAG				*i* S		Sn	15 54 42.0	-14
DAG	**Danmarks Havn**	**6.54**	**294**	*i* P		Pn	15 53 35.9	-6.3
JMIC	**Jan Mayen**	**6.55**	**235**	*e*		Pn	15 53 37.1	-5.3
JMIC	**Jan Mayen**	**6.55**	**235**	Pn		Pn	15 53 37.1	-5.3
	comp=Z,20nm,0.3s,baz=114,slow=2.9,SNR=6.5							
JMIC				LR		LR	15 55 30.1	
	comp=Z,709nm,21.1s,baz=68,slow=32							
HAMF	**Hammerfest**	**6.62**	**129**	*e*P		**Pn**	**15 53 41.9**	**-1.4**
HAMF	**Hammerfest**	**6.62**	**129**	*e*P		**Pn**	**15 53 41.9**	**-1.4**
	SNR=47							
TRO	**Tromso**	**6.68**	**146**	*e*P		**Pn**	**15 53 43.5**	**-0.6**
TRO	**Tromso**	**6.68**	**146**	*e*P		**Pn**	**15 53 43.5**	**-0.6**
	SNR=47							
KIF	**Kilpisjarvi**	**7.53**	**143**	*e*P		**Pn**	**15 53 54.8**	**-1.0**
KIF	**Kilpisjarvi**	**7.53**	**143**	*e*P		**Pn**	**15 53 54.8**	**-1.0**
	SNR=47							
LOF	**Lofoten**	**7.55**	**164**	*e*P		**Pn**	**15 53 54.3**	**-1.8**
LOF	**Lofoten**	**7.55**	**164**	*e*P		**Pn**	**15 53 54.3**	**-1.8**
	SNR=47							
ARA0	**ARCESS Array S**	**7.89**	**130**	Pn		**Pn**	**15 53 57.7**	**-3.0**
	baz=333,slow=11							
ARA0				Sn		Sn	15 55 20.1	-9.5
	baz=337,slow=22							
ARA0	**ARCESS Array S**	**7.89**	**130**	Pn		**Pn**	**15 53 57.7**	**-3.0**
	baz=333,slow=11							
ARA0				Sn		Sn	15 55 20.1	-9.5
	baz=337,slow=22							
ARA0	**ARCESS Array S**	**7.89**	**130**	Pn		**Pn**	**15 53 57.7**	**-3.0**
	SNR=50							
ARA0	**ARCESS Array S**	**7.89**	**130**	*e*Pn		**Pn**	**15 53 57.6**	**-3.0**
ARA0				*e*Sn		Sn	15 55 20.6	-9.0
ARCES	**ARCESS Array B**	**7.89**	**130**	Pn		**Pn**	**15 53 58.9**	**-1.8**
	comp=Z,9.6nm,0.3s,baz=322,slow=10,SNR=108							
ARCES				Sn		Sn	15 55 20.6	-9.0
	comp=Z,1.5nm,0.3s,baz=330,slow=18,SNR=3.4							
ARCES				LR		LR	15 57 10.5	
	comp=Z,606nm,20.8s,baz=340,slow=39							
ARE0	**ARCESS Array S**	**7.89**	**130**	*e*P		**Pn**	**15 54 00.2**	**-0.5**
ARE0				*e*S		**Sn**	**15 55 22.4**	**-7.2**
ARE0	**ARCESS Array S**	**7.89**	**130**	*e*Pn		**Pn**	**15 53 58.1**	**-2.6**
ARE0	**ARCESS Array S**	**7.89**	**130**	*e*P		**Pn**	**15 54 00.2**	**-0.5**
	SNR=47							
ARE0	**ARCESS Array S**	**7.89**	**130**	*e*Pn		**Pn**	**15 53 58.1**	**-2.6**
KTK1	**Kautokeino**	**7.92**	**137**	*e*P		**Pn**	**15 54 01.1**	**-0.1**
KTK1	**Kautokeino**	**7.92**	**137**	*e*P		**Pn**	**15 54 01.1**	**-0.1**
	SNR=47							
KEV	**Kevo**	**8.00**	**126**	*e*P		**Pn**	**15 54 00.3**	**-2.0**
KEV	**Kevo**	**8.00**	**126**	*e*P		**Pn**	**15 54 00.7**	**-1.6**
KEV	**Kevo**	**8.00**	**126**	*e*P		**Pn**	**15 54 00.7**	**-1.6**
KEV	**Kevo**	**8.00**	**126**	*e*Pn		**Pn**	**15 54 00.7**	**-1.6**
HEF	**Hetta**	**8.53**	**138**	*e*P		**Pn**	**15 54 09.2**	**-0.3**
HEF	**Hetta**	**8.53**	**138**	*e*P		**Pn**	**15 54 09.2**	**-0.3**
	SNR=47							
MOR8	**Moi Rana**	**9.55**	**164**	*e*P		**Pn**	**15 54 22.3**	**-1.2**
MOR8	**Moi Rana**	**9.55**	**164**	*e*P		**Pn**	**15 54 22.3**	**-1.2**
	SNR=47							
SGF	**Sodankyl**	**9.89**	**135**	P		**Pn**	**15 54 27.9**	**-0.2**
SGF				pmax	pmax			
	comp=Z,16nm,0.9s							
SGF	**Sodankyl**	**9.89**	**135**	P		**Pn**	**15 54 27.9**	**-0.2**
	comp=Z,16nm,0.9s							
SCO	**Scoresbysund**	**10.01**	**256**	*i* P		Pn	15 54 23.5	-6.3
SCO				*e*S		Sn	15 56 00.7	-21
SCO	**Scoresbysund**	**10.01**	**256**	*i* P		Pn	15 54 23.5	-6.3
APA0	**Apatity Array**	**11.03**	**123**	Pn		**Pn**	**15 54 40.1**	**-3.6**
	baz=330,slow=18							
APA0	**Apatity Array**	**11.03**	**123**	Pn		**Pn**	**15 54 40.1**	**-3.6**
	baz=330,slow=18							
APA	**Apatity**	**11.14**	**122**	*i*P		**Pn**	**15 54 45.2**	**-0.1**
APA				pmax	pmax			
	comp=Z,18nm,0.6s							
APA				MLR	MLR			
	comp=Z,800nm,19.0s							
APA	**Apatity**	**11.14**	**122**	*i* P		**Pn**	**15 54 45.2**	**-0.1**
	comp=Z,800nm,19.0s							
LVZ	**Lovozero**	**11.14**	**119**	*e* *i*P		**Pn**	**15 54 45.4**	**+0.1**
LVZ	**Lovozero**	**11.14**	**119**	*i* P		**Pn**	**15 54 45.4**	**+0.1**
LVZ	**Lovozero**	**11.14**	**119**	*e*Pn		**Pn**	**15 54 41.5**	**-3.8**
MSF	**Maaselka**	**11.71**	**134**	P		**Pn**	**15 54 51.6**	**-1.5**
MSF				pmax	pmax			
	comp=Z,31nm,0.6s							
MSF	**Maaselka**	**11.71**	**134**	P		**Pn**	**15 54 51.6**	**-1.5**
	comp=Z,31nm,0.6s							
SUMG	**Summit**	**12.86**	**281**	*e*P		**Pn**	**15 55 05.2**	**-3.8**
SUMG	**Summit**	**12.86**	**281**	*e*P		**Pn**	**15 55 05.2**	**-3.8**
SUMG	**Summit**	**12.86**	**281**	*e*Pn		**Pn**	**15 55 05.2**	**-3.8**
VAF	**Ylistaro**	**13.42**	**150**	P		**Pn**	**15 55 15.2**	**-1.1**
VAF				pmax	pmax			
	comp=Z,43nm,1.1s							
VAF	**Ylistaro**	**13.42**	**150**	P		**Pn**	**15 55 15.2**	**-1.1**
	comp=Z,43nm,1.1s							
NC204	**NORSAR Array S**	**14.28**	**175**	*e*Pn		**Pn**	**15 55 25.5**	**-2.6**
NC204	**NORSAR Array S**	**14.28**	**175**	*e*Pn		**Pn**	**15 55 25.5**	**-2.6**
NC303	**NORSAR Array S**	**14.35**	**174**	*e*Pn		**Pn**	**15 55 26.4**	**-2.6**
NC303	**NORSAR Array S**	**14.35**	**174**	*e*Pn		**Pn**	**15 55 26.4**	**-2.6**
BORG	**Borgarnes**	**14.44**	**238**	LR		LR	15 59 34.5	
	comp=Z,380nm,20.5s,baz=38,slow=32							
NC405	**NORSAR Array S**	**14.47**	**173**	*e*Pn		**Pn**	**15 55 28.1**	**-2.6**
NC405	**NORSAR Array S**	**14.47**	**173**	*e*Pn		**Pn**	**15 55 28.1**	**-2.6**
NB2	**NORSAR Subarra**	**14.53**	**174**	Pn		**Pn**	**15 55 29.5**	**-2.0**
NB2	**NORSAR Subarra**	**14.53**	**174**	Pn		**Pn**	**15 55 29.3**	**-2.2**
	comp=Z,5.6nm,1.1s,baz=358,slow=14							
NB2	**NORSAR Subarra**	**14.53**	**174**	P		**Pn**	**15 55 29.5**	**-2.0**
NB2	**NORSAR Subarra**	**14.53**	**174**	Pn		**Pn**	**15 55 29.5**	**-2.0**
NB200	**NORSAR Array S**	**14.53**	**174**	*e*Pn		**Pn**	**15 55 30.2**	**-1.3**
NB200	**NORSAR Array S**	**14.53**	**174**	*e*Pn		**Pn**	**15 55 30.2**	**-1.3**
NOA	**NORSAR Array B**	**14.53**	**174**	Pn		**Pn**	**15 55 30.2**	**-1.3**
	comp=Z,0.1nm,0.3s,baz=349,slow=15,SNR=3.5							
NOA				LR		LR	16 00 40.8	
	comp=Z,214nm,18.9s,baz=355,slow=36							
TMCR	**Tamitsa**	**15.05**	**123**	*e*P		**Pn**	**15 55 37.3**	**-1.2**
TMCR				*e*			15 58 26.4	
TMCR				pmax	pmax			
	comp=Z,60nm,0.9s							
FIA1	**FINESS Array S**	**15.41**	**146**	*e*Pn		**Pn**	**15 55 40.1**	**-3.2**
FIA1	**FINESS Array S**	**15.41**	**146**	*e*Pn		**Pn**	**15 55 40.1**	**-3.2**
FIA0	**FINESS Array S**	**15.41**	**146**	Pn		**Pn**	**15 55 39.8**	**-3.5**
	baz=353,slow=12							
FIA0	**FINESS Array S**	**15.41**	**146**	P		**Pn**	**15 55 39.8**	**-3.5**
	baz=353,slow=12							
FIA0	**FINESS Array S**	**15.41**	**146**	*e*P		**Pn**	**15 55 40.0**	**-3.3**
FIA0	**FINESS Array S**	**15.41**	**146**	*e*Pn		**Pn**	**15 55 40.0**	**-3.3**
FIA0	**FINESS Array S**	**15.41**	**146**	*e*Pn		**Pn**	**15 55 40.0**	**-3.3**
FINES	**FINESS Array B**	**15.41**	**146**	Pn		**Pn**	**15 55 40.0**	**-3.3**
	comp=Z,0.3nm,0.3s,baz=354,slow=12,SNR=18							
FINES				LR		LR	16 01 47.7	
	comp=Z,383nm,21.4s,baz=349,slow=38							
FINES	**FINESS Array B**	**15.41**	**146**	P		**Pn**	**15 55 40.0**	**-3.3**
FINES				MLR		MLR		
	comp=Z,383nm,21.4s							
FINES	**FINESS Array B**	**15.41**	**146**	Pn		**Pn**	**15 55 40.0**	**-3.3**
HFS	**Hagfors**	**15.52**	**170**	Pn		**Pn**	**15 55 45.0**	**+0.2**
	baz=360,slow=11							
HFS	**Hagfors**	**15.52**	**170**	Pn		**Pn**	**15 55 45.0**	**+0.2**
	baz=360,slow=11							
HFS	**Hagfors**	**15.52**	**170**	Pn		**Pn**	**15 55 45.4**	**+0.6**
	comp=Z,0.8nm,0.3s,baz=2.1,slow=12,SNR=35							
HFS				LR		LR	16 01 14.4	
	comp=Z,199nm,19.9s,baz=348,slow=36							
HFS	**Hagfors**	**15.52**	**170**	Pn		**Pn**	**15 55 45.0**	**+0.2**
	SNR=50							
KONO	**Kongsberg**	**15.89**	**177**	*e*P		**Pn**	**15 55 48.7**	**-0.8**
KONO				pmax	pmax			
	comp=Z,19nm,1.1s							
KONO	**Kongsberg**	**15.89**	**177**	*e*Pn		**Pn**	**15 55 48.7**	**-0.8**
	comp=Z,19nm,1.1s							
KONO	**Kongsberg**	**15.89**	**177**	*e*Pn		**Pn**	**15 55 48.7**	**-0.8**
	comp=Z,19nm,1.1s							
MTSE	**Matsula**	**17.77**	**152**	*e*P		**Pn**	**15 56 13.5**	**+0.4**
	SNR=41							
KLMR	**Klimovskoe**	**18.33**	**126**	*e*P		**Pn**	**15 56 15.8**	**-4.2**
KLMR				pmax	pmax			
	comp=Z,42nm,1.1s							
VSU	**Vasula**	**18.38**	**148**	*i*P		**P**	**15 56 18.9**	**-1.7**
VSU				pmax	pmax			
	comp=Z,99nm,0.9s							
VSU	**Vasula**	**18.38**	**148**	*e*P		**P**	**15 56 19.3**	**-1.3**
	SNR=40							
SLIT	**Slitere, Latvi**	**18.66**	**156**	*e*P		**P**	**15 56 21.6**	**-2.1**
	SNR=40							
SFJD	**Kangerlussuaq**	**19.74**	**276**	LR		LR	16 03 16.4	
	comp=Z,448nm,18.6s,baz=38,slow=34							
EKA	**Eskdalemuir Ar**	**20.67**	**198**	P		P	15 56 37.5	-8.1
	comp=Z,0.5nm,0.6s,baz=2.9,slow=10,SNR=2.9							
IZAR	**Zarasai**	**20.96**	**151**	*e*P		**P**	**15 56 47.9**	**-0.8**
IZAR				IAmb		IAmb	15 56 53.7	
	comp=Z,7.0nm,0.8s							
IZAR	**Zarasai**	**20.96**	**151**	*e*P		**P**	**15 56 47.9**	**-0.8**
	SNR=35							
ISAL	**Salakas**	**21.12**	**151**	*e*P		**P**	**15 56 49.6**	**-0.9**
ISAL	**Salakas**	**21.12**	**151**	*e*P		**P**	**15 56 49.6**	**-0.9**
	SNR=35							
IIGN	**Ignalina**	**21.35**	**151**	*e*P		**P**	**15 56 52.3**	**-0.6**
IIGN				IAmb		IAmb	15 56 55.9	
	comp=Z,19nm,1.4s							
IIGN	**Ignalina**	**21.35**	**151**	*e*P		**P**	**15 56 52.3**	**-0.6**
	SNR=35							
IDID	**Didziasalis**	**21.45**	**150**	*e*P		**P**	**15 56 53

AKBB Malin Array Si 26.28 149 *e*P P 15 57 39.7 -1.4
AKBB pmax pmax
comp=Z,10.0nm,0.9s
AKBB Malin Array Si 26.28 149 *e*P P 15 57 39.7 -1.4
comp=Z,10.0nm,0.9s
AKBB Malin Array Si 26.28 149 *e*P P 15 57 39.7 -1.4
comp=Z,10.0nm,0.9s
KIEV Kiev 26.29 149 *e*P P 15 57 40.0 -1.2
KIEV pmax pmax
comp=Z,13nm,1.2s
KIEV Kiev 26.29 149 *e*P P 15 57 40.0 -1.2
comp=Z,13nm,1.2s
KIEV Kiev 26.29 149 *e*P P 15 57 40.0 -1.2
comp=Z,13nm,1.2s
AK11 Malin Array Si 26.30 149 *e*P P 15 57 39.0 -2.2
AK11 Malin Array Si 26.30 149 *e*P P 15 57 39.0 -2.2
VRAC Vranov 26.48 167 P P 15 57 43.1 +0.1
comp=Z,3.9nm,0.6s,baz=359,slow=8.8,SNR=6.0
VRAC LR LR 16 08 31.1
comp=Z,162nm,18.5s,baz=349,slow=37
VRAC Vranov 26.48 167 P P 15 57 43.1 +0.1
VRAC pmax pmax
comp=Z,2.0nm,0.5s
VRAC MLR MLR
comp=Z,162nm,18.5s
KHC Kasperske Hory 26.52 172 *e*P P 15 57 38.4 -5.0
KHC *e*pP **pP** 15 57 45.2 -2.4
KHC Kasperske Hory 26.52 172 *e*P P 15 57 41.4 -1.9
KHC pmax pmax
comp=Z,4.0nm,1.7s
KHC Kasperske Hory 26.52 172 *e*P P 15 57 41.4 -1.9
comp=Z,4.3nm,1.7s
KHC Kasperske Hory 26.52 172 *e*P P 15 57 41.4 -1.9
comp=Z,4.3nm,1.7s
ARU Arti 26.63 107 P P 15 57 45.1 +0.8
comp=Z,5.8nm,0.7s,baz=335,slow=7.1,SNR=8.8
ARU LR LR 16 08 47.3
comp=Z,250nm,21.2s,baz=350,slow=38
ARU Arti 26.63 107 *c i*P P 15 57 45.2 +0.9
ARU 15 58 24.1
ARU 16 01 08.5
ARU S **S** **16 02 22.6 +4.2**
ARU SS **SnSn** **16 03 27.1 +6.3**
ARU pmax pmax
comp=Z,16nm,1.2s
ARU Arti 26.63 107 *e*P P 15 57 44.6 +0.4
comp=Z,40nm,1.0s
ARU Arti 26.63 107 *e*P P 15 57 44.6 +0.4
comp=Z,40nm,1.0s
STHS Stebnicka Huta 26.69 161 *e*P P 15 57 43.4 -1.5
STHS *e* 15 57 45.9
STHS Stebnicka Huta 26.69 161 *e*P P 15 57 43.4 -1.5
STHS Stebnicka Huta 26.69 161 *e*P P 15 57 43.4 -1.5
STHS *e*pP **pP** 15 57 45.9 -3.2
FRB Frobisher Bay 26.81 286 LR LR 16 07 47.7
comp=Z,405nm,21.4s,baz=22,slow=35
GEC2 GERESS Array S 26.81 172 *e*P P 15 57 45.7 -0.3
GEC2 pmax pmax
comp=Z,4.0nm,0.9s
GEC2 GERESS Array S 26.81 172 *e*P P 15 57 45.7 -0.3
comp=Z,3.9nm,0.9s
GEC2 GERESS Array S 26.81 172 *e*P P 15 57 45.7 -0.3
comp=Z,3.9nm,0.9s
GERES GERESS Array B 26.81 172 P P 15 57 46.0 0.0
comp=Z,1.2nm,0.7s,baz=1.0,slow=7.3,SNR=10
GERES LR LR 16 08 08.6
comp=Z,141nm,19.2s,baz=357,slow=36
GEA0 GERESS Array S 26.82 172 *e*P P 15 57 46.5 +0.4
GEA0 GERESS Array S 26.82 172 *e*P P 15 57 46.5 +0.4
LANS Liptovska Anna 26.82 163 *e*P P 15 57 48.1 +2.1
LANS Liptovska Anna 26.82 163 *e*P P 15 57 48.1 +2.1
CRVS Cervenica-Dubn 27.22 161 *e*P P 15 57 49.9 +0.3
CRVS *e* 15 57 56.6
CRVS Cervenica-Dubn 27.22 161 *e*P P 15 57 49.9 +0.3
CRVS Cervenica-Dubn 27.22 161 *e*P P 15 57 49.9 +0.3
CRVS *e*pP **sP** 15 57 56.6 +1.0
BFO Black Forest 27.22 180 *e*P P 15 57 52.0 +2.3
BFO pmax pmax
comp=Z,27nm,1.7s
BFO Black Forest 27.22 180 *e*P P 15 57 52.0 +2.3
comp=Z,27nm,1.7s
KOLS Kolonicke sedl 27.26 159 *e*P P 15 57 50.6 +0.6
KOLS pmax pmax
comp=Z,12nm,1.1s
KOLS Kolonicke sedl 27.26 159 *e*P P 15 57 50.6 +0.6
comp=Z,12nm,1.1s
KOLS Kolonicke sedl 27.26 159 *e*P P 15 57 50.6 +0.6
VSR Storozhevoye 27.33 135 *e*P P 15 57 50.5 -0.1
VSR pmax pmax
comp=Z,2.0nm,0.5s
VYHS Vyhne 27.43 164 *e*P P 15 57 52.6 +1.1
VYHS pmax pmax
comp=Z,5.0nm,1.4s
VYHS Vyhne 27.43 164 *e*P P 15 57 52.5 +1.1
UZH Uzhgorod 27.56 159 *e*P P 15 57 48.0 -4.6
VRH Novokhopyorsk 27.81 132 *e*P P 15 57 54.9 0.0
VRH pmax pmax
comp=Z,10.0nm,1.2s
PSZ Piszkesteto 28.07 163 *e*P P 15 57 57.9 +0.5
PSZ pmax pmax
comp=Z,36nm,2.0s
PSZ Piszkesteto 28.07 163 *e*P P 15 57 57.9 +0.5
comp=Z,36nm,2.0s
PSZ Piszkesteto 28.07 163 *e*P P 15 57 57.9 +0.5
comp=Z,36nm,2.0s
TIXI Tiksi 28.74 34 LR LR 16 09 35.9
comp=Z,56nm,19.5s,baz=343,slow=36
TIXI Tiksi 28.74 34 ||*i*P P 15 58 05.0 +2.0
TIXI pmax pmax
comp=Z,8.0nm,1.0s
TIXI MLR MLR
comp=Z,94nm,18.0s
TIXI Tiksi 28.74 34 *e*P P 15 58 04.5 +1.5
comp=Z,7.2nm,1.0s
TIXI Tiksi 28.74 34 *e*P P 15 58 04.5 +1.5
comp=Z,7.2nm,1.0s
DAVOX Davos/Dischmat 28.78 177 LR LR 16 11 18.3
comp=Z,112nm,18.4s,baz=80,slow=40
BUR08 Bucovina Ar. S 28.82 156 *e*P P 15 58 04.1 +0.1
BUR08 Bucovina Ar. S 28.82 156 *e*P P 15 58 04.1 +0.1
AKTO Aktyubinsk 32.01 113 P P 15 58 32.6 +0.6
comp=Z,3.6nm,0.9s,baz=330,slow=10,SNR=7.8
AKTO LR LR 16 12 06.1
comp=Z,306nm,19.3s,baz=355,slow=37
ZRNK Zerenda 32.36 99 *e*P P 15 58 35.5 +0.4
ZRNK pmax pmax
comp=Z,3.0nm,0.9s
ZRNK Zerenda 32.36 99 *e*P P 15 58 35.5 +0.4
comp=Z,3.3nm,0.9s
ZRNK Zerenda 32.36 99 *e*P P 15 58 35.5 +0.4
comp=Z,3.3nm,0.9s
BRVK Borovoye 32.58 98 ||*i*P P 15 58 38.1 +1.1
BRVK pmax pmax
comp=Z,6.0nm,2.5s
BRVK Borovoye 32.58 98 *e*P P 15 58 37.8 +0.8
comp=Z,2.7nm,0.9s
BRVK Borovoye 32.58 98 *e*P P 15 58 37.9 +0.8
comp=Z,2.7nm,0.9s
BVAR Borovoye Array 32.64 98 P P 15 58 39.2 +1.6
comp=Z,1.3nm,0.7s,baz=327,slow=7.8,SNR=10
BVAR LR LR 16 13 57.8
comp=Z,246nm,21.4s,baz=264,slow=40
VOSK Vostochnaya 33.06 97 *e*P P 15 58 42.2 +1.0
VOSK pmax pmax
comp=Z,4.0nm,1.0s
VOSK Vostochnaya 33.06 97 *e*P P 15 58 42.2 +1.0
comp=Z,4.2nm,1.0s
VOSK Vostochnaya 33.06 97 *e*P P 15 58 42.2 +1.0
comp=Z,4.2nm,1.0s
ANN Anapa 33.25 141 *e*P P 15 58 40.8 -2.1
ANN *e**PP **pP** 15 58 45.0 -2.1
ANN *e* 16 01 23.9
ANN *e*S **S** **16 04 00.3 -1.8**
ANN pmax pmax
comp=Z,45nm,0.9s
ABKAR Akbulak array 33.56 111 *e*P P 15 58 46.0 +0.4
ABKAR Akbulak array 33.56 111 *e*P P 15 58 46.0 +0.4
ABKAR *e*PP **PnPn** 15 59 58.2 +1.4
SCHQ Schefferville 34.19 276 LR LR 16 11 58.6
comp=Z,299nm,18.1s,baz=41,slow=35
NVS Novosibirsk 34.23 84 *e*P P 15 58 52.5 +1.2
INK Inuvik 34.46 336 *e*P P 15 58 53.4 +0.2
INK pmax pmax
comp=Z,9.0nm,1.2s
INK Inuvik 34.46 336 *e*P P 15 58 53.4 +0.2
comp=Z,8.8nm,1.2s
INK Inuvik 34.46 336 *e*P P 15 58 53.4 +0.2
comp=Z,8.8nm,1.2s
KIV Kislovodsk 34.97 134 *e*P P 15 58 59.6 +1.7
KIV pmax pmax
comp=Z,5.0nm,0.9s
KIV MLR MLR
comp=Z,156nm,15.0s
KIV Kislovodsk 34.97 134 *e*P P 15 58 58.1 +0.2
comp=Z,8.3nm,1.0s
KIV Kislovodsk 34.97 134 *e*P P 15 58 58.1 +0.2
comp=Z,8.3nm,1.0s
KBZ Khabaz 35.22 134 P P 15 59 04.0 +4.0
comp=Z,4.5nm,0.8s,baz=335,slow=5.6,SNR=9.1
KBZ LR LR 16 13 55.1
comp=Z,232nm,20.3s,baz=345,slow=37
KBZ Khabaz 35.22 134 P P 15 59 04.0 +4.0
KBZ pmax pmax
comp=Z,5.0nm,0.8s
KBZ MLR MLR
comp=Z,232nm,20.3s
ZAA1 Zalesovo Array 35.43 83 *e*P P 15 59 02.5 +0.8
ZAA1 Zalesovo Array 35.43 83 *e*P P 15 59 02.5 +0.8
ZAA0 Zalesovo Array 35.44 83 *e*P P 15 59 01.0 -0.7
ZAA0 Zalesovo Array 35.44 83 *e*P P 15 59 01.0 -0.7
ZALV Zalesovo Beam 35.44 83 P P 15 59 02.5 +0.8
comp=Z,2.1nm,0.8s,baz=324,slow=7.3,SNR=8.3
ZALV LR LR 16 17 21.1
comp=Z,246nm,19.2s,baz=278,slow=43
BILL Bilibino 36.08 14 *d i*P P 15 59 08.0 +0.9
BILL *i* *PP **pP** 15 59 11.7 +0.3
BILL *e**SP **sP** 15 59 14.4 +1.3
BILL *e* 16 00 34.0
BILL pmax pmax
comp=Z,14nm,1.0s
BILL MLR MLR
comp=Z,55nm,17.0s
BILL Bilibino 36.08 14 *e*P P 15 59 07.8 +0.7
comp=Z,11nm,0.9s
BILL Bilibino 36.08 14 *e*P P 15 59 07.8 +0.7
comp=Z,11nm,0.9s
TIP Timpagrande 36.59 169 *e*P P 15 59 11.9 +0.1
comp=Z,27nm,1.6s
TIP Timpagrande 36.59 169 *e*P P 15 59 11.9 +0.1
comp=Z,27nm,1.6s
KURK Kurchatov 36.83 91 *e*P P 15 59 13.0 -0.7
KURK *e* 16 00 38.0
KURK pmax pmax
comp=Z,19nm,1.9s
KURK Kurchatov 36.83 91 *e*P P 15 59 13.0 -0.7
comp=Z,19nm,1.9s
KURK Kurchatov 36.83 91 *e*PP PP 16 00 38.0 +0.7
KURK Kurchatov 36.83 91 *e*P P 15 59 13.0 -0.7
comp=Z,19nm,1.9s
KURK *e*PP **PP** 16 00 38.0 +0.7
KURBB Kurchatov Arra 36.89 91 P P 15 59 15.2 +1.0
comp=Z,1.6nm,0.8s,baz=335,slow=7.4,SNR=13
COLD Coldfoot 36.89 346 *e*P P 15 59 15.1 +1.1
comp=Z,6.1nm,0.9s
COLD Coldfoot 36.89 346 *e*P P 15 59 15.2 +1.1
comp=Z,6.1nm,0.9s
FYU Fort Yukon 37.21 343 *e*P P 15 59 20.1 +3.4
comp=Z,16nm,1.0s
BR231 Keskin MP Arra 37.42 148 *e*P P 15 59 20.6 +1.7
BR231 Keskin MP Arra 37.42 148 *e*P P 15 59 20.6 +1.7
YKA Yellowknife Ar 37.48 320 P P 15 59 18.5 -0.6
comp=Z,0.6nm,0.9s,baz=11,slow=8.9,SNR=8.1
YKA PcP **PcP** 16 01 36.5 -0.5
comp=Z,1.0nm,0.8s,baz=14,slow=3.1,SNR=14
YKB5 Yellowknife Ar 37.48 320 *e*P P 15 59 19.8 +0.7
YKB5 Yellowknife Ar 37.48 320 *e*PcP **PcP** 16 01 36.4 -0.6
YKB5 Yellowknife Ar 37.48 320 *e*P P 15 59 19.8 +0.7
YKB5 *e*PcP **PcP** 16 01 36.4 -0.6
OTUK Ortayu 37.53 99 P P 15 59 20.3 +0.6
OTUK pmax pmax
comp=Z,3.0nm,2.8s
BR101 Keskin Array S 37.65 147 *e*P P 15 59 21.8 +0.8
BR101 Keskin Array S 37.65 147 *e*P P 15 59 21.8 +0.8
BRTR Keskin Array B 37.65 147 P P 15 59 21.8 +0.8
comp=Z,1.3nm,0.8s,baz=346,slow=6.7,SNR=5.5
YAK Yakutsk 37.73 41 *i*P P 15 59 22.4 +1.2
YAK pmax pmax
comp=Z,7.0nm,1.0s
YAK Yakutsk 37.73 41 *e*P P 15 59 21.3 +0.1
comp=Z,5.7nm,0.9s
YAK Yakutsk 37.73 41 *e*P P 15 59 21.3 +0.1
comp=Z,5.7nm,0.9s
EGAK Eagle 38.63 339 *e*P P 15 59 29.3 +0.5
comp=Z,14nm,1.5s
EGAK Eagle 38.63 339 *e*P P 15 59 29.3 +0.5
comp=Z,14nm,1.5s
MDM Murphy Dome 39.01 344 *e*P P 15 59 33.2 +1.2
comp=Z,19nm,1.6s
MDM Murphy Dome 39.01 344 *e*P P 15 59 33.2 +1.2
comp=Z,19nm,1.6s
IL1 Eielson Array 39.10 343 *e*P P 15 59 33.8 +1.1
IL1 Eielson Array 39.10 343 *e*P P 15 59 33.8 +1.1
ILAR Eielson Array 39.10 343 P P 15 59 33.9 +1.2
comp=Z,1.0nm,0.8s,baz=360,slow=6.3,SNR=15
ILAR PcP **PcP** 16 01 41.5 -0.5
comp=Z,0.5nm,0.7s,baz=345,slow=4.0,SNR=4.3
ILB Eielson Array 39.10 343 *e*P P 15 59 32.8 +0.1
ILB Eielson Array 39.10 343 *e*PcP **PcP** 16 01 41.9 -0.1
ILB Eielson Array 39.10 343 *e*P P 15 59 32.8 +0.1
ILB *e*PcP **PcP** 16 01 41.9 -0.1
MLY Manley 39.10 346 *e*P P 15 59 34.6 +1.8
comp=Z,4.1nm,1.1s
MLY Manley 39.10 346 *e*P P 15 59 34.6 +1.8
comp=Z,4.1nm,1.1s
CCB Clear Creek Bu 39.29 344 *e*P P 15 59 35.0 +0.7
comp=Z,9.7nm,1.4s
CCB Clear Creek Bu 39.29 344 *e*P P 15 59 35.0 +0.7
comp=Z,9.7nm,1.4s
WRH Wood River Hil 39.48 344 *e*P P 15 59 36.9 +1.0
comp=Z,12nm,1.3s
WRH Wood River Hil 39.48 344 *e*P P 15 59 36.9 +1.0
comp=Z,12nm,1.3s
KEST Kesra 39.82 178 LR LR 16 15 39.8
comp=Z,59nm,19.1s,baz=254,slow=36
SEY Seymchan 39.96 25 P P 15 59 40.2 +0.3
comp=Z,6.0nm,0.9s,baz=319,slow=6.4,SNR=12
CAST Castle Rocks 40.79 347 *e*P P 15 59 48.2 +1.5
comp=Z,13nm,1.0s
CAST Castle Rocks 40.79 347 *e*P P 15 59 48.2 +1.5
comp=Z,13nm,1.0s
GAMB Gambell 41.02 360 *e*P P 15 59 49.5 +1.0
comp=Z,10nm,1.4s
GAMB Gambell 41.02 360 *e*P P 15 59 49.5 +1.0
comp=Z,10nm,1.4s
MK32 Makanchi Array 41.38 90 *e*P P 15 59 52.7 +0.9
MK32 Makanchi Array 41.38 90 *e*P P 15 59 52.7 +0.9
MKAR Makanchi Array 41.38 90 P P 15 59 52.7 +0.9
comp=Z,1.6nm,0.9s,baz=352,slow=6.5,SNR=11
MKAR LR LR 16 21 12.1
comp=Z,340nm,18.3s,baz=339,slow=42
FFC Flin Flon 42.46 306 *e*P P 16 00 04.0 +3.5
FFC pmax pmax
comp=Z,18nm,1.4s
FFC Flin Flon 42.46 306 *e*P P 16 00 04.0 +3.5
comp=Z,18nm,1.4s
MNAS Manas 42.95 102 P P 16 00 05.8 +1.0
MNAS pmax pmax
comp=Z,3.0nm,1.7s
SVW2 Sparrevohn 43.29 349 *e*P P 16 00 08.4 +1.2
comp=Z,17nm,1.1s
SVW2 Sparrevohn 43.29 349 *e*P P 16 00 08.4 +1.2
comp=Z,17nm,1.1s
AAK Ala-Archa 43.31 100 *e*P P 16 00 09.8 +2.1
AAK pmax pmax
comp=Z,14nm,2.0s
AAK Ala-Archa 43.31 100 *e*P P 16 00 09.8 +2.1
comp=Z,14nm,2.0s
AAK Ala-Archa 43.31 100 *e*P P 16 00 09.8 +2.1
comp=Z,14nm,2.0s
GEYT Alibeck 43.89 119 P P 16 00 13.8 +1.5
comp=Z,1.8nm,0.6s,baz=316,slow=10,SNR=6.0
GEYT LR LR 16 20 27.0
comp=Z,234nm,20.0s,baz=310,slow=39
PDGK Podgornoye 43.91 94 P P 16 00 13.2 +0.9
PDGK pmax pmax
comp=Z,2.0nm,1.2s
ULM Lac du Bonnet 45.36 299 LR LR 16 20 05.2
comp=Z,270nm,18.4s,baz=47,slow=37
ULM Lac du Bonnet 45.36 299 *e*P P 16 00 27.6 +3.8
ULM pmax pmax
comp=Z,35nm,1.8s
ULM Lac du Bonnet 45.36 299 *e*P P 16 00 27.6 +3.8
comp=Z,35nm,1.8s
WMQ Urumqi 45.52 86 *e*P P 16 00 27.4 +2.1
WMQ pP sP 16 00 32.4 +1.0
WMQ sP pP 16 00 34.4 +4.8
WMQ pmax pmax
comp=Z,4.0nm,0.6s
WMQ pmax pmax
comp=Z,58nm,6.2s
SFK Sufi-Kurgan 45.54 102 P P 16 00 23.7 -1.9
SFK pmax pmax
comp=Z,3.0nm,1.1s
SONA0 Songino Array 46.34 67 *e*P P 16 00 33.2 +1.5
comp=Z,1.2nm,0.7s
SONA0 Songino Array 46.34 67 *e*P P 16 00 33.2 +1.5
comp=Z,1.2nm,0.7s
SONM Songino Array 46.34 67 P P 16 00 33.2 +1.5
comp=Z,0.6nm,0.6s,baz=327,slow=7.8,SNR=5.0
KDAK Kodiak Island 46.43 346 *i*P P 16 00 33.4 +1.3
ULN Ulaanbaatar 46.46 67 ||*e*P P 16 00 33.3 +0.6
ULN pmax pmax
comp=Z,2.0nm,1.0s
KSH Kashi 46.62 100 *e*P P 16 00 36.3 +2.3
KSH *e*pP sP 16 00 40.3 +0.2
KSH PcS **PcS** **16 06 04.6 +2.0**
KSH S **S** **16 07 24.0 +1.7**
KSH ScS **ScS** **16 10 28.5 +0.5**
KSH SS **SS** **16 10 42.8 -5.2**
KSH pmax pmax
comp=Z,81nm,4.4s
KSH LR LR
comp=Z,120nm,6.1s
KSH LR LR
comp=Z,120nm,4.6s
KSH LR LR
comp=Z,140nm,5.5s
NKL Nikolayevsk 47.98 37 *e*P P 16 00 45.0 +0.8
PAL Palisades 48.78 275 *e*P P 16 00 47.7 -2.9
PAL pmax pmax
comp=Z,49nm,1.0s
PAL Palisades 48.78 275 *e*P P 16 00 47.7 -2.9
comp=Z,49nm,1.0s
PAL Palisades 48.78 275 *e*P P 16 00 47.7 -2.9
comp=Z,49nm,1.0s
KLR Kul'dur 50.29 45 P P 16 01 02.5 +0.4
comp=Z,0.3nm,0.5s,baz=342,slow=6.0,SNR=3.8
KLR Kul'dur 50.29 45 P P 16 01 02.5 +0.4
KLR pmax pmax
comp=Z,1.0nm,0.9s
ECSD EROS Data Cent 51.69 297 *e*P P 16 01 11.7 -0.9
comp=Z,5.3nm,0.8s
ECSD EROS Data Cent 51.69 297 *e*P P 16 01 11.7 -0.9
comp=Z,5.3nm,0.8s
GTA Gaotai 52.70 77 *e*P P 16 01 21.6 +1.3
GTA pP sP 16 01 25.8 -0.7
GTA sP pP 16 01 29.3 +4.5
GTA pmax pmax
comp=Z,3.0nm,1.1s
TAM Tamanrasset 52.72 183 P P 16 01 22.2 +1.5
TAM pmax pmax
comp=Z,4.0nm,1.4s
CDMR Cedar Moraine 53.11 319 *e*P P 16 01 23.9 +0.8
CDMR Cedar Moraine 53.11 319 *e*P P 16 01 23.9 +0.8
HHC Hu-ho-hao-te 54.14 66 *e*P P 16 01 31.6 +0.7
HHC pmax pmax
comp=Z,23nm,1.2s
HHC pmax pmax
comp=Z,100nm,6.5s
CN2 Changchun 54.32 52 *e*P P 16 01 33.0 +1.0
YSS Yuzh-Sakhalins 54.32 37 *i*P P 16 01 33.3 +1.4
YSS pmax pmax
comp=Z,15nm,1.3s
IMW Indian Meadow 54.56 309 *e*P P 16 01 34.5 +0.4
comp=Z,5.0nm,0.9s
IMW Indian Meadow 54.56 309 *e*P P 16 01 34.5 +0.4
comp=Z,5.0nm,0.9s
USRK Ussuriysk Ar. 55.19 47 P P 16 01 37.5 -0.8
comp=Z,2.1nm,0.7s,baz=330,slow=6.3,SNR=6.1
BW06 Boulder Array 55.38 308 *e*P P 16 01 39.7 -0.3
BW06 Boulder Array 55.38 308 *e*P P 16 01 39.7 -0.3
PD31 Pinedale Array 55.38 308 *e*P P 16 01 39.9 -0.1
PD31 Pinedale Array 55.38 308 *e*P P 16 01 39.9 -0.1
PDAR Pinedale Array 55.38 308 P P 16 01 39.9 -0.1
comp=Z,1.2nm,1.0s,baz=36,slow=7.9,SNR=7.2
PDAR LR LR 16 25 55.0
comp=Z,203nm,18.7s,baz=24,slow=37
O20A White River Ci 57.64 306 *e*P P 16 01 56.4 +0.3
comp=Z,21nm,1.3s
O20A White River Ci 57.64 306 *e*P P 16 01 56.4 +0.3
comp=Z,21nm,1.3s
SMCO Snowmass 58.30 304 *e*P P 16 02 01.6 +0.7
comp=Z,7.7nm,1.3s
SMCO Snowmass 58.30 304 *e*P P 16 02 01.6 +0.7
comp=Z,7.7nm,1.3s
GOGA Godfrey 58.37 281 *e*P P 16 02 00.7 -0.2
GOGA pmax pmax
comp=Z,55nm,2.0s
GOGA Godfrey 58.37 281 *e*P P 16 02 00.7 -0.2
comp=Z,55nm,2.0s
GOGA Godfrey 58.37 281 *e*P P 16 02 00.7 -0.2
comp=Z,55nm,2.0s
PV01 Paradox Valley 59.64 305 *e*P P 16 02 10.4 +0.4
PV01 Paradox Valley 59.64 305 *e*P P 16 02 10.4 +0.4
S22A 4UR Ranch, Cre 59.65 304 *e*P P 16 02 10.5 +0.3
comp=Z,4.8nm,1.0s
S22A 4UR Ranch, Cre 59.65 304 *e*P P 16 02 10.5 +0.3
comp=Z,4.8nm,1.0s
PV05 Paradox Valley 59.80 306 *e*P P 16 02 09.9 -1.2
PV05 Paradox Valley 59.80 306 *e*P P 16 02 09.9 -1.2
LCMT Little Creek M 61.66 309 *e*P P 16 02 25.5 +1.8
comp=Z,3.2nm,0.9s
LCMT Little Creek M 61.66 309 *e*P P 16 02 25.5 +1.8
comp=Z,3.2nm,0.9s
CD2 Chengdu 61.76 76 P P 16 02 23.0 -1.3
CD2 pmax pmax
comp=Z,1.0nm,0.5s
TOA1 Torodi Ar. Sit 62.39 187 *e*P P 16 02 27.1 -1.5
comp=Z,14nm,1.8s
TOA1 Torodi Ar. Sit 62.39 187 *e*P P 16 02 27.1 -1.5
comp=Z,14nm,1.8s
TOA0 Torodi Ar. Sit 62.40 187 *e*P P 16 02 27.7 -1.0
TOA0 Torodi Ar. Sit 62.40 187 *e*P P 16 02 27.7 -1.0
TORD Torodi Ar. Bea 62.40 187 P P 16 02 27.1 -1.5
comp=Z,1.3nm,1.0s,baz=346,slow=6.8,SNR=6.0
TORD LR LR 16 29 23.6
comp=Z,25nm,18.4s,baz=325,slow=36
MJAR Matsushiro Arr 63.74 43 P P 16 02 37.5 +0.1
comp=Z,2.3nm,0.7s,baz=345,slow=6.0,SNR=4.6
NJ2 Nanjing 64.22 62 *e*P P 16 02 44.1 +3.6
NJ2 pmax pmax
comp=Z,9.0nm,0.5s
KMI Kunming 67.04 79 P P 16 03 00.6 +1.4
KMI pmax pmax
comp=Z,11nm,0.5s
KMI pmax pmax
comp=Z,83nm,4.1s
LTX Lajitas 67.06 298 *e*P P 16 02 58.1 -1.1
LTX Lajitas 67.06 298 *e*P P 16 02 58.0 -1.1
LTX Lajitas 67.06 298 *e*P P 16 02 58.0 -1.1
TX31 Lajitas Ar. Si 67.06 298 *e*P P 16 02 57.7 -1.4
TX31 Lajitas Ar. Si 67.06 298 *e*P P 16 02 57.7 -1.4
TXAR Lajitas Array 67.06 298 P P 16 02 58.0 -1.1
comp=Z,0.7nm,0.8s,baz=57,slow=5.7,SNR=6.4
TXAR LR LR 16 33 16.6
comp=Z,296nm,18.5s,baz=0.0,slow=37
TEIG Tepich 72.17 281 LR LR 16 37 11.2
comp=Z,54nm,18.1s,baz=327,slow=38
CMAR Chiang Mai Arr 72.48 84 P P 16 03 33.8 +1.3
comp=Z,0.8nm,1.1s,baz=348,slow=3.0,SNR=2.5
CM01 Chiang Mai Arr 72.52 84 *e*P P 16 03 32.6 -0.1
CM01 Chiang Mai Arr 72.52 84 *e*P P 16 03 32.6 -0.1
JTS JuntasAbangare 80.88 276 LR LR 16 36 22.2
comp=Z,100nm,21.5s,baz=360,slow=33
PTGA Pitinga 85.29 249 LR LR 16 36 29.4
comp=Z,16nm,19.4s,baz=51,slow=31
WR1 Warramunga Arr 117.94 59 *e*PKIKP **PKPdf** **16 10 50.3 -1.8**
WR1 Warramunga Arr 117.94 59 *e*PKPdf **PKPdf** **16 10 50.3 -1.8**
WRA Warramunga Arr 117.94 59 PKP **PKPdf** **16 10 50.3 -1.8**
comp=Z,0.4nm,1.0s,baz=334,slow=2.6,SNR=4.6
AS31 Alice Springs 121.45 61 *e*PKIKP **PKPdf** **16 10 57.4 -1.4**
AS31 Alice Springs 121.45 61 *e*PKPdf **PKPdf** **16 10 57.4 -1.4**
ASAR Alice Springs 121.45 61 PKP **PKPdf** **16 10 57.1 -1.7**
comp=Z,0.6nm,0.6s,baz=353,slow=1.8,SNR=17
MAW Mawson 146.91 145 PKPbc **PKPbc** **16 11 46.5 +0.1**
comp=Z,2.2nm,0.9s,baz=325,slow=4.1,SNR=6.9

JMA 14 15:52:41.0±0.1, 37°.81N×141°.53E, h41km±2km, M3.2, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JMM	**Marumori**	**0.59**	**276**	P	Pn	15 52 52.8	-0.1
JMM				S	Sn	15 53 01.1	-0.3
JIO	**Ouri**	**0.66**	**348**	P	Pn	15 52 53.8	-0.1
JIO				S	Sn	15 53 02.6	-0.5
JFK	**Kawauchi**	**0.68**	**230**	P	Pn	15 52 54.1	-0.2
JFK				S	Sn	15 53 03.1	-0.7
JOU	**Okura**	**0.88**	**309**	P	Pn	15 52 57.0	+0.1
JOU				S	Sn	15 53 08.6	0.0
ONAJ	**Iwakimizuishiy**	**0.92**	**220**	P	Pn	15 52 57.4	-0.1
ONAJ				S	Sn	15 53 08.5	-1.0
JFT	**Otama**	**0.99**	**253**	P	Pn	15 52 59.2	+0.8
JFT				S	Sn	15 53 12.2	+0.9
JHO	**Hitachi**	**1.42**	**213**	S	Sn	15 53 20.3	-1.5
MAT	**Matsushiro**	**2.94**	**246**	S	Sb	15 54 07.0	

*NIED **14** 15:52:00, 37°.20N×142°.40E, h8km, Mw3.6 Best double couple: M₀3.26000×10¹⁴ NP1:φ₁=21.00000°, δ=42.00000°, λ=-102.00000°. NP2:φ₂=218.00000°, δ=49.00000°, λ=-79.00000°.*

*IDC **14** 15:52:52.2±0.9, 37°.22N×142°.53E, h0km, mb3.6/9, mb1 3.7/12, mb1mx3.5/67, mbtmp3.7/12, ML3.3/3, MS2.6/1, Ms1 2.6/1, ms1mx2.3/48, Error ellipse: s-maj=23.8km s-min=16.3km az=97.0*

*ISCJB **14** 15:52:53.5±0.7, 37°.23N±0°.05×142°.53E±0°.05, h21km, mb3.5/10, Error ellipse: s-maj=7.9km s-min=6.0km az=169.8*

*JMA **14** 15:52:54.7±0.3, 37°.22N×142°.42E, h19km, M3.9*

ISC 14 15:52:54.9±0.8, 37°.25N±0°.06×142°.55E±0°.06, h21km, n26, σ1s47/24, mb3.6/10, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**1.34**	**275**	P	**Pn**	**15 53 17.3**	**-1.1**
JFK				S	**Sn**	**15 53 33.0**	**-2.5**
ONAJ	**Iwakimizuishiy**	**1.41**	**264**	*e*S	**Sn**	**15 53 35.0**	**-2.2**
JMM	**Marumori**	**1.52**	**294**	*e*S	**Sn**	**15 53 38.6**	**-1.4**
JIO	**Ouri**	**1.53**	**322**	P	**Pb**	**15 53 21.4**	**-1.1**
JIO				*e*S	**Sn**	**15 53 38.7**	**-1.5**
JFT	**Otama**	**1.78**	**279**	*e*S	**Sn**	**15 53 45.7**	**-0.7**
MJAR	**Matsushiro Arr** 1.9nm,0.3s,baz=47,slow=13,SNR=7.2	**3.55**	**260**	Pn	**Pn**	**15 53 49.2**	**+0.5**
MJAR				Sn	**Sn**	**15 54 30.0**	**0.0**
	2.4nm,0.3s,baz=268,slow=30,SNR=4.0						
MAT	**Matsushiro**	**3.55**	**260**	P	**Pn**	**15 53 49.4**	**+0.6**
MAT	**Matsushiro**	**3.55**	**260**	S	**Sn**	**15 54 31.3**	**+1.2**
JHJ	**Hachijo jima 2** 16nm,0.3s,baz=22,slow=21,SNR=7.3	**4.70**	**210**	Pn	**Pn**	**15 54 04.0**	**-0.6**
JHJ				Sn	**Sn**	**15 54 55.0**	**-3.4**
	13nm,0.3s,baz=59,slow=18,SNR=3.5						
ASAJ	**Asahikawa** 0.4nm,0.3s,baz=22,slow=19,SNR=4.5	**6.86**	**0**	Pn	**Pn**	**15 54 33.8**	**-0.4**
ASAJ				Sn	**Sn**	**15 55 49.7**	**-1.8**
	0.3nm,0.3s,baz=45,slow=20,SNR=2.0						
USRK	**Ussuriysk Ar.** 0.2nm,0.3s,baz=154,slow=14,SNR=4.6	**10.60**	**314**	Pn	Pn	15 55 30.1	+4.8
KSRS	**Korea Array** comp=Z,30nm,18.2s,baz=174,slow=33	**11.64**	**275**	LR	LR	15 59 22.0	
SEY	**Seymchan** 0.9nm,0.5s,baz=215,slow=11,SNR=11	**26.41**	**10**	P	**P**	**15 58 32.3**	**+2.7**
H11S1	**WAKE ISLAND Hy 28.23** baz=329,slow=76,SNR=128	**125**		T	T	16 27 51.5	
H11S3	**WAKE ISLAND Hy 28.23** baz=329,slow=76,SNR=130	**125**		T	T	16 27 52.3	
H11S2	**WAKE ISLAND Hy 28.24** baz=329,slow=76,SNR=113	**125**		T	T	16 27 53.6	
SONM	**Songino Array** 0.4nm,0.3s,baz=100,slow=8.1,SNR=4.2	**28.42**	**303**	P	**P**	**15 58 48.5**	**+0.5**
CMAR	**Chiang Mai Arr** 0.2nm,0.7s,baz=42,slow=12,SNR=3.4	**42.43**	**256**	P	P	16 00 51.7	+3.5
ZALV	**Zalesovo Beam** 0.6nm,0.6s,baz=95,slow=4.6,SNR=2.5	**42.44**	**312**	P	**P**	**16 00 48.0**	**+0.1**
MKAR	**Makanchi Array** 0.6nm,0.7s,baz=87,slow=12,SNR=4.6	**44.77**	**302**	P	**P**	**16 01 07.6**	**+0.8**
KURBB	**Kurchatov Arra** 1.3nm,0.6s,baz=81,slow=7.9,SNR=8.5	**46.58**	**308**	P	**P**	**16 01 21.6**	**+0.6**
WRA	**Warramunga Arr** 0.5nm,0.5s,baz=6.8,slow=7.1,SNR=13	**57.41**	**189**	P	**P**	**16 02 42.1**	**+0.2**
ASAR	**Alice Springs** 0.2nm,0.3s,baz=0.1,slow=6.0,SNR=12	**61.14**	**189**	P	**P**	**16 03 08.4**	**+0.7**
YKA	**Yellowknife Ar** 0.2nm,0.6s,baz=298,slow=6.8,SNR=4.5	**63.16**	**30**	P	**P**	**16 03 21.0**	**+0.2**
FINES	**FINESS Array B** 0.6nm,0.8s,baz=29,slow=12,SNR=2.6	**69.04**	**333**	P	**P**	**16 03 59.1**	**+0.5**
CPUP	**Villa Florida** 1.9nm,0.8s,baz=246,slow=5.8,SNR=3.7	**159.94**	**63**	PKP	PKPdf	16 12 42.4	-10

*IDC **14** 15:56:41.9±1.8, 17°.28S×178°.71W, h530km±22km, mb3.3/14, mb1 3.5/16, mb1mx3.3/37, mbtmp4.2/16, Error ellipse: s-maj=23.5km s-min=11.8km az=148.0*

*ISCJB **14** 15:56:42.3±0.6, 17°.3S±0°.2×178°.7W±0°.1, h547km, mb3.7/14, Error ellipse: s-maj=23.3km s-min=11.4km az=145.0*

ISC 14 15:56:43.3±0.8, 17°.3S±0°.2×178°.7W±0°.2, h547km, n20, σ0s89/20, mb3.7/14, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AFI	**Afiamalu** 2.3nm,0.3s,baz=53,slow=13,SNR=6.3	**7.52**	**64**	P	P	15 58 32.8	-3.5
DZM	**Mont Dzumac** 0.4nm,0.3s,baz=56,slow=14,SNR=7.6	**14.73**	**249**	P	**P**	**15 59 49.7**	**-0.4**
URZ	**Urewera** 7.4nm,0.9s,baz=71,slow=19,SNR=2.6	**21.17**	**189**	P	**P**	**16 00 50.9**	**+1.0**
CTA	**Charters Tower** 1.8nm,0.4s,baz=105,slow=10,SNR=5.5	**33.23**	**260**	P	**P**	**16 02 35.6**	**-0.1**
STKA	**Stephens Creek** 2.3nm,0.2s,baz=92,slow=7.0,SNR=26	**38.64**	**240**	P	**P**	**16 03 20.0**	**-0.1**
WRA	**Warramunga Arr** 1.5nm,0.2s,baz=95,slow=7.7,SNR=96	**44.43**	**259**	P	**P**	**16 04 05.2**	**-0.9**
WRA				PcP	**PcP**	**16 05 37.4**	**-0.5**
	0.7nm,0.7s,baz=99,slow=2.9,SNR=5.1						
ASAR	**Alice Springs** 12nm,0.3s,baz=90,slow=7.4,SNR=509	**44.65**	**254**	P	**P**	**16 04 07.5**	**-0.3**
ASAR				PcP	**PcP**	**16 05 37.9**	**-0.8**
	0.7nm,0.4s,baz=101,slow=4.9,SNR=5.2						
FITZ	**Fitzroy Crossi** 1.6nm,0.3s,baz=108,slow=3.9,SNR=15	**52.81**	**260**	P	**P**	**16 05 08.7**	**+0.4**
MJAR	**Matsushiro Arr** 0.9nm,0.6s,baz=146,slow=8.8,SNR=3.3	**67.25**	**323**	P	**P**	**16 06 44.2**	**+0.6**
NVAR	**Mina Array Bea** 1.2nm,0.8s,baz=232,slow=7.6,SNR=5.7	**79.23**	**44**	P	**P**	**16 07 51.6**	**-0.7**
SEY	**Seymchan** 1.3nm,0.6s,baz=184,slow=5.5,SNR=12	**83.14**	**347**	P	**P**	**16 08 12.1**	**+0.6**
ILAR	**Eielson Array** 0.2nm,0.3s,baz=224,slow=5.0,SNR=2.8	**85.39**	**13**	P	**P**	**16 08 22.5**	**-0.1**
TXAR	**Lajitas Array** 1.2nm,0.8s,baz=224,slow=5.2,SNR=9.5	**85.95**	**58**	P	**P**	**16 08 27.3**	**+1.1**
PDAR	**Pinedale Array** 0.2nm,0.4s,baz=160,slow=5.5,SNR=2.9	**87.15**	**44**	P	**P**	**16 08 31.1**	**-0.6**
CMAR	**Chiang Mai Arr** 0.7nm,0.8s,baz=111,slow=3.0,SNR=7.9	**88.39**	**290**	P	**P**	**16 08 39.6**	**+1.9**
YKA	**Yellowknife Ar** 0.2nm,0.8s,baz=248,slow=4.1,SNR=4.2	**93.94**	**25**	P	**P**	**16 09 01.3**	**-0.9**
MKAR	**Makanchi Array** 0.2nm,0.9s,baz=66,slow=0.7,SNR=3.1	**108.50**	**314**	PKiKP	**PKiKP**	**16 14 08.8**	**-1.1**
BVAR	**Borovoye Array** 0.3nm,0.4s,baz=132,slow=2.3,SNR=3.4	**116.19**	**321**	PKP	**PKPdf**	**16 14 23.1**	**-1.3**
BRTR	**Keskin Array B** 0.9nm,0.6s,baz=132,slow=5.5,SNR=5.4	**144.15**	**315**	PKP	PKPbc	16 15 16.9	-0.1
GERES	**GERESS Array B** 0.7nm,0.5s,baz=2.9,slow=2.7,SNR=6.4	**146.97**	**345**	PKPbc	**PKPbc**	**16 15 24.9**	**+0.2**

*BJI **14** 16:11:51.4, 5°.70N×126°.21E, h145km, mb5.3/82, mB5.1/60*
*MAN **14** 16:11:53, 5°.81N×126°.29E, h151km, mb5.7, ML4.7, MS5.2*
MAN INTENSITY II - GENERAL SANTOS CITY.
*MOS **14** 16:11:53.6±1.0, 5°.86N×126°.11E, h155km, mb5.0/98, Error ellipse: s-maj=8.4km s-min=4.2km az=110.5*
*ISCJB **14** 16:11:54.8±0.2, 5°.89N±0°.01×126°.25E±0°.02, h167km±2km, mb5.0/185, Error ellipse: s-maj=4.0km s-min=2.3km az=166.7*
*KLM **14** 16:11:54.3, 5°.84N×126°.48E, h154km, mb5.4, ML5.9, MS6.0*
*GCMT **14** 16:11:55.3±0.2, 5°.99N×126°.40E, h154km±1km,*
MW5.3/105, Moment Tensor Solution. s82,c117; s105,c175; Duration: 1s1 Moment tensor: Scale 10¹⁷ Nm; Mrr0.27±.02; Mθθ0.08±.02; Mϕϕ-0.35±.03; Mrθ-0.65±.01; Mθϕ-0.92±.02; Mϕr0.44±.02; Best double couple: M₀1.22300×10¹⁷ NP1:φ₁=258.00000°, δ=68.00000°, λ=151.00000°. NP2:φ₂=360.00000°, δ=63.00000°, λ=25.00000°. Principal axes: T 1.3640, Plg36.0000°, Azm217.0000°; N -0.2840, Plg54.0000°, Azm44.0000°; P -1.0810, Plg3.0000°, Azm310.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.
*NEIC **14** 16:11:55.3±0.5, 5°.89N×126°.22E, h157km±4km, mb5.1/113 Error ellipse: s-maj=4.3km s-min=3.1km az=79.0*
NEIC Felt [II PIVS] at General Santos. Also felt at Davao and Digos.
*IDC **14** 16:11:55.8±0.5, 5°.82N×126°.17E, h160km±3km, mb4.7/36, mb1 4.8/40, mb1mx4.7/42, mbtmp5.1/40, MS3.9/22, Ms1 3.9/22, ms1mx3.7/53, Error ellipse: s-maj=10.2km s-min=5.9km az=74.0*
*DJA **14** 16:12:01.7±0.9, 5°.1N±8°×12°.6E±°, h127km±9km, M5.5/12, mb5.7/12, mB5.8/12, MLv5.9/2, Mw(mB)5.3/12*

ISC 14 16:11:54.7±0.3, 5°.89N±0°.03×126°.25E±0°.04, h152km±2km, h152km:pP-P,n535,σ1s39/657, mb5.0/192, 28C-20D, Mindanao

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MATI	**Mati**	**1.05**	**1**	*e*P	**Pn**	**16 12 20.3**	**+0.1**
MATI				*e*S	**Sn**	**16 12 37.3**	**-2.4**
DAV	**Davao City (W)** 1μm,0.3s,baz=95,slow=1.9,SNR=48	**1.35**	**331**	P	**Pn**	**16 12 23.8**	**+0.9**
DAV				S	**Sn**	**16 12 47.7**	**+3.1**
	5μm,0.3s,baz=90,slow=20,SNR=41						
DAV	**Davao City (W)** SNR=153	**1.35**	**331**	Pn	**Pn**	**16 12 24.0**	**+1.1**
DAV	**Davao City (W)** SNR=153	**1.35**	**331**	P	**Pn**	**16 12 24.0**	**+1.1**
DMPH	**Davao City--Mi**	**1.40**	**328**	*e*P	**Pn**	**16 12 23.9**	**+0.5**
DMPH				*i*S	**Sn**	**16 12 48.7**	**+3.3**
KCP	**Kidapawan**	**1.60**	**314**	*e*P	**Pn**	**16 12 26.1**	**+0.5**
KCP				*i*S	**Sn**	**16 12 51.2**	**+1.8**
SGSI	**Sangihe**	**2.30**	**198**	P	**Pn**	**16 12 33.9**	**+0.3**
BUKP	**Musuan**	**2.30**	**329**	*e*P	**Pn**	**16 12 34.5**	**+0.8**
BUKP				*e*S	**Sn**	**16 13 00.3**	**-3.3**
CTBH	**Cotabato--PC H**	**2.39**	**304**	*i*P	**Pn**	**16 12 34.5**	**0.0**
CTBH				*i*S	Sn	16 12 55.0	-10
CGP	**Cagayan de Oro**	**2.98**	**329**	*e*P	**Pn**	**16 12 42.9**	**+0.9**
CGP				*i*S	**Sn**	**16 13 21.2**	**+2.6**
PAGZ	**Pagadian**	**3.45**	**305**	*e*P	**Pn**	**16 12 49.1**	**+1.2**
SCPH	**Surigao**	**3.94**	**349**	*e*P	**Pn**	**16 12 54.7**	**+0.5**
SCPH				*e*S	**Sn**	**16 13 41.0**	**+0.4**
TBP	**Tagbilaran**	**4.46**	**328**	*i*P	**Pn**	**16 13 02.3**	**+1.3**
LLP	**Lapu-Lapu**	**4.95**	**333**	*e*P	**Pn**	**16 13 08.7**	**+1.6**
LLP				*e*S	**Sn**	**16 14 06.3**	**+2.0**
TNTI	**Ternate**	**5.20**	**168**	P	**Pn**	**16 13 11.9**	**+1.0**
TNTI	**Ternate**	**5.20**	**168**	*e*Pn	**Pn**	**16 13 10.2**	**-0.7**
TNTI				*e*		16 13 56.3	
TNTI				*e*Sn	**Sn**	**16 14 08.2**	**-2.2**
OCLP	**Ormoc**	**5.38**	**343**	*e*P	**Pn**	**16 13 14.8**	**+1.5**
PLP	**Palo**	**5.39**	**347**	*e*P	**Pn**	**16 13 14.9**	**+1.5**
PLP				*e*S	**Sn**	**16 14 14.1**	**-0.8**
KMSI	**Cibinong** 6μm,0.7s,49μm24nm	**5.74**	**203**	P	**Pn**	**16 13 19.2**	**+1.2**
GUIM	**Jordan**	**5.94**	**323**	*e*P	**Pn**	**16 13 22.0**	**+1.3**
RCP	**Roxas**	**6.61**	**329**	*e*P	**Pn**	**16 13 31.6**	**+1.9**
MRSI	**Marisa**	**6.88**	**219**	P	**Pn**	**16 13 35.4**	**+2.2**
KALP	**Kalibo**	**6.93**	**326**	*e*P	Pn	16 13 37.3	+3.4
CUYO	**Cuyo Island**	**7.15**	**314**	*e*P	**Pn**	**16 13 37.4**	**+0.6**
MYLDM	**Lahad Datu**	**7.74**	**265**	*e*Pn	Pn	16 13 48.0	+3.3
MYLDM				*e*Sn	**Sn**	**16 15 11.6**	**+0.4**
SANI	**Sanana**	**7.89**	**182**	P	**Pn**	**16 13 46.3**	**-0.4**
APSI	**Ampana**	**8.17**	**214**	P	**Pn**	**16 13 52.4**	**+2.0**
AUQP	**San Andres**	**8.19**	**335**	*e*P	**Pn**	**16 13 49.8**	**-0.7**
SWI	**Sorong**	**8.37**	**143**	P	**Pn**	**16 13 53.5**	**+0.5**
SIJI	**Sorong** 17nm,0.3s,baz=262,slow=23,SNR=7.4	**8.38**	**143**	P	**Pn**	**16 13 53.8**	**+0.6**
SIJI				S	**Sn**	**16 15 22.6**	**-3.9**
	29nm,0.3s,baz=274,slow=19,SNR=2.9						
I39PW	**PALAU INFRASON** baz=270,slow=321,SNR=0.5	**8.40**	**78**	*i*		17 05 20.0	
TSM	**Tawau**	**8.49**	**260**	P	**Pn**	**16 13 57.0**	**+2.3**
BUSP	**Coron**	**8.52**	**316**	*e*P	**Pn**	**16 13 56.1**	**+1.0**
ENPP	**El Nido**	**8.57**	**309**	*e*P	**Pn**	**16 13 57.0**	**+1.3**
BOAC	**Boac**	**8.69**	**330**	*e*P	**Pn**	**16 14 00.2**	**+3.0**
GQP	**Guinayangan**	**8.80**	**335**	*e*P	Pn	16 14 02.1	+3.3
BATP	**Bataraza**	**8.86**	**290**	*e*P	**Pn**	**16 13 58.5**	**-1.1**
SDKM	**Sandakan**	**9.01**	**269**	P	**Pn**	**16 14 04.2**	**+2.6**
NLAI	**Namlea**	**9.11**	**175**	P	**Pn**	**16 14 01.7**	**-1.2**
PCI	**Palu** 685nm,1.4s,8μm	**9.30**	**224**	P	**Pn**	**16 14 08.3**	**+2.8**
LQP	**Lukban**	**9.39**	**331**	*e*P	Pn	16 14 10.3	+3.4
KDM	**Kudat**	**9.41**	**277**	P	**Pn**	**16 14 09.3**	**+2.3**
MSAI	**Masohi**	**9.55**	**164**	P	**Pn**	**16 14 10.6**	**+1.7**
TGY	**Tagaytay City** 76nm,0.3s,baz=219,slow=3.5,SNR=10	**9.69**	**328**	P	**Pn**	**16 14 11.2**	**+0.5**
TGY				LR	LR	16 18 13.0	
	comp=Z,1μm,20.2s,baz=152,slow=39						
KKM	**Kota Kinabalu**	**9.98**	**271**	P	**Pn**	**16 14 17.0**	**+2.4**
KKM	**Kota Kinabalu**	**9.98**	**271**	*e*Pn	**Pn**	**16 14 15.5**	**+1.0**
KDI	**Kendari** 229nm,0.7s,2μm	**10.43**	**200**	P	**Pn**	**16 14 19.6**	**-0.8**
FAKI	**Fak Fak**	**10.60**	**145**	P	**Pn**	**16 14 24.3**	**+1.6**
FAKI	**Fak Fak**	**10.60**	**145**	*e*Pn	**Pn**	**16 14 23.1**	**+0.4**
RKPI	**Ransiki, Papua**	**10.80**	**133**	P	Pn	16 14 29.3	+3.9
BALP	**Baler**	**10.81**	**335**	*e*P	**Pn**	**16 14 28.4**	**+2.9**
TTSI	**Tana Toraja**	**10.95**	**216**	P	**Pn**	**16 14 30.1**	**+2.8**
BNDI	**Bandanaira**	**10.97**	**160**	P	**Pn**	**16 14 29.1**	**+1.6**
SCZP	**Santa Cruz**	**11.63**	**328**	*e*P	**Pn**	**16 14 39.0**	**+2.8**
BKB	**Balikpapan**	**11.73**	**233**	P	Pn	16 14 40.6	+3.1
SPSI	**Sidrap Palu** 252nm,1.0s,3μm	**11.73**	**214**	P	**Pn**	**16 14 38.9**	**+1.4**
BCPH	**Baguio City Da**	**11.81**	**332**	*e*P	**Pn**	**16 14 41.9**	**+3.2**
KAPI	**Kappang** 18nm,0.3s,baz=37,slow=5.6,SNR=92	**12.62**	**211**	P	**Pn**	**16 14 49.9**	**+0.8**
KAPI	**Kappang** SNR=27	**12.62**	**211**	Pn	**Pn**	**16 14 49.0**	**-0.1**
KAPI	**Kappang** SNR=27	**12.62**	**211**	P	**Pn**	**16 14 49.0**	**-0.1**
ABRA	**Dolores**	**12.88**	**336**	*e*P	**Pn**	**16 14 54.7**	**+2.3**
SGCP	**Mt. Cagua**	**12.95**	**342**	*e*P	**P**	**16 14 59.6**	**+1.6**
MTKI	**Muara Teweh, K** 465nm,0.9s,8μm	**13.21**	**239**	P	**P**	**16 15 01.3**	**+0.3**
SIPP	**Brgy, Tapao**	**13.23**	**335**	*e*P	**Pn**	**16 14 59.0**	**+2.2**
BSSI	**Bau Bau, Buton**	**13.26**	**206**	P	**P**	**16 15 01.1**	**-0.4**
PIP	**Pasuquin**	**13.53**	**337**	*e*P	**P**	**16 15 03.2**	**-1.2**
SBUM	**Sibu**	**14.40**	**257**	P	**P**	**16 15 14.2**	**0.0**
SBUM	**Sibu**	**14.40**	**257**	*e*Pn	**P**	**16 15 14.2**	**0.0**
SAUI	**Saumlaki** 326nm,1.1s,5μm	**14.67**	**160**	P	**Pn**	**16 15 15.0**	**0.0**
SAUI	**Saumlaki**	**14.67**	**160**	*e*Pn	**Pn**	**16 15 14.0**	**-1.0**
SAUI				*e*Sn	**Sn**	**16 17 53.6**	**-4.5**
BBKI	**Banjar Baru** 544nm,0.7s,6μm	**14.70**	**231**	P	**P**	**16 15 18.3**	**+0.8**
EDFI	**Ende, Flores** 355nm,0.7s,5μm	**15.23**	**197**	P	**P**	**16 15 23.6**	**+0.1**
SOEI	**Soe** 367nm,0.8s	**15.66**	**187**	*e*Pn	**P**	**16 15 29.6**	**+1.2**
SOEI				*e*S	S	16 18 31.0	+7.5
STKI	**Sintang**	**15.84**	**249**	P	**P**	**16 15 32.3**	**+2.1**
BATI	**Baumata** baz=288,slow=20	**16.19**	**189**	P	**P**	**16 15 36.4**	**+2.3**
BATI				S	**Sn**	**16 18 34.6**	**0.0**
	3.8nm,0.3s,baz=271,slow=23,SNR=3.5						
KSM	**Kuching**	**16.50**	**255**	P	**Pn**	**16 15 39.4**	**+1.9**
KSM	**Kuching** 203nm,0.8s	**16.50**	**255**	*e*P	**Pn**	**16 15 39.3**	**+1.8**
JAY	**Jayapura** 0.5nm,0.3s,baz=148,slow=23,SNR=15	**16.68**	**120**	P	**Pn**	**16 15 40.2**	**+0.5**
TWG	**Pinlang** 458nm,0.6s	**17.56**	**344**	*e*P	**P**	**16 15 48.0**	**-1.1**
YULB	**Yu-li** 52nm,0.8s	**18.05**	**345**	*e*P	**P**	**16 15 52.9**	**-1.4**
TPUB	**Ta-pu** 139nm,0.8s	**18.14**	**343**	*e*P	**P**	**16 15 54.9**	**-0.5**
SSLB	**Suanglung** 78nm,0.6s	**18.51**	**345**	*e*P	**P**	**16 15 58.3**	**-1.2**
JAGI	**Jajag, Banyuwa** 171nm,0.7s	**18.68**	**220**	*e*P	**P**	**16 16 01.0**	**-0.4**
NACB	**Ninganchiao** 48nm,0.7s	**18.72**	**347**	*e*P	**P**	**16 16 00.8**	**-0.9**
YOJ	**Yonaguni jima**	**18.73**	**351**	*e*P	**Pn**	**16 16 03.1**	**-0.8**
YOJ				pmax	pmax		
	comp=Z,456nm,1.3s						
YOJ	**Yonaguni jima** comp=Z,456nm,1.3s	**18.73**	**351**	*e*P	**Pn**	**16 16 03.1**	**-0.8**
MTN	**Manton Dam** baz=19,SNR=159	**19.23**	**165**	P	**P**	**16 16 07.9**	**+0.6**
MTN	**Manton Dam** comp=Z,92nm,0.6s	**19.23**	**165**	*e*P	**P**	**16 16 07.7**	**+0.4**
YHNB	**Yeheng** comp=Z,118nm,0.7s	**19.25**	**346**	*e*P	**P**	**16 16 06.5**	**-1.1**
KDU	**Kakadu** baz=20,SNR=38	**19.46**	**161**	P	**P**	**16 16 10.4**	**+0.6**
TATO	**Taipei** comp=Z,121nm,0.8s	**19.52**	**347**	*e*P	**P**	**16 16 09.6**	**-0.8**
GUMO	**Guam** comp=Z,8.4nm,0.3s,baz=346,slow=17,SNR=4.6	**19.87**	**66**	P	**P**	**16 16 14.4**	**+0.1**
GUMO				LR	LR	16 22 25.6	
	comp=Z,312nm,21.6s,baz=232,slow=32						
QZH	**Quanzhou**	**20.32**	**340**	*i*P	**P**	**16 16 16.0**	**-2.9**
QZH				pP	**pP**	**16 16 46.4**	**+0.7**
QZH				S	**S**	**16 19 53.9**	**-4.6**
QZH				pmax	pmax		
	comp=Z,290nm,0.8s						
QZH				pmax	pmax		
	comp=Z,2μm,3.7s						
UGM	**Wanagama** comp=Z,255nm,1.0s	**20.83**	**229**	*e*P	**P**	**16 16 25.0**	**+0.5**
JOW	**Kunigami** comp=Z,78nm,0.7s	**20.92**	**5**	*e*P	**P**	**16 16 26.4**	**+1.1**
GZH	**Guangzhou**	**21.15**	**325**	P	**P**	**16 16 30.4**	**+2.6**
GZH				pP	pP	16 17 02.4	+7.6
GZH				S	**S**	**16 20 17.6**	**+3.3**
GZH				PcP	**PcP**	**16 20 23.8**	**-3.8**
GZH				pmax	pmax		
	comp=Z,650nm,7.7s						
LEM	**Lembang** comp=Z,153nm,0.8s,baz=43,slow=8.0,SNR=59	**22.48**	**236**	P	P	16 16 48.6	+6.8
MYKOM	**Kota Tinggi** comp=Z,284nm,1.7s	**22.71**	**261**	*e*P	**P**	**16 16 43.9**	**+0.1**
CISI	**Cisompet, Garu** comp=Z,128nm,0.8s	**22.73**	**234**	*e*P	**P**	**16 16 41.4**	**-2.6**
CISI				*e*ScP	**ScP**	**16 23 53.3**	**-1.4**
KTGM	**Kuala Trenggan**	**23.01**	**270**	P	**P**	**16 16 47.5**	**+1.0**
KGM	**Kluang**	**23.19**	**261**	P	**P**	**16 16 49.1**	**+0.9**
FITZ	**Fitzroy Crossi** comp=Z,130nm,0.8s,baz=11,slow=7.7,SNR=210	**23.84**	**181**	P	**P**	**16 16 54.4**	**+0.4**
FITZ				S	**S**	**16 20 58.7**	**-0.2**
	comp=Z,2.9nm,0.5s,baz=204,slow=13,SNR=3.2						
FITZ				ScP	**ScP**	**16 23 57.4**	**-0.1**
	comp=Z,9.9nm,0.9s,baz=24,slow=3.9,SNR=3.7						
FITZ	**Fitzroy Crossi** baz=24,SNR=127	**23.84**	**181**	P	**P**	**16 16 54.5**	**+0.4**
FITZ	**Fitzroy Crossi** comp=Z,269nm,1.1s	**23.84**	**181**	*e*P	**P**	**16 16 54.2**	**+0.1**
FITZ				*e*S	**S**	**16 20 58.2**	**-0.7**
FITZ				ScP	**ScP**	**16 23 57.4**	**-0.1**
FRIM	**Kepong**	**24.68**	**265**	P	**P**	**16 17 02.8**	**+1.0**
IPM	**Ipoh**	**25.16**	**268**	P	**P**	**16 17 06.5**	**+0.4**
IPM	**Ipoh** comp=Z,40nm,0.7s	**25.16**	**268**	*e*P	**P**	**16 17 05.4**	**-0.7**
IPM				*e*ScP	**ScP**	**16 24 01.3**	**-0.1**
MNAI	**Manna** comp=Z,566nm,1.5s	**25.39**	**247**	*e*P	**P**	**16 17 07.9**	**-0.3**
KULM	**Kulim** comp=Z,55nm,1.4s	**25.48**	**270**	*e*P	**P**	**16 17 10.8**	**+1.7**
KULM				*e*ScP	**ScP**	**16 24 01.1**	**-1.1**
SSE	**Sheshan**	**25.52**	**350**	P	**P**	**16 17 10.6**	**+1.5**
SSE				pP	**pP**	**16 17 38.5**	**-2.5**
SSE				sP	**sP**	**16 17 55.3**	**-3.3**
SSE				S	**S**	**16 21 28.0**	**+2.6**
SSE				sS	**sS**	**16 22 22.6**	**+1.0**
SSE				pmax	pmax		
	comp=Z,23nm,0.6s						
SSE				pmax	pmax		
	comp=Z,440nm,4.9s						
SSE				LR	LR		
	comp=Z,140nm,22.0s						
SSE				LR	LR		
	comp=Z,45nm,22.0s						
SSE				LR	LR		
	comp=Z,150nm,22.0s						
BKNI	**Bangkinang** comp=Z,97nm,0.5s	**25.76**	**259**	*e*P	**P**	**16 17 11.4**	**-0.2**
PMG	**Port Moresby** comp=Z,42nm,0.5s,baz=74,slow=2.6,SNR=42	**25.79**	**126**	P	**P**	**16 17 11.3**	**-0.4**
PMG				S	**S**	**16 21 30.9**	**+1.0**
	comp=Z,6.6nm,0.8s,baz=111,slow=23,SNR=3.3						
PMG	**Port Moresby**	**25.79**	**126**	*e*P	**P**	**16 17 10.8**	**-0.9**
PMG				S	**S**	**16 21 30.9**	**+1.0**
PMG				pmax	pmax		
	comp=Z,105nm,1.0s						
PMG	**Port Moresby** comp=Z,105nm,1.0s	**25.79**	**126**	*e*P	**P**	**16 17 10.8**	**-0.9**
PMG				S	**S**	**16 21 30.9**	**+1.0**
COEN	**Coen** baz=26,SNR=58	**25.90**	**140**	P	**P**	**16 17 12.5**	**-0.3**
COEN	**Coen** comp=Z,134nm,0.7s	**25.90**	**140**	*e*P	**P**	**16 17 12.5**	**-0.3**
CBIJ	**Chichi jima** comp=Z,162nm,0.9s	**25.98**	**34**	*e*P	**P**	**16 17 10.9**	**-2.5**
JCJ	**Chichijima** comp=Z,66nm,0.4s,baz=237,slow=2.7,SNR=25	**25.98**	**34**	P	**P**	**16 17 11.5**	**-1.9**

GYA PcP **PcP** **16 20 43.3 +1.2**
GYA S **S** **16 22 01.9 +1.7**
GYA sS sS 16 22 54.5 -2.3
GYA ScP **ScP** **16 24 09.8 +1.0**
GYA ScS **ScS** **16 28 00.6 -0.7**
GYA pmax pmax
comp=N,20nm,0.8s
GYA pmax pmax
comp=N,130nm,5.0s
RABL Rabaul 27.75 111 *e*P **P** **16 17 29.3 0.0**
comp=N,38nm,0.6s
ENH Enshi 28.94 329 *e*P **P** **16 17 38.9 -0.8**
comp=N,115nm,0.8s
GSI Gunungsitoli 28.97 262 *e*P **P** **16 17 38.4 -1.8**
comp=N,104nm,0.7s
GSI *e*ScP **ScP** **16 24 12.8 0.0**
QIS Mount Isa 29.38 154 P **P** **16 17 43.8 +0.2**
baz=30,SNR=50
CM01 Chiang Mai Arr 29.39 297 *e*P **P** **16 17 43.9 +0.1**
CM01 *e*ScP **ScP** **16 24 13.9 -0.2**
CM31 Chiang Mai Arr 29.41 298 *e*P **P** **16 17 44.7 +0.6**
CM31 *e*PcP **PcP** **16 20 45.3 -1.1**
CM31 *e*ScP **ScP** **16 24 14.5 +0.3**
CMAR Chiang Mai Arr 29.41 298 P **P** **16 17 44.6 +0.6**
comp=N,12nm,0.6s,baz=108,slow=7.0,SNR=82
CMAR PcP **PcP** **16 20 46.1 -0.3**
comp=N,1.0nm,0.5s,baz=106,slow=1.3,SNR=4.8
CMAR ScP **ScP** **16 24 15.0 +0.9**
comp=N,20nm,1.0s,baz=115,slow=1.5,SNR=38
CMAR LR LR 16 30 09.8
comp=N,204nm,18.8s,baz=124,slow=37
CMAR Chiang Mai Arr 29.41 298 P **P** **16 17 44.6 +0.6**
CMAR 16 20 46.2
CMAR 16 24 15.0
CMAR pmax pmax
comp=Z,11nm,0.6s
CMAR pmax pmax
comp=Z,1.0nm,0.5s
CMAR pmax pmax
comp=N,20nm,1.0s
CMAR MLR MLR
comp=Z,204nm,18.8s
CHTO Chiang Mai 29.54 298 *e*P **P** **16 17 45.3 +0.1**
CHTO *e* 16 24 15.0
CHTO pmax pmax
comp=Z,21nm,0.8s
CHTO Chiang Mai 29.54 298 *e*P **P** **16 17 45.3 +0.1**
comp=Z,21nm,0.8s
CHTO *e*ScP **ScP** **16 24 15.0 +0.5**
CHTO Chiang Mai 29.54 298 P **P** **16 17 45.3 +0.1**
SNR=9.2
CHTO Chiang Mai 29.54 298 P **P** **16 17 45.3 +0.1**
SNR=9.2
KMI Kunming 29.55 313 P **P** **16 17 47.1 +1.7**
KMI pP pP 16 18 19.3 +1.7
KMI sP sP 16 18 36.3 +1.1
KMI PP **PnPn** **16 18 50.4 +2.7**
KMI S **S** **16 22 28.9 -0.5**
KMI pmax pmax
comp=Z,60nm,1.0s
KMI pmax pmax
comp=Z,120nm,3.1s
KMI LR LR
comp=Z,220nm,10.0s
KMI LR LR
comp=Z,410nm,11.1s
KMI LR LR
comp=Z,290nm,12.7s
MTSU Mount Surprise 29.79 144 P **P** **16 17 47.9 +0.5**
baz=30,SNR=45
AS31 Alice Springs 30.31 166 *e*P **P** **16 17 51.4 -0.5**
comp=Z,14nm,0.4s
AS31 *e*S **S** **16 22 35.8 -5.1**
AS31 *e*ScP **ScP** **16 24 15.4 -1.5**
ASAR Alice Springs 30.31 166 P **P** **16 17 51.8 -0.1**
comp=Z,6.6nm,0.4s,baz=341,slow=6.9,SNR=201
ASAR PcP **PcP** **16 20 48.3 -0.3**
comp=Z,2.9nm,0.5s,baz=350,slow=2.8,SNR=2.4
ASAR S **S** **16 22 39.5 -1.4**
comp=Z,9.1nm,1.1s,baz=353,slow=21,SNR=6.8
ASAR ScP **ScP** **16 24 17.3 +0.4**
comp=Z,10nm,1.0s,baz=342,slow=2.4,SNR=14
ASAR P3KPbc 16 49 42.9
comp=Z,0.4nm,0.6s,baz=162,slow=4.0,SNR=9.5
AS01 Alice Springs 30.32 166 *e*P **P** **16 17 51.3 -0.6**
GIRL Giralia 30.70 202 P **P** **16 17 56.4 +1.2**
baz=31,SNR=55
WRKA Warakurna 30.80 176 P **P** **16 17 56.7 +0.4**
baz=31,SNR=55
INU Inuyama 30.95 17 *e*P **P** **16 17 57.0 -0.4**
comp=Z,72nm,0.6s
TIA Tai'an 31.32 346 ⇑P **P** **16 18 01.4 +0.8**
TIA pmax pmax
comp=Z,40nm,0.7s
KS15 Wonju Array Si 31.44 2 *e*P **P** **16 18 02.3 +0.7**
KSAR Wonju Array Be 31.44 2 P **P** **16 18 02.9 +1.2**
KSAR 16 20 52.4
KSAR Wonju Array Be 31.44 2 P **P** **16 18 02.9 +1.2**
KSAR PcP **PcP** **16 20 52.4 +1.0**
KSAR ScP **ScP** **16 24 21.7 +1.3**
KSRS Korea Array 31.46 3 P **P** **16 18 02.9 +1.1**
comp=Z,11nm,0.6s,baz=188,slow=9.8,SNR=68
KSRS PcP **PcP** **16 20 52.4 +1.0**
comp=Z,3.7nm,0.7s,baz=184,slow=2.5,SNR=7.1
KSRS ScP **ScP** **16 24 21.7 +1.3**
comp=Z,1.7nm,1.0s,baz=192,slow=3.5,SNR=6.0
KS01 Wonju Array Si 31.48 3 *e*P **P** **16 18 02.4 +0.4**
KS01 *e*PcP **PcP** **16 20 50.9 -0.5**
KS01 *e*ScP **ScP** **16 24 20.7 +0.2**
CMBY CAMPBELL BAY 32.13 274 *e*P **P** **16 18 08.3 +0.2**
CMBY IAmb IAmb 16 18 08.8
comp=Z,96nm,1.5s
XAN Xi'an 32.29 332 P **P** **16 18 08.6 -0.6**
XAN PP **PnPn** **16 19 18.8 -3.2**
XAN S S 16 23 05.1 -6.5
XAN ScP **ScP** **16 24 23.5 +0.1**
XAN PcS **PcS** **16 24 41.3 +2.3**
XAN pmax pmax
comp=Z,140nm,0.9s
XAN pmax pmax
comp=Z,75nm,4.5s
XAN LR LR
comp=Z,250nm,18.5s
XAN LR LR
comp=Z,370nm,18.5s
XAN LR LR
comp=Z,340nm,18.5s
MAJO Matsushiro 32.42 18 *c i*P **P** **16 18 09.1 -1.1**
MAJO pmax pmax
comp=Z,105nm,0.7s
MAJO Matsushiro 32.42 18 *e*P **P** **16 18 08.7 -1.5**
comp=Z,18nm,0.7s
MAT Matsushiro 32.42 18 P **P** **16 18 08.2 -2.0**
MAT S **S** **16 23 13.2 -0.3**
MJAR Matsushiro Arr 32.42 18 P **P** **16 18 09.7 -0.5**
comp=Z,11nm,0.7s,baz=194,slow=9.2,SNR=34
MJAR PcP **PcP** **16 20 55.3 +1.2**
comp=Z,5.2nm,0.8s,baz=186,slow=3.0,SNR=6.5
MJAR ScP **ScP** **16 24 25.1 +1.3**
comp=Z,9.5nm,1.1s,baz=203,slow=3.6,SNR=15
MJB9 Matsu-Tunnel 32.42 18 *e*P **P** **16 18 09.0 -1.3**
comp=Z,4.6nm,0.7s
MJB9 *e*ScP **ScP** **16 24 23.5 -0.3**
CTA Charters Tower 32.46 143 P **P** **16 18 12.2 +1.4**
CTA pmax pmax
comp=Z,27nm,0.8s
CTAO Charters Tower 32.46 143 *e*P **P** **16 18 11.2 +0.4**
CTAO pmax pmax
comp=Z,19nm,0.8s
CTAO Charters Tower 32.46 143 *e*P **P** **16 18 11.2 +0.4**
comp=Z,19nm,0.8s
CD2 Chengdu 32.64 322 P **P** **16 18 11.8 -0.5**
CD2 pP pP 16 18 42.5 -2.2
CD2 sP sP 16 18 59.3 -3.0
CD2 PP **PP** **16 19 28.8 -0.4**
CD2 S **S** **16 23 12.9 -4.2**
CD2 sS sS 16 24 13.0 -1.2
CD2 pmax pmax
comp=Z,130nm,0.9s
CD2 pmax pmax
comp=Z,170nm,5.3s
DL2 Dalian 33.13 353 ⇓P **P** **16 18 18.3 +1.9**
DL2 *e*sP **sP** **16 19 07.8 +1.4**
DL2 S **S** **16 23 27.1 +2.7**
DL2 pmax pmax
comp=Z,300nm,0.6s
DL2 pmax pmax
comp=Z,320nm,5.1s
DGPR DIGLIPUR 33.62 285 *e*P **P** **16 18 21.1 +0.2**
DGPR IAmb IAmb 16 18 32.2
BJT Baijiatuau 35.17 347 *e*P **P** **16 18 34.8 +0.9**
BJT pmax pmax
comp=Z,200nm,0.6s
BJT Baijiatuau 35.17 347 *e*P **P** **16 18 34.8 +0.9**
comp=Z,200nm,0.6s
BJI Beijing 35.19 347 P **P** **16 18 34.9 +0.8**
BJI pP **pP** **16 19 05.4 -1.4**
BJI S S 16 23 50.0 -6.0
BJI sS **sS** **16 24 54.4 +1.0**
BJI pmax pmax
comp=Z,260nm,0.6s
BJI pmax pmax
comp=Z,1.0nm,2.7s
BJI LR LR
comp=Z,290nm,21.1s
BJI LR LR
comp=Z,430nm,21.6s
SNY Shenyang 35.87 357 ⇓P **P** **16 18 41.3 +1.5**
SNY S **S** **16 24 09.5 +3.2**
SNY pmax pmax
comp=Z,310nm,0.6s
SNY pmax pmax
comp=Z,800nm,3.5s
SNY LR LR
comp=Z,430nm,13.2s
SNY LR LR
comp=Z,320nm,10.8s
SNY LR LR
comp=Z,560nm,27.7s
MORW Morawa 36.12 195 P **P** **16 18 42.5 +0.4**
baz=36,SNR=49
LZH Lanzhou 36.42 329 ⇑P **P** **16 18 46.1 +1.3**
LZH pP pP 16 19 19.3 +1.5
LZH sP sP 16 19 35.0 -0.2
LZH S **S** **16 24 13.3 -2.0**
LZH sS sS 16 25 09.6 -3.3
LZH SS **SS** **16 26 52.0 -8.8**
LZH pmax pmax
comp=Z,89nm,1.1s
LZH pmax pmax
comp=Z,650nm,4.3s
LZH LR LR
comp=Z,320nm,12.8s
LZH LR LR
comp=Z,360nm,13.4s
LZH LR LR
comp=Z,500nm,14.7s
QLP Quilpie 36.68 152 P **P** **16 18 46.7 -0.3**
baz=37,SNR=18
MSHR Mys Shultsa 36.80 6 *c e*P **P** **16 18 50.3 +2.6**
HHC Hu-ho-hao-te 37.21 341 *e*P **P** **16 18 52.3 +0.9**
HHC pP pP 16 19 24.5 +0.1
HHC sP sP 16 19 36.0 -5.8
HHC S **S** **16 24 28.5 +1.4**
HHC pmax pmax
comp=Z,64nm,1.0s
HHC pmax pmax
comp=Z,350nm,5.7s
KMBL Kambalda 37.28 186 P **P** **16 18 52.6 +0.6**
baz=37,SNR=44
VLA Vladivostok 37.41 7 *d i*P **P** **16 18 54.4 +1.5**
VLA pmax pmax
comp=Z,84nm,1.1s
BLDU Ballidu 37.43 194 P **P** **16 18 53.4 +0.2**
baz=38,SNR=82
BTO Baotou 37.51 340 *e*P **P** **16 18 52.8 -1.1**
CN2 Changchun 37.77 359 ⇑P **P** **16 18 56.9 +1.0**
CN2 *e*pP pP 16 19 31.0 +2.0
CN2 pmax pmax
comp=Z,60nm,0.8s
KLBR Kellerberrin 38.14 192 P **P** **16 18 59.6 +0.5**
baz=38,SNR=72
SHL Shillong 38.24 305 *e*P **P** **16 19 00.5 +0.1**
USRK Ussuriysk Ar. 38.49 7 P **P** **16 19 02.9 +1.0**
comp=Z,24nm,0.6s,baz=180,slow=7.4,SNR=56
USRK ScP **S** **16 24 46.1 +0.1**
comp=Z,1.7nm,0.8s,baz=248,slow=3.5,SNR=4.7
USRK LR LR 16 34 52.9
comp=Z,116nm,21.5s,baz=198,slow=36
MDJ Mudanjiang 38.69 4 P **P** **16 19 05.0 +1.4**
MDJ pP pP 16 19 35.8 -1.0
MDJ sP sP 16 19 50.9 -3.2
MDJ ScP **S** **16 24 48.5 -0.5**
MDJ S **ScP** **16 24 50.5 +4.1**
MDJ PcS **PcS** **16 25 03.3 +1.5**
MDJ sS sS 16 25 45.5 -1.5
MDJ ScS **ScS** **16 28 59.1 +1.8**
MDJ pmax pmax
comp=Z,62nm,1.2s
MDJ pmax pmax
comp=Z,180nm,5.6s
MDJ Mudanjiang 38.69 4 *e*P **P** **16 19 05.0 +1.4**
comp=Z,134nm,1.4s
RMQ Roma 38.88 147 P **P** **16 19 05.7 +0.2**
baz=39,SNR=7.6
ERM Erimo 38.99 20 ⇑ *e*P **P** **16 19 07.9 +1.7**
ERM pmax pmax
comp=Z,27nm,1.4s
EIDS Eidsvold 39.35 143 P **P** **16 19 09.1 -0.2**
baz=40,SNR=22
EIDS Eidsvold 39.35 143 *e*P **P** **16 19 08.8 -0.6**
comp=Z,22nm,0.6s
NWAO Narrogin (SRO) 39.54 192 P **P** **16 19 11.7 +0.9**
baz=40,SNR=155
NWAO Narrogin (SRO) 39.54 192 *e*P **P** **16 19 11.5 +0.7**
NWAO pmax pmax
comp=Z,333nm,1.3s
NWAO Narrogin (SRO) 39.54 192 *e*P **P** **16 19 11.5 +0.7**
comp=Z,333nm,1.3s
NWAO Narrogin (SRO) 39.54 192 P **P** **16 19 11.7 +0.9**
SNR=10.0
NWAO Narrogin (SRO) 39.54 192 P **P** **16 19 11.7 +0.9**
SNR=10.0
BBOO Buckleboo 39.60 167 P **P** **16 19 11.8 +0.5**
baz=40,SNR=60
BBOO Buckleboo 39.60 167 *e*P **P** **16 19 11.4 +0.1**
comp=Z,50nm,0.9s
STKA Stephens Creek 40.30 160 P **P** **16 19 17.6 +0.5**
comp=Z,20nm,0.7s,baz=336,slow=8.0,SNR=58
STKA Stephens Creek 40.30 160 P **P** **16 19 17.7 +0.5**
baz=40,SNR=49
STKA Stephens Creek 40.30 160 *e*P **P** **16 19 17.2 0.0**
comp=Z,7.1nm,0.6s
LSA Lhasa 40.68 310 P **P** **16 19 22.4 +1.5**
LSA pmax pmax
comp=Z,24nm,0.8s
LSA Lhasa 40.68 310 *e*P **P** **16 19 21.8 +0.9**
LSA pmax pmax
comp=Z,107nm,1.8s
LSA Lhasa 40.68 310 *e*P **P** **16 19 21.8 +0.9**
comp=Z,107nm,1.8s
LSA *e*ScP **ScP** **16 24 54.6 -0.5**
ASAJ Asahikawa 40.69 18 P **P** **16 19 21.8 +1.6**
comp=Z,16nm,0.4s,baz=235,slow=8.9,SNR=88
ASAJ Asahikawa 40.69 18 *e*P **P** **16 19 21.6 +1.4**
comp=Z,33nm,0.7s
HTT Hallett 40.91 164 P **P** **16 19 23.2 +1.1**
baz=41,SNR=20
GTA Gaotai 41.02 328 *e*P **P** **16 19 23.3 +0.2**
GTA pP pP 16 19 54.6 -2.0
GTA sP sP 16 20 10.8 -3.1
GTA PcP **PcP** **16 21 22.1 +1.9**
GTA ScP **ScP** **16 24 56.0 +0.2**
GTA S **S** **16 25 27.3 +3.2**
GTA sS sS 16 26 22.5 -0.1
GTA SS **SS** **16 28 27.8 -4.8**
GTA ScS **ScS** **16 29 10.8 -0.9**
GTA pmax pmax
comp=Z,31nm,0.9s
GTA pmax pmax
comp=Z,130nm,6.9s
GTA LR LR
comp=Z,260nm,16.9s
GTA LR LR
comp=Z,250nm,15.7s
GTA LR LR
comp=Z,330nm,19.7s
RKGY Rocky Gully 41.22 192 P **P** **16 19 26.4 +1.8**
baz=41,SNR=65
H11S3 WAKE ISLAND Hy 41.35 69 T T 17 03 59.7
baz=258,slow=75,SNR=38
H11S1 WAKE ISLAND Hy 41.37 69 T T 17 04 03.6
baz=258,slow=75,SNR=37
H11S2 WAKE ISLAND Hy 41.37 69 T T 17 03 40.6
baz=258,slow=75,SNR=67
CMSA Cobar Meteorol 41.59 155 P **P** **16 19 28.2 +0.6**
baz=42,SNR=29
H11N1 WAKE ISLAND Hy 41.82 67 T T 17 04 47.2
baz=254,slow=75,SNR=17
H11N2 WAKE ISLAND Hy 41.83 67 T T 17 04 40.5
baz=254,slow=75,SNR=14
H11N3 WAKE ISLAND Hy 41.83 67 T T 17 04 42.9
baz=254,slow=75,SNR=17
BOK Bokaro 42.67 299 *e*P **P** **16 19 37.6 +0.9**
BOK IAmb IAmb 16 19 38.6
comp=Z,24nm,0.7s
HABR Khabarovsk 43.09 9 *e*P **P** **16 19 38.6 -0.9**
HABR *e**PP **pP** **16 20 11.9 -1.4**
HABR *e**SP **sP** **16 20 28.9 -1.6**
HABR *e* 16 21 22.0
HABR 16 21 25.4
HABR *e*PPP PPP 16 22 01.4
HABR *e*S **S** **16 25 54.3 +0.3**
HABR *e**SS **sS** **16 26 52.8 -0.1**
HABR *e* 16 29 22.4
HABR pmax pmax
comp=N,25nm,1.1s
HABR pmax pmax
comp=E,11nm,1.1s
HABR pmax pmax
comp=Z,57nm,1.1s
HABR MLR MLR
comp=Z,196nm,17.0s
YSS Yuzh-Sakhalins 43.31 16 *e*P **P** **16 19 41.8 +0.4**
YSS *e* 16 21 29.0
YSS *e*S **S** **16 26 00.0 +2.7**
YSS *e*SS **SS** **16 29 21.0 +4.0**
YSS pmax pmax
comp=Z,200nm,2.5s
YSS pmax pmax
comp=Z,30nm,0.5s
YSS MLR MLR
comp=Z,200nm,15.0s
YSS Yuzh-Sakhalins 43.31 16 *e*P **P** **16 19 41.7 +0.3**
comp=Z,27nm,0.6s
KLR Kul'dur 43.44 5 P **P** **16 19 43.0 +0.6**
comp=Z,20nm,0.5s,baz=201,slow=6.9,SNR=94
KLR ScP **ScP** **16 25 04.8 -0.4**
comp=Z,4.6nm,1.1s,baz=176,slow=7.0,SNR=5.7
ARMA Armidale 43.53 147 P **P** **16 19 44.4 +0.9**
baz=44,SNR=14
ARMA Armidale 43.53 147 *e*P **P** **16 19 44.1 +0.7**
comp=Z,45nm,0.6s
HIA Hailar 43.58 354 *e*P **P** **16 19 45.0 +1.5**
HIA pmax pmax
comp=Z,197nm,1.5s
HIA Hailar 43.58 354 *e*P **P** **16 19 45.0 +1.5**
comp=Z,197nm,1.5s
JIRN Jiri 43.74 304 *e*P **P** **16 19 45.8 +0.2**
JIRN Jiri 43.74 304 *e*P **ScP** **16 25 07.7 +0.3**
GUN Gumba 44.09 305 *e*P **P** **16 19 48.5 +0.1**
comp=Z,232nm,0.8s
GUN Gumba 44.09 305 *e*P **ScP** **16 25 08.3 -0.5**
PKIN Phulchoki 44.37 304 *e*P **P** **16 19 50.0 -0.5**
comp=Z,49nm,0.8s
PKIN Phulchoki 44.37 304 *e*P **ScP** **16 25 09.1 -0.7**
comp=Z,30nm,0.5s
KKN Kakani 44.54 304 *e*P **P** **16 19 51.5 -0.3**
comp=Z,89nm,0.8s
KKN Kakani 44.54 304 *e*P **ScP** **16 25 09.9 -0.5**
comp=Z,84nm,0.8s
DMN Daman 44.62 304 *e*P **P** **16 19 52.2 -0.3**
comp=Z,108nm,0.9s
DMN Daman 44.62 304 *e*P **ScP** **16 25 10.3 -0.5**
comp=Z,122nm,1.0s
ARPS Mount Arapiles 44.87 162 P **P** **16 19 55.0 +1.1**
baz=45,SNR=16
ULN Ulaanbaatar 44.93 342 *e*P **P** **16 19 54.8 +0.3**
ULN pmax pmax
comp=Z,34nm,0.6s
ULN Ulaanbaatar 44.93 342 *e*P **P** **16 19 54.8 +0.3**
comp=Z,34nm,0.6s
ULN *e*ScP **ScP** **16 25 11.4 -0.1**
ULN Ulaanbaatar 44.93 342 P **P** **16 19 55.5 +1.0**
SNR=23
ULN Ulaanbaatar 44.93 342 P **P** **16 19 55.5 +1.0**
SNR=23
SONA0 Songino Array 45.11 341 *e*P **P** **16 19 56.3 +0.4**
comp=Z,20nm,0.8s
SONA0 *e*PcP **PcP** **16 21 33.8 -0.1**
SONA0 *e*ScP **ScP** **16 25 12.1 -0.1**
SONM Songino Array 45.11 341 P **P** **16 19 56.3 +0.4**
comp=Z,17nm,0.7s,baz=154,slow=8.0,SNR=77
SONM PcP **PcP** **16 21 33.8 -0.1**
comp=Z,3.1nm,0.6s,baz=174,slow=3.8,SNR=4.4
SONM ScP **ScP** **16 25 12.1 -0.1**
comp=Z,4.0nm,1.1s,baz=164,slow=4.2,SNR=7.6
SONM LR LR 16 39 22.8
comp=Z,272nm,20.2s,baz=158,slow=36
YNG Young 45.12 154 P **P** **16 19 57.1 +1.1**
baz=45,SNR=8.5
SONA1 Songino Array 45.12 341 *e*P **P** **16 19 56.2 +0.2**
SONA1 *e*ScP **ScP** **16 25 11.9 -0.3**
GKN Gorkha 45.15 304 *e*P **P** **16 19 56.2 -0.3**
comp=Z,61nm,0.7s
GKN Gorkha 45.15 304 *e*P **ScP** **16 25 11.8 -1.1**
comp=Z,88nm,1.0s
MDRS Chennai 45.87 282 *e*P **P** **16 20 01.6 -0.6**
MDRS IAmb IAmb 16 20 04.3
comp=Z,35nm,1.2s
KOLN Koldanda 45.92 303 *e*P **P** **16 20 02.8 +0.1**
comp=Z,268nm,0.6s
KOLN Koldanda 45.92 303 *e*P **ScP** **16 25 15.0 -1.2**
comp=Z,32nm,1.0s
CAN Canberra 46.25 154 *e*P **P** **16 20 06.2 +1.4**
CAN pmax pmax
comp=Z,28nm,1.1s
CAN Canberra 46.25 154 *e*P **P** **16 20 06.2 +1.4**
comp=Z,28nm,1.1s
CNB Canberra Magne 46.40 154 P **P** **16 20 06.9 +0.8**
baz=46,SNR=6.2
PYUN Piuthan 46.55 303 *e*P **P** **16 20 07.8 +0.3**
comp=Z,266nm,0.8s
PYUN Piuthan 46.55 303 *e*P **ScP** **16 25 17.3 -1.4**
comp=Z,94nm,1.1s
TOO Toolangi 46.81 159 P **P** **16 20 12.1 +2.9**
baz=47,SNR=6.8
TOO Toolangi 46.81 159 P **P** **16 20 10.9 +1.7**
TOO pmax pmax
comp=Z,16nm,0.8s
TYV Tymovskoe 46.88 14 *e*P **P** **16 20 12.0 +2.6**
TYV pmax pmax
comp=Z,20nm,0.8s
CIT Chita 47.17 349 *e*P **P** **16 20 13.4 +1.6**
CIT *e* 16 21 01.9
CIT pmax pmax
comp=Z,174nm,1.2s
HYB Hyderabad 47.97 288 *i*P **P** **16 20 18.0 -0.5**
HYB Hyderabad 47.97 288 *e*P **P** **16 20 18.0 -0.5**
HYB IAmb IAmb 16 20 19.2
comp=Z,12nm,0.5s
ZAK Zakamensk 48.34 340 *e*P **P** **16 20 21.0 +0.1**
ZAK pmax pmax
comp=Z,7.0nm,0.8s
NKL Nikolayevsk 48.58 12 *e*P **P** **16 20 23.0 +0.5**
NKL pmax pmax
comp=N,17nm,1.0s
NKL pmax pmax
comp=E,13nm,1.0s
NKL pmax pmax
comp=Z,75nm,1.0s
LGTI Lohaghat 49.27 304 *e*P **P** **16 20 29.3 +1.2**
TLY Talaya 49.34 342 P **P** **16 20 29.5 +1.1**
comp=Z,21nm,0.7s,baz=184,slow=5.9,SNR=30
TLY LR LR 16 42 00.9
comp=Z,170nm,19.8s,baz=133,slow=37
TLY Talaya 49.34 342 *e*P **P** **16 20 29.3 +0.9**
TLY *e* 16 22 26.0
TLY *e*S S 16 27 31.4 +8.2
TLY pmax pmax
comp=Z,58nm,1.5s
TLY MLR MLR
comp=Z,236nm,28.0s
TLY Talaya 49.34 342 *e*P **P** **16 20 28.9 +0.5**
comp=Z,31nm,0.8s
TLY Talaya 49.34 342 P **P** **16 20 29.8 +1.4**
SNR=28

IRK **Irkutsk** 49.64 342 *e*P **P** 16 20 31.4 +0.8
IRK *e* 16 30 06.2
IRK pmax pmax
comp=Z,60nm,1.7s
BHPL Bhopal 50.03 295 *e*P **P** 16 20 33.9 -0.2
BHPL IAmb IAmb 16 20 35.6
comp=Z,128nm,1.7s
MOY Mondy 50.20 340 *e*P **P** 16 20 36.2 +1.2
MOY pmax pmax
comp=Z,55nm,2.6s
WMQ Urumqi 50.70 324 P P 16 20 40.0 +1.2
WMQ pP pP 16 21 11.8 -1.8
WMQ sP sP 16 21 28.3 -2.2
WMQ PcP **PcP** **16 21 54.8 +0.9**
WMQ ScP **ScP** **16 25 35.0 -0.9**
WMQ S **S** **16 27 42.8 +0.4**
WMQ ScS **ScS** **16 30 11.1 -3.1**
WMQ SS **SS** **16 31 18.3 -0.5**
WMQ pmax pmax
comp=Z,7.0nm,1.0s
WMQ pmax pmax
comp=Z,57nm,5.2s
WMQ LR LR
comp=Z,77nm,22.0s
WMQ LR LR
comp=Z,95nm,17.4s
WMQ LR LR
comp=Z,66nm,21.4s
CLNS Chul'man 50.82 359 *e*P **P** 16 20 40.4 +0.9
CLNS pmax pmax
comp=Z,30nm,0.9s
CLNS pmax pmax
comp=E,11nm,0.7s
CLNS pmax pmax
comp=N,24nm,0.9s
DDI Dehra Dun 51.35 304 *e*P **P** 16 20 42.5 -1.4
DDI IAmb IAmb 16 20 44.4
comp=Z,96nm,0.6s
NDI New Delhi 51.56 302 *e*x P 16 20 40.0 -5.4
SMLA Simla 52.33 305 *e*P **P** **16 20 50.7 -0.3**
BOD Bodaibo 52.67 352⇑ *i*P **P** **16 20 54.0 +0.9**
BOD pmax pmax
comp=Z,80nm,1.1s
DHRM DHARAMSHALA 53.38 306 *e*P **P** **16 20 58.1 -1.0**
PEA0 Petropavlovsk- 53.63 23 *e*P **P** **16 21 01.4 +1.2**
PETK Petropavlovsk- 53.63 23 P **P** **16 21 01.6 +1.3**
comp=Z,11nm,0.6s,baz=196,slow=2.9,SNR=36
PETK LR LR 16 46 33.1
comp=Z,74nm,18.6s,baz=221,slow=39
PEA1 Petropavlovsk- 53.64 23 *e*P **P** **16 21 01.6 +1.3**
PEA1 *e*PKKSdf PKKSdf 16 46 33.1 -0.9
PET Petropavlovsk 53.95 24 *e*P **P** **16 21 04.3 +1.8**
PET pmax pmax
comp=Z,15nm,0.6s
PDGK Podgornoye 55.46 320 P P 16 21 13.6 0.0
PDGK pmax pmax
comp=Z,29nm,0.6s
MK31 Makanchi Array 55.52 325 *e*P **P** **16 21 13.9 -0.1**
MK31 pmax pmax
comp=Z,23nm,0.7s
MK32 Makanchi Array 55.52 325 *e*P **P** **16 21 13.7 -0.3**
MK32 *e*ScP **ScP** **16 25 56.4 -0.5**
MKAR Makanchi Array 55.52 325 P **P** **16 21 13.7 -0.4**
comp=Z,24nm,0.5s,baz=121,slow=8.0,SNR=474
MKAR ScP **ScP** **16 25 56.4 -0.5**
comp=Z,5.5nm,0.9s,baz=128,slow=5.4,SNR=7.3
MKAR Makanchi Array 55.52 325 *e*P **P** **16 21 13.6 -0.4**
MKAR *e*ScP **ScP** **16 25 55.6 -1.2**
MAKZ Makanchi 55.71 325 *e*P **P** **16 21 14.8 -0.6**
MAKZ pmax pmax
comp=Z,19nm,0.6s
MAKZ Makanchi 55.71 325 *e*P **P** **16 21 14.8 -0.6**
comp=Z,19nm,0.6s
YAK Yakutsk 56.08 2 P **P** **16 21 18.9 +1.3**
comp=Z,78nm,0.6s,baz=245,slow=0.3,SNR=60
YAK Yakutsk 56.08 2 *e*P **P** **16 21 18.4 +0.8**
YAK *e* 16 23 27.4
YAK *e*S **S** **16 28 54.9 +0.7**
YAK *e* 16 30 48.1
YAK pmax pmax
comp=Z,109nm,0.9s
YAK pmax pmax
comp=N,82nm,1.4s
YAK pmax pmax
comp=E,23nm,1.2s
YAK pmax pmax
comp=Z,120nm,3.4s
YAK smax smax
comp=N,225nm,2.3s
YAK smax smax
comp=E,128nm,2.2s
YAK Yakutsk 56.08 2 *e*P **P** **16 21 18.4 +0.8**
comp=E,135nm,0.7s
KSH Kashi 56.20 314 P **P** **16 21 20.5 +1.4**
KSH *e*pP pP 16 21 53.1 -1.4
KSH *e*sP sP 16 22 09.3 -2.0
KSH *e*PcP **PcP** **16 22 17.3 +2.3**
KSH PcS **PcS** **16 26 13.5 -2.3**
KSH S **S** **16 28 55.4 -1.5**
KSH ScS **ScS** **16 30 52.3 -1.1**
KSH pmax pmax
comp=E,28nm,1.3s
KSH pmax pmax
comp=E,200nm,6.3s
KSH LR LR
comp=E,200nm,7.3s
KSH LR LR
comp=E,140nm,6.7s
KSH LR LR
comp=E,170nm,7.3s
MSVF Nonsavu 56.26 116 *e*P **P** **16 21 22.1 +2.3**
MSVF pmax pmax
comp=Z,39nm,1.0s
KRAR Krasnoyarsk 56.57 338⇑ *i*P **P** **16 21 22.5 +1.3**
KRAR pmax pmax
comp=Z,10.0nm,0.5s
MA2 Magadan 56.75 15 P **P** **16 21 23.8 +1.4**
comp=Z,20nm,0.7s,baz=217,slow=7.1,SNR=20
MA2 PcP **PcP** **16 22 17.8 +1.2**
comp=Z,12nm,0.8s,baz=162,slow=3.4,SNR=3.8
TKM2 Tokmak 2 57.83 318 P **P** **16 21 30.3 -0.3**
TKM2 pmax pmax
comp=Z,11nm,0.7s
TKM2 Tokmak 2 57.83 318 *e*P **P** **16 21 30.3 -0.3**
comp=Z,12nm,0.6s
SFK Sufi-Kurgan 58.15 314 P **P** **16 21 32.8 -0.1**
SFK pmax pmax
comp=Z,13nm,0.9s
FRU Bishkek 58.45 317 *e*P **P** **16 21 34.0 -0.7**
FRU *e* 16 22 20.0
AAK Ala-Archa 58.45 317 *d i*P **P** **16 21 35.3 +0.4**
AAK pmax pmax
comp=Z,19nm,0.8s
AAK Ala-Archa 58.45 317 *e*P **P** **16 21 34.6 -0.2**
comp=Z,6.9nm,0.8s
AAK Ala-Archa 58.45 317 P **P** **16 21 34.1 -0.8**
SNR=6.3
ZAA0 Zalesovo Array 58.46 333 *e*P **P** **16 21 33.0 -1.5**
ZAA0 *e*ScP **ScP** **16 26 07.6 -1.9**
ZAA0 *e*ScP ScP 16 26 07.8 -1.7
ZALV Zalesovo Beam 58.46 333 P **P** **16 21 33.7 -0.8**
comp=Z,14nm,0.7s,baz=132,slow=6.0,SNR=50
ZALV ScP **ScP** **16 26 07.8 -1.8**
comp=Z,3.5nm,0.9s,baz=116,slow=3.4,SNR=5.0
ZALV S **S** **16 29 23.2 -2.5**
comp=Z,0.3nm,0.3s,baz=133,slow=14,SNR=2.5
ZALV LR LR 16 47 37.3
comp=Z,95nm,19.4s,baz=70,slow=37
ZALV Zalesovo Beam 58.46 333 P **P** **16 21 33.7 -0.8**
ZALV S **S** **16 29 23.2 -2.5**
ZALV pmax pmax
comp=Z,14nm,0.7s
ZALV pmax pmax
comp=N,4.0nm,0.9s
ZALV MLR MLR
comp=Z,95nm,19.4s
ZAA1 Zalesovo Array 58.46 333 *e*P **P** **16 21 33.7 -0.8**
ZAA1 *e*ScP **ScP** **16 26 07.8 -1.8**
ZAA1 *e*S **S** **16 29 23.2 -2.5**
EKS2 Erkin-Say 58.95 317 *e*P **P** **16 21 37.8 -0.5**
EKS2 pmax pmax
comp=Z,13nm,0.7s
EKS2 Erkin-Say 58.95 317 *e*P **P** **16 21 37.8 -0.5**
comp=Z,13nm,0.7s
EKS2 *e*ScP **ScP** **16 26 11.3 -0.8**

KURK Kurchatov 59.68 327 P **P** **16 21 42.6 -0.3**
KURK pmax pmax
comp=Z,65nm,0.5s
KURK Kurchatov 59.68 327 *e*P **P** **16 21 42.4 -0.5**
comp=Z,46nm,0.6s
KURK Kurchatov 59.68 327 P **P** **16 21 42.8 -0.1**
SNR=13
NVS Novosibirsk 59.74 333 *e*P **P** **16 21 42.4 -0.9**
NVS *e*S **S** **16 29 36.4 -5.7**
NVS *e* 16 31 11.8
NVS pmax pmax
comp=N,10.0nm,1.1s
NVS pmax pmax
comp=E,11nm,1.1s
NVS pmax pmax
comp=Z,24nm,1.1s
NVS smax smax
comp=N,14nm,1.8s
NVS smax smax
comp=E,27nm,1.9s
MNAS Manas 59.75 316 P **P** **16 21 43.9 +0.1**
MNAS pmax pmax
comp=Z,16nm,0.9s
KBL Kabul 59.85 307 *e*P **P** **16 21 44.1 -0.6**
KBL pmax pmax
comp=Z,27nm,0.7s
KBL Kabul 59.85 307 *e*P **P** **16 21 44.1 -0.6**
comp=Z,27nm,0.7s
SEY Seymchan 60.06 13 P **P** **16 21 47.0 +1.7**
comp=Z,7.1nm,0.5s,baz=203,slow=5.5,SNR=40
SEY Seymchan 60.06 13 P **P** **16 21 47.0 +1.7**
SEY pmax pmax
comp=Z,7.0nm,0.5s
KK31 Karatay Array 61.34 316 *i* P **P** **16 21 53.8 -0.6**
KK31 pmax pmax
comp=Z,12nm,0.8s
KKAR Karatay Array 61.34 316 *e*P **P** **16 21 53.9 -0.5**
KKAR Karatay Array 61.34 316 *e*P **P** **16 21 53.9 -0.5**
OTUK Ortayu 62.13 322 P **P** **16 21 59.1 -0.5**
OTUK pmax pmax
comp=Z,10.0nm,0.9s
RPZ Rata Peaks 63.79 145 LR LR 16 50 59.3
comp=Z,143nm,19.0s,baz=311,slow=37
URZ Urewera 64.44 137 LR LR 16 49 33.4
comp=Z,140nm,19.0s,baz=300,slow=35
BKZ Black Stump Fm 64.50 139 *e*P **P** **16 22 15.1 -0.2**
comp=Z,18nm,0.8s
AFI Afiamalu 64.56 108 LR LR 16 45 51.8
comp=Z,97nm,21.8s,baz=341,slow=32
VOSK Vostochnaya 64.81 326 *e*P **P** **16 22 16.0 -1.1**
VOSK pmax pmax
comp=Z,17nm,0.8s
VOSK Vostochnaya 64.81 326 *e*P **P** **16 22 16.0 -1.1**
comp=Z,17nm,0.8s
BVA0 Borovoye Array 65.26 327 *i* P **P** **16 22 19.9 -0.1**
BVA0 pmax pmax
comp=Z,31nm,1.3s
BVAR Borovoye Array 65.26 327 P **P** **16 22 19.7 -0.3**
comp=Z,20nm,0.9s,baz=123,slow=7.8,SNR=85
BRVK Borovoye 65.33 327 *e*P **P** **16 22 20.1 -0.3**
BRVK pmax pmax
comp=Z,30nm,0.7s
BRVK Borovoye 65.33 327 *e*P **P** **16 22 20.1 -0.3**
comp=Z,30nm,0.7s
BRVK Borovoye 65.33 327 P **P** **16 22 20.1 -0.3**
SNR=13
CHKZ Chkalovo 65.42 327 P **P** **16 22 20.3 -0.6**
CHKZ pmax pmax
comp=Z,19nm,1.2s
TIXI Tiksi 65.71 1 *d i*P **P** **16 22 22.9 +0.4**
TIXI pmax pmax
comp=Z,55nm,0.9s
TIXI Tiksi 65.71 1 *e*P **P** **16 22 22.6 +0.1**
comp=Z,41nm,0.8s
ZRNK Zerenda 66.00 326 *e*P **P** **16 22 24.2 -0.5**
ZRNK pmax pmax
comp=Z,33nm,0.7s
ZRNK Zerenda 66.00 326 *e*P **P** **16 22 24.2 -0.5**
comp=Z,33nm,0.7s
ATKA Atka Island 67.01 35 *e*P **P** **16 22 31.1 -0.1**
comp=Z,44nm,0.8s
BILL Bilibino 67.61 15 *d i*P **P** **16 22 35.5 +0.9**
BILL *i* 16 23 00.7
BILL *e* 16 23 28.3
BILL *e*PPP PPP 16 26 47.0
BILL S **S** **16 31 18.0 -1.0**
BILL *e*SS **SS** **16 35 38.1 -4.6**
BILL pmax pmax
comp=Z,17nm,1.2s
BILL Bilibino 67.61 15 *e*P **P** **16 22 35.2 +0.6**
comp=Z,18nm,1.2s
NRIK Noril'sk 68.23 346 P **P** **16 22 39.2 +0.8**
comp=Z,71nm,0.6s,baz=125,slow=6.5,SNR=221
NRIK LR LR 16 55 12.8
comp=Z,120nm,18.0s,baz=118,slow=38
GEYT Alibeck 69.18 308 P **P** **16 22 45.7 +0.6**
comp=Z,10nm,0.8s,baz=128,slow=4.1,SNR=20
GEYT LR LR 16 55 53.4
comp=Z,86nm,20.4s,baz=75,slow=38
AB31 Akbulak array 70.19 320 *i* P **P** **16 22 50.3 -0.6**
AB31 pmax pmax
comp=Z,8.0nm,0.6s
ABKAR Akbulak array 70.19 320 *e*P **P** **16 22 50.0 -0.9**
AKTO Aktyubinsk 71.68 321 P **P** **16 22 59.8 -0.1**
comp=Z,15nm,0.7s,baz=101,slow=8.9,SNR=34
AKTO Aktyubinsk 71.68 321 P **P** **16 22 59.5 -0.4**
AKTO pmax pmax
comp=Z,17nm,0.8s
SVE Sverdlovsk 71.88 328 *e*P **P** **16 23 01.3 +0.3**
SVE pmax pmax
comp=Z,29nm,0.9s
GAMB Gambell 72.64 24 *e*P **P** **16 23 06.0 +0.8**
comp=Z,9.8nm,1.0s
ARU Arti 72.87 327 *c i*P **P** **16 23 06.1 -0.8**
ARU 16 23 19.8
ARU *e*PP **pP** **16 23 43.5 -0.5**
ARU S **S** **16 32 20.4 -0.1**
ARU SS **SS** **16 37 01.4 -2.4**
ARU pmax pmax
comp=Z,21nm,0.7s
ARU Arti 72.87 327 *e*P **P** **16 23 06.0 -0.8**
comp=Z,22nm,0.7s
SVW2 Sparrevohn 79.16 29 *e*P **P** **16 23 43.9 +1.5**
comp=Z,8.9nm,0.9s
TT01 Tatalina 79.20 27 *e*P **P** **16 23 43.5 +1.0**
RAYN Ar Rayn 79.20 293 *e*P **P** **16 23 42.4 -1.1**
comp=Z,11nm,0.8s
TTA Tatalina 79.21 27 *e*P **P** **16 23 43.3 +0.6**
TTA pmax pmax
comp=Z,25nm,1.8s
TTA Tatalina 79.21 27 *e*P **P** **16 23 43.3 +0.6**
comp=Z,25nm,1.8s
GNI Garni 79.74 310 *e*P **P** **16 23 48.1 +1.9**
GNI pmax pmax
comp=Z,75nm,1.8s
GNI Garni 79.74 310 *e*P **P** **16 23 48.1 +1.9**
comp=Z,75nm,1.8s
KDAK Kodiak Island 80.34 32 *e*P **P** **16 23 49.3 +0.6**
KDAK pmax pmax
comp=Z,202nm,1.8s
KDAK Kodiak Island 80.34 32 *e*P **P** **16 23 49.2 +0.6**
comp=Z,202nm,1.8s
ZEI Tsey 80.42 312 *e*P **P** **16 23 49.9 +0.1**
ZEI pmax pmax
comp=Z,115nm,1.4s
RSO Redoubt South 80.47 30 *e*P **P** **16 23 49.5 -0.2**
NCK Nalchik 80.65 313 P **P** **16 23 51.0 +0.2**
NCK pmax pmax
comp=Z,5.0nm,0.4s
SPU Mount Spurr 80.87 29 *e*P **P** **16 23 52.1 +0.5**
PPLA Purkeypile 80.94 27 *e*P **P** **16 23 53.3 +1.2**
comp=Z,18nm,0.8s
CAST Castle Rocks 81.03 27 *e*P **P** **16 23 53.5 +1.1**
comp=Z,25nm,0.8s
GOF Gofitskoye 81.06 315⇑ *e*P **P** **16 23 55.0 +2.1**
GOF pmax pmax
comp=Z,14nm,0.4s
KBZ Khabaz 81.16 313 P **P** **16 23 52.9 -0.5**
comp=Z,6.6nm,0.9s,baz=183,slow=5.6,SNR=11
NEY Neytrino 81.28 313‖ *e*P **P** **16 23 54.7 +0.4**
NEY pmax pmax
comp=Z,2.0nm,0.8s
KIV Kislovodsk 81.31 313 *e*P **P** **16 23 55.2 +0.8**
KIV pmax pmax
comp=Z,17nm,1.0s
KIV MLR MLR
comp=Z,69nm,19.0s
KIV Kislovodsk 81.31 313 *e*P **P** **16 23 55.0 +0.6**
comp=Z,13nm,0.7s
BRLK Bradley Lake 81.35 31 *e*P **P** **16 23 54.6 +0.4**
comp=Z,26nm,0.7s
KTH Kantishna Hill 81.56 27 *e*P **P** **16 23 56.3 +1.0**
comp=Z,29nm,1.3s
BPAW Bear Paw Mtn. 81.57 26 *e*P **P** **16 23 56.2 +1.0**
comp=Z,31nm,1.0s
MLY Manley 81.74 25 *e*P **P** **16 23 57.2 +1.1**
comp=Z,29nm,0.8s
TRF Thorofare Moun 81.84 27 *e*P **P** **16 23 56.9 +0.1**
comp=Z,17nm,0.8s
VRH Novokhopyorsk 82.02 321 *e*P **P** **16 23 57.1 -0.6**
VRH pmax pmax
comp=Z,20nm,0.8s
SEW Seward 82.09 30 *e*P **P** **16 23 58.5 +0.6**
comp=Z,125nm,2.0s
COLD Coldfoot 82.11 23 *e*P **P** **16 23 59.6 +1.7**
comp=Z,34nm,0.6s
PMR Palmer 82.30 29 *e*P **P** **16 23 59.4 +0.5**
PMR pmax pmax
comp=Z,14nm,0.6s
PMR Palmer 82.30 29 *e*P **P** **16 23 59.4 +0.5**
comp=Z,14nm,0.6s
MCK McKinley 82.46 27 *e*P **P** **16 24 00.4 +0.5**
MCK pmax pmax
comp=Z,41nm,0.7s
MCK McKinley 82.46 27 *e*P **P** **16 24 00.4 +0.5**
comp=Z,41nm,0.7s
RND Reindeer 82.48 27 *e*P **P** **16 24 00.1 +0.1**
RND pmax pmax
comp=Z,23nm,0.7s
RND Reindeer 82.48 27 *e*P **P** **16 24 00.1 +0.1**
comp=Z,23nm,0.7s
SML Sawmill 82.68 29 *e*P **P** **16 24 01.7 +0.6**
SML pmax pmax
comp=Z,25nm,0.9s
SML Sawmill 82.68 29 *e*P **P** **16 24 01.7 +0.6**
comp=Z,25nm,0.9s
MDM Murphy Dome 82.80 25 *e*P **P** **16 24 02.3 +0.7**
comp=Z,17nm,0.7s
WRH Wood River Hil 82.85 26 *e*P **P** **16 24 02.2 +0.3**
comp=Z,26nm,1.0s
COLA College 82.96 25 *e*P **P** **16 24 03.0 +0.6**
COLA pmax pmax
comp=Z,19nm,0.6s
COLA College 82.96 25 *e*P **P** **16 24 03.0 +0.6**
comp=Z,19nm,0.6s
CCB Clear Creek Bu 82.98 26 *e*P **P** **16 24 02.6 +0.1**
comp=Z,54nm,1.5s
SCM Sheep Creek Mo 83.16 28 *e*P **P** **16 24 04.6 +1.0**
SCM pmax pmax
comp=Z,26nm,1.0s
SCM Sheep Creek Mo 83.16 28 *e*P **P** **16 24 04.6 +1.0**
comp=Z,26nm,1.0s
KLMR Klimovskoe 83.30 331 *e*P **P** **16 24 02.9 -1.3**
KLMR pmax pmax
comp=Z,19nm,0.7s
HDA Harding Lake 83.35 26 *e*P **P** **16 24 03.9 -0.5**
comp=Z,26nm,0.7s
IL1 Eielson Array 83.38 26 *e*P **P** **16 24 03.8 -0.7**
ILAR Eielson Array 83.38 26 P **P** **16 24 03.9 -0.6**
comp=Z,9.1nm,0.7s,baz=243,slow=5.2,SNR=102
ILAR LR LR 16 57 36.5
comp=Z,38nm,21.7s,baz=314,slow=33
ILB Eielson Array 83.38 26 *e*P **P** **16 24 04.0 -0.5**
VSR Storozhevoye 83.62 321 *e*P **P** **16 24 04.9 -1.1**
VSR pmax pmax
comp=Z,10.0nm,0.6s
LPSR Galich'ya Gora 83.73 322 *e*P **P** **16 24 05.3 -1.3**
LPSR pmax pmax
comp=Z,10.0nm,1.0s
KLU Klutina 83.83 29 *e*P **P** **16 24 07.5 +0.5**
comp=Z,22nm,0.6s
DIV Divide 83.91 29 *e*P **P** **16 24 08.4 +1.0**
comp=Z,42nm,0.7s
TMCR Tamitsa 83.96 334 *e*P **P** **16 24 07.9 +0.4**
TMCR pmax pmax
comp=Z,21nm,0.6s
PAX Paxson 84.02 27 *e*P **P** **16 24 09.2 +1.3**
PAX pmax pmax
comp=Z,23nm,1.3s
PAX Paxson 84.02 27 *e*P **P** **16 24 09.2 +1.3**
comp=Z,23nm,1.3s
FYU Fort Yukon 84.05 24 *e*P **P** **16 24 10.6 +2.7**
comp=Z,31nm,0.8s
BMRM Bremner River 84.48 29 *e*P **P** **16 24 11.2 +0.9**
comp=Z,22nm,0.7s
DOT Dot Lake 84.63 27 *e*P **P** **16 24 11.6 +0.7**
comp=Z,20nm,0.8s
MENT Mentasta 84.82 27 *e*P **P** **16 24 13.3 +1.5**
comp=Z,9.3nm,0.8s
OBN Obninsk 85.03 325‖ *e*P **P** **16 24 13.1 +0.1**
OBN *e**PP **pP** **16 24 52.6 +1.4**
OBN *e**SP **sP** **16 25 05.5 -1.8**
OBN *e* 16 34 15.4
OBN *e* 16 35 40.8
OBN SS SS 16 40 10.0 +4.2
OBN pmax pmax
comp=Z,24nm,0.9s
ANN Anapa 85.06 314 *e*P **P** **16 24 11.3 -2.1**
ANN *e**PP **pP** **16 24 49.1 -2.5**
ANN *e*S S 16 34 20.2 -10
ANN pmax pmax
comp=Z,93nm,1.0s
LVZ Lovozero 85.19 338⇑ *e*P **P** **16 24 14.1 +0.4**
LVZ pmax pmax
comp=Z,12nm,0.8s
LVZ Lovozero 85.19 338 *e*P **P** **16 24 13.2 -0.4**
comp=Z,12nm,0.8s
MAW Mawson 85.60 200 P **P** **16 24 16.0 +0.5**
comp=Z,3.2nm,0.6s,baz=77,slow=4.3,SNR=14
MAW LR LR 17 04 38.0
comp=Z,38nm,18.0s,baz=59,slow=37
MAW Mawson 85.60 200 P **P** **16 24 16.0 +0.5**
MAW pmax pmax
comp=Z,6.0nm,1.0s
MAW MLR MLR
comp=Z,38nm,18.0s
MAW Mawson 85.60 200 *e*P **P** **16 24 16.1 +0.5**
comp=Z,2.2nm,1.0s
VNDA Vanda 85.61 173 P **P** **16 24 15.5 +0.1**
comp=Z,5.9nm,0.7s,baz=320,slow=6.3,SNR=35
VNDA LR LR 17 02 04.0
comp=Z,56nm,19.4s,baz=322,slow=35
VNDA Vanda 85.61 173 *e*P **P** **16 24 15.6 +0.1**
VNDA pmax pmax
comp=Z,29nm,1.4s
VNDA Vanda 85.61 173 *e*P **P** **16 24 15.6 +0.1**
comp=Z,29nm,1.4s
EGAK Eagle 85.83 25 *e*P **P** **16 24 17.1 +0.3**
comp=Z,8.8nm,0.6s
KEV Kevo 87.71 340 *e*P **P** **16 24 25.4 -0.4**
PUL Pulkovo 87.94 330‖ *e*P **P** **16 24 27.5 +0.4**
PUL pmax pmax
comp=Z,46nm,0.6s
ARA0 ARCESS Array S 88.27 340 *e*P **P** **16 24 27.9 -0.6**
ARCES ARCESS Array B 88.27 340 P **P** **16 24 27.9 -0.6**
comp=Z,23nm,0.6s,baz=82,slow=6.8,SNR=167
ARCES LR LR 17 10 26.4
comp=Z,57nm,18.5s,baz=77,slow=40
ARE0 ARCESS Array S 88.27 340 *e*P **P** **16 24 27.8 -0.7**
ARE0 IAmb IAmb 16 24 29.1
comp=Z,25nm,0.8s
ARE0 ARCESS Array S 88.27 340 *e*P **P** **16 24 28.3 -0.2**
comp=Z,23nm,0.7s
SPA0 Spitsbergen Ar 88.28 349 *e*P **P** **16 24 29.0 +0.6**
SPA0 Spitsbergen Ar 88.28 349 *e*P **P** **16 24 28.5 0.0**
SPITS Spitsbergen Ar 88.28 349 P **P** **16 24 28.1 -0.3**
SPITS pmax pmax
comp=Z,8.0nm,0.5s
BR101 Keskin Array S 88.28 310 *e*P **P** **16 24 28.1 -1.3**
BR131 Keskin Array S 88.28 310 *e*P **P** **16 24 27.6 -1.8**
BRTR Keskin Array B 88.28 310 P **P** **16 24 28.1 -1.3**
comp=Z,7.0nm,0.9s,baz=120,slow=4.5,SNR=19
BRTR Keskin Array B 88.28 310 P **P** **16 24 28.1 -1.3**
BRTR pmax pmax
comp=Z,5.0nm,0.7s
INK Inuvik 88.34 21 *e*P **P** **16 24 28.7 -0.1**
INK pmax pmax
comp=Z,8.0nm,0.6s
INK Inuvik 88.34 21 *e*P **P** **16 24 28.7 -0.1**
comp=Z,8.2nm,0.6s
HAMF Hammerfest 88.63 341 *e*P **P** **16 24 29.6 -0.5**
HAMF IAmb IAmb 16 24 30.6

comp=Z,28nm,0.6s
KBS Kingsbay 88.81 350 *e*P **P** **16 24 31.1 +0.2**
HSPB Hornsund (broa 88.88 348 *e*P **P** **16 24 31.8 +0.6**
BR231 Keskin MP Arra 88.93 310 *e*P P 16 24 28.9 -3.5
KMBO Kilima Mbogo 89.11 269 P **P** **16 24 33.2 -0.7**
comp=Z,1.3nm,0.6s,baz=53,slow=11,SNR=5.6
HEF Hetta 89.17 339 *e*P **P** **16 24 32.3 -0.5**
KTK1 Kautokeino 89.18 339 *e*P **P** **16 24 32.2 -0.6**
FIA1 FINESS Array S 89.72 332 *e*P **P** **16 24 34.6 -0.8**
FIA0 FINESS Array S 89.72 332 *e*P **P** **16 24 35.3 -0.1**
FIA0 FINESS Array S 89.72 332 *e*P **P** **16 24 35.3 -0.1**
FINES FINESS Array B 89.72 332 P **P** **16 24 35.3 -0.1**
comp=Z,7.8nm,0.4s,baz=58,slow=5.0,SNR=126
FINES LR LR 17 08 35.2
comp=Z,118nm,18.2s,baz=72,slow=38
AKASG Malin Array Be 89.93 321 P **P** **16 24 35.4 -1.3**
comp=Z,3.2nm,0.8s,baz=63,slow=5.0,SNR=11
AKBB Malin Array Si 89.93 321 *e*P **P** **16 24 35.4 -1.2**
AKBB pmax pmax
comp=Z,7.0nm,0.7s
AKBB Malin Array Si 89.93 321 *e*P **P** **16 24 35.4 -1.2**
comp=Z,6.8nm,0.7s
KIEV Kiev 89.94 321 *e*P **P** **16 24 35.3 -1.3**
KIEV pmax pmax
comp=Z,5.0nm,0.8s
KIEV Kiev 89.94 321 *e*P **P** **16 24 35.3 -1.3**
comp=Z,5.4nm,0.8s
AK11 Malin Array Si 89.97 321 *e*P **P** **16 24 35.4 -1.4**
VSU Vasula 89.98 329 *de*P **P** **16 24 36.6 -0.1**
VSU pmax pmax
comp=Z,15nm,0.5s
KIF Kilpisjarvi 90.03 340 *e*P **P** **16 24 35.7 -0.9**
TRO Tromso 90.47 340 *e*P **P** **16 24 37.9 -0.8**
TRO IAmb IAmb 16 24 41.0
comp=Z,16nm,0.8s
DLBC Dease Lake 92.15 31 LR LR 17 03 54.3
comp=Z,46nm,19.6s,baz=308,slow=34
STEI Steigen 92.32 339 *e*P **P** **16 24 46.5 -0.8**
STEI IAmb IAmb 16 24 48.6
comp=Z,20nm,0.8s
BUR08 Bucovina Ar. S 93.09 318 *e*P **P** **16 24 51.4 -0.1**
SYO Syowa Base 94.25 201 *i*P **P** **16 24 57.0 +0.9**
BBB Bella Bella 94.87 37 LR LR 16 58 59.1
comp=Z,29nm,21.2s,baz=264,slow=30
NSS Namsos 94.88 337 *e*P **P** **16 24 58.0 -1.1**
DAG Danmarks Havn 95.06 352 *i*P **P** **16 24 59.2 -0.6**
comp=Z,19nm,0.8s
DAG Danmarks Havn 95.06 352 *i*P **P** **16 24 59.2 -0.6**
DAG pmax pmax
comp=Z,14nm,0.8s
CRVS Cervenica-Dubn 95.22 320 *e*P **P** **16 25 01.9 +0.8**
CRVS Cervenica-Dubn 95.22 320 *e*P **P** **16 25 01.9 +0.8**
QSPA South Pole Qui 95.78 180 *e*P **P** **16 25 04.6 +1.2**
RES Resolute Bay 95.79 10 *e*P **P** **16 25 03.8 +0.7**
RES pmax pmax
comp=Z,5.0nm,0.9s
RES Resolute Bay 95.79 10 *e*P **P** **16 25 03.8 +0.7**
comp=Z,5.3nm,0.9s
KECS Kecovo 95.95 320 *e*P **P** **16 25 03.2 -1.2**
KECS pmax pmax
comp=Z,2.0nm,0.7s
KECS Kecovo 95.95 320 *e*P **P** **16 25 03.2 -1.2**
NC405 NORSAR Array S 96.40 334 *e*P **P** **16 25 05.1 -1.1**
NB2 NORSAR Subarra 96.65 334 P **P** **16 25 06.3 -1.1**
comp=Z,5.6nm,0.6s,baz=67,slow=4.6
NB2 NORSAR Subarra 96.65 334 P **P** **16 25 06.3 -1.1**
baz=67,slow=4.6
NB200 NORSAR Array S 96.65 334 *e*P **P** **16 25 06.4 -1.0**
NOA NORSAR Array B 96.65 334 P **P** **16 25 06.4 -1.0**
comp=Z,5.1nm,0.7s,baz=66,slow=4.6,SNR=25
NOA LR LR 17 12 18.4
comp=Z,82nm,19.7s,baz=65,slow=38
NC204 NORSAR Array S 96.75 334 *e*P **P** **16 25 07.1 -0.7**
YKW3 Yellowknife Ar 97.70 24 *e*P Pdif 16 25 12.5 +0.5
comp=Z,5.5nm,0.8s
YKA Yellowknife Ar 97.74 24 P Pdif 16 25 12.5 +0.3
comp=Z,3.2nm,0.7s,baz=299,slow=4.6,SNR=62
YKA PKKP **PKKPbc** **16 41 45.7 -3.8**
comp=Z,0.3nm,0.5s,baz=118,slow=2.8,SNR=7.9
YKB5 Yellowknife Ar 97.74 24 *e*P **P** **16 25 11.7 -0.5**
YKB5 *e*PKKPbc **PKKPbc** **16 41 45.7 -3.8**
VRAC Vranov 98.16 321 LR LR 17 15 00.7
comp=Z,76nm,18.1s,baz=88,slow=39
CLL Collm 99.62 324 *ep*PP PKiKP 16 29 59.0 +10
comp=Z,4.0nm,0.9s
CLL *e*SKSac **SKSac** **16 35 42.0 -3.0**
CLL *e*SKKSac **SKKSac** **16 36 17.0 -1.0**
CLL *e*Sdif **ScS** **16 36 37.0 -3.7**
CLL *e*SS SS 16 43 54.0 +19
CLL *e*(SSS) 16 48 06.0
GERES GERESS Array B 100.11 322 P **Pdif** **16 25 22.3 -0.9**
comp=Z,0.6nm,0.7s,baz=100,slow=4.1,SNR=4.3
NVAR Mina Array Bea 105.82 47 PKiKP **PKiKP** **16 30 02.9 +1.9**
comp=Z,0.2nm,0.3s,baz=225,slow=1.1,SNR=6.8
NVAR PKKPab **PKKPab** **16 41 42.0 -0.7**
comp=Z,1.7nm,0.6s,baz=127,slow=4.8,SNR=6.3
PDAR Pinedale Array 110.05 40 PKiKP **PKiKP** **16 30 07.9 -0.8**
comp=Z,0.1nm,0.5s,baz=219,slow=2.3,SNR=2.4
PDAR PKKPab **PKKPab** **16 41 21.9 -2.1**
comp=Z,1.7nm,0.7s,baz=115,slow=5.3,SNR=11
ULM Lac du Bonnet 113.30 28 PKiKP **PKiKP** **16 30 14.1 -0.4**
comp=Z,2.6nm,0.6s,baz=300,slow=4.8,SNR=4.2
SCHQ Schefferville 118.52 9 PKP **PKPdf** **16 30 24.3 0.0**
comp=Z,3.6nm,0.5s,baz=297,slow=2.3,SNR=7.5
SCHQ Schefferville 118.52 9 *e*PKPdf **PKPdf** **16 30 24.1 -0.3**
TX31 Lajitas Ar. Si 120.64 51 *e*PKPdf **PKPdf** **16 30 29.9 +0.6**
LTX Lajitas 120.64 51 *e*PKiKP **PKPdf** **16 30 30.1 +0.8**
LTX Lajitas 120.64 51 *e*PKPdf **PKPdf** **16 30 30.1 +0.8**
LTX *e*PKKPbc **PKKPbc** **16 40 35.2 -0.2**
TXAR Lajitas Array 120.64 51 PKP **PKPdf** **16 30 30.1 +0.8**
comp=Z,1.3nm,0.6s,baz=254,slow=0.5,SNR=18
TXAR PKKPbc **PKKPbc** **16 40 35.2 -0.2**
comp=Z,1.5nm,0.6s,baz=111,slow=5.3,SNR=9.5
TORD Torodi Ar. Bea 121.78 289 PKP **PKPdf** **16 30 31.3 -0.4**
comp=Z,2.4nm,0.3s,baz=56,slow=1.6,SNR=53
TORD SKP 16 33 52.2
comp=Z,3.2nm,1.1s,baz=38,slow=1.6,SNR=4.8
TORD PKKPbc **PKKPbc** **16 40 30.7 +0.1**
comp=Z,0.5nm,0.6s,baz=276,slow=3.1,SNR=4.1
TOA1 Torodi Ar. Sit 121.78 289 *e*PKPdf **PKPdf** **16 30 31.3 -0.4**
TOA1 *e*SKPdf **SKPdf** **16 33 52.2 -0.8**
TOA1 *e*PKKPbc **PKKPbc** **16 40 30.7 +0.1**
S37A Fort Scott 122.16 38 P **PKPdf** **16 30 32.7 +0.8**
baz=310
Q39A Willow Grove F 122.42 36 P **PKPdf** **16 30 32.3 0.0**
baz=312
JCT Junction City 123.00 48 P **PKPdf** **16 30 34.2 +0.4**
baz=302
JCT Junction City 123.00 48 *e*PKiKP **PKPdf** **16 30 34.1 +0.4**
JCT Junction City 123.00 48 *e*PKPdf **PKPdf** **16 30 34.1 +0.4**
S39A Bolivar 123.11 37 P **PKPdf** **16 30 34.3 +0.6**
baz=311
333A Richland Sprin 123.15 47 P **PKPdf** **16 30 35.1 +1.1**
baz=303
R40A Maddies Statio 123.34 36 P **PKPdf** **16 30 34.4 +0.3**
baz=312
433A Art 123.38 47 P **PKPdf** **16 30 34.8 +0.3**
baz=302
T39A Clever 123.51 38 P **PKPdf** **16 30 34.9 +0.4**
baz=311
Y36A Durant 123.58 42 P **PKPdf** **16 30 35.1 +0.4**
baz=306
W38A Poteau 124.04 40 P **PKPdf** **16 30 36.7 +1.2**
baz=308
V39A Pettigrew 124.11 39 P **PKPdf** **16 30 35.3 -0.4**
baz=310
534A Blanco 124.21 48 P **PKPdf** **16 30 35.8 -0.2**
baz=302
U40A Yellville 124.27 38 P **PKPdf** **16 30 36.0 0.0**
baz=311
V40A Witts Springs 124.64 39 P **PKPdf** **16 30 37.2 +0.5**
baz=310
X39A Fountain Ranch 124.64 41 P **PKPdf** **16 30 37.4 +0.7**
baz=309
WVT Waverly 127.39 35 *e*PKiKP **PKPdf** **16 30 42.8 +0.9**
WVT Waverly 127.39 35 *e*PKPdf **PKPdf** **16 30 42.8 +0.9**
PLAL Pickwick Lake 128.06 36 *e*PKPdf **PKPdf** **16 30 43.0 -0.2**
KIC Kosan Boka 129.59 283 *e*PKP1 **PKPdf** **16 30 47.0 +0.3**
comp=Z,6.1nm,0.5s
DBIC Dimbokro 129.63 284 PKP **PKPdf** **16 30 46.5 -0.2**
comp=Z,1.8nm,0.4s,baz=69,slow=1.8,SNR=12
DBIC SKPab SKPab 16 33 54.1 -0.3
comp=Z,32nm,0.8s,baz=63,slow=4.7,SNR=39
TIC Toumodi 129.80 284 *e*PKP1 **PKPdf** **16 30 47.3 +0.2**
LIC Lamto 129.90 283 *e*PKP1 **PKPdf** **16 30 48.0 +0.7**
comp=Z,102nm,1.8s

TKL Tuckaleechee C 129.96 32 SKPab SKPab 16 33 55.2 0.0
comp=Z,10nm,1.0s,baz=312,slow=4.3,SNR=11
CMIG Matias Romero 133.38 60 PKP **PKPdf** **16 30 53.9 +0.2**
comp=Z,2.2nm,0.6s,baz=359,slow=2.0,SNR=4.5
PLCA Paso Flores 142.18 159 PKhKP PKPpre 16 31 05.5
comp=Z,2.3nm,0.6s,baz=226,slow=1.6,SNR=7.7
JTS JuntasAbangare 145.02 63 PKPbc **PKPdf** **16 31 15.9 +0.9**
comp=Z,25nm,0.6s,baz=236,slow=12,SNR=15
TRQA Tornquist 147.12 168 *e*PKPbc **PKPbc** **16 31 20.5 +0.2**
SDDR Presa de Saban 149.85 35 *e*PKPbc **PKPbc** **16 31 28.5 +0.6**
LCO Las Campanas 151.97 147 *e*PKPbc **PKPbc** **16 31 33.5 +0.6**
SJG San Juan 153.20 27 PKPbc **PKPbc** **16 31 36.5 +1.1**
comp=Z,7.2nm,0.5s,baz=326,slow=9.1,SNR=4.0
CPUP Villa Florida 159.38 171 PKPab **PKPab** **16 32 14.6 +0.7**
comp=Z,7.0nm,0.8s,baz=190,slow=2.9,SNR=11
CPUP Villa Florida 159.38 171 *e*PKPab **PKPab** **16 32 15.5 +1.7**
LPAZ La Paz 162.53 127 PKP **PKPdf** **16 31 40.9 +0.7**
comp=Z,1.1nm,0.5s,baz=290,slow=2.1,SNR=5.6
LPAZ PKPab **PKPab** **16 32 30.1 +1.2**
comp=Z,1.9nm,0.6s,baz=18,slow=1.6,SNR=5.0
LPAZ La Paz 162.53 127 *e*PKPdf **PKPdf** **16 31 41.6 +1.5**

*ISCJB **14** 16:33:44.1±0.3, 16°.56N±0°.03×95°.09W±0°.03, h103km±3km, mb4.0/17, Error ellipse: s-maj=5.8km s-min=4.4km az=34.8*
*IDC **14** 16:33:44.5±0.8, 16°.77N×94°.89W, h86km±5km, mb3.7/10, mb1 3.9/12, mb1mx3.6/51, mbtmp4.0/12, MS3.2/4, Ms1 3.2/4, ms1mx2.7/43, Error ellipse: s-maj=21.3km s-min=12.4km az=42.0*
*NEIC **14** 16:33:45.3±0.7, 16°.70N×95°.06W, h92km±8km, mb4.2/25, MD4.4(MEX), Error ellipse: s-maj=10.7km s-min=7.4km az=213.0*
*MEX **14** 16:33:46.0±0.5, 16°.77N×95°.05W, h109km±13km, MD4.4*
ISC 14 16:33:44.8±0.6, 16°.67N±0°.04×95°.12W±0°.03, h91km±6km, n162, σ1§66/158, mb4.2/17, Oaxaca

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CMIG	**Matias Romero**	**0.48**	**28**	P	**Pn**	**16 33 58.7**	**-0.8**
	756nm,0.3s,baz=204,slow=7.5,SNR=3232						
CMIG				S	**Sn**	16 34 09.1	-1.5
	1µm,0.3s,baz=128,slow=19,SNR=206						
HUIG	**Huatulco**	**1.30**	**227**	*e*P	**Pn**	16 34 07.7	-0.5
HUIG				*i* S	**Sn**	16 34 27.0	+1.2
TUIG	**Tuzandepetl**	**1.52**	**26**	*e*Sn	**Sn**	16 34 29.7	-0.8
TUIG	**Tuzandepetl**	**1.52**	**26**	*e*P	**Pn**	16 34 09.9	-0.9
TUIG				*e*S	**Sn**	16 34 29.7	-0.8
VHO	**Vista Hermosa**	**1.59**	**285**	*e*Pn	**Pn**	16 34 13.3	+1.2
VHO				*e*Sn	**Sn**	16 34 34.6	+2.0
VHO	**Vista Hermosa**	**1.59**	**285**	*e*P	**Pn**	16 34 13.3	+1.2
VHO				*i* S	**Sn**	16 34 34.6	+2.0
TGIG		**1.92**	**86**	*e*P	**Pn**	16 34 15.9	-0.1
TGIG				*i* S	**Sn**	16 34 39.5	-0.4
PCIG		**2.06**	**117**	*e*Pn	**Pn**	16 34 18.5	+0.6
PCIG		**2.06**	**117**	*e*P	**Pn**	16 34 18.5	+0.6
PCIG				*e*S	**Sn**	16 34 46.2	+3.0
CCIG	**Comitan**	**2.89**	**97**	*e*Pn	**Pn**	16 34 28.8	-0.3
CCIG				*e*Sn	Sn	16 34 54.6	-8.6
PNIG	**Pinotepa**	**2.89**	**265**	*e*Pn	**Pn**	16 34 28.3	-0.7
PNIG				*e*Sn	**Sn**	16 35 01.6	-1.5
PNIG	**Pinotepa**	**2.89**	**265**	*e*P	**Pn**	16 34 28.3	-0.7
PNIG				*e*S	**Sn**	16 35 01.6	-1.5
TLIG	**Tlapa**	**3.41**	**286**	*e*Pn	**Pn**	16 34 37.0	+1.0
TLIG				*e*Sn	Sn	16 35 03.9	-12
TLIG	**Tlapa**	**3.41**	**286**	*e*P	**Pn**	16 34 37.2	+1.2
TLIG				*e*S	**Sn**	16 35 16.0	+0.3
MOIG	**Morelia**	**6.50**	**298**	*e*Pn	Pn	16 35 21.1	+3.0
TEIG	**Tepich**	**7.40**	**60**	P	Pn	16 35 26.9	-3.3
	41nm,0.3s,baz=269,slow=24,SNR=86						
TEIG				S	Sn	16 36 45.4	-7.2
	15nm,0.3s,baz=354,slow=21,SNR=15						
TEIG	**Tepich**	**7.40**	**60**	*e*Pn	Pn	16 35 26.6	-3.6
TEIG				*e*Sn	Sn	16 36 37.9	-15
TGUH	**Tegucigalpa,Un**	**8.00**	**108**	*e*Pn	**Pn**	16 35 39.3	+0.9
ZAIG	**Zacatecas**	**9.27**	**312**	*e*Pn	**Pn**	16 35 58.0	+2.0
035A	**Encino**	**10.59**	**345**	P	**Pn**	**16 36 14.9**	**+1.3**
	baz=164						
934A	**Benavides**	**11.33**	**344**	P	**Pn**	**16 36 25.5**	**+1.9**
	baz=163						
933A	**Laredo**	**11.55**	**341**	P	**Pn**	**16 36 27.5**	**+0.8**
	baz=160						
JTS	**JuntasAbangare**	**11.74**	**121**	P	**Pn**	**16 36 28.3**	**-1.0**
	4.8nm,0.3s,baz=328,slow=16,SNR=9.3						
JTS				S	**Sn**	16 38 38.1	-0.5
	1.1nm,0.3s,baz=287,slow=19,SNR=1.8						
JTS	**JuntasAbangare**	**11.74**	**121**	*e*Pn	**Pn**	**16 36 28.7**	**-0.6**
834A	**Tilden**	**11.84**	**345**	P	**Pn**	**16 36 32.1**	**+1.7**
	baz=164,SNR=6.9						
833A	**Chaparral WMA,**	**12.25**	**342**	P	**Pn**	**16 36 38.1**	**+2.1**
	baz=160,SNR=7.7						
736A	**Circle Diamond**	**12.36**	**352**	P	**Pn**	**16 36 39.3**	**+1.8**
	baz=171						
735A	**Kenedy**	**12.38**	**349**	P	**Pn**	**16 36 39.1**	**+1.3**
	baz=168						
734A	**La Parita Cree**	**12.53**	**346**	P	**Pn**	**16 36 41.2**	**+1.4**
	baz=165,SNR=5.4						
733A	**Divot King Ran**	**12.60**	**343**	P	**Pn**	**16 36 41.9**	**+1.2**
	baz=161,SNR=13						
636A	**Smothers Creek**	**12.88**	**352**	P	**Pn**	**16 36 45.9**	**+1.5**
	baz=172						
635A	**Leesville**	**12.89**	**350**	P	**Pn**	**16 36 45.9**	**+1.3**
	baz=168						
633A	**Saathoff Ranch**	**13.27**	**344**	P	**Pn**	**16 36 51.1**	**+1.6**
	baz=163,SNR=16						
534A	**Blanco**	**13.65**	**348**	P	**Pn**	**16 36 56.3**	**+1.7**
	baz=166,SNR=121						
533A	**Kerrville**	**13.82**	**346**	P	**Pn**	**16 36 58.7**	**+1.9**
	baz=164,SNR=23						
436A	**Wall Ranch, Ga**	**14.12**	**354**	P	**Pn**	**16 37 01.9**	**+1.3**
	baz=173						
435B	**Jarrell**	**14.23**	**351**	P	**P**	**16 37 04.8**	**-1.8**
	baz=170,SNR=10						
434A	**Burnet**	**14.37**	**349**	P	**P**	**16 37 06.5**	**-1.7**
	baz=168,SNR=12						
JCT	**Junction City**	**14.40**	**344**	P	**Pn**	**16 37 06.4**	**+2.1**
	baz=162						
JCT	**Junction City**	**14.40**	**344**	*e*Pn	**Pn**	**16 37 05.8**	**+1.5**
433A	**Art**	**14.48**	**346**	P	**Pn**	**16 37 07.7**	**+2.4**
	baz=165,SNR=53						
339A	**Huntington**	**14.61**	**2**	P	**Pn**	**16 37 08.5**	**+1.6**
	baz=182						
338A	**Crockett**	**14.62**	**359**	P	**Pn**	**16 37 08.8**	**+1.7**
	baz=179						
335A	**Moody**	**14.70**	**352**	P	**P**	**16 37 11.0**	**-0.9**
	baz=171,SNR=20						
336A	**Riesel**	**14.74**	**354**	P	**Pn**	**16 37 10.5**	**+1.9**
	baz=173						
TX31	**Lajitas Ar. Si**	**14.85**	**330**	*e*Pn	**Pn**	**16 37 08.1**	**-2.0**
TXAR	**Lajitas Array**	**14.85**	**330**	P	**Pn**	**16 37 10.7**	**+0.5**
	0.1nm,0.3s,baz=144,slow=15,SNR=4.2						
342A	**Flagon Creek P**	**14.86**	**9**	P	**Pn**	**16 37 11.4**	**+1.2**
	baz=190						
334A	**Lometa**	**14.87**	**350**	P	**P**	**16 37 13.0**	**-0.8**
	baz=168,SNR=32						
333A	**Richland Sprin**	**15.01**	**347**	P	**P**	**16 37 15.2**	**-0.2**
	baz=166,SNR=12						
344A	**Westbrook Farm**	**15.25**	**14**	P	**Pn**	**16 37 16.2**	**+1.0**
	baz=196						
238A	**Jacksonville**	**15.27**	**0**	P	**P**	**16 37 17.6**	**-0.5**
	baz=180						
WHTX	**Lake Whitney,**	**15.40**	**353**	P	**P**	**16 37 20.0**	**+0.4**
	baz=172						
WHTX	**Lake Whitney,**	**15.40**	**353**	*e*Pn	**P**	**16 37 19.0**	**-0.7**
	56nm,0.7s						
234A	**Clairette**	**15.51**	**350**	P	**P**	**16 37 22.0**	**+1.1**
	baz=169,SNR=31						
233A	**Rising Star**	**15.66**	**348**	P	**P**	**16 37 23.1**	**+0.6**
	baz=166						
135A	**Vickery Place,**	**15.96**	**353**	P	**P**	**16 37 27.4**	**+1.6**
	baz=172						
LPIG	**La Paz**	**16.04**	**300**	LR	LR	16 43 57.2	
	comp=Z,69nm,21.1s,baz=253,slow=38						
134A	**White-Moore Ra**	**16.06**	**351**	P	**P**	**16 37 28.1**	**+1.1**
	baz=170,SNR=9.9						
133A	**Hamilton Ranch**	**16.24**	**348**	P	**P**	**16 37 31.0**	**+2.1**
	baz=167						
ABTX	**Abilene, Hawle**	**16.41**	**346**	P	**P**	**16 37 33.2**	**+2.4**
	baz=164,SNR=9.7						
ABTX	**Abilene, Hawle**	**16.41**	**346**	*e*Pn	**Pn**	**16 37 28.3**	**-1.3**
	31nm,0.6s						
Z37A	**Pogue Cattle C**	**16.47**	**359**	P	**P**	**16 37 33.8**	**+2.4**
	baz=178						
Z41A	**Richland Creek**	**16.65**	**7**	P	**P**	**16 37 36.2**	**+2.8**
	baz=188						
Z35A	**Perchaven, San**	**16.70**	**354**	P	**P**	**16 37 36.7**	**+2.7**
	baz=173						
Z34A	**Collier Ranch,**	**16.82**	**352**	P	**P**	**16 37 38.5**	**+3.2**
	baz=171						
MTDJ	**Mount Denham**	**16.86**	**82**	*e*Pn	**P**	**16 37 39.4**	**+3.5**
	67nm,1.0s						
Z33A	**Whitaker Ranch**	**16.87**	**349**	P	**P**	**16 37 38.7**	**+2.8**
	baz=168						
Y36A	**Durant**	**17.19**	**357**	P	**P**	**16 37 43.0**	**+3.5**
	baz=176						
Y37A	**Hugo**	**17.25**	**359**	P	**P**	**16 37 44.2**	**+4.2**
	baz=178						
Y35A	**Marietta**	**17.25**	**355**	P	P	16 37 46.0	+5.9
	baz=174,SNR=28						
Y34A	**Reagan Ranch,**	**17.38**	**353**	P	P	16 37 47.5	+6.0
	baz=172,SNR=10						
Y33A	**Hilltop Ranch,**	**17.55**	**350**	P	Pn	16 37 50.2	+6.5
	baz=169,SNR=9.4						
MNTX	**Cornudas Mount**	**17.63**	**330**	P	**Pn**	**16 37 47.6**	**+3.0**
	baz=146						
MNTX	**Cornudas Mount**	**17.63**	**330**	*e*P	**P**	**16 37 45.0**	**+0.7**
	3.6nm,0.8s						
X35A	**Drake**	**17.74**	**355**	P	**Pn**	**16 37 50.5**	**+4.7**
	baz=174,SNR=12						
X39A	**Fountain Ranch**	**17.79**	**3**	P	**Pn**	**16 37 50.5**	**+4.0**
	baz=183						
X37A	**Clayton**	**17.85**	**359**	P	**Pn**	**16 37 51.5**	**+4.3**
	baz=179,SNR=5.8						
MIAR	**Mount Ida**	**17.86**	**4**	P	**Pn**	**16 37 49.1**	**+1.8**
	baz=185						
MIAR	**Mount Ida**	**17.86**	**4**	*e*P	**P**	**16 37 46.4**	**-0.3**
	10nm,0.8s						
X36A	**Centrahoma**	**17.86**	**357**	P	**Pn**	**16 37 49.0**	**+1.6**
	baz=176,SNR=7.0						
LRAL	**Lakeview Retre**	**17.87**	**23**	*e*P	**P**	**16 37 44.9**	**-2.1**
	5.5nm,0.8s						
LRAL				*e*PcP	**PcP**	**16 42 15.0**	**-4.1**
X38A	**Whitesboro**	**17.93**	**1**	P	**Pn**	**16 37 50.0**	**+1.8**
	baz=181						
X34A	**Smith Ranch, M**	**18.02**	**353**	P	**Pn**	**16 37 52.3**	**+3.0**
	baz=172,SNR=19						
X33A	**Lawton**	**18.06**	**351**	P	**Pn**	**16 37 52.9**	**+3.2**
	baz=170,SNR=8.3						
TIGA	**Tifton**	**18.07**	**33**	*e*P	**P**	**16 37 48.2**	**-0.8**
	86nm,1.8s						
WMOK	**Wichita Mounta**	**18.29**	**350**	*e*P	Pn	16 37 59.9	+7.3
	17nm,0.8s						
WMOK				*e*S	S	16 41 04.4	-11
W38A	**Poteau**	**18.34**	**2**	P	**Pn**	**16 37 56.0**	**+2.9**
	baz=182,SNR=13						
Y47A	**UCPARC, Winfie**	**18.37**	**20**	P	**Pn**	**16 37 55.2**	**+1.8**
	baz=202						
W36A	**Wetumka**	**18.42**	**357**	P	**Pn**	**16 37 55.5**	**+1.4**
	baz=177						
W35A	**Tecumseh**	**18.48**	**355**	P	**Pn**	**16 37 55.1**	**+0.4**
	baz=175						
W39A	**Magazine**	**18.49**	**3**	P	**Pn**	**16 37 54.8**	**-0.1**
	baz=184						
W41A	**Tony Mavity, V**	**18.61**	**7**	P	**Pn**	**16 37 57.1**	**+0.8**
	baz=189						
W41B	**Gary Mavity, V**	**18.61**	**7**	P	**Pn**	**16 37 56.7**	**+0.4**
	baz=189						
W34A	**Bridge Creek,**	**18.64**	**353**	*e*P	**Pn**	**16 37 59.8**	**+3.0**
	61nm,0.8s						
W33A	**Caddo, Fort Co**	**18.65**	**351**	P	**Pn**	**16 37 57.5**	**+0.6**
	baz=170,SNR=5.2						
X301	**Greenbrier Sit**	**18.66**	**7**	*e*P	**Pn**	**16 37 57.3**	**+0.4**
	8.0nm,0.8s						
X201	**Greenbrier Sit**	**18.71**	**7**	*e*Pn	Pn	16 38 03.6	+6.1
	11nm,1.0s						
WHAR	**Wooly Hollow**	**18.72**	**7**	*e*P	**Pn**	**16 37 57.9**	**+0.3**
	13nm,1.3s						
V36A	**Jenks**	**19.06**	**358**	P	**P**	**16 38 00.5**	**+0.6**
	baz=178						
AMTX	**Amarillo**	**19.07**	**343**	*e*P	**P**	**16 38 00.7**	**+0.6**
V35A	**Meyer Ranch, C**	**19.08**	**356**	P	**P**	**16 37 58.9**	**-1.3**
	baz=175						
V38A	**Canehill**	**19.13**	**2**	P	**P**	**16 37 59.5**	**-1.2**
	baz=182						
V37A	**Hulbert**	**19.14**	**360**	P	**P**	**16 38 00.1**	**-0.7**
	baz=180						
V39A	**Pettigrew**	**19.14**	**4**	P	**P**	**16 37 60.0**	**-0.9**
	baz=184						
V40A	**Witts Springs**	**19.17**	**6**	P	**P**	**16 38 00.6**	**-0.5**
	baz=187						
V34A	**Guthrie**	**19.21**	**354**	*e*P	**P**	**16 37 57.7**	**-3.8**
	25nm,0.6s						
V33A	**Lossen Ranch,**	**19.28**	**352**	P	**Pn**	**16 38 03.9**	**-0.4**
	baz=171						
PLAL	**Pickwick Lake**	**19.30**	**18**	*e*P	**P**	**16 38 01.3**	**-1.3**
	20nm,1.7s						
U37A	**Salina**	**19.66**	**0**	P	**P**	**16 38 07.4**	**+0.9**
	baz=180						
U35A	**Pawnee**	**19.68**	**356**	P	**P**	**16 38 07.7**	**+1.0**
	baz=175						
U39A	**Green Forest**	**19.69**	**4**	P	**P**	**16 38 07.2**	**+0.4**
	baz=185						
U38A	**Gravette**	**19.70**	**2**	P	**P**	**16 38 07.5**	**+0.5**
	baz=182						
U40A	**Yellville**	**19.71**	**5**	P	**P**	**16 38 07.0**	**-0.1**
	baz=186						
U34A	**Anderson Ranch**	**19.81**	**354**	*e*P	**P**	**16 38 05.8**	**-2.2**
	32nm,0.8s						
T35A	**Sooner Cattle**	**20.21**	**357**	P	**P**	**16 38 12.4**	**0.0**
	baz=176						
SWET	**Sewanee**	**20.22**	**22**	*e*P	Pn	16 38 16.8	+1.6
	6.9nm,1.7s						
T38A	**Diamond**	**20.30**	**2**	P	**P**	**16 38 13.6**	**+0.2**
	baz=182						
T36A	**Boggs Farm, Ca**	**20.32**	**358**	P	**P**	**16 38 14.1**	**+0.5**
	baz=178						
T34A	**McClaskey Farm**	**20.36**	**355**	P	**P**	**16 38 14.3**	**+0.3**
	baz=174						
T37A	**Cheneyville 18**	**20.38**	**0**	P	**P**	**16 38 13.9**	**-0.3**
	baz=180						
T40A	**Mansfield**	**20.53**	**6**	P	**P**	**16 38 15.7**	**-0.2**
	baz=187						
ANMO	**Albuquerque**	**20.84**	**333**	P	**P**	**16 38 20.6**	**+1.2**
	0.6nm,0.3s,baz=164,slow=14,SNR=2.3						
ANMO				pP	**pP**	**16 38 37.2**	**0.0**
	3.4nm,0.8s,baz=142,slow=14,SNR=4.9						
ANMO	**Albuquerque**	**20.84**	**333**	*e*P	**P**	**16 38 18.8**	**-0.6**
	3.9nm,0.8s						
S38A	**Stockton**	**20.91**	**3**	P	**P**	**16 38 19.7**	**-0.2**
	baz=183						
S35A	**Otter Creek Ra**	**20.96**	**357**	P	**P**	**16 38 19.8**	**-0.6**
	baz=177						
S40A	**Lebanon**	**20.98**	**6**	P	**P**	**16 38 20.3**	**-0.4**
	baz=187						
S37A	**Fort Scott**	**

B25A	**Knox Farm, Ray** baz=165	**32.20 350**	P	**P**	**16 40 04.7**	**+0.5**
O03D	**Paynes Creek** baz=128	**33.00 321**	P	**P**	**16 40 10.8**	**-0.4**
FFC	**Flin Flon** 4.3nm,0.7s	**38.35 354**	*e*P	**P**	**16 40 58.2**	**+1.4**
PTGA	**Pitinga** 2.5nm,0.5s,baz=306,slow=18,SNR=3.7	**38.74 113**	P	**P**	**16 40 59.7**	**-0.8**
SAML	**Samuel** 6.4nm,1.0s	**40.57 127**	*e*P	**P**	**16 41 14.1**	**-1.6**
SIV	**San Ignacio** 3.6nm,0.9s,baz=313,slow=9.8,SNR=6.6	**46.70 132**	P	**P**	**16 42 03.8**	**-1.1**
YKA	**Yellowknife Ar** 0.2nm,0.6s,baz=154,slow=7.2,SNR=5.0	**47.78 348**	P	**P**	**16 42 11.6**	**-1.0**
YKA	3.0nm,0.7s,baz=153,slow=7.4,SNR=22		pP	**pP**	**16 42 33.3**	**-1.2**
INK	**Inuvik** 9.6nm,0.8s,baz=132,slow=7.5,SNR=20	**57.05 344**	pP	pP	16 43 42.4	-1.2
ILAR	**Eielson Array** 1.9nm,0.9s,baz=121,slow=5.4,SNR=11	**59.22 337**	pP	pP	16 43 58.9	-0.1
PLCA	**Paso Flores** 4.3nm,0.8s,baz=339,slow=7.1,SNR=8.2	**61.50 159**	P	**P**	**16 43 52.2**	**+0.1**
ARCES	**ARCESS Array B** 1.7nm,0.9s,baz=312,slow=8.0,SNR=3.9	**84.54 18**	P	**P**	**16 46 07.0**	**-0.5**
DBIC	**Dimbokro** 2.0nm,0.9s,baz=303,slow=6.4,SNR=3.6	**88.37 84**	P	**P**	**16 46 26.4**	**-0.9**
TORD	**Torodi Ar. Bea** 0.2nm,0.5s,baz=290,slow=6.1,SNR=2.4	**92.66 76**	P	**P**	**16 46 47.4**	**+0.2**
TORD	comp=Z,22nm,18.1s,baz=135,slow=35		LR	LR	17 27 37.5	
WRA	**Warramunga Arr** 0.9nm,1.1s,baz=80,slow=2.2,SNR=4.1	**133.06 258**	PKP	**PKPdf**	**16 52 49.2**	**-1.4**
ASAR	**Alice Springs** 0.2nm,0.8s,baz=76,slow=2.5,SNR=2.9	**133.63 253**	PKP	**PKPdf**	**16 52 50.1**	**-1.5**

JMA 14 16:43:36.4±0.1, 41°.84N×142°.69E, h49km±2km, M2.9, Hokkaido region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JEM	**Erimo**	**0.39**	**63**	P	Pn	16 43 46.3	0.0
JEM				*e*S	Sn	16 43 53.6	+0.2
JNBK	**Urakawa-nobuka**	**0.44**	**6**	P	Pn	16 43 46.8	-0.1
JNBK				*e*S	Sn	16 43 54.9	+0.5
JCH	**Churui**	**0.92**	**33**	P	Pn	16 43 53.2	+0.2
JCH				*e*S	Sn	16 44 05.3	+0.1
JBT2	**Biratori 2**	**0.97**	**346**	P	Pn	16 43 53.9	+0.2
JBT2				*e*S	Sn	16 44 07.1	+0.7
JKB	**Kayabe**	**1.24**	**273**	P	Pn	16 43 57.0	-0.3
JKB				*e*S	Sn	16 44 12.6	-0.3
JOT	**Ohata**	**1.31**	**250**	P	Pn	16 43 58.4	+0.1
JOT				*e*S	Sn	16 44 15.2	+0.5
JEW	**Eniwo**	**1.36**	**318**	P	Pn	16 43 59.1	+0.2
JOB	**Onbets**	**1.36**	**38**	P	Pn	16 44 00.4	+1.4
JOB				*e*S	Sn	16 44 18.0	+2.2
JNB	**Noboribetsu**	**1.38**	**298**	P	Pn	16 43 58.6	-0.6
JNB				*e*S	Sn	16 44 15.7	-0.6
MAT	**Matsushiro**	**6.33**	**215**	P	Pn	16 45 05.4	-1.8

*IDC **14** 16:47:24.9±3.1, 37°.11N×140°.72E, h0km, mb3.4/2, mb1 3.6/4, mb1mx3.2/53, mbtmp3.5/4, ML2.7/2, Error ellipse: s-maj=50.0km s-min=32.1km az=18.0*
*ISCJB **14** 16:47:26.4±0.9, 37°.06N±0°.03×140°.76E±0°.05, h13km±7km, mb3.5/2, Error ellipse: s-maj=6.8km s-min=4.9km az=17.3*
*JMA **14** 16:47:26.9, 37°.07N×140°.69E, h7km±1km, M3.0*
ISC 14 16:47:26.6±1.0, 37°.09N±0°.03×140°.66E±0°.06, h7km±9km, n12, σ0s59/22, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.11**	**85**	P	**Pg**	**16 47 29.1**	**0.0**
ONAJ				S	**Sg**	**16 47 30.7**	**-0.2**
JFK	**Kawauchi**	**0.32**	**32**	P	**Pg**	**16 47 33.5**	**+0.6**
JFK				S	**Sg**	**16 47 38.1**	**+0.8**
JHO	**Hitachi**	**0.49**	**189**	P	**Pg**	**16 47 36.2**	**+0.2**
JHO				S	**Sg**	**16 47 42.5**	**+0.2**
JFT	**Otama**	**0.50**	**329**	P	**Pb**	**16 47 37.4**	**-0.2**
JFT				S	**Sb**	**16 47 44.8**	**-0.3**
JSB	**Shiboa**	**0.60**	**258**	P	**Pb**	**16 47 39.7**	**+0.3**
JSB				S	**Sb**	**16 47 48.2**	**0.0**
JMM	**Marumori**	**0.78**	**8**	P	**Pg**	**16 47 41.8**	**+0.2**
JMM				S	**Sb**	**16 47 52.7**	**-0.5**
JFY	**Yanaizu**	**0.82**	**293**	P	**Pb**	**16 47 43.3**	**+0.1**
JFY				S	**Sb**	**16 47 54.4**	**-0.1**
MJAR	**Matsushiro Arr** 2.1nm,0.3s,baz=72,slow=15,SNR=21	**2.04**	**255**	Pn	**Pn**	**16 48 00.8**	**-0.5**
MJAR	2.2nm,0.3s,baz=100,slow=16,SNR=4.6			Sn	**Sb**	**16 48 29.1**	**-0.4**
MAT	**Matsushiro**	**2.04**	**255**	P	**Pb**	**16 48 02.9**	**-1.1**
MAT				S	**Sb**	**16 48 30.4**	**+0.8**
JHJ	**Hachijo jima 2** 2.0nm,0.3s,baz=16,slow=6.3,SNR=4.2	**4.03**	**191**	Pn	**Pn**	**16 48 28.4**	**-0.3**
JHJ	1.7nm,0.3s,baz=49,slow=20,SNR=2.5			Sn	**Sn**	**16 49 17.3**	**+1.3**
WRA	**Warramunga Arr** 0.4nm,0.6s,baz=2.9,slow=7.4,SNR=11	**57.04**	**187**	P	**P**	**16 57 12.4**	**-0.7**
ASAR	**Alice Springs** 0.2nm,0.8s,baz=16,slow=12,SNR=4.1	**60.77**	**187**	P	**P**	**16 57 39.2**	**+0.2**

*NIED **14** 16:48:00, 35°.70N×141°.00E, h8km, Mw3.6 Best double couple: M◎3.28000×10^14 NP1:φs4.00000°, δ30.00000°, λ-74.00000°. NP2:φs166.00000°, δ61.00000°, λ-99.00000°.*
JMA 14 16:48:34.4±0.2, 35°.72N×140°.96E, h9km±1km, M3.5, 1C-2D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.08**	**258**	↑P	Pg	16 48 36.6	0.0
CHOJ				S	Sg	16 48 38.4	+0.1
JCN	**Nagara**	**0.69**	**244**	↓P	Pb	16 48 48.9	+0.4
JCN				*e*S	Sn	16 49 00.0	-1.1
JYT	**Yasato**	**0.80**	**309**	↓P	Pg	16 48 49.5	-0.3
JYT				S	Sg	16 49 00.1	-0.2
JHO	**Hitachi**	**0.94**	**341**	P	Pg	16 48 52.4	-0.2
BSO3	**Boso 3**	**0.99**	**202**	P	Pg	16 48 53.3	0.0
MAT	**Matsushiro**	**2.38**	**291**	P	Pn	16 49 12.8	-0.8
MAT				S	Sn	16 49 42.1	-0.7

*CSEM **14** 17:02:21.8±0.3, 67°.04N×21°.17E, h1km, ML2.4, Error ellipse: s-maj=7.0km s-min=5.4km az=79.0, Mining explosion.*
*ISCJB **14** 17:02:21.2±0.3, 67°.07N±0°.02×21°.08E±0°.07, h0km, Error ellipse: s-maj=3.7km s-min=2.8km az=0.5*
*HEL **14** 17:02:22.6±0.1, 67°.08N×20°.94E, h0km, ML2.4, ML2.1(UPP), Explosion*
*UPP **14** 17:02:22.0±0.1, 67°.07N×20°.92E, h0km, ML2.1, Explosion*
*IDC **14** 17:02:23.2±0.8, 67°.01N×21°.37E, h0km, mb1 3.2/5, mb1mx3.0/50, mbtmp3.2/5, ML2.5/5, Error ellipse: s-maj=16.2km s-min=7.5km az=109.0*
*NAO **14** 17:02:23.0±0.8, 67°.00N×21°.33E, ML2.7*
*BER **14** 17:02:24.7±3.7, 67°.02N×20°.84E, h0km, ML1.8, ML2.7(NAO), Suspected explosion*
ISC 14 17:02:21.5±0.7, 67°.06N±0°.02×20°.90E±0°.02, h0km, n91, σ1s29/116, Sweden

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ERTU	**Ertsjaerv**	**0.72**	**134**	P	**Pg**	**17 02 35.7**	**+0.5**
ERTU	**Ertsjaerv**	**0.72**	**134**	*i* P	**Pg**	**17 02 35.7**	**+0.5**
ERTU	**Ertsjaerv**	**0.72**	**134**	P	**Pg**	**17 02 35.7**	**+0.5**
PAJU	**Pajala**	**0.87**	**91**	P	**Pg**	**17 02 38.0**	**-0.1**
PAJU	**Pajala**	**0.87**	**91**	*i* P	**Pg**	**17 02 38.0**	**-0.1**
PAJU	**Pajala**	**0.87**	**91**	P	**Pg**	**17 02 38.0**	**-0.1**
HARU	**Harads**	**0.90**	**178**	P	**Pg**	**17 02 39.2**	**+0.5**
HARU	**Harads**	**0.90**	**178**	*e*P	**Pg**	**17 02 39.2**	**+0.5**
HARU	**Harads**	**0.90**	**178**	P	**Pg**	**17 02 39.2**	**+0.5**
KUA	**Kurravaara**	**0.93**	**347**	P	**Pg**	**17 02 39.4**	**+0.2**
KUA	**Kurravaara**	**0.93**	**347**	*e*P	**Pg**	**17 02 39.4**	**+0.2**
KUA	**Kurravaara**	**0.93**	**347**	P	**Pg**	**17 02 39.4**	**+0.2**
SALU	**Saltoluokta**	**0.98**	**290**	P	**Pg**	**17 02 40.4**	**+0.1**
SALU	**Saltoluokta**	**0.98**	**290**	*e*P	**Pg**	**17 02 40.4**	**+0.1**
SALU	**Saltoluokta**	**0.98**	**290**	P	**Pg**	**17 02 40.4**	**+0.1**
LANU	**Lannavaara**	**1.08**	**22**	P	**Pg**	**17 02 41.6**	**-0.6**
LANU	**Lannavaara**	**1.08**	**22**	*e*P	**Pg**	**17 02 41.3**	**-0.8**
LANU	**Lannavaara**	**1.08**	**22**	P	**Pg**	**17 02 41.6**	**-0.6**
NIKU	**Nikkaluokta**	**1.08**	**319**	P	**Pg**	**17 02 42.0**	**-0.2**

NIKU	**Nikkaluokta**	**1.08**	**319**	*e*P	**Pg**	**17 02 42.0**	**-0.2**
NIKU	**Nikkaluokta**	**1.08**	**319**	P	**Pg**	**17 02 42.0**	**-0.2**
SJUU	**Sjulsmark**	**1.58**	**169**	P	**Pn**	**17 02 50.8**	**0.0**
SJUU	**Sjulsmark**	**1.58**	**169**	*e*P	**Pn**	**17 02 50.8**	**0.0**
SJUU	**Sjulsmark**	**1.58**	**169**	P	**Pn**	**17 02 50.8**	**0.0**
TOF	**Tornio**	**1.69**	**124**	*e*P	**Pn**	**17 02 52.2**	**0.0**
TOF				*e*S	**Sn**	**17 03 13.9**	**-0.5**
TOF	**Tornio**	**1.69**	**124**	Pg	**Pn**	**17 02 52.1**	**0.0**
TOF				Sg	**Sn**	**17 03 13.9**	**-0.5**
HEF	**Hetta** baz=221	**1.72**	**37**	*e*P	**Pn**	**17 02 52.5**	**-0.1**
HEF	comp=Z,24nm,0.2s			MSG		17 03 13.8	
HEF				*e*SN	**Sn**	**17 03 15.2**	**0.0**
HEF	**Hetta**	**1.72**	**37**	Pg	**Pn**	**17 02 52.5**	**-0.1**
HEF				Sg	**Sn**	**17 03 15.2**	**0.0**
LILU	**Lilltraesk**	**1.83**	**194**	P	**Pn**	**17 02 54.9**	**+0.8**
LILU	**Lilltraesk**	**1.83**	**194**	*e*P	**Pn**	**17 02 54.9**	**+0.8**
LILU	**Lilltraesk**	**1.83**	**194**	P	**Pn**	**17 02 54.9**	**+0.8**
KIF	**Kilpisjarvi**	**1.96**	**359**	Pn	**Pb**	**17 02 57.5**	**-0.4**
KIF				Sn	**Sg**	**17 03 24.5**	**+0.3**
KIF	**Kilpisjarvi**	**1.96**	**359**	Pn	**Pb**	**17 02 57.5**	**-0.4**
KIF				Sn	**Sg**	**17 03 24.5**	**+0.3**
KIF	**Kilpisjarvi**	**1.96**	**359**	*e*PB	**Pb**	**17 02 57.4**	**-0.4**
KIF	comp=Z,39nm,0.2s			MSG		17 03 21.3	
KIF				*e*SG	**Sg**	**17 03 24.6**	**+0.4**
KIF	**Kilpisjarvi** SNR=50	**1.96**	**359**	Pn	**Pb**	**17 02 57.5**	**-0.4**
KIF	SNR=50			Sn	**Sg**	**17 03 24.5**	**+0.3**
RNF	**Rovaniemi**	**2.07**	**100**	*e*P	**Pn**	**17 02 58.3**	**+0.8**
RNF				*e*SG	**Sb**	**17 03 26.1**	**-0.1**
RNF	**Rovaniemi**	**2.07**	**100**	Pg	**Pn**	**17 02 58.3**	**+0.8**
KTK1	**Kautokeino**	**2.15**	**23**	*e*P	**Pb**	**17 03 00.3**	**-1.0**
KTK1	comp=Z,15nm,0.2s			IAML		17 03 32.8	
KTK1	**Kautokeino** SNR=50	**2.15**	**23**	*e*P	**Pb**	**17 03 00.3**	**-1.0**
SGF	**Sodankyl** baz=258	**2.22**	**77**	*e*PG	**Pb**	**17 03 02.4**	**-0.1**
SGF				*e*SG	**Sg**	**17 03 32.5**	**-0.2**
SGF	**Sodankyl**	**2.22**	**77**	Pg	**Pb**	**17 03 02.4**	**-0.1**
STEI	**Steigen**	**2.34**	**295**	*e*P	**Pb**	**17 03 04.5**	**0.0**
STEI	**Steigen** SNR=50	**2.34**	**295**	*e*P	**Pb**	**17 03 04.5**	**0.0**
BURU	**Burvik**	**2.49**	**175**	P	**Pn**	**17 03 04.4**	**+1.2**
BURU	**Burvik**	**2.49**	**175**	*e*P	**Pn**	**17 03 04.4**	**+1.2**
BURU	**Burvik**	**2.49**	**175**	P	**Pn**	**17 03 04.4**	**+1.2**
TRO	**Tromso**	**2.69**	**345**	*e*P	**Pn**	**17 03 08.0**	**+2.1**
TRO	comp=Z,7.5nm,0.2s			IAML		17 03 51.0	
TRO	**Tromso** SNR=50	**2.69**	**345**	*e*P	**Pn**	**17 03 08.0**	**+2.1**
MOR8	**Moi Rana**	**2.73**	**254**	*e*Sg	**Sb**	**17 03 43.0**	**-1.9**
MOR8	**Moi Rana** SNR=90	**2.73**	**254**	*e*Sg	**Sb**	**17 03 43.0**	**-1.9**
OUL	**Oulu**	**2.84**	**132**	*e*PB	**Pb**	**17 03 12.1**	**-0.9**
OUL	**Oulu**	**2.84**	**132**	Pg	**Pb**	**17 03 12.1**	**-0.9**
ARA0	**ARCESS Array S** baz=211,slow=14	**3.02**	**32**	Pn	**Pn**	**17 03 10.8**	**+0.3**
ARA0	baz=226,slow=22			Sn	**Sn**	**17 03 49.0**	**+1.7**
ARA0	**ARCESS Array S** baz=211,slow=14	**3.02**	**32**	Pn	**Pn**	**17 03 10.8**	**+0.3**
ARA0	baz=226,slow=22			Sn	**Sn**	**17 03 49.0**	**+1.7**
ARA0	**ARCESS Array S** SNR=50	**3.02**	**32**	Pn	**Pn**	**17 03 10.8**	**+0.3**
ARA0	SNR=50			Sn	**Sn**	**17 03 49.0**	**+1.7**
ARCES	**ARCESS Array B** comp=Z,1.0nm,0.3s,baz=210,slow=12,SNR=31	**3.02**	**32**	Pn	**Pn**	**17 03 10.8**	**+0.4**
ARCES	comp=Z,2.3nm,0.3s,baz=213,slow=22,SNR=10			Sn	**Sn**	**17 03 49.5**	**+2.1**
ARE0	**ARCESS Array S**	**3.02**	**32**	*e*P	**Pn**	**17 03 10.4**	**-0.1**
ARE0				*e*SB	**Sb**	**17 03 51.1**	**-2.3**
ARE0	**ARCESS Array S**	**3.02**	**32**	Pn	**Pn**	**17 03 10.4**	**-0.1**
OUFX	**Oulainen**	**3.13**	**148**	*e*P	**Pn**	**17 03 14.9**	**+2.9**
OUFX	**Oulainen**	**3.13**	**148**	Pb	**Pn**	**17 03 14.9**	**+2.9**
UMAU	**Umeaa**	**3.19**	**182**	*e*P	**Pn**	**17 03 14.9**	**+2.1**
UMAU	**Umeaa**	**3.19**	**182**	Pb	**Pn**	**17 03 14.9**	**+2.1**
VRF	**Varrio**	**3.44**	**74**	*e*PB	**Pn**	**17 03 19.2**	**+3.0**
VRF	**Varrio**	**3.44**	**74**	Pb	**Pn**	**17 03 19.1**	**+3.0**
MSF	**Maaselka**	**3.46**	**106**	*e*P	**Pn**	**17 03 17.9**	**+1.3**
KEV	**Kevo**	**3.53**	**37**	*e*P	**Pn**	**17 03 18.3**	**+0.9**
KEV				*e*SB	**Sn**	**17 04 03.0**	**+3.3**
KEV	**Kevo**	**3.53**	**37**	Pn	**Pn**	**17 03 18.3**	**+0.9**
KU6	**Riekki** baz=285	**3.74**	**102**	*e*P	**Pn**	**17 03 21.7**	**+1.3**
VAF	**Ylistaro**	**4.10**	**169**	*e*P	**Pn**	**17 03 27.5**	**+2.2**
VAF	**Ylistaro**	**4.10**	**169**	Pb	**Pn**	**17 03 27.5**	**+2.2**
HEMU	**Hemsoen** baz=19	**4.57**	**197**	*e*P	**Pn**	**17 03 33.3**	**+1.6**
HEMU	**Hemsoen**	**4.57**	**197**	Pn	**Pn**	**17 03 33.3**	**+1.6**
APA0	**Apatity Array** baz=270,slow=14	**4.71**	**78**	Pn	**Pn**	**17 03 32.7**	**-1.0**
APA0	baz=287,slow=37			Sn	**Sn**	**17 04 29.7**	**+0.7**
APA0	**Apatity Array** baz=270,slow=14	**4.71**	**78**	Pn	**Pn**	**17 03 32.7**	**-1.0**
APA0	baz=287,slow=37			Sn	**Sn**	**17 04 29.7**	**+0.7**
APA0	**Apatity Array** SNR=50	**4.71**	**78**	Pn	**Pn**	**17 03 32.7**	**-1.0**
FIA0	**FINESS Array S** baz=347,slow=14	**6.07**	**156**	Pn	**Pn**	**17 03 53.5**	**+1.1**
FIA0	baz=345,slow=28			Sn	**Sn**	**17 04 59.9**	**-2.6**
FIA0	**FINESS Array S** baz=347,slow=14	**6.07**	**156**	Pn	**Pn**	**17 03 53.5**	**+1.1**
FIA0	baz=345,slow=28			Sn	**Sn**	**17 04 59.9**	**-2.6**
FIA0	**FINESS Array S** SNR=50	**6.07**	**156**	Pn	**Pn**	**17 03 53.5**	**+1.1**
FIA0	SNR=50			Sn	**Sn**	**17 04 59.8**	**-2.6**
FINES	**FINESS Array B** comp=Z,0.2nm,0.3s,baz=347,slow=13,SNR=18	**6.07**	**156**	Pn	**Pn**	**17 03 53.0**	**+0.7**
FINES	comp=Z,0.3nm,0.3s,baz=346,slow=22,SNR=6.0			Sn	**Sn**	**17 05 01.9**	**-0.5**
FINES	comp=Z,0.2nm,0.3s,baz=339,slow=26,SNR=3.9			Lg	Lg	17 05 35.4	
NB2	**NORSAR Subarra**	**7.38**	**220**	Pn	**Pn**	**17 04 11.3**	**+1.0**
NB2	**NORSAR Subarra**	**7.38**	**220**	Pn	**Pn**	**17 04 11.3**	**+1.0**
NB2	**NORSAR Subarra** SNR=50	**7.38**	**220**	Pn	**Pn**	**17 04 11.3**	**+1.0**
NOA	**NORSAR Array B** comp=Z,0.1nm,0.3s,baz=39,slow=9.2,SNR=2.4	**7.38**	**220**	Pn	**Pn**	**17 04 10.0**	**-0.3**
NOA	comp=Z,0.3nm,0.3s,baz=36,slow=23,SNR=2.9			Lg	Lg	17 06 17.1	
HFS	**Hagfors** baz=25,slow=12	**7.65**	**208**	Pn	**Pn**	**17 04 13.8**	**-0.2**
HFS	baz=27,slow=37			Sn	**Sn**	**17 05 38.1**	**-3.2**
HFS	**Hagfors** baz=25,slow=12	**7.65**	**208**	Pn	**Pn**	**17 04 13.8**	**-0.2**
HFS	baz=27,slow=37			Sn	**Sn**	**17 05 38.1**	**-3.2**
HFS	**Hagfors**	**7.65**	**208**	Pn	**Pn**	**17 04 14.2**	**+0.2**
HFS	comp=Z,0.2nm,0.3s,baz=22,slow=14,SNR=9.6 comp=Z,0.1nm,0.3s,baz=22,slow=25,SNR=5.4			Sn	**Sn**	**17 05 41.4**	**+0.1**
HFS	**Hagfors** SNR=50	**7.65**	**208**	Pn	**Pn**	**17 04 13.8**	**-0.2**
SPA0	**Spitsbergen Ar** baz=152,slow=14	**11.25**	**355**	Pn	**Pn**	**17 05 05.0**	**+1.7**
SPA0	**Spitsbergen Ar** baz=152,slow=14	**11.25**	**355**	Pn	**Pn**	**17 05 05.0**	**+1.7**
SPA0	**Spitsbergen Ar** SNR=7.3	**11.25**	**355**	Pn	**Pn**	**17 05 05.0**	**+1.7**
SPITS	**Spitsbergen Ar** baz=166,slow=13,SNR=3.4	**11.25**	**355**	Pn	**Pn**	**17 05 04.7**	**+1.4**

*NIED **14** 17:04:00, 39°.90N×143°.80E, h11km, Mw3.8 Best double couple: M◎6.00000×10^14 NP1:φs198.00000°, δ34.00000°, λ85.00000°. NP2:φs24.00000°, δ57.00000°, λ93.00000°.*
*ISCJB **14** 17:04:59.4±0.7, 39°.83N±0°.04×143°.87E±0°.07, h6km, mb3.6/10, Error ellipse: s-maj=8.6km s-min=4.8km az=20.0*
*JMA **14** 17:04:59.3±0.3, 39°.90N×143°.79E, h0km, M3.9*
*IDC **14** 17:05:01.1±1.0, 39°.83N×143°.53E, h0km, mb3.6/9, mb1 3.7/13, mb1mx3.5/46, mbtmp3.7/13, ML3.5/3, MS3.0/2, Ms1 3.0/2, ms1mx2.3/47, Error ellipse: s-maj=26.7km s-min=16.0km az=99.0*
ISC 14 17:05:01.7±0.9, 39°.86N±0°.06×143°.67E±0°.08, h6km, n32, σ1s05/34, mb3.7/10, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JTH	**Tanohata**	**1.39**	**274**	P	**Pn**	**17 05 26.9**	**-0.8**
JTH				*e*S	**Sg**	**17 05 47.6**	**+1.2**
MIYJ	**Miyakonagasawa**	**1.46**	**259**	P	**Pn**	**17 05 28.5**	**0.0**
JANG	**Nango**	**1.73**	**288**	P	**Pn**	**17 05 31.7**	**-0.6**
OFUJ	**Ofunato**	**1.73**	**244**	P	**Pn**	**17 05 32.2**	**-0.2**
JOM	**Ohasama**	**1.88**	**259**	P	**Pn**	**17 05 35.0**	**+0.7**
JMK	**Ichinoseki**	**2.10**	**245**	P	**Pn**	**17 05 37.7**	**+0.2**
JTM	**Tenmabayashi**	**2.19**	**296**	P	**Pn**	**17 05 39.2**	**+0.5**
JAH	**Hinai**	**2.35**	**279**	P	**Pn**	**17 05 41.7**	**+0.8**
JRG	**Rokugo**	**2.39**	**260**	P	**Pn**	**17 05 42.1**	**+0.7**
JNBK	**Urakawa-nobuka**	**2.51**	**344**	P	**Pn**	**17 05 44.4**	**+1.3**
JNBK				*e*S	**Sn**	**17 06 14.1**	**+0.1**
JYK	**Kaneyama**	**2.73**	**251**	P	**Pn**	**17 05 47.0**	**+0.9**
JCH	**Churui**	**2.76**	**355**	P	**Pn**	**17 05 46.9**	**+0.4**
JCH				S	**Sn**	**17 06 18.5**	**-1.6**
JOU	**Okura**	**2.78**	**238**	P	**Pn**	**17 05 47.5**	**+0.8**
JKB	**Kayabe**	**2.84**	**316**	P	**Pn**	**17 05 48.7**	**+1.1**
JAR	**Ashorobuto**	**3.43**	**1**	P	**Pn**	**17 05 55.1**	**-0.6**
ASAJ	**Asahikawa** 1.7nm,0.3s,baz=200,slow=8.3,SNR=30	**4.33**	**350**	Pn	**Pn**	**17 06 08.6**	**+0.6**
ASAJ	1.4nm,0.3s,baz=280,slow=28,SNR=3.8			Sn	**Sn**	**17 07 00.3**	**+1.6**
MJAR	**Matsushiro Arr** 1.3nm,0.3s,baz=43,slow=12,SNR=18	**5.43**	**234**	Pn	**Pn**	**17 06 23.9**	**+0.7**
MJAR	1.6nm,0.3s,baz=85,slow=23,SNR=5.7			Sn	Sn	17 07 15.8	-10
MAT	**Matsushiro**	**5.43**	**234**	P	**Pn**	**17 06 24.7**	**+1.5**
MAT				S	Sn	17 07 14.4	-12
JHJ	**Hachijo jima 2** 4.0nm,0.3s,baz=24,slow=16,SNR=5.0	**7.42**	**206**	Pn	**Pn**	**17 06 50.3**	**-0.2**
USRK	**Ussuriysk Ar.** 0.1nm,0.3s,baz=120,slow=20,SNR=2.5	**9.71**	**300**	Pn	**Pn**	**17 07 19.8**	**-2.0**
JNU	**Nakatsue** comp=Z,102nm,18.9s,baz=118,slow=40	**12.29**	**241**	LR	LR	17 13 07.5	
KSRS	**Korea Array** 0.1nm,0.3s,baz=77,slow=13,SNR=3.4	**12.54**	**264**	Pn	Pn	17 08 05.7	+5.1
KSRS	comp=Z,38nm,18.3s,baz=90,slow=36			LR	LR	17 12 32.6	
SEY	**Seymchan** 1.9nm,0.7s,baz=215,slow=7.0,SNR=9.6	**23.69**	**10**	P	**P**	**17 10 13.4**	**-0.5**
YAK	**Yakutsk** 2.5nm,0.3s,baz=0.0,slow=3.5,SNR=5.1	**23.78**	**344**	P	**P**	**17 10 12.5**	**-2.2**
SONM	**Songino Array** 0.6nm,0.4s,baz=84,slow=7.3,SNR=6.8	**27.82**	**299**	P	**P**	**17 10 51.1**	**-0.6**
ZALV	**Zalesovo Beam** 0.6nm,0.5s,baz=102,slow=7.3,SNR=3.3	**41.39**	**310**	P	**P**	**17 12 48.7**	**+0.3**
CMAR	**Chiang Mai Arr** 0.1nm,0.4s,baz=34,slow=7.9,SNR=3.5	**43.95**	**254**	P	**P**	**17 13 09.1**	**-0.5**
MKAR	**Makanchi Array** 0.4nm,0.6s,baz=85,slow=8.4,SNR=4.8	**44.18**	**300**	P	**P**	**17 13 10.9**	**-0.3**
INK	**Inuvik** 1.3nm,0.5s,baz=284,slow=7.8,SNR=9.2	**51.06**	**28**	P	**P**	**17 14 06.7**	**+2.4**
WRA	**Warramunga Arr** 0.4nm,0.7s,baz=7.6,slow=7.1,SNR=7.5	**60.13**	**190**	P	**P**	**17 15 08.9**	**-1.1**
ASAR	**Alice Springs** 0.2nm,0.8s,baz=358,slow=5.9,SNR=4.2	**63.85**	**190**	P	**P**	**17 15 35.1**	**+0.1**
FINES	**FINESS Array B** 0.9nm,0.6s,baz=76,slow=5.9,SNR=5.3	**67.13**	**332**	P	**P**	**17 15 55.7**	**-0.1**

*DDA **14** 17:08:42.9, 38°.25N×38°.82E, h7km, Md2.6*
*CSEM **14** 17:08:42.8±0.2, 38°.27N×38°.83E, h12km, MD2.7, Error ellipse: s-maj=6.2km s-min=3.6km az=171.0*
*ISK **14** 17:08:42.8, 38°.28N×38°.83E, h10km, MD2.7*
*ISCJB **14** 17:08:43.0±0.7, 38°.26N±0°.05×38°.84E±0°.04, h11km, Error ellipse: s-maj=7.5km s-min=4.7km az=161.7*
ISC 14 17:08:43.0±0.9, 38°.27N±0°.05×38°.82E±0°.03, h11km, n16, σ0s39/24, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ELZG	**Elazig**	**0.27**	**29**	*i* P	**Pg**	**17 08 48.9**	**+0.3**
ELZG				*i* S	**Sg**	**17 08 52.9**	**+0.6**
ELZG	**Elazig**	**0.27**	**29**	P	**Pg**	**17 08 48.8**	**+0.3**
ELZG				S	**Sg**	**17 08 52.9**	**+0.6**
SVRC	**Sivrice-ELAZID**	**0.40**	**73**	*e*PG	**Pg**	**17 08 50.8**	**-0.2**
SVRC				*e*SG	**Sg**	**17 08 56.7**	**+0.4**
SVRC	**Sivrice-ELAZID**	**0.40**	**73**	*e*Pg	**Pg**	**17 08 50.8**	**-0.2**
SVRC				*e*Sg	**Sg**	**17 08 56.7**	**+0.4**
AKCD	**Akcadag**	**0.70**	**273**	*i* P	**Pg**	**17 08 56.7**	**0.0**
AKCD				*i* S	**Sb**	**17 09 07.4**	**+0.2**
AKCD	**Akcadag**	**0.70**	**273**	P	**Pg**	**17 08 56.7**	**0.0**
AKCD				S	**Sb**	**17 09 07.4**	**+0.2**
PTK	**Pertek**	**0.77**	**36**	*e*PG	**Pg**	**17 08 57.8**	**-0.2**
PTK				*e*SG	**Sb**	**17 09 09.4**	**+0.3**
PTK	**Pertek**	**0.77**	**36**	*e*Pg	**Pg**	**17 08 57.8**	**-0.2**
PTK				*e*Sg	**Sb**	**17 09 09.4**	**+0.3**
DYBB	**Diyarbakir**	**1.09**	**106**	*e*PN	**Pn**	**17 09 04.4**	**+0.1**
DARE	**Darende-Malaty**	**1.09**	**287**	*e*PN	**Pn**	**17 09 04.3**	**0.0**
**DAR

TIF ***14*** *17:12:39.7, 41°.83N × 42°.15E, h17km ± 2km*
CSEM ***14*** *17:12:39.5 ± 0.1, 41°.80N × 42°.12E, h10km, MD2.6, Error ellipse: s-maj=4.3km s-min=2.4km az=114.0*
ISCJB ***14*** *17:12:40.1 ± 0.7, 41°.78N ± 0°.04 × 42°.11E ± 0°.07, h27km ± 18km, Error ellipse: s-maj=8.8km s-min=5.1km az=25.9*
DDA ***14*** *17:12:42.0, 41°.64N × 42°.16E, h7km, Md2.6*
ISC 14 17:12:39.1 ± 1.9, 41°.79N ± 0°.03 × 42°.13E ± 0°.04, h11 km ± 16 km, n13, σ 0§16/26, Turkey-Georgia-Armenia border region

Code	Station Name	Δ°	AZ°	Phase	Op	ID	Time	Res
							h m s	ISC
EPOS	**Posof**	**0.53**	**122**	*i* P		**Pb**	**17 12 50.4**	**-0.1**
EPOS				*i* S		**Sb**	**17 12 58.4**	**+0.1**
EPOS	**Posof**	**0.53**	**122**	P		**Pb**	**17 12 50.4**	**-0.1**
EPOS				S		**Sb**	**17 12 58.4**	**+0.1**
DBOC	**Borcka**	**0.56**	**218**	*i* P		**Pb**	**17 12 50.7**	**-0.2**
DBOC				*i* S		**Sb**	**17 12 59.1**	**+0.2**
DBOC	**Borcka**	**0.56**	**218**	P		**Pb**	**17 12 50.7**	**-0.2**
DBOC				S		**Sb**	**17 12 59.1**	**+0.2**
ARTV	**Artvin**	**0.62**	**194**	*i* P		**Pb**	**17 12 52.0**	**-0.1**
ARTV				*i* S		**Sb**	**17 13 01.0**	**+0.2**
ARTV	**Artvin**	**0.62**	**194**	P		**Pb**	**17 12 52.0**	**-0.1**
ARTV				S		**Sb**	**17 13 01.0**	**+0.2**
DAGI	**Agillar**	**0.72**	**193**	*i* P		**Pb**	**17 12 53.8**	**0.0**
DAGI				*i* S		**Sb**	**17 13 04.2**	**+0.4**
DBAD	**Bademkaya**	**0.83**	**203**	*i* P		**Pb**	**17 12 55.5**	**-0.1**
DBAD				*i* S		**Sg**	**17 13 06.1**	**0.0**
DBAD	**Bademkaya**	**0.83**	**203**	P		**Pb**	**17 12 55.5**	**-0.1**
DBAD				S		**Sg**	**17 13 06.1**	**0.0**
CHVG	**Ch'k'valeri**	**0.93**	**358**	P		**Pb**	**17 12 57.3**	**0.0**
CHVG				S		**Sb**	**17 13 09.8**	**+0.1**
CHVG	**Ch'k'valeri**	**0.93**	**358**	P		**Pb**	**17 12 57.3**	**0.0**
CHVG				S		**Sb**	**17 13 09.8**	**+0.1**
ONI	**Oni**	**1.27**	**50**	P		**Pn**	**17 13 02.8**	**-0.1**
ONI				S		**Sn**	**17 13 19.9**	**-0.1**
ONI	**Oni**	**1.27**	**50**	P		**Pn**	**17 13 02.8**	**-0.1**
ONI				S		**Sn**	**17 13 19.9**	**-0.1**

IDC ***14*** *17:13:59.9 ± 0.9, 30°.00S × 71°.41W, h0km, mb3.5/3, mb1 3.9/6, mb1mx3.8/24, mbtmp3.6/6, ML3.7/3, MS3.0/3, Ms1 3.0/3, ms1mx2.8/19, Error ellipse: s-maj=36.2km s-min=29.4km az=73.0*
ISCJB ***14*** *17:14:08.5 ± 0.7, 29°.36S ± 0°.03 × 71°.43W ± 0°.09, h50km, mb3.4/3, MS3.3/1, Error ellipse: s-maj=10.9km s-min=4.5km az=6.9*
GUC ***14*** *17:14:09.5 ± 0.6, 29°.41S × 71°.12W, h49km ± 5km, ML3.9*
ISC 14 17:14:09.0 ± 0.8, 29°.39S ± 0°.04 × 71°.31W ± 0°.09, h50 km, n35, σ 1§54/25, mb3.4/3, 3C-1D, Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase	Op	ID	Time	Res
							h m s	ISC
LSCH	**La Serena**	**0.52**	**174**	⇓ *i*P		**Pn**	**17 14 21.0**	**+0.5**
LSCH				*i* S		**Sn**	**17 14 29.5**	**+0.8**
LCO	**Las Campanas**	**0.65**	**55**	*e*P		Pn	17 14 31.5	+9.2
LCO	**Las Campanas**	**0.65**	**55**	⇑ *i*P		**Pn**	**17 14 22.1**	**-0.3**
LCO				*i* S		**Sn**	**17 14 31.6**	**-0.4**
LCO				IAML			17 14 31.8	
	comp=E,17μm,0.4s							
TLL	**Tololo Astrono**	**0.89**	**151**	⇑ *i*P		**Pn**	**17 14 25.9**	**+0.4**
TLL				IAML			17 14 41.9	
	comp=E,6μm,0.3s							
VACH	**Vallenar**	**0.94**	**31**	⇑ *i*P		**Pn**	**17 14 26.0**	**0.0**
VACH				*i* S		**Sn**	**17 14 38.5**	**+0.1**
CPCH	**Copiapo**	**2.19**	**23**	*e*P		**Pn**	**17 14 43.6**	**+0.6**
CPCH				*i* S		**Sn**	**17 15 09.8**	**+0.9**
CDCH	**Caldera**	**2.35**	**11**	*e*P		Pn	**17 14 45.9**	**+0.8**
VCA	**Vinchina**	**2.79**	**77**	*e*P		Pn	17 14 55.9	+4.6
RTLS	**Leoncito**	**2.96**	**145**	*e*P		Pn	17 14 57.9	+4.1
AUSP	**Uspallata**	**3.27**	**150**	*e*P		Pn	17 15 01.8	+3.7
AUSP				*e*S		Sn	17 15 43.4	+7.6
RTCV	**Cerro Valdivia**	**3.43**	**137**	*e*P		Pn	17 15 03.5	+3.6
ROC1	**El Roble**	**3.58**	**176**	*e*P		**Pn**	**17 15 03.1**	**+0.8**
PEL	**Peldehue**	**3.78**	**172**	*e*P		**Pn**	**17 15 05.4**	**+0.6**
ACLC	**CERRO LA CRUZ**	**3.80**	**92**	*e*P		**Pn**	**17 15 07.2**	**+2.0**
ACLC				IAML			17 16 01.3	
	comp=Z,289nm,0.5s							
ASAL	**Salagasta**	**3.83**	**147**	*e*P		Pn	17 15 09.0	+3.5
CLCH	**Cerro Calan**	**4.05**	**171**	*e*P		**Pn**	**17 15 08.5**	**0.0**
AAGR	**Agrelo**	**4.25**	**151**	*e*P		**Pn**	**17 15 12.9**	**+1.6**
ACAN	**Cantantal**	**4.56**	**130**	*e*P		**Pn**	**17 15 17.6**	**+2.1**
PLCA	**Paso Flores**	**11.33**	**177**	Pn		Pn	17 16 35.0	-13
	comp=Z,0.1nm,0.3s,baz=24,slow=6.2,SNR=2.9							
PLCA				LR		LR	17 21 04.6	
	comp=Z,61nm,20.8s,baz=290,slow=40							
CPUP	**Villa Florida**	**12.73**	**79**	Pn		**Pn**	**17 17 04.8**	**-2.6**
	comp=Z,0.3nm,0.3s,baz=258,slow=13,SNR=4.6							
CPUP				LR		LR	17 22 07.6	
	comp=Z,58nm,21.8s,baz=224,slow=38							
LPAZ	**La Paz**	**13.36**	**13**	Pn		**Pn**	**17 17 19.4**	**+2.8**
	comp=Z,0.2nm,0.3s,baz=193,slow=7.7,SNR=3.0							
TXAR	**Lajitas Array**	**66.07**	**329**	P		**P**	**17 24 52.0**	**+1.2**
	comp=Z,0.3nm,0.7s,baz=157,slow=9.6,SNR=2.3							
PDAR	**Pinedale Array**	**79.96**	**332**	P		**P**	**17 26 13.2**	**+0.3**
	comp=Z,0.3nm,0.6s,baz=157,slow=4.9,SNR=3.8							
TORD	**Torodi Ar. Bea**	**82.06**	**70**	P		**P**	**17 26 23.7**	**-0.7**
	comp=Z,0.5nm,0.8s,baz=254,slow=5.7,SNR=3.9							
ESDC	**Sonseca Array**	**92.92**	**45**	LR		LR	18 08 37.1	
	comp=Z,11nm,19.9s,baz=0.0,slow=35							
ASAR	**Alice Springs**	**121.94**	**207**	PKP		**PKPdf**	**17 32 54.5**	**-3.9**
	comp=Z,0.2nm,0.8s,baz=55,slow=3.5,SNR=2.6							
WRA	**Warramunga Array**	**125.07**	**210**	PKP		**PKPdf**	**17 33 02.0**	**-2.4**
	comp=Z,0.1nm,0.5s,baz=151,slow=1.6,SNR=6.0							
H11S2	**WAKE ISLAND Hy**	**126.35**	**272**	T		T	19 52 08.9	
	baz=115,slow=75,SNR=10							
H11S1	**WAKE ISLAND Hy**	**126.36**	**272**	T		T	19 52 11.8	
	baz=115,slow=75,SNR=4.4							
H11S3	**WAKE ISLAND Hy**	**126.36**	**272**	T		T	19 52 08.9	
	baz=115,slow=75,SNR=4.0							
H11N3	**WAKE ISLAND Hy**	**126.64**	**274**	T		T	19 52 34.9	
	baz=113							
H11N1	**WAKE ISLAND Hy**	**126.66**	**274**	T		T	19 52 35.8	
	baz=113							
H11N2	**WAKE ISLAND Hy**	**126.66**	**274**	T		T	19 52 34.7	
	baz=113							
KURBB	**Kurchatov Arra**	**148.98**	**38**	PKPbc		**PKPbc**	**17 33 51.1**	**+0.1**
	comp=Z,0.3nm,0.5s,baz=306,slow=3.2,SNR=6.1							
ZALV	**Zalesovo Beam**	**149.94**	**29**	PKPbc		**PKPbc**	**17 33 53.3**	**0.0**
	comp=Z,1.4nm,0.5s,baz=280,slow=3.4,SNR=6.3							

IDC ***14*** *17:16:31.8 ± 0.7, 37°.80N × 143°.65E, h0km, mb3.9/18, mb1 4.0/24, mb1mx3.9/52, mbtmp3.9/24, ML3.6/6, MS3.0/11, Ms1 3.0/11, ms1mx2.8/45, Error ellipse: s-maj=17.2km s-min=13.2km az=122.0*
ISCJB ***14*** *17:16:33.0 ± 0.4, 37°.92N ± 0°.03 × 143°.60E ± 0°.05, h19km, mb4.0/27, MS3.1/6, Error ellipse: s-maj=5.8km s-min=4.2km az=22.1*
NEIC ***14*** *17:16:32.5 ± 2.4, 37°.82N × 143°.64E, h5km ± 14km, mb4.3/7, Error ellipse: s-maj=8.1km s-min=4.9km az=121.0*
MOS ***14*** *17:16:32.9 ± 1.4, 37°.89N × 143°.67E, h22km, mb4.3/17, Error ellipse: s-maj=9.6km s-min=6.2km az=93.9*
JMA ***14*** *17:16:35.1 ± 0.3, 37°.90N × 143°.49E, h42km, M4.1*
ISC 14 17:16:34.9 ± 0.6, 37°.91N ± 0°.05 × 143°.57E ± 0°.07, h19 km, n93, σ 1§28/87, mb4.1/27, MS3.2/6, 1C, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	Op	ID	Time	Res
							h m s	ISC
JIO	**Ouri**	**1.83**	**288**	P		**Pn**	**17 17 04.3**	**-1.1**
OFUJ	**Ofunato**	**1.90**	**309**	P		**Pn**	**17 17 05.4**	**-0.9**
JMK	**Ichinoseki**	**2.12**	**300**	P		**Pn**	**17 17 08.8**	**-0.5**
JMM	**Marumori**	**2.20**	**270**	P		**Pn**	**17 17 09.7**	**-0.7**
JFK	**Kawauchi**	**2.21**	**257**	P		**Pn**	**17 17 09.1**	**-1.5**
JOU	**Okura**	**2.34**	**282**	P		**Pn**	**17 17 12.0**	**-0.4**
JOM	**Ohasama**	**2.37**	**312**	*e*S		**Sn**	**17 17 40.5**	**-0.9**
JTH	**Tanohata**	**2.43**	**327**	S		**Sn**	**17 17 40.5**	**-2.2**
JFT	**Otama**	**2.59**	**262**	P		**Pn**	**17 17 15.5**	**-0.4**
JYK	**Kaneyama**	**2.72**	**293**	P		**Pn**	**17 17 17.3**	**-0.3**
JTM	**Tenmabayashi**	**3.47**	**327**	P		**Pn**	**17 17 28.9**	**+1.0**
JTM				*e*S		**Sn**	**17 18 06.9**	**-1.5**
JOT	**Ohata**	**3.98**	**331**	P		**Pn**	**17 17 36.0**	**+1.1**
JOT				*e*S		**Sn**	**17 18 19.1**	**-1.9**
ERM	**Erimo**	**4.12**	**356**	*e*P		**Pn**	**17 17 36.2**	**-0.5**
ERM	**Erimo**	**4.12**	**356**	*e*Pn		Pn	**17 17 36.2**	**-0.5**
JRY	**Ryogami san**	**4.19**	**245**	P		Pn	**17 17 37.2**	**-0.6**
JRY				S		**Sn**	**17 18 22.4**	**-3.8**
JNBK	**Urakawa-nobuka**	**4.41**	**352**	P		**Pn**	**17 17 40.8**	**-0.1**
JNBK				S		**Sn**	**17 18 30.7**	**-1.0**
JKB	**Kayabe**	**4.43**	**335**	P		**Pn**	**17 17 42.3**	**+1.2**
JKB				S		**Sn**	**17 18 29.1**	**-3.0**
MJAR	**Matsushiro Arr**	**4.49**	**254**	Pn		**Pn**	**17 17 41.5**	**-0.5**
	5.4nm,0.3s,baz=82,slow=14,SNR=28							
MJAR						Sn	**Sn**	**17 18 35.3**	**+1.6**
	2.2nm,0.3s,baz=52,slow=22,SNR=5.1							
MJAR				LR		LR	17 19 19.1	
	comp=Z,74nm,18.1s,baz=35,slow=37							
MAJO	**Matsushiro**	**4.49**	**254**	*e*P		**Pn**	**17 17 42.5**	**+0.5**
MAJO	**Matsushiro**	**4.49**	**254**	*e*Pn		**Pn**	**17 17 42.5**	**+0.5**
MAT	**Matsushiro**	**4.49**	**254**	P		Pn	17 17 36.0	-6.0
JCH	**Churui**	**4.71**	**358**	P		**Pn**	**17 17 43.8**	**-1.1**
JCH				*e*S		**Sn**	**17 18 35.4**	**-3.5**
JHJ2	**Mitsune**	**5.68**	**214**	*e*Pn		**Pn**	**17 17 56.4**	**-1.9**
JHJ	**Hachijo jima 2**	**5.69**	**214**	Pn		**Pn**	**17 17 56.1**	**-2.3**
	9.7nm,0.3s,baz=329,slow=22,SNR=14							
JHJ						Sn	Sn	17 18 55.5	-7.7
	17nm,0.3s,baz=81,slow=18,SNR=3.3							
ASAJ	**Asahikawa**	**6.25**	**354**	Pn		**Pn**	**17 18 06.2**	**+0.1**
	3.6nm,0.3s,baz=211,slow=10,SNR=45							
ASAJ						Sn	**Sn**	**17 19 14.4**	**-2.5**
	1.7nm,0.3s,baz=170,slow=23,SNR=4.0							
YUK	**Yuzh-Kuril'sk**	**6.36**	**15**	*e*P		**Pn**	**17 18 04.9**	**-2.7**
YUK				*e*S		Sn	17 19 12.8	-6.9
YUK				pmax		pmax		
	comp=Z,146nm,0.2s							
YUK				pmax		pmax		
	comp=N,51nm,0.3s							
YUK				pmax		pmax		
	comp=E,53nm,0.4s							
SHO	**Shikotan**	**6.45**	**21**	*e*P		**Pn**	**17 18 05.9**	**-2.9**
SHO				*e*S		Sn	17 19 13.8	-8.0
SHO				pmax		pmax		
	comp=Z,44nm,0.4s							
SHO				pmax		pmax		
	comp=N,31nm,0.5s							
SHO				pmax		pmax		
	comp=E,24nm,0.4s							
KUR	**Kuril'sk**	**8.00**	**22**	*e*P		**Pn**	**17 18 28.4**	**-1.6**
KUR				*e*S		Sn	17 19 52.4	-7.5
KUR				pmax		pmax		
	comp=Z,42nm,0.4s							
KUR				pmax		pmax		
	comp=N,16nm,0.3s							
KUR				pmax		pmax		
	comp=E,34nm,0.4s							
YSS	**Yuzh-Sakhalins**	**9.06**	**356**	⇑ *e*P		**Pn**	**17 18 46.5**	**+1.9**
YSS				pmax		pmax		
	comp=Z,10.0nm,1.4s							
USRK	**Ussuriysk Ar.**	**10.77**	**309**	Pn		**Pn**	**17 19 10.0**	**+2.0**
	comp=Z,1.0nm,0.3s,baz=108,slow=13,SNR=9.2							
USRK				LR		LR	17 23 16.4	
	comp=Z,95nm,18.5s,baz=132,slow=37							
CBIJ	**Chichi jima**	**10.84**	**187**	*e*Pn		Pn	17 19 03.5	-5.6
CBIJ				Sn		Sn	17 20 56.8	-13
JCJ	**Chichijima**	**10.84**	**187**	Pn		Pn	17 19 04.0	-5.1
	comp=Z,5.0nm,0.3s,baz=278,slow=20,SNR=14							
JCJ						Sn	Sn	17 20 56.8	-13
	baz=311,slow=19							
JCJ				LR		LR	17 24 42.3	
	comp=Z,19nm,19.8s,baz=36,slow=46							
KSRS	**Korea Array**	**12.41**	**273**	Pn		**Pn**	**17 19 31.8**	**+1.3**
	comp=Z,0.2nm,0.3s,baz=82,slow=14,SNR=10							
KSRS				LR		LR	17 24 14.3	
	comp=Z,108nm,18.3s,baz=62,slow=37							
KSAR	**Wonju Array Be**	**12.44**	**273**	P		**Pn**	**17 19 31.8**	**+0.8**
KSAR	**Wonju Array Be**	**12.44**	**273**	Pn		**Pn**	**17 19 31.8**	**+0.8**
MDJ	**Mudanjiang**	**12.46**	**307**	*e*P		**Pn**	**17 19 32.2**	**+1.0**
KLR	**Kul'dur**	**14.18**	**327**	Pn		**Pn**	**17 19 52.9**	**-1.7**
	comp=Z,0.2nm,0.3s,baz=120,slow=11,SNR=6.7							
KLR				LR		LR	17 25 23.3	
	comp=Z,56nm,20.9s,baz=142,slow=37							
NKL	**Nikolayevsk**	**15.38**	**353**	*e*P		**Pn**	**17 20 12.3**	**+1.6**
PETK	**Petropavlovsk-**	**18.09**	**28**	P		**P**	**17 20 46.0**	**+0.7**
	comp=Z,0.1nm,0.3s,baz=198,slow=14,SNR=3.5							
PETK				LR		LR	17 27 15.1	
	comp=Z,31nm,21.8s,baz=212,slow=35							
MA2	**Magadan**	**22.17**	**10**	LR		LR	17 31 46.1	
	comp=Z,20nm,18.6s,baz=22,slow=41							
SEY	**Seymchan**	**25.63**	**9**	P		**P**	**17 22 04.3**	**+1.4**
	comp=Z,3.5nm,0.8s,baz=206,slow=7.9,SNR=11							
SEY	**Seymchan**	**25.63**	**9**	P		**P**	**17 22 04.3**	**+1.4**
SEY				pmax		pmax		
	comp=Z,3.0nm,0.8s							
YAK	**Yakutsk**	**25.64**	**345**	LR		LR	17 32 50.2	
	comp=Z,74nm,18.2s,baz=160,slow=38							
H11N2	**WAKE ISLAND Hy**	**27.18**	**125**	T		T	17 50 43.9	
	baz=317,slow=74,SNR=23							
H11N1	**WAKE ISLAND Hy**	**27.19**	**125**	T		T	17 50 46.1	
	baz=317,slow=74,SNR=15							
H11N3	**WAKE ISLAND Hy**	**27.20**	**125**	T		T	17 50 48.7	
	baz=317,slow=74,SNR=16							
BOD	**Bodaibo**	**27.75**	**325**	*e*P		**P**	**17 22 21.9**	**-0.2**
BOD				pmax		pmax		
	comp=Z,6.0nm,1.3s							
H11S1	**WAKE ISLAND Hy**	**27.96**	**127**	T		T	17 52 03.9	
	baz=319,slow=75,SNR=8.2							
H11S3	**WAKE ISLAND Hy**	**27.96**	**127**	T		T	17 51 52.9	
	baz=319,slow=75,SNR=7.8							
H11S2	**WAKE ISLAND Hy**	**27.97**	**127**	T		T	17 51 45.9	
	baz=319,slow=75,SNR=7.6							
SONM	**Songino Array**	**28.75**	**302**	P		**P**	**17 22 32.1**	**+0.8**
	comp=Z,1.3nm,0.5s,baz=91,slow=9.3,SNR=10							
SONM				LR		LR	17 33 52.1	
	comp=Z,34nm,19.6s,baz=166,slow=36							
ENH	**Enshi**	**29.12**	**265**	*e*P		**P**	**17 22 35.2**	**+0.6**
	comp=Z,5.7nm,0.5s							
TLY	**Talaya**	**31.08**	**309**	*e*P		P	17 22 54.6	+2.8
TLY				pmax		pmax		
	comp=Z,4.0nm,0.9s							
TLY				MLR		MLR		
	comp=Z,66nm,15.0s							
ZAK	**Zakamensk**	**31.10**	**307**	*e*P		**P**	**17 22 53.2**	**+1.2**
ZAK				pmax		pmax		
	comp=Z,3.0nm,1.4s							
TIXI	**Tiksi**	**34.65**	**352**	P		**P**	**17 23 23.2**	**+0.5**
	comp=Z,0.2nm,0.3s,baz=18,slow=3.2,SNR=1.8							
TIXI				LR		LR	17 39 14.2	
	comp=Z,48nm,18.6s,baz=162,slow=39							
ZALV	**Zalesovo Beam**	**42.61**	**312**	P		**P**	**17 24 30.4**	**+0.7**
	comp=Z,1.5nm,0.5s,baz=90,slow=10,SNR=8.5							
CHTO	**Chiang Mai**	**43.17**	**257**	P		**P**	**17 24 34.1**	**-0.5**
CHTO				pmax		pmax		
	comp=Z,1.0nm,0.8s							
CHTO	**Chiang Mai**	**43.17**	**257**	P		**P**	**17 24 34.1**	**-0.5**
	comp=Z,1.4nm,0.8s							
CMAR	**Chiang Mai Arr**	**43.38**	**256**	P		**P**	**17 24 36.3**	**0.0**
	comp=Z,0.7nm,0.8s,baz=43,slow=5.6,SNR=9.7							
MKAR	**Makanchi Array**	**45.12**	**302**	P		**P**	**17 24 50.1**	**+0.2**
	comp=Z,1.9nm,0.7s,baz=86,slow=9.6,SNR=14							
KURK	**Kurchatov**	**46.75**	**308**	*e*P		**P**	**17 25 03.1**	**+0.4**
KURK				pmax		pmax		
	comp=Z,16nm,0.7s							
KURK	**Kurchatov**	**46.75**	**308**	*e*P		**P**	**17 25 03.0**	**+0.4**
	comp=Z,16nm,0.7s							
KURBB	**Kurchatov Arra**	**46.82**	**308**	P		**P**	**17 25 03.8**	**+0.5**
	comp=Z,3.4nm,0.6s,baz=82,slow=8.2,SNR=45							
ILAR	**Eielson Array**	**47.84**	**33**	P		**P**	**17 25 11.8**	**+0.8**
	comp=Z,1.9nm,0.7s,baz=264,slow=6.3,SNR=23							
GUN	**Gumba**	**48.77**	**276**	*e*P		**P**	**17 25 19.6**	**+0.4**
	comp=Z,13nm,0.6s							
KKN	**Kakani**	**49.30**	**276**	*e*P		**P**	**17 25 23.6**	**+0.6**
PKIN	**Phulchoki**	**49.31**	**276**	*e*P		**P**	**17 25 22.4**	**-0.7**
GKN	**Gorkha**	**49.71**	**277**	*e*P		**P**	**17 25 26.6**	**+0.5**
	comp=Z,33nm,1.0s							
TKM2	**Tokmak 2**	**50.73**	**298**	*e*P		**P**	**17 25 34.8**	**+1.1**
TKM2				pmax		pmax		
	comp=Z,5.0nm,0.9s							
TKM2	**Tokmak 2**	**50.73**	**298**	*e*P		**P**	**17 25 34.8**	**+1.1**
	comp=Z,4.6nm,0.9s							
PYUN	**Piuthan**	**50.96**	**278**	*e*P		**P**	**17 25 35.9**	**+0.3**
BVAR	**Borovoye Array**	**51.26**	**312**	P		**P**	**17 25 36.9**	**-0.4**
	comp=Z,0.6nm,0.5s,baz=66,slow=5.4,SNR=4.6							
BRVK	**Borovoye**	**51.31**	**312**	*e*P		**P**	**17 25 38.3**	**+0.7**
BRVK	**Borovoye**	**51.31**	**312**	*e*P		**P**	**17 25 38.3**	**+0.7**
AAK	**Ala-Archa**	**51.59**	**298**	P		**P**	**17 25 40.3**	**+0.2**
	comp=Z,0.4nm,0.3s,baz=341,slow=11,SNR=3.6							
AAK	**Ala-Archa**	**51.59**	**298**	*e*P		**P**	**17 25 40.5**	**+0.4**
AAK				pmax		pmax		
	comp=Z,3.0nm,0.9s							
AAK	**Ala-Archa**	**51.59**	**298**	*e*P		**P**	**17 25 40.5**	**+0.4**
	comp=Z,2.5nm,0.9s							
INK	**Inuvik**	**52.83**	**28**	P		**P**	**17 25 48.8**	**+0.2**
	comp=Z,0.4nm,0.4s,baz=323,slow=7.7,SNR=5.0							
KKAR	**Karatay Array**	**54.17**	**300**	*e*P		**P**	**17 25 58.8**	**-0.2**
KKAR				pmax		pmax		
	comp=Z,3.0nm,1.0s							
KKAR	**Karatay Array**	**54.17**	**300**	*e*P		**P**	**17 25 58.8**	**-0.2**
	comp=Z,3.1nm,1.0s							
ARU	**Arti**	**56.84**	**319**	P		**P**	**17 26 19.2**	**+1.3**
	comp=Z,0.6nm,0.3s,baz=98,slow=15,SNR=2.4							
WRAB	**Tennant Creek**	**58.18**	**190**	*e*P		**P**	**17 26 26.8**	**-0.9**
WRAB	**Tennant Creek**	**58.18**	**190**	*e*P		**P**	**17 26 26.8**	**-0.9**
WRA	**Warramunga Arr**	**58.19**	**190**	P		**P**	**17 26 26.8**	**-1.0**
	comp=Z,1.7nm,0.8s,baz=10,slow=7.3,SNR=15							
ABKAR	**Akbulak array**	**58.69**	**310**	*e*P		**P**	**17 26 30.9**	**-0.1**
	comp=Z,1.2nm,0.6s							
SPITS	**Spitsbergen Ar**	**60.00**	**349**	LR		LR	17 54 11.0	
	comp=Z,29nm,18.8s,baz=250,slow=38							
ASAR	**Alice Springs**	**61.92**	**190**	P		**P**	**17 26 53.1**	**-0.1**
	comp=Z,0.4nm,0.4s,baz=1.4,slow=6.3,SNR=21							
YKA	**Yellowknife Ar**	**62.19**	**31**	P		**P**	**17 26 54.4**	**-0.2**
	comp=Z,0.4nm,0.7s,baz=303,slow=6.8,SNR=8.2							
ARCES	**ARCESS Array B**	**63.78**	**340**	P		**P**	**17 27 05.1**	**-0.1**
	comp=Z,1.6nm,0.8s,baz=36,slow=7.8,SNR=2.8							
FINES	**FINESS Array B**	**66.83**	**333**	P		**P**	**17 27 39.7**	**+2.0**
	comp=Z,0.7nm,0.6s,baz=53,slow=9.4,SNR=3.7							
PDAR	**Pinedale Array**	**75.83**	**47**	P		**P**	**17 28 19.4**	**-0.6**
	comp=Z,0.4nm,0.6s,baz=301,slow=0.9,SNR=4.0							
H06S1	**SOCORRO T**	**90.27**	**66**	T		T	19 07 33.3	
	SNR=5.2							
QSPA	**South Pole Qui**	**127.65**	**180**	*e*PKPdf		**PKPdf**	**17 35 38.1**	**+0.2**

NIED ***14*** *17:32:00, 39°.50N × 143°.70E, h17km, Mw4.3 Best double couple: M○3.00000 × 10^15 NP1: φ○s 184.00000°, δ27.00000°, λ88.00000°. NP2: φ○s 7.00000°, δ63.00000°, λ91.00000°.*
JMA ***14*** *17:32:12.4 ± 0.3, 39°.55N × 143°.70E, h1km, M4.5*
ISCJB ***14*** *17:32:13.2 ± 1.1, 39°.48N ± 0°.03 × 143°.68E ± 0°.04, h7km ± 7km, mb4.3/53, MS3.8/15, Error ellipse: s-maj=5.8km s-min=3.7km az=42.1*
IDC ***14*** *17:32:14.2 ± 0.6, 39°.46N × 143°.51E, h0km, mb4.0/23, mb1 4.2/29, mb1mx4.1/45, mbtmp4.1/29, ML3.6/6, MS3.7/12, Ms1 3.7/12, ms1mx3.3/50, Error ellipse: s-maj=17.4km s-min=12.5km az=127.0*
BJI ***14*** *17:32:15.6, 39°.54N × 143°.53E, h25km, mb4.6/41, mB5.0/25, Ms4.2/20, Ms7 4.2/18*
MOS ***14*** *17:32:16.3 ± 1.0, 39°.54N × 143°.58E, h25km, mb4.5/34, Error ellipse: s-maj=8.2km s-min=5.4km az=97.6*
NEIC ***14*** *17:32:17.9 ± 1.9, 39°.49N × 143°.52E, h24km ± 13km, mb4.4/14, Error ellipse: s-maj=9.6km s-min=5.6km az=123.0*
ISC 14 17:32:16.5 ± 0.8, 39°.50N ± 0°.05 × 143°.66E ± 0°.05, h17 km ± 4 km, n135, σ 1§40/144, mb4.3/53, MS3.8/15, 6C-3D, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	Op	ID	Time	Res
							h m s	ISC
MIYJ	**Miyakonagasawa**	**1.43**	**274**	P		**Pn**	**17 32 39.3**	**-2.3**
MIYJ				*e*S		**Sn**	**17 32 58.6**	**-1.3**
JTH	**Tanohata**	**1.46**	**288**	P		**Pn**	**17 32 40.0**	**-2.0**
JTH				*e*S		**Sn**	**17 32 59.3**	**-1.3**
OFUJ	**Ofunato**	**1.60**	**256**	P		**Pn**	**17 32 42.6**	**-1.3**
OFUJ				*e*S		**Sn**	**17 33 03.6**	**-0.6**
JOM	**Ohasama**	**1.83**	**270**	P		**Pn**	**17 32 46.2**	**-1.0**
JOM				S		**Sn**	**17 33 10.6**	**+0.6**
JANG	**Nango**	**1.87**	**299**	P		**Pn**	**17 32 45.5**	**-2.1**
JMK	**Ichinoseki**	**1.97**	**255**	P		**Pn**	**17 32 48.1**	**-0.9**
ERM	**Erimo**	**2.55**	**352**	*e*P		**

comp=Z,0.3nm,0.3s,baz=209,slow=15,SNR=3.6
HIA Hailar 19.61 308 *e*P **P 17 36 41.5 -2.4**
HIA pmax pmax
comp=Z,9.0nm,0.6s
HIA Hailar 19.61 308 *e*P **P 17 36 41.5 -2.4**
comp=Z,8.6nm,0.6s
MA2 Magadan 20.60 10 P Pn 17 36 55.8 -0.9
comp=Z,6.6nm,0.7s,baz=196,slow=9.0,SNR=4.2
BJI Beijing 21.11 280 P P 17 36 54.3 -5.8
BJI S Sn 17 41 14.0 +13
BJI pmax pmax
comp=Z,11nm,1.1s
BJI pmax pmax
comp=Z,60nm,3.4s
BJI LR LR
comp=N,180nm,14.0s
BJI LR LR
comp=E,260nm,15.6s
TIA Tai'an 21.18 269 ⇓P **P 17 36 58.3 -2.7**
TIA pmax pmax
comp=E,30nm,1.0s
SEY Seymchan 24.05 10 P **P 17 37 31.3 +0.9**
comp=E,2.4nm,0.7s,baz=182,slow=9.8,SNR=15
YAK Yakutsk 24.13 344 P **P 17 37 29.0 -2.1**
comp=E,9.8nm,0.5s,baz=330,slow=2.9,SNR=7.9
YAK Yakutsk 24.13 344 *e*P **P 17 37 29.2 -1.9**
YAK pmax pmax
comp=Z,13nm,1.2s
YAK Yakutsk 24.13 344 P P **17 37 29.0 -2.1**
SSLB Suanglung 24.78 238 *e*P **P 17 37 35.5 -1.9**
comp=Z,5.1nm,0.6s
WHN Wuhan 25.52 259 P P **17 37 43.8 -0.3**
WHN S **S 17 42 11.1 +0.3**
WHN pmax pmax
comp=Z,66nm,0.6s
WHN LR LR
comp=Z,470nm,15.6s
WHN LR LR
comp=Z,850nm,16.5s
WHN LR LR
comp=Z,680nm,15.4s
BOD Bodaibo 26.50 324 *e*P **P 17 37 51.8 -0.8**
BOD pmax pmax
comp=Z,12nm,0.9s
ULN Ulaanbaatar 27.55 300 ⇓*i*P **P 17 38 03.1 +0.6**
ULN pmax pmax
comp=Z,18nm,1.4s
ULN Ulaanbaatar 27.55 300 *e*P **P 17 38 02.5 0.0**
comp=Z,4.3nm,0.3s
SONM Songino Array 27.99 300 P **P 17 38 06.5 +0.1**
comp=Z,3.6nm,0.8s,baz=95,slow=8.7,SNR=27
SONM LR LR 17 49 48.3
comp=Z,233nm,19.5s,baz=98,slow=38
H11N2 WAKE ISLAND Hy 28.07 128 T T 18 07 38.4
baz=321,slow=74,SNR=105
H11N1 WAKE ISLAND Hy 28.08 128 T T 18 07 38.1
baz=321,slow=74,SNR=91
H11N3 WAKE ISLAND Hy 28.09 128 T T 18 07 33.6
baz=321
H11S1 WAKE ISLAND Hy 28.89 130 T T 18 08 36.5
baz=318
H11S3 WAKE ISLAND Hy 28.89 130 T T 18 08 36.3
baz=318
H11S2 WAKE ISLAND Hy 28.91 130 T T 18 08 40.4
baz=318
ENH Enshi 29.36 262 *e*P **P 17 38 17.8 -0.8**
comp=Z,5.3nm,0.5s
TLY Talaya 30.16 307 LR LR 17 51 10.0
comp=Z,73nm,19.1s,baz=100,slow=38
TLY Talaya 30.16 307 *e*P **P 17 38 26.5 +1.1**
TLY *e*S **S 17 43 25.0 +1.5**
TLY pmax pmax
comp=Z,6.0nm,1.3s
TLY MLR MLR
comp=Z,160nm,18.0s
ZAK Zakamensk 30.23 305 *e*P **P 17 38 25.2 -1.0**
ZAK pmax pmax
comp=Z,4.0nm,1.2s
BILL Bilibino 31.17 16⇑*e*P **P 17 38 36.5 +2.4**
BILL *PP **sP 17 38 41.0 -0.5**
BILL *SP pP 17 38 46.0 +6.6
BILL 17 41 28.0
BILL pmax pmax
comp=Z,3.0nm,1.1s
BILL MLR MLR
comp=Z,60nm,21.0s
BILL Bilibino 31.17 16 *e*P **P 17 38 36.5 +2.4**
comp=Z,2.9nm,0.8s
TIXI Tiksi 33.09 351 P **P 17 38 50.6 -0.3**
comp=Z,0.8nm,0.3s,baz=140,slow=4.5,SNR=5.6
TIXI LR LR 17 53 45.7
comp=Z,65nm,19.8s,baz=172,slow=39
GTA Gaotai 33.60 284 *e*P **P 17 38 56.3 +0.3**
GTA pP pP 17 39 01.1 -0.1
GTA sP sP 17 39 04.3 +1.0
GTA pmax pmax
comp=Z,11nm,1.0s
KRAR Krasnoyarsk 36.98 314 P **P 17 39 26.0 +1.4**
KRAR pmax pmax
comp=Z,5.0nm,0.3s
ZALV Zalesovo Beam 41.62 310 P **P 17 40 03.5 +0.1**
comp=Z,4.2nm,0.6s,baz=88,slow=7.4,SNR=19
ZALV PcP **PcP 17 42 00.9 +0.8**
comp=Z,1.1nm,0.5s,baz=94,slow=2.9,SNR=3.2
ZALV LR LR 17 57 40.8
comp=Z,60nm,18.4s,baz=68,slow=37
NRIK Noril'sk 41.81 334 LR LR 17 58 42.4
comp=Z,116nm,18.5s,baz=93,slow=38
NVS Novosibirsk 42.47 312 *e*P **P 17 40 09.3 -1.0**
CHTO Chiang Mai 43.62 255 *e*P **P 17 40 19.9 -0.2**
CHTO pmax pmax
comp=Z,1.0nm,0.6s
CHTO Chiang Mai 43.62 255 *e*P **P 17 40 19.9 -0.2**
comp=Z,0.9nm,0.6s
LSA Lhasa 43.78 274 *e*P **P 17 40 23.2 +1.4**
LSA pmax pmax
comp=Z,3.0nm,0.6s
LSA Lhasa 43.78 274 *e*P **P 17 40 23.2 +1.4**
comp=Z,3.4nm,0.6s
CMAR Chiang Mai Arr 43.84 255 P **P 17 40 22.0 +0.2**
comp=Z,1.5nm,0.8s,baz=44,slow=7.1,SNR=27
KDAK Kodiak Island 44.09 44 *i*P **P 17 40 25.5 +2.2**
MKAR Makanchi Array 44.36 300 P **P 17 40 25.5 -0.2**
comp=Z,4.0nm,0.6s,baz=84,slow=9.3,SNR=54
KURK Kurchatov 45.85 307 *e*P **P 17 40 37.0 -0.4**
KURK Kurchatov 45.85 307 *e*P **P 17 40 37.0 -0.4**
ILAR Eielson Array 46.47 34 P **P 17 40 43.5 +1.4**
comp=Z,1.4nm,0.7s,baz=259,slow=6.6,SNR=18
PDGK Podgornoye 47.23 297 P **P 17 40 48.0 -0.3**
PDGK pmax pmax
comp=Z,6.0nm,0.9s
GUN Gumba 48.70 275 *e*P **P 17 41 00.4 0.0**
comp=Z,39nm,0.7s
KKN Kakani 49.22 275 *e*P **P 17 41 04.2 0.0**
comp=Z,39nm,0.8s
PKIN Phulchoki 49.23 275 *e*P **P 17 41 03.9 -0.5**
comp=Z,12nm,0.7s
DMN Daman 49.44 275 *e*P **P 17 41 06.0 0.0**
GKN Gorkha 49.61 276 *e*P **P 17 41 06.9 -0.2**
comp=Z,21nm,0.8s
TKM2 Tokmak 2 50.05 297 *e*P **P 17 41 10.7 +0.4**
TKM2 pmax pmax
comp=Z,8.0nm,0.8s
TKM2 Tokmak 2 50.05 297 *e*P **P 17 41 10.7 +0.4**
comp=Z,8.2nm,0.8s
BRVK Borovoye 50.31 311*c i*P **P 17 41 12.0 +0.1**
BRVK pmax pmax
comp=Z,7.0nm,0.9s
BRVK Borovoye 50.31 311 *e*P **P 17 41 12.0 +0.1**
comp=Z,5.6nm,0.8s
OTUK Ortayu 50.45 305 P **P 17 41 13.2 +0.1**
OTUK pmax pmax
comp=Z,4.0nm,1.3s
KOLN Koldanda 50.52 276 *e*P **P 17 41 14.1 0.0**
comp=Z,9.9nm,0.6s
PYUN Piuthan 50.83 277 *e*P **P 17 41 16.3 -0.1**
comp=Z,64nm,0.9s
AAK Ala-Archa 50.91 297 LR LR 18 03 51.4
comp=Z,104nm,19.2s,baz=64,slow=37
AAK Ala-Archa 50.91 297 P **P 17 41 16.0 -0.8**
AAK pmax pmax
comp=Z,3.0nm,0.8s
EKS2 Erkin-Say 51.39 298 *e*P **P 17 41 20.0 -0.4**
EKS2 pmax pmax
comp=Z,2.0nm,0.8s
EKS2 Erkin-Say 51.39 298 *e*P **P 17 41 20.0 -0.4**
comp=Z,2.4nm,0.8s
INK Inuvik 51.39 28 P **P 17 41 21.6 +1.8**
comp=Z,1.0nm,0.5s,baz=296,slow=9.0,SNR=10.0
SFK Sufi-Kurgan 52.60 295 P **P 17 41 29.9 +0.4**
SFK pmax pmax
comp=Z,5.0nm,0.8s
KKAR Karatay Array 53.45 299 *e*P **P 17 41 35.0 -0.5**
KKAR pmax pmax
comp=Z,2.0nm,0.7s
KKAR Karatay Array 53.45 299 *e*P **P 17 41 35.0 -0.5**
comp=Z,9.9nm,0.7s
SVE Sverdlovsk 54.49 318 *e*P **P 17 41 43.9 +1.1**
ARU Arti 55.71 318*c i*P **P 17 41 51.9 +0.3**
ARU 17 42 53.1
ARU 17 43 53.5
ARU S **S 17 49 38.2 +1.1**
ARU SS **SS 17 53 22.8 +1.0**
ARU pmax pmax
comp=Z,11nm,1.0s
ARU Arti 55.71 318 *e*P **P 17 41 51.9 +0.3**
comp=Z,10nm,1.0s
ABKAR Akbulak array 57.72 310 *e*P **P 17 42 05.9 -0.1**
comp=Z,4.1nm,0.6s
KBL Kabul 58.20 291 P **P 17 42 09.1 -0.8**
KBL pmax pmax
comp=Z,8.0nm,0.9s
WRA Warramunga Arr 59.77 190 P **P 17 42 19.4 -1.1**
comp=Z,0.3nm,0.5s,baz=7.7,slow=7.0,SNR=9.2
WRA Warramunga Arr 59.77 190 *e*P **P 17 42 19.8 -0.7**
WRA pmax pmax
comp=Z,1.0nm,0.6s
RES Resolute Bay 59.77 15 P **P 17 42 19.4 -0.5**
comp=Z,0.6nm,0.6s,baz=342,slow=6.4,SNR=2.4
YKA Yellowknife Ar 60.79 31 P **P 17 42 28.7 +1.7**
comp=Z,0.4nm,0.6s,baz=300,slow=6.4,SNR=11
ASAR Alice Springs 63.49 190 P **P 17 42 46.0 +0.5**
comp=Z,0.4nm,0.7s,baz=3.7,slow=5.2,SNR=7.7
GEYT Alibeck 64.20 299 P **P 17 42 49.5 -0.7**
comp=Z,2.3nm,0.7s,baz=79,slow=7.7,SNR=4.5
FINES FINESS Array B 67.46 333 P **P 17 43 10.5 -0.3**
comp=Z,2.7nm,0.8s,baz=45,slow=8.4,SNR=8.6
FINES LR LR 18 15 29.4
comp=Z,122nm,18.8s,baz=30,slow=38
FINES FINESS Array B 67.46 333 P **P 17 43 10.5 -0.3**
FINES pmax pmax
comp=Z,2.0nm,0.7s
FINES MLR MLR
comp=Z,122nm,18.8s
GOF Gofitskoye 69.77 312⇑*e*P **P 17 43 26.6 +1.0**
ZEI Tsey 70.60 310 *e*P **P 17 43 30.2 -0.8**
ZEI pmax pmax
comp=Z,7.0nm,0.9s
KIV Kislovodsk 70.62 311 *e*P **P 17 43 32.3 +1.4**
KIV pmax pmax
comp=Z,18nm,1.1s
KIV MLR MLR
comp=Z,93nm,17.0s
KIV Kislovodsk 70.62 311 *e*P **P 17 43 32.7 +1.7**
comp=Z,13nm,1.0s
KBZ Khabaz 70.64 311 P **P 17 43 31.4 +0.5**
comp=Z,5.3nm,1.0s,baz=56,slow=3.2,SNR=8.9
NEY Neytrino 71.02 311⇓*e*P **P 17 43 35.8 +2.3**
NEY pmax pmax
comp=Z,2.0nm,1.1s
NVAR Mina Array Bea 72.11 55 P **P 17 43 42.5 +2.4**
comp=Z,2.5nm,0.9s,baz=281,slow=7.7,SNR=3.9
NB2 NORSAR Subarra 72.59 338 P **P 17 43 42.7 +0.3**
comp=Z,0.9nm,0.7s,baz=38,slow=6.2
NOA NORSAR Array B 72.59 338 P **P 17 43 42.5 +0.1**
comp=Z,1.8nm,0.8s,baz=38,slow=6.1,SNR=5.9
NOA NORSAR Array B 72.59 338 *e*P **P 17 43 43.0 +0.6**
NOA pmax pmax
comp=Z,2.0nm,0.8s
ANN Anapa 73.09 314 *e*P **P 17 43 43.6 -2.0**
ANN *e*PP **sP 17 43 53.9 +0.7**
ANN *e* 17 44 00.0
ANN *e* 17 46 25.9
ANN *e*S **S 17 53 08.2 -3.9**
ANN *e*SS **SS 17 57 51.1 -1.2**
ANN pmax pmax
comp=Z,69nm,1.2s
AKASG Malin Array Be 73.42 323 P **P 17 43 47.3 -0.1**
comp=Z,1.9nm,0.7s,baz=40,slow=6.7,SNR=6.2
AKASG LR LR 18 20 51.0
comp=Z,34nm,21.1s,baz=300,slow=40
KIEV Kiev 73.43 323 P **P 17 43 48.0 +0.5**
KIEV pmax pmax
comp=Z,16nm,3.4s
PDAR Pinedale Array 74.69 47 P **P 17 43 56.2 +0.9**
comp=Z,0.6nm,0.6s,baz=272,slow=2.9,SNR=7.1
RAO Raoul Island 77.19 146 LR LR 18 15 47.2
comp=Z,131nm,18.1s,baz=248,slow=34
BRTR Keskin Array B 78.53 312 P **P 17 44 16.9 -0.1**
comp=Z,1.0nm,1.0s,baz=2.3,slow=6.2,SNR=3.9
BRTR LR LR 18 24 30.6
comp=Z,23nm,18.5s,baz=1.0,slow=40
CLL Collm 79.82 331 *i*P **P 17 44 24.4 +0.8**
comp=Z,5.0nm,1.2s
CLL Collm 79.82 331 *i*P **P 17 44 24.4 +0.8**
CLL pmax pmax
comp=Z,6.0nm,1.2s
GERES GERESS Array B 81.53 329 P **P 17 44 32.1 -0.9**
comp=Z,0.3nm,0.4s,baz=16,slow=4.5,SNR=3.3
GERES LR LR 18 23 24.3
comp=Z,53nm,18.4s,baz=340,slow=38
TXAR Lajitas Array 87.23 54 P **P 17 45 03.2 +1.0**
comp=Z,0.2nm,0.6s,baz=296,slow=4.9,SNR=2.7

NIED ***14*** *17:34:00,38.˚80N×144.˚40E,h5km,Mw4.3 Best double couple: M₀2.94000×10¹⁵ NP1:φs337.00000°,δ41.00000°, λ-107.00000°. NP2:φs179.00000°,δ51.00000°, λ-75.00000°.*
MOS ***14*** *17:34:32.7±1.2,38.˚72N×144.˚44E,h19km,mb4.3/22,Error ellipse: s-maj=9.1km s-min=6.2km az=94.9*
NEIC ***14*** *17:34:34.6±2.8,38.˚63N×144.˚42E,h20km±17km,mb4.5/9, Error ellipse: s-maj=9.6km s-min=5.8km az=127.0*
ISCJB ***14*** *17:34:34.3±0.4,38.˚68N±0.˚04×144.˚37E±0.˚04,h29km, mb4.2/38,MS3.6/4, Error ellipse: s-maj=6.1km s-min=3.7km az=158.6*
IDC ***14*** *17:34:36.0±4.6,38.˚62N×144.˚37E,h30km±32km,mb3.9/25, mb1 4.1/33,mb1mx4.1/48,mbtmp4.1/33,ML3.6/8,MS3.4/7, Ms1 3.4/7,ms1mx3.0/44,Error ellipse: s-maj=16.9km s-min=11.7km az=121.0*
JMA ***14*** *17:34:35.3±0.2,38.˚82N×144.˚34E,h35km,M4.6*
ISC 14 17:34:36.4±0.5,38.˚76N±0.˚06×144.˚40E±0.˚06,h29km,n98, σ1**924**/106,**mb4.2**/38,**MS3.5**/4**,4C-4D,Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
OFUJ	**Ofunato**	**2.15**	**279**	P	**Pn**	**17 35 09.2**	**-1.1**
OFUJ				*e*S	**Sn**	**17 35 34.5**	**-1.5**
MIYJ	**Miyakonagasawa**	**2.16**	**293**	P	**Pn**	**17 35 09.3**	**-1.1**
MIYJ				*e*S	**Sn**	**17 35 33.9**	**-2.4**
JMK	**Ichinoseki**	**2.49**	**275**	P	**Pn**	**17 35 14.4**	**-0.5**
JMK				S	**Sn**	**17 35 43.0**	**-1.2**
JOM	**Ohasama**	**2.52**	**287**	P	**Pn**	**17 35 14.8**	**-0.5**
JOM				*e*S	**Sn**	**17 35 43.8**	**-1.2**
JANG	**Nango**	**2.75**	**307**	P	**Pn**	**17 35 17.3**	**-1.2**
JYK	**Kaneyama**	**3.16**	**274**	P	**Pn**	**17 35 24.3**	**+0.2**
JYK				*e*S	**Sn**	**17 36 00.9**	**+0.1**
JFT	**Otama**	**3.43**	**250**	P	**Pn**	**17 35 27.5**	**-0.4**
JFT				S	**Sn**	**17 36 06.3**	**-1.3**
JOT	**Ohata**	**3.67**	**317**	P	**Pn**	**17 35 31.9**	**+0.8**
JOT				*e*S	**Sn**	**17 36 11.0**	**-2.4**
JCH	**Churui**	**3.93**	**349**	P	**Pn**	**17 35 33.2**	**-1.5**
JCH				*e*S	**Sn**	**17 36 16.8**	**-3.1**
JKB	**Kayabe**	**4.05**	**322**	P	**Pn**	**17 35 37.3**	**+1.0**
MJA0	**Matsu Arr-Jizo**	**5.36**	**248**	*e*P	**Pn**	**17 35 54.7**	**+0.3**
MJA0				pmax	pmax		
comp=Z,10.0nm,0.3s							
MJAR	**Matsushiro Arr**	**5.38**	**248**	Pn	**Pn**	**17 35 54.3**	**-0.4**
comp=Z,10.0nm,0.3s,baz=60,slow=11,SNR=15							
MJAR				Sn	**Sn**	**17 36 53.2**	**-2.6**
baz=144,slow=40,SNR=2.1							
MJAR				LR	LR	17 38 15.9	
comp=Z,595nm,19.3s,baz=75,slow=42							
MAT	**Matsushiro**	**5.38**	**248**	P	**Pn**	**17 35 55.1**	**+0.4**
MAT				S	**Sn**	**17 36 56.1**	**+0.3**
YUK	**Yuzh-Kuril'sk**	**5.39**	**11**	*e*P	Pn	17 35 51.2	-3.5
YUK				pmax	pmax		
comp=Z,142nm,0.2s							
YUK				pmax	pmax		
comp=N,43nm,0.3s							
YUK				pmax	pmax		
comp=E,53nm,0.3s							
YUK				MLR	MLR		
comp=Z,495nm,13.0s							
YUK				MLR	MLR		
comp=E,776nm,12.0s							
SHO	**Shikotan**	**5.43**	**19**	*e*P	Pn	17 35 50.6	-4.6
SHO				pmax	pmax		
comp=Z,84nm,0.3s							
SHO				pmax	pmax		
comp=N,45nm,0.4s							
SHO				pmax	pmax		
comp=E,52nm,0.3s							
ASAJ	**Asahikawa**	**5.52**	**346**	Pn	**Pn**	**17 35 56.1**	**-0.5**
comp=E,5.2nm,0.3s,baz=79,slow=10,SNR=6.8							
ASAJ				Sn	**Sn**	**17 36 57.2**	**-1.8**
comp=E,3.1nm,0.3s,baz=139,slow=20,SNR=3.2							
JHJ2	**Mitsune**	**6.75**	**215**	*e*Pn	**Pn**	**17 36 10.6**	**-2.8**
JHJ	**Hachijo jima 2**	**6.75**	**215**	Pn	Pn	17 36 10.1	-3.4
comp=E,16nm,0.3s,baz=281,slow=19,SNR=9.7							
JHJ				Sn	Sn	17 37 21.4	-8.2
comp=E,86nm,0.3s,baz=74,slow=21,SNR=10							
KUR	**Kuril'sk**	**6.97**	**21**	*e*P	**Pn**	**17 36 13.9**	**-2.5**
KUR				pmax	pmax		
comp=E,17nm,0.3s							
KUR				pmax	pmax		
comp=Z,34nm,0.3s							
VLA	**Vladivostok**	**10.42**	**299**	*i* P	**Pn**	**17 37 02.6**	**-1.1**
VLA				pmax	pmax		
comp=Z,41nm,1.1s							
USRK	**Ussuriysk Ar.**	**10.78**	**304**	Pn	**Pn**	**17 37 10.3**	**+1.7**
comp=Z,1.2nm,0.3s,baz=103,slow=14,SNR=13							
CBIJ	**Chichi jima**	**11.78**	**190**	Pn	Pn	17 37 15.2	-7.1
CBIJ				Sn	Sn	17 39 19.5	-13
JCJ	**Chichijima**	**11.78**	**190**	Pn	Pn	17 37 15.2	-7.1
comp=Z,3.9nm,0.3s,baz=291,slow=22,SNR=7.4							
JCJ				Sn	Sn	17 39 19.5	-13
comp=Z,5.1nm,0.3s,baz=192,slow=20,SNR=4.9							
JCJ				LR	LR	17 41 34.6	
comp=Z,48nm,20.9s,baz=358,slow=36							
JNU	**Nakatsue**	**12.31**	**247**	Pn	**Pn**	**17 37 26.6**	**-3.1**
comp=Z,0.2nm,0.3s,baz=78,slow=18,SNR=3.8							
JNU				LR	LR	17 42 36.9	
comp=Z,351nm,18.7s,baz=79,slow=39							
MDJ	**Mudanjiang**	**12.51**	**303**	*e*Pn	**Pn**	**17 37 33.6**	**+1.3**
comp=Z,32nm,1.1s							
KSRS	**Korea Array**	**13.04**	**269**	Pn	**Pn**	**17 37 41.0**	**+1.4**
comp=Z,0.2nm,0.3s,baz=79,slow=13,SNR=6.8							
KSRS				LR	LR	17 41 51.6	
comp=Z,238nm,19.6s,baz=94,slow=33							
KSRS	**Korea Array**	**13.04**	**269**	P	**Pn**	**17 37 41.0**	**+1.4**
KSRS				MLR	MLR		
comp=Z,238nm,19.6s							
KSAR	**Wonju Array Be**	**13.07**	**269**	P	**Pn**	**17 37 41.0**	**+0.9**
KSAR	**Wonju Array Be**	**13.07**	**269**	Pn	**Pn**	**17 37 41.0**	**+0.9**
KLR	**Kul'dur**	**13.85**	**323**	Pn	**Pn**	**17 37 50.8**	**+0.2**
comp=Z,1.1nm,0.3s,baz=119,slow=13,SNR=3.4							
PETK	**Petropavlovsk-**	**17.03**	**28**	P	**P**	**17 38 33.2**	**-0.6**
comp=Z,0.1nm,0.3s,baz=188,slow=9.0,SNR=4.0							
PETK				LR	LR	17 45 03.4	
comp=Z,66nm,20.0s,baz=220,slow=36							
PET	**Petropavlovsk**	**17.33**	**30**	*e*P	**Pn**	**17 38 34.8**	**-1.1**
PET				pmax	pmax		
comp=Z,180nm,2.1s							
MA2	**Magadan**	**21.23**	**9**	P	**P**	**17 39 20.6**	**+1.0**
comp=Z,14nm,1.1s,baz=213,slow=14,SNR=3.8							
SEY	**Seymchan**	**24.69**	**9**	P	**P**	**17 39 55.7**	**+1.2**
comp=Z,5.3nm,0.7s,baz=186,slow=8.1,SNR=12							
YAK	**Yakutsk**	**25.00**	**344**	P	**P**	**17 39 57.5**	**+0.3**
comp=Z,8.2nm,0.7s,baz=115,slow=1.1,SNR=4.2							
YAK	**Yakutsk**	**25.00**	**344**	*e*P	**P**	**17 39 57.9**	**+0.6**
YAK				pmax	pmax		
comp=Z,11nm,1.0s							
YAK	**Yakutsk**	**25.00**	**344**	*e*P	**P**	**17 39 57.8**	**+0.5**
comp=Z,21nm,0.9s							
BOD	**Bodaibo**	**27.43**	**324**	*e*P	**P**	**17 40 19.4**	**+0.1**
BOD				pmax	pmax		
comp=Z,6.0nm,0.9s							
SONM	**Songino Array**	**28.86**	**301**	P	**P**	**17 40 32.9**	**+0.5**
comp=Z,1.1nm,0.7s,baz=90,slow=8.0,SNR=3.9							
ENH	**Enshi**	**29.84**	**264**	*e*P	**P**	**17 40 41.4**	**+0.3**
comp=Z,12nm,0.8s							
BILL	**Bilibino**	**31.72**	**15**	⇓*i*P	**P**	**17 40 58.9**	**+1.6**
BILL				*i* *PP	**sP**	**17 41 07.6**	**-1.7**
BILL				*e*SS	SS	17 47 53.9	-27
BILL				pmax	pmax		
comp=Z,6.0nm,1.7s							
BILL				MLR	MLR		
comp=Z,41nm,14.0s							
BILL	**Bilibino**	**31.72**	**15**	*e*P	**P**	**17 40 57.8**	**+0.5**
comp=Z,0.5nm,0.5s							
TIXI	**Tiksi**	**33.90**	**351**	P	**P**	**17 41 16.3**	**0.0**
comp=Z,0.8nm,0.3s,baz=162,slow=5.6,SNR=4.3							
TIXI	**Tiksi**	**33.90**	**351**⇓*e*P		**P**	**17 41 17.8**	**+1.6**
TIXI				pmax	pmax		
comp=Z,2.0nm,1.2s							
TIXI	**Tiksi**	**33.90**	**351**	*e*P	**P**	**17 41 15.8**	**-0.5**
comp=Z,6.1nm,0.9s							
ZALV	**Zalesovo Beam**	**42.53**	**311**	P	**P**	**17 42 29.4**	**+0.4**
comp=Z,1.8nm,0.6s,baz=102,slow=8.0,SNR=3.7							
ZALV				PcP	**PcP**	**17 44 21.2**	**+0.1**
comp=Z,1.0nm,0.5s,baz=105,slow=3.7,SNR=3.4							
CHTO	**Chiang Mai**	**44.00**	**256**	*e*P	**P**	**17 42 42.0**	**+0.7**
CHTO				pmax	pmax		
comp=Z,2.0nm,0.8s							
CHTO	**Chiang Mai**	**44.00**	**256**	*e*P	**P**	**17 42 42.0**	**+0.7**
comp=Z,2.0nm,0.8s							
CMAR	**Chiang Mai Arr**	**44.21**	**256**	P	**P**	**17 42 42.6**	**-0.4**
comp=Z,0.5nm,0.8s,baz=41,slow=8.4,SNR=4.4							
LSA	**Lhasa**	**44.41**	**275**	P	**P**	**17 42 44.7**	**-0.4**
LSA	**Lhasa**	**44.41**	**275**	P	**P**	**17 42 44.7**	**-0.4**
MKAR	**Makanchi Array**	**45.22**	**301**	P	**P**	**17 42 50.6**	**-0.2**
comp=Z,2.3nm,0.8s,baz=83,slow=9.9,SNR=5.0							
KURK	**Kurchatov**	**46.75**	**307**	*e*P	**P**	**17 43 03.0**	**+0.3**
KURK	**Kurchatov**	**46.75**	**307**	*e*P	**P**	**17 43 03.0**	**+0.3**
ILAR	**Eielson Array**	**46.77**	**33**	P	**P**	**17 43 04.2**	**+1.4**
comp=Z,1.0nm,0.7s,baz=263,slow=6.8,SNR=7.4							
ILAR				LR	LR	18 04 14.3	
comp=Z,20nm,20.2s,baz=49,slow=38							
TKM2	**Tokmak 2**	**50.90**	**298**	*e*P	**P**	**17 43 35.9**	**+1.0**
TKM2				pmax	pmax		
comp=Z,2.0nm,0.6s							
TKM2	**Tokmak 2**	**50.90**	**298**	*e*P	**P**	**17 43 35.9**	**+1.0**
comp=Z,1.6nm,0.6s							
BRVK	**Borovoye**	**51.22**	**312**⇑*i*P		**P**	**17 43 37.9**	**+0.9**
BRVK				pmax	pmax		
comp=Z,4.0nm,1.2s							
BRVK	**Borovoye**	**51.22**	**312**	*e*P	**P**	**17 43 37.8**	**+0.8**
comp=Z,2.0nm,0.7s							
INK	**Inuvik**	**51.77**	**28**	P	**P**	**17 43 41.2**	**+0.4**
comp=Z,2.0nm,0.7s,baz=322,slow=7.2,SNR=7.7							
KKAR	**Karatay Array**	**54.31**	**300**	*e*P	**P**	**17 44 00.2**	**+0.3**
KKAR	**Karatay Array**	**54.31**	**300**	*e*P	**P**	**17 44 00.2**	**+0.3**
SVE	**Sverdlovsk**	**55.42**	**318**	*e*P	**P**	**17 44 09.1**	**+1.3**
ARU	**Arti**	**56.64**	**318***d i*P		**P**	**17 44 17.0**	**+0.6**
ARU						17 45 11.2	
ARU						17 46 20.0	
ARU				S	**S**	**17 52 10.0**	**+3.5**
ARU				SS	**SS**	**17 55 54.2**	**+0.5**
ARU				pmax	pmax		
comp=Z,10.0nm,1.2s							
ARU				MLR	MLR		
comp=Z,235nm,15.0s							
ARU	**Arti**	**56.64**	**318**	*e*P	**P**	**17 44 16.4**	**0.0**
comp=Z,15nm,0.8s							
ABKAR	**Akbulak array**	**58.63**	**310**	*e*P	**P**	**17 44 30.8**	**+0.2**
WRAB	**Tennant Creek**	**59.14**	**191**⇑*i*P		**P**	**17 44 32.9**	**-1.4**
WRAB				pmax	pmax		
comp=Z,43nm,2.5s							
WRA	**Warramunga Arr**	**59.15**	**191**	P	**P**	**17 44 32.0**	**-2.3**
comp=Z,7.2nm,0.8s,baz=8.5,slow=6.9,SNR=26							
WRA	**Warramunga Arr**	**59.15**	**191**	*e*P	**P**	**17 44 32.6**	**-1.8**
WRA				pmax	pmax		
comp=Z,7.0nm,0.8s							
RES	**Resolute Bay**	**60.33**	**15**	P	**P**	**17 44 41.0**	**-0.8**
comp=Z,1.9nm,0.7s,baz=322,slow=8.2,SNR=4.5							
RES	**Resolute Bay**	**60.33**	**15**	P	**P**	**17 44 41.1**	**-0.8**
RES				pmax	pmax		
comp=Z,1.0nm,0.6s							
YKA	**Yellowknife Ar**	**61.12**	**31**	P	**P**	**17 44 47.3**	**-0.2**
comp=Z,0.9nm,0.7s,baz=302,slow=6.5,SNR=8.2							
ASAR	**Alice Springs**	**62.87**	**191**	P	**P**	**17 44 58.3**	**-1.3**
comp=Z,2.9nm,0.8s,baz=9.3,slow=5.7,SNR=14							
ARCES	**ARCESS Array B**	**63.21**	**340**	P	**P**	**17 45 02.5**	**+1.1**
comp=Z,2.3nm,0.9s,baz=60,slow=5.3,SNR=2.9							

KLMR	**Klimovskoe**	**63.55**	**328**	*e*P		**P**	**17 45 01.9**	**-1.8**
KLMR				*e**PP		**pP**	**17 45 12.3**	**-0.5**
KLMR				*e*			17 45 37.2	
KLMR					pmax	pmax		
	comp=Z,14nm,1.4s							
GEYT	**Alibeck**	**65.05**	**300**	P		**P**	**17 45 14.2**	**+0.2**
	comp=Z,3.5nm,0.8s,baz=350,slow=4.5,SNR=7.0							
FINES	**FINESS Array B**	**68.37**	**333**	P		**P**	**17 45 34.8**	**+0.1**
	comp=Z,4.2nm,0.5s,baz=46,slow=8.2,SNR=17							
VSU	**Vasula**	**70.15**	**330**⇑	*e*P		**P**	**17 45 46.2**	**+0.5**
VSU					pmax	pmax		
	comp=Z,50nm,2.5s							
GOF	**Gofitskoye**	**70.69**	**313**⇑	*e*P		P	17 45 45.5	-3.8
FFC	**Flin Flon**	**70.97**	**34**	*e*P		**P**	**17 45 52.4**	**+1.6**
FFC					pmax	pmax		
	comp=Z,12nm,1.4s							
FFC	**Flin Flon**	**70.97**	**34**	*e*Pn		**P**	**17 45 52.4**	**+1.6**
	comp=Z,12nm,1.4s							
KIV	**Kislovodsk**	**71.54**	**312**	*e*P		**P**	**17 45 56.5**	**+1.9**
KIV					pmax	pmax		
	comp=Z,8.0nm,1.0s							
KBZ	**Khabaz**	**71.55**	**312**	P		**P**	**17 45 55.5**	**+1.0**
	comp=Z,2.9nm,0.9s,baz=137,slow=7.3,SNR=3.9							
KBZ					LR	LR	18 20 03.5	
	comp=Z,44nm,18.3s,baz=90,slow=38							
NVAR	**Mina Array Bea**	**72.07**	**55**	P		**P**	**17 45 59.7**	**+1.6**
	comp=Z,0.8nm,0.7s,baz=291,slow=5.7,SNR=1.3							
NB2	**NORSAR Subarra**	**73.49**	**338**	P		**P**	**17 46 05.6**	**-0.3**
	comp=Z,5.1nm,1.1s,baz=38,slow=6.2							
NOA	**NORSAR Array B**	**73.49**	**338**	P		**P**	**17 46 05.9**	**+0.1**
	comp=Z,0.5nm,0.8s,baz=46,slow=6.5,SNR=3.7							
AKASG	**Malin Array Be**	**74.35**	**323**	P		**P**	**17 46 09.6**	**-1.5**
	comp=Z,1.7nm,0.6s,baz=45,slow=6.1,SNR=9.3							
AKASG	**Malin Array Be**	**74.35**	**323**	*e*P		**P**	**17 46 13.1**	**+2.1**
AKASG					pmax	pmax		
	comp=Z,2.0nm,0.6s							
KIEV	**Kiev**	**74.36**	**323**⇓	*e*P		**P**	**17 46 11.8**	**+0.7**
KIEV					pmax	pmax		
	comp=Z,15nm,2.1s							
PDAR	**Pinedale Array**	**74.77**	**47**	P		**P**	**17 46 13.9**	**0.0**
	comp=Z,0.5nm,0.6s,baz=294,slow=1.5,SNR=4.2							
BRTR	**Keskin Array B**	**79.44**	**313**	P		**P**	**17 46 40.1**	**0.0**
	comp=Z,1.1nm,1.0s,baz=353,slow=5.2,SNR=3.1							
CLL	**Collm**	**80.74**	**332**	*e*P		**P**	**17 46 46.0**	**-0.7**
CLL				*i*			17 46 57.0	
CLL				*i*			17 47 01.8	
CLL	**Collm**	**80.74**	**332**	*e*P		**P**	**17 46 46.0**	**-0.7**
CLL				*i*			17 46 57.0	
KHC	**Kasperske Hory**	**82.27**	**330**	*e*pP		pP	17 47 04.5	+0.3
KHC	**Kasperske Hory**	**82.27**	**330**	*e*P		P	17 46 48.5	-6.4
GERES	**GERESS Array B**	**82.45**	**330**	P		**P**	**17 46 54.8**	**-1.2**
	comp=Z,0.5nm,0.6s,baz=27,slow=4.5,SNR=3.0							
TXAR	**Lajitas Array**	**87.20**	**54**	P		**P**	**17 47 20.4**	**+0.2**
	comp=Z,0.5nm,0.6s,baz=309,slow=3.3,SNR=4.9							
TORD	**Torodi Ar. Bea**	**117.71**	**318**	PKP		**PKPdf**	**17 53 19.3**	**-0.9**
	comp=Z,0.3nm,0.5s,baz=220,slow=0.6,SNR=2.3							

KRSC ***14*** *17:45:01.4±2.7, 47.85N×154.87E, h149km±46km, ML4.3*
MOS ***14*** *17:45:01.5±1.4, 48.49N×153.04E, h179km, mb3.8/4, Error ellipse: s-maj=13.7km s-min=6.0km az=62.9*
SKHL ***14*** *17:45:01.1±0.4, 48.58N×153.06E, h154km±5km, mb4.7/5, msh5.3/4*
IDC ***14*** *17:45:04.7±2.0, 48.57N×152.87E, h194km±19km, mb3.1/13, mb1 3.2/18, mb1mx3.1/56, mbtmp3.6/18, Error ellipse: s-maj=16.8km s-min=11.3km az=140.0*

ISC 14 17:45:02.5±0.5, 48.70N±0.05×152.87E±0.05, h150km, n79, σ1°60/70, mb3.4/15, 1C-2D, Kuril Islands

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
SKR	**Severo-Kuril's**	**2.90**	**46**	*e*P		**Pn**	**17 45 50.1**	**+1.7**
SKR				*e*S		**Sn**	**17 46 26.1**	**+2.2**
SKR	**Severo-Kuril's**	**2.90**	**46**	*e*P		**Pn**	**17 45 47.9**	**-0.5**
SKR				AMB		AMB	17 45 51.5	
	80nm,0.4s							
SKR				*e*S		**Sn**	**17 46 24.7**	**+0.8**
SKR				A		A	17 46 28.0	
	240nm,0.2s							
SKR	**Severo-Kuril's**	**2.90**	**46**	*e*PN		**Pn**	**17 45 46.1**	**-2.3**
SKR				*e*S		**Sn**	**17 46 22.0**	**-1.9**
SKR					pmax	pmax		
	comp=Z,80nm,0.5s							
SKR					smax	smax		
	comp=N,240nm,0.2s							
SKR					smax	smax		
	comp=E,240nm,0.2s							
KUR	**Kuril'sk**	**4.87**	**226**	*i* P		**Pn**	**17 46 15.0**	**+0.9**
KUR				AMB		AMB	17 46 17.8	
	comp=E,20nm,0.3s							
KUR				*i* S		**Sn**	**17 47 12.3**	**+2.3**
KUR				A		A	17 47 19.7	
	comp=E,30nm,0.2s							
KUR				A		A	17 47 19.7	
	comp=E,70nm,0.2s							
KUR	**Kuril'sk**	**4.87**	**226**	*d* iPN		**Pn**	**17 46 15.0**	**+0.9**
KUR				*i* S		**Sn**	**17 47 12.3**	**+2.3**
KUR					pmax	pmax		
	comp=N,14nm,0.3s							
KUR					pmax	pmax		
	comp=Z,17nm,0.3s							
KUR					pmax	pmax		
	comp=E,10.0nm,0.4s							
KUR					smax	smax		
	comp=E,7.0nm,0.2s							
KUR					smax	smax		
	comp=N,26nm,0.6s							
ASAK	**Asacha**	**4.89**	**39**	*e*P		**Pn**	**17 46 16.2**	**+1.9**
APC	**Apacha**	**5.03**	**31**	*e*P		Pn	17 46 18.4	+2.3
APC	**Apacha**	**5.03**	**31**	PN		Pn	17 46 18.4	+2.3
MTVR	**Mutnovka**	**5.08**	**40**	*e*P		**Pn**	**17 46 19.0**	**+2.1**
MTVR				*e*S		**Sn**	**17 47 15.7**	**+0.7**
RUS	**Russkaya**	**5.19**	**42**	*e*P		**Pn**	**17 46 18.6**	**+0.4**
RUS				*e*S		**Sn**	**17 47 15.2**	**-2.1**
RUS	**Russkaya**	**5.19**	**42**	*e*P		**Pn**	**17 46 18.6**	**+0.4**
RUS	**Russkaya**	**5.19**	**42**	PN		**Pn**	**17 46 18.6**	**+0.4**
RUS				S		**Sn**	**17 47 15.2**	**-2.1**
PETK	**Petropavlovsk-**	**5.37**	**33**	P		Pn	17 46 23.6	+3.0
	comp=N,3.3nm,0.3s,baz=206,slow=15,SNR=38							
PET	**Petropavlovsk**	**5.67**	**38**	*e*P		**Pn**	**17 46 26.5**	**+1.9**
PET				*e*S		**Sn**	**17 47 29.5**	**+0.7**
PET	**Petropavlovsk**	**5.67**	**38**	*e*P		**Pn**	**17 46 23.4**	**-1.2**
PET				AMB		AMB	17 47 26.0	
	comp=N,80nm,1.0s							
PET				*e*S		**Sn**	**17 47 29.9**	**+1.1**
PET				A		A	17 47 52.4	
	comp=N,50nm,1.0s							
PET	**Petropavlovsk**	**5.67**	**38**	PN		**Pn**	**17 46 26.5**	**+1.9**
PET				S		**Sn**	**17 47 29.5**	**+0.7**
DALK	**Dalny**	**5.71**	**38**	*e*P		**Pn**	**17 46 26.8**	**+1.6**
DALK				*e*S		**Sn**	**17 47 30.1**	**+0.2**
AVH	**Avacha**	**5.88**	**37**	*e*P		Pn	17 46 29.8	+2.3
AVH	**Avacha**	**5.88**	**37**	PN		Pn	17 46 29.8	+2.3
SMAR	**Somma**	**5.91**	**37**	*e*P		Pn	17 46 30.5	+2.5
SMAR	**Somma**	**5.91**	**37**	PN		Pn	17 46 30.5	+2.5
KRX	**Arik**	**5.92**	**36**	*e*P		Pn	17 46 30.5	+2.4
GNL	**Ganaly**	**5.93**	**31**	*e*P		Pn	17 46 30.7	+2.5
GNL	**Ganaly**	**5.93**	**31**	PN		Pn	17 46 30.7	+2.5
SDLR	**Sedlovina**	**5.95**	**37**	*e*P		**Pn**	**17 46 30.2**	**+1.7**
SDLR	**Sedlovina**	**5.95**	**37**	PN		**Pn**	**17 46 30.2**	**+1.7**
SPN	**Mys Shipunski**	**6.31**	**43**	*e*P		**Pn**	**17 46 33.1**	**0.0**
SPN				*e*S		**Sn**	**17 47 40.8**	**-3.4**
SPN	**Mys Shipunski**	**6.31**	**43**	PN		**Pn**	**17 46 33.1**	**0.0**
SPN				S		**Sn**	**17 47 40.8**	**-3.4**
SHO	**Shikotan**	**6.39**	**223**	*e*P		Pn	17 46 29.9	-4.4
SHO				AMB		AMB	17 46 31.9	
	comp=N,10.0nm,0.4s							
SHO				AMB		AMB	17 46 31.9	
	comp=N,20nm,0.4s							
SHO				*e*rx		rx	17 47 38.4	
SHO				A		A	17 47 40.0	
	comp=N,50nm,0.4s							
SHO				A		A	17 47 40.0	
	comp=N,17nm,0.4s							
SHO	**Shikotan**	**6.39**	**223**	*d* iPN		Pn	17 46 29.9	-4.4
SHO				pmax		pmax		
	comp=E,22nm,0.4s							
SHO				pmax		pmax		
	comp=Z,20nm,0.4s							
SHO				pmax		pmax		
	comp=N,12nm,0.5s							
YUK	**Yuzh-Kuril'sk**	**6.73**	**229**	*e*P		**Pn**	**17 46 37.6**	**-1.2**
YUK				AMB		AMB	17 46 44.4	
	comp=N,30nm,0.3s							
YUK				*e*S		**Sn**	**17 47 54.7**	**+0.5**
YUK	**Yuzh-Kuril'sk**	**6.73**	**229**	*c i*PN		**Pn**	**17 46 37.6**	**-1.2**
YUK				S		**Sn**	**17 47 54.1**	**-0.1**
YUK				pmax		pmax		
	comp=Z,44nm,0.3s							
YUK				pmax		pmax		
	comp=E,38nm,0.4s							
YUK				pmax		pmax		
	comp=N,32nm,0.3s							
TYV	**Tymovskoe**	**6.96**	**292**	*e*P		**Pn**	**17 46 43.6**	**+1.8**
TUMR	**Tumrok**	**7.97**	**32**	*e*P		Pn	17 47 00.2	+4.8
TUMR	**Tumrok**	**7.97**	**32**	PN		Pn	17 47 00.2	+4.8
ESO	**Esso**	**8.07**	**24**	*e*P		Pn	17 47 04.3	+7.7
ESO	**Esso**	**8.07**	**24**	PN		Pn	17 47 04.3	+7.7
KMNR	**Kamenistaya**	**8.38**	**30**	*e*P		Pn	17 47 04.4	+3.5
KMNR	**Kamenistaya**	**8.38**	**30**	PN		Pn	17 47 04.4	+3.5
JKA	**Kamikawa-asahi**	**8.45**	**241**	*e*P		**Pn**	**17 47 03.4**	**+1.7**
ASAJ	**Asahikawa**	**8.45**	**241**	P		**Pn**	**17 47 03.4**	**+1.6**
	comp=N,0.3nm,0.3s,baz=78,slow=19,SNR=4.3							
KBTR	**Krutoberegovo**	**9.66**	**35**	*e*P		**Pn**	**17 47 16.3**	**-1.4**
KBTR	**Krutoberegovo**	**9.66**	**35**	PN		**Pn**	**17 47 16.3**	**-1.4**
BKI	**Bering**	**10.37**	**46**	*e*S		Sn	17 49 12.9	-8.8
HABR	**Khabarovsk**	**11.80**	**276**	*e*P		**Pn**	**17 47 46.4**	**+0.4**
HABR	**Khabarovsk**	**11.80**	**276**	*e*PN		**Pn**	**17 47 46.4**	**+0.4**
HABR				*e*S		**Sn**	**17 49 59.2**	**+2.9**
HABR				pmax		pmax		
	comp=N,24nm,1.5s							
HABR				pmax		pmax		
	comp=E,26nm,1.5s							
HABR				pmax		pmax		
	comp=Z,51nm,1.5s							
EKMR	**Ekimchan**	**13.30**	**297**	*e*P		**P**	**17 48 08.5**	**-1.1**
EKMR				AMB		AMB	17 48 13.0	
	comp=Z,3.0nm,0.5s							
KLR	**Kul'dur**	**13.88**	**280**	P		**P**	**17 48 15.3**	**-0.7**
	comp=Z,0.3nm,0.3s,baz=74,slow=13,SNR=9.1							
USRK	**Ussuriysk Ar.**	**15.06**	**260**	P		**P**	**17 48 29.4**	**+0.2**
	comp=Z,0.1nm,0.3s,baz=158,slow=12,SNR=2.5							
MJAR	**Matsushiro Arr**	**16.21**	**227**	P		**P**	**17 48 41.0**	**-1.0**
	baz=55,slow=11,SNR=3.0							
KSRS	**Korea Array**	**21.31**	**247**	P		**P**	**17 49 35.5**	**-1.7**
	comp=Z,0.9nm,0.5s,baz=48,slow=9.9,SNR=6.2							
KSRS	**Korea Array**	**21.31**	**247**	*e*P		**P**	**17 49 37.7**	**+0.5**
TIXI	**Tiksi**	**25.55**	**343**	P		**P**	**17 50 16.1**	**-0.7**
	comp=Z,0.3nm,0.3s,baz=150,slow=2.0,SNR=3.1							
SONM	**Songino Array**	**30.58**	**286**	P		**P**	**17 50 59.9**	**-2.0**
	comp=Z,0.2nm,0.5s,baz=93,slow=10,SNR=2.9							
H11N2	**WAKE ISLAND Hy**	**31.04**	**154**	T		T	18 23 06.8	
	baz=340,slow=74,SNR=4.2							
H11N1	**WAKE ISLAND Hy**	**31.05**	**154**	T		T	18 23 08.1	
	baz=340,slow=74,SNR=5.4							
H11N3	**WAKE ISLAND Hy**	**31.05**	**154**	T		T	18 23 10.9	
	baz=340							
H11S1	**WAKE ISLAND Hy**	**32.14**	**155**	T		T	18 24 46.7	
	baz=345,slow=76,SNR=15							
H11S3	**WAKE ISLAND Hy**	**32.15**	**155**	T		T	18 24 36.1	
	baz=345,slow=76,SNR=16							
H11S2	**WAKE ISLAND Hy**	**32.16**	**155**	T		T	18 24 48.0	
	baz=345,slow=76,SNR=14							
ILAR	**Eielson Array**	**35.14**	**40**	P		**P**	**17 51 40.2**	**-1.0**
	comp=Z,0.2nm,0.6s,baz=274,slow=10.0,SNR=5.3							
ZALV	**Zalesovo Beam**	**41.36**	**304**	P		**P**	**17 52 31.7**	**-1.6**
	comp=Z,0.7nm,0.4s,baz=67,slow=6.8,SNR=3.4							
MKAR	**Makanchi Array**	**45.92**	**296**	P		**P**	**17 53 07.8**	**-2.0**
	comp=Z,0.5nm,0.5s,baz=66,slow=8.1,SNR=10							
MKAR	**Makanchi Array**	**45.92**	**296**	*e*P		**P**	**17 53 08.5**	**-1.3**
KURK	**Kurchatov**	**46.16**	**302**	*e*P		**P**	**17 53 10.2**	**-1.4**
KURK	**Kurchatov**	**46.16**	**302**	P		**P**	**17 53 10.7**	**-0.9**
KURK				pmax		pmax		
	comp=Z,2.0nm,0.8s							
KURBB	**Kurchatov Arra**	**46.26**	**302**	P		**P**	**17 53 10.7**	**-1.7**
	comp=Z,1.7nm,0.8s,baz=66,slow=8.5,SNR=16							
YKA	**Yellowknife Ar**	**49.47**	**38**	P		**P**	**17 53 36.4**	**-0.5**
	comp=Z,0.5nm,0.6s,baz=298,slow=7.2,SNR=4.7							
BRVK	**Borovoye**	**49.54**	**308**	*e*P		**P**	**17 53 36.2**	**-1.4**
BRVK	**Borovoye**	**49.54**	**308**	*e*P		**P**	**17 53 36.2**	**-1.4**
BRVK				pmax		pmax		
	comp=Z,1.0nm,0.7s							
CMAR	**Chiang Mai Arr**	**52.70**	**255**	P		**P**	**17 54 00.2**	**-1.3**
	comp=Z,0.5nm,0.5s,baz=33,slow=7.2,SNR=9.4							
CMAR	**Chiang Mai Arr**	**52.70**	**255**	*e*P		**P**	**17 54 00.8**	**-0.7**
CMAR	**Chiang Mai Arr**	**52.70**	**255**	*e*P		**P**	**17 54 00.8**	**-0.7**
FINES	**FINESS Array B**	**62.20**	**334**	P		**P**	**17 55 04.8**	**-2.7**
	comp=Z,0.6nm,0.4s,baz=31,slow=7.1,SNR=8.7							
FINES	**FINESS Array B**	**62.20**	**334**	*e*P		**P**	**17 55 05.6**	**-1.8**
FINES	**FINESS Array B**	**62.20**	**334**	*e*P		**P**	**17 55 05.6**	**-1.8**
FINES				pmax		pmax		
	comp=Z,1.0nm,0.4s							
WRA	**Warramunga Arr**	**70.31**	**199**	P		P	17 55 54.5	-5.0
	comp=Z,0.4nm,0.9s,baz=20,slow=10,SNR=2.8							
ASAR	**Alice Springs**	**74.01**	**198**	P		**P**	**17 56 18.5**	**-2.9**
	comp=Z,0.4nm,1.0s,baz=23,slow=5.1,SNR=4.9							
TXAR	**Lajitas Array**	**76.68**	**61**	P		**P**	**17 56 35.5**	**-1.4**
	comp=Z,0.3nm,0.5s,baz=289,slow=4.8,SNR=5.7							

IDC ***14*** *17:50:54.9±1.2, 31.80N×102.05E, h0km, mb3.2/5, mb1 3.3/7, mb1mx3.2/52, mbtmp3.2/7, ML3.2/2, Error ellipse: s-maj=61.7km s-min=20.1km az=63.0*

ISC 14 17:51:00.3±1.4, 31.7N±0.2×101.8E±0.3, h35km, n7, σ1°23/6, mb3.4/5, Sichuan

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
CMAR	**Chiang Mai Arr**	**13.40**	**192**	Pn		**Pn**	**17 54 08.1**	**0.0**
	0.0nm,0.3s,baz=9.7,slow=13,SNR=5.4							
SONM	**Songino Array**	**16.52**	**11**	Pn		Pn	17 54 44.4	-5.0
	0.1nm,0.3s,baz=186,slow=10,SNR=2.7							
MKAR	**Makanchi Array**	**21.29**	**321**	P		**P**	**17 55 44.7**	**+1.1**
	0.3nm,0.7s,baz=132,slow=12,SNR=4.1							
ZALV	**Zalesovo Beam**	**25.39**	**336**	P		**P**	**17 56 24.5**	**+0.4**
	0.5nm,0.3s,baz=127,slow=9.8,SNR=4.7							
KURBB	**Kurchatov Arra**	**25.62**	**324**	P		**P**	**17 56 24.5**	**-1.7**
	0.6nm,0.6s,baz=131,slow=9.7,SNR=12							
WRA	**Warramunga Arr**	**60.05**	**144**	P		**P**	**18 01 04.3**	**+0.4**
	0.2nm,0.5s,baz=337,slow=6.8,SNR=2.8							
ASAR	**Alice Springs**	**63.01**	**147**	P		**P**	**18 01 23.6**	**-0.3**
	0.1nm,0.8s,baz=328,slow=7.4,SNR=3.0							

IDC ***14*** *17:54:40.6±1.1, 38.62N×144.70E, h0km, mb3.6/9, mb1 3.8/13, mb1mx3.6/44, mbtmp3.7/13, ML3.5/4, MS3.3/1, Ms1 3.3/1, ms1mx2.2/53, Error ellipse: s-maj=25.6km s-min=17.6km az=95.0*
ISCJB ***14*** *17:54:44.2±0.7, 38.77N±0.0×144.41E±0.0, h29km, mb3.6/9, MS3.3/1, Error ellipse: s-maj=6.9km s-min=4.6km az=42.2*
JMA ***14*** *17:54:45.9±0.1, 38.75N×144.34E, h41km, M4.0*

ISC 14 17:54:45.6±1.0, 38.76N±0.0×144.47E±0.0, h29km, n32, σ1°63/43, mb3.5/9, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
OFUJ	**Ofunato**	**2.21**	**279**	P		**Pn**	**17 55 19.7**	**-0.6**
JTH	**Tanohata**	**2.34**	**301**	P		**Pn**	**17 55 21.8**	**-0.3**
JIO	**Ouri**	**2.47**	**264**	P		**Pn**	**17 55 23.1**	**-0.7**
JIO				S		**Sn**	**17 55 50.5**	**-2.5**
JMK	**Ichinoseki**	**2.55**	**275**	P		**Pn**	**17 55 24.7**	**-0.2**
JMK				S		**Sn**	**17 55 54.0**	**-1.0**
JOM	**Ohasama**	**2.57**	**287**	P		**Pn**	**17 55 25.5**	**+0.2**
JOM				*e*S		**Sn**	**17 55 54.5**	**-1.2**
JOU	**Okura**	**3.01**	**264**	P		**Pn**	**17 55 31.5**	**+0.1**
JOU				S		**Sn**	**17 56 04.8**	**-1.7**
JMM	**Marumori**	**3.03**	**254**	P		**Pn**	**17 55 31.2**	**-0.4**
JMM				S		**Sn**	**17 56 04.1**	**-2.8**
JRG	**Rokugo**	**3.05**	**283**	P		**Pn**	**17 55 32.2**	**+0.3**
JRG				*e*S		**Sn**	**17 56 07.2**	**-0.3**
JFK	**Kawauchi**	**3.16**	**245**	S		**Sn**	**17 56 06.8**	**-3.5**
JYK	**Kaneyama**	**3.22**	**274**	P		**Pn**	**17 55 34.3**	**+0.1**
JTM	**Tenmabayashi**	**3.31**	**309**	*e*S		**Sn**	**17 56 11.6**	**-2.3**
JFT	**Otama**	**3.49**	**250**	P		**Pn**	**17 55 37.8**	**-0.1**
JFT				S		**Sn**	**17 56 17.1**	**-1.2**
JOT	**Ohata**	**3.71**	**316**	S		**Sn**	**17 56 21.0**	**-2.6**
JNBK	**Urakawa-nobuka**	**3.75**	**340**	P		**Pn**	**17 55 41.6**	**+0.1**
JNBK				S		**Sn**	**17 56 22.8**	**-1.9**
JCH	**Churui**	**3.94**	**348**	P		**Pn**	**17 55 43.6**	**-0.5**
JCH				S		**Sn**	**17 56 26.3**	**-3.0**
JKB	**Kayabe**	**4.08**	**321**	P		**Pn**	**17 55 47.9**	**+1.9**
JRY	**Ryogami san**	**5.21**	**240**	P		**Pn**	**17 56 00.8**	**-0.9**
MJAR	**Matsushiro Arr**	**5.44**	**248**	Pn		**Pn**	**17 56 04.8**	**0.0**
	2.2nm,0.3s,baz=90,slow=16,SNR=17							
MJAR						**Sn**	**17 57 08.6**	**+2.2**
	0.3nm,0.3s,baz=307,slow=34,SNR=3.3							
MAT	**Matsushiro**	**5.44**	**248**	P		**Pn**	**17 56 05.1**	**+0.3**
MAT				*e*S		**Sn**	**17 57 07.3**	**+0.9**
ASAJ	**Asahikawa**	**5.53**	**346**	Pn		**Pn**	**17 56 05.9**	**-0.1**
	1.5nm,0.3s,baz=186,slow=12,SNR=27							
ASAJ						Sn	**17 57 05.6**	**-3.0**
	0.4nm,0.3s,baz=36,slow=18,SNR=2.6							
JHJ	**Hachijo jima 2**	**6.79**	**215**	Pn		**Pn**	**17 56 20.3**	**-3.1**
	6.7nm,0.3s,baz=281,slow=19,SNR=9.3							
JHJ						Sn	17 57 32.0	-7.7
	10nm,0.3s,baz=90,slow=19,SNR=3.5							
USRK	**Ussuriysk Ar.**	**10.82**	**304**	Pn		**Pn**	**17 57 20.9**	**+2.3**
	0.4nm,0.3s,baz=107,slow=15,SNR=6.1							
SEY	**Seymchan**	**24.67**	**9**	P		**P**	**18 00 05.4**	**+1.7**
	0.4nm,0.3s,baz=118,slow=7.3,SNR=3.7							
SONM	**Songino Array**	**28.91**	**301**	P		**P**	**18 00 44.5**	**+2.4**
	0.4nm,0.7s,baz=104,slow=6.3,SNR=4.4							
ZALV	**Zalesovo Beam**	**42.57**	**311**	P		**P**	**18 02 39.7**	**+1.0**
	0.4nm,0.4s,baz=90,slow=10,SNR=2.9							
MKAR	**Makanchi Array**	**45.27**	**301**	P		**P**	**18 03 00.8**	**+0.3**
	0.4nm,0.7s,baz=86,slow=8.2,SNR=5.3							
KURBB	**Kurchatov Arra**	**46.87**	**307**	P		**P**	**18 03 13.2**	**+0.3**
	0.8nm,0.4s,baz=81,slow=8.5,SNR=6.5							
WRA	**Warramunga Arr**	**59.16**	**191**	P		**P**	**18 04 42.5**	**-1.3**
	0.5nm,0.5s,baz=8.4,slow=7.0,SNR=9.1							
AKTO	**Aktyubinsk**	**59.32**	**312**	LR		LR	18 30 27.2	
	comp=Z,22nm,18.1s,slow=36							
YKA	**Yellowknife Ar**	**61.09**	**31**	P		**P**	**18 04 55.1**	**-1.4**
	0.2nm,0.9s,baz=300,slow=6.3,SNR=3.4							
ASAR	**Alice Springs**	**62.88**	**191**	P		**P**	**18 05 08.3**	**-0.7**
	0.3nm,0.8s,baz=24,slow=10.0,SNR=4.6							
FINES	**FINESS Array B**	**68.40**	**333**	P		**P**	**18 05 44.8**	**+0.7**
	0.9nm,0.5s,baz=64,slow=8.7,SNR=7.0							

NIED ***14*** *18:00:00, 38.80N×144.30E, h11km, Mw3.6 Best double couple: M0 2.57000×10^14 NP1:φs 63.00000°, δ 73.00000°, λ 11.00000°. NP2:φs 329.00000°, δ 80.00000°, λ 163.00000°.*

JMA 14 18:00:54.7±0.3, 38.78N×144.32E, h38km, M3.6, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
OFUJ	**Ofunato**	**2.09**	**279**	P		Pn	18 01 28.3	+1.2
JTH	**Tanohata**	**2.23**	**302**	P		Pn	18 01 30.3	+1.2
JIO	**Ouri**	**2.35**	**263**	P		Pn	18 01 31.9	+1.2
JIO				S		Sn	18 01 59.5	+1.2
JMK	**Ichinoseki**	**2.43**	**275**	P		Pn	18 01 33.7	+1.9
JMK				S		Sn	18 02 02.2	+2.0
JOM	**Ohasama**	**2.45**	**287**	P		Pn	18 01 34.0	+1.8
JANG	**Nango**	**2.69**	**307**	P		Pn	18 01 36.1	+0.7
JOU	**Okura**	**2.90**	**263**	P		Pn	18 01 40.1	+2.3
JOU				*e*S		Sn	18 02 13.7	+1.9
JMM	**Marumori**	**2.92**	**253**	S		Sn	18 02 12.6	+0.2
JRG	**Rokugo**	**2.93**	**283**	*e*S		Sn	18 02 15.3	+2.6
JYK	**Kaneyama**	**3.10**	**274**	P		Pn	18 01 43.4	+2.4
JTM	**Tenmabayashi**	**3.21**	**310**	S		Sn	18 02 20.6	+1.1
JNBK	**Urakawa-nobuka**	**3.69**	**342**	S		Sn	18 02 32.6	+1.2
JCH	**Churui**	**3.90**	**350**	P		Pn	18 01 51.6	-0.4

NNC 14 18:05:45.7±2.7, 36.27N×70.39E, h140km±75km, mb2.9, mpv3.7, 2C-5D, Error ellipse: s-maj=36.3km s-min=21.8km az=81.0, Hindu Kush region

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
SFK	**Sufi-Kurgan**	**4.47**	**32**	⇓P		Pn	18 06 52.0	-0.1
	12nm,0.4s							
SFK				⇑S		Sn	18 07 45.1	+1.4
	1.7nm,0.2s							
MNAS	**Manas**	**6.42**	**14**	⇓P		Pn	18 07 17.9	-0.1
	1.0nm,0.4s							
MNAS				⇓S		Sn	18 08

SHO					pmax	pmax		
	comp=E,56nm,0.4s							
ASAJ	**Asahikawa**	**5.48**	**347**	Pn	**Pn**	**18 13 51.6**	**-0.9**	
	comp=E,6.1nm,0.3s,baz=200,slow=13,SNR=60							
ASAJ				Sn	**Sn**	**18 14 53.0**	**-1.4**	
	comp=E,2.9nm,0.3s,baz=80,slow=25,SNR=6.1							
ASAJ	**Asahikawa**	**5.48**	**347**	*e*Pn	**Pn**	**18 13 51.2**	**-1.3**	
	comp=E,5.5nm,0.3s							
ASAJ				Sn	**Sn**	**18 14 53.0**	**-1.4**	
JHJ2	**Mitsune**	**6.74**	**214**	*e*Pn	Pn	18 14 06.5	-3.3	
JHJ	**Hachijo jima 2**	**6.74**	**214**	Pn	Pn	18 14 06.8	-3.1	
	comp=E,7.9nm,0.3s,baz=114,slow=23,SNR=14							
JHJ				Sn	Sn	18 15 17.3	-8.3	
	comp=E,34nm,0.3s,baz=89,slow=20,SNR=8.6							
KUR	**Kuril'sk**	**6.96**	**21**	*e*P	Pn	18 14 10.0	-2.8	
KUR				*e*S	Sn	18 15 22.2	-8.7	
KUR				pmax	pmax			
	comp=N,7.0nm,0.5s							
KUR				pmax	pmax			
	comp=E,11nm,0.5s							
KUR				pmax	pmax			
	comp=Z,20nm,0.5s							
KUR				smax	smax			
	comp=E,59nm,0.5s							
KUR				smax	smax			
	comp=N,36nm,0.3s							
USRK	**Ussuriysk Ar.**	**10.71**	**304**	Pn	**Pn**	**18 15 06.1**	**+1.9**	
	comp=N,1.5nm,0.3s,baz=101,slow=14,SNR=24							
CBIJ	**Chichi jima**	**11.79**	**189**	Pn	Pn	18 15 14.3	-4.8	
CBIJ				Sn	Sn	18 17 14.8	-15	
JCJ	**Chichijima**	**11.79**	**189**	Pn	Pn	18 15 14.3	-4.8	
	comp=N,2.4nm,0.3s,baz=282,slow=22,SNR=7.0							
JCJ				Sn	Sn	18 17 14.8	-15	
	comp=N,2.5nm,0.3s,baz=108,slow=20,SNR=3.4							
JCJ				LR	LR	18 21 50.4		
	comp=N,20nm,18.3s,baz=115,slow=48							
KSRS	**Korea Array**	**12.98**	**269**	Pn	**Pn**	**18 15 37.0**	**+1.7**	
	comp=N,0.2nm,0.3s,baz=80,slow=14,SNR=5.2							
KSRS				LR	LR	18 20 18.8		
	comp=N,125nm,18.7s,baz=70,slow=36							
KSRS	**Korea Array**	**12.98**	**269**	P	**Pn**	**18 15 37.0**	**+1.7**	
KSRS				MLR	MLR			
	comp=Z,125nm,18.7s							
KSAR	**Wonju Array Be**	**13.01**	**269**	P	**Pn**	**18 15 37.0**	**+1.3**	
KSAR	**Wonju Array Be**	**13.01**	**269**	Pn	**Pn**	**18 15 37.0**	**+1.3**	
KLR	**Kul'dur**	**13.79**	**323**	Pn	**Pn**	**18 15 45.0**	**-1.3**	
	comp=Z,0.1nm,0.3s,baz=145,slow=13,SNR=5.1							
KLR				LR	LR	18 20 55.0		
	comp=Z,36nm,21.1s,baz=137,slow=36							
KLR	**Kul'dur**	**13.79**	**323**	P	**Pn**	**18 15 45.0**	**-1.3**	
KLR				MLR	MLR			
	comp=Z,36nm,21.1s							
SEY	**Seymchan**	**24.67**	**9**	P	**P**	**18 17 51.5**	**+0.8**	
	comp=Z,2.9nm,0.6s,baz=183,slow=6.7,SNR=19							
YAK	**Yakutsk**	**24.95**	**344**	P	**P**	**18 17 53.0**	**-0.2**	
	comp=Z,6.9nm,0.6s,baz=13,slow=2.5,SNR=7.3							
YAK	**Yakutsk**	**24.95**	**344**	*e*P	**P**	**18 17 53.8**	**+0.6**	
YAK				pmax	pmax			
	comp=Z,8.0nm,0.7s							
YAK	**Yakutsk**	**24.95**	**344**	*e*P	**P**	**18 17 53.8**	**+0.6**	
	comp=Z,7.6nm,0.7s							
H11N2	**WAKE ISLAND Hy**	**27.23**	**128**	T	T	18 46 25.6		
	baz=320,slow=75,SNR=5.9							
H11N1	**WAKE ISLAND Hy**	**27.24**	**128**	T	T	18 46 27.6		
	baz=320,slow=75,SNR=5.3							
H11N3	**WAKE ISLAND Hy**	**27.25**	**128**	T	T	18 46 26.3		
	baz=320,slow=75,SNR=4.4							
BOD	**Bodaibo**	**27.37**	**324**	*e*P	**P**	**18 18 14.4**	**-0.7**	
BOD				pmax	pmax			
	comp=Z,3.0nm,1.5s							
H11S1	**WAKE ISLAND Hy**	**28.04**	**130**	T	T	18 47 36.4		
	baz=321							
H11S3	**WAKE ISLAND Hy**	**28.05**	**130**	T	T	18 47 32.8		
	baz=321							
H11S2	**WAKE ISLAND Hy**	**28.06**	**130**	T	T	18 47 26.6		
	baz=321							
SONM	**Songino Array**	**28.79**	**301**	P	**P**	**18 18 29.1**	**+1.0**	
	comp=Z,1.4nm,0.8s,baz=92,slow=7.9,SNR=10.0							
SONM				LR	LR	18 30 17.5		
	comp=Z,46nm,20.7s,baz=85,slow=37							
ENH	**Enshi**	**29.78**	**264**	*e*Pn	**P**	**18 18 39.5**	**+2.5**	
	comp=Z,9.1nm,0.8s							
ZAK	**Zakamensk**	**31.06**	**305**	*e*P	**P**	**18 18 48.2**	**+0.1**	
ZAK				pmax	pmax			
	comp=Z,2.0nm,1.3s							
BILL	**Bilibino**	**31.71**	**16**	*e*P	**P**	**18 18 53.2**	**-0.4**	
BILL				pmax	pmax			
	comp=Z,8.0nm,1.4s							
BILL	**Bilibino**	**31.71**	**16**	*e*P	**P**	**18 18 53.1**	**-0.4**	
	comp=Z,8.3nm,1.4s							
TIXI	**Tiksi**	**33.87**	**351**	*ce*P	**P**	**18 19 12.7**	**+0.4**	
TIXI				pmax	pmax			
	comp=Z,5.0nm,2.5s							
ZALV	**Zalesovo Beam**	**42.47**	**311**	P	**P**	**18 20 25.9**	**+1.0**	
	comp=Z,2.2nm,0.6s,baz=96,slow=8.4,SNR=9.9							
ZALV				PcP	**PcP**	**18 22 17.3**	**+0.1**	
	comp=Z,1.5nm,0.6s,baz=88,slow=2.4,SNR=5.3							
NRIK	**Noril'sk**	**42.67**	**334**	LR	LR	18 40 13.4		
	comp=Z,29nm,18.6s,baz=107,slow=39							
CMAR	**Chiang Mai Arr**	**44.16**	**256**	P	**P**	**18 20 39.8**	**+0.9**	
	comp=Z,0.4nm,0.8s,baz=48,slow=6.4,SNR=6.6							
CMAR				LR	LR	18 42 11.8		
	comp=Z,10nm,18.4s,baz=75,slow=40							
MKAR	**Makanchi Array**	**45.16**	**301**	P	**P**	**18 20 47.3**	**+0.7**	
	comp=Z,1.6nm,0.7s,baz=84,slow=9.3,SNR=20							
MKAR				LR	LR	18 40 21.8		
	comp=Z,52nm,18.3s,baz=58,slow=37							
KURK	**Kurchatov**	**46.68**	**307**	*e*P	**P**	**18 20 58.6**	**0.0**	
KURK				pmax	pmax			
	comp=Z,9.0nm,0.6s							
KURK	**Kurchatov**	**46.68**	**307**	*e*P	**P**	**18 20 58.6**	**0.0**	
	comp=Z,9.4nm,0.6s							
ILAR	**Eielson Array**	**46.78**	**33**	P	**P**	**18 20 59.2**	**+0.1**	
	comp=Z,0.4nm,0.8s,baz=260,slow=6.3,SNR=4.6							
GUN	**Gumba**	**49.27**	**276**	*e*P	**P**	**18 21 20.4**	**+1.1**	
	comp=Z,14nm,0.7s							
KKN	**Kakani**	**49.79**	**276**	*e*P	**P**	**18 21 24.2**	**+1.1**	
	comp=Z,11nm,0.8s							
PKIN	**Phulchoki**	**49.80**	**276**	*e*P	**P**	**18 21 22.8**	**-0.5**	
DMN	**Daman**	**50.01**	**276**	*e*P	**P**	**18 21 25.2**	**+0.3**	
GKN	**Gorkha**	**50.19**	**276**	*e*P	**P**	**18 21 27.0**	**+0.9**	
	comp=Z,14nm,0.9s							
TKM2	**Tokmak 2**	**50.83**	**298**	*e*P	**P**	**18 21 32.3**	**+1.5**	
TKM2				pmax	pmax			
	comp=Z,2.0nm,0.6s							
TKM2	**Tokmak 2**	**50.83**	**298**	*e*P	**P**	**18 21 32.3**	**+1.5**	
	comp=Z,2.3nm,0.6s							
KOLN	**Koldanda**	**51.11**	**277**	*e*P	**P**	**18 21 34.1**	**+1.0**	
	comp=Z,12nm,1.1s							
BRVK	**Borovoye**	**51.16**	**312**	*ce*P	**P**	**18 21 34.2**	**+1.4**	
BRVK				pmax	pmax			
	comp=Z,2.0nm,0.6s							
PYUN	**Piuthan**	**51.42**	**277**	*e*P	**P**	**18 21 36.7**	**+1.3**	
	comp=Z,36nm,1.0s							
INK	**Inuvik**	**51.77**	**28**	P	**P**	**18 21 36.5**	**-0.7**	
	comp=Z,1.0nm,0.8s,baz=309,slow=10,SNR=5.1							
KIP	**Kipapa**	**51.98**	**92**	*ce*P	P	18 21 34.6	-4.7	
KIP				pmax	pmax			
	comp=Z,734nm,2.5s							
ARU	**Arti**	**56.58**	**318**	P	**P**	**18 22 13.0**	**+0.7**	
ARU	**Arti**	**56.58**	**318**	*e*P	**P**	**18 22 12.8**	**+0.5**	
	comp=Z,7.7nm,0.8s							
ABKAR	**Akbulak array**	**58.57**	**310**	*e*P	**P**	**18 22 27.2**	**+0.7**	
	comp=Z,3.0nm,0.7s							
WRAB	**Tennant Creek**	**59.15**	**191**	*ce*P	**P**	**18 22 29.7**	**-1.0**	
WRAB				pmax	pmax			
	comp=Z,17nm,1.2s							
WRA	**Warramunga Arr**	**59.16**	**191**	P	**P**	**18 22 29.0**	**-1.8**	
	comp=Z,5.1nm,0.7s,baz=11,slow=7.3,SNR=46							
WRA	**Warramunga Arr**	**59.16**	**191**	P	**P**	**18 22 29.0**	**-1.8**	
WRA				pmax	pmax			
	comp=Z,5.0nm,0.7s							
YKA	**Yellowknife Ar**	**61.13**	**31**	P	**P**	**18 22 43.4**	**-0.5**	
	comp=Z,0.3nm,0.6s,baz=301,slow=6.6,SNR=8.3							
ASAR	**Alice Springs**	**62.88**	**191**	P	**P**	**18 22 54.7**	**-1.4**	
	comp=Z,1.6nm,0.8s,baz=15,slow=8.7,SNR=21							
ARCES	**ARCESS Array B**	**63.16**	**340**	P	**P**	**18 22 58.4**	**+1.0**	
	comp=Z,1.8nm,0.8s,baz=33,slow=17,SNR=6.3							
GEYT	**Alibeck**	**64.99**	**299**	P	**P**	**18 23 10.6**	**+0.7**	
	comp=Z,4.3nm,0.7s,baz=46,slow=4.3,SNR=8.5							
FINES	**FINESS Array B**	**68.32**	**333**	P	**P**	**18 23 31.1**	**+0.4**	
	comp=Z,4.1nm,0.5s,baz=43,slow=7.9,SNR=32							
KBZ	**Khabaz**	**71.49**	**311**	P	**P**	**18 23 51.4**	**+0.9**	
	comp=Z,1.0nm,0.4s,baz=146,slow=1.3,SNR=4.0							
KBZ	**Khabaz**	**71.49**	**311**	P	**P**	**18 23 51.4**	**+0.9**	
KBZ				pmax	pmax			
	comp=Z,2.0nm,0.9s							
NVAR	**Mina Array Bea**	**72.10**	**55**	P	**P**	**18 23 55.6**	**+1.0**	
	comp=Z,0.4nm,0.5s,baz=294,slow=4.9,SNR=4.6							
HFS	**Hagfors**	**73.42**	**337**	P	**P**	**18 24 01.6**	**-0.1**	
	comp=Z,1.2nm,0.7s,baz=357,slow=5.2,SNR=4.5							
NOA	**NORSAR Array B**	**73.44**	**338**	P	**P**	**18 24 00.8**	**-1.1**	
	comp=Z,1.1nm,0.9s,baz=36,slow=6.0,SNR=3.2							
AKASG	**Malin Array Be**	**74.30**	**323**	P	**P**	**18 24 06.8**	**-0.2**	
	comp=Z,1.2nm,0.5s,baz=42,slow=5.9,SNR=14							
PDAR	**Pinedale Array**	**74.80**	**47**	P	**P**	**18 24 09.7**	**-0.7**	
	comp=Z,0.1nm,0.3s,baz=285,slow=1.8,SNR=2.6							
GERES	**GERESS Array B**	**82.40**	**330**	P	**P**	**18 24 52.1**	**+0.2**	
	comp=Z,0.4nm,0.5s,baz=32,slow=5.3,SNR=3.4							
TXAR	**Lajitas Array**	**87.23**	**54**	P	**P**	**18 25 16.0**	**-0.7**	
	comp=Z,0.3nm,0.4s,baz=312,slow=4.3,SNR=3.0							
TORD	**Torodi Ar. Bea**	**117.64**	**318**	PKP	**PKPdf**	**18 31 14.6**	**-1.8**	
	comp=Z,0.3nm,0.5s,baz=13,slow=3.7,SNR=4.3							

JMA 14 18:15:20.0, 33.03N×130.74E, h12km, M1.2, Kyushu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JNU	**Nakatsue**	**0.15**	**52**	Pn	Pg	18 15 23.2	-0.3
	9.5nm,0.3s,baz=258,slow=24,SNR=284						
JNU	**Nakatsue**	**0.15**	**52**	P	Pg	18 15 23.7	+0.1
JNU				*e*S	Sg	18 15 26.2	+0.1
JNU	**Nakatsue**	**0.15**	**52**	*e*Pn	Pg	18 15 23.4	-0.2
	12nm,0.6s						
JTA	**Tamana**	**0.19**	**249**	P	Pg	18 15 24.1	0.0
JTA				*e*S	Sg	18 15 26.9	-0.1
JIU2	**Izumi 2**	**0.49**	**173**	P	Pg	18 15 29.4	-0.2
JIU2				S	Sg	18 15 36.0	0.0

IDC 14 18:25:52.6±339.0, 56.58N×30.30E, h0km, Error ellipse: s-maj=140.6km s-min=80.1km az=90.0, Baltic States-Belarus-Northwestern Russia

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
I43RU	**DUBNA INFRASON**	**3.82**	**85**	*i*		18 49 00.0	
	baz=270,slow=325,SNR=3.1						
I26DE	**FREYUNG INFRAS**	**12.67**	**239**	*i*		19 38 40.0	
	baz=45,slow=330,SNR=0.5						
I48TN	**KESRA INFRASON**	**25.16**	**223**	*i*		21 02 50.0	
	baz=22,slow=322,SNR=0.2						

IDC 14 18:28:20.9±3.0, 32.92S×178.51W, h0km, mb3.5/2, mb1 3.7/3, mb1mx3.5/40, mbtmp3.5/3, ML3.3/1, Error ellipse: s-maj=69.2km s-min=36.1km az=117.0, South of Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
URZ	**Urewera**	**6.42**	**213**	Pn	Pn	18 29 56.8	+0.2
	0.6nm,0.3s,baz=251,slow=1.1,SNR=6.2						
URZ				Sn	Sn	18 31 09.0	-1.5
	1.3nm,0.3s,baz=246,slow=23,SNR=7.5						
ASAR	**Alice Springs**	**42.60**	**270**	P	P	18 36 19.1	+0.1
	0.4nm,0.8s,baz=110,slow=8.1,SNR=8.2						
WRA	**Warramunga Arr**	**43.82**	**275**	P	P	18 36 28.7	-0.1
	0.4nm,0.4s,baz=114,slow=7.9,SNR=16						
FINES	**FINESS Array B**	**147.33**	**338**	PKPbc	PKPbc	18 48 04.7	-0.9
	0.5nm,0.6s,baz=22,slow=1.8,SNR=2.7						

*NIED **14** 18:37:00.39.80N×143.20E, h11km, Mw3.6 Best double couple: M0 2.95000×10^14 NP1:φs 184.00000°, δ 25.00000°, λ 25.00000°. NP2:φs 71.00000°, δ 80.00000°, λ 113.00000°.*
*ISCJB **14** 18:37:34.3±0.7, 39.54N±0.06×143.57E±0.07, h11km, mb3.5/9, MS2.6/1, Error ellipse: s-maj=9.1km s-min=6.9km az=139.2*
*JMA **14** 18:37:39.2±0.4, 39.82N×143.21E, h11km±4km, M3.5*
*IDC **14** 18:37:41.0±2.6, 39.72N×143.50E, h49km±24km, mb3.3/9, mb1 3.5/13, mb1mx3.3/51, mbtmp3.6/13, ML2.9/4, MS2.8/1, Ms1 2.8/1, ms1mx2.0/29, Error ellipse: s-maj=25.4km s-min=18.2km az=100.0*

ISC 14 18:37:36.5±0.9, 39.63N±0.07×143.36E±0.06, h11km, n30, σ 1§40/26, mb3.6/9, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MIYJ	**Miyakonagasawa**	**1.19**	**268**	P	**Pg**	**18 37 59.9**	**+0.5**
JTH	**Tanohata**	**1.20**	**286**	P	**Pn**	**18 37 58.7**	**-0.5**
JANG	**Nango**	**1.60**	**298**	P	**Pn**	**18 38 04.4**	**-0.4**
JKZ	**Kuzumaki**	**1.60**	**284**	P	**Pn**	**18 38 05.4**	**+0.6**
JKZ				*e*S	**Sn**	**18 38 24.2**	**-1.4**
JTM	**Tenmabayashi**	**2.10**	**304**	P	**Pn**	**18 38 12.2**	**+0.5**
JTM				*e*S	**Sn**	**18 38 36.1**	**-1.7**
JRG	**Rokugo**	**2.12**	**265**	P	**Pb**	**18 38 16.1**	**+1.1**
JRG				S	**Sb**	**18 38 41.7**	**+0.4**
JAH	**Hinai**	**2.17**	**286**	P	**Pn**	**18 38 15.8**	**+1.2**
JEM	**Erimo**	**2.39**	**356**	P	**Pn**	**18 38 16.4**	**+0.8**
JOT	**Ohata**	**2.49**	**316**	P	**Pn**	**18 38 18.6**	**+1.7**
JNBK	**Urakawa-nobuka**	**2.69**	**350**	P	**Pn**	**18 38 20.8**	**+1.1**
ASAJ	**Asahikawa**	**4.52**	**353**	P	**Pn**	**18 38 46.1**	**+1.2**
	1.6nm,0.3s,baz=221,slow=8.2,SNR=23						
ASAJ				S	**Sn**	**18 39 41.4**	**+3.9**
	baz=34,slow=18,SNR=2.3						
MJAR	**Matsushiro Arr**	**5.10**	**234**	P	**Pn**	**18 38 55.1**	**+2.2**
	0.5nm,0.3s,baz=31,slow=13,SNR=5.7						
USRK	**Ussuriysk Ar.**	**9.63**	**302**	P	Pn	18 39 58.8	+3.8
	0.1nm,0.3s,baz=92,slow=14,SNR=3.2						
PETK	**Petropavlovsk-**	**16.68**	**31**	P	**Pn**	**18 41 29.3**	**-0.8**
	0.1nm,0.3s,baz=222,slow=12,SNR=3.5						
SEY	**Seymchan**	**23.96**	**10**	P	**P**	**18 42 50.5**	**0.0**
	2.1nm,0.8s,baz=172,slow=8.0,SNR=6.0						
GUMO	**Guam**	**25.97**	**177**	LR	LR	18 53 51.9	
	comp=Z,18nm,18.8s,baz=184,slow=37						
SONM	**Songino Array**	**27.73**	**299**	P	**P**	**18 43 24.5**	**-0.5**
	0.4nm,0.8s,baz=90,slow=7.5,SNR=3.8						
H11N2	**WAKE ISLAND Hy**	**28.33**	**128**	T	T	19 13 28.9	
	baz=312,slow=75,SNR=13						
H11N1	**WAKE ISLAND Hy**	**28.34**	**128**	T	T	19 13 26.9	
	baz=312,slow=75,SNR=12						
H11N3	**WAKE ISLAND Hy**	**28.35**	**128**	T	T	19 13 31.3	
	baz=312,slow=75,SNR=10						
H11S1	**WAKE ISLAND Hy**	**29.15**	**129**	T	T	19 14 16.9	
	baz=314,slow=75,SNR=27						
H11S3	**WAKE ISLAND Hy**	**29.15**	**130**	T	T	19 14 16.6	
	baz=314,slow=75,SNR=28						
H11S2	**WAKE ISLAND Hy**	**29.17**	**130**	T	T	19 14 22.6	
	baz=314,slow=75,SNR=14						
ZALV	**Zalesovo Beam**	**41.36**	**310**	P	**P**	**18 45 21.3**	**-0.9**
	0.5nm,0.5s,baz=99,slow=8.9,SNR=3.2						
MKAR	**Makanchi Array**	**44.09**	**300**	P	**P**	**18 45 44.6**	**0.0**
	0.8nm,1.0s,baz=86,slow=10,SNR=6.3						
KURBB	**Kurchatov Arra**	**45.66**	**306**	P	**P**	**18 45 56.8**	**-0.1**
	0.3nm,0.4s,baz=80,slow=8.5,SNR=7.5						
WRA	**Warramunga Arr**	**59.85**	**190**	P	**P**	**18 47 42.6**	**+0.5**
	0.7nm,0.9s,baz=17,slow=7.2,SNR=4.8						
ASAR	**Alice Springs**	**63.58**	**190**	P	**P**	**18 48 07.9**	**+0.7**
	0.3nm,0.8s,baz=10,slow=3.9,SNR=5.3						
NOA	**NORSAR Array B**	**72.38**	**338**	P	**P**	**18 49 01.5**	**-0.7**
	0.5nm,0.8s,baz=42,slow=5.9,SNR=3.5						
PDAR	**Pinedale Array**	**74.77**	**47**	P	**P**	**18 49 14.2**	**-2.7**
	0.2nm,0.4s,baz=297,slow=4.0,SNR=4.7						

IDC 14 18:38:49.4±0.9, 11.21N×85.58W, h196km±30km, mb3.0/3, mb1 3.3/3, mb1mx3.0/41, mbtmp3.4/3, Error ellipse: s-maj=63.0km s-min=45.9km az=128.0, Nicaragua

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JTS	**JuntasAbangare**	**1.10**	**146**	P	Pn	18 39 20.6	+1.1
	51nm,0.3s,baz=311,slow=13,SNR=3.9						
JTS				S	Sn	18 39 42.9	+0.1
	185nm,0.3s,baz=329,slow=19,SNR=14						
TKL	**Tuckaleechee C**	**24.40**	**4**	P	P	18 43 50.5	+0.7
	1.6nm,0.5s,baz=163,slow=14,SNR=3.4						
TXAR	**Lajitas Array**	**24.70**	**320**	P	P	18 43 53.3	+0.6
	0.3nm,0.5s,baz=146,slow=9.7,SNR=3.4						
YKA	**Yellowknife Ar**	**55.29**	**344**	P	P	18 48 00.4	-1.9
	0.1nm,0.3s,baz=143,slow=6.8,SNR=3.6						
ASAR	**Alice Springs**	**140.48**	**246**	PKP	PKPdf	18 57 56.6	+0.5
	0.3nm,0.5s,baz=84,slow=2.5,SNR=4.6						
WRA	**Warramunga Arr**	**140.66**	**252**	PKP	PKPdf	18 57 57.3	+0.7
	0.3nm,0.5s,baz=88,slow=1.5,SNR=8.2						

*ISCJB **14** 18:39:29.7±0.7, 24.27N±0.05×122.25E±0.02, h9km±5km, Error ellipse: s-maj=8.0km s-min=3.2km az=5.6*
*JMA **14** 18:39:29.6±0.1, 24.17N×122.23E, h25km±3km, M1.9*

*TAP **14** 18:39:30.2, 24.31N×122.18E, h9km, ML2.6, D*
ISC 14 18:39:29.6±1.2, 24.28N±0.05×122.26E±0.03, h11km±11km, n15, σ 0§30/27, 2D, Taiwan region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ENA	**Nanau**	**0.49**	**287**	⇓*i*	P	**Pg**	**18 39 39.0**	**-0.2**
	baz=286							
ENA				*e*S		**Sg**	**18 39 46.0**	**+0.2**
	baz=286							
TWC	**Suao**	**0.49**	**312**	⇓*i*	P	**Pg**	**18 39 39.4**	**+0.1**
	baz=315							
TWC				*i*	S	**Sg**	**18 39 45.9**	**0.0**
	baz=315							
EGS		**0.63**	**332**	*e*	P	**Pb**	**18 39 42.9**	**+0.1**
	baz=337							
TWD	**Chiawan**	**0.63**	**252**	*e*	P	**Pb**	**18 39 42.9**	**+0.1**
	baz=246							
TWD				*e*	S	**Sb**	**18 39 51.9**	**+0.2**
	baz=246							
JYNG	**Yonagunijimaku**	**0.65**	**75**	P		**Pb**	**18 39 42.9**	**-0.2**
JYNG				*e*	S	**Sb**	**18 39 52.3**	**+0.1**
TWE	**Neicheng**	**0.69**	**309**	P		**Pg**	**18 39 43.3**	**+0.2**
	baz=311							
TWE				*e*	S	**Sb**	**18 39 52.9**	**-0.5**
	baz=311							
YOJ	**Yonaguni jima**	**0.71**	**75**	P		**Pb**	**18 39 44.1**	**0.0**
YOJ				S		**Sb**	**18 39 53.9**	**0.0**
ENTT	**Nioudou**	**0.72**	**300**	P		**Pg**	**18 39 43.6**	**0.0**
	baz=300							
ENTT				*e*	S	**Sb**	**18 39 53.9**	**-0.3**
	baz=300							
NNS	**Nan Shan**	**0.82**	**281**	*e*	P	**Pg**	**18 39 45.5**	**0.0**
	baz=279							
NNS				*e*	S	**Sg**	**18 39 56.0**	**-0.3**
	baz=279							
NWF	**Wu-fen Shan**	**0.90**	**331**	*e*	P	**Pn**	**18 39 48.2**	**-0.1**
	baz=334							
NWF				*e*	S	**Sb**	**18 39 59.8**	**+0.5**
	baz=334							
NSK	**Sanguang**	**0.91**	**296**	*e*	P	**Pg**	**18 39 47.1**	**0.0**
	baz=296							
WHF	**Hehuan Shan**	**0.91**	**262**	*e*	P	**Pg**	**18 39 47.3**	**-0.1**
	baz=258							
WHF				*e*	S	**Sg**	**18 39 59.6**	**+0.2**
	baz=258							
IRIF	**Iriomote-Funau**	**1.35**	**87**	P		**Pn**	**18 39 53.5**	**-0.9**
IRIF				*e*	S	**Sn**	**18 40 12.5**	**+0.2**
JKRS	**Kuro-shima**	**1.60**	**91**	P		**Pn**	**18 39 58.3**	**+0.4**
JKRS				*e*	S	**Sn**	**18 40 18.6**	**0.0**
JIJ	**Ishigaki jima**	**1.72**	**87**	P		**Pn**	**18 39 59.9**	**+0.3**

*DDA **14** 18:43:27.7, 37.46N×38.76E, h7km, Md2.8*
*ISCJB **14** 18:43:28.4±0.9, 37.42N±0.03×38.76E±0.04, h4km±8km, Error ellipse: s-maj=6.0km s-min=4.3km az=136.2*
*CSEM **14** 18:43:28.8±0.1, 37.41N×38.83E, h10km, MD2.8, Error ellipse: s-maj=3.7km s-min=2.4km az=124.0*
*ISK **14** 18:43:28.1, 37.40N×38.79E, h9km, MD2.9*
ISC 14 18:43:28.0±1.3, 37.47N±0.04×38.78E±0.03, h5km±12km, n25, σ 0§65/37, Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SURC	**SANLIURFA_SURC**	**0.60**	**193**	*i* P		**Pg**	**18 43 39.3**	**-0.2**
SURC				*i* S		**Sg**	**18 43 47.5**	**+0.2**
SURC	**SANLIURFA_SURC**	**0.60**	**193**	P		**Pg**	**18 43 39.3**	**-0.2**
SURC				S		**Sg**	**18 43 47.5**	**+0.2**
GZT	**Gaziantep**	**0.97**	**264**	*i* P		**Pg**	**18 43 46.1**	**-0.5**
SVRC	**Sivrice-ELAZID**	**1.00**	**25**	*e*PG		**Pn**	**18 43 48.6**	**-0.3**
SVRC				*e*SG		**Sn**	**18 44 04.0**	**+0.4**
SVRC	**Sivrice-ELAZID**	**1.00**	**25**	*e*Pg		**Pn**	**18 43 48.7**	**-0.3**
SVRC				*e*Sg		**Sn**	**18 44 04.0**	**+0.4**
ELZG	**Elazig**	**1.04**	**9**	*i* P		**Pn**	**18 43 49.8**	**+0.3**
ELZG				*i* S		**Sn**	**18 44 04.4**	**-0.2**
ELZG	**Elazig**	**1.04**	**9**	P		**Pn**	**18 43 49.8**	**+0.3**
ELZG				S		**Sn**	**18 44 04.4**	**-0.2**
AKCD	**Akcadag**	**1.07**	**321**	*i* P		**Pn**	**18 43 50.5**	**+0.7**
AKCD				*i* S		**Sn**	**18 44 05.1**	**-0.1**
AKCD	**Akcadag**	**1.07**	**321**	P		**Pn**	**18 43 50.5**	**+0.7**
AKCD				S		**Sn**	**18 44 05.1**	**-0.1**
DYBB	**Diyarbakir**	**1.19**	**65**	*e*PN		**Pn**	**18 43 51.8**	**+0.4**
DIY	**Diyarbakir**	**1.23**	**69**	*e*Pn		**Pb**	**18 43 51.8**	**0.0**
GAZ	**Gaziantep**	**1.28

JFT	**Otama**	**1.66 300**	S	Sn	18 55 19.6	-15
MJAR	**Matsushiro Arr**	**3.17 268**	Pn	**Pn**	**18 55 32.1**	**-2.1**
	2.9nm,0.3s,baz=90,slow=15,SNR=14					
MJAR			Sn	**Sn**	**18 56 11.4**	**-0.1**
	2.0nm,0.3s,baz=100,slow=20,SNR=5.7					
MAT	**Matsushiro**	**3.17 268**	P	**Pn**	**18 55 32.9**	**-1.3**
MAT			S	**Sn**	**18 56 13.1**	**+1.6**
JHJ	**Hachijo jima 2**	**4.07 209**	Pn	**Pn**	**18 55 46.1**	**-0.5**
	3.6nm,0.3s,baz=50,slow=17,SNR=3.1					
JHJ			Sn	**Sn**	**18 56 33.2**	**-0.5**
	6.2nm,0.3s,baz=90,slow=20,SNR=3.6					
SONM	**Songino Array**	**28.45 304**	P	**P**	**19 00 40.1**	**+1.1**
	0.3nm,0.5s,baz=105,slow=8.7,SNR=4.5					
CMAR	**Chiang Mai Arr**	**41.98 256**	P	**P**	**19 02 35.2**	**-0.1**
	0.1nm,0.6s,baz=52,slow=10,SNR=2.7					

IDC 14 19:04:44.8±1.4, 3°.32N×127°.02E, h0km, mb3.5/6, mb1 3.7/6, mb1mx3.4/48, mbtmp3.5/6, Error ellipse: s-maj=101.2km s-min=20.6km az=72.0, Talaud Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**21.33**	**184**	P	P	19 09 34.5	+0.8
	1.8nm,0.5s,baz=4.9,slow=9.6,SNR=9.7						
WRA	**Warramunga Arr**	**24.21**	**163**	P	P	19 10 02.9	-0.5
	0.7nm,0.4s,baz=343,slow=10,SNR=14						
ASAR	**Alice Springs**	**27.65**	**166**	P	P	19 10 33.6	-1.0
	0.2nm,0.3s,baz=338,slow=6.5,SNR=5.3						
STKA	**Stephens Creek**	**37.65**	**159**	P	P	19 12 02.8	+1.0
	0.7nm,0.6s,baz=329,slow=12,SNR=2.8						
SONM	**Songino Array**	**47.77**	**341**	P	P	19 13 24.3	+0.3
	0.3nm,0.8s,baz=165,slow=6.0,SNR=2.6						
MKAR	**Makanchi Array**	**58.05**	**325**	P	P	19 14 39.3	-0.6
	0.1nm,0.5s,baz=111,slow=7.0,SNR=2.8						

*NIED **14** 19:07:00, 37°.00N×140°.70E, h5km, Mw3.6 Best double couple: M0 2.96000×10^14 NP1:φs=36.00000°, δ36.00000°, λ-105.00000°. NP2:φs=234.00000°, δ56.00000°, λ-80.00000°.*

*ISCJB **14** 19:07:42.8±0.6, 36°.94N×140°.03×140°.81E±0°.06, h20km±4km, mb3.5/9, Error ellipse: s-maj=7.9km s-min=4.5km az=17.2*

*JMA **14** 19:07:43.8, 36°.95N×140°.67E, h6km±1km, M3.8 Broadband fault plane solution: P waves. NP1: φs=226.00000°, δ45.00000°, λ-82.00000°. NP2:φs=34.00000°, δ45.00000°, λ-98.00000°. Principal axes: T Plg0.0000°, Azm310.0000°; N Plg6.0000°, Azm40.0000°; P Plg84.0000°, Azm220.0000°;*

JMA Felt II J1.

*IDC **14** 19:07:47.3±2.3, 36°.98N×140°.73E, h41km±21km, mb3.4/9, mb1 3.6/13, mb1mx3.4/56, mbtmp3.6/13, ML3.5/4, MS2.8/3, Ms1 2.8/3, ms1mx2.5/23 Error ellipse: s-maj=15.9km s-min=11.6km az=63.0*

ISC 14 19:07:43.5±0.9, 36°.95N±0°.03×140°.70E±0°.05, h14km±6km, n29, σ1s23/31, mb3.5/9, 5C-1D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.17**	**28**	⇑P	**Pg**	**19 07 47.7**	**0.0**
ONAJ				S	**Sg**		
JHO	**Hitachi**	**0.35**	**197**	⇑P	**Pg**	**19 07 50.6**	**-0.1**
JHO				S	**Sg**	**19 07 55.6**	**0.0**
JFK	**Kawauchi**	**0.44**	**19**	⇑P	**Pg**	**19 07 52.4**	**+0.1**
JFK				S	**Sg**	**19 07 58.6**	**+0.4**
JSB	**Shiboa**	**0.62**	**272**	⇑P	**Pb**	**19 07 56.2**	**0.0**
JSB				S	**Sb**	**19 08 04.5**	**-0.4**
JFT	**Otama**	**0.64**	**333**	⇑P	**Pg**	**19 07 56.0**	**0.0**
JFT				S	**Sg**	**19 08 04.5**	**+0.1**
JYT	**Yasato**	**0.83**	**210**	⇓P	**Pg**	**19 07 59.2**	**-0.4**
JYT				S	**Sg**	**19 08 09.9**	**-0.6**
MJAR	**Matsushiro Arr**	**2.04**	**259**	P	**Pb**	**19 08 18.9**	**-1.5**
	22nm,0.3s,baz=84,slow=15,SNR=112						
MJAR				S	**Sb**	**19 08 44.2**	**-1.5**
	56nm,0.3s,baz=81,slow=19,SNR=22						
MAT	**Matsushiro**	**2.04**	**259**	P	**Pb**	**19 08 19.4**	**-1.0**
MAT				S	**Sb**	**19 08 46.2**	**+0.5**
JHJ	**Hachijo jima 2**	**3.90**	**191**	P	**Pn**	**19 08 44.3**	**+1.3**
	7.7nm,0.3s,baz=78,slow=20,SNR=5.1						
JHJ				S	**Sn**	**19 09 29.9**	**+1.4**
	28nm,0.3s,baz=14,slow=18,SNR=7.9						
ASAJ	**Asahikawa**	**7.30**	**11**	P	**Pn**	**19 09 30.9**	**+1.2**
	1.0nm,0.3s,baz=221,slow=11,SNR=12						
ASAJ				S	**Sn**	**19 10 48.7**	**-3.7**
	0.2nm,0.3s,baz=238,slow=9.5,SNR=1.8						
USRK	**Ussuriysk Ar.**	**9.81**	**320**	P	Pn	19 10 08.2	+4.1
	0.1nm,0.3s,baz=126,slow=12,SNR=8.1						
JCJ	**Chichijima**	**9.91**	**172**	P	**Pn**	**19 10 03.2**	**-2.2**
	3.0nm,0.3s,baz=311,slow=20,SNR=3.9						
JCJ				S	Sn	19 11 45.2	-11
	1.0nm,0.3s,baz=277,slow=17,SNR=2.2						
JCJ				LR	LR	19 13 52.1	
	comp=Z,74nm,20.0s,baz=78,slow=37						
KSRS	**Korea Array**	**10.21**	**277**	P	**Pn**	**19 10 11.7**	**+2.2**
	0.2nm,0.3s,baz=86,slow=16,SNR=3.8						
KSRS				LR	LR	19 14 06.7	
	comp=Z,39nm,18.3s,baz=72,slow=37						
KLR	**Kul'dur**	**13.89**	**335**	LR	LR	19 15 51.5	
	comp=Z,34nm,19.2s,baz=149,slow=35						
SONM	**Songino Array**	**27.36**	**304**	P	**P**	**19 13 28.4**	**+0.1**
	0.4nm,0.6s,baz=112,slow=9.0,SNR=5.3						
H11N2	**WAKE ISLAND Hy**	**28.60**	**120**	T	T	19 43 26.6	
	baz=313,slow=75,SNR=159						
H11N1	**WAKE ISLAND Hy**	**28.51**	**120**	T	T	19 43 26.0	
	baz=313,slow=75,SNR=144						
H11N3	**WAKE ISLAND Hy**	**28.62**	**120**	T	T	19 43 27.1	
	baz=313,slow=75,SNR=102						
H11S1	**WAKE ISLAND Hy**	**29.30**	**122**	T	T	19 44 19.1	
	baz=314,slow=76,SNR=265						
H11S3	**WAKE ISLAND Hy**	**29.30**	**122**	T	T	19 44 18.6	
	baz=314,slow=76,SNR=282						
H11S2	**WAKE ISLAND Hy**	**29.31**	**122**	T	T	19 44 19.8	
	baz=314,slow=76,SNR=221						
CMAR	**Chiang Mai Arr**	**40.92**	**255**	P	**P**	**19 15 25.3**	**-0.3**
	0.1nm,0.7s,baz=47,slow=7.4,SNR=3.3						
ZALV	**Zalesovo Beam**	**41.55**	**312**	P	**P**	**19 15 29.7**	**-0.6**
	0.4nm,0.5s,baz=90,slow=7.5,SNR=2.8						
MKAR	**Makanchi Array**	**43.68**	**302**	P	**P**	**19 15 48.0**	**+0.2**
	0.2nm,0.6s,baz=91,slow=8.1,SNR=2.7						
FITZ	**Fitzroy Crossi**	**56.57**	**197**	P	**P**	**19 17 26.4**	**+0.7**
	1.2nm,0.8s,baz=339,slow=17,SNR=1.8						
WRA	**Warramunga Arr**	**56.90**	**187**	P	**P**	**19 17 28.3**	**+0.2**
	1.3nm,0.5s,baz=1.9,slow=7.4,SNR=18						
ASAR	**Alice Springs**	**60.63**	**187**	P	**P**	**19 17 54.7**	**+0.7**
	1.0nm,0.8s,baz=13,slow=6.7,SNR=11						
YKA	**Yellowknife Ar**	**64.17**	**30**	P	**P**	**19 18 18.3**	**+1.2**
	0.2nm,0.6s,baz=299,slow=6.5,SNR=4.1						
FINES	**FINESS Array B**	**68.62**	**332**	P	**P**	**19 18 43.8**	**-1.9**
	0.8nm,0.7s,baz=40,slow=7.3,SNR=3.3						

*IDC **14** 19:16:05.3±1.3, 0°.51S×98°.09E, h0km, mb4.1/8, mb1 4.0/10, mb1mx3.7/39, mbtmp4.0/10, ML3.7/2, MS3.1/4, Ms1 3.1/4, ms1mx2.7/39, Error ellipse: s-maj=46.1km s-min=17.4km az=61.0*

*ISCJB **14** 19:16:07.4±0.8, 0°.46S±0°.06×97°.93E±0°.09, h27km, mb4.0/10, MS3.2/2, Error ellipse: s-maj=13.5km s-min=6.8km az=151.9*

*DJA **14** 19:16:08.9±1.0, 0°.5S±6°×9°.8E±°, h25km±7km, M4.0/12, MLv4.0/12*

*NEIC **14** 19:16:08.6±6.6, 0°.48S×98°.03E, h25km±43km, mb4.2/2, Error ellipse: s-maj=34.0km s-min=10.4km az=51.0*

ISC 14 19:16:09.0±0.8, 0°.45S±0°.06×98°.00E±0°.08, h27km, n40, σ1s02/29, mb4.2/10, Southwest of Sumatera

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PBSI	**Pulau Batu**	**0.48**	**36**	P	**Pb**	**19 16 19.3**	**+0.3**
GSI	**Gunungsitoli**	**1.79**	**346**	P	**Pn**	**19 16 38.1**	**-0.1**
GSI	**Gunungsitoli**	**1.79**	**346**	*e*Pn	**Pn**	**19 16 38.0**	**-0.1**
MNSI	**Mandailing Nat**	**2.01**	**52**	P	**Pn**	**19 16 41.5**	**+0.4**
SBSI	**Sibolga**	**2.18**	**24**	P	**Pn**	**19 16 45.5**	**+2.0**
PPI	**Padang Panjang**	**2.40**	**90**	P	**Pn**	**19 16 46.7**	**+0.2**
PDSI	**Padang**	**2.51**	**101**	P	**Pn**	**19 16 48.4**	**+0.4**
PPSI	**Pulau Pagai**	**3.05**	**139**	P	**Pn**	**19 16 55.8**	**+0.3**
BKNI	**Bangkinang**	**3.14**	**76**	P	**Pn**	**19 16 54.8**	**-1.9**
BKNI	**Bangkinang**	**3.14**	**76**	*e*Pn	**Pn**	**19 16 57.6**	**+1.0**
PSI	**Prapat**	**3.36**	**16**	Pn	**Pn**	**19 16 58.3**	**-1.6**
	3.1nm,0.3s,baz=171,slow=9.2,SNR=5.5						
PSI				Sn	**Sb**	**19 17 48.2**	**-0.3**
	2.4nm,0.3s,baz=145,slow=17,SNR=3.6						
PSI				LR	LR	19 18 35.0	
	comp=Z,274nm,18.6s,baz=282,slow=46						
KCSI	**Kotacane, Aceh**	**3.95**	**357**	P	**Pn**	**19 17 07.2**	**-0.7**
TSI	**Tuntungan**	**3.97**	**8**	P	**Pn**	**19 17 07.9**	**-0.2**
IPM	**Ipoh**	**5.76**	**32**	*e*P	**Pn**	**19 17 33.2**	**+0.5**
	7.3nm,0.4s						
LHSI	**Lahat**	**6.46**	**121**	P	Pn	19 17 46.5	+4.1
MDSI	**Maura Dua**	**7.36**	**123**	P	Pn	19 17 59.7	+5.0
CMAR	**Chiang Mai Arr**	**18.81**	**3**	P	**Pn**	**19 20 27.1**	**-0.2**
	0.2nm,0.3s,baz=192,slow=11,SNR=18						
CMAR				LR	LR	19 28 34.9	
	comp=Z,37nm,21.8s,baz=75,slow=40						
H08S2	**Diego Garcia H**	**26.41**	**254**	T	T	19 49 12.9	
	baz=75,slow=75,SNR=609						
H08S3	**Diego Garcia H**	**26.41**	**254**	T	T	19 49 12.8	
	baz=75,slow=75,SNR=532						
H08S1	**Diego Garcia H**	**26.43**	**254**	T	T	19 49 12.8	
	baz=75,slow=75,SNR=540						
BATI	**Baumata**	**27.30**	**112**	P	**P**	**19 21 49.9**	**-1.8**
	5.2nm,0.5s,baz=307,slow=20,SNR=2.6						
H08N1	**Diego Carcia H**	**27.55**	**257**	T	T	19 51 38.7	
	baz=269,SNR=7.9						
H08N2	**Diego Garcia H**	**27.56**	**257**	T	T	19 51 37.0	
	baz=269,SNR=9.3						
H08N3	**Diego Garcia H**	**27.57**	**257**	T	T	19 51 35.8	
	baz=269,SNR=10.0						
ENH	**Enshi**	**32.45**	**19**	P	**P**	**19 22 35.1**	**-2.1**
	3.6nm,0.5s						
H01W3	**Cape Leeuwin H**	**37.43**	**158**	T	T	20 02 51.9	
	baz=339						
H01W2	**Cape Leeuwin H**	**37.44**	**158**	T	T	20 02 53.1	
	baz=339						
H01W1	**Cape Leeuwin H**	**37.44**	**158**	T	T	20 02 53.1	
	baz=339						
WRA	**Warramunga Arr**	**40.50**	**121**	P	**P**	**19 23 45.4**	**-0.6**
	0.5nm,0.8s,baz=301,slow=8.7,SNR=5.6						
WRAB	**Tennant Creek**	**40.51**	**121**	*e*P	**P**	**19 23 45.3**	**-0.7**
	2.1nm,0.9s						
ASAR	**Alice Springs**	**41.78**	**126**	P	**P**	**19 23 56.9**	**+0.4**
	0.7nm,0.8s,baz=292,slow=8.2,SNR=8.6						
ASAR				PcP	**PcP**	**19 25 53.2**	**+0.6**
	0.2nm,0.6s,baz=305,slow=2.7,SNR=2.6						
KSRS	**Korea Array**	**46.77**	**33**	LR	LR	19 45 32.8	
	comp=Z,19nm,18.1s,baz=135,slow=38						
SONM	**Songino Array**	**48.64**	**8**	P	**P**	**19 24 52.0**	**+1.3**
	1.9nm,0.7s,baz=190,slow=8.9,SNR=7.0						
MKAR	**Makanchi Array**	**49.03**	**346**	P	**P**	**19 24 54.8**	**+1.3**
	1.5nm,0.5s,baz=156,slow=8.0,SNR=26						
STKA	**Stephens Creek**	**51.67**	**132**	LR	LR	19 47 40.4	
	comp=Z,27nm,19.4s,baz=210,slow=37						
USRK	**Ussuriysk Ar.**	**53.78**	**30**	P	**P**	**19 25 29.3**	**+0.2**
	4.6nm,0.8s,baz=246,slow=5.5,SNR=12						
ZALV	**Zalesovo Beam**	**55.30**	**351**	P	**P**	**19 25 41.0**	**+1.0**
	1.9nm,0.5s,baz=169,slow=6.5,SNR=13						
FINES	**FINESS Array B**	**81.82**	**333**	P	**P**	**19 28 26.3**	**+0.9**
	0.8nm,0.9s,baz=119,slow=11,SNR=3.1						
CPUP	**Villa Florida**	**144.29**	**220**	PKP	**PKPdf**	**19 35 42.5**	**-0.9**
	0.8nm,0.5s,baz=67,slow=7.7,SNR=2.0						
TXAR	**Lajitas Array**	**144.62**	**34**	PKP	**PKPdf**	**19 35 43.8**	**-0.2**
	0.4nm,0.6s,baz=333,slow=0.6,SNR=3.6						

MEX 14 19:16:38.6±0.4, 14°.93N×93°.74W, h48km±16km, MD3.7, Near coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PCIG		**0.92**	**33**	*e*P	Pn	19 16 53.6	-1.6
PCIG				*i* S	Sn	19 17 05.2	-2.1
TGIG		**1.93**	**18**	*i* P	Pn	19 17 07.6	-1.5
TGIG				*i* S	Sn	19 17 30.0	-2.2

*JMA **14** 19:28:37.5±0.3, 34°.84N×141°.17E, h40km±4km, M2.9*

*ISCJB **14** 19:28:38.4±1.1, 34°.78N±0°.05×141°.0E±0°.1, h44km±9km, mb3.2/2, Error ellipse: s-maj=14.5km s-min=9.0km az=170.1*

*IDC **14** 19:28:39.9±9.2, 34°.87N×140°.77E, h32km±63km, mb3.1/2, mb1 3.2/3, mb1mx2.9/40, mbtmp3.0/3, ML2.5/1, Error ellipse: s-maj=71.1km s-min=21.1km az=73.0*

ISC 14 19:28:38.8±1.3, 34°.86N±0°.05×140°.96E±0°.07, h30km±9km, n11, σ1s64/16, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BSO1	**Boso 1**	**0.21**	**175**	P	**Pb**	**19 28 45.1**	**+0.5**
BSO1				X		19 28 51.4	
BSO3	**Boso 3**	**0.37**	**261**	P	**Pn**	**19 28 49.1**	**+1.1**
BSO3				X		19 28 58.4	
BSO4	**Boso 4**	**0.53**	**284**	P	**Pn**	**19 28 51.5**	**+1.3**
BSO4				X		19 29 02.1	
KTR	**Katsuura**	**0.60**	**299**	P	**Pn**	**19 28 52.2**	**+0.9**
KTR				*e*S	**Sn**	**19 29 02.0**	**+2.0**
JCN	**Nagara**	**0.83**	**312**	P	**Pb**	**19 28 55.5**	**+0.7**
JCN				*e*S	**Sn**	**19 29 08.5**	**+2.7**
CHOJ	**Chosi**	**0.84**	**355**	P	**Pn**	**19 28 53.8**	**-0.9**
JIM2	**Oshima 3**	**1.27**	**264**	P	**Pb**	**19 29 00.9**	**-1.2**
JIM2				*e*S	**Sb**	**19 29 16.6**	**-1.4**
JHJ	**Hachijo jima 2**	**1.99**	**210**	Pn	**Pn**	**19 29 11.2**	**+0.7**
	20nm,0.3s,baz=18,slow=19,SNR=11						
JHJ				Sn	**Sn**	**19 29 32.5**	**-1.9**
	46nm,0.3s,baz=312,slow=22,SNR=16						
MJAR	**Matsushiro Arr**	**2.79**	**308**	Pn	**Pn**	**19 29 19.1**	**-2.5**
	0.8nm,0.3s,baz=81,slow=15,SNR=7.0						
MJAR				Sn	**Sn**	**19 29 53.0**	**-1.3**
	7.0nm,0.3s,baz=142,slow=12,SNR=5.5						
MKAR	**Makanchi Array**	**44.99**	**304**	P	**P**	**19 36 51.4**	**+0.1**
	0.2nm,0.9s,baz=79,slow=7.5,SNR=2.4						
WRA	**Warramunga Arr**	**54.86**	**188**	P	**P**	**19 38 06.9**	**+0.4**
	0.2nm,0.4s,baz=4.7,slow=7.4,SNR=11						

*CRAAG **14** 19:31:28.1, 36°.56N×4°.76E, Ml3.6*

*ISCJB **14** 19:31:31.6±0.4, 36°.76N±0°.03×4°.71E±0°.04, h10km, Error ellipse: s-maj=4.4km s-min=4.0km az=150.3*

*CSEM **14** 19:31:32.3±0.2, 36°.52N×4°.75E, h2km, ML3.6, Error ellipse: s-maj=5.9km s-min=4.8km az=28.0*

*MDD **14** 19:31:33.1±0.4, 36°.53N×4°.74E, h0km, mb4.2/13, Error ellipse: s-maj=6.0km s-min=4.3km az=27.0, PRX/IMO*

*LDG **14** 19:31:38.6±0.1, 36°.88N×4°.44E, h30km, Ml3.0/9, Error ellipse: s-maj=2.9km s-min=1.5km az=153.0*

ISC 14 19:31:31.3±0.9, 36°.59N±0°.05×4°.73E±0°.03, h10km, n113, σ2s29/128, 2C, Northern Algeria

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SET	**Setif**	**0.67**	**125**	P	**Pg**	**19 31 43.0**	**-1.2**
SET	**Setif**	**0.67**	**125**	P	**Pg**	**19 31 43.0**	**-1.2**
SET	**Setif**	**0.67**	**125**	P	**Pg**	**19 31 43.0**	**-1.2**
ATAF	**Djebel Tarf**	**0.80**	**207**	P	**Pb**	**19 31 47.5**	**+0.2**
ATAF	**Djebel Tarf**	**0.80**	**207**	P	**Pb**	**19 31 47.5**	**+0.2**
ATAF	**Djebel Tarf**	**0.80**	**207**	P	**Pb**	**19 31 47.5**	**+0.2**
CKHR	**Kef el Ahmar**	**0.85**	**132**	P	**Pb**	**19 31 48.3**	**0.0**
CKHR	**Kef el Ahmar**	**0.85**	**132**	P	**Pb**	**19 31 48.3**	**0.0**
CKHR	**Kef el Ahmar**	**0.85**	**132**	P	**Pb**	**19 31 48.3**	**0.0**
DFRA	**Djebel Bou Aff**	**0.93**	**92**	P	**Pb**	**19 31 50.6**	**+1.1**
DFRA	**Djebel Bou Aff**	**0.93**	**92**	P	**Pb**	**19 31 50.6**	**+1.1**
DFRA	**Djebel Bou Aff**	**0.93**	**92**	P	**Pb**	**19 31 50.6**	**+1.1**
ADJB	**Djebel Djouab**	**1.12**	**248**	P	**Pb**	**19 31 52.2**	**-0.7**
ADJB	**Djebel Djouab**	**1.12**	**248**	P	**Pb**	**19 31 52.2**	**-0.7**
ADJB	**Djebel Djouab**	**1.12**	**248**	P	**Pb**	**19 31 52.2**	**-0.7**
CASM	**Ain Smara**	**1.46**	**102**	P	**Pb**	**19 31 59.2**	**+0.6**
CASM	**Ain Smara**	**1.46**	**102**	P	**Pb**	**19 31 59.2**	**+0.6**
CASM	**Ain Smara**	**1.46**	**102**	P	**Pb**	**19 31 59.2**	**+0.6**
EMHD	**Djebel Mahouad**	**1.48**	**255**	P	**Pn**	**19 31 59.0**	**+0.9**
EMHD	**Djebel Mahouad**	**1.48**	**255**	P	**Pn**	**19 31 59.0**	**+0.9**
EMHD	**Djebel Mahouad**	**1.48**	**255**	P	**Pn**	**19 31 59.0**	**+0.9**
CKFL	**Kef-Lekhel**	**1.62**	**96**	P	**Pg**	**19 32 03.1**	**+0.8**
CKFL	**Kef-Lekhel**	**1.62**	**96**	P	**Pg**	**19 32 03.1**	**+0.8**
CKFL	**Kef-Lekhel**	**1.62**	**96**	P	**Pg**	**19 32 03.1**	**+0.8**
EANR	**'Ain N'Sour**	**3.00**	**259**	P	**Pn**	**19 32 20.5**	**+1.6**
EANR	**'Ain N'Sour**	**3.00**	**259**	P	**Pn**	**19 32 20.5**	**+1.6**
EANR	**'Ain N'Sour**	**3.00**	**259**	P	**Pn**	**19 32 20.5**	**+1.6**
ETRT	**Tiaret**	**3.02**	**248**	P	**Pn**	**19 32 21.8**	**+2.5**
ETRT	**Tiaret**	**3.02**	**248**	P	**Pn**	**19 32 21.8**	**+2.5**
ETRT	**Tiaret**	**3.02**	**248**	P	**Pn**	**19 32 21.8**	**+2.5**
ETOS	**Mallorca**	**3.51**	**335**	P	**Pn**	**19 32 28.5**	**+2.6**
	18nm,0.3s,SNR=40						
ETOS				S	**Sn**	**19 33 07.7**	**+0.1**
	5.8nm,0.3s						
EMUR	**La Murta**	**4.92**	**287**	P	**Pn**	**19 32 48.8**	**+3.4**
	1.5nm,0.3s,SNR=4.0						
ETOB	**Tobarra**	**5.39**	**294**	P	**Pn**	**19 32 54.9**	**+3.1**
	2.3nm,0.2s,SNR=11						
ETOB				S	**Sn**	**19 33 53.5**	**-0.3**
	1.5nm,0.4s						
ETOB	**Tobarra**	**5.39**	**294**	P	**Pn**	**19 32 54.9**	**+3.1**
	2.3nm,0.2s,SNR=11						
CFON	**Fontmartina**	**5.46**	**342**	⇑P	**Pn**	**19 32 55.1**	**+2.3**
	7.8nm,0.3s,SNR=18						
CFON				S	**Sn**	**19 33 54.4**	**-1.4**
	4.3nm,0.3s						
CFON	**Fontmartina**	**5.46**	**342**	P	**Pn**	**19 32 55.1**	**+2.3**
	7.8nm,0.3s,SNR=18						
EPOB	**Poblet**	**5.54**	**330**	P	**Pn**	**19 32 56.4**	**+2.5**
	1.3nm,0.2s,SNR=9.5						
EPOB				S	**Sn**	**19 33 55.5**	**-2.2**
	2.0nm,0.3s						
EPOB	**Poblet**	**5.54**	**330**	P	**Pn**	**19 32 56.4**	**+2.5**
	1.3nm,0.2s,SNR=9.5						
ERTA	**Horta de San J**	**5.55**	**323**	P	**Pn**	**19 32 56.1**	**+2.1**
	1.6nm,0.3s,SNR=7.9						
ERTA	**Horta de San J**	**5.55**	**323**	P	**Pn**	**19 32 56.1**	**+2.1**
	1.6nm,0.3s,SNR=7.9						
EMOS	**Mosqueruela**	**5.55**	**314**	P	**Pn**	**19 32 56.2**	**+2.0**
	0.8nm,0.2s,SNR=7.9						
EMOS				S	**Sn**	**19 33 56.7**	**-1.4**
	1.0nm,0.4s,SNR=7.9						
EMOS	**Mosqueruela**	**5.55**	**314**	P	**Pn**	**19 32 56.2**	**+2.0**
	0.8nm,0.2s,SNR=7.9						
SESP	**Santiago Espad**	**5.99**	**287**	P	**Pn**	**19 33 02.5**	**+2.4**
	1.2nm,0.2s,SNR=7.9						
SESP				S	**Sn**	**19 34 08.9**	**+0.1**
	1.6nm,0.3s,SNR=7.9						
SESP	**Santiago Espad**	**5.99**	**287**	P	**Pn**	**19 33 02.5**	**+2.4**
	1.2nm,0.2s,SNR=7.9						
EJON	**La Jonquera**	**6.02**	**347**	⇑P	**Pn**	**19 33 02.7**	**+2.3**
	6.0nm,0.3s,SNR=18						
EJON				S	**Sn**	**19 34 08.1**	**-1.4**
	1.4nm,0.2s						
EJON	**La Jonquera**	**6.02**	**347**	P	**Pn**	**19 33 02.7**	**+2.3**
	6.0nm,0.3s,SNR=18						
SJAF	**Saint Jean de**	**6.06**	**347**	P	**Pn**	**19 33 03.1**	**+2.2**
	3.3nm,0.3s,SNR=7.9						
SJAF				S	**Sn**	**19 34 08.8**	**-1.5**
	3.4nm,0.5s,SNR=7.9						
SJAF	**Saint Jean de**	**6.06**	**347**	P	**Pn**	**19 33 03.1**	**+2.2**
	3.3nm,0.3s,SNR=7.9						
VALF	**Valcebollere**	**6.17**	**341**	P	**Pn**	**19 33 06.5**	**+3.9**
VALF	**Valcebollere**	**6.17**	**341**	P	**Pn**	**19 33 06.5**	**+3.9**
FILF	**Fillols**	**6.20**	**345**	P	**Pn**	**19 33 06.4**	**+3.6**
FILF	**Fillols**	**6.20**	**345**	P	**Pn**	**19 33 06.4**	**+3.6**
CLLI	**Llivia**	**6.26**	**341**	P	**Pn**	**19 33 07.6**	**+3.8**
	4.5nm,0.3s,SNR=33						
CLLI				S	**Sn**	**19 34 14.7**	**-0.6**
	1.4nm,0.4s,SNR=7.9						
CLLI	**Llivia**	**6.26**	**341**	P	**Pn**	**19 33 07.6**	**+3.8**
	4.5nm,0.3s,SNR=33						
EQES	**Quesada**	**6.34**	**283**	P	**Pn**	**19 33 08.7**	**+3.8**
	1.1nm,0.3s,SNR=7.9						
EQES				S	**Sn**	**19 34 16.9**	**-0.5**
	1.5nm,0.4s,SNR=7.9						
EQES	**Quesada**	**6.34**	**283**	P	**Pn**	**19 33 08.7**	**+3.8**
	1.1nm,0.3s,SNR=7.9						
CSOR	**Sort**	**6.41**	**335**	P	**Pn**	**19 33 09.7**	**+3.8**
	1.4nm,0.1s,SNR=11						
CSOR				S	**Sn**	**19 34 17.6**	**-1.6**
	2.8nm,0.5s,SNR=7.9						
CSOR	**Sort**	**6.41**	**335**	P	**Pn**	**19 33 09.7**	**+3.8**
	1.4nm,0.1s,SNR=11						
CARF	**Carcanieres**	**6.45**	**343**	P	**Pn**	**19 33 10.3**	**+4.0**
CARF	**Carcanieres**	**6.45**	**343**	P	**Pn**	**19 33 10.3**	**+4.0**
ESAC	**San Caprasio**	**6.52**	**323**	P	**Pn**	**19 33 10.7**	**+3.4**
	3.7nm,0.2s,SNR=7.9						
ESAC	**San Caprasio**	**6.52**	**323**	P	**Pn**	**19 33 10.7**	**+3.4**
	3.7nm,0.2s,SNR=7.9						
EQUE	**Quentar**	**6.57**	**278**	P	**Pn**	**19 33 11.5**	**+3.4**
	0.5nm,0.2s,SNR=7.9						
EQUE	**Quentar**	**6.57**	**278**	P	**Pn**	**19 33 11.5**	**+3.4**
	0.5nm,0.2s,SNR=7.9						
SALF	**Salau**	**6.74**	**337**	P	**Pn**	**19 33 14.7**	**+4.4**
SALF	**Salau**	**6.74**	**337**	P	**Pn**	**19 33 14.7**	**+4.4**
PGF	**Pioggiola**	**6.81**	**28**	*e*

Ms1 2.4/1, ms1mx2.0/23, Error ellipse: s-maj=29.9km s-min=18.3km az=86.0
ISCJB ***14*** *19:33:28.5±1.6, 36°29N±0°03×141°36E±0°07, h42km±9km, mb3.2/5, Error ellipse: s-maj=10.0km s-min=5.4km az=2.5*
JMA ***14*** *19:33:30.1±0.1, 36°31N×141°19E, h47km±2km, M3.3*

ISC 14 19:33:28.5±1.6, **36°32N**±0°04×**141°34E**±0°07, **h25**km±12km, **n25**, σ1°**09**/**27**, **mb3.2**/**5**, **Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JHO	**Hitachi**	**0.69**	**295**	P	**Pb**	**19 33 42.0**	**+0.1**
CHOJ	**Chosi**	**0.73**	**213**	P	**Pb**	**19 33 43.3**	**+0.7**
CHOJ				eS	**Sb**	**19 33 52.3**	**+0.1**
ONAJ	**Iwakimizuishiy**	**0.89**	**331**	P	**Pn**	**19 33 45.3**	**-0.2**
JYT	**Yasato**	**0.93**	**265**	P	**Pn**	**19 33 45.4**	**-0.5**
JYT				S	**Sb**	**19 33 55.9**	**-2.1**
JFK	**Kawauchi**	**1.11**	**340**	P	**Pn**	**19 33 48.5**	**+0.1**
JFK				S	**Sn**	**19 34 01.7**	**-1.2**
JFT	**Otama**	**1.44**	**326**	P	**Pn**	**19 33 54.2**	**+1.2**
JFT				S	**Sn**	**19 34 11.2**	**+0.1**
JAG	**Ashikaga**	**1.53**	**274**	P	**Pn**	**19 33 54.1**	**0.0**
JAG				eS	**Sn**	**19 34 11.6**	**-1.6**
JMM	**Marumori**	**1.60**	**344**	P	**Pn**	**19 33 56.2**	**+1.0**
JMM				S	**Sn**	**19 34 14.9**	**-0.1**
JKT	**Katashina**	**1.75**	**285**	P	**Pn**	**19 33 57.9**	**+0.7**
JKT				S	**Sn**	**19 34 18.4**	**-0.3**
MJAR	**Matsushiro Arr**	**2.54**	**276**	Pn	**Pn**	**19 34 08.8**	**+0.7**
	6.1nm,0.3s,baz=102,slow=8.7,SNR=46						
MJAR				LR	LR	19 35 17.6	
	comp=Z,60nm,19.6s,baz=105,slow=41						
MAT	**Matsushiro**	**2.54**	**276**	P	**Pn**	**19 34 09.4**	**+1.3**
MAT				S	**Sn**	**19 34 39.5**	**+1.3**
JHJ	**Hachijo jima 2**	**3.44**	**202**	Pn	**Pn**	**19 34 21.7**	**+1.3**
	6.2nm,0.3s,baz=90,slow=20,SNR=5.7						
JHJ				Sn	**Sn**	**19 34 59.9**	**-0.5**
	30nm,0.3s,baz=270,slow=24,SNR=12						
ASAJ	**Asahikawa**	**7.84**	**7**	Pn	Pn	19 35 17.3	-3.6
	0.1nm,0.3s,baz=216,slow=12,SNR=1.8						
JCJ	**Chichijima**	**9.23**	**175**	Pn	**Pn**	**19 35 38.9**	**-1.0**
	2.2nm,0.3s,baz=299,slow=18,SNR=4.5						
JCJ				Sn	Sn	19 37 11.7	-11
	2.1nm,0.3s,baz=292,slow=19,SNR=2.2						
H11N2	**WAKE ISLAND Hy 27.84**	**120**		T	T	20 08 27.3	
	baz=312,slow=75,SNR=9.6						
H11N1	**WAKE ISLAND Hy 27.85**	**120**		T	T	20 08 29.0	
	baz=312,slow=75,SNR=11						
H11N3	**WAKE ISLAND Hy 27.86**	**120**		T	T	20 08 29.0	
	baz=312,slow=75,SNR=9.9						
H11S1	**WAKE ISLAND Hy 28.53**	**122**		T	T	20 09 16.4	
	baz=314,slow=76,SNR=22						
H11S3	**WAKE ISLAND Hy 28.53**	**122**		T	T	20 09 14.7	
	baz=314,slow=76,SNR=23						
H11S2	**WAKE ISLAND Hy 28.54**	**122**		T	T	20 09 15.9	
	baz=314,slow=76,SNR=16						
ZALV	**Zalesovo Beam**	**42.35**	**313**	P	**P**	**19 41 21.5**	**+1.3**
	0.2nm,0.4s,baz=100,slow=8.1,SNR=2.2						
MKAR	**Makanchi Array**	**44.45**	**303**	P	**P**	**19 41 38.8**	**+1.5**
	0.1nm,0.5s,baz=97,slow=6.0,SNR=3.3						
ILAR	**Eielson Array**	**50.13**	**32**	P	**P**	**19 42 19.4**	**-1.7**
	0.4nm,0.6s,baz=262,slow=6.5,SNR=5.3						
WRA	**Warramunga Arr**	**56.35**	**188**	P	**P**	**19 43 06.6**	**-0.8**
	0.5nm,1.0s,baz=2.0,slow=7.7,SNR=4.1						
ASAR	**Alice Springs**	**60.08**	**188**	P	**P**	**19 43 33.9**	**+0.5**
	0.1nm,0.7s,baz=17,slow=9.8,SNR=2.6						

ISCJB ***14*** *19:35:22.5±1.2, 17°3S±0°5×178°9W±0°3, h539km, mb3.5/7, Error ellipse: s-maj=75.2km s-min=18.2km az=151.7*
IDC ***14*** *19:35:32.2±19.0, 17°73S×178°86W, h658km±286km, mb2.9/7, mb1 3.2/7, mb1mx2.9/26, mbtmp3.9/7, Error ellipse: s-maj=161.4km s-min=42.6km az=0.0*

ISC 14 19:35:23.3±1.4, **17°3S**±0°5×**178°9W**±0°3, **h539**km, **n7**, σ0°**61**/**7**, **mb3.5**/**7**, **Fiji Islands region**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
STKA	**Stephens Creek**	**38.56**	**240**	P	**P**	**19 41 59.6**	**-0.5**
	1.8nm,0.8s,baz=75,slow=11,SNR=3.9						
WRA	**Warramunga Arr**	**44.33**	**259**	P	**P**	**19 42 46.4**	**+0.5**
	1.2nm,0.7s,baz=95,slow=7.1,SNR=33						
ASAR	**Alice Springs**	**44.55**	**254**	P	**P**	**19 42 48.2**	**+0.6**
	6.5nm,0.7s,baz=88,slow=8.5,SNR=127						
NVAR	**Mina Array Bea**	**79.28**	**44**	P	**P**	**19 46 33.9**	**+0.6**
	0.7nm,0.7s,baz=229,slow=10,SNR=3.8						
TXAR	**Lajitas Array**	**86.03**	**58**	P	**P**	**19 47 07.3**	**0.0**
	0.6nm,0.7s,baz=201,slow=6.4,SNR=4.3						
PDAR	**Pinedale Array**	**87.20**	**44**	P	**P**	**19 47 12.3**	**-0.4**
	0.3nm,0.5s,baz=204,slow=3.3,SNR=3.5						
SONM	**Songino Array**	**92.81**	**319**	P	**P**	**19 47 38.0**	**-0.4**
	0.2nm,0.6s,baz=113,slow=3.7,SNR=2.2						

CSEM ***14*** *19:40:21.6±1.2, 37°18N×38°04E, h40km, ML2.1, Error ellipse: s-maj=33.8km s-min=19.7km az=67.0*
ISCJB ***14*** *19:40:24.6±1.2, 37°37N±0°06×38°65E±0°04, h7km±7km, Error ellipse: s-maj=10.2km s-min=5.2km az=11.9*
DDA ***14*** *19:40:24.9, 37°34N×38°55E, h7km, Md2.7*
NSSC ***14*** *19:40:30.5±0.6, 36°49N×38°99E, h88km±8km, ML1.7*

ISC 14 19:40:24.3±1.1, **37°39N**±0°05×**38°63E**±0°03, **h13**km±10km, **n13**, σ0°**40**/**19**, **Turkey**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ATAB	**Bozova**	**0.28**	**287**	*i* P	**Pg**	**19 40 30.1**	**-0.1**
ATAB	**Bozova**	**0.28**	**287**	P	**Pg**	**19 40 30.1**	**-0.1**
SURC	**SANLIURFA_SURC**	**0.51**	**182**	*i* P	**Pg**	**19 40 34.3**	**0.0**
SURC				*i* S	**Sg**	**19 40 41.0**	**-0.1**
SURC	**SANLIURFA_SURC**	**0.51**	**182**	P	**Pg**	**19 40 34.3**	**0.0**
SURC				S	**Sg**	**19 40 41.0**	**-0.1**
KUZU	**Kuzuini**	**1.39**	**244**	*i* P	**Pg**	**19 40 51.4**	**+0.3**
KUZU				*i* S	**Sg**	**19 41 09.1**	**0.0**
AYKD	**Aykdinkavak**	**1.45**	**272**	*i* P	**Pn**	**19 40 50.3**	**-0.1**
AYKD				*i* S	**Sg**	**19 41 10.6**	**-0.6**
SFNV	**Sufian**	**1.53**	**129**	*e*P	**Pn**	**19 40 51.0**	**-0.5**
SFNV				*e*S	**Sn**	**19 41 11.5**	**+0.2**
	18nm,0.5s						
MNKR	**ALMNKUR**	**1.53**	**160**	*e*P	Pn	19 40 45.8	-5.6
MNKR				*e*S	Sn	19 40 57.1	-14
MNKR				AML	AML	19 41 09.7	
	comp=Z,110nm,0.1s						
MNKR	**ALMNKUR**	**1.53**	**160**	*e*P	Pn	19 40 45.9	-5.6
KSRV	**Kasrt alli**	**1.55**	**169**	*e*P	**Pb**	**19 40 52.9**	**0.0**
KSRV				AML	AML	19 41 19.1	
	comp=Z,5.7nm,0.2s						
KBSD	**Kabsdagh**	**1.57**	**104**	*e*P	**Pg**	**19 40 54.7**	**+0.1**
KBSD				*e*S	**Sn**	**19 41 11.5**	**-0.9**
KBSD				AML	AML	19 41 18.6	
	comp=Z,16nm,0.3s						
KBSD	**Kabsdagh**	**1.57**	**104**	*e*P	**Pb**	**19 40 53.9**	**+0.5**
KBSD				*e*S	**Sg**	**19 41 15.5**	**+0.5**
	comp=Z,16nm,0.3s						
BTCH	**Batrach**	**2.21**	**233**	*e*P	**Pb**	**19 41 04.5**	**+0.4**
BTCH				*e*S	**Sn**	**19 41 28.4**	**+0.4**
BTCH				AML	AML	19 41 41.9	
	comp=N,5.7nm,0.2s						
BTCH				AML	AML	19 41 48.7	
	comp=E,12nm,0.7s						

IDC 14 19:44:16.3±4.1, **5°82S×127°24E, h359**km±47km, **mb2.6**/**1**, **mb1 2.4**/**3**, **mb1mx2.3**/**29**, **mbtmp3.2**/**3**, **Error ellipse: s-maj=149.7km s-min=16.4km az=67.0, Banda Sea**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
WRA	**Warramunga Arr**	**15.64**	**154**	P	P	19 47 37.4	-0.3
	0.2nm,0.3s,baz=333,slow=13,SNR=8.0						
WRA				S	S	19 50 20.0	-4.6
	0.1nm,0.3s,baz=338,slow=21,SNR=4.6						
ASAR	**Alice Springs**	**18.87**	**161**	P	P	19 48 13.1	+0.9
	0.1nm,0.3s,baz=341,slow=16,SNR=6.8						
ASAR				S	S	19 51 27.8	+0.3
	0.1nm,0.3s,baz=350,slow=20,SNR=5.9						
MKAR	**Makanchi Array**	**65.76**	**328**	P	P	19 54 23.6	-0.2
	0.2nm,0.5s,baz=125,slow=7.4,SNR=4.1						

NIED ***14*** *19:47:00, 36°70N×140°60E, h5km, Mw3.3 Best double couple: M₀1.10000×10¹⁴ NP1:φs38.00000°, δ40.00000°, λ-40.00000°. NP2:φs161.00000°, δ66.00000°, λ-122.00000°.*

JMA 14 19:47:43.9, 36°70N×140°57E, h7km±1km, **M3.5, 1C-4D, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JHO	**Hitachi**	**0.09**	**181**	‖P	Pg	19 47 46.1	+0.1
JHO				S	Sg	19 47 47.6	+0.1
ONAJ	**Iwakimizuishiy**	**0.44**	**24**	‖P	Pg	19 47 52.6	+0.1
ONAJ				S	Sg	19 47 59.0	+0.7
JYT	**Yasato**	**0.56**	**213**	⇑P	Pg	19 47 54.7	0.0
JYT				S	Sg	19 48 02.2	+0.2
JSB	**Shiboa**	**0.59**	**297**	P	Pg	19 47 55.8	+0.6
JSB				S	Sb	19 48 04.2	-0.9
JFK	**Kawauchi**	**0.71**	**20**	‖P	Pg	19 47 57.3	-0.3
JFK				S	Sg	19 48 06.8	0.0
JFT	**Otama**	**0.84**	**347**	‖P	Pg	19 48 00.0	0.0
JFT				S	Sg	19 48 10.9	0.0
JAG	**Ashikaga**	**0.94**	**253**	P	Pg	19 48 00.9	-1.0
MAT	**Matsushiro**	**1.91**	**266**	P	Pn	19 48 17.0	+0.1
MAT				S	Sn	19 48 41.6	+0.5

ISCJB ***14*** *19:52:53.1±0.5, 24°23S±0°05×67°22W±0°04, h150km, Error ellipse: s-maj=7.8km s-min=4.2km az=28.5*
GUC ***14*** *19:52:53.4±0.7, 24°14S×67°78W, h226km±21km, ML4.4*
SJA ***14*** *19:52:54.6±0.8, 24°35S×67°02W, h154km±19km, ML2.2, MW2.7*

ISC 14 19:52:53.3±1.2, **24°22S**±0°06×**67°20W**±0°04, **h150**km, **n14**, σ1°**28**/**25**, **6C-2D, Chile-Argentina border region**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
HJA	**Humahuaca**	**1.93**	**59**	*e*P	**Pn**	**19 53 29.9**	**+1.9**
AZAP	**Zapla**	**1.95**	**90**	*e*P	**Pn**	**19 53 29.0**	**+1.0**
AZAP				*e*S	**Sn**	**19 53 54.3**	**-0.4**
AZAP				IAML		19 53 58.8	
	comp=Z,17nm,0.6s						
FSA	**Cafayete**	**2.18**	**150**	*e*P	**Pn**	**19 53 31.4**	**+0.7**
FSA				*e*S	**Sn**	**19 53 57.5**	**-2.1**
FSA				IAML		19 54 02.4	
	comp=Z,11nm,0.8s						
ASTB	**Santa Barbara**	**2.53**	**84**	‖*e*P	**Pn**	**19 53 35.3**	**+0.4**
PB06	**IPOC Station P**	**2.65**	**304**	⇑*i*P	**Pn**	**19 53 37.8**	**+1.4**
PB06				*i* S	**Sn**	**19 54 11.1**	**+1.4**
PB06				IAML		19 54 13.9	
	comp=N,848nm,0.2s						
PB14	**IPOC Station P**	**2.95**	**261**	*e*P	**Pn**	**19 53 40.5**	**+0.3**
PB14				*i* S	**Sn**	**19 54 16.2**	**-0.3**
PB14				IAML		19 54 18.5	
	comp=E,274nm,0.5s						
ALOL	**LOMAS DE OLMED**	**2.97**	**83**	*e*P	**Pn**	**19 53 40.7**	**+0.4**
PB09	**IPOC Station P**	**3.06**	**322**	⇑*i*P	**Pn**	**19 53 43.0**	**+1.4**
PB09				*i* S	**Sn**	**19 54 21.0**	**+2.0**
PB09				IAML		19 54 21.5	
	comp=N,2μm,0.4s						
PB10	**IPOC Station P**	**3.15**	**282**	⇑*i*P	**Pn**	**19 53 43.2**	**+0.6**
PB10				*i* S	**Sn**	**19 54 20.5**	**-0.2**
PB10				IAML		19 54 26.1	
	comp=E,603nm,0.4s						
PB04	**IPOC Station P**	**3.30**	**304**	⇑*i*P	**Pn**	**19 53 45.0**	**+0.4**
PB04				*i* S	**Sn**	**19 54 23.9**	**-0.4**
PB04				IAML		19 54 26.3	
	comp=N,448nm,0.1s						
PB07	**IPOC Station P**	**3.51**	**315**	⇑*i*P	**Pn**	**19 53 47.6**	**+0.3**
PB07				*i* S	**Sn**	**19 54 28.5**	**-0.6**
PB07				IAML		19 54 30.7	
	comp=E,486nm,0.2s						
PB01	**IPOC Station P**	**3.80**	**326**	⇑*i*P	**Pn**	**19 53 50.9**	**-0.3**
PB01				*i* S	**Sn**	**19 54 35.2**	**-0.8**
PB08	**IPOC Station P**	**4.45**	**336**	*e*P	**Pn**	**19 54 00.1**	**+0.3**
PB08				*i* S	**Sn**	**19 54 51.1**	**-0.4**
PB11	**IPOC Station P**	**4.99**	**332**	‖*i*P	**Pn**	**19 54 05.0**	**-1.7**
PB11				*i* S	**Sn**	**19 55 00.7**	**-3.3**

CSEM ***14*** *19:54:33.6±0.5, 35°89N×44°49E, h20km, ML3.0, Error ellipse: s-maj=15.1km s-min=8.6km az=34.0*
ISK ***14*** *19:54:35.3, 36°44N×44°39E, h5km, ML3.0*
TEH ***14*** *19:54:38.1, 35°92N×44°91E, h29km, ML2.9*

ISC 14 19:54:32.8±1.9, **36°15N**±0°06×**44°69E**±0°06, **h16**km±14km, **n32**, σ1°**28**/**41**, **Iran-Iraq border region**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CUKT	**Cukurca**	**1.40**	**322**	*e*PG	**Pn**	**19 54 56.0**	**-1.8**
HAKT	**HAKKARI**	**1.61**	**331**	*i* P	**Pn**	**19 55 00.4**	**-0.5**
HAKT				*i* S	**Sg**	**19 55 24.6**	**-0.4**
HAKT	**HAKKARI**	**1.61**	**331**	P	**Pn**	**19 55 00.4**	**-0.5**
HAKT				S	**Sg**	**19 55 24.6**	**-0.4**
HKR	**Hakkari**	**1.62**	**332**	*e*PN	**Pn**	**19 55 00.0**	**-0.9**
HKR				*e*SN	**Sn**	**19 55 18.9**	**-2.6**
IDHR	**Dehrash**	**2.00**	**136**	*e*Sg	**Sb**	**19 55 33.0**	**-0.8**
IDHR				*e*Pn	**Pn**	**19 55 05.3**	**-0.9**
IDHR				*e*AMB	AMB	19 55 35.2	
	comp=Z,2μm,0.1s						
ILIN	**Lien**	**2.22**	**123**	*e*Pn	**Pn**	**19 55 09.5**	**+0.2**
ILIN	**Lien**	**2.22**	**123**	*e*Pn	**Pn**	**19 55 09.5**	**+0.2**
ISHB	**Shabestar**	**2.26**	**19**	*e*Pn	**Pb**	**19 55 13.8**	**+0.4**
ISHB				*e*AMB	AMB	19 55 19.1	
	comp=Z,1μm,0.2s						
SIRN	**S¯¬rnak**	**2.27**	**307**	*i* P	**Pn**	**19 55 09.5**	**-0.2**
SIRN				*i* S	**Sn**	**19 55 37.3**	**-0.2**
SIRN	**S¯¬rnak**	**2.27**	**307**	P	**Pn**	**19 55 09.5**	**-0.2**
SIRN				S	**Sn**	**19 55 37.3**	**-0.2**
IBST	**Bostanabad**	**2.35**	**48**	*e*Pn	**Pb**	**19 55 15.3**	**+0.4**
IBST				*e*AMB	AMB	19 55 23.6	
	comp=Z,398nm,0.2s						
IBST				*e*Sg	**Sg**	**19 55 52.2**	**+3.7**
IBST	**Bostanabad**	**2.35**	**48**	*e*Pn	**Pb**	**19 55 15.3**	**+0.4**
IGHG	**Ghaleghazi**	**2.38**	**139**	*e*Pn	**Pn**	**19 55 10.6**	**-0.8**
IGHG				*e*Sg	**Sn**	**19 55 41.5**	**+1.2**
IGHG				*e*AMB	AMB	19 55 57.3	
	comp=Z,682nm,0.2s						
IGHG	**Ghaleghazi**	**2.38**	**139**	*e*Pn	**Pn**	**19 55 10.6**	**-0.8**
IGHG				*e*Sg	**Sn**	**19 55 41.5**	**+1.2**
ITBZ	**Tabriz**	**2.39**	**29**	*e*Pn	**Pg**	**19 55 17.8**	**-0.8**
ITBZ				*e*AMB	AMB	19 55 22.1	
	comp=Z,580nm,0.2s						
ITBZ	**Tabriz**	**2.39**	**29**	*e*Pn	**Pg**	**19 55 17.8**	**-0.8**
VANB	**Van**	**2.66**	**337**	*e*PN	**Pn**	**19 55 16.0**	**+0.9**
VANB	**Van**	**2.66**	**337**	*e*Pn	**Pn**	**19 55 16.0**	**+0.9**
IMRD	**Marand**	**2.69**	**17**	*e*Pn	**Pb**	**19 55 21.1**	**+0.4**
IMRD				*e*AMB	AMB	19 55 29.9	
	comp=Z,445nm,0.2s						
IMRD	**Marand**	**2.69**	**17**	*e*Pn	**Pb**	**19 55 21.1**	**+0.4**
IHRS	**Heris**	**2.87**	**40**	*e*Pn	**Pb**	**19 55 23.0**	**-0.8**
IHRS				*e*AMB	AMB	19 55 30.5	
	comp=Z,281nm,0.2s						
IHRS	**Heris**	**2.87**	**40**	*e*Pn	**Pb**	**19 55 23.0**	**-0.8**
ISRB	**Sarab**	**2.91**	**54**	*e*Pn	**Pb**	**19 55 23.2**	**-1.4**
ISRB				*e*AMB	AMB	19 55 33.0	
	comp=Z,265nm,0.2s						
ISRB	**Sarab**	**2.91**	**54**	*e*Pn	**Pb**	**19 55 23.2**	**-1.4**
SVAN	**Silvan-Diyarba**	**3.43**	**307**	*e*PN	**Pn**	**19 55 26.8**	**+1.1**
SVAN	**Silvan-Diyarba**	**3.43**	**307**	*e*Pn	**Pn**	**19 55 26.8**	**+1.1**
MAZI	**Mazidag**	**3.65**	**292**	*e*PN	**Pn**	**19 55 30.4**	**+1.7**
MAZI	**Mazidag**	**3.65**	**292**	*e*Pn	**Pn**	**19 55 30.4**	**+1.7**
AGRB	**Hanur-Agry**	**3.68**	**339**	*e*PN	**Pn**	**19 55 30.7**	**+1.5**
AGRB	**Hanur-Agry**	**3.68**	**339**	*e*Pn	**Pn**	**19 55 30.7**	**+1.5**
SVRC	**Sivrice-ELAZID**	**4.84**	**299**	*e*PN	**Pn**	**19 55 47.2**	**+2.0**
SVRC	**Sivrice-ELAZID**	**4.84**	**299**	*e*Pn	**Pn**	**19 55 47.2**	**+2.0**

ISCJB ***14*** *19:57:20.2±1.1, 11°5N±0°2×94°0E±0°2, h200km, mb3.4/9, Error ellipse: s-maj=25.1km s-min=16.0km az=42.2*
IDC ***14*** *19:57:20.2±6.8, 11°37N×93°91E, h184km±60km, mb3.3/9, mb1 3.3/10, mb1mx3.0/61, mbtmp3.8/10, MS3.3/1, Ms1 3.3/1, ms1mx2.4/27, Error ellipse: s-maj=64.2km s-min=16.2km az=51.0*

ISC 14 19:57:22.1±1.3, **11°5N**±0°2×**94°0E**±0°2, **h200**km, **n17**, σ0°**73**/**17**, **mb3.5**/**9**, **Andaman Islands region**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CMAR	**Chiang Mai Arr**	**8.38**	**34**	P	**Pn**	**19 59 20.2**	**-0.2**
	0.1nm,0.3s,baz=222,slow=14,SNR=13						
PKIN	**Phulchoki**	**17.91**	**334**	*e*P	**Pn**	**20 01 18.0**	**-1.4**
GUN	**Gumba**	**18.01**	**336**	*e*P	**P**	**20 01 18.5**	**+0.1**
	7.3nm,0.4s						
DMN	**Daman**	**18.06**	**334**	*e*P	**Pn**	**20 01 19.8**	**-1.4**
KKN	**Kakani**	**18.14**	**334**	*e*P	**P**	**20 01 20.0**	**+0.2**
GKN	**Gorkha**	**18.61**	**333**	*e*P	**P**	**20 01 24.9**	**+0.2**
KOLN	**Koldanda**	**18.89**	**330**	*e*P	**P**	**20 01 28.0**	**+0.1**
PYUN	**Piuthan**	**19.47**	**330**	*e*P	**P**	**20 01 34.2**	**+0.2**
MKAR	**Makanchi Array**	**36.53**	**346**	P	**P**	**20 04 09.3**	**+0.8**
	0.5nm,0.6s,baz=163,slow=7.7,SNR=7.1						
KURBB	**Kurchatov Arra**	**41.01**	**345**	P	**P**	**20 04 45.6**	**+0.1**
	0.5nm,0.7s,baz=168,slow=8.3,SNR=5.6						
GEYT	**Alibeck**	**41.47**	**316**	P	**P**	**20 04 50.0**	**+0.5**
	2.2nm,0.5s,baz=140,slow=9.1,SNR=6.1						
ZALV	**Zalesovo Beam**	**42.95**	**352**	P	**P**	**20 05 02.7**	**+1.6**
	1.3nm,0.4s,baz=178,slow=8.7,SNR=8.7						
ZALV				LR	LR	20 26 35.4	
	comp=Z,32nm,19.1s,baz=68,slow=41						
AKTO	**Aktyubinsk**	**48.73**	**330**	P	**P**	**20 05 46.5**	**+0.1**
	0.5nm,0.3s,baz=96,slow=10,SNR=3.4						
WRA	**Warramunga Arr**	**50.53**	**128**	P	**P**	**20 06 00.1**	**-0.3**
	0.7nm,0.4s,baz=301,slow=10.0,SNR=25						
FINES	**FINESS Array B**	**69.46**	**332**	P	**P**	**20 08 08.0**	**-0.4**
	0.2nm,0.3s,baz=119,slow=10.0,SNR=4.2						
ARCES	**ARCESS Array B**	**71.82**	**340**	P	**P**	**20 08 22.9**	**+0.3**
	0.4nm,0.3s,baz=103,slow=7.3,SNR=6.5						
HFS	**Hagfors**	**75.27**	**329**	P	**P**	**20 08 42.7**	**-0.1**
	0.6nm,0.5s,baz=90,slow=5.8,SNR=4.3						

NIED ***14*** *20:00:00, 37°20N×141°20E, h26km, Mw3.9 Best double couple: M₀9.16000×10¹⁴ NP1:φs52.00000°, δ38.00000°, λ-73.00000°. NP2:φs211.00000°, δ54.00000°, λ-103.00000°.*
IDC ***14*** *20:00:40.2±0.6, 37°19N×141°22E, h0km, mb3.7/18, mb1 4.0/21, mb1mx3.8/47, mbtmp3.8/21, ML3.4/2, MS2.8/6, Ms1 2.8/6, ms1mx2.6/50, Error ellipse: s-maj=17.6km s-min=15.1km az=117.0*
ISCJB ***14*** *20:00:42.1±0.9, 37°16N±0°04×141°36E±0°07, h26km±6km, mb3.7/18, MS2.9/2, Error ellipse: s-maj=9.5km s-min=5.8km az=13.3*
JMA ***14*** *20:00:44.2±0.1, 37°21N×141°22E, h31km±1km, M4.2*
JMA Felt III J1.

ISC 14 20:00:43.8±1.4, **37°18N**±0°04×**141°26E**±0°08, **h24**km±9km, **n42**, σ0°**90**/**42**, **mb3.7**/**18**, **Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JFK	**Kawauchi**	**0.36**	**301**	P	**Pb**	**20 00 51.8**	**+0.1**
JFK				S	**Sb**	**20 00 56.9**	**-0.2**
ONAJ	**Iwakimizuishiy**	**0.38**	**258**	P	**Pb**	**20 00 52.5**	**+0.5**
ONAJ				S	**Sb**	**20 00 58.0**	**+0.4**
JMM	**Marumori**	**0.78**	**331**	P	**Pb**	**20 00 57.8**	**-0.9**
JHO	**Hitachi**	**0.80**	**224**	P	**Pb**	**20 00 58.3**	**-0.7**
JHO				S	**Sb**	**20 01 08.5**	**-0.9**
JFT	**Otama**	**0.81**	**295**	P	**Pb**	**20 00 59.1**	**-0.1**
JFT				S	**Sb**	**20 01 09.4**	**-0.4**
JFY	**Yanaizu**	**1.26**	**281**	P	**Pn**	**20 01 06.1**	**+0.2**
JIO	**Ouri**	**1.27**	**3**	P	**Pn**	**20 01 05.4**	**-0.6**
JOU	**Okura**	**1.27**	**338**	P	**Pn**	**20 01 06.0**	**-0.1**
MJAR	**Matsushiro Arr**	**2.53**	**256**	Pn	**Pn**	**20 01 23.4**	**0.0**
	9.0nm,0.3s,baz=80,slow=16,SNR=20						
MJAR				LR	LR	20 01 54.1	
	comp=Z,27nm,20.7s,baz=80,slow=30						
MJAR				Sn	**Sb**	**20 01 56.4**	**-2.9**
	19nm,0.3s,baz=87,slow=23,SNR=6.2						
JHJ	**Hachijo jima 2**	**4.23**	**197**	Pn	**Pn**	**20 01 48.7**	**+1.9**
	26nm,0.3s,baz=66,slow=20,SNR=3.1						
JHJ				Sn	**Sn**	**20 02 34.9**	**-0.5**
	35nm,0.3s,baz=72,slow=20,SNR=3.5						
ASAJ	**Asahikawa**	**7.00**	**8**	Pn	**Pn**	**20 02 24.9**	**+0.1**
	0.7nm,0.3s,baz=199,slow=17,SNR=8.5						
JNU	**Nakatsue**	**9.42**	**248**	LR	LR	20 06 47.2	
	comp=Z,76nm,19.5s,baz=115,slow=39						
USRK	**Ussuriysk Ar.**	**9.93**	**318**	Pn	**Pn**	**20 03 07.6**	**+2.7**
	0.2nm,0.3s,baz=115,slow=13,SNR=7.9						
JCJ	**Chichijima**	**10.09**	**175**	Pn	**Pn**	**20 03 06.8**	**-0.4**
JCJ				Sn	Sn	20 04 48.6	-11
	2.1nm,0.3s,baz=20,slow=17,SNR=3.1						
KSRS	**Korea Array**	**10.63**	**275**	Pn	Pn	20 03 18.8	+4.3
	baz=92,slow=14,SNR=2.9						
KSRS				LR	LR	20 07 10.1	
	comp=Z,62nm,19.9s,baz=74,slow=37						
KLR	**Kul'dur**	**13.88**	**333**	LR	LR	20 09 00.8	
	comp=Z,43nm,20.4s,baz=150,slow=36						
SONM	**Songino Array**	**27.60**	**304**	P	**P**	**20 06 29.9**	**+0.7**
	0.6nm,0.6s,baz=102,slow=8.5,SNR=6.6						
SONM				PcP	**PcP**	**20 09 46.0**	**-0.3**
	0.2nm,0.5s,baz=130,slow=3.9,SNR=2.8						
SONM				LR	LR	20 17 53.0	
	comp=Z,29nm,18.5s,baz=84,

BNGB	**Bing˜¶ǁ**	**0.38**	**195**	*e*PG	**Pb**	**20 04 26.2**	**+0.4**
BNGB				*e*SG	**Sb**	**20 04 32.4**	**+0.2**
BGOL	**Bingol**	**0.39**	**196**	*i* P	**Pb**	**20 04 26.2**	**+0.3**
BGOL				*i* S	**Sb**	**20 04 32.5**	**+0.2**
BGOL	**Bingol**	**0.39**	**196**	P	**Pb**	**20 04 26.2**	**+0.3**
BGOL				S	**Sb**	**20 04 32.5**	**+0.2**
BNGL	**BINGOL**	**0.49**	**147**	*i* P	**Pn**	**20 04 28.8**	**-1.6**
BNGL				*i* S	**Sb**	**20 04 36.9**	**+1.7**
VRTB	**Varto-Mus**	**0.54**	**112**	*e*PG	**Pb**	**20 04 29.2**	**+0.7**
VRTB	**Varto-Mus**	**0.54**	**112**	*e*Pg	**Pb**	**20 04 29.2**	**+0.7**
BINT	**Bingol**	**0.55**	**207**	*e*Pg	**Pg**	**20 04 26.2**	**-0.5**
BINT				*e*Sg	**Sg**	**20 04 32.4**	**-1.4**
EZM	**Erzurum**	**0.69**	**38**	*e*PG	**Pb**	**20 04 31.8**	**+0.7**
ERZM	**Erzurum**	**0.69**	**38**	*i* P	**Pb**	**20 04 31.4**	**+0.3**
ERZM				*i* S	**Sg**	**20 04 38.0**	**-0.5**
ERZM	**Erzurum**	**0.69**	**38**	P	**Pb**	**20 04 31.5**	**+0.3**
ERZM				S	**Sg**	**20 04 38.0**	**-0.5**
KOPT	**Kop Dagi**	**0.70**	**340**	*i* P	**Pb**	**20 04 31.6**	**+0.3**
KOPT				*i* S	**Sn**	**20 04 42.2**	**-2.7**
KOPT	**Kop Dagi**	**0.70**	**340**	P	**Pb**	**20 04 31.6**	**+0.3**
KOPT				S	**Sn**	**20 04 42.2**	**-2.7**
ERZN	**Erzincan**	**0.87**	**285**	*e*PG	**Pn**	**20 04 35.0**	**-0.6**
TNCL	**Tunceli-Merkez**	**1.01**	**256**	*i* P	**Pn**	**20 04 38.2**	**+0.7**
TNCL				*i* S	**Sn**	**20 04 53.0**	**+0.6**
TNCL	**Tunceli-Merkez**	**1.01**	**256**	P	**Pn**	**20 04 38.2**	**+0.7**
TNCL				S	**Sn**	**20 04 53.0**	**+0.6**
BAYT	**Ayd¨–ntepe-Bay**	**1.15**	**334**	*e*PN	**Pn**	**20 04 40.5**	**+1.0**
BAYT	**Ayd¨–ntepe-Bay**	**1.15**	**334**	*e*Pn	**Pn**	**20 04 40.5**	**+1.0**
PTK	**Pertek**	**1.20**	**247**	*e*PN	**Pn**	**20 04 41.1**	**+1.0**
PTK	**Pertek**	**1.20**	**247**	*e*Pn	**Pn**	**20 04 41.1**	**+1.0**
AGRB	**Hanur-Agry**	**1.70**	**82**	*e*PN	**Pg**	**20 04 49.3**	**+0.4**
AGRB	**Hanur-Agry**	**1.70**	**82**	*e*Pn	**Pg**	**20 04 49.3**	**+0.4**

*IDC **14** 20:14:24.6±1.3, 37°.85N×143°.12E, h0km, mb3.2/5, mb1 3.5/8, mb1mx3.3/46, mbtmp3.4/8, ML3.0/3, Error ellipse: s-maj=30.3km s-min=21.9km az=102.0*
*ISCJB **14** 20:14:25.3±0.8, 37°.90N±0°.06×143°.01E±0°.08, h18km, mb3.2/5, Error ellipse: s-maj=9.4km s-min=7.7km az=144.5*
*JMA **14** 20:14:26.2±0.3, 37°.94N×142°.92E, h14km, M3.5*
ISC 14 20:14:27.4±1.1, 37°.89N±0°.06×142°.9E±0°.1, h18km, n19, σ1§50/16, mb3.2/5, Off east of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**1.37**	**295**	S	**Sn**	**20 15 08.6**	**-0.8**
OFUJ	**Ofunato**	**1.55**	**321**	P	**Pn**	**20 14 52.7**	**-1.5**
OFUJ				S	**Sn**	**20 15 12.0**	**-1.8**
JMM	**Marumori**	**1.70**	**270**	P	**Pn**	**20 14 55.4**	**-0.7**
JMM				*e*S	**Sn**	**20 15 17.5**	**+0.1**
JOM	**Ohasama**	**2.04**	**321**	P	**Pn**	**20 15 01.0**	**+0.1**
JOM				*e*S	**Sn**	**20 15 24.4**	**-1.5**
MJAR	**Matsushiro Arr**	**4.00**	**252**	Pn	**Pn**	**20 15 28.8**	**+0.9**
	0.8nm,0.3s,baz=68,slow=13,SNR=6.5						
MAT	**Matsushiro**	**4.01**	**252**	P	Pg	20 15 53.0	+8.8
MAT				S	Sn	20 15 58.1	-16
JHJ	**Hachijo jima 2**	**5.41**	**209**	Pn	**Pn**	**20 15 45.5**	**-1.7**
	5.7nm,0.3s,baz=36,slow=8.7,SNR=5.5						
JHJ				Sn	**Sn**	**20 16 46.1**	**-2.9**
	6.8nm,0.3s,baz=53,slow=20,SNR=3.7						
ASAJ	**Asahikawa**	**6.23**	**358**	Pn	**Pn**	**20 15 57.1**	**-1.3**
	0.2nm,0.3s,baz=164,slow=17,SNR=3.2						
H11N2	**WAKE ISLAND Hy 27.58**	**124**		T	T	20 49 00.5	
	baz=316,slow=75,SNR=9.1						
H11N1	**WAKE ISLAND Hy 27.59**	**124**		T	T	20 49 00.5	
	baz=316,slow=75,SNR=9.9						
H11N3	**WAKE ISLAND Hy 27.60**	**124**		T	T	20 49 01.1	
	baz=316,slow=75,SNR=13						
SONM	**Songino Array**	**28.33**	**302**	P	**P**	**20 20 21.9**	**+1.6**
	0.2nm,0.6s,baz=108,slow=9.3,SNR=2.4						
H11S1	**WAKE ISLAND Hy 28.35**	**126**		T	T	20 49 57.7	
	baz=318,slow=76,SNR=7.7						
H11S3	**WAKE ISLAND Hy 28.35**	**126**		T	T	20 49 57.7	
	baz=318,slow=76,SNR=6.9						
H11S2	**WAKE ISLAND Hy 28.36**	**126**		T	T	20 49 57.1	
	baz=318,slow=76,SNR=6.7						
MKAR	**Makanchi Array**	**44.70**	**302**	P	**P**	**20 22 41.3**	**+2.1**
	0.2nm,0.7s,baz=78,slow=7.0,SNR=2.7						
KURBB	**Kurchatov Arra**	**46.44**	**308**	P	**P**	**20 22 52.8**	**-0.1**
	0.2nm,0.4s,baz=81,slow=7.9,SNR=4.1						
ILAR	**Eielson Array**	**48.12**	**33**	P	**P**	**20 23 05.6**	**-0.2**
	0.5nm,1.0s,baz=263,slow=6.1,SNR=2.6						
WRA	**Warramunga Arr**	**58.09**	**190**	P	**P**	**20 24 19.8**	**+0.1**
	0.2nm,0.8s,baz=6.8,slow=7.3,SNR=3.0						

IDC 14 20:21:45.1±3.0, 35°.76N×141°.58E, h0km, mb3.2/2, mb1 3.5/5, mb1mx3.2/47, mbtmp3.5/5, ML3.5/3, Error ellipse: s-maj=67.9km s-min=25.2km az=63.0, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MJAR	**Matsushiro Arr**	**2.84**	**287**	Pn	Pn	20 22 33.3	+1.6
	2.4nm,0.3s,baz=107,slow=7.0,SNR=18						
MAT	**Matsushiro**	**2.84**	**287**	P	Pn	20 22 34.1	+2.4
MAT				S	Sn	20 23 03.1	-3.6
JHJ	**Hachijo jima 2**	**3.03**	**210**	Pn	Pn	20 22 32.8	-1.5
	8.3nm,0.3s,baz=72,slow=20,SNR=4.0						
JHJ				Sn	Sn	20 23 04.5	-6.7
	9.4nm,0.3s,baz=73,slow=19,SNR=4.9						
JCJ	**Chichijima**	**8.66**	**176**	Pn	Pn	20 23 51.7	+0.1
	2.6nm,0.3s,baz=275,slow=22,SNR=5.0						
H11N2	**WAKE ISLAND Hy 27.40**	**119**		T	T	20 56 38.5	
	baz=310,slow=75,SNR=13						
H11N1	**WAKE ISLAND Hy 27.40**	**119**		T	T	20 56 37.4	
	baz=310,slow=75,SNR=12						
H11N3	**WAKE ISLAND Hy 27.41**	**119**		T	T	20 56 39.6	
	baz=310,slow=75,SNR=13						
H11S1	**WAKE ISLAND Hy 28.07**	**121**		T	T	20 57 26.9	
	baz=312,slow=75,SNR=40						
H11S3	**WAKE ISLAND Hy 28.07**	**121**		T	T	20 57 25.8	
	baz=312,slow=75,SNR=34						
H11S2	**WAKE ISLAND Hy 28.09**	**121**		T	T	20 57 25.8	
	baz=312,slow=75,SNR=26						
MKAR	**Makanchi Array**	**44.92**	**303**	P	P	20 30 00.5	-1.0
	0.1nm,0.5s,baz=81,slow=9.1,SNR=2.9						
WRA	**Warramunga Arr**	**55.82**	**188**	P	P	20 31 24.6	+0.4
	0.4nm,0.6s,baz=3.9,slow=7.5,SNR=9.5						

*IDC **14** 20:28:01.9±0.8, 35°.96N×141°.29E, h0km, mb3.6/10, mb1 3.8/14, mb1mx3.7/58, mbtmp3.7/14, ML3.6/4, MS3.3/7, Ms1 3.3/7, ms1mx2.8/57, Error ellipse: s-maj=20.6km s-min=16.2km az=109.0*
*ISCJB **14** 20:28:05.1±0.6, 36°.05N±0°.04×141°.22E±0°.06, h31km, mb3.5/10, MS3.8/3, Error ellipse: s-maj=7.4km s-min=5.9km az=18.8*
*JMA **14** 20:28:06.6±0.1, 36°.03N×141°.08E, h39km±2km, M3.4*
ISC 14 20:28:06.4±0.7, 36°.01N±0°.05×141°.18E±0°.08, h31km, n33, σ1§05/26, mb3.5/10, MS4.0/3, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CHOJ	**Chosi**	**0.40**	**221**	P	**Pb**	**20 28 15.4**	**0.0**
CHOJ				S	**Sn**	**20 28 21.8**	**-0.8**
JHO	**Hitachi**	**0.78**	**321**	P	**Pn**	**20 28 19.8**	**-1.5**
JYT	**Yasato**	**0.83**	**286**	P	**Pn**	**20 28 20.6**	**-1.4**
JYT				S	**Sn**	**20 28 30.7**	**-2.4**
BSO3	**Boso 3**	**1.32**	**205**	P	**Pb**	**20 28 30.5**	**0.0**
MJAR	**Matsushiro Arr**	**2.46**	**283**	Pn	**Pn**	**20 28 44.6**	**+0.2**
	12nm,0.3s,baz=114,slow=7.4,SNR=101						
MJAR				LR	LR	20 29 48.0	
	comp=Z,190nm,18.7s,baz=130,slow=42						
MAT	**Matsushiro**	**2.46**	**283**	P	**Pn**	**20 28 44.7**	**+0.2**
MAT				S	**Sn**	**20 29 14.2**	**+0.7**
JHJ	**Hachijo jima 2**	**3.10**	**202**	Pn	**Pn**	**20 28 53.5**	**+0.2**
	5.0nm,0.3s,baz=90,slow=20,SNR=3.1						
JHJ				Sn	**Sn**	**20 29 30.3**	**+1.0**
	36nm,0.3s,baz=62,slow=23,SNR=9.3						
ASAJ	**Asahikawa**	**8.17**	**7**	Pn	**Pn**	**20 30 01.8**	**-1.0**
	0.8nm,0.3s,baz=205,slow=9.3,SNR=5.8						
JCJ	**Chichijima**	**8.93**	**174**	Pn	**Pn**	**20 30 11.3**	**-1.9**
	4.4nm,0.3s,baz=308,slow=21,SNR=5.1						
JCJ				Sn	Sn	20 31 44.2	-8.5
	baz=270,slow=20						
JNU	**Nakatsue**	**8.97**	**254**	LR	LR	20 33 51.3	
	comp=Z,51nm,20.9s,baz=303,slow=39						
KSRS	**Korea Array**	**10.74**	**282**	LR	LR	20 34 24.1	
	comp=Z,69nm,18.8s,baz=111,slow=35						
USRK	**Ussuriysk Ar.**	**10.79**	**322**	Pn	Pn	20 30 43.0	+4.4
	0.2nm,0.3s,baz=140,slow=15,SNR=3.8						
USRK				LR	LR	20 34 30.7	
	comp=Z,100nm,18.5s,baz=136,slow=36						
H11N2	**WAKE ISLAND Hy 27.80**	**119**		T	T	21 02 55.2	
	baz=311,slow=75,SNR=122						
H11N1	**WAKE ISLAND Hy 27.81**	**119**		T	T	21 02 53.8	
	baz=311,slow=75,SNR=92						
H11N3	**WAKE ISLAND Hy 27.82**	**119**		T	T	21 02 55.1	
	baz=311,slow=75,SNR=120						
SONM	**Songino Array**	**28.22**	**306**	P	**P**	**20 33 56.6**	**+0.1**
	0.5nm,0.6s,baz=104,slow=8.7,SNR=6.8						
H11S1	**WAKE ISLAND Hy 28.48**	**121**		T	T	21 03 44.6	
	baz=313,slow=75,SNR=57						
H11S3	**WAKE ISLAND Hy 28.48**	**121**		T	T	21 03 44.6	
	baz=313,slow=75,SNR=62						
H11S2	**WAKE ISLAND Hy 28.49**	**121**		T	T	21 03 46.3	
	baz=313,slow=75,SNR=47						
CMAR	**Chiang Mai Arr**	**41.06**	**256**	P	**P**	**20 35 47.4**	**+0.1**
	0.2nm,0.8s,baz=55,slow=7.8,SNR=3.9						
ZALV	**Zalesovo Beam**	**42.47**	**313**	P	**P**	**20 35 59.1**	**+0.7**
	0.5nm,0.5s,baz=104,slow=6.1,SNR=3.4						
ZALV				PcP	**PcP**	**20 37 51.8**	**+1.0**
	0.3nm,0.3s,baz=79,slow=4.8,SNR=3.7						
MKAR	**Makanchi Array**	**44.51**	**303**	P	**P**	**20 36 16.4**	**+1.4**
	1.5nm,0.6s,baz=89,slow=10,SNR=26						
ILAR	**Eielson Array**	**50.46**	**32**	P	**P**	**20 37 01.9**	**+1.0**
	0.3nm,0.7s,baz=270,slow=7.2,SNR=3.4						
AAK	**Ala-Archa**	**50.82**	**299**	LR	LR	20 59 51.3	
	comp=Z,24nm,18.7s,baz=30,slow=38						
WRA	**Warramunga Arr**	**56.02**	**188**	P	**P**	**20 37 41.6**	**-0.7**
	0.6nm,0.5s,baz=6.0,slow=7.7,SNR=15						
BBB	**Bella Bella**	**62.93**	**44**	LR	LR	21 01 50.6	
	comp=Z,100nm,19.8s,baz=284,slow=32						
RES	**Resolute Bay**	**63.64**	**14**	LR	LR	21 06 04.4	
	comp=Z,112nm,22.0s,baz=7.0,slow=36						
YKA	**Yellowknife Ar**	**64.79**	**30**	P	**P**	**20 38 42.1**	**+0.5**
	0.3nm,0.7s,baz=298,slow=6.4,SNR=5.5						
FINES	**FINESS Array B**	**69.63**	**332**	P	**P**	**20 39 13.0**	**+0.6**
	1.2nm,0.7s,baz=36,slow=3.5,SNR=4.6						
NB2	**NORSAR Subarra**	**75.06**	**337**	P	**P**	**20 39 45.8**	**+1.0**
	comp=Z,0.6nm,0.7s,baz=41,slow=5.9						
NOA	**NORSAR Array B**	**75.06**	**337**	P	**P**	**20 39 45.8**	**+1.0**
	comp=Z,0.9nm,0.7s,baz=39,slow=5.8,SNR=4.0						
PDAR	**Pinedale Array**	**78.52**	**45**	P	**P**	**20 40 04.3**	**-0.7**
	comp=Z,0.3nm,0.6s,baz=284,slow=1.2,SNR=3.4						
LPAZ	**La Paz**	**147.37**	**61**	PKPbc	**PKPbc**	**20 47 48.1**	**-0.2**
	comp=Z,1.3nm,0.4s,baz=336,slow=5.9,SNR=3.2						

*IDC **14** 20:33:24.5±1.1, 10°.09S×119°.62E, h0km, mb3.7/5, mb1 3.7/10, mb1mx3.6/40, mbtmp3.6/10, ML3.5/5, MS2.9/1, Ms1 2.9/1, ms1mx2.4/44, Error ellipse: s-maj=40.5km s-min=17.9km az=54.0*
*DJA **14** 20:33:28.1±0.6, 10°.S±6°×12°.0E±°, h10km, M4.1/8, mb4.4/1, MLv4.0/8*
ISC 14 20:33:25.3±0.8, 10°.13S±0°.06×119°.61E±0°.04, h10km, n24, σ1§34/23, mb4.0/5, Sumba region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
WSI	**Waingapu**	**0.82**	**56**	P	**Pn**	**20 33 42.0**	**-0.9**
WSI				S	**Sn**	**20 33 57.8**	**+2.7**
BASI	**Baing, Sumba**	**0.95**	**95**	P	**Pn**	**20 33 44.5**	**-0.3**
BASI				S	**Sn**	**20 33 58.2**	**-0.3**
PLAI	**Plampang**	**2.23**	**305**	P	**Pg**	**20 34 06.8**	**-1.3**
PLAI				S	**Sg**	**20 34 36.7**	**-0.3**
EDFI	**Ende, Flores**	**2.47**	**56**	P	**Pg**	**20 34 10.8**	**-1.9**
EDFI				S	**Sb**	**20 34 40.7**	**+0.3**
TWSI	**Taliwang, Sumb**	**3.03**	**297**	P	**Pb**	**20 34 17.4**	**-2.0**
BATI	**Baumata**	**3.99**	**91**	Pn	**Pn**	**20 34 28.2**	**+1.5**
	3.9nm,0.3s,baz=280,slow=24,SNR=7.5						
BSSI	**Bau Bau, Buton**	**4.06**	**12**	P	Pn	20 34 30.7	+3.1
SOEI	**Soe**	**4.60**	**86**	P	Pn	20 34 37.5	+2.4
KAPI	**Kappang**	**5.09**	**2**	Pn	**Pn**	**20 34 43.3**	**+1.6**
	6.6nm,0.3s,baz=192,slow=4.8,SNR=33						
KAPI				Sn	**Sn**	**20 35 41.7**	**+1.1**
	0.8nm,0.3s,baz=134,slow=16,SNR=2.9						
KAPI				LR	LR	20 36 55.3	
	comp=Z,108nm,18.5s,baz=203,slow=42						
SPSI	**Sidrap Palu**	**6.13**	**1**	P	**Pb**	**20 35 10.7**	**-1.6**
GMJI	**Gumukmas**	**6.36**	**286**	P	**Pb**	**20 35 15.1**	**-1.2**
TTSI	**Tana Toraja**	**7.04**	**2**	P	Pb	20 35 17.1	-11
FITZ	**Fitzroy Crossi**	**9.84**	**144**	Pn	**Pn**	**20 35 47.5**	**+0.4**
	0.3nm,0.3s,baz=330,slow=12,SNR=9.6						
FITZ				Sn	Sn	20 37 30.0	-7.6
	0.4nm,0.3s,baz=301,slow=12,SNR=4.7						
WRA	**Warramunga Arr**	**17.23**	**126**	P	**Pn**	**20 37 25.2**	**-1.1**
	0.1nm,0.3s,baz=306,slow=14,SNR=14						
WRA				S	Sn	20 40 24.6	-14
	0.1nm,0.3s,baz=295,slow=22,SNR=3.6						
ASAR	**Alice Springs**	**19.16**	**136**	P	**Pn**	**20 37 50.9**	**+0.9**
	0.1nm,0.3s,baz=320,slow=13,SNR=10						
CMAR	**Chiang Mai Arr**	**34.97**	**324**	P	**P**	**20 40 19.3**	**+1.3**
	0.2nm,0.5s,baz=158,slow=7.3,SNR=12						
H08S2	**Diego Garcia H**	**46.59**	**269**	T	T	21 31 54.6	
	baz=97						
H08S3	**Diego Garcia H**	**46.60**	**269**	T	T	21 31 52.9	
	baz=97						
H08S1	**Diego Garcia H**	**46.61**	**269**	T	T	21 31 54.6	
	baz=97						
SONM	**Songino Array**	**58.89**	**350**	P	**P**	**20 43 24.7**	**+0.1**
	0.1nm,0.4s,baz=170,slow=7.7,SNR=5.4						
MKAR	**Makanchi Array**	**65.73**	**333**	P	**P**	**20 44 10.5**	**+0.1**
	0.7nm,0.6s,baz=143,slow=7.7,SNR=10						
ZALV	**Zalesovo Beam**	**70.31**	**339**	P	**P**	**20 44 38.1**	**-0.8**
	0.5nm,0.4s,baz=135,slow=5.4,SNR=3.0						
SEY	**Seymchan**	**77.10**	**15**	P	**P**	**20 45 18.8**	**+0.2**
	0.5nm,0.2s,baz=240,slow=6.1,SNR=3.9						
TORD	**Torodi Ar. Bea**	**119.25**	**279**	PKP	**PKPdf**	**20 52 17.6**	**+1.8**
	0.2nm,0.6s,baz=59,slow=3.3,SNR=2.2						

*IDC **14** 20:38:38.5±3.4, 19°.45S×170°.09E, h0km, mb3.8/5, mb1 4.0/6, mb1mx3.8/39, mbtmp3.8/6, ML3.2/1, MS3.5/5, Ms1 3.5/5, ms1mx3.1/42, Error ellipse: s-maj=114.7km s-min=29.4km az=139.0*
*ISCJB **14** 20:38:42.7±2.6, 19°.6S±0°.4×169°.9E±0°.5, h33km, mb3.8/5, MS3.5/3, Error ellipse: s-maj=83.2km s-min=11.8km az=42.3*
ISC 14 20:38:44.1±2.9, 19°.6S±0°.5×170°.0E±0°.5, h35km, n15, σ1§28/7, mb3.7/5, MS3.5/3, Vanuatu Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
DZM	**Mont Dzumac**	**4.14**	**232**	Pn	**Pn**	**20 39 46.1**	**+1.1**
	1.4nm,0.3s,baz=90,slow=20,SNR=4.3						
DZM				Sn	**Sn**	**20 40 30.6**	**-1.6**
	2.6nm,0.3s,baz=142,slow=19,SNR=2.9						
DZM				LR	LR	20 40 34.8	
	comp=Z,229nm,19.9s,baz=73,slow=27						
AFI	**Afiamalu**	**18.35**	**75**	LR	LR	20 48 27.1	
	comp=Z,179nm,20.9s,baz=14,slow=32						
RPZ	**Rata Peaks**	**24.10**	**178**	LR	LR	20 52 38.4	
	comp=Z,275nm,20.0s,baz=32,slow=35						
STKA	**Stephens Creek**	**28.27**	**239**	LR	LR	20 54 47.2	
	comp=Z,90nm,21.3s,baz=30,slow=34						
WRA	**Warramunga Arr**	**33.51**	**263**	P	**P**	**20 45 19.9**	**-0.6**
	0.6nm,0.8s,baz=94,slow=8.5,SNR=4.4						
ASAR	**Alice Springs**	**33.73**	**256**	P	**P**	**20 45 23.1**	**+0.6**
	2.4nm,0.8s,baz=86,slow=8.9,SNR=14						
ASAR				LR	LR	20 59 17.4	
	comp=Z,87nm,18.0s,baz=90,slow=37						
H11S2	**WAKE ISLAND Hy 37.95**	**355**		T	T	21 26 03.0	
	baz=181,slow=76,SNR=10						
H11S3	**WAKE ISLAND Hy 37.96**	**355**		T	T	21 26 04.1	
	baz=181,slow=76,SNR=8.0						
H11S1	**WAKE ISLAND Hy 37.97**	**355**		T	T	21 26 04.3	
	baz=181,slow=76,SNR=7.8						
H11N1	**WAKE ISLAND Hy 39.15**	**355**		T	T	21 27 31.8	
	baz=190,slow=74,SNR=4.2						
H11N3	**WAKE ISLAND Hy 39.15**	**355**		T	T	21 27 30.4	
	baz=190,slow=74,SNR=2.8						
H11N2	**WAKE ISLAND Hy 39.17**	**355**		T	T	21 27 30.9	
	baz=190						
CMAR	**Chiang Mai Arr**	**79.27**	**294**	P	**P**	**20 50 46.6**	**+0.2**
	0.6nm,0.9s,baz=129,slow=4.8,SNR=6.1						
SONM	**Songino Array**	**87.90**	**323**	P	**P**	**20 51 30.9**	**+0.7**
	0.8nm,0.9s,baz=134,slow=4.3,SNR=6.2						
ILAR	**Eielson Array**	**90.33**	**17**	P	**P**	**20 51 39.9**	**-1.2**
	0.2nm,0.5s,baz=223,slow=4.9,SNR=2.7						

MEX 14 20:44:23.8±0.7, 17°.79N×101°.29W, h28km±9km, MD3.7, Near coast of Guerrero

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ZIIG	**Zihuatanejo**	**0.24**	**224**	*i* P	**Pb**	**20 44 28.5**	**-1.8**
ZIIG				*e*S	**Sb**	**20 44 33.4**	**-1.3**
ARIG	**Puente Sto Nin**	**1.02**	**61**	*e*P	**Pn**	**20 44 39.8**	**-2.5**
ARIG				*i* S	**Sn**	**20 44 51.7**	**-4.1**
CAIG	**El Cayaco**	**1.22**	**127**	*e*P	**Pn**	**20 44 42.4**	**-2.6**
CAIG				*i* S	**Sn**	**20 44 57.2**	**-3.4**
MEIG	**Mezcala**	**1.59**	**85**	*i* P	**Pn**	**20 44 48.0**	**-2.2**
MEIG				*i* S	**Sn**	**20 45 07.3**	**-2.7**
PLIG	**Platanillo**	**1.80**	**70**	*e*P	**Pn**	**20 44 51.1**	**-2.1**
PLIG				*i* S	**Sn**	**20 45 12.4**	**-2.8**
MMIG	**Aquila**	**2.02**	**285**	*i* P	**Pn**	**20 44 54.6**	**-1.5**
MMIG				*i* S	**Sn**	**20 45 16.7**	**-3.7**
TLIG	**Tlapa**	**2.60**	**94**	*e*P	**Pn**	**20 45 03.4**	**-0.8**
TLIG				*i* S	**Sn**	**20 45 33.4**	**-1.6**

*IDC **14** 20:50:11.5±0.3, 11°.48N×86°.06W, h0km, mb4.9/34, mb1 4.9/36, mb1mx4.9/46, mbtmp4.9/36, ML4.2/2, MS5.3/32, Ms1 5.3/32, ms1mx5.2/44, Error ellipse: s-maj=16.7km s-min=8.9km az=59.0*
*NEIC **14** 20:50:15.1±0.2, 11°.24N×86°.34W, h22km, mb5.6/216, ME5.2, MS5.4/139, MW5.6, MW5.7, MD5.4(SNET), Error ellipse: s-maj=5.7km s-min=3.4km az=46.0, Moment Tensor Solution. s33 Moment tensor: Scale 10¹⁷Nm; Mrr2.36; Mθθ-1.84; Mϕϕ-0.52; Mrθ1.17; Mrϕ1.00; Mθϕ-0.58; Best double couple: M☉2.70000×10¹⁷ NP1:ϕs117.00000°, δ59.00000°, λ89.00000°. NP2:ϕs299.00000°, δ31.00000°, λ92.00000°. Principal axes: T 2.6900, Plg76.0000°, Azm25.0000°; N 0.0200, Plg1.0000°, Azm118.0000°; P -2.7100, Plg14.0000°, Azm208.0000°; Depth from synthetics of broadband displacement seismograms. Energy computed from CMT mechanism.*
NEIC Felt [III] at Managua. Felt widely in western Nicaragua. Felt [III] at Sardinal, Costa Rica. Felt in northwestern Costa Rica and in the Valle Central. Felt [I] at San Salvador, El Salvador.
*CASC **14** 20:50:16.3±2.2, 11°.02N×86°.57W, h22km±8km, MD4.9, ML4.9, mb5.6(NEIC)*
*GCMT **14** 20:50:16.5±0.1, 10°.85N×86°.81W, h34km, MW5.7/123, Moment Tensor Solution. s116,c233; s123,c307; Duration: 1§7 Moment tensor: Scale 10¹⁷Nm; Mrr3.62±.04; Mθθ-2.56±.03; Mϕϕ-1.06±.04; Mrθ2.04±.05; Mθϕ1.99±.03; Mrϕ-1.35±.05; Best double couple: M☉4.50100×10¹⁷ NP1:ϕs124.00000°, δ61.00000°, λ89.00000°. NP2:ϕs305.00000°, δ29.00000°, λ91.00000°. Principal axes: T 4.3430, Plg74.0000°, Azm32.0000°; N 0.3160, Plg1.0000°, Azm124.0000°; P -4.6590, Plg16.0000°, Azm215.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface/mantle waves, cutoff=50s.*
*ISCJB **14** 20:50:18.8±0.2, 11°.30N±0°.03×86°.32W±0°.02, h72km±2km, mb5.4/243 Error ellipse: s-maj=5.1km s-min=2.4km az=39.0*
*BJI **14** 20:50:19.5, 11°.30N×86°.30W, h56km, mB5.5/40, Ms5.9/50, Ms7 5.6/49*
*NEIC **14** 20:50:19.0±0.0, 11°.11N×86°.25W, h35km, Moment Tensor Solution. s21 Moment tensor: Scale 10¹⁷Nm; Mrr3.40; Mθθ-2.20; Mϕϕ-1.20; Mrθ2.10; Mrϕ2.30; Mθϕ-2.20; Best double couple: M☉5.00000×10¹⁷ NP1:ϕs133.00000°, δ65.00000°, λ95.00000°. NP2:ϕs302.00000°, δ26.00000°, λ80.00000°. Principal axes: T 4.5000, Plg69.0000°, Azm53.0000°; N 0.7000, Plg4.0000°, Azm311.0000°; P -5.2000, Plg19.0000°, Azm219.0000°;*
*MOS **14** 20:50:19.1±1.1, 11°.52N×86°.09W, h64km, mb5.7/43, MS5.4/29 Error ellipse: s-maj=9.3km s-min=4.3km az=114.3*
ISC 14 20:50:19.0±0.4, 11°.28N±0°.04×86°.36W±0°.04, h55km±2km, h55km:pP-P, n1213, σ1§50/1182, mb5.5/247, MS5.4/200, 13C-6D, Near coast of Nicaragua

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
COPN	**Copaltepe**	**0.92**	**346**	*i* P	**Pn**	**20 50 36.4**	**+0.6**
GB1A	**Borinquen Arri**	**1.05**	**116**	*e*P	**Pn**	**20 50 37.0**	**-0.6**
GB1A				*e*S	**Sn**	**20 50 55.6**	**+4.1**
BUEV	**Buena Vista**	**1.05**	**117**	*e*P	**Pn**	**20 50 36.9**	**-0.8**
BUEV				*e*S	**Sn**	**20 50 52.4**	**+0.9**
APPA	**Casa M˜¡quinas**	**1.11**	**118**	*e*P	**Pn**	**20 50 38.7**	**+0.2**
APPA				*e*S	**Sn**	**20 50 54.7**	**+1.8**
GPS1	**Guardaparques**	**1.11**	**117**	*e*P	**Pn**	**20 50 37.8**	**-0.7**
GPS1			

comp=Z,12µm,18.8s,baz=322,slow=38
GTBY Guantanamo Bay 13.82 50 *e*Pn **Pn** **20 53 33.7 +1.5**
BARC Barichara 13.83 109 *e*P **Pn** **20 53 35.8 +3.3**
VILC Villavicencio, 14.43 119 *e*P **P** **20 53 45.8 -0.1**
YOPC Yopal, Colombi 14.99 112 *e*P **P** **20 53 50.2 -1.9**
SDV Santo Domingo 15.67 97 Pn **Pn** **20 53 57.8 +1.2**
comp=Z,2.7nm,0.3s,baz=276,slow=11,SNR=24
SDV LR LR 21 01 19.0
comp=Z,5µm,19.0s,baz=298,slow=43
SDV Santo Domingo 15.67 97 *e*Pn **P** **20 53 59.5 -0.2**
comp=Z,355nm,1.4s
SDDR Presa de Saban 16.43 60 *e*Pn **P** **20 54 09.6 +1.6**
comp=Z,658nm,1.9s
DWPF Disney Wildern 17.37 15 *e*Pn **P** **20 54 20.7 +2.4**
comp=Z,164nm,0.8s
646A Port Sulphur 18.49 350 P **Pn** **20 54 34.1 +2.8**
baz=169
645A Chauvin 18.51 348 P **Pn** **20 54 33.5 +2.0**
baz=167
035Z Hargill 18.70 325 P **P** **20 54 33.5 +0.6**
baz=142,SNR=18
035Z S **S** **20 58 02.5 -0.7**
baz=142
545A Edgard 19.06 349 P **Pn** **20 54 39.9 +1.8**
baz=168
035A Encino 19.10 326 P **Pn** **20 54 38.3 -0.2**
baz=143,SNR=16
546A Slidell 19.11 351 P **Pn** **20 54 40.2 +1.5**
baz=170
ZAIG Zacatecas 19.23 309 *e*P **Pn** **20 54 40.9 +0.4**
comp=Z,659nm,2.0s
544A White Castle 19.26 347 P **Pn** **20 54 41.8 +1.4**
baz=166
543A St. Martinvill 19.39 346 P **Pn** **20 54 43.2 +1.1**
baz=164
KVTX Kingsville 19.47 328 *e*P **P** **20 54 40.6 -0.7**
comp=Z,1µm,1.8s
738A Farr-Stevens R 19.51 335 P **Pn** **20 54 44.1 +0.7**
baz=152
034A Hebbronville 19.52 325 P **P** **20 54 42.9 +1.0**
baz=142,SNR=73
447A Lucedale 19.53 354 P **Pn** **20 54 45.2 +1.5**
baz=173
448A Bay Minette 19.60 356 P **Pn** **20 54 45.8 +1.3**
baz=176,SNR=6.8
446A Poplarville 19.61 352 P **Pn** **20 54 45.5 +0.9**
baz=171,SNR=11
542A Morse 19.61 344 P **Pn** **20 54 46.1 +1.5**
baz=162
445A Amite 19.70 350 P **Pn** **20 54 46.3 +0.6**
baz=168
541A Lake Charles 19.73 342 P **Pn** **20 54 47.4 +1.4**
baz=160,SNR=5.0
444A Pine Grove 19.76 349 P **Pn** **20 54 46.9 +0.5**
baz=167
737A Port Lavaca 19.78 333 P **Pn** **20 54 46.8 +0.1**
baz=150,SNR=5.3
BRAL Brewton 19.80 358 *e*P **P** **20 54 44.9 0.0**
comp=Z,1µm,1.7s
MPR Mayaguez 19.81 67 *e*P **Pn** **20 54 48.7 +1.5**
comp=Z,732nm,1.9s
934A Benavides 19.85 327 P **P** **20 54 46.6 +1.2**
baz=143,SNR=22
AGP Aguadilla 19.87 67 *e*P **Pn** **20 54 49.0 +1.1**
comp=Z,510nm,1.2s
638A Rosharon 19.94 336 P **Pn** **20 54 49.2 +0.7**
baz=153,SNR=22
ATAH Atahualpa 19.94 156 P **Pn** **20 54 48.1 -1.0**
comp=Z,0.1nm,0.3s,baz=328,slow=17,SNR=8.8
ATAH LR LR 21 01 37.0
comp=Z,20µm,19.2s,baz=334,slow=34
443A Delano Plantat 20.03 346 P Pn 20 54 49.4 -0.2
baz=164
835A Beeville 20.04 329 P **P** **20 54 48.2 +0.7**
baz=146,SNR=16
348A Jackson 20.08 356 P Pn 20 54 51.1 +0.9
baz=176
540A Vidor 20.12 341 P Pn 20 54 51.4 +0.8
baz=158,SNR=18
347A Saraland 20.12 355 P Pn 20 54 51.2 +0.5
baz=174,SNR=9.4
442A Mamou 20.14 345 P Pn 20 54 51.1 +0.2
baz=163
346A Big Creek Wild 20.21 352 P Pn 20 54 51.8 +0.1
baz=171
345A Thompson Farm, 20.21 351 P Pn 20 54 51.3 -0.4
baz=170
TIGA Tifton 20.22 7 P Pn 20 54 52.4 +0.5
baz=188,SNR=32
TIGA Tifton 20.22 7 *e*P Pn 20 54 52.5 +0.6
comp=Z,2µm,1.6s
736A Circle Diamond 20.23 332 P **P** **20 54 50.9 +1.3**
baz=148,SNR=23
933A Laredo 20.27 325 P **P** **20 54 50.0 -0.1**
baz=141,SNR=51
834A Tilden 20.28 327 P **P** **20 54 50.6 +0.4**
baz=144,SNR=75
539A Cross D Ranch, 20.28 339 P Pn 20 54 52.8 +0.3
baz=156,SNR=7.3
CELP Cerrillos 20.28 68 *e*P **P** **20 54 50.1 -0.2**
637A Eagle Lake 20.32 334 P **P** **20 54 52.1 +1.6**
baz=151,SNR=36
441A DeRidder 20.38 343 P Pn 20 54 53.9 +0.1
baz=161,SNR=9.1
344A Westbrook Farm 20.48 349 P Pn 20 54 54.4 -0.4
baz=168,SNR=47
343A Vidalia 20.49 347 P **P** **20 54 54.0 +1.6**
baz=165
735A Kenedy 20.50 330 P **P** **20 54 52.6 +0.1**
baz=146,SNR=7.9
HKT Hockley 20.56 336 *e*P **P** **20 54 54.5 +1.4**
HKT pmax pmax
comp=Z,3µm,1.9s
HKT Hockley 20.56 336 *e*P **P** **20 54 54.5 +1.4**
comp=Z,3µm,1.9s
440A Kirbyville 20.61 341 P Pn 20 54 55.7 -0.7
baz=159,SNR=27
538A Harpers Horsep 20.67 337 P Pn 20 54 56.5 -0.6
baz=154,SNR=9.8
636A Smothers Creek 20.67 333 P **P** **20 54 55.8 +1.4**
baz=149,SNR=92
SJG San Juan 20.68 68 P **P** **20 54 56.4 +1.8**
comp=Z,29nm,0.6s,baz=265,slow=12,SNR=10
SJG LR LR 21 02 03.2
comp=Z,7µm,21.3s,baz=240,slow=35
SJG San Juan 20.68 68 *e*P **P** **20 54 52.6 -2.0**
SJG San Juan 20.68 68 *e*P **P** **20 54 52.6 -2.0**
342A Flagon Creek P 20.74 345 P **P** **20 54 56.7 +1.6**
baz=163,SNR=12
248A Dixon Mills 20.75 357 P Pn 20 54 57.4 -0.7
baz=176,SNR=9.6
247A Quitman 20.77 355 P **P** **20 54 57.6 +2.1**
baz=174
246A Jackson Lee, B 20.79 353 P **P** **20 54 57.2 +1.5**
baz=172
734A La Parita Cree 20.86 329 P **P** **20 54 56.0 -0.4**
baz=145,SNR=18
537A Green Hill Far 20.87 335 P **P** **20 54 57.8 +1.3**
baz=152,SNR=91
833A Chaparral WMA, 20.89 326 P **P** **20 54 56.6 -0.2**
baz=142,SNR=34
245A Little AP, Sta 20.91 352 P **P** **20 54 58.6 +1.7**
baz=170,SNR=12
439A Center Grove, 20.92 339 P Pn 20 54 59.2 -0.9
baz=156,SNR=14
635A Leesville 20.92 331 P **P** **20 54 56.9 -0.2**
baz=147,SNR=16
341A Kurthwood 20.92 344 P **P** **20 54 58.5 +1.4**
baz=161,SNR=26
CBYP Canovanas 21.00 68 *e*P **P** **20 55 01.3 +3.2**
comp=Z,200nm,1.3s
244A Avery, Jackson 21.04 350 P **P** **20 54 59.9 +1.6**
baz=168,SNR=23
438A Sam Houston St 21.14 338 P **P** **20 55 01.1 +1.7**
baz=155,SNR=21
733A Divot King Ran 21.15 327 P **P** **20 54 59.1 -0.4**
baz=143,SNR=22
832A Faith Ranch, C 21.18 325 P **P** **20 54 59.2 -0.7**
baz=141,SNR=21
536A Bastrop 21.18 334 P **P** **20 55 00.4 +0.5**
baz=150,SNR=24
VBMS Vicksburg 21.18 350 P **P** **20 55 01.3 +1.5**
baz=169,SNR=10
VBMS Vicksburg 21.18 350 *e*P **P** **20 55 02.9 +3.0**
comp=Z,434nm,0.9s
634A China Grove, S 21.20 330 P **P** **20 54 59.3 -0.8**
baz=146,SNR=5.6
340A Bronson 21.21 342 P **P** **20 55 01.5 +1.3**
baz=159,SNR=25
339A Huntington 21.34 340 P **P** **20 55 03.0 +1.4**
baz=158,SNR=19
242A Grayson 21.36 346 P **P** **20 55 02.9 +1.2**
baz=164,SNR=6.8
147A Livingston 21.36 356 P **P** **20 55 03.5 +1.8**
baz=175
535A Dale 21.37 332 P **P** **20 55 01.7 -0.2**
baz=149,SNR=27
146A Union 21.40 354 P **P** **20 55 04.2 +2.1**
baz=173,SNR=10.0
437A Phantom Ranch, 21.46 336 P **P** **20 55 03.9 +1.1**
baz=153,SNR=9.8
145A Houston Renfro 21.47 352 P **P** **20 55 04.5 +1.6**
baz=170,SNR=16
241A Mo Tay, Goldon 21.51 345 P **P** **20 55 04.4 +1.1**
baz=162
144A Alexander Plac 21.57 351 P **P** **20 55 05.4 +1.4**
baz=169
338A Crockett 21.62 339 P **P** **20 55 05.9 +1.3**
baz=156,SNR=29
LRAL Lakeview Retre 21.66 359 *e*P **P** **20 55 07.2 +2.3**
comp=Z,609nm,1.6s
436A Wall Ranch, Ga 21.67 335 P **P** **20 55 05.7 +0.6**
baz=152,SNR=16
633A Saathoff Ranch 21.68 328 P **P** **20 55 04.4 -0.8**
baz=144,SNR=24
240A Hunter Patters 21.76 343 P **P** **20 55 06.7 +0.7**
baz=160,SNR=6.6
NATX Nacogdoches 21.77 341 P **P** **20 55 07.4 +1.2**
baz=158,SNR=47
NATX Nacogdoches 21.77 341 *e*P **P** **20 55 07.4 +1.2**
comp=Z,615nm,0.8s
NATX LR LR
comp=Z,7µm,22.0s
142A Monroe 21.78 347 P **P** **20 55 06.9 +0.7**
baz=165
534A Blanco 21.79 331 P **P** **20 55 05.6 -0.8**
baz=147,SNR=98
337A Centerville 21.80 338 P **P** **20 55 06.9 +0.5**
baz=154,SNR=12
143A Socs Landing, 21.82 348 P **P** **20 55 07.4 +0.8**
baz=167,SNR=5.7
STVI Saint Thomas 21.84 69 *e*P **P** **20 55 08.0 +0.9**
comp=Z,480nm,1.6s
239A Gary 21.95 341 P **P** **20 55 09.0 +0.9**
baz=158,SNR=36
435B Jarrell 22.02 333 P **P** **20 55 09.0 +0.2**
baz=150,SNR=23
141A Papa Simpson, 22.06 345 P **P** **20 55 10.0 +0.8**
baz=163,SNR=20
533A Kerrville 22.10 330 P **P** **20 55 08.8 -1.0**
baz=145,SNR=27
238A Jacksonville 22.15 340 P **P** **20 55 11.6 +1.4**
baz=157,SNR=35
GOGA Godfrey 22.18 6 *e*P **P** **20 55 12.4 +1.8**
GOGA pmax pmax
comp=Z,778nm,1.8s
GOGA MLR MLR
comp=Z,10µm,22.0s
GOGA Godfrey 22.18 6 *e*P **P** **20 55 12.4 +1.8**
comp=Z,778nm,1.8s
GOGA LR LR
comp=Z,10µm,22.0s
336A Riesel 22.23 336 P **P** **20 55 11.5 +0.4**
baz=152,SNR=67
RGRS Roger Stewart 22.26 14 *e*P **P** **20 55 15.1 +3.7**
140A Cam and Jess, 22.27 344 P **P** **20 55 12.4 +0.9**
baz=161,SNR=15
434A Burnet 22.35 332 P **P** **20 55 11.8 -0.6**
baz=148,SNR=78
CSU Charleston Sou 22.36 14 *e*P **P** **20 55 16.2 +3.8**
335A Moody 22.38 334 P **P** **20 55 12.9 +0.1**
baz=151,SNR=81
237A Washetta, Mont 22.39 339 P **P** **20 55 13.5 +0.8**
baz=155,SNR=19
NHSC New Hope 22.45 14 *e*P **P** **20 55 15.5 +2.1**
comp=Z,477nm,1.3s
NHSC LR LR
comp=Z,12µm,20.0s
139A Bunkhouse Ranc 22.54 342 P **P** **20 55 15.3 +0.9**
baz=159,SNR=26
Y47A UCPC, Winfie 22.56 357 P **P** **20 55 16.0 +1.4**
baz=176
236A Katherine and 22.65 337 P **P** **20 55 15.9 +0.2**
baz=154,SNR=25
433A Art 22.69 331 P **P** **20 55 15.0 -1.0**
baz=146,SNR=163
138A Matatall Enter 22.74 341 P **P** **20 55 18.1 +1.6**
baz=158,SNR=111
334A Lometa 22.78 333 P **P** **20 55 16.2 -0.8**
baz=149,SNR=114
Z40A Long Farm, Mag 22.81 345 P **P** **20 55 17.6 +0.4**
baz=162,SNR=17
JCT Junction City 22.82 329 P **P** **20 55 16.4 -1.0**
baz=144,SNR=32
JCT Junction City 22.82 329 *e*P **P** **20 55 16.4 -1.0**
JCT pmax pmax
comp=Z,160nm,0.9s
JCT MLR MLR
comp=Z,3µm,21.0s
JCT Junction City 22.82 329 *e*P **P** **20 55 16.4 -1.0**
comp=Z,160nm,0.9s
JCT *e*ScP **ScP** **21 02 45.5 +5.0**
JCT LR LR
comp=Z,3µm,21.0s
137A Heron Place, G 22.91 339 P **P** **20 55 19.4 +1.2**
baz=156,SNR=59
Y43A Makayla and Ka 22.91 350 P **P** **20 55 18.3 +0.1**
baz=168
Y42A Garnett, Star 22.99 348 P **P** **20 55 19.5 +0.4**
baz=166,SNR=8.0
Z39A Irene McRaven, 23.00 343 P **P** **20 55 20.0 +0.8**
baz=160,SNR=18
WHTX Lake Whitney, 23.01 335 P **P** **20 55 19.2 -0.2**
baz=151
WHTX Lake Whitney, 23.01 335 *e*P **P** **20 55 19.1 -0.2**
comp=Z,191nm,0.7s
CCAR Cane Creek 23.07 348 *e*P **P** **20 55 21.1 +1.3**
comp=Z,655nm,1.0s
136A Ennis 23.08 338 P **P** **20 55 20.4 +0.5**
baz=154,SNR=40
333A Richland Sprin 23.11 332 P **P** **20 55 19.4 -0.9**
baz=147,SNR=214
WLAR White Oak Lake 23.14 346 *e*P **P** **20 55 22.0 +1.4**
comp=Z,2µm,1.9s
Z38A Mt. Pleasant 23.25 341 P **P** **20 55 22.3 +0.6**
baz=158,SNR=28
OXF Oxford 23.29 354 *e*P **P** **20 55 22.3 +0.3**
OXF pmax pmax
comp=Z,450nm,1.0s
OXF Oxford 23.29 354 *e*P **P** **20 55 22.3 +0.3**
comp=Z,450nm,1.0s
234A Clairette 23.31 334 P **P** **20 55 22.0 -0.3**
baz=150,SNR=35
Z37A Pogue Cattle C 23.41 340 P **P** **20 55 23.6 +0.5**
baz=157,SNR=50
135A Vickery Place, 23.49 336 P **P** **20 55 24.0 +0.1**
baz=152,SNR=32
Y40A Okolona 23.49 345 P **P** **20 55 24.1 +0.2**
baz=163,SNR=38
SMRT St. Maarten 23.50 71 *e*P **P** **20 55 23.7 -0.4**
comp=Z,464nm,1.6s
Y39A Lockesburg 23.63 344 P **P** **20 55 25.5 +0.3**
baz=161,SNR=44
PLAL Pickwick Lake 23.64 356 *e*P **P** **20 55 25.8 +0.4**
comp=Z,161nm,0.9s
233A Rising Star 23.66 333 P **P** **20 55 25.3 -0.2**
baz=148,SNR=92
Z36A Blue Ridge 23.76 339 P **P** **20 55 26.3 -0.1**
baz=155,SNR=36
134A White-Moore Ra 23.77 335 P **P** **20 55 26.3 -0.3**
baz=151,SNR=40
Y38A Idabel 23.80 343 P **P** **20 55 26.7 -0.1**
baz=159,SNR=22
SWET Sewanee 23.83 1 *e*P **P** **20 55 27.9 +0.8**
comp=Z,45nm,1.0s
X40A Basin Creek Fa 23.84 347 P **P** **20 55 27.0 -0.1**
baz=164,SNR=61
HPIG 23.93 313 *e*P **P** **20 55 29.8 +1.5**
comp=Z,76nm,0.8s
UALR University of 24.01 348 *e*P **P** **20 55 28.6 -0.1**
comp=Z,289nm,0.7s
MIAR Mount Ida 24.07 345 P **P** **20 55 29.4 +0.2**
baz=162,SNR=152
MIAR Mount Ida 24.07 345 *e*P **P** **20 55 29.2 -0.1**
MIAR pmax pmax
comp=Z,209nm,0.8s
MIAR MLR MLR
comp=Z,10µm,21.0s
MIAR Mount Ida 24.07 345 *e*P **P** **20 55 29.2 -0.1**
comp=Z,209nm,0.8s
MIAR LR LR
comp=Z,10µm,21.0s
Z35A Perchaven, San 24.11 337 P **P** **20 55 29.7 +0.1**
baz=153,SNR=31
CPCT Cooper Cave 24.12 4 *e*P **P** **20 55 31.2 +1.5**
comp=Z,95nm,0.6s
Y37A Hugo 24.13 341 P **P** **20 55 30.1 +0.3**
baz=157,SNR=84
TXAR Lajitas Array 24.15 321 P **P** **20 55 30.1 0.0**
comp=Z,94nm,0.6s,baz=138,slow=8.9,SNR=350
TXAR PcP **PcP** **20 59 11.7 +1.6**
comp=Z,5.6nm,0.9s,baz=156,slow=6.4,SNR=3.8
TXAR ScP **ScP** **21 02 48.4 +4.2**
comp=Z,2.0nm,0.9s,baz=166,slow=4.5,SNR=5.6
TX31 Lajitas Ar. Si 24.15 321 *e*P **P** **20 55 29.9 -0.3**
133A Hamilton Ranch 24.16 333 P **P** **20 55 29.9 -0.2**
baz=149,SNR=84
X39A Fountain Ranch 24.18 344 P **P** **20 55 29.8 -0.5**
baz=161,SNR=117
KMSC Kings Mountain 24.19 10 P **P** **20 55 32.0 +1.7**
baz=192,SNR=38
KMSC Kings Mountain 24.19 10 *e*P **P** **20 55 32.0 +1.7**
comp=Z,558nm,1.8s
GRGR Grenville 24.21 86 *e*P **P** **20 55 31.0 +0.3**
GRGR Grenville 24.21 86 *e*P **P** **20 55 32.3 +1.6**
comp=Z,756nm,1.3s
GRGR LR LR
comp=Z,5µm,22.0s
Y36A Durant 24.27 340 P **P** **20 55 31.0 -0.1**
baz=156,SNR=70
W41A Tony Mavity, V 24.38 348 P **P** **20 55 31.8 -0.2**
baz=166,SNR=79
W41B Gary Mavity, V 24.38 348 P **P** **20 55 31.9 -0.1**
baz=166,SNR=84
TKL Tuckaleechee C 24.38 5 P **P** **20 55 33.2 +1.2**
comp=Z,50nm,0.6s,baz=179,slow=8.2,SNR=54
TKL LR LR 21 05 37.7
comp=Z,7µm,19.1s,baz=203,slow=38
TKL Tuckaleechee C 24.38 5 *e*P **P** **20 55 33.4 +1.3**
TKL pmax pmax
comp=Z,450nm,1.5s
TKL Tuckaleechee C 24.38 5 *e*P **P** **20 55 33.4 +1.3**
comp=Z,450nm,1.5s
GDHS Morne Mazeau, 24.39 75 *e*P **P** **20 55 31.9 -0.5**
comp=Z,275nm,1.2s
Z34A Collier Ranch, 24.41 336 P **P** **20 55 32.6 +0.3**
baz=152,SNR=52
X301 Greenbrier Sit 24.47 348 *e*P **P** **20 55 32.7 -0.2**
comp=Z,107nm,0.7s
HBAR Harrisburg 24.48 352 *e*P **P** **20 55 33.0 +0.1**
WHAR Wooly Hollow 24.50 348 *e*P **P** **20 55 32.9 -0.2**
comp=Z,235nm,0.8s
ABTX Abilene, Hawle 24.50 332 P **P** **20 55 33.0 -0.2**
baz=147,SNR=36
ABTX Abilene, Hawle 24.50 332 *e*P **P** **20 55 33.1 -0.2**
comp=Z,840nm,1.6s
X201 Greenbrier Sit 24.52 348 *e*P **P** **20 55 33.1 -0.2**
comp=Z,196nm,0.8s
X38A Whitesboro 24.53 343 P **P** **20 55 33.8 +0.4**
baz=160,SNR=133
Y35A Marietta 24.55 338 P **P** **20 55 34.1 +0.6**
baz=154,SNR=122
W40A Ferguson Farm, 24.57 347 P **P** **20 55 33.8 +0.1**
baz=164,SNR=40
SVB Belmont 24.61 83 *e*P **P** **20 55 35.5 +1.0**
comp=Z,218nm,0.6s
X37A Clayton 24.61 342 P **P** **20 55 34.5 +0.3**
baz=158,SNR=194
ANWB Willy Bob 24.61 72 PFAKE 20 55 40.0 +5.6
ANWB LR LR
comp=Z,5µm,20.0s
HALT Halls 24.67 354 *e*P **P** **20 55 35.2 +0.5**
Z33A Whitaker Ranch 24.68 334 P **P** **20 55 35.0 +0.2**
baz=150,SNR=122
W39A Magazine 24.74 345 P **P** **20 55 35.3 -0.1**
baz=162,SNR=122
WVT Waverly 24.77 357 *e*P **P** **20 55 35.4 -0.2**
WVT pmax pmax
comp=Z,105nm,1.0s
WVT Waverly 24.77 357 *e*P **P** **20 55 35.4 -0.2**
comp=Z,105nm,1.0s
GNAR Gosnell 24.80 353 *e*P **P** **20 55 36.6 +0.8**
GNAR *e*pP **pP** **20 55 51.4 +1.8**
FDF Fort de France 24.80 79 *e*P **P** **20 55 35.9 -0.2**
FDF Fort de France 24.80 79 *e*P **P** **20 55 35.9 -0.2**
FDF pmax pmax
comp=Z,58nm,0.6s
FDF MLR MLR
comp=Z,4µm,19.0s
FDF Fort de France 24.80 79 *e*P **P** **20 55 35.9 -0.2**
comp=Z,58nm,0.6s
FDF LR LR
comp=Z,4µm,19.0s
W38A Poteau 24.82 344 P **P** **20 55 35.8 -0.2**
baz=161,SNR=91
H06E1 SOCORRO T-PHAS 24.84 290 T T 21 21 07.3
SNR=92
Y34A Reagan Ranch, 24.86 337 P **P** **20 55 35.9 -0.6**
baz=153,SNR=89
H06S1 SOCORRO T 24.86 290 T T 21 21 16.7
SNR=18
X36A Centrahoma 24.91 340 P **P** **20 55 36.6 -0.3**
baz=156,SNR=202
MCLT Moule a Chique 24.93 82 *e*P **P** **20 55 36.4 -0.9**
X35A Drake 24.97 339 P **P** **20 55 37.1 -0.3**
baz=155,SNR=35
NNA Nana 24.98 157 P **P** **20 55 39.2 +1.5**
comp=Z,6.4nm,0.5s,baz=287,slow=11,SNR=3.2
NNA Nana 24.98 157 *e*P **P** **20 55 40.9 +3.2**
NNA pmax pmax
comp=Z,269nm,1.1s
NNA MLR MLR
comp=Z,3µm,20.0s
NNA Nana 24.98 157 *e*P **P** **20 55 40.9 +3.2**
comp=Z,269nm,1.1s
NNA LR LR
comp=Z,3µm,20.0s
GLAT Glass 25.02 354 *e*P **P** **20 55 38.3 +0.4**
UTMT University of 25.05 355 *e*P **P** **20 55 38.9 +0.8**
comp=Z,539nm,1.3s
CNNC Cliffs of the 25.06 17 PFAKE 20 55 50.0 +12
CNNC LR LR
comp=Z,12µm,20.0s
V40A Witts Springs 25.11 348 P **P** **20 55 38.6 -0.1**
baz=165,SNR=167
W37B Quinton 25.14 342 P **P** **20 55 39.2 +0.2**
baz=159,SNR=96
Y33A Hilltop Ranch, 25.25 336 P **P** **20 55 39.9 -0.1**
baz=151,SNR=96
TZTN Tazewell 25.28 5 *e*P **P** **20 55 41.4 +1.1**
comp=Z,46nm,0.9s
V39A Pettigrew 25.32 346 P **P** **20 55 40.4 -0.3**
baz=163,SNR=195
W36A Wetumka 25.39 341 P **P** **20 55 40.7 -0.5**
baz=157,SNR=95
PARMO Parma 25.45 354 *e*P **P** **20 55 42.6 +0.8**
X34A Smith Ranch, M 25.46 338 P **P** **20 55 42.0 +0.1**
baz=153,SNR=82
V38A Canehill 25.53 345 P **P** **20 55 41.6 -0.9**
baz=162,SNR=48
SLBS Sierra La Lagu 25.60 302 *e*P **P** **20 55 44.9 +1.5**
comp=Z,438nm,1.9s
W35A Tecumseh 25.61 340 P **P** **20 55 42.4 -0.9**
baz=156,SNR=28
U40A Yellville 25.64 348 P **P** **20 55 43.3 -0.2**
baz=165,SNR=102
X33A Lawton 25.66 336 P **P** **20 55 43.2 -0.6**
baz=152,SNR=100
V37A Hulbert 25.75 343 P **P** **20 55 43.8 -0.7**
baz=160,SNR=92
U39A Green Forest 25.80 347 P **P** **20 55 44.8 -0.2**
baz=164,SNR=76
HHAR Hobbs 25.82 346 *e*P **P** **20 55 44.6 -0.5**
comp=Z,113nm,0.7s
X32A Elmer 25.88 335 P **P** **20 55 45.6 -0.1**
baz=150,SNR=18
V36A Jenks 25.89 342 P **P** **20 55 45.1 -0.7**
baz=158,SNR=56
WMOK Wichita Mounta 25.95 336 *e*P **P** **20 55 45.7 -0.6**
WMOK pmax pmax
comp=Z,2µm,1.8s
WMOK MLR MLR
comp=Z,3µm,22.0s

WMOK **Wichita Mounta** 25.95 336 *e*P P 20 55 45.7 -0.6
comp=Z,2µm,1.8s
WMOK LR LR
comp=Z,3µm,22.0s
TUL1 **Leonard** 25.96 342 P P 20 55 45.4 -1.0
baz=159,SNR=50
TUL1 **Leonard** 25.96 342 *e*P P 20 55 45.7 -0.8
comp=Z,1µm,1.8s
W34A **Bridge Creek,** 26.00 338 P P 20 55 46.0 -0.8
baz=154,SNR=43
W34A **Bridge Creek,** 26.00 338 *e*P P 20 55 46.3 -0.6
comp=Z,584nm,1.1s
U38A **Gravette** 26.07 345 P P 20 55 46.8 -0.7
baz=162,SNR=57
LPIG **La Paz** 26.08 302 P P 20 55 49.7 +2.1
comp=Z,23nm,0.3s,baz=130,slow=3.1,SNR=5.3
V35A **Meyer Ranch, C** 26.16 340 P P 20 55 46.8 -1.4
baz=156,SNR=18
W33A **Caddo, Fort Co** 26.19 337 P P 20 55 48.4 -0.1
baz=152,SNR=60
U37A **Salina** 26.23 344 P P 20 55 48.2 -0.7
baz=160,SNR=39
BBGH **Gun Hill** 26.26 83 PFAKE 20 56 00.0 +11
BBGH LR LR
comp=Z,7µm,21.0s
T40A **Mansfield** 26.35 349 P P 20 55 49.4 -0.5
baz=166,SNR=35
BLA **Blacksburg** 26.36 11 *e*P P 20 55 51.8 +1.7
BLA pmax pmax
comp=Z,556nm,1.8s
BLA MLR MLR
comp=Z,10µm,20.0s
BLA **Blacksburg** 26.36 11 *e*P P 20 55 51.8 +1.7
comp=Z,556nm,1.8s
BLA LR LR
comp=Z,10µm,20.0s
U36A **Oologah** 26.39 343 P P 20 55 49.5 -0.8
baz=159,SNR=17
T39A **Clever** 26.40 347 P P 20 55 49.5 -0.8
baz=164,SNR=70
V34A **Guthrie** 26.45 339 P P 20 55 49.7 -1.2
baz=155,SNR=40
V34A **Guthrie** 26.45 339 *e*P P 20 55 49.6 -1.2
comp=Z,262nm,0.8s
W32A **Sentinel** 26.47 336 P P 20 55 50.5 -0.6
baz=151,SNR=70
VWCC **Virginia Weste** 26.48 11 *e*P P 20 55 52.9 +1.7
T38A **Diamond** 26.62 346 P P 20 55 51.7 -0.7
baz=162,SNR=80
U35A **Pawnee** 26.68 341 P P 20 55 51.9 -1.0
baz=157,SNR=20
V33A **Lossen Ranch,** 26.71 338 P P 20 55 52.4 -0.8
baz=153,SNR=39
S40A **Lebanon** 26.78 349 P P 20 55 53.3 -0.5
baz=167,SNR=17
WCI **Wyandotte Cave** 26.83 0 *e*P P 20 55 54.5 +0.2
WCI pmax pmax
comp=Z,351nm,1.3s
WCI **Wyandotte Cave** 26.83 0 *e*P P 20 55 54.5 +0.2
comp=Z,351nm,1.3s
MNTX **Cornudas Mount** 26.86 322 P P 20 55 54.2 -0.4
baz=135,SNR=37
MNTX **Cornudas Mount** 26.86 322 *e*P P 20 55 54.1 -0.5
comp=Z,424nm,1.9s
MNTX LR LR
comp=Z,2µm,21.0s
T37A **Cheneyville 18** 26.86 345 P P 20 55 54.2 -0.3
baz=161,SNR=77
V32A **Arapaho** 26.91 337 P P 20 55 54.4 -0.6
baz=152,SNR=51
U34A **Anderson Ranch** 27.00 340 P P 20 55 54.5 -1.3
baz=155,SNR=23
U34A **Anderson Ranch** 27.00 340 *e*P P 20 55 54.7 -1.1
comp=Z,138nm,0.8s
S39A **Bolivar** 27.03 348 P P 20 55 55.3 -0.7
baz=165,SNR=101
T36A **Boggs Farm, Ca** 27.06 343 P P 20 55 55.8 -0.5
baz=159,SNR=84
S38A **Stockton** 27.10 347 P P 20 55 55.9 -0.7
baz=164,SNR=49
MSTX **Muleshoe** 27.11 329 P P 20 55 56.3 -0.7
baz=143,SNR=18
MSTX **Muleshoe** 27.11 329 *e*P P 20 55 56.3 -0.7
comp=Z,174nm,0.8s
T35A **Sooner Cattle** 27.11 342 P P 20 55 55.8 -1.1
baz=158,SNR=22
U33A **Lingo Farm, Me** 27.20 339 P P 20 55 55.8 -1.8
baz=154,SNR=13
AMTX **Amarillo** 27.32 332 P P 20 55 58.0 -0.8
baz=146
AMTX **Amarillo** 27.32 332 *e*P P 20 55 58.7 -0.1
comp=Z,506nm,1.5s
URVA **University of** 27.35 15 *e*P P 20 56 00.3 +1.5
JSRW **J. Sargeant Re** 27.38 15 *e*P P 20 56 00.4 +1.3
OLIL **Olney** 27.38 357 *e*P P 20 55 59.8 +0.7
comp=Z,926nm,1.8s
R40A **Maddies Statio** 27.41 350 P P 20 55 58.6 -0.8
baz=167,SNR=38
T34A **McClaskey Farm** 27.42 341 P P 20 55 58.4 -1.2
baz=157,SNR=9.9
S37A **Fort Scott** 27.44 345 P P 20 55 59.1 -0.5
baz=162,SNR=78
U32A **Winter Ranch,** 27.47 337 P P 20 55 59.3 -0.8
baz=152,SNR=12
R39A **Chumby, Stover** 27.57 349 P P 20 56 00.2 -0.7
baz=166,SNR=108
S36A **Lake Cedric, C** 27.60 344 P P 20 56 00.4 -0.8
baz=160,SNR=69
R38A **Fenwick Farm,** 27.63 347 P P 20 56 00.7 -0.7
baz=164,SNR=50
S35A **Otter Creek Ra** 27.77 343 P P 20 56 01.8 -0.8
baz=159,SNR=83
BLO **Bloomington** 27.77 360 *e*P P 20 56 03.2 +0.5
BLO pmax pmax
comp=Z,592nm,1.8s
BLO **Bloomington** 27.77 360 *e*P P 20 56 03.2 +0.5
comp=Z,592nm,1.8s
T33A **Patterson Ranc** 27.83 339 P P 20 56 01.8 -1.4
baz=154,SNR=10.0
R37A **Teagarden Farm** 27.96 346 P P 20 56 03.7 -0.7
baz=162,SNR=34
CBN **Corbin Frederi** 27.99 15 *e*P P 20 56 06.6 +2.0
comp=Z,113nm,0.8s
CBN LR LR
comp=Z,12µm,21.0s
S34A **Willow Spring** 28.02 342 P P 20 56 03.4 -1.5
baz=157
Q40A **Laux Farm, Aux** 28.06 351 P P 20 56 04.3 -0.9
baz=168,SNR=15
R36A **Gordon, Harris** 28.14 345 P P 20 56 05.4 -0.5
baz=161,SNR=30
T32A **Huddler Ranch,** 28.16 338 P P 20 56 05.3 -0.8
baz=153
S33A **Kaszmaul Farm,** 28.21 340 P P 20 56 05.2 -1.4
baz=155
Q39A **Willow Grove F** 28.27 349 P P 20 56 06.2 -0.9
baz=166,SNR=30
Q38A **Cooks Store, C** 28.31 348 P P 20 56 06.8 -0.7
baz=165,SNR=32
R35A **Emporia Munici** 28.33 344 P P 20 56 06.9 -0.8
baz=159,SNR=14
Q37A **Longview Farm,** 28.41 347 P P 20 56 07.6 -0.8
baz=163,SNR=10
P40A **Paris** 28.58 351 P P 20 56 09.2 -0.7
baz=168,SNR=15
R34A **Isabella, Hill** 28.61 342 P P 20 56 09.6 -0.5
baz=157,SNR=40
S32A **Newby Ranch, P** 28.62 339 P P 20 56 09.5 -0.8
baz=154
Q36A **Arnold C. Orve** 28.73 345 P P 20 56 10.4 -0.8
baz=161,SNR=22
Q35A **Mercer Eighty,** 28.79 344 P P 20 56 11.5 -0.2
baz=160
PTGA **Pitinga** 28.82 113 P P 20 56 11.8 -0.5
comp=Z,9.2nm,0.8s,baz=306,slow=7.3,SNR=12
PTGA **Pitinga** 28.82 113 *e*P P 20 56 12.5 +0.2
comp=Z,32nm,1.0s
PTGA LR LR
comp=Z,37µm,19.0s
MCWV **Mont Chateau** 28.85 10 *e*P P 20 56 13.7 +1.4
comp=Z,44nm,0.9s
R33A **Olander Ranch,** 28.85 341 P P 20 56 11.5 -0.8
baz=156,SNR=7.2
121A **Cookes Peak, D** 28.91 320 P P 20 56 14.0 +0.9
baz=132,SNR=14
121A **Cookes Peak, D** 28.91 320 *e*P P 20 56 13.8 +0.7
P38A **Dawn** 28.94 349 P P 20 56 12.2 -0.8
baz=165,SNR=79
HSIG 28.95 311 *e*P P 20 56 14.5 +1.2
comp=Z,119nm,2.0s
BBSR **BB Station** 28.95 40 PFAKE 20 56 20.0 +6.8
BBSR LR LR
comp=Z,9µm,20.0s
ACSO **Alum Creek Sta** 28.99 5 *e*P P 20 56 13.8 +0.4
comp=Z,172nm,0.9s
ACSO *e*PcP PcP 20 59 22.6 +1.5
ACSO LR LR
comp=Z,7µm,19.0s
SFIN **Lafayette** 28.99 359 P P 20 56 12.9 -0.5
baz=178,SNR=8.4
SFIN **Lafayette** 28.99 359 *e*P P 20 56 13.1 -0.3
comp=Z,498nm,1.6s
P37A **Lathrop** 29.07 347 P P 20 56 13.0 -1.2
baz=164,SNR=21
Q34A **Chapman** 29.09 343 P P 20 56 13.8 -0.7
baz=158,SNR=16
319A **Douglas** 29.13 317 *e*P P 20 56 15.2 +0.2
comp=Z,65nm,1.0s
O40A **La Belle** 29.13 351 P P 20 56 13.8 -0.9
baz=169,SNR=14
KSU1 **Kansas State U** 29.17 344 P P 20 56 14.3 -0.8
baz=159
KSU1 **Kansas State U** 29.17 344 *e*P P 20 56 14.5 -0.6
comp=Z,226nm,1.0s
KSU1 LR LR
comp=Z,5µm,22.0s
R32A **Long Quarter,** 29.19 340 P P 20 56 14.7 -0.7
baz=155
SDMD **Soldier's Deli** 29.26 15 *e*P P 20 56 17.6 +1.7
comp=Z,43nm,0.8s
HDIL **Hopedale** 29.27 355 P P 20 56 15.5 -0.5
baz=174,SNR=17
HDIL **Hopedale** 29.27 355 *e*P P 20 56 15.9 0.0
comp=Z,357nm,1.1s
HDIL LR LR
comp=Z,3µm,22.0s
P36A **Good Intent, A** 29.30 346 P P 20 56 15.7 -0.5
baz=162,SNR=36
BNM **Barren Site** 29.34 324 *e*P P 20 56 17.5 +0.6
BNM *e*SS SS 21 03 05.4 -7.6
O39A **Kirksville** 29.37 350 P P 20 56 15.9 -0.9
baz=168,SNR=8.0
O38A **Galt** 29.41 349 P P 20 56 16.1 -1.0
baz=166
P35A **Duane Minner,** 29.41 345 P P 20 56 16.5 -0.8
baz=160,SNR=26
Q33A **Connelly Farm,** 29.43 342 P P 20 56 16.6 -0.9
baz=157,SNR=19
Y22D **IRIS PASSCAL I** 29.45 324 P P 20 56 18.8 +1.0
baz=136
LPM **Los Pinos Moun** 29.45 324 *e*P P 20 56 19.2 +1.3
O37A **Wolven Farm, M** 29.58 348 P P 20 56 17.8 -0.9
baz=164,SNR=17
P34A **Walnut Farm, R** 29.64 344 P P 20 56 18.8 -0.5
baz=159,SNR=43
Q32A **Meitler Ranch,** 29.66 341 P P 20 56 18.8 -0.7
baz=155,SNR=10
O56A **Blue Knob Stat** 29.68 12 P P 20 56 21.1 +1.4
baz=196,SNR=28
O36A **Bolckow** 29.73 347 P P 20 56 19.1 -0.9
baz=163,SNR=15
P33A **Williams Farm,** 29.79 342 P P 20 56 20.2 -0.4
baz=157,SNR=30
LAZ **Ladron** 29.81 324 *e*P P 20 56 21.9 +0.8
LAZ *e*PcP PcP 20 59 26.0 +2.4
ANMO **Albuquerque** 29.82 325 P P 20 56 22.2 +1.1
comp=Z,33nm,0.6s,baz=142,slow=6.3,SNR=68
ANMO LR LR 21 12 18.1
comp=Z,3µm,18.7s,baz=128,slow=44
ANMO **Albuquerque** 29.82 325 P P 20 56 21.4 +0.3
baz=138
ANMO **Albuquerque** 29.82 325 *e*P P 20 56 21.6 +0.4
ANMO pmax pmax
comp=Z,227nm,1.8s
ANMO **Albuquerque** 29.82 325 *e*P P 20 56 21.6 +0.4
comp=Z,227nm,1.8s
CBKS **Cedar Bluff** 29.90 339 P P 20 56 21.1 -0.6
baz=153
CBKS **Cedar Bluff** 29.90 339 *e*P P 20 56 19.9 -1.7
CBKS MLR MLR
comp=Z,4µm,21.0s
CBKS **Cedar Bluff** 29.90 339 *e*P P 20 56 19.9 -1.7
CBKS LR LR
comp=Z,4µm,21.0s
N39A **Derby Farms, D** 29.97 351 P P 20 56 21.4 -0.8
baz=168,SNR=12
N38A **Joes South For** 30.01 350 P P 20 56 21.7 -0.8
baz=166,SNR=15
O35A **Humboldt** 30.08 345 P P 20 56 22.1 -1.0
baz=161,SNR=15
N54A **Moraine State** 30.09 10 P P 20 56 24.0 +0.7
baz=192,SNR=16
N37A **Lee Faris, Mou** 30.16 348 P P 20 56 23.1 -0.8
baz=165,SNR=18
SSPA **Standing Stone** 30.18 13 *e*P P 20 56 25.3 +1.3
comp=Z,155nm,0.9s
O34A **Beatrice** 30.20 344 P P 20 56 23.7 -0.5
baz=160,SNR=32
P32A **Huiting Farm,** 30.24 341 P P 20 56 24.5 -0.2
baz=156,SNR=37
O33A **Hebron** 30.35 343 P P 20 56 24.9 -0.7
baz=158,SNR=60
N36A **Muff Farm, Cla** 30.38 347 P P 20 56 25.0 -0.8
baz=163,SNR=8.8
T25A **Trinidad** 30.44 331 P P 20 56 27.1 +0.5
baz=143,SNR=34
T25A **Trinidad** 30.44 331 *e*P P 20 56 27.1 +0.5
comp=Z,225nm,1.7s
N35A **Tabor** 30.58 346 P P 20 56 26.9 -0.7
baz=162,SNR=25
SAML **Samuel** 30.59 130 *e*P P 20 56 26.9 -1.0
comp=Z,66nm,0.8s
SAML LR LR
comp=Z,5µm,21.0s
M38A **Pleasantville** 30.61 350 P P 20 56 27.0 -0.8
baz=167,SNR=12
M54A **Oil Creek Stat** 30.68 10 P P 20 56 29.0 +0.6
baz=193,SNR=15
TUC **Tucson** 30.72 317 P P 20 56 29.7 +0.7
baz=128
TUC **Tucson** 30.72 317 *e*P P 20 56 30.0 +1.0
TUC pmax pmax
comp=Z,32nm,1.1s
TUC MLR MLR
comp=Z,6µm,20.0s
TUC **Tucson** 30.72 317 *e*P P 20 56 30.0 +1.0
comp=Z,32nm,1.1s
TUC LR LR
comp=Z,6µm,20.0s
O32A **Brockman Farm,** 30.73 342 P P 20 56 28.3 -0.6
baz=157,SNR=9.3
ALLY **Alegheny Colle** 30.74 9 *e*P P 20 56 29.7 +0.8
comp=Z,619nm,1.8s
ALLY *e*pP pP 20 56 39.2 -3.6
M37A **Trindle Farm,** 30.75 349 P P 20 56 28.4 -0.7
baz=165,SNR=11
N34A **Lincoln** 30.77 345 P P 20 56 28.3 -0.9
baz=160,SNR=22
LUPA **Lehigh Univers** 30.77 16 *e*P P 20 56 31.1 +1.9
comp=Z,80nm,1.0s
N33A **J Bar K, Exete** 30.93 343 P P 20 56 30.2 -0.4
baz=159,SNR=16
M36A **Felix, Anita** 30.95 348 P P 20 56 30.2 -0.7
baz=164,SNR=12
N59A **State Game Lan** 30.96 16 P P 20 56 32.5 +1.6
baz=200,SNR=59
O31A **Woolen Ranch,** 30.96 340 P P 20 56 30.8 -0.2
baz=155,SNR=15
AAM **Ann Arbor** 30.99 4 *e*P P 20 56 31.3 +0.2
AAM pmax pmax
comp=Z,660nm,1.8s
AAM MLR MLR
comp=Z,8µm,20.0s
AAM **Ann Arbor** 30.99 4 *e*P P 20 56 31.3 +0.2
comp=Z,660nm,1.8s
AAM LR LR
comp=Z,8µm,20.0s
BRNJ **Basking Ridge** 31.08 18 *e*P P 20 56 34.1 +2.2
comp=Z,48nm,0.8s
SCIA **State Center** 31.09 350 *e*P P 20 56 31.4 -0.7
comp=Z,527nm,1.6s
SCIA LR LR
comp=Z,4µm,21.0s
M35A **Neola** 31.16 346 P P 20 56 31.9 -0.8
baz=162,SNR=32
KSCO **Kaye Shedlock'** 31.18 335 P P 20 56 32.8 -0.3
baz=148,SNR=11
KSCO **Kaye Shedlock'** 31.18 335 *e*P P 20 56 33.5 +0.4
comp=Z,70nm,0.6s
N32A **Stulken Farm,** 31.19 342 P P 20 56 32.2 -0.8
baz=157
ERPA **Erie** 31.22 9 *e*P P 20 56 33.9 +0.7
comp=Z,985nm,1.7s
L38A **Oak Wood Farm,** 31.28 351 P P 20 56 33.1 -0.5
baz=168,SNR=28
CPNY **Central Park** 31.36 18 *e*P P 20 56 35.7 +1.3
comp=Z,34nm,0.9s
L37A **Phoenix Point,** 31.40 349 P P 20 56 34.0 -0.8
baz=166,SNR=14
M34A **Aspy Farms, Fr** 31.41 345 P P 20 56 34.2 -0.7
baz=161,SNR=14
ODNJ **Ogdensburg** 31.44 17 *e*P P 20 56 36.4 +1.3
comp=Z,32nm,1.0s
SDCO **Great Sand Dun** 31.45 330 P P 20 56 35.8 +0.2
baz=142,SNR=102
SDCO **Great Sand Dun** 31.45 330 *e*P P 20 56 36.2 +0.6
comp=Z,52nm,0.7s
SDCO LR LR
comp=Z,3µm,21.0s
N31A **Bailey Ranch,** 31.45 342 P P 20 56 35.0 -0.3
baz=156,SNR=7.5
L36A **Harm Buss Farm** 31.55 348 P P 20 56 35.2 -0.9
baz=164,SNR=14
KSPA **Keystone Colle** 31.56 15 *e*P P 20 56 37.8 +1.6
comp=Z,86nm,0.9s
PAL **Palisades** 31.57 18 *e*P P 20 56 37.6 +1.3
PAL pmax pmax
comp=Z,381nm,1.9s
PAL **Palisades** 31.57 18 *e*P P 20 56 37.6 +1.3
comp=Z,381nm,1.9s
X18A **Snowflake** 31.58 321 *e*P P 20 56 38.2 +1.5
comp=Z,99nm,1.4s
M33A **Taylor Creek F** 31.64 344 P P 20 56 36.2 -0.7
baz=160,SNR=13
JFWS **Jewell Farm** 31.69 355 *e*P P 20 56 36.8 -0.5
JFWS pmax pmax
comp=Z,855nm,1.9s
JFWS MLR MLR
comp=Z,3µm,19.0s
JFWS **Jewell Farm** 31.69 355 *e*P P 20 56 36.8 -0.5
comp=Z,855nm,1.9s
JFWS LR LR
comp=Z,3µm,19.0s
K38A **Parkersburg** 31.74 351 P P 20 56 37.0 -0.8
baz=168,SNR=14
BGNE **Belgrade** 31.75 343 P P 20 56 37.0 -0.8
baz=158,SNR=9.2
BGNE **Belgrade** 31.75 343 *e*P P 20 56 37.5 -0.4
comp=Z,195nm,0.6s
L35A **Bielow Farm, R** 31.75 347 P P 20 56 36.8 -1.0
baz=163
L34A **Svendsen Farm,** 31.80 346 P P 20 56 36.9 -1.4
baz=161,SNR=8.1
214A **Organ Pipe Nat** 31.90 314 P P 20 56 40.2 +0.8
baz=124,SNR=10
214A **Organ Pipe Nat** 31.90 314 *e*P P 20 56 39.9 +0.5
comp=Z,462nm,1.6s
M31A **Lambtecht Ranc** 31.93 342 P P 20 56 39.3 -0.2
baz=156,SNR=14
K37A **Belmond** 32.00 350 P P 20 56 39.1 -0.9
baz=166,SNR=62
K36A **Gilmore City** 32.02 349 P P 20 56 39.6 -0.7
baz=165,SNR=12
BINY **Binghamton** 32.11 15 *e*P P 20 56 42.3 +1.3
comp=Z,179nm,0.8s
BINY LR LR
comp=Z,9µm,20.0s
S22A **4UR Ranch, Cre** 32.11 329 P P 20 56 41.9 +0.4
baz=140,SNR=20
S22A **4UR Ranch, Cre** 32.11 329 *e*P P 20 56 42.1 +0.7
comp=Z,39nm,0.8s
S22A *e*PcP PcP 20 59 31.9 +2.2
MMNY **Mt. Morris Dam** 32.19 12 *e*P P 20 56 42.4 +0.8
comp=Z,318nm,1.2s
L33A **Hoskins** 32.21 345 P P 20 56 41.2 -0.7
baz=160
Q24A **Divide** 32.25 332 P P 20 56 42.6 -0.1
baz=144,SNR=8.5
Q24A **Divide** 32.25 332 *e*P P 20 56 42.9 +0.2
comp=Z,17nm,1.0s
L32A **Elgin** 32.26 344 P P 20 56 41.5 -0.8
baz=158,SNR=6.6
K35A **Storm Lake** 32.26 348 P P 20 56 41.0 -1.3
baz=164,SNR=5.6
J38A **Wedel Dairy, R** 32.36 352 P P 20 56 42.0 -1.2
baz=169,SNR=32
K34A **Le Mars** 32.42 347 P P 20 56 42.1 -1.5
baz=162
X16A **Lo Mia Camp, P** 32.45 319 *e*P P 20 56 45.4 +1.0
comp=Z,30nm,0.6s
J37A **Redenius Farm,** 32.51 350 P P 20 56 43.8 -0.7
baz=167,SNR=19
K33A **Hardington** 32.55 345 P P 20 56 43.9 -1.1
baz=160
MVCO **Mesa Verde** 32.60 326 P P 20 56 46.0 +0.3
baz=137,SNR=27
MVCO **Mesa Verde** 32.60 326 *e*P P 20 56 46.1 +0.5
comp=Z,474nm,1.9s
MVCO LR LR
comp=Z,4µm,22.0s
OGNE **Ogallala** 32.61 338 P P 20 56 45.5 0.0
baz=151
OGNE **Ogallala** 32.61 338 *e*P P 20 56 45.9 +0.3
comp=Z,108nm,0.9s
OGNE LR LR
comp=Z,4µm,22.0s
L31A **Butterfield Fa** 32.65 343 P P 20 56 45.6 -0.2
baz=157,SNR=32
J36A **Seneca 1, Swea** 32.67 349 P P 20 56 45.2 -0.7
baz=166,SNR=31
LPAZ **La Paz** 32.80 146 P P 20 56 48.4 +0.4
comp=Z,3.2nm,0.7s,baz=316,slow=5.4,SNR=13
LPAZ LR LR 21 10 46.5
comp=Z,5µm,20.0s,baz=316,slow=38
LPAZ **La Paz** 32.80 146 *e*P P 20 56 48.1 +0.1
LPAZ pmax pmax
comp=Z,73nm,1.6s
LPAZ **La Paz** 32.80 146 *e*P P 20 56 48.0 +0.1
comp=Z,73nm,1.6s
K32A **Verdigre** 32.86 344 P P 20 56 46.8 -0.8
baz=159
J35A **Milford** 32.87 348 P P 20 56 46.1 -1.6
baz=164
J34A **George** 32.95 347 P P 20 56 46.8 -1.6
baz=163
113A **Mohawk Valley,** 33.03 315 *e*P P 20 56 50.3 +1.1
comp=Z,64nm,1.4s
K31A **O'Neill** 33.04 343 P P 20 56 48.8 -0.3
baz=157,SNR=21
I38A **Scanlan Farm,** 33.04 352 P P 20 56 47.9 -1.2
baz=169,SNR=18
WUAZ **Wupatki** 33.11 321 P P 20 56 51.2 +1.1
baz=131,SNR=19
WUAZ **Wupatki** 33.11 321 *e*P P 20 56 51.2 +1.1
comp=Z,76nm,1.1s
WUAZ LR LR
comp=Z,8µm,19.0s
ISCO **Idaho Springs** 33.13 332 P P 20 56 50.7 +0.3
baz=144,SNR=18
ISCO **Idaho Springs** 33.13 332 *e*P P 20 56 50.5 +0.1
ISCO pmax pmax
comp=Z,131nm,2.0s
ISCO MLR MLR
comp=Z,3µm,22.0s
ISCO **Idaho Springs** 33.13 332 *e*P P 20 56 50.5 +0.1
comp=Z,131nm,2.0s
ISCO LR LR
comp=Z,3µm,22.0s
I37A **Lemond, Waseca** 33.18 351 P P 20 56 49.1 -1.2
baz=167,SNR=22
J33A **Davis** 33.22 346 P P 20 56 49.1 -1.6
baz=161,SNR=5.1
I36A **Fitzsimmons Fa** 33.28 350 P P 20 56 50.0 -1.2
baz=166,SNR=7.2
SMCO **Snowmass** 33.29 330 *e*P P 20 56 52.1 +0.3
comp=Z,120nm,1.4s
I35A **Creekview Farm** 33.30 349 P P 20 56 50.6 -0.8
baz=164,SNR=9.8
PV01 **Paradox Valley** 33.31 327 *e*P P 20 56 52.6 +0.7
K30A **Basset** 33.34 342 P P 20 56 51.8 0.0
baz=156,SNR=28
J32A **Parkston** 33.49 345 P P 20 56 51.6 -1.4
baz=159
ECSD **EROS Data Cent** 33.53 346 P P 20 56 52.0 -1.5

baz=162,SNR=70
ECSD **EROS Data Cent** 33.53 346 *e*P P 20 56 51.9 -1.5
comp=Z,93nm,0.9s
ECSD LR LR
comp=Z,7µm,21.0s
PV05 **Paradox Valley** 33.55 327 *e*P P 20 56 54.7 +0.7
J31A **Geddes** 33.65 344 P P 20 56 53.2 -1.3
baz=158
I34A **Hadley** 33.65 348 P P 20 56 53.4 -1.1
baz=163,SNR=12
H37A **Dierke Farm, C** 33.66 352 P P 20 56 53.4 -1.1
baz=168,SNR=8.5
PV04 **Paradox Valley** 33.68 327 *e*P P 20 56 55.5 +0.5
PV10 **Paradox Valley** 33.74 327 *e*P P 20 56 55.7 +0.1
H36A **Jessenland, He** 33.81 350 P P 20 56 55.2 -0.6
baz=167,SNR=29
ACCN **Adirondack Com** 33.83 17 *e*P P 20 56 57.3 +1.4
comp=Z,302nm,1.9s
I33A **Coleman** 33.87 346 P P 20 56 54.9 -1.5
baz=162
PV09 **Paradox Valley** 33.88 327 *e*P P 20 56 57.8 +0.9
J30A **Dallas** 33.90 343 P P 20 56 55.9 -0.7
baz=157,SNR=27
GLA **Glamis** 33.93 314 P P 20 56 58.2 +1.1
baz=123
GLA **Glamis** 33.93 314 *e*P P 20 56 59.2 +2.1
GLA pmax pmax
comp=Z,307nm,2.0s
GLA **Glamis** 33.93 314 *e*P P 20 56 59.2 +2.1
comp=Z,307nm,2.0s
SADO **Sadowa** 33.94 9 P P 20 56 56.2 -0.7
comp=Z,28nm,0.5s,baz=210,slow=8.5,SNR=29
SADO **Sadowa** 33.94 9 *e*P P 20 56 56.8 -0.1
comp=Z,150nm,1.1s
I32A **Karley and Nic** 34.01 346 P P 20 56 55.7 -1.8
baz=160
H35A **Sunnyside Ranc** 34.08 349 P P 20 56 57.2 -1.0
baz=165,SNR=32
Y12C **Blythe** 34.10 315 P P 20 56 59.5 +1.0
baz=125
Y12C **Blythe** 34.10 315 *e*P P 20 57 00.1 +1.6
comp=Z,151nm,1.9s
Y12C *e*PcP PcP 20 59 36.9 +1.9
PDMCI **Parker Dam,Lak** 34.16 317 P P 20 56 59.3 +0.4
baz=126,SNR=7.6
N23A **Red Feather La** 34.17 333 P P 20 56 59.1 -0.2
baz=144,SNR=14
N23A **Red Feather La** 34.17 333 *e*P P 20 56 59.6 +0.3
comp=Z,40nm,1.2s
NCB **Newcomb** 34.22 16 PFAKE 20 57 10.0 +11
NCB LR LR
comp=Z,3µm,22.0s
J29A **Okreek** 34.22 342 P P 20 56 59.2 -0.2
baz=155,SNR=78
H34A **Spellman Lake,** 34.24 348 P P 20 56 58.6 -0.9
baz=164,SNR=20
U15A **North Rim** 34.27 321 *e*P P 20 57 01.4 +1.2
comp=Z,44nm,1.1s
SPMN **Marine on St.** 34.27 352 P P 20 56 58.6 -1.2
baz=169,SNR=40
SPMN **Marine on St.** 34.27 352 *e*P P 20 56 58.2 -1.6
comp=Z,174nm,0.8s
I31A **Royce, Wessing** 34.28 344 P P 20 56 58.1 -1.8
baz=159
I30A **Oacoma** 34.42 343 P P 20 56 59.9 -1.2
baz=157,SNR=18
G36A **St. Michael** 34.42 351 P P 20 57 00.0 -1.1
baz=167,SNR=13
H32A **Carlson Farm,** 34.45 346 P P 20 56 59.9 -1.5
baz=161,SNR=5.5
H33A **Prehn Over Nor** 34.46 347 P P 20 57 00.1 -1.4
baz=162,SNR=9.9
J28A **Allard Ranch,** 34.52 341 P P 20 57 01.7 -0.4
baz=154,SNR=27
G35A **Watkins** 34.53 350 P P 20 57 00.6 -1.5
baz=166
SWSC **Sam W. Stewart** 34.56 313 P P 20 57 02.8 +0.3
baz=122
J27A **Elkhorn Farm,** 34.63 340 P P 20 57 03.3 +0.3
baz=152,SNR=31
O20A **White River Ci** 34.65 330 P P 20 57 04.1 +0.7
baz=140,SNR=22
O20A **White River Ci** 34.65 330 *e*P P 20 57 04.2 +0.9
comp=Z,534nm,1.8s
H31A **Wolsey** 34.69 345 P P 20 57 02.2 -1.2
baz=159
BC3 **Big Chuckawall** 34.69 315 P P 20 57 04.7 +0.9
baz=123,SNR=21
LONY **Lake Ozonia** 34.73 15 *e*P P 20 57 04.3 +0.5
comp=Z,115nm,0.9s
LONY LR LR
comp=Z,8µm,19.0s
NEE2 **Needles Airpor** 34.75 317 P P 20 57 04.7 +0.6
baz=126
IRM **Iron Mountain** 34.76 316 P P 20 57 05.1 +0.9
baz=124,SNR=13
G34A **Benson** 34.76 348 P P 20 57 02.6 -1.4
baz=164,SNR=11
I29A **Vivian Onida** 34.77 342 P P 20 57 03.7 -0.5
baz=156,SNR=24
SUSD **Miller** 34.78 344 P P 20 57 03.0 -1.2
baz=158,SNR=25
COWI **Conover** 34.78 357 *e*P P 20 57 03.0 -1.2
comp=Z,295nm,1.7s
COWI LR LR
comp=Z,4µm,19.0s
G33A **Ortonville** 34.88 348 P P 20 57 03.6 -1.4
baz=163,SNR=23
PKCU **Pink Cliffs** 34.94 323 *e*P P 20 57 08.2 +2.0
comp=Z,90nm,1.1s
PB11 **IPOC Station P** 34.96 152 *e*P P 20 57 06.7 +0.5
comp=Z,80nm,0.9s
KNB **Kanab** 34.97 322 *e*P P 20 57 07.6 +1.4
KNB pmax pmax
comp=Z,109nm,1.4s
KNB **Kanab** 34.97 322 *e*P P 20 57 07.6 +1.4
comp=Z,109nm,1.4s
MONP2 **Monument Peak** 34.98 313 P P 20 57 06.0 -0.4
baz=121,SNR=6.7
F36A **Milaca** 35.00 351 P P 20 57 04.6 -1.5
baz=168,SNR=51
I28A **Midland** 35.02 341 P P 20 57 06.0 -0.4
baz=154,SNR=20
BAR **Barrett** 35.05 312 *e*P P 20 57 09.1 +2.3
comp=Z,36nm,1.4s
J26A **Sides Ranch, S** 35.05 339 P P 20 57 07.1 +0.4
baz=151,SNR=15
SRU **San Rafael Swe** 35.07 326 *e*P P 20 57 07.5 +0.4
SRU pmax pmax
comp=Z,99nm,0.7s
SRU **San Rafael Swe** 35.07 326 *e*P P 20 57 07.5 +0.4
comp=Z,99nm,0.7s
F35A **Swanville** 35.16 350 P P 20 57 06.0 -1.5
baz=166,SNR=12
G32A **Webster** 35.17 346 P P 20 57 06.3 -1.4
baz=161,SNR=9.6
FRNY **Flat Rock** 35.19 16 *e*P P 20 57 07.9 +0.2
comp=Z,214nm,1.8s
F34A **Alexandria** 35.22 349 P P 20 57 07.2 -0.9
baz=165
LCMT **Little Creek M** 35.23 321 *e*P P 20 57 08.9 +0.5
comp=Z,99nm,1.8s
BELC **Belle Mtn. Jos** 35.26 315 P P 20 57 09.3 +0.6
baz=123,SNR=14
MTPU **Mount Pierson** 35.27 323 *e*P P 20 57 10.2 +1.2
comp=Z,351nm,1.9s
P18A **Preston Nutter** 35.30 327 *e*P P 20 57 09.6 +0.5
comp=Z,71nm,1.0s
H29A **Onida** 35.30 343 P P 20 57 07.2 -1.5
baz=156,SNR=8.6
G31A **Conde** 35.31 345 P P 20 57 07.0 -1.8
baz=160
I27A **Quinn** 35.37 340 P P 20 57 09.4 +0.1
baz=153,SNR=40
PFO **Pinyon Flats O** 35.38 314 P P 20 57 11.3 +1.4
baz=122,SNR=10
PFO **Pinyon Flats O** 35.38 314 *e*P P 20 57 11.3 +1.6
PFO pmax pmax
comp=Z,70nm,1.4s
PFO MLR MLR
comp=Z,2µm,20.0s
PFO **Pinyon Flats O** 35.38 314 *e*P P 20 57 11.3 +1.6
comp=Z,70nm,1.4s
PFO LR LR
comp=Z,2µm,20.0s
J25A **Sunshine Ranch** 35.38 338 P P 20 57 09.8 +0.3
baz=150,SNR=23
P17A **Butcher Ranch,** 35.45 327 *e*P P 20 57 10.8 +0.5
comp=Z,94nm,0.8s
GMRC **Granite Mounta** 35.46 316 P P 20 57 11.4 +1.0
baz=124
G30A **Faulkton** 35.46 344 P P 20 57 08.6 -1.5
baz=158,SNR=18
F33A **5 Mile Ranch,** 35.47 348 P P 20 57 08.5 -1.6
baz=163,SNR=65
109C **Camp Elliot, M** 35.47 312 P P 20 57 11.2 +0.9
baz=120
E37A **Wrenshall** 35.54 353 P P 20 57 09.6 -1.1
baz=170
TMUT **Trail Mountain** 35.58 326 *e*P P 20 57 13.0 +1.5
comp=Z,250nm,1.8s
TMUT *e*PcP PcP 20 59 41.3 +1.7
MSU **Marysvale** 35.58 324 *e*P P 20 57 12.3 +0.8
MSU **Marysvale** 35.58 324 *e*P P 20 57 12.3 +0.8
H28A **Mission Ridge** 35.58 342 P P 20 57 10.3 -0.9
baz=155,SNR=8.6
E36A **McGregor** 35.60 352 P P 20 57 09.9 -1.4
baz=168,SNR=14
I26A **New Underwood** 35.60 339 P P 20 57 11.5 +0.1
baz=152,SNR=13
CCUT **Cedar City** 35.65 322 *e*pP pP 20 57 26.8 +0.6
F32A **Veblen** 35.67 347 P P 20 57 10.2 -1.7
baz=162
G29A **Hoven** 35.73 344 P P 20 57 11.0 -1.5
baz=157
E35A **Pequot Lakes** 35.81 351 P P 20 57 12.1 -1.0
baz=166,SNR=11
K22A **Casper** 35.85 334 P P 20 57 13.7 0.0
baz=145,SNR=20
K22A **Casper** 35.85 334 *e*P P 20 57 13.8 +0.2
comp=Z,77nm,1.2s
H27A **Howes** 35.88 341 P P 20 57 13.4 -0.3
baz=153,SNR=88
MURC **Murrieta** 35.90 313 P P 20 57 15.5 +1.5
baz=121,SNR=11
E34A **Wadena** 35.90 350 P P 20 57 12.8 -1.0
baz=165,SNR=10
I25A **Rochford** 35.90 338 P P 20 57 14.7 +0.5
baz=150,SNR=44
G28A **Parade** 35.91 342 P P 20 57 13.0 -1.0
baz=155,SNR=8.0
F31A **Hecla** 35.92 346 P P 20 57 12.2 -1.8
baz=160,SNR=5.6
HEC **Hector,Ludlow** 35.95 316 P P 20 57 15.6 +1.1
baz=124
TUQ **Turquoise Moun** 36.01 317 P P 20 57 15.8 +0.8
baz=125
E33A **Westby DABS, E** 36.05 349 P P 20 57 13.2 -1.9
baz=164,SNR=19
BBRC **Big Bear Solar** 36.05 314 P P 20 57 16.8 +1.2
baz=122
F30A **Leola** 36.09 345 P P 20 57 13.5 -2.0
baz=159
H26A **Fairpoint** 36.09 340 P P 20 57 15.4 -0.2
baz=152,SNR=19
RSSD **Black Hills** 36.10 338 P P 20 57 16.2 +0.3
baz=150
RSSD **Black Hills** 36.10 338 *e*P P 20 57 16.1 +0.3
RSSD pmax pmax
comp=Z,39nm,0.6s
RSSD **Black Hills** 36.10 338 *e*P P 20 57 16.1 +0.3
comp=Z,40nm,0.6s
D37A **Cotton** 36.12 353 P P 20 57 14.2 -1.5
baz=170,SNR=13
PB01 **IPOC Station P** 36.15 153 *e*P P 20 57 20.3 +3.9
comp=Z,47nm,0.9s
D36A **Goodland** 36.23 352 P P 20 57 14.9 -1.8
baz=169,SNR=14
D35A **Remer** 36.27 351 P P 20 57 15.0 -2.0
baz=167,SNR=14
F29A **Eureka** 36.30 344 P P 20 57 15.5 -1.7
baz=157,SNR=9.1
MPU **Maple Canyon** 36.32 326 *e*P P 20 57 18.2 +0.5
comp=Z,76nm,0.8s
MPU *e*PcP PcP 20 59 43.4 +1.8
E32A **Braaten, Kindr** 36.35 348 P P 20 57 15.7 -2.0
baz=162
H25A **Fruitdale** 36.38 339 P P 20 57 18.2 +0.2
baz=151,SNR=14
RRX **Edison Barstow** 36.43 315 P P 20 57 19.5 +1.0
baz=123
D34A **Pat Rapids** 36.46 350 P P 20 57 17.2 -1.4
baz=165,SNR=8.8
E31A **Nome** 36.49 347 P P 20 57 17.7 -1.2
baz=161,SNR=24
G27A **Dupree** 36.50 341 P P 20 57 18.5 -0.5
baz=154,SNR=29
SHOC **Shoshone, Teco** 36.51 317 P P 20 57 19.9 +0.8
baz=125
NLU **North Lily Min** 36.52 326 *e*P P 20 57 20.8 +1.3
comp=Z,168nm,1.8s
GSC **Goldstone, Bar** 36.53 316 P P 20 57 20.5 +1.0
baz=124
GSC **Goldstone, Bar** 36.53 316 *e*P P 20 57 21.0 +1.5
GSC pmax pmax
comp=Z,31nm,1.4s
GSC **Goldstone, Bar** 36.53 316 *e*P P 20 57 21.0 +1.5
comp=Z,31nm,1.4s
C38A **Sawbill Land.** 36.55 354 P P 20 57 17.5 -1.9
baz=172,SNR=7.3
C39A **Grand Marais** 36.55 356 P P 20 57 17.6 -1.8
baz=174,SNR=5.3
BFSC **Mount Baldy Ra** 36.56 314 P P 20 57 20.9 +1.1
baz=121,SNR=6.7
SCI2 **San Clemente I** 36.57 311 P P 20 57 20.9 +1.1
baz=119
PSUT **Pine Spring** 36.58 323 *e*P P 20 57 21.0 +1.0
comp=Z,46nm,1.1s
F28A **McLaughlin** 36.58 343 P P 20 57 18.4 -1.3
baz=158,SNR=6.8
D33A **AnnSam, Waubun** 36.63 349 P P 20 57 18.5 -1.5
baz=164,SNR=16
G26A **Maurine** 36.63 341 P P 20 57 19.5 -0.7
baz=153,SNR=56
JLU **Jordanelle** 36.64 327 *e*P P 20 57 20.6 +0.1
comp=Z,38nm,0.7s
C37A **Embarrass** 36.66 353 P P 20 57 18.7 -1.5
baz=170,SNR=11
CIS **Catalina Islan** 36.68 312 P P 20 57 22.5 +1.8
baz=120,SNR=6.4
E30A **Jud** 36.68 345 P P 20 57 18.9 -1.6
baz=159,SNR=11
FMP **Fort Macarthur** 36.74 313 P P 20 57 22.8 +1.6
baz=120
C36A **Pine Crest Far** 36.76 353 P P 20 57 19.9 -1.3
baz=169,SNR=18
EYMN **Ely** 36.80 354 P P 20 57 19.8 -1.7
baz=172,SNR=8.4
EYMN **Ely** 36.80 354 *e*P P 20 57 19.9 -1.6
comp=Z,124nm,1.4s
EYMN LR LR
comp=Z,3µm,19.0s
G25A **Newell** 36.82 340 P P 20 57 21.9 +0.2
baz=151,SNR=31
MWC **Mount Wilson** 36.83 313 *e*P P 20 57 24.3 +2.1
MWC pmax pmax
comp=Z,288nm,1.9s
MWC **Mount Wilson** 36.83 313 *e*P P 20 57 24.3 +2.1
comp=Z,288nm,1.9s
D32A **Dogwood Acres,** 36.85 348 P P 20 57 20.4 -1.5
baz=162
C35A **Jirik Farms, M** 36.86 351 P P 20 57 20.7 -1.3
baz=168,SNR=43
CTU **Camp Tracy** 36.86 327 *e*P P 20 57 23.2 +0.9
comp=Z,59nm,0.9s
PKME **Peaks-Kenny Pk** 36.88 20 *e*P P 20 57 23.9 +1.7
comp=Z,459nm,1.9s
PKME LR LR
comp=Z,9µm,20.0s
SIV **San Ignacio** 36.89 137 P P 20 57 23.0 +0.3
comp=Z,36nm,0.6s,baz=319,slow=9.2,SNR=68
SIV PcP PcP 20 59 43.9 +0.4
comp=Z,12nm,0.7s,baz=278,slow=5.5,SNR=5.7
PASC **Pasadena Art C** 36.90 313 *e*P P 20 57 24.9 +2.3
comp=Z,205nm,1.8s
D31A **Mcclaflin, Tow** 36.92 347 P P 20 57 21.0 -1.5
baz=161,SNR=31
E29A **Napoleon** 36.93 345 P P 20 57 21.4 -1.3
baz=158,SNR=16
C34A **RKJ Ranch, Bem** 36.96 350 P P 20 57 21.3 -1.5
baz=166,SNR=5.9
F27A **Lemmon** 36.97 342 P P 20 57 22.3 -0.7
baz=154,SNR=29
TCUT **Toone Canyon** 36.99 328 *e*P P 20 57 24.1 +0.7
comp=Z,699nm,1.9s
TCUT *e*PcP PcP 20 59 45.4 +1.7
PB04 **IPOC Station P** 37.00 155 *e*pP pP 20 57 32.6 -5.2
DECC **Green Verdugo** 37.04 313 P P 20 57 24.4 +0.6
baz=121
DUG **Dugway, Tooele** 37.09 326 P P 20 57 25.2 +1.0
baz=134,SNR=31
DUG **Dugway, Tooele** 37.09 326 *e*P P 20 57 24.9 +0.7
DUG pmax pmax
comp=Z,67nm,1.3s
DUG MLR MLR
comp=Z,5µm,21.0s
DUG **Dugway, Tooele** 37.09 326 *e*P P 20 57 24.9 +0.7
comp=Z,67nm,1.3s
DUG LR LR
comp=Z,5µm,21.0s
TPNV **Topopah Spring** 37.09 319 P P 20 57 25.7 +1.4
baz=126,SNR=21
TPNV **Topopah Spring** 37.09 319 *e*P P 20 57 25.8 +1.5
TPNV pmax pmax
comp=Z,38nm,1.1s
TPNV **Topopah Spring** 37.09 319 *e*P P 20 57 25.8 +1.5
comp=Z,38nm,1.1s
EDW2 **Edwards Air Fo** 37.13 314 P P 20 57 25.3 +0.8
baz=122,SNR=12
F26A **Lodgepole** 37.15 341 P P 20 57 24.1 -0.4
baz=153,SNR=14
C33A **Trail** 37.21 349 P P 20 57 23.1 -1.9
baz=165
D30A **Buchanan** 37.21 346 P P 20 57 24.0 -1.0
baz=160,SNR=20
E28A **Huff** 37.22 344 P P 20 57 24.1 -1.0
baz=156,SNR=11
FURC **Furnace Creek,** 37.22 317 P P 20 57 26.4 +1.2
baz=125
LRMC **Laurel Mtn Rad** 37.23 315 P P 20 57 26.1 +0.6
baz=123,SNR=16
BW06 **Boulder Array** 37.30 331 P P 20 57 25.4 -0.7
baz=141,SNR=47
BW06 **Boulder Array** 37.30 331 *e*P P 20 57 24.4 -1.7
BW06 LR LR
comp=Z,6µm,22.0s
PD31 **Pinedale Array** 37.30 331 *e*P P 20 57 25.6 -0.5
PDAR **Pinedale Array** 37.30 331 P P 20 57 26.1 +0.1
comp=Z,28nm,0.6s,baz=125,slow=9.2,SNR=240
PDAR PcP PcP 20 59 45.1 +0.6
comp=Z,6.5nm,0.7s,baz=154,slow=4.7,SNR=6.0
PDAR ScP ScP 21 03 34.4 +7.1
comp=Z,0.4nm,0.7s,baz=128,slow=5.8,SNR=3.2
PDAR LR LR 21 17 52.4
comp=Z,3µm,18.3s,baz=134,slow=45
E27A **Carson** 37.33 343 P P 20 57 25.5 -0.5
baz=155,SNR=7.0
D29A **Pettibone, Tap** 37.37 345 P P 20 57 25.0 -1.4
baz=158,SNR=18
MPMC **Manual Prospec** 37.41 316 P P 20 57 27.3 +0.3
baz=124,SNR=22
C32A **Crookston** 37.41 349 P P 20 57 25.3 -1.3
baz=164
SNCC **San Nicolas Is** 37.42 311 P P 20 57 25.5 -1.4
baz=118
HWUT **Hardware Ranch** 37.42 328 *e*P P 20 57 27.1 0.0
comp=Z,99nm,0.8s
HWUT LR LR
comp=Z,3µm,19.0s
VLDQ **Val d'Or** 37.47 10 *e*P P 20 57 26.8 -0.3
comp=Z,76nm,1.2s
B35A **Bob, Littlefor** 37.47 352 P P 20 57 25.3 -1.9
baz=168,SNR=20
F25A **Bowman** 37.47 340 P P 20 57 26.9 -0.4
baz=152,SNR=20
BLG **Laguna Peak, P** 37.50 313 P P 20 57 29.1 +1.4
baz=120
OSI **Osito Audit: C** 37.50 314 P P 20 57 28.8 +1.0
baz=121
R11A **Troy Canyon, C** 37.51 321 P P 20 57 29.1 +1.2
baz=128,SNR=24
R11A **Troy Canyon, C** 37.51 321 *e*P P 20 57 28.8 +0.9
comp=Z,58nm,1.5s
DAC **Darwin (Calif)** 37.60 317 *e*P P 20 57 29.8 +1.1
DAC *e* 20 59 47.5
DAC pmax pmax
comp=Z,50nm,1.6s
DAC **Darwin (Calif)** 37.60 317 *e*P P 20 57 29.8 +1.1
comp=Z,50nm,1.6s
DAC *e*PcP PcP 20 59 47.5 +1.9
C31A **Landman Farms,** 37.63 347 P P 20 57 27.3 -1.2
baz=162,SNR=20
E26A **Carlson Angus** 37.64 342 P P 20 57 27.5 -1.2
baz=154,SNR=9.2
SPUT **South Promonto** 37.67 327 *e*P P 20 57 29.4 +0.2
comp=Z,43nm,0.8s
B33A **Robert and Kas** 37.67 350 P P 20 57 27.4 -1.5
baz=165,SNR=20
C30A **Mose, Pekin** 37.71 347 P P 20 57 28.3 -0.9
baz=160,SNR=35
BGU **Big Grassy Mou** 37.72 326 *e*P P 20 57 29.9 +0.4
comp=Z,301nm,1.9s
B34A **Aery, Baudette** 37.73 351 P P 20 57 27.8 -1.5
baz=167,SNR=68
AGMN **Agassiz Nation** 37.75 350 P P 20 57 28.2 -1.2
baz=165,SNR=48
AGMN **Agassiz Nation** 37.75 350 *e*P P 20 57 28.3 -1.2
comp=Z,643nm,1.8s
AGMN LR LR
comp=Z,3µm,22.0s
D28A **Regan** 37.75 344 P P 20 57 29.0 -0.5
baz=157,SNR=22
ARVC **Arvin** 37.84 314 P P 20 57 31.6 +1.1
baz=121,SNR=7.5
GRAC **Grapevine Rang** 37.85 318 P P 20 57 31.9 +1.3
baz=125,SNR=22
SCZ2 **Santa Cruz Isl** 37.85 312 P P 20 57 32.1 +1.4
baz=119
ISA **Isabella, Lake** 37.87 315 P P 20 57 32.2 +1.4
baz=122,SNR=9.3
ISA **Isabella, Lake** 37.87 315 *e*P P 20 57 32.6 +1.8
ISA *e* 20 59 48.5
ISA pmax pmax
comp=Z,127nm,1.9s
ISA **Isabella, Lake** 37.87 315 *e*P P 20 57 32.6 +1.8
comp=Z,127nm,1.9s
ISA *e*PcP PcP 20 59 48.5 +2.3
PB10 **IPOC Station P** 37.88 156 *e*pP pP 20 57 39.7 -5.3
D27A **Center** 37.94 343 P P 20 57 30.7 -0.4
baz=155,SNR=20
B32A **Ashes, Strandq** 37.96 349 P P 20 57 30.3 -1.0
baz=164,SNR=114
E25A **Miller Ranch,** 37.96 341 P P 20 57 30.8 -0.6
baz=152
AHID **Auburn Hatcher** 38.04 330 *e*P P 20 57 32.2 -0.1
comp=Z,68nm,0.8s
AHID *e*PcP PcP 20 59 48.0 +1.2
AHID LR LR
comp=Z,5µm,20.0s
MDND **Maddock** 38.11 346 P P 20 57 31.9 -0.6
baz=159,SNR=26
MDND **Maddock** 38.11 346 *e*P P 20 57 32.0 -0.6
comp=Z,976nm,1.4s
SBC **Santa Barbara** 38.13 313 P P 20 57 33.9 +1.0
baz=119
D26A **Manning** 38.13 342 P P 20 57 32.0 -0.8
baz=154,SNR=33
HVU **Hansel Valley** 38.18 327 *e*P P 20 57 34.2 +0.8
HVU pmax pmax
comp=Z,37nm,0.8s
HVU **Hansel Valley** 38.18 327 *e*P P 20 57 34.2 +0.8
comp=Z,37nm,0.8s
C28A **Hausauer Farms** 38.18 345 P P 20 57 32.6 -0.6
baz=158,SNR=8.6
B31A **Greenbush Farm** 38.21 348 P P 20 57 32.0 -1.4
baz=162,SNR=24
A33A **Warroad** 38.28 350 P P 20 57 33.2 -0.8
baz=166,SNR=106
REDW **Red Top Meadow** 38.37 331 *e*P P 20 57 35.2 +0.1
comp=Z,964nm,1.9s
B30A **Myrvik Farm, E** 38.38 347 P P 20 57 33.9 -0.9
baz=161,SNR=27
SNOW **Snow King Moun** 38.40 331 *e*P P 20 57 35.8 +0.4
comp=Z,118nm,0.9s
PKM **Mcpherson Peak** 38.42 313 P P 20 57 36.7 +1.1
baz=120,SNR=10
LOHW **Long Hollow** 38.44 331 *e*P P 20 57 35.6 -0.1
comp=Z,237nm,1.7s
TIN **Tinemaha, Big** 38.45 317 P P 20 57 36.9 +1.1
baz=124
A32A **Rocking H Ranc** 38.46 349 P P 20 57 33.8 -1.6
baz=164,SNR=27
C27A **Sayler Ranch,** 38.48 344 P P 20 57 35.2 -0.5
baz=156,SNR=22

D25A Fairfield 38.51 341 P P 20 57 35.8 -0.2
baz=153
A31A Linda, St. Vin 38.60 349 P P 20 57 35.4 -1.2
baz=163
MOOW Moose Ponds 38.61 331 eP P 20 57 36.9 -0.2
comp=Z,40nm,0.8s
B29A Wagenman Farm, 38.62 346 P P 20 57 35.9 -1.0
baz=159,SNR=26
FXWY Fox Creek 38.66 331 eP P 20 57 37.4 -0.1
comp=Z,19nm,0.7s
RCTC Rector, Farmer 38.74 316 P P 20 57 39.4 +1.4
baz=122
C26A Wahner Farm, P 38.75 343 P P 20 57 37.4 -0.5
baz=155,SNR=19
SMMC Simmler 38.76 314 P P 20 57 39.8 +1.5
baz=120,SNR=9.9
IMW Indian Meadow 38.81 331 eP P 20 57 38.8 -0.1
comp=Z,32nm,0.6s
ELK Elko 38.83 324 LR LR 21 15 26.4
comp=Z,2µm,19.5s,baz=315,slow=39
ELK Elko 38.83 324 eP P 20 57 39.6 +0.6
ELK pmax pmax
comp=Z,188nm,1.9s
ELK Elko 38.83 324 eP P 20 57 39.6 +0.6
comp=Z,188nm,1.9s
A30A Hoffart Farm, 38.84 347 P P 20 57 37.3 -1.4
baz=161,SNR=21
FLWY Flagg Ranch 38.84 332 eP P 20 57 39.3 +0.3
comp=Z,52nm,0.7s
B28A Dugan Ranch, T 38.86 345 P P 20 57 38.2 -0.6
baz=158,SNR=19
C25A Freed Ranch, W 38.99 342 P P 20 57 39.5 -0.6
baz=153,SNR=5.5
RLMT Red Lodge 39.01 334 P P 20 57 39.8 -0.7
baz=143,SNR=57
RLMT Red Lodge 39.01 334 eP P 20 57 40.0 -0.4
comp=Z,49nm,0.8s
H17A Grant Village 39.02 332 P P 20 57 41.0 +0.4
baz=140,SNR=18
H17A Grant Village 39.02 332 eP P 20 57 41.5 +0.9
comp=Z,150nm,1.8s
A29A Manning Farm, 39.03 347 P P 20 57 39.3 -0.9
baz=160,SNR=52
LMN Caledonia Moun 39.04 24 eP P 20 57 41.1 +0.7
comp=Z,53nm,0.6s
B27A Peters Farms, 39.05 344 P P 20 57 39.9 -0.5
baz=156,SNR=8.6
LKWY Lake 39.08 332 eP P 20 57 42.6 +1.5
LKWY pmax pmax
comp=Z,191nm,1.9s
LKWY MLR MLR
comp=Z,4µm,20.0s
LKWY Lake 39.08 332 eP P 20 57 42.6 +1.5
comp=Z,191nm,1.9s
LKWY LR LR
comp=Z,4µm,20.0s
LAO LASA Array 39.09 338 P P 20 57 40.1 -0.8
baz=148,SNR=30
LAO LASA Array 39.09 338 eP P 20 57 40.5 -0.4
comp=Z,66nm,0.7s
LAO LR LR
comp=Z,3µm,20.0s
MLAC Mammoth, Mammo 39.18 318 P P 20 57 42.9 +1.0
baz=124
NV11 Mina Array Sit 39.18 319 eP P 20 57 43.3 +1.4
comp=Z,116nm,1.4s
YFT Old Faithful 39.19 332 eP P 20 57 44.0 +2.0
comp=Z,266nm,1.8s
A28A Rude Farm, Bot 39.26 345 P P 20 57 40.9 -1.3
baz=158,SNR=12
NV01 Mina Array Sit 39.28 319 eP P 20 57 43.0 +0.3
NVAR Mina Array Bea 39.28 319 P P 20 57 44.4 +1.7
comp=Z,18nm,0.6s,baz=130,slow=7.4,SNR=54
NVAR PcP PcP 20 59 52.5 +1.7
comp=Z,12nm,0.6s,baz=127,slow=3.9,SNR=12
NVAR ScP S 21 03 40.5 +0.6
comp=Z,1.4nm,0.7s,baz=136,slow=4.1,SNR=3.8
NVAR LR LR 21 16 13.6
comp=Z,5µm,18.8s,baz=140,slow=40
B26A Jensen Ranch, 39.29 343 P P 20 57 41.8 -0.7
baz=155
YMR Madison River 39.41 332 eP P 20 57 44.7 +0.9
comp=Z,51nm,0.7s
B25A Knox Farm, Ray 39.46 342 P P 20 57 43.8 -0.2
baz=154
A27A Ledoux Ranch, 39.55 345 P P 20 57 43.9 -0.6
baz=157
ULM Lac du Bonnet 39.63 350 P P 20 57 43.8 -1.5
comp=Z,54nm,0.7s,baz=169,slow=8.3,SNR=71
ULM PcP PcP 20 59 51.8 +0.4
comp=Z,11nm,0.6s,baz=222,slow=5.2,SNR=4.7
ULM LR LR 21 16 51.5
comp=Z,2µm,19.9s,baz=163,slow=40
ULM Lac du Bonnet 39.63 350 eP P 20 57 43.4 -1.9
ULM 20 59 51.8
ULM pmax pmax
comp=Z,107nm,0.9s
ULM Lac du Bonnet 39.63 350 eP P 20 57 43.4 -1.9
comp=Z,107nm,0.9s
ULM PcP PcP 20 59 51.8 +0.4
A26A Wade Farm, Ken 39.71 344 P P 20 57 45.2 -0.8
baz=156,SNR=17
GCMT Greycliff 39.72 334 eP P 20 57 46.4 +0.2
QLMT Earthquake Lak 39.75 332 eP P 20 57 47.5 +0.9
BMN Battle Mountai 39.80 322 eP P 20 57 47.6 +0.7
BMN pmax pmax
comp=Z,216nm,1.5s
BMN Battle Mountai 39.80 322 eP P 20 57 47.6 +0.7
comp=Z,216nm,1.5s
DGMT Dagmar 39.96 341 P P 20 57 47.7 -0.3
baz=152,SNR=45
DGMT Dagmar 39.96 341 eP P 20 57 47.5 -0.5
comp=Z,190nm,0.8s
DGMT LR LR
comp=Z,4µm,19.0s
A25A Svangstu Ranch 40.05 343 P P 20 57 48.2 -0.5
baz=154,SNR=10
WAKR Walker 40.05 318 eP P 20 57 50.5 +1.3
HLID Hailey 40.29 328 P P 20 57 50.9 -0.1
baz=135,SNR=102
HLID Hailey 40.29 328 eP P 20 57 51.2 +0.1
comp=Z,51nm,0.7s
HLID LR LR
comp=Z,5µm,20.0s
MCMT McKenzie Canyo 40.42 331 eP P 20 57 53.0 +0.8
CMB Columbia Colle 40.43 317 eP P 20 57 53.1 +1.0
CMB e 20 59 55.8
CMB pmax pmax
comp=Z,77nm,1.6s
CMB Columbia Colle 40.43 317 eP P 20 57 53.1 +1.0
comp=Z,77nm,1.6s
CMB ePcP PcP 20 59 55.8 +1.6
BOZ Bozeman (W) 40.47 333 P P 20 57 52.4 -0.1
baz=140,SNR=143
BOZ Bozeman (W) 40.47 333 eP P 20 57 52.3 -0.1
BOZ pmax pmax
comp=Z,73nm,0.7s
BOZ MLR MLR
comp=Z,3µm,19.0s
BOZ Bozeman (W) 40.47 333 eP P 20 57 52.3 -0.1
comp=Z,73nm,0.7s
BOZ LR LR
comp=Z,3µm,19.0s
SAO San Andreas Ge 40.50 315 eP P 20 57 54.3 +1.6
SAO pmax pmax
comp=Z,147nm,1.9s
SAO San Andreas Ge 40.50 315 eP P 20 57 54.3 +1.6
comp=Z,147nm,1.9s
DLMT Dillon 40.70 331 eP P 20 57 55.0 +0.7
comp=Z,248nm,1.7s
MFID Camas Ranch 40.93 327 eP P 20 57 56.2 -0.1
comp=Z,208nm,2.0s
MFID ePcP PcP 20 59 58.0 +2.1
LRM Limekiln Ridge 40.97 332 eP P 20 57 56.8 0.0
AFDM Forest Hills D 41.30 318 eP P 20 57 59.8 +0.5
comp=Z,111nm,1.9s
EGMT Eagleton 41.54 336 P P 20 58 00.9 -0.3
baz=144,SNR=17
EGMT Eagleton 41.54 336 eP P 20 58 00.9 -0.3
comp=Z,80nm,0.9s
EGMT LR LR
comp=Z,3µm,22.0s
WVOR Wild Horse Val 41.87 324 eP P 20 58 04.1 +0.1
WVOR pmax pmax
comp=Z,634nm,1.9s
WVOR MLR MLR
comp=Z,4µm,19.0s
WVOR Wild Horse Val 41.87 324 eP P 20 58 04.1 +0.1
comp=Z,634nm,1.9s
WVOR LR LR
comp=Z,4µm,19.0s
ORV Oroville 41.97 318 eP P 20 58 05.7 +1.0
ORV pmax pmax
comp=Z,46nm,1.2s
ORV Oroville 41.97 318 eP P 20 58 05.7 +1.0
comp=Z,46nm,1.2s
CHMT Chamberlain Mo 42.16 332 eP P 20 58 05.8 -0.5
MCCM Marconi Confer 42.17 316 eP P 20 58 08.6 +2.3
comp=Z,79nm,0.9s
MSO Missoula 42.41 332 P P 20 58 07.8 -0.5
baz=138,SNR=28
MSO Missoula 42.41 332 eP P 20 58 08.0 -0.3
comp=Z,256nm,1.8s
MOD Modoc Plateau 42.54 322 eP P 20 58 09.6 +0.1
comp=Z,106nm,1.9s
MOD ePcP PcP 21 00 03.4 +2.1
O03D Paynes Creek 42.57 319 P P 20 58 09.3 -0.4
baz=123,SNR=8.5
BMO Blue Mountains 42.69 327 eP P 20 58 09.5 -1.1
comp=Z,34nm,0.8s
BMO LR LR
comp=Z,5µm,20.0s
HOPS Hopland Field 42.72 317 eP P 20 58 13.1 +2.3
comp=Z,186nm,1.8s
LCO Las Campanas 42.82 160 epP pP 20 58 20.5 -5.8
LCO LR LR
comp=Z,2µm,19.0s
SWMT Swartz Lake 42.94 333 eP P 20 58 11.9 -0.7
WDC Whiskeytown Da 43.20 319 eP P 20 58 13.0 -1.6
WDC e 21 00 04.1
WDC pmax pmax
comp=Z,32nm,1.7s
WDC Whiskeytown Da 43.20 319 eP P 20 58 13.0 -1.6
comp=Z,32nm,1.7s
WDC ePP PcP 21 00 04.1 +0.8
YBMT Yellow Bay 43.21 333 eP P 20 58 15.1 +0.3
JTMT Jette 43.25 333 eP P 20 58 15.1 0.0
K05A Summer Lake 43.37 323 eP P 20 58 16.6 +0.3
comp=Z,129nm,1.8s
K05A ePP PcP 21 00 06.5 +2.4
F10A Beach Ranch, E 43.40 329 eP P 20 58 15.6 -0.8
comp=Z,41nm,0.6s
M04C Macdoel 43.41 321 P P 20 58 16.4 -0.1
baz=124,SNR=13
BLMT Blacktail Moun 43.48 333 eP P 20 58 17.4 +0.3
N02D Trinity Center 43.51 319 P P 20 58 16.7 -0.5
baz=123
BSMT Bassoo Peak 43.55 332 P P 20 58 17.7 +0.1
KMRM Mail Ridge 43.77 318 eP P 20 58 22.2 +2.8
comp=Z,226nm,1.6s
M02C Callahan 43.83 320 P P 20 58 18.7 -1.1
baz=123
K04D Chiloquin, OR 43.83 322 P P 20 58 19.5 -0.4
baz=125
J05D Fort Rock, OR 43.91 323 P P 20 58 19.5 -0.9
baz=126
YBH Yreka Blue Hor 43.92 320 P P 20 58 19.7 -0.9
comp=Z,3.4nm,0.4s,baz=88,slow=16
YBH PcP PcP 21 00 05.2 -0.6
comp=Z,3.8nm,0.6s,baz=184,slow=3.8,SNR=3.5
YBH LR LR 21 20 02.5
comp=Z,4µm,20.3s,baz=139,slow=41
YBH Yreka Blue Hor 43.92 320 eP P 20 58 19.9 -0.7
YBH e 21 00 06.8
YBH pmax pmax
comp=Z,10.0nm,0.9s
YBH Yreka Blue Hor 43.92 320 eP P 20 58 19.9 -0.7
comp=Z,10nm,0.9s
YBH ePP PcP 21 00 06.8 +0.9
WALA Waterton Lakes 44.07 334 eP P 20 58 21.6 -0.1
comp=Z,63nm,1.0s
KHMM Horse Mountain 44.12 319 eP P 20 58 23.4 +1.2
comp=Z,245nm,2.0s
RPN Rapa Nui 44.21 210 PFAKE 20 58 30.0 +7.1
RPN LR LR
comp=Z,2µm,20.0s
JCC Jacoby Creek, 44.28 318 eP P 20 58 26.7 +3.4
comp=Z,235nm,1.8s
I05D Terrebonne, OR 44.59 324 P P 20 58 25.3 -0.6
baz=127,SNR=7.9
L02D Cave Junction, 44.71 320 P P 20 58 25.5 -1.3
baz=123
G06A Carlson Farm, 44.74 326 eP P 20 58 27.9 +1.0
comp=Z,191nm,1.6s
HAWA Hanford 44.88 328 eP P 20 58 27.8 -0.3
comp=Z,58nm,0.8s
HAWA LR LR
comp=Z,5µm,21.0s
I04A Tendick Farm, 44.90 323 P P 20 58 27.3 -0.9
baz=125,SNR=13
NEW Newport 44.94 331 P P 20 58 28.2 -0.3
comp=Z,10nm,0.7s,baz=134,slow=8.1,SNR=17
NEW PcP PcP 21 00 08.9 -0.2
comp=Z,10.0nm,0.6s,baz=183,slow=1.4,SNR=7.3
NEW LR LR 21 20 50.4
comp=Z,3µm,19.1s,baz=140,slow=41
NEW Newport 44.94 331 P P 20 58 27.6 -0.9
baz=135,SNR=14
NEW Newport 44.94 331 eP P 20 58 27.6 -0.9
NEW e 21 00 09.6
NEW pmax pmax
comp=Z,174nm,1.9s
NEW Newport 44.94 331 eP P 20 58 27.6 -0.9
comp=Z,174nm,1.9s
NEW ePcP PcP 21 00 09.6 +0.5
D08A Wollman Farm, 45.00 329 eP P 20 58 29.1 +0.1
comp=Z,104nm,1.4s
FFC Flin Flon 45.06 347 eP P 20 58 28.2 -1.1
FFC pmax pmax
comp=Z,259nm,1.8s
FFC MLR MLR
comp=Z,4µm,22.0s
FFC Flin Flon 45.06 347 eP P 20 58 28.2 -1.1
comp=Z,259nm,1.8s
FFC LR LR
comp=Z,4µm,22.0s
G05D Wamic, OR 45.12 325 P P 20 58 30.4 +0.3
baz=128,SNR=12
MDW Midway 45.14 328 P P 20 58 30.2 +0.1
MDW Midway 45.14 328 P P 20 58 30.2 +0.1
C09A Chrisman Ranch 45.17 330 eP P 20 58 30.0 -0.3
comp=Z,39nm,0.6s
C09A ePcP PcP 21 00 11.3 +1.4
TRW Toppenish Ridg 45.35 327 P P 20 58 33.0 +1.2
I03D Drain, OR 45.40 322 P P 20 58 31.8 -0.4
baz=124
COR Corvallis 45.88 323 P P 20 58 36.2 +0.3
COR pmax pmax
comp=Z,702nm,1.9s
B08A Colville Reser 46.08 330 eP P 20 58 35.2 -2.3
comp=Z,232nm,1.9s
ETW Entiat 46.08 328 P P 20 58 37.4 -0.3
SCHQ Schefferville 46.10 16 P P 20 58 36.1 -1.4
comp=Z,18nm,0.5s,baz=199,slow=5.7,SNR=17
SCHQ PcP PcP 21 00 11.8 -1.2
comp=Z,8.7nm,0.5s,baz=230,slow=5.5,SNR=3.8
SCHQ LR LR 21 18 27.5
comp=Z,6µm,20.6s,baz=210,slow=37
SCHQ Schefferville 46.10 16 eP P 20 58 36.5 -1.0
comp=Z,144nm,1.5s
SCHQ PcP PcP 21 00 11.8 -1.2
F04A Amboy 46.16 325 eP P 20 58 38.9 +0.8
comp=Z,48nm,0.8s
G03D McMinnville, O 46.21 324 P P 20 58 38.8 +0.2
baz=126,SNR=7.3
LON Longmire 46.32 327 eP P 20 58 39.5 0.0
LON pmax pmax
comp=Z,41nm,1.0s
LON Longmire 46.32 327 eP P 20 58 39.5 0.0
comp=Z,41nm,1.0s
ROC1 El Roble 46.38 162 epP pP 20 58 48.5 -6.3
NLW Nelson Butte 46.39 329 P P 20 58 39.6 -0.5
WRW Wenatchee Ridg 46.53 328 P P 20 58 41.2 0.0
C06D Leavenworth 46.58 328 P P 20 58 41.3 -0.1
baz=130,SNR=13
F04D Rainier, OR 46.58 325 P P 20 58 41.7 +0.3
baz=126,SNR=6.6
D05A Enumclaw 46.69 327 eP P 20 58 42.5 +0.2
comp=Z,75nm,0.9s
CPUP Villa Florida 46.85 143 P P 20 58 43.1 -0.6
comp=Z,14nm,0.6s,baz=334,slow=8.4,SNR=38
CPUP LR LR 21 21 18.8
comp=Z,3µm,18.1s,baz=322,slow=40
CPUP Villa Florida 46.85 143 eP P 20 58 42.8 -0.9
CPUP Villa Florida 46.85 143 eP P 20 58 42.8 -0.9
PNT Penticton 46.86 331 eP P 20 58 43.7 +0.1
PNT Penticton 46.86 331 eP P 20 58 43.7 +0.1
E03A Lebam 47.16 325 eP P 20 58 47.1 +1.2
comp=Z,560nm,1.8s
RPW Rockport 47.23 329 P P 20 58 45.8 -0.8
B06A Marblemount 47.26 329 eP P 20 58 45.5 -1.2
comp=Z,93nm,0.6s
JCW Jim Creek 47.28 328 P P 20 58 45.8 -1.1
B05A Bryant 47.42 328 P P 20 58 47.1 -0.8
baz=129,SNR=6.9
FCC Fort Churchill 47.74 355 eP P 20 58 48.8 -1.4
FCC pmax pmax
comp=Z,32nm,1.1s
FCC Fort Churchill 47.74 355 eP P 20 58 48.8 -1.4
comp=Z,32nm,1.1s
NLWA Neilton Lookou 47.83 326 PFAKE 20 59 00.0 +8.8
NLWA LR LR
comp=Z,10µm,20.0s
A04D Lummi Island 48.02 328 P P 20 58 52.1 -0.4
baz=129
PGC Sidney 48.36 328 eP P 20 58 55.5 +0.4
comp=Z,174nm,1.6s
SPB Sao Paulo 51.49 133 eP P 20 59 18.2 -1.0
comp=Z,158nm,2.0s
SPB LR LR
comp=Z,5µm,21.0s
BBB Bella Bella 52.86 329 P P 20 59 29.3 +0.3
comp=Z,27nm,0.8s,baz=68,slow=0.3,SNR=4.2
RCBR Riachuelo 53.01 106 LR LR 21 23 55.6
comp=Z,8µm,18.6s,baz=292,slow=38
PLCA Paso Flores 53.78 165 P P 20 59 36.8 +0.7
comp=Z,5.7nm,0.9s,baz=4.3,slow=9.6,SNR=14
PLCA LR LR 21 18 06.5
comp=Z,2µm,18.9s,baz=23,slow=31
PLCA Paso Flores 53.78 165 eP P 20 59 36.9 +0.9
PLCA pmax pmax
comp=Z,83nm,1.1s
PLCA Paso Flores 53.78 165 eP P 20 59 36.9 +0.9
comp=Z,83nm,1.1s
FRB Frobisher Bay 53.88 10 P P 20 59 33.9 -2.4
comp=Z,8.2nm,0.6s,baz=210,slow=7.6,SNR=25
TRQA Tornquist 54.13 156 eP P 20 59 41.3 +2.8
comp=Z,161nm,1.4s
TRQA LR LR
comp=Z,2µm,20.0s
YKA Yellowknife Ar 55.01 344 P P 20 59 43.4 -1.1
comp=Z,17nm,0.7s,baz=141,slow=7.2,SNR=279
YKA PcP PcP 21 00 45.9 +0.3
comp=Z,2.6nm,0.5s,baz=146,slow=4.0,SNR=11
YKA PKiKP PKiKP 21 07 17.4 -0.6
comp=Z,0.5nm,0.8s,baz=138,slow=1.2,SNR=4.4
YKA PKPPKP P'P'df 21 29 44.5 -9.4
comp=Z,0.6nm,0.9s,baz=339,slow=3.0,SNR=4.7
YKB5 Yellowknife Ar 55.01 344 eP P 20 59 41.2 -3.3
YKW3 Yellowknife Ar 55.07 344 eP P 20 59 43.5 -1.5
comp=Z,29nm,0.9s
PTCN Pitcairn Islan 55.89 229 PFAKE 21 00 00.0 +8.6
PTCN LR LR
comp=Z,7µm,22.0s
TAOE Nuku Hiva Isla 57.11 252 eS S 21 07 57.0 +4.9
comp=Z,2µm,25.5s
TAOE eLR LR 21 16 40.9
comp=Z,4µm,23.7s,baz=69
TAOE Nuku Hiva Isla 57.11 252 eT T 22 01 09.4
comp=Z,300nm,0.3s
WRAK Wrangell Islan 57.29 332 PFAKE 21 00 10.0 +9.1
WRAK LR LR
comp=Z,3µm,19.0s
DLBC Dease Lake 57.41 334 P P 21 00 01.9 0.0
comp=Z,31nm,0.9s,baz=129,slow=6.0,SNR=50
DLBC Dease Lake 57.41 334 eP P 21 00 02.3 +0.4
comp=Z,461nm,1.9s
RKT Rikitea 58.59 234 eS S 21 08 15.5 +4.6
comp=Z,3µm,26.0s
RKT eSS SS 21 12 04.2 -0.4
comp=Z,758nm,30.0s
RKT eLQ LQ 21 15 03.6
comp=Z,2µm,32.2s
RKT eLR LR 21 17 34.0
comp=Z,3µm,24.0s,baz=51
RKT Rikitea 58.59 234 eT T 22 03 01.5
comp=Z,10.0nm,0.2s
CHRN Cochrane 59.55 169 epP pP 21 00 25.7 -6.0
SKAG Skagway 60.27 334 eP P 21 00 21.7 +0.2
comp=Z,160nm,2.0s
SFJD Kangerlussuaq 60.55 15 PFAKE 21 00 30.0 +6.7
SFJD LR LR
comp=Z,9µm,21.0s
RES Resolute Bay 63.56 357 P P 21 00 42.4 -1.0
comp=Z,14nm,0.5s,baz=178,slow=9.4,SNR=81
RES Resolute Bay 63.56 357 eP P 21 00 42.1 -1.3
RES Resolute Bay 63.56 357 eP P 21 00 42.1 -1.3
INK Inuvik 64.63 342 P P 21 00 50.1 -0.4
comp=Z,19nm,0.8s,baz=126,slow=8.1,SNR=86
INK PKPPKP P'P'df 21 29 36.4 -2.5
comp=Z,0.8nm,0.6s,baz=9.9,slow=11,SNR=3.5
INK Inuvik 64.63 342 eP P 21 00 49.8 -0.7
INK Inuvik 64.63 342 eP P 21 00 49.8 -0.7
INK P'P' 21 29 36.4
RAGM Ragged Mountai 64.87 332 eP P 21 00 53.1 +0.8
BMRM Bremner River 65.07 333 eP P 21 00 53.7 +0.1
EGAK Eagle 65.30 337 eP P 21 00 53.8 -1.1
comp=Z,29nm,1.2s
EGAK LR LR
comp=Z,3µm,22.0s
EYAK Cordova Ski Ar 65.43 332 eP P 21 00 56.5 +0.7
comp=Z,356nm,1.9s
DIV Divide 65.66 333 eP P 21 00 57.6 +0.2
KLU Klutina 65.86 333 eP P 21 00 58.5 -0.2
DOT Dot Lake 65.93 336 eP P 21 00 58.7 -0.4
VAH Vaihoa 66.14 248 eP P 21 01 08.9 +7.7
comp=Z,88nm,1.1s
PAX Paxson 66.23 335 eP P 21 01 00.4 -0.7
PAX Paxson 66.23 335 eP P 21 01 00.3 -0.7
PMOR Pomariorio Ree 66.31 248 eT T 22 12 38.5
comp=Z,7.5nm,0.2s
SCM Sheep Creek Mo 66.61 333 eP P 21 01 03.0 -0.5
SCM Sheep Creek Mo 66.61 333 eP P 21 01 03.0 -0.5
POHA Pohakuloa 66.81 287 PFAKE 21 01 20.0 +14
POHA LR LR
comp=Z,3µm,20.0s
SEW Seward 67.00 331 eP P 21 01 05.5 -0.4
SML Sawmill 67.05 333 eP P 21 01 05.7 -0.6
SML Sawmill 67.05 333 eP P 21 01 05.7 -0.6
EFI East Falkland 67.31 161 PFAKE 21 01 20.0 +12
EFI LR LR
comp=Z,2µm,19.0s
PMR Palmer 67.33 333 eP P 21 01 07.7 -0.3
PMR Palmer 67.33 333 eP P 21 01 07.7 -0.3
HDA Harding Lake 67.40 336 eP P 21 01 07.4 -1.0
RC01 Rabbit Creek A 67.45 332 eP P 21 01 08.7 -0.1
SUMG Summit 67.45 14 iP P 21 01 07.8 -1.3
SUMG Summit 67.45 14 iP P 21 01 07.8 -1.3
SUMG Summit 67.45 14 eP P 21 01 07.0 -2.1
IL1 Eielson Array 67.51 336 eP P 21 01 06.7 -2.4
ILAR Eielson Array 67.51 336 P P 21 01 08.4 -0.7
comp=Z,18nm,0.6s,baz=132,slow=4.2,SNR=124
ILAR PP PP 21 03 35.3 -3.0
comp=Z,3.6nm,0.9s,baz=101,slow=7.0,SNR=4.8
ILAR LR LR 21 34 35.8
comp=Z,3µm,21.8s,baz=124,slow=40
ILB Eielson Array 67.51 336 eP P 21 01 08.1 -1.0
BRLK Bradley Lake 67.59 330 eP P 21 01 09.7 0.0
FYU Fort Yukon 67.61 338 eP P 21 01 09.7 +0.1
RND Reindeer 67.82 334 eP P 21 01 10.8 -0.4
RND Reindeer 67.82 334 eP P 21 01 10.8 -0.4
CCB Clear Creek Bu 67.83 336 eP P 21 01 09.7 -1.3
WRH Wood River Hil 67.88 336 eP P 21 01 10.1 -1.3
BBTS Babate 67.90 79 LR LR 21 25 39.4
comp=Z,1µm,21.6s,baz=264,slow=32
KDAK Kodiak Island 67.91 328 P P 21 01 26.5 +15
comp=Z,15nm,0.6s,baz=111,slow=4.1,SNR=18
KDAK Kodiak Island 67.91 328 eP P 21 01 12.0 +0.3
KDAK MLR MLR
comp=Z,2µm,21.0s
KDAK Kodiak Island 67.91 328 eP P 21 01 11.9 +0.3
KDAK LR LR
comp=Z,2µm,21.0s
COLA College 67.93 336c iP P 21 01 10.4 -1.3
COLA pmax pmax
comp=Z,108nm,1.9s
COLA College 67.93 336 eP P 21 01 11.2 -0.5
COLA LR LR
comp=Z,3µm,22.0s

MCK **McKinley** 67.97 335 *e*P **P** **21 01 11.4 -0.6**
MCK **McKinley** 67.97 335 *e*P **P** **21 01 11.3 -0.6**
MDM **Murphy Dome** 68.11 336 *e*P **P** **21 01 11.9 -1.0**
OHAK **Old Harbor** 68.15 327 *e*P **P** **21 01 13.0 -0.2**
TRF **Thorofare Moun** 68.44 334 *e*P **P** **21 01 14.4 -0.8**
TIAR **Tiarei** 68.48 246 *e*P P 21 01 24.7 +8.7
comp=Z,20nm,0.9s
SPU **Mount Spurr** 68.55 332 *e*P **P** **21 01 14.9 -0.8**
PPT **Papeete** 68.69 246 LR LR 21 25 05.4
comp=Z,2μm,18.4s,baz=27,slow=30
PPT2 **Papeete2** 68.70 246 *e*P P 21 01 25.2 +7.8
comp=Z,70nm,1.3s
PPT2 *e*S **S** **21 10 21.9 +4.9**
comp=Z,3μm,26.8s
PPT2 *e*SS **SS** **21 14 49.1 +6.3**
comp=Z,652nm,26.8s
PPT2 *e*LR LR 21 22 07.9
comp=Z,3μm,24.0s,baz=57
KTH **Kantishna Hill** 68.75 334 *e*P **P** **21 01 15.9 -1.1**
BPAW **Bear Paw Mtn.** 68.94 335 *e*P **P** **21 01 17.2 -0.9**
PPLA **Purkeypile** 69.10 333 *e*P **P** **21 01 18.1 -1.1**
MLY **Manley** 69.14 336 *e*P **P** **21 01 18.5 -0.8**
CAST **Castle Rocks** 69.20 334 *e*P **P** **21 01 18.2 -1.5**
COLD **Coldfoot** 69.67 338 *e*P **P** **21 01 22.8 +0.3**
SVW2 **Sparrevohn** 70.18 331 *e*P **P** **21 01 24.5 -1.3**
TBI **Tubuai** 70.65 240 *e*S **S** **21 10 45.2 +5.6**
comp=Z,2μm,26.2s
TBI **Tubuai** 70.65 240 *e*LR LR 21 23 05.7
comp=Z,3μm,24.5s,baz=65
TBI **Tubuai** 70.65 240 *e*T T 22 18 05.0
comp=Z,7.9nm,0.2s
CHGN **Chignik** 70.74 326 *e*P **P** **21 01 28.3 -0.9**
TT01 **Tatalina** 70.80 333 *e*P **P** **21 01 27.4 -2.0**
TTA **Tatalina** 70.80 333 *e*P **P** **21 01 28.0 -1.6**
TTA **Tatalina** 70.80 333 *e*P **P** **21 01 28.0 -1.6**
LIS **Lisbon** 73.09 53 *e*P **P** **21 01 42.9 -0.8**
LIS AMS AMS 21 29 27.7
comp=Z,3μm,22.7s
LIS **Lisbon** 73.09 53 *e*P **P** **21 01 42.8 -0.8**
FALS **False Pass** 73.40 324 *e*P **P** **21 01 44.9 -0.2**
comp=Z,118nm,0.6s
MORF **Marmelete** 73.51 54 *e*P **P** **21 01 45.1 -1.3**
MORF AMS AMS 21 29 24.0
comp=Z,3μm,19.9s
MORF **Marmelete** 73.51 54 *e*P **P** **21 01 45.0 -1.3**
MESJ **Messejana** 73.84 54 *e*P **P** **21 01 47.1 -1.0**
MESJ AMS AMS 21 29 27.1
comp=Z,3μm,19.0s
MESJ **Messejana** 73.84 54 *e*P **P** **21 01 47.1 -1.0**
DAG **Danmarks Havn** 74.05 13 *i*P **P** **21 01 45.3 -3.3**
comp=Z,4μm,21.0s
DAG **Danmarks Havn** 74.05 13 *i*P **P** **21 01 45.3 -3.3**
DAG MLR MLR
comp=Z,4μm,21.0s
ASCN **Ascension** 74.12 102 PFAKE 21 02 00.0 +10
ASCN LR LR
comp=Z,3μm,21.0s
MTE **Manteigas** 74.29 51 PFAKE 21 02 00.0 +9.2
MTE LR LR
comp=Z,5μm,20.0s
AKUT **Akutan** 74.74 323 *e*P **P** **21 01 52.9 0.0**
UNV **Unalaska Valle** 75.16 323 *e*P **P** **21 01 56.0 +0.6**
NIKH **Nikolski High** 76.56 322 *e*P **P** **21 02 04.1 +0.6**
PAB **San Pablo** 76.78 52 PFAKE 21 02 20.0 +15
PAB LR LR
comp=Z,3μm,20.0s
ESK **Eskdalemuir** 76.92 36 PFAKE 21 02 20.0 +15
ESK LR LR
comp=Z,3μm,20.0s
ESDC **Sonseca Array** 77.07 52 P **P** **21 02 04.9 -1.8**
comp=Z,2.2nm,0.6s,baz=286,slow=5.3,SNR=20
ES19 **SONSECA Array** 77.12 52 *e*P **P** **21 02 04.9 -2.1**
PMSA **Palmer Station** 77.69 170 PFAKE 21 02 20.0 +11
PMSA LR LR
comp=Z,1μm,19.0s
HOPE **Hope Point** 77.69 153 PFAKE 21 02 20.0 +10
HOPE LR LR
comp=Z,1μm,21.0s
GAMB **Gambell** 77.90 333 *e*P **P** **21 02 10.7 0.0**
MFF **Saint Martin d** 79.31 44 *e*P **P** **21 02 16.6 -2.3**
MFF pmax pmax
comp=Z,4.0nm,0.6s
ATKA **Atka Island** 79.86 321 *e*P **P** **21 02 22.4 +0.7**
LFF **La Frestale** 80.09 46 *e*P **P** **21 02 20.9 -2.2**
LFF pmax pmax
comp=Z,17nm,1.2s
TIC **Toumodi** 80.27 85 *e*P **P** **21 02 22.5 -2.2**
LIC **Lamto** 80.34 86 *e*P **P** **21 02 23.1 -1.9**
comp=Z,31nm,1.1s
JOHN **Johnston Islan** 80.36 285 PFAKE 21 02 40.0 +15
JOHN LR LR
comp=Z,161nm,19.0s
DBIC **Dimbokro** 80.42 85 P **P** **21 02 23.9 -1.6**
comp=Z,4.0nm,0.8s,baz=259,slow=4.7,SNR=11
KIC **Kosan Boka** 80.59 85 *e*P **P** **21 02 24.1 -2.3**
comp=Z,44nm,1.2s
KBS **Kingsbay** 80.60 11 *i*P **P** **21 02 26.2 +1.0**
KBS **Kingsbay** 80.60 11 PFAKE 21 02 40.0 +15
KBS LR LR
comp=Z,5μm,20.0s
CAF **Calviac** 81.03 46 *e*P **P** **21 02 25.7 -2.5**
CAF pmax pmax
comp=Z,8.0nm,1.2s
SPITS **Spitsbergen Ar** 81.62 12 P **P** **21 02 29.6 -1.1**
comp=Z,6.9nm,0.9s,baz=193,slow=1.5,SNR=14
HSPB **Hornsund (broa** 81.75 13 *e*P **P** **21 02 31.8 +0.5**
HSPB *e*S S 21 13 33.9 +54
HSPB MLR MLR
comp=Z,6μm,22.9s
LOR **Lormes** 81.97 43 *e*P **P** **21 02 31.7 -1.4**
LOR pmax pmax
comp=Z,2.0nm,0.6s
WLF **Walferdange** 83.12 41 PFAKE 21 02 50.0 +11
WLF LR LR
comp=Z,3μm,20.0s
KONO **Kongsberg** 83.35 31 PFAKE 21 02 50.0 +10
KONO LR LR
comp=Z,2μm,20.0s
NB2 **NORSAR Subarra** 83.86 29 P pP 21 03 01.0 +2.7
comp=Z,1.8nm,0.7s,baz=282,slow=5.1
NOA **NORSAR Array B** 83.86 29 P **P** **21 02 41.1 -1.6**
comp=Z,1.5nm,0.9s,baz=284,slow=5.0,SNR=4.8
NOA LR LR 21 39 00.6
comp=Z,2μm,19.1s,baz=275,slow=35
BNI **Bardonecchia** 84.25 45 PFAKE 21 03 00.0 +15
BNI LR LR
comp=Z,4μm,21.0s
BFO **Black Forest** 84.77 42 PFAKE 21 03 00.0 +13
BFO LR LR
comp=Z,2μm,21.0s
TORD **Torodi Ar. Bea** 85.62 78 P **P** **21 02 49.6 -2.7**
comp=Z,1.1nm,0.6s,baz=282,slow=6.1,SNR=24
TORD PKKPbc **PKKPbc** **21 20 56.1 +1.5**
comp=Z,0.7nm,0.5s,baz=86,slow=2.0,SNR=21
TORD PKPPKP **P'P'df** **21 29 00.7 -2.8**
comp=Z,2.0nm,1.2s,baz=116,slow=3.4,SNR=5.6
TORD LR LR 21 37 17.0
comp=Z,1μm,21.9s,baz=300,slow=33
BILL **Bilibino** 85.99 339 *c i*P **P** **21 02 52.6 -0.5**
BILL *e* 21 03 10.3
BILL *SP **sP** **21 03 15.0 +0.1**
BILL *e* 21 06 13.0
BILL *e*PPP PPP 21 08 05.1
BILL pmax pmax
comp=Z,63nm,1.7s
BILL MLR MLR
comp=Z,3μm,23.0s
BILL **Bilibino** 85.99 339 *e*P **P** **21 02 52.3 -0.8**
BILL LR LR
comp=Z,2μm,21.0s
DAVA **Damuels** 86.00 43 *i* PcP **P** **21 02 55.0 +1.1**
comp=Z,3.9nm,0.8s
DAVOX **Davos/Dischmat** 86.11 43 P **P** **21 02 52.7 -1.7**
comp=Z,1.5nm,0.5s,baz=342,slow=7.5,SNR=3.6
FETA **Feichten** 86.62 43 *i* PcP **P** **21 02 57.5 +0.6**
comp=Z,2.8nm,0.7s
ARCES **ARCESS Array B** 86.93 19 P **P** **21 02 56.1 -1.6**
comp=Z,1.4nm,0.5s,baz=289,slow=4.3,SNR=18
ARCES PKKPbc **PKKPbc** **21 20 51.1 -2.2**
comp=Z,1.5nm,0.7s,baz=356,slow=1.7,SNR=6.2
ARCES LR LR 21 41 49.2
comp=Z,2μm,18.3s,baz=334,slow=36
NKC **Novy Kostel** 86.99 39 *e*P **P** **21 02 57.2 -1.2**
NKC *e*S **S** **21 13 38.5 +5.5**
NKC *ex* x 21 14 53.5
comp=Z,4μm,20.0s
NKC **Novy Kostel** 86.99 39 *e*P **P** **21 02 57.2 -1.2**
NKC *e* 21 14 53.5
NKC MLR MLR
comp=Z,4μm,20.0s
VLC **Villacollemand** 87.02 46 PFAKE 21 03 10.0 +11
VLC LR LR
comp=Z,1μm,21.0s
CLL **Collm** 87.07 38 *e*(P) **P** **21 02 56.0 -2.7**
CLL *i* pP **pP** **21 03 15.4 +0.9**
CLL *i* sP **sP** **21 03 23.8 +3.2**
comp=Z,33nm,1.9s
CLL *i* 21 03 31.8
CLL *e*PP **PP** **21 06 18.0 -4.4**
CLL *e*S **S** **21 13 31.0 -2.6**
comp=N,200nm,23.1s
CLL *e*S **S** **21 13 31.0 -2.6**
comp=E,600nm,24.4s
CLL *e* 21 14 49.0
CLL *e*SS **SS** **21 19 24.0 +6.8**
CLL *e*SSS SSS 21 22 30.0
CLL *e* 21 23 18.0
CLL LmH 21 40 00.0
comp=N,1μm,19.2s
CLL LmH 21 40 00.0
comp=E,2μm,19.6s
CLL LmV 21 42 00.0
comp=N,1μm,19.5s
CLL LmV 21 42 00.0
comp=E,2μm,18.3s
CLL LmV 21 42 00.0
comp=Z,2μm,18.6s
CLL **Collm** 87.07 38 *e*P **P** **21 02 56.0 -2.7**
CLL *i* *PP **pP** **21 03 15.4 +0.9**
CLL *i* *SP **sP** **21 03 23.8 +3.2**
CLL *e*S **S** **21 13 31.0 -2.6**
CLL MLR MLR
comp=Z,2μm,18.6s
KEV **Kevo** 87.32 19 PFAKE 21 03 10.0 +10
KEV LR LR
comp=Z,2μm,20.0s
BRG **Berggiesshubel** 87.75 39 *e*P sP 21 03 27.0 +3.1
comp=Z,12nm,1.4s
BRG **Berggiesshubel** 87.75 39 S **S** **21 13 46.0 +5.8**
BRG SS SS 21 19 41.0 +14
comp=N,1μm,22.1s
comp=E,1μm,20.5s
comp=Z,2μm,21.5s
ABTA **Abfaltersbach** 87.88 43 *i* sP pP 21 03 20.0 +1.3
comp=Z,8.6nm,1.5s
KHC **Kasperske Hory** 87.97 40 *e*P **P** **21 03 01.3 -1.9**
KHC *ex* x 21 03 22.6
KHC *e*S **S** **21 13 49.3 +6.8**
KHC *ex* x 21 14 56.9
KHC AMS AMS 21 39 30.0
comp=Z,4μm,19.5s
KHC **Kasperske Hory** 87.97 40 *e*P **P** **21 03 01.3 -1.9**
KHC *e* 21 03 22.6
KHC MLR MLR
comp=Z,4μm,19.5s
KEST **Kesra** 88.07 54 LR LR 21 37 42.1
comp=Z,3μm,21.7s,baz=220,slow=32
GERES **GERESS Array B** 88.12 41 P **P** **21 03 02.1 -1.9**
comp=Z,0.6nm,0.5s,baz=292,slow=4.1,SNR=8.0
GERES PKKPbc PKKPbc 21 20 57.5 +7.7
comp=Z,0.2nm,0.4s,baz=56,slow=5.3,SNR=3.7
GERES LR LR 21 40 07.7
comp=Z,2μm,18.8s,baz=269,slow=34
PVCC **Panska Ves** 88.23 39 AMS AMS 21 38 20.0
comp=Z,2μm,19.1s
PRA **Prague** 88.27 39 AMS AMS 21 39 00.0
comp=Z,4μm,19.6s
AFI **Afiamalu** 88.30 256 LR LR 21 34 54.4
comp=Z,2μm,18.0s,baz=61,slow=30
KBA **Koelnbreinsper** 88.34 42 *i* sP pP 21 03 23.5 +2.5
comp=Z,9.9nm,1.8s
PRU **Pruhonice** 88.36 39 *e*S S 21 13 55.0 +9.0
PRU *e*PS PS 21 15 00.0 +4.1
PRU AMS AMS 21 38 50.0
comp=Z,4μm,19.8s
GOPC **GO Pecny, Ondr** 88.53 39 *e*S **S** **21 13 51.3 +3.6**
GOPC *e*PS PS 21 14 59.3 +1.4
GOPC AMS AMS 21 39 00.0
comp=Z,5μm,19.7s
MOA **Molln** 88.75 41 *i* PcP **P** **21 03 07.2 +0.3**
comp=Z,1.3nm,0.6s
UPC **Upice** 89.12 39 *e*SKS S 21 13 42.7 -10
UPC AMS AMS 21 38 40.0
comp=Z,2μm,19.5s
TREC **Trest** 89.14 40 AMS AMS 21 40 10.0
comp=Z,4μm,19.4s
DPC **Dobruska-Polom** 89.35 39 *e*P **P** **21 03 06.3 -3.4**
DPC *e*pP **pP** **21 03 23.0 -2.5**
DPC *ex* x 21 13 47.9
DPC *e*PS **PS** **21 15 08.0 +0.9**
DPC AMS AMS 21 38 50.0
comp=Z,2μm,19.9s
DPC **Dobruska-Polom** 89.35 39 *e*P **P** **21 03 06.3 -3.4**
DPC *e* 21 03 23.0
DPC *e*S **S** **21 13 47.9 -7.5**
DPC *e* 21 15 08.0
DPC MLR MLR
comp=Z,2μm,19.9s
AQU **L'Aquila** 89.59 47 PFAKE 21 03 20.0 +9.0
AQU LR LR
comp=Z,2μm,22.0s
ARSA **Arzberg** 89.73 42 *i* PcP **P** **21 03 13.4 +1.9**
comp=Z,2.4nm,1.1s
CONA **Conrad Observa** 89.76 41 *i*P **P** **21 03 11.4 -0.2**
comp=Z,3.2nm,1.1s
APA **Apatity** 90.42 19 ⇑ *i*P P 21 03 26.0 +12
FINES **FINESS Array B** 90.54 26 P **P** **21 03 12.7 -2.2**
comp=Z,1.0nm,0.6s,baz=286,slow=1.4,SNR=7.0
FINES LR LR 21 39 55.5
comp=Z,4μm,21.9s,baz=282,slow=33
OKC **Ostrava-Krasne** 90.63 39 AMS AMS 21 42 00.0
comp=Z,3μm,18.6s
LVZ **Lovozero** 90.65 19 PFAKE 21 03 30.0 +15
LVZ LR LR
comp=Z,2μm,20.0s
CLTB **Caltabellotta** 90.67 52 PFAKE 21 03 30.0 +14
CLTB LR LR
comp=Z,2μm,19.0s
CUC **Castrocucco** 91.98 49 PFAKE 21 03 30.0 +7.9
CUC LR LR
comp=Z,2μm,20.0s
WDD **Wied Dalam** 92.12 53 PFAKE 21 03 30.0 +7.2
WDD LR LR
comp=Z,2μm,22.0s
PSZ **Piszkesteto** 92.34 40 PFAKE 21 03 30.0 +6.3
PSZ LR LR
comp=Z,2μm,20.0s
TIP **Timpagrande** 92.91 49 PFAKE 21 03 40.0 +14
TIP LR LR
comp=Z,3μm,21.0s
SEY **Seymchan** 93.44 337 P **P** **21 03 28.3 0.0**
comp=Z,3.4nm,0.6s,baz=61,slow=4.3,SNR=14
SEY PP **PP** **21 07 08.9 -3.6**
comp=Z,2.7nm,1.1s,baz=50,slow=3.4,SNR=4.2
UZH **Uzhgorod** 93.59 39 *e*P **P** **21 03 29.0 -0.3**
UZH *e* 21 03 52.3
TIXI **Tiksi** 93.98 349 P **P** **21 03 29.6 -1.0**
comp=Z,4.3nm,0.4s,baz=45,slow=5.6,SNR=22
TIXI **Tiksi** 93.98 349 *c i*P **P** **21 03 29.2 -1.4**
TIXI pmax pmax
comp=Z,13nm,1.5s
TIXI **Tiksi** 93.98 349 P **P** **21 03 29.6 -1.0**
TIXI LR LR
comp=Z,2μm,22.0s
TIR **Tirane** 94.50 46 PFAKE 21 03 40.0 +6.4
TIR LR LR
comp=Z,1μm,20.0s
PET **Petropavlovsk** 95.47 327 PFAKE 21 03 50.0 +12
PET LR LR
comp=Z,1μm,21.0s
PETK **Petropavlovsk-** 95.95 327 P **P** **21 03 40.3 +0.3**
comp=Z,5.5nm,0.8s,baz=51,slow=7.8,SNR=4.4
PETK LR LR 21 49 43.9
comp=Z,386nm,20.0s,baz=56,slow=37
RAO **Raoul Island** 96.76 242 LR LR 21 37 12.9
comp=Z,912nm,21.8s,baz=127,slow=29
KIEV **Kiev** 96.85 35 PFAKE 21 03 50.0 +5.9
KIEV LR LR
comp=Z,2μm,19.0s
AKASG **Malin Array Be** 96.86 35 PP PP 21 07 37.4 -2.0
comp=Z,0.4nm,0.5s,baz=292,slow=7.2,SNR=5.2
AKASG LR LR 21 47 55.9
comp=Z,2μm,18.1s,baz=315,slow=36
SNAA **Sanae** 98.59 161 P Pdif 21 03 52.0 +0.5
NRIK **Noril'sk** 99.46 2 LR LR 21 50 32.9
comp=Z,2μm,20.3s,baz=360,slow=36
TARA **Tarawa** 100.24 273 PFAKE 21 04 10.0 +10
TARA LR LR
comp=Z,156nm,19.0s
IDI **Anoyia** 100.32 51 LR LR 21 46 47.1
comp=Z,533nm,20.2s,baz=309,slow=34
QSPA **South Pole Qui** 101.25 180 PFAKE 21 04 10.0 +6.5
QSPA LR LR
comp=Z,2μm,20.0s
YAK **Yakutsk** 101.68 344 PFAKE 21 04 20.0 +15
YAK LR LR
comp=Z,1μm,19.0s
ISP **Isparta** 103.45 47 PFAKE 21 04 20.0 +6.0
ISP LR LR
comp=Z,1μm,20.0s
SNZO **South Karori** 104.04 230 PFAKE 21 04 30.0 +14
SNZO LR LR
comp=Z,2μm,19.0s
ANTO **Ankara** 104.10 44 PFAKE 21 04 30.0 +13
ANTO LR LR
comp=Z,73nm,22.0s
SBA **Scott Base** 104.50 192 PFAKE 21 04 30.0 +12
SBA LR LR
comp=Z,2μm,19.0s
ARU **Arti** 106.52 19 PFAKE 21 08 50.0
ARU LR LR
comp=Z,2μm,21.0s
TSUM **Tsumeb** 106.68 107 PFAKE 21 08 50.0
TSUM LR LR
comp=Z,2μm,21.0s
CSS **Mathiatis** 106.75 48 PFAKE 21 08 50.0
CSS LR LR
comp=Z,167nm,22.0s
YSS **Yuzh-Sakhalins** 107.35 327 PFAKE 21 08 50.0
YSS LR LR
comp=Z,573nm,22.0s
KIV **Kislovodsk** 108.17 36 PFAKE 21 08 50.0
KIV LR LR
comp=Z,2μm,22.0s
KBZ **Khabaz** 108.43 36 PKKPab PKKPab 21 20 11.3 +4.4
comp=Z,1.7nm,0.8s,baz=190,slow=2.5,SNR=3.6
ERM **Erimo** 110.18 323 PFAKE 21 09 00.0
ERM LR LR
comp=Z,892nm,20.0s
SUR **Sutherland** 110.41 120 PFAKE 21 09 00.0
SUR LR LR
comp=Z,4μm,19.0s
KLR **Kul'dur** 111.05 334 PKiKP **PKiKP** **21 08 45.0 -1.4**
comp=Z,0.8nm,0.5s,baz=89,slow=5.2,SNR=4.5
GNI **Garni** 111.68 38 PFAKE 21 09 00.0
GNI LR LR
comp=Z,2μm,20.0s
ABKAR **Akbulak array** 112.82 23 *e*PKiKP **PKiKP** **21 08 49.5 -0.3**
BRVK **Borovoye** 112.86 15 PFAKE 21 09 00.0
BRVK LR LR
comp=Z,2μm,21.0s
BOSA **Boshof** 114.23 116 PKiKP **PKiKP** **21 08 53.2 0.0**
comp=Z,6.5nm,0.7s,baz=248,slow=1.5,SNR=17
BOSA PKKPbc **PKKPab** **21 19 37.3 -2.4**
comp=Z,3.5nm,1.0s,baz=127,slow=3.8,SNR=3.8
ZALV **Zalesovo Beam** 114.59 6 PKiKP **PKiKP** **21 08 52.1 -0.9**
comp=Z,6.8nm,0.5s,baz=283,slow=2.3,SNR=42
ZALV PKKPbc **PKKPab** **21 19 36.9 -2.8**
comp=Z,0.3nm,0.3s,baz=193,slow=5.9,SNR=2.6
ZALV PKKPab PKKPdf 21 19 44.9 -11
comp=Z,2.3nm,0.7s,baz=198,slow=3.6,SNR=10
USRK **Ussuriysk Ar.** 114.72 331 PKiKP PKPdf 21 08 53.7 +0.1
comp=Z,2.5nm,0.9s,baz=66,slow=2.3,SNR=5.5
HNR **Honiara** 114.87 265 PFAKE 21 09 10.0 +15
HNR LR LR
comp=Z,1μm,19.0s
HIA **Hailar** 115.48 341 PFAKE 21 09 10.0 +15
HIA LR LR
comp=Z,1μm,19.0s
MDJ **Mudanjiang** 115.53 332 PKP **PKPdf** **21 08 54.9 -0.2**
MDJ sPKP 21 09 15.0
MDJ PKS **PKSdf** **21 12 30.8 -0.9**
MDJ SKS **SKSdf** **21 16 01.3 -1.5**
MDJ SS **SS** **21 25 52.9 +1.6**
MDJ LR LR
comp=Z,470nm,19.3s
MDJ LR LR
comp=Z,630nm,17.2s
MDJ LR LR
comp=Z,1μm,19.3s
MDJ **Mudanjiang** 115.53 332 PFAKE 21 09 10.0 +15
MDJ LR LR
comp=Z,1μm,20.0s
LSZ **Lusaka** 116.38 102 PFAKE 21 09 10.0 +12
LSZ LR LR
comp=Z,1μm,21.0s
MJAR **Matsushiro Arr** 116.58 321 PKP **PKPdf** **21 08 57.2 -0.2**
comp=Z,1.2nm,0.6s,baz=95,slow=0.5,SNR=5.7
MJAR PKKPbc **PKKPab** **21 19 29.2 -1.5**
comp=Z,1.0nm,0.7s,baz=218,slow=5.0,SNR=4.9
MAJO **Matsushiro** 116.58 321 PFAKE 21 09 10.0 +13
MAJO LR LR
comp=Z,772nm,22.0s
TLY **Talaya** 116.70 353 PFAKE 21 09 10.0 +13
TLY LR LR
comp=Z,1μm,20.0s
KURK **Kurchatov** 116.89 11 *e*PKIKP **PKPdf** **21 08 56.9 -0.6**
KURK MLR MLR
comp=Z,6μm,20.0s
KURK **Kurchatov** 116.89 11 *e*PKPdf **PKPdf** **21 08 56.9 -0.6**
KURK LR LR
comp=Z,6μm,20.0s
CN2 **Changchun** 118.00 334 *e*PKP **PKPdf** **21 09 02.1 +2.2**
CN2 *e*PP **PP** **21 10 14.6 +0.8**
CN2 LR LR
comp=Z,1μm,20.0s
CN2 LR LR
comp=Z,1μm,20.0s
CN2 LR LR
comp=Z,900nm,20.0s
ZAK **Zakamensk** 118.02 353 *e*PKIKP **PKPdf** **21 08 58.7 -1.2**
ZAK pmax pmax
comp=Z,3.0nm,1.4s
ULN **Ulaanbaatar** 119.92 350 ⇓ *i*PKIKP **PKPdf** **21 09 03.8 +0.1**
ULN pmax pmax
comp=Z,18nm,2.5s
ULN **Ulaanbaatar** 119.92 350 PFAKE 21 09 10.0 +6.3
ULN LR LR
comp=Z,2μm,22.0s
SONM **Songino Array** 120.06 350 PKP **PKPdf** **21 09 03.5 -0.4**
comp=Z,4.8nm,0.5s,baz=324,slow=0.9,SNR=63
SONM PKKPbc **PKKPab** **21 19 14.1 -1.7**
comp=Z,0.3nm,0.6s,baz=214,slow=1.8,SNR=3.9
SONM PKKPab **PKKPbc** **21 19 20.7 +6.8**
comp=Z,0.8nm,0.8s,baz=197,slow=2.2,SNR=6.9
MAW **Mawson** 120.17 167 PKP **PKPdf** **21 09 04.0 +0.8**
comp=Z,2.2nm,0.7s,baz=310,slow=8.6,SNR=4.3
GEYT **Alibeck** 120.82 32 PKP **PKPdf** **21 09 05.7 +0.1**
comp=Z,11nm,0.5s,baz=276,slow=4.3,SNR=38
MKAR **Makanchi Array** 121.30 9 PKP **PKPdf** **21 09 04.9 -1.3**
comp=Z,3.2nm,0.4s,baz=305,slow=3.0,SNR=104
MKAR PKKPbc **PKKPab** **21 19 14.7 +4.4**
comp=Z,0.4nm,0.8s,baz=159,slow=3.8,SNR=4.9
RAYN **Ar Rayn** 121.58 53 PFAKE 21 09 20.0 +13
RAYN LR LR
comp=Z,1μm,19.0s
KSRS **Korea Array** 121.82 328 PKP **PKPdf** **21 09 07.9 +0.5**
comp=Z,9.3nm,0.7s,baz=9.0,slow=1.5,SNR=36
KSAR **Wonju Array Be** 121.85 328 PKIKP **PKPdf** **21 09 07.9 +0.4**
KSAR **Wonju Array Be** 121.85 328 PKP **PKPdf** **21 09 07.9 +0.4**
KKAR **Karatay Array** 121.89 20 *e*PKIKP **PKPdf** **21 09 06.0 -1.4**
KKAR **Karatay Array** 121.89 20 *e*PKPdf **PKPdf** **21 09 06.0 -1.4**
INCN **Inchon** 122.46 329 PFAKE 21 09 20.0 +11
INCN LR LR
comp=Z,747nm,20.0s
KMBO **Kilima Mbogo** 123.14 84 PFAKE 21 09 20.0 +9.1
KMBO LR LR
comp=Z,1μm,19.0s
EKS2 **Erkin-Say** 123.32 17 *e*PKIKP **PKPdf** **21 09 11.1 +0.8**
EKS2 MLR MLR
comp=Z,2μm,21.0s
EKS2 **Erkin-Say** 123.32 17 *e*PKPdf **PKPdf** **21 09 11.1 +0.8**
EKS2 LR LR
comp=Z,2μm,21.0s
GUMO **Guam** 123.50 295 PFAKE 21 09 20.0 +8.8
GUMO LR LR

comp=Z,689nm,21.0s
AAK Ala-Archa 123.55 17 *e*PKIKP **PKPdf 21 09 11.0 +0.2**
AAK MLR MLR
comp=Z,2μm,21.0s
AAK Ala-Archa 123.55 17 *e*PKPdf **PKPdf 21 09 11.0 +0.2**
AAK LR LR
comp=Z,2μm,21.0s
TKM2 Tokmak 2 123.59 16 *e*PKIKP **PKPdf 21 09 10.6 -0.4**
TKM2 MLR MLR
comp=Z,2μm,21.0s
TKM2 Tokmak 2 123.59 16 *e*PKPdf **PKPdf 21 09 10.6 -0.4**
TKM2 LR LR
comp=Z,2μm,21.0s
DL2 Dalian 123.66 334 PKP **PKPdf 21 09 08.8 -2.1**
DL2 PP **PP 21 10 54.5 +2.0**
DL2 SS SS 21 27 42.0 +6.2
DL2 AMB AMB
comp=Z,350nm,8.2s
DL2 LR LR
comp=Z,740nm,25.9s
DL2 LR LR
comp=Z,530nm,25.6s
DL2 LR LR
comp=Z,1μm,25.5s
CASY Casey 123.88 188 PFAKE 21 09 20.0 +10
CASY LR LR
comp=Z,703nm,19.0s
BJI Beijing 124.82 339 PKP **PKPdf 21 09 12.9 -0.2**
BJI PP **PP 21 11 01.3 +1.2**
BJI AMB AMB
comp=Z,250nm,13.7s
BJI LR LR
comp=Z,680nm,28.1s
BJI LR LR
comp=Z,1μm,29.1s
BJT Baijiatuan 124.84 339 *e*PKIKP **PKPdf 21 09 13.3 +0.2**
BJT MLR MLR
comp=Z,2μm,22.0s
BJT Baijiatuan 124.84 339 *e*PKPdf **PKPdf 21 09 13.3 +0.2**
BJT LR LR
comp=Z,2μm,22.0s
WMQ Urumqi 124.89 5 PKP **PKPdf 21 09 12.9 -0.4**
WMQ sPKP 21 09 36.8
WMQ PP **PP 21 11 02.5 +2.0**
WMQ PKS **PKSdf 21 12 48.3 -1.6**
WMQ SKS **SKSdf 21 16 13.8 -7.0**
WMQ SS **SS 21 27 51.4 +0.6**
WMQ AMB AMB
comp=Z,49nm,11.2s
WMQ LR LR
comp=Z,1μm,27.4s
WMQ LR LR
comp=Z,460nm,20.6s
WMQ LR LR
comp=Z,780nm,27.4s
HHC Hu-ho-hao-te 125.55 343 *e*PKP **PKPdf 21 09 15.3 +0.7**
HHC PP **PP 21 11 06.4 +1.4**
HHC SS SS 21 27 57.8 -1.6
HHC AMB AMB
comp=Z,110nm,8.8s
HHC LR LR
comp=Z,1μm,19.0s
HHC LR LR
comp=Z,470nm,20.0s
HHC LR LR
comp=Z,1μm,20.4s
KSH Kashi 126.86 17 PKP **PKPdf 21 09 18.4 +1.2**
KSH *e*PP **PP 21 11 16.1 +2.3**
KSH PKS **PKSdf 21 12 55.4 +1.5**
KSH SKS **SKSdf 21 16 25.3 +0.6**
KSH SKKS **SKKSac 21 18 05.3 -3.0**
KSH AMB AMB
comp=Z,270nm,6.8s
KSH LR LR
comp=Z,1μm,20.6s
KSH LR LR
comp=Z,250nm,12.2s
KSH LR LR
comp=Z,1μm,22.0s
PMG Port Moresby 127.37 267 *d i* PKIKP **PKPdf 21 09 20.7 +2.1**
PMG Port Moresby 127.37 267 PFAKE 21 09 30.0 +11
PMG LR LR
comp=Z,1μm,20.0s
TIA Tai'an 127.82 336 *e*PKP **PKPdf 21 09 19.3 +0.3**
CTA Charters Tower 128.77 253 PKP **PKPdf 21 09 21.4 +0.3**
comp=Z,3.1nm,0.5s,baz=139,slow=5.0,SNR=8.0
CTAO Charters Tower 128.77 253 PFAKE 21 09 30.0 +8.8
CTAO LR LR
comp=Z,929nm,20.0s
GTA Gaotai 129.24 354 *e*PKP **PKPdf 21 09 21.3 -0.5**
GTA SKS **SKSdf 21 16 26.0 -3.1**
GTA SKKS **SKKSac 21 18 19.1 -4.1**
GTA SS **SS 21 28 46.4 +1.3**
GTA LR LR
comp=Z,1μm,20.7s
GTA LR LR
comp=Z,960nm,20.9s
GTA LR LR
comp=Z,1μm,21.4s
SSE Sheshan 130.25 329 PKP **PKPdf 21 09 24.5 +0.8**
SSE PP **PP 21 11 41.1 +4.8**
SSE SS SS 21 29 04.9 +6.6
SSE AMB AMB
comp=Z,81nm,12.0s
SSE LR LR
comp=Z,490nm,20.8s
SSE LR LR
comp=Z,230nm,20.8s
SSE LR LR
comp=Z,590nm,20.5s
STKA Stephens Creek 131.38 237 PKP **PKPdf 21 09 25.6 -0.2**
comp=Z,6.6nm,0.6s,baz=103,slow=5.1,SNR=30
LZH Lanzhou 131.91 349 *e*PKP **PKPdf 21 09 28.3 +1.3**
LZH sPKP 21 09 50.5
LZH SKKS 21 18 38.4
LZH SS **SS 21 29 26.4 +8.4**
LZH AMB AMB
comp=Z,290nm,5.6s
LZH LR LR
comp=Z,700nm,18.5s
LZH LR LR
comp=Z,810nm,19.8s
LZH LR LR
comp=Z,910nm,20.2s
XAN Xi'an 132.64 343 PKP **PKPdf 21 09 28.3 0.0**
XAN AMB AMB
comp=Z,360nm,9.5s
XAN LR LR
comp=Z,2μm,23.3s
XAN LR LR
comp=Z,1μm,23.3s
WHN Wuhan 133.89 335 PKP **PKPdf 21 09 31.1 +0.5**
WHN PP **PP 21 11 59.9 +0.5**
WHN PKS **PKSdf 21 13 10.3 +3.2**
WHN LR LR
comp=Z,1μm,19.8s
WHN LR LR
comp=Z,2μm,17.0s
WHN LR LR
comp=Z,1μm,19.7s
OPO Ambohidratompo 134.64 105 PKP **PKPdf 21 09 33.2 +0.8**
comp=Z,2.5nm,0.5s,baz=280,slow=5.3,SNR=7.3
TATO Taipei 134.87 323 PFAKE 21 09 40.0 +7.4
TATO LR LR
comp=Z,730nm,20.0s
ENH Enshi 135.96 340 *e*PKPdf **PKPdf 21 09 34.3 -0.2**
ENH LR LR
comp=Z,2μm,19.0s
SSLB Suanglung 136.09 323 *e*PKPdf **PKPdf 21 09 34.6 -0.3**
QZH Quanzhou 136.54 326 PKPbc PKPdf 21 09 27.5 -8.2
QZH PP **PP 21 12 10.6 -5.9**
QZH PKS PKS 21 12 51.6
CD2 Chengdu 136.94 347 PKP **PKPdf 21 09 34.5 -1.9**
CD2 sPKP 21 09 57.5
CD2 SKS **SKSdf 21 16 40.3 -2.7**
CD2 SKKS **SKKSac 21 19 06.1 -4.1**
CD2 SS **SS 21 30 18.1 -0.2**
CD2 AMB AMB
comp=Z,260nm,6.4s
CD2 LR LR
comp=Z,1μm,21.6s
CD2 LR LR
comp=Z,2μm,20.4s
PAF Port-aux-Franc 137.36 157 PFAKE 21 09 50.0 +14
PAF LR LR
comp=Z,1μm,19.0s
LSA Lhasa 139.19 3 *e*PKIKP **PKPdf 21 09 38.2 -2.9**
LSA MLR MLR
comp=Z,1μm,22.0s
LSA Lhasa 139.19 3 *e*PKPdf **PKPdf 21 09 38.2 -2.9**
LSA LR LR
comp=Z,1μm,22.0s
PYUN Piuthan 139.51 15 *e*P **PKPdf 21 09 38.1 -3.3**
comp=Z,35nm,0.8s
ASAR Alice Springs 139.81 247 PKhKP PKPpre 21 09 33.5
comp=Z,1.6nm,0.5s,baz=111,slow=3.4,SNR=12
ASAR PKP **PKiKP 21 09 42.5 -1.7**
comp=Z,9.1nm,0.8s,baz=107,slow=2.1,SNR=31
ASAR SKPbc **SKiKP 21 13 17.5 +1.7**
comp=Z,1.1nm,0.9s,baz=90,slow=1.9,SNR=3.5
WRAB Tennant Creek 139.94 252 *c i* PKIKP **PKPdf 21 09 42.5 +0.4**
WRAB Tennant Creek 139.94 252 PFAKE 21 09 50.0 +7.9
WRAB LR LR
comp=Z,1μm,20.0s
WRA Warramunga Arr 139.95 252 PKhKP PKPpre 21 09 32.5
comp=Z,1.3nm,0.7s,baz=89,slow=3.6,SNR=24
WRA PKP **PKPdf 21 09 42.5 +0.4**
comp=Z,9.6nm,0.6s,baz=92,slow=1.6,SNR=42
WRA SKPbc **SKiKP 21 13 19.1 +2.8**
comp=Z,0.6nm,0.9s,baz=100,slow=2.4,SNR=7.1
KOLN Koldanda 139.98 14 *e*P PKPpre 21 09 37.8
comp=Z,15nm,0.5s
GKN Gorkha 139.99 12 *e*P PKPpre 21 09 36.8
comp=Z,32nm,0.5s
GUN Gumba 140.32 11 *e*P PKPpre 21 09 35.4
comp=Z,52nm,0.8s
KKN Kakani 140.32 12 *e*P PKPpre 21 09 36.6
comp=Z,19nm,0.6s
GYA Guiyang 140.41 342 PKP **PKPdf 21 09 41.0 -1.9**
GYA sPKP 21 10 03.6
GYA PP **PP 21 12 43.3 +3.2**
GYA PKS **PKSdf 21 13 15.8 -3.4**
GYA SKKS 21 19 26.4
GYA SS **SS 21 30 59.6 0.0**
GYA AMB AMB
comp=Z,160nm,7.9s
GYA LR LR
comp=Z,3μm,24.2s
GYA LR LR
comp=Z,2μm,25.0s
GYA LR LR
comp=Z,3μm,25.6s
DMN Daman 140.46 12 *e*P PKPpre 21 09 36.6
comp=Z,17nm,0.6s
PKIN Phulchoki 140.55 12 *e*P PKPpre 21 09 36.4
comp=Z,12nm,0.5s
KMI Kunming 142.74 346 PKP PKPpre 21 09 40.3
KMI PP **PP 21 12 57.3 +3.0**
KMI PKS **PKSdf 21 13 19.4 -4.0**
KMI SKKS 21 19 44.4
KMI AMB AMB
comp=Z,220nm,7.6s
KMI LR LR
comp=Z,590nm,22.2s
KMI LR LR
comp=Z,720nm,22.2s
KMI LR LR
comp=Z,890nm,26.4s
DAV Davao City (W) 143.36 298 PFAKE 21 10 00.0 +12
DAV LR LR
comp=Z,592nm,20.0s
TNTI Ternate 144.40 287 *e*PKPdf PKPbc 21 09 48.2 -0.5
KLRI Killari 146.33 30 *e*PKPdf **PKPdf 21 09 51.9 -1.5**
SRSP Sriramsagar 146.40 27 *e*PKPdf **PKPdf 21 09 51.5 -1.9**
RPR Rampur 146.88 25 *e*PKPdf **PKPdf 21 09 52.7 -1.6**
HYBB Hyderabad (bro 147.82 28 *e*PKPdf **PKPdf 21 09 54.1 -1.8**
HYBB *e*PKPbc **PKPbc 21 09 57.0 -1.8**
HYB Hyderabad 147.82 28 *i* PKP **PKPdf 21 09 55.0 -0.9**
FITZ Fitzroy Crossi 148.35 254 PKP **PKPdf 21 09 57.7 +1.0**
comp=Z,17nm,0.7s,baz=54,slow=5.2,SNR=43
FITZ PKPbc **PKiKP 21 10 00.7 -1.1**
comp=Z,17nm,0.7s,baz=112,slow=0.7,SNR=57
NJS Nagarjunasagar 148.92 27 *e*PKPdf **PKPdf 21 09 57.2 -0.4**
CHLP Challavanipeta 148.93 18 *e*PKPdf **PKPdf 21 09 57.3 -0.4**
SRLM Srisailam 149.13 28 *e*PKPdf **PKPdf 21 09 57.6 -0.4**
SRLM *e*PKPbc **PKPbc 21 10 00.2 -2.0**
PVM Polavaram 149.26 23 *e*PKPdf **PKPdf 21 09 57.7 -0.5**
URV Uravakonda 149.30 32 *e*PKPdf **PKPdf 21 09 58.1 -0.3**
NWAO Narrogin (SRO) 149.45 221 PKPbc **PKPbc 21 10 02.8 +0.2**
comp=Z,20nm,0.6s,baz=74,slow=0.1,SNR=17
NWAO Narrogin (SRO) 149.45 221 PKP2 **PKPbc 21 10 02.8 +0.2**
NWAO MLR MLR
comp=Z,999nm,20.0s
NWAO Narrogin (SRO) 149.45 221 PKPbc **PKPbc 21 10 02.8 +0.2**
NWAO LR LR
comp=Z,999nm,20.0s
CHTO Chiang Mai 149.64 350 *e*PKPdf **PKPdf 21 09 58.5 -0.4**
CHTO LR LR
comp=Z,791nm,22.0s
RCLA Racherla 149.71 29 *e*PKPdf **PKPdf 21 09 57.1 -1.9**
ADKI Addanki 149.84 27 *e*PKPdf **PKPdf 21 09 59.2 +0.1**
ADKI *e*PKiKP **PKiKP 21 10 04.4 -0.5**
SOEI Soe 149.85 270 *e*PKPdf **PKPdf 21 10 00.1 +0.8**
CMAR Chiang Mai Arr 149.99 350 PKP **PKPdf 21 09 59.8 +0.4**
comp=Z,18nm,1.0s,baz=307,slow=2.4,SNR=72
CMAR PKPbc **PKiKP 21 10 05.1 -0.1**
comp=Z,16nm,0.6s,baz=338,slow=3.0,SNR=73
BATI Baumata 150.49 269 PKPbc **PKPbc 21 10 07.5 +1.9**
comp=Z,8.1nm,0.6s,baz=108,slow=20,SNR=4.3
SKHT Srikalahasti 151.56 29 *e*PKPdf **PKPdf 21 10 02.0 +0.2**
KKM Kota Kinabalu 151.70 306 PFAKE 21 10 10.0 +1.4
KKM LR LR
comp=Z,724nm,20.0s
MBWA Marble Bar 153.13 245 *e*PKPdf **PKPdf 21 10 03.6 -0.4**
MBWA LR LR
comp=Z,1μm,20.0s
KAPI Kappang 153.42 281 PFAKE 21 10 20.0 -4.6
KAPI LR LR
comp=Z,510nm,22.0s
TRD Trivandrum 154.27 41 ⇓ *e*P **PKPbc 21 10 16.6 +2.5**
DGAR Diego Garcia 158.75 81 PFAKE 21 10 20.0 +8.4
DGAR LR LR
comp=Z,2μm,20.0s
KSM Kuching 159.13 306 *e*PKPdf **PKPdf 21 10 10.7 -1.5**
KSM LR LR
comp=Z,1μm,20.0s
KULM Kulim 162.12 337 PFAKE 21 10 30.0 +15
KULM LR LR
comp=Z,850nm,21.0s
IPM Ipoh 162.70 334 *e*PKPdf **PKPdf 21 10 15.4 -0.6**
PSI Prapat 165.05 339 PKP **PKPdf 21 10 17.6 -0.6**
comp=Z,16nm,1.0s,baz=337,slow=16,SNR=27
PSI PKPab **PKPab 21 11 15.4 +0.6**
comp=Z,4.5nm,0.6s,baz=45,slow=0.4,SNR=4.0
LEM Lembang 165.50 287 PKP **PKPdf 21 10 21.9 +3.2**
comp=Z,6.8nm,0.3s,baz=125,slow=2.3,SNR=14
LEM Lembang 165.50 287 P **PKPdf 21 10 24.5 +5.8**
CISI Cisompet, Garu 165.53 284 *e*PKPdf **PKPdf 21 10 14.9 -3.7**
CNJI Cibinong 166.11 285 P **PKPdf 21 10 18.7 -0.3**
comp=Z,82nm,1.7s,comp=Z,1μm
CGJI Cibinong 167.22 290 P **PKPdf 21 10 18.9 -0.9**
COCO West Island 176.74 254 PFAKE 21 10 30.0 +5.9
COCO LR LR
comp=Z,1μm,21.0s

*ISK **14** 20:54:07.9, 39°.35N×41°.02E, h2km, MD2.8*
*CSEM **14** 20:54:09.8±0.2, 39°.34N×41°.07E, h15km, MD2.8, Error ellipse: s-maj=6.0km s-min=4.8km az=139.0*
*DDA **14** 20:54:09.8, 39°.35N×41°.03E, h7km, Md2.8*
ISC 14 20:54:09.3±1.0, 39°.36N±0°.03×41°.05E±0°.03, h17km±9km, n21, σ0°.69/30, Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
VRTB	**Varto-Mus**	**0.38**	**123**	*e*PG	**Pg**	**20 54 16.7**	**-0.4**
VRTB				*e*SG	**Sb**	**20 54 22.8**	**-0.5**
VRTB	**Varto-Mus**	**0.38**	**123**	*e*Pg	**Pg**	**20 54 16.7**	**-0.4**
VRTB				*e*Sg	**Sb**	**20 54 22.8**	**-0.5**
BNGL	**BINGOL**	**0.42**	**169**	*i* P	**Pg**	**20 54 17.7**	**-0.2**
BNGL				*i* S	**Sb**	**20 54 24.3**	**-0.2**
BNGB	**Bing¨¶l**	**0.47**	**218**	*e*PG	**Pg**	**20 54 17.2**	**-1.6**
BGOL	**Bingol**	**0.48**	**218**	*i* P	**Pb**	**20 54 20.0**	**+0.7**
BGOL				*i* S	**Sg**	**20 54 25.3**	**-0.1**
BGOL	**Bingol**	**0.48**	**218**	P	**Pb**	**20 54 20.0**	**+0.7**
BGOL				S	**Sg**	**20 54 25.3**	**-0.1**
EZM	**Erzurum**	**0.59**	**24**	*e*PG	**Pg**	**20 54 20.7**	**-0.4**
ERZM	**Erzurum**	**0.59**	**24**	*i* P	**Pb**	**20 54 22.0**	**+0.6**
ERZM				*i* S	**Sn**	**20 54 32.2**	**-0.5**
ERZN	**Erzincan**	**1.05**	**283**	*e*PG	**Pb**	**20 54 28.7**	**-0.4**
TNCL	**Tunceli-Merkez**	**1.20**	**258**	*i* P	**Pn**	**20 54 31.7**	**+0.3**
TNCL				*i* S	**Sg**	**20 54 49.6**	**+1.5**
TNCL	**Tunceli-Merkez**	**1.20**	**258**	P	**Pn**	**20 54 31.7**	**+0.3**
TNCL				S	**Sg**	**20 54 49.6**	**+1.5**
BAYT	**Ayd¨¯ntepe-Bay**	**1.24**	**326**	*e*PN	**Pb**	**20 54 32.6**	**+0.1**
BAYT	**Ayd¨¯ntepe-Bay**	**1.24**	**326**	*e*Pn	**Pb**	**20 54 32.6**	**+0.1**
PTK	**Pertek**	**1.37**	**250**	*e*PN	**Pb**	**20 54 34.7**	**0.0**
PTK	**Pertek**	**1.37**	**250**	*e*Pn	**Pb**	**20 54 34.7**	**0.0**
BTMN	**Batman**	**1.48**	**173**	*i* P	Pg	20 54 43.3	+5.5
BTMN				*i* S	**Sg**	**20 54 58.4**	**+1.3**
AGRB	**Hanur-Agry**	**1.52**	**81**	*e*PN	**Pb**	**20 54 37.0**	**-0.1**
AGRB	**Hanur-Agry**	**1.52**	**81**	*e*Pn	**Pb**	**20 54 37.1**	**-0.1**
GUMT	**Gumushane**	**1.63**	**313**	*e*PN	**Pb**	**20 54 39.2**	**+0.2**
GUMT	**Gumushane**	**1.63**	**313**	*e*Pn	**Pb**	**20 54 39.2**	**+0.2**

*ISCJB **14** 20:56:07.6±0.3, 6°.61S±0°.05×125°.51E±0°.07, h544km, mb3.6/7, Error ellipse: s-maj=9.5km s-min=5.5km az=151.2*
*IDC **14** 20:56:08.2±1.2, 6°.63S×125°.60E, h536km±15km, mb3.1/7, mb1 3.4/12, mb1mx3.1/42, mbtmp4.2/12, Error ellipse: s-maj=33.5km s-min=9.0km az=59.0*
*DJA **14** 20:56:08.4±0.6, 7°.5±7°×12°.6E±°, h531km±15km, M4.4/7, mb4.5/7, mB4.4/4, MLv4.7/2, Mw(mB)3.5/4*
ISC 14 20:56:08.4±0.6, 6.70S±0°.07×125°.5E±0°.1, h544km, n32, σ0°.97/37, mb3.6/7, Banda Sea

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
NLAI	**Namlea**	**3.79**	**25**	P	**P**	**20 57 27.2**	**-1.2**
BATI	**Baumata**	**3.93**	**207**	P	**P**	**20 57 29.0**	**-0.5**
	4.9nm,0.3s,baz=102,slow=24,SNR=9.7						
BATI				S		20 58 26.8	-8.6
	4.3nm,0.3s,baz=40,slow=5.8,SNR=5.3						
SANI	**Sanana**	**4.64**	**6**	P	**P**	**20 57 33.7**	**-1.4**
BNDI	**Bandanaira**	**4.89**	**64**	P	**P**	**20 57 35.8**	**-1.2**
BSSI	**Bau Bau, Buton**	**5.01**	**276**	P	**P**	**20 57 37.7**	**-0.4**
KAPI	**Kappang**	**5.96**	**286**	P	**P**	**20 57 46.6**	**+0.2**
	5.4nm,0.3s,baz=126,slow=6.1,SNR=31						
SPSI	**Sidrap Palu**	**6.32**	**295**	P	**P**	**20 57 49.2**	**-0.6**
	62nm,0.7s,584nm						
TTSI	**Tana Toraja**	**6.72**	**302**	P	**P**	**20 57 54.4**	**+0.8**
	29nm,0.9s						
APSI	**Ampana**	**6.92**	**326**	P	**P**	**20 57 55.0**	**-0.5**
FAKI	**Fak Fak**	**7.70**	**61**	P	**P**	**20 58 02.0**	**-1.1**
	216nm,0.7s,2μm						
MRSI	**Marisa**	**7.96**	**333**	P	**P**	**20 58 04.8**	**-0.9**
PCI	**Palu**	**8.06**	**315**	P	**P**	**20 58 07.0**	**+0.3**
	44nm,0.7s,433nm						
SWI	**Sorong**	**8.16**	**45**	P	**P**	**20 58 07.3**	**-0.4**
KMPI	**Kaimana, Papua**	**8.71**	**70**	P	**P**	**20 58 16.0**	**+2.8**
FITZ	**Fitzroy Crossi**	**11.34**	**179**	P	**P**	**20 58 39.8**	**-0.3**
	2.0nm,0.3s,baz=15,slow=9.4,SNR=53						
FITZ				S	**S**	**21 00 42.4**	**-2.4**
	0.2nm,0.3s,baz=83,slow=23,SNR=6.1						
WRA	**Warramunga Arr**	**15.71**	**148**	P	**P**	**20 59 24.3**	**-1.1**
	3.5nm,0.3s,baz=326,slow=10,SNR=206						
WRA				S	**S**	**21 02 06.0**	**-0.8**
	0.2nm,0.3s,baz=325,slow=17,SNR=3.5						
ASAR	**Alice Springs**	**18.70**	**155**	P	**P**	**20 59 54.0**	**+0.9**
	3.7nm,0.3s,baz=338,slow=12,SNR=135						
ASAR				S	**S**	**21 02 56.7**	**+0.9**
	0.1nm,0.3s,baz=337,slow=21,SNR=21						
ASAR				ScP	**ScP**	**21 06 37.8**	**-0.1**
	0.0nm,0.3s,baz=337,slow=1.8,SNR=8.7						
CTA	**Charters Tower**	**24.14**	**125**	P	**P**	**21 00 42.0**	**-0.1**
	1.5nm,0.4s,baz=319,slow=11,SNR=3.0						
STKA	**Stephens Creek**	**29.21**	**151**	P	**P**	**21 01 27.4**	**+1.0**
	3.7nm,0.4s,baz=330,slow=9.0,SNR=33						
CMAR	**Chiang Mai Arr**	**36.21**	**314**	P	**P**	**21 02 26.4**	**+0.5**
	1.1nm,0.6s,baz=143,slow=6.6,SNR=20						
CMAR				PcP	**PcP**	**21 04 38.1**	**+1.8**
	0.4nm,0.8s,baz=147,slow=2.7,SNR=6.2						
GUN	**Gumba**	**51.45**	**314**	*e*P	**P**	**21 04 24.5**	**+0.3**
	8.5nm,0.5s						
PKIN	**Phulchoki**	**51.61**	**313**	*e*P	**P**	**21 04 25.2**	**-0.1**
	4.9nm,0.4s						
KKN	**Kakani**	**51.82**	**313**	*e*P	**P**	**21 04 27.0**	**+0.3**
	5.0nm,0.5s						
DMN	**Daman**	**51.84**	**313**	*e*P	**P**	**21 04 27.2**	**+0.3**
GKN	**Gorkha**	**52.40**	**313**	*e*P	**P**	**21 04 31.0**	**+0.2**
	8.2nm,0.3s						
KOLN	**Koldanda**	**53.03**	**312**	*e*P	**P**	**21 04 35.7**	**+0.3**
	9.3nm,0.7s						
PYUN	**Piuthan**	**53.66**	**312**	*e*P	**P**	**21 04 40.2**	**+0.4**
	12nm,0.5s						
SONM	**Songino Array**	**56.86**	**345**	P	**P**	**21 05 01.1**	**-0.5**
	0.3nm,0.6s,baz=160,slow=9.2,SNR=3.0						
MKAR	**Makanchi Array**	**65.59**	**329**	P	**P**	**21 05 59.1**	**+0.4**
	0.6nm,0.5s,baz=126,slow=7.8,SNR=12						
ZALV	**Zalesovo Beam**	**69.41**	**336**	P	**P**	**21 06 21.4**	**-0.4**
	1.2nm,0.6s,baz=160,slow=4.5,SNR=6.9						
TIXI	**Tiksi**	**78.22**	**1**	P	**P**	**21 07 10.6**	**-0.9**
	1.1nm,0.7s,baz=27,slow=7.9,SNR=3.1						
TORD	**Torodi Ar. Bea**	**124.37**	**281**	PKP	**PKPdf**	**21 14 07.0**	**+0.2**
	0.5nm,0.7s,baz=86,slow=1.4,SNR=3.6						

*NIED **14** 21:03:00, 39°.80N×143°.50E, h11km, Mw3.8 Best double couple: M0 4.80000×10^14 NP1:φs=353.00000°, δ21.00000°, λ-107.00000°. NP2:φs=191.00000°, δ70.00000°, λ-83.00000°.*
*ISCJB **14** 21:03:44.5±0.9, 39°.80N±0°.05×143°.57E±0°.08, h6km, mb3.7/5, Error ellipse: s-maj=10.2km s-min=5.3km az=37.7*
*IDC **14** 21:03:46.0±2.3, 39°.94N×143°.50E, h0km, mb3.7/5, mb1 3.7/8, mb1mx3.5/58, mbtmp3.7/8, ML3.1/3, Error ellipse: s-maj=43.5km s-min=26.3km az=135.0*
*JMA **14** 21:03:46.2±0.4, 39°.83N×143°.49E, h12km, M3.8*
ISC 14 21:03:46.6±1.2, 39°.90N±0°.06×143°.36E±0°.08, h6km, n30, σ0°.84/28, mb3.8/5, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JTH	**Tanohata**	**1.15**	**273**	P	**Pn**	**21 04 09.4**	**+0.1**
JTH				*e*S	**Sn**	**21 04 25.9**	**+0.5**
MIYJ	**Miyakonagasawa**	**1.23**	**255**	P	**Pn**	**21 04 10.5**	**+0.1**
JANG	**Nango**	**1.49**	**289**	P	**Pb**	**21 04 14.4**	**-0.4**
OFUJ	**Ofunato**	**1.54**	**239**	P	**Pn**	**21 04 14.1**	**-0.6**
JKZ	**Kuzumaki**	**1.56**	**274**	P	**Pn**	**21 04 13.7**	**-1.3**
JOM	**Ohasama**	**1.65**	**256**	P	**Pb**	**21 04 16.8**	**-0.7**
JOM				*e*S	**Sb**	**21 04 38.3**	**-0.2**
JTM	**Tenmabayashi**	**1.97**	**298**	P	**Pb**	**21 04 22.1**	**-0.7**
JAH	**Hinai**	**2.11**	**279**	P	**Pb**	**21 04 24.2**	**-1.1**
JIO	**Ouri**	**2.13**	**228**	P	**Pn**	**21 04 21.4**	**-1.3**
JRG	**Rokugo**	**2.17**	**258**	P	**Pn**	**21 04 24.6**	**+1.4**
JOT	**Ohata**	**2.30**	**311**	P	**Pb**	**21 04 28.4**	**-0.2**
JNBK	**Urakawa-nobuka**	**2.42**	**349**	P	**Pn**	**21 04 28.0**	**+1.2**
JNBK				S	**Sb**	**21 05 00.1**	**-0.7**
JYK	**Kaneyama**	**2.52**	**248**	P	**Pn**	**21 04 29.0**	**+0.9**
JKB	**Kayabe**	**2.66**	**319**	P	**Pb**	**21 04 34.8**	**+0.2**
JCH	**Churui**	**2.71**	**0**	P	**Pn**	**21 04 30.1**	**-0.7**
JCH				S	**Sn**	**21 05 04.7**	**+0.8**
ASAJ	**Asahikawa**	**4.25**	**353**	Pn	**Pn**	**21 04 51.8**	**-0.1**
	1.4nm,0.3s,baz=185,slow=14,SNR=17						
ASAJ				Sn	**Sn**	**21 05 41.3**	**-0.6**
	0.8nm,0.3s,baz=178,slow=17,SNR=2.6						
MAT	**Matsushiro**	**5.26**	**232**	S	**Pn**	**21 05 07.3**	**+1.5**
MJAR	**Matsushiro Arr**	**5.26**	**232**	Pn	**Pn**	**21 05 06.5**	**+0.7**
	1.3nm,0.3s,baz=44,slow=11,SNR=12						
USRK	**Ussuriysk Ar.**	**9.49**	**301**	Pn	Pn	21 06 06.9	+3.1
	0.2nm,0.3s,baz=97,slow=16,SNR=4.6						
SEY	**Seymchan**	**23.70**	**10**	P	**P**	**21 08 57.6**	**-1.3**
	1.7nm,0.5s,baz=127,slow=20,SNR=3.6						
H11N2	**WAKE ISLAND Hy 28.50**	**128**		T	T	21 39 19.6	
	baz=320,slow=74,SNR=17						
H11N1	**WAKE ISLAND Hy 28.51**	**128**		T	T	21 39 19.6	
	baz=320						
H11N3	**WAKE ISLAND Hy 28.52**	**128**		T	T	21 39 19.6	
	baz=320,slow=74,SNR=13						
H11S1	**WAKE ISLAND Hy 29.32**	**130**		T	T	21 40 21.3	
	baz=322,slow=76,SNR=4.6						
H11S3	**WAKE ISLAND Hy 29.33**	**130**		T	T	21 40 23.1	
	baz=322,slow=76,SNR=4.8						
H11S2	**WAKE ISLAND Hy 29.34**	**130**		T	T	21 40 22.5	
	baz=322,slow=76,SNR=3.8						
ZALV	**Zalesovo Beam**	**41.18**	**310**	P	**P**	**21 11 32.5**	**+0.8**
	1.0nm,0.5s,baz=96,slow=7.4,SNR=4.0						
MKAR	**Makanchi Array**	**43.96**	**300**	P	**P**	**21 11 54.7**	**+0.3**
	0.6nm,0.7s,baz=77,slow=9.9,SNR=3.2						

ILAR	**Eielson Array**	**46.26**	**34**	P		**P**	**21 12 12.6**	**+0.2**
	0.6nm,0.8s,baz=263,slow=5.4,SNR=4.1							
FINES	**FINESS Array B**	**66.99**	**332**	P		**P**	**21 14 40.4**	**+0.5**
	1.4nm,0.8s,baz=336,slow=6.5,SNR=2.9							

IDC 14 21:13:49.1±4.4, 17°47S×65°98E, h0km, mb3.7/5, mb1 3.9/5, mb1mx3.4/59, mbtmpg3.7/5, Error ellipse: s-maj=129.2km s-min=32.4km az=62.0, Mauritius-Reunion region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
H08S1	**Diego Carcia H**	**11.64**	**34**	T	T	21 28 02.1	
	baz=210,slow=76,SNR=145						
H08S2	**Diego Garcia H**	**11.65**	**34**	T	T	21 28 02.4	
	baz=210,slow=76,SNR=64						
H08S3	**Diego Garcia H**	**11.66**	**34**	T	T	21 28 03.3	
	baz=210,slow=76,SNR=190						
H08N3	**Diego Garcia H**	**12.09**	**25**	T	T	21 28 55.9	
	baz=200,slow=76,SNR=46						
H08N1	**Diego Carcia H**	**12.10**	**25**	T	T	21 28 57.1	
	baz=200,slow=76,SNR=51						
H08N2	**Diego Garcia H**	**12.11**	**25**	T	T	21 28 57.5	
	baz=200,slow=76,SNR=46						
H01W3	**Cape Leeuwin H**	**46.11**	**122**	T	T	22 11 13.5	
	baz=280,slow=75,SNR=22						
H01W2	**Cape Leeuwin H**	**46.11**	**122**	T	T	22 11 13.5	
	baz=280,slow=75,SNR=20						
H01W1	**Cape Leeuwin H**	**46.13**	**122**	T	T	22 11 12.4	
	baz=280,slow=75,SNR=23						
CMAR	**Chiang Mai Arr**	**48.23**	**44**	P	P	21 22 31.9	0.0
	0.4nm,1.0s,baz=231,slow=9.0,SNR=4.1						
ASAR	**Alice Springs**	**63.39**	**108**	P	P	21 24 20.8	-0.1
	1.4nm,0.8s,baz=268,slow=6.0,SNR=12						
WRA	**Warramunga Arr**	**64.39**	**104**	P	P	21 24 27.6	+0.1
	1.9nm,1.0s,baz=264,slow=6.7,SNR=9.8						
ZALV	**Zalesovo Beam**	**72.94**	**12**	P	P	21 25 20.1	+0.1
	0.3nm,0.5s,baz=207,slow=6.1,SNR=3.1						
SONM	**Songino Array**	**74.39**	**27**	P	P	21 25 28.8	-0.1
	0.3nm,0.9s,baz=222,slow=6.4,SNR=2.8						

WEL 14 21:20:18.2±1.0, 46°11S×166°11E, h22km±3km, ML3.7/10, 1C, Error ellipse: s-maj=10.2km s-min=3.9km az=90.0, Off west coast of South Island

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
PYZ	**Puysegur Point**	**0.40**	**99**	⇑P*	Pb	21 20 26.7	0.0
PYZ				S*	Sb	21 20 32.3	-0.1
DCZ	**Deep Cove**	**0.97**	**49**	PN	Pb	21 20 35.5	-0.8
DCZ				SN	Sb	21 20 49.1	+0.4
DCZ				AML	AML	21 20 52.5	
DCZ				AML	AML	21 20 53.5	
DCZ				AML	AML	21 21 01.5	
WHZ	**Wether Hill Ro**	**1.30**	**81**	PN	Pn	21 20 40.9	-0.1
WHZ				SN	Sn	21 20 57.6	0.0
WHZ				AML	AML	21 21 05.0	
APZ	**The Paps**	**1.49**	**120**	PN	Pn	21 20 41.9	-1.7
APZ				SN	Sn	21 20 59.9	-2.5
APZ				AML	AML	21 21 10.9	
MLZ	**Mavora Lakes**	**1.59**	**63**	PN	Pb	21 20 46.2	-0.7
MLZ				AML	AML	21 21 13.7	
MLZ				AML	AML	21 21 19.2	
SYZ	**Scrubby Hill**	**2.14**	**103**	PN	Pn	21 20 52.3	-0.2
SYZ				AML	AML	21 21 24.9	
SYZ				AML	AML	21 21 29.5	
SYZ				AML	AML	21 21 29.6	
SYZ				AML	AML	21 21 30.5	
EAZ	**Earnscleugh**	**2.41**	**70**	*e*PN	Pn	21 20 57.9	+1.7
EAZ				SN	Sb	21 21 29.5	-0.5
EAZ				AML	AML	21 21 33.8	
EAZ				AML	AML	21 21 33.8	
EAZ				AML	AML	21 21 36.3	
WKZ	**Wanaka**	**2.41**	**59**	PN	Pb	21 20 59.6	-1.3
WKZ				AML	AML	21 21 39.5	
WKZ				AML	AML	21 21 44.0	
TUZ	**Tuapeka**	**2.46**	**88**	PN	Pn	21 20 57.5	+0.7
TUZ				AML	AML	21 21 33.0	
TUZ				AML	AML	21 21 41.9	
JCZ	**Jackson Bay**	**2.78**	**44**	PN	Pb	21 21 04.6	-2.6
JCZ				AML	AML	21 21 55.5	
JCZ				AML	AML	21 22 03.3	
LBZ	**Lake Benmore**	**3.35**	**61**	PN	Pn	21 21 11.5	+2.2
ODZ	**Otahua Downs**	**3.36**	**73**	PN	Pn	21 21 09.3	+0.1
ODZ				AML	AML	21 22 06.4	
ODZ				AML	AML	21 22 15.7	

IDC 14 21:23:59.3±0.8, 37°76N×143°81E, h0km, mb3.8/10, mb1 3.9/16, mb1mx3.7/58, mbtmpg3.8/16, ML3.6/4, Error ellipse: s-maj=20.6km s-min=16.0km az=95.0
ISCJB 14 21:24:00.0±0.5, 37°83N±0°05×143°67E±0°05, h19km, mb3.8/12, Error ellipse: s-maj=7.6km s-min=5.0km az=145.0
NEIC 14 21:24:03.8±0.5, 37°72N×143°80E, h35km, mb4.4/2, Error ellipse: s-maj=12.0km s-min=9.3km az=122.0
JMA 14 21:24:03.6±0.4, 37°96N×143°43E, h36km, M3.8

ISC 14 21:24:02.5±0.8, 37°94N±0°07×143°59E±0°07, h19km, n46, σ1§53/45, mb3.9/12, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**1.84**	**287**	P	**Pn**	**21 24 32.1**	**-0.9**
JMK	**Ichinoseki**	**2.12**	**299**	P	**Pn**	**21 24 36.2**	**-0.7**
JMM	**Marumori**	**2.21**	**269**	P	**Pn**	**21 24 37.3**	**-0.9**
JMM				*e*S	**Sn**	**21 25 01.9**	**-3.1**
JFK	**Kawauchi**	**2.23**	**256**	P	**Pn**	**21 24 36.9**	**-1.6**
JOU	**Okura**	**2.35**	**281**	P	**Pn**	**21 24 39.8**	**-0.2**
JOM	**Ohasama**	**2.36**	**311**	P	**Pn**	**21 24 39.7**	**-0.5**
JOM				S	**Sn**	**21 25 07.2**	**-1.4**
JFT	**Otama**	**2.62**	**262**	P	**Pn**	**21 24 43.6**	**-0.1**
JFT				S	**Sn**	**21 25 13.9**	**-1.1**
JYK	**Kaneyama**	**2.72**	**292**	P	**Pn**	**21 24 45.0**	**-0.1**
JRG	**Rokugo**	**2.73**	**303**	P	**Pn**	**21 24 45.1**	**-0.2**
JANG	**Nango**	**2.91**	**327**	P	**Pn**	**21 24 48.8**	**+1.0**
ERM	**Erimo**	**4.08**	**355**	*e*Pn	**Pn**	**21 25 06.4**	**+2.5**
JRY	**Ryogami san**	**4.22**	**244**	P	**Pn**	**21 25 05.3**	**-0.5**
JNBK	**Urakawa-nobuka**	**4.38**	**352**	P	**Pn**	**21 25 08.8**	**+0.9**
JNBK				*e*S	**Sn**	**21 25 57.6**	**-0.8**
JKB	**Kayabe**	**4.40**	**334**	S	**Sn**	**21 25 55.5**	**-3.5**
MJAR	**Matsushiro Arr**	**4.52**	**254**	Pn	**Pn**	**21 25 10.2**	**+0.3**
	3.5nm,0.3s,baz=69,slow=9.2,SNR=18						
MJAR				Sn	**Sn**	**21 26 00.7**	**-1.2**
	baz=81,slow=40,SNR=3.2						
MAJO	**Matsushiro**	**4.52**	**254**	*e*Pn	**Pn**	**21 25 10.9**	**+1.0**
MAJO				*e*Sn	**Sn**	**21 26 04.3**	**+2.3**
MAT	**Matsushiro**	**4.52**	**254**	P	**Pn**	**21 25 11.1**	**+1.2**
MAT				S	Sn	21 25 53.8	-8.1
JCH	**Churui**	**4.67**	**358**	P	**Pn**	**21 25 11.3**	**-0.6**
JHJ	**Hachijo jima 2**	**5.73**	**214**	Pn	**Pn**	**21 25 24.8**	**-1.7**
	11nm,0.3s,baz=73,slow=19,SNR=8.2						
JHJ				Sn	Sn	21 26 23.2	-8.5
	30nm,0.3s,baz=116,slow=21,SNR=8.5						
ASAJ	**Asahikawa**	**6.21**	**353**	Pn	**Pn**	**21 25 34.7**	**+1.5**
	0.9nm,0.3s,baz=199,slow=12,SNR=8.2						
USRK	**Ussuriysk Ar.**	**10.76**	**309**	Pn	**Pn**	**21 26 37.2**	**+1.8**
	0.2nm,0.3s,baz=103,slow=16,SNR=2.7						
CBIJ	**Chichi jima**	**10.88**	**187**	Pn	Pn	21 26 32.8	-4.4
CBIJ				Sn	Sn	21 28 22.4	-16
JCJ	**Chichijima**	**10.88**	**187**	Pn	Pn	21 26 32.8	-4.5
	6.6nm,0.3s,baz=284,slow=21,SNR=9.5						
JCJ				Sn	Sn	21 28 22.4	-16
	baz=86,slow=12						
KSRS	**Korea Array**	**12.42**	**273**	Pn	**Pn**	**21 27 00.8**	**+2.5**
	0.2nm,0.3s,baz=82,slow=14,SNR=4.1						
KSAR	**Wonju Array Be**	**12.46**	**273**	Pn	**Pn**	**21 27 00.8**	**+2.1**
KLR	**Kul'dur**	**14.15**	**327**	Pn	**Pn**	**21 27 19.8**	**-2.0**
	0.1nm,0.3s,baz=136,slow=14,SNR=3.9						
H11N2	**WAKE ISLAND Hy 27.19**	**125**		T	T	21 58 03.1	
	baz=317,slow=75,SNR=14						
H11N1	**WAKE ISLAND Hy 27.20**	**125**		T	T	21 58 04.8	
	baz=317,slow=75,SNR=9.2						
H11N3	**WAKE ISLAND Hy 27.21**	**125**		T	T	21 58 05.4	
	baz=317,slow=75,SNR=12						
H11S1	**WAKE ISLAND Hy 27.96**	**127**		T	T	21 58 59.3	
	baz=319,slow=76,SNR=5.9						
H11S3	**WAKE ISLAND Hy 27.97**	**127**		T	T	21 59 01.0	
	baz=319,slow=76,SNR=5.0						
H11S2	**WAKE ISLAND Hy 27.98**	**127**		T	T	21 59 01.0	
	baz=319,slow=76,SNR=4.2						
SONM	**Songino Array**	**28.74**	**302**	P	**P**	**21 30 00.8**	**+2.0**
	0.5nm,0.5s,baz=98,slow=9.1,SNR=5.6						
SONM				PcP	**PcP**	**21 33 09.4**	**+0.7**
	0.4nm,0.9s,baz=111,slow=3.2,SNR=3.2						
ZALV	**Zalesovo Beam**	**42.59**	**312**	P	P	21 32 00.6	+3.5
	1.1nm,0.5s,baz=92,slow=7.3,SNR=6.2						
ZALV				PcP	**PcP**	**21 33 49.6**	**+0.5**
	0.5nm,0.4s,baz=114,slow=3.5,SNR=3.3						
MKAR	**Makanchi Array**	**45.11**	**302**	P	**P**	**21 32 18.7**	**+1.2**
	0.6nm,0.5s,baz=92,slow=7.6,SNR=7.5						
KURK	**Kurchatov**	**46.74**	**308**	*e*P	**P**	**21 32 32.0**	**+1.9**
KURBB	**Kurchatov Arra**	**46.81**	**308**	P	**P**	**21 32 31.5**	**+0.7**
	0.9nm,0.4s,baz=81,slow=8.4,SNR=5.4						
COLA	**College**	**47.38**	**33**	*e*P	**P**	**21 32 34.8**	**-0.2**
	1.7nm,0.7s						
ILAR	**Eielson Array**	**47.80**	**33**	P	**P**	**21 32 39.4**	**+1.2**
	0.6nm,0.7s,baz=264,slow=6.1,SNR=6.8						
WRA	**Warramunga Arr**	**58.23**	**190**	P	**P**	**21 33 54.9**	**-0.7**
	2.6nm,0.6s,baz=9.9,slow=7.2,SNR=36						
ASAR	**Alice Springs**	**61.96**	**190**	P	**P**	**21 34 19.8**	**-1.3**
	0.8nm,0.7s,baz=16,slow=6.3,SNR=9.2						
YKA	**Yellowknife Ar**	**62.15**	**31**	P	**P**	**21 34 22.6**	**+0.7**
	0.1nm,0.6s,baz=300,slow=6.7,SNR=4.2						
FINES	**FINESS Array B**	**68.81**	**333**	P	**P**	**21 35 05.6**	**+0.6**
	0.9nm,0.8s,baz=49,slow=15,SNR=2.8						
AHID	**Auburn Hatcher**	**74.90**	**47**	*e*P	**P**	**21 35 39.3**	**-3.0**
	4.9nm,0.6s						
PDAR	**Pinedale Array**	**75.79**	**47**	P	**P**	**21 35 46.0**	**-1.4**
	0.3nm,0.7s,baz=243,slow=2.9,SNR=3.1						
LPAZ	**La Paz**	**144.74**	**61**	PKP	**PKPdf**	**21 43 38.3**	**-0.9**
	0.5nm,0.5s,baz=315,slow=7.1,SNR=2.6						

DJA 14 21:27:34.9±6.2, 1°N±13°×9°5E±3°2, h20km±117km, M4.0/5, MLv4.0/5
IDC 14 21:27:50.4±8.8, 1°30N×97°39E, h0km, mb3.7/4, mb1 3.7/5, mb1mx3.4/53, mbtmpg3.6/5, Error ellipse: s-maj=178.5km s-min=97.8km az=145.0

ISC 14 21:27:57.0±1.8, 1°9N±0°2×96°8E±0°2, h10km, n12, σ1§17/8, mb3.9/4, Off west coast of northern Sumatera

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
GSI	**Gunungsitoli**	**0.92**	**127**	P	Pg	21 28 08.1	-6.6
TPTI		**1.43**	**14**	P	**Pn**	**21 28 22.4**	**-0.5**
TPTI				S	Sg	21 28 59.2	+16
KCSI	**Kotacane, Aceh**	**1.89**	**29**	P	**Pn**	**21 28 29.6**	**+0.2**
KCSI				S	Sg	21 29 14.9	+17
MNSI	**Mandailing Nat**	**2.94**	**111**	P	**Pn**	**21 28 43.7**	**0.0**
CMAR	**Chiang Mai Arr**	**16.62**	**7**	P	**Pn**	**21 31 51.8**	**+1.5**
	baz=198,slow=11,SNR=4.8						
H08S2	**Diego Garcia H**	**26.06**	**248**	T	T	22 00 28.1	
	baz=70,slow=75,SNR=61						
H08S3	**Diego Garcia H**	**26.06**	**249**	T	T	22 00 32.6	
	baz=70,slow=75,SNR=50						
H08S1	**Diego Carcia H**	**26.08**	**248**	T	T	22 00 28.7	
	baz=70,slow=75,SNR=61						
MKAR	**Makanchi Array**	**46.52**	**346**	P	**P**	**21 36 24.2**	**-0.3**
	1.2nm,0.7s,baz=159,slow=8.4,SNR=12						
SONM	**Songino Array**	**46.53**	**9**	P	**P**	**21 36 23.5**	**-1.3**
	1.1nm,0.8s,baz=188,slow=9.7,SNR=9.9						
ZALV	**Zalesovo Beam**	**52.85**	**351**	P	**P**	**21 37 11.5**	**-1.2**
	0.5nm,0.3s,baz=174,slow=7.6,SNR=3.9						
BVAR	**Borovoye Array**	**55.51**	**341**	P	**P**	**21 37 33.1**	**+0.9**
	0.3nm,0.6s,baz=156,slow=7.3,SNR=3.4						

IDC 14 21:35:39.8±3.0, 32°88S×178°25W, h0km, mb3.8/2, mb1 4.0/3, mb1mx3.7/26, mbtmpg3.8/3, ML3.5/1, MS4.8/1, Ms1 4.8/1, ms1mx3.3/50, Error ellipse: s-maj=72.6km s-min=45.0km az=125.0, South of Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
URZ	**Urewera**	**6.57**	**214**	Pn	Pn	21 37 17.3	-0.3
	1.1nm,0.3s,baz=105,slow=13,SNR=10						
URZ				Sn	Sn	21 38 29.2	-4.0
	1.0nm,0.3s,baz=348,slow=19,SNR=3.3						
ASAR	**Alice Springs**	**42.82**	**270**	P	P	21 43 39.7	0.0
	0.4nm,0.4s,baz=109,slow=7.2,SNR=7.7						
WRA	**Warramunga Arr**	**44.03**	**275**	P	P	21 43 49.3	-0.2
	1.0nm,0.5s,baz=115,slow=7.6,SNR=14						
WRA				LR	LR	22 01 46.6	
	comp=Z_1μm,20.6s,baz=95,slow=36						
FINES	**FINESS Array B**	**147.38**	**338**	PKPbc	PKPbc	21 55 24.0	-0.7
	1.7nm,0.8s,baz=64,slow=3.2,SNR=7.6						

ISCJB 14 21:42:41.4±1.5, 32°98S±0°06×177°8W±0°2, h33km, mb4.5/5, Error ellipse: s-maj=28.6km s-min=5.7km az=13.7
IDC 14 21:42:42.7±1.0, 32°81S×178°38W, h0km, mb4.5/3, mb1 4.7/4, mb1mx4.0/38, mbtmpg4.5/4, ML4.4/1, Error ellipse: s-maj=40.0km s-min=29.8km az=153.0
NEIC 14 21:42:47.8±0.6, 32°75S×178°31W, h35km, mb4.6/2, Error ellipse: s-maj=15.7km s-min=7.1km az=112.0

ISC 14 21:42:46.2±1.0, 32°93S±0°08×178°1W±0°2, h32km, n30, σ1§38/36, mb4.5/5, South of Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
RAO	**Raoul Island**	**3.67**	**2**	Sn	**Sn**	**21 44 19.4**	**-3.5**
	65nm,0.3s,baz=266,slow=22,SNR=4.1						
PKGZ	**Pakihiroa**	**5.86**	**211**	PN	**Pn**	**21 44 09.8**	**-1.0**
HAZ	**Te Kaha**	**5.88**	**214**	*e*PN	**Pn**	**21 44 10.0**	**-1.0**
HAZ				SN	**Sn**	**21 45 19.0**	**+1.7**
PUZ	**Puketiti**	**5.93**	**209**	PN	**Pn**	**21 44 10.9**	**-0.9**
PUZ				SN	**Sn**	**21 45 18.1**	**-0.6**
TWGZ	**Tauwhareparae**	**6.14**	**210**	PN	**Pn**	**21 44 13.9**	**-0.8**
TWGZ				SN	**Sn**	**21 45 24.3**	**+0.5**
MWZ	**Matawai**	**6.47**	**212**	PN	**Pn**	**21 44 17.7**	**-1.5**
MWZ				SN	**Sn**	**21 45 30.7**	**-1.2**
URZ	**Urewera**	**6.60**	**215**	Pn	**Pn**	**21 44 21.1**	**+0.1**
	8.2nm,0.3s,baz=257,slow=2.8,SNR=19						
URZ				Sn	**Sn**	**21 45 32.8**	**-2.2**
	6.2nm,0.3s,baz=72,slow=20,SNR=5.3						
URZ	**Urewera**	**6.60**	**215**	*e*Pn	**Pn**	**21 44 21.4**	**+0.4**
URZ				Sn	**Sn**	**21 45 37.0**	**+2.0**
RIGZ	**Rimuhau**	**6.68**	**209**	PN	**Pn**	**21 44 21.7**	**-0.3**
OUZ	**Omahuta**	**7.27**	**249**	*e*Pn	**Pn**	**21 44 31.4**	**+1.2**
	24nm,0.6s						
BKZ	**Black Stump Fm**	**7.62**	**214**	*e*PN	**Pn**	**21 44 33.9**	**-1.0**
BKZ				SN	**Sn**	**21 45 57.7**	**-2.5**
BFZ	**Birch Farm**	**8.97**	**209**	PN	**Pn**	**21 44 51.4**	**-2.1**
RPZ	**Rata Peaks**	**13.72**	**215**	Sn	Sn	21 48 16.5	-13
	1.2nm,0.3s,baz=4.6,slow=14,SNR=2.5						
CTAO	**Charters Tower**	**34.22**	**283**	*e*P	**P**	**21 49 28.8**	**-0.3**
	4.8nm,0.6s						
ASAR	**Alice Springs**	**42.97**	**270**	P	**P**	**21 50 41.9**	**-0.6**
	2.7nm,0.4s,baz=106,slow=7.4,SNR=55						
WRAB	**Tennant Creek**	**44.18**	**275**	*e*P	**P**	**21 50 51.4**	**-0.8**
	7.1nm,0.8s						
WRA	**Warramunga Arr**	**44.18**	**275**	P	**P**	**21 50 51.3**	**-1.0**
	6.9nm,0.5s,baz=116,slow=7.6,SNR=108						
FITZ	**Fitzroy Crossi**	**52.33**	**272**	P	**P**	**21 51 54.3**	**-0.9**
	2.6nm,0.6s,baz=152,slow=6.9,SNR=7.6						
MKAR	**Makanchi Array**	**119.33**	**309**	PKP	**PKPdf**	**22 01 32.6**	**+0.8**
	0.4nm,0.6s,baz=159,slow=1.0,SNR=6.3						
ZALV	**Zalesovo Beam**	**119.86**	**317**	PKP	**PKPdf**	**22 01 33.5**	**+0.9**
	0.6nm,0.6s,baz=93,slow=3.0,SNR=3.6						
FINES	**FINESS Array B**	**147.48**	**339**	PKPbc	**PKPbc**	**22 02 27.1**	**+1.0**
	12nm,0.9s,baz=64,slow=4.4,SNR=32						
ASF	**Jabal al Asfar**	**150.59**	**278**	PKPbc	**PKPbc**	**22 02 36.4**	**+1.3**
	1.2nm,0.6s,baz=52,slow=5.1,SNR=4.9						
NB2	**NORSAR Subarra151.24**	**351**		PKP	**PKPbc**	**22 02 37.0**	**+1.4**
	comp=Z,1.5nm,0.7s,baz=17,slow=2.6						
NOA	**NORSAR Array B 151.24**	**351**		PKPbc	**PKPbc**	**22 02 37.0**	**+1.4**
	comp=Z,1.8nm,0.7s,baz=13,slow=4.1,SNR=11						
EIL	**Elat**	**151.66**	**272**	PKPbc	**PKPbc**	**22 02 37.4**	**-0.1**
	comp=Z,4.7nm,0.6s,baz=81,slow=10,SNR=6.8						
MMAI	**Mount Meron Ar**	**151.98**	**279**	PKPbc	**PKPbc**	**22 02 40.1**	**+1.9**
	comp=Z,3.3nm,0.6s,baz=66,slow=4.7,SNR=13						
AKASG	**Malin Array Be**	**153.23**	**320**	PKPbc	**PKPbc**	**22 02 41.0**	**+0.7**
	comp=Z,0.7nm,0.4s,baz=59,slow=2.4,SNR=7.4						
BRTR	**Keskin Array B**	**153.66**	**294**	PKPbc	**PKPbc**	**22 02 42.7**	**+0.9**
	comp=Z,1.1nm,0.5s,baz=143,slow=3.6,SNR=6.8						
TORD	**Torodi Ar. Bea**	**160.30**	**179**	PKPab	**PKPab**	**22 03 25.0**	**+1.6**
	comp=Z,0.4nm,0.8s,baz=161,slow=2.0,SNR=3.0						
GERES	**GERESS Array B**	**161.81**	**334**	PKPab	**PKPab**	**22 03 29.6**	**+0.2**
	comp=Z,0.2nm,0.5s,baz=28,slow=4.4,SNR=3.7						

IDC 14 21:48:52.1±2.8, 32°78S×178°36W, h0km, mb4.1/3, mb1 4.2/4, mb1mx3.8/43, mbtmpg4.1/4, ML3.5/1, Error ellipse: s-maj=61.5km s-min=44.1km az=127.0

ISCJB 14 21:48:56.2±1.1, 33°0S±0°1×178°6W±0°2, h32km, mb4.4/5, Error ellipse: s-maj=23.4km s-min=11.1km az=31.5
NEIC 14 21:48:59.0±0.9, 32°93S×178°66W, h35km, mb4.3/3, Error ellipse: s-maj=26.0km s-min=15.8km az=150.0

ISC 14 21:48:58.5±1.2, 32°9S±0°1×178°7W±0°2, h32km, n9, σ1§20/10, mb4.0/5, South of Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
URZ	**Urewera**	**6.36**	**211**	Pn	**Pn**	**21 50 30.4**	**+0.5**
	0.9nm,0.3s,baz=37,slow=5.1,SNR=8.0						
URZ				Sn	**Sn**	**21 51 41.4**	**0.0**
	4.4nm,0.3s,baz=112,slow=23,SNR=8.6						
RAR	**Rarotonga**	**20.43**	**60**	*e*P	**P**	**21 53 33.6**	**+0.4**
	14nm,0.3s						
CTA	**Charters Tower**	**33.72**	**283**	P	**P**	**21 55 38.4**	**+1.3**
	1.8nm,0.4s,baz=115,slow=9.9,SNR=4.6						
CTAO	**Charters Tower**	**33.72**	**283**	*e*P	**P**	**21 55 38.3**	**+1.3**
	1.8nm,0.4s						
ASAR	**Alice Springs**	**42.46**	**270**	P	**P**	**21 56 50.9**	**+0.1**
	0.6nm,0.4s,baz=106,slow=7.5,SNR=12						
WRAB	**Tennant Creek**	**43.67**	**275**	*e*P	**P**	**21 57 00.4**	**-0.2**
	1.3nm,0.6s						
WRA	**Warramunga Arr**	**43.68**	**275**	P	**P**	**21 57 00.3**	**-0.3**
	1.7nm,0.5s,baz=116,slow=7.8,SNR=26						
COCO	**West Island**	**78.91**	**263**	*e*P	**P**	**22 00 56.7**	**-2.5**
	110nm,0.6s						
FINES	**FINESS Array B**	**147.26**	**338**	PKPbc	**PKPdf**	**22 08 35.9**	**+0.4**
	1.4nm,0.6s,baz=54,slow=3.9,SNR=11						

IDC 14 21:55:51.2±1.4, 10°47S×119°23E, h0km, mb3.6/4, mb1 3.7/9, mb1mx3.5/54, mbtmpg3.6/9, ML3.4/4, Error ellipse: s-maj=50.0km s-min=19.0km az=48.0
ISCJB 14 21:55:55.5±0.6, 10°23S±0°05×119°94E±0°06, h33km, mb3.6/4, Error ellipse: s-maj=9.0km s-min=6.5km az=147.9
DJA 14 21:55:56.2±0.4, 10°S±6°×12°0E±°, h81km±5km, M4.0/9, mb4.3/2, MLv3.8/9

ISC 14 21:55:57.3±0.8, 10°17S±0°07×119°91E±0°06, h35km, n20, σ1§67/16, mb3.7/4, Sumba region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
WSI	**Waingapu**	**0.63**	**37**	P	**Pn**	**21 56 09.5**	**-0.3**
WSI				S	**Sn**	**21 56 18.1**	**-0.6**
BASI	**Baing, Sumba**	**0.66**	**94**	P	**Pn**	**21 56 11.9**	**+1.7**
PLAI	**Plampang**	**2.49**	**302**	P	**Pn**	**21 56 35.4**	**0.0**
PLAI				S	**Sn**	**21 57 07.6**	**+2.9**
TWSI	**Taliwang, Sumb**	**3.31**	**295**	P	**Pn**	**21 56 47.0**	**+0.3**
BATI	**Baumata**	**3.70**	**91**	Pn	Pn	21 56 58.4	+6.4
	baz=316,slow=13						
BATI	**Baumata**	**3.70**	**91**	P	Pn	21 56 46.8	-5.2
BSSI	**Bau Bau, Buton**	**4.05**	**8**	P	Pn	21 56 50.6	-6.2
SOEI	**Soe**	**4.31**	**85**	P	Pn	21 56 55.2	-5.4
KAPI	**Kappang**	**5.13**	**358**	Pn	**Pn**	**21 57 14.2**	**+2.5**
	3.9nm,0.3s,baz=186,slow=9.2,SNR=9.6						
KAPI				Sn	**Sn**	**21 58 10.2**	**+0.5**
	1.4nm,0.3s,baz=225,slow=19,SNR=2.9						
SPSI	**Sidrap Palu**	**6.17**	**359**	P	Pn	21 57 18.5	-7.5
	15nm,0.7s,0.1nm						
FITZ	**Fitzroy Crossi**	**9.64**	**145**	Pn	**Pn**	**21 58 14.5**	**+0.9**
	0.2nm,0.3s,baz=337,slow=9.0,SNR=5.2						
FITZ				Sn	**Sn**	**21 59 58.7**	**-2.1**
	0.4nm,0.3s,baz=229,slow=8.4,SNR=7.6						
WRA	**Warramunga Arr**	**16.97**	**127**	P	**P**	**21 59 53.9**	**+0.1**
	0.1nm,0.3s,baz=298,slow=13,SNR=5.2						
WRA				S	Sn	22 02 50.8	-9.1
	0.1nm,0.3s,baz=299,slow=22,SNR=3.5						
ASAR	**Alice Springs**	**18.93**	**137**	P	**Pn**	**22 00 17.4**	**+1.2**
	0.2nm,0.3s,baz=314,slow=12,SNR=7.4						
CMAR	**Chiang Mai Arr**	**35.18**	**324**	P	**P**	**22 02 45.7**	**-2.5**
	0.7nm,0.4s,baz=164,slow=7.1,SNR=8.0						
H08S2	**Diego Garcia H**	**46.88**	**269**	T	T	22 54 19.1	
	baz=98						
H08S3	**Diego Garcia H**	**46.89**	**269**	T	T	22 54 20.2	
	baz=98						
H08S1	**Diego Carcia H**	**46.90**	**269**	T	T	22 54 20.2	
	baz=98						
SONM	**Songino Array**	**58.99**	**349**	P	**P**	**22 05 54.6**	**+1.1**
	0.2nm,0.3s,baz=174,slow=7.5,SNR=3.2						
MKAR	**Makanchi Array**	**65.90**	**333**	P	**P**	**22 06 38.5**	**-1.2**
	0.5nm,0.7s,baz=148,slow=7.2,SNR=9.0						
**

JKZ	**Kuzumaki**	**1.30**	319	P		**Pn**	**22 00 49.2**	**0.0**
JKZ				S		**Sb**	**22 01 04.5**	**-1.7**
JRG	**Rokugo**	**1.46**	286	P		**Pn**	**22 00 51.8**	**+0.5**
JRG				S		**Sn**	**22 01 10.1**	**-0.1**
JOU	**Okura**	**1.54**	246	P		**Pb**	**22 00 53.4**	**-0.3**
JOU				S		**Sn**	**22 01 12.5**	**+0.3**
JANG	**Nango**	**1.54**	332	P		**Pn**	**22 00 52.6**	**+0.2**
JANG				S		**Sn**	**22 01 11.3**	**-0.9**
ERM	**Erimo**	**3.05**	10	*e*Pn		**Pb**	**22 01 19.3**	**-0.2**
ERM				*e*Sn		**Sb**	**22 01 55.5**	**-1.0**
MAJO	**Matsushiro**	**4.17**	235	*e*Pn		Pn	22 01 32.0	+3.5
MJAR	**Matsushiro Arr**	**4.17**	235	P		Pn	22 01 31.8	+3.2
	6.7nm,0.3s,baz=40,slow=11,SNR=22							
ASAJ	**Asahikawa**	**5.10**	1	P		Pn	22 01 45.2	+3.8
	2.5nm,0.3s,baz=220,slow=10,SNR=8.1							
ASAJ				S		**Sn**	**22 02 37.7**	**-2.4**
	2.9nm,0.3s,baz=163,slow=13,SNR=5.5							
JHJ	**Hachijo jima 2**	**6.26**	201	P		Pn	22 01 55.0	-2.4
	3.0nm,0.3s,baz=61,slow=19,SNR=2.6							
JHJ				S		**Sn**	**22 03 05.5**	**-3.2**
	15nm,0.3s,baz=74,slow=19,SNR=3.1							
USRK	**Ussuriysk Ar.**	**9.39**	307	P		**Pn**	**22 02 43.1**	**+2.9**
	0.1nm,0.3s,baz=130,slow=13,SNR=4.5							
JNU	**Nakatsue**	**11.05**	241	P		**Pn**	**22 03 02.9**	**-0.2**
	0.1nm,0.3s,baz=332,slow=11,SNR=2.5							
KSRS	**Korea Array**	**11.53**	267	P		Pn	22 03 14.6	+5.1
	0.2nm,0.3s,baz=81,slow=15,SNR=4.1							
KSAR	**Wonju Array Be**	**11.56**	267	P		Pn	22 03 14.6	+4.6
KLR	**Kul'dur**	**12.77**	327	P		P	22 03 33.7	-3.8
	0.1nm,0.3s,baz=164,slow=15,SNR=4.1							
KLR				LR		LR	22 08 26.9	
	comp=Z,1µm,19.8s,baz=14,slow=37							
SEY	**Seymchan**	**24.70**	11	P		**P**	**22 05 47.6**	**+1.9**
	0.9nm,0.3s,baz=237,slow=6.1,SNR=3.7							
SONM	**Songino Array**	**27.42**	301	P		**P**	**22 06 10.9**	**+0.3**
	0.3nm,0.4s,baz=89,slow=9.9,SNR=3.5							
ENH	**Enshi**	**28.36**	262	*e*Pn		**P**	**22 06 17.7**	**-1.4**
	6.1nm,0.8s							
H11N2	**WAKE ISLAND Hy**	**28.54**	125	T		T	22 36 43.3	
	baz=317,slow=76,SNR=260							
H11N1	**WAKE ISLAND Hy**	**28.55**	125	T		T	22 36 42.9	
	baz=317,slow=76,SNR=353							
H11N3	**WAKE ISLAND Hy**	**28.56**	125	T		T	22 36 46.4	
	baz=317,slow=76,SNR=328							
H11S1	**WAKE ISLAND Hy**	**29.33**	127	T		T	22 37 42.6	
	baz=319,slow=76,SNR=94							
H11S3	**WAKE ISLAND Hy**	**29.33**	127	T		T	22 37 42.9	
	baz=319,slow=76,SNR=81							
H11S2	**WAKE ISLAND Hy**	**29.34**	127	T		T	22 37 43.7	
	baz=319,slow=76,SNR=101							
ZALV	**Zalesovo Beam**	**41.21**	311	P		**P**	**22 08 08.9**	**-0.6**
	1.3nm,0.5s,baz=90,slow=8.9,SNR=6.3							
JAY	**Jayapura**	**41.35**	183	P		**P**	**22 08 11.1**	**+0.1**
	0.6nm,0.5s,baz=131,slow=19,SNR=3.4							
CMAR	**Chiang Mai Arr**	**42.80**	254	P		**P**	**22 08 22.2**	**-0.7**
	0.8nm,0.3s,baz=46,slow=7.8,SNR=5.0							
MKAR	**Makanchi Array**	**43.79**	301	P		**P**	**22 08 30.7**	**+0.1**
	2.3nm,0.8s,baz=86,slow=8.8,SNR=18							
KURK	**Kurchatov**	**45.38**	307	*e*P		**P**	**22 08 42.8**	**-0.4**
	14nm,1.1s							
KURBB	**Kurchatov Arra**	**45.45**	307	P		**P**	**22 08 43.4**	**-0.3**
	4.5nm,0.8s,baz=82,slow=8.3,SNR=19							
COLA	**College**	**46.98**	33	*e*P		**P**	**22 08 56.2**	**+0.7**
	2.1nm,0.4s							
ILAR	**Eielson Array**	**47.39**	33	P		**P**	**22 08 59.8**	**+1.0**
	1.2nm,0.7s,baz=270,slow=6.1,SNR=12							
BVAR	**Borovoye Array**	**49.86**	311	P		**P**	**22 09 17.7**	**-0.3**
	1.2nm,0.7s,baz=80,slow=9.3,SNR=5.9							
AAK	**Ala-Archa**	**50.29**	7	P		**P**	**22 09 21.4**	**-0.2**
	0.7nm,0.6s,baz=102,slow=5.4,SNR=3.6							
EKS2	**Erkin-Say**	**50.78**	298	*e*P		**P**	**22 09 24.9**	**-0.3**
	1.1nm,0.7s							
INK	**Inuvik**	**52.26**	28	P		**P**	**22 09 37.1**	**+1.4**
	1.0nm,0.6s,baz=305,slow=6.9,SNR=6.6							
KKAR	**Karatay Array**	**52.86**	299	*e*P		**P**	**22 09 40.5**	**-0.1**
	0.6nm,0.6s							
ABKAR	**Akbulak array**	**57.30**	309	*e*P		**P**	**22 10 12.5**	**0.0**
	2.2nm,0.6s							
AKTO	**Aktyubinsk**	**57.97**	311	P		**P**	**22 10 16.2**	**-1.0**
	1.2nm,0.9s,baz=65,slow=14,SNR=2.7							
WRA	**Warramunga Arr**	**59.13**	189	P		**P**	**22 10 25.1**	**-0.5**
	1.1nm,0.3s,baz=6.8,slow=7.0,SNR=30							
YKA	**Yellowknife Ar**	**61.69**	31	P		**P**	**22 10 43.3**	**+0.7**
	0.4nm,0.9s,baz=290,slow=6.9,SNR=4.8							
ASAR	**Alice Springs**	**62.86**	189	P		**P**	**22 10 51.0**	**+0.2**
	0.3nm,0.5s,baz=16,slow=6.5,SNR=5.2							
EGMT	**Eagleton**	**72.25**	42	P		**P**	**22 11 50.0**	**-0.2**
	116nm,2.0s							
NVAR	**Mina Array Bea**	**73.16**	54	P		**P**	**22 11 57.6**	**+1.7**
	0.6nm,0.7s,baz=284,slow=7.2,SNR=4.3							
AKASG	**Malin Array Be**	**73.23**	322	P		**P**	**22 11 55.6**	**-0.1**
	0.3nm,0.3s,baz=45,slow=6.5,SNR=4.8							
NWAO	**Narrogin (SRO)**	**75.31**	202	P		**P**	**22 12 07.8**	**-0.1**
	4.2nm,0.8s,baz=81,slow=0.4,SNR=2.3							
PDAR	**Pinedale Array**	**75.71**	46	P		**P**	**22 12 12.0**	**+1.4**
	0.2nm,0.4s,baz=280,slow=5.4,SNR=2.9							
URZ	**Urewera**	**83.23**	153	LR		LR	22 48 26.2	
	comp=Z,132nm,18.5s,baz=336,slow=34							
TXAR	**Lajitas Array**	**88.28**	53	P		**P**	**22 13 16.8**	**+0.1**
	0.2nm,0.4s,baz=327,slow=9.7,SNR=3.2							

IDC ***14*** *22:03:28.1±0.8,36.64N×23.02E,h0km,mb3.6/12, mb1 3.8/17,mb1mx3.6/67,mbtmp3.6/17,ML3.2/5,MS2.9/1, Ms1 2.9/1,ms1mx2.7/53,Error ellipse: s-maj=18.2km s-min=15.1km az=4.0*

ATH ***14*** *22:03:29.2,36.64N×22.96E,h23km,ML3.3/34,Error ellipse: s-maj=0.9km s-min=0.5km az=234.0*

ISCJB ***14*** *22:03:31.0±0.3,36.60N±0.02×22.95E±0.02,h21km±3km, mb3.5/12,Error ellipse: s-maj=3.3km s-min=1.9km az=138.4*

THE ***14*** *22:03:30.9,36.61N×22.93E,h9km,ML3.4/28,Error ellipse: s-maj=1.0km s-min=0.5km az=236.0*

ISK ***14*** *22:03:30.4,36.80N×23.16E,h5km,ML3.3*

CSEM ***14*** *22:03:31.0±0.1,36.63N×22.98E,h10km,ML3.3,Error ellipse: s-maj=3.5km s-min=2.0km az=46.0*

ISC 14 22:03:30.4±0.7,36.61N±0.02×22.95E±0.02,h13km±4km, n241,σ1§03/352,mb3.5/12,1D,Southern Greece

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
VLI	**Veliai**	**0.11**	**353**	P	**Pg**	**22 03 33.7**	**+0.2**
VLI				S	**Sg**	**22 03 35.7**	**0.0**
VLI	**Veliai**	**0.11**	**353**	P	**Pg**	**22 03 33.4**	**-0.2**
VLI				S	**Sg**	**22 03 35.7**	**0.0**
VLI	**Veliai**	**0.11**	**353**	P	**Pg**	**22 03 33.4**	**-0.2**
VLI				S	**Sg**	**22 03 34.6**	**-1.1**
VLI				AML	AML	22 03 36.1	
VLI				AML	AML	22 03 37.2	
	comp=E,71179µm,0.3s						
KYTH	**Kithira**	**0.34**	**169**	P	**Pb**	**22 03 38.1**	**-0.2**
KYTH				S	**Sb**	**22 03 43.7**	**+0.2**
KYTH	**Kithira**	**0.34**	**169**	P	**Pb**	**22 03 38.1**	**-0.2**
KYTH				S	**Sb**	**22 03 43.7**	**+0.2**
KYTH	**Kithira**	**0.34**	**169**	P	**Pb**	**22 03 38.8**	**+0.5**
KRND	**KRANIDI**	**0.79**	**12**	P	**Pg**	**22 03 45.6**	**0.0**
KRND				S	**Sb**	**22 03 58.2**	**+1.8**
KRND	**KRANIDI**	**0.79**	**12**	P	**Pg**	**22 03 45.6**	**0.0**
KRND				S	**Sg**	**22 03 55.5**	**-0.5**
KRND	**KRANIDI**	**0.79**	**12**	P	**Pn**	**22 03 46.9**	**-0.3**
KRND				S	**Sg**	**22 03 55.5**	**-0.5**
KRND				AML	AML	22 04 02.0	
	comp=E,4036µm,0.6s						
KRND				AML	AML	22 04 07.5	
	comp=N,3462µm,0.3s						
ANKY	**Antikythira Is**	**0.80**	**159**	P	**Pb**	**22 03 46.1**	**+0.1**
ANKY				S	**Sb**	**22 03 56.9**	**+0.2**
ANKY	**Antikythira Is**	**0.80**	**159**	P	**Pb**	**22 03 46.1**	**+0.1**
ANKY				S	**Sb**	**22 03 56.9**	**+0.2**
ANKY	**Antikythira Is**	**0.80**	**159**	P	**Pn**	**22 03 46.9**	**-0.4**
ANKY				S	**Sg**	**22 03 55.9**	**-0.4**
ANKY				AML	AML	22 03 57.6	
	comp=E,4840µm,0.4s						
ANKY				AML	AML	22 03 59.5	
	comp=N,4267µm,0.6s						
VLX	**Vlachokerasia**	**0.89**	**329**	P	**Pg**	**22 03 46.5**	**-1.1**
VLX				S	**Sg**	**22 03 57.5**	**-1.7**
VLX	**Vlachokerasia**	**0.89**	**329**	P	**Pg**	**22 03 46.5**	**-1.1**
VLX				S	**Sg**	**22 03 57.7**	**-1.5**
VLX	**Vlachokerasia**	**0.89**	**329**	P	**Pg**	**22 03 46.3**	**-1.3**
VLX				S	**Sg**	**22 03 57.6**	**-1.5**
VLX				AML	AML	22 04 03.8	
	comp=N,8386µm,0.6s						
VLX				AML	AML	22 04 04.8	
	comp=E,7129µm,0.7s						
DID	**Didima**	**0.92**	**14**	P	**Pg**	**22 03 47.9**	**-0.3**
DID				S	**Sn**	**22 04 02.6**	**+0.4**
DID	**Didima**	**0.92**	**14**	P	**Pg**	**22 03 47.9**	**-0.3**
DID				S	**Sb**	**22 04 01.7**	**+1.3**
DID	**Didima**	**0.92**	**14**	P	**Pb**	**22 03 48.7**	**+0.4**
DID				S	**Sb**	**22 04 01.7**	**+1.3**
DID				AML	AML	22 04 05.5	
	comp=E,7675µm,0.5s						
DID				AML	AML	22 04 08.1	
	comp=N,4878µm,0.5s						
ITM	**Ithomi**	**1.00**	**305**	P	**Pg**	**22 03 48.2**	**-1.5**
ITM				S	**Sb**	**22 04 03.2**	**+0.6**
ITM	**Ithomi**	**1.00**	**305**	P	**Pg**	**22 03 48.2**	**-1.5**
ITM				S	**Sb**	**22 04 03.2**	**+0.6**
ITM	**Ithomi**	**1.00**	**305**	P	**Pg**	**22 03 47.4**	**-2.3**
ITM				S	**Sb**	**22 04 02.7**	**+0.1**
ITM				AML	AML	22 04 09.7	
	comp=E,3113µm,0.5s						
ITM				AML	AML	22 04 11.9	
	comp=N,2986µm,0.6s						
PYL	**PYLOS**	**1.01**	**287**	P	**Pg**	**22 03 48.7**	**-1.3**
PYL				S	**Sb**	**22 04 03.9**	**+0.9**
PYL	**PYLOS**	**1.01**	**287**	P	**Pg**	**22 03 48.7**	**-1.3**
PYL				S	**Sb**	**22 04 03.9**	**+0.9**
PYL	**PYLOS**	**1.01**	**287**	P	**Pg**	**22 03 47.1**	**-2.9**
PYL				S	**Sn**	**22 04 05.2**	**+0.8**
PYL				AML	AML	22 04 05.9	
	comp=N,1910µm,0.4s						
PYL				AML	AML	22 04 06.5	
	comp=E,3437µm,0.6s						
TRIP	**Tripoli**	**1.06**	**329**	P	**Pg**	**22 03 50.1**	**-0.8**
TRIP				S	**Sg**	**22 04 04.5**	**-0.4**
TRIP	**Tripoli**	**1.06**	**329**	P	**Pg**	**22 03 50.1**	**-0.8**
TRIP				S	**Sg**	**22 04 04.5**	**-0.4**
TRIP				AML	AML	22 04 07.8	
	comp=N,2127µm,0.7s						
TRIP				AML	AML	22 04 09.6	
	comp=E,2883µm,0.4s						
MHLO	**Agia Marina, M**	**1.17**	**86**	P	**Pb**	**22 03 52.5**	**+0.1**
MHLO				S	**Sn**	**22 04 09.2**	**+1.0**
MHLO	**Agia Marina, M**	**1.17**	**86**	P	**Pb**	**22 03 52.5**	**+0.1**
MHLO				S	**Sn**	**22 04 08.7**	**+0.6**
MHLO	**Agia Marina, M**	**1.17**	**86**	P	**Pn**	**22 03 54.0**	**+1.6**
MHLO				S	**Sn**	**22 04 08.7**	**+0.6**
MHLO				AML	AML	22 04 14.9	
	comp=E,14881µm,0.5s						
MHLO				AML	AML	22 04 16.3	
	comp=N,10724µm,0.6s						
SERI	**Serifos**	**1.34**	**66**	P	**Pn**	**22 03 54.7**	**-0.2**
SERI				S	**Sb**	**22 04 13.0**	**+0.4**
SERI	**Serifos**	**1.34**	**66**	P	**Pn**	**22 03 54.7**	**-0.2**
SERI				S	**Sb**	**22 04 13.0**	**+0.4**
SERI				AML	AML	22 04 20.9	
	comp=N,791µm,0.5s						
SERI				AML	AML	22 04 22.5	
	comp=E,1054µm,0.4s						
AMT	**Artemida-Makis**	**1.35**	**313**	P	**Pn**	**22 03 54.2**	**-0.8**
AMT				S	**Sg**	**22 04 14.2**	**+0.1**
AMT	**Artemida-Makis**	**1.35**	**313**	P	**Pn**	**22 03 54.2**	**-0.8**
AMT				S	**Sg**	**22 04 14.2**	**+0.1**
AMT	**Artemida-Makis**	**1.35**	**313**	P	**Pn**	**22 03 54.0**	**-1.0**
LTK	**Loutraki**	**1.41**	**0**	P	**Pn**	**22 03 56.2**	**+0.5**
LTK				S	**Sg**	**22 04 15.6**	**-0.2**
LTK	**Loutraki**	**1.41**	**0**	P	**Pn**	**22 03 56.2**	**+0.5**
LTK				S	**Sb**	**22 04 14.2**	**-0.2**
LTK	**Loutraki**	**1.41**	**0**	P	**Pg**	**22 03 57.1**	**-0.4**
LTK				S	**Sb**	**22 04 14.2**	**-0.2**
LTK				AML	AML	22 04 18.5	
	comp=E,3363µm,0.6s						
LTK				AML	AML	22 04 20.5	
	comp=N,3559µm,0.6s						
VLY	**Voula,Athens**	**1.41**	**28**	P	**Pn**	**22 03 56.0**	**+0.3**
VLY	**Voula,Athens**	**1.41**	**28**	P	**Pn**	**22 03 56.0**	**+0.3**
VLY				S	**Sb**	**22 04 12.7**	**-1.7**
VLY	**Voula,Athens**	**1.41**	**28**	P	**Pn**	**22 03 55.6**	**-0.1**
VLY				S	**Sb**	**22 04 12.7**	**-1.7**
VLY				AML	AML	22 04 24.6	
	comp=E,3230µm,0.7s						
VLY				AML	AML	22 04 25.0	
	comp=N,1588µm,0.6s						
GUR	**Goura**	**1.41**	**340**	P	**Pn**	**22 03 55.7**	**-0.1**
GUR				S	**Sb**	**22 04 14.4**	**-0.1**
GUR	**Goura**	**1.41**	**340**	P	**Pn**	**22 03 55.7**	**-0.1**
GUR				S	**Sb**	**22 04 14.4**	**-0.1**
GUR	**Goura**	**1.41**	**340**	P	**Pn**	**22 03 55.6**	**-0.1**
GUR				S	**Sb**	**22 04 13.8**	**-0.7**
GUR				AML	AML	22 04 18.7	
	comp=E,4781µm,0.4s						
GUR				AML	AML	22 04 24.2	
	comp=N,5065µm,0.5s						
IMMV	**Iera Moni Meta**	**1.42**	**144**	P	**Pn**	**22 03 56.1**	**+0.2**
IMMV				S	**Sn**	**22 04 15.1**	**+0.7**
IMMV	**Iera Moni Meta**	**1.42**	**144**	P	**Pn**	**22 03 56.1**	**+0.2**
IMMV				S	**Sn**	**22 04 15.1**	**+0.7**
IMMV	**Iera Moni Meta**	**1.42**	**144**	P	**Pn**	**22 03 55.5**	**-0.3**
IMMV				S	**Sg**	**22 04 17.1**	**+0.9**
IMMV				AML	AML	22 04 29.6	
	comp=N,2801µm,0.5s						
IMMV				AML	AML	22 04 39.8	
	comp=E,2353µm,0.6s						
THAL	**Thalero**	**1.44**	**351**	P	**Pn**	**22 03 56.3**	**+0.1**
THAL				S	**Sb**	**22 04 16.0**	**+0.7**
THAL	**Thalero**	**1.44**	**351**	P	**Pn**	**22 03 56.4**	**+0.3**
THAL				S	**Sb**	**22 04 16.0**	**+0.7**
THAL	**Thalero**	**1.44**	**351**	P	**Pn**	**22 03 56.4**	**+0.3**
THAL				S	**Sn**	**22 04 13.8**	**-1.1**
THAL				AML	AML	22 04 21.5	
	comp=E,6842µm,0.6s						
THAL				AML	AML	22 04 30.8	
	comp=N,5011µm,0.8s						
ATH	**Athens Observa**	**1.49**	**24**	P	**Pn**	**22 03 57.6**	**+0.8**
ATH				S	**Sb**	**22 04 17.2**	**+0.6**
ATH	**Athens Observa**	**1.49**	**24**	P	**Pn**	**22 03 57.6**	**+0.8**
ATH				S	**Sb**	**22 04 17.2**	**+0.6**
ATHU	**Athens Univers**	**1.51**	**26**	P	**Pn**	**22 03 57.1**	**0.0**
ATHU	**Athens Univers**	**1.51**	**26**	P	**Pn**	**22 03 57.1**	**0.0**
ATHU				S	**Sn**	**22 04 17.2**	**+0.7**
ATHU	**Athens Univers**	**1.51**	**26**	P	**Pn**	**22 03 55.3**	**-1.8**
ATHU				S	**Sn**	**22 04 17.2**	**+0.7**
ATHU				AML	AML	22 04 22.1	
	comp=E,378µm,0.7s						
ATHU				AML	AML	22 04 26.7	
	comp=N,539µm,0.5s						
KLV	**Kalavryta, Ach**	**1.57**	**336**	P	**Pn**	**22 03 58.1**	**+0.2**
KLV				S	**Sb**	**22 04 19.7**	**+0.7**
KLV	**Kalavryta, Ach**	**1.57**	**336**	P	**Pn**	**22 03 58.1**	**+0.7**
KLV				S	**Sb**	**22 04 19.3**	**+0.3**
KLV	**Kalavryta, Ach**	**1.57**	**336**	P	**Pn**	**22 03 58.6**	**+0.7**
KLV				S	**Sb**	**22 04 19.3**	**+0.3**
KLV				AML	AML	22 04 25.8	
	comp=E,1728µm,0.6s						
KLV				AML	AML	22 04 30.0	
	comp=N,1417µm,0.7s						
VAM	**Vamos**	**1.57**	**140**	P	**Pn**	**22 03 58.3**	**+0.4**
VAM	**Vamos**	**1.57**	**140**	P	**Pn**	**22 03 58.3**	**+0.4**
VAM				S	**Sn**	**22 04 18.3**	**+0.2**
VILL	**Villia**	**1.57**	**10**	P	**Pn**	**22 03 58.2**	**+0.1**
VILL				S	**Sb**	**22 04 19.5**	**+0.3**
VILL	**Villia**	**1.57**	**10**	P	**Pn**	**22 03 58.4**	**+0.3**
VILL				S	**Sb**	**22 04 19.5**	**+0.3**
PTL	**Penteli**	**1.61**	**27**	P	**Pn**	**22 03 58.9**	**+0.5**
PTL				S	**Sn**	**22 04 19.8**	**+0.7**
PTL	**Penteli**	**1.61**	**27**	P	**Pn**	**22 03 59.0**	**+0.5**
PTL				S	**Sn**	**22 04 19.8**	**+0.7**
PTL	**Penteli**	**1.61**	**27**	P	**Pn**	**22 03 59.0**	**+0.5**
PTL				S	**Sn**	**22 04 18.3**	**-0.8**
PTL				AML	AML	22 04 30.1	
	comp=E,1143µm,0.8s						
PTL				AML	AML	22 04 30.5	
	comp=N,1059µm,0.5s						
VIL2	**Platees**	**1.62**	**9**	P	**Pn**	**22 03 58.4**	**-0.2**
VIL2				S	**Sn**	**22 04 18.1**	**-1.2**
VIL2				AML	AML	22 04 31.6	
	comp=N,2081µm,0.6s						
VIL2				AML	AML	22 04 32.9	
	comp=E,1300µm,0.5s						
PROD	**Prodromos**	**1.64**	**359**	P	**Pn**	**22 03 59.3**	**+0.3**
PROD				S	**Sb**	**22 04 22.2**	**+1.0**
PROD	**Prodromos**	**1.64**	**359**	P	**Pn**	**22 03 59.3**	**+0.3**
PROD				S	**Sb**	**22 04 22.2**	**+1.0**
PROD				AML	AML	22 04 24.9	
	comp=N,1391µm,0.6s						
PROD				AML	AML	22 04 28.8	
	comp=E,1269µm,0.4s						
DRO	**Drossia**	**1.67**	**324**	P	**Pn**	**22 04 00.2**	**+0.9**
DRO	**Drossia**	**1.67**	**324**	P	**Pn**	**22 04 00.2**	**+0.9**
DRO				S	**Sn**	**22 04 21.2**	**+0.7**
DRO	**Drossia**	**1.67**	**324**	P	**Pb**	**22 04 00.5**	**-0.4**
DRO				S	**Sn**	**22 04 21.2**	**+0.7**
DRO				AML	AML	22 04 29.4	
	comp=N,2313µm,0.7s						
DRO				AML	AML	22 04 36.5	
	comp=E,2996µm,0.6s						
LAKA	**Lakka**	**1.80**	**335**	P	**Pn**	**22 04 02.1**	**+1.0**
LAKA				S	**Sn**	**22 04 25.1**	**+1.2**
LAKA	**Lakka**	**1.80**	**335**	P	**Pn**	**22 04 02.1**	**+1.0**
LAKA				S	**Sn**	**22 04 25.1**	**+1.2**
DSF	**Desfina**	**1.83**	**349**	P	**Pn**	**22 04 02.1**	**+0.6**
DSF				S	**Sn**	**22 04 26.2**	**+1.6**
DSF	**Desfina**	**1.83**	**349**	P	**Pn**	**22 04 02.3**	**+0.7**
DSF				S	**Sn**	**22 04 24.6**	**0.0**
DSF	**Desfina**	**1.83**	**349**	P	**Pn**	**22 04 02.3**	**+0.7**
DSF				S	**Sn**	**22 04 24.6**	**0.0**
DSF				AML	AML	22 04 32.3	
	comp=E,775µm,0.4s						
DSF				AML	AML	22 04 34.3	
	comp=N,1146µm,0.8s						
RLS	**Riolos of Patr**	**1.87**	**321**	P	**Pb**	**22 04 03.5**	**-0.8**
RLS				S	**Sb**	**22 04 27.2**	**-0.4**
RLS	**Riolos of Patr**	**1.87**	**321**	P	**Pb**	**22 04 03.5**	**-0.8**
RLS				S	**Sb**	**22 04 27.2**	**-0.4**
RLS	**Riolos of Patr**	**1.87**	**321**	S	**Sb**	**22 04 28.2**	**+0.6**
RLS				AML	AML	22 04 40.4	
	comp=E,902µm,0.8s						
RLS				AML	AML	22 04 45.1	
	comp=N,855µm,0.9s						
TRIZ	**Trizonia**	**1.89**	**338**	P	**Pb**	**22 04 03.9**	**-0.7**
TRIZ				S	**Sn**	**22 04 25.1**	**-0.8**
KALE	**Kalithea**	**1.89**	**340**	P	**Pn**	**22 04 03.0**	**+0.6**
KALE				S	**Sb**	**22 04 28.3**	**0.0**
KALE	**Kalithea**	**1.89**	**340**	P	**Pn**	**22 04 03.0**	**+0.6**
KALE				S	**Sn**	**22 04 26.4**	**+0.3**
KALE	**Kalithea**	**1.89**	**340**	P	**Pn**	**22 04 03.3**	**+0.9**
KALE				S	**Sn**	**22 04 26.4**	**+0.3**
KALE				AML	AML	22 04 34.2	
	comp=E,878µm,0.5s						
KALE				AML	AML	22 04 35.3	
	comp=N,1635µm,0.5s						
RODI	**Rodini**	**1.90**	**334**	P	**Pb**	**22 04 04.3**	**-0.6**
RODI	**Rodini**	**1.90**	**334**	P	**Pb**	**22 04 04.3**	**-0.6**
UPR	**University Cam**	**1.91**	**331**	P	**Pn**	**22 04 03.9**	**+1.3**
UPR	**University Cam**	**1.91**	**331**	P	**Pn**	**22 04 03.9**	**+1.3**
THR5	**Thira Island,**	**1.94**	**95**	*e*PN	**Pn**	**22 04 03.8**	**+0.8**
THR5				*e*SN	**Sn**	**22 04 28.1**	**+0.9**
THR5	**Thira Island,**	**1.94**	**95**	*e*Pn	**Pn**	**22 04 03.8**	**+0.8**
THR5				*e*Sn	**Sn**	**22 04 28.1**	**+0.9**
EREA	**Eretria**	**1.96**	**23**	P	**Pn**	**22 04 03.9**	**+0.5**
EREA				S	**Sn**	**22 04 28.9**	**+1.0**
EREA	**Eretria**	**1.96**	**23**	P	**Pn**	**22 04 03.9**	**+0.5**
EREA				S	**Sn**	**22 04 28.3**	**+0.4**
EREA	**Eretria**	**1.96**	**23**	P	**Pn**	**22 04 04.4**	**+1.0**
EREA				S	**Sn**	**22 04 28.3**	**+0.4**
EREA				AML	AML	22 04 38.0	
	comp=E,542µm,0.4s						
EREA				AML	AML	22 04 49.1	
	comp=N,686µm,0.5s						
CMBO	**Columbo, Santo**	**1.98**	**93**	P	**Pn**	**22 04 04.6**	**+1.0**
CMBO				S	**Sn**	**22 04 27.7**	**-0.5**
CMBO	**Columbo, Santo**	**1.98**	**93**	P	**Pn**	**22 04 04.6**	**+1.0**
CMBO				S	**Sn**	**22 04 27.7**	**-0.5**
CMBO				AML	AML	22 04 42.5	
	comp=N,1537µm,0.5s						
CMBO				AML	AML	22 04 47.0	
	comp=E,1801µm,0.5s						
THR3	**Thira Island,**	**1.98**	**95**	P	**Pn**	**22 04 04.6**	**+1.0**
THR3	**Thira Island,**	**1.98**	**95**	P	**Pn**	**22 04 04.6**	**+1.0**
THR6	**Thira Island,**	**1.99**	**97**	P	**Pn**	**22 04 04.7**	**+1.1**
THR6	**Thira Island,**	**1.99**	**97**	P	**Pn**	**22 04 04.7**	**+1.1**
EFP	**Efpalio**	**1.99**	**336**	P	**Pb**	**22 04 06.2**	**-0.3**
EFP	**Efpalio**	**1.99**	**336**	P	**Pb**	**22 04 06.2**	**-0.3**
GVD	**Gavdhos**	**2.00**	**152**	P	**Pb**	**22 04 07.3**	**+0.7**
THR2	**Thira island,**	**2.01**	**94**	P	**Pn**	**22 04 04.7**	**+0.8**
THR2	**Thira island,**	**2.01**	**94**	P	**Pn**	**22 04 04.7**	**+0.8**
AXS	**Araxos**	**2.02**	**322**	P	**Pn**	**22 04 04.5**	**+0.4**
AXS	**Araxos**	**2.02**	**322**	P	**Pn**	**22 04 04.5**	**+0.4**
SANT	**Santorini**	**2.03**	**96**	P	**Pn**	**22 04 05.6**	**+1.3**
SANT				S	**Sn**	**22 04 29.3**	**-0.3**
SANT	**Santorini**	**2.03**	**96**	P	**Pn**	**22 04 05.6**	**+1.3**
SANT				S	**Sn**	**22 04 29.3**	**-0.3**
SANT				AML	AML	22 04 47.3	
	comp=E,691µm,

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SKIA S Sn 22 04 44.5 +1.4
SKIA Skiathos 2.58 9 P Pn 22 04 12.6 +0.7
SKIA S Sn 22 04 41.6 -1.4
SKIA AML AML 22 04 51.5
comp=E,301μm,0.6s
SKIA AML AML 22 05 01.3
comp=N,379μm,0.6s
AOS Alonnisos 2.66 16 *e*PN Pn 22 04 12.8 -0.1
AOS *e*SN Sn 22 04 43.9 -1.0
AOS Alonnisos 2.66 16 P Pn 22 04 12.9 0.0
AOS Alonnisos 2.66 16 P Pn 22 04 12.9 0.0
AOS *e*Sn Sn 22 04 43.9 -1.0
AOS S Sn 22 04 45.3 +0.4
AOS Alonnisos 2.66 16 P Pn 22 04 11.9 -0.9
AOS S Sn 22 04 45.3 +0.4
AOS AML AML 22 05 01.6
comp=E,425μm,0.8s
AOS AML AML 22 05 01.8
comp=N,337μm,0.6s
NEO Neokhori 2.70 4 P Pn 22 04 15.4 +1.9
NEO Neokhori 2.70 4 P Pn 22 04 15.4 +1.9
XOR Xorichti 2.76 4 P Pn 22 04 15.4 +1.1
XOR S Sn 22 04 49.5 +2.1
XOR Xorichti 2.76 4 P Pn 22 04 14.2 -0.1
XOR S Sn 22 04 49.5 +2.1
XOR Xorichti 2.76 4 P Pn 22 04 14.2 -0.1
FYTO Fytoko, Volos 2.79 360 P Pn 22 04 15.2 +0.5
FYTO Fytoko, Volos 2.79 360 P Pn 22 04 15.2 +0.5
LKD2 Lefkada island 2.83 321 P Pn 22 04 17.5 +2.1
LKD2 Lefkada island 2.83 321 P Pn 22 04 17.5 +2.1
DSL Palaion Diasel 2.92 330 P Pn 22 04 18.4 +1.9
DSL Palaion Diasel 2.92 330 P Pn 22 04 18.4 +1.9
CHOS Chios island 3.04 53 *e*PN Pn 22 04 17.9 -0.3
CHOS Chios island 3.04 53 *e*Pn Pn 22 04 17.9 -0.3
CHOS Chios island 3.04 53 P Pn 22 04 18.4 +0.2
CHOS Chios island 3.04 53 P Pn 22 04 18.4 +0.2
THL Klokotos Trika 3.04 346 P Pn 22 04 19.4 +1.3
ZKR Zakros 3.04 118 P Pn 22 04 20.2 +2.0
ZKR S Sn 22 04 53.7 -0.7
ZKR Zakros 3.04 118 P Pn 22 04 20.2 +2.0
ZKR S Sn 22 04 53.7 -0.7
SMG Samos 3.29 69 P Pn 22 04 21.0 -0.6
SMG Samos 3.29 69 P Pn 22 04 21.0 -0.6
PAIG Paliouri 3.36 10 P Pn 22 04 21.4 -1.1
PAIG Paliouri 3.36 10 P Pn 22 04 21.4 -1.1
SIGR SIGRI 3.46 41 *e*PN Pn 22 04 24.1 +0.1
SIGR SIGRI 3.46 41 P Pn 22 04 23.4 -0.5
SIGR SIGRI 3.46 41 *e*Pn Pn 22 04 24.1 +0.1
SIGR SIGRI 3.46 41 P Pn 22 04 23.4 -0.5
LIT Litokhoron 3.50 354 P Pn 22 04 25.8 +1.3
LIT Litokhoron 3.50 354 P Pn 22 04 25.8 +1.3
BODT Bodrum 3.52 81 *e*PN Pn 22 04 25.8 +1.0
BODT Bodrum 3.52 81 *e*Pn Pn 22 04 25.8 +1.0
KPRO Kipourio 3.56 340 P Pn 22 04 26.9 +1.5
KPRO Kipourio 3.56 340 P Pn 22 04 26.9 +1.5
KARP Karpathos 3.57 106 *e*PN Pn 22 04 27.3 +1.8
KARP Karpathos 3.57 106 P Pn 22 04 26.9 +1.4
KARP Karpathos 3.57 106 *e*Pn Pn 22 04 27.3 +1.8
KARP Karpathos 3.57 106 P Pn 22 04 26.9 +1.4
IGT Igoumenitsa 3.57 325 *e*PN Pn 22 04 28.7 +3.2
IGT Igoumenitsa 3.57 325 P Pn 22 04 28.3 +2.8
IGT Igoumenitsa 3.57 325 *e*Pn Pn 22 04 28.7 +3.2
IGT Igoumenitsa 3.57 325 P Pn 22 04 28.3 +2.8
SGD Sagiada 3.68 325 P Pn 22 04 30.4 +3.4
PRK Paraskevi 3.71 44 P Pn 22 04 28.2 +0.8
PRK Paraskevi 3.71 44 P Pn 22 04 28.2 +0.8
LIA Limnos Island 3.72 27 P Pn 22 04 26.5 -1.0
PLG Polygyros 3.78 6 P Pn 22 04 28.4 +0.1
PLG Polygyros 3.78 6 P Pn 22 04 28.4 +0.1
OUR Ouranopolis 3.80 12 *e*PN Pn 22 04 29.2 +0.6
OUR Ouranopolis 3.80 12 P Pn 22 04 28.4 -0.2
OUR Ouranopolis 3.80 12 *e*Pn Pn 22 04 29.2 +0.6
OUR Ouranopolis 3.80 12 P Pn 22 04 28.4 -0.2
KZN Kozani 3.80 346 P Pn 22 04 29.5 +0.8
KEK Kerkira 3.97 322 P Pn 22 04 33.9 +3.0
KEK S Sn 22 05 18.0 +0.7
HORT Hortiatis 3.98 2 P Pn 22 04 33.9 +2.7
HORT Hortiatis 3.98 2 P Pn 22 04 33.9 +2.7
NEST Nestorio 4.08 339 P Pn 22 04 35.1 +2.5
NEST Nestorio 4.08 339 P Pn 22 04 35.1 +2.5
AYDB Zeytinkoy-Aydi 4.16 70 *e*PN Pn 22 04 34.5 +0.9
AYDB Zeytinkoy-Aydi 4.16 70 *e*Pn Pn 22 04 34.5 +0.9
YER Yerkesik 4.30 81 *e*PN Pn 22 04 37.0 +1.4
YER Yerkesik 4.30 81 *e*Pn Pn 22 04 37.0 +1.4
FNA Florina 4.34 344 *e*PN Pn 22 04 38.3 +2.2
FNA Florina 4.34 344 P Pn 22 04 38.1 +2.0
FNA Florina 4.34 344 P Pn 22 04 38.1 +2.0
SMTH Samothraki Isl 4.35 27 P Pn 22 04 36.5 +0.3
SMTH Samothraki Isl 4.35 27 P Pn 22 04 36.5 +0.3
GRG Griva 4.36 354 *e*PN Pn 22 04 37.7 +1.4
GRG Griva 4.36 354 P Pn 22 04 37.1 +0.8
GRG Griva 4.36 354 *e*Pn Pn 22 04 37.7 +1.4
GRG Griva 4.36 354 P Pn 22 04 37.1 +0.8
KNT Kendrikon 4.54 359 P Pn 22 04 40.1 +1.3
KNT Kendrikon 4.54 359 P Pn 22 04 40.1 +1.3
GELI Tayfur-Gelibol 4.68 35 *e*PN Pn 22 04 41.2 +0.5
GELI Tayfur-Gelibol 4.68 35 *e*Pn Pn 22 04 41.2 +0.5
NVR Nevrokopi 4.78 8 P Pn 22 04 43.6 +1.5
ALN Alexandroupoli 4.91 29 P Pn 22 04 43.9 0.0
ALN Alexandroupoli 4.91 29 P Pn 22 04 43.9 0.0
KSL Kastellorizon 5.37 93 P Pn 22 04 52.4 +2.3
KSL Kastellorizon 5.37 93 P Pn 22 04 52.4 +2.3
VAE Valguarnera 6.89 280 Pn Pn 22 05 11.2 +0.1
comp=N,0.6nm,0.3s,baz=17,slow=19,SNR=2.9
VAE Sn Sn 22 06 29.6 +0.3
comp=N,1.0nm,0.3s,baz=34,slow=18,SNR=2.8
BRTR Keskin Array B 8.97 67 Pn Pn 22 05 45.4 +5.7
comp=N,0.0nm,0.3s,baz=245,slow=14,SNR=3.2
NVLJ Novalja 10.04 325 *e*Pn Pn **22 05 55.0 +0.8**
NVLJ Sn Sn 22 07 38.9 -7.6
MMAI Mount Meron Ar 10.84 106 Pn Pn **22 06 04.0 -1.3**
comp=N,0.7nm,0.3s,baz=296,slow=13,SNR=6.6
MMAI Sn Sn **22 08 03.6 -3.0**
comp=N,0.4nm,0.3s,baz=291,slow=24,SNR=3.4
EIL Elat 12.20 121 Pn Pn **22 06 22.7 -1.1**
comp=N,0.2nm,0.3s,baz=356,slow=13,SNR=3.5
EIL Sn Sn 22 08 28.1 -12
comp=N,0.1nm,0.3s,baz=18,slow=16,SNR=2.5
GERES GERESS Array B 13.97 334 Pn P **22 06 58.1 +2.1**
comp=N,0.1nm,0.3s,baz=144,slow=11,SNR=10
KHC Kasperske Hory 14.26 334 *e*P P **22 07 00.0 +0.8**
CLL Collm 16.32 337 ‖ *i*P P **22 07 24.3 +2.3**
CLL *i* 22 07 28.5
CLL *i* 22 07 31.8
KBZ Khabaz 16.80 59 Pn P **22 07 27.9 +0.5**
comp=N,0.1nm,0.3s,baz=198,slow=19,SNR=2.2
ESDC Sonseca Array 21.36 286 P P **22 08 17.6 +0.2**
comp=N,1.1nm,0.7s,baz=92,slow=11,SNR=4.9
HFS Hagfors 24.28 349 P P **22 08 46.3 -0.8**
comp=N,0.9nm,0.5s,baz=164,slow=7.7,SNR=6.9
NOA NORSAR Array B 25.56 347 P P **22 08 57.9 -0.8**
comp=N,0.5nm,0.7s,baz=156,slow=8.6,SNR=3.4
EKA Eskdalemuir Ar 25.82 325 P P **22 09 01.1 0.0**
comp=N,4.0nm,0.5s,baz=124,slow=9.0,SNR=40
TORD Torodi Ar. Bea 30.16 225 P P **22 09 40.4 +0.2**
comp=N,0.4nm,0.6s,baz=26,slow=7.3,SNR=3.8
DBIC Dimbokro 39.16 227 P P **22 10 57.6 -0.3**
comp=N,2.5nm,0.9s,baz=45,slow=8.6,SNR=2.5
KURBB Kurchatov Arra 41.63 52 P P **22 11 16.8 -1.3**
comp=N,0.2nm,0.5s,baz=281,slow=8.6,SNR=3.3
MKAR Makanchi Array 44.49 57 P P **22 11 40.4 -0.9**
comp=N,0.5nm,0.5s,baz=267,slow=8.5,SNR=8.3
ZALV Zalesovo Beam 45.31 47 P P **22 11 45.5 -2.2**
comp=N,0.4nm,0.4s,baz=255,slow=12,SNR=3.2
YKA Yellowknife Ar 75.51 341 P P **22 15 14.4 +0.4**
comp=N,0.2nm,0.5s,baz=34,slow=5.7,SNR=5.0
ILAR Eielson Array 78.63 356 P P **22 15 32.4 +0.9**
comp=N,0.2nm,0.7s,baz=12,slow=4.6,SNR=2.5
PDAR Pinedale Array 89.92 327 P P **22 16 29.5 -0.1**
comp=N,0.4nm,0.8s,baz=86,slow=3.7,SNR=2.5

*IDC **14** 22:12:46.6±0.5, 3.°34S×131.°30E, h0km, mb4.2/21, mb1 4.2/24, mb1mx4.2/45, mbtmp4.2/24, ML2.3/2, Error ellipse: s-maj=20.2km s-min=11.3km az=79.0*
*BJI **14** 22:12:47.7, 3.°65S×131.°62E, h39km, mb4.7/31, mB5.1/8, Ms4.6/9, Ms7.4/9*
*ISCJB **14** 22:12:49.5±0.6, 3.°37S±0.°03×131.°34E±0.°03, h35km±5km, mb4.6/53, MS4.0/2, Error ellipse: s-maj=5.1km s-min=4.8km az=152.3*
*NEIC **14** 22:12:51.3±1.5, 3.°34S×131.°41E, h34km±11km, mb4.5/26,*

Error ellipse: s-maj=5.3km s-min=3.9km az=53.0
*DJA **14** 22:12:53.3±0.3, 3.°3S×4.°×13.°1E±.°, h49km±30km, M4.7/6, mB4.8/1, mb4.9/2, MLv4.5/6, Mw(mB)4.1/1*
ISC 14 22:12:52.2±0.8, 3.°33S±0.°04×131.°32E±0.°04, h41km±8km, n101, σ1§16/108, mb4.5/53, Irian Jaya region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
FAKI	**Fak Fak**	**1.01**	**67**	P	**Pn**	**22 13 11.2**	**+1.2**
FAKI				S	**Sn**	**22 13 26.8**	**+3.7**
BNDI	**Bandanaira**	**1.84**	**230**	P	**Pn**	**22 13 23.6**	**+2.2**
BNDI				S	**Sn**	**22 13 45.7**	**+2.2**
MSAI	**Masohi**	**2.38**	**269**	P	**Pn**	**22 13 27.9**	**-0.9**
MSAI				S	**Sn**	**22 13 56.1**	**-0.8**
KMPI	**Kaimana, Papua**	**2.41**	**98**	P	**Pn**	**22 13 30.8**	**+1.7**
SIJI	**Sorong**	**2.44**	**359**	Pn	**Pn**	**22 13 28.8**	**-0.9**
	30nm,0.3s,baz=18,slow=20,SNR=4.3						
SIJI				Sn	**Sn**	**22 13 57.5**	**-0.8**
	7.4nm,0.3s,baz=270,slow=24,SNR=22						
SWI	**Sorong**	**2.45**	**359**	P	**Pn**	**22 13 28.5**	**-1.2**
SWI				S	**Sn**	**22 13 57.2**	**-1.2**
RKPI	**Ransiki, Papua**	**3.38**	**58**	P	**Pn**	**22 13 44.0**	**+1.5**
RKPI				S	**Sn**	**22 14 23.3**	**+1.9**
NLAI	**Namlea**	**4.21**	**271**	P	**Pn**	**22 13 53.9**	**0.0**
SANI	**Sanana**	**5.47**	**283**	P	**Pn**	**22 14 09.9**	**-1.4**
	73nm,0.5s,1μm						
TNTI	**Ternate**	**5.67**	**316**	P	**Pn**	**22 14 13.3**	**-0.7**
JAY	**Jayapura**	**9.41**	**85**	Pn	**Pn**	**22 15 04.8**	**-0.6**
	0.0nm,0.3s,baz=128,slow=19,SNR=2.6						
JAY				Sn	**Sn**	**22 16 50.9**	**+0.9**
	0.1nm,0.3s,baz=308,slow=20,SNR=2.4						
MTN	**Manton Dam**	**9.46**	**181**	*e*Pn	**Pn**	**22 15 04.8**	**-1.2**
BATI	**Baumata**	**10.22**	**228**	Pn	**Pn**	**22 15 17.1**	**+0.7**
	baz=143,slow=20						
KAPI	**Kappang**	**11.66**	**261**	Pn	**Pn**	**22 15 36.7**	**+0.6**
	baz=122,slow=15,SNR=1.8						
KAPI	**Kappang**	**11.66**	**261**	*e*Pn	**Pn**	**22 15 37.0**	**+0.9**
DAV	**Davao City (W)**	**11.81**	**331**	Pn	**Pn**	**22 15 38.8**	**+0.6**
	45nm,0.3s,baz=235,slow=12,SNR=2.3						
DAV	**Davao City (W)**	**11.81**	**331**	*e*Pn	**Pn**	**22 15 38.3**	**+0.1**
FITZ	**Fitzroy Crossi**	**15.70**	**200**	Pn	Pn	22 16 24.3	-6.3
	0.5nm,0.3s,baz=23,slow=7.9,SNR=16						
FITZ				Sn	Sn	22 19 08.7	-15
	0.3nm,0.3s,baz=114,slow=20,SNR=3.4						
WRAB	**Tennant Creek**	**16.77**	**170**	*e*Pn	**Pn**	**22 16 41.2**	**-3.0**
	13nm,0.8s						
WRA	**Warramunga Arr**	**16.78**	**170**	Pn	Pn	22 16 37.3	-7.0
	0.4nm,0.3s,baz=351,slow=13,SNR=23						
WRA				Sn	Sn	22 19 38.6	-11
	0.9nm,0.3s,baz=356,slow=23,SNR=5.8						
WB2	**Warramunga Arr**	**16.78**	**170**	*e*Pn	**Pn**	**22 16 44.2**	**-0.1**
	12nm,0.9s						
PMG	**Port Moresby**	**16.86**	**112**	Pn	**Pn**	**22 16 42.7**	**-2.6**
	0.3nm,0.3s,baz=274,slow=13,SNR=2.0						
SBUM	**Sibu**	**19.93**	**286**	*e*P	**Pn**	**22 17 22.4**	**-0.4**
	45nm,1.8s						
AS31	**Alice Springs**	**20.37**	**173**	*e*P	**P**	**22 17 25.2**	**-0.3**
	6.0nm,0.6s						
ASAR	**Alice Springs**	**20.38**	**173**	P	**P**	**22 17 25.8**	**+0.2**
	6.8nm,0.4s,baz=348,slow=7.8,SNR=29						
ASAR				S	**S**	**22 21 09.0**	**-2.8**
	2.3nm,0.8s,baz=352,slow=26,SNR=4.3						
AS01	**Alice Springs**	**20.38**	**173**	*e*P	**P**	**22 17 25.7**	**0.0**
KSM	**Kuching**	**21.54**	**282**	*e*P	**P**	**22 17 39.1**	**+0.9**
	20nm,1.0s						
CTA	**Charters Tower**	**22.13**	**140**	P	**P**	**22 17 44.2**	**-0.3**
	2.9nm,0.7s,baz=308,slow=17,SNR=3.0						
CTAO	**Charters Tower**	**22.13**	**140**	*e*P	**P**	**22 17 43.5**	**-1.0**
	12nm,1.1s						
XMIS	**Christmas Isla**	**26.43**	**253**	*e*P	**P**	**22 18 25.5**	**0.0**
	50nm,1.3s						
TWG	**Pinang**	**27.85**	**339**	*e*P	**P**	**22 18 36.7**	**-1.3**
	163nm,1.6s						
HNR	**Honiara**	**29.08**	**103**	*e*P	**P**	**22 18 48.4**	**-0.7**
	45nm,0.9s						
STKA	**Stephens Creek**	**30.00**	**162**	P	**P**	**22 18 58.4**	**+1.3**
	1.4nm,0.5s,baz=331,slow=14,SNR=5.1						
STKA	**Stephens Creek**	**30.00**	**162**	*e*P	**P**	**22 18 57.4**	**+0.3**
	1.9nm,1.2s						
IPM	**Ipoh**	**31.25**	**284**	*e*P	**P**	**22 19 09.2**	**+0.9**
	6.8nm,0.7s						
NWAO	**Narrogin (SRO)**	**32.27**	**203**	P	**P**	**22 19 15.4**	**-1.7**
	3.2nm,0.7s,baz=53,slow=0.2,SNR=4.6						
PSI	**Prapat**	**32.95**	**280**	*e*P	**P**	**22 19 22.6**	**-0.8**
	4.7nm,0.7s						
NJ2	**Nanjing**	**37.12**	**342**	*e*P	**P**	**22 20 01.4**	**+2.5**
NJ2				pmax	pmax		
	comp=Z,14nm,0.5s						
GYA	**Guiyang**	**38.02**	**323**	P	P	22 20 10.0	+3.2
GYA				pmax	pmax		
	comp=Z,10.0nm,0.8s						
CM01	**Chiang Mai Arr**	**38.51**	**305**	*e*P	**P**	**22 20 11.0**	**+0.2**
CM31	**Chiang Mai Arr**	**38.54**	**305**	*e*P	**P**	**22 20 11.3**	**+0.1**
CMAR	**Chiang Mai Arr**	**38.54**	**305**	P	**P**	**22 20 11.7**	**+0.5**
	2.2nm,1.0s,baz=132,slow=6.7,SNR=21						
CHTO	**Chiang Mai**	**38.72**	**306**	*e*P	**P**	**22 20 13.3**	**+0.6**
	2.9nm,0.8s						
KMI	**Kunming**	**39.61**	**317**	P	**P**	**22 20 23.0**	**+2.7**
KMI				pmax	pmax		
	comp=Z,11nm,0.5s						
KMI				pmax	pmax		
	comp=Z,120nm,6.4s						
MJAR	**Matsushiro Arr**	**40.18**	**9**	P	**P**	**22 20 23.4**	**-1.2**
	1.8nm,0.7s,baz=186,slow=9.1,SNR=6.7						
MAJO	**Matsushiro**	**40.18**	**9**	*e*P	**P**	**22 20 23.6**	**-1.0**
	33nm,1.9s						
KSAR	**Wonju Array Be**	**40.69**	**356**	P	**P**	**22 20 30.0**	**+1.3**
KSRS	**Korea Array**	**40.70**	**356**	P	**P**	**22 20 30.0**	**+1.3**
	0.7nm,0.3s,baz=170,slow=7.8,SNR=3.6						
XAN	**Xi'an**	**42.75**	**332**	P	**P**	**22 20 45.3**	**-0.4**
XAN				pmax	pmax		
	comp=Z,7.0nm,1.3s						
CD2	**Chengdu**	**43.01**	**324**	P	**P**	**22 20 48.5**	**+0.6**
CD2				pmax	pmax		
	comp=Z,10.0nm,0.5s						
BJI	**Beijing**	**45.34**	**344**	P	**P**	**22 21 06.5**	**+0.2**
BJI				pmax	pmax		
	comp=Z,17nm,0.9s						
BJI				pmax	pmax		
	comp=Z,250nm,3.1s						
LZH	**Lanzhou**	**46.87**	**329**	*e*P	**P**	**22 21 17.3**	**-1.4**
LZH				pP	pP	22 21 27.6	-2.8
LZH				sP	sP	22 21 32.3	-2.9
LZH				pmax	pmax		
	comp=Z,12nm,1.0s						
USRK	**Ussuriysk Ar.**	**47.32**	**1**	P	**P**	**22 21 22.1**	**+0.3**
	2.0nm,0.5s,baz=181,slow=8.6,SNR=6.7						
HHC	**Hu-ho-hao-te**	**47.53**	**340**	*e*P	**P**	**22 21 25.9**	**+2.2**
HHC				pmax	pmax		
	comp=Z,17nm,1.2s						
LSA	**Lhasa**	**50.55**	**313**	*e*P	**P**	**22 21 47.6**	**+0.2**
	1.7nm,0.5s						
YSS	**Yuzh-Sakhalins**	**51.07**	**10**	*e*P	**P**	**22 21 49.9**	**-0.5**
	49nm,1.4s						
GTA	**Gaotai**	**51.47**	**329**	*e*P	**P**	**22 21 53.8**	**+0.1**
GTA				pP	pP	22 22 03.3	-2.3
GTA				sP	sP	22 22 07.1	-3.3
GTA				S	**S**	**22 29 10.1**	**-1.0**
GTA				sS	sS	22 29 29.6	-1.2
GTA				SS	**SS**	**22 32 45.6**	**-2.1**
GTA				pmax	pmax		
	comp=Z,5.0nm,1.0s						
GTA				LR	LR		
	comp=N,140nm,18.1s						
GTA				LR	LR		
	comp=E,260nm,20.0s						
GTA				LR	LR		
	comp=Z,240nm,17.3s						
KLR	**Kul'dur**	**52.34**	**0**	P	**P**	**22 21 59.4**	**-0.5**
	1.3nm,0.8s,baz=203,slow=6.6,SNR=5.8						
GUN	**Gumba**	**53.62**	**308**	*e*P	**P**	**22 22 09.7**	**-0.5**
PKIN	**Phulchoki**	**53.85**	**308**	*e*P	**P**	**22 22 10.7**	**-1.0**
KKN	**Kakani**	**54.04**	**308**	*e*P	**P**	**22 22 12.4**	**-0.7**
DMN	**Daman**	**54.09**	**308**	*e*P	**P**	**22 22 12.9**	**-0.6**
SNZO	**South Karori**	**54.23**	**140**	*e*P	**P**	**22 22 13.4**	**-0.6**
	110nm,1.4s						
RAO	**Raoul Island**	**54.56**	**124**	*e*P	**P**	**22 22 14.4**	**-2.2**
	413nm,1.3s						
GKN	**Gorkha**	**54.64**	**308**	*e*P	**P**	**22 22 16.8**	**-0.6**
	14nm,0.9s						
ULN	**Ulaanbaatar**	**55.23**	**340**	*e*P	**P**	**22 22 21.5**	**+0.2**
	12nm,1.4s						
KOLN	**Koldanda**	**55.36**	**307**	*e*P	**P**	**22 22 22.5**	**-0.1**
	10nm,0.8s						
SONM	**Songino Array**	**55.43**	**340**	P	**P**	**22 22 23.3**	**+0.6**
	0.8nm,0.5s,baz=153,slow=6.8,SNR=13						
SONA1	**Songino Array**	**55.44**	**340**	*e*P	**P**	**22 22 22.9**	**+0.2**
PYUN	**Piuthan**	**55.99**	**307**	*e*P	**P**	**22 22 27.0**	**-0.1**
MIDW	**Midway**	**58.43**	**54**	*e*P	**P**	**22 22 42.6**	**-1.5**
	55nm,0.7s						
DGAR	**Diego Garcia**	**58.71**	**263**	*e*P	**P**	**22 22 47.4**	**+1.0**
	121nm,0.7s						
TLY	**Talaya**	**59.65**	**340**	*e*P	**P**	**22 22 52.9**	**+0.8**
	2.4nm,0.8s						
PETK	**Petropavlovsk-**	**60.45**	**18**	P	**P**	**22 22 58.7**	**+1.1**
	4.3nm,0.9s,baz=236,slow=14,SNR=3.6						
WMQ	**Urumqi**	**61.10**	**325**	P	**P**	**22 23 03.5**	**+1.2**
WMQ				pP	pP	22 23 13.4	-0.9
WMQ				pmax	pmax		
	comp=Z,5.0nm,1.0s						
WMQ				LR	LR		
	comp=N,22nm,19.6s						
WMQ				LR	LR		
	comp=E,53nm,22.4s						
WMQ				LR	LR		
	comp=Z,45nm,21.0s						
MKAR	**Makanchi Array**	**65.93**	**325**	P	**P**	**22 23 35.0**	**+0.9**
	3.5nm,0.5s,baz=121,slow=8.3,SNR=72						
MKAR	**Makanchi Array**	**65.93**	**325**	*e*P	**P**	**22 23 34.8**	**+0.7**
MAKZ	**Makanchi**	**66.11**	**325**	*e*P	**P**	**22 23 35.9**	**+0.6**
	8.3nm,1.1s						
SEY	**Seymchan**	**67.98**	**10**	P	**P**	**22 23 47.3**	**+0.6**
	2.1nm,0.6s,baz=222,slow=4.2,SNR=10						
TKM2	**Tokmak 2**	**68.04**	**319**	*e*P	**P**	**22 23 48.6**	**+0.8**
	3.9nm,0.8s						
ZAA0	**Zalesovo Array**	**68.92**	**333**	*e*P	**P**	**22 23 52.9**	**+0.1**
ZALV	**Zalesovo Beam**	**68.92**	**333**	P	**P**	**22 23 52.6**	**-0.2**
	3.7nm,0.9s,baz=121,slow=5.5,SNR=14						
EKS2	**Erkin-Say**	**69.13**	**318**	*e*P	**P**	**22 23 55.1**	**+0.6**
	3.2nm,0.8s						
KURK	**Kurchatov**	**70.12**	**327**	*e*P	**P**	**22 24 00.8**	**+0.5**
	8.9nm,0.8s						
KKAR	**Karatay Array**	**71.49**	**318**	*e*P	**P**	**22 24 09.5**	**+0.7**
TIXI	**Tiksi**	**74.86**	**359**	P	**P**	**22 24 28.7**	**+0.6**
	3.0nm,0.6s,baz=130,slow=0.9,SNR=3.6						
TIXI	**Tiksi**	**74.86**	**359**	*e*P	**P**	**22 24 27.9**	**-0.1**
	4.2nm,1.2s						
BRVK	**Borovoye**	**75.77**	**327**	*e*P	**P**	**22 24 34.5**	**+0.8**
	8.3nm,0.9s						
VNDA	**Vanda**	**75.92**	**173**	P	**P**	**22 24 34.4**	**+0.3**
	0.8nm,0.8s,baz=320,slow=6.2,SNR=3.8						
ZRNK	**Zerenda**	**76.42**	**327**	*e*P	**P**	**22 24 37.9**	**+0.5**
	5.5nm,0.8s						
NRIK	**Noril'sk**	**78.35**	**345**	P	**P**	**22 24 48.9**	**+1.0**
	1.3nm,0.3s,baz=148,slow=4.2,SNR=3.8						
MAW	**Mawson**	**78.83**	**201**	P	**P**	**22 24 51.2**	**+0.7**
	1.8nm,0.9s,baz=112,slow=5.4,SNR=3.1						
GEYT	**Alibeck**	**78.88**	**310**	P	**P**	**22 24 52.6**	**+1.1**
	2.5nm,0.7s,baz=151,slow=3.4,SNR=7.1						
ABKAR	**Akbulak array**	**80.48**	**321**	*e*P	**P**	**22 25 00.3**	**+0.4**
RAYN	**Ar Rayn**	**87.48**	**294**	*e*P	**P**	**22 25 36.7**	**+0.5**
	5.0nm,1.2s						
ILAR	**Eielson Array**	**89.49**	**25**	P	**P**	**22 25 44.9**	**+0.1**
	0.3nm,0.6s,baz=234,slow=6.2,SNR=4.3						
ARCES	**ARCESS Array B**	**98.61**	**340**	P	**P**	**22 26 26.2**	**-0.3**
	3.3nm,1.0s,baz=87,slow=6.2,SNR=5.9						
TORD	**Torodi Ar. Bea**	**129.29**	**284**	PKP	**PKPdf**	**22 31 56.9**	**-0.3**
	0.5nm,0.9s,baz=106,slow=0.9,SNR=3.2						
DBIC	**Dimbokro**	**136.23**	**276**	PKP	**PKPdf**	**22 32 10.4**	**0.0**
	1.3nm,0.8s,baz=338,slow=5.4,SNR=2.2						
CPUP	**Villa Florida**	**149.35**	**165**	PKPbc	**PKPbc**	**22 32 38.9**	**+1.4**
	1.2nm,0.5s,baz=150,slow=8.1,SNR=2.3						
LPAZ	**La Paz**	**152.62**	**136**	PKPbc	**PKPbc**	**22 32 46.7**	**+0.5**
	0.6nm,0.4s,baz=180,slow=3.0,SNR=3.7						

*ISCJB **14** 22:14:36.1±0.5, 34.°68S±0.°04×71.°98W±0.°07, h52km±4km, mb4.2/23, Error ellipse: s-maj=9.3km s-min=6.0km az=15.7*
*NEIC **14** 22:14:36.0, 34.°68S×71.°74W, h39km, mb4.2/14, After GUC.*
NEIC Felt [IV] at Curico, Pencahue, San Fernando and Santa Cruz; [III] at Chepica, Constitucion, Iloca, Lolol, Paredones, Pichilemu, Rancagua, Rengo, Rio Claro and Talca.
*GUC **14** 22:14:36.8±0.5, 34.°68S×71.°74W, h39km±3km, ML4.5*
*IDC **14** 22:14:38.0±3.2, 34.°59S×71.°66W, h50km±29km, mb4.0/8, mb1 4.1/10, mb1mx3.8/39, mbtmp4.2/10, ML4.2/2, MS3.3/1, Ms1 3.3/1, ms1mx2.9/21, Error ellipse: s-maj=32.8km s-min=20.1km az=92.0*
ISC 14 22:14:36.2±1.0, 34.°72S±0.°04×71.°96W±0.°07, h41km±8km, n48, σ1§37/57, mb4.2/23, 1D, Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CHPI	**Pichilemu**	**0.33**	**353**	*i* P	**Pn**	**22 14 45.2**	**+0.3**
CHPI				*i* S	**Sn**	**22 14 51.5**	**+0.5**
TALC	**Talca**	**0.72**	**159**	*i* P	**Pn**	**22 14 50.5**	**+0.5**
TALC				*i* S	**Sn**	**22 15 00.1**	**+0.2**
ANTU	**Antumapu**	**1.59**	**44**	*e*P	**Pn**	**22 15 02.7**	**+0.8**
ANTU				*i* S	**Sn**	**22 15 21.1**	**-0.1**
ANTU				IAML		22 15 25.1	
	comp=E,12μm,0.5s						
CLCH	**Cerro Calan**	**1.77**	**42**	*i* P	**Pn**	**22 15 04.9**	**+0.5**
CLCH				*e*S	**Sn**	**22 15 24.9**	**-0.8**
CLCH				IAML		22 15 31.7	
	comp=N,9μm,0.2s						
YECH	**El Yeso**	**1.88**	**56**	*i* P	**Pn**	**22 15 06.8**	**+0.7**
YECH				*i* S	**Sn**	**22 15 28.9**	**+0.3**
YECH				IAML		22 15 30.6	
	comp=N,8μm,0.4s						
PEL	**Peldehue**	**1.90**	**34**	*i* P	**Pn**	**22 15 06.7**	**+0.6**
PEL				*i* S	**Sn**	**22 15 29.2**	**+0.4**
ROC1	**El Roble**	**1.91**	**24**	*e*P	**Pn**	**22 15 08.1**	**+1.6**
ROC1				*e*S	**Sn**	**22 15 33.7**	**+4.3**
AAGR	**Agrelo**	**

comp=Z,7.7nm,0.9s,baz=238,slow=3.3,SNR=10

RSSD	**Black Hills**	**83.73**	**337**	*e*P		**P**	**22 27 00.9**	**+0.2**
	comp=Z,0.5nm,0.5s							
HWUT	**Hardware Ranch**	**84.22**	**331**	*e*P		**P**	**22 27 03.4**	**+0.2**
	comp=Z,1.1nm,0.5s							
TORD	**Torodi Ar. Bea**	**84.39**	**70**	P		**P**	**22 27 04.1**	**-0.4**
	comp=Z,2.3nm,0.8s,baz=240,slow=3.9,SNR=14							
PDAR	**Pinedale Array**	**84.44**	**333**	P		**P**	**22 27 05.4**	**+1.0**
	comp=Z,0.3nm,0.6s,baz=110,slow=5.2,SNR=3.5							
CMB	**Columbia Colle**	**85.20**	**324**	*e*P		**P**	**22 27 08.5**	**+0.4**
	comp=Z,4.6nm,0.4s							
HLID	**Hailey**	**87.00**	**331**	*e*P		**P**	**22 27 17.5**	**+0.6**
	comp=Z,1.1nm,0.7s							
LSZ	**Lusaka**	**89.52**	**108**	*e*P		**P**	**22 27 29.2**	**-0.5**
	comp=Z,0.4nm,0.4s							
WRA	**Warramunga Arr**	**120.16**	**209**	PKP		**PKPdf**	**22 33 23.0**	**-0.1**
	comp=Z,0.8nm,1.1s,baz=168,slow=1.7,SNR=5.3							
ZALV	**Zalesovo Beam**	**154.79**	**33**	PKPbc		**PKPbc**	**22 34 32.1**	**-0.1**
	comp=Z,0.2nm,0.4s,baz=327,slow=2.4,SNR=3.3							
ZALV				PKPab		**PKPab**	**22 34 47.2**	**-0.3**
	comp=Z,0.3nm,0.4s,baz=305,slow=5.1,SNR=5.1							
MKAR	**Makanchi Array**	**157.18**	**50**	PKPab		**PKPdf**	**22 34 57.8**	**-0.3**
	comp=Z,0.5nm,0.7s,baz=306,slow=4.1,SNR=7.4							

ISK ***14*** *22:15:35.4, 39.1ʹ14N×36.0ʹ09E, h7km, MD3.1*
ISCJB ***14*** *22:15:36.5±0.7, 39.1ʹ11N±0.0ʹ03×36.0ʹ08E±0.0ʹ04, h6km±6km, Error ellipse: s-maj=6.5km s-min=4.6km az=143.3*
CSEM ***14*** *22:15:36.4±0.2, 39.1ʹ12N×36.0ʹ08E, h8km, MD2.9, Error ellipse: s-maj=5.3km s-min=3.8km az=148.0*
DDA ***14*** *22:15:36.9, 39.1ʹ17N×35.9ʹ99E, h7km, Md2.9*

ISC 14 22:15:36.0±1.2, 39.1ʹ14N±0.0ʹ03×36.0ʹ10E±0.0ʹ03, h6km±11km, n24, σ0ˢ59/36, Turkey

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
CUSAR	**Sarkisla-SIVAS**	**0.30**	**22**	*i* P		**Pb**	**22 15 43.3**	**-0.6**
CUSAR				*i* S		**Sb**	**22 15 48.6**	**-0.6**
CUSAR	**Sarkisla-SIVAS**	**0.30**	**22**	P		**Pb**	**22 15 43.3**	**-0.6**
CUSAR				S		**Sb**	**22 15 48.6**	**-0.6**
BNN	**Bunyan**	**0.35**	**215**	*e*PG		**Pg**	**22 15 42.7**	**-0.1**
BNN				*e*SG		**Sg**	**22 15 47.9**	**+0.5**
BNN	**Bunyan**	**0.35**	**215**	*e*Pg		**Pg**	**22 15 42.7**	**-0.1**
BNN				*e*Sg		**Sg**	**22 15 47.9**	**+0.5**
AVNS	**Nevsehir-Avano**	**1.03**	**252**	*i* P		**Pg**	**22 15 55.5**	**-0.2**
AVNS				*i* S		**Sg**	**22 16 09.0**	**-0.1**
AVNS	**Nevsehir-Avano**	**1.03**	**252**	P		**Pg**	**22 15 55.5**	**-0.2**
AVNS				S		**Sg**	**22 16 09.0**	**-0.1**
SVSK	**Karacayir**	**1.04**	**42**	*e*PG		**Pg**	**22 15 55.8**	**-0.2**
SVSK	**Karacayir**	**1.04**	**42**	*e*Pg		**Pg**	**22 15 55.8**	**-0.2**
CUKAN	**kangal_SIVAS**	**1.08**	**80**	*i* P		**Pn**	**22 15 59.0**	**+1.2**
CUKAN				*i* S		**Sn**	**22 16 12.7**	**-0.5**
CUKAN	**kangal_SIVAS**	**1.08**	**80**	P		**Pn**	**22 15 59.0**	**+1.2**
CUKAN				S		**Sn**	**22 16 12.7**	**-0.5**
DARE	**Darende-Malaty**	**1.22**	**117**	*e*PN		**Pb**	**22 15 59.5**	**0.0**
DARE	**Darende-Malaty**	**1.22**	**117**	*e*Pn		**Pb**	**22 15 59.5**	**0.0**
COAL	**Corum-Alaca**	**1.41**	**323**	*i* P		**Pb**	**22 16 02.5**	**-0.3**
COAL				*i* S		**Sn**	**22 16 22.6**	**+1.4**
COAL	**Corum-Alaca**	**1.41**	**323**	P		**Pb**	**22 16 02.5**	**-0.3**
COAL				S		**Sn**	**22 16 22.6**	**+1.4**
CDAG	**Cicekdag**	**1.42**	**290**	*i* P		**Pg**	**22 16 03.9**	**+0.7**
CDAG				*i* S		**Sb**	**22 16 20.8**	**-0.7**
CDAG	**Cicekdag**	**1.42**	**290**	P		**Pg**	**22 16 03.9**	**+0.7**
CDAG				S		**Sb**	**22 16 20.8**	**-0.7**
CORM	**Corum**	**1.54**	**313**	*e*PN		**Pn**	**22 16 04.0**	**-0.1**
CORM	**Corum**	**1.54**	**313**	*e*Pn		**Pn**	**22 16 04.0**	**-0.1**
RSDY	**Resadiye-TOKAT**	**1.57**	**37**	*e*PN		**Pn**	**22 16 04.6**	**+0.1**
RSDY	**Resadiye-TOKAT**	**1.57**	**37**	*e*Pn		**Pn**	**22 16 04.6**	**+0.1**
GULA	**Gulagac**	**1.66**	**242**	*e*PN		**Pn**	**22 16 05.6**	**-0.2**
GULA	**Gulagac**	**1.66**	**242**	*e*Pn		**Pn**	**22 16 05.6**	**-0.2**
KOZT	**Kozan**	**1.67**	**187**	*e*PN		**Pn**	**22 16 05.8**	**0.0**
KOZT	**Kozan**	**1.67**	**187**	*e*Pn		**Pn**	**22 16 05.8**	**0.0**

JMA 14 22:15:36.3±0.1, 38.36N×142.28E, h26km±2km, M3.5, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
JIO	**Ouri**	**0.74**	**278**	P		Pb	22 15 50.2	-0.3
JIO				S		Sb	22 15 59.9	-0.3
OFUJ	**Ofunato**	**0.86**	**327**	P		Pb	22 15 52.3	-0.4
JMK	**Ichinoseki**	**1.02**	**306**	P		Pn	22 15 54.8	-0.1
MIYJ	**Miyakonagasawa**	**1.27**	**344**	P		Pn	22 15 58.1	-0.2
MIYJ				S		Sn	22 16 14.2	-0.3
JOU	**Okura**	**1.27**	**271**	S		Sb	22 16 15.2	-0.3
JOM	**Ohasama**	**1.35**	**326**	P		Pn	22 16 00.2	+0.7
JOM				S		Sb	22 16 18.0	+0.2

ISCJB ***14*** *22:23:53.2±1.0, 24.8ʹ87N±0.0ʹ08×122.6ʹ63E±0.0ʹ04, h2km±6km, Error ellipse: s-maj=13.5km s-min=3.4km az=18.7*
JMA ***14*** *22:23:53.1±0.1, 24.9ʹ90N×122.6ʹ62E, h12km±2km, M2.1*
TAP ***14*** *22:23:56.7, 24.7ʹ73N×122.8ʹ38E, h2km±1km, ML2.5, D*

ISC 14 22:23:53.5±1.3, 24.7ʹ4N±0.0ʹ06×122.6ʹ2E±0.0ʹ03, h1km±15km, n22, σ0ˢ75/29, Taiwan region

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
JYNG	**Yonagunijimaku**	**0.41**	**134**	P		**Pb**	**22 24 03.5**	**0.0**
JYNG				S		**Sb**	**22 24 11.0**	**+0.7**
YOJ	**Yonaguni jima**	**0.45**	**127**	P		**Pb**	**22 24 04.0**	**-0.2**
YOJ				S		**Sb**	**22 24 11.4**	**0.0**
EGS		**0.63**	**280**	*e*P		**Pg**	**22 24 06.0**	**+0.4**
	baz=286							
TWB1	**Santiao Chiao**	**0.63**	**295**	*e*P		**Pg**	**22 24 05.5**	**-0.1**
	baz=308							
TWB1				*e*S		**Sg**	**22 24 13.2**	**-0.6**
	baz=308							
TWC	**Suao**	**0.71**	**260**	*e*P		**Pg**	**22 24 07.1**	**0.0**
	baz=255							
NWF	**Wu-fen Shan**	**0.83**	**294**	*e*P		**Pb**	**22 24 10.6**	**-0.2**
	baz=302							
ENA	**Nanau**	**0.85**	**249**	*e*P		**Pb**	**22 24 10.7**	**-0.4**
	baz=242							
TWE	**Neicheng**	**0.86**	**269**	*e*P		**Pg**	**22 24 10.1**	**0.0**
	baz=269							
TWE				*e*S		**Sg**	**22 24 20.5**	**-0.8**
	baz=269							
ENTT	**Nioudou**	**0.96**	**264**	*e*P		**Pg**	**22 24 12.4**	**+0.4**
	baz=262							
TWY	**Chenhua**	**1.07**	**300**	*e*P		**Pn**	**22 24 17.7**	**+2.1**
	baz=307							
IRIF	**Iriomote-Funau**	**1.09**	**111**	P		**Pb**	**22 24 14.4**	**-0.7**
IRIF				S		**Sb**	**22 24 28.8**	**-1.0**
NSK	**Sanguang**	**1.15**	**267**	P		**Pb**	**22 24 15.3**	**-0.8**
	baz=266							
NSK				*e*S		**Sb**	**22 24 29.8**	**-1.7**
	baz=266							
NNS	**Nan Shan**	**1.17**	**256**	*e*P		**Pb**	**22 24 15.9**	**-0.6**
	baz=252							
JKRS	**Kuro-shima**	**1.36**	**111**	P		**Pn**	**22 24 18.8**	**-0.8**
JKRS				S		**Sg**	**22 24 37.6**	**+0.3**
WHF	**Hehuan Shan**	**1.37**	**245**	*e*P		**Pg**	**22 24 20.1**	**+0.4**
	baz=240							
JIJ	**Ishigaki jima**	**1.44**	**105**	S		**Sg**	**22 24 40.2**	**+0.5**
NSTT	**Nanjuang**	**1.47**	**266**	*e*P		**Pg**	**22 24 22.4**	**+0.6**
	baz=265							
TWQ1	**Liyutan**	**1.72**	**257**	*e*P		**Pg**	**22 24 26.5**	**0.0**
	baz=255							
SMLT	**Sun Moon Lake**	**1.78**	**242**	*e*P		**Pb**	**22 24 27.2**	**+0.2**
	baz=237							
TYC	**Yuchr**	**1.81**	**243**	*e*P		**Pg**	**22 24 27.9**	**-0.2**
	baz=239							
ALS	**Alishan**	**2.06**	**234**	*e*P		**Pb**	**22 24 32.2**	**+0.4**
	baz=229							
CHN5	**Tsauling**	**2.10**	**238**	*e*P		**Pg**	**22 24 34.2**	**+0.4**
	baz=234							

NIED ***14*** *22:24:00, 38.9ʹ90N×142.3ʹ30E, h59km, Mw4.2 Best double couple: M₀2.41000×10¹⁵ NP1:φˢ359.00000°, δ52.00000°, λ152.00000°. NP2:φˢ107.00000°, δ68.00000°, λ41.00000°.*
IDC ***14*** *22:24:01.6±1.1, 38.8ʹ84N×142.4ʹ49E, h0km, mb3.4/5, mb1 3.6/7, mb1mx3.4/44, mbtmp3.4/7, ML3.1/2, MS3.8/1, Ms1 3.8/1, ms1mx2.9/48, Error ellipse: s-maj=31.7km s-min=22.0km az=117.0*
ISCJB ***14*** *22:24:03.7±1.6, 38.8ʹ87N±0.0ʹ05×142.4ʹ4E±0.0ʹ1, h23km±10km, mb3.4/5, MS3.8/1, Error ellipse: s-maj=13.9km s-min=7.6km az=23.4*
JMA ***14*** *22:24:06.0±0.2, 38.9ʹ92N×142.2ʹ7E, h37km±3km, M3.8*
JMA Felt I J1.

ISC 14 22:24:05.6±2.0, 38.85N±0.0ʹ05×142.25E±0.0ʹ08, h26km±14km, n21, σ1ˢ24/20, mb3.4/5, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
OFUJ	**Ofunato**	**0.51**	**298**	P		**Pn**	**22 24 16.6**	**-0.5**
OFUJ				S		**Sb**	**22 24 23.6**	**+0.6**
JIO	**Ouri**	**0.80**	**241**	P		**Pn**	**22 24 21.4**	**+0.2**
JIO				S		**Sn**	**22 24 31.8**	**-0.5**
JMK	**Ichinoseki**	**0.81**	**278**	P		**Pn**	**22 24 21.4**	**+0.2**
JMK				S		**Sn**	**22 24 32.2**	**-0.2**
JOM	**Ohasama**	**0.97**	**310**	P		**Pn**	**22 24 23.3**	**-0.2**
JOM				S		**Sn**	**22 24 35.5**	**-0.9**
JOU	**Okura**	**1.33**	**249**	P		**Pb**	**22 24 29.7**	**-0.2**
JOU				S		**Sb**	**22 24 47.4**	**+0.9**
MAT	**Matsushiro**	**3.94**	**236**	P		Pb	22 25 09.5	-4.9
MAT				S		**Sb**	**22 25 58.8**	**-2.9**
MJAR	**Matsushiro Arr**	**3.94**	**236**	P		**Pn**	**22 25 07.0**	**+2.6**
	2.7nm,0.3s,baz=45,slow=10,SNR=16							
ASAJ	**Asahikawa**	**5.27**	**3**	Pn		**Pn**	**22 25 22.3**	**-0.3**
	0.3nm,0.3s,baz=306,slow=17,SNR=3.0							
ASAJ				Sn		**Sn**	**22 26 24.0**	**+1.5**
	0.3nm,0.3s,baz=30,slow=20,SNR=2.6							
JHJ	**Hachijo jima 2**	**6.05**	**200**	Sn		**Sn**	**22 26 40.3**	**-1.5**
	2.9nm,0.3s,baz=72,slow=20,SNR=2.0							
H11N2	**WAKE ISLAND Hy**	**28.57**	**125**	T		T	23 00 21.2	
	baz=317,slow=75,SNR=182							
H11N1	**WAKE ISLAND Hy**	**28.58**	**125**	T		T	23 00 21.3	
	baz=317,slow=75,SNR=193							
H11N3	**WAKE ISLAND Hy**	**28.59**	**125**	T		T	23 00 22.6	
	baz=317,slow=75,SNR=148							
H11S1	**WAKE ISLAND Hy**	**29.35**	**127**	T		T	23 01 18.3	
	baz=319,slow=76,SNR=49							
H11S3	**WAKE ISLAND Hy**	**29.36**	**127**	T		T	23 01 19.2	
	baz=319,slow=76,SNR=58							
H11S2	**WAKE ISLAND Hy**	**29.37**	**127**	T		T	23 01 20.2	
	baz=319,slow=76,SNR=42							
ZALV	**Zalesovo Beam**	**41.20**	**311**	P		**P**	**22 31 48.5**	**+0.7**
	0.3nm,0.4s,baz=89,slow=5.9,SNR=2.5							
MKAR	**Makanchi Array**	**43.74**	**301**	P		**P**	**22 32 09.7**	**+1.1**
	0.3nm,0.5s,baz=87,slow=10,SNR=5.0							
ILAR	**Eielson Array**	**47.62**	**33**	P		**P**	**22 32 38.6**	**-0.3**
	0.4nm,0.6s,baz=275,slow=6.7,SNR=5.4							
DLBC	**Dease Lake**	**56.80**	**39**	LR		LR	22 57 22.7	
	comp=Z,83nm,19.3s,baz=303,slow=35							
WRA	**Warramunga Arr**	**58.95**	**189**	P		**P**	**22 34 02.5**	**-0.1**
	0.4nm,0.5s,baz=6.0,slow=7.2,SNR=8.9							
YKA	**Yellowknife Ar**	**61.91**	**31**	P		**P**	**22 34 21.9**	**-0.6**
	0.1nm,0.6s,baz=299,slow=6.6,SNR=3.0							

DJA 14 22:28:58.4±0.4, 6˚S±3˚×10˚5E±˚, h10km, M3.7/13, MLv3.7/13, Southern Sumatera

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
KASI	**Kota Agung**	**0.54**	**325**	P		Pg	22 29 08.1	-0.9
KASI				S		Sg	22 29 16.6	+0.5
BLSI	**Bandar Lampung**	**0.74**	**36**	P		Pg	22 29 11.3	-1.4
BLSI				S		Sg	22 29 22.4	0.0
CGJI	**Cibinong**	**1.09**	**126**	P		Pb	22 29 18.6	-0.7
CGJI				S		Sg	22 29 33.4	0.0
KLI	**Kotabumi**	**1.10**	**2**	P		Pg	22 29 19.6	0.0
KLI				S		Sn	22 29 35.0	-0.2
LWLI	**Liwa**	**1.21**	**322**	P		Pb	22 29 19.9	-1.5
SBJI	**Serang**	**1.32**	**97**	P		Pn	22 29 22.1	-0.8
MDSI	**Maura Dua**	**1.60**	**337**	P		Pn	22 29 25.8	-1.0
DBJI	**Dramaga**	**2.01**	**107**	P		Pn	22 29 31.7	-0.8
SKJI	**Sukabumi**	**2.02**	**121**	P		Pn	22 29 32.3	-0.2
CBJI	**Citeko**	**2.08**	**103**	P		Pb	22 29 35.1	-1.1
LHSI	**Lahat**	**2.48**	**329**	P		Pn	22 29 39.1	+0.1
CNJI	**Cibinong**	**2.66**	**120**	P		Pn	22 29 40.9	-0.5
LEM	**Lembang**	**2.92**	**107**	P		Pg	22 29 59.0	+4.6
CISI	**Cisompet, Garu**	**3.38**	**118**	P		Pn	22 29 50.9	-0.4

IDC ***14*** *22:29:15.9±1.4, 37.6ʹ69N×143.4ʹ40E, h0km, mb3.5/4, mb1 3.6/7, mb1mx3.4/48, mbtmp3.6/7, ML3.0/3, Error ellipse: s-maj=34.3km s-min=26.3km az=96.0*
ISCJB ***14*** *22:29:18.2±1.0, 37.7ʹN±0.0ʹ1×143.4ʹE±0.0ʹ1, h33km, mb3.5/4, Error ellipse: s-maj=16.3km s-min=11.3km az=145.3*

ISC 14 22:29:20.8±1.1, 37.5ʹ7N±0.0ʹ09×143.4ʹE±0.0ʹ1, h35km, n15, σ1ˢ42/11, mb3.5/4, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
MJAR	**Matsushiro Arr**	**4.24**	**258**	Pn		**Pn**	**22 30 22.9**	**-0.1**
	0.7nm,0.3s,baz=87,slow=15,SNR=4.6							
MAT	**Matsushiro**	**4.25**	**258**	P		**Pn**	**22 30 23.0**	**0.0**
MAT				S		**Sn**	**22 31 12.7**	**+1.3**
JHJ	**Hachijo jima 2**	**5.32**	**214**	Pn		**Pn**	**22 30 38.5**	**+0.8**
	5.3nm,0.3s,baz=45,slow=13,SNR=1.9							
JHJ				Sn		**Sn**	**22 31 35.5**	**-2.2**
	3.2nm,0.3s,baz=73,slow=20,SNR=1.8							
USRK	**Ussuriysk Ar.**	**10.85**	**311**	Pn		**Pn**	**22 31 53.6**	**0.0**
	0.3nm,0.3s,baz=146,slow=8.4,SNR=3.6							
H11N2	**WAKE ISLAND Hy**	**27.13**	**124**	T		T	23 03 50.5	
	baz=317,slow=75,SNR=32							
H11N1	**WAKE ISLAND Hy**	**27.14**	**124**	T		T	23 03 45.6	
	baz=317,slow=75,SNR=20							
H11N3	**WAKE ISLAND Hy**	**27.15**	**124**	T		T	23 03 43.0	
	baz=317,slow=75,SNR=24							
H11S1	**WAKE ISLAND Hy**	**27.89**	**127**	T		T	23 04 47.9	
	baz=316							
H11S3	**WAKE ISLAND Hy**	**27.89**	**127**	T		T	23 04 46.7	
	baz=316							
H11S2	**WAKE ISLAND Hy**	**27.91**	**127**	T		T	23 04 58.9	
	baz=316							
ZALV	**Zalesovo Beam**	**42.70**	**312**	P		**P**	**22 37 13.8**	**-0.3**
	0.3nm,0.3s,baz=107,slow=7.7,SNR=1.7							
MKAR	**Makanchi Array**	**45.15**	**302**	P		**P**	**22 37 32.2**	**-1.7**
	0.3nm,0.7s,baz=76,slow=6.1,SNR=3.4							
INK	**Inuvik**	**53.20**	**27**	P		**P**	**22 38 34.3**	**-0.8**
	0.4nm,0.5s,baz=239,slow=10,SNR=1.9							
WRA	**Warramunga Arr**	**57.83**	**190**	P		**P**	**22 39 09.7**	**+0.8**
	0.3nm,0.8s,baz=8.7,slow=4.4,SNR=5.0							
TORD	**Torodi Ar. Bea**	**118.03**	**317**	PKP		**PKPdf**	**22 48 06.5**	**+2.1**
	0.3nm,0.8s,baz=25,slow=3.8,SNR=2.2							

CASC 14 22:30:09.8±2.0, 11.08N×86.61W, h25km±7km, MD4.0, ML3.0, Near coast of Nicaragua

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
CRUN	**El Crucero**	**0.95**	**18**	*e*P		Pb	22 30 28.1	+0.5
COPN	**Copaltepe**	**1.09**	**1**	*e*P		Pn	22 30 29.6	0.0
XAVN	**Gruta Xavier**	**1.10**	**14**	*e*P		Pb	22 30 30.0	-0.2
TISN	**Laguna Tiscapa**	**1.10**	**17**	*e*P		Pn	22 30 29.9	+0.2
APYN	**Apoyeque**	**1.17**	**12**	*e*P		Pn	22 30 30.8	+0.1
APYN				*e*S		Sb	22 30 47.0	+0.8
APYN				AML		AML	22 30 50.0	
	comp=Z,883nm,0.3s							
MOMN	**Momotombo**	**1.32**	**3**	*e*P		Pn	22 30 32.0	-0.7
CNGN	**Cerro Negro**	**1.41**	**356**	*e*P		Pn	22 30 34.0	-0.1
CNGN				*e*S		Sn	22 30 51.9	0.0
CNGN				AML		AML	22 30 58.2	
	comp=E,225nm,0.3s							
TEL3	**Telica 3**	**1.50**	**351**	*e*P		Pn	22 30 35.2	0.0
TELN	**Telica**	**1.53**	**352**	*e*P		Pn	22 30 35.5	-0.2
BOAB	**BOACO BROADBAN**	**1.64**	**34**	*e*P		Pn	22 30 36.5	-0.6
JTS	**JuntasAbangare**	**1.81**	**116**	*e*P		Pn	22 30 38.6	-0.8
JCR	**Jicaral**	**1.91**	**130**	*e*P		Pn	22 30 39.5	-1.4
ESTN	**Estel**	**2.02**	**7**	*e*P		Pn	22 30 42.3	-0.1
URSC	**Urasca**	**3.04**	**114**	*e*P		Pn	22 30 58.6	+2.0
BUS	**Buena Vista**	**3.19**	**118**	*e*P		Pn	22 31 00.0	+1.2
BUS				*e*S		Sn	22 31 39.3	+3.1

MEX 14 22:34:52.4±0.6, 13.90N×92.44W, h20km±734km, MD3.8, Off coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
CCIG	**Comitan**	**2.39**	**7**	*e*P		Pn	22 35 28.9	-1.8
CCIG				*i* S		Sn	22 35 56.3	-3.2
TGIG		**2.94**	**347**	*e*P		Pn	22 35 35.6	-2.5
TGIG				*e*S		Sn	22 36 07.8	-5.0

IDC ***14*** *22:37:37.3±2.8, 17.65S×176.43W, h0km, mb4.4/2, mb1 4.7/2, mb1mx3.7/44, mbtmp4.4/2, Error ellipse: s-maj=153.4km s-min=41.4km az=150.0*

ISCJB ***14*** *22:37:50.0±0.5, 15.39S±0.0ʹ09×177.82W±0.0ʹ09, h33km, mb4.7/17, Error ellipse: s-maj=13.1km s-min=12.1km az=27.7*
NEIC ***14*** *22:37:50.9±3.5, 15.39S×177.83W, h28km±25km, mb4.3/13, Error ellipse: s-maj=13.4km s-min=12.2km az=193.0*

ISC 14 22:37:51.8±0.6, 15.4S±0.1×177.8W±0.1, h35km, n28, σ1ˢ33/22, mb4.4/17, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
FUNA	**Funafuti**	**7.41**	**336**	*e*Pn		**Pn**	**22 39 36.5**	**-1.1**
RAO	**Raoul Island**	**13.81**	**180**	*e*Pn		**Pn**	**22 41 05.3**	**+0.2**
RAR	**Rarotonga**	**18.08**	**111**	*e*Pn		**Pn**	**22 42 00.0**	**-0.3**
	12nm,0.4s							
HNR	**Honiara**	**22.50**	**283**	*e*P		**P**	**22 42 49.5**	**+0.9**
	9µm,0.4s							
CTAO	**Charters Tower**	**34.50**	**257**	*e*P		**P**	**22 44 37.5**	**+0.6**
	2.1nm,0.4s							
H11S2	**WAKE ISLAND Hy**	**36.95**	**335**	T		T	23 26 23.9	
	baz=147,slow=76,SNR=5.6							
H11S3	**WAKE ISLAND Hy**	**36.96**	**335**	T		T	23 26 23.6	
	baz=147,slow=76,SNR=5.1							
H11S1	**WAKE ISLAND Hy**	**36.96**	**335**	T		T	23 26 24.5	
	baz=147,slow=76,SNR=6.4							
WRAB	**Tennant Creek**	**45.69**	**257**	*e*P		**P**	**22 46 07.4**	**-2.4**
	1.2nm,0.4s							
WRA	**Warramunga Arr**	**45.70**	**257**	P		**P**	**22 46 07.0**	**-2.9**
	1.8nm,0.7s,baz=97,slow=7.1,SNR=15							
WRA	**Warramunga Arr**	**45.70**	**257**	P		**P**	**22 46 07.0**	**-2.9**
ASAR	**Alice Springs**	**46.07**	**252**	P		P	22 46 08.4	-4.4
	7.8nm,0.6s,baz=88,slow=8.9,SNR=97							
DAV	**Davao City (W)**	**60.35**	**288**	*e*P		**P**	**22 47 59.2**	**+1.3**
	77nm,0.4s							
TATO	**Taipei**	**71.47**	**303**	*e*P		**P**	**22 49 10.0**	**+0.8**
	8.8nm,0.4s							
CMB	**Columbia Colle**	**75.61**	**43**	*e*P		**P**	**22 49 33.6**	**+0.2**
	2.1nm,0.4s							
MA2	**Magadan**	**78.92**	**344**	*e*P		**P**	**22 49 51.5**	**+0.2**
	1.2nm,0.5s							
PMR	**Palmer**	**80.02**	**13**	*e*P		**P**	**22 49 57.5**	**+0.2**
	1.3nm,0.4s							
MCK	**McKinley**	**81.96**	**13**	*e*P		**P**	**22 50 08.1**	**+0.5**
	0.5nm,0.4s							
COCO	**West Island**	**82.43**	**259**	*e*P		**P**	**22 50 12.3**	**+1.1**
	67nm,0.4s							
NEW	**Newport**	**83.14**	**36**	*e*P		**P**	**22 50 14.5**	**+0.3**
	0.8nm,0.6s							
COLA	**College**	**83.19**	**12**	*e*P		**P**	**22 50 14.4**	**+0.4**
	1.8nm,0.4s							
BILL	**Bilibino**	**83.98**	**354**	*e*P		**P**	**22 50 18.3**	**+0.3**
	0.7nm,0.4s							
ANMO	**Albuquerque**	**84.08**	**51**	*e*P		**P**	**22 50 19.1**	**-0.5**
	0.5nm,0.5s							
HIA	**Hailar**	**84.65**	**324**	*e*P		**P**	**22 50 22.3**	**+0.5**
	4.0nm,0.4s							
BRTR	**Keskin Array B**	**143.36**	**318**	PKPbc		PKPab	22 57 17.0	-2.1
	0.9nm,0.8s,baz=39,slow=7.6,SNR=4.6							
GERES	**GERESS Array B**	**145.31**	**347**	PKPbc		**PKPbc**	**22 57 24.5**	**-1.4**
	0.1nm,0.3s,baz=35,slow=4.9,SNR=5.6							
GERES	**GERESS Array B**	**145.31**	**347**	PKPbc		**PKPbc**	**22 57 24.5**	**-1.4**
TORD	**Torodi Ar. Bea**	**177.74**	**168**	PKP		PKPdf	22 57 49.4	-10
	0.3nm,0.8s,baz=185,slow=0.1,SNR=1.9							

BJI ***14*** *22:41:50.1, 10.62S×161.52E, h35km, mb4.7/39, mB5.2/23, Ms4.9/16, Ms7 4.5/15*
ISCJB ***14*** *22:41:50.9±1.0, 10.65S±0.0ʹ03×161.35E±0.0ʹ03, h38km±9km, mb5.0/133, MS4.2/24, Error ellipse: s-maj=5.5km s-min=5.2km az=11.8*
IDC ***14*** *22:41:53.5±3.7, 10.47S×161.43E, h46km±35km, mb4.3/32, mb1 4.4/34, mb1mx4.4/54, mbtmp4.6/34, ML4.7/2, MS4.2/23, Ms1 4.2/23, ms1mx4.0/39, Error ellipse: s-maj=16.0km s-min=13.8km az=112.0*
NEIC ***14*** *22:41:53.8±0.7, 10.65S×161.37E, h51km±6km, mb5.2/80, Error ellipse: s-maj=4.2km s-min=3.9km az=70.0*
MOS ***14*** *22:41:53.8±1.1, 10.55S×161.37E, h62km, mb4.8/31, MS4.2/13, Error ellipse: s-maj=8.2km s-min=7.4

comp=Z,3.9nm,0.8s,baz=32,slow=14,SNR=7.4
STKA LR LR 22 58 17.4
comp=Z,1µm,19.8s,baz=25,slow=35
STKA Stephens Creek 27.98 218 P **P 22 47 41.0 +1.5**
STKA pmax pmax
comp=Z,4.0nm,0.8s
STKA MLR MLR
comp=Z,1µm,19.8s
STKA Stephens Creek 27.98 218 *e*P **P 22 47 39.3 -0.2**
comp=Z,4.1nm,1.3s
GUMO Guam 29.11 325 LR LR 22 58 43.8
comp=Z,361nm,21.5s,baz=145,slow=35
AS01 Alice Springs 29.19 240 *e*P **P 22 47 50.4 0.0**
AS31 Alice Springs 29.23 240 *e*P **P 22 47 50.3 -0.5**
comp=Z,3.3nm,0.8s
ASAR Alice Springs 29.23 240 P **P 22 47 51.5 +0.7**
comp=Z,3.4nm,0.8s,baz=72,slow=9.2,SNR=9.8
ASAR LR LR 22 59 43.4
comp=Z,1µm,18.1s,baz=22,slow=36
H11S2 WAKE ISLAND Hy 29.39 10 T T 23 18 33.2
baz=188,slow=76,SNR=278
H11S3 WAKE ISLAND Hy 29.39 10 T T 23 18 33.3
baz=188,slow=76,SNR=172
H11S1 WAKE ISLAND Hy 29.41 10 T T 23 18 34.4
baz=188,slow=76,SNR=121
HIZ Hauiti 30.28 159 *e*P **P 22 47 59.9 0.0**
comp=Z,97nm,1.3s
H11N1 WAKE ISLAND Hy 30.62 10 T T 23 20 42.1
baz=188,slow=76,SNR=115
H11N3 WAKE ISLAND Hy 30.63 10 T T 23 20 38.1
baz=188,slow=76,SNR=115
H11N2 WAKE ISLAND Hy 30.64 10 T T 23 20 42.4
baz=188,slow=76,SNR=94
URZ Urewera 30.92 155 *e*P **P 22 48 05.1 -0.4**
comp=Z,27nm,0.7s
BKZ Black Stump Fm 31.46 157 *e*P **P 22 48 10.7 +0.4**
BKZ *ep*P pP 22 48 11.8 -6.9
BBOO Buckleboo 32.12 223 *e*P **P 22 48 15.6 -0.6**
comp=Z,32nm,0.9s
BFZ Birch Farm 32.70 159 *e*P **P 22 48 21.3 +0.2**
comp=Z,74nm,1.5s
SNZO South Karori 32.75 161 *e*P **P 22 48 20.4 -1.1**
comp=Z,60nm,1.0s
KHZ Kahutara 33.41 164 *e*P **P 22 48 27.2 0.0**
comp=Z,172nm,1.8s
KHZ *e*PcP **PcP 22 51 04.1 -4.3**
LTZ Lake Taylor 33.42 165 *e*P **P 22 48 27.1 -0.4**
comp=Z,24nm,1.0s
OXZ Oxford 33.88 166 *e*P **P 22 48 31.2 -0.2**
comp=Z,30nm,1.0s
CRLZ Canterbury Las 34.26 165 *e*P **P 22 48 34.7 +0.1**
comp=Z,212nm,1.7s
NLAI Namlea 34.80 280 P P 22 48 43.7 +4.0
comp=Z,38nm,1.3s
FITZ Fitzroy Crossi 35.38 254 P **P 22 48 45.5 +0.9**
comp=Z,11nm,0.6s,baz=84,slow=9.4,SNR=8.2
FITZ Fitzroy Crossi 35.38 254 *e*P **P 22 48 45.3 +0.6**
comp=Z,137nm,2.0s
SANI Sanana 36.17 281 P P 22 48 55.2 +3.7
comp=Z,52nm,1.2s
BATI Baumata 37.10 267 P **P 22 49 02.0 +2.5**
comp=Z,7.2nm,0.4s,baz=342,slow=19
DAV Davao City (W) 39.75 295 LR LR 23 04 13.5
comp=Z,165nm,18.2s,baz=37,slow=34
APSI Ampana 40.65 281 P P 22 49 36.7 +7.5
comp=Z,11nm,0.9s,comp=Z,782nm
MBWA Marble Bar 41.31 250 *e*P **P 22 49 34.6 0.0**
comp=Z,20nm,0.9s
KAPI Kappang 41.60 274 P **P 22 49 38.3 +1.3**
comp=Z,16nm,0.8s,baz=125,slow=4.2,SNR=8.8
KAPI Kappang 41.60 274 *e*P **P 22 49 37.9 +0.8**
comp=Z,18nm,0.8s
KAPI *ep*P **sP 22 49 49.8 +0.8**
SPSI Sidrap Palu 41.78 276 P **P 22 49 39.3 +0.8**
comp=Z,18nm,0.8s
CBIJ Chichi jima 41.87 334 P **P 22 49 37.2 -1.8**
JCJ Chichijima 41.87 334 P **P 22 49 37.2 -1.8**
comp=Z,63nm,0.9s,baz=220,slow=18,SNR=2.6
XMAS Kiritimati 42.84 75 *e*P **P 22 49 47.6 +0.4**
comp=Z,115nm,1.0s
PLAI Plampang 43.01 268 P **P 22 49 48.7 +0.2**
comp=Z,50nm,0.9s
MIDW Midway 43.73 28 *e*P **P 22 49 54.4 +0.4**
comp=Z,53nm,0.8s
MCQ Macquarie Isla 43.81 182 *e*P **P 22 49 53.8 -0.6**
MCQ pmax pmax
comp=Z,338nm,1.6s
MCQ Macquarie Isla 43.81 182 *e*P **P 22 49 53.8 -0.6**
comp=Z,338nm,1.6s
TWSI Taliwang, Sumb 43.89 268 P **P 22 49 56.8 +1.2**
comp=Z,26nm,0.8s
MYLDM Lahad Datu 45.50 288 *e*P **P 22 50 07.5 -1.0**
comp=Z,39nm,1.1s
NWAO Narrogin (SRO) 46.20 234 P **P 22 50 14.4 +0.6**
comp=Z,9.4nm,1.0s,baz=289,slow=0.1,SNR=5.7
JAGI Jajag, Banyuwa 46.61 268 P **P 22 50 17.1 -0.1**
comp=Z,96nm,0.9s
TGY Tagaytay City 47.04 301 LR LR 23 08 58.0
comp=Z,75nm,18.2s,baz=98,slow=35
PPT Papeete 47.95 104 LR LR 23 07 04.9
comp=Z,198nm,19.2s,baz=202,slow=32
PPT2 Papeete2 47.95 104 *e*LR LR 23 04 01.0
comp=Z,387nm,22.5s
JHJ2 Mitsune 48.10 336 *e*P **P 22 50 31.4 +2.9**
comp=Z,1µm,1.6s
TBI Tubuai 48.46 112 *e*LR LR 23 04 23.4
comp=Z,260nm,27.0s
PWJI Pagerwojo 48.97 269 P **P 22 50 36.3 +0.8**
comp=Z,32nm,0.8s
PCJI Pacitan 49.56 268 P **P 22 50 41.3 +1.3**
comp=Z,90nm,0.9s
SBUM Sibu 50.63 282 *e*P **P 22 50 47.1 -1.1**
comp=Z,10nm,1.1s
STKI Sintang 50.74 279 P **P 22 50 51.4 +2.4**
comp=Z,23nm,0.8s,comp=Z,11µm
HON Honolulu 50.97 51 *e*P **P 22 50 51.3 +0.8**
HON pmax pmax
comp=Z,174nm,0.9s
HON Honolulu 50.97 51 *e*P **P 22 50 51.3 +0.8**
comp=Z,174nm,0.9s
KIP Kipapa 51.01 51 *e*P **P 22 50 50.8 -0.1**
KIP pmax pmax
comp=Z,297nm,1.5s
KIP Kipapa 51.01 51 *e*P **P 22 50 50.8 -0.1**
comp=Z,297nm,1.5s
OPA Opana 51.17 51 *e*P **P 22 50 52.4 +0.4**
OPA pmax pmax
comp=Z,190nm,1.2s
OPA Opana 51.17 51 *e*P **P 22 50 52.4 +0.4**
comp=Z,190nm,1.2s
INU Inuyama 51.20 334 *e*P **P 22 50 52.7 +0.7**
comp=Z,53nm,1.1s
MJAR Matsushiro Arr 51.73 336 LR LR 23 12 00.0
comp=Z,112nm,21.0s,baz=135,slow=35
YULB Yu-li 51.78 311 *e*P **P 22 50 57.1 +0.5**
comp=Z,13nm,0.7s
YULB *e* 22 51 06.7
KPJI Karang Pucung 51.88 269 P P 22 51 09.6 +12
HLK Haleakala 52.02 53 *e*P **P 22 50 58.0 -0.8**
comp=Z,211nm,1.3s
NACB Ninganchiao 52.02 312 *e*P **P 22 50 58.0 -0.4**
comp=Z,43nm,0.9s
POHA Pohakuloa 52.05 55 *e*P **P 22 50 59.0 0.0**
comp=Z,240nm,1.5s
HPAH Hawaii Prepara 52.07 54 *e*P **P 22 50 59.6 +0.8**
comp=Z,53nm,0.5s
KSM Kuching 52.22 280 *e*P **P 22 50 60.0 -0.1**
KSM *ep*P **sP 22 51 10.2 -2.0**
KSM *e* 22 51 10.5
TPUB Ta-pu 52.22 311 *e*P **P 22 51 01.5 +1.6**
comp=Z,30nm,0.9s
SSLB Suanglung 52.27 311 *e*P **P 22 51 01.6 +1.4**
SSLB *ep*P **pP 22 51 09.8 +0.8**
JNU Nakatsue 52.32 327 *e*P **P 22 51 03.4 +2.9**
JNU *ep*P **pP 22 51 10.1 +0.9**
YHNB Yeheng 52.48 312 *e*P **P 22 51 03.9 +2.0**
comp=Z,30nm,0.8s
TATO Taipei 52.59 313 *e*P **P 22 51 02.5 0.0**
comp=Z,253nm,1.9s
CISI Cisompet, Garu 52.95 269 P P 22 51 15.5 +10
LEM Lembang 53.24 269 P P 22 51 14.9 +7.1
TNG Tangerang 54.29 270 P pP 22 51 17.3 -6.7
comp=Z,2µm,0.5s
TNG P **P 22 51 17.2 +1.9**
comp=Z,1µm,0.5s
XMIS Christmas Isla 54.74 265 *e*P **P 22 51 17.4 -1.2**
comp=Z,191nm,1.8s

ERM Erimo 54.98 343 *e*P **P 22 51 20.1 +0.3**
ERM pmax pmax
comp=Z,38nm,0.7s
ERM Erimo 54.98 343 *e*P **P 22 51 20.1 +0.3**
comp=Z,38nm,0.7s
CGJI Cibinong 55.16 269 P **P 22 51 21.5 -0.1**
comp=Z,110nm,0.9s
KASI Kota Agung 56.50 270 P **P 22 51 32.7 +1.5**
MDSI Maura Dua 56.98 272 P P 22 51 46.0 +11
ASAJ Asahikawa 57.09 344 *e*P **P 22 51 34.8 0.0**
ASAJ *ep*P **sP 22 51 45.7 -1.3**
KSRS Korea Array 57.19 329 P **P 22 51 35.1 -0.5**
comp=Z,3.1nm,0.9s,baz=146,slow=6.5,SNR=7.5
KSRS LR LR 23 14 55.4
comp=Z,101nm,19.8s,baz=168,slow=35
KS15 Wonju Array Si 57.20 328 *e*P **P 22 51 36.4 +0.6**
KSAR Wonju Array Be 57.20 328 P **P 22 51 35.2 -0.6**
KSAR Wonju Array Be 57.20 328 P **P 22 51 35.1 -0.6**
KS01 Wonju Array Si 57.23 329 *e*P **P 22 51 35.2 -0.7**
TAOE Nuku Hiva Isla 57.57 94 *e*LR LR 23 08 28.4
comp=Z,316nm,23.8s
NJ2 Nanjing 58.77 318 *e*P **P 22 51 46.8 -0.1**
NJ2 pmax pmax
comp=Z,10.0nm,0.5s
YSS Yuzh-Sakhalins 59.68 345 P **P 22 51 53.1 +0.3**
YSS pmax pmax
comp=Z,18nm,0.8s
YSS Yuzh-Sakhalins 59.68 345 *e*P **P 22 51 53.1 +0.3**
comp=Z,39nm,1.0s
USRK Ussuriysk Ar. 60.73 336 P **P 22 51 59.6 -0.5**
comp=Z,11nm,0.8s,baz=148,slow=6.6,SNR=20
RKT Rikitea 61.74 111 *e*LR LR 23 10 30.6
comp=Z,514nm,27.0s
IPM Ipoh 61.94 281 *e*P **P 22 52 07.2 -1.8**
comp=Z,20nm,1.1s
MDJ Mudanjiang 62.06 335 P **P 22 52 09.9 +0.8**
MDJ pmax pmax
comp=Z,11nm,1.0s
MDJ pmax pmax
comp=Z,86nm,5.6s
MDJ Mudanjiang 62.06 335 *e*P **P 22 52 09.8 +0.7**
comp=Z,38nm,1.4s
PETK Petropavlovsk- 63.55 358 P **P 22 52 19.4 +0.6**
comp=Z,4.7nm,0.8s,baz=153,slow=10.0,SNR=3.7
PETK LR LR 23 15 40.8
comp=Z,186nm,21.8s,baz=191,slow=32
PETK Petropavlovsk- 63.55 358 P **P 22 52 19.4 +0.6**
PETK pmax pmax
comp=Z,4.0nm,0.8s
PETK MLR MLR
comp=Z,186nm,21.8s
PSI Prapat 63.58 278 P **P 22 52 19.2 -0.8**
comp=Z,1.8nm,0.4s,baz=126,slow=7.8,SNR=5.8
PSI Prapat 63.58 278 P **P 22 52 19.2 -0.8**
PSI pmax pmax
comp=Z,3.0nm,0.6s
GYA Guiyang 64.67 306 P **P 22 52 29.0 +2.1**
GYA pP sP 22 52 39.8 +0.6
GYA PP **PP 22 54 53.3 +3.7**
GYA ScP 22 57 01.0
GYA S **S 23 01 05.4 -0.3**
GYA SKS **SKSac 23 02 17.9 -2.1**
GYA SS **SS 23 05 18.6 +1.4**
GYA pmax pmax
comp=Z,20nm,1.0s
GYA pmax pmax
comp=Z,130nm,6.2s
GYA LR LR
comp=Z,500nm,18.2s
GYA LR LR
comp=Z,460nm,19.0s
GYA LR LR
comp=Z,430nm,19.6s
KLR Kul'dur 65.04 339 P **P 22 52 29.1 +0.4**
comp=Z,4.0nm,0.9s,baz=135,slow=4.0,SNR=14
BJI Beijing 65.52 323 P **P 22 52 33.8 +1.8**
BJI pmax pmax
comp=Z,7.0nm,0.8s
NKL Nikolayevsk 65.94 347 *e*P **P 22 52 34.5 +0.2**
XAN Xi'an 66.72 314 P P 22 52 49.9 +10
XAN pP sP 22 52 58.5 +6.3
XAN pmax pmax
comp=Z,15nm,0.8s
VNDA Vanda 66.89 180 P **P 22 52 41.5 +1.2**
comp=Z,9.3nm,0.8s,baz=338,slow=6.6,SNR=27
VNDA Vanda 66.89 180 *e*P **P 22 52 40.1 -0.1**
VNDA pmax pmax
comp=Z,15nm,0.9s
VNDA Vanda 66.89 180 *e*P **P 22 52 40.1 -0.1**
comp=Z,15nm,0.9s
KMI Kunming 67.28 303 P **P 22 52 44.8 +1.0**
KMI pP sP 22 52 55.3 -0.8
KMI S **S 23 01 36.4 -1.2**
KMI pmax pmax
comp=Z,8.0nm,0.9s
KMI pmax pmax
comp=Z,310nm,14.9s
KMI LR LR
comp=Z,110nm,6.4s
KMI LR LR
comp=Z,97nm,6.2s
KMI LR LR
comp=Z,84nm,6.0s
CM01 Chiang Mai Arr 68.01 295 *e*P **P 22 52 48.8 +0.5**
CMAR Chiang Mai Arr 68.04 295 P **P 22 52 49.5 +0.9**
comp=Z,2.2nm,0.7s,baz=125,slow=5.1,SNR=19
CMAR LR LR 23 23 44.9
comp=Z,46nm,18.4s,baz=130,slow=37
CHTO Chiang Mai 68.16 295 *e*P **P 22 52 49.6 +0.3**
CHTO pmax pmax
comp=Z,6.0nm,0.9s
CHTO Chiang Mai 68.16 295 *e*P **P 22 52 49.6 +0.3**
comp=Z,6.0nm,0.9s
HHC Hu-ho-hao-te 68.79 322 *e*P **P 22 52 55.3 +2.4**
HHC PP **PP 22 55 25.5 +0.3**
HHC S **S 23 01 53.3 -1.6**
HHC pmax pmax
comp=Z,13nm,1.4s
HHC pmax pmax
comp=Z,57nm,7.1s
HHC LR LR
comp=Z,850nm,17.3s
HHC LR LR
comp=Z,830nm,17.5s
HHC LR LR
comp=Z,820nm,17.7s
CD2 Chengdu 68.98 309 P **P 22 52 54.5 +0.3**
CD2 sP sP 22 53 09.6 +3.1
CD2 PP **PP 22 55 27.3 +0.4**
CD2 S **S 23 01 58.0 +0.6**
CD2 sS sS 23 02 16.3 +4.1
CD2 SS **SS 23 06 25.5 +1.8**
CD2 pmax pmax
comp=Z,10.0nm,0.5s
CD2 LR LR
comp=Z,220nm,10.8s
CD2 LR LR
comp=Z,220nm,8.4s
LZH Lanzhou 71.34 314 *e*P P 22 53 14.9 +6.2
LZH pP PcP 22 53 24.8 -3.6
LZH sP sP 22 53 28.8 +7.7
LZH pmax pmax
comp=Z,17nm,1.0s
MIR Mirnyy 71.78 203 *i* P **P 22 53 13.0 +2.4**
MIR pmax pmax
comp=Z,4.0nm,1.2s
SEY Seymchan 73.65 356⇑ *i* P **P 22 53 21.4 -0.3**
ULN Ulaanbaatar 75.49 326 *e*P **P 22 53 32.6 -0.3**
ULN pmax pmax
comp=Z,18nm,0.9s
ULN Ulaanbaatar 75.49 326 *e*P **P 22 53 32.6 -0.3**
comp=Z,18nm,0.9s
GTA Gaotai 75.72 315 *e*P **P 22 53 35.0 +0.6**
GTA pP sP 22 53 45.8 -0.9
GTA sP PcP 22 53 49.8 +2.8
GTA S **S 23 03 13.9 -0.5**
GTA sS sS 23 03 30.8 +1.5
GTA SKS **SKSac 23 03 38.1 -4.8**
GTA SS **SS 23 08 08.0 +1.3**
GTA pmax pmax
comp=Z,5.0nm,1.2s
GTA pmax pmax
comp=Z,72nm,5.7s
GTA LR LR
comp=Z,94nm,13.3s

GTA LR LR
comp=Z,130nm,15.4s
GTA LR LR
comp=Z,120nm,13.3s
SONM Songino Array 75.84 325 P **P 22 53 35.2 +0.3**
comp=Z,8.2nm,0.8s,baz=134,slow=5.1,SNR=45
SONM LR LR 23 28 21.4
comp=Z,112nm,18.5s,baz=114,slow=37
SONA1 Songino Array 75.84 325 *e*P **P 22 53 35.2 +0.3**
YAK Yakutsk 76.53 345 P **P 22 53 37.1 -1.1**
comp=Z,32nm,0.6s,baz=328,slow=2.0,SNR=4.7
YAK Yakutsk 76.53 345 *e*P **P 22 53 37.7 -0.6**
YAK pmax pmax
comp=Z,28nm,0.9s
KDAK Kodiak Island 77.81 23 P P 22 54 01.1 +16
comp=Z,12nm,0.9s,baz=311,slow=3.4,SNR=3.9
BOD Bodaibo 78.37 336 *e*P P 22 53 44.8 -3.9
BOD pmax pmax
comp=Z,5.0nm,1.4s
BILL Bilibino 78.53 2*d i*P **P 22 53 49.8 +0.4**
BILL *i* 22 53 58.9
BILL *e* 22 54 02.5
BILL *e* 22 54 11.6
BILL pmax pmax
comp=Z,18nm,1.7s
BILL MLR MLR
comp=Z,112nm,17.0s
BILL Bilibino 78.53 2 *e*P **P 22 53 49.8 +0.4**
comp=Z,22nm,1.3s
ZAK Zakamensk 78.94 326 *e*P **P 22 53 51.7 -0.4**
ZAK pmax pmax
comp=Z,7.0nm,1.4s
SVW2 Sparrevohn 79.09 20 *e*P **P 22 53 53.6 +1.0**
comp=Z,36nm,0.9s
QSPA South Pole Qui 79.39 180 *e*P **P 22 53 54.5 +0.1**
comp=Z,59nm,1.0s
TLY Talaya 79.43 328 P **P 22 53 52.6 -2.1**
comp=Z,6.6nm,0.9s,baz=208,slow=5.2,SNR=6.8
TLY Talaya 79.43 328 *e*P **P 22 53 55.0 +0.3**
TLY pmax pmax
comp=Z,10.0nm,1.0s
TLY Talaya 79.43 328 *e*P **P 22 53 53.6 -1.1**
comp=Z,8.1nm,1.0s
TLY *ep*P **pP 22 54 04.8 +1.0**
TT01 Tatalina 80.28 18 *e*P **P 22 53 59.8 +0.8**
TTA Tatalina 80.31 18 *e*P **P 22 54 00.0 +0.7**
TTA pmax pmax
comp=Z,12nm,1.0s
TTA Tatalina 80.31 18 *e*P **P 22 53 60.0 +0.7**
comp=Z,12nm,1.0s
CAST Castle Rocks 81.90 19 *e*P **P 22 54 07.3 -0.3**
comp=Z,19nm,0.9s
KTH Kantishna Hill 82.37 20 *e*P **P 22 54 09.8 -0.4**
comp=Z,13nm,0.9s
TRF Thorofare Moun 82.51 20 *e*P **P 22 54 10.7 -0.4**
comp=Z,12nm,1.0s
BPAW Bear Paw Mtn. 82.72 19 *e*P **P 22 54 11.6 -0.4**
comp=Z,11nm,1.2s
KLU Klutina 82.80 23 *e*P **P 22 54 13.9 +1.4**
comp=Z,12nm,1.0s
RND Reindeer 82.97 20 *e*P **P 22 54 12.5 -0.8**
RND pmax pmax
comp=Z,22nm,1.2s
RND Reindeer 82.97 20 *e*P **P 22 54 12.4 -0.8**
comp=Z,22nm,1.2s
BMRM Bremner River 82.98 23 *e*P P 22 54 17.2 +3.8
comp=Z,9.5nm,1.0s
MCK McKinley 83.15 20 *e*P **P 22 54 14.2 0.0**
MCK pmax pmax
comp=Z,31nm,1.0s
MCK McKinley 83.15 20 *e*P **P 22 54 14.2 0.0**
comp=Z,31nm,1.0s
MLY Manley 83.44 18 *e*P **P 22 54 16.1 +0.4**
comp=Z,9.0nm,0.9s
MAW Mawson 83.50 202 P **P 22 54 16.3 +0.3**
comp=Z,26nm,0.9s,baz=90,slow=7.8,SNR=33
MAW Mawson 83.50 202 *e*P **P 22 54 15.5 -0.5**
comp=Z,8.8nm,1.0s
WRH Wood River Hil 83.92 20 *e*P **P 22 54 17.9 -0.2**
comp=Z,12nm,1.1s
CCB Clear Creek Bu 84.12 20 *e*P **P 22 54 18.6 -0.5**
comp=Z,5.4nm,0.9s
MDM Murphy Dome 84.19 19 *e*P **P 22 54 19.2 -0.3**
comp=Z,9.3nm,1.0s
COLA College 84.26 19⇑ *e*P **P 22 54 19.0 -0.7**
COLA pmax pmax
comp=Z,9.0nm,1.0s
HDA Harding Lake 84.26 20 *e*P **P 22 54 19.9 +0.1**
comp=Z,15nm,1.0s
ILAR Eielson Array 84.51 20 P **P 22 54 20.5 -0.6**
comp=Z,2.0nm,0.9s,baz=266,slow=4.3,SNR=16
ILAR LR LR 23 28 24.5
comp=Z,176nm,19.7s,baz=274,slow=33
ILB Eielson Array 84.51 20 *e*P **P 22 54 21.7 +0.7**
IL1 Eielson Array 84.51 20 *e*P **P 22 54 21.0 0.0**
DOT Dot Lake 84.79 21 *e*P **P 22 54 23.3 +0.7**
comp=Z,24nm,0.9s
TIXI Tiksi 84.89 350 P **P 22 54 21.6 -1.2**
comp=Z,2.0nm,0.6s,baz=122,slow=3.3
TIXI Tiksi 84.89 350⇓ *e*P **P 22 54 22.1 -0.7**
TIXI pmax pmax
comp=Z,5.0nm,1.2s
TIXI Tiksi 84.89 350 *e*P **P 22 54 21.2 -1.6**
TIXI *ep*PcP **PcP 22 54 22.9 -3.2**
WMQ Urumqi 85.79 316 P **P 22 54 29.5 +1.5**
WMQ pP sP 22 54 39.3 -1.2
WMQ PP **PP 22 57 50.4 +2.6**
WMQ pmax pmax
comp=Z,2.0nm,0.5s
FYU Fort Yukon 86.17 19 *e*P **P 22 54 31.1 +1.9**
comp=Z,10nm,0.8s
WDC Whiskeytown Da 86.46 48 *e*P **P 22 54 31.8 +0.5**
WDC pmax pmax
comp=Z,15nm,1.3s
WDC Whiskeytown Da 86.46 48 *e*P **P 22 54 31.8 +0.5**
comp=Z,15nm,1.3s
EGAK Eagle 86.48 21 *e*P **P 22 54 31.7 +0.8**
comp=Z,23nm,1.1s
YBH Yreka Blue Hor 86.68 47 P **P 22 54 32.5 0.0**
comp=Z,2.6nm,0.8s,baz=311,slow=5.0,SNR=3.2
ORV Oroville 86.93 49 *e*P **P 22 54 34.4 +0.7**
ORV pmax pmax
comp=Z,11nm,1.3s
ORV Oroville 86.93 49 *e*P **P 22 54 34.4 +0.7**
comp=Z,11nm,1.3s
AFDM Forest Hills D 87.16 50 *e*P **P 22 54 35.6 +0.8**
AFDM *ep*P **sP 22 54 46.4 -0.9**
CMB Columbia Colle 87.35 51 *e*P **P 22 54 36.2 +0.4**
CMB Columbia Colle 87.35 51 *e*P **P 22 54 36.2 +0.4**
CMB *ep*P **sP 22 54 47.2 -1.1**
DLBC Dease Lake 88.09 29 P **P 22 54 38.7 -0.2**
comp=Z,0.7nm,0.7s,baz=256,slow=19,SNR=2.2
WAKR Walker 88.19 50 *e*P **P 22 54 40.0 -0.1**
WAKR *ep*P **sP 22 54 51.5 -1.0**
LRMC Laurel Mtn Rad 88.81 54 P **P 22 54 44.0 +1.1**
baz=256
NV01 Mina Array Sit 89.04 51 *e*P **P 22 54 44.7 +0.6**
NVAR Mina Array Bea 89.04 51 P **P 22 54 45.1 +1.1**
comp=Z,3.0nm,0.8s,baz=235,slow=6.8,SNR=15
NVAR LR LR 23 29 43.1
comp=Z,85nm,18.5s,baz=276,slow=32
DAC Darwin (Calif) 89.06 53 *e*P **P 22 54 45.4 +1.2**
DAC pmax pmax
comp=Z,20nm,1.3s
DAC Darwin (Calif) 89.06 53 *e*P **P 22 54 45.4 +1.2**
comp=Z,20nm,1.3s
MPMC Manual Prospec 89.09 53 P P 22 54 45.7 +1.4
baz=256
NV11 Mina Array Sit 89.15 51 *e*P **P 22 54 44.4 0.0**
comp=Z,31nm,1.4s
PFO Pinyon Flats O 89.35 56 *i* P **P 22 54 47.8 +2.3**
GRAC Grapevine Rang 89.41 52 P **P 22 54 47.0 +1.4**
baz=256
GSC Goldstone, Bar 89.46 54 P **P 22 54 47.2 +1.2**
baz=257
GSC Goldstone, Bar 89.46 54 *e*P **P 22 54 45.7 -0.3**
GSC Goldstone, Bar 89.46 54 *e*P **P 22 54 45.6 -0.3**
GSC *ep*P **sP 22 54 57.5 -0.9**
FURC Furnace Creek, 89.68 53 P **P 22 54 48.5 +1.7**
baz=257
HEC Hector,Ludlow 89.73 55 P **P 22 54 48.7 +1.5**
baz=257
WVOR Wild Horse Val 89.78 47 *e*P **P 22 54 47.8 +0.5**
WVOR pmax pmax
comp=Z,32nm,1.3s
WVOR Wild Horse Val 89.78 47 *e*P **P 22 54 47.8 +0.5**

	comp=Z,32nm,1.3s							
BELC	**Belle Mtn. Jos**	**89.81**	**55**	P		**P**	**22 54 48.7**	**+1.0**
	baz=257							
BC3	**Big Chuckawall**	**90.18**	**56**	P		**P**	**22 54 50.6**	**+1.2**
	baz=257							
TUQ	**Turquoise Moun**	**90.19**	**54**	P		**P**	**22 54 50.5**	**+1.1**
	baz=257							
GMRC	**Granite Mounta**	**90.26**	**55**	P		**P**	**22 54 50.7**	**+1.0**
	baz=257							
TPNV	**Topopah Spring**	**90.27**	**53**	*e*P		**P**	**22 54 50.7**	**+0.9**
	baz=257							
TPNV	**Topopah Spring**	**90.27**	**53**	*e*P		**P**	**22 54 50.2**	**+0.4**
TPNV					pmax	pmax		
	comp=Z,20nm,1.2s							
TPNV	**Topopah Spring**	**90.27**	**53**	*e*P		**P**	**22 54 50.2**	**+0.4**
	comp=Z,20nm,1.2s							
MKAR	**Makanchi Array**	**90.30**	**318**		P	**P**	**22 54 48.6**	**-0.9**
	comp=Z,1.2nm,0.7s,baz=98,slow=5.8,SNR=17							
MKAR	**Makanchi Array**	**90.30**	**318**	*e*P		**P**	**22 54 48.7**	**-0.8**
BMN	**Battle Mountai**	**90.33**	**49**	*e*P		**P**	**22 54 50.0**	**0.0**
BMN	**Battle Mountai**	**90.33**	**49**	*e*P		**P**	**22 54 50.0**	**0.0**
BMN					*e*pP	**sP**	**22 55 01.9**	**-0.6**
MAKZ	**Makanchi**	**90.52**	**318**	*e*P		**P**	**22 54 49.9**	**-0.6**
MAKZ					pmax	pmax		
	comp=Z,3.0nm,0.9s							
MAKZ	**Makanchi**	**90.52**	**318**	*e*P		**P**	**22 54 49.9**	**-0.6**
	comp=Z,3.3nm,0.9s							
IRM	**Iron Mountain**	**90.54**	**55**	P		**P**	**22 54 52.2**	**+1.2**
	baz=258							
ZALV	**Zalesovo Beam**	**90.73**	**325**	P		**P**	**22 54 49.1**	**-2.1**
	comp=Z,0.8nm,0.7s,baz=49,slow=4.5,SNR=5.0							
ZALV					LR	LR	23 35 38.2	
	comp=Z,71nm,20.1s,baz=70,slow=36							
INK	**Inuvik**	**90.91**	**20**	P		**P**	**22 54 50.1**	**-1.7**
	comp=Z,1.0nm,0.9s,baz=239,slow=7.9,SNR=3.0							
SYO	**Syowa Base**	**90.92**	**198**	*e*P		**P**	**22 54 50.6**	**-1.3**
R11A	**Troy Canyon, C**	**91.09**	**51**	P		**P**	**22 54 54.5**	**+0.9**
	baz=257							
R11A	**Troy Canyon, C**	**91.09**	**51**	*e*P		**P**	**22 54 54.7**	**+1.1**
	comp=Z,12nm,1.1s							
H06S1	**SOCORRO T**	**91.16**	**71**	T		T	00 35 14.3	
H06E1	**SOCORRO T-PHAS**	**91.19**	**71**	T		T	00 35 12.8	
BMO	**Blue Mountains**	**91.31**	**45**	*e*P		**P**	**22 54 54.9**	**+0.6**
BMO	**Blue Mountains**	**91.31**	**45**	*e*P		**P**	**22 54 54.9**	**+0.6**
BMO					*e*pP	**sP**	**22 55 05.4**	**-1.4**
F10A	**Beach Ranch, E**	**91.62**	**44**	*e*P		**P**	**22 54 56.5**	**+0.8**
	comp=Z,20nm,1.1s							
ELK	**Elko**	**91.87**	**49**	*e*P		**P**	**22 54 59.0**	**+1.8**
ELK	**Elko**	**91.87**	**49**	*e*P		**P**	**22 54 59.0**	**+1.8**
ELK					*e*pP	**sP**	**22 55 09.0**	**-0.7**
MFID	**Camas Ranch**	**92.02**	**46**	*e*P		**P**	**22 54 58.1**	**+0.4**
MFID					*e*pP	**sP**	**22 55 09.5**	**-0.7**
NEW	**Newport**	**92.23**	**41**	P		**P**	**22 54 58.1**	**-0.3**
	comp=Z,2.0nm,0.6s,baz=293,slow=7.7,SNR=3.3							
NEW	**Newport**	**92.23**	**41**	P		**P**	**22 54 59.1**	**+0.7**
	baz=257							
NEW	**Newport**	**92.23**	**41**	*e*P		**P**	**22 54 58.8**	**+0.4**
NEW					*e*pP	**sP**	**22 55 09.6**	**-1.3**
LCMT	**Little Creek M**	**92.64**	**53**	*e*P		**P**	**22 55 00.8**	**0.0**
	comp=Z,9.0nm,1.3s							
KNB	**Kanab**	**92.97**	**53**	*e*P		**P**	**22 55 01.0**	**-1.3**
KNB					*e**PP	**sP**	**22 55 14.6**	**-0.2**
KNB	**Kanab**	**92.97**	**53**	*e*P		**P**	**22 55 00.9**	**-1.3**
KNB					*e*pP	**sP**	**22 55 14.6**	**-0.2**
HLID	**Hailey**	**93.06**	**46**	P		**P**	**22 55 03.3**	**+0.7**
	baz=258							
HLID	**Hailey**	**93.06**	**46**	*e*P		**P**	**22 55 03.0**	**+0.4**
HLID					*e*pP	**sP**	**22 55 13.4**	**-1.7**
KSH	**Kashi**	**93.17**	**309**	*e*P		**P**	**22 55 02.9**	**-0.2**
KSH					*es*P	sP	22 55 17.8	+2.2
KSH					SKS	**SKSac**	**23 05 32.3**	**-3.3**
KSH					S	**S**	**23 06 03.3**	**-5.2**
KSH					SS	**SS**	**23 12 24.5**	**+0.2**
KSH					pmax	pmax		
	comp=Z,110nm,5.1s							
KSH					LR	LR		
	comp=Z,130nm,8.1s							
KSH					LR	LR		
	comp=Z,98nm,6.3s							
KSH					LR	LR		
	comp=Z,130nm,5.9s							
KURK	**Kurchatov**	**93.59**	**321**	P		**P**	**22 55 03.2**	**-1.4**
KURK					pmax	pmax		
	comp=Z,1.0nm,0.9s							
KURK	**Kurchatov**	**93.59**	**321**	*e*P		**P**	**22 55 02.5**	**-2.1**
KURK					*e*pP	**pP**	**22 55 13.6**	**-0.2**
KURBB	**Kurchatov Arra**	**93.63**	**321**	P		**P**	**22 55 03.2**	**-1.6**
	comp=Z,1.2nm,0.8s,baz=106,slow=3.1,SNR=14							
MSU	**Marysvale**	**93.75**	**52**	*e*P		**P**	**22 55 05.5**	**-0.4**
MSU					*e**PP	**sP**	**22 55 18.4**	**-0.1**
MSU	**Marysvale**	**93.75**	**52**	*e*P		**P**	**22 55 05.5**	**-0.4**
MSU					*e*pP	**sP**	**22 55 18.4**	**-0.1**
NRIK	**Noril'sk**	**94.24**	**340**	P		P	22 55 03.7	-3.5
	comp=Z,0.5nm,0.3s,baz=118,slow=2.8,SNR=2.8							
NRIK					LR	LR	23 36 30.0	
	comp=Z,171nm,21.6s,baz=107,slow=35							
WALA	**Waterton Lakes**	**94.47**	**41**	*e*P		**P**	**22 55 08.6**	**-0.3**
WALA					*e*pP	**sP**	**22 55 21.3**	**-0.1**
PDAR	**Pinedale Array**	**96.42**	**48**	P		**P**	**22 55 17.0**	**-1.0**
	comp=Z,0.2nm,0.4s,baz=180,slow=0.9,SNR=4.6							
YKA	**Yellowknife Ar**	**96.57**	**28**	P		**P**	**22 55 16.9**	**-1.0**
	comp=Z,1.1nm,0.8s,baz=258,slow=4.8,SNR=22							
YKB5	**Yellowknife Ar**	**96.57**	**28**	*e*P		**P**	**22 55 16.5**	**-1.4**
YKB5					*e*pP	**pP**	**22 55 26.6**	**-0.5**
EGMT	**Eagleton**	**97.03**	**43**	*e*P		**P**	**22 55 20.6**	**+0.1**
EGMT					*e*pP	**sP**	**22 55 31.8**	**-1.2**
ANMO	**Albuquerque**	**97.74**	**56**	*ce*P		Pdif	22 55 26.0	+1.8
ANMO					pmax	pmax		
	comp=Z,5.0nm,2.5s							
BVAR	**Borovoye Array**	**98.99**	**322**	P		**P**	**22 55 27.9**	**-1.1**
	comp=Z,0.9nm,0.8s,baz=64,slow=9.8,SNR=3.7							
BVAR					LR	LR	23 42 18.9	
	comp=Z,97nm,19.4s,baz=76,slow=37							
TXAR	**Lajitas Array**	**99.39**	**62**	LR		LR	23 31 33.6	
	comp=Z,133nm,21.9s,baz=0.0,slow=30							
ARCES	**ARCESS Array B**	**114.81**	**344**	PKP		PKPdf	23 00 28.2	-0.3
	comp=Z,2.8nm,1.0s,baz=103,slow=1.6,SNR=6.2							
KIV	**Kislovodsk**	**117.88**	**314**	*e*PKIKP		**PKPdf**	**23 00 31.5**	**-3.8**
KIV					pmax	pmax		
	comp=Z,7.0nm,0.9s							
LPAZ	**La Paz**	**124.18**	**118**	PKP		**PKPdf**	**23 00 48.7**	**-0.2**
	comp=Z,0.8nm,0.7s,baz=264,slow=4.6,SNR=3.2							
TORD	**Torodi Ar. Bea**	**159.98**	**279**	PKP		**PKPdf**	**23 01 48.9**	**+0.2**
	comp=Z,0.5nm,1.0s,baz=7.7,slow=0.8,SNR=2.9							
TORD					PKPab	**PKPab**	**23 02 28.1**	**-0.2**
	comp=Z,0.8nm,0.8s,baz=100,slow=2.4,SNR=4.5							

IDC ***14*** *22:45:52.6±1.4, 33°.04S×178°.20W, h0km, mb4.3/4, mb1 4.4/5, mb1mx3.9/46, mbtmp4.3/5, ML3.6/1, Error ellipse: s-maj=46.9km s-min=27.5km az=147.0*
ISCJB ***14*** *22:45:54.7±2.0, 33°.1S±0°.1×178°.1W±0°.3, h34km, mb4.3/7, Error ellipse: s-maj=36.4km s-min=11.6km az=14.2*
NEIC ***14*** *22:46:00.2±2.6, 33°.17S×178°.30W, h54km±20km, mb4.2/3, Error ellipse: s-maj=25.2km s-min=15.5km az=52.0*
ISC 14 22:45:57.3±1.2, 33°.1S±0°.1×178°.1W±0°.2, h34km, n23, σ0s75/20, mb4.2/7, South of Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
URZ	**Urewera**	**6.50**	**216**	Pn	**Pn**	**22 47 29.7**	**-0.8**
	1.3nm,0.3s,baz=268,slow=4.1,SNR=12						
URZ				Sn	**Sn**	**22 48 44.3**	**+0.8**
	9.1nm,0.3s,baz=155,slow=16,SNR=7.7						
URZ	**Urewera**	**6.50**	**216**	*e*Pn	**Pn**	**22 47 30.1**	**-0.5**
URZ				Sn	**Sn**	**22 48 44.3**	**+0.8**
OUZ	**Omahuta**	**7.24**	**250**	*e*Pn	**Pn**	**22 47 40.9**	**+0.3**
HNR	**Honiara**	**31.05**	**314**	*e*P	**P**	**22 52 12.2**	**+0.1**
	29nm,0.4s						
CTA	**Charters Tower**	**34.26**	**283**	P	**P**	**22 52 40.7**	**+0.4**
	1.8nm,0.4s,baz=114,slow=12,SNR=7.2						
CTAO	**Charters Tower**	**34.26**	**283**	*e*P	**P**	**22 52 40.3**	**0.0**
	4.9nm,0.8s						
ASAR	**Alice Springs**	**42.98**	**270**	P	**P**	**22 53 52.6**	**-0.8**
	1.6nm,0.6s,baz=110,slow=7.4,SNR=16						
WRAB	**Tennant Creek**	**44.20**	**275**	*e*P	**P**	**22 54 02.2**	**-1.1**
	3.0nm,0.7s						
WRA	**Warramunga Arr**	**44.21**	**275**	P	**P**	**22 54 02.1**	**-1.2**
	3.7nm,0.5s,baz=115,slow=7.5,SNR=18						
FITZ	**Fitzroy Crossi**	**52.35**	**272**	P	**P**	**22 55 05.2**	**-0.9**
	2.2nm,0.7s,baz=129,slow=6.5,SNR=3.9						
CASY	**Casey**	**52.78**	**209**	*e*P	**P**	**22 55 08.6**	**0.0**
	0.5nm,0.5s						
MKAR	**Makanchi Array**	**119.42**	**309**	PKP	**PKPdf**	**23 04 43.4**	**+0.5**
	0.2nm,0.5s,baz=132,slow=0.8,SNR=3.7						

H10S2	**ASCENSION HYDR**	**135.33**	**156**	T		T	01 36 03.4	
	baz=200,slow=74,SNR=6.6							
H10S3	**ASCENSION HYDR**	**135.33**	**156**	T		T	01 35 58.1	
	baz=200,slow=74,SNR=5.7							
H10S1	**ASCENSION HYDR**	**135.34**	**156**	T		T	01 35 59.3	
	baz=200,slow=74,SNR=6.9							
H10N3	**ASCENSION HYDR**	**136.42**	**156**	T		T	01 37 28.1	
	baz=203,slow=75,SNR=6.8							
H10N1	**ASCENSION HYDR**	**136.42**	**156**	T		T	01 37 26.3	
	baz=203,slow=75,SNR=8.2							
H10N2	**ASCENSION HYDR**	**136.44**	**156**	T		T	01 37 32.9	
	baz=203,slow=75,SNR=7.6							
FINES	**FINESS Array B**	**147.61**	**338**	PKPbc		**PKPbc**	**23 05 37.8**	**+0.5**
	2.7nm,0.6s,baz=46,slow=4.1,SNR=35							
NB2	**NORSAR Subarra**	**151.36**	**351**	PKP		**PKPbc**	**23 05 47.4**	**+0.7**
	comp=Z,0.6nm,0.6s,baz=10,slow=2.6							
NOA	**NORSAR Array B**	**151.36**	**351**	PKPbc		**PKPbc**	**23 05 47.9**	**+1.2**
	comp=Z,0.9nm,0.7s,baz=15,slow=4.3,SNR=5.0							
AKASG	**Malin Array Be**	**153.33**	**319**	PKP		**PKPdf**	**23 05 43.6**	**-0.2**
	comp=Z,0.3nm,0.4s,baz=50,slow=1.0,SNR=2.9							
AKASG				PKPbc		**PKPbc**	**23 05 51.0**	**-0.4**
	comp=Z,0.5nm,0.4s,baz=46,slow=2.9,SNR=3.8							
BRTR	**Keskin Array B**	**153.72**	**294**	PKPbc		**PKPbc**	**23 05 53.3**	**+0.5**
	comp=Z,0.5nm,0.5s,baz=153,slow=3.6,SNR=5.7							

IDC ***14*** *22:47:14.1±1.4, 0°.95N×97°.21E, h0km, mb4.1/13, mb1 4.1/15, mb1mx3.8/60, mbtmp4.1/15, ML3.5/2, MS2.9/1, Ms1 2.9/1, ms1mx2.7/43, Error ellipse: s-maj=34.8km s-min=23.8km az=43.0*
ISCJB ***14*** *22:47:16.3±1.0, 1°.0N±0°.1×97°.17E±0°.09, h25km, mb4.2/15, Error ellipse: s-maj=17.9km s-min=12.6km az=169.2*
DJA ***14*** *22:47:18.6±0.5, 2°.N±4°×9°.8E±°, h10km, M3.6/7, MLv3.6/7*
NEIC ***14*** *22:47:19.2±0.6, 0°.96N×97°.28E, h35km, mb4.0/3, Error ellipse: s-maj=12.6km s-min=10.9km az=86.0*
ISC 14 22:47:17.9±1.0, 1°.0N±0°.1×97°.2E±0°.1, h25km, n30, σ0s79/25, mb4.3/15, Northern Sumatera

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
GSI	**Gunungsitoli**	**0.51**	**47**	P	**Pb**	**22 47 28.5**	**+0.1**
TPTI		**2.29**	**360**	P	Pn	22 47 45.7	-8.4
MNSI	**Mandailing Nat**	**2.39**	**94**	P	Pn	22 47 48.9	-6.5
PSI	**Prapat**	**2.52**	**43**	Pn	**Pn**	**22 47 56.4**	**-1.0**
	2.0nm,0.3s,baz=199,slow=8.4,SNR=20						
PSI				Sn	**Sb**	**22 48 34.8**	**+1.6**
	2.9nm,0.3s,baz=50,slow=19,SNR=9.6						
PSI				LR	LR	22 48 45.2	
	comp=Z,247nm,20.1s,baz=286,slow=37						
KCSI	**Kotacane, Aceh**	**2.62**	**13**	P	Pn	22 47 51.0	-7.6
TSI	**Tuntungan**	**2.88**	**28**	P	Pn	22 47 52.6	-10
IPM	**Ipoh**	**5.18**	**47**	*e*Pn	**Pn**	**22 48 33.9**	**-0.1**
	15nm,0.6s						
KULM	**Kulim**	**5.52**	**39**	*e*Pn	**Pn**	**22 48 38.0**	**-0.5**
	29nm,1.0s						
CMAR	**Chiang Mai Arr**	**17.48**	**6**	P	**Pn**	**22 51 19.2**	**-0.9**
	0.2nm,0.3s,baz=196,slow=12,SNR=32						
CHTO	**Chiang Mai**	**17.83**	**5**	*e*Pn	**Pn**	**22 51 22.9**	**-1.6**
	2.0nm,0.7s						
H08S2	**Diego Garcia H**	**26.08**	**250**	T	T	23 19 57.6	
	baz=71,slow=75,SNR=706						
H08S3	**Diego Garcia H**	**26.08**	**251**	T	T	23 19 53.4	
	baz=71,slow=75,SNR=690						
H08S1	**Diego Garcia H**	**26.10**	**250**	T	T	23 19 55.8	
	baz=71,slow=75,SNR=784						
WRA	**Warramunga Arr**	**41.91**	**122**	P	**P**	**22 55 06.7**	**-0.1**
	0.5nm,0.7s,baz=300,slow=9.1,SNR=2.5						
KSAR	**Wonju Array Be**	**46.02**	**34**	P	**P**	**22 55 38.8**	**-0.7**
KSRS	**Korea Array**	**46.05**	**34**	P	**P**	**22 55 38.8**	**-1.0**
	2.8nm,0.7s,baz=226,slow=9.1,SNR=8.9						
SONM	**Songino Array**	**47.37**	**8**	P	**P**	**22 55 50.2**	**+0.1**
	0.7nm,0.5s,baz=191,slow=8.9,SNR=5.4						
SONM				PcP	**PcP**	**22 57 20.4**	**-0.2**
	0.7nm,0.7s,baz=184,slow=3.0,SNR=4.7						
MKAR	**Makanchi Array**	**47.48**	**346**	P	**P**	**22 55 51.4**	**+0.6**
	1.1nm,0.4s,baz=161,slow=8.9,SNR=13						
KURBB	**Kurchatov Arra**	**51.97**	**345**	P	**P**	**22 56 25.4**	**+0.6**
	1.3nm,0.7s,baz=163,slow=7.3,SNR=11						
KURK	**Kurchatov**	**52.03**	**345**	P	**P**	**22 56 25.4**	**+0.1**
USRK	**Ussuriysk Ar.**	**52.98**	**31**	P	**P**	**22 56 32.8**	**+0.3**
	3.1nm,0.8s,baz=220,slow=6.2,SNR=6.3						
ZALV	**Zalesovo Beam**	**53.80**	**351**	P	**P**	**22 56 38.4**	**+0.1**
	4.0nm,0.6s,baz=184,slow=6.6,SNR=16						
KLR	**Kul'dur**	**56.47**	**26**	P	**P**	**22 56 58.1**	**+0.3**
	3.3nm,1.0s,baz=253,slow=5.9,SNR=7.5						
BVAR	**Borovoye Array**	**56.48**	**341**	P	**P**	**22 56 56.9**	**-0.9**
	1.4nm,0.7s,baz=126,slow=7.5,SNR=5.8						
ABKAR	**Akbulak array**	**57.73**	**332**	*e*P	**P**	**22 57 06.9**	**+0.3**
	0.9nm,0.7s						
NRIK	**Noril'sk**	**68.57**	**356**	P	**P**	**22 58 18.2**	**0.0**
	1.3nm,0.5s,baz=126,slow=3.8,SNR=3.2						
PETK	**Petropavlovsk-**	**71.94**	**33**	P	**P**	**22 58 39.1**	**0.0**
	3.3nm,0.9s,baz=260,slow=8.6,SNR=3.0						
TIXI	**Tiksi**	**73.43**	**10**	P	**P**	**22 58 46.5**	**-1.1**
	1.0nm,0.3s,baz=312,slow=1.8,SNR=3.4						
GERES	**GERESS Array B**	**85.00**	**319**	P	**P**	**22 59 52.6**	**+1.2**
	0.1nm,0.3s,baz=116,slow=2.3,SNR=3.5						
KBS	**Kingsbay**	**88.16**	**349**	*e*P	**P**	**23 00 06.9**	**+0.8**
	39nm,0.9s						

JMA ***14*** *22:48:43.5±0.3, 43°.66N×147°.25E, h22km, M3.5*
SKHL ***14*** *22:48:43.8±0.3, 43°.74N×147°.41E, h36km±2km, mb4.5/3*
ISC 14 22:48:42.4±2.7, 43°.66N±0°.10×147°.5E±0°.1, h34km±3km, n13, σ1s10/21, Kuril Islands

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
SHO	**Shikotan**	**0.52**	**294**	*e*P	**Pb**	**22 48 53.3**	**-0.1**
SHO				AMB	AMB	22 48 54.1	
	210nm,0.2s						
SHO				*i* S	**Sb**	**22 49 00.2**	**-0.8**
SHO				A	A	22 49 01.8	
	4μm,0.3s						
SHO				A	A	22 49 01.8	
	2μm,0.3s						
YUK	**Yuzh-Kuril'sk**	**1.24**	**288**	*i* P	**Pn**	**22 49 02.9**	**-0.3**
YUK				AMB	AMB	22 49 04.6	
	60nm,0.3s						
YUK				AMB	AMB	22 49 04.6	
	170nm,0.3s						
YUK				AMB	AMB	22 49 04.6	
	300nm,0.3s						
YUK				*i* S	**Sn**	**22 49 17.4**	**-1.4**
YUK				A	A	22 49 20.0	
	670nm,0.3s						
YUK				A	A	22 49 20.0	
	910nm,0.3s						
NEM2	**Nemuro 2**	**1.31**	**258**	P	**Pn**	**22 49 04.1**	**-0.1**
NEM2				*e*S	**Sn**	**22 49 18.9**	**-1.5**
KUR	**Kuril'sk**	**1.60**	**10**	*e*P	**Pn**	**22 49 08.3**	**+0.1**
KUR				AMB	AMB	22 49 09.7	
	40nm,0.2s						
KUR				*i* S	**Sn**	**22 49 26.7**	**-0.9**
KUR				A	A	22 49 26.9	
	330nm,0.2s						
KUR				A	A	22 49 26.9	
	130nm,0.2s						
JRA	**Rausu**	**1.74**	**280**	P	**Pn**	**22 49 10.5**	**+0.4**
JRA				*e*S	**Sn**	**22 49 30.2**	**-0.9**
JNK	**Nakash**	**2.02**	**269**	P	**Pn**	**22 49 14.2**	**+0.3**
JAK	**Akkeshi**	**2.15**	**253**	P	**Pn**	**22 49 16.3**	**+0.6**
JAK				*e*S	**Sn**	**22 49 40.2**	**-0.9**
JTKR	**Abashiri--Toko**	**2.61**	**278**	P	**Pn**	**22 49 23.3**	**+1.2**
JTKR				*e*S	**Sn**	**22 49 54.0**	**+1.3**
JAR	**Ashorobuto**	**2.73**	**264**	P	**Pn**	**22 49 25.2**	**+1.4**
JOB	**Onbets**	**2.77**	**255**	P	**Pn**	**22 49 25.6**	**+1.2**
JOB				*e*S	**Sn**	**22 49 56.6**	**-0.1**
JMP	**Maruseppu**	**3.01**	**278**	P	**Pn**	**22 49 28.8**	**+1.1**
JCH	**Churui**	**3.20**	**252**	*e*S	**Sn**	**22 50 06.0**	**-1.1**
YSS	**Yuzh-Sakhalins**	**4.69**	**316**	*e*P	**Pn**	**22 49 52.6**	**+1.9**

JMA 14 22:48:48.1, 37°.04N×140°.66E, h10km±1km, M3.0, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.13**	**61**	P	Pg	22 48 51.2	+0.1
ONAJ				S	Sg	22 48 53.5	+0.2
JFK	**Kawauchi**	**0.37**	**28**	P	Pg	22 48 55.4	0.0
JFK				S	Sg	22 49 00.6	+0.3
JHO	**Hitachi**	**0.43**	**190**	P	Pg	22 48 56.4	-0.2
JHO				S	Sg	22 49 02.6	+0.3
JFT	**Otama**	**0.54**	**332**	P	Pg	22 48 58.9	+0.2
JFT				S	Sg	22 49 06.2	+0.4
JSB	**Shiboa**	**0.60**	**263**	P	Pb	22 49 00.3	-0.4
JMM	**Marumori**	**0.83**	**7**	P	Pg	22 49 03.6	-0.5
JMM				S	Sg	22 49 14.8	-0.2
JFY	**Yanaizu**	**0.85**	**296**	P	Pg	22 49 04.3	-0.1
JFY				S	Sg	22 49 15.2	-0.2
JYT	**Yasato**	**0.89**	**205**	P	Pg	22 49 04.6	-0.7
JYT				S	Sg	22 49 16.3	-0.6
MAT	**Matsushiro**	**2.03**	**257**	P	Pn	22 49 23.6	+1.2
MAT				S	Sb	22 49 50.4	0.0

IDC ***14*** *22:49:01.1±0.7, 36°.87N×143°.96E, h0km, mb3.8/18, mb1 4.1/22, mb1mx3.9/62, mbtmp3.9/22, ML4.0/3, Error ellipse: s-maj=19.6km s-min=16.7km az=96.0*
ISCJB ***14*** *22:49:04.3±0.5, 36°.78N±0°.06×143°.77E±0°.06, h33km, mb3.9/20, Error ellipse: s-maj=8.5km s-min=6.2km az=154.3*
NEIC ***14*** *22:49:05.9±0.5, 36°.81N×143°.94E, h35km, mb4.3/2, Error ellipse: s-maj=13.2km s-min=9.1km az=99.0*
JMA ***14*** *22:49:30.9±0.2, 37°.88N×142°.88E, h54km, M3.6*
ISC 14 22:49:06.6±0.6, 36°.89N±0°.07×143°.79E±0°.08, h35km, n37, σ1s26/39, mb3.9/20, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**2.48**	**310**	P	Pn	22 49 53.5	+9.0
JIO				*e*S	**Sn**	**22 50 10.5**	**-3.1**
JOU	**Okura**	**2.88**	**302**	S	**Sn**	**22 50 21.7**	**-1.8**
MJAR	**Matsushiro Arr**	**4.49**	**267**	Pn	**Pn**	**22 50 13.3**	**+1.1**
	11nm,0.3s,baz=88,slow=15,SNR=16						
MJAR				Sn	**Sn**	**22 51 03.8**	**+0.5**
	4.3nm,0.3s,baz=120,slow=12,SNR=10.0						
MAT	**Matsushiro**	**4.50**	**267**	P	**Pn**	**22 50 13.6**	**+1.4**
MAT				S	**Sn**	**22 51 03.2**	**-0.1**
JHJ	**Hachijo jima 2**	**5.00**	**222**	Pn	**Pn**	**22 50 17.9**	**-1.2**
	18nm,0.3s,baz=344,slow=18,SNR=13						
JHJ				Sn	**Sn**	**22 51 12.1**	**-3.5**
	48nm,0.3s,baz=91,slow=23,SNR=8.1						
ERM	**Erimo**	**5.14**	**355**	*e*Pn	**Pn**	**22 50 18.8**	**-2.3**
	30nm,0.5s						
ASAJ	**Asahikawa**	**7.27**	**353**	Pn	**Pn**	**22 50 47.3**	**-3.0**
	2.4nm,0.3s,baz=203,slow=16,SNR=11						
ASAJ				Sn	Sn	22 52 02.6	-9.0
	1.0nm,0.3s,baz=45,slow=20,SNR=2.6						
ASAJ	**Asahikawa**	**7.27**	**353**	*e*Pn	**Pn**	**22 50 49.5**	**-0.8**
ASAJ				Sn	Sn	22 52 02.6	-9.0
CBIJ	**Chichi jima**	**9.86**	**188**	Pn	Pn	22 51 21.4	-4.5
CBIJ				Sn	Sn	22 53 04.5	-11
JCJ	**Chichijima**	**9.86**	**188**	Pn	Pn	22 51 21.4	-4.5
	5.4nm,0.3s,baz=281,slow=22,SNR=9.0						
JCJ				Sn	Sn	22 53 04.5	-11
	baz=300,slow=20						
USRK	**Ussuriysk Ar.**	**11.56**	**313**	Pn	**Pn**	**22 51 49.0**	**0.0**
	0.2nm,0.3s,baz=115,slow=13,SNR=3.6						
SONM	**Songino Array**	**29.44**	**304**	P	**P**	**22 55 09.3**	**+2.3**
	1.4nm,0.7s,baz=103,slow=9.0,SNR=2.1						
ZALV	**Zalesovo Beam**	**43.41**	**313**	P	**P**	**22 57 07.1**	**+1.4**
	0.5nm,0.4s,baz=106,slow=5.9,SNR=2.6						
ZALV				PcP	**PcP**	**22 58 53.7**	**+0.2**
	1.6nm,0.6s,baz=76,slow=3.4,SNR=4.4						
MKAR	**Makanchi Array**	**45.80**	**303**	P	**P**	**22 57 25.4**	**+0.6**
	0.7nm,0.8s,baz=87,slow=10.0,SNR=2.3						
KSM	**Kuching**	**46.86**	**229**	*e*P	**P**	**22 57 33.2**	**-0.3**
	2.3nm,0.4s						
KURK	**Kurchatov**	**47.51**	**309**	P	**P**	**22 57 39.1**	**+1.0**
KURBB	**Kurchatov Arra**	**47.58**	**308**	P	**P**	**22 57 39.1**	**+0.4**
	1.1nm,0.6s,baz=81,slow=8.0,SNR=6.8						
ILAR	**Eielson Array**	**48.60**	**32**	P	**P**	**22 57 45.8**	**-0.6**
	0.5nm,0.7s,baz=260,slow=6.1,SNR=4.3						
BVAR	**Borovoye Array**	**52.07**	**313**	P	**P**	**22 58 12.7**	**-0.1**
	0.5nm,0.6s,baz=81,slow=8.9,SNR=2.4						
WRA	**Warramunga Arr**	**57.

MEX 14 23:06:40.5±0.6, 18°47N×102°05W, h46km±30km, MD3.9, Michoacan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ZIIG	**Zihuatanejo**	**1.02**	**147**	*eP*	Pn	23 06 57.0	-1.5
ZIIG				*eS*	Sn	23 07 09.6	-2.0
MMIG	**Aquila**	**1.25**	**262**	*eP*	Pn	23 06 59.5	-2.0
MMIG				*i* S	Sn	23 07 15.3	-1.9
ARIG	**Puente Sto Nin**	**1.62**	**96**	*i* P	Pn	23 07 05.0	-1.7
ARIG				*i* S	Sn	23 07 23.9	-2.6
EZ5V		**1.78**	**304**	*i* P	Pn	23 07 08.0	-1.0
EZ5V				*i* S	Sn	23 07 28.2	-2.5
R15V		**1.96**	**291**	*eP*	Pn	23 07 09.9	-1.5
R15V				*i* S	Sn	23 07 32.9	-1.9
CAIG	**El Cayaco**	**2.21**	**130**	*eP*	Pn	23 07 12.8	-1.9
CAIG				*i* S	Sn	23 07 38.8	-2.0
MEIG	**Mezcala**	**2.37**	**103**	*eP*	Pn	23 07 15.9	-1.0
MEIG				*i* S	Sn	23 07 42.4	-2.5
PLIG	**Platanillo**	**2.42**	**91**	*eP*	Pn	23 07 16.8	-0.8
PLIG				*i* S	Sn	23 07 44.0	-2.0

*IDC **14** 23:07:24.8±0.9, 35°.49N×142°.05E, h0km, mb3.6/7, mb1 3.9/9, mb1mx3.6/46, mbtmp3.7/9, ML3.8/2, MS4.0/8, Ms1 4.0/8, ms1mx3.3/47, Error ellipse: s-maj=24.9km s-min=19.5km az=63.0*

*ISCJB **14** 23:07:26.8±0.7, 35°.63N±0°.07×142°.04E±0°.06, h22km, mb3.6/7, MS4.1/8, Error ellipse: s-maj=9.6km s-min=7.1km az=9.8*

*JMA **14** 23:07:27.6±0.3, 35°.74N×142°.06E, h37km±4km, M3.4*

ISC 14 23:07:27.9±0.8, 35°.65N±0°.06×142°.06E±0°.07, h22km, n34, σ1§55/25, mb3.5/7, MS4.0/8, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.98**	**273**	P	**Pb**	**23 07 45.3**	**-0.8**
BSO1	**Boso 1**	**1.33**	**222**	P	**Pn**	**23 07 51.4**	**+0.8**
BSO1				*eS*	**Sb**	**23 08 09.1**	**+0.9**
JAG	**Ashikaga**	**2.25**	**291**	P	**Pn**	**23 08 03.0**	**-0.7**
JAG				*eS*	**Sn**	**23 08 29.5**	**-1.2**
JFT	**Otama**	**2.32**	**324**	P	**Pn**	**23 08 04.7**	**0.0**
JOD2	**Odawara 2**	**2.45**	**262**	P	**Pn**	**23 08 08.1**	**-0.5**
JOD2				*eS*	**Sn**	**23 08 35.2**	**-0.7**
JKT	**Katashina**	**2.53**	**297**	P	**Pn**	**23 08 07.6**	**-0.1**
JRY	**Ryogami san**	**2.59**	**279**	P	**Pn**	**23 08 08.6**	**+0.2**
JHJ	**Hachijo jima 2**	**3.15**	**217**	Sn	**Sn**	**23 08 48.3**	**-4.7**
	111nm,0.3s,baz=239,slow=19,SNR=3.7						
MJAR	**Matsushiro Arr**	**3.24**	**287**	Pn	**Pn**	**23 08 17.8**	**+0.5**
	2.3nm,0.3s,baz=86,slow=11,SNR=6.5						
MJAR				Sn	**Sn**	**23 08 56.2**	**+0.9**
	2.8nm,0.3s,baz=100,slow=6.5,SNR=6.6						
MAT	**Matsushiro**	**3.24**	**287**	P	**Pn**	**23 08 18.6**	**+1.2**
MAT				S	**Sn**	**23 08 53.2**	**-2.1**
ASAJ	**Asahikawa**	**8.46**	**3**	Pn	**Pn**	**23 09 27.5**	**-1.6**
	0.9nm,0.3s,baz=270,slow=19,SNR=3.3						
ASAJ				Sn	**Sn**	**23 11 00.8**	**-3.1**
	0.4nm,0.3s,baz=24,slow=20,SNR=2.1						
JCJ	**Chichijima**	**8.53**	**179**	Pn	Pn	23 09 25.4	-4.6
	5.2nm,0.3s,baz=299,slow=23,SNR=6.7						
JCJ				Sn	Sn	23 10 56.7	-9.0
	2.5nm,0.3s,baz=294,slow=20,SNR=2.4						
H11N2	**WAKE ISLAND Hy 27.01**	**119**		T	T	23 41 40.1	
	baz=311,slow=75,SNR=34						
H11N1	**WAKE ISLAND Hy 27.02**	**119**		T	T	23 41 08.2	
	baz=311,slow=75,SNR=35						
H11N3	**WAKE ISLAND Hy 27.03**	**119**		T	T	23 41 11.7	
	baz=311,slow=75,SNR=36						
H11S1	**WAKE ISLAND Hy 27.68**	**122**		T	T	23 42 07.9	
	baz=314,slow=76,SNR=32						
H11S3	**WAKE ISLAND Hy 27.68**	**122**		T	T	23 42 05.0	
	baz=314,slow=76,SNR=21						
H11S2	**WAKE ISLAND Hy 27.70**	**122**		T	T	23 42 03.9	
	baz=314,slow=76,SNR=18						
SONM	**Songino Array**	**29.00**	**306**	P	**P**	**23 13 27.2**	**+1.2**
	0.3nm,0.5s,baz=112,slow=8.7,SNR=3.0						
ZALV	**Zalesovo Beam**	**43.23**	**313**	P	**P**	**23 15 27.5**	**+0.3**
	0.5nm,0.6s,baz=85,slow=4.9,SNR=2.7						
MKAR	**Makanchi Array**	**45.30**	**303**	P	**P**	**23 15 44.9**	**+1.0**
	0.5nm,0.6s,baz=92,slow=9.6,SNR=6.3						
ILAR	**Eielson Array**	**50.39**	**32**	P	**P**	**23 16 24.4**	**+1.4**
	0.5nm,0.8s,baz=271,slow=8.0,SNR=5.2						
AAK	**Ala-Archa**	**51.61**	**300**	LR	LR	23 39 56.4	
	comp=Z,99nm,19.7s,baz=64,slow=38						
WRA	**Warramunga Arr**	**55.77**	**189**	P	**P**	**23 17 02.6**	**-0.6**
	1.2nm,0.5s,baz=8.5,slow=7.3,SNR=8.1						
ARU	**Arti**	**57.74**	**319**	LR	LR	23 44 42.5	
	comp=Z,97nm,20.6s,baz=76,slow=39						
ASAR	**Alice Springs**	**59.50**	**189**	P	**P**	**23 17 29.1**	**-0.2**
	0.6nm,0.7s,baz=17,slow=5.3,SNR=6.6						
FINES	**FINESS Array B**	**70.28**	**333**	LR	LR	23 51 52.6	
	comp=Z,218nm,18.4s,baz=44,slow=38						
NVAR	**Mina Array Bea**	**75.40**	**53**	P	**P**	**23 19 11.4**	**+1.2**
	0.4nm,0.7s,baz=283,slow=10,SNR=2.5						
NOA	**NORSAR Array B**	**75.66**	**338**	LR	LR	23 58 11.6	
	comp=Z,71nm,18.2s,baz=55,slow=40						
AKASG	**Malin Array Be**	**75.71**	**323**	LR	LR	23 54 52.9	
	comp=Z,86nm,21.6s,baz=15,slow=38						
BRTR	**Keskin Array B**	**80.16**	**312**	LR	LR	23 57 54.9	
	comp=Z,141nm,19.4s,baz=71,slow=38						
GERES	**GERESS Array B**	**84.16**	**329**	LR	LR	00 01 55.9	
	comp=Z,144nm,18.5s,baz=32,slow=39						
ESDC	**Sonseca Array**	**98.76**	**334**	LR	LR	00 09 47.2	
	comp=Z,75nm,18.5s,baz=330,slow=38						
LPAZ	**La Paz**	**146.91**	**62**	PKPbc	**PKPbc**	**23 27 09.2**	**-0.6**
	0.4nm,0.5s,baz=243,slow=6.8,SNR=2.5						

*ATH **14** 23:11:18.2, 36°.15N×28°.20E, h68km±3km, ML2.7/2, Error ellipse: s-maj=3.5km s-min=1.6km az=79.0*

*ISK **14** 23:11:18.6, 36°.17N×28°.19E, h20km, MD2.8*

*CSEM **14** 23:11:19.5±0.2, 36°.15N×28°.22E, h60km, ML2.7, Error ellipse: s-maj=4.7km s-min=3.5km az=156.0*

*DDA **14** 23:11:20.9, 36°.77N×28°.60E, h7km, Md3.0*

ISC 14 23:11:18.6±1.3, 36°.16N±0°.03×28°.21E±0°.03, h21km±5km, n41, σ0§63/62, Dodecanese Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ARG	**Arkhangelos**	**0.09**	**312**	P	Pb	23 11 29.6	+6.9
ARG				S	Sb	23 11 35.6	+10
DALY	**Dalyan (Mu¨la**	**0.75**	**29**	*ePG*	**Pn**	**23 11 33.8**	**-0.1**
DALY	**Dalyan (Mu¨la**	**0.75**	**29**	*ePg*	**Pn**	**23 11 33.8**	**-0.1**
TURN	**Turunc**	**0.78**	**24**	*i* P	**Pn**	**23 11 33.9**	**-0.4**
TURN				*i* S	**Sb**	**23 11 44.3**	**+0.7**
TURN	**Turunc**	**0.78**	**24**	P	**Pn**	**23 11 33.9**	**-0.4**
TURN				S	**Sb**	**23 11 44.3**	**+0.7**
FETY	**Fethiye**	**0.85**	**56**	*ePG*	**Pn**	**23 11 35.7**	**+0.3**
FETY				*eSG*	**Sn**	**23 11 48.3**	**+1.1**
FETY	**Fethiye**	**0.85**	**56**	*ePg*	**Pn**	**23 11 35.7**	**+0.3**
FETY				*eSg*	**Sn**	**23 11 48.3**	**+1.1**
NIS1	**Nisyros Isl.**	**0.94**	**298**	*ePG*	**Pn**	**23 11 36.8**	**+0.3**
NIS1	**Nisyros Isl.**	**0.94**	**298**	P	**Pn**	**23 11 36.9**	**+0.3**
NIS1				S	**Sn**	**23 11 50.0**	**+0.6**
NIS1	**Nisyros Isl.**	**0.94**	**298**	P	**Pn**	**23 11 36.9**	**+0.3**
NIS1				S	**Sn**	**23 11 50.0**	**+0.6**
NIS1				AML	AML	23 11 53.1	
	comp=E,793μm,0.2s						
NIS1				AML	AML	23 11 53.2	
	comp=N,483μm,0.3s						
YER	**Yerkesik**	**0.98**	**4**	*ePG*	**Pn**	**23 11 37.4**	**+0.3**
YER	**Yerkesik**	**0.98**	**4**	*ePg*	**Pn**	**23 11 37.4**	**+0.3**
KARP	**Karpathos**	**1.04**	**235**	*ePG*	**Pn**	**23 11 38.5**	**+0.5**
KARP	**Karpathos**	**1.04**	**235**	P	**Pn**	**23 11 38.5**	**+0.5**
KARP				S	**Sb**	**23 11 51.0**	**-0.3**
KARP	**Karpathos**	**1.04**	**235**	P	**Pn**	**23 11 38.5**	**+0.5**
KARP				S	**Sb**	**23 11 51.0**	**-0.3**
KARP				AML	AML	23 11 52.6	
	comp=E,771μm,0.1s						
KARP				AML	AML	23 11 52.7	
	comp=N,897μm,0.1s						
BDRM	**Kayabasi**	**1.09**	**326**	*i* P	**Pn**	**23 11 37.5**	**-1.2**
BDRM				*i* S	**Sn**	**23 11 53.5**	**+0.4**
BDRM	**Kayabasi**	**1.09**	**326**	P	**Pn**	**23 11 37.5**	**-1.2**
BDRM				S	**Sn**	**23 11 53.5**	**+0.4**
KSL	**Kastellorizon**	**1.11**	**90**	P	**Pb**	**23 11 39.3**	**+0.2**
KSL				S	**Sb**	**23 11 52.9**	**-0.3**
KSL	**Kastellorizon**	**1.11**	**90**	P	**Pb**	**23 11 39.4**	**+0.2**
KSL				S	**Sb**	**23 11 52.9**	**-0.3**
AKAS	**Kas**	**1.13**	**86**	*i* P	**Pb**	**23 11 39.6**	**0.0**
AKAS				*i* S	**Sb**	**23 11 53.6**	**-0.3**
AKAS	**Kas**	**1.13**	**86**	P	**Pb**	**23 11 39.6**	**0.0**
AKAS				S	**Sb**	**23 11 53.6**	**-0.3**
BODT	**Bodrum**	**1.16**	**322**	*ePN*	**Pb**	**23 11 40.0**	**+0.1**
BODT	**Bodrum**	**1.16**	**322**	*ePn*	**Pb**	**23 11 40.0**	**+0.1**
AYDN	**Tasoluk**	**1.52**	**350**	*i* P	**Pb**	**23 11 46.0**	**-0.2**
AYDN				*i* S	**Sn**	**23 12 04.0**	**+0.2**
AYDN	**Tasoluk**	**1.52**	**350**	P	**Pb**	**23 11 46.0**	**-0.2**
AYDN				S	**Sn**	**23 12 04.0**	**+0.2**
AYDB	**Zeytinkoy-Aydi**	**1.80**	**352**	*ePN*	**Pn**	**23 11 49.1**	**+0.6**
AYDB	**Zeytinkoy-Aydi**	**1.80**	**352**	*ePn*	**Pn**	**23 11 49.1**	**+0.6**
SMG	**Samos**	**1.90**	**325**	P	**Pn**	**23 11 50.0**	**+0.3**
SMG				S	**Sn**	**23 12 11.6**	**-1.4**
SMG	**Samos**	**1.90**	**325**	P	**Pn**	**23 11 50.0**	**+0.3**
SMG				S	**Sn**	**23 12 11.6**	**-1.4**
ZKR	**Zakros**	**1.93**	**238**	P	**Pn**	**23 11 50.2**	**+0.1**
ZKR				S	**Sn**	**23 12 13.4**	**-0.3**
ZKR	**Zakros**	**1.93**	**238**	P	**Pn**	**23 11 50.2**	**+0.1**
ZKR				S	**Sn**	**23 12 13.4**	**-0.3**
NPS	**Neapolis**	**2.29**	**248**	P	**Pn**	**23 11 54.4**	**-0.7**
NPS	**Neapolis**	**2.29**	**248**	P	**Pn**	**23 11 54.4**	**-0.7**
APE	**Apeiranthos**	**2.34**	**294**	P	**Pn**	**23 11 56.4**	**+0.6**
APE	**Apeiranthos**	**2.34**	**294**	P	**Pn**	**23 11 56.4**	**+0.6**
KULA	**Kula-Manisa**	**2.38**	**9**	*ePN*	**Pn**	**23 11 56.5**	**+0.1**
KULA	**Kula-Manisa**	**2.38**	**9**	*ePn*	**Pn**	**23 11 56.5**	**+0.1**
BLCB	**Balcova**	**2.41**	**338**	*ePN*	**Pn**	**23 11 57.8**	**+1.1**
BLCB	**Balcova**	**2.41**	**338**	*ePn*	**Pn**	**23 11 57.8**	**+1.1**
KHAL	**Karahalli**	**2.44**	**25**	*i* P	**Pn**	**23 11 56.9**	**-0.3**
KHAL				*i* S	**Sn**	**23 12 24.9**	**-1.5**
KHAL	**Karahalli**	**2.44**	**25**	P	**Pn**	**23 11 56.9**	**-0.3**
KHAL				S	**Sn**	**23 12 24.9**	**-1.5**

*ISCJB **14** 23:12:42.1±0.8, 20°.42S±0°.04×69°.24W±0°.09, h105km±7km, mb3.4/2, Error ellipse: s-maj=13.8km s-min=5.8km az=174.3*

*GUC **14** 23:12:42.5±0.5, 20°.41S×69°.21W, h93km±2km, ML4.0*

*IDC **14** 23:13:00.9±7.2, 18°.50S×69°.28W, h250km±42km, mb3.0/2, mb1 3.1/3, mb1mx2.9/29, mbtmp3.4/3, Error ellipse: s-maj=107.8km s-min=52.7km az=19.0*

ISC 14 23:12:42.7±1.2, 20°.43S±0°.04×69°.25W±0°.08, h97km±9km, n13, σ0§94/22, 2C, Northern Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PB08	**IPOC Station P**	**0.30**	**17**	*i* P	**Pn**	**23 12 57.1**	**-0.4**
PB08				*i* S	**Sn**	**23 13 08.3**	**-0.2**
PB08				IAML		23 13 08.9	
	comp=E,12μm,0.2s						
HMBC	**Humberstone**	**0.62**	**284**	*i* P	**Pn**	**23 12 59.6**	**+0.3**
HMBC				*i* S	**Sn**	**23 13 12.0**	**+0.3**
PB01	**IPOC Station P**	**0.65**	**200**	*i* P	**Pn**	**23 12 59.7**	**+0.1**
PB01				*i* S	**Sn**	**23 13 12.6**	**+0.4**
PB01				IAML		23 13 14.3	
	comp=E,5μm,0.1s						
PB11	**IPOC Station P**	**0.77**	**330**	*i* P	**Pn**	**23 13 00.6**	**-0.2**
PB11				*i* S	**Sn**	**23 13 14.2**	**0.0**
PATCX	**Punta Patache**	**0.93**	**245**	*i* P	**Pn**	**23 13 02.8**	**+0.5**
PATCX				*i* S	**Sn**	**23 13 17.9**	**+0.9**
PSGC	**Pisagua**	**1.17**	**315**	*i* P	**Pn**	**23 13 05.3**	**+0.3**
PSGC				*i* S	**Sn**	**23 13 22.3**	**+0.6**
MNMC	**Minye Minye**	**1.33**	**346**	*eP*	**Pn**	**23 13 07.8**	**+0.7**
MNMC				*eS*	**Sn**	**23 13 26.3**	**+0.8**
MNMC				IAML		23 13 29.4	
	comp=N,3μm,0.2s						
PB09	**IPOC Station P**	**1.36**	**180**	*i* P	**Pn**	**23 13 08.0**	**+0.7**
PB09				*i* S	**Sn**	**23 13 26.8**	**+0.9**
PB09				IAML		23 13 28.4	
	comp=N,5μm,0.6s						
PB07	**IPOC Station P**	**1.42**	**205**	*i* P	**Pn**	**23 13 08.5**	**+0.4**
PB07				*eS*	**Sn**	**23 13 28.2**	**+1.0**
PB12	**IPOC Station P**	**2.07**	**330**	*i* P	**Pn**	**23 13 16.4**	**+0.2**
PB12				*eS*	**Sn**	**23 13 41.7**	**-0.1**
LPAZ	**La Paz**	**4.25**	**15**	P	**Pn**	**23 13 48.5**	**+2.6**
	comp=N,1.8nm,0.3s,baz=200,slow=6.2,SNR=58						
LPAZ				S	Sn	23 14 26.3	-8.5
	comp=N,0.4nm,0.3s,baz=179,slow=5.5,SNR=4.0						
TORD	**Torodi Ar. Bea**	**77.30**	**71**	P	**P**	**23 24 25.2**	**-1.9**
	comp=N,0.4nm,0.4s,baz=251,slow=5.3,SNR=16						
YKA	**Yellowknife Ar**	**90.08**	**341**	P	P	23 25 23.3	-7.8
	comp=N,0.1nm,0.4s,baz=128,slow=4.0,SNR=2.3						

JMA 14 23:28:00.4±0.2, 38°.72N×144°.00E, h32km, M3.6, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**1.85**	**282**	P	Pn	23 28 31.1	+1.2
JTH	**Tanohata**	**2.06**	**307**	P	Pn	23 28 34.0	+1.3
JMK	**Ichinoseki**	**2.18**	**277**	P	Pn	23 28 36.1	+1.6
JMK				*eS*	Sn	23 29 02.5	+2.1
JOM	**Ohasama**	**2.24**	**290**	S	Sn	23 29 04.1	+2.4

*NIED **14** 23:31:00, 39°.00N×142°.40E, h26km, Mw4.1 Best double couple: M0 1.76000×10^15 NP1:φs146.00000°, δ49.00000°, λ-56.00000°. NP2:φs280.00000°, δ51.00000°, λ-123.00000°.*

*IDC **14** 23:31:44.9±0.6, 38°.92N×142°.43E, h0km, mb4.0/26, mb1 4.2/30, mb1mx4.1/45, mbtmp4.1/30, ML3.8/2, MS3.2/5, Ms1 3.2/5, ms1mx2.9/56, Error ellipse: s-maj=15.4km s-min=13.1km az=121.0*

*ISCJB **14** 23:31:47.1±0.4, 38°.97N±0°.04×142°.55E±0°.04, h27km, mb4.2/35, Error ellipse: s-maj=5.9km s-min=3.9km az=146.1*

*MOS **14** 23:31:48.7±1.1, 39°.03N×142°.55E, h39km, mb4.3/5, Error ellipse: s-maj=9.9km s-min=6.6km az=82.6*

*JMA **14** 23:31:49.0±0.1, 39°.05N×142°.44E, h34km±2km, M4.3*

JMA Felt III J1.

*NEIC **14** 23:31:50.6±0.7, 38°.92N×142°.53E, h41km±6km, mb4.8/5, Error ellipse: s-maj=9.0km s-min=6.0km az=126.0*

NEIC Recorded [3 JMA] in Iwate.

ISC 14 23:31:48.6±0.5, 38°.92N±0°.04×142°.49E±0°.05, h27km, n84, σ1§53/83, mb4.2/35, 5C, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**0.66**	**284**	P	**Pb**	**23 32 00.8**	**-0.7**
OFUJ				S	**Sb**	**23 32 09.2**	**-1.2**
MIYJ	**Miyakonagasawa**	**0.84**	**321**	P	**Pb**	**23 32 02.4**	**-2.1**
MIYJ				S	**Sb**	**23 32 12.0**	**-3.4**
JMK	**Ichinoseki**	**0.99**	**272**	P	**Pn**	**23 32 06.2**	**-0.5**
JMK				S	**Sb**	**23 32 18.5**	**-1.3**
JOM	**Ohasama**	**1.08**	**301**	P	**Pn**	**23 32 07.0**	**-1.0**
JTH	**Tanohata**	**1.12**	**334**	P	**Pn**	**23 32 06.7**	**-1.8**
OKU	**Okura**	**1.54**	**249**	P	**Pn**	**23 32 14.6**	**+0.4**
JOU				S	**Sn**	**23 32 33.9**	**+0.6**
JYK	**Kaneyama**	**1.67**	**270**	P	**Pn**	**23 32 16.5**	**+0.5**
ERM	**Erimo**	**3.13**	**9**	*ceP*	**Pn**	**23 32 35.8**	**-0.3**
ERM				pmax	pmax		
	comp=Z,55nm,1.7s						
ERM	**Erimo**	**3.13**	**9**	*ePn*	**Pn**	**23 32 35.7**	**-0.4**
MJAR	**Matsushiro Arr**	**4.15**	**236**	Pn	**Pn**	**23 32 52.9**	**+2.8**
	comp=Z,15nm,0.3s,baz=38,slow=12,SNR=75						
MJAR				LR	LR	23 34 53.9	
	comp=Z,327nm,19.0s,baz=65,slow=46						
MAJO	**Matsushiro**	**4.15**	**236**	*eP*	**Pn**	**23 32 52.7**	**+2.6**
MAJO	**Matsushiro**	**4.15**	**236**	*ePn*	**Pn**	**23 32 52.7**	**+2.6**
MAT	**Matsushiro**	**4.15**	**236**	P	**Pn**	**23 32 52.7**	**+2.6**
MAT				S	**Sb**	**23 33 45.9**	**-4.6**
ASAJ	**Asahikawa**	**5.19**	**1**	Pn	**Pn**	**23 33 05.2**	**+0.8**
	comp=Z,3.9nm,0.3s,baz=204,slow=12,SNR=10						
ASAJ				Sn	**Sn**	**23 34 07.0**	**+3.7**
	comp=Z,2.7nm,0.3s,baz=214,slow=33,SNR=4.1						
ASAJ	**Asahikawa**	**5.19**	**1**	*ePn*	**Pn**	**23 33 05.6**	**+1.3**
ASAJ				Sn	**Sn**	**23 34 07.0**	**+3.7**
YUK	**Yuzh-Kuril'sk**	**5.70**	**25**	*eP*	**Pn**	**23 33 11.9**	**+0.6**
YUK				S	**Sn**	**23 34 13.9**	**-1.9**
YUK				pmax	pmax		
	comp=Z,92nm,0.3s						
YUK				pmax	pmax		
	comp=E,58nm,0.2s						
YUK				pmax	pmax		
	comp=N,39nm,0.3s						
SHO	**Shikotan**	**5.92**	**32**	*eP*	**Pn**	**23 33 11.8**	**-2.6**
SHO				*eS*	Sn	23 34 13.9	-7.4
SHO				pmax	pmax		
	comp=Z,31nm,0.5s						
SHO				pmax	pmax		
	comp=E,14nm,0.8s						
SHO				pmax	pmax		
	comp=N,15nm,0.4s						
JHJ	**Hachijo jima 2**	**6.19**	**202**	Sn	**Sn**	**23 34 24.4**	**-3.7**
	comp=N,100nm,0.3s,baz=66,slow=19,SNR=3.4						
KUR	**Kuril'sk**	**7.46**	**31**	P	**Pn**	**23 33 34.5**	**-1.1**
KUR				S	**Sn**	**23 34 55.7**	**-3.5**
KUR				pmax	pmax		
	comp=Z,22nm,0.8s						
KUR				smax	smax		
	comp=N,27nm,0.5s						
KUR				smax	smax		
	comp=E,39nm,0.5s						
USRK	**Ussuriysk Ar.**	**9.47**	**307**	Pn	Pn	23 34 07.0	+3.9
	comp=E,0.4nm,0.3s,baz=127,slow=13,SNR=7.0						
JNU	**Nakatsue**	**11.04**	**242**	Pn	**Pn**	**23 34 25.3**	**+0.6**
	comp=E,0.3nm,0.3s,baz=30,slow=20,SNR=3.2						
JNU				LR	LR	23 38 54.0	
	comp=E,144nm,21.3s,baz=115,slow=39						
KSRS	**Korea Array**	**11.56**	**267**	Pn	Pn	23 34 36.4	+4.6
	comp=E,0.2nm,0.3s,baz=74,slow=14,SNR=2.6						
KSRS				LR	LR	23 38 39.7	
	comp=E,114nm,18.5s,baz=76,slow=36						
KSAR	**Wonju Array Be**	**11.60**	**267**	P	Pn	23 34 36.4	+4.2
KSAR	**Wonju Array Be**	**11.60**	**267**	Pn	Pn	23 34 36.4	+4.1
CBIJ	**Chichi jima**	**11.80**	**181**	Pn	**Pn**	**23 34 34.2**	**-0.9**
CBIJ				Sn	Sn	23 36 34.8	-11
JCJ	**Chichijima**	**11.80**	**181**	Pn	**Pn**	**23 34 34.2**	**-0.9**
	comp=E,5.1nm,0.3s,baz=276,slow=18,SNR=5.0						
JCJ				Sn	Sn	23 36 34.8	-11
	comp=E,1.5nm,0.3s,baz=307,slow=20,SNR=1.8						
KLR	**Kul'dur**	**12.86**	**327**	LR	LR	23 39 46.6	
	comp=E,126nm,18.6s,baz=146,slow=38						
NKL	**Nikolayevsk**	**14.28**	**356**	*eP*	**Pn**	**23 35 07.0**	**-1.8**
PETK	**Petropavlovsk-**	**17.63**	**31**	P	**P**	**23 35 53.6**	**+0.7**
	comp=E,0.1nm,0.3s,baz=231,slow=9.1,SNR=2.8						
PETK				LR	LR	23 43 40.7	
	comp=E,66nm,18.5s,baz=213,slow=40						
MA2	**Magadan**	**21.33**	**12**	P	**P**	**23 36 33.5**	**+0.3**
	comp=E,16nm,0.7s,baz=205,slow=6.8,SNR=6.1						
SEY	**Seymchan**	**24.78**	**11**	P	**P**	**23 37 08.5**	**+0.8**
	comp=E,1.9nm,0.3s,baz=171,slow=5.6,SNR=12						
SEY	**Seymchan**	**24.78**	**11**	*ceP*	**P**	**23 37 11.8**	**+4.1**
BOD	**Bodaibo**	**26.43**	**325**	*eP*	**P**	**23 37 21.8**	**-1.0**
BOD				pmax	pmax		
	comp=Z,2.0nm,0.8s						
SONM	**Songino Array**	**27.50**	**301**	P	**P**	**23 37 32.9**	**+0.2**
	comp=Z,0.9nm,0.6s,baz=94,slow=8.4,SNR=7.5						
H11N2	**WAKE ISLAND Hy 28.46**	**125**		T	T	00 08 03.8	
	baz=318,slow=76,SNR=1033						
H11N1	**WAKE ISLAND Hy 28.47**	**125**		T	T	00 08 06.9	
	baz=318,slow=76,SNR=1305						
H11N3	**WAKE ISLAND Hy 28.48**	**125**		T	T	00 08 07.2	
	baz=318,slow=76,SNR=1019						
H11S1	**WAKE ISLAND Hy 29.24**	**127**		T	T	00 09 05.2	
	baz=319,slow=76,SNR=229						
H11S3	**WAKE ISLAND Hy 29.25**	**127**		T	T	00 09 07.5	
	baz=319,slow=76,SNR=252						
H11S2	**WAKE ISLAND Hy 29.26**	**127**		T	T	00 09 06.4	
	baz=319,slow=76,SNR=182						
ZAK	**Zakamensk**	**29.82**	**306**	*eP*	**P**	**23 37 53.0**	**-0.2**
ZAK				pmax	pmax		
	comp=Z,2.0nm,1.1s						
ZALV	**Zalesovo Beam**	**41.30**	**311**	P	**P**	**23 39 31.9**	**+0.4**
	comp=Z,3.2nm,0.6s,baz=92,slow=8.7,SNR=13						
ZALV				PcP	**PcP**	**23 41 30.1**	**+0.5**
	comp=Z,0.3nm,0.3s,baz=123,slow=2.4,SNR=2.9						
NRIK	**Noril'sk**	**41.92**	**334**	P	**P**	**23 39 36.2**	**-0.1**
	comp=Z,0.6nm,0.3s,baz=124,slow=9.4,SNR=3.2						
CMAR	**Chiang Mai Arr**	**42.82**	**254**	P	**P**	**23 39 43.0**	**-1.2**
	comp=Z,0.5nm,0.6s,baz=92,slow=7.8,SNR=4.8						
CMAR				PcP	**PcP**	**23 41 36.5**	**+1.2**
	comp=Z,0.2nm,0.6s,baz=30,slow=2.3,SNR=4.4						
MKAR	**Makanchi Array**	**43.87**	**301**	P	**P**	**23 39 52.8**	**+0.4**
	comp=Z,5.0nm,0.7s,baz=84,slow=9.6,SNR=27						
KURK	**Kurchatov**	**45.46**	**307**	*eP*	**P**	**23 40 05.2**	**+0.1**
KURK				pmax	pmax		
	comp=Z,10.0nm,0.7s						
KURK	**Kurchatov**	**45.46**	**307**	*eP*	**P**	**23 40 05.2**	**+0.1**
	comp=Z,9.6nm,0.7s						
ILAR	**Eielson Array**	**47.45**	**33**	P	**P**	**23 40 20.4**	**-0.1**
	comp=Z,1.7nm,0.7s,baz=268,slow=6.4,SNR=21						
GUN	**Gumba**	**47.84**	**275**	*eP*	**P**	**23 40 25.1**	**+0.7**
	comp=Z,8.5nm,0.4s						
KKN	**Kakani**	**48.36**	**275**	*eP*	**P**	**23 40 29.7**	**+1.4**
	comp=Z,9.1nm,0.7s						
GKN	**Gorkha**	**48.76**	**275**	*eP*	**P**	**23 40

Ms4.8/21,Ms7 4.4/20
NEIC ***14*** *23:45:21.9±0.7, 1°.83S×100°.48E, h59km±6km, mb4.9/37, Error ellipse: s-maj=6.9km s-min=4.3km az=60.0*
NEIC Felt [III] at Padangpanjang and Painan. Also felt at Padang.
ISCJB ***14*** *23:45:21.2±0.3, 1°.86S±0°.02×100°.41E±0°.03, h67km±3km, mb4.8/99, Error ellipse: s-maj=5.2km s-min=3.3km az=150.4*
DJA ***14*** *23:45:22.4±0.5, 2°.5S±2°.×10°.0E±°, h36km±5km, M4.7/27, mb4.8/27, mB5.1/14, MLv5.0/12, Mw(mB)4.5/14*

ISC 14 23:45:22.6±0.5, 1°.87S±0°.04×100°.36E±0°.04, h67km±3km, h67km:pP-P,n321,σ1§45/320,mb4.9/105,17C-4D, Southern Sumatera

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
PPSI	**Pulau Pagai**	**0.95**	**202**	P		**Pn**	**23 45 39.6**	**-0.8**
PPSI				S		**Sn**	**23 45 52.4**	**-1.1**
PDSI	**Padang**	**0.96**	**6**	P		**Pn**	**23 45 38.8**	**-1.7**
PDSI				S		**Sn**	**23 45 51.1**	**-2.7**
SDSI	**Sungai Dareh**	**1.42**	**49**	P		**Pn**	**23 45 46.1**	**-0.3**
SDSI				S		**Sn**	**23 46 04.2**	**-0.1**
MASI	**Maura Aman, Be**	**2.26**	**124**	P		**Pn**	**23 45 58.0**	**+0.2**
MASI				S		**Sn**	**23 46 25.5**	**+0.8**
BKNI	**Bangkinang**	**2.29**	**17**	P		**Pn**	**23 45 57.9**	**-0.3**
BKNI				S		**Sn**	**23 46 25.4**	**+0.1**
RGRI	**Rengat**	**2.49**	**53**	P		**Pn**	**23 46 00.8**	**0.0**
MNSI	**Mandailing Nat**	**2.76**	**344**	P		**Pn**	**23 46 04.2**	**-0.4**
JMBI	**JAMBI**	**3.29**	**86**	P		**Pn**	**23 46 11.6**	**-0.2**
MNAI	**Manna**	**3.58**	**134**	P		**Pn**	**23 46 16.3**	**+0.5**
LHSI	**Lahat**	**3.71**	**122**	P		**Pn**	**23 46 18.0**	**+0.5**
GSI	**Gunungsitoli**	**4.21**	**319**	P		**Pn**	**23 46 23.4**	**-1.0**
MDSI	**Maura Dua**	**4.61**	**124**	P		**Pn**	**23 46 30.3**	**+0.4**
LWLI	**Liwa**	**4.84**	**130**	P		**Pn**	**23 46 33.5**	**+0.4**
PSI	**Prapat**	**4.86**	**343**	Pn		**Pn**	**23 46 31.8**	**-1.6**
	4.2nm,0.3s,baz=156,slow=10,SNR=17							
PSI				LR		LR	23 48 42.8	
	comp=Z,3μm,21.0s,baz=160,slow=44							
PSI	**Prapat**	**4.86**	**343**	*e*P		**Pn**	**23 46 29.3**	**-4.1**
PSI	**Prapat**	**4.86**	**343**	*e*Pn		**Pn**	**23 46 29.3**	**-4.1**
TPRI	**Tanjung Pinang**	**5.00**	**56**	P		**Pn**	**23 46 35.4**	**+0.2**
MYKOM	**Kota Tinggi**	**5.04**	**44**	*e*Pn		**Pn**	**23 46 35.3**	**-0.5**
KLI	**Kotabumi**	**5.38**	**124**	P		**Pn**	**23 46 40.2**	**-0.2**
KASI	**Kota Agung**	**5.50**	**131**	P		**Pn**	**23 46 42.6**	**+0.6**
	234nm,0.7s,3μm1.4nm							
TSI	**Tuntungan**	**5.63**	**341**	P		**Pn**	**23 46 43.5**	**-0.3**
PPBI	**Pangkal Pinang**	**5.78**	**93**	P		**Pn**	**23 46 45.5**	**-0.4**
KCSI	**Kotacane, Aceh**	**5.95**	**334**	P		**Pn**	**23 46 48.7**	**+0.5**
	116nm,0.7s,1μm0.8nm							
TPTI		**6.01**	**328**	P		**Pn**	**23 46 48.3**	**-0.7**
	105nm,1.1s,1μm1.2nm							
IPM	**Ipoh**	**6.34**	**6**	*e*Pn		**Pn**	**23 46 54.3**	**+0.6**
CGJI	**Cibinong**	**7.10**	**132**	P		**Pn**	**23 47 02.9**	**-1.1**
	73nm,0.6s,2μm0.5nm							
KULM	**Kulim**	**7.12**	**2**	*e*Pn		**Pn**	**23 47 04.9**	**+0.7**
DBJI	**Dramaga**	**7.89**	**126**	P		**Pn**	**23 47 15.0**	**+0.3**
CNJI	**Cibinong**	**8.64**	**129**	P		**Pn**	**23 47 22.2**	**-2.8**
	60nm,0.8s,1μm							
LEM	**Lembang**	**8.75**	**124**	Pn		**Pn**	**23 47 24.3**	**-2.4**
	2.1nm,0.3s,baz=308,slow=19,SNR=1.9							
LEM				LR		LR	23 51 10.3	
	comp=Z,763nm,21.6s,baz=216,slow=41							
CISI	**Cisompet, Garu**	**9.33**	**127**	P		**Pn**	**23 47 31.0**	**-3.5**
	89nm,0.6s,4μm							
TRTT	**Trang**	**9.67**	**356**	P		**Pn**	**23 47 41.5**	**+2.4**
	61nm,1.0s,703nm							
CMJI	**Cimerak**	**9.97**	**126**	P		**Pn**	**23 47 41.0**	**-2.2**
	46nm,0.9s,1μm							
XMIS	**Christmas Isla**	**10.04**	**149**	*e*Pn		**Pn**	**23 47 42.4**	**-1.7**
XMIS				*e*Sn		Sn	23 49 21.1	-14
KPJI	**Karang Pucung**	**10.12**	**123**	P		**Pn**	**23 47 45.3**	**+0.1**
KSM	**Kuching**	**10.49**	**72**	*e*Pn		**Pn**	**23 47 46.0**	**-4.2**
COCO	**West Island**	**10.83**	**199**	*e*P		**Pn**	**23 47 55.1**	**+0.2**
COCO	**West Island**	**10.83**	**199**	*e*Pn		**Pn**	**23 47 55.1**	**+0.2**
STKI	**Sintang**	**11.28**	**80**	P		**Pn**	**23 48 01.4**	**+0.3**
NGJI	**Ngawi**	**12.34**	**117**	P		**Pn**	**23 48 15.8**	**+0.3**
SBUM	**Sibu**	**12.61**	**70**	*e*Pn		**Pn**	**23 48 20.2**	**+0.9**
PWJI	**Pagerwojo**	**12.93**	**119**	P		**Pn**	**23 48 25.1**	**+1.5**
	30nm,1.0s							
CHBT	**CHBT**	**14.66**	**8**	P		**P**	**23 48 51.2**	**+0.1**
	22nm,1.5s,2μm							
TWSI	**Taliwang, Sumb**	**17.80**	**113**	P		**Pn**	**23 49 27.0**	**+1.0**
	22nm,0.6s							
PBKT	**Sadao Pong**	**18.34**	**2**	P		**Pn**	**23 49 37.5**	**+5.1**
	7.9nm,0.8s							
PLAI	**Plampang**	**18.66**	**112**	P		**Pn**	**23 49 37.1**	**+0.7**
MYLDM	**Lahad Datu**	**19.43**	**69**	*e*P		**Pn**	**23 49 44.9**	**-0.7**
	29nm,1.0s							
MYLDM				*e*ScP		**ScP**	**23 57 30.7**	**-2.8**
TTSI	**Tana Toraja**	**19.48**	**94**	P		**Pn**	**23 49 46.6**	**+0.5**
SPSI	**Sidrap Palu**	**19.49**	**97**	P		**Pn**	**23 49 47.3**	**+0.9**
UTTA	**Uttaradit**	**19.49**	**1**	P		**Pn**	**23 49 46.9**	**+0.6**
	3.1nm,0.9s,36nm							
KAPI	**Kappang**	**19.60**	**100**	P		**P**	**23 49 45.7**	**0.0**
	2.2nm,0.3s,baz=300,slow=11,SNR=7.5							
KAPI	**Kappang**	**19.60**	**100**	*e*P		**P**	**23 49 45.3**	**-0.4**
	22nm,0.8s							
CM01	**Chiang Mai Arr**	**20.21**	**356**	*e*P		**P**	**23 49 50.8**	**-1.5**
CM31	**Chiang Mai Arr**	**20.25**	**356**	*e*P		**P**	**23 49 51.1**	**-1.6**
CMAR	**Chiang Mai Arr**	**20.25**	**356**	P		**P**	**23 49 50.7**	**-2.0**
	10.0nm,0.8s,baz=186,slow=9.9,SNR=82							
LAMP	**Lampang**	**20.28**	**358**	P		Pn	23 49 54.3	-1.2
	5.3nm,0.9s							
CMMT	**Chiang Mai**	**20.60**	**356**	P		**P**	**23 49 57.1**	**+0.6**
	7.7nm,1.0s							
CHTO	**Chiang Mai**	**20.60**	**356**	P		**P**	**23 49 57.2**	**+0.7**
	42nm,1.0s							
CHTO	**Chiang Mai**	**20.60**	**356**	*e*P		**P**	**23 49 54.9**	**-1.6**
CHTO					pmax	pmax		
	comp=Z,9.0nm,1.1s							
CHTO	**Chiang Mai**	**20.60**	**356**	*e*P		**P**	**23 49 54.9**	**-1.6**
	comp=Z,9.2nm,1.1s							
MRSI	**Marisa**	**21.70**	**84**	P		**P**	**23 50 10.5**	**+2.1**
	comp=Z,40nm,0.9s,comp=Z,2μm							
CRAI	**Chiangrai**	**21.96**	**0**	P		**P**	**23 50 11.7**	**+0.6**
	comp=Z,58nm,1.0s,comp=Z,7μm							
TGY	**Tagaytay City**	**25.84**	**51**	LR		LR	00 02 07.9	
	comp=Z,285nm,18.1s,baz=260,slow=39							
DAV	**Davao City (W)**	**26.69**	**70**	LR		LR	00 02 47.5	
	comp=Z,195nm,20.3s,baz=118,slow=39							
MBWA	**Marble Bar**	**26.91**	**137**	*e*P		**P**	**23 50 57.5**	**-0.2**
	comp=Z,50nm,1.8s							
KMI	**Kunming**	**26.93**	**5**	P		**P**	**23 50 58.3**	**+0.2**
KMI				pP		pP	23 51 11.9	-2.2
KMI				sP		sP	23 51 18.3	-3.7
KMI				S		**S**	**23 55 33.1**	**+2.4**
KMI				sS		sS	23 55 56.8	-1.4
KMI				pmax		pmax		
	comp=Z,12nm,0.9s							
KMI				pmax		pmax		
	comp=Z,72nm,5.1s							
KMI				LR		LR		
	comp=Z,280nm,18.3s							
KMI				LR		LR		
	comp=Z,210nm,13.9s							
KMI				LR		LR		
	comp=Z,410nm,19.6s							
H08S2	**Diego Garcia H**	**28.34**	**257**	T		T	00 20 26.1	
	baz=80							
H08S3	**Diego Garcia H**	**28.35**	**257**	T		T	00 20 17.8	
	baz=80							
H08S1	**Diego Carcia H**	**28.36**	**257**	T		T	00 20 25.1	
	baz=80							
GYA	**Guiyang**	**28.82**	**12**	*i*P		**P**	**23 51 16.3**	**+1.5**
GYA				pP		pP	23 51 32.0	+1.1
GYA				sP		sP	23 51 41.6	+2.9
GYA				PP		**PnPn**	**23 52 11.8**	**+2.7**
GYA				PcP		**PcP**	**23 54 25.5**	**+2.2**
GYA				S		**S**	**23 56 01.0**	**+0.9**
GYA				SS		**SnSn**	**23 57 33.5**	**+5.4**
GYA				ScS		**ScS**	**00 01 52.0**	**-1.0**
GYA				pmax		pmax		
	comp=Z,20nm,0.8s							
GYA				pmax		pmax		
	comp=Z,120nm,5.2s							
GYA				LR		LR		
	comp=Z,550nm,16.6s							
GYA				LR		LR		
	comp=Z,510nm,17.0s							
GYA				LR		LR		
	comp=Z,530nm,16.9s							
FITZ	**Fitzroy Crossi**	**29.59**	**125**	P		**P**	**23 51 20.5**	**-1.1**
	comp=Z,4.6nm,0.6s,baz=321,slow=5.6,SNR=19							
FITZ				PcP		**PcP**	**23 54 26.1**	**+0.9**
	comp=Z,3.2nm,0.8s,baz=304,slow=7.3,SNR=3.3							
FITZ				LR		LR	00 03 26.5	
	comp=Z,132nm,21.4s,baz=303,slow=37							
TWG	**Pinlang**	**31.78**	**38**	*e*P		**P**	**23 51 39.0**	**-1.9**
	comp=Z,192nm,1.7s							
TPUB	**Ta-pu**	**31.87**	**37**	*e*P		**P**	**23 51 39.7**	**-2.0**
	comp=Z,81nm,1.9s							
YULB	**Yu-li**	**32.34**	**38**	*e*P		**P**	**23 51 43.7**	**-2.1**
	comp=Z,46nm,1.9s							
YULB				*e*ScP		**ScP**	**23 58 07.7**	**-2.9**
SSLB	**Suanglung**	**32.43**	**37**	*e*P		**P**	**23 51 45.2**	**-1.4**
	comp=Z,10nm,1.0s							
SSLB				*e*ScP		**ScP**	**23 58 08.7**	**-2.3**
LSA	**Lhasa**	**32.61**	**345**	P		**P**	**23 51 49.5**	**+0.9**
LSA				pmax		pmax		
	comp=Z,16nm,0.8s							
LSA	**Lhasa**	**32.61**	**345**	*e*P		**P**	**23 51 48.7**	**+0.1**
LSA				pmax		pmax		
	comp=Z,17nm,0.6s							
LSA	**Lhasa**	**32.61**	**345**	*e*P		**P**	**23 51 48.7**	**+0.1**
	comp=Z,17nm,0.6s							
PKIN	**Phulchoki**	**32.63**	**335**	*e*P		**P**	**23 51 49.3**	**+0.7**
GUN	**Gumba**	**32.72**	**336**	*e*P		**P**	**23 51 50.7**	**+1.2**
	comp=Z,65nm,0.5s							
CD2	**Chengdu**	**32.76**	**5**	P		**P**	**23 51 49.3**	**-0.1**
CD2				pP		pP	23 52 05.1	-0.5
CD2				sP		sP	23 52 13.0	-0.4
CD2				PP		**PP**	**23 53 04.5**	**-0.2**
CD2				S		**S**	**23 57 02.6**	**+1.0**
CD2				sS		sS	23 57 30.3	+1.0
CD2				pmax		pmax		
	comp=Z,10.0nm,0.5s							
CD2				pmax		pmax		
	comp=Z,90nm,4.9s							
CD2				LR		LR		
	comp=Z,420nm,15.6s							
CD2				LR		LR		
	comp=Z,580nm,16.8s							
KKN	**Kakani**	**32.87**	**335**	*e*P		**P**	**23 51 51.6**	**+1.0**
	comp=Z,27nm,0.6s							
NACB	**Ninganchiao**	**33.11**	**37**	*e*P		**P**	**23 51 51.1**	**-1.4**
	comp=Z,14nm,0.8s							
ENH	**Enshi**	**33.13**	**15**	*e*P		**P**	**23 51 51.7**	**-1.0**
	comp=Z,10nm,0.4s							
GKN	**Gorkha**	**33.33**	**334**	*e*P		**P**	**23 51 55.6**	**+1.0**
	comp=Z,25nm,0.5s							
KOLN	**Koldanda**	**33.59**	**332**	*e*P		**P**	**23 51 58.3**	**+1.4**
	comp=Z,32nm,0.7s							
TATO	**Taipei**	**33.65**	**36**	*e*P		**P**	**23 51 56.2**	**-0.9**
	comp=Z,158nm,1.8s							
PYUN	**Piuthan**	**34.16**	**332**	*e*P		**P**	**23 52 02.9**	**+1.1**
XAN	**Xi'an**	**36.62**	**12**	P		**P**	**23 52 21.4**	**-1.3**
XAN				pP		pP	23 52 37.5	-1.6
XAN				pmax		pmax		
	comp=Z,27nm,0.5s							
WRA	**Warramunga Arr**	**37.75**	**121**	P		**P**	**23 52 31.2**	**-1.2**
	comp=Z,4.3nm,0.7s,baz=303,slow=9.0,SNR=49							
WRA				PcP		**PcP**	**23 54 47.9**	**-0.5**
	comp=Z,1.1nm,0.5s,baz=312,slow=2.4,SNR=4.6							
WRAB	**Tennant Creek**	**37.75**	**121**	*e*P		**P**	**23 52 31.2**	**-1.3**
WRAB				*e*			23 54 02.7	
WRAB				pmax		pmax		
	comp=Z,12nm,0.7s							
WRAB	**Tennant Creek**	**37.75**	**121**	*e*P		**P**	**23 52 31.2**	**-1.3**
	comp=Z,12nm,0.7s							
WRAB				*e*PP		**PnPn**	**23 54 02.7**	**+1.1**
WB2	**Warramunga Arr**	**37.76**	**121**	*e*P		**P**	**23 52 31.4**	**-1.1**
	comp=Z,10nm,1.0s							
LZH	**Lanzhou**	**37.90**	**5**	*e*P		**P**	**23 52 35.0**	**+1.3**
LZH				pP		pP	23 52 48.0	-2.1
LZH				sP		sP	23 52 55.4	-2.5
LZH				pmax		pmax		
	comp=Z,21nm,1.1s							
NJ2	**Nanjing**	**38.02**	**26**	*e*P		**P**	**23 52 34.3**	**-0.2**
NJ2				pmax		pmax		
	comp=Z,6.0nm,0.8s							
SSE	**Sheshan**	**38.31**	**29**	*e*P		**P**	**23 52 34.3**	**-2.6**
SSE				S		**S**	**23 58 22.3**	**-4.2**
SSE				sS		**sS**	**23 58 56.5**	**+1.9**
SSE				pmax		pmax		
	comp=Z,17nm,0.5s							
SSE				pmax		pmax		
	comp=Z,95nm,5.3s							
SSE				LR		LR		
	comp=Z,700nm,19.7s							
SSE				LR		LR		
	comp=Z,120nm,19.7s							
SSE				LR		LR		
	comp=Z,310nm,16.3s							
AS31	**Alice Springs**	**39.04**	**126**	*e*P		**P**	**23 52 43.0**	**-0.3**
	comp=Z,4.9nm,0.6s							
ASAR	**Alice Springs**	**39.04**	**126**	P		**P**	**23 52 43.1**	**-0.2**
	comp=Z,12nm,0.6s,baz=303,slow=7.8,SNR=172							
ASAR				PcP		**PcP**	**23 54 53.4**	**+1.1**
	comp=Z,2.4nm,0.6s,baz=307,slow=2.6,SNR=6.2							
AS01	**Alice Springs**	**39.07**	**126**	*e*P		**P**	**23 52 42.4**	**-1.1**
JOW	**Kunigami**	**39.23**	**41**	*e*P		**P**	**23 52 42.0**	**-2.8**
	comp=Z,35nm,1.2s							
GTA	**Gaotai**	**41.09**	**359**	*e*P		**P**	**23 52 59.8**	**-0.2**
GTA				pP		pP	23 53 15.0	-1.7
GTA				sP		sP	23 53 22.8	-1.6
GTA				pmax		pmax		
	comp=Z,5.0nm,0.9s							
HHC	**Hu-ho-hao-te**	**43.73**	**12**	*e*P		**P**	**23 53 23.1**	**+1.6**
HHC				S		**S**	**23 59 48.1**	**+1.1**
HHC				pmax		pmax		
	comp=Z,27nm,1.2s							
HHC				pmax		pmax		
	comp=Z,99nm,6.1s							
HHC				LR		LR		
	comp=Z,260nm,15.3s							
HHC				LR		LR		
	comp=Z,330nm,16.2s							
HHC				LR		LR		
	comp=Z,240nm,15.4s							
BJT	**Baijiatuao**	**44.13**	**17**	*e*P		**P**	**23 53 24.1**	**-0.5**
BJT				pmax		pmax		
	comp=Z,9.0nm,0.6s							
BJT	**Baijiatuao**	**44.13**	**17**	*e*P		**P**	**23 53 24.1**	**-0.5**
	comp=Z,8.7nm,0.6s							
BJI	**Beijing**	**44.15**	**17**	P		**P**	**23 53 25.3**	**+0.6**
BJI				pmax		pmax		
	comp=Z,13nm,0.9s							
BJI				pmax		pmax		
	comp=Z,52nm,4.2s							
KBL	**Kabul**	**46.64**	**324**	*e*P		**P**	**23 53 44.4**	**-0.4**
KBL				pmax		pmax		
	comp=Z,14nm,1.4s							
KBL	**Kabul**	**46.64**	**324**	*e*P		**P**	**23 53 44.4**	**-0.4**
	comp=Z,14nm,1.4s							
KSRS	**Korea Array**	**46.73**	**30**	LR		LR	00 13 50.2	
	comp=Z,133nm,18.3s,baz=206,slow=37							
KSH	**Kashi**	**46.88**	**334**	P		**P**	**23 53 46.0**	**-0.5**
KSH				*e*sP		sP	23 54 07.8	-3.2
KSH				*e*PcP		**PcP**	**23 55 18.8**	**+0.4**
KSH				S		**S**	**00 00 27.0**	**-5.5**
KSH				ScS		**ScS**	**00 03 34.5**	**-0.5**
KSH				pmax		pmax		
	comp=Z,98nm,4.9s							
KSH				LR		LR		
	comp=Z,96nm,4.6s							
KSH				LR		LR		
	comp=Z,140nm,4.7s							
KSH				LR		LR		
	comp=Z,160nm,9.3s							
WMQ	**Urumqi**	**46.89**	**347**	P		**P**	**23 53 47.5**	**+1.1**
WMQ				pP		pP	23 54 03.8	+0.5
WMQ				sP		sP	23 54 10.1	-0.8
WMQ				pmax		pmax		
	comp=Z,22nm,1.0s							
WMQ				pmax		pmax		
	comp=Z,50nm,3.6s							
WMQ				LR		LR		
	comp=Z,140nm,20.6s							
WMQ				LR		LR		
	comp=Z,78nm,22.4s							
WMQ				LR		LR		
	comp=Z,74nm,21.6s							
PMG	**Port Moresby**	**47.13**	**101**	*e*P		**P**	**23 53 48.0**	**-0.6**
PMG				pmax		pmax		
	comp=Z,28nm,1.5s							
PMG	**Port Moresby**	**47.13**	**101**	*e*P		**P**	**23 53 48.0**	**-0.6**
	comp=Z,28nm,1.5s							
CTAO	**Charters Tower**	**48.33**	**115**	*e*P		**P**	**23 53 57.4**	**-0.5**
CTAO				pmax		pmax		
	comp=Z,16nm,1.4s							
CTAO	**Charters Tower**	**48.33**	**115**	*e*P		**P**	**23 53 57.4**	**-0.5**
	comp=Z,16nm,1.4s							
SFK	**Sufi-Kurgan**	**48.39**	**332**	*i*P		**P**	**23 53 59.6**	**+1.3**
SFK				pmax		pmax		
	comp=Z,32nm,1.4s							
PDGK	**Podgornoye**	**48.75**	**340**	P		**P**	**23 54 01.9**	**+1.2**
PDGK				pmax		pmax		
	comp=Z,55nm,1.0s							
STKA	**Stephens Creek**	**48.97**	**132**	P		**P**	**23 54 03.1**	**+0.5**
	comp=Z,4.5nm,0.7s,baz=307,slow=9.0,SNR=8.8							
STKA				LR		LR	00 15 29.3	
	comp=Z,152nm,21.8s,baz=335,slow=37							
STKA	**Stephens Creek**	**48.97**	**132**	*e*P		**P**	**23 54 02.8**	**+0.2**
	comp=Z,3.1nm,1.1s							
CBIJ	**Chichi jima**	**49.51**	**51**	*e*P		**P**	**23 54 04.9**	**-1.9**
	comp=Z,275nm,1.4s							
SONM	**Songino Array**	**49.78**	**5**	P		**P**	**23 54 08.9**	**+0.3**
	comp=Z,7.7nm,0.6s,baz=189,slow=9.3,SNR=68							
SONM				PcP		**PcP**	**23 55 29.2**	**+0.5**
	comp=Z,1.7nm,0.5s,baz=182,slow=4.4,SNR=7.7							
SONA1	**Songino Array**	**49.80**	**5**	*e*P		**P**	**23 54 09.0**	**+0.2**
TKM2	**Tokmak 2**	**49.86**	**336**	*i*P		**P**	**23 54 10.5**	**+1.0**
TKM2				pmax		pmax		
	comp=Z,38nm,0.8s							
TKM2	**Tokmak 2**	**49.86**	**336**	*e*P		**P**	**23 54 10.1**	**+0.7**
	comp=Z,36nm,0.6s							
ULN	**Ulaanbaatar**	**49.88**	**6**	*e*P		**P**	**23 54 08.5**	**-0.9**
ULN				pmax		pmax		
	comp=Z,17nm,1.1s							
ULN	**Ulaanbaatar**	**49.88**	**6**	*e*P		**P**	**23 54 08.5**	**-0.9**
	comp=Z,17nm,1.1s							
AAK	**Ala-Archa**	**50.08**	**335**	*c*P		**P**	**23 54 12.7**	**+1.7**
AAK				pmax		pmax		
	comp=Z,84nm,2.3s							
AAK	**Ala-Archa**	**50.08**	**335**	*e*P		**P**	**23 54 11.4**	**+0.4**
	comp=Z,8.8nm,0.8s							
FRU	**Bishkek**	**50.19**	**335**	*e*P		**P**	**23 54 13.5**	**+1.8**
FRU				*e*			23 54 30.0	
FRU				pmax		pmax		
	comp=Z,60nm,2.0s							
EKS2	**Erkin-Say**	**50.40**	**335**	*e*P		**P**	**23 54 15.2**	**+1.7**
EKS2				pmax		pmax		
	comp=Z,36nm,0.8s							
EKS2	**Erkin-Say**	**50.40**	**335**	*e*P		**P**	**23 54 15.2**	**+1.7**
	comp=Z,36nm,0.8s							
MNAS	**Manas**	**50.82**	**334**	*i*P		**P**	**23 54 18.1**	**+1.5**
MNAS				pmax		pmax		
	comp=Z,54nm,1.4s							
MK31	**Makanchi Array**	**51.01**	**344**	*i*P		**P**	**23 54 18.3**	**+0.5**
MK31				pmax		pmax		
	comp=Z,16nm,0.5s							
MKAR	**Makanchi Array**	**51.01**	**344**	P		**P**	**23 54 18.4**	**+0.6**
	comp=Z,25nm,0.6s,baz=147,slow=8.0,SNR=101							
MKAR	**Makanchi Array**	**51.01**	**344**	*e*P		**P**	**23 54 17.5**	**-0.3**
MAKZ	**Makanchi**	**51.10**	**344**	*e*P		**P**	**23 54 19.1**	**+0.6**
MAKZ				pmax		pmax		
	comp=Z,13nm,0.8s							
MAKZ	**Makanchi**	**51.10**	**344**	*e*P		**P**	**23 54 19.1**	**+0.6**
	comp=Z,13nm,0.8s							
MJAR	**Matsushiro Arr**	**51.95**	**39**	LR		LR	00 17 29.5	
	comp=Z,119nm,18.7s,baz=45,slow=37							
ZAK	**Zakamensk**	**52.11**	**2**	*e*P		**P**	**23 54 24.1**	**-2.0**
ZAK				pmax		pmax		
	comp=Z,2.0nm,1.4s							
KK31	**Karatay Array**	**52.21**	**333**	*i*P		**P**	**23 54 26.9**	**+0.1**
KK31				pmax		pmax		
	comp=Z,7.0nm,1.1s							
KKAR	**Karatay Array**	**52.21**	**333**	*e*P		**P**	**23 54 27.2**	**+0.4**
KKAR	**Karatay Array**	**52.21**	**333**	*e*P		**P**	**23 54 27.2**	**+0.4**
TLY	**Talaya**	**53.43**	**3**	LR		LR	00 19 10.2	
	comp=Z,171nm,18.1s,baz=155,slow=38							
TLY	**Talaya**	**53.43**	**3**	*e*P		**P**	**23 54 36.5**	**+0.8**
TLY				pmax		pmax		
	comp=Z,3.0nm,0.6s							
TLY	**Talaya**	**53.43**	**3**	*e*P		**P**	**23 54 35.8**	**+0.1**
	comp=Z,22nm,1.8s							
USRK	**Ussuriysk Ar.**	**53.88**	**28**	P		**P**	**23 54 39.2**	**+0.1**
	comp=Z,16nm,0.6s,baz=225,slow=4.6,SNR=35							
USRK				LR		LR	00 19 03.4	
	comp=Z,128nm,18.3s,baz=200,slow=38							
EIDS	**Eidsvold**	**54.11**	**120**	*e*P		**P**	**23 54 41.8**	**+0.6**
	comp=Z,9.7nm,1.3s							
OTUK	**Ortayu**	**55.55**	**338**	*i*P		**P**	**23 54 51.1**	**-0.1**
OTUK				pmax		pmax		
	comp=Z,31nm,1.0s							
GEYT	**Alibeck**	**55.58**	**320**	P		**P**	**23 54 51.2**	**-0.4**
	comp=Z,7.7nm,0.8s,baz=139,slow=7.9,SNR=20							
GEYT				LR		LR	00 20 01.4	
	comp=Z,99nm,21.3s,baz=30,slow=38							
KURK	**Kurchatov**	**55.59**	**343**	*e*P		**P**	**23 54 51.8**	**+0.5**
KURK				pmax		pmax		
	comp=Z,26nm,0.9s							
KURK	**Kurchatov**	**55.59**	**343**	*e*P		**P**	**23 54 51.8**	**+0.5**
	comp=Z,26nm,0.9s							
ZAA0	**Zalesovo Array**	**57.11**	**349**	*e*P		**P**	**23 55 01.3**	**-0.8**
ZALV	**Zalesovo Beam**	**57.11**	**349**	P		**P**	**23 55 02.0**	**-0.1**
	comp=Z,38nm,0.8s,baz=175,slow=5.8,SNR=182							
ZALV				PcP		**PcP**	**23 55 56.0**	**-0.2**
	comp=Z,4.1nm,0.6s,baz=168,slow=5.7,SNR=1.6							
KLR	**Kul'dur**	**57.67**	**24**	P		**P**	**23 55 06.0**	**-0.1**
	comp=Z,5.7nm,0.6s,baz=226,slow=6.9,SNR=8.4							
KLR				LR		LR	00 21 50.4	
	comp=Z,236nm,18.4s,baz=170,slow=38							
**DAM

	comp=Z,44nm,19.2s,baz=155,slow=37								
MAW	**Mawson**	**70.50**	**194**	LR	LR		00 20 45.4		
	comp=Z,216nm,20.5s,baz=60,slow=30								
NRIK	**Noril'sk**	**71.61**	**355**	P	**P**		**23 56 35.8**	**-0.8**	
	comp=Z,6.7nm,0.5s,baz=138,slow=5.7,SNR=30								
VRH	**Novokhopyorsk**	**72.42**	**326**	*e*P	**P**		**23 56 41.8**	**+0.1**	
VRH				pmax	pmax				
	comp=Z,30nm,0.6s								
ANN	**Anapa**	**72.48**	**318**	*e*P	**P**		**23 56 43.2**	**+1.0**	
ANN				*e*			23 56 57.0		
ANN				pmax	pmax				
	comp=Z,115nm,1.3s								
PETK	**Petropavlovsk-**	**72.58**	**32**	LR	LR		00 28 59.0		
	comp=Z,81nm,18.7s,baz=259,slow=36								
BRTR	**Keskin Array B**	**73.50**	**312**	P	**P**		**23 56 47.7**	**-0.9**	
	comp=Z,2.9nm,0.7s,baz=130,slow=7.5,SNR=14								
BR131	**Keskin Array S**	**73.50**	**312**	*e*P	**P**		**23 56 49.1**	**+0.5**	
VSR	**Storozhevoye**	**73.88**	**325**	*e*P	**P**		**23 56 49.9**	**-0.5**	
VSR				pmax	pmax				
	comp=Z,10.0nm,0.6s								
LPSR	**Galich'ya Gora**	**74.58**	**326**	*e*P	**P**		**23 56 54.1**	**-0.3**	
LPSR				pmax	pmax				
	comp=Z,10.0nm,0.9s								
RPZ	**Rata Peaks**	**74.81**	**135**	P	**P**		**23 56 56.1**	**+0.1**	
	comp=Z,7.3nm,0.5s,baz=293,slow=4.7,SNR=10								
SEY	**Seymchan**	**75.38**	**22**	P	**P**		**23 56 59.6**	**+0.8**	
	comp=Z,3.8nm,0.5s,baz=264,slow=9.2,SNR=4.6								
SEY	**Seymchan**	**75.38**	**22**	⇑*i*P	**P**		**23 56 59.0**	**+0.2**	
TIXI	**Tiksi**	**75.67**	**9**	P	**P**		**23 56 59.5**	**-0.9**	
	comp=Z,16nm,0.5s,baz=231,slow=4.8,SNR=38								
TIXI	**Tiksi**	**75.67**	**9**	*i* P	**P**		**23 56 59.6**	**-0.7**	
TIXI				pmax	pmax				
	comp=Z,12nm,0.5s								
TIXI	**Tiksi**	**75.67**	**9**	*e*P	**P**		**23 56 59.5**	**-0.9**	
	comp=Z,54nm,1.4s								
BOSA	**Boshof**	**76.03**	**241**	P	**P**		**23 57 04.2**	**+0.7**	
	comp=Z,2.7nm,0.8s,baz=90,slow=4.7,SNR=5.1								
BOSA				LR	LR		00 24 38.1		
	comp=Z,122nm,20.6s,baz=99,slow=31								
OBN	**Obninsk**	**76.88**	**328**	*c* *i*P	**P**		**23 57 07.9**	**+0.5**	
OBN				*e*			23 57 14.8		
OBN				*e*			23 57 21.1		
OBN				*e**PP	**pP**		**23 57 27.3**	**+1.7**	
OBN				pmax	pmax				
	comp=Z,30nm,1.7s								
OBN				MLR	MLR				
	comp=Z,186nm,17.0s								
KLMR	**Klimovskoe**	**77.87**	**334**	*e*P	**P**		**23 57 11.2**	**-1.7**	
KLMR				*e*			23 57 20.6		
KLMR				pmax	pmax				
	comp=Z,16nm,1.4s								
AKASG	**Malin Array Be**	**79.60**	**322**	P	**P**		**23 57 21.8**	**-0.8**	
	comp=Z,0.4nm,0.3s,baz=93,slow=5.1,SNR=10								
VRI	**Vrincioaia**	**80.00**	**317**	⇑*i*P	**P**		**23 57 26.2**	**+1.2**	
VRI	**Vrincioaia**	**80.00**	**317**	⇑P	**P**		**23 57 26.2**	**+1.2**	
PLOR	**Plostina**	**80.05**	**317**	⇑*i*P	P		23 57 34.0	+8.7	
PLOR	**Plostina**	**80.05**	**317**	⇑P	P		23 57 34.0	+8.7	
GIRR	**Girov**	**80.41**	**318**	⇑*i*P	**P**		**23 57 28.8**	**+1.7**	
MLR	**Muntele Rosu**	**80.45**	**317**	⇑*i*P	**P**		**23 57 26.8**	**-0.7**	
MLR	**Muntele Rosu**	**80.45**	**317**	⇑P	**P**		**23 57 26.8**	**-0.7**	
ARR	**Arges**	**81.33**	**316**	⇑*i*P	**P**		**23 57 33.5**	**+1.4**	
BURAR	**Bucovina Array**	**81.40**	**319**	⇑*i*P	**P**		**23 57 34.5**	**+2.0**	
BURAR	**Bucovina Array**	**81.40**	**319**	⇑P	**P**		**23 57 34.5**	**+2.0**	
BUR08	**Bucovina Ar. S**	**81.42**	**319**	*e*P	**P**		**23 57 34.6**	**+2.0**	
VTS	**Vitosha**	**81.82**	**313**	⇑*i*P	**P**		**23 57 35.8**	**+0.9**	
VTS	**Vitosha**	**81.82**	**313**	*e*P	**P**		**23 57 35.8**	**+0.9**	
VTS				pmax	pmax				
	comp=Z,4.0nm,0.7s								
VTS	**Vitosha**	**81.82**	**313**	*e*P	**P**		**23 57 35.8**	**+0.9**	
	comp=Z,4.0nm,0.7s								
NACGM	**Naroch**	**82.14**	**326**	*e*	**P**		**23 57 37.0**	**+0.9**	
VNDA	**Vanda**	**82.22**	**169**	LR	LR		00 26 44.8		
	comp=Z,90nm,21.8s,baz=301,slow=30								
VSU	**Vasula**	**83.08**	**329**	⇓*i*P	**P**		**23 57 41.4**	**+0.6**	
VSU				pmax	pmax				
	comp=Z,28nm,0.9s								
KOLS	**Kolonicke sedl**	**83.59**	**320**	*e*P	**P**		**23 57 45.8**	**+2.1**	
KOLS				*e*			23 57 57.4		
KOLS				pmax	pmax				
	comp=Z,12nm,1.2s								
KOLS	**Kolonicke sedl**	**83.59**	**320**	*e*P	**P**		**23 57 45.8**	**+2.1**	
KOLS				*ep*P	**pP**		**23 57 57.4**	**-4.7**	
SUW	**Suwalki**	**83.99**	**325**	*e*P	**P**		**23 57 46.4**	**+0.8**	
SUW	**Suwalki**	**83.99**	**325**	*e*P	**P**		**23 57 46.5**	**+0.8**	
CRVS	**Cervenica-Dubn**	**84.11**	**319**	*e*P	**P**		**23 57 49.6**	**+3.2**	
CRVS	**Cervenica-Dubn**	**84.11**	**319**	*e*P	**P**		**23 57 49.6**	**+3.2**	
FIA1	**FINESS Array S**	**84.17**	**332**	*e*P	**P**		**23 57 47.1**	**+0.7**	
FINES	**FINESS Array B**	**84.17**	**332**	P	**P**		**23 57 47.5**	**+1.1**	
	comp=Z,3.2nm,0.5s,baz=111,slow=5.8,SNR=42								
STHS	**Stebnicka Huta**	**84.34**	**320**	*e*P	**P**		**23 57 49.7**	**+2.1**	
STHS				*e*			23 58 01.0		
STHS				pmax	pmax				
	comp=Z,3.0nm,0.8s								
STHS	**Stebnicka Huta**	**84.34**	**320**	*e*P	**P**		**23 57 49.7**	**+2.1**	
STHS				*ep*P	**pP**		**23 58 01.0**	**-5.0**	
PDG	**Podgorica**	**84.69**	**313**	⇑*i*P	**P**		**23 57 50.2**	**+0.8**	
NIE	**Niedzica**	**84.95**	**320**	*e*P	**P**		**23 57 52.5**	**+1.9**	
NIE	**Niedzica**	**84.95**	**320**	*e*P	**P**		**23 57 52.6**	**+1.9**	
PKSM	**Moragy**	**85.61**	**316**	⇓*i*P	**P**		**23 57 54.7**	**+0.8**	
PKSM	**Moragy**	**85.61**	**316**	⇓P	**P**		**23 57 54.7**	**+0.8**	
VYHS	**Vyhne**	**85.77**	**319**	*e*P	**P**		**23 57 56.7**	**+2.0**	
VYHS				pmax	pmax				
	comp=Z,13nm,2.2s								
VYHS	**Vyhne**	**85.77**	**319**	*e*P	**P**		**23 57 56.7**	**+2.0**	
ARCES	**ARCESS Array B**	**86.48**	**340**	P	**P**		**23 57 58.8**	**+1.0**	
	comp=Z,3.5nm,0.8s,baz=100,slow=5.4,SNR=22								
KRLC	**Kraliky**	**87.29**	**320**	*e*P	**P**		**23 58 04.2**	**+2.0**	
KRLC				*ep*P	**pP**		**23 58 17.0**	**-3.7**	
KRLC	**Kraliky**	**87.29**	**320**	*e*P	**P**		**23 58 04.2**	**+2.0**	
KRLC				*e*			23 58 17.0		
DPC	**Dobruska-Polom**	**87.62**	**320**	*e*P	**P**		**23 58 06.0**	**+2.2**	
DPC				*ep*P	**pP**		**23 58 18.7**	**-3.6**	
DPC	**Dobruska-Polom**	**87.62**	**320**	*e*P	**P**		**23 58 06.0**	**+2.2**	
DPC				*e*			23 58 18.7		
CONA	**Conrad Observa**	**87.68**	**318**	*i* PcP	**P**		**23 58 05.3**	**+1.1**	
	comp=Z,3.5nm,1.2s								
SOKA	**Soboth**	**88.14**	**317**	*i* PcP	**P**		**23 58 08.0**	**+1.7**	
	comp=Z,5.3nm,1.6s								
OBKA	**Obir**	**88.46**	**316**	*i* P	**P**		**23 58 08.5**	**+0.7**	
	comp=Z,10nm,1.7s								
PRU	**Pruhonice**	**88.72**	**320**	*e*P	**P**		**23 58 10.9**	**+2.0**	
PRU	**Pruhonice**	**88.72**	**320**	*e*P	**P**		**23 58 10.9**	**+2.0**	
MOA	**Molln**	**88.75**	**318**	*i* P	**P**		**23 58 08.2**	**-0.9**	
	comp=Z,1.1nm,0.5s								
BRG	**Berggiesshubel**	**89.17**	**321**	*e*P	**P**		**23 58 12.7**	**+1.7**	
	comp=Z,3.9nm,0.9s								
BRG	**Berggiesshubel**	**89.17**	**321**	*e*P	**P**		**23 58 12.7**	**+1.7**	
BRG				pmax	pmax				
	comp=Z,2.0nm,0.9s								
GEA0	**GERESS Array S**	**89.19**	**319**	*e*P	**P**		**23 58 12.7**	**+1.4**	
GEC2	**GERESS Array S**	**89.19**	**319**	*e*P	**P**		**23 58 13.1**	**+1.8**	
GEC2				pmax	pmax				
	comp=Z,29nm,1.9s								
GEC2	**GERESS Array S**	**89.19**	**319**	*e*P	**P**		**23 58 13.1**	**+1.8**	
	comp=Z,29nm,1.9s								
GERES	**GERESS Array B**	**89.19**	**319**	P	**P**		**23 58 12.3**	**+1.0**	
	comp=Z,0.9nm,0.7s,baz=102,slow=3.3,SNR=9.1								
KHC	**Kasperske Hory**	**89.29**	**319**	*e*P	**P**		**23 58 13.4**	**+1.7**	
KHC	**Kasperske Hory**	**89.29**	**319**	*e*P	**P**		**23 58 13.4**	**+1.7**	
KBA	**Koelnbreinsper**	**89.32**	**317**	*i* PcP	**P**		**23 58 14.1**	**+2.1**	
	comp=Z,4.8nm,1.2s								
CLL	**Collm**	**89.79**	**321**	*e*P	**P**		**23 58 15.0**	**+1.1**	
CLL	**Collm**	**89.79**	**321**	*e*P	**P**		**23 58 15.0**	**+1.1**	
MOTA	**Moosalm**	**90.86**	**317**	*i* PcP	**P**		**23 58 21.2**	**+2.0**	
	comp=Z,3.9nm,1.0s								
RETA	**Reutte**	**91.09**	**317**	*i* PcP	**P**		**23 58 21.6**	**+1.4**	
	comp=Z,3.8nm,0.8s								
NB2	**NORSAR Subarra**	**91.21**	**331**	P	**P**		**23 58 20.9**	**+0.6**	
	comp=Z,1.1nm,0.7s,baz=94,slow=4.6								
NOA	**NORSAR Array B**	**91.21**	**331**	P	**P**		**23 58 19.5**	**-0.8**	
	comp=Z,1.2nm,0.7s,baz=94,slow=4.5,SNR=4.2								
DAVA	**Damuels**	**91.69**	**317**	*i* PcP	**P**		**23 58 24.8**	**+1.8**	
	comp=Z,18nm,2.1s								
KEST	**Kesra**	**91.91**	**306**	P	**P**		**23 58 25.9**	**+1.6**	
	comp=Z,5.4nm,0.8s,baz=203,slow=3.2,SNR=5.7								
TORD	**Torodi Ar. Bea**	**98.86**	**283**	P	**P**		**23 58 55.7**	**-0.5**	
	comp=Z,0.3nm,0.9s,baz=86,slow=5.9,SNR=3.2								
H09N1	**TRISTAN DA CUNI**	**06.78**	**230**	T	T		01 58 24.2		
	SNR=86								
H09W1	**TRISTAN DA CUNI**	**06.79**	**230**	T	T		01 58 24.5		
	SNR=47								
G05D	**Wamic, OR**	**123.39**	**34**	P	**PKPdf**		**00 04 11.8**	**-0.7**	
	baz=307								
RLMT	**Red Lodge**	**129.64**	**27**	P	**PKPdf**		**00 04 24.4**	**-0.3**	
	baz=320								
B30A	**Myrvik Farm, E**	**130.88**	**16**	P	**PKPdf**		**00 04 26.6**	**-0.1**	
	baz=335								
G26A	**Maurine**	**132.27**	**22**	P	**PKPdf**		**00 04 29.8**	**+0.3**	
	baz=328								
WUAZ	**Wupatki**	**135.42**	**38**	P	**PKPdf**		**00 04 36.2**	**+0.4**	
	baz=312								
ECSD	**EROS Data Cent**	**135.67**	**18**	P	**PKPdf**		**00 04 37.0**	**+1.2**	
	baz=335								
V37A	**Hulbert**	**143.23**	**21**	P	PKPbc		00 04 47.0	+0.2	
	baz=333								
U39A	**Green Forest**	**143.35**	**19**	P	PKPab		00 04 46.6	+0.6	
	baz=336								
V38A	**Canehill**	**143.51**	**20**	P	PKPab		00 04 46.8	+0.1	
	baz=335								
W37B	**Quinton**	**143.79**	**22**	P	PKPbc		00 04 48.5	0.0	
	baz=332								
V39A	**Pettigrew**	**143.79**	**19**	P	PKPbc		00 04 48.3	-0.3	
	baz=336								
X35A	**Drake**	**143.82**	**25**	P	PKPbc		00 04 48.3	-0.3	
	baz=330								
Y34A	**Reagan Ranch,**	**143.86**	**26**	P	PKPbc		00 04 48.6	-0.1	
	baz=328								
X36A	**Centrahoma**	**143.93**	**24**	P	PKPbc		00 04 49.1	+0.2	
	baz=331								
V40A	**Witts Springs**	**144.09**	**18**	P	PKPbc		00 04 49.4	0.0	
	baz=337								
W38A	**Poteau**	**144.18**	**21**	P	PKPbc		00 04 49.9	+0.2	
	baz=334								
Y35A	**Marietta**	**144.22**	**25**	P	PKPbc		00 04 50.1	+0.3	
	baz=329								
X37A	**Clayton**	**144.29**	**23**	P	PKPbc		00 04 50.3	+0.2	
	baz=332								
W39A	**Magazine**	**144.33**	**20**	P	PKPbc		00 04 50.3	+0.2	
	baz=335								
TXAR	**Lajitas Array**	**144.38**	**38**	PKP	**PKPdf**		**00 04 51.9**	**-0.3**	
	comp=Z,6.0nm,0.5s,baz=206,slow=1.3,SNR=52								
X38A	**Whitesboro**	**144.43**	**22**	P	PKPbc		00 04 50.8	+0.3	
	baz=333,SNR=9.5								
133A	**Hamilton Ranch**	**144.46**	**29**	P	PKPbc		00 04 50.7	0.0	
	baz=325								
Y36A	**Durant**	**144.54**	**24**	P	**PKPab**		**00 04 50.7**	**+0.1**	
	baz=330								
W40A	**Ferguson Farm,**	**144.57**	**19**	P	PKPbc		00 04 50.9	0.0	
	baz=336								
Z35A	**Perchaven, San**	**144.62**	**26**	P	PKPbc		00 04 51.1	-0.1	
	baz=328								
CPUP	**Villa Florida**	**144.64**	**216**	PKP	**PKPdf**		**00 04 52.6**	**+0.1**	
	comp=Z,4.2nm,0.7s,baz=173,slow=2.4,SNR=11								
Y37A	**Hugo**	**144.74**	**23**	P	PKPbc		00 04 51.8	+0.3	
	baz=332								
X39A	**Fountain Ranch**	**144.83**	**21**	P	PKPbc		00 04 52.2	+0.4	
	baz=334,SNR=17								
W41A	**Tony Mavity, V**	**144.85**	**18**	P	**PKPab**		**00 04 51.5**	**-0.3**	
	baz=338,SNR=5.1								
W41B	**Gary Mavity, V**	**144.85**	**18**	P	**PKPab**		**00 04 51.4**	**-0.3**	
	baz=338,SNR=5.1								
MIAR	**Mount Ida**	**144.99**	**20**	P	PKPbc		00 04 52.6	+0.3	
	baz=335,SNR=25								
MIAR	**Mount Ida**	**144.99**	**20**	*e*PKIKP	**PKPdf**		**00 04 52.7**	**-0.2**	
MIAR	**Mount Ida**	**144.99**	**20**	*e*PKPdf	**PKPdf**		**00 04 52.7**	**-0.2**	
MIAR				*ep*PKPdf	**pPKPdf**		**00 05 12.9**	**+0.6**	
Z36A	**Blue Ridge**	**145.02**	**25**	P	**PKPbc**		**00 04 52.4**	**0.0**	
	baz=330								
X40A	**Basin Creek Fa**	**145.29**	**19**	P	**PKPbc**		**00 04 53.1**	**-0.1**	
	baz=336,SNR=5.9								
234A	**Clairette**	**145.33**	**28**	P	**PKPbc**		**00 04 53.5**	**0.0**	
	baz=326,SNR=5.2								
Y39A	**Lockesburg**	**145.35**	**21**	P	**PKPab**		**00 04 54.3**	**+0.7**	
	baz=334								
333A	**Richland Sprin**	**145.47**	**30**	P	**PKPbc**		**00 04 54.0**	**+0.1**	
	baz=324,SNR=8.1								
Y40A	**Okolona**	**145.57**	**20**	P	**PKPab**		**00 04 54.7**	**+0.3**	
	baz=335								
JCT	**Junction City**	**145.72**	**32**	P	**PKPab**		**00 04 55.4**	**+0.2**	
	baz=322,SNR=32								
JCT	**Junction City**	**145.72**	**32**	*e*PKIKP	**PKPbc**		**00 04 54.7**	**-0.1**	
JCT	**Junction City**	**145.72**	**32**	*e*PKPdf	**PKPbc**		**00 04 54.7**	**-0.1**	
334A	**Lometa**	**145.83**	**29**	P	**PKPab**		**00 04 55.5**	**0.0**	
	baz=325								
433A	**Art**	**145.88**	**31**	P	**PKPbc**		**00 04 55.1**	**-0.1**	
	baz=324,SNR=7.3								
Z39A	**Irene McRaven,**	**145.94**	**22**	P	**PKPab**		**00 04 56.4**	**+0.6**	
	baz=333								
138A	**Matatal Enter**	**146.10**	**24**	P	**PKPab**		**00 04 57.1**	**+0.6**	
	baz=331								
Z40A	**Long Farm, Mag**	**146.22**	**21**	P	**PKPab**		**00 04 57.1**	**+0.3**	
	baz=335								
434A	**Burnet**	**146.24**	**30**	P	**PKPbc**		**00 04 56.1**	**-0.3**	
	baz=325,SNR=12								
336A	**Riesel**	**146.44**	**27**	P	**PKPab**		**00 04 58.0**	**+0.2**	
	baz=328								
533A	**Kerrville**	**146.45**	**31**	P	**PKPab**		**00 04 57.5**	**-0.4**	
	baz=333,SNR=5.6								
534A	**Blanco**	**146.77**	**31**	P	**PKPbc**		**00 04 58.1**	**+0.2**	
	baz=324								
633A	**Saathoff Ranch**	**146.86**	**32**	P	**PKPbc**		**00 04 58.7**	**+0.6**	
	baz=322,SNR=6.6								
KMSC	**Kings Mountain**	**146.86**	**3**	P	**PKPbc**		**00 04 58.1**	**+0.2**	
	baz=357								
436A	**Wall Ranch, Ga**	**146.98**	**28**	P	**PKPab**		**00 04 59.3**	**-0.6**	
	baz=327								
832A	**Faith Ranch, C**	**147.33**	**35**	P	**PKPbc**		**00 05 00.3**	**+0.8**	
	baz=320								
339A	**Huntington**	**147.48**	**24**	P	**PKPab**		**00 05 01.0**	**-0.9**	
	baz=331								
438A	**Sam Houston St**	**147.60**	**26**	P	**PKPbc**		**00 05 00.9**	**+0.8**	
	baz=329								
244A	**Avery, Jackson**	**148.24**	**18**	P	**PKPbc**		**00 05 02.2**	**+0.4**	
	baz=339								
933A	**Laredo**	**148.24**	**35**	P	**PKPbc**		**00 05 03.1**	**+1.2**	
	baz=329								
736A	**Circle Diamond**	**148.36**	**30**	P	**PKPbc**		**00 05 03.1**	**+0.9**	
	baz=325								
934A	**Benavides**	**148.68**	**34**	P	**PKPbc**		**00 05 03.9**	**+0.9**	
	baz=322								
LPAZ	**La Paz**	**158.67**	**212**	PKP	**PKPdf**		**00 05 15.6**	**+1.0**	
	comp=Z,1.1nm,0.9s,baz=70,slow=5.4,SNR=4.1								
LPAZ				PKPab	**PKPbc**		**00 05 48.8**	**-1.1**	
	comp=Z,0.8nm,0.4s,baz=265,slow=3.4,SNR=5.3								

NIED **14** *23:50:00,36.˚40N×142.˚70E,h8km,Mw4.7 Best double couple: M0 1.31000×10*^{16} *NP1:*ϕ_8*212.00000°,*δ*37.00000°,* λ*103.00000°. NP2:*ϕ_8*16.00000°,*δ*54.00000°,*λ*80.00000°.*
IDC **14** *23:50:00.*$9_{\pm}$*0.5,36.˚39N×142.˚75E,h0km,mb4.2/24, mb1 4.3/31,mb1mx4.2/56,mbtmp4.2/31,ML4.1/6,MS4.1/12, Ms1 4.1/12,ms1mx3.6/55,Error ellipse: s-maj=15.6km s-min=11.4km az=111.0*
JMA **14** *23:50:03.*$3_{\pm}$*0.2,36.˚45N×142.˚66E,h49km,M4.7*
ISCJB **14** *23:50:10.*$9_{\pm}$*0.5,36.˚76N*$_{\pm}$*0.˚05×141.˚99E*$_{\pm}$*0.˚06,h50km, mb4.7/132,MS4.4/25,Error ellipse: s-maj=8.2km s-min=4.6km az=44.6*
MOS **14** *23:50:15.*$7_{\pm}$*1.9,37.˚53N×141.˚16E,h33km,mb5.1/48, MS4.0/8,Error ellipse: s-maj=8.0km s-min=5.2km az=97.9*
BJI **14** *23:50:22.5,36.˚98N×140.˚96E,h100km,mb4.7/57, mB5.0/50*
NEIC **14** *23:50:24.*$0_{\pm}$*0.7,37.˚29N×140.˚93E,h94km*$_{\pm}$*7km,mb4.8/77, Error ellipse: s-maj=7.0km s-min=5.1km az=146.0*

ISC 14 23:50:08.$3_{\pm}$**0.5,36.˚53N**$_{\pm}$**0.˚04×142.˚28E**$_{\pm}$**0.˚04,h50km, h50km:pP-P,n281,**$_{cl}$**2.˚73/171,mb4.8/132,MS4.4/26,9C-4D, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**1.32**	**296**	P	**Pn**	**23 50 30.1**	**-0.3**
JHO	**Hitachi**	**1.38**	**274**	P	**Pn**	**23 50 31.0**	**-0.1**
JFK	**Kawauchi**	**1.40**	**307**	P	**Pn**	**23 50 31.0**	**-0.5**
CHOJ	**Chosi**	**1.41**	**235**	P	**Pn**	**23 50 30.6**	**-1.0**
CHOJ				*e*S	**Sn**	**23 50 50.4**	**+1.4**
JFT	**Otama**	**1.84**	**303**	P	**Pn**	**23 50 38.4**	**+0.9**
BSO1	**Boso 1**	**2.15**	**210**	P	**Pn**	**23 50 38.8**	**-2.3**
JAG	**Ashikaga**	**2.28**	**268**	P	**Pn**	**23 50 43.7**	**+0.3**
JAG				*e*S	**Sn**	**23 51 14.0**	**+3.7**
JMK	**Ichinoseki**	**2.56**	**341**	P	**Pn**	**23 50 46.5**	**-0.8**
JRY	**Ryogami san**	**2.77**	**260**	P	**Pn**	**23 50 50.4**	**+0.1**
JYK	**Kaneyama**	**2.83**	**328**	P	**Pn**	**23 50 50.9**	**-0.1**
JOD2	**Odawara 2**	**2.88**	**245**	P	**Pn**	**23 50 51.4**	**-0.3**
JOM	**Ohasama**	**3.04**	**345**	S	**Sn**	**23 51 30.2**	**+1.1**
MJAR	**Matsushiro Arr**	**3.28**	**271**	Pn	**Pn**	**23 50 58.6**	**+1.5**
	13nm,0.3s,baz=89,slow=14,SNR=100						
MJAR				LR	LR	23 52 39.1	
	comp=Z,2μm,19.6s,baz=95,slow=44						
MAJO	**Matsushiro**	**3.28**	**272**	*c* *i*P	**Pn**	**23 50 58.9**	**+1.8**
MAJO	**Matsushiro**	**3.28**	**272**	*e*Pn	**Pn**	**23 50 59.1**	**+1.9**
MAT	**Matsushiro**	**3.28**	**272**	P	**Pn**	**23 50 58.9**	**+1.8**
MAT				S	**Sn**	**23 51 40.9**	**+6.0**
MJB9	**Matsu-Tunnel**	**3.28**	**272**	*e*Pn	**Pn**	**23 50 59.1**	**+1.9**
JHJ2	**Mitsune**	**3.96**	**211**	*e*Pn	Pn	23 51 26.7	+20
JHJ	**Hachijo jima 2**	**3.97**	**212**	Pn	**Pn**	**23 51 06.3**	**-0.3**
	70nm,0.3s,baz=66,slow=19,SNR=2.8						
JHJ				Sn	**Sn**	**23 51 47.0**	**-4.9**
	12nm,0.3s,baz=37,slow=20,SNR=4.3						
INU	**Inuyama**	**4.43**	**256**	*e*Pn	Pn	23 51 16.6	+3.7
ERM	**Erimo**	**5.52**	**7**	*de*P	**Pn**	**23 51 24.3**	**-3.6**
ERM				pmax	pmax		
	comp=Z,120nm,1.7s						
ASAJ	**Asahikawa**	**7.59**	**2**	Pn	**Pn**	**23 51 54.1**	**-2.1**
	comp=Z,6.1nm,0.3s,baz=221,slow=12,SNR=20						
ASAJ				Sn	**Sn**	**23 53 15.9**	**-4.8**
	comp=Z,2.4nm,0.3s,baz=30,slow=20,SNR=2.8						
YUK	**Yuzh-Kuril'sk**	**7.98**	**19**	*e*P	Pn	23 52 05.4	+3.8
YUK				*e*S	Sn	23 53 20.7	-10
YUK				pmax	pmax		
	comp=N,95nm,0.4s						
YUK				pmax	pmax		
	comp=E,60nm,0.4s						
YUK				pmax	pmax		
	comp=Z,188nm,0.4s						
YUK				MLR	MLR		
	comp=N,1μm,15.0s						
YUK				MLR	MLR		
	comp=Z,2μm,15.0s						
YUK				MLR	MLR		
	comp=E,2μm,11.0s						
SHO	**Shikotan**	**8.12**	**24**	*e*P	Pn	23 52 06.6	+3.1
SHO				pmax	pmax		
	comp=N,20nm,0.6s						
SHO				pmax	pmax		
	comp=E,18nm,0.6s						
SHO				pmax	pmax		
	comp=Z,17nm,0.6s						
JCJ	**Chichijima**	**9.40**	**181**	Pn	Pn	23 52 14.0	-7.1
	comp=Z,10nm,0.3s,baz=290,slow=18,SNR=9.1						
JCJ				Sn	Sn	23 53 50.3	-15
	comp=Z,12nm,0.3s,baz=296,slow=22,SNR=6.2						
KUR	**Kuril'sk**	**9.67**	**24**	*e*P	Pn	23 52 26.9	+2.2
KUR				pmax	pmax		
	comp=Z,19nm,0.6s						
KUR				pmax	pmax		
	comp=N,15nm,0.5s						
KUR				pmax	pmax		
	comp=E,18nm,0.6s						
KUR				MLR	MLR		
	comp=N,1μm,14.0s						
KUR				MLR	MLR		
	comp=E,2μm,14.0s						
KUR				MLR	MLR		
	comp=Z,1μm,14.0s						
JNU	**Nakatsue**	**9.97**	**253**	Pn	**Pn**	**23 52 30.4**	**+1.6**
	comp=Z,0.3nm,0.3s,baz=70,slow=12,SNR=3.0						
JNU				LR	LR	23 56 28.5	
	comp=Z,764nm,19.6s,baz=82,slow=38						
YSS	**Yuzh-Sakhalins**	**10.43**	**2**	⇑*e*P	**Pn**	**23 52 32.9**	**-2.1**
YSS				*e*S	Sn	23 54 14.0	-16
YSS				pmax	pmax		
	comp=Z,50nm,0.7s						
YSS				MLR	MLR		
	comp=Z,2μm,17.0s						
YSS				MLR	MLR		
	comp=N,1μm,12.0s						
YSS				MLR	MLR		
	comp=E,2μm,13.0s						
MSHR	**Mys Shultsa**	**10.50**	**309**	*i* P	**Pn**	**23 52 37.2**	**+1.2**
USRK	**Ussuriysk Ar.**	**10.96**	**318**	Pn	**

comp=Z,191nm,1.4s
QZH Quanzhou 23.34 247 P **P** **23 55 14.3 +2.1**
QZH S **S** **23 59 13.8 -7.4**
QZH LR LR
comp=Z,600nm,11.3s
QZH LR LR
comp=Z,1μm,14.4s
QZH LR LR
comp=Z,1μm,12.0s
MA2 Magadan 23.71 11 P **P** **23 55 14.8 -0.6**
comp=Z,12nm,0.8s,baz=214,slow=15,SNR=3.2
WHN Wuhan 23.98 264 P **P** **23 55 19.5 +1.4**
WHN pmax pmax
comp=Z,84nm,1.2s
WHN pmax pmax
comp=Z,590nm,6.8s
WHN LR LR
comp=Z,1μm,10.4s
WHN LR LR
comp=Z,3μm,13.8s
WHN LR LR
comp=Z,4μm,15.5s
HHC Hu-ho-hao-te 24.29 290 *e*P **P** **23 55 19.8 -1.2**
HHC S S 23 59 22.0 -15
HHC PcS **PcS** **00 02 43.9 +4.2**
HHC pmax pmax
comp=Z,19nm,0.9s
HHC pmax pmax
comp=Z,170nm,4.4s
HHC LR LR
comp=Z,670nm,11.3s
HHC LR LR
comp=Z,630nm,11.4s
HHC LR LR
comp=Z,560nm,11.2s
CIT Chita 25.52 316 *e*P **P** **23 55 35.6 +3.6**
CIT *e* 23 55 43.7
CIT *e* 23 55 59.5
CIT pmax pmax
comp=Z,133nm,1.7s
YAK Yakutsk 26.72 347 P **P** **23 55 43.8 +1.2**
comp=Z,16nm,0.4s,baz=296,slow=1.7,SNR=6.0
YAK Yakutsk 26.72 347 *e*P **P** **23 55 44.5 +1.9**
YAK *e**PP **pP** **23 55 51.6 -3.8**
YAK *e* 23 56 22.4
YAK *e*PPP PPP 23 56 31.5
YAK *e* 23 59 11.3
YAK *e*S **S** **00 00 12.6 -1.8**
YAK *e*SS SnSn 00 01 04.8 -17
YAK *e*SSS SSS 00 01 25.8
YAK pmax pmax
comp=Z,12nm,0.7s
YAK pmax pmax
comp=N,18nm,1.1s
YAK pmax pmax
comp=E,10.0nm,1.0s
YAK pmax pmax
comp=Z,101nm,2.7s
YAK pmax pmax
comp=E,100nm,3.0s
YAK pmax pmax
comp=N,102nm,2.5s
YAK smax smax
comp=N,69nm,3.7s
YAK smax smax
comp=E,127nm,3.7s
YAK MLR MLR
comp=Z,1μm,18.0s
YAK MLR MLR
comp=E,793nm,15.0s
YAK MLR MLR
comp=N,1μm,16.0s
YAK Yakutsk 26.72 347 *e*P **P** **23 55 44.8 +2.2**
comp=N,33nm,0.7s
SEY Seymchan 27.16 10 P **P** **23 55 47.0 +0.4**
comp=N,2.5nm,0.6s,baz=228,slow=7.7,SNR=7.2
XAN Xi'an 27.27 275 P **P** **23 55 48.8 +0.9**
XAN pP sP 23 56 10.1 +3.4
XAN pmax pmax
comp=N,24nm,1.5s
XAN pmax pmax
comp=N,180nm,6.6s
H11N2 WAKE ISLAND Hy 27.29 121 T T 00 24 01.4
baz=313,slow=75,SNR=12
H11N1 WAKE ISLAND Hy 27.30 121 T T 00 24 20.2
baz=313,slow=75,SNR=10
H11N3 WAKE ISLAND Hy 27.31 121 T T 00 24 07.1
baz=313,slow=75,SNR=11
ENH Enshi 27.99 267 *e*P **P** **23 55 55.7 +1.3**
comp=N,110nm,1.3s
H11S1 WAKE ISLAND Hy 28.00 123 T T 00 24 55.7
baz=315,slow=76,SNR=8.6
H11S3 WAKE ISLAND Hy 28.00 123 T T 00 24 51.3
baz=315,slow=76,SNR=9.4
H11S2 WAKE ISLAND Hy 28.02 123 T T 00 25 08.6
baz=315,slow=76,SNR=7.8
ULN Ulaanbaatar 28.21 305 *e*P **P** **23 55 57.7 +1.3**
ULN pmax pmax
comp=Z,47nm,1.3s
ULN Ulaanbaatar 28.21 305 *e*P **P** **23 55 57.7 +1.3**
comp=Z,47nm,1.3s
BOD Bodaibo 28.33 328 *e*P P 23 56 02.9 +5.8
BOD pmax pmax
comp=Z,51nm,1.5s
SONA1 Songino Array 28.64 305 *e*P **P** **23 56 01.7 +1.5**
SONM Songino Array 28.64 305 P **P** **23 56 02.9 +2.7**
comp=Z,7.8nm,0.9s,baz=108,slow=6.9,SNR=15
LZH Lanzhou 30.84 281 ⇑P P 23 56 23.1 +3.3
LZH pP sP 23 56 45.8 +7.2
LZH sP pP 23 56 55.8 +23
LZH PP **PnPn** **23 57 24.3 +2.8**
LZH pmax pmax
comp=Z,77nm,1.3s
LZH pmax pmax
comp=Z,210nm,5.2s
LZH LR LR
comp=Z,620nm,12.8s
LZH LR LR
comp=Z,920nm,13.0s
LZH LR LR
comp=Z,1μm,13.5s
ZAK Zakamensk 31.13 309 *e*P **P** **23 56 24.5 +2.4**
ZAK pmax pmax
comp=Z,22nm,1.6s
TLY Talaya 31.19 311 *e*P **P** **23 56 25.0 +2.5**
TLY *e* 23 57 23.5
TLY *e*S **S** **00 01 24.6 -0.3**
TLY *e*SS **SnSn** **00 03 18.0 +7.4**
TLY pmax pmax
comp=Z,17nm,1.1s
TLY MLR MLR
comp=Z,460nm,13.0s
TLY Talaya 31.19 311 *e*P **P** **23 56 23.1 +0.7**
comp=Z,65nm,1.9s
GYA Guiyang 31.83 262 ⇑*i*P **P** **23 56 28.8 +0.3**
GYA pP sP 23 56 55.0 +7.7
GYA sP pP 23 57 06.4 +25
GYA PP **PP** **23 57 37.8 -3.2**
GYA PcP PcP 23 59 27.3 +8.8
GYA S **S** **00 01 29.3 -6.3**
GYA sS sS 00 02 07.0 +10
GYA ScS **ScS** **00 06 55.3 -1.0**
GYA pmax pmax
comp=Z,20nm,0.8s
GYA pmax pmax
comp=Z,120nm,5.2s
GYA LR LR
comp=Z,500nm,16.8s
GYA LR LR
comp=Z,460nm,17.0s
GYA LR LR
comp=Z,480nm,17.2s
CD2 Chengdu 32.37 271 P **P** **23 56 34.5 +1.3**
CD2 pP sP 23 56 56.3 +4.3
CD2 sP pP 23 57 07.8 +22
CD2 PP **PP** **23 57 46.9 0.0**
CD2 S S 00 01 34.8 -9.1
CD2 sS sS 00 02 13.3 +7.5
CD2 pmax pmax
comp=Z,20nm,0.6s
CD2 pmax pmax
comp=Z,120nm,4.0s
CD2 LR LR
comp=Z,910nm,14.4s
CD2 LR LR
comp=Z,220nm,10.8s
CD2 LR LR
comp=Z,770nm,15.6s
MOY Mondy 32.80 311 *e*P P 23 56 40.8 +4.1
GTA Gaotai 33.38 288 *e*P **P** **23 56 44.4 +2.5**
GTA pP sP 23 57 07.1 +6.2
GTA sP pP 23 57 17.8 +23
GTA S **S** **00 01 51.3 -8.2**
GTA sS sS 00 02 29.3 +7.9
GTA SS **SnSn** **00 03 51.6 -13**
GTA pmax pmax
comp=Z,12nm,1.3s
GTA pmax pmax
comp=Z,95nm,7.1s
GTA LR LR
comp=Z,560nm,15.0s
GTA LR LR
comp=Z,540nm,14.5s
GTA LR LR
comp=Z,510nm,15.9s
BILL Bilibino 34.32 16*d i*P **P** **23 56 49.5 -0.1**
BILL *i**SP **pP** **23 57 00.5 -2.1**
BILL *i* S **S** **00 02 10.0 -3.2**
BILL *e*SSS SSS 00 04 51.3
BILL pmax pmax
comp=Z,6.0nm,1.2s
BILL MLR MLR
comp=Z,230nm,19.0s
BILL Bilibino 34.32 16 *e*P P 23 56 57.1 +7.4
comp=Z,21nm,1.5s
KWAJ Kwajalein Atol 35.94 134 *e*P P 23 57 26.1 +22
KWAJ pmax pmax
comp=Z,222nm,1.3s
KWAJ Kwajalein Atol 35.94 134 *e*P P 23 57 26.1 +22
comp=Z,222nm,1.3s
NIKH Nikolski High 37.59 48 *e*P P 23 57 31.5 +14
comp=Z,247nm,1.9s
MANU Manus Island 38.66 172 *e*P P 23 57 46.1 +19
comp=Z,32nm,1.4s
WMQ Urumqi 41.69 298 P P 23 57 55.4 +3.3
WMQ pP sP 23 58 15.3 +4.1
WMQ sP pP 23 58 26.3 +21
WMQ S S 00 03 56.1 -9.2
WMQ sS sS 00 04 34.3 +6.7
WMQ pmax pmax
comp=Z,20nm,1.0s
WMQ pmax pmax
comp=Z,110nm,4.0s
WMQ LR LR
comp=Z,170nm,20.8s
WMQ LR LR
comp=Z,74nm,17.4s
WMQ LR LR
comp=Z,28nm,22.6s
CHTO Chiang Mai 41.85 257 *e*P P 23 57 56.7 +3.2
CHTO pmax pmax
comp=Z,26nm,1.8s
CHTO Chiang Mai 41.85 257 *e*P P 23 57 56.7 +3.2
comp=Z,26nm,1.8s
CMAR Chiang Mai Arr 42.05 257 P **P** **23 57 57.0 +1.9**
comp=Z,0.8nm,0.7s,baz=52,slow=5.8,SNR=8.1
CMAR LR LR 00 17 56.9
comp=Z,254nm,18.0s,baz=64,slow=40
CM01 Chiang Mai Arr 42.05 257 *e*P **P** **23 57 56.9 +1.7**
ZAA0 Zalesovo Array 42.77 313 *e*P **P** **23 58 02.4 +1.8**
ZALV Zalesovo Beam 42.77 313 P **P** **23 58 02.7 +2.1**
comp=Z,3.9nm,0.7s,baz=98,slow=6.0,SNR=6.1
ZALV PcP **PcP** **23 59 52.6 +1.5**
comp=Z,0.8nm,0.5s,baz=79,slow=3.1,SNR=2.3
CHGN Chignik 43.85 44 *e*P P 23 58 22.8 +14
NRIK Noril'sk 44.02 335 P **P** **23 58 11.3 +0.8**
comp=Z,1.5nm,0.7s,baz=112,slow=9.9,SNR=1.6
MKAR Makanchi Array 44.98 303 P **P** **23 58 20.9 +2.4**
comp=Z,9.5nm,1.0s,baz=86,slow=9.5,SNR=13
TARA Tarawa 45.03 134 *e*P P 23 58 40.4 +21
comp=Z,186nm,1.1s
MAKZ Makanchi 45.19 303 *e*P **P** **23 58 22.2 +2.1**
MAKZ pmax pmax
comp=Z,53nm,1.5s
MAKZ Makanchi 45.19 303 *e*P **P** **23 58 22.2 +2.1**
comp=Z,53nm,1.5s
TT01 Tatalina 45.44 34 *e*P P 23 58 32.8 +11
PMG Port Moresby 45.92 173 *e*P P 23 58 45.7 +20
PMG pmax pmax
comp=Z,22nm,1.2s
PMG Port Moresby 45.92 173 *e*P P 23 58 45.7 +20
comp=Z,22nm,1.2s
KAPI Kappang 46.39 212 P **P** **23 58 30.4 +0.6**
comp=Z,4.8nm,0.5s,baz=43,slow=7.1,SNR=4.1
KAPI Kappang 46.39 212 *e*P P 23 58 42.8 +13
comp=Z,29nm,1.1s
KURK Kurchatov 46.79 309 *e*P **P** **23 58 34.0 +1.3**
KURK pmax pmax
comp=Z,37nm,1.2s
KURK Kurchatov 46.79 309 *e*P **P** **23 58 34.0 +1.3**
comp=Z,37nm,1.2s
JOHN Johnston Islan 46.84 102 *e*P P 23 58 53.5 +20
comp=Z,81nm,1.0s
PPLA Purkeypile 47.19 35 *e*P P 23 58 48.0 +12
comp=Z,27nm,1.6s
SPU Mount Spurr 47.22 37 *e*P P 23 58 48.4 +12
CAST Castle Rocks 47.26 34 *e*P P 23 58 48.4 +12
comp=Z,13nm,1.6s
HOM Homer 47.44 39 *e*P P 23 58 48.5 +11
comp=Z,130nm,1.1s
PDGK Podgornoye 47.63 299 P P 23 58 42.7 +3.5
PDGK pmax pmax
comp=Z,19nm,1.5s
BPAW Bear Paw Mtn. 47.77 33 *e*P P 23 58 51.0 +11
comp=Z,9.0nm,1.4s
GUN Gumba 47.90 277 *e*P **P** **23 58 43.9 +1.9**
comp=Z,13nm,0.6s
COLD Coldfoot 48.26 29 *e*P P 23 58 53.4 +10
comp=Z,12nm,1.7s
RC01 Rabbit Creek A 48.34 37 *e*P P 23 58 56.2 +12
comp=Z,16nm,1.2s
PKIN Phulchoki 48.43 276 *e*P **P** **23 58 46.5 +0.5**
KKN Kakani 48.43 277 *e*P **P** **23 58 47.7 +1.7**
comp=Z,38nm,1.2s
SEW Seward 48.53 38 *e*P P 23 58 57.6 +12
comp=Z,36nm,1.4s
PMR Palmer 48.62 36 *e*P P 23 58 58.4 +12
PMR pmax pmax
comp=Z,21nm,1.5s
PMR Palmer 48.62 36 *e*P P 23 58 58.4 +12
comp=Z,21nm,1.5s
RND Reindeer 48.71 34 *e*P P 23 58 59.7 +12
RND Reindeer 48.71 34 *e*P P 23 58 59.7 +12
comp=Z,9.3nm,1.2s
GKN Gorkha 48.85 277 *e*P **P** **23 58 51.1 +2.0**
comp=Z,46nm,1.0s
MDM Murphy Dome 48.98 32 *e*P P 23 59 00.5 +11
comp=Z,9.6nm,1.0s
SML Sawmill 48.99 36 *e*P P 23 59 01.6 +12
SML pmax pmax
comp=Z,25nm,1.4s
SML Sawmill 48.99 36 *e*P P 23 59 01.6 +12
comp=Z,25nm,1.4s
WRH Wood River Hil 49.04 33 *e*P P 23 59 00.7 +11
comp=Z,10nm,1.5s
CCB Clear Creek Bu 49.16 32 *e*P P 23 59 01.1 +10
comp=Z,15nm,2.0s
KULM Kulim 49.17 241 *e*P P 23 58 59.6 +8.1
comp=Z,11nm,1.1s
SCM Sheep Creek Mo 49.47 36 *e*P P 23 59 04.4 +11
SCM pmax pmax
comp=Z,29nm,1.6s
SCM Sheep Creek Mo 49.47 36 *e*P P 23 59 04.4 +11
comp=Z,29nm,1.6s
MYKOM Kota Tinggi 49.52 235 *e*P P 23 59 01.9 +7.8
comp=Z,22nm,1.3s
HDA Harding Lake 49.53 33 *e*P P 23 59 04.7 +11
comp=Z,12nm,1.1s
ILAR Eielson Array 49.55 32 P **P** **23 58 53.3 -0.5**
comp=Z,1.0nm,0.7s,baz=265,slow=6.4,SNR=14
ILB Eielson Array 49.55 32 *e*P P 23 59 05.0 +11
KOLN Koldanda 49.78 278 *e*P **P** **23 58 57.8 +1.5**
comp=Z,10nm,0.8s
PYUN Piuthan 50.12 278 *e*P **P** **23 59 01.0 +2.1**
DIV Divide 50.26 37 *e*P P 23 59 11.1 +12
comp=Z,19nm,1.1s
TKM2 Tokmak 2 50.48 299 *e*P P 23 59 04.3 +2.9
TKM2 pmax pmax
comp=Z,45nm,1.4s
TKM2 Tokmak 2 50.48 299 *e*P P 23 59 04.2 +2.9
comp=Z,45nm,1.4s
DOT Dot Lake 50.84 34 *e*P P 23 59 14.8 +11
comp=Z,30nm,1.5s
MENT Mentasta 51.06 34 *e*P P 23 59 16.1 +11
comp=Z,13nm,1.0s
FRU Bishkek 51.20 299 *e*P **P** **23 59 09.0 +2.4**
KSH Kashi 51.25 295 P P 23 59 13.6 +6.5
KSH *e*pP sP 23 59 36.6 +10
KSH *e*sP sP 23 59 47.8 +21
KSH *e*PP PP 00 01 12.0 +7.9
KSH PcS **PcS** **00 04 24.1 +4.5**
KSH S **S** **00 06 17.9 -4.3**
KSH ScS **ScS** **00 08 49.1 -4.2**
KSH SS **SS** **00 09 50.0 -7.9**
KSH pmax pmax
comp=Z,33nm,1.5s
KSH pmax pmax
comp=Z,210nm,5.7s
KSH LR LR
comp=Z,390nm,14.5s
KSH LR LR
comp=Z,180nm,7.6s
KSH LR LR
comp=Z,600nm,15.4s
OTUK Ortayu 51.28 306 P P 23 59 09.9 +2.8
OTUK pmax pmax
comp=Z,20nm,1.5s
AAK Ala-Archa 51.34 299 *e*P **P** **23 59 10.5 +2.7**
AAK pmax pmax
comp=Z,12nm,1.1s
AAK Ala-Archa 51.34 299 *e*P **P** **23 59 10.5 +2.7**
comp=Z,12nm,1.1s
BRVK Borovoye 51.48 313 *e*P **P** **23 59 10.3 +1.8**
BRVK pmax pmax
comp=Z,8.0nm,1.1s
BRVK Borovoye 51.48 313 *e*P **P** **23 59 10.3 +1.8**
comp=Z,8.0nm,1.1s
EKS2 Erkin-Say 51.84 299 *e*P P 23 59 14.2 +2.7
EKS2 pmax pmax
comp=Z,7.0nm,1.1s
EKS2 Erkin-Say 51.84 299 *e*P P 23 59 14.2 +2.8
comp=Z,7.1nm,1.1s
PSI Prapat 52.14 240 LR LR 00 22 13.8
comp=Z,129nm,19.5s,slow=37
PSI Prapat 52.14 240 *e*P P 23 59 22.9 +8.9
PSI pmax pmax
comp=Z,7.0nm,1.0s
PSI Prapat 52.14 240 *e*P P 23 59 22.9 +8.9
comp=Z,7.2nm,1.0s
MNAS Manas 52.79 299 P P 23 59 22.2 +3.7
MNAS pmax pmax
comp=Z,15nm,1.3s
SFK Sufi-Kurgan 52.88 296 P P 23 59 22.3 +2.9
SFK pmax pmax
comp=Z,22nm,1.6s
KKAR Karatay Array 53.98 301 *e*P **P** **23 59 29.7 +2.6**
KKAR Karatay Array 53.98 301 *e*P **P** **23 59 29.7 +2.6**
INK Inuvik 54.52 27 P **P** **23 59 29.7 -0.9**
comp=Z,1.1nm,0.8s,baz=280,slow=6.1,SNR=6.5
INK Inuvik 54.52 27 *e*P P 23 59 41.7 +11
INK pmax pmax
comp=Z,4.0nm,0.9s
INK Inuvik 54.52 27 *e*P P 23 59 41.7 +11
comp=Z,4.1nm,0.9s
SKAG Skagway 55.67 38 *e*P P 23 59 49.9 +11
comp=Z,9.6nm,1.0s
SVE Sverdlovsk 55.98 319 *e*P **P** **23 59 43.5 +2.2**
FITZ Fitzroy Crossi 56.56 199 P **P** **23 59 44.9 -0.9**
comp=Z,2.2nm,0.8s,baz=16,slow=13,SNR=2.5
WRAB Tennant Creek 56.65 189 *e*P P 00 00 02.4 +16
WRAB pmax pmax
comp=Z,16nm,0.7s
WRAB Tennant Creek 56.65 189 *e*P P 00 00 02.4 +16
comp=Z,16nm,0.7s
WB2 Warramunga Arr 56.66 189 *e*P P 00 00 02.1 +16
comp=Z,15nm,1.3s
WRA Warramunga Arr 56.66 189 P **P** **23 59 45.9 -0.6**
comp=Z,3.2nm,0.9s,baz=8.1,slow=7.5,SNR=13
ARU Arti 57.20 319*c i*P **P** **23 59 51.6 +1.7**
ARU 00 01 58.9
ARU S **S** **00 07 48.1 +6.4**
ARU pmax pmax
comp=Z,22nm,1.2s
ARU Arti 57.20 319 *e*P **P** **23 59 51.8 +1.8**
comp=Z,44nm,1.4s
KBL Kabul 58.24 292 *e*P **P** **00 00 00.0 +2.1**
KBL pmax pmax
comp=Z,19nm,1.2s
KBL Kabul 58.24 292 *e*P **P** **00 00 00.0 +2.1**
comp=Z,19nm,1.2s
ABKAR Akbulak array 58.80 311 *e*P **P** **00 00 02.8 +1.6**
HYB Hyderabad 58.89 269 *i*P P 00 00 05.0 +2.6
ASAR Alice Springs 60.39 189 P **P** **00 00 10.9 -1.5**
comp=Z,1.2nm,0.9s,baz=8.9,slow=6.6,SNR=6.9
ASAR LR LR 00 28 05.0
comp=Z,69nm,18.9s,baz=358,slow=38
SPITS Spitsbergen Ar 61.15 349 LR LR 00 30 01.9
comp=Z,264nm,18.4s,baz=100,slow=39
RES Resolute Bay 62.92 15 P **P** **00 00 28.6 -0.2**
comp=Z,1.5nm,0.8s,baz=315,slow=7.5,SNR=5.8
TMCR Tamitsa 63.52 332 *e*P **P** **00 00 35.0 +2.1**
TMCR pmax pmax
comp=Z,9.0nm,0.8s
YKA Yellowknife Ar 63.90 30 P **P** **00 00 35.3 -0.2**
comp=Z,0.5nm,0.7s,baz=300,slow=6.7,SNR=8.9
YKB5 Yellowknife Ar 63.90 30 *e*P P 00 00 46.6 +11
KLMR Klimovskoe 64.55 328 *e*P **P** **00 00 38.2 -1.6**
KLMR pmax pmax
comp=Z,18nm,1.1s
GEYT Alibeck 64.69 300 P **P** **00 00 43.2 +2.1**
comp=Z,1.8nm,0.9s,baz=339,slow=3.8,SNR=4.9
ARCES ARCESS Array B 64.71 340 LR LR 00 32 25.7
comp=Z,111nm,18.7s,baz=45,slow=39
MOS Moscow 68.07 324 *e*P P 00 01 13.7 +11
MOS pmax pmax
comp=Z,50nm,1.1s
VRH Novokhopyorsk 68.42 318 *e*P **P** **00 01 05.1 +0.5**
VRH *e**SP **pP** **00 01 15.0 -3.8**
VRH pmax pmax
comp=Z,4.0nm,0.8s
OBN Obninsk 68.92 324⇓*i*P **P** **00 01 09.5 +1.9**
OBN *i* 00 01 21.7
OBN 00 01 34.1
OBN S S 00 10 26.4 +18
OBN *e*SS **SS** **00 14 27.9 -5.3**
OBN pmax pmax
comp=Z,23nm,1.5s
OBN MLR MLR
comp=Z,84nm,15.0s
LPSR Galich'ya Gora 69.13 321 *e*P **P** **00 01 10.1 +1.0**
LPSR *e**SP **pP** **00 01 20.0 -3.2**
LPSR pmax pmax
comp=Z,20nm,1.4s
LPSR MLR MLR
comp=Z,540nm,16.0s
FIA1 FINESS Array S 69.58 333 *e*P **P** **00 01 13.3 +1.6**
FINES FINESS Array B 69.58 333 P **P** **00 01 13.3 +1.6**
comp=Z,4.5nm,0.7s,baz=46,slow=8.2,SNR=11
FINES LR LR 00 36 26.0
comp=Z,226nm,19.6s,baz=42,slow=40
VSR Storozhevoye 69.77 319 *e*P **P** **00 01 14.1 +1.1**
VSR *e**SP **pP** **00 01 24.9 -2.3**
VSR pmax pmax
comp=Z,10.0nm,0.9s
GOF Gofitskoye 70.95 312⇑*e*P P 00 01 22.8 +2.5
GOF pmax pmax
comp=Z,19nm,1.0s
VSU Vasula 71.24 330*d i*P **P** **00 01 23.7 +1.9**
VSU pmax pmax
comp=Z,57nm,1.7s
ZEI Tsey 71.66 310 *e*P P 00 01 35.4 +10
ZEI pmax pmax
comp=Z,98nm,1.9s
KBZ Khabaz 71.76 311 P P 00 01 27.6 +2.4
comp=Z,5.7nm,0.9s,baz=336,slow=1.4,SNR=8.4
KIV Kislovodsk 71.76 311*c i*P **P** **00 01 27.4 +2.0**
KIV pmax pmax
comp=Z,22nm,1.1s
KIV Kislovodsk 71.76 311 *e*P P 00 01 28.1 +2.7
comp=Z,48nm,1.2s
FFC Flin Flon 73.75 33 *e*P P 00 01 47.2 +10
FFC pmax pmax
comp=Z,26nm,2.0s
FFC Flin Flon 73.75 33 *e*P P 00 01 47.2 +10
comp=Z,26nm,2.0s
LRM Limekiln Ridge 74.02 45 *e*P P 00 01 50.8 +12
ANN Anapa 74.38 314 *e*P P 00 01 50.3 +10
ANN pmax pmax

	comp=Z,121nm,1.4s								
HFS	**Hagfors**	**74.83**	**336**	LR	LR	00 38 06.6			
	comp=Z,358nm,18.7s,baz=44,slow=38								
NB2	**NORSAR Subarra**	**74.92**	**338**	P	**P**	**00 01 44.8**	**+1.2**		
	comp=Z,0.9nm,0.8s,baz=39,slow=5.9								
NOA	**NORSAR Array B**	**74.92**	**338**	P	**P**	**00 01 43.6**	**0.0**		
	comp=Z,1.8nm,0.8s,baz=39,slow=5.7,SNR=5.0								
NOA				LR	LR	00 39 00.4			
	comp=Z,228nm,19.3s,baz=355,slow=39								
AKASG	**Malin Array Be**	**75.12**	**323**	P	**P**	**00 01 45.8**	**+0.9**		
	comp=Z,2.3nm,0.7s,baz=44,slow=6.1,SNR=18								
KIEV	**Kiev**	**75.13**	**323**	*e*P	**P**	**00 01 46.1**	**+1.2**		
KIEV				pmax	pmax				
	comp=Z,47nm,3.8s								
KIEV	**Kiev**	**75.13**	**323**	*e*P	P	00 01 47.8	+2.9		
	comp=Z,13nm,1.0s								
H17A	**Grant Village**	**75.94**	**45**	*e*P	P	00 02 04.4	+14		
FLWY	**Flagg Ranch**	**76.06**	**45**	*e*P	P	00 02 02.6	+12		
	comp=Z,13nm,1.4s								
FXWY	**Fox Creek**	**76.14**	**46**	*e*P	P	00 02 03.8	+13		
	comp=Z,8.8nm,1.5s								
MOOW	**Moose Ponds**	**76.24**	**46**	*e*P	P	00 02 05.1	+13		
	comp=Z,20nm,1.9s								
BGU	**Big Grassy Mou**	**76.59**	**49**	*e*P	P	00 02 06.0	+12		
	comp=Z,8.6nm,1.5s								
HWUT	**Hardware Ranch**	**77.06**	**48**	*e*P	P	00 02 07.5	+11		
	comp=Z,11nm,1.4s								
DUG	**Dugway, Tooele**	**77.16**	**49**	*e*P	P	00 02 09.1	+12		
DUG				pmax	pmax				
	comp=Z,7.0nm,1.1s								
DUG	**Dugway, Tooele**	**77.16**	**49**	*e*P	P	00 02 09.1	+12		
	comp=Z,7.3nm,1.1s								
PSUT	**Pine Spring**	**77.51**	**51**	*e*P	P	00 02 11.4	+12		
	comp=Z,4.5nm,1.2s								
BW06	**Boulder Array**	**77.53**	**46**	*e*P	P	00 02 08.7	+10		
PDAR	**Pinedale Array**	**77.53**	**46**	P	**P**	**00 01 59.0**	**0.0**		
	comp=Z,0.3nm,0.7s,baz=256,slow=2.7,SNR=3.2								
LCMT	**Little Creek M**	**78.81**	**52**	*e*P	P	00 02 19.2	+13		
	comp=Z,5.9nm,1.3s								
P17A	**Butcher Ranch,**	**78.87**	**49**	*e*P	P	00 02 17.1	+11		
	comp=Z,8.0nm,0.9s								
P18A	**Preston Nutter**	**79.07**	**49**	*e*P	P	00 02 20.6	+13		
	comp=Z,15nm,1.6s								
KNB	**Kanab**	**79.08**	**52**	*e*P	P	00 02 20.8	+13		
KNB				pmax	pmax				
	comp=Z,25nm,1.6s								
KNB	**Kanab**	**79.08**	**52**	*e*P	P	00 02 20.8	+13		
	comp=Z,25nm,1.6s								
BUR08	**Bucovina Ar. S**	**79.13**	**322**	*e*P	P	00 02 12.3	+4.7		
BR131	**Keskin Array S**	**79.71**	**312**	*e*P	P	00 02 14.3	+3.4		
BRTR	**Keskin Array B**	**79.71**	**312**	P	**P**	**00 02 13.1**	**+2.2**		
	comp=Z,1.9nm,1.0s,baz=64,slow=3.4,SNR=5.7								
STHS	**Stebnicka Huta**	**79.77**	**325**	*e*P	P	00 02 13.8	+2.9		
STHS				pmax	pmax				
	comp=Z,6.0nm,1.2s								
OJC	**Ojcow**	**79.84**	**327**	*e*P	P	00 02 13.7	+2.4		
OJC				pmax	pmax				
	comp=Z,33nm,1.4s								
OJC	**Ojcow**	**79.84**	**327**	*e*P	P	00 02 13.7	+2.4		
	comp=Z,33nm,1.4s								
CRVS	**Cervenica-Dubn**	**80.04**	**325**	*e*P	**P**	**00 02 14.1**	**+1.7**		
BR231	**Keskin MP Arra**	**80.15**	**313**	*e*P	**P**	**00 02 14.2**	**+1.0**		
LANS	**Liptovska Anna**	**80.77**	**326**	*e*P	**P**	**00 02 16.6**	**+0.3**		
KECS	**Kecovo**	**80.79**	**325**	*e*P	P	00 02 19.3	+2.9		
KECS				pmax	pmax				
	comp=Z,2.0nm,1.0s								
MORC	**Moravsky Berou**	**81.16**	**327**	*e*P	P	00 02 23.2	+4.8		
MORC				pmax	pmax				
	comp=Z,58nm,1.5s								
MORC	**Moravsky Berou**	**81.16**	**327**	*e*P	P	00 02 23.2	+4.8		
	comp=Z,58nm,1.5s								
DPC	**Dobruska-Polom**	**81.25**	**328**	*e*P	**P**	**00 02 20.6**	**+1.7**		
DPC				*ex*	x	00 02 32.4			
DPC				AMS	AMS	00 43 40.0			
	comp=Z,400nm,18.2s								
DPC	**Dobruska-Polom**	**81.25**	**328**	*e*P	**P**	**00 02 20.6**	**+1.7**		
DPC				*e*		00 02 32.4			
DPC				MLR	MLR				
	comp=Z,400nm,18.2s								
KRLC	**Kraliky**	**81.27**	**328**	*e*P	P	00 02 21.9	+2.9		
KRLC				*ex*	x	00 02 31.9			
KRLC	**Kraliky**	**81.27**	**328**	*e*P	P	00 02 21.9	+2.9		
KRLC				*e*		00 02 31.9			
UPC	**Upice**	**81.27**	**329**	*e*P	**P**	**00 02 20.4**	**+1.5**		
UPC	**Upice**	**81.27**	**329**	*e*P	**P**	**00 02 20.4**	**+1.5**		
SMCO	**Snowmass**	**81.31**	**47**	*e*P	P	00 02 32.7	+13		
	comp=Z,8.7nm,1.5s								
PSZ	**Piszkesteto**	**81.47**	**325**	*e*P	P	00 02 23.6	+3.5		
PSZ				pmax	pmax				
	comp=Z,17nm,1.3s								
PSZ	**Piszkesteto**	**81.47**	**325**	*e*P	P	00 02 23.6	+3.5		
	comp=Z,17nm,1.3s								
RAYN	**Ar Rayn**	**81.49**	**293**	*e*P	**P**	**00 02 22.8**	**+2.2**		
	comp=Z,17nm,1.3s								
VYHS	**Vyhne**	**81.53**	**326**	*e*P	**P**	**00 02 22.4**	**+2.0**		
VYHS				*e*		00 02 32.6			
VYHS				pmax	pmax				
	comp=Z,6.0nm,1.3s								
PVCC	**Panska Ves**	**81.85**	**329**	*e*P	**P**	**00 02 24.0**	**+2.0**		
PVCC	**Panska Ves**	**81.85**	**329**	*e*P	**P**	**00 02 24.0**	**+2.0**		
CLL	**Collm**	**81.88**	**331**	*e*P	**P**	**00 02 23.0**	**+0.9**		
	comp=Z,5.0nm,1.0s								
CLL				*i*		00 02 34.2			
	comp=Z,23nm,1.7s								
CLL	**Collm**	**81.88**	**331**	*e*P	**P**	**00 02 23.0**	**+0.9**		
CLL				*i*		00 02 34.2			
CLL				pmax	pmax				
	comp=Z,5.0nm,1.0s								
PRU	**Pruhonice**	**82.28**	**329**	*e*P	**P**	**00 02 26.1**	**+1.9**		
PRU				*ex*	x	00 02 37.2			
PRU	**Pruhonice**	**82.28**	**329**	*e*P	**P**	**00 02 26.1**	**+1.9**		
PRU				*e*		00 02 37.2			
S22A	**4UR Ranch, Cre**	**82.33**	**48**	*e*P	P	00 02 36.8	+12		
	comp=Z,9.8nm,1.0s								
TREC	**Trest**	**82.41**	**328**	*e*P	**P**	**00 02 26.8**	**+1.8**		
TREC	**Trest**	**82.41**	**328**	*e*P	**P**	**00 02 26.8**	**+1.8**		
CSS	**Mathiatis**	**82.92**	**308**	*e*P	P	00 02 31.8	+3.9		
	comp=Z,3.4nm,1.1s								
KHC	**Kasperske Hory**	**83.34**	**329**	*e*P	**P**	**00 02 31.0**	**+1.2**		
KHC				*ex*	x	00 02 42.0			
KHC	**Kasperske Hory**	**83.34**	**329**	*e*P	**P**	**00 02 31.7**	**+1.9**		
KHC				pmax	pmax				
	comp=Z,6.0nm,1.5s								
KHC	**Kasperske Hory**	**83.34**	**329**	*e*P	**P**	**00 02 31.7**	**+1.9**		
	comp=Z,6.0nm,1.5s								
GERES	**GERESS Array B**	**83.51**	**329**	P	**P**	**00 02 32.1**	**+1.4**		
	comp=Z,0.7nm,0.7s,baz=51,slow=5.3,SNR=5.3								
GEA0	**GERESS Array S**	**83.51**	**329**	*e*P	**P**	**00 02 32.4**	**+1.7**		
VTS	**Vitosha**	**83.65**	**320**	*e*P	**P**	**00 02 33.7**	**+2.0**		
VTS				pmax	pmax				
	comp=Z,23nm,1.8s								
VTS	**Vitosha**	**83.65**	**320**	*e*P	**P**	**00 02 33.7**	**+2.0**		
	comp=Z,23nm,1.8s								
PPT	**Papeete**	**83.79**	**117**	LR	LR	00 34 17.8			
	comp=Z,74nm,20.0s,baz=356,slow=32								
GRFO	**Grafenberg**	**83.86**	**330**	*e*P	P	00 02 35.1	+2.7		
GRFO				pmax	pmax				
	comp=Z,18nm,1.3s								
GRFO	**Grafenberg**	**83.86**	**330**	*e*P	P	00 02 35.1	+2.7		
	comp=Z,18nm,1.3s								
T25A	**Trinidad**	**84.17**	**48**	*e*P	P	00 02 46.1	+12		
T25A				*e*pP	pP	00 02 47.4	-1.7		
ANMO	**Albuquerque**	**84.38**	**50**	*e*P	P	00 02 48.1	+12		
ANMO				pmax	pmax				
	comp=Z,8.0nm,1.3s								
ANMO	**Albuquerque**	**84.38**	**50**	*e*P	P	00 02 48.1	+12		
	comp=Z,8.0nm,1.3s								
BFO	**Black Forest**	**86.08**	**331**	*e*P	P	00 02 48.2	+4.6		
BFO				*e*		00 02 55.7			
BFO	**Black Forest**	**86.08**	**331**	*e*P	P	00 02 48.2	+4.6		
BFO				*e*PcP	pP	00 02 55.7	-2.4		
TXAR	**Lajitas Array**	**89.88**	**53**	P	**P**	**00 03 00.3**	**-1.9**		
	comp=Z,1.0nm,0.8s,baz=284,slow=3.6,SNR=3.4								
WVT	**Waverly**	**94.03**	**39**	*e*P	P	00 03 33.3	+12		
WVT				pmax	pmax				
	comp=Z,16nm,0.8s								
WVT	**Waverly**	**94.03**	**39**	*e*P	P	00 03 33.3	+12		
	comp=Z,16nm,0.8s								
TORD	**Torodi Ar. Bea**	**118.18**	**315**	PP	PP	00 10 06.1	+0.8		
	comp=Z,0.5nm,0.9s,baz=39,slow=5.7,SNR=4.9								
LPAZ	**La Paz**	**146.34**	**61**	PKPbc	**PKPbc**	**00 09 40.9**	**-3.8**		
	comp=Z,0.6nm,0.7s,baz=340,slow=8.6,SNR=2.5								

*IDC **14** 23:51:06.7±1.8,32.°60S×178.°71W,h0km, mb4.0/2,*

mb1 4.2/3,mb1mx3.8/35,mbtmp3.9/3,ML3.5/1,Error ellipse: s-maj=46.1km s-min=38.9km az=118.0

*ISCJB **14** 23:51:09.7±1.1,32.°78S±0.°07×178.°7W±0.°2,h33km, mb4.6/8,Error ellipse: s-maj=26.2km s-min=7.0km az=14.6*

*NEIC **14** 23:51:11.8±0.7,32.°66S×178.°70W,h35km,mb4.5/5,Error ellipse: s-maj=18.9km s-min=13.0km az=110.0*

ISC 14 23:51:11.2±1.1,32.°73S±0.°10×178.°7W±0.°2,h33km,n18, σ0s95/23,mb4.3/8,South of Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
WMGZ	**Waiomatatini S**	**5.62**	**204**			PN	**Pn**	**23 52 32.6**	**+0.2**
PKGZ	**Pakihiroa**	**5.80**	**206**			PN	**Pn**	**23 52 34.4**	**-0.5**
HAZ	**Te Kaha**	**5.80**	**209**	*e*PN		**Pn**		**23 52 36.2**	**+1.3**
HAZ						SN	**Sn**	**23 53 42.4**	**+2.1**
PUZ	**Puketiti**	**5.90**	**204**			PN	**Pn**	**23 52 35.0**	**-1.3**
PUZ				*e*SN			**Sn**	**23 53 40.9**	**-1.8**
URZ	**Urewera**	**6.51**	**211**	Pn		**Pn**		**23 52 44.4**	**-0.2**
	0.9nm,0.3s,baz=236,slow=18,SNR=12								
URZ						Sn	**Sn**	**23 53 57.7**	**0.0**
	4.1nm,0.3s,baz=146,slow=20,SNR=7.3								
URZ	**Urewera**	**6.51**	**211**	PN		**Pn**		**23 52 44.4**	**-0.2**
URZ						SN	**Sn**	**23 53 56.5**	**-1.2**
URZ	**Urewera**	**6.51**	**211**	*e*Pn		**Pn**		**23 52 45.2**	**+0.6**
URZ				*e*Sn			**Sn**	**23 53 57.9**	**+0.2**
HNR	**Honiara**	**30.46**	**315**	*e*P		**P**		**23 57 20.5**	**-0.5**
	34nm,0.4s								
ASAR	**Alice Springs**	**42.48**	**270**	P		**P**		**23 59 02.2**	**-1.3**
	0.8nm,0.5s,baz=94,slow=7.9,SNR=10.0								
WRAB	**Tennant Creek**	**43.67**	**275**	*e*P		**P**		**23 59 13.5**	**+0.4**
	2.0nm,0.6s								
WRA	**Warramunga Arr**	**43.68**	**275**	P		**P**		**23 59 14.3**	**+1.1**
	2.2nm,0.6s,baz=115,slow=7.5,SNR=11								
COCO	**West Island**	**78.94**	**263**	*e*P		**P**		**00 03 12.2**	**+0.3**
	93nm,0.5s								
MAJO	**Matsushiro**	**79.84**	**326**	*e*P		**P**		**00 03 15.8**	**-0.4**
	1.5nm,0.3s								
BJT	**Baijiatuan**	**94.17**	**316**	*e*P		**P**		**00 04 26.9**	**+0.4**
	3.2nm,0.4s								
HWUT	**Hardware Ranch**	**96.31**	**44**	*e*P		**P**		**00 04 36.6**	**+0.1**
	0.4nm,0.5s								
FINES	**FINESS Array B**	**147.11**	**338**	PKPbc		**PKPbc**		**00 10 49.8**	**-0.2**
	3.6nm,0.8s,baz=49,slow=4.2,SNR=12								
TORD	**Torodi Ar. Bea**	**160.51**	**181**	PKPab		**PKPab**		**00 11 50.2**	**+1.0**
	0.3nm,0.8s,baz=193,slow=5.9,SNR=1.3								
GERES	**GERESS Array B**	**161.41**	**334**	PKPab		**PKPab**		**00 11 52.1**	**-0.4**
	0.3nm,0.8s,baz=45,slow=1.5,SNR=1.6								

JMA 14 23:53:28.2±0.1,38.°59N×142.°23E,h29km±2km,M4.1, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**0.66**	**318**	P		P	Pb	23 53 40.9	-0.3
OFUJ				S		S	Sb	23 53 49.6	-0.4
JIO	**Ouri**	**0.70**	**259**	P		P	Pb	23 53 41.4	-0.5
JIO				S		S	Sb	23 53 50.2	-1.1
JMK	**Ichinoseki**	**0.87**	**295**	P		P	Pn	23 53 44.2	-0.2
JMK				S		S	Sb	23 53 55.8	-0.2
JOM	**Ohasama**	**1.15**	**321**	P		P	Pn	23 53 48.7	+0.4
JOM				S		S	Sn	23 54 03.2	+0.2
JOU	**Okura**	**1.25**	**260**	P		P	Pn	23 53 50.1	+0.4
JOU				S		S	Sn	23 54 05.7	+0.1
JMM	**Marumori**	**1.34**	**238**	P		P	Pn	23 53 50.8	-0.2
JTH	**Tanohata**	**1.38**	**348**	P		P	Pn	23 53 51.4	-0.1
JTH				S		S	Sn	23 54 08.4	-0.3

*ISCJB **14** 23:57:34.8±0.7,24.°97N±0.°09×122.°7E±0.°1,h16km, mb3.3/5,Error ellipse: s-maj=17.7km s-min=6.0km az=139.5*

*JMA **14** 23:57:34.8±0.3,24.°98N×122.°71E,h20km±4km,M2.7*

*IDC **14** 23:57:59.7±6.7,24.°70N×122.°18E,h241km±70km,mb2.8/5, mb1 3.0/6,mb1mx2.7/44,mbtmp3.5/6,Error ellipse: s-maj=47.4km s-min=23.4km az=63.0*

ISC 14 23:57:36.1±0.9,24.°94N±0.°09×122.°8E±0.°1,h16km,n11, σ0s53/13,mb3.4/5,Taiwan region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
JYNG	**Yonagunijimaku**	**0.50**	**166**	P		P	**Pg**	**23 57 45.8**	**-0.3**
JYNG				S		S	**Sb**	**23 57 54.1**	**+0.5**
IRIF	**Iriomote-Funau**	**1.03**	**126**	P		P	**Pb**	**23 57 55.2**	**-0.3**
IRIF				S		S	**Sn**	**23 58 10.8**	**+0.9**
HATJ	**Hateruma jima**	**1.26**	**134**	P		P	**Pn**	**23 57 59.2**	**+0.2**
HATJ				S		S	**Sg**	**23 58 16.8**	**0.0**
JKRS	**Kuro-shima**	**1.29**	**123**	P		P	**Pn**	**23 57 59.3**	**-0.2**
JIJ	**Ishigaki jima**	**1.34**	**115**	P		P	**Pn**	**23 57 59.7**	**-0.4**
KSRS	**Korea Array**	**13.21**	**18**	P		P		00 01 04.1	+11
	0.2nm,0.3s,baz=195,slow=11,SNR=4.2								
SONM	**Songino Array**	**26.29**	**335**	P		P		**00 03 11.9**	**+0.9**
	0.7nm,0.9s,baz=155,slow=8.2,SNR=5.3								
MKAR	**Makanchi Array**	**38.85**	**315**	P		P		**00 05 00.5**	**0.0**
	0.8nm,0.9s,baz=98,slow=9.2,SNR=5.6								
ZALV	**Zalesovo Beam**	**40.44**	**326**	P		P		**00 05 13.1**	**-0.4**
	0.4nm,0.3s,baz=126,slow=7.3,SNR=2.3								
WRA	**Warramunga Arr**	**46.00**	**165**	P		P		**00 05 58.4**	**-0.5**
	2.0nm,0.4s,baz=346,slow=8.7,SNR=1.3								
YKA	**Yellowknife Ar**	**81.69**	**23**	P		P		**00 09 53.6**	**+0.1**
	0.1nm,0.6s,baz=311,slow=5.7,SNR=3.0								

JMA 15 00:03:02.0±0.2,37.°29N×141.°78E,h36km±3km,M3.5, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**0.73**	**276**	P		P	Pn	00 03 15.9	+0.1
JFK				S		S	Sn	00 03 25.4	-0.2
ONAJ	**Iwakimizuishiy**	**0.81**	**257**	P		P	Pn	00 03 17.2	+0.3
ONAJ				S		S	Sn	00 03 27.5	-0.2
JMM	**Marumori**	**0.97**	**307**	P		P	Pn	00 03 19.1	0.0
JMM				S		S	Sn	00 03 31.0	-0.6
JFT	**Otama**	**1.17**	**282**	P		P	Pn	00 03 23.2	+1.4
JFT				S		S	Sn	00 03 37.7	+1.1
JHO	**Hitachi**	**1.18**	**235**	P		P	Pn	00 03 22.4	+0.4
JHO				*e*S		S	Sn	00 03 36.2	-0.6
JIO	**Ouri**	**1.21**	**344**	P		P	Pn	00 03 21.8	-0.6
JIO				S		S	Sn	00 03 35.6	-1.9
JOU	**Okura**	**1.39**	**321**	P		P	Pn	00 03 26.0	+1.1
JOU				S		S	Sn	00 03 42.8	+0.8
MAT	**Matsushiro**	**2.96**	**256**	P		P	Pn	00 04 28.9	+0.5
MAT				S		S	Sn	00 04 28.3	+7.6

*IDC **15** 00:08:00.8±1.2,36.°00S×101.°71W,h0km,mb4.0/4, mb1 4.4/4,mb1mx3.9/39,mbtmp4.0/4,MS3.8/6,Ms1 3.8/6, ms1mx3.6/22,Error ellipse: s-maj=41.7km s-min=31.7km az=17.0*

*ISCJB **15** 00:08:01.5±0.7,35.°8S±0.°2×101.°6W±0.°1,h10km,mb4.2/9, MS3.8/6,Error ellipse: s-maj=24.9km s-min=15.4km az=1.3*

*NEIC **15** 00:08:02.7±0.6,35.°86S×101.°60W,h10km,mb4.1/4,Error ellipse: s-maj=24.9km s-min=15.4km az=179.0*

ISC 15 00:08:02.5±0.7,35.°9S±0.°2×101.°6W±0.°1,h10km,n19, σ1s24/14,mb4.1/9,MS3.7/6,Southeast of Easter Island

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
PLCA	**Paso Flores**	**24.79**	**111**	P		P	**P**	**00 13 26.4**	**+1.7**
	2.4nm,0.8s,baz=250,slow=9.9,SNR=3.8								
PLCA				LR		LR		00 20 28.5	
	comp=Z,122nm,19.1s,baz=241,slow=30								
PTCN	**Pitcairn Islan**	**26.70**	**286**	P		P	**P**	**00 13 42.7**	**+0.7**
	102nm,0.4s								
LCO	**Las Campanas**	**26.91**	**84**	*e*P		P	**P**	**00 13 44.5**	**+0.3**
	3.3nm,0.7s								
USHA	**Ushuaia**	**29.64**	**140**	LR		LR		00 23 01.3	
	comp=Z,1μm,19.2s,baz=184,slow=30								
LPAZ	**La Paz**	**35.61**	**66**	P		P	**P**	**00 15 00.7**	**-0.5**
	6.2nm,1.0s,baz=226,slow=4.4,SNR=12								
LPAZ				LR		LR		00 26 25.9	
	comp=Z,53nm,20.4s,baz=213,slow=31								
SAML	**Samuel**	**44.06**	**62**	*e*P		P	**P**	**00 16 09.1**	**-1.7**
	2.6nm,1.0s								
JTS	**JuntasAbangare**	**48.55**	**22**	LR		LR		00 32 06.3	
	comp=Z,82nm,18.8s,baz=78,slow=30								
PTGA	**Pitinga**	**52.12**	**57**	LR		LR		00 37 08.6	
	comp=Z,70nm,18.5s,baz=233,slow=34								
CASY	**Casey**	**75.19**	**193**	*e*P		P	**P**	**00 19 45.8**	**+1.1**
	0.6nm,0.3s								
NVAR	**Mina Array Bea**	**75.53**	**347**	P		P	**P**	**00 19 48.8**	**+1.6**
	1.2nm,0.9s,baz=188,slow=7.5,SNR=4.5								
PDAR	**Pinedale Array**	**78.61**	**354**	P		P	**P**	**00 20 05.2**	**+0.7**
	1.1nm,0.9s,baz=124,slow=5.6,SNR=6.3								
STKA	**Stephens Creek**	**90.26**	**229**	LR		LR		00 54 60.0	
	comp=Z,80nm,20.6s,baz=203,slow=31								
CTAO	**Charters Tower**	**95.06**	**241**	*e*P		P	**P**	**00 21 25.0**	**-1.1**
	2.3nm,0.8s								
ASAJ	**Asahikawa**	**131.23**	**300**	*e*PKPdf		**PKPdf**	**P**	**00 27 15.0**	**+0.5**
MMAI	**Mount Meron Ar**	**144.66**	**82**	PKP		PKPbc		00 27 38.6	+0.2
	1.0nm,0.7s,baz=297,slow=3.7,SNR=4.2								
BRTR	**Keskin Array B**	**144.73**	**70**	PKP		**PKPab**	**P**	**00 27 38.4**	**0.0**
	1.2nm,0.8s,baz=194,slow=4.6,SNR=5.5								
GNI	**Garni**	**153.26**	**71**	*e*PKPdf		**PKPdf**	**P**	**00 27 52.0**	**-1.3**
CMAR	**Chiang Mai Arr**	**154.86**	**232**	PKPab		**PKPab**	**P**	**00 28 18.1**	**-1.7**
	0.4nm,0.8s,baz=152,slow=4.0,SNR=3.5								
CHTO	**Chiang Mai**	**155.12**	**232**	*e*PKPdf		**PKPdf**	**P**	**00 27 55.9**	**-0.4**

*DDA **15** 00:08:55.0,37.°00N×28.°32E,h7km,Md2.6*

*ISCJB **15** 00:08:55.1±0.7,36.°96N±0.°06×28.°32E±0.°05,h14km,Error ellipse: s-maj=8.8km s-min=4.8km az=31.7*

*CSEM **15** 00:08:55.6±0.3,36.°95N×28.°27E,h2km,MD2.6,Error ellipse: s-maj=7.4km s-min=4.8km az=29.0*

*ISK **15** 00:08:55.2,36.°96N×28.°24E,h12km,MD2.5*

ISC 15 00:08:55.0±1.0,36.°93N±0.°05×28.°29E±0.°03,h14km,n14, σ0s45/22,Dodecanese Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
YER	**Yerkesik**	**0.20**	**359**	*e*PG		**Pg**		**00 08 59.6**	**0.0**
YER				*e*SG		**Sg**		**00 09 02.7**	**0.0**
YER	**Yerkesik**	**0.20**	**359**	*e*Pg		**Pg**		**00 08 59.6**	**0.0**
YER				*e*Sg		**Sg**		**00 09 02.7**	**0.0**
TURN	**Turunc**	**0.26**	**103**	*i* P		**Pg**		**00 09 00.0**	**-0.5**
TURN				*i* S		**Sg**		**00 09 03.8**	**-0.5**
TURN	**Turunc**	**0.26**	**103**	P		**Pg**		**00 09 00.0**	**-0.5**
TURN				S		**Sg**		**00 09 03.8**	**-0.5**
DALY	**Dalyan (Mu˘la**	**0.32**	**111**	*e*PG		**Pb**		**00 09 02.9**	**+0.5**
DALY	**Dalyan (Mu˘la**	**0.32**	**111**	*e*Pg		**Pb**		**00 09 02.9**	**+0.5**
BDRM	**Kayabasi**	**0.69**	**281**	*i* P		**Pb**		**00 09 08.5**	**-0.2**
BDRM				*i* S		**Sb**		**00 09 18.9**	**+0.8**
BDRM	**Kayabasi**	**0.69**	**281**	P		**Pb**		**00 09 08.5**	**-0.2**
BDRM				S		**Sb**		**00 09 18.9**	**+0.8**
BODT	**Bodrum**	**0.79**	**280**	*e*PG		**Pg**		**00 09 10.2**	**-0.1**
BODT	**Bodrum**	**0.79**	**280**	*e*Pg		**Pg**		**00 09 10.2**	**-0.1**
AYDN	**Tasoluk**	**0.80**	**336**	*i* P		**Pb**		**00 09 10.6**	**0.0**
AYDN				*i* S		**Sg**		**00 09 20.2**	**-0.7**
AYDN	**Tasoluk**	**0.80**	**336**	P		**Pb**		**00 09 10.6**	**0.0**
AYDN				S		**Sg**		**00 09 20.2**	**-0.7**
AYDB	**Zeytinkoy-Aydi**	**1.06**	**343**	*e*PG		**Pb**		**00 09 15.2**	**+0.1**
AYDB	**Zeytinkoy-Aydi**	**1.06**	**343**	*e*Pg		**Pb**		**00 09 15.2**	**+0.1**

*ISCJB **15** 00:12:00.5±1.1,37.°06N±0.°09×71.°8E±0.°1,h250km, mb3.2/5,Error ellipse: s-maj=16.2km s-min=8.0km az=40.8*

*IDC **15** 00:12:00.3±4.2,36.°90N×71.°98E,h253km±27km,mb2.9/5, mb1 2.8/11,mb1mx2.7/61,mbtmp3.4/11,Error ellipse: s-maj=53.3km s-min=22.2km az=149.0*

*NNC **15** 00:12:07.4±3.1,37.°46N×72.°10E,h258km±26km,mb1.7, mpv3.0,Error ellipse: s-maj=31.6km s-min=26.4km az=80.0*

ISC 15 00:12:01.5±1.5,37.°1N±0.°1×71.°9E±0.°1,h250km,n16, σ1s42/22,mb3.1/5,6C-2D,Afghanistan-Tajikistan border region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
SFK	**Sufi-Kurgan**	**3.19**	**23**	⇑P		P	**Pn**	**00 12 58.3**	**+2.0**
	1.1nm,0.2s								
SFK				⇓S		S	**Sn**	**00 13 39.0**	**-0.7**
	26nm,0.5s								
MNAS	**Manas**	**5.41**	**5**	⇑P		P	**Pn**	**00 13 24.5**	**+2.0**
	1.9nm,0.5s								
MNAS				⇓S		S	**Sn**	**00 14 26.0**	**-1.0**
	3.5nm,0.5s								
AAK	**Ala-Archa**	**5.90**	**19**	P		P	**Pn**	**00 13 30.5**	**+2.1**
	0.5

CMIG				S		Sn	00 15 41.5	-0.2
	comp=Z,0.9nm,0.3s,baz=134,slow=7.9,SNR=3.4								
TEIG	**Tepich**	**7.19**	**11**	P		**Pn**	**00 14 42.5**	**+0.5**
	comp=Z,1.6nm,0.3s,baz=270,slow=24,SNR=5.5								
TXAR	**Lajitas Array**	**20.66**	**323**	P		**P**	**00 17 37.2**	**+0.7**
	comp=Z,0.6nm,0.5s,baz=144,slow=9.9,SNR=4.8								
NEW	**Newport**	**41.76**	**333**	LR		LR	00 39 47.2		
	comp=Z,126nm,18.7s,baz=134,slow=38								
SCHQ	**Schefferville**	**45.31**	**18**	P		P	00 21 08.0	-6.0	
	comp=Z,3.4nm,0.9s,baz=244,slow=12,SNR=1.8								
YKA	**Yellowknife Ar**	**52.39**	**346**	P		P	00 22 03.9	-4.2	
	comp=Z,0.2nm,0.3s,baz=129,slow=7.8,SNR=8.7								
CMAR	**Chiang Mai Arr**	**147.46**	**345**	PKPbc		**PKPdf**	**00 32 36.8**	**-1.7**	
	comp=Z,0.2nm,0.4s,baz=343,slow=2.8,SNR=2.7								

*ISCJB **15** 00:28:00.1±0.4, 30°.09N±0°.08×42°.17W±0°.05, h10km, mb4.3/52, MS4.0/17, Error ellipse: s-maj=10.9km s-min=6.7km az=172.4*

*IDC **15** 00:28:00.2±0.6, 30°.08N×42°.15W, h0km, mb4.1/24, mb1 4.3/24, mb1mx4.1/57, mbtmp4.1/24, MS4.0/17, Ms1 4.0/17, ms1mx3.7/46, Error ellipse: s-maj=16.3km s-min=13.5km az=1.0*

*NEIC **15** 00:28:01.8±0.3, 30°.08N×42°.15W, h10km, mb4.7/14, Error ellipse: s-maj=8.1km s-min=6.3km az=185.0*

ISC 15 00:28:01.8±0.6, 30°.1N±0°.1×42°.16W±0°.08, h10km, n75, σ0s67/55, mb4.3/52, MS4.1/17, Northern Mid-Atlantic Ridge

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
H05S1	**Guadeloupe/Mar**	**23.22**	**232**	T	T	00 56 53.3	
SJG	**San Juan**	**24.88**	**247**	LR	LR	00 40 54.5	
	comp=Z,114nm,20.8s,baz=65,slow=31						
BBTS	**Babate**	**28.14**	**117**	LR	LR	00 42 44.9	
	comp=Z,264nm,19.2s,baz=306,slow=32						
SCHQ	**Schefferville**	**30.40**	**331**	P	P	**00 34 12.3**	**-1.7**
	6.1nm,0.7s,baz=116,slow=6.7,SNR=8.5						
SCHQ				LR	LR	00 46 19.2	
	comp=Z,298nm,18.6s,baz=118,slow=36						
PTGA	**Pitinga**	**35.03**	**212**	P	P	**00 34 55.5**	**+0.6**
	2.5nm,0.8s,baz=61,slow=10,SNR=4.4						
EKA	**Eskdalemuir Ar**	**37.42**	**36**	P	P	**00 35 14.7**	**-0.1**
	1.1nm,0.8s,baz=230,slow=6.4,SNR=4.4						
ROSC	**El Rosal**	**39.38**	**237**	LR	LR	00 49 55.7	
	comp=Z,80nm,21.8s,baz=45,slow=33						
DBIC	**Dimbokro**	**42.06**	**116**	P	P	**00 35 54.5**	**+0.5**
	2.3nm,0.7s,baz=346,slow=18,SNR=8.6						
DBIC				LR	LR	00 50 41.4	
	comp=Z,267nm,20.3s,baz=288,slow=32						
TAM	**Tamanrasset**	**43.06**	**88**	*eP*	P	**00 36 03.0**	**+0.8**
	2.7nm,1.0s						
KEST	**Kesra**	**43.20**	**68**	P	P	**00 36 02.9**	**-0.3**
	2.9nm,0.9s,baz=159,slow=9.1,SNR=4.0						
DAVA	**Damuels**	**43.25**	**52**	*i* P	P	**00 36 03.7**	**+0.2**
	8.4nm,0.9s						
SAML	**Samuel**	**43.76**	**211**	*eP*	P	**00 36 07.6**	**-0.1**
	3.9nm,0.9s						
TORD	**Torodi Ar. Bea**	**43.81**	**103**	P	P	**00 36 06.8**	**-1.3**
	0.7nm,0.7s,baz=307,slow=9.3,SNR=9.7						
FETA	**Feichten**	**43.81**	**52**	*i* P	P	**00 36 08.5**	**+0.4**
	4.4nm,1.1s						
RETA	**Reutte**	**43.87**	**51**	*i* P	P	**00 36 08.8**	**+0.5**
	16nm,1.6s						
MOTA	**Moosalm**	**44.09**	**52**	*i* P	P	**00 36 10.7**	**+0.4**
	1.6nm,0.7s						
WATA	**Walderalm**	**44.41**	**52**	*i* P	P	**00 36 13.0**	**+0.2**
	2.6nm,0.6s						
WTTA	**Wattenberg**	**44.45**	**52**	*i* P	P	**00 36 13.6**	**+0.4**
	3.9nm,0.6s						
ULM	**Lac du Bonnet**	**44.63**	**313**	P	P	**00 36 13.8**	**-0.5**
	2.6nm,0.8s,baz=130,slow=6.0,SNR=3.4						
TUL1	**Leonard**	**44.89**	**292**	*eP*	P	**00 36 16.9**	**+0.3**
	13nm,0.8s						
ABTA	**Abfaltersbach**	**45.02**	**52**	*i* P	P	**00 36 17.4**	**-0.2**
	8.7nm,0.8s						
FCC	**Fort Churchill**	**45.23**	**325**	*eP*	P	**00 36 19.5**	**+0.5**
	24nm,1.5s						
KBA	**Koelnbreinsper**	**45.60**	**52**	*i* P	P	**00 36 21.9**	**-0.4**
	9.5nm,1.6s						
CLL	**Collm**	**45.65**	**46**	*eP*	P	**00 36 22.0**	**-0.4**
	comp=Z,4.0nm,1.3s						
CLL				*e*		00 36 28.0	
CLL				*e*		00 36 30.0	
KHC	**Kasperske Hory**	**45.84**	**49**	*eP*	P	**00 36 23.6**	**-0.4**
KHC				*ex*	x	00 36 30.0	
GERES	**GERESS Array B**	**45.91**	**50**	P	P	**00 36 23.9**	**-0.7**
	comp=Z,1.0nm,0.7s,baz=260,slow=7.8,SNR=12						
H10N2	**ASCENSION HYDR**	**46.12**	**140**	T	T	01 25 20.4	
	baz=326,slow=75,SNR=1069						
H10N3	**ASCENSION HYDR**	**46.13**	**140**	T	T	01 25 20.6	
	baz=326,slow=75,SNR=913						
H10N1	**ASCENSION HYDR**	**46.14**	**140**	T	T	01 25 21.8	
	baz=326,slow=75,SNR=1010						
BRG	**Berggiesshubel**	**46.20**	**47**	*eP*	P	00 36 35.3	+8.5
	comp=Z,7.4nm,1.5s						
MOA	**Molln**	**46.25**	**51**	*i* P	P	**00 36 26.5**	**-0.7**
	comp=Z,5.7nm,1.2s						
OBKA	**Obir**	**46.42**	**53**	*i* P	P	**00 36 28.3**	**-0.4**
	comp=Z,13nm,0.8s						
PRA	**Prague**	**46.45**	**48**	*ep*P	pP	00 36 35.9	+0.4
NOA	**NORSAR Array B**	**46.58**	**33**	LR	LR	00 52 52.2	
	comp=Z,29nm,19.1s,baz=260,slow=32						
H10S1	**ASCENSION HYDR**	**46.96**	**141**	T	T	01 26 28.0	
	baz=327,slow=75,SNR=717						
H10S3	**ASCENSION HYDR**	**46.96**	**141**	T	T	01 26 25.6	
	baz=327,slow=75,SNR=1170						
H10S2	**ASCENSION HYDR**	**46.98**	**141**	T	T	01 26 30.1	
	baz=327,slow=75,SNR=667						
ARSA	**Arzberg**	**47.09**	**52**	*i* P	P	**00 36 33.0**	**-0.9**
	comp=Z,12nm,1.6s						
CONA	**Conrad Observa**	**47.32**	**51**	*i* P	P	**00 36 35.0**	**-0.7**
	comp=Z,6.6nm,1.8s						
DPC	**Dobruska-Polom**	**47.68**	**48**	*eP*	P	**00 36 38.8**	**+0.4**
DPC				*ex*	x	00 36 45.9	
FFC	**Flin Flon**	**48.77**	**318**	*eP*	P	**00 36 47.0**	**+0.3**
	comp=Z,2.6nm,0.8s						
JCT	**Junction City**	**49.30**	**286**	*eP*	P	**00 36 51.8**	**+0.7**
	comp=Z,5.9nm,0.8s						
VYHS	**Vyhne**	**49.31**	**50**	*eP*	P	00 36 59.4	+8.5
STHS	**Stebnicka Huta**	**50.86**	**49**	*eP*	P	00 37 11.1	+8.4
KOLS	**Kolonicke sedl**	**51.56**	**49**	*eP*	P	00 37 18.3	+10
LPAZ	**La Paz**	**52.46**	**212**	P	P	**00 37 15.3**	**-0.3**
	comp=Z,1.5nm,0.9s,baz=45,slow=5.6,SNR=6.2						
TXAR	**Lajitas Array**	**52.84**	**286**	P	P	**00 37 17.9**	**+0.1**
	comp=Z,1.8nm,0.8s,baz=99,slow=7.7,SNR=10						
FINES	**FINESS Array B**	**53.7**	**34**	P	P	**00 37 23.8**	**+0.1**
	comp=Z,1.5nm,0.9s,baz=225,slow=5.7,SNR=3.8						
ARCES	**ARCESS Array B**	**54.35**	**24**	P	P	**00 37 28.9**	**+0.7**
	comp=Z,1.7nm,0.7s,baz=310,slow=9.4,SNR=4.9						
PDAR	**Pinedale Array**	**54.36**	**303**	P	P	**00 37 28.7**	**-0.3**
	comp=Z,3.4nm,0.7s,baz=74,slow=8.1,SNR=30						
PDAR				LR	LR	00 59 36.9	
	comp=Z,278nm,19.5s,baz=90,slow=35						
BW06	**Boulder Array**	**54.36**	**303**	*eP*	P	**00 37 29.1**	**0.0**
	comp=Z,8.6nm,1.0s						
LKWY	**Lake**	**54.66**	**306**	*eP*	P	**00 37 28.8**	**-2.4**
	comp=Z,29nm,1.1s						
IMW	**Indian Meadow**	**55.15**	**305**	*eP*	P	**00 37 35.4**	**+0.6**
	comp=Z,7.0nm,1.1s						
YKA	**Yellowknife Ar**	**55.73**	**328**	P	P	**00 37 37.9**	**-0.3**
	comp=Z,1.4nm,0.8s,baz=88,slow=7.4,SNR=27						
YKA				PcP	**PcP**	**00 38 37.0**	**-0.4**
	comp=Z,0.4nm,0.7s,baz=90,slow=4.7,SNR=7.9						
AKASG	**Malin Array Be**	**55.88**	**47**	P	P	**00 37 38.7**	**-0.8**
	comp=Z,1.8nm,0.7s,baz=278,slow=6.5,SNR=13						
AKASG				LR	LR	00 58 47.7	
	comp=Z,144nm,18.1s,baz=280,slow=33						
HWUT	**Hardware Ranch**	**56.05**	**302**	*eP*	P	**00 37 41.8**	**+0.6**
	comp=Z,6.7nm,1.2s						
NEW	**Newport**	**58.58**	**311**	*eP*	P	**00 37 58.7**	**-0.1**
	comp=Z,8.7nm,0.9s						
MFID	**Camas Ranch**	**58.73**	**305**	*eP*	P	**00 38 00.7**	**+0.7**
	comp=Z,4.8nm,0.9s						
BRTR	**Keskin Array B**	**61.21**	**59**	P	P	**00 38 16.9**	**-0.2**
	comp=Z,1.7nm,0.8s,baz=274,slow=5.5,SNR=7.7						
BRTR				LR	LR	01 03 36.4	
	comp=Z,51nm,18.5s,baz=298,slow=35						
NVAR	**Mina Array Bea**	**61.85**	**300**	P	P	**00 38 21.5**	**-0.1**
	comp=Z,0.9nm,0.8s,baz=68,slow=6.2,SNR=5.7						
NVAR				LR	LR	01 03 43.0	
	comp=Z,159nm,20.7s,baz=76,slow=35						
INK	**Inuvik**	**62.91**	**335**	P	P	**00 38 28.1**	**+0.3**
	comp=Z,5.6nm,0.8s,baz=64,slow=8.7,SNR=22						
INK	**Inuvik**	**62.91**	**335**	*eP*	P	**00 38 28.3**	**+0.5**
DLBC	**Dease Lake**	**63.82**	**324**	P	P	**00 38 34.5**	**+0.3**
	comp=Z,2.3nm,0.9s,baz=54,slow=5.2,SNR=5.0						
DLBC				LR	LR	01 06 20.4	
	comp=Z,301nm,18.3s,baz=141,slow=36						
ILAR	**Eielson Array**	**69.13**	**334**	P	P	**00 39 08.8**	**+0.9**
	comp=Z,1.9nm,0.8s,baz=59,slow=4.1,SNR=21						
ILAR				LR	LR	01 08 58.9	
	comp=Z,259nm,19.8s,baz=84,slow=36						
ARU	**Arti**	**71.02**	**35**	LR	LR	01 06 18.5	
	comp=Z,59nm,21.5s,baz=278,slow=32						
TRF	**Thorofare Moun**	**71.07**	**333**	*eP*	P	**00 39 20.8**	**+0.8**
	comp=Z,5.2nm,0.9s						
KTH	**Kantishna Hill**	**71.27**	**333**	*eP*	P	**00 39 21.6**	**+0.5**
	comp=Z,14nm,1.2s						
AKTO	**Aktyubinsk**	**73.41**	**41**	LR	LR	01 09 38.4	
	comp=Z,71nm,18.6s,slow=34						
PLCA	**Paso Flores**	**75.21**	**202**	P	P	**00 39 44.0**	**-0.5**
	comp=Z,2.9nm,0.9s,baz=332,slow=7.7,SNR=3.9						
TIXI	**Tiksi**	**78.35**	**3**	P	P	**00 40 02.2**	**+0.3**
	comp=Z,0.7nm,0.3s,baz=41,slow=6.2,SNR=4.3						
BVAR	**Borovoye Array**	**78.65**	**35**	LR	LR	01 13 11.7	
	comp=Z,120nm,18.3s,baz=71,slow=34						
KMBO	**Kilima Mbogo**	**81.40**	**96**	LR	LR	01 15 38.7	
	comp=Z,74nm,19.1s,baz=80,slow=35						
ZALV	**Zalesovo Beam**	**84.60**	**28**	P	P	**00 40 36.3**	**+1.0**
	comp=Z,0.5nm,0.5s,baz=249,slow=1.2,SNR=3.5						
AAK	**Ala-Archa**	**87.15**	**41**	LR	LR	01 17 38.4	
	comp=Z,82nm,20.2s,baz=331,slow=34						
MKAR	**Makanchi Array**	**88.53**	**35**	P	P	**00 40 55.5**	**+0.7**
	comp=Z,0.6nm,0.9s,baz=0.0,slow=2.9,SNR=4.6						

*ISK **15** 00:34:15.2, 39°.46N×39°.01E, h25km, MD2.2*

*DDA **15** 00:34:16.6, 39°.44N×39°.01E, h7km, Md2.7*

*ISCJB **15** 00:34:17.1±0.5, 39°.44N±0°.03×39°.02E±0°.04, h9km±6km, Error ellipse: s-maj=5.1km s-min=4.6km az=154.7*

*CSEM **15** 00:34:17.0±0.2, 39°.42N×39°.00E, h10km, MD2.2, Error ellipse: s-maj=5.0km s-min=4.6km az=135.0*

ISC 15 00:34:17.0±1.0, 39°.44N±0°.03×39°.02E±0°.02, h11km±10km, n16, σ0s47/30, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ILIC	**ilic-Erzincan**	**0.35**	**272**	*eP*G	**Pg**	**00 34 23.6**	**-0.5**
ILIC				*e*SG	**Sg**	**00 34 29.3**	**+0.5**
ILIC	**ilic-Erzincan**	**0.35**	**272**	*eP*g	**Pg**	**00 34 23.6**	**-0.5**
ILIC				*e*Sg	**Sg**	**00 34 29.3**	**+0.5**
EZC	**Erzincan**	**0.40**	**40**	*eP*g	**Pb**	**00 34 27.1**	**+0.9**
TNCL	**Tunceli-Merkez**	**0.52**	**129**	*i* P	**Pg**	**00 34 27.1**	**-0.1**
TNCL				*i* S	**Sg**	**00 34 34.7**	**+0.6**
TNCL	**Tunceli-Merkez**	**0.52**	**129**	P	**Pg**	**00 34 27.1**	**-0.1**
ERZN	**Erzincan**	**0.56**	**75**	*eP*G	**Pg**	**00 34 27.1**	**-0.9**
ERZN				*e*SG	**Sg**	**00 34 36.1**	**+0.6**
EUZM	**Uzumlu**	**0.59**	**63**	*i* P	**Pb**	**00 34 29.2**	**-0.1**
EUZM				*i* S	**Sb**	**00 34 37.7**	**0.0**
EUZM	**Uzumlu**	**0.59**	**63**	P	**Pb**	**00 34 29.2**	**-0.1**
EUZM				S	**Sb**	**00 34 37.7**	**0.0**
PTK	**Pertek**	**0.62**	**152**	*eP*G	**Pg**	**00 34 28.6**	**-0.5**
PTK				*e*SG	**Sb**	**00 34 38.4**	**-0.3**
PTK	**Pertek**	**0.62**	**152**	*eP*g	**Pg**	**00 34 28.6**	**-0.5**
PTK				*e*Sg	**Sb**	**00 34 38.4**	**-0.3**
KELT	**Kelkit**	**0.73**	**14**	*i* P	**Pg**	**00 34 30.6**	**-0.6**
KELT				*i* S	**Sg**	**00 34 41.1**	**+0.3**
KELT	**Kelkit**	**0.73**	**14**	P	**Pg**	**00 34 30.6**	**-0.6**
KELT				S	**Sg**	**00 34 41.1**	**+0.3**
ELZG	**Elazig**	**0.94**	**182**	*i* P	**Pg**	**00 34 34.6**	**-0.6**
ELZG				*i* S	**Sb**	**00 34 48.1**	**+0.1**
ELZG	**Elazig**	**0.94**	**182**	P	**Pg**	**00 34 34.6**	**-0.6**
ELZG				S	**Sb**	**00 34 48.1**	**+0.1**
CUKAN	**kangal_SIVAS**	**1.21**	**265**	*i* P	**Pb**	**00 34 40.1**	**+0.1**
CUKAN				*i* S	**Sn**	**00 34 56.5**	**+0.1**
CUKAN	**kangal_SIVAS**	**1.21**	**265**	P	**Pb**	**00 34 40.1**	**+0.1**
CUKAN				S	**Sn**	**00 34 56.5**	**+0.1**

*ISCJB **15** 00:38:44.5±0.8, 68°.16N±0°.05×153°.9W±0°.1, h10km, mb3.5/1, Error ellipse: s-maj=7.3km s-min=6.8km az=31.0*

*IDC **15** 00:38:45.9±1.8, 68°.33N×154°.02W, h0km, mb3.5/1, mb1 3.6/5, mb1mx3.3/52, mbtmp3.4/5, ML3.2/4, Error ellipse: s-maj=34.9km s-min=21.6km az=37.0*

*NEIC **15** 00:38:50.0, 68°.02N×153°.84W, h29km, ML3.1(AEIC), After AEIC.*

ISC 15 00:38:46.6±1.1, 68°.06N±0°.05×153°.77W±0°.07, h10km, n35, σ1s53/44, Northern Alaska

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
COLD	**Coldfoot**	**1.60**	**120**	P	**Pn**	**00 39 16.8**	**+1.8**
COLD				S	**Sn**	**00 39 36.5**	**+0.9**
PS05	**TAPS Pump Stn5**	**1.73**	**135**	P	**Pn**	**00 39 18.5**	**+1.7**
PS05				S	**Sn**	**00 39 39.7**	**+0.8**
IM3	**Indian Mountai**	**2.08**	**180**	P	**Pn**	**00 39 22.3**	**+0.7**
IM3				S	**Sn**	**00 39 49.0**	**+1.5**
PS06	**TAPS Pump Stn6**	**2.72**	**142**	P	**Pn**	**00 39 31.9**	**+1.5**
PS06				S	**Sn**	**00 40 04.7**	**+1.4**
PS01	**TAPS Pump Stn**	**2.88**	**37**	P	**Pn**	**00 39 35.3**	**+2.9**
PS01				S	**Sn**	**00 40 10.7**	**+3.6**
MLY	**Manley**	**3.27**	**157**	P	**Pn**	**00 39 39.0**	**+1.1**
BMM	**Burnt Mountain**	**3.55**	**96**	P	**Pn**	**00 39 42.9**	**+1.2**
FYU	**Fort Yukon**	**3.63**	**110**	P	**Pn**	**00 39 43.5**	**+0.7**
MDM	**Murphy Dome**	**3.82**	**142**	P	**Pn**	**00 39 46.6**	**+1.2**
COLA	**College**	**3.98**	**141**	P	**Pn**	**00 39 48.8**	**+1.2**
BPAW	**Bear Paw Mtn.**	**4.13**	**163**	*ePn*	**Pn**	**00 39 51.0**	**+1.3**
CCB	**Clear Creek Bu**	**4.18**	**142**	P	**Pn**	**00 39 51.5**	**+1.1**
CHUM	**Lake Minchumin**	**4.24**	**171**	P	**Pn**	**00 39 52.6**	**+1.6**
WRH	**Wood River Hil**	**4.27**	**145**	P	**Pn**	**00 39 52.9**	**+1.3**
IL1	**Eielson Array**	**4.30**	**137**	P	**Pn**	**00 39 53.4**	**+1.3**
ILAR	**Eielson Array**	**4.30**	**137**	Pn	**Pn**	**00 39 53.8**	**+1.7**
	1.1nm,0.3s,baz=324,slow=12,SNR=36						
ILAR				Sn	**Sn**	**00 40 43.7**	**+1.4**
	1.9nm,0.3s,baz=327,slow=18,SNR=5.0						
ILAR				Lg	Lg	00 41 02.9	
	2.5nm,0.3s,baz=324,slow=32,SNR=7.4						
ILB	**Eielson Array**	**4.30**	**137**	P	**Pn**	**00 39 53.7**	**+1.7**
HDA	**Harding Lake**	**4.59**	**140**	P	**Pn**	**00 39 57.1**	**+1.2**
CAST	**Castle Rocks**	**4.71**	**171**	P	**Pn**	**00 39 58.3**	**+0.6**
MCK	**McKinley**	**4.77**	**153**	*ePn*	**Pn**	**00 39 59.3**	**+0.7**
TRF	**Thorofare Moun**	**4.84**	**161**	*ePn*	**Pn**	**00 40 01.6**	**+1.9**
PPLA	**Purkeypile**	**5.22**	**172**	P	**Pn**	**00 40 06.0**	**+1.1**
TTA	**Tatalina**	**5.23**	**191**	P	**Pn**	**00 40 05.5**	**+0.6**
TT01	**Tatalina**	**5.26**	**191**	P	**Pn**	**00 40 05.9**	**+0.8**
DOT	**Dot Lake**	**5.95**	**133**	*ePn*	**Pn**	**00 40 15.9**	**+1.2**
	10nm,0.6s						
DOT				*e*Sn	**Sn**	**00 41 22.6**	**-0.2**
EGAK	**Eagle**	**6.03**	**117**	*ePn*	**Pn**	**00 40 17.1**	**+1.4**
	3.7nm,0.5s						
EGAK				*e*Sn	**Sn**	**00 41 25.3**	**+0.5**
PAX	**Paxson**	**6.16**	**142**	P	**Pn**	**00 40 19.4**	**+1.8**
SVW2	**Sparrevohn**	**7.03**	**187**	P	**Pn**	**00 40 29.3**	**-0.2**
BCA3	**Beaver Creek A**	**7.05**	**130**	P	**Pn**	**00 40 30.7**	**+0.9**
DAWY	**Dawson**	**7.08**	**118**	P	**Pn**	**00 40 31.5**	**+1.3**
INK	**Inuvik**	**7.54**	**79**	*Pn*	**Pn**	**00 40 36.7**	**+0.3**
	0.6nm,0.3s,baz=244,slow=8.8,SNR=33						
INK				Sn	**Sn**	**00 41 58.8**	**-3.0**
	0.1nm,0.3s,baz=313,slow=22,SNR=1.8						
INK	**Inuvik**	**7.54**	**79**	P	**Pn**	**00 40 37.8**	**+1.4**
YKA	**Yellowknife Ar**	**17.05**	**90**	*Pn*	**Pn**	**00 42 42.2**	**-2.5**
	0.0nm,0.3s,baz=306,slow=12,SNR=7.5						
RES	**Resolute Bay**	**19.09**	**44**	P	P	**00 43 08.2**	**-0.7**
	0.1nm,0.3s,baz=244,slow=15,SNR=2.0						
MKAR	**Makanchi Array**	**58.05**	**318**	P	P	**00 48 38.0**	**-1.3**
	0.2nm,0.4s,baz=41,slow=7.1,SNR=5.4						

*IDC **15** 00:42:42.3±1.9, 16°.86S×177°.80W, h0km, mb4.0/6, mb1 4.3/6, mb1mx3.9/41, mbtmp4.0/6, Error ellipse: s-maj=113.6km s-min=23.5km az=147.0*

*ISCJB **15** 00:42:45.5±0.7, 16°.9S±0°.1×177°.8W±0°.1, h33km, mb4.4/14, Error ellipse: s-maj=18.6km s-min=13.4km az=36.1*

*NEIC **15** 00:42:47.5±0.6, 16°.86S×177°.82W, h35km, mb4.4/7, Error ellipse: s-maj=16.0km s-min=11.5km az=126.0*

ISC 15 00:42:47.5±0.8, 16°.8S±0°.1×177°.8W±0°.1, h35km, n15, σ1s00/15, mb4.4/14, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**12.35**	**180**	*ePn*	**Pn**	**00 45 40.6**	**-0.3**
HNR	**Honiara**	**22.87**	**286**	*eP*	P	**00 47 48.5**	**+0.3**
	23nm,0.5s						
CTAO	**Charters Tower**	**34.20**	**259**	*eP*	P	**00 49 30.1**	**0.0**
	0.8nm,0.3s						
PMG	**Port Moresby**	**34.87**	**278**	*eP*	P	**00 49 35.9**	**0.0**
	2.4nm,0.4s						
STKA	**Stephens Creek**	**39.65**	**240**	P	P	**00 50 16.5**	**+0.3**
	1.4nm,0.3s,baz=81,slow=8.6,SNR=4.5						
MIDW	**Midway**	**44.80**	**1**	*eP*	P	**00 50 56.4**	**-1.5**
	56nm,1.1s						
WRAB	**Tennant Creek**	**45.39**	**258**	*eP*	P	**00 51 02.1**	**-0.9**
	2.6nm,0.4s						
WRA	**Warramunga Arr**	**45.40**	**258**	P	P	**00 51 01.0**	**-2.1**
	3.5nm,0.3s,baz=97,slow=7.7,SNR=14						
ASAR	**Alice Springs**	**45.64**	**253**	P	P	**00 51 06.2**	**+1.2**
	5.0nm,0.7s,baz=86,slow=8.1,SNR=43						
MA2	**Magadan**	**80.33**	**344**	*eP*	P	**00 54 55.3**	**+0.6**
	1.9nm,0.6s						
PMR	**Palmer**	**81.44**	**13**	*eP*	P	**00 55 01.2**	**+0.7**
	1.5nm,0.5s						
ILAR	**Eielson Array**	**84.73**	**13**	P	P	**00 55 18.6**	**+1.1**
	0.2nm,0.3s,baz=233,slow=5.1,SNR=6.0						
TXAR	**Lajitas Array**	**84.94**	**57**	P	P	**00 55 19.1**	**-0.4**
	0.6nm,0.9s,baz=263,slow=4.9,SNR=3.6						
YAK	**Yakutsk**	**88.81**	**338**	*eP*	P	**00 55 37.2**	**-0.1**
	14nm,0.5s						
YKA	**Yellowknife Ar**	**93.13**	**25**	P	P	**00 55 57.9**	**+0.4**
	0.1nm,0.7s,baz=240,slow=4.3,SNR=3.7						

MEX 15 00:44:22.4±1.0, 27°.11N×112°.18W, h8km±8km, MD3.5, Baja California

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SRIG	**Santa Rosalia**	**0.22**	**345**	*eP*	Pg	00 44 25.9	-0.9
SRIG				*i* S	Sg	00 44 30.0	+0.2
GUYB	**Guaymas**	**1.40**	**56**	*eP*	Pn	00 44 45.0	-3.2
GUYB				*e*S	Sb	00 45 01.5	-5.3

JMA 15 00:47:02.6, 37°.03N×140°.67E, h5km±1km, M2.5, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.12**	**55**	P	Pg	00 47 05.4	+0.2
ONAJ				S	Sg	00 47 07.5	+0.6
JHO	**Hitachi**	**0.43**	**191**	P	Pg	00 47 11.1	+0.3
JFT	**Otama**	**0.56**	**331**	P	Pg	00 47 13.6	+0.3
JFT				S	Sg	00 47 21.0	+0.5
MAT	**Matsushiro**	**2.04**	**257**	P	Pb	00 47 40.7	+0.6
MAT				S	Sb	00 48 05.0	-0.7

*IDC **15** 00:49:53.2±1.6, 32°.84S×178°.22W, h0km, mb4.3/3, mb1 4.4/4, mb1mx3.9/45, mbtmp4.3/4, ML3.9/1, Error ellipse: s-maj=55.3km s-min=35.1km az=153.0*

*ISCJB **15** 00:49:55.4±0.8, 33°.05S±0°.09×178°.2W±0°.1, h32km, mb4.6/8, Error ellipse: s-maj=20.1km s-min=8.3km az=31.1*

*NEIC **15** 00:49:58.4±1.1, 32°.97S×178°.28W, h35km±10km, mb4.4/6, Error ellipse: s-maj=15.2km s-min=8.9km az=137.0*

ISC 15 00:49:57.9±0.9, 33°.0S±0°.1×178°.3W±0°.1, h32km, n19, σ0s67/22, mb4.4/8, South of Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**3.72**	**5**	*ePn*	**Pn**	**00 50 53.6**	**+0.5**
URZ	**Urewera**	**6.47**	**214**	Pn	**Pn**	**00 51 31.6**	**+0.6**
	2.6nm,0.3s,baz=237,slow=7.4,SNR=8.5						
URZ				Sn	**Sn**	**00 52 43.2**	**-0.5**
	3.9nm,0.3s,baz=207,slow=20,SNR=5.6						
URZ	**Urewera**	**6.47**	**214**	*ePn*	**Pn**	**00 51 31.1**	**+0.1**
	19nm,0.6s						
URZ				Sn	**Sn**	**00 52 43.2**	**-0.5**
URZ				*e*Sn	**Sn**	**00 52 44.0**	**+0.3**
RAR	**Rarotonga**	**20.19**	**59**	*eP*	P	**00 54 29.6**	**-0.3**
	7.6nm,0.4s						
HNR	**Honiara**	**30.85**	**314**	*eP*	P	**00 56 11.6**	**+0.3**
	28nm,0.5s						
CTA	**Charters Tower**	**34.05**	**283**	P	P	**00 56 40.5**	**+1.1**
	2.4nm,0.5s,baz=91,slow=10,SNR=3.6						
CTAO	**Charters Tower**	**34.05**	**283**	*eP*	P	**00 56 40.0**	**+0.6**
	1.1nm,0.3s						
PMG	**Port Moresby**	**39.54**	**298**	*eP*	P	**00 57 24.3**	**-1.8**
	4.1nm,1.4s						

baz=319,slow=76,SNR=87
H11S2 WAKE ISLAND Hy 29.37 128 T T 01 27 59.0
baz=319,slow=76,SNR=80
ZALV Zalesovo Beam 41.18 311 P **P** **00 58 18.2 0.0**
1.2nm,0.5s,baz=89,slow=7.6,SNR=8.3
MKAR Makanchi Array 43.79 300 P **P** **00 58 39.8 +0.2**
1.3nm,0.8s,baz=81,slow=8.7,SNR=13
KURK Kurchatov 45.36 307 *e*P **P** **00 58 51.6 -0.4**
17nm,1.1s
ILAR Eielson Array 47.17 33 P **P** **00 59 05.2 -0.8**
0.6nm,0.9s,baz=271,slow=5.6,SNR=6.3
TKM2 Tokmak 2 49.45 297 *e*P **P** **00 59 24.5 +0.3**
6.5nm,1.0s
BVAR Borovoye Array 49.83 311 P **P** **00 59 25.4 -1.2**
1.2nm,0.7s,baz=76,slow=10.0,SNR=5.1
INK Inuvik 52.04 28 P **P** **00 59 43.4 +0.3**
0.7nm,0.7s,baz=333,slow=4.7,SNR=5.0
ARU Arti 55.37 318 P **P** **01 00 07.5 -0.1**
1.7nm,0.3s,baz=100,slow=12,SNR=3.2
ABKAR Akbulak array 57.27 309 *e*P **P** **01 00 21.0 -0.3**
2.4nm,0.5s
WRA Warramunga Arr 59.34 189 P **P** **01 00 34.4 -1.5**
0.4nm,0.4s,baz=4.5,slow=7.2,SNR=6.8
YKA Yellowknife Ar 61.47 31 P **P** **01 00 49.2 -0.9**
0.4nm,0.9s,baz=296,slow=6.5,SNR=4.1
ASAR Alice Springs 63.06 189 P **P** **01 01 01.4 +0.2**
0.5nm,0.8s,baz=12,slow=7.0,SNR=4.9
FINES FINESS Array B 67.33 332 P **P** **01 01 28.1 -0.4**
1.2nm,0.7s,baz=19,slow=11,SNR=7.4
KBZ Khabaz 70.20 311 P **P** **01 01 47.6 +1.1**
1.6nm,0.8s,baz=218,slow=11,SNR=3.6
NB2 NORSAR Subarra 72.55 337 P **P** **01 02 00.3 -0.3**
comp=Z,0.6nm,0.7s,baz=37,slow=6.2
NOA NORSAR Array B 72.55 337 P **P** **01 02 00.1 -0.4**
comp=Z,1.2nm,0.8s,baz=51,slow=7.2,SNR=3.7
AKASG Malin Array Ba 73.15 322 P **P** **01 02 03.6 -0.6**
comp=Z,0.8nm,0.4s,baz=43,slow=5.5,SNR=5.0
SDCO Great Sand Dun 81.15 48 *e*P **P** **01 02 49.8 0.0**
comp=Z,3.3nm,1.2s

IDC ***15*** *00:53:29.3±1.2,36.˚50S×73.˚12W,h0km,mb4.1/7, mb1 4.3/8,mb1mx4.1/29,mbtmp4.2/8,ML4.3/1,MS3.7/2, Ms1 3.7/2,ms1mx3.1/22,Error ellipse: s-maj=36.6km s-min=29.5km az=46.0*
ISCJB ***15*** *00:53:31.6±0.3,36.˚42S±0.˚04×73.˚31W±0.˚06,h25km, mb5.0/36,MS3.5/2, Error ellipse: s-maj=6.9km s-min=4.6km az=157.8*
NEIC ***15*** *00:53:32.0,36.˚48S×73.˚39W,h14km,mb4.8/22, ML4.5(GUC),After GUC.*
NEIC Felt [IV] at Angol, Chiguayante, Coronel, Penco and San Pedro de la Paz; [III] at Cauquenes, Concepcion and Renaico; [II] at Los Angeles.
GUC ***15*** *00:53:32.6±0.3,36.˚48S×73.˚39W,h14km±1km,ML4.5*
BJI ***15*** *00:53:34.6,36.˚40S×73.˚20W,h29km,mB5.0/2,Ms5.4/1, Ms7 5.2/1*

ISC 15 00:53:33.4±0.4,36.˚45S±0.˚04×73.˚21W±0.˚06,h25km,n76, σ1$96/78,mb5.0/36,2C-1D,Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
					Op	ISC	h m s	ISC
CCSP	**San Pedro de C**	**0.41**	**168**	⇑*e*P		**Pb**	**00 53 40.4**	**-1.7**
CCSP				*e*S		**Sb**	**00 53 46.5**	**-1.4**
CCSP				IAML			00 53 46.6	
	comp=N,85μm,0.9s							
CCHI	**Chillan**	**0.93**	**100**	*e*P		**Pb**	**00 53 50.5**	**-0.3**
CCHI				*e*S		**Sn**	**00 54 04.3**	**+1.0**
CCHI				IAML			00 54 08.6	
	comp=E,22μm,0.6s							
TALC	**Talca**	**1.66**	**51**	*e*P		**Pb**	**00 54 02.2**	**-1.0**
TALC				*e*S		**Sb**	**00 54 24.7**	**+1.1**
ROC1	**El Roble**	**3.91**	**28**	*e*Pn		**Pn**	**00 54 32.1**	**0.0**
PLCA	**Paso Flores**	**4.76**	**155**	Pn		**Pn**	**00 54 45.0**	**+1.4**
	comp=E,1.7nm,0.3s,baz=348,slow=14,SNR=3.3							
PLCA				Lg		Lg	00 56 00.5	
	comp=E,12nm,0.3s,baz=290,slow=22,SNR=4.6							
PLCA	**Paso Flores**	**4.76**	**155**	*e*Pn		**Pn**	**00 54 45.5**	**+1.9**
LCO	**Las Campanas**	**7.71**	**17**	*e*Pn		**Pn**	**00 55 21.9**	**-2.4**
TRQA	**Tornquist**	**9.10**	**104**	*e*Pn		**Pn**	**00 55 43.0**	**-0.1**
CHRN	**Cochrane**	**10.80**	**178**	*e*Pn		**Pn**	**00 56 06.7**	**+0.3**
PB10	**IPOC Station P**	**13.09**	**11**	*e*Pn		**Pn**	**00 56 36.9**	**-0.9**
PB04	**IPOC Station P**	**14.31**	**12**	*e*Pn		**Pn**	**00 56 54.7**	**0.0**
PB01	**IPOC Station P**	**15.69**	**13**	*e*Pn		**Pn**	**00 57 11.3**	**-1.6**
PB01				*e*sP		**P**	**00 57 17.6**	**+0.8**
CPUP	**Villa Florida**	**16.88**	**58**	Pn		**Pn**	**00 57 27.0**	**-0.9**
	comp=E,0.2nm,0.3s,baz=250,slow=10,SNR=5.4							
CPUP	**Villa Florida**	**16.88**	**58**	*e*Pn		**P**	**00 57 28.9**	**-0.9**
PB11	**IPOC Station P**	**16.91**	**12**	*e*Pn		**Pn**	**00 57 28.3**	**-0.3**
	comp=E,25nm,0.9s							
LPAZ	**La Paz**	**20.58**	**14**	P		**P**	**00 58 12.0**	**+0.9**
	comp=E,2.6nm,0.7s,baz=185,slow=7.8,SNR=10							
LPAZ	**La Paz**	**20.58**	**14**	*e*P		**P**	**00 58 11.4**	**+0.3**
	comp=E,7.7nm,0.9s							
SIV	**San Ignacio**	**23.06**	**31**	P		**P**	**00 58 35.6**	**-1.4**
	comp=E,6.2nm,0.7s,baz=240,slow=13,SNR=14							
SIV				LR		LR	01 09 08.7	
	comp=E,207nm,21.0s,baz=198,slow=41							
SPB	**Sao Paulo**	**25.65**	**67**	*e*P		**P**	**00 59 02.4**	**+1.3**
	comp=E,15nm,1.0s							
SAML	**Samuel**	**28.85**	**21**	*e*P		**P**	**00 59 30.1**	**+0.1**
	comp=E,2.7nm,1.0s							
PMSA	**Palmer Station**	**28.89**	**172**	LR		LR	01 10 23.4	
	comp=E,109nm,19.0s,baz=346,slow=35							
RPN	**Rapa Nui**	**31.92**	**277**	*e*P		**P**	**00 59 58.1**	**+1.1**
	comp=E,474nm,1.0s							
OTAV	**Otavalo**	**36.82**	**351**	*e*P		**P**	**01 00 39.8**	**-0.2**
	comp=E,6.6nm,1.5s							
PTGA	**Pitinga**	**37.60**	**22**	*e*P		**P**	**01 00 45.4**	**-0.7**
	comp=E,5.5nm,0.8s							
ROSC	**El Rosal**	**41.08**	**358**	*e*P		**P**	**01 01 16.0**	**+0.4**
	comp=E,6.0nm,0.5s							
SDV	**Santo Domingo**	**45.16**	**4**	*e*P		**P**	**01 01 48.3**	**+0.1**
	comp=E,21nm,0.5s							
JTS	**JuntasAbangare**	**47.78**	**344**	*e*P		**P**	**01 02 08.5**	**-0.2**
	comp=E,15nm,1.4s							
TRIS	**Tristan da Cun**	**48.03**	**110**	*e*P		**P**	**01 02 11.8**	**+1.2**
	comp=E,99nm,1.1s							
GRGR	**Grenville**	**49.53**	**15**	*e*P		**P**	**01 02 21.8**	**-0.4**
	comp=E,141nm,1.0s							
PTCN	**Pitcairn Islan**	**49.55**	**266**	*e*P		**P**	**01 02 22.8**	**+0.4**
	comp=E,185nm,0.8s							
SVB	**Belmont**	**50.72**	**15**	*e*P		**P**	**01 02 31.2**	**0.0**
	comp=E,250nm,1.7s							
FDF	**Fort de France**	**52.16**	**15**	*e*P		**P**	**01 02 42.7**	**+0.8**
	comp=E,78nm,1.2s							
GDHS	**Morne Mazeau,**	**53.54**	**14**	*e*P		**P**	**01 02 51.7**	**-0.4**
	comp=E,156nm,1.0s							
QSPA	**South Pole Qui**	**53.79**	**180**	*e*P		**P**	**01 02 55.6**	**+2.0**
	comp=E,3.7nm,0.9s							
SEUS	**St. Eustatius**	**54.51**	**12**	*e*P		**P**	**01 02 59.8**	**+0.6**
	comp=E,113nm,0.9s							
MTDJ	**Mount Denham**	**54.53**	**355**	*e*P		**P**	**01 02 59.6**	**+0.2**
	comp=E,32nm,1.2s							
CELP	**Cerrillos**	**54.59**	**8**	*e*P		**P**	**01 02 59.1**	**-0.6**
SABA	**Saba**	**54.59**	**12**	*e*P		**P**	**01 02 59.8**	**0.0**
	comp=E,83nm,1.0s							
BANI	**BANI**	**54.61**	**3**	*e*P		**P**	**01 03 00.4**	**+0.5**
MPR	**Mayaguez**	**54.66**	**7**	*e*P		**P**	**01 03 01.4**	**+1.2**
	comp=E,90nm,1.8s							
SJG	**San Juan**	**54.67**	**8**	*e*P		**P**	**01 02 59.7**	**-0.5**
	comp=E,34nm,1.4s							
SDD	**Santo Domingo**	**54.70**	**4**	*e*P		**P**	**01 02 59.0**	**-1.5**
	comp=E,219nm,1.4s							
LRS	**Lares**	**54.77**	**7**	*e*P		**P**	**01 03 01.0**	**0.0**
CBYP	**Canovanas**	**54.86**	**9**	*e*P		**P**	**01 03 02.1**	**+0.3**
	comp=E,22nm,1.1s							
ANWB	**Willy Bob**	**54.90**	**13**	*e*P		**P**	**01 03 02.7**	**+0.8**
	comp=E,83nm,0.9s							
SMRT	**St. Maarten**	**55.04**	**12**	*e*P		**P**	**01 03 04.0**	**+1.0**
	comp=E,43nm,1.1s							
TLIG	**Tlapa**	**58.82**	**331**	*e*P		**P**	**01 03 30.5**	**+0.6**
	comp=E,36nm,2.0s							
SYO	**Syowa Base**	**63.95**	**158**	⇑*e*P		**P**	**01 04 02.4**	**-1.5**
SYO	**Syowa Base**	**63.95**	**158**	⇓*e*sP		P	01 04 09.4	+5.5
TX31	**Lajitas Ar. Si**	**71.42**	**332**	*e*P		**P**	**01 04 51.8**	**+0.3**
TXAR	**Lajitas Array**	**71.42**	**332**	P		**P**	**01 04 52.1**	**+0.5**
	comp=E,0.7nm,0.6s,baz=151,slow=8.7,SNR=6.2							
SWET	**Sewanee**	**72.28**	**349**	*e*P		**P**	**01 04 56.5**	**0.0**
	comp=E,2.2nm,0.8s							
WVT	**Waverly**	**73.48**	**348**	*e*P		**P**	**01 05 03.1**	**-0.4**
	comp=E,12nm,1.3s							
LIC	**Lamto**	**76.46**	**72**	*e*PKP2		**P**	**01 05 23.8**	**+2.5**
TIC	**Toumodi**	**76.73**	**71**	*e*PKP2		**P**	**01 05 24.7**	**+1.9**
KIC	**Kosan Boka**	**76.76**	**72**	*e*PKP2		**P**	**01 05 23.0**	**0.0**
	comp=E,9.6nm,0.7s							

DBIC	**Dimbokro**	**76.87**	**71**	P		**P**	**01 05 23.7**	**+0.1**
	comp=E,2.5nm,0.6s,baz=202,slow=6.3,SNR=11							
BOSA	**Boshof**	**79.78**	**118**	P		**P**	**01 05 40.0**	**+0.2**
	comp=E,5.3nm,0.9s,baz=178,slow=2.9,SNR=5.3							
DUG	**Dugway, Tooele**	**84.51**	**331**	*e*P		**P**	**01 06 04.2**	**+0.1**
	comp=E,6.2nm,1.2s							
HWUT	**Hardware Ranch**	**85.24**	**332**	*e*P		**P**	**01 06 08.1**	**+0.3**
	comp=E,6.3nm,1.1s							
NVAR	**Mina Array Bea**	**85.36**	**326**	P		**P**	**01 06 09.5**	**+1.1**
	comp=E,0.5nm,0.7s,baz=165,slow=6.2,SNR=4.4							
BW06	**Boulder Array**	**85.52**	**334**	*e*P		**P**	**01 06 08.3**	**-0.9**
TOA0	**Torodi Ar. Sit**	**85.94**	**71**	*e*P		**P**	**01 06 11.2**	**-0.5**
TORD	**Torodi Ar. Bea**	**85.94**	**71**	P		**P**	**01 06 11.1**	**-0.5**
	comp=E,2.0nm,1.0s,baz=230,slow=2.8,SNR=7.0							
ARMA	**Armidale**	**101.30**	**218**	*e*P		**Pdif**	**01 07 23.1**	**+0.6**
SKAG	**Skagway**	**108.42**	**332**	*e*Pdif		**Pdif**	**01 07 55.9**	**+2.9**
ABKAR	**Akbulak array**	**143.92**	**54**	*e*PKPdf		PKPab	01 13 03.3	+0.1
HYB	**Hyderabad**	**148.67**	**120**	*i* PKP		**PKPbc**	**01 13 19.0**	**+0.2**
HYB				*e*			01 13 26.0	
BVAR	**Borovoye Array**	**149.70**	**45**	PKPbc		**PKPbc**	**01 13 19.7**	**-0.6**
	comp=E,0.5nm,0.6s,baz=320,slow=4.4,SNR=4.1							
KURBB	**Kurchatov Arra**	**155.28**	**46**	PKPbc		PKPdf	01 13 34.5	+11
KURBB				PKPab		**PKPab**	**01 13 48.7**	**-0.5**
	comp=E,0.4nm,0.8s,baz=292,slow=4.3,SNR=5.9							
KSH	**Kashi**	**155.58**	**73**	*e*PKP		**PKPdf**	**01 13 26.1**	**+1.2**
KSH				*ep*PKP		pPKPdf	01 13 36.9	+3.6
KSH				AMB		AMB		
	comp=E,99nm,5.2s							
ZALV	**Zalesovo Beam**	**156.80**	**34**	PKPab		**PKPab**	**01 13 54.1**	**-1.5**
	comp=E,0.7nm,0.4s,baz=264,slow=1.4,SNR=3.3							
MKAR	**Makanchi Array**	**159.05**	**53**	PKP		**PKPdf**	**01 13 26.3**	**-2.6**
	comp=E,0.1nm,0.5s,baz=321,slow=1.8,SNR=2.3							
MKAR				PKPab		**PKPab**	**01 14 05.3**	**-0.3**
	comp=E,0.4nm,0.7s,baz=253,slow=3.7,SNR=5.4							
WMQ	**Urumqi**	**163.67**	**57**	*e*PKP		**PKPdf**	**01 13 33.1**	**-0.8**
CD2	**Chengdu**	**173.93**	**155**	PKP		**PKPdf**	**01 13 40.3**	**-0.6**
HHC	**Hu-ho-hao-te**	**174.23**	**321**	*e*PKP		**PKPdf**	**01 13 39.1**	**-1.6**

JMA ***15*** *00:54:57.7±0.2,35.˚90N×142.˚25E,h55km,M2.9*
IDC ***15*** *00:54:58.0±2.6,36.˚86N×142.˚75E,h0km,mb3.4/4, mb1 3.5/5,mb1mx3.2/59,mbtmp3.3/5,ML3.0/1,Error ellipse: s-maj=74.7km s-min=25.3km az=60.0*

ISC 15 00:54:59.9±2.1,35.˚9N±0.˚1×142.˚1E±0.˚1,h23km,n8, σ0$46/8,mb3.5/4,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
					Op	ISC	h m s	ISC
CHOJ	**Chosi**	**1.01**	**261**	P		**Pn**	**00 55 18.0**	**-0.6**
CHOJ				S		**Sn**	**00 55 32.6**	**+0.5**
BSO1	**Boso 1**	**1.51**	**217**	P		**Pn**	**00 55 24.9**	**-0.1**
JAG	**Ashikaga**	**2.20**	**285**	P		**Pn**	**00 55 34.9**	**-0.1**
JAG				*e*S		**Sn**	**00 56 01.9**	**+0.4**
MJAR	**Matsushiro Arr**	**3.21**	**283**	Pn		**Pb**	**00 55 55.8**	**-0.3**
	1.3nm,0.3s,baz=99,slow=10,SNR=5.7							
SONM	**Songino Array**	**28.89**	**306**	P		**P**	**01 00 57.4**	**+0.4**
	0.2nm,0.4s,baz=126,slow=7.3,SNR=2.2							
KURBB	**Kurchatov Arra**	**47.15**	**309**	P		**P**	**01 03 30.1**	**-0.1**
	0.2nm,0.4s,baz=88,slow=7.6,SNR=4.4							
WRA	**Warramunga Arr**	**55.98**	**189**	P		P	01 04 44.2	+7.7
	0.4nm,0.7s,baz=4.0,slow=8.5,SNR=3.0							
ASAR	**Alice Springs**	**59.71**	**189**	P		P	01 05 13.1	+10
	0.2nm,0.5s,baz=14,slow=12,SNR=3.5							

NIED ***15*** *00:56:00,36.˚50N×142.˚50E,h8km,Mw4.7 Best double couple: Mo1.22000×10^16 NP1:φs208.00000°,δ39.00000°, λ98.00000°. NP2:φs17.00000°,δ52.00000°,λ83.00000°.*
IDC ***15*** *00:56:21.9±0.5,36.˚38N×142.˚55E,h0km,mb4.2/32, mb1 4.4/39,mb1mx4.3/65,mbtmp4.3/39,ML4.0/6,MS4.1/11, Ms1 4.1/11,ms1mx3.7/36,Error ellipse: s-maj=12.8km s-min=11.2km az=112.0*
JMA ***15*** *00:56:24.8±0.3,36.˚45N×142.˚54E,h64km,M4.4*
MOS ***15*** *00:56:25.3±1.0,36.˚61N×142.˚47E,h25km,mb4.9/48, MS4.2/7,Error ellipse: s-maj=7.5km s-min=4.9km az=108.6*
BJI ***15*** *00:56:25.0,36.˚48N×142.˚59E,h40km,mb4.7/60,mB5.0/52, Ms4.7/60,Ms7 4.5/55*
ISCJB ***15*** *00:56:26.3±0.2,36.˚46N±0.˚03×142.˚49E±0.˚03,h38km, mb4.7/140,MS4.4/24,Error ellipse: s-maj=4.1km s-min=2.7km az=153.0*
NEIC ***15*** *00:56:27.1±1.4,36.˚45N×142.˚55E,h30km±9km,mb4.8/78, Error ellipse: s-maj=4.8km s-min=3.3km az=132.0*

ISC 15 00:56:26.7±0.5,36.˚45N±0.˚04×142.˚54E±0.˚03,h30km±2km, h30km:pP-P,n295,σ1$47/318,mb4.7/140,MS4.5/24,5C-7D, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
					Op	ISC	h m s	ISC
CHOJ	**Chosi**	**1.55**	**242**	P		**Pn**	**00 56 50.7**	**-1.6**
JHO	**Hitachi**	**1.60**	**276**	P		**Pn**	**00 56 50.9**	**-2.0**
JFK	**Kawauchi**	**1.62**	**305**	P		**Pn**	**00 56 51.4**	**-1.9**
BSO1	**Boso 1**	**2.20**	**216**	P		**Pn**	**00 57 00.5**	**-0.2**
JAG	**Ashikaga**	**2.49**	**270**	P		**Pn**	**00 57 03.9**	**-1.3**
JMK	**Ichinoseki**	**2.71**	**338**	P		**Pn**	**00 57 06.3**	**-1.9**
JRY	**Ryogami san**	**2.97**	**263**	P		**Pn**	**00 57 10.5**	**-1.4**
JYK	**Kaneyama**	**3.01**	**326**	P		**Pn**	**00 57 11.1**	**-1.3**
JOD2	**Odawara 2**	**3.04**	**248**	P		**Pn**	**00 57 11.7**	**-1.1**
JOM	**Ohasama**	**3.18**	**342**	P		**Pn**	**00 57 13.4**	**-1.2**
MJAR	**Matsushiro Arr**	**3.49**	**273**	Pn		**Pn**	**00 57 19.2**	**+0.2**
	9.1nm,0.3s,baz=99,slow=9.3,SNR=24							
MJAR				LR		LR	00 58 59.6	
	comp=Z,1μm,19.6s,baz=90,slow=45							
MAJO	**Matsushiro**	**3.49**	**273**	*e*P		**Pn**	**00 57 19.5**	**+0.5**
MAJO	**Matsushiro**	**3.49**	**273**	*e*Pn		**Pn**	**00 57 19.5**	**+0.5**
MAT	**Matsushiro**	**3.49**	**273**	P		**Pn**	**00 57 19.1**	**+0.1**
MAT				*e*S		**Sn**	**00 57 58.0**	**-1.4**
MAT	**Matsushiro**	**3.49**	**273**	P		**Pn**	**00 57 19.2**	**+0.2**
MJB9	**Matsu-Tunnel**	**3.50**	**273**	*e*Pn		**Pn**	**00 57 19.6**	**+0.5**
JHJ2	**Mitsune**	**4.01**	**215**	*e*Pn		**Pn**	**00 57 28.2**	**+2.1**
JHJ	**Hachijo jima 2**	**4.02**	**215**	Pn		**Pn**	**00 57 24.5**	**-1.8**
	55nm,0.3s,baz=205,slow=3.0,SNR=5.7							
JHJ				Sn		**Sn**	**00 58 07.1**	**-5.2**
	106nm,0.3s,baz=62,slow=22,SNR=5.8							
INU	**Inuyama**	**4.62**	**258**	*e*Pn		**Pn**	**00 57 36.2**	**+1.8**
ERM	**Erimo**	**5.58**	**5**	*e*P		**Pn**	**00 57 44.8**	**-2.8**
ERM	**Erimo**	**5.58**	**5**	*e*Pn		**Pn**	**00 57 44.8**	**-2.8**
ASAJ	**Asahikawa**	**7.66**	**0**	Pn		**Pn**	**00 58 14.7**	**-1.5**
	6.6nm,0.3s,baz=243,slow=7.6,SNR=12							
ASAJ				Sn		**Sn**	**00 59 37.5**	**-4.4**
	1.1nm,0.3s,baz=15,slow=25,SNR=2.4							
YUK	**Yuzh-Kuril'sk**	**7.99**	**17**	*e*P		Pn	00 58 16.4	-4.3
YUK				*e*S		Sn	00 59 41.1	-8.9
YUK				MLR		MLR		
	comp=Z,2μm,14.0s							
YUK				MLR		MLR		
	comp=N,1μm,13.0s							
YUK				MLR		MLR		
	comp=E,1μm,13.0s							
SHO	**Shikotan**	**8.11**	**23**	*e*P		Pn	00 58 17.9	-4.4
SHO				pmax		pmax		
	comp=Z,28nm,0.5s							
SHO				pmax		pmax		
	comp=N,12nm,0.3s							
SHO				pmax		pmax		
	comp=E,15nm,0.2s							
CBIJ	**Chichi jima**	**9.33**	**182**	*e*Pn		**Pn**	**00 58 39.2**	**+0.1**
CBIJ				Sn		Sn	01 00 10.6	-12
JCJ	**Chichijima**	**9.33**	**182**	Pn		Pn	00 58 35.2	-3.9
	comp=E,3.9nm,0.3s,baz=81,slow=22,SNR=5.6							
JCJ				Sn		Sn	01 00 10.6	-12
	comp=E,7.7nm,0.3s,baz=26,slow=18,SNR=3.4							
KUR	**Kuril'sk**	**9.66**	**23**	*e*P		Pn	00 58 54.7	+11
KUR				S		**Sn**	**01 00 33.3**	**+2.4**
JNU	**Nakatsue**	**10.15**	**254**	Pn		**Pn**	**00 58 50.0**	**-0.4**
	comp=E,0.5nm,0.3s,baz=52,slow=7.2,SNR=5.1							
JNU				LR		LR	01 02 49.0	
	comp=E,741nm,19.6s,baz=76,slow=38							
JNU	**Nakatsue**	**10.15**	**254**	*e*Pn		**Pn**	**00 58 52.2**	**+1.8**
YSS	**Yuzh-Sakhalins**	**10.50**	**1**	⇓*e*P		**Pn**	**00 58 52.8**	**-2.3**
YSS				*e*S		**Sn**	**01 00 47.4**	**-4.2**
YSS				pmax		pmax		
	comp=Z,40nm,0.4s							
YSS				MLR		MLR		
	comp=Z,2μm,17.0s							
YSS				MLR		MLR		
	comp=N,2μm,13.0s							
YSS	**Yuzh-Sakhalins**	**10.50**	**1**	*e*Pn		**Pn**	**00 58 53.7**	**-1.4**
USRK	**Ussuriysk Ar.**	**11.17**	**317**	Pn		**Pn**	**00 59 04.2**	**0.0**
	comp=N,0.4nm,0.3s,baz=120,slow=14,SNR=6.3							
KSRS	**Korea Array**	**11.74**	**279**	Pn		**Pn**	**00 59 13.8**	**+1.7**
	comp=N,0.5nm,0.3s,baz=93,slow=13,SNR=14							
KSRS				LR		LR	01 03 50.0	
	comp=N,275nm,19.1s,baz=92,slow=38							
KS01	**Wonju Array Si**	**11.77**	**279**	*e*Pn		**Pn**	**00 59 13.8**	**+1.4**
KS15	**Wonju Array Si**	**11.77**	**279**	*e*Pn		**Pn**	**00 59 14.1**	**+1.6**
KSAR	**Wonju Array Be**	**11.77**	**279**	P		**Pn**	**00 59 13.9**	**+1.3**
KSAR	**Wonju Array Be**	**11.77**	**279**	Pn		**Pn**	**00 59 13.8**	**+1.3**
INCN	**Inchon**	**12.77**	**279**	*e*Pn		**Pn**	**00 59 27.6**	**+1.4**
MDJ	**Mudanjiang**	**12.78**	**314**	*e*Pn		**Pn**	**00 59 27.6**	**+1.4**
TYV	**Tymovskoe**	**14.41**	**0**	*e*P		**Pn**	**00 59 46.2**	**-2.3**
CN2	**Changchun**	**14.98**	**305**	*e*P		**Pn**	**00 59 58.6**	**+2.3**
CN2				*e*S		**Sn**	**01 02 44.0**	**+2.9**
CN2				pmax		pmax		
	comp=N,20nm,1.0s							
CN2				LR		LR		
	comp=N,1μm,13.0s							
CN2				LR		LR		
	comp=N,2μm,13.0s							
CN2				LR		LR		
	comp=N,1μm,14.0s							
KLR	**Kul'dur**	**15.01**	**332**	Pn		**Pn**	**00 59 56.0**	**-0.5**
	comp=N,0.2nm,0.3s,baz=113,slow=8.0,SNR=2.4							
SNY	**Shenyang**	**15.66**	**296**	⇑P		**Pn**	**01 00 02.3**	**-2.8**
SNY				S		**Sn**	**01 02 51.4**	**-6.1**
SNY				pmax		pmax		
	comp=N,11nm,0.6s							
SNY				pmax		pmax		
	comp=N,330nm,12.0s							
SNY				LR		LR		
	comp=N,1μm,13.3s							
SNY				LR		LR		
	comp=N,2μm,14.8s							
SNY				LR		LR		
	comp=N,3μm,14.9s							
DL2	**Dalian**	**16.74**	**285**	P		**Pn**	**01 00 17.1**	**-1.8**
DL2				S		Sn	01 03 15.8	-8.0
DL2				pmax		pmax		
	comp=N,32nm,1.6s							
DL2				pmax		pmax		
	comp=N,390nm,6.1s							
DL2				LR		LR		
	comp=N,780nm,13.6s							
DL2				LR		LR		
	comp=N,2μm,14.5s							
DL2				LR		LR		
	comp=N,2μm,14.9s							
NKL	**Nikolayevsk**	**16.75**	**356**	*e*P		Pn	01 00 10.0	-8.9
NKL				pmax		pmax		
	comp=Z,26nm,1.5s							
NKL				MLR		MLR		
	comp=N,700nm,18.0s							
NKL				MLR		MLR		
	comp=E,700nm,18.0s							
NKL				MLR		MLR		
	comp=Z,1μm,18.0s							
SSE	**Sheshan**	**18.53**	**259**	*e*P		**Pn**	**01 00 42.0**	**+1.0**
SSE				pP		**pP**	**01 00 50.3**	**+1.6**
SSE				sP		**sP**	**01 00 57.6**	**+5.0**
SSE				S		**Sn**	**01 04 08.8**	**+1.6**
SSE				sS		**sS**	**01 04 22.3**	**-1.0**
SSE				pmax		pmax		
	comp=Z,27nm,0.8s							
SSE				pmax		pmax		
	comp=Z,150nm,8.3s							
SSE				LR		LR		
	comp=E,630nm,19.7s							
SSE				LR		LR		
	comp=E,130nm,19.6s							
SSE				LR		LR		
	comp=E,320nm,24.0s							
PEA0	**Petropavlovsk-**	**19.76**	**28**	*e*P		**P**	**01 00 54.5**	**+0.4**
NJ2	**Nanjing**	**20.05**	**264**	*e*P		Pn	01 00 58.9	-0.4
NJ2				pP		sP	01 01 09.8	+0.5
NJ2				S		**S**	**01 04 35.9**	**-5.3**
NJ2				pmax		pmax		
	comp=Z,89nm,5.1s							
NJ2				LR		LR		
	comp=Z,1μm,13.9s							
NJ2				LR		LR		
	comp=Z,1μm,15.0s							
NJ2				LR		LR		
	comp=Z,1μm,14.4s							
PET	**Petropavlovsk**	**20.06**	**29**	*e*P		**P**	**01 00 57.9**	**+0.6**
PET				pmax		pmax		
	comp=Z,302nm,2.0s							
PET	**Petropavlovsk**	**20.06**	**29**	*e*P		**P**	**01 00 57.9**	**+0.6**
	comp=Z,302nm,2.0s							
TIA	**Tai'an**	**20.47**	**277**	*e*P		**P**	**01 00 59.9**	**-2.0**
TIA				pmax		pmax		
	comp=Z,10.0nm,0.8s							
YOJ	**Yonaguni jima**	**

comp=E,16nm,0.4s,baz=343,slow=6.6,SNR=6.6
YAK Yakutsk 26.84 347 *e*P **P 01 02 04.3 +0.1**
YAK *e**PP **sP** 01 02 16.2 -0.4
YAK *e*PPP PPP 01 02 57.7
YAK *e* 01 05 25.2
YAK *e*S **S** **01 06 38.6 +0.1**
YAK *e*SS **SnSn** **01 07 41.6 -2.6**
YAK *e*SSS SSS 01 08 02.8
YAK pmax pmax
comp=Z,27nm,1.0s
YAK pmax pmax
comp=N,24nm,1.3s
YAK pmax pmax
comp=E,10.0nm,1.0s
YAK pmax pmax
comp=Z,176nm,4.9s
YAK pmax pmax
comp=N,182nm,5.2s
YAK pmax pmax
comp=E,109nm,5.8s
YAK smax smax
comp=N,147nm,4.2s
YAK smax smax
comp=E,111nm,4.2s
YAK MLR MLR
comp=Z,733nm,12.0s
YAK MLR MLR
comp=E,662nm,13.0s
YAK MLR MLR
comp=N,1µm,16.0s
YAK Yakutsk 26.84 347 *e*P **P 01 02 04.3 +0.1**
comp=N,28nm,0.6s
H11N2 WAKE ISLAND Hy 27.07 121 T T 01 30 17.8
H11N1 WAKE ISLAND Hy 27.08 121 T T 01 30 17.8
H11N3 WAKE ISLAND Hy 27.09 121 T T 01 30 17.8
SEY Seymchan 27.20 10 P **P** **01 02 08.2 +0.8**
comp=N,6.6nm,0.9s,baz=182,slow=5.9,SNR=12
SMY Shemya 27.45 44 *e*P **P** **01 02 09.9 +0.1**
SMY pmax pmax
comp=Z,122nm,1.0s
SMY Shemya 27.45 44 *e*P **P** **01 02 09.9 +0.1**
comp=Z,122nm,1.0s
XAN Xi'an 27.49 275 P **P** **01 02 10.3 -0.1**
XAN pP pP 01 02 20.0 +0.9
XAN S **S** **01 06 49.5 +0.2**
XAN pmax pmax
comp=Z,17nm,1.6s
XAN pmax pmax
comp=Z,160nm,7.7s
XAN LR LR
comp=Z,350nm,13.2s
XAN LR LR
comp=Z,600nm,14.2s
XAN LR LR
comp=Z,750nm,13.2s
H11S1 WAKE ISLAND Hy 27.78 124 T T 01 31 09.9
baz=316,slow=74,SNR=3.9
H11S3 WAKE ISLAND Hy 27.78 124 T T 01 31 12.5
baz=129,slow=74,SNR=3.4
H11S2 WAKE ISLAND Hy 27.80 124 T T 01 31 12.8
ENH Enshi 28.20 267 *e*P **P** **01 02 16.4 -0.3**
comp=Z,86nm,1.2s
ULN Ulaanbaatar 28.43 305 *e*P **P** **01 02 19.7 +0.9**
ULN pmax pmax
comp=Z,38nm,1.3s
ULN Ulaanbaatar 28.43 305 *e*P **P** **01 02 19.7 +0.9**
comp=Z,38nm,1.3s
GZH Guangzhou 28.50 250 P P 01 02 14.9 -4.6
GZH S **S** **01 07 01.0 -4.3**
GZH pmax pmax
comp=Z,290nm,10.0s
BOD Bodaibo 28.51 328 *e*P **P** **01 02 18.3 -0.9**
BOD pmax pmax
comp=Z,35nm,1.4s
SONA1 Songino Array 28.86 305 *e*P **P** **01 02 23.3 +0.6**
SONM Songino Array 28.86 305 P **P** **01 02 23.3 +0.6**
comp=Z,6.0nm,0.9s,baz=105,slow=9.0,SNR=39
LZH Lanzhou 31.06 281 *e*P **P** **01 02 42.8 +0.5**
LZH pP sP 01 02 53.3 -1.4
LZH sP pP 01 02 59.9 +8.9
LZH PP **PnPn** **01 03 46.4 +2.5**
LZH S **S** **01 07 42.6 -3.1**
LZH sS sS 01 08 03.0 +2.8
LZH SS **SnSn** **01 09 25.0 -2.8**
LZH pmax pmax
comp=Z,38nm,1.0s
LZH pmax pmax
comp=Z,160nm,4.3s
LZH LR LR
comp=Z,970nm,13.9s
LZH LR LR
comp=Z,940nm,13.4s
LZH LR LR
comp=Z,1µm,15.0s
ZAK Zakamensk 31.34 309 *e*P **P** **01 02 44.6 +0.1**
ZAK pmax pmax
comp=Z,14nm,1.6s
TLY Talaya 31.40 311 P **P** **01 02 45.0 +0.2**
comp=Z,2.6nm,0.7s,baz=169,slow=7.8,SNR=3.3
TLY Talaya 31.40 311 *e*P **P** **01 02 44.8 -0.1**
TLY *e* 01 03 58.8
TLY *e*S **S** **01 07 55.9 +5.6**
TLY *e*SS **SnSn** **01 09 39.1 +3.7**
TLY *e*SSS SSS 01 10 05.0
TLY pmax pmax
comp=Z,20nm,1.8s
TLY MLR MLR
comp=Z,487nm,14.0s
TLY Talaya 31.40 311 *e*P **P** **01 02 45.3 +0.4**
comp=Z,15nm,1.3s
GYA Guiyang 32.03 262 *e*P **P** **01 02 51.0 +0.2**
GYA pP sP 01 03 02.8 -0.4
GYA sP pP 01 03 09.6 +10
GYA PP **PnPn** **01 03 58.8 +2.3**
GYA PcP **PcP** **01 05 41.3 +1.2**
GYA S **S** **01 08 00.9 +0.1**
GYA sS sS 01 08 19.6 +4.3
GYA SS **SnSn** **01 09 53.3 +1.9**
GYA ScS **ScS** **01 13 18.0 -2.3**
GYA pmax pmax
comp=Z,10.0nm,0.8s
GYA pmax pmax
comp=Z,120nm,5.5s
GYA LR LR
comp=Z,500nm,16.6s
GYA LR LR
comp=Z,460nm,17.0s
GYA LR LR
comp=Z,480nm,17.0s
CD2 Chengdu 32.59 272 P **P** **01 02 55.1 -0.5**
CD2 sP sP 01 03 11.3 +3.3
CD2 PP **PP** **01 04 09.3 -0.1**
CD2 S **S** **01 08 08.5 -0.9**
CD2 sS sS 01 08 27.5 +3.6
CD2 pmax pmax
comp=Z,20nm,0.6s
CD2 pmax pmax
comp=Z,140nm,8.4s
CD2 LR LR
comp=Z,1µm,13.2s
CD2 LR LR
comp=Z,700nm,15.6s
PATS Pohnpei 32.81 150 *e*P **P** **01 02 58.5 +1.0**
comp=Z,89nm,1.2s
MOY Mondy 33.01 311 *e*P **P** **01 02 56.9 -2.2**
GTA Gaotai 33.60 288 *e*P **P** **01 03 04.6 +0.1**
GTA pP sP 01 03 15.6 -1.3
GTA sP pP 01 03 21.3 +8.0
GTA S **S** **01 08 26.9 +1.7**
GTA pmax pmax
comp=Z,11nm,1.6s
GTA pmax pmax
comp=Z,190nm,6.4s
GTA LR LR
comp=Z,450nm,16.2s
GTA LR LR
comp=Z,530nm,14.5s
GTA LR LR
comp=Z,530nm,14.7s
BILL Bilibino 34.34 16⇓ *e*P **P** **01 03 09.6 -0.7**
BILL *e*PPP PPP 01 04 28.7
BILL pmax pmax
comp=Z,16nm,1.7s
BILL Bilibino 34.34 16 *e*P **P** **01 03 10.2 -0.2**
comp=Z,8.3nm,1.0s

MIDW Midway 34.66 92 *e*P **P** **01 03 13.9 +0.4**
comp=Z,96nm,1.3s
KWAJ Kwajalein Atol 35.73 134 *e*P **P** **01 03 22.9 +0.1**
KWAJ pmax pmax
comp=Z,193nm,1.3s
KWAJ Kwajalein Atol 35.73 134 *e*P **P** **01 03 22.9 +0.1**
comp=Z,193nm,1.3s
KMI Kunming 35.78 263 P **P** **01 03 23.8 +0.3**
KMI pP pP 01 03 33.9 +1.6
KMI sP sP 01 03 38.5 +2.5
KMI S **S** **01 09 00.9 +1.8**
KMI sS sS 01 09 17.3 +3.6
KMI pmax pmax
comp=Z,18nm,0.6s
KMI pmax pmax
comp=Z,150nm,4.9s
KMI LR LR
comp=Z,440nm,14.5s
KMI LR LR
comp=Z,400nm,16.2s
KMI LR LR
comp=Z,720nm,14.0s
TIXI Tiksi 35.98 353⇓ *e*P **P** **01 03 25.5 +1.1**
TIXI pmax pmax
comp=Z,2.0nm,0.8s
TIXI Tiksi 35.98 353 *e*P **P** **01 03 24.6 +0.3**
comp=Z,13nm,1.8s
NIKH Nikolski High 37.48 48 *e*P **P** **01 03 37.5 0.0**
comp=Z,144nm,1.6s
MYLDM Lahad Datu 38.15 221 *e*P **P** **01 03 44.0 +0.7**
comp=Z,49nm,1.4s
GAMB Gambell 38.75 31 *e*P **P** **01 03 48.7 +0.7**
comp=Z,11nm,1.8s
SKNT Sakolnakorn 39.20 251 P **P** **01 03 53.5 +1.3**
comp=Z,33nm,1.0s
CRAI Chiangrai 40.14 258 P **P** **01 04 03.1 +3.1**
comp=Z,14nm,1.3s
KHON Khomkaen 40.46 251 P P 01 04 06.0 +3.3
comp=Z,7.0nm,1.2s,comp=Z,528nm
PBKT Sadao Pong 41.74 253 P **P** **01 04 14.1 +0.8**
comp=Z,13nm,1.2s
WMQ Urumqi 41.91 298 P **P** **01 04 16.5 +2.0**
WMQ pP sP 01 04 28.3 +1.2
WMQ S **S** **01 10 31.9 +1.1**
WMQ sS sS 01 10 52.3 +6.7
WMQ ScS **ScS** **01 14 13.0 -2.0**
WMQ pmax pmax
comp=Z,6.0nm,1.4s
WMQ pmax pmax
comp=Z,100nm,3.8s
WMQ LR LR
comp=Z,140nm,19.2s
WMQ LR LR
comp=Z,73nm,23.6s
CMMT Chiang Mai 42.03 257 P P 01 04 22.1 +6.4
comp=Z,5.9nm,1.9s,comp=Z,384nm
CHTO Chiang Mai 42.04 257 P P 01 04 22.2 +6.5
comp=Z,33nm,1.2s
CHTO Chiang Mai 42.04 257 *e*P **P** **01 04 16.4 +0.7**
CHTO pmax pmax
comp=Z,5.0nm,1.0s
CHTO Chiang Mai 42.04 257 *e*P **P** **01 04 16.4 +0.7**
comp=Z,5.4nm,1.0s
CMAR Chiang Mai Arr 42.23 257 P **P** **01 04 16.9 -0.4**
comp=Z,0.4nm,0.6s,baz=57,slow=6.6,SNR=3.9
CM01 Chiang Mai Arr 42.24 257 *e*P **P** **01 04 17.0 -0.4**
ZAA0 Zalesovo Array 42.98 313 *e*P **P** **01 04 22.9 +0.1**
ZALV Zalesovo Beam 42.98 313 P **P** **01 04 22.9 0.0**
comp=Z,2.3nm,0.6s,baz=100,slow=7.7,SNR=13
ZALV PcP **PcP** **01 06 12.8 -0.1**
comp=Z,2.5nm,0.7s,baz=80,slow=3.4,SNR=4.1
CHGN Chignik 43.76 44 *e*P **P** **01 04 29.3 +0.2**
NVS Novosibirsk 43.90 314 *e*P **P** **01 04 29.4 -0.9**
NVS pmax pmax
comp=Z,35nm,2.1s
NVS pmax pmax
comp=E,14nm,1.6s
SBUM Sibu 43.90 227 *e*P **P** **01 04 30.9 +0.1**
comp=E,9.1nm,1.1s
NRIK Noril'sk 44.18 335 P **P** **01 04 32.0 -0.3**
comp=E,1.2nm,0.4s,baz=134,slow=5.5,SNR=5.7
NRIK LR LR 01 24 53.7
comp=E,602nm,19.2s,baz=104,slow=39
SRDT SRDT 44.50 252 P **P** **01 04 37.4 +1.8**
comp=E,18nm,1.4s
TARA Tarawa 44.82 134 *e*P **P** **01 04 37.6 -0.5**
comp=E,110nm,1.0s
MKAR Makanchi Array 45.20 303 P **P** **01 04 40.9 0.0**
comp=E,5.9nm,0.9s,baz=90,slow=8.5,SNR=23
MKAR Makanchi Array 45.20 303 *e*P **P** **01 04 41.0 +0.1**
TT01 Tatalina 45.38 34 *e*P **P** **01 04 42.2 +0.1**
TTA Tatalina 45.39 34 *e*P **P** **01 04 43.2 +1.0**
TTA pmax pmax
comp=Z,8.0nm,1.3s
TTA Tatalina 45.39 34 *e*P **P** **01 04 43.2 +1.0**
comp=Z,7.5nm,1.3s
MAKZ Makanchi 45.41 303 *e*P **P** **01 04 42.8 +0.3**
MAKZ pmax pmax
comp=Z,29nm,1.3s
MAKZ Makanchi 45.41 303 *e*P **P** **01 04 42.8 +0.3**
comp=Z,29nm,1.3s
SVW2 Sparrevohn 45.44 37 *e*P **P** **01 04 43.0 +0.5**
comp=Z,8.5nm,1.1s
PMG Port Moresby 45.81 174 P **P** **01 04 46.5 +0.6**
comp=Z,7.8nm,0.7s,baz=340,slow=14,SNR=3.3
PMG Port Moresby 45.81 174 P **P** **01 04 47.3 +1.4**
PMG pmax pmax
comp=Z,47nm,1.0s
PMG Port Moresby 45.81 174 *e*P **P** **01 04 45.6 -0.3**
comp=Z,20nm,1.2s
KSM Kuning 45.82 228 *e*P **P** **01 04 47.1 +1.0**
comp=Z,7.7nm,0.7s
KAPI Kappang 46.43 212 P **P** **01 04 51.1 +0.3**
comp=Z,3.3nm,0.4s,baz=16,slow=12,SNR=3.8
KAPI Kappang 46.43 212 *e*P **P** **01 04 51.6 +0.8**
comp=Z,42nm,1.5s
JOHN Johnston Islan 46.61 102 *e*P **P** **01 04 50.5 -1.8**
comp=Z,85nm,0.9s
RSO Redoubt South 46.80 38 *e*P **P** **01 04 54.5 +1.0**
KDAK Kodiak Island 46.93 42 *e*P **P** **01 04 54.9 +0.6**
KDAK pmax pmax
comp=Z,67nm,1.4s
KDAK Kodiak Island 46.93 42 *e*P **P** **01 04 54.9 +0.6**
comp=Z,67nm,1.4s
KURK Kurchatov 47.01 309 *e*P **P** **01 04 54.5 -0.5**
KURK pmax pmax
comp=Z,21nm,1.0s
KURK Kurchatov 47.01 309 *e*P **P** **01 04 54.5 -0.5**
comp=Z,21nm,1.0s
KURBB Kurchatov Arra 47.08 309 P **P** **01 04 55.1 -0.4**
comp=Z,6.0nm,0.9s,baz=84,slow=8.2,SNR=28
SPU Mount Spurr 47.15 37 *e*P **P** **01 04 56.1 0.0**
CAST Castle Rocks 47.20 34 *e*P **P** **01 04 57.9 +1.6**
comp=Z,22nm,1.9s
BPAW Bear Paw Mtn. 47.72 33 *e*P **P** **01 05 02.1 +1.7**
comp=Z,17nm,1.9s
KTH Kantishna Hill 47.73 34 *e*P **P** **01 05 01.7 +1.2**
comp=Z,7.4nm,1.1s
MLY Manley 47.87 32 *e*P **P** **01 05 02.7 +1.1**
comp=Z,6.3nm,0.8s
COLD Coldfoot 48.23 29 *e*P **P** **01 05 04.3 0.0**
comp=Z,2.6nm,0.8s
RC01 Rabbit Creek A 48.28 37 *e*P **P** **01 05 06.0 +1.2**
comp=Z,21nm,1.4s
PMR Palmer 48.56 36 *e*P **P** **01 05 06.9 +0.1**
PMR pmax pmax
comp=Z,12nm,1.2s
PMR Palmer 48.56 36 *e*P **P** **01 05 06.9 +0.1**
comp=Z,12nm,1.2s
MCK McKinley 48.62 33 *e*P **P** **01 05 07.4 +0.1**
MCK pmax pmax
comp=Z,6.0nm,1.0s
MCK McKinley 48.62 33 *e*P **P** **01 05 07.4 +0.1**
comp=Z,6.1nm,1.0s
RND Reindeer 48.66 34 *e*P **P** **01 05 07.9 +0.2**
RND pmax pmax
comp=Z,8.0nm,1.0s
RND Reindeer 48.66 34 *e*P **P** **01 05 07.9 +0.2**
comp=Z,8.3nm,1.0s
SML Sawmill 48.93 36 *e*P **P** **01 05 10.2 +0.4**
SML pmax pmax
comp=Z,9.0nm,1.0s
SML Sawmill 48.93 36 *e*P **P** **01 05 10.2 +0.4**
comp=Z,8.7nm,1.0s
MDM Murphy Dome 48.93 32 *e*P **P** **01 05 10.2 +0.4**
comp=Z,12nm,0.9s
WRH Wood River Hil 48.99 33 *e*P **P** **01 05 11.2 +1.1**
comp=Z,3.4nm,0.8s
COLA College 49.09 32⇓ *e*P **P** **01 05 12.9 +2.0**
COLA pmax pmax
comp=Z,8.0nm,0.9s
COLA College 49.09 32 *e*P **P** **01 05 11.4 +0.5**
comp=Z,8.1nm,1.0s
HDA Harding Lake 49.49 33 *e*P **P** **01 05 14.5 +0.6**
comp=Z,4.1nm,0.8s
ILAR Eielson Array 49.51 32 P **P** **01 05 13.9 -0.1**
comp=Z,4.7nm,0.8s,baz=265,slow=6.4,SNR=57
ILAR Eielson Array 49.51 32 P **P** **01 05 14.0 -0.1**
ILB Eielson Array 49.51 32 *e*P **P** **01 05 14.4 +0.4**
IL1 Eielson Array 49.51 32 *e*P **P** **01 05 13.9 -0.2**
IPM Ipoh 49.62 240 *e*P **P** **01 05 15.8 +0.2**
comp=Z,43nm,1.9s
MYKOM Kota Tinggi 49.66 235 *e*P **P** **01 05 15.7 -0.1**
comp=Z,31nm,1.5s
KLU Klutina 50.10 36 *e*P **P** **01 05 20.2 +1.4**
comp=Z,6.0nm,1.0s
COEN Coen 50.13 179 *e*P **P** **01 05 18.5 -0.8**
comp=Z,11nm,0.9s
FYU Fort Yukon 50.17 30 *e*P **P** **01 05 19.9 +0.8**
comp=Z,15nm,1.0s
DIV Divide 50.20 37 *e*P **P** **01 05 18.9 -0.6**
comp=Z,37nm,1.6s
EYAK Cordova Ski Ar 50.26 38 *e*P **P** **01 05 20.1 +0.3**
comp=Z,22nm,1.4s
TKM2 Tokmak 2 50.71 299 *e*P **P** **01 05 24.1 +0.3**
TKM2 pmax pmax
comp=Z,42nm,1.6s
TKM2 Tokmak 2 50.71 299 *e*P **P** **01 05 24.1 +0.3**
comp=Z,42nm,1.6s
BMRM Bremner River 50.78 37 *e*P **P** **01 05 25.3 +1.5**
comp=Z,22nm,1.4s
DOT Dot Lake 50.79 34 *e*P **P** **01 05 24.6 +0.7**
comp=Z,6.4nm,0.7s
MENT Mentasta 51.00 34 *e*P **P** **01 05 25.2 -0.3**
comp=Z,8.3nm,1.0s
FRU Bishkek 51.42 299 *e*P **P** **01 05 29.0 +0.1**
KSH Kashi 51.47 295 P P 01 05 33.8 +4.3
KSH *e*pP sP 01 05 46.4 +4.2
KSH *e*ScP **ScP** **01 10 38.4 +0.5**
KSH S **S** **01 12 51.3 +3.6**
KSH ScS **ScS** **01 15 16.3 -1.5**
KSH pmax pmax
comp=Z,38nm,1.9s
KSH pmax pmax
comp=Z,130nm,7.5s
KSH LR LR
comp=Z,260nm,12.8s
KSH LR LR
comp=Z,230nm,10.7s
KSH LR LR
comp=Z,580nm,15.2s
OTUK Ortayu 51.50 307 P **P** **01 05 29.5 +0.1**
OTUK pmax pmax
comp=Z,12nm,1.5s
AAK Ala-Archa 51.57 299 P **P** **01 05 30.2 0.0**
comp=Z,0.9nm,0.5s,baz=85,slow=11,SNR=4.0
AAK Ala-Archa 51.57 299 *e*P **P** **01 05 31.2 +1.1**
AAK pmax pmax
comp=Z,47nm,0.9s
AAK Ala-Archa 51.57 299 *e*P **P** **01 05 31.2 +1.1**
comp=Z,47nm,0.9s
BVAR Borovoye Array 51.63 313 P **P** **01 05 30.1 -0.3**
comp=Z,1.1nm,0.7s,baz=75,slow=11,SNR=6.9
BRVK Borovoye 51.69 313 P **P** **01 05 30.9 +0.2**
BRVK pmax pmax
comp=Z,6.0nm,1.7s
MNAS Manas 53.01 299 P **P** **01 05 41.8 +0.9**
MNAS pmax pmax
comp=Z,11nm,1.2s
SFK Sufi-Kurgan 53.10 296 P **P** **01 05 42.5 +0.8**
SFK pmax pmax
comp=Z,14nm,1.0s
KKAR Karatay Array 54.20 301 *e*P **P** **01 05 49.7 +0.3**
KKAR Karatay Array 54.20 301 *e*P **P** **01 05 49.7 +0.3**
INK Inuvik 54.50 27 P **P** **01 05 51.6 +0.5**
comp=Z,3.6nm,0.7s,baz=292,slow=6.3,SNR=25
INK Inuvik 54.50 27 *e*P **P** **01 05 51.8 +0.7**
INK pmax pmax
comp=Z,4.0nm,0.8s
INK Inuvik 54.50 27 *e*P **P** **01 05 51.8 +0.7**
comp=Z,4.1nm,0.8s
SVE Sverdlovsk 56.18 319 *e*P **P** **01 06 03.9 +0.4**
SVE pmax pmax
comp=Z,20nm,1.4s
WRAB Tennant Creek 56.61 189⇓ *e*P **P** **01 06 05.4 -1.4**
WRAB pmax pmax
comp=Z,18nm,1.2s
WB2 Warramunga Arr 56.62 189 *e*P **P** **01 06 07.8 +0.9**
WB2 *e*pP **pP** **01 06 11.6 -4.6**
WB2 *e*sP **sP** **01 06 17.4 -2.2**
WRA Warramunga Arr 56.62 189 P **P** **01 06 05.9 -1.0**
comp=Z,4.3nm,0.9s,baz=9.7,slow=7.3,SNR=14
ARU Arti 57.40 319 P **P** **01 06 11.7 -0.4**
comp=Z,4.0nm,0.7s,baz=84,slow=4.8,SNR=12
ARU Arti 57.40 319*c i*P **P** **01 06 11.6 -0.5**
ARU 01 07 08.1
ARU S **S** **01 14 01.5 -5.2**
ARU pmax pmax
comp=Z,19nm,1.2s
ARU MLR MLR
comp=Z,384nm,17.0s
ARU Arti 57.40 319 *e*P **P** **01 06 11.2 -0.9**
comp=Z,16nm,1.1s
KBL Kabul 58.47 292 P **P** **01 06 21.4 +1.2**
KBL pmax pmax
comp=Z,8.0nm,1.0s
DLBC Dease Lake 58.53 38 P **P** **01 06 20.8 +0.7**
comp=Z,1.7nm,0.9s,baz=30,slow=7.5,SNR=3.3
ABKAR Akbulak array 59.01 311 *e*P **P** **01 06 23.2 -0.3**
AKTO Aktyubinsk 59.74 313 P **P** **01 06 27.9 -0.6**
comp=Z,2.0nm,0.8s,baz=88,slow=11,SNR=8.2
AS01 Alice Springs 60.34 189 *e*P **P** **01 06 30.5 -2.3**
ASAR Alice Springs 60.34 189 P **P** **01 06 31.2 -1.6**
comp=Z,2.1nm,0.9s,baz=13,slow=5.7,SNR=17
RES Resolute Bay 62.94 15 P **P** **01 06 49.6 -0.1**
comp=Z,4.9nm,0.9s,baz=315,slow=5.9,SNR=17
RES Resolute Bay 62.94 15 *e*P **P** **01 06 50.0 +0.3**
RES pmax pmax
comp=Z,5.0nm,0.8s
RES Resolute Bay 62.94 15 *e*P **P** **01 06 50.0 +0.3**
comp=Z,5.4nm,0.8s
YKA Yellowknife Ar 63.86 30 P **P** **01 06 56.0 +0.1**
comp=Z,2.7nm,0.7s,baz=301,slow=6.7,SNR=54
YKB5 Yellowknife Ar 63.86 30 *e*P **P** **01 06 55.8 -0.1**
KLMR Klimovskoe 64.73 328 *e*P **P** **01 07 00.2 -1.5**
KLMR pmax pmax
comp=Z,12nm,1.0s
COCO West Island 64.76 231 *i* P **P** **01 07 02.9 +0.5**
GEYT Alibeck 64.91 300 P **P** **01 07 02.4 -1.0**
comp=Z,3.7nm,1.1s,baz=28,slow=6.7,SNR=4.2
TUM Tumwater 67.20 48 *e*P P 01 07 14.1 -3.7
comp=Z,140nm,1.0s
MOS Moscow 68.26 324 *e*P **P** **01 07 22.3 -2.0**
MOS *e* 01 07 32.9
MOS pmax pmax
comp=Z,49nm,1.4s
VRH Novokhopyorsk 68.62 318 *e*P **P** **01 07 25.1 -1.6**
VRH pmax pmax
comp=Z,10.0nm,1.5s
OBN Obninsk 69.11 324⇓ *e*P **P** **01 07 29.5 -0.1**
OBN *e* 01 07 47.6
OBN *e* 01 10 00.7
OBN pmax pmax
comp=Z,31nm,1.7s
FINES FINESS Array B 69.75 333 P **P** **01 07 33.8 +0.2**
comp=Z,2.8nm,0.7s,baz=66,slow=6.5,SNR=9.9
FINES LR LR 01 40 59.8
comp=Z,353nm,18.4s,baz=36,slow=38
VSR Storozhevoye 69.97 319 *e*P **P** **01 07 34.3 -0.7**
VSR pmax pmax
comp=Z,10.0nm,1.4s
HEL Helsinki 70.99 332 *e*P P 01 07 46.4 +5.3
HEL pmax pmax
comp=Z,38nm,0.9s
HEL Helsinki 70.99 332 *e*P P 01 07 46.4 +5.3
comp=Z,38nm,0.9s
GOF Gofitskoye 71.16 312⇑ *e*P **P** **01 07 42.7 +0.3**
VSU Vasula 71.42 330*ce*P **P** **01 07 45.2 +1.5**
VSU pmax pmax
comp=Z,27nm,1.2s
KBZ Khabaz 71.97 311 P **P** **01 07 48.1 +0.8**
comp=Z,4.0nm,0.9s,baz=162,slow=4.1,SNR=5.3
KIV Kislovodsk 71.97 312*ce*P **P** **01 07 49.0 +1.5**

KIV				*e*			01 08 08.0
KIV				pmax		pmax	
	comp=Z,21nm,1.2s						
KIV	**Kislovodsk**	**71.97**	**312**	*e*P		**P**	**01 07 48.5 +1.0**
	comp=Z,70nm,1.9s						
FFC	**Flin Flon**	**73.70**	**33**	*e*P		**P**	**01 07 57.9 +0.5**
FFC				pmax		pmax	
	comp=Z,6.0nm,0.9s						
FFC	**Flin Flon**	**73.70**	**33**	*e*P		**P**	**01 07 57.9 +0.5**
	comp=Z,5.5nm,0.9s						
LRM	**Limekiln Ridge**	**73.93**	**45**	*e*P		**P**	**01 07 56.5 -2.7**
NV01	**Mina Array Sit**	**74.61**	**54**	*e*P		**P**	**01 08 04.0 +0.6**
NVAR	**Mina Array Bea**	**74.61**	**54**	P		**P**	**01 08 04.1 +0.8**
	comp=Z,2.8nm,0.7s,baz=293,slow=5.6,SNR=19						
NB2	**NORSAR Subarra**	**75.07**	**338**	P		**P**	**01 08 04.9 -0.4**
	comp=Z,26nm,1.7s,baz=40,slow=5.9						
NB2	**NORSAR Subarra**	**75.07**	**338**	P		**P**	**01 08 04.9 -0.4**
	baz=40,slow=5.9						
NOA	**NORSAR Array B**	**75.07**	**338**	P		**P**	**01 08 06.2 +0.8**
	comp=Z,2.8nm,1.1s,baz=40,slow=4.9,SNR=4.3						
NOA				LR		LR	01 45 20.6
	comp=Z,250nm,19.4s,baz=35,slow=39						
NBO02	**NORSAR Array S**	**75.17**	**338**	*e*P		**P**	**01 08 06.5 +0.6**
AKASG	**Malin Array Be**	**75.31**	**323**	P		**P**	**01 08 06.3 -0.5**
	comp=Z,1.7nm,0.6s,baz=42,slow=6.0,SNR=13						
AKASG				LR		LR	01 42 40.3
	comp=Z,60nm,18.0s,baz=10.0,slow=37						
H17A	**Grant Village**	**75.85**	**45**	*e*P		**P**	**01 08 13.3 +2.9**
	comp=Z,7.2nm,1.1s						
MOOW	**Moose Ponds**	**76.14**	**46**	*e*P		**P**	**01 08 13.6 +1.6**
	comp=Z,8.7nm,1.7s						
R11A	**Troy Canyon, C**	**76.41**	**52**	*e*P		**P**	**01 08 14.7 +1.1**
	comp=Z,11nm,1.6s						
TPNV	**Topopah Spring**	**76.79**	**54**	*e*P		**P**	**01 08 16.8 +1.1**
TPNV				pmax		pmax	
	comp=Z,8.0nm,1.2s						
TPNV	**Topopah Spring**	**76.79**	**54**	*e*P		**P**	**01 08 16.8 +1.1**
	comp=Z,8.1nm,1.2s						
PSUT	**Pine Spring**	**77.39**	**51**	*e*P		**P**	**01 08 20.8 +1.6**
	comp=Z,5.2nm,1.2s						
PDAR	**Pinedale Array**	**77.43**	**46**	P		**P**	**01 08 19.8 +0.4**
	comp=Z,0.8nm,0.8s,baz=318,slow=2.0,SNR=4.4						
NLU	**North Lily Min**	**77.65**	**49**	*e*P		**P**	**01 08 22.4 +1.9**
	comp=Z,3.4nm,1.1s						
LCMT	**Little Creek M**	**78.69**	**52**	*e*P		**P**	**01 08 27.8 +1.5**
	comp=Z,3.9nm,1.0s						
KNB	**Kanab**	**78.96**	**52**	*e*P		**P**	**01 08 29.9 +2.1**
KNB				pmax		pmax	
	comp=Z,6.0nm,1.0s						
KNB	**Kanab**	**78.96**	**52**	*e*P		**P**	**01 08 29.9 +2.1**
	comp=Z,6.1nm,1.0s						
SRU	**San Rafael Swe**	**79.11**	**49**	*e*P		**P**	**01 08 29.8 +1.2**
SRU				pmax		pmax	
	comp=Z,9.0nm,1.4s						
SRU	**San Rafael Swe**	**79.11**	**49**	*e*P		**P**	**01 08 29.8 +1.2**
	comp=Z,9.3nm,1.4s						
KWP	**Kalwaria Pacla**	**79.13**	**325**	*e*P		**P**	**01 08 29.9 +1.6**
KWP	**Kalwaria Pacla**	**79.13**	**325**	*e*P		**P**	**01 08 29.9 +1.6**
KOLS	**Kolonicke sedl**	**79.83**	**325**	*e*P		**P**	**01 08 33.0 +0.9**
KOLS				pmax		pmax	
	comp=Z,9.0nm,1.5s						
KOLS	**Kolonicke sedl**	**79.83**	**325**	*e*P		**P**	**01 08 33.0 +0.9**
BRTR	**Keskin Array B**	**79.92**	**312**	P		**P**	**01 08 33.4 +0.4**
	comp=Z,1.2nm,0.8s,baz=165,slow=5.1,SNR=6.2						
BRTR				LR		LR	01 48 22.8
	comp=Z,75nm,18.6s,baz=15,slow=39						
STHS	**Stebnicka Huta**	**79.96**	**325**	*e*P		**P**	**01 08 34.1 +1.3**
STHS				pmax		pmax	
	comp=Z,4.0nm,1.3s						
STHS	**Stebnicka Huta**	**79.96**	**325**	*e*P		**P**	**01 08 34.1 +1.3**
OJC	**Ojcow**	**80.03**	**327**	*e*P		**P**	**01 08 33.1 -0.1**
OJC	**Ojcow**	**80.03**	**327**	*e*P		**P**	**01 08 32.9 -0.2**
OJC				pmax		pmax	
	comp=Z,10.0nm,1.1s						
OJC	**Ojcow**	**80.03**	**327**	*e*P		**P**	**01 08 32.9 -0.2**
	comp=Z,10.0nm,1.1s						
NIE	**Niedzica**	**80.39**	**326**	*e*P		**P**	**01 08 35.5 +0.4**
NIE	**Niedzica**	**80.39**	**326**	*e*P		**P**	**01 08 35.5 +0.4**
LANS	**Liptovska Anna**	**80.95**	**326**	*e*P		**P**	**01 08 37.6 -0.6**
LANS	**Liptovska Anna**	**80.95**	**326**	*e*P		**P**	**01 08 37.6 -0.6**
MORC	**Moravsky Berou**	**81.34**	**328**	*e*P		**P**	**01 08 41.5 +1.3**
MORC				pmax		pmax	
	comp=Z,25nm,1.3s						
MORC	**Moravsky Berou**	**81.34**	**328**	*e*P		**P**	**01 08 41.5 +1.3**
	comp=Z,25nm,1.3s						
DPC	**Dobruska-Polom**	**81.43**	**328**	*e*P		**P**	**01 08 41.0 +0.3**
DPC				*e*pP		**sP**	**01 08 54.0 +0.2**
DPC	**Dobruska-Polom**	**81.43**	**328**	*e*P		**P**	**01 08 41.0 +0.3**
DPC				*e*			01 08 54.0
X16A	**Lo Mia Camp, P**	**81.44**	**53**	*e*P		**P**	**01 08 43.1 +1.9**
	comp=Z,4.1nm,1.1s						
KRLC	**Kraliky**	**81.44**	**328**	*e*P		**P**	**01 08 41.1 +0.3**
KRLC	**Kraliky**	**81.44**	**328**	*e*P		**P**	**01 08 41.1 +0.3**
RAYN	**Ar Rayn**	**81.72**	**293**	*e*P		**P**	**01 08 42.6 -0.1**
	comp=Z,18nm,1.8s						
VYHS	**Vyhne**	**81.72**	**326**	*e*P		**P**	**01 08 42.7 +0.5**
VYHS				pmax		pmax	
	comp=Z,16nm,2.5s						
VYHS	**Vyhne**	**81.72**	**326**	*e*P		**P**	**01 08 42.7 +0.5**
CLL	**Collm**	**82.05**	**331**	*i*P		**P**	**01 08 43.5 -0.4**
	comp=Z,11nm,1.6s						
CLL				*e*			01 08 53.0
CLL				*i* (PP)			01 11 32.3
CLL				LmH			01 45 00.0
	comp=N,100nm,18.5s						
CLL				LmH			01 45 00.0
	comp=E,300nm,18.7s						
CLL	**Collm**	**82.05**	**331**	*i*P		**P**	**01 08 43.5 -0.4**
CLL				*e*			01 08 53.0
CLL				pmax		pmax	
	comp=Z,11nm,1.6s						
PRU	**Pruhonice**	**82.45**	**329**	*e*P		**P**	**01 08 46.8 +0.8**
PRU	**Pruhonice**	**82.45**	**329**	*e*P		**P**	**01 08 46.8 +0.8**
KHC	**Kasperske Hory**	**83.51**	**329**	*e*P		**P**	**01 08 51.8 +0.2**
KHC				*e*pP		**pP**	**01 09 01.3 +0.1**
KHC	**Kasperske Hory**	**83.51**	**329**	*e*P		**P**	**01 08 51.9 +0.3**
KHC				pmax		pmax	
	comp=Z,5.0nm,1.6s						
KHC	**Kasperske Hory**	**83.51**	**329**	*e*P		**P**	**01 08 51.9 +0.3**
	comp=Z,4.5nm,1.6s						
GERES	**GERESS Array B**	**83.68**	**329**	P		**P**	**01 08 52.1 -0.4**
	comp=Z,0.7nm,0.7s,baz=30,slow=6.5,SNR=5.8						
GERES				LR		LR	01 50 00.6
	comp=Z,154nm,18.1s,baz=3.5,slow=38						
ANMO	**Albuquerque**	**84.27**	**50**	*e*P		**P**	**01 08 57.7 +1.8**
ANMO				pmax		pmax	
	comp=Z,6.0nm,1.1s						
ANMO	**Albuquerque**	**84.27**	**50**	*e*P		**P**	**01 08 57.7 +1.8**
	comp=Z,5.5nm,1.1s						
BFO	**Black Forest**	**86.25**	**331**	*i*P		**P**	**01 09 05.9 +0.5**
TX31	**Lajitas Ar. Si**	**89.75**	**53**	*e*P		**P**	**01 09 22.9 +0.3**
TXAR	**Lajitas Array**	**89.75**	**53**	P		**P**	**01 09 22.3 -0.2**
	comp=Z,1.3nm,0.7s,baz=304,slow=3.6,SNR=15						
ESDC	**Sonseca Array**	**98.21**	**335**	LR		LR	01 58 27.1
	comp=Z,134nm,19.1s,baz=330,slow=38						
LPAZ	**La Paz**	**146.19**	**62**	PKPbc		**PKPdf**	**01 16 04.4 +0.1**
	comp=Z,2.7nm,0.7s,baz=359,slow=4.8,SNR=15						
SIV	**San Ignacio**	**150.75**	**52**	PKPbc		**PKPbc**	**01 16 15.7 -0.8**
	comp=Z,3.2nm,0.8s,baz=283,slow=1.8,SNR=5.1						

GUC ***15*** *00:59:37.1±0.3,37.°50S×73.°26W,h15km±2km, ML4.5*
ISCJB ***15*** *00:59:45.0±0.4, 37.°13S±0.°05×73.°55W±0.°06, h14km, mb4.8/37, MS4.1/2, Error ellipse: s-maj=8.0km s-min=6.4km az=44.8*
IDC ***15*** *00:59:44.4±1.2, 37.°06S×73.°65W, h0km, mb4.1/7, mb1 4.3/8, mb1mx4.1/26, mbtmp4.1/8, ML4.1/1, MS3.9/3, Ms1 3.9/3, ms1mx3.5/19, Error ellipse: s-maj=37.2km s-min=28.6km az=49.0*
BJI ***15*** *00:59:45.6, 37.°10S×73.°60W, h17km, mB5.1/2*
NEIC ***15*** *00:59:46.1±0.3, 37.°09S×73.°59W, h10km, mb4.8/29, ML4.5(GUC), Error ellipse: s-maj=9.8km s-min=6.7km az=79.0*
NEIC Felt [III] at Penco, San Pedro de la Paz and Talcahuano and [II] at Concepcion. Also felt at Canete.

ISC 15 00:59:46.6±0.4, 37.°13S±0.°06×73.°62W±0.°07, h14km, n74, σ1§29/66, mb4.7/37, 1C, Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
CCSP	**San Pedro de C**	**0.49**	**56**	*e*P	Pg	00 59 50.2	-6.2
CCSP				*e*S	**Sg**	**01 00 00.2**	**-2.8**
CCSP				IAML		01 00 01.0	
	comp=N,60μm,0.2s						
CCHI	**Chillan**	**1.34**	**68**	*e*P	Pn	01 00 01.3	-10
CCHI				*e*S	Sn	01 00 19.3	-9.3
CCHI				IAML		01 00 33.7	
	comp=E,16μm,1.0s						
TALC	**Talca**	**2.35**	**43**	*e*P	Pn	01 00 19.2	-5.6
TALC				*e*S	**Sn**	**01 00 51.1**	**-2.4**
NICH	**Los Niches**	**2.87**	**43**	*e*P	Pn	01 00 45.2	+3.7
NICH				*e*S	**Sg**	**01 01 22.9**	**+4.1**
PLCA	**Paso Flores**	**4.32**	**147**	Pn	Pn	01 00 48.2	-3.8
	comp=E,0.5nm,0.3s,baz=346,slow=13,SNR=12						
PLCA				Lg	Lg	01 02 02.5	
	comp=E,3.7nm,0.3s,baz=289,slow=20,SNR=3.5						
PLCA	**Paso Flores**	**4.32**	**147**	*e*Pn	**Pn**	**01 00 51.4**	**-0.7**
ROC1	**El Roble**	**4.66**	**28**	*e*Pn	Pn	01 00 53.6	-3.1
LCO	**Las Campanas**	**8.45**	**18**	*e*Pn	Pn	01 01 44.1	-4.8
TRQA	**Tornquist**	**9.29**	**99**	*e*Pn	**Pn**	**01 02 01.2**	**+1.1**
CHRN	**Cochrane**	**10.14**	**176**	*e*Pn	**Pn**	**01 02 10.0**	**-1.8**
PB01	**IPOC Station P**	**16.42**	**14**	*e*Pn	**Pn**	**01 03 37.3**	**+0.5**
	comp=E,16nm,0.8s						
CPUP	**Villa Florida**	**17.52**	**57**	Pn	**Pn**	**01 03 49.8**	**-0.6**
	comp=E,0.2nm,0.3s,baz=196,slow=7.2,SNR=3.1						
CPUP				LR	LR	01 11 49.9	
	comp=E,316nm,19.0s,baz=236,slow=41						
CPUP	**Villa Florida**	**17.52**	**57**	*e*Pn	**P**	**01 03 51.1**	**-0.4**
PB11	**IPOC Station P**	**17.64**	**12**	*e*Pn	**P**	**01 03 53.4**	**+0.2**
LPAZ	**La Paz**	**21.32**	**15**	P	**P**	**01 04 33.6**	**-0.1**
	comp=E,2.2nm,0.6s,baz=182,slow=8.2,SNR=9.6						
LPAZ	**La Paz**	**21.32**	**15**	*e*P	**P**	**01 04 32.2**	**-1.6**
	comp=E,8.3nm,0.9s						
SIV	**San Ignacio**	**23.81**	**31**	P	**P**	**01 04 59.3**	**+0.2**
	comp=E,5.2nm,0.8s,baz=216,slow=11,SNR=7.2						
SPB	**Sao Paulo**	**26.21**	**66**	*e*P	**P**	**01 05 20.9**	**-0.1**
	comp=E,15nm,0.9s						
PMSA	**Palmer Station**	**28.27**	**171**	*e*P	**P**	**01 05 38.3**	**-0.7**
	comp=E,101nm,1.4s						
OTAV	**Otavalo**	**37.45**	**352**	*e*P	**P**	**01 07 00.2**	**+0.1**
	comp=E,3.8nm,0.9s						
PTCN	**Pitcairn Islan**	**49.19**	**267**	*e*P	**P**	**01 08 33.6**	**-0.8**
	comp=E,202nm,0.7s						
SNAA	**Sanae**	**49.20**	**157**	*e*P	**P**	**01 08 36.1**	**+2.1**
SNAA				*e*sP	**sP**	**01 08 42.3**	**+2.2**
SVB	**Belmont**	**51.46**	**15**	*e*P	**P**	**01 08 52.4**	**+0.8**
	comp=E,347nm,2.0s						
TGUH	**Tegucigalpa,Un**	**52.51**	**343**	*e*P	**P**	**01 09 00.7**	**+1.4**
	comp=E,11nm,0.7s						
RKT	**Rikitea**	**54.03**	**267**	*e*LR	LR	01 24 50.5	
	comp=E,140nm,29.8s						
RKT	**Rikitea**	**54.03**	**267**	*e*T	T	02 07 27.5	
	comp=E,1.6nm,0.3s						
GDHS	**Morne Mazeau,**	**54.27**	**14**	*e*P	**P**	**01 09 13.3**	**+1.0**
	comp=E,76nm,1.2s						
MTDJ	**Mount Denham**	**55.18**	**355**	*e*P	**P**	**01 09 20.1**	**+1.1**
	comp=E,24nm,1.0s						
SEUS	**St. Eustatius**	**55.24**	**12**	*e*P	**P**	**01 09 19.8**	**+0.5**
	comp=E,256nm,1.3s						
ANWB	**Willy Bob**	**55.63**	**14**	*e*P	**P**	**01 09 22.8**	**+0.7**
	comp=E,73nm,0.8s						
GTBY	**Guantanamo Bay**	**56.76**	**358**	*e*P	**P**	**01 09 30.6**	**+0.5**
	comp=E,60nm,1.6s						
TEIG	**Tepich**	**58.70**	**344**	*e*P	**P**	**01 09 43.6**	**-0.1**
	comp=E,15nm,1.4s						
SYO	**Syowa Base**	**63.44**	**158**ǁ	*e*pP	**P**	**01 10 16.6**	**+1.2**
TBI	**Tubuai**	**65.39**	**259**	*e*LR	LR	01 30 13.3	
	comp=E,172nm,28.0s						
TAOE	**Nuku Hiva Isla**	**66.02**	**277**	*e*LR	LR	01 30 31.3	
	comp=E,140nm,26.3s						
MEH	**Mehetia**	**67.21**	**264**	*e*T	T	02 23 57.5	
	comp=E,26nm,0.2s						
TIAR	**Tiarei**	**68.40**	**264**	*e*T	T	02 25 26.8	
	comp=E,4.2nm,0.2s						
PPT2	**Papeete2**	**68.56**	**264**	*e*LR	LR	01 31 38.6	
	comp=E,174nm,23.5s						
PPT	**Papeete**	**68.58**	**264**	LR	LR	01 33 03.2	
	comp=E,188nm,18.6s,baz=10.0,slow=29						
JCT	**Junction City**	**71.59**	**336**	*e*P	**P**	**01 11 08.2**	**+0.8**
	comp=E,5.6nm,0.8s						
TXAR	**Lajitas Array**	**71.87**	**333**	P	**P**	**01 11 09.1**	**0.0**
	comp=E,2.7nm,0.8s,baz=154,slow=8.6,SNR=18						
TX31	**Lajitas Ar. Si**	**71.87**	**333**	*e*P	**P**	**01 11 09.2**	**0.0**
SWET	**Sesanee**	**72.88**	**349**	*e*P	**P**	**01 11 14.5**	**-0.5**
	comp=E,3.2nm,0.9s						
WVT	**Waverly**	**74.07**	**348**	*e*P	**P**	**01 11 21.0**	**-0.9**
	comp=E,12nm,1.4s						
X301	**Greenbrier Sit**	**74.08**	**344**	*e*P	**P**	**01 11 21.8**	**-0.2**
	comp=E,9.5nm,0.5s						
X201	**Greenbrier Sit**	**74.13**	**344**	*e*P	**P**	**01 11 22.2**	**0.0**
	comp=E,14nm,1.1s						
MNTX	**Cornudas Mount**	**74.63**	**332**	*e*P	**P**	**01 11 24.9**	**-0.5**
	comp=E,3.3nm,1.1s						
DBIC	**Dimbokro**	**77.39**	**72**	P	**P**	**01 11 40.7**	**-0.8**
	comp=E,5.1nm,1.1s,baz=157,slow=15,SNR=3.6						
T25A	**Trinidad**	**79.20**	**335**	*e*P	**P**	**01 11 52.5**	**+1.3**
	comp=E,6.7nm,1.0s						
BOSA	**Boshof**	**79.75**	**118**	P	**P**	**01 11 55.9**	**+1.3**
	comp=E,2.1nm,0.8s,baz=172,slow=7.1,SNR=2.4						
BOSA				LR	LR	01 42 08.0	
	comp=E,49nm,21.9s,baz=198,slow=32						
SMCO	**Snowmass**	**81.91**	**334**	*e*P	**P**	**01 12 06.7**	**+0.8**
	comp=E,13nm,1.5s						
KNB	**Kanab**	**82.22**	**329**	*e*P	**P**	**01 12 08.1**	**+0.8**
	comp=E,7.2nm,1.3s						
ECSD	**EROS Data Cent**	**83.15**	**343**	*e*P	**P**	**01 12 11.6**	**-0.2**
	comp=E,4.7nm,0.8s						
P18A	**Preston Nutter**	**83.48**	**332**	*e*P	**P**	**01 12 13.9**	**0.0**
	comp=E,5.6nm,1.0s						
HWUT	**Hardware Ranch**	**85.69**	**332**	*e*P	**P**	**01 12 26.0**	**+1.1**
	comp=E,5.8nm,1.0s						
BW06	**Boulder Array**	**85.99**	**334**	*e*P	**P**	**01 12 26.5**	**+0.1**
PDAR	**Pinedale Array**	**85.99**	**334**	P	**P**	**01 12 24.9**	**-1.5**
	comp=E,0.6nm,0.7s,baz=160,slow=4.7,SNR=4.6						
TORD	**Torodi Ar. Bea**	**86.47**	**71**	P	**P**	**01 12 28.1**	**-1.1**
	comp=E,1.0nm,1.0s,baz=289,slow=4.9,SNR=4.0						
EGMT	**Eagleton**	**90.69**	**337**	*e*P	**P**	**01 12 49.8**	**+1.2**
	comp=E,9.2nm,0.8s						
ABKAR	**Akbulak array**	**144.58**	**55**	*e*PKPdf	**PKPab**	**01 19 20.1**	**-0.6**
PSI	**Prapat**	**145.16**	**167**	*e*PKPbc	**PKPbc**	**01 19 23.9**	**0.0**
MYLDM	**Lahad Datu**	**146.33**	**202**	*e*PKPdf	**PKPdf**	**01 19 26.3**	**0.0**
BVAR	**Borovoye Array**	**150.41**	**46**	PKPbc	**PKPbc**	**01 19 37.7**	**+0.7**
	comp=E,0.8nm,0.8s,baz=264,slow=5.4,SNR=4.6						
ZALV	**Zalesovo Beam**	**157.54**	**35**	PKP	**PKPdf**	**01 19 41.5**	**-0.2**
	comp=E,0.4nm,0.4s,baz=291,slow=4.5,SNR=2.5						
MKAR	**Makanchi Array**	**159.72**	**54**	PKP	**PKPdf**	**01 19 44.4**	**-0.2**
	comp=E,0.1nm,0.6s,baz=329,slow=2.5,SNR=2.5						
MKAR				PKPab	**PKPab**	**01 20 23.6**	**+0.1**
	comp=E,0.5nm,0.7s,baz=282,slow=6.1,SNR=3.5						
WMQ	**Urumqi**	**164.30**	**59**	*e*PKP	**PKPdf**	**01 19 49.3**	**-0.2**
GYA	**Guiyang**	**169.36**	**181**	*e*PKP	**PKPdf**	**01 19 53.3**	**-0.6**
GYA				PKS	**PKSdf**	**01 23 23.4**	**-3.2**
GYA				PP	**PP**	**01 24 57.8**	**+2.9**
GYA				AMB	AMB		
	comp=E,120nm,8.6s						
CD2	**Chengdu**	**173.43**	**160**	PKP	**PKPdf**	**01 19 54.9**	**-0.8**
HHC	**Ha-ho-hao-te**	**174.51**	**314**	*e*PKP	**PKPdf**	**01 19 52.0**	**-3.8**

GUC 15 01:06:52.6±0.4, 21.°09S×69.°13W, h107km±3km, ML2.9, 6C, Northern Chile

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
PB01	**IPOC Station P**	**0.34**	**278**ǁ	*e*P	Pn	01 07 08.7	+0.4
PB01				*e*S	Sn	01 07 20.6	+0.4
PB08	**IPOC Station P**	**0.94**	**358**ǁ	*e*P	Pn	01 07 14.4	+0.9
PB08				*e*S	Sn	01 07 30.4	+1.3
PB08				IAML		01 07 31.9	
	comp=E,374nm,0.3s						
PB07	**IPOC Station P**	**0.95**	**228**ǁ	*e*P	Pn	01 07 13.6	+0.3
PB07				*e*S	Sn	01 07 29.3	+0.4
PB07				IAML		01 07 29.9	
	comp=E,393nm,0.2s						
PATCX	**Punta Patache**	**0.99**	**285**ǁ	*e*P	Pn	01 07 14.2	+0.6
PATCX				*e*S	Sn	01 07 30.4	+0.9
PATCX				IAML		01 07 31.3	
	comp=N,399nm,0.2s						
HMBC	**Humberstone**	**1.08**	**318**ǁ	*e*P	Pn	01 07 14.8	+0.2
HMBC				*e*S	Sn	01 07 32.0	+1.0
HMBC				IAML		01 07 35.3	
	comp=N,217nm,0.1s						
PB11	**IPOC Station P**	**1.41**	**339**ǁ	*e*P	Pn	01 07 18.8	+0.4
PB11				*e*S	Sn	01 07 39.0	+1.1
PB11	**IPOC Station P**	**1.41**	**339**	*e*Sn	Pn	01 07 18.8	+0.4

CASC ***15*** *01:42:14.9±1.0, 16.°05N×93.°68W, h83km*
ISCJB ***15*** *01:42:15.6±0.5, 15.°67N±0.°06×93.°78W±0.°04, h85km±5km, mb3.8/5, Error ellipse: s-maj=11.3km s-min=5.1km az=29.1*
IDC ***15*** *01:42:17.9±1.5, 15.°86N×93.°57W, h86km±8km, mb3.6/5, mb1 4.1/7, mb1mx3.6/37, mbtmp4.0/7, Error ellipse: s-maj=25.5km s-min=11.3km az=24.0*
MEX ***15*** *01:42:18.0±0.7, 15.°68N×93.°71W, h84km±8km, MD4.0*
NEIC ***15*** *01:42:18.0, 15.°68N×93.°71W, h84km, MD4.0(MEX), After MEX.*

ISC 15 01:42:16.9±0.7, 15.°70N±0.°06×93.°79W±0.°03, h84km±6km, n26, σ1§80/43, mb4.0/5, 1C-1D, Near coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
PCIG		**0.55**	**90**	*i*P	Pn	**01 42 30.1**	**-1.3**
PCIG				*e*S	**Sn**	**01 42 40.7**	**-1.6**
PCIG		**0.55**	**90**	*i*P	Pn	01 42 30.1	-1.3
PCIG				*e*S	Sn	01 42 40.7	-1.6
TGIG		**1.25**	**31**	*i*P	Pn	01 42 38.9	-0.5
TGIG				*e*S	Sn	01 42 55.0	-1.1
TGIG		**1.25**	**31**	*i*P	Pn	01 42 38.9	-0.5
TGIG				*e*S	Sn	01 42 55.0	-1.1
CCIG	**Comitan**	**1.69**	**70**	*e*P	Pn	01 42 44.3	-0.8
CCIG				*i*S	Sn	01 43 05.2	-1.2
CCIG	**Comitan**	**1.69**	**70**	*e*P	Pn	01 42 44.3	-0.8
CCIG				*i*S	Sn	01 43 05.2	-1.2
CMIG	**Matias Romero**	**1.73**	**323**	P	Pn	01 42 45.7	+0.2
	89nm,0.3s,baz=179,slow=9.7,SNR=477						
CMIG				S	Sn	01 43 08.6	+1.5
	530nm,0.3s,baz=132,slow=11,SNR=30						
HUIG	**Huatulco**	**2.23**	**272**	*i*P	Pn	01 42 50.5	-1.6
HUIG				*i*S	Sn	01 43 15.3	-3.6
HUIG	**Huatulco**	**2.23**	**272**	*i*P	Pn	01 42 50.5	-1.6
HUIG				*i*S	Sn	01 43 15.3	-3.6
VHO	**Vista Hermosa**	**3.14**	**296**	*e*P	Pn	01 43 05.9	+1.5
VHO				*i*S	Sn	01 43 38.6	-2.3
VHO	**Vista Hermosa**	**3.14**	**296**	*e*P	Pn	01 43 05.9	+1.5
VHO				*i*S	Sn	01 43 38.6	-2.3
IXG	**Ixpaco**	**3.56**	**115**	*e*P	Pn	01 43 09.2	-1.0
IXG				*e*S	Sn	01 43 51.9	+0.6
MRL	**Marmol**	**4.00**	**99**ǁ	*e*P	Pn	01 43 13.9	-2.3
SBLS	**San Blas**	**4.44**	**114**	*e*P	Pn	01 43 22.4	+0.4
SBLS				*e*S	Sn	01 44 14.5	+1.8
SNJE	**San Jose**	**4.44**	**114**	*e*P	Pn	01 43 22.3	+0.2
LFRS	**El Faro**	**5.02**	**114**	*e*P	Pn	01 43 29.4	-0.5
TGUH	**Tegucigalpa,Un**	**6.51**	**104**ǁ	*e*P	Pn	01 43 49.6	-0.5
TEIG	**Tepich**	**6.91**	**49**	P	Pn	01 43 53.0	-2.6
	72nm,0.3s,baz=89,slow=24,SNR=192						
TEIG				S	Sn	01 45 08.1	-4.7
	34nm,0.3s,baz=181,slow=23,SNR=9.1						
JTS	**JuntasAbangare**	**10.15**	**121**	P	Pn	01 44 38.8	-1.1
	7.2nm,0.3s,baz=321,slow=15,SNR=30						
TXAR	**Lajitas Array**	**16.34**	**328**	P	**P**	**01 46 03.6**	**+0.9**
	0.1nm,0.3s,baz=149,slow=13,SNR=15						
PDAR	**Pinedale Array**	**30.17**	**337**	P	**P**	**01 48 20.8**	**+1.4**
	0.3nm,0.6s,baz=146,slow=8.6,SNR=4.1						
NVAR	**Mina Array Bea**	**31.27**	**321**	P	**P**	**01 48 31.5**	**+2.5**
	2.1nm,0.7s,baz=137,slow=8.8,SNR=10						
NVAR				pP	**pP**	**01 48 51.7**	**+3.1**
	0.7nm,0.6s,baz=123,slow=8.1,SNR=2.9						
YKA	**Yellowknife Ar**	**48.99**	**347**	P	**P**	**01 50 54.4**	**-0.3**
	1.1nm,0.6s,baz=152,slow=7.3,SNR=25						
YKA				pP	**pP**	**01 51 14.7**	**-0.6**
	0.8nm,0.6s,baz=152,slow=7.4,SNR=5.1						
ILAR	**Eielson Array**	**60.60**	**337**	P	**P**	**01 52 18.7**	**+0.1**
	0.3nm,0.6s,baz=128,slow=5.1,SNR=5.4						
ILAR				pP	**pP**	**01 52 41.0**	**+1.2**
	0.4nm,0.6s,baz=143,slow=5.3,SNR=4.2						
ARCES	**ARCESS Array B**	**85.06**	**18**	P	**P**	**01 54 41.8**	**-1.2**
	2.9nm,0.8s,baz=297,slow=5.3,SNR=6.7						
WRA	**Warramunga Arr**	**134.10**	**257**	PKP	**PKPdf**	**02 01 25.1**	**-0.4**
	0.7nm,1.2s,baz=74,slow=1.7,SNR=4.8						

ISK ***15*** *01:42:21.4, 36.°45N×28.°79E, h8km, MD3.0*
DDA ***15*** *01:42:22.6, 36

0.4nm,0.3s,baz=104,slow=7.2,SNR=2.1
MKAR Makanchi Array 44.77 303 P **P** **02 01 27.9 +1.3**
0.1nm,0.2s,baz=85,slow=11,SNR=3.6
WRA Warramunga Arr 56.30 188 P **P** **02 02 53.9 0.0**
0.2nm,0.4s,baz=5.2,slow=7.2,SNR=5.0
YKA Yellowknife Ar 64.38 30 P P 02 04 21.7 +33
0.2nm,0.8s,baz=301,slow=6.3,SNR=4.3

IDC ***15*** *02:06:25.8±0.3, 15°.31S×173°.17W, h0km, mb5.2/41, mb1 5.3/41, mb1mx5.2/54, mbtmp5.2/41, MS5.5/34, Ms1 5.5/34, ms1mx5.3/45, Error ellipse: s-maj=13.2km s-min=9.4km az=133.0*

BJI ***15*** *02:06:25.9, 15°.26S×173°.13W, h7km, mb5.3/57, mB5.9/65, Ms5.6/76, Ms7 5.3/70*

ISCJB ***15*** *02:06:25.8±0.1, 15°.27S±0°.02×173°.21W±0°.02, h10km, mb5.6/348, MS5.6/248, Error ellipse: s-maj=3.9km s-min=2.4km az=142.8*

GCMT ***15*** *02:06:26.8±0.1, 15°.07S×172°.97W, h30km, MW5.8/135, Moment Tensor Solution. s122,c248; s135,c383; Duration: 2s0 Moment tensor: Scale 10^17Nm; Mrr0.28±.05; Mθθ4.35±.05; Mϕϕ-4.63±.05; Mrθ-4.46±.13; Mθϕ3.02±.04; Mϕr1.09±.09; Best double couple: M0 7.04800×10^17 NP1:ϕs298.00000°, δ86.00000°, λ39.00000°. NP2:ϕs205.00000°, δ51.00000°, λ174.00000°. Principal axes: T 7.5470, Plg30.0000°, Azm169.0000°; N -0.9990, Plg51.0000°, Azm304.0000°; P -6.5480, Plg23.0000°, Azm65.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface/mantle waves, cutoff=50s.*

NEIC ***15*** *02:06:27.0±0.0, 14°.77S×173°.24W, h15km, Moment Tensor Solution. s7 Moment tensor: Scale 10^17Nm; Mrr0.50; Mθθ3.10; Mϕϕ-3.60; Mrθ-2.40; Mθϕ3.50; Mϕr3.50; Best double couple: M0 6.00000×10^17 NP1:ϕs112.00000°, δ82.00000°, λ-32.00000°. NP2:ϕs207.00000°, δ57.00000°, λ-171.00000°. Principal axes: T 4.8000, Plg16.0000°, Azm164.0000°; N 2.5000, Plg56.0000°, Azm280.0000°; P -7.4000, Plg28.0000°, Azm64.0000°;*

NEIC ***15*** *02:06:28.4±0.1, 15°.28S×173°.24W, h17km, mb5.8/281, ME5.5, MS5.7/169, MW5.8, MW5.8 Error ellipse: s-maj=4.2km s-min=2.4km az=135.0, Moment Tensor Solution. s49 Moment tensor: Scale 10^17Nm; Mrr-0.77; Mθθ2.68; Mϕϕ-1.90; Mrθ-4.36; Mθϕ3.57; Mϕr2.65; Best double couple: M0 6.70000×10^17 NP1:ϕs203.00000°, δ42.00000°, λ-172.00000°. NP2:ϕs107.00000°, δ84.00000°, λ-49.00000°. Principal axes: T 5.9900, Plg27.0000°, Azm165.0000°; N 1.2000, Plg41.0000°, Azm282.0000°; P -7.1900, Plg37.0000°, Azm52.0000°; Broadband fault plane solution: P waves. NP1: ϕs231.00000°, δ11.00000°, λ-153.00000°. NP2: ϕs115.00000°, δ85.00000°, λ-80.00000°. Principal axes: T Plg39.0000°, Azm196.0000°; N Plg0.0000°, Azm0.0000°; P Plg49.0000°, Azm36.0000°; Depth from synthetics of broadband displacement seismograms. Energy computed from BB mechanism.*

NEIC Felt at Neiafu. Felt [III] at Apia, Samoa. Also felt at Faleolo. Felt at Alao, Fagatogo, Malaeimi, Mapusagafou, Nu'uuli and Pago Pago, American Samoa.

MOS ***15*** *02:06:30.5±0.9, 15°.05S×173°.12W, h33km, mb5.8/86, MS5.7/70 Error ellipse: s-maj=9.0km s-min=6.3km az=75.3*

ISC 15 02:06:28.7±0.5, 15°.25S±0°.04×173°.12W±0°.04, h17km±2km, h17km:pP-P,n1743,σ1s29/1715, mb5.7/346, MS5.7/250, 46C-26D, Tonga Islands

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
AFI	**Afiamalu**	**1.86**	**44**	Pn		Pn		02 06 53.7	-6.2
	1μm,0.3s,baz=22,slow=1.6,SNR=465								
AFI				Sn		Sn		02 07 12.1	-11
	8μm,0.3s,baz=90,slow=21,SNR=33								
AFI				LR		LR		02 07 26.9	
	comp=Z,65μm,20.0s,baz=230,slow=32								
NIUE	**Niue**	**4.87**	**142**	P		**Pn**		**02 07 38.9**	**-2.3**
	baz=4.8,SNR=73								
MSVF	**Nonsavu**	**8.82**	**253**	*e*P		Pn		02 08 43.1	+7.5
MSVF	**Nonsavu**	**8.82**	**253**	*e*Pn		Pn		02 08 43.1	+7.6
	3μm,1.4s								
FUNA	**Funafuti**	**10.06**	**311**	*e*Pn		**Pn**		**02 08 51.2**	**-1.2**
FUNA				*e*Sn		Sn		02 10 32.2	-13
RAR	**Rarotonga**	**13.99**	**117**	Pn		**Pn**		**02 09 42.7**	**-3.5**
	24nm,0.3s,baz=253,slow=8.5,SNR=12								
RAR	**Rarotonga**	**13.99**	**117**	*e*P		**Pn**		**02 09 43.1**	**-3.1**
RAR	**Rarotonga**	**13.99**	**117**	*e*Pn		**Pn**		**02 09 43.1**	**-3.1**
RAO	**Raoul Island**	**14.62**	**197**	LR		LR		02 14 35.4	
	comp=Z,24μm,21.1s,baz=16,slow=34								
DZM	**Mont Dzumac**	**20.50**	**248**	P		**P**		**02 11 05.0**	**-1.2**
	201nm,1.2s,baz=75,slow=15,SNR=33								
DZM				LR		LR		02 17 42.6	
	comp=Z,23μm,20.8s,baz=89,slow=33								
TARA	**Tarawa**	**21.52**	**319**	*e*P		**P**		**02 11 14.9**	**-2.1**
	692nm,1.1s								
TARA				LR		LR			
	comp=Z,14μm,20.0s								
PPT	**Papeete**	**22.70**	**99**	P		**P**		**02 11 30.6**	**+0.9**
	comp=Z,66nm,0.9s,baz=24,slow=3.5,SNR=5.8								
PPT				LR		LR		02 19 12.7	
	comp=Z,3μm,18.6s,baz=272,slow=34								
PAE	**Paea**	**22.70**	**99**	*e*P		**P**		**02 11 31.5**	**+1.8**
	comp=Z,32nm,1.1s								
PAE	**Paea**	**22.70**	**99**	*e*T		T		02 34 47.6	
	comp=Z,11nm,0.3s								
PPT2	**Papeete2**	**22.70**	**99**	*e*P		**P**		**02 11 31.9**	**+2.1**
	comp=Z,198nm,1.3s								
PPT2				*e*S		**S**		**02 15 34.3**	**-3.4**
	comp=Z,3μm,24.0s								
PPT2				*e*LQ		LQ		02 15 51.7	
	comp=Z,41μm,29.2s								
PPT2				*e*LR		LR		02 16 55.3	
	comp=Z,8μm,26.5s								
PPT2	**Papeete2**	**22.70**	**99**	*e*T		T		02 34 48.4	
	comp=Z,20nm,0.3s								
TIAR	**Tiarei**	**22.92**	**99**	*e*P		**P**		**02 11 33.8**	**+1.8**
	comp=Z,50nm,1.2s								
TIAR	**Tiarei**	**22.92**	**99**	*e*T		T		02 35 03.9	
	comp=Z,7.4nm,0.2s								
TVO	**Taravao**	**23.02**	**100**	*e*P		**P**		**02 11 34.7**	**+1.6**
	comp=Z,104nm,1.4s								
TVO	**Taravao**	**23.02**	**100**	*e*T		T		02 35 11.1	
	comp=Z,5.2nm,0.3s								
XMAS	**Kiritimati**	**23.15**	**43**	*e*P		**P**		**02 11 34.9**	**+0.6**
	comp=Z,1μm,1.5s								
XMAS				LR		LR			
	comp=Z,22μm,20.0s								
OUZ	**Omahuta**	**23.18**	**209**	*e*P		**P**		**02 11 35.8**	**+1.3**
	comp=Z,509nm,1.1s								
OUZ				LR		LR			
	comp=Z,28μm,20.0s								
WCZ	**Waipu Caves**	**23.45**	**206**	P*		**P**		**02 11 37.1**	**-0.1**
MXZ	**Matakaoa Point**	**23.48**	**197**	*e*P		**P**		**02 11 38.2**	**+0.7**
	comp=Z,450nm,1.6s								
MXZ				LR		LR			
	comp=Z,19μm,18.0s								
KUZ	**Kuaotunu**	**23.60**	**203**	P*		**P**		**02 11 39.6**	**+0.9**
WMGZ	**Waiomatatini S**	**23.69**	**197**	P*		**P**		**02 11 41.0**	**+1.4**
TBI	**Tubuai**	**23.71**	**113**	*e*P		**P**		**02 11 40.7**	**+0.8**
	comp=Z,281nm,1.1s								
TBI				*e*LQ		LQ		02 16 21.0	
	comp=Z,36μm,28.2s								
TBI				*e*LR		LR		02 17 25.6	
	comp=Z,5μm,25.0s								
TBI	**Tubuai**	**23.71**	**113**	*e*T		T		02 36 01.8	
	comp=Z,40nm,0.3s								
HAZ	**Te Kaha**	**23.82**	**198**	P*		**P**		**02 11 40.8**	**+0.1**
MKAZ	**Moumakai**	**24.13**	**203**	P*		**P**		**02 11 44.4**	**+0.7**
MEH	**Mehetia**	**24.15**	**100**	*e*T		T		02 36 36.0	
	comp=Z,19nm,0.3s								
PMOR	**Pomariorio Ree**	**24.35**	**93**	*e*P		**P**		**02 11 46.2**	**+0.3**
	comp=Z,706nm,1.1s								
PMOR	**Pomariorio Ree**	**24.35**	**93**	*e*T		T		02 36 51.6	
	comp=Z,12nm,0.2s								
MWZ	**Matawai**	**24.43**	**198**	P*		**P**		**02 11 46.1**	**-0.4**
URZ	**Urewera**	**24.49**	**199**	P		**P**		**02 11 45.5**	**-1.5**
	comp=Z,45nm,0.3s,baz=11,slow=5.5,SNR=56								
URZ				S		**S**		**02 16 07.8**	**+1.2**
	comp=Z,6.6nm,0.7s,baz=84,slow=22,SNR=1.3								
URZ				LR		LR		02 20 07.3	
	comp=Z,27μm,20.9s,baz=16,slow=34								
URZ	**Urewera**	**24.49**	**199**	P*		**P**		**02 11 45.2**	**-1.7**
URZ				*e*S*		**S**		**02 16 09.6**	**+3.1**
URZ	**Urewera**	**24.49**	**199**	*e*P		**P**		**02 11 45.5**	**-1.5**
	comp=Z,123nm,0.7s								
URZ				S		**S**		**02 16 07.8**	**+1.2**
URZ				*e*ScP		**ScP**		**02 19 03.1**	**-0.4**
TOZ	**Tahuroa Road**	**24.55**	**202**	P*		**P**		**02 11 47.9**	**+0.3**
VAH	**Vaihoa**	**24.59**	**93**	*e*P		**P**		**02 11 48.1**	**0.0**
	comp=Z,318nm,1.2s								
VAH	**Vaihoa**	**24.59**	**93**	*e*T		T		02 37 09.7	
	comp=Z,25nm,0.3s								
RIGZ	**Rimuhau**	**24.70**	**197**	P*		**P**		**02 11 50.1**	**+1.1**
HIZ	**Hauiti**	**25.48**	**202**	*e*P		**P**		**02 11 56.5**	**+0.5**
	comp=Z,382nm,1.3s								
HIZ				LR		LR			
	comp=Z,26μm,20.0s								
BKZ	**Black Stump Fm**	**25.51**	**199**	*e*P		**P**		**02 11 54.8**	**-1.5**
	comp=Z,74nm,0.7s								
BKZ				LR		LR			
	comp=Z,23μm,21.0s								
ANWZ	**Angora Road**	**26.70**	**198**	P*		**P**		**02 12 06.9**	**-0.1**
HNR	**Honiara**	**26.93**	**279**	LR		LR		02 21 07.2	
	comp=Z,6μm,20.3s,baz=124,slow=33								
HNR	**Honiara**	**26.93**	**279**	P		P		02 11 56.0	-13
BFZ	**Birch Farm**	**26.97**	**198**	P*		**P**		**02 12 09.0**	**-0.5**
BFZ	**Birch Farm**	**26.97**	**198**	*e*P		**P**		**02 12 09.2**	**-0.3**
	comp=Z,241nm,0.9s								
SNZO	**South Karori**	**28.03**	**200**	PFAKE				02 12 30.0	+11
SNZO				LR		LR			
	comp=Z,18μm,20.0s								
THZ	**Tophouse**	**29.05**	**202**	*e*P*		**P**		**02 12 26.9**	**-1.2**
THZ	**Tophouse**	**29.05**	**202**	*e*P		**P**		**02 12 26.8**	**-1.2**
	comp=Z,83nm,1.1s								
KHZ	**Kahutara**	**29.40**	**200**	*e*P		**P**		**02 12 29.9**	**-1.1**
	comp=Z,108nm,1.1s								
LHI	**Lord Howe Isla**	**30.11**	**233**	P		**P**		**02 12 37.0**	**-0.5**
	baz=30,SNR=3.2								
LHI	**Lord Howe Isla**	**30.11**	**233**	*e*P		**P**		**02 12 37.0**	**-0.5**
	comp=Z,149nm,1.1s								
LTZ	**Lake Taylor**	**30.17**	**202**	*e*P		**P**		**02 12 35.9**	**-2.1**
	comp=Z,90nm,0.9s								
INZ	**Inchbonnie**	**30.42**	**203**	P*		**P**		**02 12 37.8**	**-2.3**
OXZ	**Oxford**	**30.73**	**201**	P*		**P**		**02 12 40.4**	**-2.4**
OXZ	**Oxford**	**30.73**	**201**	*e*P		**P**		**02 12 40.8**	**-2.0**
	comp=Z,191nm,1.0s								
CRLZ	**Canterbury Las**	**30.74**	**200**	*e*P		**P**		**02 12 42.1**	**-0.8**
	comp=Z,281nm,1.4s								
MQZ	**McQueen's Vall**	**30.85**	**200**	P*		**P**		**02 12 42.2**	**-1.7**
MQZ	**McQueen's Vall**	**30.85**	**200**	*e*P		**P**		**02 12 42.9**	**-1.0**
	comp=Z,87nm,1.2s								
WVZ	**Waitaha Valley**	**30.99**	**203**	P*		**P**		**02 12 42.5**	**-2.5**
RPZ	**Rata Peaks**	**31.42**	**202**	P		**P**		**02 12 46.8**	**-2.1**
	comp=Z,34nm,0.7s,baz=346,slow=2.3,SNR=17								
RPZ				LR		LR		02 24 27.1	
	comp=Z,24μm,21.9s,baz=18,slow=34								
RPZ	**Rata Peaks**	**31.42**	**202**	*e*P		**P**		**02 12 47.9**	**-1.1**
	comp=Z,146nm,1.5s								
FOZ	**Fox Glacier**	**31.73**	**204**	P*		**P**		**02 12 48.9**	**-2.7**
FOZ	**Fox Glacier**	**31.73**	**204**	*e*P		**P**		**02 12 49.4**	**-2.2**
	comp=Z,282nm,1.4s								
JOHN	**Johnston Islan**	**31.98**	**7**	*e*P		**P**		**02 12 53.7**	**-0.4**
	comp=Z,26nm,0.9s								
JOHN				LR		LR			
	comp=Z,1μm,20.0s								
LBZ	**Lake Benmore**	**32.31**	**203**	*e*P		**P**		**02 12 54.2**	**-2.6**
	comp=Z,272nm,2.0s								
JCZ	**Jackson Bay**	**32.59**	**205**	P*		**P**		**02 12 56.8**	**-2.6**
ODZ	**Otahua Downs**	**32.71**	**202**	P*		**P**		**02 12 58.5**	**-1.8**
ODZ	**Otahua Downs**	**32.71**	**202**	*e*P		**P**		**02 12 59.3**	**-1.0**
	comp=Z,97nm,1.3s								
TAOE	**Nuku Hiva Isla**	**32.84**	**83**	*e*S		**S**		**02 18 19.7**	**+0.9**
	comp=Z,950nm,24.9s								
TAOE				*e*LR		LR		02 21 32.8	
	comp=Z,13μm,26.3s								
TAOE	**Nuku Hiva Isla**	**32.84**	**83**	*e*T		T		02 47 29.0	
	comp=Z,123nm,0.2s								
WKZ	**Wanaka**	**33.13**	**204**	*e*P		**P**		**02 13 01.7**	**-2.3**
	comp=Z,112nm,1.0s								
MLZ	**Mavora Lakes**	**33.93**	**204**	P*		**P**		**02 13 09.1**	**-1.8**
MLZ	**Mavora Lakes**	**33.93**	**204**	*e*P		**P**		**02 13 09.9**	**-1.0**
	comp=Z,153nm,1.0s								
DCZ	**Deep Cove**	**34.40**	**205**	*e*P		**P**		**02 13 14.2**	**-0.7**
	comp=Z,125nm,1.0s								
WHZ	**Wether Hill Ro**	**34.44**	**204**	P*		**P**		**02 13 13.8**	**-1.4**
WHZ	**Wether Hill Ro**	**34.44**	**204**	*e*P		**P**		**02 13 14.0**	**-1.3**
	comp=Z,284nm,0.9s								
EIDS	**Eidsvold**	**34.95**	**247**	P		**P**		**02 13 18.5**	**-1.5**
	baz=35,SNR=7.8								
EIDS	**Eidsvold**	**34.95**	**247**	*e*P		**P**		**02 13 16.9**	**-3.1**
	comp=Z,46nm,1.5s								
ARMA	**Armidale**	**35.65**	**239**	P		**P**		**02 13 24.7**	**-1.4**
	baz=36,SNR=7.4								
ARMA	**Armidale**	**35.65**	**239**	*e*P		**P**		**02 13 24.2**	**-1.9**
	comp=Z,42nm,0.8s								
PATS	**Pohnpei**	**35.82**	**306**	P		**P**		**02 13 29.2**	**+1.7**
	baz=36,SNR=3.7								
PATS	**Pohnpei**	**35.82**	**306**	*e*P		**P**		**02 13 29.6**	**+2.0**
	comp=Z,244nm,1.2s								
RKT	**Rikitea**	**36.78**	**108**	*e*S		**S**		**02 19 18.1**	**-1.1**
	comp=Z,2μm,28.8s								
RKT				*e*LQ		LQ		02 22 01.4	
	comp=Z,7μm,26.2s								
RKT				*e*LR		LR		02 23 32.2	
	comp=Z,4μm,24.0s								
RKT	**Rikitea**	**36.78**	**108**	*e*T		T		02 52 21.8	
	comp=Z,23nm,0.3s								
MGCD	**Mangrove Creek**	**36.96**	**235**	P		**P**		**02 13 36.2**	**-0.9**
	baz=37,SNR=6.8								
RMQ	**Roma**	**37.20**	**246**	P		**P**		**02 13 37.6**	**-1.7**
	baz=37,SNR=17								
MLOA	**Mauna Loa Obse**	**38.64**	**27**	*e*P		**P**		**02 13 53.0**	**+1.1**
UWE	**Uwekahuna**	**38.66**	**28**	*e*P		**P**		**02 13 53.2**	**+1.4**
	comp=Z,612nm,1.6s								
POHA	**Pohakuloa**	**38.85**	**27**	*e*P		**P**		**02 13 53.6**	**+0.1**
	comp=Z,314nm,1.1s								
POHA				LR		LR			
	comp=Z,9μm,20.0s								
CTA	**Charters Tower**	**38.94**	**257**	P		**P**		**02 13 52.6**	**-1.5**
	comp=Z,7.8nm,0.6s,baz=80,slow=10,SNR=12								
CTA				PcP		**PcP**		**02 16 05.5**	**+0.8**
	comp=Z,12nm,0.9s,baz=90,slow=6.3,SNR=4.2								
CTAO	**Charters Tower**	**38.94**	**257**	*e*P		**P**		**02 13 52.0**	**-2.0**
CTAO				*e*				02 16 04.5	
CTAO				pmax		pmax			
	comp=Z,20nm,1.0s								
CTAO				MLR		MLR			
	comp=Z,5μm,21.0s								
CTAO	**Charters Tower**	**38.94**	**257**	*e*P		**P**		**02 13 52.0**	**-2.0**
	comp=Z,20nm,1.0s								
CTAO				*e*PcP		**PcP**		**02 16 04.5**	**-0.1**
CTAO				LR		LR			
	comp=Z,5μm,21.0s								
H11S2	**WAKE ISLAND Hy**	**38.98**	**329**	T		T		02 55 15.4	
H11S3	**WAKE ISLAND Hy**	**38.99**	**329**	T		T		02 55 15.4	
H11S1	**WAKE ISLAND Hy**	**39.00**	**329**	T		T		02 55 17.4	
	SNR=11								
HPAH	**Hawaii Prepara**	**39.02**	**27**	*e*P		**P**		**02 13 55.4**	**+0.7**
	comp=Z,608nm,1.3s								
CNB	**Canberra Magne**	**39.05**	**232**	P		**P**		**02 13 53.6**	**-1.2**
	baz=39,SNR=19								
PMG	**Port Moresby**	**39.20**	**274**	P		**P**		**02 13 55.8**	**-0.4**
	comp=Z,14nm,0.8s,baz=65,slow=8.5,SNR=5.4								
PMG	**Port Moresby**	**39.20**	**274**	*e*P		**P**		**02 13 56.7**	**+0.5**
PMG				pmax		pmax			
	comp=Z,76nm,1.3s								
PMG				MLR		MLR			
	comp=Z,5μm,22.0s								
PMG	**Port Moresby**	**39.20**	**274**	*e*P		**P**		**02 13 56.7**	**+0.5**
	comp=Z,76nm,1.3s								
PMG				LR		LR			
	comp=Z,5μm,22.0s								
KEKH	**Kekaha**	**39.27**	**20**	*e*P		**P**		**02 13 57.3**	**+0.7**
	comp=Z,497nm,1.2s								
CAN	**Canberra**	**39.33**	**232**	*e*P		**P**		**02 13 55.1**	**-2.1**
CAN				pmax		pmax			
	comp=Z,161nm,1.3s								
CAN				MLR		MLR			
	comp=Z,5μm,20.0s								
CAN	**Canberra**	**39.33**	**232**	*e*P		**P**		**02 13 55.1**	**-2.1**
	comp=Z,161nm,1.3s								
CAN				LR		LR			
	comp=Z,5μm,20.0s								
KIP	**Kipapa**	**39.35**	**23**	*e*P		**P**		**02 13 57.9**	**+0.6**
KIP				pmax		pmax			
	comp=Z,330nm,1.0s								
KIP				MLR		MLR			
	comp=Z,14μm,20.0s								
KIP	**Kipapa**	**39.35**	**23**	*e*P		**P**		**02 13 57.9**	**+0.6**
	comp=Z,330nm,1.0s								
KIP				LR		LR			
	comp=Z,14μm,20.0s								
HLK	**Haleakala**	**39.44**	**25**	*e*P		**P**		**02 13 59.2**	**+0.9**
	comp=Z,694nm,1.3s								
YNG	**Young**	**39.45**	**234**	P		**P**		**02 13 56.7**	**-1.5**
	baz=39,SNR=10								
H11N3	**WAKE ISLAND Hy**	**39.92**	**330**	T		T		02 56 27.2	
	baz=150,slow=76,SNR=18								
H11N1	**WAKE ISLAND Hy**	**39.93**	**330**	T		T		02 56 19.8	
	baz=150,slow=76,SNR=63								
H11N2	**WAKE ISLAND Hy**	**39.94**	**330**	T		T		02 56 26.0	
	baz=150,slow=76,SNR=9.9								
MTSU	**Mount Surprise**	**40.81**	**260**	P		**P**		**02 14 08.6**	**-1.0**
	baz=41,SNR=15								
CMSA	**Cobar Meteorol**	**40.86**	**239**	P		**P**		**02 14 08.0**	**-1.8**
	baz=41,SNR=42								
QLP	**Quilpie**	**41.23**	**247**	P		**P**		**02 14 11.5**	**-1.4**
	baz=41,SNR=9.3								
COEN	**Coen**	**42.26**	**266**	P		**P**		**02 14 20.9**	**-0.7**
	baz=42,SNR=7.0								
COEN	**Coen**	**42.26**	**266**	*e*P		**P**		**02 14 21.0**	**-0.5**
	comp=Z,56nm,0.9s								
TOO	**Toolangi**	**42.77**	**231**	P		**P**		**02 14 24.1**	**-1.4**
	baz=43,SNR=20								
MIDW	**Midway**	**43.41**	**355**	PFAKE				02 14 40.0	+10
MIDW				LR		LR			
	comp=Z,11μm,21.0s								
MOO	**Moorlands**	**43.48**	**223**	P		**P**		**02 14 30.3**	**-0.8**
	baz=43,SNR=4.8								
TAU	**Tasmania Unive**	**43.61**	**223**	*e*P		**P**		**02 14 29.0**	**-3.0**
TAU				pmax		pmax			
	comp=Z,61nm,1.1s								
TAU				MLR		MLR			
	comp=Z,10μm,20.0s								
TAU	**Tasmania Unive**	**43.61**	**223**	*e*P		**P**		**02 14 29.0**	**-3.0**
	comp=Z,61nm,1.1s								
TAU				LR		LR			
	comp=Z,10μm,20.0s								
STKA	**Stephens Creek**	**44.34**	**240**	P		**P**		**02 14 36.8**	**-1.4**
	comp=Z,76nm,0.9s,baz=81,slow=8.5,SNR=114								
STKA				LR		LR		02 30 52.3	
	comp=Z,3μm,21.1s,baz=77,slow=33								
STKA	**Stephens Creek**	**44.34**	**240**	P		**P**		**02 14 36.7**	**-1.4**
	baz=44,SNR=86								
STKA	**Stephens Creek**	**44.34**	**240**	*e*P		**P**		**02 14 36.6**	**-1.6**
	comp=Z,21nm,0.9s								
MCQ	**Macquarie Isla**	**44.78**	**203**	P		**P**		**02 14 42.6**	**+1.4**
	baz=45								
MCQ	**Macquarie Isla**	**44.78**	**203**	*e*P		**P**		**02 14 41.9**	**+0.7**
MCQ				pmax		pmax			
	comp=Z,261nm,1.2s								
MCQ	**Macquarie Isla**	**44.78**	**203**	*e*P		**P**		**02 14 41.9**	**+0.7**
	comp=Z,261nm,1.2s								
QIS	**Mount Isa**	**45.18**	**256**	P		**P**		**02 14 43.3**	**-1.6**
	baz=45,SNR=7.1								
ARPS	**Mount Arapiles**	**45.30**	**233**	P		**P**		**02 14 44.2**	**-1.4**
	baz=45,SNR=5.3								
HTT	**Hallett**	**46.85**	**238**	P		**P**		**02 14 56.4**	**-1.7**
	baz=47,SNR=40								
JAY	**Jayapura**	**47.23**	**281**	P		**P**		**02 15 04.2**	**+3.0**
GENI	**Genyem**	**47.71**	**281**	P		**P**		**02 15 06.3**	**+1.4**
BBOO	**Buckleboo**	**49.12**	**240**	P		**P**		**02 15 13.8**	**-1.8**
	baz=49,SNR=31								
BBOO	**Buckleboo**	**49.12**	**240**	*e*P		**P**		**02 15 13.9**	**-1.7**
	comp=Z,77nm,0.9s								
WB2	**Warramunga Arr**	**50.13**	**257**	*e*P		**P**		**02 15 21.6**	**-1.9**
	comp=Z,71nm,1.1s								
WRAB	**Tennant Creek**	**50.13**	**257**	*e*P		**P**		**02 15 21.6**	**-1.9**
WRAB				pmax		pmax			
	comp=Z,73nm,1.1s								
WRAB				MLR		MLR			
	comp=Z,3μm,20.0s								
WRAB	**Tennant Creek**	**50.13**	**257**	*e*P		**P**		**02 15 21.6**	**-1.9**
	comp=Z,73nm,1.1s								
WRAB				LR		LR			
	comp=Z,3μm,20.0s								
WRA	**Warramunga Arr**	**50.14**	**257**	P		**P**		**02 15 21.2**	**-2.3**
	comp=Z,27nm,0.8s,baz=92,slow=6.9,SNR=81								
WRA				PcP		**PcP**		**02 16 43.9**	**+0.9**
	comp=Z,6.4nm,0.7s,baz=83,slow=4.3,SNR=5.3								
WRA				LR		LR		02 34 24.7	
	comp=Z,3μm,21.4s,baz=90,slow=34								
AS01	**Alice Springs**	**50.37**	**252**	*e*P		**P**		**02 15 22.2**	**-3.1**
AS31	**Alice Springs**	**50.41**	**252**	*e*P		**P**		**02 15 24.1**	**-1.6**
	comp=Z,24nm,0.8s								
ASAR	**Alice Springs**	**50.41**	**252**	P		**P**		**02 15 23.6**	**-2.0**
	comp=Z,57nm,0.8s,baz=85,slow=8.5,SNR=200								
ASAR				S		**S**		**02 22 31.6**	**-7.1**
	comp=Z,2.4nm,0.9s,baz=80,slow=16,SNR=5.5								
ASAR				LR		LR		02 34 57.2	
	comp=Z,11μm,21.7s,baz=87,slow=34								
GUMO	**Guam**	**50.48**	**302**	LR		LR		02 34 29.0	
	comp=Z,2μm,19.3s,baz=120,slow=33								
MTN	**Manton Dam**	**54.02**	**265**	P		**P**		**02 15 51.4**	**-1.0**
	baz=54,SNR=3.8								
MTN	**Manton Dam**	**54.02**	**265**	*e*P		**P**		**02 15 51.5**	**-0.9**
	comp=Z,51nm,1.0s								
WRKA	**Warakurna**	**55.50**	**250**	P		**P**		**02 16 01.8**	**-1.4**
	baz=55,SNR=69								
PALU	**Palau**	**56.57**	**290**	P		**P**		**02 16 12.9**	**+2.1**

comp=Z,3µm,21.7s,baz=130,slow=31
MAJO Matsushiro 69.01 320 *e*P **P 02 17 32.7 -0.7**
MAJO pmax pmax
comp=Z,64nm,1.1s
MAJO MLR MLR
comp=Z,4µm,21.0s
MAJO Matsushiro 69.01 320 *e*P **P 02 17 32.6 -0.7**
comp=Z,64nm,1.1s
MAJO LR LR
comp=Z,4µm,21.0s
MAT Matsushiro 69.01 320 P **P 02 17 33.2 -0.2**
MAT S **S 02 26 39.2 +1.5**
MJB9 Matsu-Tunnel 69.01 320 *e*P **P 02 17 33.9 +0.5**
comp=Z,17nm,1.1s
INU Inuyama 69.02 318 *e*P **P 02 17 36.8 +3.4**
comp=Z,70nm,1.3s
UNV Unalaska Valle 69.05 4 *e*P **P 02 17 32.0 -1.2**
comp=Z,87nm,1.3s
ERM Erimo 69.79 327 *e*P **P 02 17 37.5 -0.5**
ERM pmax pmax
comp=Z,30nm,1.1s
ERM MLR MLR
comp=Z,4µm,21.0s
ERM Erimo 69.79 327 *e*P **P 02 17 37.5 -0.5**
comp=Z,30nm,1.1s
ERM LR LR
comp=Z,4µm,21.0s
KUR Kuril'sk 69.82 332 *c i*P **P 02 17 37.0 -1.2**
KUR *i* S **S 02 26 48.5 +1.7**
KUR *e* 02 27 26.8
KUR *e*SS **SS 02 31 19.1 +3.0**
KUR pmax pmax
comp=Z,770nm,5.8s
KUR MLR MLR
comp=N,3µm,18.0s
KUR MLR MLR
comp=E,2µm,18.0s
KUR MLR MLR
comp=Z,3µm,18.0s
YUK Yuzh-Kuril'sk 69.87 330 *d i*P **P 02 17 38.0 -0.5**
YUK *e*S **S 02 26 46.4 -1.1**
YUK pmax pmax
comp=Z,232nm,2.0s
YUK pmax pmax
comp=N,98nm,0.8s
YUK pmax pmax
comp=E,142nm,0.8s
H06S1 SOCORRO T 69.90 63 T T 03 34 04.5
SNR=18
H06E1 SOCORRO T-PHAS 69.94 63 T T 03 34 11.7
SNR=19
SNCC San Nicolas Is 70.28 46 P **P 02 17 41.9 +0.5**
baz=236
SCZ2 Santa Cruz Isl 70.63 45 P **P 02 17 43.2 -0.2**
baz=235
CASY Casey 70.65 205 *e*P **P 02 17 43.4 +0.4**
comp=E,83nm,1.0s
CASY LR LR
comp=Z,708nm,20.0s
MYLDM Lahad Datu 70.69 281 *e*P **P 02 17 47.1 +2.9**
comp=Z,218nm,1.7s
SCI2 San Clemente I 70.81 46 P **P 02 17 45.2 +0.6**
baz=236
SBC Santa Barbara 70.83 45 P **P 02 17 45.3 +0.7**
baz=235
SKR Severo-Kuril's 70.98 340 *e*P **P 02 17 42.0 -3.1**
SKR *e* 02 27 38.0
SKR MLR MLR
comp=Z,4µm,18.0s
PKM Mcpherson Peak 71.02 44 P **P 02 17 46.5 +0.5**
baz=235
SAO San Andreas Ge 71.04 42 *e*P **P 02 17 45.4 -0.5**
SAO pmax pmax
comp=Z,64nm,1.4s
SAO San Andreas Ge 71.04 42 *e*P **P 02 17 45.4 -0.5**
comp=Z,64nm,1.4s
BLG Laguna Peak, P 71.08 45 P **P 02 17 45.9 -0.3**
baz=236
SDPT Sand Point 71.14 8 *e*P **P 02 17 45.3 -0.7**
comp=Z,170nm,1.1s
CIS Catalina Islan 71.14 46 P **P 02 17 46.3 -0.3**
baz=236
SMMC Simmler 71.14 44 P **P 02 17 47.2 +0.7**
baz=235
HOPS Hopland Field 71.39 39 *e*P **P 02 17 48.4 +0.5**
comp=Z,112nm,1.3s
FMP Fort Macarthur 71.39 46 P **P 02 17 48.1 +0.1**
baz=236
ASAJ Asahikawa 71.56 328 P **P 02 17 49.3 +0.5**
comp=Z,18nm,0.7s,baz=190,slow=8.2,SNR=9.1
ASAJ Asahikawa 71.56 328 *e*P **P 02 17 48.6 -0.2**
comp=Z,93nm,1.2s
OSI Osito Audit: C 71.60 45 P **P 02 17 49.5 +0.1**
baz=236
DECC Green Verdugo 71.67 45 P **P 02 17 49.6 -0.1**
baz=236
PASC Pasadena Art C 71.72 46 *e*P **P 02 17 49.4 -0.6**
comp=Z,66nm,1.4s
KMRM Mail Ridge 71.78 38 *e*P **P 02 17 51.7 +1.4**
comp=Z,171nm,1.2s
109C Camp Elliot, M 71.78 47 P **P 02 17 50.3 -0.1**
baz=237
ARVC Arvin 71.82 44 P **P 02 17 50.9 +0.3**
baz=236
MWC Mount Wilson 71.84 46 *e*P **P 02 17 51.4 +0.4**
MWC pmax pmax
comp=Z,46nm,1.1s
MWC Mount Wilson 71.84 46 *e*P **P 02 17 51.4 +0.4**
comp=Z,46nm,1.1s
JNU Nakatsue 71.90 313 P **P 02 17 51.8 +0.6**
comp=Z,40nm,0.8s,baz=62,slow=3.9,SNR=11
JNU Nakatsue 71.90 313 *e*P **P 02 17 51.5 +0.4**
comp=Z,87nm,1.1s
BAR Barrett 71.98 48 *e*P **P 02 17 52.6 +1.0**
comp=Z,145nm,1.9s
BAR *e*PcP **PcP 02 18 05.4 -4.8**
MURC Murrieta 72.10 47 P **P 02 17 52.4 +0.1**
baz=237
BFSC Mount Baldy Ra 72.12 46 P **P 02 17 52.5 -0.1**
baz=237
KHMM Horse Mountain 72.18 37 *e*P **P 02 17 54.2 +1.4**
comp=Z,154nm,1.6s
RCTC Rector, Farmer 72.21 43 P **P 02 17 52.5 -0.4**
baz=235
PET Petropavlovsk 72.22 343 *e*P **P 02 17 53.7 +1.2**
PET *e*S **S 02 27 14.1 -0.3**
PET *e*PPS PPS 02 27 57.1
PET *e*SSS SSS 02 35 06.1
PET pmax pmax
comp=Z,131nm,1.4s
PET pmax pmax
comp=Z,700nm,13.3s
PET pmax pmax
comp=Z,300nm,16.1s
PET Petropavlovsk 72.22 343 PFAKE 02 18 00.0 +7.5
PET LR LR
comp=Z,2µm,19.0s
EDW2 Edwards Air Fo 72.25 45 P **P 02 17 53.6 +0.3**
baz=236
MONP2 Monument Peak 72.27 48 P **P 02 17 54.0 +0.4**
baz=238
CHGN Chignik 72.34 9 *e*P **P 02 17 51.8 -1.4**
ISA Isabella, Lake 72.36 44 P **P 02 17 54.1 +0.2**
baz=236
ISA Isabella, Lake 72.36 44 *e*P **P 02 17 54.8 +0.9**
ISA pmax pmax
comp=Z,159nm,1.8s
ISA Isabella, Lake 72.36 44 *e*P **P 02 17 54.8 +0.9**
comp=Z,159nm,1.8s
CMB Columbia Colle 72.48 41 *e*P **P 02 17 54.6 +0.1**
CMB pmax pmax
comp=Z,34nm,1.1s
CMB Columbia Colle 72.48 41 *e*P **P 02 17 54.6 +0.1**
comp=Z,34nm,1.1s
PEA0 Petropavlovsk- 72.58 342 *e*P **P 02 17 54.7 0.0**
PEA0B Petropavlovsk- 72.58 342 *e*P **P 02 17 55.3 +0.6**
comp=Z,256nm,1.3s
PETK Petropavlovsk- 72.58 342 P **P 02 17 54.8 +0.1**
comp=Z,75nm,0.9s,baz=136,slow=9.1,SNR=52
PETK LR LR 02 45 57.0
comp=Z,2µm,20.1s,baz=164,slow=33
PFO Pinyon Flats O 72.62 47 LR LR 02 43 19.8
comp=Z,8µm,19.7s,baz=246,slow=30
PFO Pinyon Flats O 72.62 47 P **P 02 17 55.4 -0.2**
baz=238
PFO Pinyon Flats O 72.62 47 *e*P **P 02 17 56.1 +0.5**
PFO pmax pmax
comp=Z,112nm,1.8s
PFO Pinyon Flats O 72.62 47 *e*P **P 02 17 56.1 +0.5**
comp=Z,112nm,1.8s
BBRC Big Bear Solar 72.65 46 P **P 02 17 55.8 0.0**
baz=237
AFDM Forest Hills D 72.65 40 *e*P **P 02 17 55.7 +0.2**
comp=Z,48nm,1.4s
ORV Oroville 72.69 39 *e*P **P 02 17 55.8 +0.1**
ORV pmax pmax
comp=Z,34nm,1.2s
ORV Oroville 72.69 39 *e*P **P 02 17 55.8 +0.1**
comp=Z,34nm,1.2s
WDC Whiskeytown Da 72.70 38 *e*P **P 02 17 56.1 +0.4**
WDC pmax pmax
comp=Z,136nm,1.5s
WDC Whiskeytown Da 72.70 38 *e*P **P 02 17 56.1 +0.4**
comp=Z,136nm,1.5s
LPIG La Paz 72.73 58 LR LR 02 41 27.5
comp=Z,4µm,21.8s,baz=302,slow=29
SWSC Sam W. Stewart 72.74 48 P **P 02 17 56.2 +0.1**
baz=238
LRMC Laurel Mtn Rad 72.79 45 P **P 02 17 56.7 +0.1**
baz=236
N02D Trinity Center 72.85 38 P **P 02 17 57.3 +0.6**
baz=231,SNR=10
SLBS Sierra La Lagu 72.85 59 *e*P **P 02 17 58.1 +1.0**
comp=Z,108nm,1.5s
RRX Edison Barstow 72.93 46 P **P 02 17 57.1 -0.1**
baz=237
O03D Paynes Creek 72.96 39 P **P 02 17 57.4 0.0**
baz=232
M02C Callahan 73.02 37 P **P 02 17 58.4 +0.7**
baz=231,SNR=9.2
L02D Cave Junction, 73.08 36 P **P 02 17 59.0 +1.0**
baz=230
KKM Kota Kinabalu 73.12 281 *e*P **P 02 17 57.5 -1.3**
comp=Z,22nm,0.7s
KKM LR LR
comp=Z,963nm,22.0s
BELC Belle Mtn. Jos 73.16 47 P **P 02 17 59.1 +0.3**
baz=238
MLAC Mammoth, Mammo 73.24 42 P **P 02 17 59.6 +0.3**
baz=235
MPMC Manual Prospec 73.24 44 P **P 02 17 59.9 +0.6**
baz=236
GSC Goldstone, Bar 73.29 45 P **P 02 17 59.6 +0.2**
baz=237
GSC Goldstone, Bar 73.29 45 *e*P **P 02 17 59.5 0.0**
GSC pmax pmax
comp=Z,52nm,1.2s
GSC Goldstone, Bar 73.29 45 *e*P **P 02 17 59.5 0.0**
comp=Z,52nm,1.2s
DAC Darwin (Calif) 73.29 44 *e*P **P 02 17 59.8 +0.2**
DAC pmax pmax
comp=Z,127nm,1.9s
DAC Darwin (Calif) 73.29 44 *e*P **P 02 17 59.8 +0.2**
comp=Z,127nm,1.9s
TIN Tinemaha, Big 73.31 43 P **P 02 18 00.1 +0.6**
baz=236
YBH Yreka Blue Hor 73.32 37 P **P 02 18 00.2 +0.8**
comp=Z,29nm,1.0s,baz=201,slow=2.5,SNR=25
YBH Yreka Blue Hor 73.32 37 *e*P **P 02 18 00.3 +0.8**
YBH pmax pmax
comp=Z,69nm,1.3s
YBH Yreka Blue Hor 73.32 37 *e*P **P 02 18 00.3 +0.8**
comp=Z,69nm,1.3s
WAKR Walker 73.36 41 *e*P **P 02 18 00.2 +0.3**
BC3 Big Chuckawall 73.36 47 P **P 02 18 00.2 +0.3**
baz=238
HEC Hector,Ludlow 73.36 46 P **P 02 17 59.8 -0.1**
baz=237
GLA Glamis 73.49 48 P **P 02 18 01.0 +0.3**
baz=239
GLA Glamis 73.49 48 *e*P **P 02 18 00.9 +0.3**
GLA pmax pmax
comp=Z,85nm,1.4s
GLA Glamis 73.49 48 *e*P **P 02 18 00.9 +0.3**
comp=Z,85nm,1.4s
YSS Yuzh-Sakhalins 73.49 330 *ke*P **P 02 18 01.0 +0.8**
YSS *e* 02 18 08.0
YSS *e* 02 18 13.0
YSS *e* 02 20 45.0
YSS *e*S **SKiKP 02 27 32.6 +2.2**
YSS *e*PS **PnS 02 27 52.0 -11**
YSS *e* 02 28 10.0
YSS pmax pmax
comp=Z,50nm,0.8s
YSS pmax pmax
comp=Z,500nm,2.5s
YSS smax smax
comp=E,800nm,11.0s
YSS MLR MLR
comp=Z,1µm,19.0s
YSS Yuzh-Sakhalins 73.49 330 *e*P **P 02 18 00.4 +0.1**
comp=Z,111nm,1.1s
YSS LR LR
comp=Z,1µm,21.0s
HUMO Hull Mountain 73.73 36 *e*P **P 02 18 02.2 +0.4**
comp=Z,224nm,1.8s
GMRC Granite Mounta 73.81 46 P **P 02 18 02.7 +0.1**
baz=238
IRM Iron Mountain 73.84 47 P **P 02 18 03.2 +0.5**
baz=238
GRAC Grapevine Rang 73.85 44 P **P 02 18 03.3 +0.6**
baz=236
M04C Macdoel 73.86 37 P **P 02 18 03.3 +0.6**
baz=232,SNR=14
FURC Furnace Creek, 73.89 44 P **P 02 18 03.3 +0.5**
baz=237
TUQ Turquoise Moun 73.97 46 P **P 02 18 04.1 +0.6**
baz=238
SHOC Shoshone, Teco 73.98 45 P **P 02 18 04.0 +0.6**
baz=237
NV01 Mina Array Sit 74.04 42 *e*P **P 02 18 03.4 -0.6**
NVAR Mina Array Bea 74.04 42 P **P 02 18 04.1 +0.2**
comp=Z,8.1nm,0.8s,baz=230,slow=9.1,SNR=22
NVAR LR LR 02 43 24.5
comp=Z,8µm,20.9s,baz=246,slow=30
NVAR PKPPKP P'P'df 02 45 43.3 +8.5
comp=Z,0.2nm,0.5s,baz=115,slow=2.1,SNR=4.9
OHAK Old Harbor 74.07 11 *e*P **P 02 18 03.0 -0.3**
comp=Z,68nm,1.0s
Y12C Blythe 74.07 48 P **P 02 18 04.3 +0.3**
baz=239
Y12C Blythe 74.07 48 *e*P **P 02 18 04.4 +0.5**
comp=Z,74nm,1.4s
113A Mohawk Valley, 74.11 49 *e*P **P 02 18 04.4 +0.2**
comp=Z,138nm,1.8s
NV11 Mina Array Sit 74.14 42 *e*P **P 02 18 04.7 +0.2**
comp=Z,162nm,1.6s
I03D Drain, OR 74.21 35 P **P 02 18 05.0 +0.5**
baz=230
LDFC Landfair 74.35 46 *e*P **P 02 18 06.8 +1.1**
comp=Z,196nm,1.4s
214A Organ Pipe Nat 74.41 50 P **P 02 18 06.6 +0.5**
baz=240
214A Organ Pipe Nat 74.41 50 *e*P **P 02 18 06.1 +0.1**
comp=Z,365nm,1.4s
HSIG 74.43 54 *e*P **P 02 18 06.2 +0.1**
comp=Z,83nm,1.6s
K04D Chiloquin, OR 74.43 37 P **P 02 18 06.5 +0.5**
baz=232,SNR=5.5
NEE2 Needles Airpor 74.53 47 P **P 02 18 07.0 +0.3**
baz=239
TPNV Topopah Spring 74.57 44 P **P 02 18 07.5 +0.5**
baz=237
TPNV Topopah Spring 74.57 44 *e*P **P 02 18 06.9 -0.1**
TPNV pmax pmax
comp=Z,228nm,2.0s
TPNV Topopah Spring 74.57 44 *e*P **P 02 18 06.9 -0.1**
comp=Z,228nm,2.0s
PDMCI Parker Dam,Lak 74.63 47 P **P 02 18 07.8 +0.6**
baz=236
KDAK Kodiak Island 74.73 11 *e*P **P 02 18 07.5 +0.3**
KDAK pmax pmax
comp=Z,191nm,1.3s
KDAK MLR MLR
comp=Z,7µm,20.0s
KDAK Kodiak Island 74.73 11 *e*P **P 02 18 07.5 +0.3**
comp=Z,191nm,1.3s
KDAK LR LR
comp=Z,7µm,20.0s
I04A Tendick Farm, 74.79 36 P **P 02 18 08.3 +0.3**
baz=231
NACB Ninganchiao 74.81 301 *e*P **P 02 18 08.0 -0.4**
comp=Z,229nm,1.4s
MOD Modoc Plateau 74.84 38 *e*P **P 02 18 08.7 +0.3**
comp=Z,108nm,1.3s
K05A Summer Lake 74.99 37 *e*P **P 02 18 10.2 +0.8**
comp=Z,215nm,1.4s
J05D Fort Rock, OR 75.14 36 P **P 02 18 11.0 +0.8**
baz=232,SNR=20
SSLB Suanglung 75.18 300 *e*P **P 02 18 10.1 -0.6**
comp=Z,25nm,0.8s
YHNB Yeheng 75.19 301 *e*P **P 02 18 09.9 -0.8**
comp=Z,317nm,1.6s
YHNB LR LR
comp=Z,2µm,20.0s
TATO Taipei 75.23 301 PFAKE 02 18 20.0 +9.2
TATO LR LR
comp=Z,1µm,22.0s
G03D McMinnville, O 75.23 34 P **P 02 18 11.3 +0.9**
baz=230
TPUB Ta-pu 75.25 300 *e*P **P 02 18 12.1 +1.0**
comp=Z,291nm,1.9s
H04A Detroit Lake 75.48 35 *e*P **P 02 18 11.6 -0.3**
comp=Z,385nm,1.8s
I05D Terrebonne, OR 75.73 36 P **P 02 18 13.8 +0.3**
baz=232,SNR=13
R11A Troy Canyon, C 75.77 43 P **P 02 18 14.3 +0.3**
baz=237
R11A Troy Canyon, C 75.77 43 *e*P **P 02 18 13.8 -0.2**
comp=Z,115nm,1.8s
BMN Battle Mountai 75.87 41 *e*P **P 02 18 14.6 +0.2**
BMN pmax pmax
comp=Z,86nm,1.4s
BMN Battle Mountai 75.87 41 *e*P **P 02 18 14.6 +0.2**
comp=Z,86nm,1.4s
SBUM Sibu 75.88 277 *e*P **P 02 18 18.5 +3.7**
comp=Z,15nm,1.0s
F04D Rainier, OR 75.93 33 P **P 02 18 15.5 +1.1**
baz=230
E03A Lebam 75.94 33 *e*P **P 02 18 15.5 +1.1**
comp=Z,158nm,1.2s
TDH Tom, Dick, Har 76.08 35 P **P 02 18 15.4 -0.1**
TUC Tucson 76.09 51 P **P 02 18 16.3 +0.6**
baz=242
TUC Tucson 76.09 51 *e*P **P 02 18 16.4 +0.6**
TUC pmax pmax
comp=Z,83nm,1.3s
TUC MLR MLR
comp=Z,5µm,22.0s
TUC Tucson 76.09 51 *e*P **P 02 18 16.4 +0.6**
comp=Z,83nm,1.3s
TUC LR LR
comp=Z,5µm,22.0s
F04A Amboy 76.15 34 *e*P **P 02 18 16.2 +0.6**
comp=Z,228nm,1.6s
WVOR Wild Horse Val 76.15 38 *e*P **P 02 18 16.1 +0.2**
WVOR pmax pmax
comp=Z,176nm,1.6s
WVOR MLR MLR
comp=Z,9µm,20.0s
WVOR Wild Horse Val 76.15 38 *e*P **P 02 18 16.1 +0.2**
comp=Z,176nm,1.6s
WVOR LR LR
comp=Z,9µm,20.0s
KSRS Korea Array 76.25 315 P **P 02 18 18.1 +1.7**
comp=Z,12nm,1.0s,baz=132,slow=5.6,SNR=18
KSRS LR LR 02 51 19.8
comp=Z,1µm,18.1s,baz=108,slow=35
KSRS Korea Array 76.25 315 P **P 02 18 18.1 +1.7**
KSRS pmax pmax
comp=Z,11nm,1.0s
KSRS MLR MLR
comp=Z,1µm,18.1s
KS15 Wonju Array Si 76.27 315 *e*P **P 02 18 20.4 +3.9**
KSAR Wonju Array Be 76.27 315 P **P 02 18 18.1 +1.6**
KSAR Wonju Array Be 76.27 315 P **P 02 18 18.1 +1.6**
KS01 Wonju Array Si 76.28 315 *e*P **P 02 18 18.3 +1.7**
VFP Flag Point 76.28 35 P **P 02 18 16.8 +0.2**
G05D Wamic, OR 76.31 35 P **P 02 18 17.2 +0.5**
baz=231,SNR=5.5
NLWA Neilton Lookou 76.33 32 *e*P **P 02 18 16.4 -0.4**
NLWA LR LR
comp=Z,3µm,19.0s
TYV Tymovskoe 76.34 333 *e*P **P 02 18 17.0 +0.4**
TYV *e*S **S 02 28 05.0 +4.2**
TYV pmax pmax
comp=Z,183nm,1.4s
TYV pmax pmax
comp=Z,2µm,5.0s
TYV smax smax
comp=E,2µm,7.0s
OSR Olympics--Salm 76.36 32 P **P 02 18 18.0 +1.1**
KPJI Karang Pucung 76.53 266 P **P 02 18 20.7 +2.2**
H02S1 DAWSON INLET T 76.60 24 T T 03 40 55.4
H02N1 VAN INLET T-PH 76.61 24 T T 03 40 56.3
X16A Lo Mia Camp, P 76.62 48 *e*P **P 02 18 19.6 +0.7**
LCMT Little Creek M 76.64 45 *e*P **P 02 18 19.3 +0.4**
comp=E,132nm,1.8s
G06A Carlson Farm, 76.69 35 *e*P **P 02 18 19.4 +0.6**
comp=E,341nm,1.9s
VTHM Trough 76.69 35 P **P 02 18 19.5 +0.6**
319A Douglas 76.79 52 *e*P **P 02 18 20.4 +0.7**
BRLK Bradley Lake 76.90 11 *e*P **P 02 18 19.3 -0.4**
comp=E,186nm,1.2s
KNB Kanab 76.93 46 *e*P **P 02 18 21.2 +0.6**
KNB pmax pmax
comp=Z,311nm,1.9s
KNB Kanab 76.93 46 *e*P **P 02 18 21.2 +0.6**
comp=Z,311nm,1.9s
LON Longmire 76.99 33 *e*P **P 02 18 20.8 +0.3**
LON pmax pmax
comp=Z,60nm,1.4s
LON Longmire 76.99 33 *e*P **P 02 18 20.8 +0.3**
comp=Z,60nm,1.4s
U15A North Rim 77.00 46 *e*P **P 02 18 21.8 +0.7**
PSUT Pine Spring 77.02 44 *e*P **P 02 18 21.2 +0.1**
comp=Z,39nm,1.1s
INCN Inchon 77.14 315 *e*P **P 02 18 23.5 +2.0**
comp=Z,134nm,1.3s
INCN LR LR
comp=Z,2µm,20.0s
INCN Inchon 77.14 315 P **P 02 18 24.3 +2.8**
SNR=11
INCN P **P 02 18 24.3 +2.8**
SNR=11
INCN Inchon 77.14 315 P **P 02 18 24.3 +2.8**
SNR=11
D05A Enumclaw 77.18 33 *e*P **P 02 18 22.8 +1.3**
comp=Z,322nm,1.4s
WUAZ Wupatki 77.20 47 P **P 02 18 22.6 +0.6**
baz=241
WUAZ Wupatki 77.20 47 *e*P **P 02 18 23.3 +1.2**
comp=Z,150nm,1.6s
WUAZ LR LR
comp=Z,5µm,20.0s
ELK Elko 77.30 41 P **P 02 18 23.4 +0.8**
comp=Z,34nm,0.5s,baz=43,slow=0.2,SNR=3.3
ELK Elko 77.30 41 *e*P **P 02 18 22.8 +0.2**
ELK pmax pmax
comp=Z,112nm,1.6s
ELK Elko 77.30 41 *e*P **P 02 18 22.8 +0.2**
comp=Z,112nm,1.6s
SVW2 Sparrevohn 77.37 9 *e*P **P 02 18 21.6 -0.7**
comp=Z,45nm,1.0s
USRK Ussurivsk Ar. 77.43 323 P **P 02 18 23.4 +0.5**
comp=Z,9.9nm,1.0s,baz=113,slow=5.0,SNR=11
USRK LR LR 02 45 55.8
comp=Z,3µm,21.9s,baz=149,slow=31
KSM Kuching 77.44 275 *e*P **P 02 18 24.5 +0.8**
comp=Z,57nm,1.2s
KSM LR LR
comp=Z,531nm,20.0s
SEW Seward 77.49 12 *e*P **P 02 18 22.4 -0.5**
comp=Z,106nm,1.0s
PKCU Pink Cliffs 77.50 45 *e*P **P 02 18 26.1 +2.2**
comp=Z,538nm,2.0s
CISI Cisompet, Garu 77.55 265 P **P 02 18 25.9 +1.5**
QZH Quanzhou 77.61 300 ⇑ *i*P **P 02 18 20.3 -4.1**
QZH PP **PP 02 21 18.0 -1.7**
QZH S **S 02 28 11.3 -4.4**
QZH pmax pmax
comp=Z,90nm,1.0s
QZH pmax pmax
comp=Z,2µm,4.0s
QZH LR LR
comp=Z,2µm,17.5s
QZH LR LR
comp=Z,660nm,13.2s
QZH LR LR
comp=Z,2µm,25.9s
BBB Bella Bella 77.64 26 P **P 02 18 23.5 -0.3**
comp=Z,70nm,1.1s,baz=191,slow=5.2,SNR=4.5

MIR	**Mirnyy**	**77.67**	**204**	*i* P		**P**	**02 18 25.0**	**+1.1**
MIR				pmax		pmax		
	comp=Z,16nm,1.5s							
HPIG		**77.72**	**58**	*e*P		**P**	**02 18 24.6**	**-0.6**
	comp=Z,135nm,1.6s							
HPIG				*e*PcP		PcP	02 18 44.7	+9.4
X18A	**Snowflake**	**77.75**	**49**	*e*P		**P**	**02 18 25.8**	**+0.6**
A04D	**Lummi Island**	**77.79**	**31**	P		**P**	**02 18 25.6**	**+0.8**
	baz=230							
B05A	**Bryant**	**77.81**	**32**	P		**P**	**02 18 25.3**	**+0.4**
	baz=230,SNR=15							
MTPU	**Mount Pierson**	**77.89**	**45**	*e*P		**P**	**02 18 27.9**	**+1.8**
	comp=Z,195nm,1.6s							
LEM	**Lembang**	**77.91**	**266**	LR		LR	02 54 25.4	
	comp=Z,2µm,19.6s,baz=102,slow=37							
LEM	**Lembang**	**77.91**	**266**	P		**P**	**02 18 27.7**	**+1.2**
FSU	**Fish Springs**	**77.94**	**43**	*e*P		**P**	**02 18 26.6**	**+0.5**
RSW	**Rattlesnake Hi**	**77.97**	**35**	P		**P**	**02 18 26.8**	**+0.8**
HAWA	**Hanford**	**78.00**	**35**	*e*P		**P**	**02 18 26.5**	**+0.4**
	comp=Z,156nm,1.4s							
HAWA				LR		LR		
	comp=Z,5µm,20.0s							
SPU	**Mount Spurr**	**78.01**	**10**	*e*P		**P**	**02 18 24.5**	**-1.4**
SSE	**Sheshan**	**78.09**	**307**	P		**P**	**02 18 26.9**	**0.0**
SSE				pP		**pP**	**02 18 31.8**	**-0.8**
SSE				S		**S**	**02 28 20.8**	**+0.3**
SSE				sS		**sS**	**02 28 27.1**	**-2.8**
SSE				pmax		pmax		
	comp=Z,20nm,0.6s							
SSE				pmax		pmax		
	comp=Z,180nm,4.6s							
SSE				LR		LR		
	comp=Z,610nm,21.1s							
SSE				LR		LR		
	comp=Z,470nm,21.1s							
SSE				LR		LR		
	comp=Z,870nm,23.3s							
MSU	**Marysvale**	**78.13**	**44**	*e*P		**P**	**02 18 28.3**	**+1.0**
MSU	**Marysvale**	**78.13**	**44**	*e*P		**P**	**02 18 28.3**	**+1.0**
WRW	**Wenatchee Ridg**	**78.18**	**33**	P		**P**	**02 18 27.4**	**+0.2**
W18A	**Petrified Fore**	**78.18**	**48**	P		**P**	**02 18 28.5**	**+0.8**
	baz=242							
W18A	**Petrified Fore**	**78.18**	**48**	*e*P		**P**	**02 18 27.3**	**-0.3**
	comp=Z,99nm,1.6s							
C06D	**Leavenworth**	**78.22**	**33**	P		**P**	**02 18 27.2**	**-0.1**
	baz=231							
B06A	**Marblemount**	**78.29**	**32**	*e*P		**P**	**02 18 27.8**	**+0.2**
	comp=Z,101nm,1.6s							
ETW	**Entiat**	**78.32**	**33**	P		**P**	**02 18 28.0**	**0.0**
RC01	**Rabbit Creek A**	**78.35**	**11**	*e*P		**P**	**02 18 27.4**	**-0.3**
	comp=Z,164nm,1.1s							
BMO	**Blue Mountains**	**78.35**	**37**	*e*P		**P**	**02 18 28.0**	**-0.2**
	comp=Z,129nm,1.4s							
BMO				LR		LR		
	comp=Z,5µm,20.0s							
HABR	**Khabarovsk**	**78.36**	**328**	*e*P		**P**	**02 18 26.4**	**-1.6**
HABR				*e**SP		**pP**	**02 18 33.2**	**-0.5**
HABR				*e*			02 18 35.1	
HABR				*e*			02 21 23.0	
HABR				*e*PPP		PPP	02 23 11.1	
HABR				*e*S		**S**	**02 28 21.9**	**-0.8**
HABR				*e**SS		**sS**	**02 28 30.4**	**-1.7**
HABR				*e*			02 28 45.5	
HABR				pmax		pmax		
	comp=Z,142nm,1.9s							
HABR				pmax		pmax		
	comp=Z,630nm,2.6s							
HABR				MLR		MLR		
	comp=Z,1µm,21.0s							
MFID	**Camas Ranch**	**78.40**	**39**	*e*P		**P**	**02 18 28.6**	**+0.1**
	comp=Z,103nm,1.4s							
121A	**Cookes Peak, D**	**78.44**	**52**	P		**P**	**02 18 30.0**	**+0.9**
	baz=244							
121A	**Cookes Peak, D**	**78.44**	**52**	*e*P		**P**	**02 18 29.6**	**+0.5**
	comp=Z,76nm,1.3s							
DUG	**Dugway, Tooele**	**78.57**	**43**	P		**P**	**02 18 29.8**	**+0.1**
	baz=239							
DUG	**Dugway, Tooele**	**78.57**	**43**	*e*P		**P**	**02 18 29.7**	**+0.1**
DUG				pmax		pmax		
	comp=Z,96nm,1.4s							
DUG				MLR		MLR		
	comp=Z,6µm,21.0s							
DUG	**Dugway, Tooele**	**78.57**	**43**	*e*P		**P**	**02 18 29.7**	**+0.1**
	comp=Z,96nm,1.4s							
DUG				LR		LR		
	comp=Z,6µm,21.0s							
EYAK	**Cordova Ski Ar**	**78.68**	**13**	*e*P		**P**	**02 18 29.0**	**-0.5**
	comp=Z,95nm,1.1s							
ZAIG	**Zacatecas**	**78.70**	**63**	*e*P		**P**	**02 18 31.7**	**+0.8**
	comp=Z,47nm,1.3s							
D08A	**Wollman Farm,**	**78.74**	**34**	*e*P		**P**	**02 18 30.6**	**+0.4**
	comp=Z,170nm,1.4s							
RAGM	**Ragged Mountai**	**78.78**	**14**	*e*P		**P**	**02 18 29.9**	**-0.3**
	comp=Z,147nm,1.2s							
GAMB	**Gambell**	**78.79**	**1**	*e*P		**P**	**02 18 30.5**	**+0.5**
	comp=Z,140nm,1.2s							
BGU	**Big Grassy Mou**	**78.81**	**42**	*e*P		**P**	**02 18 31.4**	**+0.5**
	comp=Z,127nm,1.8s							
NKL	**Nikolayevsk**	**78.83**	**334**	*e*P		**P**	**02 18 29.0**	**-1.5**
NKL				*e*			02 18 44.5	
NKL				*e*			02 28 26.0	
NKL				pmax		pmax		
	comp=Z,100nm,1.2s							
NKL				pmax		pmax		
	comp=Z,1µm,9.0s							
NKL				MLR		MLR		
	comp=N,1µm,18.0s							
NKL				MLR		MLR		
	comp=E,1µm,18.0s							
NKL				MLR		MLR		
	comp=Z,2µm,18.0s							
PMR	**Palmer**	**78.92**	**11**	*e*P		**P**	**02 18 29.7**	**-1.1**
PMR				pmax		pmax		
	comp=Z,206nm,1.3s							
PMR	**Palmer**	**78.92**	**11**	*e*P		**P**	**02 18 29.7**	**-1.1**
	comp=Z,206nm,1.3s							
NLU	**North Lily Min**	**78.93**	**43**	*e*P		**P**	**02 18 32.4**	**+0.7**
	comp=Z,79nm,1.6s							
F10A	**Beach Ranch, E**	**79.04**	**36**	*e*P		**P**	**02 18 31.7**	**-0.3**
	comp=Z,155nm,1.4s							
TT01	**Tatalina**	**79.05**	**8**	*e*P		**P**	**02 18 32.0**	**+0.5**
TTA	**Tatalina**	**79.07**	**8**	*e*P		**P**	**02 18 32.1**	**+0.4**
TTA				pmax		pmax		
	comp=Z,149nm,1.0s							
TTA	**Tatalina**	**79.07**	**8**	*e*P		**P**	**02 18 32.1**	**+0.4**
	comp=Z,149nm,1.0s							
MDJ	**Mudanjiang**	**79.08**	**322**	P		**P**	**02 18 33.5**	**+1.4**
MDJ				pP		pP	02 18 36.6	-1.1
MDJ				sP		PcP	02 18 38.9	-1.6
MDJ				S		**S**	**02 28 31.4**	**+0.8**
MDJ				pmax		pmax		
	comp=Z,35nm,1.4s							
MDJ				pmax		pmax		
	comp=Z,520nm,5.1s							
MDJ				LR		LR		
	comp=Z,1µm,24.0s							
MDJ				LR		LR		
	comp=Z,2µm,24.0s							
MDJ				LR		LR		
	comp=Z,3µm,26.3s							
MDJ	**Mudanjiang**	**79.08**	**322**	PFAKE			02 18 40.0	+7.9
MDJ				LR		LR		
	comp=Z,3µm,21.0s							
WRAK	**Wrangell Islan**	**79.12**	**22**	*e*P		**P**	**02 18 32.4**	**+0.5**
	comp=Z,63nm,1.1s							
WRAK				LR		LR		
	comp=Z,4µm,20.0s							
DIV	**Divide**	**79.19**	**13**	*e*P		**P**	**02 18 32.0**	**-0.4**
	comp=Z,215nm,1.0s							
MPU	**Maple Canyon**	**79.26**	**43**	*e*P		**P**	**02 18 34.4**	**+0.9**
	comp=Z,63nm,1.3s							
SML	**Sawmill**	**79.28**	**12**	*e*P		**P**	**02 18 31.9**	**-0.9**
SML				pmax		pmax		
	comp=Z,151nm,1.4s							
SML	**Sawmill**	**79.28**	**12**	*e*P		**P**	**02 18 31.9**	**-0.9**
	comp=Z,151nm,1.4s							
B08A	**Colville Reser**	**79.31**	**33**	*e*P		**P**	**02 18 32.7**	**-0.6**
	comp=Z,98nm,1.4s							
BMRM	**Bremner River**	**79.31**	**14**	*e*P		**P**	**02 18 32.7**	**-0.4**
	comp=Z,264nm,1.0s							
HLID	**Hailey**	**79.34**	**39**	P		**P**	**02 18 34.4**	**+0.6**
	baz=237							
HLID	**Hailey**	**79.34**	**39**	*e*P		**P**	**02 18 34.2**	**+0.5**
	comp=Z,98nm,1.3s							
HLID				LR		LR		
	comp=Z,4µm,21.0s							
SPUT	**South Promonto**	**79.38**	**42**	*e*P		**P**	**02 18 35.0**	**+1.0**
	comp=Z,151nm,1.5s							
HVU	**Hansel Valley**	**79.42**	**41**	*e*P		**P**	**02 18 34.5**	**+0.3**
HVU				pmax		pmax		
	comp=Z,110nm,1.3s							
HVU	**Hansel Valley**	**79.42**	**41**	*e*P		**P**	**02 18 34.5**	**+0.3**
	comp=Z,110nm,1.3s							
KLU	**Klutina**	**79.49**	**13**	*e*P		**P**	**02 18 33.6**	**-0.5**
	comp=Z,98nm,1.1s							
SCM	**Sheep Creek Mo**	**79.50**	**12**	*e*P		**P**	**02 18 33.6**	**-0.5**
SCM				pmax		pmax		
	comp=Z,141nm,0.9s							
SCM	**Sheep Creek Mo**	**79.50**	**12**	*e*P		**P**	**02 18 33.6**	**-0.5**
	comp=Z,141nm,0.9s							
CTU	**Camp Tracy**	**79.52**	**43**	*e*P		**P**	**02 18 35.4**	**+0.5**
	comp=Z,103nm,1.5s							
C09A	**Chrisman Ranch**	**79.54**	**34**	*e*P		**P**	**02 18 34.6**	**+0.1**
	comp=Z,80nm,1.1s							
SRU	**San Rafael Swe**	**79.55**	**45**	*e*P		**P**	**02 18 35.5**	**+0.5**
SRU				pmax		pmax		
	comp=Z,128nm,1.4s							
SRU	**San Rafael Swe**	**79.55**	**45**	*e*P		**P**	**02 18 35.5**	**+0.5**
	comp=Z,128nm,1.4s							
P17A	**Butcher Ranch,**	**79.58**	**44**	*e*P		**P**	**02 18 36.4**	**+1.2**
	comp=Z,192nm,1.5s							
PPLA	**Purkeypile**	**79.60**	**10**	*e*P		**P**	**02 18 33.0**	**-1.7**
	comp=Z,49nm,1.2s							
JLU	**Jordanelle**	**79.67**	**43**	*e*P		**P**	**02 18 36.0**	**+0.2**
	comp=Z,101nm,1.4s							
LAZ	**Ladron**	**79.76**	**50**	*e*P		**P**	**02 18 37.1**	**+0.8**
NPI	**North Pocatell**	**79.77**	**41**	*e*P		**P**	**02 18 36.2**	**+0.1**
Y22D	**IRIS PASSCAL I**	**79.77**	**51**	P		**P**	**02 18 37.5**	**+1.2**
	baz=244							
PTU	**Portage**	**79.78**	**41**	*e*P		**P**	**02 18 36.3**	**0.0**
CGJI	**Cibinong**	**79.82**	**266**	P		**P**	**02 18 37.9**	**+1.1**
	comp=Z,57nm,0.7s,comp=Z,7µm							
MNTX	**Cornudas Mount**	**79.92**	**53**	P		**P**	**02 18 37.9**	**+0.9**
	baz=245							
MNTX	**Cornudas Mount**	**79.92**	**53**	*e*P		**P**	**02 18 37.5**	**+0.5**
	comp=Z,127nm,1.5s							
MNTX				LR		LR		
	comp=Z,3µm,20.0s							
TCUT	**Toone Canyon**	**79.96**	**43**	*e*P		**P**	**02 18 37.8**	**+0.5**
	comp=Z,422nm,1.3s							
P18A	**Preston Nutter**	**79.99**	**44**	*e*P		**P**	**02 18 38.0**	**+0.5**
	comp=Z,89nm,1.4s							
BNM	**Barren Site**	**80.03**	**51**	*e*P		**P**	**02 18 38.7**	**+0.9**
MVCO	**Mesa Verde**	**80.05**	**47**	P		**P**	**02 18 38.0**	**+0.2**
	baz=242							
MVCO	**Mesa Verde**	**80.05**	**47**	*e*P		**P**	**02 18 38.8**	**+0.9**
	comp=Z,80nm,1.5s							
MVCO				LR		LR		
	comp=Z,6µm,20.0s							
LPM	**Los Pinos Moun**	**80.09**	**50**	*e*P		**P**	**02 18 38.8**	**+0.7**
HWUT	**Hardware Ranch**	**80.11**	**42**	*e*P		**P**	**02 18 37.4**	**-0.6**
	comp=Z,77nm,1.4s							
HWUT				LR		LR		
	comp=Z,8µm,21.0s							
MA2	**Magadan**	**80.11**	**342**	P		**P**	**02 18 37.2**	**-0.1**
	comp=Z,24nm,0.8s,baz=164,slow=7.7,SNR=5.4							
CAST	**Castle Rocks**	**80.11**	**9**	*e*P		**P**	**02 18 35.1**	**-2.2**
	comp=Z,55nm,0.8s							
NJ2	**Nanjing**	**80.29**	**307**	*e*P		**P**	**02 18 43.1**	**+4.2**
NJ2				pmax		pmax		
	comp=Z,29nm,0.6s							
NJ2				pmax		pmax		
	comp=Z,990nm,9.3s							
NJ2				LR		LR		
	comp=Z,3µm,20.7s							
NJ2				LR		LR		
	comp=Z,2µm,20.6s							
NJ2				LR		LR		
	comp=Z,1µm,21.0s							
TX31	**Lajitas Ar. Si**	**80.31**	**56**	*e*P		**P**	**02 18 39.9**	**+0.6**
TXAR	**Lajitas Array**	**80.31**	**56**	P		**P**	**02 18 39.5**	**+0.2**
	comp=Z,31nm,1.1s,baz=215,slow=4.1,SNR=115							
TXAR					PKKPbc	**PKKPbc**	**02 37 28.3**	**+5.6**
	comp=Z,0.4nm,0.8s,baz=116,slow=2.9,SNR=3.5							
TXAR				PKPPKP		**P'P'df**	**02 45 25.5**	**+0.5**
	comp=Z,0.6nm,1.0s,baz=122,slow=1.9,SNR=3.9							
TXAR				LR		LR	02 47 09.0	
	comp=Z,4µm,20.1s,baz=0.0,slow=30							
TLIG	**Tlapa**	**80.39**	**69**	*e*P		**P**	**02 18 41.2**	**+1.2**
	comp=Z,55nm,1.4s							
KTH	**Kantishna Hill**	**80.42**	**10**	*e*P		**P**	**02 18 37.6**	**-1.4**
	comp=Z,123nm,1.0s							
TRF	**Thorofare Moun**	**80.44**	**10**	*e*P		**P**	**02 18 38.1**	**-1.2**
	comp=Z,128nm,0.9s							
NEW	**Newport**	**80.44**	**34**	P		**P**	**02 18 39.4**	**0.0**
	comp=Z,22nm,1.2s,baz=262,slow=3.1,SNR=16							
NEW	**Newport**	**80.44**	**34**	P		**P**	**02 18 38.8**	**-0.6**
	baz=234,SNR=12							
NEW	**Newport**	**80.44**	**34**	*e*P		**P**	**02 18 38.8**	**-0.6**
NEW				pmax		pmax		
	comp=Z,66nm,1.5s							
NEW				MLR		MLR		
	comp=Z,4µm,20.0s							
NEW	**Newport**	**80.44**	**34**	*e*P		**P**	**02 18 38.8**	**-0.6**
	comp=Z,66nm,1.5s							
NEW				LR		LR		
	comp=Z,4µm,20.0s							
ANMO	**Albuquerque**	**80.50**	**50**	P		**P**	**02 18 40.9**	**+0.5**
	baz=244							
ANMO	**Albuquerque**	**80.50**	**50**	*e*P		**P**	**02 18 40.8**	**+0.5**
ANMO				pmax		pmax		
	comp=Z,112nm,1.5s							
ANMO				MLR		MLR		
	comp=Z,4µm,20.0s							
ANMO	**Albuquerque**	**80.50**	**50**	*e*P		**P**	**02 18 40.8**	**+0.5**
	comp=Z,112nm,1.5s							
ANMO				LR		LR		
	comp=Z,4µm,20.0s							
SKAG	**Skagway**	**80.52**	**18**	*e*P		**P**	**02 18 40.2**	**+0.7**
	comp=Z,115nm,1.2s							
KLR	**Kul'dur**	**80.55**	**327**	P		**P**	**02 18 40.5**	**+0.6**
	comp=Z,5.1nm,1.0s,baz=101,slow=1.7,SNR=12							
KLR				LR		LR	02 52 04.1	
	comp=Z,2µm,19.4s,baz=128,slow=34							
DHY	**Denali Highway**	**80.62**	**12**	*e*P		**P**	**02 18 39.5**	**-0.7**
	comp=Z,88nm,1.1s							
RND	**Reindeer**	**80.64**	**11**	*e*P		**P**	**02 18 39.6**	**-0.7**
RND				pmax		pmax		
	comp=Z,242nm,1.2s							
RND	**Reindeer**	**80.64**	**11**	*e*P		**P**	**02 18 39.6**	**-0.7**
	comp=Z,242nm,1.2s							
PAX	**Paxson**	**80.91**	**12**	*e*P		**P**	**02 18 40.9**	**-0.8**
PAX				pmax		pmax		
	comp=Z,114nm,1.2s							
PAX	**Paxson**	**80.91**	**12**	*e*P		**P**	**02 18 40.9**	**-0.8**
	comp=Z,114nm,1.2s							
BPAW	**Bear Paw Mtn.**	**80.92**	**10**	*e*P		**P**	**02 18 40.0**	**-1.6**
	comp=Z,60nm,1.1s							
MCK	**McKinley**	**80.93**	**11**	*e*P		**P**	**02 18 41.1**	**-0.6**
MCK				pmax		pmax		
	comp=Z,283nm,0.9s							
MCK	**McKinley**	**80.93**	**11**	*e*P		**P**	**02 18 41.1**	**-0.6**
	comp=Z,283nm,0.9s							
MCMT	**McKenzie Canyo**	**80.97**	**39**	P		**P**	**02 18 43.0**	**+0.4**
AHID	**Auburn Hatcher**	**80.99**	**41**	*e*P		**P**	**02 18 43.3**	**+0.6**
	comp=Z,100nm,1.3s							
AHID				LR		LR		
	comp=Z,4µm,22.0s							
CN2	**Changchun**	**81.15**	**320**	*e*P		**P**	**02 18 44.3**	**+1.0**
CN2				*e*pP		PcP	02 18 48.0	-1.5
CN2				*e*S		**S**	**02 28 52.6**	**+0.1**
CN2				pmax		pmax		
	comp=Z,30nm,0.8s							
CN2				pmax		pmax		
	comp=Z,200nm,4.0s							
CN2				LR		LR		
	comp=Z,1µm,20.0s							
CN2				LR		LR		
	comp=Z,2µm,20.0s							
CN2				LR		LR		
	comp=Z,2µm,19.0s							
KASI	**Kota Agung**	**81.24**	**267**	P		**P**	**02 18 44.9**	**+0.5**
	comp=Z,45nm,0.9s							
MENT	**Mentasta**	**81.25**	**13**	*e*P		**P**	**02 18 43.5**	**+0.1**
	comp=Z,109nm,1.0s							
DL2	**Dalian**	**81.27**	**314**	P		**P**	**02 18 47.4**	**+3.4**
DL2				pmax		pmax		
	comp=Z,73nm,0.9s							
SNY	**Shenyang**	**81.35**	**318**	⇑P		**P**	**02 18 45.8**	**+1.4**
SNY				S		**S**	**02 28 50.6**	**-4.0**
SNY				SKS		**SKSac**	**02 29 02.8**	**-0.3**
SNY				pmax		pmax		
	comp=Z,54nm,2.0s							
SNY				pmax		pmax		
	comp=Z,730nm,3.5s							
SNY				LR		LR		
	comp=Z,800nm,18.6s							
SNY				LR		LR		
	comp=Z,1µm,20.4s							
SNY				LR		LR		
	comp=Z,2µm,27.5s							
GZH	**Guangzhou**	**81.38**	**297**	P		**P**	**02 18 45.3**	**+0.4**
GZH				PP		**PP**	**02 21 54.8**	**+3.7**
GZH				S		**S**	**02 28 56.4**	**+0.8**
GZH				SS		**SS**	**02 34 18.1**	**+5.8**
GZH				pmax		pmax		
	comp=Z,540nm,5.2s							
GZH				LR		LR		
	comp=Z,2µm,30.6s							
MSO	**Missoula**	**81.40**	**37**	P		**P**	**02 18 44.2**	**-0.5**
	baz=237							
MSO	**Missoula**	**81.40**	**37**	*e*P		**P**	**02 18 43.9**	**-0.8**
	comp=Z,135nm,1.3s							
DLMT	**Dillon**	**81.41**	**38**	*e*P		**P**	**02 18 45.3**	**+0.5**
	comp=Z,124nm,1.4s							
REDW	**Red Top Meadow**	**81.45**	**41**	*e*P		**P**	**02 18 45.4**	**+0.2**
	comp=Z,163nm,1.4s							
DLBC	**Dease Lake**	**81.47**	**21**	P		**P**	**02 18 45.0**	**+0.3**
	comp=Z,18nm,0.9s,baz=210,slow=5.5,SNR=19							
DLBC	**Dease Lake**	**81.47**	**21**	*e*P		**P**	**02 18 44.9**	**+0.2**
	comp=Z,44nm,1.1s							
S22A	**4UR Ranch, Cre**	**81.47**	**47**	P		**P**	**02 18 46.7**	**+1.2**
	baz=243							
FXWY	**Fox Creek**	**81.48**	**40**	*e*P		**P**	**02 18 45.7**	**+0.3**
	comp=Z,125nm,1.4s							
BSMT	**Bassoo Peak**	**81.49**	**35**	P		**P**	**02 18 45.0**	**-0.3**
SNOW	**Snow King Moun**	**81.56**	**41**	*e*P		**P**	**02 18 46.2**	**+0.4**
	comp=Z,110nm,1.2s							
O20A	**White River Ci**	**81.59**	**45**	P		**P**	**02 18 46.3**	**+0.4**
	baz=242							
O20A	**White River Ci**	**81.59**	**45**	*e*P		**P**	**02 18 46.8**	**+0.8**
	comp=Z,149nm,1.6s							
MCID	**Moose Creek**	**81.66**	**40**	*e*P		**P**	**02 18 47.2**	**+0.9**
IMW	**Indian Meadow**	**81.66**	**40**	*e*P		**P**	**02 18 47.0**	**+0.6**
	comp=Z,124nm,1.3s							
MOOW	**Moose Ponds**	**81.71**	**40**	*e*P		**P**	**02 18 46.5**	**0.0**
	comp=Z,111nm,1.5s							
JTMT	**Jette**	**81.71**	**36**	*e*P		**P**	**02 18 45.6**	**-0.7**
LOHW	**Long Hollow**	**81.73**	**41**	*e*P		**P**	**02 18 46.8**	**+0.2**
	comp=Z,130nm,1.5s							
LRM	**Limekiln Ridge**	**81.73**	**38**	*e*P		**P**	**02 18 46.6**	**0.0**
SWMT	**Swartz Lake**	**81.74**	**36**	*e*P		**P**	**02 18 45.5**	**-1.0**
WRH	**Wood River Hil**	**81.76**	**11**	*e*P		**P**	**02 18 45.3**	**-0.7**
	comp=Z,362nm,1.0s							
DOT	**Dot Lake**	**81.81**	**13**	*e*P		**P**	**02 18 45.9**	**-0.4**
	comp=Z,391nm,1.0s							
MDSI	**Maura Dua**	**81.81**	**268**	P		**P**	**02 18 48.6**	**+1.2**
	comp=Z,26nm,1.0s							
BLMT	**Blacktail Moun**	**81.81**	**35**	*e*P		**P**	**02 18 46.7**	**-0.3**
MLY	**Manley**	**81.83**	**9**	*e*P		**P**	**02 18 45.5**	**-1.0**
	comp=Z,136nm,1.0s							
QLMT	**Earthquake Lak**	**81.84**	**39**	*e*P		**P**	**02 18 48.1**	**+1.0**
CHMT	**Chamberlain Mo**	**81.85**	**37**	*e*P		**P**	**02 18 46.6**	**-0.5**
FLWY	**Flagg Ranch**	**81.91**	**40**	*e*P		**P**	**02 18 48.4**	**+0.9**
	comp=Z,192nm,1.4s							
HDA	**Harding Lake**	**81.91**	**11**	*e*P		**P**	**02 18 46.3**	**-0.6**
	comp=Z,151nm,1.0s							
YBMT	**Yellow Bay**	**81.93**	**36**	*e*P		**P**	**02 18 47.2**	**-0.3**
CCB	**Clear Creek Bu**	**81.97**	**11**	*e*P		**P**	**02 18 46.4**	**-0.7**
	comp=Z,231nm,0.9s							
BW06	**Boulder Array**	**81.98**	**42**	P		**P**	**02 18 47.7**	**-0.4**
	baz=241							
BW06	**Boulder Array**	**81.98**	**42**	*e*P		**P**	**02 18 47.6**	**-0.4**
	comp=Z,146nm,1.5s							
BW06				LR		LR		
	comp=Z,7µm,20.0s							
PD31	**Pinedale Array**	**81.98**	**42**	*e*P		**P**	**02 18 47.8**	**-0.2**
PDAR	**Pinedale Array**	**81.98**	**42**	P		**P**	**02 18 47.6**	**-0.4**
	comp=Z,24nm,1.1s,baz=228,slow=3.6,SNR=97							
PDAR				PKKPbc		**PKKPbc**	**02 37 19.2**	**-0.6**
	comp=Z,0.9nm,0.8s,baz=92,slow=4.5,SNR=8.2							
PDAR				PKPPKP		**P'P'df**	**02 45 26.9**	**+6.2**
	comp=Z,1.3nm,1.0s,baz=83,slow=3.7,SNR=6.9							
PDAR				LR		LR	02 50 04.3	
	comp=Z,6µm,19.1s,baz=244,slow=32							
YFT	**Old Faithful**	**82.01**	**40**	*e*P		**P**	**02 18 50.0**	**+1.8**
	comp=Z,72nm,1.2s							
SMCO	**Snowmass**	**82.02**	**46**	*e*P		**P**	**02 18 49.0**	**+0.5**
	comp=Z,150nm,1.4s							
YMR	**Madison River**	**82.04**	**40**	*e*P		**P**	**02 18 49.3**	**+1.1**
	comp=Z,242nm,1.4s							
YMC	**Maple Creek**	**82.06**	**39**	*e*P		**P**	**02 18 49.3**	**+0.9**
YPM	**Purple Mountai**	**82.09**	**40**	*e*P		**P**	**02 18 49.7**	**+1.1**
BOZ	**Bozeman (W)**	**82.14**	**38**	P		**P**	**02 18 48.9**	**+0.2**
	baz=239							
BOZ	**Bozeman (W)**	**82.14**	**38**	*e*P		**P**	**02 18 48.9**	**+0.2**
BOZ				pmax		pmax		
	comp=Z,197nm,1.5s							
BOZ				MLR		MLR		
	comp=Z,6µm,20.0s							
BOZ	**Bozeman (W)**	**82.14**	**38**	*e*P		**P**	**02 18 48.9**	**+0.2**
	comp=Z,197nm,1.5s							
BOZ				LR		LR		
	comp=Z,6µm,20.0s							
H17A	**Grant Village**	**82.14**	**40**	P		**P**	**02 18 50.4**	**+1.5**
	baz=240							
H17A	**Grant Village**	**82.14**	**40**	*e*P		**P**	**02 18 50.1**	**+1.3**
	comp=Z,69nm,1.3s							
YHH	**Holmes Hill**	**82.17**	**40**	*e*P		**P**	**02 18 50.0**	**+0.9**
COLA	**College**	**82.17**	**11**	*e*P		**P**	**02 18 47.7**	**-0.4**
COLA				pmax		pmax		
	comp=Z,319nm,0.8s							
COLA				MLR		MLR		
	comp=Z,8µm,20.0s							
COLA	**College**	**82.17**	**11**	*e*P		**P**	**02 18 47.7**	**-0.4**
	comp=Z,319nm,0.8s							
COLA				LR		LR		
	comp=Z,8µm,20.0s							
MDM	**Murphy Dome**	**82.18**	**10**	*e*P		**P**	**02 18 47.6**	**-0.7**
	comp

Q24A	**Divide**	**83.19**	**47**	*e*P		**P**	**02 18 55.0**	**+0.5**
	comp=Z,204nm,1.4s								
ISCO	**Idaho Springs**	**83.23**	**46**	P		**P**	**02 18 54.7**	**0.0**
	baz=244								
ISCO	**Idaho Springs**	**83.23**	**46**	*e*P		**P**	**02 18 55.4**	**+0.7**
ISCO				pmax		pmax			
	comp=Z,89nm,1.5s								
ISCO				MLR		MLR			
	comp=Z,5µm,19.0s								
ISCO	**Idaho Springs**	**83.23**	**46**	*e*P		**P**	**02 18 55.4**	**+0.7**
	comp=Z,89nm,1.5s								
ISCO				LR		LR			
	comp=Z,5µm,19.0s								
933A	**Laredo**	**83.24**	**59**	P		**P**	**02 18 54.6**	**0.0**
	baz=249,SNR=14								
WHN	**Wuhan**	**83.24**	**304**	⇑P		**P**	**02 18 55.3**	**+0.8**
WHN				S		**S**	**02 29 19.3**	**+4.8**
WHN				pmax		pmax			
	comp=Z,1µm,4.2s								
WHN				LR		LR			
	comp=Z,3µm,24.0s								
WHN				LR		LR			
	comp=Z,2µm,19.1s								
WHN				LR		LR			
	comp=Z,3µm,23.4s								
RLMT	**Red Lodge**	**83.31**	**40**	P		**P**	**02 18 55.7**	**+0.8**
	baz=241								
RLMT	**Red Lodge**	**83.31**	**40**	*e*P		**P**	**02 18 55.5**	**+0.6**
	comp=Z,136nm,1.2s								
RLMT				LR		LR			
	comp=Z,3µm,20.0s								
TIA	**Tai'an**	**83.32**	**310**	*e*P		**P**	**02 18 55.8**	**+0.9**
TIA				S		**S**	**02 29 17.5**	**+2.4**
TIA				pmax		pmax			
	comp=Z,20nm,0.8s								
TIA				pmax		pmax			
	comp=Z,670nm,4.6s								
TIA				LR		LR			
	comp=Z,580nm,19.4s								
TIA				LR		LR			
	comp=Z,1µm,22.1s								
TIA				LR		LR			
	comp=Z,1µm,23.0s								
833A	**Chaparral WMA,**	**83.39**	**58**	P		**P**	**02 18 55.4**	**0.0**
	baz=249,SNR=15								
GCMT	**Greycliff**	**83.39**	**39**	*e*P		**P**	**02 18 56.0**	**+0.8**
EGAK	**Eagle**	**83.42**	**13**	*e*P		**P**	**02 18 54.3**	**-0.3**
	comp=Z,110nm,1.1s								
EGAK				LR		LR			
	comp=Z,7µm,22.0s								
N23A	**Red Feather La**	**83.49**	**45**	P		**P**	**02 18 56.3**	**+0.3**
	baz=244								
N23A	**Red Feather La**	**83.49**	**45**	*e*P		**P**	**02 18 56.5**	**+0.5**
	comp=Z,282nm,1.6s								
034A	**Hebbronville**	**83.53**	**60**	P		**P**	**02 18 56.7**	**+0.6**
	baz=249,SNR=14								
733A	**Divot King Ran**	**83.62**	**58**	P		**P**	**02 18 56.7**	**+0.1**
	baz=249,SNR=8.2								
JCT	**Junction City**	**83.84**	**56**	P		**P**	**02 18 57.1**	**-0.6**
	baz=248,SNR=11								
JCT	**Junction City**	**83.84**	**56**	*e*P		**P**	**02 18 57.4**	**-0.3**
JCT				pmax		pmax			
	comp=Z,34nm,1.0s								
JCT				MLR		MLR			
	comp=Z,4µm,20.0s								
JCT	**Junction City**	**83.84**	**56**	*e*P		**P**	**02 18 57.4**	**-0.3**
	comp=Z,34nm,1.0s								
JCT				LR		LR			
	comp=Z,4µm,20.0s								
934A	**Benavides**	**83.86**	**59**	P		**P**	**02 18 58.8**	**+1.0**
	baz=249,SNR=9.1								
K22A	**Casper**	**83.89**	**43**	P		**P**	**02 18 57.8**	**-0.1**
	baz=243								
K22A	**Casper**	**83.89**	**43**	*e*P		**P**	**02 18 57.8**	**-0.1**
	comp=Z,181nm,1.4s								
COLD	**Coldfoot**	**83.96**	**9**	*e*P		**P**	**02 18 57.7**	**+0.3**
	comp=Z,150nm,1.1s								
035A	**Encino**	**83.97**	**60**	P		**P**	**02 18 59.6**	**+1.2**
	baz=250								
633A	**Saathoff Ranch**	**83.98**	**57**	P		**P**	**02 18 58.8**	**+0.4**
	baz=249,SNR=29								
PHWY	**Pilot Hill**	**84.00**	**44**	*e*P		**P**	**02 18 58.6**	**0.0**
	comp=Z,135nm,1.6s								
834A	**Tilden**	**84.02**	**59**	P		**P**	**02 18 59.3**	**+0.7**
	baz=249,SNR=23								
AMTX	**Amarillo**	**84.05**	**52**	P		**P**	**02 18 58.7**	**0.0**
	baz=247								
AMTX	**Amarillo**	**84.05**	**52**	*e*P		**P**	**02 18 58.9**	**+0.2**
	comp=Z,171nm,1.1s								
FYU	**Fort Yukon**	**84.17**	**11**	*e*P		**P**	**02 18 58.3**	**-0.2**
	comp=Z,56nm,1.2s								
PMSA	**Palmer Station**	**84.20**	**156**		PFAKE		02 19 10.0	+11
PMSA				LR		LR			
	comp=Z,3µm,21.0s								
734A	**La Parita Cree**	**84.27**	**58**	P		**P**	**02 19 00.5**	**+0.6**
	baz=249								
533A	**Kerrville**	**84.31**	**57**	P		**P**	**02 18 59.8**	**-0.3**
	baz=249,SNR=37								
KVTX	**Kingsville**	**84.36**	**60**		PFAKE		02 19 10.0	+10
KVTX				LR		LR			
	comp=Z,2µm,19.0s								
BILL	**Bilibino**	**84.40**	**352**	*d i*	P	**P**	**02 18 59.4**	**-0.3**
BILL				*e*			02 22 14.7		
BILL				*e*	PPP	PPP	02 24 09.0		
BILL				pmax		pmax			
	comp=Z,151nm,2.5s								
BILL	**Bilibino**	**84.40**	**352**	*e*P		**P**	**02 18 59.3**	**-0.3**
	comp=Z,102nm,1.3s								
BILL				LR		LR			
	comp=Z,8µm,22.0s								
EGMT	**Eagleton**	**84.45**	**37**	P		**P**	**02 19 00.4**	**-0.1**
	baz=240,SNR=13								
EGMT	**Eagleton**	**84.45**	**37**	*e*P		**P**	**02 19 00.7**	**+0.3**
	comp=Z,114nm,1.1s								
EGMT				LR		LR			
	comp=Z,6µm,20.0s								
433A	**Art**	**84.51**	**56**	P		**P**	**02 19 00.7**	**-0.4**
	baz=249,SNR=54								
634A	**China Grove, S**	**84.62**	**58**	P		**P**	**02 19 02.1**	**+0.5**
	baz=249								
835A	**Beeville**	**84.67**	**59**	P		**P**	**02 19 02.0**	**+0.1**
	baz=250								
534A	**Blanco**	**84.75**	**57**	P		**P**	**02 19 02.3**	**0.0**
	baz=249,SNR=44								
ABTX	**Abilene, Hawle**	**84.76**	**54**	P		**P**	**02 19 02.4**	**+0.1**
	baz=248								
ABTX	**Abilene, Hawle**	**84.76**	**54**	*e*P		**P**	**02 19 02.3**	**+0.1**
	comp=Z,288nm,1.3s								
333A	**Richland Sprin**	**84.81**	**56**	P		**P**	**02 19 02.1**	**-0.5**
	baz=249,SNR=33								
735A	**Kenedy**	**84.88**	**58**	P		**P**	**02 19 03.7**	**+0.7**
	baz=250								
KSCO	**Kaye Shedlock'**	**85.00**	**47**	P		**P**	**02 19 03.8**	**+0.3**
	baz=246								
635A	**Leesville**	**85.10**	**58**	P		**P**	**02 19 04.8**	**+0.7**
	baz=250,SNR=7.9								
233A	**Rising Star**	**85.12**	**55**	P		**P**	**02 19 04.2**	**0.0**
	baz=249,SNR=23								
434A	**Burnet**	**85.19**	**56**	P		**P**	**02 19 04.5**	**0.0**
	baz=249,SNR=43								
133A	**Hamilton Ranch**	**85.32**	**55**	P		**P**	**02 19 05.0**	**-0.1**
	baz=249,SNR=50								
334A	**Lometa**	**85.40**	**56**	P		**P**	**02 19 05.6**	**0.0**
	baz=249,SNR=75								
535A	**Dale**	**85.48**	**57**	P		**P**	**02 19 06.2**	**+0.2**
	baz=250,SNR=8.8								
736A	**Circle Diamond**	**85.53**	**59**	P		**P**	**02 19 07.5**	**+1.3**
	baz=250,SNR=9.5								
BJT	**Baijiatuau**	**85.56**	**313**	*e*P		**P**	**02 19 07.5**	**+1.4**
BJT				pmax		pmax			
	comp=Z,207nm,1.5s								
BJT				MLR		MLR			
	comp=Z,1µm,20.0s								
BJT	**Baijiatuau**	**85.56**	**313**	*e*P		**P**	**02 19 07.5**	**+1.4**
	comp=Z,207nm,1.5s								
BJT				LR		LR			
	comp=Z,1µm,20.0s								
BJI	**Beijing**	**85.57**	**313**	P		**P**	**02 19 07.4**	**+1.3**
BJI				PP		**PP**	**02 22 24.9**	**-0.2**
BJI				SKS		**SKSac**	**02 29 27.8**	**-3.0**
BJI				S		**S**	**02 29 43.0**	**+5.7**
BJI				SS		**SS**	**02 35 13.6**	**-0.1**
BJI				pmax		pmax			
	comp=Z,30nm,1.8s								
BJI				pmax		pmax			
	comp=Z,2µm,4.5s								
BJI				LR		LR			
	comp=Z,750nm,24.6s								
BJI				LR		LR			
	comp=Z,1µm,26.4s								
Z33A	**Whitaker Ranch**	**85.69**	**54**	P		**P**	**02 19 06.9**	**-0.1**
	baz=249,SNR=46								
X32A	**Elmer**	**85.70**	**53**	P		**P**	**02 19 06.8**	**-0.1**
	baz=248								
636A	**Smothers Creek**	**85.72**	**58**	P		**P**	**02 19 08.1**	**+1.0**
	baz=250,SNR=13								
234A	**Clairette**	**85.72**	**55**	P		**P**	**02 19 07.4**	**+0.3**
	baz=249,SNR=43								
435B	**Jarrell**	**85.73**	**57**	P		**P**	**02 19 07.3**	**+0.1**
	baz=250,SNR=10								
536A	**Bastrop**	**85.91**	**58**	P		**P**	**02 19 08.7**	**+0.6**
	baz=250,SNR=11								
LAO	**LASA Array**	**85.92**	**39**	P		**P**	**02 19 08.4**	**+0.6**
	baz=243,SNR=51								
LAO	**LASA Array**	**85.92**	**39**	*e*P		**P**	**02 19 08.7**	**+0.8**
	comp=Z,257nm,1.2s								
LAO				LR		LR			
	comp=Z,3µm,21.0s								
134A	**White-Moore Ra**	**85.97**	**55**	P		**P**	**02 19 08.5**	**+0.2**
	baz=249,SNR=40								
W32A	**Sentinel**	**85.98**	**52**	P		**P**	**02 19 08.2**	**-0.1**
	baz=248								
J25A	**Sunshine Ranch**	**86.01**	**43**	P		**P**	**02 19 08.1**	**-0.3**
	baz=245								
335A	**Moody**	**86.04**	**56**	P		**P**	**02 19 08.8**	**+0.1**
	baz=250,SNR=15								
Y33A	**Hilltop Ranch,**	**86.06**	**53**	P		**P**	**02 19 08.6**	**-0.2**
	baz=249,SNR=20								
RSSD	**Black Hills**	**86.17**	**42**	P		**P**	**02 19 09.0**	**-0.4**
	baz=245								
RSSD	**Black Hills**	**86.17**	**42**	*e*P		**P**	**02 19 08.7**	**-0.6**
RSSD				pmax		pmax			
	comp=Z,125nm,1.3s								
RSSD	**Black Hills**	**86.17**	**42**	*e*P		**P**	**02 19 08.7**	**-0.6**
	comp=Z,125nm,1.3s								
OGNE	**Ogallala**	**86.20**	**46**	P		**P**	**02 19 08.8**	**-0.5**
	baz=246								
OGNE	**Ogallala**	**86.20**	**46**		PFAKE		02 19 20.0	+11
OGNE				LR		LR			
	comp=Z,4µm,22.0s								
WMOK	**Wichita Mounta**	**86.20**	**53**	*e*P		**P**	**02 19 08.1**	**-1.3**
WMOK				pmax		pmax			
	comp=Z,38nm,1.2s								
WMOK				MLR		MLR			
	comp=Z,3µm,22.0s								
WMOK	**Wichita Mounta**	**86.20**	**53**	*e*P		**P**	**02 19 08.1**	**-1.3**
	comp=Z,38nm,1.2s								
WMOK				LR		LR			
	comp=Z,3µm,22.0s								
WHTX	**Lake Whitney,**	**86.26**	**56**	P		**P**	**02 19 09.9**	**+0.1**
	baz=250,SNR=15								
WHTX	**Lake Whitney,**	**86.26**	**56**	*e*P		**P**	**02 19 09.9**	**+0.1**
	comp=Z,222nm,1.4s								
637A	**Eagle Lake**	**86.30**	**58**	P		**P**	**02 19 10.8**	**+0.8**
	baz=250,SNR=6.4								
I25A	**Rochford**	**86.33**	**43**	P		**P**	**02 19 09.6**	**-0.4**
	baz=245,SNR=35								
X33A	**Lawton**	**86.34**	**53**	P		**P**	**02 19 09.6**	**-0.5**
	baz=249								
V32A	**Arapaho**	**86.36**	**52**	P		**P**	**02 19 10.6**	**+0.4**
	baz=248								
436A	**Wall Ranch, Ga**	**86.37**	**57**	P		**P**	**02 19 10.8**	**+0.5**
	baz=250,SNR=19								
Z34A	**Collier Ranch,**	**86.38**	**54**	P		**P**	**02 19 10.4**	**+0.1**
	baz=249,SNR=6.9								
J26A	**Sides Ranch, S**	**86.46**	**43**	P		**P**	**02 19 10.4**	**-0.2**
	baz=245								
135A	**Vickery Place,**	**86.49**	**55**	P		**P**	**02 19 11.1**	**+0.2**
	baz=250,SNR=21								
537A	**Green Hill Far**	**86.53**	**58**	P		**P**	**02 19 12.0**	**+1.0**
	baz=250,SNR=13								
336A	**Riesel**	**86.54**	**56**	P		**P**	**02 19 11.1**	**0.0**
	baz=250,SNR=12								
W33A	**Caddo, Fort Co**	**86.59**	**52**	P		**P**	**02 19 11.9**	**+0.6**
	baz=249,SNR=7.0								
U32A	**Winter Ranch,**	**86.63**	**51**	P		**P**	**02 19 11.4**	**-0.1**
	baz=248								
738A	**Farr-Stevens R**	**86.66**	**59**	P		**P**	**02 19 10.2**	**-1.6**
	baz=251								
H25A	**Fruitdale**	**86.67**	**42**	P		**P**	**02 19 11.2**	**-0.4**
	baz=245,SNR=8.6								
Y34A	**Reagan Ranch,**	**86.71**	**54**	P		**P**	**02 19 11.6**	**-0.3**
	baz=249,SNR=16								
HKT	**Hockley**	**86.88**	**58**	*e*P		**P**	**02 19 13.3**	**+0.6**
HKT				pmax		pmax			
	comp=Z,145nm,1.6s								
HKT	**Hockley**	**86.88**	**58**	*e*P		**P**	**02 19 13.3**	**+0.6**
	comp=Z,144nm,1.6s								
X34A	**Smith Ranch, M**	**86.88**	**53**	P		**P**	**02 19 13.0**	**+0.2**
	baz=249,SNR=15								
Z35A	**Perchaven, San**	**86.89**	**54**	P		**P**	**02 19 12.6**	**-0.2**
	baz=250,SNR=11								
COCO	**West Island**	**86.90**	**258**		PFAKE		02 19 20.0	+6.7
COCO				LR		LR			
	comp=Z,2µm,20.0s								
I26A	**New Underwood**	**86.90**	**43**	P		**P**	**02 19 12.3**	**-0.5**
	baz=246								
437A	**Phantom Ranch,**	**86.92**	**57**	P		**P**	**02 19 13.6**	**+0.6**
	baz=250,SNR=7.5								
V33A	**Lossen Ranch,**	**86.97**	**52**	P		**P**	**02 19 13.0**	**-0.2**
	baz=249,SNR=7.0								
T32A	**Huddler Ranch,**	**86.98**	**50**	P		**P**	**02 19 13.1**	**-0.1**
	baz=248								
CBKS	**Cedar Bluff**	**86.99**	**49**	P		**P**	**02 19 12.3**	**-1.0**
	baz=248								
CBKS	**Cedar Bluff**	**86.99**	**49**		PFAKE		02 19 20.0	+6.7
CBKS				LR		LR			
	comp=Z,3µm,20.0s								
236A	**Katherine and**	**87.00**	**56**	P		**P**	**02 19 13.4**	**0.0**
	baz=250,SNR=13								
G25A	**Newell**	**87.03**	**42**	P		**P**	**02 19 13.1**	**-0.2**
	baz=245								
ENH	**Enshi**	**87.07**	**302**	*e*P		**P**	**02 19 14.9**	**+1.1**
	comp=Z,37nm,1.0s								
ENH				LR		LR			
	comp=Z,1µm,20.0s								
J27A	**Elkhorn Farm,**	**87.15**	**44**	P		**P**	**02 19 13.9**	**0.0**
	baz=246,SNR=18								
W34A	**Bridge Creek,**	**87.15**	**52**	P		**P**	**02 19 13.9**	**-0.2**
	baz=249								
W34A	**Bridge Creek,**	**87.15**	**52**	*e*P		**P**	**02 19 14.7**	**+0.7**
	comp=Z,98nm,1.4s								
136A	**Ennis**	**87.16**	**55**	P		**P**	**02 19 14.2**	**0.0**
	baz=250,SNR=11								
S32A	**Newby Ranch, P**	**87.16**	**50**	P		**P**	**02 19 13.9**	**-0.2**
	baz=248								
IPM	**Ipoh**	**87.18**	**275**	*e*P		**P**	**02 19 15.0**	**+0.3**
	comp=Z,30nm,0.9s								
H26A	**Fairpoint**	**87.20**	**42**	P		**P**	**02 19 14.1**	**-0.1**
	baz=246								
HIA	**Hailar**	**87.25**	**323**	*e*P		**P**	**02 19 14.3**	**+0.1**
HIA				pmax		pmax			
	comp=Z,53nm,1.2s								
HIA				MLR		MLR			
	comp=Z,3µm,22.0s								
HIA	**Hailar**	**87.25**	**323**	*e*P		**P**	**02 19 14.3**	**+0.1**
	comp=Z,53nm,1.2s								
HIA				LR		LR			
	comp=Z,3µm,22.0s								
538A	**Harpers Horsep**	**87.25**	**58**	P		**P**	**02 19 15.9**	**+1.3**
	baz=251								
Y35A	**Marietta**	**87.25**	**54**	P		**P**	**02 19 14.7**	**+0.2**
	baz=250								
337A	**Centerville**	**87.29**	**57**	P		**P**	**02 19 15.7**	**+1.0**
	baz=250,SNR=11								
F25A	**Bowman**	**87.31**	**41**	P		**P**	**02 19 14.7**	**+0.1**
	baz=245,SNR=5.5								
U33A	**Lingo Farm, Me**	**87.32**	**51**	P		**P**	**02 19 14.7**	**-0.1**
	baz=249								
TIY	**Taiyuan**	**87.36**	**310**	*e*P		**P**	**02 19 16.8**	**+1.7**
TIY				PP		**PP**	**02 22 40.3**	**+0.5**
TIY				SKS		**SKSac**	**02 29 44.0**	**+1.7**
TIY				S		**S**	**02 29 57.5**	**+2.3**
TIY				pmax		pmax			
	comp=Z,37nm,0.9s								
TIY				pmax		pmax			
	comp=Z,1µm,4.0s								
TIY				LR		LR			
	comp=Z,1µm,21.8s								
TIY				LR		LR			
	comp=Z,740nm,20.1s								
TIY				LR		LR			
	comp=Z,1µm,24.2s								
438A	**Sam Houston St**	**87.43**	**57**	P		**P**	**02 19 16.8**	**+1.3**
	baz=251,SNR=9.1								
I27A	**Quinn**	**87.45**	**43**	P		**P**	**02 19 15.1**	**-0.2**
	baz=246								
T33A	**Patterson Ranc**	**87.45**	**51**	P		**P**	**02 19 15.2**	**-0.3**
	baz=249								
X35A	**Drake**	**87.47**	**53**	P		**P**	**02 19 15.2**	**-0.5**
	baz=250,SNR=15								
Z36A	**Blue Ridge**	**87.51**	**55**	P		**P**	**02 19 15.8**	**0.0**
	baz=250,SNR=5.7								
V34A	**Guthrie**	**87.56**	**52**	P		**P**	**02 19 15.6**	**-0.4**
	baz=249								
V34A	**Guthrie**	**87.56**	**52**	*e*P		**P**	**02 19 17.3**	**+1.3**
	comp=Z,59nm,1.4s								
237A	**Washetta, Mont**	**87.58**	**56**	P		**P**	**02 19 16.6**	**+0.5**
	baz=250,SNR=13								
E25A	**Miller Ranch,**	**87.59**	**40**	P		**P**	**02 19 15.9**	**0.0**
	baz=245								
G26A	**Maurine**	**87.59**	**42**	P		**P**	**02 19 15.2**	**-0.8**
	baz=246,SNR=7.4								
R32A	**Long Quarter,**	**87.59**	**49**	P		**P**	**02 19 15.8**	**-0.4**
	baz=248,SNR=13								
H27A	**Howes**	**87.66**	**43**	P		**P**	**02 19 16.3**	**-0.1**
	baz=246								
J28A	**Allard Ranch,**	**87.73**	**44**	P		**P**	**02 19 16.5**	**-0.3**
	baz=247								
KULM	**Kulim**	**87.75**	**276**	*e*P		**P**	**02 19 15.7**	**-1.8**
	comp=Z,12nm,0.9s								
KULM				LR		LR			
	comp=Z,846nm,19.0s								
U34A	**Anderson Ranch**	**87.75**	**51**	P		**P**	**02 19 16.4**	**-0.5**
	baz=249,SNR=6.9								
U34A	**Anderson Ranch**	**87.75**	**51**	*e*P		**P**	**02 19 17.1**	**+0.1**
	comp=Z,28nm,0.9s								
338A	**Crockett**	**87.77**	**57**	P		**P**	**02 19 18.0**	**+0.9**
	baz=251,SNR=14								
F26A	**Lodgepole**	**87.78**	**41**	P		**P**	**02 19 16.7**	**-0.2**
	baz=246								
O31A	**Woolen Ranch,**	**87.79**	**47**	P		**P**	**02 19 16.4**	**-0.7**
	baz=248								
SKNT	**Sakolnakorn**	**87.81**	**288**	P		**P**	**02 19 19.3**	**+1.7**
	comp=Z,64nm,1.2s								
W35A	**Tecumseh**	**87.81**	**53**	P		**P**	**02 19 17.0**	**-0.2**
	baz=250,SNR=7.5								
S33A	**Kaszmaul Farm,**	**87.82**	**50**	P		**P**	**02 19 16.5**	**-0.8**
	baz=249								
137A	**Heron Place, G**	**87.82**	**56**	P		**P**	**02 19 18.0**	**+0.7**
	baz=250,SNR=5.8								
539A	**Cross D Ranch,**	**87.84**	**58**	P		**P**	**02 19 18.0**	**+0.5**
	baz=251								
Y36A	**Durant**	**87.84**	**54**	P		**P**	**02 19 17.5**	**+0.1**
	baz=250								
Q32A	**Meitler Ranch,**	**87.91**	**49**	P		**P**	**02 19 17.2**	**-0.5**
	baz=249,SNR=6.0								
D25A	**Fairfield**	**87.91**	**40**	P		**P**	**02 19 18.0**	**+0.5**
	baz=245,SNR=9.9								
DGMT	**Dagmar**	**87.94**	**38**	P		**P**	**02 19 17.9**	**+0.3**
	baz=244,SNR=23								
DGMT	**Dagmar**	**87.94**	**38**	*e*P		**P**	**02 19 18.1**	**+0.5**
	comp=Z,186nm,1.0s								
DGMT				LR		LR			
	comp=Z,9µm,20.0s								
I28A	**Midland**	**88.00**	**43**	P		**P**	**02 19 17.4**	**-0.6**
	baz=247,SNR=7.0								
X36A	**Centrahoma**	**88.01**	**53**	P		**P**	**02 19 17.9**	**-0.3**
	baz=250,SNR=5.1								
MAW	**Mawson**	**88.02**	**199**	P		**P**	**02 19 18.5**	**+0.9**
	comp=Z,66nm,0.8s,baz=120,slow=5.9,SNR=67								
MAW				LR		LR	02 57 19.6		
	comp=Z,5µm,18.4s,baz=114,slow=35								
MAW	**Mawson**	**88.02**	**199**	P		**P**	**02 19 18.7**	**+1.1**
	baz=88,SNR=52								
MAW	**Mawson**	**88.02**	**199**	*e*P		**P**	**02 19 18.7**	**+1.1**
	comp=Z,72nm,1.5s								
439A	**Center Grove,**	**88.02**	**57**	P		**P**	**02 19 18.6**	**+0.3**
	baz=251								
V35A	**Meyer Ranch, C**	**88.05**	**52**	P		**P**	**02 19 17.8**	**-0.6**
	baz=250								
G27A	**Dupree**	**88.06**	**42**	P		**P**	**02 19 17.4**	**-0.8**
	baz=246								
INK	**Inuvik**	**88.06**	**14**	P		**P**	**02 19 17.1**	**-0.5**
	comp=Z,46nm,1.0s,baz=214,slow=5.9,SNR=135								
INK				PKPPKP		**P'P'df**	**02 45 08.8**	**+1.6**	
	comp=Z,1.8nm,1.1s,baz=122,slow=2.2,SNR=3.6								
INK	**Inuvik**	**88.06**	**14**	*e*P		**P**	**02 19 17.1**	**-0.5**
INK				pmax		pmax			
	comp=Z,77nm,1.0s								
INK	**Inuvik**	**88.06**	**14**	*e*P		**P**	**02 19 17.1**	**-0.5**
	comp=Z,77nm,1.0s								
INK				P'P'			02 45 08.8		
R33A	**Olander Ranch,**	**88.09**	**50**	P		**P**	**02 19 18.5**	**0.0**
	baz=249,SNR=9.1								
P32A	**Huiting Farm,**	**88.11**	**48**	P		**P**	**02 19 18.2**	**-0.4**
	baz=248								
Z37A	**Pogue Cattle C**	**88.12**	**55**	P		**P**	**02 19 19.2**	**+0.5**
	baz=250								
238A	**Jacksonville**	**88.13**	**56**	P		**P**	**02 19 20.0**	**+1.2**
	baz=251,SNR=12								
E26A	**Carlson Angus**	**88.17**	**41**	P		**P**	**02 19 18.8**	**+0.1**
	baz=246								
C25A	**Freed Ranch, W**	**88.19**	**39**	P		**P**	**02 19 18.9**	**+0.1**
	baz=245								
F27A	**Lemmon**	**88.20**	**41**	P		**P**	**02 19 18.5**	**-0.4**
	baz=246,SNR=12								
GYA	**Guiyang**	**88.22**	**298**	⇑*i*	P	**P**	**02 19 19.4**	**-0.1**
GYA				PP		**PP**	**02 22 48.6**	**+1.6**
GYA				SKS		**SKSac**	**02 29 45.0**	**-3.0**
GYA				S		**S**	**02 30 01.4**	**-2.5**
GYA				SS		**SS**	**02 35 54.3**	**+0.9**
GYA				pmax		pmax			
	comp=Z,50nm,1.0s								
GYA				pmax		pmax			
	comp=Z,140nm,9.2s								
GYA				LR		LR			
	comp=Z,6µm,20.0s								
GYA				LR		LR			
	comp=Z,4µm,20.4s								
GYA				LR		LR			
	comp=Z,5µm,20.3s								
T34A	**McClaskey Farm**	**88.22**	**51**	P		**P**	**02 19 18.9**	**-0.3**
	baz=250,SNR=8.7								
CLNS	**Chul'man**	**88.24**	**331**	*e*P		**P**	**02 19 18.5**	**-0.3**
CLNS				pmax		pmax			
	comp=N,7.0nm,1.1s								
CLNS				pmax		pmax			
	comp=Z,17nm,1.1s								
CLNS				pmax		pmax			
	comp=E,9.0nm,1.1s								
N31A	**Bailey Ranch,**	**88.30**	**47**	P		**P**	**02 19 19.1**	**-0.3**
	baz=248								
W36A	**Wetumka**	**88.31**	**53**	P		**P**	**02 19 19.2**	**-0.3**
	baz=250,SNR=5.5								
J29A	**Okreek**	**88.33**	**44**	P		**P**	**02 19 18.8**	**-0.8**
	baz=247,SNR=11		

Z38A Mt. Pleasant 88.65 55 P P 02 19 21.8 +0.6
baz=251
239A Gary 88.66 56 P P 02 19 22.0 +0.7
baz=251,SNR=6.9
440A Kirbyville 88.67 58 P P 02 19 22.4 +1.0
baz=251
T35A Sooner Cattle 88.69 51 P P 02 19 21.2 -0.2
baz=250,SNR=10
P33A Williams Farm, 88.70 49 P P 02 19 20.9 -0.5
baz=249
E27A Carson 88.72 41 P P 02 19 20.6 -0.7
baz=246,SNR=9.7
V36A Jenks 88.74 52 P P 02 19 21.2 -0.5
baz=250,SNR=8.0
N32A Stulken Farm, 88.75 47 P P 02 19 23.6 +2.0
baz=249
PSI Prapat 88.76 273 P P 02 19 21.3 -1.0
comp=Z,10nm,1.1s,baz=218,slow=4.0,SNR=12
PSI Prapat 88.76 273 eP P 02 19 21.8 -0.6
PSI pmax pmax
comp=Z,23nm,1.1s
PSI Prapat 88.76 273 eP P 02 19 21.8 -0.6
comp=Z,23nm,1.1s
XAN Xi'an 88.77 306 P P 02 19 22.8 +0.9
XAN pP pP 02 19 29.3 +1.7
XAN PP **PP** 02 22 52.5 +1.3
XAN SKS **SKSac** 02 29 50.1 -0.7
XAN S **S** 02 30 13.4 +4.8
XAN pmax pmax
comp=Z,33nm,1.8s
XAN pmax pmax
comp=Z,490nm,5.1s
XAN LR LR
comp=Z,690nm,19.3s
XAN LR LR
comp=Z,890nm,20.3s
XAN LR LR
comp=Z,1μm,19.3s
X37A Clayton 88.78 54 P P 02 19 21.5 -0.4
baz=251
A25A Svangstu Ranch 88.79 38 P P 02 19 21.9 +0.3
baz=245,SNR=6.2
J30A Dallas 88.86 44 P P 02 19 21.4 -0.6
baz=248,SNR=11
H29A Onida 88.88 43 P P 02 19 21.3 -0.8
baz=247,SNR=9.9
L31A Butterfield Fa 88.88 46 P P 02 19 21.6 -0.6
baz=248
TUL1 Leonard 88.90 52 P P 02 19 22.0 -0.3
baz=250,SNR=10
TUL1 Leonard 88.90 52 eP P 02 19 22.6 +0.2
comp=Z,63nm,1.4s
W37B Quinton 88.92 53 P P 02 19 22.4 -0.1
baz=251
139A Bunkhouse Ranc 88.93 56 P P 02 19 23.3 +0.7
baz=251
340A Bronson 88.93 57 P P 02 19 23.1 +0.5
baz=252
C26A Wahner Farm, P 88.95 40 P P 02 19 22.5 +0.1
baz=246,SNR=11
F28A McLaughlin 88.97 42 P P 02 19 21.8 -0.7
baz=247
O33A Hebron 89.01 48 P P 02 19 22.2 -0.6
baz=249
D27A Center 89.01 40 P P 02 19 22.6 0.0
baz=246
Q34A Chapman 89.07 49 P P 02 19 22.8 -0.3
baz=250
Y38A Idabel 89.07 55 P P 02 19 22.7 -0.5
baz=251
BGNE Belgrade 89.08 47 P P 02 19 22.2 -1.0
baz=249
YAK Yakutsk 89.09 337 P P 02 19 21.7 -0.9
comp=Z,16nm,0.4s,baz=102,slow=2.2,SNR=3.8
YAK LR LR 02 55 16.7
comp=Z,1μm,20.1s,baz=108,slow=33
YAK Yakutsk 89.09 337 eP P 02 19 21.9 -0.7
YAK e*PP **sP** 02 19 36.3 +5.9
YAK e 02 22 51.1
YAK ePPP PPP 02 24 54.9
YAK eS **SKSac** 02 29 41.9 -9.4
YAK e **S** 02 30 09.1 -1.1
YAK eSS **SS** 02 35 55.7 -8.5
YAK eSSS SSS 02 39 33.0
YAK pmax pmax
comp=Z,33nm,1.1s
YAK pmax pmax
comp=N,6.0nm,1.0s
YAK pmax pmax
comp=E,8.0nm,1.4s
YAK pmax pmax
comp=Z,129nm,2.5s
YAK pmax pmax
comp=N,82nm,2.0s
YAK pmax pmax
comp=E,74nm,2.3s
YAK smax smax
comp=N,263nm,6.3s
YAK smax smax
comp=E,302nm,7.8s
YAK Yakutsk 89.09 337 eP P 02 19 22.2 -0.3
B26A Jensen Ranch, 89.09 39 P P 02 19 22.6 -0.4
baz=246
S35A Otter Creek Ra 89.10 51 P P 02 19 22.9 -0.4
baz=250,SNR=12
U36A Oologah 89.11 52 P P 02 19 23.0 -0.3
baz=250
K31A O'Neill 89.11 45 P P 02 19 22.7 -0.5
baz=248,SNR=8.6
HHC Hu-ho-hao-te 89.13 313 eP P 02 19 24.1 +0.6
HHC PP **PP** 02 22 56.0 +2.1
HHC SKS **SKSac** 02 29 52.8 0.0
HHC S **S** 02 30 10.8 -1.1
HHC SS **SS** 02 36 05.3 -0.8
HHC pmax pmax
comp=E,33nm,1.2s
HHC pmax pmax
comp=E,900nm,4.1s
HHC LR LR
comp=E,410nm,14.7s
HHC LR LR
comp=E,1μm,19.8s
HHC LR LR
comp=E,700nm,20.0s
I30A Oacoma 89.13 44 P P 02 19 22.3 -1.0
baz=248
T36A Boggs Farm, Ca 89.22 51 P P 02 19 23.4 -0.4
baz=250,SNR=7.2
X38A Whitesboro 89.23 54 P P 02 19 23.9 0.0
baz=251,SNR=17
240A Hunter Patters 89.23 57 P P 02 19 24.7 +0.7
baz=252
C27A Sayler Ranch, 89.27 40 P P 02 19 24.0 +0.1
baz=246,SNR=8.9
Z39A Irene McRaven, 89.28 55 P P 02 19 24.3 +0.1
baz=251
G29A Hoven 89.29 43 P P 02 19 22.8 -1.2
baz=248
441A DeRidder 89.30 58 P P 02 19 24.1 -0.2
baz=252
E28A Huff 89.33 41 P P 02 19 25.2 +1.1
baz=247
N33A J Bar K, Exete 89.34 47 P P 02 19 24.1 -0.2
baz=249
TRTT Trang 89.34 278 P P 02 19 26.7 +1.8
comp=E,32nm,1.4s,comp=E,1μm
J31A Geddes 89.36 45 P P 02 19 23.4 -1.0
baz=248
P34A Walnut Farm, R 89.37 49 P P 02 19 24.2 -0.3
baz=250,SNR=14
KSU1 Kansas State U 89.37 49 P P 02 19 24.3 -0.2
baz=250,SNR=6.7
KSU1 Kansas State U 89.37 49 eP P 02 19 24.6 +0.1
comp=E,21nm,0.8s
KSU1 LR LR
comp=Z,5μm,21.0s
V37A Hulbert 89.39 53 P P 02 19 24.1 -0.6
baz=251,SNR=20
L32A Elgin 89.40 46 P P 02 19 24.0 -0.6
baz=249
PLCA Paso Flores 89.41 132 P P 02 19 26.2 +1.3
comp=Z,16nm,1.1s,baz=274,slow=5.1,SNR=13
PLCA LR LR 02 51 38.8
comp=Z,3μm,20.1s,baz=266,slow=30
PLCA Paso Flores 89.41 132 eP P 02 19 27.3 +2.4
comp=Z,84nm,1.5s
R35A Emporia Munici 89.41 50 P P 02 19 24.2 -0.5
baz=250,SNR=8.0
A26A Wade Farm, Ken 89.42 39 P P 02 19 24.4 -0.1
baz=246
341A Kurthwood 89.49 57 P P 02 19 26.4 +1.1
baz=252
Y39A Lockesburg 89.57 55 P P 02 19 25.3 -0.3
baz=251
140A Cam and Jess, 89.57 56 P P 02 19 26.3 +0.7
baz=252,SNR=6.0
U37A Salina 89.58 52 P P 02 19 25.0 -0.6
baz=251,SNR=18
F29A Eureka 89.59 42 P P 02 19 24.6 -0.8
baz=248
W38A Poteau 89.60 54 P P 02 19 26.2 +0.5
baz=251,SNR=6.2
SUSD Miller 89.64 44 P P 02 19 24.9 -0.7
baz=248
D28A Regan 89.65 41 P P 02 19 25.1 -0.5
baz=247
S36A Lake Cedric, C 89.66 51 P P 02 19 25.6 -0.3
baz=250,SNR=17
K32A Verdigre 89.66 45 P P 02 19 25.0 -0.8
baz=249
GSI Gunungsitoli 89.67 271 P P 02 19 28.3 +1.8
comp=Z,72nm,1.1s,comp=Z,1μm
O34A Beatrice 89.68 48 P P 02 19 25.2 -0.7
baz=250
B27A Peters Farms, 89.70 39 P P 02 19 25.6 -0.2
baz=246
Q35A Mercer Eighty, 89.71 50 P P 02 19 25.7 -0.4
baz=250
X39A Fountain Ranch 89.74 54 P P 02 19 26.3 0.0
baz=251
I31A Royce, Wessing 89.77 44 P P 02 19 25.8 -0.5
baz=248
G30A Faulkton 89.77 43 P P 02 19 24.9 -1.3
baz=248
M33A Taylor Creek F 89.81 47 P P 02 19 26.1 -0.5
baz=249
YKA Yellowknife Ar 89.86 23 P P 02 19 26.0 -0.2
comp=Z,29nm,0.9s,baz=238,slow=4.4,SNR=337
YKA PKKPbc **PKKPdf** 02 36 58.5 +1.1
comp=Z,0.2nm,0.6s,baz=44,slow=1.9,SNR=7.3
YKA PKPPKP **P'P'df** 02 45 04.1 -0.3
comp=Z,0.6nm,1.0s,baz=56,slow=2.6,SNR=3.9
YKA Yellowknife Ar 89.86 23 P P 02 19 26.0 -0.2
YKB5 Yellowknife Ar 89.86 23 eP P 02 19 24.6 -1.6
YKW3 Yellowknife Ar 89.89 23 eP P 02 19 26.1 -0.3
comp=Z,54nm,1.1s
442A Mamou 89.91 58 P P 02 19 26.4 -0.7
baz=252
Z40A Long Farm, Mag 89.91 56 P P 02 19 27.4 +0.3
baz=252,SNR=5.2
241A Mo Tay, Goldon 89.91 57 P P 02 19 28.3 +1.2
baz=252
R36A Gordon, Harris 89.92 50 P P 02 19 26.4 -0.7
baz=250,SNR=9.0
A27A Ledoux Ranch, 89.93 39 P P 02 19 26.6 -0.2
baz=247
V38A Canehill 89.94 53 P P 02 19 27.1 -0.1
baz=251,SNR=17
P35A Duane Minner, 89.95 49 P P 02 19 26.9 -0.3
baz=250,SNR=9.4
C28A Hausauer Farms 89.96 40 P P 02 19 26.7 -0.4
baz=247
T37A Cheneyville 18 89.96 51 P P 02 19 27.0 -0.3
baz=251,SNR=26
L33A Hoskins 89.97 46 P P 02 19 28.0 +0.8
baz=249
H31A Wolsey 89.97 44 P P 02 19 26.4 -0.9
baz=249
E29A Napoleon 89.99 41 P P 02 19 25.8 -1.4
baz=248
J32A Parkston 90.00 45 P P 02 19 26.0 -1.4
baz=249
N34A Lincoln 90.05 48 P P 02 19 29.5 +1.9
baz=250
KCSI Kotacane, Aceh 90.06 274 P P 02 19 29.0 +0.7
comp=Z,46nm,0.9s,comp=Z,806nm
141A Papa Simpson, 90.10 56 P P 02 19 28.7 +0.7
baz=252
F30A Leola 90.11 42 P P 02 19 28.4 +0.5
baz=248
BTO Baotou 90.14 312 eP P 02 19 29.3 +1.1
U38A Gravette 90.15 52 P P 02 19 27.5 -0.7
baz=251,SNR=8.4
Q36A Arnold C. Orve 90.17 50 P P 02 19 27.5 -0.8
baz=250,SNR=6.1
MIAR Mount Ida 90.17 54 P P 02 19 28.4 +0.1
baz=252
MIAR Mount Ida 90.17 54 eP P 02 19 28.8 +0.4
MIAR pmax pmax
comp=Z,23nm,1.3s
MIAR MLR MLR
comp=Z,4μm,21.0s
MIAR Mount Ida 90.17 54 eP P 02 19 28.8 +0.4
comp=Z,23nm,1.3s
MIAR LR LR
comp=Z,4μm,21.0s
543A St. Martinvill 90.19 59 P P 02 19 29.5 +1.0
baz=252
342A Flagon Creek P 90.19 58 P P 02 19 30.1 +1.6
baz=252
D29A Pettibone, Tap 90.21 41 P P 02 19 27.2 -1.1
baz=248
W39A Magazine 90.21 54 P P 02 19 28.4 -0.1
baz=252,SNR=7.6
M34A Aspy Farms, Fr 90.22 47 P P 02 19 27.8 -0.6
baz=250
Y40A Okoloma 90.24 55 P P 02 19 29.0 +0.3
baz=252
S37A Fort Scott 90.24 51 P P 02 19 27.9 -0.7
baz=251,SNR=14
B28A Dugan Ranch, T 90.26 39 P P 02 19 28.1 -0.4
baz=247
WLAR White Oak Lake 90.27 55 eP P 02 19 30.1 +1.3
comp=Z,100nm,1.2s
O35A Humboldt 90.28 48 P P 02 19 28.7 0.0
baz=250
T38A Diamond 90.41 52 P P 02 19 28.8 -0.6
baz=251,SNR=20
R37A Teagarden Farm 90.42 50 P P 02 19 28.6 -0.8
baz=251,SNR=12
G31A Conde 90.42 43 P P 02 19 28.1 -1.2
baz=249
E30A Jud 90.44 42 P P 02 19 28.5 -0.8
baz=248
HHAR Hobbs 90.44 53 eP P 02 19 30.0 +0.4
comp=Z,19nm,0.9s
443A Delano Plantat 90.45 58 P P 02 19 28.2 -1.5
baz=253
PBKT Sadao Pong 90.47 287 P P 02 19 31.8 +1.7
comp=Z,17nm,2.0s
TEIG Tepich 90.48 69 eP P 02 19 32.1 +2.0
comp=Z,39nm,1.2s
TEIG LR LR
comp=Z,592nm,22.0s
I32A Kaley and Nic 90.49 44 P P 02 19 29.0 -0.7
baz=249
A28A Rude Farm, Bot 90.50 39 P P 02 19 29.7 +0.1
baz=247
MDND Maddock 90.50 40 P P 02 19 28.8 -0.8
baz=248
MDND Maddock 90.50 40 eP P 02 19 29.9 +0.3
comp=Z,109nm,1.3s
V39A Pettigrew 90.52 53 P P 02 19 29.5 -0.6
baz=252,SNR=15
242A Grayson 90.54 57 P P 02 19 31.0 +0.9
baz=252
TPTI 90.56 273 P P 02 19 31.7 +1.1
comp=Z,57nm,1.0s,comp=Z,1μm
P36A Good Intent, A 90.57 49 P P 02 19 29.5 -0.6
baz=251,SNR=16
F31A Hecla 90.63 42 P P 02 19 29.0 -1.2
baz=249,SNR=5.3
N35A Tabor 90.67 48 P P 02 19 29.8 -0.7
baz=250
H32A Carlson Farm, 90.68 44 P P 02 19 29.9 -0.7
baz=249
X40A Basin Creek Fa 90.73 55 P P 02 19 30.3 -0.7
baz=252
D30A Buchanan 90.76 41 P P 02 19 29.9 -0.9
baz=248
W40A Ferguson Farm, 90.77 54 P P 02 19 31.5 +0.4
baz=252
U39A Green Forest 90.82 53 P P 02 19 30.6 -0.8
baz=252,SNR=11
M35A Neola 90.83 47 P P 02 19 30.7 -0.6
baz=250
142A Monroe 90.85 57 P P 02 19 30.8 -0.7
baz=252
Q37A Longview Farm, 90.88 50 P P 02 19 31.3 -0.3
baz=251
S38A Stockton 90.89 51 P P 02 19 31.0 -0.6
baz=252,SNR=6.3
B29A Wagenman Farm, 90.89 40 P P 02 19 30.7 -0.6
baz=248
O36A Bolckow 90.91 49 P P 02 19 32.3 +0.6
baz=251
JTS JuntasAbangare 90.92 80 eP P 02 19 34.3 +2.0
JTS pmax pmax
comp=Z,86nm,1.3s
JTS MLR MLR
comp=Z,3μm,20.0s
JTS JuntasAbangare 90.92 80 eP P 02 19 34.3 +2.0
comp=Z,86nm,1.3s
JTS LR LR
comp=Z,3μm,20.0s
ECSD EROS Data Cent 90.97 45 P P 02 19 30.8 -1.0
baz=250,SNR=14
ECSD EROS Data Cent 90.97 45 eP P 02 19 31.2 -0.7
comp=Z,52nm,1.4s
ECSD LR LR
comp=Z,7μm,22.0s
R38A Fenwick Farm, 91.07 51 P P 02 19 31.6 -0.8
baz=252,SNR=25
T39A Clever 91.10 52 P P 02 19 32.1 -0.5
baz=252,SNR=9.9
E31A Nome 91.11 42 P P 02 19 31.4 -1.1
baz=249
A29A Manning Farm, 91.14 39 P P 02 19 32.5 0.0
baz=248
N36A Muff Farm, Cla 91.14 48 P P 02 19 32.7 0.0
baz=251
V40A Witts Springs 91.15 53 P P 02 19 32.7 -0.2
baz=252
C30A Mose, Pekin 91.15 41 P P 02 19 31.4 -1.2
baz=249
UTTA Uttaradit 91.16 288 P P 02 19 43.0 +10
P37A Lathrop 91.19 49 P P 02 19 32.2 -0.8
baz=251,SNR=23
H33A Prehn Over Nor 91.20 44 P P 02 19 31.8 -1.2
baz=250
UALR University of 91.21 54 eP P 02 19 34.1 +1.0
comp=Z,33nm,1.0s
KMI Kunming 91.21 296 P P 02 19 33.3 -0.4
KMI pP PcP 02 19 36.6 +1.9
KMI sP pP 02 19 38.0 -1.4
KMI PP **PP** 02 23 10.1 -0.9
KMI SKS **SKSac** 02 30 03.5 -2.3
KMI S **S** 02 30 29.5 -2.5
KMI pmax pmax
comp=Z,15nm,0.5s
KMI pmax pmax
comp=Z,240nm,5.3s
KMI LR LR
comp=Z,620nm,20.0s
KMI LR LR
comp=Z,860nm,19.2s
KMI LR LR
comp=Z,1μm,18.4s
444A Pine Grove 91.29 59 P P 02 19 32.6 -1.0
baz=253
U40A Yellville 91.29 53 P P 02 19 33.0 -0.5
baz=252
X301 Greenbrier Sit 91.30 54 eP P 02 19 34.2 +0.7
comp=Z,40nm,1.1s
143A Socs Landing, 91.34 57 P P 02 19 34.2 +0.4
baz=253
S39A Bolivar 91.35 51 P P 02 19 33.4 -0.4
baz=252
X201 Greenbrier Sit 91.35 54 eP P 02 19 34.3 +0.5
comp=Z,38nm,1.0s
Y42A Garnett, Star 91.36 55 P P 02 19 34.9 +1.0
baz=253
D31A Mcclaflin, Tow 91.39 41 P P 02 19 32.6 -1.2
baz=249
CCAR Cane Creek 91.40 55 eP P 02 19 36.1 +2.0
comp=Z,142nm,1.3s
W41A Tony Mavity, V 91.40 54 P P 02 19 34.8 +0.7
baz=252
W41B Gary Mavity, V 91.40 54 P P 02 19 34.6 +0.6
baz=252
WHAR Wooly Hollow 91.41 54 eP P 02 19 34.6 +0.5
comp=Z,42nm,1.1s
344A Westbrook Farm 91.52 58 P P 02 19 35.8 +1.1
baz=253
B30A Myrvik Farm, E 91.52 40 P P 02 19 32.8 -1.5
baz=249
O37A Wolven Farm, M 91.52 49 P P 02 19 34.3 -0.2
baz=251
Q38A Cooks Store, C 91.53 50 P P 02 19 34.0 -0.6
baz=252
K35A Storm Lake 91.57 46 P P 02 19 33.4 -1.3
baz=251
G33A Ortonville 91.58 43 P P 02 19 33.2 -1.5
baz=250
C31A Landman Farms, 91.65 41 P P 02 19 33.6 -1.3
baz=249
E32A Braaten, Kindr 91.65 42 P P 02 19 34.1 -0.8
baz=250
N37A Lee Faris, Mou 91.66 48 P P 02 19 34.9 -0.3
baz=251
A30A Hoffart Farm, 91.71 40 P P 02 19 34.5 -0.7
baz=249
244A Avery, Jackson 91.72 57 P P 02 19 36.8 +1.2
baz=253
R39A Chumby, Stover 91.75 51 P P 02 19 35.0 -0.6
baz=252
L36A Harm Buss Farm 91.77 47 P P 02 19 34.7 -0.9
baz=251
T40A Mansfield 91.79 52 P P 02 19 35.4 -0.4
baz=252
P38A Dawn 91.80 49 P P 02 19 34.7 -1.0
baz=252
J35A Milford 91.80 46 P P 02 19 34.4 -1.3
baz=251
FFC Flin Flon 91.83 33 eP P 02 19 34.7 -0.9
FFC pmax pmax
comp=Z,46nm,1.3s
FFC MLR MLR
comp=Z,3μm,20.0s
FFC Flin Flon 91.83 33 eP P 02 19 34.7 -0.9
comp=Z,46nm,1.3s
FFC LR LR
comp=Z,3μm,20.0s
H34A Spellman Lake, 91.85 44 P P 02 19 34.8 -1.1
baz=250
D32A Dogwood Acres, 91.88 42 P P 02 19 34.5 -1.4
baz=250
F33A 5 Mile Ranch, 91.90 43 P P 02 19 34.8 -1.4
baz=250
VBMS Vicksburg 91.91 57 P P 02 19 37.5 +1.0
baz=253
B31A Greenbush Farm 91.93 40 P P 02 19 35.3 -0.9
baz=249
S40A Lebanon 91.94 52 P P 02 19 36.3 -0.3
baz=252
CD2 Chengdu 91.97 301 P P 02 19 35.8 -1.1
CD2 sP pP 02 19 40.5 -2.1
CD2 PP **PP** 02 23 15.0 -1.7
CD2 SKS **SKSac** 02 30 07.4 -2.1
CD2 S **S** 02 30 37.8 -0.5
CD2 sS ScS 02 30 43.6 +2.9
CD2 SS **SS** 02 36 47.5 +0.1
CD2 pmax pmax
comp=Z,10.0nm,0.5s
CD2 pmax pmax
comp=Z,400nm,6.0s
CD2 LR LR
comp=Z,990nm,22.8s
CD2 LR LR
comp=Z,930nm,20.4s
CIT Chita 91.98 324 eP P 02 19 35.4 -1.0
CIT e 02 19 51.4
M37A Trindle Farm, 91.98 48 P P 02 19 36.1 -0.5
baz=252
O38A Galt 91.99 49 P P 02 19 35.2 -1.5
baz=252
Q39A Willow Grove F 92.03 50 P P 02 19 35.9 -0.9
baz=252
345A Thompson Farm, 92.05 58 P P 02 19 35.6 -1.6
baz=254
Y43A Makayla and Ka 92.07 56 P P 02 19 37.6 +0.4
baz=253

K36A	**Gilmore City**	**92.09**	**46**	P		**P**		**02 19 36.7**	**-0.4**
	baz=251								
144A	**Alexander Plac**	**92.11**	**57**	P		**P**		**02 19 37.6**	**+0.2**
	baz=253								
I35A	**Creekview Farm**	**92.12**	**45**	P		**P**		**02 19 35.6**	**-1.6**
	baz=251								
G34A	**Benson**	**92.13**	**44**	P		**P**		**02 19 36.3**	**-0.9**
	baz=251								
KHLT	**Khaolaem Dam**	**92.21**	**285**	P		**P**		**02 19 40.4**	**+2.2**
	comp=Z,9.8nm,0.9s,comp=Z,202nm								
LAMP	**Lampang**	**92.21**	**288**	P		P		02 19 46.1	+7.9
	comp=Z,5.5nm,0.9s,comp=Z,188nm								
E33A	**Westby DABS, E**	**92.31**	**42**	P		**P**		**02 19 36.9**	**-1.1**
	baz=250								
R40A	**Maddies Statio**	**92.33**	**51**	P		**P**		**02 19 37.5**	**-0.7**
	baz=252								
245A	**Little AP, Sta**	**92.36**	**58**	P		**P**		**02 19 39.4**	**+0.8**
	baz=254								
N38A	**Joes South For**	**92.38**	**48**	P		**P**		**02 19 37.8**	**-0.7**
	baz=252								
J36A	**Seneca 1, Swea**	**92.39**	**46**	P		**P**		**02 19 37.9**	**-0.6**
	baz=251								
A31A	**Linda, St. Vin**	**92.40**	**40**	P		**P**		**02 19 37.8**	**-0.5**
	baz=250								
L37A	**Phoenix Point,**	**92.42**	**47**	P		**P**		**02 19 38.1**	**-0.5**
	baz=252								
C32A	**Crookston**	**92.43**	**41**	P		**P**		**02 19 37.4**	**-1.1**
	baz=250								
H35A	**Sunnyside Ranc**	**92.50**	**44**	P		**P**		**02 19 38.4**	**-0.5**
	baz=251								
145A	**Houston Renfro**	**92.50**	**57**	P		**P**		**02 19 39.7**	**+0.5**
	baz=254								
346A	**Big Creek Wild**	**92.54**	**58**	P		**P**		**02 19 40.4**	**+1.1**
	baz=254								
M38A	**Pleasantville**	**92.59**	**48**	P		**P**		**02 19 38.2**	**-1.3**
	baz=252								
B32A	**Ashes, Strandq**	**92.62**	**40**	P		**P**		**02 19 38.1**	**-1.3**
	baz=250								
D33A	**AnnSam, Waubun**	**92.63**	**42**	P		**P**		**02 19 38.1**	**-1.4**
	baz=250								
Q40A	**Laux Farm, Aux**	**92.68**	**50**	P		**P**		**02 19 39.0**	**-0.8**
	baz=253								
K37A	**Belmond**	**92.70**	**46**	P		**P**		**02 19 38.9**	**-1.0**
	baz=252								
O39A	**Kirksville**	**92.71**	**49**	P		**P**		**02 19 38.8**	**-1.2**
	baz=252								
SCIA	**State Center**	**92.73**	**47**	PFAKE				02 19 50.0	+10
SCIA				LR		LR			
	comp=Z,5μm,21.0s								
SYO	**Syowa Base**	**92.79**	**191**⇑	*e*P		**P**		**02 19 37.5**	**-2.4**
SYO	**Syowa Base**	**92.79**	**191**⇓	*i*PcP		**P**		**02 19 38.6**	**-1.3**
SYO	**Syowa Base**	**92.79**	**191**⇑	*e*pP		**P**		**02 19 40.8**	**+0.9**
CM01	**Chiang Mai Arr**	**92.80**	**288**	*e*P		**P**		**02 19 41.1**	**+0.2**
A32A	**Rocking H Ranc**	**92.82**	**40**	P		**P**		**02 19 39.4**	**-0.9**
	baz=250								
NNA	**Nana**	**92.83**	**103**	PFAKE				02 19 50.0	+8.8
NNA				LR		LR			
	comp=Z,658nm,21.0s								
CMAR	**Chiang Mai Arr**	**92.83**	**288**	P		**P**		**02 19 41.5**	**+0.5**
	comp=Z,1.8nm,0.7s,baz=101,slow=2.9,SNR=18								
CMAR				PP		PP		02 23 35.6	+12
	comp=Z,0.6nm,0.4s,baz=98,slow=5.4,SNR=4.6								
CMAR				PKiKP		**PKiKP**		**02 24 30.1**	**+1.0**
	comp=Z,1.9nm,0.8s,baz=51,slow=0.5,SNR=7.6								
CMAR				PKKPbc		**PKKPbc**		**02 36 54.1**	**+2.2**
	comp=Z,0.5nm,0.4s,baz=278,slow=4.5,SNR=5.7								
CMAR				LR		LR		03 01 03.1	
	comp=Z,595nm,18.7s,baz=108,slow=35								
I36A	**Fitzsimmons Fa**	**92.83**	**45**	P		**P**		**02 19 39.7**	**-0.8**
	baz=252								
P40A	**Paris**	**92.86**	**50**	P		**P**		**02 19 39.6**	**-1.1**
	baz=253								
E34A	**Wadena**	**92.86**	**43**	P		**P**		**02 19 39.7**	**-0.9**
	baz=251								
EFI	**East Falkland**	**92.86**	**146**	PFAKE				02 19 50.0	+9.5
EFI				LR		LR			
	comp=Z,4μm,21.0s								
C33A	**Trail**	**92.88**	**41**	P		**P**		**02 19 39.3**	**-1.4**
	baz=251								
G35A	**Watkins**	**92.90**	**44**	P		**P**		**02 19 40.2**	**-0.6**
	baz=251								
CMMT	**Chiang Mai**	**92.91**	**289**	P		**P**		**02 19 42.7**	**+1.3**
	comp=Z,26nm,1.6s,comp=Z,453nm								
CHTO	**Chiang Mai**	**92.92**	**289**	P		**P**		**02 19 42.8**	**+1.4**
	comp=Z,92nm,1.2s,comp=Z,2μm								
CHTO	**Chiang Mai**	**92.92**	**289**	*e*P		**P**		**02 19 42.4**	**+0.9**
CHTO				pmax		pmax			
	comp=Z,14nm,1.1s								
CHTO				MLR		MLR			
	comp=Z,921nm,22.0s								
CHTO	**Chiang Mai**	**92.92**	**289**	*e*P		**P**		**02 19 42.4**	**+0.9**
	comp=Z,14nm,1.1s								
CHTO				LR		LR			
	comp=Z,921nm,22.0s								
CHTO	**Chiang Mai**	**92.92**	**289**	P		**P**		**02 19 41.6**	**+0.1**
	SNR=7.6								
J37A	**Redenius Farm,**	**92.93**	**46**	P		**P**		**02 19 40.6**	**-0.4**
	baz=252								
N39A	**Derby Farms, D**	**92.93**	**49**	P		**P**		**02 19 40.2**	**-0.8**
	baz=252								
VNA3	**Neumayer Olymp**	**92.97**	**175**	P		**P**		**02 19 41.6**	**+0.8**
L38A	**Oak Wood Farm,**	**92.99**	**47**	P		**P**		**02 19 40.8**	**-0.4**
	baz=252								
AGMN	**Agassiz Nation**	**93.01**	**41**	P		**P**		**02 19 39.7**	**-1.5**
	baz=250								
AGMN	**Agassiz Nation**	**93.01**	**41**	*e*P		**P**		**02 19 40.2**	**-1.0**
	comp=Z,64nm,1.4s								
AGMN				LR		LR			
	comp=Z,6μm,20.0s								
D34A	**Park Rapids**	**93.03**	**42**	P		**P**		**02 19 40.1**	**-1.3**
	baz=251								
SNAA	**Sanae**	**93.04**	**177**	P		**P**		**02 19 41.9**	**+0.8**
SNAA	**Sanae**	**93.04**	**177**	*e*P		**P**		**02 19 41.1**	**0.0**
SNAA	**Sanae**	**93.04**	**177**	*e*P		**P**		**02 19 41.1**	**0.0**
	comp=Z,9μm,1.5s								
F35A	**Swanville**	**93.04**	**43**	P		**P**		**02 19 40.4**	**-1.0**
	baz=251								
H36A	**Jessenland, He**	**93.07**	**45**	P		**P**		**02 19 41.0**	**-0.6**
	baz=252								
CMAI	**Chiengmai2**	**93.11**	**290**	P		P		02 19 48.5	+6.0
	comp=Z,9.9nm,1.8s								
O40A	**La Belle**	**93.16**	**49**	P		**P**		**02 19 41.3**	**-0.8**
	baz=253								
B33A	**Robert and Kas**	**93.17**	**41**	P		**P**		**02 19 40.8**	**-1.1**
	baz=251								
LCO	**Las Campanas**	**93.19**	**121**	*e*P		**P**		**02 19 43.9**	**+0.9**
	comp=Z,66nm,1.1s								
LCO				LR		LR			
	comp=Z,3μm,19.0s								
146A	**Union**	**93.22**	**57**	P		**P**		**02 19 40.6**	**-1.9**
	baz=254								
I37A	**Lemond, Waseca**	**93.25**	**45**	P		**P**		**02 19 41.3**	**-1.1**
	baz=252								
K38A	**Parkersburg**	**93.27**	**47**	P		**P**		**02 19 41.5**	**-1.0**
	baz=252								
PBMO	**Poplar Bluff**	**93.28**	**53**	*e*P		**P**		**02 19 42.7**	**0.0**
	comp=Z,53nm,1.3s								
347A	**Saraland**	**93.30**	**59**	P		**P**		**02 19 44.1**	**+1.2**
	baz=254								
LZH	**Lanzhou**	**93.36**	**306**	*e*P		**P**		**02 19 45.4**	**+2.1**
LZH				pP		pP		02 19 50.3	+1.2
LZH				sP		sP		02 19 53.6	+2.5
LZH				PP		**PP**		**02 23 28.0**	**+0.4**
LZH				SKS		**SKSac**		**02 30 18.0**	**+0.7**
LZH				S		**S**		**02 30 50.0**	**-0.7**
LZH				sS		sS		02 31 01.0	+0.8
LZH				SS		**SS**		**02 37 06.3**	**-1.1**
LZH				pmax		pmax			
	comp=Z,48nm,1.4s								
LZH				pmax		pmax			
	comp=Z,250nm,4.7s								
LZH				LR		LR			
	comp=Z,600nm,15.6s								
LZH				LR		LR			
	comp=Z,810nm,16.3s								
LZH				LR		LR			
	comp=Z,980nm,17.0s								
E35A	**Pequot Lakes**	**93.38**	**43**	P		**P**		**02 19 42.4**	**-0.5**
	baz=252								
G36A	**St. Michael**	**93.39**	**44**	P		**P**		**02 19 42.7**	**-0.3**
	baz=252								
C34A	**RKJ Ranch, Bem**	**93.40**	**42**	P		**P**		**02 19 41.6**	**-1.4**
	baz=251								
247A	**Quitman**	**93.42**	**58**	P		**P**		**02 19 43.0**	**-0.4**
	baz=254								
OXF	**Oxford**	**93.45**	**55**	*e*P		**P**		**02 19 43.8**	**+0.3**
OXF				pmax		pmax			
	comp=Z,163nm,1.2s								
OXF	**Oxford**	**93.45**	**55**	*e*P		**P**		**02 19 43.8**	**+0.3**
	comp=Z,164nm,1.2s								
VNA2	**Neumayer--Watz**	**93.47**	**175**	P		**P**		**02 19 44.3**	**+1.3**
	baz=176,slow=0.8								
A33A	**Warroad**	**93.51**	**40**	P		**P**		**02 19 42.3**	**-1.2**
	baz=251								
ULM	**Lac du Bonnet**	**93.65**	**39**	P		**P**		**02 19 42.9**	**-1.2**
	comp=Z,24nm,1.0s,baz=245,slow=4.7,SNR=21								
ULM				PP		**PP**		**02 23 26.2**	**-3.1**
	comp=Z,2.7nm,0.8s,baz=246,slow=5.6,SNR=3.8								
ULM				LR		LR		02 56 52.8	
	comp=Z,8μm,19.4s,baz=254,slow=32								
ULM	**Lac du Bonnet**	**93.65**	**39**	*e*P		**P**		**02 19 43.0**	**-1.1**
	comp=Z,54nm,1.1s								
ULM				PP		**PP**		**02 23 26.2**	**-3.1**
VNA1	**Neumayer--Stat**	**93.67**	**175**	P		**P**		**02 19 45.2**	**+1.3**
J38A	**Wedel Dairy, R**	**93.68**	**46**	P		**P**		**02 19 43.3**	**-1.1**
	baz=253								
F36A	**Milaca**	**93.74**	**44**	P		**P**		**02 19 43.9**	**-0.7**
	baz=252								
H37A	**Dierke Farm, C**	**93.76**	**45**	P		**P**		**02 19 44.1**	**-0.6**
	baz=252								
D35A	**Remer**	**93.77**	**42**	P		**P**		**02 19 43.4**	**-1.3**
	baz=252								
348A	**Jackson**	**93.83**	**59**	P		**P**		**02 19 45.1**	**-0.2**
	baz=255								
B34A	**Aery, Baudette**	**93.83**	**41**	P		**P**		**02 19 43.5**	**-1.5**
	baz=251								
147A	**Livingston**	**93.86**	**57**	P		**P**		**02 19 45.9**	**+0.4**
	baz=254								
BOD	**Bodaibo**	**93.94**	**329**	*e*P		**P**		**02 19 44.2**	**-1.0**
BOD				pmax		pmax			
	comp=Z,14nm,1.5s								
I38A	**Scanlan Farm,**	**94.00**	**46**	P		**P**		**02 19 45.3**	**-0.5**
	baz=253								
C35A	**Jirrs Farms, M**	**94.01**	**42**	P		**P**		**02 19 44.6**	**-1.3**
	baz=252								
SPMN	**Marine on St.**	**94.03**	**44**	P		**P**		**02 19 45.7**	**-0.2**
	baz=252								
SPMN	**Marine on St.**	**94.03**	**44**	*e*P		**P**		**02 19 45.3**	**-0.7**
	comp=Z,64nm,1.3s								
E36A	**McGregor**	**94.12**	**43**	P		**P**		**02 19 45.6**	**-0.7**
	baz=252								
NVL	**N'lazarevskaya**	**94.13**	**182**	*e*P		**P**		**02 19 47.1**	**+1.1**
248A	**Dixon Mills**	**94.14**	**58**	P		**P**		**02 19 47.7**	**+0.9**
	baz=255								
UTMT	**University of**	**94.37**	**54**	*e*P		**P**		**02 19 49.0**	**+1.3**
	comp=Z,245nm,1.0s								
B35A	**Bob, Littlefor**	**94.38**	**41**	P		**P**		**02 19 46.2**	**-1.3**
	baz=252								
D36A	**Goodland**	**94.38**	**42**	P		**P**		**02 19 46.6**	**-0.9**
	baz=252								
BRAL	**Brewton**	**94.47**	**59**	*e*P		**P**		**02 19 50.7**	**+2.4**
	comp=Z,56nm,0.5s								
BRAL				LR		LR			
	comp=Z,2μm,22.0s								
SIUC	**Southern Illin**	**94.47**	**52**	*e*P		**P**		**02 19 48.6**	**+0.4**
	comp=Z,46nm,1.0s								
ULN	**Ulaanbaatar**	**94.50**	**318**	*e*P		**P**		**02 19 49.2**	**+0.9**
ULN				pmax		pmax			
	comp=Z,31nm,1.2s								
ULN				MLR		MLR			
	comp=Z,2μm,22.0s								
ULN	**Ulaanbaatar**	**94.50**	**318**	*e*P		**P**		**02 19 49.2**	**+0.9**
	comp=Z,31nm,1.2s								
ULN				LR		LR			
	comp=Z,2μm,22.0s								
ULN	**Ulaanbaatar**	**94.50**	**318**	P		**P**		**02 19 49.4**	**+1.1**
	SNR=14								
ULN				P		**P**		**02 19 49.4**	**+1.1**
	SNR=14								
ULN	**Ulaanbaatar**	**94.50**	**318**	P		**P**		**02 19 49.4**	**+1.1**
	SNR=14								
Y47A	**UCPARC, Winfie**	**94.53**	**56**	P		**P**		**02 19 47.8**	**-0.7**
	baz=255								
OTAV	**Otavalo**	**94.57**	**91**	PFAKE				02 20 00.0	+10
OTAV				LR		LR			
	comp=Z,740nm,21.0s								
PLAL	**Pickwick Lake**	**94.63**	**55**	*e*P		**P**		**02 19 48.7**	**-0.3**
	comp=Z,75nm,1.5s								
C36A	**Pine Crest Far**	**94.76**	**42**	P		**P**		**02 19 48.0**	**-1.3**
	baz=253								
D37A	**Cotton**	**94.85**	**43**	P		**P**		**02 19 49.0**	**-0.7**
	baz=253								
PAF	**Port-aux-Franc**	**94.90**	**216**	PFAKE				02 20 00.0	+10
PAF				LR		LR			
	comp=Z,3μm,20.0s								
SONA1	**Songino Array**	**94.92**	**318**	*e*P		**P**		**02 19 49.8**	**-0.3**
SONM	**Songino Array**	**94.92**	**318**	P		**P**		**02 19 50.0**	**-0.1**
	comp=Z,1.5nm,0.7s,baz=114,slow=1.9,SNR=14								
SONM				PP		**PP**		**02 23 42.2**	**+2.8**
	comp=Z,2.6nm,1.0s,baz=128,slow=6.2,SNR=4.6								
SONM				LR		LR		03 02 29.0	
	comp=Z,997nm,18.5s,baz=92,slow=35								
TIXI	**Tiksi**	**94.94**	**344**⇓	*e*P		**P**		**02 19 49.0**	**-0.5**
TIXI				pmax		pmax			
	comp=Z,25nm,1.4s								
TIXI	**Tiksi**	**94.94**	**344**	*e*P		**P**		**02 19 48.9**	**-0.5**
	comp=Z,38nm,1.5s								
TIXI				LR		LR			
	comp=Z,3μm,20.0s								
LRAL	**Lakeview Retre**	**94.99**	**57**	*e*P		**P**		**02 19 50.7**	**0.0**
	comp=Z,11nm,1.2s								
WVT	**Waverly**	**95.12**	**54**	*e*P		**P**		**02 19 51.2**	**0.0**
WVT				pmax		pmax			
	comp=Z,26nm,1.1s								
WVT	**Waverly**	**95.12**	**54**	*e*P		**P**		**02 19 51.2**	**0.0**
	comp=Z,26nm,1.1s								
JFWS	**Jewell Farm**	**95.13**	**47**	*e*P		**P**		**02 19 50.7**	**-0.3**
JFWS				pmax		pmax			
	comp=Z,61nm,0.9s								
JFWS				MLR		MLR			
	comp=Z,6μm,21.0s								
JFWS	**Jewell Farm**	**95.13**	**47**	*e*P		**P**		**02 19 50.7**	**-0.3**
	comp=Z,61nm,0.9s								
JFWS				LR		LR			
	comp=Z,6μm,21.0s								
C37A	**Embarrass**	**95.17**	**42**	P		**P**		**02 19 50.2**	**-1.0**
	baz=253								
HDIL	**Hopedale**	**95.18**	**50**	P		**P**		**02 19 50.8**	**-0.5**
	baz=254								
HDIL	**Hopedale**	**95.18**	**50**	*e*P		**P**		**02 19 51.1**	**-0.2**
HDIL				LR		LR			
	comp=Z,6μm,21.0s								
BCIP	**Isla Barro Col**	**95.50**	**82**	PFAKE				02 20 00.0	+6.6
BCIP				LR		LR			
	comp=Z,881nm,22.0s								
EYMN	**Ely**	**95.68**	**42**	P		**P**		**02 19 52.2**	**-1.2**
	baz=254								
EYMN	**Ely**	**95.68**	**42**	PFAKE				02 20 00.0	+6.5
EYMN				LR		LR			
	comp=Z,4μm,20.0s								
USIN	**University of**	**95.72**	**52**	*e*P		**P**		**02 19 54.1**	**+0.2**
	comp=Z,48nm,1.1s								
C38A	**Sawbill Land.**	**95.76**	**42**	P		**P**		**02 19 52.1**	**-1.8**
	baz=254								
SWET	**Sewanee**	**96.39**	**55**	*e*P		**P**		**02 19 56.8**	**-0.3**
	comp=Z,8.7nm,1.2s								
C39A	**Grand Marais**	**96.53**	**42**	P		**P**		**02 19 55.7**	**-1.6**
	baz=255								
TRQA	**Tornquist**	**96.56**	**132**	*e*P		**P**		**02 19 57.7**	**-0.2**
	comp=Z,51nm,1.7s								
TRQA				LR		LR			
	comp=Z,2μm,20.0s								
COWI	**Conover**	**96.74**	**44**	*e*P		**P**		**02 19 57.8**	**-0.6**
	comp=Z,67nm,1.0s								
COWI				LR		LR			
	comp=Z,8μm,20.0s								
SFIN	**Lafayette**	**96.75**	**50**	P		**P**		**02 19 57.4**	**-1.1**
	baz=256								
GTA	**Gaotai**	**97.30**	**309**	*e*P		Pdif		02 20 02.3	+1.0
GTA				pP		pP		02 20 06.6	-0.4
GTA				sP		sP		02 20 09.6	+0.6
GTA				SKS		**SKSac**		**02 30 37.5**	**-0.5**
GTA				S		**S**		**02 31 25.0**	**+0.3**
GTA				sS		sS		02 31 32.3	-2.0
GTA				SS		**SS**		**02 38 06.5**	**+3.3**
GTA				pmax		pmax			
	comp=Z,6.0nm,1.0s								
GTA				pmax		pmax			
	comp=Z,110nm,5.5s								
GTA				LR		LR			
	comp=Z,530nm,18.3s								
GTA				LR		LR			
	comp=Z,1μm,21.6s								
GTA				LR		LR			
	comp=Z,1μm,23.0s								
FCC	**Fort Churchill**	**97.32**	**31**	*e*P		**P**		**02 19 59.8**	**-0.8**
FCC	**Fort Churchill**	**97.32**	**31**	*e*P		**P**		**02 19 59.8**	**-0.8**
CPCT	**Cooper Cave**	**97.57**	**55**	*e*P		**P**		**02 20 01.4**	**-0.9**
	comp=Z,13nm,1.2s								
ZAK	**Zakamensk**	**97.58**	**320**	*e*P		**P**		**02 20 01.9**	**-0.3**
ZAK				pmax		pmax			
	comp=Z,7.0nm,1.6s								
TLY	**Talaya**	**97.69**	**321**	P		**P**		**02 20 02.6**	**0.0**
	comp=Z,3.0nm,0.7s,baz=180,slow=4.7,SNR=7.2								
TLY				LR		LR		03 01 42.2	
	comp=Z,2μm,19.4s,baz=96,slow=34								
TLY	**Talaya**	**97.69**	**321**	*e*P		Pdif		02 20 04.2	+1.6
TLY				*e*				02 24 02.3	
TLY				*e*				02 30 39.4	
TLY				*e*				02 33 41.1	
TLY				*e*SS		SS		02 38 04.6	-3.3
TLY				pmax		pmax			
	comp=Z,15nm,1.4s								
TLY				MLR		MLR			
	comp=Z,965nm,20.0s								
TLY	**Talaya**	**97.69**	**321**	*e*P		Pdif		02 20 03.0	+0.4
	comp=Z,22nm,1.5s								
TLY	**Talaya**	**97.69**	**321**	P		Pdif		02 20 03.9	+1.3
	SNR=8.2								
GOGA	**Godfrey**	**97.95**	**58**	*e*P		Pdif		02 20 04.6	+0.5
GOGA				pmax		pmax			
	comp=Z,31nm,1.5s								
GOGA				MLR		MLR			
	comp=Z,2μm,20.0s								
GOGA	**Godfrey**	**97.95**	**58**	*e*P		Pdif		02 20 04.5	+0.4
	comp=Z,31nm,1.5s								
GOGA				LR		LR			
	comp=Z,2μm,20.0s								
TKL	**Tuckaleechee C**	**98.21**	**55**	*e*P		**P**		**02 20 04.6**	**-0.6**
TKL	**Tuckaleechee C**	**98.21**	**55**	*e*P		**P**		**02 20 04.5**	**-0.6**
TZTN	**Tazewell**	**98.58**	**55**	*e*P		Pdif		02 20 09.3	+2.5
	comp=Z,58nm,1.9s								
LPAZ	**La Paz**	**99.60**	**110**	P		**Pdif**		**02 20 13.9**	**+1.2**
	comp=Z,1.8nm,0.9s,baz=356,slow=1.3,SNR=6.1								
LPAZ				LR		LR		02 58 28.8	
	comp=Z,802nm,18.1s,baz=254,slow=31								
LPAZ	**La Paz**	**99.60**	**110**	*e*Pdif		**Pdif**		**02 20 14.7**	**+2.0**
	comp=Z,9.6nm,1.4s								
AAM	**Ann Arbor**	**99.71**	**49**	*e*P		**Pdif**		**02 20 12.2**	**+0.5**
AAM				pmax		pmax			
	comp=Z,49nm,1.1s								
AAM				MLR		MLR			
	comp=Z,2μm,21.0s								
AAM	**Ann Arbor**	**99.71**	**49**	*e*Pdif		**Pdif**		**02 20 12.2**	**+0.5**
	comp=Z,49nm,1.1s								
AAM				LR		LR			
	comp=Z,2μm,21.0s								
ROSC	**El Rosal**	**99.73**	**88**	LR		LR		02 58 05.9	
	comp=Z,668nm,18.4s,baz=255,slow=31								
ACSO	**Alum Creek Sta**	**99.79**	**51**	PFAKE				02 20 20.0	+7.9
ACSO				LR		LR			
	comp=Z,3μm,21.0s								
MTDJ	**Mount Denham**	**99.82**	**74**	PFAKE				02 20 20.0	+7.1
MTDJ				LR		LR			
	comp=Z,950nm,20.0s								
KMSC	**Kings Mountain**	**100.05**	**56**	*e*Pdif		**Pdif**		**02 20 15.2**	**+1.8**
NHSC	**New Hope**	**100.58**	**59**	PFAKE				02 20 30.0	+14
NHSC				LR		LR			
	comp=Z,2μm,20.0s								
BLA	**Blacksburg**	**101.17**	**54**	PFAKE				02 20 30.0	+12
BLA				LR		LR			
	comp=Z,4μm,20.0s								
HOPE	**Hope Point**	**101.52**	**156**	PFAKE				02 20 30.0	+10
HOPE				LR		LR			
	comp=Z,2μm,19.0s								
RES	**Resolute Bay**	**101.52**	**15**	P		**Pdif**		**02 20 18.8**	**-0.2**
	comp=Z,8.6nm,0.9s,baz=242,slow=7.1,SNR=27								
RES	**Resolute Bay**	**101.52**	**15**	*e*Pdif		**Pdif**		**02 20 19.4**	**+0.3**
LSA	**Lhasa**	**102.28**	**298**	PFAKE				02 20 30.0	+5.9
LSA				LR		LR			
	comp=Z,520nm,21.0s								
GTBY	**Guantanamo Bay**	**102.42**	**73**	PFAKE				02 20 30.0	+5.7
GTBY				LR		LR			
	comp=Z,1μm,20.0s								
CNNC	**Cliffs of the**	**102.84**	**57**	PFAKE				02 20 40.0	+14
CNNC				LR		LR			
	comp=Z,3μm,21.0s								
SADO	**Sadowa**	**103.37**	**47**	Pdiff		**Pdif**		**02 20 27.1**	**-0.8**
	comp=Z,3.2nm,0.5s,baz=288,slow=7.2,SNR=3.6								
CBN	**Corbin Frederi**	**103.72**	**54**	PFAKE				02 20 40.0	+10
CBN				LR		LR			
	comp=Z,4μm,21.0s								
SDV	**Santo Domingo**	**104.26**	**85**	PFAKE				02 20 40.0	+7.1
SDV				LR		LR			
	comp=Z,911nm,19.0s								
BINY	**Binghamton**	**105.31**	**50**	PFAKE				02 25 00.0	
BINY				LR		LR			
	comp=Z,4μm,20.0s								
SDDR	**Presa de Saban**	**105.77**	**74**	PFAKE				02 25 00.0	
SDDR				LR		LR			
	comp=Z,3μm,20.0s								
GRTK	**Grand Turk**	**106.38**	**72**	PFAKE				02 25 00.0	
GRTK				LR		LR			
	comp=Z,1μm,22.0s								
SAML	**Samuel**	**106.54**	**104**	PFAKE				02 25 00.0	
SAML				LR		LR			
	comp=Z,1μm,19.0s								
LONY	**Lake Ozonia**	**106.58**	**47**	PFAKE				02 25 00.0	
LONY				LR		LR			
	comp=Z,5μm,20.0s								
NCB	**Newcomb**	**106.78**	**48**	PFAKE				02 25 00.0	
NCB				LR		LR			
	comp=Z,8μm,22.0s								
WMQ	**Urumqi**	**106.97**	**312**	*e*Pdif		**Pdif**		**02 20 44.1**	**0.0**
WMQ				PP		**PP**		**02 25 14.3**	**+3.6**
WMQ				S		**Sdif**		**02 32 40.8**	**-4.6**
WMQ				SS		**SS**		**02 40 18.1**	**+1.3**
WMQ				LR		LR			
	comp=Z,250nm,22.6s								
WMQ				LR

KSH	**Kashi**	**115.61**	**307**	PKP	**PKPdf**	**02 25 12.1**	**+1.7**		
KSH				*e*PP	PP	02 26 21.3	+8.4		
KSH				PKS	**PKSdf**	**02 28 47.3**	**+0.1**		
KSH				SKS	**SKSdf**	**02 32 22.8**	**+0.8**		
KSH				AMB	AMB				
	comp=Z,72nm,4.7s								
KSH				LR	LR				
	comp=Z,750nm,17.3s								
KSH				LR	LR				
	comp=Z,1μm,18.5s								
KSH				LR	LR				
	comp=Z,840nm,22.4s								
TKM2	**Tokmak 2**	**115.77**	**311**	*e*PKIKP	**PKPdf**	**02 25 10.2**	**-0.5**		
TKM2				*e*		02 26 11.2			
TKM2				MLR	MLR				
	comp=Z,1μm,21.0s								
TKM2	**Tokmak 2**	**115.77**	**311**	*e*PKPdf	**PKPdf**	**02 25 10.2**	**-0.5**		
TKM2				*e*PP	**PP**	**02 26 11.2**	**-2.9**		
TKM2				LR	LR				
	comp=Z,1μm,21.0s								
BBGH	**Gun Hill**	**115.78**	**83**	PFAKE		02 25 20.0	+8.8		
BBGH				LR	LR				
	comp=Z,2μm,22.0s								
KBS	**Kingsbay**	**116.26**	**359**	PFAKE		02 25 20.0	+10		
KBS				LR	LR				
	comp=Z,1μm,20.0s								
SFJD	**Kangerlussuaq**	**116.37**	**22**	PFAKE		02 25 20.0	+9.2		
SFJD				LR	LR				
	comp=Z,5μm,21.0s								
FRU	**Bishkek**	**116.50**	**310**	*e*PKIKP	**PKPdf**	**02 25 11.0**	**-0.9**		
FRU				*e*		02 26 20.0			
AAK	**Ala-Archa**	**116.60**	**310**	*e*PKIKP	**PKPdf**	**02 25 11.8**	**-0.4**		
AAK				MLR	MLR				
	comp=Z,1μm,21.0s								
AAK	**Ala-Archa**	**116.60**	**310**	*e*PKPdf	**PKPdf**	**02 25 11.8**	**-0.4**		
AAK				LR	LR				
	comp=Z,1μm,21.0s								
SUMG	**Summit**	**116.98**	**14**	*i* P	**PP**	**02 26 16.2**	**-5.4**		
DAG	**Danmarks Havn**	**117.06**	**6**	*i* P	**PP**	**02 26 23.2**	**+1.6**		
EKS2	**Erkin-Say**	**117.12**	**310**	*e*PKIKP	**PKPdf**	**02 25 12.9**	**-0.3**		
EKS2				MLR	MLR				
	comp=Z,1μm,21.0s								
EKS2	**Erkin-Say**	**117.12**	**310**	*e*PKPdf	**PKPdf**	**02 25 12.9**	**-0.3**		
EKS2				*e*PP	PP	02 26 12.8	-11		
EKS2				LR	LR				
	comp=Z,1μm,21.0s								
BRVK	**Borovoye**	**117.99**	**322**	*c i*PKIKP	**PKPdf**	**02 25 14.2**	**-0.1**		
BRVK	**Borovoye**	**117.99**	**322**	*e*PKPdf	**PKPdf**	**02 25 14.0**	**-0.4**		
BRVK				*e*PP	PP	02 26 20.4	-8.4		
BRVK				LR	LR				
	comp=Z,2μm,20.0s								
BRVK	**Borovoye**	**117.99**	**322**	P	**PKPdf**	**02 25 14.4**	**+0.1**		
	SNR=9.7								
BRVK	**Borovoye**	**117.99**	**322**	PKPdf	**PKPdf**	**02 25 14.4**	**+0.1**		
	SNR=9.7								
KKAR	**Karatay Array**	**119.47**	**311**	*e*PKIKP	**PKPdf**	**02 25 17.2**	**-0.4**		
KKAR	**Karatay Array**	**119.47**	**311**	*e*PKPdf	**PKPdf**	**02 25 17.1**	**-0.4**		
SVE	**Sverdlovsk**	**122.15**	**328**	*e*PKIKP	**PKPdf**	**02 25 22.7**	**+0.5**		
SVE				pmax	pmax				
	comp=Z,33nm,1.6s								
ARU	**Arti**	**123.36**	**329**	*i* PKIKP	**PKPdf**	**02 25 24.8**	**+0.2**		
ARU						02 27 07.8			
ARU						02 32 35.8			
ARU				SP	SP	02 36 50.2	-9.0		
ARU				PS	**PS**	**02 37 03.4**	**+0.9**		
ARU	**Arti**	**123.36**	**329**	*e*PKPdf	**PKPdf**	**02 25 24.1**	**-0.4**		
ARU				*e*PP	**PP**	**02 27 02.4**	**-2.9**		
ARU				LR	LR				
	comp=Z,2μm,20.0s								
KEV	**Kevo**	**124.09**	**352**	PFAKE		02 25 40.0	+14		
KEV				LR	LR				
	comp=Z,2μm,20.0s								
LVZ	**Lovozero**	**124.42**	**348**	*i* PKIKP	**PKPdf**	**02 25 26.5**	**+0.2**		
LVZ	**Lovozero**	**124.42**	**348**	PFAKE		02 25 40.0	+14		
LVZ				LR	LR				
	comp=Z,3μm,21.0s								
ARCES	**ARCESS Array B**	**124.50**	**352**	PKP	**PKPdf**	**02 25 26.7**	**+0.3**		
	comp=Z,7.7nm,0.8s,baz=300,slow=2.4,SNR=12								
TRIS	**Tristan da Cun**	**124.90**	**161**	PFAKE		02 25 40.0	+12		
TRIS				LR	LR				
	comp=Z,1μm,20.0s								
APA	**Apatity**	**124.95**	**348**	*i*PKIKP	**PKPdf**	**02 25 27.0**	**-0.3**		
ABKAR	**Akbulak array**	**125.28**	**320**	*e*PKPdf	**PKPdf**	**02 25 28.1**	**-0.3**		
TMCR	**Tamitsa**	**126.65**	**344**	*e*PKIKP	**PKPdf**	**02 25 33.1**	**+2.5**		
TMCR				pmax	pmax				
	comp=Z,23nm,1.1s								
BORG	**Borgarnes**	**126.94**	**15**	PFAKE		02 25 40.0	+8.8		
BORG				LR	LR				
	comp=Z,7μm,21.0s								
OPO	**Ambohidratompo**	**127.98**	**231**	PKP	**PKPdf**	**02 25 35.2**	**+0.4**		
	comp=Z,9.3nm,0.9s,baz=133,slow=1.6,SNR=6.9								
KLMR	**Klimovskoe**	**128.75**	**340**	*e*PKIKP	**PKPdf**	**02 25 33.7**	**-1.0**		
KLMR				pmax	pmax				
	comp=Z,53nm,1.5s								
KLMR				MLR	MLR				
	comp=Z,3μm,21.0s								
GEYT	**Alibeck**	**129.64**	**307**	PKP	**PKPdf**	**02 25 37.6**	**+0.3**		
	comp=Z,8.3nm,0.8s,baz=236,slow=1.6,SNR=21								
WSAR	**Wadi Sarin**	**130.71**	**288**	PKP	**PKPdf**	**02 25 40.7**	**+1.0**		
	comp=Z,12nm,1.1s,baz=97,slow=0.8,SNR=11								
SUR	**Sutherland**	**130.79**	**196**	PKP	**PKPdf**	**02 25 39.8**	**-0.1**		
	comp=Z,1.2nm,0.9s,baz=157,slow=6.0,SNR=4.4								
SUR	**Sutherland**	**130.79**	**196**	*e*PKPdf	**PKPdf**	**02 25 40.2**	**+0.3**		
SUR				LR	LR				
	comp=Z,8μm,20.0s								
SMDO	**Samad**	**131.25**	**287**	P	**PKPdf**	**02 25 41.5**	**+0.7**		
	SNR=11								
FINES	**FINESS Array B**	**131.86**	**348**	PKP	**PKPdf**	**02 25 40.5**	**-0.1**		
	comp=Z,4.6nm,0.8s,baz=98,slow=3.9,SNR=14								
RCBR	**Riachuelo**	**132.72**	**113**	PFAKE		02 25 50.0	+6.2		
RCBR				LR	LR				
	comp=Z,2μm,19.0s								
BOSA	**Boshof**	**132.91**	**202**	PKP	**PKPdf**	**02 25 44.4**	**+0.5**		
	comp=Z,17nm,0.9s,baz=129,slow=2.2,SNR=13								
HATD	**Hatta, Dubai**	**132.97**	**290**	P	**PKPdf**	**02 25 43.5**	**-0.4**		
	SNR=5.2								
HATD	**Hatta, Dubai**	**132.97**	**290**	PKPdf	**PKPdf**	**02 25 43.5**	**-0.4**		
	SNR=5.2								
ASHO	**Ashiyiah**	**133.05**	**290**	P	**PKPdf**	**02 25 43.7**	**-0.4**		
	SNR=5.6								
ASHO	**Ashiyiah**	**133.05**	**290**	PKPdf	**PKPdf**	**02 25 43.7**	**-0.4**		
	SNR=5.6								
MOS	**Moscow**	**133.22**	**337**	*e*PKIKP	**PKPdf**	**02 25 42.0**	**-1.3**		
MOS				pmax	pmax				
	comp=Z,38nm,1.1s								
MOS				MLR	MLR				
	comp=N,2μm,20.0s								
MOS				MLR	MLR				
	comp=E,1μm,20.0s								
MOS				MLR	MLR				
	comp=Z,2μm,20.0s								
OBN	**Obninsk**	**134.09**	**337**	*ce*PKIKP	**PKPdf**	**02 25 45.2**	**+0.2**		
OBN				*e*		02 28 14.4			
OBN				pmax	pmax				
	comp=Z,18nm,1.0s								
OBN				MLR	MLR				
	comp=Z,2μm,21.0s								
OBN	**Obninsk**	**134.09**	**337**	PFAKE		02 25 50.0	+5.0		
OBN				LR	LR				
	comp=Z,3μm,21.0s								
NB2	**NORSAR Subarra**	**134.17**	**357**	PKPdf	**PKPdf**	**02 25 47.4**	**+2.3**		
	comp=Z,22nm,1.4s,baz=14,slow=1.8								
NB2	**NORSAR Subarra**	**134.17**	**357**	PKPdf	**PKPdf**	**02 25 47.4**	**+2.3**		
	baz=14,slow=1.8								
NOA	**NORSAR Array B**	**134.17**	**357**	PKP	**PKPdf**	**02 25 46.2**	**+1.1**		
	comp=Z,5.0nm,1.1s,baz=15,slow=4.3,SNR=4.3								
NOA				PP	**PP**	**02 28 16.8**	**+1.3**		
	comp=Z,3.1nm,0.9s,baz=5.1,slow=6.4,SNR=5.2								
VRH	**Novokhopyorsk**	**134.56**	**330**	*e*PKIKP	**PKPdf**	**02 25 46.0**	**0.0**		
VRH				*e*		02 28 14.7			
VRH				pmax	pmax				
	comp=Z,10.0nm,0.8s								
LPSR	**Galich'ya Gora**	**134.93**	**333**	*i* PKIKP	**PKPdf**	**02 25 46.2**	**-0.4**		
LPSR				*e*		02 28 25.0			
LPSR				pmax	pmax				
	comp=Z,8.0nm,0.8s								
KONO	**Kongsberg**	**135.63**	**358**	PFAKE		02 26 00.0	+12		
KONO				LR	LR				
	comp=Z,2μm,22.0s								
VSR	**Storozhevoye**	**135.76**	**331**	*e*PKIKP	**PKPdf**	**02 25 48.7**	**+0.4**		
VSR				*e*		02 28 23.3			
VSR				pmax	pmax				
	comp=Z,20nm,1.4s								
VSR				MLR	MLR				
	comp=Z,3μm,22.0s								
ISAL	**Salakas**	**137.12**	**344**	*e*P	**PKPdf**	**02 25 48.2**	**-2.4**		
ISAL				IAmb	IAmb	02 25 54.2			
	comp=Z,27nm,1.6s								
IDID	**Didziasalis**	**137.18**	**343**	*e*P	**PKPdf**	**02 25 51.8**	**+1.1**		
IDID				IAmb	IAmb	02 26 11.0			
	comp=Z,23nm,1.4s								
IIGN	**Ignalina**	**137.29**	**344**	*e*P	**PKPdf**	**02 25 50.4**	**-0.6**		
IIGN				IAmb	IAmb	02 26 11.5			
	comp=Z,10nm,1.0s								
GOF	**Gofitskoye**	**137.46**	**322**	⇑*e*PKIKP	**PKPdf**	**02 25 53.4**	**+1.8**		
GOF				pmax	pmax				
	comp=Z,18nm,1.0s								
MIGM	**Minsk**	**137.56**	**342**	*e*	**PKPdf**	**02 25 52.0**	**+0.5**		
MIGM				*e*LR	LR	03 17 40.0			
MIGM				LRM	MLR	03 21 48.0			
	comp=Z,2.1nm,22.0s								
MNK	**Minsk**	**137.56**	**342**	*e*PKIKP	**PKPdf**	**02 25 52.0**	**+0.5**		
TBLG	**Delisi**	**138.06**	**317**	*e*P	**PKPdf**	**02 25 56.3**	**+3.4**		
ZEI	**Tsey**	**138.10**	**318**	*i* PKIKP	**PKPdf**	**02 25 53.4**	**+0.2**		
ZEI				pmax	pmax				
	comp=Z,54nm,1.3s								
KBZ	**Khabaz**	**138.25**	**320**	PKhKP	PKPpre	02 25 48.3			
	comp=Z,2.2nm,0.9s,baz=27,slow=6.8,SNR=4.2								
KBZ				PP	PP	02 28 51.4	+9.4		
	comp=Z,4.2nm,1.1s,baz=25,slow=8.7,SNR=3.8								
KIV	**Kislovodsk**	**138.26**	**321**	⇓*i*PKIKP	**PKPdf**	**02 25 56.0**	**+2.7**		
KIV				*e*		02 28 52.3			
KIV				pmax	pmax				
	comp=Z,13nm,1.1s								
KIV	**Kislovodsk**	**138.26**	**321**	*e*PKPdf	**PKPdf**	**02 25 52.0**	**-1.3**		
KIV				LR	LR				
	comp=Z,2μm,19.0s								
MATP	**Matopo**	**138.67**	**212**	PKhKP	PKPpre	02 25 46.1			
	comp=Z,6.9nm,1.0s,baz=166,slow=4.3,SNR=5.7								
GNI	**Garni**	**138.77**	**314**	*e*PKIKP	**PKPdf**	**02 25 54.5**	**+0.1**		
GNI				MLR	MLR				
	comp=Z,2μm,22.0s								
GNI	**Garni**	**138.77**	**314**	*e*PKPdf	**PKPdf**	**02 25 54.5**	**+0.1**		
GNI				LR	LR				
	comp=Z,2μm,22.0s								
GNI	**Garni**	**138.77**	**314**	PKPdf	**PKPdf**	**02 25 54.8**	**+0.4**		
	SNR=7.2								
ESK	**Eskdalemuir**	**139.27**	**9**	*e*PKIKP	**PKPdf**	**02 25 53.5**	**-1.1**		
ESK				MLR	MLR				
	comp=Z,6μm,20.0s								
ESK	**Eskdalemuir**	**139.27**	**9**	*e*PKPdf	**PKPdf**	**02 25 53.5**	**-1.1**		
ESK				LR	LR				
	comp=Z,6μm,20.0s								
SUW	**Suwalki**	**139.27**	**345**	*e*PKP	PKPpre	02 25 48.3			
SUW	**Suwalki**	**139.27**	**345**	*e*PKHKP	PKPpre	02 25 48.3			
EAK	**Akyaka**	**139.30**	**316**	*i* P	**PKPdf**	**02 25 52.5**	**-2.9**		
EPOS	**Posof**	**139.49**	**317**	*i* P	**PKPdf**	**02 25 56.7**	**+1.0**		
SOC	**Sochi**	**140.26**	**322**	*i* PKIKP	**PKPdf**	**02 25 56.9**	**+0.1**		
SOC				*e*		02 28 51.8			
SOC				*e*PPP	PPP	02 31 56.6			
SOC				*e*SS	SS	02 47 08.0	-9.0		
SOC				MLR	MLR				
	comp=Z,2μm,19.0s								
AKASG	**Malin Array Be**	**140.31**	**338**	PKhKP	PKPpre	02 25 50.0			
	comp=Z,2.9nm,0.8s,baz=36,slow=4.1,SNR=14								
AKASG				PP	**PP**	**02 28 51.8**	**-2.3**		
	comp=Z,2.2nm,0.9s,baz=35,slow=5.3,SNR=4.8								
KIEV	**Kiev**	**140.32**	**338**	*e*PKHKP	PKPpre	02 25 49.9			
KIEV				*e*		02 25 57.2			
KIEV				MLR	MLR				
	comp=Z,3μm,21.0s								
KIEV	**Kiev**	**140.32**	**338**	*e*PKPpre	PKPpre	02 25 49.9			
KIEV				*e*PKPdf	**PKPdf**	**02 25 57.2**	**+0.6**		
KIEV				LR	LR				
	comp=Z,3μm,21.0s								
DBAD	**Bademkaya**	**140.41**	**317**	*i* P	**PKPdf**	**02 25 56.7**	**-0.6**		
HAKT	**HAKKARI**	**140.60**	**311**	*i* P	PKPpre	02 25 49.8			
CUKT	**Cukurca**	**140.80**	**311**	*e*P	**PKPdf**	**02 25 57.2**	**-1.0**		
ANN	**Anapa**	**140.84**	**325**	*e*PKIKP	**PKPdf**	**02 25 56.3**	**-1.5**		
ANN				pmax	pmax				
	comp=Z,138nm,1.0s								
EZM	**Erzurum**	**141.18**	**316**	*e*P	**PKPdf**	**02 26 02.8**	**+3.8**		
KTUT	**Trabzon**	**141.67**	**318**	*e*P	**PKPdf**	**02 25 59.1**	**-0.3**		
BNGL	**BINGOL**	**141.78**	**315**	*i* P	**PKPdf**	**02 26 01.6**	**+1.6**		
GUMT	**Gumushane**	**142.13**	**318**	*e*P	**PKPdf**	**02 25 59.3**	**-1.1**		
BTMN	**Batman**	**142.19**	**313**	*i* P	**PKPdf**	**02 25 57.3**	**-3.3**		
KELT	**Kelkit**	**142.44**	**318**	*i* P	PKPpre	02 25 53.8			
RAYN	**Ar Rayn**	**142.75**	**289**	*e*PKPdf	**PKPdf**	**02 25 59.0**	**-2.9**		
RAYN				LR	LR				
	comp=Z,1μm,20.0s								
LVV	**L'vov**	**142.81**	**342**	*e*PKIKP	**PKPdf**	**02 25 59.0**	**-2.2**		
MAZI	**Mazidag**	**142.97**	**313**	*e*P	**PKPdf**	**02 25 59.1**	**-3.0**		
LSZ	**Lusaka**	**143.07**	**216**	PKP	PKPbc	02 25 60.0	+0.4		
	comp=Z,12nm,1.1s,baz=155,slow=2.3,SNR=12								
LSZ	**Lusaka**	**143.07**	**216**	PKIKP	PKPbc	02 26 00.0	+0.4		
LSZ				pmax	pmax				
	comp=Z,12nm,1.1s								
LSZ	**Lusaka**	**143.07**	**216**	*e*PKPdf	PKPbc	02 26 00.2	+0.6		
LSZ				LR	LR				
	comp=Z,3μm,20.0s								
LSZ	**Lusaka**	**143.07**	**216**	P	PKPbc	02 26 00.8	+1.3		
	SNR=6.5								
LSZ	**Lusaka**	**143.07**	**216**	PKPdf	PKPbc	02 26 00.8	+1.3		
	SNR=6.5								
KWP	**Kalwaria Pacla**	**143.37**	**343**	*e*PKP	PKPbc	02 25 59.8	+0.5		
KWP	**Kalwaria Pacla**	**143.37**	**343**	⇑*i*P	PKPbc	02 25 59.6	+0.3		
KWP	**Kalwaria Pacla**	**143.37**	**343**	*e*PKIKP	PKPbc	02 25 59.8	+0.5		
WTSB	**Winterswijk**	**143.38**	**0**	*e*PKP	PKPbc	02 25 59.8	+0.7		
	comp=Z,22nm,0.8s								
KIS	**Kishinev**	**143.46**	**335**	*e*PKP	PKPbc	02 26 00.0	+0.4		
KIS	**Kishinev**	**143.46**	**335**	*e*PP	PP	02 29 20.0	+6.7		
KIS				*e*SKP		02 29 44.0			
KIS				*e*SKSP		02 39 08.0			
KIS	**Kishinev**	**143.46**	**335**	*e*PS		02 39 40.0			
KIS				*e*L	L	03 15 10.0			
KIS				LRM	MLR	03 27 54.0			
	comp=Z,1μm,22.0s								
KIS	**Kishinev**	**143.46**	**335**	*e*PKIKP	PKPbc	02 26 00.0	+0.4		
KIS				*e*		02 29 20.0			
KIS				MLR	MLR				
	comp=N,1μm,22.0s								
KIS				MLR	MLR				
	comp=Z,2μm,22.0s								
KIS				MLR	MLR				
	comp=E,700nm,20.0s								
KIS				MLR	MLR				
	comp=Z,2μm,22.0s								
ELZG	**Elazig**	**143.48**	**316**	*i* P	**PKPdf**	**02 26 02.3**	**-0.6**		
OJC	**Ojcow**	**143.58**	**346**	*e*PKP	PKPbc	02 25 59.9	0.0		
OJC	**Ojcow**	**143.58**	**346**	*e*PKIKP	PKPbc	02 25 59.9	0.0		
CMLA	**Cha da Macela**	**143.64**	**46**	PFAKE		02 26 10.0	+7.0		
CMLA				LR	LR				
	comp=Z,3μm,22.0s								
KSP	**Ksiaz**	**143.70**	**350**	*e*PKP	PKPbc	02 26 01.2	+1.0		
KSP	**Ksiaz**	**143.70**	**350**	*e*PKIKP	PKPbc	02 26 01.2	+1.0		
CLL	**Collm**	**143.70**	**354**	*e*PKPdf	PKPbc	02 26 00.0	-0.1		
CLL	comp=Z,13nm,0.8s			*i*		02 26 02.3			
CLL				*i*		02 26 05.6			
CLL				*i*		02 26 12.8			
CLL				*e*		02 26 51.0			
CLL				*i*		02 28 35.8			
CLL				*e*PP	**PP**	**02 29 16.0**	**+1.6**		
CLL				*e*PKSdf	**PKSdf**	**02 29 42.0**	**+3.8**		
CLL				*e*		02 30 29.0			
CLL				*e*PPP	PPP	02 32 24.0			
CLL				*e*SKSac	**SKSac**	**02 33 24.0**	**+5.1**		
CLL				*e*PPPP		02 34 36.0			
CLL				*e*SKKSac	**SKKSac**	**02 36 07.0**	**-0.2**		
CLL				*e*Sdif	**SKKPab**	**02 37 48.0**	**-1.3**		
CLL				*e*SKSP		02 39 06.0			
CLL				*e*PSKS		02 39 27.0			
CLL				*e*		02 40 48.0			
CLL				*e*		02 43 21.0			
CLL				*e*SS	**SS**	**02 47 57.0**	**+1.6**		
CLL				*e*		02 49 00.0			
CLL				*e*SSS	SSS	02 53 30.0			
CLL				LmH		03 27 00.0			
	comp=N,800nm,21.7s								
CLL				LmH		03 27 00.0			
	comp=E,2μm,21.6s								
CLL				LmV		03 32 00.0			
	comp=Z,2μm,19.8s								
CLL	**Collm**	**143.70**	**354**	*e*PKIKP	PKPbc	02 26 00.0	-0.1		
CLL				*i*		02 26 05.6			
CLL				pmax	pmax				
	comp=Z,13nm,0.8s								
CLL				MLR	MLR				
	comp=Z,2μm,19.8s								
ERBA	**Erbaa**	**143.74**	**320**	*i* P	**PKPdf**	**02 26 02.3**	**-0.8**		
DAMY	**Dhamar**	**143.78**	**274**	*e*PKPdf	**PKPdf**	**02 26 04.1**	**-0.2**		
STHS	**Stebnicka Huta**	**143.97**	**344**	*e*PKIKP	PKPbc	02 26 02.1	+1.0		
STHS	**Stebnicka Huta**	**143.97**	**344**	*e*PKP	PKPbc	02 26 02.1	+1.0		
BRG	**Berggiesshubel**	**144.02**	**352**	*e*PKP	PKPbc	02 26 01.0	-0.1		
	comp=Z,19nm,1.3s								
BRG				*i*		02 26 11.2			
	comp=Z,25nm,1.1s								
BRG				*i*		02 29 38.0			
BRG				SS	SS	02 48 51.0	+52		
	comp=N,2μm,19.5s								
	comp=E,996nm,21.5s								
	comp=Z,2μm,18.6s								
BRG	**Berggiesshubel**	**144.02**	**352**	*e*PKIKP	PKPbc	02 26 01.0	-0.1		
BRG				*i*		02 26 11.2			
BRG				pmax	pmax				
	comp=Z,19nm,1.3s								
BRG				pmax	pmax				
	comp=Z,25nm,1.1s								
BRG				MLR	MLR				
	comp=N,2μm,19.5s								
BRG				MLR	MLR				
	comp=E,996nm,21.5s								
BRG				MLR	MLR				
	comp=Z,2μm,18.6s								
CUKAN	**kangal_SIVAS**	**144.06**	**318**	*i* P	**PKPdf**	**02 26 03.4**	**-0.5**		
RAC	**Raciborz**	**144.07**	**348**	*e*PKIKP	**PKPdf**	**02 26 02.5**	**-0.9**		
RAC				MLR	MLR				
	comp=Z,3μm,20.7s								
UPC	**Upice**	**144.07**	**350**	*e*PKP	PKPbc	02 26 01.8	+0.5		
UPC				AMS	AMS	03 27 50.0			
	comp=Z,2μm,22.2s								
UPC	**Upice**	**144.07**	**350**	*e*PKIKP	PKPbc	02 26 01.8	+0.5		
UPC				MLR	MLR				
	comp=Z,2μm,22.2s								
KOLS	**Kolonicke sedl**	**144.12**	**343**	*e*PKIKP	PKPbc	02 26 02.0	+0.5		
KOLS				MLR	MLR				
	comp=Z,2μm,20.4s								
KOLS	**Kolonicke sedl**	**144.12**	**343**	*e*PKP	PKPbc	02 26 02.0	+0.5		
KOLS				*e*L	L	02 30 59.1			
HAVZ	**Havza**	**144.13**	**322**	*i* P	PKPbc	02 26 02.5	+0.6		
DPC	**Dobruska-Polom**	**144.17**	**350**	*e*PKP	PKPbc	02 26 02.4	+0.7		
DPC				AMS	AMS	03 28 50.0			
	comp=Z,2μm,22.3s								
DPC	**Dobruska-Polom**	**144.17**	**350**	*e*PKIKP	PKPbc	02 26 02.4	+0.7		
DPC				MLR	MLR				
	comp=Z,2μm,22.3s								
TSUM	**Tsumeb**	**144.18**	**197**	PKP	PKPbc	02 26 03.5	+0.8		
	comp=Z,53nm,1.0s,baz=149,slow=3.9,SNR=32								
TSUM				PP	**PP**	**02 29 19.1**	**+1.6**		
	comp=Z,17nm,1.2s,baz=117,slow=12,SNR=4.2								
TSUM	**Tsumeb**	**144.18**	**197**	*e*PKPdf	PKPbc	02 26 03.7	+1.0		
TSUM				PP	**PP**	**02 29 19.1**	**+1.6**		
TSUM				LR	LR				
	comp=Z,3μm,19.0s								
PRAR	**RASCA**	**144.18**	**337**	⇑*i*P	**PKPdf**	**02 26 05.7**	**+2.0**		
NIE	**Niedzica**	**144.21**	**345**	*e*PKP	PKPbc	02 26 02.7	+0.9		
NIE	**Niedzica**	**144.21**	**345**	*e*PKIKP	PKPbc	02 26 02.8	+0.9		
PVCC	**Panska Ves**	**144.27**	**352**	AMS	AMS	03 31 00.0			
	comp=Z,2μm,20.4s								
AKCD	**Akcadag**	**144.30**	**316**	*i* P	**PKPdf**	**02 26 04.5**	**+0.1**		
OKC	**Ostrava-Krasne**	**144.31**	**347**	*e*PKP	PKPbc	02 26 02.6	+0.5		
OKC				AMS	AMS	03 29 50.0			
	comp=Z,2μm,21.2s								
OKC	**Ostrava-Krasne**	**144.31**	**347**	*e*PKIKP	PKPbc	02 26 02.6	+0.5		
OKC				MLR	MLR				
	comp=Z,2μm,21.2s								
BURAR	**Bucovina Array**	**144.33**	**339**	⇑*i*P	PKPbc	02 26 03.0	+0.6		
KRLC	**Kraliky**	**144.35**	**349**	*e*PKP	PKPbc	02 26 02.6	+0.3		
KRLC	**Kraliky**	**144.35**	**349**	*e*PKIKP	PKPbc	02 26 02.6	+0.3		
CRVS	**Cervenica-Dubn**	**144.38**	**343**	*e*PKIKP	PKPbc	02 26 02.9	+0.6		
CRVS	**Cervenica-Dubn**	**144.38**	**343**	*e*PKP	PKPbc	02 26 02.9	+0.6		
UZH	**Uzhgorod**	**144.38**	**342**	*c i*PKIKP	**PKPab**	**02 26 01.7**	**-0.3**		
UZH				*e*		02 26 13.5			
UZH				*e*		02 29 19.3			
UZH				MLR	MLR				
	comp=N,1μm,20.0s								
UZH				MLR	MLR				
	comp=E,600nm,20.0s								
UZH				MLR	MLR				
	comp=Z,850nm,20.0s								
BOYT	**Boyabat**	**144.40**	**323**	*i* P	**PKPdf**	**02 26 04.3**	**0.0**		
DARE	**Darende-Malaty**	**144.45**	**317**	*e*P	**PKPdf**	**02 26 05.4**	**+0.8**		
BYBT	**Boyabat**	**144.45**	**323**	*e*P	**P

TIRR Tirgusor 145.64 332 ePKIKP PKPab 02 26 06.7 -0.1
TIRR Tirgusor 145.64 332 ePKPbc PKPab 02 26 06.7 -0.1
KUZU Kuzuini 145.66 314 iP PKPab 02 26 07.8 +0.5
HARR Harsova 145.67 333⇑iP PKPab 02 26 08.3 +1.4
CANT Cankiri 145.67 323 eP PKPab 02 26 08.2 +1.1
CJR Cluj-Napoca 145.67 339⇓iP PKPab 02 26 07.5 +0.6
WLF Walferdange 145.68 1 PKP PKPab 02 26 07.1 +0.3
WLF Walferdange 145.68 1 ePKIKP PKPab 02 26 07.1 +0.3
WLF MLR MLR
comp=Z,3µm,20.0s
WLF Walferdange 145.68 1 ePKPbc PKPab 02 26 07.0 +0.3
WLF LR LR
comp=Z,3µm,20.0s
PSZ Piszkesteto 145.70 344⇑iP PKPab 02 26 07.7 +0.7
PSZ Piszkesteto 145.70 344⇓ePKPdf PKPab 02 26 07.5 +0.5
PSZ Piszkesteto 145.70 344 ePKP2 PKPab 02 26 06.9 -0.1
PSZ MLR MLR
comp=Z,2µm,20.0s
PSZ Piszkesteto 145.70 344 ePKPbc PKPab 02 26 06.9 -0.1
PSZ LR LR
comp=Z,2µm,20.0s
SMOL Smolenice 145.72 348 ePKP2 PKPab 02 26 08.0 +1.0
SMOL Smolenice 145.72 348 ePKP PKPab 02 26 08.0 +1.0
KAMA Osmaniye 145.73 315 iP PKPdf 02 26 06.8 0.0
ANDN Andirin 145.74 316 iP PKPbc 02 26 07.1 0.0
BTIN Bart¯–n 145.77 325 iP PKPbc 02 26 07.1 +0.1
KHC Kasperske Hory 145.77 352 ePKP PKPab 02 26 07.2 0.0
KHC ex x 02 26 13.8
KHC ex x 02 26 19.5
KHC ex x 02 39 43.6
KHC AMS AMS 03 29 10.0
comp=Z,2µm,23.9s
KHC Kasperske Hory 145.77 352 ePKP2 PKPab 02 26 07.2 0.0
KHC MLR MLR
comp=Z,2µm,23.9s
KHC Kasperske Hory 145.77 352 ePKPbc PKPab 02 26 07.2 0.0
SAFT Safranbolu 145.79 324 eP PKPab 02 26 08.6 +1.1
CDAG Cicekdag 145.83 321 iP PKPab 02 26 07.7 -0.2
KMBO Kilima Mbogo 145.84 244 PKPbc PKPab 02 26 08.8 +0.1
comp=Z,76nm,1.1s,baz=98,slow=3.5,SNR=113
KMBO Kilima Mbogo 145.84 244 ePKP2 PKPab 02 26 08.9 +0.1
KMBO MLR MLR
comp=Z,1µm,21.0s
KMBO Kilima Mbogo 145.84 244 ePKPbc PKPab 02 26 08.9 +0.1
KMBO LR LR
comp=Z,1µm,21.0s
KMBO Kilima Mbogo 145.84 244 P PKPab 02 26 08.9 +0.1
SNR=53
KMBO Kilima Mbogo 145.84 244 PKPdf PKPab 02 26 08.9 +0.1
SNR=53
MLR Muntele Rosu 145.85 336⇓iP PKPab 02 26 08.5 +0.8
CVDA Cernavoda 145.90 332⇑iP PKPab 02 26 09.1 +1.3
ISR Istrita 145.91 335⇑iP PKPab 02 26 08.5 +0.6
AMRR Amara 145.99 333⇑iP PKPab 02 26 09.6 +1.5
DRWC Darouich 146.02 314 eP PKPab 02 26 10.1 +1.5
AVNS Nevsehir-Avano 146.02 319 iP PKPbc 02 26 08.1 0.0
GERES GERESS Array B 146.04 352 PKPbc PKPbc 02 26 07.7 0.0
comp=Z,15nm,0.8s,baz=28,slow=3.2,SNR=141
KOZT Kozan 146.14 316 eP PKPab 02 26 09.7 +0.8
SECR 146.18 335⇓iP PKPab 02 26 09.1 +0.3
MSAB Monastry St. A 146.19 332⇑iP PKPab 02 26 09.7 +0.9
BRTR Keskin Array B 146.22 321 PKPbc PKPab 02 26 09.6 +0.2
comp=Z,76nm,0.8s,baz=140,slow=2.4,SNR=272
BUD Budapest 146.32 345⇓ePKPdf PKPab 02 26 11.1 +1.8
PSN Preselentsi 146.34 332 iP PKPab 02 26 11.0 +1.5
LANF Langenberg 146.36 359 PKP PKPab 02 26 09.6 +0.2
SULR 146.39 335⇑iP PKPab 02 26 09.6 0.0
AKO Adana 146.40 317 iP PKPdf 02 26 08.2 +0.4
BCAM Yenicaga 146.43 324 iP PKPbc 02 26 09.4 +0.2
KDZE Karadeniz Ereo 146.44 326 eP PKPbc 02 26 09.8 -0.1
CEYT Ceyhan 146.44 316 eP PKPbc 02 26 09.0 -0.2
ARR Arges 146.46 337⇑iP PKPab 02 26 09.6 -0.4
STU Stuttgart 146.52 357 ePKP2 PKPbc 02 26 08.9 -0.2
STU Stuttgart 146.52 357 ePKPbc PKPbc 02 26 08.9 -0.2
PKSG 146.56 346⇓ePKPdf PKPbc 02 26 09.6 +0.4
NIG Nigde 146.58 318 eP PKPbc 02 26 10.4 +0.4
CONA Conrad Observa 146.58 349 iPKPab PKPbc 02 26 09.0 -0.4
comp=Z,213nm,1.8s,SNR=57
YURE YUREGIR 146.62 315 iP PKPab 02 26 10.7 -0.1
ANTO Ankara 146.63 322 PFAKE 02 26 20.0 +9.2
ANTO LR LR
comp=Z,162nm,19.0s
LOD Lodumlu 146.63 322 eP PKPab 02 26 11.3 +0.4
BBAL Bala 146.64 322 iP PKPbc 02 26 09.8 -0.1
GULA Gulagac 146.68 319 eP PKPbc 02 26 09.5 -0.5
SOP Sopron 146.69 348⇓ePKPdf PKPab 02 26 12.5 +1.8
SIRR Siria 146.69 341⇑iP PKPbc 02 26 09.7 0.0
LOT Lotru 146.71 338 eP PKPab 02 26 13.6 +2.7
LOT Lotru 146.71 338⇑iP PKPbc 02 26 10.0 +0.1
YAYL Yayladag 146.71 314 iP PKPdf 02 26 08.6 0.0
AFSR Af¯ar-Bala (A 146.73 321 eP PKPab 02 26 11.6 +0.3
SEFE Sereflikochisa 146.74 320 eP PKPbc 02 26 09.4 -0.7
PKST T¯s 146.77 346⇓ePKPdf PKPbc 02 26 09.8 0.0
AKSY AKSARAY - Alti 146.80 320 iP PKPdf 02 26 09.1 +0.6
ARNB Al Arnab 146.89 314 eP PKPab 02 26 12.6 +0.6
MOA Molln 146.93 351 iSPKPdf PKPbc 02 26 10.8 +0.5
comp=Z,84nm,1.2s,SNR=39
BFO Black Forest 147.00 358 ePKP2 PKPbc 02 26 10.4 -0.1
BFO MLR MLR
comp=Z,2µm,22.0s
BFO Black Forest 147.00 358 ePKPbc PKPbc 02 26 10.4 -0.1
BFO LR LR
comp=Z,2µm,22.0s
KKUL Konya-Kulu 147.00 321 iP PKPbc 02 26 10.2 -0.7
HUMR Humele 147.03 336⇑iP PKPbc 02 26 09.8 -0.8
PRD Provadia 147.08 332 iP PKPab 02 26 13.0 +0.7
SAHE Sakarya_HENDEK 147.08 325 iP PKPbc 02 26 11.2 +0.3
GZR Gura Zlata 147.10 339⇑iP PKPbc 02 26 11.3 +0.4
DED Mersin 147.11 316 iP PKPdf 02 26 09.9 +0.8
THEF They Montfort 147.11 1 PKP PKPbc 02 26 11.5 +0.7
ECH Echery 147.13 360 PKP PKPbc 02 26 11.3 +0.4
MDUB Mudurnu 147.15 325 eP PKPbc 02 26 11.5 +0.2
KAND Kocaeli-Kandir 147.26 326 iP PKPbc 02 26 11.2 -0.2
BZS Buzias 147.29 341⇑iP PKPdf 02 26 09.6 +0.6
KERG Konya-Eregli 147.29 318 iP PKPdf 02 26 09.8 +0.3
ARSA Arzberg 147.30 349 iPKPab PKPbc 02 26 12.0 +0.7
comp=Z,79nm,1.5s,SNR=30
MERS Mersin 147.34 316 eP PKPdf 02 26 10.0 +0.5
CHBY Cihanbeyli 147.38 320 eP PKPbc 02 26 12.2 +0.2
AUMH MIHALICIK 147.39 324 iP PKPbc 02 26 11.9 -0.1
SPNC Sapanca-Adapaz 147.49 326 eP PKPbc 02 26 12.3 +0.2
MOF Molkenrain 147.50 360 PKP PKPab 02 26 14.3 +0.3
SILT Sile 147.51 327 eP PKPbc 02 26 12.3 +0.2
GULT Gulveren 147.55 325 eP PKPab 02 26 13.9 -0.6
PKSM Moragy 147.60 345⇓iP PKPdf 02 26 09.5 0.0
PKSM Moragy 147.60 345⇓ePKPdf PKPdf 02 26 09.6 0.0
SVRH Sivrihisar-ESK 147.65 323 eP PKPbc 02 26 11.7 -0.9
BANR Banloc 147.65 341⇑iP PKPbc 02 26 12.5 +0.2
RETA Reutte 147.70 355 iPKPab PKPbc 02 26 13.1 +0.6
comp=Z,170nm,1.4s,SNR=34
HRT Hereke 147.74 327 eP PKPbc 02 26 13.7 +0.9
KLYT Kilyos 147.75 328 eP PKPbc 02 26 12.0 -0.7
TOTH TOTAH 147.76 309 eP PKPab 02 26 14.5 -1.0
WATA Walderalm 147.78 354 iPKPbc PKPbc 02 26 13.3 +0.4
comp=Z,147nm,1.4s,SNR=18
BEHE Becsehely 147.80 347⇓ePKPdf PKPbc 02 26 12.6 -0.1
KIZT Kizilcal 147.81 322 eP PKPbc 02 26 13.9 +0.7
KIZK Mersin 147.81 316 iP PKPbc 02 26 13.6 +0.5
MOTA Moosalm 147.81 355 iSPKPbc PKPab 02 26 14.7 -0.6
comp=Z,129nm,1.1s,SNR=28
KBA Koelnbreinsper 147.82 352 iPKPbc PKPbc 02 26 13.0 0.0
comp=Z,16nm,0.8s,SNR=18
WTTA Wattenberg 147.84 354 iPKPbc PKPbc 02 26 13.7 +0.7
comp=Z,19nm,0.7s,SNR=13
ISK Istanbul-Kandi 147.88 328 eP PKPbc 02 26 11.7 -1.4
ISK Istanbul-Kandi 147.88 328 P PKPbc 02 26 13.1 0.0
ISK Istanbul-Kandi 147.88 328 PKP2 PKPbc 02 26 13.1 0.0
ISK Istanbul-Kandi 147.88 328 P PKPbc 02 26 13.1 0.0
KDHN Kadinhani 147.89 321 iP PKPbc 02 26 13.8 +0.4
SOKA Soboth 147.94 349 iSPKPdf PKPbc 02 26 12.4 -0.8
comp=Z,66nm,1.2s,SNR=42
LADK Ladik-KONYA 147.94 320 eP PKPbc 02 26 14.1 +0.5
BGKT Bogazkoy 147.94 328 eP PKPdf 02 26 10.9 +0.7
DAVA Damuels 147.97 356 iPKPbc PKPbc 02 26 14.1 +0.8
comp=Z,129nm,1.1s,SNR=29
ADVT Abdulvahap 147.97 326 eP PKPbc 02 26 14.3 +0.9
ESKT Eskisehir 147.99 324 iP PKPbc 02 26 14.2 +0.6
LOMF Lomont 148.00 0 PKP PKPbc 02 26 14.1 +0.8
BUY Buyukada 148.00 327 iP PKPbc 02 26 13.6 +0.1
CTKS Kestanelik-??a 148.04 328 eP PKPbc 02 26 14.4 +0.9
CAVI Cavuskoy 148.08 326 eP PKPbc 02 26 14.7 +1.0
BRBR Barbar 148.10 310 eP PKPbc 02 26 15.5 +1.3

KONT Konya--Tatoy 148.10 320 eP PKPbc 02 26 14.2 +0.3
FETA Feichten 148.17 355 iPKPab PKPbc 02 26 15.2 +1.3
comp=Z,23nm,0.9s,SNR=19
OBKA Obir 148.19 350 iPKPbc PKPbc 02 26 13.9 0.0
comp=Z,9.5nm,0.7s,SNR=9.7
KMER Konya-Meram 148.21 320 iP PKPbc 02 26 13.6 -0.7
MYKA Terra Mystica 148.21 351 iPKPbc PKPbc 02 26 13.8 -0.1
comp=Z,25nm,1.0s,SNR=16
PHSR Pinarhisar 148.23 330 eP PKPdf 02 26 10.7 -0.1
ABTA Abfaltersbach 148.25 353 iPKPbc PKPbc 02 26 14.2 +0.2
comp=Z,33nm,0.9s,SNR=19
IKL Isikli 148.25 316 eP PKPbc 02 26 15.0 +0.8
GEMT Gemlik 148.27 327 eP PKPbc 02 26 14.4 +0.3
FURI Furi 148.30 262 iP PKPbc 02 26 15.5 +0.1
EREN Erenkoy 148.31 315 eP PKPbc 02 26 15.6 +1.2
AUKIR K¯–rka- Seyitg 148.33 324 iP PKPbc 02 26 15.3 +0.8
ARMT Armutlu 148.35 327 eP PKPbc 02 26 15.2 +0.8
IGD Bursa 148.38 326 iP PKPbc 02 26 13.0 -1.4
EDRB Edirne 148.44 331 eP PKPbc 02 26 15.7 +1.2
EDRB Edirne 148.44 331 P PKPbc 02 26 15.5 +1.0
EDRB Edirne 148.44 331 P PKPbc 02 26 15.5 +1.0
BOLV Bolvadin 148.46 322 iP PKPbc 02 26 14.4 -0.5
MDNY Mudanya-Bursa 148.48 327 eP PKPbc 02 26 15.2 +0.5
CRLT Corlu 148.51 329 eP PKPbc 02 26 15.0 +0.2
ULUD Uludag 148.51 326 iP PKPbc 02 26 15.3 +0.3
LJU Ljubljana 148.64 350 ePKPdf PKPdf 02 26 11.7 +0.4
LJU iPKPbc PKPbc 02 26 15.2 +0.3
PHNC Paralimni 148.69 314 P PKPbc 02 26 16.2 +0.8
TKR Tekirdag 148.71 329 eP PKPbc 02 26 15.0 -0.3
ASCN Ascension 148.79 136 PFAKE 02 26 20.0 0.0
ASCN LR LR
comp=Z,2µm,20.0s
TUE Stuetta 148.81 357 ePKPdf PKPdf 02 26 11.9 +0.1
TUE ePKPbc PKPbc 02 26 15.8 +0.2
TUE LR LR
comp=Z,3µm,21.0s
TVSB Tavsanli 148.82 325 eP PKPbc 02 26 17.0 +1.2
KCTX Karacabey (Bur 148.83 327 eP PKPdf 02 26 11.7 0.0
LFK Lefkose 148.89 315 eP PKPbc 02 26 17.0 +1.0
MATF Mathat 148.93 10 PKP PKPbc 02 26 17.1 +1.5
MRMT Marmara Adasi 148.97 329 eP PKPbc 02 26 16.7 +0.6
OG01 Vacheresse 149.02 0 PKP PKPbc 02 26 17.3 +1.3
EDC Edincik 149.03 328 eP PKPbc 02 26 16.6 +0.5
BOJS Bojanci 149.03 349 ePKPdf PKPdf 02 26 12.6 +0.7
BOJS iPKPbc PKiKP 02 26 16.9 -0.4
BAGO Egridir - ISPA 149.03 322 iP PKPbc 02 26 16.5 +0.2
GDZ Gediz 149.06 324 iP PKPbc 02 26 16.5 +0.1
TRI Trieste 149.09 351 ePKP2 PKPbc 02 26 15.7 -0.4
TRI Trieste 149.09 351 ePKPbc PKPbc 02 26 15.7 -0.4
TRI ePKPab PKPab 02 26 19.7 -0.6
RKY Sarkoy-Tekirda 149.12 329 eP PKPbc 02 26 16.6 +0.2
AGO Saint Agoulin 149.14 5 PKP PKPbc 02 26 18.1 +1.9
MAMC Mammari 149.16 315 P PKPbc 02 26 17.9 +1.3
CSS Mathiatis 149.20 314 P PKPbc 02 26 17.8 +1.0
CSS Mathiatis 149.20 314 P PKPbc 02 26 16.8 0.0
CSS Mathiatis 149.20 314 ePKPdf PKPdf 02 26 12.3 -0.3
CSS ePKPbc PKPbc 02 26 17.0 +0.3
CSS LR LR
comp=Z,240nm,20.0s
DURS Dursunbey 149.25 326 iP PKPbc 02 26 17.0 +0.2
KNL Bal¯–kesir 149.25 328 iP PKPdf 02 26 13.8 +1.3
KESN Edirne-Kesan 149.25 330 iP PKPbc 02 26 16.8 -0.4
PLDF La Plantade 149.26 4 PKP PKPbc 02 26 18.2 +1.6
KRBG Karabiga-Canak 149.28 329 eP PKPbc 02 26 16.9 +0.1
ISP Isparta 149.30 322 P PKPbc 02 26 17.1 +0.1
ISP Isparta 149.30 322 ePKP2 PKPbc 02 26 16.9 -0.2
ISP MLR MLR
comp=Z,1µm,19.0s
ISP Isparta 149.30 322 ePKPbc PKPbc 02 26 16.9 -0.2
ISP LR LR
comp=Z,1µm,19.0s
VTS Vitosha 149.35 336⇑iP PKPbc 02 26 17.9 +0.9
VTS Vitosha 149.35 336 P PKPbc 02 26 17.4 +0.3
VTS Vitosha 149.35 336 PKP2 PKPbc 02 26 17.4 +0.3
VTS Vitosha 149.35 336 iP PKPbc 02 26 18.0 +0.9
VTS Vitosha 149.35 336 P PKPbc 02 26 17.4 +0.3
LEF Lefka 149.41 315 eP PKPdf 02 26 14.2 +1.3
PYM Petit Puy Mans 149.43 5 PKP PKPbc 02 26 18.4 +1.3
ERIK Erikli-Kesan 149.46 330 eP PKPdf 02 26 13.6 +0.9
BCK Bucak 149.50 321 eP PKPbc 02 26 17.7 +0.2
ALN Alexandroupoli 149.50 331 eP PKPdf 02 26 13.4 +0.6
ALN Alexandroupoli 149.50 331 P PKPbc 02 26 15.6 -1.7
ALN Alexandroupoli 149.50 331 P PKPbc 02 26 15.6 -1.7
DEMI Demirci 149.51 325 iP PKPbc 02 26 17.6 +0.1
BALB Balikesir 149.54 327 eP PKPbc 02 26 18.3 +0.9
KHAL Karahalli 149.54 327 iP PKPbc 02 26 18.0 +1.9
KHL Karahalli 149.56 323 eP PKPbc 02 26 16.9 -0.8
ENEZ Enez 149.58 330 eP PKPdf 02 26 13.3 +0.5
ALFC Alefka 149.59 315 P PKPbc 02 26 18.1 +0.4
BALY Balya 149.60 327 iP PKPbc 02 26 17.4 -0.2
SZAC Souni 149.62 314 P PKPbc 02 26 18.6 +0.8
GELI Tayfur-Gelibol 149.68 330 eP PKPbc 02 26 16.0 -1.7
FRNF Fournols 149.74 6 PKP PKPbc 02 26 17.5 -0.3
ANTB Antalya 149.81 320 eP PKPab 02 26 21.4 -2.1
AKMC Akamas 149.85 315 P PKPbc 02 26 18.3 -0.1
PPCY Paphos 149.91 315 P PKPbc 02 26 18.6 +0.1
KULA Kula-Manisa 149.92 325 eP PKPdf 02 26 15.2 +1.6
KULA Kula-Manisa 149.92 325 P PKPbc 02 26 19.1 +0.6
KULA Kula-Manisa 149.92 325 P PKPbc 02 26 19.1 +0.6
KORT Korkueli 149.94 320 iP PKPbc 02 26 19.1 +0.4
LBL Lubilhac 149.96 5 PKP PKPbc 02 26 20.7 +2.3
MMB Musomiste 149.98 334 iP PKPbc 02 26 20.0 +1.5
SSB Saint Sauveur 150.00 3 PKP PKPbc 02 26 17.4 -1.0
SSB Saint Sauveur 150.00 3 ePKPdf PKPdf 02 26 13.2 -0.3
SSB ePKPbc PKPbc 02 26 18.9 +0.4
SSB ePKPab PKPab 02 26 24.0 0.0
SSB LR LR
comp=Z,6µm,20.0s
PLE Pljevlja 150.04 342⇑iPKP PKPbc 02 26 16.6 -2.1
SMTH Samothraki Isl 150.08 331 P PKPbc 02 26 18.5 -0.2
SMTH Samothraki Isl 150.08 331 P PKPbc 02 26 18.5 -0.2
GRN Grenoble 150.09 2 PKP PKPbc 02 26 20.2 +1.5
NVR Nevrokopi 150.12 334 P PKPbc 02 26 19.1 +0.3
NVR Nevrokopi 150.12 334 P PKPbc 02 26 19.1 +0.3
AKHS Akhisar 150.12 326 iP PKPbc 02 26 19.1 +0.2
AKS Akhisar 150.12 326 eP PKPbc 02 26 17.7 -1.2
KAVA Kavala 150.13 333 P PKPbc 02 26 19.3 +0.5
KAVA Kavala 150.13 333 P PKPbc 02 26 19.3 +0.5
GDM Grand'Maison 150.14 1 PKP PKPbc 02 26 20.3 +1.4
EZN Ezine 150.19 329 eP PKPbc 02 26 19.7 +0.7
EZN Ezine 150.19 329 P PKPbc 02 26 19.1 +0.1
EZN Ezine 150.19 329 PKIKP PKPbc 02 26 19.1 +0.1
EZN Ezine 150.19 329 P PKPbc 02 26 19.1 +0.1
HRFI Mount Harif 150.25 304 P PKPdf 02 26 15.1 +0.8
BNI Bardonecchia 150.30 0 ePKIKP PKPdf 02 26 09.7 -4.4
BNI MLR MLR
comp=Z,4µm,19.0s
BNI Bardonecchia 150.30 0 ePKPdf PKPdf 02 26 09.7 -4.4
BNI LR LR
comp=Z,4µm,19.0s
IVA Berane 150.30 340 ePKP PKPbc 02 26 17.1 -2.2
UPM Unac-Piva 150.30 342⇑iPKP PKPbc 02 26 17.4 -2.0
PGAV Gavieira, Arco 150.34 23 ePKPdf PKPdf 02 26 14.4 +0.2
PGAV Gavieira, Arco 150.34 23 eLR LR 03 17 12.1
comp=Z,4µm,20.0s
AYVA Ayvalik 150.40 328 iP PKPbc 02 26 18.9 -0.6
SRS Serrai 150.43 334 P PKPpre 02 26 05.2
SRS Serrai 150.43 334 PKIKP PKPpre 02 26 05.2
SRS Serrai 150.43 334 P PKPpre 02 26 05.2
EIL Elat 150.46 304 eP PKPdf 02 26 15.2 +0.5
EIL Elat 150.46 304 PKP PKPdf 02 26 15.1 +0.4
comp=Z,17nm,1.1s,baz=114,slow=1.8,SNR=15
EIL PKPbc PKiKP 02 26 20.8 +0.1
comp=Z,65nm,1.0s,baz=356,slow=0.8,SNR=43
DKL Dikili 150.47 327 eP PKPbc 02 26 20.1 +0.4
PVY Plav 150.53 340 ePKP PKPbc 02 26 17.5 -2.4
SKO Skopje 150.56 338 P PKPbc 02 26 20.4 +0.6
SKO Skopje 150.56 338 ePKP PKPdf 02 26 14.4 0.0
SKO Skopje 150.56 338 PKIKP PKPbc 02 26 20.4 +0.6
SKO Skopje 150.56 338 P PKPbc 02 26 20.4 +0.6
NKY Niksic 150.63 342⇑iPKP PKPbc 02 26 18.0 -2.1
PCAB Cabril 150.65 23 ePKPbc PKPbc 02 26 21.2 +1.1
PCAB Cabril 150.65 23 ePKPab PKPab 02 26 27.0 +0.1
PRK Paraskevi 150.66 328 P PKPbc 02 26 20.4 +0.3
PRK Paraskevi 150.66 328 PKIKP PKPbc 02 26 20.4 +0.3
PRK Paraskevi 150.66 328 P PKPbc 02 26 20.4 +0.3
VAY Valandovo 150.68 335 P PKPbc 02 26 19.6 -0.5
VAY Valandovo 150.68 335 ePKP PKPdf 02 26 15.3 +0.7
VAY Valandovo 150.68 335 PKIKP PKPbc 02 26 19.6 -0.5
VAY Valandovo 150.68 335 P PKPbc 02 26 19.6 -0.5
KNT Kendrikon 150.68 335 eP PKPbc 02 26 20.0 -0.2

KNT Kendrikon 150.68 335 P PKPbc 02 26 20.0 -0.2
KNT Kendrikon 150.68 335 P PKPbc 02 26 20.0 -0.2
NKME Niksic 150.69 342⇑iPKP PKPbc 02 26 17.8 -2.4
BRY Bratogost 150.69 342⇑iPKP PKPbc 02 26 19.0 -1.3
LIA Limnos Island 150.69 330 P PKPbc 02 26 20.0 -0.2
LIA Limnos Island 150.69 330 P PKPbc 02 26 20.0 -0.2
OG26 St.-Nazaire-De 150.74 2 PKP PKPbc 02 26 19.1 -1.2
IZM Izmir 150.77 326 eP PKPbc 02 26 20.9 +0.4
SOH Sokhos 150.78 334 P PKPdf 02 26 13.4 -1.5
SOH Sokhos 150.78 334 PKIKP PKPdf 02 26 13.4 -1.5
SOH Sokhos 150.78 334 P PKPdf 02 26 13.4 -1.5
AKAS Kas 150.89 320 iP PKPbc 02 26 21.2 +0.3
BLCB Balcova 150.90 326 eP PKPbc 02 26 21.2 +0.4
CEME Cevo 150.90 342⇑iPKP PKPbc 02 26 19.0 -1.7
SIGR SIGRI 150.90 329 eP PKPdf 02 26 17.8 +2.7
SIGR SIGRI 150.90 329 P PKPbc 02 26 20.6 -0.1
SIGR SIGRI 150.90 329 P PKPbc 02 26 20.6 -0.1
PDG Podgorica 150.90 341 P PKPbc 02 26 21.2 +0.6
TTG Podgorica 150.90 341⇑iPKP PKPbc 02 26 18.2 -2.4
TTG Podgorica 150.90 341 PKIKP PKPbc 02 26 21.2 +0.6
TTG Podgorica 150.90 341 P PKPbc 02 26 21.2 +0.6
OUR Ouranopolis 150.90 332 eP PKPdf 02 26 16.4 +1.4
OUR Ouranopolis 150.90 332 P PKPbc 02 26 17.9 -2.7
OUR Ouranopolis 150.90 332 PKIKP PKPbc 02 26 17.9 -2.7
OUR Ouranopolis 150.90 332 P PKPbc 02 26 17.9 -2.7
FETY Fethiye 150.95 321 eP PKPbc 02 26 19.8 -1.1
FETY Fethiye 150.95 321 P PKPbc 02 26 22.1 +1.2
FETY Fethiye 150.95 321 P PKPbc 02 26 22.1 +1.2
AYDN Tasoluk 150.95 324 iP PKPbc 02 26 21.7 +0.7
KSL Kastellorizon 150.96 320 P PKPbc 02 26 20.2 -0.7
KSL Kastellorizon 150.96 320 P PKPbc 02 26 20.2 -0.7
POLO Lamas de Olo 151.03 23 ePKPbc PKPbc 02 26 21.9 +0.8
POLO Lamas de Olo 151.03 23 ePKPab PKPab 02 26 27.7 -0.8
VLC Villacollemand 151.04 355 ePKPdf PKPdf 02 26 14.5 -0.6
VLC ePKPbc PKPbc 02 26 20.9 0.0
VLC ePKPab PKPab 02 26 26.6 -1.7
VLC LR LR
comp=Z,979nm,21.0s
PBRG Braganca 151.04 21 ePKPbc PKPbc 02 26 20.3 -0.7
GRG Griva 151.06 335 eP PKPdf 02 26 15.6 +0.3
GRG Griva 151.06 335 P PKPdf 02 26 13.7 -1.6
GRG Griva 151.06 335 PKIKP PKPdf 02 26 13.7 -1.6
GRG Griva 151.06 335 P PKPdf 02 26 13.7 -1.6
HORT Hortiatis 151.07 334 eP PKPbc 02 26 19.7 -1.5
TURN Turunc 151.08 322 iP PKPbc 02 26 22.7 +1.5
DALY Dalyan (Mu¯la 151.08 322 eP PKPbc 02 26 20.1 -1.1
YER Yerkesik 151.09 323 eP PKPdf 02 26 16.9 +1.4
HCY Herceg Novi 151.12 342⇑iPKP PKPbc 02 26 20.0 -1.1
BUM Brajici-Budva 151.13 341⇑iPKP PKPbc 02 26 19.5 -1.7
DRME Dracevica, Mon 151.14 341⇑iPKP PKPbc 02 26 19.3 -1.9
PVRL Vila Real 151.15 23 ePKPbc PKPbc 02 26 23.2 +1.9
URLA Izmir 151.15 327 iP PKPbc 02 26 21.0 -0.4
GCAM G?zelcaml? 151.29 325 iP PKPbc 02 26 21.7 +0.1
ZEY ¯zmir 151.29 327 iP PKPbc 02 26 20.9 -0.7
CHOS Chios island 151.42 327 eP PKPbc 02 26 22.7 +0.6
CHOS Chios island 151.42 327 P PKPbc 02 26 22.1 +0.1
CHOS Chios island 151.42 327 P PKPbc 02 26 22.1 +0.1
BIA Bitola 151.43 337 ePKP PKPdf 02 26 16.6 +0.7
SMG Samos 151.50 325 P PKPbc 02 26 22.3 +0.1
SMG Samos 151.50 325 P PKPbc 02 26 22.3 +0.1
LARF Larrau 151.50 12 PKP PKPbc 02 26 23.1 +1.1
MVO Moncorvo 151.50 22 ePKPab PKPab 02 26 28.2 -2.2
MVO Moncorvo 151.50 22 eLR LR 03 17 16.4
comp=Z,3µm,20.0s
OHR Ohrid 151.54 338 ePKP PKPdf 02 26 15.2 -0.9
PVIS Viseu 151.56 24 ePKPdf PKPdf 02 26 15.4 -0.7
PVIS Viseu 151.56 24 ePKPab PKPab 02 26 31.4 +0.7
REYF Montagne du Re 151.59 11 PKP PKPbc 02 26 24.2 +1.9
FNA Florina 151.61 336 eP PKPbc 02 26 23.1 +0.7
FNA Florina 151.61 336 P PKPbc 02 26 22.3 -0.1
FNA Florina 151.61 336 P PKPbc 02 26 22.3 -0.1
BDRM Kayabasi 151.62 324 iP PKPdf 02 26 16.6 +0.4
TIR Tirane 151.67 339 ePKIKP PKPdf 02 26 15.9 -0.3
TIR e 02 26 22.5
TIR e 02 26 30.9
TIR MLR MLR
comp=Z,3µm,21.0s
TIR Tirane 151.67 339 ePKPdf PKPdf 02 26 15.9 -0.3
TIR ePKPbc PKPbc 02 26 22.5 +0.1
TIR ePKPab PKPab 02 26 30.9 -0.2
TIR LR LR
comp=Z,3µm,21.0s
LABF Labassere 151.69 11 PKP PKPbc 02 26 23.2 +0.7
BODT Bodrum 151.70 324 eP PKPbc 02 26 23.2 +0.5
BODT Bodrum 151.70 324 P PKPbc 02 26 22.3 -0.3
BODT Bodrum 151.70 324 P PKPbc 02 26 22.3 -0.3
VIEF Viey 151.84 11 PKP PKPbc 02 26 24.7 +1.8
KZN Kozani 151.86 335 P PKPdf 02 26 15.6 -1.0
KZN Kozani 151.86 335 PKIKP PKPdf 02 26 15.6 -1.0
KZN Kozani 151.86 335 P PKPdf 02 26 15.6 -1.0
PCAS Casmilo, Conde 151.88 26 ePKPdf PKPdf 02 26 15.6 -0.9
AOS Alonnisos 151.88 331 eP PKPdf 02 26 14.7 -1.9
MTE Manteigas 151.97 24 ePKPdf PKPdf 02 26 14.7 -2.0
MTE Manteigas 151.97 24 ePKPab PKPab 02 26 31.4 -1.0
MTE Manteigas 151.97 24 eLR LR 03 17 23.4
comp=Z,4µm,20.0s
MTE Manteigas 151.97 24 ePKPdf PKPdf 02 26 17.4 +0.7
MTE ePKPbc PKPbc 02 26 23.2 0.0
MTE ePKPab PKPab 02 26 32.2 -0.2
MTE LR LR
comp=Z,4µm,20.0s
PMOZ Porto Moniz, M 152.01 47 eLR LR 03 18 43.9
comp=Z,2µm,20.0s
XOR Xorichti 152.04 332 P PKPdf 02 26 15.8 -1.0
XOR Xorichti 152.04 332 P PKPdf 02 26 15.8 -1.0
NEST Nestorio 152.05 336 P PKPbc 02 26 21.1 -2.4
NIS1 Nisyros Isl. 152.09 323 eP PKPbc 02 26 22.4 -1.2
SALF Salau 152.16 9 PKP PKPbc 02 26 26.2 +2.6
LRDF Laroque-de-Fa 152.16 7 PKP PKPbc 02 26 24.0 +0.5
CARF Carcanieres 152.33 8 PKP PKPbc 02 26 24.1 +0.1
KPRO Kipourio 152.33 336 P PKPdf 02 26 17.1 -0.2
THL Klokotos Trika 152.39 334 P PKPdf 02 26 12.5 -4.8
AQU L'Aquila 152.42 350 ePKPbc PKPbc 02 26 24.3 +0.2
AQU ePKPab PKPab 02 26 34.5 +0.3
AQU LR LR
comp=Z,2µm,20.0s
VALF Valcebollere 152.62 8 PKP PKPbc 02 26 26.9 +2.1
SJAF Saint Jean de 152.65 6 PKP PKPbc 02 26 21.5 -3.1
LKR Lokris 152.71 332 P PKPdf 02 26 16.7 -1.1
LKR Lokris 152.71 332 P PKPdf 02 26 16.7 -1.1
PTL Penteli 152.78 330 P PKPdf 02 26 16.2 -1.8
PTL Penteli 152.78 330 P PKPdf 02 26 16.2 -1.8
JAN Janina 152.78 336 P PKPbc 02 26 25.3 +0.3
JAN Janina 152.78 336 P PKPbc 02 26 25.3 +0.3
KARP Karpathos 152.83 322 eP PKPbc 02 26 27.7 +2.4
PMRV Marv??o 152.86 25 iP PKPbc 02 26 27.4 +2.2
PMRV Marv??o 152.86 25 eLR LR 03 17 58.7
comp=Z,3µm,20.0s
VLY Voula,Athens 152.97 330 P PKPdf 02 26 21.0 +2.8
VLY Voula,Athens 152.97 330 P PKPdf 02 26 21.0 +2.8
EVR Evrytania 153.02 334 P PKPbc 02 26 22.1 -3.6
EVR Evrytania 153.02 334 P PKPbc 02 26 22.1 -3.6
SGD Sagiada 153.06 337 P PKPdf 02 26 16.6 -1.7
IGT Igoumenitsa 153.09 337 eP PKPbc 02 26 25.3 -0.4
IGT Igoumenitsa 153.09 337 P PKPbc 02 26 24.9 -0.8
IGT Igoumenitsa 153.09 337 PKIKP PKPbc 02 26 24.9 -0.8
IGT Igoumenitsa 153.09 337 P PKPbc 02 26 24.9 -0.8
DSL Palaion Diasel 153.13 335 P PKPdf 02 26 20.9 +2.5
DSL Palaion Diasel 153.13 335 P PKPdf 02 26 20.9 +2.5
KEK Kerkira 153.14 338 P PKPdf 02 26 18.7 +0.3
KEK Kerkira 153.14 338 P PKPdf 02 26 18.7 +0.3
SANT Santorini 153.23 325 ePKPbc PKPbc 02 26 25.5 -0.6
SANT LR LR
comp=Z,2µm,20.0s
ANX Ano Chora 153.24 333 P PKPdf 02 26 18.7 0.0
PESTR Estremoz 153.25 26 ePKPab PKPab 02 26 38.0 +0.2
MATE Matera 153.29 343⇓iP PKPbc 02 26 24.5 -1.5
KALE Kalithea 153.31 333 P PKPdf 02 26 17.5 -1.3
KALE Kalithea 153.31 333 P PKPdf 02 26 17.5 -1.3
PNCL Nicolau / Gran 153.47 28 ePKPab PKPab 02 26 39.2 +0.5
LAKA Lakka 153.51 333 P PKPdf 02 26 19.2 +0.2
LAKA Lakka 153.51 333 P PKPdf 02 26 19.2 +0.2
PDO Prodromos 153.55 334 P PKPdf 02 26 18.3 -0.7
KLV Kalavryta, Ach 153.59 332 P PKP

ZKR	Zakros	153.69	322	P		PKPbc	02 26 27.0	-0.1	
MESJ	Messejana	153.83	28	*e*P		PKPdf	02 26 18.1	-1.4	
MESJ				AMS		AMS	03 29 10.9		
	comp=Z,3μm,21.0s								
MESJ	Messejana	153.83	28	*e*PKIKP		PKPdf	02 26 18.0	-1.4	
PBEJ	Beja	153.84	27	*e*PKPdf		PKPdf	02 26 18.4	-1.0	
PAB	San Pablo	153.87	20	*e*PKIKP		PKPdf	02 26 19.0	-0.6	
PAB				*e*			02 26 27.1		
PAB				*e*			02 26 40.4		
PAB				MLR		MLR			
	comp=Z,3μm,22.0s								
PAB	San Pablo	153.87	20	*e*PKPdf		PKPdf	02 26 19.0	-0.6	
PAB				*e*PKPbc		PKPbc	02 26 27.1	-0.4	
PAB				*e*PKPab		PKPab	02 26 40.4	-0.1	
PAB				LR		LR			
	comp=Z,3μm,22.0s								
ESDC	Sonseca Array	153.88	19	PKP		PKPdf	02 26 20.7	+1.1	
	comp=Z,2.0nm,1.1s,baz=0.3,slow=2.1,SNR=6.9								
ESDC				PKPbc		PKPbc	02 26 26.0	-1.5	
	comp=Z,2.7nm,0.9s,baz=344,slow=2.1,SNR=8.4								
ESDC				PKPab		PKPab	02 26 39.7	-0.7	
	comp=Z,14nm,0.8s,baz=329,slow=3.1,SNR=31								
MORF	Marmelete	154.07	29	*e*P		PKPdf	02 26 18.2	-1.7	
MORF				AMS		AMS	03 28 54.5		
	comp=Z,3μm,21.1s								
MORF	Marmelete	154.07	29	*e*PKPdf		PKPdf	02 26 21.9	+2.0	
MORF	Marmelete	154.07	29	*e*PKIKP		PKPdf	02 26 18.1	-1.7	
PBAR	Barrancos	154.07	26	*e*PKPdf		PKPdf	02 26 18.5	-1.3	
PCVE	Castro Verde	154.09	28	*e*PKPab		PKPab	02 26 41.9	+0.6	
LAST	Lasithi	154.09	323	⇑*i*P		PKPbc	02 26 27.7	-0.4	
CUC	Castrocucco	154.15	344	*e*PKPdf		PKPdf	02 26 17.6	-2.3	
CUC				*e*PKPbc		PKPbc	02 26 27.6	-0.4	
CUC				*e*PKPab		PKPab	02 26 41.0	-0.5	
CUC				LR		LR			
	comp=Z,1μm,20.0s								
IDI	Anoyia	154.33	324	⇓*i*P		PKPdf	02 26 21.1	+0.8	
IDI	Anoyia	154.33	324	P		PKPbc	02 26 25.3	-3.3	
IDI	Anoyia	154.33	324	*e*PKPdf		PKPdf	02 26 20.2	-0.1	
IDI				*e*PKPbc		PKPbc	02 26 27.9	-0.7	
IDI				*e*PKPab		PKPab	02 26 41.7	-0.8	
PVAQ	Vaqueiros	154.42	28	*e*PKPdf		PKPdf	02 26 21.7	+1.4	
PVAQ	Vaqueiros	154.42	28	*e*PKPab		PKPab	02 26 42.7	0.0	
PVAQ	Vaqueiros	154.42	28	*e*LR		LR	03 18 48.1		
	comp=Z,2μm,18.0s								
SIVA	Sivas	154.57	324	P		PKPdf	02 26 24.5	+4.0	
SIVA	Sivas	154.57	324	P		PKPdf	02 26 24.5	+4.0	
TIP	Timpagrande	154.64	342	⇓*i*P		PKPdf	02 26 24.0	+3.4	
TIP	Timpagrande	154.64	342	P		PKPdf	02 26 24.0	-0.2	
TIP	Timpagrande	154.64	342	*e*PKPdf		PKPdf	02 26 20.1	-0.5	
TIP				*e*PKPbc		PKPbc	02 26 28.9	-0.2	
TIP				*e*PKPab		PKPab	02 26 43.5	-0.2	
TIP				*e*PP		PP	02 30 12.3	-5.8	
TIP				LR		LR			
	comp=Z,2μm,21.0s								
VSL	Villasalto	155.75	355	*e*PKPab		PKPab	02 26 48.4	0.0	
VSL				LR		LR			
	comp=Z,3μm,20.0s								
CLTB	Caltabellotta	157.07	347	PFAKE			02 26 30.0	+6.1	
CLTB				LR		LR			
	comp=Z,2μm,20.0s								
WDD	Wied Dalam	158.36	343	PFAKE			02 26 40.0	+15	
WDD				LR		LR			
	comp=Z,1μm,20.0s								
KEST	Kesra	159.49	354	PKP		PKPdf	02 26 25.5	-1.4	
	comp=Z,6.3nm,1.0s,baz=26,slow=7.3,SNR=3.9								
KEST				PKPab		PKPab	02 27 04.3	-0.3	
	comp=Z,13nm,1.1s,baz=237,slow=8.9,SNR=4.9								
LIC	Lamto	165.26	126	*e*PKP1		PKPdf	02 26 32.5	-0.7	
	comp=Z,40nm,1.6s								
TIC	Toumodi	165.53	125	*e*PKP1		PKPdf	02 26 32.7	-0.7	
KIC	Kosan Boka	165.57	127	*e*PKP1		PKPdf	02 26 31.7	-1.8	
	comp=Z,108nm,1.5s								
DBIC	Dimbokro	165.67	125	PKP		PKPdf	02 26 32.0	-1.5	
	comp=Z,14nm,1.1s,baz=240,slow=2.7,SNR=6.6								
DBIC				PKPab		PKPab	02 27 32.1	-0.3	
	comp=Z,20nm,1.1s,baz=212,slow=4.4,SNR=7.2								
DBIC				PP		PP	02 31 18.9	-0.1	
	comp=Z,6.8nm,1.1s,baz=226,slow=6.5,SNR=4.1								
TAM	Tamanrasset	172.39	10	*e*PKIKP		PKPdf	02 26 38.3	+0.6	
TAM				*e*			02 28 01.6		
TAM				*e*			02 31 50.4		
TAM				MLR		MLR			
	comp=Z,3μm,20.0s								
TAM	Tamanrasset	172.39	10	*e*PKPdf		PKPdf	02 26 38.3	+0.6	
TAM				*e*PKPab		PKPab	02 28 01.6	-0.2	
TAM				*e*PP		PP	02 31 50.4	-1.3	
TAM				LR		LR			
	comp=Z,3μm,20.0s								
TORD	Torodi Ar. Bea	174.55	112	PKP		PKPdf	02 26 37.5	-1.0	
	comp=Z,7.1nm,1.0s,baz=338,slow=0.5,SNR=32								
TORD				PKPab		PKPab	02 28 10.9	-0.9	
	comp=Z,7.9nm,1.0s,baz=259,slow=4.2,SNR=8.6								
TORD				PP		PP	02 32 02.5	-1.7	
	comp=Z,5.3nm,1.2s,baz=224,slow=4.9,SNR=6.2								

NIED ***15*** *02:08:00,35.70N×140.90E,h8km,Mw3.4 Best double couple: M0 1.53000×10^14 NP1:φs323.00000°,δ43.00000°, λ-120.00000°. NP2:φs181.00000°,δ54.00000°, λ-65.00000°.*

JMA 15 02:08:52.7±0.1,35°67N×140°92E,h13km±1km,M3.6, 3C-1D,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
CHOJ	**Chosi**	**0.06**	**303**	⇓P	Pg	02 08 55.3	0.0
CHOJ				S	Sg	02 09 57.3	+0.2
JCN	**Nagara**	**0.64**	**247**	⇑P	Pb	02 09 05.9	+0.2
JCN				eS	Sn	02 09 16.3	-1.1
KTR	**Katsuura**	**0.72**	**224**	P	Pg	02 09 06.5	-0.1
KTR				S	Sb	02 09 16.6	-0.2
JYT	**Yasato**	**0.81**	**314**	⇑P	Pg	02 09 07.9	-0.5
JYT				S	Sg	02 09 19.1	+0.1
BSO4	**Boso 4**	**0.83**	**215**	P	Pg	02 09 08.7	0.0
BSO3	**Boso 3**	**0.93**	**201**	P	Pb	02 09 10.3	-0.2
JHO	**Hitachi**	**0.98**	**343**	P	Pb	02 09 10.4	-1.2
JHO				eS	Sb	02 09 23.5	-0.9
BSO1	**Boso 1**	**1.01**	**177**	⇑P	Pb	02 09 10.5	-1.3
MAT	**Matsushiro**	**2.36**	**292**	P	Pn	02 09 31.2	0.0
MAT				eS	Sb	02 10 02.2	-2.0

PRU ***15*** *02:12:55.1,42.97N×15.49E,h0km*
ROM ***15*** *02:12:55.2±0.4, 43.01N×15.64E,h10km,Md3.0/4, Ml2.9/20,Error ellipse: s-maj=6.3km s-min=2.9km az=59.0*
PDG ***15*** *02:12:55.5±0.6,42.98N×15.62E,h16km±1km,ML3.1/9, Error ellipse: s-maj=0.9km s-min=1.1km az=0.0*
CSEM ***15*** *02:12:57.0±0.1,42.99N×15.60E,h20km,MD3.0, Error ellipse: s-maj=2.6km s-min=2.4km az=172.0*

ISC 15 02:12:54.5±1.2,42°99N±0°02×15°63E±0°02,h6km±10km, n116,σ1s30/154,10C-10D,Adriatic Sea

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
SGRT	**San Giovanni R**	**1.24**	**176**	Pg	**Pg**	**02 13 18.4**	**+0.2**
SGRT	**San Giovanni R**	**1.24**	**176**	Pg	**Pg**	**02 13 18.4**	**+0.2**
FRES	**Fresagrandinar**	**1.24**	**215**	Pg	**Pg**	**02 13 18.6**	**+0.4**
	338nm,0.6s						
FRES	**Fresagrandinar**	**1.24**	**215**	Pg	**Pg**	**02 13 18.6**	**+0.4**
	338nm,0.6s						
MSAG	**Monte S. Angel**	**1.30**	**171**	Pg	**Pb**	**02 13 19.1**	**-0.2**
MSAG	**Monte S. Angel**	**1.30**	**171**	Pg	**Pb**	**02 13 19.1**	**-0.2**
MS1	**Monte Sant'Ang**	**1.31**	**170**	*e*Pn	**Pb**	**02 13 19.4**	**-0.1**
CIGN	**Sant'Elia a Pi**	**1.44**	**202**	Pg	**Pb**	**02 13 21.5**	**-0.2**
	126nm,0.7s						
CIGN	**Sant'Elia a Pi**	**1.44**	**202**	Pg	**Pb**	**02 13 21.5**	**-0.2**
	126nm,0.7s						
VCEL	**Villa Celiera**	**1.45**	**246**	Pg	**Pg**	**02 13 22.5**	**+0.3**
	111nm,0.5s						
VCEL	**Villa Celiera**	**1.45**	**246**	Pg	**Pg**	**02 13 22.5**	**+0.3**
	111nm,0.5s						
TRIV	**Trivento**	**1.46**	**213**	Pg	**Pg**	**02 13 22.5**	**0.0**
	275nm,0.8s						
TRIV	**Trivento**	**1.46**	**213**	Pg	**Pg**	**02 13 22.5**	**0.0**
	275nm,0.8s						
TERO	**Teramo**	**1.54**	**257**	Pg	**Pb**	**02 13 22.8**	**-0.5**
	92nm,1.0s						
TERO	**Teramo**	**1.54**	**257**	Pg	**Pb**	**02 13 22.8**	**-0.5**
	92nm,1.0s						
UDBI	**Udbina**	**1.54**	**4**	*e*Pn	**Pb**	**02 13 23.5**	**0.0**
UDBI				Sn	**Sg**	**02 13 45.4**	**+1.4**
UDBI	**Udbina**	**1.54**	**4**	*e*Pn	**Pb**	**02 13 23.4**	**0.0**
UDBI				Sn	**Sg**	**02 13 45.3**	**+1.4**
GATE	**Gambatesa**	**1.57**	**200**	Pg	**Pg**	**02 13 24.7**	**+0.1**
	151nm,0.8s						
GATE	**Gambatesa**	**1.57**	**200**	Pg	**Pg**	**02 13 24.7**	**+0.1**
	151nm,0.8s						
INTR	**Introdacqua**	**1.61**	**233**	Pg	**Pn**	**02 13 23.8**	**+0.4**
	215nm,0.9s						
INTR	**Introdacqua**	**1.61**	**233**	Pg	**Pn**	**02 13 23.8**	**+0.4**
	215nm,0.9s						
BSSO	**Busso**	**1.64**	**208**	Pg	**Pg**	**02 13 26.0**	**+0.2**
	149nm,0.9s						
BSSO	**Busso**	**1.64**	**208**	Pg	**Pg**	**02 13 26.0**	**+0.2**
	149nm,0.9s						
NVLJ	**Novalja**	**1.66**	**341**	*i* Pn	**Pb**	**02 13 24.8**	**-0.7**
NVLJ				Sn	**Sg**	**02 13 48.1**	**+0.1**
NVLJ	**Novalja**	**1.66**	**341**	*i* Pn	**Pb**	**02 13 24.7**	**-0.7**
NVLJ				Sn	**Sg**	**02 13 48.0**	**+0.1**
FAGN	**Fagnano**	**1.67**	**245**	Pg	**Pn**	**02 13 24.8**	**+0.5**
	159nm,0.6s						
FAGN	**Fagnano**	**1.67**	**245**	Pg	**Pn**	**02 13 24.8**	**+0.5**
	159nm,0.6s						
MIDA	**Miranda**	**1.69**	**218**	Pg	**Pn**	**02 13 24.3**	**-0.3**
	140nm,0.7s						
MIDA	**Miranda**	**1.69**	**218**	Pg	**Pn**	**02 13 24.3**	**-0.3**
	140nm,0.7s						
RNI2	**Rionero Sannit**	**1.69**	**221**	Pg	**Pg**	**02 13 27.4**	**+0.5**
	117nm,0.8s						
RNI2	**Rionero Sannit**	**1.69**	**221**	Pg	**Pg**	**02 13 27.4**	**+0.5**
	117nm,0.8s						
SMA1	**SAN MARTINO**	**1.73**	**259**	Pg	**Pn**	**02 13 25.2**	**+0.1**
	69nm,0.6s						
SMA1	**SAN MARTINO**	**1.73**	**259**	Pg	**Pn**	**02 13 25.2**	**+0.1**
	69nm,0.6s						
SACR	**S. Croce Del S**	**1.73**	**204**	Pg	**Pn**	**02 13 25.7**	**+0.5**
	149nm,1.2s						
SACR	**S. Croce Del S**	**1.73**	**204**	Pg	**Pn**	**02 13 25.7**	**+0.5**
	149nm,1.2s						
AQU	**L'Aquila**	**1.76**	**250**	*e*Pn	**Pb**	**02 13 26.9**	**-0.3**
CING	**Cingoli**	**1.82**	**283**	Pg	**Pb**	**02 13 27.2**	**-1.0**
	53nm,0.9s						
CING	**Cingoli**	**1.82**	**283**	Pg	**Pb**	**02 13 27.2**	**-1.0**
	53nm,0.9s						
PTRJ	**Pietraroja**	**1.82**	**207**	Pg	**Pn**	**02 13 27.0**	**+0.6**
	294nm,0.8s						
PTRJ	**Pietraroja**	**1.82**	**207**	Pg	**Pn**	**02 13 27.0**	**+0.6**
	294nm,0.8s						
SGTA	**Sant Agata di**	**1.87**	**186**	Pg	**Pb**	**02 13 28.2**	**-0.8**
	129nm,0.6s						
SGTA	**Sant Agata di**	**1.87**	**186**	Pg	**Pb**	**02 13 28.2**	**-0.8**
	129nm,0.6s						
VAGA	**Valle Agricola**	**1.89**	**214**	Pg	**Pb**	**02 13 28.2**	**-1.1**
	182nm,1.1s						
VAGA	**Valle Agricola**	**1.89**	**214**	Pg	**Pb**	**02 13 28.2**	**-1.1**
	182nm,1.1s						
POFI	**Posta Fibreno**	**1.91**	**229**	Pg	**Pb**	**02 13 28.6**	**-1.1**
POFI	**Posta Fibreno**	**1.91**	**229**	Pg	**Pb**	**02 13 28.6**	**-1.1**
LNSS	**Leonessa**	**1.94**	**259**	Pg	**Pn**	**02 13 28.9**	**+0.8**
	55nm,0.7s						
LNSS	**Leonessa**	**1.94**	**259**	Pg	**Pn**	**02 13 28.9**	**+0.8**
	55nm,0.7s						
CDT	**Castel del Mon**	**1.97**	**166**	*e*Pn	**Pb**	**02 13 30.0**	**-0.7**
TREB	**Trebinje**	**2.02**	**97**	*e*Pn	**Pn**	**02 13 29.7**	**+0.7**
ARVD	**Arcevia**	**2.03**	**285**	Pg	**Pb**	**02 13 30.5**	**-1.2**
	31nm,0.7s						
ARVD	**Arcevia**	**2.03**	**285**	Pg	**Pb**	**02 13 30.5**	**-1.2**
	31nm,0.7s						
BAI	**Bari**	**2.10**	**153**	*e*Pn	**Pb**	**02 13 32.7**	**-0.2**
BRY	**Bratogost**	**2.14**	**91**	⇑*i*Pn	**Pn**	**02 13 31.8**	**+1.0**
BRY				eSn	**Sb**	**02 14 00.5**	**0.0**
BRY	**Bratogost**	**2.14**	**91**	⇑*i*Pn	**Pn**	**02 13 31.8**	**+1.0**
BRY				eSn	**Sb**	**02 14 00.5**	**0.0**
HCY	**Herceg Novi**	**2.18**	**103**	⇑*i*Pn	**Pn**	**02 13 32.4**	**+1.1**
HCY				eSn	**Sb**	**02 14 01.1**	**-0.5**
HCY	**Herceg Novi**	**2.18**	**103**	⇑*i*Pn	**Pn**	**02 13 32.4**	**+1.1**
HCY				eSn	**Sb**	**02 14 01.1**	**-0.5**
FRON	**Frontone**	**2.18**	**285**	Pg	**Pn**	**02 13 32.2**	**+0.9**
FRON	**Frontone**	**2.18**	**285**	Pg	**Pn**	**02 13 32.2**	**+0.9**
SG1	**Sgolgore (BA)**	**2.29**	**160**	*e*Pn	**Pn**	**02 13 34.0**	**+1.2**
UPM	**Unac-Piva**	**2.41**	**84**	⇓*i*Pn	**Pn**	**02 13 35.9**	**+1.3**
UPM				eSn	**Sb**	**02 14 06.6**	**-1.7**
UPM	**Unac-Piva**	**2.41**	**84**	⇓*i*Pn	**Pn**	**02 13 35.9**	**+1.3**
UPM				eSn	**Sb**	**02 14 06.6**	**-1.7**
NKME	**Niksic**	**2.45**	**94**	⇓*i*Pn	**Pn**	**02 13 35.6**	**+0.5**
NKME				eSn	**Sb**	**02 14 08.2**	**-1.3**
NKME	**Niksic**	**2.45**	**94**	⇓*i*Pn	**Pn**	**02 13 35.6**	**+0.5**
NKME				eSn	**Sb**	**02 14 08.2**	**-1.3**
CEME	**Cevo**	**2.46**	**99**	⇓*i*Pn	**Pn**	**02 13 35.9**	**+0.7**
CEME				eSn	**Sb**	**02 14 08.6**	**-1.2**
CEME	**Cevo**	**2.46**	**99**	⇓*i*Pn	**Pn**	**02 13 35.9**	**+0.7**
CEME				eSn	**Sb**	**02 14 08.6**	**-1.2**
NKY	**Niksic**	**2.48**	**93**	⇑*i*Pn	**Pn**	**02 13 36.2**	**+0.7**
NKY				eSn	**Sb**	**02 14 09.1**	**-1.2**
NKY	**Niksic**	**2.48**	**93**	⇑*i*Pn	**Pn**	**02 13 36.2**	**+0.7**
NKY				eSn	**Sb**	**02 14 09.1**	**-1.2**
BUM	**Brajici-Budva**	**2.51**	**105**	⇑*i*Pn	**Pn**	**02 13 36.5**	**+0.7**
BUM				eSn	**Sb**	**02 14 09.2**	**-1.8**
BUM	**Brajici-Budva**	**2.51**	**105**	⇑*i*Pn	**Pn**	**02 13 36.5**	**+0.7**
BUM				eSn	**Sb**	**02 14 09.2**	**-1.8**
BOJS	**Bojanci**	**2.53**	**354**	*i* Pn	**Pn**	**02 13 37.4**	**+1.4**
BOJS				*i* Sn	**Sb**	**02 14 09.5**	**-2.0**
BOJS	**Bojanci**	**2.53**	**354**	*i* Pn	**Pn**	**02 13 37.4**	**+1.4**
BOJS				*i* Sn	**Sb**	**02 14 09.5**	**-2.0**
HAPS	**Han Pijesak,Bl**	**2.65**	**65**	*e*Pn	**Pn**	**02 13 38.3**	**+0.5**
PDG	**Podgorica**	**2.73**	**101**	⇑*i*Pn	**Pn**	**02 13 39.6**	**+0.8**
PDG				eSn	**Sb**	**02 14 14.9**	**-2.5**
TTG	**Podgorica**	**2.73**	**101**	⇑*i*Pn	**Pn**	**02 13 39.6**	**+0.8**
TTG				eSn	**Sb**	**02 14 14.9**	**-2.5**
DRME	**Dracevica, Mon**	**2.75**	**106**	⇓*i*Pn	**Pn**	**02 13 39.4**	**+0.4**
DRME				eSn	**Sb**	**02 14 14.8**	**-3.1**
DRME	**Dracevica, Mon**	**2.75**	**106**	⇓*i*Pn	**Pn**	**02 13 39.4**	**+0.4**
DRME				eSn	**Sb**	**02 14 14.8**	**-3.1**
TAR1	**Taranto**	**2.76**	**153**	*e*Pn	**Pn**	**02 13 39.4**	**+0.2**
PLE	**Pljevlja**	**2.77**	**82**	⇓*i*Pn	**Pn**	**02 13 40.6**	**+1.1**
PLE				eSn	**Sb**	**02 14 15.4**	**-3.3**
PLE	**Pljevlja**	**2.77**	**82**	⇓*i*Pn	**Pn**	**02 13 40.6**	**+1.1**
PLE				eSn	**Sb**	**02 14 15.4**	**-3.3**
CRES	**Cresnjev**	**2.84**	**358**	*e*Pn	**Pn**	**02 13 41.2**	**+0.9**
ZAG	**Zagreb**	**2.85**	**5**	*e*Pn	**Pn**	**02 13 41.6**	**+1.2**
ULC	**Ulcinj**	**2.87**	**110**	*e*Pn	**Pn**	**02 13 40.5**	**-0.2**
ULC				eSn	**Sn**	**02 14 17.1**	**+1.6**
ULC	**Ulcinj**	**2.87**	**110**	*e*Pn	**Pn**	**02 13 40.5**	**-0.2**
ULC				eSn	**Sn**	**02 14 17.1**	**+1.6**
CEY	**Cerknica**	**2.88**	**343**	*e*Pn	**Pn**	**02 13 42.2**	**+1.3**
BBLS	**Lazići**	**2.89**	**71**	*e*Pn	**Pn**	**02 13 42.0**	**+1.0**
BEY	**Berane**	**3.13**	**91**	*e*Pn	**Pn**	**02 13 45.2**	**+0.8**
BEY				eSn	**Sn**	**02 14 24.8**	**+2.6**
IVA	**Berane**	**3.13**	**91**	*e*Pn	**Pn**	**02 13 45.2**	**+0.8**
IVA				eSn	**Sn**	**02 14 24.8**	**+2.6**
LJU	**Ljubljana**	**3.15**	**346**	*e*Pn	**Pn**	**02 13 46.0**	**+1.4**
LJU				eSn	**Sn**	**02 14 25.2**	**+2.7**
LJU	**Ljubljana**	**3.15**	**346**	*e*Pn	**Pn**	**02 13 45.6**	**+1.0**
PVY	**Plav**	**3.21**	**96**	*e*Pn	**Pn**	**02 13 46.9**	**+1.3**
PVY				eSn	**Sn**	**02 14 26.1**	**+1.9**
PVY	**Plav**	**3.21**	**96**	*e*Pn	**Pn**	**02 13 46.9**	**+1.3**
PVY				eSn	**Sn**	**02 14 26.1**	**+1.9**
TEKS	**Tekeris**	**3.23**	**60**	*e*Pn	**Pn**	**02 13 47.0**	**+1.4**
SABO	**M.te Sabotino**	**3.32**	**335**	Pg	**Pn**	**02 13 47.8**	**+0.8**
	187nm,0.7s						
SABO	**M.te Sabotino**	**3.32**	**335**	Pg	**Pn**	**02 13 47.8**	**+0.8**
	187nm,0.7s						
IVAS	**Ivanjica**	**3.35**	**78**	*e*Pn	**Pn**	**02 13 48.1**	**+0.6**
DIVS	**Divibare**	**3.36**	**69**	*e*Pn	**Pb**	**02 13 52.7**	**-1.8**
OBKA	**Obir**	**3.60**	**348**	*i* Pn	**Pn**	**02 13 52.0**	**+1.2**
	6.3nm,0.6s,SNR=7.4						
OBKA				*i* Sn	**Sn**	**02 14 37.2**	**+3.5**
	42nm,0.7s						
OBKA	**Obir**	**3.60**	**348**	Pn	**Pn**	**02 13 52.0**	**+1.2**
	6.3nm,0.6s,SNR=7.4						
OBKA				Sn	**Sn**	**02 14 37.2**	**+3.5**
	42nm,0.7s						
TRUS	**Trudelj**	**3.68**	**69**	*e*Pn	**Pn**	**02 13 51.3**	**-0.6**
FGSL	**Fruska Gora**	**3.71**	**53**	*e*Pn	Pn	02 13 48.7	-3.6
PTCC	**Patocco-Chiusa**	**3.78**	**335**	Pg	**Pn**	**02 13 53.4**	**+0.1**
PTCC	**Patocco-Chiusa**	**3.78**	**335**	Pg	**Pn**	**02 13 53.4**	**+0.1**
GRUS	**Gruza**	**3.81**	**75**	*e*Pn	**Pb**	**02 13 59.2**	**-2.9**
ACOM	**Acomizza, Ital**	**3.86**	**338**	Pg	**Pn**	**02 13 55.6**	**+1.1**
ACOM	**Acomizza, Ital**	**3.86**	**338**	Pg	**Pn**	**02 13 55.6**	**+1.1**
PKSM	**Moragy**	**3.87**	**33**	*e*Pn	**Pn**	**02 13 54.5**	**0.0**
ABTA	**Abfaltersbach**	**4.36**	**331**	*i* Pn	**Pn**	**02 14 02.0**	**+0.7**
	SNR=11						
ABTA	**Abfaltersbach**	**4.36**	**331**	Pn	**Pn**	**02 14 02.0**	**+0.7**
	SNR=11						
BARS	**Barje**	**4.55**	**90**	*e*Pn	**Pn**	**02 14 05.3**	**+1.5**
MOA	**Molln**	**4.95**	**349**	*i* Pn	**Pn**	**02 14 10.8**	**+1.5**
	SNR=17						
MOA				*i* Sn	**Sn**	**02 15 07.3**	**+0.4**
	7.6nm,0.5s						
MOA	**Molln**	**4.95**	**349**	Pn	**Pn**	**02 14 10.8**	**+1.5**
	SNR=17						
MOA				Sn	**Sn**	**02 15 07.3**	**+0.4**
	7.6nm,0.5s						
VYHS	**Vyhne**	**5.94**	**21**	*e*Pn	**Pn**	**02 14 24.4**	**+1.5**
VYHS	**Vyhne**	**5.94**	**21**	*e*PN	**Pn**	**02 14 24.4**	**+1.5**
VYHS				*e*SN	**Sn**	**02 15 28.2**	**-3.1**
VYHS				*e*LG	Lg	02 15 47.6	
KHC	**Kasperske Hory**	**6.30**	**348**	*e*PN	**Pn**	**02 14 28.4**	**+0.5**
KHC				*ex*	x	02 14 37.3	
KHC				*e*SN	**Sn**	**02 15 36.7**	**-3.5**
KHC	**Kasperske Hory**	**6.30**	**348**	Pn	**Pn**	**02 14 28.4**	**+0.5**

JMA 15 02:24:37.4±0.1,36°75N×141°31E,h35km±2km,M3.5, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.54**	**311**	P	Pn	02 24 48.4	-0.3
ONAJ				S	Sn	02 24 55.8	-0.8
JHO	**Hitachi**	**0.61**	**257**	P	Pn	02 24 49.3	-0.3
JHO				S	Sn	02 24 57.7	-0.5
JFK	**Kawauchi**	**0.71**	**331**	P	Pn	02 24 50.7	-0.3
JFK				S	Sn	02 24 59.7	-1.0
JFT	**Otama**	**1.09**	**315**	P	Pn	02 24 57.4	+1.2
JFT				S	Sn	02 25 12.3	+2.2
JMM	**Marumori**	**1.19**	**340**	P	Pn	02 24 57.7	+0.2
JMM				S	Sn	02 25 12.4	0.0
JFY	**Yanaizu**	**1.44**	**298**	P	Pn	02 25 03.3	+2.3
JFY				S	Sn	02 25 21.4	+2.7
JAG	**Ashikaga**	**1.53**	**258**	P	Pn	02 25 03.1	+0.9
JAG				S	Sn	02 25 21.9	+1.0

IDC ***15*** *02:29:49.0±0.6,36.36N×141.67E,h0km,mb3.9/13, mb1 4.1/14,mb1mx3.9/45,mbtmp3.9/14,ML4.9/1,Error ellipse: s-maj=21.8km s-min=16.9km az=98.0*
NEIC ***15*** *02:29:51.6±2.8,36.33N×141.78E,h18km±17km,mb4.1/8, Error ellipse: s-maj=7.3km s-min=7.2km az=51.0*
JMA ***15*** *02:29:53.4±0.1,36.41N×141.71E,h53km±4km,M3.9*
JMA Felt I J1.

ISC 15 02:29:50.3±3.1,36°37N±0°04×141°81E±0°05,h9km±19km, n52,σ0s90/56,mb4.0/24,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
CHOJ	**Chosi**	**1.02**	**229**	P	**Pn**	**02 30 11.4**	**+0.6**
CHOJ				S	**Sn**	**02 30 24.8**	**-0.4**
JHO	**Hitachi**	**1.03**	**284**	P	**Pb**	**02 30 10.4**	**+0.1**
JHO				eS	**Sb**	**02 30 23.5**	**-0.4**
ONAJ	**Iwakimizuishiy**	**1.09**	**312**	P	**Pb**	**02 30 11.2**	**-0.2**
ONAJ				eS	**Sb**	**02 30 25.1**	**-0.7**
JFK	**Kawauchi**	**1.25**	**323**	P	**Pn**	**02 30 13.8**	**-0.1**
JFK				eS	**Sb**	**02 30 28.9**	**-1.2**
JFT	**Otama**	**1.65**	**314**	P	**Pb**	**02 30 20.5**	**-0.3**
JFT				S	**Sn**	**02 30 40.4**	**-0.2**
JMM	**Marumori**	**1.70**	**332**	P	**Pn**	**02 30 20.3**	**+0.2**
BSO1	**Boso 1**	**1.84**	**202**	P	**Pn**	**02 30 22.6**	**+1.0**
BSO1				eS	**Sb**	**02 30 46.4**	**-0.4**
BSO3	**Boso 3**	**1.89**	**215**	P	**Pn**	**02 30 23.7**	**+1.2**
**

EPOS	**Posof**	**0.86**	**193**	P		**Pb**	**02 35 56.4**	**-0.6**
GUDG	**Gudauri**	**1.11**	**83**	P		**Pb**	**02 36 01.4**	**0.0**
GUDG				S		**Sn**	**02 36 18.5**	**+0.2**
GUDG	**Gudauri**	**1.11**	**83**	P		**Pb**	**02 36 01.4**	**0.0**
GUDG				S		**Sn**	**02 36 18.5**	**+0.2**
ARTV	**Artvin**	**1.40**	**215**	*i* P		**Pn**	**02 36 05.6**	**-0.4**
ARTV				*i* S		**Sg**	**02 36 23.3**	**-0.8**
ARTV	**Artvin**	**1.40**	**215**	P		**Pn**	**02 36 05.6**	**-0.4**
ARTV				S		**Sg**	**02 36 23.3**	**-0.8**
DBOC	**Borcka**	**1.40**	**225**	*i* P		**Pn**	**02 36 05.7**	**-0.2**
DBOC				*i* S		**Sn**	**02 36 26.0**	**+1.0**
DBOC	**Borcka**	**1.40**	**225**	P		**Pn**	**02 36 05.7**	**-0.2**
DBOC				S		**Sn**	**02 36 26.0**	**+1.0**
TBLG	**Delisi**	**1.44**	**114**	P		**Pg**	**02 36 06.6**	**-0.3**
TBLG				S		**Sn**	**02 36 26.8**	**+0.7**
TBLG	**Delisi**	**1.44**	**114**	P		**Pg**	**02 36 06.6**	**-0.3**
TBLG				S		**Sn**	**02 36 26.8**	**+0.7**
DAGI	**Agillar**	**1.49**	**213**	*i* P		**Pg**	**02 36 08.2**	**+0.4**
DAGI				*i* S		**Sg**	**02 36 29.1**	**+1.9**
DBAD	**Bademkaya**	**1.64**	**217**	*i* P		**Pb**	**02 36 09.9**	**-0.3**
DBAD				*i* S		**Sg**	**02 36 32.1**	**+0.4**
DBAD	**Bademkaya**	**1.64**	**217**	P		**Pb**	**02 36 09.9**	**-0.3**
DBAD				S		**Sg**	**02 36 32.2**	**+0.4**
DDEM	**Demirkent**	**1.72**	**213**	*i* P		**Pb**	**02 36 11.0**	**-0.6**
DDEM				*i* S		**Sg**	**02 36 35.6**	**+1.2**
DDEM	**Demirkent**	**1.72**	**213**	P		**Pb**	**02 36 11.0**	**-0.6**
DDEM				S		**Sg**	**02 36 35.6**	**+1.2**
EAK	**Akyaka**	**1.72**	**164**	*i* P		**Pn**	**02 36 09.1**	**-1.3**
EAK	**Akyaka**	**1.72**	**164**	P		**Pn**	**02 36 09.1**	**-1.3**
DGRG	**David-gareji**	**1.99**	**116**	P		**Pb**	**02 36 15.9**	**-0.4**
DGRG				S		**Sg**	**02 36 44.7**	**+1.4**
DGRG	**David-gareji**	**1.99**	**116**	P		**Pb**	**02 36 15.9**	**-0.4**
DGRG				S		**Sg**	**02 36 44.7**	**+1.4**

IDC ***15*** *02:44:35.0±12.0, 37°.02N×141°.83E, h0km, mb3.5/2, mb1 3.5/3, mb1mx3.2/40, mbtmp3.4/3, ML3.3/1, Error ellipse: s-maj=232.1km s-min=49.3km az=146.0*
JMA ***15*** *02:44:37.0±0.2, 36°.59N×141°.80E, h31km±4km, M3.4*
ISC 15 02:44:33.6±2.9, 36°.71N±0°.10×141°.9E±0°.1, h2km±12km, n9, σ0s62/14, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.99**	**293**	P		**Pn**	**02 44 54.6**	**0.0**
ONAJ				S		**Sb**	**02 45 07.2**	**+0.1**
JFK	**Kawauchi**	**1.07**	**308**	P		**Pn**	**02 44 55.9**	**+0.2**
JHO	**Hitachi**	**1.10**	**265**	P		**Pg**	**02 44 54.9**	**+0.2**
JHO				S		**Sg**	**02 45 08.0**	**-1.1**
JMM	**Marumori**	**1.47**	**322**	P		**Pg**	**02 45 02.1**	**+0.4**
JMM				S		**Sn**	**02 45 21.0**	**+0.1**
JFT	**Otama**	**1.51**	**303**	P		**Pg**	**02 45 03.0**	**+0.5**
MJAR	**Matsushiro Arr** 4.4nm,0.3s,baz=95,slow=9.1,SNR=11	**3.00**	**268**	Pn		**Pn**	**02 45 23.0**	**+0.7**
MJAR	3.0nm,0.3s,baz=201,slow=20,SNR=2.6					**Sn**	**02 45 59.1**	**+0.2**
MAT	**Matsushiro**	**3.00**	**268**	P		**Pn**	**02 45 23.2**	**+0.9**
MAT				S		**Sn**	**02 45 59.3**	**+0.4**
SONM	**Songino Array** 0.6nm,0.8s,baz=98,slow=10,SNR=3.0	**28.31**	**304**	P		**P**	**02 50 28.6**	**-0.1**
MKAR	**Makanchi Array** 0.2nm,0.2s,baz=90,slow=7.2,SNR=1.5	**44.64**	**302**	P		**P**	**02 52 46.8**	**-0.8**

IDC ***15*** *02:54:01.9±2.5, 37°.01N×140°.75E, h0km, mb3.5/2, mb1 3.7/3, mb1mx3.2/52, mbtmp3.4/3, ML3.2/1, Error ellipse: s-maj=45.8km s-min=32.5km az=34.0*
ISCJB ***15*** *02:54:04.2±0.6, 37°.00N±0°.03×140°.66E±0°.05, h16km±7km, mb3.6/2, Error ellipse: s-maj=7.3km s-min=4.9km az=12.9*
JMA ***15*** *02:54:04.4, 37°.01N×140°.59E, h6km±1km, M3.5 Broadband fault plane solution: P waves. NP1: φs281.00000°, δ70.00000°, λ-92.00000°. NP2: φs107.00000°, δ20.00000°, λ-84.00000°. Principal axes: T Plg25.0000°, Azm13.0000°; N Plg2.0000°, Azm282.0000°; P Plg65.0000°, Azm188.0000°;*
JMA Felt I J1.
ISC 15 02:54:03.7±1.2, 37°.02N±0°.04×140°.62E±0°.04, h14km±10km, n12, σ0s46/21, 7C-1D, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.16**	**60**	⇑P		**Pb**	**02 54 08.5**	**-0.1**
ONAJ				S		**Sb**	**02 54 11.5**	**-0.3**
JFK	**Kawauchi**	**0.40**	**30**	⇑P		**Pb**	**02 54 12.7**	**+0.1**
JHO	**Hitachi**	**0.41**	**186**	⇑P		**Pg**	**02 54 12.2**	**+0.2**
JHO				S		**Sg**	**02 54 17.6**	**+0.1**
JFT	**Otama**	**0.55**	**335**	⇑P		**Pb**	**02 54 15.2**	**+0.1**
JFT				S		**Sb**	**02 54 22.6**	**-0.2**
JSB	**Shiboa**	**0.56**	**265**	⇓P		**Pb**	**02 54 15.7**	**+0.3**
JSB				S		**Sg**	**02 54 22.6**	**+0.3**
JFY	**Yanaizu**	**0.83**	**298**	⇑P		**Pb**	**02 54 20.0**	**+0.1**
JFY				S		**Sg**	**02 54 30.4**	**-0.2**
JMM	**Marumori**	**0.85**	**9**	⇑P		**Pb**	**02 54 20.4**	**+0.1**
JMM				*e*S		**Sn**	**02 54 32.6**	**-1.1**
JYT	**Yasato**	**0.86**	**204**	⇑P		**Pg**	**02 54 20.2**	**-0.2**
JYT				S		**Sg**	**02 54 31.4**	**-0.4**
MJAR	**Matsushiro Arr** 7.9nm,0.3s,baz=78,slow=15,SNR=27	**2.00**	**257**	Pn		**Pb**	**02 54 38.9**	**-0.9**
MJAR	16nm,0.3s,baz=1.4,slow=3.9,SNR=16					**Sn**	**02 55 04.5**	**-0.1**
MAT	**Matsushiro**	**2.00**	**257**	P		**Pb**	**02 54 39.3**	**-0.6**
MAT				S		**Sb**	**02 55 05.1**	**+0.5**
MKAR	**Makanchi Array** 0.2nm,0.2s,baz=91,slow=7.2,SNR=1.3	**43.59**	**302**	P		**P**	**03 02 07.9**	**+0.6**
WRA	**Warramunga Arr** 0.6nm,0.7s,baz=3.1,slow=7.6,SNR=6.7	**56.97**	**187**	P		**P**	**03 03 49.1**	**+0.3**

NIED ***15*** *02:58:00, 37°.00N×140°.60E, h5km, Mw4.0 Best double couple: M01.09000×10^15 NP1:φs108.00000°, δ40.00000°, λ-127.00000°. NP2:φs332.00000°, δ59.00000°, λ-63.00000°*
ISCJB ***15*** *02:58:52.2±0.6, 37°.03N±0°.03×140°.71E±0°.05, h17km±4km, mb3.7/13, Error ellipse: s-maj=6.8km s-min=4.8km az=12.0*
JMA ***15*** *02:58:52.7, 37°.03N×140°.62E, h8km±1km, M4.0 Broadband fault plane solution: P waves. NP1: φs310.00000°, δ60.00000°, λ-93.00000°. NP2: φs136.00000°, δ30.00000°, λ-85.00000°. Principal axes: T Plg15.0000°, Azm42.0000°; N Plg3.0000°, Azm311.0000°; P Plg75.0000°, Azm211.0000°;*
JMA Felt II J1.
IDC ***15*** *02:58:58.6±3.5, 37°.03N×140°.37E, h55km±32km, mb3.5/13, mb1 3.7/13, mb1mx3.5/62, mbtmp3.7/13 Error ellipse: s-maj=22.4km s-min=17.0km az=81.0*
ISC 15 02:58:51.3±1.3, 37°.01N±0°.03×140°.52E±0°.04, h2km±9km, n34, σ0s83/33, mb3.7/13, 6C-1D, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.24**	**68**	⇑P		**Pg**	**02 58 56.3**	**+0.3**
JHO	**Hitachi**	**0.40**	**174**	⇑P		**Pb**	**02 59 00.9**	**-0.2**
JHO				S		**Sb**	**02 59 06.7**	**-1.0**
JFK	**Kawauchi**	**0.46**	**39**	⇑P		**Pg**	**02 59 00.3**	**+0.2**
JSB	**Shiboa**	**0.48**	**265**	P		**Pn**	**02 59 04.3**	**-0.9**
JFT	**Otama**	**0.53**	**344**	⇑P		**Pb**	**02 59 03.2**	**-0.1**
JFT				S		**Sb**	**02 59 10.5**	**-0.9**
JFY	**Yanaizu**	**0.76**	**302**	⇓P		**Pn**	**02 59 08.4**	**-0.7**
JFY				S		**Sb**	**02 59 19.0**	**+0.9**
JYT	**Yasato**	**0.82**	**198**	⇑P		**Pb**	**02 59 09.0**	**-0.7**
JYT				S		**Sb**	**02 59 20.6**	**+0.8**
JMM	**Marumori**	**0.88**	**14**	⇑P		**Pg**	**02 59 08.2**	**-0.1**
MJAR	**Matsushiro Arr** 30nm,0.3s,baz=80,slow=16,SNR=58	**1.91**	**257**	P		**Pg**	**02 59 27.4**	**-0.5**
MJAR	98nm,0.3s,baz=88,slow=26,SNR=29					**Sg**	**02 59 53.3**	**+0.6**
MAT	**Matsushiro**	**1.91**	**257**	P		**Pg**	**02 59 27.7**	**-0.3**
MAT				S		**Sg**	**02 59 54.2**	**+1.5**
JHJ	**Hachijo jima 2** 16nm,0.3s,baz=66,slow=20,SNR=3.1	**3.93**	**189**	P		**Pb**	**02 59 59.6**	**-1.6**
JHJ	23nm,0.3s,baz=96,slow=22,SNR=3.4			S		**Sn**	**03 00 40.6**	**+1.3**
USRK	**Ussuriysk Ar.** 0.2nm,0.3s,baz=145,slow=13,SNR=9.3	**9.67**	**321**	P		Pn	03 01 17.9	+6.4
KSRS	**Korea Array** 0.3nm,0.3s,baz=96,slow=13,SNR=9.8	**10.05**	**276**	P		Pn	03 01 24.3	+7.7
SONM	**Songino Array** 1.3nm,0.8s,baz=102,slow=9.2,SNR=6.9	**27.20**	**304**	P		**P**	**03 04 36.5**	**+0.1**
H11N2	**WAKE ISLAND Hy** baz=313,slow=75,SNR=42	**28.76**	**120**	T		T	03 34 42.0	
H11N1	**WAKE ISLAND Hy** baz=313,slow=75,SNR=47	**28.77**	**120**	T		T	03 34 40.4	
H11N3	**WAKE ISLAND Hy** baz=313,slow=75,SNR=44	**28.77**	**120**	T		T	03 34 43.4	
H11S1	**WAKE ISLAND Hy** baz=314,slow=76,SNR=83	**29.45**	**122**	T		T	03 35 34.2	
H11S3	**WAKE ISLAND Hy** baz=314,slow=76,SNR=71	**29.45**	**122**	T		T	03 35 34.6	
H11S2	**WAKE ISLAND Hy** baz=314,slow=76,SNR=26	**29.47**	**122**	T		T	03 35 31.8	
ZALV	**Zalesovo Beam** 0.8nm,0.6s,baz=115,slow=6.8,SNR=2.9	**41.40**	**312**	P		**P**	**03 06 36.6**	**-2.2**
MKAR	**Makanchi Array** 0.7nm,0.6s,baz=86,slow=10.0,SNR=9.2	**43.52**	**302**	P		**P**	**03 06 56.1**	**-0.1**
ILAR	**Eielson Array** 0.5nm,0.8s,baz=268,slow=6.1,SNR=6.9	**49.90**	**32**	P		**P**	**03 07 45.5**	**-0.4**
BVAR	**Borovoye Array** 0.7nm,0.7s,baz=72,slow=9.5,SNR=5.4	**50.06**	**312**	P		**P**	**03 07 47.4**	**+0.2**
WRA	**Warramunga Arr** 3.3nm,0.7s,baz=3.0,slow=7.3,SNR=63	**56.94**	**187**	P		**P**	**03 08 37.7**	**-0.4**
ASAR	**Alice Springs** 1.1nm,0.7s,baz=13,slow=7.3,SNR=13	**60.67**	**187**	P		**P**	**03 09 04.0**	**0.0**
YKA	**Yellowknife Ar** 0.2nm,0.8s,baz=307,slow=7.0,SNR=4.3	**64.19**	**30**	P		**P**	**03 09 26.7**	**-0.4**
FINES	**FINESS Array B** 1.9nm,0.8s,baz=52,slow=10,SNR=5.6	**68.50**	**332**	P		**P**	**03 09 54.0**	**-0.6**
NB2	**NORSAR Subarra** comp=Z,1.5nm,0.8s,baz=40,slow=6.2	**73.93**	**337**	P		**P**	**03 10 27.7**	**+0.1**
NOA	**NORSAR Array B** comp=Z,1.3nm,0.8s,baz=42,slow=6.0,SNR=4.2	**73.93**	**337**	P		**P**	**03 10 27.8**	**+0.1**
NVAR	**Mina Array Bea** comp=Z,0.4nm,0.8s,baz=286,slow=6.5,SNR=2.7	**75.58**	**53**	P		**P**	**03 10 39.1**	**+1.2**
PDAR	**Pinedale Array** comp=Z,0.2nm,0.4s,baz=316,slow=3.8,SNR=3.3	**78.19**	**45**	P		**P**	**03 10 52.9**	**+0.4**
TXAR	**Lajitas Array** comp=Z,0.3nm,0.6s,baz=304,slow=2.9,SNR=5.0	**90.70**	**52**	P		**P**	**03 11 56.6**	**+0.6**
LPAZ	**La Paz** comp=Z,0.8nm,0.4s,baz=352,slow=3.9,SNR=5.0	**147.32**	**59**	PKPbc		**PKPbc**	**03 18 38.0**	**+0.2**

ISCJB ***15*** *03:07:58.6±0.3, 50°.11N±0°.02×18°.41E±0°.02, h0km, mb2.9/2, Error ellipse: s-maj=3.5km s-min=1.8km az=14.4*
SIGU ***15*** *03:07:58.9±0.6, 50°.02N±0°.02×18°.38E±0°.03, h4km, mb3.0/10*
BGR ***15*** *03:08:01.0±0.3, 50°.10N×18°.38E, h1km, ML3.1/10, Error ellipse: s-maj=8.9km s-min=4.4km az=176.0*
CSEM ***15*** *03:08:00.0±0.2, 50°.08N×18°.40E, h2km, ML3.4/7, Error ellipse: s-maj=5.0km s-min=2.2km az=17.0*
IDC ***15*** *03:08:00.5±0.8, 49°.97N×18°.48E, h0km, mb3.0/2, mb1 3.3/8, mb1mx3.1/60, mbtmp3.2/8, ML2.9/6, Error ellipse: s-maj=16.9km s-min=7.4km az=147.0*
PRU ***15*** *03:08:01.0, 50°.07N×18°.39E, h0km*
ISC 15 03:07:59.9±0.6, 50°.10N±0°.02×18°.40E±0°.01, h0km, n120, σ1s23/176, 12C-19D, Poland

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
RAC	**Raciborz**	**0.14**	**263**	⇓*i*Pg		**Pg**	**03 08 04.9**	**+2.4**
RAC				*e*Sg		**Sg**	**03 08 08.0**	**+3.8**
OKC	**Ostrava-Krasne**	**0.31**	**212**	⇓*i*PG		**Pg**	**03 08 06.9**	**+1.1**
OKC	comp=Z,521nm,0.5s			*e*SG		**Sg**	**03 08 10.5**	**+0.7**
OKC	**Ostrava-Krasne**	**0.31**	**212**	Pg		**Pg**	**03 08 06.9**	**+1.1**
OKC	521nm,0.5s			Sg		**Sg**	**03 08 10.5**	**+0.7**
OKC	**Ostrava-Krasne**	**0.31**	**212**	*e*Pg		**Pg**	**03 08 06.9**	**+1.1**
CHZP	**Chorzow**	**0.42**	**63**	*e*Pg		**Pg**	**03 08 09.3**	**+1.3**
MORC	**Moravsky Berou**	**0.64**	**240**	⇓*i*P		**Pb**	**03 08 13.2**	**-0.8**
MORC	**Moravsky Berou**	**0.64**	**240**	*e*Pg		**Pb**	**03 08 13.1**	**-0.9**
MORC				Sg		**Sb**	**03 08 22.4**	**-1.2**
MORC	**Moravsky Berou**	**0.64**	**240**	*e*Pg		**Pb**	**03 08 13.1**	**-0.9**
MORC				*e*Sg		**Sb**	**03 08 22.4**	**-1.2**
OJC	**Ojcow**	**0.91**	**82**	*e*Pg		**Pg**	**03 08 17.2**	**0.0**
OJC				*e*Sg		**Sg**	**03 08 29.5**	**+0.6**
OJC	**Ojcow**	**0.91**	**82**	Pg		**Pg**	**03 08 17.3**	**0.0**
OJC				Sg		**Sg**	**03 08 29.5**	**+0.6**
OJC	**Ojcow**	**0.91**	**82**	*e*Pg		**Pg**	**03 08 17.3**	**+0.1**
OJC				*e*Sg		**Sg**	**03 08 29.7**	**+0.8**
KRLC	**Kraliky**	**1.04**	**269**	⇓*i*PG		**Pg**	**03 08 20.0**	**+0.1**
KRLC				*e*SG		**Sb**	**03 08 34.3**	**-0.8**
KRLC	**Kraliky**	**1.04**	**269**	Pg		**Pg**	**03 08 20.0**	**+0.1**
KRLC				Sg		**Sb**	**03 08 34.3**	**-0.8**
LANS	**Liptovska Anna**	**1.18**	**144**	*e*Pg		**Pg**	**03 08 22.5**	**+0.1**
LANS				*e*Sg		**Sb**	**03 08 38.4**	**-0.5**
LANS	**Liptovska Anna**	**1.18**	**144**	*e*PG		**Pg**	**03 08 22.5**	**+0.1**
LANS				*e*SG		**Sb**	**03 08 38.3**	**-0.6**
DPC	**Dobruska-Polom**	**1.36**	**281**	⇓*i*PG		**Pb**	**03 08 26.3**	**+0.1**
DPC	comp=Z,221nm,0.4s			*e*SG		**Sn**	**03 08 45.3**	**+0.4**
DPC	**Dobruska-Polom**	**1.36**	**281**	Pg		**Pb**	**03 08 26.3**	**+0.1**
DPC	221nm,0.4s			Sg		**Sn**	**03 08 45.3**	**+0.4**
DPC	**Dobruska-Polom**	**1.36**	**281**	*e*Pg		**Pb**	**03 08 26.4**	**+0.2**
NIE	**Niedzica**	**1.41**	**118**	*e*Pg		**Pn**	**03 08 26.3**	**-0.5**
NIE				*e*Sg		**Sn**	**03 08 46.5**	**+0.4**
VRAC	**Vranov** 14nm,0.3s,baz=61,slow=15,SNR=85	**1.42**	**237**	Pg		**Pg**	**03 08 27.0**	**0.0**
VRAC	25nm,0.3s,baz=151,slow=20,SNR=17			Lg		Lg	03 08 45.8	
VRAC	**Vranov**	**1.42**	**237**	⇓*i*P		**Pn**	**03 08 26.7**	**-0.2**
VRAC	**Vranov**	**1.42**	**237**	⇓*i*P		**Pn**	**03 08 26.7**	**-0.2**
VRAC				*e*Sg		**Sb**	**03 08 45.4**	**-0.4**
KSP	**Ksiaz**	**1.54**	**300**	*e*Pn		**Pn**	**03 08 28.9**	**+0.3**
KSP				*e*Pg		**Pg**	**03 08 31.1**	**+1.7**
KSP				*e*Sg		**Sg**	**03 08 51.2**	**+1.9**
KSP	**Ksiaz**	**1.54**	**300**	*e*Pn		**Pn**	**03 08 28.9**	**+0.3**
KSP				*e*Sg		**Sg**	**03 08 51.2**	**+1.9**
KSP	**Ksiaz**	**1.54**	**300**	*e*Pg		**Pn**	**03 08 29.0**	**+0.3**
UPC	**Upice**	**1.59**	**286**	⇓*e*PG		**Pb**	**03 08 30.2**	**+0.1**
UPC	comp=Z,65nm,0.5s			*e*SG		**Sg**	**03 08 53.1**	**+2.3**
UPC	**Upice**	**1.59**	**286**	Pg		**Pb**	**03 08 30.2**	**+0.1**
UPC	65nm,0.5s			Sg		**Sg**	**03 08 53.1**	**+2.3**
VYHS	**Vyhne**	**1.63**	**170**	*e*Pg		**Pn**	**03 08 29.1**	**-0.8**
VYHS				*e*Sg		**Sn**	**03 08 51.3**	**-0.4**
VYHS	**Vyhne**	**1.63**	**170**	*e*PG		**Pn**	**03 08 29.1**	**-0.8**
VYHS				*e*SG		**Sn**	**03 08 51.2**	**-0.4**
VYHS				eLG	Lg		03 08 58.2	
VYHS				*e*			03 21 30.0	
STHS	**Stebnicka Huta**	**1.96**	**109**	*e*Pg		**Pg**	**03 08 37.8**	**+0.3**
STHS				*e*Sg		**Sg**	**03 09 05.2**	**+2.2**
STHS	**Stebnicka Huta**	**1.96**	**109**	*e*PG		**Pg**	**03 08 37.8**	**+0.3**
STHS				*e*SG		**Sg**	**03 09 05.2**	**+2.2**
STHS				eLG	Lg		03 09 09.6	
TREC	**Trest**	**2.06**	**248**	⇓*e*PN		**Pn**	**03 08 35.6**	**-0.1**
TREC	**Trest**	**2.06**	**248**	Pn		**Pn**	**03 08 35.6**	**-0.1**
KECS	**Kecovo**	**2.12**	**139**	*e*Sg		**Sb**	**03 09 05.5**	**-0.4**
KECS	**Kecovo**	**2.12**	**139**	*e*		**Pn**	**03 08 35.5**	**-1.0**
KECS				*e*			03 08 42.0	
KECS	**Kecovo**	**2.12**	**139**	*e*SG		**Sb**	**03 09 05.5**	**-0.4**
KECS				eLG	Lg		03 09 07.4	
KECS				*e*			03 21 39.4	
CRVS	**Cervenica-Dubn**	**2.33**	**120**	*e*Pg		**Pb**	**03 08 42.8**	**+0.1**
CRVS				*e*Sg		**Sg**	**03 09 15.7**	**+1.1**
CRVS	**Cervenica-Dubn**	**2.33**	**120**	*e*PG		**Pb**	**03 08 42.8**	**+0.1**
CRVS				*e*SG		**Sg**	**03 09 15.7**	**+1.1**
CRVS				*e*			03 21 34.6	
GOPC	**GO Pecny, Ondr**	**2.34**	**267**	⇓*e*PG		**Pb**	**03 08 42.7**	**-0.2**
GOPC	**GO Pecny, Ondr**	**2.34**	**267**	Pg		**Pb**	**03 08 42.7**	**-0.2**
PSZ	**Piszkesteto**	**2.40**	**155**	⇓*e*PKPPKPdf		**Pn**	**03 08 39.7**	**-0.7**
PSZ	**Piszkesteto**	**2.40**	**155**	⇓*e*P		**Pn**	**03 08 39.7**	**-0.7**
PRU	**Pruhonice**	**2.49**	**269**	⇓*e*PN		**Pn**	**03 08 40.9**	**-0.8**
PRU				*e*PG		**Pb**	**03 08 45.7**	**+0.2**
PRU				*e*SG		**Sg**	**03 09 18.6**	**-1.3**
PRU	**Pruhonice**	**2.49**	**269**	Pn		**Pn**	**03 08 40.9**	**-0.8**
PRU	**Pruhonice**	**2.49**	**269**	Pg		**Pb**	**03 08 45.7**	**+0.2**
PRU	27nm,0.5s			Sg		**Sg**	**03 09 18.6**	**-1.3**
PVCC	**Panska Ves**	**2.50**	**281**	⇓*e*PN		**Pn**	**03 08 41.8**	**+0.1**
PVCC				*e*PG		**Pg**	**03 08 47.4**	**-0.3**
PVCC				*e*SG		**Sg**	**03 09 20.8**	**+0.8**
PVCC	**Panska Ves**	**2.50**	**281**	Pn		**Pn**	**03 08 41.8**	**+0.1**
PRA	**Prague**	**2.56**	**271**	⇓*e*PN		**Pn**	**03 08 42.6**	**0.0**
PRA	**Prague**	**2.56**	**271**	Pn		**Pn**	**03 08 42.6**	**0.0**
PKSG		**2.71**	**180**	⇓*e*PKPPKPdf		**Pn**	**03 08 44.6**	**-0.1**
PKSG		**2.71**	**180**	⇓*e*P		**Pn**	**03 08 44.6**	**-0.1**
CSKK	**Cs˘‡kako**	**2.74**	**182**	⇓*e*PKPPKPdf		**Pg**	**03 08 52.6**	**+0.2**
CONA	**Conrad Observa** 1.9nm,0.4s	**2.74**	**219**	*i* Pn		**Pn**	**03 08 45.0**	**-0.2**
CONA	11nm,0.4s			*i* Sg		**Sg**	**03 09 31.5**	**+3.5**
CONA	**Conrad Observa** 1.9nm,0.4s	**2.74**	**219**	Pn		**Pn**	**03 08 45.0**	**-0.2**
CONA	11nm,0.4s			Sg		**Sg**	**03 09 31.5**	**+3.5**
KOLS	**Kolonicke sedl**	**2.78**	**113**	*e*Pg		**Pg**	**03 08 53.4**	**+0.3**
KOLS				*e*Sg		**Sg**	**03 09 29.3**	**+0.2**
KOLS	**Kolonicke sedl**	**2.78**	**113**	*e*PG		**Pg**	**03 08 53.4**	**+0.3**
KOLS				*e*SG		**Sg**	**03 09 29.3**	**+0.2**
KOLS				eLG	Lg		03 09 34.0	
KOLS				*e*			03 21 35.1	
UZH	**Uzhgorod**	**2.94**	**119**	*e*Pn		**Pb**	**03 08 53.1**	**0.0**
UZH				Pmn			03 08 58.3	
UZH				*e*Sn		**Sg**	**03 09 33.5**	**-0.7**
UZH				Smn			03 09 38.1	
ONO	**Onokovtsy**	**2.94**	**118**	*e*Pn		**Pb**	**03 08 54.1**	**+0.9**
ONO				*e*Sn		**Sg**	**03 09 35.1**	**+0.7**
BRG	**Berggiesshubel** 40nm,0.8s	**2.95**	**287**	SG		**Sg**	**03 09 34.5**	**-0.2**
BRG	**Berggiesshubel**	**2.95**	**287**	Sg		**Sg**	**03 09 33.8**	**-0.9**
BRG	**Berggiesshubel**	**2.95**	**287**	*e*Sg		**Sg**	**03 09 33.8**	**-0.9**
MUKU	**Mukachevo**	**3.25**	**119**	*e*Pn		**Pb**	**03 08 58.1**	**-0.4**
MUKU				Pmn			03 09 07.9	
MUKU				*e*Sn		**Sg**	**03 09 42.1**	**-2.2**
MUKU				Smn			03 09 47.1	
KHC	**Kasperske Hory**	**3.29**	**255**	⇓*e*PN		**Pn**	**03 08 51.8**	**-0.8**
KHC				*e*PG		**Pb**	**03 09 00.2**	**+1.2**
KHC	comp=Z,24nm,0.5s			*e*SG		**Sg**	**03 09 43.4**	**-2.0**
KHC	**Kasperske Hory** 24nm,0.5s	**3.29**	**255**	Pn		**Pn**	**03 08 51.8**	**-0.8**
KHC				Sg		**Sg**	**03 09 43.4**	**-2.0**
GEC2	**GERESS Array S**	**3.31**	**250**	Sg		**Sg**	**03 09 43.5**	**-2.8**
GEC2	**GERESS Array S**	**3.31**	**250**	*e*Sg		**Sg**	**03 09 43.5**	**-2.8**
GERES	**GERESS Array B** 0.4nm,0.3s,baz=58,slow=14,SNR=11	**3.31**	**250**	Pn		**Pn**	**03 08 53.5**	**+0.4**
GERES	3.7nm,0.3s,baz=67,slow=16,SNR=26			Pg		**Pg**	**03 09 01.6**	**-1.8**
GERES	4.1nm,0.3s,baz=62,slow=24,SNR=6.2			Lg		Lg	03 09 44.8	
SHIU	**Shidnytsya**	**3.34**	**103**	*e*Pn		**Pb**	**03 09 01.5**	**+1.5**
SHIU				*e*Sn		**Sg**	**03 09 48.1**	**+1.0**
BERU	**Beregovo**	**3.35**	**122**	*e*Pn		**Pb**	**03 09 00.6**	**+0.4**
BERU				*e*Sn		**Sg**	**03 09 46.4**	**-1.1**
ARSA	**Arzberg** 2.2nm,0.3s	**3.43**	**215**	*i* Pn		**Pn**	**03 08 54.8**	**+0.2**
ARSA				*i* Sg		**Sg**	**03 09 54.3**	**+4.2**
ARSA	**Arzberg** 4.9nm,0.6s	**3.43**	**215**	Pn		**Pn**	**03 08 54.8**	**+0.2**
ARSA	2.2nm,0.3s			Sg		**Sg**	**03 09 54.3**	**+4.2**
BRIU	**Brid** 4.9nm,0.6s	**3.50**	**118**	*e*Pn		**Pb**	**03 09 03.1**	**+0.4**
BRIU				Pmn			03 09 11.3	
BRIU				*e*Sn		**Sg**	**03 09 51.7**	**-0.7**
BRIU				Smn			03 10 09.1	
MOA	**Molln** 0.6nm,0.2s	**3.54**	**232**	*i* Pn		**Pn**	**03 08 55.7**	**-0.4**
MOA				*i* Sg		**Sg**	**03 09 51.9**	**-1.5**
MOA	**Molln** 21nm,0.6s	**3.54**	**232**	Pn		**Pn**	**03 08 55.7**	**-0.4**
MOA	0.6nm,0.2s			Sg		**Sg**	**03 09 51.9**	**-1.5**
TRSU	**Trosnyk**	**3.60**	**122**	*e*Pn		**Pb**	**03 09 05.4**	**+1.0**
TRSU				Pmn			03 09 06.4	
CLL	**Collm**	**3.64**	**291**	*e*Pg		**Pg**	**03 09 08.0**	**-1.6**
CLL				*i*			03 09 10.9	
CLL	comp=Z,24nm,0.6s			*e*Sg		**Sg**	**03 09 58.0**	**+1.3**
CLL	**Collm**	**3.64**	**291**	Sg		**Sg**	**03 09 57.0**	**+0.3**
CLL	**Collm**	**3.64**	**291**	*e*Sg		**Sg**	**03 09 57.0**	**+0.3**
KORU	**Korolevo**	**3.67**	**120**	*e*Pn		**Pb**	**03 09 06.4**	**+0.9**
KORU				Pmn			03 09 07.8	
KORU		

Ms1 3.6/2,ms1mx3.0/41,Error ellipse: s-maj=13.0km s-min=9.4km az=81.0
DJA 15 03:10:35.3-0.2,7°S-2″×13°0E±°,h94km±4km,M5.0/42, mb5.1/42,mB5.5/24,MLv5.3/12,Mw(mB)5.0/24
ISC 15 03:10:32.0±0.3,7.045S±0.04×130.09E±0.04,h104km,n247, σ1↑92/264,mb4.8/80,5C-5D,Tanimbar Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time h m s	Res ISC
SAUI	**Saumlaki**	**1.53**	**128**	P	**Pn**	**03 11 01.1**	**+2.3**
SAUI				S	**Sn**	**03 11 19.2**	**0.0**
BNDI	**Bandanaira**	**2.50**	**356**	P	**Pn**	**03 11 12.9**	**+1.6**
BNDI				S	**Sn**	**03 11 41.7**	**+0.2**
MSAI	**Masohi**	**3.84**	**342**	P	**Pn**	**03 11 31.3**	**+2.1**
MSAI				S	**Sn**	**03 12 15.3**	**+1.8**
FAKI	**Fak Fak**	**4.62**	**28**	P	**Pn**	**03 11 40.1**	**+0.4**
NLAI	**Namlea**	**4.80**	**322**	P	**Pn**	**03 11 43.6**	**+1.4**
NLAI				S	**Sn**	**03 12 39.3**	**+2.6**
KMPI	**Kaimana, Papua**	**4.92**	**47**	P	**Pn**	**03 11 45.7**	**+2.0**
KMPI				S	**Sn**	**03 12 41.3**	**+1.8**
MTN	**Manton Dam**	**5.86**	**170**	*e*Pn	**Pn**	**03 11 59.8**	**+3.3**
SIJI	**Sorong**	**6.24**	**11**	P	**Pn**	**03 12 01.6**	**0.0**
	17nm,0.3s,baz=91,slow=24,SNR=8.7						
SIJI				S	**Sn**	**03 13 05.4**	**-6.2**
	9.0nm,0.3s,baz=90,slow=24,SNR=13						
SWI	**Sorong**	**6.24**	**11**	P	**Pn**	**03 12 04.0**	**+2.3**
SWI				S	**Pn**	**03 12 03.7**	**+2.0**
SOEI	**Soe**	**6.36**	**244**	P	**Pn**	**03 12 05.6**	**+2.2**
	861nm,0.8s,6µm2.4nm						
SANI	**Sanana**	**6.42**	**320**	P	**Pn**	**03 12 06.2**	**+2.1**
	256nm,0.8s,2µm0.8nm						
RKPI	**Ransiki, Papua**	**6.84**	**37**	P	**Pn**	**03 12 11.4**	**+1.6**
	910nm,0.8s,11µm4.4nm						
BATI	**Baumata**	**7.09**	**243**	P	**Pn**	**03 12 14.6**	**+1.4**
	58nm,0.3s,baz=268,slow=24,SNR=52						
BATI	**Baumata**	**7.09**	**243**	P	**Pn**	**03 12 15.3**	**+2.1**
	176nm,0.8s,2µm0.7nm						
MMRI	**Maumere**	**7.94**	**258**	P	**Pn**	**03 12 28.2**	**+3.5**
TNTI	**Ternate**	**8.22**	**341**	P	**Pn**	**03 12 29.7**	**+1.2**
	385nm,0.8s						
LUWI	**Luwuk**	**9.42**	**309**	P	**Pn**	**03 12 46.9**	**+2.1**
LUWI				S	**Pn**	**03 12 47.3**	**+2.5**
BSSI	**Bau Bau, Buton**	**9.58**	**275**	P	**Pn**	**03 12 50.0**	**+3.0**
	131nm,1.1s,2µm						
BASI	**Baing, Sumba**	**9.92**	**251**	P	**Pn**	**03 12 53.9**	**+2.2**
	399nm,1.3s,5µm						
APSI	**Ampana**	**10.38**	**306**	P	**Pn**	**03 13 00.1**	**+2.1**
	110nm,1.0s,1µm						
KAPI	**Kappang**	**10.47**	**280**	P	**Pn**	**03 12 59.5**	**+0.3**
	1.4nm,0.3s,baz=131,slow=12,SNR=4.5						
KAPI	**Kappang**	**10.47**	**280**	*e*Pn	Pn	03 12 52.9	-6.3
	45nm,1.0s						
KAPI	**Kappang**	**10.47**	**280**	Pn	Pn	03 12 49.0	-10
	SNR=7.0						
SPSI	**Sidrap Palu**	**10.71**	**286**	P	**Pn**	**03 13 05.1**	**+2.6**
	76nm,0.7s						
GENI	**Genyem**	**10.97**	**67**	P	**Pn**	**03 13 08.4**	**+2.5**
	151nm,1.0s,3µm						
TTSI	**Tana Toraja**	**10.97**	**291**	P	**Pn**	**03 13 08.8**	**+2.9**
	43nm,0.9s,739nm						
MRSI	**Marisa**	**11.04**	**312**	P	**Pn**	**03 13 09.0**	**+2.2**
	254nm,1.2s,2µm						
JAY	**Jayapura**	**11.49**	**68**	P	**Pn**	**03 13 15.7**	**+2.7**
	0.5nm,0.3s,baz=184,slow=24,SNR=9.5						
SGSI	**Sangihe**	**11.58**	**337**	P	**Pn**	**03 13 16.2**	**+2.0**
	1µm,0.8s,23µm						
FITZ	**Fitzroy Crossi**	**11.82**	**201**	P	**Pn**	**03 13 16.4**	**-1.0**
	6.9nm,0.3s,baz=30,slow=10,SNR=74						
FITZ				S	Sn	03 15 18.4	-9.0
	28nm,0.3s,baz=117,slow=14,SNR=12						
FITZ				LR	LR	03 18 47.9	
	comp=Z,258nm,19.4s,baz=24,slow=41						
FITZ	**Fitzroy Crossi**	**11.82**	**201**	*e*Pn	**Pn**	**03 13 16.2**	**-1.1**
FITZ				*e*Sn	Sn	03 15 18.1	-9.3
PLAI	**Plampang**	**12.32**	**261**	P	**Pn**	**03 13 22.4**	**-1.6**
TWSI	**Taliwang, Sumb**	**13.19**	**262**	P	**P**	**03 13 39.0**	**-2.5**
	32nm,1.0s						
WRAB	**Tennant Creek**	**13.47**	**163**	*e*P	**Pn**	**03 13 38.8**	**-0.2**
WRAB	**Tennant Creek**	**13.47**	**163**	*e*Pn	**Pn**	**03 13 38.8**	**-0.2**
WRAB				*e*Sn	**Sn**	**03 16 00.4**	**-6.9**
WRA	**Warramunga Arr**	**13.48**	**163**	P	**Pn**	**03 13 38.6**	**-0.5**
	12nm,0.3s,baz=335,slow=14,SNR=303						
WRA				S	**Sn**	**03 16 01.3**	**-6.3**
	20nm,0.3s,baz=328,slow=26,SNR=12						
WB2	**Warramunga Arr**	**13.48**	**163**	*e*Pn	**Pn**	**03 13 38.9**	**-0.2**
COEN	**Coen**	**14.59**	**119**	*e*Pn	**Pn**	**03 13 55.2**	**+1.7**
COEN				*e*Sn	**Sn**	**03 16 28.0**	**-6.4**
BBKI	**Banjar Baru**	**15.59**	**282**	P	**P**	**03 14 09.6**	**+1.4**
MTKI	**Muara Teweh, K**	**16.31**	**291**	P	**P**	**03 14 18.9**	**+2.7**
TSM	**Tawau**	**16.59**	**312**	⇓P	**Pn**	**03 14 18.7**	**+0.1**
MYLDM	**Lahad Datu**	**16.76**	**316**	*e*P	**Pn**	**03 14 19.2**	**-1.4**
	86nm,0.9s						
AS31	**Alice Springs**	**16.94**	**168**	*e*Pn	**P**	**03 14 24.8**	**+1.7**
	22nm,0.3s						
ASAR	**Alice Springs**	**16.94**	**168**	P	**P**	**03 14 24.6**	**+1.6**
	5.0nm,0.3s,baz=351,slow=13,SNR=120						
ASAR				S	**Sn**	**03 17 26.0**	**-5.1**
	5.6nm,0.3s,baz=353,slow=29,SNR=9.7						
AS01	**Alice Springs**	**16.95**	**168**	*e*Pn	**P**	**03 14 24.5**	**+1.4**
PMG	**Port Moresby**	**17.06**	**99**	P	**P**	**03 14 29.1**	**+4.7**
	1.6nm,0.3s,baz=276,slow=5.9,SNR=23						
PMG				S	**Sn**	**03 17 29.5**	**-4.6**
	1.1nm,0.3s,baz=184,slow=23,SNR=7.9						
PMG				LR	LR	03 23 23.0	
	comp=Z,182nm,19.6s,baz=34,slow=44						
PMG	**Port Moresby**	**17.06**	**99**	*e*P	**P**	**03 14 28.5**	**+4.1**
	58nm,0.8s						
PMG				*e*Sn	**Sn**	**03 17 29.8**	**-4.3**
MBWA	**Marble Bar**	**17.25**	**214**	*e*Pn	**P**	**03 14 25.9**	**-0.5**
	38nm,0.8s						
MBWA				*e*Sn	Sn	03 17 25.1	-13
SDKM	**Sandakan**	**18.00**	**314**	⇓P	**Pn**	**03 14 36.8**	**+1.0**
PWJI	**Pagerwojo**	**18.15**	**266**	P	**Pn**	**03 14 39.5**	**+2.0**
	25nm,0.6s						
KKM	**Kota Kinabalu**	**18.99**	**313**	*e*P	**P**	**03 14 45.1**	**-0.5**
	119nm,0.9s						
BTM	**Bintulu**	**19.79**	**300**	⇑P	**Pn**	**03 14 55.9**	**-0.9**
STKI	**Sintang**	**19.86**	**290**	P	**Pn**	**03 14 57.4**	**-0.2**
	73nm,0.9s,17µm						
SBUM	**Sibu**	**20.17**	**297**	*e*P	**P**	**03 14 58.1**	**-0.3**
	62nm,0.6s						
CTA	**Charters Tower**	**20.35**	**131**	P	Pn	03 15 06.3	+3.0
	10nm,0.9s,baz=318,slow=12,SNR=8.8						
CTAO	**Charters Tower**	**20.35**	**131**	*e*P	Pn	03 15 03.5	+0.2
CTAO				pmax	pmax		
	comp=Z,23nm,1.0s						
CTAO	**Charters Tower**	**20.35**	**131**	*e*P	Pn	03 15 03.5	+0.2
	comp=Z,23nm,1.0s						
KPJI	**Karang Pucung**	**20.99**	**268**	P	**P**	**03 15 10.5**	**+3.2**
	comp=Z,28nm,0.9s						
KSM	**Kuching**	**21.47**	**292**	⇑P	**P**	**03 15 13.3**	**+0.9**
KSM	**Kuching**	**21.47**	**292**	*e*P	**P**	**03 15 11.8**	**-0.6**
	comp=Z,18nm,0.6s						
CISI	**Cisompet, Garu**	**22.10**	**267**	P	**P**	**03 15 21.3**	**+2.2**
	comp=Z,66nm,0.6s						
TGY	**Tagaytay City**	**22.88**	**337**	P	**P**	**03 15 26.9**	**0.0**
	comp=Z,1µm,0.9s,baz=199,slow=2.3,SNR=16						
TGY	**Tagaytay City**	**22.88**	**337**	P	**P**	**03 15 27.0**	**0.0**
TNG	**Tangerang**	**23.30**	**271**	P	**P**	**03 15 34.0**	**+3.0**
	comp=Z,2µm,0.4s						
TNG				P	**P**	**03 15 34.6**	**+3.6**
	comp=Z,973nm,0.4s						
CGJI	**Cibinong**	**24.23**	**270**	P	**P**	**03 15 40.9**	**+1.5**
PPBI	**Pangkal Pinang**	**24.35**	**280**	P	**P**	**03 15 43.2**	**+2.7**
	comp=Z,56nm,0.2s,comp=Z,7µm						
BBOO	**Buckleboo**	**26.24**	**169**	*e*P	**P**	**03 16 00.5**	**+3.1**
	comp=Z,38nm,1.0s						
STKA	**Stephens Creek**	**26.95**	**158**	P	**P**	**03 16 07.5**	**+3.7**
	comp=Z,6.0nm,0.5s,baz=327,slow=9.2,SNR=17						
STKA	**Stephens Creek**	**26.95**	**158**	*e*P	**P**	**03 16 07.2**	**+3.5**
	comp=Z,3.8nm,0.8s						
MYKOM	**Kota Tinggi**	**27.61**	**288**	*e*P	**P**	**03 16 08.6**	**-1.4**
	comp=Z,24nm,0.9s						
MNSI	**Mandailing Nat**	**31.42**	**283**	P	**P**	**03 16 44.4**	**+0.8**
KULM	**Kulim**	**31.83**	**292**	*e*P	P	03 16 42.4	-4.8
	comp=Z,9.0nm,0.6s						
PSI	**Prapat**	**32.60**	**286**	P	**P**	**03 16 51.1**	**-3.0**
	comp=Z,6.8nm,0.6s,baz=136,slow=4.5,SNR=9.9						
PSI	**Prapat**	**32.60**	**286**	*e*P	**P**	**03 16 51.2**	**-3.0**
PSI				pmax	pmax		
	comp=Z,12nm,0.9s						
PSI	**Prapat**	**32.60**	**286**	*e*P	**P**	**03 16 51.2**	**-3.0**
	comp=Z,12nm,0.9s						
CAN	**Canberra**	**33.08**	**151**	*e*P	**P**	**03 16 54.6**	**-3.4**
CAN				pmax	pmax		
	comp=Z,24nm,1.0s						
CAN	**Canberra**	**33.08**	**151**	*e*P	**P**	**03 16 54.6**	**-3.4**
	comp=Z,24nm,1.0s						
GSI	**Gunungsitoli**	**33.48**	**283**	P	**P**	**03 17 02.0**	**+0.3**
TRTT	**Trang**	**33.72**	**295**	P	**P**	**03 17 03.8**	**+0.1**
	comp=Z,22nm,1.1s						
SKNT	**Sakolnakorn**	**35.15**	**313**	P	**P**	**03 17 14.4**	**-1.6**
	comp=Z,44nm,1.1s						
KHON	**Khomkaen**	**35.60**	**311**	P	**P**	**03 17 19.0**	**-0.9**
	comp=Z,12nm,1.0s,comp=Z,615nm						
PBKT	**Sadao Pong**	**37.15**	**309**	P	**P**	**03 17 31.8**	**-1.2**
	comp=Z,6.3nm,1.0s						
PHIT	**Phitsanulok**	**37.94**	**310**	P	**P**	**03 17 39.5**	**-0.2**
	comp=Z,36nm,0.9s						
KHLT	**Khaolaem Dam**	**38.03**	**305**	P	**P**	**03 17 41.2**	**+0.7**
	comp=Z,4.6nm,1.2s						
UTTA	**Uttaradit**	**38.17**	**311**	P	**P**	**03 17 40.7**	**-1.0**
	comp=Z,16nm,0.8s,comp=Z,173nm						
LAMP	**Lampang**	**39.34**	**311**	P	**P**	**03 17 50.8**	**-0.6**
	comp=Z,11nm,0.8s						
CMAR	**Chiang Mai Arr**	**39.82**	**310**	P	**P**	**03 17 54.6**	**-0.9**
	comp=Z,12nm,0.7s,baz=139,slow=7.0,SNR=103						
CMAR				PcP	**PcP**	**03 19 59.5**	**-0.2**
	comp=Z,2.0nm,0.7s,baz=167,slow=3.0,SNR=5.2						
CMAR	**Chiang Mai Arr**	**39.82**	**310**	P	**P**	**03 17 54.6**	**-0.9**
CMAR						03 19 59.5	
CMAR				pmax	pmax		
	comp=Z,14nm,0.7s						
CMAR				pmax	pmax		
	comp=Z,2.0nm,0.7s						
CRAI	**Chiangrai**	**39.85**	**313**	P	**P**	**03 17 55.4**	**-0.3**
	comp=Z,9.7nm,0.9s						
JNU	**Nakatsue**	**39.94**	**1**	P	**P**	**03 17 55.6**	**-0.6**
	comp=Z,9.2nm,0.8s,baz=283,slow=5.6,SNR=4.3						
CMMT	**Chiang Mai**	**40.03**	**310**	P	**P**	**03 17 55.9**	**-1.3**
	comp=Z,43nm,0.9s,comp=Z,532nm						
CHTO	**Chiang Mai**	**40.03**	**310**	P	**P**	**03 17 55.9**	**-1.3**
	comp=Z,190nm,0.9s						
CHTO	**Chiang Mai**	**40.03**	**310**	*e*P	**P**	**03 17 56.4**	**-0.8**
CHTO				pmax	pmax		
	comp=Z,31nm,0.8s						
CHTO	**Chiang Mai**	**40.03**	**310**	*e*P	**P**	**03 17 56.4**	**-0.8**
	comp=Z,31nm,0.8s						
CHTO	**Chiang Mai**	**40.03**	**310**	P	**P**	**03 17 55.4**	**-1.8**
	SNR=17						
CHTO	**Chiang Mai**	**40.03**	**310**	P	**P**	**03 17 55.4**	**-1.8**
	SNR=17						
WHN	**Wuhan**	**40.30**	**339**	P	**P**	**03 17 59.8**	**+0.6**
WHN				pmax	pmax		
	comp=Z,140nm,1.4s						
GYA	**Guiyang**	**40.31**	**327**	P	**P**	**03 18 00.3**	**+0.8**
GYA				pmax	pmax		
	comp=Z,10.0nm,1.0s						
NJ2	**Nanjing**	**40.32**	**345**	*e*P	**P**	**03 17 59.4**	**+0.1**
NJ2				pmax	pmax		
	comp=Z,23nm,0.8s						
CMAI	**Chiengmai2**	**40.64**	**312**	P	**P**	**03 18 01.3**	**-1.0**
	comp=Z,31nm,0.8s						
KMI	**Kunming**	**41.60**	**321**	P	**P**	**03 18 09.5**	**-0.7**
KMI				pmax	pmax		
	comp=Z,27nm,0.5s						
KMI				pmax	pmax		
	comp=Z,180nm,9.6s						
ENH	**Enshi**	**42.03**	**333**	*e*P	**P**	**03 18 11.8**	**-1.7**
	comp=Z,13nm,0.6s						
MJAR	**Matsushiro Arr**	**44.01**	**9**	P	**P**	**03 18 27.8**	**-1.5**
	comp=Z,7.1nm,0.9s,baz=186,slow=9.3,SNR=9.8						
MAJO	**Matsushiro**	**44.01**	**9**	*e*P	**P**	**03 18 27.6**	**-1.7**
MAJO				pmax	pmax		
	comp=Z,48nm,0.7s						
MAJO	**Matsushiro**	**44.01**	**9**	*e*P	**P**	**03 18 27.6**	**-1.7**
	comp=Z,11nm,0.8s						
MAT	**Matsushiro**	**44.01**	**9**	P	**P**	**03 18 26.4**	**-2.9**
MJB9	**Matsu-Tunnel**	**44.02**	**9**	*e*P	**P**	**03 18 28.3**	**-1.0**
	comp=Z,3.0nm,1.0s						
KSAR	**Wonju Array Be**	**44.29**	**357**	P	**P**	**03 18 31.4**	**-0.1**
KSAR	**Wonju Array Be**	**44.29**	**357**	P	**P**	**03 18 31.4**	**-0.1**
KSRS	**Korea Array**	**44.30**	**358**	P	**P**	**03 18 31.4**	**-0.1**
	comp=Z,2.4nm,0.6s,baz=172,slow=9.0,SNR=6.5						
CD2	**Chengdu**	**45.38**	**328**	P	**P**	**03 18 39.8**	**-0.5**
CD2				sP	sP	03 19 13.1	-3.3
CD2				PP	**PP**	**03 20 27.4**	**-1.2**
CD2				S	**S**	**03 25 13.4**	**-0.3**
CD2				sS	sS	03 25 52.5	-3.2
CD2				SS	**SS**	**03 28 38.8**	**-0.3**
CD2				pmax	pmax		
	comp=Z,70nm,1.6s						
CD2				LR	LR		
	comp=Z,440nm,17.4s						
CD2				LR	LR		
	comp=Z,350nm,15.0s						
XAN	**Xi'an**	**45.51**	**335**	P	**P**	**03 18 39.3**	**-1.9**
XAN				pP	pP	03 19 01.8	-3.8
XAN				pmax	pmax		
	comp=Z,20nm,1.2s						
BJI	**Beijing**	**48.57**	**346**	P	**P**	**03 19 03.4**	**-1.5**
BJI				pmax	pmax		
	comp=Z,16nm,1.4s						
BJI				pmax	pmax		
	comp=Z,130nm,3.3s						
LZH	**Lanzhou**	**49.48**	**332**	*e*P	**P**	**03 19 12.8**	**+0.7**
LZH				pP	pP	03 19 34.5	-2.3
LZH				sP	sP	03 19 45.3	-3.2
LZH				pmax	pmax		
	comp=Z,36nm,1.0s						
LZH				pmax	pmax		
	comp=Z,110nm,4.3s						
HHC	**Hu-ho-hao-te**	**50.60**	**342**	*e*P	**P**	**03 19 20.9**	**+0.4**
HHC				pmax	pmax		
	comp=Z,24nm,0.9s						
HHC				pmax	pmax		
	comp=Z,190nm,8.9s						
USRK	**Ussuriysk Ar.**	**51.03**	**2**	P	**P**	**03 19 23.2**	**-0.2**
	comp=Z,5.2nm,0.7s,baz=184,slow=5.5,SNR=9.4						
ASAJ	**Asahikawa**	**52.16**	**11**	P	**P**	**03 19 31.9**	**+0.1**
	comp=Z,3.1nm,0.3s,baz=217,slow=12,SNR=4.1						
LSA	**Lhasa**	**52.28**	**316**	P	**P**	**03 19 33.5**	**-0.1**
LSA				pmax	pmax		
	comp=Z,17nm,0.9s						
LSA	**Lhasa**	**52.28**	**316**	*e*P	**P**	**03 19 33.3**	**-0.3**
LSA				pmax	pmax		
	comp=Z,12nm,0.6s						
LSA	**Lhasa**	**52.28**	**316**	*e*P	**P**	**03 19 33.3**	**-0.3**
	comp=Z,12nm,0.6s						
GTA	**Gaotai**	**54.05**	**331**	*e*P	**P**	**03 19 45.6**	**-0.4**
GTA				pP	pP	03 20 08.8	-2.3
GTA				sP	sP	03 20 20.3	-2.3
GTA				pmax	pmax		
	comp=Z,14nm,1.1s						
GUN	**Gumba**	**55.04**	**311**	*e*P	**P**	**03 19 52.3**	**-1.4**
	comp=Z,90nm,0.7s						
PKIN	**Phulchoki**	**55.23**	**311**	*e*P	**P**	**03 19 53.5**	**-1.4**
	comp=Z,16nm,0.7s						
KKN	**Kakani**	**55.43**	**311**	*e*P	**P**	**03 19 55.1**	**-1.2**
	comp=Z,32nm,0.7s						
DMN	**Daman**	**55.46**	**310**	*e*P	**P**	**03 19 55.5**	**-1.1**
	comp=Z,22nm,0.5s						
GKN	**Gorkha**	**56.02**	**311**	*e*P	**P**	**03 19 59.1**	**-1.4**
	comp=Z,39nm,0.5s						
KLR	**Kul'dur**	**56.05**	**1**	P	**P**	**03 19 59.6**	**-0.4**
	comp=Z,3.6nm,0.8s,baz=249,slow=4.3,SNR=7.3						
KLR	**Kul'dur**	**56.05**	**1**	P	**P**	**03 19 59.6**	**-0.4**
KLR				pmax	pmax		
	comp=Z,3.0nm,0.7s						
KOLN	**Koldanda**	**56.69**	**310**	*e*P	**P**	**03 20 04.0**	**-1.3**
	comp=Z,51nm,0.7s						
PYUN	**Piuthan**	**57.32**	**310**	*e*P	**P**	**03 20 08.8**	**-0.9**
	comp=Z,108nm,0.8s						
ULN	**Ulaanbaatar**	**58.33**	**342**	*e*P	**P**	**03 20 16.5**	**+0.2**
ULN				pmax	pmax		
	comp=Z,8.0nm,0.6s						
ULN	**Ulaanbaatar**	**58.33**	**342**	*e*P	**P**	**03 20 16.5**	**+0.2**
	comp=Z,7.8nm,0.6s						
SONM	**Songino Array**	**58.50**	**341**	P	**P**	**03 20 17.4**	**-0.1**
	comp=Z,3.0nm,0.5s,baz=156,slow=7.2,SNR=18						
SONA1	**Songino Array**	**58.51**	**342**	*e*P	**P**	**03 20 17.4**	**-0.2**
NKL	**Nikolayevsk**	**60.63**	**7**	*e*P	**P**	**03 20 32.0**	**+0.3**
POO	**Poona**	**60.99**	**296**	*ex*	**P**	**03 20 32.0**	**-3.0**
ZAK	**Zakamensk**	**61.73**	**341**	*e*P	**P**	**03 20 36.8**	**-2.6**
ZAK				pmax	pmax		
	comp=Z,4.0nm,1.7s						
TLY	**Talaya**	**62.74**	**342**	P	**P**	**03 20 46.2**	**+0.2**
	comp=Z,2.0nm,0.5s,baz=221,slow=9.0,SNR=4.8						
WMQ	**Urumqi**	**63.47**	**327**	P	**P**	**03 20 51.3**	**+0.2**
WMQ				pP	pP	03 21 16.9	0.0
WMQ				sP	PcP	03 21 25.8	-1.2
WMQ				pmax	pmax		
	comp=Z,10.0nm,0.8s						
WMQ				LR	LR		
	comp=Z,120nm,18.4s						
WMQ				LR	LR		
	comp=Z,110nm,22.2s						
WMQ				LR	LR		
	comp=Z,63nm,20.2s						
MOY	**Mondy**	**63.58**	**340**	*e*P	**P**	**03 20 52.4**	**+0.7**
MOY				pmax	pmax		
	comp=Z,29nm,1.8s						
PETK	**Petropavlovsk-**	**64.33**	**18**	P	**P**	**03 20 57.3**	**+0.8**
	comp=Z,2.4nm,0.7s,baz=187,slow=6.8,SNR=3.8						
BOD	**Bodaibo**	**65.95**	**351**	*e*P	**P**	**03 21 04.9**	**-1.9**
BOD				pmax	pmax		
	comp=Z,5.0nm,1.8s						
KSH	**Kashi**	**68.10**	**318**	P	**P**	**03 21 22.4**	**+1.4**
KSH				*e*pP	pP	03 21 47.0	-0.1
KSH				*e*sP	sP	03 21 57.4	-1.0
KSH				*e*PP	**PP**	**03 23 55.8**	**+3.1**
KSH				S	**S**	**03 30 11.1**	**-1.7**
KSH				ScS	**SKSac**	**03 31 10.1**	**-0.1**
KSH				pmax	pmax		
	comp=Z,180nm,9.9s						
KSH				LR	LR		
	comp=Z,110nm,5.9s						
KSH				LR	LR		
	comp=Z,190nm,11.5s						
KSH				LR	LR		
	comp=Z,350nm,15.3s						
MKAR	**Makanchi Array**	**68.30**	**327**	P	**P**	**03 21 21.8**	**-0.2**
	comp=Z,25nm,0.5s,baz=122,slow=7.9,SNR=299						
MAKZ	**Makanchi**	**68.48**	**327**	*e*P	**P**	**03 21 22.6**	**-0.5**
MAKZ				pmax	pmax		
	comp=Z,23nm,0.6s						
MAKZ	**Makanchi**	**68.48**	**327**	*e*P	**P**	**03 21 22.6**	**-0.5**
	comp=Z,23nm,0.6s						
YAK	**Yakutsk**	**68.86**	**360**	P	**P**	**03 21 24.8**	**-0.2**
	comp=Z,15nm,0.4s,baz=129,slow=1.3,SNR=6.1						
YAK	**Yakutsk**	**68.86**	**360**	*e*P	**P**	**03 21 24.9**	**-0.1**
YAK				pmax	pmax		
	comp=Z,36nm,0.8s						
YAK	**Yakutsk**	**68.86**	**360**	*e*P	**P**	**03 21 25.2**	**+0.2**
	comp=Z,31nm,0.7s						
TKM2	**Tokmak 2**	**70.07**	**321**	*e*P	**P**	**03 21 32.9**	**-0.3**
TKM2				pmax	pmax		
	comp=Z,7.0nm,0.6s						
TKM2	**Tokmak 2**	**70.07**	**321**	*e*P	**P**	**03 21 32.9**	**-0.3**
	comp=Z,7.2nm,0.6s						
AAK	**Ala-Archa**	**70.62**	**320**	P	**P**	**03 21 36.4**	**-0.2**
	comp=Z,2.6nm,0.3s,baz=113,slow=5.0,SNR=13						
AAK	**Ala-Archa**	**70.62**	**320**	*c iP*	**P**	**03 21 36.8**	**+0.3**
AAK				pmax	pmax		
	comp=Z,18nm,0.8s						
AAK	**Ala-Archa**	**70.62**	**320**	*e*P	**P**	**03 21 37.0**	**+0.4**
	comp=Z,6.0nm,0.6s						
AAK	**Ala-Archa**	**70.62**	**320**	P	**P**	**03 21 37.4**	**+0.8**
	SNR=7.2						
AAK	**Ala-Archa**	**70.62**	**320**	P	**P**	**03 21 37.4**	**+0.8**
	SNR=7.2						
EKS2	**Erkin-Say**	**71.10**	**320**	*e*P	**P**	**03 21 39.6**	**+0.3**
EKS2				pmax	pmax		
	comp=Z,9.0nm,0.8s						
EKS2	**Erkin-Say**	**71.10**	**320**	*e*P	**P**	**03 21 39.6**	**+0.3**
	comp=Z,8.6nm,0.8s						
ZAA0	**Zalesovo Array**	**71.65**	**334**	*e*P	**P**	**03 21 41.2**	**-1.1**
ZALV	**Zalesovo Beam**	**71.65**	**334**	P	**P**	**03 21 41.4**	**-0.9**
	comp=Z,11nm,0.5s,baz=130,slow=5.6,SNR=52						
SEY	**Seymchan**	**71.83**	**11**	P	**P**	**03 21 43.9**	**+0.8**
	comp=Z,8.1nm,0.8s,baz=201,slow=5.5,SNR=20						
VNDA	**Vanda**	**72.40**	**173**	P	**P**	**03 21 50.0**	**+3.6**
	comp=Z,1.2nm,0.8s,baz=334,slow=7.8,SNR=7.2						
VNDA	**Vanda**	**72.40**	**173**	P	**P**	**03 21 50.0**	**+3.6**
VNDA				pmax	pmax		
	comp=Z,1.0nm,0.8s						
KURBB	**Kurchatov Arra**	**72.59**	**328**	P	**P**	**03 21 47.2**	**-0.7**
	comp=Z,18nm,0.5s,baz=126,slow=5.0,SNR=314						
KURK	**Kurchatov**	**72.59**	**329**	*e*P	**P**	**03 21 47.4**	**-0.5**
KURK				pmax	pmax		
	comp=Z,48nm,1.3s						
KURK	**Kurchatov**	**72.59**	**329**	*e*P	**P**	**03 21 47.4**	**-0.5**
	comp=Z,48nm,1.3s						
KURK	**Kurchatov**	**72.59**	**329**	P	**P**	**03 21 47.5**	**-0.4**
	SNR=12						
KURK	**Kurchatov**	**72.59**	**329**	P	**P**	**03 21 47.5**	**-0.4**
	SNR=12						
NVS	**Novosibirsk**	**72.94**	**334**	*e*P	**P**	**03 21 47.1**	**-2.8**
KKAR	**Karatay Array**	**73.42**	**319**	*e*P	**P**	**03 21 53.0**	**-0.1**
KKAR				pmax	pmax		
	comp=Z,2.0nm,0.6s						
KKAR	**Karatay Array**	**73.42**	**319**	*e*P	**P**	**03 21 53.0**	**-0.1**
	comp=Z,2.2nm,0.6s						
MAW	**Mawson**	**74.95**	**201**	P	**P**	**03 22 03.8**	**+2.4**
	comp=Z,3.3nm,0.6s

ILAR	**Eielson Array**	**93.34**	**25**	P		**P**	**03 23 34.0**	**-1.0**
	comp=Z,1.2nm,0.9s,baz=260,slow=4.3,SNR=9.7							
KLMR	**Klimovskoe**	**96.37**	**330**	*e*P		**P**	**03 23 45.0**	**-3.9**
KLMR				pmax		pmax		
	comp=Z,16nm,1.5s							
YKA	**Yellowknife Ar**	**107.74**	**26**	PKiKP		**PKiKP**	**03 28 47.1**	**+0.4**
	comp=Z,0.7nm,0.6s,baz=294,slow=1.6,SNR=27							
YKA				PKKPbc		**PKKPbc**	**03 40 01.3**	**-2.0**
	comp=Z,0.4nm,0.7s,baz=106,slow=3.0,SNR=9.5							
GERES	**GERESS Array B**	**112.50**	**320**	PKiKP		**PKiKP**	**03 28 56.2**	**-0.1**
	comp=Z,0.5nm,0.5s,baz=72,slow=1.7,SNR=6.5							
HLID	**Hailey**	**113.21**	**46**	*e*PKP		**PKiKP**	**03 28 59.5**	**+1.6**
AQU	**L'Aquila**	**114.34**	**313**	*e*PKiKP		PKPdf	03 28 59.8	-0.1
AQU	**L'Aquila**	**114.34**	**313**	*e*PKP		PKPdf	03 28 59.8	-0.1
DUG	**Dugway, Tooele**	**115.12**	**49**	*e*PKiKP		**PKPdf**	**03 29 03.0**	**+1.3**
DUG	**Dugway, Tooele**	**115.12**	**49**	*e*PKPdf		**PKPdf**	**03 29 03.0**	**+1.3**
SNOW	**Snow King Moun**	**115.82**	**45**	*e*PKPdf		**PKPdf**	**03 29 04.8**	**+1.8**
LOHW	**Long Hollow**	**115.88**	**45**	*e*PKPdf		**PKPdf**	**03 29 04.8**	**+1.6**
HGN	**Heimansgroeve**	**116.61**	**324**	*e*L		L	03 26 28.2	
	comp=Z,2μm,21.2s							
BW06	**Boulder Array**	**116.85**	**45**	*e*PKP		**PKPdf**	**03 29 05.8**	**+0.8**
PDAR	**Pinedale Array**	**116.85**	**45**	PKP		**PKPdf**	**03 29 06.3**	**+1.3**
	comp=Z,0.9nm,0.7s,baz=229,slow=1.7,SNR=9.5							
WLF	**Walferdange**	**116.91**	**323**	*e*PKiKP		**PKPdf**	**03 29 05.0**	**+0.4**
WLF	**Walferdange**	**116.91**	**323**	*e*PKPdf		**PKPdf**	**03 29 05.0**	**+0.4**
FFC	**Flin Flon**	**116.94**	**31**	*e*PKiKP		**PKPdf**	**03 29 05.2**	**+0.7**
FFC	**Flin Flon**	**116.94**	**31**	*e*PKPdf		**PKPdf**	**03 29 05.2**	**+0.7**
BNI	**Bardonecchia**	**118.24**	**318**	*e*PKiKP		**PKPdf**	**03 29 07.7**	**+0.2**
BNI	**Bardonecchia**	**118.24**	**318**	*e*PKPdf		**PKPdf**	**03 29 07.7**	**+0.2**
TUC	**Tucson**	**118.28**	**57**	*e*PKiKP		**PKPdf**	**03 29 09.1**	**+1.2**
TUC	**Tucson**	**118.28**	**57**	*e*PKPdf		**PKPdf**	**03 29 09.1**	**+1.2**
EKA	**Eskdalemuir Ar**	**119.24**	**332**	PKP		**PKPdf**	**03 29 08.8**	**-0.1**
	comp=Z,0.3nm,0.5s,baz=30,slow=2.3,SNR=4.1							
RSSD	**Black Hills**	**120.22**	**42**	*e*PKiKP		**PKPdf**	**03 29 11.8**	**+0.4**
RSSD	**Black Hills**	**120.22**	**42**	*e*PKPdf		**PKPdf**	**03 29 11.8**	**+0.4**
SDCO	**Great Sand Dun**	**121.25**	**50**	*e*PKPdf		**PKPdf**	**03 29 14.8**	**+1.1**
ANMO	**Albuquerque**	**121.26**	**53**	*i*PKiKP		**PKPdf**	**03 29 14.8**	**+1.1**
ANMO				pmax		pmax		
	comp=Z,2.0nm,1.2s							
ANMO	**Albuquerque**	**121.26**	**53**	*e*PKPdf		**PKPdf**	**03 29 14.9**	**+1.3**
ULM	**Lac du Bonnet**	**122.43**	**33**	PKP		**PKPdf**	**03 29 15.4**	**+0.2**
	comp=Z,2.7nm,0.5s,baz=75,slow=0.5,SNR=4.2							
MNTX	**Cornudas Mount**	**122.90**	**57**	*e*PKPdf		**PKPdf**	**03 29 18.3**	**+1.7**
TXAR	**Lajitas Array**	**124.87**	**59**	PKP		**PKPdf**	**03 29 21.9**	**+1.2**
	comp=Z,0.7nm,0.7s,baz=220,slow=2.0,SNR=9.1							
JCT	**Junction City**	**127.84**	**57**	*e*PKiKP		**PKPdf**	**03 29 27.8**	**+1.6**
JCT	**Junction City**	**127.84**	**57**	*e*PKPdf		**PKPdf**	**03 29 27.8**	**+1.6**
PLCA	**Paso Flores**	**128.81**	**160**	PKP		**PKPdf**	**03 29 30.7**	**+2.8**
	comp=Z,1.3nm,0.8s,baz=209,slow=12,SNR=2.8							
PLCA	**Paso Flores**	**128.81**	**160**	PKiKP		**PKPdf**	**03 29 30.7**	**+2.8**
PLCA				pmax		pmax		
	comp=Z,2.0nm,0.9s							
TORD	**Torodi Ar. Bea**	**128.90**	**281**	PKP		**PKPdf**	**03 29 29.4**	**+0.8**
	comp=Z,1.2nm,0.7s,baz=76,slow=1.8,SNR=8.5							
DBIC	**Dimbokro**	**135.28**	**272**	PKP		**PKPdf**	**03 29 42.0**	**+1.4**
	comp=Z,2.8nm,0.8s,baz=299,slow=1.1,SNR=4.5							
JTS	**JuntasAbangare**	**145.22**	**82**	*e*PKP2		**PKPdf**	**03 30 00.7**	**+2.1**
JTS	**JuntasAbangare**	**145.22**	**82**	*e*PKPdf		**PKPdf**	**03 30 00.7**	**+2.1**
CPUP	**Villa Florida**	**146.06**	**168**	PKPbc		**PKPab**	**03 30 02.6**	**+1.3**
	comp=Z,4.2nm,0.7s,baz=90,slow=1.7,SNR=6.7							
CPUP				pPKPbc		pPKPbc	03 30 35.3	+6.5
	comp=Z,9.0nm,0.9s,baz=180,slow=1.5,SNR=6.0							
LPAZ	**La Paz**	**150.64**	**142**	PKPbc		**PKPbc**	**03 30 16.4**	**+2.7**
	comp=Z,2.9nm,0.5s,baz=75,slow=3.3,SNR=14							
OTAV	**Otavalo**	**150.75**	**102**	*e*PKPdf		**PKPdf**	**03 30 10.2**	**+1.9**

BJI ***15*** *03:18:26.2,36.60N×22.78E,h16km,mb4.9/9,mB5.0/5, Ms4.6/1,Ms7 4.3/1*

IDC ***15*** *03:18:27.3±0.5,36.57N×23.01E,h0km,mb4.2/26, mb1 4.4/35,mb1mx4.2/63,mbtmp4.2/35,ML3.8/9,Error ellipse: s-maj=12.0km s-min=10.0km az=12.0*

HLW ***15*** *03:18:28.6,36.89N×23.43E,h22km±11km,MI3.8*

ATH ***15*** *03:18:28.8,36.66N×22.97E,h18km,ML4.2/20,Error ellipse: s-maj=0.8km s-min=0.5km az=239.0*

ISCJB ***15*** *03:18:29.8±0.3,36.64N±0.01×22.93E±0.01,h20km±2km, mb4.4/71,MS4.2/2,Error ellipse: s-maj=2.3km s-min=1.6km az=35.7*

NEIC ***15*** *03:18:29.2,36.61N×22.87E,h6km,mb4.5/42, ML4.5(THE),After THE.*

THE ***15*** *03:18:29.2,36.61N×22.87E,h6km,ML4.5/15,Error ellipse: s-maj=0.6km s-min=0.3km az=239.0*

PDG ***15*** *03:18:29.7±0.6,36.67N×22.97E,h12km±1km,ML4.1/9, Error ellipse: s-maj=0.9km s-min=1.0km az=0.0*

MOS ***15*** *03:18:30.9±1.1,36.56N×23.05E,h33km,mb4.5/21,Error ellipse: s-maj=6.4km s-min=3.5km az=93.0*

CSEM ***15*** *03:18:30.2±0.1,36.62N×22.96E,h15km,mb4.5/40, ML4.3/4,Error ellipse: s-maj=2.7km s-min=1.7km az=38.0*

DDA ***15*** *03:18:51.9,37.90N×24.62E,h19km,MI3.9*

ISC 15 03:18:29.1±0.7,36.60N±0.02×22.91E±0.02,h11km±4km, n1038,σ1♀12/1109,mb4.4/69,18C-24D,Southern Greece

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
VLI	**Veliai**	**0.12**	**10**	P		**Pg**	**03 18 31.7**	**-0.4**
VLI				S		**Sg**	**03 18 33.9**	**-0.3**
VLI	**Veliai**	**0.12**	**10**	P		**Pb**	**03 18 33.2**	**-0.2**
VLI				S		**Sg**	**03 18 34.8**	**+0.6**
VLI	**Veliai**	**0.12**	**10**	P		**Pb**	**03 18 33.2**	**-0.2**
VLI				S		**Sg**	**03 18 34.6**	**+0.3**
VLI	**Veliai**	**0.12**	**10**	P		**Pg**	**03 18 31.7**	**-0.4**
VLI				S		**Sg**	**03 18 33.9**	**-0.3**
KYTH	**Kithira**	**0.34**	**163**	P		**Pb**	**03 18 36.7**	**-0.5**
KYTH				S		**Sb**	**03 18 42.5**	**0.0**
KYTH	**Kithira**	**0.34**	**163**	P		**Pb**	**03 18 37.7**	**+0.6**
KYTH				S		**Sb**	**03 18 42.9**	**+0.4**
KYTH	**Kithira**	**0.34**	**163**	P		**Pb**	**03 18 37.7**	**+0.6**
KYTH	**Kithira**	**0.34**	**163**	P		**Pb**	**03 18 36.7**	**-0.5**
KYTH				S		**Sb**	**03 18 42.5**	**0.0**
ANKY	**Antikythira Is**	**0.80**	**157**	P		**Pb**	**03 18 45.0**	**0.0**
ANKY				S		**Sb**	**03 18 56.3**	**+0.5**
ANKY	**Antikythira Is**	**0.80**	**157**	P		**Pn**	**03 18 45.6**	**-0.7**
ANKY				S		**Sb**	**03 18 56.3**	**+0.5**
ANKY	**Antikythira Is**	**0.80**	**157**	P		**Pn**	**03 18 45.6**	**-0.7**
ANKY				S		**Sg**	**03 18 54.8**	**-0.2**
ANKY				AML		AML	03 19 01.1	
	comp=N,31761μm,0.5s							
ANKY				AML		AML	03 19 01.2	
	comp=E,26398μm,0.7s							
ANKY	**Antikythira Is**	**0.80**	**157**	P		**Pb**	**03 18 45.0**	**0.0**
ANKY				S		**Sb**	**03 18 56.3**	**+0.5**
KRND	**KRANIDI**	**0.80**	**14**	P		**Pg**	**03 18 44.2**	**-0.4**
KRND				S		**Sb**	**03 18 56.3**	**+0.4**
KRND	**KRANIDI**	**0.80**	**14**	P		**Pb**	**03 18 44.7**	**-0.4**
KRND				S		**Sg**	**03 18 54.4**	**-0.7**
KRND	**KRANIDI**	**0.80**	**14**	P		**Pn**	**03 18 46.3**	**-0.1**
KRND				S		**Sg**	**03 18 54.4**	**-0.7**
KRND				AML		AML	03 18 59.1	
	comp=N,19850μm,0.3s							
KRND				AML		AML	03 19 00.7	
	comp=E,27664μm,0.6s							
VLX	**Vlachokerasia**	**0.88**	**331**	P		**Pg**	**03 18 45.3**	**-0.8**
VLX				S		**Sg**	**03 18 57.1**	**-0.4**
VLX	**Vlachokerasia**	**0.88**	**331**	P		**Pg**	**03 18 45.7**	**-0.4**
VLX				S		**Sg**	**03 18 57.1**	**-0.4**
VLX	**Vlachokerasia**	**0.88**	**331**	P		**Pg**	**03 18 45.7**	**-0.4**
VLX				S		**Sg**	**03 18 55.4**	**-2.2**
VLX				AML		AML	03 19 02.8	
	comp=N,59009μm,0.6s							
VLX				AML		AML	03 19 03.8	
	comp=E,55869μm,0.6s							
VLX	**Vlachokerasia**	**0.88**	**331**	P		**Pg**	**03 18 45.3**	**-0.8**
VLX				S		**Sg**	**03 18 57.1**	**-0.4**
DID	**Didima**	**0.94**	**16**	P		**Pg**	**03 18 46.8**	**-0.4**
DID				S		**Sn**	**03 19 00.7**	**-1.1**
DID	**Didima**	**0.94**	**16**	P		**Pg**	**03 18 46.8**	**-0.4**
DID				S		**Sb**	**03 18 59.7**	**-0.2**
DID	**Didima**	**0.94**	**16**	P		**Pg**	**03 18 46.6**	**-0.6**
DID				S		**Sb**	**03 18 59.7**	**-0.2**
DID				AML		AML	03 19 04.5	
	comp=E,44650μm,0.5s							
DID				AML		AML	03 19 07.1	
	comp=N,32538μm,0.6s							
DID	**Didima**	**0.94**	**16**	P		**Pg**	**03 18 46.8**	**-0.4**
ITM	**Ithomi**	**0.98**	**306**	P		**Pb**	**03 18 47.0**	**-1.0**
ITM				S		**Sg**	**03 19 00.6**	**-0.1**
ITM	**Ithomi**	**0.98**	**306**	P		**Pb**	**03 18 47.1**	**-1.0**
ITM				S		**Sg**	**03 19 00.6**	**-0.1**
ITM	**Ithomi**	**0.98**	**306**	P		**Pb**	**03 18 46.4**	**-1.7**
ITM				S		**Sg**	**03 19 00.3**	**-0.4**
ITM				AML		AML	03 19 08.0	
	comp=E,19285μm,0.7s							
ITM				AML		AML	03 19 11.0	
	comp=N,22058μm,0.5s							
ITM	**Ithomi**	**0.98**	**306**	P		**Pb**	**03 18 47.0**	**-1.0**
PYL	**PYLOS**	**0.98**	**288**	P		**Pb**	**03 18 47.0**	**-1.2**
PYL				S		**Sb**	**03 19 00.7**	**-0.5**
PYL	**PYLOS**	**0.98**	**288**	P		**Pb**	**03 18 47.3**	**-0.9**
PYL				S		**Sg**	**03 19 02.3**	**+1.4**
PYL	**PYLOS**	**0.98**	**288**	P		**Pb**	**03 18 46.0**	**-2.2**
PYL				S		**Sg**	**03 19 02.3**	**+1.4**
PYL				AML		AML	03 19 05.1	
	comp=N,12691μm,0.4s							
PYL				AML		AML	03 19 05.5	
	comp=E,24176μm,0.6s							
PYL	**PYLOS**	**0.98**	**288**	P		**Pb**	**03 18 47.0**	**-1.2**
TRIP	**Tripoli**	**1.06**	**331**	P		**Pb**	**03 18 48.9**	**-0.6**
TRIP				S		**Sb**	**03 19 01.9**	**-1.4**
TRIP	**Tripoli**	**1.06**	**331**	P		**Pb**	**03 18 48.9**	**-0.6**
TRIP				S		**Sb**	**03 19 01.9**	**-1.4**
TRIP				AML		AML	03 19 06.5	
	comp=N,17878μm,0.7s							
TRIP				AML		AML	03 19 08.6	
	comp=E,17583μm,0.4s							
MHLO	**Agia Marina, M**	**1.20**	**85**	P		**Pg**	**03 18 51.8**	**-0.4**
MHLO				S		**Sn**	**03 19 10.2**	**+2.0**
MHLO	**Agia Marina, M**	**1.20**	**85**	P		**Pg**	**03 18 51.8**	**-0.4**
MHLO				S		**Sn**	**03 19 08.7**	**+0.5**
MHLO	**Agia Marina, M**	**1.20**	**85**	P		**Pg**	**03 18 52.9**	**+0.7**
MHLO				S		**Sn**	**03 19 08.7**	**+0.5**
MHLO				AML		AML	03 19 13.9	
	comp=E,93425μm,0.5s							
MHLO				AML		AML	03 19 17.9	
	comp=N,65688μm,0.9s							
AMT	**Artemida-Makis**	**1.34**	**314**	P		**Pn**	**03 18 53.2**	**-0.6**
AMT				S		**Sb**	**03 19 11.4**	**0.0**
AMT	**Artemida-Makis**	**1.34**	**314**	P		**Pn**	**03 18 53.4**	**-0.4**
AMT				S		**Sb**	**03 19 11.4**	**0.0**
AMT	**Artemida-Makis**	**1.34**	**314**	P		**Pn**	**03 18 52.5**	**-1.2**
SERI	**Serifos**	**1.38**	**66**	P		**Pn**	**03 18 54.0**	**-0.3**
SERI				S		**Sn**	**03 19 12.0**	**-0.6**
SERI	**Serifos**	**1.38**	**66**	P		**Pn**	**03 18 54.0**	**-0.3**
SERI				S		**Sn**	**03 19 12.0**	**-0.6**
GUR	**Goura**	**1.41**	**341**	P		**Pn**	**03 18 54.0**	**-0.8**
GUR				S		**Sb**	**03 19 13.8**	**+0.3**
GUR	**Goura**	**1.41**	**341**	P		**Pn**	**03 18 54.5**	**-0.3**
GUR				S		**Sn**	**03 19 11.9**	**-1.5**
GUR	**Goura**	**1.41**	**341**	P		**Pn**	**03 18 54.4**	**-0.4**
GUR				S		**Sn**	**03 19 11.6**	**-1.8**
GUR				AML		AML	03 19 17.7	
	comp=E,23000μm,0.4s							
GUR				AML		AML	03 19 20.5	
	comp=N,29455μm,0.5s							
GUR	**Goura**	**1.41**	**341**	P		**Pn**	**03 18 54.0**	**-0.8**
GUR				S		**Sb**	**03 19 13.8**	**+0.3**
LTK	**Loutraki**	**1.42**	**2**	P		**Pn**	**03 18 54.5**	**-0.4**
LTK	**Loutraki**	**1.42**	**2**	P		**Pn**	**03 18 54.9**	**0.0**
LTK				S		**Sb**	**03 19 13.9**	**+0.2**
LTK	**Loutraki**	**1.42**	**2**	P		**Pb**	**03 18 55.5**	**-0.1**
LTK				S		**Sg**	**03 19 14.3**	**-0.5**
LTK				AML		AML	03 19 16.9	
	comp=E,23863μm,0.6s							
LTK				AML		AML	03 19 19.2	
	comp=N,22765μm,0.6s							
LTK	**Loutraki**	**1.42**	**2**	P		**Pn**	**03 18 54.5**	**-0.4**
IMMV	**Iera Moni Meta**	**1.43**	**142**	P		**Pn**	**03 18 55.1**	**+0.1**
IMMV				S		**Sg**	**03 19 15.4**	**+0.2**
IMMV	**Iera Moni Meta**	**1.43**	**142**	P		**Pn**	**03 18 55.1**	**+0.1**
IMMV				S		**Sg**	**03 19 14.9**	**-0.3**
IMMV	**Iera Moni Meta**	**1.43**	**142**	P		**Pn**	**03 18 54.1**	**-1.0**
IMMV				S		**Sg**	**03 19 14.9**	**-0.3**
IMMV				AML		AML	03 19 28.4	
	comp=N,19114μm,0.5s							
IMMV				AML		AML	03 19 38.2	
	comp=E,15089μm,0.8s							
VLY	**Voula,Athens**	**1.43**	**29**	P		**Pn**	**03 18 54.6**	**-0.5**
VLY				S		**Sg**	**03 19 14.9**	**-0.4**
VLY	**Voula,Athens**	**1.43**	**29**	P		**Pn**	**03 18 54.6**	**-0.5**
VLY				S		**Sg**	**03 19 14.9**	**-0.4**
VLY	**Voula,Athens**	**1.43**	**29**	P		**Pb**	**03 18 55.4**	**-0.5**
VLY	**Voula,Athens**	**1.43**	**29**	P		**Pn**	**03 18 54.6**	**-0.5**
VLY				S		**Sg**	**03 19 14.9**	**-0.4**
THAL	**Thalero**	**1.45**	**352**	P		**Pn**	**03 18 54.8**	**-0.4**
THAL				S		**Sg**	**03 19 15.1**	**-0.6**
THAL	**Thalero**	**1.45**	**352**	P		**Pn**	**03 18 54.8**	**-0.4**
THAL				S		**Sn**	**03 19 13.1**	**-1.1**
THAL	**Thalero**	**1.45**	**352**	P		**Pb**	**03 18 56.3**	**+0.2**
THAL				S		**Sn**	**03 19 13.1**	**-1.1**
THAL				AML		AML	03 19 22.8	
	comp=N,33475μm,0.4s							
THAL				AML		AML	03 19 26.6	
	comp=E,43652μm,0.5s							
ATH	**Athens Observa**	**1.51**	**25**	P		**Pn**	**03 18 56.2**	**+0.1**
ATH	**Athens Observa**	**1.51**	**25**	P		**Pn**	**03 18 56.2**	**+0.1**
ATH	**Athens Observa**	**1.51**	**25**	P		**Pn**	**03 18 56.2**	**+0.1**
ATH	**Athens Observa**	**1.51**	**25**	P		**Pn**	**03 18 56.2**	**+0.1**
ATHU	**Athens Univers**	**1.53**	**27**	S		**Sn**	**03 19 14.0**	**-2.3**
ATHU	**Athens Univers**	**1.53**	**27**	P		Pn	03 18 52.1	-4.3
ATHU				S		**Sn**	**03 19 14.0**	**-2.3**
ATHU				AML		AML	03 19 24.9	
	comp=E,2137μm,0.8s							
ATHU				AML		AML	03 19 25.4	
	comp=N,3315μm,0.5s							
KLV	**Kalavryta, Ach**	**1.56**	**337**	P		**Pn**	**03 18 56.2**	**-0.7**
KLV				S		**Sn**	**03 19 17.4**	**+0.3**
KLV	**Kalavryta, Ach**	**1.56**	**337**	P		**Pn**	**03 18 56.9**	**0.0**
KLV				S		**Sn**	**03 19 17.1**	**0.0**
KLV	**Kalavryta, Ach**	**1.56**	**337**	P		**Pn**	**03 18 56.9**	**0.0**
KLV				S		**Sn**	**03 19 17.1**	**0.0**
KLV				AML		AML	03 19 24.5	
	comp=E,11168μm,0.7s							
KLV				AML		AML	03 19 25.9	
	comp=N,10097μm,0.6s							
KLV	**Kalavryta, Ach**	**1.56**	**337**	P		**Pn**	**03 18 56.2**	**-0.7**
KLV				S		**Sn**	**03 19 17.4**	**+0.3**
VAM	**Vamos**	**1.59**	**138**	P		**Pn**	**03 18 57.3**	**+0.2**
VAM	**Vamos**	**1.59**	**138**	P		**Pn**	**03 18 57.3**	**+0.2**
VAM	**Vamos**	**1.59**	**138**	P		**Pn**	**03 18 57.4**	**+0.3**
VAM	**Vamos**	**1.59**	**138**	P		**Pn**	**03 18 57.3**	**+0.2**
VILL	**Villia**	**1.59**	**11**	P		**Pn**	**03 18 57.1**	**-0.2**
VILL	**Villia**	**1.59**	**11**	P		**Pn**	**03 18 57.1**	**-0.2**
VILL				S		**Sn**	**03 19 17.4**	**-0.5**
VIL2	**Platees**	**1.63**	**10**	P		**Pn**	**03 18 57.0**	**-0.8**
VIL2				S		**Sn**	**03 19 17.4**	**-1.4**
PTL	**Penteli**	**1.63**	**27**	P		**Pn**	**03 18 57.8**	**0.0**
PTL	**Penteli**	**1.63**	**27**	P		**Pn**	**03 18 57.8**	**0.0**
PTL				S		**Sn**	**03 19 16.9**	**-2.0**
PTL	**Penteli**	**1.63**	**27**	P		**Pn**	**03 18 57.9**	**0.0**
PTL				S		**Sn**	**03 19 16.9**	**-2.0**
PTL	**Penteli**	**1.63**	**27**	P		**Pn**	**03 18 57.8**	**0.0**
DRO	**Drossia**	**1.65**	**325**	P		**Pn**	**03 18 57.5**	**-0.6**
DRO	**Drossia**	**1.65**	**325**	P		**Pn**	**03 18 57.5**	**-0.6**
DRO	**Drossia**	**1.65**	**325**	P		**Pb**	**03 18 59.8**	**+0.2**
DRO				S		**Sg**	**03 19 22.3**	**0.0**
DRO				AML		AML	03 19 28.4	
	comp=N,15338μm,0.8s							
DRO				AML		AML	03 19 35.5	
	comp=E,21401μm,0.6s							
PROD	**Prodromos**	**1.65**	**360**	P		**Pn**	**03 18 57.7**	**-0.4**
PROD	**Prodromos**	**1.65**	**360**	P		**Pn**	**03 18 57.7**	**-0.4**
PROD				S		**Sg**	**03 19 22.1**	**-0.2**
PROD				AML		AML	03 19 23.9	
	comp=N,9410μm,0.7s							
PROD				AML		AML	03 19 30.1	
	comp=E,7694μm,0.8s							
LAKA	**Lakka**	**1.79**	**336**	P		**Pn**	**03 18 59.3**	**-0.8**
LAKA	**Lakka**	**1.79**	**336**	P		**Pn**	**03 18 59.3**	**-0.8**
LAKA	**Lakka**	**1.79**	**336**	P		**Pb**	**03 19 01.5**	**-0.6**
LAKA				S		**Sb**	**03 19 25.4**	**+0.8**
LAKA				AML		AML	03 19 31.2	
	comp=N,6316μm,1.3s							
LAKA				AML		AML	03 19 36.4	
	comp=E,5291μm,0.8s							
LAKA	**Lakka**	**1.79**	**336**	P		**Pn**	**03 18 59.3**	**-0.8**
DSF	**Desfina**	**1.83**	**351**	P		**Pn**	**03 19 00.3**	**-0.3**
DSF	**Desfina**	**1.83**	**351**	P		**Pn**	**03 19 00.9**	**+0.3**
DSF				S		**Sn**	**03 19 23.9**	**+0.1**
DSF	**Desfina**	**1.83**	**351**	P		**Pn**	**03 19 00.9**	**+0.3**
DSF				S		**Sn**	**03 19 23.9**	**+0.1**
DSF				AML		AML	03 19 31.2	
	comp=E,5586μm,0.4s							
DSF				AML		AML	03 19 32.9	
	comp=N,9108μm,0.9s							
DSF	**Desfina**	**1.83**	**351**	P		**Pn**	**03 19 00.3**	**-0.3**
RLS	**Riolos of Patr**	**1.85**	**322**	S		**Sb**	**03 19 27.0**	**+0.8**
TRIZ	**Trizonia**	**1.88**	**339**	P		**Pn**	**03 19 02.1**	**+0.9**
KALE	**Kalithea**	**1.89**	**341**	P		**Pn**	**03 19 00.9**	**-0.5**
KALE	**Kalithea**	**1.89**	**341**	P		**Pn**	**03 19 01.9**	**+0.5**
KALE	**Kalithea**	**1.89**	**341**	P		**Pn**	**03 19 01.9**	**+0.5**
KALE	**Kalithea**	**1.89**	**341**	P		**Pn**	**03 19 00.9**	**-0.5**
RODI	**Rodini**	**1.90**	**335**	P		**Pb**	**03 19 03.9**	**+0.1**
RODI	**Rodini**	**1.90**	**335**	P		**Pb**	**03 19 03.9**	**+0.1**
UPR	**University Cam**	**1.90**	**332**	P		**Pn**	**03 19 01.6**	**+0.1**
UPR	**University Cam**	**1.90**	**332**	P		**Pn**	**03 19 01.3**	**+0.1**
UPR	**University Cam**	**1.90**	**332**	P		**Pn**	**03 19 04.3**	**+0.4**
THR5	**Thira Island,**	**1.97**	**95**	P		**Pn**	**03 19 02.8**	**+0.3**
THR5	**Thira Island,**	**1.97**	**95**	P		**Pn**	**03 19 02.8**	**+0.3**
EREA	**Eretria**	**1.99**	**24**	P		**Pn**	**03 19 02.9**	**+0.2**
EREA	**Eretria**	**1.99**	**24**	P		**Pn**	**03 19 02.9**	**+0.2**
EREA				S		**Sn**	**03 19 27.7**	**+0.1**
EREA	**Eretria**	**1.99**	**24**	P		**Pn**	**03 19 03.3**	**+0.6**
EREA				S		**Sn**	**03 19 27.7**	**+0.1**
EREA				AML		AML	03 19 47.8	
	comp=N,3603μm,0.6s							
EREA				AML		AML	03 19 51.8	
	comp=E,3708μm,0.5s							
EFP	**Efpalio**	**1.99**	**337**	P		**Pb**	**03 19 04.8**	**-0.5**
EFP	**Efpalio**	**1.99**	**337**	P		**Pb**	**03 19 04.8**	**-0.5**
GVD	**Gavdhos**	**2.00**	**151**	P		**Pn**	**03 19 03.8**	**+0.9**
GVD	**Gavdhos**	**2.00**	**151**	P		**Pn**	**03 19 03.8**	**+0.9**
GVD	**Gavdhos**	**2.00**	**151**	P		**Pb**	**03 19 06.3**	**+0.8**
GVD	**Gavdhos**	**2.00**	**151**	P		**Pn**	**03 19 03.8**	**+0.9**
AXS	**Araxos**	**2.01**	**323**	P		**Pb**	**03 19 06.6**	**+1.0**
CMBO	**Columbo, Santo**	**2.01**	**93**	P		**Pn**	**03 19 03.4**	**+0.4**
CMBO	**Columbo, Santo**	**2.01**	**93**	P		**Pn**	**03 19 03.4**	**+0.4**
CMBO	**Columbo, Santo**	**2.01**	**93**	P		**Pn**	**03 19 03.5**	**+0.5**
THR3	**Thira Island,**	**2.02**	**95**	P		**Pn**	**03 19 03.5**	**+0.5**
THR3	**Thira Island,**	**2.02**	**95**	P		**Pn**	**03 19 03.5**	**+0.5**
THR3	**Thira Island,**	**2.02**	**95**	P		**Pn**	**03 19 03.5**	**+0.5**
THR6	**Thira Island,**	**2.02**	**96**	P		**Pn**	**03 19 03.4**	**+0.3**
THR6	**Thira Island,**	**2.02**	**96**	P		**Pn**	**03 19 03.4**	**+0.3**
THR6	**Thira Island,**	**2.02**	**96**	P		**Pn**	**03 19 03.4**	**+0.3**
THR7	**Fira-Santorini**	**2.04**	**94**	P		**Pn**	**03 19 03.8**	**+0.5**
THR7	**Fira-Santorini**	**2.04**	**94**	P		**Pn**	**03 19 03.8**	**+0.5**
THR2	**Thira island,**	**2.04**	**94**	P		**Pn**	**03 19 04.0**	**+0.6**
THR2	**Thira island,**	**2.04**	**94**	P		**Pn**	**03 19 04.0**	**+0.6**
THR2	**Thira island,**	**2.04**	**94**	P		**Pn**	**03 19 04.0**	**+0.6**
THT1	**Athinios (Pele**	**2.04**	**95**	P		**Pn**	**03 19 03.6**	**+0.2**
THT1	**Athinios (Pele**	**2.04**	**95**	P		**Pn**	**03 19 03.6**	**+0.2**
LKR	**Lokris**	**2.05**	**2**	P		**Pn**	**03 19 03.5**	**0.0**
LKR	**Lokris**	**2.05**	**2**	P		**Pn**	**03 19 03.5**	**0.0**
LKR	**Lokris**	**2.05**	**2**	P		**Pn**	**03 19 03.2**	**-0.2**
LKR	**Lokris**	**2.05**	**2**	P		**Pn**	**03 19 03.5**	**0.0**
SANT	**Santorini**	**2.07**	**

NIS1	Nisyros Isl.	3.43	89	P	Pn	03 19 23.7 +1.1
NIS1	Nisyros Isl.	3.43	89	P	Pn	03 19 22.9 +0.3
NIS1	Nisyros Isl.	3.43	89	ePn	Pn	03 19 24.6 +2.0
NIS1	Nisyros Isl.	3.43	89	P	Pn	03 19 22.9 +0.3
NIS1	Nisyros Isl.	3.43	89	P	Pn	03 19 23.7 +1.1
SIGR	SIGRI	3.49	41	ePN	Pn	03 19 22.8 -0.5
SIGR	SIGRI	3.49	41	P	Pn	03 19 23.4 0.0
SIGR	SIGRI	3.49	41	ePn	Pn	03 19 22.8 -0.5
SIGR	SIGRI	3.49	41	P	Pn	03 19 23.4 0.0
SIGR	SIGRI	3.49	41	P	Pn	03 19 22.6 -0.7
SIGR	SIGRI	3.49	41	P	Pn	03 19 23.4 0.0
LIT	Litokhoron	3.51	355	P	Pn	03 19 23.9 +0.3
LIT	Litokhoron	3.51	355	P	Pn	03 19 23.9 +0.3
LIT	Litokhoron	3.51	355	P	Pn	03 19 23.6 0.0
LIT	Litokhoron	3.51	355	P	Pn	03 19 23.6 0.0
LIT	Litokhoron	3.51	355	P	Pn	03 19 23.9 +0.3
BODT	Bodrum	3.56	81	ePN	Pn	03 19 25.5 +1.2
BODT	Bodrum	3.56	81	P	Pn	03 19 25.0 +0.7
BODT	Bodrum	3.56	81	P	Pn	03 19 25.0 +0.7
BODT	Bodrum	3.56	81	ePn	Pn	03 19 25.5 +1.2
BODT	Bodrum	3.56	81	P	Pn	03 19 25.0 +0.7
KPRO	Kipourio	3.56	340	P	Pn	03 19 26.6 +2.2
KPRO	Kipourio	3.56	340	P	Pn	03 19 26.6 +2.2
IGT	Igoumenitsa	3.56	326	P	Pb	03 19 28.4 -3.8
KARP	Karpathos	3.60	106	P	Pn	03 19 25.7 +0.9
KARP	Karpathos	3.60	106	P	Pn	03 19 25.3 +0.4
KARP	Karpathos	3.60	106	ePn	Pn	03 19 25.8 +0.9
KARP				S	Sn	03 20 08.9 +1.5
KARP	Karpathos	3.60	106	P	Pn	03 19 25.3 +0.4
KARP				S	Sn	03 20 08.9 +1.5
KARP	Karpathos	3.60	106	ePn	Pn	03 19 25.8 +0.9
BDRM	Kayabasi	3.67	81	i P	Pn	03 19 26.3 +0.5
BDRM	Kayabasi	3.67	81	P	Pn	03 19 26.3 +0.5
BLCB	Balcova	3.74	60	ePN	Pn	03 19 26.9 +0.2
BLCB	Balcova	3.74	60	ePn	Pn	03 19 26.9 +0.2
LIA	Limnos Island	3.75	28	P	Pn	03 19 26.5 -0.3
LIA	Limnos Island	3.75	28	P	Pn	03 19 26.5 -0.3
LIA	Limnos Island	3.75	28	P	Pn	03 19 26.5 -0.3
PLG	Polygyros	3.79	6	P	Pn	03 19 27.5 0.0
PLG	Polygyros	3.79	6	P	Pn	03 19 27.5 0.0
PLG	Polygyros	3.79	6	P	Pn	03 19 27.5 0.0
PLG	Polygyros	3.79	6	P	Pn	03 19 26.0 -1.5
PLG	Polygyros	3.79	6	P	Pn	03 19 27.5 0.0
KZN	Kozani	3.81	347	P	Pn	03 19 28.1 +0.4
KZN	Kozani	3.81	347	P	Pn	03 19 28.1 +0.4
KZN	Kozani	3.81	347	P	Pn	03 19 28.1 +0.4
KZN	Kozani	3.81	347	P	Pn	03 19 28.1 +0.4
OUR	Ouranopolis	3.82	12	ePN	Pn	03 19 28.2 +0.4
OUR	Ouranopolis	3.82	12	P	Pn	03 19 27.9 +0.1
OUR	Ouranopolis	3.82	12	P	Pn	03 19 27.9 +0.1
OUR	Ouranopolis	3.82	12	P	Pn	03 19 27.9 +0.1
OUR	Ouranopolis	3.82	12	ePn	Pn	03 19 28.2 +0.4
OUR	Ouranopolis	3.82	12	P	Pn	03 19 26.9 -0.9
OUR	Ouranopolis	3.82	12	P	Pn	03 19 27.9 +0.1
KEK	Kerkira	3.96	323	P	Pn	03 19 31.9 +2.1
HORT	Hortiatis	3.99	2	ePN	Pn	03 19 30.7 +0.4
HORT	Hortiatis	3.99	2	P	Pn	03 19 30.4 +0.1
HORT	Hortiatis	3.99	2	P	Pn	03 19 30.4 +0.1
HORT	Hortiatis	3.99	2	ePn	Pn	03 19 30.7 +0.4
HORT	Hortiatis	3.99	2	P	Pn	03 19 29.9 -0.5
HORT	Hortiatis	3.99	2	P	Pn	03 19 30.4 +0.1
DKL	Dikili	4.01	51	ePN	Pn	03 19 30.5 +0.1
DKL	Dikili	4.01	51	ePn	Pn	03 19 30.5 +0.1
AYVA	Ayvalik	4.03	47	i P	Pn	03 19 30.4 -0.3
AYVA	Ayvalik	4.03	47	P	Pn	03 19 30.4 -0.3
BOZC	Bozcaada	4.07	36	i P	Pn	03 19 30.4 -0.9
NEST	Nestorio	4.08	340	P	Pn	03 19 33.8 +2.3
NEST	Nestorio	4.08	340	P	Pn	03 19 33.8 +2.3
AYDN	Tasoluk	4.11	74	i P	Pn	03 19 33.4 +1.5
AYDN	Tasoluk	4.11	74	P	Pn	03 19 33.4 +1.5
AYDB	Zeytinkoy-Aydi	4.19	70	ePN	Pn	03 19 34.2 +1.1
AYDB	Zeytinkoy-Aydi	4.19	70	ePn	Pn	03 19 34.2 +1.1
EZN	Ezine	4.19	39	ePN	Pn	03 19 32.9 -0.1
EZN	Ezine	4.19	39	ePn	Pn	03 19 32.9 -0.1
ARG	Arkhangelos	4.22	94	P	Pn	03 19 34.7 +1.3
ARG	Arkhangelos	4.22	94	P	Pn	03 19 34.7 +1.3
ARG	Arkhangelos	4.22	94	P	Pn	03 19 34.7 +1.3
ARG	Arkhangelos	4.22	94	P	Pn	03 19 34.7 +1.3
SOH	Sokhos	4.23	5	P	Pn	03 19 34.2 +0.7
SOH	Sokhos	4.23	5	P	Pn	03 19 34.2 +0.7
SOH	Sokhos	4.23	5	P	Pn	03 19 34.0 +0.5
SOH	Sokhos	4.23	5	P	Pn	03 19 34.0 +0.5
SOH	Sokhos	4.23	5	P	Pn	03 19 34.2 +0.7
YER	Yerkesik	4.34	81	ePN	Pn	03 19 37.4 +2.3
YER	Yerkesik	4.34	81	ePN	Pn	03 19 37.4 +2.3
FNA	Florina	4.34	344	ePN	Pn	03 19 37.1 +2.0
FNA	Florina	4.34	344	ePN	Pn	03 19 37.1 +2.0
FNA	Florina	4.34	344	P	Pn	03 19 37.6 +2.5
FNA	Florina	4.34	344	P	Pn	03 19 37.6 +2.5
GRG	Griva	4.37	355	ePN	Pn	03 19 35.7 +0.3
GRG	Griva	4.37	355	P	Pn	03 19 35.4 0.0
GRG	Griva	4.37	355	P	Pn	03 19 35.4 0.0
GRG	Griva	4.37	355	P	Pn	03 19 35.4 0.0
GRG	Griva	4.37	355	ePn	Pn	03 19 35.7 +0.3
GRG	Griva	4.37	355	P	Pn	03 19 35.7 +0.3
GRG	Griva	4.37	355	P	Pn	03 19 35.4 0.0
SMTH	Samothraki Isl	4.37	27	P	Pn	03 19 32.9 -2.6
SMTH	Samothraki Isl	4.37	27	P	Pn	03 19 32.9 -2.6
AKHS	Akhisar	4.50	58	i P	Pn	03 19 28.7 -8.5
AKS	Akhisar	4.50	58	ePN	Pn	03 19 38.1 +0.9
AKS	Akhisar	4.50	58	ePn	Pn	03 19 38.2 +0.9
SRS	Serrai	4.54	7	P	Pn	03 19 38.4 +0.6
SRS	Serrai	4.54	7	P	Pn	03 19 38.4 +0.6
SRS	Serrai	4.54	7	P	Pn	03 19 37.8 0.0
SRS	Serrai	4.54	7	P	Pn	03 19 37.8 0.0
SRS	Serrai	4.54	7	P	Pn	03 19 38.4 +0.6
KNT	Kendrikon	4.55	360	ePN	Pn	03 19 38.9 +0.9
KNT	Kendrikon	4.55	360	P	Pn	03 19 38.6 +0.7
KNT	Kendrikon	4.55	360	P	Pn	03 19 38.6 +0.7
KNT	Kendrikon	4.55	360	P	Pn	03 19 38.6 +0.7
KNT	Kendrikon	4.55	360	ePn	Pn	03 19 38.9 +0.9
KNT	Kendrikon	4.55	360	P	Pn	03 19 38.9 +0.9
KNT	Kendrikon	4.55	360	P	Pn	03 19 38.6 +0.7
KAVA	Kavala	4.56	15	P	Pn	03 19 35.7 -2.3
KAVA	Kavala	4.56	15	P	Pn	03 19 35.7 -2.3
TURN	Turunc	4.58	85	i P	Pn	03 19 38.1 -0.2
TURN	Turunc	4.58	85	P	Pn	03 19 38.1 -0.2
BIA	Bitola	4.58	345	ePn	Pn	03 19 38.3 -0.1
BIA	Bitola	4.58	345	ePn	Pn	03 19 38.2 -0.1
DALY	Dalyan (Mu˘la	4.62	86	ePN	Pn	03 19 41.6 +2.7
DALY	Dalyan (Mu˘la	4.62	86	ePn	Pn	03 19 41.6 +2.8
GELI	Tayfur-Gelibol	4.71	35	ePN	Pn	03 19 40.2 +0.2
GELI	Tayfur-Gelibol	4.71	35	ePn	Pn	03 19 40.3 +0.2
VAY	Valandovo	4.72	357	P	Pn	03 19 40.8 +0.6
VAY	Valandovo	4.72	357	i Pn	Pn	03 19 39.9 -0.3
VAY	Valandovo	4.72	357	P	Pn	03 19 40.8 +0.6
VAY	Valandovo	4.72	357	i Pn	Pn	03 19 39.9 -0.3
VAY	Valandovo	4.72	357	P	Pn	03 19 40.8 +0.6
VAY	Valandovo	4.72	357	P	Pn	03 19 40.8 +0.6
OHR	Ohrid	4.79	341	ePn	Pn	03 19 45.0 +3.7
OHR	Ohrid	4.79	341	ePn	Pn	03 19 45.0 +3.7
NVR	Nevrokopi	4.80	9	P	Pn	03 19 41.5 +0.2
NVR	Nevrokopi	4.80	9	P	Pn	03 19 41.5 +0.2
NVR	Nevrokopi	4.80	9	P	Pn	03 19 41.5 +0.2
ENEZ	Enez	4.84	31	ePN	Pn	03 19 41.8 -0.1
ENEZ	Enez	4.84	31	ePn	Pn	03 19 41.8 -0.1
BALY	Balya	4.86	48	i P	Pn	03 19 42.2 0.0
BALY	Balya	4.86	48	P	Pn	03 19 42.2 0.0
SCTE	Santa Cesarea	4.92	316	P	Pn	03 19 44.1 +1.1
SCTE	Santa Cesarea	4.92	316	P	Pn	03 19 44.1 +1.1
ALN	Alexandroupoli	4.94	29	ePN	Pn	03 19 43.4 +0.2
ALN	Alexandroupoli	4.94	29	P	Pn	03 19 42.7 -0.5
ALN	Alexandroupoli	4.94	29	ePn	Pn	03 19 43.4 +0.2
ALN	Alexandroupoli	4.94	29	P	Pn	03 19 42.7 -0.5
ERIK	Erikli-Kesan	4.94	34	ePN	Pn	03 19 44.2 +0.9
ERIK	Erikli-Kesan	4.94	34	ePn	Pn	03 19 44.2 +0.9
KULA	Kula-Manisa	4.95	66	ePN	Pn	03 19 44.7 +1.2
KULA	Kula-Manisa	4.95	66	ePn	Pn	03 19 44.7 +1.2
BALB	Balikesir	4.95	51	ePN	Pn	03 19 44.2 +0.8
BALB	Balikesir	4.95	51	ePn	Pn	03 19 44.2 +0.8
FETY	Fethiye	4.96	88	ePN	Pn	03 19 46.5 +2.9
FETY	Fethiye	4.96	88	ePn	Pn	03 19 46.5 +2.9
DENT	Denizli	5.02	75	ePN	Pn	03 19 46.0 +1.6
DENT	Denizli	5.02	75	ePn	Pn	03 19 46.0 +1.6
KRBG	Karabiga-Canak	5.11	41	ePN	Pn	03 19 46.3 +0.7
KRBG	Karabiga-Canak	5.11	41	ePn	Pn	03 19 46.3 +0.7
KESN	Edirne-Kesan	5.14	34	i P	Pn	03 19 45.3 -1.1
KESN	Edirne-Kesan	5.14	34	P	Pn	03 19 45.3 -1.1
UZP	Denizli	5.19	72	i P	Pn	03 19 50.9 +4.1

DEMI	Demirci	5.20	60	i P	Pn	03 19 47.4 +0.5
DEMI	Demirci	5.20	60	P	Pn	03 19 47.4 +0.5
RKY	Sarkoy-Tekirda	5.27	38	ePN	Pn	03 19 48.1 +0.3
RKY	Sarkoy-Tekirda	5.27	38	ePn	Pn	03 19 48.1 +0.3
TIR	Tirane	5.30	334	⇓i P	Pn	03 19 51.8 +3.6
TIR	Tirane	5.30	334	eP	Pn	03 19 50.1 +1.9
TIR	Tirane	5.30	334	eP	Pn	03 19 50.1 +1.9
TIR	Tirane	5.30	334	ePg	Pg	03 20 09.7 -0.9
TIR	Tirane	5.30	334	ePn	Pn	03 19 50.1 +1.9
TIR				ePg	Pg	03 20 09.7 -0.9
DURS	Dursunbey	5.31	54	i P	Pn	03 19 48.9 +0.5
DURS	Dursunbey	5.31	54	P	Pn	03 19 48.9 +0.5
EDC	Edincik	5.39	45	ePN	Pn	03 19 50.0 +0.5
EDC	Edincik	5.39	45	ePn	Pn	03 19 50.0 +0.5
KSL	Kastellorizon	5.40	93	P	Pn	03 19 51.1 +1.5
KSL	Kastellorizon	5.40	93	P	Pn	03 19 51.1 +1.5
AKAS	Kas	5.41	92	i P	Pn	03 19 52.1 +2.2
AKAS	Kas	5.41	92	P	Pn	03 19 52.1 +2.2
MRMT	Marmara Adasi	5.42	41	ePN	Pn	03 19 50.2 +0.2
MRMT	Marmara Adasi	5.42	41	ePn	Pn	03 19 50.2 +0.2
SLUM	Salum	5.44	159	P	Pn	03 19 51.1 +0.9
	baz=164					
SLUM				S	Sn	03 20 51.3 -1.5
	baz=164					
SLUM	Salum	5.44	159	P	Pn	03 19 51.1 +0.9
SLUM				S	Sn	03 20 51.3 -1.5
SKO	Skopje	5.48	348	ePn	Pn	03 19 53.0 +2.3
TIP	Timpagrande	5.50	300	⇓i P	Pn	03 19 51.5 +0.5
TIP	Timpagrande	5.50	300	P	Pn	03 19 50.2 -0.9
TIP	Timpagrande	5.50	300	ePn	Pn	03 19 51.6 +0.5
TIP				eSn	Sn	03 20 53.3 -1.1
TIP	Timpagrande	5.50	300	P	Pn	03 19 50.2 -0.9
TIP	Timpagrande	5.50	300	ePn	Pn	03 19 51.6 +0.5
TIP				eSn	Sn	03 20 53.3 -1.1
KHAL	Karahalli	5.52	69	i P	Pn	03 19 54.5 +3.2
KCTX	Karacabey (Bur	5.62	48	ePN	Pn	03 19 53.0 +0.3
GDZ	Gediz	5.76	63	i P	Pn	03 19 50.0 -4.6
CRLT	Corlu	5.88	38	ePN	Pn	03 19 56.8 +0.6
TVSB	Tavsanli	5.90	59	ePN	Pn	03 19 57.8 +1.3
KORT	Korkueli	5.98	84	i P	Pn	03 20 02.5 +4.7
VTS	Vitosha	5.99	2	⇑i P	Pn	03 20 00.5 +2.7
VTS	Vitosha	5.99	2	eP	Pn	03 20 00.2 +2.4
VTS	Vitosha	5.99	2	eP	Pn	03 20 00.2 +2.4
VTS	Vitosha	5.99	2	ePn	Pn	03 20 00.1 +2.4
EDRB	Edirne	6.02	28	ePN	Pn	03 19 58.6 +0.5
ULUD	Uludag	6.03	52	i P	Pn	03 20 02.7 +3.8
ULC	Ulcinj	6.06	333	⇓i Pn	Pn	03 20 00.3 +1.6
ULC				eSn	Sn	03 21 08.6 +0.5
ULC	Ulcinj	6.06	333	⇓i Pn	Pn	03 20 00.3 +1.6
ULC				eSn	Sn	03 21 08.6 +0.5
ARMT	Armutlu	6.11	48	ePN	Pn	03 20 00.4 +1.0
NOCI	Noci	6.19	314	P	Pn	03 20 00.1 -0.4
NOCI	Noci	6.19	314	P	Pn	03 20 00.1 -0.4
ISP	Isparta	6.20	76	⇑i P	Pn	03 20 05.2 +4.6
ISP	Isparta	6.20	76	eP	Pn	03 20 05.5 +4.9
ISP	Isparta	6.20	76	ePn	Pn	03 20 05.4 +4.8
ISP	Isparta	6.20	76	ePn	Pn	03 20 05.5 +4.8
ANTB	Antalya	6.22	85	ePN	Pn	03 20 03.9 +3.0
DRME	Dracevica, Mon	6.28	334	⇓i Pn	Pn	03 20 02.8 +1.2
DRME				eSn	Sn	03 21 13.9 +0.5
DRME	Dracevica, Mon	6.28	334	⇓i Pn	Pn	03 20 02.8 +1.2
DRME				eSn	Sn	03 21 13.9 +0.5
MATE	Matera	6.32	312	⇑i P	Pn	03 20 02.9 +0.7
MATC	Matruh	6.35	144	P	Pn	03 20 02.1 -0.6
	baz=149					
PVY	Plav	6.40	340	ePn	Pn	03 20 05.0 +1.5
PVY				eSn	Sn	03 21 16.4 -0.2
PVY	Plav	6.40	340	ePn	Pn	03 20 05.0 +1.5
PVY				eSn	Sn	03 21 16.4 -0.2
BAGO	Egridir - ISPA	6.43	75	i P	Pn	03 20 07.7 +3.9
BGKT	Bogazkoy	6.46	43	ePN	Pn	03 20 05.2 +1.0
PDG	Podgorica	6.47	335	⇑i P	Pn	03 20 06.3 +2.1
PDG	Podgorica	6.47	335	⇓i Pn	Pn	03 20 05.9 +1.7
PDG				eSn	Sn	03 21 18.3 +0.3
TTG	Podgorica	6.47	335	⇓i Pn	Pn	03 20 05.9 +1.7
TTG				eSn	Sn	03 21 18.3 +0.3
BUM	Brajici-Budva	6.48	333	⇑i Pn	Pn	03 20 05.9 +1.4
BUM				eSn	Sn	03 21 18.2 -0.3
BUM	Brajici-Budva	6.48	333	⇑i Pn	Pn	03 20 05.9 +1.4
BUM				eSn	Sn	03 21 18.2 -0.3
HMAT	Matruh	6.50	146	AMP		03 21 00.0
	comp=E,100µm,0.8s,logA/T=5.1,baz=151					
CUC	Castrocucco	6.53	303	ePn	Pn	03 20 06.7 +1.6
CUC				eSn	Sn	03 21 19.5 0.0
CUC	Castrocucco	6.53	303	ePn	Pn	03 20 06.7 +1.6
CUC				eSn	Sn	03 21 19.6 0.0
KLYT	Kilyos	6.66	44	ePN	Pn	03 20 08.3 +1.4
BEY	Berane	6.68	341	⇓i Pn	Pn	03 20 08.6 +1.4
BEY				eSn	Sn	03 21 23.4 +0.1
IVA	Berane	6.68	341	⇓i Pn	Pn	03 20 08.6 +1.4
IVA				eSn	Sn	03 21 23.4 +0.1
CEME	Cevo	6.69	334	⇓i Pn	Pn	03 20 08.6 +1.3
CEME				eSn	Sn	03 21 23.1 -0.5
CEME	Cevo	6.69	334	⇓i Pn	Pn	03 20 08.6 +1.3
CEME				eSn	Sn	03 21 23.1 -0.5
BOLV	Bolvadin	6.72	69	i P	Pn	03 20 12.2 +4.4
HCY	Herceg Novi	6.76	331	⇓i Pn	Pn	03 20 09.2 +0.9
HCY				eSn	Sn	03 21 25.2 0.0
HCY	Herceg Novi	6.76	331	⇓i Pn	Pn	03 20 09.2 +0.9
HCY				eSn	Sn	03 21 25.2 0.0
VAE	Valguarnera	6.85	280	Pn	Pn	03 20 10.6 +1.0
	comp=E,1.5nm,0.3s,baz=148,slow=1.9,SNR=16					
VAE				Sn	Sn	03 21 29.7 +2.1
	comp=E,8.0nm,0.3s,baz=11,slow=7.4,SNR=6.3					
NKME	Niksic	6.87	335	ePn	Pn	03 20 11.9 +2.1
NKME				eSn	Sn	03 21 28.1 +0.1
NKME	Niksic	6.87	335	ePn	Pn	03 20 11.9 +2.1
NKME				eSn	Sn	03 21 28.1 +0.1
NKY	Niksic	6.90	335	⇓i Pn	Pn	03 20 12.3 +2.1
NKY				eSn	Sn	03 21 28.3 -0.5
NKY	Niksic	6.90	335	⇓i Pn	Pn	03 20 12.3 +2.1
NKY				eSn	Sn	03 21 28.3 -0.5
SILT	Sile	6.94	47	ePN	Pn	03 20 12.2 +1.5
TREB	Trebinje	7.05	331	ePn	Pn	03 20 11.7 -0.5
GULT	Gulveren	7.08	55	ePN	Pn	03 20 14.5 +1.7
BRY	Bratogost	7.13	333	⇓i Pn	Pn	03 20 15.5 +2.0
BRY				eSn	Sn	03 21 34.7 +0.1
BRY	Bratogost	7.13	333	⇓i Pn	Pn	03 20 15.5 +2.0
BRY				eSn	Sn	03 21 34.7 +0.1
KAND	Kocaeli-Kandir	7.24	49	i P	Pn	03 20 17.1 +2.3
PLE	Pljevlja	7.24	339	ePn	Pn	03 20 15.9 +0.9
PLE				eSn	Sn	03 21 36.2 -1.0
PLE	Pljevlja	7.24	339	ePn	Pn	03 20 15.9 +0.9
PLE				eSn	Sn	03 21 36.2 -1.0
UPM	Unac-Piva	7.28	336	⇑i Pn	Pn	03 20 17.0 +1.5
UPM				eSn	Sn	03 21 37.2 -0.9
UPM	Unac-Piva	7.28	336	⇑i Pn	Pn	03 20 17.0 +1.5
UPM				eSn	Sn	03 21 37.2 -0.9
KIZT	Kizilcal	7.46	70	ePN	Pn	03 20 19.6 +1.6
BTAS	Taskesti	7.47	56	i P	Pn	03 20 19.8 +1.7
SAHE	Sakarya_HENDEK	7.52	53	i P	Pn	03 20 19.6 +0.9
KDHN	Kadinhani	7.56	73	i P	Pn	03 20 22.5 +3.1
KMER	Konya-Meram	7.64	78	i P	Pn	03 20 25.5 +5.0
KONT	Konya--Tatoy	7.65	77	ePN	Pn	03 20 22.7 +2.1
LADK	Ladik-KONYA	7.69	75	ePN	Pn	03 20 23.0 +1.8
CLTB	Caltabellotta	7.81	280	ePn	Pn	03 20 23.8 +1.0
CLTB	Caltabellotta	7.81	280	ePn	Pn	03 20 23.8 +1.0
HAPS	Han Pijesak,BI	8.06	339	ePn	Pn	03 20 24.9 -1.3
CHBY	Cihanbeyli	8.16	73	ePN	Pn	03 20 29.9 +2.2
LEF	Lefka	8.24	97	ePN	Pn	03 20 31.6 +3.1
KKUL	Konya-Kulu	8.32	69	i P	Pn	03 20 35.5 +5.8
TEKS	Tekeris	8.34	343	ePn	Pn	03 20 30.8 +0.8
MSAB	Monastry St. A	8.37	25	⇓i P	Pn	03 20 32.8 +2.5
BR231	Keskin MP Arra	8.41	64	ePn	Pn	03 20 39.9 +8.9
BR231	Keskin MP Arra	8.41	64	ePn	Pn	03 20 39.9 +8.9
AFSR	Af˘ar-Bala (A	8.51	67	ePN	Pn	03 20 33.8 +1.5
BBAL	Bala	8.57	67	i P	Pn	03 20 38.3 +5.0
CSS	Mathiatis	8.62	98	ePn	Pn	03 20 31.9 -2.0
CSS				eSn	Sn	03 22 03.9 -7.2
CSS	Mathiatis	8.62	98	ePn	Pn	03 20 31.9 -2.0
CSS				eSn	Sn	03 22 03.9 -7.2
IKL	Isikli	8.69	89	eP	Pn	03 20 37.2 +2.4
LFK	Lefkose	8.71	96	eP	Pn	03 20 38.5 +3.3
GZR	Gura Zlata	8.78	359	⇑i P	Pn	03 20 39.8 +3.7
ARR	Arges	8.85	8	⇓i P	Pn	03 20 39.3 +2.3
ISR	Istrita	8.94	17	⇑i P	Pn	03 20 40.6 +2.4
BRTR	Keskin Array B	9.01	67	Pn	Pn	03 20 41.7 +2.5
	comp=E,0.3nm,0.3s,baz=250,slow=13,SNR=19					
BR131	Keskin Array S	9.01	67	ePn	Pn	03 20 44.6 +5.4
BR131	Keskin Array S	9.01	67	ePn	Pn	03 20 44.6 +5.4

KERG	Konya-Eregli	9.01	81	i P	Pn	03 20 43.9 +4.6
MLR	Muntele Rosu	9.17	14	⇑i P	Pn	03 20 44.7 +3.3
MLR	Muntele Rosu	9.17	14	P	Pn	03 20 44.7 +3.3
EREN	Erenkoy	9.18	93	eP	Pn	03 20 44.2 +2.8
BLY	Banja Luka	9.22	334	ePn	Pn	03 20 42.3 +0.3
AQU	L'Aquila	9.33	311	eP	Pn	03 20 45.7 +2.2
AQU				e		03 22 30.8
AQU	L'Aquila	9.33	311	eP	Pn	03 20 45.7 +2.2
AQU				eS	Sn	03 22 30.8 +2.4
AQU	L'Aquila	9.33	311	ePn	Pn	03 20 45.7 +2.2
AQU				eSn	Sn	03 22 30.8 +2.4
MERS	Mersin	9.33	85	eP	Pn	03 20 45.8 +2.2
DED	Mersin	9.54	84	i P	Pn	03 20 49.3 +2.8
UDBI	Udbina	9.60	328	i Pn	Pn	03 20 48.7 +1.4
UDBI				Sn	Sn	03 22 30.5 -4.6
UDBI	Udbina	9.60	328	i Pn	Pn	03 20 48.6 +1.4
PLOR	Plostina	9.66	16	⇓i P	Pn	03 20 51.4 +3.4
PLOR	Plostina	9.66	16	P	Pn	03 20 51.3 +3.3
VRI	Vrincioaia	9.69	16	eP	Pn	03 20 49.3 +0.9
VRI	Vrincioaia	9.69	16	⇓i P	Pn	03 20 52.2 +3.8
VRI	Vrincioaia	9.69	16	P	Pn	03 20 52.2 +3.8
VRI	Vrincioaia	9.69	16	eP	Pn	03 20 49.3 +0.9
NVLJ	Novalja	10.03	325	ePn	Pn	03 20 53.9 +0.8
NVLJ				Sn	Sn	03 22 40.0 -5.4
NVLJ	Novalja	10.03	325	ePn	Pn	03 20 53.8 +0.8
PKSM	Moragy	10.12	343	⇑i P	Pn	03 20 52.8 -1.5
PKSM	Moragy	10.12	343	ePn	Pn	03 20 53.1 -1.2
GLL	Jalalah	10.17	131	P	Pn	03 20 53.8 -1.3
	baz=134					
GLL	Jalalah	10.17	131	P	Pn	03 20 53.8 -1.3
KOZT	Kozan	10.36	81	eP	Pn	03 20 59.5 +1.8
SUZ	Suez	10.70	126	P	Pn	03 21 00.6 -1.7
	baz=129					
SUZ	Suez	10.70	126	P	Pn	03 21 00.6 -1.7
CRES	Cresnjev	10.78	331	ePn	Pn	03 21 02.8 -0.6
CRES	Cresnjev	10.78	331	ePn	Pn	03 21 02.8 -0.6
MMAI	Mount Meron Ar	10.87	106	Pn	Pn	03 21 03.3 -1.5
	comp=E,4.0nm,0.3s,baz=290,slow=12,SNR=4.8					
MMAI				Sn	Sn	03 23 00.4 -6.1
	comp=E,1.5nm,0.3s,baz=296,slow=24,SNR=2.2					
ZAF	Zafarana	10.90	129	P	Pn	03 21 03.5 -1.5
	baz=132					
ZAF	Zafarana	10.90	129	P	Pn	03 21 03.5 -1.5
KEST	Kesra	11.00	269	Pn	Pn	03 21 07.0 +0.5
	baz=62,slow=17,SNR=2.9					
CEY	Cerknica	11.14	328	ePn	Pn	03 21 08.3 0.0
SOKA	Soboth	11.66	332	i Pn	Pn	03 21 15.2 -0.2
	comp=E,4.0nm,0

PVCC **Panska Ves** 15.16 339 *e*P P 03 22 10.1 +1.9
PVCC **Panska Ves** 15.16 339 *e*P P 03 22 10.1 +1.9
SENIN **Lac Senin/Sane** 15.21 315 *e*Pn P 03 22 07.9 -1.1
comp=Z,24nm,1.6s
SENIN *e*Sn Sn 03 24 49.5 -2.9
SENIN **Lac Senin/Sane** 15.21 315 *e*Pn P 03 22 07.9 -1.1
comp=Z,24nm,1.6s
SENIN *e*Sn Sn 03 24 49.5 -2.9
NKC **Novy Kostel** 15.58 334 *e*P P 03 22 13.0 +0.1
NKC **Novy Kostel** 15.58 334 *e*P P 03 22 13.0 +0.1
NKC **Novy Kostel** 15.58 334 *e*P P 03 22 13.0 +0.1
GRFO **Grafenberg** 15.59 331 *e*P P 03 22 14.2 +1.2
GRFO pmax pmax
comp=Z,55nm,0.7s
GRFO **Grafenberg** 15.59 331 *e*P P 03 22 14.2 +1.2
comp=Z,55nm,0.7s
GRFO **Grafenberg** 15.59 331 *e*P P 03 22 14.2 +1.2
comp=Z,55nm,0.7s
BRG **Berggiesshubel** 15.65 339 *i* P P 03 22 15.3 +1.7
comp=Z,9.8nm,0.9s
BRG **Berggiesshubel** 15.65 339 *i* P P 03 22 15.3 +1.7
BRG pmax pmax
comp=Z,10.0nm,0.9s
BRG **Berggiesshubel** 15.65 339 *i* P P 03 22 15.3 +1.7
comp=Z,10.0nm,0.9s
BFO **Black Forest** 15.88 322 *i* P P 03 22 16.7 +0.5
BFO **Black Forest** 15.88 322 *i* P P 03 22 16.7 +0.5
BFO **Black Forest** 15.88 322 *e*Pn P 03 22 17.9 +1.7
comp=Z,16nm,1.5s
BFO **Black Forest** 15.88 322 *e*Pn P 03 22 17.9 +1.7
comp=Z,16nm,1.5s
CLL **Collm** 16.32 337 *e*P Pn 03 22 19.0 +1.0
CLL *i* 03 22 22.8
comp=Z,24nm,0.9s
CLL *i* 03 22 24.6
CLL *i* 03 22 27.0
CLL Lm MLR 04 04 00.0
comp=Z,600nm,21.8s
CLL LmV 04 08 00.0
comp=Z,600nm,19.1s
CLL **Collm** 16.32 337 *e*P P 03 22 22.3 +1.3
CLL pmax pmax
comp=Z,26nm,0.8s
CLL **Collm** 16.32 337 *e*P P 03 22 22.3 +1.3
comp=Z,26nm,0.8s
CLL **Collm** 16.32 337 *e*Pn P 03 22 22.2 +1.3
comp=Z,26nm,0.8s
KIV **Kislovodsk** 16.76 58 *i* P Pn 03 22 21.5 -2.4
KIV pmax pmax
comp=Z,21nm,2.1s
KIV **Kislovodsk** 16.76 58 *e*Pn Pn 03 22 22.6 -1.3
KIV **Kislovodsk** 16.76 58 *e*Pn Pn 03 22 22.6 -1.3
KBZ **Khabaz** 16.83 59 Pn P 03 22 27.6 +0.9
comp=Z,0.2nm,0.3s,baz=240,slow=11,SNR=14
ZEI **Tsey** 17.28 63 *e*P P 03 22 34.0 +2.1
ZEI pmax pmax
comp=Z,13nm,0.8s
ZEI **Tsey** 17.28 63 *e*P P 03 22 34.0 +2.1
comp=Z,13nm,0.8s
GNI **Garni** 17.47 72 *e*P Pn 03 22 31.8 -1.1
GNI **Garni** 17.47 72 *e*P Pn 03 22 31.8 -1.1
GNI **Garni** 17.47 72 *e*Pn Pn 03 22 31.8 -1.1
LOR **Lormes** 17.69 313 P P 03 22 38.1 +1.9
LOR pmax pmax
comp=Z,4.0nm,0.8s
LOR **Lormes** 17.69 313 P P 03 22 38.1 +1.9
comp=Z,4.0nm,0.8s
CAF **Calviac** 17.81 304 P P 03 22 39.3 +1.6
CAF pmax pmax
comp=Z,5.0nm,0.9s
CAF **Calviac** 17.81 304 P P 03 22 39.3 +1.6
comp=Z,5.0nm,0.9s
WLF **Walferdange** 17.84 322 P P 03 22 40.4 +2.5
WLF **Walferdange** 17.84 322 *e*P P 03 22 40.5 +2.7
WLF pmax pmax
comp=Z,15nm,1.0s
WLF **Walferdange** 17.84 322 *e*P P 03 22 40.5 +2.7
comp=Z,15nm,1.0s
WLF **Walferdange** 17.84 322 *e*Pn P 03 22 40.5 +2.7
comp=Z,15nm,1.0s
MEM **Membach** 18.53 324 P Pn 03 22 48.4 +2.7
comp=Z,5.9nm,1.2s
VSR **Storozhevoye** 18.66 33 *e*P Pn 03 22 47.0 -0.2
VSR pmax pmax
comp=Z,2.0nm,0.5s
VSR **Storozhevoye** 18.66 33 *e*P Pn 03 22 47.0 -0.2
comp=Z,2.0nm,0.5s
DOU **Dourbes** 18.89 321 P Pn 03 22 51.1 +1.1
BSD **Bornholm Skovb** 19.31 346 *i* P P 03 22 53.7 -0.2
comp=Z,7.4nm,0.6s
BSD **Bornholm Skovb** 19.31 346 *i* P P 03 22 53.7 -0.2
BSD pmax pmax
comp=Z,7.0nm,0.6s
BSD **Bornholm Skovb** 19.31 346 *i* P P 03 22 53.7 -0.2
comp=Z,7.0nm,0.6s
VRH **Novokhopyorsk** 19.83 37 *e*P Pn 03 23 00.3 -1.0
VRH pmax pmax
comp=Z,10.0nm,0.6s
VRH **Novokhopyorsk** 19.83 37 *e*P Pn 03 23 00.3 -1.0
comp=Z,10.0nm,0.6s
TAM **Tamanrasset** 20.39 232 *e*P P 03 23 06.8 +0.6
TAM pmax pmax
comp=Z,2.0nm,0.8s
TAM **Tamanrasset** 20.39 232 *e*P P 03 23 06.8 +0.6
comp=Z,2.5nm,0.8s
TAM **Tamanrasset** 20.39 232 *e*P P 03 23 06.8 +0.6
comp=Z,2.5nm,0.8s
OBN **Obninsk** 20.74 23 P Pn 03 23 11.7 -0.2
OBN *e* 03 23 29.2
OBN pmax pmax
comp=Z,13nm,0.8s
OBN MLR MLR
comp=Z,951nm,20.0s
OBN **Obninsk** 20.74 23 P Pn 03 23 11.7 -0.2
comp=Z,13nm,0.8s
ES19 **SONSECA Array** 21.28 287 *e*P P 03 23 16.5 +0.9
ES19 **SONSECA Array** 21.28 287 *e*P P 03 23 16.5 +0.9
ESDC **Sonseca Array** 21.33 286 P P 03 23 16.7 +0.5
comp=Z,7.5nm,0.7s,baz=82,slow=9.0,SNR=34
ESLA **Sonseca Array** 21.33 286 *e*P P 03 23 17.0 +0.8
comp=Z,11nm,0.8s
ESLA **Sonseca Array** 21.33 286 *e*P P 03 23 16.9 +0.8
comp=Z,11nm,0.8s
PAB **San Pablo** 21.63 286 *e*P P 03 23 23.2 +3.8
PAB pmax pmax
comp=Z,15nm,0.7s
PAB **San Pablo** 21.63 286 *e*P P 03 23 23.2 +3.8
comp=Z,15nm,0.7s
PAB **San Pablo** 21.63 286 *e*P P 03 23 23.2 +3.8
comp=Z,15nm,0.7s
VSU **Vasula** 22.02 5⇑ *i*P P 03 23 25.2 +2.0
VSU pmax pmax
comp=Z,22nm,0.8s
VSU **Vasula** 22.02 5 *i* P P 03 23 25.2 +2.0
comp=Z,22nm,0.8s
MDT **Midelt** 22.91 269 P P 03 23 33.7 +0.6
comp=Z,4.4nm,0.7s,baz=82,slow=13,SNR=19
CWF **Charnwood Fore** 23.43 321 *e*P P 03 23 37.7 -0.4
comp=Z,15nm,1.0s
CWF **Charnwood Fore** 23.43 321 *e*P P 03 23 37.7 -0.4
comp=Z,15nm,1.0s
RAYN **Ar Rayn** 23.43 118 *e*P P 03 23 35.3 -3.1
comp=Z,6.4nm,0.9s
RAYN **Ar Rayn** 23.43 118 *e*P P 03 23 35.3 -3.1
comp=Z,6.4nm,0.9s
PBRG **Braganca** 23.49 292 *e*P P 03 23 39.8 +0.9
MVO **Moncorvo** 23.69 290 *e*P P 03 23 41.1 +0.3
PBAR **Barrancos** 23.80 283 *e*P P 03 23 43.1 +1.2
PMRV **Marv??o** 23.99 286 *e*P P 03 23 43.5 -0.2
PCBR **Castelo Branco** 24.04 287 *e*P P 03 23 44.6 +0.5
MTE **Manteigas** 24.07 288 *e*P P 03 23 44.6 +0.1
PESTR **Estremoz** 24.18 285 *e*P P 03 23 45.3 -0.1
POLO **Lamas de Olo** 24.27 291 *e*P P 03 23 47.1 +0.7
HFS **Hagfors** 24.28 349 P P 03 23 45.0 -1.2
comp=Z,4.2nm,0.5s,baz=161,slow=10,SNR=18
HFS **Hagfors** 24.28 349 P P 03 23 45.0 -1.2
HFS **Hagfors** 24.28 349 P P 03 23 45.0 -1.2
PVIS **Viseu** 24.34 289 *e*P P 03 23 47.9 +0.9
PVAQ **Vaqueiros** 24.43 281 *e*P P 03 23 47.3 -0.4
PBEJ **Beja** 24.47 283 *e*P P 03 23 48.3 +0.2
EVO **Evora** 24.53 284 *e*P P 03 23 46.7 -2.0
PBDV **Barranco-do-Ve** 24.62 281 *e*P P 03 23 50.6 +1.1
PCVE **Castro Verde** 24.65 282 *e*P P 03 23 50.2 +0.4
MESJ **Messejana** 24.77 282 *e*P P 03 23 51.3 +0.4
MESJ AMb AMB 03 23 57.5
comp=Z,43nm,1.2s
MESJ **Messejana** 24.77 282 *e*P P 03 23 51.6 +0.8
MESJ **Messejana** 24.77 282 *e*P P 03 23 51.2 +0.4
MESJ **Messejana** 24.77 282 *e*P P 03 23 51.2 +0.4
FINES **FINESS Array B** 24.94 4 P P 03 23 51.5 -0.6
comp=Z,1.2nm,0.6s,baz=161,slow=7.7,SNR=8.9
FINES PcP PcP 03 27 27.4 +0.3
comp=Z,1.0nm,0.5s,baz=126,slow=3.4,SNR=5.5
NAO01 **NORSAR Array S** 25.44 346 *e*P P 03 23 56.5 -0.2
NAO01 **NORSAR Array S** 25.44 346 *e*P P 03 23 56.5 -0.2
NB201 **NORSAR Array S** 25.55 347 *e*P P 03 23 58.0 +0.3
NB201 **NORSAR Array S** 25.55 347 *e*P P 03 23 58.0 +0.3
NB2 **NORSAR Subarra** 25.56 347 P P 03 23 57.0 -0.8
comp=Z,3.9nm,0.6s,baz=150,slow=10
NB2 **NORSAR Subarra** 25.56 347 P P 03 23 57.0 -0.8
comp=Z,3.9nm,0.6s,SNR=3.7
NOA **NORSAR Array B** 25.56 347 P P 03 23 57.5 -0.2
comp=Z,3.2nm,0.8s,baz=153,slow=9.5,SNR=14
NOA PcP PcP 03 27 27.8 -0.8
comp=Z,0.8nm,0.9s,baz=127,slow=3.0,SNR=3.9
EKA **Eskdalemuir Ar** 25.81 325 P P 03 24 00.4 +0.3
comp=Z,32nm,0.5s,baz=124,slow=9.1,SNR=213
ESK **Eskdalemuir** 25.82 325 *e*P P 03 24 00.7 +0.5
ESK pmax pmax
comp=Z,53nm,0.7s
ESK **Eskdalemuir** 25.82 325 *e*P P 03 24 00.7 +0.5
comp=Z,53nm,0.7s
ESK **Eskdalemuir** 25.82 325 *e*P P 03 24 00.7 +0.5
comp=Z,53nm,0.7s
KLMR **Klimovskoe** 26.47 18 *e*P P 03 24 06.1 +0.2
KLMR pmax pmax
comp=Z,13nm,1.3s
KLMR **Klimovskoe** 26.47 18 *e*P P 03 24 06.1 +0.2
comp=Z,13nm,1.3s
GEYT **Alibeck** 27.95 77 P P 03 24 19.5 -0.2
comp=Z,2.5nm,0.4s,baz=288,slow=6.1,SNR=4.5
TOA0 **Torodi Ar. Sit** 30.12 225 *e*P P 03 24 39.7 +0.7
comp=Z,3.4nm,0.8s
TOA0 **Torodi Ar. Sit** 30.12 225 *e*P P 03 24 39.7 +0.7
comp=Z,3.4nm,0.8s
TORD **Torodi Ar. Bea** 30.12 225 P P 03 24 39.6 +0.6
comp=Z,2.5nm,0.6s,baz=38,slow=9.3,SNR=36
TORD PcP PcP 03 27 41.0 +0.5
comp=Z,0.7nm,0.7s,baz=54,slow=1.8,SNR=4.0
TORD **Torodi Ar. Bea** 30.12 225 PcP PcP 03 27 41.0 +0.5
BRVK **Borovoye** 36.65 48 *e*P P 03 25 35.2 -0.3
BRVK pmax pmax
comp=Z,2.0nm,0.7s
BRVK **Borovoye** 36.65 48 *e*P P 03 25 35.2 -0.3
comp=Z,2.2nm,0.7s
BRVK **Borovoye** 36.65 48 *e*P P 03 25 35.2 -0.3
comp=Z,2.2nm,0.7s
BVAR **Borovoye Array** 36.71 48 P P 03 25 35.5 -0.5
comp=Z,0.4nm,0.5s,baz=290,slow=6.1,SNR=2.8
KKAR **Karatay Array** 36.71 65 *e*P P 03 25 36.1 -0.1
KKAR pmax pmax
comp=Z,2.0nm,0.5s
KKAR **Karatay Array** 36.71 65 *e*P P 03 25 36.1 -0.1
comp=Z,1.6nm,0.5s
KKAR **Karatay Array** 36.71 65 *e*P P 03 25 36.1 -0.1
comp=Z,1.6nm,0.5s
DBIC **Dimbokro** 39.12 227 P P 03 25 57.1 +0.3
comp=Z,6.4nm,0.9s,baz=26,slow=11,SNR=8.7
EKS2 **Erkin-Say** 39.15 65 *e*P P 03 25 56.3 -0.6
EKS2 pmax pmax
comp=Z,2.0nm,0.4s
EKS2 **Erkin-Say** 39.15 65 *e*P P 03 25 56.3 -0.6
comp=Z,2.0nm,0.4s
EKS2 **Erkin-Say** 39.15 65 *e*P P 03 25 56.3 -0.6
comp=Z,2.0nm,0.4s
TIC **Toumodi** 39.24 227 *e*P P 03 25 57.7 0.0
KIC **Kosan Boka** 39.30 227 *e*P P 03 25 58.8 +0.5
comp=Z,27nm,1.0s
LIC **Lamto** 39.58 227 *e*P P 03 26 01.1 +0.5
comp=Z,38nm,1.2s
AAK **Ala-Archa** 39.68 65 P P 03 26 01.1 -0.3
comp=Z,1.8nm,0.6s,baz=205,slow=6.8,SNR=5.3
AAK **Ala-Archa** 39.68 65 *e*P P 03 26 01.6 +0.2
AAK pmax pmax
comp=Z,5.0nm,1.1s
AAK **Ala-Archa** 39.68 65 *e*P P 03 26 01.6 +0.2
comp=Z,4.8nm,1.1s
AAK **Ala-Archa** 39.68 65 *e*P P 03 26 01.6 +0.2
comp=Z,4.8nm,1.1s
TKM2 **Tokmak 2** 40.43 64 *e*P P 03 26 07.4 -0.3
TKM2 pmax pmax
comp=Z,1.0nm,0.7s
TKM2 **Tokmak 2** 40.43 64 *e*P P 03 26 07.4 -0.3
comp=Z,1.5nm,0.7s
TKM2 **Tokmak 2** 40.43 64 *e*P P 03 26 07.4 -0.3
comp=Z,1.5nm,0.7s
KSH **Kashi** 41.38 69 *e*P P 03 26 12.9 -2.5
KSH *e*pP pP 03 26 17.3 -1.6
KSH S S 03 32 23.5 -6.6
KSH pmax pmax
comp=Z,150nm,6.2s
KURBB **Kurchatov Arra** 41.66 52 P P 03 26 16.0 -1.4
comp=Z,1.5nm,0.6s,baz=280,slow=8.7,SNR=8.6
KURBB PcP PcP 03 28 14.2 +0.2
comp=Z,0.9nm,0.8s,baz=268,slow=4.2,SNR=4.4
KURK **Kurchatov** 41.71 52 *e*P P 03 26 16.8 -1.0
KURK 03 28 14.2
KURK pmax pmax
comp=Z,5.0nm,0.7s
KURK **Kurchatov** 41.71 52 *e*P P 03 26 16.8 -1.0
comp=Z,4.5nm,0.7s
KURK **Kurchatov** 41.71 52 PcP PcP 03 28 14.2 0.0
KURK **Kurchatov** 41.71 52 *e*P P 03 26 16.8 -1.0
comp=Z,4.5nm,0.7s
KURK PcP PcP 03 28 14.2 0.0
SPITS **Spitsbergen Ar** 41.77 358 P P 03 26 18.1 +0.1
comp=Z,6.6nm,0.8s,baz=154,slow=7.9,SNR=7.8
MAKZ **Makanchi** 44.31 58 *e*P P 03 26 37.9 -1.0
MAKZ pmax pmax
comp=Z,3.0nm,0.9s
MAKZ **Makanchi** 44.31 58 *e*P P 03 26 37.9 -1.0
comp=Z,3.0nm,0.9s
MAKZ **Makanchi** 44.31 58 *e*P P 03 26 37.9 -1.0
comp=Z,3.0nm,0.9s
NVS **Novosibirsk** 44.38 46 *e*P P 03 26 41.0 +1.7
NVS **Novosibirsk** 44.38 46 *e*P P 03 26 41.0 +1.7
MKAR **Makanchi Array** 44.52 57 P P 03 26 39.5 -1.2
comp=Z,2.8nm,0.5s,baz=287,slow=6.6,SNR=20
MKAR PcP PcP 03 28 23.5 -0.2
comp=Z,1.3nm,0.7s,baz=286,slow=4.6,SNR=2.6
ZAA0 **Zalesovo Array** 45.34 47 *e*P P 03 26 45.3 -1.7
ZAA0 **Zalesovo Array** 45.34 47 *e*P P 03 26 45.4 -1.7
ZALV **Zalesovo Beam** 45.34 47 P P 03 26 45.5 -1.6
comp=Z,2.0nm,0.3s,baz=270,slow=8.1,SNR=10
SUMG **Summit** 46.98 339 *i* P P 03 27 01.8 +1.6
comp=Z,7.4nm,0.8s
SUMG **Summit** 46.98 339 *e*P P 03 27 01.7 +1.6
SUMG pmax pmax
comp=Z,27nm,1.6s
SUMG **Summit** 46.98 339 *e*P P 03 27 01.7 +1.6
comp=Z,27nm,1.6s
SUMG **Summit** 46.98 339 *e*P P 03 27 01.7 +1.6
comp=Z,27nm,1.6s
WMQ **Urumqi** 48.87 60 *e*P P 03 27 17.0 +2.2
WMQ pmax pmax
comp=Z,2.0nm,0.6s
PYUN **Piuthan** 50.74 81 *e*P P 03 27 29.2 -0.3
comp=Z,31nm,0.7s
KOLN **Koldanda** 51.37 82 *e*P P 03 27 33.8 -0.4
comp=Z,17nm,0.7s
LSZ **Lusaka** 51.84 174 *e*P P 03 27 36.3 -1.2
LSZ **Lusaka** 51.84 174 *e*P P 03 27 36.3 -1.2
LSZ **Lusaka** 51.84 174 *e*P P 03 27 36.3 -1.2
GKN **Gorkha** 52.10 81 *e*P P 03 27 38.8 -0.7
comp=Z,16nm,0.5s
DMN **Daman** 52.64 81 *e*P P 03 27 42.7 -1.0
comp=Z,31nm,0.9s
KKN **Kakani** 52.70 81 *e*P P 03 27 43.6 -0.5
comp=Z,13nm,0.6s
PKIN **Phulchoki** 52.89 81 *e*P P 03 27 45.6 +0.1
comp=Z,6.4nm,0.4s
GUN **Gumba** 53.12 80 *e*P P 03 27 46.9 -0.5
TSUM **Tsumeb** 55.73 186 *e*P P 03 28 05.0 -0.9
comp=Z,2.9nm,0.7s
TSUM **Tsumeb** 55.73 186 *e*P P 03 28 05.0 -0.9
comp=Z,2.9nm,0.7s
TLY **Talaya** 56.96 47 P P 03 28 14.7 +0.4
TLY pmax pmax
comp=Z,2.0nm,0.9s
TLY **Talaya** 56.96 47 P P 03 28 14.7 +0.4
comp=Z,2.0nm,0.9s
ZAK **Zakamensk** 57.16 49 *e*P P 03 28 10.6 -5.3
ZAK pmax pmax
comp=Z,2.0nm,1.0s
ZAK pmax pmax
comp=Z,3.0nm,1.6s
SONM **Songino Array** 59.98 51 P P 03 28 35.4 -0.3
comp=Z,0.4nm,0.5s,baz=295,slow=7.8,SNR=3.3
SCHQ **Schefferville** 60.90 319 P P 03 28 42.2 +0.6
comp=Z,9.7nm,0.7s,baz=82,slow=6.2,SNR=18
SCHQ **Schefferville** 60.90 319 *e*P P 03 28 42.6 +0.9
comp=Z,11nm,0.7s
SCHQ **Schefferville** 60.90 319 *e*P P 03 28 42.6 +0.9
comp=Z,11nm,0.7s
RES **Resolute Bay** 61.80 345 *e*P P 03 28 48.0 +0.6
RES pmax pmax
comp=Z,2.0nm,0.7s
RES **Resolute Bay** 61.80 345 *e*P P 03 28 48.0 +0.6
comp=Z,1.9nm,0.7s
RES **Resolute Bay** 61.80 345 *e*P P 03 28 48.0 +0.6
comp=Z,1.9nm,0.7s
BOSA **Boshof** 64.91 178 P P 03 29 08.0 -0.6
comp=Z,6.0nm,1.0s,baz=354,slow=6.8,SNR=5.5
BOSA **Boshof** 64.91 178 P P 03 29 08.0 -0.6
BOSA **Boshof** 64.91 178 P P 03 29 08.0 -0.6
CD2 **Chengdu** 65.58 69 P P 03 29 11.8 -1.3
HHC **Hu-ho-hao-te** 66.35 56 *e*P P 03 29 18.3 +0.3
HHC pmax pmax
comp=Z,18nm,0.9s
HHC pmax pmax
comp=Z,140nm,5.6s
CHTO **Chiang Mai** 68.02 82 *e*P P 03 29 27.5 -1.3
CHTO pmax pmax
comp=Z,2.0nm,0.8s
CHTO **Chiang Mai** 68.02 82 *e*P P 03 29 27.5 -1.3
comp=Z,2.3nm,0.8s
CHTO **Chiang Mai** 68.02 82 *e*P P 03 29 27.4 -1.3
comp=Z,2.3nm,0.8s
CMAR **Chiang Mai Arr** 68.21 83 P P 03 29 28.9 -1.1
comp=Z,1.2nm,0.7s,baz=297,slow=7.0,SNR=5.0
BJI **Beijing** 69.80 55 P P 03 29 31.5 -8.0
BJI pmax pmax
comp=Z,7.0nm,0.8s
BJI pmax pmax
comp=Z,83nm,3.5s
FCC **Fort Churchill** 71.56 331 *e*P P 03 29 50.5 +0.6
FCC pmax pmax
comp=Z,3.0nm,0.9s
FCC **Fort Churchill** 71.56 331 *e*P P 03 29 50.5 +0.6
comp=Z,2.8nm,0.9s
FCC **Fort Churchill** 71.56 331 *e*P P 03 29 50.5 +0.6
comp=Z,2.9nm,0.9s
BILL **Bilibino** 72.11 14⇑ *e*P P 03 29 54.4 +1.3
BILL *e* 03 30 12.6
BILL *e* 03 32 33.3
BILL pmax pmax
comp=Z,4.0nm,1.6s
BILL MLR MLR
comp=Z,98nm,16.0s
BILL **Bilibino** 72.11 14 *e*P P 03 29 53.8 +0.7
comp=Z,2.2nm,0.7s
BILL **Bilibino** 72.11 14 *e*PcP PcP 03 30 12.6 +1.2
comp=Z,98nm,16.0s
BILL **Bilibino** 72.11 14 *e*P P 03 29 53.8 +0.7
comp=Z,2.2nm,0.7s
N59A **State Game Lan** 72.83 308 P P 03 29 59.1 +1.2
baz=56
INK **Inuvik** 73.92 351 P P 03 30 04.0 +0.2
comp=Z,2.3nm,0.8s,baz=8.0,slow=5.9,SNR=14
INK **Inuvik** 73.92 351 P P 03 30 04.0 +0.2
INK pmax pmax
comp=Z,2.0nm,0.8s
INK **Inuvik** 73.92 351 *e*P P 03 30 04.1 +0.3
INK **Inuvik** 73.92 351 *e*P P 03 30 04.1 +0.3
O56A **Blue Knob Stat** 74.95 309 P P 03 30 11.5 +1.1
baz=55
N54A **Moraine State** 75.42 310 P P 03 30 14.6 +1.6
baz=54
YKW3 **Yellowknife Ar** 75.45 341 *e*P P 03 30 12.7 0.0
YKW3 **Yellowknife Ar** 75.45 341 *e*P P 03 30 12.7 0.0
YKA **Yellowknife Ar** 75.51 341 P P 03 30 13.2 +0.1
comp=Z,1.5nm,0.6s,baz=31,slow=5.4,SNR=46
COLD **Coldfoot** 76.36 357 *e*P P 03 30 18.6 +0.7
comp=Z,3.9nm,0.9s
COLD **Coldfoot** 76.36 357 *e*P P 03 30 18.6 +0.7
comp=Z,3.9nm,0.9s
C39A **Grand Marais** 76.92 320 P P 03 30 21.8 +0.4
baz=49
KULM **Kulim** 77.02 93 *e*P P 03 30 21.4 -1.1
comp=Z,4.6nm,0.7s
KULM **Kulim** 77.02 93 *e*P P 03 30 21.4 -1.1
comp=Z,4.6nm,0.7s
FFC **Flin Flon** 77.49 331 *e*P P 03 30 25.1 +0.7
FFC pmax pmax
comp=Z,6.0nm,0.9s
FFC **Flin Flon** 77.49 331 *e*P P 03 30 25.1 +0.7
comp=Z,5.8nm,0.9s
FFC **Flin Flon** 77.49 331 *e*P P 03 30 25.1 +0.7
comp=Z,5.8nm,0.9s
COWI **Conover** 77.51 319 *e*P P 03 30 26.2 +1.4
comp=Z,16nm,0.8s
COWI **Conover** 77.51 319 *e*P P 03 30 26.2 +1.4
comp=Z,16nm,0.8s
EYMN **Ely** 77.53 321 P P 03 30 25.8 +1.0
baz=49
ULM **Lac du Bonnet** 78.09 325 P P 03 30 28.6 +0.7
comp=Z,10nm,0.8s,baz=33,slow=6.2,SNR=9.5
EGAK **Eagle** 78.18 353 *e*P P 03 30 28.9 +0.8
comp=Z,2.3nm,0.8s
EGAK **Eagle** 78.18 353 *e*P P 03 30 28.9 +0.8
comp=Z,2.3nm,0.8s
C36A **Pine Crest Far** 78.33 322 P P 03 30 29.6 +0.3
baz=48
B35A **Bob, Littlefor** 78.36 323 P P 03 30 29.6 +0.2
baz=47
MDM **Murphy Dome** 78.53 356 *e*P P 03 30 31.2 +1.1
MDM **Murphy Dome** 78.53 356 *e*P P 03 30 31.2 +1.1
MLY **Manley** 78.58 357 *e*P P 03 30 31.9 +1.5
MLY **Manley** 78.58 357 *e*P P 03 30 31.9 +1.5
IL1 **Eielson Array** 78.64 356 *e*P P 03 30 31.6 +1.0
IL1 **Eielson Array** 78.64 356 *e*P P 03 30 31.6 +1.0
ILAR **Eielson Array** 78.64 356 P P 03 30 31.7 +1.0
comp=Z,1.4nm,0.8s,baz=0.1,slow=4.7,SNR=17
ILB **Eielson Array** 78.64 356 *e*P P 03 30 31.7 +1.0
ILB **Eielson Array** 78.64 356 *e*P P 03 30 31.7 +1.0
B34A **Aery, Baudette** 78.72 323 P P 03 30 31.8 +0.3
baz=47
A33A **Warroad** 78.77 324 P P 03 30 32.4 +0.7
baz=46
KSAR **Wonju Array Be** 78.82 52 P P 03 30 32.9 +0.8
KSAR **Wonju Array Be** 78.82 52 P P 03 30 32.8 +0.7
KSAR **Wonju Array Be** 78.82 52 P P 03 30 32.9 +0.7
CCB **Clear Creek Bu** 78.82 356 *e*P P 03 30 32.1 +0.5
CCB **Clear Creek Bu** 78.82 356 *e*P P 03 30 32.1 +0.5
KSRS **Korea Array** 78.83 52 P P 03 30 32.9 +0.7
comp=Z,1.2nm,0.6s,baz=300,slow=4.8,SNR=4.2
C35A **Jirik Farms, M** 78.93 322 P P 03 30 33.3 +0.7
baz=47
HDA **Harding Lake** 79.00 356 *e*P P 03 30 33.4 +0.7
HDA **Harding Lake** 79.00 356 *e*P P 03 30 33.4 +0.7
A32A **Rocking H Ranc** 79.31 324 P P 03 30 35.2 +0.6
baz=46
AGMN **Agassiz Nation** 79.44 323 P P 03 30 35.7 +0.3
baz=46
BPAW **Bear Paw Mtn.** 79.52 357 *e*P P 03 30 36.1 +0.6
BPAW **Bear Paw Mtn.** 79.52 357 *e*P P 03 30 36.1 +0.6
DOT **Dot Lake** 79.55 354 *e*P P 03 30 37.2 +1.5
comp=Z,12nm,0.8s
DOT **Dot Lake** 79.55 354 *e*P P 03 30 37.2 +1.5
comp=Z,12nm,0.8s
B32A **Ashes, Strandq** 79.69 324 P P 03 30 37.3 +0.6
baz=45
C33A **Trail** 79.77 323 P P 03 30 37.6 +0.4
baz=46
MCK **McKinley** 79.79 356 *e*P P 03 30 37.3 +0.3
MCK pmax pmax
comp=Z,7.0nm,1.2s
MCK **McKinley** 79.79 356 *e*P P 03 30 37.3 +0.3
comp=Z,7.4nm,1.2s
MCK **McKinley** 79.79 356 *e*P P 03 30 37.3 +0.3
comp=Z,7.4nm,1.2s
E35A **Pequot Lakes** 79.93 321 P P 03 30 38.9 +0.8
baz=46
F36A **Milaca** 79.96 321 P P 03 30 38.7 +0.4
baz=47
RND **Reindeer** 80.11 356 *e*P P 03 30 38.7 -0.1
RND **Reindeer** 80.11 356 *e*P P 03 30 38.7 -0.1

RND	Reindeer	80.11 356	*e*P	P	03 30 38.7	-0.1
A30A	Hoffart Farm, baz=44	80.13 325	P	P	03 30 40.0	+0.9
CAST	Castle Rocks	80.24 358	*e*P	P	03 30 40.1	+0.7
CAST	Castle Rocks	80.24 358	*e*P	P	03 30 40.1	+0.7
D33A	AnnSam, Waubun baz=46	80.24 323	P	P	03 30 39.9	+0.2
DHY	Denali Highway	80.36 356	*e*P	P	03 30 41.2	+1.0
DHY	Denali Highway	80.36 356	*e*P	P	03 30 41.2	+1.0
B30A	Myrvik Farm, E baz=44	80.50 325	P	P	03 30 41.7	+0.6
G36A	St. Michael baz=47	80.50 320	P	P	03 30 41.9	+0.7
A29A	Manning Farm, baz=44	80.57 326	P	P	03 30 42.2	+0.8
I38A	Scanlan Farm, baz=48	80.57 319	P	P	03 30 42.2	+0.7
C31A	Landman Farms, baz=44	80.69 324	P	P	03 30 42.7	+0.6
E33A	Westby DABS, E baz=46	80.76 322	P	P	03 30 43.1	+0.5
PPLA	Purkeypile comp=Z,5.7nm,0.6s	80.76 358	*e*P	P	03 30 43.0	+0.6
PPLA	Purkeypile comp=Z,5.7nm,0.6s	80.76 358	*e*P	P	03 30 43.0	+0.6
H36A	Jessenland, He baz=46	81.05 320	P	P	03 30 44.5	+0.4
H35A	Sunnyside Ranc baz=46	81.43 320	P	P	03 30 47.2	+1.0
I36A	Fitzsimmons Fa baz=46	81.48 319	P	P	03 30 46.7	+0.3
CPCT	Cooper Cave	81.61 308	*e*P	P	03 30 48.6	+1.4
CPCT	Cooper Cave	81.61 308	*e*P	P	03 30 48.6	+1.4
D30A	Buchanan baz=44	81.66 324	P	P	03 30 47.3	0.0
SML	Sawmill	81.68 356	*e*P	P	03 30 48.0	+0.8
SML	comp=Z,1.0nm,0.7s		pmax	pmax		
SML	Sawmill comp=Z,1.4nm,0.7s	81.68 356	*e*P	P	03 30 48.0	+0.8
SML	Sawmill comp=Z,1.4nm,0.7s	81.68 356	*e*P	P	03 30 48.0	+0.8
J37A	Redenius Farm, baz=47	81.72 319	P	P	03 30 48.3	+0.7
K38A	Parkersburg baz=47	81.75 318	P	P	03 30 47.7	-0.2
J36A	Seneca 1, Swea baz=46	82.12 319	P	P	03 30 50.5	+0.7
E29A	Napoleon baz=43	82.47 324	P	P	03 30 52.8	+1.2
SPU	Mount Spurr	82.48 358	*e*P	P	03 30 51.8	+0.4
SPU	Mount Spurr	82.48 358	*e*P	P	03 30 51.8	+0.4
C26A	Wahner Farm, P baz=42	82.67 326	P	P	03 30 53.8	+1.2
N39A	Derby Farms, D baz=47	82.81 316	P	P	03 30 53.3	-0.1
H32A	Carlson Farm, baz=44	82.89 322	P	P	03 30 54.0	+0.2
O40A	La Belle baz=47	82.97 315	P	P	03 30 54.3	+0.1
ECSD	EROS Data Cent baz=45,SNR=7.4	83.02 321	P	P	03 30 55.2	+0.7
ECSD	EROS Data Cent comp=Z,8.0nm,0.8s	83.02 321	*e*P	P	03 30 55.7	+1.2
ECSD	EROS Data Cent comp=Z,8.0nm,0.8s	83.02 321	*e*P	P	03 30 55.7	+1.2
WVT	Waverly	83.23 310	*e*P	P	03 30 56.1	+0.4
WVT	Waverly	83.23 310	*e*P	P	03 30 56.1	+0.4
WVT	Waverly	83.23 310	*e*P	P	03 30 56.1	+0.4
O39A	Kirksville baz=47	83.26 316	P	P	03 30 56.3	+0.5
G30A	Faulkton baz=43	83.28 323	P	P	03 30 56.6	+0.8
M37A	Trindle Farm, baz=46	83.30 318	P	P	03 30 57.1	+1.1
D26A	Manning baz=41	83.42 326	P	P	03 30 57.7	+1.1
P40A	Paris baz=47	83.47 315	P	P	03 30 57.5	+0.7
E27A	Carson baz=42	83.47 325	P	P	03 30 57.6	+0.8
F28A	McLaughlin baz=42,SNR=5.3	83.55 324	P	P	03 30 58.1	+0.9
SUSD	Miller baz=43	83.69 322	P	P	03 30 59.0	+1.1
E26A	Carlson Angus baz=41	83.85 325	P	P	03 30 59.8	+1.0
J32A	Parkston baz=44	83.91 321	P	P	03 30 59.9	+0.8
F27A	Lemmon baz=42,SNR=6.0	84.10 325	P	P	03 31 00.8	+0.8
L34A	Svendsen Farm, baz=45	84.15 319	P	P	03 31 00.2	-0.1
G28A	Parade baz=42	84.17 324	P	P	03 31 01.3	+0.9
P38A	Dawn baz=46	84.24 316	P	P	03 31 01.6	+0.8
F26A	Lodgepole baz=41	84.41 325	P	P	03 31 02.5	+0.9
R40A	Maddies Statio baz=47	84.44 314	P	P	03 31 02.9	+1.0
L33A	Hoskins baz=44	84.48 320	P	P	03 31 02.7	+0.7
N35A	Tabor baz=45	84.54 318	P	P	03 31 03.2	+0.9
O36A	Bolckow baz=46	84.68 317	P	P	03 31 03.7	+0.6
F25A	Bowman baz=40	84.72 326	P	P	03 31 03.5	+0.3
P37A	Lathrop baz=46	84.72 316	P	P	03 31 04.0	+0.8
LRAL	Lakeview Retre	84.72 308	*e*P	P	03 31 04.6	+1.2
LRAL	Lakeview Retre	84.72 308	*e*P	P	03 31 04.6	+1.2
Q38A	Cooks Store, C baz=46	84.75 316	P	P	03 31 04.0	+0.6
J30A	Dallas baz=43	84.77 322	P	P	03 31 04.5	+1.0
G26A	Maurine baz=41	84.80 325	P	P	03 31 04.0	+0.4
M33A	Taylor Creek F baz=44	84.86 319	P	P	03 31 04.6	+0.7
R39A	Chumby, Stover baz=46	84.86 315	P	P	03 31 05.1	+1.1
N34A	Lincoln baz=45	85.02 318	P	P	03 31 05.4	+0.7
S40A	Lebanon baz=47,SNR=5.7	85.04 314	P	P	03 31 05.4	+0.5
I28A	Midland baz=42	85.09 323	P	P	03 31 05.8	+0.8
J29A	Okreek baz=42	85.12 322	P	P	03 31 06.0	+0.8
P36A	Good Intent, A baz=45	85.17 317	P	P	03 31 06.3	+0.7
G25A	Newell baz=40	85.25 325	P	P	03 31 06.2	+0.3
Q37A	Longview Farm, baz=46	85.27 316	P	P	03 31 06.9	+0.9
K30A	Basset baz=43,SNR=8.7	85.30 321	P	P	03 31 07.4	+1.3
LAO	LASA Array baz=39	85.35 328	P	P	03 31 07.6	+1.2
LAO	LASA Array comp=Z,13nm,0.8s	85.35 328	*e*P	P	03 31 08.3	+1.9
LAO	LASA Array comp=Z,13nm,0.8s	85.35 328	*e*P	P	03 31 08.3	+1.9
T40A	Mansfield baz=47,SNR=10	85.36 314	P	P	03 31 07.6	+1.1
R38A	Fenwick Farm, baz=46,SNR=8.2	85.44 315	P	P	03 31 07.8	+0.9
S39A	Bolivar baz=46	85.45 314	P	P	03 31 07.7	+0.8
BGNE	Belgrade baz=44	85.48 320	P	P	03 31 08.3	+1.3
O34A	Beatrice baz=44	85.58 318	P	P	03 31 08.5	+1.0
P35A	Duane Minner, baz=45	85.68 317	P	P	03 31 09.2	+1.1
EGMT	Eagleton baz=36	85.76 330	P	P	03 31 09.7	+1.3
EGMT	Eagleton comp=Z,13nm,0.6s	85.76 330	*e*P	P	03 31 09.9	+1.5
EGMT	Eagleton comp=Z,13nm,0.6s	85.76 330	*e*P	P	03 31 09.8	+1.5
Q36A	Arnold C. Orve baz=45	85.78 317	P	P	03 31 09.4	+0.9
248A	Dixon Mills baz=49	85.81 307	P	P	03 31 08.9	+0.1
S38A	Stockton baz=46	85.83 315	P	P	03 31 09.5	+0.6
R37A	Teagarden Farm baz=46	85.88 316	P	P	03 31 09.7	+0.6
T39A	Clever baz=46	85.94 314	P	P	03 31 10.3	+0.9
M31A	Lambtecht Ranc baz=43	85.95 320	P	P	03 31 10.4	+1.0
U40A	Yellville baz=46	86.10 313	P	P	03 31 10.8	+0.6
P34A	Walnut Farm, R baz=44,SNR=6.7	86.11 318	P	P	03 31 11.3	+1.1
O33A	Hebron baz=44	86.14 318	P	P	03 31 10.6	+0.3
Q35A	Mercer Eighty, baz=45	86.17 317	P	P	03 31 10.8	+0.3
R36A	Gordon, Harris baz=45	86.25 316	P	P	03 31 11.6	+0.7
S37A	Fort Scott baz=45	86.26 315	P	P	03 31 11.5	+0.5
I25A	Rochford baz=40	86.29 325	P	P	03 31 11.9	+0.7
KSU1	Kansas State U baz=44	86.31 317	P	P	03 31 11.8	+0.6
RSSD	Black Hills baz=40	86.36 325	P	P	03 31 11.7	+0.1
O32A	Brookman Farm, baz=44	86.37 319	P	P	03 31 12.0	+0.5
U39A	Green Forest baz=46	86.45 314	P	P	03 31 12.6	+0.7
V40A	Witts Springs baz=46	86.46 313	P	P	03 31 12.7	+0.7
T38A	Diamond baz=46	86.46 315	P	P	03 31 12.8	+0.9
W41A	Tony Mavity, V baz=47	86.55 312	P	P	03 31 12.8	+0.4
W41B	Gary Mavity, V baz=47	86.55 312	P	P	03 31 13.1	+0.7
S36A	Lake Cedric, C baz=45,SNR=5.2	86.72 316	P	P	03 31 13.6	+0.4
T37A	Cheneyville 18 baz=45,SNR=6.6	86.76 315	P	P	03 31 13.9	+0.5
U38A	Gravette baz=46	86.93 314	P	P	03 31 14.8	+0.5
S35A	Otter Creek Ra baz=45	87.16 316	P	P	03 31 16.2	+0.8
R34A	Isabella, Hill baz=44	87.23 317	P	P	03 31 16.3	+0.6
X40A	Basin Creek Fa baz=46	87.37 312	P	P	03 31 17.1	+0.7
U37A	Salina baz=45	87.38 315	P	P	03 31 16.9	+0.5
Q32A	Meitler Ranch, baz=43	87.44 318	P	P	03 31 16.8	0.0
244A	Avery, Jackson baz=47	87.71 309	P	P	03 31 19.3	+1.2
MIAR	Mount Ida baz=46	87.77 312	P	P	03 31 19.2	+0.9
T35A	Sooner Cattle baz=44	87.81 316	P	P	03 31 19.0	+0.4
SWMT	Swartz Lake	87.82 332	*e*P	P	03 31 19.5	+1.0
SWMT	Swartz Lake	87.82 332	*e*P	P	03 31 19.5	+1.0
RLMT	Red Lodge baz=37	87.89 328	P	P	03 31 19.7	+0.7
R32A	Long Quarter, baz=43	87.94 318	P	P	03 31 19.5	+0.4
Y40A	Okolona baz=46	87.96 312	P	P	03 31 19.9	+0.6
T34A	McClaskey Farm baz=44	88.11 316	P	P	03 31 20.5	+0.6
TUL1	Leonard baz=45	88.11 315	P	P	03 31 21.2	+1.2
NEW	Newport baz=31	88.30 335	P	P	03 31 21.3	+0.6
NEW	Newport	88.30 335	*e*P	P	03 31 22.0	+1.3
NEW	comp=Z,8.0nm,0.8s		pmax	pmax		
NEW	Newport comp=Z,8.0nm,0.8s	88.30 335	*e*P	P	03 31 22.0	+1.3
NEW	Newport comp=Z,8.0nm,0.8s	88.30 335	*e*P	P	03 31 22.0	+1.3
U35A	Pawnee baz=44	88.32 315	P	P	03 31 21.9	+0.9
BOZ	Bozeman (W) baz=35	88.44 330	P	P	03 31 22.5	+1.0
S32A	Newby Ranch, P baz=43	88.58 318	P	P	03 31 22.8	+0.6
K22A	Casper baz=38	88.64 325	P	P	03 31 22.8	+0.3
K22A	Casper comp=Z,8.4nm,0.9s	88.64 325	*e*P	P	03 31 22.9	+0.3
K22A	Casper comp=Z,8.4nm,0.9s	88.64 325	*e*P	P	03 31 22.9	+0.4
T33A	Patterson Ranc baz=43	88.65 317	P	P	03 31 23.4	+0.9
U34A	Anderson Ranch baz=44	88.73 316	P	P	03 31 23.3	+0.4
H17A	Grant Village comp=Z,2.7nm,0.9s	89.03 329	*e*P	P	03 31 27.2	+2.7
H17A	Grant Village comp=Z,2.7nm,0.9s	89.03 329	*e*P	P	03 31 27.2	+2.7
U33A	Lingo Farm, Me baz=44	89.05 316	P	P	03 31 25.6	+1.2
V34A	Guthrie baz=44	89.15 316	P	P	03 31 25.8	+0.9
PHWY	Pilot Hill	89.20 324	*e*P	P	03 31 26.5	+1.1
PHWY	Pilot Hill	89.20 324	*e*P	P	03 31 26.5	+1.1
W35A	Tecumseh baz=44	89.27 315	P	P	03 31 26.0	+0.6
X36A	Centrahoma baz=44	89.39 314	P	P	03 31 26.9	+1.0
IMW	Indian Meadow	89.59 329	*e*P	P	03 31 28.2	+1.1
IMW	Indian Meadow	89.59 329	*e*P	P	03 31 28.2	+1.1
MOOW	Moose Ponds comp=Z,2.4nm,0.8s	89.63 328	*e*P	P	03 31 27.9	+0.7
MOOW	Moose Ponds comp=Z,2.4nm,0.8s	89.63 328	*e*P	P	03 31 27.9	+0.7
N23A	Red Feather La baz=39	89.74 324	P	P	03 31 28.0	+0.1
N23A	Red Feather La	89.74 324	*e*P	P	03 31 29.1	+1.2
N23A	Red Feather La	89.74 324	*e*P	P	03 31 29.1	+1.2
X35A	Drake baz=44	89.87 314	P	P	03 31 28.8	+0.6
BW06	Boulder Array baz=36	89.91 327	P	P	03 31 28.7	+0.1
BW06	Boulder Array	89.91 327	*e*P	P	03 31 28.3	-0.3
BW06	Boulder Array	89.91 327	*e*P	P	03 31 28.3	-0.3
PDAR	Pinedale Array comp=Z,1.1nm,0.7s,baz=68,slow=5.5,SNR=8.3	89.91 327	P	P	03 31 28.4	-0.2
138A	Matatall Enter baz=45	89.99 312	P	P	03 31 30.5	+1.7
WMOK	Wichita Mounta	90.65 316	*e*P	P	03 31 27.5	-4.4
WMOK	Wichita Mounta	90.65 316	*e*P	P	03 31 27.5	-4.4
O20A	White River Ci baz=37	91.42 325	P	P	03 31 35.8	+0.2
HWUT	Hardware Ranch	91.72 328	*e*P	P	03 31 37.6	+0.6
HWUT	Hardware Ranch	91.72 328	*e*P	P	03 31 37.6	+0.6
SDCO	Great Sand Dun baz=39	91.97 322	P	P	03 31 38.7	+0.3
S22A	4UR Ranch, Cre baz=38	92.63 322	P	P	03 31 41.6	+0.2
ABTX	Abilene, Hawle baz=43	92.69 315	P	P	03 31 41.9	+0.5
DUG	Dugway, Tooele baz=34	93.42 328	P	P	03 31 44.7	-0.1
MNTX	Cornudas Mount baz=39	96.58 318	P	P	03 31 59.7	+0.5
NVAR	Mina Array Bea comp=Z,0.5nm,0.7s,baz=35,slow=4.1,SNR=3.8	97.19 330	P	Pdif	03 32 02.8	+0.6
TXAR	Lajitas Array comp=Z,0.3nm,0.7s,baz=63,slow=4.4,SNR=4.1	97.43 315	P	Pdif	03 32 04.2	+0.9
MPMC	Manual Prospec baz=31	98.89 328	Pdiff	P	03 32 08.4	-1.4
SBC	Santa Barbara baz=30	101.20 329	Pdiff	Pdif	03 32 19.0	-0.8
WRA	Warramunga Arr comp=Z,0.4nm,0.7s,baz=297,slow=1.4,SNR=5.1	118.55 94	PKP	PKPdf	03 37 16.5	-0.9
ASAR	Alice Springs comp=Z,0.5nm,0.7s,baz=289,slow=1.5,SNR=6.2	120.09 98	PKP	PKPdf	03 37 19.3	-1.0

*ISCJB **15** 03:19:34.7±0.6,30.°44N±0.°10×139.°2E±0.°2, h450km, mb3.4/7, Error ellipse: s-maj=23.4km s-min=9.4km az=156.0*
*IDC **15** 03:19:34.8±1.0,30.°32N×138.°88E, h427km±17km, mb3.1/7, mb1 3.1/10, mb1mx2.8/64, mbtmp3.9/10, Error ellipse: s-maj=53.1km s-min=12.3km az=71.0*

ISC 15 03:19:35.5±0.8, 30.°5N±0.°1×139.°3E±0.°2, h450km, n11, σ1°08/13, mb3.5/7, Southeast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHJ	Hachijo jima 2	2.68	8	P	P	03 20 40.4	+0.2
	11nm,0.3s,baz=66,slow=18,SNR=1.9						
JHJ				S	S	03 21 31.8	-1.0
	34nm,0.3s,baz=67,slow=21,SNR=7.7						
JCJ	Chichijima	4.18	143	P	P	03 20 52.6	+0.2
	11nm,0.3s,baz=285,slow=21,SNR=16						
JCJ				S	S	03 21 53.3	-1.5
	22nm,0.3s,baz=90,slow=23,SNR=13						
MJAR	Matsushiro Arr	6.14	352	P	P	03 21 10.9	-0.3
	1.5nm,0.3s,baz=167,slow=10,SNR=9.2						
MAT	Matsushiro	6.14	351	P	P	03 21 10.8	-0.4
SONM	Songino Array	30.57	314	P	P	03 25 09.6	-1.3
	0.4nm,0.5s,baz=136,slow=11,SNR=3.5						
KURBB	Kurchatov Arra	48.92	312	P	P	03 27 37.8	-1.1
	0.9nm,0.6s,baz=95,slow=7.0,SNR=5.6						
WRA	Warramunga Arr	50.34	186	P	P	03 27 50.4	+0.6
	0.4nm,0.4s,baz=0.6,slow=7.8,SNR=2.5						
ARCES	ARCESS Array B	69.54	340	P	P	03 29 59.4	+1.8
	1.8nm,0.7s,baz=75,slow=8.2,SNR=5.0						
FINES	FINESS Array B	73.83	333	P	P	03 30 23.6	+0.9
	0.6nm,0.4s,baz=66,slow=6.5,SNR=6.5						
HFS	Hagfors	79.35	336	P	P	03 30 54.0	+0.8
	0.6nm,0.4s,baz=94,slow=4.5,SNR=8.3						
BRTR	Keskin Array B	81.90	311	P	P	03 31 07.5	+0.3
	1.0nm,0.8s,baz=33,slow=4.7,SNR=3.8						

*IDC **15** 03:26:19.0±0.7,28.°56N×139.°61E, h425km±7km, mb3.3/18, mb1 3.5/21, mb1mx3.3/53, mbtmp4.1/21, Error ellipse: s-maj=12.9km s-min=9.8km az=79.0*
*ISCJB **15** 03:26:19.1±0.5,28.°49N±0.°09×139.°6E±0.°1, h448km, mb3.6/18, Error ellipse: s-maj=13.8km s-min=11.5km az=154.5*

ISC 15 03:26:20.1±0.6, 28.°50N±0.°10×139.°6E±0.°1, h448km, n24, σ1°68/27, mb3.6/18, Bonin Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JCJ	Chichijima	2.67	121	P	P	03 27 22.8	-1.9
	51nm,0.3s,baz=117,slow=2.2,SNR=19						
JCJ				S	S	03 28 12.4	-4.6
MJAR	Matsushiro Arr	8.11	352	P	P	03 28 13.8	-2.7
	0.6nm,0.3s,baz=170,slow=11,SNR=4.3						
USRK	Ussuriysk Ar.	16.82	341	P	P	03 29 50.6	+0.3
	0.2nm,0.3s,baz=147,slow=8.8,SNR=5.5						
NJ2	Nanjing	18.27	286	*e*P	P	03 30 01.6	-3.9
NJ2	comp=Z,13nm,0.5s			pmax	pmax		
KLR	Kul'dur	21.56	346	P	P	03 30 36.2	+0.7
	comp=Z,2.9nm,0.7s,baz=184,slow=10,SNR=11						
SONM	Songino Array	32.13	316	P	P	03 32 09.4	+0.5
	comp=Z,0.8nm,0.4s,baz=123,slow=8.4,SNR=8.5						
SEY	Seymchan	35.43	10	P	P	03 32 37.2	+0.7
	comp=Z,0.9nm,0.4s,baz=201,slow=11,SNR=3.7						
CMAR	Chiang Mai Arr	38.46	264	P	P	03 33 02.2	-0.1
	comp=Z,0.6nm,0.6s,baz=54,slow=7.4,SNR=4.5						
TIXI	Tiksi	43.60	355	P	P	03 33 42.3	-0.3
	comp=Z,2.0nm,0.6s,baz=131,slow=4.0,SNR=5.8						
MKAR	Makanchi Array	47.83	309	P	P	03 34 15.7	+0.2
	comp=Z,0.9nm,0.6s,baz=93,slow=8.8,SNR=7.0						
MKAR				ScP	ScP	03 38 47.3	+0.4
	comp=Z,0.2nm,0.3s,baz=76,slow=5.1,SNR=4.5						
WRA	Warramunga Arr	48.43	187	P	P	03 34 21.4	+1.2
	comp=Z,1.7nm,0.4s,baz=6.3,slow=7.7,SNR=55						
WRA				ScP	ScP	03 38 51.9	+2.3
	comp=Z,0.6nm,0.9s,baz=0.3,slow=4.8,SNR=4.7						
KURBB	Kurchatov Arra	50.43	314	P	P	03 34 35.0	+0.2
	comp=Z,2.5nm,0.4s,baz=92,slow=8.0,SNR=50						
ASAR	Alice Springs	52.16	187	P	P	03 34 49.2	+1.5
	comp=Z,0.8nm,0.5s,baz=4.1,slow=7.3,SNR=15						
BVAR	Borovoye Array	55.47	317	P	P	03 35 11.5	+0.6
	comp=Z,1.0nm,0.4s,baz=86,slow=7.2,SNR=8.5						
ILAR	Eielson Array	57.59	29	P	P	03 35 25.4	+0.1
	comp=Z,0.9nm,0.4s,baz=252,slow=5.6,SNR=23						
INK	Inuvik	62.70	25	P	P	03 35 59.5	+0.1
	comp=Z,0.9nm,0.5s,baz=301,slow=6.0,SNR=14						
ARCES	ARCESS Array B	71.46	340	P	P	03 36 54.2	+0.5
	comp=Z,2.7nm,0.9s,baz=80,slow=8.9,SNR=8.8						
YKA	Yellowknife Ar	71.98	28	P	P	03 36 57.4	+0.7
	comp=Z,1.3nm,0.5s,baz=300,slow=5.8,SNR=34						
FINES	FINESS Array B	75.67	333	P	P	03 37 18.2	+0.4
	comp=Z,1.0nm,0.3s,baz=68,slow=4.5,SNR=17						
NVAR	Mina Array Bea	81.42	51	P	P	03 37 51.4	+1.8
	comp=Z,1.7nm,0.7s,baz=288,slow=5.4,SNR=12						
PDAR	Pinedale Array	84.80	44	P	P	03 38 07.7	+1.2
	comp=Z,0.6nm,0.6s,baz=252,slow=2.5,SNR=6.6						
TXAR	Lajitas Array	96.56	52	P	P	03 39 01.8	+0.6
	comp=Z,0.3nm,0.6s,baz=301,slow=1.6,SNR=5.5						
TORD	Torodi Ar. Bea	121.94	310	PKP	PKPdf	03 44 22.9	-0.4
	comp=Z,0.4nm,0.9s,baz=122,slow=1.8,SNR=5.1						
LPAZ	La Paz	151.69	71	PKPbc	PKPbc	03 45 26.1	+1.8
	comp=Z,0.6nm,0.5s,baz=247,slow=5.5,SNR=3.7						

JMA 15 03:32:35.2, 37.°74N×139.°94E, h8km±1km, M1.9, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFT	Otama	0.39	125	P	Pg	03 32 42.8	+0.1
JFT				S	Sg	03 32 48.1	+0.3
JMM	Marumori	0.69	79	S	Sg	03 32 57.2	-0.2
JAW	Awa shima	0.90	323	P	Pg	03 32 52.6	+0.1
JAW				*e*S	Sb	03 33 04.7	-0.5

JMA 15 03:34:06.7±0.2, 38.°01N×144.°34E, h16km, M3.5, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	Ofunato	2.35	298	P	Pn	03 34 45.8	+1.1
JIO	Ouri	2.40	282	S	Sn	03 35 15.5	+1.2
JMK	Ichinoseki	2.62	292	P	Pn	03 34 50.0	+1.6
JMK				S	Sn	03 35 21.8	+1.9
JOM	Ohasama	2.79	302	P	Pn	03 34 52.6	+1.8
JOM				S	Sn	03 35 26.5	+2.4
JMM	Marumori	2.81	268	P	Pn	03 34 52.1	+1.2
JMM				*e*S	Sn	03 35 24.8	+0.4
JOU	Okura	2.92	278	S	Sn	03 35 28.9	+1.7
JRG	Rokugo	3.21	297	P	Pn	03 34 58.7	+2.2
JRG				S	Sn	03 35 37.6	+3.2
JYK	Kaneyama	3.25	287	P	Pn	03 34 59.1	+2.0
JTM	Tenmabayashi	3.76	319	S	Sn	03 35 48.5	+0.7

*ISCJB **15** 03:39:18.7±0.9, 14.°07N±0.°09×91.°94W±0.°09, h54km, mb3.5/3, Error ellipse: s-maj=16.5km s-min=5.6km az=44.5*
*IDC **15** 03:39:21.7±2.5, 14.°28N×91.°83W, h69km±19km, mb3.0/3, mb1 3.4/7, mb1mx3.2/43, mbtmp3.4/7, Error ellipse: s-maj=52.1km s-min=14.0km az=36.0*
*MEX **15** 03:39:23.2±0.8, 14.°14N×91.°98W, h20km±30km, MD3.8*

ISC 15 03:39:20.4±1.1, 14.°2N±0.°1×91.°90W±0.°09, h54km, n12, σ1°29/17, mb3.5/3, Guatemala

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
THIG		0.83	335	*e*P	Pn	03 39 36.4	+0.3
PCIG		2.01	321	*e*P	Pn	03 39 52.4	+0.5
PCIG				*i*S	Sn	03 40 15.8	0.0
CCIG	Comitan	2.13	354	*e*P	Pn	03 39 56.0	+2.2
CCIG				*e*S	Sn	03 40 20.1	+0.9
TGIG		2.87	336	*e*P	Pn	03 40 05.7	+1.9
TGIG				*e*S	Sn	03 40 37.5	+0.4
CMIG	Matias Romero	4.10	316	P	Pn	03 40 22.0	+1.4
	1.5nm,0.3s,baz=146,slow=12,SNR=8.1						
CMIG				S	Sn	03 41 07.6	+0.2
	6.0nm,0.3s,baz=70,slow=9.1,SNR=3.0						
TEIG	Tepich	6.96	29	P	Pn	03 40 59.2	-0.7
	1.4nm,0.3s,baz=98,slow=23,SNR=6.3						
JTS	JuntasAbangare	7.79	119	P	Pn	03 41 12.8	+1.5
	0.5nm,0.3s,baz=315,slow=13,SNR=1.7						
JTS				S	Sn	03 42 39.9	+1.7
	0.4nm,0.3s,baz=172,slow=16,SNR=1.4						
TXAR	Lajitas Array	18.63	326	P	P	03 43 33.6	-0.1
	0.0nm,0.3s,baz=155,slow=11,SNR=2.7						
NVAR	Mina Array Bea	33.62	321	P	P	03 45 56.3	+0.3
	0.4nm,0.6s,baz=124,slow=8.8,SNR=3.9						
YKA	Yellowknife Ar	50.91	347	P	P	03 48 14.2	-1.6
	0.2nm,0.6s,baz=147,slow=7.6,SNR=5.0						

ILAR	**Eielson Array**	**62.74**	**337**	P	**P**	**03 49 38.7**	**-1.0**
	0.5nm,1.1s,baz=170,slow=5.5,SNR=2.3							
CMAR	**Chiang Mai Arr**	**145.88**	**341**	PKPbc	**PKPdf**	**03 58 52.6**	**-1.4**
	1.1nm,0.6s,baz=330,slow=3.9,SNR=5.5							

NIED ***15*** *03:46:00.3, 37.00N× 143.20E, h5km, Mw3.9 Best double couple: M0=6.88000×10^14 NP1:φs=39.00000°, δ=16.00000°, λ=-83.00000°. NP2:φs=212.00000°, δ=75.00000°, λ=-92.00000°.*

IDC ***15*** *03:46:20.8±0.9, 36.81N× 143.47E, h0km, mb3.6/7, mb1 3.9/10, mb1mx3.7/40, mbtmp3.7/10, ML3.5/3, Error ellipse: s-maj=23.9km s-min=19.6km az=119.0*

ISCJB ***15*** *03:46:22.7±0.7, 36.99N±0.06× 143.26E±0.07, h25km, mb3.7/7, Error ellipse: s-maj=8.6km s-min=6.9km az=39.6*

JMA ***15*** *03:46:24.6±0.4, 36.99N× 143.16E, h41km, M3.5*

ISC 15 03:46:24.4±0.9, 36.92N±0.06× 143.19E±0.08, h25km, n27, σ1s74/26, mb3.8/7, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JFK	**Kawauchi**	**1.90**	**284**	P	**Pn**	**03 46 54.9**	**-0.4**
JFK				S	**Sn**	**03 47 17.5**	**-0.9**
ONAJ	**Iwakimizuishiy**	**1.92**	**276**	P	**Pn**	**03 46 55.9**	**+0.3**
JIO	**Ouri**	**2.11**	**317**	P	**Pn**	**03 46 57.2**	**-0.9**
JIO				S	**Sn**	**03 47 21.8**	**-1.8**
JMM	**Marumori**	**2.13**	**297**	P	**Pn**	**03 46 58.0**	**-0.3**
JMM				*e*S	**Sn**	**03 47 22.6**	**-1.3**
JFT	**Otama**	**2.35**	**285**	P	**Pn**	**03 47 02.1**	**+0.6**
JOU	**Okura**	**2.47**	**306**	P	**Pn**	**03 47 03.1**	**+0.1**
JOM	**Ohasama**	**2.95**	**330**	S	**Sn**	**03 47 43.0**	**-1.3**
JYK	**Kaneyama**	**2.99**	**313**	P	**Pn**	**03 47 10.3**	**0.0**
MJAR	**Matsushiro Arr**	**4.02**	**266**	Pn	**Pn**	**03 47 25.8**	**+1.4**
	3.3nm,0.3s,baz=88,slow=9.8,SNR=28							
MAT	**Matsushiro**	**4.02**	**266**	P		**03 47 25.4**	**+1.0**
MAT				*e*S	**Sn**	**03 48 07.6**	**-3.1**
JHJ	**Hachijo jima 2**	**4.71**	**217**	Pn	**Pn**	**03 47 34.1**	**+0.2**
	11nm,0.3s,baz=82,slow=18,SNR=4.4							
JHJ				Sn	**Sn**	**03 48 23.1**	**-4.7**
	8.6nm,0.3s,baz=266,slow=23,SNR=2.7							
ASAJ	**Asahikawa**	**7.20**	**357**	Pn	**Pn**	**03 48 06.2**	**-1.8**
	2.7nm,0.3s,baz=224,slow=11,SNR=10							
KSRS	**Korea Array**	**12.19**	**277**	Pn	**Pn**	**03 49 18.9**	**+2.5**
	0.1nm,0.3s,baz=92,slow=14,SNR=4.8							
KLR	**Kul'dur**	**14.85**	**330**	Pn	**Pn**	**03 49 50.2**	**-2.4**
	0.1nm,0.3s,baz=132,slow=14,SNR=6.1							
H11N2	**WAKE ISLAND Hy**	**26.88**	**123**	T	T	04 20 07.0	
	baz=315,slow=76,SNR=4.2							
H11N1	**WAKE ISLAND Hy**	**26.89**	**123**	T	T	04 20 11.0	
	baz=315,slow=76,SNR=5.0							
H11N3	**WAKE ISLAND Hy**	**26.90**	**123**	T	T	04 20 11.4	
	baz=315,slow=76,SNR=4.8							
H11S1	**WAKE ISLAND Hy**	**27.62**	**125**	T	T	04 21 01.9	
	baz=317,slow=76,SNR=5.3							
H11S3	**WAKE ISLAND Hy**	**27.62**	**125**	T	T	04 21 04.7	
	baz=317,slow=76,SNR=4.7							
H11S2	**WAKE ISLAND Hy**	**27.64**	**125**	T	T	04 21 07.5	
	baz=317,slow=76,SNR=4.7							
SONM	**Songino Array**	**29.03**	**304**	P	**P**	**03 52 24.8**	**+2.3**
	1.5nm,0.7s,baz=96,slow=8.1,SNR=12							
MKAR	**Makanchi Array**	**45.38**	**302**	P	**P**	**03 54 42.9**	**+2.2**
	0.2nm,0.3s,baz=89,slow=10,SNR=4.9							
ILAR	**Eielson Array**	**48.83**	**32**	P	**P**	**03 55 06.9**	**-0.4**
	0.4nm,0.7s,baz=259,slow=6.6,SNR=6.8							
WRA	**Warramunga Arr**	**57.17**	**190**	P	**P**	**03 56 08.7**	**-0.5**
	1.1nm,0.6s,baz=7.5,slow=7.2,SNR=16							
ASAR	**Alice Springs**	**60.90**	**190**	P	**P**	**03 56 34.9**	**-0.1**
	0.8nm,0.7s,baz=9.3,slow=7.2,SNR=11							
YKA	**Yellowknife Ar**	**63.18**	**31**	P	**P**	**03 56 50.2**	**+0.2**
	0.1nm,0.8s,baz=304,slow=6.9,SNR=3.7							
TXAR	**Lajitas Array**	**89.05**	**53**	P	**P**	**03 59 17.8**	**+0.1**
	0.4nm,0.7s,baz=293,slow=4.1,SNR=6.2							

JMA 15 03:49:00.5±0.1, 36.82N× 138.62E, h3km±3km, M1.2, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JGK	**Kuni**	**0.26**	**176**	P	Pg	03 49 06.1	+0.6
JGK				S	Sg	03 49 09.9	+1.1
MAT	**Matsushiro**	**0.43**	**230**	P	Pg	03 49 08.7	-0.1
MAT				S	Sg	03 49 14.6	+0.2
MAT	**Matsushiro**	**0.43**	**230**	P	Pg	03 49 08.9	+0.1
MAT				S	Sg	03 49 14.6	+0.2

MEX 15 03:52:19.8±0.8, 15.19N× 91.97W, h161km±8km, MD3.7, Mexico-Guatemala border region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
CCIG	**Comitan**	**1.10**	**352**	*e*P	Pn	03 52 45.7	-0.9
CCIG				*e*S	Sn	03 53 05.0	-2.3
PCIG		**1.31**	**293**	*e*P	Pn	03 52 47.1	-1.1
PCIG				*e*S	Sn	03 53 08.2	-2.0
TGIG		**1.93**	**325**	*e*P	Pn	03 52 52.8	-2.1
TGIG				*e*S	Sn	03 53 19.2	-2.7

DDA ***15*** *03:59:13.8, 36.80N× 28.95E, h8km, Ml2.4*

CSEM ***15*** *03:59:15.0±0.7, 36.48N× 28.82E, h10km, MD2.6, Error ellipse: s-maj=17.7km s-min=8.9km az=21.0*

ISK ***15*** *03:59:15.6, 36.88N× 29.02E, h7km, MD2.6*

ISC 15 03:59:14.7±1.4, 36.83N±0.05× 29.09E±0.05, h15km±8km, n18, σ1s07/28, Turkey

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
FETY	**Fethiye**	**0.19**	**182**	*e*PG	**Pb**	**03 59 20.5**	**+0.7**
FETY				*e*SG	**Sb**	**03 59 25.6**	**+2.3**
FETY	**Fethiye**	**0.19**	**182**	*e*Pg	**Pb**	**03 59 20.5**	**+0.7**
FETY				*e*Sg	**Sb**	**03 59 25.6**	**+2.3**
DALY	**Dalyan (Mu˘la**	**0.35**	**269**	*e*PG	**Pg**	**03 59 21.3**	**-0.6**
DALY				*e*SG	**Sg**	**03 59 27.1**	**+0.2**
DALY	**Dalyan (Mu˘la**	**0.35**	**269**	*e*Pg	**Pg**	**03 59 21.3**	**-0.6**
DALY				*e*Sg	**Sg**	**03 59 27.1**	**+0.2**
TURN	**Turunc**	**0.40**	**277**	*i* P	**Pn**	**03 59 24.9**	**-0.9**
TURN				*i* S	**Sn**	**03 59 32.7**	**-0.3**
TURN	**Turunc**	**0.40**	**277**	P	**Pn**	**03 59 24.9**	**-0.9**
TURN				S	**Sn**	**03 59 32.7**	**-0.3**
YER	**Yerkesik**	**0.72**	**296**	*e*PG	**Pb**	**03 59 29.3**	**+0.4**
YER	**Yerkesik**	**0.72**	**296**	*e*Pg	**Pb**	**03 59 29.3**	**+0.4**
AKAS	**Kas**	**0.72**	**145**	*i* P	**Pg**	**03 59 28.0**	**-0.8**
AKAS				*i* S	**Sn**	**03 59 40.6**	**-0.6**
AKAS	**Kas**	**0.72**	**145**	P	**Pg**	**03 59 28.0**	**-0.8**
AKAS				S	**Sn**	**03 59 40.6**	**-0.6**
AYDN	**Tasoluk**	**1.28**	**311**	*i* P	**Pg**	**03 59 40.8**	**+1.5**
AYDN	**Tasoluk**	**1.28**	**311**	P	**Pg**	**03 59 40.8**	**+1.5**
BDRM	**Kayabasi**	**1.34**	**281**	*i* P	**Pn**	**03 59 37.8**	**-1.0**
BDRM				*i* S	**Sn**	**03 59 55.1**	**-1.3**
BDRM	**Kayabasi**	**1.34**	**281**	P	**Pn**	**03 59 37.8**	**-1.0**
BDRM				S	**Sn**	**03 59 55.1**	**-1.3**
BODT	**Bodrum**	**1.45**	**280**	*e*PN	**Pg**	**03 59 41.9**	**-0.6**
BODT	**Bodrum**	**1.45**	**280**	*e*Pn	**Pg**	**03 59 41.9**	**-0.6**
AYDB	**Zeytinkoy-Aydi**	**1.47**	**320**	*e*PN	**Pg**	**03 59 42.6**	**-0.4**
AYDB	**Zeytinkoy-Aydi**	**1.47**	**320**	*e*Pn	**Pg**	**03 59 42.6**	**-0.4**

MAN ***15*** *03:59:23, 5.79N× 126.32E, h136km, mb4.6, ML3.5, MS3.4*

ISCJB ***15*** *03:59:24.1±0.6, 5.63N±0.05× 126.1E±0.1, h116km, mb3.7/8, Error ellipse: s-maj=17.6km s-min=6.5km az=169.7*

IDC ***15*** *03:59:25.4±1.1, 5.69N× 126.00E, h116km±10km, mb3.5/8, mb1 3.7/8, mb1mx3.4/41, mbtmp3.9/8, Error ellipse: s-maj=47.7km s-min=13.2km az=76.0*

ISC 15 03:59:25.3±0.8, 5.70N±0.08× 126.2E±0.1, h116km, n15, σ1s08/17, mb3.7/7, 2C, Mindanao

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
MATI	**Mati**	**1.25**	**5**	*e*P	**Pn**	**03 59 48.2**	**-1.4**
MATI				*e*S	**Sn**	**04 00 07.2**	**-0.8**
DAV	**Davao City (W)**	**1.48**	**337**	P	**Pn**	**03 59 51.4**	**-0.8**
	18nm,0.3s,baz=55,slow=6.7,SNR=1.1						
DAV				S	**Sn**	**04 00 11.9**	**-0.9**
	88nm,0.3s,baz=90,slow=19,SNR=8.6						
DMPH	**Davao City--Mi**	**1.52**	**335**	*e*P	**Pn**	**03 59 53.5**	**+0.8**
DMPH				*e*S	**Sn**	**04 00 15.2**	**+1.5**
BUKP	**Musuan**	**2.43**	**333**	*e*P	**Pn**	**04 00 04.2**	**+0.1**
BIPH	**Bislig**	**2.48**	**5**	*i* P	Pn	04 00 08.0	+3.3
BIPH				*i* S	**Sn**	**04 00 37.6**	**+2.6**
PAGZ	**Pagadian**	**3.49**	**308**	*e*P	**Pn**	**04 00 17.4**	**-0.6**
FITZ	**Fitzroy Crossi**	**23.65**	**181**	P	**P**	**04 04 26.9**	**+0.6**
	1.6nm,0.5s,baz=11,slow=6.9,SNR=9.2						
WRA	**Warramunga Arr**	**26.72**	**163**	P	**P**	**04 04 54.0**	**0.0**
	0.3nm,0.4s,baz=348,slow=10,SNR=11						
ASAR	**Alice Springs**	**30.15**	**166**	P	**P**	**04 05 24.9**	**+0.4**
	0.5nm,0.5s,baz=345,slow=7.2,SNR=11						
STKA	**Stephens Creek**	**40.16**	**159**	P	**P**	**04 06 50.4**	**+0.3**
	2.3nm,0.7s,baz=322,slow=6.7,SNR=5.0						
MKAR	**Makanchi Array**	**55.63**	**325**	P	**P**	**04 08 48.6**	**-0.6**
	0.7nm,0.4s,baz=124,slow=8.5,SNR=11						
ILAR	**Eielson Array**	**83.59**	**26**	P	**P**	**04 11 40.9**	**+0.5**
	0.7nm,0.6s,baz=244,slow=4.9,SNR=14						
FINES	**FINESS Array B**	**89.84**	**332**	P	**P**	**04 12 10.0**	**-0.8**
	0.5nm,0.6s,baz=45,slow=4.1,SNR=3.1						
YKA	**Yellowknife Ar**	**97.95**	**24**	P	Pdif	04 12 48.8	+0.8
	0.3nm,0.7s,baz=301,slow=4.9,SNR=8.6						
TORD	**Torodi Ar. Bea**	**121.75**	**289**	PKP	**PKPdf**	**04 18 06.3**	**-0.3**
	0.5nm,0.5s,baz=58,slow=2.1,SNR=12						

ISCJB ***15*** *04:08:51.0±0.9, 38.75N±0.06× 144.34E±0.07, h29km, mb3.6/5, Error ellipse: s-maj=9.4km s-min=7.5km az=166.6*

JMA ***15*** *04:08:51.8±0.2, 38.74N× 144.31E, h40km, M3.9*

IDC ***15*** *04:08:52.5±1.2, 38.61N× 144.60E, h34km±7km, mb3.3/5, mb1 3.6/7, mb1mx3.3/43, mbtmp3.6/7, ML3.1/2, Error ellipse: s-maj=27.6km s-min=22.0km az=79.0*

ISC 15 04:08:52.6±1.0, 38.74N±0.08× 144.35E±0.09, h29km, n20, σ0s97/29, mb3.6/5, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
OFUJ	**Ofunato**	**2.12**	**280**	P	**Pn**	**04 09 25.5**	**-0.6**
JTH	**Tanohata**	**2.27**	**303**	P	**Pn**	**04 09 27.3**	**-0.8**
JTH				S	**Sn**	**04 09 53.9**	**-1.2**
JIO	**Ouri**	**2.37**	**264**	P	**Pn**	**04 09 28.7**	**-0.8**
JIO				S	**Sn**	**04 09 56.0**	**-1.5**
JMK	**Ichinoseki**	**2.45**	**276**	P	**Pn**	**04 09 30.4**	**-0.2**
JOM	**Ohasama**	**2.49**	**288**	P	**Pn**	**04 09 31.4**	**+0.2**
JANG	**Nango**	**2.73**	**308**	P	**Pn**	**04 09 33.8**	**-0.7**
JOU	**Okura**	**2.91**	**264**	P	**Pn**	**04 09 37.0**	**0.0**
JOU				S	**Sn**	**04 10 10.3**	**-0.7**
JMM	**Marumori**	**2.93**	**254**	P	**Pn**	**04 09 37.0**	**-0.2**
JMM				S	**Sn**	**04 10 10.3**	**-1.1**
JRG	**Rokugo**	**2.96**	**284**	P	**Pn**	**04 09 37.9**	**+0.2**
JRG				*e*S	**Sn**	**04 10 12.1**	**-0.2**
JYK	**Kaneyama**	**3.12**	**275**	P	**Pn**	**04 09 40.0**	**+0.1**
JYK				S	**Sn**	**04 10 16.3**	**+0.2**
JTM	**Tenmabayashi**	**3.25**	**310**	P	**Pn**	**04 09 41.7**	**+0.1**
JTM				*e*S	**Sn**	**04 10 17.4**	**-2.0**
MJAR	**Matsushiro Arr**	**5.34**	**248**	Pn	**Pn**	**04 10 11.2**	**+0.8**
	2.0nm,0.3s,baz=63,slow=12,SNR=16						
MAT	**Matsushiro**	**5.34**	**248**	P	**Pn**	**04 10 11.3**	**+0.9**
USRK	**Ussuriysk Ar.**	**10.76**	**304**	Pn	**Pn**	**04 11 26.9**	**+2.3**
	0.4nm,0.3s,baz=102,slow=12,SNR=5.0						
SONM	**Songino Array**	**28.84**	**301**	P	**P**	**04 14 49.8**	**+1.4**
	0.2nm,0.3s,baz=101,slow=6.0,SNR=2.9						
SONM				pP	**sP**	**04 15 01.3**	**+0.8**
	0.2nm,0.3s,baz=324,slow=40,SNR=3.1						
ZALV	**Zalesovo Beam**	**42.52**	**311**	pP	pP	04 16 53.9	+0.1
	1.5nm,0.6s,baz=81,slow=7.9,SNR=4.9						
MKAR	**Makanchi Array**	**45.20**	**301**	P	**P**	**04 17 07.2**	**+0.3**
	0.2nm,0.2s,baz=89,slow=7.5,SNR=2.8						
WRA	**Warramunga Arr**	**59.12**	**191**	P	**P**	**04 18 49.1**	**-1.4**
	1.3nm,0.9s,baz=12,slow=7.3,SNR=6.5						
WRA				pP	**pP**	**04 18 59.2**	**-0.3**
	0.4nm,0.8s,baz=9.0,slow=6.9,SNR=2.5						
YKA	**Yellowknife Ar**	**61.16**	**31**	P	**P**	**04 19 03.5**	**-0.5**
	0.1nm,0.5s,baz=274,slow=33,SNR=3.0						
FINES	**FINESS Array B**	**68.37**	**333**	P	**P**	**04 19 51.0**	**0.0**
	1.1nm,0.7s,baz=35,slow=7.0,SNR=4.2						
FINES				pP	**pP**	**04 20 01.0**	**+0.9**
	0.4nm,0.3s,baz=163,slow=40,SNR=2.8						

IDC ***15*** *04:12:53.8±2.6, 37.00N× 140.84E, h0km, mb3.5/2, mb1 3.7/3, mb1mx3.2/50, mbtmp3.4/3, ML3.3/1, Error ellipse: s-maj=46.7km s-min=33.7km az=35.0*

ISCJB ***15*** *04:12:55.7±0.9, 36.99N±0.04× 140.84E±0.10, h22km±5km, mb3.4/2, Error ellipse: s-maj=13.5km s-min=6.2km az=17.2*

JMA ***15*** *04:12:56.7, 37.03N× 140.62E, h9km±1km, M3.4 Broadband fault plane solution: P waves. NP1: φs=317.00000°, δ=47.00000°, λ=-75.00000°. NP2: φs=115.00000°, δ=45.00000°, λ=-106.00000°. Principal axes: T Plg1.0000°, Azm36.0000°; N Plg11.0000°, Azm126.0000°; P Plg79.0000°, Azm301.0000°;*

JMA Felt I J1.

ISC 15 04:12:56.2±1.1, 37.03N±0.04× 140.69E±0.05, h13km±9km, n9, σ0s54/16, 5C, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.12**	**50**	↑P	**Pb**	**04 13 00.4**	**0.0**
ONAJ				S	**Sb**	**04 13 02.9**	**-0.2**
JFK	**Kawauchi**	**0.37**	**24**	↑P	**Pb**	**04 13 04.4**	**-0.3**
JFK				S	**Sb**	**04 13 10.1**	**-0.3**
JHO	**Hitachi**	**0.43**	**193**	↑P	**Pg**	**04 13 04.7**	**0.0**
JHO				S	**Sg**	**04 13 10.3**	**-0.1**
JFT	**Otama**	**0.56**	**330**	↑P	**Pg**	**04 13 07.4**	**+0.1**
JFT				S	**Sg**	**04 13 14.6**	**-0.2**
JMM	**Marumori**	**0.84**	**6**	↑P	**Pg**	**04 13 12.4**	**-0.1**
JMM				S	**Sg**	**04 13 23.7**	**+0.1**
MJAR	**Matsushiro Arr**	**2.05**	**257**	Pn	**Pn**	**04 13 31.4**	**+1.0**
	9.1nm,0.3s,baz=78,slow=16,SNR=20						
MJAR				Sn	**Sb**	**04 13 58.3**	**-0.4**
	22nm,0.3s,baz=200,slow=22,SNR=5.3						
MAT	**Matsushiro**	**2.05**	**257**	P	**Pn**	**04 13 31.4**	**+1.0**
MAT				S	**Sb**	**04 13 57.9**	**-0.8**
MKAR	**Makanchi Array**	**43.63**	**302**	P	**P**	**04 21 00.5**	**+0.2**
	0.1nm,0.3s,baz=79,slow=7.5,SNR=1.3						
WRA	**Warramunga Arr**	**56.98**	**187**	P	**P**	**04 22 40.9**	**-0.6**
	0.8nm,0.8s,baz=3.2,slow=7.4,SNR=4.7						

MAN ***15*** *04:21:39, 9.63N× 126.16E, h17km, mb4.8, ML3.7, MS3.7*

MAN INTENSITY I - SURIGO CITY; GENERAL LUNA SURIGAO DEL NORTE.

NEIC ***15*** *04:21:46.8±1.3, 9.62N× 126.12E, h117km±12km, mb4.2/10, Error ellipse: s-maj=10.7km s-min=7.6km az=67.0*

NEIC Felt [I PIVS] at General Luna and Surigao.

IDC ***15*** *04:21:46.9±2.5, 9.61N× 126.01E, h116km±24km, mb3.8/21, mb1 3.9/23, mb1mx3.7/61, mbtmp4.2/23, MS3.9/3, Ms1 3.9/3, ms1mx3.2/49, Error ellipse: s-maj=19.6km s-min=11.4km az=77.0*

DJA ***15*** *04:22:09.7±0.9, 9˚N±8˚× 12˚5E±˚, h243km±8km, M4.2/14, mb4.1/14, mB5.0/3, MLv4.3/2, Mw(mB)4.4/3*

ISC 15 04:21:35.1±1.5, 9.76N±0.03× 126.28E±0.06, h11km±9km, n59, σ1s37/57, mb4.3/34, 5C-2D, Mindanao

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
SCPH	**Surigao**	**0.78**	**272**	↑*i* P	**Pn**	**04 21 53.2**	**+1.3**
SCPH				*i* S	**Sn**	**04 22 03.6**	**0.0**
BIPH	**Bislig**	**1.57**	**177**	↓*e*P	**Pb**	**04 22 03.5**	**-0.5**
BIPH				*i* S	**Sn**	**04 22 20.9**	**-2.2**
PLP	**Palo**	**1.90**	**318**	↓*e*P	**Pg**	**04 22 10.8**	**-0.6**
PLP				*i* S	**Sg**	**04 22 36.5**	**+0.5**
CGP	**Cagayan de Oro**	**2.03**	**231**	↑*i* P	**Pb**	**04 22 10.7**	**-1.3**
CGP				*i* S	**Sn**	**04 22 34.2**	**-0.5**
OCLP	**Ormoc**	**2.09**	**308**	*e*P	**Pg**	**04 22 14.2**	**-0.9**
BUKP	**Musuan**	**2.22**	**213**	*e*P	**Pb**	**04 22 14.6**	**-0.7**
BUKP				*e*S	**Sb**	**04 22 43.4**	**+0.6**
TBP	**Tagbilaran**	**2.38**	**269**	↑*i* P	**Pb**	**04 22 17.3**	**-0.7**
TBP				*i* S	**Sn**	**04 22 44.6**	**+1.3**
DAV	**Davao City (W)**	**2.76**	**195**	P	**Pg**	**04 22 27.9**	**-0.2**
	97nm,0.3s,baz=72,slow=14,SNR=4.2						
DAV				S	**Sn**	**04 22 53.5**	**+0.9**
	78nm,0.3s,baz=289,slow=21,SNR=4.5						
DAV				LR	LR	04 23 47.2	
	comp=Z,647nm,19.2s,baz=19,slow=47						
DMPH	**Davao City--Mi**	**2.77**	**196**	↑*e*P	**Pg**	**04 22 27.3**	**-0.8**
DMPH				*e*S	**Sb**	**04 22 58.9**	**+0.4**
PAGZ	**Pagadian**	**3.44**	**237**	*e*P	**Pn**	**04 22 31.2**	**+2.6**
GUIM	**Jordan**	**3.73**	**284**	*e*P	Pn	04 22 36.6	+4.0
RCP	**Roxas**	**3.91**	**298**	↑*e*P	Pb	04 22 39.7	-4.4
SGSI	**Sangihe**	**6.08**	**187**	P	**Pg**	**04 23 31.0**	**-0.6**
TTSI	**Tana Toraja**	**14.26**	**207**	P	P	04 25 07.4	+3.1
	23nm,0.9s						
SPSI	**Sidrap Palu**	**15.10**	**206**	P	**P**	**04 25 18.2**	**+4.5**
	12nm,1.0s						
KAPI	**Kappang**	**16.05**	**204**	P	**P**	**04 25 22.9**	**-1.4**
	0.5nm,0.3s,baz=59,slow=8.7,SNR=2.6						
KPJI	**Karang Pucung**	**24.23**	**226**	P	**P**	**04 26 52.9**	**+0.8**
	12nm,0.9s						
CBJI	**Citeko**	**25.16**	**231**	P	**P**	**04 27 02.0**	**+1.4**
	455nm,0.4s						
IPM	**Ipoh**	**25.59**	**260**	*e*P	**P**	**04 27 05.8**	**+1.2**
	22nm,0.9s						
KULM	**Kulim**	**25.79**	**262**	*e*P	**P**	**04 27 07.3**	**+1.0**
	15nm,1.0s						
MDSI	**Maura Dua**	**26.18**	**238**	P	**P**	**04 27 11.2**	**+1.4**
	6.0nm,0.9s,871nm						
FITZ	**Fitzroy Crossi**	**27.69**	**181**	P	**P**	**04 27 23.1**	**-0.3**
	1.1nm,0.3s,baz=15,slow=8.0,SNR=8.3						
CMAR	**Chiang Mai Arr**	**27.86**	**291**	P	**P**	**04 27 25.4**	**+0.4**
	1.1nm,0.7s,baz=106,slow=7.5,SNR=4.0						
CHTO	**Chiang Mai**	**27.94**	**292**	*e*P	**P**	**04 27 24.9**	**-0.8**
	1.5nm,0.8s						
PSI	**Prapat**	**28.04**	**258**	P	**P**	**04 27 25.9**	**-0.9**
	7.3nm,1.1s,baz=77,slow=10,SNR=5.4						
COEN	**Coen**	**28.92**	**144**	*e*P	**P**	**04 27 35.1**	**+0.8**
WRAB	**Tennant Creek**	**30.56**	**165**	*e*P	**P**	**04 27 48.0**	**-0.8**
	1.8nm,0.7s						
WRA	**Warramunga Arr**	**30.56**	**165**	P	**P**	**04 27 47.8**	**-1.1**
	0.5nm,0.3s,baz=341,slow=8.2,SNR=16						
MBWA	**Marble Bar**	**31.39**	**192**	*e*P	**P**	**04 27 55.3**	**-0.9**
	9.2nm,0.9s						
ASAR	**Alice Springs**	**34.05**	**167**	P	**P**	**04 28 18.5**	**-1.0**
	1.0nm,0.4s,baz=353,slow=7.2,SNR=13						
USRK	**Ussuriysk Ar.**	**34.67**	**7**	P	**P**	**04 28 26.6**	**+2.0**
	2.8nm,0.7s,baz=196,slow=11,SNR=7.3						
KLR	**Kul'dur**	**39.61**	**6**	P	**P**	**04 29 07.7**	**+1.2**
	1.5nm,0.5s,baz=188,slow=6.3,SNR=8.8						
KLR				LR	LR	04 45 19.1	
	comp=Z,182nm,21.9s,baz=336,slow=36						
H11S3	**WAKE ISLAND Hy**	**40.06**	**73**	T	T	05 12 05.0	
	baz=262,slow=75,SNR=226						
H11S1	**WAKE ISLAND Hy**	**40.07**	**73**	T	T	05 12 05.2	
	baz=262,slow=75,SNR=114						
H11S2	**WAKE ISLAND Hy**	**40.07**	**73**	T	T	05 12 09.0	
	baz=262,slow=75,SNR=109						
H11N1	**WAKE ISLAND Hy**	**40.41**	**71**	T	T	05 12 35.1	
	baz=264,slow=75,SNR=170						
H11N2	**WAKE ISLAND Hy**	**40.41**	**71**	T	T	05 12 37.3	
	baz=264,slow=75,SNR=116						
H11N3	**WAKE ISLAND Hy**	**40.43**	**71**	T	T	05 12 36.5	
	baz=264,slow=75,SNR=181						
STKA	**Stephens Creek**	**43.92**	**161**	P	**P**	**04 29 42.6**	**+0.7**
	2.3nm,0.6s,baz=330,slow=8.9,SNR=8.5						
PETK	**Petropavlovsk-**	**50.10**	**24**	P	**P**	**04 30 32.6**	**+2.6**
	2.5nm,0.5s,baz=190,slow=5.1,SNR=5.6						
MKAR	**Makanchi Array**	**52.44**	**323**	P	**P**	**04 30 47.0**	**-0.8**
	1.4nm,0.5s,baz=122,slow=7.7,SNR=17						
ZALV	**Zalesovo Beam**	**55.08**	**331**	P	**P**	**04 31 05.6**	**-1.2**
	0.8nm,0.3s,baz=110,slow=8.4,SNR=3.1						
SEY	**Seymchan**	**56.31**	**14**	P	**P**	**04 31 17.8**	**+2.2**
	1.2nm,0.5s,baz=213,slow=8.1,SNR=5.6						
KURK	**Kurchatov**	**56.49**	**326**	*e*P	**P**	**04 31 15.9**	**-1.2**
	3.2nm,0.6s						
KURBB	**Kurchatov Arra**	**56.50**	**326**	P	**P**	**04 31 16.1**	**-1.0**
	1.6nm,0.5s,baz=125,slow=6.9,SNR=24						
ABKAR	**Akbulak array**	**67.27**	**319**	*e*P	**P**	**04 32 28.3**	**-1.4**
	1.3nm,0.6s						
AKTO	**Aktyubinsk**	**68.72**	**320**	P	**P**	**04 32 37.2**	**-1.7**
	1.9nm,0.6s,baz=77,slow=6.8,SNR=6.5						
ARU	**Arti**	**69.66**	**327**	P	**P**	**04 32 42.9**	**-1.6**
	2.5nm,0.3s,baz=30,slow=0.6,SNR=5.8						
RAYN	**Ar Rayn**	**77.77**	**292**	*e*P	**P**	**04 33 31.1**	**-1.8**
	2.3nm,0.6s						
BPAW	**Bear Paw Mtn.**	**78.11**	**26**	*e*P	**P**	**04 33 33.6**	**-0.3**
	6.6nm,0.7s						
RAR	**Rarotonga**	**78.83**	**114**	LR	LR	05 00 42.1	
	comp=Z,306nm,21.3s,baz=265,slow=30						
MCK	**McKinley**	**79.01**	**27**	*e*P	**P**	**04 33 38.3**	**-0.6**
	4.2nm,0.9s						
ILAR	**Eielson Array**	**79.89**	**26**	P	**P**	**04 33 43.

*ISCJB **15** 04:28:30.4±0.5,24°42.N±0.09°×94°75E±0.07, h100km, mb3.6/8, Error ellipse: s-maj=14.6km s-min=4.9km az=32.8*

*IDC **15** 04:28:33.3±3.0,24°.52N×95°.00E, h109km±29km, mb3.5/8, mb1 3.6/9, mb1mx3.2/71, mbtmp3.8/9, Error ellipse: s-maj=42.6km s-min=13.6km az=61.0*

ISC 15 04:28:32.3±0.8,24°.5N±0.1×94°.8E±0.1, h100km, n17, σ0s85/23, mb3.9/8, Myanmar-India border region

Code	Station Name	Δ°	AZ°	Phase	Op	ID	Time	Res
							h m s	ISC
CMAR	**Chiang Mai Arr**	**7.13**	**146**	P		**Pn**	**04 30 15.3**	**+1.4**
	0.9nm,0.3s,baz=325,slow=13,SNR=42							
CMAR				S		**Sn**	**04 31 32.0**	**-1.4**
	baz=336,slow=18,SNR=2.2							
JIRN	**Jiri**	**8.33**	**294**	*e*P		**Pn**	**04 30 31.0**	**+0.3**
GUN	**Gumba**	**8.68**	**295**	*e*P		**Pn**	**04 30 35.6**	**+0.2**
	178nm,0.3s							
GUN				*e*S		**Sn**	**04 32 12.2**	**+0.5**
PKIN	**Phulchoki**	**8.97**	**292**	*e*P		**Pn**	**04 30 39.3**	**+0.1**
	99nm,0.4s							
PKIN				*e*S		**Sn**	**04 32 18.7**	**+0.1**
KKN	**Kakani**	**9.14**	**293**	*e*P		**Pn**	**04 30 41.5**	**+0.1**
	90nm,0.3s							
KKN				*e*S		**Sn**	**04 32 22.3**	**-0.3**
DMN	**Daman**	**9.23**	**292**	*e*P		**Pn**	**04 30 42.6**	**-0.1**
	44nm,0.3s							
GKN	**Gorkha**	**9.74**	**293**	*e*P		**Pn**	**04 30 49.2**	**-0.4**
	104nm,0.3s							
GKN				*e*S		**Sn**	**04 32 37.5**	**+0.2**
KOLN	**Koldanda**	**10.55**	**291**	*e*P		**Pn**	**04 31 00.0**	**-0.7**
	43nm,0.2s							
KOLN				*e*S		**Sn**	**04 32 55.7**	**-1.3**
PYUN	**Piuthan**	**11.16**	**292**	*e*P		**Pn**	**04 31 07.3**	**-1.6**
MKAR	**Makanchi Array**	**24.43**	**339**	P		**P**	**04 33 42.4**	**+0.9**
	2.4nm,0.5s,baz=148,slow=9.9,SNR=17							
SONM	**Songino Array**	**25.11**	**19**	P		**P**	**04 33 46.5**	**-1.2**
	0.9nm,0.8s,baz=198,slow=8.9,SNR=4.4							
KURBB	**Kurchatov Arra**	**28.99**	**338**	P		**P**	**04 34 22.6**	**+0.3**
	0.4nm,0.6s,baz=145,slow=9.5,SNR=4.7							
WRA	**Warramunga Arr**	**58.59**	**135**	P		**P**	**04 38 18.2**	**-0.7**
	0.6nm,0.4s,baz=323,slow=7.4,SNR=15							
FINES	**FINESS Array B**	**58.65**	**328**	P		**P**	**04 38 18.3**	**-0.5**
	1.8nm,0.9s,baz=81,slow=8.6,SNR=2.7							
ASAR	**Alice Springs**	**61.07**	**139**	P		**P**	**04 38 35.5**	**-0.4**
	0.8nm,0.5s,baz=322,slow=6.5,SNR=9.1							
HFS	**Hagfors**	**64.71**	**327**	P		**P**	**04 38 60.0**	**+0.5**
	1.2nm,0.6s,baz=131,slow=8.1,SNR=5.4							
TORD	**Torodi Ar. Bea**	**87.38**	**283**	P		**P**	**04 41 10.0**	**+1.1**
	0.1nm,0.5s,baz=60,slow=4.3,SNR=2.5							

*ISCJB **15** 04:31:41.6±0.7,32°.3N±0.1×85°.0E±0.2, h10km, mb3.5/9, MS3.7/1, Error ellipse: s-maj=22.7km s-min=12.1km az=149.6*

*IDC **15** 04:31:41.8±0.9,32°.31N×85°.02E, h0km, mb3.5/9, mb1 3.8/11, mb1mx3.5/62, mbtmp3.6/11, ML3.4/2, MS3.7/1, Ms1 3.7/1, ms1mx2.9/36, Error ellipse: s-maj=29.0km s-min=18.4km az=53.0*

ISC 15 04:31:43.3±0.9,32°.2N±0.1×85°.0E±0.2, h10km, n13, σ1s10/12, mb3.7/9, Xizang

Code	Station Name	Δ°	AZ°	Phase	Op	ID	Time	Res
							h m s	ISC
MKAR	**Makanchi Array**	**14.69**	**353**	Pn		**Pn**	**04 35 13.2**	**+2.0**
	0.2nm,0.3s,baz=192,slow=13,SNR=3.0							
CMAR	**Chiang Mai Arr**	**18.60**	**134**	P		**P**	**04 36 01.6**	**+0.7**
	0.1nm,0.3s,baz=325,slow=12,SNR=12							
KURBB	**Kurchatov Arra**	**18.99**	**347**	P		**P**	**04 36 04.3**	**-0.6**
	0.1nm,0.3s,baz=165,slow=11,SNR=12							
ZALV	**Zalesovo Beam**	**21.71**	**360**	P		**P**	**04 36 33.4**	**-1.0**
	1.3nm,0.4s,baz=173,slow=13,SNR=7.4							
SONM	**Songino Array**	**22.51**	**40**	P		**P**	**04 36 42.1**	**-1.1**
	0.5nm,0.6s,baz=233,slow=11,SNR=3.8							
AKASG	**Malin Array Be**	**44.53**	**311**	P		**P**	**04 39 53.8**	**-1.3**
	0.4nm,0.4s,baz=78,slow=7.3,SNR=3.3							
JCJ	**Chichijima**	**49.47**	**80**	LR		LR	05 00 41.7	
	comp=Z,92nm,21.9s,baz=146,slow=35							
GERES	**GERESS Array B**	**54.69**	**310**	P		**P**	**04 41 12.6**	**0.0**
	0.5nm,0.7s,baz=85,slow=4.6,SNR=4.7							
WRA	**Warramunga Arr**	**70.16**	**131**	P		**P**	**04 42 56.2**	**-0.2**
	0.3nm,0.5s,baz=326,slow=6.5,SNR=6.1							
ASAR	**Alice Springs**	**72.61**	**134**	P		**P**	**04 43 11.4**	**+0.3**
	0.4nm,0.5s,baz=314,slow=5.8,SNR=6.3							
ILAR	**Eielson Array**	**75.21**	**20**	P		**P**	**04 43 26.5**	**+0.6**
	0.3nm,0.8s,baz=322,slow=5.7,SNR=4.4							
TORD	**Torodi Ar. Bea**	**77.50**	**278**	P		**P**	**04 43 40.4**	**+0.7**
	0.5nm,0.7s,baz=53,slow=4.2,SNR=5.0							
YKA	**Yellowknife Ar**	**84.30**	**9**	P		**P**	**04 44 14.0**	**-1.1**
	0.1nm,0.7s,baz=336,slow=5.0,SNR=2.9							

*ISCJB **15** 04:34:40.9±0.5,26°.51S±0.03×70°.6W±0.1, h63km±7km, mb3.5/3, Error ellipse: s-maj=15.5km s-min=5.1km az=179.1*

*GUC **15** 04:34:40.6±1.0,26°.53S×70°.52W, h67km±16km, ML3.7*

*IDC **15** 04:34:42.7±1.2,26°.46S×70°.33W, h59km±6km, mb3.3/3, mb1 3.7/5, mb1mx3.5/31, mbtmp3.7/5, Error ellipse: s-maj=39.8km s-min=31.9km az=25.0*

*SJA **15** 04:35:03.6±0.6,28°.02S×69°.04W, h170km±5km, ML2.8, MW3.1*

ISC 15 04:34:42.0±0.7,26°.51S±0.04×70°.69W±0.10, h58km±7km, n21, σ0s99/29, mb3.5/3, 2D, Near coast of northern Chile

Code	Station Name	Δ°	AZ°	Phase	Op	ID	Time	Res
							h m s	ISC
CDCH	**Caldera**	**0.57**	**192**	*e*P		**Pn**	**04 34 54.4**	**-0.1**
CDCH				*i* S		**Sn**	**04 35 03.8**	**+0.3**
CPCH	**Copiapo**	**0.90**	**160⇓**	*i*P		**Pn**	**04 34 58.6**	**0.0**
CPCH				*i* S		**Sn**	**04 35 10.3**	**-0.5**
PB14	**IPOC Station P**	**1.89**	**8⇓**	*e*P		**Pn**	**04 35 12.4**	**+0.1**
PB14				*e*S		**Sn**	**04 35 35.3**	**+0.1**
PB14				IAML			04 35 52.6	
	comp=E,907nm,0.8s							
VACH	**Vallenar**	**2.06**	**182**	*e*P		**Pn**	**04 35 13.6**	**-0.6**
VACH				*e*S		**Sn**	**04 35 37.8**	**-1.0**
LCO	**Las Campanas**	**2.49**	**180**	*e*P		**Pn**	**04 35 19.6**	**-0.7**
LCO				*e*S		**Sn**	**04 35 49.5**	**-0.2**
LCO				IAML			04 36 06.5	
	comp=N,442nm,0.5s							
ANCH	**Antofagasta**	**2.83**	**5**	*e*P		**Pn**	**04 35 23.8**	**-0.9**
ANCH				*e*S		**Sn**	**04 35 56.6**	**-1.0**
VCA	**Vinchina**	**3.13**	**136**	*e*P		**Pn**	**04 35 31.0**	**+2.1**
VCA				*e*S		Sn	04 35 51.5	-14
AGUA	**GUANDACOL**	**3.55**	**147**	*e*P		**Pn**	**04 35 36.1**	**+1.5**
ACLC	**CERRO LA CRUZ**	**4.40**	**132**	*e*P		**Pn**	**04 35 44.6**	**-1.8**
ACLC				IAML			04 36 14.8	
	comp=Z,36nm,0.4s							
CYA	**Choya**	**4.75**	**115**	*e*P		**Pn**	**04 35 51.1**	**0.0**
RTLL	**Cerro Villicun**	**5.18**	**158**	*e*P		**Pn**	**04 35 56.6**	**-0.4**
RTCV	**Cerro Valdivia**	**5.65**	**161**	*e*P		**Pn**	**04 36 03.3**	**-0.2**
LPAZ	**La Paz**	**10.45**	**14**	P		**Pn**	**04 37 08.7**	**-0.9**
	comp=Z,0.7nm,0.3s,baz=201,slow=4.4,SNR=23							
SIV	**San Ignacio**	**13.77**	**42**	P		Pn	04 37 49.9	-4.6
	comp=Z,0.5nm,0.3s,baz=290,slow=5.3,SNR=2.7							
VNA2	**Neumayer--Watz**	**56.52**	**159**	P		P	04 44 10.8	-7.1
	baz=306,slow=37							
TXAR	**Lajitas Array**	**63.90**	**328**	P		**P**	**04 45 10.8**	**+1.8**
	comp=Z,0.2nm,0.6s,baz=155,slow=9.2,SNR=4.0							
TXAR				pP		**pP**	**04 45 26.6**	**+2.0**
	comp=Z,0.1nm,0.6s,baz=95,slow=26,SNR=1.8							
TORD	**Torodi Ar. Bea**	**80.57**	**70**	P		**P**	**04 46 48.2**	**-0.5**
	comp=Z,0.7nm,0.5s,baz=265,slow=5.2,SNR=19							
TORD				pP		**pP**	**04 47 03.7**	**-1.2**
	comp=Z,0.6nm,0.6s,baz=265,slow=5.2,SNR=4.0							
YKA	**Yellowknife Ar**	**95.37**	**341**	P		**P**	**04 47 59.4**	**+0.1**
	comp=Z,0.1nm,0.6s,baz=129,slow=4.9,SNR=2.1							
WRA	**Warramunga Arr**	**127.83**	**210**	PKP		**PKPdf**	**04 53 41.8**	**-0.1**
	comp=Z,0.2nm,0.4s,baz=158,slow=1.8,SNR=2.2							
ZALV	**Zalesovo Beam**	**147.15**	**27**	PKPbc		**PKPbc**	**04 54 17.7**	**-0.5**
	comp=Z,1.1nm,0.5s,baz=319,slow=3.2,SNR=4.8							
ZALV				pPKPbc		**pPKPbc**	**04 54 35.2**	**+0.1**
	comp=Z,1.5nm,0.6s,baz=312,slow=5.3,SNR=4.0							
MKAR	**Makanchi Array**	**150.58**	**39**	PKPbc		**PKPbc**	**04 54 26.6**	**-0.6**
	comp=Z,1.0nm,0.7s,baz=318,slow=1.6,SNR=5.0							
MKAR				pPKPbc		**pPKPbc**	**04 54 43.7**	**-0.5**
	comp=Z,0.5nm,0.4s,baz=320,slow=3.2,SNR=3.2							

*IDC **15** 04:44:37.2±0.7,37°.80N×143°.24E, h0km, mb4.0/16, mb1 4.1/20, mb1mx4.1/39, mbtmp4.0/20, ML3.9/3, MS3.2/2, Ms1 3.3/2, ms1mx2.8/48, Error ellipse: s-maj=18.9km s-min=14.7km az=129.0*

*ISCJB **15** 04:44:38.4±1.4,37°.85N±0.04×143°.18E±0.04, h19km±9km, mb4.2/39, MS3.1/1, Error ellipse: s-maj=7.1km s-min=5.3km az=162.1*

*JMA **15** 04:44:38.4±0.2, 37°.85N×143°.25E, h35km, M4.5*

*NEIC **15** 04:44:39.2±3.1, 37°.89N×143°.15E, h11km±19km, mb4.3/13, Error ellipse: s-maj=10.1km s-min=6.2km az=125.0*

*MOS **15** 04:44:40.0±1.4, 37°.95N×143°.16E, h29km, mb4.4/16, Error ellipse: s-maj=10.6km s-min=6.2km az=95.4*

ISC 15 04:44:38.2±2.4,37°.91N±0.06×143°.16E±0.06, h6km±14km, n86, σ1s07/91, mb4.2/39, 7C-3D, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	Op	ID	Time	Res
							h m s	ISC
JIO	**Ouri**	**1.53**	**292**	P		**Pn**	**04 45 05.5**	**-0.5**
JIO				S		**Sn**	**04 45 25.0**	**-1.2**
OFUJ	**Ofunato**	**1.66**	**316**	P		**Pn**	**04 45 07.2**	**-0.6**
OFUJ				S		**Sn**	**04 45 28.7**	**-0.7**
JMK	**Ichinoseki**	**1.85**	**305**	P		**Pn**	**04 45 10.1**	**-0.3**
JMM	**Marumori**	**1.87**	**270**	P		**Pn**	**04 45 10.1**	**-0.7**
JMM				S		**Sn**	**04 45 32.6**	**-2.1**
JFK	**Kawauchi**	**1.89**	**254**	P		**Pn**	**04 45 09.7**	**-1.4**
JFK				S		**Sn**	**04 45 32.2**	**-3.0**
JOU	**Okura**	**2.02**	**284**	P		**Pn**	**04 45 13.0**	**+0.2**
JOU				*e*S		**Sn**	**04 45 40.0**	**+1.6**
JOM	**Ohasama**	**2.14**	**318**	P		**Pn**	**04 45 14.4**	**-0.1**
JOM				*e*S		**Sn**	**04 45 41.0**	**-0.4**
JTH	**Tanohata**	**2.27**	**334**	P		**Pb**	**04 45 18.8**	**-0.8**
JFT	**Otama**	**2.27**	**261**	P		**Pn**	**04 45 16.7**	**+0.4**
JYK	**Kaneyama**	**2.42**	**296**	P		**Pn**	**04 45 18.6**	**+0.3**
JYK				S		**Sn**	**04 45 48.9**	**+0.6**
JRG	**Rokugo**	**2.47**	**308**	P		**Pn**	**04 45 19.3**	**+0.2**
JANG	**Nango**	**2.78**	**333**	P		**Pn**	**04 45 24.9**	**+1.7**
ERM	**Erimo**	**4.11**	**0**	*d* iP		**Pn**	**04 45 41.1**	**-0.4**
ERM	**Erimo**	**4.11**	**0**	*e*Pn		**Pn**	**04 45 40.5**	**-0.9**
MJAR	**Matsushiro Arr**	**4.18**	**252**	Pn		**Pn**	**04 45 43.8**	**+1.3**
	3.4nm,0.3s,baz=79,slow=14,SNR=15							
MJAR				LR		LR	04 47 34.4	
	comp=Z,325nm,19.9s,baz=40,slow=42							
MAJO	**Matsushiro**	**4.18**	**253**	*e*P		**Pn**	**04 45 42.9**	**+0.4**
MAJO	**Matsushiro**	**4.18**	**253**	*e*Pn		**Pn**	**04 45 42.9**	**+0.4**
MAT	**Matsushiro**	**4.18**	**253**	P		**Pn**	**04 45 43.9**	**+1.4**
MAT				*e*S		**Sn**	**04 46 33.2**	**+1.5**
ASAJ	**Asahikawa**	**6.22**	**356**	Pn		**Pn**	**04 46 12.6**	**+2.1**
	3.0nm,0.3s,baz=197,slow=16,SNR=5.1							
SHO	**Shikotan**	**6.58**	**24**	*e*P		**Pn**	**04 46 12.9**	**-2.5**
SHO				*e*S		Sn	04 47 22.3	-8.4
KUR	**Kuril'sk**	**8.13**	**24**	P		**Pn**	**04 46 34.6**	**-2.1**
KUR				S		Sn	04 48 00.7	-8.1
YSS	**Yuzh-Sakhalins**	**9.05**	**358**	*e*P		**Pn**	**04 46 51.5**	**+2.2**
YSS				pmax		pmax		
	comp=Z,39nm,2.5s							
USRK	**Ussuriysk Ar.**	**10.52**	**310**	Pn		**Pn**	**04 47 11.8**	**+2.4**
	comp=Z,0.2nm,0.3s,baz=117,slow=12,SNR=4.4							
JNU	**Nakatsue**	**11.08**	**248**	Pn		**Pn**	**04 47 17.1**	**-0.2**
	comp=Z,0.7nm,0.3s,baz=45,slow=22,SNR=7.6							
KLR	**Kul'dur**	**14.00**	**328**	Pn		**Pn**	**04 47 55.2**	**-1.8**
	comp=Z,0.3nm,0.3s,baz=119,slow=14,SNR=7.2							
YAK	**Yakutsk**	**25.55**	**345**	*i* P		**P**	**04 50 07.9**	**+0.4**
YAK				pmax		pmax		
	comp=Z,19nm,0.8s							
SEY	**Seymchan**	**25.68**	**10**	P		**P**	**04 50 10.6**	**+1.9**
	comp=Z,6.0nm,0.6s,baz=171,slow=5.4,SNR=18							
H11N2	**WAKE ISLAND Hy**	**27.45**	**125**	T		T	05 19 10.6	
	baz=316,slow=75,SNR=175							
H11N1	**WAKE ISLAND Hy**	**27.46**	**125**	T		T	05 19 18.4	
	baz=316,slow=75,SNR=95							
H11N3	**WAKE ISLAND Hy**	**27.47**	**125**	T		T	05 19 16.9	
	baz=316,slow=75,SNR=105							
BOD	**Bodaibo**	**27.56**	**326**	*e*P		**P**	**04 50 24.8**	**-0.9**
BOD				pmax		pmax		
	comp=Z,3.0nm,1.3s							
ULN	**Ulaanbaatar**	**28.04**	**302**	*e*P		**P**	**04 50 30.7**	**+0.4**
ULN				pmax		pmax		
	comp=Z,4.0nm,0.9s							
ULN	**Ulaanbaatar**	**28.04**	**302**	*e*P		**P**	**04 50 30.7**	**+0.4**
	comp=Z,3.6nm,0.9s							
H11S1	**WAKE ISLAND Hy**	**28.22**	**127**	T		T	05 20 04.6	
	baz=318,slow=76,SNR=70							
H11S3	**WAKE ISLAND Hy**	**28.22**	**127**	T		T	05 20 09.6	
	baz=318,slow=76,SNR=71							
H11S2	**WAKE ISLAND Hy**	**28.23**	**127**	T		T	05 20 05.8	
	baz=318,slow=76,SNR=82							
SONM	**Songino Array**	**28.47**	**302**	P		**P**	**04 50 35.7**	**+1.6**
	comp=Z,1.7nm,0.9s,baz=100,slow=8.0,SNR=9.8							
TLY	**Talaya**	**30.83**	**309**	*e*P		**P**	**04 50 57.0**	**+2.2**
TLY				pmax		pmax		
	comp=Z,3.0nm,0.9s							
ZAK	**Zakamensk**	**30.84**	**307**	*e*P		**P**	**04 50 54.6**	**-0.4**
ZAK				pmax		pmax		
	comp=Z,2.0nm,1.2s							
BILL	**Bilibino**	**32.81**	**16⇑**	*i*P		**P**	**04 51 12.5**	**+0.5**
BILL				pmax		pmax		
	comp=Z,3.0nm,1.1s							
BILL	**Bilibino**	**32.81**	**16**	*e*P		**P**	**04 51 12.2**	**+0.3**
	comp=Z,2.1nm,0.7s							
TIXI	**Tiksi**	**34.60**	**352⇑**	*i*P		**P**	**04 51 27.8**	**+0.3**
TIXI				pmax		pmax		
	comp=Z,5.0nm,2.3s							
ZALV	**Zalesovo Beam**	**42.36**	**312**	P		**P**	**04 52 33.5**	**+0.6**
	comp=Z,2.0nm,0.8s,baz=90,slow=6.5,SNR=9.7							
ZALV				PcP		**PcP**	**04 54 26.4**	**+0.1**
	comp=Z,1.4nm,0.7s,baz=96,slow=2.9,SNR=3.9							
CMAR	**Chiang Mai Arr**	**43.06**	**256**	P		**P**	**04 52 40.0**	**+1.0**
	comp=Z,0.5nm,0.6s,baz=45,slow=7.1,SNR=5.3							
CMAR				LR		LR	05 12 14.8	
	comp=Z,26nm,18.6s,baz=345,slow=38							
MKAR	**Makanchi Array**	**44.84**	**302**	P		**P**	**04 52 53.3**	**+0.2**
	comp=Z,2.2nm,0.7s,baz=86,slow=9.8,SNR=20							
KURK	**Kurchatov**	**46.49**	**308**	*e*P		**P**	**04 53 05.5**	**-0.5**
KURK				pmax		pmax		
	comp=Z,13nm,0.7s							
KURK	**Kurchatov**	**46.49**	**308**	*e*P		**P**	**04 53 05.5**	**-0.5**
	comp=Z,13nm,0.7s							
COLA	**College**	**47.60**	**33⇑**	*i*P		**P**	**04 53 15.9**	**+1.4**
COLA				pmax		pmax		
	comp=Z,15nm,2.2s							
ILAR	**Eielson Array**	**48.02**	**33**	P		**P**	**04 53 18.0**	**+0.3**
	comp=Z,1.5nm,0.7s,baz=266,slow=6.9,SNR=20							
TKM2	**Tokmak 2**	**50.44**	**298**	*e*P		**P**	**04 53 36.6**	**-0.2**
TKM2				pmax		pmax		
	comp=Z,2.0nm,0.6s							
TKM2	**Tokmak 2**	**50.44**	**298**	*e*P		**P**	**04 53 36.6**	**-0.2**
	comp=Z,1.7nm,0.6s							
BRVK	**Borovoye**	**51.07**	**312**	*d* iP		**P**	**04 53 41.6**	**+0.4**
BRVK				pmax		pmax		
	comp=Z,2.0nm,0.8s							
BRVK	**Borovoye**	**51.07**	**312**	*e*P		**P**	**04 53 41.4**	**+0.2**
	comp=Z,1.5nm,0.5s							
AAK	**Ala-Archa**	**51.30**	**298⇑**	*i*P		**P**	**04 53 43.9**	**+0.6**
AAK				pmax		pmax		
	comp=Z,6.0nm,1.5s							
AAK	**Ala-Archa**	**51.30**	**298**	*e*P		**P**	**04 53 43.2**	**-0.1**
	comp=Z,1.0nm,0.6s							
EKS2	**Erkin-Say**	**51.79**	**299**	*e*P		**P**	**04 53 45.6**	**-1.3**
EKS2				pmax		pmax		
	comp=Z,1.0nm,0.6s							
EKS2	**Erkin-Say**	**51.79**	**299**	*e*P		**P**	**04 53 45.6**	**-1.3**
	comp=Z,1.3nm,0.6s							
INK	**Inuvik**	**52.98**	**28**	P		**P**	**04 53 55.6**	**+0.5**
	comp=Z,0.7nm,0.5s,baz=299,slow=6.4,SNR=11							
ARU	**Arti**	**56.63**	**319**	*d* iP		**P**	**04 54 22.0**	**+0.2**
ARU							04 56 25.1	
ARU				S		**S**	**05 02 12.8**	**-1.3**
ARU				SS		**SS**	**05 05 58.0**	**-3.0**
ARU				pmax		pmax		
	comp=Z,16nm,2.5s							
ARU	**Arti**	**56.63**	**319**	*e*P		**P**	**04 54 21.6**	**-0.2**
	comp=Z,2.7nm,0.4s							
WRAB	**Tennant Creek**	**58.12**	**190**	*e*P		**P**	**04 54 32.8**	**+0.1**
WRAB				pmax		pmax		
	comp=Z,4.0nm,0.9s							
WRAB	**Tennant Creek**	**58.12**	**190**	*e*P		**P**	**04 54 32.8**	**+0.1**
	comp=Z,3.6nm,0.9s							
WRA	**Warramunga Arr**	**58.13**	**190**	P		**P**	**04 54 31.6**	**-1.1**
	comp=Z,2.2nm,0.8s,baz=8.7,slow=7.0,SNR=14							
ABKAR	**Akbulak array**	**58.44**	**310**	*e*P		**P**	**04 54 34.6**	**0.0**
	comp=Z,0.6nm,0.4s							
ASAR	**Alice Springs**	**61.86**	**190**	P		**P**	**04 54 58.0**	**-0.2**
	comp=Z,0.8nm,0.9s,baz=30,slow=4.5,SNR=7.1							
YKA	**Yellowknife Ar**	**62.35**	**31**	P		**P**	**04 55 01.4**	**+0.2**
	comp=Z,0.7nm,0.7s,baz=302,slow=6.6,SNR=17							
OBN	**Obninsk**	**68.22**	**324**	*c* iP		**P**	**04 55 39.4**	**+0.1**
OBN				pmax		pmax		
	comp=Z,8.0nm,0.5s							
FINES	**FINESS Array B**	**68.69**	**333**	P		**P**	**04 55 42.6**	**+0.5**
	comp=Z,2.5nm,0.6s,baz=54,slow=9.7,SNR=11							
SUMG	**Summit**	**69.81**	**1**	*e*P		**P**	**04 55 50.0**	**+0.5**
SUMG				pmax		pmax		
	comp=Z,4.0nm,0.7s							
SUMG	**Summit**	**69.81**	**1**	*e*P		**P**	**04 55 50.0**	**+0.5**
	comp=Z,4.5nm,0.7s							
BMO	**Blue Mountains**	**70.32**	**48**	*e*P		**P**	**04 55 52.8**	**+0.1**
	comp=Z,1.0nm,0.6s							
KIV	**Kislovodsk**	**71.38**	**311**	*c* iP		**P**	**04 56 00.7**	**+1.6**
KIV				pmax		pmax		
	comp=Z,8.0nm,0.6s							
KBZ	**Khabaz**	**71.38**	**311**	P		**P**	**04 55 59.0**	**0.0**
	comp=Z,2.2nm,0.8s,baz=123,slow=4.2,SNR=3.9							
KBZ	**Khabaz**	**71.38**	**311**	P		**P**	**04 55 59.0**	**0.0**
FFC	**Flin Flon**	**72.22**	**34**	*e*P		**P**	**04 56 04.2**	**+0.3**
FFC				pmax		pmax		
	comp=Z,6.0nm,1.4s							
FFC	**Flin Flon**	**72.22**	**34**	*e*P		**P**	**04 56 04.2**	**+0.3**
	comp=Z,6.5nm,1.4s							
NB2	**NORSAR Subarra**	**73.91**	**338**	P		**P**	**04 56 13.7**	**-0.1**
	comp=Z,1.0nm,0.8s,baz=38,slow=6.2							
NOA	**NORSAR Array B**	**73.91**	**338**	P		**P**	**04 56 13.8**	**-0.1**
	comp=Z,1.5nm,0.8s,baz=38,slow=5.8,SNR=4.5							
AKASG	**Malin Array Be**	**74.45**	**323**	P		**P**	**04 56 16.8**	**-0.3**
	comp=Z,0.9nm,0.4s,baz=44,slow=6.0,SNR=7.6							
KIEV	**Kiev**	**74.46**	**323**	*c* iP		**P**	**04 56 17.0**	**-0.1**
KIEV				pmax		pmax		
	comp=Z,4.0nm,0.6s							
PDAR	**Pinedale Array**	**76.06**	**46**	P		**P**	**04 56 26.9**	**+0.1**
	comp=Z,0.5nm,0.7s,baz=79,slow=3.2,SNR=5.1							
CLL	**Collm**	**81.02**	**331**	*i* P		**P**	**04 56 54.1**	**+0.4**
	comp=Z,4.0nm,1.0s							
CLL	**Collm**	**81.02**	**331**	*i* P		**P**	**04 56 54.1**	**+0.4**
CLL				pmax		pmax		
	comp=Z,4.0nm,1.0s							
ANMO	**Albuquerque**	**82.96**	**51**	*e*P		**P**	**04 57 05.8**	**+1.3**
ANMO				pmax		pmax		
	comp=Z,3.0nm,1.5s							
TXAR	**Lajitas Array**	**88.49**	**53**	P		**P**	**04 57 32.1**	**+0.2**
	comp=Z,0.3nm,0.8s,baz=302,slow=2.4,SNR=3.8							
LCO	**Las Campanas**	**150.52**	**83**	*e*PKPbc		**PKPbc**	**05 04 30.9**	**-0.5**

KRSC 15 04:44:51.2±1.0,51°.01N×158°.13E, h16km±10km, ML3.8, Near east coast of Kamchatka Peninsula

Code	Station Name	Δ°	AZ°	Phase	Op	ID	Time	Res
							h m s	ISC
SKR	**Severo-Kuril's**	**1.32**	**256**	*e*P		Pn	04 45 15.2	+0.2
SKR				*e*S		Sn	04 45 32.0	-0.2
ASAK	**Asacha**	**1.38**	**354**	*e*P		Pb	04 45 16.6	-0.2
ASAK				*e*S		Sb	04 45 34.4	+0.2
RUS	**Russkaya**	**1.45**	**9**	*e*P		Pn	04 45 17.0	+0.3
RUS				*e*S		Sn	04 45 34.7	-0.6
MTVR	**Mutnovka**	**1.48**	**1**	*e*P		Pb	04 45 17.9	-0.5
MTVR				*e*S		Sb	04 45 36.8	-0.1
GRL	**Gorelyy**	**1.54**	**359**	*e*S		Sb	04 45 39.3	+0.3
KRMR	**Karymshinskiy**	**1.82**	**360**	*e*P		Pb	04 45 23.4	-0.8
KRMR				*e*S		Sn	04 45 45.6	+1.0
PET	**Petropavlovsk**	**2.04**	**9**	*e*P		Pn	04 45 25.8	+0.9
DALK	**Dalny**	**2.06**	**10**	*e*P		Pn	04 45 26.0	+0.8
UGLR	**Uglovaya**	**2.24**	**11**	*e*P		Pb	04 45 30.1	-1.3
AVH	**Avacha**	**2.29**	**9**	*e*P		Pb	04 45 30.9	-1.3
AVH				*e*S		Sb	04 45 59.2	-1.1
SMAR	**Somma**	**2.29**	**10**	*e*P		Pn	04 45 30.3	+1.7
GNL	**Ganaly**	**2.69**	**358**	*e*P		Pn	04 45 35.9	+1.9

**IDC 15 04:45:55.3±3.4,32

MOS ***15*** *05:02:12.1±1.1,55.˙60S×28.˚11W,h33km,mb5.5/25,Error ellipse: s-maj=20.9km s-min=11.4km az=103.2*

BJI ***15*** *05:02:14.7,55.˙60S×28.˚10W,h47km,mB5.2/12,Ms5.3/11, Ms7 5.0/10*

IDC ***15*** *05:02:15.4±1.2,55.˙63S×28.˚15W,h54km±9km,mb4.9/20, mb1 4.9/20,mb1mx4.8/26,mbtmp5.2/20,MS4.5/18, Ms1 4.5/18,ms1mx4.4/25,Error ellipse: s-maj=15.1km s-min=10.8km az=35.0*

NEIC ***15*** *05:02:15.8±0.9,55.˙62S×28.˚10W,h55km±7km,mb5.3/45, Error ellipse: s-maj=6.3km s-min=4.5km az=218.0*

GCMT ***15*** *05:02:15.8±0.2,55.˙72S×27.˚96W,h45km±2km,MW5.1/91, Moment Tensor Solution. s49,c60; s91,c134; Duration: 0 Moment tensor: Scale 10^{16}Nm; M_{rr}2.28±.24; $M_{\theta\theta}$1.14±.20; $M_{\phi\phi}$-3.42±.17; $M_{r\theta}$-3.52±.19; $M_{\theta\phi}$-0.03±.14; $M_{\phi r}$-3.38±.18; Best double couple: $M_0$5.71300×10^{16} NP1:ϕ_s217.00000°,δ78.00000°,λ114.00000°. NP2: ϕ_s332.00000°,δ26.00000°,λ28.00000°. Principal axes: T 6.0170, Plg51.0000°, Azm154.0000°; N -0.6080, Plg23.0000°, Azm32.0000°; P -5.4090, Plg29.0000°, Azm288.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

ISC 15 05:02:11.7±0.2,55.˙59S±0.˙06×28.˚06W±0.˚06,h26km,n281, σ1ᵍ**42**/294,**mb5.4**/51,**MS4.5**/22,**3C-4D,South Sandwich Islands region**

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
HOPE	**Hope Point**	**5.03**	**282**	*e*Pn		**Pn**	**05 03 26.0**	**+0.7**
VNA1	**Neumayer--Stat**	**17.41**	**158**	P		**P**	**05 06 14.2**	**+0.8**
VNA3	**Neumayer Olymp**	**17.59**	**160**	P		**P**	**05 06 16.3**	**+0.8**
VNA2	**Neumayer--Watz**	**17.81**	**158**	P		**P**	**05 06 18.0**	**+0.1**
	baz=317,slow=12							
EFI	**East Falkland**	**18.14**	**270**	⇑*i*P		**P**	**05 06 22.6**	**+1.0**
EFI				pmax	pmax			
	comp=Z,228nm,1.0s							
EFI	**East Falkland**	**18.14**	**270**	*e*Pn		**P**	**05 06 22.0**	**+0.3**
	comp=Z,194nm,0.9s							
SNAA	**Sanae**	**19.37**	**156**	P		**Pn**	**05 06 36.1**	**-0.2**
SNAA	**Sanae**	**19.37**	**156**	*e*P		**Pn**	**05 06 36.3**	**0.0**
SNAA	**Sanae**	**19.37**	**156**	*e*P		**Pn**	**05 06 36.3**	**0.0**
	comp=Z,14µm,0.7s							
PMSA	**Palmer Station**	**19.84**	**228**	P		**Pn**	**05 06 42.8**	**+1.0**
	comp=Z,2.2nm,0.3s,baz=45,slow=9.1,SNR=9.1							
PMSA	**Palmer Station**	**19.84**	**228**	*e*P		**Pn**	**05 06 43.9**	**+2.1**
	comp=Z,87nm,0.9s							
USHA	**Ushuaia**	**22.82**	**255**	P		**P**	**05 07 13.2**	**+0.9**
	comp=Z,235nm,0.9s,baz=93,slow=9.4,SNR=13							
NVL	**N'lazarevskaya**	**22.92**	**147**	*e*P		**P**	**05 07 14.3**	**+1.1**
CHRN	**Cochrane**	**28.55**	**268**	*e*P		**P**	**05 08 06.0**	**+1.0**
	comp=Z,19nm,0.8s							
TRQA	**Tornquist**	**28.69**	**293**	*e*P		**P**	**05 08 07.2**	**+0.9**
	comp=Z,48nm,0.9s							
PLCA	**Paso Flores**	**31.43**	**280**	P		**P**	**05 08 29.8**	**-0.9**
	comp=Z,14nm,1.0s,baz=163,slow=7.6,SNR=16							
PLCA				ScP		**ScP**	**05 15 00.2**	**-4.2**
	comp=Z,2.9nm,0.7s,baz=108,slow=4.0,SNR=6.0							
PLCA				LR		LR	05 22 07.1	
	comp=Z,522nm,18.8s,baz=140,slow=38							
PLCA	**Paso Flores**	**31.43**	**280**	*e*P		**P**	**05 08 30.4**	**-0.3**
PLCA				pmax	pmax			
	comp=Z,35nm,1.2s							
PLCA	**Paso Flores**	**31.43**	**280**	*e*P		**P**	**05 08 30.4**	**-0.3**
	comp=Z,35nm,1.2s							
PLCA				ScP		**ScP**	**05 15 00.2**	**-4.2**
SYO	**Syowa Base**	**32.26**	**141**	⇓*i*P		**P**	**05 08 36.2**	**-1.3**
SYO	**Syowa Base**	**32.26**	**141**	⇓*i*pP		pP	05 08 48.0	+2.8
QSPA	**South Pole Qui**	**34.66**	**180**	*e*P		**P**	**05 09 00.2**	**+1.5**
SPB	**Sao Paulo**	**35.02**	**328**	*e*P		**P**	**05 09 03.2**	**+1.3**
	comp=Z,46nm,1.0s							
CPUP	**Villa Florida**	**36.13**	**312**	P		**P**	**05 09 11.6**	**+0.1**
	comp=Z,90nm,1.0s,baz=150,slow=7.5,SNR=86							
CPUP				ScP		**ScP**	**05 15 17.2**	**-3.9**
	comp=Z,12nm,1.0s,baz=143,slow=4.7,SNR=8.4							
CPUP				LR		LR	05 23 04.0	
	comp=Z,968nm,20.9s,baz=148,slow=35							
CPUP	**Villa Florida**	**36.13**	**312**	*e*P		**P**	**05 09 12.0**	**+0.5**
CPUP				ScP		**ScP**	**05 15 17.2**	**-3.9**
ROC1	**El Roble**	**37.32**	**289**	*e*P		**P**	**05 09 22.7**	**+0.8**
	comp=Z,52nm,0.7s							
LCO	**Las Campanas**	**40.27**	**293**	*e*P		**P**	**05 09 47.2**	**+0.6**
	comp=Z,102nm,1.0s							
MAW	**Mawson**	**40.81**	**144**	P		**P**	**05 09 51.1**	**+0.8**
	comp=Z,29nm,0.7s,baz=235,slow=7.8,SNR=55							
MAW				ScP		**ScP**	**05 15 34.9**	**-3.4**
	comp=Z,11nm,0.9s,baz=286,slow=8.3,SNR=9.9							
MAW				LR		LR	05 24 21.5	
	comp=Z,737nm,21.6s,baz=247,slow=32							
MAW	**Mawson**	**40.81**	**144**	*e*P		**P**	**05 09 51.1**	**+0.8**
	comp=Z,8.5nm,0.8s							
MAW				ScP		**ScP**	**05 15 34.9**	**-3.4**
SUR	**Sutherland**	**41.00**	**76**	P		**P**	**05 09 54.1**	**+1.5**
	comp=Z,2.0nm,0.9s,baz=220,slow=9.0,SNR=8.2							
SUR	**Sutherland**	**41.00**	**76**	*e*P		**P**	**05 09 54.0**	**+1.5**
	comp=Z,26nm,1.0s							
PB10	**IPOC Station P**	**44.69**	**298**	*e*P		**P**	**05 10 22.8**	**+0.5**
	comp=Z,103nm,1.6s							
PB04	**IPOC Station P**	**45.48**	**300**	*e*P		**P**	**05 10 29.8**	**+1.0**
	comp=Z,149nm,1.6s							
PB01	**IPOC Station P**	**46.25**	**301**	*e*P		**P**	**05 10 36.0**	**+1.2**
	comp=Z,112nm,0.9s							
BOSA	**Boshof**	**46.34**	**77**	P		**P**	**05 10 35.8**	**+0.3**
	comp=Z,25nm,0.7s,baz=205,slow=7.5,SNR=52							
BOSA				LR		LR	05 26 46.9	
	comp=Z,748nm,18.6s,baz=208,slow=32							
BOSA	**Boshof**	**46.34**	**77**	*e*P		**P**	**05 10 36.2**	**+0.7**
BOSA				pmax	pmax			
	comp=Z,38nm,0.8s							
BOSA	**Boshof**	**46.34**	**77**	*e*P		**P**	**05 10 36.2**	**+0.7**
	comp=Z,38nm,0.8s							
SBA	**Scott Base**	**46.51**	**184**	*e*P		**P**	**05 10 38.6**	**+2.6**
SBA				pmax	pmax			
	comp=Z,75nm,1.0s							
SBA	**Scott Base**	**46.51**	**184**	*e*P		**P**	**05 10 38.6**	**+2.6**
	comp=Z,75nm,1.0s							
SIV	**San Ignacio**	**46.90**	**314**	P		**P**	**05 10 39.8**	**0.0**
	comp=Z,12nm,0.8s,baz=164,slow=11,SNR=5.4							
SIV				ScP		**ScP**	**05 16 02.0**	**-1.9**
	comp=Z,4.8nm,0.9s,baz=178,slow=3.3,SNR=7.0							
SIV				LR		LR	05 29 01.8	
	comp=Z,655nm,21.8s,baz=180,slow=34							
VNDA	**Vanda**	**47.01**	**183**	P		**P**	**05 10 41.5**	**+1.5**
	comp=Z,68nm,0.7s,baz=187,slow=6.5,SNR=312							
VNDA				LR		LR	05 30 30.4	
	comp=Z,212nm,18.5s,baz=168,slow=36							
VNDA	**Vanda**	**47.01**	**183**	*e*P		**P**	**05 10 41.7**	**+1.7**
VNDA				pmax	pmax			
	comp=Z,72nm,0.8s							
VNDA	**Vanda**	**47.01**	**183**	*e*P		**P**	**05 10 41.7**	**+1.7**
	comp=Z,72nm,0.8s							
PB11	**IPOC Station P**	**47.42**	**302**	*e*P		**P**	**05 10 45.0**	**+1.0**
	comp=Z,134nm,0.9s							
H10S2	**ASCENSION HYDR**	**47.70**	**18**	T		T	06 02 42.6	
	baz=190,slow=75,SNR=163							
H10S3	**ASCENSION HYDR**	**47.71**	**18**	T		T	06 02 42.8	
	baz=190,slow=75,SNR=143							
H10S1	**ASCENSION HYDR**	**47.72**	**18**	T		T	06 02 44.0	
	baz=190,slow=75,SNR=145							
H10N1	**ASCENSION HYDR**	**48.82**	**18**	T		T	06 04 06.7	
	baz=189,slow=75,SNR=57							
H10N3	**ASCENSION HYDR**	**48.82**	**18**	T		T	06 04 08.0	
	baz=189,slow=75,SNR=71							
H10N2	**ASCENSION HYDR**	**48.84**	**18**	T		T	06 04 08.0	
	baz=189,slow=75,SNR=94							
LBTB	**Lobatse**	**49.35**	**74**	LR		LR	05 29 44.8	
	comp=Z,327nm,18.7s,baz=220,slow=33							
LBTB	**Lobatse**	**49.35**	**74**	*e*P		**P**	**05 10 59.3**	**+0.5**
LBTB				pmax	pmax			
	comp=Z,40nm,0.8s							
LBTB	**Lobatse**	**49.35**	**74**	*e*P		**P**	**05 10 59.3**	**+0.5**
	comp=Z,40nm,0.8s							
LPAZ	**La Paz**	**49.70**	**306**	P		**P**	**05 11 03.3**	**+1.2**
	comp=Z,80nm,0.8s,baz=143,slow=6.3,SNR=276							
LPAZ				ScP		**ScP**	**05 16 12.1**	**-4.4**
	comp=Z,2.6nm,1.0s,baz=179,slow=5.0,SNR=4.6							
LPAZ				LR		LR	05 30 34.5	
	comp=Z,338nm,21.6s,baz=149,slow=34							
LPAZ	**La Paz**	**49.70**	**306**	*e*P		**P**	**05 11 03.4**	**+1.2**
LPAZ				pmax	pmax			
	comp=Z,97nm,0.9s							
LPAZ	**La Paz**	**49.70**	**306**	*e*P		**P**	**05 11 03.4**	**+1.2**
	comp=Z,97nm,0.9s							
LPAZ				ScP		**ScP**	**05 16 12.1**	**-4.4**
TSUM	**Tsumeb**	**49.89**	**62**	*e*P		**P**	**05 11 04.1**	**+1.1**
	comp=Z,15nm,1.0s							
RCBR	**Riachuelo**	**50.01**	**350**	LR		LR	05 28 54.6	
	comp=Z,422nm,19.3s,baz=171,slow=32							
MIR	**Mirnyy**	**50.42**	**154**	*i* P		**P**	**05 11 07.0**	**+0.8**
MIR				pmax	pmax			
	comp=Z,10.0nm,1.2s							
SAML	**Samuel**	**54.12**	**315**	*e*P		**P**	**05 11 34.4**	**0.0**
	comp=Z,74nm,1.0s							
CASY	**Casey**	**54.51**	**161**	*e*P		**P**	**05 11 37.7**	**+1.2**
	comp=Z,97nm,0.9s							
NNA	**Nana**	**57.59**	**299**	P		**P**	**05 12 00.0**	**+0.8**
	comp=Z,51nm,1.0s,baz=176,slow=6.4,SNR=11							
NNA	**Nana**	**57.59**	**299**	*e*P		**P**	**05 12 00.5**	**+1.2**
NNA				pmax	pmax			
	comp=Z,211nm,1.0s							
NNA	**Nana**	**57.59**	**299**	*e*P		**P**	**05 12 00.5**	**+1.2**
	comp=Z,211nm,1.0s							
LSZ	**Lusaka**	**58.67**	**70**	*e*P		**P**	**05 12 07.6**	**+0.7**
LSZ				pmax	pmax			
	comp=Z,24nm,0.9s							
LSZ	**Lusaka**	**58.67**	**70**	*e*P		**P**	**05 12 07.6**	**+0.7**
	comp=Z,24nm,0.9s							
PTGA	**Pitinga**	**60.50**	**323**	P		**P**	**05 12 19.0**	**-0.4**
	comp=Z,12nm,0.7s,baz=155,slow=8.1,SNR=26							
PTGA	**Pitinga**	**60.50**	**323**	*e*P		**P**	**05 12 19.0**	**-0.4**
	comp=Z,15nm,0.8s							
ATAH	**Atahualpa**	**62.53**	**301**	P		**P**	**05 12 36.0**	**+2.5**
	comp=Z,34nm,0.8s,baz=164,slow=3.9,SNR=23							
DBIC	**Dimbokro**	**64.95**	**26**	P		**P**	**05 12 49.3**	**+0.4**
	comp=Z,4.3nm,0.6s,baz=168,slow=8.3,SNR=14							
DBIC				LR		LR	05 33 51.9	
	comp=Z,202nm,21.7s,baz=177,slow=29							
DBIC	**Dimbokro**	**64.95**	**26**	*e*P		**P**	**05 12 49.1**	**+0.1**
DBIC				pmax	pmax			
	comp=Z,18nm,1.3s							
DBIC	**Dimbokro**	**64.95**	**26**	*e*P		**P**	**05 12 49.1**	**+0.1**
	comp=Z,18nm,1.3s							
FLOC	**Florencia**	**68.89**	**308**	*e*P		**P**	**05 13 12.1**	**-2.0**
OTAV	**Otavalo**	**68.99**	**304**	*e*P		**P**	**05 13 16.7**	**+1.5**
	comp=Z,228nm,0.9s							
CMBC	**Cumbal**	**69.31**	**305**	*e*P		**P**	**05 13 19.0**	**+1.8**
RER	**Riviere de l'E**	**69.36**	**97**	*e*P		**P**	**05 13 19.6**	**+2.6**
	comp=Z,171nm,1.0s							
ROSC	**El Rosal**	**71.21**	**310**	P		**P**	**05 13 29.4**	**+0.6**
	comp=Z,16nm,0.9s,baz=174,slow=2.2,SNR=16							
ROSC				LR		LR	05 44 54.7	
	comp=Z,227nm,21.6s,baz=170,slow=36							
ROSC	**El Rosal**	**71.21**	**310**	*e*P		**P**	**05 13 29.8**	**+1.0**
	comp=Z,21nm,1.0s							
GRGC	**Isla de Gorgon**	**71.29**	**306**	*e*P		**P**	**05 13 28.6**	**-0.2**
NORC	**Norcasia**	**72.09**	**310**	*e*P		**P**	**05 13 31.4**	**-2.2**
TOA0	**Torodi Ar. Sit**	**72.90**	**30**	*e*P		**P**	**05 13 39.1**	**+0.8**
TORD	**Torodi Ar. Bea**	**72.90**	**30**	P		**P**	**05 13 39.1**	**+0.9**
	comp=Z,11nm,0.7s,baz=201,slow=6.5,SNR=143							
TORD				LR		LR	05 38 56.8	
	comp=Z,357nm,21.4s,baz=195,slow=30							
HELC	**Santa Helena**	**72.94**	**310**	*e*P		**P**	**05 13 36.0**	**-3.1**
GRGR	**Grenville**	**73.11**	**326**	*e*P		**P**	**05 13 40.2**	**+0.7**
	comp=Z,201nm,0.8s							
SDV	**Santo Domingo**	**73.33**	**316**	P		**P**	**05 13 41.3**	**+0.2**
	comp=Z,45nm,0.8s,baz=212,slow=2.6,SNR=6.9							
SDV	**Santo Domingo**	**73.33**	**316**	*e*P		**P**	**05 13 42.1**	**+0.9**
	comp=Z,52nm,0.9s							
KMBO	**Kilima Mbogo**	**75.34**	**70**	P		P	05 13 56.7	+3.7
	comp=Z,2.2nm,0.7s,baz=184,slow=6.3,SNR=9.0							
KMBO				LR		LR	05 46 09.7	
	comp=Z,346nm,18.1s,baz=179,slow=35							
KMBO	**Kilima Mbogo**	**75.34**	**70**	*e*P		**P**	**05 13 55.9**	**+2.9**
KMBO				pmax	pmax			
	comp=Z,16nm,1.5s							
KMBO	**Kilima Mbogo**	**75.34**	**70**	*e*P		**P**	**05 13 55.9**	**+2.9**
	comp=Z,16nm,1.5s							
GDHS	**Morne Mazeau,**	**77.03**	**327**	*e*P		**P**	**05 14 03.9**	**+1.7**
	comp=Z,187nm,0.7s							
RPZ	**Rata Peaks**	**79.75**	**194**	P		**P**	**05 14 16.1**	**-0.9**
	comp=Z,20nm,0.9s,baz=109,slow=5.8,SNR=7.0							
STVI	**Saint Thomas**	**80.00**	**325**	*e*P		**P**	**05 14 18.5**	**+0.1**
	comp=Z,47nm,1.1s							
HUMP	**Col San Antoni**	**80.10**	**324**	*e*P		**P**	**05 14 19.2**	**+0.2**
	comp=Z,22nm,1.0s							
SJG	**San Juan**	**80.18**	**323**	P		**P**	**05 14 18.4**	**-1.0**
	comp=Z,11nm,1.0s,baz=29,slow=5.4,SNR=3.1							
CBYP	**Canovanas**	**80.23**	**324**	*e*P		**P**	**05 14 19.5**	**-0.2**
	comp=Z,52nm,1.1s							
RKT	**Rikitea**	**80.25**	**243**	*e*T		T	06 42 28.5	
	comp=Z,1.7nm,0.3s							
LTZ	**Lake Taylor**	**80.49**	**195**	*e*P		**P**	**05 14 21.4**	**+0.3**
	comp=Z,43nm,1.0s							
LRS	**Lares**	**80.58**	**323**	*e*P		**P**	**05 14 22.3**	**+0.7**
JTS	**JuntasAbangare**	**80.84**	**303**	P		**P**	**05 14 23.5**	**+0.3**
	comp=Z,15nm,1.1s,baz=31,slow=0.4,SNR=8.5							
JTS	**JuntasAbangare**	**80.84**	**303**	*e*P		**P**	**05 14 24.5**	**+1.4**
JTS				pmax	pmax			
	comp=Z,51nm,1.4s							
JTS	**JuntasAbangare**	**80.84**	**303**	*e*P		**P**	**05 14 24.5**	**+1.4**
	comp=Z,51nm,1.4s							
BFZ	**Birch Farm**	**81.89**	**198**	*e*P		**P**	**05 14 28.9**	**+0.4**
	comp=Z,60nm,1.2s							
TAM	**Tamanrasset**	**83.14**	**31**	*e*P		**P**	**05 14 36.6**	**+1.4**
TAM				pmax	pmax			
	comp=Z,10.0nm,1.1s							
TAM	**Tamanrasset**	**83.14**	**31**	*e*P		**P**	**05 14 36.6**	**+1.4**
	comp=Z,9.5nm,1.1s							
BKZ	**Black Stump Fm**	**83.32**	**199**	*e*P		**P**	**05 14 35.9**	**-0.1**
	comp=Z,29nm,1.4s							
URZ	**Urewera**	**84.08**	**200**	P		**P**	**05 14 39.2**	**-0.6**
	comp=Z,7.0nm,0.8s,baz=311,slow=2.6,SNR=4.8							
URZ	**Urewera**	**84.08**	**200**	*e*P		**P**	**05 14 40.4**	**+0.6**
	comp=Z,13nm,1.0s							
NWAO	**Narrogin (SRO)**	**86.97**	**151**	*e*P		**P**	**05 14 54.0**	**-0.3**
NWAO				pmax	pmax			
	comp=Z,98nm,2.0s							
NWAO	**Narrogin (SRO)**	**86.97**	**151**	*e*P		**P**	**05 14 54.0**	**-0.3**
	comp=Z,98nm,2.0s							
TBI	**Tubuai**	**86.99**	**232**	*e*LR		LR	05 42 41.8	
	comp=Z,220nm,24.5s							
BBOO	**Buckleboo**	**90.91**	**167**	*e*P		**P**	**05 15 12.3**	**-0.7**
	comp=Z,54nm,1.8s							
TEIG	**Tepich**	**91.03**	**305**	*e*P		**P**	**05 15 15.8**	**+2.4**
PPT2	**Papeete2**	**92.05**	**234**	*e*LR		LR	05 44 57.3	
	comp=Z,248nm,23.8s							
PPT	**Papeete**	**92.07**	**234**	LR		LR	05 48 44.7	
	comp=Z,120nm,20.8s,baz=137,slow=30							
STKA	**Stephens Creek**	**92.44**	**171**	P		**P**	**05 15 19.2**	**-0.8**
	comp=Z,2.4nm,0.7s,baz=133,slow=5.7,SNR=3.8							
STKA				PP		**PP**	**05 19 00.7**	**+0.6**
	comp=Z,1.9nm,0.7s,baz=173,slow=7.7,SNR=5.0							
STKA				LR		LR	05 56 28.0	
	comp=Z,358nm,18.1s,baz=190,slow=35							
TAOE	**Nuku Hiva Isla**	**94.88**	**247**	*e*LR		LR	05 46 17.2	
	comp=Z,232nm,24.1s							
KEST	**Kesra**	**96.41**	**30**	LR		LR	05 54 16.7	
	comp=Z,267nm,20.1s,baz=186,slow=32							
ESDC	**Sonseca Array**	**97.09**	**19**	LR		LR	05 53 53.4	
	comp=Z,173nm,21.7s,baz=0.0,slow=32							
ASAR	**Alice Springs**	**99.58**	**163**	P		**Pdif**	**05 15 51.7**	**-0.9**
	comp=Z,4.3nm,0.8s,baz=190,slow=3.9,SNR=39							
ASAR				PP		**PP**	**05 19 51.6**	**-3.9**
	comp=Z,8.3nm,1.1s,baz=189,slow=6.8,SNR=14							
ASAR				PKKPbc		**PKKPbc**	**05 32 12.9**	**+1.1**
	comp=Z,0.5nm,0.7s,baz=22,slow=1.6,SNR=4.7							
ASAR				LR		LR	05 57 40.0	
	comp=Z,333nm,21.8s,baz=178,slow=33							
AS31	**Alice Springs**	**99.58**	**163**	*e*Pdif		**Pdif**	**05 15 52.1**	**-0.5**
	comp=Z,5.5nm,1.5s							
AS01	**Alice Springs**	**99.59**	**163**	*e*Pdif		**Pdif**	**05 15 51.6**	**-1.1**
WRA	**Warramunga Arr**	**103.30**	**163**	Pdiff		**Pdif**	**05 16 08.1**	**-1.1**
	comp=Z,0.8nm,0.7s,baz=196,slow=4.1,SNR=10							
WRA				PP		PP	05 20 18.0	-5.6
	comp=Z,3.5nm,0.8s,baz=191,slow=5.9,SNR=5.4							
WRA				PKKPbc		**PKKPbc**	**05 32 02.8**	**+1.7**
	comp=Z,0.8nm,0.9s,baz=357,slow=2.9,SNR=5.3							
TXAR	**Lajitas Array**	**106.14**	**298**	PP		PP	05 20 43.0	-2.9
	comp=Z,0.4nm,0.8s,baz=146,slow=6.9,SNR=3.5							
TXAR				PKKPbc		**PKKPab**	**05 32 10.2**	**+1.6**
	comp=Z,0.3nm,0.8s,baz=249,slow=2.4,SNR=3.6							
GERES	**GERESS Array B**	**109.77**	**28**	PKiKP		**PKiKP**	**05 20 38.8**	**-0.5**
	comp=Z,0.4nm,0.5s,baz=186,slow=3.6,SNR=4.4							
CLL	**Collm**	**111.85**	**26**	*e*PP		PP	05 21 29.0	+2.0
KIV	**Kislovodsk**	**115.73**	**49**	*e*PKiKP		**PKPdf**	**05 20 48.7**	**-2.1**
KIV				pmax	pmax			
	comp=Z,3.0nm,1.0s							
KIEV	**Kiev**	**116.11**	**37**	⇑*i*PKiKP		**PKPdf**	**05 20 52.9**	**+1.8**
MSU	**Marysvale**	**117.70**	**298**	*e*PKiKP		**PKPdf**	**05 20 55.8**	**+0.8**
MSU	**Marysvale**	**117.70**	**298**	*e*PKPdf		**PKPdf**	**05 20 55.8**	**+0.8**
AGMN	**Agassiz Nation**	**118.00**	**316**	*e*PKPdf		**PKPdf**	**05 20 55.5**	**+0.6**
DUG	**Dugway, Tooele**	**119.30**	**299**	*e*PKiKP		**PKPdf**	**05 20 58.0**	**+0.1**
DUG	**Dugway, Tooele**	**119.30**	**299**	*e*PKPdf		**PKPdf**	**05 20 58.0**	**+0.1**
ULM	**Lac du Bonnet**	**119.57**	**317**	PP		PP	05 22 17.8	-3.5
	comp=Z,4.4nm,0.8s,baz=53,slow=3.8,SNR=4.1							
PDAR	**Pinedale Array**	**119.68**	**303**	PKP		**PKPdf**	**05 20 56.5**	**-2.2**
	comp=Z,0.3nm,0.5s,baz=126,slow=5.5,SNR=3.9							
PDAR				PP		**PP**	**05 22 25.1**	**+2.6**
	comp=Z,1.4nm,1.1s,baz=160,slow=4.7,SNR=3.9							
HWUT	**Hardware Ranch**	**119.76**	**301**	*e*PKPdf		**PKPdf**	**05 20 58.7**	**-0.1**
NB2	**NORSAR Subarra**	**120.35**	**21**	PKPdf		**PKPdf**	**05 20 58.6**	**-0.5**
	comp=Z,3.8nm,1.1s,baz=202,slow=1.9							
NOA	**NORSAR Array B**	**120.35**	**21**	PKP		**PKPdf**	**05 20 59.1**	**0.0**
	comp=Z,2.0nm,0.8s,baz=204,slow=1.9,SNR=6.7							
NC204	**NORSAR Array S**	**120.47**	**21**	*e*PKPdf		**PKPdf**	**05 21 00.4**	**+1.0**
NV01	**Mina Array Sit**	**120.76**	**294**	*e*PKPdf		**PKPdf**	**05 21 00.6**	**-0.3**
NVAR	**Mina Array Bea**	**120.76**	**294**	PKP		**PKPdf**	**05 21 00.4**	**-0.5**
	comp=Z,0.7nm,0.7s,baz=146,slow=3.0,SNR=5.1							
LOHW	**Long Hollow**	**120.82**	**303**	*e*PKPdf		**PKPdf**	**05 21 00.5**	**-0.3**
MOOW	**Moose Ponds**	**120.99**	**303**	*e*PKPdf		**PKPdf**	**05 21 01.2**	**+0.1**
FLWY	**Flagg Ranch**	**121.22**	**303**	*e*PKPdf		**PKPdf**	**05 21 02.4**	**+0.9**
OBN	**Obninsk**	**122.28**	**38**	*i* PKiKP		**PKPdf**	**05 21 04.6**	**+1.7**
OBN				pmax	pmax			
	comp=Z,4.0nm,0.9s							
HRY	**Holter Researc**	**123.70**	**305**	*e*PKPdf		**PKPdf**	**05 21 07.1**	**+1.0**
WVOR	**Wild Horse Val**	**123.89**	**297**	*e*PKiKP		**PKPdf**	**05 21 07.8**	**+1.2**
WVOR	**Wild Horse Val**	**123.89**	**297**	*e*PKPdf		**PKPdf**	**05 21 07.8**	**+1.2**
FINES	**FINESS Array B**	**124.20**	**28**	PKP		**PKPdf**	**05 21 06.2**	**-0.2**
	comp=Z,9.9nm,0.6s,baz=158,slow=1.6,SNR=59							
FIA1	**FINESS Array S**	**124.20**	**28**	*e*PKPdf		**PKPdf**	**05 21 06.3**	**0.0**
MSO	**Missoula**	**124.78**	**304**	*e*PKPdf		**PKPdf**	**05 21 08.4**	**+0.3**
SWMT	**Swartz Lake**	**125.30**	**304**	*e*PKPdf		**PKPdf**	**05 21 09.1**	**-0.1**
JTMT	**Jette**	**125.61**	**304**	*e*PKPdf		**PKPdf**	**05 21 09.5**	**-0.2**
CM01	**Chiang Mai Arr**	**125.67**	**111**	*e*PKPdf		**PKPdf**	**05 21 09.8**	**-0.8**
CM31	**Chiang Mai Arr**	**125.69**	**111**	*e*PKPdf		**PKPdf**	**05 21 10.7**	**+0.1**
CMAR	**Chiang Mai Arr**	**125.69**	**111**	PKP		**PKPdf**	**05 21 10.5**	**-0.1**
	comp=Z,3.8nm,0.9s,baz=237,slow=6.3,SNR=25							
CMAR				PP		**PP**	**05 23 00.5**	**-2.3**
	comp=Z,1.1nm,0.8s,baz=233,slow=6.7,SNR=4.3							
BSMT	**Bassoo Peak**	**125.92**	**304**	*e*PKPdf		**PKPdf**	**05 21 11.4**	**+1.0**
CHTO	**Chiang Mai**	**125.99**	**111**	*e*PKiKP		**PKPdf**	**05 21 10.9**	**-0.3**
CHTO	**Chiang Mai**	**125.99**	**111**	*e*PKPdf		**PKPdf**	**05 21 10.9**	**-0.3**
ABKAR	**Akbulak array**	**127.51**	**56**	*e*PKPdf		**PKPdf**	**05 21 13.0**	**-0.1**
KLMR	**Klimovskoe**	**127.72**	**35**	*e*PKiKP		**PKPdf**	**05 21 10.2**	**-2.9**
KLMR				pmax	pmax			
	comp=Z,16nm,1.3s							
SUMG	**Summit**	**128.08**	**356**	*i* P		**PKPdf**	**05 21 13.6**	**-0.4**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
WMQ				SKKS		05 31 13.8	
WMQ				SS	SS	05 42 35.3	+0.4
WMQ				LR	LR		
	comp=Z,46nm,24.4s						
WMQ				LR	LR		
	comp=Z,65nm,18.4s						
WMQ				LR	LR		
	comp=Z,42nm,24.4s						
DLBC	Dease Lake	139.64	307	SKPbc	SKPbc	05 25 05.1	-4.1
	comp=Z,6.5nm,1.0s,baz=283,slow=7.9,SNR=6.8						
GTA	Gaotai	142.24	93	*e*PKP	PKPdf	05 21 38.1	-3.0
NVS	Novosibirsk	142.26	62	*e*PKHKP	PKPpre	05 21 36.1	
NVS				pmax	pmax		
	comp=Z,25nm,1.1s						
NVS				pmax	pmax		
	comp=N,7.0nm,0.9s						
ZAA0	Zalesovo Array	142.61	64	*e*PKPpre	PKPpre	05 21 36.7	
ZALV	Zalesovo Beam	142.61	64	PKhKP	PKPpre	05 21 36.7	
	comp=N,3.6nm,0.5s,baz=232,slow=4.1,SNR=14						
ZALV				PP	PP	05 24 50.8	+0.6
	comp=N,1.1nm,0.7s,baz=235,slow=5.2,SNR=3.8						
ZALV				SKPbc	SKPbc	05 25 13.3	-3.6
	comp=N,1.2nm,0.6s,baz=298,slow=3.2,SNR=3.8						
XAN	Xi'an	143.45	108	PKP	PKPdf	05 21 42.5	-0.8
INK	Inuvik	145.13	321	PKPbc	PKPdf	05 21 45.0	0.0
	comp=N,14nm,1.0s,baz=84,slow=2.7,SNR=41						
INK				SKPbc	SKPbc	05 25 20.4	-2.0
	comp=N,6.7nm,1.0s,baz=132,slow=3.5,SNR=4.6						
NJ2	Nanjing	147.00	122	*e*PKPbc	PKPbc	05 21 51.4	0.0
EGAK	Eagle	147.06	314	*e*PKPbc	PKPbc	05 21 50.5	-0.1
RAGM	Ragged Mountai	147.23	305	*e*PKPbc	PKPab	05 21 52.4	-0.7
BMRM	Bremner River	147.39	306	*e*PKPbc	PKPab	05 21 52.9	-0.8
MENT	Mentasta	147.62	310	*e*PKPbc	PKPbc	05 21 52.7	+0.5
EYAK	Cordova Ski Ar	147.78	305	*e*PKPbc	PKPbc	05 21 53.5	+0.8
DOT	Dot Lake	147.97	311	*e*PKPdf	PKPdf	05 21 50.5	+0.5
DOT				*e*PKPbc	PKPbc	05 21 53.8	+0.6
DIV	Divide	147.98	306	*e*PKPbc	PKPbc	05 21 54.1	+0.8
KLU	Klutina	148.16	306	*e*PKPbc	PKPbc	05 21 54.9	+1.1
PAX	Paxson	148.39	309	*e*PKP2	PKPbc	05 21 54.8	+0.4
PAX	Paxson	148.39	309	*e*PKPbc	PKPbc	05 21 54.8	+0.4
SCM	Sheep Creek Mo	148.91	307	*e*PKP2	PKPbc	05 21 56.6	+0.9
SCM	Sheep Creek Mo	148.91	307	*e*PKPbc	PKPbc	05 21 56.6	+0.9
NRIK	Noril'sk	148.95	38	PKPbc	PKPbc	05 21 56.0	+0.5
	comp=N,17nm,0.8s,baz=72,slow=1.0,SNR=23						
NRIK	Noril'sk	148.95	38	PKP2	PKPbc	05 21 56.0	+0.5
NRIK				pmax	pmax		
	comp=Z,17nm,0.8s						
FYU	Fort Yukon	149.11	316	*e*PKPbc	PKPbc	05 21 57.1	+1.2
DHY	Denali Highway	149.26	309	*e*PKPbc	PKPbc	05 21 57.5	+0.9
SML	Sawmill	149.36	306	*e*PKP2	PKPbc	05 21 57.3	+0.6
SML	Sawmill	149.36	306	*e*PKPbc	PKPbc	05 21 57.3	+0.6
SEW	Seward	149.38	303	*e*PKPbc	PKPbc	05 21 57.3	+0.5
IL1	Eielson Array	149.44	312	*e*PKPbc	PKPbc	05 21 57.1	+0.3
ILAR	Eielson Array	149.44	312	PKP	PKPdf	05 21 50.5	-1.8
	comp=Z,0.7nm,1.0s,baz=335,slow=2.2,SNR=7.4						
ILAR				PKPbc	PKPbc	05 21 56.7	-0.1
	comp=Z,16nm,0.8s,baz=129,slow=1.6,SNR=106						
ILAR				SKPbc		05 25 29.7	
	comp=Z,2.7nm,1.0s,baz=113,slow=1.0,SNR=6.7						
ILB	Eielson Array	149.44	312	*e*PKPbc	PKPbc	05 21 56.9	+0.1
PMR	Palmer	149.66	306	*e*PKP2	PKPbc	05 21 57.8	+0.4
PMR	Palmer	149.66	306	*e*PKPbc	PKPbc	05 21 57.8	+0.4
CCB	Clear Creek Bu	149.80	312	*e*PKPbc	PKPbc	05 21 57.3	-0.3
RC01	Rabbit Creek A	149.81	305	*e*PKPbc	PKPbc	05 21 58.7	+0.8
HHC	Hu-ho-hao-te	149.82	102	*e*PKPbc	PKPbc	05 21 57.9	-0.8
HHC				PP	PP	05 25 39.3	+6.2
HHC				SS	SS	05 44 45.3	-2.0
HHC				AMB	AMB		
	comp=Z,54nm,5.0s						
HHC				LR	LR		
	comp=Z,170nm,29.6s						
HHC				LR	LR		
	comp=Z,290nm,24.7s						
HHC				LR	LR		
	comp=Z,78nm,19.8s						
COLA	College	149.86	312	*e*PKP2	PKPbc	05 21 58.0	+0.2
COLA	College	149.86	312	*e*PKPbc	PKPbc	05 21 58.0	+0.2
WRH	Wood River Hil	149.88	312	*e*PKPbc	PKPbc	05 21 57.9	0.0
BRLK	Bradley Lake	149.97	302	*e*PKPbc	PKPbc	05 21 58.8	+0.5
RND	Reindeer	149.99	309	*e*PKP2	PKPbc	05 21 59.2	+0.9
RND	Reindeer	149.99	309	*e*PKPbc	PKPbc	05 21 59.2	+0.9
MDM	Murphy Dome	150.04	313	*e*PKPbc	PKPbc	05 21 58.2	-0.2
MCK	McKinley	150.09	310	*e*PKIKP	PKPbc	05 21 59.1	+0.6
MCK	McKinley	150.09	310	*e*PKPbc	PKPbc	05 21 59.0	+0.6
MOY	Mondy	150.09	76	*e*PKIKP	PKPbc	05 21 59.4	+0.4
MOY				pmax	pmax		
	comp=Z,50nm,2.5s						
KDAK	Kodiak Island	150.17	297	*e*PKIKP	PKPbc	05 22 00.1	+1.4
KDAK	Kodiak Island	150.17	297	*e*PKPbc	PKPbc	05 22 00.1	+1.4
OHAK	Old Harbor	150.33	296	*e*PKPbc	PKPbc	05 21 59.8	+0.7
TRF	Thorofare Moun	150.63	309	*e*PKPbc	PKPbc	05 22 00.1	+0.1
ZAK	Zakamensk	150.75	80	*e*PKIKP	PKPbc	05 22 00.0	-0.6
ZAK				pmax	pmax		
	comp=Z,21nm,1.2s						
SPU	Mount Spurr	150.92	304	*e*PKPbc	PKPbc	05 22 00.6	0.0
KTH	Kantishna Hill	150.93	309	*e*PKPbc	PKPbc	05 22 00.7	+0.2
BPAW	Bear Paw Mtn.	151.06	310	*e*PKPbc	PKPbc	05 22 00.9	+0.1
RSO	Redoubt South	151.06	303	*e*PKPbc	PKPbc	05 22 01.2	+0.1
MLY	Manley	151.10	312	*e*PKPbc	PKPbc	05 22 01.3	+0.4
COLD	Coldfoot	151.15	317	*e*PKPbc	PKPbc	05 22 01.4	+0.6
SONM	Songino Array	151.19	86	PKP	PKPdf	05 21 55.4	-0.4
	comp=Z,0.5nm,0.6s,baz=196,slow=3.9,SNR=6.7						
SONM				PKPbc	PKPbc	05 22 01.5	-0.2
	comp=Z,17nm,0.7s,baz=226,slow=3.0,SNR=86						
SONA1	Songino Array	151.20	86	*e*PKPbc	PKPbc	05 22 01.6	-0.2
PPLA	Purkeypile	151.36	308	*e*PKPbc	PKPbc	05 22 01.7	0.0
CAST	Castle Rocks	151.41	309	*e*PKPbc	PKPbc	05 22 01.5	-0.1
TLY	Talaya	151.57	77	PKPbc	PKPbc	05 22 02.5	+0.2
	comp=Z,7.1nm,0.7s,baz=246,slow=4.3,SNR=16						
TLY	Talaya	151.57	77	*e*PKIKP	PKPbc	05 22 02.3	0.0
TLY	Talaya	151.57	77	*e*PKPbc	PKPbc	05 22 02.3	0.0
ULN	Ulaanbaatar	151.58	87*c*	*i*PKIKP	PKPdf	05 21 55.2	-1.2
ULN				*i*		05 22 02.4	
ULN				pmax	pmax		
	comp=Z,19nm,1.7s						
ULN	Ulaanbaatar	151.58	87	*e*PKPbc	PKPbc	05 22 02.0	-0.7
BJT	Baijiatuau	151.77	108	*e*PKIKP	PKPbc	05 22 02.7	-0.4
BJT	Baijiatuau	151.77	108	*e*PKPbc	PKPbc	05 22 02.7	-0.4
SVW2	Sparrevohn	152.56	303	*e*PKPbc	PKPbc	05 22 03.6	-0.6
CHGN	Chignik	152.67	292	*e*PKPbc	PKPbc	05 22 04.4	-0.1
TT01	Tatalina	153.09	307	*e*PKPbc	PKPbc	05 22 06.2	+0.8
TTA	Tatalina	153.09	307	*e*PKIKP	PKPbc	05 22 05.7	+0.2
TTA	Tatalina	153.09	307	*e*PKPbc	PKPbc	05 22 05.7	+0.2
JNU	Nakatsue	153.17	138	PKPbc	PKPbc	05 22 05.0	-1.5
	comp=Z,8.3nm,0.8s,baz=126,slow=3.1,SNR=4.2						
KSAR	Wonju Array Be	155.64	128	PKP2	PKPab	05 22 27.9	-0.7
KSAR	Wonju Array Be	155.64	128	PKPab	PKPab	05 22 27.9	-0.7
KSRS	Korea Array	155.67	128	PKPab	PKPab	05 22 27.9	-0.8
	comp=Z,0.9nm,0.4s,baz=221,slow=4.5,SNR=5.5						
MJAR	Matsushiro Arr	158.78	148	PKPab	PKPab	05 22 41.3	-0.9
	comp=Z,3.5nm,0.7s,baz=191,slow=5.0,SNR=6.7						
BOD	Bodaibo	159.24	68	*e*PKIKP	PKPdf	05 22 04.4	-1.7
BOD				*e*		05 22 43.7	
BOD				pmax	pmax		
	comp=Z,12nm,1.4s						
USRK	Ussuriysk Ar.	162.90	123	PKPab	PKPab	05 22 58.6	-1.4
	comp=Z,1.4nm,0.9s,baz=256,slow=5.3,SNR=4.7						
BILL	Bilibino	165.85	338	*e*PKIKP	PKPdf	05 22 08.3	-4.1
BILL				pmax	pmax		
	comp=Z,2.0nm,1.0s						

*IDC **15** 05:04:46.0±3.5, 4°.46S×101°.12E, h0km, mb3.8/5, mb1 3.9/5, mb1mx3.6/40, mbtmp3.8/5, Error ellipse: s-maj=147.4km s-min=25.4km az=58.0*

*ISCJB **15** 05:04:54.1±1.0, 4°.38S±0°.08×102°.05E±0°.08, h79km±9km, mb3.8/5, Error ellipse: s-maj=17.1km s-min=7.4km az=135.3*

*DJA **15** 05:04:55.6±0.9, 4°S±4°×10°2E±°, h37km±10km, M3.8/4, MLv3.8/4*

ISC 15 05:04:54.6±2.1**, 4°.4S**±0°.1×**102°.0E**±0°.1**, h66**km±16km**, n17, σ0s.67**/20**, mb4.0**/5**, Southern Sumatera**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
MNAI	Manna	0.94	89	P	Pn	05 05 12.0	-0.2
MNAI				S	Sn	05 05 24.1	-1.2
MASI	Maura Aman, Be	1.25	11	P	Pn	05 05 16.3	+0.1
MASI				S	Sn	05 05 32.8	+0.5
LHSI	Lahat	1.60	70	P	Pn	05 05 21.5	+0.6
LHSI				S	Sn	05 05 41.4	+0.7
LWLI	Liwa	2.14	107	P	Pn	05 05 29.2	+1.0
MDSI	Maura Dua	2.17	93	P	Pn	05 05 28.7	+0.3
MDSI				S	Sn	05 05 54.9	+0.7
PPSI	Pulau Pagai	2.56	309	P	Pn	05 05 35.6	+1.8
KASI	Kota Agung	2.73	115	P	Pn	05 05 36.7	+0.6
KASI				S	Sn	05 06 06.9	-1.1
KLI	Kotabumi	2.88	100	P	Pn	05 05 38.3	+0.1
PMBI	Palembang	3.11	63	P	Pn	05 05 40.8	-0.5
BLSI	Bandar Lampung	3.37	107	P	Pn	05 05 45.1	+0.2
CGJI	Cibinong	4.29	121	P	Pn	05 05 57.9	+0.5
CMAR	Chiang Mai Arr	22.89	352	P	P	05 09 53.2	+0.3
	0.4nm,0.4s,baz=188,slow=8.3,SNR=4.0						
ASAR	Alice Springs	36.25	125	P	P	05 11 58.0	+6.3
	0.3nm,0.4s,baz=302,slow=8.0,SNR=6.4						
SONM	Songino Array	52.13	4	P	P	05 13 58.4	+0.1
	0.9nm,0.5s,baz=184,slow=9.8,SNR=9.9						
MKAR	Makanchi Array	53.85	343	P	P	05 14 10.6	-0.3
	0.9nm,0.5s,baz=157,slow=9.1,SNR=8.6						
ZALV	Zalesovo Beam	59.87	348	P	P	05 14 52.4	-0.9
	1.6nm,0.4s,baz=155,slow=5.6,SNR=7.3						
TXAR	Lajitas Array	145.25	42	PKPbc	PKPab	05 24 25.9	+0.3
	1.0nm,0.6s,baz=290,slow=0.7,SNR=14						

*NEIC **15** 05:08:33.3, 32°.40N×115°.48W, h5km, ML2.7(PAS), ML2.9(ECX), After ECX.*

*ECX **15** 05:08:33.3±0.6, 32°.40N×115°.48W, h5km, MD2.8, ML2.9*

*MEX **15** 05:08:34.0±0.7, 32°.48N×115°.41W, h11km±111km, MD3.7*

ISC 15 05:08:31.8±0.9**, 32°.40N**±0°.03×**115°.48W**±0°.02**, h15**km±7km**, n31, σ0s.45**/48**, 9C-4D, California-Baja California border region**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
CPBX	Cerro Prieto	0.15	82	*e*P	Pb	05 08 36.1	-0.3
CPBX				⇑*e*		05 08 38.0	
CPBX				*e*S	Sg	05 08 38.2	-0.1
CPBX				AML	AML	05 08 41.4	
	comp=E,9μm,0.3s						
CPBX				⇑*e*		05 08 41.4	
CPBX				AML	AML	05 08 41.8	
	comp=E,10μm,0.1s						
CPBX				⇑*e*		05 08 41.8	
CPBX	Cerro Prieto	0.15	82	*e*P	Pb	05 08 36.2	-0.3
CPBX				*i* S	Sg	05 08 38.3	-0.1
MBIG	Mexicali	0.24	87	*e*P	Pb	05 08 38.1	+0.2
MBIG	Mexicali	0.24	87	*i* P	Pb	05 08 38.1	+0.2
MBIG				*i* S	Sg	05 08 40.3	-0.4
SGL	Mount Signal	0.32	321	⇑*i*P	Pg	05 08 38.9	+0.4
ERPC	Ernies Place	0.38	336	⇓*i*P	Pb	05 08 40.4	+0.2
DREC	Desert Rsrch C	0.41	4	*e*P	Pb	05 08 41.0	+0.2
WESC	Westside Schoo	0.42	330	⇓*e*P	Pb	05 08 40.9	0.0
YUH	Yuha Desert	0.45	304	⇑*i*P	Pg	05 08 41.0	+0.2
COK	Cook Ranch	0.50	336	⇓*i*P	Pb	05 08 42.3	0.0
EMSC	East Mesa	0.54	51	⇑*i*P	Pb	05 08 43.1	+0.1
RMX	La Rumorosa	0.54	292	*e*P	Pg	05 08 42.3	-0.3
RMX				*e*S	Sg	05 08 49.5	-0.3
IKP	In-Ko-Pah, Jac	0.59	296	⇑*i*P	Pg	05 08 43.6	+0.3
SWSC	Sam W. Stewart	0.60	334	⇑*i*P	Pg	05 08 44.0	+0.3
ECBX	El Chinero	0.99	158	*e*P	Pb	05 08 50.7	0.0
ECBX				*e*S	Sg	05 09 03.9	-0.1
CBX	Cerro Bola	1.00	266	⇑*e*P	Pg	05 08 51.3	+0.1
CBX				*e*S	Sb	05 09 04.2	+0.2
CBX	Cerro Bola	1.00	266	*e*P	Pb	05 08 51.1	+0.1
CBX				*e*S	Sb	05 09 03.9	-0.1
CBX	Cerro Bola	1.00	266	*e*P	Pb	05 08 51.1	+0.1
CBX				*e*S	Sb	05 09 03.9	-0.1
TJIG	Tijuana	1.01	272	*e*P	Pb	05 08 51.0	0.0
TJIG	Tijuana	1.01	272	*e*P	Pb	05 08 51.0	0.0
TJIG				*i* S	Sb	05 09 03.9	-0.2
BAR	Barrett	1.04	286	*e*P	Pb	05 08 51.6	0.0
ZAX	El Zacaton	1.11	218	*e*P	Pn	05 08 52.9	0.0
ZAX				*e*S	Sn	05 09 07.8	-0.2
ZAX				AML	AML	05 09 08.8	
	comp=E,303nm,0.4s						
ZAX				⇓*e*		05 09 08.8	
ECNX	Esteban Cantu	1.20	232	*e*P	Pn	05 08 54.1	-0.1
ECNX				*e*S	Sn	05 09 10.3	0.0
SDRC	San Diego Road	1.28	286	*e*P	Pn	05 08 55.4	+0.2
SPIG	San Pedro Mart	1.35	179	*e*P	Pn	05 08 56.2	-0.2
SPIG	San Pedro Mart	1.35	179	*e*P	Pn	05 08 56.3	-0.2
SPIG				*e*S	Sn	05 09 14.3	+0.1
SPIG	San Pedro Mart	1.35	179	*e*P	Pn	05 08 56.3	-0.2
SPIG				*e*S	Sn	05 09 14.3	+0.1
SPX	San Pedro Mart	1.35	179	*e*P	Pn	05 08 56.3	-0.2
SPX				*e*S	Sg	05 09 15.4	0.0
SPX	San Pedro Mart	1.35	179	*e*P	Pn	05 08 56.3	-0.2
SPX				*e*S	Sb	05 09 13.9	-0.3
PFO	Pinyon Flats O	1.46	326	*e*Pn	Pn	05 08 56.3	-1.5
PFO				*e*Sn	Sg	05 09 20.4	+1.5
214A	Organ Pipe Nat	2.31	100	Pn	Pb	05 09 12.2	-1.0
214A				*e*Pg	Pg	05 09 17.4	+1.3

*ISCJB **15** 05:08:51.7±1.7, 38°.08N±0°.04×142°.18E±0°.07, h5km±9km, mb3.5/3, Error ellipse: s-maj=9.4km s-min=6.5km az=25.2*

*IDC **15** 05:08:53.3±2.9, 37°.81N×142°.33E, h0km, mb3.5/3, mb1 3.5/4, mb1mx3.2/44, mbtmp3.4/4, ML2.9/1, Error ellipse: s-maj=70.0km s-min=37.3km az=67.0*

*JMA **15** 05:08:53.4±0.2, 38°.10N×142°.14E, h17km±2km, M3.6*

ISC 15 05:08:53.2±2.7**, 38°.16N**±0°.06×**142°.09E**±0°.08**, h5**km±15km**, n14, σ0s.92**/21**, mb3.5**/3**, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
JIO	Ouri	0.65	297	P	Pb	05 09 07.2	+0.2
JIO				S	Sb	05 09 16.1	-0.2
OFUJ	Ofunato	0.98	341	P	Pb	05 09 12.7	+0.1
OFUJ				S	Sb	05 09 26.5	+0.7
JMK	Ichinoseki	1.04	320	P	Pn	05 09 14.1	-0.3
JMK				S	Sn	05 09 29.0	-0.4
JMM	Marumori	1.06	255	S	Sg	05 09 26.9	-0.4
JOU	Okura	1.14	281	P	Pn	05 09 15.4	-0.3
JOU				S	Sn	05 09 31.0	-0.7
MIYJ	Miyakonagasawa	1.43	352	P	Pn	05 09 19.1	-0.7
MIYJ				S	Sb	05 09 37.8	-1.1
JOM	Ohasama	1.45	335	P	Pb	05 09 20.2	-0.5
JOM				S	Sg	05 09 40.3	+0.4
JFT	Otama	1.52	246	S	Sn	05 09 40.3	-0.9
JYK	Kaneyama	1.55	300	P	Pb	05 09 22.2	-0.2
JYK				S	Sg	05 09 43.2	+0.2
JYS	Shirataka	1.59	273	P	Pn	05 09 21.2	-0.8
JYS				S	Sg	05 09 44.2	-0.1
MJAR	Matsushiro Arr	3.48	244	Pn	Pn	05 09 48.9	+0.9
	1.0nm,0.3s,baz=84,slow=15,SNR=2.6						
MKAR	Makanchi Array	43.98	301	P	P	05 17 06.1	+4.9
	0.2nm,0.3s,baz=85,slow=7.6,SNR=1.9						
KURBB	Kurchatov Arra	45.74	307	P	P	05 17 17.7	+2.6
	0.5nm,0.6s,baz=82,slow=8.3,SNR=3.0						
WRA	Warramunga Arr	58.25	189	P	P	05 18 47.3	-1.3
	0.3nm,0.7s,baz=6.2,slow=7.2,SNR=2.3						

MEX 15 05:08:56.0±0.7**, 17°.97N**×**101°.76W, h37**km±32km**, MD3.7, Near coast of Guerrero**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
ZIIG	Zihuatanejo	0.46	142	*e*P	Pn	05 09 04.8	-1.1
ZIIG				*i* S	Sn	05 09 10.3	-2.7
ARIG	Puente Sto Nin	1.38	77	*e*P	Pn	05 09 16.7	-2.0
ARIG				*i* S	Sn	05 09 33.0	-2.7
MMIG	Aquila	1.54	282	*i* P	Pn	05 09 19.7	-1.2
MMIG				*i* S	Sn	05 09 37.3	-2.4
CAIG	El Cayaco	1.69	123	*e*P	Pn	05 09 20.9	-2.1
CAIG				*i* S	Sn	05 09 33.2	-10
PLIG	Platanillo	2.19	79	*i* P	Pn	05 09 28.8	-1.1
PLIG				*i* S	Sn	05 09 54.0	-1.8

IDC 15 05:10:38.4±2.8**, 54°.17N**×**86°.42E, h0**km**, mb1 2.8**/2**, mb1mx2.7**/53**, mbtmp2.8**/2**, ML2.5**/2**, Error ellipse: s-maj=21.8km s-min=12.8km az=62.0, Southwestern Siberia**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
I46RU	ZALESOVO INFRA	0.97	258	*i*		05 16 00.0	
	baz=78,slow=318,SNR=2.8						
ZALV	Zalesovo Beam	0.97	258	Pg	Pg	05 10 55.5	-1.5
	2.5nm,0.3s,baz=76,slow=18,SNR=23						
ZALV				Lg	Lg	05 11 11.2	
	4.4nm,0.3s,baz=76,slow=30,SNR=21						
KURBB	Kurchatov Arra	5.99	237	Pn	Pn	05 12 09.3	+1.1
	0.1nm,0.3s,baz=56,slow=14,SNR=7.0						
MKAR	Makanchi Array	7.84	201	Pn	Pn	05 12 34.7	+1.1
	0.1nm,0.3s,baz=26,slow=13,SNR=3.5						
MKAR				Lg	Lg	05 14 46.2	
	0.1nm,0.3s,baz=27,slow=29,SNR=8.2						

*NIED **15** 05:15:00, 37°.00N×140°.70E, h5km, Mw3.6 Best double couple: M0 2.88000×10^14 NP1: ϕ_s246.00000°, δ37.00000°, λ-110.00000°. NP2: ϕ_s91.00000°, δ56.00000°, λ-76.00000°.*

*IDC **15** 05:15:01.7±0.9, 37°.05N×140°.68E, h0km, mb3.8/7, mb1 3.9/8, mb1mx3.7/46, mbtmp3.7/8, ML3.3/1, Error ellipse: s-maj=22.6km s-min=20.2km az=81.0*

*ISCJB **15** 05:15:02.5±0.6, 37°.00N±0°.03×140°.82E±0°.05, h17km±4km, mb3.9/9, Error ellipse: s-maj=7.0km s-min=4.9km az=27.5*

*JMA **15** 05:15:03.4, 37°.01N×140°.70E, h7km±1km, M3.7 Broadband fault plane solution: P waves. NP1: ϕ_s263.00000°, δ56.00000°, λ-105.00000°. NP2: ϕ_s108.00000°, δ36.00000°, λ-69.00000°. Principal axes: T Plg10.0000°, Azm3.0000°; N Plg12.0000°, Azm271.0000°; P Plg74.0000°, Azm132.0000°;*

JMA Felt II J1.

*NEIC **15** 05:15:08.0±2.1, 36°.97N×140°.59E, h45km±18km, mb4.4/2 Error ellipse: s-maj=24.0km s-min=11.1km az=62.0*

ISC 15 05:15:03.3±0.9**, 37°.00N**±0°.03×**140°.69E**±0°.04**, h10**km±6km**, n31, σ0s.69**/32**, mb4.0**/9**, 7C, Eastern Honshu**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
ONAJ	Iwakimizuishiy	0.13	41	⇑P	Pg	05 15 06.5	0.0
ONAJ				S	Sg	05 15 08.5	-0.2
JFK	Kawauchi	0.39	22	⇑P	Pg	05 15 11.1	0.0
JFK				S	Sg	05 15 16.4	+0.1
JHO	Hitachi	0.40	194	⇑P	Pg	05 15 11.3	+0.1
JHO				S	Sg	05 15 16.9	+0.4
JFT	Otama	0.59	331	⇑P	Pg	05 15 14.9	+0.1
JFT				S	Sg	05 15 22.8	+0.3
JSB	Shiboa	0.62	267	P	Pb	05 15 16.1	-0.1
JSB				S	Sb	05 15 24.7	-0.3
JYT	Yasato	0.87	207	⇑P	Pg	05 15 19.8	-0.3
JFY	Yanaizu	0.89	298	⇑P	Pg	05 15 20.4	0.0
JFY				S	Sg	05 15 31.7	-0.2
JAG	Ashikaga	1.15	240	⇑P	Pb	05 15 24.6	-0.7
JAG				S	Sg	05 15 39.9	-0.4
MJAR	Matsushiro Arr	2.04	258	Pn	Pn	05 15 39.0	+1.2
	12nm,0.3s,baz=98,slow=15,SNR=14						
MJAR				Sn	Sb	05 16 05.7	-0.3
	13nm,0.3s,baz=64,slow=13,SNR=4.4						
MAJO	Matsushiro	2.05	258	*e*Pn	Pn	05 15 39.1	+1.3
MAJO				*e*Sn	Sb	05 16 06.4	+0.3
MAT	Matsushiro	2.05	258	P	Pn	05 15 38.7	+0.9
MAT				S	Sn	05 16 04.4	+1.0
JHJ2	Mitsune	3.95	191	*e*Pn	Pn	05 16 05.0	+1.1
USRK	Ussuriysk Ar.	9.77	320	Pn	Pn	05 17 30.1	+6.3
	0.1nm,0.3s,baz=122,slow=14,SNR=5.3						
KSRS	Korea Array	10.19	276	Pn	Pn	05 17 35.2	+5.6
	0.1nm,0.3s,baz=87,slow=14,SNR=6.5						
KSAR	Wonju Array Be	10.22	276	Pn	Pn	05 17 35.2	+5.1
SONM	Songino Array	27.32	304	P	P	05 20 46.9	-1.4
	0.3nm,0.4s,baz=112,slow=11,SNR=3.1						
H11N2	WAKE ISLAND Hy	28.63	120	T	T	05 50 46.7	
	baz=313,slow=75,SNR=28						
H11N1	WAKE ISLAND Hy	28.64	120	T	T	05 50 48.8	
	baz=313,slow=75,SNR=28						
H11N3	WAKE ISLAND Hy	28.65	120	T	T	05 50 48.7	
	baz=313,slow=75,SNR=26						
H11S1	WAKE ISLAND Hy	29.33	122	T	T	05 51 37.5	
	baz=314,slow=76,SNR=78						
H11S3	WAKE ISLAND Hy	29.33	122	T	T	05 51 39.8	
	baz=314,slow=76,SNR=45						
H11S2	WAKE ISLAND Hy	29.35	122	T	T	05 51 38.8	
	baz=314,slow=76,SNR=37						
MKAR	Makanchi Array	43.65	302	P	P	05 23 07.7	-0.3
	0.2nm,0.3s,baz=88,slow=9.6,SNR=1.9						
KURK	Kurchatov	45.50	308	*e*P	P	05 23 23.7	+1.0
	5.5nm,0.8s						
KURBB	Kurchatov Arra	45.56	308	P	P	05 23 22.8	-0.4
	1.0nm,0.7s,baz=83,slow=7.8,SNR=7.3						
WRAB	Tennant Creek	56.94	187	*e*P	P	05 24 48.3	-0.5
	3.1nm,0.8s						
WRA	Warramunga Arr	56.95	187	P	P	05 24 48.3	-0.6
	2.0nm,0.6s,baz=3.5,slow=7.3,SNR=28						
ASAR	Alice Springs	60.68	187	P	P	05 25 15.0	+0.2
	1.1nm,0.8s,baz=16,slow=5.8,SNR=9.8						
YKA	Yellowknife Ar	64.12	30	P	P	05 25 38.0	+0.6
	0.2nm,0.7s,baz=304,slow=6.5,SNR=3.1						
FINES	FINESS Array B	68.57	332	P	P	05 26 04.7	-1.2
	1.7nm,0.9s,baz=38,slow=7.0,SNR=3.5						
LPAZ	La Paz	147.21	59	PKPbc	PKPbc	05 34 48.3	+0.3
	0.9nm,0.7s,baz=32,slow=6.5,SNR=4.2						

*ISCJB **15** 05:26:01.3±0.5, 26°.96N±0°.03×55°.93E±0°.05, h14km, Error ellipse: s-maj=7.1km s-min=4.4km az=7.5*

*CSEM **15** 05:26:01.2±0.2, 26°.93N×55°.91E, h5km, ML3.1, Error ellipse: s-maj=5.9km s-min=3.8km az=94.0*

*DSN **15** 05:26:01.9±1.3, 26°.91N×56°.13E, h10km, ML3.1, Error ellipse: s-maj=24.5km s-min=4.4km az=67.0*

*TEH **15** 05:26:02.8, 27°.01N×55°.88E, h3km, ML3.1*

ISC 15 05:26:01.2±0.9**, 26°.93N**±0°.03×**55°.91E**±0°.05**, h14**km**, n33, σ1s.13**/37**, Southern Iran**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
GENO	Geno	0.52	26	*e*Pg	Pg	05 26 10.9	-0.6
GENO	Geno	0.52	26	*e*Pg	Pg	05 26 10.9	-0.6
IBND	Bandar-abas	0.76	47	*e*Pg	Pb	05 26 16.6	+0.4
IBND				*e*Sg	Sg	05 26 26.0	0.0
IBND				*e*AMB	AMB	05 26 27.7	
	comp=N,15μm,0.1s						
IBND	Bandar-abas	0.76	47	*e*Pg	Pb	05 26 16.6	+0.4
IBND				*e*Sg	Sg	05 26 26.0	0.0
KHSK	Kohestak	1.03	99	*e*Pg	Pn	05 26 22.1	+0.9
KHSK	Kohestak	1.03	99	*e*Pg	Pn	05 26 22.1	+0.9
NIAN	Nian	1.03	52	*e*Pg	Pb	05 26 19.7	-1.1
NIAN	Nian	1.03	52	*e*Pg	Pb	05 26 19.7	-1.1
BANOM	Banah	1.06	161	*e*P	Pb	05 26 20.5	-0.8
	SNR=35						
BANOM				S	Sb	05 26 35.1	0.0
BANOM	Banah	1.06	161	P	Pb	05 26 20.5	-0.8
	SNR=35						
BANOM				S	Sb	05 26 35.1	0.0
NAZ	Nazwa, Dubai	1.95	187	P	Pb	05 26 35.6	-0.8
NAZ	Nazwa, Dubai	1.95	187	P	Pb	05 26 35.6	-0.8
HATD	Hatta, Dubai	2.10	175	*e*P	Pn	05 26 37.2	+1.2
	SNR=18						
HATD	Hatta, Dubai	2.10	175	P	Pn	05 26 37.2	+1.2
	SNR=18						
ASHO	Ashiyiah	2.24	177	*e*P	Pn	05 26 39.0	+1.1
	SNR=14						
ASHO	Ashiyiah	2.24	177	P	Pn	05 26 39.0	+1.1
	SNR=14						
ASUD	Al Ashush, Dub	2.35	193	P	Pn	05 26 40.7	+1.3
ASUD	Al Ashush, Dub	2.35	193	P	Pn	05 26 40.7	+1.3
TVBK	TV Kerman	3.13	14	*e*Pn	Pb	05 26 54.9	-2.0
CHMN	Cheshme madani	3.25	26	*e*Pn	Pn	05 26 53.6	+1.5
CHMN	Cheshme madani	3.25	26	*e*Pn	Pn	05 26 53.6	+1.5
KHGB	Koh Gabri	3.47	8	*e*Pn	Pn	05 26 55.8	+0.8
KHGB	Koh Gabri	3.47	8	*e*Pn	Pn	05 26 55.8	+0.8
IPAR	Pars	3.84	320	*e*Pn	Pn	05 27 02.2	+2.0
IPAR				*e*AMB	AMB	05 28 24.2	
	comp=E,195nm,0.4s						
IPAR	Pars	3.84	320	*e*Pn	Pn	05 27 02.2	+2.0
IKAZ	Kazeroun	4.58	309	*e*Pn	Pn	05 27 10.9	+0.6
IKAZ				*e*AMB	AMB	05 28 09.3	
	comp=Z,248nm,0.1s						
IKAZ	Kazeroun	4.58	309	*e*Pn	Pn	05 27 10.9	+0.6
IMEH	Mehriz	4.59	346	*e*Pn	Pn	05 27 11.2	+0.8
IMEH				*e*AMB	AMB	05 27 17.7	
	comp=Z,172nm,0.1s						
IMEH	Mehriz	4.59	346	*e*Pn	Pn	05 27 11.2	+0.8
IRAM	Ramesheh	5.76	328	*e*Pn	Pn	05 27 27.5	+1.1
IRAM				*e*AMB	AMB	05 28 38.9	
	comp=N,115nm,0.1s						
IRAM	Ramesheh	5.76	328	*e*Pn	Pn	05 27 27.5	+1.1
IKOO	Kooshah	6.10	25	*e*Pn	Pn	05 27 32.7	+1.5
IKOO	Kooshah	6.10	25	*e*Pn	Pn	05 27 32.7	+1.5

IDC 15 05:38:14.6±3.2, 32.89S×178.50W, h0km, mb3.6/2, mb1 3.8/3, mb1mx3.7/29, mbtmp3.6/3, ML3.6/1, Error ellipse: s-maj=73.3km s-min=46.8km az=121.0, South of Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
URZ	**Urewera**	**6.44**	**212**	Pn	Pn	05 39 49.7	-0.9
	1.2nm,0.3s,baz=266,slow=10,SNR=7.2						
URZ				Sn	Sn	05 41 00.5	-4.3
	1.5nm,0.3s,baz=278,slow=20,SNR=6.5						
ASAR	**Alice Springs**	**42.61**	**270**	P	P	05 46 12.8	-0.1
	0.6nm,0.8s,baz=113,slow=7.7,SNR=5.6						
WRA	**Warramunga Arr**	**43.83**	**275**	P	P	05 46 22.6	0.0
	0.4nm,0.3s,baz=114,slow=8.0,SNR=22						
FINES	**FINESS Array B**	**147.32**	**338**	PKPbc	PKPbc	05 57 58.5	-0.8
	0.7nm,0.5s,baz=50,slow=4.3,SNR=4.7						

NIED ***15*** *05:48:00.3, 37.00N×140.70E, h5km, Mw3.7 Best double couple: M₀4.13000×10¹⁴ NP1:φs91.00000°, δ35.00000°, λ-73.00000°. NP2:φs251.00000°, δ57.00000°, λ-101.00000°.*

ISCJB ***15*** *05:48:39.6±1.7, 37.01N±0.03×140.81E±0.05, h11km±11km, mb3.6/9, Error ellipse: s-maj=7.6km s-min=4.5km az=18.8*

IDC ***15*** *05:48:39.2±0.8, 37.00N×140.74E, h0km, mb3.7/9, mb1 3.9/10, mb1mx3.8/34, mbtmp3.6/10, ML3.6/1, Error ellipse: s-maj=22.4km s-min=17.9km az=138.0*

JMA ***15*** *05:48:40.6, 37.02N×140.69E, h7km±1km, M3.7 Broadband fault plane solution: P waves. NP1: φs100.00000°, δ52.00000°, λ-74.00000°. NP2: φs255.00000°, δ41.00000°, λ-110.00000°. Principal axes: T Plg6.0000°, Azm179.0000°; N Plg13.0000°, Azm270.0000°; P Plg76.0000°, Azm65.0000°;*

JMA Felt I J1.

ISC 15 05:48:40.8±0.9, 37.02N±0.03×140.70E±0.04, h9km±6km, n28, σ0844/28, mb3.6/9, 8C, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.11**	**44**	⇑P	**Pg**	**05 48 43.4**	**-0.1**
ONAJ				S	**Sg**	**05 48 45.5**	**+0.1**
JFK	**Kawauchi**	**0.37**	**22**	⇑P	**Pg**	**05 48 48.0**	**-0.1**
JFK				S	**Sg**	**05 48 53.2**	**+0.2**
JHO	**Hitachi**	**0.42**	**195**	⇑P	**Pg**	**05 48 48.8**	**-0.3**
JHO				S	**Sg**	**05 48 54.9**	**+0.3**
JFT	**Otama**	**0.57**	**330**	⇑P	**Pg**	**05 48 51.9**	**0.0**
JFT				S	**Sg**	**05 48 59.5**	**0.0**
JSB	**Shiboa**	**0.63**	**265**	⇑P	**Pg**	**05 48 53.3**	**+0.4**
JMM	**Marumori**	**0.85**	**5**	⇑P	**Pg**	**05 48 56.4**	**-0.7**
JMM				S	**Sg**	**05 49 08.0**	**-0.1**
JFY	**Yanaizu**	**0.89**	**296**	⇑P	**Pg**	**05 48 57.4**	**-0.4**
JFY				S	**Sg**	**05 49 08.6**	**-0.7**
JYT	**Yasato**	**0.89**	**207**	⇑P	**Pg**	**05 48 57.2**	**-0.7**
MJAR	**Matsushiro Arr**	**2.06**	**257**	Pn	**Pn**	**05 49 16.4**	**+0.9**
	18nm,0.3s,baz=72,slow=15,SNR=123						
MJAR				Sn	**Sb**	**05 49 44.0**	**+0.1**
	19nm,0.3s,baz=88,slow=27,SNR=15						
MAT	**Matsushiro**	**2.06**	**257**	P	**Pn**	**05 49 16.3**	**+0.8**
MAT				S	**Sb**	**05 49 44.0**	**0.0**
USRK	**Ussuriysk Ar.**	**9.76**	**320**	Pn	Pn	05 51 07.1	+6.0
	0.2nm,0.3s,baz=137,slow=13,SNR=4.7						
KSRS	**Korea Array**	**10.20**	**276**	Pn	Pn	05 51 14.1	+6.8
	0.4nm,0.3s,baz=94,slow=12,SNR=6.8						
SONM	**Songino Array**	**27.32**	**304**	P	**P**	**05 54 25.4**	**-0.4**
	0.8nm,0.7s,baz=106,slow=8.5,SNR=4.6						
H11N2	**WAKE ISLAND Hy**	**28.63**	**120**	T	T	06 24 21.8	
	baz=313,slow=75,SNR=19						
H11N1	**WAKE ISLAND Hy**	**28.64**	**120**	T	T	06 24 25.8	
	baz=313,slow=75,SNR=19						
H11N3	**WAKE ISLAND Hy**	**28.65**	**120**	T	T	06 24 23.3	
	baz=313,slow=75,SNR=14						
H11S1	**WAKE ISLAND Hy**	**29.33**	**122**	T	T	06 25 18.1	
	baz=314,slow=75,SNR=25						
H11S3	**WAKE ISLAND Hy**	**29.33**	**122**	T	T	06 25 18.1	
	baz=314,slow=75,SNR=23						
H11S2	**WAKE ISLAND Hy**	**29.35**	**122**	T	T	06 25 20.4	
	baz=314,slow=75,SNR=7.1						
MKAR	**Makanchi Array**	**43.64**	**302**	P	**P**	**05 56 45.2**	**-0.3**
	0.7nm,0.6s,baz=87,slow=10.0,SNR=8.8						
ILAR	**Eielson Array**	**49.81**	**32**	P	**P**	**05 57 33.6**	**+0.2**
	0.2nm,0.5s,baz=258,slow=7.3,SNR=5.4						
WRA	**Warramunga Arr**	**56.97**	**187**	P	**P**	**05 58 26.1**	**-0.5**
	1.3nm,0.6s,baz=3.8,slow=7.4,SNR=30						
ASAR	**Alice Springs**	**60.70**	**187**	P	**P**	**05 58 52.1**	**-0.3**
	0.7nm,0.7s,baz=16,slow=7.0,SNR=7.8						
YKA	**Yellowknife Ar**	**64.10**	**30**	P	**P**	**05 59 14.7**	**0.0**
	0.1nm,0.6s,baz=304,slow=6.7,SNR=6.1						
FINES	**FINESS Array B**	**68.56**	**332**	P	**P**	**05 59 43.3**	**0.0**
	1.7nm,0.8s,baz=88,slow=5.9,SNR=3.7						
PDAR	**Pinedale Array**	**78.08**	**45**	P	**P**	**06 00 40.0**	**-0.2**
	0.4nm,0.7s,baz=222,slow=8.0,SNR=4.7						
TXAR	**Lajitas Array**	**90.58**	**52**	P	**P**	**06 01 44.4**	**+0.7**
	0.1nm,0.4s,baz=322,slow=3.9,SNR=3.6						
LPAZ	**La Paz**	**147.19**	**59**	PKPbc	**PKPbc**	**06 08 25.4**	**-0.1**
	1.4nm,0.9s,baz=331,slow=6.4,SNR=4.5						

JMA ***15*** *05:53:05.2±0.2, 43.13N×146.84E, h59km±3km, M3.4*

SKHL ***15*** *05:53:05.3±0.4, 43.10N×146.96E, h44km±1km, mb4.2/2*

ISC 15 05:53:05.2±2.1, 43.13N±0.08×146.88E±0.09, h29km±15km, n17, σ0886/27, Kuril Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SHO	**Shikotan**	**0.74**	**357**	*i* P	**Pb**	**05 53 19.2**	**-0.3**
SHO				AMB	AMB	05 53 19.6	
	170nm,0.3s						
SHO				*e*S	**Sb**	**05 53 29.4**	**+0.1**
SHO				A	A	05 53 29.7	
	2μm,0.4s						
SHO				A	A	05 53 29.7	
	2μm,0.4s						
NEM2	**Nemuro 2**	**0.86**	**286**	P	**Pn**	**05 53 21.2**	**-0.2**
NEM2				*e*S	**Sn**	**05 53 33.2**	**+0.2**
YUK	**Yuzh-Kuril'sk**	**1.17**	**321**	*i* P	**Pn**	**05 53 24.9**	**-0.7**
YUK				AMB	AMB	05 53 25.5	
	120nm,0.5s						
YUK				*i* S	**Sn**	**05 53 39.9**	**-0.6**
YUK				A	A	05 53 41.0	
	730nm,0.3s						
YUK				A	A	05 53 41.0	
	590nm,0.3s						
JRA	**Rausu**	**1.51**	**303**	P	**Pn**	**05 53 30.3**	**0.0**
JRA				*e*S	**Sn**	**05 53 49.0**	**0.0**
JAK	**Akkeshi**	**1.60**	**266**	P	**Pn**	**05 53 31.4**	**-0.2**
JAK				*e*S	**Sn**	**05 53 50.3**	**-1.0**
JNK	**Nakash**	**1.64**	**287**	P	**Pn**	**05 53 31.4**	**-0.7**
JNK				*e*S	**Sn**	**05 53 51.4**	**-0.8**
KUR	**Kuril'sk**	**2.22**	**18**	*e*P	**Pn**	**05 53 39.8**	**-0.2**
KUR				*e*S	**Sn**	**05 54 05.5**	**-0.9**
KUR				A	A	05 54 07.6	
	390nm,0.5s						
KUR				A	A	05 54 07.6	
	240nm,0.5s						
JOB	**Onbets**	**2.24**	**265**	P	**Pn**	**05 53 40.4**	**0.0**
JOB				*e*S	**Sn**	**05 54 06.2**	**-0.9**
JAR	**Ashorobuto**	**2.28**	**275**	P	**Pn**	**05 53 40.8**	**-0.1**
JAR				*e*S	**Sn**	**05 54 07.7**	**-0.3**
JTKR	**Abashiri--Toko**	**2.32**	**292**	P	**Pn**	**05 53 41.8**	**+0.4**
JCH	**Churui**	**2.64**	**260**	P	**Pn**	**05 53 46.5**	**+0.7**
JCH				*e*S	**Sn**	**05 54 15.9**	**-0.8**
JMP	**Maruseppu**	**2.70**	**290**	P	**Pn**	**05 53 47.4**	**+0.7**
JEM	**Erimo**	**2.97**	**249**	P	**Pn**	**05 53 52.0**	**+1.7**
JKK2	**Kamakawa 2**	**3.10**	**285**	P	**Pn**	**05 53 53.3**	**+1.2**
JNBK	**Urakawa-nobuka**	**3.16**	**256**	P	**Pn**	**05 53 52.9**	**0.0**
YSS	**Yuzh-Sakhalins**	**4.81**	**324**	*e*P	**Pn**	**05 54 17.2**	**+1.6**
TYV	**Tymovskoe**	**8.25**	**341**	*e*P	**Pn**	**05 55 04.7**	**+1.8**

ISCJB ***15*** *05:53:14.9±1.5, 36.62N±0.08×140.76E±0.10, h10km±5km, mb3.3/3, Error ellipse: s-maj=16.8km s-min=8.2km az=136.4*

IDC ***15*** *05:53:14.9±2.4, 36.75N×140.72E, h0km, mb3.4/3, mb1 3.5/4, mb1mx3.3/38, mbtmp3.4/4, ML3.2/1, Error ellipse: s-maj=41.1km s-min=28.9km az=60.0*

JMA ***15*** *05:53:16.6, 36.69N×140.63E, h5km±1km, M3.2 Broadband fault plane solution: P waves. NP1: φs349.00000°, δ63.00000°, λ-76.00000°. NP2: φs141.00000°, δ30.00000°, λ-115.00000°. Principal axes: T Plg17.0000°, Azm69.0000°; N Plg12.0000°, Azm163.0000°; P Plg69.0000°, Azm287.0000°;*

JMA Felt II J1.

ISC 15 05:53:15.5±1.6, 36.73N±0.10×140.7E±0.1, h4km±12km, n7, σ0546/11, mb3.5/3, 2C, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHO	**Hitachi**	**0.16**	**221**	⇑P	**Pg**	**05 53 18.7**	**+0.1**
JHO				S	**Sg**	**05 53 20.2**	**-0.5**
ONAJ	**Iwakimizuishiy**	**0.38**	**12**	⇑P	**Pb**	**05 53 25.2**	**+0.2**
ONAJ				*e*S	**Sb**	**05 53 31.1**	**-0.2**
MJAR	**Matsushiro Arr**	**2.01**	**265**	Pn	**Pn**	**05 53 50.8**	**+0.5**
	8.0nm,0.3s,baz=84,slow=9.9,SNR=26						
MJAR				Sn	**Sn**	**05 54 15.7**	**-0.3**
	15nm,0.3s,baz=84,slow=27,SNR=10						
MAT	**Matsushiro**	**2.01**	**265**	P	**Pn**	**05 53 50.7**	**+0.4**
MAT				S	**Sn**	**05 54 16.5**	**+0.5**
SONM	**Songino Array**	**27.48**	**305**	P	**P**	**05 59 02.7**	**-0.3**
	0.4nm,0.4s,baz=92,slow=7.8,SNR=2.4						
MKAR	**Makanchi Array**	**43.80**	**302**	P	**P**	**06 01 21.9**	**-0.6**
	0.1nm,0.3s,baz=53,slow=5.6,SNR=1.6						
WRA	**Warramunga Arr**	**56.68**	**187**	P	**P**	**06 03 00.4**	**+0.2**
	0.2nm,0.4s,baz=5.5,slow=7.3,SNR=2.6						

SOME ***15*** *05:57:35.5, 41.08N×71.35E, h0km*

NNC ***15*** *05:57:35.5±1.4, 41.03N×71.40E, h0km, mb2.7, mpv2.4, Error ellipse: s-maj=13.6km s-min=5.3km az=66.0*

ISC 15 05:57:32.7±1.7, 40.91N±0.10×71.2E±0.1, h15km±24km, n7, σ0550/12, 6C-3D, Tajikistan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
IUG	**Iuzhnay**	**1.50**	**326**	*e*P	**Pg**	**05 58 02.1**	**+0.4**
	31nm,0.4s						
IUG				*e*S	**Sg**	**05 58 21.2**	**0.0**
	26nm,0.3s						
MNAS	**Manas**	**1.87**	**32**	⇓Pn	**Pb**	**05 58 06.4**	**-0.4**
	1.3nm,0.4s						
MNAS				⇑Sn	**Sb**	**05 58 29.8**	**-0.3**
	3.3nm,0.4s						
SFK	**Sufi-Kurgan**	**2.00**	**116**	⇑P	**Pg**	**05 58 10.7**	**-0.4**
	0.5nm,0.3s						
SFK				⇑S	**Sb**	**05 58 34.5**	**+0.7**
	12nm,0.5s						
BRLS	**Borolday**	**2.18**	**330**	*e*P	**Pg**	**05 58 14.7**	**+0.1**
	2.1nm,0.3s						
BRLS				⇑*i*S	**Sg**	**05 58 42.9**	**0.0**
	8.0nm,0.2s						
KK31	**Karatay Array**	**2.25**	**348**	⇓Pn	**Pb**	**05 58 12.4**	**-0.7**
	1.5nm,0.3s,baz=157,slow=14,SNR=3.6						
KK31				⇑Lg	Lg	05 58 43.1	
	32nm,0.7s,baz=152,slow=17,SNR=9.7						
MRKS	**Merke**	**2.40**	**39**	*e*P	**Pb**	**05 58 16.3**	**+0.5**
	8.1nm,0.4s						
MRKS				*e*S	**Sb**	**05 58 45.3**	**+0.1**
	28nm,0.3s						
AAK	**Ala-Archa**	**3.03**	**54**	⇓Pg	**Pb**	**05 58 26.7**	**+0.2**
	0.6nm,0.3s						
AAK				⇑Lg	Lg	05 59 03.8	
	1.8nm,0.7s						

IDC ***15*** *06:00:22.7±0.9, 35.87N×142.85E, h0km, mb3.5/9, mb1 3.8/10, mb1mx3.6/41, mbtmp3.5/10, ML3.3/1, Error ellipse: s-maj=23.3km s-min=22.3km az=9.0*

ISCJB ***15*** *06:00:26.0±0.6, 35.98N±0.07×142.82E±0.07, h33km, mb3.4/9, Error ellipse: s-maj=9.8km s-min=7.5km az=151.5*

JMA ***15*** *06:00:26.8±0.3, 36.04N×142.72E, h66km, M3.1*

ISC 15 06:00:28.1±0.8, 36.01N±0.07×142.81E±0.09, h35km, n19, σ1934/21, mb3.5/9, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**1.61**	**260**	P	**Pn**	**06 00 53.0**	**-1.0**
JHO	**Hitachi**	**1.91**	**289**	P	**Pn**	**06 00 56.4**	**-1.7**
BSO1	**Boso 1**	**2.01**	**228**	P	**Pn**	**06 00 57.9**	**-1.2**
BSO1				S	**Sn**	**06 01 23.1**	**+0.4**
BSO3	**Boso 3**	**2.23**	**238**	P	**Pn**	**06 01 01.6**	**-0.7**
BSO4	**Boso 4**	**2.25**	**244**	P	**Pn**	**06 01 02.3**	**-0.5**
JMM	**Marumori**	**2.46**	**320**	P	**Pn**	**06 01 04.2**	**-1.5**
JFT	**Otama**	**2.49**	**308**	P	**Pn**	**06 01 04.7**	**-1.4**
JAG	**Ashikaga**	**2.74**	**280**	P	**Pn**	**06 01 08.5**	**-1.1**
MJAR	**Matsushiro Arr**	**3.75**	**280**	Pn	**Pn**	**06 01 22.6**	**-0.9**
	2.1nm,0.3s,baz=105,slow=8.9,SNR=9.8						
MAT	**Matsushiro**	**3.75**	**280**	P	**Pn**	**06 01 20.4**	**-3.1**
MAT				*e*S	**Sn**	**06 02 08.8**	**+2.3**
SONM	**Songino Array**	**29.29**	**305**	P	**P**	**06 06 27.7**	**+0.6**
	0.3nm,0.5s,baz=95,slow=8.7,SNR=2.8						
ZALV	**Zalesovo Beam**	**43.43**	**313**	P	**P**	**06 08 27.9**	**+0.6**
	0.4nm,0.3s,baz=120,slow=5.2,SNR=3.5						
MKAR	**Makanchi Array**	**45.62**	**303**	P	**P**	**06 08 45.3**	**+0.4**
	0.2nm,0.2s,baz=82,slow=8.7,SNR=5.0						
ILAR	**Eielson Array**	**49.77**	**32**	P	**P**	**06 09 16.8**	**0.0**
	0.2nm,0.8s,baz=233,slow=6.7,SNR=3.8						
WRA	**Warramunga Arr**	**56.22**	**190**	P	**P**	**06 10 03.3**	**-1.5**
	0.4nm,0.8s,baz=7.4,slow=7.2,SNR=5.8						
ASAR	**Alice Springs**	**59.94**	**189**	P	**P**	**06 10 29.9**	**-0.9**
	0.2nm,0.4s,baz=357,slow=5.0,SNR=4.7						
NVAR	**Mina Array Bea**	**74.70**	**54**	P	**P**	**06 12 05.3**	**+0.8**
	0.7nm,0.8s,baz=286,slow=5.4,SNR=4.0						
PDAR	**Pinedale Array**	**77.58**	**46**	P	**P**	**06 12 21.4**	**+0.5**
	0.2nm,0.6s,baz=253,slow=7.6,SNR=3.7						
TXAR	**Lajitas Array**	**89.85**	**53**	P	**P**	**06 13 24.1**	**+0.5**
	0.2nm,0.8s,baz=300,slow=2.7,SNR=3.4						

ISCJB ***15*** *06:14:03.3±0.6, 31.25N±0.07×115.59W±0.04, h21km±10km, Error ellipse: s-maj=11.8km s-min=5.7km az=13.1*

ECX ***15*** *06:14:04.3±0.5, 31.27N×115.60W, h5km, MD2.3, ML2.4*

MEX ***15*** *06:14:05.6±0.6, 31.17N×115.64W, h12km±43km, MD3.6*

ISC 15 06:14:02.9±1.0, 31.29N±0.04×115.59W±0.04, h16km±9km, n11, σ0932/22, 4C-1D, Baja California

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SPIG	**San Pedro Mart**	**0.26**	**157**	*e*P	**Pg**	**06 14 09.0**	**+0.2**
SPIG				*e*S	**Sg**	**06 14 12.8**	**-0.1**
SPIG	**San Pedro Mart**	**0.26**	**157**	*i* P	**Pb**	**06 14 09.4**	**0.0**
SPIG				*i* S	**Sg**	**06 14 12.4**	**-0.5**
SPX	**San Pedro Mart**	**0.26**	**157**	⇓*e*P	**Pb**	**06 14 09.4**	**0.0**
SPX				*e*S	**Sg**	**06 14 12.9**	**-0.1**
SPX				⇑*e*		06 14 14.2	
SPX				AML	AML	06 14 14.2	
	comp=N,446nm,0.1s						
ECBX	**El Chinero**	**0.49**	**68**	⇑*e*P	**Pb**	**06 14 13.3**	**+0.2**
ECBX				*e*S	**Sb**	**06 14 20.3**	**+0.2**
ZAX	**El Zacaton**	**0.63**	**291**	*e*P	**Pb**	**06 14 15.6**	**0.0**
ZAX				*e*S	**Sb**	**06 14 24.2**	**0.0**
ECNX	**Esteban Cantu**	**0.94**	**293**	*e*P	**Pb**	**06 14 21.1**	**+0.2**
ECNX				*e*S	**Sb**	**06 14 33.3**	**+0.1**
PBX	**Punta Banda**	**1.07**	**295**	*e*P	**Pb**	**06 14 23.2**	**+0.1**
PBX				*e*S	**Sb**	**06 14 37.1**	**+0.2**
CBX	**Cerro Bola**	**1.38**	**318**	*e*P	**Pb**	**06 14 28.5**	**+0.1**
CBX				*e*S	**Sb**	**06 14 46.5**	**+0.8**
CBX				AML	AML	06 14 48.5	
	comp=E,54nm,0.1s						
CBX				⇑*e*		06 14 48.5	
CBX	**Cerro Bola**	**1.38**	**318**	*e*P	**Pb**	**06 14 28.4**	**+0.1**
CBX				*i* S	**Sn**	**06 14 44.8**	**-0.7**
RMX	**La Rumorosa**	**1.38**	**342**	*e*P	**Pb**	**06 14 28.3**	**-0.1**
RMX				*e*S	**Sg**	**06 14 47.0**	**-0.5**
RMX				AML	AML	06 14 48.3	
	comp=E,87nm,0.4s						
RMX				⇑*e*		06 14 48.3	
TJIG	**Tijuana**	**1.47**	**321**	*i* P	**Pn**	**06 14 28.8**	**+0.1**
TJIG				*i* S	**Sn**	**06 14 47.6**	**-0.1**

NIED ***15*** *06:16:00, 37.70N×142.00E, h11km, Mw3.8 Best double couple: M₀4.91000×10¹⁴ NP1:φs150.00000°, δ22.00000°, λ-84.00000°. NP2:φs324.00000°, δ68.00000°, λ-92.00000°.*

JMA ***15*** *06:16:50.3±0.2, 37.65N×142.03E, h26km±4km, M3.8*

IDC ***15*** *06:16:57.5±3.9, 37.54N×141.96E, h72km±35km, mb3.4/8, mb1 3.6/9, mb1mx3.4/40, mbtmp3.6/9, ML3.2/1, Error ellipse: s-maj=27.7km s-min=17.6km az=92.0*

ISC 15 06:16:49.7±2.1, 37.69N±0.05×141.96E±0.07, h7km±12km, n28, σ1926/30, mb3.6/8, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**0.90**	**328**	P	**Pb**	**06 17 07.8**	**+0.1**
JIO				S	**Sb**	**06 17 20.0**	**+0.1**
JFK	**Kawauchi**	**0.92**	**250**	P	**Pb**	**06 17 07.9**	**-0.2**
JFK				S	**Sb**	**06 17 19.9**	**-0.7**
JMM	**Marumori**	**0.94**	**281**	P	**Pb**	**06 17 08.4**	**0.0**
JMM				*e*S	**Sb**	**06 17 20.9**	**-0.2**
ONAJ	**Iwakimizuishiy**	**1.10**	**238**	S	**Sg**	**06 17 24.2**	**-0.9**
JOU	**Okura**	**1.23**	**304**	P	**Pg**	**06 17 13.4**	**+0.1**
JOU				S	**Sn**	**06 17 29.7**	**-0.4**
JFT	**Otama**	**1.30**	**263**	S	**Sg**	**06 17 31.6**	**0.0**
JMK	**Ichinoseki**	**1.39**	**335**	P	**Pn**	**06 17 15.3**	**-0.2**
JYS	**Shirataka**	**1.59**	**290**	S	**Sg**	**06 17 40.5**	**-0.3**
JYK	**Kaneyama**	**1.76**	**315**	P	**Pn**	**06 17 21.4**	**+0.8**
JFY	**Yanaizu**	**1.82**	**262**	P	**Pn**	**06 17 22.0**	**+0.6**
JFY				S	**Sb**	**06 17 45.3**	**-1.0**
JOM	**Ohasama**	**1.85**	**344**	P	**Pn**	**06 17 21.7**	**-0.2**
JOM				S	**Sn**	**06 17 45.0**	**-0.6**
JYA	**Atsumi**	**1.99**	**298**	P	**Pn**	**06 17 24.5**	**+0.7**
MJAR	**Matsushiro Arr**	**3.21**	**250**	P	**Pn**	**06 17 43.3**	**+2.7**
	2.7nm,0.3s,baz=84,slow=16,SNR=7.4						
MJAR				S	**Sn**	**06 18 21.9**	**+2.7**
	2.9nm,0.3s,baz=77,slow=17,SNR=4.7						
MAT	**Matsushiro**	**3.21**	**250**	P	**Pn**	**06 17 41.7**	**+1.1**
MAT				*e*S	**Sn**	**06 18 15.6**	**-3.6**
H11N2	**WAKE ISLAND Hy**	**28.12**	**123**	T	T	06 51 59.0	
	baz=315,slow=76,SNR=68						
H11N1	**WAKE ISLAND Hy**	**28.13**	**123**	T	T	06 52 01.5	
	baz=315,slow=76,SNR=70						
H11N3	**WAKE ISLAND Hy**	**28.14**	**123**	T	T	06 51 57.9	
	baz=315,slow=76,SNR=71						
H11S1	**WAKE ISLAND Hy**	**28.86**	**125**	T	T	06 52 56.8	
	baz=317,slow=76,SNR=79						
H11S3	**WAKE ISLAND Hy**	**28.86**	**125**	T	T	06 52 56.9	
	baz=317,slow=76,SNR=78						
H11S2	**WAKE ISLAND Hy**	**28.88**	**125**	T	T	06 52 58.1	
	baz=317,slow=76,SNR=79						
ZALV	**Zalesovo Beam**	**41.80**	**312**	P	**P**	**06 24 41.1**	**+1.4**
	0.6nm,0.4s,baz=90,slow=12,SNR=2.7						
MKAR	**Makanchi Array**	**44.14**	**302**	P	**P**	**06 24 58.6**	**-0.2**
	0.3nm,0.4s,baz=86,slow=9.5,SNR=3.6						
ILAR	**Eielson Array**	**48.70**	**33**	P	**P**	**06 25 35.1**	**+0.8**
	0.3nm,0.7s,baz=269,slow=5.1,SNR=5.7						
WRA	**Warramunga Arr**	**57.77**	**188**	P	**P**	**06 26 39.6**	**-1.9**
	2.0nm,0.6s,baz=5.0,slow=7.0,SNR=24						
ASAR	**Alice Springs**	**61.50**	**188**	P	**P**	**06 27 06.0**	**-1.1**
	1.4nm,0.7s,baz=12,slow=6.1,SNR=16						
YKA	**Yellowknife Ar**	**63.02**	**30**	P	**P**	**06 27 17.6**	**+0.7**
	0.2nm,0.7s,baz=303,slow=6.7,SNR=4.1						
FINES	**FINESS Array B**	**68.44**	**332**	P	**P**	**06 27 51.9**	**0.0**
	0.8nm,0.8s,baz=29,slow=18,SNR=2.0						
TXAR	**Lajitas Array**	**89.38**	**53**	P	**P**	**06 29 47.2**	**-0.1**
	0.2nm,0.7s,baz=292,slow=2.8,SNR=2.7						

ISK ***15*** *06:23:34.8, 37.77N×36.37E, h29km, MD2.6*

CSEM ***15*** *06:23:35.0±0.7, 37.84N×36.39E, h20km, MD2.5, Error ellipse: s-maj=17.8km s-min=11.2km az=164.0*

DDA ***15*** *06:23:36.6, 37.24N×36.35E, h7km, Md2.5*

ISCJB ***15*** *06:23:37.5±0.6, 37.28N±0.04×36.35E±0.04, h8km±7km, Error ellipse: s-maj=7.2km s-min=4.7km az=2.1*

ISC 15 06:23:36.6±1.3, 37.21N±0.05×36.35E±0.03, h5km±12km, n17, σ0848/32, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KAMA	**Osmaniye**	**0.26**	**95**	*i* P	**Pg**	**06 23 41.8**	**+0.3**
KAMA				*i* S	**Sb**	**06 23 48.0**	**-0.5**
ANDN	**Andirin**	**0.37**	**359**	*i* P	**Pg**	**06 23 43.9**	**+0.1**
ANDN				*i* S	**Sg**	**06 23 48.4**	**-0.2**
ANDN	**Andirin**	**0.37**	**359**	P	**Pg**	**06 23 43.9**	**+0.1**
ANDN				S	**Sg**	**06 23 48.4**	**-0.2**
AYKD	**Aykdinkavak**	**0.42**	**61**	*i* P	**Pg**	**06 23 44.5**	**-0.2**
AYKD				*i* S	**Sg**	**06 23 50.0**	**-0.1**
KOZT	**Kozan**	**0.50**	**303**	*e*PG	**Pg**	**06 23 45.8**	**-0.3**
KOZT				*e*SG	**Sb**	**06 23 54.9**	**-0.6**
KOZT	**Kozan**	**0.50**	**303**	*e*Pg	**Pg**	**06 23 45.8**	**-0.3**
KOZT				*e*Sg	**Sb**	**06 23 54.9**	**-0.6**
CEYT	**Ceyhan**	**0.52**	**248**	*e*PG	**Pn**	**06 23 51.9**	**+1.2**
CEYT	**Ceyhan**	**0.52**	**248**	*e*Pg	**Pn**	**06 23 51.9**	**+1.2**
KMRS	**Kahramanmaras**	**0.53**	**56**	*e*PG	**Pg**	**06 23 46.1**	**-0.6**
KMRS				*e*SG	**Sg**	**06 23 53.5**	**0.0**
KMRS	**Kahramanmaras**	**0.53**	**56**	*e*Pg	**Pg**	**06 23 46.1**	**-0.6**
KMRS				*e*Sg	**Sg**	**06 23 53.6**	**0.0**
GAZ	**Gaziantep**	**0.69**	**93**	*e*PG	**Pb**	**06 23 51.5**	**+0.4**
GAZ				*e*SG	**Sn**	**06 24 03.8**	**-0.5**
GAZ	**Gaziantep**	**0.69**	**93**	*e*Pg	**Pb**	**06 23 51.5**	**+0.4**
GAZ				*e*Sg	**Sn**	**06 24 03.8**	**-0.5**
KUZU	**Kuzuini**	**0.73**	**127**	*i* P	**Pb**	**06 23 51.6**	**-0.2**
KUZU				*i* S	**Sn**	**06 24 04.8**	**-0.4**
KUZU	**Kuzuini**	**0.73**	**127**	P	**Pb**	**06 23 51.6**	**-0.2**
KUZU				S	**Sn**	**06 24 04.8**	**-0.4**
GZT	**Gaziantep**	**0.98**	**81**	*i* P	**Pb**	**06 23 56.3**	**+0.1**
GZT				*i* S	**

MAT	**Matsushiro**	**3.53**	**243**	P	Pb	06 35 26.5 -0.9

CSEM ***15*** *06:37:49.4±0.6,39.˚54N×41.˚90E,h5km,MD2.5,Error ellipse: s-maj=16.3km s-min=8.7km az=4.0*
ISK ***15*** *06:37:50.1,39.˚58N×41.˚95E,h5km,MD2.7*
ISCJB ***15*** *06:37:51.9±0.7,39.˚68N±0.˚04×41.˚96E±0.˚05,h21km±7km, Error ellipse: s-maj=7.5km s-min=5.9km az=5.7*
DDA ***15*** *06:37:52.0,39.˚77N×41.˚95E,h7km,Md2.5*
ISC 15 06:37:51.4±1.2,39.˚70N±0.˚04×41.˚99E±0.˚03,h14km±9km, n14,σ0s71/23,Turkey

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
HOMI	**Horasan**	**0.35**	**349**	*i* P		**Pg**		**06 37 58.4**	**-0.3**
HOMI				*i* S		**Sg**		**06 38 04.2**	**+0.5**
EATA	**Eleskirt**	**0.42**	**67**	*i* P		**Pg**		**06 38 00.1**	**+0.3**
EATA				*i* S		**Sb**		**06 38 07.8**	**+0.8**
EATA	**Eleskirt**	**0.42**	**67**	P		**Pg**		**06 38 00.1**	**+0.3**
EATA				S		**Sb**		**06 38 07.8**	**+0.8**
ERZM	**Erzurum**	**0.53**	**293**	*i* P		**Pb**		**06 38 02.3**	**-0.2**
ERZM	**Erzurum**	**0.53**	**293**	P		**Pb**		**06 38 02.3**	**-0.2**
EZM	**Erzurum**	**0.53**	**293**	*e*PG		**Pg**		**06 38 01.8**	**-0.1**
EZM				*e*SG		**Sb**		**06 38 11.1**	**+0.9**
AGRB	**Hanur-Agry**	**0.78**	**99**	*e*PG		**Pg**		**06 38 06.5**	**-0.1**
AGRB				*e*SG		**Sn**		**06 38 19.4**	**-0.3**
AGRB	**Hanur-Agry**	**0.78**	**99**	*e*Pg		**Pg**		**06 38 06.5**	**-0.1**
AGRB				*e*Sg		**Sn**		**06 38 19.4**	**-0.3**
BNGL	**BINGOL**	**0.99**	**222**	*i* P		**Pg**		**06 38 10.5**	**0.0**
BNGL				*i* S		**Sn**		**06 38 26.9**	**+2.0**
BNGB	**Bing˜¶l**	**1.24**	**236**	*e*PN		**Pn**		**06 38 13.1**	**-1.3**
DBAD	**Bademkaya**	**1.34**	**350**	*i* P		**Pn**		**06 38 15.6**	**-0.1**
DBAD				*i* S		**Sg**		**06 38 34.7**	**+0.1**
DBAD	**Bademkaya**	**1.34**	**350**	P		**Pn**		**06 38 15.6**	**-0.1**
DBAD				S		**Sg**		**06 38 34.7**	**+0.1**
DAGI	**Agillar**	**1.38**	**358**	*i* P		**Pn**		**06 38 15.2**	**-1.1**
DAGI				*i* S		**Sb**		**06 38 34.5**	**0.0**
BINT	**Bingol**	**1.43**	**235**	*e*Pn		Pn		06 38 13.1	-3.8

IDC 15 06:42:02.7±1.7,0.˚32S×133.˚02E,h0km,mb3.6/4, mb1 3.8/6,mb1mx3.5/48,mbtmp3.7/6,ML3.7/2,Error ellipse: s-maj=83.3km s-min=19.4km az=76.0,Irian Jaya region

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**19.10**	**202**	P		Pn		06 46 28.5	+0.5
	0.1nm,0.3s,baz=8.7,slow=13,SNR=2.5								
WRA	**Warramunga Arr**	**19.55**	**176**	P		P		06 46 32.2	+0.1
	0.4nm,0.3s,baz=354,slow=11,SNR=22								
ASAR	**Alice Springs**	**23.23**	**178**	P		P		06 47 11.4	-0.3
	2.8nm,0.7s,baz=356,slow=12,SNR=34								
STKA	**Stephens Creek**	**32.42**	**166**	P		P		06 48 34.1	-0.5
	0.7nm,0.3s,baz=352,slow=7.1,SNR=2.9								
MKAR	**Makanchi Array**	**64.47**	**324**	P		P		06 52 40.5	-0.8
	0.1nm,0.4s,baz=132,slow=8.0,SNR=3.0								
KURBB	**Kurchatov Arra**	**68.55**	**326**	P		P		06 53 08.0	+0.8
	0.2nm,0.6s,baz=123,slow=6.4,SNR=3.2								

BJI ***15*** *06:50:22.7,50.˚49N×175.˚31W,h11km,mb5.4/74, mB5.2/49,Ms4.8/54,Ms7 4.5/54*
IDC ***15*** *06:50:23.0±0.4,50.˚45N×175.˚19W,h0km,mb5.1/40, mb1 5.2/41,mb1mx5.1/49,mbtmp5.1/41,ML3.8/1,MS4.3/32, Ms1 4.3/32,ms1mx4.1/50,Error ellipse: s-maj=13.6km s-min=9.0km az=175.0*
ISCJB ***15*** *06:50:23.7±0.7,50.˚49N±0.˚02×175.˚03W±0.˚02,h15km±4km, mb5.3/439,MS4.4/53,Error ellipse: s-maj=3.8km s-min=1.8km az=5.7*
MOS ***15*** *06:50:26.4±1.1,50.˚57N×175.˚12W,h30km,mb5.6/121, MS4.4/15,Error ellipse: s-maj=5.9km s-min=4.1km az=92.2*
GCMT ***15*** *06:50:29.1±0.2,50.˚51N×175.˚22W,h12km,MW5.1/118, Moment Tensor Solution. s67,c95; s118,c204; Duration: 0 Moment tensor: Scale 10^16Nm; Mrr-6.06±.10; Mθθ6.23±.09; Mφφ-0.17±.09; Mrθ-0.43±.27; Mθφ-0.40±.09; Mφr0.61±.33; Best double couple: M06.20300×10^16 NP1:φs99.00000°,δ47.00000°,λ-82.00000°. NP2: φs268.00000°,δ43.00000°,λ-98.00000°. Principal axes: T 6.2720, Plg2.0000°, Azm184.0000°; N -0.1400, Plg6.0000°, Azm274.0000°; P -6.1340, Plg84.0000°, Azm73.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
NEIC ***15*** *06:50:29.1,50.˚67N×175.˚20W,h26km,mb5.4/295, ML4.8(AEIC),After AEIC.*
ISC 15 06:50:27.2±0.5,50.˚54N±0.˚04×175.˚10W±0.˚03,h27km±2km, h26km;pP-P,n1426,σ1s09/1493,mb5.4/448,MS4.4/55, 37C-76D,Andreanof Islands

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
ETKA	**Kagalaska Isla**	**1.56**	**329**	P		**Pn**		**06 50 51.8**	**-1.4**
GSCK	**Great Sitkin C**	**1.62**	**336**	P		**Pn**		**06 50 52.6**	**-1.4**
GSMY	**Great Sitkin M**	**1.63**	**339**	P		**Pn**		**06 50 52.6**	**-1.5**
GSTD	**Great Sitkin T**	**1.66**	**337**	P		**Pn**		**06 50 53.2**	**-1.4**
GSTR	**Great Sitkin T**	**1.67**	**339**	*e*Pn		**Pn**		**06 50 53.7**	**-1.1**
ADAG	**Mount Adagdak**	**1.73**	**327**	P		**Pn**		**06 50 54.5**	**-1.0**
ATKA	**Atka Island**	**1.76**	**18**	P		**Pn**		**06 50 54.8**	**-1.2**
ATKA				S		**Sn**		**06 51 15.8**	**-1.6**
KOFP	**Korovin Flat P**	**1.85**	**19**	P		**Pn**		**06 50 56.9**	**-0.4**
KIRH	**Kanaga Island**	**1.86**	**318**	P		**Pn**		**06 50 56.0**	**-1.2**
KIKV	**Kanaga Island**	**1.88**	**317**	P		**Pn**		**06 50 56.1**	**-1.4**
KOKL	**Mount Kliuchef**	**1.88**	**17**	P		**Pn**		**06 50 57.2**	**-0.4**
KOWE	**Korovin West**	**1.91**	**16**	P		**Pn**		**06 50 57.7**	**-0.3**
KOSE	**Korovin Southe**	**1.93**	**19**	P		**Pn**		**06 50 58.2**	**-0.1**
TAPA	**Tanaga Point A**	**2.14**	**308**	P		**Pn**		**06 51 00.1**	**-1.0**
TAFL	**Tanaga Flats**	**2.15**	**306**	P		**Pn**		**06 51 00.6**	**-0.6**
TAFP	**Tanaga Falls P**	**2.27**	**308**	P		**Pn**		**06 51 02.1**	**-0.9**
GAEA	**Gareloi East**	**2.62**	**300**	P		**Pn**		**06 51 07.5**	**-0.2**
GALAA	**Gareloi Lava P**	**2.62**	**299**	P		**Pn**		**06 51 07.5**	**-0.2**
NIKH	**Nikolski High**	**4.58**	**55**	P		**Pn**		**06 51 34.5**	**-0.2**
NIKH				S		**Sn**		**06 52 26.0**	**-1.0**
OKAK	**Okmok**	**5.15**	**51**	P		**Pn**		**06 51 42.5**	**0.0**
OKTU	**Okmok Mt. Tuli**	**5.21**	**54**	P		**Pn**		**06 51 44.8**	**+1.4**
OKER	**Okmok East Rim**	**5.24**	**53**	P		**Pn**		**06 51 44.7**	**+0.8**
OKFG	**Magazine Ridge**	**5.29**	**54**	P		**Pn**		**06 51 45.1**	**+0.7**
OKFG				S		**Sn**		**06 52 44.4**	**-0.1**
MSOM	**Makushin Julie**	**5.99**	**54**	P		**Pn**		**06 51 54.3**	**+0.3**
MSOM	**Makushin Julie**	**5.99**	**54**	P		**Pn**		**06 51 54.3**	**+0.3**
MGOD	**Makushin Gods**	**6.02**	**54**	P		**Pn**		**06 51 55.3**	**+0.9**
MTBL	**Makushin Table**	**6.21**	**53**	P		**Pn**		**06 51 57.8**	**+0.7**
UNV	**Unalaska Valle**	**6.24**	**55**	P		**Pn**		**06 51 58.5**	**+1.1**
UNV				S		**Sn**		**06 53 06.2**	**-1.5**
AKRB	**Akutan Reef Bi**	**6.60**	**53**	P		**Pn**		**06 52 03.0**	**+0.6**
AKRB				S		**Sn**		**06 53 14.9**	**-1.8**
ZRO	**Akutan Zero**	**6.63**	**54**	P		**Pn**		**06 52 03.5**	**+0.7**
AKGG	**Akutan Green G**	**6.67**	**53**	P		**Pn**		**06 52 04.2**	**+0.8**
AKGG				S		**Sn**		**06 53 16.8**	**-1.7**
AKUT	**Akutan**	**6.75**	**54**	P		**Pn**		**06 52 05.0**	**+0.6**
WECS	**Westdahl Cape**	**7.46**	**54**	P		**Pn**		**06 52 15.0**	**+0.9**
WESP	**Westdahl Peak**	**7.47**	**54**	P		**Pn**		**06 52 14.9**	**+0.6**
WESP				S		**Sn**		**06 53 35.9**	**-2.2**
WEBT	**Westdahl Beart**	**7.50**	**53**	P		**Pn**		**06 52 15.2**	**+0.5**
SSLW	**Shishaldin Wes**	**7.91**	**53**	P		**Pn**		**06 52 20.8**	**+0.4**
SSLN	**Shishaldin Nor**	**7.99**	**53**	P		**Pn**		**06 52 22.3**	**+0.8**
ISLZ	**Isanotski Laza**	**8.10**	**54**	P		**Pn**		**06 52 22.8**	**-0.1**
FALS	**False Pass**	**8.31**	**54**	P		**Pn**		**06 52 25.9**	**+0.2**
FALS				S		**Sn**		**06 53 55.5**	**-3.1**
BALA	**Baldy Mountain**	**8.78**	**53**	P		**Pn**		**06 52 32.5**	**+0.2**
DT1	**Dutton Round H**	**9.01**	**55**	P		**Pn**		**06 52 35.2**	**-0.1**
PS4A	**Pavlof South-4**	**9.33**	**54**	P		**Pn**		**06 52 39.9**	**+0.1**
SDPT	**Sand Point**	**10.05**	**56**	P		**Pn**		**06 52 49.0**	**-0.6**
CHGN	**Chignik**	**11.49**	**53**	*e*Pn		**Pn**		**06 53 07.6**	**-1.8**
GAMB	**Gambell**	**13.40**	**7**	*e*Pn		**Pn**		**06 53 36.0**	**+0.7**
OHAK	**Old Harbor**	**14.46**	**54**	*e*Pn		**Pn**		**06 53 45.5**	**-4.3**
KDAK	**Kodiak Island**	**15.00**	**52**	Pn		P		06 54 07.0	+4.7
	5.1nm,0.3s,baz=217,slow=4.1,SNR=38								
KDAK	**Kodiak Island**	**15.00**	**52**	*e*P		**Pn**		**06 53 53.0**	**-4.1**
KDAK					pmax	pmax			
	comp=Z,78nm,0.5s								
KDAK	**Kodiak Island**	**15.00**	**52**	*e*Pn		**Pn**		**06 53 53.0**	**-4.1**
	comp=Z,78nm,0.5s								
SVW2	**Sparrevohn**	**15.17**	**38**	*e*Pn		**Pn**		**06 53 59.6**	**+0.2**
	comp=Z,70nm,1.0s								
RSO	**Redoubt South**	**16.01**	**43**	*e*Pn		**Pn**		**06 54 10.9**	**+0.4**
TT01	**Tatalina**	**16.13**	**33**	*e*Pn		**Pn**		**06 54 11.6**	**-0.3**
HOM	**Homer**	**16.15**	**47**	*e*Pn		**Pn**		**06 54 13.4**	**+1.4**
	comp=Z,142nm,0.8s								
TTA	**Tatalina**	**16.15**	**33**	*e*P		**Pn**		**06 54 12.6**	**+0.5**
TTA					pmax	pmax			
	comp=Z,67nm,0.9s								
TTA	**Tatalina**	**16.15**	**33**	*e*Pn		**Pn**		**06 54 12.6**	**+0.5**
	comp=Z,67nm,0.9s								
PET	**Petropavlovsk**	**16.40**	**289**	*i*P		**P**		**06 54 17.9**	**0.0**
PET				*e*S		**Sn**		**06 57 16.4**	**+0.1**
PET					pmax	pmax			
	comp=Z,164nm,1.2s								
PET					MLR	MLR			
	comp=Z,1μm,18.0s								
PET					MLR	MLR			
	comp=Z,2μm,13.0s								
PET	**Petropavlovsk**	**16.40**	**289**	*e*Pn		**Pn**		**06 54 16.2**	**+0.9**
	comp=Z,145nm,1.0s								
BRLK	**Bradley Lake**	**16.55**	**47**	*e*Pn		**Pn**		**06 54 14.9**	**-2.2**
	comp=Z,133nm,1.0s								
SPU	**Mount Spurr**	**16.66**	**41**	*e*Pn		**Pn**		**06 54 18.2**	**-0.3**
PEA0	**Petropavlovsk-**	**16.98**	**289**	*e*Pn		**Pn**		**06 54 21.6**	**-0.9**
PEA0B	**Petropavlovsk-**	**16.98**	**289**	*e*Pn		**Pn**		**06 54 22.9**	**+0.4**
	comp=Z,210nm,1.0s								
PETK	**Petropavlovsk-**	**16.98**	**289**	Pn		**Pn**		**06 54 21.6**	**-0.9**
	comp=Z,1.7nm,0.3s,baz=98,slow=14,SNR=44								
PETK					Sn	**Sn**		**06 57 31.5**	**+1.3**
	comp=Z,0.1nm,0.3s,baz=93,slow=16,SNR=3.5								
PETK					PcP	**PcP**		**06 59 07.7**	**+0.2**
	comp=Z,0.3nm,0.3s,baz=147,slow=8.3,SNR=5.7								
PETK					LR	LR		07 01 14.4	
	comp=Z,940nm,20.3s,baz=96,slow=38								
SEW	**Seward**	**17.34**	**47**	*e*Pn		**Pn**		**06 54 23.8**	**-3.2**
	comp=Z,52nm,0.7s								
PPLA	**Purkeypile**	**17.52**	**36**	*e*Pn		**P**		**06 54 30.4**	**+0.1**
	comp=Z,374nm,1.5s								
RC01	**Rabbit Creek A**	**17.61**	**43**	*e*Pn		**Pn**		**06 54 29.7**	**-0.8**
	comp=Z,46nm,0.8s								
CAST	**Castle Rocks**	**17.85**	**35**	*e*Pn		**P**		**06 54 34.1**	**+0.2**
	comp=Z,518nm,2.0s								
PMR	**Palmer**	**18.09**	**42**	*e*P		**Pn**		**06 54 35.2**	**-1.1**
PMR					pmax	pmax			
	comp=Z,18nm,0.6s								
PMR	**Palmer**	**18.09**	**42**	*e*Pn		**Pn**		**06 54 35.2**	**-1.1**
	comp=Z,18nm,0.6s								
SKR	**Severo-Kuril's**	**18.23**	**282**	*e*P		**P**		**06 54 38.9**	**+0.9**
KTH	**Kantishna Hill**	**18.36**	**36**	*e*Pn		**P**		**06 54 39.2**	**-0.4**
	comp=Z,223nm,0.9s								
SML	**Sawmill**	**18.53**	**42**	*e*P		**P**		**06 54 40.0**	**-1.4**
SML					pmax	pmax			
	comp=Z,100nm,0.9s								
SML	**Sawmill**	**18.53**	**42**	*e*P		**P**		**06 54 40.0**	**-1.4**
	comp=Z,104nm,0.9s								
TRF	**Thorofare Moun**	**18.54**	**36**	*e*P		**P**		**06 54 41.9**	**+0.3**
	comp=Z,105nm,1.1s								
BPAW	**Bear Paw Mtn.**	**18.65**	**34**	*e*P		**P**		**06 54 42.6**	**-0.1**
	comp=Z,114nm,0.9s								
SCM	**Sheep Creek Mo**	**18.98**	**43**	*e*P		**P**		**06 54 44.5**	**-1.8**
SCM					pmax	pmax			
	comp=Z,240nm,0.8s								
SCM	**Sheep Creek Mo**	**18.98**	**43**	*e*P		**P**		**06 54 44.5**	**-1.8**
	comp=Z,241nm,0.8s								
RND	**Reindeer**	**19.07**	**38**	*e*P		**P**		**06 54 46.0**	**-1.3**
RND					pmax	pmax			
	comp=Z,50nm,0.7s								
RND	**Reindeer**	**19.07**	**38**	*e*P		**P**		**06 54 46.0**	**-1.3**
	comp=Z,50nm,0.7s								
MCK	**McKinley**	**19.20**	**37**	*e*P		**P**		**06 54 48.2**	**-0.5**
MCK					pmax	pmax			
	comp=Z,67nm,0.8s								
MCK	**McKinley**	**19.20**	**37**	*e*P		**P**		**06 54 48.2**	**-0.5**
	comp=Z,67nm,0.8s								
EYAK	**Cordova Ski Ar**	**19.23**	**47**	*e*P		**P**		**06 54 47.8**	**-1.2**
	comp=Z,73nm,1.0s								
MLY	**Manley**	**19.29**	**32**	*e*P		**P**		**06 54 50.0**	**+0.3**
	comp=Z,84nm,1.1s								
DIV	**Divide**	**19.41**	**46**	*e*P		**P**		**06 54 51.2**	**+0.2**
	comp=Z,60nm,0.9s								
KLU	**Klutina**	**19.47**	**45**	*e*P		**P**		**06 54 50.5**	**-1.2**
	comp=Z,83nm,0.9s								
DHY	**Denali Highway**	**19.50**	**39**	*e*P		**P**		**06 54 51.1**	**-1.0**
	comp=Z,49nm,0.6s								
RAGM	**Ragged Mountai**	**19.69**	**48**	*e*P		**P**		**06 54 54.6**	**+0.5**
	comp=Z,104nm,1.0s								
BILL	**Bilibino**	**19.81**	**339**	*e*P		**P**		**06 54 55.7**	**+0.4**
BILL					pmax	pmax			
	comp=Z,154nm,1.0s								
BILL	**Bilibino**	**19.81**	**339**	*e*P		**P**		**06 54 55.6**	**+0.4**
	comp=Z,121nm,0.9s								
BMRM	**Bremner River**	**19.89**	**47**	*e*P		**P**		**06 54 56.4**	**+0.1**
	comp=Z,81nm,0.9s								
WRH	**Wood River Hil**	**19.91**	**35**	*e*P		**P**		**06 54 54.3**	**-2.1**
	comp=Z,47nm,0.9s								
CCB	**Clear Creek Bu**	**20.10**	**35**	*e*P		**P**		**06 54 56.5**	**-2.0**
	comp=Z,68nm,1.1s								
MDM	**Murphy Dome**	**20.12**	**34**	*e*P		**P**		**06 54 57.1**	**-1.6**
	comp=Z,91nm,1.1s								
COLA	**College**	**20.21**	**34**	*e*P		**P**		**06 54 59.0**	**-0.6**
COLA					pmax	pmax			
	comp=Z,70nm,0.9s								
COLA	**College**	**20.21**	**34**	*e*P		**P**		**06 54 59.0**	**-0.6**
	comp=Z,70nm,0.8s								
PAX	**Paxson**	**20.23**	**41**	*e*P		**P**		**06 54 59.4**	**-0.6**
PAX					pmax	pmax			
	comp=Z,31nm,0.9s								
PAX	**Paxson**	**20.23**	**41**	*e*P		**P**		**06 54 59.4**	**-0.6**
	comp=Z,31nm,0.9s								
HDA	**Harding Lake**	**20.30**	**36**	*e*P		**P**		**06 55 00.1**	**-0.6**
	comp=Z,114nm,0.8s								
ILAR	**Eielson Array**	**20.51**	**35**	P		**P**		**06 54 59.7**	**-3.2**
	comp=Z,7.5nm,0.6s,baz=239,slow=8.7,SNR=86								
ILAR					S	**S**		**06 58 45.2**	**-5.5**
	comp=Z,5.6nm,0.8s,baz=227,slow=18,SNR=6.6								
ILAR					LR	LR		07 03 34.8	
	comp=Z,809nm,18.8s,baz=242,slow=38								
ILB	**Eielson Array**	**20.51**	**35**	*e*P		**P**		**06 55 00.8**	**-2.1**
IL1	**Eielson Array**	**20.51**	**35**	*e*P		**P**		**06 55 02.6**	**-0.2**
COLD	**Coldfoot**	**20.85**	**27**	*e*P		**P**		**06 55 07.2**	**+0.6**
	comp=Z,115nm,1.0s								
MENT	**Mentasta**	**20.96**	**42**	*e*P		Pn		06 55 09.8	-0.6
	comp=Z,40nm,0.6s								
DOT	**Dot Lake**	**21.09**	**40**	*e*P		**P**		**06 55 07.8**	**-1.5**
	comp=Z,192nm,0.9s								
SEY	**Seymchan**	**21.44**	**318**	P		**P**		**06 55 13.1**	**+0.1**
	comp=Z,41nm,1.0s,baz=113,slow=11,SNR=52								
SEY					S	**S**		**06 59 09.4**	**+0.2**
	comp=Z,2.6nm,0.7s,baz=24,slow=20,SNR=3.4								
FYU	**Fort Yukon**	**22.03**	**32**	*e*P		**P**		**06 55 18.3**	**-0.9**
	comp=Z,71nm,1.1s								
EGAK	**Eagle**	**22.70**	**38**	*e*P		**P**		**06 55 25.0**	**-1.4**
	comp=Z,126nm,0.8s								
SKAG	**Skagway**	**24.16**	**53**	*e*P		**P**		**06 55 41.6**	**+0.9**
	comp=Z,53nm,0.8s								
KUR	**Kuril'sk**	**25.21**	**272**	*e*P		**P**		**06 55 52.1**	**+1.7**
CRAG	**Craig**	**25.44**	**62**	*e*P		**P**		**06 55 54.9**	**+2.5**
	comp=Z,116nm,0.7s								
WRAK	**Wrangell Islan**	**25.78**	**60**	*e*P		**P**		**06 55 58.3**	**+2.9**
	comp=Z,47nm,1.0s								
TYV	**Tymovskoe**	**26.50**	**287**	*e*P		**P**		**06 56 03.0**	**+0.9**
TYV					pmax	pmax			
	comp=Z,7.0nm,0.8s								
TYV					MLR	MLR			
	comp=N,1μm,16.0s								
TYV					MLR	MLR			
	comp=Z,1μm,17.0s								
INK	**Inuvik**	**26.85**	**33**	P		**P**		**06 56 05.2**	**+0.2**
	comp=Z,20nm,0.6s,baz=246,slow=5.7,SNR=113								
INK					PcP	**PcP**		**06 59 26.4**	**-0.3**
	comp=Z,7.9nm,0.8s,baz=211,slow=2.1,SNR=4.6								
INK					S	**S**		**07 00 39.8**	**+0.3**
	comp=Z,1.3nm,0.8s,baz=186,slow=18,SNR=4.1								
INK					LR	LR		07 07 59.2	
	comp=Z,876nm,18.4s,baz=254,slow=39								
INK	**Inuvik**	**26.85**	**33**	*e*P		**P**		**06 56 05.3**	**+0.3**
	comp=Z,24nm,0.7s								
INK					PcP	**PcP**		**06 59 26.4**	**-0.3**
INK					S	**S**		**07 00 39.8**	**+0.3**
DLBC	**Dease Lake**	**26.89**	**55**	P		**P**		**06 56 07.7**	**+2.1**
	comp=Z,29nm,0.7s,baz=277,slow=7.9,SNR=47								
DLBC					PcP	**PcP**		**06 59 27.3**	**+0.2**
	comp=Z,4.8nm,0.8s,baz=311,slow=3.5,SNR=4.8								
DLBC					LR	LR		07 06 49.1	
	comp=Z,437nm,20.7s,baz=292,slow=36								
DLBC	**Dease Lake**	**26.89**	**55**	*e*P		**P**		**06 56 08.1**	**+2.5**
	comp=Z,76nm,1.0s								
DLBC					PcP	**PcP**		**06 59 27.3**	**+0.2**
NKL	**Nikolayevsk**	**27.12**	**293**	*e*P		**P**		**06 56 07.5**	**-0.1**
NKL				*e*S		**S**		**07 00 44.5**	**+0.5**
NKL					pmax	pmax			
	comp=N,78nm,1.6s								
NKL					pmax	pmax			
	comp=Z,55nm,1.1s								
NKL					pmax	pmax			
	comp=E,500nm,5.0s								
NKL					pmax	pmax			
	comp=Z,500nm,5.0s								
NKL					smax	smax			
	comp=N,200nm,1.8s								
NKL					smax	smax			
	comp=E,150nm,1.8s								
NKL					smax	smax			
	comp=N,600nm,5.0s								
NKL					smax	smax			
	comp=E,600nm,5.0s								
NKL					MLR	MLR			
	comp=E,500nm,20.0s								
NKL					MLR	MLR			
	comp=Z,800nm,18.0s								
YSS	**Yuzh-Sakhalins**	**27.75**	**279**	*i*P		**P**		**06 56 13.0**	**-0.3**
YSS				*e*				06 56 27.3	
YSS					pmax	pmax			
	comp=Z,30nm,1.7s								
ASAJ	**Asahikawa**	**29.07**	**274**	P		**P**		**06 56 25.4**	**+0.4**
	comp=Z,14nm,0.7s,baz=67,slow=4.6,SNR=8.9								
ASAJ					LR	LR		07 08 50.2	
	comp=Z,184nm,19.4s,baz=68,slow=38								
ASAJ	**Asahikawa**	**29.07**	**274**	*e*P		**P**		**06 56 25.5**	**+0.4**
	comp=Z,113nm,1.9s								
ERM	**Erimo**	**29.75**	**270**	*e*P		**P**		**06 56 31.0**	**-0.1**
ERM					pmax	pmax			
	comp=Z,33nm,1.7s								
ERM	**Erimo**	**29.75**	**270**	*e*P		**P**		**06 56 31.9**	**+0.8**
	comp=Z,30nm,1.2s								
YAK	**Yakutsk**	**31.73**	**313**	LR		LR		07 11 00.1	
	comp=Z,377nm,18.8s,baz=93,slow=39								
YAK	**Yakutsk**	**31.73**	**313**	*e*P		**P**		**06 56 47.8**	**-0.5**
YAK				*e*PPP		PPP		06 57 57.5	
YAK				*e*				06 59 38.2	
YAK				*e*S		**S**		**07 01 54.7**	**-1.4**
YAK				*e*SSS		SSS		07 03 49.6	
YAK					pmax	pmax			
	comp=Z,21nm,0.8s								
YAK					pmax	pmax			
	comp=E,11nm,0.9s								
YAK					pmax	pmax			
	comp=Z,145nm,3.6s								
YAK					pmax	pmax			
	comp=N,89nm,4.7s								
YAK					pmax	pmax			
	comp=E,132nm,4.4s								
YAK					smax	smax			
	comp=N,132nm,1.8s								
YAK					smax	smax			
	comp=E,68nm,1.8s								
YAK					MLR	MLR			
	comp=Z,341nm,12.0s								
YAK					MLR	MLR			
	comp=N,220nm,16.0s								
YAK					MLR	MLR			
	comp=E,413nm,15.0s								
YAK	**Yakutsk**	**31.73**	**313**	*e*P		**P**		**06 56 47.0**	**-1.3**
	comp=E,38nm,0.6s								
HABR	**Khabarovsk**	**31.95**	**286**	*e*P		**P**		**06 56 49.5**	**-1.0**
HABR				*e**PP		**pP**		**06 56 59.1**	**+0.7**
HABR				*e**SP		**sP**		**06 57 03.4**	**+1.7**
HABR				*e*				06 57 55.1	
HABR				*e*				06 59 38.6	
HABR				*e*S		**S**		**07 01 59.5**	**-0.4**
HABR				*e**SS		**sS**		**07 02 15.8**	**+2.8**
HABR				*e*SS		**SnSn**		**07 03 51.2**	**+1.8**
HABR				*e*				07 07 18.2	
HABR					pmax	pmax			
	comp=Z,60nm,1.4s								
HABR					pmax	pmax			
	comp=N,29nm,1.4s								
HABR					pmax	pmax			
	comp=E,20nm,0.6s								
HABR					MLR	MLR			
	comp=Z,322nm,17.0s								
KIP	**Kipapa**	**32.01**	**149**	*e*P		**P**		**06 56 54.9**	**+3.7**
KIP					pmax	pmax			
	comp=Z,696nm,1.7s								
TIXI	**Tiksi**	**32.52**	**331**	*de*P		**P**		**06 56 54.2**	**-1.0**
TIXI					pmax	pmax			
	com

VGB **Gordon Butte** 35.98 76 P P 06 57 27.2 +1.7
MJAR **Matsushiro Arr** 36.01 265 P P 06 57 25.7 -0.2
comp=Z,6.3nm,0.7s,baz=48,slow=7.9,SNR=14
MJAR PcP PcP 06 59 52.1 +0.2
comp=Z,12nm,0.8s,baz=86,slow=1.8,SNR=19
MAJO **Matsushiro** 36.01 265*c* *i*P P 06 57 26.2 +0.3
MAJO pmax pmax
comp=Z,232nm,1.2s
MAJO **Matsushiro** 36.01 265 *e*P P 06 57 25.8 -0.1
comp=Z,50nm,1.3s
MAT **Matsushiro** 36.01 265 P P 06 57 25.1 -0.8
MAT *e*S S 07 03 06.8 +3.8
MJB9 **Matsu-Tunnel** 36.01 265 *e*P P 06 57 26.4 +0.5
comp=Z,13nm,1.3s
HUMO **Hull Mountain** 36.05 82 *e*P P 06 57 28.2 +2.0
comp=Z,32nm,1.1s
I05D **Terrebonne, OR** 36.20 78 P P 06 57 28.8 +1.4
baz=300,SNR=14
G06A **Carlson Farm,** 36.20 77 *e*P P 06 57 29.0 +1.5
comp=Z,73nm,1.7s
VTHM **Trough** 36.28 77 P P 06 57 29.4 +1.3
RSW **Rattlesnake Hi** 36.31 74 P P 06 57 29.6 +1.2
JCC **Jacoby Creek,** 36.32 85 *e*P P 06 57 30.1 +1.6
comp=Z,70nm,1.2s
HAWA **Hanford** 36.34 74 *e*P P 06 57 29.8 +1.2
comp=Z,36nm,0.6s
VLA **Vladivostok** 36.35 279*c* *i*P P 06 57 29.4 +0.8
VLA pmax pmax
comp=Z,77nm,1.0s
D08A **Wollman Farm,** 36.42 73 *e*P P 06 57 30.1 +0.8
comp=Z,22nm,0.8s
C09A **Chrisman Ranch** 36.48 72 *e*P P 06 57 30.5 +0.8
KHMM **Horse Mountain** 36.48 85 *e*P P 06 57 32.2 +2.2
comp=Z,99nm,1.8s
YBH **Yreka Blue Hor** 36.67 83 P P 06 57 33.5 +1.9
comp=Z,19nm,0.9s,baz=285,slow=5.6,SNR=21
YBH **Yreka Blue Hor** 36.67 83 *e*P P 06 57 33.5 +1.9
YBH pmax pmax
comp=Z,29nm,1.1s
YBH **Yreka Blue Hor** 36.67 83 *e*P P 06 57 33.5 +1.9
comp=Z,29nm,1.1s
M02C **Callahan** 36.76 84 P P 06 57 34.6 +2.3
baz=303,SNR=8.1
J05D **Fort Rock, OR** 36.79 80 P P 06 57 34.5 +1.9
baz=301,SNR=29
K04D **Chiloquin, OR** 36.80 81 P P 06 57 34.5 +1.8
baz=302,SNR=6.4
KMRM **Mail Ridge** 36.86 86 *e*P P 06 57 35.7 +2.6
comp=Z,21nm,0.8s
NEW **Newport** 36.97 70 P P 06 57 34.2 +0.3
baz=296,SNR=17
NEW **Newport** 36.97 70 *e*P P 06 57 34.5 +0.5
NEW pmax pmax
comp=Z,25nm,0.9s
NEW **Newport** 36.97 70 *e*P P 06 57 34.5 +0.5
comp=Z,25nm,0.9s
MDJ **Mudanjiang** 37.03 283 P P 06 57 33.8 -0.7
MDJ pmax pmax
comp=Z,20nm,0.8s
MDJ pmax pmax
comp=Z,94nm,6.0s
MDJ **Mudanjiang** 37.03 283 *e*P P 06 57 33.8 -0.7
comp=Z,18nm,0.8s
N02D **Trinity Center** 37.08 84 P P 06 57 36.5 +1.5
baz=303,SNR=9.4
M04C **Macdoel** 37.19 82 P P 06 57 37.6 +1.5
baz=303,SNR=19
K05A **Summer Lake** 37.29 81 *e*P P 06 57 38.9 +1.9
comp=Z,106nm,1.0s
WDC **Whiskeytown Da** 37.40 85 *e*P P 06 57 39.2 +1.5
WDC *e* 06 59 56.3
WDC pmax pmax
comp=Z,53nm,1.4s
WDC **Whiskeytown Da** 37.40 85 *e*P P 06 57 39.2 +1.5
comp=Z,53nm,1.4s
F10A **Beach Ranch, E** 37.95 74 *e*P P 06 57 43.0 +0.6
comp=Z,13nm,0.9s
HOPS **Hopland Field** 37.95 87 *e*P P 06 57 43.6 +1.2
comp=Z,77nm,1.7s
O03D **Paynes Creek** 38.03 84 P P 06 57 43.7 +0.6
baz=304,SNR=19
MOD **Modoc Plateau** 38.10 81 *e*P P 06 57 45.2 +1.4
comp=Z,62nm,1.0s
BMO **Blue Mountains** 38.45 75 *e*P P 06 57 47.8 +1.1
comp=Z,79nm,2.0s
WALA **Waterton Lakes** 38.53 68 *e*P P 06 57 47.8 +0.5
comp=Z,34nm,1.0s
BSMT **Basoo Peak** 38.56 70 *e*P P 06 57 48.1 +0.5
ORV **Oroville** 38.64 85 *e*P P 06 57 48.6 +0.5
ORV *e* 06 59 59.7
ORV pmax pmax
comp=Z,72nm,2.0s
ORV **Oroville** 38.64 85 *e*P P 06 57 48.6 +0.5
comp=Z,72nm,2.0s
BLMT **Blacktail Moun** 38.74 69 *e*P P 06 57 50.0 +0.9
WVOR **Wild Horse Val** 38.87 80 *e*P P 06 57 51.3 +1.1
WVOR pmax pmax
comp=Z,68nm,0.9s
WVOR **Wild Horse Val** 38.87 80 *e*P P 06 57 51.3 +1.1
comp=Z,68nm,0.9s
JTMT **Jette** 38.91 70 *e*P P 06 57 50.9 +0.4
YBMT **Yellow Bay** 39.02 69 *e*P P 06 57 51.9 +0.6
SWMT **Swartz Lake** 39.19 70 *e*P P 06 57 53.5 +0.8
AFDM **Forest Hills D** 39.32 86 *e*P P 06 57 54.7 +0.9
comp=Z,49nm,1.8s
MSO **Missoula** 39.55 71 P P 06 57 55.7 0.0
baz=299,SNR=16
MSO **Missoula** 39.55 71 *e*P P 06 57 55.8 0.0
comp=Z,29nm,1.0s
RES **Resolute Bay** 39.55 24 *e*P P 06 57 54.5 -0.7
RES pmax pmax
comp=Z,5.0nm,0.8s
RES **Resolute Bay** 39.55 24 *e*P P 06 57 54.5 -0.7
comp=Z,4.9nm,0.8s
CHMT **Chamberlain Mo** 39.92 70 *e*P P 06 57 58.8 -0.2
JCJ **Chichijima** 39.94 250 LR LR 07 10 49.2
comp=Z,262nm,21.7s,baz=126,slow=31
CN2 **Changchun** 40.02 284 ⇑P P 06 57 59.1 -0.4
CN2 *es*P sP 06 58 09.9 -1.0
CN2 pmax pmax
comp=Z,40nm,0.7s
CN2 LR LR
comp=Z,200nm,15.0s
MFID **Camas Ranch** 40.10 77 *e*P P 06 58 00.8 +0.4
comp=Z,21nm,0.9s
CMB **Columbia Colle** 40.23 86 *e*P P 06 58 02.5 +1.1
CMB pmax pmax
comp=Z,38nm,1.4s
CMB **Columbia Colle** 40.23 86 *e*P P 06 58 02.5 +1.1
comp=Z,38nm,1.4s
WAKR **Walker** 40.55 85 *e*P P 06 58 05.7 +1.4
BMN **Battle Mountai** 40.85 81 *e*P P 06 58 07.7 +1.0
BMN pmax pmax
comp=Z,44nm,1.1s
BMN **Battle Mountai** 40.85 81 *e*P P 06 58 07.7 +1.0
comp=Z,44nm,1.1s
HRY **Holter Researc** 40.87 70 *e*P P 06 58 07.7 +1.0
HLID **Hailey** 40.90 75 P P 06 58 07.5 +0.5
baz=302,SNR=46
HLID **Hailey** 40.90 75 *e*P P 06 58 07.7 +0.6
comp=Z,31nm,1.0s
LRM **Limekiln Ridge** 40.94 71 *e*P P 06 58 07.8 +0.3
DLMT **Dillon** 41.08 72 *e*P P 06 58 08.9 +0.4
comp=Z,9.1nm,0.8s
MCMT **McKenzie Canyo** 41.20 73 *e*P P 06 58 10.2 +0.6
NV01 **Mina Array Sit** 41.32 84 *e*P P 06 58 11.8 +1.1
NVAR **Mina Array Bea** 41.32 84 P P 06 58 11.7 +1.1
comp=Z,12nm,0.9s,baz=294,slow=8.3,SNR=78
NVAR PcP PcP 07 00 09.4 +0.7
comp=Z,9.3nm,0.7s,baz=289,slow=3.0,SNR=15
NVAR LR LR 07 12 18.6
comp=Z,232nm,18.7s,baz=328,slow=32
NV11 **Mina Array Sit** 41.41 84 *e*P P 06 58 12.3 +1.0
comp=Z,34nm,1.3s
MLAC **Mammoth, Mammo** 41.45 86 P P 06 58 13.2 +1.4
baz=307
EGMT **Eagleton** 41.46 67 P P 06 58 11.6 +0.1
baz=299,SNR=38
EGMT **Eagleton** 41.46 67 *e*P P 06 58 11.7 +0.1
comp=Z,70nm,0.8s
BOZ **Bozeman (W)** 41.52 71 P P 06 58 12.4 +0.3
baz=301,SNR=61
BOZ **Bozeman (W)** 41.52 71 *e*P P 06 58 12.4 +0.3
BOZ pmax pmax
comp=Z,33nm,0.7s
BOZ **Bozeman (W)** 41.52 71 *e*P P 06 58 12.4 +0.3
comp=Z,33nm,0.6s

ELK **Elko** 41.92 80 *e*P P 06 58 16.6 +1.0
ELK pmax pmax
comp=Z,29nm,0.9s
ELK **Elko** 41.92 80 *e*P P 06 58 16.6 +1.0
comp=Z,29nm,0.8s
RCTC **Rector, Farmer** 41.99 88 P P 06 58 16.3 +0.4
baz=308
KSRS **Korea Array** 42.02 275 P P 06 58 16.4 +0.4
comp=Z,5.0nm,0.8s,baz=58,slow=7.7,SNR=14
KSRS PcP PcP 07 00 11.2 +0.5
comp=Z,10nm,0.8s,baz=55,slow=3.8,SNR=12
KS01 **Wonju Array Si** 42.02 275 *e*P P 06 58 15.3 -0.8
KS15 **Wonju Array Si** 42.05 275 *e*P P 06 58 16.4 0.0
KSAR **Wonju Array Be** 42.05 275 P P 06 58 16.4 +0.1
KSAR 07 00 11.2
KSAR **Wonju Array Be** 42.05 275 P P 06 58 16.4 +0.1
KSAR PcP PcP 07 00 11.2 +0.3
QLMT **Earthquake Lak** 42.06 72 *e*P P 06 58 16.8 +0.2
SMMC **Simmler** 42.13 89 P P 06 58 17.9 +0.9
baz=309
TIN **Tinemaha, Big** 42.18 86 P P 06 58 18.3 +0.7
baz=308
SNY **Shenyang** 42.24 283 ⇑P P 06 58 18.4 +0.6
SNY S S 07 04 44.8 +8.5
SNY pmax pmax
comp=Z,34nm,1.0s
SNY pmax pmax
comp=Z,240nm,5.3s
SNY LR LR
comp=Z,400nm,15.1s
SNY LR LR
comp=Z,420nm,23.5s
SNY LR LR
comp=Z,510nm,17.9s
YMR **Madison River** 42.43 72 *e*P P 06 58 20.1 +0.5
comp=Z,27nm,0.9s
YHH **Holmes Hill** 42.44 72 *e*P P 06 58 20.0 +0.2
PKM **Mcpherson Peak** 42.51 90 P P 06 58 21.3 +0.9
baz=309
YFT **Old Faithful** 42.62 72 *e*P P 06 58 23.1 +1.8
comp=Z,15nm,0.9s
GCMT **Greycliff** 42.63 70 *e*P P 06 58 22.0 +0.8
FFC **Flin Flon** 42.72 55 *e*P P 06 58 22.0 +0.4
FFC pmax pmax
comp=Z,21nm,0.6s
FFC **Flin Flon** 42.72 55 *e*P P 06 58 22.0 +0.4
comp=Z,21nm,0.6s
GRAC **Grapevine Rang** 42.77 86 P P 06 58 23.2 +0.9
baz=308,SNR=13
H17A **Grant Village** 42.81 72 P P 06 58 24.6 +1.7
baz=302
H17A **Grant Village** 42.81 72 *e*P P 06 58 24.5 +1.7
comp=Z,48nm,1.2s
LKWY **Lake** 42.83 72 *e*P P 06 58 24.7 +1.8
LKWY pmax pmax
comp=Z,35nm,0.7s
LKWY **Lake** 42.83 72 *e*P P 06 58 24.7 +1.8
comp=Z,35nm,0.7s
JNU **Nakatsue** 42.84 267 *e*P P 06 58 23.2 +0.3
IMW **Indian Meadow** 42.86 73 *e*P P 06 58 24.0 +0.8
comp=Z,18nm,0.8s
SBC **Santa Barbara** 42.86 90 P P 06 58 23.7 +0.8
baz=310
ISA **Isabella, Lake** 42.88 88 P P 06 58 23.4 +0.2
baz=309,SNR=8.0
ISA **Isabella, Lake** 42.88 88 *e*P P 06 58 23.7 +0.5
ISA pmax pmax
comp=Z,23nm,1.0s
ISA **Isabella, Lake** 42.88 88 *e*P P 06 58 23.7 +0.5
comp=Z,22nm,1.0s
HVU **Hansel Valley** 42.88 77 *e*P P 06 58 24.5 +1.2
HVU pmax pmax
comp=Z,34nm,0.8s
HVU **Hansel Valley** 42.88 77 *e*P P 06 58 24.5 +1.2
comp=Z,34nm,0.8s
FLWY **Flagg Ranch** 42.90 73 *e*P P 06 58 24.4 +0.9
comp=Z,30nm,1.2s
ARVC **Arvin** 42.99 89 P P 06 58 24.3 +0.3
baz=309
MOOW **Moose Ponds** 43.05 73 *e*P P 06 58 25.1 +0.3
comp=Z,5.5nm,0.8s
DAC **Darwin (Calif)** 43.06 86 *e*P P 06 58 25.6 +0.8
DAC pmax pmax
comp=Z,12nm,0.8s
DAC **Darwin (Calif)** 43.06 86 *e*P P 06 58 25.6 +0.8
comp=Z,12nm,0.8s
R11A **Troy Canyon, C** 43.09 83 P P 06 58 25.6 +0.5
baz=307,SNR=58
R11A **Troy Canyon, C** 43.09 83 *e*P P 06 58 25.7 +0.7
comp=Z,64nm,1.4s
SCZ2 **Santa Cruz Isl** 43.19 91 P P 06 58 26.0 +0.3
baz=310
REDW **Red Top Meadow** 43.20 74 *e*P P 06 58 26.9 +1.0
comp=Z,66nm,1.6s
BGU **Big Grassy Mou** 43.20 78 *e*P P 06 58 26.7 +0.8
comp=Z,21nm,1.0s
SNOW **Snow King Moun** 43.20 73 *e*P P 06 58 26.9 +0.9
comp=Z,13nm,0.8s
LOHW **Long Hollow** 43.21 73 *e*P P 06 58 26.7 +0.7
comp=Z,39nm,1.8s
RLMT **Red Lodge** 43.22 71 P P 06 58 26.6 +0.5
baz=302,SNR=62
RLMT **Red Lodge** 43.22 71 *e*P P 06 58 26.5 +0.5
comp=Z,50nm,0.8s
MPMC **Manual Prospec** 43.26 87 P P 06 58 27.0 +0.5
baz=308,SNR=15
SPUT **South Promonto** 43.35 77 *e*P P 06 58 28.2 +1.1
comp=Z,26nm,0.9s
AHID **Auburn Hatcher** 43.37 75 *e*P P 06 58 28.3 +1.1
comp=Z,66nm,1.6s
OSI **Osito Audit: C** 43.38 89 P P 06 58 28.2 +1.0
baz=310
OSI **Osito Audit: C** 43.38 89 *e*P P 06 58 28.6 +1.3
comp=Z,26nm,0.8s
FURC **Furnace Creek,** 43.41 86 P P 06 58 28.1 +0.8
baz=308,SNR=26
BLG **Laguna Peak, P** 43.48 90 P P 06 58 28.3 +0.3
baz=310
LRMC **Laurel Mtn Rad** 43.50 87 P P 06 58 28.5 +0.2
baz=309,SNR=7.1
TPNV **Topopah Spring** 43.51 85 P P 06 58 29.0 +0.6
baz=308,SNR=82
TPNV **Topopah Spring** 43.51 85 *e*P P 06 58 29.1 +0.7
TPNV pmax pmax
comp=Z,41nm,0.8s
TPNV **Topopah Spring** 43.51 85 *e*P P 06 58 29.1 +0.7
comp=Z,41nm,0.8s
EDW2 **Edwards Air Fo** 43.67 88 P P 06 58 30.1 +0.4
baz=309,SNR=6.2
HWUT **Hardware Ranch** 43.73 76 *e*P P 06 58 30.8 +0.6
comp=Z,27nm,1.0s
SNCC **San Nicolas Is** 43.74 91 P P 06 58 29.9 -0.2
baz=311
DUG **Dugway, Tooele** 43.76 79 P P 06 58 30.8 +0.5
baz=306,SNR=63
DUG **Dugway, Tooele** 43.76 79 *e*P P 06 58 31.0 +0.7
DUG pmax pmax
comp=Z,89nm,1.2s
DUG **Dugway, Tooele** 43.76 79 *e*P P 06 58 31.0 +0.7
comp=Z,89nm,1.2s
DECC **Green Verdugo** 43.86 89 P P 06 58 31.4 +0.4
baz=310
MWC **Mount Wilson** 44.05 89 *e*P P 06 58 33.7 +0.9
MWC pmax pmax
comp=Z,68nm,1.6s
MWC **Mount Wilson** 44.05 89 *e*P P 06 58 33.7 +0.9
comp=Z,68nm,1.6s
PSUT **Pine Spring** 44.07 81 *e*P P 06 58 33.4 +0.4
comp=Z,24nm,0.8s
TCUT **Toone Canyon** 44.10 77 *e*P P 06 58 34.1 +0.9
comp=Z,55nm,0.9s
CTU **Camp Tracy** 44.13 77 *e*P P 06 58 34.0 +0.6
comp=Z,39nm,0.9s
SHOC **Shoshone, Teco** 44.13 86 P P 06 58 33.9 +0.7
baz=309,SNR=30
GSC **Goldstone, Bar** 44.17 87 P P 06 58 34.1 +0.5
baz=309,SNR=31
GSC **Goldstone, Bar** 44.17 87 *e*P P 06 58 34.5 +0.9
GSC pmax pmax
comp=Z,70nm,1.1s
GSC **Goldstone, Bar** 44.17 87 *e*P P 06 58 34.5 +0.9
comp=Z,70nm,1.1s
LAO **LASA Array** 44.21 67 P P 06 58 34.1 +0.3
baz=302,SNR=19
LAO **LASA Array** 44.21 67 *e*P P 06 58 34.4 +0.6
comp=Z,28nm,0.7s
BFSC **Mount Baldy Ra** 44.30 89 P P 06 58 35.2 +0.5
baz=310,SNR=14
RRX **Edison Barstow** 44.31 88 P P 06 58 35.2 +0.5
baz=310
BW06 **Boulder Array** 44.32 74 P P 06 58 35.1 +0.2
baz=304,SNR=72
BW06 **Boulder Array** 44.32 74 *e*P P 06 58 35.5 +0.6
comp=Z,40nm,0.7s
PD31 **Pinedale Array** 44.32 74 *e*P P 06 58 35.1 +0.2
PDAR **Pinedale Array** 44.32 74 P P 06 58 35.3 +0.4
comp=Z,29nm,0.6s,baz=298,slow=4.0,SNR=366
PDAR LR LR 07 16 33.7
comp=Z,176nm,18.4s,baz=321,slow=35
NLU **North Lily Min** 44.36 78 *e*P P 06 58 35.9 +0.7
comp=Z,42nm,1.0s
JLU **Jordanelle** 44.37 77 *e*P P 06 58 36.1 +0.7
comp=Z,38nm,0.9s
DGMT **Dagmar** 44.47 64 P P 06 58 35.9 +0.1
baz=301,SNR=24
DGMT **Dagmar** 44.47 64 *e*P P 06 58 36.0 +0.2
comp=Z,239nm,1.6s
SCI2 **San Clemente I** 44.54 91 P P 06 58 36.4 0.0
baz=311
MPU **Maple Canyon** 44.60 78 *e*P P 06 58 37.9 +0.7
comp=Z,26nm,0.9s
TUQ **Turquoise Moun** 44.65 86 P P 06 58 37.8 +0.3
baz=309,SNR=8.0
BBRC **Big Bear Solar** 44.75 88 P P 06 58 38.9 +0.5
baz=310,SNR=12
HEC **Hector,Ludlow** 44.77 87 P P 06 58 38.9 +0.5
baz=310,SNR=10
FCC **Fort Churchill** 44.84 47 *e*P P 06 58 39.3 +0.8
FCC pmax pmax
comp=Z,100nm,0.9s
FCC **Fort Churchill** 44.84 47 *e*P P 06 58 39.2 +0.8
comp=Z,101nm,0.8s
A25A **Svangstu Ranch** 44.85 63 P P 06 58 39.1 +0.3
baz=301,SNR=44
MURC **Murrieta** 45.00 89 P P 06 58 40.2 0.0
baz=310,SNR=6.1
SGU **Sterling** 45.08 79 *e*P P 06 58 42.5 +1.4
MSU **Marysvale** 45.14 80 *e*P P 06 58 42.7 +1.2
MSU **Marysvale** 45.14 80 *e*P P 06 58 42.7 +1.2
B25A **Knox Farm, Ray** 45.16 64 P P 06 58 41.5 +0.2
baz=302
GMRC **Granite Mounta** 45.22 87 P P 06 58 42.7 +0.6
baz=310,SNR=18
TMUT **Trail Mountain** 45.28 79 *e*P P 06 58 43.8 +1.0
comp=Z,51nm,1.1s
LCMT **Little Creek M** 45.38 83 *e*P P 06 58 44.3 +1.0
comp=Z,50nm,1.1s
LDFC **Landfair** 45.39 86 *e*P P 06 58 44.2 +0.8
comp=Z,80nm,1.1s
C25A **Freed Ranch, W** 45.40 64 P P 06 58 43.2 -0.1
baz=302,SNR=9.2
MTPU **Mount Pierson** 45.42 81 *e*P P 06 58 45.4 +1.6
comp=Z,64nm,1.4s
PFO **Pinyon Flats O** 45.46 89 P P 06 58 44.3 +0.3
comp=Z,12nm,0.8s,baz=325,slow=4.8,SNR=12
PFO **Pinyon Flats O** 45.46 89 P P 06 58 44.2 +0.3
baz=310,SNR=7.8
PFO **Pinyon Flats O** 45.46 89 *e*P P 06 58 44.4 +0.4
PFO pmax pmax
comp=Z,15nm,0.9s
PFO **Pinyon Flats O** 45.46 89 *e*P P 06 58 44.4 +0.4
comp=Z,15nm,0.8s
P17A **Butcher Ranch,** 45.47 78 *e*P P 06 58 44.8 +0.8
comp=Z,95nm,1.4s
A26A **Wade Farm, Ken** 45.48 62 P P 06 58 43.6 -0.2
baz=301,SNR=24
BELC **Belle Mtn. Jos** 45.51 88 P P 06 58 44.2 -0.2
baz=310,SNR=7.2
109C **Camp Elliot, M** 45.52 90 P P 06 58 44.7 +0.4
baz=311
B26A **Jensen Ranch,** 45.64 63 P P 06 58 45.1 0.0
baz=302
KNB **Kanab** 45.64 82 *e*P P 06 58 46.5 +1.1
KNB pmax pmax
comp=Z,160nm,1.6s
KNB **Kanab** 45.64 82 *e*P P 06 58 46.5 +1.1
comp=Z,159nm,1.7s
D25A **Fairfield** 45.66 65 P P 06 58 45.7 +0.4
baz=302,SNR=11
P18A **Preston Nutter** 45.69 78 *e*P P 06 58 46.6 +0.7
comp=Z,58nm,0.9s
SRU **San Rafael Swe** 45.82 78 *e*P P 06 58 47.5 +0.7
SRU pmax pmax
comp=Z,66nm,1.1s
SRU **San Rafael Swe** 45.82 78 *e*P P 06 58 47.5 +0.7
comp=Z,66nm,1.1s
MMU **Miners Mountai** 45.88 80 *e*P P 06 58 47.1 -0.3
A27A **Ledoux Ranch,** 45.90 62 P P 06 58 47.3 +0.2
baz=302
NEE2 **Needles Airpor** 45.90 86 P P 06 58 47.1 -0.2
baz=310
BAR **Barrett** 45.93 90 *e*P P 06 58 48.2 +0.6
comp=Z,21nm,1.0s
IRM **Iron Mountain** 45.95 87 P P 06 58 47.9 +0.2
baz=310,SNR=11
MONP2 **Monument Peak** 45.95 89 P P 06 58 48.1 +0.2
baz=311,SNR=5.4
E25A **Miller Ranch,** 45.96 66 P P 06 58 48.0 +0.3
baz=303,SNR=23
C26A **Wahner Farm, P** 46.01 64 P P 06 58 48.2 +0.2
baz=302,SNR=33
BC3 **Big Chuckawall** 46.08 88 P P 06 58 48.9 +0.1
baz=310,SNR=5.3
B27A **Peters Farms,** 46.17 63 P P 06 58 49.5 +0.2
baz=302,SNR=15
K22A **Casper** 46.23 72 P P 06 58 49.5 -0.5
baz=305,SNR=14
K22A **Casper** 46.23 72 *e*P P 06 58 49.5 -0.5
comp=Z,22nm,0.8s
D26A **Manning** 46.23 65 P P 06 58 49.5 -0.3
baz=303,SNR=15
F25A **Bowman** 46.24 67 P P 06 58 49.8 -0.1
baz=303,SNR=10
NRIK **Noril'sk** 46.30 331 P P 06 58 50.1 +0.1
comp=Z,28nm,0.8s,baz=77,slow=8.6,SNR=48
NRIK LR LR 07 20 15.3
comp=Z,490nm,19.0s,baz=73,slow=39
SWSC **Sam W. Stewart** 46.31 89 P P 06 58 50.5 -0.1
baz=311
U15A **North Rim** 46.34 83 *e*P P 06 58 51.3 +0.3
comp=Z,60nm,1.0s
C27A **Sayler Ranch,** 46.40 63 P P 06 58 51.0 -0.1
baz=303,SNR=17
A28A **Rude Farm, Bot** 46.47 61 P P 06 58 51.6 0.0
baz=302,SNR=21
PDMCI **Parker Dam,Lak** 46.50 86 P P 06 58 52.2 +0.2
baz=310,SNR=11
E26A **Carlson Angus** 46.52 65 P P 06 58 52.3 +0.2
baz=303,SNR=30
Y12C **Blythe** 46.61 87 P P 06 58 53.0 +0.1
baz=310,SNR=15
Y12C **Blythe** 46.61 87 *e*P P 06 58 53.4 +0.5
comp=Z,41nm,1.2s
O20A **White River Ci** 46.64 76 P P 06 58 53.3 0.0
baz=306,SNR=33
O20A **White River Ci** 46.64 76 *e*P P 06 58 53.2 0.0
comp=Z,66nm,1.1s
B28A **Dugan Ranch, T** 46.66 62 P P 06 58 53.3 +0.2
baz=302,SNR=16
G25A **Newell** 46.66 67 P P 06 58 52.9 -0.3
baz=304,SNR=7.0
D27A **Center** 46.72 64 P P 06 58 53.5 -0.1
baz=303,SNR=5.4
F26A **Lodgepole** 46.74 66 P P 06 58 53.7 -0.1
baz=304,SNR=12
GLA **Glamis** 46.87 88 P P 06 58 55.0 +0.1
baz=311,SNR=5.7
GLA **Glamis** 46.87 88 *e*P P 06 58 55.8 +0.9
GLA pmax pmax
comp=Z,16nm,0.8s
GLA **Glamis** 46.87 88 *e*P P 06 58 55.8 +0.9
comp=Z,16nm,0.8s
H25A **Fruitdale** 46.88 68 P P 06 58 54.6 -0.3
baz=304,SNR=9.4
RSSD **Black Hills** 46.90 69 P P 06 58 54.6 -0.6
baz=304
RSSD **Black Hills** 46.90 69 *e*P P 06 58 55.0 -0.3
RSSD pmax pmax
comp=Z,16nm,0.6s
RSSD **Black Hills** 46.90 69 *e*P P 06 58 55.0 -0.3
comp=Z,16nm,0.6s
C28A **Hausauer Farms** 47.04 63 P P 06 58 56.0 -0.1
baz=303
A29A **Manning Farm,** 47.04 61 P P 06 58 55.7 -0.3
baz=303,SNR=29

E27A	**Carson**	47.06	65	P		P		06 58 56.2	-0.1	
	baz=304,SNR=19									
G26A	**Maurine**	47.09	67	P		P		06 58 56.1	-0.4	
	baz=304,SNR=36									
F27A	**Lemmon**	47.11	66	P		P		06 58 56.3	-0.3	
	baz=304,SNR=28									
I25A	**Rochford**	47.13	69	P		P		06 58 56.4	-0.7	
	baz=305,SNR=9.0									
B29A	**Wagenman Farm,**	47.22	62	P		P		06 58 56.7	-0.7	
	baz=303,SNR=5.9									
D28A	**Regan**	47.22	64	P		P		06 58 57.4	-0.1	
	baz=303,SNR=7.4									
H26A	**Fairpoint**	47.37	68	P		P		06 58 57.7	-1.1	
	baz=305,SNR=6.2									
MDND	**Maddock**	47.41	62	P		P		06 58 59.0	0.0	
	baz=303,SNR=18									
MDND	**Maddock**	47.41	62	*e*P		P		06 58 59.5	+0.5	
	comp=Z,296nm,1.0s									
G27A	**Dupree**	47.43	66	P		P		06 58 58.9	-0.3	
	baz=304,SNR=20									
J25A	**Sunshine Ranch**	47.45	70	P		P		06 58 58.6	-0.8	
	baz=305,SNR=9.4									
WUAZ	**Wupatki**	47.49	83	P		P		06 59 00.8	+0.9	
	baz=309,SNR=40									
WUAZ	**Wupatki**	47.49	83	*e*P		P		06 59 00.5	+0.6	
	comp=Z,47nm,0.9s									
E28A	**Huff**	47.49	64	P		P		06 58 59.5	-0.1	
	baz=304,SNR=7.6									
A30A	**Hoffart Farm,**	47.55	60	P		P		06 58 59.9	-0.1	
	baz=303,SNR=17									
N23A	**Red Feather La**	47.60	74	P		P		06 59 01.1	+0.3	
	baz=306,SNR=9.9									
N23A	**Red Feather La**	47.60	74	*e*P		P		06 59 01.3	+0.5	
	comp=Z,43nm,1.1s									
I26A	**New Underwood**	47.65	68	P		P		06 59 00.6	-0.3	
	baz=305,SNR=6.4									
113A	**Mohawk Valley,**	47.73	87	*e*P		P		06 59 02.0	+0.5	
	comp=Z,18nm,1.2s									
H27A	**Howes**	47.77	67	P		P		06 59 01.1	-0.7	
	baz=305,SNR=5.8									
B30A	**Myrvik Farm, E**	47.80	61	P		P		06 59 01.9	-0.1	
	baz=303,SNR=46									
F28A	**McLaughlin**	47.83	65	P		P		06 59 01.9	-0.3	
	baz=304,SNR=36									
D29A	**Pettibone, Tap**	47.85	63	P		P		06 59 02.2	-0.2	
	baz=304,SNR=8.7									
BJI	**Beijing**	47.85	285	P		P		06 59 00.6	-1.8	
BJI				S		S		07 05 55.3	-2.3	
BJI				sS		sS		07 06 05.3	-5.7	
BJI				pmax		pmax				
	comp=Z,28nm,1.7s									
BJI				pmax		pmax				
	comp=Z,320nm,5.3s									
BJI				LR		LR				
	comp=Z,280nm,17.8s									
IRK	**Irkutsk**	47.85	305	*e*P		P		06 59 01.7	-0.6	
IRK				pmax		pmax				
	comp=Z,80nm,1.7s									
BJT	**Baijiatuau**	47.87	285	*e*P		P		06 59 02.6	0.0	
BJT				pmax		pmax				
	comp=Z,153nm,2.0s									
BJT	**Baijiatuau**	47.87	285	*e*P		P		06 59 02.6	0.0	
	comp=Z,153nm,2.0s									
J26A	**Sides Ranch, S**	47.93	69	P		P		06 59 02.4	-0.7	
	baz=305									
SMCO	**Snowmass**	47.99	76	*e*P		P		06 59 04.1	0.0	
	comp=Z,26nm,1.4s									
E29A	**Napoleon**	48.09	64	P		P		06 59 03.8	-0.5	
	baz=304,SNR=8.1									
I27A	**Quinn**	48.10	68	P		P		06 59 04.3	-0.2	
	baz=305,SNR=17									
C30A	**Mose, Pekin**	48.12	62	P		P		06 59 04.2	-0.3	
	baz=304,SNR=18									
X16A	**Lo Mia Camp, P**	48.14	84	*e*P		P		06 59 05.8	+0.8	
	comp=Z,26nm,1.1s									
A31A	**Linda, St. Vin**	48.17	60	P		P		06 59 04.6	-0.2	
	baz=303									
ULM	**Lac du Bonnet**	48.17	58	P		P		06 59 04.6	-0.2	
	comp=Z,17nm,0.6s,baz=311,slow=7.7,SNR=26									
ULM				LR		LR		07 19 56.0		
	comp=Z,313nm,21.1s,baz=334,slow=37									
ULM	**Lac du Bonnet**	48.17	58	*e*P		P		06 59 04.6	-0.2	
ULM				pmax		pmax				
	comp=Z,130nm,1.6s									
ULM	**Lac du Bonnet**	48.17	58	*e*P		P		06 59 04.6	-0.2	
	comp=Z,134nm,1.6s									
B31A	**Greenbush Farm**	48.19	61	P		P		06 59 04.9	-0.1	
	baz=304,SNR=37									
G28A	**Parade**	48.20	66	P		P		06 59 05.1	-0.1	
	baz=305,SNR=7.4									
MVCO	**Mesa Verde**	48.24	79	P		P		06 59 05.7	-0.1	
	baz=309,SNR=19									
MVCO	**Mesa Verde**	48.24	79	*e*P		P		06 59 06.1	+0.2	
	comp=Z,36nm,0.9s									
D30A	**Buchanan**	48.30	63	P		P		06 59 05.3	-0.6	
	baz=304,SNR=19									
H28A	**Mission Ridge**	48.36	67	P		P		06 59 05.9	-0.6	
	baz=305									
F29A	**Eureka**	48.40	65	P		P		06 59 06.3	-0.3	
	baz=305,SNR=8.0									
ISCO	**Idaho Springs**	48.46	75	P		P		06 59 07.9	+0.4	
	baz=307,SNR=7.8									
ISCO	**Idaho Springs**	48.46	75	*e*P		P		06 59 08.0	+0.5	
ISCO				pmax		pmax				
	comp=Z,35nm,1.4s									
ISCO	**Idaho Springs**	48.46	75	*e*P		P		06 59 08.0	+0.5	
	comp=Z,35nm,1.4s									
TLY	**Talaya**	48.48	305	LR		LR		07 21 44.3		
	comp=Z,340nm,18.8s,baz=45,slow=39									
TLY	**Talaya**	48.48	305	*e*P		P		06 59 07.6	+0.4	
TLY				*e*S		S		07 06 16.6	+10	
TLY				*e*SSS		SSS		07 10 46.7		
TLY				pmax		pmax				
	comp=Z,52nm,1.3s									
TLY				MLR		MLR				
	comp=Z,315nm,17.0s									
TLY	**Talaya**	48.48	305	*e*P		P		06 59 07.8	+0.6	
	comp=Z,29nm,0.7s									
TLY	**Talaya**	48.48	305	P		P		06 59 07.7	+0.5	
	SNR=24									
TLY				P		P		06 59 07.7	+0.5	
	SNR=24									
TLY	**Talaya**	48.48	305	P		P		06 59 07.7	+0.5	
	SNR=24									
C31A	**Landman Farms,**	48.49	61	P		P		06 59 06.8	-0.6	
	baz=304,SNR=20									
E30A	**Jud**	48.55	63	P		P		06 59 07.0	-0.8	
	baz=304									
A32A	**Rocking H Ranc**	48.56	60	P		P		06 59 07.5	-0.3	
	baz=304,SNR=40									
J27A	**Elkhorn Farm,**	48.60	69	P		P		06 59 07.9	-0.5	
	baz=306,SNR=10									
I28A	**Midland**	48.66	67	P		P		06 59 08.4	-0.3	
	baz=306,SNR=30									
G29A	**Hoven**	48.71	65	P		P		06 59 08.4	-0.7	
	baz=305									
ULN	**Ulaanbaatar**	48.73	299	*de*P		P		06 59 09.5	+0.2	
ULN				pmax		pmax				
	comp=Z,75nm,1.7s									
ULN	**Ulaanbaatar**	48.73	299	*e*P		P		06 59 09.6	+0.2	
	comp=Z,49nm,1.1s									
ULN	**Ulaanbaatar**	48.73	299	P		P		06 59 09.6	+0.3	
	SNR=26									
ULN				P		P		06 59 09.6	+0.3	
	SNR=26									
ULN	**Ulaanbaatar**	48.73	299	P		P		06 59 09.6	+0.3	
	SNR=26									
W18A	**Petrified Fore**	48.77	82	P		P		06 59 10.3	+0.4	
	baz=310,SNR=11									
W18A	**Petrified Fore**	48.77	82	*e*P		P		06 59 10.9	+1.0	
	comp=Z,63nm,1.1s									
B32A	**Ashes, Strandq**	48.83	60	P		P		06 59 09.4	-0.5	
	baz=304,SNR=54									
F30A	**Leola**	48.86	64	P		P		06 59 09.3	-1.0	
	baz=305									
H29A	**Onida**	48.87	66	P		P		06 59 10.0	-0.3	
	baz=305,SNR=13									
214A	**Organ Pipe Nat**	48.87	88	P		P		06 59 10.7	+0.2	
	baz=312,SNR=10									
214A	**Organ Pipe Nat**	48.87	88	*e*P		P		06 59 10.4	-0.1	
	comp=Z,117nm,1.3s									
D31A	**Mcclaflin, Tow**	48.92	62	P		P		06 59 09.8	-0.8	
	baz=305,SNR=14									
S22A	**4UR Ranch, Cre**	48.95	78	P		P		06 59 12.3	+0.9	
	baz=308,SNR=39									
S22A	**4UR Ranch, Cre**	48.95	78	*e*P		P		06 59 12.2	+0.9	
	comp=Z,48nm,1.1s									
J28A	**Allard Ranch,**	48.96	68	P		P		06 59 11.0	-0.1	
	baz=306,SNR=17									
X18A	**Snowflake**	49.02	83	*e*P		P		06 59 12.5	+0.8	
	comp=Z,28nm,0.9s									
GUMO	**Guam**	49.09	236	P		P		06 59 10.2	-2.0	
	comp=Z,112nm,0.9s,baz=34,slow=7.3,SNR=5.5									
E31A	**Nome**	49.10	63	P		P		06 59 11.1	-0.9	
	baz=305,SNR=17									
SONA1	**Songino Array**	49.10	299	*e*P		P		06 59 11.7	-0.5	
SONM	**Songino Array**	49.11	299	P		P		06 59 12.7	+0.5	
	comp=Z,28nm,0.8s,baz=50,slow=8.8,SNR=159									
SONM				PcP		PcP		07 00 33.9	-1.5	
	comp=Z,4.7nm,1.0s,baz=46,slow=6.4,SNR=3.9									
SONM				LR		LR		07 21 13.3		
	comp=Z,558nm,19.3s,baz=56,slow=38									
C32A	**Crookston**	49.15	61	P		P		06 59 11.8	-0.6	
	baz=304									
A33A	**Warroad**	49.16	59	P		P		06 59 12.1	-0.2	
	baz=304,SNR=37									
I29A	**Vivian Onida**	49.16	67	P		P		06 59 12.2	-0.3	
	baz=306,SNR=11									
G30A	**Faulkton**	49.20	65	P		P		06 59 12.2	-0.6	
	baz=305,SNR=25									
Q24A	**Divide**	49.25	75	P		P		06 59 14.1	+0.5	
	baz=308,SNR=6.0									
Q24A	**Divide**	49.25	75	*e*P		P		06 59 14.4	+0.8	
	comp=Z,39nm,1.5s									
AGMN	**Agassiz Nation**	49.25	60	P		P		06 59 12.7	-0.4	
	baz=304,SNR=39									
AGMN	**Agassiz Nation**	49.25	60	*e*P		P		06 59 12.8	-0.4	
	comp=Z,131nm,1.1s									
D32A	**Dogwood Acres,**	49.27	62	P		P		06 59 12.4	-0.8	
	baz=305									
F31A	**Hecla**	49.29	64	P		P		06 59 12.5	-0.9	
	baz=305,SNR=10.0									
ZAK	**Zakamensk**	49.39	303	*e*P		P		06 59 14.2	-0.1	
ZAK				pmax		pmax				
	comp=Z,63nm,1.3s									
B33A	**Robert and Kas**	49.42	60	P		P		06 59 13.8	-0.6	
	baz=305,SNR=18									
J29A	**Okreek**	49.51	68	P		P		06 59 15.0	-0.2	
	baz=306,SNR=16									
E32A	**Braaten, Kindr**	49.54	62	P		P		06 59 14.8	-0.6	
	baz=305,SNR=5.9									
C33A	**Trail**	49.61	61	P		P		06 59 15.4	-0.5	
	baz=305,SNR=16									
TIA	**Tai'an**	49.61	281	JP		P		06 59 15.5	-0.5	
TIA				pmax		pmax				
	comp=Z,50nm,0.8s									
TIA				LR		LR				
	comp=Z,360nm,18.5s									
TIA				LR		LR				
	comp=Z,480nm,16.0s									
TIA				LR		LR				
	comp=Z,270nm,16.0s									
G31A	**Conde**	49.68	65	P		P		06 59 15.4	-1.0	
	baz=306									
SUSD	**Miller**	49.70	66	P		P		06 59 16.0	-0.7	
	baz=306,SNR=14									
I30A	**Oacoma**	49.74	67	P		P		06 59 16.3	-0.7	
	baz=306,SNR=5.1									
SDCO	**Great Sand Dun**	49.78	77	P		P		06 59 18.1	+0.4	
	baz=309,SNR=53									
SDCO	**Great Sand Dun**	49.78	77	*e*P		P		06 59 18.1	+0.4	
	comp=Z,34nm,1.0s									
B34A	**Aery, Baudette**	49.81	59	P		P		06 59 16.9	-0.5	
	baz=305,SNR=34									
MOY	**Mondy**	49.87	306	*e*P		P		06 59 18.6	+0.7	
MOY				pmax		pmax				
	comp=Z,63nm,3.1s									
D33A	**AnnSam, Waubun**	49.92	61	P		P		06 59 17.4	-0.8	
	baz=305,SNR=18									
TUC	**Tucson**	49.92	86	P		P		06 59 19.2	+0.6	
	baz=312									
TUC	**Tucson**	49.92	86	*e*P		P		06 59 19.0	+0.4	
TUC				pmax		pmax				
	comp=Z,34nm,1.0s									
TUC	**Tucson**	49.92	86	*e*P		P		06 59 19.0	+0.4	
	comp=Z,34nm,1.0s									
F32A	**Veblen**	49.93	63	P		P		06 59 17.1	-1.2	
	baz=306									
OGNE	**Ogallala**	49.95	71	P		P		06 59 18.9	+0.2	
	baz=307									
OGNE	**Ogallala**	49.95	71	*e*P		P		06 59 19.8	+1.1	
	comp=Z,66nm,0.8s									
H31A	**Wolsey**	49.96	65	P		P		06 59 18.1	-0.5	
	baz=306,SNR=13									
J30A	**Dallas**	50.05	67	P		P		06 59 18.6	-0.7	
	baz=307,SNR=9.4									
G32A	**Webster**	50.07	64	P		P		06 59 18.5	-1.0	
	baz=306									
C34A	**RKJ Ranch, Bem**	50.15	60	P		P		06 59 19.1	-0.9	
	baz=305,SNR=15									
HHC	**Hu-ho-hao-te**	50.18	289	*e*P		P		06 59 21.0	+0.6	
HHC				PP		PP		07 01 13.9	-1.6	
HHC				S		S		07 06 25.6	-4.9	
HHC				ScS		ScS		07 09 07.3	-2.3	
HHC				SS		SS		07 09 55.3	-8.2	
HHC				pmax		pmax				
	comp=Z,68nm,1.0s									
HHC				pmax		pmax				
	comp=Z,250nm,4.4s									
HHC				LR		LR				
	comp=Z,1μm,12.3s									
HHC				LR		LR				
	comp=Z,1μm,13.6s									
HHC				LR		LR				
	comp=Z,1μm,16.1s									
I31A	**Royce, Wessing**	50.19	66	P		P		06 59 19.7	-0.7	
	baz=306									
E33A	**Westby DABS, E**	50.20	62	P		P		06 59 19.6	-0.7	
	baz=306									
D34A	**Park Rapids**	50.31	61	P		P		06 59 20.5	-0.7	
	baz=306,SNR=24									
K30A	**Basset**	50.36	68	P		P		06 59 21.8	+0.1	
	baz=307,SNR=12									
B35A	**Bob, Littlefor**	50.39	59	P		P		06 59 21.3	-0.5	
	baz=305,SNR=21									
F33A	**5 Mile Ranch,**	50.42	63	P		P		06 59 21.0	-1.1	
	baz=306,SNR=9.6									
J31A	**Geddes**	50.51	67	P		P		06 59 22.2	-0.5	
	baz=307,SNR=12									
H32A	**Carlson Farm,**	50.55	65	P		P		06 59 21.9	-1.2	
	baz=306									
C35A	**Jirik Farms, M**	50.63	60	P		P		06 59 22.9	-0.7	
	baz=306,SNR=14									
E34A	**Wadena**	50.66	62	P		P		06 59 22.9	-1.0	
	baz=306									
G33A	**Ortonville**	50.72	64	P		P		06 59 23.2	-1.0	
	baz=306,SNR=9.7									
KBS	**Kingsbay**	50.73	358	*e*P		P		06 59 24.7	+0.7	
KBS				pmax		pmax				
	comp=Z,111nm,1.6s									
KBS	**Kingsbay**	50.73	358	*e*P		P		06 59 24.6	+0.7	
	comp=Z,111nm,1.6s									
KSCO	**Kaye Shedlock'**	50.77	74	P		P		06 59 25.3	+0.3	
	baz=308									
I32A	**Karley and Nic**	50.81	65	P		P		06 59 23.9	-1.2	
	baz=307									
T25A	**Trinidad**	50.84	77	P		P		06 59 26.0	+0.4	
	baz=309,SNR=77									
T25A	**Trinidad**	50.84	77	*e*P		P		06 59 26.5	+0.9	
	comp=Z,100nm,1.0s									
H33A	**Prehn Over Nor**	50.84	64	P		P		06 59 24.3	-1.0	
	baz=307,SNR=18									
LAZ	**Ladron**	50.87	81	*e*P		P		06 59 26.9	+1.1	
K31A	**O'Neill**	50.90	68	P		P		06 59 25.5	-0.3	
	baz=307,SNR=8.6									
ANMO	**Albuquerque**	50.95	80	P		P		06 59 26.7	+0.3	
	baz=310									
ANMO	**Albuquerque**	50.95	80	*e*P		P		06 59 26.8	+0.3	
ANMO				pmax		pmax				
	comp=Z,73nm,1.5s									
ANMO	**Albuquerque**	50.95	80	*e*P		P		06 59 26.8	+0.3	
	comp=Z,72nm,1.5s									
D35A	**Remer**	50.95	60	P		P		06 59 25.4	-0.6	
	baz=306,SNR=16									
J32A	**Parkston**	50.98	66	P		P		06 59 25.3	-1.0	
	baz=307,SNR=5.8									
F34A	**Alexandria**	51.03	62	P		P		06 59 25.6	-1.1	
	baz=306,SNR=8.3									
E35A	**Pequot Lakes**	51.06	61	P		P		06 59 26.5	-0.3	
	baz=306,SNR=25									
L31A	**Butterfield Fa**	51.12	68	P		P		06 59 27.1	-0.3	
	baz=308,SNR=11									
G34A	**Benson**	51.14	63	P		P		06 59 26.6	-0.9	
	baz=307									
I33A	**Coleman**	51.19	65	P		P		06 59 26.4	-1.4	
	baz=307									
NJ2	**Nanjing**	51.20	275	*e*P		P		06 59 27.8	-0.3	
NJ2				pmax		pmax				
	comp=Z,22nm,0.5s									
C36A	**Pine Crest Far**	51.23	59	P		P		06 59 27.6	-0.5	
	baz=306,SNR=12									
LPM	**Los Pinos Moun**	51.25	81	*e*P		P		06 59 29.4	+0.7	
BTO	**Baotou**	51.26	290	*e*P		P		06 59 28.8	+0.3	
K32A	**Verdigre**	51.34	67	P		P		06 59 28.1	-0.9	
	baz=308,SNR=5.8									
BNM	**Barren Site**	51.36	81	*e*P		P		06 59 30.3	+0.8	
SPA0	**Spitsbergen Ar**	51.36	357	*e*P		P		06 59 29.1	+0.3	
SPITS	**Spitsbergen Ar**	51.36	357	P		P		06 59 28.7	0.0	
	comp=Z,19nm,0.6s,baz=50,slow=7.8,SNR=55									
F35A	**Swanville**	51.38	62	P		P		06 59 28.7	-0.6	
	baz=307,SNR=27									
D36A	**Goodland**	51.39	60	P		P		06 59 28.6	-0.7	
	baz=306,SNR=7.6									
H34A	**Spellman Lake,**	51.41	64	P		P		06 59 28.7	-0.8	
	baz=307									
ECSD	**EROS Data Cent**	51.48	65	P		P		06 59 29.3	-0.8	
	baz=307,SNR=32									
ECSD	**EROS Data Cent**	51.48	65	*e*P		P		06 59 29.2	-0.8	
	comp=Z,35nm,0.7s									
319A	**Douglas**	51.50	86	*e*P		P		06 59 31.3	+0.8	
	comp=Z,56nm,1.4s									
J33A	**Davis**	51.53	66	P		P		06 59 29.3	-1.2	
	baz=307									
M31A	**Lambtecht Ranc**	51.54	69	P		P		06 59 29.9	-0.7	
	baz=308									
TIY	**Taiyuan**	51.58	285	*e*P		P		06 59 31.8	+0.8	
TIY				S		S		07 06 56.6	+6.6	
TIY				LR		LR				
	comp=Z,410nm,18.0s									
TIY				LR		LR				
	comp=Z,82nm,12.3s									
TIY				LR		LR				
	comp=Z,310nm,16.8s									
C37A	**Embarrass**	51.60	59	P		P		06 59 30.4	-0.5	
	baz=306,SNR=8.8									
121A	**Cookes Peak, D**	51.68	83	P		P		06 59 32.0	+0.1	
	baz=312,SNR=28									
121A	**Cookes Peak, D**	51.68	83	*e*P		P		06 59 32.4	+0.4	
	comp=Z,33nm,0.8s									
L32A	**Elgin**	51.71	68	P		P		06 59 31.2	-0.7	
	baz=308,SNR=6.0									
E36A	**McGregor**	51.73	61	P		P		06 59 31.5	-0.4	
	baz=307,SNR=26									
I34A	**Hadley**	51.73	64	P		P		06 59 30.9	-1.1	
	baz=307									
D37A	**Cotton**	51.80	59	P		P		06 59 31.7	-0.7	
	baz=307,SNR=5.2									
G35A	**Watkins**	51.81	63	P		P		06 59 31.8	-0.7	
	baz=307,SNR=7.8									
EYMN	**Ely**	51.85	58	P		P		06 59 32.2	-0.5	
	baz=306,SNR=7.7									
EYMN	**Ely**	51.85	58	*e*P		P		06 59 32.7	-0.1	
	comp=Z,64nm,1.0s									
N31A	**Bailey Ranch,**	51.88	69	P		P		06 59 32.7	-0.4	
	baz=308									
H35A	**Sunnyside Ranc**	51.93	63	P		P		06 59 32.4	-0.9	
	baz=307,SNR=12									
K33A	**Hardington**	51.94	67	P		P		06 59 32.7	-0.8	
	baz=308									
F36A	**Milaca**	51.97	61	P		P		06 59 32.7	-1.0	
	baz=307,SNR=16									
BGNE	**Belgrade**	51.99	68	P		P		06 59 33.6	-0.4	
	baz=308,SNR=9.2									
BGNE	**Belgrade**	51.99	68	*e*P		P		06 59 33.3	-0.7	
	comp=Z,96nm,1.0s									
L33A	**Hoskins**	52.05	67	P		P		06 59 33.2	-1.2	
	baz=308									
O31A	**Woolen Ranch,**	52.07	70	P		P		06 59 34.1	-0.4	
	baz=309									
DAG	**Danmarks Havn**	52.08	7	*i*P		P		06 59 33.4	-0.7	
	comp=Z,12nm,0.9s									
DAG	**Danmarks Havn**	52.08	7	*i*P		P		06 59 33.4	-0.7	
DAG				pmax		pmax				
	comp=Z,10.0nm,0.9s									
C38A	**Sawbill Land.**	52.10	58	P		P		06 59 34.0	-0.6	
	baz=307,SNR=6.5									
J34A	**George**	52.13	65	P		P		06 59 34.2	-0.8	
	baz=308									
E37A	**Wrenshall**	52.17	60	P		P		06 59 34.6	-0.6	
	baz=307									
G36A	**St. Michael**	52.22	62	P		P		06 59 34.9	-0.6	
	baz=307,SNR=7.1									
N32A	**Stulken Farm,**	52.30	69	P		P		06 59 36.0	-0.3	
	baz=309									
I35A	**Creekview Farm**	52.35	64	P		P		06 59 35.5	-1.1	
	baz=308									
K34A	**Le Mars**	52.42	66	P		P		06 59 36.5	-0.5	
	baz=308,SNR=14									
M33A	**Taylor Creek F**	52.46	68	P		P		06 59 36.6	-0.8	
	baz=308,SNR=6.3									
H36A	**Jessenland, He**	52.51	63	P		P		06 59 37.5	-0.2	
	baz=308,SNR=23									
J35A	**Milford**	52.52	65	P		P		06 59 37.0	-0.8	
	baz=308									
O32A	**Brockman Farm,**	52.63	70	P		P		06 59 38.1	-0.6	
	baz=309,SNR=5.0									
CBKS	**Cedar Bluff**	52.65	72	P		P		06 59 38.7	-0.2	
	baz=309									
C39A	**Grand Marais**	52.66	58	P		P		06 59 37.9	-0.9	
	baz=307									
L34A	**Svendsen Farm,**	52.70	67	P		P		06 59 38.4	-0.8	
	baz=308									
SPMN	**Marine on St.**	52.76	62	P		P		06 59 39.2	-0.3	
	baz=308,SNR=9.9									
SPMN	**Marine on St.**	52.76	62	*e*P		P		06 59 39.3	-0.2	
	comp=Z,65nm,1.2s									
I36A	**Fitzsimmons Fa**	52.80	63	P		P		06 59 38.7	-1.2	
	baz=308									

baz=312,SNR=37
MSTX **Muleshoe** 53.90 79 eP P 06 59 48.0 -0.1
comp=Z,207nm,1.5s
M36A **Felix, Anita** 53.94 66 P P 06 59 47.7 -0.5
baz=309
P34A **Walnut Farm, R** 53.94 69 P P 06 59 47.4 -1.0
baz=310,SNR=10
AMTX **Amarillo** 53.98 77 P P 06 59 48.6 -0.2
baz=311
AMTX **Amarillo** 53.98 77 eP P 06 59 48.8 0.0
comp=Z,33nm,0.9s
O35A **Humboldt** 54.03 68 P P 06 59 48.0 -1.0
baz=310
R33A **Olander Ranch,** 54.04 71 P P 06 59 48.1 -0.9
baz=310
J38A **Wedel Dairy, R** 54.12 63 P P 06 59 49.0 -0.6
baz=309,SNR=9.1
L37A **Phoenix Point,** 54.13 65 P P 06 59 49.0 -0.7
baz=309,SNR=16
T32A **Huddler Ranch,** 54.19 73 P P 06 59 49.5 -0.7
baz=310
N36A **Muff Farm, Cla** 54.25 67 P P 06 59 49.1 -1.4
baz=310
COWI **Conover** 54.25 59 eP P 06 59 50.2 -0.3
comp=Z,64nm,1.1s
Q34A **Chapman** 54.27 70 P P 06 59 50.2 -0.6
baz=310,SNR=26
KSU1 **Kansas State U** 54.36 70 P P 06 59 50.5 -0.8
baz=310,SNR=18
KSU1 **Kansas State U** 54.36 70 eP P 06 59 50.6 -0.8
comp=Z,58nm,0.9s
K38A **Parkersburg** 54.37 64 P P 06 59 50.6 -0.8
baz=309
M37A **Trindle Farm,** 54.41 66 P P 06 59 51.5 -0.1
baz=310,SNR=14
P35A **Duane Minner,** 54.44 69 P P 06 59 51.0 -1.0
baz=310,SNR=8.2
S33A **Kaszmaul Farm,** 54.48 72 P P 06 59 51.7 -0.6
baz=310
R34A **Isabella, Hill** 54.49 71 P P 06 59 51.6 -0.7
baz=310,SNR=11
L38A **Oak Wood Farm,** 54.58 65 P P 06 59 52.1 -0.8
baz=309,SNR=16
SCIA **State Center** 54.58 65 eP P 06 59 51.9 -1.0
comp=Z,76nm,0.8s
U32A **Winter Ranch,** 54.66 74 P P 06 59 52.8 -0.8
baz=311
T33A **Patterson Ranc** 54.67 73 P P 06 59 53.0 -0.7
baz=311
O36A **Bolckow** 54.68 68 P P 06 59 52.6 -1.1
baz=310
N37A **Lee Faris, Mou** 54.73 67 P P 06 59 53.5 -0.5
baz=310,SNR=15
Q35A **Mercer Eighty,** 54.86 70 P P 06 59 54.0 -1.0
baz=310
P36A **Good Intent, A** 54.86 68 P P 06 59 54.0 -1.0
baz=310,SNR=18
M38A **Pleasantville** 54.90 66 P P 06 59 54.6 -0.6
baz=310,SNR=12
S34A **Willow Spring** 54.95 71 P P 06 59 54.6 -1.0
baz=311,SNR=8.2
V32A **Arapaho** 55.06 74 P P 06 59 56.1 -0.4
baz=311
WHN **Wuhan** 55.07 277 P P 06 59 55.5 -1.1
WHN pmax pmax
comp=Z,62nm,0.6s
WHN LR LR
comp=Z,490nm,15.4s
WHN LR LR
comp=Z,500nm,16.8s
WHN LR LR
comp=Z,370nm,17.4s
R35A **Emporia Munici** 55.10 70 P P 06 59 56.1 -0.7
baz=310,SNR=7.3
Q36A **Arnold C. Orve** 55.13 69 P P 06 59 55.8 -1.2
baz=310
O37A **Wolven Farm, M** 55.14 67 P P 06 59 56.2 -0.7
baz=310,SNR=8.9
U33A **Lingo Farm, Me** 55.17 73 P P 06 59 56.2 -1.0
baz=311
N38A **Joes South For** 55.27 66 P P 06 59 57.2 -0.8
baz=310,SNR=8.8
W32A **Sentinel** 55.33 75 P P 06 59 58.5 0.0
baz=312,SNR=8.7
T34A **McClaskey Farm** 55.35 72 P P 06 59 58.0 -0.5
baz=311,SNR=15
P37A **Lathrop** 55.39 68 P P 06 59 57.7 -1.1
baz=310,SNR=11
S35A **Otter Creek Ra** 55.45 71 P P 06 59 58.2 -1.0
baz=311,SNR=13
V33A **Lossen Ranch,** 55.46 74 P P 06 59 58.5 -0.9
baz=311
U34A **Anderson Ranch** 55.52 73 P P 06 59 59.1 -0.6
baz=311,SNR=9.5
U34A **Anderson Ranch** 55.52 73 eP P 06 59 59.3 -0.5
comp=Z,94nm,1.4s
R36A **Gordon, Harris** 55.52 70 P P 06 59 59.1 -0.7
baz=311,SNR=19
SFJD **Kangerlussuaq** 55.53 23 *i* P P 06 59 59.5 +0.2
comp=Z,16nm,0.8s
SFJD **Kangerlussuaq** 55.53 23 eP P 06 59 59.7 +0.4
SFJD pmax pmax
comp=Z,19nm,0.8s
SFJD **Kangerlussuaq** 55.53 23 eP P 06 59 59.7 +0.4
comp=Z,19nm,0.8s
SSLB **Suanglung** 55.56 266 eP P 06 59 59.4 -0.9
comp=Z,50nm,0.8s
O38A **Galt** 55.56 67 P P 06 59 59.1 -1.0
baz=310,SNR=8.6
YULB **Yu-li** 55.63 266 eP P 06 59 58.8 -1.9
comp=Z,59nm,1.6s
JFWS **Jewell Farm** 55.64 62 eP P 06 59 59.5 -1.0
JFWS pmax pmax
comp=Z,44nm,0.8s
JFWS **Jewell Farm** 55.64 62 eP P 06 59 59.5 -1.0
comp=Z,44nm,0.8s
N39A **Derby Farms, D** 55.65 66 P P 06 59 59.7 -0.9
baz=310,SNR=29
X32A **Elmer** 55.77 76 P P 07 00 01.1 -0.5
baz=312
Q37A **Longview Farm,** 55.79 69 P P 06 59 60.0 -1.7
baz=311
W33A **Caddo, Fort Co** 55.79 75 P P 07 00 02.0 +0.3
baz=312
T35A **Sooner Cattle** 55.83 72 P P 07 00 01.0 -1.0
baz=311
P38A **Dawn** 55.85 67 P P 07 00 01.0 -1.1
baz=311,SNR=17
S36A **Lake Cedric, C** 55.85 70 P P 07 00 01.2 -0.9
baz=311,SNR=6.5
WMOK **Wichita Mounta** 55.87 75 eP P 07 00 02.1 -0.2
WMOK pmax pmax
comp=Z,30nm,1.1s
WMOK **Wichita Mounta** 55.87 75 eP P 07 00 02.1 -0.2
comp=Z,30nm,1.1s
V34A **Guthrie** 55.92 73 P P 07 00 02.3 -0.4
baz=312,SNR=5.1
V34A **Guthrie** 55.92 73 eP P 07 00 02.6 -0.1
comp=Z,46nm,1.4s
R37A **Teagarden Farm** 55.93 69 P P 07 00 01.4 -1.3
baz=311,SNR=6.0
O39A **Kirksville** 56.02 66 P P 07 00 02.2 -1.1
baz=311,SNR=6.4
U35A **Pawnee** 56.05 72 P P 07 00 02.6 -1.0
baz=311
T36A **Boggs Farm, Ca** 56.12 71 P P 07 00 03.3 -0.8
baz=311,SNR=6.6
XAN **Xi'an** 56.13 284 P P 07 00 03.4 -0.8
XAN pP pP 07 00 12.5 0.0
XAN pmax pmax
comp=Z,21nm,0.9s
XAN pmax pmax
comp=Z,130nm,7.1s
XAN LR LR
comp=Z,240nm,17.3s
XAN LR LR
comp=Z,200nm,18.3s
W34A **Bridge Creek,** 56.16 74 P P 07 00 04.2 -0.2
baz=312
X33A **Lawton** 56.17 75 P P 07 00 04.0 -0.5
baz=312
Q38A **Cooks Store, C** 56.23 68 P P 07 00 03.2 -1.6
baz=311,SNR=12
QZH **Quanzhou** 56.24 269 P P 07 00 03.1 -2.0
QZH S S 07 07 50.5 -2.6
QZH LR LR
comp=Z,380nm,14.8s
QZH LR LR
comp=Z,200nm,9.6s
QZH LR LR
comp=Z,270nm,9.6s
S37A **Fort Scott** 56.29 70 P P 07 00 04.0 -1.3
baz=311,SNR=26
ZAA0 **Zalesovo Array** 56.29 316 eP P 07 00 04.4 -0.6
ZALV **Zalesovo Beam** 56.29 316 P P 07 00 04.4 -0.6
comp=Z,3.1nm,0.7s,baz=49,slow=6.7,SNR=16
ZALV PcP PcP 07 01 02.4 +0.2
comp=Z,5.4nm,0.6s,baz=28,slow=2.8,SNR=5.9
ZALV LR LR 07 26 41.6
comp=Z,441nm,18.0s,baz=70,slow=39
V35A **Meyer Ranch, C** 56.39 73 P P 07 00 05.1 -0.9
baz=312,SNR=5.3
SLBS **Sierra La Lagu** 56.40 93 eP P 07 00 11.4 +5.1
comp=Z,34nm,1.2s
NVS **Novosibirsk** 56.40 317 eP P 07 00 04.5 -1.3
NVS eS S 07 07 52.7 -1.7
NVS eSSS SSS 07 13 48.6
NVS pmax pmax
comp=Z,60nm,1.9s
NVS pmax pmax
comp=N,13nm,1.4s
NVS pmax pmax
comp=E,17nm,1.4s
NVS pmax pmax
comp=Z,12nm,1.3s
NVS smax smax
comp=E,24nm,2.0s
TX31 **Lajitas Ar. Si** 56.45 83 eP P 07 00 06.3 -0.3
TXAR **Lajitas Array** 56.45 83 P P 07 00 06.3 -0.3
comp=E,35nm,0.9s,baz=295,slow=5.0,SNR=256
TXAR PcP PcP 07 01 03.3 0.0
comp=E,6.2nm,0.6s,baz=240,slow=1.7,SNR=11
TXAR PKP2bc 07 30 16.1
comp=E,0.7nm,0.9s,baz=123,slow=2.1,SNR=3.9
Y33A **Hilltop Ranch,** 56.45 76 P P 07 00 05.9 -0.6
baz=312,SNR=11
O40A **La Belle** 56.50 66 P P 07 00 05.6 -1.1
baz=311,SNR=30
X34A **Smith Ranch, M** 56.55 75 P P 07 00 07.3 +0.2
baz=312,SNR=6.9
Q39A **Willow Grove F** 56.55 68 P P 07 00 05.3 -1.8
baz=311,SNR=14
R38A **Fenwick Farm,** 56.56 69 P P 07 00 05.1 -2.1
baz=311,SNR=7.4
U36A **Ologah** 56.64 72 P P 07 00 06.9 -0.9
baz=312
T37A **Cheneyville 18** 56.65 71 P P 07 00 06.8 -1.0
baz=312,SNR=16
ABTX **Abilene, Hawle** 56.74 78 P P 07 00 08.2 -0.4
baz=313,SNR=9.1
ABTX **Abilene, Hawle** 56.74 78 eP P 07 00 08.9 +0.3
comp=E,72nm,1.1s
W35A **Tecumseh** 56.77 74 P P 07 00 08.5 -0.2
baz=312,SNR=13
P40A **Paris** 56.78 67 P P 07 00 07.6 -1.1
baz=311,SNR=27
HPIG 56.83 87 eP P 07 00 09.0 -0.5
comp=E,39nm,1.2s
Z33A **Whitaker Ranch** 56.85 76 P P 07 00 08.5 -0.8
baz=312,SNR=9.1
V36A **Jenks** 56.92 72 P P 07 00 09.2 -0.5
baz=312,SNR=5.7
TUL1 **Leonard** 56.92 72 P P 07 00 09.1 -0.7
baz=312,SNR=7.4
TUL1 **Leonard** 56.92 72 eP P 07 00 09.3 -0.5
comp=E,52nm,1.4s
S38A **Stockton** 56.93 69 P P 07 00 08.4 -1.4
baz=312,SNR=26
R39A **Chumby, Stover** 56.99 68 P P 07 00 09.3 -0.9
baz=311
U37A **Salina** 57.01 71 P P 07 00 09.5 -0.9
baz=312,SNR=20
Y34A **Reagan Ranch,** 57.02 75 P P 07 00 10.4 -0.1
baz=312,SNR=21
T38A **Diamond** 57.09 70 P P 07 00 09.7 -1.3
baz=312,SNR=14
Q40A **Laux Farm, Aux** 57.12 67 P P 07 00 09.4 -1.7
baz=311,SNR=16
W36A **Wetumka** 57.17 73 P P 07 00 11.3 -0.2
baz=312,SNR=5.7
133A **Hamilton Ranch** 57.21 77 P P 07 00 11.7 -0.2
baz=313,SNR=35
X35A **Drake** 57.21 74 P P 07 00 11.5 -0.3
baz=312,SNR=12
S39A **Bolivar** 57.24 69 P P 07 00 10.1 -1.9
baz=312,SNR=7.2
Z34A **Collier Ranch,** 57.32 76 P P 07 00 12.1 -0.6
baz=313,SNR=5.1
V37A **Hulbert** 57.34 72 P P 07 00 11.9 -0.9
baz=312,SNR=17
U38A **Grayette** 57.43 71 P P 07 00 12.1 -1.3
baz=312,SNR=14
R40A **Maddies Statio** 57.47 68 P P 07 00 11.8 -1.8
baz=312,SNR=14
X36A **Centrahoma** 57.48 74 P P 07 00 13.5 -0.2
baz=312,SNR=13
Y35A **Marietta** 57.50 75 P P 07 00 13.9 +0.1
baz=313,SNR=12
233A **Rising Star** 57.62 78 P P 07 00 14.1 -0.7
baz=313,SNR=25
T39A **Clever** 57.64 70 P P 07 00 13.3 -1.6
baz=312,SNR=16
W37B **Quinton** 57.66 73 P P 07 00 14.9 -0.1
baz=312,SNR=13
HDIL **Hopedale** 57.71 64 P P 07 00 14.4 -0.9
baz=311,SNR=6.6
HDIL **Hopedale** 57.71 64 eP P 07 00 14.8 -0.5
comp=E,122nm,0.8s
SCO **Scoresbysund** 57.74 10 *i* P P 07 00 15.3 +0.3
comp=E,12nm,0.7s
SCO **Scoresbysund** 57.74 10 *i* P P 07 00 15.3 +0.3
SCO pmax pmax
comp=Z,12nm,0.7s
134A **White-Moore Ra** 57.75 77 P P 07 00 15.8 +0.1
baz=313,SNR=22
Z35A **Perchaven, San** 57.75 75 P P 07 00 15.0 -0.7
baz=313
S40A **Lebanon** 57.78 69 P P 07 00 14.3 -1.6
baz=312
V38A **Canehill** 57.80 71 P P 07 00 14.8 -1.1
baz=312,SNR=16
HHAR **Hobbs** 57.80 71 eP P 07 00 15.0 -1.0
comp=Z,11nm,0.8s
LZH **Lanzhou** 57.87 289 eP P 07 00 17.5 +0.8
LZH pP pP 07 00 23.9 -1.1
LZH sP sP 07 00 27.3 -0.9
LZH PP PP 07 02 27.1 +2.4
LZH S S 07 08 16.4 +1.7
LZH pmax pmax
comp=Z,67nm,1.1s
LZH pmax pmax
comp=Z,300nm,4.7s
LZH LR LR
comp=Z,450nm,14.7s
LZH LR LR
comp=Z,510nm,15.1s
LZH LR LR
comp=Z,760nm,17.5s
Y36A **Durant** 57.97 74 P P 07 00 17.0 -0.2
baz=313,SNR=10.0
U39A **Green Forest** 58.01 70 P P 07 00 15.9 -1.5
baz=312,SNR=7.1
333A **Richland Sprin** 58.03 78 P P 07 00 17.1 -0.6
baz=313,SNR=27
GTA **Gaotai** 58.05 295 eP P 07 00 17.8 -0.1
GTA pP pP 07 00 24.6 -1.6
GTA sP sP 07 00 27.6 -1.8
GTA S S 07 08 15.0 -1.9
GTA sS sS 07 08 24.5 -6.1
GTA SS SS 07 12 10.4 +2.6
GTA pmax pmax
comp=Z,26nm,1.2s
GTA pmax pmax
comp=Z,170nm,5.9s
GTA LR LR
comp=Z,310nm,18.5s
GTA LR LR
comp=Z,190nm,18.5s
GTA LR LR
comp=Z,240nm,17.6s
X37A **Clayton** 58.06 73 P P 07 00 17.4 -0.5
baz=313
T40A **Mansfield** 58.07 69 P P 07 00 16.1 -1.8
baz=312,SNR=8.6
JCT **Junction City** 58.10 80 P P 07 00 17.2 -1.0
baz=314,SNR=16
JCT **Junction City** 58.10 80 eP P 07 00 17.2 -1.0
JCT pmax pmax
comp=Z,95nm,1.6s
JCT **Junction City** 58.10 80 eP P 07 00 17.2 -1.0
comp=Z,95nm,1.6s
234A **Clairette** 58.10 77 P P 07 00 17.8 -0.4
baz=313,SNR=27
135A **Vickery Place,** 58.18 76 P P 07 00 18.8 +0.1
baz=313
W38A **Poteau** 58.26 72 P P 07 00 19.1 -0.1
baz=313,SNR=12
V39A **Pettigrew** 58.27 71 P P 07 00 18.2 -1.2
baz=312
Z36A **Blue Ridge** 58.30 75 P P 07 00 19.2 -0.3
baz=313,SNR=8.6
ENH **Enshi** 58.32 280 eP P 07 00 18.8 -0.9
comp=Z,25nm,0.8s
Y37A **Hugo** 58.32 74 P P 07 00 19.4 -0.2
baz=313,SNR=5.9
X38A **Whitesboro** 58.34 73 P P 07 00 19.7 -0.1
baz=313,SNR=7.8
433A **Art** 58.36 79 P P 07 00 18.8 -1.2
baz=314,SNR=25
U40A **Yellville** 58.40 70 P P 07 00 18.8 -1.4
baz=312,SNR=8.2
334A **Lometa** 58.50 78 P P 07 00 20.6 -0.4
baz=314,SNR=78
WHTX **Lake Whitney,** 58.53 77 P P 07 00 20.8 -0.4
baz=313,SNR=16
WHTX **Lake Whitney,** 58.53 77 eP P 07 00 21.3 +0.1
comp=Z,57nm,0.6s
W39A **Magazine** 58.62 71 P P 07 00 20.8 -0.8
baz=313,SNR=12
136A **Ennis** 58.78 76 P P 07 00 22.6 -0.3
baz=313
V40A **Witts Springs** 58.79 70 P P 07 00 21.5 -1.4
baz=313
434A **Burnet** 58.83 78 P P 07 00 22.7 -0.6
baz=314,SNR=24
Z37A **Pogue Cattle C** 58.85 74 P P 07 00 22.6 -0.7
baz=313
533A **Kerrville** 58.86 79 P P 07 00 22.5 -1.0
baz=314,SNR=32
X39A **Fountain Ranch** 58.88 72 P P 07 00 22.9 -0.6
baz=313,SNR=14
Y38A **Idabel** 58.90 73 P P 07 00 23.0 -0.7
baz=313
KEV **Kevo** 58.94 351 eP P 07 00 24.0 +0.6
KEV **Kevo** 58.94 351 eP P 07 00 23.7 +0.3
KEV pmax pmax
comp=Z,28nm,1.1s
KEV **Kevo** 58.94 351 eP P 07 00 23.7 +0.3
comp=Z,28nm,1.1s
VLDQ **Val d'Or** 59.03 51 eP P 07 00 23.2 -1.2
comp=Z,43nm,1.1s
335A **Moody** 59.04 77 P P 07 00 24.3 -0.4
baz=314
W40A **Ferguson Farm,** 59.05 71 P P 07 00 24.2 -0.5
baz=313,SNR=23
SFIN **Lafayette** 59.08 63 P P 07 00 24.4 -0.4
baz=312,SNR=13
SFIN **Lafayette** 59.08 63 eP P 07 00 24.6 -0.2
comp=Z,82nm,0.8s
236A **Katherine and** 59.10 76 P P 07 00 25.1 0.0
baz=314,SNR=8.5
137A **Heron Place, G** 59.17 75 P P 07 00 24.9 -0.6
baz=313
MIAR **Mount Ida** 59.18 72 P P 07 00 25.3 -0.4
baz=313,SNR=18
MIAR **Mount Ida** 59.18 72 eP P 07 00 25.2 -0.4
MIAR pmax pmax
comp=Z,130nm,1.8s
MIAR **Mount Ida** 59.18 72 eP P 07 00 25.2 -0.4
comp=Z,134nm,1.8s
SCHQ **Schefferville** 59.19 40 P P 07 00 26.1 +0.6
comp=Z,27nm,0.7s,baz=321,slow=7.5,SNR=40
SCHQ LR LR 07 28 45.1
comp=Z,629nm,18.3s,baz=320,slow=39
SCHQ **Schefferville** 59.19 40 eP P 07 00 26.0 +0.6
comp=Z,33nm,0.7s
633A **Saathoff Ranch** 59.20 80 P P 07 00 24.8 -1.0
baz=314
Z38A **Mt. Pleasant** 59.20 74 P P 07 00 25.4 -0.3
baz=313
534A **Blanco** 59.24 79 P P 07 00 25.3 -0.8
baz=314,SNR=26
435B **Jarrell** 59.28 78 P P 07 00 26.1 -0.2
baz=314,SNR=5.8
Y39A **Lockesburg** 59.28 73 P P 07 00 25.6 -0.7
baz=313
ARA0 **ARCESS Array S** 59.29 352 eP P 07 00 25.8 -0.1
ARCES **ARCESS Array B** 59.29 352 P P 07 00 25.4 -0.5
comp=Z,11nm,0.5s,baz=14,slow=7.7,SNR=58
ARCES PcP PcP 07 01 14.2 +0.4
comp=Z,18nm,0.7s,baz=19,slow=5.1,SNR=11
ARCES LR LR 07 29 33.1
comp=Z,187nm,18.1s,baz=19,slow=40
ARE0 **ARCESS Array S** 59.29 352 eP P 07 00 25.7 -0.2
ARE0 **ARCESS Array S** 59.29 352 eP P 07 00 25.8 -0.1
comp=Z,56nm,1.4s
336A **Riesel** 59.33 77 P P 07 00 26.2 -0.5
baz=314
X201 **Greenbrier Sit** 59.41 70 eP P 07 00 26.4 -0.9
comp=Z,137nm,2.0s
X301 **Greenbrier Sit** 59.43 71 eP P 07 00 26.2 -1.1
comp=Z,112nm,1.7s
WHAR **Wooly Hollow** 59.46 70 eP P 07 00 26.6 -0.9
comp=Z,106nm,1.7s
832A **Faith Ranch, C** 59.51 82 P P 07 00 27.7 -0.2
baz=315,SNR=35
138A **Matatall Enter** 59.54 75 P P 07 00 28.2 +0.1
baz=314
237A **Washetta, Mont** 59.55 76 P P 07 00 27.9 -0.2
baz=314
PBMO **Poplar Bluff** 59.56 68 eP P 07 00 28.6 +0.4
comp=Z,75nm,1.1s
W41A **Tony Mavity, V** 59.56 71 P P 07 00 27.1 -1.1
baz=313,SNR=8.3
W41B **Gary Mavity, V** 59.56 71 P P 07 00 27.1 -1.1
baz=313,SNR=8.0
OLIL **Olney** 59.61 65 eP P 07 00 28.0 -0.5
comp=Z,75nm,0.8s
733A **Divot King Ran** 59.63 81 P P 07 00 28.6 -0.2
baz=314,SNR=22
SIUC **Southern Illin** 59.64 66 eP P 07 00 28.1 -0.7
comp=Z,27nm,0.8s
X40A **Basin Creek Fa** 59.67 71 P P 07 00 28.2 -0.8
baz=313
Z39A **Irene McRaven,** 59.70 73 P P 07 00 28.5 -0.7
baz=313
AAM **Ann Arbor** 59.71 59 eP P 07 00 29.6 +0.5
AAM pmax pmax
comp=Z,53nm,0.7s
AAM **Ann Arbor** 59.71 59 eP P 07 00 29.6 +0.5
comp=Z,53nm,0.6s
Y40A **Okolona** 59.73 72 P P 07 00 28.4 -0.9
baz=313
634A **China Grove, S** 59.77 80 P P 07 00 29.2 -0.5
baz=314
436A **Wall Ranch, Ga** 59.78 77 P P 07 00 30.0 +0.2
baz=314,SNR=8.8
LVZ **Lovozero** 59.80 347 eP P 07 00 28.8 -0.7
LVZ pmax pmax
comp=Z,39nm,0.7s
LVZ **Lovozero** 59.80 347 eP P 07 00 29.1 -0.4
comp=Z,38nm,0.7s
535A **Dale** 59.81 78 P P 07 00 29.7 -0.3
baz=314,SNR=11
833A **Chaparral WMA,** 59.85 81 P P 07 00 30.0 -0.2
baz=315,SNR=14
139A **Bunkhouse Ranc** 59.95 74 P P 07 00 30.7 -0.3
baz=314
337A **Centerville** 59.97 76 P P 07 00 31.5 +0.4
baz=314
238A **Jacksonville** 59.97 75 P P 07 00 31.2 +0.1
baz=314
734A **La Parita Cree** 60.01 80 P P 07 00 31.4 0.0
baz=315,SNR=13
536A **Bastrop** 60.09 78 P P 07 00 32.0 +0.1
baz=314
635A **Leesville** 60.12 79 P P 07 00 32.1 0.0
baz=314,SNR=20
437A **Phantom Ranch,** 60.15 77 P P 07 00 32.2 -0.1
baz=314
Z40A **Long Farm, Mag** 60.17 73 P P 07 00 32.1 -0.3
baz=314
KIF **Kilpisjarvi** 60.20 353 eP P 07 00 31.4 -0.7
BLO **Bloomington** 60.22 64 eP P 07 00 32.5 -0.2

BLO pmax pmax
comp=Z,78nm,0.8s
BLO Bloomington 60.22 64 *e*P **P 07 00 32.5 -0.2**
comp=Z,78nm,0.8s
APA Apatity 60.28 348⇑ *i*P **P 07 00 32.0 -0.7**
APA MLR MLR
comp=Z,700nm,15.0s
338A Crockett 60.30 76 P **P 07 00 33.2 -0.1**
baz=314
239A Gary 60.36 75 P **P 07 00 33.4 -0.4**
baz=314
USIN University of 60.38 65 *e*P **P 07 00 33.5 -0.3**
comp=Z,84nm,1.3s
933A Laredo 60.42 82 P **P 07 00 34.4 +0.2**
baz=315,SNR=13
NATX Nacogdoches 60.42 75 P **P 07 00 33.8 -0.4**
baz=314
SADO Sadowa 60.45 55 *e*P **P 07 00 34.7 +0.6**
comp=Z,35nm,0.9s
735A Kenedy 60.47 80 P **P 07 00 34.9 +0.4**
baz=315,SNR=8.4
140A Cam and Jess, 60.48 74 P **P 07 00 34.4 -0.1**
baz=314
636A Smothers Creek 60.51 79 P **P 07 00 35.1 +0.3**
baz=314,SNR=8.4
834A Tilden 60.52 81 P **P 07 00 35.0 +0.1**
baz=315
537A Green Hill Far 60.56 78 P **P 07 00 35.4 +0.3**
baz=314
438A Sam Houston St 60.62 76 P **P 07 00 36.0 +0.5**
baz=314
Y42A Garnett, Star 60.75 71 P **P 07 00 36.1 -0.3**
baz=314
339A Huntington 60.78 75 P **P 07 00 36.6 0.0**
baz=314
240A Hunter Patters 60.78 74 P **P 07 00 36.4 -0.3**
baz=314
UTMT University of 60.78 67 *e*P **P 07 00 36.5 0.0**
comp=Z,186nm,1.3s
835A Beeville 60.86 80 P **P 07 00 38.1 +0.9**
baz=315,SNR=11
736A Circle Diamond 60.87 79 P **P 07 00 38.0 +0.7**
baz=315,SNR=12
934A Benavides 60.90 81 P **P 07 00 38.0 +0.5**
baz=315,SNR=9.4
141A Papa Simpson, 60.92 73 P **P 07 00 37.4 -0.1**
baz=314
HKT Hockley 60.95 77 *e*P **P 07 00 37.7 0.0**
HKT pmax pmax
comp=Z,110nm,1.8s
HKT Hockley 60.95 77 *e*P **P 07 00 37.7 0.0**
comp=Z,106nm,1.8s
538A Harpers Horsep 60.97 77 P **P 07 00 38.6 +0.7**
baz=314
WCI Wyandotte Cave 60.99 64 *e*P **P 07 00 37.5 -0.5**
WCI pmax pmax
comp=Z,34nm,0.8s
WCI Wyandotte Cave 60.99 64 *e*P **P 07 00 37.5 -0.5**
comp=Z,34nm,0.8s
637A Eagle Lake 60.99 78 P **P 07 00 38.4 +0.3**
baz=315
439A Center Grove, 61.02 76 P **P 07 00 37.9 -0.3**
baz=314
340A Bronson 61.13 75 P **P 07 00 38.9 -0.1**
baz=314
034A Hebbronville 61.17 82 P **P 07 00 39.4 +0.1**
baz=315,SNR=5.5
KURK Kurchatov 61.28 316 *e*P **P 07 00 40.0 +0.3**
KURK pmax pmax
comp=Z,106nm,0.8s
KURK Kurchatov 61.28 316 *e*P **P 07 00 40.0 +0.3**
comp=Z,106nm,0.8s
KURK Kurchatov 61.28 316 P **P 07 00 40.1 +0.3**
SNR=35
KURK P **P 07 00 40.1 +0.3**
SNR=35
KURK Kurchatov 61.28 316 P **P 07 00 40.1 +0.3**
SNR=35
241A Mo Tay, Goldon 61.31 74 P **P 07 00 40.1 -0.1**
baz=314
KURBB Kurchatov Arra 61.38 316 P **P 07 00 40.8 +0.3**
comp=Z,99nm,0.7s,baz=44,slow=6.7,SNR=605
MANU Manus Island 61.42 224 *e*P **P 07 00 41.0 0.0**
comp=Z,40nm,1.3s
CD2 Chengdu 61.45 285 P **P 07 00 39.3 -1.9**
CD2 sP pP 07 00 48.8 -0.8
CD2 PP **PP 07 02 54.1 -2.3**
CD2 S **S 07 08 58.5 -2.2**
CD2 sS sS 07 09 10.3 -4.2
CD2 SS **SS 07 13 00.1 -1.1**
CD2 pmax pmax
comp=Z,40nm,1.3s
CD2 pmax pmax
comp=Z,180nm,7.8s
CD2 LR LR
comp=Z,230nm,15.6s
CD2 LR LR
comp=Z,220nm,18.0s
ACSO Alum Creek Sta 61.49 61 *e*P **P 07 00 41.5 +0.2**
comp=Z,36nm,0.8s
WVT Waverly 61.54 67 *e*P **P 07 00 41.2 -0.5**
WVT pmax pmax
comp=Z,21nm,0.9s
WVT Waverly 61.54 67 *e*P **P 07 00 41.2 -0.5**
comp=Z,21nm,0.8s
142A Monroe 61.54 73 P **P 07 00 41.4 -0.4**
baz=314
638A Rosharon 61.56 77 P **P 07 00 42.4 +0.5**
baz=315
STEI Steigen 61.60 356 *e*P **P 07 00 41.8 +0.2**
341A Kurthwood 61.63 74 P **P 07 00 42.3 -0.1**
baz=314
OXF Oxford 61.72 69 *e*P **P 07 00 42.5 -0.4**
OXF pmax pmax
comp=Z,89nm,1.2s
OXF Oxford 61.72 69 *e*P **P 07 00 42.5 -0.4**
comp=Z,89nm,1.2s
242A Grayson 61.75 73 P **P 07 00 42.7 -0.5**
baz=314
WMQ Urumqi 61.75 305 P **P 07 00 43.9 +0.8**
WMQ pP pP 07 00 50.9 -0.6
WMQ sP sP 07 00 55.3 +0.6
WMQ PcP **PcP 07 01 24.4 +0.2**
WMQ S **S 07 09 06.6 +2.3**
WMQ SS **SS 07 13 10.9 +5.5**
WMQ pmax pmax
comp=Z,57nm,0.6s
WMQ pmax pmax
comp=Z,130nm,5.2s
WMQ LR LR
comp=Z,150nm,22.0s
WMQ LR LR
comp=Z,130nm,24.4s
WMQ LR LR
comp=Z,98nm,26.8s
143A Secs Landing, 61.76 72 P **P 07 00 42.7 -0.5**
baz=314
ZAIG Zacatecas 61.76 88 *e*P **P 07 00 43.2 -0.6**
comp=Z,28nm,1.3s
ERPA Erie 61.83 57 *e*P **P 07 00 44.2 +0.6**
comp=Z,209nm,1.2s
035Z Hargill 61.99 82 P **P 07 00 45.3 +0.5**
baz=316
441A DeRidder 62.03 75 P **P 07 00 45.1 0.0**
baz=315
ALLY Alegheny Colle 62.06 58 *e*P **P 07 00 45.8 +0.6**
comp=Z,246nm,0.8s
342A Flagon Creek P 62.12 74 P **P 07 00 45.8 +0.1**
baz=315
PLAL Pickwick Lake 62.18 68 *e*P **P 07 00 45.2 -0.9**
comp=Z,104nm,1.7s
MK31 Makanchi Array 62.38 311 *i* P **P 07 00 46.5 -0.7**
MK31 pmax pmax
comp=Z,15nm,0.6s
MKAR Makanchi Array 62.38 311 P **P 07 00 46.9 -0.4**
comp=Z,18nm,0.5s,baz=49,slow=5.9,SNR=271
MKAR PKP2bc 07 29 56.6
comp=Z,0.6nm,0.9s,baz=260,slow=7.1,SNR=3.9
MKAR LR LR 07 31 27.6
comp=Z,197nm,18.4s,baz=34,slow=40
144A Alexander Plac 62.41 71 P **P 07 00 47.3 -0.3**
baz=314
M54A Oil Creek Stat 62.42 58 P **P 07 00 47.6 0.0**
baz=314,SNR=15
CHKZ Chkalovo 62.44 322 P **P 07 00 46.7 -0.8**
CHKZ pmax pmax
comp=Z,40nm,0.9s
SOKR Solikamsk 62.45 333 *d i*P **P 07 00 45.8 -1.6**
SOKR pmax pmax
comp=Z,40nm,1.2s
MMNY Mt. Morris Dam 62.50 55 *e*P **P 07 00 48.7 +0.6**
comp=Z,147nm,1.0s
MAKZ Makanchi 62.52 311 P **P 07 00 47.5 -0.7**
MAKZ pmax pmax
comp=Z,30nm,0.8s
MAKZ Makanchi 62.52 311 *e*P **P 07 00 47.7 -0.5**
N54A Moraine State 62.63 58 P **P 07 00 48.9 -0.1**
baz=315,SNR=29
VBMS Vicksburg 62.64 72 P **P 07 00 48.8 -0.3**
baz=315
244A Avery, Jackson 62.66 72 P **P 07 00 48.9 -0.4**
baz=315
145A Houston Renfro 62.73 71 P **P 07 00 49.0 -0.7**
baz=315
TMCR Tamitsa 62.75 344 *e*P **P 07 00 48.7 -0.6**
TMCR pmax pmax
comp=Z,25nm,0.9s
GYA Guiyang 62.76 279 P **P 07 00 51.3 +1.2**
GYA PcP **PcP 07 01 30.6 +2.0**
GYA PP **PP 07 03 11.8 +3.7**
GYA ScP **ScP 07 05 29.3 +0.7**
GYA S **S 07 09 15.0 -2.4**
GYA SKS **ScS 07 10 38.9 -2.1**
GYA SS **SS 07 13 22.3 +0.3**
GYA pmax pmax
comp=Z,20nm,1.0s
GYA pmax pmax
comp=Z,130nm,5.9s
GYA LR LR
comp=Z,580nm,18.2s
GYA LR LR
comp=Z,520nm,19.0s
GYA LR LR
comp=Z,540nm,18.8s
542A Morse 62.86 75 P **P 07 00 51.3 +0.7**
baz=315
LMQ La Malbaie 62.86 47 *e*P **P 07 00 50.6 +0.1**
comp=Z,51nm,1.1s
443A Delano Plantat 62.88 74 P **P 07 00 51.2 +0.4**
baz=315
LONY Lake Ozonia 62.88 52 *e*P **P 07 00 50.4 -0.2**
comp=Z,30nm,0.8s
BVA0 Borovoye Array 63.02 322 *i* P **P 07 00 51.7 +0.3**
BVA0 pmax pmax
comp=Z,77nm,0.6s
BVAR Borovoye Array 63.02 322 P **P 07 00 52.2 +0.8**
comp=Z,91nm,0.5s,baz=49,slow=6.9,SNR=543
BVAR PKPPKP **P'P'df** 07 29 55.4 -2.3
comp=Z,0.8nm,0.7s,baz=197,slow=1.5,SNR=5.4
BVAR LR LR 07 30 45.3
comp=Z,589nm,18.8s,baz=61,slow=38
BRVK Borovoye 63.04 322 *e*P **P 07 00 52.6 +1.1**
BRVK pmax pmax
comp=Z,261nm,1.5s
BRVK Borovoye 63.04 322 *e*P **P 07 00 52.6 +1.1**
comp=Z,261nm,1.5s
BRVK Borovoye 63.04 322 P **P 07 00 52.3 +0.8**
SNR=47
BRVK P **P 07 00 52.3 +0.8**
SNR=47
BRVK Borovoye 63.04 322 P **P 07 00 52.3 +0.8**
SNR=47
344A Westbrook Farm 63.04 73 P **P 07 00 51.6 -0.2**
baz=315
Y47A UCPARC, Winfie 63.07 69 P **P 07 00 51.0 -1.0**
baz=315
KONS Konosvik 63.13 356 *e*P **P 07 00 52.2 +0.3**
245A Little AP, Sta 63.14 72 P **P 07 00 52.0 -0.5**
baz=315
146A Union 63.23 71 P **P 07 00 52.1 -0.9**
baz=315
FRNY Flat Rock 63.23 51 *e*P **P 07 00 52.4 -0.5**
comp=Z,105nm,1.9s
BORG Borgarnes 63.26 12 P **P 07 00 54.8 +2.0**
comp=Z,23nm,1.0s,baz=326,slow=3.6,SNR=2.9
SWET Sewanee 63.28 66 *e*P **P 07 00 52.5 -0.9**
comp=Z,12nm,1.5s
STOK Stokkvaagen 63.30 356 *e*P **P 07 00 53.6 +0.7**
STOK IAmb IAmb 07 00 53.8
comp=N,22nm,0.6s
MOR8 Moi Rana 63.40 356 *e*P **P 07 00 52.8 -0.9**
MOR8 IAmb IAmb 07 00 53.5
comp=Z,19nm,0.8s
SVE Sverdlovsk 63.54 330 *ce*P **P 07 00 55.7 +1.0**
SVE pmax pmax
comp=Z,108nm,1.2s
444A Pine Grove 63.55 73 P **P 07 00 55.1 -0.1**
baz=315
MCWV Mont Chateau 63.62 59 *e*P **P 07 00 55.9 +0.4**
comp=Z,50nm,1.1s
ZRNK Zerenda 63.62 323 *e*P **P 07 00 56.2 +0.8**
ZRNK pmax pmax
comp=Z,115nm,0.6s
ZRNK Zerenda 63.62 323 *e*P **P 07 00 56.2 +0.8**
comp=Z,115nm,0.6s
147A Livingston 63.67 70 P **P 07 00 54.7 -1.3**
baz=315
TZTN Tazewell 63.73 64 *e*P **P 07 00 55.7 -0.6**
346A Big Creek Wild 63.86 72 P **P 07 00 56.5 -0.8**
baz=315
BINY Binghamton 63.88 55 *e*P **P 07 00 58.1 +0.8**
comp=Z,138nm,1.2s
O56A Blue Knob Stat 63.88 58 P **P 07 00 56.8 -0.5**
baz=315,SNR=18
247A Quitman 63.91 71 P **P 07 00 57.1 -0.4**
baz=315
CPCT Cooper Cave 63.94 65 *e*P **P 07 00 56.8 -0.9**
comp=Z,18nm,1.3s
SSPA Standing Stone 63.99 57 *e*P **P 07 00 58.2 +0.3**
comp=Z,78nm,0.8s
MDV Middlebury 64.03 52 *e*P **P 07 00 58.0 -0.2**
LRAL Lakeview Retre 64.18 69 *e*P **P 07 00 58.2 -1.2**
comp=Z,13nm,1.2s
TKL Tuckaleechee C 64.22 65 *e*P **P 07 00 59.0 -0.6**
TKL pmax pmax
comp=Z,52nm,1.4s
TKL Tuckaleechee C 64.22 65 *e*P **P 07 00 59.0 -0.6**
comp=Z,52nm,1.4s
ACCN Adirondack Com 64.23 53 *e*P **P 07 00 60.0 +0.5**
comp=Z,85nm,1.0s
AFI Afiamalu 64.23 176 LR LR 07 27 39.8
comp=Z,113nm,19.1s,baz=358,slow=35
248A Dixon Mills 64.40 70 P **P 07 01 00.4 -0.4**
baz=315,SNR=6.2
347A Saraland 64.41 71 P **P 07 01 00.4 -0.4**
baz=315
KSPA Keystone Colle 64.46 55 *e*P **P 07 00 56.9 -4.1**
comp=Z,69nm,1.3s
ARU Arti 64.53 330 *d i*P **P 07 01 01.6 +0.4**
ARU 07 01 30.9
ARU 07 03 24.1
ARU S **S 07 09 40.3 +1.9**
ARU SS **SS 07 13 47.2 -0.7**
ARU pmax pmax
comp=Z,169nm,1.7s
ARU Arti 64.53 330 *e*P **P 07 01 01.4 +0.2**
comp=Z,86nm,0.9s
348A Jackson 64.78 71 P **P 07 01 02.9 -0.4**
baz=316
MOIG Morelia 64.89 89 *e*P **P 07 01 04.8 +0.5**
comp=Z,156nm,1.6s
N59A State Game Lan 64.92 56 P **P 07 01 04.4 +0.4**
baz=316,SNR=16
PKME Peaks-Kenny Pk 65.02 49 *e*P **P 07 01 05.3 +0.7**
comp=Z,42nm,1.1s
BLA Blacksburg 65.03 61 *e*P **P 07 01 05.1 +0.2**
BLA pmax pmax
comp=Z,70nm,0.9s
BLA Blacksburg 65.03 61 *e*P **P 07 01 05.1 +0.2**
comp=Z,70nm,0.8s
448A Bay Minette 65.15 71 P **P 07 01 05.5 -0.1**
baz=316
VWCC Virginia Weste 65.26 61 *e*P **P 07 01 06.4 +0.1**
LUPA Lehigh Univers 65.35 56 *e*P **P 07 01 07.6 +0.7**
comp=Z,55nm,0.6s
ODNJ Ogdensburg 65.41 55 *e*P **P 07 01 07.7 +0.5**
comp=Z,48nm,0.9s
SDMD Soldier's Deli 65.43 57 *e*P **P 07 01 07.8 +0.5**
comp=Z,40nm,1.1s
KLMR Klimovskoe 65.53 342 *e*P **P 07 01 05.0 -2.6**
KLMR pmax pmax
comp=Z,61nm,1.5s
BRNJ Basking Ridge 65.72 55 *e*P **P 07 01 10.2 +1.1**
comp=Z,54nm,0.8s
PAL Palisades 65.83 54 *e*P **P 07 01 10.9 +1.0**
PAL pmax pmax
comp=Z,108nm,0.9s
PAL Palisades 65.83 54 *e*P **P 07 01 10.9 +1.0**
comp=Z,108nm,0.9s
HRV Adam Dziewonsk 65.93 52 *e*P **P 07 01 11.1 +0.6**
HRV pmax pmax
comp=Z,34nm,0.8s
HRV Adam Dziewonsk 65.93 52 *e*P **P 07 01 11.1 +0.6**
comp=Z,34nm,0.8s
CPNY Central Park 65.95 55 *e*P **P 07 01 11.5 +0.8**
comp=Z,69nm,0.8s
KMSC Kings Mountain 65.99 64 P **P 07 01 10.5 -0.6**
baz=316,SNR=22
KMSC Kings Mountain 65.99 64 *e*P **P 07 01 10.9 -0.2**
comp=Z,77nm,1.2s
GOGA Godfrey 66.00 66 *e*P **P 07 01 09.9 -1.2**
GOGA pmax pmax
comp=Z,54nm,1.6s
GOGA Godfrey 66.00 66 *e*P **P 07 01 09.9 -1.2**
comp=Z,54nm,1.6s
CBN Corbin Frederi 66.01 59 *e*P **P 07 01 11.8 +0.8**
comp=Z,106nm,1.3s
JSRW J. Sargeant Re 66.10 59 *e*P **P 07 01 11.9 +0.2**
KMI Kunming 66.17 281 P **P 07 01 12.6 -0.1**
KMI pP pP 07 01 19.5 -1.6
KMI sP sP 07 01 22.6 -1.7
KMI PP **PP 07 03 41.0 +2.8**
KMI S **S 07 10 01.1 +1.2**
KMI pmax pmax
comp=Z,36nm,0.7s
KMI pmax pmax
comp=Z,180nm,3.7s
KMI LR LR
comp=Z,77nm,5.3s
KMI LR LR
comp=Z,84nm,6.0s
KMI LR LR
comp=Z,69nm,6.5s
GGN Saint George 66.28 47 *e*P **P 07 01 13.1 +0.3**
comp=Z,131nm,1.8s
LMN Caledonia Moun 66.67 46 *e*P **P 07 01 15.9 +0.6**
comp=Z,75nm,1.1s
FIA1 FINESS Array S 67.09 349 *e*P **P 07 01 17.3 -0.3**
FINES FINESS Array B 67.09 349 P **P 07 01 17.4 -0.2**
comp=Z,20nm,0.7s,baz=11,slow=8.2,SNR=40
FINES PKPPKP **P'P'df**
comp=Z,2.5nm,0.9s,baz=145,slow=7.0,SNR=4.6
FINES LR LR 07 34 55.6
comp=Z,265nm,18.4s,baz=14,slow=40
DRLN Deer Lake 67.17 39 *e*P **P 07 01 18.9 +0.5**
comp=Z,314nm,2.0s
MOL Molde 67.22 359 *e*P **P 07 01 19.3 +0.9**
MOL IAmb IAmb 07 01 20.7
comp=Z,38nm,0.9s
TIGA Tifton 67.34 68 P **P 07 01 18.8 -0.9**
baz=317
AKN Aaknes 67.62 359 *e*P **P 07 01 22.1 +1.0**
AKN IAmb IAmb 07 01 23.5
comp=Z,130nm,1.6s
CNNC Cliffs of the 67.87 61 *e*P **P 07 01 23.1 +0.1**
comp=Z,6.7nm,0.6s
PMG Port Moresby 68.11 221 *de*P **P 07 01 24.0 -0.6**
PMG pmax pmax
comp=Z,170nm,1.2s
PMG Port Moresby 68.11 221 *e*P **P 07 01 24.5 -0.1**
comp=Z,32nm,1.0s
TLIG Tlapa 68.12 89 *e*P **P 07 01 25.3 +0.4**
comp=Z,77nm,1.8s
NHSC New Hope 68.12 64 *e*P **P 07 01 25.4 +0.8**
comp=Z,60nm,0.9s
MSVF Nonsavu 68.24 187 *e*P **P 07 01 25.8 +0.4**
MSVF pmax pmax
comp=Z,40nm,1.1s
MSVF Nonsavu 68.24 187 *e*P **P 07 01 25.8 +0.4**
comp=Z,40nm,1.1s
NC204 NORSAR Array S 68.44 357 *e*P **P 07 01 26.3 +0.1**
TKM2 Tokmak 2 68.44 312 *e*P **P 07 01 27.5 +0.7**
TKM2 pmax pmax
comp=Z,66nm,1.0s
TKM2 Tokmak 2 68.44 312 *e*P **P 07 01 27.5 +0.7**
comp=Z,66nm,1.0s
NC303 NORSAR Array S 68.47 357 *e*P **P 07 01 27.1 +0.7**
SWI Sorong 68.49 240 P **P 07 01 26.5 -0.5**
comp=Z,112nm,0.9s
NC405 NORSAR Array S 68.57 356 *e*P **P 07 01 27.7 +0.7**
NB201 NORSAR Array S 68.65 357 *e*P **P 07 01 28.2 +0.7**
NB2 NORSAR Subarra 68.66 357 P **P 07 01 28.1 +0.5**
comp=Z,168nm,2.0s,baz=5.8,slow=6.5
NB2 NORSAR Subarra 68.66 357 P **P 07 01 28.1 +0.5**
baz=5.8,slow=6.5
NOA NORSAR Array B 68.66 357 P **P 07 01 28.1 +0.5**
comp=Z,22nm,0.9s,baz=4.9,slow=6.4,SNR=47
NOA LR LR 07 34 19.9
comp=Z,99nm,18.3s,baz=0.0,slow=38
NBO02 NORSAR Array S 68.67 357 *e*P **P 07 01 27.8 +0.2**
NBO00 NORSAR Array S 68.69 357 *e*P **P 07 01 28.9 +1.2**
NAO01 NORSAR Array S 68.87 357 *e*P **P 07 01 29.2 +0.3**
NC602 NORSAR Array S 68.95 357 *e*P **P 07 01 29.7 +0.3**
NC602 NORSAR Array S 68.95 357 *e*P **P 07 01 29.9 +0.6**
FRU Bishkek 68.97 312⇓ *i*P **P 07 01 31.0 +1.1**
FRU *e*S **S 07 10 36.0 +3.4**
FRU pmax pmax
comp=Z,220nm,1.8s
FRU smax smax
comp=N,725nm,5.0s
AAK Ala-Archa 69.19 312 *e*P **P 07 01 32.0 +0.7**
AAK pmax pmax
comp=Z,64nm,0.9s
AAK Ala-Archa 69.19 312 *e*P **P 07 01 32.0 +0.7**
comp=Z,62nm,0.8s
AAK Ala-Archa 69.19 312 P **P 07 01 32.4 +1.1**
SNR=45
AAK P **P 07 01 32.4 +1.1**
SNR=45
AAK Ala-Archa 69.19 312 P **P 07 01 32.4 +1.1**
SNR=45
EKS2 Erkin-Say 69.50 313 *e*P **P 07 01 34.2 +1.0**
EKS2 pmax pmax
comp=Z,74nm,0.9s
EKS2 Erkin-Say 69.50 313 *e*P **P 07 01 34.2 +1.0**
comp=Z,74nm,0.8s
FAKI Fak Fak 69.66 238 P **P 07 01 33.9 -0.4**
comp=Z,46nm,1.5s,comp=Z,733nm
FAKI Fak Fak 69.66 238 *e*P **P 07 01 33.8 -0.6**
comp=Z,32nm,0.9s
AKTO Aktyubinsk 69.70 327 P **P 07 01 35.0 +0.8**
AKTO pmax pmax
comp=Z,129nm,0.6s
ODD1 Odda 69.90 359 *e*P **P 07 01 36.2 +1.0**
ODD1 IAmb IAmb 07 01 37.2
comp=Z,34nm,0.8s
VSU Vasula 69.90 348⇓ *e*P **P 07 01 35.4 +0.2**
VSU pmax pmax
comp=Z,284nm,1.0s
LSA Lhasa 69.93 292 P **P 07 01 37.6 +1.1**
LSA pmax pmax
comp=Z,33nm,1.0s
AB31 Akbulak array 70.00 325 *i* P **P 07 01 36.4 +0.4**
AB31 pmax pmax
comp=Z,31nm,0.6s
ABKAR Akbulak array 70.00 325 *e*P **P 07 01 37.0 +1.0**
KONO Kongsberg 70.11 357 *e*P **P 07 01 37.4 +0.9**
KONO IAmb IAmb 07 01 38.7
comp=Z,38nm,1.0s
KONO Kongsberg 70.11 357 *e*P **P 07 01 37.5 +1.0**
KONO pmax pmax
comp=Z,39nm,1.0s
KONO Kongsberg 70.11 357 *e*P **P 07 01 37.0 +0.6**
comp=Z,39nm,1.0s
MNAS Manas 70.23 313 P **P 07 01 38.6 +0.9**
MNAS pmax pmax
comp=Z,62nm,0.9s
KMY Karmoy 70.61 360 *e*P **P 07 01 40.4 +0.9**
KMY IAmb IAmb 07 01 41.5
comp=Z,35nm,0.9s
MOS Moscow 70.65 341 *e*P **P 07 01 38.7 -1.1**
MOS *e* 07 01 49.3
MOS pmax pmax
comp=Z,133nm,1.5s
KK31 Karatay Array 70.66 315 P **P 07 01 39.4 -0.8**
KK31 pmax pmax
comp=Z,69nm,0.9s
KKAR Karatay Array 70.66 315 *e*P **P 07 01 40.5 +0.3**
KKAR Karatay Array 70.66 315 *e*P **P 07 01 40.5 +0.3**
KSH Kashi 70.86 309 P **P 07 01 45.8 +4.2**

KSH ep P sP 07 01 51.6 -1.7
KSH es P pP 07 01 54.6 +4.5
KSH S **S** **07 10 59.6 +4.5**
KSH SKS **SKSac** **07 11 41.0 -1.1**
KSH pmax pmax
comp=Z,61nm,0.8s
KSH LR LR
comp=Z,220nm,8.1s
KSH LR LR
comp=Z,190nm,6.3s
KSH LR LR
comp=Z,220nm,5.8s
STAV Stavanger 70.89 360 *e*P **P** **07 01 42.2 +1.0**
MYLDM Lahad Datu 71.13 255 *e*P **P** **07 01 45.0 +1.6**
comp=Z,71nm,1.3s
PPT Papeete 71.44 154 LR LR 07 25 23.8
comp=Z,133nm,20.4s,baz=320,slow=29
OBN Obninsk 71.45 341 *de*P **P** **07 01 44.9 +0.2**
OBN *e* 07 01 55.3
OBN *e* 07 02 02.7
OBN *e* 07 04 26.3
OBN pmax pmax
comp=Z,151nm,1.7s
OBN MLR MLR
comp=Z,299nm,18.0s
PPT2 Papeete2 71.45 154 *e*S **S** **07 11 02.3 +0.4**
comp=Z,572nm,27.8s
PPT2 Papeete2 71.45 154 *e*LR LR 07 23 10.8
comp=Z,481nm,32.0s
HOMB Homborsund 71.52 358 *e*P **P** **07 01 46.1 +1.0**
HOMB IAmb IAmb 07 01 46.2
comp=Z,24nm,0.7s
MVH1 Achvaich 71.64 5⇓*e*P **P** **07 01 46.3 +0.4**
MCD Coleburn Disti 72.04 5 *e*P **P** **07 01 48.6 +0.4**
MCD ⇓*e*P **P** **07 01 48.7 +0.5**
MDO Dochfour 72.12 5 *e*P **P** **07 01 49.0 +0.3**
MDO ⇓*e*P **P** **07 01 49.4 +0.7**
MME1 Meikle Cairn 72.32 4 *e*P **P** **07 01 50.0 0.0**
MME1 ⇓*e*P **P** **07 01 50.4 +0.4**
SANI Sanana 72.43 244 P **P** **07 01 51.8 +0.7**
comp=Z,30nm,1.2s
KHON Khomkaen 72.56 275 P **P** **07 01 51.8 -0.2**
comp=Z,21nm,0.9s
TEIG Tepich 72.67 79 *e*P **P** **07 01 52.3 -0.2**
comp=Z,7.5nm,0.8s
DRUM Mains of Drumt 72.74 4 *e*P **P** **07 01 53.0 +0.6**
MRSI Marisa 72.76 249 P **P** **07 01 52.8 -0.3**
comp=Z,71nm,1.2s
ISAL Salakas 72.79 348 *e*P **P** **07 01 53.1 +0.4**
ISAL IAmb IAmb 07 01 54.0
comp=Z,10nm,0.7s
IDID Didziasalis 72.96 347 *e*P **P** **07 01 54.1 +0.4**
IDID IAmb IAmb 07 01 54.9
comp=Z,35nm,1.0s
UTTA Uttaradit 72.96 277 P **P** **07 01 53.9 -0.4**
comp=Z,24nm,0.8s,comp=Z,193nm
LAMP Lampang 72.96 278 P **P** **07 01 54.2 -0.1**
comp=Z,5.8nm,1.1s,comp=Z,269nm
IIGN Ignalina 73.00 347 *e*P **P** **07 01 54.4 +0.4**
IIGN IAmb IAmb 07 01 55.2
comp=Z,33nm,0.6s
EDU Dundee 73.08 5⇓*e*P **P** **07 01 55.2 +0.7**
CCIG Comitan 73.16 85 *e*P **P** **07 01 56.3 +0.5**
comp=Z,36nm,1.4s
CMMT Chiang Mai 73.18 279 P **P** **07 01 54.9 -0.7**
comp=Z,22nm,0.9s
CHTO Chiang Mai 73.18 279 P **P** **07 01 55.0 -0.6**
comp=Z,94nm,0.9s
CHTO Chiang Mai 73.18 279 *e*P **P** **07 01 55.2 -0.4**
CHTO pmax pmax
comp=Z,41nm,1.3s
CHTO Chiang Mai 73.18 279 *e*P **P** **07 01 55.2 -0.4**
comp=Z,41nm,1.4s
CHTO Chiang Mai 73.18 279 P **P** **07 01 55.1 -0.6**
SNR=13
CHTO Chiang Mai 73.18 279 P **P** **07 01 55.1 -0.6**
SNR=13
LPSR Galich'ya Gora 73.29 339 *e*P **P** **07 01 56.1 +0.4**
LPSR *e**SP **sP** **07 02 08.8 +1.4**
LPSR *e*S **S** **07 11 19.3 -2.9**
LPSR pmax pmax
comp=Z,130nm,0.9s
LPSR smax smax
comp=N,580nm,7.6s
NACGM Naroch 73.35 347 *e* **P** **07 01 56.0 0.0**
EAB Aberfoyle 73.37 5⇓*e*P **P** **07 01 57.2 +1.1**
CM31 Chiang Mai Arr 73.44 279 *e*P **P** **07 01 57.4 +0.2**
CMAR Chiang Mai Arr 73.44 279 P **P** **07 01 57.1 0.0**
comp=N,19nm,0.7s,baz=30,slow=6.5,SNR=139
CM01 Chiang Mai Arr 73.46 279 *e*P **P** **07 01 56.1 -1.2**
LUWI Luwuk 73.48 247 *e*P **P** **07 01 55.7 -1.6**
comp=N,147nm,1.0s
COEN Coen 73.87 222 *e*P **P** **07 01 59.2 -0.3**
comp=N,39nm,1.4s
VRH Novokhopyorsk 73.92 337 *e*P **P** **07 01 59.3 -0.1**
VRH *e**SP **sP** **07 02 12.3 +1.2**
VRH *e*S **S** **07 11 31.7 +2.4**
VRH pmax pmax
comp=Z,90nm,0.7s
VRH smax smax
comp=E,190nm,1.4s
COP Copenhagen 73.96 356⇓*i*P **P** **07 02 00.8 +1.2**
comp=E,40nm,0.9s
COP Copenhagen 73.96 356⇓*i*P **P** **07 02 00.8 +1.2**
COP pmax pmax
comp=Z,40nm,0.9s
APSI Ampana 74.04 248 P **P** **07 01 59.9 -0.7**
comp=Z,55nm,1.2s,comp=Z,665nm
DZM Mont Dzumac 74.11 198 LR LR 07 32 08.3
comp=Z,182nm,18.8s,baz=26,slow=34
GMK Mull of Kintyr 74.12 6⇓*e*P **P** **07 02 01.6 +1.0**
ESK Eskdalemuir 74.30 5 *e*P **P** **07 02 02.6 +1.1**
ESK Eskdalemuir 74.30 5 *e*P **P** **07 02 02.7 +1.1**
ESK pmax pmax
comp=Z,51nm,1.0s
ESK Eskdalemuir 74.30 5 *e*P **P** **07 02 02.7 +1.1**
comp=Z,51nm,1.0s
GUN Gumba 74.34 295 *e*P **P** **07 02 03.4 +0.6**
comp=Z,86nm,0.7s
JIRN Jiri 74.35 294 *e*P **P** **07 02 03.6 +0.8**
comp=Z,0.9nm,0.9s
BSD Bornholm Skovb 74.39 354⇓*i*P **P** **07 02 02.6 +0.5**
comp=Z,38nm,0.6s
BSD Bornholm Skovb 74.39 354⇓*i*P **P** **07 02 02.6 +0.5**
BSD pmax pmax
comp=Z,38nm,0.6s
BWH Wardlaw 74.42 5⇓*e*P **P** **07 02 03.1 +0.9**
ECK Cauldkaine Hil 74.44 5⇓*e*P **P** **07 02 03.4 +1.0**
VSR Storozhevoye 74.52 338 *e*P **P** **07 02 03.2 +0.2**
VSR *e**SP **sP** **07 02 15.2 +0.5**
VSR *e*S **S** **07 11 39.1 +3.0**
VSR pmax pmax
comp=Z,210nm,1.7s
VSR smax smax
comp=E,60nm,1.1s
BHH Howats Hill 74.52 5⇓*e*P **P** **07 02 04.1 +1.2**
GAL1 Galloway 74.66 6⇓*e*P **P** **07 02 04.5 +0.8**
GAL1 AMB AMB 07 02 05.2
comp=Z,42nm,1.1s
SUW Suwalki 74.70 349 *e*P **P** **07 02 03.7 -0.2**
SUW Suwalki 74.70 349 *e*P **P** **07 02 03.7 -0.2**
KKN Kakani 74.78 295 *e*P **P** **07 02 05.6 +0.5**
comp=Z,68nm,0.9s
PKIN Phulchoki 74.87 295 *e*P **P** **07 02 05.7 0.0**
comp=Z,83nm,1.2s
BBO1 Bothel 74.88 5⇓*e*P **P** **07 02 06.0 +1.1**
GKN Gorkha 74.99 296 *e*P **P** **07 02 06.6 +0.3**
comp=Z,80nm,0.8s
DMN Daman 75.02 295 *e*P **P** **07 02 07.0 +0.4**
comp=Z,86nm,0.9s
KESW Keswick, Cumbr 75.03 5 *e*P **P** **07 02 06.9 +1.0**
KESW AMB AMB 07 02 07.7
comp=Z,73nm,1.0s
RGN Rugen 75.05 355 *e*P **P** **07 02 07.9 +2.0**
comp=Z,262nm,1.1s
GMM Mts of Mourne 75.20 7⇓*e*P **P** **07 02 07.7 +0.8**
WIM Isle of Man 75.38 6⇓*e*P **P** **07 02 09.0 +1.1**
CHBT CHBT 75.56 273 P **P** **07 02 10.5 +1.0**
comp=Z,22nm,1.5s
HPK Haverah Park 75.73 4⇓*e*P **P** **07 02 11.1 +1.2**
HPK AMB AMB 07 02 12.3
comp=Z,65nm,1.3s
PYUN Piuthan 75.86 297 *e*P **P** **07 02 11.5 +0.2**
comp=Z,200nm,1.1s
LHO Holmfirth 76.14 4⇓*e*P **P** **07 02 13.0 +0.7**

WME Myndd Eilian 76.15 6⇓*e*P **P** **07 02 13.1 +0.8**
DSB Dublin 76.16 7 *e*P **P** **07 02 13.6 +1.3**
comp=Z,223nm,2.0s
WLF1 Llynfaes 76.25 6 *e*P **P** **07 02 13.6 +0.7**
YRC Rhoscolyn 76.28 6⇓*e*P **P** **07 02 13.5 +0.6**
WPM1 Penmaenmawr 76.31 5⇓*e*P **P** **07 02 14.0 +0.8**
PATY Pattaya 76.37 274 P **P** **07 02 14.8 +0.7**
comp=Z,19nm,0.8s,comp=Z,4μm
SRDT SRDT 76.40 276 P **P** **07 02 14.2 -0.1**
comp=Z,125nm,1.0s
KHLT Khaolaem Dam 76.40 277 P **P** **07 02 14.2 -0.1**
comp=Z,14nm,1.1s
YLL Llanberis 76.42 6 *e*P **P** **07 02 14.5 +0.7**
THN Thein Dam 76.49 305 *e*P **P** **07 02 13.0 -1.6**
YRE Yr Eifl 76.56 6⇓*e*P **P** **07 02 15.4 +0.8**
STNC Stoke 76.57 4 *e*P **P** **07 02 16.1 +1.4**
FOEL Foel Wylfa 76.72 5⇓*e*P **P** **07 02 16.9 +1.4**
FOEL AMB AMB 07 02 17.4
comp=Z,103nm,0.9s
TTSI Tana Toraja 76.83 248 P **P** **07 02 16.4 -0.2**
comp=Z,51nm,1.2s,comp=Z,930nm
CWF Charnwood Fore 76.97 4 *e*P **P** **07 02 17.8 +0.9**
CWF AMB AMB 07 02 18.5
comp=Z,53nm,1.3s
CWF Charnwood Fore 76.97 4 *e*P **P** **07 02 18.3 +1.4**
comp=Z,58nm,1.1s
TBI Tubuai 76.98 156 *e*S **S** **07 12 03.5 0.0**
comp=Z,112nm,30.5s
AKASG Malin Array Be 77.03 344 P **P** **07 02 17.4 +0.1**
comp=Z,63nm,0.6s,baz=17,slow=5.7,SNR=140
AKASG LR LR 07 40 31.8
comp=Z,222nm,18.7s,baz=20,slow=39
AKBB Malin Array Si 77.03 344 *e*P **P** **07 02 17.6 +0.3**
AKBB pmax pmax
comp=Z,76nm,0.9s
AKBB Malin Array Si 77.03 344 *e*P **P** **07 02 17.6 +0.3**
comp=Z,76nm,0.8s
KIEV Kiev 77.04 344 *e*P **P** **07 02 17.6 +0.2**
KIEV pmax pmax
comp=Z,71nm,0.8s
KIEV Kiev 77.04 344 *e*P **P** **07 02 17.6 +0.2**
comp=Z,71nm,0.8s
AK11 Malin Array Si 77.06 344 *e*P **P** **07 02 17.4 -0.1**
HLM1 Long Mynd 77.11 5⇓*e*P **P** **07 02 18.9 +1.1**
SBUM Sibu 77.15 258 *e*P **P** **07 02 18.7 +0.2**
comp=Z,108nm,2.0s
BBSR BB Station 77.17 54 *e*P **P** **07 02 19.1 +0.7**
comp=Z,47nm,0.8s
SPSI Sidrap Palu 77.59 248 P **P** **07 02 20.5 -0.4**
comp=Z,20nm,1.2s
MCH1 Michaelchurch 77.62 5⇓*e*P **P** **07 02 21.6 +1.0**
MCH1 AMB AMB 07 02 22.2
comp=Z,68nm,0.9s
MONM Monmouth 77.79 5⇓*e*P **P** **07 02 22.7 +1.2**
MONM AMB AMB 07 02 23.2
comp=Z,105nm,1.2s
WTSB Winterswijk 77.86 359 *e*P **P** **07 02 22.8 +0.9**
comp=Z,94nm,1.1s
TGUH Tegucigalpa,Un 77.92 83 *e*P **P** **07 02 23.5 +0.7**
comp=Z,90nm,1.2s
CTAO Charters Tower 78.14 217 *e*P **P** **07 02 23.1 -0.6**
CTAO pmax pmax
comp=Z,17nm,1.1s
CTAO Charters Tower 78.14 217 *e*P **P** **07 02 23.1 -0.6**
comp=Z,17nm,1.1s
KBL Kabul 78.18 311 *e*P **P** **07 02 23.9 -0.4**
KBL pmax pmax
comp=Z,57nm,0.9s
KBL Kabul 78.18 311 *e*P **P** **07 02 23.9 -0.4**
comp=Z,57nm,0.9s
CLL Collm 78.30 355⇓*i*P **P** **07 02 25.0 +0.6**
comp=Z,49nm,0.7s
CLL *i* 07 02 28.2
CLL *e*S **S** **07 12 20.0 +2.5**
CLL *e*SS SS 07 17 36.0 +17
CLL Collm 78.30 355⇓*i*P **P** **07 02 25.0 +0.6**
CLL *i* 07 02 28.2
CLL pmax pmax
comp=Z,49nm,0.7s
CLL Collm 78.30 355 *e*P **P** **07 02 25.0 +0.6**
comp=Z,49nm,0.6s
WOL Wolverton 78.39 4⇓*e*P **P** **07 02 26.0 +1.1**
KAPI Kappang 78.45 247 *e*P **P** **07 02 26.2 +0.5**
comp=Z,42nm,1.2s
KAPI Kappang 78.45 247 P **P** **07 02 25.8 +0.2**
SNR=7.5
KAPI Kappang 78.45 247 P **P** **07 02 25.8 +0.2**
SNR=7.5
HTL Hartland 78.53 6 *e*P **P** **07 02 26.8 +1.1**
HTL AMB AMB 07 02 27.9
comp=Z,24nm,0.9s
KSP Ksiaz 78.53 353 *e*P **P** **07 02 26.3 +0.6**
KSP Ksiaz 78.53 353 *e*P **P** **07 02 26.3 +0.6**
MTN Manton Dam 78.59 233 *e*P **P** **07 02 25.6 -0.8**
comp=Z,56nm,1.3s
BRG Berggiesshubel 78.68 354 *i* P **P** **07 02 27.3 +0.8**
comp=Z,86nm,1.3s
BRG Berggiesshubel 78.68 354 *i* P **P** **07 02 27.3 +0.8**
BRG pmax pmax
comp=Z,86nm,1.3s
BRG MLR MLR
comp=N,354nm,20.1s
BRG MLR MLR
comp=E,266nm,21.8s
BRG MLR MLR
comp=Z,523nm,28.3s
LVV L'vov 78.69 348 *e*P **P** **07 02 26.2 -0.4**
LVV MLR MLR
comp=Z,200nm,18.0s
OJC Ojcow 78.82 350 *e*P **P** **07 02 27.9 +0.7**
OJC Ojcow 78.82 350 *e*P **P** **07 02 28.0 +0.7**
OJC Ojcow 78.82 350 *e*P **P** **07 02 28.0 +0.7**
comp=Z,60nm,1.4s
UPC Upice 78.89 353⇓*i*P **P** **07 02 28.4 +0.7**
UPC Upice 78.89 353⇓*i*P **P** **07 02 28.4 +0.7**
PVCC Panska Ves 78.98 354⇓*e*P **P** **07 02 29.2 +1.1**
PVCC Panska Ves 78.98 354 *e*P **P** **07 02 29.2 +1.1**
DPC Dobruska-Polom 79.02 353⇓*i*P **P** **07 02 29.5 +1.1**
DPC *ex* x 07 02 32.3
DPC Dobruska-Polom 79.02 353⇓*i*P **P** **07 02 29.5 +1.1**
DPC *e* 07 02 32.3
BEBN Eben Emael 79.04 360 P **P** **07 02 30.0 +1.5**
KWP Kalwaria Pacla 79.06 348 *e*P **P** **07 02 29.4 +0.8**
KWP Kalwaria Pacla 79.06 348⇓*i*P **P** **07 02 29.6 +1.0**
KWP Kalwaria Pacla 79.06 348⇓P **P** **07 02 29.6 +1.0**
HGN Heimansgroeve 79.08 359 *e*P **P** **07 02 29.6 +1.0**
comp=Z,83nm,0.8s
KSM Kuching 79.10 259 *e*P **P** **07 02 29.2 0.0**
comp=Z,64nm,1.4s
DYA Yadsworthy 79.13 6 *e*P **P** **07 02 29.8 +0.8**
DYA AMB AMB 07 02 30.9
comp=Z,67nm,0.9s
DYA Yadsworthy 79.13 6 *e*P **P** **07 02 30.1 +1.1**
comp=Z,65nm,0.9s
GOF Gofitskoye 79.20 334⇓*i*P **P** **07 02 30.4 +1.0**
GOF pmax pmax
comp=Z,88nm,0.7s
MEM Membach 79.23 359 P **P** **07 02 30.5 +1.0**
comp=Z,49nm,1.3s
KRLC Kraliky 79.25 352⇓*i*P **P** **07 02 30.6 +0.9**
KRLC Kraliky 79.25 352⇓*i*P **P** **07 02 30.6 +0.9**
CCA1 Carnmenellis 79.28 7 *e*P **P** **07 02 30.7 +0.9**
CCA1 AMB AMB 07 02 31.5
comp=Z,96nm,1.1s
SNF Seneffe 79.33 0 P **P** **07 02 30.9 +0.9**
OKC Ostrava-Krasne 79.37 351⇓*e*P **P** **07 02 31.4 +1.1**
OKC *ex* x 07 02 35.9
OKC Ostrava-Krasne 79.37 351 *e*P **P** **07 02 31.4 +1.1**
OKC *e* 07 02 35.9
NKC Novy Kostel 79.40 355⇓*e*P **P** **07 02 31.6 +1.1**
NKC Novy Kostel 79.40 355 *e*P **P** **07 02 31.6 +1.1**
BCLA Clavier 79.42 360 P **P** **07 02 31.6 +1.1**
comp=Z,49nm,1.5s
STHS Stebnicka Huta 79.45 349 *e*P **P** **07 02 32.7 +1.9**
STHS pmax pmax
comp=Z,28nm,0.9s
STHS Stebnicka Huta 79.45 349 *e*P **P** **07 02 32.7 +1.9**
STKI Sintang 79.46 257 P **P** **07 02 32.2 +0.9**
comp=Z,103nm,0.8s
MORC Moravsky Berou 79.48 352⇑*i*P **P** **07 02 31.1 +0.1**
MORC Moravsky Berou 79.48 352 *e*P **P** **07 02 31.8 +0.8**
MORC pmax pmax
comp=Z,61nm,0.8s
MORC Moravsky Berou 79.48 352 *e*P **P** **07 02 31.8 +0.8**
comp=Z,61nm,0.8s

PRU Pruhonice 79.52 354⇓*e*P **P** **07 02 32.0 +0.9**
PRU *ex* x 07 02 35.1
PRU Pruhonice 79.52 354 *e*P **P** **07 02 32.0 +0.9**
PRU *e* 07 02 35.1
NIE Niedzica 79.56 350 *e*P **P** **07 02 32.4 +1.1**
NIE Niedzica 79.56 350 *e*P **P** **07 02 32.5 +1.1**
GOPC GO Pecny, Ondr 79.57 354⇓*i*P **P** **07 02 32.1 +0.7**
GOPC *ex* x 07 02 35.2
GOPC GO Pecny, Ondr 79.57 354⇓*i*P **P** **07 02 32.1 +0.7**
GOPC *e* 07 02 35.2
SOEI Soe 79.70 241 P P 07 02 38.4 +5.8
DOU Dourbes 79.75 0 P **P** **07 02 33.6 +1.3**
comp=Z,44nm,1.6s
KOLS Kolonicke sedl 79.80 348 *e*P **P** **07 02 33.8 +1.2**
KOLS pmax pmax
comp=Z,29nm,0.9s
KOLS Kolonicke sedl 79.80 348 *e*P **P** **07 02 33.8 +1.2**
LANS Liptovska Anna 79.91 350 *e*P **P** **07 02 35.2 +1.9**
LANS Liptovska Anna 79.91 350 *e*P **P** **07 02 35.2 +1.9**
CRVS Cervenica-Dubn 79.93 349 *e*P **P** **07 02 34.7 +1.3**
CRVS Cervenica-Dubn 79.93 349 *e*P **P** **07 02 34.7 +1.3**
GRFO Grafenberg 80.01 356 *e*P **P** **07 02 35.3 +1.5**
GRFO pmax pmax
comp=Z,360nm,0.4s
GRFO Grafenberg 80.01 356 *e*P **P** **07 02 35.2 +1.5**
comp=Z,360nm,0.4s
VRAC Vranov 80.03 352⇑*i*P **P** **07 02 34.8 +0.9**
VRAC Vranov 80.03 352⇑P **P** **07 02 34.8 +0.9**
UZH Uzhgorod 80.09 348 *e*P **P** **07 02 31.0 -3.2**
WLF Walferdange 80.17 359 *e*P **P** **07 02 36.3 +1.7**
WLF pmax pmax
comp=Z,33nm,0.8s
WLF Walferdange 80.17 359 *e*P **P** **07 02 36.3 +1.7**
comp=Z,33nm,0.8s
GEYT Alibeck 80.27 320 P **P** **07 02 36.3 +0.9**
comp=Z,31nm,0.9s,baz=343,slow=4.6,SNR=37
GEYT LR LR 07 42 38.5
comp=Z,683nm,18.6s,baz=20,slow=39
KIV Kislovodsk 80.31 333 *de*P **P** **07 02 36.2 +0.6**
KIV *e* 07 02 43.5
KIV *e* 07 05 35.7
KIV pmax pmax
comp=Z,31nm,0.8s
KIV MLR MLR
comp=Z,219nm,22.0s
KIV Kislovodsk 80.31 333 *e*P **P** **07 02 36.9 +1.3**
comp=Z,34nm,1.0s
KHC Kasperske Hory 80.44 354⇓*e*P **P** **07 02 37.4 +1.3**
KHC *ex* x 07 02 40.9
KHC Kasperske Hory 80.44 354 *e*P **P** **07 02 37.2 +1.0**
KHC pmax pmax
comp=Z,23nm,1.2s
KHC Kasperske Hory 80.44 354 *e*P **P** **07 02 37.1 +1.0**
comp=Z,23nm,1.2s
KECS Kecovo 80.46 350 *e*P **P** **07 02 37.4 +1.2**
KECS pmax pmax
comp=Z,20nm,0.8s
KECS Kecovo 80.46 350 *e*P **P** **07 02 37.4 +1.2**
KBZ Khabaz 80.46 333 P **P** **07 02 37.4 +1.1**
comp=Z,14nm,0.9s,baz=12,slow=1.1,SNR=21
JSA Saint Aubin 80.47 5⇓*e*P **P** **07 02 37.1 +0.9**
JSA AMB AMB 07 02 37.8
comp=Z,91nm,1.0s
VYHS Vyhne 80.63 351 *e*P **P** **07 02 38.2 +1.1**
VYHS pmax pmax
comp=Z,18nm,1.1s
VYHS pmax pmax
comp=N,2.0nm,0.3s
VYHS Vyhne 80.63 351 *e*P **P** **07 02 38.2 +1.1**
BUR08 Bucovina Ar. S 80.65 346 *e*P **P** **07 02 38.6 +1.2**
BURAR Bucovina Array 80.67 346⇑*i*P **P** **07 02 36.5 -1.0**
BURAR Bucovina Array 80.67 346⇑P **P** **07 02 36.5 -1.0**
KIS Kishinev 80.68 344⇑*i*P **P** **07 02 38.0 +0.6**
comp=N,600nm,2.0s
KIS LRM MLR 07 42 48.0
comp=N,500nm,16.0s
KIS Kishinev 80.68 344⇑*i*P **P** **07 02 38.0 +0.6**
KIS pmax pmax
comp=Z,600nm,2.0s
KIS MLR MLR
comp=Z,500nm,17.0s
KIS MLR MLR
comp=Z,500nm,16.0s
SURT Suratani 80.68 273 P **P** **07 02 38.0 +0.1**
comp=Z,20nm,1.0s,comp=Z,205nm
GEC2 GERESS Array S 80.71 354 *e*P **P** **07 02 38.5 +0.8**
GEC2 pmax pmax
comp=Z,120nm,1.8s
GEC2 GERESS Array S 80.71 354 *e*P **P** **07 02 38.5 +0.8**
comp=Z,117nm,1.9s
GERES GERESS Array B 80.71 354 P **P** **07 02 38.3 +0.6**
comp=Z,10nm,0.8s,baz=22,slow=4.9,SNR=73
GEA0 GERESS Array S 80.72 354 *e*P **P** **07 02 38.5 +0.7**
MTDJ Mount Denham 80.82 73 *e*P **P** **07 02 38.8 +0.1**
comp=Z,85nm,1.3s
LANF Langenberg 80.83 358⇓*e*P **P** **07 02 39.5 +1.3**
NEY Neytrino 80.95 333 *di*P **P** **07 02 40.5 +1.3**
NEY pmax pmax
comp=Z,16nm,2.0s
TRTT Trang 80.97 271 P **P** **07 02 39.5 +0.1**
comp=Z,36nm,1.1s
PSZ Piszkesteto 81.08 350⇑*i*P **P** **07 02 40.9 +1.3**
PSZ Piszkesteto 81.08 350 *e*P **P** **07 02 41.0 +1.3**
PSZ pmax pmax
comp=Z,79nm,1.3s
PSZ Piszkesteto 81.08 350 *e*P **P** **07 02 41.0 +1.3**
comp=Z,79nm,1.3s
LDF La Druitiere 81.16 3 *e*P **P** **07 02 39.6 -0.3**
LDF pmax pmax
comp=Z,55nm,0.8s
EIDS Eidsvold 81.28 211 *e*P **P** **07 02 40.8 +0.1**
comp=Z,20nm,1.3s
ARCR ARCALIA 81.32 347⇑*i*P **P** **07 02 43.0 +2.2**
RKT Rikitea 81.45 143 *e*LR LR 07 27 56.4
comp=Z,396nm,30.5s
CONA Conrad Observa 81.46 353 *i* P **P** **07 02 42.9 +1.2**
comp=Z,28nm,0.7s,SNR=24
BFO Black Forest 81.47 358 *e*P **P** **07 02 42.3 +0.7**
BFO pmax pmax
comp=Z,110nm,1.8s
BFO Black Forest 81.47 358 *e*P **P** **07 02 42.3 +0.7**
comp=Z,112nm,1.8s
SIM Simferopol' 81.57 339 *ce*P **P** **07 02 43.5 +1.3**
SIM pmax pmax
comp=Z,25nm,1.0s
ECH Echery 81.61 358⇓*e*P **P** **07 02 43.3 +0.9**
THEF They Montfort 81.61 359⇓*e*P **P** **07 02 43.6 +1.2**
MOA Molln 81.67 354 *i* P **P** **07 02 43.7 +1.0**
comp=Z,15nm,1.1s,SNR=9.0
MOF Molkenrain 81.97 358⇓*e*P **P** **07 02 45.3 +0.9**
VRI Vrincioaia 82.14 345⇓*i*P **P** **07 02 46.5 +1.3**
VRI Vrincioaia 82.14 345⇓P **P** **07 02 46.5 +1.3**
PLOR Plostina 82.16 345⇑*i*P **P** **07 02 47.0 +1.6**
PLOR Plostina 82.16 345⇑P **P** **07 02 47.0 +1.6**
ARSA Arzberg 82.17 353 *i* P **P** **07 02 46.8 +1.5**
comp=Z,27nm,0.8s,SNR=12
RETA Reutte 82.23 356 *i* P **P** **07 02 46.8 +1.1**
comp=Z,20nm,1.2s,SNR=7.1
KULM Kulim 82.29 269 *e*P **P** **07 02 46.5 +0.1**
comp=Z,49nm,1.4s
WATA Walderalm 82.34 355 *i* P **P** **07 02 47.3 +0.9**
comp=Z,34nm,1.1s,SNR=6.1
MOTA Moosalm 82.35 356 *i* P **P** **07 02 48.4 +1.9**
comp=Z,25nm,1.0s,SNR=7.6
WTTA Wattenberg 82.41 355 *i* P **P** **07 02 48.0 +1.2**
comp=Z,26nm,1.0s,SNR=12
TLCR 82.43 343⇑*i*P **P** **07 02 47.6 +0.9**
TLCR 82.43 343⇑P **P** **07 02 47.6 +0.9**
DAVA Damuels 82.47 357 *i* P **P** **07 02 48.2 +1.2**
comp=Z,16nm,0.9s,SNR=5.0
LOMF Lomont 82.48 359⇓*e*P **P** **07 02 48.1 +1.1**
SIRR Siria 82.49 348⇓*i*P **P** **07 02 45.2 -1.8**
KBA Koelnbreinsper 82.50 354 *i* P **P** **07 02 48.7 +1.4**
comp=Z,80nm,0.7s,SNR=33
CFR Carcaliu 82.56 344⇑*i*P **P** **07 02 47.9 +0.6**
CFR Carcaliu 82.56 344⇑P **P** **07 02 47.9 +0.6**
LOR Lormes 82.57 1 *e*P **P** **07 02 47.4 0.0**
LOR pmax pmax
comp=Z,25nm,0.8s
MLR Muntele Rosu 82.63 345⇑*i*P **P** **07 02 49.7 +1.8**
MLR Muntele Rosu 82.63 345 *e*P **P** **07 02 48.9 +1.0**
MLR pmax pmax
comp=Z,77nm,0.9s
MLR Muntele Rosu 82.63 345 *e*P **P** **07 02 48.9 +1.0**
comp=Z,77nm,0.9s

IPM	**Ipoh**	**82.67**	**268**	*eP*		**P**	**07 02 47.2**	**-1.2**
	comp=Z,28nm,1.0s								
FETA	**Feichten**	**82.69**	**356**	*iP*		**P**	**07 02 49.6**	**+1.4**
	comp=Z,29nm,0.9s,SNR=14								
SOKA	**Soboth**	**82.77**	**353**	*iP*		**P**	**07 02 49.8**	**+1.2**
	comp=Z,51nm,0.8s,SNR=25								
PERS	**Pernice**	**82.81**	**353**	*iP*		**P**	**07 02 49.8**	**+1.0**
ABTA	**Abfaltersbach**	**82.88**	**355**	*iP*		**P**	**07 02 50.0**	**+0.9**
	comp=Z,30nm,1.0s,SNR=9.6								
PKSM	**Moragy**	**82.90**	**350**	⇑*iP*		**P**	**07 02 49.1**	**0.0**
PKSM	**Moragy**	**82.90**	**350**	⇑P		**P**	**07 02 49.1**	**0.0**
MYKA	**Terra Mystica**	**82.92**	**354**	*iP*		**P**	**07 02 50.6**	**+1.3**
	comp=Z,16nm,0.9s,SNR=5.4								
ARR	**Arges**	**82.96**	**346**	⇑*iP*		**P**	**07 02 50.9**	**+1.4**
OBKA	**Obir**	**82.98**	**353**	*iP*		**P**	**07 02 50.6**	**+0.9**
	comp=Z,31nm,0.7s,SNR=10								
LOT	**Lotru**	**83.01**	**347**	⇓*iP*		**P**	**07 02 50.2**	**+0.3**
SECR		**83.05**	**345**	⇑*iP*		**P**	**07 02 51.4**	**+1.4**
WRAB	**Tennant Creek**	**83.08**	**227**	⇓*eP*		**P**	**07 02 48.7**	**-1.5**
WRAB				pmax	pmax				
	comp=Z,40nm,1.2s								
WRAB	**Tennant Creek**	**83.08**	**227**	*eP*		**P**	**07 02 49.1**	**-1.1**
	comp=Z,15nm,0.7s								
WB2	**Warramunga Arr**	**83.08**	**227**	*eP*		**P**	**07 02 48.9**	**-1.4**
	comp=Z,19nm,1.2s								
WRA	**Warramunga Arr**	**83.09**	**227**	P		**P**	**07 02 48.9**	**-1.5**
	comp=Z,6.0nm,0.8s,baz=37,slow=6.1,SNR=42								
WRA				PP		**PP**	**07 06 02.6**	**+0.7**
	comp=Z,2.8nm,1.2s,baz=34,slow=8.8,SNR=4.6								
WRA				LR		LR	07 42 22.8		
	comp=Z,101nm,18.0s,baz=185,slow=38								
FUORN	**Ofenpass-Fuorn**	**83.11**	**356**	*eP*		**P**	**07 02 52.0**	**+1.4**
	comp=Z,130nm,1.9s								
BZS	**Buzias**	**83.14**	**348**	⇑*iP*		**P**	**07 02 51.0**	**+0.7**
BZS	**Buzias**	**83.14**	**348**	⇑P		**P**	**07 02 51.1**	**+0.7**
GNI	**Garni**	**83.17**	**330**	*dP*		**P**	**07 02 52.2**	**+1.4**
GNI				pmax	pmax				
	comp=Z,291nm,1.7s								
GNI	**Garni**	**83.17**	**330**	*eP*		**P**	**07 02 52.9**	**+2.1**
	comp=Z,199nm,1.8s								
GNI	**Garni**	**83.17**	**330**	P		**P**	**07 02 52.3**	**+1.4**
	SNR=6.6								
GZR	**Gura Zlata**	**83.20**	**347**	⇑*iP*		**P**	**07 02 50.5**	**-0.3**
GZR	**Gura Zlata**	**83.20**	**347**	⇑P		**P**	**07 02 50.6**	**-0.3**
TIRR	**Tirgusor**	**83.20**	**343**	⇑*iP*		**P**	**07 02 51.1**	**+0.4**
TIRR	**Tirgusor**	**83.20**	**343**	*eP*		**P**	**07 02 51.7**	**+1.0**
TIRR				pmax	pmax				
	comp=Z,43nm,0.9s								
TIRR	**Tirgusor**	**83.20**	**343**	*eP*		**P**	**07 02 51.6**	**+1.0**
	comp=Z,43nm,0.9s								
TUE	**Stuetta**	**83.30**	**357**	*eP*		**P**	**07 02 52.6**	**+1.1**
	comp=Z,24nm,0.8s								
SENIN	**Lac Senin/Sane**	**83.46**	**358**	*eP*		**P**	**07 02 53.9**	**+1.5**
	comp=Z,14nm,1.0s								
HUMR	**Humele**	**83.72**	**346**	⇑*iP*		**P**	**07 02 54.6**	**+1.2**
AGO	**Saint Agoulin**	**83.78**	**1**	⇓*eP*		**P**	**07 02 56.3**	**+2.6**
PLDF	**La Plantade**	**83.87**	**1**	⇓*eP*		**P**	**07 02 56.8**	**+2.6**
PYM	**Petit Puy Mans**	**84.08**	**1**	⇓*eP*		**P**	**07 02 57.7**	**+2.4**
DSRI	**Dabo**	**84.21**	**262**	P		**P**	**07 02 57.2**	**+0.9**
	comp=Z,150nm,1.3s								
LPG	**La Plagne**	**84.33**	**359**	*eP*		**P**	**07 02 57.9**	**+1.0**
LPG				pmax	pmax				
	comp=Z,64nm,1.3s								
PPBI	**Pangkal Pinang**	**84.53**	**260**	P		**P**	**07 02 57.7**	**-0.2**
	comp=Z,32nm,1.4s,comp=Z,4μm								
SSB	**Saint Sauveur**	**84.57**	**0**	*eP*		**P**	**07 02 58.1**	**+0.3**
SSB				pmax	pmax				
	comp=Z,53nm,1.0s								
SSB	**Saint Sauveur**	**84.57**	**0**	*eP*		**P**	**07 02 58.1**	**+0.3**
	comp=Z,53nm,1.0s								
GRN	**Grenoble**	**84.60**	**359**	*eP*		**P**	**07 02 59.7**	**+1.7**
LBL	**Lubilhac**	**84.60**	**1**	⇓*eP*		**P**	**07 03 00.5**	**+2.5**
GDM	**Grand'Maison**	**84.64**	**359**	*eP*		**P**	**07 03 00.0**	**+1.8**
BOYT	**Boyabat**	**84.73**	**338**	*iP*		**P**	**07 03 00.4**	**+1.7**
NVLJ	**Novalja**	**84.89**	**353**	P		**P**	**07 02 59.5**	**+0.2**
CAF	**Calviac**	**84.89**	**2**	*eP*		**P**	**07 02 59.4**	**0.0**
CAF				pmax	pmax				
	comp=Z,73nm,1.3s								
ERBA	**Erbaa**	**84.97**	**336**	*iP*		**P**	**07 03 01.3**	**+1.5**
PSI	**Prapat**	**85.29**	**269**	*eP*		**P**	**07 03 01.3**	**-0.6**
PSI				pmax	pmax				
	comp=Z,54nm,0.8s								
PSI	**Prapat**	**85.29**	**269**	*eP*		**P**	**07 03 01.3**	**-0.6**
	comp=Z,54nm,0.8s								
ILGA	**Igaz**	**85.36**	**339**	*iP*		**P**	**07 03 03.6**	**+1.5**
PWJI	**Pagerwojo**	**85.58**	**252**	P		**P**	**07 03 01.2**	**-1.9**
ARMA	**Armidale**	**85.81**	**208**	*eP*		**P**	**07 03 04.7**	**+0.7**
	comp=Z,36nm,1.4s								
COAL	**Corum-Alaca**	**85.82**	**337**	*iP*		**P**	**07 03 05.4**	**+1.2**
FITZ	**Fitzroy Crossi**	**85.85**	**235**	*eP*		**P**	**07 03 04.1**	**-0.2**
	comp=Z,23nm,0.9s								
VTS	**Vitosha**	**85.89**	**347**	⇓*iP*		**P**	**07 03 04.5**	**0.0**
VTS	**Vitosha**	**85.89**	**347**	*eP*		**P**	**07 03 04.9**	**+0.4**
VTS				pmax	pmax				
	comp=Z,42nm,1.3s								
VTS	**Vitosha**	**85.89**	**347**	*eP*		**P**	**07 03 04.8**	**+0.4**
	comp=Z,42nm,1.3s								
AS01	**Alice Springs**	**86.48**	**226**	*eP*		**P**	**07 03 06.4**	**-1.0**
AS31	**Alice Springs**	**86.51**	**226**	*eP*		**P**	**07 03 06.8**	**-0.7**
	comp=Z,5.2nm,1.5s								
ASAR	**Alice Springs**	**86.51**	**226**	P		**P**	**07 03 06.7**	**-0.8**
	comp=Z,3.2nm,0.6s,baz=27,slow=5.0,SNR=36								
ASAR				LR		LR	07 45 26.5		
	comp=Z,55nm,18.0s,baz=32,slow=38								
SDSI	**Sungai Dareh**	**86.56**	**264**	P		**P**	**07 03 08.3**	**+0.3**
	comp=Z,190nm,0.9s,comp=Z,38μm								
CDAG	**Cicekdag**	**86.57**	**338**	*iP*		**P**	**07 03 08.2**	**+0.3**
PDG	**Podgorica**	**86.57**	**349**	⇑*iP*		**P**	**07 03 08.4**	**+0.7**
BR131	**Keskin Array S**	**86.64**	**338**	*eP*		**P**	**07 03 08.8**	**+0.5**
BRTR	**Keskin Array B**	**86.64**	**338**	P		**P**	**07 03 08.8**	**+0.5**
	comp=Z,5.2nm,0.6s,baz=33,slow=2.5,SNR=23								
BRTR				LR		LR	07 48 52.8		
	comp=Z,152nm,18.0s,baz=1.5,slow=40								
HYB	**Hyderabad**	**86.70**	**293**	*iP*		**P**	**07 03 07.0**	**-1.8**
BR231	**Keskin MP Arra**	**86.73**	**339**	*eP*		**P**	**07 03 09.3**	**+0.6**
SKO	**Skopje**	**86.74**	**348**	*eP*		**P**	**07 03 09.9**	**+1.3**
PGAV	**Gavieira, Arco**	**87.16**	**10**	*eP*		**P**	**07 03 11.1**	**+0.4**
PGAV	**Gavieira, Arco**	**87.16**	**10**	*eLR*		LR	07 32 31.8		
AQU	**L'Aquila**	**87.19**	**354**	*eP*		**P**	**07 03 12.3**	**+1.5**
AQU				pmax	pmax				
	comp=Z,33nm,0.7s								
AQU	**L'Aquila**	**87.19**	**354**	*eP*		**P**	**07 03 12.3**	**+1.5**
	comp=Z,33nm,0.7s								
VAY	**Valandovo**	**87.22**	**347**	*eP*		**P**	**07 03 10.7**	**-0.2**
GSI	**Gunungsitoli**	**87.30**	**269**	P		**P**	**07 03 11.9**	**+0.3**
	comp=Z,51nm,1.3s								
GSI	**Gunungsitoli**	**87.30**	**269**	*eP*		**P**	**07 03 11.6**	**0.0**
	comp=Z,40nm,1.0s								
KBSD	**Kabsdagh**	**87.35**	**332**	*eP*		**P**	**07 03 11.5**	**-0.1**
PCAB	**Cabril**	**87.44**	**10**	*eP*		**P**	**07 03 12.4**	**+0.4**
PBRG	**Braganca**	**87.48**	**9**	*eP*		**P**	**07 03 12.6**	**+0.4**
MDSI	**Maura Dua**	**87.55**	**260**	P		**P**	**07 03 10.5**	**-2.3**
POLO	**Lamas de Olo**	**87.80**	**10**	*eP*		**P**	**07 03 14.1**	**+0.3**
HUMP	**Col San Antoni**	**87.81**	**64**	*eP*		**P**	**07 03 14.7**	**+0.7**
	comp=Z,64nm,1.7s								
PVRL	**Vila Real**	**87.90**	**9**	*eP*		**P**	**07 03 14.7**	**+0.5**
	comp=Z,38nm,1.4s								
MVO	**Moncorvo**	**88.08**	**9**	*eP*		**P**	**07 03 15.4**	**+0.3**
	comp=Z,36nm,1.1s								
MVO	**Moncorvo**	**88.08**	**9**	*eLR*		LR	07 33 03.5		
STVI	**Saint Thomas**	**88.15**	**63**	*eP*		**P**	**07 03 15.5**	**-0.1**
	comp=Z,38nm,1.2s								
CGJI	**Cibinong**	**88.25**	**258**	P		**P**	**07 03 15.1**	**-1.0**
PVIS	**Viseu**	**88.44**	**10**	*eP*		**P**	**07 03 17.1**	**+0.3**
URZ	**Urewera**	**88.68**	**186**	LR		LR	07 35 35.1		
	comp=Z,118nm,19.9s,baz=39,slow=31								
MTE	**Manteigas**	**88.79**	**9**	*eP*		**P**	**07 03 18.8**	**+0.3**
MTE	**Manteigas**	**88.79**	**9**	*eLR*		LR	07 33 24.7		
DRWC	**Darouich**	**88.81**	**335**	*eP*		**P**	**07 03 18.4**	**-0.3**
KSRV	**Kasrt alli**	**88.86**	**333**	*eP*		**P**	**07 03 18.1**	**-0.7**
PCAS	**Casmilo, Conde**	**89.03**	**10**	*eP*		**P**	**07 03 19.7**	**+0.2**
JHLN	**Al Jahlan**	**89.20**	**333**	*eP*		P	07 03 15.2	-5.3
PCBR	**Castelo Branco**	**89.35**	**10**	*eP*		**P**	**07 03 20.9**	**-0.1**
	comp=Z,22nm,1.7s								
PTOM	**Tomar**	**89.47**	**10**	*eP*		**P**	**07 03 21.9**	**+0.3**
	comp=Z,38nm,1.4s								
ARNB	**Al Arnab**	**89.71**	**335**	*eP*		**P**	**07 03 21.3**	**-1.6**
PMRV	**Marv??o**	**89.77**	**9**	*eLR*		LR	07 33 40.8		
ES19	**SONSECA Array**	**89.81**	**7**	*eP*		**P**	**07 03 23.4**	**+0.2**
ESDC	**Sonseca Array**	**89.83**	**7**	P		**P**	**07 03 23.4**	**0.0**
	comp=Z,6.3nm,0.7s,baz=350,slow=4.5,SNR=30								
ESDC				LR		LR	07 45 32.5		
	comp=Z,37nm,19.2s,baz=300,slow=37								
ESLA	**Sonseca Array**	**89.83**	**7**	*eP*		**P**	**07 03 23.5**	**+0.1**
	comp=Z,11nm,0.8s								
SLNF	**Slenfeh**	**89.89**	**335**	*eP*		**P**	**07 03 23.1**	**-0.7**
PAB	**San Pablo**	**89.93**	**7**	*eP*		**P**	**07 03 23.9**	**+0.1**
PAB				pmax	pmax				
	comp=Z,36nm,1.9s								
PAB	**San Pablo**	**89.93**	**7**	*eP*		**P**	**07 03 23.9**	**+0.1**
	comp=Z,36nm,1.9s								
PMAFR	**Mafra**	**90.02**	**11**	*eP*		**P**	**07 03 24.3**	**+0.1**
TIP	**Timpagrande**	**90.06**	**351**	⇑*iP*		**P**	**07 03 25.0**	**+0.5**
TIP	**Timpagrande**	**90.06**	**351**	*eP*		**P**	**07 03 24.9**	**+0.5**
	comp=Z,81nm,1.8s								
PESTR	**Estremoz**	**90.30**	**10**	*eP*		**P**	**07 03 25.6**	**+0.1**
	comp=Z,26nm,1.6s								
STKA	**Stephens Creek**	**90.55**	**216**	P		**P**	**07 03 26.2**	**-0.2**
	comp=Z,7.7nm,0.9s,baz=359,slow=8.3,SNR=10								
STKA				LR		LR	07 37 56.1		
	comp=Z,123nm,21.8s,baz=27,slow=32								
STKA	**Stephens Creek**	**90.55**	**216**	*eP*		**P**	**07 03 26.2**	**-0.2**
STKA				pmax	pmax				
	comp=Z,6.0nm,1.4s								
STKA	**Stephens Creek**	**90.55**	**216**	*eP*		**P**	**07 03 26.2**	**-0.2**
	comp=Z,6.3nm,1.4s								
PBAR	**Barrancos**	**91.04**	**9**	*eP*		**P**	**07 03 27.8**	**-1.1**
	comp=Z,52nm,2.1s								
CSS	**Mathiatis**	**91.25**	**337**	*eP*		**P**	**07 03 30.0**	**0.0**
	comp=Z,15nm,1.4s								
MARH	**Ras Al Marh**	**91.30**	**334**	*eP*		**P**	**07 03 28.8**	**-1.8**
MBWA	**Marble Bar**	**91.50**	**238**	*eP*		**P**	**07 03 30.4**	**-0.7**
	comp=Z,40nm,1.5s								
PVAQ	**Vaqueiros**	**91.73**	**10**	*eLR*		LR	07 34 38.9		
BRBR	**Barbar**	**92.03**	**334**	*eP*		**P**	**07 03 32.9**	**-1.0**
ZALF	**Zalf**	**92.09**	**333**	*eP*		**P**	**07 03 33.2**	**-0.8**
UOSS	**Minazif**	**92.25**	**315**	*eP*		**P**	**07 03 33.2**	**-1.5**
	comp=Z,0.9nm,1.0s								
SALA	**Sala**	**92.47**	**334**	*eP*		**P**	**07 03 35.5**	**-0.3**
MMAI	**Mount Meron Ar**	**92.55**	**335**	P		**P**	**07 03 36.6**	**+0.5**
	comp=Z,1.1nm,0.4s,baz=14,slow=7.1,SNR=11								
LAST	**Lasithi**	**92.76**	**343**	⇑*iP*		**P**	**07 03 35.9**	**-1.1**
LAST	**Lasithi**	**92.76**	**343**	*eP*		**P**	**07 03 36.5**	**-0.5**
	comp=Z,33nm,1.0s								
ASF	**Jabal al Asfar**	**92.92**	**333**	P		**P**	**07 03 37.6**	**-0.3**
	comp=Z,3.7nm,0.7s,baz=325,slow=1.4,SNR=8.0								
SMDO	**Samad**	**93.02**	**312**	P		**P**	**07 03 38.0**	**-0.5**
	SNR=6.4								
SMDO	**Samad**	**93.02**	**312**	P		**P**	**07 03 38.0**	**-0.5**
	SNR=6.4								
ARQ	**Araqi**	**93.49**	**314**	P		**P**	**07 03 39.6**	**-0.9**
	SNR=14								
ARQ	**Araqi**	**93.49**	**314**	P		**P**	**07 03 39.6**	**-0.9**
	SNR=14								
JMDO	**Jabal Madar**	**93.58**	**312**	P		**P**	**07 03 40.4**	**-0.5**
	SNR=8.2								
JMDO	**Jabal Madar**	**93.58**	**312**	P		**P**	**07 03 40.4**	**-0.5**
	SNR=8.2								
BSY	**Bisya**	**93.69**	**313**	P		**P**	**07 03 40.7**	**-0.7**
	SNR=12								
BSY	**Bisya**	**93.69**	**313**	P		**P**	**07 03 40.7**	**-0.7**
	SNR=12								
KEST	**Kesra**	**94.02**	**356**	P		**P**	**07 03 41.2**	**-1.6**
	comp=Z,3.2nm,0.8s,baz=274,slow=11,SNR=2.4								
RAYN	**Ar Rayn**	**98.00**	**323**	*eP*		**P**	**07 04 00.9**	**-0.2**
	comp=Z,19nm,0.9s								
TOA0	**Torodi Ar. Sit**	**116.53**	**3**	*e*PKPdf		**PKPdf**	**07 09 07.6**	**-1.2**
TOA0				*e*PKPdf		**PKiKP**	**07 09 07.8**	**-1.0**
TORD	**Torodi Ar. Bea**	**116.53**	**3**	PKP		**PKPdf**	**07 09 07.6**	**-1.2**
	comp=Z,2.7nm,0.6s,baz=342,slow=2.4,SNR=24								
DBIC	**Dimbokro**	**122.40**	**12**	PKP		**PKPdf**	**07 09 19.1**	**-1.0**
	comp=Z,2.9nm,0.4s,baz=327,slow=2.9,SNR=19								
DBIC	**Dimbokro**	**122.40**	**12**	PKP		**PKPdf**	**07 09 19.1**	**-1.0**
DBIC				*e*PKPdf		**PKiKP**	**07 09 19.2**	**-1.0**
ROC1	**El Roble**	**123.20**	**103**	*e*PKPdf		**PKPdf**	**07 09 20.7**	**-0.6**
KMBO	**Kilima Mbogo**	**123.65**	**320**	PKP		**PKPdf**	**07 09 22.5**	**-0.3**
	comp=Z,2.1nm,0.7s,baz=11,slow=4.3,SNR=5.1								
KMBO	**Kilima Mbogo**	**123.65**	**320**	PKP		**PKPdf**	**07 09 22.5**	**-0.3**
KMBO				*e*PKPpre		PKPpre	07 09 45.8		
CPUP	**Villa Florida**	**127.33**	**87**	PKP		**PKPdf**	**07 09 28.5**	**-0.6**
	comp=Z,3.7nm,0.9s,baz=13,slow=3.8,SNR=3.9								
CPUP				PKKPab		PKKPab	07 18 52.7		
	comp=Z,3.4nm,1.1s,baz=22,slow=5.3,SNR=3.0								
CPUP	**Villa Florida**	**127.33**	**87**	PKIKP		**PKPdf**	**07 09 28.5**	**-0.6**
CPUP				pmax	pmax				
	comp=Z,3.0nm,0.9s								
CPUP				pmax	pmax				
	comp=Z,3.0nm,1.1s								
PLCA	**Paso Flores**	**128.48**	**110**	PKP		**PKPdf**	**07 09 31.0**	**+0.1**
	comp=Z,10nm,0.9s,baz=302,slow=2.6,SNR=14								
VNDA	**Vanda**	**128.59**	**186**	PKP		**PKPdf**	**07 09 29.8**	**-0.1**
	comp=Z,1.5nm,0.9s,baz=3.7,slow=3.0,SNR=3.1								
TRQA	**Tornquist**	**132.10**	**102**	*e*PKPdf		**PKPdf**	**07 09 37.1**	**-0.8**
QSPA	**South Pole Qui**	**140.29**	**180**	*e*PKPpre		PKPpre	07 09 45.8		
TSUM	**Tsumeb**	**147.15**	**338**	PKPbc		**PKPbc**	**07 10 07.9**	**0.0**
	baz=8.1,slow=5.5								
MAW	**Mawson**	**147.23**	**217**	PKPbc		**PKPbc**	**07 10 06.4**	**-0.1**
	comp=Z,62nm,0.9s,baz=98,slow=2.3,SNR=62								
MAW	**Mawson**	**147.23**	**217**	*e*PKPdf		**PKPbc**	**07 10 06.3**	**-0.2**
MAW				PKPbc		**PKPbc**	**07 10 06.4**	**-0.1**
LBTB	**Lobatse**	**149.93**	**320**	PKPbc		**PKPbc**	**07 10 14.8**	**-0.1**
	comp=Z,27nm,0.9s,baz=36,slow=2.3,SNR=4.8								
LBTB				PKPab		**PKPab**	**07 10 20.7**	**+0.1**
	comp=Z,40nm,0.7s,baz=21,slow=3.3,SNR=8.9								
BOSA	**Boshof**	**153.23**	**317**	PKPbc		**PKPbc**	**07 10 21.2**	**-1.3**
	comp=Z,9.5nm,1.0s,baz=12,slow=1.5,SNR=12								
BOSA	**Boshof**	**153.23**	**317**	*e*PKPbc		**PKPbc**	**07 10 21.7**	**-0.8**

LJU 15 07:00:32.4, 46°.39N×15°.07E, *h*0km, ML1.0 Rockburst, Northwestern Balkan Peninsula

*IDC **15** 07:01:13.2±1.1, 35°.72S×73°.32W, h0km, mb3.8/5, mb1 4.0/8, mb1mx3.8/25, mbtmp3.9/8, ML3.8/2, MS3.2/4, Ms1 3.1/4, ms1mx3.0/25, Error ellipse: s-maj=40.9km s-min=23.7km az=83.0*

*ISCJB **15** 07:01:15.5±0.8, 35°.95S±0°.05×73°.48W±0°.08, h33km, mb3.6/5, MS3.2/2, Error ellipse: s-maj=10.0km s-min=7.2km az=167.8*

*GUC **15** 07:01:16.5±0.4, 35°.98S×73°.40W, h12km±7km, ML3.9*

ISC 15 07:01:17.5±0.8, 35°.96S±0°.06×73°.41W±0°.10, h35km, n17, σ1=39/18, mb3.7/5.1, D, Off coast of central Chile

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
					Op	ISC	h m s	ISC
CCSP	**San Pedro de C**	**0.91**	**164**	*eP*		**Pn**	**07 01 31.9**	**-1.9**
CCSP				*eS*		**Sn**	**07 01 43.9**	**-1.8**
CCSP				IAML			07 01 51.9	
	comp=N,7μm,0.5s							
CCHI	**Chillan**	**1.25**	**121**	⇓*eP*		**Pn**	**07 01 37.5**	**-1.1**
CCHI				*eS*		**Sn**	**07 01 53.5**	**-0.6**
CCHI				IAML			07 02 07.8	
	comp=E,5μm,1.7s							
TALC	**Talca**	**1.56**	**69**	*eP*		**Pn**	**07 01 42.7**	**0.0**
TALC				*eS*		**Sn**	**07 02 02.0**	**+0.4**
PLCA	**Paso Flores**	**5.26**	**156**	Pn		**Pn**	**07 02 35.8**	**+2.0**
	comp=E,0.8nm,0.3s,baz=350,slow=11,SNR=32							
PLCA				Sn		Sn	07 03 48.5	+15
	comp=E,0.2nm,0.3s,baz=328,slow=19,SNR=1.3							
PLCA				LR		LR	07 04 04.2	
	comp=E,63nm,18.6s,baz=359,slow=31							
CPUP	**Villa Florida**	**16.77**	**60**	LR		LR	07 11 55.2	
	comp=E,111nm,19.7s,baz=237,slow=39							
USHA	**Ushuaia**	**19.18**	**171**	P		**Pn**	**07 05 42.4**	**+3.4**
	comp=E,12nm,0.3s,baz=0.0,slow=9.1,SNR=2.7							
LPAZ	**La Paz**	**20.15**	**15**	P		**P**	**07 05 48.6**	**-0.8**
	comp=E,0.1nm,0.3s,baz=168,slow=5.8,SNR=5.6							
SIV	**San Ignacio**	**22.73**	**32**	P		**P**	**07 06 14.7**	**-1.8**
	comp=E,2.1nm,0.8s,baz=226,slow=17,SNR=10							
SIV				LR		LR	07 16 10.6	
	comp=E,118nm,20.6s,baz=200,slow=40							
NNA	**Nana**	**24.07**	**352**	LR		LR	07 13 29.1	
	comp=E,56nm,18.9s,baz=184,slow=31							
TXAR	**Lajitas Array**	**70.92**	**332**	P		**P**	**07 12 31.6**	**+0.4**
	comp=E,0.3nm,0.7s,baz=156,slow=8.1,SNR=3.4							
DBIC	**Dimbokro**	**76.87**	**72**	P		**P**	**07 13 06.4**	**+0.1**
	comp=E,2.5nm,0.9s,baz=250,slow=7.0,SNR=4.0							
NVAR	**Mina Array Bea**	**84.87**	**326**	P		**P**	**07 13 48.2**	**-0.5**
	comp=E,0.1nm,0.3s,baz=167,slow=4.5,SNR=2.9							
TORD	**Torodi Ar. Bea**	**85.93**	**71**	P		**P**	**07 13 53.8**	**-0.4**
	comp=E,0.4nm,0.8s,baz=191,slow=3.0,SNR=3.9							
BVAR	**Borovoye Array**	**149.48**	**45**	PKPbc		**PKPbc**	**07 21 02.8**	**+0.5**
	comp=E,0.6nm,0.7s,baz=291,slow=4.5,SNR=3.5							
KURBB	**Kurchatov Arra**	**155.06**	**45**	PKPbc		PKPdf	07 21 15.9	+10
	comp=E,0.2nm,0.6s,baz=294,slow=3.0,SNR=2.7							
KURBB				PKPab		**PKPab**	**07 21 31.0**	**+0.2**
	comp=E,0.3nm,0.9s,baz=316,slow=3.9,SNR=3.0							
ZALV	**Zalesovo Beam**	**156.48**	**33**	PKPab		**PKPab**	**07 21 36.8**	**0.0**
	comp=E,0.9nm,0.5s,baz=313,slow=3.1,SNR=2.4							
MKAR	**Makanchi Array**	**158.88**	**52**	PKPab		**PKPab**	**07 21 47.4**	**-0.1**
	comp=E,0.3nm,0.7s,baz=284,slow=5.8,SNR=3.4							

*NIED **15** 07:03:00,36°.80N×138°.60E, h5km, Mw3.9 Best double couple: M0 8.91000×10^14 NP1:φs=278.00000°,δ39.00000°, λ-168.00000°. NP2:φs178.00000°,δ83.00000°, λ-52.00000°*

*ISCJB **15** 07:03:54.2±0.6, 36°.82N±0°.03×138°.61E±0°.04, h9km±4km, mb3.4/5, Error ellipse: s-maj=6.1km s-min=4.4km az=141.5*

*JMA **15** 07:03:54.5±0.2, 36°.82N×138°.62E, h1km±3km, M3.5 Broadband fault plane solution: P waves. NP1: φs187.00000°,δ80.00000°,λ-16.00000°. NP2: φs280.00000°,δ75.00000°,λ-170.00000°. Principal axes: T Plg4.0000°, Azm234.0000°; N Plg72.0000°, Azm336.0000°; P Plg18.0000°, Azm143.0000°;*

JMA Felt II J1.

*IDC **15** 07:03:55.2±1.0, 36°.61N×138°.71E, h0km, mb3.5/5, mb1 3.7/7, mb1mx3.4/42, mbtmp3.5/7, ML3.3/2 Error ellipse: s-maj=24.5km s-min=7.9km az=167.0*

ISC 15 07:03:55.8±1.0, 36°.72N±0°.05×138°.67E±0°.03, h11km±7km, n16, σ1=85/23, mb3.5/5, 2C-3D, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
					Op	ISC	h m s	ISC
JGK	**Kuni**	**0.16**	**190**	⇓P		**Pg**	**07 04 00.3**	**+0.9**
JGK				S		**Sg**	**07 04 03.9**	**+1.9**
MJAR	**Matsushiro Arr**	**0.42**	**244**	Pg		**Pg**	**07 04 02.6**	**-1.4**
	487nm,0.3s,baz=44,slow=19,SNR=1161							
MJAR				Lg		Lg	07 04 07.6	
	486nm,0.3s,baz=66,slow=30,SNR=54							
MJAR				LR		LR	07 04 22.6	
	comp=Z,426nm,18.1s,baz=45,slow=72							
MAT	**Matsushiro**	**0.42**	**244**	P		**Pg**	**07 04 02.7**	**-1.2**
MAT				S		**Sg**	**07 04 08.5**	**-1.0**
MAT	**Matsushiro**	**0.42**	**244**	P		**Pg**	**07 04 02.8**	**-1.2**
MAT				S		**Sg**	**07 04 08.5**	**-1.0**
JKT	**Katashina**	**0.46**	**85**	P		**Pg**	**07 04 04.6**	**-0.3**
JKT				S		**Sb**	**07 04 11.5**	**-1.5**
JNG	**Nsakai**	**0.56**	**236**	⇑P		**Pg**	**07 04 05.7**	**-1.0**
JNG				S		**Sb**	**07 04 13.5**	**-2.3**
JHK	**Hiroka**	**0.59**	**28**	⇑P		Pg	07 04 04.8	-2.5
JHK				S		**Sg**	**07 04 12.0**	**-3.1**
JAG	**Ashikaga**	**0.69**	**115**	⇓P		**Pn**	**07 04 09.7**	**-1.9**
JAG				S		**Sn**	**07 04 20.1**	**-2.3**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
I46RU	**ZALESOVO INFRA**	**1.36**	**259**	*i*		07 21 03.6	
	baz=82,slow=318,SNR=16						
ZALV	**Zalesovo Beam**	**1.36**	**259**	Pg	**Pn**	**07 11 56.5**	**-1.1**
	2.9nm,0.3s,baz=82,slow=16,SNR=21						
ZALV				Lg	Lg	07 12 16.7	
	2.6nm,0.3s,baz=76,slow=26,SNR=12						
KURK	**Kurchatov**	**6.26**	**239**	⇑Pg	**Pn**	**07 13 06.3**	**+1.5**
	2.7nm,0.9s						
KURK				⇑Lg	Lg	07 15 05.6	
	3.9nm,0.8s						
KURBB	**Kurchatov Arra**	**6.36**	**239**	Pn	**Pn**	**07 13 07.5**	**+1.3**
	0.1nm,0.3s,baz=55,slow=13,SNR=9.6						
KURBB				Sn	**Sn**	**07 14 18.8**	**+1.2**
	0.0nm,0.3s,baz=72,slow=35,SNR=3.1						
KURBB				Lg	Lg	07 14 54.5	
	0.0nm,0.3s,baz=52,slow=30,SNR=5.2						
KURBB	**Kurchatov Arra**	**6.36**	**239**	⇓Pg	**Pn**	**07 13 06.8**	**+0.6**
	0.4nm,0.3s						
KURBB				⇑Sn	**Sn**	**07 14 16.1**	**-1.4**
	2.6nm,0.6s						
KURBB				⇑Lg	Lg	07 15 05.6	
	3.8nm,0.8s						
MK31	**Makanchi Array**	**8.05**	**204**	Pg	**Pn**	**07 13 28.2**	**-1.2**
	0.1nm,0.2s,baz=28,slow=14,SNR=7.4						
MK31				Lg	Lg	07 15 39.8	
	1.1nm,0.8s,baz=32,slow=30,SNR=5.2						
MKAR	**Makanchi Array**	**8.05**	**204**	Pn	**Pn**	**07 13 29.6**	**+0.2**
	0.1nm,0.3s,baz=26,slow=14,SNR=6.0						
MKAR				Sn	**Sn**	**07 14 59.3**	**+0.1**
	0.1nm,0.3s,baz=28,slow=26,SNR=3.7						
MKAR				Lg	Lg	07 15 45.5	
	0.1nm,0.3s,baz=28,slow=34,SNR=3.8						
BVAR	**Borovoye Array**	**9.99**	**270**	Pn	**Pn**	**07 13 58.3**	**+2.3**
	0.2nm,0.3s,baz=78,slow=11,SNR=3.8						
BVAR				Sn	**Sn**	**07 15 45.1**	**-1.7**
	0.3nm,0.3s,baz=72,slow=23,SNR=3.4						

ISCJB ***15*** *07:15:40.4±0.5,8.°90S±0.°06×119.°07E±0.°04,h150km, mb3.7/4, Error ellipse: s-maj=9.0km s-min=5.4km az=9.3*
DJA ***15*** *07:15:41.2±0.5,9.°S±4.°×11.°9E±.°,h138km±7km,M4.0/8, mb4.0/1, MLv4.0/8*
IDC ***15*** *07:15:48.7±4.8,8.°84S×119.°55E,h200km±46km, mb3.3/5, mb1 3.3/6, mb1mx3.1/4,mbtmp3.8/6, Error ellipse: s-maj=68.8km s-min=11.5km az=49.0*

ISC 15 07:15:41.2±0.9,8.°88S±0.°08×119.°08E±0.°05,h150km,n17, σ1°80/18,mb3.8/4,Flores region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PLAI	**Plampang**	**1.29**	**272**	P	**Pn**	**07 16 08.8**	**+0.1**
PLAI				S	**Sn**	**07 16 28.0**	**-1.6**
BASI	**Baing, Sumba**	**1.98**	**132**	P	**Pn**	**07 16 16.3**	**+0.1**
TWSI	**Taliwang, Sumb**	**2.18**	**274**	P	**Pn**	**07 16 19.5**	**+1.0**
TWSI				S	**Sn**	**07 16 47.1**	**0.0**
BSSI	**Bau Bau, Buton**	**3.06**	**27**	P	**Pn**	**07 16 28.5**	**-0.9**
BSSI				S	**Sn**	**07 17 05.6**	**-1.0**
MMRI	**Maumere**	**3.13**	**86**	P	**Pn**	**07 16 30.4**	**+0.1**
DNP	**Denpasar**	**3.83**	**273**	P	**Pn**	**07 16 38.4**	**-0.9**
SRBI	**Singaraja**	**3.91**	**281**	P	**Pn**	**07 16 39.1**	**-1.2**
BATI	**Baumata**	**4.71**	**107**	P	**Pn**	**07 16 51.1**	**+0.3**
JAGI	**Jajag, Banyuwa**	**4.89**	**274**	P	**Pn**	**07 16 51.6**	**-1.7**
GMJI	**Gumukmas**	**5.61**	**276**	P	**Pn**	**07 17 01.0**	**-1.8**
WRA	**Warramunga Arr**	**18.40**	**128**	P	**Pn**	**07 19 47.0**	**+0.1**
	0.5nm,0.3s,baz=302,slow=13,SNR=28						
WRA				S	**S**	**07 23 02.5**	**-4.9**
	0.2nm,0.3s,baz=306,slow=26,SNR=6.0						
ASAR	**Alice Springs**	**20.43**	**138**	P	**P**	**07 20 07.3**	**+0.3**
	0.7nm,0.4s,baz=310,slow=9.6,SNR=4.9						
ASAR				S	Sn	07 23 58.7	-3.6
	0.7nm,0.7s,baz=308,slow=20,SNR=4.5						
SONM	**Songino Array**	**57.58**	**350**	P	P	07 25 18.2	+2.9
	1.3nm,0.5s,baz=167,slow=8.5,SNR=7.9						
MKAR	**Makanchi Array**	**64.39**	**333**	P	P	07 26 04.3	+3.1
	0.8nm,0.6s,baz=156,slow=11,SNR=2.4						
KURBB	**Kurchatov Arra**	**68.90**	**334**	P	P	07 26 33.1	+3.5
	0.4nm,0.5s,baz=139,slow=6.2,SNR=2.2						
ZALV	**Zalesovo Beam**	**68.96**	**339**	P	**P**	**07 26 32.0**	**+2.0**
	0.4nm,0.3s,baz=151,slow=3.3,SNR=2.0						
TORD	**Torodi Ar. Bea**	**118.52**	**280**	PKP	**PKPdf**	**07 34 14.7**	**+2.5**
	0.3nm,0.6s,baz=122,slow=1.9,SNR=2.8						

ISCJB ***15*** *07:20:26.4±1.2,36.°44N±0.°06×28.°76E±0.°07,h3km±11km, Error ellipse: s-maj=12.5km s-min=5.7km az=40.1*
CSEM ***15*** *07:20:26.2±0.3,36.°42N×28.°80E,h5km,MD2.3,Error ellipse: s-maj=5.8km s-min=3.6km az=22.0*
DDA ***15*** *07:20:26.8,36.°51N×28.°78E,h7km,Md2.5*
ISK ***15*** *07:20:27.2,36.°57N×28.°85E,h19km,MD2.3*

ISC 15 07:20:26.3±1.3,36.°46N±0.°05×28.°84E±0.°04,h10km±10km, n18,σ0°55/30,Dodecanese Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FETY	**Fethiye**	**0.27**	**48**	*e*PG	**Pg**	**07 20 32.0**	**+0.2**
FETY				*e*SG	**Sb**	**07 20 36.8**	**-1.1**
FETY	**Fethiye**	**0.27**	**48**	*e*Pg	**Pg**	**07 20 32.0**	**+0.2**
FETY				*e*Sg	**Sb**	**07 20 36.8**	**-1.1**
DALY	**Dalyan (Mu¨la**	**0.39**	**338**	*e*PG	**Pg**	**07 20 33.9**	**-0.1**
DALY				*e*SG	**Sg**	**07 20 38.9**	**-0.2**
DALY	**Dalyan (Mu¨la**	**0.39**	**338**	*e*Pg	**Pg**	**07 20 33.9**	**-0.1**
DALY				*e*Sg	**Sg**	**07 20 38.9**	**-0.2**
TURN	**Turunc**	**0.46**	**336**	*i* P	**Pb**	**07 20 36.5**	**+0.1**
TURN				*i* S	**Sb**	**07 20 44.6**	**+1.4**
TURN	**Turunc**	**0.46**	**336**	P	**Pb**	**07 20 36.5**	**+0.1**
TURN				S	**Sb**	**07 20 44.6**	**+1.4**
AKAS	**Kas**	**0.66**	**110**	*i* P	**Pg**	**07 20 39.4**	**+0.3**
AKAS				*i* S	**Sn**	**07 20 52.4**	**+0.1**
AKAS	**Kas**	**0.66**	**110**	P	**Pg**	**07 20 39.4**	**+0.3**
AKAS				S	**Sn**	**07 20 52.4**	**+0.1**
YER	**Yerkesik**	**0.81**	**327**	*e*PG	**Pg**	**07 20 41.8**	**-0.1**
YER				*e*SG	**Sg**	**07 20 52.5**	**0.0**
YER	**Yerkesik**	**0.81**	**327**	*e*Pg	**Pg**	**07 20 41.8**	**-0.1**
YER				*e*Sg	**Sg**	**07 20 52.5**	**0.0**
BDRM	**Kayabasi**	**1.27**	**299**	*i* P	Pn	07 20 45.6	-4.5
BDRM				*i* S	**Sb**	**07 21 05.9**	**-0.8**
BDRM	**Kayabasi**	**1.27**	**299**	P	Pn	07 20 45.6	-4.5
BDRM				S	**Sb**	**07 21 05.9**	**-0.8**
NIS1	**Nisyros Isl.**	**1.34**	**277**	*e*PN	**Pb**	**07 20 51.6**	**0.0**
NIS1	**Nisyros Isl.**	**1.34**	**277**	*e*Pn	**Pb**	**07 20 51.6**	**0.0**
BODT	**Bodrum**	**1.37**	**297**	*e*PN	**Pn**	**07 20 51.4**	**0.0**
BODT	**Bodrum**	**1.37**	**297**	*e*Pn	**Pn**	**07 20 51.4**	**0.0**
AYDN	**Tasoluk**	**1.43**	**328**	*i* P	**Pb**	**07 20 53.0**	**0.0**
AYDN				*i* S	**Sb**	**07 21 11.3**	**+0.2**
AYDN	**Tasoluk**	**1.43**	**328**	P	**Pb**	**07 20 53.0**	**0.0**
AYDN				S	**Sb**	**07 21 11.4**	**+0.2**

NNC ***15*** *07:22:11.2±0.5,50.°02N×78.°77E,h0km,mb3.5,mpv3.1, Error ellipse: s-maj=6.0km s-min=2.4km az=90.0, Suspected Mining explosion.*
SOME ***15*** *07:22:51.5,48.°68N×79.°33E,h0km*

ISC 15 07:22:17.0±0.9,50.°32N±0.°03×78.°31E±0.°06,h0km,n11, σ2°51/16,10C-4D,Eastern Kazakhstan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KURBB	**Kurchatov Arra**	**0.34**	**25**	⇑P	**Pg**	**07 22 23.4**	**-0.1**
	39nm,0.5s						
KURBB				⇑S	**Sb**	**07 22 32.1**	**+0.1**
	55nm,0.4s						
KURK	**Kurchatov**	**0.45**	**27**	⇓P	**Pg**	**07 22 24.5**	**-1.1**
	32nm,0.4s						
KURK				⇑S	**Sb**	**07 22 34.5**	**-0.5**
	43nm,0.4s						
MK31	**Makanchi Array**	**4.41**	**142**	⇑Pg	**Pn**	**07 23 23.8**	**-1.4**
	1.0nm,0.3s,baz=321,slow=14,SNR=21						
MK31				⇑Lg	Lg	07 24 19.3	
	9.4nm,0.5s,baz=330,slow=27,SNR=10						
OTUK	**Ortayu**	**4.42**	**244**	⇑Pn	**Pn**	**07 23 23.0**	**-2.4**
	0.8nm,0.2s						
OTUK				⇓Pg	**Pb**	**07 23 35.6**	**+0.1**
	1.8nm,0.5s						
OTUK				⇑Sn	**Sn**	**07 24 15.8**	**-1.7**
	1.3nm,0.4s						
OTUK				⇑Lg	Lg	07 24 36.3	
	5.5nm,0.4s						
ZSN	**Zaisan**	**4.94**	**123**	*e*P	Pg	07 23 56.5	+4.8
ZSN				*e*S	**Sb**	**07 24 43.0**	**-1.3**
KAPS	**Kapalarasan**	**5.08**	**172**	*e*P	**Pg**	**07 23 54.2**	**-0.2**
	0.9nm,0.4s						
KAPS				*e*S	**Sn**	**07 24 39.4**	**+5.4**
	10.0nm,0.6s						
BVA0	**Borovoye Array**	**5.62**	**302**	⇓Sn	**Sn**	**07 24 51.5**	**+4.4**
	1.2nm,0.5s,baz=103,slow=23,SNR=4.4						
BVA0				⇑Lg	Lg	07 25 24.9	
	1.8nm,0.5s,baz=113,slow=24,SNR=3.7						
DJR	**Jarkent**	**6.07**	**170**	*e*P	**Pg**	**07 24 13.5**	**+0.2**
	2.7nm,0.5s						
DJR				*e*S	**Sb**	**07 25 12.7**	**-4.2**
	10nm,0.5s						
PDGK	**Podgornoye**	**7.04**	**173**	⇓Lg	Lg	07 25 47.3	
	2.4nm,0.5s						
SATY	**Saty**	**7.26**	**179**	*e*P	**Pg**	**07 24 36.8**	**+0.7**
	1.2nm,0.1s						
SATY				*e*S	**Sb**	**07 25 52.2**	**+1.1**
	7.4nm,0.5s						
AAK	**Ala-Archa**	**8.12**	**200**	⇑Lg	Lg	07 26 25.7	
	0.8nm,0.4s						

DJA 15 07:34:06.2±0.9,9.°S±7.°×11.°0E±.°,h10km,M3.5/3,MLv3.5/3, Jawa

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
UGM	**Wanagama**	**1.02**	**10**	P	Pg	07 34 24.5	-1.3
UGM				S	Sb	07 34 40.0	+0.6
PCJI	**Pacitan**	**1.10**	**49**	P	Pb	07 34 25.0	-2.3
PCJI				S	Sg	07 34 40.9	-0.7
WOJI	**Wonogiri, Jawa**	**1.22**	**28**	P	Pn	07 34 27.3	-2.0
WOJI				S	Sb	07 34 44.7	-0.5
PWJI	**Pagerwojo**	**1.70**	**58**	P	Pn	07 34 33.6	-2.4
PWJI				S	Sn	07 34 55.3	-2.5
SMRI	**Semarang**	**1.86**	**3**	P	Pn	07 34 37.5	-0.7
NGJI	**Ngawi**	**1.90**	**36**	P	Pn	07 34 38.6	-0.1
KPJI	**Karang Pucung**	**2.10**	**318**	P	Pn	07 34 41.3	-0.2
CMJI	**Cimerak**	**2.19**	**301**	P	Pn	07 34 42.8	+0.2
UWJI	**Ujung Watu**	**2.56**	**14**	P	Pn	07 34 47.5	-0.2

NIED ***15*** *07:40:00,37.°80N×144.°20E,h5km,Mw3.9 Best double couple: M₀8.87000×10¹⁴ NP1:φs34.00000°,δ22.00000°, λ-82.00000°. NP2:φs206.00000°,δ68.00000°, λ-93.00000°.*
IDC ***15*** *07:40:24.5±0.7,37.°48N×144.°43E,h0km,mb3.9/13, mb1 4.1/17,mb1mx3.9/47,mbtmp4.0/17,ML3.8/3,MS2.8/3, Ms1 2.8/3,ms1mx2.5/44,Error ellipse: s-maj=19.7km s-min=13.6km az=119.0*
NEIC ***15*** *07:40:25.8±4.7,37.°53N×144.°48E,h8km±29km,mb4.3/6, Error ellipse: s-maj=14.4km s-min=7.6km az=121.0*
ISCJB ***15*** *07:40:28.0±0.5,37.°62N±0.°04×144.°28E±0.°04,h33km, mb4.0/17,Error ellipse: s-maj=5.5km s-min=4.6km az=166.7*
JMA ***15*** *07:40:29.2±0.2,37.°75N×144.°23E,h40km,M4.2*

ISC 15 07:40:30.4±0.7,37.°71N±0.°05×144.°26E±0.°07,h35km,n45, σ1°77/53,mb4.1/17,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**2.41**	**289**	P	**Pn**	**07 41 07.2**	**-0.1**
JIO				S	**Sn**	**07 41 35.1**	**-0.5**
OFUJ	**Ofunato**	**2.45**	**305**	P	**Pn**	**07 41 07.6**	**-0.3**
OFUJ				S	**Sn**	**07 41 35.9**	**-0.7**
JMK	**Ichinoseki**	**2.69**	**298**	S	**Sn**	**07 41 42.3**	**-0.2**
JOM	**Ohasama**	**2.92**	**308**	P	**Pn**	**07 41 14.5**	**+0.2**
JOM				S	**Sn**	**07 41 48.8**	**+0.8**
JFT	**Otama**	**3.12**	**268**	P	**Pn**	**07 41 17.4**	**+0.3**
JFT				S	**Sn**	**07 41 52.9**	**-0.2**
JYK	**Kaneyama**	**3.29**	**293**	P	**Pn**	**07 41 20.1**	**+0.6**
JYK				S	**Sn**	**07 41 58.6**	**+1.2**
JANG	**Nango**	**3.41**	**322**	S	**Sn**	**07 41 59.1**	**-1.2**
ERM	**Erimo**	**4.38**	**349**	*e*Pn	**Pn**	**07 41 35.2**	**+0.8**
ERM				*e*Sn	**Sn**	**07 42 22.0**	**-2.2**
JOT	**Ohata**	**4.43**	**327**	*e*S	**Sn**	**07 42 23.2**	**-2.1**
JRY	**Ryogami san**	**4.61**	**250**	P	**Pn**	**07 41 36.0**	**-1.6**
JRY				S	**Sn**	**07 42 25.6**	**-4.4**
JOD2	**Odawara 2**	**4.83**	**241**	P	**Pn**	**07 41 40.0**	**-0.5**
JOD2				S	**Sn**	**07 42 30.2**	**-5.0**
JCH	**Churui**	**4.95**	**352**	P	**Pn**	**07 41 41.3**	**-0.9**
JCH				*e*S	**Sn**	**07 42 35.4**	**-2.8**
MJAR	**Matsushiro Arr**	**4.97**	**258**	Pn	**Pn**	**07 41 43.2**	**+0.7**
	3.4nm,0.3s,baz=94,slow=16,SNR=15						
MJAR				Sn	**Sn**	**07 42 40.4**	**+1.7**
	2.1nm,0.3s,baz=105,slow=21,SNR=8.4						
MJAR				LR	LR	07 43 46.5	
	comp=Z,101nm,18.2s,baz=100,slow=40						
MAJO	**Matsushiro**	**4.97**	**258**	*e*Pn	**Pn**	**07 41 43.6**	**+1.1**
	16nm,0.8s						
MAT	**Matsushiro**	**4.97**	**258**	P	**Pn**	**07 41 43.3**	**+0.8**
MAT				S	**Sn**	**07 42 38.6**	**-0.2**
NEM2	**Nemuro 2**	**5.76**	**11**	P	**Pn**	**07 41 50.5**	**-2.9**
NEM2				*e*S	**Sn**	**07 42 52.8**	**-5.4**
JHJ	**Hachijo jima 2**	**5.86**	**220**	P	**Pn**	**07 41 52.7**	**-2.0**
	35nm,0.3s,baz=58,slow=19,SNR=4.1						
JHJ				Sn	**Sn**	**07 43 00.0**	**-0.5**
	56nm,0.3s,baz=235,slow=19,SNR=2.5						
ASAJ	**Asahikawa**	**6.52**	**349**	Pn	**Pn**	**07 42 04.2**	**+0.3**
	1.1nm,0.3s,baz=200,slow=14,SNR=4.1						
ASAJ				Sn	**Sn**	**07 43 15.1**	**-1.9**
	0.6nm,0.3s,baz=37,slow=23,SNR=4.0						
ASAJ				LR	LR	07 44 51.1	
	comp=Z,55nm,18.2s,baz=247,slow=39						
CBIJ	**Chichi jima**	**10.72**	**190**	Pn	Pn	07 42 55.1	-6.3
CBIJ				Sn	Sn	07 44 45.1	-15
JCJ	**Chichijima**	**10.72**	**190**	Pn	Pn	07 42 55.1	-6.3
	baz=286,slow=20						
JCJ				Sn	Sn	07 44 45.1	-15
	baz=300,slow=20						
USRK	**Ussuriysk Ar.**	**11.31**	**309**	Pn	Pn	07 43 13.3	+3.9
	0.1nm,0.3s,baz=118,slow=14,SNR=2.6						
KSRS	**Korea Array**	**12.96**	**274**	LR	LR	07 48 25.9	
	comp=Z,41nm,18.7s,baz=270,slow=37						
KLR	**Kul'dur**	**14.64**	**326**	Pn	**P**	**07 44 02.8**	**+2.1**
	0.1nm,0.3s,baz=145,slow=12,SNR=3.9						
SEY	**Seymchan**	**25.74**	**9**	P	**P**	**07 45 58.2**	**+0.9**
	0.4nm,0.2s,baz=191,slow=13,SNR=3.9						
H11N2	**WAKE ISLAND Hy**	**26.63**	**126**	T	T	08 13 37.9	
	baz=317,slow=74						
H11N1	**WAKE ISLAND Hy**	**26.64**	**126**	T	T	08 13 38.5	
	baz=317						
H11N3	**WAKE ISLAND Hy**	**26.64**	**126**	T	T	08 13 37.9	
	baz=317,slow=74						
ZALV	**Zalesovo Beam**	**43.14**	**312**	P	**P**	**07 48 28.4**	**+1.2**
	0.5nm,0.6s,baz=72,slow=4.7,SNR=2.6						
ZALV				PcP	**PcP**	**07 50 14.9**	**-1.5**
	1.2nm,0.8s,baz=73,slow=5.1,SNR=4.1						
MKAR	**Makanchi Array**	**45.68**	**302**	P	**P**	**07 48 49.2**	**+1.6**
	1.2nm,0.8s,baz=88,slow=10,SNR=13						
KURK	**Kurchatov**	**47.30**	**308**	*e*P	**P**	**07 49 01.1**	**+0.9**
	2.8nm,0.6s						
KURBB	**Kurchatov Arra**	**47.37**	**308**	P	**P**	**07 49 01.9**	**+1.1**
	2.4nm,0.5s,baz=82,slow=7.9,SNR=31						
ILAR	**Eielson Array**	**47.71**	**33**	P	**P**	**07 49 03.6**	**+0.3**
	1.4nm,0.7s,baz=265,slow=6.7,SNR=20						
TKM2	**Tokmak 2**	**51.30**	**299**	*e*P	**P**	**07 49 33.0**	**+1.8**
	3.4nm,0.9s						
INK	**Inuvik**	**52.75**	**28**	P	**P**	**07 49 42.4**	**+1.1**
	0.5nm,0.5s,baz=296,slow=6.8,SNR=6.9						
INK	**Inuvik**	**52.75**	**28**	*e*P	**P**	**07 49 41.9**	**+0.6**
	1.3nm,0.9s						
WRAB	**Tennant Creek**	**58.09**	**191**	*e*P	**P**	**07 50 18.2**	**-2.0**
	4.0nm,0.9s						
WRA	**Warramunga Arr**	**58.10**	**191**	P	**P**	**07 50 18.0**	**-2.3**
	3.0nm,0.8s,baz=11,slow=7.2,SNR=26						
RES	**Resolute Bay**	**61.37**	**15**	P	**P**	**07 50 42.6**	**+0.4**
	1.3nm,0.9s,baz=245,slow=4.2,SNR=5.3						
RES	**Resolute Bay**	**61.37**	**15**	*e*P	**P**	**07 50 42.8**	**+0.6**
	2.2nm,1.1s						
ASAR	**Alice Springs**	**61.82**	**191**	P	**P**	**07 50 43.9**	**-1.9**
	1.0nm,0.8s,baz=11,slow=5.8,SNR=14						
YKA	**Yellowknife Ar**	**62.08**	**31**	P	**P**	**07 50 46.0**	**-1.1**
	0.2nm,0.7s,baz=296,slow=6.6,SNR=4.5						
NVAR	**Mina Array Bea**	**72.76**	**55**	P	**P**	**07 51 56.6**	**+1.2**
	1.5nm,0.7s,baz=286,slow=6.4,SNR=4.5						
AKASG	**Malin Array Be**	**75.13**	**323**	P	**P**	**07 52 09.3**	**+0.7**
	0.8nm,0.6s,baz=48,slow=6.2,SNR=5.5						
PDAR	**Pinedale Array**	**75.57**	**47**	P	**P**	**07 52 11.5**	**-0.2**
	0.4nm,0.8s,baz=318,slow=2.0,SNR=4.4						
ECSD	**EROS Data Cent**	**81.97**	**40**	*e*P	**P**	**07 52 46.3**	**-0.3**
	3.2nm,1.0s						

IDC ***15*** *07:41:40.2±24.0,34.°67N×72.°69E,h161km±102km, mb2.9/2,mb1 3.0/3,mb1mx2.7/49,mbtmp3.3/3,Error ellipse: s-maj=552.2km s-min=42.8km az=142.0*
ISCJB ***15*** *07:41:53.4±1.4,36.°8N±0.°1×70.°9E±0.°2,h200km,mb2.9/2, Error ellipse: s-maj=21.5km s-min=11.3km az=27.1*
NNC ***15*** *07:41:56.6±2.7,37.°11N×70.°74E,h0km,mb3.6,mpv3.2, Error ellipse: s-maj=21.3km s-min=19.0km az=145.0*

ISC 15 07:41:54.3±1.7,36.°8N±0.°1×71.°0E±0.°2,h200km,n7, σ1°10/11,4C-4D,Hindu Kush region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SFK	**Sufi-Kurgan**	**3.82**	**31**	⇑Pn	**Pn**	**07 42 54.6**	**+0.6**
	2.1nm,0.2s						
SFK				⇓Sn	**Sn**	**07 43 39.7**	**-1.3**
	29nm,0.6s						
MNAS	**Manas**	**5.84**	**11**	⇑Pn	**Pn**	**07 43 20.4**	**+0.8**
	0.9nm,0.3s						
MNAS				⇓Sn	**Sn**	**07 44 25.7**	**-1.5**
	3.0nm,0.5s						
KK31	**Karatay Array**	**6.35**	**357**	⇓Pn	**Pn**	**07 43 27.3**	**+1.4**
	0.5nm,0.3s,baz=180,slow=13,SNR=18						
KK31				⇑Sn	**Sn**	**07 44 37.9**	**-0.8**
	0.9nm,0.4s,baz=182,slow=21,SNR=7.5						
AAK	**Ala-Archa**	**6.47**	**24**	⇓Pn	**Pn**	**07 43 28.5**	**+0.8**
	1.1nm,0.4s						
AAK				⇑Sn	**Sn**	**07 44 41.9**	**+0.1**
	3.4nm,0.6s						
MKAR	**Makanchi Array**	**13.11**	**37**	P	**Pn**	**07 44 53.1**	**+0.1**
	0.1nm,0.3s,baz=213,slow=12,SNR=3.4						
TORD	**Torodi Ar. Bea**	**65.69**	**268**	P	**P**	**07 52 16.5**	**-1.1**
	0.2nm,0.5s,baz=49,slow=6.2,SNR=4.1						
YKA	**Yellowknife Ar**	**80.99**	**3**	P	**P**	**07 53 47.0**	**+0.8**
	0.1nm,0.4s,baz=349,slow=5.4,SNR=7.1						

BJI ***15*** *07:44:46.0,26.°66N×102.°94E,h12km,mb4.7/50,mB4.8/31, ML4.6/14,Ms4.5/54,Ms7 4.2/51*
ISCJB ***15*** *07:44:47.2±1.2,26.°70N±0.°02×103.°09E±0.°03,h30km±8km, mb4.7/127,MS3.8/21,Error ellipse: s-maj=4.5km s-min=3.5km az=14.6*
BKK ***15*** *07:44:48.0±0.3,27.°N±4.°×10.°3E±.°,h10km,M4.7/21, mB5.1/7,mb4.8/21,MLv4.9/4,Mw(mB)4.5/7,Mwp5.0/1*
MOS ***15*** *07:44:48.2±1.1,26.°67N×103.°13E,h41km,mb5.0/47,Error ellipse: s-maj=8.4km s-min=5.1km az=99.7*
IDC ***15*** *07:44:48.9±3.5,26.°68N×103.°10E,h33km±27km,mb4.3/32, mb1 4.3/33,mb1mx4.2/50,mbtmp4.4/33,ML4.4/1,MS3.8/17, Ms1 3.8/17,ms1mx3.6/53,Error ellipse: s-maj=12.4km s-min=9.8km az=74.0*
NEIC ***15*** *07:44:50.6±0.6,26.°69N×103.°06E,h47km±5km,mb4.8/68, Error ellipse: s-maj=4.7km s-min=3.5km az=84.0*
NEIC Felt at Xichang.

ISC 15 07:44:46.8±0.7,26.°68N±0.°03×103.°09E±0.°04,h17km±4km, n280,σ1°64/284,mb4.8/127,MS3.8/22,8C-5D,Yunnan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KMI	**Kunming**	**1.58**	**191**	Pn	**Pn**	**07 45 12.8**	**-1.5**
KMI				Sn	**Sn**	**07 45 31.8**	**-2.7**
KMI				Sg	**Sb**	**07 45 32.9**	**-2.7**
KMI				smax	smax		
	comp=N,7µm,0.6s						
KMI				smax	smax		
	comp=E,11µm,1.0s						
GYA	**Guiyang**	**3.21**	**93**	Pn	**Pn**	**07 45 36.8**	**+0.2**
GYA				Pg	**Pb**	**07 45 43.0**	**-0.5**
GYA				Sn	**Sn**	**07 46 15.6**	**+1.0**
GYA				Sg	**Sb**	**07 46 24.5**	**+2.1**
GYA				smax	smax		
	comp=N,190nm,1.0s						
GYA				smax	smax		
	comp=E,320nm,1.0s						
GYA				LR	LR		
	comp=N,9µm,6.2s						
GYA				LR	LR		
	comp=E,8µm,5.3s						
GYA				LR	LR		
	comp=Z,7µm,6.9s						
CD2	**Chengdu**	**4.25**	**8**	Pn	**Pn**	**07 45 53.3**	**+2.4**
CD2				Pg	**Pg**	**07 46 05.8**	**-2.5**
CD2				Sn	**Sn**	**07 46 42.8**	**+2.7**
CD2				Sg	**Sg**	**07 47 01.8**	**-1.6**
CD2				smax	smax		
	comp=N,2µm,1.0s						
CD2				smax	smax		
	comp=E,3µm,0.8s						
CD2				LR	LR		
	comp=N,8µm,4.0s						
CD2				LR	LR		
	comp=Z,4µm,9.0s						
ENH	**Enshi**	**6.67**	**56**	*e*Pn	Pn	07 46 27.3	+3.2
ENH				*e*Sn	**Sn**	**07 47 41.6**	**+1.9**
CMMT	**Chiang Mai**	**8.71**	**207**	P	**Pn**	**07 46 55.3**	**+3.2**
	19nm,1.4s,487nm0.1nm						
CHTO	**Chiang Mai**	**8.71**	**207**	P	Pn	07 46 55.4	+3.3
	86nm,1.4s,1µm0.5nm						
CHTO	**Chiang Mai**	**8.71**	**207**	*e*P	**Pn**	**07 46 54.2**	**+2.1**
CHTO	**Chiang Mai**	**8.71**	**207**	*e*Pn	**Pn**	**07 46 54.2**	**+2.1**
LAMP	**Lampang**	**8.72**	**202**	P	Pn	07 46 56.1	+3.8
	6.4nm,0.8s,162nm0.0nm						
XAN	**Xi'an**	**8.89**	**

NJ2	**Nanjing**	**14.75**	**65**	*e*P		**Pn**	**07 48 11.8**	**-2.8**
NJ2				S		**Sn**	**07 50 52.5**	**-5.2**
NJ2				pmax	pmax			
	comp=Z,18nm,0.8s							
NJ2				LR	LR			
	comp=N,470nm,14.1s							
NJ2				LR	LR			
	comp=E,1μm,15.0s							
NJ2				LR	LR			
	comp=Z,1μm,13.4s							
BTO	**Baotou**	**15.03**	**21**	*e*P		**Pn**	**07 48 13.8**	**-4.7**
JIRN	**Jiri**	**15.07**	**278**	*e*P		**Pn**	**07 48 15.7**	**-3.7**
TIA	**Tai'an**	**15.27**	**48**	*e*P		**Pn**	**07 48 23.0**	**+1.3**
TIA				pmax	pmax			
	comp=Z,30nm,0.8s							
GUN	**Gumba**	**15.35**	**278**	*e*P		**Pn**	**07 48 18.8**	**-4.2**
	comp=Z,157nm,0.8s							
PKIN	**Phulchoki**	**15.78**	**277**	*e*P		Pn	07 48 24.0	-4.5
	comp=Z,47nm,0.6s							
HHC	**Hu-ho-hao-te**	**15.78**	**24**	*e*P		**Pn**	**07 48 27.8**	**-0.5**
HHC				S		**Sn**	**07 51 21.8**	**-1.0**
HHC				pmax	pmax			
	comp=Z,19nm,0.9s							
HHC				pmax	pmax			
	comp=Z,90nm,4.1s							
HHC				LR	LR			
	comp=Z,2μm,9.3s							
HHC				LR	LR			
	comp=Z,3μm,8.3s							
HHC				LR	LR			
	comp=Z,2μm,6.3s							
KKN	**Kakani**	**15.88**	**278**	*e*P		**Pn**	**07 48 25.6**	**-4.2**
	comp=Z,139nm,0.8s							
DMN	**Daman**	**16.03**	**277**	*e*P		**Pn**	**07 48 28.6**	**-3.2**
	comp=Z,76nm,0.7s							
SSLB	**Suanglung**	**16.42**	**96**	*e*Pn		**Pn**	**07 48 36.5**	**-0.1**
GKN	**Gorkha**	**16.45**	**279**	*e*P		**Pn**	**07 48 33.5**	**-3.5**
	comp=Z,110nm,1.0s							
BJT	**Baijiatuau**	**17.19**	**36**	*e*P		**P**	**07 48 47.8**	**+0.2**
BJT				pmax	pmax			
	comp=Z,54nm,1.1s							
BJT	**Baijiatuau**	**17.19**	**36**	*e*Pn		**P**	**07 48 47.8**	**+0.2**
	comp=Z,54nm,1.1s							
BJI	**Beijing**	**17.21**	**36**	P		**P**	**07 48 47.8**	**0.0**
BJI				pP		**sP**	**07 48 54.1**	**-0.8**
BJI				S		**S**	**07 52 04.1**	**-2.2**
BJI				pmax	pmax			
	comp=Z,35nm,1.1s							
BJI				pmax	pmax			
	comp=Z,190nm,3.3s							
BJI				LR	LR			
	comp=Z,700nm,16.5s							
KOLN	**Koldanda**	**17.37**	**278**	*e*P		**Pn**	**07 48 44.9**	**-3.7**
	comp=Z,58nm,0.7s							
PYUN	**Piuthan**	**17.90**	**279**	*e*P		**Pn**	**07 48 51.9**	**-3.4**
	comp=Z,141nm,0.8s							
SURT	**Suratani**	**18.09**	**194**	P		P	07 49 06.5	+8.7
DL2	**Dalian**	**19.74**	**47**	P		**Pn**	**07 49 19.5**	**+2.2**
DL2				pmax	pmax			
	comp=Z,46nm,1.0s							
WMQ	**Urumqi**	**21.16**	**328**	P		**P**	**07 49 33.0**	**+1.8**
WMQ				pP		pP	07 49 37.5	+1.4
WMQ				sP		sP	07 49 39.8	+1.5
WMQ				S		**S**	**07 53 21.5**	**-4.4**
WMQ				SS		**SnSn**	**07 53 56.0**	**+8.1**
WMQ				pmax	pmax			
	comp=Z,11nm,0.6s							
WMQ				pmax	pmax			
	comp=Z,100nm,5.2s							
WMQ				LR	LR			
	comp=Z,360nm,11.2s							
WMQ				LR	LR			
	comp=Z,210nm,9.8s							
WMQ				LR	LR			
	comp=Z,100nm,16.8s							
KTGM	**Kuala Trenggan**	**21.24**	**180**	⇑P		**P**	**07 49 34.5**	**+2.4**
SONM	**Songino Array**	**21.27**	**6**	P		**P**	**07 49 32.9**	**+0.5**
	comp=Z,6.7nm,0.6s,baz=188,slow=11,SNR=24							
SONA1	**Songino Array**	**21.29**	**6**	*e*P		**P**	**07 49 32.9**	**+0.3**
ULN	**Ulaanbaatar**	**21.37**	**7**	*e*P		**P**	**07 49 33.4**	**-0.1**
ULN				pmax	pmax			
	comp=Z,172nm,1.0s							
ULN	**Ulaanbaatar**	**21.37**	**7**	*e*P		**P**	**07 49 33.4**	**-0.1**
	comp=Z,172nm,1.0s							
KULM	**Kulim**	**21.40**	**187**	⇓P		**P**	**07 49 35.7**	**+1.9**
KULM	**Kulim**	**21.40**	**187**	*e*P		**P**	**07 49 34.5**	**+0.7**
	comp=Z,62nm,1.8s							
LHMI	**Lhok Sumawe**	**22.13**	**196**	P		**P**	**07 49 44.5**	**+2.9**
IPM	**Ipoh**	**22.17**	**185**	⇑P		**P**	**07 49 42.6**	**+0.5**
IPM	**Ipoh**	**22.17**	**185**	*e*P		**P**	**07 49 41.6**	**-0.5**
	comp=Z,16nm,0.6s							
SNY	**Shenyang**	**22.61**	**43**	⇓P		**P**	**07 49 50.5**	**+3.8**
SNY				S		**S**	**07 53 52.4**	**-1.2**
SNY				pmax	pmax			
	comp=Z,20nm,1.4s							
SNY				pmax	pmax			
	comp=Z,130nm,3.5s							
SNY				LR	LR			
	comp=Z,250nm,18.0s							
SNY				LR	LR			
	comp=Z,360nm,17.7s							
SNY				LR	LR			
	comp=Z,340nm,12.6s							
NDI	**New Delhi**	**22.98**	**281**	*e*P		P	07 49 45.0	-5.7
TSI	**Tuntungan**	**23.45**	**191**	P		**P**	**07 49 56.7**	**+1.2**
KSAR	**Wonju Array Be**	**23.53**	**57**	P		**P**	**07 49 56.0**	**-0.1**
KSAR	**Wonju Array Be**	**23.53**	**57**	P		**P**	**07 49 56.0**	**-0.1**
KSRS	**Korea Array**	**23.56**	**57**	P		**P**	**07 49 56.0**	**-0.4**
	comp=Z,6.7nm,0.7s,baz=245,slow=10,SNR=11							
KSRS				LR	LR		08 00 08.9	
	comp=Z,237nm,19.5s,baz=280,slow=39							
KSRS	**Korea Array**	**23.56**	**57**	P		**P**	**07 49 56.0**	**-0.4**
KSRS				pmax	pmax			
	comp=Z,3.0nm,0.6s							
KSRS				MLR	MLR			
	comp=Z,237nm,19.5s							
KCSI	**Kotacane, Aceh**	**23.59**	**193**	P		**P**	**07 49 59.4**	**+2.6**
	comp=Z,20nm,1.4s							
ZAK	**Zakamensk**	**23.66**	**0**	*e*P		**P**	**07 49 57.7**	**+0.3**
ZAK				pmax	pmax			
	comp=Z,14nm,1.5s							
TPTI		**23.97**	**195**	P		**P**	**07 49 59.7**	**-0.7**
	comp=Z,28nm,0.7s							
KKM	**Kota Kinabalu**	**24.04**	**146**	⇓P		**P**	**07 50 02.4**	**+1.1**
KKM	**Kota Kinabalu**	**24.04**	**146**	*e*P		**P**	**07 50 02.3**	**+1.0**
	comp=Z,50nm,1.0s							
PSI	**Prapat**	**24.08**	**190**	P		**P**	**07 50 01.7**	**0.0**
	comp=Z,7.3nm,0.7s,baz=356,slow=7.9,SNR=10							
PSI	**Prapat**	**24.08**	**190**	*e*P		**P**	**07 50 03.7**	**+2.1**
PSI				pmax	pmax			
	comp=Z,11nm,0.9s							
PSI	**Prapat**	**24.08**	**190**	*e*P		**P**	**07 50 03.7**	**+2.1**
	comp=Z,11nm,0.9s							
HYB	**Hyderabad**	**24.50**	**253**	*i* P		**P**	**07 50 04.5**	**-0.9**
KGM	**Kluang**	**24.53**	**179**	⇑P		**P**	**07 50 06.5**	**+0.9**
MYKOM	**Kota Tinggi**	**24.76**	**178**	⇑P		**P**	**07 50 09.4**	**+1.7**
MYKOM	**Kota Tinggi**	**24.76**	**178**	*e*P		**P**	**07 50 08.9**	**+1.2**
	comp=Z,18nm,0.9s							
CN2	**Changchun**	**24.88**	**41**	*e*P		**P**	**07 50 09.4**	**+0.8**
CN2				*e*S		**S**	**07 54 27.8**	**-3.1**
CN2				pmax	pmax			
	comp=Z,20nm,0.7s							
CN2				pmax	pmax			
	comp=Z,200nm,3.0s							
JNU	**Nakatsue**	**24.89**	**68**	P		**P**	**07 50 08.9**	**+0.1**
	comp=Z,11nm,0.9s,baz=109,slow=5.3,SNR=3.9							
JNU	**Nakatsue**	**24.89**	**68**	*e*P		**P**	**07 50 09.9**	**+1.1**
	comp=Z,55nm,1.4s							
TLY	**Talaya**	**24.97**	**1**	P		**P**	**07 50 08.4**	**-1.0**
	comp=Z,1.3nm,0.4s,baz=40,slow=3.5,SNR=4.0							
TLY				LR	LR		08 00 35.2	
	comp=Z,250nm,18.1s,baz=172,slow=38							
TLY	**Talaya**	**24.97**	**1**	*e*P		**P**	**07 50 05.4**	**-3.9**
TLY				pmax	pmax			
	comp=Z,4.0nm,1.0s							
TLY	**Talaya**	**24.97**	**1**	*e*P		**P**	**07 50 05.9**	**-3.4**
	comp=Z,8.6nm,1.1s							
MOY	**Mondy**	**25.00**	**357**	*e*P		**P**	**07 50 10.2**	**+0.5**
MOY				pmax	pmax			
	comp=Z,16nm,1.7s							
PDGK	**Podgornoye**	**25.35**	**317**	P		**P**	**07 50 13.5**	**+0.7**
PDGK				pmax	pmax			
	comp=Z,71nm,0.9s							
SBUM	**Sibu**	**25.64**	**158**	⇑P		**P**	**07 50 16.9**	**+1.3**
SBUM	**Sibu**	**25.64**	**158**	*e*P		**P**	**07 50 17.3**	**+1.6**
	comp=Z,18nm,0.9s							
TPRI	**Tanjung Pinang**	**25.65**	**177**	P		**P**	**07 50 17.8**	**+2.0**
GSI	**Gunungsitoli**	**25.78**	**193**	*e*P		**P**	**07 50 16.8**	**-0.2**
	comp=Z,12nm,0.6s							
MKAR	**Makanchi Array**	**25.95**	**326**	P		**P**	**07 50 18.2**	**-0.1**
	comp=Z,8.3nm,0.9s,baz=123,slow=9.0,SNR=43							
MKAR				PcP		**PcP**	**07 53 46.0**	**-0.6**
	comp=Z,1.4nm,0.7s,baz=130,slow=4.5,SNR=5.3							
MKAR				LR	LR		08 00 42.4	
	comp=Z,116nm,19.7s,baz=130,slow=37							
MKAR	**Makanchi Array**	**25.95**	**326**	P		**P**	**07 50 18.2**	**-0.1**
MKAR							07 53 46.0	
MKAR				pmax	pmax			
	comp=Z,4.0nm,0.6s							
MKAR				pmax	pmax			
	comp=Z,1.0nm,0.7s							
MKAR				MLR	MLR			
	comp=Z,116nm,19.7s							
MKAR	**Makanchi Array**	**25.95**	**326**	*e*P		**P**	**07 50 19.4**	**+1.1**
MKAR				PcP		**PcP**	**07 53 46.0**	**-0.6**
KSH	**Kashi**	**25.96**	**306**	P		P	07 50 23.5	+4.9
KSH				*e*pP		sP	07 50 30.8	+4.8
KSH				S		**S**	**07 54 53.5**	**+5.1**
KSH				pmax	pmax			
	comp=Z,25nm,1.0s							
KSH				LR	LR			
	comp=Z,250nm,7.2s							
KSH				LR	LR			
	comp=Z,170nm,7.1s							
KSH				LR	LR			
	comp=Z,600nm,16.4s							
MYLDM	**Lahad Datu**	**25.96**	**143**	⇓P		**P**	**07 50 20.1**	**+1.5**
MYLDM	**Lahad Datu**	**25.96**	**143**	*e*P		**P**	**07 50 20.4**	**+1.8**
	comp=Z,51nm,1.1s							
HIA	**Hailar**	**25.98**	**25**	*e*P		**P**	**07 50 21.3**	**+2.8**
HIA				pmax	pmax			
	comp=Z,41nm,0.7s							
HIA	**Hailar**	**25.98**	**25**	*e*P		**P**	**07 50 21.3**	**+2.8**
	comp=Z,41nm,0.7s							
KSM	**Kuching**	**26.01**	**163**	⇓P		**P**	**07 50 20.1**	**+1.1**
KSM	**Kuching**	**26.01**	**163**	*e*P		**P**	**07 50 19.3**	**+0.3**
	comp=Z,15nm,1.0s							
MAKZ	**Makanchi**	**26.11**	**326**	*e*P		**P**	**07 50 20.5**	**+0.8**
MAKZ				pmax	pmax			
	comp=Z,8.0nm,0.8s							
MAKZ	**Makanchi**	**26.11**	**326**	*e*P		**P**	**07 50 20.5**	**+0.8**
	comp=Z,8.0nm,0.8s							
SFK	**Sufi-Kurgan**	**27.92**	**306**	P		P	07 50 41.5	+5.2
SFK				pmax	pmax			
	comp=Z,17nm,1.1s							
AAK	**Ala-Archa**	**28.22**	**312**	P		**P**	**07 50 39.7**	**+0.8**
	comp=Z,1.7nm,0.4s,baz=140,slow=6.9,SNR=6.9							
AAK				LR	LR		08 03 23.2	
	comp=Z,400nm,19.7s,baz=108,slow=40							
AAK	**Ala-Archa**	**28.22**	**312**	*e*P		**P**	**07 50 40.7**	**+1.8**
AAK				pmax	pmax			
	comp=Z,27nm,2.0s							
AAK	**Ala-Archa**	**28.22**	**312**	*e*P		**P**	**07 50 39.7**	**+0.8**
	comp=Z,9.4nm,1.0s							
FRU	**Bishkek**	**28.22**	**312**	*e*P		**P**	**07 50 41.0**	**+2.2**
VLA	**Vladivostok**	**28.56**	**48**	*e*P		**P**	**07 50 38.7**	**-3.0**
VLA				pmax	pmax			
	comp=Z,47nm,0.8s							
EKS2	**Erkin-Say**	**28.71**	**311**	*e*P		**P**	**07 50 44.8**	**+1.6**
EKS2				pmax	pmax			
	comp=Z,7.0nm,0.8s							
EKS2	**Erkin-Say**	**28.71**	**311**	*e*P		**P**	**07 50 44.8**	**+1.6**
	comp=Z,6.9nm,0.8s							
USRK	**Ussuriysk Ar.**	**29.11**	**46**	P		**P**	**07 50 46.7**	**+0.1**
	comp=Z,12nm,0.8s,baz=246,slow=8.3,SNR=14							
USRK				LR	LR		08 03 57.0	
	comp=Z,40nm,18.7s,baz=232,slow=40							
MNAS	**Manas**	**29.50**	**310**	P		P	07 50 54.7	+4.4
MNAS				pmax	pmax			
	comp=Z,6.0nm,1.1s							
KURBB	**Kurchatov Arra**	**30.38**	**328**	P		**P**	**07 50 57.6**	**-0.2**
	comp=Z,18nm,0.8s,baz=135,slow=9.6,SNR=49							
KURBB				PcP		**PcP**	**07 53 56.0**	**-1.4**
	comp=Z,2.7nm,1.0s,baz=142,slow=1.6,SNR=4.5							
KURK	**Kurchatov**	**30.40**	**329**	*e*P		**P**	**07 50 58.0**	**0.0**
KURK							07 53 56.0	
KURK				pmax	pmax			
	comp=Z,30nm,0.8s							
KURK	**Kurchatov**	**30.40**	**329**	*e*P		**P**	**07 50 58.0**	**0.0**
	comp=Z,30nm,0.8s							
KURK				PcP		**PcP**	**07 53 56.0**	**-1.4**
ZAA0	**Zalesovo Array**	**30.40**	**339**	*e*P		**P**	**07 50 57.7**	**-0.2**
ZALV	**Zalesovo Beam**	**30.40**	**339**	P		**P**	**07 50 58.2**	**+0.3**
	comp=Z,7.4nm,0.6s,baz=147,slow=9.5,SNR=19							
ZALV				LR	LR		08 03 45.1	
	comp=Z,251nm,18.4s,baz=246,slow=37							
MDSI	**Maura Dua**	**31.00**	**178**	P		**P**	**07 51 03.9**	**+0.3**
	comp=Z,5.6nm,0.9s,comp=Z,1μm							
MJAR	**Matsushiro Arr**	**31.34**	**63**	LR		LR	08 05 04.7	
	comp=Z,183nm,19.4s,baz=250,slow=39							
KLR	**Kul'dur**	**31.58**	**37**	P		**P**	**07 51 08.5**	**+0.1**
	comp=Z,8.7nm,0.8s,baz=258,slow=8.5,SNR=32							
NVS	**Novosibirsk**	**31.66**	**338**	*e*P		**P**	**07 51 10.6**	**+1.6**
BOD	**Bodaibo**	**32.06**	**11**	*e*P		**P**	**07 51 12.2**	**-0.3**
BOD				pmax	pmax			
	comp=Z,5.0nm,1.3s							
OTUK	**Ortayu**	**32.20**	**320**	P		**P**	**07 51 11.9**	**-2.0**
OTUK				pmax	pmax			
	comp=Z,12nm,1.0s							
TTSI	**Tana Toraja**	**33.69**	**149**	P		**P**	**07 51 29.0**	**+1.9**
	comp=Z,27nm,0.8s,comp=Z,1μm							
SPSI	**Sidrap Palu**	**34.48**	**150**	P		**P**	**07 51 35.7**	**+1.7**
	comp=Z,22nm,0.9s							
JCJ	**Chichijima**	**34.78**	**80**	LR		LR	08 06 25.3	
	comp=Z,110nm,18.4s,slow=37							
KAPI	**Kappang**	**35.40**	**150**	*e*P		**P**	**07 51 42.5**	**+0.5**
	comp=Z,18nm,1.1s							
BVAR	**Borovoye Array**	**35.83**	**326**	P		**P**	**07 51 45.2**	**-0.1**
	comp=Z,1.0nm,0.4s,baz=124,slow=11,SNR=4.3							
BVAR				PcP		**PcP**	**07 54 11.2**	**-1.3**
	comp=Z,1.6nm,0.5s,baz=140,slow=3.4,SNR=5.8							
BRVK	**Borovoye**	**35.90**	**326**	*e*P		**P**	**07 51 48.7**	**+2.8**
BRVK				pmax	pmax			
	comp=Z,12nm,1.2s							
BRVK	**Borovoye**	**35.90**	**326**	*e*P		**P**		
	comp=Z,6.3nm,0.7s						**07 51 45.9**	**0.0**
ASAJ	**Asahikawa**	**36.20**	**51**	P		**P**	**07 51 47.5**	**-1.0**
	comp=Z,9.6nm,0.8s,baz=246,slow=9.0,SNR=3.7							
ZRNK	**Zerenda**	**36.49**	**325**	*e*P		**P**	**07 51 51.7**	**+0.8**
ZRNK				pmax	pmax			
	comp=Z,10.0nm,1.4s							
ZRNK	**Zerenda**	**36.49**	**325**	*e*P		**P**	**07 51 51.7**	**+0.8**
	comp=Z,10nm,1.4s							
YSS	**Yuzh-Sakhalins**	**37.14**	**46**	⇑*e*P		**P**	**07 51 54.8**	**-1.7**
YSS				*e*			07 52 01.7	
YSS				pmax	pmax			
	comp=Z,20nm,1.7s							
TWSI	**Taliwang, Sumb**	**37.67**	**157**	P		**P**	**07 52 04.0**	**+2.7**
	comp=Z,28nm,1.2s							
GEYT	**Alibeck**	**39.29**	**298**	P		**P**	**07 52 15.3**	**+0.4**
	comp=Z,11nm,0.6s,baz=116,slow=6.8,SNR=18							
GEYT				PcP		**PcP**	**07 54 23.6**	**+0.1**
	comp=Z,2.9nm,0.6s,baz=208,slow=2.8,SNR=4.0							
YAK	**Yakutsk**	**39.55**	**19**	*e*P		**P**	**07 52 16.4**	**-0.2**
YAK				pmax	pmax			
	comp=Z,13nm,0.9s							
ABKAR	**Akbulak array**	**40.08**	**316**	*e*P		**P**	**07 52 21.1**	**-0.1**
GUMO	**Guam**	**41.15**	**100**	LR		LR	08 09 54.3	
	comp=Z,96nm,19.9s,baz=268,slow=37							
AKTO	**Aktyubinsk**	**41.63**	**317**	LR		LR	08 10 28.8	
	comp=Z,94nm,21.1s,baz=135,slow=37							
ARU	**Arti**	**43.47**	**326**	P		**P**	**07 52 49.8**	**+0.9**
	comp=Z,2.6nm,0.3s,baz=113,slow=7.9							
ARU	**Arti**	**43.47**	**326**	*c i* P		**P**	**07 52 48.7**	**-0.1**
ARU							07 54 27.2	
ARU				S		**S**	**07 59 17.4**	**+1.0**
ARU				SS		**SS**	**08 02 28.2**	**-2.4**
ARU				pmax	pmax			
	comp=Z,29nm,1.2s							
ARU	**Arti**	**43.47**	**326**	*e*P		**P**	**07 52 49.5**	**+0.7**
	comp=Z,20nm,1.0s							
NRIK	**Noril'sk**	**43.65**	**352**	P		**P**	**07 52 50.3**	**+0.2**
	comp=Z,6.7nm,0.6s,baz=147,slow=7.8,SNR=8.9							
NRIK				LR	LR		08 12 10.0	
	comp=Z,198nm,18.2s,baz=228,slow=38							
SOKR	**Solikamsk**	**45.65**	**329**	*e*P		**P**	**07 53 05.4**	**-0.8**
SOKR				pmax	pmax			
	comp=Z,53nm,1.3s							
TIXI	**Tiksi**	**47.25**	**11**	P		**P**	**07 53 17.5**	**-1.0**
	comp=Z,9.3nm,0.5s,baz=208,slow=2.3,SNR=12							
TIXI	**Tiksi**	**47.25**	**11**	*e*P		**P**	**07 53 17.7**	**-0.8**
TIXI				pmax	pmax			
	comp=Z,6.0nm,0.6s							
TIXI				MLR	MLR			
	comp=Z,82nm,16.0s							
TIXI	**Tiksi**	**47.25**	**11**	*e*P		**P**	**07 53 17.5**	**-1.0**
	comp=Z,8.2nm,0.5s							
PETK	**Petropavlovsk-**	**48.03**	**41**	LR		LR	08 16 14.6	
	comp=Z,75nm,18.8s,baz=259,slow=39							
SEY	**Seymchan**	**48.39**	**28**	P		**P**	**07 53 27.6**	**0.0**
	comp=Z,2.0nm,0.6s,baz=265,slow=11,SNR=9.0							
SEY				PcP		**PcP**	**07 54 53.5**	**-0.3**
	comp=Z,4.0nm,0.8s,baz=304,slow=6.8,SNR=4.4							
MBWA	**Marble Bar**	**50.22**	**160**	*e*P		**P**	**07 53 41.8**	**-0.2**
	comp=Z,17nm,0.8s							
ZEI	**Tsey**	**50.23**	**305**	*e*P		**P**	**07 53 43.8**	**+1.6**
ZEI				pmax	pmax			
	comp=Z,13nm,0.9s							
KIV	**Kislovodsk**	**51.09**	**306**	*e*P		**P**	**07 53 48.7**	**+0.2**
KIV				*e*			07 55 42.9	
KIV				pmax	pmax			
	comp=Z,7.0nm,1.0s							
RAYN	**Ar Rayn**	**51.87**	**280**	*e*P		**P**	**07 53 52.5**	**-2.1**
	comp=Z,15nm,0.8s							
VRH	**Novokhopyorsk**	**51.91**	**315**	*e*P		**P**	**07 53 55.5**	**+1.1**
VRH				pmax	pmax			
	comp=Z,10.0nm,0.9s							
VSR	**Storozhevoye**	**53.51**	**315**	*e*P		**P**	**07 54 08.2**	**+1.9**
VSR				pmax	pmax			
	comp=Z,10.0nm,1.2s							
LPSR	**Galich'ya Gora**	**53.71**	**317**	*e*P		**P**	**07 54 10.3**	**+2.6**
LPSR				pmax	pmax			
	comp=Z,10.0nm,0.9s							
KLMR	**Klimovskoe**	**54.24**	**327**	*e*P		**P**	**07 54 10.4**	**-1.0**
KLMR				*e**PP		**sP**	**07 54 20.1**	**+1.1**
KLMR				*e*			07 55 13.2	
KLMR				pmax	pmax			
	comp=Z,36nm,1.3s							
OBN	**Obninsk**	**55.22**	**320**	*e*P		**P**	**07 54 19.6**	**+1.0**
OBN				pmax	pmax			
	comp=Z,6.0nm,1.0s							
OBN				MLR	MLR			
	comp=Z,125nm,16.0s							
WRAB	**Tennant Creek**	**55.38**	**144**	*e*P		**P**	**07 54 19.7**	**-0.5**
WRAB				pmax	pmax			
	comp=Z,28nm,0.7s							
WRAB	**Tennant Creek**	**55.38**	**144**	*e*P		**P**	**07 54 19.7**	**-0.5**
	comp=Z,28nm,0.7s							
WRA	**Warramunga Arr**	**55.38**	**144**	P		**P**	**07 54 19.9**	**-0.3**
	comp=Z,20nm,0.6s,baz=332,slow=8.1,SNR=245							
WRA				PcP		**PcP**	**07 55 20.1**	**-0.5**
	comp=Z,3.1nm,0.9s,baz=334,slow=4.1,SNR=3.1							
WB2	**Warramunga Arr**	**55.39**	**144**	*e*P		**P**	**07 54 20.0**	**-0.2**
	comp=Z,30nm,0.6s							
BILL	**Bilibino**	**55.55**	**24**	*e*P		**P**	**07 54 20.3**	**-0.5**
BILL				pmax	pmax			
	comp=Z,11nm,1.2s							
BILL				MLR	MLR			
	comp=Z,122nm,17.0s							
BILL	**Bilibino**	**55.55**	**24**	*e*P		**P**	**07 54 20.0**	**-0.8**
	comp=Z,6.6nm,0.7s							
PMG	**Port Moresby**	**55.82**	**124**	*ce*P		**P**	**07 54 24.4**	**+1.0**
PMG				pmax	pmax			
	comp=Z,171nm,1.7s							
PMG	**Port Moresby**	**55.82**	**124**	*e*P		**P**	**07 54 24.5**	**+1.0**
	comp=Z,29nm,0.8s							
BRTR	**Keskin Array B**	**58.23**	**302**	P		**P**	**07 54 40.3**	**-0.2**
	comp=Z,0.9nm,0.7s,baz=120,slow=5.2,SNR=4.0							
BRTR				LR	LR		08 23 42.7	
	comp=Z,64nm,20.2s,baz=123,slow=40							
BRTR	**Keskin Array B**	**58.23**	**302**	*i* P		**P**	**07 54 42.5**	**+2.0**
BRTR				pmax	pmax			
	comp=Z,1.0nm,0.7s							
AS31	**Alice Springs**	**58.25**	**146**	*e*P		**P**	**07 54 40.8**	**+0.3**
	comp=Z,3.3nm,0.6s							
ASAR	**Alice Springs**	**58.25**	**146**	P		**P**	**07 54 40.8**	**+0.2**
	comp=Z,13nm,0.8s,baz=326,slow=7.1,SNR=141							
ASAR				PcP		**PcP**	**07 55 31.6**	**-0.1**
	comp=Z,1.9nm,0.9s,baz=346,slow=3.8,SNR=4.5							
AS01	**Alice Springs**	**58.27**	**146**	*e*P		**P**	**07 54 40.5**	**-0.2**
AKASG	**Malin Array Be**	**59.81**	**315**	P		**P**	**07 54 49.7**	**-1.3**
	comp=Z,2.5nm,0.5s,baz=74,slow=6.3,SNR=9.3							
AKASG	**Malin Array Be**	**59.81**	**315**	*i* P		**P**	**07 54 53.2**	**+2.2**
AKASG				pmax	pmax			
	comp=Z,3.0nm,0.5s							
KIEV	**Kiev**	**59.82**	**315**	*e*P		**P**	**07 54 51.8**	**+0.7**
KIEV				pmax	pmax			
	comp=Z,1.0nm,0.8s							
VSU	**Vasula**	**60.60**	**324**	*e*P		**P**	**07 54 57.9**	**+1.6**
VSU				pmax	pmax			
	comp=Z,22nm,0.9s							
FINES	**FINESS Array B**	**60.77**	**328**	P		**P**	**07 54 57.0**	**-0.4**
	comp=Z,1.5nm,0.5s,baz=103,slow=6.1,SNR=5.5							
FINES	**FINESS Array B**	**60.77**	**328**	*i* P		**P**	**07 54 58.0**	**+0.6**
FINES				pmax	pmax			
	comp=Z,2.0nm,0.5s							
ARCES	**ARCESS Array B**	**60.94**	**337**	P		**P**	**07 54 57.5**	**-0.9**
	comp=Z,1.9nm,0.5s,baz=80,slow=7.5,SNR=17							
CTAO	**Charters Tower**	**62.56**	**134**	*e*P		**P**	**07 55 10.6**	**+0.6**
CTAO				pmax	pmax			
	comp=Z,16nm,1.0s							
CTAO	**Charters Tower**	**62.56**	**134**	*e*P		**P**	**07 55 10.6**	**+0.6**
	comp=Z,16nm,1.0s							
SPITS	**

SVW2	**Sparrevohn**	**72.24**	**30**	*e*P		**P**	**07 56 12.0**	**+1.1**
	comp=Z,10nm,1.0s							
MLY	**Manley**	**72.62**	**25**	*e*P		**P**	**07 56 13.7**	**+0.6**
	comp=Z,15nm,1.0s							
CAST	**Castle Rocks**	**72.79**	**27**	*e*P		**P**	**07 56 14.3**	**+0.3**
	comp=Z,8.3nm,0.9s							
PPLA	**Purkeypile**	**72.97**	**28**	*e*P		**P**	**07 56 15.9**	**+0.6**
	comp=Z,20nm,0.9s							
TRF	**Thorofare Moun**	**73.50**	**27**	*e*P		**P**	**07 56 19.5**	**+1.0**
	comp=Z,6.6nm,0.9s							
BFO	**Black Forest**	**73.55**	**316**	*i* P		P	07 56 23.2	+4.3
MDM	**Murphy Dome**	**73.61**	**25**	*e*P		**P**	**07 56 18.9**	**0.0**
	comp=Z,32nm,1.0s							
COLA	**College**	**73.79**	**25**	*e*P		**P**	**07 56 20.6**	**+0.7**
COLA					pmax	pmax		
	comp=Z,17nm,1.0s							
COLA	**College**	**73.79**	**25**	*e*P		**P**	**07 56 20.6**	**+0.7**
	comp=Z,17nm,1.0s							
WRH	**Wood River Hil**	**73.89**	**25**	*e*P		**P**	**07 56 21.1**	**+0.6**
	comp=Z,4.2nm,0.8s							
MCK	**McKinley**	**73.91**	**26**	*e*P		**P**	**07 56 20.6**	**-0.1**
MCK					pmax	pmax		
	comp=Z,27nm,1.8s							
MCK	**McKinley**	**73.91**	**26**	*e*P		**P**	**07 56 20.6**	**-0.1**
	comp=Z,27nm,1.8s							
CCB	**Clear Creek Bu**	**73.92**	**25**	*e*P		**P**	**07 56 20.0**	**-0.7**
	comp=Z,5.8nm,0.9s							
RND	**Reindeer**	**74.10**	**26**	*e*P		**P**	**07 56 21.3**	**-0.5**
RND					pmax	pmax		
	comp=Z,12nm,1.0s							
RND	**Reindeer**	**74.10**	**26**	*e*P		**P**	**07 56 21.3**	**-0.5**
	comp=Z,12nm,1.0s							
IL1	**Eielson Array**	**74.20**	**25**	*e*P		**P**	**07 56 20.6**	**-1.7**
ILAR	**Eielson Array**	**74.20**	**25**	P		**P**	**07 56 21.1**	**-1.2**
	comp=Z,3.2nm,1.1s,baz=272,slow=7.0,SNR=20							
ILB	**Eielson Array**	**74.20**	**25**	*e*P		**P**	**07 56 21.1**	**-1.2**
RC01	**Rabbit Creek A**	**74.81**	**29**	*e*P		**P**	**07 56 25.6**	**-0.4**
	comp=Z,11nm,0.9s							
PMR	**Palmer**	**74.84**	**28**	*e*P		**P**	**07 56 25.3**	**-0.7**
PMR					pmax	pmax		
	comp=Z,14nm,0.9s							
PMR	**Palmer**	**74.84**	**28**	*e*P		**P**	**07 56 25.3**	**-0.7**
	comp=Z,14nm,0.9s							
DHY	**Denali Highway**	**74.84**	**26**	*e*P		**P**	**07 56 25.7**	**-0.6**
	comp=Z,4.1nm,0.7s							
BRLK	**Bradley Lake**	**74.92**	**30**	*e*P		**P**	**07 56 25.2**	**-1.4**
	comp=Z,15nm,0.8s							
OHAK	**Old Harbor**	**74.92**	**33**	*e*P		**P**	**07 56 26.0**	**-0.6**
	comp=Z,12nm,0.8s							
KDAK	**Kodiak Island**	**75.02**	**32**	P		P	07 56 42.1	+15
	comp=Z,10nm,0.6s,baz=289,slow=3.2,SNR=18							
KDAK	**Kodiak Island**	**75.02**	**32**	*i* P		**P**	**07 56 26.7**	**-0.4**
SML	**Sawmill**	**75.07**	**28**	*e*P		**P**	**07 56 27.6**	**+0.2**
SML					pmax	pmax		
	comp=Z,19nm,1.0s							
SML	**Sawmill**	**75.07**	**28**	*e*P		**P**	**07 56 27.6**	**+0.2**
	comp=Z,19nm,1.0s							
SEW	**Seward**	**75.40**	**30**	*e*P		**P**	**07 56 28.8**	**-0.5**
	comp=Z,11nm,0.9s							
SCM	**Sheep Creek Mo**	**75.47**	**28**	*e*P		**P**	**07 56 30.1**	**+0.3**
SCM					pmax	pmax		
	comp=Z,11nm,1.0s							
SCM	**Sheep Creek Mo**	**75.47**	**28**	*e*P		**P**	**07 56 30.1**	**+0.3**
	comp=Z,11nm,1.0s							
PAX	**Paxson**	**75.65**	**26**	*e*P		**P**	**07 56 31.2**	**+0.4**
PAX					pmax	pmax		
	comp=Z,8.0nm,1.4s							
PAX	**Paxson**	**75.65**	**26**	*e*P		**P**	**07 56 31.2**	**+0.4**
	comp=Z,7.6nm,1.4s							
DOT	**Dot Lake**	**75.84**	**25**	*e*P		**P**	**07 56 31.8**	**-0.1**
	comp=Z,15nm,1.1s							
KLU	**Klutina**	**76.22**	**27**	*e*P		**P**	**07 56 34.4**	**+0.3**
	comp=Z,25nm,1.0s							
EGAK	**Eagle**	**76.29**	**23**	*e*P		**P**	**07 56 34.0**	**-0.4**
MENT	**Mentasta**	**76.35**	**26**	*e*P		**P**	**07 56 35.0**	**+0.2**
	comp=Z,6.1nm,1.0s							
DIV	**Divide**	**76.47**	**28**	*e*P		**P**	**07 56 35.9**	**+0.4**
	comp=Z,14nm,1.1s							
INK	**Inuvik**	**76.61**	**19**	P		**P**	**07 56 35.8**	**-0.3**
	comp=Z,9.6nm,0.9s,baz=324,slow=6.9,SNR=43							
INK	**Inuvik**	**76.61**	**19**	*e*P		**P**	**07 56 36.0**	**-0.1**
INK					pmax	pmax		
	comp=Z,13nm,0.9s							
INK	**Inuvik**	**76.61**	**19**	*e*P		**P**	**07 56 36.0**	**-0.1**
	comp=Z,13nm,0.9s							
EYAK	**Cordova Ski Ar**	**76.78**	**28**	*e*P		**P**	**07 56 37.9**	**+0.7**
	comp=Z,25nm,1.0s							
ESK	**Eskdalemuir**	**77.11**	**326**	*i* P		P	07 56 42.5	+3.4
SUMG	**Summit**	**77.59**	**349**	*i* P		**P**	**07 56 40.1**	**-1.9**
SUMG	**Summit**	**77.59**	**349**	*e*P		**P**	**07 56 40.8**	**-1.2**
SUMG					pmax	pmax		
	comp=Z,12nm,1.1s							
SUMG	**Summit**	**77.59**	**349**	*e*P		**P**	**07 56 40.8**	**-1.2**
	comp=Z,12nm,1.1s							
RES	**Resolute Bay**	**78.20**	**5**	P		**P**	**07 56 44.7**	**-0.1**
	comp=Z,5.4nm,0.9s,baz=329,slow=6.0,SNR=20							
RES	**Resolute Bay**	**78.20**	**5**	*e*P		**P**	**07 56 45.0**	**+0.1**
RES					pmax	pmax		
	comp=Z,7.0nm,0.9s							
RES	**Resolute Bay**	**78.20**	**5**	*e*P		**P**	**07 56 45.0**	**+0.1**
	comp=Z,6.6nm,0.9s							
LDF	**La Druitiere**	**78.56**	**319**	*e*P		P	07 56 51.5	+4.1
LDF					pmax	pmax		
	comp=Z,10.0nm,1.1s							
CAF	**Calviac**	**78.88**	**315**	*e*P		P	07 56 53.0	+3.8
CAF					pmax	pmax		
	comp=Z,20nm,1.4s							
SKAG	**Skagway**	**81.68**	**26**	*e*P		**P**	**07 57 04.9**	**+1.0**
	comp=Z,15nm,0.9s							
SFJD	**Kangerlussuaq**	**84.52**	**350**	*i* P		**P**	**07 57 18.5**	**0.0**
	comp=Z,8.8nm,0.8s							
SFJD	**Kangerlussuaq**	**84.52**	**350**	*e*P		**P**	**07 57 18.5**	**0.0**
SFJD					pmax	pmax		
	comp=Z,9.0nm,0.8s							
ESDC	**Sonseca Array**	**85.32**	**312**	P		**P**	**07 57 25.4**	**+2.2**
	comp=Z,0.3nm,0.3s,baz=53,slow=9.8,SNR=4.3							
YKW3	**Yellowknife Ar**	**86.11**	**16**	*e*P		**P**	**07 57 25.6**	**-0.9**
	comp=Z,10nm,1.2s							
YKA	**Yellowknife Ar**	**86.17**	**17**	P		**P**	**07 57 26.3**	**-0.5**
	comp=Z,4.1nm,0.8s,baz=326,slow=4.7,SNR=72							
YKA					PP	**PP**	**08 00 50.6**	**+4.0**
	comp=Z,0.3nm,0.7s,baz=328,slow=8.1,SNR=4.5							
TORD	**Torodi Ar. Bea**	**94.08**	**287**	P		**P**	**07 58 05.0**	**+0.1**
	comp=Z,0.5nm,0.8s,baz=90,slow=4.9,SNR=3.2							
TORD					PP	**PP**	**08 01 48.6**	**-2.5**
	comp=Z,1.0nm,0.8s,baz=63,slow=8.7,SNR=5.1							
FFC	**Flin Flon**	**96.10**	**14**	*i* P		**P**	**07 58 14.1**	**+0.7**
DAC	**Darwin (Calif)**	**106.57**	**33**	*e*P		**Pdif**	**07 59 00.0**	**-0.8**
DAC	**Darwin (Calif)**	**106.57**	**33**	*e*Pdif		**Pdif**	**07 59 00.0**	**-0.8**
QSPA	**South Pole Qui**	**116.47**	**180**	*e*PKPdf		**PKPdf**	**08 03 27.7**	**-1.3**
TAOE	**Nuku Hiva Isla**	**117.81**	**86**	eLR		LR	07 58 42.7	
	comp=Z,129nm,24.5s							
TX31	**Lajitas Ar. Si**	**118.68**	**27**	*e*PKPdf		**PKPdf**	**08 03 32.8**	**-1.8**
TXAR	**Lajitas Array**	**118.68**	**27**	PKP		**PKPdf**	**08 03 33.7**	**-0.9**
	comp=Z,0.3nm,0.5s,baz=192,slow=0.7,SNR=5.2							
OCAC	**Ocana**	**145.11**	**354**	*e*P		**PKPbc**	**08 04 20.0**	**-3.8**
GRMC	**Gramalote, San**	**145.57**	**353**	*e*P		**PKPdf**	**08 04 22.8**	**-2.4**
BRRC	**Barranca, Sant**	**146.27**	**354**	*e*P		**PKPdf**	**08 04 25.1**	**-1.1**
HELC	**Santa Helena**	**147.29**	**357**	*e*P		**PKPbc**	**08 04 30.7**	**+0.1**
GUYC	**Guyana, Colomb**	**148.25**	**357**	*e*P		**PKPdf**	**08 04 29.0**	**-1.1**
ROSC	**El Rosal**	**148.56**	**355**	PKPbc		**PKPbc**	**08 04 33.9**	**-0.2**
	comp=Z,17nm,0.9s,baz=110,slow=8.5,SNR=12							
PTGA	**Pitinga**	**149.48**	**325**	*e*PKPbc		**PKPbc**	**08 04 34.5**	**-1.5**
PLCA	**Paso Flores**	**165.03**	**199**	PKPab		**PKPab**	**08 05 44.5**	**-2.2**
	comp=Z,0.9nm,0.6s,baz=151,slow=3.1,SNR=5.2							

IDC 15 07:54:10.7±3.2, 53°69N×90°78E, h0km, mb1 3.4/3, mb1mx3.1/56, mbtmp3.4/3, ML2.8/3, Error ellipse: s-maj=27.5km s-min=23.4km az=51.0, Southwestern Siberia

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
I46RU	**ZALESOVO INFRA**	**3.54**	**277**	*i*		08 17 15.0	
	baz=92,slow=319,SNR=14						
ZALV	**Zalesovo Beam**	**3.54**	**277**	Pn	Pn	07 55 07.2	+0.3
	1.5nm,0.3s,baz=96,slow=11,SNR=14						
ZALV				Lg	Lg	07 56 03.5	
	2.4nm,0.3s,baz=91,slow=26,SNR=3.7						
TLY	**Talaya**	**8.07**	**99**	Lg	Lg	07 58 11.1	
	0.0nm,0.3s,baz=54,slow=7.4,SNR=8.3						
KURBB	**Kurchatov Arra**	**8.13**	**253**	Pn	Pn	07 56 09.8	-0.1
	0.1nm,0.3s,baz=65,slow=14,SNR=7.2						
KURBB				Sn	Sn	07 57 39.9	-2.7
	0.0nm,0.3s,baz=66,slow=25,SNR=4.8						
KURBB				Lg	Lg	07 58 29.2	
	0.1nm,0.3s,baz=62,slow=30,SNR=5.9						
MKAR	**Makanchi Array**	**8.78**	**222**	Pn	Pn	07 56 19.5	+0.6
	0.3nm,0.3s,baz=42,slow=14,SNR=10						
MKAR				Sn	Sn	07 57 58.6	+0.1
	0.2nm,0.3s,baz=40,slow=29,SNR=3.7						
MKAR				Lg	Lg	07 58 48.1	
	0.2nm,0.3s,baz=40,slow=27,SNR=5.1						
SONM	**Songino Array**	**11.48**	**114**	Lg	Lg	08 00 05.4	
	0.1nm,0.3s,baz=297,slow=29,SNR=12						

IDC 15 08:05:52.0±0.9, 36°.96N×140°.79E, h0km, mb3.4/6, mb1 3.5/9, mb1mx3.4/48, mbtmp3.4/9, ML2.8/3, Error ellipse: s-maj=21.6km s-min=19.6km az=135.0
JMA 15 08:05:53.1, 37°.02N×140°.69E, h7km±1km, M3.5 Broadband fault plane solution: P waves. NP1: φs259.00000°, δ51.00000°, λ-99.00000°. NP2: φs93.00000°, δ40.00000°, λ-79.00000°. Principal axes: T Plg6.0000°, Azm355.0000°; N Plg7.0000°, Azm264.0000°; P Plg81.0000°, Azm125.0000°;
JMA Felt I J1.

ISC 15 08:05:53.4±1.0, 37°.01N±0°.03×140°.71E±0°.04, h7km±7km, n19, σ0°72/29, mb3.5/6, 7C, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.12**	**38**	⇑P	**Pg**	**08 05 56.0**	**0.0**
ONAJ				S	**Sg**	**08 05 58.1**	**+0.3**
JFK	**Kawauchi**	**0.38**	**20**	⇑P	**Pg**	**08 06 00.6**	**-0.2**
JFK				S	**Sg**	**08 06 05.9**	**+0.1**
JHO	**Hitachi**	**0.42**	**196**	⇑P	**Pg**	**08 06 01.3**	**-0.2**
JHO				S	**Sg**	**08 06 07.4**	**+0.5**
JFT	**Otama**	**0.59**	**330**	⇑P	**Pg**	**08 06 04.4**	**-0.3**
JFT				S	**Sg**	**08 06 12.1**	**-0.3**
JSB	**Shiboa**	**0.63**	**266**	P	**Pg**	**08 06 05.9**	**+0.3**
JSB				S	**Sg**	**08 06 14.6**	**+0.7**
JMM	**Marumori**	**0.85**	**4**	⇑P	**Pg**	**08 06 09.0**	**-0.9**
JMM				S	**Sg**	**08 06 20.6**	**-0.4**
JYT	**Yasato**	**0.89**	**208**	⇑P	**Pg**	**08 06 09.7**	**-0.7**
JYT				S	**Sg**	**08 06 21.4**	**-0.5**
JFY	**Yanaizu**	**0.89**	**296**	⇑P	**Pg**	**08 06 10.0**	**-0.6**
JFY				S	**Sg**	**08 06 21.3**	**-0.9**
MJAR	**Matsushiro Arr**	**2.06**	**258**	Pn	**Pn**	**08 06 29.1**	**+0.7**
	7.3nm,0.3s,baz=97,slow=16,SNR=33						
MJAR				Sn	**Sn**	**08 06 55.9**	**+1.5**
	11nm,0.3s,baz=88,slow=27,SNR=8.5						
MAT	**Matsushiro**	**2.06**	**258**	P	**Pn**	**08 06 28.7**	**+0.2**
MAT				S	**Sb**	**08 06 56.0**	**-1.0**
ASAJ	**Asahikawa**	**7.24**	**11**	Sn	**Sn**	**08 09 03.4**	**+1.4**
	0.2nm,0.3s,baz=174,slow=18,SNR=2.5						
USRK	**Ussuriysk Ar.**	**9.77**	**320**	Pn	**Pn**	**08 08 15.0**	**+0.7**
	0.1nm,0.3s,baz=144,slow=18,SNR=2.4						
KSRS	**Korea Array**	**10.21**	**276**	Pn	**Pn**	**08 08 20.8**	**+0.5**
	0.2nm,0.3s,baz=119,slow=39,SNR=6.3						
MKAR	**Makanchi Array**	**43.65**	**302**	P	**P**	**08 13 59.2**	**+0.6**
	0.3nm,0.5s,baz=80,slow=8.9,SNR=2.9						
KURBB	**Kurchatov Arra**	**45.57**	**308**	P	**P**	**08 14 13.1**	**-0.7**
	0.5nm,0.5s,baz=83,slow=8.3,SNR=2.4						
ILAR	**Eielson Array**	**49.81**	**32**	P	**P**	**08 14 46.2**	**-0.3**
	0.3nm,0.8s,baz=278,slow=6.2,SNR=4.0						
WRA	**Warramunga Arr**	**56.97**	**187**	P	**P**	**08 15 38.4**	**-1.2**
	0.6nm,0.6s,baz=4.7,slow=7.5,SNR=10						
ASAR	**Alice Springs**	**60.69**	**187**	P	**P**	**08 16 05.1**	**-0.3**
	0.4nm,0.8s,baz=14,slow=5.7,SNR=3.8						
YKA	**Yellowknife Ar**	**64.11**	**30**	P	**P**	**08 16 27.8**	**0.0**
	0.1nm,0.8s,baz=301,slow=6.2,SNR=2.5						

IDC 15 08:09:08.0±1.8, 3°78N×124°26E, h0km, mb3.7/3, mb1 3.8/3, mb1mx3.4/47, mbtmp3.7/3, Error ellipse: s-maj=187.8km s-min=23.6km az=64.0, Celebes Sea

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
WRA	**Warramunga Arr**	**25.57**	**158**	P	P	08 14 39.0	+0.1
	0.4nm,0.5s,baz=336,slow=10,SNR=19						
ASAR	**Alice Springs**	**28.86**	**161**	P	P	08 15 08.4	-0.1
	0.3nm,0.6s,baz=341,slow=7.1,SNR=8.3						
MKAR	**Makanchi Array**	**56.13**	**326**	P	P	08 18 49.4	-0.1
	1.1nm,0.4s,baz=123,slow=8.4,SNR=17						

MAN 15 08:12:53, 17°.82N×120°.55E, h32km, mb3.9, ML2.7, MS2.3, 1D, Luzon

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
SIPP	**Brgy, Tapao**	**0.14**	**318**	*i*eP	Pn	08 12 59.6	+0.7
SIPP				*e*S	Sb	08 13 08.6	+5.7
ABRA	**Dolores**	**0.23**	**139**	*e*P	Pn	08 13 01.7	+1.5
ABRA				*e*S	Sn	08 13 06.5	+1.7
PIP	**Pasuquin**	**0.50**	**7**	*i* P	Pn	08 13 05.2	+1.2
PIP				*e*S	Sn	08 13 16.7	+5.1
APYP	**Conner**	**0.66**	**86**	*e*P	Pb	08 13 08.3	+2.2
APYP				*e*S	Sn	08 13 16.8	+1.4

NIED 15 08:16:00, 38°.20N×141°.60E, h17km, Mw3.9 Best double couple: M0 6.92000×10^14 NP1: φs314.00000°, δ73.00000°, λ-180.00000°. NP2: φs224.00000°, δ90.00000°, λ-17.00000°.

JMA 15 08:16:07.7±0.1, 38°.20N×141°.62E, h54km±1km, M3.8, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**0.33**	**320**	P	Pn	08 16 17.6	+0.1
JIO				S	Sn	08 16 24.2	-0.3
JMM	**Marumori**	**0.73**	**243**	P	Pn	08 16 21.8	-0.2
JMM				S	Sn	08 16 32.1	-0.4
JOU	**Okura**	**0.77**	**283**	P	Pn	08 16 22.8	+0.3
JOU				S	Sn	08 16 33.4	0.0
JMK	**Ichinoseki**	**0.81**	**337**	P	Pn	08 16 23.4	+0.3
JMK				S	Sn	08 16 34.3	0.0
OFUJ	**Ofunato**	**0.88**	**2**	P	Pn	08 16 23.9	-0.1
OFUJ				S	Sn	08 16 35.1	-0.8
JFK	**Kawauchi**	**1.02**	**216**	P	Pn	08 16 25.9	+0.1
JFK				S	Sn	08 16 39.0	-0.2
JYK	**Kaneyama**	**1.22**	**306**	P	Pn	08 16 28.8	+0.3
JYK				S	Sn	08 16 44.7	+0.7
JFT	**Otama**	**1.22**	**237**	P	Pn	08 16 29.1	+0.6
JFT				S	Sn	08 16 44.3	+0.3
JYS	**Shirataka**	**1.23**	**271**	P	Pn	08 16 29.1	+0.6
JYS				S	Sn	08 16 44.8	+0.7
JOM	**Ohasama**	**1.30**	**349**	P	Pn	08 16 29.9	+0.4
JRG	**Rokugo**	**1.42**	**327**	P	Pn	08 16 32.0	+0.8
JRG				S	Sn	08 16 50.4	+1.6
JYA	**Atsumi**	**1.55**	**285**	P	Pn	08 16 33.4	+0.5
JYA				S	Sn	08 16 52.9	+1.0
MAT	**Matsushiro**	**3.18**	**240**	P	Pn	08 16 57.3	+2.0
MAT				S	Sn	08 17 31.4	-0.6

IDC 15 08:21:39.4±3.7, 53°73N×88°10E, h0km, mb1 2.9/2, mb1mx2.8/54, mbtmp2.9/2, ML2.6/2, Error ellipse: s-maj=36.1km s-min=18.9km az=48.0, Southwestern Siberia

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
I46RU	**ZALESOVO INFRA**	**1.96**	**278**	*i*		08 34 39.4	
	baz=94,slow=321,SNR=18						
ZALV	**Zalesovo Beam**	**1.96**	**278**	Pg	Pn	08 22 14.6	+0.8
	1.3nm,0.3s,baz=97,slow=15,SNR=24						
ZALV				Lg	Lg	08 22 41.4	
	2.6nm,0.3s,baz=96,slow=27,SNR=13						
KURBB	**Kurchatov Arra**	**6.66**	**246**	Pn	Pn	08 23 18.9	+0.6
	0.1nm,0.3s,baz=62,slow=14,SNR=11						
MKAR	**Makanchi Array**	**7.87**	**211**	Pn	Pn	08 23 36.1	+1.1
	0.1nm,0.3s,baz=31,slow=15,SNR=4.6						

ISCJB 15 08:24:10.4±0.6, 37°.00N±0°.03×140°.78E±0°.07, h14km±4km, mb3.4/3, Error ellipse: s-maj=9.5km s-min=4.6km az=16.5
JMA 15 08:24:10.8, 37°.02N×140°.69E, h6km±1km, M3.4 Broadband fault plane solution: P waves. NP1: φs86.00000°, δ56.00000°, λ-87.00000°. NP2: φs261.00000°, δ34.00000°, λ-94.00000°. Principal axes: T Plg11.0000°, Azm174.0000°; N Plg2.0000°, Azm264.0000°; P Plg79.0000°, Azm6.0000°;
JMA Felt I J1.
IDC 15 08:24:10.6±1.4, 36°.74N×140°.79E, h0km, mb3.3/3, mb1 3.6/5, mb1mx3.3/59, mbtmp3.4/5, ML2.6/2 Error ellipse: s-maj=26.8km s-min=23.9km az=90.0

ISC 15 08:24:09.8±1.3, 37°.00N±0°.04×140°.60E±0°.04, h3km±11km, n20, σ0°63/21, mb3.3/3, 7C, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.19**	**57**	⇑P	**Pg**	**08 24 13.7**	**+0.2**
ONAJ				S	**Sg**	**08 24 15.8**	**-0.1**
JHO	**Hitachi**	**0.39**	**184**	⇑P	**Pb**	**08 24 18.9**	**-0.4**
JHO				S	**Sb**	**08 24 25.1**	**-0.6**
JFK	**Kawauchi**	**0.43**	**31**	⇑P	**Pg**	**08 24 18.3**	**+0.3**
JFK				S	**Sg**	**08 24 23.5**	**-0.1**
JSB	**Shiboa**	**0.55**	**267**	P	**Pn**	**08 24 23.5**	**-1.1**
JFT	**Otama**	**0.56**	**338**	⇑P	**Pb**	**08 24 22.1**	**-0.2**
JFT				S	**Sb**	**08 24 29.8**	**-0.9**
JFY	**Yanaizu**	**0.82**	**300**	⇑P	**Pn**	**08 24 27.7**	**-0.7**
JFY				S	**Sb**	**08 24 38.9**	**+0.6**
JYT	**Yasato**	**0.84**	**203**	⇑P	**Pb**	**08 24 27.4**	**+0.4**
JMM	**Marumori**	**0.88**	**10**	⇑P	**Pg**	**08 24 26.7**	**0.0**
JMM				S	**Sg**	**08 24 38.1**	**0.0**
MJAR	**Matsushiro Arr**	**1.98**	**257**	Pn	**Pb**	**08 24 45.8**	**-0.7**
	6.9nm,0.3s,baz=80,slow=15,SNR=33						
MJAR				Sn	**Sg**	**08 25 13.7**	**+0.4**
	8.4nm,0.3s,baz=86,slow=27,SNR=16						
MAT	**Matsushiro**	**1.98**	**257**	P	**Pb**	**08 24 46.7**	**+0.2**
MAT				S	**Sg**	**08 25 13.7**	**+0.4**
USRK	**Ussuriysk Ar.**	**9.72**	**320**	Pn	Pn	08 26 37.0	+6.4
	0.2nm,0.3s,baz=142,slow=14,SNR=4.3						
H11N2	**WAKE ISLAND Hy**	**28.69**	**120**	T	T	08 59 54.2	
	baz=313						
H11N1	**WAKE ISLAND Hy**	**28.70**	**120**	T	T	08 59 56.8	
	baz=313						
H11N3	**WAKE ISLAND Hy**	**28.71**	**120**	T	T	08 59 56.0	
	baz=313						
H11S1	**WAKE ISLAND Hy**	**29.39**	**122**	T	T	09 00 43.4	
	baz=315						
H11S3	**WAKE ISLAND Hy**	**29.39**	**122**	T	T	09 00 45.6	
	baz=315						
H11S2	**WAKE ISLAND Hy**	**29.41**	**122**	T	T	09 00 50.2	
	baz=315						
ILAR	**Eielson Array**	**49.87**	**32**	P	**P**	**08 33 05.5**	**+1.4**
	0.2nm,0.5s,baz=264,slow=5.1,SNR=3.5						
WRA	**Warramunga Arr**	**56.94**	**187**	P	**P**	**08 33 56.0**	**-0.4**
	0.4nm,0.7s,baz=4.1,slow=7.4,SNR=7.7						
ASAR	**Alice Springs**	**60.67**	**187**	P	**P**	**08 34 22.4**	**+0.1**
	0.2nm,0.8s,baz=12,slow=11,SNR=3.0						

IDC 15 08:26:58.8±0.9, 36°.85N×140°.76E, h0km, mb3.7/6, mb1 3.9/11, mb1mx3.6/63, mbtmp3.8/11, ML3.4/4, Error ellipse: s-maj=20.7km s-min=18.0km az=79.0
ISCJB 15 08:26:59.8±0.6, 36°.91N±0°.03×140°.75E±0°.05, h17km±5km, mb3.7/6, Error ellipse: s-maj=6.9km s-min=4.2km az=16.9
JMA 15 08:27:00.4, 36°.93N×140°.66E, h9km±1km, M3.8 Broadband fault plane solution: P waves. NP1: φs202.00000°, δ73.00000°, λ-87.00000°. NP2: φs13.00000°, δ17.00000°, λ-98.00000°. Principal axes: T Plg28.0000°, Azm290.0000°; N Plg2.0000°, Azm21.0000°; P Plg62.0000°, Azm116.0000°;
JMA Felt II J1.
NIED 15 08:27:00, 36°.90N×140°.70E, h5km, Mw3.6 Best double couple: M0 2.41000×10^14 NP1: φs317.00000°, δ38.00000°, λ-115.00000°. NP2: φs169.00000°, δ56.00000°, λ-71.00000°.

ISC 15 08:26:59.4±1.4, 36°.88N±0°.04×140°.67E±0°.04, h3km±10km, n27, σ1°03/31, mb3.7/6, 7C, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.25**	**25**	⇑P	**Pg**	**08 27 04.9**	**+0.8**
JHO	**Hitachi**	**0.28**	**197**	⇑P	**Pb**	**08 27 06.9**	**-0.1**
JHO				S	**Sb**	**08 27 11.6**	**-0.6**
JFK	**Kawauchi**	**0.51**	**19**	⇑P	**Pg**	**08 27 09.4**	**+0.1**
JFK				S	**Sg**	**08 27 16.2**	**+0.3**
JSB	**Shiboa**	**0.61**	**279**	⇑P	**Pb**	**08 27 12.5**	**-0.2**
JSB				S	**Sb**	**08 27 20.7**	**-0.9**
JFT	**Otama**	**0.69**	**338**	⇑P	**Pg**	**08 27 12.9**	**+0.3**
JFT				S	**Sg**	**08 27 21.7**	**+0.1**
JYT	**Yasato**	**0.75**	**211**	⇑P	**Pb**	**08 27 15.3**	**+0.2**
JYT				S	**Sb**	**08 27 25.9**	**+0.1**
JFY	**Yanaizu**	**0.93**	**305**	P	**Pg**	**08 27 17.3**	**0.0**
JFY				S	**Sg**	**08 27 28.8**	**-0.6**
JMM	**Marumori**	**0.99**	**6**	⇑P	**Pg**	**08 27 17.7**	**-0.7**
JMM				S	**Sg**	**08 27 30.0**	**-1.2**
MJAR	**Matsushiro Arr**	**2.00**	**261**	Pn	**Pn**	**08 27 35.0**	**+0.8**
	13nm,0.3s,baz=87,slow=16,SNR=36						
MJAR				Sn	**Sb**	**08 28 01.1**	**-0.8**
	32nm,0.3s,baz=84,slow=27,SNR=18						
MAT	**Matsushiro**	**2.01**	**261**	P	**P

0.2nm,0.7s,baz=226,slow=6.1,SNR=2.9

IDC 15 08:36:35.3±2.0, 2°63N×126°18E, h0km, mb3.5/4, mb1 3.7/4, mb1mx3.4/37, mbtmp3.5/4, Error ellipse: s-maj=179.0km s-min=26.9km az=65.0, Northern Molucca Sea

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
WRA	**Warramunga Arr**	**23.82**	**161**	P	P	08 41 50.1	-0.1
	0.9nm,0.4s,baz=339,slow=10,SNR=18						
ASAR	**Alice Springs**	**27.20**	**164**	P	P	08 42 21.6	+0.6
	0.1nm,0.3s,baz=343,slow=10,SNR=4.8						
STKA	**Stephens Creek**	**37.31**	**158**	P	P	08 43 48.8	-0.6
	1.4nm,0.7s,baz=333,slow=11,SNR=3.1						
MKAR	**Makanchi Array**	**58.15**	**326**	P	P	08 46 30.8	-0.2
	0.1nm,0.5s,baz=126,slow=7.3,SNR=2.9						

*ISCJB **15** 08:38:13.4±0.6, 9°61S±0°05×114°05E±0°03, h51km±6km, mb4.4/25, Error ellipse: s-maj=8.3km s-min=4.6km az=7.4*
*NEIC **15** 08:38:16.1±0.7, 9°63S×114°13E, h60km±6km, mb4.4/9, Error ellipse: s-maj=8.4km s-min=5.9km az=205.0*
*DJA **15** 08:38:17.1±0.3, 9°S±5°×11°4E±°, h125km±3km, M4.5/19, mB5.3/1, mb4.6/7, MLv4.4/19, Mw(mB)4.7/1*
*IDC **15** 08:38:19.2±1.8, 9°60S×114°32E, h89km±16km, mb3.9/17, mb1 4.0/20, mb1mx3.9/39, mbtmp4.3/20, MS3.2/1, Ms1 3.2/1, ms1mx2.6/50, Error ellipse: s-maj=15.7km s-min=8.6km az=33.0*

ISC 15 08:38:16.9±1.0, 9°53S±0°07×114°16E±0°04, h68km±9km, n77, σ2s08/75, mb4.3/25, South of Bali

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JAGI	**Jajag, Banyuwa**	**1.05**	**360**	P	**Pn**	**08 38 35.1**	**-0.9**
JAGI				S	**Sn**	**08 38 48.2**	**-2.1**
JAGI	**Jajag, Banyuwa**	**1.05**	**360**	*e*Pn	**Pn**	**08 38 34.8**	**-1.2**
JAGI				*e*Sn	**Sn**	**08 38 51.0**	**+0.7**
DNP	**Denpasar**	**1.34**	**51**	P	**Pn**	**08 38 40.4**	**+0.6**
DNP				S	**Sn**	**08 38 58.3**	**+1.4**
GMJI	**Gumukmas**	**1.43**	**331**	P	**Pn**	**08 38 38.8**	**-2.2**
GMJI				S	**Sn**	**08 38 55.8**	**-3.2**
ABJI	**Asem Bagus**	**1.73**	**3**	P	Pn	08 38 39.4	-5.5
SRBI	**Singaraja**	**1.78**	**36**	P	**Pn**	**08 38 42.1**	**-3.4**
PWJI	**Pagerwojo**	**2.77**	**303**	P	**Pn**	**08 38 55.6**	**-3.3**
TWSI	**Taliwang, Sumb**	**2.81**	**74**	P	**Pn**	**08 38 58.5**	**-1.0**
TWSI				S	**Sn**	**08 39 32.7**	**+0.5**
GRJI	**Gresik**	**3.08**	**327**	P	Pn	08 38 56.9	-6.4
PCJI	**Pacitan**	**3.23**	**294**	P	**Pn**	**08 39 02.0**	**-3.2**
NGJI	**Ngawi**	**3.42**	**309**	P	**Pn**	**08 39 03.2**	**-4.7**
WOJI	**Wonogiri, Jawa**	**3.61**	**298**	P	**Pn**	**08 39 06.4**	**-4.1**
PLAI	**Plampang**	**3.64**	**79**	P	**Pn**	**08 39 11.2**	**+0.3**
UGM	**Wanagama**	**3.93**	**294**	P	**Pn**	**08 39 11.4**	**-3.5**
SMRI	**Semarang**	**4.43**	**304**	P	Pn	08 39 15.5	-6.1
SMRI	**Semarang**	**4.43**	**304**	*e*Pn	Pn	08 39 26.0	+4.4
SMRI				*e*Sn	Sn	08 40 22.4	+10
UWJI	**Ujung Watu**	**4.43**	**314**	P	Pn	08 39 13.1	-8.6
KPJI	**Karang Pucung**	**5.61**	**293**	P	**Pn**	**08 39 33.5**	**-4.3**
CMJI	**Cimerak**	**5.90**	**287**	P	**Pn**	**08 39 39.7**	**-2.1**
57nm,0.9s,0.3nm							
BASI	**Baing, Sumba**	**6.37**	**97**	P	**Pn**	**08 39 51.8**	**+3.7**
158nm,0.9s							
JCJI	**Jatiwangi**	**6.56**	**297**	P	Pn	08 39 45.4	-5.5
99nm,0.4s							
CISI	**Cisompet, Garu**	**6.57**	**287**	P	**Pn**	**08 39 48.6**	**-2.4**
76nm,0.9s,3µm							
CISI	**Cisompet, Garu**	**6.57**	**287**	*e*Pn	**Pn**	**08 39 49.0**	**-2.0**
50nm,0.5s							
CISI				*e*Sn	**Sn**	**08 41 07.9**	**+3.3**
LEM	**Lembang**	**7.01**	**292**	P	Pn	08 40 03.4	+6.3
1.8nm,0.3s,baz=150,slow=20,SNR=3.0							
LEM				S	**Sn**	**08 41 21.4**	**+6.0**
4.4nm,0.3s,baz=93,slow=18,SNR=2.6							
BSSI	**Bau Bau, Buton**	**7.12**	**62**	P	**Pn**	**08 39 53.8**	**-4.7**
KAPI	**Kappang**	**7.14**	**51**	P	**Pn**	**08 39 59.6**	**+0.8**
2.8nm,0.3s,baz=221,slow=11,SNR=8.5							
KAPI				S	**Sn**	**08 41 19.2**	**+0.8**
1.9nm,0.3s,baz=248,slow=19,SNR=3.6							
KAPI	**Kappang**	**7.14**	**51**	*e*Pn	**Pn**	**08 39 59.5**	**+0.8**
14nm,0.8s							
KAPI				*e*Sn	**Sn**	**08 41 20.9**	**+2.5**
PBKI	**Pangkalan Bun**	**7.22**	**340**	P	Pn	08 39 48.0	-12
110nm,0.6s							
MMRI	**Maumere**	**8.03**	**84**	P	Pn	08 40 20.9	+10
MMRI	**Maumere**	**8.03**	**84**	*e*Pn	**Pn**	**08 40 11.9**	**+0.9**
50nm,0.8s							
XMIS	**Christmas Isla**	**8.43**	**263**	*e*Pn	**Pn**	**08 40 16.1**	**-0.3**
CGJI	**Cibinong**	**8.87**	**288**	P	**Pn**	**08 40 20.8**	**-1.6**
BATI	**Baumata**	**9.39**	**95**	P	**Pn**	**08 40 30.8**	**+1.2**
2.2nm,0.3s,baz=287,slow=20,SNR=2.7							
BATI				S	**Sn**	**08 42 10.8**	**-2.9**
3.7nm,0.3s,baz=264,slow=24,SNR=5.1							
BATI				LR	LR	08 45 09.0	
comp=Z,156nm,21.3s,baz=219,slow=44							
MBWA	**Marble Bar**	**12.75**	**156**	*e*Pn	Pn	08 41 05.4	-10
MBWA				*e*Sn	Sn	08 43 14.7	-21
SANI	**Sanana**	**13.92**	**58**	P	**Pn**	**08 41 28.1**	**-2.9**
FITZ	**Fitzroy Crossi**	**14.03**	**129**	P	Pn	08 41 25.5	-7.0
0.5nm,0.3s,baz=308,slow=11,SNR=8.3							
FITZ				S	Sn	08 43 50.3	-16
0.2nm,0.3s,baz=0.0,slow=20,SNR=6.3							
FITZ	**Fitzroy Crossi**	**14.03**	**129**	*e*Pn	Pn	08 41 25.8	-6.6
FITZ				S	Sn	08 43 50.3	-16
BNDI	**Bandanaira**	**16.40**	**73**	P	P	08 42 16.9	+12
FAKI	**Fak Fak**	**19.14**	**71**	P	**Pn**	**08 42 38.2**	**+1.9**
FAKI	**Fak Fak**	**19.14**	**71**	*e*P	**P**	**08 42 34.5**	**-0.4**
27nm,0.8s							
WRA	**Warramunga Arr**	**22.07**	**120**	P	**P**	**08 43 04.2**	**-2.2**
4.2nm,0.8s,baz=294,slow=12,SNR=22							
WRA				S	**S**	**08 47 01.7**	**-4.3**
0.4nm,0.7s,baz=292,slow=22,SNR=4.8							
WRAB	**Tennant Creek**	**22.07**	**120**	*e*P	**P**	**08 43 06.3**	**-0.1**
6.8nm,0.8s							
ASAR	**Alice Springs**	**23.53**	**129**	P	**P**	**08 43 19.8**	**-1.4**
5.0nm,0.7s,baz=307,slow=9.3,SNR=50							
ASAR				S	**S**	**08 47 28.1**	**-2.1**
0.5nm,1.0s,baz=299,slow=21,SNR=3.2							
CMAR	**Chiang Mai Arr**	**31.60**	**332**	P	**P**	**08 44 35.2**	**+1.7**
2.9nm,0.9s,baz=164,slow=8.0,SNR=24							
CTA	**Charters Tower**	**32.70**	**112**	P	**P**	**08 44 43.6**	**+0.5**
3.2nm,0.6s,baz=264,slow=11,SNR=5.2							
STKA	**Stephens Creek**	**33.78**	**135**	P	**P**	**08 44 52.3**	**0.0**
6.7nm,0.6s,baz=316,slow=8.7,SNR=28							
GUN	**Gumba**	**46.20**	**324**	*e*P	**P**	**08 46 35.9**	**+0.2**
21nm,0.6s							
DMN	**Daman**	**46.42**	**324**	*e*P	**P**	**08 46 37.3**	**0.0**
14nm,0.6s							
KKN	**Kakani**	**46.45**	**324**	*e*P	**P**	**08 46 37.5**	**0.0**
GKN	**Gorkha**	**46.99**	**323**	*e*P	**P**	**08 46 41.5**	**-0.1**
11nm,0.4s							
KOLN	**Koldanda**	**47.44**	**322**	*e*P	**P**	**08 46 44.8**	**-0.3**
8.4nm,0.5s							
PYUN	**Piuthan**	**48.04**	**322**	*e*P	**P**	**08 46 49.5**	**-0.4**
USRK	**Ussuriysk Ar.**	**55.87**	**15**	P	**P**	**08 47 47.9**	**+0.5**
1.1nm,0.7s,baz=214,slow=13,SNR=4.2							
ULN	**Ulaanbaatar**	**57.49**	**354**	*e*P	**P**	**08 47 59.8**	**+0.7**
1.5nm,0.6s							
SONM	**Songino Array**	**57.52**	**354**	P	**P**	**08 48 00.1**	**+0.8**
1.0nm,0.4s,baz=169,slow=8.3,SNR=12							
RPZ	**Rata Peaks**	**59.74**	**135**	P	**P**	**08 48 13.0**	**-1.8**
7.9nm,0.9s,baz=248,slow=5.4,SNR=2.7							
MKAR	**Makanchi Array**	**62.87**	**336**	P	**P**	**08 48 35.9**	**+0.2**
1.8nm,0.8s,baz=134,slow=6.9,SNR=9.3							
AAK	**Ala-Archa**	**63.30**	**328**	*e*P	**P**	**08 48 40.4**	**+1.6**
3.4nm,0.9s							
EKS2	**Erkin-Say**	**63.69**	**328**	*e*P	**P**	**08 48 42.7**	**+1.3**
6.5nm,1.1s							
MAW	**Mawson**	**67.15**	**199**	P	**P**	**08 49 01.6**	**-1.5**
2.9nm,0.9s,baz=45,slow=2.9,SNR=2.9							
KURK	**Kurchatov**	**67.46**	**336**	*e*P	**P**	**08 49 06.3**	**+0.9**
3.6nm,0.9s							
ZALV	**Zalesovo Beam**	**67.94**	**342**	P	**P**	**08 49 08.3**	**+0.1**
0.4nm,0.3s,baz=157,slow=8.0,SNR=3.5							
GEYT	**Alibeck**	**70.42**	**316**	P	**P**	**08 49 25.0**	**+0.9**
2.8nm,0.5s,baz=140,slow=7.7,SNR=5.6							
VNDA	**Vanda**	**72.24**	**170**	P	**P**	**08 49 33.8**	**-0.6**
2.1nm,0.9s,baz=299,slow=5.1,SNR=5.5							
QSPA	**South Pole Qui**	**80.47**	**180**	*e*P	**P**	**08 50 21.0**	**-0.3**
24nm,1.2s							
TIXI	**Tiksi**	**81.59**	**5**	*e*P	**P**	**08 50 26.8**	**0.0**
3.0nm,0.8s							
MATP	**Matopo**	**82.69**	**251**	P	**P**	**08 50 34.6**	**+0.6**
2.2nm,0.9s,baz=90,slow=8.1,SNR=3.7							
LSZ	**Lusaka**	**83.68**	**256**	P	**P**	**08 50 39.8**	**+0.7**
1.7nm,0.4s,baz=113,slow=4.8,SNR=4.5							
LSZ	**Lusaka**	**83.68**	**256**	*e*P	**P**	**08 50 39.5**	**+0.4**
2.7nm,0.7s							
LBTB	**Lobatse**	**84.74**	**246**	P	**P**	**08 50 45.2**	**+0.9**
2.6nm,0.9s,baz=76,slow=8.9,SNR=3.1							
BRTR	**Keskin Array B**	**88.82**	**310**	P	**P**	**08 51 04.3**	**+0.5**
1.3nm,0.9s,baz=123,slow=4.6,SNR=4.2							
SNAA	**Sanae**	**89.17**	**196**	*e*P	**P**	**08 51 05.2**	**+0.4**
75nm,0.6s							
YKA	**Yellowknife Ar**	**116.59**	**23**	PKP	**PKPdf**	**08 56 53.8**	**+1.0**
0.4nm,0.7s,baz=312,slow=1.9,SNR=7.1							
TXAR	**Lajitas Array**	**139.51**	**56**	PKhKP	PKPpre	08 57 32.1	
0.1nm,0.5s,baz=222,slow=1.2,SNR=2.6							
MIAR	**Mount Ida**	**144.44**	**41**	*e*PKPdf	**PKPdf**	**08 57 46.0**	**0.0**
WCI	**Wyandotte Cave**	**146.02**	**29**	*e*PKPbc	**PKPab**	**08 57 50.3**	**+0.2**
LPAZ	**La Paz**	**154.25**	**175**	PKPab	**PKPab**	**08 58 24.4**	**-0.4**
2.8nm,0.9s,baz=194,slow=1.6,SNR=8.6							

LJU 15 08:42:30.9, 46°39N×15°07E, h0km, ML1.0 Rockburst, Northwestern Balkan Peninsula

TRN 15 08:44:14.2, 16°54N×61°78W, h122km, MD3.8, 6C, Leeward Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SEG	**Port Louis**	**0.30**	**118**	*i*P	Pn	08 44 33.1	+1.7
MLYT	**Lee's Yard**	**0.43**	**294**	*e*P	Pn	08 44 33.8	+1.8
MLYT				*e*S	Sn	08 44 46.8	+1.4
SSG	**Sans Toucher**	**0.46**	**168**	*e*P	Pn	08 44 33.6	+1.2
BPA	**Boggy Peak**	**0.51**	**351**	*e*P	Pn	08 44 33.8	+1.3
BPA				*e*S	Sn	08 44 46.9	+0.6
DOG	**Dongo Capester**	**0.53**	**163**	*i*P	Pn	08 44 34.3	+1.7
TBG	**Guadaloupe-3**	**0.70**	**169**	*e*P	Pn	08 44 35.2	+1.4
TBG				*e*S	Sn	08 44 49.6	+1.0
DEG	**La Desirade**	**0.73**	**108**	*e*P	Pn	08 44 35.3	+1.2
DEG				*e*S	Sn	08 44 47.6	-1.4
MGG	**Marie-Galante**	**0.77**	**144**	*i*P	Pn	08 44 36.0	+1.7
BBL	**Barber's Block**	**1.05**	**164**	*e*P	Pn	08 44 38.4	+1.4
BBL				*e*S	Sn	08 44 55.2	+1.0
ANWB	**Willy Bob**	**1.12**	**360**	*e*P	Pn	08 44 39.1	+1.5
ANWB				*e*S	Sn	08 44 56.5	+1.2
SEUS	**St. Eustatius**	**1.49**	**310**	*e*P	Pn	08 44 42.2	+0.6
SABA	**Saba**	**1.76**	**308**	*e*P	Pn	08 44 46.3	+1.4
SABA				*e*S	Sn	08 45 09.7	+1.4
PCM	**Pelee Case Pet**	**1.80**	**162**	*e*P	Pn	08 44 46.1	+0.6
PCM	**Pelee Case Pet**	**1.80**	**162**	*i*P	Pn	08 44 46.8	+1.3
CXM	**Morne La Croix**	**1.82**	**161**	*e*P	Pn	08 44 46.8	+1.1
BAMF	**Morne Balai**	**1.82**	**160**	*i*P	Pn	08 44 46.6	+0.9
GBMF	**Grand Be**	**1.83**	**161**	*e*P	Pn	08 44 46.8	+0.9
PML	**Morne Lenard**	**1.84**	**162**	*e*P	Pn	08 44 47.9	+1.9
FDF	**Fort de France**	**1.90**	**161**	*e*P	Pn	08 44 47.5	+0.9
FDF				*e*S	Sn	08 45 12.8	+1.4
SMRT	**St. Maarten**	**1.94**	**321**	*e*P	Pn	08 44 48.2	+1.0
SMRT				*e*S	Sn	08 45 13.4	+1.2
ZAM	**Aeronautique**	**2.09**	**160**	*e*P	Pn	08 44 49.9	+1.0
LPMF	**Morne Lapointe**	**2.11**	**158**	*i*P	Pn	08 44 49.9	+0.7
TRMF	**Trois Ilets**	**2.12**	**161**	*e*P	Pn	08 44 50.5	+1.2
MVM	**Montagne Vaucl**	**2.15**	**157**	*e*P	Pn	08 44 50.8	+1.0
SVB	**Belmont**	**3.29**	**171**	*e*P	Pn	08 45 06.5	+2.0
FCV	**Fort Charlotte**	**3.41**	**171**	*e*P	Pn	08 45 07.1	+1.1

*BJI **15** 08:49:25.4, 4°80S×34°82E, h10km, mb4.8/26, mB5.0/17, Ms4.8/10, Ms7 4.5/8*
*ISCJB **15** 08:49:31.3±0.2, 4°22S±0°03×35°67E±0°04, h10km, mb4.8/107, MS4.0/13, Error ellipse: s-maj=5.7km s-min=4.5km az=3.3*
*IDC **15** 08:49:31.6±0.4, 4°22S×35°70E, h0km, mb4.5/33, mb1 4.6/38, mb1mx4.5/58, mbtmp4.5/38, ML4.5/4, MS4.0/16, Ms1 4.0/16, ms1mx3.8/47, Error ellipse: s-maj=14.8km s-min=10.4km az=99.0*
*MOS **15** 08:49:31.5±0.9, 4°17S×35°75E, h10km, mb4.9/60, Error ellipse: s-maj=11.9km s-min=5.4km az=85.0*
*NEIC **15** 08:49:33.3±0.1, 4°25S×35°74E, h10km, mb4.9/40, Error ellipse: s-maj=5.2km s-min=4.0km az=95.0*
NEIC Felt [III] at Arusha. Also felt at Babati, Dodoma and Moshi. Felt [II] at Nairobi, Kenya. Also felt at Mombasa.

ISC 15 08:49:33.0±0.3, 4°27S±0°04×35°71E±0°07, h10km, n242, σ1s17/253, mb4.8/107, MS4.0/14, 5C-3D, Tanzania

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
DODT	**Dodoma, Tanzan**	**1.91**	**179**	*i* P	**Pn**	**08 50 05.9**	**+0.1**
DODT				*i* S	**Sg**	**08 50 34.1**	**-0.4**
I32KE	**NAIROBI INFRAS**	**3.20**	**20**	Pn	**Pn**	**08 50 24.2**	**+0.6**
I32KE	baz=178,slow=29,SNR=1.0			*i*		09 01 50.0	
baz=212,slow=325,SNR=0.4							
KMBO	**Kilima Mbogo**	**3.48**	**26**	Pn	**Pn**	**08 50 25.5**	**-1.9**
47nm,0.3s,baz=317,slow=5.8,SNR=261							
KMBO				Sn	**Sn**	**08 51 07.2**	**-1.5**
569nm,0.3s,baz=117,slow=16,SNR=10							
KMBO				Lg	Lg	08 51 16.3	
1µm,0.3s,baz=274,slow=24,SNR=11							
KMBO				LR	LR	08 51 57.3	
comp=Z,3µm,19.2s,baz=142,slow=42							
KMBO	**Kilima Mbogo**	**3.48**	**26**	*e*P	**Pn**	**08 50 26.2**	**-1.2**
KMBO				*e*		08 51 07.6	
KMBO	**Kilima Mbogo**	**3.48**	**26**	*e*Pn	**Pn**	**08 50 26.2**	**-1.2**
KMBO				*e*Sn	**Sn**	**08 51 07.6**	**-1.2**
KMBO				Lg	Lg	08 51 16.3	
LSZ	**Lusaka**	**13.21**	**214**	Pn	**Pn**	**08 52 39.4**	**-1.5**
3.1nm,0.3s,baz=42,slow=12,SNR=41							
LSZ				Sn	**Sn**	**08 55 03.1**	**-5.0**
5.4nm,0.3s,baz=34,slow=3.6,SNR=3.0							
LSZ				Lg	Lg	08 56 21.9	
8.1nm,0.3s,baz=1.6,slow=21,SNR=12							
LSZ				LR	LR	08 57 57.7	
comp=Z,1µm,19.9s,baz=38,slow=38							
FURI	**Furi**	**13.40**	**13**	*e*Pn	**Pn**	**08 52 45.4**	**+1.7**
ATD	**Arta Tunnel**	**17.22**	**24**	P	**Pn**	**08 53 32.2**	**-1.7**
baz=253,slow=19,SNR=1.5							
ATD				Lg	Lg	08 58 27.1	
1.1nm,0.3s,baz=208,slow=17,SNR=3.6							
ATD				LR	LR	08 59 45.1	
comp=Z,264nm,21.5s,baz=183,slow=36							
MATP	**Matopo**	**17.53**	**203**	P	**Pn**	**08 53 37.0**	**-0.8**
0.9nm,0.3s,baz=23,slow=12,SNR=25							
MATP				Lg	Lg	08 58 35.6	
1.4nm,0.3s,baz=285,slow=20,SNR=4.5							
MATP				LR	LR	09 00 40.9	
comp=Z,952nm,18.7s,baz=36,slow=38							
OPO	**Ambohidratompo**	**18.11**	**143**	P	**Pn**	**08 53 43.9**	**-1.1**
0.5nm,0.3s,baz=311,slow=9.8,SNR=20							
OPO				LR	LR	08 59 29.6	
comp=Z,277nm,21.0s,baz=338,slow=33							
DAMY	**Dhamar**	**20.60**	**25**	*e*P	Pn	08 54 14.4	-0.7
81nm,1.2s							
LBTB	**Lobatse**	**22.81**	**204**	P	**P**	**08 54 36.0**	**-0.3**
26nm,1.0s,baz=34,slow=12,SNR=8.5							
LBTB				LR	LR	09 04 22.0	
comp=Z,249nm,21.0s,baz=56,slow=39							
LBTB	**Lobatse**	**22.81**	**204**	*e*P	**P**	**08 54 36.2**	**-0.1**
LBTB				pmax	pmax		
comp=Z,131nm,1.5s							
LBTB	**Lobatse**	**22.81**	**204**	*e*P	**P**	**08 54 36.2**	**-0.1**
comp=Z,131nm,1.5s							
TSUM	**Tsumeb**	**23.10**	**229**	P	**P**	**08 54 39.6**	**+0.3**
comp=Z,21nm,1.0s,baz=44,slow=9.9,SNR=15							
TSUM				LR	LR	09 04 11.1	
comp=Z,968nm,19.0s,baz=153,slow=38							
TSUM	**Tsumeb**	**23.10**	**229**	*e*P	**P**	**08 54 39.7**	**+0.3**
comp=Z,27nm,0.9s							
BOSA	**Boshof**	**26.18**	**201**	P	**P**	**08 55 08.3**	**+0.3**
comp=Z,11nm,1.0s,baz=16,slow=8.8,SNR=6.9							
BOSA				LR	LR	09 05 46.3	
comp=Z,961nm,19.9s,baz=42,slow=37							
BOSA	**Boshof**	**26.18**	**201**	*e*P	**P**	**08 55 08.2**	**+0.3**
BOSA				pmax	pmax		
comp=Z,33nm,1.2s							
BOSA	**Boshof**	**26.18**	**201**	*e*P	**P**	**08 55 08.2**	**+0.3**
comp=Z,32nm,1.2s							
RAYN	**Ar Rayn**	**29.22**	**19**	*e*P	**P**	**08 55 33.2**	**-1.9**
comp=Z,6.8nm,1.4s							
WSAR	**Wadi Sarin**	**35.32**	**38**	P	**P**	**08 56 27.9**	**-0.8**
comp=Z,2.5nm,0.7s,baz=229,slow=9.3,SNR=2.3							
ASF	**Jabal al Asfar**	**36.25**	**2**	P	**P**	**08 56 37.3**	**+0.7**
comp=Z,1.3nm,0.5s,baz=165,slow=7.9,SNR=3.1							
MMAI	**Mount Meron Ar**	**37.08**	**360**	P	**P**	**08 56 43.6**	**0.0**
comp=Z,0.3nm,0.2s,baz=197,slow=4.5,SNR=1.8							
TOA0	**Torodi Ar. Sit**	**37.95**	**298**	*e*P	**P**	**08 56 51.4**	**+0.1**
comp=Z,35nm,1.8s							
TORD	**Torodi Ar. Bea**	**37.95**	**298**	P	**P**	**08 56 50.6**	**-0.6**
comp=Z,4.4nm,1.0s,baz=110,slow=7.9,SNR=13							
TORD				PP	**PnPn**	**08 58 23.2**	**+4.0**
comp=Z,2.1nm,0.8s,baz=109,slow=8.9,SNR=3.5							
TORD				LR	LR	09 13 11.1	
comp=Z,341nm,19.2s,baz=105,slow=37							
TAM	**Tamanrasset**	**39.91**	**314**	*e*P	**P**	**08 57 09.4**	**+1.7**
TAM				pmax	pmax		
comp=Z,30nm,1.5s							
TAM	**Tamanrasset**	**39.91**	**314**	*e*P	**P**	**08 57 09.4**	**+1.7**
comp=Z,30nm,1.5s							
IDI	**Anoyia**	**40.64**	**346**	P	**P**	**08 57 13.4**	**0.0**
comp=Z,14nm,1.2s,baz=180,slow=6.1,SNR=2.7							
KIC	**Kosan Boka**	**41.75**	**284**	*e*P	**P**	**08 57 21.9**	**-0.9**
comp=Z,62nm,1.7s							
DBIC	**Dimbokro**	**41.93**	**285**	P	**P**	**08 57 24.1**	**-0.2**
comp=Z,6.0nm,0.7s,baz=88,slow=8.7,SNR=12							
DBIC				LR	LR	09 15 05.3	
comp=Z,156nm,19.3s,baz=92,slow=37							
LIC	**Lamto**	**41.99**	**284**	*e*P	**P**	**08 57 24.2**	**-0.6**
TIC	**Toumodi**	**42.08**	**285**	*e*P	**P**	**08 57 25.1**	**-0.5**
ISP	**Isparta**	**42.15**	**354**	*e*P	**P**	**08 57 26.5**	**+0.7**
ISP				pmax	pmax		
comp=Z,15nm,0.8s							
APE	**Apeiranthos**	**42.20**	**348**	*e*P	**P**	**08 57 27.1**	**+0.9**
APE				pmax	pmax		
comp=Z,15nm,1.1s							
BR131	**Keskin Array S**	**43.81**	**358**	*e*P	**P**	**08 57 40.5**	**+1.1**
BRTR	**Keskin Array B**	**43.81**	**358**	P	**P**	**08 57 40.1**	**+0.7**
comp=Z,2.7nm,0.8s,baz=179,slow=10,SNR=10							
BR231	**Keskin MP Arra**	**43.97**	**357**	*e*P	**P**	**08 57 40.7**	**+0.2**
KEST	**Kesra**	**46.84**	**330**	LR	LR	09 20 01.9	
comp=Z,360nm,19.3s,baz=141,slow=39							
KBZ	**Khabaz**	**48.21**	**7**	LR	LR	09 18 58.7	
comp=Z,113nm,18.2s,baz=182,slow=37							
KIV	**Kislovodsk**	**48.41**	**7**	*i* P	**P**	**08 58 17.2**	**+1.8**
KIV				*e*		08 59 42.9	
KIV				pmax	pmax		
comp=Z,7.0nm,1.1s							
GOF	**Gofitskoye**	**49.54**	**7**	*e*P	**P**	**08 58 24.7**	**+0.7**
GOF				pmax	pmax		
comp=Z,18nm,0.9s							
BUR08	**Bucovina Ar. S**	**52.51**	**351**	*e*P	**P**	**08 58 47.6**	**+1.2**
PSZ	**Piszkesteto**	**53.79**	**347**	*e*P	**P**	**08 58 55.9**	**+0.1**
PSZ				pmax	pmax		
comp=Z,16nm,1.0s							
PSZ	**Piszkesteto**	**53.79**	**347**	*e*P	**P**	**08 58 55.9**	**+0.1**
comp=Z,16nm,1.0s							
STHS	**Stebnicka Huta**	**54.92**	**348**	*e*P	**P**	**08 59 05.6**	**+1.6**
STHS	**Stebnicka Huta**	**54.92**	**348**	*e*P	**P**	**08 59 05.6**	**+1.6**
AK11	**Malin Array Si**	**55.02**	**355**	*e*P	**P**	**08 59 04.8**	**+0.3**
KIEV	**Kiev**	**55.03**	**355**	*e*P	**P**	**08 59 04.7**	**+0.1**
KIEV				pmax	pmax		
comp=Z,12nm,1.0s							
KIEV	**Kiev**	**55.03**	**355**	*e*P	**P**	**08 59 04.7**	**+0.1**
comp=Z,12nm,1.0s							
AKASG	**Malin Array Be**	**55.03**	**355**	P	**P**	**08 59 04.6**	**-0.1**
comp=Z,6.1nm,0.8s,baz=176,slow=6.3,SNR=24							
AKASG	**Malin Array Be**	**55.03**	**355**	P	**P**	**08 59 04.6**	**-0.1**
AKASG				pmax	pmax		
comp=Z,8.0nm,0.8s							
AKBB	**Malin Array Si**	**55.03**	**355**	*e*P	**P**	**08 59 04.6**	**-0.1**
AKBB				pmax	pmax		
comp=Z,12nm,1.0s							
AKBB	**Malin Array Si**	**55.03**	**355**	*e*P	**P**	**08 59 04.6**	**-0.1**
comp=Z,12nm,1.0s							
LANS	**Liptovska Anna**	**55.05**	**347**	*e*P	**P**	**08 59 05.6**	**+0.7**
LANS	**Liptovska Anna**	**55.05**	**347**	*e*P	**P**	**08 59 05.6**	**+0.7**
VSR	**Storozhevoye**	**55.34**	**3**	*e*P	**P**	**08 59 06.4**	**-0.5**
VSR				pmax	pmax		
comp=Z,9.0nm,0.7s							
VRH	**Novokhopyorsk**	**55.49**	**5**	*e*P	**P**	**08 59 06.7**	**-1.3**
VRH		

CLL	**Collm**	**58.67**	**344**	*e*P		**P**		**08 59 30.2**	**-0.3**
CLL				pmax		pmax			
	comp=Z,5.0nm,0.6s								
CLL	**Collm**	**58.67**	**344**	*e*P		**P**		**08 59 30.2**	**-0.3**
	comp=Z,4.7nm,0.6s								
OBN	**Obninsk**	**59.17**	**1**	P		**P**		**08 59 34.1**	**+0.2**
	comp=Z,15nm,0.4s,baz=129,slow=24,SNR=3.6								
OBN				LR		LR		09 27 59.5	
	comp=Z,60nm,20.2s,baz=272,slow=39								
OBN	**Obninsk**	**59.17**	**1**↑	*e*P		**P**		**08 59 32.4**	**-1.5**
OBN				*e*				09 00 22.3	
OBN				*e*				09 01 40.7	
OBN				pmax		pmax			
	comp=Z,21nm,1.2s								
TKM2	**Tokmak 2**	**59.20**	**33**	*e*P		**P**		**08 59 34.3**	**-0.4**
TKM2				pmax		pmax			
	comp=Z,8.0nm,1.0s								
TKM2	**Tokmak 2**	**59.20**	**33**	*e*P		**P**		**08 59 34.2**	**-0.4**
	comp=Z,8.5nm,1.0s								
MOS	**Moscow**	**59.82**	**1**	*e*P		**P**		**08 59 38.7**	**+0.4**
MOS				pmax		pmax			
	comp=Z,52nm,1.4s								
MEM	**Membach**	**60.33**	**339**	P		**P**		**08 59 44.3**	**+2.3**
BCLA	**Clavier**	**60.44**	**338**	P		**P**		**08 59 43.4**	**+0.7**
	comp=Z,16nm,2.0s								
GSI	**Gunungsitoli**	**62.06**	**86**	*e*P		**P**		**08 59 55.3**	**+0.8**
	comp=Z,86nm,2.0s								
LSA	**Lhasa**	**62.88**	**54**	*e*P		**P**		**08 59 59.8**	**-0.4**
LSA				pmax		pmax			
	comp=Z,4.0nm,0.5s								
LSA	**Lhasa**	**62.88**	**54**	*e*P		**P**		**08 59 59.8**	**-0.4**
	comp=Z,3.7nm,0.5s								
VSU	**Vasula**	**62.94**	**355**	*e*P		**P**		**08 59 58.3**	**-1.1**
VSU				pmax		pmax			
	comp=Z,33nm,1.2s								
ARU	**Arti**	**63.31**	**14**	P		**P**		**09 00 01.8**	**-0.1**
	comp=Z,2.5nm,0.3s,baz=204,slow=3.6,SNR=12								
ARU	**Arti**	**63.31**	**14**	*d i* P		**P**		**09 00 01.9**	**-0.1**
ARU								09 00 37.7	
ARU								09 02 16.7	
ARU				S		**S**		**09 08 34.0**	**0.0**
ARU				SS		**SS**		**09 12 36.1**	**-4.7**
ARU				pmax		pmax			
	comp=Z,31nm,1.7s								
ARU	**Arti**	**63.31**	**14**	*e*P		**P**		**09 00 02.0**	**+0.1**
	comp=Z,19nm,1.1s								
ZRNK	**Zerenda**	**63.54**	**22**	*e*P		**P**		**09 00 03.0**	**-0.5**
ZRNK				pmax		pmax			
	comp=Z,3.0nm,1.0s								
ZRNK	**Zerenda**	**63.54**	**22**	*e*P		**P**		**09 00 03.0**	**-0.5**
	comp=Z,3.4nm,1.0s								
PSI	**Prapat**	**63.55**	**85**	LR		LR		09 21 52.4	
	comp=Z,83nm,20.2s,slow=30								
PSI	**Prapat**	**63.55**	**85**	*e*P		**P**		**09 00 04.4**	**-0.2**
PSI				pmax		pmax			
	comp=Z,10.0nm,1.2s								
PSI	**Prapat**	**63.55**	**85**	*e*P		**P**		**09 00 04.4**	**-0.2**
	comp=Z,9.9nm,1.2s								
PUL	**Pulkovo**	**63.98**	**357**	*ce*P		**P**		**09 00 06.5**	**+0.3**
PUL				pmax		pmax			
	comp=Z,91nm,0.5s								
BRVK	**Borovoye**	**64.10**	**22**	*ce*P		**P**		**09 00 07.1**	**-0.1**
BRVK				pmax		pmax			
	comp=Z,6.0nm,1.2s								
BRVK	**Borovoye**	**64.10**	**22**	*e*P		**P**		**09 00 06.9**	**-0.3**
	comp=Z,6.5nm,1.2s								
BVAR	**Borovoye Array**	**64.12**	**22**	P		**P**		**09 00 07.2**	**-0.2**
	comp=Z,2.0nm,0.7s,baz=217,slow=4.7,SNR=12								
BVAR				PcP		**PcP**		**09 00 41.8**	**-0.6**
	comp=Z,1.3nm,0.7s,baz=216,slow=4.6,SNR=3.6								
SYO	**Syowa Base**	**64.69**	**178**↓	*i* P		**P**		**09 00 11.4**	**+0.6**
SYO	**Syowa Base**	**64.69**	**178**↓	*e*PcP		**PcP**		**09 00 42.4**	**-2.1**
TRTT	**Trang**	**64.94**	**79**	P		**P**		**09 00 14.0**	**+0.5**
	comp=Z,22nm,1.2s								
KLMR	**Klimovskoe**	**65.00**	**2**	*e*P		**P**		**09 00 10.3**	**-2.6**
KLMR				pmax		pmax			
	comp=Z,32nm,1.1s								
KHLT	**Khaolaem Dam**	**65.10**	**72**	P		**P**		**09 00 16.1**	**+1.6**
	comp=Z,8.0nm,1.1s,comp=Z,316nm								
MAKZ	**Makanchi**	**65.17**	**33**	*e*P		**P**		**09 00 14.1**	**-0.3**
MAKZ				pmax		pmax			
	comp=Z,7.0nm,1.0s								
MAKZ	**Makanchi**	**65.17**	**33**	*e*P		**P**		**09 00 14.1**	**-0.3**
	comp=Z,7.1nm,1.0s								
MK01	**Makanchi Array**	**65.33**	**33**	*e*P		**P**		**09 00 14.7**	**-0.7**
MK31	**Makanchi Array**	**65.34**	**33**	*e*P		**P**		**09 00 15.5**	**0.0**
MK31	**Makanchi Array**	**65.34**	**33**	*e*P		**P**		**09 00 15.4**	**0.0**
MKAR	**Makanchi Array**	**65.34**	**33**	P		**P**		**09 00 15.1**	**-0.4**
	comp=Z,5.1nm,0.8s,baz=232,slow=6.0,SNR=42								
MKAR	**Makanchi Array**	**65.34**	**33**	*e*P		**P**		**09 00 15.2**	**-0.3**
BKNI	**Bangkinang**	**65.42**	**88**	*e*P		**P**		**09 00 18.0**	**+1.4**
	comp=Z,59nm,0.5s								
SOKR	**Solikamsk**	**65.81**	**12**	*e*P		**P**		**09 00 16.8**	**-1.4**
SOKR				pmax		pmax			
	comp=Z,20nm,1.2s								
IPM	**Ipoh**	**65.82**	**83**	*e*P		**P**		**09 00 19.0**	**-0.3**
	comp=Z,17nm,0.9s								
MAW	**Mawson**	**65.90**	**169**	P		**P**		**09 00 20.2**	**+1.5**
	comp=Z,13nm,1.0s,baz=325,slow=7.6,SNR=13								
MAW	**Mawson**	**65.90**	**169**	*e*P		**P**		**09 00 20.4**	**+1.7**
	comp=Z,6.3nm,1.2s								
FINES	**FINESS Array B**	**65.94**	**355**	P		**P**		**09 00 16.1**	**-2.9**
	comp=Z,9.6nm,0.8s,baz=158,slow=36,SNR=35								
FINES	**FINESS Array B**	**65.94**	**355**	P		**P**		**09 00 16.1**	**-2.9**
FINES				pmax		pmax			
	comp=Z,16nm,0.7s								
KURK	**Kurchatov**	**65.96**	**28**	*e*P		**P**		**09 00 19.5**	**+0.1**
KURK				pmax		pmax			
	comp=Z,5.0nm,0.9s								
KURK	**Kurchatov**	**65.96**	**28**	*e*P		**P**		**09 00 19.4**	**+0.1**
	comp=Z,5.2nm,0.9s								
CM31	**Chiang Mai Arr**	**66.23**	**68**	*e*P		**P**		**09 00 21.9**	**+0.1**
CMAR	**Chiang Mai Arr**	**66.23**	**68**	P		**P**		**09 00 22.1**	**+0.4**
	comp=Z,3.9nm,0.8s,baz=258,slow=7.8,SNR=34								
CM01	**Chiang Mai Arr**	**66.23**	**68**	*e*P		**P**		**09 00 21.4**	**-0.4**
CHTO	**Chiang Mai**	**66.31**	**67**	P		**P**		**09 00 22.3**	**0.0**
	comp=Z,34nm,1.4s								
CHTO	**Chiang Mai**	**66.31**	**67**	*e*P		**P**		**09 00 22.2**	**0.0**
CHTO				pmax		pmax			
	comp=Z,25nm,1.8s								
CHTO	**Chiang Mai**	**66.31**	**67**	*e*P		**P**		**09 00 22.2**	**0.0**
	comp=Z,25nm,1.8s								
CMMT	**Chiang Mai**	**66.31**	**67**	P		**P**		**09 00 22.3**	**0.0**
	comp=Z,7.6nm,1.4s								
HFS	**Hagfors**	**66.50**	**348**	P		**P**		**09 00 22.5**	**-0.2**
	comp=Z,3.5nm,0.8s,baz=161,slow=9.4,SNR=5.7								
WMQ	**Urumqi**	**66.82**	**38**	P		**P**		**09 00 25.5**	**+0.4**
WMQ				pP		sP		09 00 29.5	-0.1
WMQ				sP		pP		09 00 32.0	+3.6
WMQ				pmax		pmax			
	comp=Z,4.0nm,0.8s								
WMQ				pmax		pmax			
	comp=Z,56nm,3.6s								
WMQ				LR		LR			
	comp=Z,26nm,18.8s								
WMQ				LR		LR			
	comp=Z,43nm,22.4s								
WMQ				LR		LR			
	comp=Z,22nm,16.4s								
LAMP	**Lampang**	**66.88**	**68**	P		**P**		**09 00 26.9**	**+1.0**
	comp=Z,4.0nm,0.8s								
JOF	**Joensuu**	**67.08**	**358**	P		**P**		**09 00 26.7**	**+0.4**
JOF				pmax		pmax			
	comp=Z,18nm,1.2s								
UTTA	**Uttaradit**	**67.56**	**69**	P		**P**		**09 00 31.3**	**+1.1**
	comp=Z,2.3nm,1.3s								
PBKT	**Sadao Pong**	**67.71**	**70**	P		**P**		**09 00 32.1**	**+1.0**
	comp=Z,8.1nm,2.0s,comp=Z,747nm								
NB2	**NORSAR Subarra**	**67.84**	**347**	P		**P**		**09 00 30.9**	**-0.3**
	comp=Z,1.3nm,0.7s,baz=155,slow=6.2								
NOA	**NORSAR Array B**	**67.84**	**347**	P		**P**		**09 00 31.3**	**+0.1**
	comp=Z,3.5nm,0.9s,baz=155,slow=5.9,SNR=7.5								
NOA	**NORSAR Array B**	**67.84**	**347**	P		**P**		**09 00 31.3**	**+0.1**
NOA				pmax		pmax			
	comp=Z,3.0nm,0.9s								
VAF	**Ylistaro**	**67.85**	**354**	P		**P**		**09 00 31.5**	**+0.4**
NBO02	**NORSAR Array S**	**67.93**	**347**	*e*P		**P**		**09 00 31.6**	**-0.2**
CRAI	**Chiangrai**	**67.95**	**66**	P		**P**		**09 00 34.2**	**+1.5**
	comp=Z,6.8nm,1.5s								
MDSI	**Maura Dua**	**68.24**	**93**	P		**P**		**09 00 34.9**	**+0.3**
	comp=Z,18nm,1.1s								
TMCR	**Tamitsa**	**68.27**	**1**	*e*P		**P**		**09 00 34.1**	**+0.3**
TMCR				pmax		pmax			
	comp=Z,20nm,0.6s								
SKNT	**Sakolnakorn**	**70.61**	**70**	P		**P**		**09 00 49.6**	**+0.4**
	comp=Z,33nm,1.1s								
NVS	**Novosibirsk**	**70.77**	**27**	*e*P		**P**		**09 00 49.0**	**-0.4**
ZAA0	**Zalesovo Array**	**70.95**	**28**	*e*P		**P**		**09 00 50.1**	**-0.4**
ZALV	**Zalesovo Beam**	**70.95**	**28**	P		**P**		**09 00 49.8**	**-0.8**
	comp=Z,3.7nm,0.8s,baz=257,slow=5.9,SNR=11								
SNAA	**Sanae**	**71.53**	**192**	*e*P		**P**		**09 00 54.7**	**+0.8**
CISI	**Cisompet, Garu**	**71.73**	**97**	P		**P**		09 01 00.1	+4.0
	comp=Z,43nm,1.1s								
CISI	**Cisompet, Garu**	**71.73**	**97**	*e*P		**P**		**09 00 55.8**	**-0.4**
	comp=Z,36nm,1.0s								
GTA	**Gaotai**	**73.10**	**47**	*e*P		**P**		**09 01 04.5**	**+0.6**
GTA				pP		sP		09 01 09.0	+0.6
GTA				sP		pP		09 01 12.3	+5.1
GTA				pmax		pmax			
	comp=Z,7.0nm,0.9s								
CD2	**Chengdu**	**73.58**	**56**	P		**P**		**09 01 06.6**	**-0.2**
CD2				pmax		pmax			
	comp=Z,1.0nm,0.5s								
ARCES	**ARCESS Array B**	**73.98**	**356**	P		**P**		**09 01 08.3**	**0.0**
	comp=Z,2.3nm,0.6s,baz=163,slow=4.7,SNR=13								
ARCES	**ARCESS Array B**	**73.98**	**356**	P		**P**		**09 01 08.3**	**0.0**
ARCES				pmax		pmax			
	comp=Z,10.0nm,1.0s								
KSM	**Kuching**	**74.75**	**87**	*e*P		**P**		**09 01 14.1**	**+0.1**
	comp=Z,22nm,1.2s								
GYA	**Guiyang**	**74.99**	**61**	P		**P**		**09 01 16.0**	**+0.8**
GYA				pmax		pmax			
	comp=Z,10.0nm,1.0s								
PCJI	**Pacitan**	**75.03**	**97**	P		**P**		**09 01 17.7**	**+2.1**
	comp=Z,45nm,1.4s								
LZH	**Lanzhou**	**75.07**	**51**	*e*P		**P**		**09 01 16.8**	**+1.2**
LZH				pP		sP		09 01 22.0	+1.9
LZH				sP		PcP		09 01 25.6	-3.6
LZH				pmax		pmax			
	comp=Z,24nm,1.0s								
LZH				pmax		pmax			
	comp=Z,89nm,4.5s								
PWJI	**Pagerwojo**	**75.66**	**97**	P		**P**		**09 01 20.5**	**+1.3**
KRAR	**Krasnoyarsk**	**75.96**	**29**	*e*P		**P**		**09 01 20.0**	**0.0**
KRAR				pmax		pmax			
	comp=Z,22nm,1.1s								
SBUM	**Sibu**	**76.74**	**86**	*e*P		**P**		**09 01 25.6**	**+0.3**
	comp=Z,9.5nm,1.2s								
JAGI	**Jajag, Banyuwa**	**77.96**	**98**	*e*P		**P**		**09 01 31.8**	**-0.4**
	comp=Z,58nm,1.2s								
ENH	**Enshi**	**78.23**	**58**	*e*P		**P**		**09 01 33.8**	**+0.4**
	comp=Z,13nm,1.0s								
ZAK	**Zakamensk**	**79.23**	**37**	*e*P		**P**		**09 01 38.7**	**+0.1**
ZAK				pmax		pmax			
	comp=Z,3.0nm,1.5s								
SONM	**Songino Array**	**80.35**	**40**	P		**P**		**09 01 45.1**	**+0.4**
	comp=Z,2.4nm,0.9s,baz=239,slow=5.0,SNR=14								
SONA1	**Songino Array**	**80.36**	**40**	*e*P		**P**		**09 01 46.1**	**+1.3**
NWAO	**Narrogin (SRO)**	**80.58**	**123**	P		**P**		**09 01 46.8**	**+0.6**
	comp=Z,7.2nm,1.0s,baz=254,slow=0.1,SNR=2.4								
ULN	**Ulaanbaatar**	**80.78**	**40**	*e*P		**P**		**09 01 48.2**	**+1.1**
ULN				pmax		pmax			
	comp=Z,9.0nm,1.4s								
ULN	**Ulaanbaatar**	**80.78**	**40**	*e*P		**P**		**09 01 48.2**	**+1.1**
	comp=Z,8.6nm,1.4s								
NRIK	**Noril'sk**	**81.40**	**16**	P		**P**		**09 01 50.3**	**+0.6**
	comp=Z,3.0nm,0.7s,baz=221,slow=4.6,SNR=9.0								
HHC	**Hu-ho-hao-te**	**82.14**	**48**	*e*P		**P**		**09 01 53.9**	**-0.5**
HHC				sP		PcP		09 02 01.3	+1.5
HHC				S		**S**		**09 12 07.0**	**-2.6**
HHC				pmax		pmax			
	comp=Z,29nm,0.7s								
HHC				pmax		pmax			
	comp=Z,100nm,6.8s								
HHC				LR		LR			
	comp=Z,110nm,18.5s								
HHC				LR		LR			
	comp=Z,220nm,18.5s								
HHC				LR		LR			
	comp=Z,140nm,18.0s								
MBWA	**Marble Bar**	**82.90**	**111**	*e*P		**P**		**09 01 59.1**	**+0.4**
	comp=Z,11nm,0.9s								
BJI	**Beijing**	**85.44**	**49**	P		**P**		**09 02 12.3**	**+1.2**
BJI				S		**S**		**09 12 48.3**	**+5.7**
BJI				pmax		pmax			
	comp=Z,10.0nm,0.9s								
BJI				LR		LR			
	comp=Z,170nm,24.5s								
BJI				LR		LR			
	comp=Z,120nm,33.5s								
QSPA	**South Pole Qui**	**85.79**	**180**	*e*P		**P**		**09 02 12.4**	**-0.1**
NJ2	**Nanjing**	**86.44**	**58**	*e*P		**P**		**09 02 15.0**	**-1.2**
NJ2				pmax		pmax			
	comp=Z,17nm,0.7s								
DAG	**Danmarks Havn**	**86.45**	**349**	P		**P**		**09 02 16.1**	**+0.7**
DAG				pmax		pmax			
	comp=Z,11nm,1.5s								
BOD	**Bodaibo**	**87.37**	**32**	*e*P		**P**		**09 02 18.2**	**-2.0**
BOD				pmax		pmax			
	comp=Z,4.0nm,1.4s								
FITZ	**Fitzroy Crossi**	**88.62**	**108**	P		**P**		**09 02 27.9**	**+0.8**
	comp=Z,4.4nm,0.7s,baz=263,slow=7.0,SNR=3.8								
TIXI	**Tiksi**	**95.02**	**19**	*ce*P		**P**		**09 02 56.1**	**+0.6**
TIXI				pmax		pmax			
	comp=Z,9.0nm,2.5s								
ASAR	**Alice Springs**	**95.78**	**114**	P		**P**		**09 03 00.2**	**0.0**
	comp=Z,2.0nm,1.0s,baz=264,slow=4.7,SNR=7.4								
ASAR				LR		LR		09 41 57.3	
	comp=Z,102nm,18.0s,baz=278,slow=33								
AS01	**Alice Springs**	**95.83**	**114**	*e*P		**P**		**09 03 00.2**	**-0.2**
WRA	**Warramunga Arr**	**96.64**	**111**	P		**P**		**09 03 04.0**	**-0.1**
	comp=Z,1.5nm,0.8s,baz=268,slow=2.7,SNR=7.4								
WB2	**Warramunga Arr**	**96.65**	**111**	*e*P		**P**		**09 03 04.2**	**0.0**
	comp=Z,13nm,1.4s								
INK	**Inuvik**	**115.65**	**356**	PKP		**PKPdf**		**09 08 14.3**	**-0.7**
	comp=Z,2.1nm,1.2s,baz=360,slow=3.6,SNR=3.4								
GAMB	**Gambell**	**117.35**	**13**	*e*PKPdf		**PKPdf**		**09 08 19.1**	**+0.6**
FYU	**Fort Yukon**	**117.81**	**0**	*e*PKPdf		**PKPdf**		**09 08 20.3**	**+1.0**
YKA	**Yellowknife Ar**	**117.89**	**345**	PKP		**PKPdf**		**09 08 19.6**	**+0.1**
	comp=Z,0.9nm,0.7s,baz=26,slow=2.1,SNR=18								
YKA				PP		**PP**		**09 09 34.8**	**+2.1**
	comp=Z,0.9nm,1.1s,baz=20,slow=7.4,SNR=5.5								
YKA	**Yellowknife Ar**	**117.89**	**345**	PKIKP		**PKPdf**		**09 08 19.6**	**+0.1**
YKA								09 09 34.8	
YKA				pmax		pmax			
	comp=Z,1.0nm,0.7s								
YKA				pmax		pmax			
	comp=Z,1.0nm,1.1s								
YKB5	**Yellowknife Ar**	**117.89**	**345**	*e*PKPdf		**PKPdf**		**09 08 19.0**	**-0.6**
MLY	**Manley**	**119.18**	**3**	*e*PKPdf		**PKPdf**		**09 08 22.5**	**+0.4**
EGAK	**Eagle**	**119.57**	**358**	*e*PKPdf		**PKPdf**		**09 08 23.3**	**+0.6**
IL1	**Eielson Array**	**119.59**	**1**	*e*PKPdf		**PKPdf**		**09 08 22.1**	**-0.7**
ILAR	**Eielson Array**	**119.59**	**1**	PKP		**PKPdf**		**09 08 22.1**	**-0.7**
	comp=Z,1.2nm,1.0s,baz=321,slow=3.1,SNR=7.0								
ILAR				PP		**PP**		**09 09 45.4**	**+1.0**
	comp=Z,0.4nm,0.9s,baz=359,slow=5.0,SNR=4.8								
KTH	**Kantishna Hill**	**120.64**	**3**	*e*PKPdf		**PKPdf**		**09 08 25.6**	**+0.7**
CAST	**Castle Rocks**	**120.70**	**4**	*e*PKPdf		**PKPdf**		**09 08 25.5**	**+0.5**
DOT	**Dot Lake**	**120.74**	**360**	*e*PKPdf		**PKPdf**		**09 08 25.9**	**+0.8**
TRF	**Thorofare Moun**	**120.78**	**3**	*e*PKPdf		**PKPdf**		**09 08 25.3**	**-0.1**
TT01	**Tatalina**	**120.85**	**6**	*e*PKPdf		**PKPdf**		**09 08 26.4**	**+1.2**
PPLA	**Purkeypile**	**121.21**	**4**	*e*PKPdf		**PKPdf**		**09 08 26.4**	**+0.2**
SML	**Sawmill**	**122.51**	**2**	*e*PKIKP		**PKPdf**		**09 08 29.2**	**+0.6**
SML	**Sawmill**	**122.51**	**2**	*e*PKPdf		**PKPdf**		**09 08 29.2**	**+0.6**
BMRM	**Bremner River**	**123.43**	**0**	*e*PKPdf		**PKPdf**		**09 08 31.8**	**+1.4**
LAO	**LASA Array**	**126.45**	**328**	*e*PKPdf		**PKPdf**		**09 08 37.6**	**+1.0**
EGMT	**Eagleton**	**127.32**	**331**	*e*PKPdf		**PKPdf**		**09 08 40.1**	**+1.8**
SWMT	**Swartz Lake**	**129.65**	**334**	*e*PKPdf		**PKPdf**		**09 08 44.3**	**+1.5**
BSMT	**Bassoo Peak**	**129.74**	**334**	*e*PKPdf		**PKPdf**		**09 08 43.6**	**+0.6**
CHMT	**Chamberlain Mo**	**129.76**	**333**	*e*PKPdf		**PKPdf**		**09 08 44.0**	**+0.8**
BOZ	**Bozeman (W)**	**129.91**	**330**	*e*PKIKP		**PKPdf**		**09 08 45.8**	**+2.4**
BOZ	**Bozeman (W)**	**129.91**	**330**	*e*PKPdf		**PKPdf**		**09 08 45.8**	**+2.4**
MSO	**Missoula**	**130.14**	**333**	*e*PKPdf		**PKPdf**		**09 08 44.9**	**+1.2**
DLMT	**Dillon**	**130.59**	**331**	*e*PKPdf		**PKPdf**		**09 08 44.5**	**-0.2**
IMW	**Indian Meadow**	**130.79**	**328**	*e*PKPdf		**PKPdf**		**09 08 46.5**	**+1.3**
BW06	**Boulder Array**	**130.81**	**326**	*e*PKPdf		**PKPdf**		**09 08 46.6**	**+1.3**
PD31	**Pinedale Array**	**130.81**	**326**	*e*PKPdf		**PKPdf**		**09 08 46.2**	**+0.9**
PDAR	**Pinedale Array**	**130.81**	**326**	PKP		**PKPdf**		**09 08 45.8**	**+0.6**
	comp=Z,0.8nm,0.8s,baz=85,slow=3.1,SNR=7.3								
REDW	**Red Top Meadow**	**131.11**	**328**	*e*PKPdf		**PKPdf**		**09 08 47.5**	**+1.7**
SDCO	**Great Sand Dun**	**131.40**	**319**	*e*PKPdf		**PKPdf**		**09 08 47.3**	**+0.7**
SMCO	**Snowmass**	**131.53**	**321**	*e*PKPdf		**PKPdf**		**09 08 48.4**	**+1.5**
TXAR	**Lajitas Array**	**134.19**	**308**	PKP		**PKPdf**		**09 08 53.5**	**+1.7**
	comp=Z,0.7nm,0.8s,baz=97,slow=2.9,SNR=6.8								
NV01	**Mina Array Sit**	**138.57**	**329**	*e*PKPdf		**PKPdf**		**09 09 02.0**	**+2.1**
NVAR	**Mina Array Bea**	**138.57**	**329**	PKP		**PKPdf**		**09 09 01.6**	**+1.7**
	comp=Z,7.3nm,1.1s,baz=87,slow=1.8,SNR=12								
AFI	**Afiamalu**	**147.29**	**124**	PKPbc		**PKPab**		**09 09 18.8**	**-0.9**
	comp=Z,31nm,0.8s,baz=270,slow=5.1,SNR=4.6								

ISCJB ***15*** *08:53:48.4±0.5, 48.77N±0.05×155.12E±0.09, h43km, mb3.9/17, MS3.1/3, Error ellipse: s-maj=11.0km s-min=3.3km az=41.2*
MOS ***15*** *08:53:49.2±1.6, 48.79N×155.12E, h57km, mb4.1/12, Error ellipse: s-maj=13.9km s-min=5.8km az=70.3*
KRSC ***15*** *08:53:49.9±2.2, 48.72N×156.54E, h25km±10km, ML4.7*
SKHL ***15*** *08:53:49.8±0.3, 48.74N×155.07E, h62km±5km, mb4.6/5*
IDC ***15*** *08:53:50.5±0.6, 48.80N×155.02E, h49km±5km, mb3.6/17, mb1 3.7/22, mb1mx3.6/67, mbtmp3.8/22, MS3.2/7, Ms1 3.2/7, ms1mx2.9/56, Error ellipse: s-maj=20.0km s-min=11.4km az=138.0*

ISC 15 08:53:49.0±0.6, 48°69N±0.07×155°25E±0.0, h43km, n74, σ1°63/83, mb3.8/17, MS3.3/3, 1C, Kuril Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SKR	**Severo-Kuril's**	**2.07**	**16**	*e*P	**Pn**	**08 54 21.2**	**0.0**
SKR				*e*S	**Sn**	**08 54 44.5**	**-1.3**
SKR	**Severo-Kuril's**	**2.07**	**16**	*i* P	**Pn**	**08 54 21.2**	**0.0**
SKR				AMB	AMB	08 54 22.8	
	150nm,0.4s						
SKR				*i* S	**Sn**	**08 54 44.5**	**-1.3**
SKR				A	A	08 54 52.2	
	550nm,0.4s						
SKR	**Severo-Kuril's**	**2.07**	**16**	*e*PN	Pn	08 54 16.5	-4.7
SKR				*e*S	Sn	08 54 40.0	-5.8
SKR				pmax	pmax		
	comp=N,80nm,0.5s						
SKR				pmax	pmax		
	comp=Z,150nm,0.5s						
SKR				smax	smax		
	comp=N,770nm,0.5s						
SKR				smax	smax		
	comp=E,540nm,0.5s						
ASAK	**Asacha**	**4.07**	**24**	*e*P	**Pn**	**08 54 50.2**	**+1.5**
ASAK				*e*S	**Sn**	**08 55 35.2**	**+0.2**
MTVR	**Mutnovka**	**4.23**	**25**	*e*P	**Pn**	**08 54 52.6**	**+1.6**
MTVR				*e*S	**Sn**	**08 55 38.9**	**-0.3**
RUS	**Russkaya**	**4.29**	**28**	*e*P	**Pn**	**08 54 52.2**	**+0.6**
RUS				*e*S	**Sn**	**08 55 38.3**	**-2.0**
RUS	**Russkaya**	**4.29**	**28**	PN	**Pn**	**08 54 52.2**	**+0.6**
RUS				S	**Sn**	**08 55 38.3**	**-2.0**
KRMR	**Karymshinskiy**	**4.53**	**23**	*e*P	**Pn**	**08 54 57.4**	**+2.4**
KRMR				*e*S	**Sn**	**08 55 48.2**	**+1.9**
PETK	**Petropavlovsk-**	**4.69**	**18**	P	**Pn**	**08 54 59.5**	**+2.4**
	comp=E,3.8nm,0.3s,baz=177,slow=13,SNR=29						
PETK				S	**Sn**	**08 55 55.0**	**+4.8**
	baz=184,slow=21,SNR=1.9						
PETK				LR	LR	08 57 04.9	
	comp=E,198nm,18.9s,baz=168,slow=42						
PET	**Petropavlovsk**	**4.84**	**25**	*e*P	**Pn**	**08 55 01.6**	**+2.3**
PET				*e*S	**Sn**	**08 55 54.6**	**+0.6**
PET	**Petropavlovsk**	**4.84**	**25**	*e*P	**Pn**	**08 55 01.1**	**+1.8**
PET				AMB	AMB	08 55 04.7	
	comp=E,30nm,0.6s						
PET				*e*S	**Sn**	**08 55 54.6**	**+0.6**
PET				A	A	08 56 12.9	
	comp=E,200nm,1.0s						
PET	**Petropavlovsk**	**4.84**	**25**	PN	**Pn**	**08 55 01.6**	**+2.3**
PET				S	**Sn**	**08 55 54.6**	**+0.6**
DALK	**Dalny**	**4.88**	**26**	*e*P	**Pn**	**08 55 01.3**	**+1.6**
DALK				*e*S	**Sn**	**08 55 54.7**	**-0.2**
UGLR	**Uglovaya**	**5.06

MKAR	**Makanchi Array**	**47.34**	**297**	P		**P**	**09 02 17.6**	**-0.7**
	comp=Z,0.4nm,0.5s,baz=65,slow=7.2,SNR=3.7							
MKAR	**Makanchi Array**	**47.34**	**297**	P		**P**	**09 02 17.6**	**-0.7**
MKAR				pmax		pmax		
	comp=Z,1.0nm,0.5s							
YKA	**Yellowknife Ar**	**48.51**	**38**	P		**P**	**09 02 28.8**	**+1.7**
	comp=Z,1.1nm,0.9s,baz=300,slow=7.6,SNR=12							
YKA				pP		**pP**	**09 02 40.6**	**+1.5**
	comp=Z,0.6nm,0.7s,baz=296,slow=7.5,SNR=9.2							
RES	**Resolute Bay**	**48.53**	**19**	P		**P**	**09 02 27.6**	**+0.6**
	comp=Z,0.8nm,0.8s,baz=328,slow=6.6,SNR=4.5							
BVAR	**Borovoye Array**	**50.75**	**309**	P		**P**	**09 02 43.9**	**-0.3**
	comp=Z,0.5nm,0.4s,baz=58,slow=3.7,SNR=4.4							
CMAR	**Chiang Mai Ar**	**54.22**	**257**	P		**P**	**09 03 10.8**	**+0.4**
	comp=Z,1.5nm,0.7s,baz=33,slow=7.6,SNR=12							
PDAR	**Pinedale Array**	**62.45**	**56**	P		**P**	**09 04 09.0**	**+1.1**
	comp=Z,0.6nm,0.8s,baz=268,slow=4.3,SNR=5.4							
PDAR				pP		**sP**	**09 04 23.2**	**-2.0**
	comp=Z,0.9nm,0.8s,baz=318,slow=2.0,SNR=6.7							
FINES	**FINESS Array B**	**62.89**	**335**	P		**P**	**09 04 07.9**	**-2.1**
	comp=Z,3.0nm,1.1s,baz=33,slow=8.3,SNR=5.7							
GEYT	**Alibeck**	**66.83**	**301**	P		**P**	**09 04 35.5**	**-0.7**
	comp=Z,1.6nm,0.5s,baz=21,slow=8.4,SNR=2.3							
NOA	**NORSAR Array B**	**66.84**	**342**	P		**P**	**09 04 35.8**	**-0.1**
	comp=Z,0.8nm,0.8s,baz=27,slow=8.4,SNR=3.0							
AKASG	**Malin Array Be**	**70.72**	**327**	P		**P**	**09 04 59.0**	**-1.1**
	comp=Z,0.7nm,0.3s,baz=82,slow=38,SNR=2.3							
WRA	**Warramunga Arr**	**70.83**	**201**	P		**P**	**09 05 01.0**	**-0.1**
	comp=Z,0.6nm,0.6s,baz=20,slow=6.5,SNR=5.9							
WRA				pP		**sP**	**09 05 16.6**	**-1.9**
	comp=Z,0.8nm,0.8s,baz=20,slow=6.9,SNR=4.0							
SCHQ	**Schefferville**	**70.95**	**24**	P		**P**	**09 05 02.5**	**+1.0**
	comp=Z,3.5nm,0.9s,baz=11,slow=4.8,SNR=5.2							
ASAR	**Alice Springs**	**74.52**	**200**	P		**P**	**09 05 24.1**	**+1.1**
	comp=Z,0.4nm,0.5s,baz=15,slow=4.9,SNR=6.7							
TXAR	**Lajitas Array**	**75.30**	**62**	P		**P**	**09 05 28.9**	**+1.3**
	comp=Z,0.5nm,0.5s,baz=299,slow=4.3,SNR=14							
TXAR				pP		**sP**	**09 05 43.3**	**-2.0**
	comp=Z,0.6nm,0.7s,baz=297,slow=4.7,SNR=5.0							

ISCJB ***15*** *08:54:08.6±0.2,6°.11S±0°.04×153°.80E±0°.04, h10km, mb4.6/55, MS3.9/2, Error ellipse: s-maj=6.1km s-min=5.4km az=25.9*

IDC ***15*** *08:54:08.6±0.6,6°.09S×153°.90E, h0km, mb4.3/23, mb1 4.4/26,mb1mx4.3/49,mbtmp4.3/26,ML3.0/2,MS4.0/1, Ms1 4.0/1,ms1mx2.9/45,Error ellipse: s-maj=19.8km s-min=13.3km az=98.0*

NEIC ***15*** *08:54:10.4±0.2,6°.11S×153°.78E, h10km, mb4.8/27, Error ellipse: s-maj=6.2km s-min=4.3km az=110.0*

BJI ***15*** *08:54:11.3,5°.44S×153°.86E, h10km, mb4.8/36, mB5.0/23, Ms4.9/8,Ms7 4.5/8*

ISC 15 08:54:10.5±0.4,6°.11S±0°.05×153°.80E±0°.05, h10km, n95, σ1°13/98, mb4.7/55, New Britain region

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
RABL	**Rabaul**	**2.51**	**319**	*e*Pn		**Pn**	**08 54 49.3**	**-2.1**
HNR	**Honiara**	**6.93**	**119**	Pn		**Pn**	**08 55 51.7**	**-0.5**
	baz=222,slow=15,SNR=2.0							
HNR				Sn		**Sn**	**08 57 11.2**	**0.0**
	8.2nm,0.3s,baz=66,slow=20,SNR=1.9							
HNR	**Honiara**	**6.93**	**119**	P		Pb	08 56 08.0	-3.1
HNR				S		**Sb**	**08 57 34.0**	**+0.1**
HNR	**Honiara**	**6.93**	**119**	*e*Pn		**Pn**	**08 55 52.0**	**-0.2**
HNR				Sn		**Sn**	**08 57 11.2**	**0.0**
HNR				*e*Sg		Sg	08 57 44.4	-8.7
PMG	**Port Moresby**	**7.35**	**243**	Pn		**Pn**	**08 55 58.7**	**+0.7**
	2.1nm,0.3s,baz=63,slow=8.0,SNR=9.2							
PMG				Sn		**Sn**	**08 57 21.4**	**-0.2**
	3.3nm,0.3s,baz=87,slow=18,SNR=6.2							
PMG				LR		LR	08 59 13.7	
	comp=Z,956nm,18.0s,baz=354,slow=41							
PMG	**Port Moresby**	**7.35**	**243**	*e*Pn		**Pn**	**08 55 56.8**	**-1.2**
PMG				*e*Sn		**Sn**	**08 57 21.1**	**-0.5**
MANU	**Manus Island**	**7.58**	**302**	*e*Pn		**Pn**	**08 56 00.5**	**-0.7**
PATS	**Pohnpei**	**13.62**	**19**	*e*Pn		**Pn**	**08 57 23.2**	**-0.8**
CTA	**Charters Tower**	**15.71**	**207**	Pn		**Pn**	**08 57 51.7**	**-0.5**
	0.2nm,0.3s,baz=59,slow=18,SNR=2.3							
CTAO	**Charters Tower**	**15.71**	**207**	*e*Pn		**Pn**	**08 57 51.5**	**-0.6**
	18nm,1.1s							
EIDS	**Eidsvold**	**19.33**	**187**	*e*P		**P**	**08 58 36.2**	**+0.1**
	20nm,1.1s							
DZM	**Mont Dzumac**	**20.03**	**144**	P		Pn	08 58 49.9	+4.2
	0.2nm,0.3s,baz=318,slow=18,SNR=4.0							
WRAB	**Tennant Creek**	**23.37**	**232**	*e*P		**P**	**08 59 19.3**	**-0.2**
	37nm,1.8s							
WB2	**Warramunga Arr**	**23.37**	**232**	*e*P		**P**	**08 59 19.5**	**0.0**
	10.0nm,1.0s							
WRA	**Warramunga Arr**	**23.38**	**232**	P		**P**	**08 59 19.4**	**-0.2**
	7.9nm,1.1s,baz=56,slow=10,SNR=16							
WRA				PcP		**PcP**	**09 03 09.7**	**+3.1**
	0.5nm,0.5s,baz=57,slow=2.8,SNR=5.6							
WRA				ScP		**ScP**	**09 06 47.3**	**+2.3**
	1.6nm,0.9s,baz=51,slow=2.7,SNR=6.1							
ARMA	**Armidale**	**24.27**	**185**	*e*P		**P**	**08 59 28.8**	**+0.6**
	64nm,1.9s							
AS01	**Alice Springs**	**25.87**	**226**	*e*P		**P**	**08 59 43.1**	**+0.4**
AS31	**Alice Springs**	**25.90**	**226**	*e*P		**P**	**08 59 43.8**	**+0.8**
	1.7nm,0.8s							
ASAR	**Alice Springs**	**25.91**	**226**	P		**P**	**08 59 43.5**	**+0.5**
	7.5nm,1.1s,baz=57,slow=8.5,SNR=38							
ASAR				PcP		**PcP**	**09 03 15.0**	**+2.9**
	1.2nm,0.9s,baz=55,slow=1.7,SNR=5.0							
ASAR				ScP		**ScP**	**09 06 54.6**	**+2.6**
	0.4nm,0.7s,baz=61,slow=3.3,SNR=5.5							
H11S3	**WAKE ISLAND Hy**	**27.55**	**27**	T		T	09 28 14.3	
	baz=197,slow=73,SNR=6.2							
H11S2	**WAKE ISLAND Hy**	**27.56**	**27**	T		T	09 28 23.4	
	baz=197,slow=73,SNR=4.8							
H11S1	**WAKE ISLAND Hy**	**27.57**	**27**	T		T	09 28 16.8	
	baz=197,slow=73,SNR=3.9							
STKA	**Stephens Creek**	**28.06**	**202**	P		**P**	**09 00 02.1**	**-0.2**
	2.4nm,0.8s,baz=8.7,slow=13,SNR=2.6							
FITZ	**Fitzroy Crossi**	**29.95**	**244**	P		**P**	**09 00 19.3**	**+0.1**
	4.0nm,0.8s,baz=72,slow=9.8,SNR=3.6							
FITZ	**Fitzroy Crossi**	**29.95**	**244**	*e*P		**P**	**09 00 19.0**	**-0.2**
	20nm,1.3s							
RPZ	**Rata Peaks**	**40.41**	**161**	P		**P**	**09 01 47.8**	**-1.2**
	6.5nm,1.0s,baz=211,slow=12,SNR=3.4							
JNU	**Nakatsue**	**44.68**	**332**	P		**P**	**09 02 22.4**	**-1.4**
	14nm,0.9s,baz=123,slow=9.1,SNR=5.1							
JNU	**Nakatsue**	**44.68**	**332**	*e*P		**P**	**09 02 22.8**	**-1.0**
	44nm,1.3s							
MJAR	**Matsushiro Arr**	**44.87**	**342**	P		**P**	**09 02 27.7**	**+2.4**
	1.2nm,0.4s,baz=97,slow=8.7,SNR=6.6							
KSRS	**Korea Array**	**49.61**	**333**	P		**P**	**09 03 01.7**	**-0.5**
	3.9nm,1.0s,baz=146,slow=8.6,SNR=9.2							
KSAR	**Wonju Array Be**	**49.62**	**333**	P		**P**	**09 03 01.7**	**-0.5**
NJ2	**Nanjing**	**50.48**	**321**	*e*P		P	09 03 12.3	+3.4
NJ2				pmax		pmax		
	comp=Z,23nm,0.6s							
MNAI	**Manna**	**50.65**	**269**	*e*P		**P**	**09 03 09.1**	**-1.4**
	216nm,1.1s							
KEKH	**Kekaha**	**53.41**	**57**	*e*P		**P**	**09 03 32.8**	**+1.9**
	162nm,1.4s							
USRK	**Ussuriysk Ar.**	**53.80**	**341**	P		**P**	**09 03 33.0**	**-0.4**
	5.9nm,0.9s,baz=141,slow=7.3,SNR=8.1							
CN2	**Changchun**	**55.89**	**335**	*e*P		**P**	**09 03 47.0**	**-1.6**
GYA	**Guiyang**	**55.98**	**308**	P		**P**	**09 03 52.3**	**+2.7**
GYA				pmax		pmax		
	comp=Z,10.0nm,1.0s							
PPT2	**Papeete2**	**56.39**	**107**	*e*LR		LR	09 20 26.5	
	82nm,24.5s							
TBI	**Tubuai**	**57.12**	**114**	*e*LR		LR	09 20 45.1	
	123nm,22.0s							
XAN	**Xi'an**	**58.25**	**316**	P		**P**	**09 04 03.0**	**-2.5**
XAN				pP		sP	09 04 10.5	+0.6
XAN				pmax		pmax		
	comp=Z,8.0nm,1.2s							
KLR	**Kul'dur**	**58.38**	**343**	P		**P**	**09 04 05.6**	**-0.4**
	6.5nm,0.8s,baz=158,slow=4.4,SNR=18							
PEA0	**Petropavlovsk-**	**59.08**	**3**	*e*P		**P**	**09 04 12.2**	**+1.3**
PETK	**Petropavlovsk-**	**59.08**	**3**	P		**P**	**09 04 10.5**	**-0.4**
	5.1nm,1.1s,baz=178,slow=10,SNR=3.6							
CM01	**Chiang Mai Arr**	**59.31**	**295**	*e*P		**P**	**09 04 13.0**	**-0.1**
CM31	**Chiang Mai Arr**	**59.33**	**296**	*e*P		**P**	**09 04 13.2**	**-0.1**
CMAR	**Chiang Mai Arr**	**59.33**	**296**	P		**P**	**09 04 13.3**	**0.0**
	1.2nm,0.8s,baz=111,slow=5.7,SNR=7.5							
CHTO	**Chiang Mai**	**59.45**	**296**	*e*P		**P**	**09 04 12.6**	**-1.4**
	10nm,1.5s							
CD2	**Chengdu**	**60.34**	**311**	P		**P**	**09 04 19.5**	**-0.6**
CD2				pmax		pmax		
	comp=Z,1.0nm,0.5s							
HHC	**Hu-ho-hao-te**	**60.68**	**324**	*e*P		**P**	**09 04 24.5**	**+2.2**
HHC				PP		**PP**	**09 06 38.3**	**+2.1**
HHC				S		S	09 12 32.3	-6.8
HHC				pmax		pmax		
	comp=Z,18nm,0.9s							
HHC				pmax		pmax		
	comp=Z,110nm,4.8s							
HHC				LR		LR		
	comp=N,140nm,16.0s							
HHC				LR		LR		
	comp=E,150nm,13.6s							
HHC				LR		LR		
	comp=Z,65nm,13.6s							
LZH	**Lanzhou**	**62.86**	**316**	*e*P		P	09 04 44.6	+7.5
LZH				pP		sP	09 04 50.0	+8.5
LZH				sP		pP	09 04 53.3	+13
LZH				pmax		pmax		
	comp=Z,21nm,1.0s							
TAOE	**Nuku Hiva Isla**	**65.48**	**97**	*e*LR		LR	09 24 35.9	
	comp=Z,56nm,24.0s							
ULN	**Ulaanbaatar**	**67.63**	**328**	*e*P		**P**	**09 05 08.1**	**+0.3**
	comp=Z,16nm,1.6s							
SONM	**Songino Array**	**67.96**	**328**	P		**P**	**09 05 10.5**	**+0.7**
	comp=Z,3.6nm,0.9s,baz=140,slow=5.4,SNR=19							
SONA1	**Songino Array**	**67.96**	**328**	*e*P		**P**	**09 05 10.0**	**+0.1**
SEY	**Seymchan**	**68.85**	**359**	P		**P**	**09 05 15.0**	**+0.1**
	comp=Z,0.4nm,0.3s,baz=142,slow=19,SNR=2.9							
VNDA	**Vanda**	**71.50**	**178**	P		**P**	**09 05 30.2**	**-0.9**
	comp=Z,1.3nm,1.1s,baz=304,slow=7.3,SNR=2.0							
TLY	**Talaya**	**71.70**	**330**	*e*P		**P**	**09 05 32.8**	**+0.1**
	comp=Z,7.0nm,0.8s							
BILL	**Bilibino**	**74.50**	**5**	*e*P		**P**	**09 05 48.1**	**-0.8**
	comp=Z,4.5nm,1.0s							
WMQ	**Urumqi**	**77.37**	**317**	*e*P		**P**	**09 06 07.0**	**+1.1**
WMQ				pP		sP	09 06 11.8	+1.4
WMQ				sP		PcP	09 06 14.0	-2.4
WMQ				pmax		pmax		
	comp=Z,5.0nm,0.6s							
WMQ				pmax		pmax		
	comp=Z,46nm,3.6s							
WMQ				LR		LR		
	comp=Z,25nm,17.2s							
TT01	**Tatalina**	**78.60**	**21**	*e*P		**P**	**09 06 12.8**	**+0.5**
TTA	**Tatalina**	**78.62**	**21**	*e*P		**P**	**09 06 12.8**	**+0.4**
	comp=Z,12nm,1.7s							
CAST	**Castle Rocks**	**80.34**	**22**	*e*P		**P**	**09 06 22.1**	**+0.4**
	comp=Z,7.7nm,1.4s							
SML	**Sawmill**	**80.90**	**24**	*e*P		**P**	**09 06 24.6**	**-0.1**
	comp=Z,17nm,1.5s							
TRF	**Thorofare Moun**	**81.03**	**22**	*e*P		**P**	**09 06 25.8**	**+0.2**
	comp=Z,16nm,1.8s							
MCK	**McKinley**	**81.69**	**22**	*e*P		**P**	**09 06 28.0**	**-0.9**
	comp=Z,7.6nm,1.0s							
MKAR	**Makanchi Array**	**81.96**	**319**	P		**P**	**09 06 31.0**	**+0.3**
	comp=Z,4.1nm,0.8s,baz=104,slow=6.0,SNR=24							
MKAR	**Makanchi Array**	**81.96**	**319**	*e*P		**P**	**09 06 31.2**	**+0.4**
MAKZ	**Makanchi**	**82.17**	**319**	*e*P		**P**	**09 06 32.1**	**+0.2**
	comp=Z,6.9nm,0.9s							
ZAA0	**Zalesovo Array**	**82.79**	**326**	*e*P		**P**	**09 06 33.9**	**-1.0**
ZALV	**Zalesovo Beam**	**82.79**	**326**	P		**P**	**09 06 34.3**	**-0.5**
	comp=Z,1.8nm,0.5s,baz=103,slow=5.0,SNR=6.3							
IL1	**Eielson Array**	**82.99**	**22**	*e*P		**P**	**09 06 33.1**	**-2.5**
ILAR	**Eielson Array**	**82.99**	**22**	P		**P**	**09 06 34.0**	**-1.7**
	comp=Z,1.2nm,1.0s,baz=248,slow=4.9,SNR=9.6							
DOT	**Dot Lake**	**83.52**	**23**	*e*P		**P**	**09 06 38.4**	**-0.1**
	comp=Z,8.3nm,0.8s							
QSPA	**South Pole Qui**	**83.86**	**180**	*e*P		**P**	**09 06 38.7**	**-1.6**
KSH	**Kashi**	**84.54**	**311**	*e*P		**P**	**09 06 46.1**	**+1.8**
KSH				*e*pP		sP	09 06 51.0	+2.1
KSH				S		**S**	**09 17 11.5**	**0.0**
KSH				SS		**SS**	**09 22 44.9**	**+2.3**
KSH				pmax		pmax		
	comp=Z,110nm,6.7s							
KSH				LR		LR		
	comp=Z,130nm,8.0s							
KSH				LR		LR		
	comp=Z,110nm,9.3s							
KSH				LR		LR		
	comp=Z,190nm,6.3s							
EGAK	**Eagle**	**85.17**	**23**	*e*P		**P**	**09 06 46.6**	**-0.2**
	comp=Z,3.7nm,0.8s							
KURK	**Kurchatov**	**85.41**	**322**	*e*P		**P**	**09 06 48.2**	**0.0**
	comp=Z,12nm,1.1s							
TKM2	**Tokmak 2**	**85.55**	**314**	*e*P		**P**	**09 06 50.0**	**+0.6**
	comp=Z,5.7nm,0.8s							
AAK	**Ala-Archa**	**86.28**	**313**	P		**P**	**09 06 53.2**	**+0.2**
	comp=Z,3.5nm,1.0s,baz=108,slow=3.6,SNR=6.3							
AAK	**Ala-Archa**	**86.28**	**313**	*e*P		**P**	**09 06 53.8**	**+0.7**
	comp=Z,4.3nm,1.0s							
EKS2	**Erkin-Say**	**86.81**	**313**	*e*P		**P**	**09 06 55.4**	**-0.2**
	comp=Z,11nm,1.4s							
NRIK	**Noril'sk**	**87.52**	**341**	P		**P**	**09 06 57.8**	**-0.4**
	comp=Z,1.2nm,0.4s,baz=87,slow=4.2,SNR=4.8							
INK	**Inuvik**	**89.32**	**21**	P		**P**	**09 07 05.5**	**-1.2**
	comp=Z,1.2nm,1.0s,baz=229,slow=8.4,SNR=4.7							
SAO	**San Andreas Ge**	**89.42**	**53**	*e*P		**P**	**09 07 07.9**	**-0.1**
	comp=Z,9.1nm,1.0s							
BVAR	**Borovoye Array**	**90.88**	**323**	P		**P**	**09 07 13.9**	**-0.5**
	comp=Z,3.8nm,0.7s,baz=98,slow=6.1,SNR=18							
BRVK	**Borovoye**	**90.95**	**323**	*e*P		**P**	**09 07 14.0**	**-0.7**
	comp=Z,42nm,1.8s							
ZRNK	**Zerenda**	**91.70**	**323**	*e*P		**P**	**09 07 17.5**	**-0.7**
	comp=Z,13nm,1.6s							
YKA	**Yellowknife Ar**	**96.11**	**28**	P		**P**	**09 07 37.6**	**-0.6**
	comp=Z,0.2nm,0.8s,baz=263,slow=4.0,SNR=4.0							
AKTO	**Aktyubinsk**	**98.36**	**320**	P		**P**	**09 07 48.2**	**-0.5**
	comp=Z,0.6nm,0.6s,baz=85,slow=4.9,SNR=2.9							
SFJD	**Kangerlussuaq**	**116.94**	**11**	*e*PKPdf		**PKPdf**	**09 12 55.5**	**+0.4**
ROC1	**El Roble**	**122.39**	**135**	*e*PKPdf		**PKPdf**	**09 13 07.2**	**+0.1**
GERES	**GERESS Array B**	**125.68**	**329**	PKP		**PKPdf**	**09 13 13.3**	**+0.6**
	comp=Z,0.6nm,0.2s,baz=57,slow=4.9,SNR=6.6							
GEA0	**GERESS Array S**	**125.69**	**329**	*e*PKPdf		**PKPdf**	**09 13 12.8**	**+0.2**
TOA0	**Torodi Ar. Sit**	**151.64**	**286**	*e*PKPbc		**PKPbc**	**09 14 05.4**	**-0.9**
TORD	**Torodi Ar. Bea**	**151.64**	**286**	PKPbc		**PKPbc**	**09 14 06.4**	**+0.1**
	comp=Z,5.1nm,0.9s,baz=63,slow=2.4,SNR=16							
TORD				PKPab		**PKPab**	**09 14 16.2**	**+1.2**
	comp=Z,2.1nm,0.8s,baz=70,slow=1.5,SNR=4.6							

JMA 15 08:59:16.2,37°.04N×140°.79E, h10km±1km, M2.6, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.06**	**6**	P		Pg	08 59 18.5	+0.1
ONAJ				S		Sg	08 59 19.8	-0.2
JFK	**Kawauchi**	**0.33**	**12**	P		Pg	08 59 22.9	0.0
JFK				S		Sg	08 59 27.8	+0.5
JHO	**Hitachi**	**0.46**	**203**	P		Pg	08 59 25.1	-0.2
JHO				S		Sg	08 59 31.2	-0.2
JFT	**Otama**	**0.60**	**323**	P		Pg	08 59 28.1	+0.3
JFT				S		Sg	08 59 36.3	+0.6
JMM	**Marumori**	**0.82**	**0**	P		Pg	08 59 31.8	-0.3
JMM				S		Sg	08 59 43.3	+0.4
MAT	**Matsushiro**	**2.13**	**257**	P		Pb	08 59 53.5	-1.4
MAT				S		Sb	09 00 21.5	+0.1

IDC 15 09:04:12.2±3.2,6°.27S×154°.57E, h0km, mb3.6/5, mb1 3.7/5, mb1mx3.5/44, mbtmp3.6/5, MS4.0/2, Ms1 4.0/2, ms1mx3.3/17, Error ellipse: s-maj=100.5km s-min=30.9km az=105.0, Bougainville-Solomon Islands region

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
PMG	**Port Moresby**	**7.98**	**247**	LR		LR	09 08 47.0	
	comp=Z,2μm,21.6s,baz=42,slow=34							
WRA	**Warramunga Arr**	**23.90**	**233**	P		P	09 09 27.9	0.0
	0.7nm,1.0s,baz=57,slow=9.5,SNR=6.0							
ASAR	**Alice Springs**	**26.35**	**227**	P		P	09 09 50.1	-0.1
	0.4nm,0.8s,baz=56,slow=8.0,SNR=4.1							
STKA	**Stephens Creek**	**28.22**	**204**	P		P	09 10 06.6	-0.2
	2.9nm,1.1s,baz=59,slow=7.1,SNR=2.8							
MKAR	**Makanchi Array**	**82.58**	**319**	P		P	09 16 38.8	+1.5
	0.2nm,0.5s,baz=106,slow=5.9,SNR=3.1							
ZALV	**Zalesovo Beam**	**83.34**	**326**	P		P	09 16 39.9	-1.1
	0.6nm,0.5s,baz=96,slow=5.1,SNR=3.9							
GEYT	**Alibeck**	**98.90**	**307**	LR		LR	10 05 24.2	
	comp=Z,42nm,19.5s,baz=280,slow=37							

BJI ***15*** *09:04:59.5,6°.01S×151°.54E, h35km, mb4.9/32, mB5.0/21, Ms4.7/12, Ms7 4.3/14*

MOS ***15*** *09:05:02.2±1.1,5°.66S×151°.07E, h33km, mb4.8/41, Error ellipse: s-maj=10.2km s-min=7.0km az=87.3*

IDC ***15*** *09:05:04.6±1.4,5°.74S×151°.16E, h43km±13km, mb4.4/31, mb1 4.5/34,mb1mx4.4/48,mbtmp4.6/34,ML3.4/2,MS4.0/6, Ms1 4.0/6,ms1mx3.6/20, Error ellipse: s-maj=12.0km s-min=8.3km az=100.0*

ISCJB ***15*** *09:05:04.4±0.9,5°.77S±0°.03×151°.14E±0°.03, h55km±8km, mb4.7/96,MS4.0/7, Error ellipse: s-maj=5.5km s-min=4.9km az=7.7*

GCMT ***15*** *09:05:05.8±0.3,5°.90S×151°.07E, h40km, MW5.0/70, Moment Tensor Solution. s36,c46; s70,c91; Duration: 0 Moment tensor: Scale 10¹⁶Nm; Mrr3.27±.22; Mθθ-1.05±.16; Mϕϕ-2.22±.17; Mrθ-1.55±.11; Mθϕ2.28±.09; Mϕr-0.53±.12; Best double couple: M₀4.03000×10¹⁶ NP1:ϕ₁299.00000°,δ54.00000°,λ59.00000°. NP2: ϕ₂165.00000°,δ46.00000°,λ126.00000°. Principal axes: T 4.0290, Plg65.0000°, Azm150.0000°; N 0.0020, Plg25.0000°, Azm319.0000°; P -4.0310, Plg4.0000°, Azm51.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

NEIC ***15*** *09:05:05.8±0.7,5°.75S×151°.13E, h54km±7km, mb4.9/58 Error ellipse: s-maj=5.3km s-min=4.3km az=96.0*

DJA ***15*** *09:05:20.3±0.7,6°.S±4°×15°.1E±°, h121km±6km, M5.2/21, mB5.5/2, mb4.8/21, MLv5.4/1, Mw(mB)4.9/2*

ISC 15 09:05:04.8±0.5,5°.73S±0°.04×151°.11E±0°.05, h43km±4km, h43km:pP-P, n208, σ1°15/213, mb4.8/96, MS4.1/7, 2C-2D, New Britain region

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
RABL	**Rabaul**	**1.85**	**35**	*e*Pn		**Pn**	**09 05 36.3**	**+2.2**
RABL				*e*Sn		Sn	09 06 03.8	+7.4
MANU	**Manus Island**	**5.23**	**314**	*e*Pn		Pn	09 06 28.9	+8.3
MANU				*e*Sn		Sn	09 07 05.1	-14
PMG	**Port Moresby**	**5.36**	**227**	P		**Pn**	**09 06 24.2**	**+1.9**
	33nm,0.3s,baz=55,slow=6.3,SNR=102							
PMG				S		**Sn**	**09 07 22.4**	**-0.4**
	43nm,0.3s,baz=0.0,slow=19,SNR=9.3							
PMG	**Port Moresby**	**5.36**	**227**	*e*Pn		**Pn**	**09 06 24.2**	**+1.9**
PMG				*e*Sn		**Sn**	**09 07 25.4**	**+2.7**
HNR	**Honiara**	**9.50**	**113**	P		**Pn**	**09 07 20.0**	**+0.9**
	13nm,0.3s,baz=249,slow=4.5,SNR=9.5							
HNR				S		**Sn**	**09 09 04.7**	**+0.1**
	16nm,0.3s,baz=17,slow=18,SNR=4.9							
HNR				LR		LR	09 10 32.4	
	comp=Z,989nm,21.9s,baz=266,slow=35							
HNR	**Honiara**	**9.50**	**113**	*e*P		**Pn**	**09 07 20.0**	**+0.9**
HNR				*e*S		**Sn**	**09 09 05.0**	**+0.3**
HNR	**Honiara**	**9.50**	**113**	*e*Pn		**Pn**	**09 07 18.2**	**-0.9**
HNR				*e*Sn		**Sn**	**09 09 04.3**	**-0.3**
JAY	**Jayapura**	**10.86**	**287**	P		Pn	09 07 43.3	+5.5
	0.0nm,0.3s,baz=128,slow=19,SNR=4.2							
JAY	**Jayapura**	**10.86**	**287**	P		Pn	09 07 48.6	+11
COEN	**Coen**	**11.31**	**223**	P		**Pn**	**09 07 45.2**	**+1.2**
	baz=11,SNR=12							
COEN	**Coen**	**11.31**	**223**	*e*Pn		**Pn**	**09 07 45.1**	**+1.1**
COEN				*e*Sn		**Sn**	**09 09 46.4**	**-2.7**
GENI	**Genyem**	**11.35**	**285**	P		Pn	09 07 56.0	+12
MTSU	**Mount Surprise**	**14.00**	**208**	P		**Pn**	**09 08 22.1**	**+1.3**
	baz=14,SNR=6.5							
CTA	**Charters Tower**	**15.04**	**198**	P		**Pn**	**09 08 34.9**	**+0.4**
	0.2nm,0.3s,baz=16,slow=15,SNR=4.3							
CTAO	**Charters Tower**	**15.04**	**198**	*e*P		**Pn**	**09 08 34.3**	**-0.2**
CTAO	**Charters Tower**	**15.04**	**198**	*e*Pn		**Pn**	**09 08 34.3**	**-0.2**
KMPI	**Kaimana, Papua**	**17.47**	**276**	P		**P**	**09 09 09.9**	**+3.7**
QIS	**Mount Isa**	**18.50**	**216**	P		**Pn**	**09 09 18.7**	**+0.7**
	baz=18,SNR=31							
FAKI	**Fak Fak**	**19.01**	**278**	*e*P		**P**	**09 09 20.6**	**-2.6**
	30nm,1.1s							
EIDS	**Eidsvold**	**19.53**	**180**	P	

MOO	**Moorlands**	**36.73**	**185**	P	**P**	**09 12 08.7**	**+0.8**
	baz=37,SNR=3.6						
JAGI	**Jajag, Banyuwa**	**36.77**	**264**	P	**P**	**09 12 07.9**	**-0.8**
	comp=Z,40nm,1.2s						
JAGI	**Jajag, Banyuwa**	**36.77**	**264**	*eP*	**P**	**09 12 07.3**	**-1.4**
	comp=Z,35nm,1.0s						
KMBL	**Kambalda**	**37.42**	**223**	P	**P**	**09 12 13.8**	**-0.3**
	baz=38,SNR=9.5						
RAO	**Raoul Island**	**37.46**	**132**	LR	LR	09 25 05.4	
	comp=Z,309nm,21.4s,baz=136,slow=32						
PWJI	**Pagerwojo**	**39.08**	**264**	P	P	09 12 33.2	+5.0
	comp=Z,29nm,0.7s,comp=Z,2µm						
GIRL	**Giralia**	**39.35**	**241**	P	**P**	**09 12 29.6**	**-0.7**
	baz=39,SNR=10						
PCJI	**Pacitan**	**39.70**	**264**	P	**P**	**09 12 33.9**	**+0.5**
	comp=Z,54nm,1.1s						
URZ	**Urewera**	**40.07**	**148**	P	**P**	**09 12 36.1**	**0.0**
	comp=Z,13nm,0.6s,baz=297,slow=3.2,SNR=18						
URZ				PcP	**PcP**	**09 14 38.5**	**-1.8**
	comp=Z,7.3nm,0.7s,baz=312,slow=11,SNR=3.7						
URZ				LR	LR	09 26 18.5	
	comp=Z,309nm,20.5s,baz=3.0,slow=32						
URZ	**Urewera**	**40.07**	**148**	*eP*	**P**	**09 12 36.1**	**0.0**
	comp=Z,46nm,0.7s						
URZ				PcP	**PcP**	**09 14 38.5**	**-1.8**
KLBR	**Kellerberrin**	**40.45**	**226**	P	**P**	**09 12 38.5**	**-0.8**
	baz=40,SNR=13						
MORW	**Morawa**	**40.46**	**231**	P	**P**	**09 12 39.0**	**-0.5**
	baz=40,SNR=16						
BLDU	**Ballidu**	**40.71**	**228**	P	**P**	**09 12 41.0**	**-0.5**
	baz=41,SNR=16						
THZ	**Tophouse**	**40.80**	**155**	*eP*	**P**	**09 12 41.9**	**-0.3**
	comp=Z,33nm,1.0s						
YULB	**Yu-li**	**41.05**	**316**	*eP*	**P**	**09 12 44.8**	**+0.4**
	comp=Z,23nm,0.8s						
FOZ	**Fox Glacier**	**41.10**	**159**	*eP*	**P**	**09 12 44.1**	**-0.4**
	comp=Z,58nm,1.1s						
NACB	**Ninganchiao**	**41.37**	**317**	*eP*	**P**	**09 12 48.6**	**+1.6**
	comp=Z,39nm,0.9s						
LTZ	**Lake Taylor**	**41.38**	**156**	*eP*	**P**	**09 12 46.9**	**-0.1**
	comp=Z,60nm,1.1s						
BFZ	**Birch Farm**	**41.46**	**151**	*eP*	**P**	**09 12 46.7**	**-0.8**
	comp=Z,34nm,1.0s						
TPUB	**Ta-pu**	**41.46**	**315**	*eP*	**P**	**09 12 47.9**	**+0.1**
	comp=Z,22nm,0.7s						
NWAO	**Narrogin (SRO)**	**41.54**	**225**	P	**P**	**09 12 47.2**	**-1.2**
	comp=Z,19nm,0.8s,baz=58,slow=0.0,SNR=4.6						
NWAO	**Narrogin (SRO)**	**41.54**	**225**	P	**P**	**09 12 47.9**	**-0.5**
	baz=42,SNR=6.0						
NWAO	**Narrogin (SRO)**	**41.54**	**225**	*eP*	**P**	**09 12 46.6**	**-1.7**
NWAO				pmax	pmax		
	comp=Z,25nm,1.0s						
NWAO	**Narrogin (SRO)**	**41.54**	**225**	*eP*	**P**	**09 12 46.6**	**-1.7**
	comp=Z,25nm,1.0s						
SSLB	**Suanglung**	**41.55**	**316**	*eP*	**P**	**09 12 48.7**	**+0.2**
	comp=Z,14nm,0.8s						
RPZ	**Rata Peaks**	**41.71**	**158**	P	**P**	**09 12 47.6**	**-1.9**
	comp=Z,41nm,0.8s,baz=339,slow=1.6,SNR=21						
RPZ	**Rata Peaks**	**41.71**	**158**	*eP*	**P**	**09 12 49.2**	**-0.3**
	comp=Z,276nm,1.1s						
OXZ	**Oxford**	**41.75**	**157**	*eP*	**P**	**09 12 48.8**	**-1.1**
	comp=Z,45nm,0.8s						
YHNB	**Yeheng**	**41.84**	**317**	*eP*	**P**	**09 12 52.1**	**+1.2**
	comp=Z,48nm,0.9s						
LBZ	**Lake Benmore**	**41.98**	**159**	*eP*	**P**	**09 12 50.8**	**-0.9**
	comp=Z,22nm,1.0s						
MLZ	**Mavora Lakes**	**42.17**	**162**	*eP*	**P**	**09 12 53.1**	**-0.2**
	comp=Z,73nm,1.2s						
CRLZ	**Canterbury Las**	**42.19**	**157**	*eP*	**P**	**09 12 53.1**	**-0.3**
	comp=Z,168nm,1.3s						
JNU	**Nakatsue**	**43.15**	**335**	P	**P**	**09 13 03.1**	**+1.8**
	comp=Z,22nm,0.8s,baz=66,slow=2.2,SNR=11						
JNU	**Nakatsue**	**43.15**	**335**	*eP*	**P**	**09 13 03.5**	**+2.2**
	comp=Z,9.1nm,0.8s						
MJAR	**Matsushiro Arr**	**43.75**	**345**	P	**P**	**09 13 06.6**	**+0.4**
	comp=Z,0.4nm,0.4s,baz=170,slow=7.4,SNR=3.6						
MAJO	**Matsushiro**	**43.75**	**345**	*eP*	P	09 13 09.7	+3.5
MAJO				pmax	pmax		
	comp=Z,26nm,1.0s						
QZH	**Quanzhou**	**43.94**	**315**	*iP*	**P**	**09 13 06.6**	**-1.2**
QZH				pP	**pP**	**09 13 17.3**	**-2.4**
QZH				*eS*	**S**	**09 19 37.0**	**+0.4**
QZH				pmax	pmax		
	comp=Z,130nm,0.7s						
QZH				LR	LR		
	comp=Z,330nm,15.1s						
XMIS	**Christmas Isla**	**45.22**	**261**	*eP*	**P**	**09 13 18.7**	**+0.5**
	comp=Z,49nm,0.8s						
KSRS	**Korea Array**	**48.10**	**335**	P	**P**	**09 13 40.5**	**+0.2**
	comp=Z,2.0nm,0.7s,baz=161,slow=8.9,SNR=7.0						
KSRS	**Korea Array**	**48.10**	**335**	P	**P**	**09 13 40.5**	**+0.2**
KSRS				pmax	pmax		
	comp=Z,3.0nm,0.7s						
KSAR	**Wonju Array Be**	**48.10**	**335**	P	**P**	**09 13 40.5**	**+0.1**
KSAR	**Wonju Array Be**	**48.10**	**335**	P	**P**	**09 13 40.5**	**+0.1**
NJ2	**Nanjing**	**48.53**	**323**	*eP*	**P**	**09 13 45.0**	**+1.2**
NJ2				pmax	pmax		
	comp=Z,7.0nm,0.8s						
RAR	**Rarotonga**	**49.96**	**113**	LR	LR	09 32 11.7	
	comp=Z,133nm,21.3s,baz=280,slow=33						
ASAJ	**Asahikawa**	**50.20**	**352**	P	**P**	**09 13 54.9**	**-1.5**
	comp=Z,2.8nm,0.7s,baz=187,slow=8.1,SNR=1.9						
USRK	**Ussuriysk Ar.**	**52.60**	**343**	P	**P**	**09 14 13.4**	**-0.9**
	comp=Z,2.2nm,0.9s,baz=163,slow=14,SNR=4.5						
ENH	**Enshi**	**53.58**	**314**	*eP*	**P**	**09 14 22.8**	**+0.9**
	comp=Z,19nm,0.9s						
GYA	**Guiyang**	**53.64**	**309**	P	P	09 14 26.3	+3.8
GYA				pmax	pmax		
	comp=Z,10.0nm,1.0s						
BJI	**Beijing**	**55.76**	**328**	P	P	09 14 49.3	+12
BJI				pmax	pmax		
	comp=Z,11nm,1.4s						
XAN	**Xi'an**	**56.15**	**318**	P	**P**	**09 14 40.4**	**0.0**
XAN				pP	pP	09 14 48.8	-3.9
XAN				pmax	pmax		
	comp=Z,9.0nm,0.6s						
CMAR	**Chiang Mai Arr**	**56.76**	**296**	P	**P**	**09 14 45.7**	**+0.8**
	comp=Z,0.6nm,0.4s,baz=104,slow=5.5,SNR=6.6						
CMAR				PKP2bc		09 44 50.8	
	comp=Z,1.8nm,1.0s,baz=284,slow=3.9,SNR=6.9						
CMAR				PKP2ab		09 45 03.9	
	comp=Z,2.7nm,0.9s,baz=291,slow=3.9,SNR=8.9						
KLR	**Kul'dur**	**57.28**	**345**	P	**P**	**09 14 48.3**	**+0.2**
	comp=Z,1.8nm,0.7s,baz=115,slow=2.2,SNR=7.4						
CD2	**Chengdu**	**58.08**	**312**	P	**P**	**09 14 54.6**	**+0.5**
CD2				pmax	pmax		
	comp=Z,1.0nm,0.5s						
PETK	**Petropavlovsk-**	**58.88**	**5**	P	**P**	**09 14 58.4**	**-0.8**
	comp=Z,4.7nm,0.7s,baz=166,slow=7.5,SNR=6.1						
TBI	**Tubuai**	**59.72**	**114**	*e*LR	LR	09 32 49.8	
	comp=Z,266nm,35.8s						
LZH	**Lanzhou**	**60.74**	**317**	*eP*	**P**	**09 15 15.4**	**+2.9**
LZH				pP	pP	09 15 24.8	-0.1
LZH				sP	sP	09 15 28.0	-1.9
LZH				pmax	pmax		
	comp=Z,17nm,1.0s						
GTA	**Gaotai**	**65.21**	**318**	*eP*	P	09 15 54.3	+12
GTA				pP	sP	09 15 58.5	-1.1
GTA				sP	pP	09 16 02.0	+7.4
GTA				pmax	pmax		
	comp=Z,7.0nm,0.8s						
ULN	**Ulaanbaatar**	**65.91**	**329**	*eP*	**P**	**09 15 46.5**	**0.0**
ULN				pmax	pmax		
	comp=Z,3.0nm,0.9s						
SONM	**Songino Array**	**66.22**	**329**	P	**P**	**09 15 48.7**	**+0.2**
	comp=Z,1.8nm,0.6s,baz=131,slow=6.3,SNR=13						
SONM				PKP2bc		09 44 25.6	
	comp=Z,0.6nm,0.9s,baz=300,slow=2.2,SNR=4.1						
SONA1	**Songino Array**	**66.23**	**329**	*eP*	**P**	**09 15 48.9**	**+0.3**
SEY	**Seymchan**	**68.47**	**1**	P	**P**	**09 16 01.4**	**-0.8**
	comp=Z,0.9nm,0.4s,baz=38,slow=22,SNR=4.6						
ZAK	**Zakamensk**	**69.42**	**330**	*eP*	**P**	**09 16 08.4**	**-0.1**
ZAK				pmax	pmax		
	comp=Z,5.0nm,1.0s						
TLY	**Talaya**	**70.05**	**331**	*eP*	**P**	**09 16 11.8**	**-0.5**
TLY				pmax	pmax		
	comp=Z,2.0nm,0.9s						
BOD	**Bodaibo**	**70.06**	**340**	*eP*	**P**	**09 16 09.8**	**-2.4**
BOD				pmax	pmax		
	comp=Z,4.0nm,1.1s						
MOY	**Mondy**	**71.35**	**330**	*eP*	**P**	**09 16 21.1**	**+0.8**
VNDA	**Vanda**	**71.97**	**178**	P	**P**	**09 16 23.8**	**+0.3**
	comp=Z,8.7nm,1.0s,baz=328,slow=7.0,SNR=21						
VNDA	**Vanda**	**71.97**	**178**	*eP*	**P**	**09 16 23.8**	**+0.3**
	comp=Z,15nm,1.1s						
MIR	**Mirnyy**	**72.46**	**201**	*iP*	**P**	**09 16 27.0**	**+0.4**
MIR				pmax	pmax		
	comp=Z,6.0nm,1.0s						
BILL	**Bilibino**	**74.37**	**6**	*eP*	**P**	**09 16 39.2**	**+1.5**
BILL				*e*		09 16 50.7	
BILL				*e*		09 19 22.0	
BILL				pmax	pmax		
	comp=Z,5.0nm,1.0s						
WMQ	**Urumqi**	**75.29**	**318**	*eP*	**P**	**09 16 45.5**	**+1.9**
WMQ				pP	pP	09 16 55.6	-0.8
WMQ				sP	PcP	09 16 59.0	+2.2
WMQ				pmax	pmax		
	comp=Z,2.0nm,0.6s						
WMQ				pmax	pmax		
	comp=Z,23nm,3.6s						
WMQ				LR	LR		
	comp=Z,38nm,23.2s						
WMQ				LR	LR		
	comp=Z,54nm,23.2s						
WMQ				LR	LR		
	comp=Z,19nm,25.0s						
SVW2	**Sparrevohn**	**78.33**	**23**	*eP*	**P**	**09 17 00.8**	**+0.4**
	comp=Z,6.0nm,1.0s						
TIXI	**Tiksi**	**78.60**	**353**	P	**P**	**09 17 02.2**	**+0.7**
	comp=Z,0.8nm,0.4s,baz=149,slow=5.9,SNR=3.0						
TIXI	**Tiksi**	**78.60**	**353**	*eP*	**P**	**09 17 01.1**	**-0.4**
TIXI				pmax	pmax		
	comp=Z,3.0nm,1.4s						
TTA	**Tatalina**	**79.25**	**22**	*eP*	**P**	**09 17 04.9**	**-0.5**
TTA				pmax	pmax		
	comp=Z,13nm,1.7s						
TTA	**Tatalina**	**79.25**	**22**	*eP*	**P**	**09 17 04.9**	**-0.5**
	comp=Z,13nm,1.7s						
MKAR	**Makanchi Array**	**79.92**	**319**	P	**P**	**09 17 09.6**	**+0.2**
	comp=Z,1.5nm,0.6s,baz=101,slow=7.0,SNR=14						
MKAR	**Makanchi Array**	**79.92**	**319**	*eP*	**P**	**09 17 11.3**	**+1.9**
MAKZ	**Makanchi**	**80.13**	**319**	*eP*	**P**	**09 17 10.3**	**-0.2**
MAKZ				*e**PP	**pP**	**09 17 21.5**	**-1.8**
MAKZ	**Makanchi**	**80.13**	**319**	*eP*	**P**	**09 17 10.3**	**-0.2**
MAKZ				*e*pP	**pP**	**09 17 21.5**	**-1.8**
PPLA	**Purkeypile**	**80.67**	**23**	*eP*	**P**	**09 17 12.2**	**-1.0**
	comp=Z,11nm,1.4s						
CAST	**Castle Rocks**	**80.99**	**22**	*eP*	**P**	**09 17 13.8**	**-1.0**
	comp=Z,5.4nm,1.0s						
ZALV	**Zalesovo Beam**	**80.99**	**327**	P	**P**	**09 17 13.8**	**-1.1**
	comp=Z,2.9nm,0.8s,baz=110,slow=6.4,SNR=8.1						
ZALV	**Zalesovo Beam**	**80.99**	**327**	P	**P**	**09 17 13.8**	**-1.1**
ZALV				pmax	pmax		
	comp=Z,2.0nm,0.7s						
KTH	**Kantishna Hill**	**81.51**	**23**	*eP*	**P**	**09 17 16.1**	**-1.4**
	comp=Z,10nm,1.4s						
SML	**Sawmill**	**81.66**	**25**	*eP*	**P**	**09 17 17.9**	**-0.5**
SML				pmax	pmax		
	comp=Z,9.0nm,0.7s						
SML	**Sawmill**	**81.66**	**25**	*eP*	**P**	**09 17 17.9**	**-0.5**
	comp=Z,8.5nm,0.7s						
KSH	**Kashi**	**82.27**	**311**	P	**P**	**09 17 23.8**	**+1.7**
KSH				*e*pP	pP	09 17 34.3	-0.7
KSH				S	**S**	**09 27 35.0**	**+0.2**
KSH				pmax	pmax		
	comp=Z,100nm,3.9s						
KSH				LR	LR		
	comp=Z,110nm,5.4s						
KSH				LR	LR		
	comp=Z,140nm,4.9s						
KSH				LR	LR		
	comp=Z,150nm,6.1s						
MLY	**Manley**	**82.35**	**21**	*eP*	**P**	**09 17 21.4**	**-0.6**
	comp=Z,4.4nm,0.7s						
MCK	**McKinley**	**82.36**	**23**	*eP*	**P**	**09 17 20.8**	**-1.2**
MCK				pmax	pmax		
	comp=Z,8.0nm,0.9s						
MCK	**McKinley**	**82.36**	**23**	*eP*	**P**	**09 17 20.8**	**-1.2**
	comp=Z,8.4nm,0.9s						
KLU	**Klutina**	**82.53**	**26**	*eP*	**P**	**09 17 22.8**	**-0.1**
	comp=Z,4.7nm,0.8s						
WRH	**Wood River Hil**	**83.05**	**22**	*eP*	**P**	**09 17 24.2**	**-1.2**
	comp=Z,4.6nm,1.0s						
CCB	**Clear Creek Bu**	**83.24**	**22**	*eP*	**P**	**09 17 24.8**	**-1.6**
	comp=Z,3.7nm,0.8s						
COLA	**College**	**83.33**	**22**	*eP*	**P**	**09 17 25.4**	**-1.5**
COLA				pmax	pmax		
	comp=Z,5.0nm,0.8s						
COLA	**College**	**83.33**	**22**	*eP*	**P**	**09 17 25.4**	**-1.5**
	comp=Z,5.0nm,0.8s						
TKM2	**Tokmak 2**	**83.36**	**314**	*eP*	**P**	**09 17 26.3**	**-1.6**
TKM2				pmax	pmax		
	comp=Z,15nm,0.6s						
TKM2	**Tokmak 2**	**83.36**	**314**	*eP*	**P**	**09 17 26.3**	**-1.6**
	comp=Z,15nm,0.6s						
KURK	**Kurchatov**	**83.47**	**322**	*eP*	**P**	**09 17 29.5**	**+1.6**
KURK				pmax	pmax		
	comp=Z,8.0nm,0.9s						
KURK	**Kurchatov**	**83.47**	**322**	*eP*	**P**	**09 17 29.5**	**+1.6**
	comp=Z,7.6nm,0.9s						
KURBB	**Kurchatov Arra**	**83.49**	**322**	P	**P**	**09 17 27.9**	**-0.2**
	comp=Z,2.1nm,0.9s,baz=118,slow=4.3,SNR=9.5						
IL1	**Eielson Array**	**83.65**	**22**	*eP*	**P**	**09 17 26.5**	**-2.0**
ILAR	**Eielson Array**	**83.65**	**22**	P	**P**	**09 17 26.6**	**-1.9**
	comp=Z,3.5nm,0.8s,baz=249,slow=5.2,SNR=30						
ILB	**Eielson Array**	**83.65**	**22**	*eP*	**P**	**09 17 26.7**	**-1.9**
MAW	**Mawson**	**84.07**	**203**	P	**P**	**09 17 30.7**	**-0.1**
	comp=Z,11nm,0.7s,baz=99,slow=6.4,SNR=22						
MAW	**Mawson**	**84.07**	**203**	P	**P**	**09 17 30.6**	**-0.1**
	baz=84,SNR=13						
MAW	**Mawson**	**84.07**	**203**	*eP*	**P**	**09 17 30.6**	**-0.1**
	comp=Z,5.8nm,1.2s						
AAK	**Ala-Archa**	**84.08**	**314**	P	**P**	**09 17 31.5**	**0.0**
	comp=Z,1.4nm,0.6s,baz=134,slow=4.8,SNR=5.9						
AAK	**Ala-Archa**	**84.08**	**314**	*eP*	**P**	**09 17 31.8**	**+0.3**
AAK				*e**PP	**pP**	**09 17 43.2**	**-1.2**
AAK				pmax	pmax		
	comp=Z,6.0nm,0.8s						
AAK	**Ala-Archa**	**84.08**	**314**	*eP*	**P**	**09 17 31.8**	**+0.3**
	comp=Z,6.3nm,0.8s						
AAK				*e*pP	**pP**	**09 17 43.2**	**-1.2**
MENT	**Mentasta**	**84.09**	**25**	*eP*	**P**	**09 17 30.7**	**-0.3**
	comp=Z,3.0nm,0.7s						
QSPA	**South Pole Qui**	**84.24**	**180**	*eP*	**P**	**09 17 31.3**	**-0.4**
	comp=Z,111nm,0.9s						
DOT	**Dot Lake**	**84.25**	**24**	*eP*	**P**	**09 17 31.1**	**-0.6**
	comp=Z,9.8nm,0.8s						
EKS2	**Erkin-Say**	**84.61**	**314**	*eP*	**P**	**09 17 34.5**	**+0.4**
EKS2				pmax	pmax		
	comp=Z,14nm,1.0s						
EKS2	**Erkin-Say**	**84.61**	**314**	*eP*	**P**	**09 17 34.5**	**+0.4**
	comp=Z,14nm,1.0s						
EGAK	**Eagle**	**85.87**	**23**	*eP*	**P**	**09 17 39.6**	**-0.1**
	comp=Z,13nm,1.4s						
NRIK	**Noril'sk**	**86.30**	**341**	P	**P**	**09 17 41.4**	**-0.4**
	comp=Z,2.0nm,0.5s,baz=109,slow=4.2,SNR=4.8						
KKAR	**Karatay Array**	**87.05**	**314**	*eP*	**P**	**09 17 46.0**	**0.0**
KKAR				pmax	pmax		
	comp=Z,1.0nm,0.6s						
KKAR	**Karatay Array**	**87.05**	**314**	*eP*	**P**	**09 17 46.0**	**0.0**
	comp=Z,1.3nm,0.6s						
BVAR	**Borovoye Array**	**88.97**	**323**	P	**P**	**09 17 53.2**	**-1.7**
	comp=Z,1.3nm,0.6s,baz=101,slow=7.7,SNR=7.4						
BRVK	**Borovoye**	**89.04**	**323**	*eP*	**P**	**09 17 55.4**	**+0.1**
BRVK				pmax	pmax		
	comp=Z,1.0nm,0.9s						
INK	**Inuvik**	**89.92**	**21**	*eP*	**P**	**09 17 58.0**	**-1.0**
INK				pmax	pmax		
	comp=Z,1.0nm,0.5s						
INK	**Inuvik**	**89.92**	**21**	*eP*	**P**	**09 17 58.0**	**-1.0**
	comp=Z,0.8nm,0.5s						
HUMO	**Hull Mountain**	**90.85**	**47**	*eP*	**P**	**09 18 05.5**	**+1.5**
	comp=Z,14nm,1.0s						
AFDM	**Forest Hills D**	**91.94**	**51**	*eP*	**P**	**09 18 10.4**	**+1.3**
SYO	**Syowa Base**	**92.24**	**200**	*iP*	**P**	**09 18 07.2**	**-2.6**
SYO	**Syowa Base**	**92.24**	**200**	*iX*	pP	09 18 20.2	-2.6
MOD	**Modoc Plateau**	**92.73**	**48**	*eP*	**P**	**09 18 13.9**	**+1.0**
MOD				*e*pP	**pP**	**09 18 25.8**	**-0.1**
MWC	**Mount Wilson**	**93.87**	**56**	*eP*	**P**	**09 18 19.5**	**+1.1**
MWC				*e**PP	**pP**	**09 18 31.7**	**+0.3**
MWC	**Mount Wilson**	**93.87**	**56**	*eP*	**P**	**09 18 19.5**	**+1.1**
MWC				*e*pP	**pP**	**09 18 31.7**	**+0.3**
NVAR	**Mina Array Bea**	**93.98**	**52**	P	**P**	**09 18 18.8**	**0.0**
	comp=Z,4.1nm,0.7s,baz=250,slow=7.2,SNR=18						
NV11	**Mina Array Sit**	**94.09**	**52**	*eP*	**P**	**09 18 20.2**	**+1.0**
DAC	**Darwin (Calif)**	**94.39**	**54**	*eP*	**P**	**09 18 21.9**	**+1.1**
DAC				*e**PP	**pP**	**09 18 33.9**	**+0.1**
DAC	**Darwin (Calif)**	**94.39**	**54**	*eP*	**P**	**09 18 21.9**	**+1.1**
DAC				*e*pP	**pP**	**09 18 33.9**	**+0.1**
TPNV	**Topopah Spring**	**95.51**	**54**	*eP*	**P**	**09 18 26.8**	**+1.0**
TPNV	**Topopah Spring**	**95.51**	**54**	*eP*	**P**	**09 18 26.8**	**+1.0**
ARU	**Arti**	**96.14**	**326**	*eP*	P	09 18 31.7	+3.7
ARU				pmax	pmax		
	comp=Z,2.0nm,1.1s						
YKA	**Yellowknife Ar**	**97.03**	**28**	P	**P**	**09 18 31.4**	**-0.4**
	comp=Z,0.7nm,0.8s,baz=269,slow=4.5,SNR=14						
YKA				PKKP	PKKPdf	09 35 22.7	+6.2
	comp=Z,0.2nm,0.7s,baz=85,slow=2.7,SNR=6.5						
LCMT	**Little Creek M**	**97.92**	**54**	*eP*	Pdif	09 18 38.1	+1.4
PDAR	**Pinedale Array**	**100.71**	**48**	P	**Pdif**	**09 18 48.6**	**-0.6**
	comp=Z,0.7nm,0.6s,baz=228,slow=1.6,SNR=7.6						
AKASG	**Malin Array Be**	**114.25**	**324**	PKP	PKPdf	09 23 40.9	+1.1
	comp=Z,0.5nm,0.4s,baz=58,slow=3.2,SNR=2.8						
NOA	**NORSAR Array B**	**117.20**	**339**	PKP	**PKPdf**	**09 23 44.3**	**-0.9**
	comp=Z,0.8nm,0.8s,baz=52,slow=2.0,SNR=2.4						
GERES	**GERESS Array B**	**123.94**	**327**	PKP	**PKPdf**	**09 23 58.1**	**-0.5**
	comp=Z,0.7nm,0.6s,baz=64,slow=2.3,SNR=7.0						
EKA	**Eskdalemuir Ar**	**126.41**	**342**	PKP	**PKPdf**	**09 24 02.8**	**-0.2**
	comp=Z,0.6nm,0.5s,baz=20,slow=2.3,SNR=4.6						
SAML	**Samuel**	**142.83**	**113**	*e*PKPdf	**PKPdf**	**09 24 30.3**	**-4.5**
TORD	**Torodi Ar. Bea**	**148.97**	**286**	PKPbc	**PKPbc**	**09 24 48.5**	**-0.8**
	comp=Z,19nm,0.6s,baz=71,slow=2.6,SNR=107						

JMA 15 09:16:45.5, 37.06N×140.64E, h14km±1km, M2.9, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.13**	**72**	P	Pg	09 16 49.2	+0.1
ONAJ				S	Sg	09 16 51.7	+0.1
JFK	**Kawauchi**	**0.36**	**31**	P	Pg	09 16 52.9	+0.1
JFK				S	Sg	09 16 57.8	0.0
JHO	**Hitachi**	**0.45**	**187**	P	Pg	09 16 54.2	-0.3
JHO				S	Sg	09 17 00.4	-0.2
JFT	**Otama**	**0.52**	**332**	P	Pg	09 16 55.9	+0.2
JFT				S	Sg	09 17 02.8	+0.1
JSB	**Shiboa**	**0.58**	**261**	P	Pb	09 16 57.3	-0.2
JSB				S	Sb	09 17 05.4	-0.3
JMM	**Marumori**	**0.81**	**9**	P	Pg	09 17 00.7	-0.6
JMM				S	Sg	09 17 11.5	-0.5
JFY	**Yanaizu**	**0.82**	**295**	P	Pg	09 17 01.2	-0.3
JFY				S	Sg	09 17 11.7	-0.6
MAT	**Matsushiro**	**2.02**	**256**	P	Pb	09 17 20.9	-1.1
MAT				S	Sb	09 17 47.3	+0.3

IDC ***15*** *09:17:10.4±0.8, 35.89N×141.57E, h0km, mb3.6/10, mb1 3.8/14, mb1mx3.6/74, mbtmp3.7/14, ML3.8/4, Error ellipse: s-maj=20.7km s-min=14.7km az=103.0*
ISCJB ***15*** *09:17:11.5±0.5, 35.92N±0.04×141.65E±0.06, h26km, mb3.7/9, Error ellipse: s-maj=6.7km s-min=5.5km az=22.0*
JMA ***15*** *09:17:14.3±0.1, 35.94N×141.47E, h31km±2km, M3.4*
ISC 15 09:17:13.6±0.7, 35.90N±0.06×141.57E±0.07, h26km, n24, σ1s 06/23, mb3.6/9, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CHOJ	**Chosi**	**0.61**	**252**	P	**Pb**	**09 17 25.2**	**-0.5**
CHOJ				S	**Sb**	**09 17 33.2**	**-0.7**
JHO	**Hitachi**	**1.08**	**312**	P	**Pn**	**09 17 32.7**	**-0.3**
JHO				S	**Sn**	**09 17 45.4**	**-1.8**
BSO4	**Boso 4**	**1.35**	**228**	P	**Pn**	**09 17 37.7**	**+1.0**
BSO3	**Boso 3**	**1.40**	**219**	P	**Pn**	**09 17 37.4**	**+0.3**
MJAR	**Matsushiro Arr**	**2.79**	**284**	P	**Pn**	**09 17 57.0**	**+0.3**
	4.0nm,0.3s,baz=89,slow=9.8,SNR=17						
MJAR				Sn	**Sn**	**09 18 30.1**	**+0.5**
	3.9nm,0.3s,baz=108,slow=12,SNR=6.8						
JHJ	**Hachijo jima 2**	**3.14**	**209**	Pn	**Pn**	**09 18 01.6**	**+0.2**
	41nm,0.3s,baz=152,slow=3.9,SNR=16						
JHJ				Sn	**Sn**	**09 18 36.6**	**-1.4**
	38nm,0.3s,baz=54,slow=19,SNR=8.7						
ASAJ	**Asahikawa**	**8.25**	**5**	Pn	**Pn**	**09 19 10.5**	**-1.0**
	1.3nm,0.3s,baz=236,slow=7.6,SNR=9.9						
ASAJ				Sn	**Sn**	**09 20 42.9**	**-0.9**
	0.3nm,0.3s,baz=283,slow=18,SNR=2.8						
JCJ	**Chichijima**	**8.79**	**176**	Pn	**Pn**	**09 19 17.8**	**-1.2**
	4.6nm,0.3s,baz=285,slow=21,SNR=5.7						
JCJ				Sn	Sn	09 20 48.0	-9.2
	1.8nm,0.3s,baz=306,slow=19,SNR=2.3						
PETK	**Petropavlovsk-**	**20.61**	**28**	P	**P**	**09 21 49.1**	**-1.6**
	0.8nm,0.5s,baz=261,slow=8.8,SNR=4.9						
H11N2	**WAKE ISLAND Hy**	**27.47**	**119**	T	T	09 52 08.1	
	baz=311,slow=75,SNR=24						
H11N1	**WAKE ISLAND Hy**	**27.48**	**119**	T	T	09 52 03.0	
	baz=311,slow=75,SNR=15						
H11N3	**WAKE ISLAND Hy**	**27.49**	**119**	T	T	09 52 05.2	
	baz=311,slow=75,SNR=21						
H11S1	**WAKE ISLAND Hy**	**28.15**	**121**	T	T	09 53 25.0	
	baz=313,slow=75,SNR=29						
H11S3	**WAKE ISLAND Hy**	**28.15**	**121**	T	T	09 52 57.8	
	baz=313,slow=75,SNR=23						
H11S2	**WAKE ISLAND Hy**	**28.16**	**121**	T	T	09 52 58.3	
	baz=313,slow=75,SNR=16						
ZALV	**Z

	baz=177					
TWE	**Neicheng**	**0.18 223**	P	**Pn**	**09 19 46.1**	**+0.2**
	baz=202					
TWE			*e*S	**Sn**	**09 19 57.8**	**+0.6**
	baz=202					
NWF	**Wu-fen Shan**	**0.22 355**	P	**Pn**	**09 19 46.4**	**+0.2**
	baz=7.0					
NWF			*e*S	**Sn**	**09 19 57.3**	**-0.3**
	baz=7.0					
TWB1	**Santiao Chiao**	**0.23 47**	P	**Pn**	**09 19 46.4**	**+0.4**
	baz=58					
TWB1			S	**Sn**	**09 19 57.4**	**0.0**
	baz=58					
TWA	**Mucha**	**0.24 302**	P	**Pn**	**09 19 46.1**	**0.0**
	baz=307					
TWA			*e*S	**Sn**	**09 19 57.6**	**0.0**
	baz=307					
TWC	**Suao**	**0.25 170**	*i* P	**Pn**	**09 19 46.8**	**+0.7**
	baz=159					
TWC			S	**Sn**	**09 19 57.8**	**+0.2**
	baz=159					
ENTT	**Nioudou**	**0.30 226**	P	**Pn**	**09 19 46.3**	**-0.1**
	baz=215					
ENTT			*e*S	**Sn**	**09 19 57.7**	**-0.4**
	baz=215					
ENA	**Nanau**	**0.43 188**	*e*P	**Pn**	**09 19 47.3**	**+0.4**
	baz=180					
ENA			*e*S	**Sn**	**09 19 59.4**	**+0.3**
	baz=180					
TWS1	**Kuangyinshan**	**0.43 305**	P	**Pn**	**09 19 46.8**	**-0.1**
	baz=307					
TWS1			S	**Sn**	**09 19 58.6**	**-0.5**
	baz=307					
NSK	**Sanguang**	**0.44 247**	P	**Pn**	**09 19 46.9**	**-0.2**
	baz=241					
NSK			*e*S	**Sn**	**09 19 58.2**	**-1.2**
	baz=241					
TWY	**Chenhua**	**0.46 336**	P	**Pn**	**09 19 47.4**	**+0.2**
	baz=341					
TWY			S	**Sn**	**09 19 59.7**	**+0.3**
	baz=341					
NNS	**Nan Shan**	**0.57 224**	P	**Pn**	**09 19 48.1**	**+0.1**
	baz=218					
NNS			*e*S	**Sn**	**09 20 00.5**	**-0.6**
	baz=218					
NCU	**National Centr**	**0.57 282**	*e*P	**Pn**	**09 19 47.8**	**-0.1**
	baz=281					
NCU			*e*S	**Sn**	**09 20 00.7**	**-0.1**
	baz=281					
NSTT	**Nanjuang**	**0.76 253**	*i* P	**Pn**	**09 19 49.4**	**-0.1**
	baz=250					
NSTT			*i* S	**Sn**	**09 20 03.0**	**-0.6**
	baz=250					
TWD	**Chiawan**	**0.79 194**	*e*P	**Pn**	**09 19 49.2**	**-0.6**
	baz=189					
TWD			*e*S	**Sn**	**09 20 03.0**	**-1.1**
	baz=189					
TWT	**Tachien**	**0.83 224**	P	**Pn**	**09 19 50.8**	**+0.5**
	baz=221					
TWT			*e*S	**Sn**	**09 20 04.9**	**-0.1**
	baz=221					
WHF	**Hehuan Shan**	**0.86 215**	P	**Pn**	**09 19 51.0**	**+0.1**
	baz=211					
WHF			*e*S	**Sn**	**09 20 05.7**	**-0.3**
	baz=211					
NSY	**Sanyi**	**1.04 246**	P	**Pn**	**09 19 52.5**	**+0.2**
	baz=243					
NSY			*e*S	**Sn**	**09 20 08.5**	**0.0**
	baz=243					
TWQ1	**Liyutan**	**1.06 242**	P	**Pn**	**09 19 52.5**	**0.0**
	baz=239					
TWQ1			*e*S	**Sn**	**09 20 08.5**	**-0.4**
	baz=239					
JYNG	**Yonagunijimaku**	**1.11 111**	P	**Pn**	**09 19 52.7**	**-0.3**
JYNG			*e*S	**Sn**	**09 20 08.8**	**-1.0**
YOJ	**Yonaguni jima**	**1.17 109**	P	**Pn**	**09 19 53.4**	**-0.2**
YOJ			*e*S	**Sn**	**09 20 10.6**	**-0.2**
WDT	**Danda**	**1.25 209**	P	**Pn**	**09 19 55.3**	**+0.4**
	baz=206					
WDT			*e*S	**Sn**	**09 20 12.9**	**-0.2**
	baz=206					
SMLT	**Sun Moon Lake**	**1.27 221**	P	**Pn**	**09 19 55.0**	**+0.1**
	baz=218					
SMLT			*e*S	**Sn**	**09 20 13.0**	**-0.1**
	baz=218					
TYC	**Yuchr**	**1.28 223**	P	**Pn**	**09 19 55.0**	**+0.1**
	baz=220					
TYC			S	**Sn**	**09 20 12.9**	**-0.2**
	baz=220					
TWF1	**Yuli**	**1.56 197**	*e*P	**Pn**	**09 19 59.0**	**+0.7**
	baz=195					
TWF1			*e*S	**Sn**	**09 20 19.1**	**-0.1**
	baz=195					
YUS	**Yu-Shan**	**1.56 210**	*e*P	**Pn**	**09 19 59.6**	**+0.8**
	baz=207					
YUS			*e*S	**Sn**	**09 20 20.9**	**+0.9**
	baz=207					
ALS	**Alishan**	**1.62 215**	P	**Pn**	**09 19 59.6**	**+0.4**
	baz=212					
ALS			*e*S	**Sn**	**09 20 21.0**	**+0.2**
	baz=212					
CHN5	**Tsauling**	**1.62 220**	P	**Pn**	**09 19 59.1**	**+0.1**
	baz=217					
CHN5			*e*S	**Sn**	**09 20 20.5**	**+0.1**
	baz=217					
ELDTW	**Lidau**	**1.81 204**	*e*P	**Pn**	**09 20 01.6**	**+0.3**
	baz=201					
ELDTW			*e*S	**Sn**	**09 20 25.1**	**+0.4**
	baz=201					
IRIF	**Iriomote-Funau**	**1.83 106**	P	**Pn**	**09 20 01.1**	**-0.4**
IRIF			S	**Sn**	**09 20 24.4**	**-0.5**
CHN4	**Tsaushan**	**1.86 217**	P	**Pn**	**09 20 02.3**	**+0.4**
	baz=215					
CHN4			*e*S	**Sn**	**09 20 25.8**	**+0.1**
	baz=215					
STYT	**Tauyuan**	**1.94 210**	*e*P	**Pn**	**09 20 02.8**	**-0.2**
	baz=207					
STYT			*e*S	**Sn**	**09 20 27.4**	**-0.1**
	baz=207					
TWK	**Hsinying**	**1.99 218**	P	**Pn**	**09 20 03.5**	**0.0**
	baz=215					
TWK			S	**Sn**	**09 20 28.4**	**-0.2**
	baz=215					
HATJ	**Hateruma jima**	**1.99 113**	P	**Pn**	**09 20 04.0**	**+0.5**
HATJ			*e*S	**Sn**	**09 20 28.8**	**+0.3**
CHN1	**Nanshi**	**2.03 215**	*e*P	**Pn**	**09 20 04.1**	**0.0**
	baz=213					
CHN1			*e*S	**Sn**	**09 20 29.3**	**-0.2**
	baz=213					
JKRS	**Kuro-shima**	**2.10 107**	P	**Pn**	**09 20 05.1**	**+0.2**
JKRS			*e*S	**Sn**	**09 20 30.5**	**-0.5**
TWG	**Pinlang**	**2.13 198**	*e*P	**Pn**	**09 20 05.7**	**+0.3**
	baz=196					
TWG			*e*S	**Sn**	**09 20 30.5**	**-1.4**
	baz=196					
JIJ	**Ishigaki jima**	**2.18 102**	P	**Pn**	**09 20 05.9**	**-0.1**
JIJ			*e*S	**Sn**	**09 20 32.9**	**-0.1**
JISG	**Ishigakijimahi**	**2.29 96**	P	**Pn**	**09 20 07.6**	**+0.2**
JISG			S	**Sn**	**09 20 35.9**	**+0.4**
JTJ	**Tarama**	**2.64 94**	P	**Pn**	**09 20 12.5**	**+0.5**
JTJ			S	**Sn**	**09 20 43.3**	**-0.4**

*ISCJB **15** 09:20:01.6±0.5, 37°.23N±0°.05×137°.12E±0°.07, h258km±5km, mb3.1/4, Error ellipse: s-maj=9.1km s-min=7.0km az=35.6*
*JMA **15** 09:20:01.6±0.2, 37°.19N×137°.13E, h263km±2km, M3.1*
*IDC **15** 09:20:02.5±1.1, 37°.26N×137°.22E, h255km±13km, mb3.0/4, mb1 3.1/8, mb1mx2.8/73, mbtmp3.7/8, Error ellipse: s-maj=28.1km s-min=16.0km az=71.0*

ISC 15 09:20:02.3±0.8, 37°.22N±0°.07×137°.13E±0°.07, h254km±7km, n26, σ0^{s}80/38, mb3.1/4, Near west coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JSZ	**Suzu**	**0.30**	**39**	P	**Pn**	**09 20 35.3**	**+0.2**
JSZ				S	**S**	**09 21 01.5**	**+0.5**
MAT	**Matsushiro**	**1.10**	**127**	P	**Pn**	**09 20 38.4**	**0.0**
MAT				S	**S**	**09 21 06.9**	**+0.1**
MAT	**Matsushiro**	**1.10**	**127**	P	**Pn**	**09 20 38.4**	**0.0**
MAT				*e*S	**S**	**09 21 07.9**	**+1.1**
MJAR	**Matsushiro Arr**	**1.10**	**127**	P	**Pn**	**09 20 38.9**	**+0.5**
	4.3nm,0.3s,baz=304,slow=7.3,SNR=16						
JNG	**Nsakai**	**1.12**	**136**	P	**Pn**	**09 20 39.0**	**+0.3**
JNG				*e*S	**S**	**09 21 08.4**	**+1.2**
JSD	**Sado**	**1.22**	**47**	P	**Pn**	**09 20 39.4**	**+0.4**
JSD				*e*S	**S**	**09 21 06.6**	**-1.4**
JHK	**Hiroka**	**1.51**	**88**	P	**Pn**	**09 20 41.2**	**+0.1**
JGM	**Miyama**	**1.55**	**192**	P	**Pn**	**09 20 41.7**	**+0.2**
JGM				*e*S	**S**	**09 21 13.0**	**+0.6**
JRY	**Ryogami san**	**1.86**	**129**	P	**Pn**	**09 20 43.9**	**-0.1**
JRY				*e*S	**S**	**09 21 15.3**	**-1.6**
JAG	**Ashikaga**	**2.03**	**112**	P	**Pn**	**09 20 45.0**	**-0.4**
JAG				*e*S	**S**	**09 21 18.2**	**-1.1**
JYN	**Shimob**	**2.06**	**146**	P	**Pn**	**09 20 45.7**	**-0.1**
JYN				*e*S	**S**	**09 21 20.5**	**+0.4**
JAW	**Awa shima**	**2.09**	**53**	P	**Pn**	**09 20 46.3**	**+0.5**
JAW				S	**S**	**09 21 19.8**	**-0.4**
JKY	**Yasaka**	**2.27**	**226**	*e*S	**S**	**09 21 22.5**	**-1.0**
JWT	**Wachi**	**2.38**	**216**	P	**Pn**	**09 20 48.3**	**-0.4**
JWT				S	**S**	**09 21 23.5**	**-1.9**
JOD2	**Odawara 2**	**2.51**	**140**	P	**Pn**	**09 20 50.3**	**+0.2**
JOD2				*e*S	**S**	**09 21 27.5**	**-0.3**
JFT	**Otama**	**2.58**	**82**	P	**Pn**	**09 20 50.8**	**+0.2**
JYK	**Kaneyama**	**3.06**	**55**	P	**Pn**	**09 20 56.2**	**+0.5**
JWY	**Kouya**	**3.24**	**203**	P	**Pn**	**09 20 57.7**	**-0.1**
KSRS	**Korea Array**	**7.34**	**275**	P	**Pn**	**09 21 48.2**	**+1.0**
	0.2nm,0.3s,baz=95,slow=12,SNR=4.8						
USRK	**Ussuriysk Ar.**	**7.99**	**332**	P	**Pn**	**09 21 56.5**	**+1.1**
	0.9nm,0.3s,baz=148,slow=12,SNR=19						
ASAJ	**Asahikawa**	**8.05**	**29**	P	**Pn**	**09 21 54.6**	**-1.5**
	2.0nm,0.3s,baz=226,slow=11,SNR=12						
KLR	**Kul'dur**	**12.63**	**344**	P	**Pn**	**09 22 52.6**	**-0.7**
	0.5nm,0.3s,baz=151,slow=7.7,SNR=8.7						
MKAR	**Makanchi Array**	**41.11**	**301**	P	**P**	**09 27 22.1**	**+0.6**
	0.2nm,0.5s,baz=87,slow=10,SNR=4.0						
NRIK	**Noril'sk**	**41.69**	**336**	P	**P**	**09 27 26.3**	**+0.4**
	2.4nm,0.4s,baz=74,slow=3.6,SNR=5.0						
KURBB	**Kurchatov Arra**	**43.18**	**307**	P	**P**	**09 27 37.5**	**-0.6**
	0.2nm,0.3s,baz=75,slow=6.9,SNR=5.3						
WRA	**Warramunga Arr**	**56.91**	**183**	P	**P**	**09 29 21.6**	**+0.4**
	0.7nm,1.0s,baz=2.7,slow=7.8,SNR=5.8						

IDC 15 09:20:49.9±2.3, 6°.26S×154°.31E, h0km, mb3.4/3, mb1 3.7/4, mb1mx3.4/45, mbtmp3.5/4, ML1.7/1, MS2.8/1, Ms1 2.8/1, ms1mx2.6/22, Error ellipse: s-maj=78.9km s-min=30.2km az=128.0, Bougainville-Solomon Islands region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
PMG	**Port Moresby**	**7.74**	**246**	Pn	Pn	09 22 44.7	+0.7
	0.6nm,0.3s,baz=96,slow=10,SNR=4.8						
PMG				Sn	Sn	09 24 15.3	+2.9
	0.5nm,0.3s,baz=252,slow=10,SNR=4.0						
PMG				LR	LR	09 26 02.8	
	comp=Z,61nm,18.0s,baz=135,slow=40						
WRA	**Warramunga Arr**	**23.69**	**233**	P	P	09 26 02.3	-1.2
	1.1nm,0.9s,baz=55,slow=10.0,SNR=8.4						
ASAR	**Alice Springs**	**26.16**	**226**	P	P	09 26 26.8	+0.5
	0.5nm,0.8s,baz=89,slow=7.5,SNR=17						
MKAR	**Makanchi Array**	**82.41**	**319**	P	P	09 33 14.8	+0.7
	0.3nm,0.7s,baz=92,slow=3.3,SNR=3.7						
TORD	**Torodi Ar. Bea**	**152.17**	**286**	PKPbc	PKPbc	09 40 47.6	-1.0
	1.1nm,0.7s,baz=56,slow=2.4,SNR=7.8						
TORD				PKPab	PKPab	09 40 58.6	+0.4
	0.5nm,0.7s,baz=63,slow=3.2,SNR=3.9						

*NIED **15** 09:37:00, 39°.70N×143°.60E, h23km, Mw3.7 Best double couple: M$_0$3.39000×10^{14} NP1:φ$_s$204.00000°, δ43.00000°, λ95.00000°. NP2:φ$_s$17.00000°, δ48.00000°, λ86.00000°.*

JMA 15 09:37:30.2±0.4, 39°.70N×143°.63E, h14km, M3.8, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JTH	**Tanohata**	**1.38**	**281**	P	Pn	09 37 55.0	-0.1
MIYJ	**Miyakonagasawa**	**1.40**	**266**	P	Pn	09 37 55.5	+0.1
OFUJ	**Ofunato**	**1.64**	**248**	P	Pn	09 37 58.7	+0.1
JANG	**Nango**	**1.76**	**293**	P	Pn	09 38 00.5	+0.3
JOM	**Ohasama**	**1.82**	**264**	P	Pn	09 38 02.0	+0.9
JOM				*e*S	Sn	09 38 24.8	+0.8
JMK	**Ichinoseki**	**2.01**	**249**	P	Pn	09 38 04.4	+0.7
JTM	**Tenmabayashi**	**2.24**	**300**	P	Pn	09 38 08.3	+1.4
JRG	**Rokugo**	**2.34**	**263**	P	Pn	09 38 10.0	+1.8
JAH	**Hinai**	**2.35**	**283**	P	Pn	09 38 09.9	+1.5
JYK	**Kaneyama**	**2.66**	**254**	P	Pn	09 38 13.9	+1.3
JNBK	**Urakawa-nobuka**	**2.66**	**346**	P	Pb	09 38 15.8	-1.8
JCH	**Churui**	**2.92**	**356**	P	Pn	09 38 18.7	+2.5
JAR	**Ashorobuto**	**3.59**	**2**	S	Sn	09 39 09.5	+1.8
NEM2	**Nemuro 2**	**3.99**	**23**	P	Pn	09 38 33.4	+2.5
NEM2				S	Sn	09 39 17.0	-0.4
JTKR	**Abashiri--Toko**	**4.27**	**3**	P	Pn	09 38 37.6	+2.8
JTKR				*e*S	Sn	09 39 26.0	+1.6
MAT	**Matsushiro**	**5.31**	**235**	P	Pn	09 38 51.0	+1.9

*IDC **15** 09:39:40.4±0.9, 35°.83N×141°.55E, h0km, mb3.4/5, mb1 3.6/9, mb1mx3.5/59, mbtmp3.6/9, ML3.4/3, MS2.7/1, Ms1 2.7/1, ms1mx2.3/25, Error ellipse: s-maj=29.2km s-min=17.6km az=100.0*
*ISCJB **15** 09:39:41.4±0.7, 35°.79N±0°.05×141°.67E±0°.06, h26km, mb3.4/5, Error ellipse: s-maj=8.0km s-min=7.1km az=31.2*
*JMA **15** 09:39:44.1±0.2, 35°.92N×141°.48E, h39km±3km, M2.9*

ISC 15 09:39:43.4±0.8, 35°.86N±0°.07×141°.50E±0°.06, h26km, n20, σ1^{s}19/18, mb3.5/5, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
CHOJ	**Chosi**	**0.54**	**254**	P	**Pn**	**09 39 55.4**	**-0.1**
CHOJ				S	**Sn**	**09 40 03.5**	**-0.2**
JHO	**Hitachi**	**1.06**	**315**	P	**Pn**	**09 40 02.0**	**-0.6**
JYT	**Yasato**	**1.12**	**290**	P	**Pn**	**09 40 02.7**	**-0.7**
JYT				*e*S	**Sn**	**09 40 17.1**	**-0.9**
MJAR	**Matsushiro Arr**	**2.75**	**285**	Pn	**Pn**	**09 40 26.6**	**+0.8**
	1.8nm,0.3s,baz=86,slow=13,SNR=7.6						
MJAR				Sn	**Sb**	**09 41 04.3**	**-0.8**
	1.0nm,0.3s,baz=108,slow=10,SNR=4.5						
MAT	**Matsushiro**	**2.75**	**285**	P	**Pn**	**09 40 27.1**	**+1.3**
MAT				S	**Sb**	**09 41 02.9**	**-2.3**
JHJ	**Hachijo jima 2**	**3.08**	**208**	Pn	**Pn**	**09 40 30.2**	**-0.2**
	23nm,0.3s,baz=322,slow=23,SNR=11						
JHJ				Sn	**Sn**	**09 41 05.6**	**-0.7**
	15nm,0.3s,baz=90,slow=20,SNR=3.9						
ASAJ	**Asahikawa**	**8.29**	**5**	Pn	**Pn**	**09 41 40.8**	**-1.1**
	0.6nm,0.3s,baz=148,slow=33,SNR=4.0						
JCJ	**Chichijima**	**8.76**	**176**	Pn	**Pn**	**09 41 46.3**	**-2.0**
	baz=320,slow=17						
JCJ				Sn	Sn	09 43 16.4	-10
	1.5nm,0.3s,baz=274,slow=20,SNR=2.3						
JNU	**Nakatsue**	**9.18**	**256**	LR	LR	09 45 11.4	
	comp=Z,53nm,21.2s,baz=120,slow=36						
H11N2	**WAKE ISLAND Hy**	**27.50**	**119**	T	T	10 14 28.3	
	baz=311,slow=75,SNR=27						
H11N1	**WAKE ISLAND Hy**	**27.51**	**119**	T	T	10 14 30.9	
	baz=311,slow=75,SNR=17						
H11N3	**WAKE ISLAND Hy**	**27.52**	**119**	T	T	10 14 28.4	
	baz=311,slow=75,SNR=5.0						
H11S1	**WAKE ISLAND Hy**	**28.18**	**121**	T	T	10 15 17.7	
	baz=313,slow=75,SNR=6.2						
H11S3	**WAKE ISLAND Hy**	**28.18**	**121**	T	T	10 15 19.7	
	baz=313,slow=75,SNR=5.3						
H11S2	**WAKE ISLAND Hy**	**28.19**	**121**	T	T	10 15 19.0	
	baz=313,slow=75,SNR=3.9						
MKAR	**Makanchi Array**	**44.81**	**303**	P	**P**	**09 47 55.9**	**+0.8**
	0.4nm,0.7s,baz=90,slow=10,SNR=4.2						
ILAR	**Eielson Array**	**50.45**	**32**	P	**P**	**09 48 40.2**	**+1.6**
	0.3nm,0.6s,baz=264,slow=6.1,SNR=5.5						
WRA	**Warramunga Arr**	**55.91**	**188**	P	**P**	**09 49 19.8**	**+0.7**
	0.6nm,0.7s,baz=3.1,slow=7.4,SNR=4.9						
ASAR	**Alice Springs**	**59.63**	**188**	P	**P**	**09 49 46.2**	**+1.0**
	0.2nm,0.7s,baz=11,slow=12,SNR=3.8						
YKA	**Yellowknife Ar**	**64.79**	**30**	P	**P**	**09 50 20.3**	**+0.9**
	0.2nm,0.7s,baz=303,slow=7.1,SNR=6.5						

IDC 15 09:43:15.3±6.7, 5°.37S×151°.49E, h202km±43km, mb2.7/2, mb1 2.9/3, mb1mx2.7/38, mbtmp3.3/3, Error ellipse: s-maj=123.6km s-min=45.4km az=120.0, New Britain region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
PMG	**Port Moresby**	**5.87**	**227**	P	Pn	09 44 41.5	+0.5
	0.6nm,0.3s,baz=45,slow=10.0,SNR=2.4						
PMG				S	S	09 45 48.8	+0.3
	2.9nm,0.3s,baz=104,slow=15,SNR=5.6						
WRA	**Warramunga Arr**	**22.09**	**228**	P	P	09 47 54.3	-0.1
	0.1nm,0.3s,baz=54,slow=9.6,SNR=8.0						
ASAR	**Alice Springs**	**24.85**	**221**	P	P	09 48 19.9	+0.4
	0.4nm,0.7s,baz=55,slow=9.0,SNR=11						
TORD	**Torodi Ar. Bea**	**149.23**	**287**	PKPbc	PKPbc	10 02 40.3	-0.7
	0.1nm,0.5s,baz=50,slow=4.5,SNR=3.3						

*IDC **15** 09:48:31.6±2.3, 36°.84N×143°.96E, h0km, mb3.6/3, mb1 3.8/8, mb1mx3.4/49, mbtmp3.7/8, ML3.5/4, MS2.4/1, Ms1 2.4/1, ms1mx2.1/34, Error ellipse: s-maj=51.5km s-min=23.4km az=59.0*
*ISCJB **15** 09:48:33.9±1.1, 36°.67N±0°.07×143°.95E±0°.09, h33km, mb3.6/3, Error ellipse: s-maj=11.1km s-min=9.8km az=42.0*

ISC 15 09:48:36.0±1.4, 36°.66N±0°.09×144°.0E±0°.1, h35km, n11, σ1^{s}43/13, mb3.6/3, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
MJAR	**Matsushiro Arr**	**4.66**	**270**	Pn	**Pn**	**09 49 42.4**	**-1.5**
	2.7nm,0.3s,baz=73,slow=9.4,SNR=21						
MJAR				Sn	**Sn**	**09 50 37.5**	**+0.7**
	3.6nm,0.3s,baz=63,slow=14,SNR=8.9						
MJAR				LR	LR	09 51 37.8	
	comp=Z,38nm,18.5s,baz=245,slow=40						
MAT	**Matsushiro**	**4.66**	**270**	P	**Pn**	**09 49 42.6**	**-1.3**
MAT				S	**Sn**	**09 50 36.5**	**-0.3**
JHJ	**Hachijo jima 2**	**4.95**	**226**	Pn	**Pn**	**09 49 48.8**	**+1.0**
	6.7nm,0.3s,baz=288,slow=23,SNR=5.2						
JHJ				Sn	**Sn**	**09 50 44.3**	**+0.5**
	11nm,0.3s,baz=356,slow=13,SNR=3.2						
ASAJ	**Asahikawa**	**7.53**	**352**	Pn	Pn	09 50 14.1	-9.2
	1.6nm,0.3s,baz=200,slow=19,SNR=14						
JCJ	**Chichijima**	**9.66**	**190**	Pn	**Pn**	**09 50 51.7**	**-0.8**
	baz=245,slow=14						
JCJ				Sn	**Sn**	**09 52 37.7**	**-2.1**
	2.7nm,0.3s,baz=287,slow=19,SNR=3.0						
USRK	**Ussuriysk Ar.**	**11.84**	**313**	Pn	Pn	09 51 17.7	-4.6
	0.1nm,0.3s,baz=127,slow=16,SNR=3.0						
KSRS	**Korea Array**	**12.87**	**278**	Pn	**Pn**	**09 51 36.0**	**-0.3**
	0.3nm,0.3s,baz=73,slow=17,SNR=4.2						
KLR	**Kul'dur**	**15.41**	**328**	Pn	**Pn**	**09 52 09.6**	**-1.1**
	0.1nm,0.3s,baz=145,slow=10,SNR=6.2						
SONM	**Songino Array**	**29.71**	**304**	P	**P**	**09 54 38.8**	**0.0**
	0.5nm,0.6s,baz=112,slow=11,SNR=4.1						
WRA	**Warramunga Arr**	**57.03**	**191**	P	**P**	**09 58 20.4**	**+1.9**
	0.7nm,0.7s,baz=8.2,slow=7.2,SNR=7.7						
ASAR	**Alice Springs**	**60.75**	**191**	P	**P**	**09 58 46.4**	**+2.1**
	0.3nm,0.5s,baz=14,slow=8.0,SNR=7.8						

*IDC **15** 09:53:08.0±0.9, 35°.85N×141°.54E, h0km, mb3.4/5, mb1 3.6/10, mb1mx3.5/43, mbtmp3.6/10, ML3.5/3, MS2.9/1, Ms1 2.9/1, ms1mx2.3/24, Error ellipse: s-maj=23.1km s-min=15.6km az=106.0*
*ISCJB **15** 09:53:09.5±0.6, 35°.90N±0°.04×141°.60E±0°.06, h26km, mb3.5/5, Error ellipse: s-maj=7.5km s-min=6.0km az=23.2*
*JMA **15** 09:53:11.4±0.1, 35°.93N×141°.45E, h39km±2km, M3.0*

ISC 15 09:53:11.4±0.8, 35°.91N±0°.05×141°.42E±0°.07, h26km, n25, σ1^{s}10/22, mb3.5/5, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
CHOJ	**Chosi**	**0.50**	**246**	P	**Pn**	**09 53 22.4**	**-0.4**
CHOJ				S	**Sn**	**09 53 30.6**	**+0.1**
JHO	**Hitachi**	**0.98**	**316**	P	**Pb**	**09 53 29.2**	**-0.5**
JYT	**Yasato**	**1.04**	**288**	P	**Pn**	**09 53 30.0**	**-0.3**
JYT				*e*S	**Sb**	**09 53 43.2**	**-0.7**
ONAJ	**Iwakimizuishiy**	**1.29**	**338**	P	**Pn**	**09 53 33.3**	**-0.5**
BSO1	**Boso 1**	**1.30**	**196**	P	**Pn**	**09 53 33.6**	**+0.2**
BSO3	**Boso 3**	**1.33**	**214**	P	**Pb**	**09 53 34.6**	**-0.8**
JFK	**Kawauchi**	**1.52**	**344**	P	**Pn**	**09 53 36.4**	**-0.5**
MJAR	**Matsushiro Arr**	**2.67**	**285**	Pn	**Pn**	**09 53 54.9**	**+2.2**
	2.0nm,0.3s,baz=102,slow=11,SNR=6.2						
MJAR				Sn	**Sb**	**09 54 29.4**	**-1.4**
	1.8nm,0.3s,baz=116,slow=8.3,SNR=4.7						
JHJ	**Hachijo jima 2**	**3.09**	**206**	Pn	**Pn**	**09 53 58.6**	**+0.2**
	54nm,0.3s,baz=41,slow=20,SNR=17						
JHJ				Sn	**Sn**	**09 54 34.8**	**+0.3**
	41nm,0.3s,baz=49,slow=20,SNR=5.1						
ASAJ	**Asahikawa**	**8.25**	**6**	Pn	**Pn**	**09 55 07.9**	**-1.4**
	0.7nm,0.3s,baz=207,slow=6.8,SNR=4.7						
JCJ	**Chichijima**	**8.81**	**176**	Pn	**Pn**	**09 55 14.5**	**-2.5**
	4.3nm,0.3s,baz=22,slow=16,SNR=6.6						
JCJ				Sn	Sn	09 56 47.7	-7.7
	baz=288,slow=19						
USRK	**Ussuriysk Ar.**	**10.98**	**322**	Pn	**Pn**	**09 55 46.4**	**-0.3**
	0.1nm,0.3s,baz=139,slow=44,SNR=2.4						
KLR	**Kul'dur**	**15.08**	**335**	LR	LR	10 02 20.2	
	comp=Z,45nm,18.0s,baz=160,slow=36						
H11N2	**WAKE ISLAND Hy**	**27.59**	**119**	T	T	10 27 31.3	
	baz=312,slow=75,SNR=20						
H11N1	**WAKE ISLAND Hy**	**27.59**	**119**	T	T	10 27 34.1	
	baz=312,slow=75,SNR=33						
H11N3	**WAKE ISLAND Hy**	**27.60**	**119**	T	T	10 27 35.5	
	baz=312,slow=75,SNR=19						
H11S1	**WAKE ISLAND Hy**	**28.26**	**121**	T	T	10 28 27.1	
	baz=314,slow=76,SNR=29						
H11S3	**WAKE ISLAND Hy**	**28.26**	**121**	T	T	10 28 27.2	
	baz=314,slow=76,SNR=23						
H11S2	**WAKE ISLAND Hy**	**28.28**	**121**	T	T	10 28 41.9	
	baz=314,slow=76,SNR=17						
MKAR	**Makanchi Array**	**44.73**	**303**	P	**P**	**10 01 23.1**	**+0.7**
	0.4nm,0.7s,baz=96,slow=7.9,SNR=2.9						
ILAR	**Eielson Array**	**50.45**	**32**	P	**P**	**10 02 07.3**	**+0.9**
	0.4nm,0.6s,baz=273,slow=5.6,SNR=6.6						
INK	**Inuvik**	**55.39**	**27**	P	**P**	**10 02 44.0**	**+1.2**
	baz=294,slow=4.3						
WRA	**Warramunga Arr**	**55.95**	**188**	P	**P**	**10 02 46.7**	**-0.6**
	0.3n

PAMC				*e*S		**Sn**	**10 20 44.8**	**+0.1**
BRRC	**Barranca, Sant**	**0.69**	**298**	*e*P		**Pn**	**10 20 26.6**	**+0.5**
BRRC				*i*			10 20 27.0	
	comp=Z,70nm,0.1s							
BRRC				*e*S		**Sn**	**10 20 42.6**	**-1.1**
TOLC	**Tolima**	**0.88**	**179**	*e*P		Pn	10 20 53.4	+25
CAPV	**Capacho**	**1.33**	**36**	*e*P		**Pn**	**10 20 32.9**	**+1.2**
CAPV				*e*S		**Sn**	**10 20 54.2**	**+0.7**
OCAC	**Ocana**	**1.47**	**352**	*e*P		**Pn**	**10 20 33.5**	**+0.6**
OCAC				*e*S		**Sn**	**10 20 55.5**	**-0.3**
OCAC				*i*			10 21 03.0	
	comp=Z,34nm,0.3s							
YOPC	**Yopal, Colombi**	**1.57**	**154**	*e*P		**Pn**	**10 20 34.8**	**+0.8**
YOPC				*i*			10 20 59.1	
	comp=Z,24nm,0.4s							
NORC	**Norcasia**	**2.13**	**236**	*e*P		**Pn**	**10 20 39.8**	**-0.3**
NORC				*e*S		**Sn**	**10 21 07.8**	**-1.0**
HELC	**Santa Helena**	**2.48**	**256**	*e*P		**Pn**	**10 20 45.9**	**+1.3**
HELC				*e*S		**Sn**	**10 21 16.4**	**-0.2**
HELC				*i*			10 21 24.7	
	comp=Z,18nm,0.7s							
VIGV	**El Vigia**	**2.67**	**40**	*e*P		**Pn**	**10 20 47.7**	**+1.0**
VIGV				*e*S		**Sn**	**10 21 18.7**	**-1.7**
SOCV	**Socops**	**2.68**	**56**	*e*P		**Pn**	**10 20 47.6**	**+0.9**
SOCV				*e*S		**Sn**	**10 21 19.5**	**-1.0**
GUYC	**Guyana, Colomb**	**2.75**	**236**	*e*P		**Pn**	**10 20 49.0**	**+0.9**
DBBC	**Dabeiba**	**3.10**	**275**	*e*P		**Pn**	**10 20 52.5**	**+0.6**
PRAC	**Prado**	**3.53**	**210**	*e*P		**Pn**	**10 20 58.0**	**+0.6**
VIRV	**Villa del Rosa**	**3.76**	**10**	*e*P		**Pn**	**10 21 01.5**	**+1.1**
VIRV				*e*S		**Sn**	**10 21 42.8**	**-2.2**
CURV	**Curarigua**	**4.47**	**44**	*e*P		**Pn**	**10 21 10.2**	**+0.5**
BAUV	**El Baul**	**5.45**	**66**	*e*P		**Pn**	**10 21 22.5**	**0.0**

MEX 15 10:30:06.7±0.6, 16°.20N×95°.46W, h88km±19km, MD3.8, Oaxaca

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
HUIG	**Huatulco**	**0.76**	**236**	*e*P	Pn	10 30 22.1	-1.5
HUIG				*e*S	Sn	10 30 34.8	-1.5
VHO	**Vista Hermosa**	**1.50**	**305**	*e*P	Pn	10 30 31.3	-1.3
VHO				*e*S	Sn	10 30 50.0	-2.1
PCIG		**2.21**	**103**	*e*P	Pn	10 30 40.6	-1.0
PCIG				*e*S	Sn	10 31 06.1	-2.1
PNIG	**Pinotepa**	**2.57**	**275**	*i* P	Pn	10 30 45.3	-1.2
PNIG				*e*S	Sn	10 31 14.8	-2.2
TLIG	**Tlapa**	**3.27**	**295**	*e*P	Pn	10 30 55.0	-0.9
TLIG				*e*S	Sn	10 31 32.4	-1.6

*ISK **15** 10:33:14.3, 37°.12N×28°.30E, h21km, MD2.6*
*CSEM **15** 10:33:14.3±0.3, 37°.25N×28°.32E, h20km, MD2.6, Error ellipse: s-maj=9.1km s-min=4.8km az=33.0*
*DDA **15** 10:33:15.3, 37°.24N×28°.23E, h7km, Md2.6*
ISC 15 10:33:14.3±1.3, 37°.23N±0°.06×28°.38E±0°.04, h19km±3km, n12, σ0°.46/21, Turkey

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
YER	**Yerkesik**	**0.10**	**186**	*e*PG	**Pg**	**10 33 18.2**	**0.0**
YER				*e*SG	**Sg**	**10 33 20.9**	**+0.1**
YER	**Yerkesik**	**0.10**	**186**	*e*Pg	**Pg**	**10 33 18.2**	**0.0**
YER				*e*Sg	**Sg**	**10 33 20.9**	**+0.1**
TURN	**Turunc**	**0.44**	**146**	*i* P	**Pb**	**10 33 24.4**	**+0.9**
TURN				*i* S	**Sn**	**10 33 31.9**	**-1.1**
TURN	**Turunc**	**0.44**	**146**	P	**Pb**	**10 33 24.4**	**+0.9**
AYDN	**Tasoluk**	**0.54**	**322**	*i* P	**Pg**	**10 33 25.3**	**+0.1**
AYDN				*i* S	**Sb**	**10 33 32.6**	**+0.1**
AYDN	**Tasoluk**	**0.54**	**322**	P	**Pg**	**10 33 25.3**	**+0.1**
AYDN				S	**Sb**	**10 33 32.7**	**+0.1**
BDRM	**Kayabasi**	**0.70**	**256**	*i* P	**Pb**	**10 33 27.7**	**-0.2**
BDRM				*i* S	**Sg**	**10 33 37.6**	**+0.1**
BDRM	**Kayabasi**	**0.70**	**256**	P	**Pb**	**10 33 27.7**	**-0.2**
BDRM				S	**Sg**	**10 33 37.6**	**+0.1**
BODT	**Bodrum**	**0.81**	**258**	*e*PG	**Pg**	**10 33 30.2**	**+0.1**
BODT				*e*SG	**Sn**	**10 33 42.0**	**-0.2**
BODT	**Bodrum**	**0.81**	**258**	*e*Pg	**Pg**	**10 33 30.2**	**+0.1**
BODT				*e*Sg	**Sn**	**10 33 42.0**	**-0.2**
FETY	**Fethiye**	**0.87**	**133**	*e*PG	**Pb**	**10 33 30.3**	**-0.5**
FETY	**Fethiye**	**0.87**	**133**	*e*Pg	**Pb**	**10 33 30.3**	**-0.5**

*IDC **15** 10:33:23.7±2.7, 36°.68S×97°.64W, h0km, mb4.1/5, mb1 4.5/5, mb1mx4.1/26, mbtmp4.1/5, MS3.9/7, Ms1 3.8/7, ms1mx3.6/23, Error ellipse: s-maj=79.5km s-min=29.8km az=33.0*
*ISCJB **15** 10:33:27.6±0.8, 36°.3S±0°.1×97°.2W±0°.1, h10km, mb4.5/22, MS3.9/7, Error ellipse: s-maj=21.5km s-min=13.0km az=42.1*
*BJI **15** 10:33:28.9, 35°.38S×97°.62W, h10km*
*NEIC **15** 10:33:29.8±0.7, 36°.18S×97°.14W, h10km, mb4.5/17, Error ellipse: s-maj=20.5km s-min=13.7km az=48.0*
ISC 15 10:33:29.8±0.7, 36°.2S±0°.1×97°.1W±0°.2, h10km, n40, σ1°.28/31, mb4.4/21, MS3.9/7, West Chile Rise

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
PLCA	**Paso Flores**	**21.23**	**110**	P	**P**	**10 38 14.4**	**-1.6**
	5.7nm,0.8s,baz=285,slow=10,SNR=14						
PLCA	**Paso Flores**	**21.23**	**110**	*e*P	**P**	**10 38 16.6**	**+0.6**
	19nm,1.3s						
LCO	**Las Campanas**	**23.30**	**80**	*e*P	**P**	**10 38 39.0**	**+0.8**
	11nm,0.8s						
USHA	**Ushuaia**	**27.10**	**142**	LR	LR	10 47 20.9	
	comp=Z,1μm,20.5s,baz=136,slow=31						
TRQA	**Tornquist**	**27.95**	**104**	*e*P	**P**	**10 39 20.4**	**-0.1**
	3.4nm,0.8s						
PB01	**IPOC Station P**	**28.41**	**65**	*e*P	**P**	**10 39 25.8**	**+1.1**
	26nm,1.6s						
LPAZ	**La Paz**	**32.46**	**60**	P	**P**	**10 40 01.9**	**+0.8**
	5.0nm,0.8s,baz=227,slow=6.1,SNR=19						
LPAZ				LR	LR	10 50 52.6	
	comp=Z,52nm,19.1s,baz=256,slow=32						
LPAZ	**La Paz**	**32.46**	**60**	*e*P	**P**	**10 40 02.4**	**+1.2**
	21nm,1.4s						
CPUP	**Villa Florida**	**35.16**	**85**	LR	LR	10 52 03.2	
	comp=Z,99nm,21.6s,baz=248,slow=31						
OTAV	**Otavalo**	**40.16**	**30**	*e*P	**P**	**10 41 07.1**	**+0.4**
	6.5nm,1.2s						
SAML	**Samuel**	**41.03**	**57**	*e*P	**P**	**10 41 13.0**	**-0.5**
	7.4nm,1.3s						
ROSC	**El Rosal**	**46.04**	**32**	LR	LR	10 57 42.0	
	comp=Z,142nm,20.7s,baz=208,slow=31						
QSPA	**South Pole Qui**	**54.04**	**180**	*e*P	**P**	**10 42 56.4**	**+2.2**
	182nm,1.9s						
TEIG	**Tepich**	**56.72**	**10**	*e*P	**P**	**10 43 14.4**	**+0.7**
	3.0nm,0.8s						
SNAA	**Sanae**	**57.41**	**158**	*e*P	**P**	**10 43 15.9**	**-2.3**
	128nm,0.9s						
SDDR	**Presa de Saban**	**60.05**	**28**	*e*P	**P**	**10 43 36.6**	**-0.5**
	3.2nm,0.5s						
TXAR	**Lajitas Array**	**65.46**	**354**	P	**P**	**10 44 11.5**	**-1.6**
	1.0nm,0.9s,baz=159,slow=7.5,SNR=7.9						
TX31	**Lajitas Ar. Si**	**65.46**	**354**	*e*P	**P**	**10 44 13.7**	**+0.7**
MIAR	**Mount Ida**	**70.44**	**3**	P	**P**	**10 44 45.1**	**+1.0**
	0.9nm,0.6s						
OXF	**Oxford**	**70.69**	**7**	P	**P**	**10 44 43.4**	**-2.2**
	7.3nm,0.4s						
U34A	**Anderson Ranch**	**72.25**	**360**	*e*P	**P**	**10 44 54.5**	**-0.6**
	20nm,0.8s						
SMCO	**Snowmass**	**75.54**	**352**	*e*P	**P**	**10 45 16.1**	**+1.3**
	8.2nm,1.5s						
PHWY	**Pilot Hill**	**77.49**	**354**	*e*P	**P**	**10 45 26.9**	**+1.3**
	7.7nm,0.6s						
BW06	**Boulder Array**	**79.39**	**351**	*e*P	**P**	**10 45 35.9**	**-0.1**
	9.7nm,1.6s						
PD31	**Pinedale Array**	**79.39**	**351**	*e*P	**P**	**10 45 36.6**	**+0.5**
PDAR	**Pinedale Array**	**79.39**	**351**	P	**P**	**10 45 33.7**	**-2.4**
	1.8nm,0.7s,baz=151,slow=6.2,SNR=17						
LOHW	**Long Hollow**	**80.37**	**350**	*e*P	**P**	**10 45 43.2**	**+2.0**
	5.0nm,1.5s						
HLID	**Hailey**	**80.92**	**347**	*e*P	**P**	**10 45 44.0**	**-0.1**
	1.5nm,0.7s						
STKA	**Stephens Creek**	**92.81**	**227**	LR	LR	11 23 55.0	
	comp=Z,75nm,18.1s,baz=199,slow=33						
DBIC	**Dimbokro**	**95.68**	**86**	LR	LR	11 30 57.4	
	comp=Z,23nm,18.4s,baz=179,slow=36						
BOSA	**Boshof**	**95.77**	**132**	LR	LR	11 26 29.5	
	comp=Z,62nm,20.2s,baz=188,slow=33						
YKA	**Yellowknife Ar**	**99.34**	**352**	P	**Pdif**	**10 47 09.7**	**-1.8**
	0.1nm,0.8s,baz=160,slow=4.8,SNR=2.4						
H01W1	**Cape Leeuwin H**	**103.53**	**206**	T	T	12 43 31.2	
	baz=154,slow=76,SNR=4.3						
H01W2	**Cape Leeuwin H**	**103.53**	**206**	T	T	12 43 33.9	
	baz=154,slow=76,SNR=3.8						
H01W3	**Cape Leeuwin H**	**103.55**	**206**	T	T	12 43 34.7	
	baz=154,slow=76,SNR=5.6						
KBZ	**Khabaz**	**148.65**	**64**	PKPbc	**PKPdf**	**10 53 12.8**	**-0.3**
	1.7nm,0.8s,baz=297,slow=6.8,SNR=2.5						
NJ2	**Nanjing**	**150.08**	**273**	*e*PKPbc	**PKPdf**	**10 53 16.3**	**+0.5**
HHC	**Hu-ho-hao-te**	**157.16**	**290**	*e*PKP	**PKPdf**	**10 53 24.6**	**-1.2**
CD2	**Chengdu**	**161.86**	**259**	PKP	**PKPdf**	**10 53 31.9**	**+0.5**
WMQ	**Urumqi**	**171.54**	**336**	*e*PKP	**PKPdf**	**10 53 39.1**	**+0.7**

IDC 15 10:36:40.3±1.1, 20°.53N×120°.40E, h0km, mb3.5/5, mb1 3.7/5, mb1mx3.4/34, mbtmp3.5/5, MS2.7/1, Ms1 2.7/1, ms1mx2.3/35, Error ellipse: s-maj=76.0km s-min=20.8km az=66.0, Philippine Islands region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JNU	**Nakatsue**	**15.63**	**35**	LR	LR	10 46 24.8	
	comp=Z,25nm,19.2s,baz=293,slow=37						
MKAR	**Makanchi Array**	**40.53**	**319**	P	P	10 44 21.3	0.0
	0.5nm,0.8s,baz=107,slow=9.8,SNR=3.9						
WRA	**Warramunga Arr**	**42.48**	**160**	P	P	10 44 35.5	-1.9
	0.5nm,0.8s,baz=346,slow=8.8,SNR=3.7						
ZALV	**Zalesovo Beam**	**42.96**	**330**	P	P	10 44 40.5	-0.5
	0.4nm,0.3s,baz=83,slow=12,SNR=2.6						
ASAR	**Alice Springs**	**45.86**	**163**	P	P	10 45 06.2	+1.7
	0.6nm,0.8s,baz=328,slow=6.3,SNR=7.2						
YKA	**Yellowknife Ar**	**86.60**	**22**	P	P	10 49 25.6	+0.3
	0.3nm,0.9s,baz=308,slow=4.8,SNR=5.6						

MEX 15 10:43:09.1±0.5, 15°.19N×92°.92W, h64km±10km, MD3.5, Mexico-Guatemala border region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
PCIG		**0.59**	**330**	*e*P	Pn	10 43 20.9	-1.5
PCIG				*e*S	Sn	10 43 30.4	-1.7
CCIG	**Comitan**	**1.32**	**35**	*i* P	Pn	10 43 30.5	-1.2
CCIG				*i* S	Sn	10 43 46.5	-2.1

JMA 15 10:56:13.8±0.1, 37°.62N×141°.59E, h43km±2km, M3.5, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JFK	**Kawauchi**	**0.62**	**246**	P	Pn	10 56 26.3	0.0
JFK				S	Sn	10 56 35.0	-0.3
JMM	**Marumori**	**0.68**	**291**	P	Pn	10 56 27.1	+0.1
JMM				S	Sn	10 56 36.3	-0.2
ONAJ	**Iwakimizuishiy**	**0.82**	**231**	P	Pn	10 56 28.8	-0.1
ONAJ				S	Sn	10 56 39.4	-0.5
JIO	**Ouri**	**0.85**	**347**	P	Pn	10 56 29.3	-0.1
JIO				S	Sn	10 56 40.0	-0.8
JFT	**Otama**	**1.00**	**265**	P	Pn	10 56 32.3	+0.9
JFT				S	Sn	10 56 44.9	+0.5
JOU	**Okura**	**1.04**	**316**	P	Pn	10 56 32.1	+0.1
JOU				S	Sn	10 56 45.8	+0.4
JYS	**Shirataka**	**1.35**	**297**	P	Pn	10 56 36.9	+0.8
JYS				S	Sn	10 56 54.3	+1.5
JMK	**Ichinoseki**	**1.36**	**348**	P	Pn	10 56 36.7	+0.4
JMK				S	Sn	10 56 53.0	-0.2
JFY	**Yanaizu**	**1.51**	**262**	P	Pn	10 56 39.3	+0.9
JFY				S	Sn	10 56 57.8	+0.8
JYK	**Kaneyama**	**1.62**	**324**	P	Pn	10 56 40.3	+0.4
JYK				*e*S	Sn	10 56 59.8	+0.3

IDC 15 11:01:05.5±3.6, 19°.54S×178°.60W, h635km±53km, mb2.9/5, mb1 3.2/6, mb1mx2.8/35, mbtmp4.0/6, Error ellipse: s-maj=59.4km s-min=24.3km az=167.0, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
RAO	**Raoul Island**	**9.69**	**176**	P	P	11 03 21.6	-0.3
	46nm,0.3s,baz=70,slow=22,SNR=4.4						
DZM	**Mont Dzumac**	**14.21**	**257**	P	P	11 04 06.8	+1.6
	0.2nm,0.3s,baz=250,slow=2.6,SNR=1.9						
CTA	**Charters Tower**	**33.04**	**263**	P	P	11 06 51.9	+0.6
	1.3nm,0.4s,baz=90,slow=9.1,SNR=3.5						
WRA	**Warramunga Arr**	**44.19**	**261**	P	P	11 08 20.5	-0.2
	1.1nm,0.4s,baz=96,slow=7.6,SNR=35						
ASAR	**Alice Springs**	**44.20**	**256**	P	P	11 08 20.5	-0.3
	1.3nm,0.7s,baz=92,slow=7.6,SNR=24						
ASAR				PcP	PcP	11 09 51.2	+0.2
	0.4nm,0.5s,baz=106,slow=3.8,SNR=6.9						
ILAR	**Eielson Array**	**87.50**	**13**	P	P	11 12 47.0	+0.2
	0.5nm,0.5s,baz=212,slow=5.1,SNR=10						
PDAR	**Pinedale Array**	**88.65**	**43**	P	P	11 12 52.8	-0.3
	0.2nm,0.5s,baz=213,slow=4.8,SNR=2.9						

*ISCJB **15** 11:01:23.6±0.7, 37°.68N±0°.03×34°.76E±0°.04, h5km±8km, Error ellipse: s-maj=6.4km s-min=5.0km az=143.5*
*CSEM **15** 11:01:23.7±0.3, 37°.67N×34°.75E, h10km, MD2.3, Error ellipse: s-maj=5.8km s-min=4.7km az=48.0*
*ISK **15** 11:01:23.3, 37°.66N×34°.76E, h6km, MD2.3*
*DDA **15** 11:01:23.6, 37°.71N×34°.70E, h7km, Md2.6*
ISC 15 11:01:22.4±1.5, 37°.72N±0°.05×34°.79E±0°.04, h12km±11km, n15, σ0°.32/28, Turkey

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
GULE	**Gulek**	**0.44**	**181**	*i* P	**Pg**	**11 01 30.9**	**-0.2**
GULE				*i* S	**Sb**	**11 01 39.0**	**+0.3**
GULE	**Gulek**	**0.44**	**181**	P	**Pg**	**11 01 30.9**	**-0.2**
GULE				S	**Sb**	**11 01 39.0**	**+0.3**
KARA	**Karaisali**	**0.51**	**155**	*e*PG	**Pb**	**11 01 32.7**	**-0.5**
KARA				*e*SG	**Sg**	**11 01 39.6**	**+0.6**
KARA	**Karaisali**	**0.51**	**155**	*e*Pg	**Pb**	**11 01 32.7**	**-0.5**
KARA				*e*Sg	**Sg**	**11 01 39.6**	**+0.6**
KERG	**Konya-Eregli**	**0.61**	**240**	*i* P	**Pg**	**11 01 33.9**	**-0.4**
KERG				*i* S	**Sg**	**11 01 42.7**	**+0.3**
KERG	**Konya-Eregli**	**0.61**	**240**	P	**Pg**	**11 01 33.9**	**-0.4**
KERG				S	**Sg**	**11 01 42.7**	**+0.3**
GULA	**Gulagac**	**0.76**	**325**	*e*PG	**Pn**	**11 01 39.1**	**+0.1**
GULA				*e*SG	**Sn**	**11 01 50.7**	**+0.2**
GULA	**Gulagac**	**0.76**	**325**	*e*Pg	**Pn**	**11 01 39.1**	**+0.1**
GULA				*e*Sg	**Sn**	**11 01 50.7**	**+0.2**
DED	**Mersin**	**0.76**	**179**	*i* P	**Pn**	**11 01 38.8**	**-0.2**
DED				*i* S	**Sb**	**11 01 48.3**	**+0.5**
KOZT	**Kozan**	**0.86**	**106**	*e*PG	**Pn**	**11 01 40.3**	**0.0**
KOZT				*e*SG	**Sn**	**11 01 52.7**	**-0.1**
KOZT	**Kozan**	**0.86**	**106**	*e*Pg	**Pn**	**11 01 40.3**	**0.0**
KOZT				*e*Sg	**Sn**	**11 01 52.7**	**-0.1**
MERS	**Mersin**	**0.88**	**194**	*e*PG	**Pg**	**11 01 39.3**	**0.0**
MERS				*e*SG	**Sg**	**11 01 51.0**	**+0.2**
MERS	**Mersin**	**0.88**	**194**	*e*Pg	**Pg**	**11 01 39.3**	**0.0**
MERS				*e*Sg	**Sg**	**11 01 51.0**	**+0.2**
IKL	**Isikli**	**1.73**	**211**	*e*PN	**Pb**	**11 01 53.7**	**-0.3**
IKL	**Isikli**	**1.73**	**211**	*e*Pn	**Pb**	**11 01 53.7**	**-0.3**

IDC 15 11:02:06.1±5.4, 12°.02S×15°.30W, h0km, mb3.7/4, mb1 3.7/4, mb1mx3.6/24, mbtmp3.8/4, MS3.3/2, Ms1 3.3/2, ms1mx2.9/26, Error ellipse: s-maj=354.8km s-min=102.5km az=120.0, Southern Mid-Atlantic Ridge

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
H10S2	**ASCENSION HYDR**	**3.11**	**12**	T	T	11 06 36.0	
	baz=187,slow=75,SNR=30						
H10S3	**ASCENSION HYDR**	**3.11**	**12**	T	T	11 06 36.0	
	baz=187,slow=75,SNR=46						
H10S1	**ASCENSION HYDR**	**3.13**	**12**	T	T	11 06 34.7	
	baz=187,slow=75,SNR=20						
H10N1	**ASCENSION HYDR**	**4.23**	**11**	T	T	11 07 56.8	
	baz=190,slow=78,SNR=4.3						
H10N3	**ASCENSION HYDR**	**4.23**	**11**	T	T	11 07 57.7	
	baz=190,slow=78,SNR=14						
H10N2	**ASCENSION HYDR**	**4.24**	**11**	T	T	11 07 58.2	
	baz=190,slow=78,SNR=8.7						
DBIC	**Dimbokro**	**21.27**	**30**	P	P	11 06 54.7	+0.4
	4.1nm,0.9s,baz=194,slow=13,SNR=4.0						
TORD	**Torodi Ar. Bea**	**30.16**	**35**	P	P	11 08 17.6	-0.5
	0.7nm,0.8s,baz=220,slow=10,SNR=4.9						
CPUP	**Villa Florida**	**41.98**	**244**	LR	LR	11 24 24.5	
	comp=Z,40nm,20.2s,baz=127,slow=32						
GERES	**GERESS Array B**	**65.80**	**21**	LR	LR	11 39 51.2	
	comp=Z,24nm,21.7s,baz=269,slow=34						
BRTR	**Keskin Array B**	**68.66**	**39**	P	P	11 13 11.9	+0.3
	0.4nm,0.5s,baz=199,slow=8.5,SNR=3.4						
AKASG	**Malin Array Be**	**73.51**	**28**	P	P	11 13 40.5	-0.1
	0.3nm,0.3s,baz=230,slow=6.3,SNR=5.4						

JMA 15 11:02:22.7, 37°.05N×140°.80E, h8km±1km, M2.5, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.05**	**358**	P	Pg	11 02 24.6	+0.1
ONAJ				S	Sg	11 02 25.8	0.0
JFK	**Kawauchi**	**0.32**	**11**	P	Pg	11 02 29.3	+0.2
JFK				S	Sg	11 02 34.0	+0.6
JHO	**Hitachi**	**0.48**	**203**	P	Pg	11 02 31.8	-0.1
JFT	**Otama**	**0.60**	**322**	P	Pg	11 02 34.5	+0.3
JFT				S	Sg	11 02 42.8	+0.8
JMM	**Marumori**	**0.81**	**360**	P	Pg	11 02 38.1	-0.3
JMM				S	Sg	11 02 49.1	+0.1
JOU	**Okura**	**1.32**	**355**	P	Pn	11 02 47.4	0.0
JOU				S	Sn	11 03 05.2	0.0
MAT	**Matsushiro**	**2.14**	**257**	P	Pn	11 03 00.2	+1.4
MAT				S	Sb	11 03 28.1	-0.4

GUC 15 11:05:08.5±0.4, 34°.54S×72°.29W, h21km±2km, ML3.6, 2C, Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
CHPI	**Pichilemu**	**0.28**	**58**	*e*P	Pb	11 05 14.1	-0.8
CHPI				*e*S	Sb	11 05 18.8	-0.5
TALC	**Talca**	**1.01**	**148**	*e*P	Pb	11 05 26.0	-1.3
TALC				*e*S	Sb	11 05 39.1	-1.2
ANTU	**Antumapu**	**1.68**	**55**	*e*P	Pn	11 05 36.4	-0.2
ANTU				*e*S	Sn	11 05 57.8	+0.2
STL	**Santa Lucia**	**1.75**	**52**	*e*S	Sn	11 05 59.7	+0.2
CLCH	**Cerro Calan**	**1.85**	**52**	*e*P	Pn	11 05 39.0	0.0
CLCH				*e*S	Sn	11 06 02.3	+0.5
CLCH				IAML		11 06 08.2	
	comp=N,1μm,0.8s						
ROCH	**El Roble**	**1.89**	**35**	*e*P	Pn	11 05 40.1	+0.4
ROCH				*e*S	Sn	11 06 04.3	+1.3
ROCH				IAML		11 06 13.9	
	comp=N,585nm,0.4s						
PEL	**Peldehue**	**1.93**	**44**	*e*P	Pn	11 05 40.1	+0.1
PEL				*e*S	Sn	11 06 04.5	+0.9
PEL				IAML		11 06 13.3	
	comp=N,556nm,0.3s						
YECH	**El Yeso**	**2.02**	**65**	*e*P	Pn	11 05 42.7	+1.0
YECH				*e*S	Sn	11 06 08.1	+1.6
YECH				IAML		11 06 17.8	
	comp=E,1μm,1.4s						

*IDC **15** 11:06:10.5±0.9, 5°.81S×153°.40E, h0km, mb4.1/11, mb1 4.2/12, mb1mx4.0/38, mbtmp4.2/12, ML2.3/1, MS3.2/4, Ms1 3.3/4, ms1mx2.9/37, Error ellipse: s-maj=30.2km s-min=17.3km az=107.0*
*ISCJB **15** 11:06:13.0±0.6, 5°.85S±0°.08×153°.45E±0°.09, h32km, mb4.1/15, MS3.2/3, Error ellipse: s-maj=15.6km s-min=8.7km az=40.3*
*NEIC **15** 11:06:15.1±0.6, 5°.85S×153°.47E, h35km, mb4.3/4, Error ellipse: s-maj=16.4km s-min=10.7km az=112.0*
ISC 15 11:06:15.1±0.9, 5°.8S±0°.1×153°.5E±0°.2, h32km, n21, σ1°.49/25, mb4.2/15, MS3.2/3, New Ireland region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
PMG	**Port Moresby**	**7.21**	**240**	Pn	**Pn**	**11 07 58.2**	**-0.1**
	3.2nm,0.3s,baz=56,slow=4.3,SNR=11						
PMG				Sn	**Sn**	**11 09 18.4**	**-0.8**
	1.7nm,0.3s,baz=75,slow=8.6,SNR=3.1						
PMG				LR	LR	11 10 20.5	
	comp=Z,203nm,18.9s,baz=36,slow=35						
PMG	**Port Moresby**	**7.21**	**240**	*e*Pn	**Pn**	**11 07 58.4**	**+0.1**
PMG				*e*Sn	**Sn**	**11 09 19.3**	**+0.1**
DZM	**Mont Dzumac**	**20.48**	**143**	P	Pn	11 10 50.4	-2.4
	8.7nm,1.1s,baz=342,slow=16,SNR=3.1						
GUMO	**Guam**	**21.06**	**336**	LR	LR	11 19 51.2	
	comp=Z,50nm,18.5s,baz=142,slow=39						
WRAB	**Tennant Creek**	**23.30**	**231**	*e*P	**P**	**11 11 19.7**	**-0.8**
	1.6nm,0.7s						
WRA	**Warramunga Arr**	**23.32**	**231**	P	**P**	**11 11 18.5**	**-2.1**
	3.1nm,1.1s,baz=59,slow=9.2,SNR=12						
WRA				PcP	**PcP**	**11 15 08.9**	**+1.5**
	0.4nm,0.5s,baz=56,slow=2.5,SNR=8.5						
ASAR	**Alice Springs**	**25.89**	**225**	P	**P**	**11 11 42.6**	**-1.8**
	1.2nm,0.7s,baz=58,slow=9.4,SNR=32						
ASAR				PcP	**PcP**	**11 15 14.9**	**+1.8**
	0.4nm,0.5s,baz=57,slow=2.9,SNR=6.1						
ASAR				ScP	**ScP**	**11 18 54.9**	**+4.5**
	0.6nm,1.0s,baz=38,slow=4.7,SNR=3.6						
FITZ	**Fitzroy Crossi**	**29.79**	**243**	*e*P	**P**	**11 12 18.1**	**-1.1**
	2.5nm,0.6s						
JNU	**Nakatsue**	**44.24**	**332**	P	**P**	**11 14 21.7**	**0.0**
	8.2nm,0.7s,baz=112,slow=3.0,SNR=5.4						
KLR	**Kul'dur**	**57.98**	**343**	P	**P**	**11 16 04.5**	**0.0**
	3.2nm,0.7s,baz=161,slow=4.9,SNR=14						
PETK	**Petropavlovsk-**	**58.79**	**3**

2.6nm,0.3s,baz=1.8,slow=20,SNR=6.6
JCJ Sn Sn 11 17 43.9 -6.0
3.0nm,0.3s,baz=256,slow=22,SNR=1.8
ASAJ Asahikawa 8.82 7 Pn **Pn 11 16 25.6 +0.7**
0.3nm,0.3s,baz=239,slow=5.9,SNR=3.4
KSRS Korea Array 10.87 285 LR LR 11 21 19.0
comp=Z,81nm,19.6s,baz=78,slow=38
USRK Ussuriysk Ar. 11.30 324 LR LR 11 20 58.0
comp=Z,59nm,20.8s,baz=174,slow=35
H11N2 WAKE ISLAND Hy 27.51 118 T T 11 49 05.0
baz=310,slow=76,SNR=26
H11N1 WAKE ISLAND Hy 27.52 118 T T 11 49 08.5
baz=310,slow=76,SNR=18
H11N3 WAKE ISLAND Hy 27.53 118 T T 11 49 03.9
baz=310,slow=76,SNR=20
H11S1 WAKE ISLAND Hy 28.17 120 T T 11 49 54.7
baz=312,slow=76,SNR=39
H11S3 WAKE ISLAND Hy 28.17 120 T T 11 49 56.5
baz=312,slow=76,SNR=40
H11S2 WAKE ISLAND Hy 28.18 120 T T 11 49 60.0
baz=312,slow=76,SNR=33
TIXI Tiksi 36.93 354 P **P 11 21 24.1 -1.0**
1.0nm,0.3s,baz=95,slow=5.2,SNR=5.0
MKAR Makanchi Array 44.85 304 P **P 11 22 31.3 +0.6**
0.3nm,0.5s,baz=96,slow=4.3,SNR=2.7
ILAR Eielson Array 51.03 32 P **P 11 23 19.6 +1.4**
0.2nm,0.7s,baz=266,slow=5.4,SNR=3.4
WRA Warramunga Arr 55.37 188 P **P 11 23 50.3 -0.3**
1.4nm,0.5s,baz=5.2,slow=7.6,SNR=20
INK Inuvik 55.98 27 LR LR 11 48 49.3
comp=Z,335nm,21.8s,baz=137,slow=37
ASAR Alice Springs 59.10 188 P **P 11 24 17.4 +0.5**
0.4nm,0.8s,baz=1.8,slow=7.3,SNR=4.6

*IDC **15** 11:16:52.1±1.8,37.00N×140.70E,h0km,mb3.3/2, mb1 3.5/4,mb1mx3.2/55,mbtmp3.4/4,ML3.1/2,Error ellipse: s-maj=32.0km s-min=27.9km az=98.0*
*ISCJB **15** 11:16:53.5±0.6,37.03N±0.03×140.73E±0.07,h15km±6km, mb3.2/2,Error ellipse: s-maj=10.3km s-min=4.5km az=21.1*
*JMA **15** 11:16:53.8,37.04N×140.64E,h8km±1km,M3.3*
JMA Felt I J1.

ISC 15 11:16:53.9±0.9,37°04'N±0°03'×140°64'E±0°04',h10km±8km, n19,σ0°66/22,5C-1D,Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.14**	**63**	⇑P	**Pg**	**11 16 57.1**	**-0.1**
ONAJ				S	**Sg**	**11 16 59.4**	**-0.1**
JFK	**Kawauchi**	**0.38**	**30**	⇑P	**Pg**	**11 17 01.3**	**-0.1**
JFK				S	**Sg**	**11 17 06.4**	**-0.1**
JHO	**Hitachi**	**0.43**	**187**	⇑P	**Pg**	**11 17 02.2**	**-0.1**
JHO				S	**Sg**	**11 17 08.0**	**+0.1**
JFT	**Otama**	**0.54**	**334**	⇓P	**Pg**	**11 17 04.5**	**+0.1**
JFT				S	**Sg**	**11 17 11.7**	**+0.2**
JSB	**Shiboa**	**0.58**	**264**	⇑P	**Pb**	**11 17 05.8**	**-0.3**
JSB				S	**Sb**	**11 17 13.7**	**-0.7**
JFY	**Yanaizu**	**0.83**	**297**	⇑P	**Pg**	**11 17 09.8**	**-0.1**
JFY				S	**Sg**	**11 17 20.6**	**-0.2**
JMM	**Marumori**	**0.84**	**8**	P	**Pg**	**11 17 09.5**	**-0.5**
JMM				S	**Sg**	**11 17 20.8**	**-0.2**
JYT	**Yasato**	**0.88**	**204**	P	**Pg**	**11 17 10.7**	**-0.1**
MJAR	**Matsushiro Arr**	**2.01**	**257**	Pn	**Pn**	**11 17 28.8**	**+0.9**
MJAR				Sn	**Sb**	**11 17 55.7**	**+0.1**
14nm,0.3s,baz=312,slow=29,SNR=10							
MAT	**Matsushiro**	**2.01**	**257**	P	**Pn**	**11 17 29.1**	**+1.2**
MAT				S	**Sb**	**11 17 56.2**	**+0.6**
ASAJ	**Asahikawa**	**7.23**	**11**	Pn	**Pn**	**11 18 41.2**	**+1.7**
0.2nm,0.3s,baz=234,slow=17,SNR=2.4							
H11N2	**WAKE ISLAND Hy 28.68 120**			T	T	11 52 39.4	
baz=312,slow=75,SNR=24							
H11N1	**WAKE ISLAND Hy 28.69 120**			T	T	11 52 40.3	
baz=312,slow=75,SNR=31							
H11N3	**WAKE ISLAND Hy 28.70 120**			T	T	11 52 41.0	
baz=312,slow=75,SNR=38							
H11S1	**WAKE ISLAND Hy 29.39 122**			T	T	11 53 33.5	
baz=314,slow=75,SNR=43							
H11S3	**WAKE ISLAND Hy 29.39 122**			T	T	11 53 31.0	
baz=314,slow=75,SNR=32							
H11S2	**WAKE ISLAND Hy 29.40 122**			T	T	11 53 32.3	
baz=314,slow=75,SNR=25							
MKAR	**Makanchi Array 43.59 302**			P	**P**	**11 24 56.9**	**-1.1**
0.1nm,0.4s,baz=97,slow=10,SNR=2.7							
WRA	**Warramunga Arr 56.98 187**			P	**P**	**11 26 39.3**	**-0.2**
0.4nm,0.6s,baz=3.1,slow=7.4,SNR=4.4							

*ISCJB **15** 11:19:44.4±0.6,39.56N±0.05×142.3E±0.1,h46km, mb3.8/11,Error ellipse: s-maj=14.1km s-min=6.3km az=14.8*
*IDC **15** 11:19:48.1±2.0,39.61N×142.07E,h63km±18km,mb3.4/10, mb1 3.6/14,mb1mx3.4/58,mbtmp3.7/14,Error ellipse: s-maj=23.3km s-min=12.1km az=101.0*

ISC 15 11:19:46.6±0.8,39°58N±0°07'×142°1'E±0°2',h46km,n23, σ1°34/18,mb3.7/11,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
MJAR	**Matsushiro Arr**	**4.34**	**227**	P	**Pn**	**11 20 52.8**	**+2.8**
2.8nm,0.3s,baz=31,slow=13,SNR=22							
MAT	**Matsushiro**	**4.34**	**227**	P	**Pn**	**11 20 53.1**	**+3.0**
MAT				S	Sn	11 21 45.9	+6.5
ASAJ	**Asahikawa**	**4.54**	**4**	P	**Pn**	**11 20 53.5**	**+0.7**
1.4nm,0.3s,baz=240,slow=11,SNR=10							
ASAJ				S	**Sn**	**11 21 45.3**	**+1.0**
1.1nm,0.3s,baz=271,slow=20,SNR=1.6							
JHJ	**Hachijo jima 2**	**6.73**	**197**	P	**Pn**	**11 21 23.9**	**+1.1**
4.0nm,0.3s,baz=90,slow=20,SNR=3.1							
JHJ				S	**Sn**	**11 22 37.0**	**-1.1**
4.6nm,0.3s,baz=59,slow=16,SNR=1.3							
USRK	**Ussuriysk Ar.**	**8.86**	**305**	P	**Pn**	**11 21 52.4**	**+0.4**
0.2nm,0.3s,baz=122,slow=14,SNR=5.9							
KSRS	**Korea Array**	**11.34**	**264**	P	Pn	11 22 29.6	+3.7
0.6nm,0.3s,baz=71,slow=14,SNR=7.2							
SONM	**Songino Array**	**25.33**	**300**	P	**P**	**11 25 23.8**	**+0.3**
0.5nm,0.6s,baz=86,slow=9.1,SNR=2.9							
H11N2	**WAKE ISLAND Hy 29.07 126**			T	T	11 56 16.7	
baz=318,slow=75,SNR=318							
H11N1	**WAKE ISLAND Hy 29.08 126**			T	T	11 56 19.9	
baz=318,slow=75,SNR=302							
H11N3	**WAKE ISLAND Hy 29.09 126**			T	T	11 56 17.1	
baz=318,slow=75,SNR=365							
H11S1	**WAKE ISLAND Hy 29.86 128**			T	T	11 57 15.8	
baz=320,slow=76,SNR=54							
H11S3	**WAKE ISLAND Hy 29.87 128**			T	T	11 57 16.5	
baz=320,slow=76,SNR=59							
H11S2	**WAKE ISLAND Hy 29.88 128**			T	T	11 57 17.6	
baz=320,slow=76,SNR=51							
ZALV	**Zalesovo Beam 40.66 310**			P	**P**	**11 27 21.4**	**-0.7**
1.2nm,0.3s,baz=78,slow=8.6,SNR=5.2							
MKAR	**Makanchi Array 43.30 300**			P	**P**	**11 27 42.9**	**-0.8**
0.8nm,0.6s,baz=88,slow=9.1,SNR=7.9							
ILAR	**Eielson Array 47.05 34**			P	**P**	**11 28 13.5**	**+0.3**
0.2nm,0.6s,baz=261,slow=5.4,SNR=3.6							
INK	**Inuvik 51.87 28**			P	**P**	**11 28 50.3**	**+0.5**
0.7nm,0.8s,baz=294,slow=8.2,SNR=5.3							
WRA	**Warramunga Arr 59.66 189**			P	**P**	**11 29 45.2**	**-1.0**
1.1nm,0.7s,baz=7.3,slow=6.9,SNR=12							
YKA	**Yellowknife Ar 61.33 31**			P	**P**	**11 29 57.2**	**+0.2**
0.1nm,0.7s,baz=300,slow=6.4,SNR=3.1							
ASAR	**Alice Springs 63.39 188**			P	**P**	**11 30 11.0**	**-0.3**
0.5nm,0.7s,baz=16,slow=5.7,SNR=11							
FINES	**FINESS Array B 66.83 332**			P	**P**	**11 30 31.6**	**-1.6**
0.8nm,0.5s,baz=23,slow=15,SNR=4.2							
NOA	**NORSAR Array B 72.06 337**			P	**P**	**11 31 04.6**	**-0.9**
0.7nm,0.6s,baz=44,slow=9.8,SNR=3.6							
KEST	**Kesra 93.33 323**			P	**P**	**11 32 56.4**	**-0.4**
5.6nm,0.5s,baz=76,slow=1.6,SNR=7.3							

*IDC **15** 11:27:28.5±11.0,25.01S×179.68E,h422km±128km, mb3.1/4,mb1 3.3/6,mb1mx3.0/35,mbtmp4.1/6,Error ellipse: s-maj=138.5km s-min=47.6km az=61.0*

ISC 15 11:27:33.0±5.6,25°3S±0°3'×180°0E±0°7',h507km,n6, σ1°33/7,mb3.5/4,South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
URZ	**Urewera 13.14 190**			P	**P**	**11 30 22.6**	**-0.7**
1.2nm,0.3s,baz=37,slow=3.2,SNR=11							
URZ				S	**S**	**11 32 43.7**	**-0.1**
0.1nm,0.3s,baz=68,slow=20,SNR=1.9							
RPZ	**Rata Peaks 19.75 199**			P	**P**	**11 31 31.2**	**+2.4**
0.4nm,0.3s,baz=63,slow=11,SNR=4.5							
STKA	**Stephens Creek 34.19 250**			P	**P**	**11 33 35.8**	**+0.1**
0.6nm,0.4s,baz=100,slow=17,SNR=3.0							
ASAR	**Alice Springs 41.79 262**			P	**P**	**11 34 37.7**	**-0.2**
1.5nm,0.8s,baz=96,slow=7.3,SNR=23							
WRA	**Warramunga Arr 42.30 268**			P	**P**	**11 34 41.0**	**-0.9**
0.9nm,0.5s,baz=101,slow=8.1,SNR=12							
FITZ	**Fitzroy Crossi 50.70 267**			P	**P**	**11 35 46.0**	**+0.3**
1.0nm,0.6s,baz=132,slow=16,SNR=3.2							

*NIED **15** 11:29:00,38.50N×144.40E,h5km,Mw3.5 Best double couple: M0 1.98000×10^14 NP1:φs33.00000°,δ45.00000°, λ-77.00000°. NP2:φs195.00000°,δ46.00000°, λ-103.00000°.*
*IDC **15** 11:29:27.1±2.2,38.32N×145.01E,h0km,mb3.4/3, mb1 3.6/5,mb1mx3.3/39,mbtmp3.5/5,ML3.4/2,MS2.6/2, Ms1 2.6/2,ms1mx2.4/41,Error ellipse: s-maj=58.5km s-min=28.5km az=73.0*
*ISCJB **15** 11:29:31.8±1.0,38.49N±0.04×144.51E±0.07,h29km, mb3.3/3,Error ellipse: s-maj=8.6km s-min=5.6km az=27.8*
*JMA **15** 11:29:33.7±0.3,38.47N×144.41E,h39km,M3.8*

ISC 15 11:29:33.2±1.5,38°46N±0°06'×144°53E±0°09,h29km,n22, σ1°19/25,mb3.5/3,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
OFUJ	**Ofunato**	**2.32**	**286**	P	**Pn**	**11 30 09.3**	**-0.2**
JIO	**Ouri**	**2.50**	**271**	S	**Sn**	**11 30 39.8**	**-1.5**
JTH	**Tanohata**	**2.55**	**306**	P	**Pn**	**11 30 12.3**	**-0.2**
JTH				S	**Sn**	**11 30 41.2**	**-1.4**
JMK	**Ichinoseki**	**2.64**	**282**	S	**Sn**	**11 30 44.3**	**-0.5**
JOM	**Ohasama**	**2.72**	**293**	P	**Pn**	**11 30 15.2**	**+0.3**
JOM				S	**Sn**	**11 30 46.7**	**-0.2**
JMM	**Marumori**	**3.00**	**260**	S	**Sn**	**11 30 52.2**	**-1.7**
JOU	**Okura**	**3.04**	**269**	S	**Sn**	**11 30 54.7**	**-0.1**
JFK	**Kawauchi**	**3.09**	**251**	P	**Pn**	**11 30 19.2**	**-0.9**
JRG	**Rokugo**	**3.18**	**288**	P	**Pn**	**11 30 22.1**	**+0.8**
JYK	**Kaneyama**	**3.30**	**279**	P	**Pn**	**11 30 23.9**	**+1.0**
JFT	**Otama**	**3.44**	**256**	S	**Sn**	**11 31 04.3**	**-0.4**
JTM	**Tenmabayashi**	**3.54**	**312**	S	**Sn**	**11 31 05.3**	**-1.9**
JNBK	**Urakawa-nobuka**	**4.05**	**341**	S	**Sn**	**11 31 19.2**	**-0.5**
JCH	**Churui**	**4.25**	**348**	P	**Pn**	**11 30 35.3**	**-0.6**
JRY	**Ryogami san**	**5.11**	**243**	P	**Pn**	**11 30 47.7**	**-0.1**
JRY				S	**Sn**	**11 31 43.2**	**-2.6**
MJAR	**Matsushiro Arr**	**5.38**	**251**	Pn	**Pn**	**11 30 52.4**	**+0.9**
1.5nm,0.3s,baz=59,slow=9.2,SNR=13							
MJAR				LR	LR	11 33 12.5	
comp=Z,39nm,18.7s,baz=25,slow=40							
MAT	**Matsushiro**	**5.38**	**251**	P	**Pn**	**11 30 52.8**	**+1.3**
MAT				S	**Sn**	**11 31 54.5**	**+2.0**
ASAJ	**Asahikawa**	**5.84**	**346**	Pn	**Pn**	**11 30 57.9**	**+0.1**
0.7nm,0.3s,baz=197,slow=11,SNR=8.6							
ASAJ				Sn	**Sn**	**11 32 04.2**	**+0.5**
0.3nm,0.3s,baz=108,slow=32,SNR=1.8							
JNU	**Nakatsue**	**12.29**	**248**	LR	LR	11 37 25.6	
comp=Z,33nm,18.3s,baz=16,slow=38							
MKAR	**Makanchi Array**	**45.47**	**301**	P	**P**	**11 37 51.2**	**+1.5**
0.1nm,0.5s,baz=93,slow=7.6,SNR=3.7							
WRA	**Warramunga Arr**	**58.87**	**191**	P	**P**	**11 39 28.5**	**-0.8**
0.4nm,0.7s,baz=9.5,slow=6.9,SNR=3.9							
ASAR	**Alice Springs**	**62.59**	**191**	P	P	11 39 51.2	-3.4
0.3nm,0.8s,baz=14,slow=8.1,SNR=3.1							

*ISCJB **15** 11:47:24.8±0.3,33.45N±0.01×116.44W±0.02,h4km±3km, Error ellipse: s-maj=2.6km s-min=2.3km az=161.4*
*NEIC **15** 11:47:26.1,33.46N×116.45W,h5km,ML3.2(PAS),After PAS.*
*ECX **15** 11:47:26.4±0.5,33.45N×116.45W,h4km±2km,MD3.0, ML3.2*

ISC 15 11:47:24.9±0.8,33°46N±0°02'×116°42W±0°02,h12km±6km, n46,σ0°72/74,5C-5D,Southern California

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
PFO	**Pinyon Flats O**	**0.15**	**350**	P	**Pg**	**11 47 28.9**	**+0.4**
baz=172,SNR=1000							
PFO				S	**Sg**	**11 47 30.8**	**-0.3**
baz=172							
PFO	**Pinyon Flats O**	**0.15**	**350**	*e*Pg	**Pg**	**11 47 28.9**	**+0.4**
PFO				*e*Sg	**Sg**	**11 47 31.1**	**0.0**
BORC	**Borrego Spring**	**0.19**	**178**	⇓*i*P	**Pb**	**11 47 29.7**	**-0.7**
CRY	**Cary Ranch**	**0.28**	**292**	⇑*i*P	**Pb**	**11 47 31.4**	**-0.5**
PLM	**Palomar**	**0.38**	**254**	⇓*i*P	**Pb**	**11 47 33.3**	**-0.4**
MONP2	**Monument Peak**	**0.57**	**180**	P	**Pb**	**11 47 36.5**	**-0.4**
baz=359,SNR=27							
MONP2				S	**Sg**	**11 47 43.7**	**+0.1**
baz=359							
BELC	**Belle Mtn. Jos**	**0.65**	**33**	P	**Pb**	**11 47 38.0**	**-0.2**
baz=214,SNR=191							
BELC				S	**Sg**	**11 47 46.4**	**+0.4**
baz=214							
MURC	**Murrieta**	**0.66**	**282**	P	**Pb**	**11 47 38.0**	**-0.4**
baz=102,SNR=54							
MURC				S	**Sg**	**11 47 46.6**	**+0.1**
baz=102							
HAY	**Hayfield**	**0.67**	**68**	⇑*i*P	**Pn**	**11 47 39.3**	**-0.9**
SWSC	**Sam W. Stewart**	**0.74**	**134**	P	**Pb**	**11 47 39.6**	**0.0**
baz=315,SNR=162							
SWSC				S	**Sb**	**11 47 49.7**	**0.0**
baz=315							
BAR	**Barrett**	**0.81**	**195**	*e*P	**Pb**	**11 47 40.5**	**-0.4**
109C	**Camp Elliot, M**	**0.81**	**225**	P	**Pg**	**11 47 40.3**	**-0.1**
baz=44,SNR=33							
109C				S	**Sg**	**11 47 50.8**	**-0.3**
baz=44							
BC3	**Big Chuckawall**	**0.83**	**76**	P	**Pb**	**11 47 41.5**	**+0.1**
baz=257,SNR=41							
BC3				S	**Sb**	**11 47 52.7**	**+0.1**
baz=257							
SDRC	**San Diego Road**	**0.84**	**211**	*e*P	**Pg**	**11 47 40.9**	**-0.3**
IKP	**In-Ko-Pah, Jac**	**0.85**	**162**	⇓*i*P	**Pb**	**11 47 41.8**	**+0.1**
BBRC	**Big Bear Solar**	**0.90**	**333**	P	**Pb**	**11 47 42.6**	**0.0**
baz=153,SNR=111							
BBRC				S	**Sb**	**11 47 54.4**	**-0.2**
baz=153							
RMX	**La Rumorosa**	**0.90**	**161**	*e*P	**Pg**	**11 47 42.1**	**-0.2**
RMX				*e*S	**Sb**	**11 47 54.5**	**-0.1**
RMX				⇑*e*		11 47 56.5	
RMX				AML	AML	11 47 56.5	
comp=E,445nm,0.5s							
WESC	**Westside Schoo**	**0.91**	**140**	*e*P	**Pb**	**11 47 42.5**	**0.0**
SGL	**Mount Signal**	**1.00**	**144**	⇓*i*P	**Pb**	**11 47 43.6**	**-0.5**
TJIG	**Tijuana**	**1.05**	**192**	*e*P	**Pb**	**11 47 44.5**	**-0.4**
CBX	**Cerro Bola**	**1.16**	**190**	*e*P	**Pb**	**11 47 46.6**	**-0.3**
CBX				*e*S	**Sg**	**11 48 02.0**	**-0.4**
CBX				⇓*e*		11 48 10.1	
CBX				AML	AML	11 48 10.1	
comp=N,604nm,0.6s							
IRM	**Iron Mountain**	**1.27**	**56**	P	**Pn**	**11 47 48.2**	**-0.3**
baz=238,SNR=144							
IRM				S	**Sg**	**11 48 06.2**	**+0.4**
baz=238							
BFSC	**Mount Baldy Ra**	**1.29**	**307**	P	**Pb**	**11 47 48.8**	**-0.3**
baz=127,SNR=42							
BFSC				S	**Sb**	**11 48 05.6**	**-0.1**
baz=127							
HEC	**Hector,Ludlow**	**1.37**	**3**	P	**Pg**	**11 47 51.0**	**-0.2**
baz=184,SNR=54							
HEC				S	**Sg**	**11 48 08.8**	**-0.2**
baz=184							
GLA	**Glamis**	**1.40**	**107**	P	**Pn**	**11 47 49.3**	**-1.0**
baz=288							
GMRC	**Granite Mounta**	**1.46**	**25**	P	**Pn**	**11 47 51.0**	**-0.2**
baz=206,SNR=46							
GMRC				Sb	**Sg**	**11 48 11.9**	**0.0**
baz=206							
RRX	**Edison Barstow**	**1.49**	**342**	Pg	**Pg**	**11 47 53.4**	**-0.2**
baz=162							
RRX				Sb	**Sg**	**11 48 12.8**	**-0.2**
baz=162							
FMP	**Fort Macarthur**	**1.58**	**280**	Pb	**Pb**	**11 47 53.8**	**-0.2**
baz=98							
FMP				Sb	**Sg**	**11 48 15.2**	**-0.6**
baz=98							
Y12C	**Blythe**	**1.61**	**79**	P	**Pn**	**11 47 52.9**	**-0.3**
baz=260,SNR=23							
Y12C				Sb	**Sg**	**11 48 16.5**	**-0.3**
baz=260							
PASC	**Pasadena Art C**	**1.63**	**296**	*e*Pn	**Pb**	**11 47 54.2**	**-0.6**
PASC				*e*Sn	**Sb**	**11 48 15.8**	**+0.4**
CIS	**Catalina Islan**	**1.66**	**269**	P	**Pn**	**11 47 53.9**	**+0.1**
baz=87,SNR=5.9							
CIS				S	**Sb**	**11 48 15.7**	**-0.5**
baz=87							
DECC	**Green Verdugo**	**1.77**	**297**	Pb	**Pb**	**11 47 57.6**	**+0.3**
baz=116							
DECC				Sb	**Sb**	**11 48 20.3**	**+0.8**
baz=116							
ECNX	**Esteban Cantu**	**1.81**	**185**	*e*P	**Pb**	**11 47 57.1**	**-0.8**
SCI2	**San Clemente I**	**1.84**	**256**	P	**Pn**	**11 47 56.5**	**+0.2**
baz=74							
GSC	**Goldstone, Bar**	**1.86**	**350**	Pg	**Pg**	**11 48 00.6**	**-0.1**
baz=170,SNR=26							
GSC				Sb	**Sg**	**11 48 24.1**	**-0.8**
baz=170							
EDW2	**Edwards Air Fo**	**1.92**	**318**	Pb	**Pb**	**11 48 00.1**	**+0.2**
baz=137,SNR=36							
EDW2				Sb	**Sg**	**11 48 25.4**	**-1.3**
baz=137							
ZAX	**El Zacaton**	**1.95**	**176**	*e*P	**Pb**	**11 47 59.6**	**-0.7**
ZAX				*e*S	**Sb**	**11 48 24.8**	**+0.2**
ZAX				⇑*e*		11 48 27.6	
ZAX				AML	AML	11 48 27.6	
comp=E,254nm,0.6s							
ZAX				AML	AML	11 48 28.7	
comp=N,221nm,0.5s							
ZAX				⇑*e*		11 48 28.7	
NEE2	**Needles Airpor**	**1.98**	**48**	Pb	**Pg**	**11 48 02.1**	**-0.9**
baz=230,SNR=39							
NEE2				Sb	**Sg**	**11 48 27.8**	**-0.9**
baz=230							
TUQ	**Turquoise Moun**	**2.01**	**12**	Pg	**Pg**	**11 48 03.3**	**-0.2**
baz=192,SNR=24							
TUQ				Sb	**Sg**	**11 48 29.0**	**-0.7**
baz=192							
PDMCI	**Parker Dam,Lak**	**2.08**	**66**	Sb	**Sg**	**11 48 30.9**	**-0.7**
baz=247							
LRMC	**Laurel Mtn Rad**	**2.27**	**333**	P	**Pn**	**11 48 03.3**	**+1.0**
baz=153,SNR=36							
ARVC	**Arvin**	**2.59**	**311**	Pb	**Pb**	**11 48 11.3**	**-0.1**
baz=129,SNR=10							
MPMC	**Manual Prospec**	**2.74**	**342**	P	**Pn**	**11 48 09.7**	**+0.9**
baz=161,SNR=12							
ISA	**Isabella, Lake**	**2.77**	**323**	Pb	**Pb**	**11 48 15.5**	**+1.1**
baz=142,SNR=14							
DAC	**Darwin (Calif)**	**2.97**	**341**	*e*Pn	**Pb**	**11 48 15.3**	**-2.5**
DAC				*e*Sn	**Sn**	**11 48 47.1**	**-0.6**
214A	**Organ Pipe Nat**	**3.40**	**115**	*e*Pn	**Pn**	**11 48 18.5**	**+0.8**
214A				*e*Sn	**Sn**	**11 49 01.5**	**+3.5**

IDC 15 11:48:32.1±2.1,37°53N×144°15E,h0km,mb3.4/2, mb1 3.5/4,mb1mx2.2/54,mbtmp3.4/4,ML3.3/2,Error ellipse: s-maj=56.3km s-min=33.5km az=80.0,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
MJAR	**Matsushiro Arr**	**4.85**	**260**	Pn	Pn	**11 49 46.6**	**+0.2**
1.2nm,0.3s,baz=89,slow=15,SNR=9.0							
ASAJ	**Asahikawa**	**6.69**	**350**	Pn	Pn	11 50 11.6	0.0
0.6nm,0.3s,baz=158,slow=13,SNR=7.0							
WRA	**Warramunga Arr**	**57.90**	**191**	P	P	11 58 25.8	-0.2
0.4nm,0.5s,baz=10,slow=7.3,SNR=5.8							
ASAR	**Alice Springs**	**61.62**	**191**	P	P	11 58 51.6	0.0
0.2nm,1.0s,baz=1.5,slow=6.3,SNR=4.4							

*ISCJB **15** 11:48:55.4±0.4,33.44N±0.01×116.44W±0.02,h5km±3km, Error ellipse: s-maj=2.8km s-min=2.4km az=167.0*
*ECX **15** 11:48:56.5±0.6,33.46N×116.45W,h6km,MD2.7,ML2.9*
*NEIC **15** 11:48:56.4,33.46N×116.45W,h6km,ML3.0(PAS),After PAS.*
NEIC Felt [II] at La Quinta. Also felt at Cathedral City, Indian Wells, Loma Linda, Mountain Center, Palm Desert, San Clemente and San Diego.

ISC 15 11:48:54.8±0.9,33°47N±0°02'×116°46W±0°02,h13km±8km, n46,σ0°64/71,4C-4D,Southern California

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
FRD	**Ford Ranch, An**	**0.12**	**284**	⇓*i*P	**Pb**	**11 48 59.3**	**+0.3**
PFO	**Pinyon Flats O**	**0.14**	**2**	P	**Pb**	**11 48 59.1**	**-0.3**
baz=173,SNR=209							
PFO				S	**Sg**	**11 49 01.0**	**-0.1**
baz=173							
PFO	**Pinyon Flats O**	**0.14**	**2**	*e*Pg	**Pb**	**11 48 59.2**	**-0.3**
PFO				*e*Sg	**Sg**	**11 49 01.2**	**+0.1**
BORC	**Borrego Spring**	**0.20**	**169**	⇓*i*P	**Pb**	**11 48 60.0**	**-0.3**
CRY	**Cary Ranch**	**0.25**	**294**	⇓*i*P	**Pb**	**11 49 01.7**	**+0.5**
PLM	**Palomar**	**0.35**	**252**	⇑*i*P	**Pb**	**11 49 03.6**	**+0.6**
MONP2	**Monument Peak**	**0.57**	**176**	P	**Pb**	**11 49 06.9**	**+0.1**
baz=359							
MONP2				S	**Sg**	**11 49 14.0**	**+0.3**
baz=359							
MURC	**Murrieta**	**0.63**	**283**	P	**Pb**	**11 49 08.2**	**+0.6**
baz=102,SNR=9.3							
MURC				S	**Sb**	**11 49 16.9**	**+0.5**
baz=102							
BELC	**Belle Mtn. Jos**	**0.66**	**36**	P	**Pb**	**11 49 08.3**	**0.0**
baz=214,SNR=13							
BELC				S	**Sb**	**11 49 17.0**	**-0.3**
baz=214							
SWSC	**Sam W. Stewart**	**0.77**	**133**	P	**Pb**	**11 49 09.9**	**0.0**
baz=314,SNR=13							
SWSC				S	**Sb**	**11 49 20.1**	**-0.1**
baz=314							
109C	**Camp Elliot, M**	**0.79**	**223**	P	**Pb**	**11 49 10.7**	**+0.4**
baz=44,SNR=18							
109C				S	**Sb**	**11 49 21.1**	**+0.2**
baz=44							
BAR	**Barrett**	**0.80**	**193**	*i*P	**Pb**	**11 49 10.6**	**+0.1**
BAR	**Barrett**	**0.80**	**193**	*e*Pg	**Pb**	**11 49 10.7**	**+0.1**
BAR				*e*Sg	**Sb**	**11 49 21.1**	**-0.3**
SDRC	**San Diego Road**	**0.83**	**209**	*e*P	**Pb**	**11 49 11.1**	**+0.1**
SND	**San Diego**	**0.86**	**216**	⇓*i*P	Pg	11 48 59.9	-12
BC3	**Big Chuckawall**	**0.86**	**77**	P	**Pb**	**11 49 11.8**	**+0.1**
baz=257,SNR=9.3				

FLSC	**Flash Two Peak**	**1.58**	**343**	*e*Pn	**Pg**	**11 49 25.7**	**+0.6**
PASC	**Pasadena Art C**	**1.60**	**297**	*e*Pn	**Pg**	**11 49 25.3**	**-0.2**
PASC				*e*Sn	**Sg**	**11 49 46.0**	**-0.2**
CIS	**Catalina Islan**	**1.62**	**268**	P	**Pb**	**11 49 24.3**	**-0.3**
	baz=87						
CIS				S	**Sg**	**11 49 46.6**	**-0.4**
	baz=87						
Y12C	**Blythe**	**1.64**	**79**	Pb	**Pb**	**11 49 25.2**	**+0.3**
	baz=260						
Y12C	**Blythe**	**1.64**	**79**	*e*Pn	**Pn**	**11 49 23.3**	**0.0**
Y12C				*e*Sn	**Sg**	**11 49 46.6**	**-1.0**
DECC	**Green Verdugo**	**1.74**	**297**	S	**Sg**	**11 49 50.3**	**-0.5**
	baz=116						
ECNX	**Esteban Cantu**	**1.81**	**184**	*e*P	**Pb**	**11 49 27.4**	**-0.4**
ECNX				*e*S	**Sb**	**11 49 51.4**	**+1.1**
SCI2	**San Clemente I**	**1.81**	**255**	P	**Pb**	**11 49 27.1**	**-0.7**
	baz=74						
GSC	**Goldstone, Bar**	**1.85**	**351**	*e*Pn	**Pg**	**11 49 31.0**	**+0.7**
GSC				*e*Sn	**Sg**	**11 49 55.4**	**+0.9**
EDW2	**Edwards Air Fo**	**1.90**	**319**	Pb	**Pg**	**11 49 31.0**	**-0.2**
	baz=137,SNR=6.5						
ZAX	**El Zacaton**	**1.95**	**175**	*e*P	**Pb**	**11 49 29.9**	**-0.3**
ZAX				*e*S	**Sb**	**11 49 55.2**	**+0.7**
NEE2	**Needles Airpor**	**2.01**	**49**	Pb	**Pg**	**11 49 32.5**	**-0.8**
	baz=230,SNR=13						
LRMC	**Laurel Mtn Rad**	**2.25**	**334**	Pb	**Pg**	**11 49 37.7**	**-0.2**
	baz=153						
MPMC	**Manual Prospec**	**2.72**	**342**	Pb	**Pg**	**11 49 45.7**	**-1.3**
	baz=161						
ISA	**Isabella, Lake**	**2.75**	**323**	Pb	**Pg**	**11 49 46.2**	**-1.3**
	baz=142						

NIED ***15*** *11:49:00,37˚.50N×142˚.60E,h5km,Mw4.0 Best double couple: M₀1.22000×10²⁵ NP1:φs14.00000°,δ2.00000°, λ-122.00000°. NP2:φs225.00000°,δ88.00000°, λ-89.00000°.*

IDC ***15*** *11:49:34.5±0.7,37˚.36N×142˚.70E,h0km,mb3.7/12, mb1 3.9/16,mb1mx3.8/59,mbtmp3.8/16,ML3.5/3,MS2.8/1, Ms1 2.8/1,ms1mx2.3/44,Error ellipse: s-maj=21.5km s-min=14.5km az=107.0*

JMA ***15*** *11:49:34.9±0.3,37˚.48N×142˚.55E,h0km,M4.2*

ISCJB ***15*** *11:49:35.2±1.7,37˚.32N±0˚.04×142˚.66E±0˚.06, h18km±12km,mb3.7/12,Error ellipse: s-maj=8.3km s-min=7.2km az=167.1*

ISC 15 11:49:34.6±3.0,37˚.38N±0˚.05×142˚.60E±0˚.07,h1km±18km, n35,σ1s24/33,mb3.7/12,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JFK	**Kawauchi**	**1.37**	**270**	P	**Pn**	**11 50 01.3**	**+0.5**
JFK				S	**Sg**	**11 50 17.9**	**-0.7**
JIO	**Ouri**	**1.45**	**318**	P	**Pn**	**11 50 01.1**	**-0.8**
JIO				*e*S	**Sn**	**11 50 18.7**	**-2.9**
ONAJ	**Iwakimizuishiy**	**1.46**	**259**	P	**Pn**	**11 50 00.3**	**-1.8**
JMM	**Marumori**	**1.51**	**289**	P	**Pn**	**11 50 02.0**	**-0.7**
JMM				S	**Sn**	**11 50 22.3**	**-0.7**
JFT	**Otama**	**1.80**	**275**	P	**Pn**	**11 50 07.6**	**+0.8**
JFT				*e*S	**Sn**	**11 50 31.5**	**+1.2**
JOU	**Okura**	**1.82**	**303**	P	**Pn**	**11 50 06.7**	**-0.3**
JOU				*e*S	**Sn**	**11 50 28.7**	**-1.9**
JMK	**Ichinoseki**	**1.91**	**326**	P	**Pn**	**11 50 09.0**	**+0.9**
JYS	**Shirataka**	**2.17**	**293**	P	**Pn**	**11 50 12.7**	**+0.9**
JOM	**Ohasama**	**2.32**	**334**	P	**Pn**	**11 50 14.5**	**+0.6**
JYK	**Kaneyama**	**2.34**	**312**	P	**Pn**	**11 50 14.5**	**+0.4**
JAW	**Awa shima**	**2.85**	**293**	P	**Pn**	**11 50 23.1**	**+1.9**
MJAR	**Matsushiro Arr**	**3.61**	**258**	Pn	**Pn**	**11 50 34.2**	**+2.6**
	2.1nm,0.3s,baz=87,slow=16,SNR=9.8						
MJAR				LR	LR	11 52 13.3	
	comp=Z,124nm,18.7s,baz=65,slow=43						
JHJ	**Hachijo jima 2**	**4.84**	**209**	Pn	**Pn**	**11 50 49.2**	**+0.8**
	8.1nm,0.3s,baz=90,slow=20,SNR=5.6						
JHJ				Sn	**Sn**	**11 51 42.3**	**-2.7**
	68nm,0.3s,baz=295,slow=23,SNR=10						
ASAJ	**Asahikawa**	**6.73**	**0**	Pn	**Pn**	**11 51 14.1**	**-0.3**
	0.8nm,0.3s,baz=208,slow=15,SNR=5.2						
JCJ	**Chichijima**	**10.26**	**182**	Pn	**Pn**	**11 52 02.4**	**-0.5**
	baz=11,slow=19						
JCJ				Sn	Sn	11 53 51.0	-7.6
	1.7nm,0.3s,baz=152,slow=22,SNR=1.1						
USRK	**Ussuriysk Ar.**	**10.53**	**314**	Pn	Pn	11 52 10.4	+3.8
	0.3nm,0.3s,baz=143,slow=13,SNR=3.9						
KSRS	**Korea Array**	**11.67**	**275**	Pn	Pn	11 52 26.6	+4.5
	baz=90,slow=12,SNR=3.5						
SEY	**Seymchan**	**26.27**	**10**	P	**P**	**11 55 12.5**	**+1.4**
	0.7nm,0.4s,baz=284,slow=23,SNR=6.3						
H11N2	**WAKE ISLAND Hy**	**27.53**	**123**	T	T	12 24 15.5	
	baz=315,slow=75,SNR=30						
H11N1	**WAKE ISLAND Hy**	**27.54**	**123**	T	T	12 24 15.1	
	baz=315,slow=75,SNR=16						
H11N3	**WAKE ISLAND Hy**	**27.55**	**123**	T	T	12 24 14.8	
	baz=315,slow=75,SNR=18						
H11S1	**WAKE ISLAND Hy**	**28.27**	**125**	T	T	12 25 15.9	
	baz=317,slow=76,SNR=22						
H11S3	**WAKE ISLAND Hy**	**28.27**	**125**	T	T	12 25 15.8	
	baz=317,slow=76,SNR=30						
H11S2	**WAKE ISLAND Hy**	**28.29**	**125**	T	T	12 25 15.7	
	baz=317,slow=76,SNR=26						
SONM	**Songino Array**	**28.38**	**303**	P	**P**	**11 55 31.0**	**+0.7**
	1.8nm,0.8s,baz=99,slow=9.7,SNR=12						
ZALV	**Zalesovo Beam**	**42.38**	**312**	P	**P**	**11 57 30.3**	**+0.1**
	1.1nm,0.6s,baz=98,slow=7.4,SNR=6.3						
MKAR	**Makanchi Array**	**44.73**	**302**	P	**P**	**11 57 50.1**	**+0.8**
	0.7nm,0.8s,baz=85,slow=14,SNR=4.7						
ILAR	**Eielson Array**	**48.69**	**33**	P	**P**	**11 58 19.7**	**-0.3**
	0.6nm,0.8s,baz=257,slow=6.1,SNR=9.6						
INK	**Inuvik**	**53.65**	**27**	P	**P**	**11 58 57.6**	**+0.5**
	0.5nm,0.7s,baz=302,slow=4.2,SNR=4.0						
WRA	**Warramunga Arr**	**57.55**	**189**	P	**P**	**11 59 25.3**	**-0.4**
	3.1nm,0.9s,baz=8.0,slow=7.3,SNR=22						
ASAR	**Alice Springs**	**61.27**	**189**	P	**P**	**11 59 51.6**	**+0.2**
	0.9nm,0.7s,baz=14,slow=8.2,SNR=13						
YKA	**Yellowknife Ar**	**63.03**	**31**	P	**P**	**12 00 02.7**	**-0.1**
	0.1nm,0.6s,baz=301,slow=6.5,SNR=3.5						
FINES	**FINESS Array B**	**68.94**	**333**	P	**P**	**12 00 40.9**	**+0.1**
	1.7nm,0.9s,baz=55,slow=12,SNR=2.7						
PDAR	**Pinedale Array**	**76.75**	**46**	P	**P**	**12 01 27.7**	**-0.2**
	0.3nm,0.6s,baz=285,slow=1.8,SNR=4.0						
TXAR	**Lajitas Array**	**89.16**	**53**	P	**P**	**12 02 32.3**	**+0.1**
	0.2nm,0.6s,baz=297,slow=3.4,SNR=3.4						

MAN 15 11:49:43,13˚.69N×120˚.29E,h5km,mb4.0,ML2.8,MS2.5, Mindoro

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SJMP	**San Jose**	**1.46**	**146**	*e*P	Pn	11 50 10.0	-0.1
BUSP	**Coron**	**1.68**	**183**	*e*P	Pb	11 50 13.7	-0.7
BUSP				*e*S	Sb	11 50 36.1	+0.3
ENPP	**El Nido**	**2.61**	**199**	*e*P	Pn	11 50 26.8	+1.0

IDC ***15*** *11:59:06.1±0.4,9˚.59S×114˚.14E,h0km,mb4.6/31, mb1 4.6/31,mb1mx4.6/40,mbtmp4.6/31,MS3.8/16, Ms1 3.8/16,ms1mx3.6/33,Error ellipse: s-maj=19.6km s-min=11.1km az=62.0*

BJI ***15*** *11:59:08.9,9˚.70S×114˚.20E,h16km,mb4.8/38,mB4.9/26, Ms4.6/14,Ms7 4.4/12*

MOS ***15*** *11:59:09.3±1.1,9˚.52S×114˚.19E,h33km,mb4.8/43,Error ellipse: s-maj=13.4km s-min=6.7km az=113.1*

NEIC ***15*** *11:59:11.9±0.5,9˚.71S×114˚.01E,h39km±5km,mb4.8/19, Error ellipse: s-maj=6.9km s-min=4.2km az=202.0*

NEIC Felt [III] at Denpasar and Nusadua.

DJA ***15*** *11:59:11.3±0.2,10˚.S±2˚×11˚.4E±˚,h10km,M4.9/47, mb5.0/47,mB5.4/22,MLv5.2/24,Mw(mB)4.9/22*

ISCJB ***15*** *11:59:11.7±0.4,9˚.71S±0˚.03×114˚.03E±0˚.02,h57km±3km, mb4.7/78,MS3.8/17,Error ellipse: s-maj=5.2km s-min=3.2km az=21.6*

KLM ***15*** *11:59:14.0,9˚.94S×113˚.80E,h44km,mb4.8,MS5.7*

ISC 15 11:59:12.1±0.6,9.77S±0˚.04×114˚.02E±0˚.04,h43km±5km, n241,σ1s47/241,mb4.7/78,MS3.9/17,7C-2D,South of Bali

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JAGI	**Jajag, Banyuwa**	**1.30**	**6**	P	**Pn**	**11 59 31.7**	**-2.1**
JAGI				S	**Sn**	**11 59 48.8**	**-1.2**
JAGI	**Jajag, Banyuwa**	**1.30**	**6**	*e*Pn	**Pn**	**11 59 32.7**	**-1.1**
JAGI				*e*Sn	**Sn**	**11 59 48.8**	**-1.2**
GMJI	**Gumukmas**	**1.59**	**339**	P	**Pn**	**11 59 36.8**	**-1.1**
DNP	**Denpasar**	**1.60**	**47**	P	**Pn**	**11 59 37.9**	**0.0**
DNP				S	**Sn**	**11 59 58.2**	**+0.8**
ABJI	**Asem Bagus**	**1.97**	**6**	P	**Pn**	**11 59 43.7**	**+0.6**
PWJI	**Pagerwojo**	**2.80**	**308**	P	**Pn**	**11 59 53.3**	**-1.1**
PWJI				S	**Sn**	**12 00 27.7**	**+0.8**
TWSI	**Taliwang, Sumb**	**3.00**	**70**	P	**Pn**	**11 59 56.0**	**-1.2**
TWSI				S	**Sn**	**12 00 32.9**	**+0.9**
PCJI	**Pacitan**	**3.22**	**299**	P	**Pn**	**12 00 00.3**	**+0.1**
NGJI	**Ngawi**	**3.48**	**313**	P	Pn	12 00 07.3	+3.5
WOJI	**Wonogiri, Jawa**	**3.62**	**302**	P	**Pn**	**12 00 06.5**	**+0.8**
PLAI	**Plampang**	**3.82**	**76**	P	**Pn**	**12 00 08.8**	**+0.3**
UGM	**Wanagama**	**3.92**	**298**	P	**Pn**	**12 00 10.8**	**+0.9**
UGM	**Wanagama**	**3.92**	**298**	*e*Pn	**Pn**	**12 00 10.5**	**+0.6**
SMRI	**Semarang**	**4.46**	**307**	P	Pn	12 00 20.8	+3.5
SMRI	**Semarang**	**4.46**	**307**	*e*Pn	**Pn**	**12 00 16.8**	**-0.4**
SMRI				*e*Sn	**Sn**	**12 01 07.6**	**-0.3**
UWJI	**Ujung Watu**	**4.51**	**317**	P	Pn	12 00 24.7	+6.7
KPJI	**Karang Pucung**	**5.59**	**295**	P	**Pn**	**12 00 35.3**	**+2.5**
	218nm,0.6s,2µm1.3nm						
CMJI	**Cimerak**	**5.85**	**289**	P	**Pn**	**12 00 37.1**	**+0.7**
	167nm,0.8s,3µm0.8nm						
BBKI	**Banjar Baru**	**6.32**	**7**	P	Pn	12 00 46.6	+3.8
	138nm,0.8s,3µm0.8nm						
CISI	**Cisompet, Garu**	**6.52**	**289**	P	**Pn**	**12 00 46.6**	**+1.0**
	246nm,0.6s,2.0nm						
CISI	**Cisompet, Garu**	**6.52**	**289**	*e*Pn	**Pn**	**12 00 45.4**	**-0.3**
CISI				*e*Sn	**Sn**	**12 01 59.0**	**+0.1**
LEM	**Lembang**	**6.98**	**294**	Pn	Pn	12 00 57.3	+5.2
	4.5nm,0.3s,baz=143,slow=7.8,SNR=13						
LEM				Sn	Sn	12 02 21.0	+11
	3.9nm,0.3s,baz=292,slow=1.6,SNR=3.8						
LEM	**Lembang**	**6.98**	**294**	P	Pn	12 01 01.3	+9.2
CNJI	**Cibinong**	**7.24**	**289**	P	Pn	12 01 03.9	+8.4
BSSI	**Bau Bau, Buton**	**7.35**	**61**	P	Pn	12 01 04.5	+7.5
KAPI	**Kappang**	**7.39**	**51**	Pn	**Pn**	**12 00 58.3**	**+0.8**
	8.1nm,0.3s,baz=240,slow=3.5,SNR=13						
KAPI				Sn	**Sn**	**12 02 15.5**	**-4.6**
	5.8nm,0.3s,baz=98,slow=23,SNR=3.1						
KAPI				LR	LR	12 04 16.1	
	comp=Z,2µm,19.1s,baz=273,slow=43						
KAPI	**Kappang**	**7.39**	**51**	*e*Pn	**Pn**	**12 00 58.1**	**+0.6**
KAPI				*e*Sn	**Sn**	**12 02 17.8**	**-2.3**
PBKI	**Pangkalan Bun**	**7.40**	**341**	P	Pn	12 01 01.7	+4.0
	156nm,0.9s,1µm0.6nm						
CBJI	**Citeko**	**7.84**	**295**	P	Pn	12 01 07.7	+4.0
DBJI	**Dramaga**	**7.88**	**293**	P	**Pn**	**12 01 06.0**	**+1.8**
	116nm,1.1s,9µm						
SKJI	**Sukabumi**	**7.88**	**290**	P	**Pn**	**12 01 06.1**	**+1.8**
	241nm,1.1s,3µm						
SPSI	**Sidrap Palu**	**8.11**	**45**	P	Pn	12 01 13.7	+6.3
MMRI	**Maumere**	**8.19**	**83**	P	**Pn**	**12 01 10.1**	**+1.6**
	261nm,1.0s						
MMRI	**Maumere**	**8.19**	**83**	*e*Pn	**Pn**	**12 01 07.3**	**-1.2**
XMIS	**Christmas Isla**	**8.27**	**264**	*e*Pn	**Pn**	**12 01 07.4**	**-2.3**
XMIS				*e*Sn	Sn	12 02 33.5	-8.3
SBJI	**Serang**	**8.62**	**294**	P	**Pn**	**12 01 16.5**	**+2.1**
	132nm,1.0s,12µm						
MTKI	**Muara Teweh, K**	**8.81**	**6**	P	**Pn**	**12 01 18.5**	**+1.4**
	113nm,0.7s						
TTSI	**Tana Toraja**	**8.82**	**41**	P	**Pn**	**12 01 18.8**	**+1.7**
	80nm,1.0s						
CGJI	**Cibinong**	**8.82**	**290**	P	**Pn**	**12 01 18.0**	**+0.8**
	245nm,0.6s,4µm						
BATI	**Baumata**	**9.51**	**93**	Pn	**Pn**	**12 01 28.9**	**+2.4**
	3.9nm,0.3s,baz=242,slow=24,SNR=6.7						
BATI				Sn	**Sn**	**12 03 07.1**	**-5.0**
	12nm,0.3s,baz=293,slow=24,SNR=8.4						
STKI	**Sintang**	**10.10**	**345**	P	Pn	12 01 39.3	+4.7
	49nm,0.9s,10µm						
SOEI	**Soe**	**10.10**	**91**	*e*Pn	**Pn**	**12 01 34.5**	**-0.2**
SOEI				*e*Sn	**Sn**	**12 03 27.5**	**+0.7**
KASI	**Kota Agung**	**10.34**	**293**	P	**Pn**	**12 01 40.0**	**+2.0**
	65nm,0.8s,864nm						
LWLI	**Liwa**	**10.95**	**295**	P	Pn	12 01 52.3	+5.9
MDSI	**Maura Dua**	**11.09**	**298**	P	**Pn**	**12 01 49.1**	**+0.9**
	19nm,0.8s,458nm						
APSI	**Ampana**	**11.62**	**41**	P	Pn	12 02 02.6	+7.1
LHSI	**Lahat**	**11.98**	**299**	P	Pn	12 02 07.0	+6.6
MNAI	**Manna**	**12.22**	**295**	*e*Pn	**Pn**	**12 02 02.5**	**-1.3**
SBUM	**Sibu**	**12.27**	**351**	⇑P	**Pn**	**12 02 07.0**	**+2.6**
SBUM	**Sibu**	**12.27**	**351**	*e*Pn	Pn	12 02 08.1	+3.7
MBWA	**Marble Bar**	**12.59**	**155**	*e*Pn	Pn	12 02 03.8	-4.8
MBWA				*e*Sn	Sn	12 04 11.1	-16
MRSI	**Marisa**	**12.87**	**38**	P	**P**	**12 02 24.9**	**+2.4**
MASI	**Maura Aman, Be**	**13.43**	**299**	P	**Pn**	**12 02 21.8**	**+1.5**
	179nm,0.9s,4µm						
FITZ	**Fitzroy Crossi**	**13.98**	**128**	Pn	Pn	12 02 23.5	-4.3
	0.6nm,0.3s,baz=290,slow=12,SNR=16						
FITZ				Sn	Sn	12 04 48.0	-14
	1.3nm,0.3s,baz=355,slow=23,SNR=6.0						
FITZ	**Fitzroy Crossi**	**13.98**	**128**	*e*Pn	Pn	12 02 23.3	-4.4
FITZ				*e*Sn	Sn	12 04 51.1	-11
SANI	**Sanana**	**14.15**	**58**	P	**P**	**12 02 38.0**	**+1.3**
NLAI	**Namlea**	**14.52**	**64**	P	P	12 02 50.4	+10
MYLDM	**Lahad Datu**	**15.51**	**17**	⇑P	**P**	**12 02 55.7**	**+3.9**
MYLDM	**Lahad Datu**	**15.51**	**17**	*e*Pn	**P**	**12 02 55.4**	**+3.6**
	82nm,1.3s						
KNRA	**Kununurra**	**15.53**	**114**	P	**P**	**12 02 50.6**	**-1.4**
	baz=16						
SDKM	**Sandakan**	**15.63**	**12**	⇑P	**P**	**12 02 54.3**	**+1.1**
LBMI	**Labuha**	**16.19**	**57**	P	P	12 03 05.5	+6.1
BNDI	**Bandanaira**	**16.59**	**73**	P	**P**	**12 03 04.6**	**+0.8**
	390nm,1.0s,4µm						
TNTI	**Ternate**	**16.92**	**52**	P	P	12 03 13.9	+6.5
TNTI	**Ternate**	**16.92**	**52**	*e*Pn	**P**	**12 03 11.3**	**+3.9**
	84nm,1.0s						
COCO	**West Island**	**17.05**	**260**	*e*P	**Pn**	**12 03 05.9**	**-1.6**
COCO				pmax	pmax		
	comp=Z,157nm,0.8s						
COCO	**West Island**	**17.05**	**260**	*e*Pn	**Pn**	**12 03 05.9**	**-1.6**
	comp=Z,156nm,0.8s						
MTN	**Manton Dam**	**17.05**	**102**	*e*Pn	**P**	**12 03 08.8**	**-0.1**
	comp=Z,31nm,1.0s						
SAUI	**Saumlaki**	**17.16**	**85**	P	**P**	**12 03 12.4**	**+2.2**
	comp=Z,272nm,1.1s						
SAUI	**Saumlaki**	**17.16**	**85**	*e*Pn	**P**	**12 03 09.7**	**-0.5**
	comp=Z,192nm,0.7s						
IPM	**Ipoh**	**19.19**	**317**	⇓P	**Pn**	**12 03 33.2**	**-0.5**
IPM	**Ipoh**	**19.19**	**317**	*e*P	**P**	**12 03 32.6**	**+0.1**
	comp=Z,13nm,0.6s						
MORW	**Morawa**	**19.29**	**175**	P	**P**	**12 03 32.3**	**-1.1**
	baz=19,SNR=7.0						
SWI	**Sorong**	**19.29**	**64**	P	**P**	**12 03 32.9**	**-0.7**
	comp=Z,128nm,0.9s,comp=Z,1µm						
FAKI	**Fak Fak**	**19.34**	**71**	P	**P**	**12 03 33.7**	**-0.5**
	comp=Z,77nm,0.8s,comp=Z,931nm						
FAKI	**Fak Fak**	**19.34**	**71**	*e*P	**P**	**12 03 31.4**	**-2.8**
	comp=Z,75nm,1.0s						
FAKI				*e*Sn	S	12 07 01.5	-9.5
DAV	**Davao City (W)**	**20.31**	**35**	LR	LR	12 12 40.4	
	comp=Z,311nm,20.4s,baz=195,slow=40						
WRKA	**Warakurna**	**20.36**	**140**	P	**P**	**12 03 45.9**	**+0.7**
	baz=20,SNR=37						
KMPI	**Kaimana, Papua**	**20.46**	**74**	P	Pn	12 03 48.4	-0.3
	comp=Z,151nm,0.8s,comp=Z,1µm						
BLDU	**Ballidu**	**20.89**	**173**	P	**P**	**12 03 50.0**	**-0.9**
	baz=21,SNR=7.9						
KLBR	**Kellerberrin**	**21.99**	**171**	P	**P**	**12 04 01.3**	**-1.3**
	baz=22						
WRA	**Warramunga Arr**	**22.06**	**120**	P	**P**	**12 04 02.7**	**-0.9**
	comp=Z,8.9nm,0.7s,baz=295,slow=11,SNR=55						
WRA				PcP	**PcP**	**12 08 00.9**	**+0.4**
	comp=Z,1.9nm,0.8s,baz=294,slow=1.8,SNR=5.2						
WRA				ScP	**ScP**	**12 11 35.4**	**+0.9**
	comp=Z,1.2nm,1.0s,baz=278,slow=3.1,SNR=2.8						
WRA				LR	LR	12 13 06.6	
	comp=Z,486nm,21.9s,baz=270,slow=38						
WRAB	**Tennant Creek**	**22.07**	**120**	*ce*P	**P**	**12 04 03.5**	**-0.1**
WRAB				pmax	pmax		
	comp=Z,94nm,2.5s						
WRAB	**Tennant Creek**	**22.07**	**120**	*e*P	**P**	**12 04 03.2**	**-0.4**
	comp=Z,17nm,0.8s						
TRTT	**Trang**	**22.58**	**320**	P	**P**	**12 04 09.6**	**+0.5**
	comp=Z,27nm,1.1s						
NWAO	**Narrogin (SRO)**	**23.23**	**173**	P	**P**	**12 04 16.0**	**+0.3**
	comp=Z,11nm,0.9s,baz=279,slow=0.6,SNR=4.3						
NWAO				S	**S**	**12 08 22.2**	**-2.5**
	comp=Z,5.5nm,0.4s,baz=86,slow=0.1,SNR=3.3						
NWAO	**Narrogin (SRO)**	**23.23**	**173**	P	**P**	**12 04 16.4**	**+0.7**
	baz=23						
ASAR	**Alice Springs**	**23.48**	**129**	P	**P**	**12 04 17.8**	**-0.4**
	comp=Z,11nm,0.7s,baz=307,slow=9.1,SNR=123						
ASAR				PcP	**PcP**	**12 08 03.9**	**+0.5**
	comp=Z,1.4nm,0.7s,baz=346,slow=2.4,SNR=5.2						
ASAR				S	S	12 08 37.3	+8.3
	comp=Z,2.9nm,0.9s,baz=296,slow=22,SNR=8.0						
ASAR				ScP	**ScP**	**12 11 39.6**	**+1.3**
	comp=Z,1.4nm,0.9s,baz=256,slow=0.5,SNR=5.3						
ASAR				LR	LR	12 14 12.4	
	comp=Z,90nm,20.2s,baz=310,slow=39						
ASAR	**Alice Springs**	**23.48**	**129**	P	**P**	**12 04 17.8**	**-0.4**
ASAR						12 08 03.9	
ASAR				pmax	pmax		
	comp=Z,11nm,0.7s						
ASAR				pmax	pmax		
	comp=Z,1.0nm,0.7s						
ASAR				pmax	pmax		
	comp=N,1.0nm,1.0s						
ASAR				MLR	MLR		
	comp=Z,90nm,20.2s						
RKGY	**Rocky Gully**	**24.87**	**174**	P	**P**	**12 04 31.6**	**+0.8**
	baz=25						
CHBT	**CHBT**	**25.21**	**332**	P	**P**	**12 04 36.8**	**+2.7**
	comp=Z,13nm,1.1s,comp=Z,2µm						
QIS	**Mount Isa**	**26.88**	**116**	P	**P**	**12 04 49.5**	**+0.3**
	baz=27,SNR=4.7						
GENI	**Genyem**	**26.93**	**76**	P	P	12 04 59.6	+10
COEN	**Coen**	**28.82**	**101**	P	**P**	**12 05 06.9**	**+0.3**
	baz=29						
PBKT	**Sadao Pong**	**29.18**	**334**	P	**P**	**12 05 10.4**	**+0.7**
	comp=Z,8.4nm,1.2s						
UTTA	**Uttaradit**	**30.41**	**334**	P	**P**	**12 05 21.8**	**+1.3**
	comp=Z,6.8nm,0.8s						
MTSU	**Mount Surprise**	**30.51**	**109**	P	**P**	**12 05 22.2**	**+0.6**
	baz=31						
BBOO	**Buckleboo**	**30.64**	**142**	P	**P**	**12 05 23.0**	**+0.4**
	baz=31,SNR=5.3						
LAMP	**Lampang**	**31.50**	**333**	P	**P**	**12 05 31.6**	**+1.4**
	comp=Z,4.7nm,0.8s,comp=Z,86nm						
CMAR	**Chiang Mai Arr**	**31.75**	**332**	P	**P**	**12 05 32.3**	**-0.1**
	comp=Z,8.0nm,0.8s,baz=164,slow=8.1,SNR=35						
CMAR				PcP	**PcP**	**12 08 24.9**	**+1.6**
	comp=Z,1.5nm,0.8s,baz=183,slow=3.2,SNR=5.6						
CMAR				ScP	**ScP**	**12 12 05.2**	**+1.8**
	comp=Z,0.2nm,0.4s,baz=197,slow=2.8,SNR=3.1						
CMMT	**Chiang Mai**	**32.06**	**332**	P	**P**	**12 05 36.1**	**+1.0**
	comp=Z,8.7nm,1.1s						
CHTO	**Chiang Mai**	**32.06**	**332**	P	**P**	**12 05 36.1**	**+1.0**
	comp=Z,39nm,1.2s						
CHTO	**Chiang Mai**	**32.06**	**332**	*e*P	**P**	**12 05 35.9**	**+0.7**
CHTO				pmax	pmax		
	comp=Z,10.0nm,1.1s						
CHTO	**Chiang Mai**	**32.06**	**332**	*e*P	**P**	**12 05 35.9**	**+0.7**
	comp=Z,10nm,1.1s						
CRAI	**Chiangrai**	**32.70**	**336**	P	**P**	**12 05 42.5**	**+1.8**
	comp=Z,9.8nm,0.8s,comp=Z,504nm						
CTA	**Charters Tower**	**32.73**	**112**	P	**P**	**12 05 42.2**	**+1.2**
	baz=33						
HTT	**Hallett**	**32.85**	**140**	P	**P**	**12 05 42.9**	**+0.9**
	baz=33,SNR=6.5						
CMAI	**Chiengmai2**	**33.00**	**333**	P	**P**	**12 05 44.8**	**+1.3**
	comp=Z,47nm,1.4s,comp=Z,3µm						
QLP	**Quilpie**	**33.09**	**124**	P	**P**	**12 05 45.2**	**+1.1**
	baz=33,SNR=8.1						
STKA	**Stephens Creek**	**33.70**	**135**	P	**P**	**12 05 49.9**	**+0.6**
	comp=Z,18nm,0.9s,baz=312,slow=9.3,SNR=29						
STKA				LR	LR	12 20 52.6	
	comp=Z,336nm,20.5s,baz=299,slow=39						
STKA	**Stephens Creek**	**33.70**	**135**	P	**P**	**12 05 50.0**	**+0.6**
	baz=34,SNR=24						
KMI	**Kunming**	**36.38**	**343**	P	**P**	**12 06 15.6**	**+2.8**
KMI				pP	pP	12 06 24.4	-0.1
KMI				sP	sP	12 06 28.3	-1.2
KMI				PP	**PP**	**12 07 39.4**	**+3.2**
KMI				S	**S**	**12 11 55.8**	**+4.3**
KMI				SS	**SnSn**	**12 14 22.8**	**+0.6**
KMI				pmax	pmax		
	comp=Z,19nm,0.6s						
KMI				pmax	pmax		
	comp=Z,50nm,3.6s						
KMI				LR	LR		
	comp=Z,90nm,6.4s						
KMI				LR	LR		
	comp=Z,86nm,5.8s						
KMI				LR	LR		
	comp=Z,64nm,6.4s						
**CMS

GTA sP sP 12 08 17.6 -7.0
GTA pmax pmax
comp=Z,6.0nm,1.1s
MAJO Matsushiro 51.38 25 *e*P P 12 08 08.8 -3.9
MAJO Matsushiro 51.38 25 *e*P P 12 08 08.8 -3.9
MJAR Matsushiro Arr 51.38 25 P P 12 08 08.6 -4.1
comp=Z,1.9nm,0.6s,baz=203,slow=7.9,SNR=6.1
USRK Ussuriysk Ar. 56.13 15 P **P 12 08 45.7 -1.6**
comp=Z,7.9nm,1.0s,baz=198,slow=7.8,SNR=7.4
ULN Ulaanbaatar 57.71 354*c*eP **P 12 08 57.7 -0.9**
ULN pmax pmax
comp=Z,8.0nm,1.0s
ULN Ulaanbaatar 57.71 354 *e*P **P 12 08 57.9 -0.7**
comp=Z,7.0nm,0.9s
SONM Songino Array 57.75 354 P **P 12 08 57.9 -0.9**
comp=Z,5.7nm,0.8s,baz=170,slow=8.3,SNR=24
SONM LR LR 12 36 03.7
comp=Z,61nm,20.4s,baz=195,slow=38
WMQ Urumqi 58.46 338 P **P 12 09 03.6 -0.2**
WMQ pP pP 12 09 12.4 -3.7
WMQ sP sP 12 09 17.3 -3.7
WMQ PcP **PcP 12 09 54.6 +0.5**
WMQ pmax pmax
comp=Z,7.0nm,0.6s
WMQ pmax pmax
comp=Z,33nm,4.0s
WMQ LR LR
comp=Z,37nm,21.8s
WMQ LR LR
comp=Z,24nm,24.2s
KSH Kashi 60.42 327 P **P 12 09 16.3 -1.3**
KSH *e*PP **PP 12 11 30.4 -0.9**
KSH S **S 12 17 25.5 -4.3**
KSH ScS SKKSac 12 19 02.9 -2.0
KSH pmax pmax
comp=Z,110nm,6.2s
KSH LR LR
comp=Z,130nm,5.9s
KSH LR LR
comp=Z,120nm,5.0s
KSH LR LR
comp=Z,140nm,6.6s
ZAK Zakamensk 60.63 352 *e*P **P 12 09 16.2 -2.5**
ZAK pmax pmax
comp=Z,3.0nm,1.2s
KLR Kul'dur 60.78 13 LR LR 12 41 18.5
comp=Z,10nm,18.3s,baz=189,slow=42
KLR Kul'dur 60.78 13 *e*P **P 12 09 16.9 -2.7**
PDGK Podgornoye 61.49 332 P **P 12 09 24.2 -0.3**
PDGK pmax pmax
comp=Z,13nm,0.9s
SFK Sufi-Kurgan 62.13 326 P **P 12 09 28.7 -0.5**
SFK pmax pmax
comp=Z,12nm,0.7s
BKZ Black Stump Fm 62.60 129 *e*P **P 12 09 33.2 +1.0**
MKAR Makanchi Array 63.03 336 P **P 12 09 33.8 -1.1**
comp=Z,4.3nm,0.7s,baz=148,slow=7.9,SNR=29
MKAR Makanchi Array 63.03 336 *e*P **P 12 09 34.1 -0.8**
TKM2 Tokmak 2 63.08 329 *e*P **P 12 09 34.7 -0.8**
TKM2 pmax pmax
comp=Z,6.0nm,0.7s
TKM2 Tokmak 2 63.08 329 *e*P **P 12 09 34.7 -0.8**
comp=Z,5.5nm,0.7s
MAKZ Makanchi 63.17 336 *e*P **P 12 09 34.8 -1.0**
MAKZ Makanchi 63.17 336 *e*P **P 12 09 34.8 -1.0**
WSAR Wadi Sarin 63.33 302 P **P 12 09 37.1 -0.2**
comp=Z,8.8nm,0.7s,baz=143,slow=7.2,SNR=12
WSAR LR LR 12 36 47.6
comp=Z,121nm,19.2s,baz=146,slow=36
AAK Ala-Archa 63.43 328 P **P 12 09 37.6 -0.2**
comp=Z,5.5nm,0.9s,baz=121,slow=5.5,SNR=9.2
AAK Ala-Archa 63.43 328 *e*P **P 12 09 36.9 -0.9**
AAK pmax pmax
comp=Z,18nm,1.1s
AAK Ala-Archa 63.43 328 *e*P **P 12 09 37.8 0.0**
comp=Z,5.0nm,0.9s
FRU Bishkek 63.51 329 *e*P **P 12 09 37.0 -1.1**
MNAS Manas 64.38 327 P **P 12 09 43.5 -0.5**
MNAS pmax pmax
comp=Z,17nm,1.0s
MAW Mawson 66.88 199 P **P 12 10 00.5 +1.0**
comp=Z,6.8nm,1.0s,baz=68,slow=9.4,SNR=6.6
MAW LR LR 12 34 06.0
comp=Z,131nm,21.5s,baz=62,slow=31
BOD Bodaibo 67.35 360 *e*P P 12 09 58.2 -4.4
BOD pmax pmax
comp=Z,5.0nm,1.8s
KURBB Kurchatov Arra 67.59 336 P **P 12 10 02.6 -1.7**
comp=Z,0.8nm,0.5s,baz=152,slow=5.2,SNR=9.7
KURK Kurchatov 67.63 337 P **P 12 10 02.6 -1.9**
KURK pmax pmax
comp=Z,1.0nm,0.5s
KURK Kurchatov 67.63 337 *e*P **P 12 10 03.2 -1.2**
KRAR Krasnoyarsk 67.87 347 *e*P **P 12 10 05.2 -0.6**
ZALV Zalesovo Beam 68.12 342 P **P 12 10 05.9 -1.7**
comp=Z,1.2nm,0.3s,baz=145,slow=4.0,SNR=7.6
OTUK Ortayu 68.49 331 P **P 12 10 09.5 -0.5**
OTUK pmax pmax
comp=Z,8.0nm,1.2s
GEYT Alibeck 70.51 316 P **P 12 10 22.5 -0.2**
comp=Z,9.9nm,0.7s,baz=151,slow=3.3,SNR=13
VNDA Vanda 72.03 170 P **P 12 10 31.9 +0.7**
comp=Z,4.4nm,0.9s,baz=301,slow=6.3,SNR=12
VNDA LR LR 12 39 45.7
comp=Z,149nm,20.3s,baz=312,slow=34
YAK Yakutsk 72.62 8 *e*P **P 12 10 32.7 -2.1**
YAK pmax pmax
comp=Z,13nm,0.9s
BVAR Borovoye Array 72.75 334 P **P 12 10 34.9 -0.9**
comp=Z,2.5nm,0.7s,baz=142,slow=7.5,SNR=12
BRVK Borovoye 72.82 334 *e*P **P 12 10 35.8 -0.4**
BRVK pmax pmax
comp=Z,4.0nm,0.8s
BRVK Borovoye 72.82 334 *e*P **P 12 10 35.3 -0.9**
PETK Petropavlovsk- 72.83 26 P **P 12 10 36.6 +0.4**
comp=Z,4.4nm,0.9s,baz=190,slow=2.5,SNR=3.5
ZRNK Zerenda 73.30 333 *e*P **P 12 10 38.1 -0.9**
ZRNK Zerenda 73.30 333 *e*P **P 12 10 38.1 -0.9**
RAYN Ar Rayn 74.67 298 *e*P **P 12 10 47.1 -0.7**
comp=Z,5.1nm,0.7s
SYO Syowa Base 75.37 201↑ *e*P **P 12 10 49.8 -1.1**
ABKAR Akbulak array 75.43 327 *e*P **P 12 10 50.8 -0.8**
KMBO Kilima Mbogo 76.77 271 P **P 12 11 02.1 +1.8**
comp=Z,4.1nm,0.7s,baz=68,slow=7.1,SNR=9.4
KMBO LR LR 12 38 15.3
comp=Z,96nm,21.2s,baz=88,slow=31
KMBO Kilima Mbogo 76.77 271 *e*P **P 12 11 02.2 +2.0**
KMBO pmax pmax
comp=Z,5.0nm,0.8s
KMBO Kilima Mbogo 76.77 271 *e*P **P 12 11 02.2 +2.0**
comp=Z,5.2nm,0.8s
AKTO Aktyubinsk 77.13 327 P **P 12 11 00.6 -0.5**
comp=Z,2.9nm,0.5s,baz=108,slow=6.8,SNR=8.6
SEY Seymchan 78.25 17 P **P 12 11 06.2 -0.8**
comp=Z,2.2nm,0.6s,baz=210,slow=9.0,SNR=9.1
ARU Arti 80.20 332 P **P 12 11 17.5 -0.4**
comp=Z,1.3nm,0.3s,baz=135,slow=2.0,SNR=7.5
ARU Arti 80.20 332*d* i*P* **P 12 11 17.2 -0.7**
ARU S **S 12 21 18.3 -1.3**
ARU SS **SS 12 26 29.7 -1.7**
ARU pmax pmax
comp=Z,12nm,1.2s
ARU Arti 80.20 332 *e*P **P 12 11 17.7 -0.1**
QSPA South Pole Qui 80.23 180 *e*P **P 12 11 18.9 +0.7**
comp=Z,54nm,1.1s
NRIK Noril'sk 81.05 351 P **P 12 11 21.4 -0.8**
comp=Z,1.9nm,0.4s,baz=142,slow=5.3,SNR=3.8
TIXI Tiksi 81.84 5 P **P 12 11 24.6 -1.8**
comp=Z,7.1nm,0.9s,baz=179,slow=2.6,SNR=17
ZEI Tsey 82.38 316 *e*P **P 12 11 29.5 -0.6**
ZEI pmax pmax
comp=Z,5.0nm,0.6s
KBZ Khabaz 83.40 316 P **P 12 11 35.5 +0.5**
comp=Z,1.9nm,0.7s,baz=157,slow=7.7,SNR=3.1
LSZ Lusaka 83.50 256 *e*P **P 12 11 37.4 +1.1**
LSZ pmax pmax
comp=Z,22nm,1.5s
LSZ Lusaka 83.50 256 *e*P **P 12 11 37.4 +1.1**
comp=Z,22nm,1.5s
KIV Kislovodsk 83.62 316 *i* P P 12 11 32.6 -3.7
KIV *e* 12 14 46.4
KIV pmax pmax
comp=Z,4.0nm,0.9s
BOSA Boshof 84.32 242 P **P 12 11 41.6 +1.2**
comp=Z,7.1nm,0.9s,baz=126,slow=6.7,SNR=5.6
BOSA LR LR 12 42 25.8
comp=Z,87nm,20.6s,baz=94,slow=31
ASF Jabal al Asfar 84.44 304 P **P 12 11 41.9 +1.2**
comp=Z,4.7nm,0.7s,baz=161,slow=4.6,SNR=12
EIL Elat 85.44 301 P **P 12 11 46.5 +0.8**
comp=Z,10nm,1.0s,baz=73,slow=3.8,SNR=7.4
MMAI Mount Meron Ar 85.87 304 P **P 12 11 49.5 +1.6**
comp=Z,2.6nm,0.7s,baz=106,slow=8.9,SNR=9.3
BILL Bilibino 85.94 17 *e*P **P 12 11 45.4 -1.9**
BILL pmax pmax
comp=Z,1.0nm,0.9s
VRH Novokhopyorsk 86.71 323 *e*P **P 12 11 49.6 -1.8**
VRH *e**SP **pP 12 12 03.1 -1.2**
VRH pmax pmax
comp=Z,10.0nm,0.6s
VSR Storozhevoye 88.23 323 *e*P **P 12 11 57.7 -1.1**
VSR *e**SP **pP 12 12 11.2 -0.5**
VSR pmax pmax
comp=Z,20nm,0.7s
LPSR Galich'ya Gora 88.80 324 *e*P **P 12 12 00.7 -0.7**
LPSR pmax pmax
comp=Z,20nm,1.1s
BRTR Keskin Array B 88.87 310 P **P 12 12 02.3 0.0**
comp=Z,4.1nm,0.8s,baz=131,slow=6.1,SNR=16
BRTR LR LR 12 55 29.1
comp=Z,38nm,18.7s,baz=114,slow=38
SNAA Sanae 88.91 196 P **P 12 12 02.9 +1.2**
SNAA Sanae 88.91 196↑ *i*P **P 12 12 03.2 +1.4**
VNA2 Neumayer--Watz 90.56 196 P **P 12 12 09.7 +0.3**
baz=68,slow=3.4
OBN Obninsk 90.86 326 *e*P **P 12 12 09.7 -1.2**
OBN *e* 12 15 47.8
OBN pmax pmax
comp=Z,3.0nm,0.8s
KLMR Klimovskoe 91.04 332 *e*P **P 12 12 08.6 -3.1**
KLMR *e* 12 15 43.7
KLMR pmax pmax
comp=Z,19nm,1.4s
PPT Papeete 93.11 108 LR LR 12 51 29.6
comp=Z,78nm,20.2s,baz=292,slow=34
AKASG Malin Array Be 94.20 321 P **P 12 12 25.4 -1.2**
comp=Z,0.3nm,0.3s,baz=83,slow=4.4,SNR=5.3
AKASG LR LR 13 02 29.8
comp=Z,21nm,18.4s,baz=300,slow=40
AKASG Malin Array Be 94.20 321 P **P 12 12 25.4 -1.2**
AKASG pmax pmax
comp=Z,1.0nm,0.4s
KIEV Kiev 94.21 321 *e*P **P 12 12 24.4 -2.2**
KIEV pmax pmax
comp=Z,3.0nm,1.1s
FINES FINESS Array B 97.52 331 P **P 12 12 40.9 -0.5**
comp=Z,3.2nm,0.8s,baz=79,slow=9.9,SNR=7.2
SPITS Spitsbergen Ar 101.07 348 P **Pdif 12 12 56.1 -0.9**
comp=Z,2.6nm,0.7s,baz=81,slow=7.0,SNR=4.6
SPITS Spitsbergen Ar 101.07 348 P **Pdif 12 12 56.1 -0.9**
SPITS pmax pmax
comp=Z,8.0nm,1.0s
YKA Yellowknife Ar 116.86 23 PKP **PKPdf 12 17 51.5 -0.2**
comp=Z,0.8nm,0.7s,baz=315,slow=1.9,SNR=16
BORG Borgarnes 116.94 340 *i* PKIKP **PKPdf 12 17 47.8 -4.0**
NVAR Mina Array Bea 125.27 50 PKP **PKPdf 12 18 10.5 +1.5**
comp=Z,0.6nm,0.7s,baz=262,slow=1.7,SNR=5.4
PDAR Pinedale Array 129.78 41 PKP **PKPdf 12 18 18.8 +1.3**
comp=Z,0.3nm,0.6s,baz=252,slow=2.7,SNR=4.2
TXAR Lajitas Array 139.75 56 PKhKP PKPpre 12 18 29.3
comp=Z,0.2nm,0.8s,baz=222,slow=2.7,SNR=3.6
TXAR PKP **PKPdf 12 18 35.8 -0.4**
comp=Z,0.4nm,0.7s,baz=192,slow=2.5,SNR=5.3
U34A Anderson Ranch 140.99 42 *e*PKPdf **PKPdf 12 18 38.3 +0.1**
MIAR Mount Ida 144.71 41 *e*PKIKP PKPbc 12 18 43.8 +0.1
MIAR Mount Ida 144.71 41 *e*PKPdf PKPbc 12 18 43.8 +0.1
HKT Hockley 145.66 50 *e*PKIKP **PKPab 12 18 47.8 +0.7**
HKT Hockley 145.66 50 *e*PKPbc **PKPab 12 18 47.8 +0.7**
ACSO Alum Creek Sta 146.11 24 *e*PKPbc **PKPbc 12 18 48.0 +0.1**
WCI Wyandotte Cave 146.29 30 *e*PKP2 **PKPbc 12 18 48.6 0.0**
WCI Wyandotte Cave 146.29 30 *e*PKPbc **PKPbc 12 18 48.6 0.0**
LRAL Lakeview Retre 149.81 37 *e*PKPbc **PKPbc 12 18 58.4 +0.3**
LRAL *e*PKPab **PKPab 12 19 02.1 -1.4**
GOGA Godfrey 151.49 32 *e*PKIKP **PKPdf 12 18 56.1 +0.2**
GOGA *e* 12 19 02.3
GOGA *e* 12 19 08.9
GOGA Godfrey 151.49 32 *e*PKPdf **PKPdf 12 18 56.1 +0.2**
GOGA *e*PKPbc **PKiKP 12 19 02.3 -0.3**
GOGA *e*PKPab **PKPab 12 19 08.9 -1.5**
LPAZ La Paz 154.02 175 PKPab **PKPab 12 19 23.2 +1.1**
comp=Z,5.3nm,0.7s,baz=163,slow=2.2,SNR=17

*ISCJB **15** 12:00:15.5±0.6,33.°77N±0.°02×35.°76E±0.°04,h1km±5km,*
Error ellipse: s-maj=6.5km s-min=3.3km az=156.3
*GRAL **15** 12:00:15.5±0.3,33.°78N×35.°75E,h10km±4km, MD2.8*
*CSEM **15** 12:00:15.4±0.2,33.°76N×35.°75E,h2km, ML2.8, Error*
ellipse: s-maj=4.5km s-min=2.5km az=77.0
*NSSC **15** 12:00:15.9±0.5,33.°75N×35.°78E,h0km±1km, MD1.1, ML1.8*
ISC 15 12:00:15.2±0.9,33.77N±0.°02×35.74E±0.°03,h9km±8km,
n30,σ0°62/48, Jordan-Syria region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
BHL	**Bhannes**	**0.15**	**332**	*e*P	**Pg**	**12 00 18.6**	**0.0**
BHL				*e*S	**Sg**	**12 00 20.9**	**0.0**
BHL	**Bhannes**	**0.15**	**332**	*e*P	**Pg**	**12 00 18.6**	**0.0**
BHL				*e*S	**Sg**	**12 00 20.9**	**0.0**
DQRL	**Deir Qamar**	**0.15**	**244**	*e*P	**Pg**	**12 00 18.9**	**+0.3**
DQRL	**Deir Qamar**	**0.15**	**244**	*e*P	**Pg**	**12 00 18.9**	**+0.3**
RCY	**Rachaya**	**0.29**	**164**	*e*P	**Pg**	**12 00 21.0**	**0.0**
RCY				*e*S	**Sg**	**12 00 25.2**	**+0.2**
RCY	**Rachaya**	**0.29**	**164**	*e*P	**Pg**	**12 00 21.0**	**0.0**
RCY				*e*S	**Sg**	**12 00 25.2**	**+0.2**
BRBR	**Barbar**	**0.40**	**154**	*e*P	**Pg**	**12 00 23.2**	**0.0**
BRBR				AML	AML	12 00 32.6	
	comp=E,118nm,0.3s						
BRBR				AML	AML	12 00 36.4	
	comp=N,98nm,0.6s						
BRBR	**Barbar**	**0.40**	**154**	*e*P	**Pg**	**12 00 23.2**	**0.0**
BRBR				*e*S	**Sb**	**12 00 29.6**	**-1.4**
QASN	**Qassioun**	**0.51**	**118**	*e*P	**Pg**	**12 00 25.7**	**+0.5**
QASN				*e*S	**Sg**	**12 00 32.0**	**+0.1**
QASN				AML	AML	12 00 38.8	
	comp=E,235nm,0.5s						
QASN				AML	AML	12 00 39.1	
	comp=N,184nm,0.4s						
QASN	**Qassioun**	**0.51**	**118**	*e*P	**Pg**	**12 00 24.5**	**-0.6**
QASN				*e*S	**Sg**	**12 00 31.8**	**-0.1**
HWQ	**Hawqa**	**0.53**	**19**	*e*P	**Pg**	**12 00 24.9**	**-0.6**
HWQ	**Hawqa**	**0.53**	**19**	*e*P	**Pg**	**12 00 25.0**	**-0.6**
MARH	**Ras Al Marh**	**0.67**	**68**	*e*P	**Pg**	**12 00 28.8**	**+0.5**
MARH				AML	AML	12 00 44.0	
	comp=N,49nm,0.4s						
MARH				AML	AML	12 00 44.8	
	comp=E,118nm,0.3s						
MARH	**Ras Al Marh**	**0.67**	**68**	*e*P	**Pg**	**12 00 28.4**	**+0.2**
TOTH	**TOTAH**	**0.71**	**125**	*e*P	**Pb**	**12 00 29.6**	**-0.2**
TOTH				*e*S	**Sb**	**12 00 38.6**	**-1.0**
TOTH				AML	AML	12 00 46.9	
	comp=N,25nm,0.4s						
TOTH				AML	AML	12 00 47.2	
	comp=E,25nm,0.7s						
TOTH	**TOTAH**	**0.71**	**125**	*e*P	**Pb**	**12 00 29.4**	**-0.4**
TCHB	**Talchebab**	**1.12**	**170**	*e*P	**Pb**	**12 00 36.5**	**-0.3**
TCHB				*e*S	**Sn**	**12 00 52.0**	**-0.6**
TCHB				AML	AML	12 00 56.4	
	comp=N,350nm,0.6s						
TCHB	**Talchebab**	**1.12**	**170**	*e*P	**Pb**	**12 00 36.3**	**-0.4**
ROOS	**tl_alroos**	**1.35**	**73**	*e*P	**Pg**	**12 00 41.2**	**+0.1**
ROOS				AML	AML	12 01 05.3	
	comp=N,24nm,0.3s						
ROOS				AML	AML	12 01 12.6	
	comp=E,19nm,0.5s						
ROOS	**tl_alroos**	**1.35**	**73**	*e*P	**Pn**	**12 00 40.5**	**+0.2**
ROOS				*e*S	**Sg**	**12 00 58.7**	**+0.1**
SALA	**Sala**	**1.35**	**142**	*e*P	**Pb**	**12 00 40.7**	**-0.1**
SALA				*e*S	**Sg**	**12 00 58.7**	**+0.1**
SALA				AML	AML	12 01 05.0	
	comp=N,28nm,0.4s						
SALA				AML	AML	12 01 06.2	
	comp=E,1.8nm,0.7s						
SALA	**Sala**	**1.35**	**142**	*e*P	**Pb**	**12 00 40.7**	**-0.1**
ZALF	**Zalf**	**1.58**	**122**	*e*P	**Pb**	**12 00 44.7**	**0.0**
ZALF				AML	AML	12 01 11.3	
	comp=E,17nm,0.4s						
ZALF				AML	AML	12 01 13.6	
	comp=N,8.8nm,0.4s						
ZALF	**Zalf**	**1.58**	**122**	*e*P	**Pb**	**12 00 44.6**	**-0.1**
ZALF				*e*S	**Sb**	**12 01 04.8**	**0.0**
SLNF	**Slenfeh**	**1.86**	**12**	*e*P	**Pb**	**12 00 49.4**	**-0.1**
SLNF				*e*S	**Sb**	**12 01 13.8**	**+0.8**
SLNF				AML	AML	12 01 19.7	
	comp=N,58nm,0.4s						
SLNF				AML	AML	12 01 26.4	
	comp=E,12nm,0.4s						
SLNF	**Slenfeh**	**1.86**	**12**	*e*P	**Pb**	**12 00 49.2**	**-0.3**
SLNF				*e*S	**Sb**	**12 01 13.3**	**+0.4**
ARNB	**Al Arnab**	**2.09**	**5**	*e*P	**Pb**	**12 00 52.6**	**-0.8**
ARNB				*e*S	**Sb**	**12 01 19.2**	**-0.3**
ARNB				AML	AML	12 01 23.8	
	comp=E,14nm,0.3s						
ARNB				AML	AML	12 01 29.9	
	comp=N,6.5nm,0.3s						
ARNB	**Al Arnab**	**2.09**	**5**	*e*P	**Pn**	**12 00 51.2**	**+0.7**
ARNB				*e*S	**Sb**	**12 01 18.8**	**-0.7**
BTCH	**Batrach**	**2.33**	**14**	*e*P	**Pb**	**12 00 56.0**	**-1.5**
BTCH				*e*S	**Sn**	**12 01 24.8**	**+2.1**
BTCH				AML	AML	12 01 44.1	
	comp=E,19nm,0.4s						
BTCH				AML	AML	12 01 44.2	
	comp=N,11nm,0.5s						
BTCH	**Batrach**	**2.33**	**14**	*e*P	**Pb**	**12 00 56.3**	**-1.2**
BTCH				*e*S	**Sb**	**12 01 25.8**	**-0.7**

*CSEM **15** 12:06:02.8,44.°12N×20.°43E,h0km,ML1.2*
BEO 15 12:06:02.8±0.4,44.°12N×20.°43E,h0km,M1.2/6,
Northwestern Balkan Peninsula

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
TRUS	**Trudelj**	**0.10**	**351**	*e*Pg	Pg	12 06 04.2	-0.6
TRUS	**Trudelj**	**0.10**	**351**	*e*Pg	Pg	12 06 04.2	-0.6
GRUS	**Gruza**	**0.31**	**138**	*e*Pg	Pg	12 06 08.2	-0.5
GRUS				*e*Sg	Sg	12 06 13.6	+0.9
GRUS	**Gruza**	**0.31**	**138**	*e*Pg	Pg	12 06 08.2	-0.5
GRUS				*e*Sg	Sg	12 06 13.6	+0.9
DIVS	**Divibare**	**0.32**	**266**	*e*Pg	Pg	12 06 08.2	-0.7
DIVS				*e*Sg	Sg	12 06 12.1	-0.9
DIVS	**Divibare**	**0.32**	**266**	*e*Pg	Pg	12 06 08.2	-0.7
DIVS				*e*Sg	Sg	12 06 12.1	-0.9
IVAS	**Ivanjica**	**0.58**	**200**	*e*Pg	Pg	12 06 13.1	-0.8
IVAS				*e*Sg	Sg	12 06 19.7	-1.7
IVAS	**Ivanjica**	**0.58**	**200**	*e*Pg	Pg	12 06 13.1	-0.8
IVAS				*e*Sg	Sg	12 06 19.7	-1.7
TEKS	**Tekeris**	**0.78**	**304**	*e*Pg	Pg	12 06 17.7	0.0
TEKS				*e*Sg	Sg	12 06 28.5	+0.8
TEKS	**Tekeris**	**0.78**	**304**	*e*Pg	Pg	12 06 17.7	0.0
TEKS				*e*Sg	Sg	12 06 28.5	+0.8
BBLS	**Lazići**	**0.78**	**251**	*e*Pg	Pg	12 06 16.7	-1.1
BBLS				*e*Sg	Sg	12 06 28.6	+0.7
BBLS	**Lazići**	**0.78**	**251**	*e*Pg	Pg	12 06 16.7	-1.1
BBLS				*e*Sg	Sg	12 06 28.6	+0.7
SJES	**Sjenica**	**0.92**	**201**	*e*Sg	Sg	12 06 33.2	+0.9
SJES	**Sjenica**	**0.92**	**201**	*e*Sg	Sg	12 06 33.2	+0.9

JMA 15 12:06:55.9±0.2,39.°28N×142.°95E,h15km±2km,M3.7,
Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MIYJ	**Miyakonagasawa**	**0.92**	**289**	P	Pb	12 07 12.8	-0.8
MIYJ				S	Sb	12 07 25.2	-0.5
OFUJ	**Ofunato**	**1.01**	**259**	P	Pb	12 07 14.6	-0.6
OFUJ				*e*S	Sb	12 07 27.9	-0.4
JTH	**Tanohata**	**1.07**	**308**	P	Pb	12 07 15.5	-0.6
JTH				*e*S	Sb	12 07 28.4	-1.4
JOM	**Ohasama**	**1.30**	**279**	P	Pn	12 07 19.2	-0.3
JOM				S	Sb	12 07 36.2	-0.3
JMK	**Ichinoseki**	**1.39**	**257**	P	Pn	12 07 20.5	-0.2
JMK				S	Sn	12 07 38.3	-0.4
JKZ	**Kuzumaki**	**1.44**	**300**	P	Pn	12 07 21.4	0.0
JKZ				S	Sn	12 07 39.6	-0.5
JIO	**Ouri**	**1.50**	**237**	P	Pn	12 07 22.0	-0.2
JANG	**Nango**	**1.55**	**315**	P	Pn	12 07 22.7	-0.3
JANG				*e*S	Sb	12 07 43.9	+0.1
JRG	**Rokugo**	**1.80**	**274**	P	Pb	12 07 28.3	-0.3
JRG				*e*S	Sb	12 07 51.5	+0.6
JAH	**Hinai**	**2.00**	**298**	P	Pn	12 07 30.3	+1.1
JAH				*e*S	Sb	12 07 56.2	-0.5
JYK	**Kaneyama**	**2.05**	**261**	P	Pb	12 07 31.3	-1.5
JTM	**Tenmabayashi**	**2.09**	**317**	P	Pn	12 07 30.9	+0.6
JTM				*e*S	Sn	12 07 57.0	+1.0
JOT	**Ohata**	**2.55**	**326**	P	Pb	12 07 39.4	-2.0
JOT				*e*S	Sn	12 08 08.5	+1.0
JKB	**Kayabe**	**2.99**	**331**	P	Pn	12 07 44.4	+1.7
JKB				*e*S	Sn	12 08 19.2	+1.0

JMA 15 12:18:30.9±0.1,37.°69N×141.°76E,h19km±2km,M3.5,
Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JFK	**Kawauchi**	**0.78**	**246**	P	Pb	12 18 45.7	-0.1
JFK				*e*S	Sb	12 18 55.9	0.0
JMM	**Marumori**	**0.79**	**283**	P	Pb	12 18 45.7	-0.2
JMM				S	Sb	12 18 55.7	-0.5
JIO	**Ouri**	**0.83**	**337**	P	Pb	12 18 46.3	-0.4
JIO				S	Sb	12 18 56.8	-0.7
ONAJ	**Iwakimizuishiy**	**0.96**	**233**	P	Pb	12 18 48.6	-0.4
ONAJ				*e*S	Sb	12 19 01.9	+0.5
JOU	**Okura**	**1.10**	**308**	P	Pb	12 18 51.3	0.0
JOU				S	Sb	12 19 05.5	+0.3
JFT	**Otama**	**1.14**	**262**	P	Pb	12 18 52.0	-0.1
JFT				*e*S	Sn	12 19 07.5	+0.4
JHO	**Hitachi**	**1.44**	**222**	P	Pn	12 18 55.6	-0.3
JHO				*e*S	Sn	12 19 13.6	-0.7

IDC 15 12:19:07.7±3.4,54.°24N×87.°58E,h0km,mb1 2.8/2,
mb1mx2.7/47,mbtmp2.8/2,ML2.5/2,Error ellipse:
s-maj=28.2km s-min=19.8km az=42.0,Southwestern
Siberia

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
I46RU	**ZALESOVO INFRA**	**1.65**	**261**	*i*		12 28 41.6	
	baz=82,slow=317,SNR=14						
ZALV	**Zalesovo Beam**	**1.65**	**261**	Pg	Pn	12 19 36.0	-1.9
	1.4nm,0.3s,baz=83,slow=16,SNR=18						
ZALV				Lg	Lg	12 20 01.3	
	0.6nm,0.3s,baz=74,slow=25,SNR=7.2						
ZALV				Rg	Rg	12 20 07.4	
	3.1nm,0.5s,baz=75,slow=30,SNR=9.0						
KURBB	**Kurchatov Arra**	**6.61**	**240**	Pn	Pn	12 20 46.2	+0.2
	0.1nm,0.3s,baz=53,slow=13,SNR=7.1						
KURBB				Lg	Lg	12 22 38.1	
	0.0nm,0.3s,baz=52,slow=30,SNR=3.8						
MKAR	**Makanchi Array**	**8.18**	**206**	Pn	Pn	12 21 09.7	+2.1
	0.1nm,0.3s,baz=350,slow=12,SNR=2.9						
MKAR				Lg	Lg	12 23 26.8	
	0.1nm,0.3s,baz=26,slow=33,SNR=3.3						

IDC 15 12:35:06.8±3.0,54.°07N×87.°31E,h0km,mb1 3.0/3,
mb1mx2.9/55,mbtmp3.0/3,ML2.9/3,Error ellipse:
s-maj=31.4km s-min=17.8km az=51.0,Southwestern
Siberia

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
I46RU	**ZALESOVO INFRA**	**1.48**	**266**	*i*		12 44 37.6	
	baz=81,slow=320,SNR=7.4						
ZALV	**Zalesovo Beam**	**1.48**	**266**	Pg	Pn	12 35 31.9	-2.8
	4.3nm,0.3s,baz=85,slow=17,SNR=40						
ZALV				Lg	Lg	12 35 53.8	
	2.6nm,0.3s,baz=71,slow=25,SNR=7.6						
KURBB	**Kurchatov Arra**	**6.39**	**241**	Pn	Pn	12 36 41.8	-0.4
	0.1nm,0.3s,baz=53,slow=13,SNR=6.5						
MKAR	**Makanchi Array**	**7.96**	**206**	Pn	Pn	12 37 05.1	+1.4
	0.2nm,0.3s,baz=25,slow=14,SNR=3.8						
BVAR	**Borovoye Array**	**10.13**	**271**	Pn	Pn	12 37 33.6	+0.2
	0.2nm,0.3s,baz=90,slow=13,SNR=3.5						

IDC 15 12:37:35.0±343.0,47.°43N×48.°24E,h0km,Error ellipse:
s-maj=168.5km s-min=114.9km az=16.0,Western
Kazakhstan

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC

I31KZ	**AKTYUBINSK INF**	**7.11**	**62**	*i*				13 21 50.0	
	baz=250,slow=316,SNR=1.7								
I26DE	**FREYUNG INFRAS**	**22.97**	**286**	*i*				14 58 10.0	
	baz=81,slow=327,SNR=0.8								
I46RU	**ZALESOVO INFRA**	**23.87**	**61**	*i*				15 03 40.0	
	baz=269,slow=330,SNR=0.9								
I34MN	**SONGINO INFRAS**	**38.41**	**67**	*i*				16 32 30.0	
	baz=290,slow=319,SNR=0.7								

JMA 15 12:38:59.8±0.1, 36°.68N×141°.50E, h31$^{km}_{±2}$, M3.1, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.70**	**307**	P	Pb	12 39 13.2	-0.5
ONAJ				S	Sb	12 39 22.8	-0.3
JHO	**Hitachi**	**0.75**	**265**	P	Pn	12 39 13.8	-0.5
JHO				*e*S	Sb	12 39 23.9	-0.5
JFK	**Kawauchi**	**0.85**	**324**	P	Pn	12 39 15.4	-0.3
JFK				*e*S	Sn	12 39 26.9	-0.2
JFT	**Otama**	**1.25**	**312**	P	Pb	12 39 22.2	-0.6
JFT				*e*S	Sb	12 39 38.0	-0.6
MAT	**Matsushiro**	**2.65**	**268**	P	Pn	12 39 42.7	+2.2
MAT				S	Sb	12 40 16.3	-2.5

JMA 15 12:42:33.5, 37°.49N×141°.15E, h24$^{km}_{±1}$, M2.5, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**0.25**	**241**	P	Pb	12 42 39.8	0.0
JFK				S	Sb	12 42 44.0	0.0
JMM	**Marumori**	**0.47**	**323**	P	Pb	12 42 42.9	-0.3
JMM				S	Sb	12 42 49.5	-0.3
ONAJ	**Iwakimizuishiy**	**0.48**	**216**	P	Pb	12 42 43.0	-0.4
ONAJ				S	Sb	12 42 49.8	-0.2
JFT	**Otama**	**0.65**	**273**	P	Pb	12 42 46.1	-0.1
JFT				S	Sb	12 42 55.1	+0.3
JOU	**Okura**	**0.95**	**336**	P	Pb	12 42 51.2	-0.2
JOU				*e*S	Sn	12 43 04.0	-0.3
JIO	**Ouri**	**0.97**	**9**	P	Pn	12 42 51.1	-0.6
JIO				S	Sb	12 43 04.0	-0.2
JHO	**Hitachi**	**0.99**	**208**	S	Sb	12 43 04.0	-0.7

*BKK **15** 12:42:43.5±2.1, 10°.6×9°.0E±2°.0, h10^{km}, M4.3/11, mbΔ.9/4, mb4.3/11, Mw(mB)4.2/4*
*IDC **15** 12:42:55.0±0.7, 10°.67N×91°.69E, h0^{km}, mb4.1/16, mb1 4.2/17, mb1mx4.0/53, mbtmp4.1/17, ML3.8/1, MS4.0/2, Ms1 4.0/2, ms1mx3.0/48, Error ellipse: s-maj=23.7km s-min=14.5km az=64.0*
*ISCJB **15** 12:42:56.4±0.3, 10°.70N±0°.04×91°.59E±0°.03, h17^{km}, mb4.2/23, MS4.8/1, Error ellipse: s-maj=5.6km s-min=4.2km az=36.4*
*NEIC **15** 12:43:00.6±1.6, 10°.69N×91°.74E, h37$^{km}_{±15}$, mb4.3/7, Error ellipse: s-maj=14.9km s-min=7.5km az=62.0*
*DJA **15** 12:43:04.1±0.9, 11°.N±4°×9°.2E±°, h50$^{km}_{±9}$, M4.8/18, mB6.1/4, mb4.3/18, MLv4.8/1, Mw(mB)5.8/4, Mwp7.6/1*

ISC 15 12:42:57.8±0.5, 10°.66N±0°.06×91°.59E±0°.06, h17^{km}, n56, σ1^{s}39/53, mb4.2/23, Andaman Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PBA	**Port Blair**	**1.50**	**49**	*e*P	Pn	12 43 23.9	0.0
PBA				*e*S	Sn	12 43 38.8	-4.3
DGPR	**DIGLIPUR**	**2.82**	**27**	*e*P	**Pn**	**12 43 41.9**	**-0.3**
DGPR				*e*S	**Sn**	**12 44 13.4**	**-2.4**
CMBY	**CAMPBELL BAY**	**4.30**	**147**	*e*P	**Pn**	**12 44 02.7**	**+0.3**
SURT	**Suratani**	**7.30**	**103**	P	**Pn**	**12 44 45.8**	**+2.1**
	20nm,0.9s,229nm						
KHLT	**Khaolaem Dam**	**7.97**	**58**	P	**Pn**	**12 44 55.3**	**+2.4**
	11nm,0.8s						
SRDT	**SRDT**	**8.21**	**63**	P	Pn	12 44 59.7	+3.4
	49nm,1.0s,5μm						
TRTT	**Trang**	**8.47**	**109**	P	Pn	12 45 03.1	+3.3
	12nm,1.5s,704nm						
KCSI	**Kotacane, Aceh**	**9.37**	**139**	P	Pn	12 45 16.5	+4.3
	9.4nm,1.3s						
CMAR	**Chiang Mai Arr**	**10.52**	**42**	Pn	**Pn**	**12 45 25.6**	**-2.3**
	0.2nm,0.3s,baz=232,slow=14,SNR=17						
VIS	**Vishakhapatnam**	**10.65**	**312**	*e*P	**Pn**	**12 45 28.6**	**-1.1**
VIS				*e*S	Sn	12 47 17.5	-11
VIS				IAML		12 48 00.5	
	comp=E,54nm,0.7s						
VIS				IAML		12 48 01.4	
	comp=N,46nm,1.1s						
PSI	**Prapat**	**10.67**	**137**	LR	LR	12 49 35.7	
	comp=N,165nm,20.6s,baz=240,slow=38						
CHTO	**Chiang Mai**	**10.78**	**40**	P	**Pn**	**12 45 33.8**	**+2.3**
	comp=N,22nm,0.9s						
CHTO	**Chiang Mai**	**10.78**	**40**	*e*Pn	**Pn**	**12 45 31.1**	**-0.4**
	comp=N,3.4nm,0.7s						
CHTO				*e*Sn	**Sn**	**12 47 31.7**	**-0.2**
CMMT	**Chiang Mai**	**10.78**	**40**	P	**Pn**	**12 45 33.7**	**+2.2**
	comp=N,8.1nm,1.9s						
PBKT	**Sadao Pong**	**10.84**	**56**	P	Pn	12 45 42.0	+10
IPM	**Ipoh**	**11.18**	**123**	*e*Pn	**Pn**	**12 45 36.3**	**-0.8**
	comp=N,6.9nm,0.6s						
IPM				*e*Sn	**Sn**	**12 47 44.9**	**+3.1**
MDRS	**Chennai**	**11.36**	**283**	*e*P	**Pn**	**12 45 40.5**	**+1.0**
MDRS				*ex*	x	12 47 35.1	
MDRS				IAML		12 47 49.9	
	comp=N,89nm,0.0s						
MDRS				IAML		12 47 49.9	
	comp=E,195nm,0.7s						
CMAI	**Chiengmai2**	**11.69**	**37**	P	**Pn**	**12 45 46.8**	**+2.7**
	comp=E,6.1nm,0.8s						
SKNT	**Sakolnakorn**	**13.57**	**61**	P	**Pn**	**12 46 12.7**	**+3.1**
HYB	**Hyderabad**	**14.32**	**299**	*i* P	**Pn**	**12 46 21.0**	**+1.0**
HYB				*e*S	**Sn**	**12 48 59.0**	**+0.5**
PDSI	**Padang**	**14.49**	**142**	P	**P**	**12 46 26.7**	**-2.2**
	comp=E,23nm,0.6s,comp=E,72μm						
SDSI	**Sungai Dareh**	**15.11**	**139**	P	**P**	**12 46 33.2**	**-2.6**
	comp=E,19nm,0.8s,comp=E,30μm						
PKIN	**Phulchoki**	**17.81**	**342**	*e*P	**P**	**12 47 06.2**	**+0.2**
	comp=E,19nm,0.6s						
DMN	**Daman**	**17.93**	**341**	*e*P	**P**	**12 47 07.1**	**-0.2**
	comp=E,32nm,0.7s						
GUN	**Gumba**	**17.98**	**343**	*e*P	**P**	**12 47 08.8**	**+0.9**
	comp=E,47nm,1.0s						
GKN	**Gorkha**	**18.45**	**340**	*e*P	**Pn**	**12 47 13.6**	**+0.6**
	comp=E,20nm,0.5s						
KOLN	**Koldanda**	**18.61**	**337**	*e*P	**Pn**	**12 47 15.2**	**+0.2**
	comp=E,23nm,0.6s						
LSA	**Lhasa**	**18.95**	**359**	*e*P	**Pn**	**12 47 21.3**	**+1.9**
	comp=E,12nm,0.8s						
PYUN	**Piuthan**	**19.14**	**336**	*e*P	**P**	**12 47 20.9**	**+0.4**
	comp=E,39nm,0.8s						
KSM	**Kuching**	**20.71**	**115**	*e*P	**P**	**12 47 37.1**	**-0.4**
	comp=E,14nm,1.0s						
ENH	**Enshi**	**25.66**	**38**	*e*P	**P**	**12 48 26.0**	**-0.9**
	comp=E,24nm,0.6s						
BBKI	**Banjar Baru**	**27.06**	**120**	P	**P**	**12 48 40.9**	**+1.2**
	comp=E,52nm,0.8s						
AAK	**Ala-Archa**	**35.18**	**338**	*e*P	**P**	**12 49 52.5**	**+1.3**
	comp=E,3.4nm,1.1s						
MKAR	**Makanchi Array**	**36.87**	**349**	P	**P**	**12 50 05.4**	**+0.1**
	comp=E,4.0nm,0.8s,baz=168,slow=8.4,SNR=31						
SONM	**Songino Array**	**39.10**	**16**	P	**P**	**12 50 24.9**	**+0.6**
	comp=E,4.5nm,0.9s,baz=200,slow=8.8,SNR=26						
GEYT	**Alibeck**	**40.46**	**318**	P	**P**	**12 50 36.7**	**+1.0**
	comp=E,1.4nm,0.4s,baz=121,slow=11,SNR=3.6						
KURBB	**Kurchatov Arra**	**41.27**	**347**	P	**P**	**12 50 42.0**	**-0.1**
	comp=E,2.3nm,0.9s,baz=166,slow=7.0,SNR=24						
KURK	**Kurchatov**	**41.34**	**348**	*e*P	**P**	**12 50 42.7**	**0.0**
ZALV	**Zalesovo Beam**	**43.51**	**354**	P	**P**	**12 51 00.1**	**-0.2**
	comp=E,3.7nm,0.8s,baz=175,slow=10.0,SNR=16						
BVAR	**Borovoye Array**	**45.57**	**342**	P	**P**	**12 51 16.8**	**0.0**
	comp=E,0.7nm,0.7s,baz=143,slow=5.0,SNR=5.8						
RAYN	**Ar Rayn**	**45.68**	**292**	*e*P	**P**	**12 51 19.3**	**+1.1**
	comp=E,5.6nm,1.3s						
ABKAR	**Akbulak array**	**46.60**	**332**	*e*P	**P**	**12 51 25.5**	**+0.6**
	comp=E,0.3nm,0.2s						
WRA	**Warramunga Arr**	**51.92**	**126**	P	**P**	**12 52 05.1**	**-0.9**
	comp=E,5.9nm,0.8s,baz=306,slow=8.3,SNR=46						
WRAB	**Tennant Creek**	**51.92**	**126**	*e*P	**P**	**12 52 05.7**	**-0.4**
	comp=E,112nm,2.0s						
ASAR	**Alice Springs**	**53.62**	**130**	P	**P**	**12 52 17.9**	**-0.8**
	comp=E,6.0nm,0.8s,baz=306,slow=6.9,SNR=74						
NRIK	**Noril'sk**	**58.68**	**358**	P	**P**	**12 52 53.6**	**-0.4**
	comp=E,1.3nm,0.4s,baz=151,slow=4.1,SNR=3.5						
BRTR	**Keskin Array B**	**58.72**	**310**	P	**P**	**12 52 54.0**	**-1.0**
	comp=E,1.5nm,0.9s,baz=113,slow=9.5,SNR=5.6						
STKA	**Stephens Creek**	**63.84**	**133**	P	**P**	**12 53 29.0**	**-0.5**
	comp=E,2.1nm,0.7s,baz=301,slow=5.1,SNR=7.1						
TIXI	**Tiksi**	**65.03**	**12**	*e*P	**P**	**12 53 35.8**	**-0.9**
	comp=E,3.3nm,0.9s						
SEY	**Seymchan**	**67.49**	**26**	P	**P**	**12 53 52.1**	**-0.5**
	comp=E,1.2nm,0.7s,baz=161,slow=9.8,SNR=3.2						
BOSA	**Boshof**	**74.97**	**236**	P	**P**	**12 54 39.7**	**+1.0**
	comp=E,4.0nm,0.8s,baz=25,slow=4.5,SNR=5.8						
NOA	**NORSAR Array B**	**76.08**	**330**	P	**P**	**12 54 42.7**	**-1.7**
	comp=E,0.7nm,0.8s,baz=109,slow=5.3,SNR=2.6						
TORD	**Torodi Ar. Bea**	**87.52**	**283**	P	**P**	**12 55 46.0**	**+0.4**
	comp=E,0.5nm,0.7s,baz=117,slow=5.2,SNR=2.4						
ILAR	**Eielson Array**	**93.11**	**21**	P	**P**	**12 56 09.4**	**-1.2**
	comp=E,0.2nm,0.8s,baz=299,slow=4.0,SNR=2.7						
INK	**Inuvik**	**95.01**	**15**	LR	LR	13 45 30.7	
	comp=E,320nm,19.4s,baz=124,slow=40						
PLCA	**Paso Flores**	**146.15**	**205**	PKPbc	**PKPab**	**13 02 38.1**	**0.0**
	comp=E,1.6nm,0.7s,baz=112,slow=1.1,SNR=7.4						

*NIED **15** 12:43:00, 40°.30N×142°.30E, h47^{km}, Mw3.7 Best double couple: M$_{\delta}$4.21000×10^{14} NP1:ϕ_s154.00000°, δ27.00000°, λ54.00000°. NP2:ϕ_s14.00000°, δ68.00000°, λ107.00000°.*
*ISCJB **15** 12:43:04.6±0.9, 40°.34N±0°.05×142°.3E±0°.1, h54$^{km}_{±7}$, mb3.7/11, Error ellipse: s-maj=13.4km s-min=8.4km az=15.2*
*JMA **15** 12:43:05.3±0.1, 40°.32N×142°.32E, h36$^{km}_{±1}$, M4.1*
JMA Felt II J1.
*IDC **15** 12:43:07.6±2.5, 40°.34N×142°.28E, h67$^{km}_{±22}$, mb3.4/11, mb1 3.5/14, mb1mx3.4/50, mbtmp3.7/14, MS2.6/2, Ms1 2.6/2, ms1mx2.2/44, Error ellipse: s-maj=25.0km s-min=18.7km az=103.0*

ISC 15 12:43:05.6±1.4, 40°.33N±0°.06×142°.28E±0°.10, h46$^{km}_{±12}$, n30, σ1^{s}21/28, mb3.8/11, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JTH	**Tanohata**	**0.51**	**219**	P	**Pn**	**12 43 16.1**	**-0.6**
JTH				S	**Sn**	**12 43 23.6**	**-1.0**
JANG	**Nango**	**0.59**	**274**	P	**Pn**	**12 43 17.5**	**-0.2**
JANG				S	**Sn**	**12 43 26.2**	**-0.2**
JKZ	**Kuzumaki**	**0.81**	**245**	P	**Pn**	**12 43 20.7**	**0.0**
JKZ				S	**Sn**	**12 43 31.8**	**+0.2**
JTM	**Tenmabayashi**	**1.03**	**297**	P	**Pn**	**12 43 23.5**	**-0.1**
JOM	**Ohasama**	**1.15**	**222**	P	**Pn**	**12 43 25.6**	**+0.4**
JOM				S	**Sn**	**12 43 40.1**	**+0.3**
JAH	**Hinai**	**1.27**	**264**	P	**Pn**	**12 43 27.4**	**+0.6**
JAH				S	**Sn**	**12 43 43.9**	**+1.2**
ASAJ	**Asahikawa**	**3.79**	**3**	P	**Pn**	**12 44 02.2**	**+0.8**
	2.3nm,0.3s,baz=200,slow=12,SNR=19						
ASAJ				S	Sn	12 44 51.6	+7.0
	2.7nm,0.3s,baz=113,slow=32,SNR=1.8						
MJAR	**Matsushiro Arr**	**4.95**	**221**	P	**Pn**	**12 44 20.6**	**+3.1**
	0.9nm,0.3s,baz=34,slow=13,SNR=15						
MAT	**Matsushiro**	**4.96**	**221**	P	**Pn**	**12 44 20.4**	**+2.9**
MAT				*e*S	**Sn**	**12 45 15.6**	**+2.1**
USRK	**Ussuriysk Ar.**	**8.55**	**300**	P	**Pn**	**12 45 09.0**	**+2.2**
	0.4nm,0.3s,baz=110,slow=11,SNR=5.5						
KSRS	**Korea Array**	**11.55**	**260**	LR	LR	12 49 10.9	
	comp=Z,25nm,18.3s,baz=158,slow=31						
KLR	**Kul'dur**	**11.61**	**323**	LR	LR	12 49 48.5	
	comp=Z,30nm,19.9s,baz=202,slow=34						
SEY	**Seymchan**	**23.43**	**12**	P	**P**	**12 48 10.5**	**+0.2**
	1.4nm,0.8s,baz=232,slow=6.8,SNR=4.2						
SONM	**Songino Array**	**26.66**	**298**	P	**P**	**12 48 39.0**	**-1.1**
	0.4nm,0.5s,baz=64,slow=6.6,SNR=3.5						
H11N2	**WAKE ISLAND Hy**	**29.42**	**127**	T	T	13 19 51.9	
	baz=318,slow=75,SNR=54						
H11N1	**WAKE ISLAND Hy**	**29.43**	**127**	T	T	13 19 54.1	
	baz=318,slow=75,SNR=65						
H11N3	**WAKE ISLAND Hy**	**29.44**	**127**	T	T	13 19 52.3	
	baz=318,slow=75,SNR=60						
H11S1	**WAKE ISLAND Hy**	**30.24**	**129**	T	T	13 21 06.9	
	baz=316						
H11S3	**WAKE ISLAND Hy**	**30.24**	**129**	T	T	13 21 04.2	
	baz=316						
H11S2	**WAKE ISLAND Hy**	**30.26**	**129**	T	T	13 21 07.0	
	baz=316						
ZALV	**Zalesovo Beam**	**40.27**	**310**	P	**P**	**12 50 37.8**	**0.0**
	0.8nm,0.5s,baz=89,slow=8.8,SNR=5.1						
MKAR	**Makanchi Array**	**43.02**	**299**	P	**P**	**12 51 00.6**	**+0.1**
	0.5nm,0.4s,baz=89,slow=9.4,SNR=6.0						
KURBB	**Kurchatov Arra**	**44.57**	**306**	P	**P**	**12 51 12.5**	**-0.3**
	1.4nm,0.6s,baz=81,slow=9.0,SNR=9.6						
BVAR	**Borovoye Array**	**48.91**	**310**	P	**P**	**12 51 46.5**	**-0.2**
	0.8nm,0.3s,baz=99,slow=7.9,SNR=6.4						
WRA	**Warramunga Arr**	**60.42**	**189**	P	**P**	**12 53 09.5**	**-0.8**
	0.3nm,0.6s,baz=2.3,slow=6.9,SNR=3.1						
YKA	**Yellowknife Ar**	**60.63**	**31**	P	**P**	**12 53 11.5**	**+0.2**
	0.1nm,0.6s,baz=304,slow=6.5,SNR=2.9						
FINES	**FINESS Array B**	**66.22**	**332**	P	**P**	**12 53 48.1**	**-0.2**
	0.9nm,0.7s,baz=58,slow=10,SNR=3.4						
NB2	**NORSAR Subarra**	**71.41**	**337**	P	**P**	**12 54 19.9**	**-0.7**
	comp=Z,1.3nm,0.8s,baz=40,slow=6.2						
NOA	**NORSAR Array B**	**71.41**	**337**	P	**P**	**12 54 20.5**	**-0.1**
	comp=Z,1.1nm,0.9s,baz=38,slow=5.9,SNR=3.9						
AKASG	**Malin Array Be**	**72.11**	**322**	P	**P**	**12 54 24.3**	**-0.6**
	comp=Z,0.3nm,0.3s,baz=44,slow=7.4,SNR=3.3						

SGS 15 12:45:42.8, 25°.24N×37°.79E, h8^{km}, Western Arabian Peninsula

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LNY06	**LNY06**	**0.03**	**199**	S	Sg	12 45 46.0	+0.3
LNY06				P	Pg	12 45 44.9	+0.4
LNY06	**LNY06**	**0.03**	**199**	S	Sg	12 45 46.1	+0.4
LNY06				P	Pg	12 45 45.0	+0.5
LNY12	**LNY12**	**0.03**	**331**	S	Sg	12 45 45.8	+0.1
LNY12				P	Pg	12 45 44.9	+0.4
LNY12	**LNY12**	**0.03**	**331**	S	Sg	12 45 45.8	+0.1
LNY12				P	Pg	12 45 44.9	+0.4
LNY10	**LNY10**	**0.07**	**67**	S	Sg	12 45 46.7	+0.3
LNY10				P	Pg	12 45 45.3	+0.5
LNY10	**LNY10**	**0.07**	**67**	S	Sg	12 45 46.7	+0.3
LNY10				P	Pg	12 45 45.4	+0.5
LNY11	**LNY11**	**0.08**	**348**	S	Sg	12 45 46.8	+0.3
LNY11				P	Pg	12 45 45.4	+0.5
LNY11	**LNY11**	**0.08**	**348**	S	Sg	12 45 46.8	+0.3
LNY11				P	Pg	12 45 45.4	+0.4
LNY02	**LNY02**	**0.12**	**148**	S	Sg	12 45 48.0	+0.4
LNY02				P	Pg	12 45 46.1	+0.5
LNY02	**LNY02**	**0.12**	**148**	S	Sg	12 45 48.1	+0.5
LNY02				P	Pg	12 45 46.1	+0.5
LNY04	**LNY04**	**0.14**	**283**	S	Sg	12 45 48.2	+0.4
LNY04				P	Pg	12 45 46.3	+0.5
LNY03	**LNY03**	**0.15**	**23**	S	Sg	12 45 48.7	+0.5
LNY03				P	Pg	12 45 46.6	+0.6
LNY03	**LNY03**	**0.15**	**23**	S	Sg	12 45 48.7	+0.4
LNY03				P	Pg	12 45 46.6	+0.6
LNY01	**LNY01**	**0.16**	**98**	S	Sg	12 45 48.9	+0.5
LNY01				P	Pg	12 45 46.7	+0.6
LNY01	**LNY01**	**0.16**	**98**	S	Sg	12 45 48.9	+0.5
LNY01				P	Pg	12 45 46.7	+0.5
LNY05	**LNY05**	**0.21**	**204**	S	Sg	12 45 50.5	+0.4
LNY05				P	Pg	12 45 47.7	+0.5
LNY05	**LNY05**	**0.21**	**204**	S	Sg	12 45 50.5	+0.4
LNY05				P	Pg	12 45 47.7	+0.5
LNY07	**LNY07**	**0.23**	**241**	S	Sg	12 45 51.3	+0.8
LNY07				P	Pg	12 45 47.9	+0.5
LNY07	**LNY07**	**0.23**	**241**	S	Sg	12 45 51.1	+0.6
LNY07				P	Pg	12 45 47.9	+0.5

DJA 15 12:48:13.4±0.3, 3°.S±3°×13°.0E±°, h51$^{km}_{±9}$, M3.7/13, mb4.6/1, MLv3.2/13, Seram

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MSAI	**Masohi**	**0.93**	**235**	P	Pn	12 48 29.8	-0.4
MSAI				S	Sn	12 48 43.3	+0.7
BNDI	**Bandanaira**	**1.71**	**173**	P	Pn	12 48 39.7	-1.2
BNDI				S	Sn	12 49 02.3	+0.7
SWI	**Sorong**	**2.49**	**39**	P	Pn	12 48 51.2	-0.3
SWI				S	Sn	12 49 20.8	+0.1
FAKI	**Fak Fak**	**2.56**	**92**	P	Pn	12 48 53.9	+1.5
FAKI				S	Sn	12 49 19.3	-3.1
NLAI	**Namlea**	**2.62**	**261**	P	Pn	12 48 53.4	+0.1
NLAI				S	Sn	12 49 24.9	+1.0
LBMI	**Labuha**	**3.07**	**315**	P	Pn	12 48 59.8	+0.3
SANI	**Sanana**	**3.77**	**281**	P	Pn	12 49 09.3	+0.2
SANI				S	Sn	12 49 53.3	+1.0
KMPI	**Kaimana, Papua**	**4.10**	**102**	P	Pn	12 49 13.8	+0.3
KMPI				S	Sn	12 50 01.2	+1.0
RKPI	**Ransiki, Papua**	**4.67**	**74**	P	Pn	12 49 20.8	-0.6
SAUI	**Saumlaki**	**5.38**	**163**	P	Pn	12 49 31.0	-0.2

*NIED **15** 12:53:00, 37°.40N×141°.50E, h5^{km}, Mw4.4 Best double couple: M$_{\delta}$4.27000×10^{15} NP1:ϕ_s345.00000°, δ52.00000°, λ-170.00000°. NP2:ϕ_s249.00000°, δ82.00000°, λ-39.00000°.*
*IDC **15** 12:53:02.9±0.5, 37°.38N×141°.28E, h0^{km}, mb4.3/22, mb1 4.5/25, mb1mx4.4/42, mbtmp4.4/25, ML4.3/2, MS3.6/4, Ms1 3.6/4, ms1mx3.1/48, Error ellipse: s-maj=16.7km s-min=12.1km az=101.0*
*JMA **15** 12:53:04.2±0.1, 37°.41N×141°.49E, h19$^{km}_{±1}$km, M4.7*
JMA Felt III J1.
*ISCJB **15** 12:53:06.5±0.5, 37°.41N±0°.03×141°.25E±0°.04, h33$^{km}_{±4}$km, mb4.4/82, MS3.7/4, Error ellipse: s-maj=6.1km s-min=3.8km az=21.7*
*BJI **15** 12:53:08.4, 37°.62N×140°.81E, h25^{km}, mb4.5/29, mB4.8/18, Ms4.3/17, Ms7 4.0/17*
*NEIC **15** 12:53:08.8±0.3, 37°.47N×141°.22E, h35^{km}, mb4.6/47, Error ellipse: s-maj=8.9km s-min=5.5km az=139.0*
NEIC Recorded [3 JMA] in Fukushima.
*MOS **15** 12:53:08.1±0.9, 37°.82N×141°.08E, h28^{km}, mb4.7/30, Error ellipse: s-maj=9.1km s-min=5.9km az=90.2*

ISC 15 12:53:06.9±0.8, 37°.48N±0°.03×141°.23E±0°.05, h24$^{km}_{±5}$km, n183, σ1^{s}44/158, mb4.5/82, MS3.6/4, 5C-2D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**0.30**	**248**	P	**Pb**	**12 53 13.9**	**0.0**
JFK				S	**Sn**	**12 53 20.4**	**-1.3**
ONAJ	**Iwakimizuishiy**	**0.51**	**222**	P	**Pb**	**12 53 16.4**	**-0.9**
ONAJ				S	**Sb**	**12 53 25.1**	**+0.8**
JMM	**Marumori**	**0.52**	**318**	P	**Pb**	**12 53 17.5**	**+0.1**
JMM				S	**Sn**	**12 53 27.0**	**+0.1**
JFT	**Otama**	**0.71**	**273**	P	**Pn**	**12 53 21.7**	**+0.2**
JFT				S	**Sn**	**12 53 34.0**	**+2.3**
JIO	**Ouri**	**0.98**	**5**	P	**Pb**	**12 53 22.9**	**-2.2**
JIO				S	**Sb**	**12 53 36.6**	**-1.0**
JOU	**Okura**	**0.99**	**333**	P	**Pn**	**12 53 25.6**	**+0.3**
JOU				S	**Sn**	**12 53 40.9**	**+2.3**
JHO	**Hitachi**	**1.02**	**212**	P	**Pn**	**12 53 22.8**	**-2.8**
MJAR	**Matsushiro Arr**	**2.49**	**250**	P	**Pn**	**12 53 49.2**	**+1.8**
	13nm,0.3s,baz=80,slow=16,SNR=78						
MJAR				Sn	**Sb**	**12 54 24.0**	**-0.1**
	22nm,0.3s,baz=77,slow=25,SNR=6.4						
MAJO	**Matsushiro**	**2.59**	**250**	*e*P	**Pn**	**12 53 49.2**	**+1.8**
MAJO				*e*		12 54 17.8	
MAJO	**Matsushiro**	**2.59**	**250**	*e*Pn	**Pn**	**12 53 49.2**	**+1.8**
MAJO				*e*Sn	**Sn**	**12 54 17.8**	**-0.4**
MAT	**Matsushiro**	**2.59**	**250**	P	Pn	12 53 38.5	-8.9
INU	**Inuyama**	**4.01**	**239**	*e*Pn	**Pn**	**12 54 08.1**	**+1.3**
JHJ	**Hachijo jima 2**	**4.51**	**196**	Pn	**Pn**	**12 54 11.9**	**-1.8**
	129nm,0.3s,baz=27,slow=2.7,SNR=34						
JHJ				Sn	**Sn**	**12 55 03.9**	**-1.5**
	54nm,0.3s,baz=245,slow=23,SNR=5.6						
JHJ2	**Mitsune**	**4.51**	**195**	*e*Pn	**Pn**	**12 54 11.9**	**-1.7**
JHJ2				*e*Sn	**Sn**	**12 55 03.4**	**-1.9**
ERM	**Erimo**	**4.77**	**18**	*e*P	**Pn**	**12 54 15.3**	**-1.8**
ERM				*e*		12 55 10.2	
ERM	**Erimo**	**4.77**	**18**	*e*Pn	**Pn**	**12 54 15.3**	**-1.8**
ERM				*e*Sn	**Sn**	**12 55 10.2**	**-1.4**
ASAJ	**Asahikawa**	**6.71**	**8**	Pn	**Pn**	**12 54 42.8**	**-1.0**
	3.1nm,0.3s,baz=214,slow=8.2,SNR=21						
ASAJ				Sn	**Sn**	**12 56 01.3**	**+1.8**
	1.7nm,0.3s,baz=92,slow=21,SNR=1.5						
ASAJ	**Asahikawa**	**6.71**	**8**	*e*Pn	**Pn**	**12 54 42.5**	**-1.4**
ASAJ				*e*Sn	**Sn**	**12 55 58.3**	**-1.2**
ASAJ				Sn	**Sn**	**12 56 01.3**	**+1.8**
YUK	**Yuzh-Kuril'sk**	**7.43**	**27**	*e*P	Pn	12 54 49.4	-4.3
YUK				*e*S	Sn	12 56 09.2	-8.0
YUK				pmax	pmax		
	comp=Z,133nm,0.3s						
YUK				pmax	pmax		
	comp=E,56nm,0.4s						
YUK				pmax	pmax		
	comp=N,69nm,0.3s						
SHO	**Shikotan**	**7.67**	**32**	*e*P	**Pn**	**12 54 56.2**	**-0.8**
SHO				*e*S	Sn	12 56 12.9	-10
SHO				pmax	pmax		
	comp=Z,49nm,0.4s						
SHO				pmax	pmax		
	comp=N,9.0nm,0.2s				

YAK e 12 59 13.6
YAK e 13 02 00.6
YAK eS S **13 02 55.5 -4.8**
YAK pmax pmax
comp=Z,20nm,0.9s
YAK pmax pmax
comp=N,9.0nm,1.1s
YAK pmax pmax
comp=E,6.0nm,1.1s
YAK pmax pmax
comp=Z,80nm,4.3s
YAK pmax pmax
comp=N,69nm,4.2s
YAK pmax pmax
comp=E,49nm,4.5s
YAK smax smax
comp=N,44nm,3.0s
YAK smax smax
comp=E,27nm,3.0s
SEY Seymchan 26.38 11 P P **12 58 42.1 +1.1**
comp=E,9.3nm,0.6s,baz=194,slow=8.1,SNR=19
SEY Seymchan 26.38 11 eP P **12 58 42.2 +1.2**
ULN Ulaanbaatar 26.98 304 ceP P **12 58 45.9 -0.9**
ULN pmax pmax
comp=Z,3.0nm,1.0s
BOD Bodaibo 27.07 327 eP P **12 58 45.7 -1.6**
BOD pmax pmax
comp=Z,5.0nm,1.0s
SONA1 Songino Array 27.41 303 eP P **12 58 50.8 +0.1**
SONM Songino Array 27.42 303 P P **12 58 50.5 -0.2**
comp=Z,4.2nm,0.9s,baz=96,slow=8.9,SNR=22
H11N2 WAKE ISLAND Hy 28.50 121 T T 13 28 29.0
baz=314,slow=75,SNR=800
H11N1 WAKE ISLAND Hy 28.51 121 T T 13 28 29.6
baz=314,slow=75,SNR=828
H11N3 WAKE ISLAND Hy 28.52 121 T T 13 28 30.9
baz=314,slow=75,SNR=900
H11S1 WAKE ISLAND Hy 29.23 123 T T 13 29 24.6
baz=316,slow=76,SNR=1786
H11S3 WAKE ISLAND Hy 29.23 123 T T 13 29 24.4
baz=316,slow=76,SNR=1420
H11S2 WAKE ISLAND Hy 29.24 123 T T 13 29 26.6
baz=316,slow=76,SNR=1422
LZH Lanzhou 29.85 279 eP P **12 59 12.6 +0.1**
LZH pP pP 12 59 18.8 -0.9
LZH sP sP 12 59 22.0 -0.6
LZH pmax pmax
comp=Z,14nm,1.0s
ZAK Zakamensk 29.88 308 eP P **12 59 13.5 +1.0**
ZAK pmax pmax
comp=Z,2.0nm,1.2s
TLY Talaya 29.93 310 eP P **12 59 12.2 -0.6**
TLY pmax pmax
comp=Z,4.0nm,1.0s
TLY Talaya 29.93 310 eP P **12 59 12.2 -0.6**
comp=Z,3.7nm,1.0s
CD2 Chengdu 31.53 269 P P **12 59 27.1 -0.1**
CD2 pmax pmax
comp=Z,1.0nm,0.5s
BILL Bilibino 33.64 17‖ eP P 12 59 48.7 +3.5
BILL e 13 01 00.4
BILL ePPP PPP 13 01 12.1
BILL pmax pmax
comp=Z,5.0nm,1.2s
BILL Bilibino 33.64 17 eP P **12 59 44.6 -0.6**
comp=Z,3.2nm,0.9s
TIXI Tiksi 34.83 353 ceP P **12 59 55.3 -0.1**
TIXI pmax pmax
comp=Z,3.0nm,1.0s
TIXI Tiksi 34.83 353 eP P **12 59 54.7 -0.7**
comp=Z,4.2nm,1.1s
WMQ Urumqi 40.51 296 eP P **13 00 45.1 +1.2**
WMQ pP pP 13 00 51.3 +0.1
WMQ sP sP 13 00 54.6 +0.4
WMQ PP **PnPn** **13 02 21.6 +0.4**
WMQ S S **13 06 50.1 -1.4**
WMQ pmax pmax
comp=Z,3.0nm,0.6s
WMQ pmax pmax
comp=Z,34nm,4.6s
WMQ LR LR
comp=Z,46nm,21.6s
WMQ LR LR
comp=Z,27nm,19.0s
WMQ LR LR
comp=Z,41nm,17.6s
CMAR Chiang Mai Arr 41.47 255 P P **13 00 54.6 +2.6**
comp=Z,0.3nm,0.6s,baz=43,slow=6.7,SNR=4.5
ZAA0 Zalesovo Array 41.51 312 eP P **13 00 52.2 +0.3**
ZALV Zalesovo Beam 41.51 312 P P **13 00 52.2 +0.4**
comp=Z,7.6nm,0.8s,baz=90,slow=7.4,SNR=32
NVS Novosibirsk 42.43 313 eP P **13 00 59.7 +0.3**
MK01 Makanchi Array 43.76 302 eP P **13 01 10.6 +0.3**
MK31 Makanchi Array 43.76 302 eP P **13 01 11.1 +0.8**
MK31 Makanchi Array 43.76 302 eP P **13 01 11.1 +0.8**
MKAR Makanchi Array 43.76 302 P P **13 01 10.9 +0.5**
comp=Z,5.0nm,0.9s,baz=86,slow=9.8,SNR=16
MKAR Makanchi Array 43.76 302 ceP P **13 01 11.0 +0.7**
MKAR pmax pmax
comp=Z,5.0nm,0.9s
MKAR Makanchi Array 43.76 302 eP P **13 01 11.1 +0.7**
MAKZ Makanchi 43.97 302 eP P **13 01 12.9 +0.9**
MAKZ pmax pmax
comp=Z,7.0nm,0.9s
MAKZ Makanchi 43.97 302 eP P **13 01 12.9 +0.9**
comp=Z,7.2nm,0.9s
SVW2 Sparrevohn 45.26 38 eP P 13 01 26.0 +3.9
comp=Z,5.4nm,0.8s
KURK Kurchatov 45.54 308 eP P **13 01 24.8 +0.4**
KURK pmax pmax
comp=Z,33nm,0.9s
KURK Kurchatov 45.54 308 eP P **13 01 24.8 +0.4**
comp=Z,33nm,0.9s
PDGK Podgornoye 46.44 297 P P **13 01 31.9 +0.3**
CAST Castle Rocks 46.94 34 eP P **13 01 37.4 +2.0**
comp=Z,27nm,2.0s
KTH Kantishna Hill 47.46 34 eP P 13 01 43.7 +4.3
comp=Z,8.8nm,1.0s
MLY Manley 47.55 32 eP P **13 01 41.1 +1.0**
comp=Z,4.6nm,1.0s
TRF Thorofare Moun 47.75 34 eP P **13 01 42.7 +0.9**
comp=Z,24nm,1.9s
PMR Palmer 48.35 37 eP P 13 01 50.5 +4.3
PMR pmax pmax
comp=Z,4.0nm,0.8s
PMR Palmer 48.35 37 eP P 13 01 50.5 +4.3
comp=Z,4.1nm,0.8s
RND Reindeer 48.39 34 eP P 13 01 50.8 +4.2
RND pmax pmax
comp=Z,7.0nm,0.8s
RND Reindeer 48.39 34 eP P 13 01 50.8 +4.1
comp=Z,6.5nm,0.8s
MDM Murphy Dome 48.62 32 eP P **13 01 49.2 +0.9**
comp=Z,11nm,1.1s
SML Sawmill 48.72 37 eP P **13 01 48.9 -0.2**
SML pmax pmax
comp=Z,7.0nm,0.7s
SML Sawmill 48.72 37 eP P **13 01 48.9 -0.2**
comp=Z,7.1nm,0.7s
CCB Clear Creek Bu 48.81 33 eP P 13 01 54.3 +4.6
comp=Z,9.3nm,1.7s
SCM Sheep Creek Mo 49.19 36 eP P **13 01 54.5 +1.7**
SCM pmax pmax
comp=Z,6.0nm,0.6s
SCM Sheep Creek Mo 49.19 36 eP P **13 01 54.5 +1.7**
comp=Z,6.1nm,0.6s
ILAR Eielson Array 49.20 33 P P **13 01 52.1 -0.6**
comp=Z,2.9nm,0.8s,baz=266,slow=4.9,SNR=14
ILB Eielson Array 49.20 33 eP P **13 01 52.2 -0.5**
IL1 Eielson Array 49.20 33 eP P **13 01 51.7 -1.0**
TKM2 Tokmak 2 49.29 298 eP P **13 01 55.1 +1.1**
TKM2 pmax pmax
comp=Z,10.0nm,1.1s
TKM2 Tokmak 2 49.29 298 eP P **13 01 55.1 +1.1**
comp=Z,10.0nm,1.1s
FYU Fort Yukon 49.80 30 eP P 13 02 02.6 +5.3
comp=Z,6.3nm,0.9s
KLU Klutina 49.90 37 eP P 13 02 01.9 +3.7
comp=Z,5.9nm,0.7s
AAK Ala-Archa 50.15 298 eP P **13 02 00.3 -0.2**
AAK pmax pmax
comp=Z,3.0nm,0.9s
BRVK Borovoye 50.22 312 eP P 13 01 52.4 -8.2
BRVK pmax pmax
comp=Z,33nm,0.8s
BRVK Borovoye 50.22 312 eP P 13 01 52.4 -8.2
comp=Z,33nm,0.8s
BMRM Bremner River 50.59 37 eP P **13 02 03.6 +0.2**
comp=Z,6.8nm,0.9s
EKS2 Erkin-Say 50.65 298 eP P **13 02 03.7 -0.5**
EKS2 pmax pmax
comp=Z,2.0nm,0.6s
EKS2 Erkin-Say 50.65 298 eP P **13 02 03.7 -0.5**
comp=Z,2.3nm,0.6s
MENT Mentasta 50.75 35 eP P **13 02 05.7 +1.2**
comp=Z,6.3nm,1.0s
MNAS Manas 51.59 298 P P **13 02 12.6 +1.3**
SFK Sufi-Kurgan 51.71 295 P P **13 02 12.8 +0.4**
GSI Gunungsitoli 53.91 239 eP P **13 02 29.0 +0.5**
comp=Z,12nm,0.6s
INK Inuvik 54.06 27 P P **13 02 29.0 +0.1**
comp=Z,2.7nm,0.6s,baz=303,slow=4.6
INK Inuvik 54.06 27 eP P 13 02 32.2 +3.3
INK pmax pmax
comp=Z,16nm,1.5s
INK Inuvik 54.06 27 eP P 13 02 32.2 +3.3
comp=Z,16nm,1.5s
ARU Arti 55.93 318 dP P **13 02 42.8 +0.2**
ARU 13 04 42.8
ARU S S **13 10 26.0 -2.8**
ARU SS SS **13 14 08.1 -6.2**
ARU pmax pmax
comp=Z,11nm,1.7s
ARU Arti 55.93 318 eP P **13 02 43.6 +1.0**
comp=Z,7.8nm,1.0s
WRAB Tennant Creek 57.47 188 eP P **13 02 52.5 -1.4**
WRAB pmax pmax
comp=Z,3.0nm,0.6s
WRAB Tennant Creek 57.47 188 eP P **13 02 52.5 -1.4**
comp=Z,3.0nm,0.6s
WRA Warramunga Arr 57.48 188 P P **13 02 52.3 -1.7**
comp=Z,3.8nm,0.6s,baz=6.0,slow=7.3,SNR=63
ABKAR Akbulak array 57.54 310 eP P **13 02 54.1 -0.1**
comp=Z,2.5nm,0.5s
AKTO Aktyubinsk 58.27 312 LR LR 13 29 23.6
comp=Z,75nm,19.0s,baz=58,slow=37
ASAR Alice Springs 61.21 188 P P **13 03 18.8 -1.0**
comp=Z,2.9nm,0.9s,baz=7.9,slow=5.8,SNR=19
GEYT Alibeck 63.49 299 P P **13 03 35.9 +0.8**
comp=Z,2.8nm,0.7s,baz=54,slow=7.7,SNR=4.7
YKA Yellowknife Ar 63.50 30 P P **13 03 34.3 -0.3**
comp=Z,1.8nm,0.7s,baz=303,slow=6.7,SNR=23
YKB5 Yellowknife Ar 63.50 30 eP P **13 03 37.4 +2.8**
ARCES ARCESS Array B 63.53 339 P P **13 03 35.8 +1.0**
comp=Z,3.1nm,0.9s,baz=45,slow=9.0,SNR=2.8
OBN Obninsk 67.65 323 LR LR 13 33 28.4
comp=Z,20nm,19.4s,baz=72,slow=36
OBN Obninsk 67.65 323 eP P **13 04 01.6 +0.1**
OBN e 13 04 27.4
OBN pmax pmax
comp=Z,5.0nm,0.9s
FIA1 FINESS Array S 68.35 332 eP P **13 04 05.9 0.0**
FINES FINESS Array B 68.35 332 P P **13 04 06.1 +0.2**
comp=Z,6.3nm,1.0s,baz=34,slow=14,SNR=9.0
STKA Stephens Creek 69.00 180 P P **13 04 09.7 -0.5**
comp=Z,4.0nm,0.7s,baz=346,slow=6.5,SNR=7.5
KBZ Khabaz 70.50 310 P P **13 04 20.0 +0.6**
comp=Z,2.5nm,0.8s,baz=55,slow=4.9,SNR=5.0
KIV Kislovodsk 70.50 311 ceP P **13 04 20.9 +1.3**
KIV e 13 04 41.4
KIV pmax pmax
comp=Z,10.0nm,1.0s
FFC Flin Flon 73.41 33 eP P **13 04 37.7 +1.0**
FFC pmax pmax
comp=Z,5.0nm,0.8s
FFC Flin Flon 73.41 33 eP P **13 04 37.7 +1.0**
comp=Z,4.7nm,0.8s
MFID Camas Ranch 73.43 48 eP P 13 04 42.4 +5.2
comp=Z,4.9nm,0.9s
FCC Fort Churchill 73.67 27 eP P **13 04 38.0 -0.1**
FCC pmax pmax
comp=Z,24nm,1.8s
FCC Fort Churchill 73.67 27 eP P **13 04 38.0 -0.1**
comp=Z,24nm,1.8s
NB2 NORSAR Subarra 73.72 337 P P **13 04 38.3 -0.2**
comp=Z,3.2nm,0.6s,baz=40,slow=6.2
NOA NORSAR Array B 73.72 337 P P **13 04 38.5 0.0**
comp=Z,3.5nm,0.9s,baz=40,slow=5.8,SNR=7.1
AKASG Malin Array Be 73.86 322 P P **13 04 39.1 -0.3**
comp=Z,2.3nm,0.5s,baz=46,slow=6.2,SNR=14
LRM Limekiln Ridge 73.93 44 eP P **13 04 41.9 +1.6**
EGMT Eagleton 74.03 41 eP P 13 04 45.7 +5.1
comp=Z,9.6nm,1.0s
HLID Hailey 74.17 47 eP P **13 04 44.2 +2.5**
comp=Z,1.1nm,0.6s
BOZ Bozeman (W) 74.49 44 eP P **13 04 44.7 +1.3**
BOZ pmax pmax
comp=Z,5.0nm,0.6s
BOZ Bozeman (W) 74.49 44 eP P **13 04 44.7 +1.3**
comp=Z,4.7nm,0.6s
NV01 Mina Array Sit 74.84 53 eP P **13 04 45.9 +0.2**
NVAR Mina Array Bea 74.84 53 P P **13 04 46.0 +0.4**
comp=Z,2.2nm,0.8s,baz=311,slow=5.8,SNR=8.0
LKWY Lake 75.85 44 eP P 13 04 58.2 +6.8
LKWY pmax pmax
comp=Z,5.0nm,1.1s
LKWY Lake 75.85 44 eP P 13 04 58.2 +6.8
comp=Z,5.2nm,1.1s
H17A Grant Village 75.86 45 eP P **13 04 54.6 +3.1**
comp=Z,6.0nm,0.8s
IMW Indian Meadow 75.96 45 eP P **13 04 53.1 +1.0**
comp=Z,4.7nm,0.8s
MOOW Moose Ponds 76.17 45 eP P **13 04 55.3 +2.1**
comp=Z,14nm,1.9s
R11A Troy Canyon, C 76.60 52 eP P 13 05 00.4 +4.7
comp=Z,5.5nm,1.3s
TPNV Topopah Spring 77.03 53 eP P 13 05 03.0 +4.9
TPNV pmax pmax
comp=Z,6.0nm,1.1s
TPNV Topopah Spring 77.03 53 eP P 13 05 03.0 +4.9
comp=Z,5.5nm,1.1s
DUG Dugway, Tooele 77.17 49 eP P 13 05 04.1 +5.3
DUG pmax pmax
comp=Z,2.0nm,0.5s
DUG Dugway, Tooele 77.17 49 eP P 13 05 04.1 +5.3
comp=Z,1.5nm,0.5s
BW06 Boulder Array 77.46 45 eP P 13 05 05.0 +4.5
comp=Z,13nm,1.9s
PDAR Pinedale Array 77.46 45 P P **13 05 00.5 -0.1**
comp=Z,1.2nm,0.7s,baz=290,slow=3.7,SNR=4.1
KWP Kalwaria Pacla 77.68 324 P P **13 05 01.8 +0.5**
BRTR Keskin Array B 78.45 311 P P **13 05 07.3 +1.3**
comp=Z,0.6nm,0.8s,baz=72,slow=6.2,SNR=3.0
LCMT Little Creek M 78.89 52 eP P 13 05 14.0 +5.6
comp=Z,6.8nm,1.3s
NIE Nienzica 78.94 325 P P **13 05 09.3 +1.0**
KNB Kanab 79.15 52 eP P **13 05 11.8 +1.9**
KNB pmax pmax
comp=Z,18nm,1.7s
KNB Kanab 79.15 52 eP P **13 05 11.8 +1.9**
comp=Z,18nm,1.7s
SRU San Rafael Swe 79.23 49 eP P 13 05 15.1 +4.8
SRU pmax pmax
comp=Z,6.0nm,1.1s
SRU San Rafael Swe 79.23 49 eP P 13 05 15.1 +4.8
comp=Z,6.3nm,1.1s
DPC Dobruska-Polom 80.00 328 eP P 13 05 18.0 +3.9
DPC Dobruska-Polom 80.00 328 eP P 13 05 18.0 +3.9
RAYN Ar Rayn 80.35 292 eP P **13 05 17.6 +1.1**
BRG Berggiesshubel 80.59 329 eP P **13 05 17.2 0.0**
comp=Z,8.7nm,1.5s
BRG e 13 05 24.8
comp=Z,9.2nm,1.4s
BRG Berggiesshubel 80.59 329 eP P **13 05 17.2 0.0**
BRG e 13 05 24.8
BRG pmax pmax
comp=Z,9.0nm,1.5s
BRG pmax pmax
comp=Z,9.0nm,1.4s
CLL Collm 80.64 330 eP P **13 05 17.0 -0.4**
comp=Z,8.0nm,1.1s
CLL e 13 05 22.0
CLL Collm 80.64 330 eP P **13 05 17.0 -0.4**
CLL e 13 05 22.0
CLL pmax pmax
comp=Z,8.0nm,1.1s
WUAZ Wupatki 81.00 52 eP P 13 05 25.6 +5.7
comp=Z,5.5nm,1.0s
CLZ Clausthal 81.24 332 P P **13 05 21.2 +0.5**
KHC Kasperske Hory 82.09 328 eP P **13 05 25.6 +0.4**
KHC ePCP PcP **13 05 29.6 -1.1**
KHC Kasperske Hory 82.09 328 eP P **13 05 25.6 +0.4**
KHC e 13 05 29.6
GERES GERESS Array B 82.25 328 P P **13 05 26.1 0.0**
comp=Z,0.3nm,0.4s,baz=31,slow=5.4,SNR=4.2
GEA0 GERESS Array S 82.26 328 eP P **13 05 26.4 +0.2**
ANMO Albuquerque 84.41 50 ceP P **13 05 39.8 +2.1**
ANMO pmax pmax
comp=Z,2.0nm,1.2s
BFO Black Forest 84.84 331 iP P 13 05 45.4 +6.0
FUORN Ofenpass-Fuorn 85.44 329 eP P **13 05 41.4 -1.3**
comp=Z,12nm,1.3s
TX31 Lajitas Ar. Si 89.96 52 eP P **13 06 05.2 +0.7**
TXAR Lajitas Array 89.96 52 P P **13 06 04.4 -0.1**
comp=Z,1.0nm,0.6s,baz=316,slow=3.8,SNR=5.3
LPAZ La Paz 146.59 59 PKPbc **PKPbc 13 12 47.6 0.0**
comp=Z,1.1nm,0.6s,baz=346,slow=5.2,SNR=2.8

IDC 15 12:54:56.6±5.8, 19.27S×168.08E, h0km, mb3.8/3, mb1 4.1/4, mb1mx3.7/38, mbtmp3.9/4, ML4.4/1, MS3.8/1, Ms1 3.8/1, ms1mx2.8/38, Error ellipse: s-maj=116.3km s-min=35.1km az=100.0, Vanuatu Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
DZM	**Mont Dzumac**	**3.18**	**208**	Pn	Pn	12 55 48.8	+0.8
	42nm,0.3s,baz=97,slow=13,SNR=725						
DZM				Sn	Sn	12 56 26.2	-0.4
	28nm,0.3s,baz=109,slow=22,SNR=11						
RPZ	**Rata Peaks**	**24.50**	**175**	LR	LR	13 08 39.4	
	comp=Z,207nm,19.1s,baz=336,slow=34						
WRA	**Warramunga Arr**	**31.76**	**263**	P	P	13 01 23.4	+0.6
	0.7nm,0.6s,baz=92,slow=8.4,SNR=20						
ASAR	**Alice Springs**	**32.05**	**256**	P	P	13 01 24.6	-0.8
	1.1nm,0.6s,baz=91,slow=9.0,SNR=15						
CMAR	**Chiang Mai Arr**	**77.52**	**295**	P	P	13 06 54.7	0.0
	0.5nm,0.7s,baz=133,slow=5.0,SNR=5.0						

*IDC **15** 13:00:15.3±0.4, 38.61N×144.80E, h0km, mb4.7/31, mb1 4.9/38, mb1mx4.7/54, mbtmp4.7/38, ML3.8/7, MS3.9/29, Ms1 3.9/29, ms1mx3.7/47, Error ellipse: s-maj=12.7km s-min=9.7km az=97.0*
*ISCJB **15** 13:00:16.8±0.7, 38.79N±0.02×144.67E±0.02, h15km±4km, mb4.9/258, MS4.1/37, Error ellipse: s-maj=3.7km s-min=2.0km az=178.3*
*BJI **15** 13:00:17.6, 38.79N×144.71E, h23km, mb4.7/67, mB5.0/52, Ms4.5/64, Ms7 4.3/60*
*JMA **15** 13:00:18.7±0.2, 38.76N×144.66E, h50km, M4.8*
*MOS **15** 13:00:18.1±1.1, 38.88N×144.71E, h20km, mb5.2/99, MS4.3/6, Error ellipse: s-maj=6.1km s-min=3.9km az=102.5*
*NEIC **15** 13:00:20.9±0.1, 38.67N×144.67E, h35km, mb5.0/170, Error ellipse: s-maj=4.5km s-min=3.1km az=157.0*
*GCMT **15** 13:00:20.9±0.3, 38.71N×144.66E, h12km, MW4.8/81, Moment Tensor Solution. s20,c21; s81,c120; Duration: 0 Moment tensor: Scale 10^16 Nm; Mrr-2.02±.06; Mθθ0.44±.06; Mφφ1.58±.05; Mrθ-0.56±.28; Mφθ0.64±.05; Mφr0.77±.22; Best double couple: Mo2.13800×10^16 NP1:φs185.00000°, δ55.00000°, λ-112.00000°. NP2: φs40.00000°, δ40.00000°, λ-62.00000°. Principal axes: T 1.9270, Plg8.0000°, Azm290.0000°; N 0.4180, Plg18.0000°, Azm198.0000°; P -2.3490, Plg71.0000°, Azm43.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

ISC 15 13:00:19.3±0.6, 38.75N±0.04×144.74E±0.03, h25km±3km, h24km:pP-P, n805, σ1s34/870, mb5.0/262, MS4.2/38, 21C-15D, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MIYJ	**Miyakonagasawa**	**2.42**	**291**	P	Pn	**13 00 56.0**	**-1.3**
MIYJ				eS	Sn	**13 01 22.8**	**-3.3**
OFUJ	**Ofunato**	**2.42**	**279**	P	Pn	**13 00 56.0**	**-1.3**
OFUJ				S	Sn	**13 01 23.6**	**-2.6**
JTH	**Tanohata**	**2.53**	**299**	P	Pn	**13 00 57.7**	**-1.1**
JTH				S	Sn	**13 01 26.3**	**-2.5**
JIO	**Ouri**	**2.68**	**265**	P	Pn	**13 00 58.9**	**-1.9**
JIO				S	Sn	**13 01 29.3**	**-3.1**
JMK	**Ichinoseki**	**2.76**	**275**	P	Pn	**13 01 00.8**	**-1.1**
JMK				eS	Sn	**13 01 32.4**	**-2.1**
JOM	**Ohasama**	**2.78**	**286**	P	Pn	**13 01 01.4**	**-0.9**
JOM				eS	Sn	**13 01 32.6**	**-2.4**
JKZ	**Kuzumaki**	**2.92**	**296**	P	Pn	**13 01 03.4**	**-0.8**
JKZ				S	Sn	**13 01 36.3**	**-2.2**
JANG	**Nango**	**2.98**	**304**	P	Pn	**13 01 03.3**	**-1.7**
JANG				eS	Sn	**13 01 36.5**	**-3.4**
JOU	**Okura**	**3.22**	**264**	P	Pn	**13 01 07.4**	**-0.9**
JOU				S	Sn	**13 01 43.2**	**-2.7**
JMM	**Marumori**	**3.23**	**255**	P	Pn	**13 01 06.5**	**-1.9**
JMM				S	Sn	**13 01 41.3**	**-4.8**
JRG	**Rokugo**	**3.26**	**283**	P	Pn	**13 01 08.3**	**-0.6**
JRG				eS	Sn	**13 01 45.3**	**-1.6**
JFK	**Kawauchi**	**3.35**	**247**	P	Pn	**13 01 07.7**	**-2.4**
JFK				eS	Sn	**13 01 44.0**	**-5.2**
JYK	**Kaneyama**	**3.43**	**274**	P	Pn	**13 01 10.4**	**-0.8**
JYK				eS	Sn	**13 01 49.5**	**-1.5**
ERM	**Erimo**	**3.48**	**340**	eP	Pn	**13 01 12.3**	**+0.4**
ERM				e		13 01 53.0	
ERM	**Erimo**	**3.48**	**340**	ePn	Pn	**13 01 12.3**	**+0.4**
ERM				eSn	Sn	**13 01 53.0**	**+0.7**
JEM	**Erimo**	**3.48**	**340**	P	Pn	**13 01 11.6**	**-0.3**
JEM				S	Sn	**13 01 49.1**	**-3.2**
JTM	**Tenmabayashi**	**3.49**	**307**	P	Pn	**13 01 11.6**	**-0.4**
JTM				eS	Sn	**13 01 50.0**	**-2.5**
JAH	**Hinai**	**3.49**	**296**	P	Pn	**13 01 11.6**	**-0.4**
JAH				eS	Sn	**13 01 50.7**	**-1.8**
ONAJ	**Iwakimizuishiy**	**3.53**	**243**	P	Pn	**13 01 09.8**	**-2.8**
ONAJ				eS	Sn	**13 01 48.0**	**-5.5**
JYW	**Yuwa**	**3.61**	**284**	P	Pn	**13 01 13.5**	**-0.2**
JYW				S	Sn	**13 01 54.9**	**-0.7**
JNBK	**Urakawa-nobuka**	**3.84**	**337**	P	Pn	**13 01 16.8**	**0.0**
JNBK				eS	Sn	**13 02 00.1**	**-1.0**
JOT	**Ohata**	**3.87**	**314**	P	Pn	**13 01 16.9**	**-0.3**
JOT				eS	Sn	**13 01 59.5**	**-2.3**
JCH	**Churui**	**4.00**	**345**	P	Pn	**13 01 17.5**	**-1.5**
JCH				eS	Sn	**13 02 02.8**	**-2.3**
JKB	**Kayabe**	**4.23**	**319**	P	Pn	**13 01 22.0**	**-0.1**
JKB				eS	Sn	**13 02 07.0**	**-3.7**
JAR	**Ashorobuto**	**4.60**	**351**	P	Pn	**13 01 25.3**	**-2.0**
JAR				S	Sn	**13 02 15.4**	**-4.6**
NEM2	**Nemuro 2**	**4.67**	**9**	P	Pn	**13 01 25.9**	**-2.3**
NEM2				eS	Sn	**13 02 15.4**	**-6.2**
JTKR	**Abashiri--Toko**	**5.25**	**353**	P	Pn	**13 01 35.3**	**-0.9**
JTKR				eS	Sn	**13 02 32.0**	**-4.0**
YUK	**Yuzh-Kuril'sk**	**5.35**	**9**	eP	Pn	**13 01 35.7**	**-1.8**
YUK				eS	Sn	**13 02 34.0**	**-4.3**
YUK				pmax	pmax		
	comp=Z,434nm,0.5s						
YUK				pmax	pmax		
	comp=E,209nm,0.6s						
YUK				pmax	pmax		
	comp=N,179nm,0.4s						
SHO	**Shikotan**	**5.35**	**16**	eP	Pn	**13 01 34.7**	**-2.9**
SHO				eS	Sn	**13 02 31.5**	**-6.9**
SHO				pmax	pmax		
	comp=Z,560nm,0.6s						
SHO				pmax	pmax		
	comp=E,275nm,0.5s						
SHO				pmax	pmax		
	comp=N,180nm,0.6s						
ASAJ	**Asahikawa**	**5.60**	**344**	Pn	Pn	**13 01 40.9**	**-0.2**
	comp=N,3.9nm,0.3s,baz=199,slow=13,SNR=29						
ASAJ				Sn	Sn	**13 02 42.8**	**-1.7**
	comp=N,17nm,0.3s,baz=348,slow=31,SNR=8.8						
ASAJ	**Asahikawa**	**5.60**	**344**	ePn	Pn	**13 01 40.8**	**-0.2**
ASAJ				Sn	Sn	**13 02 42.8**	**-1.7**
ASAJ				eSn	Sn	**13 02 45.8**	**+1.3**
MJAR	**Matsushiro Arr**	**5.63**	**249**	Pn	Pn	**13 01 40.8**	**-0.7**
	comp=N,12nm,0.3s,baz=66,slow=11,SNR=88						
MJAR				Sn	Sn	**13 02 43.4**	**-2.1**
	comp=N,11nm,0.3s,baz=89,slow=26,SNR=5.5						
MJAR				LR	LR	13 04 06.1	
	comp=N,1μm,19.9s,baz=70,slow=41						
MAJO	**Matsushiro**	**5.63**	**249**	eP	Pn	**13 01 40.0**	**-1.5**
MAJO				e		13 02 42.6	
MAJO	**Matsushiro**	**5.63**	**249**	ePn	Pn	**13 01 40.0**	**-1.5**
MAJO				eSn	Sn	**13 02 42.6**	**-2.9**
MAT	**Matsushiro**	**5.63**	**249**	P	Pn	**13 01 41.1**	**-0.4**
MAT				S	Sn	**13 02 44.2**	**-1.3**

KUR Kuril'sk 6.88 19 *e*P **Pn 13 01 56.5 -2.1**
KUR *e*S **Sn 13 03 09.3 -6.8**
KUR pmax pmax
comp=Z,207nm,0.5s
KUR pmax pmax
comp=E,105nm,0.7s
KUR pmax pmax
comp=N,112nm,0.6s
JHJ2 Mitsune 6.90 217 *e*Pn **Pn 13 01 54.4 -4.4**
JHJ Hachijo jima 2 6.91 217 Pn **Pn 13 01 55.6 -3.4**
comp=N,58nm,0.3s,baz=280,slow=18,SNR=15
JHJ Sn Sn 13 03 05.7 -11
comp=N,111nm,0.3s,baz=66,slow=21,SNR=11
YSS Yuzh-Sakhalins 8.33 351⇑ *e*P **Pn 13 02 17.7 -0.7**
YSS *e*S **Sn 13 03 48.5 -3.1**
YSS pmax pmax
comp=Z,20nm,0.8s
YSS MLR MLR
comp=Z,900nm,13.0s
YSS MLR MLR
comp=N,700nm,14.0s
YSS Yuzh-Sakhalins 8.33 351 *e*Pn **Pn 13 02 16.7 -1.7**
VLA Vladivostok 10.66 298 *e*P **Pn 13 02 52.1 +1.7**
USRK Ussuriysk Ar. 11.01 304 Pn **Pn 13 02 56.6 +1.5**
comp=N,2.3nm,0.3s,baz=106,slow=12,SNR=52
CBIJ Chichi jima 11.82 191 Pn Pn 13 02 58.7 -7.6
JCJ Chichijima 11.82 191 Pn Pn 13 02 58.7 -7.6
comp=N,3.1nm,0.3s,baz=6.5,slow=22,SNR=11
JCJ LR LR 13 07 54.1
comp=N,38nm,18.9s,baz=30,slow=39
HABR Khabarovsk 11.98 327 *c*eP **Pn 13 03 06.2 -2.2**
HABR *e*S **Sn 13 05 17.8 -3.4**
HABR pmax pmax
comp=N,19nm,1.4s
HABR pmax pmax
comp=Z,45nm,1.4s
HABR pmax pmax
comp=E,44nm,1.4s
HABR MLR MLR
comp=Z,463nm,17.0s
TYV Tymovskoe 12.20 354 *e*P **Pn 13 03 10.0 -1.4**
TYV pmax pmax
comp=Z,13nm,0.8s
JNU Nakatsue 12.56 248 Pn **Pn 13 03 15.4 -1.0**
comp=Z,0.2nm,0.3s,baz=104,slow=8.3,SNR=3.1
JNU LR LR 13 08 16.8
comp=Z,703nm,21.0s,baz=91,slow=38
MDJ Mudanjiang 12.75 302 P **Pn 13 03 20.5 +1.6**
MDJ S **Sn 13 05 45.3 +5.4**
MDJ pmax pmax
comp=Z,65nm,0.9s
MDJ pmax pmax
comp=Z,290nm,5.4s
MDJ LR LR
comp=Z,630nm,16.1s
MDJ LR LR
comp=Z,820nm,14.8s
MDJ LR LR
comp=Z,1μm,14.8s
MDJ Mudanjiang 12.75 302 *e*Pn **Pn 13 03 19.1 +0.2**
comp=Z,131nm,1.4s
KSRS Korea Array 13.31 270 Pn **Pn 13 03 28.1 +1.4**
comp=Z,0.4nm,0.3s,baz=79,slow=13,SNR=11
KSRS LR LR 13 08 14.2
comp=Z,393nm,20.5s,baz=66,slow=36
KSAR Wonju Array Be 13.35 270 P **Pn 13 03 28.1 +1.0**
KSAR Wonju Array Be 13.35 270 Pn **Pn 13 03 28.1 +1.0**
KLR Kul'dur 14.02 323 Pn **Pn 13 03 35.5 -0.8**
comp=Z,0.1nm,0.3s,baz=130,slow=15,SNR=12
KLR LR LR 13 08 47.5
comp=Z,560nm,19.8s,baz=147,slow=36
SKR Severo-Kuril's 14.39 30 *e*P **Pn 13 03 41.5 +0.2**
SKR pmax pmax
comp=Z,220nm,1.0s
SKR MLR MLR
comp=Z,3μm,14.0s
CN2 Changchun 15.35 295 *e*P **P 13 03 57.3 -1.4**
CN2 *e*S **Sn 13 06 47.8 +4.3**
CN2 LR LR
comp=Z,600nm,14.0s
CN2 LR LR
comp=Z,600nm,14.0s
CN2 LR LR
comp=Z,500nm,13.0s
PETK Petropavlovsk- 16.91 28 P **Pn 13 04 11.2 -3.0**
comp=Z,0.1nm,0.3s,baz=198,slow=14,SNR=4.5
PETK LR LR 13 11 21.9
comp=Z,63nm,20.2s,baz=211,slow=39
HIA Hailar 20.74 309 *e*P **P 13 04 58.2 +0.2**
HIA pmax pmax
comp=Z,16nm,0.8s
HIA Hailar 20.74 309 *e*P **P 13 04 58.2 +0.2**
comp=Z,16nm,0.8s
MA2 Magadan 21.20 8 P **P 13 05 04.3 +1.5**
comp=Z,33nm,0.8s,baz=205,slow=14,SNR=9.7
MA2 LR LR 13 14 43.9
comp=Z,116nm,18.6s,baz=288,slow=41
TIA Tai'an 22.03 272⇑ P **P 13 05 11.0 -1.0**
TIA S **S 13 09 11.6 -2.2**
TIA pmax pmax
comp=Z,20nm,0.9s
TIA LR LR
comp=Z,350nm,9.3s
TIA LR LR
comp=Z,740nm,13.5s
TIA LR LR
comp=Z,700nm,13.5s
BJI Beijing 22.08 282 P **P 13 05 13.0 +0.6**
BJI pP **pP 13 05 18.3 -0.9**
BJI S **S 13 09 10.0 -4.6**
BJI sS **sS 13 09 23.3 -2.3**
BJI pmax pmax
comp=Z,13nm,1.4s
BJI pmax pmax
comp=Z,250nm,4.4s
BJI LR LR
comp=Z,270nm,13.8s
NJ2 Nanjing 22.09 260 *e*P **P 13 05 12.8 +0.2**
NJ2 S **S 13 09 18.9 +3.9**
NJ2 LR LR
comp=Z,720nm,18.7s
NJ2 LR LR
comp=Z,1μm,16.6s
NJ2 LR LR
comp=Z,870nm,16.9s
SEY Seymchan 24.66 8 P **P 13 05 39.3 +1.6**
comp=Z,28nm,0.9s,baz=186,slow=6.6,SNR=85
SEY Seymchan 24.66 8 *d*eP **P 13 05 39.8 +2.1**
GUMO Guam 25.06 180 LR LR 13 15 45.0
comp=Z,32nm,18.9s,baz=9.0,slow=37
YAK Yakutsk 25.08 343 P **P 13 05 42.4 +0.8**
comp=Z,48nm,0.6s,baz=145,slow=1.7,SNR=22
YAK LR LR 13 16 35.8
comp=Z,223nm,19.5s,baz=162,slow=39
YAK Yakutsk 25.08 343 *e*P **P 13 05 41.6 0.0**
YAK *e* 13 06 22.6
YAK *e* 13 09 12.0
YAK *e*S **S 13 09 59.9 -4.5**
YAK pmax pmax
comp=Z,41nm,0.8s
YAK pmax pmax
comp=N,15nm,1.0s
YAK pmax pmax
comp=E,6.0nm,1.0s
YAK pmax pmax
comp=Z,148nm,4.5s
YAK pmax pmax
comp=N,149nm,5.4s
YAK pmax pmax
comp=E,44nm,2.4s
YAK smax smax
comp=N,76nm,2.5s
YAK smax smax
comp=E,51nm,1.7s
YAK Yakutsk 25.08 343 *e*P **P 13 05 42.1 +0.5**
comp=E,57nm,0.7s
CIT Chita 25.39 312 *e*P **P 13 05 45.0 +0.5**
CIT *e* 13 06 17.4
CIT *e* 13 06 34.7
CIT pmax pmax
comp=Z,102nm,1.2s
HHC Hu-ho-hao-te 25.50 285 *e*P **P 13 05 46.3 +0.6**
HHC PP **PnPn 13 06 28.0 +6.5**
HHC S **S 13 10 10.6 -1.1**
HHC sS sS 13 10 26.4 +2.8
HHC pmax pmax
comp=Z,19nm,0.8s
HHC pmax pmax
comp=Z,180nm,4.4s
HHC LR LR
comp=Z,1μm,14.8s
HHC LR LR
comp=Z,1μm,14.4s
HHC LR LR
comp=Z,1μm,13.7s
QZH Quanzhou 26.02 246 *e*P **P 13 05 50.9 +0.4**
QZH *e*S **S 13 10 18.8 -1.1**
QZH LR LR
comp=Z,750nm,15.1s
QZH LR LR
comp=Z,510nm,18.2s
QZH LR LR
comp=Z,820nm,14.7s
BTO Baotou 26.69 285 *e*P **P 13 05 56.8 +0.3**
H11N2 WAKE ISLAND Hy 26.95 128 T T 13 34 00.1
baz=320,slow=74,SNR=26
H11N1 WAKE ISLAND Hy 26.96 128 T T 13 34 01.8
baz=320,slow=74,SNR=20
H11N3 WAKE ISLAND Hy 26.97 128 T T 13 34 01.6
baz=320,slow=74,SNR=27
BOD Bodaibo 27.59 324 *e*P **P 13 06 04.0 -0.3**
BOD pmax pmax
comp=Z,16nm,1.5s
H11S1 WAKE ISLAND Hy 27.77 130 T T 13 35 00.2
baz=322
H11S3 WAKE ISLAND Hy 27.77 130 T T 13 35 00.1
baz=322
H11S2 WAKE ISLAND Hy 27.78 130 T T 13 35 00.7
baz=322
ULN Ulaanbaatar 28.66 301 *c*eP **P 13 06 15.5 +1.4**
ULN pmax pmax
comp=Z,9.0nm,1.0s
ULN Ulaanbaatar 28.66 301 *e*P **P 13 06 13.6 -0.6**
comp=Z,9.5nm,1.0s
XAN Xi'an 29.10 272 P P 13 06 28.1 +10
XAN pP sP 13 06 34.8 +6.5
XAN pmax pmax
comp=Z,15nm,0.9s
SONM Songino Array 29.10 301 P **P 13 06 18.9 +0.9**
comp=Z,2.2nm,0.7s,baz=86,slow=8.8,SNR=15
SONM LR LR 13 18 21.2
comp=Z,344nm,20.5s,baz=116,slow=37
ENH Enshi 30.11 264 *e*P **P 13 06 26.0 -1.0**
comp=Z,34nm,0.8s
IRK Irkutsk 30.98 309 *e*P **P 13 06 37.7 +3.2**
IRK pmax pmax
comp=Z,30nm,2.0s
TLY Talaya 31.28 308 LR LR 13 19 43.5
comp=Z,311nm,19.1s,baz=94,slow=37
TLY Talaya 31.28 308 *e*P **P 13 06 36.0 -1.1**
TLY pmax pmax
comp=Z,11nm,1.0s
TLY MLR MLR
comp=Z,192nm,10.0s
ZAK Zakamensk 31.35 305 *e*P **P 13 06 38.7 +0.9**
ZAK *e* 13 09 29.1
ZAK pmax pmax
comp=Z,6.0nm,1.3s
ZAK pmax pmax
comp=Z,8.0nm,1.3s
ZAK pmax pmax
comp=Z,3.0nm,1.1s
BILL Bilibino 31.66 15 *e*P **P 13 06 40.8 +0.6**
BILL pmax pmax
comp=Z,50nm,1.0s
BILL Bilibino 31.66 15 *e*P **P 13 06 40.7 +0.5**
comp=Z,38nm,0.9s
LZH Lanzhou 32.40 278 *e*P **P 13 06 48.5 +1.2**
LZH pP pP 13 06 55.4 +0.8
LZH sP sP 13 06 59.1 +1.4
LZH PP **PnPn 13 07 53.3 -1.1**
LZH S **S 13 11 57.0 -3.4**
LZH pmax pmax
comp=Z,34nm,1.0s
LZH pmax pmax
comp=Z,86nm,4.5s
LZH LR LR
comp=Z,540nm,13.0s
LZH LR LR
comp=Z,690nm,14.5s
LZH LR LR
comp=Z,800nm,14.9s
MOY Mondy 32.91 308 *e*P **P 13 06 54.1 +2.5**
TIXI Tiksi 33.95 351 P **P 13 07 00.4 +0.2**
comp=Z,12nm,0.8s,baz=168,slow=6.4,SNR=37
TIXI PcP **PcP 13 09 37.6 -0.2**
comp=Z,4.6nm,1.0s,baz=94,slow=5.1,SNR=4.3
TIXI Tiksi 33.95 351 *c*e**P P 13 07 00.7 +0.5**
TIXI pmax pmax
comp=Z,19nm,1.0s
TIXI Tiksi 33.95 351 *e*P **P 13 07 00.4 +0.2**
comp=Z,16nm,0.9s
TIXI PcP **PcP 13 09 37.6 -0.2**
GYA Guiyang 34.10 260⇑ *i*P **P 13 07 01.8 -0.4**
GYA pP sP 13 07 11.0 -1.5
GYA PP **PP 13 08 17.6 -1.9**
GYA PcP **PcP 13 09 41.4 +2.1**
GYA S **S 13 12 26.8 -0.1**
GYA sS sS 13 12 39.5 +0.5
GYA SS **SnSn 13 14 33.0 -2.1**
GYA ScS **ScS 13 17 22.3 -2.6**
GYA pmax pmax
comp=Z,10.0nm,0.8s
GYA pmax pmax
comp=Z,120nm,5.4s
GYA LR LR
comp=Z,500nm,16.6s
GYA LR LR
comp=Z,460nm,17.0s
GYA LR LR
comp=Z,480nm,17.0s
CD2 Chengdu 34.31 270 P **P 13 07 02.3 -1.6**
CD2 sP sP 13 07 13.3 -0.9
CD2 PP **PP 13 08 20.0 -1.7**
CD2 S **S 13 12 28.1 -1.8**
CD2 sS sS 13 12 41.3 -0.7
CD2 pmax pmax
comp=Z,20nm,0.5s
CD2 pmax pmax
comp=Z,160nm,5.9s
CD2 LR LR
comp=Z,440nm,15.0s
CD2 LR LR
comp=Z,350nm,16.8s
GTA Gaotai 34.61 286 *e*P **P 13 07 07.1 +0.6**
GTA pP pP 13 07 14.5 +0.7
GTA sP sP 13 07 17.9 +1.1
GTA PcP **PcP 13 09 41.8 +1.3**
GTA S **S 13 12 32.8 -1.7**
GTA sS sS 13 12 44.6 -2.0
GTA SS **SnSn 13 14 41.8 -5.3**
GTA pmax pmax
comp=Z,62nm,6.2s
GTA LR LR
comp=Z,350nm,15.4s
GTA LR LR
comp=Z,740nm,14.7s
GTA LR LR
comp=Z,750nm,14.5s
GAMB Gambell 35.88 31 *e*P **P 13 07 17.5 +0.5**
comp=Z,4.3nm,0.9s
GAMB *e*PcP **PcP 13 09 44.1 +0.6**
QIZ Qiongzhong 36.03 247 P **P 13 07 19.4 +0.7**
QIZ S **S 13 12 54.8 -1.5**
QIZ LR LR
comp=Z,110nm,15.4s
QIZ LR LR
comp=Z,100nm,16.6s
KMI Kunming 37.82 262 P **P 13 07 34.9 +0.7**
KMI pP pP 13 07 41.6 0.0
KMI sP sP 13 07 44.8 +0.2
KMI PP **PnPn 13 09 01.6 -0.3**
KMI pmax pmax
comp=Z,12nm,0.5s
KMI pmax pmax
comp=Z,98nm,4.0s
KMI LR LR
comp=Z,360nm,15.2s
KMI LR LR
comp=Z,370nm,15.5s
KMI LR LR
comp=Z,560nm,15.9s
MYLDM Lahad Datu 41.02 222 *e*P **P 13 08 01.8 +1.2**
comp=Z,52nm,1.2s
JAY Jayapura 41.23 186 P **P 13 08 01.9 -0.5**
comp=Z,2.4nm,0.8s,baz=343,slow=21,SNR=9.2
SKNT Sakolnakorn 41.61 250 P **P 13 08 06.5 +1.0**
comp=Z,16nm,1.1s
WMQ Urumqi 42.44 296 P **P 13 08 13.1 +1.0**
WMQ pP pP 13 08 19.8 +0.2
WMQ sP sP 13 08 23.8 +1.2
WMQ PP **PP 13 09 54.6 +4.1**
WMQ ScP **ScP 13 13 55.8 +1.9**
WMQ S **S 13 14 33.4 +1.0**
WMQ sS sS 13 14 47.3 +2.6
WMQ SS **SS 13 17 36.3 -5.4**
WMQ pmax pmax
comp=Z,4.0nm,0.6s
WMQ pmax pmax
comp=Z,96nm,4.2s
WMQ LR LR
comp=Z,57nm,19.4s
WMQ LR LR
comp=Z,40nm,19.4s
WMQ LR LR
comp=Z,79nm,25.4s
TT01 Tatalina 42.50 36 *e*P **P 13 08 13.3 +1.1**
TTA Tatalina 42.50 36 *e*P **P 13 08 10.2 -2.2**
TTA pmax pmax
comp=Z,26nm,1.7s
TTA Tatalina 42.50 36 *e*P **P 13 08 10.2 -2.2**
comp=Z,26nm,1.7s
SVW2 Sparrevohn 42.55 38 *e*P **P 13 08 13.5 +0.8**
comp=Z,27nm,1.1s
ZAA0 Zalesovo Array 42.74 311 *e*P **P 13 08 14.8 +0.5**
ZALV Zalesovo Beam 42.74 311 P **P 13 08 15.1 +0.8**
comp=Z,8.9nm,0.6s,baz=91,slow=7.7,SNR=30
ZALV PcP **PcP 13 10 05.8 +0.3**
comp=Z,9.2nm,0.6s,baz=95,slow=3.3,SNR=12
ZALV LR LR 13 26 55.3
comp=Z,222nm,18.9s,baz=70,slow=37
NRIK Noril'sk 42.85 334 P **P 13 08 15.9 +1.0**
comp=Z,12nm,0.9s,baz=104,slow=8.3,SNR=16
NRIK LR LR 13 27 19.9
comp=Z,358nm,21.2s,baz=109,slow=38
NRIK Noril'sk 42.85 334 P **P 13 08 16.0 +1.0**
NRIK pmax pmax
comp=Z,12nm,0.9s
NRIK MLR MLR
comp=Z,358nm,21.2s
RABL Rabaul 43.27 169 *e*P **P 13 08 17.9 -1.1**
comp=Z,58nm,0.9s
CMAI Chiengmai2 43.53 258 P **P 13 08 22.4 +1.2**
comp=Z,10nm,1.2s,comp=Z,497nm
NVS Novosibirsk 43.59 312 *e*P **P 13 08 21.2 0.0**
OHAK Old Harbor 43.70 44 *e*P **P 13 08 22.2 +0.2**
comp=Z,23nm,0.7s
LAMP Lampang 43.91 256 P **P 13 08 25.3 +1.2**
comp=Z,5.0nm,0.9s
RSO Redoubt South 43.92 39 *e*P **P 13 08 23.3 -0.7**
KDAK Kodiak Island 44.06 43 *e*P **P 13 08 23.8 -1.0**
KDAK *e* 13 10 10.9
KDAK pmax pmax
comp=Z,59nm,0.8s
KDAK Kodiak Island 44.06 43 *e*P **P 13 08 23.8 -1.0**
comp=Z,59nm,0.8s
KDAK *e*PcP **PcP 13 10 10.9 +1.1**
PPLA Purkeypile 44.25 36 *e*P **P 13 08 25.9 -0.6**
comp=Z,44nm,1.4s
PPLA *e*PcP **PcP 13 10 10.5 -0.1**
CMMT Chiang Mai 44.26 257 P **P 13 08 27.6 +0.7**
comp=Z,12nm,1.2s
CHTO Chiang Mai 44.26 257 P **P 13 08 27.8 +0.8**
comp=Z,44nm,1.6s
CHTO Chiang Mai 44.26 257 *e*P **P 13 08 25.9 -1.0**
CHTO pmax pmax
comp=Z,13nm,1.3s
CHTO Chiang Mai 44.26 257 *e*P **P 13 08 25.9 -1.0**
comp=Z,13nm,1.3s
SPU Mount Spurr 44.27 38 *e*P **P 13 08 26.5 -0.1**
CAST Castle Rocks 44.32 35 *e*P **P 13 08 28.5 +1.6**
comp=Z,18nm,1.2s
CMAR Chiang Mai Arr 44.47 256 P **P 13 08 28.8 +0.2**
comp=Z,1.6nm,0.7s,baz=45,slow=7.6,SNR=17
CMAR LR LR 13 30 38.7
comp=Z,99nm,18.2s,baz=47,slow=41
KTH Kantishna Hill 44.84 35 *e*P **P 13 08 30.7 -0.5**
comp=Z,23nm,1.0s
BRLK Bradley Lake 44.86 40 *e*P **P 13 08 32.4 +1.0**
comp=Z,9.3nm,0.8s
MLY Manley 44.99 33 *e*P **P 13 08 33.7 +1.4**
comp=Z,16nm,0.9s
COLD Coldfoot 45.37 30 *e*P **P 13 08 36.5 +1.3**
comp=Z,18nm,0.7s
RC01 Rabbit Creek A 45.39 38 *e*P **P 13 08 36.2 +0.7**
comp=Z,19nm,0.9s
MK01 Makanchi Array 45.46 301 *e*P **P 13 08 36.7 +0.4**
MK31 Makanchi Array 45.46 301 *i* P **P 13 08 36.1 -0.2**
MK31 pmax pmax
comp=Z,10.0nm,0.8s
MK31 Makanchi Array 45.46 301 *e*P **P 13 08 36.9 +0.7**
MKAR Makanchi Array 45.46 301 P **P 13 08 36.8 +0.6**
comp=Z,10nm,0.9s,baz=83,slow=9.5,SNR=36
MKAR PcP **PcP 13 10 14.8 -0.1**
comp=Z,4.7nm,0.9s,baz=68,slow=3.3,SNR=4.4
MKAR LR LR 13 28 19.2
comp=Z,278nm,20.2s,baz=67,slow=37
SEW Seward 45.57 40 *e*P **P 13 08 37.2 +0.4**
comp=Z,20nm,1.0s
CHBT CHBT 45.58 247 P **P 13 08 38.7 +1.3**
comp=Z,21nm,1.1s
MAKZ Makanchi 45.67 301 *e*P **P 13 08 38.6 +0.7**
MAKZ pmax pmax
comp=Z,10.0nm,0.9s
MAKZ Makanchi 45.67 301 *e*P **P 13 08 38.6 +0.7**
comp=Z,10nm,0.9s
PMR Palmer 45.67 38 *e*P **P 13 08 36.4 -1.2**
PMR pmax pmax
comp=Z,23nm,1.1s
PMR Palmer 45.67 38 *e*P **P 13 08 36.4 -1.2**
comp=Z,24nm,1.1s
MCK McKinley 45.73 35 *e*P **P 13 08 37.2 -1.0**
MCK *e* 13 10 14.8
MCK pmax pmax
comp=Z,14nm,1.0s
MCK McKinley 45.73 35 *e*P **P 13 08 37.2 -1.0**
comp=Z,14nm,1.0s
MCK *e*PcP **PcP 13 10 14.8 -0.8**
RND Reindeer 45.77 35 *e*P **P 13 08 37.5 -1.0**
RND pmax pmax
comp=Z,30nm,1.2s
RND Reindeer 45.77 35 *e*P **P 13 08 37.5 -1.0**
comp=Z,30nm,1.2s
SML Sawmill 46.04 37 *e*P **P 13 08 40.6 -0.1**
SML *e* 13 10 16.6
SML pmax pmax
comp=Z,31nm,1.1s
SML Sawmill 46.04 37 *e*P **P 13 08 40.6 -0.1**
comp=Z,31nm,1.1s
SML *e*PcP **PcP 13 10 16.6 -0.1**
MDM Murphy Dome 46.05 33 *e*P **P 13 08 41.2 +0.5**
comp=Z,24nm,0.9s
WRH Wood River Hil 46.11 34 *e*P **P 13 08 40.0 -1.0**
comp=Z,12nm,1.0s
COLA College 46.22 33 *e*P **P 13 08 42.4 +0.5**
COLA pmax pmax
comp=Z,15nm,0.8s
COLA College 46.22 33 *e*P **P 13 08 42.4 +0.5**
comp=Z,15nm,0.8s
CCB Clear Creek Bu 46.23 33 *e*P **P 13 08 42.4 +0.3**
comp=Z,6.8nm,1.2s
DHY Denali Highway 46.45 36 *e*P **P 13 08 43.2 -0.7**
comp=Z,34nm,1.7s
SCM Sheep Creek Mo 46.52 37 *e*P **P 13 08 43.7 -0.8**
SCM pmax pmax
comp=Z,35nm,1.1s
SCM Sheep Creek Mo 46.52 37 *e*P **P 13 08 43.6 -0.8**
comp=Z,35nm,1.1s
ILAR Eielson Array 46.63 33 P **P 13 08 45.3 +0.1**
comp=Z,9.2nm,0.7s,baz=262,slow=6.6,SNR=125
SBUM Sibu 46.75 228 *e*P **P 13 08 45.9 -0.8**
comp=Z,11nm,1.4s
KURK Kurchatov 46.97 307 P **P 13 08 48.2 +0.2**
KURK pmax pmax
comp=Z,36nm,0.7s
KURK Kurchatov 46.97 307 *e*P **P 13 08 47.8 -0.2**
comp=Z,21nm,0.8s
KLU Klutina 47.21 38 *e*P **P 13 08 51.0 +1.1**

comp=Z,28nm,1.1s
FYU Fort Yukon 47.30 31 *e*P **P 13 08 52.4 +2.1**
comp=Z,93nm,1.6s
DIV Divide 47.31 38 *e*P **P 13 08 50.7 0.0**
comp=Z,37nm,1.1s
PAX Paxson 47.32 36 *e*P **P 13 08 50.6 -0.1**
PAX *e* 13 10 21.9
PAX pmax pmax
comp=Z,9.0nm,0.9s
PAX Paxson 47.32 36 *e*P **P 13 08 50.6 -0.1**
comp=Z,8.9nm,0.9s
PAX *e*PcP **PcP 13 10 21.9 +0.6**
EYAK Cordova Ski Ar 47.38 39 *e*P **P 13 08 51.1 +0.1**
comp=Z,33nm,1.2s
BMRM Bremner River 47.89 38 P **P 13 08 53.5 -1.6**
comp=Z,22nm,1.1s
BMRM *e*PcP **PcP 13 10 24.0 +0.7**
DOT Dot Lake 47.91 35 *e*P **P 13 08 55.1 -0.1**
comp=Z,75nm,1.7s
DOT *e*PcP **PcP 13 10 22.6 -0.7**
RAGM Ragged Mountai 47.92 39 *e*P **P 13 08 54.4 -0.9**
comp=Z,72nm,1.6s
MENT Mentasta 48.12 36 *e*P **P 13 08 57.7 +0.9**
comp=Z,14nm,1.0s
PDGK Podgornoye 48.32 297 P **P 13 08 59.4 +0.9**
PDGK pmax pmax
comp=Z,7.0nm,0.9s
EGAK Eagle 49.08 33 *e*P **P 13 09 02.5 -1.7**
comp=Z,19nm,1.4s
GUN Gumba 49.60 276 *e*P **P 13 09 09.9 +0.8**
comp=Z,142nm,0.9s
KKN Kakani 50.13 276 *e*P **P 13 09 13.9 +1.0**
comp=Z,102nm,1.0s
PKIN Phulchoki 50.14 276 *e*P **P 13 09 13.4 +0.4**
comp=Z,18nm,0.7s
DMN Daman 50.35 276 *e*P **P 13 09 15.4 +0.8**
GKN Gorkha 50.53 277 *e*P **P 13 09 16.7 +0.9**
comp=Z,162nm,0.9s
TKM2 Tokmak 2 51.14 298 *e*P **P 13 09 20.8 +0.5**
TKM2 pmax pmax
comp=Z,43nm,1.5s
TKM2 Tokmak 2 51.14 298 *e*P **P 13 09 20.8 +0.5**
comp=Z,43nm,1.5s
BVA0 Borovoye Array 51.38 312 P **P 13 09 19.9 -1.8**
BVA0 pmax pmax
comp=Z,14nm,0.9s
BRVK Borovoye 51.43 312 *e*P **P 13 09 20.9 -1.2**
BRVK *e* 13 10 35.9
BRVK pmax pmax
comp=Z,18nm,0.9s
BRVK Borovoye 51.43 312 *e*P **P 13 09 20.9 -1.2**
comp=Z,18nm,0.9s
BRVK *e*PcP **PcP 13 10 35.9 -0.4**
KOLN Koldanda 51.44 277 *e*P **P 13 09 23.7 +0.9**
comp=Z,49nm,0.9s
OTUK Ortayu 51.57 306 P **P 13 09 23.7 +0.5**
OTUK pmax pmax
comp=Z,22nm,1.4s
INK Inuvik 51.65 28 P **P 13 09 24.3 +0.8**
comp=Z,8.3nm,0.7s,baz=297,slow=6.6,SNR=72
INK Inuvik 51.65 28 *e*P **P 13 09 24.7 +1.2**
INK pmax pmax
comp=Z,9.0nm,0.7s
INK Inuvik 51.65 28 *e*P **P 13 09 24.6 +1.2**
comp=Z,9.2nm,0.7s
PKDT Phuket 51.75 246 P **P 13 09 26.5 +1.6**
comp=Z,36nm,1.1s,comp=Z,4µm
PYUN Piuthan 51.76 278 *e*P **P 13 09 26.1 +1.0**
comp=Z,197nm,1.0s
FRU Bishkek 51.84 298 *e*P **P 13 09 26.0 +0.6**
AAK Ala-Archa 52.00 298 *e*P **P 13 09 26.8 +0.1**
AAK pmax pmax
comp=Z,24nm,1.8s
AAK Ala-Archa 52.00 298 *e*P **P 13 09 26.8 +0.1**
comp=Z,24nm,1.8s
ZRNK Zerenda 52.20 312 *e*P **P 13 09 28.1 +0.2**
ZRNK pmax pmax
comp=Z,24nm,1.0s
ZRNK Zerenda 52.20 312 *e*P **P 13 09 28.1 +0.2**
comp=Z,24nm,1.0s
IPM Ipoh 52.28 241 *e*P **P 13 09 25.9 -3.0**
comp=Z,11nm,1.0s
IPM *e*ScP **ScP 13 14 31.9 -3.6**
COEN Coen 52.45 182 *e*P **P 13 09 29.1 -0.8**
comp=Z,20nm,1.0s
EKS2 Erkin-Say 52.48 298 *e*P **P 13 09 31.1 +0.8**
EKS2 pmax pmax
comp=Z,7.0nm,1.0s
EKS2 Erkin-Say 52.48 298 *e*P **P 13 09 31.1 +0.8**
comp=Z,7.1nm,1.0s
SKAG Skagway 52.72 39 *e*P **P 13 09 30.6 -0.9**
comp=Z,17nm,1.2s
MTN Manton Dam 52.88 197 *e*P **P 13 09 31.9 -1.3**
comp=Z,71nm,0.8s
MNAS Manas 53.42 299 P **P 13 09 37.2 0.0**
MNAS pmax pmax
comp=Z,11nm,0.8s
SFK Sufi-Kurgan 53.68 295 P **P 13 09 40.0 +0.8**
SFK pmax pmax
comp=Z,10.0nm,0.7s
KK31 Karatay Array 54.55 300 *i* P **P 13 09 44.9 -0.4**
KK31 pmax pmax
comp=Z,7.0nm,0.9s
KKAR Karatay Array 54.55 300 *e*P **P 13 09 45.8 +0.5**
KKAR Karatay Array 54.55 300 *e*P **P 13 09 45.8 +0.5**
DLBC Dease Lake 55.64 39 P **P 13 09 52.6 -0.4**
comp=Z,12nm,1.1s
SOKR Solikamsk 56.57 322 *e*P **P 13 09 58.8 -0.6**
SOKR pmax pmax
comp=Z,8.0nm,0.6s
SOKR MLR MLR
comp=Z,255nm,17.0s
ARU Arti 56.82 319 LR LR 13 36 17.6
comp=Z,136nm,19.5s,baz=83,slow=38
ARU Arti 56.82 319 *d i* P **P 13 10 02.0 +0.7**
ARU S **S 13 17 54.2 +1.3**
ARU SS **SS 13 21 36.5 -4.0**
ARU pmax pmax
comp=Z,17nm,0.5s
ARU MLR MLR
comp=Z,482nm,16.0s
ARU Arti 56.82 319 *e*P **P 13 10 01.1 -0.2**
comp=Z,24nm,0.7s
GSI Gunungsitoli 56.94 241 *e*P **P 13 10 01.1 -1.6**
comp=Z,22nm,0.9s
LEM Lembang 56.94 226 P **P 13 10 07.0 +4.1**
comp=Z,19nm,0.6s,baz=43,slow=3.6,SNR=5.4
LEM Lembang 56.94 226 P **P 13 10 07.0 +4.1**
CTA Charters Tower 58.54 178 P **P 13 10 12.2 -1.5**
comp=Z,9.5nm,0.9s,baz=356,slow=7.9,SNR=9.5
CTAO Charters Tower 58.54 178 *e*P **P 13 10 10.4 -3.3**
CTAO pmax pmax
comp=Z,15nm,1.2s
CTAO Charters Tower 58.54 178 *e*P **P 13 10 10.4 -3.3**
comp=Z,15nm,1.2s
AB31 Akbulak array 58.85 310 *i* P **P 13 10 14.5 -1.2**
AB31 pmax pmax
comp=Z,19nm,1.2s
ABKAR Akbulak array 58.85 310 *e*P **P 13 10 16.4 +0.7**
WRAB Tennant Creek 59.18 191 *ce*P **P 13 10 16.7 -1.5**
WRAB pmax pmax
comp=Z,139nm,1.0s
WRAB Tennant Creek 59.18 191 *e*P **P 13 10 16.5 -1.7**
comp=Z,44nm,0.8s
WRA Warramunga Arr 59.19 191 P **P 13 10 16.4 -1.8**
comp=Z,41nm,0.8s,baz=13,slow=7.2,SNR=142
KBL Kabul 59.25 291 *e*P **P 13 10 19.3 +0.3**
KBL pmax pmax
comp=Z,8.0nm,0.8s
KBL Kabul 59.25 291 *e*P **P 13 10 19.3 +0.3**
comp=Z,7.7nm,0.8s
FITZ Fitzroy Crossi 59.32 201 P **P 13 10 18.5 -0.6**
comp=Z,16nm,1.0s,baz=10,slow=7.5,SNR=18
FITZ Fitzroy Crossi 59.32 201 *e*P **P 13 10 19.0 -0.2**
comp=Z,16nm,0.9s
KBS Kingsbay 59.41 351 *e*P **P 13 10 20.5 +1.4**
KBS pmax pmax
comp=Z,131nm,1.3s
AKTO Aktyubinsk 59.48 312 P **P 13 10 20.7 +0.7**
comp=Z,9.9nm,0.8s,baz=61,slow=13
AKTO Aktyubinsk 59.48 312 P **P 13 10 19.8 -0.3**
AKTO pmax pmax
comp=Z,14nm,1.0s
RES Resolute Bay 60.27 15 *e*P **P 13 10 25.7 +0.6**
RES pmax pmax
comp=Z,20nm,1.0s
RES Resolute Bay 60.27 15 *e*P **P 13 10 25.6 +0.6**
comp=Z,20nm,1.0s
HYB Hyderabad 60.87 270 *i* P **P 13 10 30.0 0.0**
HYB *e* 13 10 39.5
YKW3 Yellowknife Ar 60.95 31 *e*P **P 13 10 30.2 +0.3**
comp=Z,27nm,1.6s
YKA Yellowknife Ar 60.99 31 P **P 13 10 30.6 +0.4**
comp=Z,5.1nm,0.8s,baz=299,slow=6.7,SNR=87
YKB5 Yellowknife Ar 60.99 31 *e*P **P 13 10 29.8 -0.3**
LVZ Lovozero 61.62 336 *e*P **P 13 10 35.4 +1.0**
LVZ pmax pmax
comp=Z,35nm,2.5s
TMCR Tamitsa 62.49 332 *e*P **P 13 10 40.8 +0.6**
TMCR pmax pmax
comp=Z,45nm,1.0s
ASAR Alice Springs 62.91 191 P **P 13 10 42.2 -1.3**
comp=Z,13nm,0.8s,baz=11,slow=5.9,SNR=133
ARCES ARCESS Array B 63.31 340 P **P 13 10 46.3 +0.7**
comp=Z,4.3nm,0.8s,baz=48,slow=6.7,SNR=3.6
ARCES LR LR 13 43 45.4
comp=Z,135nm,18.1s,baz=59,slow=41
KLMR Klimovskoe 63.70 328 *e*P **P 13 10 46.1 -2.2**
KLMR *e**PP **pP 13 10 56.9 +0.8**
KLMR *e* 13 11 23.4
KLMR pmax pmax
comp=Z,15nm,0.8s
MBWA Marble Bar 64.04 206 *e*P **P 13 10 50.1 -0.9**
comp=Z,15nm,0.9s
B05A Bryant 64.22 48 P **P 13 10 52.6 +0.7**
baz=300
DAG Danmarks Havn 64.28 356 *i* P **P 13 10 52.3 +0.4**
comp=Z,21nm,1.1s
DAG Danmarks Havn 64.28 356 *i* P **P 13 10 52.3 +0.4**
DAG pmax pmax
comp=Z,27nm,1.1s
MSF Maaselka 64.58 336 P **P 13 10 55.6 +1.6**
MSF pmax pmax
comp=Z,18nm,1.0s
GEYT Alibeck 65.30 300 P **P 13 10 59.6 +0.4**
comp=Z,9.0nm,0.7s,baz=30,slow=3.6,SNR=14
GEYT LR LR 13 40 44.7
comp=Z,82nm,20.4s,baz=135,slow=37
JOF Joensuu 65.67 333 P **P 13 11 02.4 +1.3**
JOF pmax pmax
comp=Z,28nm,1.2s
B08A Colville Reser 65.75 47 *e*P **P 13 11 03.0 +1.1**
comp=Z,39nm,1.9s
I03D Drain, OR 65.78 53 P **P 13 11 03.1 +0.9**
baz=301
H04A Detroit Lake 65.98 51 *e*P **P 13 11 05.0 +1.5**
comp=Z,13nm,0.9s
G05D Wamic, OR 66.22 50 P **P 13 11 05.6 +0.6**
baz=302
I04A Tendick Farm, 66.31 52 P **P 13 11 06.1 +0.4**
baz=302
L02D Cave Junction, 66.42 54 P **P 13 11 07.2 +0.9**
baz=302
I05D Terrebonne, OR 66.68 51 P **P 13 11 09.0 +0.9**
baz=302
NEW Newport 67.06 46 P **P 13 11 10.8 +0.5**
baz=303
NEW Newport 67.06 46 *e*P **P 13 11 11.3 +1.0**
NEW pmax pmax
comp=Z,9.0nm,0.9s
NEW Newport 67.06 46 *e*P **P 13 11 11.3 +1.0**
comp=Z,8.9nm,0.9s
M02C Callahan 67.30 55 P **P 13 11 12.8 +0.8**
baz=302
J05D Fort Rock, OR 67.31 52 P **P 13 11 12.9 +0.8**
baz=302
N02D Trinity Center 67.62 55 P **P 13 11 14.6 +0.5**
baz=302
M04C Macdoel 67.73 54 P **P 13 11 15.3 +0.4**
baz=303
K05A Summer Lake 67.82 53 *e*P **P 13 11 17.4 +2.0**
comp=Z,15nm,0.9s
VRH Novokhopyorsk 68.06 319 *e*P **P 13 11 15.5 -1.0**
VRH pmax pmax
comp=Z,10.0nm,0.8s
OBN Obninsk 68.28 324 *ce*P **P 13 11 18.6 +0.8**
OBN *e* 13 11 26.2
OBN *e* 13 11 43.1
OBN *e* 13 13 50.1
OBN pmax pmax
comp=Z,38nm,1.0s
WALA Waterton Lakes 68.39 44 *e*P **P 13 11 20.0 +1.2**
comp=Z,8.1nm,0.8s
FIA1 FINESS Array S 68.50 333 *e*P **P 13 11 19.6 +0.5**
FINES FINESS Array B 68.50 333 P **P 13 11 19.4 +0.3**
comp=Z,26nm,0.6s,baz=46,slow=8.2,SNR=83
FINES LR LR 13 43 15.0
comp=Z,280nm,21.9s,baz=46,slow=38
FINES FINESS Array B 68.50 333 *i* P **P 13 11 19.8 +0.7**
FINES pmax pmax
comp=Z,26nm,0.6s
VAF Ylistaro 68.55 335 P **P 13 11 20.9 +1.5**
VAF pmax pmax
comp=Z,23nm,1.0s
O03D Paynes Creek 68.56 55 P **P 13 11 20.1 +0.1**
baz=303
LPSR Galich'ya Gora 68.65 321 *e*P **P 13 11 20.4 +0.2**
LPSR pmax pmax
comp=Z,20nm,0.8s
BMO Blue Mountains 68.83 49 *e*P **P 13 11 23.0 +1.4**
comp=Z,5.8nm,0.9s
SUMG Summit 68.95 1 *i* P **P 13 11 23.4 +1.1**
comp=Z,20nm,0.9s
SUMG Summit 68.95 1 *e*P **P 13 11 23.4 +1.1**
SUMG pmax pmax
comp=Z,20nm,0.9s
SUMG Summit 68.95 1 *e*P **P 13 11 23.4 +1.1**
comp=Z,20nm,0.9s
ARMA Armidale 69.11 174 *e*P **P 13 11 23.8 +0.5**
comp=Z,14nm,1.0s
ORV Oroville 69.16 56 *e*P **P 13 11 24.4 +0.8**
ORV pmax pmax
comp=Z,10.0nm,1.4s
ORV Oroville 69.16 56 *e*P **P 13 11 24.4 +0.8**
comp=Z,10nm,1.4s
SWMT Swartz Lake 69.22 45 *e*P **P 13 11 25.2 +1.2**
VSR Storozhevoye 69.36 320 *e*P **P 13 11 24.8 +0.2**
VSR pmax pmax
comp=Z,10.0nm,0.6s
WVOR Wild Horse Val 69.37 52 *e*P **P 13 11 26.2 +1.1**
WVOR pmax pmax
comp=Z,12nm,1.3s
WVOR Wild Horse Val 69.37 52 *e*P **P 13 11 26.2 +1.1**
comp=Z,12nm,1.3s
MSO Missoula 69.64 46 P **P 13 11 26.7 +0.1**
baz=305
MSO Missoula 69.64 46 *e*P **P 13 11 27.5 +0.9**
comp=Z,9.5nm,1.2s
VSU Vasula 70.29 330 *de*P **P 13 11 30.9 +0.7**
VSU pmax pmax
comp=Z,131nm,1.2s
STKA Stephens Creek 70.33 183 P **P 13 11 29.7 -0.9**
comp=Z,6.9nm,0.8s,baz=357,slow=7.5,SNR=10.0
MFID Camas Ranch 70.52 50 *e*P **P 13 11 33.0 +0.9**
comp=Z,24nm,1.6s
SCO Scoresbysund 70.65 355 *i* P **P 13 11 33.1 +0.9**
SCO Scoresbysund 70.65 355 *i* P **P 13 11 33.1 +0.9**
CMB Columbia Colle 70.73 56 *e*P **P 13 11 34.1 +0.7**
CMB pmax pmax
comp=Z,18nm,1.4s
CMB Columbia Colle 70.73 56 *e*P **P 13 11 34.1 +0.7**
comp=Z,18nm,1.4s
FFC Flin Flon 70.82 34 *e*P **P 13 11 34.2 +0.6**
FFC pmax pmax
comp=Z,22nm,0.9s
FFC Flin Flon 70.82 34 *e*P **P 13 11 34.2 +0.6**
comp=Z,22nm,0.9s
LRM Linoklin Ridge 71.07 46 *e*P **P 13 11 36.5 +0.9**
WAKR Walker 71.08 56 *e*P **P 13 11 37.2 +1.6**
EGMT Eagleton 71.23 43 P **P 13 11 36.5 +0.2**
baz=307
EGMT Eagleton 71.23 43 *e*P **P 13 11 36.9 +0.6**
comp=Z,14nm,0.8s
HLID Hailey 71.27 49 P **P 13 11 36.8 +0.1**
baz=306
HLID Hailey 71.27 49 *e*P **P 13 11 38.1 +1.4**
comp=Z,4.8nm,1.0s
FCC Fort Churchill 71.27 28 *e*P **P 13 11 36.3 +0.1**
FCC pmax pmax
comp=Z,11nm,0.8s
FCC Fort Churchill 71.27 28 *e*P **P 13 11 36.3 +0.1**
comp=Z,11nm,0.8s
BMN Battle Mountai 71.38 53 *e*P **P 13 11 38.8 +1.4**
BMN pmax pmax
comp=Z,38nm,1.7s
BMN Battle Mountai 71.38 53 *e*P **P 13 11 38.8 +1.4**
comp=Z,38nm,1.7s
BOZ Bozeman (W) 71.64 46 P **P 13 11 39.4 +0.5**
baz=307
BOZ Bozeman (W) 71.64 46 *e*P **P 13 11 36.1 -2.8**
BOZ pmax pmax
comp=Z,7.0nm,0.8s
BOZ Bozeman (W) 71.64 46 *e*P **P 13 11 36.1 -2.8**
comp=Z,6.9nm,0.8s
ZEI Tsey 71.72 310 *e*P **P 13 11 39.1 -0.4**
ZEI pmax pmax
comp=Z,13nm,0.8s
KIV Kislovodsk 71.75 312 *de*P **P 13 11 40.7 +1.2**
KIV *e* 13 11 58.1
KIV *e* 13 14 20.4
KIV pmax pmax
comp=Z,52nm,1.0s
KIV Kislovodsk 71.75 312 *e*P **P 13 11 40.6 +1.1**
comp=Z,48nm,1.0s
KBZ Khabaz 71.76 312 P **P 13 11 40.9 +1.5**
comp=Z,23nm,0.9s,baz=58,slow=2.1,SNR=31
KBZ LR LR 13 45 24.9
comp=Z,146nm,20.1s,baz=64,slow=38
NVAR Mina Array Bea 71.85 55 P **P 13 11 41.3 +0.9**
comp=Z,6.2nm,0.8s,baz=291,slow=6.5,SNR=32
NVAR LR LR 13 34 59.6
comp=Z,270nm,21.2s,baz=1.0,slow=29
NEY Neytrino 72.15 311 *e*P **P 13 11 43.0 +1.0**
NEY pmax pmax
comp=Z,3.0nm,1.1s
QLMT Earthquake Lak 72.24 47 *e*P **P 13 11 44.0 +1.4**
YMR Madison River 72.60 46 *e*P **P 13 11 46.3 +1.6**
comp=Z,6.3nm,0.9s
NACGM Naroch 72.71 328 *e* **P 13 11 45.0 +0.1**
YFT Old Faithful 72.81 47 *e*P **P 13 11 48.9 +2.9**
comp=Z,10nm,1.1s
LKWY Lake 72.98 46 P **P 13 11 45.8 -1.3**
LKWY pmax pmax
comp=Z,9.0nm,1.2s
LKWY Lake 72.98 46 P **P 13 11 45.8 -1.3**
comp=Z,9.2nm,1.2s
H17A Grant Village 72.99 46 P **P 13 11 49.3 +2.2**
baz=308
H17A Grant Village 72.99 46 *e*P **P 13 11 49.8 +2.7**
comp=Z,17nm,1.1s
IMW Indian Meadow 73.09 47 *e*P **P 13 11 49.8 +2.0**
comp=Z,14nm,1.1s
FLWY Flagg Ranch 73.11 47 *e*P **P 13 11 50.0 +2.2**
comp=Z,17nm,1.4s
RLMT Red Lodge 73.28 45 P **P 13 11 48.8 0.0**
baz=308
RLMT Red Lodge 73.28 45 *e*P **P 13 11 50.1 +1.4**
comp=Z,11nm,1.3s
GRAC Grapevine Rang 73.29 56 P **P 13 11 49.5 +0.8**
baz=306
MOOW Moose Ponds 73.29 47 *e*P **P 13 11 50.4 +1.5**
comp=Z,10nm,1.1s
HVU Hansel Valley 73.30 50 *e*P **P 13 11 50.5 +1.6**
HVU pmax pmax
comp=Z,8.0nm,0.9s
HVU Hansel Valley 73.30 50 *e*P **P 13 11 50.5 +1.6**
comp=Z,8.0nm,0.9s
ISA Isabella, Lake 73.34 58 P **P 13 11 49.2 +0.1**
baz=306
ARVC Arvin 73.42 58 P **P 13 11 50.0 +0.5**
baz=306
LOHW Long Hollow 73.45 47 *e*P **P 13 11 51.5 +1.7**
comp=Z,8.2nm,1.2s
SNOW Snow King Moun 73.46 47 *e*P **P 13 11 51.9 +2.0**
comp=Z,11nm,1.1s
REDW Red Top Meadow 73.46 47 *e*P **P 13 11 51.5 +1.7**
comp=Z,10nm,1.1s
DAC Darwin (Calif) 73.56 57 *e*P **P 13 11 51.5 +1.0**
DAC *e* 13 11 59.9
DAC pmax pmax
comp=Z,7.0nm,1.1s
DAC Darwin (Calif) 73.56 57 *e*P **P 13 11 51.5 +1.0**
comp=Z,7.1nm,1.1s
DAC *e* 13 11 59.9
NB2 NORSAR Subarra 73.59 338 P **P 13 11 50.4 +0.3**
comp=Z,1.7nm,0.6s,baz=38,slow=5.9
NOA NORSAR Array B 73.59 338 P **P 13 11 50.4 +0.3**
comp=Z,4.9nm,0.9s,baz=38,slow=5.8,SNR=7.2
NOA LR LR 13 50 04.9
comp=Z,45nm,18.8s,baz=30,slow=40
R11A Troy Canyon, C 73.63 54 P **P 13 11 51.2 +0.3**
baz=307
R11A Troy Canyon, C 73.63 54 *e*P **P 13 11 51.7 +0.8**
comp=Z,11nm,1.3s
BGU Big Grassy Mou 73.66 51 *e*P **P 13 11 52.5 +1.4**
comp=Z,4.6nm,1.0s
AHID Auburn Hatcher 73.69 48 *e*P **P 13 11 52.5 +1.3**
comp=Z,5.8nm,0.8s
SOC Sochi 73.69 313 *e*P **P 13 11 53.0 +2.1**
SOC *e* 13 14 34.9
SOC *e*S **S 13 21 21.2 +1.2**
SOC *e*SSS SSS 13 29 12.5
SOC pmax pmax
comp=Z,28nm,0.8s
MPMC Manual Prospec 73.76 57 P **P 13 11 52.4 +0.7**
baz=306,SNR=13
DGMT Dagmar 73.84 40 P **P 13 11 51.9 +0.2**
baz=311
DGMT Dagmar 73.84 40 *e*P **P 13 11 52.4 +0.7**
comp=Z,17nm,0.8s
FURC Furnace Creek, 73.93 56 P **P 13 11 53.1 +0.8**
baz=306,SNR=6.4
LAO LASA Array 73.94 43 P **P 13 11 53.3 +0.9**
baz=310
LAO LASA Array 73.94 43 *e*P **P 13 11 53.5 +1.1**
comp=Z,25nm,1.1s
LRMC Laurel Mtn Rad 73.97 57 P **P 13 11 53.1 +0.2**
baz=306,SNR=5.8
TPNV Topopah Spring 74.04 55 P **P 13 11 53.9 +0.6**
baz=307,SNR=11
TPNV Topopah Spring 74.04 55 *e*P **P 13 11 54.1 +0.8**
TPNV pmax pmax
comp=Z,15nm,1.1s
TPNV Topopah Spring 74.04 55 *e*P **P 13 11 54.0 +0.8**
comp=Z,15nm,1.1s
A25A Svangstu Ranch 74.08 39 P **P 13 11 53.3 +0.2**
baz=311
EDW2 Edwards Air Fo 74.12 58 P **P 13 11 54.5 +0.9**
baz=306,SNR=5.9
DUG Dugway, Tooele 74.24 51 P **P 13 11 55.2 +0.9**
baz=308
DUG Dugway, Tooele 74.24 51 *e*P **P 13 11 55.4 +1.0**
DUG pmax pmax
comp=Z,11nm,1.0s
DUG Dugway, Tooele 74.24 51 *e*P **P 13 11 55.4 +1.0**
comp=Z,11nm,1.0s
AKASG Malin Array Be 74.52 323 P **P 13 11 56.0 +0.4**
comp=Z,21nm,1.0s,baz=42,slow=6.0,SNR=49
AKASG LR LR 13 48 55.5
comp=Z,82nm,19.1s,baz=40,slow=39
AKASG Malin Array Be 74.52 323 P **P 13 11 56.0 +0.4**
KIEV Kiev 74.53 323 *c i* P **P 13 11 56.3 +0.7**
KIEV pmax pmax
comp=Z,25nm,1.0s
KIEV Kiev 74.53 323 *e*P **P 13 11 56.4 +0.7**
comp=Z,19nm,0.9s
CTU Camp Tracy 74.57 50 *e*P **P 13 11 58.1 +1.8**
comp=Z,10nm,1.0s
BW06 Boulder Array 74.58 47 P **P 13 11 56.4 0.0**
baz=309
BW06 Boulder Array 74.58 47 *e*P **P 13 11 56.8 +0.4**
comp=Z,12nm,1.3s
PDAR Pinedale Array 74.58 47 P **P 13 11 56.8 +0.4**
comp=Z,3.0nm,0.7s,baz=271,slow=2.1,SNR=36
PSUT Pine Spring 74.60 53 *e*P **P 13 11 57.9 +1.3**
comp=Z,9.2nm,1.1s
A26A Wade Farm, Ken 74.64 39 P **P 13 11 56.4 0.0**
baz=312
SHOC Shoshone, Teco 74.64 56 P **P 13 11 57.2 +0.6**
baz=307
GSC Goldstone, Bar 74.66 57 P **P 13 11 57.0 +0.2**
baz=307,SNR=5.3
GSC Goldstone, Bar 74.66 57 *e*P **P 13 11 57.9 +1.1**
GSC pmax pmax
comp=Z,11nm,1.1s
GSC Goldstone, Bar 74.66 57 *e*P **P 13 11 57.9 +1.1**
comp=Z,11nm,1.1s
BFSC Mount Baldy Ra 74.72 58 P **P 13 11 57.8 +0.6**
baz=307,SNR=5.5

JLU **Jordanelle** 74.81 50 *e*P P 13 11 59.3 +1.5
comp=Z,10.0nm,1.1s
NLU **North Lily Min** 74.83 51 *e*P P 13 11 59.3 +1.4
comp=Z,7.2nm,1.0s
A27A **Ledoux Ranch,** 74.99 39 P P 13 11 58.9 +0.5
baz=312
MPU **Maple Canyon** 75.06 51 *e*P P 13 12 00.7 +1.5
comp=Z,10nm,1.0s
TUQ **Turquoise Moun** 75.15 56 P P 13 12 00.4 +0.7
baz=307,SNR=11
D25A **Fairfield** 75.16 41 P P 13 12 00.2 +0.7
baz=311
HEC **Hector,Ludlow** 75.25 57 P P 13 12 00.9 +0.7
baz=307,SNR=6.2
C26A **Wahner Farm, P** 75.33 40 P P 13 12 00.9 +0.5
baz=312
MURC **Murrieta** 75.41 59 P P 13 12 01.7 +0.5
baz=307
A28A **Rude Farm, Bot** 75.49 38 P P 13 12 01.8 +0.5
baz=313
E25A **Miller Ranch,** 75.54 41 P P 13 12 02.0 +0.3
baz=312
MSU **Marysvale** 75.66 52 *e*P P 13 12 04.2 +1.5
MSU **Marysvale** 75.66 52 *e*P P 13 12 04.2 +1.5
D26A **Manning** 75.69 41 P P 13 12 03.0 +0.5
baz=312
C27A **Sayler Ranch,** 75.70 40 P P 13 12 03.0 +0.5
baz=312
GMRC **Granite Mounta** 75.72 57 P P 13 12 03.5 +0.5
baz=307,SNR=8.7
B28A **Dugan Ranch, T** 75.76 39 P P 13 12 03.2 +0.4
baz=313
TMUT **Trail Mountain** 75.76 51 *e*P P 13 12 04.8 +1.4
comp=Z,5.7nm,0.9s
F25A **Bowman** 75.89 42 P P 13 12 03.9 +0.2
baz=312
PFO **Pinyon Flats O** 75.90 58 P P 13 12 04.3 +0.4
baz=307,SNR=5.1
PFO **Pinyon Flats O** 75.90 58 *e*P P 13 12 04.4 +0.4
PFO pmax pmax
comp=Z,11nm,1.0s
PFO **Pinyon Flats O** 75.90 58 *e*P P 13 12 04.4 +0.4
comp=Z,11nm,1.0s
LDFC **Landfair** 75.90 56 *e*P P 13 12 05.5 +1.6
comp=Z,24nm,1.1s
LCMT **Little Creek M** 75.91 54 *e*P P 13 12 05.6 +1.5
comp=Z,14nm,1.0s
P17A **Butcher Ranch,** 75.94 51 *e*P P 13 12 05.6 +1.4
comp=Z,19nm,1.0s
BELC **Belle Mtn. Jos** 75.97 58 P P 13 12 04.6 +0.2
baz=307
A29A **Manning Farm,** 75.98 38 P P 13 12 04.6 +0.5
baz=314,SNR=10
E26A **Carlson Angus** 76.05 41 P P 13 12 04.9 +0.4
baz=312
D27A **Center** 76.09 40 P P 13 12 05.4 +0.6
baz=313
P18A **Preston Nutter** 76.14 50 *e*P P 13 12 06.9 +1.4
comp=Z,12nm,1.1s
KNB **Kanab** 76.18 54 *e*P P 13 12 07.3 +1.7
KNB pmax pmax
comp=Z,16nm,1.1s
KNB **Kanab** 76.18 54 *e*P P 13 12 07.3 +1.7
comp=Z,16nm,1.1s
B29A **Wagenman Farm,** 76.24 38 P P 13 12 06.0 +0.4
baz=314
C28A **Hausauer Farms** 76.25 39 P P 13 12 06.4 +0.8
baz=313
BORG **Borgarnes** 76.26 354 *i* P P 13 12 06.3 +1.0
SRU **San Rafael Swe** 76.30 51 *e*P P 13 12 07.3 +1.0
SRU pmax pmax
comp=Z,21nm,0.9s
SRU **San Rafael Swe** 76.30 51 *e*P P 13 12 07.2 +1.0
comp=Z,21nm,0.9s
F26A **Lodgepole** 76.36 42 P P 13 12 06.4 +0.1
baz=312
MONP2 **Monument Peak** 76.36 59 P P 13 12 07.2 +0.5
baz=307
K22A **Casper** 76.38 46 P P 13 12 07.0 +0.3
baz=310
K22A **Casper** 76.38 46 *e*P P 13 12 07.5 +0.9
comp=Z,14nm,1.0s
MMU **Miners Mountai** 76.39 52 *e*P P 13 12 07.5 +0.5
G25A **Newell** 76.40 42 P P 13 12 06.8 +0.2
baz=312
A30A **Hoffart Farm,** 76.41 37 P P 13 12 07.0 +0.5
baz=314
IRM **Iron Mountain** 76.44 57 P P 13 12 07.5 +0.5
baz=308,SNR=7.8
D28A **Regan** 76.52 40 P P 13 12 07.8 +0.6
baz=313
E27A **Carson** 76.53 41 P P 13 12 07.8 +0.5
baz=313
BC3 **Big Chuckawall** 76.54 58 P P 13 12 07.5 -0.2
baz=308,SNR=5.1
MDND **Maddock** 76.54 39 P P 13 12 07.7 +0.4
baz=314
MDND **Maddock** 76.54 39 *e*P P 13 12 08.3 +1.0
comp=Z,36nm,1.0s
ULM **Lac du Bonnet** 76.61 35 P P 13 12 07.9 +0.3
comp=Z,9.0nm,1.0s,baz=307,slow=5.5,SNR=6.6
ULM **Lac du Bonnet** 76.61 35 *e*P P 13 12 07.7 +0.2
comp=Z,9.4nm,0.9s
F27A **Lemmon** 76.68 41 P P 13 12 08.4 +0.2
baz=312
B30A **Myrvik Farm, E** 76.74 38 P P 13 12 08.4 0.0
baz=314,SNR=5.1
G26A **Maurine** 76.77 42 P P 13 12 09.0 +0.3
baz=312
RSSD **Black Hills** 76.78 44 P P 13 12 09.1 +0.1
baz=312
RSSD **Black Hills** 76.78 44 *e*P P 13 12 09.5 +0.5
RSSD pmax pmax
comp=Z,6.0nm,1.0s
RSSD **Black Hills** 76.78 44 *e*P P 13 12 09.5 +0.5
comp=Z,6.0nm,1.0s
PDMCI **Parker Dam,Lak** 77.00 56 P P 13 12 11.1 +1.0
baz=308
O20A **White River Ci** 77.01 49 P P 13 12 10.6 +0.3
baz=310
O20A **White River Ci** 77.01 49 *e*P P 13 12 11.3 +1.0
comp=Z,15nm,1.0s
I25A **Rochford** 77.02 44 P P 13 12 10.4 +0.2
baz=312
G27A **Dupree** 77.06 42 P P 13 12 10.3 0.0
baz=313
D29A **Pettibone, Tap** 77.09 39 P P 13 12 10.4 0.0
baz=314
Y12C **Blythe** 77.09 57 P P 13 12 11.0 +0.3
baz=308,SNR=6.3
Y12C **Blythe** 77.09 57 *e*P P 13 12 11.9 +1.3
comp=Z,13nm,0.9s
BSD **Bornholm Skovb** 77.15 333 ⇓*i*P P 13 12 10.8 +0.3
comp=Z,21nm,1.0s
BSD **Bornholm Skovb** 77.15 333 ⇓*i*P P 13 12 10.8 +0.3
BSD pmax pmax
comp=Z,21nm,1.0s
C30A **Mose, Pekin** 77.19 38 P P 13 12 10.8 -0.1
baz=314,SNR=6.4
A32A **Rocking H Ranc** 77.27 36 P P 13 12 11.4 0.0
baz=315
F28A **McLaughlin** 77.32 41 P P 13 12 11.3 -0.4
baz=313
GLA **Glamis** 77.32 58 P P 13 12 12.5 +0.5
baz=308
J25A **Sunshine Ranch** 77.40 44 P P 13 12 11.9 -0.4
baz=312
E29A **Napoleon** 77.41 40 P P 13 12 12.2 0.0
baz=314
D30A **Buchanan** 77.47 39 P P 13 12 12.5 0.0
baz=314
I26A **New Underwood** 77.48 43 P P 13 12 13.1 +0.4
baz=312
H27A **Howes** 77.48 42 P P 13 12 12.9 +0.2
baz=313
C31A **Landman Farms,** 77.49 38 P P 13 12 12.5 -0.1
baz=315
B32A **Ashes, Strandq** 77.63 37 P P 13 12 13.4 0.0
baz=316,SNR=12
A33A **Warroad** 77.77 36 P P 13 12 13.7 -0.5
baz=316,SNR=8.0
G28A **Parade** 77.79 41 P P 13 12 14.6 +0.2
baz=313
E30A **Jud** 77.82 39 P P 13 12 14.6 +0.1
baz=314
N23A **Red Feather La** 77.85 47 P P 13 12 15.9 +0.8
baz=311,SNR=9.6
N23A **Red Feather La** 77.85 47 *e*P P 13 12 16.6 +1.6
comp=Z,21nm,0.9s
I27A **Quinn** 77.88 43 P P 13 12 15.2 +0.3
baz=313
H28A **Mission Ridge** 78.01 42 P P 13 12 16.2 +0.6
baz=313
AGMN **Agassiz Nation** 78.01 36 P P 13 12 15.1 -0.3
baz=316,SNR=6.1
AGMN **Agassiz Nation** 78.01 36 *e*P P 13 12 15.3 -0.1
comp=Z,19nm,1.1s
D31A **Mcclaflin, Tow** 78.02 38 P P 13 12 15.7 +0.2
baz=315
WUAZ **Wupatki** 78.03 54 P P 13 12 16.9 +0.8
baz=309,SNR=13
WUAZ **Wupatki** 78.03 54 *e*P P 13 12 17.2 +1.2
comp=Z,18nm,1.0s
KWP **Kalwaria Pacla** 78.24 326 *e*P P 13 12 18.2 +1.5
KWP **Kalwaria Pacla** 78.24 326 ⇑*i*P P 13 12 18.4 +1.7
KWP **Kalwaria Pacla** 78.24 326 ⇑P P 13 12 18.4 +1.7
E31A **Nome** 78.28 39 P P 13 12 16.7 -0.4
baz=315,SNR=6.7
SMCO **Snowmass** 78.37 49 *e*P P 13 12 19.1 +0.9
comp=Z,7.6nm,0.9s
I28A **Midland** 78.39 42 P P 13 12 17.7 0.0
baz=313,SNR=7.2
B34A **Aery, Baudette** 78.43 36 P P 13 12 17.6 -0.2
baz=317
C33A **Trail** 78.44 37 P P 13 12 18.0 +0.1
baz=316
J27A **Elkhorn Farm,** 78.46 43 P P 13 12 18.3 +0.2
baz=313
H29A **Onida** 78.46 41 P P 13 12 18.2 +0.1
baz=314
BUR08 **Bucovina Ar. S** 78.55 323 *e*P P 13 12 19.8 +1.2
BURAR **Bucovina Array** 78.56 323 ⇑*i*P P 13 12 19.7 +1.0
BURAR **Bucovina Array** 78.56 323 ⇑P P 13 12 19.7 +1.0
F31A **Hecla** 78.59 39 P P 13 12 18.8 0.0
baz=315
G30A **Faulkton** 78.66 40 P P 13 12 19.1 0.0
baz=314
MVCO **Mesa Verde** 78.73 51 P P 13 12 20.4 +0.4
baz=310,SNR=6.1
MVCO **Mesa Verde** 78.73 51 *e*P P 13 12 21.3 +1.3
comp=Z,13nm,0.9s
J28A **Allard Ranch,** 78.75 43 P P 13 12 19.7 -0.1
baz=313
ISCO **Idaho Springs** 78.76 48 P P 13 12 20.2 0.0
baz=311
ISCO **Idaho Springs** 78.76 48 *e*P P 13 12 21.6 +1.4
ISCO pmax pmax
comp=Z,6.0nm,0.9s
ISCO **Idaho Springs** 78.76 48 *e*P P 13 12 21.6 +1.4
comp=Z,6.0nm,0.9s
I29A **Vivian Onida** 78.83 42 P P 13 12 19.9 -0.3
baz=314
C34A **RKJ Ranch, Bem** 78.92 36 P P 13 12 19.7 -0.9
baz=317
KOLS **Kolonicke sedl** 78.94 325 *e*P P 13 12 21.8 +1.2
KOLS pmax pmax
comp=Z,9.0nm,1.2s
KOLS **Kolonicke sedl** 78.94 325 *e*P P 13 12 21.8 +1.2
B35A **Bob, Littlefor** 78.94 35 P P 13 12 20.4 -0.2
baz=317
STHS **Stebnicka Huta** 79.03 326 *e*P P 13 12 22.7 +1.6
STHS pmax pmax
comp=Z,7.0nm,1.1s
STHS **Stebnicka Huta** 79.03 326 *e*P P 13 12 22.7 +1.6
OJC **Ojcow** 79.05 328 *e*P P 13 12 22.1 +0.9
OJC **Ojcow** 79.05 328 *e*P P 13 12 22.6 +1.4
OJC pmax pmax
comp=Z,22nm,1.0s
OJC **Ojcow** 79.05 328 *e*P P 13 12 22.6 +1.4
comp=Z,22nm,1.0s
G31A **Conde** 79.06 40 P P 13 12 22.0 +0.6
baz=315
UZH **Uzhgorod** 79.16 325 *e*P P 13 12 18.0 -3.8
UZH *e* 13 12 23.2
UZH *e* 13 12 29.0
UZH *e* 13 12 31.6
D34A **Park Rapids** 79.20 37 P P 13 12 21.6 -0.5
baz=316,SNR=5.7
E33A **Westby DABS, E** 79.23 38 P P 13 12 21.8 -0.5
baz=316,SNR=5.1
J29A **Okreek** 79.25 42 P P 13 12 22.4 0.0
baz=314
W18A **Petrified Fore** 79.31 53 P P 13 12 23.7 +0.6
baz=310
W18A **Petrified Fore** 79.31 53 *e*P P 13 12 24.7 +1.6
comp=Z,12nm,1.2s
C35A **Jirik Farms, M** 79.31 36 P P 13 12 22.1 -0.6
baz=317,SNR=5.3
214A **Organ Pipe Nat** 79.33 58 P P 13 12 23.8 +0.6
baz=309
214A **Organ Pipe Nat** 79.33 58 *e*P P 13 12 21.4 -1.8
comp=Z,30nm,1.0s
I30A **Oacoma** 79.36 41 P P 13 12 23.1 +0.1
baz=314
S22A **4UR Ranch, Cre** 79.39 50 P P 13 12 24.6 +0.9
baz=311,SNR=10
S22A **4UR Ranch, Cre** 79.39 50 *e*P P 13 12 25.5 +1.8
comp=Z,14nm,1.0s
NIE **Niedzica** 79.44 327 *e*P P 13 12 25.0 +1.6
NIE **Niedzica** 79.44 327 *e*P P 13 12 25.0 +1.6
F33A **5 Mile Ranch,** 79.57 38 P P 13 12 23.7 -0.4
baz=316,SNR=5.4
Q24A **Divide** 79.58 48 P P 13 12 24.8 +0.1
baz=312
Q24A **Divide** 79.58 48 *e*P P 13 12 25.4 +0.7
comp=Z,8.1nm,1.1s
E34A **Wadena** 79.62 37 P P 13 12 24.9 +0.5
baz=317
BR131 **Keskin Array S** 79.65 313 *e*P P 13 12 26.0 +1.1
BRTR **Keskin Array B** 79.65 313 P P 13 12 25.6 +0.8
comp=Z,3.1nm,0.9s,baz=103,slow=2.7,SNR=10
BRTR LR LR 13 52 46.8
comp=Z,49nm,18.1s,baz=58,slow=40
C36A **Pine Crest Far** 79.79 35 P P 13 12 25.1 -0.1
baz=318
E35A **Pequot Lakes** 79.95 37 P P 13 12 26.3 +0.1
baz=317
KSP **Ksiaz** 79.99 330 *e*P P 13 12 27.4 +1.2
KSP **Ksiaz** 79.99 330 *e*P P 13 12 27.5 +1.2
LANS **Liptovska Anna** 80.00 327 *e*P P 13 12 28.3 +1.9
LANS **Liptovska Anna** 80.00 327 *e*P P 13 12 28.3 +1.9
BR231 **Keskin MP Arra** 80.06 314 *e*P P 13 12 26.6 -0.4
KECS **Kecovo** 80.07 326 *e*P P 13 12 27.9 +1.2
KECS pmax pmax
comp=Z,3.0nm,1.0s
KECS **Kecovo** 80.07 326 *e*P P 13 12 27.9 +1.2
F34A **Alexandria** 80.10 38 P P 13 12 26.6 -0.4
baz=317
K30A **Basset** 80.13 42 P P 13 12 26.9 -0.3
baz=314
H33A **Prehn Over Nor** 80.18 40 P P 13 12 27.4 0.0
baz=316,SNR=5.4
SDCO **Great Sand Dun** 80.19 49 P P 13 12 29.1 +1.1
baz=312,SNR=8.1
SDCO **Great Sand Dun** 80.19 49 *e*P P 13 12 29.3 +1.4
comp=Z,4.7nm,0.9s
VOIR 80.22 322 ⇓*i*P P 13 12 29.3 +1.6
VOIR 80.22 322 ⇓P P 13 12 29.3 +1.6
MORC **Moravsky Berou** 80.32 328 ⇓*i*P P 13 12 29.6 +1.5
MORC **Moravsky Berou** 80.32 328 ⇓P P 13 12 29.6 +1.5
MORC **Moravsky Berou** 80.32 328 *e*P P 13 12 29.6 +1.5
comp=Z,39nm,0.9s
DRGR 80.33 324 ⇑*i*P P 13 12 29.3 +1.0
DRGR 80.33 324 ⇑P P 13 12 29.3 +1.0
DPC **Dobruska-Polom** 80.37 329 *e*P P 13 12 30.0 +1.6
DPC *e*pP **sP** 13 12 39.3 +0.1
DPC **Dobruska-Polom** 80.37 329 *e*P P 13 12 30.0 +1.6
DPC *e* 13 12 39.3
UPC **Upice** 80.37 330 *e*P P 13 12 29.6 +1.3
UPC **Upice** 80.37 330 *e*P P 13 12 29.6 +1.3
F35A **Swanville** 80.39 38 P P 13 12 28.5 0.0
baz=317
KRLC **Kraliky** 80.40 329 *e*P P 13 12 29.9 +1.3
KRLC *e*pP **sP** 13 12 39.2 -0.2
KRLC **Kraliky** 80.40 329 *e*P P 13 12 29.9 +1.3
KRLC *e* 13 12 39.2
TUC **Tucson** 80.44 56 P P 13 12 29.8 +0.7
baz=310
TUC **Tucson** 80.44 56 *e*P P 13 12 30.4 +1.2
TUC pmax pmax
comp=Z,7.0nm,1.0s
TUC **Tucson** 80.44 56 *e*P P 13 12 30.4 +1.2
comp=Z,7.3nm,1.0s
ARR **Arges** 80.47 322 ⇑*i*P P 13 12 31.6 +2.5
E36A **McGregor** 80.52 36 P P 13 12 29.3 +0.1
baz=318
C38A **Sawbill Land.** 80.52 35 P P 13 12 29.3 +0.1
baz=319
K31A **O'Neill** 80.62 42 P P 13 12 29.9 +0.1
baz=315,SNR=6.2
PSZ **Piszkesteto** 80.75 326 ⇓*i*P P 13 12 31.8 +1.3
PSZ **Piszkesteto** 80.75 326 *e*P P 13 12 32.2 +1.7
PSZ pmax pmax
comp=Z,17nm,1.1s
PSZ **Piszkesteto** 80.75 326 *e*P P 13 12 32.2 +1.7
comp=Z,17nm,1.1s
VYHS **Vyhne** 80.77 327 *e*P P 13 12 31.9 +1.4
VYHS pmax pmax
comp=Z,5.0nm,1.1s
VYHS **Vyhne** 80.77 327 *e*P P 13 12 31.9 +1.4
BRG **Berggiesshubel** 80.88 331 *e*P P 13 12 31.7 +0.7
comp=Z,11nm,1.1s
BRG **Berggiesshubel** 80.88 331 *e*P P 13 12 31.7 +0.7
BRG pmax pmax
comp=Z,11nm,1.1s
F36A **Milaca** 80.88 37 P P 13 12 31.1 0.0
baz=318
CLL **Collm** 80.88 332 ⇓*i*P P 13 12 31.4 +0.4
comp=Z,23nm,1.1s
CLL *e* 13 12 41.0
CLL LmV 13 50 00.0
comp=Z,200nm,20.3s
CLL **Collm** 80.88 332 ⇓*i*P P 13 12 31.4 +0.4
CLL pmax pmax
comp=Z,23nm,1.1s
CLL MLR MLR
comp=Z,200nm,20.3s
CLL **Collm** 80.88 332 *e*P P 13 12 31.5 +0.4
comp=Z,21nm,0.9s
L31A **Butterfield Fa** 80.89 42 P P 13 12 31.5 +0.2
baz=315
G35A **Watkins** 80.89 38 P P 13 12 31.6 +0.4
baz=317
PVCC **Panska Ves** 80.91 330 *e*P P 13 12 32.8 +1.6
PVCC **Panska Ves** 80.91 330 *e*P P 13 12 32.8 +1.6
ECSD **EROS Data Cent** 80.92 40 P P 13 12 31.2 -0.3
baz=316,SNR=9.2
ECSD **EROS Data Cent** 80.92 40 *e*P P 13 12 31.8 +0.3
comp=Z,14nm,0.9s
H35A **Sunnyside Ranc** 81.11 38 P P 13 12 32.5 +0.1
baz=317
T25A **Trinidad** 81.23 49 P P 13 12 33.6 +0.1
baz=312,SNR=13
T25A **Trinidad** 81.23 49 *e*P P 13 12 34.8 +1.3
comp=Z,15nm,0.9s
GOPC **GO Pecny, Ondr** 81.32 330 *e*P P 13 12 34.7 +1.3
GOPC **GO Pecny, Ondr** 81.32 330 *e*P P 13 12 34.7 +1.3
GZR **Gura Zlata** 81.34 323 ⇑*i*P P 13 12 34.6 +0.9
GZR **Gura Zlata** 81.34 323 ⇑P P 13 12 34.6 +0.9
PRU **Pruhonice** 81.36 330 *e*P P 13 12 34.9 +1.3
PRU **Pruhonice** 81.36 330 *e*P P 13 12 34.9 +1.3
CLZ **Clausthal** 81.39 333 P P 13 12 35.1 +1.3
CLZ pmax pmax
comp=Z,31nm,1.1s
LAZ **Ladron** 81.40 53 *e*P P 13 12 36.0 +1.6
ANMO **Albuquerque** 81.46 52 P P 13 12 35.7 +1.0
baz=312
ANMO **Albuquerque** 81.46 52 *e*P P 13 12 36.3 +1.6
ANMO pmax pmax
comp=Z,13nm,1.1s
ANMO **Albuquerque** 81.46 52 *e*P P 13 12 36.3 +1.6
comp=Z,13nm,1.1s
TREC **Trest** 81.53 329 *e*P P 13 12 35.8 +1.2
TREC **Trest** 81.53 329 *e*P P 13 12 35.8 +1.2
K33A **Hardington** 81.54 41 P P 13 12 35.1 +0.3
baz=316
H36A **Jesseland, He** 81.64 38 P P 13 12 36.3 +1.1
baz=318
SPMN **Marine on St.** 81.69 37 P P 13 12 36.3 +0.8
baz=318
BGNE **Belgrade** 81.79 43 P P 13 12 36.3 +0.2
baz=315
BNM **Barren Site** 81.88 53 *e*P P 13 12 38.2 +1.2
MOX **Moxa** 81.93 332 P P 13 12 37.6 +0.9
MOX pmax pmax
comp=Z,10.0nm,1.1s
NKC **Novy Kostel** 81.96 331 *e*P P 13 12 37.9 +1.1
NKC **Novy Kostel** 81.96 331 *e*P P 13 12 37.9 +1.1
M33A **Taylor Creek F** 82.18 42 P P 13 12 38.5 +0.3
baz=316
121A **Cookes Peak, D** 82.22 54 P P 13 12 39.9 +1.2
baz=311
121A **Cookes Peak, D** 82.22 54 *e*P P 13 12 38.3 -0.5
comp=Z,23nm,1.2s
I37A **Lemond, Waseca** 82.31 38 P P 13 12 39.3 +0.6
baz=318
L34A **Svendsen Farm,** 82.32 41 P P 13 12 38.7 -0.2
baz=316
RAYN **Ar Rayn** 82.41 294 *e*P P 13 12 39.6 -0.1
comp=Z,8.8nm,1.0s
KHC **Kasperske Hory** 82.42 330 *e*P P 13 12 40.4 +1.1
KHC *e*pP **sP** 13 12 49.8 -0.3
KHC **Kasperske Hory** 82.42 330 *e*P P 13 12 40.6 +1.3
KHC pmax pmax
comp=Z,5.0nm,0.8s
KHC **Kasperske Hory** 82.42 330 *e*P P 13 12 40.6 +1.3
comp=Z,4.9nm,0.8s
CONA **Conrad Observa** 82.46 328 *i* P P 13 12 40.7 +1.2
comp=Z,11nm,1.0s,SNR=6.5
M34A **Aspy Farms, Fr** 82.55 42 P P 13 12 40.4 +0.3
baz=316
GEC2 **GERESS Array S** 82.60 330 *e*P P 13 12 41.2 +0.9
GEC2 pmax pmax
comp=Z,5.0nm,0.8s
GEC2 **GERESS Array S** 82.60 330 *e*P P 13 12 41.2 +0.9
comp=Z,4.7nm,0.8s
GERES **GERESS Array B** 82.60 330 P P 13 12 40.6 +0.3
comp=Z,3.5nm,0.7s,baz=33,slow=5.1,SNR=27
GERES LR LR 13 53 18.3
comp=Z,102nm,18.1s,baz=43,slow=38
GEA0 **GERESS Array S** 82.61 330 *e*P P 13 12 40.7 +0.4
PKSM **Moragy** 82.61 326 ⇑*i*P P 13 12 40.8 +0.5
PKSM **Moragy** 82.61 326 ⇑P P 13 12 40.8 +0.5
I38A **Scanlan Farm,** 82.80 38 P P 13 12 41.0 -0.3
baz=319
P32A **Huiting Farm,** 82.82 44 P P 13 12 41.2 -0.3
baz=315
GRFO **Grafenberg** 82.86 332 *e*P P 13 12 43.1 +1.6
GRFO pmax pmax
comp=Z,21nm,1.0s
GRFO **Grafenberg** 82.86 332 *e*P P 13 12 43.1 +1.6
comp=Z,21nm,1.0s
SCHQ **Schefferville** 82.93 18 LR LR 13 50 52.8
comp=Z,24nm,20.8s,baz=2.0,slow=37
M35A **Neola** 83.03 41 P P 13 12 42.8 +0.2
baz=317
N34A **Lincoln** 83.07 42 P P 13 12 42.4 -0.4
baz=316
L36A **Harm Buss Farm** 83.09 40 P P 13 12 42.9 +0.1
baz=317
PPT **Papeete** 83.10 119 LR LR 13 40 21.5
comp=Z,80nm,21.7s,baz=316,slow=29
PPT2 **Papeete2** 83.11 119 *e*LR LR 13 38 21.7
comp=Z,245nm,23.0s
K37A **Belmond** 83.12 39 P P 13 12 43.0 +0.1
baz=318
ARSA **Arzberg** 83.14 328 *i* P P 13 12 43.9 +0.9
comp=Z,6.3nm,0.8s
VTS **Vitosha** 83.20 321 ⇑*i*P P 13 12 45.1 +1.5
VTS **Vitosha** 83.20 321 *e*P P 13 12 45.2 +1.5
VTS pmax pmax
comp=Z,10.0nm,1.0s
VTS **Vitosha** 83.20 321 *e*P P 13 12 45.1 +1.5
comp=Z,9.9nm,1.0s
J38A **Wedel Dairy, R** 83.27 38 P P 13 12 43.8 +0.1
baz=319
O34A **Beatrice** 83.44 43 P P 13 12 44.2 -0.6
baz=316
M36A **Felix, Anita** 83.50 41 P P 13 12 45.4 +0.4
baz=317
L37A **Phoenix Point,** 83.53 40 P P 13 12 45.3 +0.2
baz=318
Q33A **Connelly Farm,** 83.68 44 P P 13 12 45.7 -0.3
baz=316
GROS **Grobnik** 83.77 327 *i* P P 13 12 46.7 +0.3
SOKA **Soboth** 83.80 328 *i* P P 13 12 47.1 +0.6
comp=Z,17nm,0.9s,SNR=11
P34A **Walnut Farm, R** 83.83 43 P P 13 12 46.4 -0.3
baz=316
M37A **Trindle Farm,** 83.92 40 P P 13 12 47.4 +0.3

	baz=318							
MEM	**Membach**	83.92	335	P		P	13 12 47.9	+1.0
TAOE	**Nuku Hiva Isla**	84.07	106	*e*LR		LR	13 38 51.4	
	comp=Z,228nm,33.0s							
GOLS	**Golise**	84.08	327	*e*P		P	13 12 48.3	+0.4
OBKA	**Obir**	84.13	328	*i* P		P	13 12 48.4	+0.1
	comp=Z,11nm,1.1s							
KBA	**Koelnbreinsper**	84.17	329	*i* P		P	13 12 48.8	+0.3
	comp=Z,9.6nm,0.9s							
Q34A	**Chapman**	84.22	44	P		P	13 12 48.3	-0.4
	baz=316							
KSU1	**Kansas State U**	84.27	43	P		P	13 12 48.9	-0.1
	baz=316							
P35A	**Duane Minner,**	84.27	43	P		P	13 12 48.5	-0.4
	baz=317							
MNTX	**Cornudas Mount**	84.30	54	P		P	13 12 49.7	+0.5
	baz=312							
MNTX	**Cornudas Mount**	84.30	54	*e*P		P	13 12 49.8	+0.5
	comp=Z,18nm,1.1s							
BCLA	**Clavier**	84.31	335	P		P	13 12 49.5	+0.5
N37A	**Lee Faris, Mou**	84.31	41	P		P	13 12 48.8	-0.3
	baz=318							
M38A	**Pleasantville**	84.34	40	P		P	13 12 48.9	-0.3
	baz=318							
MSTX	**Muleshoe**	84.37	50	P		P	13 12 50.3	+0.6
	baz=314							
MSTX	**Muleshoe**	84.37	50	*e*P		P	13 12 50.5	+0.8
	comp=Z,21nm,1.3s							
O36A	**Bolckow**	84.39	42	P		P	13 12 49.8	+0.3
	baz=317							
MYKA	**Terra Mystica**	84.41	329	*i* P		P	13 12 49.6	0.0
	comp=Z,5.7nm,0.5s							
R34A	**Isabella, Hill**	84.50	44	P		P	13 12 50.6	+0.4
	baz=316							
P36A	**Good Intent, A**	84.64	42	P		P	13 12 50.7	-0.1
	baz=317							
LANF	**Langenberg**	84.69	333	*e*P		P	13 12 51.7	+0.8
Q35A	**Mercer Eighty,**	84.75	43	P		P	13 12 51.1	-0.3
	baz=317							
ABTA	**Abfaltersbach**	84.77	329	*i* P		P	13 12 51.4	0.0
	comp=Z,13nm,1.2s							
N38A	**Joes South For**	84.78	40	P		P	13 12 51.7	+0.2
	baz=318							
DOU	**Dourbes**	84.82	336	P		P	13 12 52.3	+0.8
JAVS	**Javornik**	84.83	328	*e*P		P	13 12 51.3	-0.5
MOTA	**Moosalm**	84.83	330	*i* PcP		P	13 12 53.5	+1.6
	comp=Z,18nm,0.9s,SNR=7.1							
RETA	**Reute**	84.85	331	*i* PcP		P	13 12 52.7	+0.9
	comp=Z,20nm,0.8s,SNR=8.4							
Q36A	**Arnold C. Orve**	84.98	43	P		P	13 12 52.4	-0.2
	baz=317							
S34A	**Willow Spring**	85.01	45	P		P	13 12 53.1	+0.4
	baz=316							
BFO	**Black Forest**	85.05	332	*e*P		P	13 12 53.5	+0.7
BFO				pmax		pmax		
	comp=Z,29nm,1.1s							
BFO	**Black Forest**	85.05	332	*e*P		P	13 12 53.5	+0.7
	comp=Z,29nm,1.1s							
R35A	**Emporia Munici**	85.05	44	P		P	13 12 53.4	+0.4
	baz=317							
N39A	**Derby Farms, D**	85.09	40	P		P	13 12 53.2	+0.2
	baz=319							
P37A	**Lathrop**	85.11	42	P		P	13 12 53.0	-0.2
	baz=318							
O38A	**Galt**	85.16	41	P		P	13 12 53.0	-0.4
	baz=318							
PDG	**Podgorica**	85.24	323	‖ *i* P		P	13 12 54.4	+0.7
FETA	**Feichten**	85.25	330	*i* PcP		P	13 12 54.6	+0.7
	comp=Z,16nm,1.0s,SNR=8.0							
WLS	**Welschbruch**	85.33	333	*e*P		P	13 12 54.8	+0.6
DAVA	**Damuels**	85.35	331	*i* PcP		P	13 12 55.0	+0.5
	comp=Z,31nm,0.9s,SNR=10.0							
R36A	**Gordon, Harris**	85.43	43	P		P	13 12 54.8	0.0
	baz=317							
S35A	**Otter Creek Ra**	85.45	44	P		P	13 12 55.2	+0.3
	baz=317							
T34A	**McClaskey Farm**	85.45	45	P		P	13 12 55.1	+0.2
	baz=316							
P38A	**Dawn**	85.50	41	P		P	13 12 55.1	-0.1
	baz=318							
O39A	**Kirksville**	85.54	40	P		P	13 12 55.6	+0.3
	baz=319							
ECH	**Echery**	85.57	333	*e*P		P	13 12 55.6	+0.3
Q37A	**Longview Farm,**	85.58	42	P		P	13 12 55.5	-0.1
	baz=318							
W32A	**Sentinel**	85.64	48	P		P	13 12 56.6	+0.7
	baz=315							
U34A	**Anderson Ranch**	85.68	46	P		P	13 12 56.6	+0.5
	baz=316							
V33A	**Lossen Ranch,**	85.70	47	P		P	13 12 56.4	+0.2
	baz=316							
FUORN	**Ofenpass-Fuorn**	85.76	330	*e*P		P	13 12 57.5	+0.9
	comp=Z,33nm,0.8s							
R37A	**Teagarden Farm**	85.79	43	P		P	13 12 56.2	-0.5
	baz=318							
S36A	**Lake Cedric, C**	85.82	44	P		P	13 12 56.9	+0.2
	baz=317							
MOF	**Molkenrain**	85.88	333	*e*P		P	13 12 57.5	+0.5
T35A	**Sooner Cattle**	85.90	45	P		P	13 12 56.9	-0.3
	baz=317							
Q38A	**Cooks Store, C**	85.95	42	P		P	13 12 57.4	+0.1
	baz=318							
O40A	**La Belle**	85.97	40	P		P	13 12 57.4	-0.1
	baz=319							
LPIG	**La Paz**	86.05	62	LR		LR	13 46 23.8	
	comp=Z,42nm,18.5s,baz=156,slow=32							
W33A	**Caddo, Fort Co**	86.07	47	P		P	13 12 58.0	-0.1
	baz=316							
X32A	**Elmer**	86.12	48	P		P	13 12 58.6	+0.3
	baz=315							
V34A	**Guthrie**	86.12	46	P		P	13 12 58.5	+0.2
	baz=316							
V34A	**Guthrie**	86.12	46	*e*P		P	13 12 59.0	+0.7
	comp=Z,18nm,0.7s							
T36A	**Boggs Farm, Ca**	86.15	44	P		P	13 12 58.6	+0.2
	baz=317							
U35A	**Pawnee**	86.18	45	P		P	13 12 58.7	+0.2
	baz=317							
S37A	**Fort Scott**	86.20	43	P		P	13 12 58.7	0.0
	baz=318							
Q39A	**Willow Grove F**	86.22	41	P		P	13 12 58.9	+0.2
	baz=319							
TUE	**Stuetta**	86.23	331	*e*P		P	13 12 59.7	+0.8
	comp=Z,15nm,1.0s							
P40A	**Paris**	86.33	40	P		P	13 12 59.3	0.0
	baz=319							
R38A	**Fenwick Farm,**	86.38	42	P		P	13 12 58.7	-0.8
	baz=318							
W34A	**Bridge Creek,**	86.41	47	P		P	13 12 59.8	0.0
	baz=316							
LOMF	**Lomont**	86.42	333	*e*P		P	13 13 00.3	+0.7
V35A	**Meyer Ranch, C**	86.56	46	P		P	13 13 00.5	+0.1
	baz=317							
T37A	**Cheneyville 18**	86.62	44	P		P	13 13 01.0	+0.3
	baz=318							
Q40A	**Laux Farm, Aux**	86.72	41	P		P	13 13 00.7	-0.5
	baz=319							
R39A	**Chumby, Stover**	86.74	42	P		P	13 13 00.9	-0.3
	baz=319							
S38A	**Stockton**	86.79	43	P		P	13 13 01.2	-0.3
	baz=318							
Y33A	**Hilltop Ranch,**	86.80	48	P		P	13 13 01.7	+0.1
	baz=316							
X34A	**Smith Ranch, M**	86.83	47	P		P	13 13 02.7	+0.9
	baz=316							
W35A	**Tecumseh**	86.98	46	P		P	13 13 02.9	+0.4
	baz=317							
TX31	**Lajitas Ar. Si**	86.98	54	*e*P		P	13 13 03.0	+0.3
TXAR	**Lajitas Array**	86.98	54	P		P	13 13 03.2	+0.5
	comp=Z,9.8nm,1.1s,baz=297,slow=3.6,SNR=33							
T38A	**Diamond**	87.02	43	P		P	13 13 03.0	+0.3
	baz=318							
TUL1	**Leonard**	87.03	45	P		P	13 13 03.0	+0.3
	baz=317							
V36A	**Jenks**	87.04	45	P		P	13 13 02.6	-0.2
	baz=317							
U37A	**Salina**	87.04	44	P		P	13 13 02.8	0.0
	baz=318							
S39A	**Bolivar**	87.05	42	P		P	13 13 02.2	-0.6
	baz=318							
SENIN	**Lac Senin/Sane**	87.09	332	*e*P		P	13 13 03.9	+0.8
	comp=Z,7.7nm,0.9s							
R40A	**Maddies Statio**	87.15	41	P		P	13 13 03.2	-0.1
	baz=319							
ABTX	**Abilene, Hawle**	87.18	50	P		P	13 13 03.6	0.0
	baz=315							
TBI	**Tubuai**	87.19	123	*e*LR		LR	13 39 56.2	
	comp=Z,123nm,34.0s							

Z33A	**Whitaker Ranch**	87.23	49	P		P	13 13 04.2	+0.4
	baz=316							
HPIG		87.32	57	*e*P		P	13 13 05.5	+1.0
	comp=Z,18nm,1.1s							
Y34A	**Reagan Ranch,**	87.34	48	P		P	13 13 04.2	-0.1
	baz=316							
V37A	**Hulbert**	87.41	45	P		P	13 13 04.5	-0.1
	baz=318							
U38A	**Gravette**	87.42	44	P		P	13 13 04.4	-0.2
	baz=318							
X35A	**Drake**	87.47	47	P		P	13 13 05.3	+0.4
	baz=318							
LAST	**Lasithi**	87.47	314	*e*P		P	13 13 05.5	+0.5
	comp=Z,74nm,1.9s							
LOR	**Lormes**	87.52	335	*e*P		P	13 13 04.8	-0.1
LOR				pmax		pmax		
	comp=Z,28nm,1.0s							
T39A	**Clever**	87.52	43	P		P	13 13 04.9	-0.2
	baz=318							
LDF	**La Druitiere**	87.61	338	*e*P		P	13 13 05.3	0.0
LDF				pmax		pmax		
	comp=Z,26nm,1.5s							
133A	**Hamilton Ranch**	87.62	49	P		P	13 13 05.1	-0.6
	baz=316							
X36A	**Centrahoma**	87.70	46	P		P	13 13 06.0	+0.1
	baz=317							
Y35A	**Marietta**	87.79	47	P		P	13 13 06.6	+0.2
	baz=316							
V38A	**Canehill**	87.83	44	P		P	13 13 06.6	0.0
	baz=318							
T40A	**Mansfield**	87.88	42	P		P	13 13 06.5	-0.4
	baz=319							
U39A	**Green Forest**	87.94	43	P		P	13 13 07.1	0.0
	baz=318							
LPG	**La Plagne**	88.03	332	*e*P		P	13 13 07.8	+0.1
LPG				pmax		pmax		
	comp=Z,7.0nm,0.7s							
233A	**Rising Star**	88.05	50	P		P	13 13 07.3	-0.5
	baz=316							
Z35A	**Perchaven, San**	88.08	48	P		P	13 13 07.5	-0.3
	baz=316							
SFIN	**Lafayette**	88.10	37	P		P	13 13 07.1	-0.6
	baz=322							
Y36A	**Durant**	88.22	47	P		P	13 13 08.3	-0.2
	baz=317							
V39A	**Pettigrew**	88.26	44	P		P	13 13 08.4	-0.3
	baz=318							
U40A	**Yellville**	88.30	43	P		P	13 13 08.6	-0.3
	baz=319							
W38A	**Poteau**	88.35	45	P		P	13 13 09.2	+0.2
	baz=318							
X38A	**Whitesboro**	88.48	45	P		P	13 13 09.9	+0.3
	baz=318							
333A	**Richland Sprin**	88.49	50	P		P	13 13 09.9	0.0
	baz=316							
234A	**Clairette**	88.51	49	P		P	13 13 10.1	+0.1
	baz=316							
Y37A	**Hugo**	88.54	46	P		P	13 13 10.0	0.0
	baz=317							
Z36A	**Blue Ridge**	88.59	47	P		P	13 13 10.5	+0.3
	baz=317							
JCT	**Junction City**	88.60	51	P		P	13 13 10.2	-0.1
	baz=315							
W39A	**Magazine**	88.66	44	P		P	13 13 10.4	-0.1
	baz=318							
V40A	**Witts Springs**	88.73	43	P		P	13 13 10.5	-0.4
	baz=319							
433A	**Art**	88.83	51	P		P	13 13 11.1	-0.4
	baz=316							
OLIL	**Olney**	88.91	39	*e*P		P	13 13 12.6	+1.0
	comp=Z,23nm,1.0s							
WHTX	**Lake Whitney,**	88.92	49	P		P	13 13 12.4	+0.5
	baz=316							
334A	**Lometa**	88.94	50	P		P	13 13 11.9	0.0
	baz=316							
X39A	**Fountain Ranch**	88.99	45	P		P	13 13 12.2	+0.1
	baz=318							
Z37A	**Pogue Cattle C**	89.11	47	P		P	13 13 13.0	+0.3
	baz=317							
SIUC	**Southern Illin**	89.15	40	*e*P		P	13 13 13.9	+1.2
	comp=Z,41nm,1.1s							
PBMO	**Poplar Bluff**	89.25	41	*e*P		P	13 13 13.8	+0.6
	comp=Z,21nm,1.0s							
MIAR	**Mount Ida**	89.26	45	P		P	13 13 13.3	-0.1
	baz=318							
MIAR	**Mount Ida**	89.26	45	*e*P		P	13 13 14.1	+0.7
MIAR				pmax		pmax		
	comp=Z,12nm,0.9s							
MIAR	**Mount Ida**	89.26	45	*e*P		P	13 13 14.1	+0.7
	comp=Z,12nm,0.9s							
434A	**Burnet**	89.29	50	P		P	13 13 13.2	-0.4
	baz=316							
X201	**Greenbrier Sit**	89.36	43	*e*P		P	13 13 14.7	+0.9
	comp=Z,14nm,1.2s							
X301	**Greenbrier Sit**	89.38	43	*e*P		P	13 13 14.9	+1.0
	comp=Z,53nm,2.0s							
WHAR	**Wooly Hollow**	89.40	43	*e*P		P	13 13 14.4	+0.4
	comp=Z,19nm,1.1s							
Y39A	**Lockesburg**	89.43	45	P		P	13 13 14.7	+0.5
	baz=318							
W41A	**Tony Mavity, V**	89.51	43	P		P	13 13 14.0	-0.5
	baz=319							
W41B	**Gary Mavity, V**	89.51	43	P		P	13 13 14.0	-0.5
	baz=319							
336A	**Riesel**	89.72	49	P		P	13 13 15.9	+0.3
	baz=317							
534A	**Blanco**	89.72	51	P		P	13 13 15.8	+0.1
	baz=316							
CAF	**Calviac**	90.17	334	*e*P		P	13 13 18.0	+0.5
CAF				pmax		pmax		
	comp=Z,18nm,1.0s							
N54A	**Moraine State**	90.78	32	P		P	13 13 21.0	+0.7
	baz=327							
933A	**Laredo**	90.95	53	P		P	13 13 21.5	+0.2
	baz=315							
636A	**Smothers Creek**	90.97	50	P		P	13 13 22.0	+0.5
	baz=317							
438A	**Sam Houston St**	90.99	48	P		P	13 13 21.1	-0.3
	baz=317							
ACCN	**Adirondack Com**	91.15	27	*e*P		P	13 13 23.1	+1.1
	comp=Z,20nm,1.0s							
034A	**Hebbronville**	91.71	53	P		P	13 13 25.7	+0.8
	baz=316							
341A	**Kurthwood**	91.88	46	P		P	13 13 25.6	0.0
	baz=319							
O56A	**Blue Knob Stat**	91.95	32	P		P	13 13 26.0	+0.2
	baz=328							
SWET	**Sewanee**	92.74	39	*e*P		P	13 13 29.6	0.0
	comp=Z,11nm,1.8s							
KEST	**Kesra**	95.19	325	LR		LR	14 01 02.5	
	comp=Z,105nm,20.8s,baz=293,slow=38							
ESDC	**Sonseca Array**	96.85	336	LR		LR	14 03 03.0	
	comp=Z,49nm,19.7s,baz=0.0,slow=39							
TORD	**Torodi Ar. Bea**	117.89	319	PKP		PKPdf	13 19 03.5	-0.7
	comp=Z,1.2nm,0.8s,baz=14,slow=1.7,SNR=6.0							
DBIC	**Dimbokro**	126.73	321	PKP		PKPdf	13 19 20.8	-0.4
	comp=Z,2.9nm,0.8s,baz=312,slow=2.1,SNR=4.0							
SAML	**Samuel**	141.16	48	*e*PKPdf		PKPdf	13 19 48.5	+0.4
SNAA	**Sanae**	143.15	196	PKP		PKPab	13 19 45.1	-0.6
SNAA	**Sanae**	143.15	196	*e*PKPdf		PKPab	13 19 45.2	-0.4
LPAZ	**La Paz**	143.56	61	PKP		PKPbc	13 19 50.3	-0.1
	comp=Z,1.2nm,0.5s,baz=100,slow=1.4,SNR=5.5							
VNA2	**Neumayer--Watz**	144.68	195	PKP		PKPab	13 19 50.8	-0.7
	baz=96,slow=2.4							
VNA1	**Neumayer--Stat**	145.08	195	PKP		PKPbc	13 19 52.2	-0.6
LCO	**Las Campanas**	149.18	82	*e*PKPbc		PKPbc	13 20 06.4	+0.4
YJA	**Yavi**	149.31	66	*e*P		PKPbc	13 20 07.7	+0.9
AZAP	**Zapla**	150.90	69	*e*P		PKPbc	13 20 10.6	+0.3
VCA	**Vinchina**	150.97	80	*e*P		PKPbc	13 20 11.2	+1.0
AGUA	**GUANDACOL**	151.11	81	‖ *e*P		PKPbc	13 20 11.1	+0.6
FSA	**Cafayete**	151.31	73	*e*P		PKPbc	13 20 11.3	+0.2
RTLS	**Leoncito**	151.47	86	*e*P		PKPbc	13 20 12.3	+0.8
AUSP	**Uspallata**	151.57	87	*e*P		PKPbc	13 20 12.7	+0.5
AMOG	**MOGNA**	151.75	84	*e*P		PKPbc	13 20 12.7	+0.9
ASAL	**Salagasta**	152.14	88	*e*P		PKPbc	13 20 13.3	+0.6
PLCA	**Paso Flores**	152.90	105	PKPbc		PKPbc	13 20 14.0	-0.1
	comp=Z,2.4nm,0.9s,baz=256,slow=3.3,SNR=5.3							
PLCA				PKPab		PKPab	13 20 24.6	-0.9
	comp=Z,3.2nm,1.0s,baz=242,slow=3.1,SNR=5.3							

*ISK **15** 13:00:51.8,41.71N×32.48E,h9km,ML2.7*
*ISCJB **15** 13:00:52.1±1.0,41.74N±0.05×32.47E±0.04,h4km±6km, Error ellipse: s-maj=8.9km s-min=4.4km az=172.5*
*CSEM **15** 13:00:52.2±0.3,41.73N×32.50E,h5km,MD2.7,Error ellipse: s-maj=7.0km s-min=3.8km az=176.0*

*DDA **15** 13:00:52.6,41.70N×32.45E,h8km,Md2.7*

ISC 15 13:00:52.8±1.0,41.69N±0.05×32.48E±0.02,h9km±7km, n29,σ0.48/48,Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
BTIN	**Bart¯–n**	0.18	253	*i* P	Pg	13 00 56.4	-0.3
BTIN				*i* S	Sg	13 00 59.5	+0.2
BTIN	**Bart¯–n**	0.18	253	P	Pg	13 00 56.4	-0.3
BTIN				S	Sg	13 00 59.5	+0.2
SAFT	**Safranbolu**	0.47	161	*e*PG	Pg	13 01 01.8	-0.3
SAFT				*e*SG	Sb	13 01 09.5	-0.9
SAFT	**Safranbolu**	0.47	161	*e*Pg	Pg	13 01 01.8	-0.3
SAFT				*e*Sg	Sb	13 01 09.5	-0.9
KDZE	**Karadeniz Ereo**	0.87	245	*e*PG	Pg	13 01 09.0	-0.5
KDZE				*e*SG	Sb	13 01 21.5	-0.2
KDZE	**Karadeniz Ereo**	0.87	245	*e*Pg	Pg	13 01 09.0	-0.5
KDZE				*e*Sg	Sb	13 01 21.5	-0.2
BCAM	**Yenicaga**	0.93	200	*i* P	Pb	13 01 10.9	-0.2
BCAM				*i* S	Sb	13 01 24.0	+0.4
BCAM	**Yenicaga**	0.93	200	P	Pb	13 01 10.9	-0.2
BCAM				S	Sb	13 01 24.0	+0.4
ILGA	**Ilgaz**	1.13	124	*i* P	Pb	13 01 14.5	-0.1
ILGA				*i* S	Sn	13 01 31.1	+0.4
ILGA	**Ilgaz**	1.13	124	P	Pb	13 01 14.5	-0.1
ILGA				S	Sn	13 01 31.1	+0.4
BZK	**Bozkurt**	1.17	76	*e*PN	Pb	13 01 14.7	-0.5
BZK				*e*SN	Sn	13 01 31.3	-0.1
BZK	**Bozkurt**	1.17	76	*e*Pn	Pb	13 01 14.7	-0.5
BZK				*e*Sn	Sn	13 01 31.3	-0.1
TOS	**Tosya**	1.33	119	*e*PN	Pn	13 01 17.1	-0.5
TOS	**Tosya**	1.33	119	*e*Pn	Pn	13 01 17.2	-0.5
SAHE	**Sakarya_HENDEK**	1.48	236	*i* P	Pn	13 01 19.7	0.0
SAHE				*i* S	Sn	13 01 39.2	0.0
SAHE	**Sakarya_HENDEK**	1.48	236	P	Pn	13 01 19.7	0.0
SAHE				S	Sn	13 01 39.2	0.0
MDUB	**Mudurnu**	1.56	219	*e*PN	Pn	13 01 20.5	-0.2
MDUB	**Mudurnu**	1.56	219	*e*Pn	Pn	13 01 20.6	-0.2
BTAS	**Taskesti**	1.58	226	*i* P	Pb	13 01 22.6	+0.3
BTAS				*i* S	Sg	13 01 44.0	+0.3
BTAS	**Taskesti**	1.58	226	P	Pb	13 01 22.6	+0.3
BTAS				S	Sg	13 01 44.0	+0.3
KAND	**Kocaeli-Kandir**	1.82	252	*i* P	Pb	13 01 26.4	+0.1
KAND				*i* S	Sn	13 01 47.6	+0.1
KAND	**Kocaeli-Kandir**	1.82	252	P	Pb	13 01 26.4	+0.1
KAND				S	Sn	13 01 47.6	+0.1
BOYT	**Boyabat**	1.84	98	*i* P	Pb	13 01 27.1	+0.5
BOYT				*i* S	Sg	13 01 54.0	+2.1
GULT	**Gulveren**	1.95	230	*e*PN	Pn	13 01 26.0	-0.1
GULT	**Gulveren**	1.95	230	*e*Pn	Pn	13 01 26.0	-0.1
SILT	**Sile**	2.20	257	*e*PN	Pn	13 01 29.8	+0.3
SILT	**Sile**	2.20	257	*e*Pn	Pn	13 01 29.8	+0.3
SVRH	**Sivrihisar-ESK**	2.36	198	*e*PN	Pn	13 01 31.7	0.0
SVRH	**Sivrihisar-ESK**	2.36	198	*e*Pn	Pn	13 01 31.7	0.0

MEX 15 13:04:02.0±0.6,14.36N×91.72W,h32km,MD3.6, Guatemala

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PCIG		1.97	313	*e*P	Pn	13 04 31.6	-1.6
PCIG				*e*S	Sn	13 04 54.5	-2.4

*IDC **15** 13:09:59.1±0.8,9.74S×113.92E,h0km,mb4.0/11, mb1 4.1/13,mb1mx3.9/52,mbtmp4.0/13,ML3.9/2,MS3.3/1, Ms1 3.3/1,ms1mx2.6/36,Error ellipse: s-maj=35.7km s-min=14.1km az=55.0*
*ISCJB **15** 13:10:05.6±0.8,9.59S±0.07×114.05E±0.03,h59km±7km, mb4.0/11, Error ellipse: s-maj=12.2km s-min=4.5km az=10.3*
*DJA **15** 13:10:08.9±0.5,9°S±11″×11″4E±″,h109km±6km,M4.4/15, MLv4.4/15*

ISC 15 13:10:07.2±1.4,9.54S±0.09×114.05E±0.04,h57km±12km, n34,σ1.12/42,mb4.0/11,South of Bali

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JAGI	**Jajag, Banyuwa**	1.07	6	P	Pn	13 10 26.6	+0.5
JAGI				S	Sn	13 10 41.4	+1.3
GMJI	**Gumukmas**	1.40	335	P	Pn	13 10 30.1	-0.3
GMJI				S	Sn	13 10 46.4	-1.4
DNP	**Denpasar**	1.44	53	P	Pn	13 10 31.5	+0.6
DNP				S	Sn	13 10 48.5	-0.3
ABJI	**Asem Bagus**	1.75	6	P	Pn	13 10 32.5	-2.7
PWJI	**Pagerwojo**	2.68	304	P	Pn	13 10 47.9	0.0
PWJI				S	Sn	13 11 18.0	-1.3
TWSI	**Taliwang, Sumb**	2.91	74	P	Pn	13 10 51.3	+0.2
TWSI				S	Sn	13 11 24.9	0.0
PCJI	**Pacitan**	3.14	295	P	Pn	13 10 55.1	+1.0
PCJI				S	Sn	13 11 32.4	+2.0
NGJI	**Ngawi**	3.35	310	P	Pn	13 10 51.4	-5.7
TBJI	**Tambak Boyo**	3.47	321	P	Pn	13 10 56.3	-2.5
WOJI	**Wonogiri, Jawa**	3.52	299	P	Pn	13 11 00.0	+0.6
WOJI				S	Sn	13 11 40.2	+0.3
PLAI	**Plampang**	3.75	79	P	Pn	13 11 02.7	+0.1
PLAI				S	Sn	13 11 45.5	0.0
UGM	**Wanagama**	3.84	295	P	Pn	13 11 04.4	+0.5
UGM				S	Sn	13 11 49.4	+1.6
UWJI	**Ujung Watu**	4.37	315	P	Pn	13 11 09.3	-1.7
KAPI	**Kappang**	7.23	52	Pn	Pn	13 11 50.8	+0.6
	2.8nm,0.3s,baz=181,slow=3.1,SNR=7.4						
KAPI				Sn	Sn	13 13 09.0	-2.0
	3.9nm,0.3s,baz=239,slow=19,SNR=7.0						
KAPI				LR	LR	13 15 10.5	
	comp=Z,197nm,19.6s,baz=267,slow=42						
FITZ	**Fitzroy Crossi**	14.10	128	Pn	Pn	13 13 18.6	-5.5
	0.3nm,0.3s,baz=303,slow=10,SNR=6.4						
FITZ				Sn	Sn	13 15 40.3	-19
	0.3nm,0.3s,baz=342,slow=20,SNR=3.8						
WRA	**Warramunga Arr**	22.15	120	P	P	13 14 57.2	-1.3

BBLS	**Lazići**	**0.31**	**132**	*e*Pg	Pg	13	10	49.1	-1.3
BBLS				*e*Sg	Sg	13	10	53.5	-0.9
BBLS	**Lazići**	**0.31**	**132**	*e*Pg	Pg	13	10	49.1	-1.3
BBLS				*e*Sg	Sg	13	10	53.5	-0.9
DIVS	**Divibare**	**0.65**	**87**	*e*Pg	Pg	13	10	57.1	0.0
DIVS				*e*Sg	Sg	13	11	04.7	-0.8
DIVS	**Divibare**	**0.65**	**87**	*e*Pg	Pg	13	10	57.1	0.0
DIVS				*e*Sg	Sg	13	11	04.7	-0.8
IVAS	**Ivanjica**	**0.91**	**122**	*e*Pg	Pg	13	11	01.7	-0.4
IVAS				*e*Sg	Sg	13	11	14.5	+0.6
IVAS	**Ivanjica**	**0.91**	**122**	*e*Pg	Pg	13	11	01.7	-0.4
IVAS				*e*Sg	Sg	13	11	14.5	+0.6
TRUS	**Trudelj**	**0.96**	**80**	*e*Pg	Pg	13	11	01.2	-1.8
TRUS				*e*Sg	Sg	13	11	15.0	-0.4
TRUS	**Trudelj**	**0.96**	**80**	*e*Pg	Pg	13	11	01.2	-1.8
TRUS				*e*Sg	Sg	13	11	15.0	-0.4

NIED ***15*** *13:15:00, 42˚.70N×146˚.40E, h23km, Mw4.2 Best double couple: M0 2.06000×10^15 NP1:ϕs268.00000°, δ65.00000°, λ156.00000°. NP2:ϕs9.00000°, δ68.00000°, λ27.00000°.*
IDC ***15*** *13:15:22.1±0.8, 42˚.83N×146˚.21E, h0km, mb4.3/27, mb1 4.4/29, mb1mx4.2/59, mbtmp4.3/29, ML2.9/2, MS3.4/6, Ms1 3.4/6, ms1mx3.0/43, Error ellipse: s-maj=20.7km s-min=13.2km az=161.0*
MOS ***15*** *13:15:23.1±1.3, 42˚.74N×146˚.18E, h23km, mb4.8/22, Error ellipse: s-maj=8.7km s-min=5.1km az=102.2*
SKHL ***15*** *13:15:24.4±0.2, 42˚.63N×146˚.31E, h40km±4km, mb4.7/9*
JMA ***15*** *13:15:24.4±0.2, 42˚.77N×146˚.31E, h38km±3km, M4.2*
JMA Felt I J1.
ISCJB ***15*** *13:15:25.5±0.8, 42˚.77N±0˙.04×146˚.20E±0˙.05, h40km±5km, mb4.4/51, MS3.4/4, Error ellipse: s-maj=8.5km s-min=4.6km az=140.7*
BJI ***15*** *13:15:25.0, 42˚.70N×146˚.30E, h30km, mb4.6/7, mB4.8/4, Ms4.5/3, Ms7 4.2/3*
NEIC ***15*** *13:15:26.8±0.5, 42˚.76N×146˚.20E, h35km, mb4.4/8, Error ellipse: s-maj=13.1km s-min=7.7km az=146.0*
NEIC Recorded [1˚JMA] in eastern Hokkaido.

ISC 15 13:15:21.9±1.5, 42.77N±0˙.04×146.18E±0˙.04, h0km±8km, n142, σ1s15/146, mb4.6/51, MS3.4/4, 4C-2D, Off southeast coast of Hokkaido

Code	Station Name	Δ°	AZ°	Phase	ID	Time			Res
				Op	ISC	h	m	s	ISC
NEM2	**Nemuro 2**	**0.68**	**332**	P	**Pn**	**13**	**15**	**38.2**	**-0.5**
NEM2				*e*S	**Sn**	**13**	**15**	**48.3**	**-1.7**
JAK	**Akkeshi**	**1.11**	**282**	P	**Pn**	**13**	**15**	**45.3**	**+0.6**
JAK				*e*S	**Sn**	**13**	**16**	**00.8**	**+0.1**
SHO	**Shikotan**	**1.20**	**23**	*e*P	**Pg**	**13**	**15**	**45.4**	**+0.5**
SHO				AMB	AMB	13	15	46.6	
	2µm,0.5s								
SHO				*i* S	**Sb**	**13**	**16**	**01.3**	**-0.3**
SHO				A	A	13	16	04.6	
	2µm,0.5s								
SHO				A	A	13	16	04.6	
	6µm,0.5s								
SHO	**Shikotan**	**1.20**	**23**	*c i*PN	**Pg**	**13**	**15**	**45.4**	**+0.5**
SHO				*i* S	**Sb**	**13**	**16**	**01.3**	**-0.3**
SHO				pmax	pmax				
	comp=N,1µm,0.6s								
SHO				pmax	pmax				
	comp=E,2µm,0.6s								
SHO				pmax	pmax				
	comp=Z,3µm,0.6s								
SHO				smax	smax				
	comp=N,5µm,0.4s								
SHO				smax	smax				
	comp=E,8µm,0.6s								
YUK	**Yuzh-Kuril'sk**	**1.29**	**350**	*i* P	**Pg**	**13**	**15**	**47.0**	**+0.3**
YUK				AMB	AMB	13	15	49.7	
	comp=E,2µm,0.4s								
YUK				*i* S	**Sb**	**13**	**16**	**03.8**	**-0.3**
YUK				A	A	13	16	06.1	
	comp=E,2µm,0.5s								
YUK				A	A	13	16	06.1	
	comp=E,3µm,0.5s								
YUK	**Yuzh-Kuril'sk**	**1.29**	**350**	*d i*PN	**Pg**	**13**	**15**	**46.9**	**+0.3**
YUK				*i* S	**Sb**	**13**	**16**	**03.8**	**-0.3**
YUK				pmax	pmax				
	comp=Z,3µm,0.3s								
YUK				pmax	pmax				
	comp=E,317nm,0.1s								
YUK				pmax	pmax				
	comp=N,803nm,0.3s								
YUK				smax	smax				
	comp=E,6µm,0.5s								
YUK				smax	smax				
	comp=N,2µm,0.4s								
JNK	**Nakash**	**1.34**	**308**	P	**Pn**	**13**	**15**	**48.1**	**+0.2**
JNK				*e*S	**Sg**	**13**	**16**	**06.0**	**+0.9**
JRA	**Rausu**	**1.40**	**327**	P	**Pb**	**13**	**15**	**49.2**	**+0.3**
JOB	**Onbets**	**1.73**	**275**	P	**Pn**	**13**	**15**	**54.0**	**+0.8**
JAR	**Ashorobuto**	**1.84**	**287**	P	**Pn**	**13**	**15**	**55.5**	**+0.7**
JTKR	**Abashiri--Toko**	**2.04**	**307**	P	**Pn**	**13**	**15**	**59.0**	**+1.5**
JCH	**Churui**	**2.08**	**267**	P	**Pn**	**13**	**15**	**59.4**	**+1.4**
JCH				*e*S	**Sn**	**13**	**16**	**25.1**	**+0.5**
ERM	**Erimo**	**2.36**	**252**	*e*P	**Pb**	**13**	**16**	**04.5**	**-0.8**
ERM	**Erimo**	**2.36**	**252**	*e*PN	**Pb**	**13**	**16**	**04.5**	**-0.8**
ERM				*e*		13	16	29.0	
ERM	**Erimo**	**2.36**	**252**	*e*Pn	**Pb**	**13**	**16**	**04.5**	**-0.8**
ERM				*e*Sn	**Sn**	**13**	**16**	**29.0**	**-2.5**
JEM	**Erimo**	**2.36**	**252**	P	**Pb**	**13**	**16**	**04.4**	**-0.9**
JMP	**Maruseppu**	**2.40**	**302**	P	**Pn**	**13**	**16**	**04.3**	**+1.9**
KUR	**Kuril'sk**	**2.75**	**26**	*i* P	**Pn**	**13**	**16**	**08.0**	**+0.8**
KUR				AMB	AMB	13	16	10.9	
	comp=N,30nm,0.3s								
KUR				AMB	AMB	13	16	10.9	
	comp=N,50nm,0.3s								
KUR				AMB	AMB	13	16	10.9	
	comp=N,200nm,0.3s								
KUR				*i* S	**Sn**	**13**	**16**	**40.1**	**-1.0**
KUR				A	A	13	16	45.0	
	comp=N,120nm,0.3s								
KUR				A	A	13	16	45.0	
	comp=N,410nm,0.3s								
KUR	**Kuril'sk**	**2.75**	**26**	*c i*PN	**Pn**	**13**	**16**	**08.0**	**+0.8**
KUR				*i* S	**Sn**	**13**	**16**	**42.2**	**+1.1**
KUR				pmax	pmax				
	comp=Z,204nm,0.3s								
KUR				pmax	pmax				
	comp=E,47nm,0.2s								
KUR				pmax	pmax				
	comp=N,26nm,0.4s								
KUR				smax	smax				
	comp=N,123nm,0.3s								
KUR				smax	smax				
	comp=E,408nm,0.5s								
ASAJ	**Asahikawa**	**2.94**	**299**	Pn	**Pb**	**13**	**16**	**13.2**	**-1.9**
	comp=E,20nm,0.3s,baz=120,slow=12,SNR=53								
ASAJ				Sn	**Sb**	**13**	**16**	**51.3**	**-0.2**
	comp=E,15nm,0.3s,baz=354,slow=32,SNR=5.6								
ASAJ				LR	LR	13	17	28.3	
	comp=E,593nm,20.2s,baz=170,slow=43								
ASAJ	**Asahikawa**	**2.94**	**299**	*e*Pn	**Pn**	**13**	**16**	**12.5**	**+2.7**
ASAJ				*e*Sn	**Sn**	**13**	**16**	**44.2**	**-1.6**
YSS	**Yuzh-Sakhalins**	**4.84**	**331**	*e*P	**Pn**	**13**	**16**	**38.3**	**+2.3**
YSS				AMB	AMB	13	16	39.3	
	comp=E,50nm,0.4s								
YSS	**Yuzh-Sakhalins**	**4.84**	**331**	*e*PN	**Pn**	**13**	**16**	**38.3**	**+2.3**
YSS				pmax	pmax				
	comp=Z,50nm,0.4s								
YSS	**Yuzh-Sakhalins**	**4.84**	**331**	*e*Pn	**Pn**	**13**	**16**	**36.4**	**+0.4**
YSS				*e*Sn	**Sn**	**13**	**17**	**33.3**	**+0.6**
TYV	**Tymovskoe**	**8.45**	**345**	*e*P	Pn	13	17	30.0	+4.5
TYV				AMB	AMB	13	17	37.5	
	comp=Z,6.0nm,0.6s								
TYV	**Tymovskoe**	**8.45**	**345**	*e*PN	Pn	13	17	30.0	+4.5
TYV				pmax	pmax				
	comp=Z,6.0nm,0.6s								
MJA0	**Matsu Arr-Jizo**	**8.72**	**227**	*e*PN	**Pn**	**13**	**17**	**29.1**	**-0.2**
MJAR	**Matsushiro Arr**	**8.74**	**227**	Pn	**Pn**	**13**	**17**	**29.2**	**-0.4**
	comp=Z,0.4nm,0.3s,baz=30,slow=13,SNR=8.2								
MAJO	**Matsushiro**	**8.74**	**227**	*e*P	**Pn**	**13**	**17**	**29.9**	**+0.4**
MAJO	**Matsushiro**	**8.74**	**227**	*e*PN	**Pn**	**13**	**17**	**29.9**	**+0.4**
MAJO	**Matsushiro**	**8.74**	**227**	*e*Pn	**Pn**	**13**	**17**	**27.9**	**-1.6**
	comp=Z,9.9nm,0.6s								
HABR	**Khabarovsk**	**9.65**	**310**	*e*PN	**Pn**	**13**	**17**	**41.2**	**-0.8**
HABR				*e*SS	Sn	13	19	42.7	+12
HABR				pmax	pmax				
	comp=N,21nm,2.0s								
HABR				pmax	pmax				
	comp=Z,38nm,2.0s								
HABR				pmax	pmax				
	comp=E,21nm,2.0s								
HABR				MLR	MLR				
	comp=Z,177nm,12.0s								
USRK	**Ussuriysk Ar.**	**10.41**	**283**	Pn	Pn	13	17	57.6	+5.2
	comp=Z,0.2nm,0.3s,baz=82,slow=15,SNR=4.4								
GRNR	**Gornyy**	**10.42**	**324**	*e*P	Pn	13	17	56.7	+4.1
GRNR				AMB	AMB	13	17	58.6	
	comp=Z,10.0nm,0.7s								
NKL	**Nikolayevsk**	**11.02**	**342**	*e*P	**Pn**	**13**	**18**	**02.0**	**+1.4**
NKL				AMB	AMB	13	18	04.0	
	comp=Z,10.0nm,1.0s								
NKL	**Nikolayevsk**	**11.02**	**342**	*e*PN	**Pn**	**13**	**18**	**02.0**	**+1.4**
NKL				pmax	pmax				
	comp=Z,13nm,1.0s								
NKL				MLR	MLR				
	comp=E,300nm,12.0s								
NKL				MLR	MLR				
	comp=Z,500nm,12.0s								
KLR	**Kul'dur**	**11.92**	**308**	LR	LR	13	23	12.4	
	comp=Z,227nm,18.3s,baz=136,slow=40								
KLR	**Kul'dur**	**11.92**	**308**	*e*P	**Pn**	**13**	**18**	**14.5**	**+1.4**
KLR	**Kul'dur**	**11.92**	**308**	*e*PN	**Pn**	**13**	**18**	**14.5**	**+1.4**
PETK	**Petropavlovsk-**	**12.89**	**33**	Pn	**Pn**	**13**	**18**	**24.6**	**-1.7**
	comp=Z,0.1nm,0.3s,baz=210,slow=14,SNR=2.5								
EKMR	**Ekimchan**	**13.57**	**324**	*e*P	**Pn**	**13**	**18**	**37.5**	**+1.9**
EKMR				AMB	AMB	13	18	50.1	
	comp=Z,6.0nm,0.7s								
KSRS	**Korea Array**	**14.93**	**255**	Pn	**P**	**13**	**19**	**02.5**	**+2.4**
	comp=Z,0.1nm,0.3s,baz=59,slow=13,SNR=3.0								
KSAR	**Wonju Array Be**	**14.97**	**255**	P	**P**	**13**	**19**	**02.5**	**+2.1**
KSAR	**Wonju Array Be**	**14.97**	**255**	Pn	**P**	**13**	**19**	**02.5**	**+2.1**
BMKR	**Bomnak**	**16.48**	**322**	*e*P	**Pn**	**13**	**19**	**14.6**	**+0.3**
ZEA	**Zeya**	**16.66**	**318**	*e*P	**Pn**	**13**	**19**	**15.5**	**-1.0**
ZEA				AMB	AMB	13	19	38.0	
	comp=Z,9.0nm,1.0s								
MA2	**Magadan**	**17.07**	**8**	LR	LR	13	25	17.6	
	comp=Z,87nm,18.4s,baz=132,slow=35								
SEY	**Seymchan**	**20.52**	**8**	P	**P**	**13**	**19**	**58.2**	**-3.2**
	comp=Z,1.3nm,0.5s,baz=76,slow=22,SNR=7.5								
SEY	**Seymchan**	**20.52**	**8**	*e*P	**P**	**13**	**20**	**01.1**	**-0.4**
SEY	**Seymchan**	**20.52**	**8**	*e*P	**P**	**13**	**20**	**01.1**	**-0.4**
YAK	**Yakutsk**	**21.64**	**339**	LR	LR	13	29	20.9	
	comp=Z,70nm,18.8s,baz=219,slow=39								
YAK	**Yakutsk**	**21.64**	**339**	*e*P	**P**	**13**	**20**	**11.3**	**-2.1**
YAK				pmax	pmax				
	comp=Z,8.0nm,0.7s								
BILL	**Bilibino**	**27.50**	**16**	*e*P	**P**	**13**	**21**	**09.9**	**+0.3**
BILL	**Bilibino**	**27.50**	**16**	*e*P	**P**	**13**	**21**	**09.9**	**+0.3**
BILL				*e*		13	21	55.1	
BILL				pmax	pmax				
	comp=Z,9.0nm,3.9s								
BILL				MLR	MLR				
	comp=Z,80nm,16.0s								
ULN	**Ulaanbaatar**	**27.77**	**294**	*e*P	**P**	**13**	**21**	**12.0**	**-0.4**
ULN	**Ulaanbaatar**	**27.77**	**294**	*e*P	**P**	**13**	**21**	**11.8**	**-0.6**
ULN				pmax	pmax				
	comp=Z,8.0nm,1.0s								
ULN	**Ulaanbaatar**	**27.77**	**294**	*e*P	**P**	**13**	**21**	**11.8**	**-0.6**
	comp=Z,7.6nm,1.0s								
SONM	**Songino Array**	**28.21**	**294**	P	**P**	**13**	**21**	**16.9**	**+0.6**
	comp=Z,7.0nm,0.7s,baz=86,slow=8.1,SNR=38								
SONM	**Songino Array**	**28.21**	**294**	*e*P	**P**	**13**	**21**	**17.1**	**+0.8**
SONM				pmax	pmax				
	comp=Z,7.0nm,0.7s								
H11N2	**WAKE ISLAND Hy**	**28.85**	**136**	T	T	13	52	19.8	
	baz=328,slow=75,SNR=50								
H11N1	**WAKE ISLAND Hy**	**28.86**	**136**	T	T	13	52	20.7	
	baz=328,slow=75,SNR=59								
H11N3	**WAKE ISLAND Hy**	**28.87**	**136**	T	T	13	52	21.1	
	baz=328,slow=75,SNR=43								
H11S1	**WAKE ISLAND Hy**	**29.79**	**138**	T	T	13	53	36.0	
	baz=329,slow=76,SNR=203								
H11S3	**WAKE ISLAND Hy**	**29.79**	**138**	T	T	13	53	29.1	
	baz=329,slow=76,SNR=207								
H11S2	**WAKE ISLAND Hy**	**29.80**	**138**	T	T	13	53	34.0	
	baz=329,slow=76,SNR=121								
ZAK	**Zakamensk**	**30.11**	**300**	*e*P	**P**	**13**	**21**	**33.6**	**+0.5**
ZAK				pmax	pmax				
	comp=Z,4.0nm,0.9s								
TIXI	**Tiksi**	**30.18**	**349**	LR	LR	13	33	57.8	
	comp=Z,74nm,19.1s,baz=158,slow=37								
TIXI	**Tiksi**	**30.18**	**349**	*e*P	**P**	**13**	**21**	**36.4**	**+3.0**
TIXI				pmax	pmax				
	comp=Z,7.0nm,3.1s								
KDAK	**Kodiak Island**	**40.44**	**46**	*i* P	**P**	**13**	**23**	**02.0**	**+0.4**
ZALV	**Zalesovo Beam**	**41.03**	**308**	P	**P**	**13**	**23**	**07.2**	**+0.6**
	comp=Z,1.2nm,0.7s,baz=90,slow=10,SNR=4.5								
ZALV				PcP	**PcP**	**13**	**25**	**06.2**	**-0.2**
	comp=Z,0.8nm,0.4s,baz=78,slow=1.8,SNR=4.6								
COLD	**Coldfoot**	**41.36**	**32**	*e*P	**P**	**13**	**23**	**09.1**	**-0.1**
	comp=Z,3.0nm,0.8s								
MCK	**McKinley**	**41.84**	**37**	*e*P	**P**	**13**	**23**	**12.4**	**-0.8**
MCK	**McKinley**	**41.84**	**37**	*e*P	**P**	**13**	**23**	**12.4**	**-0.8**
MCK				pmax	pmax				
	comp=Z,7.0nm,1.1s								
MCK	**McKinley**	**41.84**	**37**	*e*P	**P**	**13**	**23**	**12.4**	**-0.8**
	comp=Z,6.9nm,1.1s								
COLA	**College**	**42.28**	**35**	P	**P**	**13**	**23**	**14.8**	**-1.9**
COLA				pmax	pmax				
	comp=Z,9.0nm,0.9s								
ILAR	**Eielson Array**	**42.70**	**36**	P	**P**	**13**	**23**	**19.7**	**-0.4**
	comp=Z,1.7nm,0.6s,baz=256,slow=6.1,SNR=22								
ILAR	**Eielson Array**	**42.70**	**36**	*e*P	**P**	**13**	**23**	**19.9**	**-0.2**
ILAR	**Eielson Array**	**42.70**	**36**	*e*P	**P**	**13**	**23**	**19.9**	**-0.2**
ILAR				pmax	pmax				
	comp=Z,1.0nm,0.6s								
MKAR	**Makanchi Array**	**44.42**	**298**	P	**P**	**13**	**23**	**34.5**	**+0.2**
	comp=Z,6.2nm,0.7s,baz=79,slow=8.8,SNR=52								
KURK	**Kurchatov**	**45.49**	**305**	*e*P	**P**	**13**	**23**	**40.5**	**-2.2**
KURK				pmax	pmax				
	comp=Z,14nm,0.6s								
KURK	**Kurchatov**	**45.49**	**305**	*e*P	**P**	**13**	**23**	**40.5**	**-2.2**
	comp=Z,14nm,0.6s								
KURBB	**Kurchatov Arra**	**45.58**	**304**	P	**P**	**13**	**23**	**43.3**	**0.0**
	comp=Z,7.9nm,0.7s,baz=71,slow=9.0,SNR=46								
CMAR	**Chiang Mai Arr**	**46.57**	**254**	P	**P**	**13**	**23**	**53.9**	**+2.4**
	comp=Z,0.3nm,0.7s,baz=52,slow=6.2,SNR=3.3								
PDGK	**Podgornoye**	**47.53**	**295**	P	**P**	**13**	**23**	**58.5**	**-0.3**
PDGK				pmax	pmax				
	comp=Z,4.0nm,1.1s								
INK	**Inuvik**	**47.61**	**30**	P	**P**	**13**	**23**	**59.2**	**+0.1**
	comp=Z,5.2nm,0.8s,baz=302,slow=6.8,SNR=29								
BVAR	**Borovoye Array**	**49.58**	**310**	P	**P**	**13**	**24**	**14.9**	**+0.4**
	comp=Z,1.5nm,0.4s,baz=80,slow=8.4,SNR=20								
BRVK	**Borovoye**	**49.63**	**310**	*e*P	**P**	**13**	**24**	**14.7**	**-0.1**
BRVK	**Borovoye**	**49.63**	**310**	*e*P	**P**	**13**	**24**	**14.7**	**-0.1**
BRVK				pmax	pmax				
	comp=Z,4.0nm,1.5s								
OTUK	**Ortayu**	**50.19**	**303**	P	**P**	**13**	**24**	**19.5**	**+0.3**
OTUK				pmax	pmax				
	comp=Z,8.0nm,0.8s								
TKM2	**Tokmak 2**	**50.29**	**296**	*e*P	**P**	**13**	**24**	**19.7**	**-0.6**
TKM2				pmax	pmax				
	comp=Z,10.0nm,0.8s								
TKM2	**Tokmak 2**	**50.29**	**296**	*e*P	**P**	**13**	**24**	**19.6**	**-0.6**
	comp=Z,9.7nm,0.8s								
AAK	**Ala-Archa**	**51.14**	**296**	*e*P	**P**	**13**	**24**	**26.3**	**-0.4**
AAK	**Ala-Archa**	**51.14**	**296**	*i*P	**P**	**13**	**24**	**26.3**	**-0.4**
AAK				pmax	pmax				
	comp=Z,14nm,3.2s								
AAK	**Ala-Archa**	**51.14**	**296**	*e*P	**P**	**13**	**24**	**24.4**	**-2.2**
	comp=Z,3.4nm,0.9s								
DLBC	**Dease Lake**	**51.88**	**42**	LR	LR	13	47	41.8	
	comp=Z,60nm,18.6s,baz=290,slow=37								
MNAS	**Manas**	**52.52**	**297**	P	**P**	**13**	**24**	**37.5**	**+0.6**
MNAS				pmax	pmax				
	comp=Z,12nm,0.9s								
SFK	**Sufi-Kurgan**	**53.01**	**293**	P	**P**	**13**	**24**	**40.1**	**-0.6**
SFK				pmax	pmax				
	comp=Z,8.0nm,0.9s								
KKAR	**Karatay Array**	**53.55**	**298**	*e*P	**P**	**13**	**24**	**43.8**	**-0.5**
KKAR				pmax	pmax				
	comp=Z,2.0nm,0.7s								
KKAR	**Karatay Array**	**53.55**	**298**	*e*P	**P**	**13**	**24**	**43.8**	**-0.5**
	comp=Z,2.5nm,0.7s								
ARU	**Arti**	**54.58**	**317**	P	**P**	**13**	**24**	**51.2**	**-0.4**
	comp=Z,2.6nm,0.4s,baz=193,slow=2.2,SNR=5.2								
ARU	**Arti**	**54.58**	**317**	*e*P	**P**	**13**	**24**	**50.9**	**-0.7**
ARU	**Arti**	**54.58**	**317**	*d i*P	**P**	**13**	**24**	**51.1**	**-0.5**
ARU						13	26	52.1	
ARU				S	**S**	**13**	**32**	**31.2**	**-0.6**
ARU				SS	**SKiKP**	**13**	**36**	**05.1**	**+3.3**
ARU				pmax	pmax				
	comp=Z,11nm,1.7s								
RES	**Resolute Bay**	**56.11**	**16**	P	**P**	**13**	**25**	**01.7**	**-0.7**
	comp=Z,6.7nm,0.4s,baz=324,slow=7.4,SNR=39								
YKA	**Yellowknife Ar**	**57.01**	**33**	P	**P**	**13**	**25**	**08.5**	**-0.4**
	comp=Z,0.9nm,0.7s,baz=302,slow=6.8,SNR=18								
ABKAR	**Akbulak array**	**57.12**	**309**	*e*P	**P**	**13**	**25**	**09.3**	**-0.6**
	comp=Z,5.9nm,0.6s								
AKTO	**Aktyubinsk**	**57.64**	**311**	P	**P**	**13**	**25**	**12.7**	**-0.9**
	comp=Z,2.0nm,0.7s,baz=49,slow=8.0,SNR=7.7								
ARCES	**ARCESS Array B**	**59.92**	**340**	P	**P**	**13**	**25**	**28.9**	**-0.3**
	comp=Z,3.8nm,0.8s,baz=34,slow=8.8,SNR=9.8								
ARCES	**ARCESS Array B**	**59.92**	**340**	*e*P	**P**	**13**	**25**	**29.9**	**+0.7**
ARCES	**ARCESS Array B**	**59.92**	**340**	*e*P	**P**	**13**	**25**	**29.9**	**+0.7**
ARCES				pmax	pmax				
	comp=Z,4.0nm,0.8s								
MSF	**Maaselka**	**61.37**	**335**	P	**P**	**13**	**25**	**38.5**	**-0.6**
JOF	**Joensuu**	**62.62**	**332**	P	**P**	**13**	**25**	**46.4**	**-1.1**
JOF				pmax	pmax				
	comp=Z,11nm,1.1s								
GEYT	**Alibeck**	**64.29**	**299**	P	**P**	**13**	**25**	**58.9**	**-0.2**
	comp=Z,1.7nm,0.5s,baz=343,slow=4.5,SNR=3.3								
SUMG	**Summit**	**64.91**	**2**	*i* P	**P**	**13**	**26**	**02.6**	**-0.4**
	comp=Z,12nm,1.0s								
SUMG	**Summit**	**64.91**	**2**	*i* P	**P**	**13**	**26**	**02.6**	**-0.4**
SUMG				pmax	pmax				
	comp=Z,12nm,1.0s								
FINES	**FINESS Array B**	**65.42**	**333**	P	**P**	**13**	**26**	**05.5**	**-0.4**
	comp=Z,13nm,0.6s,baz=46,slow=7.6,SNR=74								
OBN	**Obninsk**	**65.68**	**324**	*e*P	**P**	**13**	**26**	**06.8**	**-0.9**
OBN	**Obninsk**	**65.68**	**324**	*e*P	**P**	**13**	**26**	**06.8**	**-0.9**
OBN				pmax	pmax				
	comp=Z,8.0nm,0.5s								
VRH	**Novokhopyorsk**	**65.78**	**318**	*e*P	**P**	**13**	**26**	**06.9**	**-1.5**
VRH				pmax	pmax				
	comp=Z,20nm,1.7s								
LPSR	**Galich'ya Gora**	**66.24**	**320**	*e*P	**P**	**13**	**26**	**10.1**	**-1.3**
LPSR				pmax	pmax				
	comp=Z,6.0nm,0.7s								
VSR	**Storozhevoye**	**67.01**	**319**	*e*P	**P**	**13**	**26**	**15.4**	**-1.0**
VSR				pmax	pmax				
	comp=Z,10.0nm,1.3s								
ASAR	**Alice Springs**	**67.06**	**192**	P	**P**	**13**	**26**	**16.2**	**-0.7**
	comp=Z,0.8nm,0.8s,baz=13,slow=6.1,SNR=8.2								
VSU	**Vasula**	**67.34**	**330**	P	**P**	**13**	**26**	**17.8**	**-0.5**
VSU				pmax	pmax				
	comp=Z,39nm,0.7s								
NVAR	**Mina Array Bea**	**68.70**	**57**	P	**P**	**13**	**26**	**28.6**	**+1.1**
	comp=Z,1.2nm,0.5s,baz=292,slow=7.0,SNR=6.9								
KIV	**Kislovodsk**	**69.89**	**312**	*e*P	**P**	**13**	**26**	**33.8**	**-0.8**
KIV				pmax	pmax				
	comp=Z,4.0nm,0.9s								
NACGM	**Naroch**	**69.90**	**328**	*e*	**P**	**13**	**26**	**34.0**	**-0.4**
KBZ	**Khabaz**	**69.92**	**311**	P	**P**	**13**	**26**	**35.4**	**+0.8**
	comp=Z,4.1nm,0.8s,baz=46,slow=7.1,SNR=7.2								
NB2	**NORSAR Subarra**	**70.26**	**339**	P	**P**	**13**	**26**	**35.8**	**-0.7**
	comp=Z,4.6nm,0.5s,baz=33,slow=6.5								
NOA	**NORSAR Array B**	**70.26**	**339**	P	**P**	**13**	**26**	**36.1**	**-0.4**
	comp=Z,6.1nm,0.6s,baz=34,slow=6.2,SNR=23								
HFS	**Hagfors**	**70.32**	**337**	P	**P**	**13**	**26**	**36.4**	**-0.4**
	comp=Z,8.8nm,0.6s,baz=47,slow=6.5,SNR=24								
FRB	**Frobisher Bay**	**70.32**	**16**	P	**P**	**13**	**26**	**35.2**	**-1.5**
	comp=Z,3.6nm,0.7s,baz=338,slow=7.0,SNR=5.7								
PDAR	**Pinedale Array**	**71.09**	**49**	P	**P**	**13**	**26**	**42.2**	**+0.1**
	comp=Z,1.0nm,0.4s,baz=359,slow=0.5,SNR=22								
AKASG	**Malin Array Be**	**71.95**	**323**	P	**P**	**13**	**26**	**46.2**	**-0.6**
	comp=Z,1.3nm,0.4s,baz=39,slow=5.8,SNR=9.6								
STHS	**Stebnicka Huta**	**76.29**	**327**	*e*P	**P**	**13**	**27**	**13.0**	**+0.7**
STHS				*e*		13	27	21.5	
STHS	**Stebnicka Huta**	**76.29**	**327**	*e*P	**P**	**13**	**27**	**13.0**	**+0.7**
STHS

0.5nm,0.4s,baz=8.3,slow=7.2,SNR=24
ILAR Eielson Array 56.65 29 P **P 13 26 36.0 +0.3**
0.7nm,0.7s,baz=273,slow=5.4,SNR=7.1
STKA Stephens Creek 60.47 179 P **P 13 27 01.8 -0.7**
1.3nm,0.7s,baz=354,slow=8.3,SNR=5.9
INK Inuvik 61.84 25 P **P 13 27 11.6 +0.3**
1.3nm,0.5s,baz=294,slow=6.0,SNR=9.7
ABKAR Akbulak array 63.03 313 *e*P **P 13 27 17.6 -1.9**
DLBC Dease Lake 65.36 35 P **P 13 27 36.4 +1.6**
1.1nm,0.6s,baz=277,slow=8.1,SNR=4.3
YKA Yellowknife Ar 71.06 28 P **P 13 28 09.9 -0.3**
0.4nm,0.6s,baz=295,slow=6.3,SNR=5.8
ARCES ARCESS Array B 71.45 340 P **P 13 28 11.9 -0.5**
3.7nm,0.9s,baz=45,slow=6.9,SNR=3.6
FINES FINESS Array B 75.82 333 P **P 13 28 37.4 -0.7**
1.0nm,0.4s,baz=72,slow=4.5,SNR=9.6
HFS Hagfors 81.31 336 P **P 13 29 07.6 -0.6**
0.8nm,0.4s,baz=79,slow=7.5,SNR=5.3
NOA NORSAR Array B 81.50 338 P **P 13 29 09.0 -0.4**
0.5nm,0.5s,baz=42,slow=4.9,SNR=2.7
PDAR Pinedale Array 83.69 44 P **P 13 29 21.4 0.0**
0.4nm,0.5s,baz=38,slow=1.5,SNR=6.8
TXAR Lajitas Array 95.39 52 P **P 13 30 17.7 +0.8**
0.6nm,0.6s,baz=333,slow=3.5,SNR=4.7
TORD Torodi Ar. Bea 122.55 311 PKP **PKPdf 13 35 47.0 -0.9**
0.3nm,0.5s,baz=44,slow=1.8,SNR=4.2
LPAZ La Paz 150.46 71 PKPbc **PKPbc 13 36 45.4 +0.7**
1.9nm,0.6s,baz=340,slow=3.9,SNR=7.3
PLCA Paso Flores 151.75 123 PKPbc **PKPbc 13 36 47.0 +0.6**
2.6nm,0.6s,baz=257,slow=3.9,SNR=11

*ISCJB **15** 13:17:56.0±1.2, 38.44N±0.03×118.72W±0.04, h11km±8km, Error ellipse: s-maj=6.3km s-min=5.1km az=37.9*
*NEIC **15** 13:17:57.7, 38.40N×118.73W, h15km, ML3.2(REN), After REN.*

ISC 15 13:17:57.1±1.4, 38.41N±0.04×118.75W±0.04, h15km±11km, n13, σ1s08/22, California-Nevada border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MLAC	**Mammoth, Mammo**	**0.78**	**185**	P	**Pg**	**13 18 12.6**	**+0.4**
	baz=6.0						
MLAC				S	**Sb**	**13 18 23.6**	**+0.7**
	baz=6.0						
CMB	**Columbia Colle**	**1.34**	**254**	*e*Pn	**Pb**	**13 18 22.6**	**+0.6**
CMB				*e*Sn	**Sb**	**13 18 40.5**	**+1.5**
GRAC	**Grapevine Rang**	**1.78**	**142**	Pb	**Pb**	**13 18 29.8**	**+0.3**
	baz=323						
GRAC				Sg	**Sg**	**13 18 55.8**	**+1.4**
	baz=323						
DAC	**Darwin (Calif)**	**2.31**	**156**	*e*Pn	**Pn**	**13 18 34.6**	**-0.3**
DAC				*e*Sn	**Sn**	**13 19 02.4**	**-0.8**
BMN	**Battle Mountai**	**2.34**	**30**	*e*Pn	**Pn**	**13 18 35.9**	**+0.7**
BMN				*e*Sn	**Sn**	**13 19 02.8**	**-1.0**
R11A	**Troy Canyon, C**	**2.49**	**90**	P	**Pn**	**13 18 38.2**	**+1.0**
	baz=272						
R11A				Sb	**Sg**	**13 19 15.9**	**-1.1**
	baz=272						
R11A	**Troy Canyon, C**	**2.49**	**90**	*e*Pn	**Pn**	**13 18 38.4**	**+1.1**
R11A				*e*Sn	**Sn**	**13 19 06.2**	**-1.2**
MPMC	**Manual Prospec**	**2.55**	**156**	Pg	**Pg**	**13 18 45.4**	**-0.5**
	baz=337						
SAO	**San Andreas Ge**	**2.70**	**233**	Pn	**Pn**	**13 18 39.2**	**-0.7**
SAO				*e*Sn	**Sn**	**13 19 12.7**	**+0.3**
ISA	**Isabella, Lake**	**2.75**	**175**	Sb	**Sg**	**13 19 23.0**	**-2.4**
	baz=356						
ELK	**Elko**	**3.58**	**48**	*e*Pn	**Pn**	**13 18 52.4**	**+0.1**
ELK				*e*Sn	**Sn**	**13 19 34.5**	**0.0**
WDC	**Whiskeytown Da**	**3.65**	**308**	*e*Pn	**Pn**	**13 18 53.2**	**+0.2**
MOD	**Modoc Plateau**	**3.69**	**342**	*e*Pn	**Pn**	**13 18 52.3**	**-1.4**

*IDC **15** 13:33:54.4±1.1, 38.12N×118.76W, h0km, mb3.5/4, mb1 3.8/6, mb1mx3.5/46, mbtmp3.5/6, ML3.8/2, MS3.3/3, Ms1 3.3/3, ms1mx2.8/26, Error ellipse: s-maj=11.9km s-min=6.8km az=156.0*
*NEIC **15** 13:33:55.9, 38.40N×118.73W, h13km, MW3.8, ML4.3(REN), Moment Tensor Solution. s34 Moment tensor: Scale 10^{14}Nm; M_{rr}=6.29; $M_{\theta\theta}$=1.37; $M_{\phi\phi}$=4.92; $M_{r\theta}$=1.67; $M_{\theta\phi}$=0.31; $M_{\phi r}$=-0.89; Best double couple: M_o=6.00000×10^{14} NP1:ϕ_s=196.00000°, δ=42.00000°, λ=-72.00000°. NP2:ϕ_s=352.00000°, δ=50.00000°, λ=-106.00000°. Principal axes: T 5.0000, Plg4.0000°, Azm93.0000°; N 1.7100, Plg12.0000°, Azm2.0000°; P -6.7100, Plg77.0000°, Azm201.0000°; After REN.*
NEIC Felt [II] at Hawthorne.

ISC 15 13:33:55.0±1.1, 38.39N±0.02×118.73W±0.02, h3km±9km, n78, σ1s64/89, mb3.5/3, California-Nevada border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
NV01	**Mina Array Sit**	**0.34**	**83**	*e*Pg	**Pg**	**13 34 01.2**	**-0.3**
NV01				*e*Sg	**Sg**	**13 34 02.3**	**-3.7**
NVAR	**Mina Array Bea**	**0.34**	**83**	Pg	**Pg**	**13 34 03.0**	**+1.4**
	1μm,0.3s,baz=258,slow=21,SNR=6434						
NVAR				Lg	Lg	13 34 09.3	
	3μm,0.3s,baz=348,slow=25,SNR=32						
NV11	**Mina Array Sit**	**0.45**	**84**	*e*Pg	**Pg**	**13 34 05.0**	**+1.2**
WAKR	**Walker**	**0.57**	**282**	*e*Pg	**Pg**	**13 34 06.9**	**+0.9**
MLAC	**Mammoth, Mammo**	**0.76**	**187**	P	**Pb**	**13 34 10.6**	**-0.4**
	baz=5.8						
MLAC				S	**Sb**	**13 34 21.3**	**-0.6**
	baz=5.8						
MTUM	**Tungsten Hills**	**1.04**	**173**	*e*Pg	**Pn**	**13 34 15.8**	**-0.9**
CMB	**Columbia Colle**	**1.35**	**255**	*e*Pn	**Pb**	**13 34 20.8**	**-0.2**
CMB				*e*Sn	**Sb**	**13 34 36.7**	**-2.1**
TIN	**Tinemaha, Big**	**1.39**	**163**	P	**Pg**	**13 34 22.1**	**+0.5**
	baz=343						
TIN				S	**Sg**	**13 34 41.4**	**+1.7**
	baz=343						
GRAC	**Grapevine Rang**	**1.76**	**142**	P	**Pb**	**13 34 27.5**	**-0.5**
	baz=322						
GRAC				Sg	**Sg**	**13 34 54.2**	**+2.6**
	baz=322						
AFDM	**Forest Hills D**	**1.84**	**288**	*e*Pn	**Pb**	**13 34 28.9**	**-0.5**
DAC	**Darwin (Calif)**	**2.29**	**156**	*e*Pn	**Pn**	**13 34 34.7**	**+0.8**
DAC				*e*Sn	**Sn**	**13 35 01.1**	**-1.6**
BMN	**Battle Mountai**	**2.35**	**29**	*e*Pn	**Pn**	**13 34 34.5**	**-0.2**
BMN				*e*Sn	**Sn**	**13 35 02.8**	**-1.4**
FURC	**Furnace Creek,**	**2.42**	**142**	P	**Pn**	**13 34 36.9**	**+1.4**
	baz=323						
FURC				Sb	**Sg**	**13 35 13.4**	**+0.5**
	baz=323						
TPNV	**Topopah Spring**	**2.43**	**125**	P	**Pn**	**13 34 36.6**	**+0.7**
	baz=307						
TPNV				Sg	**Sg**	**13 35 15.7**	**+2.4**
	baz=307						
TPNV	**Topopah Spring**	**2.43**	**125**	*e*Pn	**Pn**	**13 34 36.9**	**+1.1**
ORV	**Oroville**	**2.46**	**299**	*e*Pn	**Pn**	**13 34 37.1**	**+1.1**
R11A	**Troy Canyon, C**	**2.47**	**90**	P	**Pn**	**13 34 35.8**	**-0.5**
	baz=272						
R11A				Sb	**Sg**	**13 35 13.9**	**-0.5**
	baz=272						
R11A	**Troy Canyon, C**	**2.47**	**90**	*e*Pn	**Pb**	**13 34 38.6**	**-1.6**
R11A				*e*Sn	**Sn**	**13 35 06.3**	**-0.8**
MPMC	**Manual Prospec**	**2.53**	**157**	P	**Pn**	**13 34 38.2**	**+1.0**
	baz=337						
MPMC				Sb	**Sg**	**13 35 15.9**	**-0.3**
	baz=337						
SAO	**San Andreas Ge**	**2.70**	**234**	*e*Pn	**Pn**	**13 34 39.8**	**+0.5**
SAO				*e*Sn	**Sn**	**13 35 11.7**	**-0.8**
ISA	**Isabella, Lake**	**2.73**	**176**	P	**Pn**	**13 34 41.1**	**+1.3**
	baz=356						
ISA				Sb	**Sg**	**13 35 21.5**	**-1.1**
	baz=356						
ISA	**Isabella, Lake**	**2.73**	**176**	*e*Pn	**Pb**	**13 34 43.2**	**-1.3**
LRMC	**Laurel Mtn Rad**	**3.02**	**164**	P	**Pn**	**13 34 45.1**	**+1.2**
	baz=344						
LRMC				Sb	**Sg**	**13 35 30.9**	**-1.2**
	baz=344						
O03D	**Paynes Creek**	**3.05**	**310**	P	**Pn**	**13 34 44.3**	**+0.1**
	baz=128,SNR=78						
O03D				Sg	**Sg**	**13 35 34.1**	**+1.0**
	baz=128						
SHOC	**Shoshone, Teco**	**3.16**	**141**	P	**Pn**	**13 34 46.9**	**+1.2**
	baz=322						
SHOC				Sb	**Sg**	**13 35 34.9**	**-1.7**
	baz=322						
SMMC	**Simmler**	**3.23**	**199**	P	**Pn**	**13 34 48.2**	**+1.5**
	baz=18						
ARVC	**Arvin**	**3.25**	**181**	P	**Pn**	**13 34 49.0**	**+2.1**
	baz=1.3						
ARVC				Sb	**Sg**	**13 35 37.3**	**-2.3**
	baz=1.3						
MCCM	**Marconi Confer**	**3.28**	**267**	*e*Pn	**Pn**	**13 34 48.0**	**+0.7**
MCCM				*e*Sg	**Sg**	**13 35 41.1**	**+0.7**
GSC	**Goldstone, Bar**	**3.44**	**153**	P	**Pn**	**13 34 50.6**	**+0.9**
	baz=334						
HOPS	**Hopland Field**	**3.45**	**281**	*e*Pn	**Pn**	**13 34 49.1**	**-0.6**
HOPS				*e*Sn	**Sn**	**13 35 29.4**	**-1.7**
EDW2	**Edwards Air Fo**	**3.55**	**170**	P	**Pn**	**13 34 53.1**	**+2.0**
	baz=350						
EDW2				Sb	**Sg**	**13 35 46.8**	**-2.2**
	baz=350						
ELK	**Elko**	**3.58**	**48**	Lg	Lg	13 35 48.4	
	83nm,0.3s,baz=51,slow=0.0,SNR=11						
ELK	**Elko**	**3.58**	**48**	*e*Pn	**Pn**	**13 34 51.5**	**-0.1**
ELK				Lg	Lg	13 35 48.4	
ELK				*e*Sg	**Sg**	**13 35 48.8**	**-1.2**
PKM	**Mcpherson Peak**	**3.60**	**194**	P	**Pn**	**13 34 53.6**	**+1.8**
	baz=14						
PKM				Sb	**Sg**	**13 35 47.4**	**-3.3**
	baz=14						
WDC	**Whiskeytown Da**	**3.67**	**308**	*e*Pn	**Pn**	**13 34 52.4**	**-0.4**
WDC				*e*Sn	**Sn**	**13 35 34.7**	**-1.9**
TUQ	**Turquoise Moun**	**3.70**	**142**	P	**Pn**	**13 34 54.0**	**+0.8**
	baz=323						
MOD	**Modoc Plateau**	**3.71**	**342**	*e*Pn	Pn	13 34 56.7	+3.3
MOD				*e*Sn	Sn	13 35 29.8	-8.0
N02D	**Trinity Center**	**4.01**	**311**	P	**Pn**	**13 34 58.3**	**+0.9**
	baz=129,SNR=7.7						
WVOR	**Wild Horse Val**	**4.04**	**1**	*e*Pn	Pn	13 35 01.4	+3.5
WVOR				*e*Sn	**Sn**	**13 35 44.8**	**-1.1**
M04C	**Macdoel**	**4.15**	**326**	P	**Pn**	**13 35 01.9**	**+2.5**
	baz=144,SNR=11						
PASC	**Pasadena Art C**	**4.23**	**174**	*e*Pn	**Pn**	**13 34 59.8**	**-0.6**
PASC				*e*Sn	**Sn**	**13 35 49.0**	**-1.3**
PASC				*e*Lg	Lg	13 36 12.1	
CCUT	**Cedar City**	**4.32**	**99**	*e*Pg	**Pg**	**13 35 17.1**	**-0.7**
FSU	**Fish Springs**	**4.36**	**71**	*e*Pn	**Pn**	**13 35 03.5**	**+1.2**
YBH	**Yreka Blue Hor**	**4.53**	**319**	Pn	Pn	13 35 08.1	+3.6
	0.8nm,0.3s,baz=140,slow=8.1,SNR=17						
YBH				Lg	Lg	13 36 21.9	
	0.2nm,0.3s,baz=143,slow=20,SNR=1.9						
YBH				LR	LR	13 37 07.2	
	comp=Z,378nm,18.6s,baz=170,slow=41						
YBH	**Yreka Blue Hor**	**4.53**	**319**	*e*Pn	**Pn**	**13 35 03.1**	**-1.5**
YBH				Lg	Lg	13 36 21.9	
LCMT	**Little Creek M**	**4.56**	**106**	*e*Pn	**Pn**	**13 35 06.0**	**+0.9**
K04D	**Chiloquin, OR**	**4.82**	**332**	P	**Pn**	**13 35 09.4**	**+0.8**
	baz=151,SNR=6.8						
KNB	**Kanab**	**4.88**	**104**	*e*Pn	**Pn**	**13 35 10.9**	**+1.5**
BELC	**Belle Mtn. Jos**	**4.90**	**152**	P	**Pn**	**13 35 10.9**	**+1.1**
	baz=334						
DUG	**Dugway, Tooele**	**4.93**	**67**	P	**Pn**	**13 35 12.1**	**+2.0**
	baz=250						
BGU	**Big Grassy Mou**	**5.07**	**58**	*e*Pn	**Pn**	**13 35 13.0**	**+0.9**
PFO	**Pinyon Flats O**	**5.11**	**158**	Pg	Pb	13 35 19.1	-6.0
	0.3nm,0.3s,baz=335,slow=17,SNR=3.9						
PFO				Lg	Lg	13 36 40.7	
	0.7nm,0.3s,baz=253,slow=19,SNR=3.3						
PFO	**Pinyon Flats O**	**5.11**	**158**	*e*Pn	**Pn**	**13 35 14.3**	**+1.7**
PKCU	**Pink Cliffs**	**5.16**	**99**	*e*Pg	**Pg**	**13 35 34.7**	**+0.7**
MTPU	**Mount Pierson**	**5.16**	**92**	*e*Pg	**Pg**	**13 35 35.3**	**+1.3**
J05D	**Fort Rock, OR**	**5.25**	**340**	P	Pn	13 35 18.4	+3.9
	baz=158,SNR=12						
L02D	**Cave Junction,**	**5.30**	**317**	P	Pn	13 35 18.7	+3.6
	baz=134,SNR=6.2						
MFID	**Tomas Ranch**	**5.48**	**23**	Pn	**Pn**	**13 35 15.7**	**-2.0**
HVU	**Hansel Valley**	**5.68**	**52**	*e*Pn	Pn	13 35 24.9	+4.4
TMUT	**Trail Mountain**	**5.94**	**79**	*e*Pn	Pn	13 35 30.9	+6.7
I04A	**Tendick Farm,**	**6.08**	**334**	P	Pn	13 35 30.4	+4.7
	baz=152,SNR=9.5						
HLID	**Hailey**	**6.11**	**31**	*e*Pn	**Pn**	**13 35 24.9**	**-1.6**
HLID				*e*Sn	**Sn**	**13 36 31.3**	**-5.6**
I05D	**Terrebonne, OR**	**6.26**	**343**	P	Pn	13 35 32.6	+4.2
	baz=161,SNR=6.3						
TCUT	**Toone Canyon**	**6.26**	**62**	*e*Pn	Pn	13 35 33.2	+4.6
WUAZ	**Wupatki**	**6.55**	**114**	Pn	**Pn**	**13 35 32.5**	**+0.1**
HAWA	**Hanford**	**8.02**	**356**	*e*Pn	**Pn**	**13 35 52.2**	**-0.2**
IMW	**Indian Meadow**	**8.05**	**44**	*e*Pn	**Pn**	**13 35 50.6**	**-2.5**
BW06	**Boulder Array**	**8.23**	**55**	*e*Pn	**Pn**	**13 35 55.3**	**-0.2**
PDAR	**Pinedale Array**	**8.23**	**55**	Pn	Pn	13 35 59.0	+3.5
	0.1nm,0.3s,baz=229,slow=13,SNR=8.2						
PDAR				Lg	Lg	13 38 12.3	
	0.6nm,0.3s,baz=238,slow=23,SNR=4.4						
YBMT	**Yellow Bay**	**10.08**	**18**	*e*Pn	**Pn**	**13 36 17.6**	**-3.1**
YBMT				*e*Sn	**Sn**	**13 38 15.6**	**+1.3**
ANMO	**Albuquerque**	**10.44**	**105**	Pg	Pn	13 37 09.8	+44
	0.1nm,0.3s,baz=281,slow=14,SNR=1.9						
ANMO				Lg	Lg	13 39 22.2	
	0.1nm,0.3s,baz=329,slow=19,SNR=3.1						
ANMO				LR	LR	13 40 57.0	
	comp=Z,155nm,18.1s,baz=308,slow=41						
TXAR	**Lajitas Array**	**15.41**	**121**	Pn	**P**	**13 37 40.8**	**+2.6**
	0.1nm,0.3s,baz=307,slow=10,SNR=7.5						
ULM	**Lac du Bonnet**	**20.11**	**46**	P	Pn	13 38 31.5	-0.1
	2.0nm,0.6s,baz=247,slow=13,SNR=2.9						
DLBC	**Dease Lake**	**21.36**	**344**	P	**P**	**13 38 47.4**	**+4.0**
	1.0nm,0.7s,baz=148,slow=13,SNR=3.4						
YKA	**Yellowknife Ar**	**24.27**	**5**	P	**P**	**13 39 14.5**	**+1.4**
	1.0nm,0.8s,baz=183,slow=9.9,SNR=27						
YKB5	**Yellowknife Ar**	**24.27**	**5**	*e*P	**P**	**13 39 15.0**	**+1.9**
IL1	**Eielson Array**	**31.17**	**337**	*e*P	P	13 40 19.0	+4.1
ILAR	**Eielson Array**	**31.17**	**337**	P	P	13 40 18.4	+3.5
	1.0nm,0.9s,baz=152,slow=7.0,SNR=11						
ILAR				LR	LR	13 51 56.0	
	comp=Z,34nm,18.3s,baz=134,slow=34						

*NIED **15** 13:40:00, 39.50N×143.70E, h26km, Mw3.5 Best double couple: M_o1.78000×10^{14} NP1:ϕ_s=186.00000°, δ30.00000°, λ72.00000°. NP2:ϕ_s27.00000°, δ61.00000°, λ100.00000°.*

JMA 15 13:40:30.3±0.3, 39.49N×143.70E, h2km, M3.5, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MIYJ	**Miyakonagasawa**	**1.46**	**274**	P	Pn	13 40 57.5	-0.1
MIYJ				*e*S	Sg	13 41 16.9	-0.2
JTH	**Tanohata**	**1.49**	**288**	P	Pn	13 40 58.1	+0.1
OFUJ	**Ofunato**	**1.63**	**256**	P	Pn	13 41 00.0	0.0
JOM	**Ohasama**	**1.86**	**270**	P	Pn	13 41 03.6	+0.4
JMK	**Ichinoseki**	**2.00**	**255**	P	Pn	13 41 05.7	+0.6
JRG	**Rokugo**	**2.38**	**269**	P	Pb	13 41 12.3	-1.5
JTM	**Tenmabayashi**	**2.40**	**304**	P	Pn	13 41 11.1	+0.5
JAH	**Hinai**	**2.46**	**287**	P	Pn	13 41 12.3	+0.9
JYK	**Kaneyama**	**2.66**	**259**	P	Pn	13 41 15.1	+1.0
JNBK	**Urakawa-nobuka**	**2.88**	**346**	P	Pn	13 41 19.1	+1.9
JNBK				*e*S	Sn	13 41 52.4	0.0
MAT	**Matsushiro**	**5.24**	**238**	P	Pn	13 41 51.7	+2.0
MAT				*e*S	Sn	13 42 53.4	+2.7

*NIED **15** 13:44:00, 37.10N×141.20E, h50km, Mw4.2 Best double couple: M_o2.08000×10^{15} NP1:ϕ_s=206.00000°, δ26.00000°, λ58.00000°. NP2:ϕ_s61.00000°, δ69.00000°, λ104.00000°.*
*MOS **15** 13:44:20.6±1.9, 36.95N×141.44E, h48km, mb4.3/14, Error ellipse: s-maj=10.2km s-min=6.8km az=89.3*
*ISCJB **15** 13:44:21.3±0.5, 37.03N±0.03×141.31E±0.05, h52km±4km, mb4.0/27, MS3.6/4, Error ellipse: s-maj=7.1km s-min=3.9km az=24.6*
*NEIC **15** 13:44:23.3±0.7, 37.03N×141.14E, h48km±7km, mb4.1/1, Error ellipse: s-maj=9.7km s-min=6.9km az=105.0*
NEIC Recorded [3 JMA] in Fukushima.
*JMA **15** 13:44:23.6±0.1, 37.07N×141.14E, h51km±1km, M4.1*
JMA Felt III J1.
*IDC **15** 13:44:24.7±1.9, 37.04N×141.07E, h58km±19km, mb3.7/16, mb1 3.9/19, mb1mx3.7/45, mbtmp4.0/19, ML3.8/3, MS3.3/11, Ms1 3.3/11, ms1mx3.1/42, Error ellipse: s-maj=18.0km s-min=11.6km az=92.0*

ISC 15 13:44:22.6±0.8, 37.04N±0.04×141.27E±0.06, h43km±7km, n72, σ1s31/75, mb4.0/27, MS3.5/4, 6C, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.38**	**280**	P	**Pn**	**13 44 32.7**	**+0.7**
ONAJ				S	**Sn**	**13 44 38.8**	**+0.2**
JFK	**Kawauchi**	**0.45**	**317**	P	**Pn**	**13 44 33.4**	**+0.5**
JFK				S	**Sn**	**13 44 40.0**	**-0.1**
JHO	**Hitachi**	**0.70**	**233**	P	**Pn**	**13 44 36.5**	**+0.4**
JHO				S	**Sn**	**13 44 45.3**	**-0.5**
JFT	**Otama**	**0.88**	**303**	P	**Pn**	**13 44 39.1**	**+0.5**
JFT				S	**Sn**	**13 44 49.8**	**-0.4**
JMM	**Marumori**	**0.91**	**336**	P	**Pn**	**13 44 39.1**	**+0.2**
JMM				S	**Sn**	**13 44 50.2**	**-0.6**
JFY	**Yanaizu**	**1.30**	**287**	P	**Pn**	**13 44 44.1**	**-0.2**
JOU	**Okura**	**1.41**	**340**	P	**Pn**	**13 44 46.2**	**+0.4**
JOU				*e*S	**Sn**	**13 45 03.8**	**+0.7**
JIO	**Ouri**	**1.42**	**3**	P	**Pn**	**13 44 46.5**	**+0.7**
JIO				S	**Sn**	**13 45 03.0**	**-0.3**
JYS	**Shirataka**	**1.52**	**321**	P	**Pn**	**13 44 47.7**	**+0.4**
JAG	**Ashikaga**	**1.58**	**248**	P	**Pn**	**13 44 48.2**	**+0.1**
JAG				*e*S	**Sn**	**13 45 06.3**	**-1.0**
MJAR	**Matsushiro Arr**	**2.50**	**259**	P	**Pn**	**13 45 01.4**	**+0.7**
	9.7nm,0.3s,baz=80,slow=16,SNR=47						
MJAR				S	**Sn**	**13 45 31.9**	**+1.8**
	13nm,0.3s,baz=89,slow=27,SNR=7.6						
MJAR				LR	LR	13 46 12.5	
	comp=Z,231nm,22.0s,baz=90,slow=46						
MAJO	**Matsushiro**	**2.50**	**260**	*e*P	**Pn**	**13 45 00.5**	**-0.3**
MAJO				*e*		13 45 28.6	
MAJO	**Matsushiro**	**2.50**	**260**	*e*Pn	**Pn**	**13 45 00.5**	**-0.3**
MAJO				*e*Sn	**Sn**	**13 45 28.6**	**-1.5**
MAT	**Matsushiro**	**2.50**	**260**	P	**Pn**	**13 45 01.8**	**+1.0**
MAT				S	**Sn**	**13 45 30.8**	**+0.7**
JHJ	**Hachijo jima 2**	**4.09**	**198**	P	**Pn**	**13 45 24.9**	**+2.3**
	41nm,0.3s,baz=92,slow=20,SNR=16						
JHJ				S	**Sn**	**13 46 10.5**	**+1.2**
	55nm,0.3s,baz=263,slow=24,SNR=7.1						
JHJ2	**Mitsune**	**4.09**	**197**	*e*Pn	**Pn**	**13 45 23.1**	**+0.5**
ERM	**Erimo**	**5.18**	**16**	*e*P	**Pn**	**13 45 38.3**	**+0.8**
ERM				*e*		13 46 36.4	
ERM				pmax	pmax		
	comp=Z,155nm,1.6s						
ERM	**Erimo**	**5.18**	**16**	*e*Pn	**Pn**	**13 45 38.3**	**+0.8**
	comp=Z,155nm,1.6s						
ERM				*e*Sn	**Sn**	**13 46 36.4**	**+0.4**
ASAJ	**Asahikawa**	**7.14**	**8**	P	**Pn**	**13 46 05.0**	**+0.5**
	comp=Z,1.8nm,0.3s,baz=226,slow=10,SNR=18						
ASAJ				S	**Sn**	**13 47 24.1**	**-0.2**
	comp=Z,0.9nm,0.3s,baz=108,slow=20,SNR=3.2						
YUK	**Yuzh-Kuril'sk**	**7.81**	**25**	*e*P	**Pn**	**13 46 13.9**	**+0.3**
YUK				*e*S	**Sn**	**13 47 36.7**	**-4.0**
YUK				pmax	pmax		
	comp=Z,66nm,0.9s						
YUK				pmax	pmax		
	comp=N,50nm,0.4s						
YUK				pmax	pmax		
	comp=E,21nm,0.1s						
SHO	**Shikotan**	**8.03**	**30**	*e*P	**Pn**	**13 46 16.0**	**-0.6**
SHO				*e*S	Sn	13 47 38.5	-7.6
SHO				pmax	pmax		
	comp=Z,34nm,0.6s						
SHO				pmax	pmax		
	comp=E,15nm,0.7s						
JNU	**Nakatsue**	**9.37**	**248**	LR	LR	13 50 23.9	
	comp=E,58nm,19.3s,baz=124,slow=39						
KUR	**Kuril'sk**	**9.58**	**29**	*e*P	**Pn**	**13 46 38.6**	**+0.8**
KUR				*i* S	**Sn**	**13 48 19.4**	**-4.6**
KUR				smax	smax		
	comp=E,24nm,0.7s						
KUR				smax	smax		
	comp=N,16nm,0.4s						
CBIJ	**Chichi jima**	**9.94**	**175**	P	**Pn**	**13 46 42.5**	**-0.4**
CBIJ				S	Sn	13 48 25.6	-7.6
JCJ	**Chichijima**	**9.94**	**175**	P	**Pn**	**13 46 42.5**	**-0.4**
	comp=N,9.4nm,0.3s,baz=69,slow=7.7,SNR=26						
JCJ				S	Sn	13 48 25.6	-7.6
	comp=N,9.2nm,0.3s,baz=281,slow=22,SNR=7.1						
JCJ				LR	LR	13 50 30.2	
	comp=N,192nm,21.1s,baz=153,slow=37						
YSS	**Yuzh-Sakhalins**	**9.97**	**6**	*e*P	**Pn**	**13 46 44.8**	**+1.7**
USRK	**Ussuriysk Ar.**	**10.04**	**318**	P	Pn	13 46 49.3	+5.2
	comp=N,0.5nm,0.3s,baz=135,slow=12,SNR=14						
USRK				LR	LR	13 50 19.2	
	comp=N,123nm,18.6s,baz=104,slow=36						
KSRS	**Korea Array**	**10.65**	**276**	P	Pn	13 46 58.2	+5.8
	comp=N,0.2nm,0.3s,baz=93,slow=14,SNR=8.0						
KSRS				LR	LR	13 50 30.0	
	comp=N,90nm,20.1s,baz=52,slow=35						
KSAR	**Wonju Array Be**	**10.68**	**276**	P	Pn	13 46 58.2	+5.3
KSAR	**Wonju Array Be**	**10.68**	**276**	P	Pn	13 46 58.2	+5.3
KLR	**Kul'dur**	**14.01**	**333**	P	**P**	**13 47 44.8**	**-0.6**
	comp=N,0.1nm,0.3s,baz=139,slow=14,SNR=4.3						
KLR				LR	LR	13 52 47.0	
	comp=N,94nm,18.6s,baz=148,slow=36						
KLR	**Kul'dur**	**14.01**	**333**	*e*P	**P**	**13 47 42.9**	**-2.4**
PETK	**Petropavlovsk-**	**19.74**	**30**	LR	LR	13 55 59.0	
	comp=N,56nm,20.1s,baz=293,slow=35						
SEY	**Seymchan**	**26.81**	**11**	P	**P**	**13 49 59.5**	**+1.1**
	comp=N,2.9nm,0.8s,baz=222,slow=14,SNR=7.4						
SEY	**Seymchan**	**26.81**	**11**	*ce*P	**P**	**13 50 01.5**	**+3.1**
ULN	**Ulaanbaatar**	**27.25**	**304**	*ce*P	**P**	**13 50 01.0**	**-1.8**
ULN				pmax	pmax		
	comp=Z,5.0nm,1.2s						
SONM	**Songino Array**	**27.68**	**304**	P	**P**	**13 50 06.6**	**

FINES pmax pmax
comp=Z,2.0nm,0.7s
KIV Kislovodsk 70.81 311 *eP* **P 13 55 35.1 +0.3**
KIV *e* 13 55 48.9
KIV pmax pmax
comp=Z,8.0nm,1.2s
NB2 NORSAR Subarra 74.14 337 P **P 13 55 53.7 -0.5**
comp=Z,0.6nm,0.6s,baz=40,slow=5.9
NOA NORSAR Array B 74.14 337 P **P 13 55 53.8 -0.4**
comp=Z,1.5nm,0.8s,baz=40,slow=5.8,SNR=4.7
NOA LR LR 14 31 49.8
comp=Z,26nm,18.8s,baz=30,slow=38
AKASG Malin Array Be 74.22 322 P **P 13 55 54.1 -0.7**
comp=Z,0.8nm,0.3s,baz=45,slow=6.2,SNR=9.4
AKASG Malin Array Be 74.22 322 *ce*P **P 13 55 53.7 -1.1**
AKASG pmax pmax
comp=Z,1.0nm,0.3s
KIEV Kiev 74.23 322 *eP* **P 13 55 57.6 +2.8**
KIEV pmax pmax
comp=Z,3.0nm,1.0s
PDAR Pinedale Array 77.75 45 P **P 13 56 16.9 +1.5**
comp=Z,0.6nm,0.7s,baz=282,slow=2.9,SNR=7.2
TXAR Lajitas Array 90.21 52 P **P 13 57 20.7 +1.8**
comp=Z,0.5nm,0.7s,baz=251,slow=2.8,SNR=3.1
LPAZ La Paz 146.79 59 PKPbc **PKPab 14 04 02.1 -0.4**
comp=Z,3.6nm,0.8s,baz=300,slow=5.7,SNR=11

SKHL 15 14:02:42.1±0.3, 51.69N×132.88E, h7km±3km, mb3.5/2, Southeastern Siberia

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
EKMR	**Ekimchan**	**1.38**	**2**	*e*Pg	Pn	14 03 07.0	-0.8
EKMR				AMB	AMB	14 03 11.2	
	7.0nm,0.4s						
EKMR				AMB	AMB	14 03 11.2	
	4.0nm,0.4s						
EKMR				AMB	AMB	14 03 11.2	
	19nm,0.4s						
EKMR				*e*Sg	Sb	14 03 25.0	-1.2
EKMR				A	A	14 03 26.1	
	57nm,0.4s						
EKMR				A	A	14 03 26.1	
	92nm,0.4s						
EKMR				A	A	14 03 26.1	
	72nm,0.4s						
GRNR	**Gornyy**	**2.41**	**111**	*e*Pg	Pb	14 03 26.3	+0.5
GRNR				*e*Sg	Sb	14 03 57.1	+1.4
GRNR				A	A	14 03 59.0	
	67nm,0.4s						
GRNR				A	A	14 03 59.0	
	86nm,0.4s						
BMKR	**Bomnak**	**3.88**	**323**	*e*Pn	Pn	14 03 45.0	+2.9
BMKR				*e*Pg	Pb	14 03 53.5	+2.7
BMKR				*e*Sg	Sg	14 04 43.4	-3.2
BMKR				A	A	14 04 45.0	
	11nm,0.4s						
ZEA	**Zeya**	**3.99**	**303**	*e*Sg	Sg	14 04 46.6	-3.6
ZEA				A	A	14 04 49.2	
	30nm,0.6s						
KROS	**Kirovskiy**	**4.50**	**310**	*e*Pn	Pn	14 03 53.0	+2.4
KROS				AMB	AMB	14 03 54.4	
	4.0nm,0.4s						
KROS				*e*Sg	Sg	14 05 02.0	-4.5
KROS				A	A	14 05 05.0	
	9.0nm,0.6s						
NKL	**Nikolayevsk**	**4.99**	**70**	*e*Pg	Pb	14 04 12.1	+2.4
NKL				*e*Sg	Sg	14 05 18.0	-4.3
NKL				A	A	14 05 21.3	
	8.0nm,0.4s						

JMA 15 14:06:01.1±0.2, 38.69N×144.14E, h45km, M3.4, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
OFUJ	**Ofunato**	**1.97**	**282**	*e*S	Sn	14 06 56.5	+1.1
JTH	**Tanohata**	**2.16**	**306**	P	Pn	14 06 35.5	+0.9
JTH				*e*S	Sn	14 07 01.7	+1.5
JIO	**Ouri**	**2.20**	**265**	S	Sn	14 07 01.5	+0.4
JMK	**Ichinoseki**	**2.30**	**277**	*e*S	Sn	14 07 04.7	+1.2
JOM	**Ohasama**	**2.35**	**290**	P	Pn	14 06 38.7	+1.5
JOM				S	Sn	14 07 06.6	+1.8
JOU	**Okura**	**2.75**	**264**	*e*S	Sn	14 07 15.1	+0.5
JRG	**Rokugo**	**2.82**	**286**	*e*S	Sn	14 07 18.5	+2.1
JYK	**Kaneyama**	**2.96**	**276**	*e*S	Sn	14 07 22.6	+2.7
JTM	**Tenmabayashi**	**3.16**	**312**	*e*S	Sn	14 07 25.3	+0.5
JNBK	**Urakawa-nobuka**	**3.74**	**344**	P	Pn	14 06 57.4	+1.2
JNBK				*e*S	Sn	14 07 39.5	+0.5
JCH	**Churui**	**3.96**	**352**	P	Pn	14 06 59.4	+0.1
JCH				*e*S	Sn	14 07 43.6	-0.9

*CSEM **15** 14:16:11.3, 33.79N×35.75E, h9km, ML2.8*
GRAL 15 14:16:11.3±0.3, 33.79N×35.75E, h9km±4km, MD2.8, Jordan-Syria region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
BHL	**Bhannes**	**0.14**	**325**	*e*P	Pg	14 16 14.3	-0.2
BHL				*e*S	Sg	14 16 16.6	-0.2
BHL	**Bhannes**	**0.14**	**325**	*e*P	Pg	14 16 14.3	-0.3
BHL				*e*S	Sg	14 16 16.6	-0.2
DQRL	**Deir Qamar**	**0.17**	**242**	*e*P	Pg	14 16 14.8	-0.2
DQRL	**Deir Qamar**	**0.17**	**242**	*e*P	Pg	14 16 14.8	-0.2
RCY	**Rachaya**	**0.30**	**167**	*e*P	Pg	14 16 16.9	-0.4
RCY				*e*S	Sg	14 16 21.0	-0.3
HWQ	**Hawqa**	**0.52**	**18**	*e*P	Pg	14 16 20.7	-0.7
HWQ	**Hawqa**	**0.52**	**18**	*e*P	Pg	14 16 20.7	-0.7

*ISK **15** 14:17:42.3, 39.20N×40.69E, h5km, MD3.0, ML3.0*
*CSEM **15** 14:17:43.5±0.2, 39.18N×40.69E, h2km, MD3.0, Error ellipse: s-maj=4.7km s-min=3.8km az=5.0*
*DDA **15** 14:17:43.4, 39.20N×40.71E, h18km, Ml3.2*
ISC 15 14:17:43.8±1.0, 39.19N±0.02×40.71E±0.02, h6km±9km, n52, σ0.76/75, Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
BNGB	**Bing¯¶‖**	**0.20**	**186**	*e*PG	**Pg**	**14 17 47.4**	**-0.5**
BNGB				*e*SG	**Sg**	**14 17 51.0**	**+0.5**
BNGL	**BINGOL**	**0.42**	**125**	*i* P	**Pg**	**14 17 52.0**	**+0.1**
BNGL				*i* S	**Sg**	**14 17 58.7**	**+1.2**
VRTB	**Varto-Mus**	**0.58**	**93**	*e*PG	**Pg**	**14 17 54.6**	**-0.4**
VRTB				*e*SG	**Sb**	**14 18 04.2**	**-0.8**
VRTB	**Varto-Mus**	**0.58**	**93**	*e*Pg	**Pg**	**14 17 54.6**	**-0.4**
VRTB				*e*Sg	**Sb**	**14 18 04.2**	**-0.8**
KOPT	**Kop Dagi**	**0.84**	**349**	*i* P	**Pg**	**14 17 59.8**	**-0.2**
KOPT				*i* S	**Sn**	**14 18 14.8**	**-0.4**
ERZN	**Erzincan**	**0.86**	**297**	*e*PG	**Pg**	**14 17 59.4**	**-0.9**
ERZN				*e*SG	**Sb**	**14 18 12.5**	**-0.5**
EZM	**Erzurum**	**0.87**	**35**	*e*PG	**Pg**	**14 18 00.4**	**-0.2**
TNCL	**Tunceli-Merkez**	**0.91**	**265**	*i* P	**Pg**	**14 18 00.3**	**-0.9**
TNCL				*i* S	**Sb**	**14 18 14.0**	**-0.4**
TNCL	**Tunceli-Merkez**	**0.91**	**265**	P	**Pg**	**14 18 00.3**	**-0.9**
TNCL				S	**Sb**	**14 18 14.0**	**-0.4**
PTK	**Pertek**	**1.07**	**254**	*e*PG	**Pg**	**14 18 03.0**	**-1.3**
PTK				*e*SG	**Sb**	**14 18 19.2**	**+0.1**
PTK	**Pertek**	**1.07**	**254**	*e*Pg	**Pg**	**14 18 03.0**	**-1.3**
PTK				*e*Sg	**Sb**	**14 18 19.2**	**+0.1**
SVAN	**Silvan-Diyarba**	**1.11**	**160**	*e*PN	**Pb**	**14 18 05.0**	**-0.4**
SVAN	**Silvan-Diyarba**	**1.11**	**160**	*e*Pn	**Pb**	**14 18 05.0**	**-0.4**
BAYT	**Ayd¯–ntepe-Bay**	**1.27**	**340**	*e*PN	**Pg**	**14 18 07.7**	**-0.5**
BAYT	**Ayd¯–ntepe-Bay**	**1.27**	**340**	*e*Pn	**Pg**	**14 18 07.7**	**-0.5**
DYBB	**Diyarbakir**	**1.32**	**200**	*e*PN	**Pg**	**14 18 08.5**	**-0.5**
DIYA	**Diyarbakir**	**1.35**	**200**	*i* P	**Pg**	**14 18 09.7**	**0.0**
DIYA				*i* S	**Sn**	**14 18 28.0**	**+0.5**
DIYA	**Diyarbakir**	**1.35**	**200**	P	**Pg**	**14 18 09.7**	**0.0**
DIYA				S	**Sn**	**14 18 28.0**	**+0.5**
DIY	**Diyarbakir**	**1.35**	**196**	*e*Pn	**Pn**	**14 18 08.5**	**-0.7**
SVRC	**Sivrice-ELAZID**	**1.36**	**234**	*e*PN	**Pg**	**14 18 10.0**	**+0.1**
SVRC	**Sivrice-ELAZID**	**1.36**	**234**	*e*Pn	**Pg**	**14 18 10.0**	**+0.1**
BTMN	**Batman**	**1.37**	**161**	*i* P	**Pn**	**14 18 09.3**	**-0.2**
BTMN				*i* S	**Sn**	**14 18 29.2**	**+1.1**
BTMN	**Batman**	**1.37**	**161**	P	**Pn**	**14 18 09.4**	**-0.2**
BTMN				S	**Sn**	**14 18 29.2**	**+1.1**
TATV	**Tatvan**	**1.40**	**119**	*i* P	**Pn**	**14 18 08.2**	**-1.9**
TATV				*i* S	**Sb**	**14 18 27.7**	**-0.8**
TATV	**Tatvan**	**1.40**	**119**	P	**Pn**	**14 18 08.1**	**-1.9**
TATV				S	**Sb**	**14 18 27.7**	**-0.8**
KELT	**Kelkit**	**1.47**	**311**	*i* P	**Pn**	**14 18 10.9**	**-0.1**
KELT				*i* S	**Sg**	**14 18 33.1**	**+2.0**
KELT	**Kelkit**	**1.47**	**311**	P	**Pn**	**14 18 10.9**	**-0.1**
KELT				S	**Sg**	**14 18 33.1**	**+2.0**
EATA	**Eleskirt**	**1.53**	**64**	*i* P	**Pn**	**14 18 12.1**	**+0.1**
EATA				*i* S	**Sg**	**14 18 34.7**	**+1.7**
GUMT	**Gumushane**	**1.58**	**324**	*e*PN	**Pb**	**14 18 12.6**	**-0.9**
GUMT	**Gumushane**	**1.58**	**324**	*e*Pn	**Pb**	**14 18 12.6**	**-0.9**
ILIC	**ilic-Erzincan**	**1.68**	**280**	*e*PN	**Pn**	**14 18 13.8**	**0.0**
ILIC	**ilic-Erzincan**	**1.68**	**280**	*e*Pn	**Pn**	**14 18 13.8**	**0.0**
MAZI	**Mazidag**	**1.74**	**187**	*e*PN	**Pn**	**14 18 14.6**	**-0.1**
MAZI	**Mazidag**	**1.74**	**187**	*e*Pn	**Pn**	**14 18 14.6**	**-0.1**
AGRB	**Hanur-Agry**	**1.81**	**77**	*e*PN	**Pn**	**14 18 15.9**	**+0.2**
AGRB	**Hanur-Agry**	**1.81**	**77**	*e*Pn	**Pn**	**14 18 15.9**	**+0.2**
MARD	**Mardin**	**1.88**	**178**	*i* P	**Pn**	**14 18 17.0**	**+0.5**
MARD				*i* S	**Sb**	**14 18 41.9**	**-0.4**
KTUT	**Trabzon**	**1.93**	**338**	*e*PN	**Pn**	**14 18 17.4**	**+0.3**
KTUT	**Trabzon**	**1.93**	**338**	*e*Pn	**Pn**	**14 18 17.4**	**+0.3**
DBAD	**Bademkaya**	**1.97**	**22**	*i* P	**Pn**	**14 18 18.4**	**+0.5**
DBAD				*i* S	**Sb**	**14 18 45.9**	**+0.8**
GEVA	**Gevas**	**2.04**	**115**	*i* P	**Pb**	**14 18 20.8**	**-0.5**
GEVA	**Gevas**	**2.04**	**115**	P	**Pb**	**14 18 20.8**	**-0.5**
DAGI	**Agillar**	**2.10**	**26**	*i* P	**Pn**	**14 18 19.7**	**+0.2**
DAGI				*i* S	**Sg**	**14 18 50.0**	**-1.1**
VANB	**Van**	**2.18**	**105**	*e*PN	**Pn**	**14 18 21.1**	**+0.5**
VANB	**Van**	**2.18**	**105**	*e*Pn	**Pn**	**14 18 21.1**	**+0.5**
ARTV	**Artvin**	**2.20**	**25**	*i* P	**Pn**	**14 18 21.7**	**+0.6**
ARTV				*i* S	**Sg**	**14 18 54.7**	**+0.3**
CLDR	**Caldiran**	**2.50**	**90**	*e*PN	**Pn**	**14 18 25.7**	**+0.6**
CLDR	**Caldiran**	**2.50**	**90**	*e*Pn	**Pn**	**14 18 25.7**	**+0.6**
CUKAN	**kangal_SIVAS**	**2.52**	**274**	*i* P	**Pb**	**14 18 29.2**	**-0.3**
CUKAN	**kangal_SIVAS**	**2.52**	**274**	P	**Pb**	**14 18 29.2**	**-0.3**
DARE	**Darende-Malaty**	**2.59**	**257**	*e*PN	**Pn**	**14 18 26.8**	**+0.5**
DARE	**Darende-Malaty**	**2.59**	**257**	*e*Pn	**Pn**	**14 18 26.8**	**+0.5**

JMA 15 14:22:23.4, 36.71N×137.87E, h3km±1km, M0.4, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MAT	**Matsushiro**	**0.32**	**122**	P	Pg	14 22 29.2	-0.3
MAT				S	Sg	14 22 34.1	+0.4
MAT	**Matsushiro**	**0.32**	**122**	P	Pg	14 22 29.4	-0.1
MAT				S	Sg	14 22 34.1	+0.4
JNG	**Nsakai**	**0.35**	**148**	P	Pg	14 22 30.3	+0.1
JNG				S	Sg	14 22 35.4	+0.5

*NIED **15** 14:26:00, 37.30N×142.50E, h11km, Mw3.4 Best double couple: M01.20000×10^14 NP1:φ202.00000°, δ42.00000°, λ-95.00000°. NP2:φ29.00000°, δ48.00000°, λ-85.00000°.*
JMA 15 14:26:03.6±0.2, 37.34N×142.47E, h0km±3km, M3.5, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JFK	**Kawauchi**	**1.27**	**272**	P	Pg	14 26 28.0	0.0
JIO	**Ouri**	**1.42**	**322**	P	Pn	14 26 30.2	-0.5
JIO				*e*S	Sn	14 26 50.2	+0.1
JMM	**Marumori**	**1.43**	**292**	P	Pn	14 26 30.3	-0.5
JFT	**Otama**	**1.71**	**277**	P	Pb	14 26 35.4	-0.5
JFT				*e*S	Sn	14 26 57.1	-0.1
JOU	**Okura**	**1.76**	**306**	P	Pn	14 26 36.0	+0.7
JOU				*e*S	Sn	14 26 58.3	-0.2

*NIED **15** 14:34:00, 39.10N×142.50E, h26km, Mw4.9 Best double couple: M02.39000×10^16 NP1:φ323.00000°, δ34.00000°, λ-131.00000°. NP2:φ189.00000°, δ65.00000°, λ-66.00000°.*
*BJI **15** 14:34:22.8, 38.99N×142.33E, h31km, mb4.8/76, mB5.0/51, Ms4.6/82, Ms7 4.5/76*
*GCMT **15** 14:34:22.1±0.3, 39.23N×142.39E, h23km±1km, MW4.9/75, Moment Tensor Solution. s38,c43; s75,c113; Duration: 0 Moment tensor: Scale 10^16Nm; Mrr-2.11±.14; Mθθ-0.33±.08; Mφφ2.44±.09; Mrθ1.34±.14; Mrφ-0.52±.06; Mθφ1.67±.13; Best double couple: M03.16600×10^16 NP1:φ198.00000°, δ67.00000°, λ-63.00000°. NP2: φ325.00000°, δ35.00000°, λ-137.00000°. Principal axes: T 2.9890, Plg18.0000°, Azm268.0000°; N 0.3500, Plg25.0000°, Azm7.0000°; P -3.3430, Plg59.0000°, Azm146.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
*NEIC **15** 14:34:22.1±0.1, 39.11N×142.29E, h10km, mb5.1/174 Error ellipse: s-maj=3.9km s-min=2.6km az=137.0*
NEIC Recorded [3 JMA] in Miyagi.
*MOS **15** 14:34:23.3±1.1, 39.20N×142.36E, h27km, mb5.2/86, MS4.8/13, Error ellipse: s-maj=6.3km s-min=3.9km az=99.3*
*JMA **15** 14:34:23.7±0.1, 39.17N×142.42E, h31km±1km, M5.0 Broadband fault plane solution: P waves. NP1: φ±344.00000°, δ52.00000°, λ-102.00000°. NP2: φ182.00000°, δ40.00000°, λ-76.00000°. Principal axes: T Plg6.0000°, Azm82.0000°; N Plg9.0000°, Azm351.0000°; P Plg79.0000°, Azm205.0000°;*
JMA Felt III J1.
*ISCJB **15** 14:34:23.9±0.5, 39.13N±0.02×142.33E±0.02, h31km±3km, mb4.9/272, MS4.5/53 Error ellipse: s-maj=3.5km s-min=2.4km az=146.6*
*IDC **15** 14:34:26.9±1.8, 39.12N×142.32E, h43km±16km, mb4.5/32, mb1 4.7/38, mb1mx4.6/46, mbtmp4.8/38, ML4.5/5, MS4.3/29, Ms1 4.3/29, ms1mx4.1/45, Error ellipse: s-maj=12.6km s-min=9.1km az=103.0*
ISC 15 14:34:23.3±0.3, 39.15N±0.03×142.42E±0.03, h20km±2km, h19km:pP-P, n684, σ1$40/732, mb5.0/275, MS4.6/54, 32C-8D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
OFUJ	**Ofunato**	**0.58**	**264**	⇑P	**Pg**	**14 34 35.3**	**+0.3**
OFUJ				S	**Sg**	**14 34 43.6**	**+0.7**
MIYJ	**Miyakonagasawa**	**0.63**	**313**	⇑P	**Pb**	**14 34 35.8**	**+0.1**
MIYJ				S	**Sg**	**14 34 44.3**	**-0.1**
JTH	**Tanohata**	**0.90**	**332**	P	**Pb**	**14 34 39.5**	**-0.8**
JOM	**Ohasama**	**0.93**	**291**	⇑P	**Pb**	**14 34 40.8**	**0.0**
JOM				S	**Sb**	**14 34 52.9**	**+0.1**
JMK	**Ichinoseki**	**0.95**	**259**	⇑P	**Pb**	**14 34 41.0**	**-0.1**
JMK				S	**Sg**	**14 34 53.9**	**-0.5**
JIO	**Ouri**	**1.08**	**231**	⇑P	**Pn**	**14 34 42.4**	**-1.0**
JRG	**Rokugo**	**1.41**	**281**	⇑P	**Pn**	**14 34 48.2**	**+0.4**
JANG	**Nango**	**1.41**	**331**	⇑P	**Pn**	**14 34 47.5**	**-0.4**
JANG				S	**Sn**	**14 35 05.4**	**-0.5**
JOU	**Okura**	**1.58**	**241**	⇑P	**Pn**	**14 34 50.4**	**+0.2**
JOU				*e*S	**Sn**	**14 35 10.0**	**0.0**
ERM	**Erimo**	**2.92**	**11**	*e*P	**Pn**	**14 35 09.3**	**+0.7**
ERM				*e*		14 35 39.8	
ERM	**Erimo**	**2.92**	**11**	*e*Pn	**Pn**	**14 35 09.3**	**+0.7**
ERM				*e*Sn	**Sn**	**14 35 39.8**	**-3.4**
MJAR	**Matsushiro Arr**	**4.22**	**233**	P	**Pn**	**14 35 28.7**	**+2.1**
	54nm,0.3s,baz=41,slow=11,SNR=214						
MJAR				LR	LR	14 37 28.9	
	comp=Z,5μm,18.1s,baz=40,slow=44						
MAJO	**Matsushiro**	**4.22**	**233**	*e*P	**Pn**	**14 35 28.1**	**+1.5**
MAJO				*e*SN	**Sn**	**14 36 13.1**	**-2.3**
MAJO	**Matsushiro**	**4.22**	**233**	*e*Pn	**Pn**	**14 35 28.1**	**+1.5**
MAJO				*e*Sn	**Sn**	**14 36 13.1**	**-2.3**
MAT	**Matsushiro**	**4.22**	**233**	P	**Pn**	**14 35 28.4**	**+1.8**
MAT				S	**Sn**	**14 36 16.8**	**+1.4**
ASAJ	**Asahikawa**	**4.97**	**1**	P	**Pn**	**14 35 38.6**	**+1.8**
	12nm,0.3s,baz=223,slow=11,SNR=68						
ASAJ				S	**Sn**	**14 36 33.2**	**-0.4**
	6.7nm,0.3s,baz=202,slow=29,SNR=4.6						
ASAJ	**Asahikawa**	**4.97**	**1**	*e*Pn	**Pn**	**14 35 36.4**	**-0.4**
ASAJ				*e*Sn	**Sn**	**14 36 33.2**	**-0.4**
ASAJ				S	**Sn**	**14 36 33.2**	**-0.4**
YUK	**Yuzh-Kuril'sk**	**5.53**	**27**	*e*P	**Pn**	**14 35 43.4**	**-1.0**
YUK				*e*S	**Sn**	**14 36 43.1**	**-4.2**
YUK				pmax	pmax		
	comp=Z,695nm,0.4s						
YUK				pmax	pmax		
	comp=N,126nm,0.3s						
YUK				pmax	pmax		
	comp=E,118nm,0.2s						
YUK				MLR	MLR		
	comp=Z,2μm,12.0s						
YUK				MLR	MLR		
	comp=N,3μm,9.0s						
INU	**Inuyama**	**5.74**	**230**	*e*Pn	**Pn**	**14 35 47.1**	**-0.2**
SHO	**Shikotan**	**5.77**	**34**	*e*P	**Pn**	**14 35 45.8**	**-1.9**
SHO				*e*S	Sn	14 36 46.4	-6.9
SHO				pmax	pmax		
	comp=Z,317nm,0.6s						
SHO				pmax	pmax		
	comp=E,279nm,0.7s						
SHO				pmax	pmax		
	comp=N,183nm,0.3s						
JHJ2	**Mitsune**	**6.38**	**200**	*e*Pn	**Pn**	**14 35 55.0**	**-1.2**
JHJ2				*e*Sn	**Sn**	**14 37 06.3**	**-2.1**
JHJ	**Hachijo jima 2**	**6.38**	**200**	P	**Pn**	**14 35 56.2**	**0.0**
	comp=N,81nm,0.3s,baz=322,slow=22,SNR=19						
JHJ				S	**Sn**	**14 37 04.8**	**-3.7**
	comp=N,86nm,0.3s,baz=233,slow=20,SNR=8.7						
KUR	**Kuril'sk**	**7.30**	**32**	*e*P	**Pn**	**14 36 08.3**	**-0.5**
KUR				*e*S	**Sn**	**14 37 25.5**	**-5.6**
KUR				pmax	pmax		
	comp=E,106nm,0.5s						
KUR				pmax	pmax		
	comp=Z,155nm,0.5s						
KUR				pmax	pmax		
	comp=N,33nm,0.2s						
YSS	**Yuzh-Sakhalins**	**7.81**	**2**	⇓*e*P	**Pn**	**14 36 17.1**	**+1.3**
YSS				*e*S	**Sn**	**14 37 48.4**	**+4.9**
YSS				pmax	pmax		
	comp=Z,50nm,0.8s						
YSS				MLR	MLR		
	comp=Z,1μm,17.0s						
YSS				MLR	MLR		
	comp=N,1μm,10.0s						
YSS				MLR	MLR		
	comp=E,1μm,18.0s						
YSS	**Yuzh-Sakhalins**	**7.81**	**2**	Pn	**Pn**	**14 36 16.4**	**+0.7**
YSS				*e*Sn	**Sn**	**14 37 42.5**	**-1.1**
USRK	**Ussuriysk Ar.**	**9.29**	**306**	P	**Pn**	**14 36 38.6**	**+2.5**
	comp=E,1.6nm,0.3s,baz=116,slow=14,SNR=37						
USRK				LR	LR	14 40 07.0	
	comp=E,4μm,18.2s,baz=112,slow=37						
HABR	**Khabarovsk**	**10.73**	**333**	*e*P	**Pn**	**14 36 55.1**	**-0.7**
HABR				*e*S	**Sn**	**14 38 54.8**	**-0.4**
HABR				pmax	pmax		
	comp=N,8.0nm,1.5s						
HABR				pmax	pmax		
	comp=E,22nm,1.5s						
HABR				pmax	pmax		
	comp=Z,52nm,1.5s						
HABR				MLR	MLR		
	comp=Z,937nm,13.0s						
MDJ	**Mudanjiang**	**11.01**	**304**	P	Pn	14 37 06.5	+6.9
MDJ				S	Sn	14 39 11.8	+10
MDJ				pmax	pmax		
	comp=Z,71nm,0.9s						
MDJ				pmax	pmax		
	comp=Z,170nm,5.7s						
MDJ				LR	LR		
	comp=Z,1μm,17.3s						
MDJ				LR	LR		
	comp=Z,2μm,16.1s						
MDJ				LR	LR		
	comp=Z,3μm,17.3s						
MDJ	**Mudanjiang**	**11.01**	**304**	**Pn**	**Pn**	**14 36 59.8**	**+0.1**
	comp=Z,72nm,0.9s						
JNU	**Nakatsue**	**11.09**	**241**	P	**Pn**	**14 37 03.5**	**+2.6**
	comp=Z,3.5nm,0.3s,baz=69,slow=2.9,SNR=36						
JNU				LR	LR	14 41 38.9	
	comp=Z,3μm,19.4s,baz=42,slow=39						
JNU	**Nakatsue**	**11.09**	**241**	*e*Pn	**Pn**	**14 37 00.2**	**-0.6**
KSRS	**Korea Array**	**11.52**	**266**	P	Pn	14 37 11.1	+4.5
	comp=Z,1.9nm,0.3s,baz=73,slow=14,SNR=60						
KSRS				LR	LR	14 41 13.6	
	comp=Z,2μm,19.3s,baz=82,slow=36						
KS01	**Wonju Array Si**	**11.53**	**266**	*e*Pn	Pn	14 37 10.5	+3.7
KS15	**Wonju Array Si**	**11.55**	**266**	*e*Pn	**Pn**	**14 37 08.2**	**+1.1**
KSAR	**Wonju Array Be**	**11.55**	**266**	P	Pn	14 37 11.1	+4.1
KSAR	**Wonju Array Be**	**11.55**	**266**	P	Pn	14 37 11.1	+4.0
TYV	**Tymovskoe**	**11.72**	**1**	*e*P	**Pn**	**14 37 10.8**	**+1.5**
TYV				*e*		14 39 24.0	
TYV				pmax	pmax		
	comp=Z,13nm,0.8s						
TYV				MLR	MLR		
	comp=N,2μm,18.0s						
TYV				MLR	MLR		
	comp=Z,2μm,16.0s						
CBIJ	**Chichi jima**	**12.02**	**181**	*e*Pn	**Pn**	**14 37 10.9**	**-2.6**
CBIJ				S	Sn	14 39 15.2	-12
JCJ	**Chichijima**	**12.02**	**181**	P	**Pn**	**14 37 11.2**	**-2.3**
	comp=Z,14nm,0.3s,baz=270,slow=22,SNR=10						
JCJ				S	Sn	14 39 15.2	-12
	baz=315,slow=20						
KLR	**Kul'dur**	**12.64**	**326**	P	**Pn**	**14 37 24.4**	**+2.4**
	comp=Z,0.3nm,0.3s,baz=135,slow=12,SNR=14						
KLR				LR	LR	14 42 16.4	
	comp=Z,2μm,18.9s,baz=140,slow=37						
CN2	**Changchun**	**13.54**	**296**	*e*P	**Pn**	**14 37 36.3**	**+2.0**
CN2				*e*S	**Sn**	**14 40 04.9**	**+0.8**
CN2				pmax	pmax		
	comp=Z,10.0nm,0.6s						
CN2				pmax	pmax		
	comp=Z,200nm,4.0s						
CN2				LR	LR		
	comp=Z,1μm,20.0s						
CN2				LR	LR		
	comp=Z,900nm,20.0s						
CN2				LR	LR		
	comp=Z,1μm,21.0s						
NKL	**Nikolayevsk**	**14.06**	**356**	*e*P	**Pn**	**14 37 40.0**	**-1.2**
NKL				pmax	pmax		
	comp=Z,35nm,1.2s						
NKL				MLR	MLR		
	comp=N,500nm,15.0s						
NKL				MLR	MLR		
	comp=E,1μm,15.0s						
NKL				MLR	MLR		
	comp=Z,900nm,15.0s						
SNY	**Shenyang**	**14.59**	**287**	⇑P	**P**	**14 37 54.8**	**0.0**
SNY				S	**S**	**14 40 43.1**	**-5.5**
SNY				pmax	pmax		
	comp=Z,16nm,0.7s						
SNY				pmax	pmax		
	comp=Z,220nm,5.3s						
SNY				LR	LR		
	comp=N,440nm,18.4s						
SNY				LR	LR		
	comp=E,2μm,18.2s						
SNY				LR	LR		
	comp=Z,2μm,19.6s						
DL2	**Dalian**	**16.16**	**276**	P	**P**	**14 38 10.8**	**-1.5**
DL2				pmax	pmax		
	comp=Z,52nm,1.2s						
PETK	**Petropavlovsk-**	**17.47**	**32**	P	**Pn**	**14 38 22.8**	**-2.9**
	comp=Z,0.3nm,0.3s,baz=209,slow=15,SNR=7.8						
PETK				PcP	**PcP**	**14 43 06.3**	**+0.6**
	comp=Z,0.2nm,0.3s,baz=203,slow=2.2,SNR=5.8

TIA LR LR
comp=Z,1μm,11.8s
BJI Beijing 20.22 281 P P 14 38 54.9 -2.1
BJI sP **sP** 14 39 07.4 +2.2
BJI S S 14 42 34.9 -8.1
BJI sS **sS** 14 42 53.4 +1.5
BJI pmax pmax
comp=Z,36nm,0.8s
BJI LR LR
comp=Z,370nm,16.4s
BJT Baijiatuau 20.23 281 *e*P P 14 38 52.3 -4.8
comp=Z,24nm,0.6s
NJ2 Nanjing 20.39 257 *e*P **P 14 38 58.3 -0.6**
NJ2 pP **sP 14 39 07.8 +0.7**
NJ2 pmax pmax
comp=Z,23nm,0.5s
NJ2 pmax pmax
comp=Z,1μm,8.4s
NJ2 LR LR
comp=Z,1μm,15.5s
NJ2 LR LR
comp=Z,3μm,15.0s
NJ2 LR LR
comp=Z,2μm,15.5s
CLNS Chul'man 21.12 333 *e*P **P 14 39 07.2 +0.5**
CLNS pmax pmax
comp=N,21nm,1.4s
CLNS pmax pmax
comp=Z,30nm,1.0s
CLNS pmax pmax
comp=E,13nm,0.8s
CLNS MLR MLR
comp=N,472nm,13.0s
CLNS MLR MLR
comp=E,340nm,14.0s
CLNS MLR MLR
comp=Z,639nm,13.0s
MA2 Magadan 21.13 12 P **P 14 39 07.3 +0.6**
comp=Z,38nm,0.7s,baz=217,slow=9.6,SNR=16
MA2 LR LR 14 47 29.4
comp=Z,487nm,19.5s,baz=222,slow=37
YHNB Yeheng 22.89 237 *e*P **P 14 39 23.0 -2.8**
comp=Z,121nm,1.7s
NACB Ninganchiao 23.09 236 *e*P **P 14 39 23.4 -4.5**
HHC Hu-ho-hao-te 23.64 284 *e*P **P 14 39 32.9 -0.4**
HHC pP pP 14 39 37.4 -1.8
HHC PP **PnPn 14 40 03.3 +2.7**
HHC S **S 14 43 43.6 -3.4**
HHC sS sS 14 43 53.5 -3.4
HHC SS SnSn 14 44 34.6 +10
HHC pmax pmax
comp=Z,16nm,0.9s
HHC LR LR
comp=Z,3μm,12.2s
HHC LR LR
comp=Z,3μm,14.7s
HHC LR LR
comp=Z,3μm,16.9s
CIT Chita 23.77 312 *e*P **P 14 39 34.7 +0.3**
CIT *e* 14 40 06.2
CIT pmax pmax
comp=Z,98nm,1.5s
SSLB Suanglung 23.78 236 *e*P **P 14 39 31.3 -3.4**
comp=Z,36nm,1.2s
YULB Yu-li 23.84 235 *e*P **P 14 39 31.8 -3.5**
comp=Z,20nm,0.7s
YAK Yakutsk 24.21 345 P **P 14 39 37.7 -0.7**
comp=Z,29nm,0.4s,baz=346,slow=6.1,SNR=30
YAK Yakutsk 24.21 345*c i*P **P 14 39 37.6 -0.7**
YAK *e**PP **sP 14 39 48.4 +1.6**
YAK *e* 14 43 16.6
YAK *e*S **S 14 43 52.1 -3.3**
YAK *e* 14 50 39.2
YAK pmax pmax
comp=Z,50nm,0.9s
YAK pmax pmax
comp=N,24nm,1.0s
YAK pmax pmax
comp=E,11nm,1.1s
YAK pmax pmax
comp=Z,63nm,1.1s
YAK pmax pmax
comp=N,44nm,1.6s
YAK pmax pmax
comp=E,35nm,1.6s
YAK smax smax
comp=N,26nm,2.1s
YAK smax smax
comp=E,99nm,2.3s
YAK Yakutsk 24.21 345 *e*P **P 14 39 37.0 -1.4**
comp=E,71nm,0.8s
TPUB Ta-pu 24.33 236 *e*P **P 14 39 36.9 -2.9**
comp=E,40nm,1.0s
TWG Pinlang 24.39 234 *e*P **P 14 39 38.0 -2.4**
comp=E,308nm,1.1s
WHN Wuhan 24.51 258 ⇓P **P 14 39 41.3 0.0**
WHN S S 14 43 50.3 -10
WHN pmax pmax
comp=E,100nm,0.6s
WHN pmax pmax
comp=E,510nm,3.4s
WHN LR LR
comp=E,2μm,17.2s
WHN LR LR
comp=E,3μm,15.2s
WHN LR LR
comp=E,3μm,13.9s
QZH Quanzhou 24.57 242 P **P 14 39 40.8 -1.1**
QZH S **S 14 43 58.1 -3.7**
QZH LR LR
comp=E,2μm,15.0s
QZH LR LR
comp=E,2μm,18.5s
QZH LR LR
comp=E,2μm,14.7s
SEY Seymchan 24.57 11 P **P 14 39 42.7 +1.1**
comp=E,9.5nm,0.6s,baz=196,slow=10,SNR=29
BOD Bodaibo 26.21 325 ⇑*i*P **P 14 39 56.8 +0.2**
BOD *e* 14 50 46.8
BOD pmax pmax
comp=Z,17nm,1.0s
ULN Ulaanbaatar 26.89 301 *e*P **P 14 40 05.1 +2.1**
ULN pmax pmax
comp=Z,4.0nm,0.9s
ULN Ulaanbaatar 26.89 301 *e*P **P 14 40 02.8 -0.3**
comp=Z,19nm,1.5s
XAN Xi'an 27.28 270 P **P 14 40 05.5 -0.9**
XAN pP pP 14 40 12.8 +0.4
XAN S **S 14 44 38.6 -6.2**
XAN pmax pmax
comp=Z,14nm,0.6s
XAN LR LR
comp=Z,680nm,16.5s
XAN LR LR
comp=Z,730nm,12.9s
SONA1 Songino Array 27.33 300 *e*P **P 14 40 05.5 -1.4**
SONM Songino Array 27.33 300 P **P 14 40 07.4 +0.5**
comp=Z,4.7nm,0.5s,baz=100,slow=8.1,SNR=41
SONM LR LR 14 51 29.0
comp=Z,1μm,18.3s,baz=99,slow=38
ENH Enshi 28.36 262 *e*P **P 14 40 15.2 -0.9**
comp=Z,51nm,0.7s
H11N2 WAKE ISLAND Hy 28.64 125 T T 15 10 48.3
baz=318,slow=75,SNR=3613
H11N1 WAKE ISLAND Hy 28.65 125 T T 15 10 48.5
baz=318,slow=75,SNR=3766
H11N3 WAKE ISLAND Hy 28.65 125 T T 15 11 00.1
baz=318,slow=75,SNR=3069
IRK Irkutsk 29.32 309 *e*P **P 14 40 23.9 -0.6**
IRK pmax pmax
comp=E,33nm,2.1s
H11S1 WAKE ISLAND Hy 29.43 127 T T 15 11 51.1
baz=319,slow=76,SNR=693
H11S3 WAKE ISLAND Hy 29.43 127 T T 15 11 51.4
baz=319,slow=76,SNR=1028
H11S2 WAKE ISLAND Hy 29.44 127 T T 15 11 52.9
baz=319,slow=76,SNR=776
TLY Talaya 29.60 308 P **P 14 40 27.6 +0.6**
comp=E,4.6nm,0.6s,baz=8.3,slow=1.9,SNR=10
TLY Talaya 29.60 308 *e*P **P 14 40 25.9 -1.1**
TLY *e*S **S 14 45 21.9 +0.8**
TLY pmax pmax
comp=Z,16nm,1.4s
TLY MLR MLR
comp=Z,1μm,17.0s
TLY Talaya 29.60 308 *e*P **P 14 40 26.4 -0.6**
comp=Z,7.7nm,0.7s
TLY Talaya 29.60 308 P **P 14 40 27.9 +0.9**
SNR=8.3
TLY Talaya 29.60 308 P **P 14 40 27.9 +0.9**
SNR=8.3
TLY P **P 14 40 27.9 +0.9**
SNR=8.3
ZAK Zakamensk 29.64 305 *e*P **P 14 40 27.6 +0.2**
ZAK pmax pmax
comp=Z,8.0nm,1.1s
LZH Lanzhou 30.55 277 *e*P **P 14 40 37.3 +1.6**
LZH pP sP 14 40 46.9 +2.7
LZH sP pP 14 40 51.8 +10
LZH PP **PnPn 14 41 35.3 +0.4**
LZH S **S 14 45 32.5 -4.1**
LZH pmax pmax
comp=Z,38nm,1.0s
LZH pmax pmax
comp=Z,150nm,4.5s
LZH LR LR
comp=Z,580nm,12.6s
LZH LR LR
comp=Z,1μm,12.8s
LZH LR LR
comp=Z,1μm,15.0s
MOY Mondy 31.23 307 *e*P **P 14 40 42.5 +1.0**
BILL Bilibino 31.78 17*ce*P **P 14 40 46.6 +0.6**
BILL *e*PPP PPP 14 41 59.7
BILL pmax pmax
comp=Z,20nm,1.2s
BILL MLR MLR
comp=Z,343nm,17.0s
BILL Bilibino 31.78 17 *e*P **P 14 40 44.6 -1.4**
comp=Z,20nm,1.2s
GYA Guiyang 32.40 258 ⇑*i*P **P 14 40 52.6 +0.6**
GYA pP sP 14 41 02.0 +1.6
GYA PP **PnPn 14 42 01.9 +3.0**
GYA PcP **PcP 14 43 41.6 +2.4**
GYA S **S 14 46 04.0 -1.4**
GYA sS sS 14 46 19.3 +3.9
GYA SS **SnSn 14 47 57.8 -0.6**
GYA ScS **ScS 14 51 19.6 -1.7**
GYA pmax pmax
comp=Z,10.0nm,0.8s
GYA pmax pmax
comp=Z,120nm,5.4s
GYA LR LR
comp=Z,540nm,16.8s
GYA LR LR
comp=Z,510nm,17.2s
GYA LR LR
comp=Z,500nm,17.4s
CD2 Chengdu 32.51 267 P **P 14 40 51.4 -1.4**
CD2 sP sP 14 41 04.4 +3.1
CD2 PP **PP 14 42 04.8 -1.5**
CD2 S **S 14 46 04.1 -2.9**
CD2 sS sS 14 46 19.5 +2.6
CD2 pmax pmax
comp=Z,30nm,0.4s
CD2 pmax pmax
comp=Z,40nm,4.5s
CD2 LR LR
comp=Z,1μm,13.2s
CD2 LR LR
comp=Z,1μm,14.4s
GTA Gaotai 32.76 284 *e*P **P 14 40 55.1 +0.1**
GTA pP sP 14 41 04.4 +0.9
GTA sP pP 14 41 08.5 +7.5
GTA PcP **PcP 14 43 41.1 +1.1**
GTA S **S 14 46 07.8 -3.0**
GTA sS sS 14 46 26.0 +5.2
GTA SS **SnSn 14 48 06.0 -0.8**
GTA pmax pmax
comp=Z,4.0nm,0.7s
GTA pmax pmax
comp=Z,100nm,6.9s
GTA LR LR
comp=Z,700nm,17.3s
GTA LR LR
comp=Z,1μm,18.8s
GTA LR LR
comp=Z,2μm,16.4s
TIXI Tiksi 33.30 352 *e*P **P 14 40 58.9 -0.3**
TIXI pmax pmax
comp=Z,2.0nm,0.8s
TIXI Tiksi 33.30 352 *e*P **P 14 40 58.9 -0.3**
comp=Z,7.9nm,1.0s
QIZ Qiongzhong 34.54 244 P **P 14 41 10.8 +0.2**
QIZ S **S 14 46 40.9 +2.4**
QIZ LR LR
comp=Z,250nm,14.6s
QIZ LR LR
comp=Z,280nm,12.5s
KMI Kunming 36.10 259 P **P 14 41 24.4 +0.2**
KMI pP sP 14 41 32.0 -0.7
KMI sP pP 14 41 36.8 +6.6
KMI S **S 14 46 59.9 -2.9**
KMI pmax pmax
comp=Z,47nm,1.1s
KMI pmax pmax
comp=Z,160nm,4.9s
KMI LR LR
comp=Z,430nm,15.7s
KMI LR LR
comp=Z,610nm,14.8s
KMI LR LR
comp=Z,710nm,14.6s
KRAR Krasnoyarsk 36.53 314 *e*P **P 14 41 27.5 +0.3**
KRAR pmax pmax
comp=Z,14nm,1.0s
SKNT Sakolnakorn 40.06 248 P **P 14 41 58.6 +1.2**
comp=Z,27nm,1.1s
MYLDM Lahad Datu 40.15 219 *e*P **P 14 41 56.7 -1.4**
comp=Z,23nm,1.0s
WMQ Urumqi 40.63 295 P **P 14 42 02.5 +0.5**
WMQ pP sP 14 42 09.5 -1.0
WMQ sP pP 14 42 15.8 +7.7
WMQ PP **PP 14 43 37.0 +1.5**
WMQ S **S 14 48 12.3 +1.6**
WMQ sS sS 14 48 25.1 +4.3
WMQ SS **SS 14 51 04.0 -6.9**
WMQ pmax pmax
comp=Z,24nm,0.6s
WMQ pmax pmax
comp=Z,73nm,3.6s
WMQ LR LR
comp=Z,120nm,19.8s
WMQ LR LR
comp=Z,84nm,23.2s
WMQ LR LR
comp=Z,98nm,24.8s
CRAI Chiangrai 40.67 255 P **P 14 42 04.0 +1.5**
comp=Z,20nm,0.9s,comp=Z,300nm
SWI Sorong 41.11 197 P **P 14 42 06.9 +0.9**
comp=Z,30nm,0.9s
ZAA0 Zalesovo Array 41.11 311 *e*P **P 14 42 05.2 -0.4**
ZALV Zalesovo Beam 41.11 311 P **P 14 42 06.0 +0.4**
comp=Z,20nm,0.5s,baz=89,slow=8.2,SNR=92
ZALV PcP **PcP 14 44 04.8 -0.1**
comp=Z,2.5nm,0.4s,baz=100,slow=2.7,SNR=4.1
ZALV LR LR 14 59 47.9
comp=Z,904nm,19.4s,baz=72,slow=37
MANU Manus Island 41.24 172 *e*P **P 14 42 06.7 -0.4**
comp=Z,35nm,1.0s
KHON Khomkaen 41.31 248 P **P 14 42 08.0 +0.3**
comp=Z,13nm,0.8s
JAY Jayapura 41.48 183 P **P 14 42 10.6 +1.5**
comp=Z,43nm,1.2s
GENI Genyem 41.58 183 P **P 14 42 11.7 +1.8**
comp=Z,112nm,1.0s
NRIK Noril'sk 41.70 334 P **P 14 42 10.6 +0.3**
comp=Z,2.4nm,0.5s,baz=112,slow=8.6,SNR=5.3
NRIK LR LR 15 00 19.6
comp=Z,1μm,20.3s,baz=110,slow=37
CMAI Chiengmai2 41.85 256 P **P 14 42 12.9 +0.6**
comp=Z,23nm,0.6s
NVS Novosibirsk 41.99 312 *e*P **P 14 42 12.8 0.0**
NVS *e*S **S 14 48 29.0 -1.3**
NVS pmax pmax
comp=Z,18nm,1.0s
NVS pmax pmax
comp=E,7.0nm,0.5s
NVS smax smax
comp=E,30nm,2.4s
UTTA Uttaradit 42.07 252 P **P 14 42 14.7 +0.8**
comp=E,4.7nm,0.8s
LAMP Lampang 42.27 253 P **P 14 42 16.1 +0.6**
comp=E,7.3nm,0.6s,comp=E,91nm
PBKT Sadao Pong 42.51 250 P **P 14 42 18.1 +0.6**
comp=E,14nm,1.0s
CMMT Chiang Mai 42.60 254 P **P 14 42 18.4 +0.2**
comp=E,14nm,0.8s
CHTO Chiang Mai 42.60 254 P **P 14 42 18.4 +0.1**
comp=E,62nm,0.8s
CHTO Chiang Mai 42.60 254 *e*P **P 14 42 18.4 +0.1**
CHTO pmax pmax
comp=Z,10.0nm,0.7s
CHTO Chiang Mai 42.60 254 *e*P **P 14 42 18.4 +0.1**
comp=Z,10.0nm,0.7s
CHTO Chiang Mai 42.60 254 P **P 14 42 18.4 +0.1**
SNR=9.4
CHTO Chiang Mai 42.60 254 P **P 14 42 18.4 +0.1**
SNR=9.4
CHTO P **P 14 42 18.4 +0.1**
SNR=9.4
MRSI Marisa 42.80 211 P **P 14 42 21.3 +1.5**
comp=Z,53nm,1.1s
CM31 Chiang Mai Arr 42.82 254 *e*P **P 14 42 20.8 +0.8**
CMAR Chiang Mai Arr 42.82 254 P **P 14 42 20.4 +0.4**
comp=Z,5.0nm,0.7s,baz=44,slow=7.7,SNR=68
CMAR LR LR 15 00 32.8
comp=Z,91nm,19.9s,baz=68,slow=37
CM01 Chiang Mai Arr 42.83 254 *e*P **P 14 42 20.0 -0.1**
LSA Lhasa 42.84 273 P **P 14 42 21.8 +1.2**
LSA pmax pmax
comp=Z,5.0nm,0.8s
LSA Lhasa 42.84 273 *e*P **P 14 42 20.9 +0.2**
LSA pmax pmax
comp=Z,27nm,0.9s
LSA Lhasa 42.84 273 *e*P **P 14 42 20.9 +0.2**
comp=Z,27nm,0.9s
FAKI Fak Fak 42.89 195 *e*P **P 14 42 20.8 +0.2**
comp=Z,36nm,1.0s
TT01 Tatalina 43.24 36 *e*P **P 14 42 22.8 -0.1**
TTA Tatalina 43.24 36 *e*P **P 14 42 24.6 +1.5**
TTA pmax pmax
comp=Z,9.0nm,1.2s
TTA Tatalina 43.24 36 *e*P **P 14 42 24.6 +1.5**
comp=Z,8.6nm,1.2s
SVW2 Sparrevohn 43.37 39 *e*P **P 14 42 25.5 +1.5**
comp=Z,22nm,1.0s
SANI Sanana 43.69 204 P **P 14 42 29.0 +2.0**
comp=Z,44nm,1.0s,comp=Z,502nm
MK01 Makanchi Array 43.70 300 *e*P **P 14 42 27.0 +0.1**
MK31 Makanchi Array 43.70 300 P **P 14 42 26.4 -0.5**
MK31 pmax pmax
comp=Z,7.0nm,0.6s
MK31 Makanchi Array 43.70 300 *e*P **P 14 42 26.1 -0.7**
MKAR Makanchi Array 43.70 300 P **P 14 42 27.1 +0.2**
comp=Z,9.7nm,0.7s,baz=83,slow=9.7,SNR=107
MKAR LR LR 15 01 17.7
comp=Z,586nm,21.6s,baz=72,slow=37
MKAR Makanchi Array 43.70 300 *e*P **P 14 42 25.9 -1.0**
MAKZ Makanchi 43.91 301 P **P 14 42 28.2 -0.3**
MAKZ pmax pmax
comp=Z,15nm,0.9s
MAKZ Makanchi 43.91 301 *e*P **P 14 42 28.9 +0.4**
comp=Z,12nm,0.6s
RABL Rabaul 44.05 166 *e*P **P 14 42 29.3 -0.6**
comp=Z,62nm,1.0s
CHBT CHBT 44.08 245 P **P 14 42 32.5 +2.3**
comp=Z,22nm,1.0s
APSI Ampana 44.19 211 P **P 14 42 32.5 +1.5**
comp=Z,53nm,1.1s
RSO Redoubt South 44.77 40 *e*P **P 14 42 36.4 +1.0**
BNDI Bandanaira 44.96 198 P **P 14 42 38.4 +1.2**
comp=Z,145nm,1.0s,comp=Z,1μm
PPLA Purkeypile 44.99 36 *e*P **P 14 42 37.9 +0.8**
comp=Z,25nm,1.2s
KDAK Kodiak Island 45.01 43 P P 14 42 52.6 +15
comp=Z,9.6nm,0.7s,baz=242,slow=2.8,SNR=8.6
KDAK Kodiak Island 45.01 43 *e*P **P 14 42 34.6 -2.5**
KDAK pmax pmax
comp=Z,29nm,1.1s
KDAK Kodiak Island 45.01 43 *e*P **P 14 42 34.6 -2.5**
comp=Z,29nm,1.1s
CAST Castle Rocks 45.04 35 *e*P **P 14 42 39.6 +2.2**
comp=Z,17nm,1.1s
SPU Mount Spurr 45.08 39 *e*P **P 14 42 39.6 +1.9**
KURK Kurchatov 45.28 307 P **P 14 42 38.9 -0.5**
KURK pmax pmax
comp=Z,75nm,0.7s
KURK Kurchatov 45.28 307 *e*P **P 14 42 39.3 -0.1**
comp=Z,40nm,0.7s
KURK Kurchatov 45.28 307 P **P 14 42 39.4 +0.1**
SNR=17
KURK Kurchatov 45.28 307 P **P 14 42 39.4 +0.1**
SNR=17
KURK P **P 14 42 39.4 +0.1**
SNR=17
SRDT SRDT 45.30 249 P **P 14 42 41.1 +1.2**
comp=Z,35nm,0.9s,comp=Z,3μm
KHLT Khaolaem Dam 45.40 250 P **P 14 42 42.7 +2.0**
comp=Z,6.4nm,1.1s
BPAW Bear Paw Mtn. 45.53 34 *e*P **P 14 42 43.0 +1.7**
comp=Z,27nm,1.5s
KTH Kantishna Hill 45.56 35 *e*P **P 14 42 43.4 +1.8**
comp=Z,35nm,1.0s
MLY Manley 45.65 33 *e*P **P 14 42 44.1 +1.9**
comp=Z,21nm,1.1s
TRF Thorofare Moun 45.85 35 *e*P **P 14 42 45.1 +1.2**
comp=Z,10nm,0.9s
COLD Coldfoot 45.93 30 *e*P **P 14 42 46.0 +1.7**
comp=Z,4.5nm,0.8s
RC01 Rabbit Creek A 46.21 39 *e*P **P 14 42 46.3 -0.3**
comp=Z,33nm,1.1s
SEW Seward 46.43 40 *e*P **P 14 42 48.2 -0.1**
comp=Z,41nm,1.5s
MCK McKinley 46.45 35 *e*P **P 14 42 48.7 +0.2**
MCK pmax pmax
comp=Z,21nm,1.0s
MCK McKinley 46.45 35 *e*P **P 14 42 48.7 +0.2**
comp=Z,21nm,1.0s
PMR Palmer 46.47 38 *e*P **P 14 42 49.0 +0.4**
PMR pmax pmax
comp=Z,31nm,1.2s
PMR Palmer 46.47 38 *e*P **P 14 42 49.0 +0.4**
comp=Z,30nm,1.2s
RND Reindeer 46.50 35 *e*P **P 14 42 47.9 -1.0**
RND pmax pmax
comp=Z,32nm,1.1s
RND Reindeer 46.50 35 *e*P **P 14 42 47.9 -1.0**
comp=Z,32nm,1.1s
PDGK Podgornoye 46.52 296 P **P 14 42 48.7 -0.5**
PDGK pmax pmax
comp=Z,20nm,1.3s
MDM Murphy Dome 46.71 33 *e*P **P 14 42 51.8 +1.2**
comp=Z,28nm,1.0s
WRH Wood River Hil 46.79 34 *e*P **P 14 42 50.6 -0.5**
comp=Z,10.0nm,0.9s
SML Sawmill 46.83 38 *e*P **P 14 42 50.3 -1.2**
SML pmax pmax
comp=Z,22nm,0.9s
SML Sawmill 46.83 38 *e*P **P 14 42 50.3 -1.2**
comp=Z,22nm,0.9s
COLA College 46.88 33*c i*P **P 14 42 53.6 +1.8**
COLA pmax pmax
comp=Z,11nm,1.0s
COLA College 46.88 33 *e*P **P 14 42 53.5 +1.8**
comp=Z,11nm,0.8s
CCB Clear Creek Bu 46.91 34 *e*P **P 14 42 51.0 -1.0**
comp=Z,18nm,1.3s
DHY Denali Highway 47.18 36 *e*P **P 14 42 52.5 -1.9**
comp=Z,17nm,1.1s
IL1 Eielson Array 47.30 33 *e*P **P 14 42 54.5 -0.5**
ILAR Eielson Array 47.30 33 P **P 14 42 56.1 +1.1**
comp=Z,13nm,0.7s,baz=267,slow=6.1,SNR=221
ILAR LR LR 15 03 40.2
comp=Z,126nm,21.2s,baz=302,slow=37
ILB Eielson Array 47.30 33 *e*P **P 14 42 55.3 +0.3**
SCM Sheep Creek Mo 47.30 37 *e*P **P 14 42 54.6 -0.7**
SCM pmax pmax
comp=Z,30nm,0.9s
SCM Sheep Creek Mo 47.30 37 *e*P **P 14 42 54.6 -0.7**
comp=Z,30nm,0.9s
KSM Kuching 47.58 226 *e*P **P 14 42 58.2 +0.4**
comp=Z,11nm,0.8s
GUN Gumba 47.76 274 *e*P **P 14 43 00.2 +0.6**
comp=Z,69nm,0.5s
FYU Fort Yukon 47.89 31 *e*P **P 14 42 59.9 +0.3**
comp=Z,61nm,1.4s
KLU Klutina 48.01 38 *e*P **P 14 43 01.2 +0.5**
comp=Z,30nm,1.1s

PAX **Paxson** 48.06 36 *e*P P 14 43 01.7 +0.6
PAX pmax pmax
comp=Z,12nm,1.0s
PAX **Paxson** 48.06 36 *e*P P 14 43 01.7 +0.6
comp=Z,12nm,1.0s
STKI **Sintang** 48.11 224 P P 14 43 03.5 +1.6
comp=Z,56nm,0.4s
DIV **Divide** 48.12 38 *e*P P 14 43 01.8 +0.2
comp=Z,32nm,1.0s
EYAK **Cordova Ski Ar** 48.21 39 *e*P P 14 43 03.5 +1.3
comp=Z,26nm,1.0s
KKN **Kakani** 48.28 274 *e*P P 14 43 03.8 +0.3
comp=Z,62nm,0.7s
PKIN **Phulchoki** 48.30 274 *e*P P 14 43 02.7 -0.9
comp=Z,12nm,0.4s
PMG **Port Moresby** 48.50 174 *ce*P P 14 43 04.6 -0.2
PMG pmax pmax
comp=Z,173nm,2.5s
PMG **Port Moresby** 48.50 174 *e*P P 14 43 03.6 -1.2
comp=Z,23nm,0.9s
DOT **Dot Lake** 48.62 35 *e*P P 14 43 04.8 -0.5
comp=Z,35nm,1.1s
KAPI **Kappang** 48.68 211 P P 14 43 06.7 +0.4
comp=Z,7.4nm,0.4s,baz=74,slow=11,SNR=5.8
KAPI **Kappang** 48.68 211 *e*P P 14 43 06.8 +0.6
comp=Z,52nm,1.4s
GKN **Gorkha** 48.68 275 *e*P P 14 43 06.6 +0.1
comp=Z,50nm,0.7s
BMRM **Bremner River** 48.71 38 *e*P P 14 43 05.4 -0.7
comp=Z,25nm,1.0s
RAGM **Ragged Mountai** 48.76 39 *e*P P 14 43 06.5 0.0
comp=Z,16nm,0.9s
MENT **Mentasta** 48.86 36 *e*P P 14 43 08.9 +1.8
comp=Z,16nm,0.8s
SURT **Suratani** 49.20 244 P P 14 43 13.2 +2.9
comp=Z,9.7nm,1.3s
TKM2 **Tokmak 2** 49.35 297 *e*P P 14 43 11.9 +0.4
TKM2 pmax pmax
comp=Z,29nm,0.7s
TKM2 **Tokmak 2** 49.35 297 *e*P P 14 43 11.9 +0.4
comp=Z,29nm,0.7s
BBKI **Banjar Baru** 49.43 217 P P 14 43 12.6 +0.5
comp=Z,32nm,1.1s
CHKZ **Chkalovo** 49.47 312 P P 14 43 11.6 -0.3
CHKZ pmax pmax
comp=Z,25nm,1.1s
KOLN **Koldanda** 49.60 275 *e*P P 14 43 13.8 +0.3
comp=Z,31nm,0.4s
EGAK **Eagle** 49.74 33 *e*P P 14 43 14.2 +0.4
comp=Z,5.4nm,0.6s
BVA0 **Borovoye Array** 49.76 311 *i* P P 14 43 14.0 -0.2
BVA0 pmax pmax
comp=Z,11nm,0.6s
BVAR **Borovoye Array** 49.76 311 P P 14 43 14.4 +0.3
comp=Z,14nm,0.6s,baz=80,slow=8.2,SNR=87
BVAR PcP PcP 14 44 35.3 +0.4
comp=Z,6.6nm,0.8s,baz=66,slow=3.6,SNR=4.7
BRVK **Borovoye** 49.81 311 *e*P P 14 43 14.0 -0.6
BRVK pmax pmax
comp=Z,18nm,0.8s
BRVK **Borovoye** 49.81 311 *e*P P 14 43 14.0 -0.6
comp=Z,18nm,0.8s
BRVK **Borovoye** 49.81 311 P P 14 43 15.0 +0.5
SNR=8.6
BRVK **Borovoye** 49.81 311 P P 14 43 15.0 +0.5
BRVK P P 14 43 15.0 +0.5
SNR=8.6
OTUK **Ortayu** 49.85 305 P P 14 43 14.9 -0.1
OTUK pmax pmax
comp=Z,16nm,0.8s
PYUN **Piuthan** 49.91 276 *e*P P 14 43 16.3 +0.4
comp=Z,109nm,0.6s
FRU **Bishkek** 50.06 297 *i* P P 14 43 18.0 +1.4
FRU *e* 14 43 29.0
FRU *eS* S 14 50 29.0 +2.3
FRU pmax pmax
comp=Z,60nm,2.2s
AAK **Ala-Archa** 50.21 297 *c i* P P 14 43 18.0 0.0
AAK pmax pmax
comp=Z,12nm,0.8s
AAK **Ala-Archa** 50.21 297 *e*P P 14 43 17.9 0.0
comp=Z,8.5nm,0.6s
AAK **Ala-Archa** 50.21 297 P P 14 43 18.3 +0.3
SNR=5.8
AAK **Ala-Archa** 50.21 297 P P 14 43 18.3 +0.3
SNR=5.8
AAK P P 14 43 18.3 +0.3
SNR=5.8
PKDT **Phuket** 50.27 244 P P 14 43 21.8 +3.3
comp=Z,31nm,0.8s,comp=Z,10µm
KSH **Kashi** 50.29 293 P P 14 43 23.1 +4.5
KSH *ep*P sP 14 43 33.0 +5.8
KSH *es*P pP 14 43 37.3 +12
KSH S **S** **14 50 33.5 +3.2**
KSH sS sS 14 50 50.4 +10
KSH ScS **ScS** **14 53 07.5 -1.3**
KSH SS **SS** **14 54 08.3 +4.7**
KSH pmax pmax
comp=Z,8.0nm,1.0s
KSH pmax pmax
comp=Z,140nm,6.2s
KSH LR LR
comp=Z,370nm,13.4s
KSH LR LR
comp=Z,180nm,9.0s
KSH LR LR
comp=Z,370nm,12.6s
KULM **Kulim** 50.57 239 *e*P P 14 43 21.4 +0.7
comp=Z,12nm,1.0s
ZRNK **Zerenda** 50.59 311 *e*P P 14 43 20.3 -0.2
ZRNK pmax pmax
comp=Z,25nm,0.8s
ZRNK **Zerenda** 50.59 311 *e*P P 14 43 20.3 -0.2
comp=Z,25nm,0.8s
EKS2 **Erkin-Say** 50.70 297 *e*P P 14 43 20.9 -0.7
EKS2 pmax pmax
comp=Z,16nm,0.7s
EKS2 **Erkin-Say** 50.70 297 *e*P P 14 43 20.9 -0.7
comp=Z,16nm,0.7s
IPM **Ipoh** 50.92 238 *e*P P 14 43 23.1 -0.3
comp=Z,17nm,1.0s
MMRI **Maumere** 51.10 206 P P 14 43 26.2 +1.5
comp=Z,40nm,1.1s
MMRI **Maumere** 51.10 206 *e*P P 14 43 24.8 +0.1
comp=Z,33nm,0.7s
SOEI **Soe** 51.50 203 P P 14 43 27.8 0.0
comp=Z,55nm,1.2s
SOEI **Soe** 51.50 203 *e*P P 14 43 26.9 -0.8
comp=Z,92nm,1.3s
MNAS **Manas** 51.64 298 P P 14 43 29.0 +0.3
MNAS pmax pmax
comp=Z,37nm,0.7s
SFK **Sufi-Kurgan** 51.87 294 P P 14 43 30.9 +0.4
SFK pmax pmax
comp=Z,16nm,0.6s
INK **Inuvik** 52.15 28 P P 14 43 33.4 +1.5
comp=Z,12nm,0.6s,baz=295,slow=7.0,SNR=70
INK **Inuvik** 52.15 28 *e*P P 14 43 31.4 -0.5
INK pmax pmax
comp=Z,23nm,1.0s
INK **Inuvik** 52.15 28 *e*P P 14 43 31.4 -0.5
comp=Z,23nm,1.0s
KK31 **Karatay Array** 52.77 299 P P 14 43 36.4 -0.6
KK31 pmax pmax
comp=Z,10.0nm,0.6s
KKAR **Karatay Array** 52.77 299 *e*P P 14 43 36.8 -0.1
KKAR **Karatay Array** 52.77 299 *e*P P 14 43 36.8 -0.1
MTN **Manton Dam** 52.78 194 *e*P P 14 43 37.3 +0.2
comp=Z,50nm,1.1s
COEN **Coen** 52.83 179 *e*P P 14 43 37.4 -0.1
comp=Z,62nm,1.0s
PSI **Prapat** 53.56 239 P P 14 43 43.6 +0.5
comp=Z,5.6nm,0.7s,baz=8.6,slow=9.3,SNR=6.7
PSI **Prapat** 53.56 239 *e*P P 14 43 42.6 -0.5
comp=Z,6.3nm,0.8s
SVE **Sverdlovsk** 54.10 318 *de*P P 14 43 47.6 +1.1
SVE pmax pmax
comp=Z,52nm,0.9s
SVE MLR MLR
comp=Z,1µm,16.0s
PWJI **Pagerwojo** 54.86 218 P P 14 43 52.1 -0.3
comp=Z,30nm,0.7s
ARU **Arti** 55.32 318 *c i* P P 14 43 55.8 +0.5
ARU 14 44 55.8
ARU 14 45 55.4
ARU S S 14 51 38.0 -0.1
ARU SS SS 14 55 16.8 -5.1
ARU pmax pmax
comp=Z,45nm,1.0s
ARU MLR MLR
comp=Z,1µm,17.0s
ARU **Arti** 55.32 318 *e*P P 14 43 54.7 -0.5
comp=Z,36nm,0.9s
GSI **Gunungsitoli** 55.57 239 P P 14 43 58.3 +0.7
comp=Z,36nm,1.5s
GSI **Gunungsitoli** 55.57 239 *e*P P 14 43 55.1 -2.5
comp=Z,29nm,0.9s
KPJI **Karang Pucung** 55.70 221 P P 14 43 58.3 -0.1
comp=Z,23nm,1.0s
DLBC **Dease Lake** 56.48 39 *e*P P 14 44 05.7 +2.0
comp=Z,14nm,1.1s
AB31 **Akbulak array** 57.20 309 *i* P P 14 44 08.7 -0.1
AB31 pmax pmax
comp=Z,17nm,0.7s
ABKAR **Akbulak array** 57.20 309 *e*P P 14 44 08.8 0.0
KBL **Kabul** 57.42 290 *e*P P 14 44 11.6 +0.7
KBL pmax pmax
comp=Z,15nm,0.8s
KBL **Kabul** 57.42 290 *e*P P 14 44 11.6 +0.7
comp=Z,15nm,0.8s
AKTO **Aktyubinsk** 57.87 311 P P 14 44 13.3 -0.2
AKTO pmax pmax
comp=Z,12nm,0.9s
CTAO **Charters Tower** 59.03 176 *e*P P 14 44 21.7 -0.1
CTAO pmax pmax
comp=Z,26nm,1.4s
CTAO **Charters Tower** 59.03 176 *e*P P 14 44 21.7 -0.1
comp=Z,26nm,1.4s
HYB **Hyderabad** 59.06 268 *i* P P 14 44 22.0 -0.3
FITZ **Fitzroy Crossi** 59.07 199 P P 14 44 22.6 +0.4
comp=Z,8.4nm,0.7s,baz=25,slow=8.6,SNR=14
WRAB **Tennant Creek** 59.25 189 *ce*P P 14 44 22.9 -0.5
WRAB pmax pmax
comp=Z,165nm,1.2s
WRAB **Tennant Creek** 59.25 189 *e*P P 14 44 22.8 -0.6
comp=Z,73nm,1.2s
WRA **Warramunga Arr** 59.26 189 P P 14 44 22.8 -0.6
comp=Z,25nm,0.4s,baz=6.3,slow=7.0,SNR=183
WRA LR LR 15 09 21.3
comp=Z,100nm,21.5s,baz=210,slow=35
RES **Resolute Bay** 60.36 15 *e*P P 14 44 30.7 +0.3
RES pmax pmax
comp=Z,18nm,1.0s
RES **Resolute Bay** 60.36 15 *e*P P 14 44 30.7 +0.3
comp=Z,18nm,1.0s
TMCR **Tamitsa** 61.28 331 *e*P P 14 44 37.1 +0.3
TMCR pmax pmax
comp=Z,18nm,0.9s
YKW3 **Yellowknife Ar** 61.55 31 *e*P P 14 44 38.5 -0.2
comp=Z,15nm,1.4s
YKA **Yellowknife Ar** 61.59 31 P P 14 44 39.6 +0.7
comp=Z,2.7nm,0.7s,baz=301,slow=6.6,SNR=46
YKB5 **Yellowknife Ar** 61.59 31 *e*P P 14 44 38.5 -0.4
ARCES **ARCESS Array B** 62.30 339 P P 14 44 44.0 +0.4
comp=Z,9.6nm,1.0s,baz=57,slow=6.6,SNR=10
ARCES LR LR 15 16 26.9
comp=Z,385nm,18.7s,baz=43,slow=40
KLMR **Klimovskoe** 62.40 327 *e*P P 14 44 42.8 -1.6
KLMR pmax pmax
comp=Z,22nm,1.2s
AS01 **Alice Springs** 62.98 189 *e*P P 14 44 48.3 -0.3
AS31 **Alice Springs** 62.99 189 *e*P P 14 44 48.6 -0.1
comp=Z,7.3nm,1.0s
ASAR **Alice Springs** 62.99 189 P P 14 44 48.5 -0.1
comp=Z,18nm,0.8s,baz=8.9,slow=6.0,SNR=146
ASAR LR LR 15 11 59.8
comp=Z,116nm,21.6s,baz=3.0,slow=36
GEYT **Alibeck** 63.52 298 P P 14 44 52.3 0.0
comp=Z,6.7nm,0.8s,baz=54,slow=3.7,SNR=10
GEYT LR LR 15 14 16.5
comp=Z,280nm,18.8s,baz=265,slow=38
MBWA **Marble Bar** 63.64 204 *e*P P 14 44 53.0 +0.1
comp=Z,60nm,1.9s
DAG **Danmarks Havn** 63.74 355 *i* P P 14 44 52.1 -0.9
comp=Z,12nm,0.9s
DAG **Danmarks Havn** 63.74 355 *i* P P 14 44 52.1 -0.9
DAG pmax pmax
comp=Z,10.0nm,0.9s
JOF **Joensuu** 64.48 332 P P 14 44 57.9 -0.2
EIDS **Eidsvold** 64.69 171 *e*P P 14 45 00.3 +0.5
comp=Z,18nm,1.0s
B05A **Bryant** 65.29 47 P P 14 45 05.4 +1.8
baz=302
MOS **Moscow** 66.03 323 *e*P P 14 45 10.2 +1.9
MOS pmax pmax
comp=Z,47nm,1.3s
MOS MLR MLR
comp=Z,700nm,16.0s
VRH **Novokhopyorsk** 66.55 318 *e*P P 14 45 11.0 -0.7
VRH pmax pmax
comp=Z,10.0nm,0.6s
LTY **Liberty** 66.64 47 *e*P P 14 45 13.6 +1.1
comp=Z,14nm,1.1s
B08A **Colville Reser** 66.79 46 *e*P P 14 45 14.4 +1.0
comp=Z,17nm,1.2s
OBN **Obninsk** 66.88 323 *e*P P 14 45 14.1 +0.4
OBN *e* 14 45 21.5
OBN *e* 14 45 37.3
OBN *e* 14 47 38.0
OBN *e*PPP PPP 14 49 15.1
OBN pmax pmax
comp=Z,17nm,0.7s
OBN MLR MLR
comp=Z,703nm,16.0s
H04A **Detroit Lake** 67.14 50 *e*P P 14 45 17.1 +1.5
comp=Z,30nm,1.2s
LPSR **Galich'ya Gora** 67.19 320 *e*P P 14 45 15.7 0.0
LPSR pmax pmax
comp=Z,10.0nm,0.8s
FIA1 **FINESS Array S** 67.32 332 *e*P P 14 45 16.1 -0.2
FINES **FINESS Array B** 67.32 332 P P 14 45 16.2 -0.1
comp=Z,6.7nm,0.6s,baz=41,slow=8.7,SNR=25
FINES LR LR 15 16 47.0
comp=Z,546nm,20.6s,baz=14,slow=38
C09A **Chrisman Ranch** 67.69 46 *e*P P 14 45 20.2 +1.2
comp=Z,36nm,1.3s
D08A **Wolman Farm,** 67.74 47 *e*P P 14 45 20.4 +1.1
comp=Z,32nm,1.4s
HAWA **Hanford** 67.76 48 *e*P P 14 45 21.8 +2.3
comp=Z,10.0nm,1.0s
VSR **Storozhevoye** 67.87 319 *e*P P 14 45 20.1 +0.1
VSR pmax pmax
comp=Z,10.0nm,0.5s
NEW **Newport** 68.07 45 P P 14 45 22.2 +0.8
baz=305
NEW **Newport** 68.07 45 *e*P P 14 45 22.6 +1.1
NEW pmax pmax
comp=Z,22nm,1.2s
NEW **Newport** 68.07 45 *e*P P 14 45 22.6 +1.1
comp=Z,22nm,1.2s
YBH **Yreka Blue Hor** 68.44 53 *e*P P 14 45 26.2 +2.3
YBH pmax pmax
comp=Z,41nm,1.6s
YBH **Yreka Blue Hor** 68.44 53 *e*P P 14 45 26.2 +2.3
comp=Z,41nm,1.6s
J05D **Fort Rock, OR** 68.48 51 P P 14 45 26.0 +1.7
M02C **Callahan** 68.54 54 P P 14 45 26.6 +2.1
baz=304
SUMG **Summit** 68.58 0 *i* P P 14 45 26.0 +1.4
comp=Z,18nm,1.0s
SUMG **Summit** 68.58 0 *e*P P 14 45 25.5 +0.9
SUMG pmax pmax
comp=Z,27nm,1.1s
SUMG **Summit** 68.58 0 *e*P P 14 45 25.5 +0.9
comp=Z,27nm,1.1s
M04C **Macdoel** 68.95 53 P P 14 45 28.6 +1.4
baz=304
K05A **Summer Lake** 69.00 52 *e*P P 14 45 29.9 +2.3
comp=Z,51nm,1.3s
VSU **Vasula** 69.04 330 *ce*P P 14 45 27.7 +0.5
VSU pmax pmax
comp=Z,70nm,1.7s
WDC **Whiskeytown Da** 69.19 54 *e*P P 14 45 30.2 +1.7
WDC pmax pmax
comp=Z,13nm,1.2s
WDC **Whiskeytown Da** 69.19 54 *e*P P 14 45 30.2 +1.7
comp=Z,13nm,1.2s
GOF **Gofitskoye** 69.28 312 *e*P P 14 45 30.2 +1.2
GOF pmax pmax
comp=Z,56nm,1.0s
WALA **Waterton Lakes** 69.35 43 *e*P P 14 45 30.6 +1.1
comp=Z,19nm,1.1s
BLMT **Blacktail Moun** 69.73 44 *e*P P 14 45 33.8 +1.8
ARMA **Armidale** 69.74 172 *e*P P 14 45 33.5 +1.7
comp=Z,34nm,1.4s
O03D **Paynes Creek** 69.81 54 P P 14 45 33.1 +0.6
baz=305
MOD **Modoc Plateau** 69.83 52 *e*P P 14 45 34.0 +1.4
comp=Z,16nm,1.4s
BMO **Blue Mountains** 69.92 48 *e*P P 14 45 34.8 +1.6
comp=Z,7.7nm,1.0s
JTMT **Jette** 69.93 44 *e*P P 14 45 34.5 +1.4
YBMT **Yellow Bay** 70.00 44 *e*P P 14 45 35.3 +1.7
ZEI **Tsey** 70.08 309 *e*P P 14 45 33.1 -1.1
ZEI pmax pmax
comp=Z,11nm,0.8s
SCO **Scoresbysund** 70.09 354 *i* P P 14 45 33.9 +0.4
comp=Z,13nm,1.1s
SCO **Scoresbysund** 70.09 354 *i* P P 14 45 33.9 +0.4
SCO pmax pmax
comp=Z,13nm,1.1s
KIV **Kislovodsk** 70.13 311 *de*P P 14 45 35.8 +1.5
KIV *e* 14 45 41.6
KIV *e* 14 45 59.1
KIV *e* 14 48 13.5
KIV *e*PPP PPP 14 49 48.1
KIV pmax pmax
comp=Z,47nm,1.0s
KIV MLR MLR
comp=Z,302nm,18.0s
KIV **Kislovodsk** 70.13 311 *e*P P 14 45 36.2 +1.9
comp=Z,41nm,0.9s
KIV **Kislovodsk** 70.13 311 P P 14 45 36.1 +1.7
SNR=7.4
KIV **Kislovodsk** 70.13 311 P P 14 45 36.1 +1.7
SNR=7.4
KIV P P 14 45 36.1 +1.7
SNR=7.4
KBZ **Khabaz** 70.13 311 P P 14 45 35.4 +1.1
comp=Z,13nm,0.9s,baz=50,slow=3.1,SNR=19
KBZ LR LR 15 17 53.7
comp=Z,209nm,20.0s,baz=41,slow=37
SWMT **Swartz Lake** 70.22 44 *e*P P 14 45 36.0 +1.1
ORV **Oroville** 70.42 55 *e*P P 14 45 37.2 +1.1
ORV pmax pmax
comp=Z,9.0nm,1.1s
ORV **Oroville** 70.42 55 *e*P P 14 45 37.2 +1.1
comp=Z,9.3nm,1.1s
WVOR **Wild Horse Val** 70.54 51 *e*P P 14 45 38.5 +1.6
WVOR pmax pmax
comp=Z,26nm,1.4s
WVOR **Wild Horse Val** 70.54 51 *e*P P 14 45 38.5 +1.6
comp=Z,26nm,1.4s
MSO **Missoula** 70.66 45 P P 14 45 38.2 +0.6
baz=307
MSO **Missoula** 70.66 45 *e*P P 14 45 38.7 +1.1
comp=Z,12nm,1.2s
STKA **Stephens Creek** 70.67 181 P P 14 45 37.5 +0.1
comp=Z,7.0nm,0.8s,baz=350,slow=8.8,SNR=14
AKH **Akhalkalaki** 71.12 308 ‖ *i* P P 14 45 42.2 +1.6
FFC **Flin Flon** 71.51 33 *e*P P 14 45 43.0 +0.6
FFC pmax pmax
comp=Z,22nm,0.9s
FFC **Flin Flon** 71.51 33 *e*P P 14 45 43.0 +0.6
comp=Z,22nm,0.9s
MFID **Camas Ranch** 71.63 49 *e*P P 14 45 45.1 +1.6
comp=Z,26nm,1.5s
FCC **Fort Churchill** 71.76 27 *e*P P 14 45 44.2 +0.4
FCC pmax pmax
comp=Z,21nm,1.0s
FCC **Fort Churchill** 71.76 27 *e*P P 14 45 44.2 +0.4
comp=Z,21nm,1.0s
CMB **Columbia Colle** 72.01 55 *e*P P 14 45 47.1 +1.3
CMB pmax pmax
comp=Z,20nm,1.4s
CMB **Columbia Colle** 72.01 55 *e*P P 14 45 47.1 +1.3
comp=Z,20nm,1.4s
LRM **Limekiln Ridge** 72.09 45 *e*P P 14 45 47.5 +1.1
EGMT **Eagleton** 72.17 42 P P 14 45 47.4 +0.7
baz=309
EGMT **Eagleton** 72.17 42 *e*P P 14 45 47.5 +0.9
comp=Z,27nm,1.1s
DLMT **Dillon** 72.29 46 *e*P P 14 45 49.0 +1.5
comp=Z,12nm,0.9s
WAKR **Walker** 72.34 55 *e*P P 14 45 49.5 +1.5
HLID **Hailey** 72.36 48 P P 14 45 48.9 +0.9
baz=308
HLID **Hailey** 72.36 48 *e*P P 14 45 49.6 +1.6
comp=Z,6.4nm,1.1s
NB2 **NORSAR Subarra** 72.55 337 P P 14 45 48.2 -0.4
comp=Z,26nm,1.4s,baz=39,slow=6.2
NB2 **NORSAR Subarra** 72.55 337 P P 14 45 48.2 -0.4
baz=39,slow=6.2
NOA **NORSAR Array B** 72.55 337 P P 14 45 48.6 0.0
comp=Z,5.7nm,0.7s,baz=39,slow=6.0,SNR=19
NOA LR LR 15 22 48.7
comp=Z,268nm,19.5s,baz=35,slow=40
BMN **Battle Mountai** 72.58 52 *e*P P 14 45 50.9 +1.6
BMN pmax pmax
comp=Z,7.0nm,0.6s
BMN **Battle Mountai** 72.58 52 *e*P P 14 45 50.9 +1.6
comp=Z,6.9nm,0.6s
BOZ **Bozeman (W)** 72.65 45 P P 14 45 50.5 +0.8
baz=309
NV01 **Mina Array Sit** 73.10 54 *e*P P 14 45 53.8 +1.3
NVAR **Mina Array Bea** 73.10 54 P P 14 45 53.9 +1.4
comp=Z,6.4nm,0.9s,baz=288,slow=6.2,SNR=17
NVAR LR LR 15 13 19.2
comp=Z,78nm,20.6s,baz=298,slow=32
AKASG **Malin Array Be** 73.11 322 P P 14 45 52.0 -0.1
comp=Z,5.8nm,0.4s,baz=44,slow=6.3,SNR=48
AKASG LR LR 15 21 24.6
comp=Z,266nm,19.0s,baz=25,slow=39
AKASG **Malin Array Be** 73.11 322 P P 14 45 52.0 -0.1
KIEV **Kiev** 73.12 322 *e*P P 14 45 52.0 -0.1
KIEV pmax pmax
comp=Z,17nm,0.9s
KIEV **Kiev** 73.12 322 *e*P P 14 45 52.0 -0.1
comp=Z,17nm,0.9s
NV11 **Mina Array Sit** 73.19 54 *e*P P 14 45 54.2 +1.3
comp=Z,9.3nm,1.1s
MLAC **Mammoth, Mammo** 73.24 55 P P 14 45 55.6 +2.2
baz=307
QLMT **Earthquake Lak** 73.27 46 *e*P P 14 45 55.0 +1.6
ELK **Elko** 73.59 51 *e*P P 14 45 57.0 +1.6
ELK pmax pmax
comp=Z,8.0nm,1.3s
ELK **Elko** 73.59 51 *e*P P 14 45 57.0 +1.6
comp=Z,8.4nm,1.3s
YFT **Old Faithful** 73.84 46 *e*P P 14 46 00.1 +3.3
comp=Z,7.6nm,0.9s
H17A **Grant Village** 74.02 45 P P 14 46 00.6 +2.7
baz=310
H17A **Grant Village** 74.02 45 *e*P P 14 46 00.8 +2.9
comp=Z,16nm,0.9s
IMW **Indian Meadow** 74.13 46 *e*P P 14 46 00.5 +1.9
comp=Z,9.4nm,0.9s
FLWY **Flagg Ranch** 74.15 46 *e*P P 14 46 01.0 +2.4
comp=Z,29nm,1.5s
RLMT **Red Lodge** 74.28 44 P P 14 46 00.5 +1.2
baz=310
RLMT **Red Lodge** 74.28 44 *e*P P 14 46 01.0 +1.7
comp=Z,53nm,2.0s
MOOW **Moose Ponds** 74.34 46 *e*P P 14 46 01.7 +2.0
comp=Z,16nm,1.4s
HVU **Hansel Valley** 74.41 49 *e*P P 14 46 02.4 +2.3
HVU pmax pmax
comp=Z,34nm,1.8s
HVU **Hansel Valley** 74.41 49 *e*P P 14 46 02.4 +2.3
comp=Z,34nm,1.8s
LOHW **Long Hollow** 74.50 46 *e*P P 14 46 02.2 +1.6
comp=Z,30nm,2.0s
REDW **Red Top Meadow** 74.52 46 *e*P P 14 46 02.3 +1.5
comp=Z,19nm,1.4s
GRAC **Grapevine Rang** 74.56 55 P P 14 46 02.1 +1.2
baz=308
DGMT **Dagmar** 74.70 39 P P 14 46 02.0 +0.5
baz=312
DGMT **Dagmar** 74.70 39 *e*P P 14 46 02.6 +1.1
comp=Z,27nm,1.3s
BGU **Big Grassy Mou** 74.80 49 *e*P P 14 46 04.1 +1.7
comp=Z,4.6nm,1.0s
DAC **Darwin (Calif)** 74.85 56 *e*P P 14 46 00.0 -2.7
DAC pmax pmax
comp=Z,9.0nm,1.3s
DAC **Darwin (Calif)** 74.85 56 *e*P P 14 46 00.0 -2.7
comp=Z,9.1nm,1.3s
R11A **Troy Canyon, C** 74.85 53 P P 14 46 03.6 +0.9
baz=308

R11A	**Troy Canyon, C**	**74.85**	**53**	*e*P		**P**		**14 46 03.9**	**+1.2**
	comp=Z,7,4nm,1.0s								
LAO	**LASA Array**	**74.87**	**42**	P		**P**		**14 46 02.9**	**+0.4**
	baz=312								
LAO	**LASA Array**	**74.87**	**42**	*e*P		**P**		**14 46 03.4**	**+0.9**
	comp=Z,22nm,0.9s								
MPMC	**Manual Prospec**	**75.05**	**56**	P		**P**		**14 46 04.5**	**+0.6**
	baz=308								
HWUT	**Hardware Ranch**	**75.23**	**48**	*e*P		**P**		**14 46 06.1**	**+1.3**
	comp=Z,28nm,1.4s								
LRMC	**Laurel Mtn Rad**	**75.28**	**56**	P		**P**		**14 46 06.1**	**+0.9**
	baz=308								
TPNV	**Topopah Spring**	**75.29**	**54**	P		**P**		**14 46 06.3**	**+1.0**
	baz=308								
TPNV	**Topopah Spring**	**75.29**	**54**	*e*P		**P**		**14 46 06.4**	**+1.1**
TPNV				pmax		pmax			
	comp=Z,13nm,1.0s								
TPNV	**Topopah Spring**	**75.29**	**54**	*e*P		**P**		**14 46 06.4**	**+1.1**
	comp=Z,13nm,1.0s								
DUG	**Dugway, Tooele**	**75.39**	**50**	P		**P**		**14 46 06.9**	**+1.2**
	baz=309								
DUG	**Dugway, Tooele**	**75.39**	**50**	*e*P		**P**		**14 46 07.2**	**+1.5**
DUG				pmax		pmax			
	comp=Z,17nm,1.1s								
DUG	**Dugway, Tooele**	**75.39**	**50**	*e*P		**P**		**14 46 07.2**	**+1.5**
	comp=Z,17nm,1.1s								
A26A	**Wade Farm, Ken**	**75.46**	**38**	P		**P**		**14 46 06.4**	**+0.6**
	baz=314								
TCUT	**Toone Canyon**	**75.63**	**49**	*e*P		**P**		**14 46 09.0**	**+1.7**
	comp=Z,26nm,1.1s								
BW06	**Boulder Array**	**75.63**	**46**	P		**P**		**14 46 07.8**	**+0.6**
	baz=310								
BW06	**Boulder Array**	**75.63**	**46**	*e*P		**P**		**14 46 07.8**	**+0.6**
PD31	**Pinedale Array**	**75.63**	**46**	*e*P		**P**		**14 46 08.0**	**+0.8**
PDAR	**Pinedale Array**	**75.63**	**46**	P		**P**		**14 46 07.8**	**+0.6**
	comp=Z,3.0nm,0.5s,baz=340,slow=0.7,SNR=48								
A27A	**Ledoux Ranch,**	**75.80**	**38**	P		**P**		**14 46 09.2**	**+1.5**
	baz=314								
PSUT	**Pine Spring**	**75.80**	**52**	*e*P		**P**		**14 46 09.4**	**+1.2**
	comp=Z,11nm,1.1s								
JLU	**Jordanelle**	**75.93**	**49**	*e*P		**P**		**14 46 10.7**	**+1.7**
	comp=Z,24nm,1.5s								
GSC	**Goldstone, Bar**	**75.95**	**56**	P		**P**		**14 46 10.0**	**+1.0**
	baz=308								
NLU	**North Lily Min**	**75.97**	**50**	*e*P		**P**		**14 46 10.8**	**+1.6**
	comp=Z,8.3nm,1.0s								
LVV	**L'vov**	**76.14**	**324**	*e*P		**P**		**14 46 07.4**	**-2.3**
LVV				MLR		MLR			
	comp=N,150nm,15.0s								
LVV				MLR		MLR			
	comp=E,520nm,15.0s								
LVV				MLR		MLR			
	comp=Z,600nm,15.0s								
C26A	**Wahner Farm, P**	**76.17**	**39**	P		**P**		**14 46 11.1**	**+1.2**
	baz=314								
MPU	**Maple Canyon**	**76.20**	**49**	*e*P		**P**		**14 46 12.2**	**+1.7**
	comp=Z,14nm,1.0s								
A28A	**Rude Farm, Bot**	**76.29**	**37**	P		**P**		**14 46 11.7**	**+1.1**
	baz=315								
E25A	**Miller Ranch,**	**76.43**	**40**	P		**P**		**14 46 12.4**	**+0.9**
	baz=313								
TUQ	**Turquoise Moun**	**76.43**	**55**	P		**P**		**14 46 12.8**	**+1.0**
	baz=309								
C27A	**Sayler Ranch,**	**76.53**	**39**	P		**P**		**14 46 13.2**	**+1.2**
	baz=314								
HEC	**Hector Ludlow**	**76.55**	**56**	P		**P**		**14 46 13.3**	**+1.0**
	baz=308								
D26A	**Manning**	**76.55**	**40**	P		**P**		**14 46 13.0**	**+0.9**
	baz=314								
B28A	**Dugan Ranch, T**	**76.57**	**37**	P		**P**		**14 46 13.0**	**+0.9**
	baz=315								
A29A	**Manning Farm,**	**76.76**	**37**	P		**P**		**14 46 14.0**	**+0.8**
	baz=316								
F25A	**Bowman**	**76.80**	**41**	P		**P**		**14 46 14.4**	**+0.8**
	baz=313								
KWP	**Kalwaria Pacla**	**76.88**	**325**	*e*P		**P**		**14 46 14.7**	**+0.9**
KWP	**Kalwaria Pacla**	**76.88**	**325**	⇑*i*P		**P**		**14 46 15.2**	**+1.4**
KWP	**Kalwaria Pacla**	**76.88**	**325**	*e*P		**P**		**14 46 14.7**	**+0.9**
TMUT	**Trail Mountain**	**76.91**	**50**	*e*P		**P**		**14 46 16.2**	**+1.6**
	comp=Z,8.5nm,1.1s								
GMRC	**Granite Mounta**	**77.01**	**56**	P		**P**		**14 46 15.9**	**+0.9**
	baz=309								
B29A	**Wagenman Farm,**	**77.03**	**37**	P		**P**		**14 46 15.5**	**+0.8**
	baz=316								
P17A	**Butcher Ranch,**	**77.07**	**49**	*e*P		**P**		**14 46 16.9**	**+1.6**
	comp=Z,26nm,1.1s								
LCMT	**Little Creek M**	**77.13**	**53**	*e*P		**P**		**14 46 17.2**	**+1.5**
	comp=Z,16nm,1.1s								
BURAR	**Bucovina Array**	**77.14**	**322**	⇑*i*P		**P**		**14 46 16.0**	**+0.5**
BURAR	**Bucovina Array**	**77.14**	**322**	P		**P**		**14 46 16.0**	**+0.5**
A30A	**Hoffart Farm,**	**77.18**	**36**	P		**P**		**14 46 16.4**	**+0.9**
	baz=316								
PFO	**Pinyon Flats O**	**77.22**	**57**	P		**P**		**14 46 17.8**	**+1.6**
F26A	**Lodgepole**	**77.25**	**41**	P		**P**		**14 46 16.8**	**+0.7**
	baz=314								
P18A	**Preston Nutter**	**77.27**	**49**	*e*P		**P**		**14 46 18.3**	**+1.7**
	comp=Z,12nm,1.1s								
BELC	**Belle Mtn. Jos**	**77.28**	**57**	P		**P**		**14 46 17.1**	**+0.5**
	baz=309								
ULM	**Lac du Bonnet**	**77.31**	**34**	P		**P**		**14 46 16.3**	**+0.1**
	comp=Z,12nm,1.0s,baz=312,slow=6.5,SNR=10								
ULM	**Lac du Bonnet**	**77.31**	**34**	*e*P		**P**		**14 46 16.4**	**+0.1**
ULM				pmax		pmax			
	comp=Z,16nm,0.9s								
ULM	**Lac du Bonnet**	**77.31**	**34**	*e*P		**P**		**14 46 16.4**	**+0.1**
	comp=Z,16nm,0.9s								
G25A	**Newell**	**77.32**	**41**	P		**P**		**14 46 16.9**	**+0.4**
	baz=314								
MDND	**Maddock**	**77.35**	**38**	P		**P**		**14 46 17.3**	**+0.8**
	baz=315								
MDND	**Maddock**	**77.35**	**38**	*e*P		**P**		**14 46 17.5**	**+1.0**
	comp=Z,56nm,1.3s								
D28A	**Regan**	**77.35**	**39**	P		**P**		**14 46 17.8**	**+1.2**
	baz=315								
KNB	**Kanab**	**77.39**	**52**	*e*P		**P**		**14 46 19.3**	**+2.1**
KNB				pmax		pmax			
	comp=Z,27nm,1.3s								
KNB	**Kanab**	**77.39**	**52**	*e*P		**P**		**14 46 19.3**	**+2.1**
	comp=Z,27nm,1.3s								
K22A	**Casper**	**77.39**	**45**	P		**P**		**14 46 17.8**	**+0.7**
	baz=312								
K22A	**Casper**	**77.39**	**45**	*e*P		**P**		**14 46 18.2**	**+1.1**
	comp=Z,28nm,1.3s								
E27A	**Carson**	**77.40**	**40**	P		**P**		**14 46 18.0**	**+1.1**
	baz=314								
SRU	**San Rafael Swe**	**77.44**	**50**	*e*P		**P**		**14 46 18.7**	**+1.3**
SRU				pmax		pmax			
	comp=Z,21nm,1.0s								
SRU	**San Rafael Swe**	**77.44**	**50**	*e*P		**P**		**14 46 18.7**	**+1.3**
	comp=Z,21nm,1.0s								
B30A	**Myrvik Farm, E**	**77.52**	**37**	P		**P**		**14 46 18.5**	**+1.0**
	baz=316								
F27A	**Lemmon**	**77.56**	**40**	P		**P**		**14 46 18.1**	**+0.3**
	baz=314								
MMU	**Miners Mountai**	**77.56**	**51**	*e*P		**P**		**14 46 19.9**	**+1.6**
KOLS	**Kolonicke sedl**	**77.58**	**324**	*e*P		**P**		**14 46 18.4**	**+0.6**
KOLS				pmax		pmax			
	comp=Z,3.0nm,0.8s								
KOLS	**Kolonicke sedl**	**77.58**	**324**	*e*P		**P**		**14 46 18.4**	**+0.6**
VRI	**Vrincioaia**	**77.63**	**320**	⇑*i*P		**P**		**14 46 19.2**	**+1.1**
VRI	**Vrincioaia**	**77.63**	**320**	P		**P**		**14 46 19.1**	**+0.9**
G26A	**Maurine**	**77.67**	**41**	P		**P**		**14 46 19.0**	**+0.5**
	baz=314								
STHS	**Stebnicka Huta**	**77.69**	**325**	*e*P		**P**		**14 46 19.9**	**+1.5**
STHS				pmax		pmax			
	comp=Z,8.0nm,1.1s								
STHS	**Stebnicka Huta**	**77.69**	**325**	*e*P		**P**		**14 46 19.9**	**+1.5**
OJC	**Ojcow**	**77.73**	**326**	*e*P		**P**		**14 46 20.1**	**+1.5**
OJC	**Ojcow**	**77.73**	**326**	*e*P		**P**		**14 46 19.1**	**+0.5**
OJC				pmax		pmax			
	comp=Z,15nm,0.9s								
OJC	**Ojcow**	**77.73**	**326**	*e*P		**P**		**14 46 19.1**	**+0.5**
	comp=Z,15nm,0.9s								
IRM	**Iron Mountain**	**77.73**	**56**	P		**P**		**14 46 19.8**	**+0.8**
	baz=309								
RSSD	**Black Hills**	**77.73**	**43**	P		**P**		**14 46 19.2**	**+0.2**
	baz=313								
RSSD	**Black Hills**	**77.73**	**43**	*e*P		**P**		**14 46 19.5**	**+0.4**
RSSD				pmax		pmax			
	comp=Z,12nm,0.8s								
RSSD	**Black Hills**	**77.73**	**43**	*e*P		**P**		**14 46 19.5**	**+0.4**
	comp=Z,12nm,0.8s								
UZH	**Uzhgorod**	**77.79**	**324**	*e*P		**P**		**14 46 18.4**	**-0.5**
UZH				*e*				14 46 22.2	
UZH				*i*				14 46 28.4	
UZH				*e*S		**S**		**14 56 04.6**	**-5.7**
UZH				MLR		MLR			
	comp=N,500nm,14.0s								
UZH				MLR		MLR			
	comp=E,500nm,14.0s								
UZH				MLR		MLR			
	comp=Z,400nm,14.0s								
D29A	**Pettibone, Tap**	**77.92**	**38**	P		**P**		**14 46 20.4**	**+0.6**
	baz=316								
G27A	**Dupree**	**77.95**	**41**	P		**P**		**14 46 20.4**	**+0.4**
	baz=314								
I25A	**Rochford**	**77.96**	**42**	P		**P**		**14 46 20.7**	**+0.4**
	baz=314								
CRVS	**Cervenica-Dubn**	**77.97**	**325**	*e*P		**P**		**14 46 20.9**	**+0.9**
CRVS	**Cervenica-Dubn**	**77.97**	**325**	*e*P		**P**		**14 46 20.9**	**+0.9**
C30A	**Mose, Pekin**	**77.99**	**37**	P		**P**		**14 46 20.8**	**+0.7**
	baz=316								
BR131	**Keskin Array S**	**78.04**	**312**	*e*P		**P**		**14 46 21.4**	**+0.6**
BRTR	**Keskin Array B**	**78.04**	**312**	P		**P**		**14 46 21.1**	**+0.3**
	comp=Z,3.7nm,1.0s,baz=88,slow=4.1,SNR=10								
BRTR				LR		LR		15 25 17.7	
	comp=Z,134nm,18.7s,baz=44,slow=39								
O20A	**White River Ci**	**78.10**	**48**	P		**P**		**14 46 21.8**	**+0.7**
	baz=312								
O20A	**White River Ci**	**78.10**	**48**	*e*P		**P**		**14 46 22.2**	**+1.1**
	comp=Z,18nm,1.3s								
NIE	**Niedzica**	**78.10**	**326**	P		**P**		**14 46 22.4**	**+1.7**
NIE				pmax		pmax			
	comp=Z,5.0nm,1.7s								
ISR	**Istrita**	**78.24**	**319**	⇑*i*P		**P**		**14 46 23.1**	**+1.4**
ISR	**Istrita**	**78.24**	**319**	P		**P**		**14 46 23.0**	**+1.4**
PDMCI	**Parker Dam,Lak**	**78.28**	**55**	P		**P**		**14 46 22.6**	**+0.6**
	baz=310								
MLR	**Muntele Rosu**	**78.28**	**320**	⇑*i*P		**P**		**14 46 24.0**	**+2.0**
MLR	**Muntele Rosu**	**78.28**	**320**	P		**P**		**14 46 23.9**	**+2.0**
J25A	**Sunshine Ranch**	**78.36**	**43**	P		**P**		**14 46 22.9**	**+0.5**
	baz=314								
B32A	**Ashes, Strandq**	**78.38**	**36**	P		**P**		**14 46 22.5**	**+0.3**
	baz=317								
Y12C	**Blythe**	**78.39**	**56**	*e*P		**P**		**14 46 24.0**	**+1.5**
	comp=Z,16nm,1.4s								
H27A	**Howes**	**78.40**	**41**	P		**P**		**14 46 23.4**	**+0.9**
	baz=314								
BR231	**Keskin MP Arra**	**78.47**	**312**	*e*P		**P**		**14 46 21.7**	**-1.3**
A33A	**Warroad**	**78.49**	**35**	P		**P**		**14 46 22.9**	**+0.1**
	baz=318								
E30A	**Jud**	**78.64**	**38**	P		**P**		**14 46 24.2**	**+0.4**
	baz=316								
F29A	**Eureka**	**78.68**	**39**	P		**P**		**14 46 24.5**	**+0.5**
	baz=316								
OKC	**Ostrava-Krasne**	**78.72**	**327**	*e*P		**P**		**14 46 25.3**	**+1.2**
OKC	**Ostrava-Krasne**	**78.72**	**327**	*e*P		**P**		**14 46 25.3**	**+1.2**
KSP	**Ksiaz**	**78.72**	**329**	*e*P		**P**		**14 46 25.0**	**+0.9**
KSP	**Ksiaz**	**78.72**	**329**	*e*P		**P**		**14 46 25.0**	**+0.9**
AGMN	**Agassiz Nation**	**78.75**	**35**	P		**P**		**14 46 24.2**	**-0.1**
	baz=318								
AGMN	**Agassiz Nation**	**78.75**	**35**	*e*P		**P**		**14 46 24.3**	**-0.1**
	comp=Z,19nm,1.2s								
VOIR		**78.77**	**320**	⇑*i*P		**P**		**14 46 25.8**	**+1.3**
VOIR		**78.77**	**320**	P		**P**		**14 46 25.8**	**+1.3**
J26A	**Sides Ranch, S**	**78.80**	**43**	P		**P**		**14 46 25.7**	**+0.9**
	baz=314								
I27A	**Quinn**	**78.80**	**42**	P		**P**		**14 46 25.5**	**+0.8**
	baz=314								
N23A	**Red Feather La**	**78.89**	**46**	P		**P**		**14 46 26.8**	**+1.2**
	baz=313								
N23A	**Red Feather La**	**78.89**	**46**	*e*P		**P**		**14 46 27.3**	**+1.7**
	comp=Z,36nm,1.4s								
H28A	**Mission Ridge**	**78.90**	**41**	P		**P**		**14 46 26.1**	**+0.9**
	baz=315								
MORC	**Moravsky Berou**	**79.02**	**327**	⇑*i*P		**P**		**14 46 26.9**	**+1.1**
MORC	**Moravsky Berou**	**79.02**	**327**	*e*P		**P**		**14 46 26.7**	**+0.9**
MORC				pmax		pmax			
	comp=Z,32nm,1.0s								
MORC	**Moravsky Berou**	**79.02**	**327**	*e*P		**P**		**14 46 26.7**	**+0.9**
	comp=Z,32nm,1.0s								
ARR	**Arges**	**79.02**	**321**	⇑*i*P		**P**		**14 46 27.7**	**+1.8**
DPC	**Dobruska-Polom**	**79.09**	**328**	*e*P		**P**		**14 46 27.2**	**+1.0**
DPC				*e*pP		**pP**		**14 46 32.5**	**-0.2**
DPC	**Dobruska-Polom**	**79.09**	**328**	*e*P		**P**		**14 46 27.2**	**+1.0**
DPC				*e*				14 46 32.5	
E31A	**Nome**	**79.09**	**38**	P		**P**		**14 46 26.8**	**+0.6**
	baz=317								
UPC	**Upice**	**79.09**	**328**	*e*P		**P**		**14 46 27.6**	**+1.5**
UPC				AMS		AMS		15 23 50.0	
	comp=Z,600nm,13.0s								
UPC	**Upice**	**79.09**	**328**	*e*P		**P**		**14 46 27.6**	**+1.5**
UPC				MLR		MLR			
	comp=Z,600nm,13.0s								
KRLC	**Kraliky**	**79.11**	**328**	*e*P		**P**		**14 46 26.9**	**+0.6**
KRLC	**Kraliky**	**79.11**	**328**	*e*P		**P**		**14 46 26.9**	**+0.6**
WUAZ	**Wupatki**	**79.25**	**53**	P		**P**		**14 46 28.6**	**+1.1**
	baz=311								
WUAZ	**Wupatki**	**79.25**	**53**	*e*P		**P**		**14 46 29.2**	**+1.8**
	comp=Z,16nm,1.1s								
I28A	**Midland**	**79.31**	**41**	P		**P**		**14 46 28.0**	**+0.5**
	baz=315								
H29A	**Onida**	**79.35**	**40**	P		**P**		**14 46 28.0**	**+0.4**
	baz=316								
F31A	**Hecla**	**79.42**	**38**	P		**P**		**14 46 28.3**	**+0.3**
	baz=317								
VYHS	**Vyhne**	**79.44**	**326**	*e*P		**P**		**14 46 29.0**	**+0.9**
VYHS				pmax		pmax			
	comp=Z,2.0nm,0.8s								
VYHS	**Vyhne**	**79.44**	**326**	*e*P		**P**		**14 46 29.0**	**+0.9**
SMCO	**Snowmass**	**79.47**	**48**	*e*P		**P**		**14 46 29.9**	**+1.0**
	comp=Z,15nm,1.4s								
G30A	**Faulkton**	**79.52**	**39**	P		**P**		**14 46 28.9**	**+0.3**
	baz=316								
BRG	**Berggiesshubel**	**79.64**	**330**	*e*P		**P**		**14 46 29.7**	**+0.6**
	comp=Z,31nm,0.9s								
	comp=N,423nm,19.1s								
	comp=E,297nm,17.1s								
	comp=Z,741nm,20.3s								
BRG	**Berggiesshubel**	**79.64**	**330**	*e*P		**P**		**14 46 29.7**	**+0.6**
BRG				pmax		pmax			
	comp=Z,31nm,0.9s								
BRG				MLR		MLR			
	comp=N,423nm,19.1s								
BRG				MLR		MLR			
	comp=E,297nm,17.1s								
BRG				MLR		MLR			
	comp=Z,741nm,20.3s								
B35A	**Bob, Littlefor**	**79.66**	**34**	P		**P**		**14 46 29.2**	**-0.1**
	baz=319								
CLL	**Collm**	**79.66**	**330**	⇓*i*P		**P**		**14 46 29.2**	**0.0**
	comp=Z,9.0nm,1.1s								
CLL				*i*				14 46 36.3	
CLL				*i*				14 46 44.6	
CLL				*e*PP		PP		14 49 24.0	-5.3
CLL				*e*S		**S**		**14 56 35.0**	**+4.8**
CLL				LmH				15 22 00.0	
	comp=N,300nm,19.2s								
CLL				LmH				15 22 00.0	
	comp=E,200nm,19.0s								
CLL				Lm		MLR		15 24 00.0	
	comp=Z,300nm,19.1s								
CLL	**Collm**	**79.66**	**330**	⇓*i*P		**P**		**14 46 29.2**	**0.0**
CLL				*i*				14 46 36.3	
CLL				*e*S		**S**		**14 56 35.0**	**+4.8**
CLL				pmax		pmax			
	comp=Z,9.0nm,1.1s								
CLL				MLR		MLR			
	comp=Z,300nm,19.1s								
CLL	**Collm**	**79.66**	**330**	*e*P		**P**		**14 46 29.6**	**+0.4**
	comp=Z,8.5nm,0.8s								
PVCC	**Panska Ves**	**79.66**	**329**	*e*P		**P**		**14 46 30.0**	**+0.8**
PVCC	**Panska Ves**	**79.66**	**329**	*e*P		**P**		**14 46 30.0**	**+0.8**
I29A	**Vivian Onida**	**79.73**	**41**	P		**P**		**14 46 30.5**	**+0.7**
	baz=316								
ISCO	**Idaho Springs**	**79.82**	**47**	*e*P		**P**		**14 46 32.4**	**+1.7**
ISCO				pmax		pmax			
	comp=Z,25nm,1.7s								
ISCO	**Idaho Springs**	**79.82**	**47**	*e*P		**P**		**14 46 32.4**	**+1.7**
	comp=Z,25nm,1.7s								
MVCO	**Mesa Verde**	**79.89**	**50**	P		**P**		**14 46 31.7**	**+0.7**
	baz=312								
MVCO	**Mesa Verde**	**79.89**	**50**	*e*P		**P**		**14 46 32.5**	**+1.5**
	comp=Z,28nm,1.5s								
E33A	**Westby DABS, E**	**80.02**	**37**	P		**P**		**14 46 31.6**	**+0.4**
	baz=318								
GOPC	**GO Pecny, Ondr**	**80.05**	**329**	*e*P		**P**		**14 46 32.2**	**+0.8**
GOPC				AMS		AMS		15 24 20.0	
	comp=Z,600nm,21.0s								
GOPC	**GO Pecny, Ondr**	**80.05**	**329**	*e*P		**P**		**14 46 32.2**	**+0.8**
GOPC				MLR		MLR			
	comp=Z,600nm,21.0s								
PRU	**Pruhonice**	**80.09**	**329**	*e*P		**P**		**14 46 32.2**	**+0.6**
PRU				*e*PCP		**sP**		**14 46 41.5**	**+1.1**
PRU	**Pruhonice**	**80.09**	**329**	*e*P		**P**		**14 46 32.2**	**+0.6**
PRU				*e*				14 46 41.5	
G32A	**Webster**	**80.23**	**38**	P		**P**		**14 46 33.3**	**+0.9**
	baz=317								
TREC	**Trest**	**80.25**	**328**	*e*P		**P**		**14 46 33.0**	**+0.5**
TREC				AMS		AMS		15 24 20.0	
	comp=Z,500nm,15.2s								
TREC	**Trest**	**80.25**	**328**	*e*P		**P**		**14 46 33.0**	**+0.5**
TREC				MLR		MLR			
	comp=Z,500nm,15.2s								
I30A	**Oacoma**	**80.25**	**40**	P		**P**		**14 46 33.1**	**+0.5**
	baz=316								
F33A	**5 Mile Ranch,**	**80.37**	**37**	P		**P**		**14 46 33.6**	**+0.4**
	baz=318								
S22A	**4UR Ranch, Cre**	**80.51**	**49**	P		**P**		**14 46 35.4**	**+1.0**
	baz=313								
S22A	**4UR Ranch, Cre**	**80.51**	**49**	*e*P		**P**		**14 46 35.4**	**+1.0**
	comp=Z,15nm,1.3s								
RAYN	**Ar Rayn**	**80.58**	**293**	*e*P		**P**		**14 46 35.0**	**+0.2**
	comp=Z,5.5nm,0.8s								
Q24A	**Divide**	**80.65**	**47**	*e*P		**P**		**14 46 36.5**	**+1.3**
	comp=Z,5.8nm,0.8s								
NKC	**Novy Kostel**	**80.73**	**330**	*e*P		**P**		**14 46 34.8**	**-0.2**
NKC	**Novy Kostel**	**80.73**	**330**	*e*P		**P**		**14 46 34.8**	**-0.2**
G33A	**Ortonville**	**80.78**	**38**	P		**P**		**14 46 35.7**	**+0.4**
	baz=318								
H33A	**Prehn Over Nor**	**81.01**	**38**	P		**P**		**14 46 37.1**	**+0.5**
	baz=318								
J31A	**Geddes**	**81.04**	**40**	P		**P**		**14 46 37.2**	**+0.4**
	baz=317								
CONA	**Conrad Observa**	**81.15**	**327**	*e*P		**P**		**14 46 37.6**	**+0.2**
	comp=Z,7.9nm,1.2s								
KHC	**Kasperske Hory**	**81.16**	**329**	*e*P		**P**		**14 46 38.0**	**+0.7**
KHC				*es*P		**sP**		**14 46 45.4**	**-0.8**
KHC				AMS		AMS		15 25 10.0	
	comp=Z,700nm,18.7s								
KHC	**Kasperske Hory**	**81.16**	**329**	*e*P		**P**		**14 46 38.1**	**+0.7**
KHC				pmax		pmax			
	comp=Z,2.0nm,0.9s								
KHC	**Kasperske Hory**	**81.16**	**329**	*e*P		**P**		**14 46 38.0**	**+0.7**
	comp=Z,2.4nm,0.9s								
PKSM	**Moragy**	**81.25**	**324**	⇑*i*P		**P**		**14 46 38.0**	**+0.2**
SDCO	**Great Sand Dun**	**81.28**	**48**	P		**P**		**14 46 39.6**	**+1.0**
	baz=313								
SDCO	**Great Sand Dun**	**81.28**	**48**	*e*P		**P**		**14 46 40.1**	**+1.5**
	comp=Z,5.4nm,1.1s								
GEC2	**GERESS Array S**	**81.33**	**329**	*e*P		**P**		**14 46 38.9**	**+0.5**
GEC2				pmax		pmax			
	comp=Z,14nm,1.6s								
GEC2	**GERESS Array S**	**81.33**	**329**	*e*P		**P**		**14 46 38.9**	**+0.5**
	comp=Z,14nm,1.6s								
GERES	**GERESS Array B**	**81.33**	**329**	P		**P**		**14 46 38.6**	**+0.2**
	comp=Z,1.4nm,0.5s,baz=37,slow=5.3,SNR=14								
GERES				LR		LR		15 25 38.4	
	comp=Z,492nm,19.9s,baz=22,slow=38								
GEA0	**GERESS Array S**	**81.34**	**329**	*e*P		**P**		**14 46 38.4**	**0.0**
K31A	**O'Neill**	**81.52**	**41**	P		**P**		**14 46 39.9**	**+0.5**
	baz=317								
TUC	**Tucson**	**81.71**	**55**	P		**P**		**14 46 41.2**	**+0.6**
	baz=311								
TUC	**Tucson**	**81.71**	**55**	*e*P		**P**		**14 46 42.1**	**+1.5**
TUC				pmax		pmax			
	comp=Z,22nm,1.6s								
TUC	**Tucson**	**81.71**	**55**	*e*P		**P**		**14 46 42.1**	**+1.5**
	comp=Z,22nm,1.6s								
VTS	**Vitosha**	**81.74**	**319**	⇑*i*P		**P**		**14 46 41.8**	**+1.1**
VTS	**Vitosha**	**81.74**	**319**	*e*P		**P**		**14 46 41.8**	**+1.1**
VTS				pmax		pmax			
	comp=Z,10.0nm,0.7s								
VTS	**Vitosha**	**81.74**	**319**	*e*P		**P**		**14 46 41.8**	**+1.1**
	comp=Z,9.9nm,0.7s								
ECSD	**EROS Data Cent**	**81.78**	**39**	P		**P**		**14 46 41.0**	**+0.3**
	baz=318								
ECSD	**EROS Data Cent**	**81.78**	**39**	*e*P		**P**		**14 46 40.8**	**+0.1**
	comp=Z,12nm,0.8s								
L31A	**Butterfield Fa**	**81.80**	**41**	P		**P**		**14 46 41.5**	**+0.6**
	baz=317								
T25A	**Trinidad**	**82.33**	**48**	P		**P**		**14 46 44.7**	**+0.7**
	baz=314								
T25A	**Trinidad**	**82.33**	**48**	*e*P		**P**		**14 46 45.0**	**+1.0**
	comp=Z,13nm,1.0s								
SOKA	**Soboth**	**82.48**	**327**	*i* P		**P**		**14 46 44.5**	**+0.1**
	comp=Z,12nm,0.9s								
ANMO	**Albuquerque**	**82.63**	**51**	P		**P**		**14 46 46

Q40A	**La Belle**	**86.82**	**39**	P		**P**	**14 47 06.9 +0.6**
	baz=321						
LBZ	**Lake Benmore**	**86.84**	**160**	*e*P		**P**	**14 47 07.4 +1.4**
	comp=Z,36nm,1.2s						
Q38A	**Cooks Store, C**	**86.85**	**40**	P		**P**	**14 47 06.3 -0.1**
	baz=320						
Q39A	**Willow Grove F**	**87.10**	**40**	P		**P**	**14 47 08.0 +0.2**
	baz=320						
T36A	**Boggs Farm, Ca**	**87.11**	**43**	P		**P**	**14 47 08.3 +0.4**
	baz=319						
S37A	**Fort Scott**	**87.14**	**42**	P		**P**	**14 47 07.9 -0.1**
	baz=319						
P40A	**Paris**	**87.19**	**39**	P		**P**	**14 47 08.7 +0.6**
	baz=321						
R38A	**Fenwick Farm,**	**87.29**	**41**	P		**P**	**14 47 07.7 -0.9**
	baz=320						
T37A	**Cheneyville 18**	**87.57**	**42**	P		**P**	**14 47 10.3 +0.2**
	baz=319						
Q40A	**Laux Farm, Aux**	**87.59**	**39**	P		**P**	**14 47 10.7 +0.6**
	baz=321						
R39A	**Chumby, Stover**	**87.63**	**40**	P		**P**	**14 47 10.2 -0.2**
	baz=320						
T38A	**Diamond**	**87.96**	**42**	P		**P**	**14 47 12.0 0.0**
	baz=320						
S39A	**Bolivar**	**87.97**	**41**	P		**P**	**14 47 11.8 -0.1**
	baz=320						
U37A	**Salina**	**88.01**	**43**	P		**P**	**14 47 12.4 +0.3**
	baz=319						
V36A	**Jenks**	**88.03**	**44**	P		**P**	**14 47 12.6 +0.3**
	baz=319						
R40A	**Maddies Statio**	**88.04**	**40**	P		**P**	**14 47 12.3 0.0**
	baz=321						
TX31	**Lajitas Ar. Si**	**88.21**	**53**	*e*P		**P**	**14 47 13.7 +0.3**
TXAR	**Lajitas Array**	**88.21**	**53**	P		**P**	**14 47 14.1 +0.7**
	comp=Z,1.2nm,0.5s,baz=286,slow=3.3,SNR=8.8						
U38A	**Gravette**	**88.37**	**42**	P		**P**	**14 47 14.1 +0.3**
	baz=320						
V37A	**Hulbert**	**88.39**	**43**	P		**P**	**14 47 14.9 +1.0**
	baz=319						
T39A	**Clever**	**88.45**	**41**	P		**P**	**14 47 14.5 +0.2**
	baz=320						
S40A	**Lebanon**	**88.45**	**41**	P		**P**	**14 47 14.3 +0.1**
	baz=321						
X36A	**Centrahoma**	**88.72**	**45**	P		**P**	**14 47 16.3 +0.8**
	baz=318						
T40A	**Mansfield**	**88.79**	**41**	P		**P**	**14 47 15.6 -0.3**
	baz=321						
V38A	**Canehill**	**88.79**	**43**	P		**P**	**14 47 16.0 +0.1**
	baz=320						
SFIN	**Lafayette**	**88.85**	**36**	P		**P**	**14 47 15.8 -0.3**
	baz=324						
U39A	**Green Forest**	**88.88**	**42**	P		**P**	**14 47 16.3 0.0**
	baz=320						
TBI	**Tubuai**	**88.94**	**121**	*e*LR		LR	15 15 33.3
	comp=Z,306nm,22.2s,baz=314						
TBI	**Tubuai**	**88.94**	**121**	*e*T		T	16 25 59.7
	comp=Z,51nm,0.3s						
V39A	**Pettigrew**	**89.21**	**42**	P		**P**	**14 47 18.2 +0.3**
	baz=320						
U40A	**Yellville**	**89.23**	**42**	P		**P**	**14 47 18.3 +0.4**
	baz=320						
234A	**Clairette**	**89.61**	**48**	P		**P**	**14 47 20.2 +0.4**
	baz=318						
333A	**Richland Sprin**	**89.61**	**49**	P		**P**	**14 47 20.2 +0.3**
	baz=317						
JCT	**Junction City**	**89.75**	**50**	P		**P**	**14 47 20.8 +0.3**
	baz=317						
X39A	**Fountain Ranch**	**89.97**	**44**	P		**P**	**14 47 22.1 +0.6**
	baz=320						
SIUC	**Southern Illin**	**89.99**	**38**	*e*P		**P**	**14 47 22.5 +1.1**
	comp=Z,29nm,0.8s						
334A	**Lometa**	**90.04**	**48**	P		**P**	**14 47 22.1 +0.3**
	baz=318						
MIAR	**Mount Ida**	**90.23**	**43**	P		**P**	**14 47 22.9 +0.3**
	baz=320						
MIAR	**Mount Ida**	**90.23**	**43**	*e*P		**P**	**14 47 22.6 0.0**
MIAR					pmax	pmax	
	comp=Z,10.0nm,0.8s						
MIAR	**Mount Ida**	**90.23**	**43**	*e*P		**P**	**14 47 22.6 0.0**
	comp=Z,9.5nm,0.8s						
WHAR	**Wooly Hollow**	**90.34**	**42**	*e*P		**P**	**14 47 23.7 +0.6**
	comp=Z,14nm,1.0s						
ACSO	**Alum Creek Sta**	**90.78**	**33**	*e*P		**P**	**14 47 25.9 +0.9**
	comp=Z,28nm,1.0s						
KEST	**Kesra**	**93.81**	**323**	LR		LR	15 35 52.1
	comp=Z,134nm,18.3s,baz=280,slow=39						
ESDC	**Sonseca Array**	**95.74**	**335**	LR		LR	15 34 24.9
	comp=Z,165nm,20.5s,baz=335,slow=38						
RKT	**Rikitea**	**98.82**	**112**	*e*LR		LR	15 19 55.4
	comp=Z,330nm,24.0s,baz=309						
TORD	**Torodi Ar. Bea**	**116.38**	**316**	PKP		**PKPdf**	**14 53 05.2 -0.8**
	comp=Z,1.0nm,0.6s,baz=13,slow=2.0,SNR=11						
VNDA	**Vanda**	**117.01**	**175**	PKP		**PKPdf**	**14 53 04.5 -0.8**
	comp=Z,0.8nm,0.9s,baz=325,slow=0.3,SNR=3.8						
MAW	**Mawson**	**121.78**	**206**	PKP		**PKPdf**	**14 53 14.9 +0.2**
	comp=Z,2.4nm,0.7s,baz=104,slow=0.6,SNR=4.5						
DBIC	**Dimbokro**	**125.26**	**319**	PKP		**PKPdf**	**14 53 22.8 -0.3**
	comp=Z,1.5nm,0.6s,baz=338,slow=4.5,SNR=4.4						
SNAA	**Sanae**	**143.00**	**197**	PKP		**PKPdf**	**14 53 50.1 -4.4**
VNA2	**Neumayer--Watz**	**144.56**	**197**	PKP		**PKPab**	**14 53 55.7 0.0**
	baz=124,slow=3.0						
LPAZ	**La Paz**	**144.93**	**58**	PKPbc		**PKPdf**	**14 54 00.3 +0.1**
	comp=Z,1.5nm,0.5s,baz=277,slow=3.2,SNR=7.7						
VNA1	**Neumayer--Stat**	**144.96**	**197**	PKP		PKPbc	14 53 57.2 0.0
PLCA	**Paso Flores**	**154.75**	**104**	PKPbc		**PKPbc**	**14 54 23.8 +0.9**
	comp=Z,2.9nm,0.8s,baz=278,slow=3.7,SNR=8.2						
PLCA				PKPab		**PKPab**	**14 54 38.5 +0.5**
	comp=Z,2.1nm,0.7s,baz=262,slow=2.1,SNR=5.0						

IDC 15 14:36:33.1±510.0, 56.71N×29.29E, h0km, Error ellipse: s-maj=192.6km s-min=106.3km az=87.0, Baltic States-Belarus-Northwestern Russia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
I43RU	**DUBNA INFRASON 4.37**		**87**	*i*		15 04 50.0	
	baz=273,slow=320,SNR=1.2						
I26DE	**FREYUNG INFRAS12.26**		**237**	*i*		15 54 00.0	
	baz=44,slow=332,SNR=1.1						
I31KZ	**AKTYUBINSK INF 18.11**		**98**	*i*		16 26 10.0	
	baz=301,slow=318,SNR=0.5						

JMA 15 14:37:59.6, 37.00N×140.60E, h8km±1km, M3.5, 8C, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.19**	**57**	⇑P	Pg	14 38 03.7	+0.2
ONAJ				S	Sg	14 38 06.6	+0.5
JHO	**Hitachi**	**0.39**	**184**	⇑P	Pg	14 38 07.2	0.0
JHO				S	Sg	14 38 12.7	+0.4
JFK	**Kawauchi**	**0.43**	**31**	⇑P	Pg	14 38 07.9	0.0
JFK				S	Sg	14 38 13.8	+0.2
JSB	**Shiboa**	**0.55**	**267**	⇑P	Pb	14 38 10.9	-0.5
JSB				S	Sb	14 38 18.4	-1.0
JFT	**Otama**	**0.56**	**338**	⇑P	Pg	14 38 10.7	+0.3
JFT				S	Sg	14 38 18.1	+0.4
JFY	**Yanaizu**	**0.82**	**300**	⇑P	Pg	14 38 15.5	+0.1
JFY				S	Sg	14 38 25.9	-0.2
JYT	**Yasato**	**0.84**	**203**	⇑P	Pg	14 38 15.3	-0.4
JYT				S	Sg	14 38 26.0	-0.6
JMM	**Marumori**	**0.88**	**10**	⇑P	Pg	14 38 15.9	-0.6
JMM				S	Sg	14 38 27.8	-0.1
MAT	**Matsushiro**	**1.98**	**257**	P	Pn	14 38 34.2	+0.8
MAT				S	Sb	14 39 00.0	-0.6

DJA 15 14:40:50.4±0.6, 5°S±4°×10°3E±°, h45km±12km, M3.6/8, MLv3.6/8, Southern Sumatera

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MNAI	**Manna**	**0.83**	**353**	P	Pn	14 41 05.3	-0.5
MNAI				S	Sn	14 41 17.8	+0.9
LWLI	**Liwa**	**1.01**	**80**	P	Pn	14 41 08.3	0.0
LWLI				S	Sn	14 41 21.8	+0.4
MDSI	**Maura Dua**	**1.32**	**58**	P	Pn	14 41 12.7	+0.4
MDSI				S	Sn	14 41 29.1	+0.4
LHSI	**Lahat**	**1.43**	**19**	P	Pn	14 41 14.4	+0.5
LHSI				S	Sn	14 41 32.2	+0.6
KASI	**Kota Agung**	**1.47**	**103**	P	Pn	14 41 14.3	-0.1
KASI				S	Sn	14 41 32.8	+0.3
KLSI		**1.74**	**73**	P	Pn	14 41 17.8	-0.3
KLSI				S	Sn	14 41 39.7	+0.6
MASI	**Maura Aman, Be**	**2.19**	**338**	P	Pn	14 41 24.6	+0.2
MASI				S	Sn	14 41 51.1	+0.7
CGJI	**Cibinong**	**2.98**	**118**	P	Pn	14 41 35.6	+0.5
CGJI				S	Sn	14 42 10.3	+0.7

*CSEM **15** 14:43:55.7±0.5, 41.68N×24.13E, h10km, ML1.9, Error ellipse: s-maj=8.9km s-min=8.0km az=48.0*
*ATH **15** 14:43:56.9, 41.60N×24.07E, h21km±3km, ML1.9/2, Error ellipse: s-maj=5.5km s-min=1.8km az=190.0*

THE 15 14:43:55.8, 41.67N×24.07E, h4km±1km, ML2.0/3, Error ellipse: s-maj=1.9km s-min=0.5km az=243.0, Greece-Bulgaria border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
NVR	**Nevrokopi**	**0.36**	**206**	P	Pg	14 44 02.6	-0.1
NVR				S	Sg	14 44 07.9	+0.6
NVR	**Nevrokopi**	**0.36**	**206**	P	Pg	14 44 02.6	-0.1
NVR				S	Sg	14 44 07.9	+0.6
SRS	**Serrai**	**0.66**	**213**	P	Pg	14 44 08.4	0.0
SRS				S	Sg	14 44 17.9	+0.9
SRS	**Serrai**	**0.66**	**213**	P	Pg	14 44 08.4	0.0
SRS				S	Sg	14 44 17.9	+0.9
SRS	**Serrai**	**0.66**	**213**	P	Pg	14 44 08.5	+0.1
SRS				S	Sg	14 44 18.1	+1.1
KAVA	**Kavala**	**0.75**	**154**	P	Pg	14 44 09.8	-0.4
KAVA				S	Sg	14 44 20.8	+0.9
KAVA	**Kavala**	**0.75**	**154**	P	Pg	14 44 09.8	-0.4
KAVA				S	Sg	14 44 20.8	+0.9
KAVA	**Kavala**	**0.75**	**154**	P	Pg	14 44 09.4	-0.8
KNT	**Kendrikon**	**1.02**	**240**	P	Pn	14 44 17.1	+0.2
KNT				S	Sg	14 44 28.3	-0.2
KNT	**Kendrikon**	**1.02**	**240**	P	Pn	14 44 17.1	+0.2
KNT				S	Sg	14 44 28.3	-0.2
KNT				AML	AML	14 44 32.3	
	comp=E,133μm,0.2s						
KNT				AML	AML	14 44 32.4	
	comp=N,141μm,0.2s						
VTS	**Vitosha**	**1.12**	**325**	P	Pg	14 44 16.7	-0.6
VTS	**Vitosha**	**1.12**	**325**	P	Pg	14 44 16.7	-0.6
VAY	**Valandovo**	**1.18**	**253**	*e*Pn	Pn	14 44 20.5	+1.4
VAY	**Valandovo**	**1.18**	**253**	*e*Pn	Pn	14 44 20.4	+1.3
HORT	**Hortiatis**	**1.30**	**215**	P	Pg	14 44 20.3	-0.4
HORT				S	Sn	14 44 39.6	+0.9
HORT	**Hortiatis**	**1.30**	**215**	P	Pg	14 44 20.3	-0.4
HORT				S	Sn	14 44 39.6	+0.8
PLG	**Polygyros**	**1.38**	**200**	P	Pn	14 44 22.0	+0.1
PLG	**Polygyros**	**1.38**	**200**	P	Pn	14 44 22.0	+0.1
PLG				S	Sg	14 44 31.9	-8.1
PLG				AML	AML	14 44 39.9	
	comp=N,114μm,0.8s						
PLG				AML	AML	14 44 42.0	
	comp=E,126μm,0.5s						
ALN	**Alexandroupoli**	**1.68**	**117**	P	Pn	14 44 25.2	-0.7
ALN	**Alexandroupoli**	**1.68**	**117**	P	Pn	14 44 25.2	-0.7
ALN	**Alexandroupoli**	**1.68**	**117**	P	Pg	14 44 27.9	0.0
PAIG	**Paliouri**	**1.77**	**190**	P	Pn	14 44 25.5	-1.7
PAIG	**Paliouri**	**1.77**	**190**	P	Pn	14 44 25.5	-1.6

*ISCJB **15** 14:48:12.0±1.0, 37.12N±0.03×140.99E±0.06, h7km±4km, mb3.2/4, Error ellipse: s-maj=8.6km s-min=5.3km az=13.4*
*IDC **15** 14:48:11.8±1.8, 37.08N×141.07E, h0km, mb3.3/4, mb1 3.5/5, mb1mx3.3/39, mbtmp3.3/5, ML3.3/1, MS3.2/2, Ms1 3.2/2, ms1mx2.7/24, Error ellipse: s-maj=41.7km s-min=23.6km az=53.0*
*JMA **15** 14:48:13.7, 37.14N×140.87E, h8km, M3.5*
JMA Felt II J1.

ISC 15 14:48:13.7±1.2, 37.13N±0.03×140.88E±0.06, h7km±6km, n15, σ0°63/22, mb3.3/4, 4C-2D, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.07**	**248**	⇓P	Pg	**14 48 15.5**	**-0.1**
ONAJ				S	Sg	**14 48 16.7**	**-0.2**
JFK	**Kawauchi**	**0.24**	**359**	⇑P	Pg	**14 48 18.5**	**+0.1**
JFK				S	Sg	**14 48 22.0**	**+0.3**
JHO	**Hitachi**	**0.57**	**206**	⇓P	Pg	**14 48 24.8**	**+0.1**
JHO				S	Sg	**14 48 32.4**	**+0.2**
JFT	**Otama**	**0.58**	**312**	⇑P	Pg	**14 48 25.0**	**+0.1**
JFT				S	Sg	**14 48 32.8**	**+0.3**
JMM	**Marumori**	**0.74**	**355**	P	Pg	**14 48 27.2**	**-0.7**
JMM				S	Sg	**14 48 37.8**	**+0.3**
JSB	**Shiboa**	**0.79**	**259**	⇑P	Pb	**14 48 29.3**	**-0.3**
JSB				S	Sb	**14 48 40.0**	**-0.5**
JFY	**Yanaizu**	**0.98**	**287**	⇑P	Pg	**14 48 32.2**	**-0.2**
JFY				S	Sg	**14 48 44.7**	**-0.5**
MJAR	**Matsushiro Arr**	**2.22**	**256**	Pn	Pn	**14 48 52.4**	**+1.5**
	7.2nm,0.3s,baz=80,slow=18,SNR=11						
MJAR				Sn	Sb	**14 49 21.3**	**-0.6**
	11nm,0.3s,baz=84,slow=30,SNR=13						
MAT	**Matsushiro**	**2.22**	**256**	P	Pn	**14 48 52.0**	**+1.1**
MAT				S	Sb	**14 49 21.7**	**-0.2**
JCJ	**Chichijima**	**10.06**	**173**	LR	LR	14 53 46.5	
	comp=Z,93nm,20.9s,slow=34						
KLR	**Kul'dur**	**13.79**	**334**	LR	LR	14 56 15.3	
	comp=Z,175nm,21.4s,baz=352,slow=35						
SONM	**Songino Array**	**27.38**	**304**	P	**P**	**14 53 59.7**	**+0.1**
	0.1nm,0.4s,baz=99,slow=8.0,SNR=2.1						
MKAR	**Makanchi Array**	**43.71**	**302**	P	**P**	**14 56 19.7**	**+0.4**
	0.3nm,0.6s,baz=89,slow=9.6,SNR=5.2						
WRA	**Warramunga Arr**	**57.10**	**187**	P	**P**	**14 57 59.5**	**-1.1**
	0.4nm,0.6s,baz=4.0,slow=7.3,SNR=9.7						
ASAR	**Alice Springs**	**60.83**	**187**	P	**P**	**14 58 25.9**	**-0.7**
	0.2nm,0.7s,baz=2.8,slow=7.5,SNR=4.0						

*ISK **15** 14:49:55.8, 39.71N×30.81E, h5km, MD2.7*
*ISCJB **15** 14:49:56.1±0.4, 39.73N±0.02×30.78E±0.03, h0km, Error ellipse: s-maj=3.8km s-min=3.0km az=45.0*
*CSEM **15** 14:49:56.1±0.2, 39.73N×30.79E, h2km, MD2.8, Error ellipse: s-maj=4.0km s-min=3.7km az=36.0, Suspected Mining explosion.*
*DDA **15** 14:49:56.0, 39.73N×30.73E, h7km, Md2.8, Suspected Mining explosion.*

ISC 15 14:49:55.7±0.8, 39.75N±0.02×30.78E±0.02, h0km, n31, σ0°60/51, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ESKT	**Eskisehir**	**0.24**	**167**	*i* P	Pg	**14 50 00.1**	**-0.2**
ESKT				*i* S	Sg	**14 50 04.4**	**+1.0**
SEYT	**Eskypehyr**	**0.24**	**167**	P	Pg	**14 50 00.1**	**-0.2**
SEYT				S	Sg	**14 50 04.4**	**+1.0**
AUMIH	**MIHALICIK**	**0.55**	**78**	*i* P	Pg	**14 50 05.4**	**-0.9**
AUMIH				*i* S	Sb	**14 50 16.4**	**-0.5**
AUMIH	**MIHALICIK**	**0.55**	**78**	P	Pg	**14 50 05.4**	**-0.9**
AUMIH				S	Sb	**14 50 16.4**	**-0.5**
SVRH	**Sivrihisar-ESK**	**0.65**	**118**	*e*PG	Pg	**14 50 08.0**	**-0.1**
SVRH				*e*SG	Sg	**14 50 17.2**	**+0.6**
SVRH	**Sivrihisar-ESK**	**0.65**	**118**	*e*Pg	Pg	**14 50 08.0**	**-0.1**
SVRH				*e*Sg	Sg	**14 50 17.2**	**+0.6**
GULT	**Gulveren**	**0.71**	**343**	*e*PG	Pb	**14 50 10.8**	**-0.2**
GULT				*e*SG	Sb	**14 50 21.7**	**+0.4**
GULT	**Gulveren**	**0.71**	**343**	*e*Pg	Pb	**14 50 10.8**	**-0.2**
GULT				*e*Sg	Sb	**14 50 21.7**	**+0.4**
MDUB	**Mudurnu**	**0.78**	**24**	*e*PG	Pb	**14 50 12.1**	**-0.2**
MDUB	**Mudurnu**	**0.78**	**24**	*e*Pg	Pb	**14 50 12.1**	**-0.2**
BOLV	**Bolvadin**	**1.04**	**173**	*i* P	Pb	**14 50 16.1**	**-0.6**
BOLV				*i* S	Sb	**14 50 31.0**	**0.0**
BOLV	**Bolvadin**	**1.04**	**173**	P	Pb	**14 50 16.1**	**-0.6**
BOLV				S	Sb	**14 50 31.0**	**0.0**
ADVT	**Abdulvahap**	**1.05**	**311**	*e*PN	Pn	**14 50 17.4**	**-0.3**
ADVT	**Abdulvahap**	**1.05**	**311**	*e*Pn	Pn	**14 50 17.4**	**-0.3**
TVSB	**Tavsanli**	**1.06**	**254**	*e*PG	Pb	**14 50 16.6**	**-0.5**
TVSB	**Tavsanli**	**1.06**	**254**	*e*Pg	Pb	**14 50 16.6**	**-0.5**
SAHE	**Sakarya_HENDEK**	**1.10**	**3**	*i* P	Pg	**14 50 16.9**	**+0.1**
SAHE				*i* S	Sn	**14 50 33.9**	**-0.4**
SAHE	**Sakarya_HENDEK**	**1.10**	**3**	P	Pg	**14 50 16.9**	**+0.1**
SAHE				S	Sn	**14 50 33.9**	**-0.4**
IZI	**Iznik**	**1.16**	**300**	*e*PN	Pn	**14 50 19.4**	**+0.1**
IZI	**Iznik**	**1.16**	**300**	*e*Pn	Pn	**14 50 19.4**	**+0.1**
GDZ	**Gediz**	**1.21**	**237**	*i* P	Pg	**14 50 18.5**	**-0.3**
GDZ				*i* S	Sg	**14 50 34.4**	**-0.1**
GDZ	**Gediz**	**1.21**	**237**	P	Pg	**14 50 18.5**	**-0.3**
GDZ				S	Sg	**14 50 34.4**	**-0.1**
IGD	**Bursa**	**1.32**	**293**	*i* P	Pg	**14 50 20.8**	**-0.2**
IGD				*i* S	Sn	**14 50 40.3**	**+0.7**
ULDT	**Uludag**	**1.32**	**288**	*i* P	Pg	**14 50 21.1**	**0.0**
ULDT				*i* S	Sn	**14 50 39.7**	**-0.3**
ULDT	**Uludag**	**1.32**	**288**	P	Pg	**14 50 21.1**	**0.0**
ULDT				S	Sn	**14 50 39.7**	**-0.3**
KDHN	**Kadinhani**	**1.61**	**139**	*i* P	Pb	**14 50 25.9**	**-0.5**
KDHN				*i* S	Sg	**14 50 50.3**	**+2.9**
KDHN	**Kadinhani**	**1.61**	**139**	P	Pb	**14 50 25.9**	**-0.5**
ARMT	**Armutlu**	**1.68**	**299**	*e*PN	Pb	**14 50 27.2**	**-0.3**
ARMT	**Armutlu**	**1.68**	**299**	*e*Pn	Pb	**14 50 27.2**	**-0.3**
DURS	**Dursunbey**	**1.79**	**266**	*i* P	Pn	**14 50 28.2**	**+0.3**
DURS				*i* S	Sg	**14 50 53.5**	**+0.4**
DURS	**Dursunbey**	**1.79**	**266**	P	Pn	**14 50 28.2**	**+0.3**
DURS				S	Sg	**14 50 53.5**	**+0.4**

*NIED **15** 14:54:00, 38.20N×142.30E, h32km, Mw3.5 Best double couple: M0 2.33000×10^14 NP1:φs 199.00000°, δ17.00000°, λ84.00000°. NP2:φs 25.00000°, δ73.00000°, λ92.00000°.*

JMA 15 14:54:19.3±0.1, 38.24N×142.33E, h33km±3km, M3.9, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**0.80**	**286**	P	Pn	14 54 34.0	-0.2
JIO				S	Sn	14 54 44.6	-0.4
OFUJ	**Ofunato**	**0.99**	**329**	P	Pn	14 54 37.1	+0.3
OFUJ				S	Sn	14 54 49.7	+0.1
JMK	**Ichinoseki**	**1.12**	**310**	P	Pn	14 54 39.1	+0.4
JOU	**Okura**	**1.32**	**276**	P	Pn	14 54 42.0	+0.6
JOU				S	Sb	14 54 59.1	-0.9
MIYJ	**Miyakonagasawa**	**1.39**	**344**	P	Pn	14 54 42.7	+0.3
MIYJ				S	Sn	14 54 59.9	+0.2
JOM	**Ohasama**	**1.47**	**327**	P	Pn	14 54 44.7	+1.2
JOM				S	Sb	14 55 03.1	-1.4
JYK	**Kaneyama**	**1.69**	**294**	P	Pn	14 54 47.9	+1.4
JFT	**Otama**	**1.73**	**246**	P	Pn	14 54 47.9	+0.8
JFT				S	Sn	14 55 08.4	+0.3
MAT	**Matsushiro**	**3.69**	**244**	P	Pn	14 55 16.1	+2.0
MAT				S	Sn	14 56 01.0	+4.5

*NIED **15** 14:58:00, 37.40N×141.50E, h14km, Mw3.5 Best double couple: M0 2.13000×10^14 NP1:φs 202.00000°, δ45.00000°, λ-58.00000°. NP2:φs 340.00000°, δ53.00000°, λ-118.00000°.*
*ISCJB **15** 14:58:26.7±1.0, 37.34N±0.03×141.68E±0.07, h19km±7km, mb3.4/7, Error ellipse: s-maj=8.8km s-min=5.4km az=8.1*
*JMA **15** 14:58:29.6±0.1, 37.37N×141.50E, h32km±2km, M3.9*
JMA Felt I J1.
*IDC **15** 14:58:41.3±2.5, 36.83N×140.67E, h91km±23km, mb3.1/7, mb1 3.4/8, mb1mx3.2/40, mbtmp3.5/8, Error ellipse: s-maj=26.4km s-min=17.5km az=85.0*

ISC 15 14:58:25.7±1.8, 37.37N±0.04×141.68E±0.07, h1km±11km, n26, σ1°21/27, mb3.5/7, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**0.64**	**270**	P	**Pb**	**14 58 40.0**	**+0.3**
JFK				S	**Sg**	**14 58 47.0**	**+0.8**
ONAJ	**Iwakimizuishiy**	**0.75**	**249**	P	**Pg**	**14 58 41.7**	**+0.1**
ONAJ				S	**Sg**	**14 58 50.0**	**+0.2**
JMM	**Marumori**	**0.86**	**305**	P	**Pb**	**14 58 43.4**	**0.0**
JMM				S	**Sg**	**14 58 52.9**	**-0.4**
JFT	**Otama**	**1.07**	**278**	P	**Pb**	**14 58 47.2**	**+0.1**
JIO	**Ouri**	**1.11**	**347**	P	**Pn**	**14 58 48.2**	**-0.2**
JIO				S	**Sg**	**14 59 01.0**	**-0.4**
JHO	**Hitachi**	**1.17**	**230**	P	**Pg**	**14 58 48.3**	**+0.2**
JHO				S	**Sg**	**14 59 01.3**	**-1.9**
JOU	**Okura**	**1.27**	**321**	P	**Pn**	**14 58 50.7**	**0.0**
JOU				S	**Sg**	**14 59 05.8**	**-0.9**
JYS	**Shirataka**	**1.53**	**304**	P	**Pn**	**14 58 54.5**	**+0.3**
JYS				*e*S	**Sn**	**14 59 12.7**	**-2.1**
JFY	**Yanaizu**	**1.57**	**272**	P	**Pn**	**14 58 54.5**	**-0.3**
MJAR	**Matsushiro Arr**	**2.90**	**254**	P	**Pn**	**14 59 13.8**	**+0.8**
	5.2nm,0.3s,baz=78,slow=16,SNR=44						
MJAR				S	**Sn**	**14 59 47.6**	**-0.9**
	6.1nm,0.3s,baz=112,slow=19,SNR=5.6						
MAT	**Matsushiro**	**2.90**	**254**	P	**Pn**	**14 59 13.6**	**+0.6**
MAT				S	**Sn**	**14 59 47.5**	**-1.0**
JHJ	**Hachijo jima 2**	**4.52**	**201**	P	**Pn**	**14 59 36.2**	**+1.0**
	20nm,0.3s,baz=268,slow=24,SNR=6.7						
JHJ				S	**Sn**	**15 00 26.4**	**-2.1**
	22nm,0.3s,baz=253,slow=19,SNR=4.0						
JCJ	**Chichijima**	**10.26**	**177**	P	**Pn**	**15 00 53.2**	**-0.8**
	3.9nm,0.3s,baz=86,slow=21,SNR=5.2						
JCJ				S	Sn	15 02 41.8	-8.0
	baz=287,slow=20						
SONM	**Songino Array**	**27.77**	**303**	P	**P**	**15 04 20.0**	**+3.8**
	0.1nm,0.3s,baz=99,slow=8.9,SNR=2.7						
H11N2	**WAKE ISLAND Hy 28.14**	**122**		T	T	15 33 45.8	
	baz=315,slow=75,SNR=40						
H11N1	**WAKE ISLAND Hy 28.15**	**122**		T	T	15 33 56.0	
	baz=315,slow=75,SNR=67						
H11N3	**WAKE ISLAND Hy 28.16**	**122**		T	T	15 33 52.2	
	baz=315,slow=75,SNR=58						
H11S1	**WAKE ISLAND Hy 28.87**	**124**		T	T	15 34 46.8	
	baz=316,slow=76,SNR=51						
H11S3	**WAKE ISLAND Hy 28.87**	**124**		T	T	15 34 51.7	
	baz=316,slow=76,SNR=66						
H11S2	**WAKE ISLAND Hy 28.89**	**124**		T	T	15 35 16.6	
	baz=316,slow=76,SNR=48						
MKAR	**Makanchi Array**	**44.12**	**302**	P	**P**	**15 06 35.2**	**-0.3**
	0.3nm,0.7s,baz=86,slow=9.0,SNR=3.2						
ILAR	**Eielson Array**	**49.10**	**33**	P	P	15 07 24.4	+10
	0.3nm,0.8s,baz=279,slow=6.5,SNR=4.8						
WRA	**Warramunga Arr**	**57.42**	**188**	P	**P**	**15 08 15.

	19nm,0.4s								
PMOZ				*e*S		**Sn**	15 04 45.5	**-0.2**	
	93nm,0.3s								
EFAM	**Famara**	**3.48**	**155**	P		**Pg**	15 04 58.3	**-1.3**	
	2.5nm,0.2s,SNR=7.9								
EFAM				S		**Sb**	15 05 37.9	**+0.9**	
	2.1nm,0.2s,SNR=7.9								
EFAM	**Famara**	**3.48**	**155**	P		**Pg**	15 04 58.3	**-1.3**	
	2.5nm,0.2s,SNR=7.9								
EFAM				S		**Sb**	15 05 37.9	**+0.9**	
	2.1nm,0.2s,SNR=7.9								
CFUE	**Fuerteventura**	**3.81**	**163**	P		**Pb**	15 05 02.0	**+1.9**	
	0.2nm,0.2s,SNR=7.9								
CFUE				S		**Sb**	15 05 46.3	**0.0**	
	50nm,0.4s,SNR=7.9								
CFUE	**Fuerteventura**	**3.81**	**163**	P		**Pb**	15 05 02.0	**+1.9**	
	0.2nm,0.2s,SNR=7.9								
CFUE				S		**Sb**	15 05 46.3	**0.0**	
	50nm,0.4s,SNR=7.9								
EBAJ	**Bajamar**	**3.87**	**195**	P		**Pb**	15 05 01.8	**+0.5**	
	0.1nm,0.2s,SNR=7.9								
EBAJ				S		**Sb**	15 05 50.3	**+2.1**	
	0.4nm,0.1s,SNR=7.9								
EBAJ	**Bajamar**	**3.87**	**195**	P		**Pb**	15 05 01.8	**+0.5**	
	0.1nm,0.2s,SNR=7.9								
EBAJ				S		**Sb**	15 05 50.3	**+2.1**	
	0.4nm,0.1s,SNR=7.9								
CFTV	**Fuerteventura**	**4.00**	**165**	P		**Pb**	15 05 04.2	**+0.8**	
	SNR=7.9								
CFTV				S		**Sb**	15 05 49.7	**-2.1**	
	SNR=7.9								
CFTV	**Fuerteventura**	**4.00**	**165**	P		**Pb**	15 05 04.2	**+0.8**	
	SNR=7.9								
EOSO	**Osorio**	**4.22**	**184**	P		**Pb**	15 05 06.9	**-0.4**	
	1.3nm,0.1s,SNR=7.9								
EOSO				S		**Sb**	15 05 57.4	**-1.0**	
	2.5nm,0.2s,SNR=7.9								
EOSO	**Osorio**	**4.22**	**184**	P		**Pb**	15 05 06.9	**-0.4**	
	1.3nm,0.1s,SNR=7.9								
EOSO				S		**Sb**	15 05 57.4	**-1.0**	
	2.5nm,0.2s,SNR=7.9								
CCAN	**Las Canadas**	**4.24**	**197**	P		**Pb**	15 05 07.9	**+0.3**	
	0.8nm,0.1s,SNR=7.9								
CCAN				S		**Sb**	15 05 55.7	**-3.2**	
	0.7nm,0.2s,SNR=7.9								
CCAN	**Las Canadas**	**4.24**	**197**	P		**Pb**	15 05 07.9	**+0.3**	
	0.8nm,0.1s,SNR=7.9								
EGOM	**La Gomera**	**4.47**	**203**	P		**Pb**	15 05 10.2	**-1.2**	
	1.9nm,0.1s,SNR=7.9								
EGOM				S		**Sb**	15 06 01.8	**-3.6**	
	3.9nm,0.2s,SNR=7.9								
EGOM	**La Gomera**	**4.47**	**203**	P		**Pb**	15 05 10.2	**-1.2**	
	1.9nm,0.1s,SNR=7.9								
PFVI	**Vila Bisbo**	**7.14**	**46**	*e*Pn		**Pn**	15 05 36.2	**-1.1**	
PFVI				*e*Sn		Sn	15 06 47.1	-11	
PFVI	**Vila Bisbo**	**7.14**	**46**	P		**Pn**	15 05 36.1	**-1.1**	
	3.6nm,0.2s,SNR=7.9								
PFVI				S		Sn	15 06 43.9	-15	
	0.1nm,0.1s,SNR=7.9								
PFVI	**Vila Bisbo**	**7.14**	**46**	P		**Pn**	15 05 36.2	**-1.1**	
	3.6nm,0.2s,SNR=7.9								
MORF	**Marmelete**	**7.36**	**45**	*e*Pn		**Pn**	15 05 40.2	**-0.2**	
MORF				*e*Sn		Sn	15 06 53.1	-11	
MORF	**Marmelete**	**7.36**	**45**	P		**Pn**	15 05 40.2	**-0.2**	
MORF				S		Sn	15 06 53.1	-11	
MORF	**Marmelete**	**7.36**	**45**	P		**Pn**	15 05 40.2	**-0.2**	
PTEO	**Sao Teotonio**	**7.47**	**44**	*e*Pn		**Pn**	15 05 42.4	**+0.5**	
PTEO	**Sao Teotonio**	**7.47**	**44**	P		**Pn**	15 05 42.4	**+0.5**	
PTEO	**Sao Teotonio**	**7.47**	**44**	P		**Pn**	15 05 42.4	**+0.5**	
PVAQ	**Vaqueiros**	**8.00**	**48**	*e*Pn		**Pn**	15 05 49.1	**0.0**	
PVAQ				*e*Sn		Sn	15 07 05.0	-15	
PVAQ				A		A	15 07 10.5		
	1.9nm,0.5s								
PVAQ	**Vaqueiros**	**8.00**	**48**	P		**Pn**	15 05 49.1	**0.0**	
PVAQ				S		Sn	15 07 05.0	-15	
	1.9nm,0.5s								
PVAQ	**Vaqueiros**	**8.00**	**48**	P		**Pn**	15 05 49.1	**0.0**	
EGRO	**El Granado**	**8.22**	**48**	P		**Pn**	15 05 52.1	**-0.1**	
	0.9nm,0.2s,SNR=7.9								
EGRO				S		Sn	15 07 14.2	-11	
	1.8nm,0.3s,SNR=7.9								
EGRO	**El Granado**	**8.22**	**48**	P		**Pn**	15 05 52.1	**-0.1**	
	0.9nm,0.2s,SNR=7.9								
EMIN	**Mina Concepcio**	**8.88**	**50**	P		**Pn**	15 06 01.1	**-0.1**	
	0.4nm,0.2s,SNR=7.9								
EMIN				S		Sn	15 07 24.9	-16	
	0.6nm,0.5s,SNR=7.9								
EMIN	**Mina Concepcio**	**8.88**	**50**	P		**Pn**	15 06 01.1	**-0.1**	
	0.4nm,0.2s,SNR=7.9								
EBAD	**Badajoz**	**9.28**	**44**	P		**Pn**	15 06 06.8	**0.0**	
	0.5nm,0.1s,SNR=7.9								
EBAD	**Badajoz**	**9.28**	**44**	P		**Pn**	15 06 06.8	**0.0**	
	0.5nm,0.1s,SNR=7.9								
ECAB	**El Cabril**	**9.88**	**52**	P		**Pn**	15 06 14.9	**0.0**	
	0.5nm,0.3s,SNR=5.8								
ECAB				S		Sn	15 07 51.3	-14	
	0.1nm,0.3s								
ECAB	**El Cabril**	**9.88**	**52**	P		**Pn**	15 06 14.9	**0.0**	
	0.5nm,0.3s,SNR=5.8								

*ISCJB **15** 15:21:29.7±0.6,10°.65S±0°.05×123°.07E±0°.04,h33km, mb3.4/1,Error ellipse: s-maj=6.8km s-min=5.9km az=13.1*
*DJA **15** 15:21:32.5±0.6,10°.5±4°×12°.3E±°,h26km±8km,M3.7/4, mb3.8/3,MLv3.6/4*
*IDC **15** 15:21:32.8±2.2,10°.35S×123°.35E,h66km±28km,mb3.1/1, mb1 3.4/4,mb1mx3.0/41,mbtmp3.4/4,ML3.3/3,Error ellipse: s-maj=73.0km s-min=25.4km az=75.0*
ISC 15 15:21:30.5±0.9,**10.60S**±0.06×**123.14E**±0.05,**h35**km,**n10**, σ**2s04**/15,**Timor region**

Code	Station Name	Δ°	AZ°	Phase	ID		Time		Res
				Op		ISC	h	m s	ISC
BATI	**Baumata**	**0.65**	**53**	P		**Pn**	**15 21 44.6**		**+1.3**
	18nm,0.3s,baz=151,slow=24,SNR=40								
BATI				S		**Sn**	**15 21 54.5**		**+2.2**
	116nm,0.3s,baz=264,slow=19,SNR=52								
BATI	**Baumata**	**0.65**	**53**	P		**Pn**	**15 21 44.4**		**+1.2**
SOEI	**Soe**	**1.39**	**53**	P		**Pn**	**15 21 55.3**		**+1.7**
SOEI				S		**Sn**	**15 22 11.7**		**+0.9**
MMRI	**Maumere**	**2.14**	**335**	P		**Pn**	**15 22 03.5**		**-0.3**
MMRI				S		**Sn**	**15 22 27.3**		**-1.8**
PLAI	**Plampang**	**5.57**	**288**	P		**Pn**	**15 22 52.5**		**+1.6**
	13nm,1.2s,0.1nm								
TWSI	**Taliwang, Sumb**	**6.44**	**286**	P		**Pn**	**15 23 04.8**		**+1.9**
TWSI				S		**Sn**	**15 24 17.2**		**+2.0**
FITZ	**Fitzroy Crossi**	**7.85**	**162**	P		Pn	15 23 27.7		+5.5
	0.2nm,0.3s,baz=354,slow=11,SNR=6.7								
FITZ				S		**Sn**	**15 24 51.7**		**+1.9**
	1.2nm,0.3s,baz=196,slow=18,SNR=11								
WRA	**Warramunga Arr**	**14.24**	**132**	P		**Pn**	**15 24 49.6**		**-0.3**
	0.2nm,0.3s,baz=311,slow=13,SNR=12								
WRA				S		Sn	15 27 18.4		-8.3
	0.2nm,0.3s,baz=306,slow=24,SNR=5.6								
ASAR	**Alice Springs**	**16.56**	**143**	P		**P**	**15 25 22.3**		**-0.2**
	0.2nm,0.3s,baz=320,slow=12,SNR=29								
ASAR				S		**Sn**	**15 28 18.8**		**-4.3**
	0.1nm,0.3s,baz=314,slow=22,SNR=5.4								
MKAR	**Makanchi Array**	**67.77**	**331**	P		**P**	**15 32 23.2**		**-1.5**
	0.2nm,0.5s,baz=140,slow=7.5,SNR=3.9								

IDC 15 15:21:54.5±11.0,**56.31S**×**25.94W**,**h148**km±99km, **mb3.7**/3,**mb1 3.9**/3,**mb1mx3.5**/26,**mbtmp4.2**/3,**Error ellipse: s-maj=39.0km s-min=25.3km az=77.0,South Sandwich Islands region**

Code	Station Name	Δ°	AZ°	Phase	ID		Time		Res
				Op		ISC	h	m s	ISC
VNDA	**Vanda**	**46.34**	**182**	P		P	15 30 04.8		-0.1
	2.4nm,0.6s,baz=189,slow=7.9,SNR=16								
H10S2	**ASCENSION HYDR**	**48.06**	**15**	T		T	16 23 05.3		
	baz=189								
H10S3	**ASCENSION HYDR**	**48.06**	**15**	T		T	16 23 06.2		
	baz=189								
H10S1	**ASCENSION HYDR**	**48.07**	**15**	T		T	16 23 08.9		
	baz=189								
H10N1	**ASCENSION HYDR**	**49.17**	**15**	T		T	16 24 30.1		
	baz=198								
H10N3	**ASCENSION HYDR**	**49.18**	**15**	T		T	16 24 28.9		
	baz=198								
H10N2	**ASCENSION HYDR**	**49.19**	**15**	T		T	16 24 31.2		
	baz=198								
LPAZ	**La Paz**	**51.10**	**304**	P		P	15 30 42.5		-0.1
	1.5nm,0.6s,baz=152,slow=8.0,SNR=6.0								
TORD	**Torodi Ar. Bea**	**72.94**	**28**	P		P	15 33 07.5		0.0
	1.7nm,0.8s,baz=192,slow=6.7,SNR=8.7								
YKA	**Yellowknife Ar**	**136.83**	**317**	PKP		PKPdf	15 40 57.7		0.0
	0.2nm,0.6s,baz=125,slow=2.2,SNR=3.0								
INK	**Inuvik**	**146.45**	**320**	PKPbc		PKPbc	15 41 16.1		-0.3
	0.9nm,0.5s,baz=84,slow=2.8,SNR=6.6								
SONM	**Songino Array**	**150.05**	**86**	PKPbc		PKPbc	15 41 26.3		-0.3
	0.7nm,0.7s,baz=261,slow=3.6,SNR=4.6								
ILAR	**Eielson Array**	**150.81**	**311**	PKPbc		PKPbc	15 41 26.9		-0.9
	0.8nm,0.9s,baz=125,slow=1.5,SNR=7.1								

*ISK **15** 15:26:44.4,40°.11N×39°.50E,h3km,MD2.7*
*DDA **15** 15:26:45.0,40°.10N×39°.44E,h12km,Md2.8,Suspected Mining explosion.*
*ISCJB **15** 15:26:45.1±0.5,40°.09N±0°.03×39°.47E±0°.03,h0km,Error ellipse: s-maj=4.9km s-min=3.4km az=172.4*
*CSEM **15** 15:26:45.0±0.3,40°.08N×39°.46E,h2km,MD2.8,Error ellipse: s-maj=7.0km s-min=5.0km az=156.0,Suspected Mining explosion.*
ISC 15 15:26:44.2±0.8,**40°.15N**±0°.03×**39°.53E**±0°.02,**h0**km,**n25**, σ**0s58**/40,**Turkey**

Code	Station Name	Δ°	AZ°	Phase	ID		Time		Res
				Op		ISC	h	m s	ISC
KELT	**Kelkit**	**0.21**	**270**	*i* P		**Pg**	**15 26 48.5**		**+0.2**
KELT				*i* S		**Sg**	**15 26 51.5**		**+0.5**
KELT	**Kelkit**	**0.21**	**270**	P		**Pg**	**15 26 48.5**		**+0.2**
KELT				S		**Sg**	**15 26 51.5**		**+0.5**
GUMT	**Gumushane**	**0.31**	**353**	*e*PG		**Pb**	**15 26 52.2**		**-0.6**
GUMT				*e*SG		**Sb**	**15 26 58.1**		**-0.4**
GUMT	**Gumushane**	**0.31**	**353**	*e*Pg		**Pb**	**15 26 52.2**		**-0.6**
GUMT				*e*Sg		**Sb**	**15 26 58.1**		**-0.4**
EZC	**Erzincan**	**0.42**	**199**	*e*Pg		**Pb**	**15 26 55.3**		**+0.6**
BAYT	**Ayd¨–ntepe-Bay**	**0.53**	**62**	*e*PG		**Pb**	**15 26 56.2**		**-0.2**
BAYT				*e*SG		**Sb**	**15 27 04.7**		**0.0**
BAYT	**Ayd¨–ntepe-Bay**	**0.53**	**62**	*e*Pg		**Pb**	**15 26 56.3**		**-0.2**
BAYT				*e*Sg		**Sb**	**15 27 04.7**		**0.0**
ERZN	**Erzincan**	**0.58**	**165**	*e*PG		**Pg**	**15 26 55.3**		**-0.1**
KOPT	**Kop Dagi**	**0.75**	**100**	*i* P		**Pb**	**15 27 00.1**		**-0.3**
KOPT				*i* S		**Sn**	**15 27 13.3**		**-1.4**
KOPT	**Kop Dagi**	**0.75**	**100**	P		**Pb**	**15 27 00.1**		**-0.3**
MACK	**Trabzon**	**0.81**	**13**	*i* P		**Pb**	**15 27 01.6**		**+0.3**
MACK				*i* S		**Sn**	**15 27 14.9**		**-0.9**
MACK	**Trabzon**	**0.81**	**13**	P		**Pb**	**15 27 01.6**		**+0.3**
MACK				S		**Sn**	**15 27 14.9**		**-0.9**
KTUT	**Trabzon**	**0.85**	**12**	*e*PG		**Pb**	**15 27 02.4**		**+0.5**
KTUT	**Trabzon**	**0.85**	**12**	*e*Pg		**Pb**	**15 27 02.4**		**+0.5**
SUSE	**Susehri**	**1.02**	**274**	*i* P		**Pg**	**15 27 03.0**		**-0.8**
SUSE				*i* S		**Sg**	**15 27 17.6**		**+0.6**
SUSE	**Susehri**	**1.02**	**274**	P		**Pg**	**15 27 03.0**		**-0.8**
SUSE				S		**Sg**	**15 27 17.6**		**+0.6**
PTK	**Pertek**	**1.26**	**185**	*e*PN		**Pb**	**15 27 08.5**		**-0.5**
PTK	**Pertek**	**1.26**	**185**	*e*Pn		**Pb**	**15 27 08.5**		**-0.5**
DBAD	**Bademkaya**	**1.86**	**62**	*i* P		**Pg**	**15 27 20.2**		**+0.3**
DBAD				*i* S		**Sb**	**15 27 42.8**		**-0.3**
DBAD	**Bademkaya**	**1.86**	**62**	P		**Pg**	**15 27 20.2**		**+0.3**
DBAD				S		**Sb**	**15 27 42.8**		**-0.3**
SVSK	**Karacayir**	**1.96**	**264**	*e*PN		**Pn**	**15 27 19.5**		**+0.8**
SVSK	**Karacayir**	**1.96**	**264**	*e*Pn		**Pn**	**15 27 19.5**		**+0.8**
DAGI	**Agillar**	**2.04**	**62**	*i* P		**Pg**	**15 27 23.4**		**+0.1**
DAGI				*i* S		**Sb**	**15 27 47.4**		**-0.8**
ARTV	**Artvin**	**2.10**	**60**	*i* P		**Pg**	**15 27 24.3**		**-0.1**
ARTV				*i* S		**Sg**	**15 27 52.9**		**+1.3**
ARTV	**Artvin**	**2.10**	**60**	P		**Pg**	**15 27 24.3**		**-0.1**

*ISCJB **15** 15:27:42.7±0.2,24°.19N±0°.02×122°.81E±0°.01,h39km±9km, Error ellipse: s-maj=4.0km s-min=2.0km az=170.7*
*TAP **15** 15:27:42.4,24°.23N×122°.79E,h53km±1km,ML3.9,D*
*JMA **15** 15:27:42.2±0.1,24°.23N×122°.77E,h50km±2km,M3.2*
ISC 15 15:27:41.4±1.0,**24°.12N**±0°.03×**122°.76E**±0°.02,**h31**km±11km, **n72**,σ**1s21**/133,**Taiwan region**

Code	Station Name	Δ°	AZ°	Phase	ID		Time		Res
				Op		ISC	h	m s	ISC
JYNG	**Yonagunijimaku**	**0.37**	**27**	P		**Pn**	**15 27 51.1**		**+0.6**
JYNG				S		**Sn**	**15 27 57.4**		**+0.8**
YOJ	**Yonaguni jima**	**0.41**	**34**	P		**Pn**	**15 27 51.5**		**+0.4**
YOJ				S		**Sn**	**15 27 58.1**		**+0.5**
IRIF	**Iriomote-Funau**	**0.91**	**76**	P		**Pn**	**15 27 58.3**		**+0.3**
IRIF				S		**Sn**	**15 28 10.3**		**+0.3**
HATJ	**Hateruma jima**	**0.96**	**94**	P		**Pb**	**15 27 59.9**		**+0.5**
HATJ				S		**Sb**	**15 28 13.6**		**+1.8**
TWC	**Suao**	**0.96**	**300**	*e*P		**Pb**	**15 27 59.5**		**0.0**
	baz=303								
TWC				*e*S		**Sn**	**15 28 11.5**		**+0.2**
	baz=303								
ENA	**Nanau**	**0.98**	**288**	P		**Pb**	**15 28 00.2**		**+0.4**
	baz=281								
ENA				*e*S		**Sb**	**15 28 13.5**		**+1.1**
	baz=281								
TWD	**Chiawan**	**1.06**	**268**	*e*P		**Pb**	**15 28 01.3**		**0.0**
	baz=250								
TWD				*e*S		**Sb**	**15 28 15.6**		**+0.8**
	baz=250								
HWA	**Hwalien**	**1.07**	**262**	*e*P		**Pb**	**15 28 01.9**		**+0.6**
	baz=256								
HWA				*e*S		**Sb**	**15 28 16.8**		**+1.9**
	baz=256								
ILA	**Ilan**	**1.12**	**305**	*e*P		**Pb**	**15 28 02.3**		**0.0**
	baz=308								
ILA				*e*S		**Sb**	**15 28 16.6**		**0.0**
	baz=308								
TWB1	**Santiao Chiao**	**1.13**	**322**	*e*P		**Pn**	**15 28 01.0**		**0.0**
	baz=326								
TWB1				*e*S		**Sn**	**15 28 15.5**		**+0.1**
	baz=326								
JKRS	**Kuro-shima**	**1.15**	**84**	P		**Pb**	**15 28 02.3**		**-0.3**
JKRS				S		**Sb**	**15 28 17.5**		**+0.3**
TWE	**Neicheng**	**1.16**	**301**	*e*P		**Pb**	**15 28 02.6**		**-0.3**
	baz=303								
TWE				*e*S		**Sb**	**15 28 17.3**		**-0.3**
	baz=303								
ENTT	**Nioudou**	**1.21**	**296**	P		**Pb**	**15 28 04.0**		**+0.3**
	baz=279								
ENTT				*e*S		**Sb**	**15 28 19.6**		**+0.7**
	baz=279								
ESL	**Shilin**	**1.25**	**256**	*e*P		**Pn**	**15 28 03.0**		**+0.3**
	baz=250								
ESL				*e*S		**Sn**	**15 28 19.5**		**+0.9**
	baz=250								
JIJ	**Ishigaki jima**	**1.28**	**79**	P		**Pn**	**15 28 03.3**		**+0.2**
JIJ				S		**Sn**	**15 28 18.6**		**-0.7**
NWF	**Wu-fen Shan**	**1.30**	**317**	*e*P		**Pn**	**15 28 03.9**		**+0.5**
	baz=312								
NWF				*e*S		**Sn**	**15 28 19.5**		**-0.3**
	baz=312								
NNS	**Nan Shan**	**1.30**	**284**	*e*P		**Pb**	**15 28 04.7**		**-0.7**
	baz=269								
NNS				*e*S		**Sb**	**15 28 21.6**		**-0.3**
	baz=269								
WHF	**Hehuan Shan**	**1.37**	**271**	P		**Pb**	**15 28 06.1**		**-0.5**
	baz=255								
WHF				*e*S		**Sb**	**15 28 23.6**		**-0.3**
	baz=255								
NSK	**Sanguang**	**1.39**	**294**	*e*P		**Pb**	**15 28 06.5**		**-0.3**
	baz=276								
NSK				*e*S		**Sb**	**15 28 23.5**		**-0.8**
	baz=276								
TWT	**Tachien**	**1.45**	**275**	*e*P		**Pb**	**15 28 08.4**		**+0.4**
	baz=270								
TWT				*e*S		**Sb**	**15 28 25.1**		**-1.0**
	baz=270								
EHY	**Hungye**	**1.45**	**245**	P		**Pb**	**15 28 07.1**		**-0.8**
	baz=252								
EHY				*e*S		**Sn**	**15 28 24.5**		**+1.0**
	baz=252								
JISG	**Ishigakijimahi**	**1.49**	**72**	P		**Pn**	**15 28 05.9**		**0.0**
JISG				S		**Sn**	**15 28 23.7**		**-0.6**
WDT	**Danda**	**1.53**	**257**	*e*P		**Pb**	**15 28 08.6**		**-0.8**
	baz=251								
WDT				*e*S		**Sb**	**15 28 27.6**		**-1.0**
	baz=251								
TWF1	**Yuli**	**1.54**	**241**	P		**Pb**	**15 28 08.6**		**-0.8**
	baz=236								
TWF1				*e*S		**Sn**	**15 28 27.1**		**+1.4**
	baz=236								
TWY	**Chenhua**	**1.56**	**318**	*e*P		**Pn**	**15 28 07.3**		**+0.4**
	baz=314								
TWY				*e*S		**Sn**	**15 28 26.8**		**+0.7**
	baz=314								
TWS1	**Kuangyinshan**	**1.56**	**309**	*e*P		**Pn**	**15 28 08.2**		**+1.2**
	baz=305								
TWS1				*e*S		**Sb**	**15 28 27.7**		**-1.3**
	baz=305								
PCYT	**Pengchaiyu**	**1.62**	**337**	*e*P		**Pn**	**15 28 08.2**		**+0.3**
	baz=326								
PCYT				*e*S		**Sn**	**15 28 28.1**		**+0.4**
	baz=326								
CHKT	**Chengkung**	**1.64**	**232**	*e*P		**Pn**	**15 28 09.2**		**+1.3**
	baz=219								
CHKT				*e*S		**Sn**	**15 28 28.1**		**+0.1**
	baz=219								
NSTT	**Nanjuang**	**1.68**	**288**	*e*P		**Pb**	**15 28 11.1**		**-0.6**
	baz=275								
NSTT				*e*S		**Sb**	**15 28 31.4**		**-1.1**
	baz=275								
SMLT	**Sun Moon Lake**	**1.72**	**262**	P		**Pb**	**15 28 11.7**		**-0.7**
	baz=257								
SMLT				*e*S		**Sb**	**15 28 32.5**		**-1.1**
	baz=257								
TYC	**Yuchr**	**1.75**	**263**	*e*P		**Pb**	**15 28 12.0**		**-0.9**
	baz=258								
TYC				*e*S		**Sb**	**15 28 35.5**		**+1.0**
	baz=258								
YUS	**Yu-Shan**	**1.77**	**250**	*e*P		**Pb**	**15 28 12.8**		**-0.7**
	baz=245								
YUS				*e*S		**Sn**	**15 28 34.0**		**+1.9**
	baz=245								
TWQ1	**Liyutan**	**1.83**	**277**	*e*P		**Pb**	**15 28 13.6**		**-0.6**
	baz=272								
TWQ1				*e*S		**Sb**	**15 28 36.1**		**-0.6**
	baz=272								
JTJ	**Tarama**	**1.84**	**73**	P		**Pn**	**15 28 11.4**		**+0.6**
JTJ				S		**Sn**	**15 28 32.9**		**-0.2**
NSY	**Sanyi**	**1.85**	**279**	*e*P		**Pb**	**15 28 13.2**		**-1.3**
	baz=274								
NSY				*e*S		**Sb**	**15 28 37.1**		**-0.2**
	baz=274								
ELDTW	**Lidau**	**1.85**	**240**	*e*P		**Pn**	**15 28 12.5**		**+1.5**
	baz=236								
ELDTW				*e*S		**Sn**	**15 28 34.1**		**+0.7**
	baz=236								
ALS	**Alishan**	**1.89**	**252**	*e*P		**Pb**	**15 28 14.8**		**-0.7**
	baz=247								
ALS				*e*S		**Sb**	**15 28 38.8**		**0.0**
	baz=247								
TCU	**Taichung**	**1.91**	**271**	*e*P		**Pb**	**15 28 14.7**		**-0.8**
	baz=278								
TCU				*e*S		**Sb**	**15 28 37.9**		**-1.0**
	baz=278								
WNT	**Mingjian**	**1.92**	**263**	*e*P		**Pb**	**15 28 15.6**		**0.0**
	baz=248								
WNT				*e*S		**Sb**	**15 28 39.2**		**+0.1**
	baz=248								
CHN5	**Tsauling**	**1.98**	**255**	*e*P		**Pb**	**15 28 16.1**		**-0.7**
	baz=250								
CHN5				*e*S		**Sb**	**15 28 39.8**		**-1.3**
	baz=250								
TTN	**Taitung**	**2.01**	**228**	*e*S		**Sb**	**15 28 40.8**		**-1.2**
	baz=217								
TWG	**Pinlang**	**2.02**	**230**	*e*P		**Pn**	**15 28 15.0**		**+1.7**
	baz=237								
TWG				*e*S		**Sn**	**15 28 37.7**		**+0.2**
	baz=237								
WGK	**Gukeng**	**2.06**	**258**	*e*P		**Pb**	**15 28 16.3**		**-1.8**
	baz=253								
WGK				*e*S		**Sb**	**15 28 43.3**		**0.0**
	baz=253								
STYT	**Tauyuan**	**2.07**	**243**	*e*P		**Pb**	**15 28 16.7**		**-1.6**
	baz=233								
STYT				*e*S		**Sn**	**15 28 41.4**		**+2.5**
	baz=233								
CHN4	**Tsaushan**	**2.13**	**249**	*e*P		**Pb**	**15 28 19.0**		**-0.3**
	baz=245								
CHN4				*e*S		**Sb**	**15 28 44.9**		**-0.4**
	baz=245								
WTP	**Ta-pu**	**2.15**	**247**	*e*P		**Pb**	**15 28 18.6**		**-1.1**
	baz=242								
WTP				*e*S		**Sb**	**15 28 45.2**		**-0.8**
	baz=242								
CHN2	**Minshiung**	**2.17**	**255**	*e*P		**Pb**	**15 28 19.5**		**-0.6**
	baz=250								
CHN2				*e*S		**Sb**	**15 28 45.7**		**-0.9**
	baz=250								
CHY	**Chiayi**	**2.23**	**254**	*e*P		**Pb**	**15 28 19.5**		**-1.5**
	baz=250								
CHY				*e*S		**Sb**	**15 28 47.0**		**-1.2**
	baz=250								
CHN1	**Nanshi**	**2.25**	**246**	*e*P		**Pb**	**15 28 20.2**		**-1.2**
	baz=242								
CHN1				*e*S		**Sb**	**15 28 47.2**		**-1.6**
	baz=242								
ECL	**Taimali**	**2.25**	**228**	*e*P		**Pn**	**15 28 17.7**		**+1.3**
	baz=233								
ECL				*e*S		**Sn**	**15 28 42.5**		**-0.7**
	baz=233								
SGST	**Jiashian**	**2.25**	**243**	*e*P		**Pb**	**15 28 20.2**		**-1.1**
	baz=239								
SGST				*e*S		**Sb**	**15 28 48.2**		**-0.6**
	baz=239								
TWK	**Hsinying**	**2.25**	**248**	*e*P		**Pb**

ASAR LR LR 16 00 39.2
comp=Z,60nm,18.2s,baz=236,slow=38

ISCJB ***15*** *15:36:19.9±0.4, 40°.38N±0°.03×27°.86E±0°.03, h0km, Error ellipse: s-maj=4.0km s-min=3.0km az=177.5*
CSEM ***15*** *15:36:20.1±0.2, 40°.36N×27°.85E, h1km, MD2.7, Error ellipse: s-maj=4.3km s-min=3.6km az=17.0, Suspected Mining explosion.*
DDA ***15*** *15:36:20.3, 40°.33N×27°.83E, h9km, Md2.8, Suspected Mining explosion.*
ISK ***15*** *15:36:20.2, 40°.35N×27°.87E, h8km, MD2.7*

ISC 15 15:36:19.9±0.8, 40°.39N±0°.03×27°.83E±0.02, h0km, n43, σ0s59/56, Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
EDC	**Edincik**	**0.05**	**149**	*e*PG	**Pg**	**15 36 21.9**	**+1.0**
EDC				*e*SG	**Sg**	**15 36 23.3**	**+1.8**
EDC	**Edincik**	**0.05**	**149**	*e*Pg	**Pg**	**15 36 21.9**	**+1.0**
EDC				*e*Sg	**Sg**	**15 36 23.3**	**+1.8**
KNL	**Bal¯–kesir**	**0.26**	**242**	*i* P	**Pg**	**15 36 24.9**	**0.0**
KNL				*i* S	**Sg**	**15 36 29.8**	**+1.6**
MRMT	**Marmara Adasi**	**0.28**	**320**	*e*PG	**Pb**	**15 36 27.8**	**0.0**
MRMT	**Marmara Adasi**	**0.28**	**320**	*e*Pg	**Pb**	**15 36 27.8**	**0.0**
GONE	**Gonen-Balikesi**	**0.36**	**197**	*e*PG	**Pg**	**15 36 27.1**	**+0.3**
GONE	**Gonen-Balikesi**	**0.36**	**197**	*e*Pg	**Pg**	**15 36 27.1**	**+0.3**
KCTX	**Karacabey (Bur**	**0.42**	**107**	*e*PG	**Pg**	**15 36 28.0**	**0.0**
KCTX				*e*SG	**Sg**	**15 36 33.1**	**-0.4**
KCTX	**Karacabey (Bur**	**0.42**	**107**	*e*Pg	**Pg**	**15 36 28.0**	**0.0**
KCTX				*e*Sg	**Sg**	**15 36 33.1**	**-0.4**
RKY	**Sarkoy-Tekirda**	**0.58**	**301**	*e*PG	**Pb**	**15 36 32.3**	**-0.6**
RKY	**Sarkoy-Tekirda**	**0.58**	**301**	*e*Pg	**Pb**	**15 36 32.3**	**-0.6**
BALY	**Balya**	**0.67**	**194**	*i* P	**Pg**	**15 36 31.8**	**-0.9**
BALY				*i* S	**Sg**	**15 36 40.6**	**-0.8**
BALY	**Balya**	**0.67**	**194**	P	**Pg**	**15 36 31.8**	**-0.9**
BALY				S	**Sg**	**15 36 40.6**	**-0.8**
ARMT	**Armutlu**	**0.81**	**77**	*e*PG	**Pg**	**15 36 35.8**	**+0.4**
ARMT	**Armutlu**	**0.81**	**77**	*e*Pg	**Pg**	**15 36 35.8**	**+0.4**
DURS	**Dursunbey**	**0.93**	**148**	*i* P	**Pg**	**15 36 37.8**	**0.0**
DURS				*i* S	**Sg**	**15 36 50.0**	**+0.2**
DURS	**Dursunbey**	**0.93**	**148**	P	**Pg**	**15 36 37.8**	**0.0**
DURS				S	**Sg**	**15 36 50.0**	**+0.2**
CTKS	**Kestanelik-??a**	**0.99**	**31**	*e*PG	**Pb**	**15 36 39.8**	**-0.1**
CTKS	**Kestanelik-??a**	**0.99**	**31**	*e*Pg	**Pb**	**15 36 39.8**	**-0.1**
ULDT	**Uludag**	**1.03**	**104**	*i* P	**Pg**	**15 36 39.3**	**-0.3**
ULDT				*i* S	**Sg**	**15 36 53.5**	**+0.5**
ULDT	**Uludag**	**1.03**	**104**	P	**Pg**	**15 36 39.3**	**-0.3**
ULDT				S	**Sg**	**15 36 53.5**	**+0.5**
GELI	**Tayfur-Gelibol**	**1.03**	**271**	*e*PN	**Pb**	**15 36 41.1**	**+0.5**
GELI	**Tayfur-Gelibol**	**1.03**	**271**	*e*Pn	**Pb**	**15 36 41.1**	**+0.5**
ERIK	**Erikli-Kesan**	**1.04**	**286**	*e*PN	**Pb**	**15 36 40.9**	**+0.1**
ERIK	**Erikli-Kesan**	**1.04**	**286**	*e*Pn	**Pb**	**15 36 40.9**	**+0.1**
GEMT	**Gemlik**	**1.04**	**87**	*e*PG	**Pg**	**15 36 40.1**	**+0.3**
GEMT	**Gemlik**	**1.04**	**87**	*e*Pg	**Pg**	**15 36 40.1**	**+0.3**
IGD	**Bursa**	**1.06**	**96**	*i* P	**Pg**	**15 36 40.4**	**+0.2**
IGD				*i* S	**Sb**	**15 36 54.6**	**-0.8**
CTYL	**Yalikoy Yolu**	**1.14**	**18**	*e*PN	**Pn**	**15 36 43.0**	**-0.1**
CTYL	**Yalikoy Yolu**	**1.14**	**18**	*e*Pn	**Pn**	**15 36 43.0**	**-0.1**
ISK	**Istanbul-Kandi**	**1.15**	**54**	*e*PN	**Pb**	**15 36 42.5**	**-0.2**
ISK	**Istanbul-Kandi**	**1.15**	**54**	*e*Pn	**Pb**	**15 36 42.5**	**-0.2**
IZI	**Iznik**	**1.26**	**92**	*e*PN	**Pg**	**15 36 44.1**	**+0.1**
IZI	**Iznik**	**1.26**	**92**	*e*Pn	**Pg**	**15 36 44.1**	**+0.1**
KLYT	**Kilyos**	**1.26**	**47**	*e*PN	**Pn**	**15 36 44.6**	**-0.1**
KLYT	**Kilyos**	**1.26**	**47**	*e*Pn	**Pn**	**15 36 44.6**	**-0.1**
ALN	**Alexandroupoli**	**1.45**	**291**	*e*PN	**Pg**	**15 36 47.7**	**+0.1**
ALN	**Alexandroupoli**	**1.45**	**291**	*e*Pn	**Pg**	**15 36 47.7**	**+0.1**
BOZC	**Bozcaada**	**1.47**	**249**	*i* P	**Pn**	**15 36 47.5**	**-0.1**
BOZC				*i* S	**Sn**	**15 37 07.8**	**+0.3**
CAVI	**Cavuskoy**	**1.55**	**96**	*e*PN	**Pn**	**15 36 48.6**	**-0.2**
CAVI	**Cavuskoy**	**1.55**	**96**	*e*Pn	**Pn**	**15 36 48.6**	**-0.2**
TVSB	**Tavsanli**	**1.57**	**126**	*e*PN	**Pn**	**15 36 48.6**	**-0.5**
TVSB	**Tavsanli**	**1.57**	**126**	*e*Pn	**Pn**	**15 36 48.6**	**-0.5**

IDC 15 15:41:09.3±8.6, 36°.60N×142°.01E, h0km, mb3.2/2, mb1 3.5/2, mb1mx3.1/32, mbtmp3.2/2, ML1.9/1, Error ellipse: s-maj=187.5km s-min=43.5km az=30.0, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MJAR	**Matsushiro Arr**	**3.06**	**270**	Pn	Pn	15 41 58.7	-0.3
	0.2nm,0.3s,baz=87,slow=14,SNR=3.5						
WRA	**Warramunga Arr**	**56.70**	**189**	P	P	15 50 54.6	-0.1
	0.3nm,0.7s,baz=11,slow=7.2,SNR=3.6						
ASAR	**Alice Springs**	**60.43**	**189**	P	P	15 51 20.6	-0.1
	0.1nm,0.6s,baz=7.9,slow=8.3,SNR=4.2						

IDC ***15*** *15:44:34.6±2.1, 37°.36N×144°.92E, h0km, mb3.4/3, mb1 3.5/5, mb1mx3.2/39, mbtmp3.4/5, ML3.2/2, Error ellipse: s-maj=58.5km s-min=27.2km az=71.0*
ISCJB ***15*** *15:44:37.9±0.9, 37°.46N±0°.06×144°.71E±0°.07, h33km, mb3.4/3, Error ellipse: s-maj=8.7km s-min=7.8km az=148.0*
JMA ***15*** *15:44:41.7±0.5, 37°.61N×144°.52E, h40km, M4.0*

ISC 15 15:44:39.5±1.4, 37°.44N±0°.07×144°.75E±0°.09, h35km, n18, σ1s64/22, mb3.3/3, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**2.87**	**292**	P	**Pn**	**15 45 22.8**	**0.0**
JIO				*e*S	**Sn**	**15 45 54.3**	**-1.8**
OFUJ	**Ofunato**	**2.93**	**305**	P	**Pn**	**15 45 24.4**	**+0.9**
JMK	**Ichinoseki**	**3.17**	**300**	P	**Pn**	**15 45 27.0**	**+0.2**
JMK				*e*S	**Sn**	**15 46 01.7**	**-1.6**
JOM	**Ohasama**	**3.39**	**308**	P	**Pn**	**15 45 31.1**	**+1.2**
JOM				*e*S	**Sn**	**15 46 07.3**	**-1.6**
JFT	**Otama**	**3.51**	**273**	P	**Pn**	**15 45 32.7**	**+1.1**
JFT				S	**Sn**	**15 46 11.2**	**-0.7**
JYK	**Kaneyama**	**3.76**	**294**	P	**Pn**	**15 45 36.2**	**+1.2**
JYK				*e*S	**Sn**	**15 46 17.5**	**-0.5**
JRY	**Ryogami san**	**4.91**	**255**	P	**Pn**	**15 45 50.5**	**-0.3**
JRY				*e*S	Sn	15 46 38.4	-7.9
JOD2	**Odawara 2**	**5.06**	**246**	*e*S	**Sn**	**15 46 46.3**	**-3.8**
JCH	**Churui**	**5.28**	**349**	P	**Pn**	**15 45 55.1**	**-0.7**
JCH				S	**Sn**	**15 46 51.4**	**-4.0**
JKB	**Kayabe**	**5.29**	**328**	P	**Pn**	**15 45 56.7**	**+0.8**
JKB				*e*S	Sn	15 46 51.5	-4.1
MJAR	**Matsushiro Arr**	**5.31**	**262**	Pn	**Pn**	**15 45 55.9**	**-0.4**
	0.7nm,0.3s,baz=88,slow=15,SNR=6.7						
MJAR				Sn	Sn	15 46 51.8	-4.5
	0.5nm,0.3s,baz=96,slow=28,SNR=2.8						
ASAJ	**Asahikawa**	**6.87**	**347**	Pn	**Pn**	**15 46 17.2**	**-0.5**
	0.4nm,0.3s,baz=195,slow=12,SNR=6.4						
ASAJ				Sn	**Sn**	**15 47 35.7**	**+1.1**
	0.2nm,0.3s,baz=73,slow=20,SNR=2.3						
H11N2	**WAKE ISLAND Hy**	**26.15**	**126**	T	T	16 17 19.0	
	baz=318,slow=74,SNR=7.8						
H11N1	**WAKE ISLAND Hy**	**26.16**	**126**	T	T	16 17 19.9	
	baz=318,slow=74,SNR=7.5						
H11N3	**WAKE ISLAND Hy**	**26.17**	**126**	T	T	16 17 18.2	
	baz=318,slow=74,SNR=6.8						
MKAR	**Makanchi Array**	**46.16**	**302**	P	**P**	**15 53 02.6**	**+2.1**
	0.2nm,0.7s,baz=81,slow=9.2,SNR=3.2						
WRA	**Warramunga Arr**	**57.91**	**192**	P	**P**	**15 54 28.1**	**0.0**
	0.4nm,0.4s,baz=9.2,slow=7.1,SNR=9.7						
ASAR	**Alice Springs**	**61.63**	**191**	P	**P**	**15 54 53.6**	**0.0**
	0.2nm,0.8s,baz=6.1,slow=7.2,SNR=5.1						

ISCJB ***15*** *16:04:09.8±0.8, 17°.2S±0°.2×178°.8W±0°.2, h533km, mb3.8/9, Error ellipse: s-maj=28.9km s-min=16.8km az=141.4*
IDC ***15*** *16:04:16.7±3.0, 17°.44S×178°.83W, h609km±39km, mb3.3/9, mb1 3.5/10, mb1mx3.2/37, mbtmp4.2/10, Error ellipse: s-maj=33.2km s-min=15.9km az=160.0*

ISC 15 16:04:10.6±0.9, 17°.2S±0°.2×178°.9W±0°.2, h533km, n11, σ1s53/11, mb3.5/9, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
DZM	**Mont Dzumac**	**14.62**	**248**	P	P	16 07 21.2	+4.6
	0.4nm,0.3s,baz=90,slow=19,SNR=5.1						
URZ	**Urewera**	**21.31**	**189**	P	**P**	**16 08 19.4**	**+0.2**
	4.7nm,0.4s,baz=267,slow=3.3,SNR=8.4						
STKA	**Stephens Creek**	**38.56**	**240**	P	**P**	**16 10 48.5**	**+0.6**
	2.6nm,0.5s,baz=88,slow=7.7,SNR=17						
WRA	**Warramunga Arr**	**44.29**	**259**	P	**P**	**16 11 34.2**	**+0.9**
	3.5nm,0.5s,baz=95,slow=6.9,SNR=138						
ASAR	**Alice Springs**	**44.52**	**254**	P	**P**	**16 11 36.1**	**+1.0**
	21nm,0.6s,baz=87,slow=8.6,SNR=605						
ASAR				PcP	**PcP**	**16 13 05.2**	**-1.8**
	0.5nm,0.4s,baz=103,slow=3.8,SNR=4.1						
ASAR				S	**S**	**16 17 28.9**	**-3.1**
	0.6nm,1.0s,baz=79,slow=16,SNR=4.1						
FITZ	**Fitzroy Crossi**	**52.67**	**260**	P	**P**	**16 12 37.1**	**+1.4**
	1.0nm,0.4s,baz=96,slow=9.2,SNR=10						
ILAR	**Eielson Array**	**85.27**	**13**	P	**P**	**16 15 50.5**	**-0.1**
	0.2nm,0.4s,baz=224,slow=5.1,SNR=6.4						
TXAR	**Lajitas Array**	**86.01**	**58**	P	**P**	**16 15 54.7**	**-0.5**
	0.8nm,0.7s,baz=212,slow=4.4,SNR=5.2						
PDAR	**Pinedale Array**	**87.15**	**44**	P	**P**	**16 16 00.0**	**-0.4**
	0.4nm,0.5s,baz=220,slow=2.8,SNR=5.6						
CMAR	**Chiang Mai Arr**	**88.17**	**290**	P	**P**	**16 16 06.5**	**+1.1**
	0.5nm,0.8s,baz=103,slow=5.1,SNR=4.7						
BRTR	**Keskin Array B**	**143.91**	**315**	PKP	PKPab	16 22 45.5	+0.4
	0.6nm,0.4s,baz=85,slow=3.2,SNR=4.1						

JMA 15 16:21:10.0, 37°.00N×140°.82E, h7km±1km, M1.8, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.10**	**350**	P	Pg	16 21 12.5	+0.1
ONAJ				S	Sg	16 21 14.7	+0.7
JFK	**Kawauchi**	**0.37**	**7**	P	Pg	16 21 17.5	+0.3
JFK				S	Sg	16 21 22.9	+0.8
JFT	**Otama**	**0.65**	**323**	P	Pg	16 21 22.8	+0.4
JFT				S	Sg	16 21 31.5	+0.6

JMA 15 16:21:37.3, 36°.84N×138°.68E, h6km±2km, M1.3, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JGK	**Kuni**	**0.28**	**187**	S	Sg	16 21 47.0	+0.5
JKT	**Katashina**	**0.46**	**99**	S	Sg	16 21 52.5	+0.2
MAT	**Matsushiro**	**0.48**	**232**	P	Pg	16 21 46.2	-0.4
MAT				S	Sg	16 21 52.3	-0.6
MAT	**Matsushiro**	**0.48**	**232**	P	Pg	16 21 46.3	-0.3
MAT				S	Sg	16 21 52.3	-0.6
JHK	**Hiroka**	**0.49**	**33**	P	Pg	16 21 46.8	+0.1
JJN	**Nakama**	**0.49**	**303**	P	Pb	16 21 47.7	-0.6
JNG	**Nsakai**	**0.64**	**227**	P	Pg	16 21 49.3	-0.2
JNG				S	Sg	16 21 57.4	-0.4
JRY	**Ryogami san**	**0.84**	**168**	P	Pg	16 21 53.3	-0.1
JRY				S	Sg	16 22 03.9	-0.5

JMA 15 16:24:50.4±0.3, 39°.85N×143°.46E, h11km±4km, M3.5, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JTH	**Tanohata**	**1.23**	**275**	P	Pn	16 25 13.1	-0.4
JTH				*e*S	Sb	16 25 29.4	-0.2
MIYJ	**Miyakonagasawa**	**1.29**	**258**	P	Pn	16 25 14.5	+0.1
JANG	**Nango**	**1.58**	**290**	P	Pn	16 25 18.4	0.0
OFUJ	**Ofunato**	**1.58**	**242**	P	Pn	16 25 18.3	-0.1
JOM	**Ohasama**	**1.71**	**258**	P	Pb	16 25 21.1	-0.8
JMK	**Ichinoseki**	**1.95**	**243**	P	Pn	16 25 23.8	+0.3
JTM	**Tenmabayashi**	**2.05**	**298**	P	Pn	16 25 26.0	+1.1
JTM				*e*S	Sb	16 25 52.1	-1.1
JAH	**Hinai**	**2.19**	**280**	P	Pn	16 25 28.2	+1.4
JAH				*e*S	Sb	16 25 56.8	-0.5
JRG	**Rokugo**	**2.23**	**259**	P	Pn	16 25 28.5	+1.2
JRG				*e*S	Sb	16 25 59.4	+1.1
JYK	**Kaneyama**	**2.58**	**250**	P	Pn	16 25 33.3	+1.2
JOU	**Okura**	**2.63**	**237**	P	Pn	16 25 34.2	+1.4
JOU				*e*S	Sn	16 26 03.4	-1.4
JKB	**Kayabe**	**2.74**	**319**	P	Pn	16 25 36.2	+1.9
JCH	**Churui**	**2.76**	**359**	P	Pn	16 25 36.5	+1.9
JCH				S	Sn	16 26 08.8	+0.9

NIED ***15*** *16:28:00, 37°.80N×142°.10E, h38km, Mw3.6 Best double couple: M₀2.79000×10¹⁴ NP1:φ₀17.00000°, δ39.00000°, λ-94.00000°. NP2:φ₀202.00000°, δ51.00000°, λ-87.00000°.*
IDC ***15*** *16:28:49.7±0.9, 37°.78N×142°.29E, h0km, mb3.4/5, mb1 3.6/7, mb1mx3.3/45, mbtmp3.3/7, ML2.6/2, MS2.2/1, Ms1 2.2/1, ms1mx1.8/28, Error ellipse: s-maj=29.8km s-min=20.6km az=108.0*
JMA ***15*** *16:28:54.2±0.2, 37°.83N×142°.07E, h40km±4km, M3.8*

ISC 15 16:28:53.8±3.3, 37°.83N±0°.07×142°.10E±0°.09, h27km±22km, n24, σ0s95/24, mb3.4/5, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**0.86**	**317**	P	**Pn**	**16 29 09.9**	**-0.2**
JIO				S	**Sb**	**16 29 20.5**	**-0.7**
JMM	**Marumori**	**1.04**	**272**	P	**Pn**	**16 29 12.2**	**-0.3**
JMM				S	**Sn**	**16 29 25.5**	**-0.6**
JFK	**Kawauchi**	**1.08**	**245**	P	**Pn**	**16 29 12.5**	**-0.7**
JFK				S	**Sn**	**16 29 25.6**	**-1.7**
JOU	**Okura**	**1.25**	**296**	P	**Pn**	**16 29 15.9**	**+0.4**
JMK	**Ichinoseki**	**1.31**	**328**	P	**Pn**	**16 29 16.5**	**+0.1**
JMK				S	**Sn**	**16 29 32.4**	**-0.6**
JFT	**Otama**	**1.44**	**258**	P	**Pn**	**16 29 18.7**	**+0.7**
JFT				S	**Sn**	**16 29 35.4**	**-0.6**
JYS	**Shirataka**	**1.65**	**284**	P	**Pn**	**16 29 21.9**	**+0.9**
JYK	**Kaneyama**	**1.75**	**309**	P	**Pn**	**16 29 23.1**	**+0.8**
MIYJ	**Miyakonagasawa**	**1.75**	**353**	P	**Pn**	**16 29 22.0**	**-0.4**
JOM	**Ohasama**	**1.76**	**339**	P	**Pn**	**16 29 23.0**	**+0.6**
JOM				*e*S	**Sn**	**16 29 44.1**	**+0.2**
JRG	**Rokugo**	**1.94**	**324**	P	**Pn**	**16 29 26.2**	**+1.3**
MJAR	**Matsushiro Arr**	**3.36**	**249**	Pn	**Pn**	**16 29 46.8**	**+2.2**
	1.6nm,0.3s,baz=82,slow=16,SNR=17						
MJAR				LR	LR	16 30 59.5	
	comp=Z,34nm,21.2s,baz=120,slow=37						
USRK	**Ussuriysk Ar.**	**9.94**	**313**	Pn	**Pn**	**16 31 16.5**	**+1.8**
	0.2nm,0.3s,baz=119,slow=18,SNR=2.3						
H11N2	**WAKE ISLAND Hy**	**28.10**	**123**	T	T	17 04 08.2	
	baz=315,slow=76,SNR=7.0						
H11N1	**WAKE ISLAND Hy**	**28.11**	**123**	T	T	17 04 33.0	
	baz=315,slow=76,SNR=41						
H11N3	**WAKE ISLAND Hy**	**28.12**	**123**	T	T	17 04 37.7	
	baz=315,slow=76,SNR=22						
H11S1	**WAKE ISLAND Hy**	**28.85**	**125**	T	T	17 05 00.5	
	baz=317,slow=76,SNR=31						
H11S3	**WAKE ISLAND Hy**	**28.85**	**125**	T	T	17 05 20.3	
	baz=317,slow=76,SNR=23						
H11S2	**WAKE ISLAND Hy**	**28.87**	**125**	T	T	17 05 00.8	
	baz=317,slow=76,SNR=17						
KURBB	**Kurchatov Arra**	**45.95**	**307**	P	**P**	**16 37 14.0**	**-0.1**
	0.4nm,0.4s,baz=81,slow=8.2,SNR=5.7						
ILAR	**Eielson Array**	**48.53**	**33**	P	**P**	**16 37 34.3**	**+0.3**
	0.3nm,0.8s,baz=263,slow=6.3,SNR=3.2						
WRA	**Warramunga Arr**	**57.93**	**189**	P	**P**	**16 38 43.0**	**-0.6**
	0.8nm,0.6s,baz=5.8,slow=7.0,SNR=15						
ASAR	**Alice Springs**	**61.66**	**189**	P	**P**	**16 39 09.5**	**+0.3**
	0.2nm,0.8s,baz=14,slow=12,SNR=3.9						
YKA	**Yellowknife Ar**	**62.84**	**31**	P	**P**	**16 39 16.6**	**-0.2**
	0.1nm,0.5s,baz=298,slow=6.3,SNR=2.7						

ISCJB ***15*** *16:29:07.1±0.4, 44°.79N±0°.07×146°.37E±0°.07, h194km±4km, mb3.1/10, Error ellipse: s-maj=11.5km s-min=6.5km az=152.2*
JMA ***15*** *16:29:08.4±0.5, 44°.84N×146°.31E, h187km±4km, M3.2*
IDC ***15*** *16:29:09.8±1.2, 45°.29N×146°.00E, h190km±13km, mb3.0/10, mb1 3.3/15, mb1mx3.1/45, mbtmp3.6/15, Error ellipse: s-maj=29.5km s-min=12.5km az=162.0*
SKHL ***15*** *16:29:09.4±0.8, 44°.79N×146°.44E, h161km±1km, mb3.9/3, msh4.7/3*

ISC 15 16:29:07.7±0.7, 44°.80N±0°.07×146°.36E±0°.06, h190km±7km, n31, σ1s24/38, mb3.3/10, Kuril Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
YUK	**Yuzh-Kuril'sk**	**0.84**	**205**	*i* P	**Pn**	**16 29 36.3**	**+0.9**
YUK				AMB	AMB	16 29 38.3	
	70nm,0.3s						
YUK				AMB	AMB	16 29 38.3	
	30nm,0.3s						
YUK				AMB	AMB	16 29 38.3	
	50nm,0.3s						
YUK				*i* S	**Sn**	**16 29 57.6**	**+0.9**
YUK				A	A	16 29 58.7	
	200nm,0.3s						
YUK				A	A	16 29 58.7	
	80nm,0.3s						
SHO	**Shikotan**	**0.99**	**160**	*e*P	**Pn**	**16 29 36.6**	**+0.2**
SHO				AMB	AMB	16 29 37.5	
	90nm,0.4s						
SHO				*i* S	**Sn**	**16 29 58.2**	**-0.2**
SHO				A	A	16 29 59.4	
	200nm,0.3s						
SHO				A	A	16 29 59.4	
	110nm,0.3s						
KUR	**Kuril'sk**	**1.15**	**67**	*i* P	**Pn**	**16 29 38.1**	**+0.6**
KUR				AMB	AMB	16 29 38.5	
	40nm,0.3s						
KUR				AMB	AMB	16 29 38.5	
	30nm,0.3s						
KUR				AMB	AMB	16 29 38.5	
	20nm,0.3s						
KUR				*e*S	**Sn**	**16 29 59.7**	**-0.9**
KUR				A	A	16 30 02.9	
	110nm,0.4s						
KUR				A	A	16 30 02.9	
	90nm,0.4s						
JRA	**Rausu**	**1.24**	**226**	P	**Pn**	**16 29 38.8**	**+0.6**
NEM2	**Nemuro 2**	**1.50**	**198**	P	**Pn**	**16 29 40.9**	**+0.4**
NEM2				*e*S	**Sn**	**16 30 05.7**	**-0.2**
JNK	**Nakash**	**1.69**	**225**	P	**Pn**	**16 29 43.4**	**+1.0**
JTKR	**Abashiri--Toko**	**1.94**	**246**	P	**Pn**	**16 29 45.3**	**+0.4**
JTKR				*e*S	**Sn**	**16 30 14.2**	**+0.5**
JAK	**Akkeshi**	**2.17**	**214**	P	**Pn**	**16 29 47.9**	**+0.6**
JAK				*e*S	**Sn**	**16 30 18.1**	**+0.1**
JMP	**Maruseppu**	**2.29**	**251**	P	**Pn**	**16 29 48.9**	**+0.2**
JAR	**Ashorobuto**	**2.40**	**232**	P	**Pn**	**16 29 51.2**	**+1.4**
JSE	**Soyaes**	**2.69**	**275**	P	**Pn**	**16 29 52.9**	**-0.2**
JKK2	**Kamakawa 2**	**2.75**	**252**	P	**Pn**	**16 29 54.6**	**+0.7**
ASAJ	**Asahikawa**	**2.78**	**257**	P	**Pn**	**16 29 55.1**	**+0.9**
	2.5nm,0.3s,baz=72,slow=12,SNR=28						
ASAJ				S	**Sn**	**16 30 31.2**	**+0.7**
	0.6nm,0.3s,baz=300,slow=20,SNR=5.3						
JCH	**Churui**	**3.08**	**226**	P	**Pn**	**16 29 58.6**	**+0.8**
JCH				*e*S	**Sn**	**16 30 35.3**	**-1.6**
YSS	**Yuzh-Sakhalins**	**3.31**	**312**	*e*P	**Pn**	**16 30 02.2**	**+1.7**
JNBK	**Urakawa-nobuka**	**3.64**	**227**	P	Pn	16 30 01.6	-3.0
TYV	**Tymovskoe**	**6.56**	**339**	*e*P	**Pn**	**16 30 44.0**	**+2.0**
USRK	**Ussuriysk Ar.**	**10.29**	**272**	P	**Pn**	**16 31 29.9**	**-0.8**
	0.1nm,0.3s,baz=79,slow=10,SNR=4.2						
PETK	**Petropavlovsk-**	**11.15**	**38**	P	**Pn**	**16 31 41.5**	**-0.4**
	0.1nm,0.3s,baz=201,slow=8.9,SNR=4.4						
KSRS	**Korea Array**	**15.70**	**249**	P	**P**	**16 32 40.6**	**+1.8**
	0.1nm,0.3s,baz=55,slow=11,SNR=4.6						
SEY	**Seymchan**	**18.50**	**9**	P	**P**	**16 33 07.1**	**-2.1**
	0.1nm,0.3s,baz=254,slow=21,SNR=4.4						
SONM	**Songino Array**	**27.56**	**291**	P	**P**	**16 34 36.3**	**-0.6**
	0.2nm,0.4s,baz=67,slow=8.6,SNR=2.9						
ILAR	**Eielson Array**	**40.98**	**37**	P	**P**	**16 36 31.3**	**-0.2**
	0.5nm,0.6s,baz=264,slow=6.0,SNR=7.0						
MKAR	**Makanchi Array**	**43.60**	**296**	P	**P**	**16 36 51.5**	**-1.4**
	0.5nm,0.5s,baz=75,slow=9.2,SNR=10.0						
KURBB	**Kurchatov Arra**	**44.56**	**303**	P	**P**	**16 36 58.2**	**-2.2**
	0.2nm,0.3s,baz=78,slow=8.8,SNR=3.5						
CMAR	**Chiang Mai Arr**	**47.30**	**252**	P	**P**	**16 37 23.2**	**+1.1**
	0.4nm,0.4s,baz=49,slow=7.5,SNR=4.2						
YKA	**Yellowknife Ar**	**55.24**	**34**	P	**P**	**16 38 20.5**	**-0.1**
	0.2nm,0.7s,baz=302,slow=6.8,SNR=3.0						
FINES	**FINESS Array B**	**63.68**	**332**	P	**P**	**16 39 15.7**	**-2.6**
	1.9nm,1.0s,baz=42,slow=5.9,SNR=5.6						
NVAR	**Mina Array Bea**	**67.50**	**58**	P	**P**	**16 39 45.7**	**+2.2**
	0.3nm,0.3s,baz=316,slow=6.3,SNR=3.5						
PDAR	**Pinedale Array**	**69.66**	**50**	P	**P**	**16 39 58.1**	**+1.3**
	0.3nm,0.5s,baz=240,slow=1.2,SNR=4.5						
TXAR	**Lajitas Array**	**82.53**	**56**	P	**P**	**16 41 11.1**	**+1.7**
	0.2nm,0.5s,baz=316,slow=6.3,SNR=2.4						

IDC ***15*** *16:32:53.5±0.9, 30°.25N×97°.33E, h0km, mb3.5/8, mb1 3.6/10, mb1mx3.4/43, mbtmp3.5/10, ML3.4/2, Error ellipse: s-maj=47.2km s-min=15.8km az=63.0*
ISCJB ***15*** *16:32:55.9±0.7, 30°.02N±0°.09×96°.80E±0°.08, h33km, mb3.6/7, Error ellipse: s-maj=12.5km s-min=10.1km az=17.6*

ISC 15 16:32:58.0±0.8, 30°.1N±0°.1×96°.9E±0°.1, h35km, n16, σ1s42/16, mb3.5/7, Xizang

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
GUN	**Gumba**	**9.92**	**260**	*e*P	**Pn**	**16 35 18.7**	**+0.2**
	11nm,0.3s						
PKIN	**

HAL			Sn	**Sn**	**16 48 18.6**	**-1.9**
DRLN	**Deer Lake**	**6.52 352**	PN	**Pn**	**16 47 28.2**	**+2.1**
DRLN			mb		16 47 29.6	
	comp=Z,29nm,0.4s					
DRLN			SN	**Sn**	**16 48 38.9**	**-1.6**
DRLN			Trac		16 48 41.5	
	comp=Z,77nm,0.5s					
DRLN	**Deer Lake**	**6.52 352**	Pn	**Pn**	**16 47 28.2**	**+2.1**
DRLN			Sn	**Sn**	**16 48 38.9**	**-1.6**
LMN	**Caledonia Moun**	**6.92 299**	PN	**Pn**	**16 47 34.1**	**+2.5**
LMN			PN	Pn	16 47 34.5	+2.9
LMN			mb		16 47 35.0	
	comp=Z,11nm,0.1s					
LMN			SN	**Sn**	**16 48 48.6**	**-1.8**
LMN			Trac		16 48 53.3	
	comp=Z,18nm,0.2s					
LMN	**Caledonia Moun**	**6.92 299**	Pn	**Pn**	**16 47 34.1**	**+2.5**
LMN			Sn	**Sn**	**16 48 48.6**	**-1.8**
GGN	**Saint George**	**8.06 290**	PN	**Pn**	**16 47 48.3**	**+1.0**
GGN			mb		16 47 49.5	
	comp=Z,24nm,0.4s					
GGN			SN	**Sn**	**16 49 13.6**	**-4.9**
GGN			Trac		16 49 22.8	
	comp=Z,6.4nm,0.1s					
GGN	**Saint George**	**8.06 290**	Pn	**Pn**	**16 47 48.3**	**+1.0**
GGN			Sn	**Sn**	**16 49 13.6**	**-4.9**
BATG	**Bathurst New B**	**8.33 306**	PN	**Pn**	**16 47 53.1**	**+2.2**
BATG			mb		16 47 53.3	
	comp=Z,7.2nm,0.2s					
BATG			SN	**Sn**	**16 49 22.0**	**-3.0**
BATG			Trac		16 49 26.5	
	comp=Z,5.3nm,0.1s					
BATG	**Bathurst New B**	**8.33 306**	Pn	**Pn**	**16 47 53.1**	**+2.2**
BATG			Sn	**Sn**	**16 49 26.5**	**+1.6**
NATG	**Natashquan Que**	**8.78 331**	PN	**Pn**	**16 47 59.6**	**+2.5**
NATG			SN	**Sn**	**16 49 34.2**	**-1.8**
NATG			Trac		16 49 40.7	
	comp=Z,14nm,0.3s					
NATG	**Natashquan Que**	**8.78 331**	Pn	**Pn**	**16 47 59.6**	**+2.5**
NATG			Sn	**Sn**	**16 49 34.2**	**-1.8**
GSQ	**Grosses Roches**	**9.79 312**	PN	**Pn**	**16 48 12.3**	**+1.4**
GSQ			mb		16 48 15.0	
	comp=Z,2.9nm,0.2s					
GSQ			SN	Sn	16 49 54.4	-6.4
GSQ	**Grosses Roches**	**9.79 312**	Pn	**Pn**	**16 48 12.3**	**+1.4**
GSQ			Sn	Sn	16 49 54.4	-6.4
PKME	**Peaks-Kenny Pk**	**9.79 289**	PN	**Pn**	**16 48 11.5**	**+0.5**
PKME			SN	Sn	16 49 54.5	-6.4
PKME	**Peaks-Kenny Pk**	**9.79 289**	*e*Pn	**Pn**	**16 48 11.2**	**+0.3**
PKME			*e*Sn	Sn	16 49 52.9	-7.9
SMQ	**Clarke City**	**10.39 319**	PN	**Pn**	**16 48 19.4**	**+0.3**
SMQ			mb		16 48 21.2	
	comp=Z,3.9nm,0.2s					
SMQ			SN	**Sn**	**16 50 09.7**	**-5.8**
SMQ			Trac		16 50 18.9	
	comp=Z,3.2nm,0.2s					
SMQ	**Clarke City**	**10.39 319**	Pn	**Pn**	**16 48 19.4**	**+0.3**
SMQ			Sn	**Sn**	**16 50 09.7**	**-5.8**
CNQ	**Baie Comeau**	**10.53 312**	PN	**Pn**	**16 48 22.8**	**+1.7**
CNQ			mb		16 48 25.8	
	comp=Z,2.3nm,0.2s					
CNQ			SN	**Sn**	**16 50 17.6**	**-1.4**
CNQ			Trac		16 50 21.9	
	comp=Z,1.9nm,0.1s					
CNQ	**Baie Comeau**	**10.53 312**	Pn	**Pn**	**16 48 22.8**	**+1.7**
CNQ			Sn	**Sn**	**16 50 17.6**	**-1.4**
A16	**Riviere Ouelle**	**10.85 300**	PN	**Pn**	**16 48 25.8**	**+0.4**
A16			mb		16 48 27.3	
	comp=Z,11nm,0.3s					
A16			SN	**Sn**	**16 50 22.8**	**-4.0**
A16	**Riviere Ouelle**	**10.85 300**	Pn	**Pn**	**16 48 25.8**	**+0.4**
A16			Sn	**Sn**	**16 50 22.8**	**-4.0**
LMQ	**La Malbaie**	**11.08 300**	PN	**Pn**	**16 48 28.6**	**0.0**
LMQ			mb		16 48 29.2	
	comp=Z,14nm,0.6s					
LMQ			SN	**Sn**	**16 50 29.8**	**-2.8**
DAQ	**Lac Daran**	**11.80 301**	PN	**Pn**	**16 48 38.2**	**-0.4**
DAQ			mb		16 48 38.9	
	comp=Z,15nm,0.4s					
DAQ			SN	**Sn**	**16 50 45.1**	**-5.2**
DAQ			Trac		16 50 52.2	
	comp=Z,5.0nm,0.2s					
DAQ	**Lac Daran**	**11.80 301**	Pn	**Pn**	**16 48 38.2**	**-0.4**
DAQ			Sn	**Sn**	**16 50 45.1**	**-5.2**
SCHQ	**Schefferville**	**13.92 333**	Pn	**Pn**	**16 49 06.7**	**-0.8**
	0.6nm,0.3s,baz=153,slow=15,SNR=2.9					
PDAR	**Pinedale Array**	**38.65 289**	P	**P**	**16 53 13.1**	**-0.9**
	0.6nm,0.7s,baz=74,slow=11,SNR=5.8					
YKA	**Yellowknife Ar**	**38.89 321**	P	**P**	**16 53 16.8**	**+1.3**
	0.3nm,0.5s,baz=95,slow=8.6,SNR=6.9					
TXAR	**Lajitas Array**	**40.20 266**	P	**P**	**16 53 27.3**	**+0.5**
	0.8nm,0.7s,baz=91,slow=7.4,SNR=6.9					
ARCES	**ARCESS Array B**	**47.82 28**	P	**P**	**16 54 25.7**	**-1.7**
	2.4nm,1.0s,baz=275,slow=9.7,SNR=3.6					
TORD	**Torodi Ar. Bea**	**57.67 103**	P	P	16 55 37.4	-3.6
	0.7nm,0.7s,baz=310,slow=7.0,SNR=4.5					

IDC ***15*** *16:52:38.4±1.6,38˚.13N×141˚.67E,h0km,mb3.6/4, mb1 3.7/7,mb1mx3.4/60,mbtmp3.5/7,ML3.1/3,Error ellipse: s-maj=43.4km s-min=21.4km az=76.0*

ISCJB ***15*** *16:52:44.1±1.0,38˚.31N±0˚.05×142˚.0E±0˚.1,h69km±7km, mb3.6/4,Error ellipse: s-maj=14.8km s-min=6.4km az=20.3*

JMA ***15*** *16:52:46.0±0.1,38˚.33N×141˚.91E,h60km±1km,M3.7*

JMA Felt I J1.

ISC 15 16:52:44.9±1.4,38˚.31N±0˚.06×142˚.0E±0˚.1,h62km±11km, n24,σ0°74/25,mb3.6/4,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**0.53**	**286**	P	**Pn**	**16 52 57.5**	**+0.2**
JIO				S	**Sn**	**16 53 05.6**	**-0.7**
OFUJ	**Ofunato**	**0.81**	**341**	P	**Pn**	**16 53 01.1**	**+0.6**
OFUJ				S	**Sn**	**16 53 12.1**	**0.0**
JMK	**Ichinoseki**	**0.88**	**316**	P	**Pn**	**16 53 02.0**	**+0.5**
JMK				S	**Sn**	**16 53 13.3**	**-0.4**
JOU	**Okura**	**1.05**	**273**	S	**Sn**	**16 53 17.1**	**-0.5**
JMM	**Marumori**	**1.05**	**245**	S	**Sn**	**16 53 16.3**	**-1.3**
JOM	**Ohasama**	**1.28**	**335**	P	**Pn**	**16 53 07.5**	**+0.8**
JOM				S	**Sn**	**16 53 23.3**	**+0.3**
JFK	**Kawauchi**	**1.30**	**224**	P	**Pn**	**16 53 07.3**	**+0.3**
JFK				S	**Sn**	**16 53 22.6**	**-0.9**
JYK	**Kaneyama**	**1.42**	**296**	P	**Pn**	**16 53 08.9**	**+0.4**
JYK				*e*S	**Sn**	**16 53 25.9**	**-0.4**
JRG	**Rokugo**	**1.52**	**316**	P	**Pn**	**16 53 10.8**	**+1.0**
JYS	**Shirataka**	**1.52**	**267**	P	**Pn**	**16 53 10.3**	**+0.4**
JYS				S	**Sn**	**16 53 28.8**	**0.0**
JFT	**Otama**	**1.54**	**239**	S	**Sn**	**16 53 28.7**	**-0.4**
MJAR	**Matsushiro Arr**	**3.50**	**241**	Pn	Pn	16 53 28.9	-7.9
	1.9nm,0.3s,baz=80,slow=15,SNR=9.8						
ASAJ	**Asahikawa**	**5.81**	**4**	Pn	**Pn**	**16 54 08.4**	**0.0**
	1.0nm,0.3s,baz=198,slow=21,SNR=15						
ASAJ				Sn	**Sn**	**16 55 12.3**	**-1.5**
	0.6nm,0.3s,baz=20,slow=12,SNR=3.5						
USRK	**Ussuriysk Ar.**	**9.56**	**311**	Pn	**Pn**	**16 54 58.0**	**-1.7**
	0.2nm,0.3s,baz=120,slow=13,SNR=4.3						
H11N2	**WAKE ISLAND Hy**	**28.43**	**124**	T	T	17 28 56.7	
	baz=316,slow=75,SNR=60						
H11N1	**WAKE ISLAND Hy**	**28.44**	**124**	T	T	17 28 56.2	
	baz=316,slow=75,SNR=8.8						
H11N3	**WAKE ISLAND Hy**	**28.45**	**124**	T	T	17 28 58.0	
	baz=316,slow=75,SNR=8.0						
H11S1	**WAKE ISLAND Hy**	**29.19**	**126**	T	T	17 29 54.6	
	baz=318,slow=76,SNR=12						
H11S3	**WAKE ISLAND Hy**	**29.20**	**126**	T	T	17 29 52.2	
	baz=318,slow=76,SNR=17						
H11S2	**WAKE ISLAND Hy**	**29.21**	**126**	T	T	17 29 55.9	
	baz=318,slow=76,SNR=13						
ZALV	**Zalesovo Beam**	**41.41**	**311**	P	**P**	**17 00 25.0**	**+0.1**
	0.8nm,0.5s,baz=85,slow=8.4,SNR=4.2						
MKAR	**Makanchi Array**	**43.84**	**301**	P	**P**	**17 00 45.1**	**+0.3**
	0.4nm,0.7s,baz=81,slow=10.0,SNR=5.4						
WRA	**Warramunga Arr**	**58.39**	**188**	P	**P**	**17 02 34.2**	**+0.3**
	0.6nm,0.5s,baz=6.4,slow=7.0,SNR=12						
ASAR	**Alice Springs**	**62.12**	**188**	P	**P**	**17 02 59.6**	**+0.2**
	0.3nm,0.7s,baz=9.7,slow=3.9,SNR=6.0						

IDC 15 16:55:13.0±52.0,16˚.75S×179˚.54W,h0km,mb3.9/3, mb1 4.1/3,mb1mx3.6/43,mbtmp3.9/3,Error ellipse: s-maj=945.2km s-min=153.8km az=77.0,Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
STKA	**Stephens Creek**	**38.26**	**240**	P	P	17 02 35.0	-0.2
	1.8nm,1.0s,baz=98,slow=15,SNR=4.5						
WRA	**Warramunga Arr**	**43.79**	**258**	P	P	17 03 20.9	-0.1
	0.3nm,0.4s,baz=93,slow=7.5,SNR=15						
ASAR	**Alice Springs**	**44.08**	**253**	P	P	17 03 23.0	-0.2
	2.0nm,0.5s,baz=86,slow=8.7,SNR=51						

ISCJB ***15*** *17:06:38.4±0.2,38˚.40N±0˚.02×118˚.69W±0˚.02,h10km, mb3.3/3,MS3.2/1,Error ellipse: s-maj=2.8km s-min=2.6km az=2.9*

NEIC ***15*** *17:06:38.2,38˚.40N×118˚.73W,h16km,ML3.9(REN),After REN.*

IDC ***15*** *17:06:39.2±1.0,38˚.46N×118˚.73W,h0km,mb3.5/4, mb1 3.8/7,mb1mx3.5/66,mbtmp3.5/7,ML3.8/3,MS2.9/4, Ms1 2.9/4,ms1mx2.6/41,Error ellipse: s-maj=14.8km s-min=6.4km az=21.0*

ISC 15 17:06:39.0±0.6,38˚.43N±0˚.03×118˚.72W±0˚.02,h10km,n79, σ1°46/86,mb3.4/3,California-Nevada border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
NV01	**Mina Array Sit**	**0.32**	**90**	*e*Pg	**Pg**	**17 06 45.0**	**-0.5**
NV01				*e*Sg	**Sg**	**17 06 50.5**	**+0.5**
NVAR	**Mina Array Bea**	**0.32**	**90**	Pg	**Pg**	**17 06 44.7**	**-0.9**
	1µm,0.3s,baz=258,slow=20,SNR=6936						
NVAR				Lg	Lg	17 06 50.5	
	3µm,0.3s,baz=259,slow=31,SNR=80						
NVAR				LR	LR	17 07 15.4	
	comp=Z,835nm,18.2s,baz=3.5,slow=80						
NV11	**Mina Array Sit**	**0.44**	**89**	*e*Pg	**Pg**	**17 06 47.5**	**-0.2**
WAKR	**Walker**	**0.57**	**278**	*e*Pg	**Pg**	**17 06 49.2**	**-0.9**
WAKR				*e*Sg	**Sg**	**17 06 57.0**	**-0.7**
MLAC	**Mammoth, Mammo**	**0.80**	**187**	P	**Pg**	**17 06 53.3**	**-1.2**
	baz=5.9						
MLAC				S	**Sb**	**17 07 04.1**	**-2.1**
	baz=5.9						
MTUM	**Tungsten Hills**	**1.08**	**174**	*e*Pg	**Pg**	**17 06 58.3**	**-1.5**
CMB	**Columbia Colle**	**1.37**	**254**	*e*Pn	**Pn**	**17 07 03.2**	**-1.0**
CMB				*e*Sg	**Sb**	**17 07 20.8**	**-1.7**
TIN	**Tinemaha, Big**	**1.43**	**164**	Pg	**Pg**	**17 07 05.6**	**-0.8**
	baz=344						
TIN				Sg	**Sg**	**17 07 24.7**	**-0.2**
	baz=344						
GRAC	**Grapevine Rang**	**1.79**	**143**	Pb	**Pg**	**17 07 11.6**	**-1.7**
	baz=323						
GRAC				Sg	**Sg**	**17 07 36.5**	**0.0**
	baz=323						
AFDM	**Forest Hills D**	**1.84**	**287**	*e*Pn	**Pb**	**17 07 11.3**	**-1.5**
AFDM				*e*Sn	**Sn**	**17 07 33.1**	**-0.9**
BMN	**Battle Mountai**	**2.31**	**30**	*e*Pn	**Pn**	**17 07 16.9**	**-0.4**
BMN				*e*Sn	**Sn**	**17 07 47.2**	**+1.4**
DAC	**Darwin (Calif)**	**2.33**	**157**	*e*Pn	**Pn**	**17 07 17.2**	**-0.4**
DAC				*e*Sn	**Sb**	**17 07 48.7**	**-1.3**
ORV	**Oroville**	**2.44**	**298**	*e*Pn	**Pn**	**17 07 19.6**	**+0.6**
ORV				*e*Sn	**Sn**	**17 07 49.9**	**+1.0**
TPNV	**Topopah Spring**	**2.45**	**126**	P	**Pn**	**17 07 19.5**	**+0.3**
	baz=307						
TPNV	**Topopah Spring**	**2.45**	**126**	*e*Pn	**Pn**	**17 07 19.7**	**+0.5**
TPNV				*e*Sn	**Sg**	**17 07 55.7**	**-2.1**
R11A	**Troy Canyon, C**	**2.46**	**91**	P	**Pn**	**17 07 18.5**	**-0.9**
	baz=272						
R11A				Sb	**Sg**	**17 07 56.4**	**-1.8**
	baz=272						
R11A	**Troy Canyon, C**	**2.46**	**91**	*e*Pn	**Pn**	**17 07 18.7**	**-0.7**
R11A				*e*Sn	**Sg**	**17 07 56.2**	**-1.9**
SAO	**San Andreas Ge**	**2.73**	**233**	*e*Pn	**Pn**	**17 07 23.1**	**+0.2**
SAO				*e*Sn	**Sn**	**17 07 56.5**	**+0.5**
ISA	**Isabella, Lake**	**2.77**	**176**	Sb	**Sb**	**17 08 03.3**	**+0.7**
	baz=356						
ISA	**Isabella, Lake**	**2.77**	**176**	*e*Pn	**Pn**	**17 07 23.9**	**+0.4**
ISA				*e*Sn	**Sb**	**17 08 03.1**	**+0.5**
PTRM	**Twissleman Ran**	**3.02**	**204**	*e*Pn	**Pn**	**17 07 28.1**	**+1.2**
O03D	**Paynes Creek**	**3.03**	**309**	P	**Pn**	**17 07 28.1**	**+1.0**
	baz=128						
MCCM	**Marconi Confer**	**3.29**	**266**	*e*Pn	**Pn**	**17 07 31.2**	**+0.7**
HOPS	**Hopland Field**	**3.45**	**281**	*e*Pn	**Pn**	**17 07 35.0**	**+2.1**
GSC	**Goldstone, Bar**	**3.48**	**153**	*e*Pn	**Pn**	**17 07 32.6**	**-0.7**
ELK	**Elko**	**3.54**	**48**	Lg	Lg	17 08 31.1	
	53nm,0.3s,baz=204,slow=0.0,SNR=7.7						
ELK	**Elko**	**3.54**	**48**	*e*Pn	**Pn**	**17 07 34.2**	**-0.1**
ELK				*e*Lg	Lg	17 08 30.8	
MOD	**Modoc Plateau**	**3.68**	**341**	*e*Pn	Pn	17 07 39.4	+3.3
PSUT	**Pine Spring**	**3.82**	**87**	*e*Pn	**Pn**	**17 07 38.7**	**+0.7**
WVOR	**Wild Horse Val**	**4.00**	**1**	*e*Pn	**Pn**	**17 07 41.0**	**+0.5**
MWC	**Mount Wilson**	**4.23**	**173**	*e*Pg	**Pb**	**17 07 51.1**	**-2.5**
CCUT	**Cedar City**	**4.32**	**100**	*e*Pn	Pn	17 07 40.6	-4.3
FSU	**Fish Springs**	**4.34**	**71**	*e*Pn	**Pn**	**17 07 45.9**	**+0.7**
YBH	**Yreka Blue Hor**	**4.50**	**318**	Pn	**Pn**	**17 07 49.9**	**+2.6**
	1.4nm,0.3s,baz=180,slow=6.5,SNR=8.2						
YBH				LR	LR	17 09 50.0	
	comp=Z,187nm,19.8s,baz=162,slow=43						
LCMT	**Little Creek M**	**4.56**	**106**	*e*Pn	**Pn**	**17 07 48.4**	**+0.1**
K05A	**Summer Lake**	**4.60**	**340**	*e*Pn	Pn	17 07 52.5	+3.7
KNB	**Kanab**	**4.88**	**105**	*e*Pn	**Pn**	**17 07 53.3**	**+0.7**
DUG	**Dugway, Tooele**	**4.91**	**67**	*e*Pn	**Pn**	**17 07 54.0**	**+1.1**
MSU	**Marysvale**	**5.13**	**87**	*e*Pn	Pn	17 07 59.6	+3.5
MSU				*e*Lg	Lg	17 09 20.6	
PFO	**Pinyon Flats O**	**5.14**	**158**	Pg	**Pb**	**17 08 08.7**	**-0.5**
	0.4nm,0.3s,baz=324,slow=8.7,SNR=3.8						
PFO				Lg	Lg	17 09 23.8	
	0.6nm,0.3s,baz=133,slow=15,SNR=3.9						
PFO				LR	LR	17 09 31.2	
	comp=Z,36nm,22.0s,baz=342,slow=33						
PFO	**Pinyon Flats O**	**5.14**	**158**	*e*Pn	**Pn**	**17 07 56.6**	**+0.4**
PFO				*e*Pg	**Pb**	**17 08 08.7**	**-0.5**
PFO				*e*Sg	**Sg**	**17 09 23.8**	**-0.3**
PFO				*e*Lg	Lg	17 09 31.2	
MTPU	**Mount Pierson**	**5.16**	**92**	*e*Pn	**Pn**	**17 07 56.2**	**-0.4**
MTPU				*e*Pg	**Pg**	**17 08 18.6**	**+0.8**
MTPU				*e*Lg	Lg	17 09 20.6	
PKCU	**Pink Cliffs**	**5.16**	**99**	*e*Pn	**Pn**	**17 07 56.0**	**-0.6**
PKCU				*e*Pg	**Pg**	**17 08 15.9**	**-1.9**
PKCU				*e*Lg	Lg	17 09 20.7	
HUMO	**Hull Mountain**	**5.28**	**324**	*e*Pn	Pn	17 08 01.7	+3.8
NLU	**North Lily Min**	**5.38**	**71**	*e*Pn	**Pn**	**17 07 59.4**	**-0.1**
NLU				*e*Pg	**Pg**	**17 08 19.5**	**-2.5**
NLU				*e*Lg	Lg	17 09 26.1	
CWU	**Camp Williams**	**5.50**	**66**	*e*Sg	Sg	17 09 29.3	-6.3
SPUT	**South Promonto**	**5.61**	**57**	*e*Pn	**Pn**	**17 08 00.5**	**-2.1**
SPUT				*e*Pg	Pg	17 08 23.1	-3.4
SPUT				*e*Sn	**Sn**	**17 09 09.4**	**+2.1**
HVU	**Hansel Valley**	**5.65**	**52**	*e*Pn	**Pn**	**17 08 02.8**	**-0.4**
HVU				*e*Pg	**Pg**	**17 08 24.2**	**-3.0**
HVU				*e*Lg	Lg	17 09 37.2	
MPU	**Maple Canyon**	**5.72**	**72**	*e*Pn	**Pn**	**17 08 01.6**	**-2.7**
MPU				*e*Sg	**Sg**	**17 09 40.4**	**-2.4**
Y12C	**Blythe**	**5.77**	**143**	*e*Pn	**Pn**	**17 08 05.6**	**+0.9**
TMUT	**Trail Mountain**	**5.92**	**79**	*e*Pg	**Pb**	**17 08 22.2**	**-0.3**
JLU	**Jordanelle**	**6.02**	**67**	*e*Pn	**Pn**	**17 08 10.7**	**+2.3**
HLID	**Hailey**	**6.07**	**31**	*e*Pn	**Pn**	**17 08 09.1**	**+0.1**
TCUT	**Toone Canyon**	**6.24**	**62**	*e*Pn	**Pn**	**17 08 10.8**	**-0.6**
P17A	**Butcher Ranch,**	**6.30**	**78**	*e*Pg	**Pg**	**17 08 37.5**	**-2.2**
HWUT	**Hardware Ranch**	**6.34**	**58**	*e*Pn	**Pn**	**17 08 13.0**	**+0.4**
ALVY	**Alvey**	**6.44**	**331**	*e*Sg	Sg	17 09 57.1	-8.4
SRU	**San Rafael Swe**	**6.44**	**81**	*e*Pn	**Pn**	**17 08 13.6**	**-0.4**
SRU				*e*Sg	Sg	17 09 59.0	-6.7
WUAZ	**Wupatki**	**6.56**	**114**	*e*Pn	**Pn**	**17 08 13.5**	**-2.1**
WUAZ				*e*Pg	Pg	17 08 40.9	-3.6
REDW	**Red Top Meadow**	**7.73**	**48**	*e*Pn	Pn	17 08 38.6	+6.8
MCMT	**McKenzie Canyo**	**7.76**	**33**	*e*Pn	Pn	17 08 35.3	+3.2
MCMT				*e*Pg	Pb	17 08 58.7	+5.0
FXWY	**Fox Creek**	**7.80**	**46**	*e*Pn	**Pn**	**17 08 35.1**	**+2.4**
IMW	**Indian Meadow**	**8.01**	**45**	*e*Pn	**Pn**	**17 08 37.8**	**+2.1**
LOHW	**Long Hollow**	**8.02**	**47**	*e*Pn	Pn	17 08 39.3	+3.5
MOOW	**Moose Ponds**	**8.03**	**46**	*e*Pn	**Pn**	**17 08 38.1**	**+2.3**
MOOW				*e*Sg	Sg	17 10 47.5	-9.0
MVCO	**Mesa Verde**	**8.18**	**95**	*e*Pn	Pn	17 08 34.1	-3.9
MVCO				*e*Pg	**Pg**	**17 09 13.6**	**-2.0**
BW06	**Boulder Array**	**8.20**	**55**	*e*Pn	**Pn**	**17 08 39.9**	**+1.6**
PD31	**Pinedale Array**	**8.20**	**55**	*e*Pn	**Pn**	**17 08 39.9**	**+1.6**
PDAR	**Pinedale Array**	**8.20**	**55**	Pn	**Pn**	**17 08 40.5**	**+2.2**
	0.1nm,0.3s,baz=242,slow=15,SNR=5.4						
PDAR				Lg	Lg	17 10 55.3	
	0.3nm,0.3s,baz=225,slow=25,SNR=3.9						
YMV	**Mammoth Vault**	**8.87**	**40**	*e*Sn	Sn	17 10 35.5	+8.0
BOZ	**Bozeman (W)**	**8.93**	**34**	*e*Pn	**Pn**	**17 08 46.0**	**-2.2**
ANMO	**Albuquerque**	**10.44**	**106**	Lg	Lg	17 12 08.9	
	0.1nm,0.3s,baz=60,slow=4.2,SNR=3.1						
LTX	**Lajitas**	**15.43**	**122**	*e*Pn	**P**	**17 10 23.8**	**+2.3**
TXAR	**Lajitas Array**	**15.43**	**122**	Pn	**P**	**17 10 23.8**	**+2.3**
	0.1nm,0.3s,baz=311,slow=9.8,SNR=5.3						
TXAR				LR	LR	17 15 50.0	
	comp=Z,40nm,21.0s,baz=0.0,slow=36						
ULM	**Lac du Bonnet**	**20.07**	**47**	P	Pn	17 11 13.0	-1.2
	3.1nm,0.9s,baz=241,slow=4.9,SNR=3.8						
YKA	**Yellowknife Ar**	**24.23**	**5**	P	**P**	**17 11 57.3**	**+1.7**
	0.8nm,0.9s,baz=184,slow=9.9,SNR=13						
TKL	**Tuckaleechee C**	**27.93**	**85**	LR	LR	17 24 15.3	
	comp=Z,60nm,19.4s,baz=335,slow=38						
INK	**Inuvik**	**31.03**	**349**	P	**P**	**17 12 58.9**	**+2.5**
	0.7nm,0.9s,baz=164,slow=7.5,SNR=3.1						
ILAR	**Eielson Array**	**31.13**	**337**	P	P	17 13 00.5	+3.0
	0.5nm,0.9s,baz=150,slow=7.7,SNR=6.8						

NIED ***15*** *17:07:00,38˚.30N×141˚.90E,h74km,Mw4.0 Best double couple: M0 1.33000×10^15 NP1:φ=337.00000°,δ46.00000°, λ8.00000°. NP2:φ=241.00000°,δ84.00000°,λ136.00000°.*

ISCJB ***15*** *17:07:53.0±0.5,38˚.34N±0˚.03×142˚.09E±0˚.05,h66km±3km, mb4.1/42,Error ellipse: s-maj=7.4km s-min=4.2km az=24.6*

MOS ***15*** *17:07:53.2±1.0,38˚.39N×142˚.05E,h63km,mb4.6/17,Error ellipse: s-maj=9.7km s-min=6.4km az=98.4*

IDC ***15*** *17:07:55.1±0.7,38˚.30N×141˚.91E,h60km±6km,mb3.8/22, mb1 3.9/28,mb1mx3.7/70,mbtmp4.1/28,MS2.9/4, Ms1 2.9/4,ms1mx2.5/68,Error ellipse: s-maj=17.4km s-min=11.3km az=99.0*

JMA ***15*** *17:07:55.9±0.1,38˚.33N×141˚.89E,h64km±1km,M4.1*

JMA Felt II J1.

NEIC ***15*** *17:07:55.6±0.5,38˚.36N×141˚.98E,h67km±4km,mb4.4/13, Error ellipse: s-maj=8.3km s-min=4.6km az=117.0*

BJI ***15*** *17:07:56.0,38˚.34N×141˚.70E,h84km,mb4.4/29,mB4.7/16, Ms4.0/6,Ms7 3.6/5*

ISC 15 17:07:54.1±0.7,38˚.28N±0˚.05×142˚.11E±0˚.05,h63km±5km, n118,σ1°24/130,mb4.3/42,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**0.62**	**286**	P	**Pn**	**17 08 07.8**	**+0.2**
JIO				S	**Sn**	**17 08 15.9**	**-1.6**
JMK	**Ichinoseki**	**0.96**	**314**	P	**Pn**	**17 08 12.1**	**+0.3**
JMK				S	**Sn**	**17 08 23.4**	**-1.5**
JMM	**Marumori**	**1.12**	**249**	P	**Pn**	**17 08 13.6**	**-0.2**
JMM				S	**Sn**	**17 08 26.5**	**-1.9**
JOU	**Okura**	**1.14**	**275**	P	**Pn**	**17 08 13.8**	**-0.3**
JOU				S	**Sn**	**17 08 27.0**	**-2.0**
JFK	**Kawauchi**	**1.34**	**227**	P	**Pn**	**17 08 17.2**	**+0.5**
JFK				S	**Sn**	**17 08 33.2**	**-0.5**
JOM	**Ohasama**	**1.35**	**332**	P	**Pn**	**17 08 17.3**	**+0.4**
JOM				S	**Sn**	**17 08 33.4**	**-0.5**
JYK	**Kaneyama**	**1.51**	**295**	P	**Pn**	**17 08 18.8**	**-0.2**
JYK				S	**Sn**	**17 08 36.1**	**-1.6**
JFT	**Otama**	**1.59**	**242**	P	**Pn**	**17 08 20.8**	**+0.6**
JFT				S	**Sn**	**17 08 38.5**	**-1.3**
JRG	**Rokugo**	**1.60**	**315**	P	**Pn**	**17 08 20.4**	**+0.2**
JRG				S	**Sn**	**17 08 38.9**	**-1.0**
JYS	**Shirataka**	**1.61**	**268**	P	**Pn**	**17 08 20.3**	**0.0**
JYS				S	**Sn**	**17 08 38.7**	**-1.4**
MJAR	**Matsushiro Arr**	**3.56**	**242**	P	**Pn**	**17 08 47.8**	**+0.9**
	9.8nm,0.3s,baz=59,slow=10.0,SNR=76						
MAJO	**Matsushiro**	**3.56**	**242**	*e*P	**Pn**	**17 08 48.7**	**+1.8**
MAJO	**Matsushiro**	**3.56**	**242**	*e*Pn	**Pn**	**17 08 48.7**	**+1.8**
MAT	**Matsushiro**	**3.56**	**242**	P	Pn	**17 08 48.5**	**+1.6**
MAT				*e*S	Sn	17 09 32.7	+5.0
MJB9	**Matsu-Tunnel**	**3.56**	**242**	*e*Pn	**Pn**	**17 08 48.6**	**+1.8**
ERM	**Erimo**	**3.81**	**12**	*e*P	**Pn**	**17 08 50.8**	**+0.4**
ERM				*e*		17 09 31.8	
ERM	**Erimo**	**3.81**	**12**	*e*Pn	**Pn**	**17 08 50.8**	**+0.4**
ERM				*e*Sn	**Sn**	**17 09 31.8**	**-2.1**
INU	**Inuyama**	**5.02**	**236**

H11N3 WAKE ISLAND Hy 28.37 124 T T 17 44 12.1
baz=316,slow=76,SNR=424
H11S1 WAKE ISLAND Hy 29.11 126 T T 17 45 09.2
baz=318,slow=76,SNR=124
H11S3 WAKE ISLAND Hy 29.11 126 T T 17 45 00.9
baz=318,slow=76,SNR=229
H11S2 WAKE ISLAND Hy 29.12 126 T T 17 45 06.3
baz=318,slow=76,SNR=144
ZAK Zakamensk 29.95 306 *e*P **P** **17 13 56.2 -0.1**
ZAK pmax pmax
comp=Z,3.0nm,0.8s
MOY Mondy 31.57 309 *e*P **P** **17 14 11.0 +0.4**
CD2 Chengdu 32.24 269 P **P** **17 14 14.4 -2.2**
CD2 pmax pmax
comp=Z,1.0nm,0.5s
WMQ Urumqi 40.78 296 P **P** **17 15 28.1 -1.1**
WMQ pP pP 17 15 47.8 +2.8
WMQ sP sP 17 15 57.3 +5.0
WMQ pmax pmax
comp=Z,12nm,0.8s
WMQ pmax pmax
comp=Z,46nm,5.6s
WMQ LR LR
comp=Z,25nm,14.8s
WMQ LR LR
comp=Z,25nm,18.8s
WMQ LR LR
comp=Z,27nm,18.8s
ZAA0 Zalesovo Array 41.49 311 *e*P **P** **17 15 34.5 -0.2**
ZAA1 Zalesovo Array 41.49 311 *e*P **P** **17 15 35.0 +0.2**
ZALV Zalesovo Beam 41.49 311 P **P** **17 15 35.0 +0.2**
comp=Z,4.3nm,0.5s,baz=82,slow=7.7,SNR=26
ZALV Zalesovo Beam 41.49 311 P **P** **17 15 35.0 +0.2**
CMAR Chiang Mai Arr 42.35 255 P **P** **17 15 42.3 +0.1**
comp=Z,0.3nm,0.7s,baz=45,slow=9.6,SNR=4.9
LSA Lhasa 42.65 274 *e*P **P** **17 15 46.4 +1.3**
LSA pmax pmax
comp=Z,10.0nm,1.5s
LSA Lhasa 42.65 274 *e*P **P** **17 15 46.4 +1.3**
comp=Z,10nm,1.5s
MK01 Makanchi Array 43.93 301 *e*P **P** **17 15 54.7 0.0**
MK31 Makanchi Array 43.93 301 *e*P **P** **17 15 54.7 0.0**
MK31 Makanchi Array 43.93 301 *e*P **P** **17 15 54.7 0.0**
MK32 Makanchi Array 43.93 301 *e*P **P** **17 15 54.6 -0.1**
MKAR Makanchi Array 43.93 301 P **P** **17 15 54.6 -0.1**
comp=Z,4.3nm,0.7s,baz=85,slow=9.4,SNR=59
MKAR Makanchi Array 43.93 301 *e*P **P** **17 15 54.3 -0.4**
MAKZ Makanchi 44.14 301 *e*P **P** **17 15 56.4 0.0**
MAKZ pmax pmax
comp=Z,4.0nm,0.6s
MAKZ Makanchi 44.14 301 *e*P **P** **17 15 56.4 0.0**
comp=Z,3.8nm,0.6s
KURK Kurchatov 45.61 307 *e*P **P** **17 16 07.5 -0.4**
KURK pmax pmax
comp=Z,8.0nm,1.0s
KURK Kurchatov 45.61 307 *e*P **P** **17 16 07.5 -0.4**
comp=Z,8.0nm,1.0s
KURBB Kurchatov Arra 45.68 307 P **P** **17 16 08.3 -0.1**
comp=Z,3.3nm,0.3s,baz=78,slow=7.6,SNR=42
PDGK Podgornoye 46.69 297 P **P** **17 16 15.9 -0.6**
PDGK pmax pmax
comp=Z,3.0nm,0.6s
GUN Gumba 47.59 275 *e*P **P** **17 16 24.5 +0.4**
KKN Kakani 48.11 275 *e*P **P** **17 16 28.3 +0.3**
comp=Z,13nm,0.6s
ILAR Eielson Array 48.15 33 P **P** **17 16 30.3 +2.7**
comp=Z,0.3nm,0.8s,baz=267,slow=5.4,SNR=3.7
ILAR pP **pP** **17 16 45.4 +1.7**
comp=Z,0.8nm,0.8s,baz=272,slow=6.5,SNR=7.2
ILB Eielson Array 48.15 33 *e*P **P** **17 16 29.8 +2.2**
GKN Gorkha 48.52 276 *e*P **P** **17 16 31.2 +0.1**
comp=Z,6.2nm,0.4s
KOLN Koldanda 49.44 276 *e*P **P** **17 16 37.9 -0.3**
comp=Z,3.1nm,0.3s
TKM2 Tokmak 2 49.53 298 *e*P **P** **17 16 38.7 0.0**
TKM2 pmax pmax
comp=Z,5.0nm,0.5s
TKM2 Tokmak 2 49.53 298 *e*P **P** **17 16 38.7 0.0**
comp=Z,4.9nm,0.5s
PYUN Piuthan 49.76 277 *e*P **P** **17 16 41.1 +0.5**
BVAR Borovoye Array 50.15 312 P **P** **17 16 43.0 +0.1**
comp=Z,0.9nm,0.5s,baz=64,slow=6.5,SNR=10
OTUK Ortayu 50.15 305 P **P** **17 16 42.7 -0.4**
OTUK pmax pmax
comp=Z,3.0nm,1.0s
AAK Ala-Archa 50.39 298 *e*P **P** **17 16 46.4 +1.3**
AAK pmax pmax
comp=Z,2.0nm,0.4s
AAK Ala-Archa 50.39 298 *e*P **P** **17 16 46.4 +1.3**
comp=Z,1.9nm,0.4s
ZRNK Zerenda 50.98 312 *e*P **P** **17 16 49.2 0.0**
ZRNK pmax pmax
comp=Z,2.0nm,0.8s
ZRNK Zerenda 50.98 312 *e*P **P** **17 16 49.2 0.0**
comp=Z,1.6nm,0.8s
MNAS Manas 51.82 298 P **P** **17 16 56.7 +0.8**
MNAS pmax pmax
comp=Z,3.0nm,1.0s
SFK Sufi-Kurgan 52.00 295 P **P** **17 16 57.2 -0.1**
SFK pmax pmax
comp=Z,3.0nm,1.0s
INK Inuvik 53.03 28 pP pP 17 17 22.8 +2.3
comp=Z,0.4nm,0.4s,baz=273,slow=9.5,SNR=2.8
ARU Arti 55.80 318 P **P** **17 17 24.7 +0.3**
comp=Z,2.8nm,0.5s,baz=70,slow=5.8,SNR=6.2
ARU Arti 55.80 318 *e*P **P** **17 17 23.7 -0.8**
comp=Z,3.0nm,0.6s
ABKAR Akbulak array 57.56 310 *e*P **P** **17 17 36.7 -0.4**
AKTO Aktyubinsk 58.26 312 P **P** **17 17 41.0 -0.9**
comp=Z,1.4nm,0.6s,baz=72,slow=11,SNR=8.2
AKTO LR LR 17 45 50.0
comp=Z,41nm,20.4s,baz=213,slow=39
WR1 Warramunga Arr 58.37 189 *e*P **P** **17 17 43.9 +0.9**
WRA Warramunga Arr 58.37 189 P **P** **17 17 43.9 +0.9**
comp=Z,2.1nm,0.5s,baz=6.4,slow=7.2,SNR=48
WRA pP **pP** **17 17 58.4 -1.2**
comp=Z,0.6nm,0.4s,baz=2.5,slow=7.4,SNR=3.8
RES Resolute Bay 61.26 15 P **P** **17 18 03.0 +0.9**
comp=Z,0.8nm,0.7s,baz=316,slow=3.7,SNR=6.7
RES pP **pP** **17 18 19.6 +0.8**
comp=Z,1.0nm,0.6s,baz=300,slow=6.5,SNR=3.6
RES LR LR 17 45 32.0
comp=Z,270nm,21.6s,baz=277,slow=37
RES Resolute Bay 61.26 15 *e*P **P** **17 18 02.5 +0.4**
RES pmax pmax
comp=Z,9.0nm,1.8s
RES Resolute Bay 61.26 15 *e*P **P** **17 18 02.5 +0.4**
comp=Z,8.9nm,1.8s
AS31 Alice Springs 62.10 189 *e*P **P** **17 18 09.6 +1.2**
comp=Z,2.9nm,1.8s
ASAR Alice Springs 62.10 189 P **P** **17 18 09.9 +1.6**
comp=Z,1.1nm,0.7s,baz=10,slow=4.8,SNR=23
ASAR pP **pP** **17 18 26.1 +1.0**
comp=Z,0.4nm,0.8s,baz=16,slow=11,SNR=3.7
ASAR Alice Springs 62.10 189 P **P** **17 18 10.0 +1.6**
ARA0 ARCESS Array S 63.02 339 *e*P **P** **17 18 14.3 +0.2**
ARCES ARCESS Array B 63.02 339 P **P** **17 18 14.3 +0.2**
comp=Z,1.1nm,0.5s,baz=46,slow=6.9,SNR=11
GEYT Alibeck 63.72 299 P **P** **17 18 18.3 -0.9**
comp=Z,1.9nm,0.7s,baz=36,slow=5.5,SNR=4.1
FIA0 FINESS Array S 67.97 332 *e*P **P** **17 18 46.4 +0.3**
FIA0 FINESS Array S 67.97 332 *e*P **P** **17 18 46.4 +0.3**
FINES FINESS Array B 67.97 332 P **P** **17 18 46.4 +0.3**
comp=Z,2.2nm,0.6s,baz=45,slow=9.9,SNR=12
KVAR Kislovodsk Arr 70.50 311 P **P** **17 19 03.2 +1.0**
comp=Z,3.8nm,0.8s,baz=58,slow=15,SNR=2.9
KIV Kislovodsk 70.50 311 *e*P **P** **17 19 03.1 +0.9**
KIV pmax pmax
comp=Z,11nm,1.2s
KIV Kislovodsk 70.50 311 *e*P **P** **17 19 03.1 +0.9**
comp=Z,11nm,1.2s
KBZ Khabaz 70.51 311 P **P** **17 19 03.2 +1.2**
comp=Z,2.5nm,0.8s,baz=333,slow=2.1,SNR=5.1
HFS Hagfors 73.18 336 P **P** **17 19 18.8 +1.0**
comp=Z,1.0nm,0.4s,baz=54,slow=7.5,SNR=5.5
NB2 NORSAR Subarra 73.25 337 P **P** **17 19 18.6 +0.4**
comp=Z,1.0nm,0.7s,baz=40,slow=5.9
NB200 NORSAR Array S 73.25 337 *e*P **P** **17 19 18.8 +0.6**
NOA NORSAR Array B 73.25 337 P **P** **17 19 18.8 +0.6**
comp=Z,1.6nm,0.7s,baz=39,slow=5.9,SNR=5.7
AKASG Malin Array Be 73.65 322 P **P** **17 19 20.8 +0.1**
comp=Z,1.4nm,0.5s,baz=46,slow=5.8,SNR=15
MMAI Mount Meron Ar 81.69 306 P **P** **17 20 06.8 +0.9**
comp=Z,0.9nm,0.5s,baz=39,slow=7.0,SNR=4.1

*ISCJB **15** 17:21:08.1±0.4,27.92N±0.05×87.35E±0.04,h50km, mb3.7/18,MS3.2/2,Error ellipse: s-maj=6.9km s-min=4.7km az=167.0*
*DMN **15** 17:21:09.4±0.5,28.04N×87.36E,h50km,Ml5.4/5,Error ellipse: s-maj=22.5km s-min=10.4km az=178.0*
*HYB **15** 17:21:10.5,27.85N×87.16E,h99km,mb4.4/8*
*IDC **15** 17:21:10.8±0.7,28.03N×87.40E,h52km±5km, mb3.4/18, mb1 3.5/21,mb1mx3.4/73,mbtmpg3.7/21,MS3.1/3, Ms1 3.1/3,ms1mx2.7/48,Error ellipse: s-maj=17.7km s-min=13.2km az=28.0*
*NDI **15** 17:21:17.2±2.5,27.63N×86.33E,h10km,ML3.9*
ISC 15 17:21:09.9±0.5,27.90N±0.07×87.31E±0.06,h50km,n45, σ1ᵍ56/53,mb3.7/18,Nepal

Code	Station Name	Δ°	AZ°	Phase	Op	ID	Time	Res
							h m s	ISC
JIRN	**Jiri**	**1.02**	**257**	*e*Pg		**Pn**	**17 21 29.6**	**+1.4**
GUN	**Gumba**	**1.26**	**271**	*e*Pg		**Pn**	**17 21 32.3**	**+0.8**
GUN				*e*Sg		**Sn**	**17 21 48.4**	**+0.8**
	11μm,0.3s							
PKIN	**Phulchoki**	**1.72**	**260**	*e*Pg		**Pn**	**17 21 38.4**	**+0.7**
PKIN				*e*Sg		**Sn**	**17 21 59.6**	**+0.9**
	7μm,0.4s							
KKN	**Kakani**	**1.80**	**267**	*e*Pg		**Pn**	**17 21 39.4**	**+0.7**
KKN				*e*Sg		**Sn**	**17 22 00.9**	**+0.4**
	5μm,0.3s							
DMN	**Daman**	**1.97**	**262**	*e*Pg		**Pn**	**17 21 41.7**	**+0.6**
GKN	**Gorkha**	**2.36**	**273**	*e*Pn		**Pn**	**17 21 47.0**	**+0.6**
GKN				*e*Sn		**Sn**	**17 22 13.8**	**-0.5**
	6μm,0.3s							
KOLN	**Koldanda**	**3.29**	**269**	*e*Pn		**Pn**	**17 21 58.9**	**-0.2**
KOLN				*e*Sn		**Sn**	**17 22 36.3**	**-0.7**
	1μm,0.2s							
PYUN	**Piuthan**	**3.82**	**274**	*e*Pn		**Pn**	**17 22 05.2**	**-1.2**
BOK	**Bokaro**	**4.28**	**198**	*e*P		**Pn**	**17 22 14.7**	**+2.1**
BOK				*e*S		**Sn**	**17 23 01.1**	**-0.1**
BOK				IAML			17 23 34.0	
	comp=N,339nm,0.0s							
BOK				IAML			17 23 35.8	
	comp=E,364nm,0.5s							
LGTI	**Lohaghat**	**6.39**	**286**	*e*P		**Pn**	**17 22 43.2**	**+1.7**
DDI	**Dehra Dun**	**8.45**	**289**	*e*P		**Pn**	**17 23 10.0**	**+0.3**
DDI				*e*S		Sn	17 24 32.8	-11
DDI				IAML			17 24 53.8	
	comp=N,232nm,0.2s							
DDI				IAML			17 24 54.2	
	comp=E,163nm,0.3s							
AYAN	**Aya Nagar**	**9.00**	**276**	*e*P		**Pn**	**17 23 13.7**	**-3.6**
SONA	**Sohna**	**9.04**	**275**	*e*P		**Pn**	**17 23 15.7**	**-2.0**
SONA				*e*S		Sn	17 24 43.3	-15
SMLA	**Simla**	**9.40**	**292**	*e*P		**Pn**	**17 23 20.1**	**-2.6**
SMLA				*e*S		Sn	17 24 54.5	-13
SMLA				IAML			17 25 17.5	
	comp=E,59nm,0.5s							
SMLA				IAML			17 25 17.6	
	comp=N,60nm,0.3s							
KUDL	**Kundal**	**9.56**	**274**	*e*P		**Pn**	**17 23 22.2**	**-2.7**
KUDL				*e*S		Sn	17 24 54.9	-16
KUDL				IAML			17 25 46.3	
	comp=N,38nm,0.7s							
KUDL				IAML			17 25 46.8	
	comp=E,18nm,0.3s							
BHPL	**Bhopal**	**10.05**	**245**	*e*P		**Pn**	**17 23 28.4**	**-3.3**
BHPL				*ex*		x	17 25 11.4	
KHET	**Khetri**	**10.17**	**274**	*e*P		**Pn**	**17 23 29.1**	**-4.2**
KHET				*e*S		Sn	17 25 10.1	-16
KHET				IAML			17 25 19.0	
	comp=E,47nm,0.4s							
KHET				IAML			17 25 19.6	
	comp=N,62nm,0.3s							
DHRM	**DHARAMSHALA**	**10.47**	**297**	*ex*		**Pn**	**17 23 34.2**	**-3.4**
DHRM				*e*S		Sn	17 25 20.7	-13
DHRM				IAML			17 25 34.6	
	comp=N,49nm,0.3s							
DHRM				IAML			17 25 34.9	
	comp=E,63nm,0.6s							
HYB	**Hyderabad**	**13.19**	**220**	*i* P		**Pn**	**17 24 11.5**	**-3.1**
HYB				*e*			17 24 22.0	
HYB				*e*S		Sn	17 26 23.0	-17
CMAR	**Chiang Mai Arr**	**14.23**	**129**	P		**Pn**	**17 24 28.0**	**-0.7**
	comp=E,0.0nm,0.3s,baz=310,slow=13,SNR=4.8							
CMAR				LR		LR	17 30 14.1	
	comp=E,34nm,18.3s,baz=15,slow=38							
AAK	**Ala-Archa**	**18.01**	**328**	P		**Pn**	**17 25 17.1**	**+0.4**
	comp=E,0.1nm,0.3s,baz=55,slow=8.5,SNR=4.7							
MKAR	**Makanchi Array**	**19.27**	**350**	P		**P**	**17 25 29.7**	**-0.7**
	comp=E,0.4nm,0.3s,baz=175,slow=9.0,SNR=23							
KURBB	**Kurchatov Arra**	**23.66**	**346**	P		**P**	**17 26 15.9**	**-0.7**
	comp=E,0.7nm,0.4s,baz=162,slow=10,SNR=4.3							
SONM	**Songino Array**	**24.84**	**32**	P		**P**	**17 26 27.1**	**-0.6**
	comp=E,1.6nm,0.5s,baz=227,slow=9.5,SNR=6.7							
ZALV	**Zalesovo Beam**	**26.09**	**357**	P		**P**	**17 26 38.1**	**-0.6**
	comp=E,0.5nm,0.3s,baz=190,slow=7.5,SNR=6.2							
GEYT	**Alibeck**	**26.38**	**300**	pP		pP	17 26 56.6	+2.3
	comp=E,2.3nm,0.6s,baz=141,slow=5.7,SNR=3.5							
BVAR	**Borovoye Array**	**28.07**	**338**	pP		pP	17 27 10.5	+1.2
	comp=E,0.5nm,0.4s,baz=148,slow=12,SNR=2.9							
KSRS	**Korea Array**	**35.26**	**94**	P		**P**	**17 27 59.3**	**-0.5**
	comp=E,1.6nm,0.8s,baz=255,slow=8.3,SNR=3.9							
KSRS				LR		LR	17 44 07.8	
	comp=E,33nm,18.8s,baz=200,slow=39							
JNU	**Nakatsue**	**37.70**	**71**	LR		LR	17 45 39.3	
	comp=E,40nm,18.6s,baz=129,slow=39							
KLR	**Kul'dur**	**40.03**	**46**	P		**P**	**17 28 40.1**	**+0.2**
	comp=E,1.4nm,0.6s,baz=262,slow=9.6,SNR=5.0							
MMAI	**Mount Meron Ar**	**44.67**	**290**	P		**P**	**17 29 20.0**	**+2.1**
	comp=E,0.2nm,0.4s,baz=95,slow=15,SNR=2.2							
MMAI				pP		**pP**	**17 29 32.6**	**+1.2**
	comp=E,1.0nm,0.6s,baz=77,slow=9.5,SNR=3.1							
BRTR	**Keskin Array B**	**45.52**	**299**	P		**P**	**17 29 25.0**	**+0.3**
	comp=E,0.6nm,0.8s,baz=31,slow=8.6,SNR=2.5							
BRTR				pP		**pP**	**17 29 39.5**	**+1.4**
	comp=E,0.8nm,0.7s,baz=102,slow=7.7,SNR=5.9							
TIXI	**Tiksi**	**49.37**	**16**	P		**P**	**17 29 53.1**	**-0.8**
	comp=E,0.8nm,0.5s,baz=212,slow=5.5,SNR=7.8							
FINES	**FINESS Array B**	**52.20**	**328**	P		**P**	**17 30 14.2**	**-1.3**
	comp=E,1.4nm,0.7s,baz=104,slow=6.9,SNR=7.6							
FINES				pP		**pP**	**17 30 28.6**	**-0.5**
	comp=E,2.0nm,0.6s,baz=102,slow=7.9,SNR=4.3							
SEY	**Seymchan**	**54.23**	**31**	P		**P**	**17 30 29.6**	**-0.8**
	comp=E,0.8nm,0.5s,baz=106,slow=17,SNR=7.1							
HFS	**Hagfors**	**58.14**	**326**	P		**P**	**17 30 58.2**	**0.0**
	comp=E,1.5nm,0.6s,baz=86,slow=8.8,SNR=3.8							
GERES	**GERESS Array B**	**59.04**	**312**	P		**P**	**17 31 05.5**	**+0.7**
	comp=E,0.1nm,0.3s,baz=99,slow=5.2,SNR=2.9							
GERES				pP		**pP**	**17 31 20.2**	**+1.6**
	comp=E,0.7nm,0.7s,baz=86,slow=5.5,SNR=4.2							
NB2	**NORSAR Subarra**	**59.33**	**327**	P		pP	17 31 21.2	+0.8
	comp=Z,1.4nm,0.7s,baz=86,slow=7.4							
NOA	**NORSAR Array B**	**59.33**	**327**	P		**P**	**17 31 05.5**	**-1.0**
	comp=Z,0.6nm,0.7s,baz=86,slow=6.9,SNR=2.5							
NOA				pP		**pP**	**17 31 20.4**	**0.0**
	comp=Z,1.0nm,0.6s,baz=87,slow=6.9,SNR=3.2							
WRA	**Warramunga Arr**	**65.81**	**131**	P		**P**	**17 31 50.5**	**+0.2**
	comp=Z,0.7nm,0.7s,baz=324,slow=6.4,SNR=9.7							
ASAR	**Alice Springs**	**68.17**	**134**	P		**P**	**17 32 06.2**	**+1.0**
	comp=Z,0.3nm,0.6s,baz=313,slow=6.5,SNR=12							
ILAR	**Eielson Array**	**78.55**	**21**	P		**P**	**17 33 06.8**	**+1.1**
	comp=Z,0.1nm,0.6s,baz=299,slow=4.0,SNR=2.1							
ILAR				pP		**pP**	**17 33 20.4**	**+0.3**
	comp=Z,0.6nm,0.8s,baz=298,slow=4.8,SNR=5.7							
STKA	**Stephens Creek**	**78.76**	**135**	pP		pP	17 33 22.9	+1.2
	comp=Z,1.3nm,0.8s,baz=9.5,slow=6.1,SNR=1.9							
TORD	**Torodi Ar. Bea**	**80.14**	**280**	P		**P**	**17 33 16.5**	**+1.2**
	comp=Z,0.2nm,0.6s,baz=50,slow=4.8,SNR=2.9							
TORD				pP		**pP**	**17 33 31.7**	**+2.0**
	comp=Z,0.3nm,0.5s,baz=62,slow=4.1,SNR=2.2							
YKA	**Yellowknife Ar**	**88.23**	**10**	P		**P**	**17 33 54.6**	**-0.8**
	comp=Z,0.3nm,0.7s,baz=326,slow=5.3,SNR=6.2							

IDC 15 17:21:36.8±6.1,4.63S×151.60E,h90km±46km,mb3.5/3, mb1 3.6/4,mb1mx3.2/53,mbtmpg3.8/4,MS3.6/2,Ms1 3.6/2, ms1mx2.7/37,Error ellipse: s-maj=98.1km s-min=38.9km az=130.0,New Britain region

Code	Station Name	Δ°	AZ°	Phase	Op	ID	Time	Res
							h m s	ISC
PMG	**Port Moresby**	**6.47**	**223**	P		Pn	17 23 10.1	+0.5
	1.0nm,0.3s,baz=17,slow=14,SNR=5.1							
PMG				S		Sn	17 24 25.4	+3.4
	0.9nm,0.3s,baz=324,slow=19,SNR=2.8							
WRA	**Warramunga Arr**	**22.68**	**226**	P		P	17 26 30.4	-0.5
	1.0nm,0.5s,baz=51,slow=10,SNR=19							
ASAR	**Alice Springs**	**25.48**	**220**	P		P	17 26 55.9	-0.9
	0.8nm,0.4s,baz=57,slow=8.9,SNR=46							
FITZ	**Fitzroy Crossi**	**28.70**	**240**	P		P	17 27 25.0	-0.6
	2.9nm,1.0s,baz=60,slow=8.1,SNR=2.9							
RPZ	**Rata Peaks**	**42.55**	**159**	LR		LR	17 44 28.9	
	comp=Z,61nm,20.3s,baz=337,slow=32							
LEM	**Lembang**	**43.80**	**265**	LR		LR	17 53 00.8	
	comp=Z,74nm,18.5s,baz=280,slow=43							
TORD	**Torodi Ar. Bea**	**149.12**	**288**	PKPbc		PKPbc	17 41 16.1	+0.4
	0.3nm,0.5s,baz=89,slow=2.4,SNR=3.7							

*IDC **15** 17:22:55.8±1.6,35.64N×27.73E,h0km,mb3.4/2, mb1 3.2/4,mb1mx3.0/66,mbtmpg3.2/4,ML3.0/2,MS3.3/1, Ms1 3.3/1,ms1mx2.4/33,Error ellipse: s-maj=43.5km s-min=21.6km az=148.0*
*ISK **15** 17:22:57.5,35.87N×27.50E,h9km,MD3.4*
*ATH **15** 17:22:57.4,35.87N×27.51E,h24km±1km,ML3.0/6,Error ellipse: s-maj=2.6km s-min=0.9km az=130.0*
*THE **15** 17:22:58.7,35.81N×27.51E,h5km±1km,ML3.3/5,Error ellipse: s-maj=1.6km s-min=0.7km az=150.0*
*DDA **15** 17:22:58.5,35.88N×27.50E,h63km,Md3.3*
*CSEM **15** 17:22:58.3±0.1,35.86N×27.52E,h10km,ML3.3,Error ellipse: s-maj=3.7km s-min=2.0km az=152.0*
*ISCJB **15** 17:22:58.7±0.5,35.83N±0.03×27.53E±0.02,h23km±4km, mb3.2/2,MS3.4/1,Error ellipse: s-maj=5.1km s-min=2.7km az=152.6*
ISC 15 17:22:57.9±1.0,35.86N±0.02×27.51E±0.02,h12km±8km, n100,σ0ᵍ79/145,Dodecanese Islands

Code	Station Name	Δ°	AZ°	Phase	Op	ID	Time	Res
							h m s	ISC
KARP	**Karpathos**	**0.42**	**222**	P		**Pg**	**17 23 06.2**	**-0.1**
KARP				S		**Sg**	**17 23 12.9**	**+0.9**
KARP	**Karpathos**	**0.42**	**222**	P		**Pg**	**17 23 06.2**	**-0.1**
KARP				S		**Sg**	**17 23 12.7**	**+0.7**
KARP	**Karpathos**	**0.42**	**222**	P		**Pg**	**17 23 06.2**	**-0.1**
KARP				S		**Sg**	**17 23 12.7**	**+0.7**
KARP				AML		AML	17 23 14.1	
	comp=E,8923μm,0.4s							
KARP				AML		AML	17 23 14.1	
	comp=N,12169μm,0.4s							
ARG	**Arkhangelos**	**0.61**	**54**	*e*PG		**Pg**	**17 23 09.8**	**0.0**
ARG				*e*SG		**Sb**	**17 23 18.9**	**-0.3**
ARG	**Arkhangelos**	**0.61**	**54**	P		**Pg**	**17 23 09.5**	**-0.3**
ARG	**Arkhangelos**	**0.61**	**54**	*e*Pg		**Pg**	**17 23 09.8**	**0.0**
ARG				S		**Sg**	**17 23 17.5**	**-0.4**
ARG				*e*Sg		**Sb**	**17 23 18.9**	**-0.3**
NIS1	**Nisyros Isl.**	**0.79**	**340**	*e*PG		**Pg**	**17 23 13.0**	**-0.1**
NIS1	**Nisyros Isl.**	**0.79**	**340**	P		**Pn**	**17 23 14.6**	**-0.3**
NIS1				S		**Sn**	**17 23 27.3**	**+0.6**
NIS1	**Nisyros Isl.**	**0.79**	**340**	*e*Pg		**Pg**	**17 23 13.0**	**-0.1**
NIS1	**Nisyros Isl.**	**0.79**	**340**	P		**Pn**	**17 23 14.6**	**-0.3**
NISR	**Nisiros**	**0.81**	**338**	P		**Pn**	**17 23 15.0**	**-0.2**
NISR	**Nisiros**	**0.81**	**338**	P		**Pn**	**17 23 15.0**	**-0.2**
BDRM	**Kayabasi**	**1.20**	**357**	*i* P		**Pb**	**17 23 20.3**	**-0.4**
BDRM				*i* S		**Sn**	**17 23 37.1**	**+0.2**
BDRM	**Kayabasi**	**1.20**	**357**	P		**Pb**	**17 23 20.3**	**-0.4**
BDRM				S		**Sn**	**17 23 37.1**	**+0.2**
BODT	**Bodrum**	**1.21**	**352**	*e*PN		**Pb**	**17 23 20.7**	**-0.1**
BODT	**Bodrum**	**1.21**	**352**	P		**Pb**	**17 23 20.5**	**-0.3**
BODT				S		**Sn**	**17 23 40.3**	**+3.2**
BODT	**Bodrum**	**1.21**	**352**	P		**Pb**	**17 23 20.5**	**-0.3**
BODT	**Bodrum**	**1.21**	**352**	*e*Pn		**Pb**	**17 23 20.7**	**-0.1**
ZKR	**Zakros**	**1.29**	**235**	P		**Pn**	**17 23 21.8**	**-0.1**
ZKR				S		**Sb**	**17 23 38.6**	**-0.2**
ZKR	**Zakros**	**1.29**	**235**	P		**Pn**	**17 23 22.2**	**+0.3**
ZKR				S		**Sb**	**17 23 39.0**	**+0.2**
ZKR	**Zakros**	**1.29**	**235**	P		**Pn**	**17 23 22.2**	**+0.3**
ZKR				S		**Sb**	**17 23 39.0**	**+0.2**
ZKR				AML		AML	17 23 42.4	
	comp=N,1183μm,0.6s							
ZKR				AML		AML	17 23 47.8	
	comp=E,1160μm,0.5s							
DALY	**Dalyan (Mu¨la**	**1.33**	**44**	*e*PN		**Pn**	**17 23 22.6**	**+0.3**
DALY	**Dalyan (Mu¨la**	**1.33**	**44**	*e*Pn		**Pn**	**17 23 22.6**	**+0.3**
TURN	**Turunc**	**1.34**	**41**	*i* P		Pn	17 23 18.1	-4.4
TURN				*i* S		Sb	17 23 33.1	-7.0
TURN	**Turunc**	**1.34**	**41**	P		Pn	17 23 18.1	-4.4
YER	**Yerkesik**	**1.41**	**26**	*e*PN		**Pb**	**17 23 24.5**	**+0.1**
YER	**Yerkesik**	**1.41**	**26**	P		**Pn**	**17 23 24.1**	**+0.5**
YER				S		**Sg**	**17 23 43.7**	**+0.2**
YER	**Yerkesik**	**1.41**	**26**	P		**Pn**	**17 23 24.1**	**+0.5**
YER	**Yerkesik**	**1.41**	**26**	*e*Pn		**Pb**	**17 23 24.5**	**+0.1**
YER				S		**Sg**	**17 23 43.7**	**+0.2**
FETY	**Fethiye**	**1.49**	**58**	*e*PN		**Pb**	**17 23 25.4**	**-0.1**
FETY	**Fethiye**	**1.49**	**58**	P		**Pn**	**17 23 25.0**	**+0.4**
FETY				S		**Sb**	**17 23 45.0**	**+0.6**
FETY	**Fethiye**	**1.49**	**58**	P		**Pn**	**17 23 25.0**	**+0.4**
FETY	**Fethiye**	**1.49**	**58**	*e*Pn		**Pb**	**17 23 25.4**	**-0.1**
FETY				S		**Sb**	**17 23 45.0**	**+0.6**
NPS	**Neapolis**	**1.66**	**249**	P		**Pn**	**17 23 27.0**	**+0.1**
NPS				S		**Sn**	**17 23 48.1**	**-0.1**
NPS	**Neapolis**	**1.66**	**249**	P		**Pn**	**17 23 27.0**	**+0.1**
NPS				S		**Sn**	**17 23 48.1**	**-0.1**
NPS	**Neapolis**	**1.66**	**249**	P		**Pn**	**17 23 27.6**	**+0.6**
NPS				S		**Sn**	**17 23 48.1**	**-0.1**
NPS				AML		AML	17 23 48.9	
	comp=N,949μm,0.5s							
NPS				AML		AML	17 23 53.1	
	comp=E,1259μm,0.3s							
KSL	**Kastellorizon**	**1.71**	**80**	P		**Pn**	**17 23 27.8**	**+0.3**
KSL	**Kastellorizon**	**1.71**	**80**	P		**Pn**	**17 23 27.8**	**+0.3**
AKAS	**Kas**	**1.74**	**77**	*i* P		**Pn**	**17 23 28.4**	**+0.3**
AKAS				*i* S		**Sn**	**17 23 50.2**	**-0.1**
AKAS	**Kas**	**1.74**	**77**	P		**Pn**	**17 23 28.4**	**+0.3**
AKAS				S		**Sn**	**17 23 50.2**	**-0.1**
SANT	**Santorini**	**1.74**	**288**	P		**Pn**	**17 23 28.5**	**+0.5**
SANT				S		**Sb**	**17 23 51.8**	**+0.2**
SANT	**Santorini**	**1.74**	**288**	P		**Pn**	**17 23 28.5**	**+0.5**
SANT				S		**Sb**	**17 23 51.8**	**+0.2**

SIVA	**Sivas**	**2.36**	**250**	*e*Pn		**Pn**	**17 23 37.8**	**+1.3**
SIVA	**Sivas**	**2.36**	**250**	P		**Pb**	**17 23 39.2**	**-1.2**
SIVA	**Sivas**	**2.36**	**250**	P		**Pb**	**17 23 39.2**	**-1.2**
SERI	**Serifos**	**2.76**	**299**	P		**Pn**	**17 23 43.8**	**+1.7**
SERI				S		**Sn**	**17 24 13.7**	**-1.7**
SERI	**Serifos**	**2.76**	**299**	P		**Pn**	**17 23 43.8**	**+1.7**
SERI				S		**Sn**	**17 24 13.7**	**-1.7**
KULA	**Kula-Manisa**	**2.80**	**19**	*e*PN		**Pn**	**17 23 43.5**	**+0.8**
KULA	**Kula-Manisa**	**2.80**	**19**	*e*Pn		**Pn**	**17 23 43.5**	**+0.8**
KHAL	**Karahalli**	**2.96**	**32**	*i* P		**Pn**	**17 23 45.1**	**+0.2**
KHAL				*i* S		**Sn**	**17 24 21.6**	**+1.1**
KHAL	**Karahalli**	**2.96**	**32**	P		**Pn**	**17 23 45.2**	**+0.2**
KHAL				S		**Sn**	**17 24 21.6**	**+1.1**
ANKY	**Antikythira Is**	**3.42**	**271**	P		**Pn**	**17 23 51.3**	**+0.2**
ANKY				S		**Sn**	**17 24 33.2**	**+1.6**
ANKY	**Antikythira Is**	**3.42**	**271**	P		**Pn**	**17 23 51.3**	**+0.2**
ANKY				S		**Sn**	**17 24 33.2**	**+1.6**
KYTH	**Kithira**	**3.65**	**278**	P		**Pn**	**17 23 56.1**	**+1.8**
KYTH	**Kithira**	**3.65**	**278**	P		**Pn**	**17 23 56.1**	**+1.8**
VLI	**Veliai**	**3.79**	**284**	P		**Pn**	**17 23 58.1**	**+1.9**
VLI				S		**Sn**	**17 24 41.9**	**+1.1**
VLI	**Veliai**	**3.79**	**284**	P		**Pn**	**17 23 58.1**	**+1.9**
VLI				S		**Sn**	**17 24 41.9**	**+1.1**
VLI				AML	AML		17 24 45.1	
	comp=E,114μm,0.5s							
VLI				AML	AML		17 24 45.6	
	comp=N,148μm,0.5s							
DURS	**Dursunbey**	**3.81**	**11**	*i* P		**Pn**	**17 23 56.9**	**+0.3**
DURS				*i* S		**Sn**	**17 24 40.9**	**-0.5**
DURS	**Dursunbey**	**3.81**	**11**	P		**Pn**	**17 23 56.9**	**+0.3**
DURS				S		**Sn**	**17 24 40.9**	**-0.5**
TVSB	**Tavsanli**	**3.90**	**23**	*e*PN		**Pn**	**17 23 59.4**	**+1.6**
TVSB	**Tavsanli**	**3.90**	**23**	*e*Pn		**Pn**	**17 23 59.4**	**+1.6**
GAZI	**Gazipasa**	**3.91**	**83**	*i* P		**Pn**	**17 23 57.3**	**-0.6**
GAZI				*i* S		Sn	17 24 37.3	-6.5
GAZI	**Gazipasa**	**3.91**	**83**	P		**Pn**	**17 23 57.3**	**-0.6**
ERMK	**Ermenek**	**4.43**	**78**	*i* P		**Pn**	**17 24 05.8**	**+0.5**
ERMK				*i* S		**Sn**	**17 24 58.7**	**+1.7**
ERMK	**Ermenek**	**4.43**	**78**	P		**Pn**	**17 24 05.8**	**+0.5**
ERMK				S		**Sn**	**17 24 58.7**	**+1.7**
BRTR	**Keskin Array B**	**6.20**	**50**	Pn		**Pn**	**17 24 30.8**	**+1.3**
	comp=N,0.1nm,0.3s,baz=225,slow=15,SNR=3.9							
BRTR				Sn		**Sn**	**17 25 41.5**	**+1.2**
	comp=N,0.1nm,0.3s,baz=217,slow=25,SNR=3.1							
MMAI	**Mount Meron Ar**	**7.11**	**111**	Pn		Pn	17 24 38.7	-3.2
	comp=N,1.1nm,0.3s,baz=309,slow=12,SNR=7.3							
MMAI				Sn		Sn	17 25 56.8	-5.9
	comp=N,1.0nm,0.3s,baz=288,slow=20,SNR=4.6							
TORD	**Torodi Ar. Bea**	**32.42**	**232**	P		**P**	**17 29 27.5**	**-0.4**
	comp=N,0.2nm,0.4s,baz=27,slow=7.7,SNR=2.4							
MKAR	**Makanchi Array**	**41.78**	**57**	P		**P**	**17 30 46.6**	**-0.7**
	comp=N,0.4nm,0.7s,baz=265,slow=7.0,SNR=3.6							
SFJD	**Kangerlussuaq**	**52.99**	**331**	LR		LR	17 57 51.2	
	comp=N,30nm,18.4s,baz=130,slow=39							

ISCJB ***15*** *17:24:25.7±0.2,38˚.40N×0˚.02×118˚.67W±0˚.02,h10km, mb3.8/7,MS3.0/2,Error ellipse: s-maj=2.3km s-min=2.2km az=144.8*

NEIC ***15*** *17:24:25.0,38˚.40N×118˚.74W,h16km,mb4.0/5,MW3.8, ML4.0(REN),Moment Tensor Solution. s34 Moment tensor: Scale 10^{14}Nm; M_{rr}-5.55; $M_{\theta\theta}$-1.25; $M_{\phi\phi}$6.81; $M_{r\theta}$0.86; $M_{\theta\phi}$-0.50; $M_{\phi r}$-0.44; Best double couple: M_o6.40000×10^{14} NP1:ϕ_s187.00000°,δ44.00000°, λ-75.00000°. NP2:ϕ_s346.00000°,δ48.00000°, λ-104.00000°. Principal axes: T 6.8600, Plg2.0000°, Azm86.0000°; N -1.1300, Plg11.0000°, Azm356.0000°; P -5.7300, Plg79.0000°, Azm188.0000°; After REN.*

NEIC Felt [II] at Hawthorne. Felt at Bridgeport and Mariposa, California.

IDC ***15*** *17:24:25.7±0.8,38˚.42N×118˚.75W,h0km,mb3.7/7, mb1 3.8/11,mb1mx3.6/72,mbtmp3.6/11,ML4.0/3,MS3.1/7, Ms1 3.1/7,ms1mx2.9/45 Error ellipse: s-maj=14.4km s-min=5.9km az=13.0*

ISC 15 17:24:25.7±0.5,38˚.37N±0˚.02×118˚.70W±0˚.02,h10km, n136,σ1$75/170,mb3.7/7,California-Nevada border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
NV01	**Mina Array Sit**	**0.31**	**79**	*e*Pg	**Pg**	**17 24 31.9**	**-0.2**
NV01				*e*Sg	**Sb**	**17 24 36.8**	**-2.0**
NVAR	**Mina Array Bea**	**0.31**	**79**	Pg	**Pg**	**17 24 31.7**	**-0.3**
	2μm,0.3s,baz=259,slon=21,SNR=737						
NVAR				Lg	Lg	17 24 37.1	
	5μm,0.3s,baz=259,slow=33,SNR=69						
NVAR				LR	LR	17 25 02.5	
	comp=Z,2μm,18.2s,baz=358,slow=79						
NV11	**Mina Array Sit**	**0.43**	**82**	*e*Pg	**Pb**	**17 24 34.1**	**-1.3**
NV11				*e*Sg	**Sb**	**17 24 40.8**	**-1.2**
WAKR	**Walker**	**0.60**	**283**	*e*Pg	**Pg**	**17 24 36.1**	**-1.2**
WAKR				*e*Sg	**Sg**	**17 24 43.5**	**-1.8**
MLAC	**Mammoth, Mammo**	**0.75**	**189**	P	**Pg**	**17 24 40.1**	**-0.1**
	baz=5.5						
MLAC				S	**Sb**	**17 24 50.9**	**-0.4**
	baz=5.5						
MTUM	**Tungsten Hills**	**1.02**	**174**	*e*Pg	**Pb**	**17 24 45.2**	**-0.4**
TIN	**Tinemaha, Big**	**1.37**	**164**	P	**Pg**	**17 24 51.7**	**-0.2**
	baz=343						
TIN				S	**Sg**	**17 25 10.7**	**+1.1**
	baz=343						
CMB	**Columbia Colle**	**1.38**	**256**	*e*Pn	**Pn**	**17 24 49.8**	**-1.1**
CMB				*e*Sn	**Sb**	**17 25 07.1**	**-2.0**
GRAC	**Grapevine Rang**	**1.73**	**142**	P	**Pb**	**17 24 57.1**	**-0.5**
	baz=322						
GRAC				Sb	**Sg**	**17 25 23.2**	**+1.8**
	baz=322						
AFDM	**Forest Hills D**	**1.87**	**289**	*e*Pn	**Pn**	**17 24 57.9**	**+0.1**
AFDM				*e*Sn	**Sn**	**17 25 21.7**	**+0.2**
RCTC	**Rector, Farmer**	**2.11**	**192**	Sb	**Sg**	**17 25 31.4**	**-2.0**
	baz=11						
DAC	**Darwin (Calif)**	**2.27**	**157**	*e*Pn	**Pn**	**17 25 04.2**	**+0.8**
DAC				*e*Pg	**Pg**	**17 25 08.2**	**-0.9**
DAC				*e*Sn	**Sg**	**17 25 37.6**	**-0.9**
BMN	**Battle Mountai**	**2.35**	**29**	*e*Pn	**Pn**	**17 25 03.7**	**-0.8**
FURC	**Furnace Creek,**	**2.40**	**142**	P	**Pn**	**17 25 06.0**	**+1.1**
	baz=323						
FURC				S	**Sb**	**17 25 37.0**	**-1.4**
	baz=323						
TPNV	**Topopah Spring**	**2.41**	**125**	P	**Pn**	**17 25 06.3**	**+1.1**
	baz=307						
TPNV				Sb	**Sg**	**17 25 42.6**	**-0.4**
	baz=307						
TPNV	**Topopah Spring**	**2.41**	**125**	*e*Pn	**Pn**	**17 25 05.8**	**+0.6**
TPNV				*e*Pg	**Pg**	**17 25 11.0**	**-0.7**
TPNV				*e*Sn	**Sg**	**17 25 44.8**	**+1.8**
R11A	**Troy Canyon, C**	**2.44**	**90**	Sb	**Sg**	**17 25 44.9**	**+0.7**
	baz=272						
R11A	**Troy Canyon, C**	**2.44**	**90**	*e*Pn	**Pn**	**17 25 06.3**	**+0.5**
R11A				*e*Sn	**Sg**	**17 25 43.7**	**-0.5**
ORV	**Oroville**	**2.48**	**299**	*e*Pn	**Pn**	**17 25 05.8**	**-0.4**
ORV				*e*Sn	**Sn**	**17 25 36.1**	**-0.5**
MPMC	**Manual Prospec**	**2.50**	**157**	P	**Pn**	**17 25 07.3**	**+0.7**
	baz=337						
MPMC				Sb	**Sg**	**17 25 44.6**	**-1.5**
	baz=337						
ISA	**Isabella, Lake**	**2.71**	**176**	Sb	**Sg**	**17 25 49.9**	**-2.8**
	baz=356						
ISA	**Isabella, Lake**	**2.71**	**176**	*e*Pn	**Pb**	**17 25 11.3**	**-3.0**
ISA				*e*Pg	**Pg**	**17 25 15.1**	**-2.5**
ISA				*e*Sn	**Sg**	**17 25 49.7**	**-3.0**
SAO	**San Andreas Ge**	**2.71**	**235**	*e*Pn	**Pn**	**17 25 10.3**	**+1.0**
SAO				*e*Sn	**Sb**	**17 25 46.8**	**-0.8**
NMTM	**Middletown**	**2.97**	**280**	*e*Pn	**Pb**	**17 25 15.9**	**-2.7**
LRMC	**Laurel Mtn Rad**	**3.00**	**164**	P	**Pn**	**17 25 14.0**	**+0.7**
	baz=344						
LRMC				Sb	**Sg**	**17 25 58.4**	**-3.6**
	baz=344						
O03D	**Paynes Creek**	**3.08**	**310**	P	**Pn**	**17 25 15.3**	**+0.9**
	baz=128,SNR=44						
O03D				Sb	**Sg**	**17 26 02.4**	**-2.2**
	baz=128						
SHOC	**Shoshone, Teco**	**3.13**	**141**	Sb	**Sg**	**17 26 04.6**	**-1.7**
	baz=322						
ARVC	**Arvin**	**3.24**	**182**	Sb	**Sb**	**17 26 05.5**	**+2.7**
	baz=1.2						
MCCM	**Marconi Confer**	**3.30**	**267**	*e*Pn	**Pn**	**17 25 17.4**	**0.0**
GSC	**Goldstone, Bar**	**3.42**	**153**	P	**Pn**	**17 25 20.2**	**+1.1**
	baz=334						
GSC	**Goldstone, Bar**	**3.42**	**153**	*e*Pn	**Pn**	**17 25 19.9**	**+0.8**
GSC				*e*Pg	**Pg**	**17 25 30.0**	**-1.2**
HOPS	**Hopland Field**	**3.48**	**282**	*e*Pn	**Pn**	**17 25 22.2**	**+2.3**
EDW2	**Edwards Air Fo**	**3.53**	**171**	Sb	**Sg**	**17 26 15.3**	**-3.7**
	baz=350						
ELK	**Elko**	**3.57**	**47**	Lg	Lg	17 26 17.9	
	98nm,0.3s,baz=48,slow=0.0,SNR=8.4						
ELK	**Elko**	**3.57**	**47**	*e*Pn	**Pn**	**17 25 21.0**	**-0.3**
ELK				*e*Pg	**Pg**	**17 25 32.1**	**-1.9**
ELK				*e*Sn	**Sn**	**17 26 04.1**	**+0.4**
ELK				eLg	Lg	17 26 17.0	
PKM	**Mcpherson Peak**	**3.59**	**195**	Sb	**Sb**	**17 26 16.2**	**+3.1**
	baz=13						
WDC	**Whiskeytown Da**	**3.70**	**308**	*e*Pn	**Pn**	**17 25 23.2**	**+0.3**
WDC				*e*Sg	**Sg**	**17 26 21.1**	**-3.5**
MOD	**Modoc Plateau**	**3.73**	**341**	*e*Pn	**Pn**	**17 25 25.2**	**+1.7**
MOD				*e*Sg	**Sb**	**17 26 20.7**	**+3.6**
OSI	**Osito Audit: C**	**3.75**	**180**	*e*Pn	**Pn**	**17 25 23.7**	**+0.1**
OSI				*e*Pg	**Pb**	**17 25 33.1**	**+1.1**
OSI				*e*Sn	**Sn**	**17 26 06.2**	**-1.7**
PSUT	**Pine Spring**	**3.80**	**86**	*e*Pn	Pb	17 25 28.4	-4.6
PSUT				*e*Pg	**Pg**	**17 25 36.6**	**-1.9**
PSUT				*e*Sn	**Sn**	**17 26 09.8**	**+0.4**
PSUT				*e*Sg	**Sg**	**17 26 25.9**	**-1.9**
HEC	**Hector,Ludlow**	**4.01**	**151**	P	**Pn**	**17 25 28.3**	**+1.0**
	baz=332						
N02D	**Trinity Center**	**4.04**	**311**	P	**Pn**	**17 25 29.2**	**+1.6**
	baz=129						
WVOR	**Wild Horse Val**	**4.06**	**1**	*e*Pn	**Pn**	**17 25 30.6**	**+2.7**
MWC	**Mount Wilson**	**4.17**	**173**	*e*Pn	Pn	17 25 32.5	+3.0
MWC				*e*Sg	**Sb**	**17 26 32.7**	**+2.9**
M04C	**Macdoel**	**4.17**	**326**	P	**Pn**	**17 25 31.6**	**+2.1**
	baz=144,SNR=9.4						
PASC	**Pasadena Art C**	**4.21**	**174**	*e*Pg	**Pb**	**17 25 37.2**	**-2.6**
PASC				*e*Sg	**Sg**	**17 26 39.8**	**-1.1**
CCUT	**Cedar City**	**4.29**	**99**	*e*Pg	**Pg**	**17 25 45.0**	**-2.9**
KMRM	**Mail Ridge**	**4.31**	**297**	*e*Pn	Pb	17 25 36.9	-4.6
LDFC	**Landfair**	**4.37**	**138**	*e*Pn	**Pn**	**17 25 33.2**	**+0.9**
LDFC				*e*Pg	**Pg**	**17 25 47.1**	**-2.2**
LCMT	**Little Creek M**	**4.53**	**106**	*e*Pn	**Pn**	**17 25 35.1**	**+0.7**
LCMT				*e*Pg	**Pg**	**17 25 52.2**	**-0.3**
LCMT				*e*Sg	**Sg**	**17 26 48.7**	**-2.5**
YBH	**Yreka Blue Hor**	**4.55**	**319**	Pn	**Pn**	**17 25 36.7**	**+2.0**
	2.9nm,0.3s,baz=171,slow=5.0,SNR=18						
YBH				LR	LR	17 27 37.6	
	comp=Z,274nm,19.7s,baz=154,slow=43						
YBH	**Yreka Blue Hor**	**4.55**	**319**	*e*Pn	**Pn**	**17 25 37.4**	**+2.7**
KHMM	**Horse Mountain**	**4.62**	**304**	*e*Pn	**Pn**	**17 25 37.5**	**+1.8**
KHMM				*e*Pg	**Pb**	**17 25 46.7**	**-0.2**
K05A	**Summer Lake**	**4.66**	**340**	*e*Pn	Pn	17 25 39.6	+3.3
JCC	**Jacoby Creek,**	**4.79**	**302**	*e*Pn	**Pn**	**17 25 36.5**	**-1.3**
K04D	**Chiloquin, OR**	**4.84**	**332**	P	**Pn**	**17 25 41.4**	**+2.7**
	baz=151						
KNB	**Kanab**	**4.85**	**104**	*e*Pn	**Pn**	**17 25 40.0**	**+1.2**
KNB				*e*Pg	**Pg**	**17 25 56.3**	**-2.3**
KNB				*e*Sg	**Sg**	**17 27 00.5**	**-0.9**
BELC	**Belle Mtn. Jos**	**4.88**	**153**	P	**Pn**	**17 25 40.7**	**+1.5**
	baz=334						
DUG	**Dugway, Tooele**	**4.91**	**66**	P	**Pn**	**17 25 42.0**	**+2.3**
	baz=250						
DUG	**Dugway, Tooele**	**4.91**	**66**	*e*Pn	**Pn**	**17 25 41.3**	**+1.6**
DUG				*e*Pg	**Pg**	**17 25 59.3**	**-0.5**
DUG				*e*Sg	**Sg**	**17 27 04.3**	**+0.9**
BGU	**Big Grassy Mou**	**5.06**	**58**	*e*Pn	**Pn**	**17 25 43.6**	**+1.9**
EKU	**East Kanab**	**5.08**	**103**	*e*Pn	**Pn**	**17 25 43.9**	**+1.9**
PFO	**Pinyon Flats O**	**5.08**	**158**	Pn	Pn	17 25 44.9	+2.9
	0.7nm,0.3s,baz=6.6,slow=13,SNR=4.6						
PFO				Pg	**Pb**	**17 25 57.0**	**+2.2**
	1.0nm,0.3s,baz=347,slow=10.0,SNR=9.9						
PFO				LR	LR	17 27 55.2	
	comp=Z,111nm,20.8s,baz=351,slow=41						
PFO	**Pinyon Flats O**	**5.08**	**158**	*e*Pn	**Pn**	**17 25 44.0**	**+2.0**
PFO				*e*Pg	**Pb**	**17 25 57.0**	**+2.2**
PFO				*e*		17 26 00.7	
MSU	**Marysvale**	**5.12**	**86**	*e*Pn	Pn	17 25 46.4	+3.7
PKCU	**Pink Cliffs**	**5.13**	**98**	*e*Pn	**Pn**	**17 25 45.0**	**+2.1**
PKCU				*e*Pg	**Pg**	**17 26 03.6**	**-0.4**
PKCU				*e*Sg	**Sg**	**17 27 08.6**	**-1.9**
MTPU	**Mount Pierson**	**5.14**	**92**	*e*Pn	**Pn**	**17 25 45.1**	**+2.1**
MTPU				*e*Pg	**Pg**	**17 26 03.9**	**-0.2**
WCU	**Willow Creek**	**5.20**	**81**	*e*Pg	**Pg**	**17 26 02.9**	**-2.4**
J05D	**Fort Rock, OR**	**5.27**	**339**	P	**Pn**	**17 25 47.4**	**+2.8**
	baz=158,SNR=12						
L02D	**Cave Junction,**	**5.33**	**317**	P	Pn	17 25 48.3	+3.1
	baz=134,SNR=16						
HUMO	**Hull Mountain**	**5.33**	**324**	*e*Pn	**Pn**	**17 25 46.3**	**+1.0**
NLU	**North Lily Min**	**5.38**	**71**	*e*Pn	Pn	17 25 49.1	+2.9
NLU				*e*Pg	**Pg**	**17 26 07.1**	**-1.7**
U15A	**North Rim**	**5.46**	**109**	*e*Pn	**Pn**	**17 25 47.9**	**+0.7**
U15A				*e*Pg	Pg	17 26 07.1	-3.0
U15A				*e*Sg	**Sg**	**17 27 17.8**	**-3.0**
MFID	**Camas Ranch**	**5.49**	**22**	*e*Pn	**Pn**	**17 25 49.6**	**+2.1**
SPUT	**South Promonto**	**5.63**	**57**	*e*Pn	**Pn**	**17 25 51.7**	**+2.2**
HVU	**Hansel Valley**	**5.67**	**51**	*e*Pn	**Pn**	**17 25 51.9**	**+1.8**
HVU				*e*Sg	**Sg**	**17 27 23.9**	**-3.8**
Y12C	**Blythe**	**5.72**	**143**	*e*Pn	**Pn**	**17 25 50.3**	**-0.3**
Y12C				*e*Pg	**Pg**	**17 26 16.2**	**+1.1**
MPU	**Maple Canyon**	**5.73**	**71**	*e*Pn	**Pn**	**17 25 51.5**	**+0.6**
MPU				*e*Pg	**Pg**	**17 26 17.2**	**+1.9**
MPU				*e*Sg	**Sg**	**17 27 28.4**	**-1.1**
CTU	**Camp Tracy**	**5.85**	**64**	*e*Pn	**Pn**	**17 25 53.3**	**+0.8**
CTU				*e*Pg	**Pg**	**17 26 17.9**	**+0.3**
TMUT	**Trail Mountain**	**5.92**	**79**	*e*Pn	Pn	17 25 58.0	+4.4
TMUT				*e*Pg	**Pg**	**17 26 16.6**	**-2.4**
JLU	**Jordanelle**	**6.03**	**66**	*e*Pn	**Pn**	**17 25 56.1**	**+0.9**
JLU				*e*		17 26 20.6	
HLID	**Hailey**	**6.11**	**31**	*e*Pn	**Pn**	**17 25 57.8**	**+1.6**
HLID				*e*Pg	**Pb**	**17 26 14.3**	**+2.0**
GLA	**Glamis**	**6.17**	**148**	*e*Pn	**Pn**	**17 25 55.1**	**-1.7**
GLA				*e*Pg	**Pg**	**17 26 25.5**	**+1.9**
GLA				eScS	ScS	17 40 55.0	+2.9
TCUT	**Toone Canyon**	**6.25**	**62**	*e*Pn	**Pn**	**17 26 00.6**	**+2.4**
TCUT				eLg	Lg	17 27 43.0	
I05D	**Terrebonne, OR**	**6.28**	**342**	P	Pn	17 26 01.8	+3.4
	baz=161,SNR=6.9						
P17A	**Butcher Ranch,**	**6.30**	**77**	*e*Pn	**Pn**	**17 25 59.3**	**+0.6**
P17A				eLg	Lg	17 27 42.8	
HWUT	**Hardware Ranch**	**6.36**	**57**	*e*Pn	**Pn**	**17 26 02.2**	**+2.6**
HWUT				eLg	Lg	17 27 45.1	
SRU	**San Rafael Swe**	**6.43**	**81**	*e*Pn	Pn	17 26 03.5	+3.0
SRU				eLg	Lg	17 27 45.2	
WUAZ	**Wupatki**	**6.52**	**114**	*e*Pn	Pn	17 26 06.8	+5.0
WUAZ				*e*Pg	Pg	17 26 25.3	-5.2
WUAZ				eLg	Lg	17 27 50.2	
BMO	**Blue Mountains**	**6.56**	**9**	*e*Pn	**Pn**	**17 26 03.6**	**+1.4**
P18A	**Preston Nutter**	**6.70**	**77**	*e*Pn	**Pn**	**17 26 05.0**	**+0.6**
P18A				*e*Pg	Pg	17 26 30.6	-3.9
H04A	**Detroit Lake**	**6.83**	**339**	*e*Pn	Pn	17 26 10.6	+4.8
X16A	**Lo Mia Camp, P**	**7.05**	**122**	*e*Pn	**Pn**	**17 26 09.9**	**+0.8**
X16A				eLg	Lg	17 28 15.1	
AHID	**Auburn Hatcher**	**7.26**	**50**	*e*Pn	**Pn**	**17 26 12.9**	**+1.0**
AHID				*e*Pg	Pg	17 26 39.6	-4.9
REDW	**Red Top Meadow**	**7.75**	**48**	*e*Pn	**Pn**	**17 26 19.2**	**+0.4**
MCMT	**McKenzie Canyo**	**7.79**	**32**	*e*Pn	Pn	17 26 23.3	+4.0
FXWY	**Fox Creek**	**7.83**	**45**	*e*Pn	Pn	17 26 25.6	+5.8
SNOW	**Snow King Moun**	**7.87**	**47**	*e*Pn	**Pn**	**17 26 22.9**	**+2.4**
W18A	**Petrified Fore**	**7.89**	**112**	*e*Pn	**Pn**	**17 26 19.2**	**-1.5**
W18A				*e*Pg	**Pg**	**17 26 54.0**	**-2.8**
X18A	**Snowflake**	**8.02**	**116**	*e*Pn	**Pn**	**17 26 22.0**	**-0.4**
X18A				*e*Pg	**Pg**	**17 26 58.1**	**-1.1**
X18A				*e*Sg	**Sg**	**17 28 39.0**	**-4.1**
HAWA	**Hanford**	**8.04**	**356**	*e*Pn	Pn	17 26 26.4	+3.9
LOHW	**Long Hollow**	**8.05**	**47**	*e*Pn	**Pn**	**17 26 22.1**	**-0.8**
MOOW	**Moose Ponds**	**8.05**	**46**	*e*Pn	**Pn**	**17 26 23.1**	**+0.2**
MVCO	**Mesa Verde**	**8.16**	**95**	*e*Pn	**Pn**	**17 26 24.6**	**+0.3**
BW06	**Boulder Array**	**8.22**	**55**	*e*Pn	Pn	17 26 28.5	+3.3
PD31	**Pinedale Array**	**8.22**	**55**	*e*Pn	Pn	17 26 28.6	+3.4
PD31				eLg	Lg	17 28 42.9	
PDAR	**Pinedale Array**	**8.22**	**55**	Pn	**Pn**	**17 26 27.8**	**+2.5**
	0.2nm,0.3s,baz=232,slow=13,SNR=16						
PDAR				Lg	Lg	17 28 42.9	
	0.5nm,0.3s,baz=232,slow=25,SNR=4.5						
PDAR				LR	LR	17 30 13.9	
	comp=Z,110nm,18.9s,baz=250,slow=42						
FLWY	**Flagg Ranch**	**8.29**	**44**	*e*Pn	Pn	17 26 30.4	+4.2
O20A	**White River Ci**	**8.30**	**74**	*e*Pn	Pn	17 26 31.2	+5.0
DLMT	**Dillon**	**8.33**	**31**	*e*Pn	**Pn**	**17 26 26.4**	**-0.2**
SMCO	**Snowmass**	**9.19**	**81**	Pn	**Pn**	**17 26 39.2**	**+0.6**
ANMO	**Albuquerque**	**10.41**	**105**	Lg	Lg	17 29 57.1	
	0.2nm,0.3s,baz=23,slow=3.8,SNR=5.2						
ANMO				LR	LR	17 31 28.6	
	comp=Z,128nm,19.9s,baz=274,slow=40						
319A	**Douglas**	**10.41**	**129**	*e*Pn	**Pn**	**17 26 57.7**	**+2.6**
Q24A	**Divide**	**10.61**	**83**	*e*Pn	**Pn**	**17 26 55.7**	**-2.3**
BNM	**Barren Site**	**10.61**	**110**	*e*Pn	Pn	17 26 53.8	-4.2
LTX	**Lajitas**	**15.38**	**121**	*e*Pn	**P**	**17 28 07.5**	**-0.1**
TX31	**Lajitas Ar. Si**	**15.38**	**121**	*e*Pn	**P**	**17 28 08.5**	**+0.9**
TXAR	**Lajitas Array**	**15.38**	**121**	Pn	**P**	**17 28 07.5**	**-0.1**
	baz=311,slow=8.1,SNR=6.5						
TXAR				LR	LR	17 34 45.8	
	comp=Z,125nm,18.2s,baz=0.0,slow=40						
MDND	**Maddock**	**16.82**	**50**	*e*Pn	**P**	**17 28 25.2**	**+2.0**
	24nm,1.4s						
U34A	**Anderson Ranch**	**16.92**	**90**	*e*Pn	**P**	**17 28 26.4**	**+1.8**
	63nm,2.0s						
FFC	**Flin Flon**	**19.91**	**29**	*e*P	Pn	**17 28 58.9**	**+0.1**
	4.6nm,0.9s						
ULM	**Lac du Bonnet**	**20.10**	**46**	P	Pn	17 29 00.2	-0.9
	5.7nm,0.9s,baz=233,slow=8.9,SNR=5.1						
ULM	**Lac du Bonnet**	**20.10**	**46**	*e*P	Pn	17 29 00.0	-1.1
	8.3nm,1.0s						
DLBC	**Dease Lake**	**21.39**	**344**	P	**P**	**17 29 13.8**	**+0.5**
	0.5nm,0.3s,baz=152,slow=15,SNR=2.0						
DLBC				LR	LR	17 38 03.2	
	comp=Z,46nm,18.3s,baz=342,slow=38						
DLBC	**Dease Lake**	**21.39**	**344**	*e*P	**P**	**17 29 14.7**	**+1.5**
	3.7nm,0.6s						
YKA	**Yellowknife Ar**	**24.28**	**5**	P	**P**	**17 29 44.2**	**+1.4**
	0.9nm,0.8s,baz=182,slow=9.9,SNR=15						
YKB5	**Yellowknife Ar**	**24.28**	**5**	*e*P	**P**	**17 29 44.2**	**+1.4**
ILAR	**Eielson Array**	**31.19**	**337**	P	**P**	**17 30 47.0**	**+2.4**
	0.9nm,0.8s,baz=152,slow=7.5,SNR=12						
GUMO	**Guam**	**86.64**	**285**	LR	LR	18 07 04.9	
	comp=Z,9.8nm,21.0s,baz=318,slow=30						
BVAR	**Borovoye Array**	**88.63**	**355**	P	**P**	**17 37 20.1**	**+1.3**
	0.6nm,0.7s,baz=344,slow=3.2,SNR=4.3						
KURK	**Kurchatov**	**89.99**	**349**	*e*P	**P**	**17 37 26.4**	**+1.2**
KURBB	**Kurchatov Arra**	**90.09**	**349**	P	**P**	**17 37 26.4**	**+0.8**
	0.3nm,0.5s,baz=13,slow=4.8,SNR=4.3						
MK32	**Makanchi Array**	**93.16**	**346**	*e*P	**P**	**17 37 41.8**	**+1.8**
MKAR	**Makanchi Array**	**93.16**	**346**	P	**P**	**17 37 41.8**	**+1.8**
	0.2nm,0.7s,baz=2.7,slow=6.2,SNR=2.6						
WMQ	**Urumqi**	**94.77**	**341**	*e*P	**P**	**17 37 47.0**	**-0.5**
WMQ				pmax	pmax		
	comp=Z,1.0nm,0.6s						
WMQ				pmax	pmax		
	comp=Z,56nm,4.0s						
CD2	**Chengdu**	**100.51**	**324**	P	**Pdif**	**17 38 10.1**	**-3.5**

DJA 15 17:28:15.4±0.6,6˚S±3˚×10˚4E±˚,h21km±5km,M3.6/12, MLv3.6/12,Sunda Strait

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KASI	**Kota Agung**	**0.62**	**10**	P	Pb	17 28 27.5	-0.2
KASI				S	Sb	17 28 36.3	+0.3
BLSI	**Bandar Lampung**	**1.15**	**48**	P	Pn	17 28 35.7	-0.5
BLSI				S	Sb	17 28 51.1	+0.1

0.9nm,0.3s,baz=336,slow=16,SNR=16

JNU Sn **Sn** **17 31 38.4 -1.4**
1.2nm,0.3s,baz=121,slow=23,SNR=6.0

JCJ **Chichijima** **9.88 106** LR LR 17 35 04.2
comp=Z,29nm,18.8s,baz=118,slow=30

MKAR **Makanchi Array** **41.19 308** P **P** **17 38 06.2 +2.4**
0.1nm,0.5s,baz=98,slow=10,SNR=3.9

ASAR **Alice Springs** **53.69 177** P **P** **17 39 42.0 +0.9**
0.2nm,0.8s,baz=11,slow=12,SNR=5.5

ILAR **Eielson Array** **59.49 29** P **P** **17 40 20.2 -1.8**
0.2nm,0.5s,baz=277,slow=7.3,SNR=3.5

IDC 15 17:33:38.2±1.7, 9.35S×124.77E, h0km, mb3.0/1, mb1 3.4/4, mb1mx3.3/54, mbtmp3.2/4, ML3.2/3, Error ellipse: s-maj=39.1km s-min=26.3km az=76.0, Timor region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
BATI	**Baumata**	**1.38**	**232**	Pg	Pg	17 34 04.4	-0.3
	18nm,0.3s,baz=266,slow=23,SNR=18						
FITZ	**Fitzroy Crossi**	**8.74**	**175**	Pn	Pn	17 35 45.4	-0.6
	0.3nm,0.3s,baz=1.1,slow=9.8,SNR=7.3						
WRA	**Warramunga Arr**	**14.02**	**140**	Pn	Pn	17 36 58.9	+0.7
	0.1nm,0.3s,baz=311,slow=14,SNR=7.8						
WRA				Sn	Sn	17 39 27.3	-7.4
	0.1nm,0.3s,baz=307,slow=26,SNR=5.1						
ASAR	**Alice Springs**	**16.71**	**150**	Pn	Pn	17 37 33.5	-0.3
	0.1nm,0.3s,baz=320,slow=12,SNR=7.3						
MKAR	**Makanchi Array**	**67.49**	**330**	P	P	17 44 36.0	-0.1
	0.1nm,0.5s,baz=134,slow=8.3,SNR=2.3						

*IDC **15** 17:34:30.4±2.1, 37.62N×142.50E, h0km, mb3.4/2, mb1 3.4/4, mb1mx3.2/76, mbtmp3.3/4, ML3.0/2, Error ellipse: s-maj=49.9km s-min=30.2km az=86.0*
*ISCJB **15** 17:34:35.0±1.3, 37.86N±0.06×142.0E±0.1, h30km, mb3.4/2, Error ellipse: s-maj=11.6km s-min=8.1km az=13.2*
*JMA **15** 17:34:34.9±0.2, 37.81N×142.00E, h20km±3km, M3.5*

ISC 15 17:34:34.8±1.6, 37.81N±0.06×141.99E±0.09, h30km, n11, σ1s43/14, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**0.81**	**322**	P	**Pn**	**17 34 50.3**	**+0.1**
JIO				S	**Sn**	**17 35 00.8**	**-0.5**
JMM	**Marumori**	**0.95**	**274**	P	**Pn**	**17 34 52.8**	**+0.8**
JMM				S	**Sn**	**17 35 04.2**	**-0.3**
JFK	**Kawauchi**	**0.99**	**244**	P	**Pn**	**17 34 53.2**	**+0.5**
JFK				S	**Sn**	**17 35 06.3**	**+0.7**
JOU	**Okura**	**1.18**	**298**	P	**Pn**	**17 34 56.4**	**+1.1**
JOU				S	**Sn**	**17 35 12.1**	**+1.7**
ONAJ	**Iwakimizuishiy**	**1.18**	**233**	P	**Pn**	**17 34 55.8**	**+0.5**
JFT	**Otama**	**1.34**	**258**	P	**Pb**	**17 34 59.4**	**+0.1**
MJAR	**Matsushiro Arr**	**3.27**	**248**	Pn	**Pn**	**17 35 26.7**	**+2.7**
	1.0nm,0.3s,baz=75,slow=15,SNR=11						
MAT	**Matsushiro**	**3.27**	**248**	P	Pn	17 35 28.4	+4.3
MAT				S	**Sb**	**17 36 08.8**	**-2.8**
ASAJ	**Asahikawa**	**6.32**	**4**	Pn	**Pn**	**17 36 06.7**	**+0.8**
	0.3nm,0.3s,baz=208,slow=12,SNR=5.2						
MKAR	**Makanchi Array**	**44.10**	**302**	P	P	17 42 43.8	+3.7
	0.3nm,0.8s,baz=88,slow=6.2,SNR=3.6						
WRA	**Warramunga Arr**	**57.90**	**188**	P	**P**	**17 44 23.2**	**-0.7**
	0.4nm,0.6s,baz=6.2,slow=7.5,SNR=6.4						

IDC 15 17:36:04.8±7.1, 19.12S×176.67W, h0km, mb4.1/2, mb1 4.4/2, mb1mx3.6/42, mbtmp4.1/2, Error ellipse: s-maj=301.5km s-min=112.4km az=153.0, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
WRA	**Warramunga Arr**	**46.05**	**260**	P	P	17 44 30.9	+0.1
	1.0nm,0.3s,baz=97,slow=7.8,SNR=40						
ASAR	**Alice Springs**	**46.07**	**255**	P	P	17 44 30.5	-0.4
	1.4nm,0.6s,baz=90,slow=7.7,SNR=45						
AKASG	**Malin Array Be**	**142.39**	**333**	PKP	PKPdf	17 55 38.5	-0.8
	0.4nm,0.4s,baz=36,slow=4.0,SNR=6.9						

MAN 15 17:37:44, 10.99N×124.52E, h9km, mb4.5, ML3.4, MS3.3, 1C-4D, Leyte

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
OCLP	**Ormoc**	**0.10**	**55**	*eP*	Pg	17 37 48.1	+1.6
OCLP				*eS*	Sg	17 37 51.4	+3.0
PLP	**Palo**	**0.48**	**69**	*iP*	Pn	17 37 55.9	-1.2
PLP				*i* S	Sb	17 38 02.4	+0.6
LLP	**Lapu-Lapu**	**0.86**	**219**	*iP*	Pg	17 37 59.8	-0.9
LLP				*i* S	Sb	17 38 13.5	+0.6
TBP	**Tagbilaran**	**1.45**	**207**	*iP*	Pn	17 38 10.6	+0.2
TBP				*i* S	Sg	17 38 33.4	+2.8
SCPH	**Surigao**	**1.53**	**142**	*eP*	Pg	17 38 13.5	+0.1
SCPH				*eS*	Sg	17 38 37.0	+3.7
RCP	**Roxas**	**1.83**	**288**	*eP*	Pn	17 38 16.4	+0.7
RCP				*eS*	Sb	17 38 40.1	-0.7
GUIM	**Jordan**	**1.93**	**259**	*eP*	Pn	17 38 17.2	+0.1
CGP	**Cagayan de Oro**	**2.53**	**176**	*eP*	Pn	17 38 25.9	+0.6
CGP				*eS*	Sb	17 39 00.0	-0.8
BUKP	**Musuan**	**3.14**	**170**	*eP*	Pn	17 38 28.2	-5.5

*ATH **15** 17:40:01.5, 39.27N×23.92E, h12km±3km, ML2.0/7, Error ellipse: s-maj=3.4km s-min=0.9km az=170.0*
*CSEM **15** 17:40:01.7±0.3, 39.27N×23.92E, h2km, ML2.1, Error ellipse: s-maj=5.3km s-min=5.0km az=16.0*

THE 15 17:40:01.2, 39.28N×23.93E, h12km±1km, ML2.1/5, Error ellipse: s-maj=1.5km s-min=0.4km az=178.0, Aegean Sea

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
AOS	**Alonnisos**	**0.11**	**200**	P	Pg	17 40 04.5	+0.3
AOS				S	Sg	17 40 06.5	+0.1
AOS	**Alonnisos**	**0.11**	**200**	P	Pg	17 40 04.5	+0.3
AOS				S	Sg	17 40 06.4	0.0
AOS	**Alonnisos**	**0.11**	**200**	P	Pg	17 40 04.5	+0.3
AOS				S	Sg	17 40 06.4	0.0
AOS				AML	AML	17 40 06.8	
	comp=N,2542μm,0.2s						
AOS				AML	AML	17 40 07.1	
	comp=E,3128μm,0.2s						
SKIA	**Skiathos**	**0.38**	**253**	P	Pg	17 40 08.4	-0.3
SKIA				S	Sg	17 40 14.3	+0.5
SKIA	**Skiathos**	**0.38**	**253**	P	Pg	17 40 08.4	-0.3
SKIA				S	Sg	17 40 14.0	+0.2
SKIA	**Skiathos**	**0.38**	**253**	P	Pg	17 40 08.2	-0.5
SKIA				S	Sg	17 40 14.0	+0.2
SKIA				AML	AML	17 40 14.8	
	comp=E,480μm,0.2s						
SKIA				AML	AML	17 40 15.0	
	comp=N,663μm,0.3s						
NEO	**Neokhori**	**0.55**	**273**	P	Pb	17 40 12.6	-0.2
NEO				S	Sb	17 40 20.3	-0.3
NEO	**Neokhori**	**0.55**	**273**	P	Pb	17 40 12.6	-0.2
NEO				S	Sb	17 40 20.3	-0.3
XOR	**Xorichti**	**0.58**	**279**	P	Pg	17 40 12.6	+0.1
XOR				S	Sb	17 40 20.9	-0.6
XOR	**Xorichti**	**0.58**	**279**	P	Pg	17 40 12.7	+0.2
XOR				S	Sb	17 40 20.9	-0.6
XOR	**Xorichti**	**0.58**	**279**	P	Pg	17 40 12.7	+0.2
XOR				S	Sg	17 40 20.0	-0.2
XOR				AML	AML	17 40 21.8	
	comp=E,170μm,0.1s						
XOR				AML	AML	17 40 22.1	
	comp=N,283μm,0.2s						
PAIG	**Paliouri**	**0.68**	**344**	P	Pg	17 40 14.3	-0.1
PAIG				S	Sb	17 40 24.6	+0.3
PAIG	**Paliouri**	**0.68**	**344**	P	Pg	17 40 14.6	+0.2
PAIG				S	Sb	17 40 24.6	+0.3
PAIG	**Paliouri**	**0.68**	**344**	P	Pg	17 40 14.6	+0.2
PAIG				S	Sb	17 40 25.2	+0.9
PAIG				AML	AML	17 40 25.9	
	comp=N,156μm,0.2s						
PAIG				AML	AML	17 40 26.1	
	comp=E,196μm,0.3s						
SMIA	**Simia**	**0.69**	**235**	P	Pg	17 40 14.4	-0.1
SMIA				S	Sb	17 40 24.6	0.0
SMIA	**Simia**	**0.69**	**235**	P	Pg	17 40 14.5	0.0
SMIA				S	Sb	17 40 24.6	0.0
SMIA	**Simia**	**0.69**	**235**	P	Pg	17 40 14.5	0.0
SMIA				S	Sb	17 40 25.3	+0.7
SMIA				AML	AML	17 40 27.6	
	comp=E,612μm,0.4s						
SMIA				AML	AML	17 40 30.8	
	comp=N,1318μm,0.4s						
FYTO	**Fytoko, Volos**	**0.78**	**280**	P	Pb	17 40 16.8	+0.1
FYTO				S	Sg	17 40 26.4	-0.1
FYTO	**Fytoko, Volos**	**0.78**	**280**	P	Pb	17 40 16.8	+0.2
FYTO				S	Sg	17 40 26.4	0.0
EREA	**Eretria**	**0.85**	**180**	P	Pn	17 40 19.2	+0.1
EREA				S	Sb	17 40 29.7	+0.3
EREA	**Eretria**	**0.85**	**180**	P	Pn	17 40 19.2	+0.2
EREA				S	Sb	17 40 29.7	+0.3
EREA				AML	AML	17 40 32.9	
	comp=N,271μm,0.3s						
EREA				AML	AML	17 40 33.1	
	comp=E,266μm,0.3s						
LKR	**Lokris**	**0.96**	**230**	P	Pg	17 40 19.3	-0.4
LKR				S	Sb	17 40 32.6	+0.3
LKR	**Lokris**	**0.96**	**230**	P	Pg	17 40 19.3	-0.3
LKR				S	Sb	17 40 32.6	+0.3
OUR	**Ouranopolis**	**1.06**	**2**	P	Pb	17 40 21.1	-0.3
OUR				S	Sg	17 40 35.6	+0.2
OUR	**Ouranopolis**	**1.06**	**2**	P	Pb	17 40 21.1	-0.3
OUR				S	Sg	17 40 35.6	+0.2
OUR	**Ouranopolis**	**1.06**	**2**	P	Pb	17 40 20.7	-0.7
OUR				S	Sg	17 40 35.7	+0.3
OUR				AML	AML	17 40 38.7	
	comp=N,159μm,0.6s						
OUR				AML	AML	17 40 39.8	
	comp=E,125μm,0.6s						
VIL2	**Platees**	**1.18**	**206**	P	Pb	17 40 22.2	-1.3
VIL2				S	Sg	17 40 39.1	-0.2
VILL	**Villia**	**1.21**	**204**	P	Pn	17 40 22.2	-1.8
VILL				S	Sb	17 40 39.1	-0.6
VLY	**Voula,Athens**	**1.43**	**184**	P	Pg	17 40 29.0	+0.4
VLY	**Voula,Athens**	**1.43**	**184**	P	Pg	17 40 29.0	+0.4

IDC 15 17:40:05.3±3.1, 32.95S×178.32W, h0km, mb3.4/2, mb1 3.6/3, mb1mx3.5/36, mbtmp3.4/3, ML2.9/1, Error ellipse: s-maj=73.3km s-min=36.5km az=117.0, South of Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
URZ	**Urewera**	**6.47**	**214**	Pn	Pn	17 41 42.5	+0.6
	0.2nm,0.3s,baz=220,slow=7.9,SNR=4.5						
URZ				Sn	Sn	17 42 54.6	-1.8
	0.9nm,0.3s,baz=174,slow=18,SNR=6.1						
ASAR	**Alice Springs**	**42.77**	**270**	P	P	17 48 04.7	0.0
	0.3nm,1.0s,baz=109,slow=7.6,SNR=4.7						
WRA	**Warramunga Arr**	**43.99**	**275**	P	P	17 48 14.6	0.0
	0.4nm,0.5s,baz=114,slow=7.6,SNR=10.0						
FINES	**FINESS Array B**	**147.43**	**338**	PKPbc	PKPbc	17 59 49.4	-0.9
	1.5nm,0.8s,baz=33,slow=4.5,SNR=6.0						

*IDC **15** 17:40:15.9±0.8, 36.00N×29.89E, h0km, mb3.7/11, mb1 3.8/16, mb1mx3.6/58, mbtmp3.7/16, ML3.7/5, MS2.8/2, Ms1 2.8/2, ms1mx2.3/60, Error ellipse: s-maj=18.9km s-min=14.0km az=1.0*
*DDA **15** 17:40:15.8, 35.78N×29.79E, h20km, Md3.5*
*THE **15** 17:40:16.7, 35.78N×29.74E, h0km±3km, ML4.0/1, Error ellipse: s-maj=8.6km s-min=1.8km az=126.0*
*HLW **15** 17:40:17.2, 36.13N×29.88E, h33km±16km, Ml3.1*
*CSEM **15** 17:40:17.9±0.1, 35.85N×29.80E, h5km, ML4.0, Error ellipse: s-maj=3.5km s-min=2.0km az=55.0*
*ISCJB **15** 17:40:18.0±0.5, 35.79N±0.02×29.80E±0.02, h21km±4km, mb3.6/11, Error ellipse: s-maj=3.3km s-min=2.2km az=144.6*
*ISK **15** 17:40:19.7, 35.78N×29.80E, h33km, ML3.5*
*GII **15** 17:40:22.6±0.0, 35.78N×29.93E, h30km, MD3.4/3*
*NIC **15** 17:40:24.9±0.1, 36.25N×30.34E, h25km, mb4.1, ML3.8*

ISC 15 17:40:17.5±1.1, 35.82N±0.03×29.80E±0.02, h14km±7km, n213, σ1s62/275, mb3.7/11, Eastern Mediterranean Sea

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
KSL	**Kastellorizon**	**0.38**	**332**	P	**Pg**	**17 40 24.4**	**-0.8**
KSL				S	**Sb**	**17 40 31.9**	**+0.1**
AKAS	**Kas**	**0.45**	**339**	*i* P	**Pg**	**17 40 25.3**	**-1.2**
AKAS				*i* S	**Sg**	**17 40 33.0**	**+0.4**
AKAS	**Kas**	**0.45**	**339**	P	**Pg**	**17 40 25.3**	**-1.2**
AKAS				S	**Sg**	**17 40 33.0**	**+0.4**
FETY	**Fethiye**	**1.00**	**325**	*e*PG	**Pb**	**17 40 36.5**	**-0.3**
FETY				*e*SG	**Sn**	**17 40 51.0**	**-0.3**
FETY	**Fethiye**	**1.00**	**325**	P	**Pb**	**17 40 35.7**	**-1.1**
FETY				S	**Sn**	**17 40 51.2**	**-0.1**
FETY	**Fethiye**	**1.00**	**325**	P	**Pb**	**17 40 35.7**	**-1.1**
FETY	**Fethiye**	**1.00**	**325**	*e*Pg	**Pb**	**17 40 36.5**	**-0.3**
FETY				*e*Sg	**Sn**	**17 40 51.0**	**-0.3**
KORT	**Korkueli**	**1.26**	**20**	*i* P	**Pn**	**17 40 40.3**	**-0.7**
KORT				*i* S	**Sg**	**17 40 58.8**	**+0.4**
KORT	**Korkueli**	**1.26**	**20**	P	**Pn**	**17 40 40.3**	**-0.7**
KORT				S	**Sg**	**17 40 58.8**	**+0.4**
ANTB	**Antalya**	**1.28**	**32**	*e*PN	**Pn**	**17 40 41.0**	**-0.1**
ANTB	**Antalya**	**1.28**	**32**	*e*Pn	**Pn**	**17 40 41.0**	**-0.1**
DALY	**Dalyan (Mu¨la**	**1.36**	**317**	*e*PN	**Pn**	**17 40 42.5**	**+0.3**
DALY	**Dalyan (Mu¨la**	**1.36**	**317**	*e*Pn	**Pn**	**17 40 42.5**	**+0.3**
GOLH	**Golhisar**	**1.43**	**352**	*i* P	**Pb**	**17 40 43.8**	**-0.3**
GOLH				*i* S	**Sg**	**17 41 04.5**	**+0.8**
GOLH	**Golhisar**	**1.43**	**352**	P	**Pb**	**17 40 43.8**	**-0.3**
GOLH				S	**Sg**	**17 41 04.6**	**+0.8**
TURN	**Turunc**	**1.43**	**318**	*i* P	**Pg**	**17 40 45.4**	**+0.3**
TURN				*i* S	**Sg**	**17 41 07.2**	**+3.5**
TURN	**Turunc**	**1.43**	**318**	P	**Pg**	**17 40 45.4**	**+0.3**
TURN				S	**Sg**	**17 41 07.2**	**+3.5**
BCK	**Bucak**	**1.76**	**21**	*e*PN	**Pn**	**17 40 48.0**	**+0.3**
BCK	**Bucak**	**1.76**	**21**	*e*Pn	**Pn**	**17 40 48.0**	**+0.3**
YER	**Yerkesik**	**1.80**	**318**	*e*PN	**Pn**	**17 40 48.8**	**+0.6**
YER	**Yerkesik**	**1.80**	**318**	P	**Pn**	**17 40 47.2**	**-1.0**
YER				S	**Sb**	**17 41 12.5**	**-0.3**
YER	**Yerkesik**	**1.80**	**318**	P	**Pn**	**17 40 47.2**	**-1.0**
YER	**Yerkesik**	**1.80**	**318**	*e*Pn	**Pn**	**17 40 48.8**	**+0.6**
YER				S	**Sb**	**17 41 12.5**	**-0.3**
DENT	**Denizli**	**2.03**	**343**	*e*PN	**Pn**	**17 40 51.7**	**+0.3**
DENT	**Denizli**	**2.03**	**343**	*e*Pn	**Pn**	**17 40 51.7**	**+0.3**
GAZI	**Gazipasa**	**2.08**	**78**	*i* P	**Pn**	**17 40 52.3**	**+0.2**
GAZI				*i* S	**Sn**	**17 41 17.9**	**+0.2**
GAZI	**Gazipasa**	**2.08**	**78**	P	**Pn**	**17 40 52.3**	**+0.2**
GAZI				S	**Sn**	**17 41 18.0**	**+0.2**
ISP	**Isparta**	**2.08**	**16**	*e*PN	**Pn**	**17 40 52.3**	**+0.1**
ISP	**Isparta**	**2.08**	**16**	P	**Pn**	**17 40 53.2**	**+1.0**
ISP	**Isparta**	**2.08**	**16**	Pn	**Pb**	**17 40 55.3**	**+0.1**
ISP	**Isparta**	**2.08**	**16**	*e*Pn	**Pn**	**17 40 52.3**	**+0.1**
ISP	**Isparta**	**2.08**	**16**	P	**Pn**	**17 40 53.2**	**+1.0**
AKMC	**Akamas** baz=307	**2.21**	**110**	P	**Pb**	**17 40 56.0**	**-1.3**
AKMC	**Akamas**	**2.21**	**110**	P	**Pb**	**17 40 56.0**	**-1.3**
NIS1	**Nisyros Isl.**	**2.26**	**291**	*e*PN	**Pn**	**17 40 55.7**	**+1.1**
NIS1	**Nisyros Isl.**	**2.26**	**291**	*e*Pn	**Pn**	**17 40 55.7**	**+1.1**
UZP	**Denizli**	**2.27**	**347**	*i* P	**Pb**	**17 40 57.7**	**-0.7**
UZP				*i* S	**Sb**	**17 41 27.5**	**+1.1**
BDRM	**Kayabasi**	**2.27**	**304**	*i* P	**Pn**	**17 40 55.6**	**+0.9**
BDRM				*i* S	**Sb**	**17 41 25.1**	**-1.3**
BDRM	**Kayabasi**	**2.27**	**304**	P	**Pn**	**17 40 55.6**	**+0.9**
PPCY	**Paphos** baz=310	**2.28**	**113**	P	**Pb**	**17 40 57.6**	**-0.8**
PPCY				S	**Sn**	**17 41 22.7**	**+0.1**
PPCY	**Paphos**	**2.28**	**113**	P	**Pb**	**17 40 57.6**	**-0.8**
PPCY				S	**Sn**	**17 41 22.7**	**+0.1**
BAGO	**Egridir - ISPA**	**2.31**	**20**	*i* P	**Pn**	**17 40 56.5**	**+1.2**
BAGO				*i* S	**Sb**	**17 41 28.7**	**+1.2**
BODT	**Bodrum**	**2.36**	**303**	*e*PN	**Pn**	**17 40 56.6**	**+0.6**
BODT	**Bodrum**	**2.36**	**303**	P	**Pn**	**17 40 54.7**	**-1.3**
BODT	**Bodrum**	**2.36**	**303**	*e*Pn	**Pn**	**17 40 56.6**	**+0.6**
ALFC	**Alefka** baz=301	**2.38**	**105**	P	**Pn**	**17 40 57.6**	**+1.5**
ALFC				S	**Sn**	**17 41 23.3**	**-1.8**
ALFC	**Alefka**	**2.38**	**105**	P	**Pn**	**17 40 57.6**	**+1.5**
ALFC				S	**Sn**	**17 41 23.3**	**-1.8**
AYDN	**Tasoluk**	**2.40**	**321**	*i* P	**Pb**	**17 40 58.9**	**-1.8**
AYDN				*i* S	**Sb**	**17 41 31.7**	**+1.5**
AYDN	**Tasoluk**	**2.40**	**321**	P	**Pb**	**17 40 58.9**	**-1.7**
KHL	**Karahalli**	**2.51**	**355**	*e*PN	**Pn**	**17 40 59.1**	**+1.0**
KHL	**Karahalli**	**2.51**	**355**	*e*Pn	**Pn**	**17 40 59.1**	**+1.0**
KHAL	**Karahalli**	**2.56**	**355**	*i* P	**Pn**	**17 40 58.2**	**-0.6**
KHAL				*i* S	**Sn**	**17 41 30.5**	**+0.7**
KHAL	**Karahalli**	**2.56**	**355**	P	**Pn**	**17 40 58.2**	**-0.6**
KHAL				S	**Sn**	**17 41 30.5**	**+0.7**
LEF	**Lefka**	**2.62**	**104**	*e*PN	**Pn**	**17 41 00.4**	**+1.0**
LEF	**Lefka**	**2.62**	**104**	*e*Pn	**Pn**	**17 41 00.4**	**+1.0**
AYDB	**Zeytinkoy-Aydi**	**2.62**	**325**	*e*PN	**Pn**	**17 41 00.5**	**+0.9**
AYDB	**Zeytinkoy-Aydi**	**2.62**	**325**	*e*Pn	**Pn**	**17 41 00.5**	**+0.9**
ERMK	**Ermenek**	**2.65**	**71**	*i* P	**Pb**	**17 41 02.7**	**-2.2**
ERMK				*i* S	**Sb**	**17 41 37.2**	**-0.1**
ERMK	**Ermenek**	**2.65**	**71**	P	**Pb**	**17 41 02.7**	**-2.2**
ERMK				S	**Sb**	**17 41 37.2**	**-0.1**
GCAM	**G?zelcaml?**	**2.79**	**313**	*i* P	**Pn**	**17 41 01.8**	**0.0**
GCAM				*i* S	**Sn**	**17 41 32.5**	**-2.8**
GCAM	**G?zelcaml?**	**2.79**	**313**	P	**Pn**	**17 41 01.8**	**0.0**
GCAM				S	**Sn**	**17 41 32.5**	**-2.8**
KMER	**Konya-Meram**	**2.84**	**46**	*i* P	**Pn**	**17 41 04.8**	**+2.2**
KMER				*i* S	**Sb**	**17 41 40.8**	**-1.9**
KMER	**Konya-Meram**	**2.84**	**46**	P	**Pn**	**17 41 04.8**	**+2.2**
KMER				S	**Sb**	**17 41 40.8**	**-1.9**
KULA	**Kula-Manisa**	**2.84**	**342**	*e*PN	**Pn**	**17 41 03.1**	**+0.5**
KULA	**Kula-Manisa**	**2.84**	**342**	P	**Pn**	**17 41 02.2**	**-0.4**
KULA	**Kula-Manisa**	**2.84**	**342**	P	**Pn**	**17 41 02.2**	**-0.4**
KULA	**Kula-Manisa**	**2.84**	**342**	*e*Pn	**Pn**	**17 41 03.2**	**+0.6**
KONT	**Konya--Tatoy**	**2.95**	**43**	*e*PN	**Pn**	**17 41 05.1**	**+1.0**
KONT	**Konya--Tatoy**	**2.95**	**43**	*e*Pn	**Pn**	**17 41 05.1**	**+1.0**
CSS	**Mathiatis**	**3.01**	**105**	Pn	**Pn**	**17 41 05.8**	**+1.0**
CSS	**Mathiatis**	**3.01**	**105**	Pn	**Pn**	**17 41 05.8**	**+1.0**
BOLV	**Bolvadin**	**3.04**	**17**	*i* P	**Pn**	**17 41 07.7**	**+2.3**
BOLV				*i* S	**Sn**	**17 41 44.7**	**+3.1**
BOLV	**Bolvadin**	**3.04**	**17**	P	**Pn**	**17 41 07.7**	**+2.3**
BOLV				S	**Sn**	**17 41 44.7**	**+3.1**
LFK	**Lefkose**	**3.09**	**99**	*e*PN	**Pn**	**17 41 07.8**	**+1.9**
LFK	**Lefkose**	**3.09**	**99**	*e*Pn	**Pn**	**17 41 07.8**	**+1.9**
LADK	**Ladik-KONYA**	**3.14**	**40**	*e*PN	**Pn**	**17 41 07.8**	**+1.1**
LADK	**Ladik-KONYA**	**3.14**	**40**	*e*Pn	**Pn**	**17 41 07.8**	**+1.1**
IKL	**Isikli**	**3.18**	**81**	*e*PN	**Pn**	**17 41 08.7**	**+1.6**
IKL	**Isikli**	**3.18**	**81**	*e*Pn	**Pn**	**17 41 08.7**	**+1.6**
KDHN	**Kadinhani**	**3.27**	**34**	*i* P	**Pn**	**17 41 09.7**	**+1.2**
KDHN				*i* S	**Sn**	**17 41 51.0**	**+3.6**
KDHN	**Kadinhani**	**3.27**	**34**	P	**Pn**	**17 41 09.7**	**+1.2**
KDHN				S	**Sn**	**17 41 51.0**	**+3.6**
GDZ	**Gediz**	**3.28**	**356**	*i* P	**Pn**	**17 41 07.5**	**-1.1**
GDZ				*i* S	**Sn**	**17 41 48.0**	**+0.5**
GDZ	**Gediz**	**3.28**	**356**	S	**Sn**	**17 41 48.0**	**+0.5**
GDZ	**Gediz**	**3.28**	**356**	P	**Pn**	**17 41 07.5**	**-1.2**
IZM	**Izmir**	**3.28**	**323**	*e*PN	**Pn**	**17 41 09.2**	**+0.6**
IZM	**Izmir**	**3.28**	**323**	*e*Pn	**Pn**	**17 41 09.2**	**+0.6**
DEMI	**Demirci**	**3.34**	**345**	*i* P	**Pn**	**17 41 08.5**	**-0.9**
DEMI				*i* S	**Sn**	**17 41 51.9**	**+3.0**
DEMI	**Demirci**	**3.34**	**345**	P	**Pn**	**17 41 08.5**	**-0.9**
DEMI				S	**Sn**	**17 41 51.9**	**+3.0**
BLCB	**Balcova**	**3.38**	**320**	*e*PN	**Pn**	**17 41 11.2**	**+1.3**
BLCB	**Balcova**	**3.38**	**320**	*e*Pn	**Pn**	**17 41 11.2**	**+1.3**
AKS	**Akhisar**	**3.44**	**333**	*e*PN	**Pn**	**17 41 11.7**	**+0.9**
AKS	**Akhisar**	**3.44**	**333**	*e*Pn	**Pn**	**17 41 11.7**	**+0.9**
KIZT	**Kizilcal**	**3.48**	**28**	*e*PN	**Pn**	**17 41 12.3**	**+0.9**
KIZT	**Kizilcal**	**3.48**	**28**	*e*Pn	**Pn**	**17 41 12.3**	**+0.9**
AUKIR	**K¨–rka- Seyitg**	**3.50**	**9**	*i* P	**Pn**	**17 41 13.5**	**+1.8**
AUKIR	**K¨–rka- Seyitg**	**3.50**	**9**	P	**Pn**	**17 41 13.5**	**+1.8**
EREN	**Erenkoy**	**3.57**	**93**	*e*PN	**Pn**	**17 41 14.9**	**+2.4**
EREN	**Erenkoy**	**3.57**	**93**	*e*Pn	**Pn**	**17 41 14.9**	**+2.4**
KIZK	**Mersin**	**3.58**	**78**	*i* P	**Pn**	**17 41 13.8**	**+1.2**
KIZK				*i* S	**Sn**	**17 41 57.6**	**+3.0**
KIZK	**Mersin**	**3.58**	**78**	P	**Pn**	**17 41 13.8**	**+1.2**
KIZK				S	**Sn**	**17 41 57.7**	**+3.0**
ZEY	**¨zmir**	**3.58**	**313**	*i* P	**Pn**	**17 41 12.1**	**-0.5**
ZEY				*i* S	**Sn**	**17 41 50.1**	**-4.2**
URLA	**Izmir**	**3.61**	**316**	*i* P	**Pn**	**17 41 15.6**	**+2.5**
URLA	**Izmir**	**3.61**	**316**	P	**Pn**	**17 41 15.6**	**+2.5**
TVSB	**Tavsanli**	**3.64**	**356**	*e*PN	**Pn**	**17 41 14.5**	**+0.9**
TVSB	**Tavsanli**	**3.64**	**356**	*e*Pn	**Pn**	**17 41 14.5**	**+0.9**
APE	**Apeiranthos**	**3.66**	**291**	*e*PN	**Pn**	**17 41 15.5**	**+1.6**
APE	**Apeiranthos**	**3.66**	**291**	*e*Pn	**Pn**	**17 41 15.5**	**+1.6**
CHBY	**Cihanbeyli**	**3.70**	**41**	*e*PN	**Pn**	**17 41 15.8**	**+1.3**
CHBY	**Cihanbeyli**	**3.70**	**41**	*e*Pn	**Pn**	**17 41 15.8**	**+1.3**
ESKT	**Eskisehir**	**3.79**	**12**	*i* P	**Pn**	**17 41 17.5**	**+1.8**
ESKT

MMLI	**Mount Malkishu**	**5.75**	**124**	Pn	**Pn**	**17 41 44.6**	**+2.1**
SLUM	**Salum**	**5.76**	**223**	P	**Pn**	**17 41 45.0**	**+2.3**
	baz=222						
SLUM	**Salum**	**5.76**	**223**	P	**Pn**	**17 41 45.0**	**+2.3**
HMDT	**Nahal Hemdat**	**5.93**	**125**	Pn	**Pn**	**17 41 47.3**	**+2.3**
HMDT				Sn	**Sn**	**17 42 53.4**	**+0.6**
HMDT	**Nahal Hemdat**	**5.93**	**125**	Pn	**Pn**	**17 41 47.3**	**+2.3**
HMDT				Sn	**Sn**	**17 42 53.4**	**+0.6**
AMAZ	**Amatzia**	**6.03**	**134**	Pn	**Pn**	**17 41 48.5**	**+2.1**
AMAZ	**Amatzia**	**6.03**	**134**	Pn	**Pn**	**17 41 48.5**	**+2.1**
KOT	**Kottamia**	**6.11**	**163**	P	**Pn**	**17 41 50.2**	**+2.7**
	baz=164						
KOT	**Kottamia**	**6.11**	**163**	P	**Pn**	**17 41 50.2**	**+2.7**
HHAG	**Hagoal**	**6.16**	**161**	P	**Pn**	**17 41 50.4**	**+2.3**
	baz=162						
HHAG	**Hagoal**	**6.16**	**161**	P	**Pn**	**17 41 50.4**	**+2.3**
HNAT	**Natroun**	**6.20**	**173**	P	Pn	17 41 53.6	+4.9
	baz=174						
DSI	**Dead Sea**	**6.29**	**131**	Pn	**Pn**	**17 41 52.1**	**+2.2**
DSI	**Dead Sea**	**6.29**	**131**	Pn	**Pn**	**17 41 52.1**	**+2.2**
REVI	**Revivim**	**6.29**	**138**	Pn	**Pn**	**17 41 51.4**	**+1.5**
REVI	**Revivim**	**6.29**	**138**	Pn	**Pn**	**17 41 51.4**	**+1.5**
GLL	**Jalalah**	**6.42**	**165**	P	**Pn**	**17 41 54.5**	**+2.7**
	baz=166						
GLL	**Jalalah**	**6.42**	**165**	P	**Pn**	**17 41 54.5**	**+2.7**
MZDA	**Masada**	**6.46**	**132**	Pn	**Pn**	**17 41 54.0**	**+1.8**
MZDA				Sn	**Sn**	**17 43 06.8**	**+1.1**
MZDA	**Masada**	**6.46**	**132**	Pn	**Pn**	**17 41 54.0**	**+1.8**
MZDA				Sn	**Sn**	**17 43 06.8**	**+1.1**
SUZ	**Suez**	**6.48**	**156**	P	**Pn**	**17 41 54.7**	**+2.1**
	baz=157						
SUZ	**Suez**	**6.48**	**156**	P	**Pn**	**17 41 54.7**	**+2.1**
HNKL	**Nakhl**	**6.84**	**148**	P	**Pn**	**17 41 59.0**	**+1.4**
	baz=149						
HNKL	**Nakhl**	**6.84**	**148**	P	**Pn**	**17 41 58.9**	**+1.4**
ASF	**Jabal al Asfar**	**6.92**	**120**	Pn	**Pn**	**17 41 59.9**	**+1.3**
	comp=E,0.6nm,0.3s,baz=246,slow=6.9,SNR=3.3						
PRNI	**Paran**	**6.98**	**140**	Pn	**Pn**	**17 42 00.9**	**+1.5**
PRNI				Sn	**Sn**	**17 43 17.5**	**-1.2**
PRNI	**Paran**	**6.98**	**140**	Pn	**Pn**	**17 42 00.9**	**+1.5**
KRMI	**Paran Flat**	**7.03**	**143**	Pn	**Pn**	**17 42 02.0**	**+1.9**
KRMI	**Paran Flat**	**7.03**	**143**	Pn	**Pn**	**17 42 02.0**	**+1.9**
HRFI	**Mount Harif**	**7.25**	**141**	Pn	**Pn**	**17 42 05.1**	**+2.0**
HRFI	**Mount Harif**	**7.25**	**141**	Pn	**Pn**	**17 42 05.1**	**+2.0**
MBRI	**Mt Berech**	**7.38**	**143**	Pn	**Pn**	**17 42 07.1**	**+2.1**
MBRI	**Mt Berech**	**7.38**	**143**	Pn	**Pn**	**17 42 07.1**	**+2.1**
EIL	**Elat**	**7.51**	**143**	Pn	**Pn**	**17 42 08.4**	**+1.8**
	comp=E,1.0nm,0.3s,baz=259,slow=1.9,SNR=9.8						
EIL				Sn	**Sn**	**17 43 31.0**	**-0.5**
	comp=E,0.9nm,0.3s,baz=323,slow=20,SNR=4.2						
EIL	**Elat**	**7.51**	**143**	Pn	**Pn**	**17 42 08.0**	**+1.4**
EIL	**Elat**	**7.51**	**143**	Pn	**Pn**	**17 42 08.0**	**+1.4**
DAVOX	**Davos/Dischmat**	**18.50**	**312**	LR	LR	17 52 54.9	
	comp=E,83nm,19.2s,baz=60,slow=41						
GEYT	**Alibeck**	**22.72**	**76**	P	**P**	**17 45 18.3**	**-0.7**
	comp=E,1.6nm,0.5s,baz=289,slow=4.5,SNR=3.7						
AKTO	**Aktyubinsk**	**25.06**	**46**	P	**P**	**17 45 39.2**	**-2.1**
	comp=E,0.8nm,0.4s,baz=239,slow=9.6,SNR=5.1						
FINES	**FINESS Array B**	**25.76**	**356**	P	**P**	**17 45 45.9**	**-1.7**
	comp=E,0.9nm,0.6s,baz=156,slow=10,SNR=6.3						
HFS	**Hagfors**	**26.47**	**342**	P	**P**	**17 45 54.3**	**+0.3**
	comp=E,0.8nm,0.5s,baz=137,slow=13,SNR=4.0						
ESDC	**Sonseca Array**	**26.88**	**288**	P	**P**	**17 45 59.0**	**+1.0**
	comp=E,0.2nm,0.4s,baz=84,slow=8.6,SNR=2.8						
TORD	**Torodi Ar. Bea**	**33.90**	**235**	P	**P**	**17 47 01.6**	**+1.5**
	comp=E,1.2nm,0.8s,baz=39,slow=8.7,SNR=7.9						
MKAR	**Makanchi Array**	**40.24**	**58**	P	**P**	**17 47 52.7**	**-1.1**
	comp=E,0.8nm,0.6s,baz=275,slow=7.4,SNR=13						
ZALV	**Zalesovo Beam**	**41.81**	**47**	P	**P**	**17 48 05.5**	**-1.1**
	comp=E,0.4nm,0.4s,baz=285,slow=7.3,SNR=3.0						
SONM	**Songino Array**	**56.12**	**52**	P	**P**	**17 49 57.1**	**+0.5**
	comp=E,0.7nm,0.4s,baz=283,slow=13,SNR=3.3						
CMAR	**Chiang Mai Arr**	**62.74**	**86**	P	**P**	**17 50 41.8**	**-0.8**
	comp=E,0.6nm,1.0s,baz=293,slow=8.8,SNR=6.4						
YKA	**Yellowknife Ar**	**77.93**	**344**	P	**P**	**17 52 13.3**	**-1.4**
	comp=E,0.2nm,0.6s,baz=33,slow=5.4,SNR=3.6						

IDC 15 17:46:33.1±3.5, **8°34S**×**119°52E**, **h192**km±31km, **mb3.3**/4, **mb1 3.3**/7, **mb1mx3.0**/45, **mbtmp3.8**/7, **Error ellipse: s-maj=101.4km s-min=12.7km az=62.0, Flores region**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
KAPI	**Kappang**	**3.31**	**4**	P	Pn	17 47 26.4	+0.3
	3.6nm,0.3s,baz=172,slow=9.9,SNR=11						
FITZ	**Fitzroy Crossi**	**11.39**	**149**	P	Pn	17 49 11.1	+0.7
	0.3nm,0.3s,baz=320,slow=8.3,SNR=11						
FITZ				S	Sn	17 51 12.9	-4.3
	0.4nm,0.3s,baz=174,slow=23,SNR=6.7						
WRA	**Warramunga Arr**	**18.41**	**130**	P	P	17 50 33.5	-0.6
	0.3nm,0.3s,baz=306,slow=12,SNR=24						
ASAR	**Alice Springs**	**20.55**	**140**	P	P	17 50 57.0	0.0
	0.8nm,0.4s,baz=315,slow=9.4,SNR=30						
STKA	**Stephens Creek**	**31.14**	**142**	P	P	17 52 35.1	+1.1
	1.1nm,0.5s,baz=307,slow=12,SNR=5.1						
MKAR	**Makanchi Array**	**64.11**	**332**	P	P	17 56 47.1	+0.3
	0.4nm,0.5s,baz=148,slow=7.6,SNR=13						
ZALV	**Zalesovo Beam**	**68.61**	**339**	P	P	17 57 14.3	-0.8
	1.2nm,0.3s,baz=147,slow=4.7,SNR=7.8						

IDC ***15*** *18:04:34.2*±*2.6, 37.20N*×*140.78E, h0km, mb3.7/2, mb1 3.7/3, mb1mx3.2/45, mbtmp3.5/3, ML2.8/1, Error ellipse: s-maj=44.5km s-min=34.3km az=36.0*
JMA ***15*** *18:04:36.5, 37.05N*×*140.66E, h7km*±*1km, M2.6*
ISC 15 18:04:35.4±1.5, **37.1N**±0.1×**140.58E**±0.07, **h5**km±14km, **n10**, σ**948**/10, **Eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.18**	**99**	P	**Pg**	**18 04 39.4**	**+0.5**
JFK	**Kawauchi**	**0.33**	**45**	P	**Pb**	**18 04 43.8**	**-0.1**
JFK				S	**Sb**	**18 04 48.9**	**-0.7**
JHO	**Hitachi**	**0.52**	**181**	P	**Pg**	**18 04 45.1**	**-0.3**
MJAR	**Matsushiro Arr**	**1.99**	**254**	Pn	**Pb**	**18 05 12.3**	**+0.1**
	2.8nm,0.3s,baz=72,slow=14,SNR=19						
MJAR				Sn	**Sb**	**18 05 37.8**	**+0.6**
	6.1nm,0.3s,baz=357,slow=14,SNR=15						
MAT	**Matsushiro**	**1.99**	**254**	P	**Pb**	**18 05 12.1**	**-0.1**
MAT				S	**Sg**	**18 05 38.9**	**-0.5**
SONM	**Songino Array**	**27.18**	**304**	P	**P**	**18 10 20.1**	**+0.2**
	1.1nm,0.5s,baz=127,slow=9.5,SNR=3.6						
H11N2	**WAKE ISLAND Hy**	**28.77**	**120**	T	T	18 40 15.9	
	baz=313,slow=75,SNR=9.1						
H11N1	**WAKE ISLAND Hy**	**28.78**	**120**	T	T	18 40 22.3	
	baz=313,slow=75,SNR=8.7						
H11N3	**WAKE ISLAND Hy**	**28.79**	**120**	T	T	18 40 20.6	
	baz=313,slow=75,SNR=8.5						
WRA	**Warramunga Arr**	**57.07**	**187**	P	**P**	**18 14 22.6**	**0.0**
	0.3nm,0.6s,baz=3.5,slow=7.0,SNR=5.3						

IDC 15 18:11:55.3±1.7, **0.19S**×**16.42W**, **h0**km, **mb3.9**/3, **mb1 4.1**/4, **mb1mx3.6**/38, **mbtmp4.1**/4, **ML4.5**/1, **MS3.5**/6, **Ms1 3.4**/6, **ms1mx3.1**/42, **Error ellipse: s-maj=60.2km s-min=25.7km az=141.0, North of Ascension Island**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
H10N2	**ASCENSION HYDR**	**7.83**	**166**	T	T	18 23 00.9	
	baz=343,slow=74,SNR=98						
H10N3	**ASCENSION HYDR**	**7.84**	**166**	T	T	18 22 59.1	
	baz=343,slow=74,SNR=148						
H10N1	**ASCENSION HYDR**	**7.85**	**166**	T	T	18 23 02.3	
	baz=343,slow=74,SNR=279						
H10S1	**ASCENSION HYDR**	**8.87**	**169**	T	T	18 24 18.4	
	baz=346,slow=74,SNR=62						
H10S3	**ASCENSION HYDR**	**8.88**	**169**	T	T	18 24 12.1	
	baz=346,slow=74,SNR=50						
H10S2	**ASCENSION HYDR**	**8.89**	**169**	T	T	18 24 19.8	
	baz=346,slow=74,SNR=61						
LIC	**Lamto**	**13.04**	**61**	*e*P	Pn	18 15 06.7	+4.7
	10nm,0.3s						
TIC	**Toumodi**	**13.25**	**59**	*e*P	Pn	18 15 06.8	+1.9
KIC	**Kosan Boka**	**13.35**	**61**	*e*P	Pn	18 15 09.2	+2.9
	12nm,0.5s						
DBIC	**Dimbokro**	**13.40**	**59**	Pn	Pn	18 15 08.8	+1.9
	2.5nm,0.3s,baz=231,slow=14,SNR=33						
DBIC				Sn	Sn	18 17 29.2	-7.6
	0.4nm,0.3s,baz=148,slow=13,SNR=3.2						
DBIC				LR	LR	18 19 55.5	
	comp=Z,102nm,18.3s,baz=242,slow=36						
TORD	**Torodi Ar. Bea**	**22.32**	**53**	P	P	18 16 56.5	+1.7
	7.0nm,0.8s,baz=238,slow=11,SNR=31						
TORD				S	S	18 21 01.5	+0.1
	0.6nm,0.6s,baz=232,slow=16,SNR=3.6						
TORD				LR	LR	18 25 04.8	
	comp=Z,73nm,18.5s,baz=160,slow=35						
KEST	**Kesra**	**43.05**	**31**	LR	LR	18 38 24.5	
	comp=Z,114nm,19.4s,baz=304,slow=37						
CPUP	**Villa Florida**	**47.18**	**233**	LR	LR	18 38 01.6	
	comp=Z,32nm,18.9s,baz=110,slow=33						
GERES	**GERESS Array B**	**55.33**	**24**	P	P	18 21 30.9	0.0
	0.3nm,0.5s,baz=216,slow=8.3,SNR=4.3						
NNA	**Nana**	**61.07**	**256**	LR	LR	18 47 07.7	
	comp=Z,38nm,18.1s,baz=16,slow=35						
PLCA	**Paso Flores**	**63.42**	**224**	LR	LR	18 48 43.7	
	comp=Z,39nm,18.2s,baz=177,slow=35						
FINES	**FINESS Array B**	**69.43**	**20**	P	P	18 23 04.8	-0.2
	1.2nm,0.6s,baz=228,slow=3.5,SNR=8.1						
ASAR	**Alice Springs**	**142.69**	**132**	PKP	PKPdf	18 31 29.4	-2.2
	0.2nm,0.8s,baz=210,slow=1.9,SNR=3.6						
WRA	**Warramunga Arr**	**145.06**	**127**	PKPbc	PKPbc	18 31 34.0	-1.1
	0.3nm,0.5s,baz=250,slow=2.7,SNR=6.2						

CSEM ***15*** *18:14:29.3*±*0.2, 38.43N*×*31.81E, h2km, MD2.5, Error ellipse: s-maj=4.3km s-min=3.5km az=59.0*
ISK 15 18:14:28.8, 38.44N×**31.83E, h5**km, **MD2.5, Turkey**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
KIZT	**Kizilcal**	**0.44**	**5**	*e*PG	Pg	18 14 38.0	+0.6
KIZT				*e*SG	Sb	18 14 44.9	-1.4
KIZT	**Kizilcal**	**0.44**	**5**	*e*Pg	Pg	18 14 38.0	+0.6
KIZT				*e*Sg	Sb	18 14 44.9	-1.3
LADK	**Ladik-KONYA**	**0.48**	**119**	*e*PG	Pg	18 14 38.4	+0.4
LADK				*e*SG	Sb	18 14 46.4	-0.8
LADK	**Ladik-KONYA**	**0.48**	**119**	*e*Pg	Pg	18 14 38.4	+0.3
LADK				*e*Sg	Sb	18 14 46.4	-0.8
KONT	**Konya--Tatoy**	**0.64**	**140**	*e*PG	Pg	18 14 41.7	+0.6
KONT				*e*SG	Sb	18 14 51.1	-0.7
KONT	**Konya--Tatoy**	**0.64**	**140**	*e*Pg	Pg	18 14 41.7	+0.5
KONT				*e*Sg	Sb	18 14 51.2	-0.6
CHBY	**Cihanbeyli**	**0.84**	**80**	*e*PG	Pb	18 14 45.9	-0.1
CHBY				*e*SG	Sb	18 14 57.3	-0.4
CHBY	**Cihanbeyli**	**0.84**	**80**	*e*Pg	Pb	18 14 45.9	-0.1
CHBY				*e*Sg	Sb	18 14 57.3	-0.4

IDC ***15*** *18:14:44.9*±*5.3, 22.45S*×*68.32W, h0km, mb4.0/1, mb1 3.7/2, mb1mx3.5/34, mbtmp3.6/2, ML3.1/1, Error ellipse: s-maj=158.0km s-min=55.6km az=69.0*
ISCJB ***15*** *18:15:03.4*±*0.8, 21.14S*±*0.04*×*68.76W*±*0.1, h143km*±*10km, mb3.6/1, Error ellipse: s-maj=19.0km s-min=6.3km az=0.7*
GUC ***15*** *18:15:03.7*±*0.5, 21.11S*×*68.66W, h131km*±*3km, ML3.7*
ISC 15 18:15:03.9±1.1, **21.14S**±0.05×**68.7W**±0.1, **h138**km±10km, **n14**, σ**059**/25, **3C, Chile-Bolivia border region**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PB01	**IPOC Station P**	**0.74**	**277**	*i* P	**Pn**	**18 15 25.3**	**-0.2**
PB01				*i* S	**Sn**	**18 15 41.7**	**-0.2**
PB09	**IPOC Station P**	**0.83**	**218**	*i* P	**Pn**	**18 15 26.4**	**+0.2**
PB09				*i* S	**Sn**	**18 15 43.3**	**0.0**
PB09				IAML		18 15 44.6	
	comp=N,2μm,0.8s						
PB08	**IPOC Station P**	**1.08**	**337**	*i* P	**Pn**	**18 15 28.7**	**0.0**
PB08				*i* S	**Sn**	**18 15 47.5**	**0.0**
PB07	**IPOC Station P**	**1.25**	**242**	*i* P	**Pn**	**18 15 30.4**	**+0.4**
PB07				*i* S	**Sn**	**18 15 50.8**	**+0.7**
PB07				IAML		18 15 51.9	
	comp=N,1μm,0.2s						
PATCX	**Punta Patache**	**1.39**	**283**	*i* P	**Pn**	**18 15 32.1**	**+0.6**
PATCX				*i* S	**Sn**	**18 15 53.2**	**+0.7**
PATCX				IAML		18 15 56.4	
	comp=E,1μm,0.2s						
HMBC	**Humberstone**	**1.40**	**307**	*i* P	**Pn**	**18 15 31.7**	**+0.1**
HMBC				*i* S	**Sn**	**18 15 52.9**	**+0.1**
HMBC				IAML		18 15 53.7	
	comp=N,813nm,0.3s						
PB11	**IPOC Station P**	**1.64**	**327**	*i* P	**Pn**	**18 15 34.1**	**-0.2**
PB11				*i* S	**Sn**	**18 15 57.4**	**0.0**
PB11				IAML		18 15 59.8	
	comp=N,2μm,0.2s						
PB06	**IPOC Station P**	**1.76**	**207**	*e*P	**Pn**	**18 15 35.6**	**0.0**
PB06				*e*S	**Sn**	**18 15 60.0**	**+0.1**
PB06				IAML		18 16 00.5	
	comp=E,356nm,0.2s						
PB04	**IPOC Station P**	**1.80**	**228**	*i* P	**Pn**	**18 15 36.6**	**+0.6**
PB04				*e*S	**Sn**	**18 16 00.9**	**+0.2**
PB04				IAML		18 16 01.9	
	comp=E,406nm,0.2s						
PSGC	**Pisagua**	**2.03**	**319**	*e*P	**Pn**	**18 15 38.3**	**-0.5**
PSGC				*e*S	**Sn**	**18 16 05.0**	**-0.6**
MNMC	**Minye Minye**	**2.17**	**337**	*i* P	**Pn**	**18 15 40.9**	**+0.2**
MNMC				*i* S	**Sn**	**18 16 09.0**	**+0.3**
MNMC				IAML		18 16 11.2	
	comp=N,692nm,0.3s						
LPAZ	**La Paz**	**4.86**	**6**	Pn	**Pn**	**18 16 17.4**	**+1.6**
	comp=N,0.2nm,0.3s,baz=181,slow=6.3,SNR=4.1						
TORD	**Torodi Ar. Bea**	**77.05**	**70**	P	**P**	**18 26 41.0**	**-1.2**
	comp=N,0.8nm,0.5s,baz=259,slow=5.0,SNR=7.8						
MKAR	**Makanchi Array**	**145.23**	**36**	PKPbc	**PKPab**	**18 34 25.9**	**+0.7**
	comp=N,0.4nm,0.7s,baz=321,slow=3.1,SNR=4.4						

ISK ***15*** *18:15:28.9, 37.08N*×*29.07E, h10km, MD3.1*
DDA ***15*** *18:15:29.5, 37.08N*×*29.05E, h7km, Md3.1*
CSEM ***15*** *18:15:29.6*±*0.1, 37.09N*×*29.06E, h8km, MD3.1, Error ellipse: s-maj=3.0km s-min=2.8km az=27.0*
ISC 15 18:15:29.4±1.2, **37.10N**±0.02×**29.08E**±0.02, **h3**km±10km, **n38**, σ**038**/51, **Turkey**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
DALY	**Dalyan (Mu˘la**	**0.44**	**230**	*e*PG	**Pg**	**18 15 37.8**	**-0.1**
DALY				*e*SG	**Sg**	**18 15 44.0**	**+0.4**
DALY	**Dalyan (Mu˘la**	**0.44**	**230**	*e*Pg	**Pg**	**18 15 37.8**	**-0.1**
DALY				*e*Sg	**Sg**	**18 15 44.1**	**+0.4**
TURN	**Turunc**	**0.44**	**239**	*i* P	**Pn**	**18 15 43.1**	**+0.4**
TURN				*i* S	Sb	18 15 53.8	+6.9
TURN	**Turunc**	**0.44**	**239**	S	Sb	18 15 53.8	+6.9
FETY	**Fethiye**	**0.47**	**179**	*e*PG	**Pg**	**18 15 37.8**	**-0.6**
FETY				*e*SG	**Sg**	**18 15 44.7**	**+0.2**
FETY	**Fethiye**	**0.47**	**179**	*e*Pg	**Pg**	**18 15 37.8**	**-0.6**
FETY				*e*Sg	**Sg**	**18 15 44.7**	**+0.2**
YER	**Yerkesik**	**0.63**	**273**	*e*PG	**Pg**	**18 15 41.6**	**0.0**
YER	**Yerkesik**	**0.63**	**273**	*e*Pg	**Pg**	**18 15 41.6**	**0.0**
DENT	**Denizli**	**0.65**	**357**	*e*PG	**Pg**	**18 15 42.2**	**+0.3**
DENT	**Denizli**	**0.65**	**357**	*e*Pg	**Pg**	**18 15 42.2**	**+0.3**
UZP	**Denizli**	**0.93**	**5**	*i* P	**Pg**	**18 15 47.5**	**+0.2**
UZP				*i* S	**Sb**	**18 16 01.5**	**+0.4**
AKAS	**Kas**	**0.97**	**154**	*i* P	**Pg**	**18 15 47.9**	**-0.1**
AKAS				*i* S	**Sn**	**18 16 04.5**	**+0.1**
AKAS	**Kas**	**0.97**	**154**	P	**Pg**	**18 15 47.9**	**-0.1**
AKAS				S	**Sn**	**18 16 04.5**	**+0.1**
KORT	**Korkueli**	**1.02**	**95**	*i* P	**Pb**	**18 15 49.6**	**-0.3**
KORT				*i* S	**Sn**	**18 16 05.9**	**+0.1**
KORT	**Korkueli**	**1.02**	**95**	P	**Pb**	**18 15 49.6**	**-0.3**
KORT				S	**Sn**	**18 16 05.9**	**+0.1**
AYDN	**Tasoluk**	**1.10**	**301**	*i* P	**Pg**	**18 15 50.8**	**+0.2**
AYDN				*i* S	**Sb**	**18 16 06.2**	**+0.2**
AYDN	**Tasoluk**	**1.10**	**301**	P	**Pg**	**18 15 50.8**	**+0.2**
AYDN				S	**Sb**	**18 16 06.2**	**+0.2**
BCK	**Bucak**	**1.26**	**73**	*e*PN	**Pg**	**18 15 53.4**	**-0.2**
BCK	**Bucak**	**1.26**	**73**	*e*Pn	**Pg**	**18 15 53.4**	**-0.2**
AYDB	**Zeytinkoy-Aydi**	**1.26**	**312**	*e*PN	**Pg**	**18 15 53.2**	**-0.5**
AYDB	**Zeytinkoy-Aydi**	**1.26**	**312**	*e*Pn	**Pg**	**18 15 53.2**	**-0.5**
KHL	**Karahalli**	**1.27**	**16**	*e*PN	**Pb**	**18 15 54.0**	**-0.1**
KHL	**Karahalli**	**1.27**	**16**	*e*Pn	**Pb**	**18 15 54.0**	**-0.1**
ANTB	**Antalya**	**1.28**	**99**	*e*PN	**Pg**	**18 15 53.4**	**-0.6**
ANTB	**Antalya**	**1.28**	**99**	*e*Pn	**Pg**	**18 15 53.4**	**-0.6**
BDRM	**Kayabasi**	**1.30**	**269**	*i* P	**Pg**	**18 15 54.5**	**0.0**
BDRM				*i* S	**Sn**	**18 16 12.6**	**+0.1**
BDRM	**Kayabasi**	**1.30**	**269**	P	**Pg**	**18 15 54.5**	**0.0**
BDRM	**Kayabasi**	**1.30**	**269**	S	**Sn**	**18 16 12.6**	**0.0**
KHAL	**Karahalli**	**1.31**	**14**	*i* P	**Pb**	**18 15 54.5**	**-0.2**
KHAL				*i* S	**Sn**	**18 16 12.4**	**-0.4**
KHAL	**Karahalli**	**1.31**	**14**	P	**Pb**	**18 15 54.5**	**-0.2**
KHAL				S	**Sn**	**18 16 12.4**	**-0.4**
BODT	**Bodrum**	**1.41**	**269**	*e*PN	**Pn**	**18 15 55.5**	**-0.6**
BODT	**Bodrum**	**1.41**	**269**	*e*Pn	**Pn**	**18 15 55.5**	**-0.6**
KULA	**Kula-Manisa**	**1.45**	**347**	*e*PN	**Pn**	**18 15 56.1**	**-0.5**
KULA	**Kula-Manisa**	**1.45**	**347**	*e*Pn	**Pn**	**18 15 56.1**	**-0.5**
TVSB	**Tavsanli**	**2.36**	**7**	*e*PN	**Pn**	**18 16 09.1**	**-0.1**
TVSB	**Tavsanli**	**2.36**	**7**	*e*Pn	**Pn**	**18 16 09.1**	**-0.1**
IKL	**Isikli**	**3.81**	**102**	*e*PN	**Pn**	**18 16 29.9**	**+1.0**
IKL	**Isikli**	**3.81**	**102**	*e*Pn	**Pn**	**18 16 29.9**	**+1.0**

NEIC ***15*** *18:21:31.9, 38.39N*×*118.75W, h10km, MW3.5, ML4.0(REN), Moment Tensor Solution. s29 Moment tensor: Scale 10¹⁴Nm; Mrr=0.75; Mθθ-1.18; Mφφ1.92; Mrθ0.96; Mθφ-0.82; Mrφ0.98; Best double couple: Mo2.30000×10¹⁴ NP1:φ307.00000°, δ52.00000°, λ-161.00000°. NP2:φ205.00000°, δ75.00000°, λ-40.00000°. Principal axes: T 2.3100, Plg15.0000°, Azm261.0000°; N 0.0000, Plg48.0000°, Azm8.0000°; P -2.3200, Plg38.0000°, Azm159.0000°; After REN.*
NEIC Felt [II] at Hawthorne.
ISCJB ***15*** *18:21:32.2*±*0.2, 38.40N*±*0.02*×*118.73W*±*0.02, h10km, mb2.7/2 Error ellipse: s-maj=3.0km s-min=2.7km az=18.5*
IDC ***15*** *18:21:33.1*±*1.1, 38.53N*×*118.73W, h0km, mb2.9/2, mb1 3.3/4, mb1mx3.2/44, mbtmp3.0/4, ML3.7/2, MS2.9/1, Ms1 2.9/1, ms1mx2.4/14, Error ellipse: s-maj=16.8km s-min=6.3km az=29.0*
ISC 15 18:21:32.1±0.6, **38.28N**±0.02×**118.78W**±0.02, **h10**km, **n85**, σ**2914**/110, **California-Nevada border region**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
NV01	**Mina Array Sit**	**0.40**	**68**	*e*Pg	**Pg**	**18 21 38.4**	**-1.7**
NV01				*e*Sg	**Sg**	**18 21 43.5**	**-1.9**
NVAR	**Mina Array Bea**	**0.40**	**68**	Pg	**Pg**	**18 21 38.4**	**-1.7**
	767nm,0.3s,baz=258,slow=20,SNR=1191						
NVAR				Lg	Lg	18 21 44.0	
	3μm,0.3s,baz=256,slow=33,SNR=89						
NV11	**Mina Array Sit**	**0.51**	**73**	*e*Pg	**Pg**	**18 21 41.0**	**-1.1**
NV11				*e*Sg	**Sg**	**18 21 47.3**	**-1.6**
WAKR	**Walker**	**0.56**	**294**	*e*Pg	**Pg**	**18 21 42.7**	**-0.4**
WAKR				*e*Sg	**Sg**	**18 21 51.1**	**+0.5**
MLAC	**Mammoth, Mammo**	**0.65**	**184**	P	**Pn**	**18 21 46.6**	**-1.0**
	baz=4.9						
MLAC				S	**Sn**	**18 21 56.9**	**-1.2**
	baz=4.9						
MTUM	**Tungsten Hills**	**0.94**	**170**	*e*Pg	**Pn**	**18 21 51.8**	**+0.2**
CMB	**Columbia Colle**	**1.29**	**260**	*e*Pg	**Pb**	**18 21 56.3**	**-0.2**
CMB				*e*Sg	**Sb**	**18 22 11.9**	**-1.2**
TIN	**Tinemaha, Big**	**1.30**	**160**	P	**Pg**	**18 21 58.2**	**+1.2**
	baz=343						
GRAC	**Grapevine Rang**	**1.70**	**138**	P	**Pb**	**18 22 03.4**	**-0.1**
	baz=322						
GRAC				Sb	**Sg**	**18 22 29.4**	**+2.6**
	baz=322						
AFDM	**Forest Hills D**	**1.84**	**292**	*e*Pn	**Pn**	**18 22 04.3**	**+0.5**
AFDM				*e*Sn	**Sn**	**18 22 24.4**	**-2.8**
DAC	**Darwin (Calif)**	**2.21**	**154**	*e*Pn	**Pb**	**18 22 10.8**	**-1.5**
OHCM	**Honcut**	**2.36**	**297**	*e*Sn	**Sb**	**18 22 44.3**	**+0.4**
TPNV	**Topopah Spring**	**2.41**	**123**	P	**Pn**	**18 22 13.0**	**+1.3**
	baz=307						
TPNV	**Topopah Spring**	**2.41**	**123**	*e*Pn	**Pb**	**18 22 13.2**	**-2.4**
MPMC	**Manual Prospec**	**2.44**	**155**	P	**Pb**	**18 22 14.1**	**-2.2**
	baz=337						
BMN	**Battle Mountai**	**2.46**	**29**	*e*Pn	**Pn**	**18 22 10.4**	**-2.1**
BMN				*e*Sn	**Sn**	**18 22 42.9**	**+0.2**
ORV	**Oroville**	**2.48**	**302**	*e*Pn	**Pn**	**18 22 12.7**	**+0.1**
ORV				*e*Sn	**Sb**	**18 22 45.2**	**-2.0**
R11A

BW06	**Boulder Array**	**8.33**	**55**	*e*Pn		**Pn**	**18 23 36.1**	**+3.0**
PD31	**Pinedale Array**	**8.33**	**55**	*e*Pn		**Pn**	**18 23 36.2**	**+3.1**
PD31				*e*Lg		Lg	18 25 52.9	
PDAR	**Pinedale Array**	**8.33**	**55**	Pn		**Pn**	**18 23 34.7**	**+1.6**
	0.1nm,0.3s,baz=243,slow=13,SNR=6.9							
PDAR				Lg		Lg	18 25 52.9	
	0.3nm,0.3s,baz=224,slow=32,SNR=4.6							
RPW	**Rockport**	**10.36**	**350**	*e*Sn		**Sn**	**18 25 54.6**	**-2.2**
TXAR	**Lajitas Array**	**15.39**	**121**	LR		LR	18 31 14.2	
	comp=Z,46nm,18.3s,baz=0.0,slow=38							
U34A	**Anderson Ranch**	**16.99**	**90**	*e*Pn		**P**	**18 25 31.2**	**-0.5**
JCT	**Junction City**	**17.47**	**111**	*e*Pn		**P**	**18 25 43.3**	**+6.2**
YKA	**Yellowknife Ar**	**24.38**	**5**	P		**P**	**18 26 51.5**	**+1.4**
	0.1nm,0.6s,baz=181,slow=9.5,SNR=5.9							
YKB5	**Yellowknife Ar**	**24.38**	**5**	*e*P		**P**	**18 26 51.5**	**+1.4**
ILAR	**Eielson Array**	**31.25**	**337**	P		**P**	**18 27 52.3**	**+0.7**
	0.2nm,0.8s,baz=158,slow=7.4,SNR=2.8							
ILB	**Eielson Array**	**31.25**	**337**	*e*P		**P**	**18 27 52.3**	**+0.7**

IDC ***15*** *18:23:55.7±1.1, 10.°69N×91.°66E, h0km, mb3.8/7, mb1 3.9/8, mb1mx3.6/45, mbtmp3.8/8, ML3.5/1, MS3.3/2, Ms1 3.3/2, ms1mx2.7/40, Error ellipse: s-maj=35.0km s-min=19.8km az=70.0*

ISCJB ***15*** *18:23:56.5±0.6, 10.°68N±0.°07×91.°75E±0.°10, h17km, mb4.0/13, MS3.3/2, Error ellipse: s-maj=14.4km s-min=9.9km az=162.7*

NEIC ***15*** *18:24:01.8±2.1, 10.°70N×91.°75E, h42km±17km, mb4.3/7, Error ellipse: s-maj=18.9km s-min=8.1km az=61.0*

ISC 15 18:23:58.2±1.0, 10.°7N±0.°1×91.°7E±0.°2, h17km, n28, σ0s77/26, mb4.0/13, Andaman Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CM01	**Chiang Mai Arr**	**10.45**	**42**	*e*Pn	**Pn**	**18 26 29.5**	**+2.0**
CM31	**Chiang Mai Arr**	**10.47**	**41**	*e*Pn	**Pn**	**18 26 27.2**	**-0.4**
CMAR	**Chiang Mai Arr**	**10.47**	**41**	Pn	**Pn**	**18 26 26.9**	**-0.8**
	0.1nm,0.3s,baz=238,slow=15,SNR=6.0						
LSA	**Lhasa**	**18.96**	**359**	*e*P	**Pn**	**18 28 21.8**	**+1.9**
	3.1nm,0.8s						
ENH	**Enshi**	**25.61**	**38**	*e*P	**P**	**18 29 26.7**	**-0.1**
	7.6nm,0.7s						
MK01	**Makanchi Array**	**36.87**	**349**	*e*P	**P**	**18 31 05.8**	**0.0**
MK31	**Makanchi Array**	**36.90**	**349**	*e*P	**P**	**18 31 06.0**	**0.0**
MK32	**Makanchi Array**	**36.90**	**349**	*e*P	**P**	**18 31 05.1**	**-0.9**
MKAR	**Makanchi Array**	**36.90**	**349**	P	**P**	**18 31 05.1**	**-0.9**
	0.7nm,0.6s,baz=165,slow=8.1,SNR=12						
MKAR	**Makanchi Array**	**36.90**	**349**	*e*P	**P**	**18 31 06.4**	**+0.4**
JOW	**Kunigami**	**38.03**	**60**	*e*P	**P**	**18 31 15.8**	**-0.1**
	26nm,1.0s						
SONA0	**Songino Array**	**39.08**	**16**	*e*P	**P**	**18 31 24.1**	**-0.5**
	5.1nm,1.4s						
SONM	**Songino Array**	**39.08**	**16**	P	**P**	**18 31 24.1**	**-0.5**
	0.9nm,0.4s,baz=201,slow=7.9,SNR=3.6						
KURBB	**Kurchatov Arra**	**41.30**	**347**	P	**P**	**18 31 42.7**	**0.0**
	0.5nm,0.7s,baz=161,slow=7.4,SNR=4.5						
KURK	**Kurchatov**	**41.37**	**347**	*e*P	**P**	**18 31 42.7**	**-0.6**
JNU	**Nakatsue**	**42.34**	**52**	LR	LR	18 51 15.7	
	comp=Z,32nm,19.4s,baz=298,slow=39						
ZAA0	**Zalesovo Array**	**43.53**	**354**	*e*P	**P**	**18 32 00.6**	**-0.2**
ZALV	**Zalesovo Beam**	**43.53**	**354**	P	**P**	**18 32 01.1**	**+0.2**
	0.4nm,0.3s,baz=183,slow=11,SNR=4.7						
ZAA1	**Zalesovo Array**	**43.54**	**354**	*e*P	**P**	**18 32 01.1**	**+0.2**
WR1	**Warramunga Arr**	**51.84**	**126**	*e*P	**P**	**18 33 06.3**	**+0.4**
	30nm,1.9s						
WRA	**Warramunga Arr**	**51.84**	**126**	P	**P**	**18 33 06.3**	**+0.4**
	1.0nm,0.8s,baz=304,slow=8.6,SNR=5.6						
ASAR	**Alice Springs**	**53.55**	**130**	P	**P**	**18 33 18.9**	**+0.4**
	1.5nm,0.9s,baz=308,slow=7.2,SNR=17						
AS31	**Alice Springs**	**53.55**	**130**	*e*P	**P**	**18 33 19.0**	**+0.5**
	0.9nm,1.0s						
AS01	**Alice Springs**	**53.58**	**130**	*e*P	**P**	**18 33 18.4**	**-0.3**
PMG	**Port Moresby**	**58.67**	**108**	LR	LR	19 05 13.7	
	comp=Z,29nm,18.8s,baz=288,slow=42						
TIXI	**Tiksi**	**65.03**	**12**	*e*P	**P**	**18 34 36.0**	**-1.1**
	7.9nm,1.8s						
PEA0	**Petropavlovsk-**	**67.21**	**37**	*e*P	**P**	**18 34 51.1**	**-0.4**
BOSA	**Boshof**	**75.04**	**237**	P	**P**	**18 35 39.9**	**+0.4**
	2.3nm,0.8s,baz=100,slow=6.1,SNR=3.6						

WEL 15 18:27:11.2±0.2, 38.°31S×178.°83E, h30km±1km, ML3.9/16, 8C-2D, Error ellipse: s-maj=2.2km s-min=0.9km az=90.0, Off east coast of North Island

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PUZ	**Puketiti**	**0.51**	**298**	⇓P*	Pb	18 27 21.3	-0.5
PUZ				S*	Sb	18 27 29.4	+0.3
PUZ				AML	AML	18 27 30.7	
CNGZ	**Carnagh Statio**	**0.52**	**250**	P*	Pb	18 27 22.2	+0.3
WMGZ	**Waiomatatini S**	**0.59**	**326**	⇑P*	Pb	18 27 23.0	-0.1
WMGZ				S*	Sn	18 27 32.1	0.0
TWGZ	**Tauwhareparae**	**0.68**	**281**	⇑PN	Pb	18 27 24.4	-0.3
TWGZ				SN	Sn	18 27 34.4	-0.2
PKGZ	**Pakihiroa**	**0.73**	**305**	⇑PN	Pb	18 27 24.8	-0.6
PKGZ				SN	Sb	18 27 35.2	-0.1
TKGZ	**Te Karaka**	**0.78**	**260**	PN	Pb	18 27 25.6	-0.5
TKGZ				SN	Sb	18 27 36.5	-0.1
MXZ	**Matakaoa Point**	**0.85**	**331**	PN	Pn	18 27 26.8	-0.3
MXZ				AML	AML	18 27 27.3	
MXZ				AML	AML	18 27 27.3	
MXZ				AML	AML	18 27 39.5	
RIGZ	**Rimuhau**	**0.93**	**244**	PN	Pn	18 27 27.6	-0.6
PRGZ	**Paritu Road**	**0.96**	**230**	PN	Pn	18 27 28.3	-0.4
HAZ	**Te Kaha**	**1.00**	**303**	PN	Pn	18 27 28.2	-0.9
MWZ	**Matawai**	**1.03**	**268**	PN	Pn	18 27 28.8	-0.8
MWZ				SN	Sn	18 27 41.9	-1.1
MWZ				AML	AML	18 27 42.5	
MWZ				AML	AML	18 27 42.5	
MWZ				AML	AML	18 27 42.5	
MHGZ	**Mahia Peninsul**	**1.11**	**220**	PN	Pn	18 27 30.1	-0.6
RAGZ	**Rawiri**	**1.13**	**260**	PN	Pn	18 27 30.6	-0.4
KNZ	**Kokohu**	**1.15**	**232**	PN	Pn	18 27 30.4	-0.9
SNGZ	**Shannon Statio**	**1.26**	**248**	⇑PN	Pn	18 27 32.0	-0.8
URZ	**Urewera**	**1.35**	**272**	⇑PN	Pn	18 27 33.8	-0.3
URZ				AML	AML	18 27 51.7	
URZ				AML	AML	18 27 52.3	
WHHZ	**Waihua**	**1.47**	**238**	PN	Pn	18 27 35.3	-0.3
RAHZ	**Arahi**	**1.50**	**246**	PN	Pn	18 27 35.3	-0.7
EDRZ	**Edgecumbe**	**1.66**	**276**	PN	Pn	18 27 38.5	+0.2
EDRZ				AML	AML	18 27 59.6	
EDRZ				AML	AML	18 28 11.1	
ARHZ	**Aropaoanui**	**1.72**	**236**	PN	Pn	18 27 38.6	-0.5
NMHZ	**Naumai**	**1.77**	**243**	PN	Pn	18 27 39.4	-0.4
RRRZ	**Republican Roa**	**1.82**	**268**	PN	Pn	18 27 40.4	-0.1
TARZ	**Mount Tarawera**	**1.83**	**272**	PN	Pn	18 27 40.7	-0.1
OPRZ	**Ohinepanea**	**1.86**	**284**	⇑PN	Pn	18 27 40.1	-0.8
PRRZ	**Plateau Road**	**1.93**	**264**	PN	Pn	18 27 41.7	-0.2
HLRZ	**Highlands Stat**	**1.95**	**271**	PN	Pn	18 27 41.6	-0.7
MRHZ	**Matea Rd**	**1.96**	**254**	PN	Pn	18 27 42.1	-0.4
ALRZ	**Allen Road**	**1.97**	**262**	PN	Pn	18 27 42.3	-0.2
MCHZ	**McNeill Hill**	**2.02**	**235**	PN	Pn	18 27 42.8	-0.4
BKZ	**Black Stump Fm**	**2.02**	**244**	PN	Pn	18 27 42.8	-0.5
BKZ				SN	Sn	18 28 05.8	-1.7
BKZ				AML	AML	18 28 08.3	
KARZ	**Kaharoa**	**2.06**	**277**	⇓PN	Pn	18 27 43.3	-0.5
TGRZ	**Tauranga**	**2.11**	**285**	PN	Pn	18 27 43.6	-0.8
KAHZ	**Kahuranaki**	**2.12**	**225**	PN	Pn	18 27 43.5	-1.2
KWHZ	**Kaweka Forest**	**2.19**	**239**	PN	Pn	18 27 44.6	-0.9
PXZ	**Pawanui**	**2.30**	**221**	PN	Pn	18 27 45.0	-2.0
PXZ				AML	AML	18 28 13.2	
PXZ				AML	AML	18 28 13.5	
KRHZ	**Kereru**	**2.33**	**234**	PN	Pn	18 27 46.3	-1.3
BHHZ	**Black Hill Sta**	**2.46**	**241**	PN	Pn	18 27 48.5	-0.9
WPHZ	**Waipukurau**	**2.55**	**226**	PN	Pn	18 27 48.8	-1.8
PRHZ	**Porangahau**	**2.59**	**220**	PN	Pn	18 27 48.8	-2.3
PNHZ	**Pukenui**	**2.60**	**231**	PN	Pn	18 27 49.4	-1.9
KRVZ	**Karewarewa**	**2.62**	**252**	PN	Pn	18 27 50.7	-0.8
OTVZ	**Oturere**	**2.62**	**250**	PN	Pn	18 27 50.8	-0.8
MOVZ	**Moawhango**	**2.64**	**245**	PN	Pn	18 27 51.0	-0.8
NGZ	**Ngauruhoe**	**2.67**	**250**	PN	Pn	18 27 51.5	-0.8
TOZ	**Tahuroa Road**	**2.69**	**281**	PN	Pn	18 27 51.6	-0.9
WHVZ	**Whangaehu Hut**	**2.71**	**248**	PN	Pn	18 27 52.5	-0.4
WNVZ	**Wahianoa**	**2.72**	**247**	PN	Pn	18 27 52.3	-0.7
FWVZ	**Far West T-bar**	**2.73**	**249**	PN	Pn	18 27 52.7	-0.5
FWVZ				AML	AML	18 28 29.5	
ANWZ	**Angora Road**	**2.82**	**220**	PN	Pn	18 27 51.6	-2.6
TSZ	**Takapari Road**	**2.83**	**231**	PN	Pn	18 27 52.5	-1.9
MTVZ	**Mangateitei**	**2.84**	**247**	PN	Pn	18 27 53.8	-0.7
MTVZ				AML	AML	18 28 30.3	
MTVZ				AML	AML	18 28 33.2	
DVHZ	**Dannevirke**	**2.87**	**225**	⇑PN	Pn	18 27 52.6	-2.3
KUZ	**Kuaotunu**	**2.92**	**301**	PN	Pn	18 27 54.3	-1.3
BFZ	**Birch Farm**	**3.10**	**219**	PN	Pn	18 27 55.0	-3.1
HIZ	**Hauiti**	**3.13**	**265**	PN	Pn	18 27 58.6	+0.1
MKAZ	**Moumakai**	**3.15**	**291**	⇑PN	Pn	18 27 57.8	-0.9
PRWZ	**Pori Road**	**3.15**	**224**	PN	Pn	18 27 56.5	-2.3
POWZ	**Post Office Ro**	**3.16**	**228**	PN	Pn	18 27 57.0	-1.9
WAZ	**Wanganui**	**3.33**	**243**	PN	Pn	18 28 01.0	-0.1
TIWZ	**Tintock**	**3.35**	**222**	PN	Pn	18 27 58.8	-2.8
TIWZ				AML	AML	18 28 41.2	
TIWZ				AML	AML	18 28 43.0	
MRZ	**Mangatainoka R**	**3.44**	**226**	PN	Pn	18 28 00.0	-2.7
TMWZ	**Te Maipa**	**3.60**	**218**	PN	Pn	18 28 01.3	-3.7
HOWZ	**Holdsworth Sta**	**3.64**	**224**	PN	Pn	18 28 02.2	-3.3
OGWZ	**Otaki Gorge**	**3.78**	**227**	PN	Pn	18 28 04.5	-2.9
MTW	**Mount Morrison**	**3.83**	**221**	PN	Pn	18 28 03.6	-4.5
TRWZ	**Traveller**	**3.92**	**217**	PN	Pn	18 28 05.0	-4.4
KIW	**Kapiti Island**	**3.96**	**229**	PN	Pn	18 28 06.9	-2.9
CAW	**Cannon Point**	**4.03**	**225**	PN	Pn	18 28 07.2	-3.6
CAW				AML	AML	18 28 54.3	
PAWZ	**Paruwai Farm**	**4.04**	**219**	PN	Pn	18 28 06.6	-4.3
PAWZ				AML	AML	18 28 56.2	
MSWZ	**Moikau Station**	**4.15**	**221**	PN	Pn	18 28 08.2	-4.3
MSWZ				AML	AML	18 28 56.7	
PLWZ	**Palliser**	**4.26**	**219**	PN	Pn	18 28 09.4	-4.6
DUWZ	**D'Urville Isla**	**4.54**	**235**	PN	Pn	18 28 14.8	-3.1
DUWZ				AML	AML	18 32 16.1	
NNZ	**Nelson**	**5.11**	**234**	PN	Pn	18 28 22.0	-3.6
QRZ	**Quartz Range**	**5.48**	**241**	PN	Pn	18 28 27.0	-3.8
THZ	**Tophouse**	**5.71**	**231**	PN	Pn	18 28 29.8	-4.2
CTZ	**Chatham Island**	**6.42**	**149**	PN	Pn	18 28 43.1	-0.6
LTZ	**Lake Taylor**	**6.70**	**226**	PN	Pn	18 28 41.9	-5.7
LTZ				AML	AML	18 31 12.7	
ODZ	**Otahua Downs**	**9.10**	**220**	PN	Pn	18 29 15.5	-4.8
ODZ				AML	AML	18 34 31.2	
ODZ				AML	AML	18 37 14.8	

IDC ***15*** *18:37:11.6±2.7, 22.°05S×66.°99W, h152km±24km, mb3.3/2, mb1 3.4/5, mb1mx3.1/40, mbtmp3.7/5, Error ellipse: s-maj=34.6km s-min=23.3km az=86.0*

ISCJB ***15*** *18:37:14.9±0.5, 21.°89S±0.°04×67.°17W±0.°04, h202km±6km, mb3.2/2, Error ellipse: s-maj=7.8km s-min=5.0km az=38.7*

GUC ***15*** *18:37:17.0±0.4, 21.°83S×67.°64W, h230km±6km, ML4.4*

SJA ***15*** *18:37:22.8±0.5, 21.°89S×66.°39W, h182km±5km, ML2.9, MW3.0*

ISC 15 18:37:15.3±0.8, 21.°85S±0.°05×67.°11W±0.°04, h194km±8km, n22, σ1s56/37, 2C, Chile-Bolivia border region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
YJA	**Yavi**	**1.52**	**103**	*e*P	**Pn**	**18 37 51.4**	**+2.2**
YJA				*e*S	**Sn**	**18 38 12.2**	**-3.2**
YJA				IAML		18 38 20.2	
	comp=Z,127nm,0.6s						
PB09	**IPOC Station P**	**1.98**	**271**	*i* P	**Pn**	**18 37 55.1**	**+1.7**
PB09				*i* S	**Sn**	**18 38 23.7**	**+0.8**
HJA	**Humahuaca**	**2.07**	**131**	*e*P	**Pn**	**18 37 57.2**	**+2.6**
HJA				*e*S	**Sn**	**18 38 23.1**	**-2.1**
HJA				IAML		18 38 29.2	
	comp=Z,71nm,0.4s						
PB01	**IPOC Station P**	**2.35**	**290**	*i* P	**Pn**	**18 37 58.3**	**+0.9**
PB01				*i* S	**Sn**	**18 38 29.7**	**-0.3**
PB01				IAML		18 38 31.1	
	comp=N,1μm,0.2s						
PB06	**IPOC Station P**	**2.43**	**249**	*i* P	**Pn**	**18 37 59.4**	**+1.2**
PB06				*i* S	**Sn**	**18 38 31.6**	**-0.1**
PB08	**IPOC Station P**	**2.56**	**311**	*i* P	**Pn**	**18 38 01.8**	**+1.8**
PB08				*e*S	**Sn**	**18 38 35.0**	**+0.3**
PB07	**IPOC Station P**	**2.58**	**272**	*i* P	**Pn**	**18 38 00.7**	**+0.7**
PB07				*i* S	**Sn**	**18 38 33.5**	**-1.2**
PB07				IAML		18 38 34.7	
	comp=N,734nm,0.2s						
PB04	**IPOC Station P**	**2.86**	**260**	*i* P	**Pn**	**18 38 03.5**	**+0.3**
PB04				*e*S	**Sn**	**18 38 38.1**	**-2.4**
PATCX	**Punta Patache**	**3.02**	**289**	*i* P	**Pn**	**18 38 05.6**	**+0.7**
PATCX				*i* S	**Sn**	**18 38 42.1**	**-1.6**
PATCX				IAML		18 38 45.5	
	comp=E,689nm,0.5s						
AZAP	**Zapla**	**3.02**	**142**	*e*P	**Pn**	**18 38 06.9**	**+1.7**
AZAP				*e*S	**Sn**	**18 38 41.8**	**-2.4**
AZAP				IAML		18 38 57.6	
	comp=Z,21nm,0.7s						
HMBC	**Humberstone**	**3.03**	**301**	⇑*e*P	**Pn**	**18 38 05.5**	**+0.3**
HMBC				*e*S	**Sn**	**18 38 42.2**	**-1.9**
HMBC				IAML		18 38 43.0	
	comp=N,1μm,0.3s						
PB11	**IPOC Station P**	**3.16**	**311**	⇑*e*P	**Pn**	**18 38 07.4**	**+0.6**
PB11				*e*S	**Sn**	**18 38 45.5**	**-1.5**
ASTB	**Santa Barbara**	**3.22**	**131**	*e*P	**Pn**	**18 38 09.0**	**+1.6**
ALOL	**LOMAS DE OLMED**	**3.49**	**125**	*e*P	**Pn**	**18 38 11.6**	**+1.0**
MNMC	**Minye Minye**	**3.57**	**319**	*e*P	**Pn**	**18 38 13.1**	**+1.1**
MNMC				*e*S	**Sn**	**18 38 55.3**	**-0.8**
PB10	**IPOC Station P**	**3.58**	**242**	*i* P	**Pn**	**18 38 12.3**	**+0.5**
PB10				*e*S	**Sn**	**18 38 53.3**	**-2.7**
PB10				IAML		18 38 55.2	
	comp=E,423nm,0.2s						
LPAZ	**La Paz**	**5.62**	**350**	P	**Pn**	**18 38 38.2**	**0.0**
	comp=E,0.9nm,0.3s,baz=171,slow=8.0,SNR=14						
LPAZ				S	**Sn**	**18 39 42.9**	**-0.6**
	baz=24,slow=20,SNR=4.1						
SIV	**San Ignacio**	**8.16**	**45**	P	**Pn**	**18 39 09.6**	**-1.3**
	comp=E,1.2nm,0.3s,baz=243,slow=9.2,SNR=18						
PLCA	**Paso Flores**	**19.05**	**188**	P	**P**	**18 41 21.8**	**-1.1**
	comp=E,0.1nm,0.3s,baz=38,slow=12,SNR=3.8						
TORD	**Torodi Ar. Bea**	**75.91**	**69**	P	**P**	**18 48 40.7**	**-0.3**
	comp=E,0.4nm,0.4s,baz=253,slow=5.7,SNR=11						
YKA	**Yellowknife Ar**	**92.08**	**340**	P	**P**	**18 50 02.4**	**+0.6**
	comp=E,0.1nm,0.5s,baz=133,slow=4.2,SNR=3.9						
MKAR	**Makanchi Array**	**144.91**	**37**	PKPbc	**PKPdf**	**18 56 30.8**	**+1.6**
	comp=E,1.0nm,0.7s,baz=313,slow=4.0,SNR=11						

ISCJB ***15*** *18:40:11.1±0.6, 48.°1S±0.°1×31.°7E±0.°3, h12km, mb4.2/11, MS3.7/4, Error ellipse: s-maj=32.0km s-min=9.9km az=152.9*

IDC ***15*** *18:40:11.6±1.3, 48.°01S×32.°10E, h0km, mb3.9/7, mb1 3.9/8, mb1mx3.7/34, mbtmp3.9/8, ML2.8/1, MS3.7/4, Ms1 3.6/4, ms1mx3.1/33, Error ellipse: s-maj=75.7km s-min=17.6km az=59.0*

NEIC ***15*** *18:40:12.4±0.4, 48.°10S×31.°86E, h10km, mb4.6/8, Error ellipse: s-maj=24.6km s-min=7.7km az=63.0*

ISC 15 18:40:12.8±0.7, 48.°1S±0.°1×31.°7E±0.°3, h12km, n22, σ0s86/19, mb4.0/11, MS3.7/4, 1C-1D, South of Africa

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SUR	**Sutherland**	**17.78**	**328**	P	**Pn**	**18 44 20.5**	**+0.2**
	0.0nm,0.3s,baz=151,slow=12,SNR=20						
SUR				LR	LR	18 50 22.7	
	comp=Z,6.0nm,19.5s,baz=154,slow=34						
SUR	**Sutherland**	**17.78**	**328**	*e*Pn	**Pn**	**18 44 19.9**	**-0.4**
	96nm,1.7s						
BOSA	**Boshof**	**20.13**	**343**	P	**P**	**18 44 47.6**	**+0.8**
	5.4nm,1.0s,baz=175,slow=12,SNR=4.5						
BOSA				LR	LR	18 51 18.3	
	comp=Z,78nm,18.2s,baz=156,slow=33						
SYO	**Syowa Base**	**21.29**	**172**	‖*e*pP	pP	18 45 04.6	+2.3
SYO	**Syowa Base**	**21.29**	**172**	‖*e*PnPn	**PnPn**	**18 45 17.6**	**-0.8**
LBTB	**Lobatse**	**23.58**	**346**	P	**P**	**18 45 23.2**	**-0.2**
	2.3nm,0.7s,baz=166,slow=17,SNR=3.8						
MAW	**Mawson**	**25.10**	**152**	P	**P**	**18 45 38.6**	**+1.6**
	2.6nm,0.9s,baz=308,slow=12,SNR=3.2						
MAW	**Mawson**	**25.10**	**152**	*e*P	**P**	**18 45 37.9**	**+1.0**
	4.9nm,1.8s						
LSZ	**Lusaka**	**32.90**	**354**	P	**P**	**18 46 47.9**	**+0.9**
	2.1nm,0.6s,baz=174,slow=9.2,SNR=6.4						
LSZ	**Lusaka**	**32.90**	**354**	*e*P	**P**	**18 46 46.0**	**-1.0**
	15nm,1.8s						
QSPA	**South Pole Qui**	**42.08**	**180**	*e*P	**P**	**18 48 03.7**	**-0.5**
VNDA	**Vanda**	**50.89**	**168**	LR	LR	19 11 56.7	
	comp=Z,170nm,18.0s,baz=324,slow=37						
VNDA	**Vanda**	**50.89**	**168**	*e*P	**P**	**18 49 13.4**	**+0.4**
	9.0nm,1.6s						
TOA0	**Torodi Ar. Sit**	**66.61**	**328**	*e*P	**P**	**18 51 02.3**	**-0.7**
	13nm,1.7s						
TORD	**Torodi Ar. Bea**	**66.61**	**328**	P	**P**	**18 51 03.3**	**+0.3**
	0.4nm,0.4s,baz=162,slow=7.1,SNR=10.0						
TORD				LR	LR	19 17 59.0	
	comp=Z,25nm,18.6s,baz=190,slow=34						
TOA1	**Torodi Ar. Sit**	**66.61**	**328**	*e*P	**P**	**18 51 03.3**	**+0.3**
	17nm,1.9s						
ASAR	**Alice Springs**	**80.39**	**115**	P	**P**	**18 52 24.2**	**0.0**
	1.2nm,0.7s,baz=221,slow=4.6,SNR=27						
AS31	**Alice Springs**	**80.40**	**115**	*e*P	**P**	**18 52 24.2**	**-0.1**
	2.6nm,1.5s						
AS01	**Alice Springs**	**80.42**	**115**	*e*P	**P**	**18 52 24.3**	**-0.1**
WRA	**Warramunga Arr**	**83.44**	**112**	P	**P**	**18 52 39.0**	**-1.4**
	0.8nm,0.8s,baz=223,slow=4.0,SNR=4.6						
WR1	**Warramunga Arr**	**83.44**	**112**	*e*P	**P**	**18 52 39.0**	**-1.4**
	20nm,1.7s						
PMG	**Port Moresby**	**99.39**	**115**	LR	LR	19 34 18.0	
	comp=Z,42nm,18.4s,baz=211,slow=33						

ISCJB ***15*** *18:46:57.0±1.0, 38.°57N±0.°06×143.°80E±0.°08, h14km, mb3.4/4, MS2.4/1, Error ellipse: s-maj=9.6km s-min=6.9km az=42.1*

IDC ***15*** *18:46:56.1±1.3, 38.°32N×144.°23E, h0km, mb3.3/4, mb1 3.5/5, mb1mx3.3/50, mbtmp3.3/5, ML3.3/1, MS2.6/1, Ms1 2.6/1, ms1mx2.1/24, Error ellipse: s-maj=41.2km s-min=24.0km az=92.0*

JMA ***15*** *18:46:58.2±0.2, 38.°60N×143.°76E, h23km, M3.3*

ISC 15 18:46:58.2±1.4, 38.°61N±0.°07×143.°78E±0.°09, h14km, n19, σ0s89/23, mb3.5/4, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
OFUJ	**Ofunato**	**1.71**	**286**	P	**Pn**	**18 47 27.3**	**-0.3**
OFUJ				S	**Sn**	**18 47 48.6**	**-0.6**
JIO	**Ouri**	**1.91**	**266**	P	**Pn**	**18 47 29.8**	**-0.5**
JIO				*e*S	**Sn**	**18 47 52.9**	**-1.2**
JTH	**Tanohata**	**1.99**	**312**	P	**Pn**	**18 47 31.4**	**0.0**
JMK	**Ichinoseki**	**2.03**	**280**	P	**Pn**	**18 47 32.0**	**+0.1**
JOM	**Ohasama**	**2.12**	**295**	P	**Pn**	**18 47 33.3**	**+0.2**
JOU	**Okura**	**2.46**	**265**	P	**Pn**	**18 47 38.0**	**+0.2**
JOU				*e*S	**Sn**	**18 48 07.9**	**+0.3**
JANG	**Nango**	**2.48**	**316**	P	**Pn**	**18 47 38.1**	**0.0**
JANG				*e*S	**Sn**	**18 48 08.0**	**-0.2**
JRG	**Rokugo**	**2.57**	**289**	P	**Pn**	**18 47 40.5**	**+1.1**
JYK	**Kaneyama**	**2.69**	**278**	P	**Pn**	**18 47 41.8**	**+0.8**
JFT	**Otama**	**2.93**	**249**	P	**Pn**	**18 47 44.8**	**+0.5**
JFT				*e*S	**Sn**	**18 48 18.9**	**-0.4**
JTM	**Tenmabayashi**	**3.01**	**317**	P	**Pn**	**18 47 46.0**	**+0.6**
MJAR	**Matsushiro Arr**	**4.88**	**247**	Pn	**Pn**	**18 48 12.4**	**+1.2**
	1.2nm,0.3s,baz=63,slow=11,SNR=15						
MAT	**Matsushiro**	**4.88**	**247**	P	**Pn**	**18 48 12.2**	**+1.0**
MAT				*e*S	**Sn**	**18 49 08.8**	**+1.3**
ASAJ	**Asahikawa**	**5.57**	**351**	Pn	**Pn**	**18 48 20.9**	**+0.4**
	0.4nm,0.3s,baz=246,slow=13,SNR=5.5						
MA2	**Magadan**	**21.45**	**10**	LR	LR	19 00 32.0	
	comp=Z,15nm,18.0s,baz=290,slow=38						
SEY	**Seymchan**	**24.90**	**9**	P	**P**	**18 52 22.1**	**+1.8**
	1.4nm,0.8s,baz=83,slow=23,SNR=7.6						
MKAR	**Makanchi Array**	**44.88**	**301**	P	P	18 55 16.3	+4.2
	0.2nm,0.6s,baz=80,slow=10,SNR=2.5						
WRA	**Warramunga Arr**	**58.32**	**190**	P	**P**	**18 56 55.5**	**-1.3**
	0.3nm,0.6s,baz=8.1,slow=6.8,SNR=2.7						
ASAR	**Alice Springs**	**62.64**	**190**	P	**P**	**18 57 20.8**	**-1.4**
	0.2nm,0.7s,baz=6.6,slow=7.3,SNR=3.5						

**IDC 15 18:52:35.4±3.0, 32.°84S×178.°50W, h0km, mb3.5/2, mb1 3.7/3, mb1mx3.6/31, mbtmp3.5/3, ML3.2/1, Error ellipse: s-maj=70.7km s-min=36.1km

6.7nm,0.3s,baz=200,slow=17,SNR=87
ASAJ S **Sb** **19 28 54.8 -5.1**
11nm,0.3s,baz=282,slow=27,SNR=3.8
ASAJ LR LR 19 30 03.7
comp=Z,3µm,21.6s,baz=196,slow=45
ASAJ Asahikawa 3.92 360 *e*Pn **Pn** **19 28 03.5 +1.0**
ASAJ *e*Sn **Sn** **19 28 52.6 +5.4**
YUK Yuzh-Kuril'sk 4.53 31 *e*P **Pn** **19 28 10.7 0.0**
YUK *e*S **Sn** **19 29 00.6 -1.6**
YUK pmax pmax
comp=N,173nm,0.2s
YUK pmax pmax
comp=E,107nm,0.2s
YUK pmax pmax
comp=Z,407nm,0.2s
YUK MLR MLR
comp=Z,1µm,16.0s
YUK MLR MLR
comp=N,2µm,14.0s
YUK MLR MLR
comp=E,1µm,9.0s
MJAR Matsushiro Arr 5.04 225 P **Pn** **19 28 20.6 +2.8**
comp=E,6.8nm,0.3s,baz=33,slow=13,SNR=108
MJAR LR LR 19 30 29.9
comp=E,1µm,20.7s,baz=50,slow=41
MJB9 Matsu-Tunnel 5.04 225 *e*Pn **Pn** **19 28 19.8 +2.0**
MAJO Matsushiro 5.04 225 *d i*P Pn 19 28 21.2 +3.4
MAJO Matsushiro 5.04 225 *e*Pn **Pn** **19 28 19.9 +2.1**
MAT Matsushiro 5.04 225 P **Pn** **19 28 19.8 +2.0**
MAT S **Sn** **19 29 17.8 +3.0**
KUR Kuril'sk 6.34 36 *e*P **Pn** **19 28 36.3 +0.7**
KUR *e*S **Sn** **19 29 44.1 -2.7**
KUR pmax pmax
comp=Z,75nm,0.7s
KUR pmax pmax
comp=E,32nm,0.3s
KUR pmax pmax
comp=N,62nm,0.2s
KUR smax smax
comp=N,124nm,0.8s
KUR smax smax
comp=E,98nm,0.4s
KUR smax smax
comp=E,657nm,3.0s
INU Inuyama 6.57 224 *e*Pn **Pn** **19 28 41.2 +2.3**
YSS Yuzh-Sakhalins 6.76 1 ‖ *e*P **Pn** **19 28 40.8 -0.6**
YSS *e*S **Sn** **19 29 53.1 -4.0**
YSS pmax pmax
comp=Z,30nm,1.2s
YSS MLR MLR
comp=Z,900nm,19.0s
YSS Yuzh-Sakhalins 6.76 1 *e*Pn **Pn** **19 28 42.5 +1.1**
JHJ Hachijo jima 2 7.42 199 P **Pn** **19 28 50.7 +0.2**
comp=Z,13nm,0.3s,baz=82,slow=22,SNR=2.8
JHJ S **Sn** **19 30 09.5 -4.1**
comp=Z,23nm,0.3s,baz=76,slow=23,SNR=3.2
USRK Ussuriysk Ar. 8.86 300 P Pn 19 29 13.4 +3.2
comp=Z,1.5nm,0.3s,baz=103,slow=15,SNR=22
USRK LR LR 19 32 31.5
comp=Z,1µm,18.9s,baz=132,slow=37
HABR Khabarovsk 9.90 329 *e*P Pn 19 29 20.2 -4.2
HABR *e*S Sn 19 31 06.9 -7.3
HABR MLR MLR
comp=Z,619nm,14.0s
MDJ Mudanjiang 10.61 299 P Pn 19 29 39.8 +5.7
MDJ pmax pmax
comp=Z,17nm,0.9s
MDJ pmax pmax
comp=Z,66nm,5.7s
MDJ Mudanjiang 10.61 299 *e*Pn **Pn** **19 29 36.0 +1.8**
TYV Tymovskoe 10.67 0 *e*P **Pn** **19 29 37.5 +2.5**
TYV *e* 19 31 36.0
TYV pmax pmax
comp=Z,22nm,1.0s
TYV MLR MLR
comp=E,2µm,19.0s
TYV MLR MLR
comp=Z,2µm,19.0s
JNU Nakatsue 11.78 237 P **Pn** **19 29 52.1 +1.8**
comp=Z,0.3nm,0.3s,baz=310,slow=7.2,SNR=4.0
JNU LR LR 19 34 55.5
comp=Z,460nm,18.5s,baz=107,slow=40
JNU Nakatsue 11.78 237 *e*Pn **Pn** **19 29 49.8 -0.5**
KSRS Korea Array 11.80 261 P Pn 19 29 54.1 +3.7
comp=Z,0.6nm,0.3s,baz=69,slow=13,SNR=9.7
KSRS LR LR 19 34 08.1
comp=Z,592nm,18.5s,baz=73,slow=36
KS01 Wonju Array Si 11.81 261 *e*Pn **Pn** **19 29 49.4 -1.2**
KS15 Wonju Array Si 11.83 261 *e*Pn **Pn** **19 29 48.9 -2.0**
KSAR Wonju Array Be 11.83 261 P Pn 19 29 54.2 +3.3
KSAR Wonju Array Be 11.83 261 P Pn 19 29 54.1 +3.3
KLR Kul'dur 11.89 323 P **Pn** **19 29 53.9 +2.2**
comp=Z,0.2nm,0.3s,baz=134,slow=14,SNR=3.1
KLR LR LR 19 34 40.6
comp=Z,853nm,18.2s,baz=137,slow=38
NKL Nikolayevsk 13.03 355 *e*P **Pn** **19 30 08.0 +0.8**
NKL pmax pmax
comp=Z,28nm,1.1s
NKL MLR MLR
comp=N,500nm,17.0s
NKL MLR MLR
comp=Z,500nm,17.0s
CBIJ Chichi jima 13.07 182 *e*Pn Pn 19 30 03.6 -4.3
JCJ Chichijima 13.07 182 LR LR 19 36 20.0
comp=Z,200nm,21.1s,baz=332,slow=42
PETK Petropavlovsk- 16.50 33 P **Pn** **19 30 53.6 +0.3**
comp=Z,0.1nm,0.3s,baz=206,slow=13,SNR=3.6
PETK LR LR 19 37 47.3
comp=Z,88nm,20.5s,baz=219,slow=39
PEA1 Petropavlovsk- 16.50 33 *e*Pn **Pn** **19 30 53.6 +0.3**
JOW Kunigami 17.88 226 *e*Pn **Pn** **19 31 06.6 -4.1**
comp=Z,43nm,1.2s
HIA Hailar 18.57 307 *e*P P 19 31 13.2 -5.3
HIA pmax pmax
comp=Z,21nm,1.3s
HIA Hailar 18.57 307 *e*P P 19 31 13.2 -5.3
comp=Z,21nm,1.3s
MA2 Magadan 20.07 12 P Pn 19 31 36.5 -0.2
comp=Z,4.0nm,0.5s,baz=224,slow=12,SNR=4.5
MA2 LR LR 19 40 32.5
comp=Z,307nm,18.2s,baz=227,slow=40
BJI Beijing 20.22 278 P **P** **19 31 36.1 -0.5**
BJI S **S** **19 35 20.1 -1.4**
BJI pmax pmax
comp=Z,8.0nm,1.8s
BJI pmax pmax
comp=Z,110nm,3.9s
BJI LR LR
comp=Z,160nm,15.9s
BJI LR LR
comp=Z,400nm,19.5s
BJT Baijiatuau 20.23 278 *e*P P 19 31 31.5 -5.2
BJT pmax pmax
comp=Z,18nm,1.0s
BJT Baijiatuau 20.23 278 *e*P P 19 31 31.5 -5.2
comp=Z,18nm,1.0s
NJ2 Nanjing 20.81 254 *e*P Pn 19 31 46.4 +0.7
NJ2 S **S** **19 35 36.1 +2.6**
NJ2 pmax pmax
comp=Z,19nm,0.7s
NJ2 LR LR
comp=Z,860nm,25.7s
NJ2 LR LR
comp=Z,1µm,27.3s
NJ2 LR LR
comp=Z,330nm,14.4s
CIT Chita 23.21 310 *e*P **P** **19 32 09.1 +0.6**
CIT *e* 19 32 20.5
CIT *e* 19 32 27.8
CIT *e* 19 32 45.4
YAK Yakutsk 23.24 344 P **P** **19 32 07.7 -0.9**
comp=Z,8.4nm,0.2s,baz=1.9,slow=0.6,SNR=6.4
YAK LR LR 19 41 22.0
comp=Z,92nm,18.4s,baz=166,slow=37
YAK Yakutsk 23.24 344 *e*P **P** **19 32 06.8 -1.8**
YAK *e**PP **pP** **19 32 17.7 0.0**
YAK *e*S **S** **19 36 13.6 -4.5**
YAK pmax pmax
comp=Z,16nm,1.0s
YAK pmax pmax
comp=N,8.0nm,1.1s
YAK smax smax
comp=N,196nm,3.0s
YAK smax smax
comp=E,150nm,2.5s
YAK Yakutsk 23.24 344 *e*P **P** **19 32 05.9 -2.6**
comp=E,24nm,0.7s
SEY Seymchan 23.51 11 P **P** **19 32 10.8 -0.4**
comp=E,15nm,1.0s,baz=196,slow=8.4,SNR=19
SEY Seymchan 23.51 11 *e*P **P** **19 32 11.8 +0.6**
HHC Hu-ho-hao-te 23.57 282 *e*P **P** **19 32 11.0 -1.2**
HHC PP **PnPn** **19 32 44.6 +5.0**
HHC S **S** **19 36 21.8 -2.4**
HHC pmax pmax
comp=E,23nm,1.1s
HHC pmax pmax
comp=E,55nm,4.1s
HHC LR LR
comp=E,320nm,10.3s
HHC LR LR
comp=E,360nm,14.4s
HHC LR LR
comp=E,390nm,16.4s
NACB Ninganchiao 23.83 234 *e*P **P** **19 32 10.7 -3.9**
comp=E,12nm,0.8s
SSLB Suanglung 24.51 235 *e*P **P** **19 32 17.7 -3.2**
comp=E,7.1nm,1.0s
YULB Yu-li 24.59 233 *e*P **P** **19 32 18.7 -2.9**
comp=E,29nm,1.5s
WHN Wuhan 24.90 256 P **P** **19 32 25.0 +0.6**
WHN LR LR
comp=E,1µm,17.2s
WHN LR LR
comp=E,630nm,16.5s
WHN LR LR
comp=E,920nm,20.3s
QZH Quanzhou 25.22 240 P **P** **19 32 25.0 -2.3**
QZH S **S** **19 36 46.9 -3.7**
QZH LR LR
comp=E,400nm,15.6s
QZH LR LR
comp=E,710nm,18.7s
QZH LR LR
comp=E,510nm,15.4s
BOD Bodaibo 25.47 323 *e*P **P** **19 32 28.8 -0.4**
BOD pmax pmax
comp=Z,13nm,1.1s
ULN Ulaanbaatar 26.52 299 *e*P **P** **19 32 38.1 -1.0**
ULN pmax pmax
comp=Z,15nm,1.7s
ULN Ulaanbaatar 26.52 299 *e*P **P** **19 32 38.1 -1.0**
comp=Z,15nm,1.7s
GUMO Guam 26.57 175 LR LR 19 42 03.0
comp=Z,156nm,21.9s,baz=12,slow=34
SONA1 Songino Array 26.96 299 *e*P **P** **19 32 42.9 -0.2**
SONA0 Songino Array 26.96 299 *e*P **P** **19 32 43.2 +0.1**
comp=Z,25nm,1.9s
SONM Songino Array 26.96 299 P **P** **19 32 43.2 +0.1**
comp=Z,2.4nm,0.5s,baz=85,slow=8.8,SNR=9.8
SONM LR LR 19 43 57.4
comp=Z,474nm,18.2s,baz=72,slow=38
XAN Xi'an 27.47 268 P **P** **19 32 47.6 0.0**
XAN pmax pmax
comp=Z,6.0nm,0.7s
ENH Enshi 28.68 260 *e*P **P** **19 32 58.0 -0.4**
comp=Z,6.9nm,0.8s
TLY Talaya 29.11 306 *e*P P 19 33 07.9 +5.9
TLY pmax pmax
comp=Z,7.0nm,1.1s
TLY MLR MLR
comp=Z,282nm,17.0s
H11N2 WAKE ISLAND Hy 29.12 127 T T 20 03 46.3
baz=319,slow=76,SNR=569
H11N1 WAKE ISLAND Hy 29.13 127 T T 20 03 49.0
baz=319,slow=76,SNR=628
H11N3 WAKE ISLAND Hy 29.14 127 T T 20 03 52.5
baz=319,slow=76,SNR=606
ZAK Zakamensk 29.19 304 *e*P **P** **19 33 03.1 +0.2**
ZAK pmax pmax
comp=Z,6.0nm,1.3s
H11S1 WAKE ISLAND Hy 29.94 129 T T 20 04 58.4
baz=321,slow=76,SNR=150
H11S3 WAKE ISLAND Hy 29.95 129 T T 20 04 49.6
baz=321,slow=76,SNR=84
H11S2 WAKE ISLAND Hy 29.96 129 T T 20 04 35.3
baz=321,slow=76,SNR=150
BILL Bilibino 30.73 17 *ce*P **P** **19 33 16.5 +0.3**
BILL pmax pmax
comp=Z,7.0nm,1.0s
BILL Bilibino 30.73 17 *e*P **P** **19 33 16.8 +0.6**
comp=Z,11nm,1.2s
MOY Mondy 30.74 306 *e*P **P** **19 33 17.8 +1.2**
TIXI Tiksi 32.29 352 *e*P **P** **19 33 29.5 -0.3**
TIXI pmax pmax
comp=Z,7.0nm,1.7s
TIXI Tiksi 32.29 352 *e*P **P** **19 33 29.0 -0.7**
comp=Z,13nm,1.8s
GTA Gaotai 32.67 283 *e*P **P** **19 33 34.3 +0.6**
GTA S **S** **19 38 49.9 +2.1**
GTA pmax pmax
comp=Z,4.0nm,1.3s
GTA pmax pmax
comp=Z,61nm,6.2s
GTA LR LR
comp=Z,150nm,13.5s
GTA LR LR
comp=Z,380nm,18.3s
GTA LR LR
comp=Z,490nm,17.6s
CD2 Chengdu 32.74 266 P **P** **19 33 32.8 -1.5**
CD2 pmax pmax
comp=Z,1.0nm,0.5s
GYA Guiyang 32.79 256 *e*P **P** **19 33 34.8 -0.1**
GYA pmax pmax
comp=Z,10.0nm,0.8s
KRAR Krasnoyarsk 35.93 313 *e*P **P** **19 34 01.0 -0.5**
KRAR pmax pmax
comp=Z,12nm,1.1s
KMI Kunming 36.47 258 P **P** **19 34 07.1 +0.3**
KMI pP pP 19 34 17.6 +1.1
KMI sP sP 19 34 22.0 +1.4
KMI S **S** **19 39 49.4 +2.7**
KMI pmax pmax
comp=Z,7.0nm,0.5s
KMI pmax pmax
comp=Z,94nm,4.6s
KMI LR LR
comp=Z,250nm,15.3s
KMI LR LR
comp=Z,200nm,17.1s
KMI LR LR
comp=Z,290nm,18.3s
WMQ Urumqi 40.35 294 *e*P **P** **19 34 39.8 +0.7**
WMQ pP pP 19 34 49.8 +0.9
WMQ sP sP 19 34 56.8 +3.9
WMQ pmax pmax
comp=Z,18nm,0.6s
WMQ pmax pmax
comp=Z,270nm,3.6s
ZAA0 Zalesovo Array 40.56 310 *e*P **P** **19 34 39.7 -0.9**
ZAA1 Zalesovo Array 40.56 310 *e*P **P** **19 34 40.6 0.0**
ZAA1 *e*PcP **PcP** **19 36 42.9 +0.7**
ZALV Zalesovo Beam 40.56 310 P **P** **19 34 40.6 0.0**
comp=Z,5.4nm,0.5s,baz=94,slow=8.2,SNR=32
ZALV PcP **PcP** **19 36 42.9 +0.7**
comp=Z,1.0nm,0.5s,baz=81,slow=4.5,SNR=2.7
ZALV LR LR 19 52 18.4
comp=Z,320nm,19.0s,baz=68,slow=37
NRIK Noril'sk 40.83 334 P **P** **19 34 42.9 +0.3**
comp=Z,2.2nm,0.5s,baz=126,slow=7.7,SNR=5.5
NRIK LR LR 19 52 51.0
comp=Z,430nm,18.3s,baz=102,slow=38
NVS Novosibirsk 41.42 311 *e*P **P** **19 34 46.2 -1.3**
TTA Tatalina 42.30 37 *e*P **P** **19 34 55.1 +0.3**
TTA pmax pmax
comp=Z,19nm,2.0s
TTA Tatalina 42.30 37 *e*P **P** **19 34 55.0 +0.3**
comp=Z,18nm,2.0s
LSA Lhasa 42.95 272 *e*P **P** **19 35 01.0 0.0**
LSA pmax pmax
comp=Z,8.0nm,1.3s
LSA Lhasa 42.95 272 *e*P **P** **19 35 01.0 0.0**
comp=Z,8.2nm,1.3s
CHTO Chiang Mai 43.05 253 *e*P **P** **19 35 01.5 +0.2**
CHTO pmax pmax
comp=Z,4.0nm,0.7s
CHTO Chiang Mai 43.05 253 *e*P **P** **19 35 01.5 +0.2**
comp=Z,3.6nm,0.7s
CM31 Chiang Mai Arr 43.28 253 *e*P **P** **19 35 02.7 -0.5**
CMAR Chiang Mai Arr 43.28 253 P **P** **19 35 03.2 +0.1**
comp=Z,0.8nm,0.5s,baz=42,slow=7.1,SNR=12
CM01 Chiang Mai Arr 43.29 253 *e*P **P** **19 35 01.7 -1.5**
MK01 Makanchi Array 43.32 299 *e*P **P** **19 35 02.5 -0.7**
MK31 Makanchi Array 43.32 300 *e*P **P** **19 35 03.1 -0.1**
MK31 Makanchi Array 43.32 300 *e*P **P** **19 35 03.1 -0.1**
MK32 Makanchi Array 43.32 300 *e*P **P** **19 35 03.2 0.0**
MKAR Makanchi Array 43.32 300 P **P** **19 35 03.2 0.0**
comp=Z,3.2nm,0.6s,baz=83,slow=9.8,SNR=36
MKAR LR LR 19 53 55.1
comp=Z,257nm,19.6s,baz=80,slow=37
MKAR Makanchi Array 43.32 300 P **P** **19 35 03.2 0.0**
MKAR pmax pmax
comp=Z,5.0nm,0.8s
MKAR MLR MLR
comp=Z,257nm,19.6s
MKAR Makanchi Array 43.32 300 *e*P **P** **19 35 03.1 -0.2**
MAKZ Makanchi 43.53 300 *e*P **P** **19 35 04.3 -0.6**
MAKZ pmax pmax
comp=Z,28nm,1.5s
MAKZ Makanchi 43.53 300 *e*P **P** **19 35 04.3 -0.6**
comp=Z,28nm,1.5s
CAST Castle Rocks 44.09 36 *e*P **P** **19 35 10.4 +1.3**
comp=Z,5.3nm,1.1s
KTH Kantishna Hill 44.61 36 *e*P **P** **19 35 14.7 +1.3**
comp=Z,10nm,1.1s
MLY Manley 44.68 34 *e*P **P** **19 35 13.9 0.0**
comp=Z,4.9nm,1.1s
KURK Kurchatov 44.80 306 P **P** **19 35 15.5 +0.6**
KURK pmax pmax
comp=Z,20nm,0.5s
KURK Kurchatov 44.80 306 *e*P **P** **19 35 14.6 -0.4**
comp=Z,17nm,0.7s
KURBB Kurchatov Arra 44.88 306 P **P** **19 35 15.4 -0.1**
comp=Z,20nm,0.5s,baz=80,slow=8.7,SNR=78
COLD Coldfoot 44.94 31 *e*P **P** **19 35 16.8 +1.0**
comp=Z,4.1nm,0.9s
RND Reindeer 45.55 36 *e*P **P** **19 35 20.6 -0.2**
RND pmax pmax
comp=Z,8.0nm,1.1s
RND Reindeer 45.55 36 *e*P **P** **19 35 20.6 -0.2**
comp=Z,8.3nm,1.1s
MDM Murphy Dome 45.75 34 *e*P **P** **19 35 23.9 +1.5**
comp=Z,5.7nm,1.0s
COLA College 45.91 34 *e*P **P** **19 35 25.3 +1.8**
COLA pmax pmax
comp=Z,4.0nm,1.1s
PDGK Podgornoye 46.21 296 P **P** **19 35 26.8 +0.6**
PDGK pmax pmax
comp=Z,5.0nm,1.0s
DHY Denali Highway 46.24 36 *e*P **P** **19 35 26.6 +0.2**
comp=Z,5.2nm,1.0s
IL1 Eielson Array 46.33 34 *e*P **P** **19 35 27.1 +0.2**
ILAR Eielson Array 46.33 34 P **P** **19 35 27.6 +0.8**
comp=Z,2.0nm,0.9s,baz=264,slow=5.7,SNR=20
ILB Eielson Array 46.33 34 *e*P **P** **19 35 27.5 +0.6**
FYU Fort Yukon 46.91 31 *e*P **P** **19 35 32.9 +1.5**
comp=Z,29nm,1.5s
KLU Klutina 47.08 38 *e*P **P** **19 35 34.0 +1.2**
comp=Z,7.9nm,1.2s
GUN Gumba 47.86 273 *e*P **P** **19 35 39.8 +0.1**
comp=Z,32nm,0.4s
KKN Kakani 48.38 274 *e*P **P** **19 35 43.5 -0.1**
comp=Z,18nm,0.7s
PKIN Phulchoki 48.40 273 *e*P **P** **19 35 43.5 -0.3**
GKN Gorkha 48.76 274 *e*P **P** **19 35 46.2 -0.2**
comp=Z,11nm,0.4s
EGAK Eagle 48.77 34 *e*P **P** **19 35 46.7 +0.9**
comp=Z,26nm,2.0s
VOSK Vostochnaya 48.94 310 *e*P **P** **19 35 46.7 -0.6**
VOSK pmax pmax
comp=Z,27nm,1.6s
VOSK Vostochnaya 48.94 310 *e*P **P** **19 35 46.7 -0.6**
comp=Z,27nm,1.6s
TKM2 Tokmak 2 49.03 296 *e*P **P** **19 35 48.7 +0.3**
TKM2 pmax pmax
comp=Z,40nm,1.6s
TKM2 Tokmak 2 49.03 296 *e*P **P** **19 35 48.7 +0.3**
comp=Z,40nm,1.6s
BVAR Borovoye Array 49.20 311 P **P** **19 35 49.6 +0.3**
comp=Z,10nm,0.4s,baz=74,slow=9.4,SNR=110
BRVK Borovoye 49.26 311 *ce*P **P** **19 35 50.3 +0.6**
BRVK pmax pmax
comp=Z,17nm,1.7s
BRVK Borovoye 49.26 311 *e*P **P** **19 35 49.8 +0.1**
comp=Z,6.9nm,0.6s
OTUK Ortayu 49.40 304 P **P** **19 35 52.0 +1.1**
OTUK pmax pmax
comp=Z,5.0nm,0.7s
KOLN Koldanda 49.67 275 *e*P **P** **19 35 53.8 +0.3**
comp=Z,15nm,0.5s
FRU Bishkek 49.73 297 *e*P **P** **19 35 53.5 0.0**
FRU *e* 19 36 09.0
AAK Ala-Archa 49.89 296 ‖ *i*P **P** **19 35 54.8 -0.1**
AAK pmax pmax
comp=Z,15nm,1.1s
AAK Ala-Archa 49.89 296 *e*P **P** **19 35 55.0 +0.1**
comp=Z,6.3nm,1.1s
PYUN Piuthan 49.97 275 *e*P **P** **19 35 56.4 +0.7**
ZRNK Zerenda 50.03 311 *e*P **P** **19 35 55.6 0.0**
ZRNK pmax pmax
comp=Z,10.0nm,0.7s
ZRNK Zerenda 50.03 311 *e*P **P** **19 35 55.6 0.0**
comp=Z,10nm,0.7s
KSH Kashi 50.05 292 P P 19 36 00.4 +4.3
KSH S **S** **19 43 08.6 +3.6**
KSH ScS **ScS** **19 45 43.6 -1.3**
KSH pmax pmax
comp=Z,140nm,6.1s
KSH LR LR
comp=Z,110nm,6.5s
KSH LR LR
comp=Z,140nm,8.2s
KSH LR LR
comp=Z,160nm,6.6s
EKS2 Erkin-Say 50.37 297 *e*P **P** **19 35 58.3 -0.2**
EKS2 pmax pmax
comp=Z,4.0nm,0.8s
EKS2 Erkin-Say 50.37 297 *e*P **P** **19 35 58.2 -0.2**
comp=Z,3.9nm,0.8s
INK Inuvik 51.15 28 P **P** **19 36 05.0 +1.2**
comp=Z,3.0nm,0.4s,baz=291,slow=7.2,SNR=26
INK LR LR 20 01 58.6
comp=Z,101nm,18.3s,baz=286,slow=41
INK Inuvik 51.15 28 *e*P **P** **19 36 04.8 +1.0**
INK pmax pmax
comp=Z,4.0nm,0.6s
INK Inuvik 51.15 28 *e*P **P** **19 36 04.8 +1.0**
comp=Z,4.4nm,0.6s
MNAS Manas 51.30 297 P **P** **19 36 05.9 +0.3**
MNAS pmax pmax
comp=Z,11nm,0.8s
SFK Sufi-Kurgan 51.59 294 P **P** **19 36 07.9 +0.1**
KKAR Karatay Array 52.42 298 *e*P **P** **19 36 12.9 -0.8**
KKAR Karatay Array 52.42 298 *e*P **P** **19 36 12.9 -0.8**
SVE Sverdlovsk 53.45 317 *e*P **P** **19 36 21.6 +0.6**
SVE pmax pmax
comp=Z,30nm,1.3s
PSI Prapat 54.25 238 P **P** **19 36 28.4 +0.8**
comp=Z,2.7nm,0.4s,baz=57,slow=3.4,SNR=4.7
PSI Prapat 54.25 238 *e*P **P** **19 36 28.0 +0.4**
PSI pmax pmax
comp=Z,11nm,1.2s
PSI Prapat 54.25 238 *e*P **P** **19 36 28.0 +0.4**
comp=Z,11nm,1.2s
ARU Arti 54.66 317 P **P** **19 36 30.4 +0.6**
comp=Z,6.8nm,0.7s,baz=48,slow=4.9,SNR=15
ARU Arti 54.66 317 *c i*P **P** **19 36 30.1 +0.3**
ARU S **S** **19 44 07.4 +0.1**
ARU SS **SS** **19 47 51.1 +1.3**
ARU pmax pmax
comp=Z,32nm,1.7s
ARU MLR MLR
comp=Z,542nm,18.0s
ARU Arti 54.66 317 *e*P **P** **19 36 29.9 +0.1**
comp=Z,17nm,1.0s
DLBC Dease Lake 55.57 40 P **P** **19 36 38.7 +2.2**
comp=Z,0.4nm,0.4s,baz=285,slow=20,SNR=3.9
ABKAR Akbulak array 56.67 309 *e*P **P** **19 36 44.2 -0.2**
KBL Kabul 57.22 290 *e*P **P** **19 36 48.0 -0.8**
KBL pmax pmax
comp=Z,16nm,0.8s
KBL Kabul 57.22 290 *e*P **P** **19 36 48.0 -0.8**
comp=Z,16nm,0.8s
AKTO Aktyubinsk 57.31 311 P **P** **19 36 48.8 -0.1**
comp=Z,4.9nm,0.6s,baz=42,slow=10.0,SNR=12
SPITS Spitsbergen Ar 57.62 349 P **P** **19 36 51.6 +0.9**
comp=Z,14nm,1.1s,baz=64,slow=7.5,SNR=3.4
RES Resolute Bay 59.31 15 P **P** **19 37 02.5 +0.1**

FITZ Fitzroy Crossi 60.12 199 P **P** **19 37 09.0 +0.4**
comp=Z,5.7nm,1.1s,baz=1.9,slow=7.9,SNR=5.0
WRAB Tennant Creek 60.31 189 *ce*P P 19 37 18.3 +8.3
WRAB pmax pmax
comp=Z,27nm,1.2s
WR1 Warramunga Arr 60.32 189 *e*P **P** **19 37 10.1 0.0**
comp=Z,44nm,1.9s
WRA Warramunga Arr 60.32 189 P **P** **19 37 10.1 0.0**
comp=Z,2.0nm,0.8s,baz=7.1,slow=7.3,SNR=13
YKA Yellowknife Ar 60.61 31 P **P** **19 37 12.0 +0.4**
comp=Z,0.9nm,0.5s,baz=301,slow=6.5,SNR=16
YKA Yellowknife Ar 60.61 31 P **P** **19 37 12.0 +0.4**
YKB5 Yellowknife Ar 60.61 31 *e*P **P** **19 37 12.3 +0.8**
ARA0 ARCESS Array S 61.39 339 *e*P **P** **19 37 17.0 +0.2**
ARCES ARCESS Array B 61.39 339 P **P** **19 37 17.0 +0.2**
ARCES LR LR 20 09 21.3
comp=Z,2.7nm,0.9s,baz=30,slow=7.6,SNR=2.6
comp=Z,123nm,18.2s,baz=56,slow=41
ARCES ARCESS Array B 61.39 339 P **P** **19 37 17.0 +0.2**
GEYT Alibeck 63.17 298 P **P** **19 37 29.6 +0.3**
comp=Z,5.4nm,0.7s,baz=29,slow=3.4,SNR=12
GEYT LR LR 20 06 57.9
comp=Z,107nm,18.9s,baz=60,slow=38
AS01 Alice Springs 64.04 189 *e*P **P** **19 37 34.6 -0.4**
AS31 Alice Springs 64.05 189 *e*P **P** **19 37 35.1 +0.1**
comp=Z,1.9nm,1.4s
ASAR Alice Springs 64.05 189 P **P** **19 37 34.8 -0.2**
comp=Z,3.0nm,1.1s,baz=1.6,slow=5.9,SNR=16
ASAR LR LR 20 04 06.1
comp=Z,128nm,21.3s,baz=322,slow=35
MARYW Marymoor Park 64.76 48 *e*P **P** **19 37 42.5 +3.0**
SVTR Two Rivers Sch 65.05 48 *e*P **P** **19 37 42.3 +1.0**
VRH Novokhopyorsk 65.89 317 *e*P **P** **19 37 46.4 -0.3**
VRH *e**SP **pP** **19 37 58.0 +0.9**
VRH pmax pmax
comp=Z,6.0nm,0.4s
OBN Obninsk 66.15 323 P **P** **19 37 47.6 -0.7**
comp=Z,6.9nm,0.4s,baz=34,slow=15,SNR=3.4
OBN Obninsk 66.15 323 *e*P **P** **19 37 46.6 -1.7**
OBN pmax pmax
comp=Z,23nm,1.7s
OBN Obninsk 66.15 323 *e*P **P** **19 37 47.4 -0.9**
comp=Z,29nm,1.3s
FIA0 FINESS Array S 66.47 332 *e*P **P** **19 37 50.4 +0.1**
FIA0 FINESS Array S 66.47 332 *e*P **P** **19 37 50.4 +0.1**
FINES FINESS Array B 66.47 332 P **P** **19 37 50.4 +0.1**
comp=Z,3.1nm,0.7s,baz=27,slow=10,SNR=9.5
FINES LR LR 20 09 09.0
comp=Z,344nm,18.1s,baz=36,slow=38
LPSR Galich'ya Gora 66.50 320 *e*P **P** **19 37 48.6 -2.0**
LPSR pmax pmax
comp=Z,9.0nm,1.1s
VSR Storozhevoye 67.20 318 *e*P **P** **19 37 54.2 -0.9**
VSR *e**SP **pP** **19 38 07.0 +1.6**
VSR pmax pmax
comp=Z,10.0nm,1.3s
SUMG Summit 67.53 0 *e*P **P** **19 37 57.6 +0.3**
SUMG pmax pmax
comp=Z,51nm,1.9s
SUMG Summit 67.53 0 *e*P **P** **19 37 57.6 +0.3**
comp=Z,51nm,1.9s
GOF Gofitskoye 68.71 311⇑ *e*P **P** **19 38 06.1 +1.3**
KVAR Kislovodsk Arr 69.56 311 P **P** **19 38 12.2 +2.0**
comp=Z,6.9nm,0.8s,baz=253,slow=9.2,SNR=7.3
KIV Kislovodsk 69.57 311 *de*P **P** **19 38 11.5 +1.3**
KIV pmax pmax
comp=Z,35nm,1.7s
KIV Kislovodsk 69.57 311 *e*P **P** **19 38 10.2 0.0**
comp=Z,41nm,1.4s
KBZ Khabaz 69.58 310 P **P** **19 38 10.8 +0.7**
comp=Z,2.4nm,0.7s,baz=123,slow=4.7,SNR=9.0
KBZ LR LR 20 11 11.6
comp=Z,129nm,18.1s,baz=42,slow=38
FFC Flin Flon 70.54 34 *i* P **P** **19 38 16.7 +0.9**
GNI Garni 70.60 306 P **P** **19 38 18.1 +1.4**
comp=Z,1.9nm,0.4s,baz=154,slow=14,SNR=5.1
GNI Garni 70.60 306 *e*P **P** **19 38 16.6 0.0**
GNI pmax pmax
comp=Z,64nm,1.2s
LRM Limekiln Ridge 71.24 46 *e*P **P** **19 38 20.9 +0.4**
HFS Hagfors 71.61 336 P **P** **19 38 22.4 +0.3**
comp=Z,3.7nm,0.5s,baz=37,slow=5.9,SNR=31
NB2 NORSAR Subarra 71.64 337 P **P** **19 38 22.4 -0.1**
comp=Z,1.3nm,0.6s,baz=36,slow=6.2
NB200 NORSAR Array S 71.64 337 *e*P **P** **19 38 22.3 -0.1**
NOA NORSAR Array B 71.64 337 P **P** **19 38 22.3 -0.1**
comp=Z,1.7nm,0.5s,baz=54,slow=6.8,SNR=9.6
NOA LR LR 20 15 34.4
comp=Z,113nm,18.1s,baz=40,slow=41
STKA Stephens Creek 71.71 181 P **P** **19 38 22.9 -0.2**
comp=Z,1.3nm,0.8s,baz=335,slow=11,SNR=3.1
STKA LR LR 20 12 55.9
comp=Z,52nm,19.9s,baz=19,slow=38
STKA Stephens Creek 71.71 181 *e*P **P** **19 38 23.7 +0.7**
STKA pmax pmax
comp=Z,4.0nm,1.8s
STKA Stephens Creek 71.71 181 *e*P **P** **19 38 23.7 +0.7**
comp=Z,4.3nm,1.8s
BOZ Bozeman (W) 71.80 45 *e*P **P** **19 38 21.5 -2.3**
BOZ pmax pmax
comp=Z,5.0nm,0.8s
BOZ Bozeman (W) 71.80 45 *e*P **P** **19 38 21.5 -2.3**
comp=Z,4.7nm,0.8s
NV01 Mina Array Sit 72.35 54 *e*P **P** **19 38 28.8 +1.4**
NVAR Mina Array Bea 72.35 54 P **P** **19 38 28.9 +1.6**
comp=Z,0.4nm,0.5s,baz=286,slow=6.5,SNR=2.4
AKASG Malin Array Be 72.39 322 P **P** **19 38 26.7 -0.3**
comp=Z,2.3nm,0.7s,baz=42,slow=5.7,SNR=18
AKASG LR LR 20 13 28.4
comp=Z,89nm,19.5s,baz=305,slow=38
AKBB Malin Array Si 72.39 322 *e*P **P** **19 38 26.3 -0.7**
AKBB pmax pmax
comp=Z,17nm,1.3s
AKBB Malin Array Si 72.39 322 *e*P **P** **19 38 26.3 -0.7**
comp=Z,17nm,1.3s
KIEV Kiev 72.40 322 *e*P **P** **19 38 26.5 -0.6**
KIEV pmax pmax
comp=Z,5.0nm,1.1s
MOOW Moose Ponds 73.49 46 *e*P **P** **19 38 35.6 +1.6**
comp=Z,6.6nm,1.4s
PD31 Pinedale Array 74.79 47 *e*P **P** **19 38 42.1 +0.5**
PDAR Pinedale Array 74.79 47 P **P** **19 38 42.4 +0.8**
comp=Z,0.6nm,0.5s,baz=264,slow=0.2,SNR=10
ULM Lac du Bonnet 76.35 34 P **P** **19 38 51.0 +0.9**
comp=Z,1.1nm,0.4s,baz=297,slow=4.3,SNR=3.2
ULM Lac du Bonnet 76.35 34 P **P** **19 38 51.0 +0.9**
BUR08 Bucovina Ar. S 76.41 322 *e*P **P** **19 38 51.2 +0.5**
STHS Stebnicka Huta 76.92 325 *e*P **P** **19 38 55.2 +1.8**
STHS *e* 19 38 59.6
STHS pmax pmax
comp=Z,3.0nm,0.8s
STHS Stebnicka Huta 76.92 325 *e*P **P** **19 38 55.2 +1.8**
STHS *e* 19 38 59.6
BR101 Keskin Array S 77.47 312 *e*P **P** **19 38 56.8 0.0**
BRTR Keskin Array B 77.47 312 P **P** **19 38 56.8 0.0**
comp=Z,0.8nm,0.5s,baz=36,slow=2.3,SNR=7.1
BRTR LR LR 20 16 29.9
comp=Z,44nm,18.5s,baz=34,slow=38
BRTR Keskin Array B 77.47 312 *i* P **P** **19 38 57.9 +1.1**
BRTR pmax pmax
comp=Z,1.0nm,0.5s
BR231 Keskin MP Arra 77.89 312 *e*P **P** **19 38 58.0 -1.1**
LANS Liptovska Anna 77.89 326 *e*P **P** **19 38 59.6 +0.7**
LANS Liptovska Anna 77.89 326 *e*P **P** **19 38 59.6 +0.7**
MORC Moravsky Berou 78.23 327 *e*P **P** **19 39 01.5 +0.8**
MORC pmax pmax
comp=Z,18nm,1.0s
MORC Moravsky Berou 78.23 327 *e*P **P** **19 39 01.5 +0.8**
comp=Z,18nm,1.0s
DPC Dobruska-Polom 78.29 328 *i* P **P** **19 39 01.5 +0.5**
DPC *ep*P **sP** **19 39 15.9 +0.5**
DPC Dobruska-Polom 78.29 328 *i* P **P** **19 39 01.5 +0.5**
DPC *e* 19 39 15.9
KRLC Kraliky 78.31 328 *e*P **P** **19 39 01.5 +0.3**
KRLC Kraliky 78.31 328 *e*P **P** **19 39 01.5 +0.3**
WUAZ Wupatki 78.48 53 *e*P **P** **19 38 59.7 -2.8**
comp=Z,14nm,0.9s
VYHS Vyhne 78.67 326 *e*P **P** **19 39 03.7 +0.6**
VYHS pmax pmax
comp=Z,6.0nm,1.7s
VYHS Vyhne 78.67 326 *e*P **P** **19 39 03.7 +0.6**
CLL Collm 78.83 330 *i* P **P** **19 39 03.7 -0.2**
comp=Z,5.0nm,1.1s
CLL *i* 19 39 18.2
CLL Collm 78.83 330 *i* P **P** **19 39 03.7 -0.2**
CLL pmax pmax
comp=Z,5.0nm,1.1s
PVCC Panska Ves 78.85 329 *e*P **P** **19 39 05.6 +1.6**
PVCC Panska Ves 78.85 329 *e*P **P** **19 39 05.6 +1.6**
VRAC Vranov 78.99 327 P **P** **19 39 06.0 +1.1**
comp=Z,3.1nm,1.0s,baz=2.6,slow=8.9,SNR=5.2
VRAC Vranov 78.99 327 P **P** **19 39 06.0 +1.1**
GOPC GO Pecny, Ondr 79.25 329 *e*P **P** **19 39 07.2 +0.9**
GOPC GO Pecny, Ondr 79.25 329 *e*P **P** **19 39 07.2 +0.9**
PRU Pruhonice 79.28 329 *e*P **P** **19 39 07.3 +0.9**
PRU Pruhonice 79.28 329 *e*P **P** **19 39 07.3 +0.9**
RAYN Ar Rayn 80.34 292 *e*P **P** **19 39 11.9 -0.8**
comp=Z,5.2nm,1.0s
KHC Kasperske Hory 80.35 329 *e*P **P** **19 39 12.9 +0.6**
KHC *ep*P **sP** **19 39 26.9 +0.2**
KHC Kasperske Hory 80.35 329 *e*P **P** **19 39 12.5 +0.3**
KHC pmax pmax
comp=Z,5.0nm,1.6s
KHC Kasperske Hory 80.35 329 *e*P **P** **19 39 12.5 +0.3**
comp=Z,4.7nm,1.6s
EKA Eskdalemuir Ar 80.47 341 P **P** **19 39 13.0 +0.3**
comp=Z,1.0nm,0.6s,baz=30,slow=4.8,SNR=5.1
GERES GERESS Array B 80.53 329 P **P** **19 39 13.7 +0.4**
comp=Z,0.6nm,0.5s,baz=35,slow=4.9,SNR=7.5
GERES LR LR 20 18 02.7
comp=Z,155nm,18.5s,baz=17,slow=38
GEA0 GERESS Array S 80.53 329 *e*P **P** **19 39 11.9 -1.4**
CDF Champ du Feu 83.33 332 P **P** **19 39 27.6 -0.4**
CDF pmax pmax
comp=Z,7.0nm,1.3s
FUORN Ofenpass-Fuorn 83.69 329 *e*P **P** **19 39 30.1 -0.1**
comp=Z,10nm,1.0s
DAVOX Daos/Dischmat 83.71 329 P **P** **19 39 31.2 +1.0**
comp=Z,1.5nm,0.7s,baz=287,slow=8.8,SNR=3.2
PMOR Pomariorio Ree 84.59 115 *e*T T 21 12 33.7
comp=Z,7.9nm,0.2s
PPT Papeete 85.22 118 LR LR 20 08 44.4
comp=Z,109nm,21.7s,baz=326,slow=29
PPT2 Papeete2 85.23 118 *e*LR LR 20 06 31.7
comp=Z,221nm,22.8s,baz=315
LOR Lormes 85.51 333 P **P** **19 39 39.5 +0.5**
LOR pmax pmax
comp=Z,6.0nm,1.0s
LDF La Druitiere 85.65 336 P **P** **19 39 40.3 +0.7**
LDF pmax pmax
comp=Z,16nm,1.6s
LPL La Plagne 85.97 331 P **P** **19 39 41.1 -0.5**
LPL pmax pmax
comp=Z,4.0nm,0.8s
LPG La Plagne 85.98 331 P **P** **19 39 42.5 +0.8**
LPG pmax pmax
comp=Z,5.0nm,1.0s
TAOE Nuku Hiva Isla 86.03 105 *e*LR LR 20 07 09.2
comp=Z,162nm,21.7s
SMF Signal de Mont 86.05 333 P **P** **19 39 42.3 +0.6**
SMF pmax pmax
comp=Z,17nm,1.5s
TCF Toulx Ste Croi 86.92 334 P **P** **19 39 46.9 +0.9**
TCF pmax pmax
comp=Z,17nm,1.6s
JCT Junction City 88.94 50 P **P** **19 39 56.4 +0.4**
JCT pmax pmax
comp=Z,24nm,0.8s
TBI Tubuai 89.34 122 *e*LR LR 20 07 57.4
comp=Z,114nm,26.0s
ESDC Sonseca Array 94.86 335 LR LR 20 28 48.7
comp=Z,81nm,18.2s,baz=210,slow=39
SNAA Sanae 144.04 198 PKP PKPbc 19 46 33.4 -0.1
VNA2 Neumayer--Watz 145.61 197 PKP PKPdf 19 46 31.3 -6.9
baz=77,slow=1.4
VNA1 Neumayer--Stat 146.01 197 PKP **PKPdf** **19 46 38.1 -0.7**

MEX 15 19:36:38.6±1.6, 31°.25N×109°.15W, h16km±37km, MD3.9, Eastern Arizona-Sonora border region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CGIG		**1.34**	**131**	*i* P	Pn	19 37 00.0	-2.8
CGIG				*e*S	Sn	19 37 14.3	-6.0
121A	**Cookes Peak, D**	**1.72**	**42**	*e*P	Pn	19 37 04.5	-3.5
121A				*i* S	Sn	19 37 25.2	-4.6
HSIG		**2.72**	**216**	*e*P	Pn	19 37 18.5	-3.1
HSIG				*i* S	Sn	19 37 50.4	-3.8
214A	**Organ Pipe Nat**	**3.21**	**284**	*e*P	Pn	19 37 23.3	-5.0
214A				*e*S	Sn	19 37 59.4	-6.8

*SKO **15** 19:37:09.3, 41°.44N×22°.58E, h15km, M1.5, ML1.7*
*CSEM **15** 19:37:11.5±0.4, 41°.32N×22°.64E, h5km, ML1.7, Error ellipse: s-maj=7.9km s-min=5.2km az=172.0*

ATH 15 19:37:12.0, 41°.29N×22°.68E, h16km±5km, ML1.2/2, 2C, Error ellipse: s-maj=5.1km s-min=1.4km az=169.0, Northwestern Balkan Peninsula

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
VAY	**Valandovo**	**0.09**	**294**⇑	*i* Pg	Pg	19 37 12.9	-2.5
VAY				*i* Sg	Sg	19 37 14.0	-3.5
VAY				*e*Lg	Lg	19 37 14.1	
	comp=E,392nm,0.2s						
VAY				*e*Lg	Lg	19 37 14.1	
	comp=N,652nm,0.2s						
VAY	**Valandovo**	**0.09**	**294**⇑	*i* Pg	Pg	19 37 12.8	-2.5
VAY				*i* Sg	Sg	19 37 14.0	-3.5
KNT	**Kendrikon**	**0.20**	**127**	P	Pg	19 37 16.5	-0.3
KNT				S	Sg	19 37 20.3	+0.2
KNT	**Kendrikon**	**0.20**	**127**	P	Pg	19 37 16.5	-0.4
KNT				S	Sg	19 37 20.3	+0.1
GRG	**Griva**	**0.39**	**213**	P	Pg	19 37 19.0	-1.0
GRG				S	Sb	19 37 27.1	+0.9
GRG	**Griva**	**0.39**	**213**	P	Pg	19 37 19.0	-1.0
GRG				S	Sb	19 37 27.1	+0.9
GRG				AML	AML	19 37 30.3	
	comp=N,74μm,0.2s						
GRG				AML	AML	19 37 31.3	
	comp=E,54μm,0.2s						
SOH	**Sokhos**	**0.69**	**132**	P	Pg	19 37 25.0	-0.5
SOH				S	Sb	19 37 35.6	+0.8
SOH	**Sokhos**	**0.69**	**132**	P	Pg	19 37 25.0	-0.4
SOH				S	Sb	19 37 35.6	+0.7
SOH				AML	AML	19 37 37.5	
	comp=N,59μm,0.5s						
SOH				AML	AML	19 37 39.7	
	comp=E,58μm,0.6s						
SRS	**Serrai**	**0.71**	**103**	P	Pg	19 37 25.2	-0.6
SRS				S	Sb	19 37 36.6	+1.2
SRS	**Serrai**	**0.71**	**103**	P	Pg	19 37 25.2	-0.6
SRS				S	Sb	19 37 36.6	+1.2
HORT	**Hortiatis**	**0.76**	**155**	P	Pb	19 37 27.0	+0.2
HORT				S	Sg	19 37 36.2	-0.6
HORT	**Hortiatis**	**0.76**	**155**	P	Pb	19 37 27.1	+0.3
HORT				S	Sg	19 37 36.2	-0.6
NVR	**Nevrokopi**	**0.89**	**85**	P	Pn	19 37 30.4	+0.6
NVR				S	Sb	19 37 40.4	-0.3

*IDC **15** 19:37:37.9±1.2, 37°.59N×144°.90E, h0km, mb3.7/7, mb1 3.8/9, mb1mx3.6/50, mbtmp3.6/9, ML3.5/2, Error ellipse: s-maj=27.1km s-min=22.3km az=134.0*
*ISCJB **15** 19:37:40.9±0.9, 37°.66N±0°.08×144°.8E±0°.1, h33km, mb3.7/7, Error ellipse: s-maj=13.5km s-min=9.0km az=41.6*

ISC 15 19:37:43.1±1.1, 37°.63N±0°.10×144°.9E±0°.1, h35km, n10, σ0s80/12, mb3.7/7, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MJAR	**Matsushiro Arr**	**5.42**	**260**	Pn	**Pn**	**19 39 00.8**	**-0.6**
	1.3nm,0.3s,baz=90,slow=15,SNR=12						
MJAR				Sn	**Sn**	**19 40 02.5**	**-0.2**
	1.1nm,0.3s,baz=72,slow=23,SNR=5.2						
MAT	**Matsushiro**	**5.42**	**260**	P	**Pn**	**19 39 00.7**	**-0.8**
MAT				S	Sn	19 39 56.4	-6.3
ASAJ	**Asahikawa**	**6.70**	**346**	Pn	**Pn**	**19 39 17.3**	**-1.6**
	1.0nm,0.3s,baz=222,slow=9.1,SNR=14						
ASAJ				Sn	**Sn**	**19 40 34.5**	**+0.4**
	0.5nm,0.3s,baz=289,slow=29,SNR=3.6						
MKAR	**Makanchi Array**	**46.12**	**302**	P	**P**	**19 46 04.3**	**+0.5**
	0.4nm,0.4s,baz=114,slow=8.4,SNR=9.6						
ILAR	**Eielson Array**	**47.52**	**33**	P	**P**	**19 46 14.7**	**+0.2**
	0.5nm,0.7s,baz=270,slow=6.9,SNR=6.4						
KURBB	**Kurchatov Arra**	**47.80**	**308**	P	**P**	**19 46 17.0**	**+0.2**
	0.9nm,0.5s,baz=81,slow=7.9,SNR=9.2						
WRA	**Warramunga Arr**	**58.11**	**192**	P	**P**	**19 47 32.3**	**-0.8**
	0.3nm,0.6s,baz=11,slow=7.4,SNR=4.8						
YKA	**Yellowknife Ar**	**61.90**	**31**	P	**P**	**19 47 58.8**	**+0.2**
	0.2nm,0.6s,baz=302,slow=6.5,SNR=4.6						
GEYT	**Alibeck**	**65.93**	**300**	P	**P**	**19 48 26.3**	**+0.8**
	0.6nm,0.4s,baz=46,slow=6.2,SNR=3.4						
FINES	**FINESS Array B**	**69.54**	**333**	P	**P**	**19 48 48.5**	**+0.6**
	0.9nm,0.8s,baz=36,slow=12,SNR=2.8						

WEL 15 19:41:30.8±0.1, 43°.58S×172°.74E, h9km, ML3.7/12, 2C-2D, Error ellipse: s-maj=0.7km s-min=0.4km az=90.0, South Island

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CRLZ	**Canterbury Las**	**0.09**	**276**	⇑PG	Pg	19 41 33.0	-0.1
CRLZ				SG	Sg	19 41 34.3	-0.3
CRLZ				AML	AML	19 41 34.7	
CRLZ				AML	AML	19 41 35.2	
CRLZ				AML	AML	19 41 35.2	
MQZ	**McQueen's Vall**	**0.14**	**207**	⇑PG	Pg	19 41 34.1	+0.2
MQZ				SG	Sg	19 41 36.3	+0.4
MQZ				AML	AML	19 41 36.5	
OXZ	**Oxford**	**0.57**	**297**	⇓P*	Pg	19 41 41.9	0.0
LTZ	**Lake Taylor**	**0.87**	**337**	P*	Pg	19 41 47.7	+0.2
LTZ				S*	Sb	19 41 59.5	-0.4
LTZ				AML	AML	19 42 00.4	
RPZ	**Rata Peaks**	**1.23**	**263**	P*	Pn	19 41 52.9	-1.3
RPZ				AML	AML	19 42 12.2	
RPZ				AML	AML	19 42 16.4	
INZ	**Inchbonnie**	**1.28**	**312**	P*	Pn	19 41 54.8	-0.1
WVZ	**Waitaha Valley**	**1.55**	**289**	PN	Pn	19 41 57.8	-0.7
WVZ				AML	AML	19 42 24.0	
WVZ				AML	AML	19 42 29.4	
THZ	**Tophouse**	**1.82**	**4**	PN	Pn	19 42 01.1	-1.4
THZ				AML	AML	19 42 34.8	
THZ				AML	AML	19 42 41.9	
DSZ	**Denniston Nort**	**1.96**	**339**	PN	Pn	19 42 04.6	+0.3
DSZ				AML	AML	19 42 31.9	
DSZ				AML	AML	19 42 31.9	
DSZ				AML	AML	19 42 32.2	
DSZ				AML	AML	19 42 36.9	
LBZ	**Lake Benmore**	**2.01**	**246**	PN	Pn	19 42 04.1	-0.9
LBZ				AML	AML	19 42 42.5	
LBZ				AML	AML	19 42 44.1	
ODZ	**Otahua Downs**	**2.10**	**225**	⇓PN	Pn	19 42 04.8	-1.3
ODZ				AML	AML	19 42 37.8	
ODZ				AML	AML	19 42 44.2	
FOZ	**Fox Glacier**	**2.13**	**270**	PN	Pn	19 42 07.1	+0.5
NNZ	**Nelson**	**2.41**	**12**	PN	Pn	19 42 09.6	-0.8
TCW	**Tory Channel**	**2.63**	**26**	PN	Pn	19 42 12.1	-1.4
WKZ	**Wanaka**	**2.95**	**244**	PN	Pn	19 42 17.4	-0.5
WKZ				AML	AML	19 43 11.7	
WKZ				AML	AML	19 43 16.4	
EAZ	**Earnscleugh**	**2.96**	**235**	PN	Pn	19 42 17.0	-1.0
EAZ				AML	AML	19 43 09.6	
EAZ				AML	AML	19 43 09.6	
EAZ				AML	AML	19 43 11.5	
EAZ				AML	AML	19 43 14.0	
CAW	**Cannon Point**	**3.02**	**36**	PN	Pn	19 42 16.6	-2.2
MTW	**Mount Morrison**	**3.17**	**41**	PN	Pn	19 42 18.3	-2.7
TUZ	**Tuapeka**	**3.24**	**222**	PN	Pn	19 42 20.8	-1.1
TUZ				AML	AML	19 43 22.2	
TUZ				AML	AML	19 43 27.1	
OGWZ	**Otaki Gorge**	**3.30**	**34**	PN	Pn	19 42 20.6	-2.1
MRZ	**Mangatainoka R**	**3.60**	**37**	PN	Pn	19 42 24.4	-2.5
MLZ	**Mavora Lakes**	**3.76**	**240**	PN	Pn	19 42 27.7	-1.2
BFZ	**Birch Farm**	**3.90**	**43**	PN	Pn	19 42 28.3	-2.7
SYZ	**Scrubby Hill**	**3.90**	**220**	PN	Pn	19 42 30.5	-0.5
WHZ	**Wether Hill Ro**	**4.12**	**234**	PN	Pn	19 42 31.9	-2.0
WNVZ	**Wahianoa**	**4.76**	**28**	PN	Pn	19 42 42.8	-0.2

*IDC **15** 19:43:37.2±1.0, 3°.13S×100°.10E, h0km, mb4.3/17, mb1 4.3/19, mb1mx4.1/49, mbtmp4.3/19, ML3.7/2, MS3.6/1, Ms1 3.6/1, ms1mx2.7/49, Error ellipse: s-maj=34.6km s-min=13.2km az=52.0*
*DJA **15** 19:43:38.7±0.5, 3°.5±3°×10°.0E±°, h16km±5km, M4.4/26, mb4.5/13, mB4.9/6, MLv4.5/26, Mw(mB)4.2/6*
*ISCJB **15** 19:43:38.7±0.4, 3°.20S±0°.04×100°.15E±0°.04, h27km, mb4.4/33, MS3.6/1, Error ellipse: s-maj=7.4km s-min=3.4km az=39.0*
*NEIC **15** 19:43:38.5±0.4, 3°.16S×100°.18E, h10km, mb4.5/16, Error ellipse: s-maj=10.9km s-min=5.0km az=50.0*
*BJI **15** 19:43:38.3, 3°.51S×100°.36E, h37km, mb4.7/23, mB4.9/14, Ms4.6/3, Ms7 4.3/3*
*KLM **15** 19:43:39.7, 3°.15S×100°.04E, h31km, mb4.4, ML4.3, MS5.0*

ISC 15 19:43:40.9±0.6, 3°.16S±0°.06×100°.19E±0°.06, h27km, n107, σ1s21/104, mb4.5/33, 12C, Southern Sumatera

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PPSI	**Pulau Pagai**	**0.44**	**335**	P	**Pb**	**19 43 49.4**	**-0.8**
PPSI				S	**Sn**	**19 43 58.7**	**+0.2**
MASI	**Maura Aman, Be**	**2.04**	**89**	P	**Pn**	**19 44 14.0**	**+0.4**
MASI				S	**Sb**	**19 44 41.3**	**-1.1**
PDSI	**Padang**	**2.25**	**7**	P	**Pn**	**19 44 16.1**	**-0.4**
SDSI	**Sungai Dareh**	**2.54**	**29**	P	**Pn**	**19 44 21.2**	**+0.8**
SDSI				S	**Sb**	**19 44 55.0**	**-1.6**
MNAI	**Manna**	**3.00**	**113**	*e*Pn	**Pn**	**19 44 26.4**	**-0.3**
MNAI				*e*Sn	**Sn**	**19 44 58.0**	**-3.9**
LHSI	**Lahat**	**3.39**	**101**	P	**Pn**	**19 44 33.0**	**+0.9**
LHSI				S	**Sn**	**19 45 13.2**	**+1.8**
RGRI	**Rengat**	**3.52**	**37**	P	**Pn**	**19 44 34.9**	**+1.0**
BKNI	**Bangkinang**	**3.57**	**14**	P	**Pn**	**19 44 36.1**	**+1.5**
BKNI	**Bangkinang**	**3.57**	**14**	*e*Pn	**Pn**	**19 44 35.2**	**+0.6**
JMBI	**JAMBI**	**3.77**	**66**	P	**Pn**	**19 44 39.0**	**+1.7**
MNSI	**Mandailing Nat**	**3.98**	**351**	P	**Pn**	**19 44 39.7**	**-0.5**
MDSI	**Maura Dua**	**4.19**	**108**	P	**Pn**	**19 44 43.1**	**0.0**
MDSI				S	**Sn**	**19 45 32.7**	**+1.6**
LWLI	**Liwa**	**4.27**	**116**	P	**Pn**	**19 44 43.5**	**-0.8**
LWLI				S	**Sn**	**19 45 33.9**	**+0.5**
KASI	**Kota Agung**	**4.89**	**119**	P	**Pn**	**19 44 51.8**	**-0.9**
KLI	**Kotabumi**	**4.95**	**110**	P	**Pn**	**19 44 51.7**	**-1.8**
DSRI	**Dabo**	**5.13**	**59**	P	**Pn**	**19 44 56.8**	**+0.8**
	119nm,0.9s,0.5nm						
GSI	**Gunungsitoli**	**5.15**	**329**	P	**Pn**	**19 44 56.2**	**-0.1**
	28nm,0.9s,0.3nm						
GSI	**Gunungsitoli**	**5.15**	**329**	*e*Pn	**Pn**	**19 44 54.8**	**-1.5**
TPRI	**Tanjung Pinang**	**5.93**	**47**	P	**Pn**	**19 45 07.5**	**+0.4**
	52nm,0.6s,769nm0.2nm						
PPBI	**Pangkal Pinang**	**6.02**	**81**	P	**Pn**	**19 45 09.4**	**+1.1**
	6.6nm,0.8s,0.1nm						
PSI	**Prapat**	**6.06**	**348**	Pn	**Pn**	**19 45 08.3**	**-0.6**
	0.4nm,0.3s,baz=164,slow=12,SNR=4.7						
PSI	**Prapat**	**6.06**	**348**	*e*Pn	**Pn**	**19 45 06.2**	**-2.7**
MYKOM	**Kota Tinggi**	**6.13**	**37**	⇑P	**Pn**	**19 45 08.8**	**-1.0**
MYKOM	**Kota Tinggi**	**6.13**	**37**	*e*Pn	**Pn**	**19 45 10.2**	**+0.4**
CGJI	**Cibinong**	**6.46**	**122**	P	**Pn**	**19 45 12.3**	**-2.0**
	38nm,0.8s,1μm0.4nm						
FRIM	**Kepong**	**6.52**	**13**	⇑P	**Pn**	**19 45 14.8**	**-0.3**
IPM	**Ipoh**	**7.64**	**6**	⇑P	**Pn**	**19 45 29.6**	**-0.9**
IPM	**Ipoh**	**7.64**	**6**	*e*Pn	**Pn**	**19 45 32.0**	**+1.5**
CNJI	**Cibinong**	**8.04**	**121**	P	**Pn**	**19 45 34.2**	**-1.8**
	56nm,0.8s,758nm						
LEM	**Lembang**	**8.24**	**116**	Pn	Pn	19 45 47.0	+8.0
	5.3nm,0.3s,baz=59,slow=6.3,SNR=4.1						
KULM	**Kulim**	**8.41**	**3**	⇑P	**Pn**	**19 45 40.4**	**-0.7**
KULM	**Kulim**	**8.41**	**3**	*e*Pn	**Pn**	**19 45 40.9**	**-0.2**
CISI	**Cisompet, Garu**	**8.75**	**120**	P	**Pn**	**19 45 43.9**	**-2.0**
CISI	**Cisompet, Garu**	**8.75**	**120**	*e*Pn	**Pn**	**19 45 43.2**	**-2.7**
CISI				*e*Sn	Sn	19 47 11.8	-12
KTGM	**Kuala Trenggan**	**8.93**	**19**	⇑P	**Pn**	**19 45 47.7**	**-0.6**
XMIS	**Christmas Isla**	**9.06**	**144**	*e*Pn	Pn	19 45 45.7	-4.4
XMIS				*e*Sn	Sn	19 47 19.6	-12
KSM	**Kuching**	**11.11

	26nm,1.1s								
MYLDM	**Lahad Datu**	**20.08**	**66**	⇑P		**P**		**19 48 13.1**	**+0.5**
MYLDM	**Lahad Datu**	**20.08**	**66**	*e*P		**P**		**19 48 11.9**	**-0.6**
	16nm,1.1s								
CM01	**Chiang Mai Arr**	**21.48**	**357**	*e*P		**P**		**19 48 26.8**	**-0.9**
CM31	**Chiang Mai Arr**	**21.52**	**357**	*e*P		**P**		**19 48 27.2**	**-0.9**
CMAR	**Chiang Mai Arr**	**21.52**	**357**	P		**P**		**19 48 26.7**	**-1.3**
	2.9nm,0.7s,baz=188,slow=9.9,SNR=24								
CHTO	**Chiang Mai**	**21.88**	**357**	*e*P		**P**		**19 48 30.8**	**-1.0**
	3.7nm,0.8s								
KMI	**Kunming**	**28.23**	**5**	P		P		19 49 35.5	+3.5
KMI				S		**S**		**19 54 18.5**	**+2.0**
KMI				pmax		pmax			
	comp=Z,10.0nm,0.5s								
FITZ	**Fitzroy Crossi**	**29.02**	**123**	P		**P**		**19 49 41.5**	**+2.6**
	2.5nm,0.7s,baz=307,slow=1.7,SNR=5.3								
FITZ	**Fitzroy Crossi**	**29.02**	**123**	*e*P		**P**		**19 49 41.5**	**+2.6**
	68nm,2.0s								
LSA	**Lhasa**	**33.81**	**346**	*e*P		**P**		**19 50 22.1**	**+0.7**
	5.5nm,0.6s								
GUN	**Gumba**	**33.83**	**337**	*e*P		**P**		**19 50 23.0**	**+1.5**
	28nm,0.5s								
KKN	**Kakani**	**33.96**	**336**	*e*P		P		19 50 26.3	+3.8
	13nm,0.4s								
CD2	**Chengdu**	**34.05**	**5**	P		**P**		**19 50 23.4**	**+0.3**
CD2				pmax		pmax			
	comp=Z,1.0nm,0.5s								
H01W3	**Cape Leeuwin H**	**34.12**	**159**	T		T		20 26 19.9	
	baz=336,slow=76,SNR=37								
H01W2	**Cape Leeuwin H**	**34.13**	**159**	T		T		20 26 20.9	
	baz=336,slow=76,SNR=37								
H01W1	**Cape Leeuwin H**	**34.13**	**159**	T		T		20 26 23.4	
	baz=336,slow=76,SNR=34								
ENH	**Enshi**	**34.41**	**14**	*e*P		**P**		**19 50 25.2**	**-0.9**
	6.0nm,0.9s								
GKN	**Gorkha**	**34.42**	**335**	*e*P		P		19 50 30.7	+4.3
	11nm,0.3s								
KOLN	**Koldanda**	**34.66**	**334**	*e*P		P		19 50 35.2	+6.6
	22nm,0.8s								
PYUN	**Piuthan**	**35.22**	**333**	*e*P		P		19 50 40.6	+7.2
WRA	**Warramunga Arr**	**37.25**	**119**	P		**P**		**19 50 51.6**	**+0.9**
	1.2nm,0.4s,baz=297,slow=8.7,SNR=24								
WR1	**Warramunga Arr**	**37.25**	**119**	*e*P		**P**		**19 50 51.6**	**+0.9**
	31nm,1.9s								
XAN	**Xi'an**	**37.91**	**12**	P		**P**		**19 50 55.1**	**-0.9**
XAN				pmax		pmax			
	comp=Z,13nm,0.8s								
AS31	**Alice Springs**	**38.42**	**125**	*e*P		**P**		**19 51 00.3**	**-0.2**
	1.8nm,0.3s								
ASAR	**Alice Springs**	**38.42**	**125**	P		**P**		**19 51 00.3**	**-0.2**
	1.3nm,0.6s,baz=298,slow=8.1,SNR=17								
HHC	**Hu-ho-hao-te**	**45.02**	**12**	*e*P		**P**		**19 51 56.8**	**+2.4**
HHC				pmax		pmax			
	comp=Z,17nm,0.8s								
WMQ	**Urumqi**	**48.10**	**348**	*e*P		**P**		**19 52 19.8**	**+1.3**
WMQ				pmax		pmax			
	comp=Z,2.0nm,0.6s								
STKA	**Stephens Creek**	**48.24**	**131**	P		**P**		**19 52 21.4**	**+1.7**
	2.7nm,0.8s,baz=327,slow=9.0,SNR=5.8								
STKA	**Stephens Creek**	**48.24**	**131**	*e*P		**P**		**19 52 21.4**	**+1.7**
	3.6nm,1.8s								
TKM2	**Tokmak 2**	**50.97**	**337**	*e*P		**P**		**19 52 40.6**	**+0.1**
	4.0nm,0.9s								
SONA0	**Songino Array**	**51.08**	**5**	*e*P		**P**		**19 52 42.3**	**+1.2**
	17nm,1.5s								
SONM	**Songino Array**	**51.08**	**5**	P		**P**		**19 52 42.3**	**+1.2**
	4.2nm,0.7s,baz=189,slow=8.6,SNR=11								
SONA1	**Songino Array**	**51.09**	**5**	*e*P		**P**		**19 52 41.2**	**0.0**
ULN	**Ulaanbaatar**	**51.17**	**6**	*e*P		**P**		**19 52 42.2**	**+0.3**
EKS2	**Erkin-Say**	**51.49**	**335**	*e*P		**P**		**19 52 45.2**	**+0.9**
	12nm,1.4s								
MK01	**Makanchi Array**	**52.17**	**344**	*e*P		**P**		**19 52 49.8**	**+0.6**
MK31	**Makanchi Array**	**52.20**	**344**	*e*P		**P**		**19 52 50.1**	**+0.7**
MK32	**Makanchi Array**	**52.20**	**344**	*e*P		**P**		**19 52 50.0**	**+0.7**
MKAR	**Makanchi Array**	**52.20**	**344**	P		**P**		**19 52 50.0**	**+0.6**
	6.0nm,0.7s,baz=148,slow=8.1,SNR=93								
MKAR	**Makanchi Array**	**52.20**	**344**	*e*P		**P**		**19 52 50.2**	**+0.8**
MAKZ	**Makanchi**	**52.29**	**344**	*e*P		**P**		**19 52 50.5**	**+0.4**
	4.9nm,1.1s								
USRK	**Ussuriysk Ar.**	**55.09**	**28**	P		**P**		**19 53 10.7**	**+0.1**
	5.3nm,0.8s,baz=242,slow=6.4,SNR=12								
KURBB	**Kurchatov Arra**	**56.71**	**344**	P		**P**		**19 53 22.5**	**+0.4**
	2.9nm,0.8s,baz=164,slow=6.7,SNR=31								
KURK	**Kurchatov**	**56.77**	**344**	*e*P		**P**		**19 53 22.3**	**-0.2**
	5.8nm,0.9s								
ZAA0	**Zalesovo Array**	**58.34**	**349**	*e*P		**P**		**19 53 33.3**	**-0.2**
ZALV	**Zalesovo Beam**	**58.34**	**349**	P		**P**		**19 53 33.6**	**+0.1**
	5.7nm,0.8s,baz=163,slow=5.7,SNR=24								
ZALV				LR		LR		20 23 21.4	
	comp=Z,46nm,18.1s,baz=66,slow=41								
ZAA1	**Zalesovo Array**	**58.34**	**349**	*e*P		**P**		**19 53 33.6**	**+0.1**
KLR	**Kul'dur**	**58.91**	**24**	P		**P**		**19 53 37.8**	**+0.2**
	2.9nm,0.7s,baz=258,slow=6.7,SNR=9.8								
ZRNK	**Zerenda**	**61.76**	**339**	*e*P		**P**		**19 53 56.2**	**-0.8**
	8.2nm,1.9s								
ABKAR	**Akbulak array**	**62.75**	**332**	*e*P		**P**		**19 54 03.2**	**-0.5**
KBZ	**Khabaz**	**69.31**	**319**	P		**P**		**19 54 47.1**	**+1.1**
	2.9nm,0.9s,baz=100,slow=6.4,SNR=5.2								
BR101	**Keskin Array S**	**74.25**	**313**	*e*P		**P**		**19 55 15.3**	**-0.7**
BRTR	**Keskin Array B**	**74.25**	**313**	P		**P**		**19 55 15.3**	**-0.7**
	1.0nm,0.8s,baz=132,slow=6.8,SNR=5.5								
SEY	**Seymchan**	**76.63**	**22**	P		**P**		**19 55 29.1**	**+0.2**
	0.5nm,0.3s,baz=26,slow=9.2,SNR=2.8								
TIXI	**Tiksi**	**76.97**	**9**	P		**P**		**19 55 29.4**	**-1.3**
	0.7nm,0.3s,baz=180,slow=3.6,SNR=4.2								
FIA0	**FINESS Array S**	**85.23**	**332**	*e*P		**P**		**19 56 14.1**	**-0.7**
FINES	**FINESS Array B**	**85.23**	**332**	P		**P**		**19 56 14.1**	**-0.7**
	1.2nm,0.6s,baz=101,slow=4.9,SNR=7.1								
SPITS	**Spitsbergen Ar**	**91.81**	**348**	P		**P**		**19 56 45.9**	**-0.1**
	11nm,1.1s,baz=96,slow=1.8,SNR=2.9								
LTX	**Lajitas**	**145.50**	**39**	*e*PKPbc		**PKPab**		**20 03 18.6**	**+0.9**
TXAR	**Lajitas Array**	**145.50**	**39**	PKPbc		**PKPab**		**20 03 18.6**	**+0.9**
	3.2nm,0.7s,baz=294,slow=1.1,SNR=21								

*ISCJB **15** 19:45:35.2±0.5,32.2°23N±0.04°×115.2°29W±0.05°,h17km, Error ellipse: s-maj=6.1km s-min=5.1km az=0.9*
*MEX **15** 19:45:35.6±0.6,32.2°34N×115.2°08W,h32km±6km,MD3.5*
*ECX **15** 19:45:36.1±0.4,32.2°21N×115.2°29W,h6km,MD2.5,ML2.7*
ISC 15 19:45:34.6±1.0,32°21N±0°03×115°30W±0°04,h17km,n15, σ0§25/19,5C-4D,California-Baja California border region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
CPBX	**Cerro Prieto**	**0.20**	**359**	*e*P	**Pb**	**19 45 39.9**	**-0.1**
CPBX				*e*P	**Pg**	**19 45 40.1**	**+0.5**
CPBX				AML	AML	19 45 44.7	
	comp=N,3μm,0.2s						
CPBX				⇓*e*		19 45 44.7	
CPBX				⇑*e*		19 45 46.0	
CPBX				AML	AML	19 45 46.0	
	comp=E,5μm,0.2s						
MBIG	**Mexicali**	**0.21**	**24**	*i* P	**Pb**	**19 45 40.3**	**+0.2**
SGL	**Mount Signal**	**0.56**	**321**	⇑*i* P	**Pb**	**19 45 46.2**	**+0.1**
EMSC	**East Mesa**	**0.59**	**27**	⇓*i* P	**Pb**	**19 45 46.6**	**+0.1**
COA	**Coachella**	**0.67**	**19**	⇑*i* P	**Pg**	**19 45 47.7**	**-0.1**
YUH	**Yuha Desert**	**0.68**	**310**	⇑*i* P	**Pb**	**19 45 48.1**	**0.0**
YMD	**Yuma Desert**	**0.72**	**62**	⇑*i* P	**Pb**	**19 45 48.8**	**0.0**
ECBX	**El Chinero**	**0.77**	**164**	*e*P	**Pg**	**19 45 49.8**	**+0.1**
IKP	**In-Ko-Pah, Jac**	**0.81**	**303**	⇓*i* P	**Pg**	**19 45 50.6**	**+0.1**
CBX	**Cerro Bola**	**1.16**	**275**	*e*P	**Pb**	**19 45 56.7**	**+0.3**
CBX				*e*S	**Sg**	**19 46 12.1**	**-0.1**
CBX				⇓*e*		19 46 14.4	
CBX				AML	AML	19 46 14.4	
	comp=E,235nm,0.3s						
CBX	**Cerro Bola**	**1.16**	**275**	*e*P	**Pb**	**19 45 56.6**	**+0.3**
CBX				*e*S	**Sn**	**19 46 11.8**	**+0.1**
SPIG	**San Pedro Mart**	**1.17**	**187**	*i* P	**Pn**	**19 45 56.5**	**0.0**
SPIG				*i* S	**Sg**	**19 46 12.5**	**-0.2**
SPX	**San Pedro Mart**	**1.17**	**187**	*e*P	**Pb**	**19 45 56.6**	**0.0**
TJIG	**Tijuana**	**1.18**	**281**	*e*P	**Pn**	**19 45 56.0**	**-0.5**
BAR	**Barrett**	**1.25**	**292**	*e*P	**Pb**	**19 45 57.6**	**-0.2**

*ISCJB **15** 20:12:19.7±0.9,56.0°S±0.2°×27.3°W±0.4,h112km,mb4.0/5, Error ellipse: s-maj=35.4km s-min=21.2km az=165.9*
*IDC **15** 20:12:20.9±11.0,56.02°S×27.43°W,h108km±100km, mb3.7/5,mb1 3.7/5,mb1mx3.6/20,mbtmp4.1/5,MS3.2/1, Ms1 3.3/1,ms1mx2.9/24,Error ellipse: s-maj=31.3km s-min=23.4km az=84.0*
ISC 15 20:12:21.2±0.9,56.0°S±0.2°×27.4°W±0.3,h112km,n8, σ0§93/8,mb4.0/5,South Sandwich Islands region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
MAW	**Mawson**	**40.25**	**144**	P	**P**	**20 19 46.2**	**-0.1**
	1.1nm,0.5s,baz=267,slow=18,SNR=2.8						
VNDA	**Vanda**	**46.59**	**183**	P	**P**	**20 20 37.4**	**+0.3**
	0.7nm,0.7s,baz=184,slow=4.4,SNR=5.4						
LPAZ	**La Paz**	**50.26**	**305**	P	**P**	**20 21 06.9**	**+0.3**
	0.8nm,0.3s,baz=105,slow=6.3,SNR=6.6						
LPAZ				LR	LR	20 43 60.0	
	comp=Z,25nm,19.8s,baz=318,slow=38						
DBIC	**Dimbokro**	**65.19**	**25**	P	**P**	**20 22 49.1**	**-1.1**
	3.2nm,0.9s,baz=156,slow=6.2,SNR=3.7						
TORD	**Torodi Ar. Bea**	**73.09**	**30**	P	**P**	**20 23 40.5**	**+1.5**
	1.8nm,0.6s,baz=201,slow=6.5,SNR=20						
YKA	**Yellowknife Ar**	**136.07**	**318**	PKP	**PKPdf**	**20 31 27.0**	**-0.4**
	0.2nm,0.5s,baz=128,slow=2.2,SNR=5.0						
INK	**Inuvik**	**145.70**	**321**	PKPbc	**PKPdf**	**20 31 44.0**	**-0.6**
	0.7nm,0.4s,baz=47,slow=2.8,SNR=7.9						
ILAR	**Eielson Array**	**150.00**	**312**	PKPbc	**PKPbc**	**20 31 56.5**	**-0.3**
	0.9nm,0.7s,baz=137,slow=2.1,SNR=10						

*JMA **15** 20:12:24.3±0.4,34.2°04N×137.2°38E,h351km±4km,M3.0*
*ISCJB **15** 20:12:25.3±0.4,34.2°07N±0.2°06×137.2°33E±0.2°06, h343km,3km,mb3.1/13,Error ellipse: s-maj=10.3km s-min=7.3km az=155.9*
*IDC **15** 20:12:25.7±0.8,34.2°01N×137.2°28E,h330km±7km,mb3.0/13, mb1 3.1/20,mb1mx3.0/61,mbtmp3.7/20,Error ellipse: s-maj=12.9km s-min=11.1km az=84.0*
ISC 15 20:12:26.3±0.7,34.2°09N±0.2°08×137.2°31E±0.2°06,h337km±6km, n38,σ0§74/44,mb3.2/13,Near south coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
TK04	**Tokai 4**	**0.56**	**58**	S	**S**	**20 13 45.3**	**+2.1**
JIE	**Ise**	**0.58**	**301**	P	**Pn**	**20 13 09.3**	**+0.1**
TTO1	**TONANKAI O.B.S**	**0.64**	**223**	P	**Pn**	**20 13 09.6**	**+0.5**
JWY	**Kouya**	**1.43**	**276**	P	**Pn**	**20 13 12.8**	**0.0**
JWZ	**Kozaga**	**1.44**	**248**	P	**Pn**	**20 13 12.3**	**-0.5**
JGM	**Miyama**	**1.68**	**343**	P	**Pn**	**20 13 14.4**	**+0.2**
JGM				S	**S**	**20 13 52.5**	**0.0**
JYN	**Shimob**	**1.74**	**36**	P	**Pn**	**20 13 15.3**	**+0.7**
JOD2	**Odawara 2**	**1.88**	**51**	P	**Pn**	**20 13 15.3**	**-0.2**
JOD2				S	**S**	**20 13 54.5**	**-0.4**
JWT	**Wachi**	**1.97**	**308**	P	**Pn**	**20 13 16.2**	**+0.1**
JWT				S	**S**	**20 13 55.4**	**-0.6**
JHJ	**Hachijo jima 2**	**2.28**	**114**	P	**Pn**	**20 13 18.6**	**+0.1**
	36nm,0.3s,baz=275,slow=11,SNR=9.2						
JKG	**Kaga**	**2.32**	**340**	P	**Pn**	**20 13 18.7**	**0.0**
JRY	**Ryogami san**	**2.33**	**34**	P	**Pn**	**20 13 19.1**	**+0.3**
JRY				S	**S**	**20 14 00.6**	**-0.4**
JAI	**Aioi**	**2.39**	**264**	P	**Pn**	**20 13 19.1**	**-0.3**
MAT	**Matsushiro**	**2.56**	**17**	S	**S**	**20 14 03.2**	**-1.2**
MJAR	**Matsushiro Arr**	**2.56**	**17**	P	**Pn**	**20 13 20.9**	**+0.2**
	1.0nm,0.3s,baz=119,slow=15,SNR=7.9						
MJAR				S	**S**	**20 14 03.4**	**-1.0**
	0.5nm,0.3s,baz=107,slow=39,SNR=4.9						
JMN	**Monobe**	**2.87**	**264**	P	**Pn**	**20 13 23.5**	**-0.1**
JAG	**Ashikaga**	**2.92**	**36**	P	**Pn**	**20 13 22.5**	**-1.4**
BSO1	**Boso 1**	**3.09**	**78**	P	**Pn**	**20 13 23.1**	**-1.7**
JHS	**Saijyo**	**3.57**	**286**	P	**Pn**	**20 13 30.4**	**+0.2**
JHS				S	**S**	**20 14 22.1**	**+0.5**
JTO	**Tosashimizu**	**3.96**	**253**	P	**Pn**	**20 13 33.8**	**-0.3**
JNU	**Nakatsue**	**5.45**	**262**	P	**Pn**	**20 13 50.5**	**+0.1**
	0.7nm,0.3s,baz=96,slow=3.1,SNR=7.2						
KSRS	**Korea Array**	**9.33**	**296**	P	**Pn**	**20 14 25.2**	**+1.1**
	0.6nm,0.3s,baz=108,slow=13,SNR=16						
ASAJ	**Asahikawa**	**10.82**	**21**	P	**P**	**20 14 55.0**	**-0.2**
	0.3nm,0.3s,baz=262,slow=15,SNR=4.7						
USRK	**Ussuriysk Ar.**	**10.90**	**339**	P	**Pn**	**20 14 55.3**	**+0.4**
	0.3nm,0.3s,baz=146,slow=11,SNR=5.5						
KLR	**Kul'dur**	**15.68**	**346**	P	**P**	**20 15 48.6**	**-0.1**
	0.3nm,0.3s,baz=165,slow=12,SNR=6.1						
SONM	**Songino Array**	**26.87**	**310**	P	**P**	**20 17 37.5**	**+0.2**
	0.5nm,0.5s,baz=116,slow=8.4,SNR=3.6						
CMAR	**Chiang Mai Arr**	**37.51**	**255**	P	**P**	**20 19 08.6**	**-0.5**
	0.4nm,0.4s,baz=50,slow=7.5,SNR=6.1						
ZALV	**Zalesovo Beam**	**41.52**	**315**	P	**P**	**20 19 41.3**	**-0.2**
	0.3nm,0.3s,baz=81,slow=8.9,SNR=3.2						
MKAR	**Makanchi Array**	**42.92**	**304**	P	**P**	**20 19 53.2**	**+0.4**
	1.4nm,0.6s,baz=90,slow=9.9,SNR=26						
KURBB	**Kurchatov Arra**	**45.24**	**310**	P	**P**	**20 20 10.8**	**-0.2**
	0.6nm,0.4s,baz=90,slow=6.5,SNR=13						
BVAR	**Borovoye Array**	**50.12**	**311**	P	**P**	**20 20 47.8**	**-0.3**
	0.3nm,0.4s,baz=109,slow=4.9,SNR=4.4						
ILAR	**Eielson Array**	**53.75**	**31**	P	**P**	**20 21 15.0**	**+0.6**
	0.3nm,0.7s,baz=261,slow=4.6,SNR=4.9						
WRA	**Warramunga Arr**	**53.80**	**183**	P	**P**	**20 21 14.0**	**-1.3**
	0.4nm,0.3s,baz=0.1,slow=7.6,SNR=18						
ASAR	**Alice Springs**	**57.53**	**184**	P	**P**	**20 21 40.5**	**-1.0**
	0.1nm,0.3s,baz=355,slow=4.8,SNR=7.8						
YKA	**Yellowknife Ar**	**68.01**	**28**	P	**P**	**20 22 50.0**	**+0.4**
	0.3nm,0.5s,baz=300,slow=6.2,SNR=6.5						
FINES	**FINESS Array B**	**69.83**	**331**	P	**P**	**20 23 00.3**	**-0.4**
	1.6nm,1.0s,baz=145,slow=34,SNR=3.2						
NVAR	**Mina Array Bea**	**79.44**	**51**	P	**P**	**20 23 57.3**	**+1.1**
	0.3nm,0.5s,baz=272,slow=6.2,SNR=3.2						
TXAR	**Lajitas Array**	**94.57**	**50**	P	**P**	**20 25 10.6**	**+1.0**
	0.1nm,0.3s,baz=131,slow=8.3,SNR=3.0						

*ISCJB **15** 20:13:57.0±1.3,33.2°16S±0.07°×177.8°W±0.2°,h34km, mb4.2/5,Error ellipse: s-maj=23.0km s-min=7.8km az=15.0*
*IDC **15** 20:13:57.4±1.5,33.2°02S×178.2°26W,h0km,mb4.1/3, mb1 4.3/5,mb1mx3.9/38,mbtmp4.1/5,ML3.9/2,MS3.1/1, Ms1 3.1/1,ms1mx2.6/40,Error ellipse: s-maj=44.7km s-min=27.8km az=131.0*
*NEIC **15** 20:14:01.7±1.2,33.2°23S×178.2°08W,h35km,mb4.6/2,Error ellipse: s-maj=26.6km s-min=12.6km az=106.0*
ISC 15 20:14:00.2±1.2,33.2°16S±0.2°10×177.2°8W±0.2°,h34km,n26, σ1§35/29,mb4.3/5,1D,South of Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
WMGZ	**Waiomatatini S**	**5.58**	**212**	PN	**Pn**	**20 15 23.6**	**+2.8**
PKGZ	**Pakihiroa**	**5.79**	**214**	PN	**Pn**	**20 15 23.8**	**+0.1**
PKGZ				SN	**Sn**	**20 16 30.2**	**+1.3**
HAZ	**Te Kaha**	**5.83**	**217**	PN	**Pn**	**20 15 25.1**	**+1.0**
HAZ				SN	**Sn**	**20 16 31.8**	**+2.1**
PUZ	**Puketiti**	**5.85**	**212**	PN	**Pn**	**20 15 24.0**	**-0.6**
PUZ				SN	**Sn**	**20 16 30.3**	**-0.2**
TWGZ	**Tauwhareparae**	**6.06**	**213**	PN	**Pn**	**20 15 26.8**	**-0.7**
URZ	**Urewera**	**6.55**	**218**	Pn	**Pn**	**20 15 34.6**	**+0.5**
	2.9nm,0.3s,baz=246,slow=3.4,SNR=17						
URZ				Sn	**Sn**	**20 16 47.4**	**-0.2**
	3.9nm,0.3s,baz=153,slow=21,SNR=9.8						
URZ	**Urewera**	**6.55**	**218**	*e*Pn	**Pn**	**20 15 34.1**	**0.0**
URZ				*e*Sn	**Sn**	**20 16 47.4**	**-0.2**
RIGZ	**Rimuhau**	**6.60**	**212**	PN	**Pn**	**20 15 36.2**	**+1.4**
OUZ	**Omahuta**	**7.41**	**252**	*e*Pn	**Pn**	**20 15 46.8**	**+0.9**
BKZ	**Black Stump Fm**	**7.56**	**216**	*e*Pn	**Pn**	**20 15 47.1**	**-0.8**
BFZ	**Birch Farm**	**8.88**	**211**	*e*Pn	**Pn**	**20 16 04.5**	**-1.7**
BFZ				*e*Sn	Sn	20 17 36.8	-8.2
THZ	**Tophouse**	**11.31**	**218**	*e*Pn	**Pn**	**20 16 39.2**	**-0.3**
MQZ	**McQueen's Vall**	**12.90**	**213**	*e*Pn	Pn	20 16 56.3	-4.7
RPZ	**Rata Peaks**	**13.67**	**216**	Pn	**Pn**	**20 17 10.1**	**-1.5**
	0.5nm,0.3s,baz=55,slow=4.7,SNR=2.6						
RPZ				LR	LR	20 22 42.9	
	comp=Z,84nm,20.2s,baz=3.5,slow=39						
ODZ	**Otahua Downs**	**14.85**	**214**	*e*Pn	Pn	20 17 23.9	-3.7
CTA	**Charters Tower**	**34.49**	**283**	P	**P**	**20 20 44.8**	**-0.3**
	1.1nm,0.5s,baz=121,slow=11,SNR=5.6						
AS01	**Alice Springs**	**43.15**	**270**	*e*P	**P**	**20 21 56.3**	**-1.5**
ASAR	**Alice Springs**	**43.19**	**270**	P	**P**	**20 21 56.9**	**-1.2**
	1.5nm,0.7s,baz=106,slow=7.5,SNR=25						
WB2	**Warramunga Arr**	**44.41**	**275**	*e*P	**P**	**20 22 06.5**	**-1.4**
	18nm,1.6s						
WR1	**Warramunga Arr**	**44.42**	**275**	*e*P	**P**	**20 22 06.5**	**-1.5**
	12nm,1.4s						
WRA	**Warramunga Arr**	**44.42**	**275**	P	**P**	**20 22 06.5**	**-1.5**
	2.7nm,0.5s,baz=115,slow=7.7,SNR=36						
SYO	**Syowa Base**	**74.47**	**193**	‖*e*P	**P**	**20 25 34.2**	**-0.4**
FINES	**FINESS Array B**	**147.78**	**339**	PKPbc	**PKPab**	**20 33 42.0**	**-1.1**
	1.2nm,0.4s,baz=36,slow=3.0,SNR=14						
HFS	**Hagfors**	**151.97**	**348**	PKPbc	**PKPbc**	**20 33 52.8**	**+1.8**
	2.8nm,0.9s,baz=108,slow=4.7,SNR=3.2						
MMAI	**Mount Meron Ar**	**152.23**	**279**	PKPbc	**PKPbc**	**20 33 54.8**	**+2.3**
	1.0nm,0.6s,baz=57,slow=3.1,SNR=5.2						
BRTR	**Keskin Array B**	**153.95**	**294**	PKPbc	**PKPbc**	**20 33 57.7**	**+1.5**
	0.4nm,0.6s,baz=134,slow=3.9,SNR=2.6						

*NIED **15** 20:22:00,38.2°40N×141.2°90E,h122km,Mw4.4 Best double couple: Mw4.92000×10^15 NP1:φs81.00000°, δ46.00000°,λ-174.00000°. NP2:φs346.00000°, δ86.00000°,λ-44.00000°.*
JMA 15 20:22:35.0±0.1,38.2°39N×141.2°88E,h57km±1km,M3.5, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**0.42**	**279**	P	Pn	20 22 46.0	+0.1
JIO				S	Sn	20 22 53.6	-0.2
OFUJ	**Ofunato**	**0.71**	**347**	P	Pn	20 22 49.3	+0.1
OFUJ				S	Sn	20 22 59.4	-0.1
JMK	**Ichinoseki**	**0.76**	**318**	P	Pn	20 22 50.2	+0.4
JMK				S	Sn	20 23 00.8	+0.1
JOU	**Okura**	**0.96**	**269**	P	Pn	20 22 52.6	+0.2
JOU				S	Sn	20 23 05.5	+0.3
JMM	**Marumori**	**1.00**	**239**	P	Pn	20 22 52.8	-0.2
JMM				S	Sn	20 23 05.5	-0.7
JOM	**Ohasama**	**1.18**	**337**	P	Pn	20 22 55.6	+0.4
MIYJ	**Miyakonagasawa**	**1.19**	**358**	P	Pn	20 22 55.3	-0.1
MIYJ				S	Sn	20 23 10.3	-0.3
JFK	**Kawauchi**	**1.29**	**218**	P	Pn	20 22 57.0	+0.1
JFK				S	Sn	20 23 12.6	-0.6
JYK	**Kaneyama**	**1.30**	**294**	P	Pn	20 22 57.4	+0.5
JYK				S	Sn	20 23 14.0	+0.6
JRG	**Rokugo**	**1.40**	**316**	P	Pn	20 22 59.0	+0.8
JRG				*e*S	Sn	20 23 16.8	+1.1
JYS	**Shirataka**	**1.44**	**264**	P	Pn	20 22 59.3	+0.5
JYS				S	Sn	20 23 17.4	+0.8
JFT	**Otama**	**1.50**	**235**	S	Sn	20 23 18.8	+0.7
JKZ	**Kuzumaki**	**1.65**	**345**	P	Pn	20 23 02.3	+0.6
JKZ				S	Sn	20 23 22.3	+0.5
JANG	**Nango**	**2.00**	**352**	P	Pn	20 23 06.5	+0.1
JANG				*e*S	Sn	20 23 31.3	+1.0

IDC 15 20:22:42.1±5.8,20.2°51S×179.2°57E,h193km±43km,mb2.7/2, mb1 3.3/3,mb1mx3.0/47,mbtmp3.7/3,Error ellipse: s-maj=332.5km s-min=24.8km az=152.0,South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
AFI	**Afiamalu**	**10.55**	**53**	P	Pn	20 25 08.7	0.0
	3.7nm,0.3s,baz=247,slow=21,SNR=3.0						
ASAR	**Alice Springs**	**42.30**	**257**	P	P	20 30 17.0	-0.2
	0.2nm,0.4s,baz=93,slow=8.0,SNR=6.9						
WRA	**Warramunga Arr**	**42.34**	**263**	P	P	20 30 17.5	0.0
	0.1nm,0.3s,baz=98,slow=7.4,SNR=3.4						
BRTR	**Keskin Array B**	**145.14**	**311**	PKPbc	PKPbc	20 41 55.6	-1.4
	0.9nm,0.6s,baz=46,slow=3.6,SNR=4.7						
GERES	**GERESS Array B**	**149.54**	**341**	PKPbc	PKPbc	20 42 08.5	-0.2
	0.1nm,0.3s,baz=40,slow=7.7,SNR=3.1						

*ISCJB **15** 20:24:03.7±0.4,36.2°03N±0.04°×71.2°02E±0.05°,h100km, mb3.8/13,Error ellipse: s-maj=6.6km s-min=4.2km az=138.9*
*IDC **15** 20:24:06.0±2.9,36.2°10N×70.2°96E,h103km±25km,mb3.6/14, mb1 3.6/20,mb1mx3.4/69,mbtmp4.0/20,Error ellipse: s-maj=18.8km s-min=15.2

comp=Z,0.2nm,0.8s,baz=307,slow=4.5,SNR=4.6

*ISCJB **15** 20:26:03.3±1.6, 17°.4S±0°.6×178°.9W±0°.4, h539km, mb3.6/6, Error ellipse: s-maj=85.7km s-min=20.1km az=150.5*
*IDC **15** 20:26:08.2±6.7, 17°.51S×178°.95W, h586km±81km, mb3.1/6, mb1 3.3/7, mb1mx2.9/52, mbtmp4.1/7, Error ellipse: s-maj=80.1km s-min=36.6km az=153.0*

ISC 15 20:26:04.4±1.6, 17°.3S±0.5×178°.8W±0°.3, h539km, n8, σ1§47/8, mb3.7/6, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**14.69**	**249**	P	**P**	**20 29 13.5**	**+2.5**
	0.4nm,0.3s,baz=99,slow=17,SNR=5.0						
CTA	**Charters Tower**	**33.19**	**260**	P	**P**	**20 31 56.5**	**-0.4**
	1.7nm,0.6s,baz=94,slow=15,SNR=3.5						
STKA	**Stephens Creek**	**38.61**	**240**	P	**P**	**20 32 40.4**	**-1.1**
	1.4nm,0.4s,baz=82,slow=9.2,SNR=9.1						
WRA	**Warramunga Arr**	**44.39**	**259**	P	**P**	**20 33 26.2**	**-1.3**
	0.6nm,0.4s,baz=98,slow=7.0,SNR=26						
ASAR	**Alice Springs**	**44.61**	**254**	P	**P**	**20 33 28.1**	**-1.1**
	9.1nm,0.5s,baz=89,slow=8.2,SNR=231						
ILAR	**Eielson Array**	**85.38**	**13**	P	**P**	**20 37 44.5**	**+0.1**
	0.2nm,0.4s,baz=225,slow=5.2,SNR=4.4						
TXAR	**Lajitas Array**	**85.98**	**58**	P	**P**	**20 37 48.5**	**+0.3**
	0.5nm,0.7s,baz=212,slow=4.0,SNR=3.7						
GERES	**GERESS Array B**	**146.94**	**345**	PKPbc	**PKPbc**	**20 44 46.8**	**+0.2**
	0.4nm,0.4s,baz=358,slow=3.1,SNR=4.5						

*NIED **15** 20:29:00, 36°.30N×142°.70E, h8km, Mw4.0 Best double couple: M₀1.13000×10¹⁵ NP1:φs355.00000°,δ26.00000°, λ-125.00000°. NP2:φs212.00000°,δ69.00000°, λ-74.00000°.*
*NEIC **15** 20:29:30.2±0.8, 36°.23N×143°.21E, h25km±6km, mb4.2/9, Error ellipse: s-maj=14.2km s-min=7.6km az=113.0*
*ISCJB **15** 20:29:32.3±1.5, 36°.25N±0°.04×142°.81E±0°.04, h33km±11km, mb4.0/32, MS3.4/3, Error ellipse: s-maj=6.2km s-min=5.7km az=145.0*
*JMA **15** 20:29:33.3±0.2, 36°.34N×142°.72E, h72km, M3.9*
*IDC **15** 20:29:35.2±0.6, 36°.15N×142°.86E, h41km±4km, mb3.7/21, mb1 3.8/27, mb1mx3.7/78, mbtmp3.9/27, ML3.7/5, MS3.1/8, Ms1 3.1/8, ms1mx2.8/70, Error ellipse: s-maj=11.6km s-min=8.7km az=145.0*

ISC 15 20:29:33.8±0.5, 36°.26N±0°.04×142°.81E±0°.06, h28km±2km, n79, σ1§28/86, mb4.0/32, MS3.3/3, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**1.68**	**251**	P	**Pn**	**20 30 00.8**	**-0.5**
CHOJ				S	Sn	20 30 21.3	-0.6
ONAJ	**Iwakimizuishiy**	**1.82**	**298**	P	**Pn**	**20 30 01.8**	**-1.5**
ONAJ				S	Sn	20 30 24.1	-1.4
JHO	**Hitachi**	**1.84**	**281**	P	**Pn**	**20 30 02.0**	**-1.5**
JHO				S	Sn	20 30 23.6	-2.3
BSO1	**Boso 1**	**2.20**	**224**	P	**Pn**	**20 30 08.0**	**+0.1**
BSO1				S	Sb	20 30 36.6	-2.5
JMM	**Marumori**	**2.27**	**315**	P	**Pn**	**20 30 07.6**	**-1.9**
JFT	**Otama**	**2.35**	**303**	P	**Pn**	**20 30 09.3**	**-1.2**
JFT				S	Sn	20 30 37.2	-1.2
BSO3	**Boso 3**	**2.38**	**233**	P	**Pn**	**20 30 10.9**	**+0.2**
JAG	**Ashikaga**	**2.72**	**274**	P	**Pn**	**20 30 14.4**	**-1.2**
JRY	**Ryogami san**	**3.17**	**267**	P	**Pn**	**20 30 21.1**	**-0.8**
JRY				S	Sn	20 30 57.1	-1.7
JOD2	**Odawara 2**	**3.19**	**253**	P	**Pn**	**20 30 21.8**	**-0.3**
JOD2				S	Sn	20 30 59.1	-0.1
JYK	**Kaneyama**	**3.29**	**324**	P	**Pn**	**20 30 21.4**	**-2.0**
JYK				S	Sn	20 30 59.0	-2.6
JYN	**Shimob**	**3.55**	**259**	P	**Pn**	**20 30 27.5**	**+0.4**
MJAR	**Matsushiro Arr**	**3.72**	**276**	P	**Pn**	**20 30 28.9**	**-0.5**
	11nm,0.3s,baz=87,slow=9.8,SNR=38						
MJAR				S	**Sn**	**20 31 14.1**	**+1.7**
	3.6nm,0.3s,baz=149,slow=9.3,SNR=5.1						
MJAR				LR	LR	20 31 51.1	
	comp=Z,59nm,20.8s,baz=105,slow=36						
MAJO	**Matsushiro**	**3.73**	**276**	*e*Pn	**Pn**	**20 30 29.6**	**+0.1**
MAT	**Matsushiro**	**3.73**	**276**	P	**Pn**	**20 30 29.2**	**-0.3**
MAT				*e*S	**Sn**	**20 31 11.3**	**-1.1**
MAT	**Matsushiro**	**3.73**	**276**	P	**Pn**	**20 30 29.5**	**0.0**
MJB9	**Matsu-Tunnel**	**3.73**	**276**	*e*Pn	**Pn**	**20 30 29.5**	**0.0**
JHJ2	**Mitsune**	**4.00**	**219**	*e*Pn	**Pn**	**20 30 32.4**	**-0.8**
JHJ2				*e*Sn	**Sn**	**20 31 15.6**	**-3.5**
JHJ	**Hachijo jima 2**	**4.01**	**219**	P	**Pn**	**20 30 32.0**	**-1.3**
	24nm,0.3s,baz=329,slow=16,SNR=13						
JHJ				S	**Sn**	**20 31 17.2**	**-2.1**
	79nm,0.3s,baz=16,slow=22,SNR=6.9						
INU	**Inuyama**	**4.80**	**261**	*e*Pn	**Pn**	**20 30 44.7**	**+0.5**
ERM	**Erimo**	**5.75**	**3**	*e*Pn	Pn	20 30 52.7	-4.5
ERM				*e*Sn	Sn	20 31 49.2	-13
ASAJ	**Asahikawa**	**7.84**	**359**	P	Pn	20 31 22.1	-3.9
	5.4nm,0.3s,baz=216,slow=11,SNR=4						
ASAJ				S	**Sn**	**20 32 50.6**	**-3.2**
	1.3nm,0.3s,baz=94,slow=28,SNR=2.6						
ASAJ				LR	LR	20 35 12.4	
	comp=Z,91nm,18.9s,baz=339,slow=42						
ASAJ	**Asahikawa**	**7.84**	**359**	*e*Pn	Pn	20 31 21.8	-4.2
CBIJ	**Chichi jima**	**9.16**	**184**	*e*Pn	Pn	20 31 39.3	-4.8
CBIJ				*e*Sn	Sn	20 33 17.3	-8.8
JCJ	**Chichijima**	**9.16**	**184**	P	Pn	20 31 39.7	-4.4
JCJ				S	Sn	20 33 17.3	-8.8
JNU	**Nakatsue**	**10.31**	**256**	P	**Pn**	**20 32 01.1**	**+1.2**
	0.4nm,0.3s,baz=104,slow=6.1,SNR=4.0						
JNU				LR	LR	20 36 36.9	
	comp=Z,87nm,18.6s,baz=128,slow=41						
JNU	**Nakatsue**	**10.31**	**256**	*e*Pn	**Pn**	**20 32 01.6**	**+1.7**
USRK	**Ussuriysk Ar.**	**11.45**	**317**	P	**Pn**	**20 32 16.2**	**+0.9**
	0.2nm,0.3s,baz=119,slow=14,SNR=5.0						
USRK				S	**Sn**	**20 34 27.1**	**+4.9**
	0.3nm,0.3s,baz=145,slow=42,SNR=7.7						
KSRS	**Korea Array**	**11.99**	**280**	P	**Pn**	**20 32 24.4**	**+1.7**
	0.2nm,0.3s,baz=100,slow=13,SNR=4.3						
KSRS				LR	LR	20 36 47.3	
	comp=Z,68nm,20.4s,baz=116,slow=36						
KLR	**Kul'dur**	**15.27**	**331**	P	**P**	**20 33 10.6**	**-1.3**
	0.3nm,0.3s,baz=118,slow=3.6,SNR=5.1						
KLR				LR	LR	20 38 59.0	
	comp=Z,42nm,18.9s,baz=180,slow=37						
HHC	**Hu-ho-hao-te**	**24.79**	**290**	*e*P	**P**	**20 34 51.8**	**-1.6**
HHC				pmax	pmax		
	comp=Z,20nm,1.1s						
HHC				pmax	pmax		
	comp=Z,59nm,3.8s						
H11N2	**WAKE ISLAND Hy**	**26.79**	**121**	T	T	21 03 12.2	
	baz=314,slow=75,SNR=5.0						
H11N1	**WAKE ISLAND Hy**	**26.80**	**122**	T	T	21 03 12.1	
	baz=314,slow=75,SNR=3.8						
H11N3	**WAKE ISLAND Hy**	**26.81**	**121**	T	T	21 03 14.6	
	baz=314,slow=75,SNR=4.2						
YAK	**Yakutsk**	**27.07**	**346**	LR	LR	20 47 01.8	
	comp=Z,46nm,20.1s,baz=182,slow=38						
SEY	**Seymchan**	**27.34**	**10**	P	**P**	**20 35 15.9**	**-0.2**
	comp=Z,13nm,0.2s,baz=24,slow=23,SNR=2.3						
H11S1	**WAKE ISLAND Hy**	**27.50**	**124**	T	T	21 04 08.4	
	SNR=3.3						
ENH	**Enshi**	**28.41**	**268**	*e*P	**P**	**20 35 25.5**	**-0.5**
	comp=Z,6.5nm,0.8s						
ULN	**Ulaanbaatar**	**28.72**	**305**	*e*P	**P**	**20 35 28.5**	**-0.2**
	comp=Z,3.0nm,0.9s						
SONA1	**Songino Array**	**29.14**	**305**	*e*P	**P**	**20 35 32.1**	**-0.3**
SONM	**Songino Array**	**29.15**	**305**	P	**P**	**20 35 34.0**	**+1.5**
	comp=Z,2.1nm,0.6s,baz=108,slow=8.7,SNR=9.3						
TLY	**Talaya**	**31.68**	**312**	P	**P**	**20 35 56.5**	**+1.7**
	comp=Z,1.4nm,0.4s,baz=129,slow=4.4,SNR=4.6						
TLY	**Talaya**	**31.68**	**312**	*e*P	**P**	**20 35 54.8**	**0.0**
	comp=Z,3.3nm,0.7s						
CD2	**Chengdu**	**32.81**	**272**	P	**P**	**20 36 06.3**	**+1.4**
CD2				pmax	pmax		
	comp=Z,1.0nm,0.5s						
TIXI	**Tiksi**	**36.19**	**353**	P	**P**	**20 36 34.7**	**+1.2**
	comp=Z,0.5nm,0.4s						
WMQ	**Urumqi**	**42.19**	**298**	*e*P	**P**	**20 37 25.5**	**+1.4**
WMQ				pmax	pmax		
	comp=Z,1.0nm,0.6s						
WMQ				pmax	pmax		
	comp=Z,58nm,3.6s						
CMAR	**Chiang Mai Arr**	**42.41**	**257**	P	**P**	**20 37 26.9**	**+0.9**
	comp=Z,0.4nm,0.8s,baz=45,slow=10,SNR=3.7						
ZAA0	**Zalesovo Array**	**43.26**	**313**	*e*P	**P**	**20 37 31.6**	**-0.9**
ZALV	**Zalesovo Beam**	**43.26**	**313**	P	**P**	**20 37 32.7**	**+0.1**
	comp=Z,3.0nm,0.5s,baz=98,slow=7.3,SNR=15						
ZALV				pP	**sP**	**20 37 44.9**	**+0.3**
	comp=Z,1.5nm,0.6s,baz=87,slow=6.1,SNR=3.8						
MK01	**Makanchi Array**	**45.48**	**303**	*e*P	**P**	**20 37 49.8**	**-0.7**
MK31	**Makanchi Array**	**45.48**	**303**	*e*P	**P**	**20 37 50.3**	**-0.1**
MKAR	**Makanchi Array**	**45.48**	**303**	P	**P**	**20 37 50.6**	**+0.1**
	comp=Z,2.3nm,0.8s,baz=85,slow=4.9,SNR=18						
MKAR				LR	LR	20 57 18.0	
	comp=Z,32nm,18.3s,baz=152,slow=36						
MKAR	**Makanchi Array**	**45.48**	**303**	*e*P	**P**	**20 37 50.3**	**-0.1**
MAKZ	**Makanchi**	**45.69**	**303**	*e*P	**P**	**20 37 52.0**	**-0.1**
	comp=Z,3.7nm,0.9s						
KURK	**Kurchatov**	**47.29**	**309**	*e*P	**P**	**20 38 03.8**	**-0.8**
	comp=Z,6.7nm,0.9s						
ILAR	**Eielson Array**	**49.55**	**32**	P	**P**	**20 38 21.2**	**-0.5**
	comp=Z,0.4nm,0.7s,baz=260,slow=6.6,SNR=5.5						
ILAR				pP	**sP**	**20 38 33.6**	**-0.2**
	comp=Z,0.7nm,0.8s,baz=262,slow=6.0,SNR=6.6						
TKM2	**Tokmak 2**	**50.99**	**299**	*e*P	**P**	**20 38 32.3**	**-0.9**
	comp=Z,1.1nm,0.8s						
VOSK	**Vostochnaya**	**51.63**	**313**	*e*P	**P**	**20 38 36.6**	**-1.0**
	comp=Z,2.2nm,0.8s						
AAK	**Ala-Archa**	**51.85**	**299**	*e*P	P	20 38 43.0	+3.4
	comp=Z,2.2nm,1.1s						
BVAR	**Borovoye Array**	**51.92**	**313**	P	**P**	**20 38 39.8**	**0.0**
	comp=Z,0.8nm,0.5s,baz=86,slow=8.4,SNR=9.6						
ZRNK	**Zerenda**	**52.75**	**313**	*e*P	**P**	**20 38 45.4**	**-0.5**
	comp=Z,2.0nm,0.8s						
INK	**Inuvik**	**54.56**	**27**	P	**P**	**20 38 58.5**	**-0.4**
	comp=Z,0.4nm,0.5s,baz=289,slow=6.8,SNR=2.5						
WRA	**Warramunga Arr**	**56.47**	**190**	P	**P**	**20 39 12.2**	**-1.0**
	comp=Z,1.7nm,0.8s,baz=8.8,slow=7.7,SNR=12						
ARU	**Arti**	**57.68**	**319**	P	**P**	**20 39 21.1**	**-0.3**
	comp=Z,2.0nm,0.6s,baz=35,slow=4.7,SNR=5.3						
ABKAR	**Akbulak array**	**59.29**	**311**	*e*P	**P**	**20 39 31.7**	**-1.0**
AKTO	**Aktyubinsk**	**60.02**	**313**	P	**P**	**20 39 37.8**	**-0.1**
	comp=Z,0.9nm,0.6s,baz=71,slow=11,SNR=4.4						
ASAR	**Alice Springs**	**60.20**	**189**	P	**P**	**20 39 38.4**	**-0.8**
	comp=Z,0.9nm,0.8s,baz=15,slow=7.0,SNR=12						
YKA	**Yellowknife Ar**	**63.91**	**30**	P	**P**	**20 40 03.4**	**-0.3**
	comp=Z,0.1nm,0.5s,baz=293,slow=6.6,SNR=3.2						
YKA				pP	**sP**	**20 40 15.9**	**0.0**
	comp=Z,0.2nm,0.6s,baz=298,slow=6.4,SNR=3.9						
BLN	**Blyn Mountain**	**66.64**	**47**	*e*pP	pP	20 40 26.3	-4.3
FINES	**FINESS Array B**	**70.02**	**333**	P	**P**	**20 40 43.1**	**+0.6**
	comp=Z,1.2nm,0.9s,baz=45,slow=6.1,SNR=3.1						
FINES				pP	**sP**	**20 40 55.9**	**+1.1**
	comp=Z,2.7nm,0.9s,baz=20,slow=6.1,SNR=3.2						
KBZ	**Khabaz**	**72.25**	**311**	P	**P**	**20 40 56.9**	**+0.5**
	comp=Z,2.2nm,0.9s,baz=310,slow=4.6,SNR=3.2						
NVAR	**Mina Array Bea**	**74.54**	**54**	pP	pP	20 41 23.2	+3.9
	comp=Z,0.7nm,0.6s,baz=292,slow=4.8,SNR=2.0						
NB2	**NORSAR Subarra**	**75.33**	**338**	P	sP	20 41 26.7	+0.2
	comp=Z,1.1nm,0.8s,baz=38,slow=5.9						
NOA	**NORSAR Array B**	**75.33**	**338**	P	**P**	**20 41 15.5**	**+1.4**
	comp=Z,1.4nm,0.9s,baz=42,slow=6.0,SNR=3.3						
NOA				pP	**sP**	**20 41 26.8**	**+0.2**
	comp=Z,2.5nm,0.9s,baz=39,slow=5.7,SNR=5.7						
AKASG	**Malin Array Be**	**75.59**	**323**	P	**P**	**20 41 15.9**	**+0.1**
	comp=Z,0.3nm,0.4s,baz=49,slow=6.3,SNR=3.8						
AKASG				pP	**sP**	**20 41 27.9**	**-0.3**
	comp=Z,0.8nm,0.6s,baz=48,slow=5.9,SNR=2.6						
PDAR	**Pinedale Array**	**77.40**	**46**	P	**P**	**20 41 26.8**	**+0.3**
	comp=Z,0.4nm,0.8s,baz=298,slow=6.2,SNR=3.6						
PDAR				pP	**sP**	**20 41 38.8**	**-0.1**
	comp=Z,0.4nm,0.6s,baz=313,slow=3.0,SNR=3.2						
TXAR	**Lajitas Array**	**89.69**	**53**	P	**P**	**20 42 29.2**	**-0.4**
	comp=Z,0.4nm,0.8s,baz=301,slow=0.7,SNR=4.5						
TXAR				pP	**sP**	**20 42 42.1**	**0.0**
	comp=Z,0.7nm,0.7s,baz=292,slow=3.2,SNR=5.3						
ATD	**Arta Tunnel**	**91.15**	**285**	LR	LR	21 27 20.3	
	comp=Z,31nm,18.1s,baz=58,slow=38						
LPAZ	**La Paz**	**146.08**	**62**	PKPbc	**PKPbc**	**20 49 12.6**	**+0.2**
	comp=Z,1.9nm,0.8s,baz=16,slow=9.5,SNR=7.8						
LPAZ				pPKPbc	pPKPbc	20 49 24.7	+3.0
	comp=Z,0.9nm,0.5s,baz=88,slow=2.4,SNR=3.1						

*ISCJB **15** 20:29:54.4±0.5, 50°.21N±0°.04×19°.19E±0°.03, h0km, Error ellipse: s-maj=5.6km s-min=2.4km az=17.3*
*CSEM **15** 20:29:55.5±0.3, 50°.19N×19°.25E, h2km, ML2.7/5, Error ellipse: s-maj=6.7km s-min=3.1km az=16.0*
*PRU **15** 20:29:56.4, 50°.20N×19°.22E, h0km*

ISC 15 20:29:55.7±0.8, 50°.17N±0°.04×19°.26E±0°.02, h0km, n34, σ0§73/54, Poland

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OJC	**Ojcow**	**0.35**	**82**	*e*Pg	**Pg**	**20 30 01.8**	**-0.6**
OJC				*e*Sg	**Sg**	**20 30 06.2**	**-0.7**
OJC	**Ojcow**	**0.35**	**82**	*e*Pg	**Pg**	**20 30 01.8**	**-0.6**
OJC				*e*Sg	**Sg**	**20 30 06.2**	**-0.7**
OKC	**Ostrava-Krasne**	**0.79**	**246**	*e*SG	**Sg**	**20 30 20.8**	**-0.2**
	comp=Z,8.6nm,0.4s						
OKC	**Ostrava-Krasne**	**0.79**	**246**	Sg	**Sg**	**20 30 20.8**	**-0.2**
	8.6nm,0.4s						
NIE	**Niedzica**	**1.01**	**138**	*e*Pg	**Pg**	**20 30 14.8**	**-0.2**
NIE				*e*Sg	**Sg**	**20 30 28.6**	**+0.5**
NIE	**Niedzica**	**1.01**	**138**	*e*Pg	**Pg**	**20 30 14.8**	**-0.2**
NIE				*e*Sg	**Sg**	**20 30 28.6**	**+0.5**
LANS	**Liptovska Anna**	**1.03**	**172**	*e*Pg	**Pg**	**20 30 15.8**	**+0.5**
LANS				*e*Sg	**Sb**	**20 30 30.0**	**-0.5**
LANS	**Liptovska Anna**	**1.03**	**172**	*e*PG	**Pg**	**20 30 15.8**	**+0.5**
LANS				*e*SG	**Sb**	**20 30 29.9**	**-0.5**
MORC	**Moravsky Berou**	**1.18**	**251**	*e*Pg	**Pg**	**20 30 18.2**	**0.0**
MORC				*e*Sg	**Sb**	**20 30 34.7**	**+0.1**
STHS	**Stebnicka Huta**	**1.49**	**120**	*e*Sn	**Sn**	**20 30 45.1**	**+1.2**
STHS	**Stebnicka Huta**	**1.49**	**120**	*e*	**Pb**	**20 30 24.3**	**+0.1**
STHS	**Stebnicka Huta**	**1.49**	**120**	*e*SN	**Sn**	**20 30 45.1**	**+1.2**
STHS				*e*LG	Lg	20 30 46.9	
KRLC	**Kraliky**	**1.60**	**268**	*e*PG	**Pn**	**20 30 24.3**	**-0.9**
KRLC				*e*SG	**Sn**	**20 30 46.1**	**-0.4**
KRLC	**Kraliky**	**1.60**	**268**	Pg	**Pn**	**20 30 24.3**	**-0.9**
KRLC				Sg	**Sn**	**20 30 46.1**	**-0.4**
VYHS	**Vyhne**	**1.70**	**189**	*e*Pn	**Pn**	**20 30 26.2**	**-0.4**
VYHS				*e*Sn	**Sn**	**20 30 48.4**	**-0.6**
VYHS	**Vyhne**	**1.70**	**189**	*e*PN	**Pn**	**20 30 26.2**	**-0.4**
VYHS				*e*SN	**Sn**	**20 30 48.4**	**-0.6**
VYHS				*e*LG	Lg	20 30 51.6	
KECS	**Kecovo**	**1.87**	**154**	*e*Pn	**Pn**	**20 30 29.0**	**+0.1**
KECS				*e*Sn	**Sb**	**20 30 54.7**	**+0.1**
KECS	**Kecovo**	**1.87**	**154**	*e*PN	**Pn**	**20 30 29.0**	**+0.1**
KECS				*e*SN	**Sb**	**20 30 54.7**	**+0.1**
KECS				*e*LG	Lg	20 30 58.2	
DPC	**Dobruska-Polom**	**1.89**	**277**	*e*PG	**Pn**	**20 30 29.1**	**-0.2**
DPC				*e*SG	**Sb**	**20 30 55.4**	**+0.1**
	comp=Z,18nm,0.5s						
DPC	**Dobruska-Polom**	**1.89**	**277**	Sg	**Sb**	**20 30 55.4**	**+0.1**
	18nm,0.5s						
CRVS	**Cervenica-Dubn**	**1.92**	**131**	*e*Pn	**Pg**	**20 30 32.7**	**+0.3**
CRVS				*e*Sn	**Sg**	**20 30 57.3**	**+0.1**
CRVS	**Cervenica-Dubn**	**1.92**	**131**	*e*PN	**Pg**	**20 30 32.7**	**+0.3**
CRVS				*e*SN	**Sg**	**20 30 57.2**	**+0.1**
VRAC	**Vranov**	**1.93**	**245**	*e*Pn	**Pn**	**20 30 30.4**	**+0.6**
VRAC				*e*Sg	**Sb**	**20 30 56.9**	**+0.5**
KSP	**Ksiaz**	**2.01**	**291**	*e*Pg	**Pg**	**20 30 35.2**	**+1.1**
KSP				*e*Sg	**Sg**	**20 31 01.0**	**+0.8**
KSP	**Ksiaz**	**2.01**	**291**	*e*Pg	**Pg**	**20 30 35.2**	**+1.1**
KSP				*e*Sg	**Sg**	**20 31 01.0**	**+0.8**
UPC	**Upice**	**2.11**	**281**	*e*SG	**Sg**	**20 31 03.6**	**+0.3**
	comp=Z,5.3nm,0.4s						
UPC	**Upice**	**2.11**	**281**	Sg	**Sg**	**20 31 03.6**	**+0.3**
	5.3nm,0.4s						
PVCC	**Panska Ves**	**3.02**	**279**	*e*SG	**Sg**	**20 31 32.2**	**-0.6**
	comp=Z,8.5nm,0.4s						
PVCC	**Panska Ves**	**3.02**	**279**	Sg	**Sg**	**20 31 32.2**	**-0.6**
	8.5nm,0.4s						
PRU	**Pruhonice**	**3.04**	**268**	*e*SG	**Sg**	**20 31 31.7**	**-1.7**
	comp=Z,4.5nm,0.5s						
PRU	**Pruhonice**	**3.04**	**268**	Sg	**Sg**	**20 31 31.7**	**-1.7**
	4.5nm,0.5s						
BRG	**Berggiesshubel**	**3.46**	**284**	SG	**Sg**	**20 31 46.3**	**-0.6**
	4.2nm,0.5s						
KHC	**Kasperske Hory**	**3.83**	**256**	*e*PN	**Pn**	**20 30 56.5**	**+0.6**
KHC				*e*SG	**Sg**	**20 31 56.3**	**-2.5**
KHC	**Kasperske Hory**	**3.83**	**256**	Pn	**Pn**	**20 30 56.5**	**+0.6**

JMA 15 20:32:32.8, 37°.00N×140°.62E, h8km±1km, M2.6, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.17**	**55**	P	Pg	20 32 36.7	+0.2
ONAJ				S	Sg	20 32 39.4	+0.4
JHO	**Hitachi**	**0.39**	**186**	P	Pg	20 32 40.4	0.0
JHO				S	Sg	20 32 45.7	+0.1
JFK	**Kawauchi**	**0.42**	**29**	P	Pg	20 32 40.9	-0.1
JFK				S	Sg	20 32 46.7	+0.2
JFT	**Otama**	**0.56**	**336**	P	Pg	20 32 44.0	+0.3
JFT				S	Sg	20 32 51.6	+0.5
MAT	**Matsushiro**	**1.99**	**257**	P	Pn	20 33 07.2	+0.4
MAT				S	Sb	20 33 33.9	-0.3

JMA 15 20:36:29.3, 36°.91N×140°.70E, h5km±1km, M3.0, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.21**	**22**	P	Pg	20 36 33.7	+0.3
ONAJ				*e*S	Sg	20 36 36.8	+0.6
JHO	**Hitachi**	**0.32**	**199**	P	Pg	20 36 35.7	+0.3
JFK	**Kawauchi**	**0.48**	**17**	P	Pg	20 36 38.6	+0.1
JFT	**Otama**	**0.67**	**335**	P	Pg	20 36 42.6	+0.4
JFT				S	Sg	20 36 51.5	+0.5
MAT	**Matsushiro**	**2.04**	**260**	P	Pn	20 37 05.0	+0.7
MAT				S	Sb	20 37 32.0	-0.4

JMA 15 20:38:34.0±0.3, 37°.53N×142°.72E, h0km, M3.5, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**1.42**	**311**	P	Pn	20 39 00.7	-0.4
JIO				*e*S	Sb	20 39 20.2	+0.1
JMM	**Marumori**	**1.56**	**283**	S	Sn	20 39 23.5	-0.5
ONAJ	**Iwakimizuishiy**	**1.59**	**255**	P	Pb	20 39 03.9	-0.4
ONAJ				S	Sn	20 39 24.4	-0.4
JOU	**Okura**	**1.83**	**298**	P	Pb	20 39 07.8	-0.5
JOU				*e*S	Sg	20 39 32.6	-0.1

*ISCJB **15** 20:39:18.5±0.3, 32°.31N±0°.02×115°.31W±0°.02, h27km±2km, Error ellipse: s-maj=3.3km s-min=3.1km az=21.8*
*NEIC **15** 20:39:19.0, 32°.27N×115°.37W, h5km, ML3.1(ECX), ML3.2(PAS), After ECX.*
*ECX **15** 20:39:19.9±0.6, 32°.27N×115°.37W, h5km, MD2.9, ML3.1*
*MEX **15** 20:39:20.8±0.7, 32°.34N×115°.26W, h14km±218km, MD3.7*

ISC 15 20:39:18.6±0.8, 32°.27N±0°.02×115°.36W±0°.02, h17km±5km, n65, σ1§42/72, 8C-3D, California-Baja California border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CPBX	**Cerro Prieto**	**0.15**	**20**	*e*P	**Pg**	**20 39 22.7**	**-0.1**
CPBX				*e*S	**Sg**	**20 39 25.4**	**-0.3**
CPBX				⇑*e*		20 39 27.0	
CPBX				AML	AML	20 39 27.0	
	comp=N,15µm,0.6s						
CPBX	**Cerro Prieto**	**0.15**	**20**	*e*Pg	**Pg**	**20 39 22.7**	**-0.1**
CPBX				*e*Sg	**Sg**	**20 39 24.2**	**-1.5**
MBIG	**Mexicali**	**0.19**	**47**	*e*P	**Pg**	**20 39 23.8**	**+0.4**
MBIG	**Mexicali**	**0.19**	**47**	*e*P	**Pg**	**20 39 23.8**	**+0.4**
MBIG				*e*S	**Sg**	**20 39 25.2**	**-1.5**
SGL	**Mount Signal**	**0.48**	**321**	⇑*i*P	**Pg**	**20 39 28.6**	**+0.2**
ERPC	**Ernies Place**	**0.53**	**332**	⇑*i*P	**Pg**	**20 39 30.1**	**+0.8**
DREC	**Desert Rsrch C**	**0.54**	**353**	*e*P	**Pg**	**20 39 29.8**	**+0.5**
EMSC	**East Mesa**	**0.56**	**34**	⇓*i*P	**Pg**	**20 39 29.9**	**+0.1**
WESC	**Westside Schoo**	**0.57**	**327**	*e*P	**Pg**	**20 39 30.1**	**+0.1**
YUH	**Yuha Desert**	**0.60**	**308**	⇑*i*P	**Pg**	**20 39 30.5**	**-0.1**
COA	**Coachella**	**0.62**	**19**	⇓*i*P	**Pg**	**20 39 30.6**	**-0.3**
COK	**Cook Ranch**	**0.65**	**332**	⇑*i*P	**Pg**	**20 39 31.6**	**+0.1**
RMX	**La Rumorosa**	**0.69**	**299**	*e*P	**Pg**	**20 39 31.7**	**-0.5**
RMX				*e*S	**Sg**	**20 39 41.2**	**-0.2**
RMX				⇑*e*		20 39 44.9	
RMX				AML	AML	20 39 44.9	
	comp=N,634nm,0.7s						
YMD	**Yuma Desert

TUC	**Tucson**	**3.88**	**88**	*e*Pn	**Pn**	**20 40 19.5**	**+2.0**
TUC				*e*Pg	**Pb**	**20 40 27.6**	**+1.0**
TUC				*e*Sg	**Sg**	**20 41 21.7**	**-1.5**
X16A	**Lo Mia Camp, P**	**3.92**	**56**	*e*Pn	**Pn**	**20 40 18.6**	**+0.4**
ISA	**Isabella, Lake**	**4.25**	**323**	*e*Pn	**Pn**	**20 40 23.1**	**+0.4**
DAC	**Darwin (Calif)**	**4.40**	**336**	*e*Pn	Pn	20 40 20.6	-4.2
WUAZ	**Wupatki**	**4.63**	**45**	*e*Pn	**Pn**	**20 40 29.2**	**+1.2**
CRGC	**Crocker Grade**	**4.69**	**310**	*e*Pn	Pn	20 40 26.0	-2.6
TPNV	**Topopah Spring**	**4.72**	**351**	*e*Pg	**Pg**	**20 40 49.9**	**+0.9**
U15A	**North Rim**	**4.86**	**31**	*e*Pn	Pn	20 40 29.4	-1.8
U15A				*e*Pg	**Pg**	**20 40 50.8**	**-1.0**
LCMT	**Little Creek M**	**5.04**	**20**	*e*Pn	Pn	20 40 33.1	-0.4
X18A	**Snowflake**	**5.06**	**62**	*e*Pn	Pn	20 40 31.7	-2.1
KNB	**Kanab**	**5.17**	**23**	*e*Pn	**Pn**	**20 40 35.9**	**+0.5**
R11A	**Troy Canyon, C**	**6.06**	**358**	*e*Pn	Pn	20 40 54.4	+6.8
121A	**Cookes Peak, D**	**6.42**	**86**	*e*Pn	Pn	20 40 51.4	-1.1
MSU	**Marysvale**	**6.75**	**22**	*e*Pn	Pn	20 40 53.7	-3.3

ISCJB ***15*** *20:40:40.6±0.8, 34°.39S±0'.04×178°.2W±0'.1, h33km, mb4.6/11, Error ellipse: s-maj=13.1km s-min=5.7km az=10.6*

IDC ***15*** *20:40:48.3±6.3, 34°.29S×178°.65W, h62km±51km, mb4.1/3, mb1 4.4/5, mb1mx3.8/40, mbtmp4.5/5, ML4.1/2, MS3.8/1, Ms1 3.8/1, ms1mx2.9/39, Error ellipse: s-maj=41.1km s-min=27.3km az=56.0*

NEIC ***15*** *20:40:48.9±1.7, 34°.60S×178°.64W, h71km±13km, mb4.8/11, Error ellipse: s-maj=16.2km s-min=12.1km az=68.0*

ISC 15 20:40:43.1±0.7, 34°.48S±0'.07×178°.09W±0'.08, h35km, n88, σ1§92/91, mb4.8/11, 1C-1D, South of Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
MXZ	**Matakaoa Point**	**4.24**	**222**	PN	**Pn**	**20 41 46.6**	**+1.5**
MXZ				SN	**Sn**	**20 42 38.4**	**+5.0**
MXZ	**Matakaoa Point**	**4.24**	**222**	*e*Pn	**Pn**	**20 41 46.8**	**+1.7**
MXZ				*e*Sn	**Sn**	**20 42 31.2**	**-2.1**
WMGZ	**Waiomatatini S**	**4.37**	**219**	PN	**Pn**	**20 41 49.2**	**+2.3**
PKGZ	**Pakihiroa**	**4.60**	**221**	PN	**Pn**	**20 41 52.3**	**+2.2**
PUZ	**Puketiti**	**4.64**	**218**	PN	**Pn**	**20 41 52.2**	**+1.5**
PUZ				SN	Sn	20 42 48.6	+5.3
HAZ	**Te Kaha**	**4.67**	**224**	PN	**Pn**	**20 41 53.7**	**+2.6**
HAZ				SN	Sn	20 42 50.4	+6.4
TWGZ	**Tauwhareparae**	**4.86**	**220**	PN	**Pn**	**20 41 55.8**	**+2.0**
TWGZ				SN	Sn	20 42 54.6	+5.7
CNGZ	**Carnagh Statio**	**4.98**	**216**	PN	**Pn**	**20 41 57.7**	**+2.3**
MWZ	**Matawai**	**5.22**	**221**	PN	**Pn**	**20 42 00.0**	**+1.4**
MWZ				SN	**Sn**	**20 43 02.6**	**+4.9**
RIGZ	**Rimuhau**	**5.37**	**217**	PN	**Pn**	**20 42 02.2**	**+1.4**
RAGZ	**Rawiri**	**5.40**	**221**	PN	**Pn**	**20 42 02.6**	**+1.5**
URZ	**Urewera**	**5.40**	**224**	P	**Pn**	**20 42 02.7**	**+1.6**
	15nm,0.3s,baz=270,slow=3.7,SNR=71						
URZ				S	**Sn**	**20 43 05.2**	**+3.1**
	74nm,0.3s,baz=181,slow=20,SNR=40						
URZ	**Urewera**	**5.40**	**224**	PN	**Pn**	**20 42 02.3**	**+1.2**
URZ				SN	**Sn**	**20 43 06.1**	**+4.1**
URZ	**Urewera**	**5.40**	**224**	*e*Pn	**Pn**	**20 42 01.6**	**+0.5**
URZ				*e*Sn	**Sn**	**20 43 05.2**	**+3.1**
OPRZ	**Ohinepanea**	**5.48**	**231**	PN	Pn	20 42 05.2	+3.1
PRGZ	**Paritu Road**	**5.49**	**215**	PN	**Pn**	**20 42 03.5**	**+1.2**
MHGZ	**Mahia Peninsul**	**5.66**	**213**	PN	**Pn**	**20 42 05.9**	**+1.3**
KNZ	**Kokohu**	**5.66**	**216**	PN	**Pn**	**20 42 05.2**	**+0.5**
WHHZ	**Waihua**	**5.92**	**218**	PN	**Pn**	**20 42 09.5**	**+1.2**
MKAZ	**Moumakai**	**6.07**	**243**	PN	Pn	20 42 13.4	+3.0
NMHZ	**Naumai**	**6.16**	**220**	PN	**Pn**	**20 42 13.0**	**+1.4**
ARHZ	**Aropaoanui**	**6.18**	**218**	PN	**Pn**	**20 42 12.7**	**+0.9**
MRHZ	**Matea Rd**	**6.19**	**224**	PN	**Pn**	**20 42 13.3**	**+1.3**
BKZ	**Black Stump Fm**	**6.38**	**221**	*e*Pn	**Pn**	**20 42 15.1**	**+0.5**
BKZ				*e*Sn	Sn	20 43 16.6	-10
MCHZ	**McNeill Hill**	**6.47**	**219**	PN	**Pn**	**20 42 17.0**	**+1.2**
KWHZ	**Kaweka Forest**	**6.60**	**220**	PN	**Pn**	**20 42 18.8**	**+1.1**
KAHZ	**Kahuranaki**	**6.65**	**216**	PN	**Pn**	**20 42 18.3**	**-0.1**
KRHZ	**Kereru**	**6.79**	**219**	PN	**Pn**	**20 42 20.7**	**+0.5**
PXZ	**Pawanui**	**6.84**	**215**	PN	**Pn**	**20 42 20.6**	**-0.3**
PXZ				SN	**Sn**	**20 43 38.1**	**+0.5**
OTVZ	**Oturere**	**6.85**	**225**	PN	**Pn**	**20 42 22.6**	**+1.5**
OUZ	**Omahuta**	**6.87**	**262**	*e*Pn	**Pn**	**20 42 22.6**	**+1.3**
HIZ	**Hauiti**	**6.96**	**233**	*e*Pn	**Pn**	**20 42 23.8**	**+1.3**
WNVZ	**Wahianoa**	**6.99**	**224**	PN	**Pn**	**20 42 24.0**	**+0.9**
PNHZ	**Pukenui**	**7.08**	**218**	PN	**Pn**	**20 42 24.2**	**0.0**
MTVZ	**Mangateitei**	**7.11**	**225**	PN	**Pn**	**20 42 25.5**	**+1.0**
BFZ	**Birch Farm**	**7.65**	**214**	PN	**Pn**	**20 42 30.5**	**-1.4**
BFZ	**Birch Farm**	**7.65**	**214**	*e*Pn	**Pn**	**20 42 30.5**	**-1.4**
BFZ				*e*Sn	Sn	20 43 47.4	-10
MRZ	**Mangatainoka R**	**7.95**	**217**	PN	**Pn**	**20 42 35.6**	**-0.6**
MRZ				*e*SN	**Sn**	**20 44 04.2**	**-0.6**
OGWZ	**Otaki Gorge**	**8.28**	**218**	PN	**Pn**	**20 42 39.9**	**-0.6**
KIW	**Kapiti Island**	**8.44**	**219**	PN	**Pn**	**20 42 42.2**	**-0.7**
PLWZ	**Palliser**	**8.81**	**215**	PN	**Pn**	**20 42 45.7**	**-2.2**
SNZO	**South Karori**	**8.88**	**218**	*e*Pn	**Pn**	**20 42 47.9**	**-0.9**
SNZO				*e*Sn	Sn	20 44 13.8	-14
CTZ	**Chatham Island**	**9.31**	**173**	PN	**Pn**	**20 42 56.9**	**+2.2**
CTZ				SN	**Sn**	**20 44 36.5**	**-1.7**
NNZ	**Nelson**	**9.52**	**223**	SN	**Sn**	**20 44 40.1**	**-3.2**
THZ	**Tophouse**	**10.15**	**222**	*e*Pn	**Pn**	**20 43 05.0**	**-1.3**
THZ				*e*Sn	Sn	20 44 46.6	-12
KHZ	**Kahutara**	**10.28**	**217**	SN	**Sn**	**20 44 56.8**	**-5.1**
KHZ	**Kahutara**	**10.28**	**217**	*e*Pn	**Pn**	**20 43 08.8**	**+0.8**
KHZ				*e*Sn	Sn	20 44 49.0	-13
DSZ	**Denniston Nort**	**10.76**	**225**	*e*PN	**Pn**	**20 43 13.3**	**-1.3**
DSZ				SN	Sn	20 45 07.3	-6.5
LTZ	**Lake Taylor**	**11.19**	**219**	*e*Pn	**Pn**	**20 43 21.9**	**+1.3**
LTZ				*e*Sn	Sn	20 45 11.0	-13
CRLZ	**Canterbury Las**	**11.59**	**216**	*e*Sn	**Sn**	**20 45 29.9**	**-4.1**
MQZ	**McQueen's Vall**	**11.68**	**215**	SN	Sn	20 45 27.0	-9.1
MQZ	**McQueen's Vall**	**11.68**	**215**	*e*Pn	**Pn**	**20 43 26.9**	**-0.2**
MQZ				*e*Sn	Sn	20 45 27.7	-8.4
OXZ	**Oxford**	**11.70**	**218**	*e*Pn	**Pn**	**20 43 26.9**	**-0.6**
OXZ				*e*Sn	Sn	20 45 25.4	-11
DCZ	**Deep Cove**	**15.73**	**221**	*e*Pn	**Pn**	**20 44 22.0**	**+0.2**
	72nm,1.7s						
PYZ	**Puysegur Point**	**16.43**	**220**	*e*Pn	**P**	**20 44 32.3**	**-1.0**
	161nm,1.5s						
DZM	**Mont Dzumac**	**18.37**	**308**	P	**P**	**20 44 54.0**	**-0.9**
	0.3nm,0.3s,baz=314,slow=20,SNR=6.8						
DZM				LR	LR	20 51 02.5	
	comp=Z,282nm,18.5s,baz=178,slow=34						
TBI	**Tubuai**	**27.32**	**74**	*e*LQ	LQ	20 51 34.0	
	332nm,26.8s						
TBI				*e*LR	LR	20 52 43.8	
	158nm,22.5s						
EIDS	**Eidsvold**	**28.13**	**280**	*e*P	**P**	**20 46 31.5**	**-0.4**
	17nm,1.4s						
PPT2	**Papeete2**	**30.50**	**64**	*e*LR	LR	20 54 02.1	
	158nm,22.5s						
BBOO	**Buckleboo**	**37.96**	**259**	*e*P	**P**	**20 47 56.5**	**-1.0**
	38nm,1.6s						
COEN	**Coen**	**40.48**	**291**	*e*P	**P**	**20 48 17.1**	**-1.5**
	31nm,1.5s						
AS01	**Alice Springs**	**42.93**	**271**	*e*P	**P**	**20 48 37.2**	**-1.5**
AS31	**Alice Springs**	**42.97**	**271**	*e*P	**P**	**20 48 37.4**	**-1.6**
	3.0nm,0.3s						
ASAR	**Alice Springs**	**42.97**	**271**	P	**P**	**20 48 37.2**	**-1.8**
	1.9nm,0.2s,baz=114,slow=8.0,SNR=50						
TAOE	**Nuku Hiva Isla**	**43.12**	**63**	*e*LR	LR	20 59 50.5	
	179nm,25.2s						
WB2	**Warramunga Arr**	**44.31**	**276**	*e*P	**P**	**20 48 47.7**	**-2.1**
	7.8nm,1.0s						
WRAB	**Tennant Creek**	**44.32**	**276**	*e*P	**P**	**20 48 48.1**	**-1.8**
	30nm,1.6s						
WR1	**Warramunga Arr**	**44.32**	**276**	*e*P	**P**	**20 48 47.8**	**-2.1**
	30nm,1.8s						
WRA	**Warramunga Arr**	**44.32**	**276**	P	**P**	**20 48 47.8**	**-2.1**
	1.3nm,0.3s,baz=117,slow=8.1,SNR=46						
MTN	**Manton Dam**	**50.66**	**282**	*e*P	**P**	**20 49 37.5**	**-1.6**
	45nm,1.6s						
FITZ	**Fitzroy Crossi**	**52.39**	**273**	P	**P**	**20 49 50.4**	**-1.6**
	1.3nm,0.3s,baz=146,slow=6.0,SNR=12						
FITZ	**Fitzroy Crossi**	**52.39**	**273**	*e*P	**P**	**20 49 50.6**	**-1.5**
	62nm,1.8s						
SYO	**Syowa Base**	**73.13**	**193‖**	*e*P	**P**	**20 52 11.4**	**+1.9**
SYO	**Syowa Base**	**73.13**	**193‖**	*e*PcP	**PcP**	**20 52 23.4**	**-2.6**
NMTM	**Middletown**	**89.28**	**40**	*e*P	**P**	**20 53 34.0**	**-1.5**
ARCES	**ARCESS Array B**	**142.54**	**347**	PKP	**PKPdf**	**21 00 13.2**	**+1.9**
	1.3nm,0.8s,baz=43,slow=1.3,SNR=6.2						
KBZ	**Khabaz**	**147.16**	**299**	PKPbc	**PKPbc**	**21 00 22.7**	**+0.5**
	1.6nm,0.8s,baz=286,slow=5.7,SNR=3.9						
OBN	**Obninsk**	**148.39**	**321**	PKPbc	**PKPbc**	**21 00 26.4**	**+1.2**
	5.1nm,0.3s,baz=180,slow=23,SNR=3.7						
FINES	**FINESS Array B**	**148.91**	**338**	PKPbc	**PKPbc**	**21 00 25.8**	**-0.5**
	1.9nm,0.5s,baz=66,slow=2.3,SNR=16						
DBIC	**Dimbokro**	**151.63**	**166**	PKPbc	**PKPbc**	**21 00 36.5**	**+2.2**
	1.4nm,0.5s,baz=216,slow=3.1,SNR=6.8						
NB2	**NORSAR Subarra**	**152.76**	**350**	PKP	**PKPbc**	**21 00 39.3**	**+3.9**
	comp=Z,12nm,1.7s,baz=17,slow=2.6						
NB200	**NORSAR Array S**	**152.76**	**350**	*e*PKPbc	**PKPbc**	**21 00 37.0**	**+1.6**
NOA	**NORSAR Array B**	**152.76**	**350**	PKPbc	**PKPbc**	**21 00 37.0**	**+1.6**
	comp=Z,1.2nm,0.9s,baz=257,slow=20,SNR=2.6						
HFS	**Hagfors**	**153.21**	**347**	PKPbc	**PKPbc**	**21 00 37.7**	**+1.3**
	comp=Z,1.1nm,0.8s,baz=169,slow=33,SNR=2.4						
BR101	**Keskin Array S**	**154.24**	**291**	*e*PKPbc	**PKPbc**	**21 00 40.1**	**+0.6**
BRTR	**Keskin Array B**	**154.24**	**291**	PKPbc	**PKPbc**	**21 00 40.1**	**+0.6**
	comp=Z,0.5nm,0.8s,baz=120,slow=4.7,SNR=3.2						
AKASG	**Malin Array Be**	**154.38**	**318**	PKPbc	**PKPbc**	**21 00 41.7**	**+2.5**
	comp=Z,0.1nm,0.3s,baz=146,slow=26,SNR=3.4						
TORD	**Torodi Ar. Bea**	**158.76**	**179**	PKPbc	PKPbc	21 00 52.3	
	comp=Z,0.8nm,0.9s,baz=124,slow=1.4,SNR=3.8						
TORD				PKPab	**PKPab**	**21 01 14.3**	**+1.2**
	comp=Z,1.6nm,1.1s,baz=173,slow=3.0,SNR=4.2						

WEL 15 20:42:11.1±0.1, 44°.98S×167°.36E, h2km, ML3.6/13, 1C-1D, Error ellipse: s-maj=1.5km s-min=0.7km az=90.0, South Island

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
DCZ	**Deep Cove**	**0.51**	**196**	PG	Pg	20 42 21.3	+0.5
DCZ				SG	Sg	20 42 28.5	+1.1
DCZ				AML	AML	20 42 29.0	
MSZ	**Milford Sound**	**0.51**	**53**	PG	Pg	20 42 21.3	+0.5
MSZ				SG	Sg	20 42 27.8	+0.5
MSZ				AML	AML	20 42 28.0	
MLZ	**Mavora Lakes**	**0.67**	**126**	‖PG	Pb	20 42 24.7	-0.8
MLZ				AML	AML	20 42 34.0	
MLZ				AML	AML	20 42 34.1	
WHZ	**Wether Hill Ro**	**1.01**	**156**	↑P*	Pg	20 42 30.2	-0.2
WHZ				S*	Sg	20 42 43.5	+0.1
WHZ				AML	AML	20 42 44.1	
WKZ	**Wanaka**	**1.19**	**83**	P*	Pg	20 42 33.8	-0.1
WKZ				AML	AML	20 42 50.3	
WKZ				AML	AML	20 42 50.4	
PYZ	**Puysegur Point**	**1.28**	**201**	P*	Pg	20 42 32.5	-3.1
JCZ	**Jackson Bay**	**1.36**	**49**	P*	Pg	20 42 36.4	-0.8
JCZ				AML	AML	20 42 57.5	
JCZ				AML	AML	20 42 59.7	
EAZ	**Earnscleugh**	**1.41**	**101**	PN	Pn	20 42 37.2	-0.5
EAZ				AML	AML	20 42 57.3	
EAZ				AML	AML	20 42 57.6	
TUZ	**Tuapeka**	**1.88**	**122**	PN	Pn	20 42 44.0	-0.2
TUZ				AML	AML	20 43 10.1	
TUZ				AML	AML	20 43 11.6	
APZ	**The Paps**	**1.91**	**167**	PN	Pn	20 42 44.5	-0.1
APZ				AML	AML	20 43 09.7	
APZ				AML	AML	20 43 13.4	
SYZ	**Scrubby Hill**	**2.00**	**142**	PN	Pn	20 42 45.3	-0.5
SYZ				AML	AML	20 43 12.3	
SYZ				AML	AML	20 43 15.8	
LBZ	**Lake Benmore**	**2.10**	**75**	PN	Pn	20 42 47.7	+0.4
LBZ				AML	AML	20 43 20.3	
LBZ				AML	AML	20 45 18.6	
ODZ	**Otahua Downs**	**2.33**	**93**	AML	AML	20 43 28.5	
ODZ				AML	AML	20 45 21.2	
RPZ	**Rata Peaks**	**2.94**	**66**	AML	AML	20 45 30.3	
RPZ				AML	AML	20 45 51.2	

IDC 15 20:42:19.6±33.0, 8°.04S×128°.68E, h601km±167km, mb2.6/1, mb1 2.7/3, mb1mx2.3/43, mbtmp3.5/3, Error ellipse: s-maj=412.4km s-min=103.7km az=158.0, Timor Sea

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
WRA	**Warramunga Arr**	**13.04**	**156**	P	P	20 45 08.3	-0.6
	0.2nm,0.3s,baz=334,slow=11,SNR=11						
ASAR	**Alice Springs**	**16.33**	**163**	P	P	20 45 41.0	+1.0
	0.2nm,0.3s,baz=342,slow=7.5,SNR=20						
STKA	**Stephens Creek**	**26.59**	**155**	P	P	20 47 11.5	-0.3
	0.6nm,0.5s,baz=353,slow=9.1,SNR=5.0						

IDC ***15*** *20:53:25.9±0.8, 33°.11S×178°.26W, h0km, mb4.4/6, mb1 4.5/8, mb1mx4.1/42, mbtmp4.4/8, ML4.3/2, MS4.1/8, Ms1 4.0/8, ms1mx3.6/45, Error ellipse: s-maj=27.8km s-min=22.1km az=161.0*

ISCJB ***15*** *20:53:30.3±0.6, 33°.35S±0'.05×178°.37W±0'.10, h41km, mb4.5/12, MS4.0/7, Error ellipse: s-maj=11.6km s-min=6.5km az=10.9*

NEIC ***15*** *20:53:32.5±1.6, 33°.42S×178°.31W, h48km±13km, mb4.6/10, Error ellipse: s-maj=15.7km s-min=11.7km az=68.0*

ISC 15 20:53:31.7±0.6, 33°.46S±0'.07×178°.21W±0'.09, h41km, n78, σ1§87/75, mb4.5/12, MS4.0/7, 1D, South of Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
RAO	**Raoul Island**	**4.20**	**3**	Pn	Pn	20 54 24.2	-9.1
	62nm,0.3s,baz=123,slow=17,SNR=3.8						
RAO				Sn	Sn	20 55 06.4	-15
	124nm,0.3s,baz=239,slow=22,SNR=3.9						
WMGZ	**Waiomatatini S**	**5.14**	**211**	PN	**Pn**	**20 54 49.1**	**+3.0**
WMGZ				SN	Sn	20 55 54.4	+10
PKGZ	**Pakihiroa**	**5.35**	**213**	PN	**Pn**	**20 54 51.0**	**+1.9**
PKGZ				SN	Sn	20 55 58.1	+8.7
HAZ	**Te Kaha**	**5.39**	**216**	PN	**Pn**	**20 54 52.6**	**+3.2**
HAZ				SN	Sn	20 56 00.1	+10
PUZ	**Puketiti**	**5.42**	**211**	PN	**Pn**	**20 54 52.9**	**+2.9**
PUZ				SN	Sn	20 55 58.5	+7.3
TWGZ	**Tauwhareparae**	**5.63**	**212**	PN	**Pn**	**20 54 55.5**	**+2.6**
CNGZ	**Carnagh Statio**	**5.79**	**209**	PN	**Pn**	**20 54 57.2**	**+2.2**
MWZ	**Matawai**	**5.97**	**214**	PN	**Pn**	**20 55 00.3**	**+2.8**
URZ	**Urewera**	**6.11**	**217**	Pn	**Pn**	**20 55 01.5**	**+2.1**
	8.4nm,0.3s,baz=293,slow=1.8,SNR=37						
URZ				Sn	**Sn**	**20 56 14.0**	**+6.0**
	7.7nm,0.3s,baz=182,slow=22,SNR=13						
URZ	**Urewera**	**6.11**	**217**	PN	**Pn**	**20 55 02.1**	**+2.7**
RIGZ	**Rimuhau**	**6.17**	**211**	PN	**Pn**	**20 55 02.8**	**+2.6**
OUZ	**Omahuta**	**7.00**	**253**	*e*Pn	Pn	20 55 15.1	+3.5
BKZ	**Black Stump Fm**	**7.12**	**215**	*e*Pn	**Pn**	**20 55 15.1**	**+1.8**
HIZ	**Hauiti**	**7.55**	**226**	*e*Pn	**Pn**	**20 55 17.7**	**-1.5**
BFZ	**Birch Farm**	**8.46**	**210**	*e*Pn	**Pn**	**20 55 29.3**	**-2.3**
BFZ				*e*Sn	**Sn**	**20 57 03.8**	**-2.0**
MRZ	**Mangatainoka R**	**8.73**	**213**	*e*PN	**Pn**	**20 55 34.3**	**-1.1**
MRZ				*e*SN	**Sn**	**20 57 12.8**	**+0.3**
SNZO	**South Karori**	**9.65**	**214**	*e*Pn	**Pn**	**20 55 50.0**	**+2.1**
CTZ	**Chatham Island**	**10.33**	**174**	*e*PN	**Pn**	**20 55 59.5**	**+2.2**
CTZ				*e*SN	**Sn**	**20 57 47.5**	**-4.1**
THZ	**Tophouse**	**10.87**	**218**	*e*Pn	**Pn**	**20 56 04.6**	**-0.1**
THZ				*e*Sn	**Sn**	**20 58 06.1**	**+1.1**
KHZ	**Kahutara**	**11.06**	**214**	*e*Pn	**Pn**	**20 56 07.8**	**+0.7**
LTZ	**Lake Taylor**	**11.94**	**216**	*e*Pn	**Pn**	**20 56 20.9**	**+1.6**
LTZ				*e*Sn	**Sn**	**20 58 28.1**	**-3.1**
OXZ	**Oxford**	**12.46**	**215**	*e*Sn	**Sn**	**20 58 39.0**	**-4.8**
MQZ	**McQueen's Vall**	**12.47**	**212**	*e*Pn	**Pn**	**20 56 24.4**	**-2.1**
RPZ	**Rata Peaks**	**13.23**	**216**	Pn	**Pn**	**20 56 36.7**	**-0.1**
	1.4nm,0.3s,baz=72,slow=4.6,SNR=6.3						
RPZ				Sn	**Sn**	**20 58 58.9**	**-3.6**
	1.1nm,0.3s,baz=92,slow=23,SNR=6.0						
RPZ	**Rata Peaks**	**13.23**	**216**	*e*Pn	**Pn**	**20 56 36.8**	**-0.1**
RPZ				*e*Sn	Sn	20 58 52.9	-10
FOZ	**Fox Glacier**	**13.74**	**219**	*e*Pn	**Pn**	**20 56 43.6**	**-0.1**
LBZ	**Lake Benmore**	**14.15**	**216**	*e*Pn	**Pn**	**20 56 48.9**	**-0.5**
ODZ	**Otahua Downs**	**14.42**	**213**	*e*Pn	**Pn**	**20 56 52.5**	**-0.5**
MLZ	**Mavora Lakes**	**15.88**	**218**	*e*Pn	**Pn**	**20 57 12.9**	**+0.7**
	146nm,1.9s						
WHZ	**Wether Hill Ro**	**16.33**	**216**	*e*Pn	**Pn**	**20 57 18.9**	**+1.0**
	48nm,1.4s						
DCZ	**Deep Cove**	**16.45**	**219**	*e*Pn	**Pn**	**20 57 19.6**	**+0.3**
	116nm,1.9s						
DZM	**Mont Dzumac**	**17.68**	**306**	P	**P**	**20 57 36.0**	**+0.6**
	0.2nm,0.3s,baz=106,slow=15,SNR=6.2						
DZM				LR	LR	21 03 25.5	
	comp=Z,1μm,18.8s,baz=127,slow=34						
AFI	**Afiamalu**	**20.32**	**18**	P	**P**	**20 58 04.3**	**-0.2**
	14nm,0.2s,baz=223,slow=3.5,SNR=5.1						
RAR	**Rarotonga**	**20.38**	**58**	LR	LR	21 05 48.6	
	comp=Z,195nm,19.4s,baz=264,slow=37						
TBI	**Tubuai**	**27.14**	**76**	*e*LR	LR	21 05 54.1	
	244nm,22.5s						
PPT2	**Papeete2**	**30.15**	**65**	*e*LR	LR	21 07 25.1	
	169nm,20.5s						
PPT	**Papeete**	**30.16**	**65**	LR	LR	21 12 43.1	
	comp=Z,186nm,18.2s,baz=229,slow=38						

STKA	**Stephens Creek**	**33.73**	**261**	P	**P**	**21 00 10.3**	**+1.1**
	1.8nm,0.9s,baz=110,slow=12,SNR=3.2						
STKA				LR	LR	21 13 29.7	
	comp=Z,488nm,18.2s,baz=69,slow=36						
CTA	**Charters Tower**	**34.24**	**284**	P	**P**	**21 00 13.8**	**0.0**
	4.2nm,0.5s,baz=104,slow=10,SNR=9.6						
CTAO	**Charters Tower**	**34.24**	**284**	*e*P	**P**	**21 00 13.9**	**+0.2**
	15nm,1.2s						
CTAO				*e*S	**S**	**21 05 35.8**	**-2.1**
RKT	**Rikitea**	**39.20**	**86**	*e*LR	LR	21 11 36.1	
	236nm,21.8s						
PMG	**Port Moresby**	**39.84**	**299**	LR	LR	21 16 47.6	
	comp=Z,227nm,18.4s,baz=139,slow=35						
TAOE	**Nuku Hiva Isla**	**42.74**	**64**	*e*LR	LR	21 13 03.2	
	116nm,22.3s						
AS01	**Alice Springs**	**42.82**	**270**	*e*P	**P**	**21 01 24.1**	**-1.7**
AS31	**Alice Springs**	**42.86**	**270**	*e*P	**P**	**21 01 24.8**	**-1.3**
	2.1nm,0.9s						
ASAR	**Alice Springs**	**42.86**	**270**	P	**P**	**21 01 25.1**	**-1.0**
	4.1nm,0.7s,baz=109,slow=7.3,SNR=52						
ASAR				LR	LR	21 19 54.9	
	comp=Z,165nm,18.6s,baz=108,slow=37						
WB2	**Warramunga Arr**	**44.11**	**275**	*e*P	**P**	**21 01 34.7**	**-1.5**
	7.2nm,0.8s						
WRAB	**Tennant Creek**	**44.12**	**275**	*e*P	**P**	**21 01 34.8**	**-1.4**
	12nm,0.8s						
WR1	**Warramunga Arr**	**44.12**	**275**	*e*P	**P**	**21 01 34.8**	**-1.5**
	8.1nm,0.8s						
WRA	**Warramunga Arr**	**44.12**	**275**	P	**P**	**21 01 34.8**	**-1.5**
	3.0nm,0.4s,baz=114,slow=7.9,SNR=64						
FITZ	**Fitzroy Crossi**	**52.24**	**272**	P	**P**	**21 02 38.0**	**-1.0**
	3.4nm,0.7s,baz=165,slow=8.6,SNR=3.5						
FITZ				LR	LR	21 24 59.8	
	comp=Z,261nm,19.3s,slow=36						
FITZ	**Fitzroy Crossi**	**52.24**	**272**	*e*P	**P**	**21 02 37.9**	**-1.1**
	62nm,1.8s						
QSPA	**South Pole Qui**	**56.66**	**180**	*e*P	P	21 03 15.6	+5.0
MAW	**Mawson**	**69.39**	**201**	*e*P	**P**	**21 04 36.7**	**+1.9**
	2.0nm,1.1s						
PMSA	**Palmer Station**	**69.56**	**155**	*e*P	**P**	**21 04 36.8**	**+1.0**
	108nm,0.9s						
SYO	**Syowa Base**	**74.10**	**193‖**	*e*P	**P**	**21 05 02.0**	**-1.1**
PLCA	**Paso Flores**	**80.56**	**133**	P	**P**	**21 05 42.4**	**+2.5**
	2.7nm,0.9s,baz=269,slow=5.5,SNR=4.6						
JTS	**JuntasAbangare**	**98.28**	**83**	LR	LR	21 45 46.5	
	comp=Z,44nm,18.5s,baz=223,slow=32						
MK32	**Makanchi Array**	**119.58**	**309**	*e*PKPdf	**PKPdf**	**21 12 15.5**	**-1.1**
MKAR	**Makanchi Array**	**119.58**	**309**	PKP	**PKPdf**	**21 12 15.5**	**-1.1**
	0.2nm,0.5s,baz=90,slow=2.9,SNR=3.6						
BVAR	**Borovoye Array**	**128.44**	**314**	PKP	**PKPdf**	**21 12 33.4**	**0.0**
	0.5nm,0.7s,baz=113,slow=3.4,SNR=4.0						
KBZ	**Khabaz**	**146.58**	**300**	PKPbc	**PKPdf**	**21 13 07.2**	**+0.3**
	2.3nm,1.0s,baz=135,slow=10,SNR=3.3						
FIA0	**FINES

WRA	**Warramunga Arr**	**44.16**	**275**	P		**P**	**21 06 56.7**	**-1.3**
	6.4nm,0.6s,baz=116,slow=7.6,SNR=59							
VNDA	**Vanda**	**45.43**	**186**	P		P	21 07 12.4	+5.2
	0.7nm,0.7s,baz=358,slow=7.1,SNR=3.9							
HLK	**Haleakala**	**57.47**	**24**	*e*P		**P**	**21 08 36.2**	**-2.1**
	317nm,1.8s							
USRK	**Ussuriysk Ar.**	**89.33**	**327**	P		**P**	**21 11 46.0**	**+1.2**
	1.1nm,0.6s,baz=172,slow=1.3,SNR=4.0							
NVAR	**Mina Array Bea**	**90.27**	**43**	P		**P**	**21 11 52.2**	**+2.5**
	0.2nm,0.3s,baz=197,slow=4.0,SNR=3.6							
MK32	**Makanchi Array**	**119.39**	**309**	*e*PKPdf		**PKPdf**	**21 17 37.8**	**-0.1**
MKAR	**Makanchi Array**	**119.39**	**309**	PKP		**PKPdf**	**21 17 37.8**	**-0.1**
	0.6nm,0.9s,baz=57,slow=4.5,SNR=4.0							
KURK	**Kurchatov**	**122.80**	**313**	*e*PKPdf		**PKPdf**	**21 17 44.3**	**+0.1**
KURBB	**Kurchatov Arra**	**122.84**	**312**	PKP		**PKPdf**	**21 17 44.3**	**+0.1**
	0.8nm,0.8s,baz=107,slow=1.8,SNR=10							
BVAR	**Borovoye Array**	**128.22**	**314**	PKP		**PKPdf**	**21 17 55.9**	**+1.4**
	0.5nm,0.6s,baz=97,slow=6.0,SNR=5.1							
FIA1	**FINESS Array S**	**147.60**	**338**	*e*PKPbc		**PKPbc**	**21 18 32.7**	**+0.5**
FIA0	**FINESS Array S**	**147.61**	**338**	*e*PKPbc		**PKPbc**	**21 18 32.7**	**+0.4**
FINES	**FINESS Array B**	**147.61**	**338**	PKPbc		**PKPbc**	**21 18 32.7**	**+0.4**
	8.8nm,0.7s,baz=58,slow=2.9,SNR=21							
ASF	**Jabal al Asfar**	**150.57**	**278**	PKPbc		**PKPbc**	**21 18 42.3**	**+1.5**
	1.9nm,0.8s,baz=121,slow=2.0,SNR=5.6							
NB2	**NORSAR Subarra**	**151.37**	**351**	PKP		**PKPbc**	**21 18 42.3**	**+0.6**
	comp=Z,1.3nm,0.7s,baz=17,slow=2.6							
NB200	**NORSAR Array S**	**151.37**	**351**	*e*PKPbc		**PKPbc**	**21 18 42.5**	**+0.8**
NOA	**NORSAR Array B**	**151.37**	**351**	PKPbc		**PKPbc**	**21 18 42.5**	**+0.8**
	comp=Z,1.9nm,0.9s,baz=15,slow=4.6,SNR=7.1							
EIL	**Elat**	**151.63**	**272**	PKPbc		**PKPbc**	**21 18 44.9**	**+1.6**
	comp=Z,4.2nm,0.7s,baz=23,slow=5.1,SNR=6.3							
HFS	**Hagfors**	**151.84**	**347**	PKPbc		**PKPbc**	**21 18 43.1**	**+0.4**
	comp=Z,4.8nm,0.8s,baz=156,slow=1.5,SNR=7.5							
MMAI	**Mount Meron Ar**	**151.97**	**279**	PKPbc		**PKPbc**	**21 18 45.9**	**+1.8**
	comp=Z,2.8nm,0.6s,baz=76,slow=3.5,SNR=12							
AKASG	**Malin Array Be**	**153.31**	**319**	PKPbc		**PKPbc**	**21 18 46.9**	**+0.6**
	comp=Z,0.6nm,0.5s,baz=65,slow=2.0,SNR=5.7							
BR101	**Keskin Array S**	**153.68**	**294**	*e*PKPbc		**PKPbc**	**21 18 48.2**	**+0.5**
BRTR	**Keskin Array B**	**153.68**	**294**	PKPbc		**PKPbc**	**21 18 48.2**	**+0.5**
	comp=Z,1.0nm,0.5s,baz=148,slow=3.5,SNR=8.2							
TORD	**Torodi Ar. Bea**	**160.16**	**179**	PKPab		**PKPab**	**21 19 30.5**	**+1.9**
	comp=Z,0.6nm,0.8s,baz=174,slow=3.5,SNR=3.6							
GERES	**GERESS Array B**	**161.93**	**334**	PKPab		**PKPab**	**21 19 35.6**	**-0.1**
	comp=Z,0.7nm,0.7s,baz=23,slow=4.4,SNR=5.5							

ISCJB ***15*** *21:03:47.8±0.6,32.28N±0.04×115.36W±0.05,h14km±6km, Error ellipse: s-maj=7.9km s-min=5.5km az=152.4*
MEX ***15*** *21:03:49.5±0.7,32.36N×115.24W,h20km±18km,MD3.7*
ECX ***15*** *21:03:49.0±0.6,32.28N×115.36W,h6km,MD2.7,ML2.9*

ISC 15 21:03:47.5±1.0, 32.27N±0.03×115.36W±0.04, h18km±4km, n17,σ0°37/22, 4C-6D, California-Baja California border region

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
CPBX	**Cerro Prieto**	**0.15**	**17**	*e*P		**Pb**	**21 03 51.7**	**+0.4**
CPBX				*e*S		**Sg**	**21 03 54.5**	**-0.3**
CPBX				AML		AML	21 03 56.2	
	comp=E,14μm,0.2s							
CPBX				⇓*e*			21 03 56.2	
CPBX				AML		AML	21 03 57.3	
	comp=N,8μm,0.2s							
CPBX				⇑*e*			21 03 57.3	
MBIG	**Mexicali**	**0.19**	**45**	*e*P		**Pg**	**21 03 52.7**	**+0.4**
MBIG	**Mexicali**	**0.19**	**45**	*e*P		**Pb**	**21 03 52.5**	**+0.3**
MBIG				*e*S		**Sb**	**21 03 54.8**	**-0.4**
SGL	**Mount Signal**	**0.49**	**320**	⇑*i*P		**Pg**	**21 03 57.5**	**+0.1**
ERPC	**Ernies Place**	**0.54**	**331**	*e*P		**Pb**	**21 03 58.8**	**+0.4**
EMSC	**East Mesa**	**0.56**	**34**	⇓*i*P		**Pb**	**21 03 58.8**	**0.0**
WESC	**Westside Schoo**	**0.58**	**327**	⇑*e*P		**Pb**	**21 03 59.5**	**+0.4**
YUH	**Yuha Desert**	**0.61**	**308**	⇑*i*P		**Pb**	**21 03 59.4**	**-0.1**
COA	**Coachella**	**0.62**	**19**	⇓*i*P		**Pb**	**21 03 59.6**	**-0.3**
YMD	**Yuma Desert**	**0.74**	**68**	*e*P		**Pb**	**21 04 01.3**	**-0.6**
ECBX	**El Chinero**	**0.84**	**162**	⇓*e*P		**Pg**	**21 04 04.2**	**+0.3**
ECBX				*e*S		**Sg**	**21 04 15.6**	**+0.5**
CBX	**Cerro Bola**	**1.11**	**272**	*e*P		**Pn**	**21 04 08.4**	**+0.2**
CBX	**Cerro Bola**	**1.11**	**272**	*e*P		**Pn**	**21 04 08.2**	**0.0**
CBX				*e*S		**Sb**	**21 04 21.6**	**-0.8**
TJIG	**Tijuana**	**1.13**	**279**	*e*P		**Pn**	**21 04 08.3**	**-0.2**
SPIG	**San Pedro Mart**	**1.23**	**184**	⇓*e*P		**Pn**	**21 04 10.1**	**0.0**
SPIG	**San Pedro Mart**	**1.23**	**184**	*e*P		**Pn**	**21 04 10.1**	**0.0**
SPIG				*i*S		**Sb**	**21 04 25.6**	**-0.4**
SPX	**San Pedro Mart**	**1.23**	**184**	⇓*e*P		**Pn**	**21 04 10.1**	**0.0**

JMA ***15*** *21:07:00.8±0.1,36.41N×141.03E,h45km±1km,M3.4*
IDC ***15*** *21:07:05.1±4.0,36.37N×140.94E,h74km±34km,mb3.1/4, mb1 3.3/5,mb1mx2.9/75,mbtmp3.4/5,ML3.2/1,MS4.1/1, Ms1 4.1/1,ms1mx2.6/18,Error ellipse: s-maj=31.7km s-min=26.3km az=85.0*

ISC 15 21:06:58.3±2.1, 36.37N±0.07×141.00E±0.08, h15km±11km, n15,σ0°80/17, mb3.4/4, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
JHO	**Hitachi**	**0.42**	**304**	P		**Pn**	**21 07 10.7**	**+0.8**
JHO				*i*S		**Sn**	**21 07 17.5**	**0.0**
JYT	**Yasato**	**0.67**	**258**	P		**Pn**	**21 07 14.5**	**+1.2**
JYT				S		**Sn**	**21 07 23.7**	**+0.2**
JFK	**Kawauchi**	**1.00**	**354**	P		**Pn**	**21 07 17.1**	**-0.2**
JAG	**Ashikaga**	**1.25**	**273**	P		**Pg**	**21 07 22.8**	**+0.4**
JAG				S		**Sn**	**21 07 38.1**	**+0.2**
JFT	**Otama**	**1.26**	**335**	P		**Pg**	**21 07 22.7**	**+0.1**
JFT				S		**Sn**	**21 07 38.2**	**0.0**
MJAR	**Matsushiro Arr**	**2.26**	**275**	P		**Pb**	**21 07 38.0**	**-0.9**
	7.9nm,0.3s,baz=111,slow=9.3,SNR=36							
MJAR				S		**Sb**	**21 08 06.3**	**-0.3**
	7.5nm,0.3s,baz=90,slow=15,SNR=11							
MAT	**Matsushiro**	**2.26**	**275**	P		**Pb**	**21 07 37.8**	**-1.1**
MAT				S		**Sn**	**21 08 04.3**	**+1.4**
SONM	**Songino Array**	**27.89**	**305**	P		**P**	**21 12 46.5**	**-1.2**
	0.3nm,0.5s,baz=91,slow=12,SNR=2.6							
H11N1	**WAKE ISLAND Hy**	**28.11**	**119**	T		T	21 42 49.9	
	SNR=3.0							
H11S3	**WAKE ISLAND Hy**	**28.79**	**121**	T		T	21 43 05.5	
	baz=258,slow=74,SNR=5.4							
H11S2	**WAKE ISLAND Hy**	**28.80**	**121**	T		T	21 43 05.3	
	baz=310,slow=74,SNR=5.4							
TIXI	**Tiksi**	**35.91**	**353**	LR		LR	21 30 04.7	
	comp=Z,289nm,21.5s,baz=186,slow=38							
KURBB	**Kurchatov Arra**	**46.15**	**308**	P		**P**	**21 15 22.0**	**0.0**
	0.4nm,0.6s,baz=84,slow=7.6,SNR=3.2							
ILAR	**Eielson Array**	**50.23**	**32**	P		**P**	**21 15 53.9**	**+0.5**
	0.3nm,0.7s,baz=280,slow=5.4,SNR=3.9							
WRA	**Warramunga Arr**	**56.36**	**188**	P		**P**	**21 16 38.5**	**-0.5**
	0.3nm,0.6s,baz=6.5,slow=7.3,SNR=6.3							

IDC ***15*** *21:10:16.7±1.4,33.04S×178.16W,h0km,mb4.0/4, mb1 4.2/5,mb1mx3.9/44,mbtmp4.0/5,ML3.8/1,MS3.8/1, Ms1 3.8/1,ms1mx3.0/31,Error ellipse: s-maj=46.9km s-min=27.8km az=145.0*
ISCJB ***15*** *21:10:19.7±1.2,33.06S±0.10×178.2W±0.2,h34km, mb4.4/8,MS3.8/1,Error ellipse: s-maj=28.6km s-min=10.0km az=20.7*
NEIC ***15*** *21:10:22.0±0.7,33.01S×178.22W,h35km,mb4.7/5,Error ellipse: s-maj=19.6km s-min=12.9km az=113.0*

ISC 15 21:10:21.9±1.1, 33.0S±0.1×178.3W±0.2, h34km, n17,σ0°90/17, mb4.2/8, South of Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
URZ	**Urewera**	**6.46**	**214**	Pn		**Pn**	**21 11 54.0**	**-0.6**
	1.9nm,0.3s,baz=276,slow=4.4,SNR=10							
URZ				Sn		**Sn**	**21 13 07.0**	**-0.1**
	2.4nm,0.3s,baz=195,slow=4.3,SNR=7.8							
FUNA	**Funafuti**	**24.48**	**354**	*e*P		**P**	**21 15 37.3**	**-0.6**
	22nm,0.2s							
CTA	**Charters Tower**	**34.10**	**283**	P		**P**	**21 17 04.9**	**+1.4**
	1.2nm,0.6s,baz=127,slow=10,SNR=3.7							
CTAO	**Charters Tower**	**34.10**	**283**	*e*P		**P**	**21 17 04.4**	**+0.9**
	1.6nm,0.6s							
PMG	**Port Moresby**	**39.59**	**298**	LR		LR	21 31 56.4	
	comp=Z,136nm,20.5s,baz=95,slow=33							
ASAR	**Alice Springs**	**42.83**	**270**	P		**P**	**21 18 17.1**	**+0.2**
	1.0nm,0.6s,baz=111,slow=7.7,SNR=15							
WRA	**Warramunga Arr**	**44.05**	**275**	P		**P**	**21 18 26.5**	**-0.2**
	1.8nm,0.5s,baz=115,slow=7.7,SNR=45							
FITZ	**Fitzroy Crossi**	**52.19**	**272**	P		**P**	**21 19 29.5**	**-0.1**
	2.4nm,0.8s,baz=56,slow=7.3,SNR=2.6							
QSPA	**South Pole Qui**	**57.11**	**180**	*e*P		**P**	**21 20 05.5**	**+0.6**
	6.5nm,1.0s							
MIDW	**Midway**	**60.89**	**1**	*e*P		**P**	**21 20 30.7**	**-0.4**
	31nm,0.6s							
KSM	**Kuching**	**75.32**	**282**	*e*P		**P**	**21 22 00.8**	**-1.3**
	0.8nm,0.5s							
FINES	**FINESS Array B**	**147.50**	**338**	PKPbc		**PKPbc**	**21 30 02.4**	**+0.8**
	1.6nm,0.5s,baz=43,slow=3.9,SNR=20							
NB2	**NORSAR Subarra**	**151.28**	**350**	PKP		**PKPbc**	**21 30 12.0**	**+0.9**
	comp=Z,0.8nm,0.7s,baz=16,slow=2.6							
NOA	**NORSAR Array B**	**151.28**	**350**	PKPbc		**PKPbc**	**21 30 12.1**	**+0.9**
	comp=Z,0.9nm,0.6s,baz=16,slow=4.2,SNR=4.5							
HFS	**Hagfors**	**151.74**	**347**	PKPbc		**PKPbc**	**21 30 10.5**	**-1.7**
	comp=Z,1.5nm,0.6s,baz=177,slow=3.0,SNR=4.9							
MMAI	**Mount Meron Ar**	**151.85**	**279**	PKPbc		**PKPbc**	**21 30 13.8**	**+0.4**
	comp=Z,1.1nm,0.6s,baz=65,slow=5.9,SNR=3.6							
BRTR	**Keskin Array B**	**153.56**	**294**	PKPbc		**PKPbc**	**21 30 17.6**	**+0.5**
	comp=Z,0.3nm,0.5s,baz=164,slow=3.7,SNR=3.1							

NIED ***15*** *21:10:00,37.30N×142.50E,h20km,Mw4.9 Best double couple: M0 2.54000×10^16 NP1:ϕs234.00000°,δ59.00000°, λ-11.00000°. NP2:ϕs330.00000°,δ81.00000°, λ-148.00000°.*
BJI ***15*** *21:10:30.3,37.17N×142.90E,h17km,mb5.0/83,mB5.0/53, Ms4.8/90,Ms7 4.8/81*
ISCJB ***15*** *21:10:32.9±0.8,37.23N±0.02×142.48E±0.02,h5km±4km, mb5.0/292,MS4.5/36,Error ellipse: s-maj=3.2km s-min=2.2km az=165.0*
JMA ***15*** *21:10:32.6±0.2,37.29N×142.51E,h0km,M5.1*
JMA Felt II J1.
IDC ***15*** *21:10:35.5±3.8,37.25N×142.46E,h12km±23km,mb4.7/50, mb1 4.8/56,mb1mx4.7/77,mbtmp4.8/56,ML4.4/4,MS4.2/21, Ms1 4.2/21,ms1mx4.0/49,Error ellipse: s-maj=11.1km s-min=9.4km az=121.0*
MOS ***15*** *21:10:36.5±1.1,37.30N×142.45E,h28km,mb5.2/90, MS4.5/15,Error ellipse: s-maj=6.2km s-min=3.9km az=105.0*
NEIC ***15*** *21:10:38.0±1.1,37.21N×142.41E,h28km±7km,mb5.0/166, Error ellipse: s-maj=3.7km s-min=2.5km az=138.0*
GCMT ***15*** *21:10:38.0±0.3,37.42N×142.52E,h15km±1km,MW5.0/70, Moment Tensor Solution. s25,c29; s70,c108; Duration: 0 Moment tensor: Scale 10^16Nm; Mrr-1.39±.14; Mθθ-1.05±.10; Mϕϕ2.44±.10; Mre2.74±.42; Mθϕ0.97±.07; Mθr-3.04±.43; Best double couple: M0 4.64000×10^16 NP1:ϕs330.00000°,δ82.00000°,λ-117.00000°. NP2: ϕs224.00000°,δ28.00000°,λ-18.00000°. Principal axes: T 4.1730, Plg31.0000°, Azm82.0000°; N 0.9340, Plg27.0000°, Azm335.0000°; P -5.1070, Plg47.0000°, Azm212.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

ISC 15 21:10:34.6±0.9, 37.29N±0.03×142.49E±0.03, h8km±5km, n768,σ1°$45/817, mb5.0/293, MS4.5/38, 30C-48D, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**1.29**	**274**	P		**Pg**	**21 10 57.5**	**-1.8**
JFK				*e*S		**Sb**	**21 11 15.5**	**-0.3**
ONAJ	**Iwakimizuishiy**	**1.36**	**262**	P		**Pg**	**21 10 58.8**	**-1.9**
JMM	**Marumori**	**1.46**	**294**	P		**Pn**	**21 11 00.2**	**-1.1**
JMM				*e*S		**Sg**	**21 11 19.9**	**-1.7**
JIO	**Ouri**	**1.47**	**323**	⇑P		**Pn**	**21 11 00.4**	**-1.0**
JIO				*e*S		**Sb**	**21 11 20.4**	**-0.6**
JFT	**Otama**	**1.73**	**278**	P		**Pb**	**21 11 04.9**	**-1.7**
JFT				S		**Sb**	**21 11 28.3**	**-0.1**
JOU	**Okura**	**1.80**	**307**	⇑P		**Pn**	**21 11 05.7**	**-0.2**
JOU				S		**Sn**	**21 11 27.9**	**-1.1**
JMK	**Ichinoseki**	**1.94**	**329**	P		**Pn**	**21 11 07.9**	**+0.1**
JYS	**Shirataka**	**2.13**	**297**	P		**Pb**	**21 11 11.4**	**-2.1**
JYS				*e*S		**Sn**	**21 11 37.9**	**+0.7**
JFY	**Yanaizu**	**2.22**	**274**	P		**Pn**	**21 11 12.1**	**+0.4**
JYK	**Kaneyama**	**2.33**	**315**	⇑P		**Pn**	**21 11 13.2**	**-0.1**
JOM	**Ohasama**	**2.37**	**337**	⇓P		**Pn**	**21 11 13.3**	**-0.5**
MJAR	**Matsushiro Arr**	**3.51**	**259**	Pn		**Pn**	**21 11 30.1**	**+0.6**
	45nm,0.3s,baz=90,slow=15,SNR=165							
MJAR				Sn		**Sn**	**21 12 11.4**	**+0.2**
	39nm,0.3s,baz=49,slow=10,SNR=7.5							
MJAR				LR		LR	21 12 56.5	
	comp=Z,5μm,20.4s,baz=80,slow=41							
MAJO	**Matsushiro**	**3.51**	**259**	*e*P		**Pn**	**21 11 30.9**	**+1.4**
MAJO	**Matsushiro**	**3.51**	**259**	*e*Pn		**Pn**	**21 11 30.9**	**+1.4**
MAT	**Matsushiro**	**3.51**	**259**	P		**Pn**	**21 11 30.2**	**+0.7**
MAT				S		**Sn**	**21 12 10.2**	**-1.0**
MJB9	**Matsu-Tunnel**	**3.51**	**259**	*e*Pn		**Pn**	**21 11 31.0**	**+1.5**
JHJ2	**Mitsune**	**4.71**	**208**	*e*Pn		**Pn**	**21 11 44.6**	**-1.3**
JHJ	**Hachijo jima 2**	**4.71**	**209**	Pn		**Pn**	**21 11 44.4**	**-1.6**
	128nm,0.3s,baz=304,slow=4.1,SNR=21							
JHJ				Sn		**Sn**	**21 12 37.2**	**-3.7**
	100nm,0.3s,baz=85,slow=23,SNR=3.4							
JHJ				LR		LR	21 13 20.3	
	comp=Z,584nm,21.5s,baz=110,slow=35							
ERM	**Erimo**	**4.75**	**6**	*de*P		**Pn**	**21 11 46.0**	**-0.4**
ERM				pmax	pmax			
	comp=Z,72nm,0.8s							
ERM	**Erimo**	**4.75**	**6**	*e*Pn		**Pn**	**21 11 45.7**	**-0.7**
INU	**Inuyama**	**4.82**	**248**	*e*Pn		**Pn**	**21 11 49.3**	**+1.8**
ASAJ	**Asahikawa**	**6.82**	**1**	Pn		**Pn**	**21 12 14.8**	**-0.1**
	comp=Z,4.4nm,0.3s,baz=202,slow=11,SNR=24							
ASAJ				Sn		**Sn**	**21 13 32.8**	**+0.1**
	comp=Z,6.4nm,0.3s,baz=121,slow=28,SNR=2.5							
ASAJ	**Asahikawa**	**6.82**	**1**	*e*Pn		**Pn**	**21 12 17.4**	**+2.5**
ASAJ				Sn		**Sn**	**21 13 32.8**	**+0.1**
YUK	**Yuzh-Kuril'sk**	**7.21**	**20**	*e*P		**Pn**	**21 12 17.7**	**-2.5**
YUK				*e*S		**Sn**	**21 13 36.0**	**-6.2**
YUK				pmax	pmax			
	comp=Z,369nm,0.3s							
YUK				pmax	pmax			
	comp=N,116nm,0.4s							
YUK				pmax	pmax			
	comp=E,28nm,0.1s							
YUK				MLR	MLR			
	comp=Z,2μm,14.0s							
YUK				MLR	MLR			
	comp=N,4μm,18.0s							
YUK				MLR	MLR			
	comp=E,2μm,14.0s							
SHO	**Shikotan**	**7.35**	**25**	*e*P		**Pn**	**21 12 18.5**	**-3.7**
SHO				pmax	pmax			
	comp=Z,249nm,0.6s							
SHO				pmax	pmax			
	comp=N,103nm,0.4s							
SHO				pmax	pmax			
	comp=E,147nm,0.6s							
KUR	**Kuril'sk**	**8.90**	**25**	*e*P		**Pn**	**21 12 41.2**	**-2.3**
KUR				*e*S		**Sn**	**21 14 17.7**	**-6.3**
KUR				pmax	pmax			
	comp=N,37nm,0.9s							
KUR				pmax	pmax			
	comp=E,32nm,0.9s							
KUR				pmax	pmax			
	comp=Z,74nm,0.9s							
KUR				smax	smax			
	comp=N,60nm,0.5s							
KUR				smax	smax			
	comp=E,124nm,0.5s							
KUR				smax	smax			
	comp=E,792nm,3.3s							
YSS	**Yuzh-Sakhalins**	**9.66**	**1**	⇓*e*P		**Pn**	**21 12 56.6**	**+2.8**
YSS				*e*S		**Sn**	**21 14 42.7**	**+0.3**
YSS				pmax	pmax			
	comp=Z,50nm,0.9s							
YSS				MLR	MLR			
	comp=Z,2μm,15.0s							
YSS				MLR	MLR			
	comp=N,1μm,14.0s							
YSS				MLR	MLR			
	comp=E,2μm,14.0s							
YSS	**Yuzh-Sakhalins**	**9.66**	**1**	*e*Pn		**Pn**	**21 12 57.4**	**+3.6**
VLA	**Vladivostok**	**9.98**	**309**	*e*P		Pn	21 13 03.7	+5.5
CBIJ	**Chichi jima**	**10.17**	**182**	*e*Pn		**Pn**	**21 13 01.5**	**+0.6**
CBIJ				Sn		Sn	21 14 45.5	-10
JCJ	**Chichijima**	**10.17**	**182**	Pn		**Pn**	**21 12 57.1**	**-3.8**
	comp=E,26nm,0.3s,baz=12,slow=5.4,SNR=18							
JCJ				Sn		Sn	21 14 45.5	-10
JNU	**Nakatsue**	**10.37**	**250**	Pn		**Pn**	**21 13 05.3**	**+1.6**
	comp=E,1.7nm,0.3s,baz=59,slow=8.5,SNR=34							
JNU				LR		LR	21 17 43.8	
	comp=E,476nm,19.2s,baz=74,slow=42							
JNU	**Nakatsue**	**10.37**	**250**	*e*Pn		**Pn**	**21 13 05.7**	**+2.1**
USRK	**Ussuriysk Ar.**	**10.53**	**314**	Pn		**Pn**	**21 13 06.9**	**+1.1**
	comp=E,0.7nm,0.3s,baz=132,slow=12,SNR=9.5							
USRK				LR		LR	21 16 35.7	
	comp=E,628nm,21.7s,baz=117,slow=34							
KSRS	**Korea Array**	**11.59**	**275**	Pn		**Pn**	**21 13 23.8**	**+3.5**
	comp=E,0.6nm,0.3s,baz=90,slow=13,SNR=27							
KSRS				LR		LR	21 17 27.5	
	comp=E,2μm,18.8s,baz=70,slow=36							
KS01	**Wonju Array Si**	**11.61**	**275**	*e*Pn		**Pn**	**21 13 23.0**	**+2.4**
KS15	**Wonju Array Si**	**11.62**	**275**	*e*Pn		**Pn**	**21 13 24.3**	**+3.5**
KSAR	**Wonju Array Be**	**11.62**	**275**	P		**Pn**	**21 13 23.8**	**+3.0**
KSAR	**Wonju Array Be**	**11.62**	**275**	Pn		**Pn**	**21 13 23.8**	**+3.0**
MDJ	**Mudanjiang**	**12.18**	**311**	P		Pn	21 13 33.1	+4.8
MDJ				S		**Sn**	**21 15 49.6**	**+5.3**
MDJ				pmax	pmax			
	comp=E,40nm,0.8s							
MDJ				pmax	pmax			
	comp=E,160nm,6.7s							
MDJ				LR	LR			
	comp=E,2μm,16.5s							
MDJ				LR	LR			
	comp=E,2μm,22.0s							
MDJ				LR	LR			
	comp=E,1μm,15.1s							
HABR	**Khabarovsk**	**12.43**	**336**	*e*P		**Pn**	**21 13 31.7**	**+0.1**
HABR				*e*S		**Sn**	**21 15 50.6**	**+0.4**
HABR				pmax	pmax			
	comp=Z,47nm,1.8s							
HABR				MLR	MLR			
	comp=Z,634nm,11.0s							
TYV	**Tymovskoe**	**13.57**	**0**	*e*P		**Pn**	**21 13 49.0**	**+1.8**
TYV				pmax	pmax			
	comp=Z,22nm,1.0s							
TYV				MLR	MLR			
	comp=E,2μm,18.0s							
TYV				MLR	MLR			
	comp=Z,2μm,16.0s							
KLR	**Kul'dur**	**14.25**	**330**	Pn		**P**	**21 14 00.1**	**-3.9**
	comp=Z,0.7nm,0.3s,baz=128,slow=14,SNR=12							
KLR				LR		LR	21 19 20.5	
	comp=Z,1μm,18.2s,baz=146,slow=37							
CN2	**Changchun**	**14.48**	**302**	*e*P		**P**	**21 14 03.8**	**-2.8**
CN2				*e*S		**Sn**	**21 16 44.4**	**+3.9**
CN2				LR	LR			
	comp=Z,2μm,15.0s							
CN2				LR	LR			
	comp=Z,900nm,15.0s							
CN2				LR	LR			
	comp=Z,700nm,18.0s							
SNY	**Shenyang**	**15.27**	**293**	⇑P		**P**	**21 14 13.1**	**-2.2**
SNY				pmax	pmax			
	comp=Z,31nm,1.3s							
SNY				pmax	pmax			
	comp=Z,270nm,3.5s							
SNY				LR	LR			
	comp=Z,2μm,13.3s							
SNY				LR	LR			
	comp=Z,2μm,16.8s							
SNY				LR	LR			
	comp=Z,3μm,17.5s							
NKL	**Nikolayevsk**	**15.91**	**356**	*e*P		**Pn**	**21 14 19.0**	**+0.4**
NKL				pmax	pmax			
	comp=N,13nm,1.3s							
NKL				pmax	pmax			
	comp=E,32nm,1.3s							
NKL				pmax	pmax			
	comp=Z,43nm,1.3s							
NKL				MLR	MLR			
	comp=N,1μm,18.0s							
NKL				MLR	MLR			
	comp=E,600nm,18.0s							
NKL				MLR	MLR			
	comp=Z,2μm,18.0s							
JOW	**Kunigami**	**15.92**	**233**	*e*Pn		**Pn**	**21 14 17.5**	**-1.4**
	comp=Z,35nm,0.9s							
DL2	**Dalian**	**16.50**	**282**	P		**P**	**21 14 28.8**	**-0.2**
DL2				pmax	pmax			
	comp=Z,97nm,1.0s							
SKR	**Severo-Kuril's**	**16.56**	**32**	*e*P		**Pn**	**21 14 21.7**	**-5.3**
SKR				MLR	MLR			
	comp=Z,3μm,16.0s							
SSE	**Sheshan**	**18.66**	**257**	*e*P		**Pn**	**21 14 56.0**	**+2.8**
SSE				pP		P	21 14 59.5	+6.6
SSE				S		**Sn**	**21 18 21.6**	**-0.4**
SSE				sS		**S**	**21 18 27.1**	**+1.5**
SSE				pmax	pmax			
	comp=Z,22nm,0.7s							
SSE				pmax	pmax			
	comp=Z,190nm,7.0s							
SSE				LR	LR			
	comp=Z,2μm,16.0s							
SSE				LR	LR			
	comp=Z,810nm,16.0s							
SSE				LR	LR			
	comp=Z,2μm,16.1s							
PEA0	**Petropavlovsk-**	**19.04**	**29**	*e*P		**Pn**	**21 14 57.6**	**-0.1**
PEA0B	**Petropavlovsk-**	**19.04**	**29**	*e*P		**Pn**	**21 14 59.4**	**+1.7**
	comp=Z,83nm,1.3s							
PETK	**Petropavlovsk-**	**19.04**	**29**	P		**Pn**	**21 14 56.5**	**-1.1**
	comp=Z,0.2nm,0.3s,baz=192,slow

QZH comp=Z,660nm,9.9s LR LR
comp=Z,2µm,13.4s
HHC Hu-ho-hao-te 24.20 288 *e*P **P** **21 15 49.8 -2.0**
HHC pP pP 21 15 54.3 +0.2
HHC sP sP 21 15 59.3 +4.2
HHC S **S** **21 20 08.1 -2.2**
HHC sS sS 21 20 17.6 +3.5
HHC pmax pmax
comp=Z,16nm,1.0s
HHC pmax pmax
comp=Z,140nm,3.7s
HHC LR LR
comp=Z,640nm,9.6s
HHC LR LR
comp=Z,920nm,13.6s
HHC LR LR
comp=Z,940nm,14.3s
WHN Wuhan 24.25 262 ⇓P **P** **21 15 51.0 -1.0**
WHN S **S** **21 20 09.1 -1.7**
WHN pmax pmax
comp=Z,92nm,0.9s
WHN pmax pmax
comp=Z,530nm,9.6s
WHN LR LR
comp=Z,2µm,10.8s
WHN LR LR
comp=Z,2µm,12.2s
WHN LR LR
comp=Z,4µm,12.8s
CIT Chita 25.09 315 *e*P **P** **21 15 58.3 -1.3**
CIT *e* 21 16 41.5
CIT pmax pmax
comp=Z,283nm,1.3s
BTO Baotou 25.39 288 *e*P **P** **21 16 00.4 -2.1**
YAK Yakutsk 26.01 346 P **P** **21 16 09.5 +1.8**
comp=Z,32nm,0.6s,baz=318,slow=1.0,SNR=12
YAK LR LR 21 26 32.5
comp=Z,770nm,18.9s,baz=162,slow=37
YAK Yakutsk 26.01 346 *e*P **P** **21 16 09.4 +1.6**
YAK *e*PP 21 16 17.7
YAK *e* 21 16 50.7
YAK *e* 21 19 34.3
YAK *e*S **S** **21 20 36.9 -1.6**
YAK *e*SS **SnSn** **21 21 46.3 +11**
YAK pmax pmax
comp=Z,27nm,0.9s
YAK pmax pmax
comp=N,18nm,1.0s
YAK pmax pmax
comp=E,9.0nm,1.3s
YAK pmax pmax
comp=Z,160nm,3.7s
YAK pmax pmax
comp=N,69nm,3.0s
YAK pmax pmax
comp=E,81nm,3.0s
YAK smax smax
comp=N,96nm,3.2s
YAK smax smax
comp=E,68nm,3.5s
YAK Yakutsk 26.01 346 *e*P **P** **21 16 09.0 +1.3**
comp=E,50nm,0.7s
SEY Seymchan 26.38 10 P **P** **21 16 12.8 +1.7**
comp=E,46nm,1.2s,baz=192,slow=6.7,SNR=25
XAN Xi'an 27.38 273 P **P** **21 16 20.0 -0.5**
XAN pP pP 21 16 27.8 +5.0
XAN S **S** **21 21 01.6 +0.8**
XAN pmax pmax
comp=E,23nm,0.8s
XAN pmax pmax
comp=E,110nm,4.5s
XAN LR LR
comp=E,1µm,15.6s
XAN LR LR
comp=E,1µm,14.7s
H11N2 WAKE ISLAND Hy 27.55 123 T T 21 45 07.2
baz=315,slow=76,SNR=820
H11N1 WAKE ISLAND Hy 27.56 123 T T 21 45 11.0
baz=315,slow=76,SNR=864
H11N3 WAKE ISLAND Hy 27.57 123 T T 21 45 13.0
baz=315,slow=76,SNR=873
BOD Bodaibo 27.77 327 *e*P **P** **21 16 22.9 -0.8**
BOD pmax pmax
comp=Z,17nm,1.2s
ULN Ulaanbaatar 27.92 304 *de*P **P** **21 16 25.4 +0.1**
ULN pmax pmax
comp=Z,39nm,1.2s
ULN Ulaanbaatar 27.92 304 *e*P **P** **21 16 25.3 -0.1**
comp=Z,25nm,0.9s
ULN Ulaanbaatar 27.92 304 P **P** **21 16 25.6 +0.2**
SNR=16
ULN Ulaanbaatar 27.92 304 P **P** **21 16 25.6 +0.2**
SNR=16
ENH Enshi 28.21 265 *e*P **P** **21 16 27.3 -0.6**
comp=Z,199nm,1.1s
H11S1 WAKE ISLAND Hy 28.29 125 T T 21 46 11.4
baz=317,slow=76,SNR=546
H11S3 WAKE ISLAND Hy 28.29 125 T T 21 46 04.8
baz=317,slow=76,SNR=1057
H11S2 WAKE ISLAND Hy 28.31 125 T T 21 46 05.9
baz=317,slow=76,SNR=875
SONM Songino Array 28.36 303 P **P** **21 16 29.2 0.0**
comp=Z,46nm,0.8s,baz=96,slow=8.4,SNR=207
SONM LR LR 21 29 24.0
comp=Z,220nm,19.2s,baz=94,slow=40
GZH Guangzhou 28.76 249 P **P** **21 16 28.5 -4.3**
GZH S **S** **21 21 16.8 -5.7**
GZH pmax pmax
comp=Z,270nm,7.3s
MCO Taipa Grande 29.18 247 P **P** **21 16 38.0 +1.5**
IRK Irkutsk 30.56 312 *e*P **P** **21 16 48.5 0.0**
IRK pmax pmax
comp=Z,26nm,2.2s
ZAK Zakamensk 30.79 308 *e*P **P** **21 16 51.1 +0.5**
ZAK pmax pmax
comp=Z,20nm,1.3s
TLY Talaya 30.81 310 P **P** **21 16 51.6 +0.8**
comp=Z,10nm,0.7s,baz=272,slow=6.6,SNR=4.6
TLY LR LR 21 29 55.4
comp=Z,580nm,18.9s,baz=102,slow=38
TLY Talaya 30.81 310 *e*P **P** **21 16 52.1 +1.4**
TLY pmax pmax
comp=Z,27nm,1.0s
TLY MLR MLR
comp=Z,816nm,17.0s
TLY Talaya 30.81 310 *e*P **P** **21 16 51.5 +0.8**
comp=Z,26nm,1.0s
TLY Talaya 30.81 310 P **P** **21 16 52.1 +1.4**
SNR=5.7
TLY Talaya 30.81 310 P **P** **21 16 52.1 +1.4**
SNR=5.7
LZH Lanzhou 30.87 280 *e*P **P** **21 16 51.8 +0.2**
LZH pP pP 21 16 56.3 +2.4
LZH sP sP 21 16 58.8 +3.9
LZH PP **PnPn** **21 17 50.0 -1.8**
LZH S **S** **21 21 55.6 -0.2**
LZH sS sS 21 22 07.3 +7.6
LZH SS **SnSn** **21 23 41.1 +6.5**
LZH pmax pmax
comp=Z,41nm,1.0s
LZH pmax pmax
comp=Z,150nm,4.8s
LZH LR LR
comp=Z,730nm,13.0s
LZH LR LR
comp=Z,2µm,13.2s
LZH LR LR
comp=Z,2µm,13.7s
GYA Guiyang 32.11 261 ⇑*i*P **P** **21 17 02.6 +0.1**
GYA PP **PP** **21 18 11.4 -3.6**
GYA PcP **PcP** **21 19 54.3 +2.5**
GYA S **S** **21 22 14.8 -0.4**
GYA SS **SnSn** **21 24 06.0 +1.1**
GYA ScS **ScS** **21 27 32.1 -2.5**
GYA pmax pmax
comp=Z,20nm,0.8s
GYA pmax pmax
comp=Z,120nm,5.4s
GYA LR LR
comp=Z,540nm,16.8s
GYA LR LR
comp=Z,510nm,17.2s
GYA LR LR
comp=Z,500nm,17.4s
MOY Mondy 32.43 310 *e*P **P** **21 17 05.5 +0.4**
MOY pmax pmax
comp=Z,20nm,2.2s
CD2 Chengdu 32.53 270 P **P** **21 17 04.9 -1.2**
CD2 sP sP 21 17 12.5 +3.1
CD2 PP **PP** **21 18 18.3 -1.2**
CD2 S **S** **21 22 19.5 -2.1**
CD2 sS sS 21 22 28.5 +3.0
CD2 ScP **ScP** **21 23 34.8 -2.1**
CD2 pmax pmax
comp=Z,50nm,0.9s
CD2 pmax pmax
comp=Z,150nm,6.1s
CD2 LR LR
comp=Z,2µm,13.8s
CD2 LR LR
comp=Z,2µm,15.0s
GTA Gaotai 33.31 287 *e*P **P** **21 17 12.8 -0.1**
GTA pP pP 21 17 25.1 +10
GTA PcP **PcP** **21 19 55.8 +0.9**
GTA S **S** **21 22 33.3 -0.4**
GTA SS **SnSn** **21 24 39.8 +6.1**
GTA pmax pmax
comp=Z,17nm,1.4s
GTA pmax pmax
comp=Z,92nm,6.7s
GTA LR LR
comp=Z,950nm,19.0s
GTA LR LR
comp=Z,540nm,13.5s
GTA LR LR
comp=Z,460nm,13.3s
BILL Bilibino 33.54 16 *e*P **P** **21 17 14.7 +0.3**
BILL pmax pmax
comp=Z,17nm,1.0s
BILL Bilibino 33.54 16 *e*P **P** **21 17 14.7 +0.3**
comp=Z,20nm,1.2s
QIZ Qiongzhong 33.82 246 P **P** **21 17 18.0 +0.6**
QIZ S **S** **21 22 46.4 +4.8**
QIZ LR LR
comp=Z,230nm,22.5s
QIZ LR LR
comp=Z,210nm,23.7s
TIXI Tiksi 35.14 353 P **P** **21 17 28.1 -0.2**
comp=Z,0.9nm,0.3s,baz=156,slow=4.0,SNR=6.5
TIXI Tiksi 35.14 353 *e*P **P** **21 17 27.1 -1.1**
TIXI pmax pmax
comp=Z,2.0nm,0.8s
TIXI Tiksi 35.14 353 *e*P **P** **21 17 29.3 +1.1**
comp=Z,4.1nm,0.7s
KMI Kunming 35.85 262 P **P** **21 17 36.5 +1.4**
KMI pP pP 21 17 41.9 +4.4
KMI sP sP 21 17 44.8 +6.3
KMI PP **PP** **21 18 56.1 -0.4**
KMI S **S** **21 23 10.0 -3.3**
KMI pmax pmax
comp=Z,22nm,1.2s
KMI pmax pmax
comp=Z,140nm,3.1s
KMI LR LR
comp=Z,690nm,13.6s
KMI LR LR
comp=Z,870nm,17.4s
KMI LR LR
comp=Z,1µm,14.2s
KWAJ Kwajalein Atol 36.35 135 *e*P **P** **21 17 39.1 -0.1**
KWAJ pmax pmax
comp=Z,227nm,1.3s
KWAJ Kwajalein Atol 36.35 135 *e*P **P** **21 17 39.1 -0.1**
comp=Z,227nm,1.3s
KRAR Krasnoyarsk 37.87 316 *e*P **P** **21 17 52.6 +0.9**
KRAR pmax pmax
comp=Z,14nm,0.9s
GAMB Gambell 38.05 31 *e*P **P** **21 17 55.2 +2.1**
comp=Z,13nm,1.4s
KDM Kudat 38.20 224 ⇓P **P** **21 17 57.2 +2.3**
MYLDM Lahad Datu 38.76 220 *e*P **P** **21 18 01.4 +1.8**
comp=Z,67nm,1.0s
SDKM Sandakan 39.06 222 ⇓P **P** **21 18 05.3 +3.1**
UBPT Khong Chiam 39.42 246 P **P** **21 18 05.8 +0.7**
comp=Z,34nm,1.0s,comp=Z,735nm
SKNT Sakolnakorn 39.44 250 P **P** **21 18 05.8 +0.5**
comp=Z,25nm,1.3s
TSM Tawau 39.83 220 ⇑P **P** **21 18 09.7 +1.1**
CRAI Chiangrai 40.28 257 P **P** **21 18 13.6 +1.3**
comp=Z,191nm,1.2s
KHON Khomkaen 40.70 250 P **P** **21 18 16.8 +1.0**
comp=Z,15nm,0.9s,comp=Z,6µm
MRSI Marisa 41.26 212 P **P** **21 18 21.3 +0.9**
comp=Z,92nm,1.3s
CMAI Chiengmai2 41.48 258 P **P** **21 18 24.3 +1.9**
comp=Z,16nm,1.4s
WMQ Urumqi 41.49 297 P **P** **21 18 23.0 +0.9**
WMQ sP sP 21 18 31.9 +6.4
WMQ PP **PnPn** **21 20 02.8 +0.3**
WMQ S **S** **21 24 37.9 +0.1**
WMQ SS **SS** **21 27 36.6 -5.3**
WMQ pmax pmax
comp=Z,83nm,0.8s
WMQ pmax pmax
comp=Z,410nm,3.6s
WMQ LR LR
comp=Z,100nm,17.4s
WMQ LR LR
comp=Z,140nm,17.4s
WMQ LR LR
comp=Z,160nm,19.6s
UTTA Uttaradit 41.57 254 P **P** **21 18 23.1 +0.2**
comp=Z,5.4nm,0.9s,comp=Z,41nm
LAMP Lampang 41.82 255 P **P** **21 18 25.9 +0.9**
comp=Z,5.9nm,0.9s
PBKT Sadao Pong 41.96 252 P **P** **21 18 26.0 -0.1**
comp=Z,12nm,0.9s,comp=Z,1µm
SANI Sanana 42.03 205 P **P** **21 18 27.4 +0.7**
comp=Z,49nm,1.0s
CMMT Chiang Mai 42.18 256 P **P** **21 18 27.9 -0.1**
comp=Z,8.7nm,1.1s
CHTO Chiang Mai 42.19 256 P **P** **21 18 27.9 -0.1**
comp=Z,38nm,1.0s
CHTO Chiang Mai 42.19 256 *e*P **P** **21 18 28.2 +0.2**
CHTO pmax pmax
comp=Z,6.0nm,0.9s
CHTO Chiang Mai 42.19 256 *e*P **P** **21 18 28.2 +0.2**
comp=Z,6.0nm,0.9s
CHTO Chiang Mai 42.19 256 P **P** **21 18 27.7 -0.3**
SNR=5.5
CHTO Chiang Mai 42.19 256 P **P** **21 18 27.7 -0.3**
SNR=5.5
ZAA0 Zalesovo Array 42.38 312 *e*P **P** **21 18 29.0 -0.1**
ZALV Zalesovo Beam 42.38 312 P **P** **21 18 29.2 +0.1**
comp=Z,14nm,0.8s,baz=88,slow=6.7,SNR=56
ZALV ScP **ScP** **21 24 12.5 -0.8**
comp=Z,0.9nm,0.8s,baz=42,slow=6.8,SNR=3.6
ZALV LR LR 21 38 37.4
comp=Z,228nm,20.2s,baz=70,slow=40
ZALV Zalesovo Beam 42.38 312 *i*P **P** **21 18 29.5 +0.4**
ZALV pmax pmax
comp=Z,15nm,0.8s
CM31 Chiang Mai Arr 42.39 256 *e*P **P** **21 18 30.4 +0.7**
CMAR Chiang Mai Arr 42.39 256 P **P** **21 18 29.6 -0.1**
comp=Z,6.3nm,0.8s,baz=46,slow=6.0,SNR=72
CMAR PcP **PcP** **21 20 23.8 +0.8**
comp=Z,3.8nm,0.9s,baz=18,slow=2.5,SNR=8.8
CMAR LR LR 21 38 19.2
comp=Z,272nm,18.5s,baz=54,slow=39
CMAR Chiang Mai Arr 42.39 256 *i*P **P** **21 18 30.1 +0.4**
CMAR pmax pmax
comp=Z,6.0nm,0.8s
CM01 Chiang Mai Arr 42.40 256 *e*P **P** **21 18 29.6 -0.2**
APSI Ampana 42.63 212 P **P** **21 18 31.0 -0.6**
comp=Z,133nm,1.3s,comp=Z,1µm
NLAI Namlea 42.79 203 P **P** **21 18 34.0 +1.2**
comp=Z,23nm,0.9s
LSA Lhasa 43.04 275 P **P** **21 18 36.3 +0.9**
LSA pmax pmax
comp=Z,13nm,1.1s
LSA Lhasa 43.04 275 *e*P **P** **21 18 36.3 +0.9**
LSA pmax pmax
comp=Z,26nm,0.8s
LSA Lhasa 43.04 275 *e*P **P** **21 18 36.3 +0.9**
comp=Z,26nm,0.8s
NVS Novosibirsk 43.28 314 *e*P **P** **21 18 36.4 -0.1**
NVS *e*S **S** **21 25 01.5 -2.3**
NVS pmax pmax
comp=Z,32nm,1.2s
NVS pmax pmax
comp=N,6.0nm,0.9s
NVS pmax pmax
comp=E,25nm,1.0s
NVS smax smax
comp=N,8.0nm,1.2s
NVS smax smax
comp=E,10.0nm,1.2s
CHBT CHBT 43.36 246 P **P** **21 18 38.2 +0.6**
comp=E,30nm,1.1s
NRIK Noril'sk 43.39 335 P **P** **21 18 36.1 -1.1**
comp=E,3.3nm,0.6s,baz=120,slow=12,SNR=2.9
NRIK LR LR 21 37 35.3
comp=E,665nm,19.5s,baz=108,slow=37
SBUM Sibu 44.46 226 ⇑P **P** **21 18 47.2 +0.9**
SBUM Sibu 44.46 226 *e*P **P** **21 18 46.5 +0.2**
comp=E,24nm,1.1s
MK01 Makanchi Array 44.70 302 *e*P **P** **21 18 48.0 -0.1**
MK31 Makanchi Array 44.71 302 *e*P **P** **21 18 48.2 +0.1**
MK31 Makanchi Array 44.71 302 *e*P **P** **21 18 48.2 +0.1**
MKAR Makanchi Array 44.71 302 P **P** **21 18 48.1 0.0**
comp=E,18nm,0.8s,baz=88,slow=9.6,SNR=162
MKAR LR LR 21 38 49.2
comp=E,141nm,18.2s,baz=86,slow=38
TT01 Tatalina 44.71 35 *e*P **P** **21 18 48.8 +0.9**
TTA Tatalina 44.72 35 *e*P **P** **21 18 48.9 +0.9**
TTA pmax pmax
comp=Z,12nm,1.6s
TTA Tatalina 44.72 35 *e*P **P** **21 18 48.9 +0.9**
comp=Z,12nm,1.6s
SVW2 Sparrevohn 44.80 37 *e*P **P** **21 18 50.2 +1.6**
comp=Z,22nm,1.0s
KHLT Khaolaem Dam 44.85 252 P **P** **21 18 52.5 +3.0**
comp=Z,5.1nm,1.1s
MAKZ Makanchi 44.92 302 *e*P **P** **21 18 50.3 +0.5**
MAKZ pmax pmax
comp=Z,19nm,0.8s
MAKZ Makanchi 44.92 302 *e*P **P** **21 18 50.3 +0.5**
comp=Z,19nm,0.8s
MTKI Muara Teweh, K 45.82 220 P **P** **21 18 59.0 +1.8**
comp=Z,78nm,0.8s,comp=Z,3µm
OHAK Old Harbor 45.98 43 *e*P **P** **21 18 57.6 -0.4**
comp=Z,23nm,0.9s
RSO Redoubt South 46.17 38 *e*P **P** **21 19 00.8 +1.1**
SPSI Sidrap Palu 46.17 212 P **P** **21 18 59.4 -0.5**
comp=Z,34nm,1.0s
KDAK Kodiak Island 46.33 42 P **P** **21 19 16.3 +16**
comp=Z,34nm,0.7s,baz=283,slow=3.1,SNR=28
KDAK Kodiak Island 46.33 42 *e*P **P** **21 19 01.0 +0.3**
KDAK pmax pmax
comp=Z,40nm,0.8s
KDAK Kodiak Island 46.33 42 *e*P **P** **21 19 01.0 +0.3**
comp=Z,40nm,0.8s
KSM Kuching 46.35 227 *e*P **P** **21 19 01.4 0.0**
comp=Z,38nm,0.9s
KURK Kurchatov 46.45 308 *e*P **P** **21 19 01.6 -0.1**
KURK pmax pmax
comp=Z,81nm,1.0s
KURK Kurchatov 46.45 308 *e*P **P** **21 19 01.6 -0.1**
comp=Z,81nm,1.0s
KURK Kurchatov 46.45 308 P **P** **21 19 01.8 +0.1**
SNR=30
KURK Kurchatov 46.45 308 P **P** **21 19 01.8 +0.1**
SNR=30
KURK P **P** **21 19 01.8 +0.1**
SNR=30
PPLA Purkeypile 46.47 35 *e*P **P** **21 19 04.0 +2.1**
comp=Z,18nm,1.1s
SPU Mount Spurr 46.51 37 *e*P **P** **21 19 03.4 +1.3**
KURBB Kurchatov Arra 46.52 308 P **P** **21 19 02.2 -0.1**
comp=Z,19nm,0.4s,baz=83,slow=8.0,SNR=123
CAST Castle Rocks 46.53 34 *e*P **P** **21 19 03.9 +1.6**
comp=Z,8.4nm,0.9s
PMG Port Moresby 46.66 174 *e*P **P** **21 19 02.6 -1.1**
PMG pmax pmax
comp=Z,23nm,0.9s
PMG Port Moresby 46.66 174 *e*P **P** **21 19 02.6 -1.1**
comp=Z,22nm,0.9s
HOM Homer 46.74 40 *e*P **P** **21 19 05.2 +1.3**
comp=Z,168nm,1.3s
STKI Sintang 46.83 225 P **P** **21 19 05.9 +0.8**
comp=Z,53nm,1.1s
JOHN Johnston Islan 46.83 103 *e*P **P** **21 19 06.5 +1.4**
comp=Z,92nm,1.0s
BPAW Bear Paw Mtn. 47.04 33 *e*P **P** **21 19 07.7 +1.4**
comp=Z,11nm,1.2s
KTH Kantishna Hill 47.05 34 *e*P **P** **21 19 08.0 +1.6**
comp=Z,17nm,1.0s
BRLK Bradley Lake 47.12 39 *e*P **P** **21 19 08.4 +1.5**
comp=Z,22nm,1.2s
KAPI Kappang 47.13 212 *e*P **P** **21 19 07.0 -0.3**
comp=Z,74nm,1.1s
KAPI Kappang 47.13 212 P **P** **21 19 08.0 +0.6**
SNR=7.6
KAPI Kappang 47.13 212 P **P** **21 19 08.0 +0.6**
SNR=7.6
MLY Manley 47.17 32 *e*P **P** **21 19 08.5 +1.2**
comp=Z,17nm,1.1s
TRF Thorofare Moun 47.34 34 *e*P **P** **21 19 09.6 +0.9**
comp=Z,7.5nm,0.8s
COLD Coldfoot 47.51 29 *e*P **P** **21 19 11.5 +1.6**
comp=Z,18nm,1.7s
RC01 Rabbit Creek A 47.63 38 *e*P **P** **21 19 11.5 +0.6**
comp=Z,19nm,0.9s
SEW Seward 47.83 39 *e*P **P** **21 19 13.2 +0.9**
comp=Z,26nm,1.1s
PMR Palmer 47.91 37 *e*P **P** **21 19 13.4 +0.5**
PMR pmax pmax
comp=Z,23nm,1.1s
PMR Palmer 47.91 37 *e*P **P** **21 19 13.4 +0.5**
comp=Z,23nm,1.1s
MCK McKinley 47.94 34 *e*P **P** **21 19 14.1 +0.8**
MCK pmax pmax
comp=Z,15nm,1.0s
MCK McKinley 47.94 34 *e*P **P** **21 19 14.1 +0.8**
comp=Z,15nm,1.0s
GUN Gumba 47.98 276 *e*P **P** **21 19 14.5 0.0**
comp=Z,194nm,0.9s
RND Reindeer 47.98 34 *e*P **P** **21 19 13.9 +0.2**
RND pmax pmax
comp=Z,26nm,1.2s
RND Reindeer 47.98 34 *e*P **P** **21 19 13.9 +0.2**
comp=Z,26nm,1.2s
MDM Murphy Dome 48.24 32 *e*P **P** **21 19 16.8 +1.2**
comp=Z,24nm,1.0s
SML Sawmill 48.27 36 *e*P **P** **21 19 15.0 -0.9**
SML pmax pmax
comp=Z,19nm,0.8s
SML Sawmill 48.27 36 *e*P **P** **21 19 15.0 -0.9**
comp=Z,19nm,0.8s
WRH Wood River Hil 48.30 33 *e*P **P** **21 19 16.8 +0.8**
comp=Z,6.5nm,0.8s
COLA College 48.40 32 *e*P **P** **21 19 18.1 +1.4**
COLA pmax pmax
comp=Z,59nm,0.3s
COLA College 48.40 32 *e*P **P** **21 19 18.1 +1.4**
comp=Z,60nm,0.3s
CCB Clear Creek Bu 48.42 33 *e*P **P** **21 19 17.5 +0.6**
comp=Z,6.9nm,1.2s
SURT Suratani 48.47 246 P **P** **21 19 18.7 +0.8**
comp=Z,13nm,1.1s,comp=Z,183nm
KKN Kakani 48.51 276 *e*P **P** **21 19 18.3 -0.1**
comp=Z,96nm,0.8s
PKIN Phulchoki 48.51 276 *e*P **P** **21 19 17.6 -0.9**
comp=Z,26nm,0.7s
TRTT Trang 48.58 244 P **P** **21 19 19.8 +1.0**
comp=Z,29nm,1.2s,comp=Z,546nm
DHY Denali Highway 48.66 35 *e*P **P** **21 19 19.7 +0.7**
comp=Z,11nm,1.1s
SCM Sheep Creek Mo 48.75 36 *e*P **P** **21 19 20.7 +1.1**
SCM pmax pmax
comp=Z,21nm,0.9s
SCM Sheep Creek Mo 48.75 36 *e*P **P** **21 19 20.7 +1.1**
comp=Z,21nm,0.9s
HDA Harding Lake 48.80 33 *e*P **P** **21 19 20.3 +0.5**
comp=Z,14nm,0.9s
ILAR Eielson Array 48.82 32 P **P** **21 19 20.0 0.0**
comp=Z,9.4nm,0.8s,baz=267,slow=6.2,SNR=94
ILAR LR LR 21 40 48.6
comp=Z,157nm,20.2s,baz=278,slow=37
ILB Eielson Array 48.82 32 *e*P **P** **21 19 20.4 +0.5**
IL1 Eielson Array 48.82 32 *e*P **P** **21 19 19.8 -0.1**
GKN Gorkha 48.93 277 *e*P **P** **21 19 21.4 -0.1**
comp=Z,142nm,0.9s
KLU Klutina 49.45 37 *e*P **P** **21 19 26.0 +1.1**
comp=Z,23nm,1.1s
FYU Fort Yukon 49.46 30 *e*P **P** **21 19 26.5 +1.7**
comp=Z,14nm,1.0s
PKDT Phuket 49.52 245 P **P** **21 19 26.9 +0.9**

comp=Z,108nm,1.0s,comp=Z,982nm
PAX Paxson 49.53 35 *e*P **P** **21 19 27.2 +1.6**
PAX pmax pmax
comp=Z,7.0nm,1.0s
PAX Paxson 49.53 35 *e*P **P** **21 19 27.2 +1.6**
comp=Z,7.4nm,1.0s
DIV Divide 49.55 37 *e*P **P** **21 19 27.2 +1.5**
comp=Z,25nm,0.9s
EYAK Cordova Ski Ar 49.62 38 *e*P **P** **21 19 27.6 +1.4**
comp=Z,19nm,0.8s
KULM Kulim 49.69 241 *e*P **P** **21 19 27.4 +0.2**
comp=Z,60nm,1.5s
SOEI Soe 49.82 204 P **P** **21 19 29.7 +1.4**
comp=Z,98nm,1.0s
KOLN Koldanda 49.85 277 *e*P **P** **21 19 28.6 0.0**
comp=Z,66nm,0.9s
IPM Ipoh 50.01 239 *e*P **P** **21 19 29.5 -0.2**
comp=Z,45nm,1.0s
MYKOM Kota Tinggi 50.11 234 *e*P **P** **21 19 31.3 +0.9**
comp=Z,26nm,1.2s
DOT Dot Lake 50.11 34 *e*P **P** **21 19 30.0 +0.1**
comp=Z,16nm,0.8s
BMRM Bremner River 50.13 37 *e*P **P** **21 19 31.6 +1.5**
comp=Z,27nm,1.0s
RAGM Ragged Mountai 50.17 38 *e*P **P** **21 19 32.2 +1.8**
comp=Z,25nm,1.0s
PYUN Piuthan 50.19 278 *e*P **P** **21 19 31.3 +0.1**
comp=Z,239nm,1.2s
TKM2 Tokmak 2 50.26 299 *e*P **P** **21 19 32.3 +0.7**
TKM2 pmax pmax
comp=Z,27nm,0.8s
TKM2 Tokmak 2 50.26 299 *e*P **P** **21 19 32.3 +0.7**
comp=Z,27nm,0.8s
MENT Mentasta 50.33 35 *e*P **P** **21 19 33.4 +1.8**
comp=Z,12nm,0.9s
TPRI Tanjung Pinang 50.33 233 P **P** **21 19 33.5 +1.4**
comp=Z,37nm,1.1s,comp=Z,778nm
OTUK Ortayu 50.97 306 P **P** **21 19 37.0 +0.4**
FRU Bishkek 50.97 299 *e*P **P** **21 19 37.0 +0.3**
FRU *e* 21 19 45.0
FRU pmax pmax
comp=Z,35nm,1.3s
COEN Coen 50.98 179 *e*P **P** **21 19 37.5 +0.6**
comp=Z,46nm,1.0s
MTN Manton Dam 51.00 194 *e*P **P** **21 19 35.6 -1.4**
comp=Z,34nm,0.9s
BVAR Borovoye Array 51.03 312 P **P** **21 19 36.8 -0.1**
comp=Z,6.2nm,0.9s,baz=79,slow=7.7,SNR=23
KSH Kashi 51.08 294 P **P** **21 19 41.8 +4.1**
KSH *e*pP pP 21 19 46.1 +5.9
KSH *es*P sP 21 19 48.8 +7.7
KSH *e*PP **PP** **21 21 39.4 +5.3**
KSH S ScS **S** **21 26 57.9 +2.3**
KSH ScS **ScS** **21 29 29.8 +0.9**
KSH pmax pmax
comp=Z,19nm,1.0s
KSH pmax pmax
comp=Z,160nm,6.6s
KSH LR LR
comp=Z,910nm,15.6s
KSH LR LR
comp=Z,290nm,10.9s
KSH LR LR
comp=Z,1μm,15.4s
BRVK Borovoye 51.09 312 *e*P **P** **21 19 37.5 +0.1**
BRVK pmax pmax
comp=Z,13nm,0.8s
BRVK Borovoye 51.09 312 *e*P **P** **21 19 37.5 +0.1**
comp=Z,14nm,0.8s
BRVK Borovoye 51.09 312 P **P** **21 19 37.8 +0.4**
SNR=8.3
BRVK Borovoye 51.09 312 P **P** **21 19 37.8 +0.4**
SNR=8.3
AAK Ala-Archa 51.12 298 P **P** **21 19 38.2 +0.2**
comp=Z,14nm,0.8s,baz=102,slow=4.5,SNR=28
AAK Ala-Archa 51.12 298 *d i*P **P** **21 19 38.0 0.0**
AAK pmax pmax
comp=Z,35nm,0.9s
AAK Ala-Archa 51.12 298 *e*P **P** **21 19 38.3 +0.2**
comp=Z,13nm,0.8s
AAK Ala-Archa 51.12 298 P **P** **21 19 38.4 +0.4**
SNR=6.4
AAK Ala-Archa 51.12 298 P **P** **21 19 38.4 +0.4**
SNR=6.4
AAK P **P** **21 19 38.4 +0.4**
SNR=6.4
EGAK Eagle 51.26 32 *e*P **P** **21 19 39.1 +0.6**
comp=Z,22nm,1.5s
EKS2 Erkin-Say 51.61 299 *e*P **P** **21 19 41.9 +0.2**
EKS2 pmax pmax
comp=Z,13nm,0.8s
EKS2 Erkin-Say 51.61 299 *e*P **P** **21 19 41.9 +0.2**
comp=Z,13nm,0.8s
TWSI Taliwang, Sumb 51.69 213 P **P** **21 19 44.3 +2.0**
comp=Z,16nm,1.0s,comp=Z,421nm
PPBI Pangkal Pinang 51.74 229 P **P** **21 19 43.2 +0.5**
comp=Z,31nm,1.1s,comp=Z,448nm
ZRNK Zerenda 51.86 312 *e*P **P** **21 19 43.4 +0.2**
ZRNK pmax pmax
comp=Z,18nm,1.0s
ZRNK Zerenda 51.86 312 *e*P **P** **21 19 43.4 +0.2**
comp=Z,18nm,1.0s
LHMI Lhok Sumawe 52.34 244 P **P** **21 19 48.8 +1.6**
comp=Z,64nm,0.9s
PSI Prapat 52.66 240 *e*P **P** **21 19 49.5 -0.2**
PSI pmax pmax
comp=Z,34nm,0.9s
PSI Prapat 52.66 240 *e*P **P** **21 19 49.5 -0.2**
comp=Z,34nm,0.9s
SFK Sufi-Kurgan 52.70 296 P **P** **21 19 50.3 +0.4**
KCSI Kotacane, Aceh 52.95 242 P **P** **21 19 50.0 -1.7**
comp=Z,21nm,0.9s
BKNI Bangkinang 53.05 236 P **P** **21 19 53.6 +1.2**
comp=Z,154nm,1.2s
NGJI Ngawi 53.06 220 P **P** **21 19 53.6 +1.2**
comp=Z,41nm,1.2s
KIP Kipapa 53.40 90 *e*P **P** **21 19 56.0 +1.0**
KIP pmax pmax
comp=Z,126nm,1.4s
KIP Kipapa 53.40 90 *e*P **P** **21 19 56.0 +1.0**
comp=Z,126nm,1.4s
TPTI 53.55 242 P **P** **21 19 57.3 +1.2**
comp=Z,22nm,1.2s
SDSI Sungai Dareh 53.73 235 P **P** **21 19 58.4 +0.9**
comp=Z,91nm,1.0s,comp=Z,44μm
KKAR Karatay Array 53.74 300 *e*P **P** **21 19 57.3 +0.1**
KKAR pmax pmax
comp=Z,27nm,1.0s
KKAR Karatay Array 53.74 300 *e*P **P** **21 19 57.3 +0.1**
comp=Z,27nm,1.0s
INK Inuvik 53.77 27 P **P** **21 19 57.9 +0.9**
comp=Z,6.5nm,0.8s,baz=294,slow=7.0,SNR=33
THN Thein Dam 53.98 286 *e*P **P** **21 20 01.0 +1.9**
KPJI Karang Pucung 54.36 222 P **P** **21 20 01.6 -0.3**
comp=Z,61nm,1.1s
LHSI Lahat 54.64 230 P **P** **21 20 04.7 +0.7**
comp=Z,80nm,1.2s,comp=Z,1μm
KLI Kotabumi 54.65 228 P **P** **21 20 05.3 +1.2**
comp=Z,95nm,1.3s
LEM Lembang 54.66 224 P P 21 20 09.8 +5.5
comp=Z,720nm,1.1s
GSI Gunungsitoli 54.67 240 P **P** **21 20 05.3 +1.0**
comp=Z,195nm,1.2s,comp=Z,2μm
MDSI Maura Dua 54.76 229 P **P** **21 20 04.6 -0.3**
comp=Z,53nm,1.3s,comp=Z,707nm
MASI Maura Aman, Be 54.90 232 P **P** **21 20 07.1 +1.1**
comp=Z,128nm,1.2s
SKAG Skagway 54.96 38 *e*P **P** **21 20 07.2 +1.4**
comp=Z,12nm,1.0s
CISI Cisompet, Garu 55.15 223 P **P** **21 20 08.2 +0.4**
comp=Z,29nm,1.4s
LWLI Liwa 55.25 229 P **P** **21 20 09.4 +0.8**
comp=Z,41nm,0.8s,comp=Z,3μm
KASI Kota Agung 55.39 228 P **P** **21 20 07.5 -2.0**
comp=Z,30nm,1.2s
SVE Sverdlovsk 55.52 319 *e*P **P** **21 20 10.4 +0.5**
SVE pmax pmax
comp=Z,33nm,1.0s
SVE MLR MLR
comp=Z,1μm,16.0s
HPAH Hawaii Prepara 55.97 90 *e*P **P** **21 20 14.4 +0.6**
comp=Z,58nm,0.7s
SOKR Solikamsk 56.64 323 *e*P **P** **21 20 13.6 -4.2**
SOKR pmax pmax
comp=Z,15nm,1.1s
SOKR MLR MLR
comp=Z,801nm,18.0s

ARU Arti 56.73 319 P **P** **21 20 18.7 +0.1**
comp=Z,12nm,0.6s,baz=77,slow=2.1,SNR=19
ARU Arti 56.73 319 *d i*P **P** **21 20 18.6 +0.1**
ARU 21 21 12.4
ARU 21 22 22.3
ARU PPP PPP 21 23 42.8
ARU S **S** **21 28 12.0 +0.7**
ARU SS **SS** **21 31 50.8 -7.8**
ARU pmax pmax
comp=Z,28nm,1.0s
ARU Arti 56.73 319 *e*P **P** **21 20 18.6 0.0**
comp=Z,27nm,1.0s
CTAO Charters Tower 57.18 176 *e*P **P** **21 20 21.9 -0.2**
CTAO pmax pmax
comp=Z,6.0nm,0.8s
CTAO Charters Tower 57.18 176 *e*P **P** **21 20 21.9 -0.2**
comp=Z,6.4nm,0.8s
FITZ Fitzroy Crossi 57.34 199 P **P** **21 20 23.5 +0.3**
comp=Z,8.1nm,0.8s,baz=21,slow=7.4,SNR=18
FITZ Fitzroy Crossi 57.34 199 *e*P **P** **21 20 22.5 -0.7**
comp=Z,55nm,1.5s
WRAB Tennant Creek 57.43 189 *ce*P **P** **21 20 22.7 -1.2**
WRAB pmax pmax
comp=Z,167nm,1.2s
WRAB Tennant Creek 57.43 189 *e*P **P** **21 20 22.2 -1.6**
comp=Z,55nm,1.1s
WB2 Warramunga Arr 57.44 189 *e*P **P** **21 20 23.1 -0.8**
comp=Z,72nm,1.2s
WRA Warramunga Arr 57.44 189 P **P** **21 20 22.9 -1.0**
comp=Z,32nm,0.9s,baz=7.0,slow=7.2,SNR=101
WRA Warramunga Arr 57.44 189 *i*P **P** **21 20 22.8 -1.2**
WRA pmax pmax
comp=Z,30nm,0.9s
DLBC Dease Lake 57.89 38 P **P** **21 20 29.2 +2.3**
comp=Z,8.6nm,0.8s,baz=297,slow=7.7,SNR=17
DLBC Dease Lake 57.89 38 *e*P **P** **21 20 29.2 +2.3**
comp=Z,16nm,1.1s
ABKAR Akbulak array 58.43 310 *e*P **P** **21 20 30.4 -0.2**
HYB Hyderabad 59.07 269 *i*P **P** **21 20 35.0 -0.6**
comp=Z,50nm,1.0s
HYB PcP **PcP** **21 21 24.0 -0.4**
AKTO Aktyubinsk 59.14 312 P **P** **21 20 35.7 +0.1**
comp=Z,8.6nm,0.8s,baz=67,slow=12,SNR=18
AS01 Alice Springs 61.16 189 *e*P **P** **21 20 49.0 -0.7**
AS31 Alice Springs 61.17 189 *e*P **P** **21 20 49.2 -0.5**
comp=Z,6.1nm,0.8s
ASAR Alice Springs 61.17 189 P **P** **21 20 49.0 -0.7**
comp=Z,18nm,0.8s,baz=9.7,slow=5.7,SNR=152
ASAR Alice Springs 61.17 189 P **P** **21 20 49.0 -0.7**
TMCR Tamitsa 62.93 332 *e*P **P** **21 21 01.0 0.0**
TMCR pmax pmax
comp=Z,38nm,0.6s
YKW3 Yellowknife Ar 63.12 30 *e*P **P** **21 21 02.8 +0.5**
comp=Z,4.0nm,0.9s
YKA Yellowknife Ar 63.15 30 P **P** **21 21 02.4 -0.1**
comp=Z,2.8nm,0.8s,baz=303,slow=6.7,SNR=57
YKB5 Yellowknife Ar 63.15 30 *e*P **P** **21 21 02.0 -0.5**
ARCES ARCESS Array B 64.06 340 P **P** **21 21 10.0 +1.5**
comp=Z,6.0nm,1.0s,baz=52,slow=9.8,SNR=8.0
ARCES LR LR 21 51 40.1
comp=Z,209nm,20.5s,baz=48,slow=38
ARCES ARCESS Array B 64.06 340 P **P** **21 21 10.0 +1.5**
GEYT Alibeck 64.46 299 P **P** **21 21 11.7 0.0**
comp=Z,9.0nm,0.8s,baz=29,slow=3.4,SNR=17
COCO West Island 65.26 230 *i*P **P** **21 21 19.8 +2.8**
DAG Danmarks Havn 65.59 355 *i*P **P** **21 21 17.9 -0.4**
comp=Z,7.4nm,1.1s
DAG Danmarks Havn 65.59 355 *e*P **P** **21 21 17.9 -0.4**
DAG pmax pmax
comp=Z,9.0nm,1.1s
JOF Joensuu 66.14 332 P **P** **21 21 22.3 +0.3**
JOF pmax pmax
comp=Z,18nm,0.9s
F04D Rainier, OR 67.07 49 P **P** **21 21 29.6 +1.3**
baz=300
MOS Moscow 67.55 324 *e*P **P** **21 21 30.8 -0.4**
MOS pmax pmax
comp=Z,75nm,1.4s
ARMA Armidale 67.90 171 *e*P **P** **21 21 33.4 -0.3**
comp=Z,52nm,1.6s
VRH Novokhopyorsk 67.96 318 *e*P **P** **21 21 32.8 -1.0**
VRH pmax pmax
comp=Z,30nm,1.3s
I03D Drain, OR 68.08 51 P **P** **21 21 36.7 +1.9**
baz=301
H04A Detroit Lake 68.28 50 *e*P **P** **21 21 37.5 +1.4**
comp=Z,14nm,0.9s
OBN Obninsk 68.40 324 P **P** **21 21 37.1 +0.6**
comp=Z,12nm,0.4s,baz=335,slow=1.9,SNR=7.7
OBN Obninsk 68.40 324 *ce*P **P** **21 21 35.1 -1.4**
OBN *e* 21 21 56.8
OBN *e* 21 24 06.0
OBN pmax pmax
comp=Z,30nm,1.0s
OBN MLR MLR
comp=Z,272nm,15.0s
OBN Obninsk 68.40 324 *e*P **P** **21 21 37.1 +0.6**
comp=Z,36nm,1.1s
I04A Tendick Farm, 68.61 51 P **P** **21 21 39.5 +1.3**
baz=302
LPSR Galich'ya Gora 68.65 320 *e*P **P** **21 21 38.0 -0.1**
LPSR pmax pmax
comp=Z,30nm,1.1s
STKA Stephens Creek 68.82 181 P **P** **21 21 39.4 +0.2**
comp=Z,6.5nm,0.9s,baz=348,slow=7.2,SNR=9.2
STKA Stephens Creek 68.82 181 *e*P **P** **21 21 39.5 +0.2**
comp=Z,3.0nm,0.6s
FIA1 FINESS Array S 68.98 333 *e*P **P** **21 21 40.6 +0.5**
I05D Terrebonne, OR 68.98 50 P **P** **21 21 40.9 +0.5**
baz=302
FINES FINESS Array B 68.98 333 P **P** **21 21 40.1 +0.1**
comp=Z,19nm,0.9s,baz=47,slow=8.4,SNR=24
FINES LR LR 21 53 28.0
comp=Z,368nm,19.0s,baz=46,slow=37
VSR Storozhevoye 69.30 319 *e*P **P** **21 21 41.7 -0.5**
VSR pmax pmax
comp=Z,20nm,0.7s
NEW Newport 69.34 45 P **P** **21 21 43.6 +0.9**
comp=Z,1.5nm,0.6s,baz=126,slow=6.1,SNR=3.8
NEW Newport 69.34 45 P **P** **21 21 43.3 +0.7**
baz=303
NEW Newport 69.34 45 *e*P **P** **21 21 43.9 +1.3**
NEW pmax pmax
comp=Z,28nm,1.9s
NEW Newport 69.34 45 *e*P **P** **21 21 43.9 +1.3**
comp=Z,28nm,1.9s
YBH Yreka Blue Hor 69.51 53 P **P** **21 21 44.6 +0.8**
comp=Z,2.8nm,0.7s,baz=292,slow=14,SNR=4.2
M02C Callahan 69.59 53 P **P** **21 21 45.8 +1.4**
baz=302
J05D Fort Rock, OR 69.61 51 P **P** **21 21 45.5 +1.1**
baz=302
K04D Chiloquin, OR 69.64 52 P **P** **21 21 45.6 +1.0**
baz=302
N02D Trinity Center 69.91 53 P **P** **21 21 47.5 +1.2**
baz=302
BBOO Buckleboo 70.00 186 *e*P **P** **21 21 46.5 0.0**
comp=Z,22nm,0.9s
M04C Macdoel 70.03 52 P **P** **21 21 47.8 +0.7**
baz=302
K05A Summer Lake 70.12 51 *e*P **P** **21 21 49.5 +1.9**
comp=Z,34nm,1.1s
WDC Whiskeytown Da 70.23 54 *e*P **P** **21 21 49.9 +1.8**
WDC pmax pmax
comp=Z,14nm,1.3s
WDC Whiskeytown Da 70.23 54 *e*P **P** **21 21 49.9 +1.8**
comp=Z,14nm,1.3s
SUMG Summit 70.42 0 *i*P **P** **21 21 50.2 +0.9**
comp=Z,39nm,1.5s
SUMG Summit 70.42 0 *i*P **P** **21 21 50.2 +0.9**
SUMG pmax pmax
comp=Z,39nm,1.5s
SUMG Summit 70.42 0 *e*P **P** **21 21 50.5 +1.2**
comp=Z,17nm,1.0s
GOF Gofitskoye 70.56 312 *i*P **P** **21 21 50.7 +0.6**
GOF pmax pmax
comp=Z,55nm,0.9s
VSU Vasula 70.66 330 *e*P **P** **21 21 51.1 +0.7**
VSU pmax pmax
comp=Z,209nm,2.5s
WALA Waterton Lakes 70.67 43 *e*P **P** **21 21 51.8 +0.9**
comp=Z,33nm,1.9s
O03D Paynes Creek 70.86 54 P **P** **21 21 52.8 +0.7**
baz=303
MOD Modoc Plateau 70.93 52 *e*P **P** **21 21 53.4 +0.8**
comp=Z,6.8nm,0.9s
DGRG David-gareji 71.12 308 P **P** **21 21 55.0 +1.4**

DGRG David-gareji 71.12 308 *e*P **P** **21 21 55.0 +1.4**
GUDG Gudauri 71.12 309 P **P** **21 21 54.9 +1.1**
ZEI Tsey 71.30 310 *e*P **P** **21 21 54.3 -0.6**
ZEI pmax pmax
comp=Z,16nm,0.8s
KVAR Kislovodsk Arr 71.38 311 P **P** **21 21 55.9 +0.6**
comp=Z,36nm,1.0s,baz=292,slow=4.4,SNR=15
KBZ Khabaz 71.38 311 P **P** **21 21 55.8 +0.7**
comp=Z,22nm,0.9s,baz=38,slow=2.6,SNR=32
KIV Kislovodsk 71.38 311 *de*P **P** **21 21 55.8 +0.6**
KIV *e* 21 22 14.6
KIV *e* 21 24 33.3
KIV pmax pmax
comp=Z,71nm,1.0s
KIV MLR MLR
comp=Z,251nm,17.0s
KIV Kislovodsk 71.38 311 *e*P **P** **21 21 56.0 +0.7**
comp=Z,55nm,0.9s
KIV Kislovodsk 71.38 311 P **P** **21 21 56.2 +0.9**
SNR=10.0
KIV Kislovodsk 71.38 311 P **P** **21 21 56.2 +0.9**
SNR=10.0
KIV P **P** **21 21 56.2 +0.9**
SNR=10.0
ORV Oroville 71.45 54 *e*P **P** **21 21 56.3 +0.7**
ORV pmax pmax
comp=Z,7.0nm,0.9s
ORV Oroville 71.45 54 *e*P **P** **21 21 56.3 +0.7**
comp=Z,6.8nm,0.9s
WSAR Wadi Sarin 71.63 285 P **P** **21 21 57.3 +0.4**
comp=Z,13nm,1.0s,baz=98,slow=7.9,SNR=3.4
WVOR Wild Horse Val 71.67 50 *e*P **P** **21 21 58.4 +1.4**
WVOR pmax pmax
comp=Z,11nm,1.2s
WVOR Wild Horse Val 71.67 50 *e*P **P** **21 21 58.4 +1.4**
comp=Z,11nm,1.2s
ONI Oni 71.68 310 P **P** **21 21 58.1 +1.1**
ONI Oni 71.68 310 *e*P **P** **21 21 58.1 +1.1**
NEY Neytrino 71.76 311 *e*P **P** **21 21 58.5 +0.9**
MSO Missoula 71.93 45 P **P** **21 21 59.0 +0.5**
baz=305
SCO Scoresbysund 71.94 355 *i*P **P** **21 21 57.3 -0.7**
SCO Scoresbysund 71.94 355 *e*P **P** **21 21 57.3 -0.7**
GNI Garni 72.24 307 P **P** **21 22 01.8 +1.3**
comp=Z,12nm,1.1s,baz=143,slow=10,SNR=5.0
GNI Garni 72.24 307 *e*P **P** **21 22 01.2 +0.7**
GNI pmax pmax
comp=Z,112nm,1.2s
GNI Garni 72.24 307 *e*P **P** **21 22 02.0 +1.5**
comp=Z,18nm,1.0s
CHVG Ch'k'valeri 72.44 311 P **P** **21 22 03.8 +2.3**
MFID Camas Ranch 72.81 48 *e*P **P** **21 22 05.0 +1.2**
comp=Z,5.5nm,0.8s
NACGM Naroch 72.98 327 *e* **P** **21 22 05.0 +0.6**
CMB Columbia Colle 73.02 55 *e*P **P** **21 22 06.3 +1.2**
CMB pmax pmax
comp=Z,8.0nm,1.0s
CMB Columbia Colle 73.02 55 *e*P **P** **21 22 06.3 +1.2**
comp=Z,8.3nm,1.0s
FFC Flin Flon 73.02 33 *e*P **P** **21 22 05.2 +0.5**
FFC pmax pmax
comp=Z,14nm,0.9s
FFC Flin Flon 73.02 33 *e*P **P** **21 22 05.2 +0.5**
comp=Z,14nm,0.9s
LRM Limekiln Ridge 73.36 45 *e*P **P** **21 22 07.9 +0.7**
WAKR Walker 73.37 54 *e*P **P** **21 22 08.9 +1.5**
FCC Fort Churchill 73.38 27 *e*P **P** **21 22 07.0 +0.3**
FCC pmax pmax
comp=Z,15nm,1.2s
FCC Fort Churchill 73.38 27 *e*P **P** **21 22 07.0 +0.3**
comp=Z,15nm,1.2s
DLMT Dillon 73.55 45 *e*P **P** **21 22 09.8 +1.5**
comp=Z,7.7nm,0.6s
HLID Hailey 73.57 48 P **P** **21 22 08.4 0.0**
baz=306,SNR=7.6
HLID Hailey 73.57 48 *e*P **P** **21 22 09.7 +1.3**
comp=Z,5.0nm,0.9s
BMN Battle Mountai 73.68 51 *e*P **P** **21 22 10.6 +1.5**
BMN pmax pmax
comp=Z,9.0nm,1.1s
BMN Battle Mountai 73.68 51 *e*P **P** **21 22 10.6 +1.5**
comp=Z,9.4nm,1.1s
NWAO Narrogin (SRO) 73.73 202 P **P** **21 22 08.9 -0.1**
comp=Z,17nm,0.9s,baz=275,slow=0.3,SNR=7.3
BOZ Bozeman (W) 73.93 45 P **P** **21 22 10.7 +0.3**
baz=307,SNR=6.5
BOZ Bozeman (W) 73.93 45 *e*P **P** **21 22 11.7 +1.3**
BOZ pmax pmax
comp=Z,7.0nm,0.8s
BOZ Bozeman (W) 73.93 45 *e*P **P** **21 22 11.7 +1.3**
comp=Z,6.6nm,0.8s
NC405 NORSAR Array S 74.07 338 *e*P **P** **21 22 11.5 +0.7**
NVAR Mina Array Bea 74.15 54 P **P** **21 22 12.9 +1.0**
comp=Z,1.1nm,0.9s,baz=283,slow=6.5,SNR=19
NB2 NORSAR Subarra 74.28 338 P **P** **21 22 12.1 +0.1**
comp=Z,14nm,1.0s,baz=41,slow=6.2
NOA NORSAR Array B 74.28 338 P **P** **21 22 12.3 +0.2**
comp=Z,8.4nm,0.9s,baz=38,slow=5.8,SNR=17
NOA LR LR 21 58 44.1
comp=Z,254nm,18.5s,baz=0.0,slow=39
NBO02 NORSAR Array S 74.38 338 *e*P **P** **21 22 13.3 +0.7**
AKASG Malin Array Be 74.61 323 P **P** **21 22 14.0 -0.1**
comp=Z,37nm,1.0s,baz=45,slow=5.8,SNR=76
AKASG LR LR 21 59 34.4
comp=Z,212nm,18.8s,baz=55,slow=39
AKASG Malin Array Be 74.61 323 *i*P **P** **21 22 14.1 0.0**
AKASG pmax pmax
comp=Z,38nm,1.0s
AKBB Malin Array Si 74.61 323 *e*P **P** **21 22 14.2 +0.1**
AKBB pmax pmax
comp=Z,35nm,1.0s
AKBB Malin Array Si 74.61 323 *e*P **P** **21 22 14.2 +0.1**
comp=Z,35nm,1.0s
KIEV Kiev 74.63 323 *e*P **P** **21 22 14.1 -0.1**
KIEV pmax pmax
comp=Z,32nm,1.0s
KIEV Kiev 74.63 323 *e*P **P** **21 22 14.1 -0.1**
comp=Z,32nm,1.0s
AK11 Malin Array Si 74.66 323 *e*P **P** **21 22 14.5 +0.1**
ELK Elko 74.73 50 *e*P **P** **21 22 15.5 +0.2**
ELK pmax pmax
comp=Z,6.0nm,1.2s
ELK Elko 74.73 50 *e*P **P** **21 22 15.5 +0.2**
comp=Z,5.7nm,1.2s
YFT Old Faithful 75.10 45 *e*P **P** **21 22 20.5 +3.1**
comp=Z,8.0nm,0.8s
SUW Suwalki 75.13 328 *e*P **P** **21 22 17.2 +0.2**
SUW Suwalki 75.13 328 *e*P **P** **21 22 17.3 +0.2**
PKM Mcpherson Peak 75.19 57 P **P** **21 22 17.4 -0.6**
baz=305
H17A Grant Village 75.28 45 P **P** **21 22 20.7 +2.2**
baz=308,SNR=12
H17A Grant Village 75.28 45 *e*P **P** **21 22 20.9 +2.4**
comp=Z,12nm,0.8s
IMW Indian Meadow 75.38 46 *e*P **P** **21 22 21.0 +1.9**
comp=Z,8.7nm,0.7s
FLWY Flagg Ranch 75.40 45 *e*P **P** **21 22 21.3 +2.2**
comp=Z,7.7nm,1.0s
FXWY Fox Creek 75.49 46 *e*P **P** **21 22 21.4 +1.8**
comp=Z,7.5nm,1.1s
SFJD Kangerlussuaq 75.55 5 *e*P **P** **21 22 22.5 +3.3**
SFJD pmax pmax
comp=Z,27nm,1.4s
SFJD Kangerlussuaq 75.55 5 *e*P **P** **21 22 22.5 +3.3**
comp=Z,27nm,1.4s
RLMT Red Lodge 75.56 44 P **P** **21 22 20.3 +0.3**
baz=309
RLMT Red Lodge 75.56 44 *e*P **P** **21 22 20.6 +0.6**
comp=Z,19nm,1.6s
GRAC Grapevine Rang 75.58 54 P **P** **21 22 21.1 +1.0**
baz=306
MOOW Moose Ponds 75.58 46 *e*P **P** **21 22 21.6 +1.4**
comp=Z,6.6nm,1.1s
HVU Hansel Valley 75.60 48 *e*P **P** **21 22 22.1 +2.0**
comp=Z,8.4nm,0.9s
SIM Simferopol' 75.74 316 *e*P **P** **21 22 21.3 +0.6**
SIM pmax pmax
comp=Z,29nm,0.9s
SIM MLR MLR
comp=Z,180nm,16.0s
LOHW Long Hollow 75.75 46 *e*P **P** **21 22 23.0 +1.9**
comp=Z,3.0nm,0.8s
REDW Red Top Meadow 75.76 46 *e*P **P** **21 22 23.2 +2.0**
comp=Z,6.0nm,1.0s
DAC Darwin (Calif) 75.85 55 *e*P **P** **21 22 22.7 +0.9**
DAC pmax pmax

comp=Z,8.0nm,1.3s
DAC Darwin (Calif) 75.85 55 *e*P P 21 22 22.7 +0.9
comp=Z,8.3nm,1.3s
R11A Troy Canyon, C 75.93 52 P P 21 22 22.5 +0.4
baz=306,SNR=14
R11A Troy Canyon, C 75.93 52 *e*P P 21 22 22.8 +0.7
comp=Z,8.2nm,1.0s
AHID Auburn Hatcher 75.98 47 *e*P P 21 22 23.9 +1.5
comp=Z,6.9nm,1.0s
MPMC Manual Prospec 76.05 55 P P 21 22 23.2 +0.2
baz=306,SNR=7.3
DGMT Dagmar 76.10 39 P P 21 22 23.2 +0.4
baz=311
DGMT Dagmar 76.10 39 *e*P P 21 22 23.0 +0.2
comp=Z,6.6nm,0.8s
LAO LASA Array 76.22 41 P P 21 22 24.1 +0.6
baz=310
FURC Furnace Creek, 76.22 55 P P 21 22 24.6 +1.0
baz=306
LRMC Laurel Mtn Rad 76.26 56 P P 21 22 24.4 +0.3
baz=306
WSHM Spangler Hills 76.32 56 *e*P P 21 22 23.1 -1.1
A25A Svangstu Ranch 76.33 38 P P 21 22 24.6 +0.5
baz=312
TPNV Topopah Spring 76.33 54 P P 21 22 24.7 +0.3
baz=306,SNR=9.1
TPNV Topopah Spring 76.33 54 *e*P P 21 22 25.6 +1.1
TPNV pmax pmax
comp=Z,11nm,1.0s
TPNV Topopah Spring 76.33 54 *e*P P 21 22 25.6 +1.1
comp=Z,11nm,1.0s
EDW2 Edwards Air Fo 76.41 57 P P 21 22 25.2 +0.4
baz=306,SNR=5.9
HWUT Hardware Ranch 76.42 48 *e*P P 21 22 26.3 +1.4
comp=Z,9.6nm,1.1s
DUG Dugway, Tooele 76.54 50 P P 21 22 26.2 +0.6
baz=308,SNR=9.1
DUG Dugway, Tooele 76.54 50 *e*P P 21 22 27.0 +1.5
DUG pmax pmax
comp=Z,7.0nm,0.7s
DUG Dugway, Tooele 76.54 50 *e*P P 21 22 27.0 +1.5
comp=Z,6.6nm,0.7s
BW06 Boulder Array 76.87 46 P P 21 22 27.6 +0.1
baz=309
BW06 Boulder Array 76.87 46 *e*P P 21 22 27.9 +0.4
PD31 Pinedale Array 76.87 46 *e*P P 21 22 27.9 +0.4
PDAR Pinedale Array 76.87 46 P P 21 22 27.7 +0.2
comp=Z,3.6nm,0.6s,baz=261,slow=2.2,SNR=45
A26A Wade Farm, Ken 76.88 38 P P 21 22 27.6 +0.4
baz=312
FMP Fort Macarthur 76.89 58 P P 21 22 28.0 +0.5
baz=306
PSUT Pine Spring 76.90 51 *e*P P 21 22 29.3 +1.6
comp=Z,9.1nm,1.0s
GSC Goldstone, Bar 76.94 56 P P 21 22 28.4 +0.5
baz=306
CIS Catalina Islan 76.99 58 P P 21 22 28.2 +0.1
baz=306
BFSC Mount Baldy Ra 77.01 57 P P 21 22 29.1 +0.8
baz=306
JLU Jordanelle 77.11 49 *e*P P 21 22 30.6 +1.7
comp=Z,8.6nm,1.2s
MPU Maple Canyon 77.36 49 *e*P P 21 22 31.7 +1.5
comp=Z,6.1nm,0.7s
TUQ Turquoise Moun 77.44 55 P P 21 22 29.8 -0.9
baz=307,SNR=6.0
HEC Hector,Ludlow 77.54 56 P P 21 22 31.7 +0.5
baz=307
BSD Bornholm Skovb 77.62 332 *i* P P 21 22 31.1 0.0
comp=Z,26nm,1.1s
BSD Bornholm Skovb 77.62 332 *i* P P 21 22 31.1 0.0
BSD pmax pmax
comp=Z,26nm,1.1s
LVV L'vov 77.67 324 *e*P P 21 22 31.9 +0.4
LVV MLR MLR
comp=N,210nm,16.0s
LVV MLR MLR
comp=E,370nm,16.0s
LVV MLR MLR
comp=Z,360nm,16.0s
A28A Rude Farm, Bot 77.73 37 P P 21 22 32.6 +0.6
baz=314
IAS Iasi 77.76 321⇑ *i*P P 21 22 32.7 +0.6
E25A Miller Ranch, 77.81 40 P P 21 22 33.0 +0.6
baz=312
LEOM Leova 77.89 320⇓ *i*P P 21 22 31.8 -1.0
C27A Sayler Ranch, 77.95 38 P P 21 22 33.7 +0.5
baz=313
MSU Marysvale 77.96 51 *e*P P 21 22 35.4 +1.8
MSU Marysvale 77.96 51 *e*P P 21 22 35.4 +1.8
B28A Dugan Ranch, T 78.00 37 P P 21 22 34.0 +0.5
baz=314
GMRC Granite Mounta 78.01 55 P P 21 22 33.9 +0.1
baz=307
TMUT Trail Mountain 78.06 50 *e*P P 21 22 36.8 +2.5
comp=Z,6.4nm,1.0s
F25A Bowman 78.16 41 P P 21 22 35.1 +0.7
baz=312
PFO Pinyon Flats O 78.18 57 P P 21 22 35.4 +0.6
baz=307
MNKR ALMNKUR 78.19 306 *e*P P 21 22 34.2 -0.5
LCMT Little Creek M 78.21 52 *e*P P 21 22 36.6 +1.6
comp=Z,11nm,1.1s
A29A Manning Farm, 78.22 36 P P 21 22 35.2 +0.6
baz=314
P17A Butcher Ranch, 78.24 49 *e*P P 21 22 36.7 +1.6
comp=Z,9.6nm,0.7s
BELC Belle Mtn. Jos 78.25 56 P P 21 22 35.7 +0.4
baz=307
E26A Carlson Angus 78.31 40 P P 21 22 35.8 +0.6
baz=312
PRAR RASCA 78.31 321⇑ *i*P P 21 22 35.7 +0.5
KSRV Kasrt alli 78.41 306 *e*P P 21 22 35.5 -0.4
KWP Kalwaria Pacla 78.42 325 *e*P P 21 22 36.7 +1.0
KWP Kalwaria Pacla 78.42 325⇓ *i*P P 21 22 37.0 +1.3
KWP Kalwaria Pacla 78.42 325 *e*P P 21 22 36.7 +1.0
P18A Preston Nutter 78.44 49 *e*P P 21 22 37.7 +1.3
comp=Z,9.1nm,1.1s
TLCR 78.46 319⇑ *i*P P 21 22 36.3 +0.3
KNB Kanab 78.48 52 *e*P P 21 22 38.3 +1.8
KNB pmax pmax
comp=Z,12nm,1.2s
KNB Kanab 78.48 52 *e*P P 21 22 38.3 +1.8
comp=Z,12nm,1.2s
SRU San Rafael Swe 78.59 49 *e*P P 21 22 38.3 +1.2
SRU pmax pmax
comp=Z,13nm,0.9s
SRU San Rafael Swe 78.59 49 *e*P P 21 22 38.3 +1.2
comp=Z,13nm,0.9s
BUR08 Bucovina Ar. S 78.62 322 *e*P P 21 22 37.6 +0.6
BURAR Bucovina Array 78.64 322⇓ *i*P P 21 22 37.7 +0.6
BURAR Bucovina Array 78.64 322 P P 21 22 37.6 +0.5
MONP2 Monument Peak 78.64 57 P P 21 22 37.8 +0.3
baz=307
A30A Hoffart Farm, 78.64 36 P P 21 22 37.5 +0.5
baz=315
K22A Casper 78.67 45 P P 21 22 37.9 +0.4
baz=311
IRM Iron Mountain 78.72 56 P P 21 22 38.3 +0.6
baz=308
D28A Regan 78.77 38 P P 21 22 38.4 +0.7
baz=314
MDND Maddock 78.79 37 P P 21 22 38.2 +0.4
baz=314
ULM Lac du Bonnet 78.81 34 P P 21 22 37.2 -0.7
comp=Z,3.5nm,0.8s,baz=325,slow=5.8,SNR=4.2
CFR Carcaliu 78.82 319⇓ *i*P P 21 22 38.4 +0.5
BC3 Big Chuckawall 78.82 56 P P 21 22 38.7 +0.3
baz=307
F27A Lemmon 78.94 40 P P 21 22 39.2 +0.5
baz=313
B30A Myrvik Farm, E 78.97 36 P P 21 22 39.2 +0.4
baz=315
ODBI Odobesti 78.98 320⇑ *i*P P 21 22 41.1 +2.2
SWSC Sam W. Stewart 79.02 57 P P 21 22 40.1 +0.8
baz=307
G26A Maurine 79.03 41 P P 21 22 39.6 +0.3
baz=313
RSSD Black Hills 79.06 42 *e*P P 21 22 40.1 +0.4
RSSD pmax pmax
comp=Z,5.0nm,0.8s
RSSD Black Hills 79.06 42 *e*P P 21 22 40.1 +0.4
comp=Z,4.7nm,0.8s
VRI Vrincioaia 79.08 320⇑ *i*P P 21 22 39.5 +0.1
KOLS Kolonicke sedl 79.11 325 *e*P P 21 22 40.4 +0.9
KOLS pmax pmax
comp=Z,13nm,1.1s
KOLS Kolonicke sedl 79.11 325 *e*P P 21 22 40.4 +0.9
PLOR Plostina 79.13 320⇑ *i*P P 21 22 40.7 +1.0
TIRR Tirgusor 79.16 318⇑ *i*P P 21 22 39.8 0.0
STHS Stebnicka Huta 79.24 325 *e*P P 21 22 41.5 +1.3
STHS pmax pmax
comp=Z,11nm,1.1s
STHS Stebnicka Huta 79.24 325 *e*P P 21 22 41.5 +1.3
GRER 79.29 320⇑ *i*P P 21 22 42.8 +2.3
I25A Rochford 79.29 42 P P 21 22 40.9 0.0
baz=312
PDMCI Parker Dam,Lak 79.29 55 P P 21 22 41.0 +0.2
baz=308
OJC Ojcow 79.30 327 *e*P P 21 22 41.1 +0.6
OJC Ojcow 79.30 327 *e*P P 21 22 41.3 +0.8
OJC pmax pmax
comp=Z,35nm,1.0s
OJC Ojcow 79.30 327 *e*P P 21 22 41.3 +0.8
comp=Z,35nm,1.0s
O20A White River Ci 79.31 47 P P 21 22 41.4 +0.4
baz=310
BR131 Keskin Array S 79.32 312 *e*P P 21 22 41.6 +0.5
BRTR Keskin Array B 79.32 312 P P 21 22 41.1 +0.1
comp=Z,7.8nm,1.1s,baz=83,slow=4.2,SNR=23
BRTR Keskin Array B 79.32 312 *i* P P 21 22 41.5 +0.5
BRTR pmax pmax
comp=Z,8.0nm,1.1s
UZH Uzhgorod 79.32 324 *e*P P 21 22 38.0 -2.6
UZH *e*S S 21 32 32.9 -8.3
UZH *i* 21 33 34.9
UZH MLR MLR
comp=N,900nm,14.0s
UZH MLR MLR
comp=E,750nm,14.0s
UZH MLR MLR
comp=Z,600nm,14.0s
G27A Dupree 79.32 40 P P 21 22 41.4 +0.6
baz=313
Y12C Blythe 79.38 56 P P 21 22 41.8 +0.5
baz=308
ARCR ARCALIA 79.43 322⇓ *i*P P 21 22 43.1 +1.8
C30A Mose, Pekin 79.43 37 P P 21 22 40.9 -0.4
baz=315
DRWC Darquich 79.43 308 *e*P P 21 21.7 0.0
A32A Rocking H Ranc 79.50 35 P P 21 22 41.8 +0.1
baz=316
CRVS Cervenica-Dubn 79.51 325 *e*P P 21 22 42.7 +1.0
CRVS Cervenica-Dubn 79.51 325 *e*P P 21 22 42.7 +1.0
TRPA Tarpa 79.56 324 *e*SKPdf P 21 22 43.3 +1.3
GLA Glamis 79.61 56 P P 21 22 43.4 +0.8
baz=308
NIE Niedzica 79.66 326 *e*P P 21 22 43.8 +1.2
NIE Niedzica 79.66 326 *e*P P 21 22 43.8 +1.2
ISR Istrita 79.69 320⇓ *i*P P 21 22 44.3 +1.5
MSAB Monastry St. A 79.72 318⇓ *i*P P 21 22 43.9 +1.0
C31A Landman Farms, 79.72 36 P P 21 22 43.2 +0.4
baz=315
ANTO Ankara 79.72 313 *e*P P 21 22 44.3 +1.2
ANTO pmax pmax
comp=Z,11nm,0.8s
ANTO Ankara 79.72 313 *e*P P 21 22 44.3 +1.2
comp=Z,11nm,0.8s
MLR Muntele Rosu 79.74 320⇑ *i*P P 21 22 44.0 +0.8
MLR Muntele Rosu 79.74 320 *e*P P 21 22 43.9 +0.8
MLR pmax pmax
comp=Z,30nm,1.5s
MLR Muntele Rosu 79.74 320 *e*P P 21 22 43.9 +0.7
comp=Z,30nm,1.5s
BR231 Keskin MP Arra 79.75 313 *e*P P 21 22 41.8 -1.5
H27A Howes 79.75 41 P P 21 22 43.4 +0.2
baz=313
B32A Ashes, Strandq 79.85 35 P P 21 22 43.7 +0.1
baz=316
BTCH Batrach 79.93 308 *e*P P 21 22 44.5 +0.2
A33A Warroad 79.98 35 P P 21 22 44.5 +0.2
baz=317
SECR 79.99 320⇑ *i*P P 21 22 46.2 +1.8
CJR Cluj-Napoca 80.06 322⇓ *i*P P 21 22 46.6 +1.8
SULR 80.14 319⇑ *i*P P 21 22 45.9 +0.8
N23A Red Feather La 80.14 46 P P 21 22 46.7 +1.0
baz=311
N23A Red Feather La 80.14 46 *e*P P 21 22 47.5 +1.9
comp=Z,11nm,0.9s
I27A Quinn 80.15 41 P P 21 22 46.3 +0.9
baz=313
LANS Liptovska Anna 80.23 326 *e*P P 21 22 47.2 +1.5
LANS Liptovska Anna 80.23 326 *e*P P 21 22 47.2 +1.5
VOIR 80.23 321⇑ *i*P P 21 22 46.8 +1.0
KECS Kecovo 80.26 325 *e*P P 21 22 46.5 +0.7
KECS pmax pmax
comp=Z,4.0nm,1.0s
KECS Kecovo 80.26 325 *e*P P 21 22 46.5 +0.7
H28A Mission Ridge 80.28 40 P P 21 22 46.7 +0.7
baz=314
OKC Ostrava-Krasne 80.30 327⇓ *e*P P 21 22 47.0 +1.0
OKC Ostrava-Krasne 80.30 327 *e*P P 21 22 47.0 +1.0
WUAZ Wupatki 80.32 53 P P 21 22 47.5 +1.0
baz=309
WUAZ Wupatki 80.32 53 *e*P P 21 22 48.0 +1.5
comp=Z,11nm,1.0s
KSP Ksiaz 80.33 329 *e*P P 21 22 46.8 +0.7
KSP Ksiaz 80.33 329 *e*P P 21 22 46.9 +0.8
ARNB Al Arnab 80.34 308 *e*P P 21 22 46.3 -0.3
SLNF Slenfeh 80.35 307 *e*P P 21 22 46.5 -0.2
DRGR 80.43 323⇓ *i*P P 21 22 47.6 +0.8
RABH Abou Rabah 80.45 306 *e*P P 21 22 53.2 +6.0
ARR Arges 80.49 321⇑ *i*P P 21 22 48.9 +1.7
ROOS tl_alroos 80.56 306 *e*P P 21 22 48.2 +0.4
MORC Moravsky Berou 80.61 327⇑ *i*P P 21 22 48.7 +1.0
MORC Moravsky Berou 80.61 327 *e*P P 21 22 48.7 +1.0
MORC pmax pmax
comp=Z,74nm,1.1s
MORC Moravsky Berou 80.61 327 *e*P P 21 22 48.7 +1.0
comp=Z,74nm,1.1s
I28A Midland 80.66 41 P P 21 22 48.3 +0.2
baz=314
SMCO Snowmass 80.67 48 *e*P P 21 22 49.8 +1.1
comp=Z,17nm,1.6s
DPC Dobruska-Polom 80.69 328⇓ *i*P P 21 22 49.0 +0.9
DPC *e*PCP PcP 21 22 53.6 -1.3
DPC *e*pP pP 21 22 58.2 +7.5
DPC Dobruska-Polom 80.69 328⇓ *i*P P 21 22 49.0 +0.9
DPC *e* 21 22 58.2
UPC Upice 80.70 329⇓ *e*P P 21 22 49.1 +1.0
UPC Upice 80.70 329 *e*P P 21 22 49.1 +1.0
KRLC Kraliky 80.71 328⇓ *e*P P 21 22 48.8 +0.6
KRLC *e*PCP PcP 21 22 52.0 -3.0
KRLC Kraliky 80.71 328 *e*P P 21 22 48.8 +0.6
LOT Lotru 80.86 321⇑ *i*P P 21 22 49.4 +0.2
HUMR Humele 80.90 320⇓ *i*P P 21 22 50.2 +0.9
G30A Faulkton 80.92 39 P P 21 22 49.8 +0.5
baz=315
PSZ Piszkesteto 80.94 325⇑ *i*P P 21 22 50.5 +0.9
PSZ Piszkesteto 80.94 325⇓ *e*P P 21 22 50.4 +0.9
PSZ Piszkesteto 80.94 325 *e*P P 21 22 50.3 +0.8
PSZ pmax pmax
comp=Z,23nm,1.0s
PSZ Piszkesteto 80.94 325 *e*P P 21 22 50.3 +0.8
comp=Z,23nm,1.0s
DEV Deva 80.98 322⇓ *i*P P 21 22 50.9 +1.2
VYHS Vyhne 81.00 326 *e*P P 21 22 50.5 +0.8
VYHS pmax pmax
comp=Z,8.0nm,1.2s
VYHS Vyhne 81.00 326 *e*P P 21 22 50.5 +0.8
J28A Allard Ranch, 81.03 41 P P 21 22 50.6 +0.5
baz=314
MVCO Mesa Verde 81.03 50 P P 21 22 51.0 +0.6
baz=310
ISCO Idaho Springs 81.06 46 P P 21 22 51.0 +0.4
baz=312
B35A Knab, Littlefor 81.16 34 P P 21 22 50.3 -0.3
baz=318
MARH Ras Al Marh 81.17 306 *e*P P 21 22 51.7 +0.3
BRG Berggiesshubel 81.26 330 *i* P P 21 22 51.8 +0.7
comp=Z,13nm,1.0s
BRG *e* 21 31 31.8
comp=Z,9.7nm,1.5s
comp=N,476nm,18.7s
comp=E,277nm,18.0s
comp=Z,867nm,21.6s
BRG Berggiesshubel 81.26 330 *i* P P 21 22 51.8 +0.7
BRG pmax pmax
comp=Z,13nm,1.0s
BRG pmax pmax
comp=Z,10.0nm,1.5s
BRG MLR MLR
comp=N,476nm,18.7s
BRG MLR MLR
comp=E,277nm,18.0s
BRG MLR MLR
comp=Z,867nm,21.6s
PVCC Panska Ves 81.28 329⇓ *e*PCP P 21 22 55.2 +4.0
PVCC Panska Ves 81.28 329 *e*P P 21 22 55.2 +4.0
CLL Collm 81.30 331⇓ *i*P P 21 22 51.1 -0.1
comp=Z,21nm,1.1s
CLL *i* 21 23 00.0
CLL Collm 81.30 331⇓ *i*P P 21 22 51.1 -0.1
CLL *i* 21 23 00.0
CLL pmax pmax
comp=Z,21nm,1.1s
CLL Collm 81.30 331 *e*P P 21 22 51.0 -0.3
comp=Z,25nm,1.1s
SIRR Siria 81.31 323⇓ *i*P P 21 22 52.3 +0.8
ZALF Zalf 81.31 305 *e*P P 21 22 50.4 -1.4
RAYN Ar Rayn 81.35 293 *e*P P 21 22 51.9 -0.2
comp=Z,8.9nm,1.0s
VRAC Vranov 81.37 328 P P 21 22 52.6 +0.9
comp=Z,10nm,0.9s,baz=40,slow=5.3,SNR=14
VRAC Vranov 81.37 328⇓ *i*P P 21 22 52.7 +1.0
GZR Gura Zlata 81.40 322⇓ *i*P P 21 22 52.4 +0.4
E33A Westby DABS, E 81.47 37 P P 21 22 52.6 +0.3
baz=317
C35A Jirik Farms, M 81.53 35 P P 21 22 52.9 +0.3
baz=318
SMOL Smolenice 81.60 327 *e*P P 21 22 54.3 +1.3
SMOL Smolenice 81.60 327 *e*P P 21 22 54.3 +1.3
214A Organ Pipe Nat 81.62 56 P P 21 22 54.2 +0.8
baz=309
I30A Oacoma 81.63 40 P P 21 22 53.6 +0.4
baz=315
TOTH TOTAH 81.63 306 *e*P P 21 22 53.2 -0.2
GOPC GO Pecny, Ondr 81.66 329⇓ *e*P P 21 22 54.3 +1.0
GOPC *e*pP PcP 21 23 02.4 +3.3
GOPC GO Pecny, Ondr 81.66 329 *e*P P 21 22 54.3 +1.0
GOPC *e* 21 23 02.4
S22A 4UR Ranch, Cre 81.69 49 P P 21 22 54.5 +0.5
baz=311
S22A 4UR Ranch, Cre 81.69 49 *e*P P 21 22 55.7 +1.7
comp=Z,6.3nm,0.9s
PRU Pruhonice 81.71 329⇓ *e*P P 21 22 54.1 +0.7
PRU *e*PCP PcP 21 22 57.7 -1.6
PRU *e*pP pP 21 23 02.2 +6.2
PRU AMS AMS 22 05 10.0
comp=Z,600nm,18.5s
PRU Pruhonice 81.71 329 *e*P P 21 22 54.1 +0.7
PRU *e* 21 23 02.2
PRU MLR MLR
comp=Z,600nm,18.5s
BZS Buzias 81.80 323⇑ *i*P P 21 22 54.5 +0.5
SALA Sala 81.84 305 *e*P P 21 22 54.1 -0.7
BRBR Barbar 81.91 306 *e*P P 21 22 52.7 -2.4
PKS7 Kunszentmiklos 81.92 325⇓ *e*P P 21 22 55.3 +0.7
ASF Jabal al Asfar 82.07 304 P P 21 22 56.4 +0.5
comp=Z,2.2nm,0.7s,baz=317,slow=1.7,SNR=6.6
G33A Ortonville 82.21 38 P P 21 22 56.8 +0.6
baz=316
NKC Novy Kostel 82.36 330⇓ *e*P P 21 22 57.6 +0.7
NKC *e*pP PcP 21 23 06.1 +4.0
NKC Novy Kostel 82.36 330 *e*P P 21 22 57.6 +0.7
NKC *e* 21 23 06.1
TCHB Talchebab 82.36 305 *e*P P 21 22 57.4 +0.2
H33A Prehn Over Nor 82.43 38 P P 21 22 58.2 +0.8
baz=316
MMAI Mount Meron Ar 82.51 306 P P 21 22 58.7 +0.6
comp=Z,12nm,1.1s,baz=33,slow=6.3,SNR=21
PKS9 Tamasi 82.67 325⇑ *e*P P 21 22 58.8 +0.3
TUC Tucson 82.73 55 P P 21 22 59.6 +0.3
baz=310
TUC Tucson 82.73 55 *e*P P 21 23 00.8 +1.5
TUC pmax pmax
comp=Z,5.0nm,1.1s
TUC Tucson 82.73 55 *e*P P 21 23 00.8 +1.5
comp=Z,4.9nm,1.1s
CONA Conrad Observa 82.73 327 *i* P P 21 22 59.9 +0.9
comp=Z,14nm,1.1s,SNR=8.4
KHC Kasperske Hory 82.77 329⇓ *i*P P 21 22 59.6 +0.5
KHC *e*pP PcP 21 23 08.2 +4.2
KHC Kasperske Hory 82.77 329 *e*P P 21 22 59.7 +0.6
KHC pmax pmax
comp=Z,6.0nm,1.0s
KHC Kasperske Hory 82.77 329 *e*P P 21 22 59.6 +0.6
comp=Z,6.2nm,1.0s
PKSM Moragy 82.78 324⇑ *i*P P 21 22 59.3 +0.2
PKSM Moragy 82.78 324 *e*P P 21 22 58.8 -0.3
GEC2 GERESS Array S 82.94 329 *e*P P 21 23 00.6 +0.5
GEC2 pmax pmax
comp=Z,9.0nm,1.1s
GEC2 GERESS Array S 82.94 329 *e*P P 21 23 00.6 +0.5
comp=Z,9.0nm,1.1s
GERES GERESS Array B 82.94 329 P P 21 23 00.1 0.0
comp=Z,5.1nm,0.8s,baz=37,slow=5.1,SNR=31
GEA0 GERESS Array S 82.95 329 *e*P P 21 23 00.1 0.0
EKA Eskdalemuir Ar 83.17 341 P P 21 23 01.7 +0.7
comp=Z,2.6nm,0.6s,baz=28,slow=4.6,SNR=14
VTS Vitosha 83.18 320⇓ *i*P P 21 23 02.4 +0.9
VTS Vitosha 83.18 320 *e*P P 21 23 02.3 +0.8
VTS pmax pmax
comp=Z,13nm,0.8s
VTS Vitosha 83.18 320 *e*P P 21 23 02.3 +0.8
comp=Z,13nm,0.8s
ECSD EROS Data Cent 83.18 39 P P 21 23 01.5 +0.2
baz=316
GRFO Grafenberg 83.27 331 *e*P P 21 23 02.8 +1.2
GRFO pmax pmax
comp=Z,19nm,1.0s
GRFO Grafenberg 83.27 331 *e*P P 21 23 02.8 +1.2
comp=Z,18nm,1.0s
H35A Sunnyside Ranc 83.35 37 P P 21 23 02.8 +0.7
baz=318
MOA Molln 83.48 328 *i* P P 21 23 03.2 +0.4
comp=Z,8.7nm,1.1s
T25A Trinidad 83.53 48 P P 21 23 04.2 +0.7
baz=312
T25A Trinidad 83.53 48 *e*P P 21 23 04.4 +0.9
comp=Z,8.0nm,0.8s
ANMO Albuquerque 83.76 50 P P 21 23 05.8 +1.1
baz=312
ANMO Albuquerque 83.76 50⇓ *e*P P 21 23 04.8 +0.1
ANMO pmax pmax
comp=Z,15nm,1.7s
ANMO Albuquerque 83.76 50 *e*P P 21 23 06.0 +1.3
comp=Z,9.9nm,1.1s
H36A Jessenland, He 83.87 37 P P 21 23 05.8 +0.9
baz=318
SOKA Soboth 84.05 327 *i* P P 21 23 06.0 +0.2
comp=Z,12nm,1.0s,SNR=7.3
BNM Barren Site 84.18 51 *e*P P 21 23 08.1 +1.2
VAY Valandovo 84.42 319 *e*P P 21 23 08.3 +0.6
N32A Stulken Farm, 84.45 42 P P 21 23 08.3 +0.4
baz=316
MEM Membach 84.46 334 P P 21 23 08.1 +0.4
KBA Koelnbreinsper 84.47 328 *i* PcP P 21 23 08.8 +0.7
comp=Z,6.7nm,0.8s
121A Cookes Peak, D 84.52 53 P P 21 23 09.0 +0.4
baz=311
I37A Lemond, Waseca 84.55 37 P P 21 23 08.7 +0.4
baz=319
MYKA Terra Mystica 84.69 327 *i* P P 21 23 08.5 -0.6
comp=Z,5.6nm,1.0s
BCLA Clavier 84.87 334 P P 21 23 10.0 +0.3
comp=Z,9.7nm,1.8s
EIL Elat 84.95 304 P P 21 23 10.8 +0.3
comp=Z,5.0nm,0.9s,baz=288,slow=2.2,SNR=6.4
CWF Charnwood Fore 84.97 339 *e*P P 21 23 10.9 +0.8
comp=Z,18nm,1.2s
ABTA Abfaltersbach 85.08 328 *i* P P 21 23 09.9 -1.1
comp=Z,7.0nm,1.1s
SNF Seneffe 85.14 335 P P 21 23 11.6 +0.5
LANF Langenberg 85.16 332 *e*P P 21 23 11.9 +0.6
MOTA Moosalm 85.19 329 *e*PcP PcP 21 23 12.8 -2.0
comp=Z,6.8nm,1.0s,SNR=6.2
WLF Walferdange 85.20 333 P P 21 23 12.0 +0.6
WLF Walferdange 85.20 333 *e*P P 21 23 13.0 +1.6
WLF pmax pmax
comp=Z,23nm,1.5s
WLF Walferdange 85.20 333 *e*P P 21 23 13.0 +1.6
comp=Z,23nm,1.5s
RETA Reutte 85.22 329 *i* P P 21 23 11.8 +0.2
comp=Z,14nm,1.1s,SNR=8.5
PDG Podgorica 85.30 322⇓ *i*P P 21 23 13.6 +1.6
L36A Harm Buss Farm 85.35 39 P P 21 23 12.5 +0.2
baz=318

K37A	**Belmond**	**85.36**	**38**	P		**P**	**21 23 12.7**	**+0.3**
	baz=318							
DOU	**Dourbes**	**85.38**	**334**	P		**P**	**21 23 12.7**	**+0.4**
OHR	**Ohrid**	**85.49**	**320**	*e*P		**P**	**21 23 12.6**	**-0.5**
BFO	**Black Forest**	**85.49**	**331**	*i* P		**P**	**21 23 13.3**	**+0.3**
BFO	**Black Forest**	**85.49**	**331**	*e*P		**P**	**21 23 13.1**	**+0.1**
FETA	**Feichten**	**85.61**	**329**	*i* P		**P**	**21 23 13.8**	**+0.1**
	comp=Z,7.6nm,1.1s							
DAVA	**Damuels**	**85.73**	**330**	*i* PcP		**P**	**21 23 14.5**	**+0.1**
	comp=Z,16nm,0.9s,SNR=6.7							
TIR	**Tirane**	**85.79**	**321**	⇑*i*P		P	21 23 23.4	+8.8
WLS	**Welschbruch**	**85.80**	**332**	*e*P		**P**	**21 23 14.6**	**+0.1**
R32A	**Long Quarter,**	**85.89**	**44**	P		**P**	**21 23 15.7**	**+0.5**
	baz=316							
KARP	**Karpathos**	**85.93**	**312**	*e*P		**P**	**21 23 15.4**	**+0.1**
	comp=Z,10nm,0.9s							
ECH	**Echery**	**86.03**	**332**	⇓*e*P		**P**	**21 23 15.5**	**-0.1**
FUORN	**Ofenpass-Fuorn**	**86.12**	**329**	*e*P		**P**	**21 23 17.0**	**+0.6**
	comp=Z,20nm,0.9s							
DAVOX	**Davos/Dischmat**	**86.14**	**330**	P		**P**	**21 23 16.4**	**0.0**
	comp=Z,5.9nm,1.1s,baz=198,slow=5.5,SNR=4.4							
MOF	**Molkenrain**	**86.34**	**332**	⇓*e*P		**P**	**21 23 16.8**	**-0.5**
THEF	**They Montfort**	**86.46**	**333**	⇓*e*P		**P**	**21 23 17.5**	**-0.2**
P35A	**Duane Minner,**	**86.55**	**41**	P		**P**	**21 23 18.3**	**0.0**
	baz=317							
MNTX	**Cornudas Mount**	**86.60**	**52**	P		**P**	**21 23 19.1**	**+0.3**
	baz=312							
MNTX	**Cornudas Mount**	**86.60**	**52**	*e*P		**P**	**21 23 19.4**	**+0.7**
	comp=Z,12nm,1.6s							
LOMF	**Lomont**	**86.87**	**332**	⇓*e*P		**P**	**21 23 19.8**	**-0.1**
P36A	**Good Intent, A**	**86.91**	**41**	P		**P**	**21 23 19.6**	**-0.5**
	baz=318							
Q35A	**Mercer Eighty,**	**87.03**	**42**	P		**P**	**21 23 20.6**	**-0.1**
	baz=317							
LAST	**Lasithi**	**87.18**	**313**	⇓*i*P		**P**	**21 23 22.2**	**+0.6**
LAST	**Lasithi**	**87.18**	**313**	*e*P		**P**	**21 23 21.9**	**+0.3**
	comp=Z,20nm,1.0s							
N39A	**Derby Farms, D**	**87.34**	**38**	P		**P**	**21 23 22.4**	**+0.3**
	baz=319							
P37A	**Lathrop**	**87.37**	**40**	P		**P**	**21 23 22.6**	**+0.3**
	baz=318							
IDI	**Anoyia**	**87.44**	**313**	P		**P**	**21 23 21.2**	**-1.6**
	comp=Z,4.9nm,0.8s,baz=19,slow=6.6,SNR=5.4							
S35A	**Otter Creek Ra**	**87.73**	**43**	P		**P**	**21 23 24.8**	**+0.6**
	baz=317							
P38A	**Dawn**	**87.77**	**40**	P		**P**	**21 23 24.2**	**0.0**
	baz=319							
VLDQ	**Val d'Or**	**87.82**	**26**	*e*P		P	21 23 28.5	+4.2
	comp=Z,14nm,1.0s							
LOR	**Lormes**	**88.04**	**333**	P		**P**	**21 23 26.0**	**+0.6**
LOR				pmax	pmax			
	comp=Z,16nm,1.2s							
Q38A	**Cooks Store, C**	**88.22**	**40**	P		**P**	**21 23 26.6**	**+0.3**
	baz=319							
LDF	**La Druitiere**	**88.25**	**336**	P		**P**	**21 23 25.9**	**-0.5**
LDF				pmax	pmax			
	comp=Z,4.0nm,0.7s							
W33A	**Caddo, Fort Co**	**88.37**	**46**	P		**P**	**21 23 27.2**	**0.0**
	baz=316							
S37A	**Fort Scott**	**88.48**	**42**	P		**P**	**21 23 27.6**	**0.0**
	baz=318							
Q39A	**Willow Grove F**	**88.49**	**40**	P		**P**	**21 23 27.6**	**0.0**
	baz=319							
P40A	**Paris**	**88.59**	**39**	P		**P**	**21 23 28.1**	**0.0**
	baz=320							
Q40A	**Laux Farm, Aux**	**88.98**	**39**	P		**P**	**21 23 30.7**	**+0.7**
	baz=320							
PLDF	**La Plantade**	**89.23**	**333**	*e*P		**P**	**21 23 30.8**	**-0.3**
TX31	**Lajitas Ar. Si**	**89.28**	**53**	*e*P		**P**	**21 23 32.4**	**+0.7**
TXAR	**Lajitas Array**	**89.28**	**53**	P		**P**	**21 23 32.1**	**+0.4**
	comp=Z,3.1nm,0.8s,baz=293,slow=3.5,SNR=37							
T38A	**Diamond**	**89.30**	**42**	P		**P**	**21 23 31.4**	**-0.1**
	baz=318							
V36A	**Jenks**	**89.33**	**44**	P		**P**	**21 23 31.3**	**-0.4**
	baz=317							
R40A	**Maddies Statio**	**89.42**	**40**	P		**P**	**21 23 32.0**	**0.0**
	baz=320							
PYM	**Petit Puy Mans**	**89.64**	**333**	*e*P		**P**	**21 23 32.7**	**-0.4**
V37A	**Hulbert**	**89.70**	**43**	P		**P**	**21 23 34.0**	**+0.6**
	baz=318							
X36A	**Centrahoma**	**89.99**	**45**	P		**P**	**21 23 34.0**	**-0.7**
	baz=317							
V38A	**Canehill**	**90.11**	**43**	P		**P**	**21 23 35.3**	**0.0**
	baz=318							
SFIN	**Lafayette**	**90.33**	**36**	P		**P**	**21 23 35.6**	**-0.7**
	baz=323							
U40A	**Yellville**	**90.58**	**42**	P		**P**	**21 23 37.7**	**+0.2**
	baz=319							
CAF	**Calviac**	**90.69**	**333**	P		**P**	**21 23 38.2**	**+0.3**
CAF				pmax	pmax			
	comp=Z,9.0nm,1.1s							
234A	**Clairette**	**90.81**	**48**	P		**P**	**21 23 38.4**	**-0.3**
	baz=316							
334A	**Lometa**	**91.23**	**48**	P		**P**	**21 23 40.7**	**0.0**
	baz=316							
MIAR	**Mount Ida**	**91.55**	**43**	*e*P		P	21 23 47.7	+5.7
MIAR				pmax	pmax			
	comp=Z,14nm,1.2s							
MIAR	**Mount Ida**	**91.55**	**43**	*e*P		P	21 23 47.7	+5.7
	comp=Z,14nm,1.2s							
Z38A	**Mt. Pleasant**	**91.72**	**45**	P		**P**	**21 23 42.6**	**-0.3**
	baz=318							
ESDC	**Sonseca Array**	**97.43**	**335**	P		Pdif	21 24 08.6	-0.4
	comp=Z,0.1nm,0.3s,baz=29,slow=4.4,SNR=4.7							
ESDC				LR		LR	22 13 31.6	
	comp=Z,231nm,18.6s,baz=270,slow=39							
TORD	**Torodi Ar. Bea**	**117.75**	**316**	PKP		**PKPdf**	**21 29 21.2**	**-0.8**
	comp=Z,1.3nm,1.0s,baz=91,slow=0.7,SNR=4.6							
DBIC	**Dimbokro**	**126.68**	**318**	PKP		**PKPdf**	**21 29 39.0**	**-0.2**
	comp=Z,4.1nm,1.0s,baz=157,slow=0.6,SNR=3.6							
LPAZ	**La Paz**	**145.82**	**61**	PKPbc		**PKPab**	**21 30 15.8**	**-0.2**
	comp=Z,6.7nm,0.7s,baz=330,slow=2.6,SNR=16							

*ISCJB **15** 21:13:32.8±1.2,33°.21S±0°.06×178°.3W±0°.2, h34km, mb4.3/7, MS3.5/1, Error ellipse: s-maj=19.5km s-min=8.8km az=2.8*

*IDC **15** 21:13:37.7±6.3,33°.19S×178°.36W, h62km±52km, mb4.2/5, mb1 4.3/7, mb1mx3.8/46, mbtmp4.5/7, ML4.1/2, MS3.7/2, Ms1 3.7/2, ms1mx3.2/36, Error ellipse: s-maj=42.5km s-min=24.7km az=41.0*

*NEIC **15** 21:13:38.5±2.3,33°.37S×178°.43W, h71km±18km, mb4.6/2, Error ellipse: s-maj=24.3km s-min=12.4km az=46.0*

ISC 15 21:13:34.0±0.9,33°.19S±0°.08×178°.2W±0°.1, h34km, n33, σ1§76/36, mb4.5/7, 1D, South of Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
WMGZ	**Waiomatatini S**	**5.39**	**210**	PN		**Pn**	**21 14 53.3**	**+1.4**
PKGZ	**Pakihiroa**	**5.60**	**212**	PN		**Pn**	**21 14 54.4**	**-0.4**
PKGZ				SN		**Sn**	**21 16 02.4**	**+4.4**
HAZ	**Te Kaha**	**5.63**	**215**	*e*PN		**Pn**	**21 14 55.6**	**+0.4**
TWGZ	**Tauwhareparae**	**5.88**	**211**	PN		**Pn**	**21 14 59.0**	**+0.3**
TWGZ				SN		**Sn**	**21 16 09.1**	**+4.2**
CNGZ	**Carnagh Statio**	**6.05**	**208**	PN		**Pn**	**21 15 00.9**	**-0.1**
MWZ	**Matawai**	**6.21**	**213**	*e*PN		**Pn**	**21 15 02.9**	**-0.3**
URZ	**Urewera**	**6.35**	**216**	P		**Pn**	**21 15 05.8**	**+0.7**
	7.2nm,0.3s,baz=288,slow=4.4,SNR=16							
URZ				S		**Sn**	**21 16 18.9**	**+2.5**
	18nm,0.3s,baz=159,slow=20,SNR=12							
URZ	**Urewera**	**6.35**	**216**	PN		**Pn**	**21 15 04.9**	**-0.2**
URZ				SN		**Sn**	**21 16 18.2**	**+1.8**
URZ	**Urewera**	**6.35**	**216**	*e*Pn		**Pn**	**21 15 05.3**	**+0.2**
	33nm,0.5s							
URZ				*e*Sn		**Sn**	**21 16 12.9**	**-3.5**
RIGZ	**Rimuhau**	**6.42**	**210**	PN		**Pn**	**21 15 06.0**	**-0.1**
OUZ	**Omahuta**	**7.12**	**251**	*e*Pn		**Pn**	**21 15 16.4**	**+0.7**
BKZ	**Black Stump Fm**	**7.36**	**214**	PN		**Pn**	**21 15 19.1**	**0.0**
BFZ	**Birch Farm**	**8.71**	**209**	*e*SN		**Sn**	**21 17 11.3**	**-3.2**
MRZ	**Mangatainoka R**	**8.98**	**212**	*e*PN		**Pn**	**21 15 38.8**	**-2.4**
MRZ				*e*SN		**Sn**	**21 17 17.3**	**-3.7**
DZM	**Mont Dzumac**	**17.55**	**305**	P		**P**	**21 17 37.9**	**+1.0**
	0.4nm,0.3s,baz=65,slow=16,SNR=5.8							
DZM				LR		LR	21 23 34.2	
	comp=Z,388nm,18.2s,baz=114,slow=34							
PPT	**Papeete**	**30.02**	**66**	LR		LR	21 31 53.8	
	comp=Z,93nm,18.9s,baz=191,slow=36							
CTA	**Charters Tower**	**34.21**	**283**	P		**P**	**21 20 16.7**	**+0.2**
	4.3nm,0.6s,baz=113,slow=11,SNR=13							
PMG	**Port Moresby**	**39.75**	**299**	*e*P		**P**	**21 21 03.7**	**+0.1**
	8.9nm,1.0s							
ASAR	**Alice Springs**	**42.90**	**270**	P		**P**	**21 21 29.0**	**-0.5**
	1.4nm,0.6s,baz=104,slow=6.9,SNR=4.2							
WRAB	**Tennant Creek**	**44.13**	**275**	*e*P		**P**	**21 21 38.2**	**-1.1**
	3.3nm,0.4s							
WRA	**Warramunga Arr**	**44.13**	**275**	P		**P**	**21 21 38.1**	**-1.3**
	7.1nm,0.5s,baz=116,slow=8.0,SNR=12							
FITZ	**Fitzroy Crossi**	**52.27**	**272**	P		**P**	**21 22 41.5**	**-0.7**
	2.5nm,0.5s,baz=160,slow=10,SNR=4.7							
SYO	**Syowa Base**	**74.37**	**193**	⇓*e*X		pP	21 25 17.6	-0.8
PLCA	**Paso Flores**	**80.71**	**133**	P		**P**	**21 25 45.6**	**+1.8**
	1.5nm,0.8s,baz=1.7,slow=1.0,SNR=4.1							
MKAR	**Makanchi Array**	**119.44**	**309**	PKP		**PKPdf**	**21 32 19.2**	**-0.4**
	0.2nm,0.7s,baz=226,slow=1.2,SNR=2.7							
KURK	**Kurchatov**	**122.85**	**313**	PKP		**PKPdf**	**21 32 25.1**	**-0.9**
KURBB	**Kurchatov Arra**	**122.89**	**312**	PKP		**PKPdf**	**21 32 25.1**	**-0.9**
	0.7nm,0.7s,baz=108,slow=2.0,SNR=6.3							
ARCES	**ARCESS Array B**	**141.28**	**347**	PKhKP		PKPpre	21 32 55.8	
	3.7nm,0.9s,baz=57,slow=3.3,SNR=4.1							
FINES	**FINESS Array B**	**147.70**	**338**	PKPbc		**PKPbc**	**21 33 13.7**	**-0.5**
	7.2nm,0.7s,baz=38,slow=3.6,SNR=23							
NB2	**NORSAR Subarra**	**151.48**	**350**	PKP		**PKPbc**	**21 33 23.3**	**-0.3**
	comp=Z,1.6nm,1.0s,baz=17,slow=2.6							
NOA	**NORSAR Array B**	**151.48**	**350**	PKPbc		**PKPbc**	**21 33 23.4**	**-0.2**
	comp=Z,1.6nm,0.7s,baz=14,slow=4.1,SNR=4.5							
AKASG	**Malin Array Be**	**153.38**	**319**	PKPbc		**PKPbc**	**21 33 27.9**	**-0.2**
	comp=Z,0.2nm,0.3s,baz=62,slow=2.6,SNR=5.0							
BRTR	**Keskin Array B**	**153.69**	**293**	PKPbc		**PKPbc**	**21 33 29.4**	**0.0**
	comp=Z,0.8nm,0.5s,baz=144,slow=3.2,SNR=4.6							

MEX 15 21:15:03.1±0.3, 14°.15N×93°.10W, h35km, MD3.7, Near coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
PCIG		**1.56**	**356**	*e*P		Pn	21 15 26.5	-1.8
PCIG				*e*S		Sn	21 15 44.6	-2.6

*ISCJB **15** 21:15:33.7±1.1,27°.93S±0°.05×70°.26W±0°.08, h106km±10km, Error ellipse: s-maj=11.7km s-min=8.9km az=1.1*

*SJA **15** 21:15:33.8±0.7,27°.98S×70°.25W, h103km±8km, ML3.5, MW3.4*

*GUC **15** 21:15:34.2±0.5,27°.98S×70°.11W, h90km±6km, ML3.6*

ISC 15 21:15:35.2±2.2,27°.95S±0°.06×70°.24W±0°.08, h95km±19km, n14, σ0§52/19, 4D, Near coast of northern Chile

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
CPCH	**Copiapo**	**0.60**	**351**	⇓*i*P		**Pn**	**21 15 50.6**	**-0.6**
CPCH				*i* S		**Sn**	**21 16 02.8**	**-0.5**
VACH	**Vallenar**	**0.77**	**216**	⇓*i*P		**Pn**	**21 15 53.0**	**+0.1**
VACH				*i* S		**Sn**	**21 16 06.8**	**+0.7**
CDCH	**Caldera**	**1.02**	**330**	⇓*i*P		**Pn**	**21 15 55.7**	**+0.3**
CDCH				*i* S		**Sn**	**21 16 11.0**	**+0.4**
LCO	**Las Campanas**	**1.13**	**201**	*e*P		**Pn**	**21 15 56.5**	**-0.5**
LCO				*i* S		**Sn**	**21 16 13.9**	**+0.5**
LCO	**Las Campanas**	**1.13**	**201**	⇓*i*P		**Pn**	**21 15 56.5**	**-0.5**
LCO				*i* S		**Sn**	**21 16 13.6**	**+0.2**
LCO				IAML			21 16 14.9	
	comp=E,2μm,0.3s							
VCA	**Vinchina**	**1.96**	**114**	*e*P		**Pn**	**21 16 07.5**	**+0.3**
VCA				*e*S		**Sn**	**21 16 31.8**	**+0.3**
VCA				IAML			21 16 35.1	
	comp=Z,489nm,0.2s							
AGUA	**GUANDACOL**	**2.17**	**135**	*e*P		**Pn**	**21 16 10.1**	**+0.2**
TLL	**Tololo Astrono**	**2.26**	**192**	*e*P		**Pn**	**21 16 10.8**	**-0.5**
TLL				IAML			21 16 40.1	
	comp=N,407nm,0.6s							
AMOG	**MOGNA**	**3.35**	**153**	*e*P		**Pn**	**21 16 25.2**	**-0.3**
CYA	**Choya**	**3.95**	**98**	IAML			21 17 15.0	
	comp=Z,35nm,0.4s							
RTCV	**Cerro Valdivia**	**4.17**	**160**	*e*P		**Pn**	**21 16 36.7**	**+0.1**
AUSP	**Uspallata**	**4.32**	**170**	*e*P		**Pn**	**21 16 39.3**	**+0.4**
ASAL	**Salagasta**	**4.78**	**166**	*e*P		**Pn**	**21 16 44.9**	**-0.1**
ACAN	**Cantantal**	**5.06**	**149**	*e*P		**Pn**	**21 16 47.5**	**-1.1**

IDC 15 21:16:58.6±326.0, 56°.47N×30°.13E, h0km, Error ellipse: s-maj=133.2km s-min=84.9km az=91.0, Baltic States-Belarus-Northwestern Russia

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
I43RU	**DUBNA INFRASON**	**3.92**	**83**	*i*			21 41 50.0	
	baz=267,slow=324,SNR=2.9							
I26DE	**FREYUNG INFRAS**	**12.53**	**239**	*i*			22 28 20.0	
	baz=44,slow=328,SNR=1.5							
I31KZ	**AKTYUBINSK INF**	**17.62**	**98**	*i*			23 02 20.0	
	baz=302,slow=324,SNR=0.5							
I48TN	**KESRA INFRASON**	**25.02**	**223**	*i*			23 53 20.0	
	baz=25,slow=322,SNR=0.2							

JMA 15 21:18:23.5±0.3, 37°.51N×141°.90E, h15km±3km, M2.8, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
JMM	**Marumori**	**0.95**	**292**	P		Pb	21 18 41.1	-0.5
JMM				S		Sb	21 18 53.7	-0.3
ONAJ	**Iwakimizuishiy**	**0.97**	**245**	S		Sb	21 18 53.4	-1.2
JIO	**Ouri**	**1.04**	**335**	P		Pb	21 18 42.3	-0.9
JIO				S		Sb	21 18 55.3	-1.3
JFT	**Otama**	**1.24**	**271**	P		Pb	21 18 46.9	+0.2
JFT				S		Sn	21 19 03.0	+0.1
JOU	**Okura**	**1.30**	**312**	P		Pn	21 18 46.9	-0.2
JOU				S		Sb	21 19 03.9	-0.2

*NIED **15** 21:19:00, 37°.00N×144°.30E, h5km, Mw4.5 Best double couple: M0 5.62000×10^15 NP1:φs=25.00000°, δ46.00000°, λ-48.00000°. NP2:φs=152.00000°, δ58.00000°, λ-125.00000°.*

*IDC **15** 21:19:08.3±0.5, 36°.97N×144°.52E, h0km, mb4.5/36, mb1 4.6/43, mb1mx4.5/58, mbtmp4.5/43, ML4.3/6, MS3.7/8, Ms1 3.7/8, ms1mx3.4/56, Error ellipse: s-maj=13.3km s-min=11.1km az=142.0*

*JMA **15** 21:19:12.2±0.3, 36°.99N×144°.28E, h54km, M4.7*

*MOS **15** 21:19:13.0±0.8, 37°.31N×144°.36E, h28km, mb5.1/57, Error ellipse: s-maj=6.8km s-min=4.4km az=110.6*

*ISCJB **15** 21:19:13.7±0.2, 37°.24N±0°.03×144°.30E±0°.02, h36km, mb4.8/167, MS4.3/6, Error ellipse: s-maj=3.8km s-min=2.3km az=171.5*

*NEIC **15** 21:19:14.2±1.2, 37°.22N×144°.33E, h29km±8km, mb4.9/96, Error ellipse: s-maj=4.1km s-min=2.7km az=150.0*

*BJI **15** 21:19:16.1, 37°.37N×144°.06E, h42km, mb4.7/66, mB5.0/35, Ms4.5/28, Ms7 4.3/26*

ISC 15 21:19:13.5±0.3, 37°.22N±0°.04×144°.33E±0°.04, h25km±2km, h24km: pP-P, n393, σ1§19/446, mb4.8/167, MS4.3/6, 16C-19D, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
JIO	**Ouri**	**2.67**	**299**	P		**Pn**	**21 19 54.8**	**-0.1**
JIO				S		**Sn**	**21 20 26.5**	**+0.1**
JFK	**Kawauchi**	**2.76**	**274**	P		**Pn**	**21 19 55.1**	**-1.1**
JFK				S		**Sn**	**21 20 26.5**	**-2.3**
ONAJ	**Iwakimizuishiy**	**2.83**	**269**	P		**Pn**	**21 19 56.0**	**-1.1**
ONAJ				*e*S		**Sn**	**21 20 28.1**	**-2.3**
JMM	**Marumori**	**2.89**	**284**	P		**Pn**	**21 19 57.5**	**-0.4**
JMM				S		**Sn**	**21 20 30.9**	**-0.9**
JMK	**Ichinoseki**	**3.00**	**306**	P		**Pn**	**21 19 59.8**	**+0.3**
JMK				S		**Sn**	**21 20 35.3**	**+0.6**
JFT	**Otama**	**3.20**	**277**	P		**Pn**	**21 20 02.5**	**+0.3**
JFT				S		**Sn**	**21 20 38.7**	**-0.9**
JOM	**Ohasama**	**3.28**	**314**	P		**Pn**	**21 20 03.7**	**+0.3**
JOM				S		**Sn**	**21 20 41.8**	**+0.1**
JYK	**Kaneyama**	**3.57**	**300**	P		**Pn**	**21 20 07.7**	**+0.4**
JYK				*e*S		**Sn**	**21 20 51.3**	**+2.7**
BSO1	**Boso 1**	**3.73**	**228**	P		Pn	21 20 05.3	-3.8
BSO1				S		**Sn**	**21 20 47.4**	**-4.6**
JAG	**Ashikaga**	**3.99**	**260**	P		**Pn**	**21 20 11.6**	**-1.5**
JRY	**Ryogami san**	**4.53**	**256**	P		**Pn**	**21 20 18.4**	**-2.1**
JRY				S		**Sn**	**21 21 08.6**	**-3.8**
JOD2	**Odawara 2**	**4.67**	**247**	P		**Pn**	**21 20 19.9**	**-2.5**
JOD2				S		**Sn**	**21 21 10.8**	**-5.0**
ERM	**Erimo**	**4.88**	**350**	*e*P		**Pn**	**21 20 24.5**	**-0.7**
ERM	**Erimo**	**4.88**	**350**	*e*Pn		**Pn**	**21 20 24.5**	**-0.7**
JOT	**Ohata**	**4.88**	**330**	P		**Pn**	**21 20 27.0**	**+1.8**
JOT				*e*S		**Sn**	**21 21 19.0**	**-1.9**
MJAR	**Matsushiro Arr**	**4.96**	**264**	Pn		**Pn**	**21 20 26.0**	**-0.4**
	23nm,0.3s,baz=88,slow=15,SNR=83							
MJAR				Sn		**Sn**	**21 21 25.4**	**+2.5**
	12nm,0.3s,baz=90,slow=24,SNR=6.2							
MJAR				LR		LR	21 23 04.8	
	comp=Z,334nm,19.0s,baz=100,slow=47							
MAJO	**Matsushiro**	**4.96**	**264**	*de*P		**Pn**	**21 20 26.6**	**+0.2**
MAJO				pmax	pmax			
	comp=Z,113nm,1.0s							
MAJO	**Matsushiro**	**4.96**	**264**	*e*Pn		**Pn**	**21 20 26.4**	**0.0**
MAT	**Matsushiro**	**4.96**	**264**	P		**Pn**	**21 20 26.2**	**-0.2**
MAT				S		**Sn**	**21 21 22.9**	**-0.1**
MJB9	**Matsu-Tunnel**	**4.96**	**264**	*e*Pn		**Pn**	**21 20 26.4**	**0.0**
JKB	**Kayabe**	**5.32**	**332**	P		**Pn**	**21 20 31.6**	**+0.3**
JKB				S		**Sn**	**21 21 29.2**	**-2.5**
JCH	**Churui**	**5.44**	**352**	P		**Pn**	**21 20 31.7**	**-1.3**
JCH				*e*S		**Sn**	**21 21 30.5**	**-4.3**
JHJ2	**Mitsune**	**5.52**	**223**	S		Sn	21 21 28.0	-8.8
JHJ	**Hachijo jima 2**	**5.53**	**224**	Pn		Pn	21 20 29.7	-4.6
	comp=Z,47nm,0.3s,baz=328,slow=23,SNR=16							
JHJ				Sn		Sn	21 21 28.3	-8.8
	comp=Z,218nm,0.3s,baz=242,slow=23,SNR=9.8							
INU	**Inuyama**	**6.20**	**255**	*e*Pn		**Pn**	**21 20 43.1**	**-0.3**
YUK	**Yuzh-Kuril'sk**	**6.91**	**9**	*e*P		Pn	21 20 49.6	-3.5
YUK				*e*S		Sn	21 22 04.3	-6.6
YUK				pmax	pmax			
	comp=Z,795nm,0.3s							
YUK				pmax	pmax			
	comp=N,84nm,0.2s							
YUK				pmax	pmax			
	comp=E,138nm,0.2s							
SHO	**Shikotan**	**6.91**	**15**	*e*P		Pn	21 20 49.3	-3.9
SHO				*e*S		Sn	21 22 02.5	-8.5
SHO				pmax	pmax			
	comp=E,107nm,0.8s							
SHO				pmax	pmax			
	comp=Z,302nm,0.8s							
SHO				pmax	pmax			
	comp=N,106nm,0.7s							
ASAJ	**Asahikawa**	**7.02**	**350**	Pn		**Pn**	**21 20 54.3**	**-0.3**
	comp=N,30nm,0.3s,baz=184,slow=12,SNR=173							
ASAJ				Sn		**Sn**	**21 22 11.5**	**-2.1**
	comp=N,1.1nm,0.3s,baz=179,slow=21,SNR=2.6							
ASAJ				LR		LR	21 23 53.2	
	comp=N,556nm,21.8s,baz=162,slow=39							
KUR	**Kuril'sk**	**8.44**	**17**	*e*P		**Pn**	**21 21 11.4**	**-2.7**
KUR				*e*S		Sn	21 22 42.2	-6.3
KUR				pmax	pmax			
	comp=Z,33nm,0.6s							
KUR				smax	smax			
	comp=N,94nm,0.7s							
KUR				smax	smax			
	comp=E,143nm,0.7s							
YSS	**Yuzh-Sakhalins**	**9.80**	**354**	⇑*e*P		**Pn**	**21 21 35.6**	**+2.8**
JCJ	**Chichijima**	**10.26**	**191**	Pn		Pn	21 21 30.6	-8.5
	comp=E,8.6nm,0.3s,baz=188,slow=23,SNR=11							
JCJ				Sn		Sn	21 23 16.3	-17
	comp=E,21nm,0.3s,baz=87,slow=22,SNR=6.5							
JCJ				LR		LR	21 24 52.5	
	comp=E,183nm,21.6s,baz=185,slow=34							
VLA	**Vladivostok**	**11.20**	**306**	*i* P		**Pn**	**21 21 53.9**	**+2.0**
USRK	**Ussuriysk Ar.**	**11.67**	**311**	Pn		**Pn**	**21 21 59.7**	**+1.3**
	comp=E,1.8nm,0.3s,baz=116,slow=13,SNR=31							
USRK				LR		LR	21 25 48.0	
	comp=E,408nm,20.3s,baz=124,slow=34							
JNU	**Nakatsue**	**11.74**	**254**	Pn		**Pn**	**21 21 59.1**	**-0.4**
	comp=E,0.5nm,0.3s,baz=72,slow=9.7,SNR=5.4							
JNU				LR		LR	21 26 34.0	
	comp=E,400nm,20.1s,baz=125,slow=38							
JNU	**Nakatsue**	**11.74**	**254**	*e*Pn		**Pn**	**21 21 59.9**	**+0.5**
KSRS	**Korea Array**	**13.06**	**276**	Pn		**Pn**	**21 22 19.5**	**+2.0**
	comp=E,0.6nm,0.3s,baz=92,slow=14,SNR=15							
KSRS				LR		LR	21 26 54.5	
	comp=E,232nm,21.8s,baz=90,slow=35							
KS15	**Wonju Array Si**	**13.10**	**276**	*e*Pn		**Pn**	**21 22 16.9**	**-1.0**
KSAR	**Wonju Array Be**	**13.10**	**276**	P		**Pn**	**21 22 19.5**	**+1.6**
KSAR	**Wonju Array Be**	**13.10**	**276**	Pn		**Pn**	**21 22 19.5**	**+1.6**
HABR	**Khabarovsk**	**13.14**	**332**	*e*P		**Pn**	**21 22 17.6**	**-0.8**
HABR				*e*S		**Sn**	**21 24 43.7**	**+0.1**
HABR				pmax	pmax			
	comp=N,17nm,1.1s							
HABR				pmax	pmax			
	comp=E,10.0nm,1.1s							
HABR				pmax	pmax			
	comp=Z,29nm,1.1s							
MDJ	**Mudanjiang**	**13.36**	**308**	P		**Pn**	**21 22 22.6**	**+1.1**
MDJ				pmax	pmax			
	comp=Z,22nm,1.0s							
MDJ				pmax	pmax			
	comp

SEY Seymchan 26.21 8 P **P** **21 24 47.2 +1.1**
comp=Z,34nm,1.0s,baz=188,slow=6.8,SNR=65

H11N2 WAKE ISLAND Hy 26.29 125 T T 21 51 35.1
baz=317,slow=75,SNR=307

H11N1 WAKE ISLAND Hy 26.30 125 T T 21 51 33.2
baz=317,slow=75,SNR=154

H11N3 WAKE ISLAND Hy 26.31 125 T T 21 51 33.7
baz=317,slow=75,SNR=254

YAK Yakutsk 26.46 344 P **P** **21 24 48.0 -0.2**
comp=Z,38nm,0.7s,baz=138,slow=1.7,SNR=15

YAK Yakutsk 26.46 344 *i* P **P** **21 24 48.0 -0.2**
YAK *e**PP **sP** **21 24 57.9 -0.6**
YAK *e* 21 25 29.9
YAK *e* 21 28 07.1
YAK *e*S **S** **21 29 18.8 -1.6**
YAK *e*SS **SnSn** **21 30 26.7 +4.4**
YAK *e* 21 35 36.2
YAK pmax pmax
comp=Z,29nm,0.8s
YAK pmax pmax
comp=N,13nm,1.1s
YAK pmax pmax
comp=E,10.0nm,1.0s
YAK pmax pmax
comp=Z,212nm,8.4s
YAK pmax pmax
comp=N,338nm,7.7s
YAK pmax pmax
comp=E,347nm,7.7s
YAK smax smax
comp=N,82nm,3.7s
YAK smax smax
comp=E,66nm,4.3s

YAK Yakutsk 26.46 344 *e*P **P** **21 24 47.8 -0.4**
comp=E,47nm,0.7s

H11S1 WAKE ISLAND Hy 27.06 127 T T 21 52 29.8
baz=318,slow=76,SNR=172

H11S3 WAKE ISLAND Hy 27.06 127 T T 21 52 33.9
baz=318,slow=76,SNR=152

H11S2 WAKE ISLAND Hy 27.07 127 T T 21 52 35.1
baz=318,slow=76,SNR=153

BOD Bodaibo 28.66 326 ⇓ *i* P **P** **21 25 08.2 +0.2**
BOD pmax pmax
comp=Z,21nm,1.2s

XAN Xi'an 28.86 274 P P 21 25 14.3 +4.2
XAN pP sP 21 25 24.8 +4.4
XAN pmax pmax
comp=Z,18nm,0.9s

ULN Ulaanbaatar 29.19 303 *ce*P **P** **21 25 15.6 +2.5**
ULN pmax pmax
comp=Z,20nm,1.2s

ULN Ulaanbaatar 29.19 303 *e*P **P** **21 25 12.7 -0.4**
comp=Z,12nm,0.9s

ULN Ulaanbaatar 29.19 303 P P 21 25 17.4 +4.3
SNR=8.9

ULN Ulaanbaatar 29.19 303 P P 21 25 17.4 +4.3
SNR=8.9

SONM Songino Array 29.63 303 P **P** **21 25 17.6 +0.7**
comp=Z,6.5nm,1.1s,baz=116,slow=8.2,SNR=15
SONM PcP **PcP** **21 28 21.1 +0.1**
comp=Z,0.5nm,0.4s,baz=110,slow=3.0,SNR=4.5

ENH Enshi 29.67 267 *e*P **P** **21 25 17.5 +0.2**
comp=Z,29nm,1.1s

TLY Talaya 31.99 310 *e*P **P** **21 25 37.3 -0.3**
TLY pmax pmax
comp=Z,6.0nm,0.8s

TLY Talaya 31.99 310 *e*P **P** **21 25 37.3 -0.3**
comp=Z,6.0nm,0.8s

ZAK Zakamensk 32.00 307 *e*P **P** **21 25 39.0 +1.2**
ZAK pmax pmax
comp=Z,7.0nm,1.2s

LZH Lanzhou 32.33 280 *e*P **P** **21 25 43.1 +2.2**
LZH pmax pmax
comp=Z,21nm,1.0s

PATS Pohnpei 32.81 154 *e*P **P** **21 25 45.7 +0.7**
comp=Z,276nm,1.7s

BILL Bilibino 33.22 15 *e*P **P** **21 25 47.8 -0.3**
BILL *e* 21 25 59.1
BILL *e* 21 26 58.5
BILL pmax pmax
comp=Z,46nm,1.7s

BILL Bilibino 33.22 15 *e*P **P** **21 25 47.9 -0.3**
comp=Z,24nm,1.0s

MIDW Midway 33.27 94 *e*P **P** **21 25 50.2 +1.3**
comp=Z,46nm,0.7s

GYA Guiyang 33.55 262 ⇑ *i* P **P** **21 25 51.4 -0.2**
GYA pP sP 21 26 03.5 +1.5
GYA PP **PP** **21 27 06.0 -1.7**
GYA PcP **PcP** **21 28 32.3 +0.4**
GYA S **S** **21 31 11.8 -0.8**
GYA sS sS 21 31 30.4 +5.7
GYA ScP **ScP** **21 32 13.6 -1.3**
GYA ScS **ScS** **21 36 12.9 -3.4**
GYA pmax pmax
comp=Z,20nm,0.8s
GYA pmax pmax
comp=Z,120nm,5.4s
GYA LR LR
comp=Z,550nm,16.6s
GYA LR LR
comp=Z,520nm,17.0s
GYA LR LR
comp=Z,530nm,17.1s

GTA Gaotai 34.73 288 *e*P **P** **21 26 03.1 +1.3**
GTA pP sP 21 26 14.9 +2.8
GTA sP pP 21 26 19.8 +11
GTA PcP **PcP** **21 28 34.9 -0.2**
GTA S **S** **21 31 25.9 -4.7**
GTA sS sS 21 31 46.0 +3.3
GTA SS **SnSn** **21 33 37.3 -7.1**
GTA pmax pmax
comp=Z,10.0nm,1.1s
GTA pmax pmax
comp=Z,92nm,6.7s
GTA LR LR
comp=Z,370nm,15.4s
GTA LR LR
comp=Z,280nm,12.8s
GTA LR LR
comp=Z,330nm,14.0s

TIXI Tiksi 35.42 352 P **P** **21 26 06.9 -0.2**
comp=Z,3.6nm,0.8s,baz=146,slow=7.5,SNR=11

TIXI Tiksi 35.42 352 *e*P **P** **21 26 07.4 +0.3**
TIXI Tiksi 35.42 352 *e*P **P** **21 26 06.8 -0.3**
comp=Z,7.1nm,1.1s

KMI Kunming 37.30 263 P **P** **21 26 23.8 -0.1**
KMI pP sP 21 26 35.4 +1.1
KMI sP pP 21 26 40.8 +9.5
KMI S **S** **21 32 05.8 -4.5**
KMI pmax pmax
comp=Z,15nm,1.1s
KMI pmax pmax
comp=Z,130nm,10.8s
KMI LR LR
comp=Z,140nm,14.2s
KMI LR LR
comp=Z,190nm,15.7s
KMI LR LR
comp=Z,180nm,14.5s

KRAR Krasnoyarsk 38.95 316 *i* P **P** **21 26 38.5 +1.3**
KRAR pmax pmax
comp=Z,13nm,0.9s

MYLDM Lahad Datu 39.68 223 *e*P **P** **21 26 45.2 +1.5**
MYLDM *ep*P **sP** **21 26 54.2 +0.1**
MYLDM *e*S **S** **21 32 44.5 -1.3**

CRAI Chiangrai 41.70 258 P **P** **21 27 02.5 +2.1**
comp=Z,116nm,1.2s,comp=Z,12µm

WMQ Urumqi 42.84 297 P **P** **21 27 11.0 +1.5**
WMQ pP sP 21 27 23.0 +3.0
WMQ sP pP 21 27 28.0 +11
WMQ SS SS 21 36 37.3 -6.4
WMQ ScS **ScS** **21 37 05.6 -3.3**
WMQ pmax pmax
comp=Z,18nm,0.6s
WMQ pmax pmax
comp=Z,34nm,3.8s
WMQ LR LR
comp=Z,65nm,23.8s
WMQ LR LR
comp=Z,130nm,20.4s
WMQ LR LR
comp=Z,59nm,18.6s

CMAI Chiengmai2 42.90 259 P **P** **21 27 12.3 +1.9**
comp=Z,34nm,1.4s

UTTA Uttaradit 42.97 255 P **P** **21 27 12.0 +1.3**
comp=Z,2.8nm,0.9s

LAMP Lampang 43.23 257 P **P** **21 27 14.1 +1.2**
comp=Z,6.2nm,0.8s

PBKT Sadao Pong 43.34 254 P **P** **21 27 14.3 +0.5**
comp=Z,12nm,1.0s,comp=Z,1µm

ZAA0 Zalesovo Array 43.52 312 *e*P **P** **21 27 15.2 +0.4**
ZALV Zalesovo Beam 43.52 312 P **P** **21 27 15.1 +0.3**
comp=Z,5.7nm,0.5s,baz=86,slow=6.4,SNR=30
ZALV PcP **PcP** **21 29 01.4 -0.9**
comp=Z,3.6nm,0.5s,baz=95,slow=3.6,SNR=10

ZALV Zalesovo Beam 43.52 312 *i* P **P** **21 27 15.6 +0.8**
ZALV pmax pmax
comp=Z,6.0nm,0.5s

CMMT Chiang Mai 43.60 258 P **P** **21 27 16.4 +0.5**
comp=Z,12nm,1.0s,comp=Z,477nm

CHTO Chiang Mai 43.60 258 P **P** **21 27 16.4 +0.5**
comp=Z,54nm,1.1s

CHTO Chiang Mai 43.60 258 *e*P **P** **21 27 16.0 +0.1**
CHTO pmax pmax
comp=Z,10.0nm,1.0s

CHTO Chiang Mai 43.60 258 *e*P **P** **21 27 16.0 +0.1**
comp=Z,10nm,1.0s

CHTO Chiang Mai 43.60 258 P **P** **21 27 16.2 +0.3**
SNR=8.3

CHTO Chiang Mai 43.60 258 P **P** **21 27 16.2 +0.3**
SNR=8.3

CM31 Chiang Mai Arr 43.81 257 *e*P **P** **21 27 17.4 -0.2**
CMAR Chiang Mai Arr 43.81 257 P **P** **21 27 17.6 0.0**
comp=Z,3.6nm,0.8s,baz=47,slow=7.3,SNR=43
CMAR PcP **PcP** **21 29 03.9 0.0**
comp=Z,0.6nm,0.8s,baz=357,slow=2.3,SNR=4.3

CM01 Chiang Mai Arr 43.82 257 *e*P **P** **21 27 17.1 -0.5**
TT01 Tatalina 43.94 35 *e*P **P** **21 27 18.7 +0.7**
TT01 *ep*P **pP** **21 27 25.1 -0.4**

TTA Tatalina 43.94 35 *e*P **P** **21 27 16.9 -1.3**
TTA pmax pmax
comp=Z,8.0nm,1.0s

TTA Tatalina 43.94 35 *e*P **P** **21 27 16.9 -1.3**
comp=Z,8.4nm,1.0s

SVW2 Sparrevohn 43.96 37 *e*P **P** **21 27 18.3 0.0**
SVW2 *ep*P **sP** **21 27 28.9 +0.1**

NRIK Noril'sk 44.09 335 P **P** **21 27 19.7 +0.6**
comp=Z,5.3nm,0.8s,baz=139,slow=4.9,SNR=9.8

TARA Tarawa 44.36 137 *e*P **P** **21 27 22.0 0.0**
comp=Z,181nm,1.3s

NVS Novosibirsk 44.40 314 *e*P **P** **21 27 22.3 +0.5**
LSA Lhasa 44.51 277 *e*P **P** **21 27 24.5 +0.8**
LSA pmax pmax
comp=Z,5.0nm,0.8s

LSA Lhasa 44.51 277 *e*P **P** **21 27 24.4 +0.8**
comp=Z,4.9nm,0.8s

OHAK Old Harbor 45.03 43 *e*P **P** **21 27 26.5 -0.3**
comp=Z,25nm,1.4s

JOHN Johnston Islan 45.38 104 *e*P **P** **21 27 31.5 +1.4**
comp=Z,479nm,1.9s

KDAK Kodiak Island 45.40 42 P P 21 27 43.9 +14
comp=Z,5.1nm,0.8s,baz=316,slow=3.7,SNR=5.0

KDAK Kodiak Island 45.40 42 *e*P **P** **21 27 30.4 +0.6**
KDAK *e**PP **sP** **21 27 39.4 -0.8**

KDAK Kodiak Island 45.40 42 *e*P **P** **21 27 30.4 +0.6**
KDAK *ep*P **sP** **21 27 39.4 -0.8**

SBUM Sibu 45.48 228 *e*P **P** **21 27 31.1 +0.2**
SBUM *ep*P **pP** **21 27 39.7 +1.3**

SPU Mount Spurr 45.67 37 *e*P **P** **21 27 32.7 +0.8**
SPU *ep*P **sP** **21 27 42.8 +0.4**

PPLA Purkeypile 45.68 35 *e*P **P** **21 27 33.6 +1.5**
comp=Z,18nm,1.2s
PPLA *ep*P **sP** **21 27 43.4 +0.7**

CAST Castle Rocks 45.76 34 *e*P **P** **21 27 33.3 +0.7**
comp=Z,8.4nm,0.8s

MK01 Makanchi Array 45.99 302 *e*P **P** **21 27 34.6 0.0**
MK31 Makanchi Array 45.99 302 *e*P **P** **21 27 35.4 +0.7**
MK31 Makanchi Array 45.99 302 *e*P **P** **21 27 35.4 +0.7**
MKAR Makanchi Array 45.99 302 P **P** **21 27 35.2 +0.5**
comp=Z,16nm,0.9s,baz=85,slow=8.6,SNR=74
MKAR Makanchi Array 45.99 302 *e*P **P** **21 27 35.4 +0.7**

KTH Kantishna Hill 46.29 34 *e*P **P** **21 27 37.8 +0.9**
comp=Z,14nm,1.1s

BPAW Bear Paw Mtn. 46.29 33 *e*P **P** **21 27 37.7 +0.9**
BPAW *ep*P **sP** **21 27 47.6 +0.4**

MLY Manley 46.46 32 *e*P **P** **21 27 38.9 +0.8**
comp=Z,12nm,0.9s

TRF Thorofare Moun 46.57 34 *e*P **P** **21 27 40.0 +0.8**
comp=Z,8.6nm,1.1s

RC01 Rabbit Creek A 46.80 37 *e*P **P** **21 27 40.9 +0.2**
comp=Z,13nm,1.2s

COLD Coldfoot 46.86 29 *e*P **P** **21 27 41.6 +0.5**
COLD *ep*P **sP** **21 27 52.4 +0.7**

PMR Palmer 47.08 37 *e*P **P** **21 27 42.7 -0.2**
PMR pmax pmax
comp=Z,11nm,1.0s

PMR Palmer 47.08 37 *e*P **P** **21 27 42.7 -0.2**
comp=Z,10nm,1.0s

MCK McKinley 47.18 34 *e*P **P** **21 27 43.8 +0.1**
MCK pmax pmax
comp=Z,9.0nm,0.8s

MCK McKinley 47.18 34 *e*P **P** **21 27 43.8 +0.1**
comp=Z,9.0nm,0.8s

RND Reindeer 47.21 34 *e*P **P** **21 27 43.9 -0.1**
RND pmax pmax
comp=Z,16nm,0.9s

RND Reindeer 47.21 34 *e*P **P** **21 27 43.9 -0.1**
comp=Z,16nm,0.9s

KSM Kuching 47.41 229 *e*P **P** **21 27 45.8 -0.2**
KSM *ep*P **sP** **21 27 55.9 -0.6**

SML Sawmill 47.46 36 *e*P **P** **21 27 46.2 +0.2**
SML pmax pmax
comp=Z,9.0nm,0.9s

SML Sawmill 47.46 36 *e*P **P** **21 27 46.2 +0.2**
comp=Z,9.2nm,0.9s

MDM Murphy Dome 47.52 32 *e*P **P** **21 27 46.9 +0.6**
comp=Z,16nm,0.8s

WRH Wood River Hil 47.57 33 *e*P **P** **21 27 47.3 +0.6**
comp=Z,4.4nm,0.8s

KURK Kurchatov 47.65 308 *e*P **P** **21 27 48.0 +0.5**
KURK pmax pmax
comp=Z,32nm,0.9s

KURK Kurchatov 47.65 308 *e*P **P** **21 27 48.0 +0.5**
comp=Z,32nm,0.9s

KURK Kurchatov 47.65 308 P **P** **21 27 48.2 +0.7**
SNR=11
KURK P **P** **21 27 48.2 +0.7**
SNR=11

KURK Kurchatov 47.65 308 P **P** **21 27 48.2 +0.7**
SNR=11

COLA College 47.68 32 *ce*P **P** **21 27 49.0 +1.5**
COLA pmax pmax
comp=Z,16nm,2.5s

COLA College 47.68 32 *e*P **P** **21 27 48.2 +0.7**
comp=Z,7.7nm,0.7s

CCB Clear Creek Bu 47.69 33 *e*P **P** **21 27 49.7 +2.0**
comp=Z,4.2nm,0.9s

KURBB Kurchatov Arra 47.72 308 P **P** **21 27 48.5 +0.4**
comp=Z,18nm,0.6s,baz=83,slow=8.5,SNR=92

KAPI Kappang 47.86 214 *e*P **P** **21 27 49.8 +0.3**
comp=Z,29nm,1.4s

DHY Denali Highway 47.88 35 *e*P **P** **21 27 49.5 +0.1**
comp=Z,6.2nm,1.0s

SCM Sheep Creek Mo 47.94 36 *e*P **P** **21 27 50.1 +0.4**
SCM pmax pmax
comp=Z,13nm,1.0s

SCM Sheep Creek Mo 47.94 36 *e*P **P** **21 27 50.1 +0.4**
comp=Z,13nm,1.0s

HDA Harding Lake 48.06 33 *e*P **P** **21 27 50.7 +0.2**
comp=Z,11nm,0.8s

IL1 Eielson Array 48.09 32 *e*P **P** **21 27 49.9 -0.8**
ILAR Eielson Array 48.09 32 P **P** **21 27 50.3 -0.5**
comp=Z,5.8nm,0.9s,baz=265,slow=6.5,SNR=51

ILB Eielson Array 48.09 32 *e*P **P** **21 27 50.5 -0.2**
KLU Klutina 48.62 37 *e*P **P** **21 27 55.5 +0.6**
comp=Z,20nm,1.2s

DIV Divide 48.72 37 *e*P **P** **21 27 56.5 +0.7**
comp=Z,17nm,0.9s

PDGK Podgornoye 48.75 299 P **P** **21 27 57.3 +1.2**
PDGK pmax pmax
comp=Z,12nm,1.6s

PAX Paxson 48.76 35 *e*P **P** **21 27 56.0 0.0**
PAX pmax pmax
comp=Z,8.0nm,1.2s

PAX Paxson 48.76 35 *e*P **P** **21 27 56.0 0.0**
comp=Z,8.2nm,1.2s

EYAK Cordova Ski Ar 48.77 38 *e*P **P** **21 27 56.8 +0.8**
comp=Z,30nm,1.8s

FYU Fort Yukon 48.78 30 *e*P **P** **21 27 56.7 +0.7**
comp=Z,34nm,1.2s

BMRM Bremner River 49.30 37 *e*P **P** **21 28 00.8 +0.7**
comp=Z,20nm,1.2s

RAGM Ragged Mountai 49.32 38 *e*P **P** **21 28 00.6 +0.3**
comp=Z,10nm,1.0s

DOT Dot Lake 49.35 34 *e*P **P** **21 28 00.3 -0.2**
comp=Z,16nm,0.8s

GUN Gumba 49.45 277 *e*P **P** **21 28 02.7 +0.6**
MENT Mentasta 49.55 35 *e*P **P** **21 28 03.3 +1.2**
comp=Z,9.4nm,0.9s

KKN Kakani 49.98 277 *e*P **P** **21 28 06.4 +0.4**
comp=Z,23nm,0.7s

PKIN Phulchoki 49.98 277 *e*P **P** **21 28 05.7 -0.4**
comp=Z,7.9nm,0.6s

GKN Gorkha 50.40 278 *e*P **P** **21 28 09.4 +0.3**
comp=Z,56nm,0.8s

EGAK Eagle 50.54 32 *e*P **P** **21 28 09.9 +0.5**
comp=Z,9.6nm,1.4s

KOLN Koldanda 51.32 278 *e*P **P** **21 28 16.6 +0.5**
comp=Z,16nm,0.9s

TKM2 Tokmak 2 51.59 299 *e*P **P** **21 28 19.4 +1.5**
TKM2 pmax pmax
comp=Z,42nm,1.0s

TKM2 Tokmak 2 51.59 299 *e*P **P** **21 28 19.4 +1.5**
comp=Z,42nm,1.0s

PYUN Piuthan 51.65 279 *e*P **P** **21 28 19.0 +0.4**
comp=Z,74nm,1.1s

BVAR Borovoye Array 52.17 313 P **P** **21 28 22.5 +0.7**
comp=Z,14nm,0.8s,baz=79,slow=7.7,SNR=47

OTUK Ortayu 52.20 306 P **P** **21 28 23.1 +0.9**
OTUK pmax pmax
comp=Z,14nm,1.2s

BRVK Borovoye 52.22 313 *ce*P **P** **21 28 23.4 +1.2**
BRVK pmax pmax
comp=Z,35nm,1.2s

BRVK Borovoye 52.22 313 *e*P **P** **21 28 23.1 +0.8**
comp=Z,22nm,0.9s

BRVK Borovoye 52.22 313 P **P** **21 28 23.3 +1.1**
SNR=6.3

BRVK Borovoye 52.22 313 P **P** **21 28 23.3 +1.1**
SNR=6.3

FRU Bishkek 52.30 299 *i* P **P** **21 28 24.0 +1.0**
FRU pmax pmax
comp=Z,57nm,1.8s

AAK Ala-Archa 52.45 299 P **P** **21 28 25.1 +0.8**
comp=Z,3.6nm,0.4s,baz=80,slow=5.0,SNR=23

AAK Ala-Archa 52.45 299 *ce*P **P** **21 28 25.3 +1.0**
AAK pmax pmax
comp=Z,35nm,1.2s

AAK Ala-Archa 52.45 299 *e*P **P** **21 28 25.1 +0.8**
comp=Z,14nm,1.1s

AAK Ala-Archa 52.45 299 P **P** **21 28 25.3 +1.0**
SNR=5.7

AAK P **P** **21 28 25.3 +1.0**
SNR=5.7

AAK Ala-Archa 52.45 299 P **P** **21 28 25.3 +1.0**
SNR=5.7

KSH Kashi 52.45 295 P P 21 28 29.0 +4.7
KSH *ep*P sP 21 28 41.8 +6.9
KSH *e*SP pP 21 28 45.6 +14
KSH *e*PcP **PcP** **21 29 38.3 +3.5**
KSH *e*PP PP 21 30 30.0 +7.0
KSH PcS **PcS** **21 33 32.6 -0.7**
KSH S **S** **21 35 51.9 +2.7**
KSH SS **SS** **21 39 31.6 +4.6**
KSH pmax pmax
comp=Z,16nm,1.0s
KSH pmax pmax
comp=Z,140nm,6.5s
KSH LR LR
comp=Z,270nm,7.8s
KSH LR LR
comp=Z,160nm,7.4s
KSH LR LR
comp=Z,350nm,8.0s

PPBI Pangkal Pinang 52.82 231 P P 21 28 35.5 +8.5
comp=Z,11nm,1.2s,comp=Z,4µm

EKS2 Erkin-Say 52.94 299 *e*P **P** **21 28 28.7 +0.8**
EKS2 pmax pmax
comp=Z,10.0nm,0.8s

EKS2 Erkin-Say 52.94 299 *e*P **P** **21 28 28.7 +0.8**
comp=Z,9.9nm,0.8s

ZRNK Zerenda 53.00 313 *e*P **P** **21 28 28.8 +0.8**
ZRNK pmax pmax
comp=Z,30nm,1.0s

ZRNK Zerenda 53.00 313 *e*P **P** **21 28 28.8 +0.8**
comp=Z,30nm,1.0s

INK Inuvik 53.16 27 P P **P** **21 28 29.5 +0.7**
comp=Z,6.3nm,0.8s,baz=280,slow=6.9,SNR=24

HLK Haleakala 53.68 90 *e*P **P** **21 28 34.7 +0.9**
comp=Z,120nm,1.2s

MNAS Manas 53.88 300 P **P** **21 28 35.9 +1.1**
MNAS pmax pmax
comp=Z,30nm,1.0s

SFK Sufi-Kurgan 54.05 296 P **P** **21 28 37.5 +1.3**
SFK pmax pmax
comp=Z,32nm,1.1s

SKAG Skagway 54.11 38 *e*P **P** **21 28 36.7 +0.7**
comp=Z,9.7nm,1.0s

HPAH Hawaii Prepara 54.50 91 *e*P **P** **21 28 39.3 -0.2**
comp=Z,138nm,1.4s

KKAR Karatay Array 55.04 301 *e*P **P** **21 28 43.5 +0.4**
KKAR pmax pmax
comp=Z,15nm,1.0s

KKAR Karatay Array 55.04 301 *e*P **P** **21 28 43.5 +0.4**
comp=Z,15nm,1.0s

LHSI Lahat 55.74 232 P P 21 28 57.1 +8.8
SVE Sverdlovsk 56.55 319 ⇑ *e*P **P** **21 28 54.7 +1.1**
SVE pmax pmax
comp=Z,46nm,1.1s

DLBC Dease Lake 57.03 39 P **P** **21 28 57.0 -0.2**
comp=Z,3.0nm,0.8s,baz=294,slow=7.4,SNR=5.6

DLBC Dease Lake 57.03 39 *e*P **P** **21 28 57.0 -0.2**
DLBC *ep*P **sP** **21 29 08.9 +1.2**

SOKR Solikamsk 57.59 323 *e*P **P** **21 29 00.4 -0.5**
SOKR pmax pmax
comp=Z,17nm,1.2s

WRAB Tennant Creek 57.62 191 *e*P **P** **21 29 03.6 +2.1**
WRAB pmax pmax
comp=Z,32nm,1.6s

WRAB Tennant Creek 57.62 191 *e*P **P** **21 29 03.6 +2.1**
comp=Z,32nm,1.6s

WRA Warramunga Arr 57.63 191 P P 21 28 57.7 -3.9
comp=Z,1.6nm,0.4s,baz=9.8,slow=7.1,SNR=29

ARU Arti 57.76 319 *d* *i* P **P** **21 29 02.7 +0.6**
ARU S **S** **21 37 02.2 +2.7**
ARU SS **SS** **21 40 47.8 -1.7**
ARU pmax pmax
comp=Z,58nm,1.2s

ARU Arti 57.76 319 *e*P **P** **21 29 02.8 +0.6**
comp=Z,41nm,1.0s

ABKAR Akbulak array 59.59 311 *e*P **P** **21 29 15.3 +0.2**
AKTO Aktyubinsk 60.28 313 P **P** **21 29 19.8 0.0**
comp=Z,13nm,0.8s,baz=74,slow=11,SNR=14

HYB Hyderabad 60.54 270 *i* P **P** **21 29 22.0 0.0**
ASAR Alice Springs 61.35 191 P P 21 29 23.2 -4.0
comp=Z,1.4nm,0.8s,baz=5.0,slow=4.7,SNR=11

YKW3 Yellowknife Ar 62.43 31 *e*P **P** **21 29 33.0 -1.0**
YKW3 *ep*P **sP** **21 29 44.1 -0.6**

YKA Yellowknife Ar 62.47 31 P **P** **21 29 33.5 -0.8**
comp=Z,1.3nm,0.8s,baz=299,slow=6.6,SNR=17

YKB5 Yellowknife Ar 62.47 31 *e*P **P** **21 29 32.9 -1.4**
YKB5 *ep*P **sP** **21 29 44.0 -1.0**

ARCES ARCESS Array B 64.63 340 P **P** **21 29 48.8 +0.2**
comp=Z,3.0nm,0.8s,baz=40,slow=6.7,SNR=8.1

GEYT Alibeck 65.78 300 P **P** **21 29 56.7 +0.2**
comp=Z,11nm,1.0s,baz=29,slow=3.4,SNR=17

B08A Colville Reser 67.05 46 *e*P **P** **21 30 04.7 +0.2**
comp=Z,14nm,1.0s

C09A Chrisman Ranch 67.94 46 *e*P **P** **21 30 10.0 -0.2**
C09A *ep*P **sP** **21 30 20.6 -0.2**

D08A Wollman Farm, 67.95 47 *e*P **P** **21 30 10.4 +0.2**
D08A *ep*P **sP** **21 30 20.9 0.0**

STKA Stephens Creek 68.78 182 P **P** **21 30 13.6 -1.7**
comp=Z,0.6nm,0.4s,baz=311,slow=10,SNR=2.8

VRH Novokhopyorsk 68.99 319 *e*P **P** **21 30 16.2 -0.4**
VRH pmax pmax
comp=Z,20nm,0.9s

K05A Summer Lake 69.01 52 *e*P **P** **21 30 16.7 -0.4**
K05A *ep*P **sP** **21 30 28.1 +0.2**

OBN Obninsk 69.33 324 *e*P **P** **21 30 19.3 +0.7**
OBN *e* 21 30 39.4
OBN *e* 21 32 54.8
OBN pmax pmax
comp=Z,30nm,1.2s

OBN Obninsk 69.33 324 *e*P **P** **21 30 18.7 +0.1**
comp=Z,309nm,1.1s

LPSR Galich'ya Gora 69.64 321 *e*P **P** **21 30 20.3 -0.2**
LPSR pmax pmax

comp=Z,20nm,1.0s
FIA1 FINESS Array S 69.72 333 *e*P **P** 21 30 20.9 0.0
FINES FINESS Array B 69.72 333 P **P** 21 30 21.3 +0.4
comp=Z,11nm,0.8s,baz=49,slow=6.1,SNR=18
ORV Oroville 70.30 55 *e*P **P** 21 30 24.7 -0.2
ORV *e**PP **sP** 21 30 34.8 -0.8
ORV Oroville 70.30 55 *e*P **P** 21 30 24.7 -0.2
ORV *e*pP **sP** 21 30 34.8 -0.8
VSR Storozhevoye 70.31 320 *e*P **P** 21 30 24.7 0.0
VSR pmax pmax
comp=Z,20nm,1.0s
SWMT Swartz Lake 70.53 45 *e*P **P** 21 30 25.2 -1.1
SWMT *e*pP **sP** 21 30 37.1 0.0
WVOR Wild Horse Val 70.58 51 *e*P **P** 21 30 26.5 -0.2
WVOR *e**PP **sP** 21 30 37.5 +0.1
WVOR Wild Horse Val 70.58 51 *e*P **P** 21 30 26.5 -0.2
WVOR *e*pP **sP** 21 30 37.5 +0.1
MSO Missoula 70.95 45 *e*P **P** 21 30 29.1 +0.2
MSO *e*pP **sP** 21 30 39.3 -0.3
GOF Gofitskoye 71.69 313⇑ *e*P **P** 21 30 34.0 +0.8
GOF pmax pmax
comp=Z,35nm,1.0s
MFID Camas Ranch 71.76 49 *e*P **P** 21 30 33.8 0.0
MFID *e*pP **sP** 21 30 44.5 -0.1
CMB Columbia Colle 71.85 56 *e*P **P** 21 30 34.3 -0.1
CMB pmax pmax
comp=Z,6.0nm,1.0s
CMB Columbia Colle 71.85 56 *e*P **P** 21 30 34.3 -0.1
comp=Z,6.3nm,1.0s
FFC Flin Flon 72.27 34 *e*P **P** 21 30 36.1 -0.4
FFC *e**PP **sP** 21 30 46.5 -0.8
FFC Flin Flon 72.27 34 *e*P **P** 21 30 36.1 -0.4
FFC *e*pP **sP** 21 30 46.5 -0.8
LRM Limekiln Ridge 72.37 46 *e*P **P** 21 30 37.5 -0.1
ZEI Tsey 72.47 311 *e*P **P** 21 30 36.7 -1.5
ZEI pmax pmax
comp=Z,29nm,1.1s
HLID Hailey 72.52 48 *e*P **P** 21 30 39.1 +0.6
comp=Z,5.3nm,1.1s
KIV Kislovodsk 72.53 312 *c i*P **P** 21 30 39.7 +1.3
KIV *e* 21 30 56.8
KIV *e* 21 33 21.2
KIV pmax pmax
comp=Z,41nm,1.2s
KIV Kislovodsk 72.53 312 *e*P **P** 21 30 38.9 +0.5
comp=Z,42nm,1.1s
KIV Kislovodsk 72.53 312 P **P** 21 30 40.7 +2.3
SNR=6.7
KIV P **P** 21 30 40.7 +2.3
SNR=6.7
KIV Kislovodsk 72.53 312 P **P** 21 30 40.7 +2.3
SNR=6.7
KBZ Khabaz 72.54 312 P **P** 21 30 39.1 +0.9
comp=Z,14nm,1.0s,baz=80,slow=0.9,SNR=15
BMN Battle Mountai 72.57 52 *e*P **P** 21 30 38.9 +0.2
BMN *e**PP **sP** 21 30 49.9 +0.4
BMN Battle Mountai 72.57 52 *e*P **P** 21 30 38.9 +0.2
BMN *e*pP **sP** 21 30 49.9 +0.4
FCC Fort Churchill 72.77 28 *e*P **P** 21 30 39.5 +0.1
FCC *e**PP **sP** 21 30 49.6 -0.5
FCC Fort Churchill 72.77 28 *e*P **P** 21 30 39.5 +0.1
FCC *e*pP **sP** 21 30 49.6 -0.5
BOZ Bozeman (W) 72.94 45 *e*P **P** 21 30 40.5 -0.4
BOZ pmax pmax
comp=Z,9.0nm,1.0s
BOZ Bozeman (W) 72.94 45 *e*P **P** 21 30 40.5 -0.4
comp=Z,8.5nm,1.0s
NVAR Mina Array Bea 73.00 55 P **P** 21 30 40.8 -0.6
comp=Z,2.8nm,0.8s,baz=281,slow=6.3,SNR=12
GNI Garni 73.45 308 P **P** 21 30 45.6 +1.6
GNI Garni 73.45 308 *e*P **P** 21 30 44.7 +0.7
GNI pmax pmax
comp=Z,514nm,1.4s
GNI Garni 73.45 308 *e*P **P** 21 30 44.7 +0.7
comp=Z,514nm,1.4s
NACGM Naroch 73.83 328 *e* **P** 21 30 46.0 +0.3
H17A Grant Village 74.28 46 *e*P **P** 21 30 49.3 +0.4
comp=Z,18nm,1.1s
IMW Indian Meadow 74.37 47 *e*P **P** 21 30 50.2 +0.7
comp=Z,9.9nm,1.1s
FLWY Flagg Ranch 74.40 46 *e*P **P** 21 30 49.6 +0.1
comp=Z,13nm,1.1s
FXWY Fox Creek 74.47 47 *e*P **P** 21 30 51.0 +0.9
comp=Z,9.4nm,1.4s
MOOW Moose Ponds 74.57 47 *e*P **P** 21 30 51.5 +0.9
comp=Z,7.0nm,1.2s
DAC Darwin (Calif) 74.68 56 *e*P **P** 21 30 50.6 -0.7
DAC pmax pmax
comp=Z,4.0nm,0.9s
DAC Darwin (Calif) 74.68 56 *e*P **P** 21 30 50.6 -0.7
comp=Z,3.6nm,0.9s
REDW Red Top Meadow 74.74 47 *e*P **P** 21 30 51.0 -0.5
comp=Z,9.1nm,1.3s
R11A Troy Canyon, C 74.80 53 *e*P **P** 21 30 51.7 -0.2
comp=Z,4.7nm,0.9s
NC204 NORSAR Array S 74.84 339 *e*P **P** 21 30 52.6 +1.1
HFS Hagfors 74.86 337 P **P** 21 30 51.8 +0.2
comp=Z,3.8nm,0.5s,baz=40,slow=4.8,SNR=20
NB2 NORSAR Subarra 74.90 338 P **P** 21 30 51.7 -0.2
comp=Z,12nm,0.9s,baz=38,slow=5.9
NOA NORSAR Array B 74.90 338 P **P** 21 30 51.8 -0.2
comp=Z,8.7nm,0.9s,baz=37,slow=5.8,SNR=14
NBO02 NORSAR Array S 74.99 339 *e*P **P** 21 30 52.4 0.0
TPNV Topopah Spring 75.18 55 *e*P **P** 21 30 53.8 -0.3
TPNV pmax pmax
comp=Z,5.0nm,0.8s
TPNV Topopah Spring 75.18 55 *e*P **P** 21 30 53.8 -0.3
comp=Z,5.1nm,0.8s
HWUT Hardware Ranch 75.37 49 *e*P **P** 21 30 55.6 +0.5
comp=Z,12nm,1.4s
DUG Dugway, Tooele 75.45 50 *e*P **P** 21 30 55.8 +0.2
DUG pmax pmax
comp=Z,5.0nm,0.8s
DUG Dugway, Tooele 75.45 50 *e*P **P** 21 30 55.8 +0.2
comp=Z,5.1nm,0.8s
AKASG Malin Array Be 75.56 324 P **P** 21 30 55.6 -0.2
comp=Z,6.9nm,0.6s,baz=44,slow=5.8,SNR=45
AKASG Malin Array Be 75.56 324 *i* P **P** 21 30 55.9 +0.1
AKASG pmax pmax
comp=Z,7.0nm,0.6s
AKBB Malin Array Si 75.56 324 *e*P **P** 21 30 56.2 +0.4
AKBB pmax pmax
comp=Z,15nm,0.8s
AKBB Malin Array Si 75.56 324 *e*P **P** 21 30 56.2 +0.4
comp=Z,15nm,0.8s
KIEV Kiev 75.57 324 *e*P **P** 21 30 55.2 -0.7
KIEV pmax pmax
comp=Z,16nm,0.8s
KIEV Kiev 75.57 324 *e*P **P** 21 30 55.2 -0.7
comp=Z,16nm,0.8s
AK11 Malin Array Si 75.60 324 *e*P **P** 21 30 56.3 +0.3
PSUT Pine Spring 75.79 52 *e*P **P** 21 30 58.0 +0.3
PDAR Pinedale Array 75.86 47 P **P** 21 30 57.7 -0.3
comp=Z,1.7nm,0.9s,baz=341,slow=7.6,SNR=2.7
MSU Marysvale 76.86 52 *e*P **P** 21 31 03.2 -0.6
MSU Marysvale 76.86 52 *e*P **P** 21 31 03.2 -0.6
LCMT Little Creek M 77.08 53 *e*P **P** 21 31 05.5 +0.6
comp=Z,6.5nm,0.9s
KNB Kanab 77.35 53 *e*P **P** 21 31 07.2 +0.7
KNB pmax pmax
comp=Z,8.0nm,0.9s
KNB Kanab 77.35 53 *e*P **P** 21 31 07.2 +0.7
comp=Z,7.6nm,0.9s
BAR Barrett 77.39 59 *e*P **P** 21 31 06.4 -0.1
comp=Z,100nm,1.1s
SRU San Rafael Swe 77.52 50 *e*P **P** 21 31 06.7 -0.7
SRU pmax pmax
comp=Z,11nm,0.8s
SRU San Rafael Swe 77.52 50 *e*P **P** 21 31 06.7 -0.7
comp=Z,11nm,0.8s
ULM Lac du Bonnet 78.05 35 P **P** 21 31 08.8 -1.1
comp=Z,2.0nm,0.6s,baz=245,slow=23,SNR=2.4
WUAZ Wupatki 79.19 54 *e*P **P** 21 31 17.1 +0.5
comp=Z,4.3nm,0.8s
KWP Kalwaria Pacla 79.32 326⇑ *i*P **P** 21 31 18.0 +1.1
KWP Kalwaria Pacla 79.32 326 ⇑P **P** 21 31 18.0 +1.1
BUR08 Bucovina Ar. S 79.58 323 *e*P **P** 21 31 19.1 +0.7
BURAR Bucovina Array 79.59 323 ⇓*i*P **P** 21 31 19.1 +0.6
BURAR Bucovina Array 79.59 323 ⇓P **P** 21 31 19.1 +0.6
TESR Tescani 79.66 322 ⇑*i*P **P** 21 31 19.0 +0.2
KOLS Kolonicke sedl 80.02 325 *e*P **P** 21 31 21.6 +0.9
KOLS Kolonicke sedl 80.02 325 *e*P **P** 21 31 21.6 +0.9
VRI Vrincioaia 80.07 321 ⇑*i*P **P** 21 31 22.8 +1.7
VRI Vrincioaia 80.07 321 ⇑P **P** 21 31 22.8 +1.7
STHS Stebnicka Huta 80.13 326 *e*P **P** 21 31 22.3 +1.0
STHS pmax pmax
comp=Z,5.0nm,1.1s
STHS Stebnicka Huta 80.13 326 *e*P **P** 21 31 22.3 +1.0
OJC Ojcow 80.16 328 *e*P **P** 21 31 22.3 +0.8
OJC pmax pmax
comp=Z,18nm,1.2s
OJC Ojcow 80.16 328 *e*P **P** 21 31 22.3 +0.8
comp=Z,18nm,1.2s
BR131 Keskin Array S 80.45 313 *e*P **P** 21 31 24.6 +1.2
BRTR Keskin Array B 80.45 313 P **P** 21 31 24.0 +0.6
comp=Z,3.6nm,1.0s,baz=104,slow=5.2,SNR=14
BRTR Keskin Array B 80.45 313 *i*P **P** 21 31 24.2 +0.8
BRTR pmax pmax
comp=Z,4.0nm,1.0s
ISR Istrita 80.69 321 ⇓*i*P **P** 21 31 26.4 +2.0
ISR Istrita 80.69 321 ⇓P **P** 21 31 26.4 +2.0
MLR Muntele Rosu 80.73 321 ⇓*i*P **P** 21 31 26.9 +2.1
MLR Muntele Rosu 80.73 321 ⇓P **P** 21 31 26.9 +2.1
MSAB Monastry St. A 80.74 319 ⇑*i*P **P** 21 31 26.2 +1.6
BR231 Keskin MP Arra 80.88 314 *e*P **P** 21 31 24.3 -1.3
LANS Liptovska Anna 81.11 327 *e*P **P** 21 31 28.1 +1.5
LANS Liptovska Anna 81.11 327 *e*P **P** 21 31 28.1 +1.5
SDCO Great Sand Dun 81.43 49 *e*P **P** 21 31 27.0 -1.8
comp=Z,6.9nm,1.4s
MORC Moravsky Berou 81.45 328 ⇓*i*P **P** 21 31 28.9 +0.5
MORC Moravsky Berou 81.45 328 *e*P **P** 21 31 28.3 -0.1
MORC pmax pmax
comp=Z,22nm,1.1s
MORC Moravsky Berou 81.45 328 *e*P **P** 21 31 28.3 -0.1
comp=Z,22nm,1.1s
ARR Arges 81.47 322 ⇓*i*P **P** 21 31 30.1 +1.5
DPC Dobruska-Polom 81.52 329 *e*P **P** 21 31 29.5 +0.8
DPC Dobruska-Polom 81.52 329 *e*P **P** 21 31 29.5 +0.8
UPC Upice 81.52 330 *e*P **P** 21 31 29.6 +0.9
UPC Upice 81.52 330 *e*P **P** 21 31 29.6 +0.9
KRLC Kraliky 81.54 329 *e*P **P** 21 31 29.4 +0.5
KRLC Kraliky 81.54 329 *e*P **P** 21 31 29.4 +0.5
VYHS Vyhne 81.87 327 *e*P **P** 21 31 31.4 +0.8
VYHS pmax pmax
comp=Z,4.0nm,1.3s
VYHS Vyhne 81.87 327 *e*P **P** 21 31 31.4 +0.8
VYHS *e* 21 49 12.8
CLL Collm 82.07 332 ⇓*i*P **P** 21 31 31.4 -0.2
comp=Z,14nm,1.1s
CLL *e* 21 31 42.0
CLL *i* 21 31 50.1
CLL Collm 82.07 332 ⇓*i*P **P** 21 31 31.4 -0.2
CLL *e* 21 31 42.0
CLL pmax pmax
comp=Z,14nm,1.1s
CLL Collm 82.07 332 *e*P **P** 21 31 30.8 -0.8
comp=Z,14nm,1.0s
VRAC Vranov 82.21 329 ⇓*i*P **P** 21 31 32.8 +0.4
VRAC Vranov 82.21 329 ⇓P **P** 21 31 32.8 +0.4
PRU Pruhonice 82.52 330 *e*P **P** 21 31 34.4 +0.5
PRU Pruhonice 82.52 330 *e*P **P** 21 31 34.4 +0.5
ANMO Albuquerque 82.67 51 P **P** 21 31 35.5 +0.2
comp=Z,0.8nm,0.6s,baz=335,slow=16,SNR=3.1
RAYN Ar Rayn 82.73 294 *e*P **P** 21 31 35.2 -0.3
comp=Z,3.3nm,0.9s
BZS Buzias 82.75 323 ⇓*i*P **P** 21 31 35.7 +0.5
BZS Buzias 82.75 323 ⇓P **P** 21 31 35.7 +0.5
ASF Jabal al Asfar 83.32 305 P **P** 21 31 38.9 +0.3
comp=Z,3.0nm,0.9s,baz=222,slow=4.3,SNR=6.3
KHC Kasperske Hory 83.58 330 *e*P **P** 21 31 39.6 0.0
KHC *e*pP **sP** 21 31 50.3 -0.1
KHC Kasperske Hory 83.58 330 *e*P **P** 21 31 39.5 0.0
KHC pmax pmax
comp=Z,2.0nm,1.1s
KHC Kasperske Hory 83.58 330 *e*P **P** 21 31 39.5 -0.1
comp=Z,2.3nm,1.1s
ESK Eskdalemuir 83.73 342 *i*P **P** 21 31 41.2 +1.1
MMAI Mount Meron Ar 83.74 307 P **P** 21 31 41.2 +0.5
comp=Z,2.4nm,0.5s,baz=39,slow=6.8,SNR=20
GERES GERESS Array B 83.76 330 P **P** 21 31 40.4 -0.1
comp=Z,1.2nm,0.8s,baz=45,slow=4.0,SNR=10
GEA0 GERESS Array S 83.76 330 *e*P **P** 21 31 40.0 -0.5
RPZ Rata Peaks 84.13 161 LR LR 22 04 17.4
comp=Z,418nm,20.6s,baz=159,slow=32
VTS Vitosha 84.18 321 ⇑*i*P **P** 21 31 44.0 +1.1
VTS Vitosha 84.18 321 *e*P **P** 21 31 42.3 -0.5
VTS pmax pmax
comp=Z,8.0nm,1.0s
VTS Vitosha 84.18 321 *e*P **P** 21 31 42.3 -0.5
comp=Z,7.6nm,1.0s
MEM Membach 85.17 335 P **P** 21 31 48.4 +0.9
MNTX Cornudas Mount 85.47 53 *e*P **P** 21 31 49.1 -0.2
comp=Z,3.3nm,0.9s
BCLA Clavier 85.56 335 P **P** 21 31 49.3 -0.1
BFO Black Forest 86.25 332 *e*P **P** 21 31 51.9 -1.0
BFO pmax pmax
comp=Z,13nm,1.3s
BFO Black Forest 86.25 332 *e*P **P** 21 31 51.9 -1.0
comp=Z,13nm,1.3s
V34A Guthrie 87.42 46 *e*P **P** 21 31 58.3 -0.5
comp=Z,28nm,0.8s
TX31 Lajitas Ar. Si 88.14 54 *e*P **P** 21 32 01.5 -1.1
TXAR Lajitas Array 88.14 54 P **P** 21 32 01.0 -1.5
comp=Z,1.2nm,0.8s,baz=301,slow=3.0,SNR=14
LAST Lasithi 88.30 314 ⇓*i*P **P** 21 32 02.8 -0.4
SWET Sewanee 94.13 39 *e*P **P** 21 32 29.9 -0.4
comp=Z,4.7nm,0.7s
BLA Blacksburg 95.16 34 *e*P **P** 21 32 34.9 0.0
BLA pmax pmax
comp=Z,34nm,1.0s
BLA Blacksburg 95.16 34 *e*P **P** 21 32 34.9 0.0
comp=Z,34nm,1.0s
TORD Torodi Ar. Bea 118.81 318 PKP **PKPdf** 21 37 58.3 -1.9
comp=Z,0.4nm,0.5s,baz=16,slow=1.2,SNR=8.4
LPAZ La Paz 144.56 63 PKP **PKPab** 21 38 47.3 -0.3
comp=Z,1.0nm,0.7s,baz=341,slow=0.6,SNR=4.9

*SJA **15** 21:22:13.6±0.6, 32°.33S×71°.44W, h26km±9km, ML2.9, MW3.1*
*GUC **15** 21:22:14.1±0.6, 32°.61S×71°.55W, h61km±6km, ML3.5*
ISC 15 21:22:12.7±3.1, **32°.51S**±0°.09×**71°.8W**±0°.2, **h60**km±27km, **n14**,σ0°65/22, **1D**, **Near coast of central Chile**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ROC1	**El Roble**	**0.78**	**127**	*e*P	**Pn**	**21 22 29.0**	**+0.9**
ROC1				*e*S	**Sn**	**21 22 39.4**	**-0.1**
ROCH	**El Roble**	**0.78**	**126**	*i*P	**Pn**	**21 22 28.4**	**+0.3**
ROCH				*i*S	**Sn**	**21 22 39.6**	**+0.1**
ROCH				IAML		21 22 40.0	
	comp=E,2μm,0.4s						
PEL	**Peldehue**	**1.10**	**125**	*i*P	**Pn**	**21 22 31.7**	**-0.4**
PEL				*i*S	**Sn**	**21 22 45.5**	**-1.0**
PEL				IAML		21 22 46.5	
	comp=E,2μm,0.2s						
RCDM	**Rinconada Maip**	**1.26**	**141**	*i*P	**Pn**	**21 22 34.4**	**+0.2**
RCDM				*i*S	**Sn**	**21 22 49.6**	**-0.7**
RCDM				IAML		21 22 50.5	
	comp=E,3μm,0.2s						
CLCH	**Cerro Calan**	**1.35**	**131**	⇓*i*P	**Pn**	**21 22 36.1**	**+0.6**
CLCH				*i*S	**Sn**	**21 22 51.9**	**-0.6**
CLCH				IAML		21 22 53.2	
	comp=E,2μm,0.4s						
ANTU	**Antumapu**	**1.42**	**138**	*i*P	**Pn**	**21 22 36.2**	**0.0**
ANTU				*i*S	**Sn**	**21 22 53.5**	**-0.5**
ANTU				IAML		21 22 55.2	
	comp=N,1μm,0.4s						
AUSP	**Uspallata**	**2.03**	**82**	*e*P	**Pn**	**21 22 45.1**	**+0.4**
AUSP				*e*S	**Sn**	**21 23 08.5**	**-0.7**
RTLS	**Leoncito**	**2.21**	**72**	*e*P	**Pn**	**21 22 47.3**	**0.0**
ARCO	**CERRO ARCO**	**2.41**	**99**	*e*P	**Pn**	**21 22 50.8**	**+0.9**
ARCO				*e*S	**Sn**	**21 23 18.2**	**-0.1**
ARCO				IAML		21 23 20.8	
	comp=Z,79nm,0.3s						
ASAL	**Salagasta**	**2.47**	**93**	*e*P	**Pn**	**21 22 51.5**	**+0.9**
AAGR	**Agrelo**	**2.54**	**104**	*e*P	**Pn**	**21 22 52.6**	**+1.1**
RTCV	**Cerro Valdivia**	**2.81**	**78**	*e*P	**Pn**	**21 22 55.3**	**+0.1**
AMOG	**MOGNA**	**3.20**	**61**	*e*P	**Pn**	**21 23 00.1**	**-0.4**
AGUA	**GUANDACOL**	**4.12**	**44**	*e*P	**Pn**	**21 23 13.7**	**+0.5**

DDA 15 21:33:59.0, 38°.42N×26°.64E, h4km, Md2.1, Aegean Sea

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
URLA	**Izmir**	**0.07**	**210**	*i*P	Pg	21 34 01.0	+0.4
URLA				*i*S	Sg	21 34 02.3	+0.7
ZEY	**˜zmir**	**0.21**	**211**	*i*P	Pg	21 34 03.6	+0.5
ZEY				*i*S	Sg	21 34 07.2	+1.3

MEX 15 21:36:26.3±0.3, **17°.32N×100°.84W, h20**km±88km, **MD3.6, Guerrero**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CAIG	**El Cayaco**	**0.61**	**117**	*e*P	Pb	21 36 36.6	-1.7
CAIG				*e*S	Sb	21 36 44.0	-2.5
ZIIG	**Zihuatanejo**	**0.66**	**295**	*e*P	Pb	21 36 37.0	-2.2
ZIIG				*e*S	Sb	21 36 45.5	-2.5
ACX	**Acapulco**	**1.04**	**116**	*i*P	Pb	21 36 44.3	-1.3
ACX				*e*S	Sb	21 36 50.6	-8.3
ARIG	**Puente Sto Nin**	**1.06**	**26**	*e*P	Pb	21 36 42.7	-3.3
ARIG				*e*S	Sb	21 36 55.8	-3.7
MEIG	**Mezcala**	**1.31**	**63**	*e*P	Pn	21 36 49.3	-0.2
PLIG	**Platanillo**	**1.66**	**50**	*e*P	Pn	21 36 51.2	-3.2
PLIG				*e*S	Sn	21 37 11.4	-3.8

*NIED **15** 21:46:00, 38°.60N×143°.70E, h8km, Mw3.7 Best double couple: M0=4.02000×10^14 NP1:φs=45.00000°, δ21.00000°, λ-45.00000°. NP2:φs178.00000°, δ76.00000°, λ-105.00000°.*

JMA 15 21:46:05.2±0.4, **38°.60N×143°.66E, h10**km, **M3.5, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
OFUJ	**Ofunato**	**1.63**	**288**	P	Pn	21 46 34.5	+0.6
JIO	**Ouri**	**1.82**	**266**	P	Pn	21 46 35.9	-0.6
JTH	**Tanohata**	**1.93**	**314**	*e*S	Sn	21 47 03.3	+0.9
JMK	**Ichinoseki**	**1.94**	**281**	P	Pn	21 46 39.2	+1.0
JOM	**Ohasama**	**2.04**	**296**	P	Pn	21 46 40.4	+0.8
JOM				*e*S	Sb	21 47 06.6	-1.2
JOU	**Okura**	**2.36**	**265**	P	Pn	21 46 45.3	+1.2
JANG	**Nango**	**2.43**	**318**	*e*S	Sn	21 47 14.9	+0.2
JRG	**Rokugo**	**2.49**	**290**	P	Pn	21 46 47.4	+1.6
JRG				*e*S	Sb	21 47 19.2	-1.5
JYK	**Kaneyama**	**2.60**	**278**	P	Pn	21 46 49.1	+1.8
JFT	**Otama**	**2.84**	**249**	P	Pn	21 46 52.1	+1.5
JFT				*e*S	Sn	21 47 26.5	+1.7
JTM	**Tenmabayashi**	**2.96**	**318**	*e*S	Sn	21 47 27.9	+0.1
JOT	**Ohata**	**3.43**	**325**	*e*S	Sn	21 47 37.9	-1.4
JNBK	**Urakawa-nobuka**	**3.74**	**350**	P	Pn	21 47 02.4	-0.6
JNBK				S	Sn	21 47 45.0	-2.0
JKB	**Kayabe**	**3.85**	**329**	P	Pn	21 47 06.3	+1.8
JKB				S	Sn	21 47 48.0	-1.7
JCH	**Churui**	**4.02**	**357**	P	Pn	21 47 04.9	-1.9
JCH				*e*S	Sn	21 47 49.8	-4.0
JRY	**Ryogami san**	**4.59**	**237**	P	Pn	21 47 15.2	+0.6
MAT	**Matsushiro**	**4.79**	**246**	P	Pn	21 47 19.2	+1.7
MAT				*e*S	Sn	21 48 14.0	+0.9

*MOS **15** 21:46:14.1±0.8, 18°.50S×175°.39W, h142km, mb5.8/58, Error ellipse: s-maj=7.0km s-min=5.6km az=72.2*
*ISCJB **15** 21:46:21.1±0.1, 18°.70S±0°.02×175°.39W±0°.02, h212km, mb5.7/360, Error ellipse: s-maj=3.0km s-min=1.8km az=136.9*
*IDC **15** 21:46:22.4±0.3, 18°.75S×175°.36W, h211km±3km, mb5.4/40, mb1 5.4/42, mb1mx5.4/44, mbtmp5.9/42, Error ellipse: s-maj=8.9km s-min=6.0km az=142.0*
*NEIC **15** 21:46:22.7±0.3, 18°.69S×175°.36W, h216km±2km, mb5.7/255, MW5.7, MW5.7, Error ellipse: s-maj=4.4km s-min=2.7km az=137.0, Moment Tensor Solution. s29 Moment tensor: Scale 10^17 Nm; Mrr=3.07; Mθθ 3.10; Mφφ-0.03; Mrθ-1.77; Mθφ 2.34; Mφr-2.71; Best double couple: M0 5.00000×10^17 NP1:φs40.00000°, δ67.00000°, λ-113.00000°. NP2:φs268.00000°, δ32.00000°, λ-47.00000°. Principal axes: T 5.3500, Plg19.0000°, Azm147.0000°; N -0.6800, Plg21.0000°, Azm50.0000°; P -4.6800, Plg61.0000°, Azm276.0000°;*
*GCMT **15** 21:46:22.7±0.1, 18°.65S×174°.93W, h219km, MW5.7/136, Moment Tensor Solution. s115,c228; s136,c363; Duration: 1ŝ8 Moment tensor: Scale 10^17 Nm; Mrr-2.18±.04; Mθθ 2.61±.04; Mφφ-0.43±.04; Mrθ-1.13±.04; Mθφ 2.10±.04; Mφr-3.22±.03; Best double couple: M0 4.68300×10^17 NP1:φs31.00000°, δ73.00000°, λ-121.00000°. NP2:φs276.00000°, δ35.00000°, λ-30.00000°. Principal axes: T 4.7010, Plg22.0000°, Azm144.0000°; N -0.0380, Plg30.0000°, Azm41.0000°; P -4.6650, Plg51.0000°, Azm265.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface/mantle waves, cutoff=50s.*
*BJI **15** 21:46:22.0, 18°.27S×175°.02W, h215km, mb5.9/74, mB5.7/46*
*NEIC **15** 21:46:23.0±0.0, 18°.60S×175°.29W, h216km, Moment Tensor Solution. s19 Moment tensor: Scale 10^17 Nm; Mrr-2.00; Mθθ 2.60; Mφφ-0.60; Mrθ-1.00; Mθφ 1.70; Mφr-2.80; Best double couple: M0 4.00000×10^17 NP1:φs34.00000°, δ72.00000°, λ-122.00000°. NP2:φs278.00000°, δ36.00000°, λ-31.00000°. Principal axes: T 4.1000, Plg20.0000°, Azm148.0000°; N 0.1000, Plg30.0000°, Azm45.0000°; P -4.1000, Plg51.0000°, Azm267.0000°;*

ISC 15 21:46:22.3±0.2, **18°.69S**±0°.04×**175°.28W**±0°.03, **h213**km±1km, **h213**km:**pP-P**, **n1930**,σ1ŝ**31**/2110, **mb5.7**/359, **66C-172D, Tonga Islands**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
NIUE	**Niue**	**5.08**	**95**	P	**Pn**	**21 47 34.3**	**-3.7**
	baz=5.0,SNR=193						
AFI	**Afiamalu**	**5.82**	**36**	P	Pn	21 47 40.6	-7.0
	182nm,0.3s,baz=32,slow=4.6,SNR=129						
AFI				S	S	21 48 41.0	-14
	1μm,0.3s,baz=62,slow=22,SNR=16						
MSVF	**Nonsavu**	**6.41**	**277**	*i*P	**Pn**	**21 47 57.6**	**+2.4**
MSVF	**Nonsavu**	**6.41**	**277**	*e*Pn	**Pn**	**21 47 58.2**	**+3.0**
RAO	**Raoul Island**	**10.79**	**192**	P	**Pn**	**21 48 49.1**	**-2.4**
	53nm,0.3s,baz=54,slow=22,SNR=3.0						
RAO				S	**S**	**21 50 45.3**	**-6.9**
	216nm,0.3s,baz=153,slow=24,SNR=5.6						
RAR	**Rarotonga**	**14.79**	**102**	P	**Pn**	**21 49 40.4**	**-1.2**
	13nm,0.3s,baz=255,slow=7.0,SNR=69						
RAR	**Rarotonga**	**14.79**	**102**	P	**Pn**	**21 49 39.9**	**-1.6**
RAR				S	**S**	**21 52 27.0**	**+1.6**
DZM	**Mont Dzumac**	**17.46**	**256**	P	**P**	**21 50 12.6**	**+1.0**
	6.7nm,0.3s,baz=86,slow=14,SNR=150						
DZM				ScP	**ScP**	**21 58 01.0**	**+4.7**
	0.1nm,0.3s,baz=48,slow=15,SNR=6.5						
NFK	**Norfolk Island**	**18.47**	**233**	P	**P**	**21 50 23.8**	**+1.4**
	baz=18						
OUZ	**Omahuta**	**19.20**	**209**	*e*P	**P**	**21 50 30.7**	**+0.5**
	222nm,0.9s						
WCZ	**Waipu Caves**	**19.48**	**206**	PN	**P**	**21 50 34.7**	**+1.5**
MXZ	**Matakaoa Point**	**19.63**	**195**	PN	**P**	**21 50 33.4**	**-1.3**
MXZ				*e*SN	**S**	**21 53 56.3**	**-8.2**
MXZ	**Matakaoa Point**	**19.63**	**195**	*e*P	**P**	**21 50 35.2**	**+0.5**
	185nm,0.4s						
WMGZ	**Waiomatatini S**	**19.84**	**195**	*e*PN	**P**	**21 50 36.4**	**-0.6**
HAZ	**Te Kaha**	**19.95**	**196**	PN	**P**	**21 50 37.2**	**-0.9**
HAZ				SN	**S**	**21 54 05.5**	**-5.2**
PKGZ	**Pakihiroa**	**19.99**	**196**	PN	**P**	**21 50 37.0**	**-1.7**
PKGZ				SN	**S**	**21 54 07.2**	**-4.6**
PUZ	**Puketiti**	**20.12**	**195**	*e*PN	**P**	**21 50 37.0**	**-3.0**
PUZ				SN	**S**	**21 54 06.8**	**-7.4**
MKAZ	**Moumakai**	**20.18**	**203**	PN	**P**	**21 50 41.8**	**+1.1**
TWGZ	**Tauwhareparae**	**20.29**	**195**	*e*PN	**P**	**21 50 41.2**	**-0.7**
CNGZ	**Carnagh Statio**	**20.53**	**195**	PN	**P**	**21 50 45.8**	**+1.4**
CNGZ				SN	**S**	**21 54 17.6**	**-4.1**
MWZ	**Matawai**	**20.56**	**196**	PN	**P**	**21 50 45.5**	**+0.8**
TKGZ	**Te Karaka**	**20.57**	**196**	*e*PN	**P**	**21 50 43.4**	**-1.4**
URZ	**Urewera**	**20.60**	**197**	P	**P**	**21 50 43.3**	**-1.8**
	248nm,0.4s,baz=306,slow=3.1,SNR=176						
URZ				S	**S**	**21 54 20.6**	**-2.5**
	80nm,0.5s,baz=303,slow=18,SNR=4.4						
URZ	**Urewera**	**20.60**	**197**	PN	**P**	**21 50 42.9**	**-2.2**
URZ				SN	**S**	**21 54 16.4**	**-6.7**
URZ	**Urewera**	**20.60**	**197**	*e*P	**P**	**21 50 44.8**	**-0.3**
	312nm,0.5s						
URZ				S	**S**	**21 54 20.6**	**-2.5**
TOZ	**Tahuroa Road**	**20.62**	**201**	PN	**P**	**21 50 46.9**	**+1.6**
RAGZ	**Rawiri**	**20.74**	**196**	PN	**P**	**21 50 45.2**	**-1.5**
RIGZ	**Rimuhau**	**20.85**	**195**	PN	**P**	**21 50 48.6**	**+0.8**
PRGZ	**Paritu Road**	**21.02**	**195**	PN	**P**	**21 50 50.6**	**+1.0**

RAHZ **Arahi** 21.22 197 *e*PN P 21 50 49.9 -1.7
MHGZ **Mahia Peninsul** 21.23 195 *e*PN P 21 50 53.0 +1.3
WHHZ **Waihua** 21.33 196 PN P 21 50 53.2 +0.5
NMHZ **Naumai** 21.47 197 *e*PN P 21 50 52.9 -1.3
HIZ **Hauiti** 21.54 201 PN P 21 50 56.6 +1.7
HIZ **Hauiti** 21.54 201 *e*P P 21 50 55.8 +0.9
589nm,1.2s
ARHZ **Aropaoanui** 21.57 196 *e*PN P 21 50 54.1 -1.1
BKZ **Black Stump Fm** 21.62 198 PN P 21 50 53.5 -2.3
BKZ **Black Stump Fm** 21.62 198 *e*P P 21 50 53.8 -1.9
75nm,0.5s
MCHZ **McNeill Hill** 21.82 197 PN P 21 50 56.3 -1.4
KWHZ **Kaweka Forest** 21.88 197 PN P 21 50 57.1 -1.2
WNVZ **Wahianoa** 22.04 199 PN P 21 50 57.8 -2.1
BHHZ **Black Hill Sta** 22.04 198 PN P 21 50 57.1 -2.7
KRHZ **Kereru** 22.10 197 *e*PN P 21 50 57.5 -2.9
KAHZ **Kahuranaki** 22.10 196 *e*PN P 21 50 59.8 -0.6
PXZ **Pawanui** 22.33 196 *e*SN S 21 54 50.9 -0.7
ANWZ **Angora Road** 22.83 196 PN P 21 51 07.5 +0.6
BFZ **Birch Farm** 23.10 197 PN P 21 51 09.2 -0.2
BFZ *e*SN S 21 55 05.0 +0.8
BFZ **Birch Farm** 23.10 197 *e*P P 21 51 09.1 -0.2
220nm,0.8s
BFZ *e*S S 21 55 08.2 +3.9
MRZ **Mangatainoka R** 23.27 198 PN P 21 51 09.0 -1.8
TIWZ **Tintock** 23.29 197 PN P 21 51 10.4 -0.6
OGWZ **Otaki Gorge** 23.53 198 PN P 21 51 11.8 -1.5
KIW **Kapiti Island** 23.65 199 *e*PN P 21 51 13.6 -0.8
CAW **Cannon Point** 23.83 198 *e*PN P 21 51 14.6 -1.4
DUWZ **D'Urville Isla** 23.91 201 *e*PN P 21 51 14.1 -2.7
SNZO **South Karori** 24.12 199 *e*P P 21 51 18.0 -0.6
213nm,0.6s
TCW **Tory Channel** 24.17 200 PN P 21 51 18.0 -1.0
PLWZ **Palliser** 24.20 198 PN P 21 51 18.6 -0.8
QRZ **Quartz Range** 24.42 203 PN P 21 51 24.3 +2.9
PAE **Paea** 24.43 92 ⇓*i*P P 21 51 21.3 -0.4
83nm,1.0s
PAE **Paea** 24.43 92 *e*T T 22 15 48.7
21nm,0.3s
PPT2 **Papeete2** 24.44 92 ⇑*i*P P 21 51 21.8 -0.1
500nm,1.1s
PPT2 *e*S S 21 55 21.2 -5.1
497nm,24.5s
PPT2 *e*LR LR 21 57 31.9
17µm,63.0s
PPT2 **Papeete2** 24.44 92 *e*T T 22 15 50.5
21nm,0.3s
PPT **Papeete** 24.45 91 P P 21 51 21.8 0.0
492nm,0.9s,baz=246,slow=2.8,SNR=31
PPT **Papeete** 24.45 91 *e*P P 21 51 21.3 -0.6
NNZ **Nelson** 24.47 201 PN P 21 51 20.0 -1.7
TUWZ **Tuamarina** 24.47 200 PN P 21 51 20.5 -1.3
TBI **Tubuai** 24.53 105 *e*P P 21 51 23.0 +0.5
2µm,1.2s
TBI *e*S S 21 55 24.4 -2.9
995nm,31.2s
TBI *e*LR LR 21 57 40.5
6µm,82.0s
TBI **Tubuai** 24.53 105 *e*T T 22 15 58.5
45nm,0.3s
TIAR **Tiarei** 24.67 92 *e*P P 21 51 23.7 -0.2
98nm,0.9s
TVO **Taravao** 24.73 92 ⇓*i*P P 21 51 24.2 -0.3
102nm,0.9s
TVO **Taravao** 24.73 92 *e*T T 22 16 11.2
5.1nm,0.3s
CTZ **Chatham Island** 25.00 182 *e*PN P 21 51 28.6 +2.1
THZ **Tophouse** 25.11 201 PN P 21 51 27.3 -0.4
THZ **Tophouse** 25.11 201 *e*P P 21 51 28.0 +0.3
213nm,0.8s
THZ *e*S S 21 55 36.3 -0.1
DSZ **Denniston Nort** 25.49 203 PN P 21 51 31.1 +0.1
KHZ **Kahutara** 25.49 199 *e*P P 21 51 31.1 +0.1
153nm,0.8s
KHZ *e*S S 21 55 46.0 +3.9
HNR **Honiara** 25.70 288 P P 21 51 31.1 -2.1
584nm,0.9s,baz=196,slow=4.1,SNR=41
HNR **Honiara** 25.70 288 *e*P P 21 51 33.0 -0.2
HNR **Honiara** 25.70 288 *e*P P 21 51 33.8 +0.6
HNR pmax pmax
comp=Z,870nm,1.0s
HNR **Honiara** 25.70 288 *e*P P 21 51 33.8 +0.6
comp=Z,867nm,1.0s
MEH **Mehetia** 25.84 93 *e*P P 21 51 33.9 -0.6
comp=Z,54nm,1.2s
MEH **Mehetia** 25.84 93 *e*T T 22 17 35.0
comp=Z,53nm,0.2s
LTZ **Lake Taylor** 26.23 201 PN P 21 51 36.4 -1.4
LTZ **Lake Taylor** 26.23 201 *e*P P 21 51 36.3 -1.4
comp=Z,238nm,0.7s
LHI **Lord Howe Isla** 26.44 236 P P 21 51 40.7 +1.0
baz=26,SNR=3.6
LHI **Lord Howe Isla** 26.44 236 *e*P P 21 51 40.2 +0.6
comp=Z,380nm,0.9s
PMOR **Pomariorio Ree** 26.45 86 *e*P P 21 51 39.5 -0.4
comp=Z,422nm,1.3s
INZ **Inchbonnie** 26.47 202 PN P 21 51 38.7 -1.1
VAH **Vaihoa** 26.66 87 *e*P P 21 51 40.9 -0.8
comp=Z,136nm,1.1s
OXZ **Oxford** 26.80 201 PN P 21 51 41.3 -1.4
OXZ **Oxford** 26.80 201 *e*P P 21 51 41.6 -1.1
comp=Z,300nm,0.7s
CRLZ **Canterbury Las** 26.83 200 *e*P P 21 51 43.3 +0.4
comp=Z,71nm,0.8s
MQZ **McQueen's Vall** 26.93 200 *e*P P 21 51 43.7 -0.2
comp=Z,133nm,1.2s
WVZ **Waitaha Valley** 27.04 203 *e*PN P 21 51 43.4 -1.4
XMAS **Kiritimati** 27.06 42 *e*P P 21 51 44.0 -1.4
comp=Z,169nm,1.0s
RPZ **Rata Peaks** 27.48 202 P P 21 51 47.3 -1.5
comp=Z,125nm,0.5s,baz=6.5,slow=4.1,SNR=24
RPZ **Rata Peaks** 27.48 202 *e*P P 21 51 48.1 -0.6
comp=Z,173nm,0.6s
FOZ **Fox Glacier** 27.77 204 *e*P P 21 51 50.7 -0.7
comp=Z,149nm,0.9s
LBZ **Lake Benmore** 28.37 202 *e*P P 21 51 55.2 -1.4
comp=Z,269nm,1.9s
ODZ **Otahua Downs** 28.78 201 *e*P P 21 51 59.5 -0.7
comp=Z,79nm,0.9s
WKZ **Wanaka** 29.18 203 *e*P P 21 52 02.6 -1.2
comp=Z,175nm,1.3s
MLZ **Mavora Lakes** 29.97 204 PN P 21 52 10.5 -0.3
MLZ **Mavora Lakes** 29.97 204 *e*P P 21 52 10.8 0.0
comp=Z,285nm,1.2s
DCZ **Deep Cove** 30.43 205 *e*P P 21 52 15.2 +0.4
comp=Z,173nm,0.9s
WHZ **Wether Hill Ro** 30.48 203 *e*PN P 21 52 14.8 -0.4
WHZ **Wether Hill Ro** 30.48 203 *e*P P 21 52 15.3 +0.1
comp=Z,377nm,0.9s
PYZ **Puysegur Point** 31.20 205 *e*P P 21 52 21.9 +0.4
comp=Z,67nm,0.7s
EIDS **Eidsvold** 31.83 252 P P 21 52 26.9 -0.4
baz=32,SNR=102
EIDS **Eidsvold** 31.83 252 *e*P P 21 52 26.9 -0.4
comp=Z,476nm,0.9s
EIDS *e*ScP ScP 21 58 41.9 +5.7
KWAJ **Kwajalein Atol** 32.11 327 *e*P P 21 52 29.0 -0.8
KWAJ pmax pmax
comp=Z,500nm,1.5s
KWAJ **Kwajalein Atol** 32.11 327 *e*P P 21 52 29.0 -0.8
comp=Z,505nm,1.5s
ARMA **Armidale** 32.17 242 P P 21 52 30.6 +0.3
baz=32,SNR=204
ARMA **Armidale** 32.17 242 *e*P P 21 52 30.7 +0.3
comp=Z,124nm,0.6s
MGCD **Mangrove Creek** 33.34 238 P P 21 52 41.0 +0.7
baz=33,SNR=24
RIV **Riverview** 33.49 237 P P 21 52 42.2 +0.6
baz=34
RMQ **Roma** 34.01 250 P P 21 52 46.6 +0.3
baz=34,SNR=70
RABL **Rabaul** 34.92 290 *e*P P 21 52 52.8 -1.4
comp=Z,334nm,1.3s
RABL *e*PcP PcP 21 55 23.0 +1.1
CNB **Canberra Magne** 35.36 235 P P 21 52 57.8 +0.1
baz=35,SNR=38
TAOE **Nuku Hiva Isla** 35.43 79 *e*P P 21 52 57.9 -0.7
comp=Z,266nm,1.2s
TAOE *e*LR LR 22 01 51.6
comp=Z,1µm,35.4s
TAOE **Nuku Hiva Isla** 35.43 79 *e*P P 21 52 56.9 -1.7
comp=Z,115nm,1.0s
CAN **Canberra** 35.65 235 P P 21 53 00.2 0.0
baz=36
CAN **Canberra** 35.65 235 *e*P P 21 52 59.9 -0.3
CAN pmax pmax
comp=Z,510nm,1.3s
CAN **Canberra** 35.65 235 *e*P P 21 52 59.9 -0.3
comp=Z,514nm,1.3s
JOHN **Johnston Islan** 35.65 9 *e*P P 21 52 58.6 -1.5
comp=Z,285nm,1.7s
YNG **Young** 35.82 237 P P 21 53 01.4 -0.3
baz=36,SNR=8.6
MILA **Mila** 36.10 232 P P 21 53 03.5 -0.5
baz=36,SNR=5.3
CTA **Charters Tower** 36.26 261 P P 21 53 05.0 -0.6
comp=Z,578nm,0.8s
CTA PcP PcP 21 55 27.2 +1.3
comp=Z,51nm,1.0s,baz=59,slow=6.2,SNR=3.4
CTA S S 21 58 30.9 +0.7
comp=Z,23nm,1.1s,baz=296,slow=16,SNR=4.1
CTA ScP ScP 21 58 56.6 +4.6
comp=Z,14nm,1.0s,baz=60,slow=2.5,SNR=7.0
CTAO **Charters Tower** 36.26 261 *e*P P 21 53 05.1 -0.4
CTAO *e*S S 21 58 31.8 +1.6
CTAO pmax pmax
comp=Z,610nm,0.7s
CTAO **Charters Tower** 36.26 261 *e*P P 21 53 05.1 -0.4
comp=Z,613nm,0.7s
CTAO *e*S S 21 58 31.8 +1.6
PATS **Pohnpei** 36.35 312 P P 21 53 05.2 -1.1
baz=36,SNR=3.0
PATS **Pohnpei** 36.35 312 *e*P P 21 53 05.4 -0.9
comp=Z,178nm,1.1s
PATS *e*PcP PcP 21 55 28.4 +2.3
CMSA **Cobar Meteorol** 37.39 242 P P 21 53 14.4 -0.5
baz=37,SNR=61
PMG **Port Moresby** 37.52 279 PcP PcP 21 55 30.9 +1.2
comp=Z,43nm,1.0s,baz=21,slow=5.2,SNR=2.9
PMG **Port Moresby** 37.52 279 *ce*P P 21 53 16.0 -0.2
PMG pmax pmax
comp=Z,3µm,1.1s
PMG **Port Moresby** 37.52 279 *e*P P 21 53 15.9 -0.2
comp=Z,619nm,1.0s
PMG PcP PcP 21 55 30.9 +1.2
RKT **Rikitea** 37.83 104 *e*P P 21 53 19.2 +0.6
comp=Z,317nm,1.0s
RKT *e*S S 21 58 53.1 -0.6
comp=Z,835nm,28.5s
RKT *e*LR LR 22 03 46.6
comp=Z,4µm,88.5s
RKT **Rikitea** 37.83 104 *e*T T 22 32 54.1
comp=Z,12nm,0.3s
QLP **Quilpie** 38.06 251 P P 21 53 20.1 -0.4
baz=38,SNR=254
MTSU **Mount Surprise** 38.28 264 P P 21 53 21.7 -0.8
baz=38,SNR=230
TOO **Toolangi** 39.03 233 P P 21 53 28.0 -0.6
baz=39,SNR=38
MOO **Moorlands** 39.59 225 P P 21 53 33.5 +0.4
baz=40,SNR=5.1
TAU **Tasmania Unive** 39.71 224 *e*P P 21 53 33.4 -0.6
TAU pmax pmax
comp=Z,67nm,0.9s
TAU **Tasmania Unive** 39.71 224 *e*P P 21 53 33.4 -0.6
comp=Z,67nm,0.8s
COEN **Coen** 40.09 270 P P 21 53 37.0 -0.5
baz=40,SNR=122
COEN **Coen** 40.09 270 *e*P P 21 53 37.0 -0.5
comp=Z,146nm,0.8s
MANU **Manus Island** 40.16 290 *e*P P 21 53 38.4 +0.4
comp=Z,307nm,0.8s
MCQ **Macquarie Isla** 40.83 203 *e*P P 21 53 42.9 0.0
MCQ pmax pmax
comp=Z,940nm,1.7s
MCQ **Macquarie Isla** 40.83 203 *e*P P 21 53 42.9 0.0
comp=Z,940nm,1.7s
STKA **Stephens Creek** 40.89 243 P P 21 53 43.6 -0.2
comp=Z,144nm,1.0s,baz=86,slow=9.2,SNR=143
STKA PcP PcP 21 55 41.6 +1.4
comp=Z,15nm,0.6s,baz=120,slow=6.5,SNR=3.2
STKA **Stephens Creek** 40.89 243 P P 21 53 43.7 -0.2
baz=41,SNR=84
STKA **Stephens Creek** 40.89 243 *e*P P 21 53 43.6 -0.2
STKA pmax pmax
comp=Z,49nm,1.0s
STKA **Stephens Creek** 40.89 243 *e*P P 21 53 43.6 -0.2
comp=Z,49nm,1.0s
STKA PcP PcP 21 55 41.6 +1.4
ARPS **Mount Arapiles** 41.62 235 P P 21 53 48.3 -1.4
baz=42,SNR=21
QIS **Mount Isa** 42.44 260 P P 21 53 55.4 -1.2
baz=42,SNR=46
UWE **Uwekahuna** 42.65 28 *e*P P 21 53 57.2 -1.0
comp=Z,558nm,1.9s
POHA **Pohakuloa** 42.84 28 *e*P P 21 53 58.9 -1.0
comp=Z,179nm,1.1s
HPAH **Hawaii Prepara** 43.00 28 *e*P P 21 54 00.1 -1.0
comp=Z,191nm,1.0s
KEKH **Kekaha** 43.19 21 *e*P P 21 54 01.6 -0.8
comp=Z,183nm,1.0s
KEKH *ep*P pP 21 54 49.9 +2.1
HON **Honolulu** 43.21 24 *e*P P 21 54 01.0 -1.6
HON pmax pmax
comp=Z,420nm,1.1s
HON **Honolulu** 43.21 24 *e*P P 21 54 01.0 -1.6
comp=Z,417nm,1.1s
KIP **Kipapa** 43.30 24 *ce*P P 21 54 03.7 +0.4
KIP pmax pmax
comp=Z,3µm,2.5s
KIP **Kipapa** 43.30 24 *e*P P 21 54 02.8 -0.5
comp=Z,287nm,1.2s
KIP *ep*P pP 21 54 50.7 +1.9
HTT **Hallett** 43.34 241 P P 21 54 03.1 -0.5
baz=43,SNR=103
HLK **Haleakala** 43.41 26 *e*P P 21 54 03.5 -1.0
comp=Z,138nm,1.0s
OPA **Opana** 43.54 24 *e*P P 21 54 04.0 -1.2
OPA pmax pmax
comp=Z,440nm,1.9s
OPA **Opana** 43.54 24 *e*P P 21 54 04.0 -1.2
comp=Z,438nm,1.9s
BBOO **Buckleboo** 45.65 242 P P 21 54 21.1 -0.8
baz=46,SNR=136
BBOO **Buckleboo** 45.65 242 *e*P P 21 54 21.0 -0.8
comp=Z,304nm,0.8s
JAY **Jayapura** 45.98 285 *e*P P 21 54 24.4 -0.3
comp=Z,399nm,1.2s,comp=Z,3µm
GENI **Genyem** 46.44 285 P P 21 54 28.4 +0.1
comp=Z,874nm,1.0s,comp=Z,10µm
MIDW **Midway** 46.67 357 *e*P P 21 54 28.8 -0.9
comp=Z,80nm,0.8s
WR9 **Warramunga Arr** 47.25 260 P P 21 54 33.3 -1.3
baz=47
AS01 **Alice Springs** 47.41 255 *e*P P 21 54 33.2 -2.5
WB2 **Warramunga Arr** 47.41 260 *e*P P 21 54 34.4 -1.3
comp=Z,517nm,0.8s
WRAB **Tennant Creek** 47.41 260 *e*P P 21 54 34.4 -1.3
WRAB pmax pmax
comp=Z,2µm,1.5s
WRAB **Tennant Creek** 47.41 260 *e*P P 21 54 34.4 -1.3
comp=Z,2µm,1.5s
WRA **Warramunga Arr** 47.42 260 P P 21 54 34.5 -1.3
comp=Z,282nm,0.7s,baz=95,slow=7.6,SNR=1336
WRA PcP PcP 21 56 03.6 +0.7
comp=Z,145nm,0.8s,baz=92,slow=3.8,SNR=15
WRA ScP ScP 21 59 40.7 +4.1
comp=Z,23nm,1.2s,baz=92,slow=4.2,SNR=6.2
WRA S S 22 01 10.5 -3.4
comp=Z,31nm,1.2s,baz=98,slow=14,SNR=7.8
WRA ScS ScS 22 04 10.5 +3.1
comp=Z,6.5nm,1.3s,baz=94,slow=9.0,SNR=5.1
AS31 **Alice Springs** 47.45 255 *e*P P 21 54 35.5 -0.5
comp=Z,377nm,0.8s
ASAR **Alice Springs** 47.45 255 P P 21 54 35.5 -0.5
comp=Z,1µm,0.8s,baz=87,slow=8.5,SNR=4678
ASAR PcP PcP 21 56 03.5 +0.6
comp=Z,148nm,0.8s,baz=109,slow=3.4,SNR=18
ASAR S S 22 01 11.2 -3.1
comp=Z,53nm,1.1s,baz=92,slow=14,SNR=28
ASAR ScS ScS 22 04 10.4 +2.8
comp=Z,3.2nm,1.0s,baz=91,slow=7.9,SNR=4.5
KDU **Kakadu** 50.52 269 P P 21 54 58.5 -0.8
baz=50,SNR=52
GUMO **Guam** 50.71 306 *e*P P 21 55 01.0 +0.3
GUMO pmax pmax
comp=Z,740nm,1.0s
GUMO **Guam** 50.71 306 *e*P P 21 55 01.0 +0.3
comp=Z,744nm,0.9s
MTN **Manton Dam** 51.75 268 P P 21 55 07.3 -1.1
baz=52,SNR=178
MTN **Manton Dam** 51.75 268 *e*P P 21 55 07.4 -1.1
comp=Z,593nm,0.8s
KMPI **Kaimana, Papua** 52.02 280 P P 21 55 10.7 +0.2
comp=Z,659nm,1.1s,comp=Z,6µm
RKPI **Ransiki, Papua** 52.37 283 P P 21 55 13.4 +0.3
comp=Z,484nm,0.9s,comp=Z,4µm
WRKA **Warakurna** 52.44 252 P P 21 55 12.9 -0.6
baz=52,SNR=743
SAUI **Saumlaki** 52.88 274 P P 21 55 17.0 +0.2
comp=Z,809nm,1.1s,comp=Z,9µm
KNRA **Kununurra** 53.37 264 P P 21 55 19.8 -0.5
baz=53
FAKI **Fak Fak** 53.65 280 P P 21 55 21.5 -0.9
comp=Z,216nm,1.4s,comp=Z,4µm
BNDI **Bandanaira** 55.29 278 P P 21 55 33.7 -0.5
comp=Z,719nm,1.4s,comp=Z,9µm
SWI **Sorong** 55.32 282 P P 21 55 33.9 -0.5
comp=Z,3µm,0.8s,comp=Z,18µm
FITZ **Fitzroy Crossi** 55.83 260 P P 21 55 38.0 0.0
comp=Z,192nm,1.0s,baz=125,slow=4.0,SNR=142
FITZ PcP PcP 21 56 35.3 +1.0
comp=Z,74nm,0.8s,baz=116,slow=3.2,SNR=4.1
FITZ **Fitzroy Crossi** 55.83 260 P P 21 55 37.7 -0.3
baz=56,SNR=74
FITZ **Fitzroy Crossi** 55.83 260 *e*P P 21 55 37.8 -0.3
comp=Z,669nm,1.4s
FITZ PcP PcP 21 56 35.3 +1.0
PALU **Palau** 55.89 293 P P 21 55 38.6 +0.2
baz=56,SNR=8.9
MSAI **Masohi** 56.60 279 P P 21 55 42.8 -0.7
comp=Z,99nm,0.7s,comp=Z,1µm
KMBL **Kambalda** 57.65 244 P P 21 55 49.5 -1.2
baz=58,SNR=19
NLAI **Namlea** 58.35 278 P P 21 55 55.4 -0.3
comp=Z,559nm,1.3s,comp=Z,6µm
LBMI **Labuha** 58.89 281 P P 21 55 59.6 +0.2
comp=Z,795nm,1.3s,comp=Z,7µm
SOEI **Soe** 59.04 270 P P 21 56 00.7 +0.1
comp=Z,2µm,1.0s,comp=Z,18µm
TNTI **Ternate** 59.53 282 P P 21 56 04.0 +0.2
comp=Z,2µm,0.9s,comp=Z,14µm
SANI **Sanana** 59.80 279 P P 21 56 05.9 +0.2
comp=Z,905nm,1.1s,comp=Z,7µm
SBA **Scott Base** 59.85 184 *e*P P 21 56 06.9 +1.9
SBA pmax pmax
comp=Z,52nm,0.8s
SBA **Scott Base** 59.85 184 *e*P P 21 56 06.9 +1.9
comp=Z,52nm,0.8s
VNDA **Vanda** 59.94 186 P P 21 56 08.0 +2.4
comp=Z,34nm,0.8s,baz=359,slow=7.4,SNR=120
VNDA PKP2bc 22 25 38.3
comp=Z,11nm,1.3s,baz=283,slow=3.8,SNR=9.4
VNDA **Vanda** 59.94 186 *e*P P 21 56 07.7 +2.1
VNDA pmax pmax
comp=Z,43nm,0.9s
VNDA **Vanda** 59.94 186 *e*P P 21 56 07.7 +2.1
comp=Z,43nm,0.9s
VNDA ⇑*e* 22 25 38.3
MBWA **Marble Bar** 60.77 256 *e*P P 21 56 11.1 -1.0
comp=Z,399nm,1.0s
MBWA **Marble Bar** 60.77 256 P P 21 56 11.5 -0.7
SNR=28
MBWA **Marble Bar** 60.77 256 P P 21 56 11.5 -0.7
SNR=28
KLBR **Kellerberrin** 61.15 244 P P 21 56 13.7 -0.8
baz=61,SNR=55
MMRI **Maumere** 61.28 270 P P 21 56 14.9 -0.8
comp=Z,884nm,1.0s,comp=Z,8µm
CBIJ **Chichi jima** 61.42 317 *e*P P 21 56 16.1 -0.2
comp=Z,184nm,0.9s
NWAO **Narrogin (SRO)** 61.48 242 P P 21 56 16.2 -0.5
comp=Z,130nm,0.9s,baz=97,slow=0.0,SNR=30
NWAO PcP PcP 21 56 58.3 +1.7
comp=Z,44nm,1.1s,baz=285,slow=0.0,SNR=3.1
NWAO **Narrogin (SRO)** 61.48 242 P P 21 56 16.4 -0.3
baz=62,SNR=27
NWAO **Narrogin (SRO)** 61.48 242 *e*P P 21 56 15.4 -1.3
comp=Z,306nm,1.2s
NWAO PcP PcP 21 56 58.3 +1.7
NWAO **Narrogin (SRO)** 61.48 242 P P 21 56 16.4 -0.3
SNR=11
NWAO **Narrogin (SRO)** 61.48 242 P P 21 56 16.4 -0.3
SNR=11
RKGY **Rocky Gully** 61.56 240 P P 21 56 17.3 +0.1
baz=62,SNR=8.2
BLDU **Ballidu** 62.14 245 P P 21 56 20.2 -1.0
baz=62,SNR=46
BASI **Baing, Sumba** 62.41 268 P P 21 56 23.5 +0.3
comp=Z,1µm,1.1s,comp=Z,11µm
MUN **Mundaring** 62.42 243 P P 21 56 22.5 -0.6
baz=62
MORW **Morawa** 62.90 246 P P 21 56 25.2 -1.0
baz=63,SNR=37
LUWI **Luwuk** 63.16 279 P P 21 56 28.4 +0.2
comp=Z,1µm,1.3s,comp=Z,13µm
BSSI **Bau Bau, Buton** 63.66 272 P P 21 56 31.0 -0.5
comp=Z,392nm,1.3s,comp=Z,4µm
DAV **Davao City (W)** 63.67 288 P P 21 56 31.3 -0.1
SNR=7.4
DAV **Davao City (W)** 63.67 288 P P 21 56 31.3 -0.1
SNR=7.4
APSI **Ampana** 64.26 278 P P 21 56 35.6 +0.3
comp=Z,1µm,1.1s,comp=Z,13µm
MRSI **Marisa** 64.47 280 P P 21 56 35.7 -1.0
comp=Z,368nm,1.0s,comp=Z,3µm
KAPI **Kappang** 64.71 273 P P 21 56 37.8 -0.5
comp=Z,110nm,0.9s,baz=152,slow=2.5,SNR=55
KAPI **Kappang** 64.71 273 *e*P P 21 56 37.9 -0.3
comp=Z,519nm,1.5s
KAPI **Kappang** 64.71 273 P P 21 56 38.2 -0.1
SNR=15
KAPI **Kappang** 64.71 273 P P 21 56 38.2 -0.1
SNR=15
SPSI **Sidrap Palu** 65.02 274 P P 21 56 38.9 -1.4
comp=Z,304nm,0.9s,comp=Z,3µm
TTSI **Tana Toraja** 65.27 275 P P 21 56 41.5 -0.4
comp=Z,137nm,1.5s,comp=Z,2µm
PLAI **Plampang** 65.45 269 P P 21 56 42.1 -0.9
comp=Z,1µm,1.0s,comp=Z,11µm
GIRL **Giralia** 65.52 253 P P 21 56 43.6 +0.3
baz=66,SNR=104
TWSI **Taliwang, Sumb** 66.33 268 P P 21 56 47.6 -1.0
comp=Z,977nm,1.1s,comp=Z,9µm
CASY **Casey** 66.69 205 *e*P P 21 56 51.0 +1.1
comp=Z,102nm,0.9s
JHJ2 **Mitsune** 67.02 320 *e*P P 21 56 52.7 +0.2
comp=Z,1µm,0.9s
JHJ **Hachijo jima 2** 67.05 320 P P 21 56 52.9 +0.2
comp=Z,1µm,0.8s,baz=181,slow=6.9,SNR=12
DNP **Denpasar** 67.93 268 P P 21 56 58.6 -0.1
comp=Z,1µm,0.9s,comp=Z,25µm
BKB **Balikpapan** 68.61 276 P P 21 57 03.6 +0.7
comp=Z,406nm,1.2s,comp=Z,5µm
JAGI **Jajag, Banyuwa** 68.99 268 P P 21 57 03.4 -1.9
comp=Z,997nm,1.0s,comp=Z,8µm
ABJI **Asem Bagus** 69.11 269 P P 21 57 05.7 -0.2
comp=Z,666nm,1.2s,comp=Z,6µm
MYLDM **Lahad Datu** 69.38 283 *e*P P 21 57 09.0 +1.4
comp=Z,727nm,1.3s
GMJI **Gumukmas** 69.72 268 P P 21 57 08.5 -1.2
comp=Z,443nm,1.1s,comp=Z,4µm
INU **Inuyama** 70.24 320 *e*P P 21 57 12.0 -0.4
comp=Z,152nm,1.0s
LQP **Lukban** 70.26 293 *e*P P 21 57 12.7 -0.4
MJAR **Matsushiro Arr** 70.33 322 P P 21 57 12.6 -0.3
comp=Z,174nm,0.8s,baz=159,slow=6.0,SNR=213
MAJO **Matsushiro** 70.33 322 *e*P P 21 57 12.8 -0.2
MAJO pmax pmax
comp=Z,250nm,0.9s
MAJO **Matsushiro** 70.33 322 *e*P P 21 57 12.8 -0.2
comp=Z,254nm,0.8s
MAT **Matsushiro** 70.33 322 P P 21 57 12.3 -0.7
MAT S S 22 06 07.6 -0.2
MJB9 **Matsu-Tunnel** 70.34 322 *e*P P 21 57 12.9 -0.1
comp=Z,65nm,0.8s
ATKA **Atka Island** 70.59 1 *e*P P 21 57 13.8 -0.3
comp=Z,376nm,1.0s
MTKI **Muara Teweh, K** 70.61 276 P P 21 57 15.3 +0.2
comp=Z,334nm,0.9s,comp=Z,5µm
SDKM **Sandakan** 70.76 283 ⇑P P 21 57 16.1 0.0
TGY **Tagaytay City** 70.78 293 P P 21 57 17.1 +0.9
comp=Z,168nm,0.3s,baz=130,slow=0.8,SNR=3.2
JOW **Kunigami** 71.02 308 *e*P P 21 57 18.5 +1.2
comp=Z,252nm,1.1s
PWJI **Pagerwojo** 71.34 268 P P 21 57 18.8 -0.7
comp=Z,709nm,1.0s,comp=Z,5µm
QSPA **South Pole Qui** 71.37 180 *e*P P 21 57 19.9 +1.0
comp=Z,579nm,1.1s
ERM **Erimo** 71.57 329 *e*P P 21 57 20.5 +0.3
ERM pmax pmax

comp=Z,90nm,1.0s
ERM Erimo 71.57 329 *e*P **P**
comp=Z,90nm,1.0s
KDM Kudat 71.57 284 ⇓P **P** **21 57 21.4 +0.6**
NIKH Nikolski High 71.58 4 *e*P **P** **21 57 19.7 -0.3**
comp=Z,399nm,1.1s
SMY Shemya 71.71 353 *e*P **P** **21 57 20.6 -0.2**
SMY pmax pmax
comp=Z,380nm,1.0s
SMY Shemya 71.71 353 *e*P **P** **21 57 20.6 -0.2**
comp=Z,378nm,1.0s
KKM Kota Kinabalu 71.81 283 *e*P **P** **21 57 22.4 -0.1**
comp=Z,315nm,0.9s
NGJI Ngawi 71.86 268 P **P** **21 57 23.1 +0.5**
comp=Z,635nm,0.9s,comp=Z,5µm
PCJI Pacitan 71.89 267 P **P** **21 57 22.7 -0.1**
comp=Z,2µm,1.1s,comp=Z,22µm
KUR Kuril'sk 71.91 334 *e*P **P** **21 57 22.7 +0.6**
WOJI Wonogiri, Jawa 72.23 268 P **P** **21 57 25.1 +0.3**
comp=Z,1µm,1.1s,comp=Z,12µm
UGM Wanagama 72.59 267 P **P** **21 57 26.6 -0.4**
comp=Z,941nm,0.9s,comp=Z,7µm
UWJI Ujung Watu 72.63 269 P **P** **21 57 27.5 +0.3**
comp=Z,937nm,1.2s,comp=Z,8µm
UNV Unalaska Valle 72.63 5 *e*P **P** **21 57 25.1 -1.1**
comp=Z,183nm,1.0s
JNU Nakatsue 72.77 315 P **P** **21 57 27.7 +0.1**
comp=Z,227nm,0.8s,baz=90,slow=2.0,SNR=123
AKUT Akutan 72.98 6 *e*P **P** **21 57 27.4 -0.8**
comp=Z,142nm,0.9s
PBKI Pangkalan Bun 73.08 273 P **P** **21 57 31.1 +1.2**
comp=Z,2µm,1.1s,comp=Z,15µm
ASAJ Asahikawa 73.41 330 P **P** **21 57 32.4 +1.3**
comp=Z,147nm,0.9s,baz=205,slow=9.0,SNR=46
ASAJ Asahikawa 73.41 330 *e*P **P** **21 57 32.3 +1.3**
comp=Z,206nm,1.0s
SKR Severo-Kuril's 73.52 341 *e*P **P** **21 57 30.9 -0.6**
MIR Mirnyy 73.71 205 *i*P **P** **21 57 34.0 +1.5**
MIR pmax pmax
comp=Z,14nm,2.0s
YOJ Yonaguni jima 73.84 303 *e*P **P** **21 57 34.5 +0.5**
YOJ pmax pmax
comp=Z,1µm,0.9s
YOJ Yonaguni jima 73.84 303 *e*P **P** **21 57 34.5 +0.5**
comp=Z,1µm,0.9s
FALS False Pass 73.94 7 *e*P **P** **21 57 32.2 -1.6**
comp=Z,92nm,1.0s
SNCC San Nicolas Is 74.14 46 P **P** **21 57 35.9 +0.3**
baz=234
STKI Sintang 74.16 276 P **P** **21 57 36.6 +0.5**
comp=Z,517nm,1.1s,comp=Z,6µm
SBUM Sibu 74.26 278 *e*P **P** **21 57 36.9 +0.2**
comp=Z,235nm,0.9s
SCZ2 Santa Cruz Isl 74.50 45 P **P** **21 57 38.3 +0.6**
baz=234
TWG Pinlang 74.61 301 *e*P **P** **21 57 37.0 -1.4**
comp=Z,1µm,1.1s
SCI2 San Clemente I 74.66 47 P **P** **21 57 38.8 +0.3**
baz=235
YULB Yu-li 74.70 302 *e*P **P** **21 57 37.8 -1.2**
comp=Z,197nm,0.9s
SBC Santa Barbara 74.71 45 P **P** **21 57 39.4 +0.6**
baz=234
SDPT Sand Point 74.81 9 *e*P **P** **21 57 38.3 -0.5**
comp=Z,261nm,1.0s
NACB Ningaanchiao 74.83 302 *e*P **P** **21 57 39.5 -0.2**
comp=Z,1µm,1.1s
PET Petropavlovsk 74.90 344 *e*P **P** **21 57 38.8 -0.6**
PET *e*S **S** **22 06 58.1 -0.5**
PET pmax pmax
comp=Z,78nm,1.0s
PET pmax pmax
comp=Z,400nm,17.4s
PET Petropavlovsk 74.90 344 *e*P **P** **21 57 38.9 -0.5**
comp=Z,365nm,1.9s
PKM Mcpherson Peak 74.90 45 P **P** **21 57 41.0 +0.8**
baz=234,SNR=10
MCCM Marconi Confer 74.92 40 *e*P **P** **21 57 40.5 +0.6**
comp=Z,92nm,1.2s
BLG Laguna Peak, P 74.95 46 P **P** **21 57 40.4 +0.2**
baz=235
SAO San Andreas Ge 74.96 42 *e*P **P** **21 57 41.2 +1.0**
SAO *e**PP **pP** **21 58 31.1 +0.3**
SAO pmax pmax
comp=Z,96nm,1.1s
SAO San Andreas Ge 74.96 42 *e*P **P** **21 57 41.2 +1.0**
comp=Z,96nm,1.1s
SAO *ep*P **pP** **21 58 31.1 +0.3**
CIS Catalina Islan 74.99 46 P **P** **21 57 40.8 +0.4**
baz=235
SMMC Simmler 75.03 44 P **P** **21 57 41.5 +0.8**
baz=234,SNR=5.2
SSLB Suanglung 75.16 302 *e*P **P** **21 57 40.6 -1.1**
comp=Z,404nm,1.0s
TPUB Ta-pu 75.19 301 *e*P **P** **21 57 40.9 -0.9**
comp=Z,1µm,0.9s
PEA0 Petropavlovsk- 75.22 344 *e*P **P** **21 57 40.5 -0.8**
PEA0B Petropavlovsk- 75.22 344 *e*P **P** **21 57 41.2 -0.1**
comp=Z,350nm,1.2s
PETK Petropavlovsk- 75.22 344 P **P** **21 57 41.1 -0.2**
comp=Z,109nm,0.8s,baz=139,slow=9.1,SNR=111
YHNB Yeheng 75.25 303 *e*P **P** **21 57 42.0 -0.2**
comp=Z,787nm,1.1s
FMP Fort Macarthur 75.25 46 P **P** **21 57 42.6 +0.7**
baz=235
CISI Cisompet, Garu 75.26 267 P **P** **21 57 41.5 -1.0**
TATO Taipei 75.30 303 *e*P **P** **21 57 41.9 -0.5**
comp=Z,847nm,0.9s
TATO Taipei 75.30 303 P **P** **21 57 42.6 +0.2**
SNR=14
TATO Taipei 75.30 303 P **P** **21 57 42.6 +0.2**
SNR=14
HOPS Hopland Field 75.34 40 *e*P **P** **21 57 43.0 +0.7**
comp=Z,140nm,1.3s
OSI Osito Audit: C 75.47 45 P **P** **21 57 44.0 +0.7**
baz=235
YSS Yuzh-Sakhalins 75.47 332 ⇓*e*P **P** **21 57 43.3 +0.5**
YSS pmax pmax
comp=Z,330nm,0.9s
YSS Yuzh-Sakhalins 75.47 332 *e*P **P** **21 57 43.7 +0.9**
comp=Z,505nm,1.0s
DECC Green Verdugo 75.53 46 P **P** **21 57 43.8 +0.3**
baz=235
PASC Pasadena Art C 75.59 46 *e*P **P** **21 57 44.6 +0.8**
comp=Z,58nm,1.0s
109C Camp Elliot, M 75.61 48 P **P** **21 57 44.3 +0.4**
baz=236
ARVC Arvin 75.70 45 P **P** **21 57 45.1 +0.7**
baz=235,SNR=6.5
MWC Mount Wilson 75.70 46 *e*P **P** **21 57 45.3 +0.6**
MWC *e**PP **pP** **21 58 35.0 -0.4**
MWC pmax pmax
comp=Z,57nm,1.0s
MWC Mount Wilson 75.70 46 *e*P **P** **21 57 45.3 +0.6**
comp=Z,57nm,0.9s
MWC *ep*P **pP** **21 58 35.0 -0.4**
KSM Kuching 75.73 277 *e*P **P** **21 57 45.5 +0.4**
comp=Z,1µm,1.0s
KMRM Mail Ridge 75.74 38 *e*P **P** **21 57 46.0 +1.4**
comp=Z,257nm,0.9s
MURC Murrieta 75.94 47 P **P** **21 57 46.3 +0.5**
baz=236,SNR=9.3
BFSC Mount Baldy Ra 75.98 46 P **P** **21 57 46.3 +0.1**
baz=236,SNR=12
CHGN Chignik 76.04 10 *e*P **P** **21 57 44.9 -0.9**
MONP2 Monument Peak 76.09 48 P **P** **21 57 47.5 +0.6**
baz=237,SNR=17
RCTC Rector, Farmer 76.11 44 P **P** **21 57 47.0 +0.3**
baz=234
EDW2 Edwards Air Fo 76.12 45 P **P** **21 57 47.2 +0.3**
baz=235,SNR=54
KHMM Horse Mountain 76.15 38 *e*P **P** **21 57 48.6 +1.6**
comp=Z,118nm,1.2s
ISA Isabella, Lake 76.25 45 P **P** **21 57 48.3 +0.8**
baz=235,SNR=18
ISA Isabella, Lake 76.25 45 *e*P **P** **21 57 48.4 +0.8**
ISA pmax pmax
comp=Z,88nm,1.0s
ISA Isabella, Lake 76.25 45 *e*P **P** **21 57 48.4 +0.8**
comp=Z,88nm,1.0s
SLBS Sierra La Lagu 76.38 59 *e*P **P** **21 57 50.1 +1.5**
comp=Z,63nm,1.4s
SLBS *ep*P **pP** **21 58 41.4 +2.0**
CMB Columbia Colle 76.40 42 *e*P **P** **21 57 48.9 +0.5**
CMB pmax pmax
comp=Z,45nm,1.0s
CMB Columbia Colle 76.40 42 *e*P **P** **21 57 48.9 +0.5**
comp=Z,45nm,1.0s
XMIS Christmas Isla 76.45 263 *e*P **P** **21 57 49.3 +0.1**
comp=Z,528nm,1.1s
PFO Pinyon Flats O 76.46 47 P **P** **21 57 49.6 +0.7**
comp=Z,19nm,0.9s,baz=284,slow=3.9,SNR=17
PFO pP **pP** **21 58 39.2 -0.5**
comp=Z,19nm,0.9s,baz=239,slow=5.4,SNR=5.8
PFO Pinyon Flats O 76.46 47 P **P** **21 57 49.4 +0.4**
baz=236,SNR=10
BBRC Big Bear Solar 76.50 46 P **P** **21 57 49.6 +0.3**
baz=236
SWSC Sam W. Stewart 76.56 48 P **P** **21 57 49.8 +0.5**
baz=237,SNR=7.3
AFDM Forest Hills D 76.59 41 *e*P **P** **21 57 49.9 +0.5**
comp=Z,54nm,1.1s
ORV Oroville 76.64 40 *e*P **P** **21 57 50.0 +0.4**
ORV *e**PP **pP** **21 58 41.3 +0.8**
ORV Oroville 76.64 40 *e*P **P** **21 57 50.0 +0.4**
ORV *ep*P **pP** **21 58 41.3 +0.8**
WDC Whiskeytown Da 76.66 39 *e*P **P** **21 57 50.5 +0.8**
WDC *e**PP **pP** **21 58 41.8 +1.3**
WDC pmax pmax
comp=Z,95nm,1.2s
WDC Whiskeytown Da 76.66 39 *e*P **P** **21 57 50.5 +0.8**
comp=Z,95nm,1.3s
WDC *ep*P **pP** **21 58 41.8 +1.3**
LRMC Laurel Mtn Rad 76.67 45 P **P** **21 57 50.7 +0.6**
baz=235,SNR=25
RRX Edison Barstow 76.79 46 P **P** **21 57 51.2 +0.6**
baz=236
N02D Trinity Center 76.81 38 P **P** **21 57 51.7 +1.1**
baz=231,SNR=30
O03D Paynes Creek 76.92 39 P **P** **21 57 51.7 +0.4**
baz=231,SNR=32
M02C Callahan 76.99 38 P **P** **21 57 52.6 +0.9**
baz=230,SNR=18
BELC Belle Mtn. Jos 77.00 47 P **P** **21 57 52.7 +0.8**
baz=237,SNR=27
L02D Cave Junction, 77.05 37 P **P** **21 57 52.6 +0.7**
baz=230
MPMC Manual Prospec 77.13 45 P **P** **21 57 53.5 +0.8**
baz=235,SNR=98
MLAC Mammoth, Mammo 77.15 43 P **P** **21 57 53.6 +0.8**
baz=234,SNR=7.2
GSC Goldstone, Bar 77.16 46 P **P** **21 57 53.2 +0.4**
baz=236,SNR=34
GSC Goldstone, Bar 77.16 46 *e*P **P** **21 57 53.4 +0.7**
GSC pmax pmax
comp=Z,75nm,1.1s
GSC Goldstone, Bar 77.16 46 *e*P **P** **21 57 53.4 +0.7**
comp=Z,75nm,1.1s
DAC Darwin (Calif) 77.18 44 *e*P **P** **21 57 53.5 +0.5**
DAC pmax pmax
comp=Z,70nm,1.4s
DAC Darwin (Calif) 77.18 44 *e*P **P** **21 57 53.5 +0.5**
comp=Z,70nm,1.4s
BC3 Big Chuckawall 77.19 48 P **P** **21 57 53.5 +0.6**
baz=237,SNR=19
TIN Tinemaha, Big 77.21 44 P **P** **21 57 53.7 +0.7**
baz=235,SNR=5.3
HEC Hector,Ludlow 77.22 46 P **P** **21 57 53.5 +0.4**
baz=236,SNR=32
KSRS Korea Array 77.28 317 P **P** **21 57 54.5 +1.4**
comp=Z,162nm,0.9s,baz=136,slow=6.1,SNR=202
WAKR Walker 77.28 42 *e*P **P** **21 57 54.2 +0.7**
YBH Yreka Blue Hor 77.29 38 P **P** **21 57 54.4 +1.1**
comp=Z,41nm,0.8s,baz=190,slow=1.9,SNR=62
YBH pP **pP** **21 58 44.0 -0.2**
comp=Z,38nm,0.9s,baz=207,slow=0.6,SNR=6.3
YBH Yreka Blue Hor 77.29 38 *e*P **P** **21 57 54.3 +1.0**
comp=Z,184nm,1.5s
YBH pP **pP** **21 58 44.0 -0.2**
KS15 Wonju Array Si 77.30 317 *e*P **P** **21 57 54.6 +1.3**
KSAR Wonju Array Be 77.30 317 P **P** **21 57 54.6 +1.3**
KSAR Wonju Array Be 77.30 317 P **P** **21 57 54.5 +1.3**
GLA Glamis 77.31 48 P **P** **21 57 54.5 +1.0**
baz=238,SNR=14
GLA Glamis 77.31 48 *e*P **P** **21 57 54.9 +1.3**
GLA pmax pmax
comp=Z,57nm,1.1s
GLA Glamis 77.31 48 *e*P **P** **21 57 54.9 +1.3**
comp=Z,57nm,1.1s
KS01 Wonju Array Si 77.31 317 *e*P **P** **21 57 53.5 +0.1**
QZH Quanzhou 77.60 302 ⇓*i*P **P** **21 57 53.3 -2.0**
QZH sP **sP** **21 59 06.5 -2.3**
QZH S **S** **22 07 25.9 -3.4**
QZH sS **sS** **22 09 01.4 +3.2**
QZH pmax pmax
comp=Z,1µm,0.9s
QZH pmax pmax
comp=Z,4µm,3.1s
GMRC Granite Mounta 77.66 47 P **P** **21 57 56.3 +0.7**
baz=237,SNR=27
IRM Iron Mountain 77.67 47 P **P** **21 57 56.5 +0.9**
baz=237,SNR=45
HUMO Hull Mountain 77.70 37 *ep*P pP 21 58 48.2 +1.8
comp=Z,122nm,1.4s
GRAC Grapevine Rang 77.74 44 P **P** **21 57 57.1 +1.3**
baz=235,SNR=27
FURC Furnace Creek, 77.77 45 P **P** **21 57 56.7 +0.7**
baz=236,SNR=15
M04C Macdoel 77.82 38 P **P** **21 57 56.9 +0.6**
baz=231,SNR=18
OHAK Old Harbor 77.83 12 *e*P **P** **21 57 55.6 -0.1**
comp=Z,118nm,1.1s
TUQ Turquoise Moun 77.83 46 P **P** **21 57 57.2 +0.7**
baz=236,SNR=40
SHOC Shoshone, Teco 77.85 45 P **P** **21 57 57.1 +0.6**
baz=236,SNR=13
Y12C Blythe 77.89 48 P **P** **21 57 57.5 +0.8**
baz=238,SNR=18
Y12C Blythe 77.89 48 *e*P **P** **21 57 57.8 +1.1**
comp=Z,44nm,0.9s
Y12C *ep*P **pP** **21 58 47.8 +0.1**
NVAR Mina Array Bea 77.96 42 P **P** **21 57 58.0 +0.7**
comp=Z,51nm,0.8s,baz=226,slow=9.3,SNR=152
NVAR pP **pP** **21 58 47.1 -1.2**
comp=Z,23nm,0.9s,baz=225,slow=9.5,SNR=5.9
HSIG 78.11 54 *e*P **P** **21 57 58.4 +0.4**
comp=Z,44nm,1.0s
HSIG *ep*P **pP** **21 58 50.3 +1.2**
INCN Inchon 78.13 316 *e*P **P** **21 57 59.4 +1.4**
comp=Z,196nm,0.9s
INCN Inchon 78.13 316 P **P** **21 57 59.6 +1.6**
SNR=5.5
INCN Inchon 78.13 316 P **P** **21 57 59.6 +1.6**
SNR=5.5
214A Organ Pipe Nat 78.19 50 P **P** **21 57 59.4 +0.9**
baz=239,SNR=17
214A Organ Pipe Nat 78.19 50 *e*P **P** **21 57 58.5 +0.1**
comp=Z,232nm,1.3s
I03D Drain, OR 78.19 36 P **P** **21 57 58.6 +0.5**
baz=230
LDFC Landfair 78.20 47 *e*P **P** **21 57 59.7 +1.2**
comp=Z,164nm,1.0s
VLA Vladivostok 78.32 323 *di*P **P** **21 57 59.3 +0.5**
VLA pmax pmax
comp=Z,94nm,1.0s
NEE2 Needles Airpor 78.37 47 P **P** **21 58 00.0 +0.7**
baz=238
MSHR Mys Shultsa 78.40 323 *ce*P **P** **21 58 01.0 +1.8**
K04D Chiloquin, OR 78.40 37 P **P** **21 57 59.9 +0.4**
baz=231
TPNV Topopah Spring 78.45 45 P **P** **21 58 00.8 +0.9**
baz=236,SNR=68
TPNV Topopah Spring 78.45 45 *e*P **P** **21 58 00.8 +0.9**
TPNV pmax pmax
comp=Z,72nm,0.9s
TPNV Topopah Spring 78.45 45 *e*P **P** **21 58 00.8 +0.9**
comp=Z,72nm,0.8s
PDMCI Parker Dam,Lak 78.45 48 P **P** **21 58 00.7 +1.0**
baz=238,SNR=18
TYV Tymovskoe 78.49 334 *e*P **P** **21 58 00.5 +1.0**
TYV pmax pmax
comp=E,110nm,1.0s
TYV pmax pmax
comp=Z,158nm,1.0s
KDAK Kodiak Island 78.49 12 P P 21 58 14.5 +15
comp=Z,102nm,1.1s,baz=210,slow=3.0,SNR=53
KDAK Kodiak Island 78.49 12 *e*P **P** **21 57 59.6 +0.2**
KDAK pmax pmax
comp=Z,270nm,1.4s
KDAK Kodiak Island 78.49 12 *e*P **P** **21 57 59.6 +0.2**
comp=Z,273nm,1.4s
SSE Sheshan 78.54 308 ⇓P **P** **21 58 00.6 +0.3**
SSE sP **sP** **21 59 17.0 +3.1**
SSE S **S** **22 07 43.1 +4.1**
SSE pmax pmax
comp=Z,120nm,0.9s
SSE pmax pmax
comp=Z,330nm,5.1s
SSE LR LR
comp=Z,320nm,23.1s
SSE LR LR
comp=Z,110nm,23.1s
SSE LR LR
comp=Z,130nm,22.3s
I04A Tendick Farm, 78.77 36 P **P** **21 58 01.5 +0.1**
baz=230
MOD Modoc Plateau 78.80 39 *e*P **P** **21 58 02.3 +0.6**
comp=Z,99nm,1.1s
MOD *ep*P **pP** **21 58 53.9 +1.1**
USRK Ussuriysk Ar. 78.95 324 P **P** **21 58 02.6 +0.4**
comp=Z,66nm,1.0s,baz=106,slow=4.2,SNR=77
K05A Summer Lake 78.96 38 *e*P **P** **21 58 03.5 +0.9**
comp=Z,135nm,1.0s
J05D Fort Rock, OR 79.11 37 P **P** **21 58 04.4 +1.1**
baz=231
G03D McMinnville, O 79.21 35 P **P** **21 58 04.3 +0.6**
baz=230,SNR=6.9
H04A Detroit Lake 79.46 35 *e*P **P** **21 58 05.2 +0.2**
H04A *ep*P **pP** **21 58 57.0 +0.8**
F03A Seaside 79.53 34 *e*P **P** **21 58 06.6 +1.2**
comp=Z,130nm,1.0s
R11A Troy Canyon, C 79.67 44 P **P** **21 58 07.0 +0.5**
baz=236,SNR=22
I05D Terrebonne, OR 79.71 36 P **P** **21 58 06.9 +0.5**
baz=231
BMN Battle Mountai 79.80 41 *e*P **P** **21 58 07.8 +0.6**
BMN *e**PP **pP** **21 58 59.1 +0.8**
BMN pmax pmax
comp=Z,75nm,0.9s
BMN Battle Mountai 79.80 41 *e*P **P** **21 58 07.8 +0.6**
comp=Z,75nm,0.9s
BMN *ep*P **pP** **21 58 59.1 +0.8**
TUC Tucson 79.85 51 P **P** **21 58 08.7 +1.2**
baz=240
TUC Tucson 79.85 51 *e*P **P** **21 58 08.9 +1.4**
TUC pmax pmax
comp=Z,51nm,1.0s
TUC Tucson 79.85 51 *e*P **P** **21 58 08.9 +1.4**
comp=Z,51nm,1.0s
F04D Rainier, OR 79.92 34 P **P** **21 58 09.2 +1.8**
baz=230
E03A Lebam 79.93 33 *e*P **P** **21 58 08.2 +0.8**
comp=Z,144nm,1.0s
WVOR Wild Horse Val 80.11 39 *e*P **P** **21 58 09.3 +0.6**
WVOR pmax pmax
comp=Z,95nm,1.0s
WVOR Wild Horse Val 80.11 39 *e*P **P** **21 58 09.3 +0.6**
comp=Z,95nm,1.0s
F04A Amboy 80.13 34 *e*P **P** **21 58 09.1 +0.5**
comp=Z,141nm,1.4s
HABR Khabarovsk 80.18 329 *di*P **P** **21 58 07.4 -1.3**
HABR *e* 21 58 13.8
HABR *e**PP **pP** **21 59 00.0 0.0**
HABR 22 01 12.6
HABR *e*PPP PPP 22 03 02.5
HABR *e*S **S** **22 07 53.2 -2.3**
HABR *e* 22 08 11.3
HABR *e*SS **SS** **22 13 09.3 -2.6**
HABR *e*SSS SSS 22 16 36.6
HABR pmax pmax
comp=N,33nm,1.0s
HABR pmax pmax
comp=E,58nm,1.0s
HABR pmax pmax
comp=Z,253nm,1.0s
HABR pmax pmax
comp=Z,1µm,1.7s
HABR MLR MLR
comp=Z,48nm,18.0s
G05D Wamic, OR 80.29 35 P **P** **21 58 11.0 +1.5**
baz=231
NLWA Neilton Lookou 80.32 33 *e*P **P** **21 58 10.4 +0.8**
comp=Z,89nm,1.1s
HOM Homer 80.42 12 *e*P **P** **21 58 10.5 +0.8**
comp=Z,351nm,1.1s
LCMT Little Creek M 80.51 46 *e*P **P** **21 58 12.0 +1.0**
comp=Z,40nm,0.9s
MDJ Mudanjiang 80.55 324 P **P** **21 58 12.5 +1.7**
MDJ pP pP 21 59 05.9 +3.8
MDJ sP sP 21 59 24.3 -0.3
MDJ PP **PP** **22 01 19.9 +2.1**
MDJ S **S** **22 08 01.8 +2.2**
MDJ pmax pmax
comp=Z,260nm,0.9s
MDJ pmax pmax
comp=Z,670nm,8.1s
MDJ LR LR
comp=Z,250nm,25.1s
MDJ LR LR
comp=Z,290nm,26.9s
MDJ LR LR
comp=Z,190nm,26.9s
MDJ Mudanjiang 80.55 324 *e*P **P** **21 58 11.6 +0.7**
comp=Z,275nm,1.1s
BRLK Bradley Lake 80.66 12 *e*P **P** **21 58 11.0 -0.1**
comp=Z,202nm,1.2s
G06A Carlson Farm, 80.66 36 *e*P **P** **21 58 11.8 +0.3**
G06A *ep*P **pP** **21 59 03.6 +0.8**
NJ2 Nanjing 80.74 308 *e*P **P** **21 58 13.3 +1.2**
NJ2 S **S** **22 08 10.1 +8.0**
NJ2 pmax pmax
comp=Z,230nm,1.1s
NJ2 LR LR
comp=Z,980nm,28.9s
NJ2 LR LR
comp=Z,2µm,38.5s
NJ2 LR LR
comp=Z,880nm,31.0s
KNB Kanab 80.80 46 *e*P **P** **21 58 13.9 +1.3**
KNB pmax pmax
comp=Z,410nm,2.0s
KNB Kanab 80.80 46 *e*P **P** **21 58 13.8 +1.3**
comp=Z,412nm,2.0s
LON Longmire 80.98 34 *e*P **P** **21 58 13.2 +0.1**
LON pmax pmax
comp=Z,20nm,0.8s
LON Longmire 80.98 34 *e*P **P** **21 58 13.2 +0.1**
comp=Z,20nm,0.8s
NKL Nikolayevsk 81.01 335 *i*P **P** **21 58 12.7 -0.3**
NKL pmax pmax
comp=N,30nm,1.0s
NKL pmax pmax
comp=E,20nm,1.0s
NKL pmax pmax
comp=Z,170nm,1.0s
WUAZ Wupatki 81.03 48 P **P** **21 58 15.2 +1.4**
baz=240
WUAZ Wupatki 81.03 48 *e*P **P** **21 58 15.1 +1.3**
comp=Z,72nm,1.2s
SVW2 Sparrevohn 81.07 10 *e*P **P** **21 58 12.6 -0.6**
comp=Z,67nm,1.2s
GZH Guangzhou 81.11 298 P **P** **21 58 15.5 +1.3**
GZH sP **sP** **21 59 27.8 -0.3**
GZH S **S** **22 08 06.5 +0.3**
GZH pmax pmax
comp=Z,1µm,3.9s
D05A Enumclaw 81.17 34 *e*P **P** **21 58 15.4 +1.4**
comp=Z,248nm,1.4s
D05A *ep*P **pP** **21 59 07.2 +1.8**
ELK Elko 81.22 42 *e*P **P** **21 58 15.3 +0.5**
ELK *e**PP **pP** **21 59 07.0 +0.8**
ELK pmax pmax
comp=Z,39nm,1.0s
ELK Elko 81.22 42 *e*P **P** **21 58 15.3 +0.5**
comp=Z,39nm,0.9s
ELK *ep*P **pP** **21 59 07.0 +0.8**
HPIG 81.30 58 *e*P **P** **21 58 16.7 +1.2**
HPIG *ep*P **pP** **21 59 05.7 -1.2**
PGC Sidney 81.36 32 *e*P **P** **21 58 15.6 +0.6**
comp=Z,128nm,1.0s
PGC *ep*P **pP** **21 59 07.7 +1.3**
PKCU Pink Cliffs 81.37 46 *e*P **P** **21 58 18.2 +2.5**
comp=Z,231nm,1.7s
BBB Bella Bella 81.61 27 P **P** **21 58 16.8 +0.6**
comp=Z,75nm,1.0s,baz=254,slow=6.0,SNR=11
BBB pP **pP** **21 59 07.2 -0.4**
comp=Z,65nm,1.1s,baz=249,slow=1.7,SNR=4.1
SPU Mount Spurr 81.75 11 *e*P **P** **21 58 15.6 -1.2**
MTPU Mount Pierson 81.76 45 *e*P **P** **21 58 20.1 +2.3**
MTPU *ep*P **pP** **21 59 11.3 +2.0**

A04D **Lummi Island** 81.78 32 P P 21 58 17.9 +0.7
baz=230,SNR=30
B05A **Bryant** 81.80 33 P P 21 58 17.9 +0.7
baz=230,SNR=25
MYKOM **Kota Tinggi** 81.93 275 *e*P P 21 58 19.3 +0.5
comp=Z,291nm,0.9s
HAWA **Hanford** 81.98 35 *e*P P 21 58 19.0 +0.7
comp=Z,106nm,1.0s
W18A **Petrified Fore** 81.99 49 P P 21 58 19.9 +1.0
baz=241
W18A **Petrified Fore** 81.99 49 *e*P P 21 58 20.3 +1.4
comp=Z,120nm,1.5s
MSU **Marysvale** 82.01 45 *e*P P 21 58 20.4 +1.4
MSU **Marysvale** 82.01 45 *e*P P 21 58 20.4 +1.4
CRAG **Craig** 82.05 23 *e*P P 21 58 19.1 +0.8
comp=Z,88nm,1.0s
ZAIG **Zacatecas** 82.10 63 *e*P P 21 58 21.6 +1.7
ZAIG *e*pP **pP** 21 59 11.4 +0.1
RC01 **Rabbit Creek A** 82.11 12 *e*P P 21 58 18.4 -0.3
comp=Z,159nm,1.2s
121A **Cookes Peak, D** 82.18 52 P P 21 58 21.8 +1.9
baz=242,SNR=17
121A **Cookes Peak, D** 82.18 52 *e*P P 21 58 20.6 +0.7
comp=Z,79nm,1.4s
C06D **Leavenworth** 82.20 33 P P 21 58 20.9 +1.4
baz=231
DL2 **Dalian** 82.21 315 P P 21 58 20.8 +1.1
DL2 pmax pmax
comp=Z,180nm,1.0s
GAMB **Gambell** 82.24 2 *e*P P 21 58 19.7 +0.5
comp=Z,162nm,1.2s
B06A **Marblemount** 82.28 33 *e*P P 21 58 20.1 +0.3
comp=Z,41nm,1.0s
BMO **Blue Mountains** 82.31 37 *e*P P 21 58 20.4 +0.2
BMO *e**PP **pP** 21 59 12.5 +0.8
BMO **Blue Mountains** 82.31 37 *e*pP pP 21 59 12.5 +0.8
comp=Z,185nm,1.6s
KLR **Kul'dur** 82.31 328 P P 21 58 20.6 +0.7
comp=Z,43nm,1.0s,baz=106,slow=4.2,SNR=86
MFID **Camas Ranch** 82.36 39 *e*P P 21 58 21.0 +0.5
comp=Z,158nm,1.5s
MMU **Miners Mountai** 82.44 46 *e*P P 21 58 22.4 +1.1
FLU **Fool Peak** 82.47 44 *e*P P 21 58 22.5 +1.2
CN2 **Changchun** 82.47 321 ⇓P P 21 58 21.6 +0.7
CN2 *e*S **S** 22 08 19.8 +0.5
DUG **Dugway, Tooele** 82.48 43 P P 21 58 21.3 +0.1
baz=238
DUG **Dugway, Tooele** 82.48 43 *e*P P 21 58 18.0 -3.2
DUG pmax pmax
comp=Z,30nm,0.9s
DUG **Dugway, Tooele** 82.48 43 *e*P P 21 58 18.0 -3.2
comp=Z,30nm,0.9s
EYAK **Cordova Ski Ar** 82.49 14 *e*P P 21 58 20.5 -0.1
comp=Z,86nm,1.1s
QIZ **Qiongzhong** 82.49 293 P P 21 58 22.5 +0.9
QIZ pmax pmax
comp=Z,49nm,1.2s
SNY **Shenyang** 82.51 319 ⇓P P 21 58 21.9 +0.8
SNY sP **sP** 21 59 33.0 -2.1
SNY SKS **S** 22 08 18.6 -1.2
SNY S **SKKSac** 22 08 25.3 -0.6
SNY pmax pmax
comp=Z,110nm,1.7s
SNY pmax pmax
comp=Z,1μm,3.5s
SNY LR LR
comp=Z,390nm,19.0s
SNY LR LR
comp=Z,250nm,21.2s
SNY LR LR
comp=Z,370nm,18.4s
RAGM **Ragged Mountai** 82.60 15 *e*P P 21 58 21.3 +0.1
comp=Z,114nm,1.2s
PMR **Palmer** 82.69 12 *e*P P 21 58 20.9 -0.7
PMR pmax pmax
comp=Z,180nm,1.3s
PMR **Palmer** 82.69 12 *e*P P 21 58 20.9 -0.7
comp=Z,184nm,1.4s
D08A **Wollman Farm,** 82.72 35 *e*P P 21 58 22.9 +0.7
D08A *e*pP **pP** 21 59 14.9 +1.2
BGU **Big Grassy Mou** 82.72 43 *e*P P 21 58 23.4 +0.8
comp=Z,169nm,1.9s
TT01 **Tatalina** 82.73 9 *e*P P 21 58 22.4 +0.6
TTA **Tatalina** 82.75 9 *e*P P 21 58 22.2 +0.2
TTA pmax pmax
comp=Z,180nm,1.2s
TTA **Tatalina** 82.75 9 *e*P P 21 58 22.2 +0.2
comp=Z,177nm,1.3s
MA2 **Magadan** 82.76 343 P P 21 58 21.4 -0.6
comp=Z,93nm,1.1s,baz=171,slow=4.7,SNR=22
NLU **North Lily Min** 82.83 44 *e*P P 21 58 23.9 +0.8
comp=Z,139nm,1.8s
DIV **Divide** 83.00 14 *e*P P 21 58 23.1 -0.2
comp=Z,154nm,0.9s
F10A **Beach Ranch, E** 83.02 37 *e*P P 21 58 24.0 +0.2
comp=Z,130nm,0.9s
SML **Sawmill** 83.05 13 *e*P P 21 58 23.1 -0.4
SML pmax pmax
comp=Z,110nm,1.4s
SML **Sawmill** 83.05 13 *e*P P 21 58 23.1 -0.4
comp=Z,112nm,1.4s
WRAK **Wrangell Islan** 83.06 22 *e*P P 21 58 24.4 +0.8
comp=Z,127nm,1.2s
TMUT **Trail Mountain** 83.06 45 *e*P P 21 58 25.9 +1.4
comp=Z,142nm,0.9s
BMRM **Bremner River** 83.13 15 *e*P P 21 58 23.9 -0.1
comp=Z,172nm,1.1s
MPU **Maple Canyon** 83.15 44 *e*P P 21 58 25.7 +0.9
comp=Z,53nm,0.9s
SCM **Sheep Creek Mo** 83.28 13 *e*P P 21 58 24.7 -0.1
SCM pmax pmax
comp=Z,140nm,0.9s
SCM **Sheep Creek Mo** 83.28 13 *e*P P 21 58 24.7 -0.1
comp=Z,144nm,0.9s
KLU **Klutina** 83.28 14 *e*P P 21 58 24.6 -0.1
comp=Z,69nm,1.1s
HLID **Hailey** 83.29 40 P P 21 58 26.1 +0.8
baz=236
HLID **Hailey** 83.29 40 *e*P P 21 58 26.2 +0.9
comp=Z,78nm,0.9s
B08A **Colville Reser** 83.30 34 *e*P P 21 58 25.0 -0.1
comp=Z,76nm,1.1s
B08A *e*pP **pP** 21 59 17.1 +0.4
SPUT **South Promonto** 83.30 42 *e*P P 21 58 26.3 +0.9
comp=Z,85nm,1.0s
PPLA **Purkeypile** 83.32 10 *e*P P 21 58 23.6 -1.4
comp=Z,60nm,1.4s
HVU **Hansel Valley** 83.34 42 *e*P P 21 58 26.4 +0.7
HVU pmax pmax
comp=Z,86nm,0.8s
HVU **Hansel Valley** 83.34 42 *e*P P 21 58 26.4 +0.7
comp=Z,86nm,0.8s
CTU **Camp Tracy** 83.43 43 *e*P P 21 58 27.1 +0.9
comp=Z,78nm,1.0s
SRU **San Rafael Swe** 83.43 45 *e*P P 21 58 27.1 +0.9
SRU pmax pmax
comp=Z,130nm,0.8s
SRU **San Rafael Swe** 83.43 45 *e*P P 21 58 27.1 +0.9
comp=Z,134nm,0.8s
P17A **Butcher Ranch,** 83.47 45 *e*P P 21 58 27.5 +1.2
comp=Z,120nm,1.2s
WHN **Wuhan** 83.47 305 ⇓*i*P P 21 58 27.5 +1.2
WHN S **S** 22 08 33.3 +3.4
WHN pmax pmax
comp=Z,610nm,1.0s
WHN pmax pmax
comp=Z,3μm,4.8s
WHN LR LR
comp=Z,410nm,16.2s
MTUT **Morton Thiokol** 83.51 42 *e*P P 21 58 27.0 +0.6
C09A **Chrisman Ranch** 83.52 35 *e*P P 21 58 26.6 +0.4
C09A *e*pP **pP** 21 59 18.8 +0.9
LAZ **Ladron** 83.53 51 *e*P P 21 58 28.5 +1.6
Y22D **IRIS PASSCAL I** 83.53 51 P P 21 58 28.9 +2.1
baz=242
FPU **Francis Peak** 83.55 43 *e*P P 21 58 27.6 +0.7
JLU **Jordanelle** 83.58 43 *e*P P 21 58 27.7 +0.7
comp=Z,66nm,0.9s
MNTX **Cornudas Mount** 83.61 54 P P 21 58 28.5 +1.4
baz=244
MNTX **Cornudas Mount** 83.61 54 *e*P P 21 58 28.5 +1.4
comp=Z,131nm,1.3s
BNM **Barren Site** 83.79 51 *e*P P 21 58 29.6 +1.4
BNM *e*pP **pP** 21 59 20.0 +0.2
CAST **Castle Rocks** 83.83 10 *e*P P 21 58 25.8 -1.6
comp=Z,174nm,1.5s

LPM **Los Pinos Moun** 83.86 51 *e*P P 21 58 29.9 +1.4
TCUT **Toone Canyon** 83.87 43 *e*P P 21 58 29.5 +1.0
comp=Z,333nm,0.8s
P18A **Preston Nutter** 83.87 45 *e*P P 21 58 29.4 +0.8
comp=Z,62nm,0.9s
MVCO **Mesa Verde** 83.88 48 P P 21 58 29.4 +0.8
baz=241
MVCO **Mesa Verde** 83.88 48 *e*P P 21 58 29.5 +0.9
comp=Z,108nm,1.7s
MLI **Malad Range** 83.88 42 *e*P P 21 58 29.0 +0.6
TX31 **Lajitas Ar. Si** 83.92 56 *e*P P 21 58 29.6 +0.8
TXAR **Lajitas Array** 83.92 56 P P 21 58 30.5 +1.7
comp=Z,37nm,1.0s,baz=217,slow=6.0,SNR=164
TXAR pP **pP** 21 59 20.4 -0.1
comp=Z,19nm,1.1s,baz=220,slow=5.7,SNR=2.9
TXAR PKKPbc **PKKPbc** 22 16 44.7 +1.0
comp=Z,1.2nm,1.0s,baz=102,slow=3.1,SNR=5.8
TXAR PKPPKP **P'P'df** 22 24 48.2 -0.5
comp=Z,0.8nm,1.0s,baz=38,slow=2.2,SNR=3.9
TIA **Tai'an** 83.98 311 ⇓P P 21 58 29.6 +0.8
TIA pmax pmax
comp=Z,260nm,1.0s
TIA pmax pmax
comp=Z,1μm,3.5s
TIA LR LR
comp=Z,360nm,13.5s
TIA LR LR
comp=Z,490nm,17.7s
TIA LR LR
comp=Z,540nm,20.2s
HWUT **Hardware Ranch** 84.02 43 *e*P P 21 58 29.4 +0.2
comp=Z,50nm,0.8s
MAW **Mawson** 84.12 199 P P 21 58 30.1 +1.2
comp=Z,61nm,0.7s,baz=130,slow=6.2,SNR=126
MAW **Mawson** 84.12 199 P P 21 58 30.0 +1.0
baz=84,SNR=58
MAW **Mawson** 84.12 199 *e*P P 21 58 30.2 +1.2
comp=Z,18nm,0.9s
RSUT **Red Spur Mount** 84.13 43 *e*P P 21 58 30.1 +0.3
KTH **Kantishna Hill** 84.15 11 *e*P P 21 58 27.7 -1.4
comp=Z,206nm,1.5s
TRF **Thorofare Moun** 84.17 11 *e*P P 21 58 28.5 -0.8
comp=Z,152nm,1.1s
COCO **West Island** 84.20 259 *e*P P 21 58 32.5 +2.1
COCO pmax pmax
comp=Z,320nm,1.0s
COCO **West Island** 84.20 259 *e*P P 21 58 32.5 +2.1
comp=Z,319nm,1.0s
ANMO **Albuquerque** 84.28 50 P P 21 58 31.8 +1.2
comp=Z,56nm,1.0s,baz=230,slow=4.6,SNR=26
ANMO pP **pP** 21 59 22.2 -0.2
comp=Z,18nm,1.1s,baz=215,slow=3.7,SNR=2.8
ANMO **Albuquerque** 84.28 50 P P 21 58 31.6 +1.0
baz=243
ANMO **Albuquerque** 84.28 50 *e*P P 21 58 31.9 +1.2
comp=Z,94nm,1.1s
ANMO pP **pP** 21 59 22.2 -0.2
DHY **Denali Highway** 84.39 12 *e*P P 21 58 29.9 -0.5
comp=Z,220nm,1.6s
RND **Reindeer** 84.39 12 *e*P P 21 58 30.1 -0.3
RND pmax pmax
comp=Z,360nm,1.0s
RND **Reindeer** 84.39 12 *e*P P 21 58 30.1 -0.3
comp=Z,357nm,1.1s
SKAG **Skagway** 84.42 19 *e*P P 21 58 31.6 +1.2
comp=Z,149nm,1.1s
NEW **Newport** 84.42 35 P P 21 58 30.7 -0.1
comp=Z,17nm,0.9s,baz=226,slow=5.2,SNR=24
NEW pP **pP** 21 59 22.0 -0.5
comp=Z,19nm,1.0s,baz=228,slow=5.0,SNR=6.1
NEW **Newport** 84.42 35 P P 21 58 30.6 -0.1
baz=234,SNR=20
NEW **Newport** 84.42 35 *e*P P 21 58 30.7 -0.1
NEW *e**PP **pP** 21 59 23.0 +0.4
NEW **Newport** 84.42 35 *e*P P 21 58 30.7 -0.1
NEW *e*pP **pP** 21 59 23.0 +0.4
BPAW **Bear Paw Mtn.** 84.64 10 *e*P P 21 58 30.0 -1.5
comp=Z,56nm,1.1s
MCK **McKinley** 84.68 11 *e*P P 21 58 31.4 -0.3
MCK pmax pmax
comp=Z,300nm,1.0s
MCK **McKinley** 84.68 11 *e*P P 21 58 31.4 -0.3
comp=Z,299nm,1.0s
PAX **Paxson** 84.69 13 *e*P P 21 58 31.1 -0.8
PAX pmax pmax
comp=Z,110nm,1.2s
PAX **Paxson** 84.69 13 *e*P P 21 58 31.1 -0.8
comp=Z,110nm,1.2s
MCMT **McKenzie Canyo** 84.92 39 *e*P P 21 58 34.4 +0.7
UBPT **Khong Chiam** 85.00 288 P P 21 58 34.8 +0.5
comp=Z,286nm,1.1s
MENT **Mentasta** 85.05 14 *e*P P 21 58 33.6 0.0
comp=Z,130nm,1.0s
SEY **Seymchan** 85.23 346 PKKPbc PKKPbc 22 16 39.9 -2.4
comp=Z,1.0nm,0.4s,baz=222,slow=15,SNR=5.0
SEY **Seymchan** 85.23 346 *de*P P 21 58 34.1 -0.3
S22A **4UR Ranch, Cre** 85.30 48 P P 21 58 37.0 +1.2
baz=242,SNR=74
S22A **4UR Ranch, Cre** 85.30 48 *e*P P 21 58 36.8 +1.0
comp=Z,120nm,1.3s
DLMT **Dillon** 85.36 39 *e*P P 21 58 36.9 +1.2
comp=Z,189nm,1.4s
MSO **Missoula** 85.37 37 P P 21 58 35.3 -0.4
baz=236,SNR=22
MSO **Missoula** 85.37 37 *e*P P 21 58 35.3 -0.4
MSO *e*pP **pP** 21 59 27.8 +0.2
REDW **Red Top Meadow** 85.38 41 *e*P P 21 58 36.5 +0.6
comp=Z,272nm,1.4s
DLBC **Dease Lake** 85.40 22 P P 21 58 36.1 +0.6
comp=Z,47nm,0.8s,baz=223,slow=5.0,SNR=90
DLBC pP **pP** 21 59 28.6 +1.2
comp=Z,15nm,0.8s,baz=234,slow=5.8,SNR=3.4
DLBC **Dease Lake** 85.40 22 *e*P P 21 58 36.1 +0.6
comp=Z,86nm,1.0s
DLBC pP **pP** 21 59 28.6 +1.2
FXWY **Fox Creek** 85.41 41 *e*P P 21 58 36.6 +0.5
comp=Z,191nm,1.5s
BSMT **Basoo Peak** 85.46 36 *e*P P 21 58 36.1 -0.1
O20A **White River Ci** 85.47 45 P P 21 58 36.8 +0.4
baz=241,SNR=20
O20A **White River Ci** 85.47 45 *e*P P 21 58 37.0 +0.6
comp=Z,227nm,1.7s
IPM **Ipoh** 85.47 276 *e*P P 21 58 37.5 +0.7
comp=Z,627nm,0.9s
SNOW **Snow King Moun** 85.49 41 *e*P P 21 58 37.4 +0.8
comp=Z,173nm,1.3s
WRH **Wood River Hil** 85.51 11 *e*P P 21 58 35.4 -0.3
comp=Z,439nm,1.1s
MLY **Manley** 85.55 10 *e*P P 21 58 35.1 -0.9
comp=Z,155nm,1.0s
DOT **Dot Lake** 85.60 13 *e*P P 21 58 36.1 -0.1
comp=Z,388nm,0.9s
IMW **Indian Meadow** 85.60 41 *e*P P 21 58 37.9 +0.8
comp=Z,184nm,1.4s
MCID **Moose Creek** 85.60 40 *e*P P 21 58 38.1 +1.1
MOOW **Moose Ponds** 85.64 41 *e*P P 21 58 37.6 +0.4
comp=Z,128nm,1.5s
LOHW **Long Hollow** 85.66 41 *e*P P 21 58 37.4 0.0
comp=Z,150nm,1.4s
HDA **Harding Lake** 85.67 12 *e*P P 21 58 36.3 -0.3
comp=Z,181nm,0.9s
JTMT **Jette** 85.69 36 *e*P P 21 58 37.2 -0.1
LRM **Limekiln Ridge** 85.69 39 *e*P P 21 58 37.8 +0.3
SWMT **Swartz Lake** 85.72 37 *e*P P 21 58 37.1 -0.2
SWMT *e*pP **pP** 21 59 29.4 +0.2
CCB **Clear Creek Bu** 85.72 11 *e*P P 21 58 36.3 -0.5
comp=Z,274nm,1.0s
QLMT **Earthquake Lak** 85.78 40 *e*P P 21 58 39.1 +1.2
QLMT *e*pP **pP** 21 59 30.8 +1.0
BLMT **Blacktail Moun** 85.79 36 *e*P P 21 58 37.8 0.0
BLMT *e*pP **pP** 21 59 30.1 +0.4
CHMT **Chamberlain Mo** 85.82 37 *e*P P 21 58 37.9 -0.1
FLWY **Flagg Ranch** 85.84 41 *e*P P 21 58 39.2 +1.0
comp=Z,243nm,1.4s
SMCO **Snowmass** 85.87 46 *e*P P 21 58 39.3 +0.6
comp=Z,120nm,1.5s
BW06 **Boulder Array** 85.89 42 P P 21 58 38.4 -0.1
baz=240,SNR=23
BW06 **Boulder Array** 85.89 42 *e*P P 21 58 38.5 -0.1
comp=Z,77nm,1.3s
PD31 **Pinedale Array** 85.90 42 *e*P P 21 58 38.5 -0.1
PDAR **Pinedale Array** 85.90 42 P P 21 58 38.4 -0.1
comp=Z,21nm,0.8s,baz=210,slow=4.5,SNR=75
PDAR pP **pP** 21 59 29.9 -0.5
comp=Z,18nm,0.9s,baz=202,slow=1.6,SNR=6.5
PDAR PKKPbc **PKKPbc** 22 16 38.6 -1.3
comp=Z,2.2nm,0.8s,baz=79,slow=4.1,SNR=15

PDAR PKPPKP **P'P'df** 22 24 44.9 +0.5
comp=Z,1.0nm,1.0s,baz=48,slow=2.2,SNR=3.4
YBMT **Yellow Bay** 85.91 36 *e*P P 21 58 38.1 -0.2
COLA **College** 85.91 11 *d*/P P 21 58 37.3 -0.4
COLA pmax pmax
comp=Z,335nm,1.0s
COLA **College** 85.91 11 *e*P P 21 58 37.4 -0.3
comp=Z,346nm,0.8s
MDM **Murphy Dome** 85.92 11 *e*P P 21 58 37.3 -0.6
comp=Z,333nm,1.2s
YFT **Old Faithful** 85.95 40 *e*P P 21 58 41.1 +2.4
comp=Z,98nm,1.3s
YMR **Madison River** 85.98 40 *e*P P 21 58 40.6 +1.7
comp=Z,237nm,1.4s
IL1 **Eielson Array** 86.01 12 *e*P P 21 58 36.5 -1.7
ILAR **Eielson Array** 86.01 12 P P 21 58 37.6 -0.6
comp=Z,120nm,1.1s,baz=216,slow=5.5,SNR=303
ILAR pP **pP** 21 59 31.8 +1.7
comp=Z,28nm,1.1s,baz=210,slow=5.3,SNR=3.1
ILAR PKKPbc **PKKPdf** 22 16 37.0 +3.6
comp=Z,0.5nm,0.6s,baz=358,slow=3.6,SNR=5.6
ILB **Eielson Array** 86.01 12 *e*P P 21 58 37.6 -0.6
H17A **Grant Village** 86.08 41 P P 21 58 40.8 +1.4
baz=239,SNR=16
H17A **Grant Village** 86.08 41 *e*P P 21 58 41.3 +1.9
comp=Z,104nm,1.4s
KULM **Kulim** 86.08 277 *e*P P 21 58 40.6 +0.9
comp=Z,219nm,0.9s
KULM *e*PP **PP** 22 02 01.9 -1.5
BOZ **Bozeman (W)** 86.09 39 P P 21 58 39.7 +0.4
baz=238,SNR=18
BOZ **Bozeman (W)** 86.09 39 *e*P P 21 58 39.4 +0.1
BOZ pmax pmax
comp=Z,220nm,1.4s
BOZ **Bozeman (W)** 86.09 39 *e*P P 21 58 39.4 +0.1
comp=Z,223nm,1.4s
SDCO **Great Sand Dun** 86.24 48 P P 21 58 40.5 +0.2
baz=243,SNR=25
SDCO **Great Sand Dun** 86.24 48 *e*P P 21 58 40.8 +0.4
comp=Z,36nm,1.0s
SDCO *e*pP **pP** 21 59 32.6 +0.2
BJT **Baijiatuau** 86.44 314 *e*P P 21 58 41.3 +0.4
BJT pmax pmax
comp=Z,275nm,1.1s
BJT **Baijiatuau** 86.44 314 *e*P P 21 58 41.3 +0.4
comp=Z,275nm,1.1s
BJI **Beijing** 86.44 314 P P 21 58 41.9 +1.0
BJI pP **pP** 21 59 32.5 -0.4
BJI sP **sP** 21 59 53.6 -1.6
BJI SKS **SKSac** 22 08 47.6 +0.7
BJI S **S** 22 09 02.5 +3.8
BJI sS **sS** 22 10 25.0 -4.6
BJI pmax pmax
comp=Z,230nm,2.0s
BJI pmax pmax
comp=Z,2μm,3.9s
832A **Faith Ranch, C** 86.45 59 P P 21 58 42.1 +0.8
baz=247,SNR=16
MSTX **Muleshoe** 86.58 53 P P 21 58 42.9 +1.0
baz=245
MSTX **Muleshoe** 86.58 53 *e*P P 21 58 42.9 +1.0
comp=Z,163nm,1.2s
MSTX *e*pP **pP** 21 59 34.1 +0.2
WALA **Waterton Lakes** 86.62 35 *e*P P 21 58 42.0 +0.3
comp=Z,130nm,1.3s
T25A **Trinidad** 86.74 49 P P 21 58 43.0 +0.3
baz=244
T25A **Trinidad** 86.74 49 *e*P P 21 58 43.0 +0.3
comp=Z,21nm,0.9s
T25A *e*pP **pP** 21 59 35.4 +0.6
933A **Laredo** 86.75 60 P P 21 58 43.9 +1.2
baz=247,SNR=11
PSI **Prapat** 86.91 274 P P 21 58 43.5 -0.4
comp=Z,262nm,0.9s
PSI **Prapat** 86.91 274 *e*P P 21 58 43.4 -0.6
PSI pmax pmax
comp=Z,410nm,1.0s
PSI **Prapat** 86.91 274 *e*P P 21 58 43.4 -0.6
comp=Z,408nm,1.0s
SKNT **Sakolnakorn** 86.93 289 P P 21 58 44.3 +0.5
comp=Z,459nm,1.0s,comp=Z,5μm
833A **Chaparral WMA,** 86.93 59 P P 21 58 44.8 +1.2
baz=247,SNR=9.5
CHBT **CHBT** 86.98 284 P P 21 58 44.9 +0.8
comp=Z,330nm,1.4s,comp=Z,5μm
034A **Hebbronville** 87.03 60 P P 21 58 46.1 +2.0
baz=247,SNR=6.6
Q24A **Divide** 87.03 47 P P 21 58 44.6 +0.4
baz=243,SNR=16
Q24A **Divide** 87.03 47 *e*P P 21 58 44.8 +0.5
comp=Z,42nm,1.1s
ISCO **Idaho Springs** 87.09 46 P P 21 58 44.9 +0.4
baz=243,SNR=9.4
ISCO **Idaho Springs** 87.09 46 *e*P P 21 58 45.3 +0.8
ISCO *e**PP **pP** 21 59 37.5 +1.0
ISCO **Idaho Springs** 87.09 46 *e*P P 21 58 45.3 +0.8
ISCO *e*pP **pP** 21 59 37.5 +1.0
733A **Divot King Ran** 87.17 59 P P 21 58 45.6 +0.9
baz=247,SNR=7.7
ENH **Enshi** 87.18 303 *e*P P 21 58 45.1 +0.3
comp=Z,2μm,1.3s
EGAK **Eagle** 87.22 14 *e*P P 21 58 44.3 +0.2
comp=Z,178nm,1.2s
RLMT **Red Lodge** 87.25 40 P P 21 58 45.3 +0.3
baz=240,SNR=11
RLMT **Red Lodge** 87.25 40 *e*P P 21 58 46.2 +1.2
RLMT *e*pP **pP** 21 59 38.1 +1.0
035Z **Hargill** 87.31 61 P P 21 58 46.1 +0.8
baz=248
934A **Benavides** 87.37 60 P P 21 58 47.4 +1.8
baz=247
N23A **Red Feather La** 87.37 45 P P 21 58 46.2 +0.5
baz=243,SNR=14
N23A **Red Feather La** 87.37 45 *e*P P 21 58 46.7 +1.0
comp=Z,35nm,1.0s
JCT **Junction City** 87.45 57 P P 21 58 46.6 +0.6
baz=247,SNR=6.7
JCT **Junction City** 87.45 57 *e*P P 21 58 46.7 +0.7
JCT *e**PP **pP** 21 59 39.1 +0.9
JCT **Junction City** 87.45 57 *e*P P 21 58 46.7 +0.7
JCT *e*pP **pP** 21 59 39.1 +0.9
035A **Encino** 87.46 61 P P 21 58 48.1 +2.0
baz=248
BILL **Bilibino** 87.53 353 *de*P P 21 58 45.2 -0.3
BILL *e**PP **pP** 21 59 38.3 +0.7
BILL pmax pmax
comp=Z,202nm,1.1s
BILL **Bilibino** 87.53 353 *e*P P 21 58 45.0 -0.5
comp=Z,197nm,1.1s
834A **Tilden** 87.54 59 P P 21 58 48.1 +1.7
baz=247,SNR=7.4
633A **Saathoff Ranch** 87.55 58 P P 21 58 47.8 +1.3
baz=247,SNR=16
COLD **Coldfoot** 87.66 10 *e*P P 21 58 46.6 +0.5
comp=Z,45nm,0.8s
KHON **Khomkaen** 87.75 288 P P 21 58 48.9 +1.2
comp=Z,106nm,0.9s,comp=Z,965nm
AMTX **Amarillo** 87.78 52 P P 21 58 47.8 +0.3
baz=246
AMTX **Amarillo** 87.78 52 *e*P P 21 58 48.2 +0.6
AMTX *e*pP **pP** 21 59 40.4 +0.7
K22A **Casper** 87.80 43 P P 21 58 47.9 +0.3
baz=242
K22A **Casper** 87.80 43 *e*P P 21 58 47.9 +0.3
comp=Z,40nm,1.3s
TRTT **Trang** 87.81 279 P P 21 58 49.5 +1.5
comp=Z,769nm,1.2s,comp=Z,8μm
734A **La Parita Cree** 87.81 59 P P 21 58 48.8 +1.1
baz=247
533A **Kerrville** 87.90 57 P P 21 58 49.0 +0.8
baz=247,SNR=22
TIY **Taiyuan** 88.01 311 *e*P P 21 58 50.3 +1.7
TIY sP **sP** 22 00 00.9 -2.2
TIY pmax pmax
comp=Z,180nm,0.9s
TIY pmax pmax
comp=Z,630nm,6.3s
GYA **Guiyang** 88.01 299 ⇑*i*P P 21 58 49.8 +0.9
GYA pP pP 21 59 43.3 +2.2
GYA sP sP 22 00 06.4 +3.0
GYA PP **PP** 22 02 21.3 +2.5
GYA SKS **SKSac** 22 08 55.0 -2.4
GYA S **S** 22 09 12.8 -1.8
GYA sS sS 22 10 46.6 +0.8
GYA pmax pmax
comp=Z,80nm,1.0s

GYA pmax pmax
comp=Z,210nm,9.2s
433A Art 88.12 57 P **P** 21 58 50.0 +0.8
baz=247,SNR=34
634A China Grove, S 88.18 58 P **P** 21 58 50.9 +1.4
baz=247
835A Beeville 88.19 59 P **P** 21 58 51.7 +2.2
baz=248
534A Blanco 88.33 58 P **P** 21 58 51.1 +0.9
baz=247,SNR=14
EGMT Eagleton 88.42 38 P **P** 21 58 50.9 +0.7
baz=240,SNR=7.2
ABTX Abilene, Hawle 88.42 55 P **P** 21 58 51.5 +1.0
baz=247,SNR=29
ABTX Abilene, Hawle 88.42 55 *e*P **P** 21 58 51.7 +1.2
comp=Z,320nm,1.4s
ABTX *ep*P **pP** 21 59 43.0 +0.2
735A Kenedy 88.42 59 P **P** 21 58 51.9 +1.3
baz=248
333A Richland Sprin 88.43 56 P **P** 21 58 51.3 +0.7
baz=247,SNR=20
PLCA Paso Flores 88.63 133 P **P** 21 58 52.9 +1.3
comp=Z,1.4nm,0.5s,baz=281,slow=5.8,SNR=6.4
PLCA pP **pP** 21 59 43.5 -0.3
comp=Z,12nm,1.2s,baz=243,slow=5.9,SNR=5.9
PLCA PKKPbc **PKKPbc** 22 16 32.1 0.0
comp=Z,7.2nm,0.9s,baz=73,slow=1.6,SNR=11
PLCA PKPPKP **P'P'df** 22 24 42.0 +0.5
comp=Z,3.1nm,1.1s,baz=65,slow=6.0,SNR=2.9
PLCA Paso Flores 88.63 133 P **P** 21 58 52.9 +1.3
PLCA *PP **pP** 21 59 43.5 -0.3
PLCA pmax pmax
comp=Z,2.0nm,0.7s
PLCA pmax pmax
comp=Z,13nm,1.2s
PLCA pmax pmax
comp=Z,7.0nm,0.9s
PLCA Paso Flores 88.63 133 *e*P **P** 21 58 53.5 +1.9
PLCA *ep*P **pP** 21 59 44.1 +0.3
PLCA PKKPbc **PKKPbc** 22 16 32.1 0.0
PLCA P'P' 22 24 42.0
635A Leesville 88.65 58 P **P** 21 58 53.0 +1.3
baz=248
HIA Hailar 88.74 324 *e*P **P** 21 58 52.1 +0.5
HIA pmax pmax
comp=Z,315nm,1.8s
HIA Hailar 88.74 324 *e*P **P** 21 58 52.1 +0.5
comp=Z,315nm,1.8s
233A Rising Star 88.76 56 P **P** 21 58 52.9 +0.7
baz=247,SNR=12
434A Burnet 88.80 57 P **P** 21 58 52.9 +0.6
baz=247,SNR=23
KSCO Kaye Shedlock' 88.82 48 P **P** 21 58 52.9 +0.4
baz=245
KSCO Kaye Shedlock' 88.82 48 *ep*P pP 21 59 49.7 +4.9
133A Hamilton Ranch 88.98 55 P **P** 21 58 54.0 +0.9
baz=247,SNR=24
SURT Suratani 89.01 280 P **P** 21 58 55.2 +1.5
comp=Z,270nm,1.0s,comp=Z,2µm
334A Lometa 89.02 57 P **P** 21 58 54.2 +0.8
baz=247,SNR=27
SYO Syowa Base 89.03 192 ||*i*P **P** 21 58 51.8 -0.9
535A Dale 89.06 58 P **P** 21 58 54.6 +1.1
baz=248
736A Circle Diamond 89.06 59 P **P** 21 58 55.3 +1.7
baz=248
PKDT Phuket 89.10 279 P **P** 21 58 55.7 +1.6
comp=Z,457nm,1.0s,comp=Z,4µm
XAN Xi'an 89.10 306 P **P** 21 58 54.8 +1.0
XAN sP sP 22 00 05.8 -2.5
XAN SKS **SKSac** 22 09 03.8 +0.5
XAN S **S** 22 09 25.8 +1.5
XAN SS **SS** 22 15 25.8 +2.1
XAN pmax pmax
comp=Z,310nm,1.4s
XAN pmax pmax
comp=Z,580nm,5.4s
XAN LR LR
comp=Z,320nm,28.5s
XAN LR LR
comp=Z,210nm,19.3s
636A Smothers Creek 89.27 59 P **P** 21 58 56.5 +1.9
baz=248
435B Jarrell 89.33 57 P **P** 21 58 55.8 +1.0
baz=248
234A Clairette 89.35 56 P **P** 21 58 55.9 +1.0
baz=248,SNR=19
Z33A Whitaker Ranch 89.36 55 P **P** 21 58 55.7 +0.8
baz=247,SNR=20
X32A Elmer 89.40 53 P **P** 21 58 55.5 +0.4
baz=247,SNR=7.9
536A Bastrop 89.48 58 P **P** 21 58 56.7 +1.2
baz=248
134A White-Moore Ra 89.62 55 P **P** 21 58 57.2 +1.1
baz=248,SNR=12
335A Moody 89.64 57 P **P** 21 58 57.1 +0.8
baz=248
W32A Sentinel 89.70 53 P **P** 21 58 57.4 +0.9
baz=247,SNR=9.2
SNAA Sanae 89.72 178 P **P** 21 58 56.0 0.0
SNAA Sanae 89.72 178 *e*P **P** 21 58 56.3 +0.2
SNAA *e**PP **pP** 21 59 49.3 +0.9
SNAA Sanae 89.72 178 *e*P **P** 21 58 56.2 +0.2
comp=Z,1µm,0.8s
SNAA *ep*P **pP** 21 59 49.3 +0.9
Y33A Hilltop Ranch, 89.74 54 P **P** 21 58 57.6 +0.9
baz=247,SNR=13
LAO LASA Array 89.87 40 P **P** 21 58 58.3 +1.3
baz=242,SNR=17
LAO LASA Array 89.87 40 *ep*P pP 21 59 51.0 +1.6
WHTX Lake Whitney, 89.89 56 P **P** 21 58 58.2 +0.9
baz=248
J25A Sunshine Ranch 89.91 44 P **P** 21 58 57.3 0.0
baz=244
HHC Hu-ho-hao-te 89.95 313 *e*P **P** 21 58 59.1 +1.5
HHC pP pP 21 59 51.0 +1.0
HHC sP sP 22 00 10.8 -1.4
HHC SKS **SKSac** 22 09 10.9 +2.8
HHC S **S** 22 09 36.8 +4.8
HHC pmax pmax
comp=Z,240nm,1.0s
HHC pmax pmax
comp=Z,460nm,3.8s
436A Wall Ranch, Ga 89.95 58 P **P** 21 58 59.2 +1.5
baz=248
X33A Lawton 90.04 53 P **P** 21 58 58.4 +0.3
baz=247
Z34A Collier Ranch, 90.05 55 P **P** 21 58 58.8 +0.6
baz=248
OGNE Ogallala 90.05 46 P **P** 21 58 58.7 +0.7
baz=245
RSSD Black Hills 90.08 43 P **P** 21 58 58.1 -0.2
baz=244
RSSD Black Hills 90.08 43 *e*P **P** 21 58 58.7 +0.4
RSSD *e**PP **pP** 21 59 50.1 -0.5
RSSD pmax pmax
comp=Z,52nm,1.0s
RSSD Black Hills 90.08 43 *e*P **P** 21 58 58.7 +0.4
comp=Z,52nm,1.0s
RSSD *ep*P **pP** 21 59 50.1 -0.5
537A Green Hill Far 90.09 58 P **P** 21 59 00.1 +1.8
baz=248
V32A Arapaho 90.09 52 P **P** 21 58 59.2 +0.9
baz=247
135A Vickery Place, 90.13 56 P **P** 21 58 59.5 +1.0
baz=248,SNR=5.4
336A Riesel 90.14 57 P **P** 21 58 59.8 +1.2
baz=248
PHIT Phitsanulok 90.21 288 P **P** 21 59 00.9 +1.7
comp=Z,274mm,1.1s,comp=Z,2µm
VNA2 Neumayer--Watz 90.23 176 P **P** 21 58 59.5 +1.2
baz=190,slow=3.5
I25A Rochford 90.23 43 P **P** 21 58 59.0 0.0
baz=244
UTTA Uttaradit 90.27 289 P **P** 21 59 00.7 +1.3
comp=Z,89nm,1.1s,comp=Z,716nm
W33A Caddo, Fort Co 90.30 53 P **P** 21 59 00.6 +1.3
baz=247
J26A Sides Ranch, S 90.36 44 P **P** 21 58 59.9 +0.5
baz=244
U32A Winter Ranch, 90.38 52 P **P** 21 59 00.4 +0.8
baz=247
Y34A Reagan Ranch, 90.39 54 P **P** 21 59 00.3 +0.7
baz=248,SNR=9.2
HKT Hockley 90.43 59 *e*P **P** 21 59 01.4 +1.6
HKT *e**PP **pP** 21 59 52.6 +0.4
HKT Hockley 90.43 59 *e*P **P** 21 59 01.4 +1.6
HKT *ep*P **pP** 21 59 52.6 +0.4
VNA1 Neumayer--Stat 90.44 176 P **P** 21 58 59.8 +0.5
437A Phantom Ranch, 90.50 58 P **P** 21 59 01.6 +1.3
baz=248
Z35A Perchaven, San 90.55 55 P **P** 21 59 01.3 +0.9
baz=248,SNR=11
638A Rosharon 90.55 59 P **P** 21 59 01.7 +1.2
baz=249
X34A Smith Ranch, M 90.58 54 P **P** 21 59 02.0 +1.4
baz=248,SNR=16
H25A Fruitdale 90.58 43 P **P** 21 59 01.0 +0.5
baz=244
236A Katherine and 90.62 56 P **P** 21 59 01.8 +1.0
baz=248
NVL N'lazarevskaya 90.64 182 *e*P **P** 21 58 59.0 -1.2
V33A Lossen Ranch, 90.70 52 P **P** 21 59 01.5 +0.4
baz=247
T32A Huddler Ranch, 90.75 51 P **P** 21 59 01.9 +0.6
baz=247
136A Ennis 90.79 56 P **P** 21 59 02.4 +0.9
baz=248,SNR=6.2
CBKS Cedar Bluff 90.80 49 P **P** 21 59 01.8 +0.2
baz=247
538A Harpers Horsep 90.80 58 P **P** 21 59 01.9 +0.2
baz=249
I26A New Underwood 90.81 43 P **P** 21 59 01.9 +0.4
baz=245
KMI Kunming 90.84 296 P **P** 21 59 04.4 +2.1
KMI SKS **SKSac** 22 09 13.4 -0.7
KMI S **S** 22 09 38.9 -2.1
KMI pmax pmax
comp=Z,290nm,1.4s
KMI LR LR
comp=Z,65nm,5.8s
KMI LR LR
comp=Z,67nm,8.7s
KMI LR LR
comp=Z,160nm,20.6s
W34A Bridge Creek, 90.86 53 P **P** 21 59 03.0 +1.2
baz=248,SNR=5.5
W34A Bridge Creek, 90.86 53 *e*P **P** 21 59 03.4 +1.5
comp=Z,163nm,1.3s
337A Centerville 90.88 57 P **P** 21 59 03.7 +1.7
baz=249,SNR=8.3
BTO Baotou 90.92 313 *e*P **P** 21 59 02.5 +0.4
Y35A Marietta 90.93 55 P **P** 21 59 03.2 +1.0
baz=248
S32A Newby Ranch, P 90.94 50 P **P** 21 59 02.9 +0.7
baz=247
G25A Newell 90.95 42 P **P** 21 59 02.4 +0.3
baz=244,SNR=5.7
438A Sam Houston St 91.01 58 P **P** 21 59 04.4 +1.8
baz=249
J27A Elkhorn Farm, 91.04 44 P **P** 21 59 03.5 +0.9
baz=245
U33A Lingo Farm, Me 91.06 52 P **P** 21 59 03.5 +0.7
baz=248
KHLT Khaoaem Dam 91.09 285 P **P** 21 59 04.7 +1.4
comp=Z,114nm,1.5s,comp=Z,1µm
H26A Fairpoint 91.11 43 P **P** 21 59 03.4 +0.5
baz=245
X35A Drake 91.16 54 P **P** 21 59 04.0 +0.8
baz=248,SNR=14
Z36A Blue Ridge 91.16 55 P **P** 21 59 04.4 +1.1
baz=248,SNR=6.8
237A Washetta, Mont 91.19 57 P **P** 21 59 04.6 +1.2
baz=249
T33A Patterson Ranc 91.21 51 P **P** 21 59 04.4 +1.0
baz=248
F25A Bowman 91.24 42 P **P** 21 59 04.5 +1.1
baz=244,SNR=7.1
CRAI Chiangrai 91.25 291 P **P** 21 59 06.5 +2.5
comp=Z,161nm,1.2s,comp=Z,10µm
V34A Guthrie 91.28 53 P **P** 21 59 04.0 +0.2
baz=248
I27A Quinn 91.35 44 P **P** 21 59 04.2 +0.3
baz=245
LAMP Lampang 91.35 289 P **P** 21 59 05.9 +1.4
comp=Z,230nm,0.9s,comp=Z,2µm
338A Crockett 91.35 57 P **P** 21 59 05.5 +1.3
baz=249
R32A Long Quarter, 91.38 50 P **P** 21 59 04.8 +0.6
baz=247
539A Cross D Ranch, 91.38 59 P **P** 21 59 05.6 +1.3
baz=249
YAK Yakutsk 91.42 337 P **P** 21 59 02.8 -0.9
comp=Z,420nm,0.5s,baz=103,slow=0.9,SNR=24
YAK Yakutsk 91.42 337 ||*i*P **P** 21 59 02.8 -0.9
YAK *e**PP pP 21 59 40.3 -16
YAK *e* 22 09 39.4
YAK pmax pmax
comp=Z,101nm,1.0s
YAK pmax pmax
comp=N,22nm,1.3s
YAK pmax pmax
comp=E,30nm,1.4s
YAK pmax pmax
comp=Z,222nm,4.2s
YAK pmax pmax
comp=E,134nm,4.4s
YAK pmax pmax
comp=N,136nm,4.3s
YAK Yakutsk 91.42 337 *e*P **P** 21 59 02.6 -1.1
comp=N,96nm,0.9s
137A Hen Place, G 91.45 56 P **P** 21 59 06.2 +1.6
baz=249
U34A Anderson Ranch 91.49 52 P **P** 21 59 05.3 +0.6
baz=248
Y36A Durant 91.50 55 P **P** 21 59 06.1 +1.3
baz=248,SNR=54
G26A Maurine 91.51 42 P **P** 21 59 05.1 +0.4
baz=245,SNR=14
W35A Tecumseh 91.51 53 P **P** 21 59 05.7 +0.8
baz=248,SNR=27
E25A Miller Ranch, 91.52 41 P **P** 21 59 05.8 +1.1
baz=244,SNR=9.5
H27A Howes 91.57 43 P **P** 21 59 05.4 +0.4
baz=245,SNR=9.8
S33A Kaszmaul Farm, 91.58 51 P **P** 21 59 06.1 +1.0
baz=248
O31A Woolen Ranch, 91.61 48 P **P** 21 59 06.4 +1.1
baz=247
J28A Allard Ranch, 91.62 44 P **P** 21 59 06.1 +0.8
baz=246
X36A Centrahoma 91.70 54 P **P** 21 59 06.6 +0.9
baz=248,SNR=37
F26A Lodgepole 91.70 42 P **P** 21 59 06.1 +0.6
baz=245,SNR=7.6
Q32A Meitler Ranch, 91.71 49 P **P** 21 59 06.6 +0.9
baz=247,SNR=6.4
238A Jacksonville 91.74 57 P **P** 21 59 07.4 +1.4
baz=249,SNR=8.2
V35A Mer Ranch, C 91.77 53 P **P** 21 59 06.7 +0.7
baz=248,SNR=8.3
Z37A Pogue Cattle C 91.77 56 P **P** 21 59 07.4 +1.4
baz=249,SNR=5.9
D25A Fairfield 91.86 40 P **P** 21 59 07.2 +1.0
baz=244,SNR=6.3
R33A Olander Ranch, 91.87 50 P **P** 21 59 07.3 +0.8
baz=248
INK Inuvik 91.88 14 P **P** 21 59 05.5 -0.2
comp=N,104nm,1.1s,baz=218,slow=5.2,SNR=258
INK Inuvik 91.88 14 *e*P **P** 21 59 05.5 -0.2
INK pmax pmax
comp=Z,150nm,1.1s
INK Inuvik 91.88 14 *e*P **P** 21 59 05.5 -0.2
comp=Z,145nm,1.1s
I28A Midland 91.90 44 P **P** 21 59 07.0 +0.5
baz=246
DGMT Dagmar 91.90 39 P **P** 21 59 07.2 +0.8
baz=244,SNR=16
DGMT Dagmar 91.90 39 *e*P **P** 21 59 07.6 +1.2
comp=Z,331nm,1.2s
DGMT *ep*P **pP** 22 00 00.1 +1.3
CM01 Chiang Mai Arr 91.92 289 *e*P **P** 21 59 07.7 +0.6
P32A Huiting Farm, 91.92 49 P **P** 21 59 07.6 +0.9
baz=247
CM31 Chiang Mai Arr 91.95 289 *e*P **P** 21 59 08.9 +1.7
CMAR Chiang Mai Arr 91.95 289 P **P** 21 59 08.9 +1.7
comp=Z,242nm,1.0s,baz=109,slow=2.8,SNR=848
CMAR PKKPbc **PKKPbc** 22 16 24.2 +0.8
comp=Z,1.2nm,0.9s,baz=275,slow=4.3,SNR=6.0
339A Huntington 91.95 58 P **P** 21 59 08.3 +1.3
baz=249
T34A McClaskey Farm 91.97 52 P **P** 21 59 07.8 +0.8
baz=248
G27A Dupree 91.97 43 P **P** 21 59 06.9 0.0
baz=245,SNR=21
138A Matatall Enter 91.99 56 P **P** 21 59 08.6 +1.5
baz=249,SNR=5.6
CD2 Chengdu 92.00 302 P **P** 21 59 08.4 +1.1
CD2 pP pP 22 00 01.6 +1.9
CD2 sP sP 22 00 24.5 +2.6
CD2 PP **PP** 22 02 51.1 +0.9
CD2 SKS **SKSac** 22 09 19.9 -0.2
CD2 S **S** 22 09 50.3 -0.5
CD2 sS sS 22 11 24.5 +1.6
CD2 SS **SS** 22 16 06.3 +0.8
CD2 pmax pmax
comp=Z,150nm,1.4s
CD2 pmax pmax
comp=Z,150nm,6.1s
W36A Wetumka 92.00 54 P **P** 21 59 07.8 +0.7
baz=249,SNR=28
NATX Nacogdoches 92.02 57 P **P** 21 59 08.1 +0.8
baz=249
540A Vidor 92.02 59 P **P** 21 59 08.5 +1.2
baz=250
Y37A Hugo 92.05 55 P **P** 21 59 08.6 +1.3
baz=249,SNR=21
CMMT Chiang Mai 92.06 289 P **P** 21 59 08.7 +0.9
comp=Z,398nm,1.0s,comp=Z,3µm
CHTO Chiang Mai 92.06 289 P **P** 21 59 08.7 +0.9
comp=Z,2µm,1.1s,comp=Z,16µm
CHTO Chiang Mai 92.06 289 *e*P **P** 21 59 09.2 +1.4
CHTO pmax pmax
comp=Z,280nm,0.9s
CHTO Chiang Mai 92.06 289 *e*P **P** 21 59 09.2 +1.4
comp=Z,283nm,0.8s
CHTO Chiang Mai 92.06 289 P **P** 21 59 09.4 +1.6
SNR=200
U35A Pawnee 92.07 52 P **P** 21 59 08.1 +0.7
baz=248
E26A Carlson Angus 92.10 41 P **P** 21 59 07.9 +0.6
baz=245,SNR=15
F27A Lemmon 92.12 42 P **P** 21 59 08.0 +0.6
baz=245,SNR=15
C25A Freed Ranch, W 92.14 40 P **P** 21 59 08.4 +0.9
baz=244
N31A Bailey Ranch, 92.14 48 P **P** 21 59 08.9 +1.3
baz=247
J29A Okreek 92.22 45 P **P** 21 59 08.6 +0.6
baz=246
440A Kirbyville 92.22 58 P **P** 21 59 08.0 -0.2
baz=250
Q33A Connelly Farm, 92.24 50 P **P** 21 59 08.9 +0.7
baz=248
239A Gary 92.26 57 P **P** 21 59 09.2 +0.8
baz=249
H28A Mission Ridge 92.27 43 P **P** 21 59 08.7 +0.5
baz=246
S34A Willow Spring 92.28 51 P **P** 21 59 08.9 +0.6
baz=248,SNR=15
Z38A Mt. Pleasant 92.28 56 P **P** 21 59 09.9 +1.5
baz=249
M31A Lambtecht Ranc 92.32 47 P **P** 21 59 09.6 +1.0
baz=247,SNR=5.8
CMAI Chiengmai2 92.33 290 P **P** 21 59 10.7 +1.5
comp=Z,342nm,1.0s
D26A Manning 92.35 41 P **P** 21 59 09.3 +0.8
baz=245,SNR=28
O32A Brockman Farm, 92.40 48 P **P** 21 59 09.4 +0.5
baz=248
R34A Isabella, Hill 92.40 50 P **P** 21 59 09.5 +0.6
baz=248,SNR=6.1
K30A Basset 92.41 46 P **P** 21 59 09.6 +0.7
baz=247
T35A Sooner Cattle 92.43 52 P **P** 21 59 09.9 +0.8
baz=248
B25A Knox Farm, Ray 92.44 40 P **P** 21 59 10.2 +1.4
baz=244
V36A Jenks 92.45 53 P **P** 21 59 10.1 +0.9
baz=249,SNR=16
X37A Clayton 92.46 54 P **P** 21 59 10.0 +0.8
baz=249,SNR=21
I29A Vivian Onida 92.48 44 P **P** 21 59 09.5 +0.4
baz=246
P33A Williams Farm, 92.50 49 P **P** 21 59 10.1 +0.7
baz=248
G28A Parade 92.50 43 P **P** 21 59 09.7 +0.4
baz=246,SNR=5.4
340A Bronson 92.51 58 P **P** 21 59 10.7 +1.2
baz=250
139A Bunkhouse Ranc 92.55 56 P **P** 21 59 11.0 +1.3
baz=250
N32A Stulken Farm, 92.58 48 P **P** 21 59 10.8 +1.1
baz=248
W37B Quinton 92.61 54 P **P** 21 59 10.7 +0.8
baz=249,SNR=25
TUL1 Leonard 92.61 53 P **P** 21 59 10.7 +0.8
baz=249
541A Lake Charles 92.61 59 P **P** 21 59 11.8 +1.8
baz=250
E27A Carson 92.64 42 P **P** 21 59 10.6 +0.7
baz=246,SNR=16
Y38A Idabel 92.72 55 P **P** 21 59 10.9 +0.5
baz=249,SNR=7.6
L31A Butterfield Fa 92.74 46 P **P** 21 59 10.8 +0.4
baz=247
J30A Dallas 92.74 45 P **P** 21 59 10.2 -0.2
baz=247
A25A Svangstu Ranch 92.75 39 P **P** 21 59 11.1 +0.8
baz=245,SNR=12
H29A Onida 92.78 44 P **P** 21 59 10.8 +0.3
baz=246,SNR=6.3
O33A Hebron 92.82 49 P **P** 21 59 11.7 +0.9
baz=248,SNR=7.4
U36A Oologah 92.83 53 P **P** 21 59 11.6 +0.7
baz=249
240A Hunter Patters 92.83 57 P **P** 21 59 12.0 +1.0
baz=250
441A DeRidder 92.85 59 P **P** 21 59 12.0 +0.9
baz=250
Q34A Chapman 92.85 50 P **P** 21 59 11.6 +0.6
baz=248,SNR=12
S35A Otter Creek Ra 92.86 51 P **P** 21 59 11.7 +0.7
baz=249,SNR=19
F28A McLaughlin 92.89 42 P **P** 21 59 11.2 +0.2
baz=246,SNR=8.1
C26A Wahner Farm, P 92.89 40 P **P** 21 59 11.7 +0.7
baz=245,SNR=21
X38A Whitesboro 92.91 54 P **P** 21 59 12.3 +1.0
baz=249,SNR=66
Z39A Irene McRaven, 92.91 56 P **P** 21 59 12.8 +1.5
baz=250
BGNE Belgrade 92.92 47 P **P** 21 59 12.5 +1.3
baz=248
BGNE Belgrade 92.92 47 *e*P **P** 21 59 12.7 +1.4
comp=Z,296nm,1.2s
D27A Center 92.95 41 P **P** 21 59 11.6 +0.3
baz=246,SNR=10
T36A Boggs Farm, Ca 92.96 52 P **P** 21 59 12.2 +0.7
baz=249
CMBY CAMPBELL BAY 92.96 276 *e*P **P** 21 59 11.1 -0.9
K31A O'Neill 92.97 46 P **P** 21 59 11.8 +0.3
baz=247
I30A Oacoma 93.02 45 P **P** 21 59 11.9 +0.2
baz=247
B26A Jensen Ranch, 93.04 40 P **P** 21 59 12.5 +0.9
baz=245,SNR=5.6
341A Kurthwood 93.06 58 P **P** 21 59 13.2 +1.1
baz=250
V37A Hulbert 93.09 53 P **P** 21 59 12.9 +0.8
baz=249,SNR=30
542A Morse 93.16 59 P **P** 21 59 13.9 +1.4
baz=250
KSU1 Kansas State U 93.16 50 P **P** 21 59 13.2 +0.9
baz=248,SNR=12
KSU1 Kansas State U 93.16 50 *e*P **P** 21 59 13.5 +1.1
comp=Z,82nm,0.8s
N33A J Bar K, Exete 93.16 48 P **P** 21 59 13.0 +0.6
baz=248
P34A Walnut Farm, R 93.17 49 P **P** 21 59 12.9 +0.5
baz=248,SNR=14
LCO Las Campanas 93.17 122 *ep*P pP 22 00 05.2 -0.3
R35A Emporia Munici 93.18 51 P **P** 21 59 13.4 +0.9
baz=249,SNR=6.9
140A Cam and Jess, 93.19 57 P **P** 21 59 14.2 +1.6
baz=250
G29A Hoven 93.19 43 P **P** 21 59 12.2 -0.2
baz=247
C27A Sayler Ranch, 93.21 40 P **P** 21 59 13.3 +0.8
baz=246,SNR=11
Y39A Lockesburg 93.22 55 P **P** 21 59 13.5 +0.7
baz=250,SNR=6.1
J31A Geddes 93.24 45 P **P** 21 59 12.9 +0.2

baz=247
L32A Elgin 93.25 47 P P 21 59 13.5 +0.8
baz=248
E28A Huff 93.25 42 P P 21 59 12.6 -0.1
baz=246
W38A Poteau 93.28 54 P P 21 59 14.0 +1.0
baz=250,SNR=15
U37A Salina 93.30 53 P P 21 59 13.8 +0.8
baz=249
A26A Wade Farm, Ken 93.38 39 P P 21 59 13.8 +0.6
baz=245,SNR=23
X39A Fountain Ranch 93.40 55 P P 21 59 14.4 +0.8
baz=250,SNR=19
S36A Lake Cedric, C 93.41 51 P P 21 59 14.1 +0.6
baz=249,SNR=9.6
Q35A Mercer Eighty, 93.49 50 P P 21 59 14.4 +0.5
baz=249,SNR=13
O34A Beatrice 93.49 49 P P 21 59 14.4 +0.5
baz=249,SNR=8.6
241A Mo Tay, Goldon 93.50 58 P P 21 59 15.5 +1.4
baz=250
F29A Eureka 93.51 43 P P 21 59 13.6 -0.2
baz=247,SNR=11
K32A Verdigre 93.52 46 P P 21 59 13.9 -0.1
baz=248
Z40A Long Farm, Mag 93.53 56 P P 21 59 15.3 +1.1
baz=250
SUSD Miller 93.54 44 P P 21 59 14.0 0.0
baz=247
JTS JuntasAbangare 93.55 80 *e*P P 21 59 16.7 +2.0
JTS pmax pmax
comp=Z,59nm,1.1s
JTS JuntasAbangare 93.55 80 *e*P P 21 59 16.7 +2.0
comp=Z,60nm,1.1s
D28A Regan 93.58 41 P P 21 59 14.5 +0.3
baz=246,SNR=7.5
B27A Peters Farms, 93.64 40 P P 21 59 15.2 +0.9
baz=246
V38A Canehill 93.64 53 P P 21 59 15.4 +0.7
baz=250,SNR=37
M33A Taylor Creek F 93.65 47 P P 21 59 15.1 +0.5
baz=248,SNR=13
I31A Royce, Wessing 93.66 45 P P 21 59 14.8 +0.2
baz=248
G30A Faulkton 93.68 44 P P 21 59 14.0 -0.6
baz=247
R36A Gordon, Harris 93.69 51 P P 21 59 15.3 +0.4
baz=249,SNR=9.2
T37A Cheneyville 18 93.70 52 P P 21 59 15.3 +0.4
baz=249
141A Papa Simpson, 93.70 57 P P 21 59 15.9 +0.9
baz=250
543A St. Martinvill 93.71 60 P P 21 59 15.7 +0.6
baz=251
LZH Lanzhou 93.73 307 ⇓P P 21 59 16.6 +1.3
LZH pP pP 22 00 09.5 +1.8
LZH sP sP 22 00 34.9 +5.0
LZH PP **PP** **22 03 01.1 -2.7**
LZH SKS **SKSac** **22 09 27.1 -2.5**
LZH SS **SS** **22 16 29.3 -1.0**
LZH pmax pmax
comp=Z,160nm,1.1s
LZH pmax pmax
comp=Z,590nm,4.3s
P35A Duane Minner, 93.74 50 P P 21 59 15.6 +0.6
baz=249,SNR=12
342A Flagon Creek P 93.76 58 P P 21 59 16.9 +1.6
baz=250
YKA Yellowknife Ar 93.81 24 P P 21 59 14.6 -0.1
comp=Z,25nm,0.8s,baz=240,slow=4.3,SNR=278
YKA pP **pP** **22 00 07.2 0.0**
comp=Z,4.9nm,0.9s,baz=237,slow=4.0,SNR=2.8
YKA PP **PP** **22 02 57.0 -6.6**
comp=Z,1.2nm,0.9s,baz=236,slow=7.7,SNR=4.1
YKA PKKP **PKKPdf** **22 16 16.9 -2.3**
comp=Z,0.9nm,0.6s,baz=41,slow=2.3,SNR=18
YKA PKPPKP **P'P'df** **22 24 31.6 +3.4**
comp=Z,0.5nm,1.0s,baz=41,slow=2.7,SNR=5.5
YKB5 Yellowknife Ar 93.81 24 *e*P P 21 59 14.3 -0.5
L33A Hoskins 93.81 47 P P 21 59 15.7 +0.4
baz=248
MIAR Mount Ida 93.83 55 P P 21 59 16.4 +0.8
baz=250,SNR=7.5
MIAR Mount Ida 93.83 55 *e*P P 21 59 16.1 +0.5
MIAR *e*'PP **pP** **22 00 09.1 +1.1**
MIAR pmax pmax
comp=Z,59nm,1.2s
MIAR Mount Ida 93.83 55 *e*P P 21 59 16.1 +0.5
comp=Z,59nm,1.2s
MIAR *ep*P **pP** **22 00 09.1 +1.1**
YKW3 Yellowknife Ar 93.85 24 *e*P P 21 59 13.8 -1.1
comp=Z,37nm,1.0s
U38A Gravette 93.86 53 P P 21 59 16.3 +0.6
baz=250
H31A Wolsey 93.87 44 P P 21 59 15.5 0.0
baz=248
N34A Lincoln 93.87 48 P P 21 59 16.0 +0.4
baz=249,SNR=8.5
J32A Parkston 93.87 46 P P 21 59 15.1 -0.4
baz=248
A27A Ledoux Ranch, 93.88 39 P P 21 59 15.8 +0.4
baz=246
Y40A Okolona 93.88 56 P P 21 59 17.0 +1.2
baz=250,SNR=10
W39A Magazine 93.89 54 P P 21 59 16.9 +1.1
baz=250,SNR=24
C28A Hausauer Farms 93.90 41 P P 21 59 15.9 +0.3
baz=246
E29A Napoleon 93.92 42 P P 21 59 15.7 0.0
baz=247
Q36A Arnold C. Orve 93.94 50 P P 21 59 16.6 +0.6
baz=249,SNR=11
S37A Fort Scott 93.99 52 P P 21 59 16.8 +0.5
baz=250,SNR=15
443A Delano Plantat 94.00 59 P P 21 59 16.4 0.0
baz=251
F30A Leola 94.03 43 P P 21 59 15.6 -0.6
baz=247
M34A Aspy Farms, Fr 94.05 48 P P 21 59 17.2 +0.8
baz=249,SNR=14
O35A Humboldt 94.08 49 P P 21 59 17.2 +0.6
baz=249,SNR=12
242A Grayson 94.12 58 P P 21 59 17.5 +0.5
baz=251
D29A Pettibone, Tap 94.14 42 P P 21 59 16.2 -0.5
baz=247,SNR=9.0
T38A Diamond 94.14 52 P P 21 59 17.4 +0.5
baz=250
HHAR Hobbs 94.14 53 *e*P P 21 59 17.9 +0.9
comp=Z,62nm,1.2s
HHAR *ep*P **pP** **22 00 10.1 +0.6**
K33A Hardington 94.16 46 P P 21 59 17.1 +0.2
baz=248
R37A Teagarden Farm 94.18 51 P P 21 59 17.6 +0.5
baz=250,SNR=13
B28A Dugan Ranch, T 94.21 40 P P 21 59 17.3 +0.3
baz=247,SNR=10
V39A Pettigrew 94.22 54 P P 21 59 17.8 +0.4
baz=250,SNR=24
544A White Castle 94.29 60 P P 21 59 17.9 +0.2
baz=251
G31A Conde 94.33 44 P P 21 59 17.3 -0.2
baz=248,SNR=5.7
E30A Jud 94.36 42 P P 21 59 17.2 -0.5
baz=248,SNR=8.1
P36A Good Intent, A 94.36 50 P P 21 59 18.5 +0.6
baz=249,SNR=16
L34A Svendsen Farm, 94.36 47 P P 21 59 18.0 +0.1
baz=249
I32A Karley and Nic 94.37 45 P P 21 59 17.8 -0.1
baz=248
X40A Basin Creek Fa 94.39 55 P P 21 59 18.4 +0.3
baz=250
MDND Maddock 94.44 41 P P 21 59 18.2 +0.2
baz=247,SNR=22
MDND Maddock 94.44 41 *e*P P 21 59 18.3 +0.2
comp=Z,183nm,1.0s
MDND *ep*P **pP** **22 00 10.9 +0.4**
W40A Ferguson Farm, 94.44 54 P P 21 59 19.4 +1.1
baz=250,SNR=9.6
J33A Davis 94.45 46 P P 21 59 17.8 -0.4
baz=249
142A Monroe 94.45 57 P P 21 59 19.2 +0.8
baz=251
A28A Rude Farm, Bot 94.45 40 P P 21 59 18.8 +0.7
baz=247,SNR=22
N35A Tabor 94.48 48 P P 21 59 19.5 +1.1
baz=249,SNR=18
U39A Green Forest 94.53 53 P P 21 59 19.2 +0.4
baz=250
F31A Hecla 94.53 43 P P 21 59 18.4 -0.1
baz=248,SNR=22
H32A Carlson Farm, 94.57 45 P P 21 59 18.5 -0.2
baz=248,SNR=5.4
S38A Stockton 94.63 52 P P 21 59 19.5 +0.4
baz=250,SNR=14
Q37A Longview Farm, 94.65 51 P P 21 59 19.5 +0.3
baz=250,SNR=6.8
M35A Neola 94.66 48 P P 21 59 19.7 +0.5
baz=249
D30A Buchanan 94.68 42 P P 21 59 19.0 -0.2
baz=248,SNR=17
O36A Bolckow 94.71 49 P P 21 59 19.7 +0.2
baz=250,SNR=9.0
G32A Webster 94.80 44 P P 21 59 19.9 +0.1
baz=248
K34A Le Mars 94.82 47 P P 21 59 20.0 +0.1
baz=249
R38A Fenwick Farm, 94.82 51 P P 21 59 20.5 +0.5
baz=250,SNR=32
T39A Clever 94.82 53 P P 21 59 20.5 +0.5
baz=250
I33A Coleman 94.83 45 P P 21 59 20.1 +0.2
baz=249
B29A Wagenman Farm, 94.83 40 P P 21 59 19.6 -0.2
baz=247,SNR=9.2
V40A Witts Springs 94.84 54 P P 21 59 20.7 +0.5
baz=250
ECSD EROS Data Cent 94.84 46 P P 21 59 19.6 -0.3
baz=249,SNR=31
ECSD EROS Data Cent 94.84 46 *e*P P 21 59 20.4 +0.4
comp=Z,109nm,1.2s
ECSD *ep*P **pP** **22 00 12.6 +0.1**
UALR University of 94.87 55 *e*P P 21 59 22.0 +1.7
UALR *ep*P **pP** **22 00 13.4 +0.7**
143A Socs Landing, 94.93 57 P P 21 59 21.6 +1.0
baz=251
N36A Muff Farm, Cla 94.95 49 P P 21 59 21.3 +0.7
baz=250,SNR=6.7
P37A Lathrop 94.97 50 P P 21 59 21.0 +0.3
baz=250,SNR=17
X301 Greenbrier Sit 94.97 55 *e*P P 21 59 22.2 +1.4
comp=Z,197nm,1.7s
L35A Bielow Farm, R 94.99 47 P P 21 59 21.2 +0.5
baz=249
Y42A Garnett, Star 95.00 56 P P 21 59 21.2 +0.3
baz=251
U40A Yellville 95.00 53 P P 21 59 21.3 +0.4
baz=251
X201 Greenbrier Sit 95.02 55 *e*P P 21 59 22.4 +1.4
comp=Z,133nm,1.4s
E31A Nome 95.03 43 P P 21 59 20.4 -0.4
baz=248,SNR=6.4
W41A Tony Mavity, V 95.07 55 P P 21 59 22.0 +0.8
baz=251,SNR=11
W41B Gary Mavity, V 95.07 55 P P 21 59 21.9 +0.7
baz=251,SNR=12
WHAR Wooly Hollow 95.08 55 *e*P P 21 59 22.5 +1.3
WHAR *ep*P **pP** **22 00 14.0 +0.3**
A29A Manning Farm, 95.08 40 P P 21 59 20.9 -0.1
baz=248,SNR=47
C30A Mose, Pekin 95.08 41 P P 21 59 20.9 -0.1
baz=248,SNR=23
S39A Bovar 95.09 52 P P 21 59 21.6 +0.4
baz=250,SNR=18
H33A Prehn Over Nor 95.09 45 P P 21 59 21.0 -0.1
baz=249,SNR=14
J34A George 95.12 46 P P 21 59 20.9 -0.4
baz=249
M36A Felix, Anita 95.29 48 P P 21 59 22.2 +0.1
baz=250
Q38A Cooks Store, C 95.29 51 P P 21 59 22.3 +0.2
baz=250,SNR=8.7
O37A Wolven Farm, M 95.31 50 P P 21 59 22.5 +0.3
baz=250,SNR=8.2
D31A Mcclaflin, Tow 95.32 42 P P 21 59 21.6 -0.5
baz=248,SNR=5.9
K35A Storm Lake 95.42 47 P P 21 59 23.1 +0.5
baz=250
I34A Hadley 95.45 45 P P 21 59 22.7 -0.1
baz=249
B30A Myk Farm, E 95.46 41 P P 21 59 21.8 -0.8
baz=248,SNR=10
N37A Lee Faris, Mou 95.47 49 P P 21 59 23.2 +0.3
baz=250,SNR=5.5
G33A Ortonville 95.48 44 P P 21 59 22.4 -0.4
baz=249,SNR=12
VBMS Vicksburg 95.49 58 P P 21 59 24.1 +1.0
baz=251
R39A Chumby, Stover 95.50 52 P P 21 59 23.5 +0.4
baz=251,SNR=25
546A Slidell 95.51 60 P P 21 59 23.0 -0.3
baz=252
T40A Mansfield 95.51 53 P P 21 59 23.5 +0.3
baz=251
E32A Braaten, Kindr 95.57 43 P P 21 59 22.7 -0.5
baz=249
P38A Dawn 95.58 50 P P 21 59 23.3 -0.1
baz=250
C31A Landman Farms, 95.58 41 P P 21 59 23.2 -0.1
baz=248,SNR=23
345A Thompson Farm, 95.59 59 P P 21 59 22.6 -1.1
baz=252
L36A Harm Buss Farm 95.60 48 P P 21 59 23.8 +0.3
baz=250,SNR=11
A30A Hoffart Farm, 95.66 40 P P 21 59 23.6 0.0
baz=248,SNR=24
J35A Milford 95.66 46 P P 21 59 23.4 -0.4
baz=250
S40A Lebanon 95.67 52 P P 21 59 24.5 +0.6
baz=251,SNR=22
ULN Ulaanbaatar 95.69 319 *e*P P 21 59 23.7 -0.2
ULN pmax pmax
comp=Z,63nm,1.1s
ULN Ulaanbaatar 95.69 319 *e*P P 21 59 23.7 -0.2
comp=Z,63nm,1.1s
ULN Ulaanbaatar 95.69 319 P P 21 59 24.0 0.0
SNR=30
ULN Ulaanbaatar 95.69 319 P P 21 59 24.0 0.0
SNR=30
Y43A Makayla and Ka 95.69 56 P P 21 59 23.7 -0.4
baz=251
H34A Spellman Lake, 95.73 45 P P 21 59 24.2 +0.2
baz=250
O38A Galt 95.79 50 P P 21 59 24.5 +0.2
baz=251
Q39A Willow Grove F 95.79 51 P P 21 59 24.2 -0.2
baz=251,SNR=7.5
M37A Trindle Farm, 95.80 48 P P 21 59 25.1 +0.7
baz=250,SNR=23
D32A Dogwood Acres, 95.80 42 P P 21 59 23.6 -0.6
baz=249
F33A 5 Mile Ranch, 95.80 44 P P 21 59 24.2 0.0
baz=249,SNR=22
FFC Flin Flon 95.82 34 *e*P P 21 59 24.1 -0.1
FFC *e*'PP **pP** **22 00 16.9 +0.2**
FFC Flin Flon 95.82 34 *e*P P 21 59 24.1 -0.1
FFC *ep*P **pP** **22 00 16.9 +0.2**
BOD Bodaibo 95.83 329 ⇑P P 21 59 22.9 -1.2
BOD pmax pmax
comp=Z,21nm,1.9s
B31A Greenbush Farm 95.87 41 P P 21 59 23.8 -0.7
baz=249,SNR=7.4
K36A Gilmore City 95.94 47 P P 21 59 25.5 +0.5
baz=250
I35A Creekview Farm 95.99 46 P P 21 59 25.1 -0.1
baz=250
G34A Benson 96.02 44 P P 21 59 25.2 -0.1
baz=250
R40A Maddies Statio 96.07 52 P P 21 59 26.0 +0.3
baz=251,SNR=15
SONA1 Songino Array 96.09 318 *e*P P 21 59 24.9 -0.9
SONM Songino Array 96.09 318 P P 21 59 25.2 -0.5
comp=Z,22nm,1.0s,baz=129,slow=2.5,SNR=61
SONM PP **PP** **22 03 17.1 -4.6**
comp=Z,1.6nm,0.9s,baz=96,slow=5.2,SNR=2.7
N38A Joes South For 96.18 49 P P 21 59 26.5 +0.4
baz=251,SNR=9.0
E33A Westby DABS, E 96.22 43 P P 21 59 25.6 -0.6
baz=250
J36A Seneca 1, Swea 96.25 46 P P 21 59 26.5 +0.1
baz=250
L37A Phoenix Point, 96.25 48 P P 21 59 26.6 +0.2
baz=251,SNR=11
A31A Linda, St. Vin 96.34 40 P P 21 59 26.4 -0.2
baz=249
C32A Crookston 96.36 42 P P 21 59 26.2 -0.5
baz=249
H35A Sunnyside Ranc 96.38 45 P P 21 59 26.7 -0.2
baz=250
M38A Pleasantville 96.41 49 P P 21 59 27.1 -0.1
baz=251,SNR=15
Q40A Laux Farm, Aux 96.44 51 P P 21 59 27.4 +0.1
baz=251
F34A Alexandria 96.47 44 P P 21 59 27.2 -0.1
baz=250
O39A Kirksville 96.50 50 P P 21 59 28.1 +0.5
baz=251
K37A Belmond 96.54 47 P P 21 59 27.5 -0.2
baz=251
D33A AnnSam, Waubun 96.55 42 P P 21 59 27.2 -0.4
baz=250
B32A Ashes, Strandq 96.55 41 P P 21 59 27.2 -0.4
baz=249,SNR=24
447A Lucedale 96.56 60 P P 21 59 27.5 -0.5
baz=252
SCIA State Center 96.56 48 *ep*P **pP** **22 00 20.9 +0.6**
SCIA *e*PP **PP** **22 03 28.9 +3.6**
P40A Paris 96.63 51 P P 21 59 28.4 +0.2
baz=251,SNR=6.4
I36A Fitzsimmons Fa 96.70 46 P P 21 59 28.2 -0.1
baz=251
N39A Derby Farms, D 96.73 49 P P 21 59 28.6 0.0
baz=251
A32A Rocking H Ranc 96.76 41 P P 21 59 28.2 -0.4
baz=249,SNR=19
E34A Wadena 96.77 43 P P 21 59 28.4 -0.2
baz=250
G35A Watkins 96.78 45 P P 21 59 28.9 +0.1
baz=250,SNR=11
J37A Redenius Farm, 96.78 47 P P 21 59 28.4 -0.4
baz=251
146A Union 96.79 58 P P 21 59 28.8 -0.2
baz=252
C33A Trail 96.81 42 P P 21 59 28.3 -0.6
baz=250
L38A Oak Wood Farm, 96.81 48 P P 21 59 30.5 +1.5
baz=251
AGMN Agassiz Nation 96.94 41 P P 21 59 28.7 -0.7
baz=250,SNR=8.9
AGMN Agassiz Nation 96.94 41 *e*P P 21 59 28.9 -0.5
AGMN *ep*P **pP** **22 00 21.6 -0.3**
F35A Swanville 96.94 44 P P 21 59 29.8 +0.4
baz=250,SNR=14
H36A Jessenland, He 96.94 45 P P 21 59 29.8 +0.3
baz=251
O40A La Belle 96.94 50 P P 21 59 29.8 +0.2
baz=252,SNR=5.9
D34A Park Rapids 96.95 43 P P 21 59 29.2 -0.2
baz=250
PBMO Poplar Bluff 96.98 54 *e*P P 21 59 30.8 +1.0
comp=Z,23nm,0.8s
B33A Robert and Kas 97.10 41 P P 21 59 29.4 -0.7
baz=250,SNR=6.7
K38A Parkersburg 97.11 47 P Pdif 21 59 30.9 +0.6
baz=251
I37A Lemond, Waseca 97.12 46 P Pdif 21 59 30.4 0.0
baz=251
G36A St. Michael 97.28 45 P Pdif 21 59 31.6 +0.6
baz=251,SNR=5.6
E35A Pequot Lakes 97.28 43 P P 21 59 31.0 0.0
baz=251
C34A RKJ Ranch, Bem 97.32 42 P P 21 59 30.6 -0.5
baz=250
A33A Warroad 97.45 41 P P 21 59 31.1 -0.6
baz=250,SNR=8.9
J38A Wedel Dairy, R 97.53 47 P P 21 59 32.2 0.0
baz=252
ULM Lac du Bonnet 97.60 40 P P 21 59 31.8 -0.5
comp=Z,8.8nm,0.9s,baz=251,slow=6.2,SNR=8.6
ULM pP **pP** **22 00 24.7 -0.1**
comp=Z,19nm,1.0s,baz=260,slow=5.8,SNR=9.8
ULM Lac du Bonnet 97.60 40 P P 21 59 31.8 -0.5
ULM *PP **pP** **22 00 24.7 -0.1**
ULM pmax pmax
comp=Z,8.0nm,0.9s
ULM pmax pmax
comp=Z,19nm,1.0s
ULM Lac du Bonnet 97.60 40 *e*P P 21 59 31.7 -0.6
ULM *ep*P **pP** **22 00 24.5 -0.3**
H37A Dierke Farm, C 97.63 46 P P 21 59 32.5 -0.1
baz=251
F36A Milaca 97.63 44 P Pdif 21 59 32.6 +0.1
baz=251,SNR=24
PB11 IPOC Station P 97.67 114 *ep*P pP 22 00 26.6 +0.5
TIXI Tiksi 97.67 345 P P 21 59 31.3 -0.8
comp=Z,32nm,0.9s,baz=125,slow=5.8,SNR=86
TIXI PP **PP** **22 03 29.1 -3.9**
comp=Z,9.3nm,1.0s,baz=119,slow=9.5,SNR=9.1
TIXI Tiksi 97.67 345 *e*P P 21 59 31.4 -0.8
TIXI pmax pmax
comp=Z,50nm,1.0s
TIXI Tiksi 97.67 345 *e*P P 21 59 31.2 -0.8
comp=Z,54nm,1.1s
TIXI *e*PP PP 22 03 24.9 -8.1
D35A Remer 97.68 43 Pdiff P 21 59 32.7 0.0
baz=251
248A Dixon Mills 97.69 59 Pdiff P 21 59 32.3 -0.8
baz=253
B34A Aery, Baudette 97.76 41 Pdiff Pdif 21 59 33.2 +0.1
baz=251
GTA Gaotai 97.83 309 P Pdif 21 59 34.1 +0.3
GTA pP pP 22 00 24.6 -1.7
GTA SKS **SKSac** **22 09 50.8 -0.1**
GTA S **SKKSac** **22 10 29.5 +9.2**
GTA sS sS 22 12 08.6 -5.3
GTA SS **SS** **22 17 27.6 -0.3**
GTA pmax pmax
comp=Z,19nm,1.7s
GTA pmax pmax
comp=Z,270nm,6.9s
GTA LR LR
comp=Z,140nm,14.5s
GTA LR LR
comp=Z,160nm,18.3s
GTA LR LR
comp=Z,180nm,14.3s
I38A Scanlan Farm, 97.86 46 Pdiff Pdif 21 59 34.4 +0.7
baz=252
SPMN Marine on St. 97.91 45 Pdiff Pdif 21 59 34.6 +0.8
baz=252
SPMN Marine on St. 97.91 45 *e*P Pdif 21 59 34.5 +0.7
comp=Z,71nm,1.1s
SPMN *ep*P pP 22 00 26.8 +0.4
C35A Jirik Farms, M 97.93 42 Pdiff P 21 59 33.6 -0.3
baz=251
E36A McGregor 98.02 44 Pdiff Pdif 21 59 34.7 +0.4
baz=251
Y47A UCPARC, Winfie 98.13 57 Pdiff P 21 59 34.9 -0.1
baz=253
D36A Goodland 98.29 43 Pdiff Pdif 21 59 35.9 +0.4
baz=252
B35A Bob, Littlefor 98.30 42 Pdiff Pdif 21 59 35.6 +0.1
baz=251
E37A Wrenshall 98.59 44 Pdiff P 21 59 36.8 -0.1
baz=252
C36A Pine Crest Far 98.68 43 Pdiff Pdif 21 59 37.3 +0.1
baz=252
D37A Cotton 98.76 43 Pdiff P 21 59 37.9 +0.3
baz=252
ZAK Zakamensk 98.88 320 *e*P Pdif 21 59 37.3 -0.9
ZAK pmax pmax
comp=Z,8.0nm,1.4s
ZAK pmax pmax
comp=Z,4.0nm,1.5s
HDIL Hopedale 98.96 50 Pdiff P 21 59 39.0 +0.4
baz=253
TLY Talaya 99.07 321 P **Pdif** 21 59 38.8 -0.1
comp=Z,5.9nm,0.7s,baz=102,slow=3.3,SNR=6.6
TLY Talaya 99.07 321 *e*P **Pdif** 21 59 38.7 -0.1
TLY *e* 22 12 29.7
TLY pmax pmax
comp=Z,14nm,1.1s
TLY Talaya 99.07 321 *e*Pdif **Pdif** 21 59 39.9 +1.0
comp=Z,8.9nm,0.8s
LPAZ La Paz 100.35 111 PP PP 22 03 56.0 +1.0
comp=Z,8.8nm,1.2s,baz=270,slow=5.5,SNR=9.0
LPAZ PKKP **PKKPbc** **22 16 01.9 +0.5**
comp=Z,3.3nm,0.8s,baz=17,slow=4.0,SNR=11
SFIN Lafayette 100.52 51 Pdiff **Pdif** 21 59 45.9 +0.4
baz=254
MOY Mondy 100.64 321 *e*P **Pdif** 21 59 49.5 +3.5
FCC Fort Churchill 101.31 32 *e*P **Pdif** 21 59 48.7 +0.1

LSA	Lhasa	102.03	297	*e*P	Pdif	21 59 54.2	+1.1	
LSA	Lhasa	102.03	297	*e*Pdif	Pdif	21 59 54.2	+1.1	
CPUP	Villa Florida	104.96	125	PKKPbc	PKKPbc	22 15 47.0	-0.4	
	comp=Z,2.1nm,0.8s,baz=91,slow=1.9,SNR=4.1							
BOK	Bokaro	105.14	290	*e*P	Pdif	22 00 05.7	-0.8	
VIS	Vishakhapatnam	105.95	284	*e*P	Pdif	22 00 09.0	-1.2	
GUN	Gumba	106.10	294	*e*P	Pdif	22 00 11.5	+0.4	
	comp=Z,52nm,1.2s							
KKN	Kakani	106.59	294	*e*P	Pdif	22 00 13.6	+0.5	
	comp=Z,21nm,0.9s							
DMN	Daman	106.70	294	*e*P	Pdif	22 00 14.3	+0.6	
GKN	Gorkha	107.19	294	*e*P	Pdif	22 00 15.5	-0.2	
	comp=Z,26nm,1.0s							
WMQ	Urumqi	107.68	311	*e*Pdif	Pdif	22 00 18.5	+1.1	
WMQ				PP	PP	22 04 51.3	+2.8	
WMQ				S	Sdif	22 11 58.3	-4.8	
WMQ				SS	SS	22 19 40.8	-2.2	
WMQ				LR	LR			
	comp=Z,170nm,25.6s							
WMQ				LR	LR			
	comp=Z,120nm,25.6s							
WMQ				LR	LR			
	comp=Z,66nm,22.4s							
KOLN	Koldanda	108.04	294	*e*P	Pdif	22 00 19.4	-0.2	
	comp=Z,12nm,0.8s							
PYUN	Piuthan	108.63	294	*e*P	Pdif	22 00 21.9	-0.3	
NRIK	Noril'sk	109.86	338	Pdiff	Pdif	22 00 26.0	-0.4	
	comp=Z,2.1nm,0.7s,baz=86,slow=5.9,SNR=4.5							
NRIK				PP	PP	22 04 59.6	-3.8	
	comp=Z,5.5nm,0.8s,baz=99,slow=6.3,SNR=10							
HYB	Hyderabad	110.29	282	*i* PKP	PKiKP	22 04 29.5	-0.3	
HYB				*e*PP	PP	22 05 03.0	-5.0	
HYB				*e*		22 05 19.0		
HYB	Hyderabad	110.29	282	*e*P	PKiKP	22 04 28.0	-1.7	
ZAA0	Zalesovo Array	110.69	322	*e*Pdif	Pdif	22 00 29.8	-0.6	
ZAA0				*e*PKiKP	PKiKP	22 04 28.4	-0.9	
ZAA0				*e*PKiKP	PKiKP	22 04 29.0	-0.4	
ZALV	Zalesovo Beam	110.69	322	Pdiff	Pdif	22 00 30.3	-0.1	
	comp=Z,1.3nm,0.6s,baz=92,slow=4.5,SNR=8.1							
ZALV				PKiKP	PKiKP	22 04 28.6	-0.7	
	comp=Z,14nm,0.6s,baz=174,slow=1.1,SNR=48							
ZALV				PP	PP	22 05 05.8	-4.1	
	comp=Z,5.5nm,0.9s,baz=98,slow=6.1,SNR=4.6							
NVS	Novosibirsk	111.65	322	*e*PKiKP	PKiKP	22 04 30.2	-1.0	
NVS				*e*		22 05 10.3		
NVS				*e*		22 10 53.9		
NVS				pmax	pmax			
	comp=Z,22nm,1.0s							
NVS				pmax	pmax			
	comp=N,7.0nm,1.1s							
NVS				pmax	pmax			
	comp=E,13nm,1.5s							
MK01	Makanchi Array	111.81	314	*e*Pdif	Pdif	22 00 35.2	-0.4	
MKAR	Makanchi Array	111.81	314	Pdiff	Pdif	22 00 35.5	-0.2	
	comp=E,2.1nm,0.8s,baz=97,slow=6.2,SNR=20							
MKAR				pPdiff	pPdif	22 01 18.6	-10	
	comp=E,3.7nm,0.9s,baz=122,slow=4.1,SNR=5.3							
MKAR				PKiKP	PKiKP	22 04 30.8	-1.0	
	comp=E,20nm,0.9s,baz=71,slow=2.1,SNR=59							
MKAR				PP	PP	22 05 16.7	-1.5	
	comp=E,5.4nm,0.9s,baz=98,slow=8.7,SNR=5.1							
MKAR				PKKPbc	PKKPbc	22 15 25.8	-0.8	
	comp=E,1.3nm,0.7s,baz=281,slow=3.6,SNR=9.8							
MKAR	Makanchi Array	111.81	314	*e*Pdif	Pdif	22 00 36.4	+0.7	
MKAR				*e*PKiKP	PKiKP	22 04 29.3	-2.5	
MKAR				PP	PP	22 05 16.7	-1.5	
MKAR				PKKPbc	PKKPbc	22 15 25.8	-0.8	
BHPL	Bhopal	112.59	288	*e*P	PKiKP	22 04 31.9	-2.1	
BHPL				IAmb	IAmb	22 04 34.1		
	comp=Z,25nm,1.1s							
DDI	Dehra Dun	113.27	296	*e*P	PKiKP	22 04 34.8	-0.4	
DDI				IAmb	IAmb	22 04 36.1		
SMLA	Simla	114.14	296	*e*P	PKPdf	22 04 35.8	-0.9	
GOA	Goa	114.24	279	*e*P	PKPdf	22 04 36.3	-1.0	
KURK	Kurchatov	114.39	318	*e*PKiKP	PKPdf	22 04 35.9	-0.6	
KURK	Kurchatov	114.39	318	*e*PKiKP	PKPdf	22 04 35.9	-0.7	
KURK				SKP		22 07 52.1		
KURK				PKKPab	PKKPab	22 15 23.4	+1.0	
KURK	Kurchatov	114.39	318	P	PKPdf	22 04 35.9	-0.6	
	SNR=11							
KURK	Kurchatov	114.39	318	PKPdf	PKPdf	22 04 35.9	-0.6	
	SNR=11							
KURBB	Kurchatov Arra	114.45	318	PKP	PKPdf	22 04 35.9	-0.7	
	comp=Z,25nm,0.9s,baz=95,slow=1.9,SNR=88							
KURBB				pPKP	PP	22 05 30.0	-6.6	
	comp=Z,13nm,1.3s,baz=98,slow=6.6,SNR=4.0							
KURBB				SKP		22 07 52.1		
	comp=Z,4.0nm,1.0s,baz=109,slow=2.0,SNR=4.8							
KURBB				PKKPab	PKKPab	22 15 23.4	+1.3	
	comp=Z,1.0nm,0.9s,baz=265,slow=4.4,SNR=5.2							
POO	Poona	114.90	282	*e*P	PKPpre	22 04 33.6		
DHRM	DHARAMSHALA	115.02	297	*e*P	PKPdf	22 04 38.0	-0.6	
THN	Thein Dam	115.53	298	*ex*	PKPpre	22 04 30.6		
SCHQ	Schefferville	115.67	38	PKP	PKPdf	22 04 37.8	-1.1	
	comp=Z,5.1nm,0.9s,baz=242,slow=15,SNR=2.4							
KSH	Kashi	115.94	305	PKP	PKPdf	22 04 40.8	+0.7	
KSH				*e*PP	PP	22 05 57.0	+9.3	
KSH				*es*PKP		22 06 01.9		
KSH				PKS	PKSdf	22 08 16.3	-0.6	
KSH				SKS	SKSdf	22 11 30.3	-1.7	
KSH				SKKS	SKKSac	22 12 23.8	-3.0	
KSH				LR	LR			
	comp=Z,160nm,7.5s							
KSH				LR	LR			
	comp=Z,140nm,7.7s							
KSH				LR	LR			
	comp=Z,200nm,5.5s							
TKM2	Tokmak 2	116.37	309	*e*PKiKP	PKPdf	22 04 40.3	-0.6	
TKM2	Tokmak 2	116.37	309	*e*PKPdf	PKPdf	22 04 40.3	-0.6	
FRU	Bishkek	117.09	309	*i* PKiKP	PKPdf	22 04 41.5	-0.6	
FRU				*i*		22 05 54.0		
FRU				pmax	pmax			
	comp=Z,70nm,1.6s							
AAK	Ala-Archa	117.18	309	PKP	PKPdf	22 04 42.2	-0.2	
	comp=Z,20nm,0.8s,baz=173,slow=1.2,SNR=26							
AAK	Ala-Archa	117.18	309	P	PKPdf	22 04 42.3	-0.2	
	SNR=11							
AAK	Ala-Archa	117.18	309	PKPdf	PKPdf	22 04 42.3	-0.2	
	SNR=11							
EKS2	Erkin-Say	117.71	309	*e*PKiKP	PKPdf	22 04 43.4	0.0	
ILULI	Ilulissat	119.18	20	*i* P	PKPdf	22 04 44.5	-0.7	
	comp=Z,31nm,0.8s							
ILULI	Ilulissat	119.18	20	*i* PKIKP	PKPdf	22 04 44.5	-0.7	
ILULI				pmax	pmax			
	comp=Z,31nm,0.8s							
BVAR	Borovoye Array	119.32	321	PKP	PKPdf	22 04 45.7	-0.3	
	comp=Z,30nm,0.5s,baz=138,slow=1.0,SNR=145							
BRVK	Borovoye	119.38	321	*d* iPKIKP	PKPdf	22 04 45.6	-0.5	
BRVK				pmax	pmax			
	comp=Z,86nm,1.2s							
BRVK	Borovoye	119.38	321	*e*PKPdf	PKPdf	22 04 45.7	-0.5	
BRVK	Borovoye	119.38	321	P	PKPdf	22 04 45.8	-0.3	
	SNR=25							
BRVK	Borovoye	119.38	321	PKPdf	PKPdf	22 04 45.8	-0.3	
	SNR=25							
BHJ	Bhuj	119.63	287	*e*P	PKPdf	22 04 46.5	-1.0	
ZRNK	Zerenda	120.16	321	*e*PKiKP	PKPdf	22 04 47.1	-0.5	
ZRNK	Zerenda	120.16	321	*e*PKPdf	PKPdf	22 04 47.1	-0.5	
SPA0	Spitsbergen Ar	120.20	357	*e*PKiKP	PKPdf	22 04 47.0	-0.1	
SPA0	Spitsbergen Ar	120.20	357	*e*PKPdf	PKPdf	22 04 47.2	+0.2	
SFJD	Kangerlussuaq	120.31	22	*i* P	PKPdf	22 04 46.6	-0.8	
	comp=Z,12nm,0.7s							
SFJD	Kangerlussuaq	120.31	22	*i* PKIKP	PKPdf	22 04 46.6	-0.8	
SFJD				pmax	pmax			
	comp=Z,12nm,0.7s							
SFJD	Kangerlussuaq	120.31	22	*e*PKPdf	PKPdf	22 04 47.0	-0.4	
DAG	Danmarks Havn	120.68	6	*i* P	PKPdf	22 04 46.6	-1.4	
	comp=Z,21nm,1.2s							
DAG	Danmarks Havn	120.68	6	*i* PKIKP	PKPdf	22 04 46.6	-1.4	
DAG				pmax	pmax			
	comp=Z,32nm,1.2s							
SUMG	Summit	120.79	14	*i* P	PKPdf	22 04 48.8	0.0	
	comp=Z,33nm,1.2s							
SUMG	Summit	120.79	14	*i* PKIKP	PKPdf	22 04 48.8	0.0	
SUMG				pmax	pmax			
	comp=Z,33nm,1.2s							
SUMG	Summit	120.79	14	*e*PKPdf	PKPdf	22 04 49.2	+0.4	
KBL	Kabul	121.25	300	*e*PKIKP	PKPdf	22 04 51.0	+0.4	
KBL	Kabul	121.25	300	*e*PKPdf	PKPdf	22 04 51.0	+0.4	
SVE	Sverdlovsk	123.92	327	*e*PKIKP	PKPdf	22 04 54.7	0.0	
SVE				pmax	pmax			
	comp=Z,97nm,1.0s							
SOKR	Solikamsk	124.79	331	*d* iPKIKP	PKPdf	22 04 54.1	-2.1	
SOKR				pmax	pmax			
	comp=Z,185nm,1.2s							
NRS	Narsarsuaq	124.97	27	*i* P	PKPdf	22 04 56.3	-0.2	
	comp=Z,50nm,1.1s							
NRS	Narsarsuaq	124.97	27	*i* PKIKP	PKPdf	22 04 56.3	-0.2	
NRS				pmax	pmax			
	comp=Z,50nm,1.1s							
ARU	Arti	125.14	327	PKP	PKPdf	22 04 56.9	-0.1	
	comp=Z,57nm,0.8s,baz=82,slow=0.1,SNR=88							
ARU	Arti	125.14	327	*i* PKIKP	PKPdf	22 04 56.8	-0.2	
ARU						22 06 45.5		
ARU						22 11 46.8		
ARU				PS	PS	22 16 45.1	-7.7	
ARU	Arti	125.14	327	*e*PKPdf	PKPdf	22 04 56.6	-0.4	
SCO	Scoresbysund	125.78	11	*i* P	PKPdf	22 04 58.2	+0.4	
	comp=Z,90nm,1.5s							
SCO	Scoresbysund	125.78	11	*i* PKIKP	PKPdf	22 04 58.2	+0.4	
SCO				pmax	pmax			
	comp=Z,90nm,1.5s							
KEV	Kevo	127.15	350	*e*PKIKP	PKPdf	22 05 00.7	+0.2	
KEV	Kevo	127.15	350	*e*PKPdf	PKPdf	22 05 00.7	+0.2	
LVZ	Lovozero	127.28	346	*c i* PKIKP	PKPdf	22 05 00.7	-0.1	
LVZ				pmax	pmax			
	comp=Z,37nm,1.2s							
LVZ	Lovozero	127.28	346	*e*PKPdf	PKPdf	22 05 00.8	-0.1	
AKTO	Aktyubinsk	127.39	320	PKP	PKPdf	22 05 01.3	-0.2	
	comp=Z,32nm,1.0s,baz=72,slow=2.9,SNR=67							
ARA0	ARCESS Array S	127.58	351	*e*PKPdf	PKPdf	22 05 01.0	-0.4	
ARCES	ARCESS Array B	127.58	351	PKP	PKPdf	22 05 00.7	-0.6	
	comp=Z,44nm,0.9s,baz=347,slow=1.6,SNR=31							
ARCES				pPKP	pPKPdf	22 05 57.5	+1.2	
	comp=Z,19nm,0.9s,baz=5.7,slow=2.4,SNR=4.6							
ARE0	ARCESS Array S	127.58	351	*e*PKPdf	PKPdf	22 05 01.5	+0.2	
ARE0				IAmb	IAmb	22 05 02.2		
	comp=Z,82nm,1.1s							
ARE0	ARCESS Array S	127.58	351	*e*PKPdf	PKPdf	22 05 01.6	+0.2	
TRO	Tromso	128.32	354	*e*PKPdf	PKPdf	22 05 03.0	+0.3	
KTK1	Kautokeino	128.38	352	*e*PKPdf	PKPdf	22 05 00.6	-2.3	
KTK1				IAmb	IAmb	22 05 03.3		
	comp=Z,117nm,1.4s							
BOSA	Boshof	128.96	203	PKP	PKPdf	22 05 06.7	+1.2	
	comp=Z,22nm,1.0s,baz=159,slow=3.4,SNR=22							
BOSA				pPKP	pPKPdf	22 06 01.0	+0.6	
	comp=Z,3.3nm,0.7s,baz=125,slow=0.9,SNR=1.8							
TMCR	Tamitsa	129.30	342	*e*PKIKP	PKPdf	22 05 03.3	-1.4	
TMCR				pmax	pmax			
	comp=Z,95nm,1.5s							
WSAR	Wadi Sarin	129.69	285	PKP	PKPdf	22 05 08.1	+1.3	
	comp=Z,51nm,1.3s,baz=128,slow=2.3,SNR=6.3							
GEYT	Alibeck	129.94	304	PKhKP	PKPpre	22 04 51.0		
	comp=Z,4.4nm,0.7s,baz=255,slow=2.9,SNR=9.2							
GEYT				PKP	PKPdf	22 05 07.0	+0.1	
	comp=Z,55nm,1.1s,baz=270,slow=1.5,SNR=49							
GEYT				PP	PP	22 07 19.4	-2.3	
	comp=Z,27nm,1.1s,baz=101,slow=3.0,SNR=8.5							
SMDO	Samad	130.20	285	P	PKPdf	22 05 08.1	+0.2	
	SNR=8.0							
SMDO	Samad	130.20	285	PKPdf	PKPdf	22 05 08.1	+0.2	
	SNR=8.0							
LBTB	Lobatse	132.04	206	*e*PKIKP	PKPdf	22 05 12.2	+0.8	
LBTB	Lobatse	132.04	206	*e*PKPdf	PKPdf	22 05 12.2	+0.8	
RBK	Rabkut	133.07	277	P	PKPdf	22 05 13.9	+0.6	
	SNR=9.3							
RBK	Rabkut	133.07	277	PKPdf	PKPdf	22 05 13.9	+0.6	
	SNR=3.3							
NSS	Namsos	133.93	356	*e*PKPdf	PKPdf	22 05 13.2	-0.3	
FIA1	FINESS Array S	134.71	346	*e*PKPdf	PKPdf	22 05 14.2	-0.9	
FIA1				*e*PP	PP	22 07 47.7	-3.0	
FINES	FINESS Array B	134.71	346	PKhKP	PKPpre	22 05 00.7		
	comp=Z,1.0nm,0.7s,baz=40,slow=3.2,SNR=7.1							
FINES				PKP	PKPdf	22 05 14.0	-1.0	
	comp=Z,27nm,0.9s,baz=114,slow=2.3,SNR=32							
FINES				pPKP	pPKPdf	22 06 11.2	+1.2	
	comp=Z,11nm,0.9s,baz=101,slow=1.9,SNR=2.9							
FINES				SKP		22 08 29.9		
	comp=Z,4.0nm,0.8s,baz=45,slow=5.7,SNR=3.8							
PUL	Pulkovo	135.02	342	*c i* PKIKP	PKPdf	22 05 15.9	+0.3	
PUL				pmax	pmax			
	comp=Z,77nm,0.6s							
MOS	Moscow	135.46	334	*e*PKIKP	PKPdf	22 05 15.9	-0.7	
MOS				*e*		22 07 59.4		
MOS				pmax	pmax			
	comp=Z,100nm,1.5s							
OBN	Obninsk	136.33	334	*c i* PKIKP	PKPdf	22 05 18.3	+0.1	
OBN				pmax	pmax			
	comp=Z,112nm,1.3s							
OBN	Obninsk	136.33	334	*e*PKPdf	PKPdf	22 05 20.0	+1.8	
VRH	Novokhopyorsk	136.37	327	*e*PKIKP	PKPdf	22 05 17.8	-0.6	
VRH				pmax	pmax			
	comp=Z,60nm,0.9s							
LPSR	Galich'ya Gora	136.93	330	*e*PKIKP	PKPdf	22 05 19.6	+0.2	
LPSR				pmax	pmax			
	comp=Z,70nm,1.1s							
VSU	Vasula	137.13	343	*c i* PKIKP	PKPdf	22 05 17.9	-1.7	
VSU				pmax	pmax			
	comp=Z,172nm,1.2s							
NB201	NORSAR Array S	137.43	355	*e*PKPdf	PKPdf	22 05 17.9	-2.2	
NB2	NORSAR Subarra	137.44	355	PKP	PKPpre	22 05 10.1		
	comp=Z,19nm,1.2s,baz=17,slow=2.6							
NB2	NORSAR Subarra	137.44	355	PKP	PKPpre	22 05 10.1		
	baz=17,slow=2.6							
NOA	NORSAR Array B	137.44	355	PKhKP	PKPpre	22 05 07.8		
	comp=Z,2.0nm,0.8s,baz=213,slow=20,SNR=6.6							
NOA				PKP	PKPdf	22 05 18.6	-1.6	
	comp=Z,9.7nm,0.8s,baz=20,slow=2.5,SNR=14							
NOA				PP	PP	22 08 03.8	-3.9	
	comp=Z,7.0nm,1.0s,baz=8.5,slow=6.2,SNR=5.3							
NOA				PKIKP	PKPdf	22 05 18.6	-1.6	
NOA				pmax	pmax			
	comp=Z,15nm,1.1s							
NOA				pmax	pmax			
	comp=Z,7.0nm,1.0s							
NAO01	NORSAR Array S	137.66	356	*e*PKPdf	PKPdf	22 05 19.2	-1.3	
VSR	Storozhevoye	137.67	328	*e*PKIKP	PKPdf	22 05 19.8	-1.0	
VSR				pmax	pmax			
	comp=Z,50nm,1.1s							
DGRG	David-gareji	138.65	312	P	PKPpre	22 05 15.5		
DGRG	David-gareji	138.65	312	*e*PKHKP	PKPpre	22 05 15.4		
KONO	Kongsberg	138.94	356	*e*PKHKP	PKPpre	22 05 15.0		
TBLG	Delisi	138.99	313	P	PKPpre	22 05 20.5		
TBLG	Delisi	138.99	313	*e*PKIKP	PKPpre	22 05 20.5		
LSZ	Lusaka	139.10	216	PP	PP	22 08 13.9	-4.7	
	comp=Z,12nm,1.1s,baz=195,slow=4.6,SNR=6.2							
LSZ				SKPab	SKPab	22 08 53.9	+4.0	
	comp=Z,12nm,1.1s,baz=178,slow=7.0,SNR=4.8							
KBZ	Khabaz	139.43	316	PKhKP	PKPpre	22 05 16.9		
	comp=Z,9.4nm,0.9s,baz=283,slow=1.8,SNR=10							
KBZ				PP	PP	22 08 18.8	-2.1	
	comp=Z,10nm,0.9s,baz=66,slow=11,SNR=5.7							
KVAR	Kislovodsk Arr	139.46	317	PKhKP	PKPpre	22 05 17.7		
	comp=Z,14nm,0.9s,baz=73,slow=3.5,SNR=7.9							
KVAR				PKP	PKPdf	22 05 24.4	-0.1	
	comp=Z,10nm,0.8s,baz=347,slow=3.7,SNR=8.7							
KIV	Kislovodsk	139.47	317	*i* PKHKP	PKPpre	22 05 18.2		
KIV				*i*		22 05 23.9		
KIV				*e*		22 08 19.1		
KIV				pmax	pmax			
	comp=Z,21nm,1.0s							
KIV				pmax	pmax			
	comp=Z,28nm,1.2s							
ONI	Oni	139.54	315	P	PKPpre	22 05 17.9		
ONI	Oni	139.54	315	*e*PKHKP	PKPpre	22 05 17.8		
GNI	Garni	139.55	311	*d* iPKIKP	PKPdf	22 05 25.2	+0.3	
GNI	Garni	139.55	311	P	PKPdf	22 05 25.6	+0.7	
	SNR=9.0							
GNI	Garni	139.55	311	PKPdf	PKPdf	22 05 25.6	+0.7	
	SNR=9.0							
NEY	Neytrino	139.75	316	*e*PKIKP	PKPdf	22 05 24.7	-0.5	
ISAL	Salakas	139.76	341	*e*P	PKPpre	22 05 17.4		
ISAL				IAmb	IAmb	22 05 25.9		
	comp=Z,24nm,1.2s							
IDID	Didziasalis	139.79	341	*e*P	PKPpre	22 05 18.1		
IDID				IAmb	IAmb	22 05 28.8		
	comp=Z,30nm,1.1s							
IIGN	Ignalina	139.92	341	*e*P	PKPpre	22 05 18.0		
IIGN				IAmb	IAmb	22 05 26.2		
	comp=Z,20nm,1.0s							
AKH	Akhalkalaki	139.98	313	⇑*i* P	PKPpre	22 05 19.0		
MICGM	Minsk	140.09	339	*e*P	PKPpre	22 05 19.0		
MNK	Minsk	140.09	339	*e*PKHKP	PKPpre	22 05 19.0		
NACGM	Naroch	140.12	340	*e*	PKPpre	22 05 20.0		
ARTV	Artvin	141.15	313	⇓*i* P	PKPdf	22 05 28.2	+0.4	
HAKT	HAKKARI	141.16	307	*i* P	PKPpre	22 05 22.5		
DRUM	Mains of Drumt	141.46	6	*e*P	PKPpre	22 05 21.5		
SOC	Sochi	141.54	318	*e*PKIKP	PKPdf	22 05 26.8	-1.3	
SOC				*e*		22 08 29.5		
SOC				*e*PPP	PPP	22 11 48.4		
SOC				pmax	pmax			
	comp=Z,46nm,1.0s							
SOC				pmax	pmax			
	comp=Z,35nm,0.9s							
DAMY	Dhamar	141.82	270	*e*PKPpre	PKPpre	22 05 26.1		
EAB	Aberfoyle	141.94	8	*e*P	PKPpre	22 05 23.5		
SUW	Suwalki	141.98	342	*e*PKP	PKPpre	22 05 23.8		
SUW	Suwalki	141.98	342	*e*PKHKP	PKPpre	22 05 23.9		
ERZM	Erzurum	142.05	312	*i* P	PKPpre	22 05 25.2		
MUD	Monsted U'grnd	142.14	356	*i* P	PKPpre	22 05 24.0		
MUD	Monsted U'grnd	142.14	356	*e*PKHKP	PKPpre	22 05 24.0		
SIRN	S¯¬rnak	142.15	308	⇓*i* P	PKPpre	22 05 24.1		
KLNR	Kaliningrad	142.23	345	*i* PKHKP	PKPpre	22 05 24.8		
ANN	Anapa	142.32	321	*e*PKIKP	PKPpre	22 05 26.5		
ANN				pmax	pmax			
	comp=Z,124nm,0.8s							
KMBO	Kilima Mbogo	142.45	242	PKhKP	PKPpre	22 05 27.5		
	comp=Z,44nm,1.1s,baz=86,slow=4.0,SNR=89							
KMBO	Kilima Mbogo	142.45	242	*e*PKPpre	PKPpre	22 05 27.8		
KMBO	Kilima Mbogo	142.45	242	PKPdf	PKPpre	22 05 28.1		
	SNR=70							
ATD	Arta Tunnel	142.57	265	PKhKP	PKPpre	22 05 28.6		
	comp=Z,38nm,0.9s,baz=266,slow=1.6,SNR=10							
BNGL	BINGOL	142.57	310	⇓*i* P	PKPpre	22 05 27.0		
GMK	Mull of Kintyr	142.57	10	*e*P	PKPpre	22 05 25.8		
AKASG	Malin Array Be	142.59	334	PKhKP	PKPpre	22 05 24.1		
	comp=Z,40nm,0.8s,baz=40,slow=4.2,SNR=120							
AKBB	Malin Array Si	142.59	334	*e*PKHKP	PKPpre	22 05 25.3		
AKBB	Malin Array Si	142.59	334	*e*PKPpre	PKPpre	22 05 25.3		
KIEV	Kiev	142.60	334	*e*PKHKP	PKPpre	22 05 26.2		
KIEV				pmax	pmax			
	comp=Z,33nm,0.9s							
KIEV	Kiev	142.60	334	*e*PKPpre	PKPpre	22 05 24.9		
AK11	Malin Array Si	142.63	334	*e*PKPpre	PKPpre	22 05 24.9		
BSD	Bornholm Skovb	142.81	350	*i* P	PKPpre	22 05 25.8		
	comp=Z,70nm,1.0s							
BSD	Bornholm Skovb	142.81	350	*i* PKHKP	PKPpre	22 05 25.8		
BSD				pmax	pmax			
	comp=Z,70nm,1.0s							
BTMN	Batman	142.87	309	⇓*i* P	PKPpre	22 05 27.2		
EKA	Eskdalemuir Ar	142.93	7	PKhKP	PKPpre	22 05 26.0		
	comp=Z,22nm,0.8s,baz=331,slow=2.9,SNR=59							
ESK	Eskdalemuir	142.94	8	*e*P	PKPpre	22 05 25.8		
ESK	Eskdalemuir	142.94	8	*e*PKHKP	PKPpre	22 05 26.3		
ESK	Eskdalemuir	142.94	8	*e*PKPpre	PKPpre	22 05 26.3		
BWH	Wardlaw	143.02	8	*e*P	PKPpre	22 05 26.6		
ECK	Cauldkaine Hil	143.08	7	*e*P	PKPab	22 05 26.4	0.0	
BHH	Howats Hill	143.16	8	*e*P	PKPab	22 05 26.8	+0.1	
GAL1	Galloway	143.17	9	*e*P	PKPab	22 05 27.0	+0.2	
EUZM	Uzumlu	143.31	312	⇓*i* P	PKPbc	22 05 29.0	-0.3	
KELT	Kelkit	143.43	313	⇓*i* P	PKPab	22 05 27.6	-1.0	
MARD	Mardin	143.44	308	⇓*i* P	PKPab	22 05 29.0	+0.4	
GMM	Mts of Mourne	143.57	11	*e*P	PKPab	22 05 28.1	-0.3	
TNCL	Tunceli-Merkez	143.66	311	⇓*i* P	PKPbc	22 05 30.3	0.0	
LCP	Cassop	143.70	6	*e*P	PKPab	22 05 29.1	+0.2	
DIYA	Diyarbakir	143.71	309	⇓*i* P	PKPbc	22 05 30.8	+0.4	
GRSN	GIRESUNGRSN	143.75	315	*i* P	PKPab	22 05 27.8	-1.8	
ORDU	Ordu-Boztepe	144.00	315	⇓*i* P	PKPbc	22 05 30.9	-0.3	
SHEL	Horse Pasture	144.06	163	*i* PKIKP	PKPdf	22 05 34.2	+0.7	
SHEL	Horse Pasture	144.06	163	*e*PKPdf	PKPdf	22 05 33.7	+0.2	
SUSE	Susehri	144.12	314	⇓*i* P	PKPbc	22 05 32.0	+0.3	
SIM	Simferopol'	144.16	323	*i* PKIKP	PKPbc	22 05 31.8	+0.4	
SIM				*e*		22 06 29.0		
SIM

KSP Ksiaz 146.62 347 ePKIKP PKPdf 22 05 37.5 +0.7
BUR08 Bucovina Ar. S 146.63 335 ePKPdf PKPdf 22 05 37.9 +0.8
BURAR Bucovina Array 146.64 334 ⇓iP PKPbc 22 05 39.3 +0.3
BURAR Bucovina Array 146.64 334 ⇓PKP2 PKPbc 22 05 39.3 +0.3
ILGA Ilgaz 146.66 318 ⇓iP PKPdf 22 05 37.5 0.0
KOLS Kolonicke sedl 146.66 339 ePKIKP PKPbc 22 05 38.1 -0.8
KOLS e 22 05 40.0
KOLS Kolonicke sedl 146.66 339 ePKP PKPbc 22 05 38.1 -0.8
KOLS e 22 05 40.0
SKP1 Kophill 146.75 6⇓eP PKPbc 22 05 38.4 -0.5
DRWC Darouich 146.75 309 eP PKPab 22 05 40.4 -0.9
WTSB Winterswijk 146.75 358 ePKP PKPdf 22 05 37.4 +0.5
comp=Z,364nm,1.1s
WTSB epPKP pPKPdf 22 06 32.2 +0.2
CLL Collm 146.80 350 ePKPdf PKPdf 22 05 37.0 0.0
comp=Z,48nm,1.3s
CLL ⇓iPKPbc PKPbc 22 05 39.6 +0.5
comp=Z,454nm,1.1s
CLL i 22 05 47.6
CLL e 22 05 55.0
CLL e 22 06 19.0
CLL iPKPbc PKPbc 22 06 35.3 +1.9
CLL e 22 06 41.0
CLL eSS SS 22 27 47.0 +1.9
CLL eSS 22 29 02.0
CLL eSSS SSS 22 33 18.0
CLL eSSS 22 34 50.0
CLL eSSSS 22 37 42.0
CLL Collm 146.80 350⇓ePKIKP PKPdf 22 05 37.0 0.0
CLL i 22 05 39.6
CLL pmax pmax
comp=Z,48nm,1.3s
CLL pmax pmax
comp=Z,454nm,1.1s
CLL Collm 146.80 350 ePKPdf PKPdf 22 05 37.2 +0.2
TLCR 146.84 328⇑iP PKPbc 22 05 40.1 +0.7
TLCR 146.84 328⇑PKP2 PKPbc 22 05 40.1 +0.7
SWN1 Swindon 146.84 7⇓eP PKPbc 22 05 39.3 +0.1
SWN1 AMB AMB 22 05 40.0
comp=Z,355nm,1.1s
BATH Bath 146.84 8⇓eP PKPbc 22 05 39.1 -0.1
BATH AMB AMB 22 05 39.7
comp=Z,292nm,1.0s
RAC Raciborz 146.87 344 ePKIKP PKPdf 22 05 38.1 +0.9
NIE Niedzica 146.88 341 ePKPdf PKPdf 22 05 38.3 +1.0
NIE epPKPab PKPab 22 05 40.4 -0.9
NIE Niedzica 146.88 341 ePKIKP PKPbc 22 05 38.4 -1.1
UZH Uzhgorod 146.91 338 ePKIKP PKPdf 22 05 37.3 0.0
UZH i 22 05 40.5
UZH e 22 06 14.7
CRVS Cervenica-Dubn 146.96 340 ePKIKP PKPdf 22 05 38.3 +0.9
CRVS e 22 05 40.8
CRVS Cervenica-Dubn 146.96 340 ePKP PKPdf 22 05 38.3 +0.9
CRVS e 22 05 40.8
UPC Upice 147.00 347 ePKP PKPdf 22 05 37.9 +0.5
UPC ex x 22 05 40.5
UPC epPKP pPKPdf 22 06 37.3 +4.8
UPC Upice 147.00 347 ePKIKP PKPdf 22 05 37.9 +0.5
UPC e 22 05 40.5
BRG Berggiesshubel 147.06 349 iPKP PKPdf 22 05 37.9 +0.4
comp=Z,82nm,1.4s
BRG i 22 05 40.5
comp=Z,328nm,1.3s
BRG i 22 05 48.5
comp=Z,71nm,0.9s
BRG ipPKP pPKPdf 22 06 36.7 +4.2
comp=Z,347nm,1.9s
BRG isPKP 22 06 55.6
comp=Z,39nm,1.1s
BRG Berggiesshubel 147.06 349 iPKIKP PKPdf 22 05 37.9 +0.4
BRG i 22 05 40.5
BRG pmax pmax
comp=Z,82nm,1.4s
BRG pmax pmax
comp=Z,328nm,1.3s
BRG pmax pmax
comp=Z,71nm,0.9s
BRG pmax pmax
comp=Z,347nm,2.0s
BRG pmax pmax
comp=N,39nm,1.2s
AVNS Nevsehir-Avano 147.07 314⇓iP PKPdf 22 05 37.7 -0.4
DPC Dobruska-Polom 147.08 346 ePKP PKPdf 22 05 38.2 +0.6
DPC ex x 22 05 41.1
DPC epPKP pPKPdf 22 06 36.9 +4.2
DPC Dobruska-Polom 147.08 346 ePKIKP PKPdf 22 05 38.2 +0.6
DPC e 22 05 41.1
WOL Wolverton 147.11 7⇓eP PKPbc 22 05 39.9 -0.1
WOL AMB AMB 22 05 40.7
comp=Z,358nm,1.1s
OKC Ostrava-Krasne 147.11 344 ePKP PKPdf 22 05 38.3 +0.7
OKC ex x 22 05 40.6
OKC Ostrava-Krasne 147.11 344 ePKIKP PKPdf 22 05 38.3 +0.7
OKC e 22 05 40.6
BTCH Batrach 147.14 308 eP PKPdf 22 05 39.0 +0.8
ELDT Eldivan 147.15 318⇓iP PKPbc 22 05 41.5 +0.8
CFR Carcaliu 147.18 329⇑iP PKPdf 22 05 38.3 +0.5
CFR Carcaliu 147.18 329⇑PKIKP PKPdf 22 05 38.3 +0.5
ROOS tl_alroos 147.18 305 eP PKPbc 22 05 41.9 +1.0
KRLC Kraliky 147.23 346 ePKP PKPdf 22 05 38.3 +0.4
KRLC ex x 22 05 41.2
KRLC Kraliky 147.23 346 ePKIKP PKPdf 22 05 38.3 +0.4
KRLC e 22 05 41.2
BTIN Bart¯–n 147.24 320⇓iP PKPdf 22 05 33.3 -4.8
TRPA Tarpa 147.25 338⇓ePKPdf PKPbc 22 05 41.0 +0.5
ODBI Odobesti 147.27 331⇓iP PKPab 22 05 42.2 -0.7
PVCC Panska Ves 147.27 348 ePKP PKPdf 22 05 38.3 +0.5
PVCC epPKP pPKPdf 22 06 37.3 +4.4
PVCC Panska Ves 147.27 348 ePKIKP PKPdf 22 05 38.3 +0.5
BMR Baia Mare 147.28 336⇑iP PKPab 22 05 41.7 -1.2
BMR Baia Mare 147.28 336⇑PKP2 PKPab 22 05 41.7 -1.2
AKO Adana 147.28 311⇓iP PKPdf 22 05 38.5 +0.1
MORC Moravsky Berou 147.32 345⇑iP PKPdf 22 05 38.7 +0.7
MORC Moravsky Berou 147.32 345 ePKIKP PKPdf 22 05 39.0 +1.0
MORC Moravsky Berou 147.32 345 ePKPdf PKPdf 22 05 39.0 +1.0
VRI Vrincioaia 147.34 331⇓iP PKPbc 22 05 41.4 +0.5
VRI Vrincioaia 147.34 331⇓PKP2 PKPbc 22 05 41.4 +0.5
LANS Liptovska Anna 147.36 342 ePKIKP PKPbc 22 05 39.6 -1.2
LANS e 22 05 42.6
LANS Liptovska Anna 147.36 342 ePKP PKPbc 22 05 39.6 -1.2
LANS e 22 05 42.6
PLOR Plostina 147.39 331⇑iP PKPbc 22 05 41.0 0.0
PLOR Plostina 147.39 331⇑PKP2 PKPbc 22 05 41.1 0.0
YAYL Yayladag 147.40 308⇓iP PKPdf 22 05 37.6 -1.0
BR131 Keskin Array S 147.42 316 ePKPdf PKPdf 22 05 38.6 0.0
YURE YUREGIR 147.42 310⇓iP PKPbc 22 05 42.3 +0.9
BRTR Keskin Array B 147.42 316 PKP PKPdf 22 05 38.1 -0.5
comp=Z,173nm,0.9s,baz=132,slow=1.8,SNR=79
BRTR PKPbc PKPbc 22 05 42.0 +0.6
comp=Z,274nm,1.0s,baz=139,slow=2.6,SNR=189
CMLA Cha da Macela 147.48 48 iPKP2 PKPab 22 05 43.6 -0.5
ELSH Elham, Standar 147.49 4⇓eP PKPbc 22 05 41.4 +0.4
ELSH AMB AMB 22 05 42.1
comp=Z,402nm,1.1s
SLNF Slenfeh 147.49 308 eP PKPbc 22 05 42.2 +0.4
ZALF Zalf 147.55 302 eP PKPbc 22 05 41.7 -0.2
TIRR Tirgusor 147.56 328⇓iP PKPbc 22 05 41.8 +0.4
TIRR Tirgusor 147.56 328 ePKP2 PKPbc 22 05 41.8 +0.4
TIRR Tirgusor 147.56 328 ePKPbc PKPbc 22 05 41.8 +0.4
ARNB Al Arnab 147.57 308 eP PKPbc 22 05 42.5 +0.6
DYA Yadsworthy 147.58 10⇓eP PKPbc 22 05 41.0 -0.3
DYA AMB AMB 22 05 41.8
comp=Z,148nm,1.2s
DYA Yadsworthy 147.58 10 ePKPdf PKPdf 22 05 39.2 +0.9
CCA1 Carnmenellis 147.58 12 eP PKPbc 22 05 41.0 -0.3
CCA1 AMB AMB 22 05 41.9
comp=Z,108nm,1.1s
GRER 147.59 330⇓iP PKPab 22 05 43.1 -1.1
HARR Harsova 147.63 328⇓iP PKPbc 22 05 42.3 +0.7
HARR Harsova 147.63 328⇓PKP2 PKPbc 22 05 42.3 +0.7
KECS Kecovo 147.64 340 ePKP PKPdf 22 05 38.7 +0.2
KECS e 22 05 42.8
HMNX Herstmonceux 147.70 5⇓eP PKPbc 22 05 42.1 +0.5
HMNX AMB AMB 22 05 42.8
comp=Z,273nm,1.1s
PRA Prague 147.74 348 ePKP PKPdf 22 05 39.5 +0.9
PRA ex x 22 05 42.5
PRA Prague 147.74 348 ePKIKP PKPdf 22 05 39.5 +0.9
PRA e 22 05 42.5
PRU Pruhonice 147.79 348 ePKP PKPdf 22 05 39.1 +0.4
PRU ex x 22 05 42.5
PRU Pruhonice 147.79 348 ePKIKP PKPdf 22 05 39.1 +0.4
PRU e 22 05 42.5
GOPC GO Pecny, Ondr 147.82 348 ePKP PKPdf 22 05 39.2 +0.4
GOPC ex x 22 05 42.6
GOPC epPKP pPKPdf 22 06 38.9 +5.0
GOPC GO Pecny, Ondr 147.82 348 ePKIKP PKPdf 22 05 39.2 +0.4
GOPC e 22 05 42.6
BCAM Yenicaga 147.83 319⇓iP PKPdf 22 05 38.6 -0.7
BBAL Bala 147.85 316⇓iP PKPdf 22 05 39.1 -0.2
MARH Ras Al Marh 147.86 305 eP PKPbc 22 05 44.1 +1.1
AKSY AKSARAY - Alti 147.89 314⇓iP PKPdf 22 05 38.6 -0.8
ANTO Ankara 147.89 317 ePKIKP PKPdf 22 05 39.5 +0.2
ANTO Ankara 147.89 317 ePKPdf PKPdf 22 05 39.5 +0.2
MANR Mangalia 147.91 327⇓iP PKPbc 22 05 43.4 +1.0
BR231 Keskin MP Arra 147.92 317 ePKPdf PKPdf 22 05 38.1 -1.3
BR231 ePKPdf PKPbc 22 05 39.9 -2.8
NKC Novy Kostel 147.93 351 ePKP PKPdf 22 05 39.2 +0.2
NKC ex x 22 05 42.9
NKC Novy Kostel 147.93 351 ePKIKP PKPdf 22 05 39.2 +0.2
NKC e 22 05 42.9
PGOR Pogoanele 147.94 330⇓iP PKPbc 22 05 43.4 +1.0
BEBN Eben Emael 147.95 359 PKPbc PKPbc 22 05 42.7 +0.4
BEBN APKP pPKPdf 22 06 38.8 +4.8
UCC Uccle 147.96 0 PKPbc PKPbc 22 05 42.4 +0.1
UCC APKP pPKPdf 22 06 38.7 +4.7
DED Mersin 147.96 311⇓iP PKPdf 22 05 38.4 -1.1
HGN Heimansgroeve 147.98 359 ePKP PKPdf 22 05 39.1 +0.1
comp=Z,281nm,1.5s
HGN epPKP pPKPdf 22 06 36.9 +2.8
AMRR Amara 147.98 329⇓iP PKPbc 22 05 43.8 +1.3
AMRR Amara 147.98 329⇓PKP2 PKPbc 22 05 43.8 +1.3
MLR Muntele Rosu 147.99 331⇑iP PKPdf 22 05 39.8 +0.4
MLR Muntele Rosu 147.99 331 ePKIKP PKPdf 22 05 39.4 0.0
MLR Muntele Rosu 147.99 331 ePKPdf PKPdf 22 05 39.4 0.0
VRAC Vranov 147.99 345 PKP PKPdf 22 05 39.1 0.0
comp=Z,81nm,1.1s,baz=16,slow=2.5,SNR=38
VRAC PKPbc PKPbc 22 05 43.2 +0.8
comp=Z,68nm,1.0s,baz=30,slow=1.5,SNR=64
VRAC Vranov 147.99 345⇑iP PKPab 22 05 47.4 +1.7
ISR Istrita 147.99 330⇑iP PKPbc 22 05 43.1 +0.4
ISR Istrita 147.99 330⇑PKP2 PKPbc 22 05 43.1 +0.4
SALA Sala 148.09 302 eP PKPbc 22 05 42.5 -1.0
ASF Jabal al Asfar 148.12 301 PKP PKPdf 22 05 40.1 +0.1
comp=Z,120nm,0.9s,baz=126,slow=0.7,SNR=24
ASF PKPbc PKPbc 22 05 44.2 +0.8
comp=Z,120nm,0.9s,baz=49,slow=1.4,SNR=145
ASF PP PP 22 09 12.2 -1.4
comp=Z,11nm,1.1s,baz=34,slow=2.5,SNR=5.0
TOTH TOTAH 148.13 304 eP PKPbc 22 05 44.1 +0.7
MEM Membach 148.13 358 PKPbc PKPbc 22 05 43.1 +0.4
MEM APKP pPKPdf 22 06 39.3 +5.0
VYHS Vyhne 148.14 342 ePKIKP PKPdf 22 05 39.8 +0.4
VYHS e 22 05 44.1
VYHS pmax pmax
comp=N,5.0nm,0.4s
VYHS Vyhne 148.14 342 ePKP PKPdf 22 05 39.8 +0.4
VYHS e 22 05 44.1
MDB Medias 148.16 334⇑iP PKPbc 22 05 44.2 +1.2
MDB Medias 148.16 334⇑PKP2 PKPbc 22 05 44.2 +1.2
KKUL Konya-Kulu 148.19 316⇓iP PKPdf 22 05 38.8 -1.1
HWQ Hawqa 148.19 305 eP PKPdf 22 05 40.4 +0.3
QASN Qassioun 148.19 304 eP PKPbc 22 05 44.2 +0.6
KERG Konya-Eregli 148.24 312⇓iP PKPdf 22 05 38.0 -2.0
SNF Seneffe 148.25 1 PKPbc PKPbc 22 05 43.1 +0.1
SNF APKP pPKPdf 22 06 39.7 +5.2
TREC Trest 148.26 347 ePKP PKPdf 22 05 39.8 +0.2
TREC ex x 22 05 43.6
TREC Trest 148.26 347 ePKIKP PKPdf 22 05 39.8 +0.2
TREC e 22 05 43.6
DRGR 148.31 336⇑iP PKPdf 22 05 40.1 +0.3
DRGR 148.31 336⇑PKIKP PKPdf 22 05 40.1 +0.3
PSZ Piszkesteto 148.33 340⇑iP PKPbc 22 05 43.7 +0.2
PSZ Piszkesteto 148.33 340⇑ePKPdf PKPbc 22 05 43.9 +0.4
PSZ Piszkesteto 148.33 340 ePKIKP PKPdf 22 05 39.8 0.0
PSZ Piszkesteto 148.33 340 ePKPdf PKPdf 22 05 39.8 0.0
BCLA Clavier 148.34 359 PKPbc PKPbc 22 05 43.4 +0.1
BCLA APKPbc 22 06 37.7
VOIR 148.43 332⇑iP PKPdf 22 05 41.1 +1.1
VOIR 148.43 332⇑PKIKP PKPdf 22 05 41.1 +1.1
SULR 148.46 330⇑iP PKPdf 22 05 40.9 +1.0
BRBR Barbar 148.49 304 eP PKPbc 22 05 44.5 0.0
SMOL Smolenice 148.51 344 ePKP PKPbc 22 05 45.4 +1.6
SMOL e 22 05 48.9
SAHE Sakarya_HENDEK 148.55 320⇓iP PKPdf 22 05 39.3 -1.0
BHL Bhannes 148.55 305 eP PKPdf 22 05 41.2 +0.6
RCY Rachaya 148.55 304 eP PKPdf 22 05 41.3 +0.6
MTUR Matau 148.59 332⇓iP PKPbc 22 05 43.8 -0.4
MTUR Matau 148.59 332⇓PKP2 PKPbc 22 05 43.8 -0.4
BTAS Taskesti 148.63 320⇓iP PKPdf 22 05 39.9 -0.5
GRFO Grafenberg 148.63 352 ePKIKP PKPdf 22 05 40.5 +0.4
GRFO Grafenberg 148.63 352 ePKPdf PKPdf 22 05 40.5 +0.4
KIZK Mersin 148.65 310⇓iP PKPdf 22 05 39.9 -0.7
DOU Dourbes 148.66 0 PKPbc PKPbc 22 05 44.2 +0.1
DOU APKP pPKPdf 22 06 40.0 +4.8
ARR Arges 148.67 333⇑iP PKPbc 22 05 46.1 +1.7
DQRL Deir Qamar 148.69 305 eP PKPdf 22 05 42.0 +1.2
BTMR Bucharest-Geot 148.71 330⇓iP PKPbc 22 05 45.5 +1.1
TCHB Talchebab 148.72 303 eP PKPbc 22 05 44.5 -0.3
BAPR Bucharest-Chil 148.72 330⇑iP PKPbc 22 05 44.7 +0.3
BUC Bucharest 148.73 330⇑PKP2 PKPbc 22 05 45.0 +0.5
AUMIH MIHALICIK 148.73 318⇓iP PKPdf 22 05 40.3 -0.4
KAND Kocaeli-Kandir 148.80 321⇓iP PKPdf 22 05 39.5 -1.1
KHC Kasperske Hory 148.80 349 ePKP PKPdf 22 05 40.6 +0.1
KHC ex x 22 05 45.2
KHC ex x 22 05 49.2
KHC epPKP pPKPdf 22 06 32.5 -3.1
KHC ex x 22 06 41.8
KHC Kasperske Hory 148.80 349 ePKIKP PKPdf 22 05 40.6 +0.1
KHC e 22 05 49.2
KHC e 22 06 32.5
KHC Kasperske Hory 148.80 349 ePKPdf PKPdf 22 05 40.7 +0.2
BUC1 Bucharest 148.81 330⇑iP PKPbc 22 05 45.0 +0.3
GOLR 148.93 332⇓iP PKPdf 22 05 42.7 +1.9
PRD Provadia 148.96 327 eP PKPdf 22 05 41.1 +0.3
LOT Lotru 148.98 334⇑iP PKPdf 22 05 40.8 -0.2
DEV Deva 148.98 335⇓iP PKPbc 22 05 45.8 +0.7
DEV Deva 148.98 335⇓PKP2 PKPbc 22 05 45.8 +0.7
BUD Budapest 148.99 341⇓ePKPdf PKPbc 22 05 45.5 +0.5
GEC2 GERESS Array S 149.05 348 ePKIKP PKPdf 22 05 41.5 +0.5
GEC2 GERESS Array S 149.05 348 ePKPdf PKPdf 22 05 41.5 +0.5
GERES GERESS Array B 149.05 348 PKP PKPdf 22 05 40.7 -0.3
comp=N,67nm,0.9s,baz=108,slow=0.4,SNR=191
GERES PKPbc PKPbc 22 05 45.3 0.0
comp=N,67nm,0.9s,baz=38,slow=2.4,SNR=190
GERES pPKPbc pPKPbc 22 06 42.0 +2.1
comp=N,21nm,0.8s,baz=28,slow=3.2,SNR=4.7
MMAI Mount Meron Ar 149.06 304 PKP PKPdf 22 05 41.3 -0.1
comp=N,222nm,0.7s,baz=57,slow=3.1,SNR=202
MMAI PKPbc PKiKP 22 05 46.6 -0.3
comp=N,214nm,0.7s,baz=67,slow=4.6,SNR=438
GEA0 GERESS Array S 149.06 348 ePKPdf PKPdf 22 05 40.3 -0.7
KDHN Kadinhani 149.06 315⇓iP PKPdf 22 05 40.4 -0.9
JSA Saint Aubin 149.07 9⇓eP PKPbc 22 05 45.2 +0.1
JSA AMB AMB 22 05 46.0
comp=Z,388nm,0.9s
WLF Walferdange 149.07 358 PKPbc PKPbc 22 05 46.2 +1.0
WLF APKP pPKPdf 22 06 42.2 +6.3
WLF Walferdange 149.07 358 ePKIKP PKPdf 22 05 41.6 +0.8
WLF Walferdange 149.07 358 ePKPdf PKPdf 22 05 41.6 +0.8
JRS Jersey 149.07 9⇓eP PKPbc 22 05 45.0 -0.1
SIRR Siria 149.14 337⇑iP PKPdf 22 05 41.9 +0.8
HUMR Humele 149.16 331⇓iP PKPdf 22 05 41.0 -0.1
PKSG 149.26 342⇓ePKPdf PKPbc 22 05 46.0 +0.3
KMER Konya-Meram 149.28 314⇓iP PKPbc 22 05 45.8 -0.4
CSKK Cs¯ákako 149.32 342⇓ePKPdf PKPbc 22 05 46.2 +0.3
PKS7 Kunszentmiklos 149.33 340⇓ePKPdf PKPbc 22 05 46.4 +0.5
ESKT Eskisehir 149.33 318 iP PKPdf 22 05 41.0 -0.8
PHNC Paralimni 149.36 308 P PKPbc 22 05 47.0 +0.6
GZR Gura Zlata 149.43 335⇑iP PKPdf 22 05 41.5 -0.1
GZR Gura Zlata 149.43 335⇑PKIKP PKPdf 22 05 41.5 -0.1
CONA Conrad Observa 149.45 345 iPKPdf PKPdf 22 05 41.8 +0.2
comp=Z,29nm,1.3s,SNR=115
CONA iPKiKP PKiKP 22 05 47.1 -0.2
comp=Z,379nm,1.3s
ERMK Ermenek 149.45 312⇓iP PKPdf 22 05 41.7 -0.4
ISK Istanbul-Kandi 149.48 322 P PKPdf 22 05 40.5 -1.2
ISK Istanbul-Kandi 149.48 322 PKIKP PKPdf 22 05 40.5 -1.2
ISK Istanbul-Kandi 149.48 322 P PKPdf 22 05 40.5 -1.2
PKST T¯'s 149.49 342⇓ePKPdf PKPbc 22 05 46.4 +0.1
SOP Sopron 149.50 344⇓ePKPdf PKPbc 22 05 47.1 +0.8
BUY Buyukada 149.59 322⇓iP PKPdf 22 05 41.2 -0.7
AUKUT KUTAHYA 149.59 320⇓iP PKPdf 22 05 42.5 +0.4
ZIMR 149.65 330⇑iP PKPbc 22 05 47.0 +0.3
ZIMR 149.65 330⇑PKP2 PKPbc 22 05 47.0 +0.3
AUKIR K¯–rka- Seyitg 149.67 318⇓iP PKPdf 22 05 41.9 -0.4
LANF Langenberg 149.68 356 PKP PKPdf 22 05 42.4 +0.6
BZS Buzias 149.71 336⇓iP PKPdf 22 05 42.1 +0.1
BZS Buzias 149.71 336⇓PKIKP PKPdf 22 05 42.1 +0.1
BOLV Bolvadin 149.72 317⇓iP PKPdf 22 05 41.9 -0.5
TIM Timisoara 149.75 337⇓iP PKPbc 22 05 48.5 +1.6
TIM Timisoara 149.75 337⇓PKP2 PKPbc 22 05 48.5 +1.6
STU Stuttgart 149.77 354 ePKPdf PKPdf 22 05 42.8 +0.8
SRE Strehaia 149.84 333⇑iP PKPbc 22 05 48.2 +1.0
SRE Strehaia 149.84 333⇑PKP2 PKPbc 22 05 48.2 +1.0
CRAR CRAIOVA 149.85 332⇑iP PKPbc 22 05 48.4 +1.2
CRAR CRAIOVA 149.85 332⇑PKP2 PKPbc 22 05 48.4 +1.2
MOA Mollin 149.89 347 iPKPdf PKPdf 22 05 41.6 -0.6
comp=Z,1.6nm,0.7s,SNR=38
MOA iPKiKP PKPbc 22 05 47.5 +0.3
comp=Z,130nm,1.3s
MOA iPKiKP pPKiKP 22 06 44.1 +1.1
comp=Z,82nm,1.2s
MAMC Mammari 149.90 309 P PKPbc 22 05 48.3 +0.6
CSS Mathiatis 149.90 308 P PKPbc 22 05 48.4 +0.7
CSS Mathiatis 149.90 308 P PKPdf 22 05 42.5 -0.1
CSS Mathiatis 149.90 308 P PKPdf 22 05 42.5 -0.1
CSS ePKPdf PKPdf 22 05 42.7 0.0
IGD Bursa 149.90 321⇓iP PKPdf 22 05 40.2 -2.2
JMB Yambol 149.90 327 eP PKPdf 22 05 42.2 -0.2
PKS9 Tamasi 150.02 341⇓ePKPdf PKPbc 22 05 47.6 0.0
ULDT Uludag 150.02 321⇓iP PKPdf 22 05 42.5 -0.4
BANR Banloc 150.09 336⇓iP PKPbc 22 05 49.2 +1.5
ARSA Arzberg 150.17 345 iPKPdf PKPdf 22 05 42.4 -0.2
comp=Z,16nm,1.4s,SNR=23
ARSA iPKiKP PKPbc 22 05 48.0 +0.1
comp=Z,71nm,1.1s
BAGO Egridir - ISPA 150.23 316⇓iP PKPdf 22 05 42.1 -1.0
PKSM Moragy 150.24 340⇓iP PKPdf 22 05 42.8 0.0
PKSM Moragy 150.24 340⇓ePKPdf PKPbc 22 05 48.3 +0.2
PKSM Moragy 150.24 340 ⇓PKIKP PKPdf 22 05 42.8 0.0
EDRB Edirne 150.26 326 P PKPdf 22 05 42.3 -0.6
EDRB Edirne 150.26 326 P PKPdf 22 05 42.3 -0.6
BFO Black Forest 150.29 355 ePKIKP PKPdf 22 05 43.2 +0.4
BFO Black Forest 150.29 355 ePKPdf PKPdf 22 05 43.2 +0.4
SZAC Souni 150.33 308 P PKPbc 22 05 49.2 +0.5
ALFC Alefka 150.36 309 P PKPbc 22 05 48.7 -0.1
EIL Elat 150.42 297 PKP PKPdf 22 05 43.5 -0.1
comp=Z,39nm,1.3s,baz=320,slow=1.0,SNR=17
EIL PKPbc PKiKP 22 05 49.7 0.0
comp=Z,348nm,1.0s,baz=18,slow=1.7,SNR=194
GDZ Gediz 150.45 319⇓iP PKPdf 22 05 42.6 -0.9
ECH Echery 150.48 357 PKP PKPdf 22 05 43.6 +0.5
ISP Isparta 150.50 316⇑iP PKPbc 22 05 48.8 -0.3
ISP Isparta 150.50 316 P PKPbc 22 05 48.3 -0.8
ISP Isparta 150.50 316 ePKIKP PKPbc 22 05 48.9 -0.2
ISP Isparta 150.50 316 ePKPbc PKPbc 22 05 48.9 -0.2
THEF They Montfort 150.52 358 PKP PKPdf 22 05 44.0 +0.8
BEHE Becsehely 150.56 343⇓ePKPdf PKPbc 22 05 49.3 +0.4
AKMC Akamas 150.62 309 P PKPbc 22 05 48.9 -0.5
PPCY Paphos 150.67 309 P PKPbc 22 05 49.2 -0.3
KOGS Kog 150.73 344 iPKPdf PKPdf 22 05 43.0 -0.5
KOGS iPKPbc PKPbc 22 05 49.2 -0.1
KOGS ePKPab PKPab 22 05 56.9 0.0
DURS Dursunbey 150.75 320⇓iP PKPdf 22 05 42.9 -1.0
KBA Koelnbreinsper 150.81 348 iPKPdf PKPdf 22 05 43.0 -0.8
comp=Z,17nm,1.1s,SNR=23
KBA iPKiKP PKPbc 22 05 49.3 -0.4
comp=Z,140nm,1.2s
KBA ipPKiKP pPKiKP 22 06 45.8 +0.7
comp=Z,53nm,0.9s
SOKA Soboth 150.82 345 iPKPdf PKPdf 22 05 43.3 -0.5
comp=Z,23nm,1.1s,SNR=25
SOKA iPKiKP PKPbc 22 05 49.4 -0.2
comp=Z,173nm,1.1s
PERS Pernice 150.84 345 ePKPdf PKPdf 22 05 43.3 -0.4
PERS ePKPbc PKPbc 22 05 49.4 -0.2
PERS ePKPab PKPab 22 05 57.1 -0.4
MOF Molkenrain 150.84 357 PKP PKPdf 22 05 43.8 0.0
RETA Reutte 150.85 352 iPKPdf PKPdf 22 05 43.3 -0.5
comp=Z,14nm,1.2s,SNR=37
RETA iPKiKP PKPbc 22 05 49.9 +0.3
comp=Z,167nm,1.2s
RETA ipPKiKP pPKiKP 22 06 46.4 +1.4
comp=Z,52nm,1.1s
KHAL Karahalli 150.86 317⇓iP PKPdf 22 05 43.4 -0.7
WATA Walderalm 150.88 350 iPKPdf PKPdf 22 05 43.4 -0.5
comp=Z,37nm,1.4s,SNR=44
WATA iPKiKP PKPbc 22 05 49.8 0.0
comp=Z,228nm,1.2s
WATA ipPKiKP pPKiKP 22 06 45.4 +0.2
comp=Z,40nm,0.9s
KNL Bal¯–kesir 150.89 322⇓iP PKPdf 22 05 41.7 -2.3
GROS Grobnik 150.91 345 ePKPdf PKPdf 22 05 43.4 -0.5
WTTA Wattenberg 150.94 350 iPKPdf PKPdf 22 05 44.0 0.0
comp=Z,30nm,1.4s,SNR=41
WTTA iPKiKP PKiKP 22 05 50.3 -0.2
comp=Z,128nm,0.7s
MOTA Moosalm 150.94 351 iPKPdf PKPdf 22 05 44.5 +0.4
comp=Z,32nm,1.2s,SNR=28
MOTA iPKiKP PKiKP 22 05 51.0 +0.5
comp=Z,140nm,0.9s
DEMI Demirci 150.95 319⇓iP PKPdf 22 05 43.0 -1.2
KORT Korkueli 151.05 314⇓iP PKPdf 22 05 43.7 -0.8
OBKA Obir 151.09 346 ePKPdf PKPdf 22 05 43.6 -0.6
comp=Z,8.1nm,1.1s
OBKA iPKPbc PKPbc 22 05 49.9 -0.3
comp=Z,53nm,0.9s
DAVA Damuels 151.16 353 iPKPdf PKPdf 22 05 44.1 -0.3
comp=Z,30nm,1.8s,SNR=56
DAVA iPKiKP PKiKP 22 05 50.8 -0.1
comp=Z,277nm,1.1s
DAVA ipPKiKP pPKiKP 22 06 47.3 +1.5
comp=Z,131nm,1.1s
MYKA Terra Mystica 151.18 347 iPKPdf PKPdf 22 05 43.7 -0.6
comp=Z,14nm,1.0s,SNR=36
MYKA iPKPbc PKPbc 22 05 49.9 -0.5
comp=Z,89nm,0.8s
UZP Denizli 151.26 317⇓iP PKPbc 22 05 51.5 +0.5
ABTA Abfaltersbach 151.29 349 iPKPdf PKPdf 22 05 43.9 -0.6
comp=Z,43nm,1.0s,SNR=24
ABTA iPKiKP PKPbc 22 05 50.4 -0.3
comp=Z,324nm,1.2s
ABTA ipPKiKP pPKiKP 22 06 46.1 +0.1
comp=Z,90nm,0.8s
ALN Alexandroupoli 151.29 325 P PKPdf 22 05 42.3 -2.2
ALN Alexandroupoli 151.29 325 PKIKP PKPdf 22 05 42.3 -2.2
ALN Alexandroupoli 151.29 325 P PKPdf 22 05 42.3 -2.2
GOLS Golise 151.29 344 iPKPdf PKPdf 22 05 44.6 +0.1
KULA Kula-Manisa 151.30 318 P PKPdf 22 05 44.9 +0.1
KULA Kula-Manisa 151.30 318 P PKPdf 22 05 44.9 +0.1
FETA Feichten 151.31 351 iPKPdf PKPdf 22 05 44.6 0.0
comp=Z,35nm,1.0s,SNR=26
FETA iPKiKP PKiKP 22 05 51.2 -0.1
comp=Z,223nm,1.1s
FETA ipPKiKP pPKiKP 22 06 47.8 +1.6
comp=Z,102nm,1.1s
ENEZ Enez 151.35 325 P PKPdf 22 05 44.1 -0.5
LOMF Lomont 151.36 357 PKP PKPdf 22 05 45.0 +0.4
GORS Gorjuse 151.40 347 ePKPdf PKPdf 22 05 44.0 -0.6
PDKS Podkum 151.41 345 iPKPdf PKPdf 22 05 44.6 -0.1
RZN Rozhen 151.43 328 eP PKPdf 22 05 43.9 -1.1
VTS Vitosha 151.48 331⇑iP PKPdf 22 05 45.3 +0.3
VTS Vitosha 151.48 331 P PKPdf 22 05 44.0 -1.0
VTS Vitosha 151.48 331 ePKIKP PKPdf 22 05 44.3 -0.7
VTS Vitosha 151.48 331 eP PKPdf 22 05 44.5 -0.5
VTS Vitosha 151.48 331 ePKPdf PKPdf 22 05 44.2 -0.7
LJU Ljubljana 151.54 346 iPKPdf PKPdf 22 05 44.9 +0.1
LJU iPKPbc PKiKP 22 05 51.3 -0.2
LJU ePKPab PKPab 22 06 00.0 -0.4
LJU epPKPdf pPKPdf 22 06 39.5 -0.4
LJU ipPKPbc pPKPbc 22 06 47.3 +1.4
SISC Sisak 151.59 343 P PKPdf 22 05 45.5 +0.7
AKHS Akhisar 151.60 320⇓iP PKPdf 22 05 44.4 -0.8
DAVOX Davos/Dischmat 151.66 353 PKP PKPdf 22 05 44.9 -0.3
comp=Z,12nm,0.9s,baz=259,slow=0.5,SNR=21
DAVOX PKPbc PKPbc 22 05 51.8 +0.1
comp=Z,128nm,0.9s,baz=339,slow=0.1,SNR=73
DAVOX pPKPbc pPKPbc 22 06 48.0 +1.6
comp=Z,75nm,0.9s,baz=45,slow=3.8,SNR=5.0
FUORN Ofenpass-Fuorn 151.77 352 ePKPdf PKPdf 22 05 46.1 +0.6
BOJS Bojanci 151.86 344 iPKPdf PKPdf 22 05 45.5 +0.3
BOJS iPKPbc PKiKP 22 05 52.5 +0.3
BOJS epPKPdf pPKPdf 22 06 39.4 -1.0
BOJS epPKPbc pPKPbc 22 06 48.2 +1.6
EZN Ezine 151.87 323 P PKPbc 22 05 52.2 +0.1

SMTH	Samothraki Isl	151.87 325	P	PKPdf	22 05 43.1	-2.4
SMTH	Samothraki Isl	151.87 325	P	PKPdf	22 05 43.1	-2.4
AKAS	Kas	151.97 314			/P	PKPdf	22 05 44.7	-1.2
MMB	Musomiste	152.00 329	eP	PKPdf	22 05 45.0	-0.7
AYVA	Ayvalik	152.00 322			/P	PKPdf	22 05 44.6	-1.0
BLY	Banja Luka	152.00 341	/P	PKPbc	22 05 53.0	+0.8
BOZC	Bozcaada	152.01 323			/P	PKPdf	22 05 43.5	-2.1
KSL	Kastellorizon	152.03 313	P	PKPbc	22 05 51.4	-1.1
TRI	Trieste	152.03 346	eP	KIKP	PKPdf	22 05 45.7	+0.2
TRI	Trieste	152.03 346	eP	KPdf	PKPdf	22 05 45.7	+0.2
TUE	Stuetta	152.03 353	eP	KPdf	PKPdf	22 05 46.0	+0.2
KAVA	Kavala	152.04 327	P	PKPbc	22 05 50.3	-2.1
KAVA	Kavala	152.04 327	P	PKPbc	22 05 50.3	-2.1
KKB	Krupnik	152.10 330	eP	PKPdf	22 05 44.7	-1.1
FETY	Fethiye	152.10 315	P	PKPdf	22 05 46.0	0.0
FETY	Fethiye	152.10 315	P	PKPdf	22 05 46.0	0.0
NVR	Nevrokopi	152.11 328	P	PKPdf	22 05 43.8	-2.0
NVR	Nevrokopi	152.11 328	P	PKPdf	22 05 43.8	-2.0
SKDS	Skadanscina	152.12 346	eP	KPdf	PKPdf	22 05 45.3	-0.4
PRK	Paraskevi	152.29 322	P	PKPdf	22 05 45.1	-1.0
PRK	Paraskevi	152.29 322	P	KIKP	PKPdf	22 05 45.1	-1.0
PRK	Paraskevi	152.29 322	P	PKPdf	22 05 45.1	-1.0
TURN	Turunc	152.29 316			/P	PKPdf	22 05 46.0	-0.1
AYDN	Tasoluk	152.31 318			/P	PKPdf	22 05 44.5	-1.8
SENIN	Lac Senin/Sane	152.32 356	eP	KPdf	PKPdf	22 05 46.7	+0.5
YER	Yerkesik	152.35 316	P	PKPdf	22 05 46.0	-0.4
YER	Yerkesik	152.35 316	P	KIKP	PKPdf	22 05 46.0	-0.4
YER	Yerkesik	152.35 316	P	PKPdf	22 05 46.0	-0.4
OG01	Vacheresse	152.38 357	PKP	PKPdf	22 05 47.5	+1.3
SRS	Serrai	152.42 328	P	PKPdf	22 05 43.6	-2.7
SRS	Serrai	152.42 328	P	KIKP	PKPdf	22 05 43.6	-2.7
SRS	Serrai	152.42 328	P	PKPdf	22 05 43.6	-2.7
LIA	Limnos Island	152.46 324	P	PKPdf	22 05 44.2	-2.1
LIA	Limnos Island	152.46 324	P	PKPdf	22 05 44.2	-2.1
PLE	Pljevlja	152.49 336	/PKP	PKPdf	22 05 46.5	+0.1
SIGR	SIGRI	152.55 323	P	PKPbc	22 05 53.9	+0.3
UDBI	Udbina	152.63 343	P	PKPdf	22 05 44.5	-2.0
URLA	Izmir	152.67 320			/P	PKPdf	22 05 45.8	-0.9
AGO	Saint Agoulin	152.68 2	PKP	PKPdf	22 05 46.8	+0.3
IVA	Berane	152.68 335	/PKP	PKPdf	22 05 46.0	-0.7
GCAM	G?zelcaml?	152.69 319			/P	PKPdf	22 05 45.8	-0.9
KNT	Kendrikon	152.73 329	P	PKPbc	22 05 51.2	-2.8
SOH	Sokhos	152.76 328	P	PKPbc	22 05 52.7	-1.4
VAY	Valandovo	152.76 330	P	PKPdf	22 05 46.0	-0.7
VAY	Valandovo	152.76 330	eP	PKPdf	22 05 45.8	-0.9
VAY			eP	KPBC	PKPbc	22 05 53.4	-0.6
VAY	Valandovo	152.76 330	PKIKP	PKPdf	22 05 46.0	-0.7
VAY	Valandovo	152.76 330	P	PKPdf	22 05 46.0	-0.7
SKJ	Skopje	152.77 332	eP	KPdf	PKPbc	22 05 54.5	+0.5
PLDF	La Plantade	152.78 2	PKP	PKPdf	22 05 47.1	+0.4
UPM	Unac-Piva	152.78 337	/PKP	PKPdf	22 05 46.8	-0.2
OUR	Ouranopolis	152.80 327	P	PKPdf	22 05 46.0	-0.8
OUR	Ouranopolis	152.80 327	PKIKP	PKPdf	22 05 46.0	-0.8
OUR	Ouranopolis	152.80 327	P	PKPdf	22 05 46.0	-0.8
ZEY	˙zmir	152.81 320			/P	PKPbc	22 05 53.8	-0.4
NVLJ	Novalja	152.84 344	P	PKPdf	22 05 46.3	-0.4
PVY	Plav	152.89 335	eP	KPdf	PKPdf	22 05 46.1	-1.0
SMG	Samos	152.93 319	P	PKPdf	22 05 44.3	-2.8
SMG	Samos	152.93 319	P	PKPdf	22 05 44.3	-2.8
PYM	Petit Puy Mans	152.97 3	PKP	PKPdf	22 05 47.6	+0.6
CHOS	Chios island	152.98 321	P	PKPdf	22 05 45.7	-1.6
CHOS	Chios island	152.98 321	P	PKPdf	22 05 45.7	-1.6
ARG	Arkhangelos	152.98 315	P	PKPbc	22 05 53.4	-1.3
BODT	Bodrum	153.03 317	P	PKPdf	22 05 45.8	-1.5
BODT	Bodrum	153.03 317	P	PKPdf	22 05 45.8	-1.5
PLG	Polygyros	153.04 327	P	PKPbc	22 05 53.0	-1.7
HORT	Hortiatis	153.05 328	P	PKPdf	22 05 45.6	-1.7
HORT	Hortiatis	153.05 328	P	PKPdf	22 05 45.6	-1.7
NKY	Niksic	153.08 336	/PKP	PKPdf	22 05 47.0	-0.3
GRG	Griva	153.12 329	P	PKPdf	22 05 46.0	-1.3
GRG	Griva	153.12 329	P	KIKP	PKPdf	22 05 46.0	-1.3
GRG	Griva	153.12 329	P	PKPdf	22 05 46.0	-1.3
BRY	Bratogost	153.18 337	/PKP	PKPdf	22 05 47.0	-0.5
PAIG	Paliouri	153.25 326	P	PKPdf	22 05 45.9	-1.6
PAIG	Paliouri	153.25 326	P	KIKP	PKPdf	22 05 45.9	-1.6
PAIG	Paliouri	153.25 326	P	PKPdf	22 05 45.9	-1.6
PDG	Podgorica	153.31 336	/P	PKPbc	22 05 55.5	+0.3
PDG	Podgorica	153.31 336	P	PKPdf	22 05 46.7	-0.8
TTG	Podgorica	153.31 336	eP	KPdf	PKPdf	22 05 47.0	-0.5
TTG	Podgorica	153.31 336	P	KIKP	PKPdf	22 05 46.7	-0.8
TTG	Podgorica	153.31 336	P	PKPdf	22 05 46.7	-0.8
FRNF	Fournols	153.31 3	PKP	PKPdf	22 05 48.4	+0.9
NIS1	Nisyros Isl.	153.38 317	P	PKPdf	22 05 48.5	+0.7
NIS1	Nisyros Isl.	153.38 317	P	PKPdf	22 05 48.5	+0.7
SSB	Saint Sauveur	153.48 0	PKP	PKPdf	22 05 48.7	+0.0
SSB	Saint Sauveur	153.48 0	eP	KIKP	PKPdf	22 05 47.7	-0.8
SSB	Saint Sauveur	153.48 0	eP	KPdf	PKPdf	22 05 47.7	0.0
LBL	Lubilhac	153.50 2	PKP	PKPdf	22 05 48.7	+0.9
BUM	Brajici-Budva	153.56 336	/PKP	PKPdf	22 05 47.2	-0.8
BIA	Bitola	153.58 331	P	PKPbc	22 05 55.8	-0.1
HCY	Herceg Novi	153.59 337	/PKP	PKPdf	22 05 47.4	-0.5
AOS	Alonnisos	153.69 325	P	PKPdf	22 05 46.1	-2.0
AOS	Alonnisos	153.69 325	P	PKPdf	22 05 46.1	-2.0
ULC	Ulcinj	153.71 335	/PKP	PKPdf	22 05 47.9	-0.2
LIT	Litokhoron	153.73 328	P	PKPdf	22 05 47.6	-0.6
LIT	Litokhoron	153.73 328	P	KIKP	PKPdf	22 05 47.6	-0.6
LIT	Litokhoron	153.73 328	P	PKPdf	22 05 47.6	-0.6
FNA	Florina	153.75 331	P	PKPdf	22 05 46.5	-1.8
FNA	Florina	153.75 331	P	KIKP	PKPdf	22 05 46.5	-1.8
FNA	Florina	153.75 331	P	PKPdf	22 05 46.5	-1.8
OHR	Ohrid	153.75 332	/P	KP	PKPdf	22 05 47.5	-0.7
SKIA	Skiathos	153.92 325	P	PKPdf	22 05 46.7	-1.8
XOR	Xorichti	153.92 326	P	PKPdf	22 05 46.3	-2.2
XOR	Xorichti	153.92 326	P	PKPdf	22 05 46.3	-2.2
KZN	Kozani	153.93 329	P	PKPbc	22 05 55.2	-1.5
NEO	Neokhori	153.94 326	P	PKPdf	22 05 48.2	-0.3
NEO	Neokhori	153.94 326	P	PKPdf	22 05 48.2	-0.3
TIR	Tirane	153.96 333			/P	PKPbc	22 05 57.7	+1.1
TIR	Tirane	153.96 333	eP	KIKP	PKPbc	22 05 57.2	+0.6
TIR			e		22 06 08.2	
TIR	Tirane	153.96 333	eP	KPbc	PKPbc	22 05 57.2	+0.6
TIR			eP	KPab	PKPab	22 06 08.2	-2.6
KARP	Karpathos	154.00 315	P	PKPdf	22 05 47.4	-1.4
KARP	Karpathos	154.00 315	eP	KPdf	PKPdf	22 05 47.8	-0.9
FYTO	Fytoko, Volos	154.02 326	P	PKPdf	22 05 46.0	-2.6
FYTO	Fytoko, Volos	154.02 326	P	PKPdf	22 05 46.0	-2.6
EREA	Eretria	154.19 324	P	PKPdf	22 05 47.4	-1.5
NEST	Nestorio	154.19 330	P	PKPdf	22 05 47.4	-1.5
SMIA	Simia	154.26 325	P	PKPdf	22 05 48.5	-0.5
PGAV	Gavieira, Arco	154.29 23	ePKPab	PKPab	22 06 12.7	+0.1
THL	Klokotos Trika	154.38 328	P	PKPdf	22 05 47.0	-2.1
KPRO	Kipourio	154.40 329	P	PKPdf	22 05 47.1	-2.1
PTL	Penteli	154.48 323	P	PKPdf	22 05 46.8	-2.5
PTL	Penteli	154.48 323	P	PKPdf	22 05 46.8	-2.5
LKR	Lokris	154.54 325	P	PKPdf	22 05 47.9	-1.4
LKR	Lokris	154.54 325	P	PKPdf	22 05 47.9	-1.4
ATHU	Athens Univers	154.59 323	P	PKPbc	22 05 56.0	-2.1
PCAB	Cabril	154.60 23	ePKPdf	PKPdf	22 05 49.5	+0.1
PCAB	Cabril	154.60 23	ePKPbc	PKPbc	22 05 58.7	+0.7
PCAB	Cabril	154.60 23	ePKPab	PKPab	22 06 13.8	+0.3
ATH	Athens Observa	154.62 323	P	PKPbc	22 05 56.4	-1.7
SANT	Santorini	154.63 318	P	PKPbc	22 05 56.7	-1.6
SANT	Santorini	154.63 318	eP	KPbc	PKPbc	22 05 56.9	-1.4
SANT			eP	KPab	PKPab	22 06 12.0	-1.9
THT1	Athinios (Pele	154.64 318	P	PKPdf	22 05 49.0	-0.5
VLY	Voula,Athens	154.66 323	P	PKPdf	22 05 48.9	-0.6
VLY	Voula,Athens	154.66 323	P	PKPdf	22 05 48.9	-0.6
THRE	Thira Island,	154.68 318	P	PKPbc	22 05 55.1	-3.2
VILL	Villia	154.72 324	P	PKPdf	22 05 46.9	-2.8
MVIF	Mont Vial	154.78 356	PKP	PKPdf	22 05 49.4	-0.3
JAN	Janina	154.88 330	P	PKPdf	22 05 49.7	-0.1
JAN	Janina	154.88 330	PKIKP	PKPdf	22 05 49.7	-0.1
JAN	Janina	154.88 330	P	PKPdf	22 05 49.7	-0.1
PTO	Porto	154.88 24	ePKPab	PKPab	22 06 15.0	+0.4
ZKR	Zakros	154.88 315	P	PKPbc	22 05 58.1	-0.7
DSF	Desfina	154.97 325	P	PKPdf	22 05 49.6	-0.4
DSF	Desfina	154.97 325	P	PKPdf	22 05 49.6	-0.4
PBRG	Braganca	154.97 21	ePKPbc	PKPbc	22 05 58.9	+0.1
PBRG	Braganca	154.97 21	ePKPab	PKPab	22 06 15.2	+0.1
EVR	Evrytania	154.97 327	P	PKPbc	22 05 59.7	+0.7
POLO	Lamas de Olo	154.98 23	ePKPdf	PKPdf	22 05 49.7	-0.3
POLO	Lamas de Olo	154.98 23	ePKPbc	PKPbc	22 05 59.6	+0.7
POLO	Lamas de Olo	154.98 23	ePKPab	PKPab	22 06 15.7	+0.5
LTK	Loutraki	155.01 324	P	PKPdf	22 05 45.0	-5.0
PVRL	Vila Real	155.10 23	ePKPbc	PKPdf	22 05 59.7	+10
PVRL	Vila Real	155.10 23	ePKPab	PKPab	22 06 16.2	+0.6
ANX	Ano Chora	155.16 327	P	PKPdf	22 05 48.8	-1.5
THAL	Thalero	155.16 325	P	PKPdf	22 05 50.2	0.0
DSL	Palaion Diasel	155.17 329	P	PKPdf	22 05 49.3	-0.9
DSL	Palaion Diasel	155.17 329	P	PKPdf	22 05 49.3	-0.9
NPS	Neapolis	155.20 316	P	PKPdf	22 05 59.1	+8.7
SGD	Sagiada	155.21 330	P	PKPdf	22 05 49.7	-0.5
DID	Didima	155.22 323	P	PKPdf	22 05 51.1	+0.7
DID	Didima	155.22 323	P	PKPdf	22 05 51.1	+0.7
SERG	Sergoula	155.22 326	P	PKPdf	22 05 50.1	-0.2
IGT	Igoumenitsa	155.22 330	P	PKPdf	22 05 48.3	-2.0
IGT	Igoumenitsa	155.22 330	PKIKP	PKPdf	22 05 48.3	-2.0
IGT	Igoumenitsa	155.22 330	P	PKPdf	22 05 48.3	-2.0
AQU	L'Aquila	155.28 344	eP	KIKP	PKPdf	22 05 50.2	-0.1
AQU	L'Aquila	155.28 344	eP	KPdf	PKPdf	22 05 50.2	-0.1
EFP	Efpalio	155.29 326	P	PKPdf	22 05 49.2	-1.2
KEK	Kerkira	155.33 331	P	PKPdf	22 05 48.7	-1.7
KEK	Kerkira	155.33 331	P	PKPdf	22 05 48.7	-1.7
LAST	Lasithi	155.35 316			/P	PKPdf	22 05 53.1	+2.4
LAST	Lasithi	155.35 316	P	PKPdf	22 05 48.2	-2.5
LAST	Lasithi	155.35 316	eP	KPdf	PKPdf	22 05 51.9	+1.2
KRND	KRANIDI	155.35 323	P	PKPdf	22 05 47.4	-3.1
LAKA	Lakka	155.39 326	P	PKPdf	22 05 50.5	-0.1
LAKA	Lakka	155.39 326	P	PKPdf	22 05 50.5	-0.1
GUR	Goura	155.41 325	P	PKPdf	22 05 47.4	-3.3
GUR	Goura	155.41 325	P	PKPdf	22 05 47.4	-3.3
KLV	Kalavryta, Ach	155.44 325	P	PKPdf	22 05 47.8	-2.9
KLV	Kalavryta, Ach	155.44 325	P	PKPdf	22 05 47.8	-2.9
MVO	Moncorvo	155.44 22	eP	KPdf	PKPdf	22 05 51.6	+1.0
MVO	Moncorvo	155.44 22	ePKPab	PKPab	22 06 17.5	+0.3
PVIS	Viseu	155.52 24	ePKPdf	PKPdf	22 05 51.5	+0.8
PVIS	Viseu	155.52 24	ePKPab	PKPab	22 06 18.0	+0.5
PDO	Prodromos	155.53 328	P	PKPdf	22 05 49.1	-1.6
LKD2	Lefkada island	155.65 329	P	PKPdf	22 05 49.8	-1.1
LKD2	Lefkada island	155.65 329	P	PKPdf	22 05 49.8	-1.1
IDI	Anoyia	155.66 317	PKP	PKPdf	22 05 50.5	-0.6
	comp=Z,19nm,0.9s,baz=29,slow=0.3,SNR=15					
IDI				PKPab	PKPab	22 06 18.6	+0.3
	comp=Z,65nm,0.8s,baz=145,slow=9.3,SNR=12					
IDI				PP	PP	22 09 57.1	+1.4
	comp=Z,12nm,1.1s,baz=41,slow=17,SNR=3.7					
IDI	Anoyia	155.66 317	/P	iP	PKPdf	22 05 54.6	+3.5
IDI	Anoyia	155.66 317	P	PKPdf	22 05 50.5	-0.6
IDI	Anoyia	155.66 317	eP	KPdf	PKPdf	22 05 51.9	+0.9
IDI				PKPab	PKPab	22 06 18.6	+0.3
IDI				PP	PP	22 09 57.1	+1.4
AXS	Araxos	155.74 327	P	PKPdf	22 05 57.4	+6.4
DRO	Drossia	155.74 326	P	PKPdf	22 05 58.8	+7.8
RLS	Riolos of Patr	155.79 326	P	PKPdf	22 05 50.7	-0.3
RLS	Riolos of Patr	155.79 326	P	PKPdf	22 05 50.7	-0.3
VLX	Vlachokerasia	155.80 324	P	PKPdf	22 05 51.4	+0.2
VLX	Vlachokerasia	155.80 324	P	PKPdf	22 05 51.4	+0.2
MATE	Matera	155.81 337	/P	iP	PKPab	22 06 19.0	+0.4
PCAS	Casmilo, Conde	155.85 25	i	P	PKPdf	22 05 59.5	+8.4
PCAS	Casmilo, Conde	155.85 25	eP	KPab	PKPab	22 06 19.2	+0.3
SIVA	Sivas	155.87 316	/P	iP	PKPab	22 06 20.1	+0.9
SIVA	Sivas	155.87 316	P	PKPdf	22 06 00.9	+10
MTE	Manteigas	155.92 23	eP	KPdf	PKPdf	22 05 52.0	+0.7
MTE	Manteigas	155.92 23	eP	KPab	PKPab	22 06 19.3	+0.1
MTE	Manteigas	155.92 23	eP	KPdf	PKPdf	22 05 52.2	+1.0
MTE				eP	KPab	PKPab	22 06 19.5	+0.3
VLI	Veliai	155.94 322	P	PKPdf	22 05 48.7	-2.6
VLI	Veliai	155.94 322	P	PKPdf	22 05 48.7	-2.6
VAM	Vamos	156.03 318	P	PKPdf	22 05 52.4	+0.9
VAM	Vamos	156.03 318	P	KIKP	PKPdf	22 05 52.4	+0.9
VAM	Vamos	156.03 318	P	PKPdf	22 05 52.4	+0.9
VTN	Vitinoika	156.04 326	P	PKPdf	22 05 50.9	-0.5
AMT	Artemida-Makis	156.05 325	P	PKPdf	22 05 59.8	+8.3
KFL	Anninata	156.10 327	P	PKPdf	22 05 51.0	-0.5
IMMV	Iera Moni Meta	156.13 318	P	PKPdf	22 06 00.8	+9.2
VLS	Valsamata	156.16 328	P	PKPdf	22 05 50.9	-0.7
VLS	Valsamata	156.16 328	P	KIKP	PKPdf	22 05 50.9	-0.7
VLS	Valsamata	156.16 328	P	PKPdf	22 05 50.9	-0.7
ITM	Ithomi	156.19 324	P	PKPdf	22 05 50.8	-0.8
ITM	Ithomi	156.19 324	P	PKPdf	22 05 50.8	-0.8
PTOM	Tomar	156.25 26	ePKPdf	PKPdf	22 05 52.8	+1.2
PTOM	Tomar	156.25 26	ePKPab	PKPab	22 06 20.9	+0.3
PMAFR	Mafra	156.43 28	ePKPab	PKPab	22 06 22.6	+1.2
PCBR	Castelo Branco	156.43 24	ePKPdf	PKPdf	22 05 52.8	+1.0
PCBR	Castelo Branco	156.43 24	ePKPab	PKPab	22 06 21.3	-0.1
PYL	PYLOS	156.49 324	P	PKPdf	22 05 50.2	-1.8
PYL	PYLOS	156.49 324	P	PKPdf	22 05 50.2	-1.8
PMTG	Montargil	156.79 26	i	P	PKPdf	22 06 02.7	+10
PMTG	Montargil	156.79 26	ePKPab	PKPab	22 06 23.1	+0.2
PMRV	Marv??o	156.82 24	ePKPdf	PKPdf	22 05 53.3	+0.9
PMRV	Marv??o	156.82 24	ePKPab	PKPab	22 06 23.4	+0.3
TIP	Timpagrande	157.07 335			/P	PKPdf	22 05 53.6	+0.8
TIP	Timpagrande	157.07 335	P	PKPdf	22 05 49.4	-3.4
TIP	Timpagrande	157.07 335	P	PKPdf	22 05 49.4	-3.4
TIP				eP	KPdf	PKPdf	22 05 53.1	+0.4
PESTR	Estremoz	157.22 25	ePKPdf	PKPdf	22 05 53.1	+0.2
PESTR	Estremoz	157.22 25	ePKPab	PKPab	22 06 24.8	0.0
EVO	Evora	157.33 27	ePKPdf	PKPdf	22 05 54.2	+1.2
EVO	Evora	157.33 27	ePKPab	PKPab	22 06 25.6	+0.3
PNCL	Nicolau / Gran	157.46 28	ePKPdf	PKPdf	22 05 54.3	+1.1
PNCL	Nicolau / Gran	157.46 28	ePKPab	PKPab	22 06 26.0	+0.2
ES19	SONSECA Array	157.77 18	ePKPdf	PKPdf	22 05 54.1	+0.5
ESDC	Sonseca Array	157.78 18	PKP	PKPdf	22 05 54.2	+0.5
	comp=Z,4.5nm,0.9s,baz=349,slow=2.4,SNR=27					
ESDC				PKPab	PKPab	22 06 27.4	+0.1
	comp=Z,32nm,0.9s,baz=330,slow=3.7,SNR=49					
ESDC				PP	PP	22 10 02.4	-4.1
	comp=Z,2.8nm,1.0s,baz=339,slow=6.7,SNR=4.0					
ESLA	Sonseca Array	157.78 19	ePKPdf	PKPdf	22 05 54.2	+0.5
ESLA				eP	KPab	PKPab	22 06 28.0	+0.8
PAB	San Pablo	157.78 19	ePKIKP	PKPdf	22 05 54.6	+0.9
PAB	San Pablo	157.78 19	ePKPdf	PKPdf	22 05 54.6	+0.9
PAB				eP	KPab	PKPab	22 06 27.9	+0.6
MESJ	Messejana	157.82 28	eP	KPdf	PKPdf	22 05 54.4	+0.7
MESJ	Messejana	157.82 28	ePKPdf	PKPdf	22 05 55.0	+1.4
MESJ	Messejana	157.82 28	ePKPab	PKPab	22 06 27.5	+0.1
PBEJ	Beja	157.82 27	ePKPdf	PKPdf	22 05 54.9	+1.2
PBEJ	Beja	157.82 27	ePKPab	PKPab	22 06 27.4	0.0
PTEO	Sao Teotonio	157.83 29	ePKPdf	PKPdf	22 05 55.1	+1.4
PTEO	Sao Teotonio	157.83 29	ePKPab	PKPab	22 06 28.1	+0.6
PBAR	Barrancos	158.04 25	ePKPdf	PKPdf	22 05 55.0	+1.1
PBAR	Barrancos	158.04 25	ePKPab	PKPab	22 06 28.8	+0.5
MORF	Marmelete	158.06 30	eP	KPdf	PKPdf	22 05 54.5	+0.5
MORF	Marmelete	158.06 30	ePKPdf	PKPdf	22 05 55.6	+1.6
MORF	Marmelete	158.06 30	ePKPab	PKPab	22 06 28.8	+0.3
PCVE	Castro Verde	158.07 28	ePKPdf	PKPdf	22 05 55.3	+1.3
PCVE	Castro Verde	158.07 28	ePKPab	PKPab	22 06 29.1	+0.6
PFVI	Vila Bisbo	158.11 30	ePKPdf	PKPdf	22 05 55.5	+1.5
PFVI	Vila Bisbo	158.11 30	ePKPab	PKPab	22 06 28.6	-0.1
PFVI	Vila Bisbo	158.11 30	ePKPab	PKPab	22 06 27.6	-1.1
PVAQ	Vaqueiros	158.40 28	ePKPdf	PKPdf	22 05 55.5	+1.1
PVAQ	Vaqueiros	158.40 28	ePKPab	PKPab	22 06 30.6	+0.7
PBDV	Barranco-do-Ve	158.44 28	ePKPdf	PKPdf	22 05 56.2	+1.7
PBDV	Barranco-do-Ve	158.44 28	ePKPab	PKPab	22 06 31.1	+0.9
BBTS	Babate	159.25 98	PKP	PKPdf	22 05 56.5	+0.6
	comp=Z,12nm,0.5s,baz=256,slow=4.8,SNR=4.0					
VAE	Valguarnera	159.44 338	PKPab	PKPab	22 06 34.8	+0.3
	comp=Z,7.0nm,0.7s,baz=183,slow=13,SNR=3.7					
CMAH	Djebel Manchou	161.97 353	P	PKPpre	22 05 45.1	
DFRA	Djebel Bou Aff	162.18 357	P	PKPdf	22 06 07.5	+8.8
CKFL	Kef-Lekhel	162.27 355	P	PKPdf	22 06 07.0	+8.2
ABSA	Djebel Ababsia	162.31 353	P	PKPpre	22 05 46.8	
CASM	Ain Smara	162.42 355	P	PKPdf	22 06 07.4	+8.5
KEST	Kesra	162.53 347	PKP	PKPdf	22 05 59.5	+0.5
	comp=Z,10nm,1.0s,baz=246,slow=7.8,SNR=4.3					
KEST				PKPab	PKPab	22 06 48.0	-0.1
	comp=Z,30nm,1.0s,baz=294,slow=3.2,SNR=11					
KEST	Kesra	162.53 347	PKP	PKPdf	22 05 59.5	+0.5
KEST				eP	KPab	PKPab	22 06 48.4	+0.3
MDT	Midelt	163.62 29	PKP	PKPdf	22 06 01.6	+1.3
	comp=Z,20nm,1.0s,baz=324,slow=1.4,SNR=36					
MDT				PKPab	PKPab	22 06 53.9	+0.8
	comp=Z,24nm,0.9s,baz=313,slow=4.6,SNR=16					
LIC	Lamto	164.39 141	ePKIKP	PKPdf	22 06 00.7	-0.6
	comp=Z,46nm,1.3s					
KIC	Kosan Boka	164.67 142	ePKIKP	PKPdf	22 06 00.9	-0.7
	comp=Z,48nm,1.1s					
TIC	Toumodi	164.73 140	ePKIKP	PKPdf	22 06 00.9	-0.7
DBIC	Dimbokro	164.84 141	PKP	PKPdf	22 06 01.1	-0.5
	comp=Z,12nm,0.9s,baz=167,slow=2.5,SNR=8.9					
DBIC				PKPab	PKPab	22 06 58.5	-0.2
	comp=Z,9.2nm,1.1s,baz=208,slow=5.6,SNR=4.6					
DBIC	Dimbokro	164.84 141	ePKPdf	PKPdf	22 06 01.6	-0.1
DBIC				PKPab	PKPab	22 06 58.5	-0.2
TORD	Torodi Ar. Bea	173.77 152	PKP	PKPdf	22 06 06.1	-1.0
	comp=Z,11nm,0.9s,baz=341,slow=0.8,SNR=59					
TORD				pPKP	pPKPdf	22 07 02.9	+0.4
	comp=Z,7.6nm,1.0s,baz=302,slow=1.0,SNR=5.7					
TORD				PKPab	PKPab	22 07 38.8	+0.6
	comp=Z,3.6nm,0.7s,baz=210,slow=4.0,SNR=8.2					
TORD				pPKPab	pPKPab	22 08 31.5	+0.8
	comp=Z,8.4nm,0.9s,baz=23,slow=0.8,SNR=4.3					
TORD				PP	PP	22 11 30.6	+1.4
	comp=Z,3.1nm,0.9s,baz=144,slow=3.3,SNR=3.6					
TAM	Tamanrasset	175.85 350	eP	KIKP	PKPdf	22 06 07.8	+0.1
TAM			e			22 07 47.4	
TAM	Tamanrasset	175.85 350	eP	KPdf	PKPdf	22 06 07.8	+0.1
TAM			eP	KPab	PKPab	22 07 47.4	+0.1

*ISCJB **15** 21:48:40.8±0.7, 50˚25N±0˚04×19˚17E±0˚03, h0km, Error ellipse: s-maj=6.4km s-min=2.6km az=13.4*
*CSEM **15** 21:48:41.6±0.3, 50˚25N×19˚22E, h2km, ML2.5/5, Error ellipse: s-maj=7.1km s-min=2.9km az=10.0*
*PRU **15** 21:48:42.8, 50˚25N×19˚20E, h0km*

ISC 15 21:48:41.7±0.9, 50˚22N±0˚04×19˚22E±0˚02, h0km, n29, σ0s59/46, Poland

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
OJC	Ojcow	0.37	89	eP	g	Pg	Pg	21 48 48.7	-0.1
OJC				eS	g	Sg	Sg	21 48 53.1	-0.5
OJC	Ojcow	0.37	89	eP	g	Pg	Pg	21 48 48.7	-0.1
OJC				eS	g	Sg	Sg	21 48 53.1	-0.5
OKC	Ostrava-Krasne	0.79	242	eP	G	Pb	Pb	21 48 58.2	-0.1
OKC				eS	G	Sb	Sb	21 49 08.9	-0.6
	comp=Z,8.3nm,0.4s								
OKC	Ostrava-Krasne	0.79	242	Pg		Pb	Pb	21 48 58.2	-0.1
OKC				Sg		Sb	Sb	21 49 08.9	-0.6
	8.3nm,0.4s								
NIE	Niedzica	1.06	138	eP	g	Pg	Pg	21 49 02.1	+0.1
NIE				eS	g	Sb	Sb	21 49 17.0	-0.4
NIE	Niedzica	1.06	138	eP	g	Pg	Pg	21 49 02.1	+0.1
NIE				eS	g	Sb	Sb	21 49 17.0	-0.4
LANS	Liptovska Anna	1.08	171	eP	g	Pg	Pg	21 49 02.5	+0.1
LANS			

MJAR	**Matsushiro Arr**	**4.54**	**251**	Pn	**Pn**	**22 13 16.8**	**+1.0**
	1.5nm,0.3s,baz=78,slow=15,SNR=10						
MAJO	**Matsushiro**	**4.54**	**251**	*e*Pn	**Pn**	**22 13 17.1**	**+1.3**
MAT	**Matsushiro**	**4.54**	**251**	P	**Pn**	**22 13 17.2**	**+1.4**
MAT				*e*S	Sn	22 13 56.1	-12
JHJ	**Hachijo jima 2**	**5.86**	**213**	Pn	**Pn**	**22 13 32.8**	**-1.0**
	9.4nm,0.3s,baz=311,slow=15,SNR=2.8						
JHJ				Sn	Sn	22 14 34.0	-6.5
	20nm,0.3s,baz=252,slow=20,SNR=3.3						
ASAJ	**Asahikawa**	**6.04**	**353**	Pn	**Pn**	**22 13 36.5**	**+0.1**
	3.9nm,0.3s,baz=202,slow=8.8,SNR=18						
ASAJ	**Asahikawa**	**6.04**	**353**	*e*Pn	**Pn**	**22 13 36.9**	**+0.6**
USRK	**Ussuriysk Ar.**	**10.63**	**309**	Pn	**Pn**	**22 14 42.2**	**+3.0**
	0.2nm,0.3s,baz=105,slow=17,SNR=3.4						
KLR	**Kul'dur**	**14.00**	**326**	Pn	**Pn**	**22 15 25.2**	**0.0**
	0.1nm,0.3s,baz=123,slow=17,SNR=3.0						
SEY	**Seymchan**	**25.43**	**9**	P	**P**	**22 17 34.7**	**+0.5**
	2.0nm,0.7s,baz=205,slow=8.4,SNR=5.9						
H11N2	**WAKE ISLAND Hy**	**27.31**	**126**	T	T	22 46 38.0	
	baz=317,slow=74,SNR=17						
H11N1	**WAKE ISLAND Hy**	**27.32**	**126**	T	T	22 46 35.1	
	baz=317,slow=74,SNR=10						
H11N3	**WAKE ISLAND Hy**	**27.33**	**126**	T	T	22 46 38.0	
	baz=317,slow=74,SNR=13						
SONM	**Songino Array**	**28.63**	**302**	P	**P**	**22 18 03.4**	**+0.1**
	0.7nm,0.8s,baz=86,slow=8.8,SNR=4.0						
ZALV	**Zalesovo Beam**	**42.46**	**312**	P	**P**	**22 20 02.4**	**+0.9**
	0.6nm,0.5s,baz=96,slow=8.9,SNR=2.7						
CMAR	**Chiang Mai Arr**	**43.42**	**256**	LR	LR	22 37 51.0	
	comp=Z,118nm,19.5s,baz=135,slow=36						
MKAR	**Makanchi Array**	**45.00**	**302**	P	**P**	**22 20 23.1**	**+1.0**
	0.8nm,0.9s,baz=91,slow=9.7,SNR=5.4						
KURK	**Kurchatov**	**46.62**	**308**	*e*P	**P**	**22 20 35.2**	**+0.4**
	2.5nm,0.4s						
KURBB	**Kurchatov Arra**	**46.69**	**307**	P	**P**	**22 20 35.9**	**+0.6**
	1.3nm,0.8s,baz=82,slow=8.1,SNR=11						
COLA	**College**	**47.25**	**33**	*e*P	**P**	**22 20 40.1**	**+0.5**
	1.7nm,0.6s						
ILAR	**Eielson Array**	**47.67**	**33**	P	**P**	**22 20 43.4**	**+0.5**
	0.9nm,0.7s,baz=264,slow=6.5,SNR=13						
EKS2	**Erkin-Say**	**51.97**	**299**	*e*P	**P**	**22 21 15.8**	**-0.2**
	0.6nm,0.6s						
WRA	**Warramunga Arr**	**58.40**	**190**	P	**P**	**22 22 01.7**	**-0.6**
	1.1nm,0.7s,baz=9.2,slow=7.1,SNR=9.9						
YKA	**Yellowknife Ar**	**62.01**	**31**	P	**P**	**22 22 27.0**	**+0.4**
	0.2nm,0.8s,baz=305,slow=6.1,SNR=3.9						
FINES	**FINESS Array B**	**68.64**	**333**	P	**P**	**22 23 10.1**	**+0.5**
	0.9nm,0.6s,baz=27,slow=9.4,SNR=6.8						
WSAR	**Wadi Sarin**	**72.22**	**286**	LR	LR	23 00 58.2	
	comp=Z,88nm,18.3s,slow=41						
AKASG	**Malin Array Be**	**74.47**	**323**	P	**P**	**22 23 43.7**	**-1.2**
	0.4nm,0.4s,baz=45,slow=5.9,SNR=3.0						

IDC ***15*** *22:15:19.8±2.1,18°.11N×118°.91E,h0km,mb3.7/5, mb1 3.8/5,mb1mx3.4/53,mbtmp3.7/5,MS3.9/1,Ms1 3.9/1, ms1mx2.9/53,Error ellipse: s-maj=281.1km s-min=19.2km az=62.0*

ISCJB ***15*** *22:15:22.1±0.9,18°.4N±0°.2×119°.6E±0°.2,h33km,mb3.5/5, MS3.7/1,Error ellipse: s-maj=38.9km s-min=9.4km az=40.5*

ISC 15 22:15:23.9±1.2,18°.5N±0°.3×119°.7E±0°.3,h35km,n7, σ1s23/7,mb3.6/5,1D,Philippine Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SIPP	**Brgy, Tapao**	**0.88**	**127**	*e*P	**Pn**	**22 15 39.4**	**-0.4**
SIPP				*e*S	**Sn**	**22 15 51.3**	**-0.1**
JHJ	**Hachijo jima 2**	**23.16**	**47**	LR	LR	22 29 07.3	
	comp=Z,265nm,19.6s,baz=74,slow=34						
WRA	**Warramunga Arr**	**40.77**	**159**	P	**P**	**22 23 01.7**	**-0.2**
	0.9nm,0.8s,baz=340,slow=8.5,SNR=3.7						
MKAR	**Makanchi Array**	**41.71**	**321**	P	**P**	**22 23 08.7**	**-0.7**
	0.6nm,0.6s,baz=109,slow=9.4,SNR=7.5						
ASAR	**Alice Springs**	**44.10**	**161**	P	**P**	**22 23 30.1**	**+1.1**
	0.6nm,0.5s,baz=336,slow=6.9,SNR=9.8						
ZALV	**Zalesovo Beam**	**44.44**	**331**	P	**P**	**22 23 32.8**	**+1.6**
	0.6nm,0.5s,baz=124,slow=7.9,SNR=4.5						
KURBB	**Kurchatov Arra**	**45.76**	**324**	P	**P**	**22 23 40.6**	**-1.3**
	0.4nm,0.5s,baz=120,slow=7.9,SNR=3.4						

JMA 15 22:16:26.7±0.2,37°.42N×141°.83E,h31km±3km,M3.5, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**0.76**	**266**	P	Pn	22 16 41.1	-0.3
JFK				S	Sb	22 16 51.1	-0.5
ONAJ	**Iwakimizuishiy**	**0.88**	**249**	P	Pn	22 16 42.8	-0.2
ONAJ				S	Sn	22 16 54.0	-0.8
JMM	**Marumori**	**0.94**	**299**	P	Pn	22 16 43.6	-0.1
JMM				S	Sn	22 16 55.7	-0.3
JIO	**Ouri**	**1.10**	**340**	P	Pn	22 16 45.4	-0.6
JIO				S	Sn	22 16 58.5	-1.6
JFT	**Otama**	**1.19**	**275**	P	Pb	22 16 48.3	-0.4
JFT				S	Sb	22 17 03.3	-0.5
JOU	**Okura**	**1.32**	**316**	P	Pn	22 16 49.7	+0.7
JOU				S	Sn	22 17 06.4	+0.8
MAT	**Matsushiro**	**3.03**	**254**	P	Pn	22 17 13.6	+1.1
MAT				S	Sn	22 17 50.0	+2.2

IDC ***15*** *22:17:22.3±0.9,37°.28N×144°.65E,h0km,mb3.7/8, mb1 3.9/10,mb1mx3.6/53,mbtmp3.7/10,ML3.6/2,MS3.7/4, Ms1 3.7/4,ms1mx3.0/55,Error ellipse: s-maj=28.1km s-min=19.3km az=98.0*

ISCJB ***15*** *22:17:25.4±0.8,37°.3N±0°.1×144°.4E±0°.10,h33km, mb3.8/8,MS3.9/3,Error ellipse: s-maj=16.3km s-min=9.6km az=155.4*

ISC 15 22:17:28.0±1.0,37°.46N±0°.09×144°.4E±0°.1,h35km,n20, σ1s53/13,mb3.7/8,MS4.1/3,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MJAR	**Matsushiro Arr**	**5.05**	**261**	Pn	**Pn**	**22 18 41.3**	**0.0**
	2.5nm,0.3s,baz=88,slow=15,SNR=4.1						
MJAR				Sn	**Sn**	**22 19 37.5**	**-1.0**
	0.5nm,0.3s,baz=96,slow=27,SNR=3.1						
MJAR				LR	LR	22 21 03.0	
	comp=Z,178nm,18.4s,baz=135,slow=42						
MAT	**Matsushiro**	**5.06**	**261**	P	**Pn**	**22 18 41.1**	**-0.3**
ASAJ	**Asahikawa**	**6.79**	**349**	Pn	**Pn**	**22 19 05.2**	**+0.1**
	1.0nm,0.3s,baz=204,slow=12,SNR=3.6						
ASAJ				Sn	**Sn**	**22 20 18.2**	**-3.0**
	0.4nm,0.3s,baz=3.5,slow=19,SNR=2.5						
YAK	**Yakutsk**	**26.24**	**344**	LR	LR	22 33 54.5	
	comp=Z,89nm,21.6s,baz=148,slow=38						
H11N2	**WAKE ISLAND Hy**	**26.38**	**126**	T	T	22 50 09.9	
	baz=317,slow=74,SNR=19						
H11N1	**WAKE ISLAND Hy**	**26.39**	**126**	T	T	22 50 09.9	
	baz=317,slow=74,SNR=12						
H11N3	**WAKE ISLAND Hy**	**26.39**	**126**	T	T	22 50 11.1	
	baz=317,slow=74,SNR=16						
H11S1	**WAKE ISLAND Hy**	**27.15**	**128**	T	T	22 51 08.4	
	baz=319,slow=76,SNR=5.4						
H11S3	**WAKE ISLAND Hy**	**27.15**	**128**	T	T	22 51 08.4	
	baz=319,slow=76,SNR=5.2						
H11S2	**WAKE ISLAND Hy**	**27.17**	**128**	T	T	22 51 08.4	
	baz=319,slow=76,SNR=6.4						
MKAR	**Makanchi Array**	**45.92**	**302**	P	**P**	**22 25 48.9**	**+1.7**
	0.6nm,0.7s,baz=84,slow=10,SNR=5.8						
KURBB	**Kurchatov Arra**	**47.63**	**308**	P	**P**	**22 26 01.9**	**+1.4**
	1.2nm,0.3s,baz=78,slow=6.6,SNR=6.2						
ILAR	**Eielson Array**	**47.84**	**33**	P	**P**	**22 26 01.3**	**-0.6**
	0.4nm,0.8s,baz=253,slow=6.2,SNR=3.7						
ARU	**Arti**	**57.62**	**319**	LR	LR	22 54 45.8	
	comp=Z,182nm,20.6s,baz=56,slow=39						
WRA	**Warramunga Arr**	**57.88**	**191**	P	**P**	**22 27 14.9**	**-1.5**
	0.5nm,0.5s,baz=12,slow=7.2,SNR=3.7						
AKTO	**Aktyubinsk**	**60.16**	**313**	LR	LR	22 56 52.3	
	comp=Z,132nm,18.4s,slow=39						
ASAR	**Alice Springs**	**61.60**	**191**	P	**P**	**22 27 40.5**	**-1.6**
	0.3nm,0.6s,baz=2.1,slow=5.1,SNR=3.4						
YKA	**Yellowknife Ar**	**62.22**	**31**	P	**P**	**22 27 46.4**	**+0.7**
	0.1nm,0.6s,baz=305,slow=7.6,SNR=3.1						
FINES	**FINESS Array B**	**69.53**	**333**	P	**P**	**22 28 33.9**	**+1.1**
	0.7nm,0.7s,baz=38,slow=5.4,SNR=3.1						
NOA	**NORSAR Array B**	**74.69**	**338**	P	**P**	**22 29 05.0**	**+1.3**
	4.9nm,1.3s,baz=33,slow=5.8,SNR=2.9						

JMA 15 22:18:18.8,37°.01N×140°.74E,h21km±1km,M2.4,Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.10**	**27**	P	Pb	22 18 22.9	-2.8
ONAJ				S	Sb	22 18 25.7	-4.8
JFK	**Kawauchi**	**0.37**	**17**	P	Pb	22 18 26.6	0.0
JFK				S	Sb	22 18 31.8	-0.1
JHO	**Hitachi**	**0.42**	**199**	P	Pb	22 18 27.2	-0.2
JHO				S	Sb	22 18 32.8	-0.5
JFT	**Otama**	**0.60**	**328**	S	Sb	22 18 38.9	+0.1
MAT	**Matsushiro**	**2.09**	**258**	*e*S	Sb	22 19 22.6	+1.2

GUC ***15*** *22:22:36.2±0.7,33°.12S×70°.27W,h11km±5km,ML1.7*
SJA ***15*** *22:22:36.5±0.6,33°.08S×70°.28W,h3km±8km,ML1.6, MW2.5*

ISCJB ***15*** *22:22:37.8±0.8,33°.20S±0°.07×70°.31W±0°.07,h23km±14km, Error ellipse: s-maj=11.5km s-min=9.6km az=147.7*

ISC 15 22:22:37.7±1.6,33°.2S±0°.1×70°.30W±0°.09,h22km±7km,n8, σ1s01/9,2C-1D,Chile-Argentina border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CLCH	**Cerro Calan**	**0.27**	**229**	*i* P	**Pb**	**22 22 44.1**	**0.0**
CLCH				*i* S	**Sb**	**22 22 49.9**	**+1.4**
CLCH				IAML		22 22 51.6	
	comp=E,379nm,0.4s						
PEL	**Peldehue**	**0.34**	**283**	*i* P	Pb	22 22 43.4	-1.7
PEL				*i* S	**Sb**	**22 22 49.5**	**-0.6**
PEL				IAML		22 22 51.0	
	comp=N,63nm,0.2s						
RCDM	**Rinconada Maip**	**0.50**	**238**	*i* P	**Pb**	**22 22 47.7**	**-0.2**
ROCH	**El Roble**	**0.65**	**292**	*i* P	Pb	22 22 49.6	-1.0
ROC1	**El Roble**	**0.65**	**292**	*e*P	Pb	22 22 49.8	-0.8
ROC1				IAML		22 22 57.7	
ROC1				*e*S	**Sb**	**22 23 00.3**	**+1.0**
ARCO	**CERRO ARCO**	**1.21**	**72**	*e*P	**Pn**	**22 22 59.5**	**+0.1**
ARCO				IAML		22 23 19.6	
	comp=Z,13nm,0.4s						
AUSP	**Uspallata**	**1.26**	**38**	*e*P	**Pn**	**22 22 59.6**	**-0.6**
AUSP				*e*S	**Sn**	**22 23 16.5**	**-0.1**
RTLS	**Leoncito**	**1.65**	**31**	*e*P	**Pn**	**22 23 06.8**	**+1.2**

MEX 15 22:26:13.4±0.5,16°.22N×98°.11W,h5km,MD3.6,Near coast of Guerrero

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PNIG	**Pinotepa**	**0.18**	**354**	*i* P	Pg	22 26 16.6	-0.4
PNIG				*e*S	Sg	22 26 19.2	-0.1
VHO	**Vista Hermosa**	**1.57**	**57**	*e*P	Pn	22 26 38.3	-3.9
VHO				*e*S	Sn	22 26 58.4	-4.6
ACX	**Acapulco**	**1.80**	**291**	*e*P	Pn	22 26 40.1	-5.0
ACX				*e*S	Sn	22 27 07.7	-7.7
HUIG	**Huatulco**	**1.97**	**103**	*e*P	Pn	22 26 43.3	-4.2
HUIG				*e*P	Pb	22 26 45.7	-4.2

ATH ***15*** *22:36:15.0,38°.56N×21°.90E,h23km±2km,ML1.8/6,Error ellipse: s-maj=2.3km s-min=0.9km az=86.0*

CSEM ***15*** *22:36:15.2±0.1,38°.56N×21°.90E,h15km,ML1.8,Error ellipse: s-maj=2.3km s-min=2.1km az=52.0*

THE 15 22:36:15.4,38°.56N×21°.89E,h19km,ML2.0/9,Error ellipse: s-maj=0.9km s-min=0.3km az=40.0,Greece

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ANX	**Ano Chora**	**0.04**	**36**	P	Pg	22 36 18.7	-0.3
ANX				S	Sg	22 36 21.3	-0.2
ANX	**Ano Chora**	**0.04**	**36**	P	Pg	22 36 18.7	-0.3
ANX				S	Sg	22 36 20.8	-0.7
ANX	**Ano Chora**	**0.04**	**36**	P	Pg	22 36 18.5	-0.5
ANX				S	Sg	22 36 20.8	-0.6
EFP	**Efpalio**	**0.13**	**173**	P	Pg	22 36 19.1	-0.5
EFP	**Efpalio**	**0.13**	**173**	P	Pg	22 36 19.1	-0.4
SERG	**Sergoula**	**0.20**	**137**	P	Pg	22 36 20.3	-0.1
SERG				S	Sg	22 36 24.0	+0.1
SERG	**Sergoula**	**0.20**	**137**	P	Pg	22 36 20.4	0.0
SERG				S	Sg	22 36 24.0	+0.1
RODI	**Rodini**	**0.23**	**178**	P	Pb	22 36 20.8	+0.1
RODI				S	Sg	22 36 25.2	+0.5
RODI	**Rodini**	**0.23**	**178**	P	Pb	22 36 20.8	+0.1
RODI				S	Sg	22 36 25.2	+0.5
RODI				AML	AML	22 36 25.7	
	comp=E,504μm,0.1s						
RODI				AML	AML	22 36 25.9	
	comp=N,256μm,0.2s						
KALE	**Kalithea**	**0.26**	**130**	P	Pb	22 36 21.2	-0.1
KALE				S	Sg	22 36 25.9	+0.4
KALE	**Kalithea**	**0.26**	**130**	P	Pg	22 36 21.4	0.0
KALE				S	Sg	22 36 25.9	+0.4
KALE	**Kalithea**	**0.26**	**130**	P	Pg	22 36 21.4	0.0
KALE				S	Sg	22 36 26.3	+0.8
KALE				AML	AML	22 36 26.4	
	comp=E,419μm,0.2s						
KALE				AML	AML	22 36 26.6	
	comp=N,618μm,0.3s						
PVO	**Paravola**	**0.29**	**282**	P	Pg	22 36 21.7	-0.2
PVO				S	Sg	22 36 26.6	+0.3
PVO	**Paravola**	**0.29**	**282**	P	Pg	22 36 21.7	-0.2
PVO				S	Sg	22 36 26.6	+0.3
PVO	**Paravola**	**0.29**	**282**	P	Pg	22 36 21.7	-0.2
LAKA	**Lakka**	**0.32**	**167**	P	Pg	22 36 22.2	-0.3
LAKA				S	Sb	22 36 27.6	+0.2
LAKA	**Lakka**	**0.32**	**167**	P	Pg	22 36 22.2	-0.3
LAKA				S	Sb	22 36 27.6	+0.2
LAKA	**Lakka**	**0.32**	**167**	P	Pg	22 36 22.2	-0.2
EVR	**Evrytania**	**0.36**	**350**	P	Pg	22 36 22.9	-0.3
EVR				S	Sb	22 36 29.0	+0.2
EVR	**Evrytania**	**0.36**	**350**	P	Pg	22 36 23.1	-0.1
EVR				S	Sb	22 36 29.0	+0.2
EVR	**Evrytania**	**0.36**	**350**	P	Pg	22 36 23.1	-0.1
EVR				S	Sb	22 36 29.7	+0.9
EVR				AML	AML	22 36 29.8	
	comp=N,360μm,0.2s						
DSF	**Desfina**	**0.52**	**106**	P	Pb	22 36 25.4	-0.5
DSF				S	Sb	22 36 33.8	+0.7
DSF	**Desfina**	**0.52**	**106**	P	Pb	22 36 25.5	-0.4
DSF				S	Sb	22 36 33.8	+0.7
DSF	**Desfina**	**0.52**	**106**	P	Pb	22 36 25.5	-0.5
AXS	**Araxos**	**0.54**	**228**	P	Pg	22 36 26.5	+0.2
AXS				S	Sg	22 36 34.9	+1.4
AXS	**Araxos**	**0.54**	**228**	P	Pg	22 36 26.5	+0.2
AXS				S	Sg	22 36 34.9	+1.3
KLV	**Kalavryta, Ach**	**0.55**	**158**	P	Pb	22 36 25.8	-0.6
KLV				S	Sg	22 36 34.4	+0.4
KLV	**Kalavryta, Ach**	**0.55**	**158**	P	Pb	22 36 25.8	-0.6
KLV				S	Sg	22 36 34.4	+0.4
KLV	**Kalavryta, Ach**	**0.55**	**158**	P	Pb	22 36 25.7	-0.7
PDO	**Prodromos**	**0.55**	**275**	P	Pb	22 36 26.1	-0.3
PDO				S	Sg	22 36 34.3	+0.3
PDO	**Prodromos**	**0.55**	**275**	P	Pb	22 36 26.3	-0.1
PDO				S	Sg	22 36 34.3	+0.3
PDO	**Prodromos**	**0.55**	**275**	P	Pb	22 36 26.3	-0.1
PDO				S	Sg	22 36 35.0	+1.0
PDO				AML	AML	22 36 36.5	
	comp=E,214μm,0.2s						
PDO				AML	AML	22 36 36.7	
	comp=N,309μm,0.3s						
RLS	**Riolos of Patr**	**0.60**	**214**	P	Pb	22 36 26.9	-0.2
RLS				S	Sg	22 36 36.4	+1.0
RLS	**Riolos of Patr**	**0.60**	**214**	S	Sg	22 36 36.4	+1.0
RLS				AML	AML	22 36 39.4	
	comp=N,81μm,0.4s						
RLS				AML	AML	22 36 40.2	
	comp=E,89μm,0.3s						
DRO	**Drossia**	**0.62**	**193**	P	Pb	22 36 27.2	-0.3
DRO				S	Sg	22 36 37.0	+1.0
DRO	**Drossia**	**0.62**	**193**	P	Pb	22 36 27.2	-0.3
DRO				S	Sg	22 36 37.0	+1.0
DRO	**Drossia**	**0.62**	**193**	P	Pb	22 36 27.3	-0.2
DRO				S	Sn	22 36 37.9	-0.7
DRO				AML	AML	22 36 38.6	
	comp=E,351μm,0.3s						
DRO				AML	AML	22 36 38.8	
	comp=N,236μm,0.2s						
GUR	**Goura**	**0.71**	**150**	P	Pb	22 36 28.6	-0.7
GUR				S	Sg	22 36 39.0	-0.1
GUR	**Goura**	**0.71**	**150**	P	Pb	22 36 28.6	-0.7
GUR				S	Sg	22 36 39.0	-0.1
GUR	**Goura**	**0.71**	**150**	P	Pb	22 36 28.3	-0.9
THL	**Klokotos Trika**	**1.01**	**6**	P	Pg	22 36 34.9	-0.2
VLS	**Valsamata**	**1.09**	**250**	P	Pb	22 36 35.1	-0.5

ISCJB ***15*** *22:37:05.5±1.0,27°.58S±0°.06×69°.48W±0°.08, h114km±13km,Error ellipse: s-maj=12.1km s-min=9.2km az=149.0*

GUC ***15*** *22:37:05.9±0.5,27°.58S×69°.39W,h105km±10km,ML3.3*
SJA ***15*** *22:37:08.4±0.6,27°.84S×69°.09W,h154km±10km,ML3.0, MW3.1*

ISC 15 22:37:05.4±2.4,27°.54S±0°.08×69°.48W±0°.07, h119km±22km,n16,σ0s88/21,1D,Northern Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CPCH	**Copiapo**	**0.79**	**283**	*i* P	**Pn**	**22 37 25.4**	**0.0**
CPCH				*i* S	**Sn**	**22 37 39.6**	**-0.9**
CDCH	**Caldera**	**1.28**	**291**	*i* P	**Pn**	**22 37 30.7**	**+0.5**
CDCH				*i* S	**Sn**	**22 37 49.6**	**+0.5**
CDCH				IAML		22 37 50.3	
	comp=E,581nm,0.2s						
VACH	**Vallenar**	**1.53**	**227**	*i* P	**Pn**	**22 37 33.2**	**+0.1**
VACH				*i* S	**Sn**	**22 37 53.9**	**-0.3**
VCA	**Vinchina**	**1.64**	**137**	*e*P	**Pn**	**22 37 35.9**	**+1.4**
VCA				IAML		22 38 01.2	
	comp=Z,104nm,0.2s						
LCO	**Las Campanas**	**1.81**	**216**	*i* P	**Pn**	**22 37 37.3**	**+0.6**
LCO				*i* S	**Sn**	**22 38 00.9**	**+0.2**
LCO				IAML		22 38 03.1	
	comp=E,218nm,0.2s						
AGUA	**GUANDACOL**	**2.12**	**156**	*e*P	**Pn**	**22 37 41.8**	**+1.4**
AGUA				*e*S	**Sn**	**22 38 05.9**	**-1.4**
TLL	**Tololo Astrono**	**2.86**	**204**	*i* P	**Pn**	**22 37 50.3**	**+0.3**
TLL				*e*S	**Sn**	**22 38 22.6**	**-1.8**
TLL				IAML		22 38 32.8	
	comp=N,127nm,0.5s						
CYA	**Choya**	**3.38**	**106**	*e*P	**Pn**	**22 37 56.3**	**-0.3**
AMOG	**MOGNA**	**3.49**	**166**	*e*P	**Pn**	**22 37 58.6**	**+0.4**
RTLL	**Cerro Villicun**	**3.87**	**167**	*e*P	**Pn**	**22 38 03.8**	**+0.6**
RTLS	**Leoncito**	**4.24**	**178**	*e*P	**Pn**	**22 38 09.3**	**+0.9**
RTCV	**Cerro Valdivia**	**4.38**	**169**	*e*P	**Pn**	**22 38 10.5**	**+0.4**
AUSP	**Uspallata**	**4.67**	**179**	*e*P	**Pn**	**22 38 14.9**	**+0.8**
ASAL	**Salagasta**	**5.06**	**174**	*e*P	**Pn**	**22 38 19.7**	**+0.5**
ACAN	**Cantantal**	**5.12**	**158**	*e*P	**Pn**	**22 38 20.2**	**+0.2**
ARCO	**CERRO ARCO**	**5.30**	**175**	IAML		22 39 28.1	
	comp=Z,11nm,0.2s						

ISCJB ***15*** *22:37:49.7±0.4,40°.03N±0°.03×27°.83E±0°.04,h16km±10km, Error ellipse: s-maj=5.6km s-min=4.0km az=145.7*

DDA ***15*** *22:37:49.2,40°.02N×27°.84E,h16km,Md2.8*

CSEM ***15*** *22:37:49.5±0.1,40°.03N×27°.84E,h14km,MD2.7,Error ellipse: s-maj=1.7km s-min=1.4km az=50.0*

ISK ***15*** *22:37:49.3,40°.05N×27°.86E,h17km,MD2.7*

ISC 15 22:37:49.5±0.9,40°.03N±0°.02×27°.84E±0°.02,h14km±8km, n34,σ0s25/46,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GONE	**Gonen-Balikesi**	**0.12**	**281**	*e*PG	**Pb**	**22 37 53.3**	**-0.2**
GONE	**Gonen-Balikesi**	**0.12**	**281**	*e*Pg	**Pb**	**22 37 53.3**	**-0.2**
EDC	**Edincik**	**0.32**	**4**	*e*PG	**Pg**	**22 37 56.2**	**+0.2**
EDC				*e*SG	**Sg**	**22 38 00.9**	**+0.3**
EDC	**Edincik**	**0.32**	**4**	*e*Pg	**Pg**	**22 37 56.3**	**+0.2**
EDC				*e*Sg	**Sg**	**22 38 00.9**	**+0.3**
BALY	**Balya**	**0.33**	**210**	*i* P	**Pg**	**22 37 56.5**	**+0.2**
BALY				*i* S	**Sg**	**22 38 00.9**	**0.0**
BALY	**Balya**	**0.33**	**210**	P	**Pg**	**22 37 56.5**	**+0.2**
BALY				S	**Sg**	**22 38 00.9**	**0.0**
KNL	**Bal¯kesir**	**0.34**	**316**	*i* P	**Pg**	**22 37 55.5**	**-1.0**
KNL				*i* S	**Sg**	**22 38 00.8**	**-0.4**
BALB	**Balikesir**	**0.39**	**175**	*e*PG	**Pb**	**22 37 57.9**	**-0.2**
BALB	**Balikesir**	**0.39**	**175**	*e*Pg	**Pb**	**22 37 57.9**	**-0.2**
KCTX	**Karacabey (Bur**	**0.47**	**59**	*e*PG	**Pg**	**22 37 58.8**	**+0.1**
KCTX				*e*SG	**Sg**	**22 38 04.7**	**-0.3**
KCTX	**Karacabey (Bur**	**0.47**	**59**	*e*Pg	**Pg**	**22 37 58.8**	**+0.1**
KCTX				*e*Sg	**Sg**	**22 38 04.7**	**-0.3**
MRMT	**Marmara Adasi**	**0.61**	**342**	*e*PG	**Pg**	**22 38 01.3**	**-0.1**
MRMT	**Marmara Adasi**	**0.61**	**342**	*e*Pg	**Pg**	**22 38 01.3**	**-0.1**
DURS	**Dursunbey**	**0.65**	**130**	*i* P	**Pg**	**22 38 01.9**	**-0.3**
DURS				*i* S	**Sg**	**22 38 10.9**	**+0.1**
DURS	**Dursunbey**	**0.65**	**130**	P	**Pg**	**22 38 01.9**	**-0.3**
DURS				S	**Sg**	**22 38 10.9**	**+0.1**
RKY	**Sarkoy-Tekirda**	**0.83**	**323**	*e*PG	**Pb**	**22 38 05.7**	**0.0**
RKY	**Sarkoy-Tekirda**	**0.83**	**323**	*e*Pg	**Pb**	**22 38 05.7**	**0.0**
SART	**Tekirdag**	**0.83**	**323**	*i* P	**Pb**	**22 38 05.7**	**-0.1**
SART				*i* S	**Sb**	**22 38 17.3**	**+0.5**
SART	**Tekirdag**	**0.83**	**323**	P	**Pb**	**22 38 05.7**	**-0.1**
SART	**Tekirdag**	**0.83**	**323**	S	**Sb**	**22 38 17.3**	**+0.5**
MDNY	**Mudanya-Bursa**	**0.87**	**67**	*e*PG	**Pg**	**22 38 06.2**	**-0.2**
MDNY	**Mudanya-Bursa**	**0.87**	**67**	*e*Pg	**Pg**	**22 38 06.2**	**-0.2**
ARMT	**Armutlu**	**0.95**	**55**	*e*PG	**Pb**	**22 38 07.8**	**0.0**
ARMT	**Armutlu**	**0.95**	**55**	*e*Pg	**Pb**	**22 38 07.8**	**0.0**
GELI	**Tayfur-Gelibol**	**1.11**	**290**

WRA Warramunga Arr 59.37 189 P **P 22 55 52.1 +0.5**
0.3nm,0.5s,baz=6.5,slow=7.1,SNR=2.4
YKA Yellowknife Ar 61.35 31 P **P 22 56 04.8 +0.1**
0.1nm,0.6s,baz=302,slow=5.7,SNR=2.8
BORG Borgarnes 75.66 353 LR LR 23 33 02.6
comp=Z,59nm,20.7s,baz=46,slow=38

JMA 15 22:46:39.2, 37.73N×139.93E, h8km±1km, M2.2, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFY	**Yanaizu**	**0.37**	**209**	P	Pg	22 46 46.5	+0.1
JFY				eS	Sg	22 46 51.4	+0.1
JFT	**Otama**	**0.39**	**123**	P	Pg	22 46 46.7	0.0
JFT				eS	Sg	22 46 51.9	+0.1
JNS	**Sasagawa**	**0.49**	**280**	P	Pg	22 46 48.8	0.0
JYS	**Shirataka**	**0.50**	**12**	eS	Sg	22 46 56.3	+0.8
JHK	**Hiroka**	**0.87**	**237**	eS	Sg	22 47 06.6	-0.7
JAW	**Awa shima**	**0.90**	**324**	P	Pg	22 46 56.8	+0.2
JAW				eS	Sb	22 47 09.3	0.0
MAT	**Matsushiro**	**1.82**	**230**	P	Pn	22 47 06.4	-4.4
MAT				S	Sb	22 47 35.2	-0.4

*ISCJB **15** 22:50:22.4±0.9, 5.88S±0.08×146.4E±0.2, h100km, mb3.5/6, Error ellipse: s-maj=23.9km s-min=9.8km az=165.4*
*IDC **15** 22:50:24.1±3.9, 5.92S×146.50E, h104km±41km, mb3.4/6, mb1 3.5/8, mb1mx3.4/39, mbtmp3.7/8, MS4.2/1, Ms1 4.2/1, ms1mx2.8/22, Error ellipse: s-maj=34.3km s-min=27.0km az=133.0*
ISC 15 22:50:22.8±1.1, **5.8S**±0.1×**146.3E**±0.2, **h100**km, **n12, σ2.57/10, mb3.6/6, Eastern New Guinea region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**3.68**	**166**	P	**Pn**	**22 51 18.4**	**+0.7**
	7.3nm,0.3s,baz=353,slow=8.1,SNR=24						
PMG				S	**Sn**	**22 51 58.2**	**-1.9**
	20nm,0.3s,baz=311,slow=19,SNR=18						
CTA	**Charters Tower**	**14.19**	**180**	P	**P**	**22 53 44.4**	**+0.8**
	3.9nm,0.3s,baz=1.1,slow=14,SNR=16						
WRA	**Warramunga Arr**	**18.21**	**218**	P	**Pn**	**22 54 28.6**	**-0.6**
	0.1nm,0.3s,baz=42,slow=11,SNR=3.8						
ASAR	**Alice Springs**	**21.37**	**213**	P	**P**	**22 55 03.6**	**+1.3**
	0.7nm,0.7s,baz=45,slow=8.6,SNR=8.4						
FITZ	**Fitzroy Crossi**	**23.55**	**237**	P	**P**	**22 55 26.0**	**+1.7**
	1.7nm,0.7s,baz=42,slow=9.5,SNR=6.1						
JHJ	**Hachijo jima 2**	**39.20**	**351**	LR	LR	23 11 08.6	
	comp=Z,349nm,19.0s,baz=300,slow=32						
CMAR	**Chiang Mai Arr**	**52.51**	**298**	P	P	22 59 29.9	+3.7
	1.4nm,0.7s,baz=120,slow=5.7,SNR=13						
MKAR	**Makanchi Array**	**76.89**	**321**	P	P	23 02 06.0	+1.9
	0.3nm,0.6s,baz=114,slow=7.2,SNR=7.0						
ZALV	**Zalesovo Beam**	**78.46**	**328**	P	**P**	**23 02 13.3**	**+0.6**
	0.4nm,0.4s,baz=117,slow=5.0,SNR=3.4						
ILAR	**Eielson Array**	**85.60**	**23**	P	**P**	**23 02 50.5**	**+0.7**
	0.6nm,0.6s,baz=252,slow=5.2,SNR=9.0						
TORD	**Torodi Ar. Bea**	**144.33**	**284**	PKP	**PKPdf**	**23 09 48.8**	**+0.5**
	1.3nm,0.6s,baz=67,slow=2.5,SNR=15						
DBIC	**Dimbokro**	**151.28**	**273**	PKPbc	**PKPab**	**23 10 08.2**	**-5.9**
	2.2nm,0.4s,baz=51,slow=2.7,SNR=13						

MEX 15 22:56:45.5±0.3, **16.47N×98.29W, h5km, MD3.5, Near coast of Guerrero**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PNIG	**Pinotepa**	**0.18**	**117**	*eP*	Pg	22 56 48.8	-0.2
PNIG				eS	Sg	22 56 51.3	-0.1
VHO	**Vista Hermosa**	**1.61**	**68**	*eP*	Pn	22 57 11.8	-2.9

*ISCJB **15** 23:03:34.6±0.2, 61.58N±0.02×152.17W±0.04, h132km±2km, mb4.0/37, Error ellipse: s-maj=3.8km s-min=2.9km az=143.6*
*NEIC **15** 23:03:36.6, 61.58N×152.19W, h125km, mb4.4/9, After AEIC.*
NEIC Felt at Anchorage.
*IDC **15** 23:03:37.1±0.8, 61.70N×152.40W, h132km±7km, mb3.8/26, mb1 3.9/30, mb1mx3.8/45, mbtmp4.2/30, MS3.0/1, Ms1 3.0/1, ms1mx2.5/37, Error ellipse: s-maj=15.2km s-min=9.0km az=16.0*
ISC 15 23:03:36.1±0.5, **61.60N**±0.04×**152.19W**±0.04, **h128**km±4km, **n182, σ1.916/201, mb4.1/37, Southern Alaska**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
STLK	**Strandline Lak**	**0.20**	**121**	P	**Pn**	**23 03 53.3**	**-0.6**
SPCG	**Spurr Capps Gl**	**0.32**	**165**	P	**Pn**	**23 03 52.6**	**-1.7**
SPCG				S	**Sn**	**23 04 06.3**	**-1.7**
CKN	**Chakachatna No**	**0.38**	**180**	P	**Pn**	**23 03 53.9**	**-0.5**
SPCR	**Spurr Chakacha**	**0.40**	**181**	P	**Pn**	**23 03 53.8**	**-0.8**
SPCR				S	**Sn**	**23 04 07.7**	**-0.8**
CKL	**Chakachamna La**	**0.41**	**190**	P	**Pn**	**23 03 54.0**	**-0.6**
SPU	**Mount Spurr**	**0.42**	**171**	*e*Pn	**Pn**	**23 03 53.9**	**-0.8**
DFR	**Drift River**	**1.04**	**194**	P	**Pn**	**23 03 58.9**	**-0.5**
RDJH	**Redoubt Jeurge**	**1.05**	**197**	P	**Pn**	**23 03 59.2**	**-0.4**
RDJH				S	**Sn**	**23 04 03.8**	**-0.4**
FIB	**Fire Island**	**1.06**	**113**	P	**Pn**	**23 04 00.1**	**+0.7**
NCT	**North Crescent**	**1.10**	**199**	P	**Pn**	**23 03 59.5**	**-0.4**
RSO	**Redoubt South**	**1.17**	**194**	*e*Pn	**Pn**	**23 04 00.1**	**-0.6**
CUT	**Chulitna**	**1.21**	**47**	P	**Pn**	**23 04 01.0**	**+0.1**
RC01	**Rabbit Creek A**	**1.29**	**112**	*e*Pn	**Pn**	**23 04 01.3**	**-0.4**
PPLA	**Purkeypile**	**1.30**	**360**	*e*Pn	**Pn**	**23 04 02.0**	**0.0**
SLKM	**Skilak Lake**	**1.45**	**138**	P	**Pn**	**23 04 03.0**	**-0.6**
PMR	**Palmer**	**1.46**	**89**	*e*Pn	**Pn**	**23 04 02.7**	**-0.9**
ILW	**Iliamna West**	**1.61**	**197**	P	**Pn**	**23 04 05.0**	**-0.6**
IVE	**Iliamna Volcan**	**1.64**	**195**	P	**Pn**	**23 04 05.2**	**-0.6**
PTE	**Portage**	**1.70**	**114**	P	**Pn**	**23 04 05.4**	**-0.9**
ILS	**Iliamna Low So**	**1.70**	**195**	P	**Pn**	**23 04 06.0**	**-0.5**
SVW2	**Sparrevohn**	**1.71**	**254**	*e*Pn	**Pn**	**23 04 05.5**	**-1.0**
HUR	**Hurricane**	**1.83**	**40**	P	**Pn**	**23 04 07.9**	**0.0**
CAST	**Castle Rocks**	**1.83**	**1**	*e*Pn	**Pn**	**23 04 07.6**	**-0.3**
SML	**Sawmill**	**1.85**	**82**	*e*Pn	**Pn**	**23 04 07.2**	**-0.9**
BRLK	**Bradley Lake**	**1.95**	**160**	*e*Pn	**Pn**	**23 04 08.9**	**-0.4**
HOM	**Homer**	**1.96**	**172**	*e*Pn	**Pn**	**23 04 09.0**	**-0.5**
SEW	**Seward**	**2.01**	**137**	*e*Pn	**Pn**	**23 04 09.2**	**-0.8**
KTH	**Kantishna Hill**	**2.05**	**16**	*e*Pn	**Pn**	**23 04 10.4**	**-0.2**
TRF	**Thorofare Moun**	**2.06**	**25**	*e*Pn	**Pn**	**23 04 10.8**	**0.0**
TT01	**Tatalina**	**2.22**	**308**	*e*Pn	**Pn**	**23 04 12.1**	**-0.6**
TTA	**Tatalina**	**2.23**	**308**	*e*Pn	**Pn**	**23 04 12.2**	**-0.7**
CHUM	**Lake Minchumin**	**2.29**	**359**	P	**Pn**	**23 04 13.4**	**-0.1**
AUE	**Augustine Isla**	**2.32**	**195**	P	**Pn**	**23 04 13.3**	**-0.7**
SCM	**Sheep Creek Mo**	**2.33**	**82**	*e*Pn	**Pn**	**23 04 13.2**	**-0.9**
AUI	**Augustine Isla**	**2.35**	**196**	P	**Pn**	**23 04 13.7**	**-0.7**
RND	**Reindeer**	**2.38**	**39**	*e*Pn	**Pn**	**23 04 14.4**	**-0.3**
BPAW	**Bear Paw Mtn.**	**2.57**	**12**	*e*Pn	**Pn**	**23 04 16.3**	**-0.8**
MCK	**McKinley**	**2.62**	**34**	*e*Pn	**Pn**	**23 04 17.4**	**-0.2**
MCNL	**McNeil River**	**2.65**	**205**	P	**Pn**	**23 04 17.6**	**-0.4**
DHY	**Denali Highway**	**2.69**	**54**	*e*Pn	**Pn**	**23 04 18.4**	**-0.4**
CDD	**Cape Douglas**	**2.77**	**196**	P	**Pn**	**23 04 18.6**	**-1.1**
VMT	**TAPS TI Valdez**	**2.85**	**98**	P	**Pn**	**23 04 19.6**	**-1.1**
VLZ	**Valdez**	**2.86**	**97**	P	**Pn**	**23 04 19.4**	**-1.3**
FOSS	**Fourpeaked Sta**	**2.91**	**196**	P	**Pn**	**23 04 20.3**	**-1.2**
FOPK	**Fourpeaked Vol**	**2.92**	**193**	P	**Pn**	**23 04 20.0**	**-1.6**
KLU	**Klutina**	**3.00**	**89**	*e*Pn	**Pn**	**23 04 21.7**	**-1.0**
DIV	**Divide**	**3.12**	**96**	*e*Pn	**Pn**	**23 04 23.1**	**-1.2**
PS11	**TAPS Pump St11**	**3.22**	**78**	P	**Pn**	**23 04 25.9**	**+0.5**
KAHC	**Katmai Hardscr**	**3.28**	**207**	P	**Pn**	**23 04 25.6**	**-0.8**
EYAK	**Cordova Ski Ar**	**3.30**	**106**	*e*Pn	**Pn**	**23 04 24.9**	**-1.6**
PAX	**Paxson**	**3.43**	**63**	*e*Pn	**Pn**	**23 04 28.5**	**+0.2**
WRH	**Wood River Hil**	**3.43**	**31**	*e*Pn	**Pn**	**23 04 27.6**	**-0.7**
KAWH	**Katmai**	**3.48**	**203**	P	**Pn**	**23 04 28.2**	**-0.7**
PS10	**TAPS Pump St10**	**3.49**	**56**	P	**Pn**	**23 04 30.1**	**+1.1**
MLY	**Manley**	**3.51**	**10**	*e*Pn	**Pn**	**23 04 28.6**	**-0.6**
KVTA	**Katmai Vly 10**	**3.58**	**207**	P	**Pn**	**23 04 29.7**	**-0.6**
KAKN	**Katmai Knife C**	**3.61**	**205**	P	**Pn**	**23 04 30.0**	**-0.8**
KELA	**Mount Kelaz**	**3.64**	**211**	P	**Pn**	**23 04 30.5**	**-0.5**
CCB	**Clear Creek Bu**	**3.65**	**31**	*e*Pn	**Pn**	**23 04 30.3**	**-0.8**
KABU	**Katmai Buttres**	**3.68**	**206**	P	**Pn**	**23 04 31.3**	**-0.4**
HDA	**Harding Lake**	**3.69**	**38**	*e*Pn	**Pn**	**23 04 31.2**	**-0.4**
BMRM	**Bremner River**	**3.71**	**96**	*e*Pn	**Pn**	**23 04 30.8**	**-1.3**
KABR	**Katmai Barrier**	**3.75**	**203**	P	**Pn**	**23 04 31.3**	**-1.2**
MDM	**Murphy Dome**	**3.82**	**26**	*e*Pn	**Pn**	**23 04 32.6**	**-0.7**
COLA	**College**	**3.83**	**29**	*e*Pn	**Pn**	**23 04 32.9**	**-0.5**
PS08	**TAPS Pump Stn8**	**3.83**	**37**	P	**Pn**	**23 04 32.9**	**-0.6**
KDAK	**Kodiak Island**	**3.83**	**183**	P	Pn	23 04 45.7	+12
	28nm,0.3s,baz=23,slow=9.3,SNR=268						
KDAK				S	Sn	23 05 28.9	+11
	63nm,0.3s,baz=294,slow=22,SNR=11						
KDAK	**Kodiak Island**	**3.83**	**183**	*e*Pn	**Pn**	**23 04 31.0**	**-2.5**
KDAK				S	Sn	23 05 28.9	+11
RAGM	**Ragged Mountai**	**3.85**	**105**	*e*Pn	**Pn**	**23 04 32.3**	**-1.6**
IL1	**Eielson Array**	**3.99**	**35**	*e*Pn	**Pn**	**23 04 34.3**	**-1.3**
ILAR	**Eielson Array**	**3.99**	**35**	P	**Pn**	**23 04 34.9**	**-0.7**
	44nm,0.3s,baz=218,slow=14,SNR=533						
ILAR				S	Sn	23 05 12.6	-9.0
	11nm,0.3s,baz=227,slow=19,SNR=8.0						
ILB	**Eielson Array**	**3.99**	**35**	*e*Pn	**Pn**	**23 04 34.9**	**-0.7**
MENT	**Mentasta**	**4.18**	**68**	*e*Pn	**Pn**	**23 04 38.2**	**0.0**
VRDI	**Verde Repeater**	**4.21**	**91**	P	**Pn**	**23 04 37.5**	**-1.3**
NICHA	**Nichawak Mount**	**4.24**	**105**	P	**Pn**	**23 04 37.1**	**-1.9**
DOT	**Dot Lake**	**4.28**	**58**	*e*Pn	**Pn**	**23 04 39.3**	**-0.1**
BERG	**Berg Lake**	**4.30**	**103**	P	**Pn**	**23 04 38.5**	**-1.3**
SUCK	**Suckling Hills**	**4.39**	**107**	P	**Pn**	**23 04 40.7**	**-0.2**
MCARA	**McCarthy VSAT**	**4.40**	**89**	P	**Pn**	**23 04 40.9**	**-0.1**
PS06	**TAPS Pump Stn6**	**4.41**	**13**	P	**Pn**	**23 04 41.5**	**+0.4**
PLK1	**Peulik 1**	**4.42**	**212**	P	**Pn**	**23 04 41.1**	**-0.2**
OHAK	**Old Harbor**	**4.43**	**188**	*e*Pn	**Pn**	**23 04 38.7**	**-2.7**
PLK3	**Peulik 3**	**4.43**	**210**	P	**Pn**	**23 04 41.0**	**-0.6**
IM3	**Indian Mountai**	**4.46**	**352**	P	**Pn**	**23 04 41.5**	**-0.3**
CRQM	**Cirque**	**4.46**	**97**	P	**Pn**	**23 04 41.5**	**-0.6**
KHIT	**Khitrov Hills**	**4.50**	**101**	P	**Pn**	**23 04 41.2**	**-1.3**
GRIN	**Grindle Hills**	**4.52**	**103**	P	**Pn**	**23 04 41.4**	**-1.3**
TGL	**Tana Glacier**	**4.61**	**96**	P	**Pn**	**23 04 43.5**	**-0.4**
PTPK	**Patty Peak**	**4.69**	**91**	P	**Pn**	**23 04 44.5**	**-0.6**
BALM	**Baldy**	**4.78**	**92**	P	**Pn**	**23 04 45.5**	**-0.7**
KIAG	**Kiagna River**	**4.79**	**94**	P	**Pn**	**23 04 45.5**	**-1.0**
KULT	**Kultieth River**	**4.81**	**102**	P	**Pn**	**23 04 45.4**	**-1.3**
BARK	**Barkley Ridge**	**4.87**	**100**	P	**Pn**	**23 04 46.6**	**-0.8**
ISLE	**Juniper Island**	**4.88**	**97**	P	**Pn**	**23 04 47.5**	**-0.2**
BAGL	**Bagley Icefiel**	**5.03**	**98**	P	**Pn**	**23 04 49.0**	**-0.4**
BCA3	**Beaver Creek A**	**5.07**	**69**	P	**Pn**	**23 04 50.0**	**0.0**
BARN	**Barnard Glacie**	**5.10**	**91**	P	**Pn**	**23 04 50.5**	**-0.1**
GRNC	**Granite Creek**	**5.13**	**95**	P	**Pn**	**23 04 50.5**	**-0.5**
MESA	**MESA**	**5.20**	**101**	P	**Pn**	**23 04 51.4**	**-0.5**
CTGM	**Chitina Glacie**	**5.27**	**92**	P	**Pn**	**23 04 52.6**	**-0.3**
LOGN	**Logan Glacier**	**5.46**	**93**	P	**Pn**	**23 04 55.2**	**-0.2**
TABL	**Table Mountain**	**5.50**	**97**	P	**Pn**	**23 04 55.6**	**-0.3**
COLD	**Coldfoot**	**5.72**	**8**	*e*Pn	**Pn**	**23 04 58.2**	**-0.4**
FYU	**Fort Yukon**	**5.84**	**28**	*e*Pn	**Pn**	**23 04 59.8**	**-0.5**
EGAK	**Eagle**	**5.92**	**53**	*e*Pn	**Pn**	**23 05 00.8**	**-0.6**
CHGN	**Chignik**	**6.21**	**214**	*e*Pn	**Pn**	**23 05 03.7**	**-1.6**
DAWY	**Dawson**	**6.36**	**62**	P	**Pn**	**23 05 07.3**	**0.0**
VNHG	**Veniaminof 1**	**6.49**	**217**	P	**Pn**	**23 05 08.9**	**-0.2**
BM3	**Burnt Mountain**	**6.69**	**26**	P	**Pn**	**23 05 10.8**	**-1.0**
SDPT	**Sand Point**	**7.62**	**218**	*e*Pn	**Pn**	**23 05 23.6**	**-0.7**
DT1	**Dutton Round H**	**8.39**	**224**	P	**Pn**	**23 05 33.8**	**-0.8**
WHY	**Whitehorse**	**8.43**	**89**	P	**Pn**	**23 05 34.5**	**-0.7**
SKAG	**Skagway**	**8.58**	**97**	*e*Pn	**Pn**	**23 05 37.4**	**+0.2**
GAMB	**Gambell**	**9.22**	**292**	*e*Pn	**Pn**	**23 05 46.2**	**+0.5**
INK	**Inuvik**	**10.35**	**42**	P	**Pn**	**23 06 00.2**	**-0.6**
	1.7nm,0.3s,baz=230,slow=20,SNR=50						
INK				S	**Sn**	**23 07 51.5**	**-3.2**
	0.5nm,0.3s,baz=189,slow=19,SNR=6.4						
INK	**Inuvik**	**10.35**	**42**	*e*Pn	**Pn**	**23 06 00.6**	**-0.2**
INK				S	**Sn**	**23 07 51.5**	**-3.2**
DLBC	**Dease Lake**	**11.51**	**96**	P	**Pn**	**23 06 17.2**	**+0.8**
	0.4nm,0.3s,baz=291,slow=6.0,SNR=9.0						
DLBC				S	**Sn**	**23 08 20.2**	**-2.9**
	0.4nm,0.3s,baz=151,slow=19,SNR=3.2						
DLBC				LR	LR	23 10 33.0	
	comp=Z,73nm,18.6s,baz=350,slow=36						
DLBC	**Dease Lake**	**11.51**	**96**	*e*Pn	**Pn**	**23 06 16.2**	**-0.3**
DLBC				S	**Sn**	**23 08 20.2**	**-2.9**
YKW3	**Yellowknife Ar**	**17.46**	**70**	*e*P	**Pn**	**23 07 31.3**	**0.0**
	3.3nm,0.7s						
YKA	**Yellowknife Ar**	**17.48**	**70**	P	**Pn**	**23 07 32.1**	**+0.5**
	0.2nm,0.3s,baz=283,slow=11,SNR=22						
YKA				PcP	**PcP**	**23 12 03.9**	**-0.1**
	0.1nm,0.3s,baz=281,slow=1.3,SNR=8.0						
YKA				ScP	**ScP**	**23 15 26.2**	**-0.6**
	0.2nm,0.3s,baz=285,slow=2.3,SNR=24						
YKB5	**Yellowknife Ar**	**17.48**	**70**	*e*P	**Pn**	**23 07 32.4**	**+0.8**
YKB5				eScP	**ScP**	**23 15 26.0**	**-0.8**
RES	**Resolute Bay**	**23.74**	**34**	P	**P**	**23 08 36.5**	**+0.5**
	2.4nm,0.6s,baz=270,slow=20						
NEW	**Newport**	**23.80**	**108**	P	**P**	**23 08 39.2**	**+2.4**
	0.6nm,0.4s,baz=324,slow=8.7,SNR=2.5						
SEY	**Seymchan**	**25.16**	**298**	P	**P**	**23 08 47.9**	**-1.0**
	1.6nm,0.3s,baz=102,slow=7.4,SNR=13						
PETK	**Petropavlovsk-**	**27.68**	**275**	P	**P**	**23 09 10.7**	**-1.0**
	3.2nm,0.9s,baz=76,slow=12,SNR=8.4						
TIXI	**Tiksi**	**30.45**	**322**	P	**P**	**23 09 35.3**	**-0.6**
	1.0nm,0.2s,baz=93,slow=13,SNR=3.5						
PTU	**Portage**	**30.84**	**111**	*e*P	**P**	**23 09 38.5**	**-1.5**
PDAR	**Pinedale Array**	**31.43**	**107**	P	**P**	**23 09 47.8**	**+2.6**
	0.3nm,0.4s,baz=324,slow=3.8,SNR=6.5						
PDAR				pP	**pP**	**23 10 16.0**	**+3.1**
	0.6nm,0.6s,baz=319,slow=4.3,SNR=3.4						
PDAR				PcP	**PcP**	**23 12 34.7**	**-0.5**
	0.7nm,0.6s,baz=341,slow=1.9,SNR=4.5						
PDAR				ScP	**ScP**	**23 16 05.3**	**-0.7**
	0.3nm,0.5s,baz=311,slow=1.9,SNR=4.1						
MCU	**Monte Cristo P**	**31.59**	**111**	*e*P	**P**	**23 09 43.9**	**-2.7**
MCU				*e*pP	**pP**	**23 10 17.2**	**+2.8**
MCU				*e*PP	**PP**	**23 10 58.7**	**-1.4**
MCU				eS	**S**	**23 14 50.5**	**+4.5**
MOUT	**Mount Ogden**	**31.64**	**111**	*e*P	**P**	**23 09 47.0**	**-0.1**
JLU	**Jordanelle**	**32.30**	**112**	*e*pP	**pP**	**23 10 18.0**	**-2.6**
JLU				eS	**S**	**23 14 59.4**	**+2.4**
R11A	**Troy Canyon, C**	**32.38**	**119**	*e*pP	pP	23 10 25.2	+4.0
AGMN	**Agassiz Nation**	**33.82**	**87**	*e*pP	pP	23 10 35.1	+1.6
YAK	**Yakutsk**	**34.82**	**306**	P	**P**	**23 10 13.5**	**-0.5**
	9.9nm,0.3s,baz=5.0,slow=0.6,SNR=5.2						
SCHQ	**Schefferville**	**42.37**	**59**	P	**P**	**23 11 18.2**	**+1.0**
	3.3nm,0.8s,baz=302,slow=9.5,SNR=4.0						
KLR	**Kul'dur**	**42.39**	**289**	P	**P**	**23 11 16.4**	**-0.9**
	2.5nm,0.7s,baz=21,slow=12,SNR=6.1						
NRIK	**Noril'sk**	**42.64**	**333**	P	**P**	**23 11 19.5**	**+0.4**
	4.9nm,0.4s,baz=46,slow=6.7,SNR=16						
TX31	**Lajitas Ar. Si**	**45.20**	**113**	*e*P	**P**	**23 11 42.4**	**+2.2**
TXAR	**Lajitas Array**	**45.20**	**113**	P	**P**	**23 11 42.4**	**+2.2**
	0.8nm,0.7s,baz=326,slow=5.7,SNR=8.8						
TXAR				pP	**pP**	**23 12 12.1**	**+2.8**
	0.6nm,0.7s,baz=339,slow=7.4,SNR=4.5						
TXAR				PcP	**PcP**	**23 13 18.1**	**0.0**
	0.6nm,0.5s,baz=71,slow=1.2,SNR=7.5						
MIAR	**Mount Ida**	**45.47**	**99**	*e*pP	pP	23 12 08.6	-2.7
USRK	**Ussuriysk Ar.**	**46.02**	**284**	P	**P**	**23 11 45.0**	**-1.3**
	1.9nm,0.6s,baz=64,slow=8.2,SNR=5.9						
ARCES	**ARCESS Array B**	**49.14**	**1**	P	**P**	**23 12 09.3**	**-0.8**
	3.2nm,0.9s,baz=13,slow=6.5,SNR=6.8						
CN2	**Changchun**	**49.32**	**289**	*e*P	**P**	**23 12 11.5**	**-0.3**
KSRS	**Korea Array**	**53.23**	**282**	P	**P**	**23 12 41.2**	**+0.3**
	5.2nm,0.7s,baz=26,slow=7.2,SNR=10						
KSAR	**Wonju Array Be**	**53.26**	**282**	P	**P**	**23 12 41.2**	**+0.1**
ULN	**Ulaanbaatar**	**53.90**	**305**	*e*P	**P**	**23 12 46.5**	**+0.6**
	5.0nm,0.7s						
SONA1	**Songino Array**	**54.17**	**305**	*e*P	**P**	**23 12 48.5**	**+0.7**
SONM	**Songino Array**	**54.18**	**305**	P	**P**	**23 12 48.9**	**+1.0**
	6.2nm,0.7s,baz=36,slow=7.8,SNR=43						
ZAA0	**Zalesovo Array**	**56.32**	**323**	*e*P	**P**	**23 13 03.0**	**0.0**
ZALV	**Zalesovo Beam**	**56.32**	**323**	P	**P**	**23 13 02.6**	**-0.3**
	5.0nm,0.5s,baz=29,slow=6.7,SNR=30						
NB2	**NORSAR Subarra**	**57.03**	**10**	P	**P**	**23 13 07.0**	**-1.0**
	comp=Z,0.6nm,0.7s,baz=351,slow=6.9						
NOA	**NORSAR Array B**	**57.03**	**10**	P	**P**	**23 13 06.9**	**-1.0**
	comp=Z,0.6nm,0.6s,baz=352,slow=7.2,SNR=4.3						
FINES	**FINESS Array B**	**57.27**	**1**	P	**P**	**23 13 08.8**	**-0.7**
	comp=Z,0.6nm,0.4s,baz=3.1,slow=9.1,SNR=10						
KURK	**Kurchatov**	**60.93**	**326**	*e*P	**P**	**23 13 34.8**	**-0.1**
	comp=Z,3.6nm,0.5s						
ZRNK	**Zerenda**	**61.21**	**333**	*e*P	**P**	**23 13 36.2**	**-0.6**
	comp=Z,3.8nm,0.4s						
MK31	**Makanchi Array**	**63.43**	**321**	*e*P	**P**	**23 13 50.9**	**-0.8**
MKAR	**Makanchi Array**	**63.43**	**321**	P	**P**	**23 13 51.0**	**-0.7**
	comp=Z,1.5nm,0.8s,baz=44,slow=6.9,SNR=26						
MKAR	**Makanchi Array**	**63.43**	**321**	*e*P	**P**	**23 13 50.9**	**-0.7**
MK01	**Makanchi Array**	**63.45**	**321**	*e*P	**P**	**23 13 50.5**	**-1.3**
MAKZ	**Makanchi**	**63.51**	**322**	*e*P	**P**	**23 13 51.7**	**-0.5**
	comp=Z,15nm,1.9s						
WMQ	**Urumqi**	**64.38**	**316**	*e*P	**P**	**23 14 00.9**	**+2.9**
WMQ				pmax	pmax		
	comp=Z,3.0nm,0.6s						
ABKAR	**Akbulak array**	**66.53**	**338**	*e*P	**P**	**23 14 11.2**	**-0.5**
AKASG	**Malin Array Be**	**68.05**	**359**	P	**P**	**23 14 20.7**	**-0.4**
	comp=Z,0.4nm,0.3s,baz=2.3,slow=6.4,SNR=3.1						
TKM2	**Tokmak 2**	**68.90**	**324**	*e*P	**P**	**23 14 27.6**	**+0.7**
	comp=Z,12nm,1.7s						
GERES	**GERESS Array B**	**69.33**	**10**	P	**P**	**23 14 29.4**	**+0.2**
	comp=Z,0.3nm,0.4s,baz=348,slow=5.9,SNR=5.5						
AAK	**Ala-Archa**	**69.47**	**325**	*e*P	**P**	**23 14 30.7**	**+0.3**
	comp=Z,2.2nm,0.6s						
CD2	**Chengdu**	**69.56**	**297**	P	**P**	**23 14 30.5**	**-0.4**
CD2				pmax	pmax		
	comp=Z,1.0nm,0.5s						
EKS2	**Erkin-Say**	**69.64**	**326**	*e*P	**P**	**23 14 31.3**	**0.0**
	comp=Z,3.3nm,0.6s						
KKAR	**Karatay Array**	**70.08**	**328**	*e*P	**P**	**23 14 33.6**	**-0.3**
	comp=Z,0.7nm,0.5s						
GYA	**Guiyang**	**72.16**	**292**	*e*P	**P**	**23 14 48.3**	**+1.5**
GYA				pP	pP	23 15 18.0	-0.4
GYA				sP	sP	23 15 32.6	+0.5
GYA				PP	**PP**	**23 17 31.0**	**+2.7**
GYA				S	**S**	**23 23 57.8**	**-0.9**
GYA				SKS	**SKSac**	**23 24 36.8**	**-2.2**
GYA				pmax	pmax		
	comp=Z,10.0nm,1.0s						
ESDC	**Sonseca Array**	**75.83**	**25**	P	**P**	**23 15 08.7**	**+0.9**
	comp=Z,2.4nm,1.2s,baz=1.7,slow=5.1,SNR=4.4						
ESDC				pP	**pP**	**23 15 40.6**	**+0.9**
	comp=Z,0.6nm,0.6s,baz=347,slow=5.5,SNR=3.7						
GEYT	**Alibeck**	**77.81**	**336**	P	**P**	**23 15 18.9**	**0.0**
	comp=Z,2.6nm,0.9s,baz=336,slow=3.2,SNR=5.7						
BRTR	**Keskin Array B**	**78.92**	**355**	P	**P**	**23 15 26.7**	**+1.6**
	comp=Z,0.7nm,0.8s,baz=26,slow=3.0,SNR=3.5						
GUN	**Gumba**	**79.33**	**310**	*e*P	**P**	**23 15 27.9**	**+0.1**
GKN	**Gorkha**	**79.70**	**311**	*e*P	**P**	**23 15 29.6**	**+0.1**
	comp=Z,5.8nm,0.4s						
PYUN	**Piuthan**	**80.19**	**313**	*e*P	**P**	**23 15 32.4**	**+0.1**
KOLN	**Koldanda**	**80.28**	**312**	*e*P	**P**	**23 15 32.7**	**0.0**
KEST	**Kesra**	**81.86**	**15**	P	**P**	**23 15 41.2**	**+0.4**
	comp=Z,3.5nm,0.8s,baz=8.1,slow=7.1,SNR=6.3						
CMAR	**Chiang Mai Arr**	**82.55**	**295**	P	**P**	**23 15 43.6**	**-0.9**
	comp=Z,2.8nm,0.9s,baz=4.9,slow=6.2,SNR=22	

JMA 15 23:15:05.8±0.3, 30.000N×131.786E, h59km, M2.5, Kyushu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JTN	**Tanegashima 3**	**1.00**	**311**	P	Pn	23 15 24.2	+0.4
JTN				eS	Sn	23 15 38.0	+0.8
JYAK	**Yakushimahirau**	**1.19**	**282**	P	Pn	23 15 26.6	+0.3
JYAK				eS	Sn	23 15 41.7	0.0
JTSR	**Tashiro 2**	**1.42**	**325**	P	Pn	23 15 29.6	+0.2
JTSR				eS	Sn	23 15 47.5	+0.4
JNAR	**Kushima--Naru**	**1.60**	**342**	eS	Sn	23 15 52.6	+1.1
JNN	**Nakanoshima**	**1.73**	**265**	P	Pn	23 15 34.7	+1.1
JNN				eS	Sn	23 15 56.9	+2.3
JSJ	**Shimokoshiki**	**2.49**	**313**	P	Pn	23 15 44.0	+0.1
JSJ				eS	Sn	23 16 12.7	-0.5
JAM	**Amami Oshima**	**2.53**	**232**	P	Pn	23 15 44.9	+0.5
JAM				eS	Sn	23 16 13.3	-0.8
JAMN	**Amaminishikomi**	**2.93**	**234**	P	Pn	23 15 50.6	+0.7
JAMN				eS	Sn	23 16 24.0	+0.1

IDC ***15*** *23:20:08.0±2.2, 51.11N×169.21W, h0km, mb3.5/6, mb1 3.8/7, mb1mx3.4/46, mbtmp3.5/7, ML3.4/1, MS3.4/1, Ms1 3.4/1, ms1mx2.6/44, Error ellipse: s-maj=53.4km s-min=28.4km az=18.0*

ISCJB ***15*** *23:20:11.0±0.8, 51.27N±0.07×169.45W±0.07, h33km, mb3.4/6, MS3.4/1, Error ellipse: s-maj=10.3km s-min=4.8km az=157.9*

NEIC ***15*** *23:20:11.8, 51.35N×169.50W, h10km, ML3.1(AEIC), After AEIC.*

ISC 15 23:20:13.1±1.0, 51.3N±0.1×169.43W±0.06, h35km, n20, σ0s88/24, mb3.4/6, Fox Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
NIKH	**Nikolski High**	**1.73**	**12**	P	Pn	**23 20 39.8**	**-0.9**
NIKH				S	Sn	**23 21 01.8**	**+0.2**
OKTU	**Okmok Mt. Tuli**	**2.28**	**21**	P	Pn	**23 20 48.0**	**-0.2**
OKFG	**Magazine Ridge**	**2.33**	**23**	P	Pn	**23 20 47.8**	**-1.1**
OKFG				S	Sn	**23 21 15.7**	**-0.6**
KOFP	**Korovin Flat P**	**3.07**	**291**	P	Pn	**23 20 59.0**	**0.0**
MSW	**Makushin Switc**	**3.10**	**30**	P	Pn	**23 20 59.4**	**-0.1**
MSW				S	Sn	**23 21 34.6**	**-0.6**
ATKA	**Atka Island**	**3.10**	**289**	P	Pn	**23 20 58.8**	**-0.7**
ATKA				S	Sn	**23 21 33.8**	**-1.5**
UNV	**Unalaska Valle**	**3.13**	**34**	P	Pn	**23 20 58.9**	**-1.0**
UNV				S	Sn	**23 21 35.8**	**-0.3**
GSTD	**Great Sitkin T**	**4.25**	**283**	P	Pn	**23 21 15.0**	**-0.3**
GSTD				S	Sn	**23 22 03.1**	**-0.6**
ADAG	**Mount Adagdak**	**4.52**	**282**	P	Pn	**23 21 18.5**	**-0.5**
SSLW	**Shishaldin Wes**	**4.75**	**40**	P	Pn	**23 21 22.2**	**+0.1**
ISLZ	**Isanotski Laza**	**4.88**	**43**	P	Pn	**23 21 23.8**	**-0.2**
KDAK	**Kodiak Island**	**11.74**	**50**	Pn	Pn	23 23 10.3	+12
	0.8nm,0.3s,baz=237,slow=6.3,SNR=17						
ILAR	**Eielson Array**	**17.89**	**32**	P	**Pn**	**23 24 17.9**	**-0.9**
	0.1nm,0.3s,baz=228,slow=11,SNR=6.9						
INK	**Inuvik**	**24.29**	**32**	P	**P**	**23 25 27.7**	**+1.0**
	1.0nm,0.6s,baz=254,slow=8.8,SNR=7.7						
YKA	**Yellowknife Ar**	**31.00**	**47**	P	**P**	**23 26 27.1**	**+0.4**
	0.2nm,0.8s,baz=276,slow=8.5,SNR=3.9						
PDAR	**Pinedale Array**	**40.66**	**78**	P	**P**	**23 27 48.9**	**-1.1**
	0.5nm,0.7s,baz=299,slow=4.0,SNR=6.5						
TXAR	**Lajitas Array**	**52.81**	**88**	P	**P**	**23 29 24.1**	**-0.9**
	0.3nm,0.7s,baz=288,slow=6.5,SNR=3.1						
ZALV	**Zalesovo Beam**	**58.21**	**318**	LR	LR	23 58 54.8	
	comp=Z,29nm,18.1s,baz=250,slow=40						
BVAR	**Borovoye Array**	**64.57**	**325**	P	**P**	**23 30 48.0**	**+1.7**
	1.0nm,0.7s,baz=49,slow=6.6,SNR=7.4						
GERES	**GERESS Array B**	**80.22**	**358**	P	**P**	**23 32 21.1**	**+1.4**
	0.2nm,0.5s,baz=355,slow=4.9,SNR=3.2						

IDC ***15*** *23:37:21.9±3.0, 36.10N×142.14E, h0km, mb3.4/2, mb1 3.6/4, mb1mx3.3/34, mbtmp3.5/4, ML3.4/1, MS2.8/1, Ms1 2.8/1, ms1mx2.3/36, Error ellipse: s-maj=63.7km s-min=31.2km az=63.0*

ISCJB ***15*** *23:37:22.8±1.2, 36.17N±0.06×142.17E±0.10, h23km, mb3.6/2, Error ellipse: s-maj=11.9km s-min=8.3km az=158.7*

JMA 15 23:37:24.4±0.3, 36.20N×142.08E, h51km, M3.3

ISC 15 23:37:24.2±1.7, 36.13N±0.06×142.1E±0.1, h23km, n20, σ1s39/17, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**1.10**	**248**	P	**Pn**	**23 37 43.9**	**-0.3**
CHOJ				eS	**Sn**	**23 37 58.5**	**-0.1**
JHO	**Hitachi**	**1.33**	**292**	P	**Pn**	**23 37 46.1**	**-1.3**
ONAJ	**Iwakimizuishiy**	**1.43**	**313**	P	**Pn**	**23 37 47.4**	**-1.5**
ONAJ				eS	**Sn**	**23 38 06.4**	**-0.6**
BSO1	**Boso 1**	**1.73**	**212**	P	**Pb**	**23 37 53.6**	**-1.4**
BSO4	**Boso 4**	**1.83**	**232**	P	**Pn**	**23 37 55.0**	**+0.8**
BSO3	**Boso 3**	**1.85**	**225**	P	**Pn**	**23 37 55.2**	**+0.8**
JRY	**Ryogami san**	**2.60**	**269**	P	**Pn**	**23 38 04.3**	**-0.6**
JOD2	**Odawara 2**	**2.60**	**252**	P	**Pn**	**23 38 05.1**	**+0.2**
MJAR	**Matsushiro Arr**	**3.17**	**279**	Pn	**Pn**	**23 38 13.4**	**+0.6**
	3.9nm,0.3s,baz=100,slow=8.6,SNR=33						
MAT	**Matsushiro**	**3.17**	**279**	P	**Pn**	**23 38 13.4**	**+0.6**
MAT				eS	**Sn**	**23 38 51.7**	**+1.7**
JHJ	**Hachijo jima 2**	**3.56**	**213**	Pn	**Pn**	**23 38 18.3**	**+0.3**
	baz=73,slow=19,SNR=3.0						
JHJ				Sn	**Sn**	**23 38 55.9**	**-3.5**
	36nm,0.3s,baz=87,slow=18,SNR=5.4						
ASAJ	**Asahikawa**	**7.99**	**3**	LR	LR	23 42 53.7	
	comp=Z,71nm,20.5s,baz=156,slow=41						
H11N2	**WAKE ISLAND Hy**	**27.21**	**120**	T	T	00 11 44.9	
	baz=310,slow=74						
H11N1	**WAKE ISLAND Hy**	**27.21**	**120**	T	T	00 11 45.9	
	baz=310,slow=74						
H11N3	**WAKE ISLAND Hy**	**27.23**	**120**	T	T	00 11 46.1	
	baz=310						
H11S1	**WAKE ISLAND Hy**	**27.90**	**122**	T	T	00 12 38.9	
	baz=314,slow=76,SNR=5.6						
H11S3	**WAKE ISLAND Hy**	**27.90**	**122**	T	T	00 12 38.1	
	baz=314,slow=76,SNR=6.8						
H11S2	**WAKE ISLAND Hy**	**27.92**	**122**	T	T	00 12 41.6	
	baz=314,slow=76,SNR=3.4						
MKAR	**Makanchi Array**	**45.08**	**303**	P	**P**	**23 45 39.7**	**+1.3**
	0.3nm,0.7s,baz=79,slow=7.8,SNR=5.4						
WRA	**Warramunga Arr**	**56.24**	**189**	P	**P**	**23 47 03.8**	**+1.0**
	0.5nm,0.3s,baz=4.3,slow=7.3,SNR=3.6						

NIED ***15*** *23:40:00, 36.70N×141.50E, h47km, Mw3.7 Best double couple: M0 3.52000×10^14 NP1:ϕs285.00000°, δ7.00000°, λ-120.00000°. NP2:ϕs135.00000°, δ84.00000°, λ-86.00000°.*

IDC ***15*** *23:40:08.2±1.4, 36.68N×141.89E, h0km, mb3.2/3, mb1 3.5/4, mb1mx3.3/33, mbtmp3.3/4, ML3.7/1, MS3.7/2, Ms1 3.7/2, ms1mx2.6/31, Error ellipse: s-maj=35.4km s-min=31.8km az=113.0*

ISCJB ***15*** *23:40:11.5±1.3, 36.65N±0.05×141.69E±0.07, h25km±7km, mb3.3/3, MS3.8/2, Error ellipse: s-maj=10.1km s-min=7.9km az=26.4*

JMA 15 23:40:14.4±0.1, 36.68N×141.50E, h38km±2km, M3.6

ISC 15 23:40:10.9±2.2, 36.71N±0.06×141.71E±0.07, h16km±11km, n21, σ0s86/22, mb3.4/3, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.83**	**298**	P	**Pn**	**23 40 27.8**	**-0.2**
ONAJ				S	**Sb**	**23 40 37.7**	**-0.3**
JHO	**Hitachi**	**0.92**	**264**	P	**Pb**	**23 40 28.4**	**-0.1**
JHO				S	**Sb**	**23 40 38.7**	**-1.9**
JFK	**Kawauchi**	**0.94**	**315**	P	**Pn**	**23 40 30.0**	**+0.5**
JFK				eS	**Sg**	**23 40 41.6**	**+0.2**
JFT	**Otama**	**1.36**	**307**	P	**Pg**	**23 40 36.9**	**-0.3**
JFT				S	**Sn**	**23 40 52.9**	**-0.2**
JMM	**Marumori**	**1.37**	**328**	P	**Pb**	**23 40 36.6**	**+0.5**
JMM				S	**Sn**	**23 40 53.1**	**-0.1**
JFY	**Yanaizu**	**1.75**	**294**	P	**Pb**	**23 40 42.8**	**+0.1**
JFY				S	**Sn**	**23 41 02.5**	**-0.1**
JIO	**Ouri**	**1.77**	**351**	P	**Pb**	**23 40 42.8**	**-0.1**
JIO				eS	**Sb**	**23 41 04.5**	**-0.3**
JAG	**Ashikaga**	**1.84**	**262**	P	**Pn**	**23 40 42.0**	**+0.2**
MJAR	**Matsushiro Arr**	**2.82**	**268**	Pn	**Pn**	**23 40 56.8**	**+1.4**
	9.6nm,0.3s,baz=89,slow=15,SNR=29						
MJAR				Sn	**Sn**	**23 41 28.4**	**-0.7**
	6.9nm,0.3s,baz=88,slow=19,SNR=6.2						
MAT	**Matsushiro**	**2.82**	**268**	P	**Pn**	**23 40 57.0**	**+1.6**
MAT				S	**Sn**	**23 41 30.9**	**+1.8**
H11N2	**WAKE ISLAND Hy**	**27.78**	**121**	T	T	00 15 21.8	
	baz=313,slow=75,SNR=28						
H11N1	**WAKE ISLAND Hy**	**27.78**	**121**	T	T	00 15 25.7	
	baz=313,slow=75,SNR=27						
H11N3	**WAKE ISLAND Hy**	**27.79**	**121**	T	T	00 15 16.7	
	baz=313,slow=75,SNR=27						
H11S1	**WAKE ISLAND Hy**	**28.48**	**123**	T	T	00 16 14.3	
	baz=315,slow=76,SNR=21						
H11S3	**WAKE ISLAND Hy**	**28.48**	**123**	T	T	00 16 12.9	
	baz=315,slow=76,SNR=21						
H11S2	**WAKE ISLAND Hy**	**28.50**	**123**	T	T	00 16 17.0	
	baz=315,slow=76,SNR=21						
MKAR	**Makanchi Array**	**44.49**	**302**	P	**P**	**23 48 21.9**	**+0.5**
	0.2nm,0.6s,baz=81,slow=8.9,SNR=3.7						
AAK	**Ala-Archa**	**50.85**	**299**	LR	LR	00 11 13.3	
	comp=Z,40nm,18.2s,baz=244,slow=37						
PSI	**Prapat**	**51.83**	**240**	LR	LR	00 13 41.4	
	comp=Z,137nm,18.4s,slow=39						
WRA	**Warramunga Arr**	**56.77**	**188**	P	**P**	**23 49 54.0**	**-0.3**
	0.2nm,0.4s,baz=2.4,slow=7.6,SNR=3.2						
YKA	**Yellowknife Ar**	**63.97**	**30**	P	**P**	**23 50 42.5**	**-0.5**
	0.2nm,0.7s,baz=299,slow=6.3,SNR=4.1						

IDC ***15*** *23:54:41.2±2.2, 5.35S×152.34E, h0km, mb3.6/4, mb1 3.9/5, mb1mx3.5/51, mbtmp3.7/5, ML1.8/1, Error ellipse: s-maj=135.6km s-min=24.4km az=130.0*

ISC 15 23:54:47.6±2.3, 5.4S±0.7×152.1E±0.7, h40km, n6, σ1s13/7, mb3.6/4, New Britain region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**6.38**	**231**	Pn	**Pn**	**23 56 19.9**	**+0.7**
	1.1nm,0.3s,baz=34,slow=18,SNR=3.5						
PMG				Sn	**Sn**	**23 57 29.2**	**-1.5**
	0.8nm,0.3s,baz=37,slow=20,SNR=2.1						
WRA	**Warramunga Arr**	**22.59**	**228**	P	**P**	**23 59 44.5**	**-0.5**
	0.6nm,0.3s,baz=52,slow=8.7,SNR=8.7						
ASAR	**Alice Springs**	**25.30**	**222**	P	**P**	**00 00 10.7**	**0.0**
	1.5nm,0.8s,baz=56,slow=9.2,SNR=17						
FITZ	**Fitzroy Crossi**	**28.82**	**242**	P	**P**	**00 00 43.6**	**+1.2**
	3.3nm,1.1s,baz=47,slow=10,SNR=3.2						
ILAR	**Eielson Array**	**82.92**	**22**	P	**P**	**00 07 07.5**	**-0.5**
	0.1nm,0.5s,baz=249,slow=4.6,SNR=3.0						
TORD	**Torodi Ar. Bea**	**149.85**	**287**	PKPbc	**PKPbc**	**00 14 33.9**	**-0.7**
	0.1nm,0.4s,baz=92,slow=2.7,SNR=4.1						

IDC 15 23:59:50.4±6.4, 23.78N×93.55E, h73km±47km, mb3.3/4, mb1 3.4/5, mb1mx3.0/57, mbtmp3.5/5, ML3.4/1, Error ellipse: s-maj=212.2km s-min=17.8km az=59.0, Myanmar-India border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CMAR	**Chiang Mai Arr**	**7.31**	**135**	P	Pn	00 01 34.6	0.0
	0.2nm,0.3s,baz=308,slow=16,SNR=5.1						
MKAR	**Makanchi Array**	**24.68**	**341**	P	P	00 05 04.3	-0.1
	0.6nm,0.6s,baz=158,slow=11,SNR=13						
KURBB	**Kurchatov Arra**	**29.22**	**340**	P	P	00 05 45.2	+0.1
	0.2nm,0.4s,baz=146,slow=8.9,SNR=3.4						
WRA	**Warramunga Arr**	**58.90**	**134**	P	P	00 09 41.8	-0.3
	0.7nm,0.4s,baz=326,slow=7.4,SNR=3.5						
ASAR	**Alice Springs**	**61.32**	**137**	P	P	00 09 58.8	+0.2
	0.5nm,0.5s,baz=319,slow=6.7,SNR=8.0						

IDC ***16*** *00:00:25.7±3.0, 32.99S×178.35W, h0km, mb4.0/2, mb1 4.3/3, mb1mx3.8/42, mbtmp4.1/3, ML4.2/1, Error ellipse: s-maj=72.9km s-min=44.6km az=125.0*

ISCJB ***16*** *00:00:29.1±0.9, 33.11S±0.07×178.4W±0.2, h32km, mb4.1/7, Error ellipse: s-maj=22.5km s-min=7.7km az=17.4*

NEIC ***16*** *00:00:33.0±2.2, 33.27S×178.41W, h54km±20km, mb4.0/4, Error ellipse: s-maj=18.8km s-min=17.0km az=90.0*

ISC 16 00:00:30.5±1.1, 33.1S±0.1×178.3W±0.2, h32km, n18, σ1s57/22, mb4.0/7, South of Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WMGZ	**Waiomatatini S**	**5.43**	**209**	PN	**Pn**	**00 01 51.2**	**+1.9**
PKGZ	**Pakihiroa**	**5.63**	**211**	PN	**Pn**	**00 01 51.7**	**-0.4**
HAZ	**Te Kaha**	**5.66**	**214**	PN	**Pn**	**00 01 52.4**	**0.0**
HAZ				SN	**Sn**	**00 03 00.2**	**+3.9**
PUZ	**Puketiti**	**5.71**	**209**	PN	**Pn**	**00 01 52.9**	**-0.3**
TWGZ	**Tauwhareparae**	**5.92**	**210**	PN	**Pn**	**00 01 56.8**	**+0.8**
TWGZ				SN	**Sn**	**00 03 05.5**	**+2.7**
CNGZ	**Carnagh Statio**	**6.09**	**207**	PN	**Pn**	**00 01 57.2**	**-1.1**
URZ	**Urewera**	**6.38**	**215**	Pn	**Pn**	**00 02 01.4**	**-0.8**
	5.4nm,0.3s,baz=338,slow=1.2,SNR=26						
URZ				Sn	**Sn**	**00 03 14.0**	**0.0**
	5.2nm,0.3s,baz=125,slow=12,SNR=7.4						
URZ	**Urewera**	**6.38**	**215**	PN	**Pn**	**00 02 02.0**	**-0.3**
URZ				SN	**Sn**	**00 03 14.4**	**+0.5**
RIGZ	**Rimuhau**	**6.46**	**209**	PN	**Pn**	**00 02 03.8**	**+0.4**
BFZ	**Birch Farm**	**8.75**	**209**	SN	**Sn**	**00 04 09.4**	**-3.0**
FUNA	**Funafuti**	**24.57**	**354**	*eP*	**P**	**00 05 49.0**	**+1.4**
	48nm,0.5s						
CTAO	**Charters Tower**	**34.10**	**283**	*eP*	**P**	**00 07 12.2**	**-0.3**
	0.8nm,0.6s						
ASAR	**Alice Springs**	**42.81**	**270**	P	**P**	**00 08 25.1**	**-0.5**
	1.4nm,0.7s,baz=112,slow=7.3,SNR=16						
WRAB	**Tennant Creek**	**44.04**	**275**	*eP*	**P**	**00 08 34.7**	**-0.8**
	1.0nm,0.6s						
WRA	**Warramunga Arr**	**44.04**	**275**	P	**P**	**00 08 34.3**	**-1.2**
	1.6nm,0.6s,baz=116,slow=7.5,SNR=5.6						
QSPA	**South Pole Qui**	**57.02**	**180**	*eP*	**P**	**00 10 11.8**	**-1.3**
	0.7nm,0.4s						
MOD	**Modoc Plateau**	**91.67**	**39**	*eP*	**P**	**00 13 35.7**	**+1.1**
	0.9nm,0.5s						
FINES	**FINESS Array B**	**147.58**	**338**	PKPbc	**PKPbc**	**00 20 10.1**	**-0.6**
	1.3nm,0.5s,baz=29,slow=3.5,SNR=13						

IDC ***16*** *00:05:06.4±1.2, 33.02S×178.33W, h0km, mb4.4/2, mb1 4.6/3, mb1mx3.9/35, mbtmp4.4/3, ML4.5/1, MS3.7/1, Ms1 3.7/1, ms1mx2.7/33, Error ellipse: s-maj=41.2km s-min=29.8km az=130.0*

ISCJB ***16*** *00:05:08.6±1.2, 33.11S±0.06×178.2W±0.2, h34km, mb4.3/6, Error ellipse: s-maj=21.9km s-min=8.3km az=10.6*

NEIC ***16*** *00:05:15.0±3.3, 33.22S×178.45W, h63km±24km, mb4.4/4, Error ellipse: s-maj=33.1km s-min=13.2km az=48.0*

ISC 16 00:05:10.8±1.0, 33.13S±0.09×178.2W±0.1, h34km, n26, σ1s38/29, mb4.3/6, South of Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WMGZ	**Waiomatatini S**	**5.45**	**210**	PN	**Pn**	**00 06 30.7**	**+1.1**
PKGZ	**Pakihiroa**	**5.66**	**212**	PN	**Pn**	**00 06 31.5**	**-1.0**
HAZ	**Te Kaha**	**5.68**	**215**	*e*PN	**Pn**	**00 06 33.8**	**+1.0**
HAZ				SN	**Sn**	**00 07 39.6**	**+2.8**
PUZ	**Puketiti**	**5.73**	**210**	PN	**Pn**	**00 06 32.6**	**-0.9**
PUZ				*e*SN	**Sn**	**00 07 38.8**	**+0.7**
TWGZ	**Tauwhareparae**	**5.94**	**211**	PN	**Pn**	**00 06 38.1**	**+1.7**
CNGZ	**Carnagh Statio**	**6.11**	**208**	PN	**Pn**	**00 06 38.9**	**+0.3**
MWZ	**Matawai**	**6.27**	**213**	*e*PN	**Pn**	**00 06 40.7**	**-0.2**
URZ	**Urewera**	**6.41**	**216**	Pn	**Pn**	**00 06 43.2**	**+0.5**
	11nm,0.3s,baz=268,slow=4.0,SNR=29						
URZ				Sn	**Sn**	**00 07 56.0**	**+1.4**
	6.1nm,0.3s,baz=166,slow=20,SNR=6.8						
URZ	**Urewera**	**6.41**	**216**	PN	**Pn**	**00 06 42.4**	**-0.4**
RIGZ	**Rimuhau**	**6.47**	**210**	PN	**Pn**	**00 06 43.7**	**0.0**
OUZ	**Omahuta**	**7.15**	**251**	*e*Pn	**Pn**	**00 06 53.8**	**+0.8**
BFZ	**Birch Farm**	**8.77**	**209**	*e*PN	Pn	00 07 11.5	-3.6
BFZ				*e*SN	**Sn**	**00 08 47.7**	**-5.0**
DZM	**Mont Dzumac**	**17.53**	**305**	LR	LR	00 14 26.3	
	comp=Z,212nm,18.4s,baz=80,slow=32						
CTAO	**Charters Tower**	**34.21**	**283**	*eP*	**P**	**00 11 52.9**	**-0.5**
	0.9nm,0.4s						
PMG	**Port Moresby**	**39.73**	**299**	*eP*	**P**	**00 12 40.2**	**0.0**
	4.6nm,0.5s						
ASAR	**Alice Springs**	**42.91**	**270**	P	**P**	**00 13 05.7**	**-0.8**
	2.0nm,0.6s,baz=107,slow=7.4,SNR=23						
WRAB	**Tennant Creek**	**44.14**	**275**	*eP*	**P**	**00 13 15.1**	**-1.2**
	2.1nm,0.5s						
WRA	**Warramunga Arr**	**44.14**	**275**	P	**P**	**00 13 15.3**	**-1.0**
	3.2nm,0.4s,baz=115,slow=7.4,SNR=10						
QSPA	**South Pole Qui**	**56.98**	**180**	*eP*	**P**	**00 14 53.4**	**+0.6**
	3.3nm,0.4s						
ARCES	**ARCESS Array B**	**141.22**	**347**	PKhKP	PKPpre	00 24 31.9	
	2.6nm,0.8s,baz=117,slow=1.4,SNR=4.5						
ARCES				PKP	**PKiKP**	**00 24 38.9**	**-0.6**
	2.2nm,0.9s,baz=110,slow=1.1,SNR=2.7						
FINES	**FINESS Array B**	**147.65**	**338**	PKPbc	**PKPbc**	**00 24 51.0**	**+0.1**
	1.7nm,0.4s,baz=52,slow=3.9,SNR=22						
NB2	**NORSAR Subarra**	**151.42**	**350**	PKP	**PKPbc**	**00 25 00.5**	**+0.1**
	comp=Z,0.6nm,0.6s,baz=17,slow=2.6						
NOA	**NORSAR Array B**	**151.42**	**350**	PKPbc	**PKPbc**	**00 25 00.9**	**+0.5**
	comp=Z,0.9nm,0.8s,baz=16,slow=4.5,SNR=3.9						
AKASG	**Malin Array Be**	**153.34**	**319**	PKPbc	**PKPbc**	**00 25 05.7**	**+0.8**
	comp=Z,0.2nm,0.3s,baz=46,slow=2.7,SNR=2.7						
BRTR	**Keskin Array B**	**153.69**	**294**	PKPbc	**PKPbc**	**00 25 06.3**	**+0.1**
	comp=Z,0.5nm,0.5s,baz=149,slow=4.0,SNR=5.0						
BRTR				PKPab	**PKPab**	**00 25 19.0**	**-0.2**
	comp=Z,0.4nm,0.5s,baz=152,slow=4.1,SNR=3.5						
TORD	**Torodi Ar. Bea**	**160.10**	**180**	PKPab	**PKPab**	**00 25 47.7**	**+0.8**
	comp=Z,0.2nm,0.8s,baz=225,slow=3.9,SNR=3.0						

ISCJB ***16*** *00:25:14.8±0.3, 21.38S±0.03×68.92W±0.04, h118km±3km, mb4.8/38, Error ellipse: s-maj=6.0km s-min=4.4km az=146.7*

BJI ***16*** *00:25:14.4, 21.20S×68.81W, h103km, mB5.2/4*

SJA ***16*** *00:25:14.3±0.8, 21.34S×68.83W, h203km±32km, ML3.7, MW3.8*

GUC ***16*** *00:25:14.8±0.3, 21.32S×69.20W, h122km±2km, ML4.5*

NEIC ***16*** *00:25:15.6±0.5, 21.32S×68.71W, h110km±4km, mb4.8/29, MW4.3, Error ellipse: s-maj=7.5km s-min=5.8km az=86.0, Moment Tensor Solution. s8 Moment tensor: Scale 10^15 Nm; Mrr-1.94; Mθθ-1.36; Mϕϕ3.30; Mrθ1.78; Mϕθ0.57; Mϕr-1.94; Best double couple: M0 3.90000×10^15 NP1: ϕs220.00000°, δ40.00000°, λ-30.00000°. NP2: ϕs334.00000°, δ71.00000°, λ-126.00000°. Principal axes: T 3.9400, Plg18.0000°, Azm90.0000°; N 0.0000, Plg34.0000°, Azm347.0000°; P -3.9400, Plg50.0000°, Azm203.0000°;*

IDC ***16*** *00:25:16.4±0.8, 21.31S×68.73W, h120km±5km, mb3.8/8, mb1 4.0/12, mb1mx3.8/35, mbtmp4.2/12, MS2.8/3, Ms1 2.9/3, ms1mx2.7/39 Error ellipse: s-maj=20.5km s-min=17.2km az=32.0*

SCB ***16*** *00:25:22.5±0.4, 20.56S×67.98W, h125km, Ml3.5/1, Error ellipse: s-maj=13.3km s-min=4.1km az=52.0*

ISC 16 00:25:15.5±0.5, 21.27S±0.04×68.92W±0.04, h110km±4km, h108km:pP-P, n92, σ1s84/108, mb4.8/38, 8C-1D, Chile-Bolivia border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PB01	**IPOC Station P**	**0.57**	**294**	↑*eP*	**Pn**	**00 25 32.8**	**-0.2**
PB01				*e*S	**Sn**	**00 25 46.2**	**0.0**
PB01	**IPOC Station P**	**0.57**	**294**	*e*Pn	**Pn**	**00 25 33.4**	**+0.4**
PB07	**IPOC Station P**	**1.00**	**243**	*e*P	**Pn**	**00 25 36.9**	**-0.1**
PB07				*e*S	**Sn**	**00 25 52.7**	**-0.4**
PB07				IAML		00 25 53.8	
	comp=N,15μm,0.2s						
PB08	**IPOC Station P**	**1.15**	**349**	*e*P	**Pn**	**00 25 40.1**	**+1.4**
PB08				IAML		00 25 59.2	
	comp=E,12μm,1.1s						
PB06	**IPOC Station P**	**1.55**	**203**	↑*eP*	**Pn**	**00 25 42.3**	**-0.7**
PB06				*e*S	**Sn**	**00 26 03.3**	**-0.7**
PB06				IAML		00 26 04.1	
	comp=E,7μm,0.3s						
PB04	**IPOC Station P**	**1.55**	**227**	*e*P	**Pn**	**00 25 41.3**	**-1.8**
PB04				*e*S	**Sn**	**00 26 01.8**	**-2.3**
PB04				IAML		00 26 04.0	
	comp=N,7μm,0.7s						
PB04	**IPOC Station P**	**1.55**	**227**	*e*Pn	**Pn**	**00 25 42.8**	**-0.3**
PB11	**IPOC Station P**	**1.65**	**335**	↑*eP*	**Pn**	**00 25 44.5**	**+0.1**
PB11				*e*S	**Sn**	**00 26 07.0**	**+0.6**
PB11	**IPOC Station P**	**1.65**	**335**	*e*Pn	**Pn**	**00 25 44.6**	**+0.2**
PB10	**IPOC Station P**	**2.69**	**214**	*e*P	**Pn**	**00 25 55.8**	**-1.6**
PB10	**IPOC Station P**	**2.69**	**214**	*e*Pn	**Pn**	**00 25 56.4**	**-1.0**
MOCB	**Mochara**	**3.06**	**90**	*e*Pn	**Pn**	**00 26 05.1**	**+2.3**
YJA	**Yavi**	**3.29**	**106**	*e*P	**Pn**	**00 26 07.9**	**+2.1**
	baz=276,slow=1.5						
YJA				IAML		00 26 13.1	
	comp=Z,67nm,0.7s						
YJA				*e*S	**Sn**	**00 26 47.5**	**+2.9**
HJA	**Humahuaca**	**3.78**	**121**	*e*P	**Pn**	**00 26 13.9**	**+1.6**
HJA				IAML		00 26 17.0	
	comp=Z,90nm,0.7s						
HJA				*e*S	**Sn**	**00 27 01.4**	**+5.2**
BBOJ	**La Paz, Jacaqu**	**4.33**	**9**	↑*i*Pn	**Pn**	**00 26 22.6**	**+2.8**
BBOE	**La Paz, Chanca**	**4.53**	**11**	↓*i*Pn	**Pn**	**00 26 24.6**	**+2.1**
AZAP	**Zapla**	**4.62**	**130**	*e*P	**Pn**	**00 26 23.9**	**+0.5**
BBOD	**La Paz, Gloria**	**4.62**	**4**	↑*i*Pn	**Pn**	**00 26 26.6**	**+2.8**
ASTB	**Santa Barbara**	**4.91**	**124**	*i* P	**Pn**	**00 26 27.4**	**+0.1**
ASTB				*i* S	**Sn**	**00 27 20.7**	**-2.5**
LPAZ	**La Paz**	**5.02**	**9**	*e*

NATX	**Nacogdoches**	**58.22**	**334**	*e*P		**P**	**00 34 59.0**	**+0.8**
	comp=Z,111nm,0.8s								
BLA	**Blacksburg**	**59.17**	**349**	*e*P		**P**	**00 35 05.6**	**+0.8**
	comp=Z,28nm,1.5s								
WLAR	**White Oak Lake**	**59.32**	**337**	*e*P		**P**	**00 35 07.4**	**+1.6**
	comp=Z,16nm,0.7s								
JCT	**Junction City**	**59.40**	**329**	*e*P		**P**	**00 35 07.9**	**+1.4**
	comp=Z,23nm,1.8s								
WVT	**Waverly**	**59.83**	**342**	*e*P		**P**	**00 35 10.1**	**+0.8**
	comp=Z,36nm,2.0s								
TXAR	**Lajitas Array**	**60.44**	**325**	P		**P**	**00 35 12.8**	**-0.9**
	comp=Z,0.4nm,0.8s,baz=141,slow=6.4,SNR=3.9								
SDCO	**Great Sand Dun**	**68.05**	**329**	*e*P		**P**	**00 36 04.9**	**+1.4**
	comp=Z,4.4nm,1.3s								
DBIC	**Dimbokro**	**68.68**	**74**	P		**P**	**00 36 06.6**	**-0.9**
	comp=Z,2.0nm,0.4s,baz=215,slow=4.2,SNR=8.3								
KNB	**Kanab**	**71.23**	**324**	*e*P		**P**	**00 36 25.5**	**+2.6**
	comp=Z,14nm,1.4s								
P18A	**Preston Nutter**	**71.83**	**328**	*e*P		**P**	**00 36 27.4**	**+0.7**
	comp=Z,4.4nm,0.9s								
PSUT	**Pine Spring**	**72.90**	**325**	*e*P		**P**	**00 36 33.5**	**+0.6**
	comp=Z,2.5nm,0.9s								
R11A	**Troy Canyon, C**	**73.72**	**323**	*e*P		**P**	**00 36 38.7**	**+1.1**
	comp=Z,4.4nm,1.4s								
PDAR	**Pinedale Array**	**73.91**	**330**	P		**P**	**00 36 39.3**	**+0.6**
	comp=Z,0.1nm,0.3s,baz=174,slow=4.5,SNR=4.1								
NVAR	**Mina Array Bea**	**75.31**	**322**	P		**P**	**00 36 48.1**	**+1.2**
	comp=Z,0.4nm,0.4s,baz=153,slow=6.1,SNR=4.5								
IMW	**Indian Meadow**	**75.42**	**330**	*e*P		**P**	**00 36 49.2**	**+1.7**
	comp=Z,2.3nm,0.8s								
FLWY	**Flagg Ranch**	**75.45**	**330**	*e*P		**P**	**00 36 48.8**	**+1.3**
	comp=Z,5.7nm,0.9s								
HLID	**Hailey**	**76.84**	**328**	*e*P		**P**	**00 36 56.7**	**+1.3**
	comp=Z,3.7nm,0.9s								
TOA0	**Torodi Ar. Sit**	**77.29**	**70**	*e*P		**P**	**00 36 57.5**	**-0.8**
TORD	**Torodi Ar. Bea**	**77.29**	**70**	P		**P**	**00 36 56.8**	**-1.5**
	comp=Z,2.2nm,0.9s,baz=258,slow=5.0,SNR=17								
TORD				pP		**pP**	**00 37 27.4**	**+0.9**
	comp=Z,2.2nm,0.7s,baz=252,slow=4.8,SNR=3.9								
C09A	**Chrisman Ranch**	**81.77**	**329**	*e*P		**P**	**00 37 23.5**	**+1.6**
	comp=Z,9.5nm,0.8s								
YKA	**Yellowknife Ar**	**90.97**	**341**	P		**P**	**00 38 06.7**	**+0.2**
	comp=Z,1.7nm,0.7s,baz=134,slow=4.5,SNR=40								
YKA				pP		**pP**	**00 38 37.4**	**+2.0**
	comp=Z,1.6nm,0.9s,baz=133,slow=4.7,SNR=8.1								
YKB5	**Yellowknife Ar**	**90.97**	**341**	*e*P		**P**	**00 38 06.8**	**+0.3**
MSVF	**Nonsavu**	**103.80**	**245**	*e*Pdif		**Pdif**	**00 39 05.8**	**0.0**
ZALV	**Zalesovo Beam**	**141.75**	**25**	PKP		**PKPdf**	**00 44 31.3**	**-2.4**
	comp=Z,0.4nm,0.5s,baz=28,slow=3.9,SNR=3.2								
ZALV				pPKP		**pPKPdf**	**00 45 03.7**	**-0.1**
	comp=Z,0.7nm,0.8s,baz=207,slow=0.3,SNR=2.3								
KSH	**Kashi**	**144.97**	**51**	*e*PKP		**PKPab**	**00 44 37.3**	**-2.3**
KSH				*ep*PKP		**pPKPdf**	**00 45 04.4**	**-5.8**
KSH				*es*PKP			00 45 14.9	
KSH				AMB		AMB		
	comp=Z,85nm,6.6s								
MK31	**Makanchi Array**	**145.46**	**36**	*e*PKPdf		**PKPab**	**00 44 41.4**	**+0.3**
MKAR	**Makanchi Array**	**145.46**	**36**	PKPbc		**PKPab**	**00 44 41.2**	**+0.1**
	comp=Z,1.0nm,0.8s,baz=319,slow=3.5,SNR=9.4								
MKAR				pPKPbc		pPKPbc	00 45 12.2	+1.7
	comp=Z,6.3nm,0.9s,baz=309,slow=2.5,SNR=22								
MK01	**Makanchi Array**	**145.48**	**36**	*e*PKPdf		**PKPab**	**00 44 41.0**	**-0.2**
WMQ	**Urumqi**	**150.29**	**35**	*e*PKPbc		**PKPdf**	**00 44 49.3**	**+0.7**
WMQ				LR		LR		
	comp=Z,60nm,20.6s								
WMQ				LR		LR		
	comp=Z,62nm,20.6s								
WMQ				LR		LR		
	comp=Z,94nm,18.2s								
CN2	**Changchun**	**154.55**	**335**	*e*PKPbc		**PKPdf**	**00 44 55.5**	**+0.7**
HHC	**Hu-ho-hao-te**	**160.48**	**359**	*e*PKP		**PKPdf**	**00 45 02.6**	**+0.1**
NJ2	**Nanjing**	**167.22**	**329**	*e*PKP		**PKPdf**	**00 45 09.5**	**+0.8**
CD2	**Chengdu**	**168.37**	**33**	PKP		**PKPdf**	**00 45 09.0**	**-0.7**
KMI	**Kunming**	**171.43**	**62**	PKP		**PKPdf**	**00 45 10.3**	**-1.5**
GYA	**Guiyang**	**173.45**	**37**	PKP		**PKPdf**	**00 45 11.0**	**-1.5**
GYA				pPKP		**pPKPdf**	**00 45 40.6**	**-2.2**
GYA				PKS		**PKSdf**	**00 48 42.3**	**-2.7**
GYA				AMB		AMB		
	comp=Z,120nm,8.2s								

IDC ***16*** *00:33:31.8±1.1,33.06S×178.11W,h0km,mb4.4/4, mb1 4.5/5,mb1mx4.0/37,mbtmp4.4/5,ML3.8/1,MS3.8/3, Ms1 3.7/3,ms1mx3.2/37,Error ellipse: s-maj=47.0km s-min=22.7km az=152.0*

ISCJB ***16*** *00:33:32.8±1.1,33.2S±0.1×177.7W±0.2,h34km,mb4.2/5, MS4.2/3,Error ellipse: s-maj=22.6km s-min=10.2km az=37.3*

NEIC ***16*** *00:33:36.2±0.8,33.14S×177.86W,h35km,mb4.3/4,Error ellipse: s-maj=29.3km s-min=14.2km az=152.0*

ISC 16 00:33:36.2±0.9,33.2S±0.1×177.8W±0.1,h34km,n26,
σ1§48/22,mb4.3/5,MS3.9/3,South of Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
					Op	ISC	h m s	ISC
URZ	**Urewera**	**6.53**	**218**	Pn		**Pn**	**00 35 09.4**	**-0.3**
	1.8nm,0.3s,baz=342,slow=9.6,SNR=11							
URZ				Sn		**Sn**	**00 36 23.2**	**+0.2**
	5.1nm,0.3s,baz=216,slow=19,SNR=6.3							
URZ	**Urewera**	**6.53**	**218**	*e*Pn		**Pn**	**00 35 09.2**	**-0.6**
	44nm,0.7s							
URZ				*e*Sn		**Sn**	**00 36 24.2**	**+1.2**
OUZ	**Omahuta**	**7.40**	**252**	*e*Pn		**Pn**	**00 35 23.1**	**+1.4**
DZM	**Mont Dzumac**	**17.79**	**305**	LR		LR	00 43 32.4	
	comp=Z,356nm,18.7s,baz=116,slow=34							
RAR	**Rarotonga**	**19.96**	**58**	P		**P**	**00 38 05.9**	**+0.5**
	25nm,0.6s,baz=109,slow=8.3,SNR=4.3							
RAR	**Rarotonga**	**19.96**	**58**	*e*P		**P**	**00 38 03.7**	**-1.7**
	16nm,0.7s							
TBI	**Tubuai**	**26.75**	**76**	*e*LR		LR	00 45 56.7	
	85nm,23.2s							
PPT2	**Papeete2**	**29.74**	**65**	*e*LR		LR	00 47 27.7	
	60nm,21.2s							
PPT	**Papeete**	**29.75**	**65**	LR		LR	00 50 18.9	
	comp=Z,86nm,19.2s,baz=188,slow=34							
STKA	**Stephens Creek**	**34.10**	**261**	LR		LR	00 53 38.7	
	comp=Z,190nm,18.3s,baz=30,slow=36							
CTA	**Charters Tower**	**34.50**	**283**	P		**P**	**00 40 20.5**	**-0.7**
	2.2nm,0.5s,baz=117,slow=10,SNR=8.0							
CTAO	**Charters Tower**	**34.50**	**283**	*e*P		**P**	**00 40 20.7**	**-0.5**
	1.8nm,0.5s							
PMG	**Port Moresby**	**40.01**	**298**	*e*P		**P**	**00 41 08.1**	**+0.2**
	6.6nm,0.9s							
ASAR	**Alice Springs**	**43.19**	**270**	P		**P**	**00 41 31.9**	**-2.2**
	3.6nm,1.0s,baz=112,slow=7.8,SNR=20							
WRAB	**Tennant Creek**	**44.42**	**275**	*e*P		**P**	**00 41 42.1**	**-1.8**
	2.5nm,0.5s							
WRA	**Warramunga Arr**	**44.43**	**275**	P		**P**	**00 41 41.3**	**-2.7**
	2.8nm,0.4s,baz=115,slow=7.7,SNR=12							
KSRS	**Korea Array**	**86.58**	**320**	LR		LR	01 22 26.8	
	comp=Z,1μm,18.1s,baz=218,slow=34							
MKAR	**Makanchi Array**	**119.67**	**309**	PKP		**PKPdf**	**00 52 21.9**	**-0.3**
	0.3nm,0.8s,baz=99,slow=1.9,SNR=2.7							
KURK	**Kurchatov**	**123.07**	**312**	PKP		**PKPdf**	**00 52 27.9**	**-0.6**
KURBB	**Kurchatov Arra**	**123.11**	**312**	PKP		**PKPdf**	**00 52 27.9**	**-0.7**
	0.5nm,0.9s,baz=105,slow=1.8,SNR=4.4							
BVAR	**Borovoye Array**	**128.49**	**314**	PKP		**PKPdf**	**00 52 39.7**	**+0.8**
	0.3nm,0.5s,baz=81,slow=2.0,SNR=3.5							
FINES	**FINESS Array B**	**147.81**	**339**	PKPbc		**PKPbc**	**00 53 16.6**	**0.0**
	3.3nm,0.6s,baz=42,slow=3.6,SNR=16							
NB2	**NORSAR Subarra**	**151.53**	**351**	PKP		**PKPbc**	**00 53 29.3**	**+3.4**
	comp=Z,1.7nm,0.9s,baz=17,slow=2.6							
NOA	**NORSAR Array B**	**151.53**	**351**	PKPbc		**PKPbc**	**00 53 27.0**	**+1.1**
	comp=Z,1.8nm,0.9s,baz=36,slow=2.0,SNR=3.6							
AKASG	**Malin Array Be**	**153.57**	**320**	PKPbc		**PKPbc**	**00 53 32.6**	**+1.8**
	comp=Z,1.2nm,0.7s,baz=66,slow=2.2,SNR=3.1							
BRTR	**Keskin Array B**	**153.97**	**294**	PKPbc		**PKPbc**	**00 53 33.2**	**+1.1**
	comp=Z,0.4nm,0.5s,baz=167,slow=4.4,SNR=4.6							

IDC ***16*** *00:37:41.2±2.4,21.46S×179.10W,h638km±28km,mb3.4/8, mb1 3.5/10,mb1mx3.2/38,mbtmp4.5/10,Error ellipse: s-maj=24.7km s-min=19.0km az=19.0*

ISC 16 00:37:42.8±1.1,21.4S±0.2×179.2W±0.2,h650km,n17,
σ1§14/18,mb4.2/9,Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
					Op	ISC	h m s	ISC
DZM	**Mont Dzumac**	**13.33**	**264**	P		**P**	**00 40 32.2**	**-1.7**
	0.7nm,0.3s,baz=90,slow=17,SNR=7.9							
URZ	**Urewera**	**17.14**	**190**	P		**P**	**00 41 06.5**	**-1.9**
	4.1nm,0.3s,baz=262,slow=2.5,SNR=15							
RPZ	**Rata Peaks**	**23.72**	**198**	P		**P**	**00 42 05.6**	**-1.6**
	8.4nm,0.7s,baz=309,slow=1.5,SNR=2.7							
CTA	**Charters Tower**	**32.27**	**266**	P		**P**	**00 43 21.8**	**+0.4**
	8.1nm,0.4s,baz=90,slow=11,SNR=20							
PMG	**Port Moresby**	**34.43**	**285**	P		**P**	**00 43 39.3**	**-0.1**
	9.3nm,0.6s,baz=83,slow=3.9,SNR=4.1							
STKA	**Stephens Creek**	**36.38**	**245**	P		**P**	**00 43 55.3**	**+0.1**
	1.1nm,0.4s,baz=82,slow=11,SNR=5.6							
ASAR	**Alice Springs**	**43.21**	**258**	P		**P**	**00 44 49.9**	**+0.3**
	7.6nm,0.6s,baz=97,slow=7.6,SNR=54							
ASAR				PcP		**PcP**	**00 46 24.1**	**+0.6**
	0.5nm,0.6s,baz=102,slow=3.3,SNR=4.4							
ASAR				S		**S**	**00 50 32.6**	**+0.9**
	0.8nm,0.7s,baz=91,slow=17,SNR=6.8							
JAY	**Jayapura**	**43.24**	**290**	P		**P**	**00 44 50.0**	**+0.2**
	2.0nm,0.6s,baz=279,slow=19,SNR=5.0							
WRA	**Warramunga Arr**	**43.35**	**263**	P		**P**	**00 44 50.3**	**-0.3**
	3.3nm,0.3s,baz=96,slow=8.2,SNR=22							
VNDA	**Vanda**	**56.96**	**185**	P		**P**	**00 46 30.3**	**+2.1**
	0.9nm,0.9s,baz=353,slow=5.8,SNR=5.5							
CMAR	**Chiang Mai Arr**	**89.32**	**290**	P		**P**	**00 49 34.0**	**+1.6**
	1.0nm,0.7s,baz=133,slow=2.5,SNR=7.4							
MKAR	**Makanchi Array**	**110.95**	**313**	PKiKP		**PKiKP**	**00 55 03.3**	**-0.6**
	0.1nm,0.5s,baz=36,slow=2.7,SNR=2.6							
BVAR	**Borovoye Array**	**118.99**	**320**	PKP		**PKPdf**	**00 55 18.3**	**-0.8**
	0.5nm,0.3s,baz=115,slow=1.1,SNR=6.4							
ARCES	**ARCESS Array B**	**129.54**	**349**	PKP		**PKPdf**	**00 55 38.1**	**-0.7**
	2.3nm,0.8s,baz=17,slow=3.3,SNR=3.8							
AKASG	**Malin Array Be**	**143.19**	**330**	PKP		PKPbc	00 56 02.4	-0.8
	1.6nm,0.4s,baz=43,slow=4.2,SNR=20							
BRTR	**Keskin Array B**	**146.54**	**311**	PKPbc		**PKPbc**	**00 56 13.6**	**+0.1**
	0.8nm,0.6s,baz=143,slow=5.8,SNR=6.1							
GERES	**GERESS Array B**	**150.69**	**342**	PKPbc		**PKPbc**	**00 56 22.7**	**-0.6**
	0.4nm,0.5s,baz=17,slow=1.4,SNR=6.4							

IDC 16 01:03:36.1±18.0,18.87S×178.63W,h542km±143km,
mb3.1/3,mb1 3.5/3,mb1mx2.9/42,mbtmp4.1/3,Error ellipse: s-maj=358.9km s-min=56.9km az=141.0,Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
					Op	ISC	h m s	ISC
WRA	**Warramunga Arr**	**44.26**	**261**	P		P	01 10 58.0	0.0
	1.6nm,0.3s,baz=96,slow=7.7,SNR=10							
ASAR	**Alice Springs**	**44.34**	**255**	P		P	01 10 58.2	-0.3
	2.4nm,0.7s,baz=90,slow=8.5,SNR=28							
ILAR	**Eielson Array**	**86.87**	**13**	P		P	01 15 22.8	-0.1
	0.2nm,0.4s,baz=220,slow=5.6,SNR=4.8							
AKASG	**Malin Array Be**	**141.31**	**332**	PKhKP		PKPpre	01 22 00.1	
	0.3nm,0.3s,baz=41,slow=4.3,SNR=5.5							
AKASG				PKP		PKPdf	01 22 04.8	-0.3
	0.3nm,0.4s,baz=34,slow=2.5,SNR=2.8							
BRTR	**Keskin Array B**	**145.30**	**314**	PKPbc		PKPdf	01 22 12.3	-0.3
	0.6nm,0.5s,baz=145,slow=5.4,SNR=3.7							
MMAI	**Mount Meron Ar**	**146.48**	**302**	PKPbc		PKPbc	01 22 16.8	-0.4
	0.6nm,0.4s,baz=72,slow=6.2,SNR=5.1							
GERES	**GERESS Array B**	**148.48**	**344**	PKPbc		PKPbc	01 22 21.5	-0.4
	0.2nm,0.3s,baz=41,slow=4.3,SNR=6.1							

NIED ***16*** *01:11:00,25.20N×124.00E,h130km,Mw5.8 Best double couple: M0 5.10000×10^17 NP1:φs175.00000°, δ19.00000°,λ-129.00000°. NP2:φs35.00000°,δ75.00000°, λ-78.00000°.*

BJI ***16*** *01:11:08.4,25.30N×124.15E,h131km,mb5.8/81, mB6.0/60*

MOS ***16*** *01:11:08.4±0.9,25.53N×123.99E,h124km,mb5.9/84, MS4.7/11,Error ellipse: s-maj=5.6km s-min=3.4km az=112.6*

ISCJB ***16*** *01:11:09.8±0.1,25.37N±0.01×123.99E±0.01, h138km±1km,mb5.8/475,Error ellipse: s-maj=2.0km s-min=1.4km az=155.6*

NEIC ***16*** *01:11:10.0±0.0,25.39N×124.22E,h131km,Moment Tensor Solution. s11 Moment tensor: Scale 10^17Nm; Mrr-2.00; Mθθ 0.06; Mφφ 1.95; Mrθ-3.31; Mθφ-0.16; Mφr-2.49; Best double couple: M0 4.60000×10^17 NP1:φs45.00000°, δ80.00000°,λ-76.00000°. NP2:φs171.00000°,δ17.00000°, λ-143.00000°. Principal axes: T 3.8300, Plg33.0000°, Azm123.0000°; N 1.2600, Plg13.0000°, Azm222.0000°; P -5.0900, Plg53.0000°, Azm330.0000°;*

NEIC ***16*** *01:11:10.4±0.1,25.44N×123.90E,h131km,mb5.9/269, ME5.7,MW5.8,MW5.7 Error ellipse: s-maj=2.9km s-min=2.6km az=140.0,Moment Tensor Solution. s45 Moment tensor: Scale 10^17Nm; Mrr-3.19; Mθθ 1.25; Mφφ 1.94; Mrθ-4.93; Mθφ 0.55; Mφr-4.59; Best double couple: M0 7.30000×10^17 NP1:φs46.00000°,δ79.00000°, λ-87.00000°. NP2:φs210.00000°,δ11.00000°, λ-105.00000°. Principal axes: T 6.7300, Plg34.0000°, Azm133.0000°; N 1.0600, Plg3.0000°, Azm225.0000°; P -7.7800, Plg56.0000°, Azm319.0000°; Broadband fault plane solution: P waves. NP1:φs235.00000°,δ10.00000°, λ-90.00000°. NP2:φs55.00000°,δ80.00000°,λ-90.00000°. Principal axes: T Plg35.0000°, Azm145.0000°; N Plg0.0000°, Azm0.0000°; P Plg55.0000°, Azm325.0000°; Depth from synthetics of broadband displacement seismograms. Energy computed from BB mechanism.*

NEIC Felt [II] at Chatan, Okinawa. Also felt at Gushikawa and Ishigaki. Felt at Shulin, Taipei and Taoyuan, Taiwan. Recorded [2 JMA] in the Miyako-retto and Yaeyama-retto, Ryukyu Islands.

GCMT ***16*** *01:11:10.7±0.1,25.30N×123.98E,h138km,MW5.8/119, Moment Tensor Solution. s117,c251; s119,c352; Duration: 1§9 Moment tensor: Scale 10^17Nm; Mrr-2.27±.05; Mθθ-0.16±.06; Mφφ 2.43±.07; Mrθ-3.87±.04; Mθφ 0.44±.06; Mφr-4.10±.04; Best double couple: M0 6.11100×10^17 NP1:φs40.00000°,δ80.00000°, λ-78.00000°. NP2:φs170.00000°,δ15.00000°, λ-139.00000°. Principal axes: T 5.8660, Plg34.0000°, Azm120.0000°; N 0.4920, Plg11.0000°, Azm218.0000°; P -6.3560, Plg54.0000°, Azm324.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface/mantle waves, cutoff=50s.*

TAP ***16*** *01:11:10.9,25.16N×124.03E,h147km,ML6.2,C*

BKK ***16*** *01:11:11.1±0.8,25.N±5.°×12.4E±.°,h134km±7km,M5.7/47, mb5.7/47,mB6.0/44,MLv6.4/1,Mw(mB)5.6/44,Mwp6.2/1*

IDC ***16*** *01:11:11.9±0.4,25.42N×123.99E,h144km±2km,mb5.4/57, mb1 5.5/62,mb1mx5.4/68,mbtmp5.8/62,MS4.6/23, Ms1 4.6/23,ms1mx4.3/58,Error ellipse: s-maj=7.2km s-min=5.9km az=71.0*

JMA ***16*** *01:11:11.3±0.1,25.21N×124.02E,h137km±3km,M5.8*

JMA Felt II J1.

ISC 16 01:11:10.9±0.2,25.36N±0.02×124.03E±0.02,h140km±1km,
h139km:pP-P,n1960,σ1§49/2323,mb5.9/500,72C-369D,
Northeast of Taiwan

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
					Op	ISC	h m s	ISC
JISG	**Ishigakijimahi**	**0.81**	**162**	P		**Pn**	**01 11 32.3**	**-0.8**
JISG				S		**Sn**	**01 11 48.4**	**-1.6**
JTJ	**Tarama**	**0.94**	**140**	P		**Pn**	**01 11 33.8**	**-0.4**
JTJ				S		**Sn**	**01 11 50.7**	**-1.1**
JIJ	**Ishigaki jima**	**1.00**	**174**	P		**Pn**	**01 11 33.5**	**-1.2**
JIJ				S		**Sn**	**01 11 49.9**	**-2.9**
IRIF	**Iriomote-Funau**	**1.06**	**195**	P		**Pn**	**01 11 34.0**	**-1.2**
IRIF				S		**Sn**	**01 11 51.6**	**-2.1**
JKRS	**Kuro-shima**	**1.12**	**181**	P		**Pn**	**01 11 34.9**	**-0.9**
JKRS				S		**Sn**	**01 11 53.2**	**-1.5**
JIRB	**Irabujima**	**1.16**	**117**	P		**Pn**	**01 11 35.8**	**-0.4**
JIRB				S		**Sn**	**01 11 54.1**	**-1.3**
JIKM	**Ikemajima**	**1.19**	**111**	P		**Pn**	**01 11 36.4**	**0.0**
JIKM				S		**Sn**	**01 11 55.7**	**-0.1**
JMJ	**Miyako jima 2**	**1.27**	**115**	P		**Pn**	**01 11 37.2**	**0.0**
JMJ				S		**Sn**	**01 11 56.5**	**-0.7**
JMJ	**Miyako jima 2**	**1.27**	**115**	*i*P		**Pn**	**01 11 37.3**	**0.0**
	baz=106							
JMJ				S		**Sn**	**01 11 56.3**	**-0.9**
	baz=106							
YOJ	**Yonaguni jima**	**1.29**	**226**	P		**Pn**	**01 11 36.9**	**-0.5**
YOJ				S		**Sn**	**01 11 56.3**	**-1.3**
YOJ	**Yonaguni jima**	**1.29**	**226**	*i*P		**Pn**	**01 11 36.9**	**-0.5**
	baz=230							
YOJ				*i* S		**Sn**	**01 11 56.1**	**-1.5**
	baz=230							
YOJ	**Yonaguni jima**	**1.29**	**226**	*e*P		**Pn**	**01 11 36.7**	**-0.7**
YOJ	**Yonaguni jima**	**1.29**	**226**	*e*Pn		**Pn**	**01 11 36.7**	**-0.7**
YOJ				*e*Sn		**Sn**	**01 11 55.8**	**-1.8**
HATJ	**Hateruma jima**	**1.31**	**189**	P		**Pn**	**01 11 36.6**	**-1.1**
HATJ				S		**Sn**	**01 11 56.2**	**-2.0**
JYNG	**Yonagunijimaku**	**1.34**	**228**	P		**Pn**	**01 11 37.4**	**-0.6**
JYNG				S		**Sn**	**01 11 57.4**	**-1.2**
JOGS	**Gusukube**	**1.38**	**115**	P		**Pn**	**01 11 38.6**	**+0.2**
JOGS				S		**Sn**	**01 11 58.9**	**-0.5**
PCYT	**Pengchaiyu**	**1.79**	**279**	*i*P		**Pn**	**01 11 44.2**	**+1.3**
	baz=285							
PCYT				*i* S		**Sn**	**01 12 09.3**	**+1.9**
	baz=285							
TWB1	**Santiao Chiao**	**1.88**	**260**	*i*P		**Pn**	**01 11 44.5**	**+0.5**
	baz=269							
TWB1				S		**Sn**	**01 12 09.3**	**0.0**
	baz=269							
NWF	**Wu-fen Shan**	**2.06**	**262**	*i*P		**Pn**	**01 11 47.0**	**+0.8**
	baz=275							
NWF				*e*S		**Sn**	**01 12 14.4**	**+1.2**
	baz=275							
TWC	**Suao**	**2.12**	**250**	*i*P		**Pn**	**01 11 47.0**	**+0.2**
	baz=254							
TWC				*e*S		**Sn**	**01 12 13.4**	**-0.9**
	baz=254							
ILA	**Ilan**	**2.15**	**255**	*e*P		**Pn**	**01 11 48.0**	**+0.7**
	baz=253							
TWY	**Chenhua**	**2.20**	**268**	*i*P		**Pn**	**01 11 49.0**	**+1.2**
	baz=273							
TWY				*e*S		**Sn**	**01 12 17.9**	**+1.8**
	baz=273							
TWE	**Neicheng**	**2.24**	**254**	*i*P		**Pn**	**01 11 49.0**	**+0.8**
	baz=258							
TWE				*e*S		**Sn**	**01 12 16.9**	**0.0**
	baz=258							
ENA	**Nanau**	**2.28**	**246**	P		**Pn**	**01 11 48.3**	**-0.5**
	baz=255							
TAP1	**Taipei**	**2.29**	**263**	*i*P		**Pn**	**01 11 49.9**	**+1.0**
	baz=273							
TAP	**Taipei**	**2.31**	**263**	P		**Pn**	**01 11 50.2**	**+1.1**
	baz=273							
TAP				*e*S		**Sn**	**01 12 20.9**	**+2.3**
	baz=273							
EHP	**Heping Village**	**2.33**	**244**	*e*P		**Pn**	**01 11 50.1**	**+0.7**
	baz=252							
TATO	**Taipei**	**2.34**	**261**	*e*Pn		**Pn**	**01 11 50.0**	**+0.5**
TATO				*e*Sn		**Sn**	**01 12 17.7**	**-1.4**
ENTT	**Nioudou**	**2.35**	**253**	*i*P		**Pn**	**01 11 50.6**	**+1.0**
	baz=254							
TWS1	**Kuangyinshan**	**2.38**	**264**	*i*P		**Pn**	**01 11 51.4**	**+1.4**
	baz=275							
YHNB	**Yeheng**	**2.50**	**255**	*e*Pn		**Pn**	**01 11 52.2**	**+0.5**
YHNB				*e*Sn		**Sn**	**01 12 20.6**	**-2.4**
NACB	**Ninganchiao**	**2.51**	**242**	*e*Pn		**Pn**	**01 11 50.4**	**-1.2**
NACB				*e*Sn		**Sn**	**01 12 22.3**	**-0.7**
NSK	**Sanguang**	**2.52**	**255**	*i*P		**Pn**	**01 11 52.5**	**+0.7**
	baz=261							
NSK				*e*S		**Sn**	**01 12 23.9**	**+0.6**
	baz=261							
TWD	**Chiawan**	**2.56**	**241**	P		**Pn**	**01 11 51.0**	**-1.2**
	baz=244							
TWD				*e*S		**Sn**	**01 12 20.4**	**-3.6**
	baz=244							
NNS	**Nan Shan**	**2.58**	**250**	P		**Pn**	**01 11 52.8**	**+0.1**
	baz=254							
NNS				*e*S		**Sn**	**01 12 24.5**	**-0.3**
	baz=254							
HWA	**Hwalien**	**2.60**	**239**	*e*P		**Pn**	**01 11 51.0**	**-1.7**
	baz=242							
NCU	**National Centr**	**2.61**	**262**	*i*P		**Pn**	**01 11 54.3**	**+1.4**
	baz=271							
NCU				*e*S		**Sn**	**01 12 27.3**	**+2.1**
	baz=271							
JKE	**Kume jima 2**	**2.66**	**68**	P		**Pn**	**01 11 53.7**	**+0.2**
JKE				S		**Sn**	**01 12 27.0**	**+0.6**
ESF	**Shoufeng Towns**	**2.73**	**238**	*e*P		**Pn**	**01 11 53.7**	**-0.7**
	baz=241							
WHF	**Hehuan Shan**	**2.79**	**245**	*i*P		**Pn**	**01 11 55.1**	**-0.5**
	baz=248							
TEGC	**Jichi Village**	**2.80**	**235**	*e*P		**Pn**	**01 11 54.7**	**-0.6**
	baz=233							
TEGC				*e*S		**Sn**	**01 12 26.5**	**-3.0**
	baz=233							
TWT	**Tachien**	**2.82**	**248**	*i*P		**Pn**	**01 11 56.2**	**+0.5**
	baz=245							
TWT				*e*S		**Sn**	**01 12 29.6**	**-0.6**
	baz=245							
HSN	**Hsinchu**	**2.83**	**259**	*e*P		**Pn**	**01 11 56.3**	**+0.6**
	baz=268							
HSN				*e*S		**Sn**	**01 12 30.1**	**-0.1**
	baz=268							
NSTT	**Nanjuang**	**2.84**	**256**	*i*P		**Pn**	**01 11 56.5**	**+0.7**
	baz=259							
NSTT				S		**Sn**	**01 12 30.1**	**-0.4**
	baz=259							
WDT	**Danda**	**3.08**	**239**	*i*P		**

CHN2 eS Sn 01 12 50.1 -0.7
baz=243
CHN4 Tsaushan 3.72 238 ⇓iP Pn 01 12 07.3 +0.1
baz=234
CHN4 eS Sn 01 12 50.5 -0.4
baz=234
TPUB Ta-pu 3.72 237 ePn Pn 01 12 06.5 -0.7
TPUB eSn Sn 01 12 50.1 -0.7
TPUB e 01 26 17.5
WTCT Ta-ch'eng 3.72 247 eP Pn 01 12 06.8 -0.4
baz=249
WTCT eS Sn 01 12 48.1 -2.8
baz=249
WTP Ta-pu 3.76 237 ⇓iP Pn 01 12 07.8 0.0
baz=238
WTP eS Sn 01 12 50.4 -1.5
baz=238
JNTH Nagotoyohara 3.77 71 P Pn 01 12 07.4 -0.5
JNTH S Sn 01 12 49.3 -2.8
CHY Chiayi 3.77 241 ⇓iP Pn 01 12 08.0 +0.1
baz=243
CHY eS Sn 01 12 50.5 -1.6
baz=243
TWK Hsinying 3.85 238 ⇓P Pn 01 12 08.6 -0.3
baz=240
TWK eS Sn 01 12 51.6 -2.3
baz=240
CHN1 Nanshi 3.86 237 ⇓iP Pn 01 12 08.7 -0.4
baz=238
CHN1 eS Sn 01 12 52.5 -1.7
baz=238
WSF Szhu 3.87 244 ⇓P Pn 01 12 08.9 -0.3
baz=246
WSF eS Sn 01 12 52.1 -2.2
baz=246
SGST Jiashian 3.88 235 ⇓iP Pn 01 12 09.5 +0.2
baz=241
SGST S Sn 01 12 53.4 -1.3
baz=241
JIH Iheya 3.91 64 P Pn 01 12 09.3 -0.3
JIH S Sn 01 12 52.9 -2.3
ECL Taimali 3.94 226 eP Pn 01 12 06.9 -3.1
baz=234
LAY Lan-yu 4.01 215 ⇓P Pn 01 12 07.8 -3.3
baz=216
LAY eS Sn 01 12 50.1 -7.7
baz=216
CHN8 Yiju 4.02 241 eP Pn 01 12 09.7 -1.4
baz=243
CHN3 Shinhua 4.05 237 eP Pn 01 12 11.2 -0.3
baz=246
CHN3 eS Sn 01 12 58.2 -0.3
baz=246
SSD Sandimen 4.05 231 ⇑P Pn 01 12 11.0 -0.6
baz=230
SSD eS Sn 01 12 56.9 -1.8
baz=230
JOW Kunigami 4.09 68 P Pn 01 12 10.8 -1.2
JOW S Sn 01 12 56.3 -3.2
JOW Kunigami 4.09 68⇑eP Pn 01 12 11.1 -1.0
baz=66
JOW Kunigami 4.09 68 ePn Pn 01 12 10.7 -1.3
JOW eSn Sn 01 12 51.2 -8.3
SCLT Jiali 4.12 239 eP Pn 01 12 12.0 -0.5
baz=240
SCLT eS Sn 01 12 59.8 -0.5
baz=240
TAW Tawu 4.14 224 eP Pn 01 12 09.8 -3.0
baz=219
TAW eS Sn 01 12 55.0 -5.8
baz=219
TWM1 Shoushan 4.15 233 eP Pn 01 12 13.4 +0.4
baz=235
EAST Anshuo 4.16 225⇓eP Pn 01 12 10.6 -2.4
baz=231
SGLT Jiouru 4.17 232 eP Pn 01 12 12.8 -0.3
baz=233
TAI1 Yung-k'ang 4.17 237 ⇓P Pn 01 12 12.8 -0.3
baz=246
TAI1 S Sn 01 12 59.4 -2.1
baz=246
SCZT Fangliau 4.31 227 eP Pn 01 12 14.6 -0.5
baz=228
SCZT eS Sn 01 13 03.1 -1.7
baz=228
KAU Kaohsiung 4.40 232 eP Pn 01 12 16.4 +0.3
baz=233
PNG Penghu 4.45 247 ⇓iP Pn 01 12 15.4 -1.4
baz=249
PNG eS Sn 01 13 03.2 -4.9
baz=249
TSEB Hengchuen, Pin 4.48 220 eP Pn 01 12 16.5 -0.7
baz=229
TSEB eS Sn 01 13 05.2 -3.7
baz=229
HEN Hengchun 4.50 223⇓eP Pn 01 12 16.4 -1.2
baz=224
WDGT Dungji 4.50 243 ⇓iP Pn 01 12 16.2 -1.3
baz=245
WDGT eS Sn 01 13 04.3 -5.0
baz=245
TWP Hsiaoliuchiu 4.50 229 eP Pn 01 12 17.6 +0.1
baz=230
TWK1 Hengchun 4.51 222 ⇓P Pn 01 12 16.1 -1.5
baz=229
TWK1 eS Sn 01 13 05.5 -4.0
baz=229
JOKE Okinoerabujima 4.53 63 P Pn 01 12 16.6 -1.3
JOKE S Sn 01 13 09.6 -0.5
QZH Quanzhou 4.95 266⇑iP Pn 01 12 20.3 -3.1
QZH sP 01 12 50.0
QZH S Sn 01 13 12.8 -7.1
QZH smax smax
comp=N,10μm,1.5s
QZH smax smax
comp=E,3μm,1.0s
QZH LR LR
comp=N,40μm,6.6s
QZH LR LR
comp=E,16μm,7.0s
QZH LR LR
comp=Z,35μm,13.3s
JTK Tokunoshima 5.02 60 P Pn 01 12 22.8 -1.6
JTK S Sn 01 13 17.7 -4.0
KNM Kinmen 5.17 261 ⇓P Pn 01 12 27.4 +1.0
baz=262
JAMN Amaminishikomi 5.42 57 P Pn 01 12 27.7 -2.0
JAMN S Sn 01 13 31.1 -0.1
JAM Amami Oshima 5.83 57 P Pn 01 12 32.9 -2.3
JAM S Sn 01 13 35.6 -5.4
JTAJ Takarajima 5.95 49 P Pn 01 12 35.8 -1.0
JZK Kikaishima 6.07 60 P Pn 01 12 36.5 -1.9
JZK S Sn 01 13 44.3 -2.4
SSE Sheshan 6.24 337 P Pn 01 12 42.1 +1.5
SSE S Sn 01 13 50.6 -0.2
SSE pmax pmax
comp=Z,1μm,1.1s
SSE LR LR
comp=N,5μm,6.8s
SSE LR LR
comp=E,10μm,6.8s
SSE LR LR
comp=Z,8μm,9.1s
JMZ Minamidaito 2 6.51 84 P Pn 01 12 41.5 -2.8
JMZ S Sn 01 13 48.3 -9.0
SGCP Mt. Cagua 7.32 195 eP Pn 01 12 55.9 +0.6
PIP Pasuquin 7.69 205⇓eP Pn 01 13 00.8 +0.7
PIP eS Sn 01 14 24.5 -1.3
CVP Callao Caves 7.89 196⇑eP Pn 01 13 02.1 -0.8
CVP iS Sn 01 14 28.0 -2.8
APYP Conner 7.90 200 eP Pn 01 13 02.1 -0.9
NJ2 Nanjing 8.07 327 eP Pn 01 13 06.8 +1.7
NJ2 sP 01 13 39.0
NJ2 S Sn 01 14 33.4 -1.5
NJ2 pmax pmax
comp=Z,460nm,1.0s
NJ2 pmax pmax
comp=Z,3μm,10.2s
NJ2 LR LR
comp=N,15μm,8.8s
NJ2 LR LR
comp=E,20μm,5.2s
NJ2 LR LR
comp=Z,21μm,6.8s
JFU Fukue jima 2 8.36 29 P Pn 01 13 11.9 +2.8
CAUP Cauayan 8.62 194 eP Pn 01 13 14.9 +2.2

JHD Hondo 8.87 36 P Pn 01 13 17.5 +1.6
HKC Hong Kong Obse 9.52 253 P Pn 01 13 25.0 +0.3
BOLP Bolinao 9.73 204 eP Pn 01 13 27.9 +0.4
JNU Nakatsue 9.77 36 P Pn 01 13 28.7 +0.7
5.0nm,0.3s,baz=209,slow=8.1,SNR=26
JNU Nakatsue 9.77 36 P Pn 01 13 28.5 +0.5
JNU Nakatsue 9.77 36 ePn Pn 01 13 28.7 +0.7
JNU eScP ScP 01 22 48.4 +0.4
BALP Baler 9.84 194 eP Pn 01 13 30.2 +1.1
WHN Wuhan 9.99 303⇑iP Pn 01 13 32.5 +1.6
WHN PP 01 13 41.5
WHN S Sn 01 15 25.0 +3.6
WHN pmax pmax
comp=Z,3μm,1.8s
WHN pmax pmax
comp=Z,1μm,4.5s
WHN LR LR
comp=N,45μm,5.8s
WHN LR LR
comp=E,17μm,7.9s
WHN LR LR
comp=Z,18μm,6.9s
GZH Guangzhou 10.01 259 P Pn 01 13 26.0 -5.2
GZH S Sn 01 15 13.6 -8.4
GZH pmax pmax
comp=Z,330nm,0.7s
MCO Taipa Grande 10.12 254 P Pn 01 13 34.0 +1.3
PCPH Palayan 10.13 196⇑eP Pn 01 13 34.8 +1.9
JTU Tsushima 10.25 26 P Pn 01 13 36.3 +2.0
GQP Guinayangan 11.49 188⇑eP Pn 01 13 53.0 +2.1
GQP eS Sn 01 15 54.1 -3.7
TGY Tagaytay City 11.57 195 P Pn 01 13 53.7 +1.7
comp=Z,62nm,0.3s,baz=74,slow=7.5,SNR=4.2
TGY LR LR 01 18 01.8
comp=Z,2μm,19.9s,baz=17,slow=35
JMN Monobe 11.95 43 P Pn 01 13 52.0 -4.9
INCN Inchon 12.29 10 ePn Pn 01 14 03.3 +2.2
INCN Inchon 12.29 10 Pn Pn 01 14 03.7 +2.6
SNR=47
TIA Tai'an 12.33 333 ⇓P Pn 01 14 04.3 +2.6
TIA sP sP 01 14 40.6
TIA pmax pmax
comp=Z,310nm,1.7s
TIA pmax pmax
comp=Z,6μm,4.0s
TIA LR LR
comp=Z,5μm,8.3s
TIA LR LR
comp=Z,8μm,9.2s
TIA LR LR
comp=Z,7μm,10.7s
KS15 Wonju Array Si 12.48 14 ePn Pn 01 14 06.0 +2.4
KSAR Wonju Array Be 12.48 14 P Pn 01 14 06.5 +2.8
KSAR Wonju Array Be 12.48 14 P Pn 01 14 06.5 +2.8
KSAR S Sn 01 16 27.2 +5.8
KSAR PcP PcP 01 19 32.2 +0.8
KSAR ScP ScP 01 22 51.8 +0.3
KSRS Korea Array 12.50 14 P Pn 01 14 06.5 +2.6
comp=Z,5.7nm,0.3s,baz=199,slow=13,SNR=354
KSRS S Sn 01 16 27.2 +5.3
baz=243,slow=29,SNR=2.1
KSRS PcP PcP 01 19 32.2 +0.8
comp=Z,0.3nm,0.3s,baz=230,slow=1.3,SNR=4.2
KSRS ScP ScP 01 22 51.8 +0.2
comp=Z,0.4nm,0.3s,baz=214,slow=2.0,SNR=8.7
KS01 Wonju Array Si 12.52 14 ePn Pn 01 14 05.6 +1.5
KS01 eScP ScP 01 22 50.6 -1.0
DL2 Dalian 13.66 352 ⇓iP P 01 14 21.3 -1.5
DL2 sP sP 01 14 56.5
DL2 S Sn 01 16 54.5 +4.8
DL2 pmax pmax
comp=Z,630nm,1.4s
DL2 pmax pmax
comp=Z,5μm,6.3s
ENH Enshi 13.77 294 ePn Pn 01 14 22.0 +1.8
RCP Roxas 13.78 185⇑eP Pn 01 14 22.4 +1.9
PLP Palo 14.15 176⇑iP P 01 14 27.5 -0.9
OCLP Ormoc 14.24 178 eP P 01 14 29.3 -0.2
QIZ Qiongzhong 14.57 247 P Pn 01 14 31.0 +0.5
QIZ S Sn 01 17 14.5 +2.6
QIZ LR LR
comp=Z,1μm,8.3s
QIZ LR LR
comp=Z,1μm,12.3s
GUIM Jordan 14.72 186 eP P 01 14 34.2 -0.6
LLP Lapu-Lapu 14.96 180⇑eP Pn 01 14 36.0 +0.6
LLP eS Sn 01 17 14.4 -7.1
INU Inuyama 14.98 45 ePn Pn 01 14 34.7 -0.8
INU eScP ScP 01 22 56.7 +0.9
GYA Guiyang 15.67 278 ⇓iP P 01 14 45.1 -0.3
GYA PP pP 01 15 00.9 -8.7
GYA sP sP 01 15 22.4 -4.9
GYA S Sn 01 17 35.3 -3.2
GYA SS S 01 18 00.4 +19
GYA PcP PcP 01 19 38.9 +2.9
GYA pmax pmax
comp=Z,560nm,1.0s
GYA pmax pmax
comp=Z,3μm,8.9s
GYA LR LR
comp=Z,10μm,7.5s
GYA LR LR
comp=Z,3μm,7.8s
GYA LR LR
comp=Z,4μm,6.3s
XAN Xi'an 15.71 307 P P 01 14 45.3 -0.4
XAN sP sP 01 15 20.8 -6.8
XAN S Sn 01 17 35.8 -3.4
XAN PcP PcP 01 19 39.1 +3.2
XAN pmax pmax
comp=Z,980nm,1.3s
XAN pmax pmax
comp=Z,6μm,9.7s
JHJ Hachijo jima 2 15.76 57 P P 01 14 51.3 +5.1
comp=Z,73nm,0.3s,baz=194,slow=5.9,SNR=34
TIY Taiyuan 15.77 324 P P 01 14 48.5 +2.1
TIY S Sn 01 17 38.3 -2.4
TIY pmax pmax
comp=Z,940nm,1.0s
TIY pmax pmax
comp=Z,11μm,4.8s
TIY LR LR
comp=Z,4μm,10.6s
TIY LR LR
comp=Z,3μm,9.4s
TIY LR LR
comp=Z,3μm,9.5s
JHJ2 Mitsune 15.79 57 P P 01 14 52.0 +5.6
JHJ2 Mitsune 15.79 57 ePn P 01 14 46.7 +0.2
JHJ2 eP Pn 01 14 51.3 +5.9
BJT Baijiatuau 16.03 338 eP P 01 14 50.9 +1.8
BJT pmax pmax
comp=Z,686nm,1.1s
BJT Baijiatuau 16.03 338 ePn P 01 14 50.9 +1.8
comp=Z,686nm,1.1s
BJI Beijing 16.05 338 P P 01 14 50.9 +1.6
BJI sP sP 01 15 29.8 -1.5
BJI S S 01 17 48.8 +0.5
BJI pmax pmax
comp=Z,620nm,1.5s
BJI pmax pmax
comp=Z,14μm,7.3s
JOD2 Odawara 2 16.30 49 P Pn 01 14 51.3 -0.5
CBIJ Chichi jima 16.38 80 P P 01 14 53.9 +0.8
CBIJ Chichi jima 16.38 80 ePn Pn 01 14 52.4 -0.4
comp=Z,4μm,1.7s
CBIJ eSn S 01 18 08.3 +13
JCJ Chichijima 16.38 80 P P 01 14 54.5 +1.3
baz=190,slow=6.1
SNY Shenyang 16.43 359 ⇓P P 01 14 55.3 +1.8
SNY sP sP 01 15 34.6 -0.9
SNY S S 01 17 57.8 +1.2
SNY PcP PcP 01 19 32.6 -4.1
SNY pmax pmax
comp=Z,720nm,1.4s
SNY pmax pmax
comp=Z,13μm,4.0s
SNY LR LR
comp=Z,6μm,13.0s
SNY LR LR
comp=Z,2μm,14.7s
SNY LR LR
comp=Z,8μm,12.3s
MAJO Matsushiro 16.47 44 eP Pn 01 14 52.5 -1.4

MAJO Matsushiro 16.47 44 ePn Pn 01 14 53.9 0.0
comp=Z,215nm,1.4s
MAT Matsushiro 16.47 44 P P 01 14 55.3 +1.2
MJB9 Matsu-Tunnel 16.47 44 ePn P 01 14 54.3 +0.2
MJB9 eP Pn 01 14 55.3 +1.4
MJB9 eScP ScP 01 23 00.2 +1.5
MJAR Matsushiro Arr 16.48 44 P Pn 01 14 52.0 -1.9
comp=Z,3.4nm,0.3s,baz=237,slow=11,SNR=23
MJAR S S 01 18 03.1 +5.3
comp=Z,0.4nm,0.3s,baz=203,slow=21,SNR=3.5
MJAR ScP ScP 01 22 58.8 +0.2
baz=236,slow=2.8,SNR=14
MJAR Matsushiro Arr 16.48 44 P Pn 01 14 52.0 -1.9
JRY Ryogami san 16.61 47 P P 01 14 56.2 +0.7
CGP Cagayan de Oro 16.82 178⇓eP Pn 01 15 00.0 +1.7
BUKP Musuan 17.41 177 eP Pn 01 15 06.4 +1.0
PAGZ Pagadian 17.43 182 eP Pn 01 15 05.4 -0.1
CTBH Cotabato--PC H 18.04 179 eP Pn 01 15 13.0 +0.2
DAV Davao City (W) 18.25 175 P Pn 01 15 14.8 -0.5
comp=Z,69nm,0.3s,baz=24,slow=4.0,SNR=9.4
DAV LR LR 01 21 24.7
comp=Z,2μm,20.2s,baz=2.0,slow=34
DAV Davao City (W) 18.25 175⇑eP P 01 15 12.7 -1.1
DAV Davao City (W) 18.25 175 ⇑S Sn 01 18 55.9 +16
DAV Davao City (W) 18.25 175 P Pn 01 15 14.8 -0.5
SNR=9.5
DAV Davao City (W) 18.25 175 P Pn 01 15 14.8 -0.5
SNR=9.5
CN2 Changchun 18.43 3 eP Pn 01 15 17.1 -0.2
CN2 esP sP 01 15 54.5 -3.2
CN2 eS S 01 18 37.9 -0.7
CN2 ScS ScS 01 26 40.3 -3.1
CN2 pmax pmax
comp=Z,200nm,3.0s
CN2 LR LR
comp=Z,4μm,13.0s
CN2 LR LR
comp=Z,4μm,13.0s
CN2 LR LR
comp=Z,3μm,13.0s
MATI Mati 18.44 173 eP P 01 15 14.5 -1.2
HHC Hu-ho-hao-te 18.61 329 eP Pn 01 15 19.8 +0.3
HHC S S 01 18 42.5 0.0
HHC LR LR
comp=N,9μm,9.9s
HHC LR LR
comp=E,5μm,7.4s
HHC Hu-ho-hao-te 18.61 329 ⇓P Pn 01 15 19.5 0.0
HHC pP pP 01 15 42.6 +0.5
HHC sP sP 01 16 02.0 +2.1
HHC S S 01 18 44.1 +1.6
HHC pmax pmax
comp=E,570nm,1.0s
HHC pmax pmax
comp=E,10μm,3.9s
JYA Atsumi 18.70 41 P Pn 01 15 22.4 +2.0
CD2 Chengdu 18.71 292 ⇓iP P 01 15 19.5 +0.8
CD2 pP pP 01 15 42.9 -0.3
CD2 sP sP 01 15 59.9 -1.0
CD2 S S 01 18 42.6 -1.8
CD2 PcP PcP 01 19 40.0 -0.7
CD2 pmax pmax
comp=E,830nm,1.0s
CD2 pmax pmax
comp=E,6μm,9.6s
VLA Vladivostok 18.85 18 eP P 01 15 19.8 -0.2
VLA pmax pmax
comp=Z,237nm,1.0s
BTO Baotou 19.18 326 eP P 01 15 24.6 +0.9
BTO pmax pmax
comp=Z,140nm,1.6s
KMI Kunming 19.26 274 P Pn 01 15 26.8 -0.6
KMI pP pP 01 15 49.3 -0.3
KMI sP sP 01 16 06.8 -0.4
KMI S S 01 18 56.5 +0.7
KMI pmax pmax
comp=Z,530nm,1.0s
KMI pmax pmax
comp=Z,2μm,3.2s
KMI LR LR
comp=Z,2μm,11.2s
KMI LR LR
comp=Z,3μm,11.1s
KMI LR LR
comp=Z,3μm,12.3s
KDM Kudat 19.59 202 ⇓P Pn 01 15 30.3 -0.7
MDJ Mudanjiang 19.73 12 P P 01 15 29.5 -0.1
MDJ sP sP 01 16 08.9 -3.1
MDJ S S 01 19 03.6 -0.8
MDJ sS sS 01 19 42.8 -2.9
MDJ ScP ScP 01 23 04.8 -0.6
MDJ ScS ScS 01 26 46.3 -1.3
MDJ pmax pmax
comp=Z,1μm,6.3s
MDJ Mudanjiang 19.73 12 eP P 01 15 30.0 +0.4
comp=Z,226nm,1.0s
USRK Ussuriysk Ar. 19.88 17 P P 01 15 31.1 0.0
comp=Z,3.5nm,0.3s,baz=203,slow=9.1,SNR=83
USRK pP pP 01 15 56.5 +0.5
comp=Z,1.2nm,0.3s,baz=192,slow=18,SNR=1.6
LZH Lanzhou 20.34 306 ⇓P P 01 15 37.5 +1.1
LZH PP PnPn 01 16 06.0 +3.8
LZH sP sP 01 16 18.4 -0.6
LZH S S 01 19 18.0 +1.1
LZH ScP ScP 01 23 08.8 +1.5
LZH PcS PcS 01 23 20.5 -1.1
LZH ScS ScS 01 26 51.5 +1.1
LZH pmax pmax
comp=Z,980nm,1.1s
LZH pmax pmax
comp=Z,4μm,4.3s
LZH LR LR
comp=Z,930nm,10.0s
LZH LR LR
comp=Z,1μm,9.2s
LZH LR LR
comp=Z,1μm,12.1s
SKNT Sakolnakorn 20.46 250 P P 01 15 39.4 +1.8
comp=Z,546nm,0.9s,comp=Z,8μm
KKM Kota Kinabalu 20.61 203 ⇓P P 01 15 40.8 +1.4
KKM Kota Kinabalu 20.61 203 eP P 01 15 40.3 +0.9
comp=Z,142nm,1.1s
KKM eScP ScP 01 23 09.8 +1.7
SDKM Sandakan 20.67 200 ⇑P P 01 15 40.4 +0.4
MYLDM Lahad Datu 20.76 196 ⇑P Pn 01 15 43.6 -1.2
MYLDM Lahad Datu 20.76 196 eP P 01 15 42.6 +1.8
comp=Z,522nm,1.1s
MYLDM eScP ScP 01 23 12.0 +3.6
JTM Tenmabayashi 20.93 39 P P 01 15 38.8 -3.6
JOT Ohata 21.32 37 P P 01 15 44.5 -2.1
JSH Shimam 21.69 33 P P 01 15 50.1 -0.5
KHON Khomkaen 21.73 250 P P 01 15 52.2 +0.9
comp=Z,186nm,1.5s,comp=Z,2μm
TSM Tawau 21.77 197 ⇑P P 01 15 52.7 +1.1
CRAI Chiangrai 22.39 262 P P 01 15 59.5 +1.6
comp=Z,253nm,1.9s,comp=Z,5μm
JEW Eniwo 22.55 35 P P 01 15 56.6 -2.6
GUMO Guam 22.83 117 P P 01 16 02.0 -0.1
comp=Z,1μm,1.1s,baz=260,slow=2.1,SNR=34
GUMO Guam 22.83 117 eP P 01 16 02.6 +0.5
comp=Z,11μm,1.8s
ERM Erimo 22.92 39 eP P 01 16 00.1 -2.6
ERM eS S 01 20 01.8 -0.1
ERM Erimo 22.92 39 eP P 01 16 00.1 -2.6
ERM eS S 01 20 01.8 -0.1
JEM Erimo 22.92 39 P P 01 16 00.7 -2.0
UTTA Uttaradit 23.09 255 P P 01 16 04.6 +0.1
comp=Z,53nm,1.4s,comp=Z,462nm
PBKT Sadao Pong 23.21 252 P P 01 16 06.0 +0.3
comp=Z,948nm,1.0s,comp=Z,8μm
PHIT Phitsanulok 23.43 254 P P 01 16 08.4 +0.7
comp=Z,440nm,1.0s,comp=Z,3μm
LAMP Lampang 23.61 258 P P 01 16 09.8 +0.5
comp=Z,167nm,1.0s,comp=Z,1μm
CMAI Chiengmai2 23.67 262 P P 01 16 10.6 +0.6
comp=Z,605nm,1.1s,comp=Z,13μm
CHBT CHBT 24.00 243 P P 01 16 13.8 +1.0
comp=Z,507nm,1.3s,comp=Z,12μm
ASAJ Asahikawa 24.04 34 P P 01 16 12.2 -0.8
comp=Z,121nm,0.5s,baz=238,slow=9.2,SNR=81
ASAJ S S 01 20 23.5 +3.5
comp=Z,51nm,0.9s,baz=158,slow=33,SNR=7.5
ASAJ Asahikawa 24.04 34 P P 01 16 10.4 -2.5
ASAJ Asahikawa 24.04 34 eP P 01 16 12.2 -0.8
comp=Z,223nm,1.0s

ASAJ eS S 01 20 18.2 -1.8
ASAJ eS S 01 20 25.4 +5.4
HIA Hailar 24.10 353 eP **P** **01 16 12.7 -0.7**
HIA e 01 19 50.9
HIA pmax pmax
comp=Z,475nm,1.1s
HIA Hailar 24.10 353 eP **P** **01 16 12.7 -0.7**
comp=Z,475nm,1.1s
HIA ePcP **PcP** **01 19 50.9 0.0**
HIA eScP **ScP** **01 23 16.6 +0.2**
HIA eScP ScP 01 23 17.4 +1.0
CMMT Chiang Mai 24.12 259 P **P** **01 16 13.9 0.0**
comp=Z,276nm,1.6s,comp=Z,3µm
CHTO Chiang Mai 24.12 259 P **P** **01 16 13.9 0.0**
comp=Z,1µm,1.6s,comp=Z,15µm
CHTO Chiang Mai 24.12 259 eP **P** **01 16 13.5 -0.4**
CHTO Chiang Mai 24.12 259 eP **P** **01 16 13.5 -0.4**
CHTO eScP **ScP** **01 23 17.5 +0.5**
CHTO Chiang Mai 24.12 259 P **P** **01 16 14.4 +0.5**
SNR=224
CHTO P **P** **01 16 14.4 +0.5**
SNR=224
CHTO Chiang Mai 24.12 259 P **P** **01 16 14.4 +0.5**
SNR=224
CM01 Chiang Mai Arr 24.24 258 eP **P** **01 16 14.1 -0.9**
CM01 eScP **ScP** **01 23 16.6 -0.7**
CM31 Chiang Mai Arr 24.25 259 eP **P** **01 16 15.8 +0.7**
CM31 eScP **ScP** **01 23 18.8 +1.4**
CMAR Chiang Mai Arr 24.25 259 P **P** **01 16 15.6 +0.6**
comp=Z,77nm,1.0s,baz=58,slow=7.8,SNR=261
CMAR PcP **PcP** **01 19 53.0 +1.3**
comp=Z,13nm,1.0s,baz=62,slow=1.4,SNR=8.3
CMAR ScP **ScP** **01 23 18.1 +0.8**
comp=Z,10nm,0.9s,baz=76,slow=0.9,SNR=15
JMP Maruseppu 24.36 35 P **P** **01 16 14.8 -1.1**
BTM Bintulu 24.42 207 ⇑P **P** **01 16 17.0 +0.4**
JWK2 Keihoku 24.57 31 P **P** **01 16 18.7 +1.0**
KLR Kul'dur 24.58 12 P **P** **01 16 16.6 -1.1**
comp=Z,121nm,0.9s,baz=218,slow=7.6,SNR=72
KLR pP **pP** **01 16 48.2 +1.5**
comp=Z,224nm,1.2s,baz=226,slow=7.7,SNR=7.2
KLR PcP **PcP** **01 19 52.9 +1.0**
comp=Z,20nm,0.8s,baz=222,slow=4.3,SNR=8.3
HABR Khabarovsk 24.64 18 deP **P** **01 16 15.6 -2.7**
HABR e*PP **pP** **01 16 42.5 -4.9**
HABR e*SP **sP** **01 16 58.5 -5.4**
HABR e 01 19 50.1
HABR eS **S** **01 20 27.2 -2.2**
HABR e*SS **sS** **01 21 16.4 -4.7**
HABR e 01 27 04.7
HABR pmax pmax
comp=N,18nm,1.5s
HABR pmax pmax
comp=Z,51nm,1.5s
HABR pmax pmax
comp=E,59nm,1.5s
HABR MLR MLR
comp=Z,528nm,16.0s
TNTI Ternate 24.66 172 P **P** **01 16 20.0 +1.2**
comp=Z,2µm,1.2s,comp=Z,22µm
GTA Gaotai 24.69 310 ⇓P **P** **01 16 18.6 -0.5**
GTA pP pP 01 16 48.3 +0.1
GTA sP sP 01 17 01.6 -3.1
GTA PcP **PcP** **01 19 54.0 +1.5**
GTA S **S** **01 20 29.8 -0.9**
GTA sS sS 01 21 18.8 -3.6
GTA SS **SnSn** **01 21 40.9 +6.8**
GTA ScP **ScP** **01 23 19.9 +1.5**
GTA PcS **PcS** **01 23 31.6 -1.2**
GTA ScS **ScS** **01 27 05.1 -1.6**
GTA pmax pmax
comp=Z,170nm,1.1s
GTA pmax pmax
comp=Z,2µm,6.5s
GTA LR LR
comp=Z,4µm,8.7s
GTA LR LR
comp=Z,3µm,9.2s
GTA LR LR
comp=Z,3µm,10.0s
MRSI Marisa 24.82 185 P **P** **01 16 22.6 +2.4**
comp=Z,826nm,1.2s,comp=Z,10µm
PATY Pattaya 25.09 245 P **P** **01 16 24.5 +1.8**
comp=Z,17nm,0.9s
SBUM Sibu 25.46 208 ⇓P **P** **01 16 27.0 +1.0**
SBUM Sibu 25.46 208 eP **P** **01 16 26.4 +0.3**
comp=Z,134nm,0.9s
YUK Yuzh-Kuril'sk 25.74 38 d iP **P** **01 16 26.4 -1.9**
YUK i 01 17 13.0
YUK i S **S** **01 20 44.0 -2.7**
YUK pmax pmax
comp=Z,1µm,2.2s
YUK pmax pmax
comp=Z,431nm,0.8s
YUK pmax pmax
comp=N,151nm,0.9s
YUK MLR MLR
comp=Z,878nm,19.0s
YUK MLR MLR
comp=N,1µm,18.0s
KHLT Khaolaem Dam 26.06 251 P **P** **01 16 32.8 +1.3**
comp=N,102nm,1.2s,comp=N,1µm
LBMI Labuha 26.06 172 P **P** **01 16 32.6 +1.1**
comp=N,782nm,1.0s,comp=N,10µm
ULN Ulaanbaatar 26.16 334 eP **P** **01 16 31.8 -0.5**
ULN pmax pmax
comp=Z,500nm,1.2s
ULN Ulaanbaatar 26.16 334 eP **P** **01 16 31.8 -0.5**
comp=Z,501nm,1.2s
ULN ePcP **PcP** **01 19 56.1 +0.4**
ULN eScP **ScP** **01 23 22.3 -0.2**
ULN Ulaanbaatar 26.16 334 P **P** **01 16 31.7 -0.5**
SNR=123
ULN P **P** **01 16 31.7 -0.5**
SNR=123
ULN Ulaanbaatar 26.16 334 P **P** **01 16 31.7 -0.5**
SNR=123
YSS Yuzh-Sakhalins 26.20 30 ⇑eP **P** **01 16 31.4 -1.0**
YSS eS **S** **01 20 55.3 +1.4**
YSS pmax pmax
comp=Z,160nm,1.4s
YSS pmax pmax
comp=Z,1µm,2.2s
YSS Yuzh-Sakhalins 26.20 30 eP **P** **01 16 30.7 -1.7**
comp=Z,797nm,1.6s
APSI Ampana 26.22 185 P **P** **01 16 33.1 +0.2**
comp=Z,420nm,1.2s,comp=Z,5µm
LUWI Luwuk 26.27 183 P **P** **01 16 32.6 -0.8**
comp=Z,367nm,1.2s,comp=Z,5µm
SONM Songino Array 26.40 333 P **P** **01 16 34.0 -0.4**
comp=Z,62nm,0.9s,baz=144,slow=9.0,SNR=73
SONM pP **pP** **01 17 04.8 +0.9**
comp=Z,412nm,1.1s,baz=148,slow=9.1,SNR=28
SONM PcP **PcP** **01 19 57.0 +0.7**
comp=Z,7.6nm,0.7s,baz=159,slow=3.6,SNR=5.8
SONM ScP **ScP** **01 23 23.2 0.0**
comp=Z,37nm,1.1s,baz=151,slow=2.2,SNR=15
SONA1 Songino Array 26.41 333 eP **P** **01 16 33.9 -0.6**
SWI Sorong 26.99 164 P **P** **01 16 39.8 0.0**
comp=Z,268nm,0.9s,comp=Z,3µm
KSM Kuching 27.19 211 ⇑P **P** **01 16 42.3 +0.7**
KSM Kuching 27.19 211 eP **P** **01 16 41.0 -0.6**
comp=Z,69nm,0.9s
KSM eScP **ScP** **01 23 26.8 +0.9**
SANI Sanana 27.31 176 P **P** **01 16 44.1 +1.4**
comp=Z,348nm,1.2s,comp=Z,5µm comp=Z,7µm
KUR Kuril'sk 27.60 38 eP **P** **01 16 44.9 -0.1**
KUR e 01 17 35.7
KUR MLR MLR
comp=N,511nm,13.0s
KUR MLR MLR
comp=E,711nm,13.0s
KUR MLR MLR
comp=Z,549nm,13.0s
MTKI Muara Teweh, K 27.60 200 P **P** **01 16 47.1 +1.8**
comp=Z,251nm,0.3s,comp=Z,20µm
CIT Chita 27.79 346 eP **P** **01 16 46.2 -0.4**
CIT pmax pmax
comp=Z,795nm,1.3s
STKI Sintang 27.92 208 P **P** **01 16 52.1 +4.0**
KTGM Kuala Trenggan 28.25 229 ⇓P **P** **01 16 52.5 +1.5**
RKPI Ransiki, Papua 28.46 158 P **P** **01 16 53.8 +0.9**
comp=Z,498nm,0.8s,comp=Z,7µm
TTSI Tana Toraja 28.53 189 P **P** **01 16 53.8 +0.3**
comp=Z,122nm,0.9s,comp=Z,2µm comp=Z,18µm

NLAI Namlea 28.59 174 P **P** **01 16 55.0 +1.0**
comp=Z,206nm,1.3s,comp=Z,3µm
MSAI Masohi 28.93 170 P **P** **01 16 58.2 +1.2**
comp=Z,97nm,1.0s,comp=Z,1µm
SURT Suratani 29.02 240 P **P** **01 16 59.1 +1.2**
comp=Z,122nm,1.2s,comp=Z,2µm
TRTT Trang 29.02 237 P **P** **01 16 59.2 +1.3**
comp=Z,138nm,1.3s,comp=Z,2µm
AAI Ambon 29.16 171 P **P** **01 17 00.4 +1.4**
comp=Z,1.0nm,0.4s
TYV Tymovskoe 29.21 25 eP **P** **01 16 57.2 -1.9**
TYV pmax pmax
comp=Z,24nm,0.8s
FAKI Fak Fak 29.22 163 P **P** **01 16 59.9 +0.3**
comp=Z,899nm,1.1s,comp=Z,9µm
LSA Lhasa 29.42 286 P **P** **01 17 02.8 +0.9**
LSA pmax pmax
comp=Z,140nm,0.8s
LSA pmax pmax
comp=Z,890nm,11.2s
LSA LR LR
comp=Z,970nm,13.5s
LSA LR LR
comp=Z,1µm,10.8s
LSA LR LR
comp=Z,3µm,12.9s
LSA Lhasa 29.42 286 eP **P** **01 17 02.6 +0.7**
LSA e 01 20 04.2
LSA pmax pmax
comp=Z,96nm,0.8s
LSA Lhasa 29.42 286 eP **P** **01 17 02.6 +0.7**
comp=Z,96nm,0.8s
LSA ePcP **PcP** **01 20 04.2 -0.3**
LSA eScP **ScP** **01 23 34.9 +1.6**
SPSI Sidrap Palu 29.44 189 P **P** **01 17 01.4 -0.2**
comp=Z,102nm,0.9s,comp=Z,2µm
ZAK Zakamensk 29.67 333 eP **P** **01 17 02.2 -1.2**
ZAK e 01 17 34.3
ZAK e 01 20 05.1
ZAK pmax pmax
comp=Z,85nm,1.6s
ZAK pmax pmax
comp=Z,197nm,1.5s
ZAK pmax pmax
comp=Z,58nm,1.3s
KULM Kulim 30.01 232 ⇑P **P** **01 17 08.2 +1.6**
KULM Kulim 30.01 232 eP **P** **01 17 06.2 -0.3**
comp=Z,88nm,1.3s
KULM ePcP **PcP** **01 20 06.7 +1.2**
KULM eScP **ScP** **01 23 35.1 +0.4**
BBKI Banjar Baru 30.01 199 P **P** **01 17 08.0 +1.4**
comp=Z,208nm,1.1s,comp=Z,5µm
PKDT Phuket 30.03 239 P **P** **01 17 08.4 +1.6**
comp=Z,259nm,1.4s,comp=Z,11µm
BNDI Bandanaira 30.25 168 P **P** **01 17 08.5 -0.2**
comp=Z,427nm,1.4s,comp=Z,5µm
IPM Ipoh 30.31 231 ⇓P **P** **01 17 09.9 +0.7**
IPM Ipoh 30.31 231 eP **P** **01 17 08.8 -0.5**
comp=Z,401nm,1.9s
IPM ePcP **PcP** **01 20 07.3 +0.9**
IPM eScP **ScP** **01 23 35.7 -0.1**
KMPI Kaimana, Papua 30.34 161 P **P** **01 17 10.5 +1.0**
comp=Z,1µm,0.8s,comp=Z,13µm
NKL Nikolayevsk 30.45 20 eP **P** **01 17 08.0 -2.0**
NKL pmax pmax
comp=N,200nm,1.3s
NKL pmax pmax
comp=Z,120nm,1.3s
MYKOM Kota Tinggi 30.46 223 ⇑P **P** **01 17 11.6 +1.1**
MYKOM Kota Tinggi 30.46 223 eP **P** **01 17 11.2 +0.6**
comp=Z,142nm,1.6s
MYKOM ePcP **PcP** **01 20 07.8 +1.1**
MYKOM eScP **ScP** **01 23 37.4 +1.2**
KAPI Kappang 30.48 188 eP **P** **01 17 10.2 -0.4**
comp=Z,249nm,1.4s
KAPI Kappang 30.48 188 P **P** **01 17 10.5 -0.2**
SNR=11
TLY Talaya 30.53 335 P **P** **01 17 10.6 -0.3**
comp=Z,37nm,0.7s,baz=163,slow=7.8,SNR=37
TLY pP **pP** **01 17 42.4 +1.6**
comp=Z,106nm,1.0s,baz=157,slow=6.4,SNR=9.1
TLY PKP2bc 01 51 32.5
comp=Z,2.7nm,0.7s,baz=50,slow=10,SNR=3.6
TLY Talaya 30.53 335 ⇓eP **P** **01 17 10.6 -0.3**
TLY eS **S** **01 22 01.3 -0.8**
TLY pmax pmax
comp=Z,203nm,1.6s
TLY Talaya 30.53 335 P **P** **01 17 10.7 -0.1**
SNR=57
TLY Talaya 30.53 335 P **P** **01 17 10.7 -0.1**
SNR=57
KGM Kluang 30.61 224 ⇓P **P** **01 17 12.8 +0.8**
TPRI Tanjung Pinang 30.74 221 P **P** **01 17 13.8 +0.8**
comp=Z,131nm,0.3s,comp=Z,11µm
IRK Irkutsk 30.74 336 ⇓i P **P** **01 17 11.6 -1.1**
IRK e 01 27 33.6
IRK pmax pmax
comp=Z,308nm,1.6s
FRIM Kepong 30.79 228 ⇑P **P** **01 17 14.6 +1.1**
CLNS Chul'man 31.45 1 eP **P** **01 17 18.6 -0.3**
CLNS e 01 18 20.8
CLNS e 01 20 09.9
CLNS eS **S** **01 22 18.2 +1.8**
CLNS pmax pmax
comp=Z,213nm,1.2s
CLNS pmax pmax
comp=E,68nm,1.3s
CLNS pmax pmax
comp=N,151nm,1.2s
CLNS pmax pmax
comp=N,39nm,0.9s
CLNS pmax pmax
comp=Z,38nm,1.3s
CLNS pmax pmax
comp=E,41nm,1.0s
CLNS smax smax
comp=N,289nm,11.9s
CLNS smax smax
comp=E,388nm,10.8s
CLNS MLR MLR
comp=N,1µm,12.0s
CLNS MLR MLR
comp=Z,1µm,11.0s
CLNS MLR MLR
comp=N,1µm,11.0s
MOY Mondy 31.59 332 eP **P** **01 17 19.8 -0.5**
MOY e 01 17 51.6
MOY pmax pmax
comp=Z,896nm,1.9s
DGPR DIGLIPUR 31.67 253 eP **P** **01 17 21.4 +0.1**
DGPR lAmb lAmb 01 17 22.9
comp=Z,375nm,1.4s
GENI Genyem 31.89 148 P **P** **01 17 24.8 +1.7**
comp=Z,571nm,1.2s,comp=Z,7µm
JAY Jayapura 32.08 147 P **P** **01 17 25.9 +1.1**
comp=Z,99nm,1.0s,comp=Z,2µm
PPBI Pangkal Pinang 32.39 215 P **P** **01 17 28.4 +0.9**
comp=Z,45nm,0.9s,comp=Z,14µm
PBA Port Blair 32.55 251 eP P 01 17 27.2 -1.7
LHMI Lhok Sumawe 32.78 237 P **P** **01 17 32.4 +1.5**
comp=Z,473nm,0.8s,comp=Z,5µm
PSI Prapat 32.97 231 P **P** **01 17 33.5 +0.8**
comp=Z,27nm,0.9s,baz=7.0,slow=6.2,SNR=20
PSI PcP **PcP** **01 20 13.9 +0.2**
comp=Z,23nm,0.7s,baz=215,slow=2.5,SNR=6.5
PSI Prapat 32.97 231 eP **P** **01 17 32.8 +0.1**
PSI epP **pP** **01 18 03.9 +1.1**
PSI PcP **PcP** **01 20 13.9 +0.2**
PSI eScP **ScP** **01 23 44.3 -0.6**
BOD Bodaibo 33.22 350 ⇑i P **P** **01 17 32.7 -1.5**
BOD pmax pmax
comp=Z,82nm,1.6s
KCSI Kotacane, Aceh 33.30 234 P **P** **01 17 36.0 +0.6**
comp=Z,35nm,2.0s,comp=Z,1µm
JMBI JAMBI 33.32 219 P **P** **01 17 36.6 +1.0**
comp=Z,768nm,0.5s
BKNI Bangkinang 33.36 225 P **P** **01 17 36.7 +0.8**
comp=Z,119nm,1.2s,comp=Z,11µm
MMRI Maumere 33.84 183 P **P** **01 17 39.8 -0.2**
comp=Z,673nm,1.2s,comp=Z,7µm
SAUI Saumlaki 33.89 167 P **P** **01 17 40.4 -0.1**
comp=Z,626nm,1.0s,comp=Z,7µm
TPTI 33.91 234 P **P** **01 17 41.7 +1.0**
comp=Z,46nm,1.3s
MNSI Mandailing Nat 33.96 228 P **P** **01 17 41.5 +0.3**
comp=Z,97nm,1.1s,comp=Z,2µm

CMBY CAMPBELL BAY 34.05 243 eP **P** **01 17 41.9 0.0**
CMBY lAmb lAmb 01 17 44.8
comp=Z,106nm,0.4s
SDSI Sungai Dareh 34.08 223 P **P** **01 17 43.5 +1.3**
comp=Z,37nm,1.4s,comp=Z,30µm
GUN Gumba 34.11 283 eP **P** **01 17 42.8 0.0**
comp=Z,544nm,1.0s
ABJI Asem Bagus 34.31 197 P **P** **01 17 45.4 +1.3**
comp=Z,124nm,1.8s,comp=Z,3µm
SRBI Singaraja 34.34 196 P **P** **01 17 45.6 +1.3**
comp=Z,172nm,0.7s,comp=Z,2µm
PLAI Plampang 34.52 191 P **P** **01 17 46.3 +0.3**
comp=Z,96nm,1.4s,comp=Z,2µm
PKIN Phulchoki 34.56 282 eP **P** **01 17 46.4 -0.2**
TWSI Taliwang, Sumb 34.60 193 P **P** **01 17 46.2 -0.4**
comp=Z,60nm,1.2s,comp=Z,1µm
KKN Kakani 34.65 283 eP **P** **01 17 47.3 0.0**
comp=Z,496nm,0.9s
BOK Bokaro 34.65 276 ex P 01 17 42.0 -5.1
PDSI Padang 34.67 225 P **P** **01 17 48.3 +1.0**
comp=Z,26nm,0.8s,comp=Z,6µm
NGJI Ngawi 34.76 202 P **P** **01 17 49.3 +1.3**
comp=Z,63nm,1.1s
WMQ Urumqi 34.77 311 P **P** **01 17 47.8 -0.1**
WMQ pP pP 01 18 18.9 +0.7
WMQ sP sP 01 18 35.3 +1.1
WMQ PP **PP** **01 19 13.0 +3.5**
WMQ PcP **PcP** **01 20 18.9 +0.6**
WMQ S **S** **01 23 09.8 +1.7**
WMQ ScP **ScP** **01 23 53.6 +2.8**
WMQ SS **SnSn** **01 25 36.9 -0.9**
WMQ pmax pmax
comp=Z,140nm,1.2s
WMQ pmax pmax
comp=Z,1µm,4.0s
WMQ LR LR
comp=Z,430nm,26.8s
WMQ LR LR
comp=Z,350nm,25.2s
WMQ LR LR
comp=Z,380nm,28.6s
DMN Daman 34.82 282 eP **P** **01 17 48.7 -0.1**
comp=Z,485nm,1.0s
SOEI Soe 34.90 180 P **P** **01 17 47.6 -1.8**
comp=Z,222nm,0.9s
DNP Denpasar 34.91 195 P **P** **01 17 50.6 +1.4**
comp=Z,721nm,1.2s,comp=Z,21µm
JAGI Jajag, Banyuwa 34.98 197 P **P** **01 17 51.1 +1.2**
comp=Z,115nm,1.5s,comp=Z,2µm
JAGI Jajag, Banyuwa 34.98 197 eP **P** **01 17 50.7 +0.8**
comp=Z,82nm,0.9s
GMJI Gumukmas 34.98 198 P **P** **01 17 50.3 +0.4**
comp=Z,82nm,1.8s,comp=Z,2µm
LHSI Lahat 35.19 217 P **P** **01 17 52.9 +1.2**
comp=Z,129nm,0.9s
GKN Gorkha 35.20 283 eP **P** **01 17 51.6 -0.3**
comp=Z,558nm,1.0s
PWJI Pagerwojo 35.25 201 P **P** **01 17 52.9 +0.7**
comp=Z,79nm,0.8s,comp=Z,2µm
KLSI 35.27 215 P **P** **01 17 53.5 +1.1**
comp=Z,693nm,1.4s,comp=Z,27µm
SKR Severo-Kuril's 35.28 36 P P 01 17 46.5 -5.6
SKR eS **S** **01 23 07.0 -8.5**
SKR pmax pmax
comp=Z,160nm,0.9s
SKR MLR MLR
comp=Z,2µm,18.0s
MASI Maura Aman, Be 35.35 220 P **P** **01 17 54.3 +1.2**
comp=Z,285nm,0.9s,comp=Z,4µm
KLI Kotabumi 35.35 214 P **P** **01 17 53.7 +0.6**
comp=Z,129nm,0.8s
BATI Baumata 35.35 181 P **P** **01 17 51.5 -1.6**
comp=Z,102nm,0.7s,baz=139,slow=19
BATI Baumata 35.35 181 P **P** **01 17 51.5 -1.6**
comp=Z,47nm,1.3s
MDSI Maura Dua 35.38 216 P **P** **01 17 54.0 +0.6**
comp=Z,73nm,1.1s,comp=Z,1µm
MANU Manus Island 35.40 137 eP **P** **01 17 54.6 +1.1**
comp=Z,225nm,0.7s
KPJI Karang Pucung 35.66 206 P **P** **01 17 57.0 +1.3**
comp=Z,82nm,1.8s
LEM Lembang 35.76 209 P **P** **01 17 58.2 +1.5**
comp=Z,456nm,1.0s,comp=Z,23µm
LWLI Liwa 35.89 215 P **P** **01 17 58.3 +0.4**
comp=Z,95nm,0.7s
DBJI Dramaga 35.90 210 P **P** **01 17 59.7 +1.9**
comp=Z,104nm,1.3s
KASI Kota Agung 36.10 214 P **P** **01 18 00.3 +0.9**
comp=Z,66nm,0.9s
KOLN Koldanda 36.13 283 eP **P** **01 17 59.9 -0.1**
comp=Z,327nm,0.8s
CISI Cisompet, Garu 36.33 208 P **P** **01 18 02.6 +1.1**
comp=Z,55nm,0.8s,comp=Z,4µm
PYUN Piuthan 36.64 284 eP **P** **01 18 04.6 +0.4**
comp=Z,667nm,0.9s
YAK Yakutsk 36.86 4 d iP **P** **01 18 04.2 -1.2**
YAK ePP **PnPn** **01 19 35.7 +1.7**
YAK eS **S** **01 23 36.0 -3.2**
YAK pmax pmax
comp=Z,770nm,1.0s
YAK Yakutsk 36.86 4 eP **P** **01 18 04.2 -1.2**
comp=Z,671nm,0.9s
YAK ePcP **PcP** **01 20 24.0 0.0**
PEA0 Petropavlovsk- 37.46 33 eP **P** **01 18 09.0 -1.6**
PEA0 eScP **ScP** **01 24 01.3 +0.9**
PEA0B Petropavlovsk- 37.46 33 eP **P** **01 18 09.7 -0.9**
comp=Z,45nm,0.6s
PEA0B eS **S** **01 23 49.5 +0.9**
PETK Petropavlovsk- 37.46 33 P **P** **01 18 09.4 -1.2**
comp=Z,35nm,0.8s,baz=193,slow=2.2,SNR=62
PETK PcP **PcP** **01 20 26.8 +0.7**
comp=Z,8.4nm,0.7s,baz=132,slow=2.1,SNR=3.5
PETK S **S** **01 23 49.4 +0.7**
comp=Z,10nm,1.0s,baz=271,slow=19,SNR=6.0
PETK ScP **ScP** **01 24 01.2 +0.8**
comp=Z,18nm,1.1s,baz=245,slow=3.4,SNR=6.0
PATS Pohnpei 37.56 113 eP **P** **01 18 12.0 +0.1**
comp=Z,872nm,1.1s
CHLP Challavanipeta 37.60 268 eP **P** **01 18 12.2 +0.1**
CHLP lAmb lAmb 01 18 14.9
comp=Z,856nm,1.1s
CHLP epP **pP** **01 18 44.5 +1.8**
CHLP ePcP **PcP** **01 20 27.7 +0.6**
CHLP eS **S** **01 23 51.6 +0.1**
PET Petropavlovsk 37.89 34 ⇓i P **P** **01 18 13.2 -1.0**
PET eS **S** **01 23 49.9 -5.1**
PET pmax pmax
comp=Z,800nm,3.4s
PET pmax pmax
comp=Z,325nm,1.0s
PET MLR MLR
comp=Z,500nm,15.0s
PET MLR MLR
comp=Z,500nm,17.0s
PET Petropavlovsk 37.89 34 eP **P** **01 18 12.7 -1.4**
comp=Z,240nm,0.9s
PET eS **S** **01 24 03.8 +8.7**
KRAR Krasnoyarsk 38.07 332 d iP **P** **01 18 14.7 -0.9**
KRAR pmax pmax
comp=Z,291nm,1.1s
ZSN Zaisan 38.21 316 ⇓i P **P** **01 18 14.1 -2.9**
comp=Z,701nm,1.4s
ZSN i pP **pP** **01 18 44.1 -3.6**
ZSN i PP **PP** **01 19 43.9 -3.2**
VIS Vishakhapatnam 38.50 267 eP **P** **01 18 20.9 +1.1**
MTN Manton Dam 38.60 169 eP **P** **01 18 19.9 -0.6**
comp=Z,1µm,1.5s
MA2 Magadan 38.93 21 eP **P** **01 18 20.7 -2.1**
MK01 Makanchi Array 39.33 314 eP **P** **01 18 25.7 -0.7**
MK31 Makanchi Array 39.34 314 i P **P** **01 18 25.9 -0.6**
MK31 pmax pmax
comp=Z,291nm,1.1s
MK31 Makanchi Array 39.34 314 eP **P** **01 18 26.2 -0.3**
MKAR Makanchi Array 39.34 314 P **P** **01 18 26.1 -0.4**
comp=Z,93nm,0.6s,baz=98,slow=10.0,SNR=609
MKAR pP **pP** **01 18 58.1 +0.9**
comp=Z,242nm,1.0s,baz=102,slow=10,SNR=11
MKAR PP **PP** **01 20 01.3 +1.8**
comp=Z,43nm,0.9s,baz=101,slow=13,SNR=4.5
MKAR PcP **PcP** **01 20 32.1 0.0**
comp=Z,95nm,1.1s,baz=102,slow=5.1,SNR=7.9
MKAR ScP **ScP** **01 24 08.1 +0.3**
comp=Z,9.6nm,0.8s,baz=126,slow=3.7,SNR=6.1
MKAR LR LR 01 35 51.1
comp=Z,1µm,18.4s,baz=104,slow=38
MAKZ Makanchi 39.55 314 eP **P** **01 18 28.0 -0.2**

MAKZ pmax pmax
comp=Z,441nm,1.1s
MAKZ Makanchi 39.55 314 *e*P **P 01 18 28.0 -0.2**
comp=Z,441nm,1.1s
SHLS Shalkode 40.06 308⇓*i*P **P 01 18 32.8 +0.1**
comp=Z,3μm,1.2s
SHLS *i* PP **PP 01 20 07.5 -0.1**
SHLS *e*S **S 01 24 29.4 +1.0**
RABL Rabaul 40.11 133 *e*P **P 01 18 35.4 +2.2**
comp=Z,363nm,0.7s
PVM Polavaram 40.19 267 *e*P **P 01 18 32.9 -0.9**
PVM IAmb IAmb 01 18 35.9
comp=Z,430nm,1.1s
PVM *e* 01 18 54.3
PVM *e*pP **pP 01 19 07.6 +2.9**
PVM *e*PcP **PcP 01 20 35.6 +0.3**
PVM *e*S **S 01 24 30.6 +0.2**
UZB Uzynbulak 40.67 307⇓*i*P **P 01 18 37.9 +0.2**
comp=Z,4μm,1.4s
UZB *i* pP **pP 01 19 09.9 +1.3**
UZB *i* PP **PP 01 20 14.3 +0.2**
UZB *e*S **S 01 24 36.8 -0.6**
ZAA0 Zalesovo Array 40.72 325 *e*P **P 01 18 36.7 -0.9**
ZALV Zalesovo Beam 40.72 325 P **P 01 18 36.6 -1.0**
comp=Z,256nm,0.7s,baz=110,slow=7.6,SNR=589
ZALV pP **pP 01 19 09.2 +0.6**
comp=Z,276nm,1.1s,baz=111,slow=8.1,SNR=6.1
ZALV PcP **PcP 01 20 35.0 -1.3**
comp=Z,38nm,0.7s,baz=112,slow=4.7,SNR=7.0
ZALV ScP **ScP 01 24 12.2 -0.7**
comp=Z,40nm,1.0s,baz=116,slow=3.4,SNR=15
ZALV ScS **ScS 01 28 25.7 -2.0**
comp=Z,2.2nm,0.7s,baz=137,slow=13,SNR=3.5
ZALV LR LR 01 37 19.0
comp=Z,721nm,19.8s,baz=92,slow=39
DDI Dehra Dun 40.74 288 *e*P **P 01 18 38.6 +0.3**
PMG Port Moresby 41.25 144 P **P 01 18 43.4 +1.0**
comp=Z,163nm,0.9s,baz=355,slow=5.0,SNR=38
PMG Port Moresby 41.25 144*de*P **P 01 18 43.1 +0.7**
PMG pmax pmax
comp=Z,1μm,1.1s
PMG Port Moresby 41.25 144 *e*P **P 01 18 42.5 0.0**
comp=Z,295nm,1.0s
SMLA Simla 41.45 289 *i* P **P 01 18 43.3 -0.6**
NDI New Delhi 41.63 285 *e*P **P 01 18 43.5 -2.0**
NDI *ex* x 01 24 46.0
RPR Rampur 41.80 270 *e*P **P 01 18 46.8 -0.2**
RPR IAmb IAmb 01 18 48.8
comp=Z,428nm,1.1s
RPR *e*pP **pP 01 19 20.4 +2.4**
RPR *e*PcP **PcP 01 20 40.2 -0.3**
RPR *e*ScP **ScP 01 24 17.4 -0.5**
RPR *e*S **S 01 24 54.0 -0.2**
SEM Semipalatinsk 41.81 318⇓*i*P **P 01 18 46.2 -0.4**
comp=Z,4μm,1.1s
SEM *i* pP **pP 01 19 19.1 +1.4**
SEM *i* PP **PP 01 20 25.3 -0.8**
NVS Novosibirsk 41.96 326⇓*i*P **P 01 18 47.0 -0.7**
NVS *i* PPP PPP 01 20 32.4
NVS *e*S **S 01 24 52.8 -2.8**
NVS *e*SSS SSS 01 28 31.1
NVS pmax pmax
comp=Z,638nm,1.7s
NVS pmax pmax
comp=N,233nm,1.6s
NVS pmax pmax
comp=E,326nm,1.5s
NVS smax smax
comp=N,92nm,2.5s
SEY Seymchan 42.01 19*de*P **P 01 18 47.0 -1.0**
MDOK Medeo 42.10 307⇑*i*P **P 01 18 49.9 +0.6**
comp=N,2μm,0.8s
MDOK *i* PP **PP 01 20 28.6 -0.9**
MDOK *e*SS SS 01 28 05.2 -6.0
DHRM DHARAMSHALA 42.11 291 *e*P **P 01 18 48.3 -1.3**
ADKI Addanki 42.16 266 *e*P **P 01 18 51.3 +1.5**
ADKI IAmb IAmb 01 18 52.5
comp=Z,633nm,1.3s
ADKI *e* 01 19 08.5
ADKI *e*pP **pP 01 19 20.8 -0.2**
ADKI *e*PcP **PcP 01 20 42.5 +0.8**
ADKI *e*S **S 01 24 59.2 -0.3**
AAA Alma-Ata 42.19 307 *e*P **P 01 18 50.9 +1.0**
AAA pmax pmax
comp=Z,2μm,6.7s
AAA Alma-Ata 42.19 307⇓*i*P **P 01 18 51.1 +1.2**
comp=Z,2μm,1.2s
AAA *e*PP **PP 01 20 31.4 +1.0**
BHPL Bhopal 42.37 277 *e*P **P 01 18 51.0 -0.5**
KSH Kashi 42.46 302⇓*i*P **P 01 18 55.8 +3.5**
KSH *e*pP pP 01 19 24.4 +1.0
KSH *e*sP sP 01 19 38.5 -0.7
KSH *e*PP **PcP 01 20 39.1 -3.5**
KSH *e*PcP PP 01 20 45.6 +12
KSH *e*ScP **ScP 01 24 23.9 +3.5**
KSH PcS **PcS 01 24 37.4 +2.5**
KSH S **S 01 25 08.8 +5.0**
KSH ScS **ScS 01 28 40.4 +1.1**
KSH pmax pmax
comp=Z,1μm,2.0s
KSH LR LR
comp=Z,1μm,8.5s
KSH LR LR
comp=Z,2μm,9.3s
KSH LR LR
comp=Z,2μm,10.7s
NJS Nagarjunasagar 42.51 267 *e*P **P 01 18 52.3 -0.5**
NJS IAmb IAmb 01 18 54.8
comp=Z,2μm,2.1s
NJS *e*pP **pP 01 19 27.8 +3.8**
NJS *e*PcP **PcP 01 20 42.4 -0.5**
NJS *e*S **S 01 25 04.3 -0.4**
THN Thein Dam 42.59 291⇓*i*P **P 01 18 51.6 -1.6**
THN *ex* x 01 24 19.9
SRSP Sriramsagar 42.64 271 *e*P **P 01 18 52.9 -0.9**
SRSP IAmb IAmb 01 18 55.5
comp=Z,490nm,1.2s
SRSP *e*pP **pP 01 19 27.4 +2.4**
SRSP *e*PcP **PcP 01 20 42.5 -0.9**
SRSP *e*ScP **ScP 01 24 20.4 -0.9**
SRSP *e*S **S 01 25 05.7 -0.9**
KUU Kurty 42.73 308⇓*i*P **P 01 18 54.5 +0.3**
comp=Z,6μm,0.9s
KUU *i* pP **pP 01 19 27.4 +2.0**
KUU *i* PP **PP 01 20 36.3 +0.3**
KURK Kurchatov 42.90 318 *e*P **P 01 18 54.9 -0.5**
KURK Kurchatov 42.90 318 *e*P **P 01 18 54.9 -0.5**
KURK *e*PP **PP 01 20 36.8 -0.8**
KURK ScP **ScP 01 24 21.3 -0.4**
KURK Kurchatov 42.90 318 P **P 01 18 55.1 -0.3**
SNR=241
KURK P **P 01 18 55.1 -0.3**
SNR=241
KURK Kurchatov 42.90 318 P **P 01 18 55.1 -0.3**
SNR=241
HYB Hyderabad 42.91 269 *i* P **P 01 18 57.0 +1.0**
comp=Z,643nm,1.2s
HYB *e*pP **pP 01 19 30.5 +3.3**
HYB *e*PcP **PcP 01 20 44.5 +0.2**
HYB *e*ScP **ScP 01 24 22.0 -0.4**
HYB *e*S **S 01 25 10.0 -0.7**
HYB *e*ScS **ScS 01 28 40.0 -2.5**
HYB Hyderabad 42.91 269 *e*P **P 01 18 56.3 +0.3**
HYBB Hyderabad (bro 42.91 269 *e*P **P 01 18 55.9 -0.1**
HYBB IAmb IAmb 01 18 57.9
comp=Z,573nm,1.3s
HYBB *e*pP **pP 01 19 30.2 +2.9**
HYBB *e*PcP **PcP 01 20 42.5 -1.9**
HYBB *e*S **S 01 25 10.2 -0.5**
KURBB Kurchatov Arra 42.92 318 ScP **ScP 01 24 21.3 -0.5**
comp=Z,7.3nm,0.9s,baz=113,slow=3.7,SNR=5.6
MDRS Chennai 42.93 262 *e*P **P 01 18 55.9 -0.2**
SRLM Srisailam 43.04 267 *e*P **P 01 18 56.3 -0.8**
SRLM IAmb IAmb 01 18 59.0
comp=Z,505nm,1.3s
SRLM *e*pP **pP 01 19 30.9 +2.6**
SRLM *e*ScP **ScP 01 24 21.7 -1.3**
SRLM *e*S **S 01 25 12.4 -0.1**
TKM2 Tokmak 2 43.12 306 *e*P **P 01 18 58.0 +0.4**
TKM2 pmax pmax
comp=Z,290nm,0.8s
TKM2 Tokmak 2 43.12 306 *e*P **P 01 18 58.0 +0.4**
comp=Z,295nm,0.8s
TKM2 *e*PcP **PcP 01 20 44.9 0.0**

SKHT Srikalahasti 43.15 263 *e*P **P 01 18 58.3 +0.4**
SKHT IAmb IAmb 01 19 00.5
comp=Z,996nm,1.6s
SKHT *e* 01 19 33.4
SKHT *e*PcP **PcP 01 20 44.5 -0.6**
SKHT *e*ScP **ScP 01 24 21.6 -1.8**
SKHT *e*S **S 01 25 15.1 +0.9**
RCLA Racherla 43.21 266 *e*P **P 01 18 57.2 -1.1**
RCLA IAmb IAmb 01 19 00.3
comp=Z,349nm,1.3s
RCLA *e*pP **pP 01 19 31.9 +2.2**
RCLA *e*ScP **ScP 01 24 23.1 -0.4**
RCLA *e*S **S 01 25 15.4 +0.5**
FITZ Fitzroy Crossi 43.23 178 P **P 01 18 58.3 -0.1**
comp=Z,191nm,0.7s,baz=3.4,slow=7.4,SNR=309
FITZ Fitzroy Crossi 43.23 178 *e*P **P 01 18 57.9 -0.4**
comp=Z,207nm,0.8s
COEN Coen 43.31 152 *e*P **P 01 19 00.2 +1.1**
comp=Z,445nm,0.9s
FRU Bishkek 43.82 306⇓*i*P **P 01 19 03.0 0.0**
FRU *i* 01 19 36.5
FRU *i* 01 20 44.0
FRU *e* 01 29 36.0
FRU pmax pmax
comp=Z,720nm,1.8s
AAK Ala-Archa 43.88 306 P **P 01 19 04.2 +0.5**
comp=Z,50nm,0.8s,baz=97,slow=6.7,SNR=129
AAK PcP **PcP 01 20 47.7 +0.3**
comp=Z,35nm,0.9s,baz=193,slow=4.9,SNR=4.3
AAK ScP **ScP 01 24 26.8 +0.7**
comp=Z,9.4nm,1.0s,baz=39,slow=3.6,SNR=3.6
AAK Ala-Archa 43.88 306 *e*P **P 01 19 04.1 +0.5**
comp=Z,121nm,1.0s
AAK *e*PcP **PcP 01 20 47.5 +0.1**
AAK *e*ScP **ScP 01 24 26.2 0.0**
AAK Ala-Archa 43.88 306 P **P 01 19 04.4 +0.7**
SNR=68
AAK Ala-Archa 43.88 306 P **P 01 19 04.4 +0.7**
SNR=68
EKS2 Erkin-Say 44.41 306 *e*P **P 01 19 08.3 +0.5**
EKS2 pmax pmax
comp=Z,150nm,1.1s
EKS2 Erkin-Say 44.41 306 *e*P **P 01 19 08.3 +0.5**
comp=Z,148nm,1.1s
EKS2 *e*PcP **PcP 01 20 49.6 +0.4**
EKS2 *e*ScP **ScP 01 24 25.8 -2.5**
KLRI Killari 44.48 270 *e*P **P 01 19 07.2 -1.4**
KLRI IAmb IAmb 01 19 10.2
comp=Z,2μm,0.9s
KLRI *e*pP **pP 01 19 42.3 +2.3**
KLRI *e*PcP **PcP 01 20 49.3 -0.4**
KLRI *e*S **S 01 25 32.0 -1.5**
KWAJ Kwajalein Atol 44.56 104 *e*P **P 01 19 09.3 +0.2**
KWAJ pmax pmax
comp=Z,460nm,1.3s
KWAJ Kwajalein Atol 44.56 104 *e*P **P 01 19 09.3 +0.2**
comp=Z,462nm,1.4s
URV Uravakonda 44.92 266 *e*P **P 01 19 11.3 -0.7**
URV IAmb IAmb 01 19 14.0
comp=Z,470nm,1.4s
URV *e*pP **pP 01 19 42.9 -0.6**
URV *e*PcP **PcP 01 20 51.0 -0.2**
URV *e*ScP **ScP 01 24 30.3 -0.4**
URV *e*S **S 01 25 39.6 -0.2**
MNAS Manas 45.33 305 P **P 01 19 15.4 +0.3**
MNAS pmax pmax
comp=Z,527nm,1.5s
WRAB Tennant Creek 46.13 166 *e*P **P 01 19 21.8 +0.5**
WRAB Tennant Creek 46.13 166 *e*P **P 01 19 21.8 +0.5**
comp=Z,319nm,0.8s
WRAB *e*S **S 01 25 54.5 -2.3**
WRA Warramunga Arr 46.13 166 P **P 01 19 21.8 +0.3**
comp=Z,266nm,0.7s,baz=348,slow=8.4,SNR=275
WRA pP **pP 01 19 52.0 -1.0**
comp=Z,63nm,0.7s,baz=344,slow=8.3,SNR=4.2
WRA ScP **ScP 01 24 35.9 +0.5**
comp=Z,4.1nm,1.0s,baz=341,slow=4.4,SNR=6.4
WRA S **S 01 25 55.1 -1.8**
comp=Z,12nm,0.9s,baz=345,slow=14,SNR=17
WRA PKP2ab 01 51 46.1
comp=Z,2.9nm,1.0s,baz=174,slow=3.1,SNR=4.9
WB2 Warramunga Arr 46.14 166 *e*P **P 01 19 22.0 +0.6**
comp=Z,357nm,0.8s
OTUK Ortayu 46.23 313 P **P 01 19 22.1 +0.1**
OTUK pmax pmax
comp=Z,693nm,1.0s
SMY Shemya 46.27 40 *e*P **P 01 19 21.8 -0.3**
SMY pmax pmax
comp=Z,300nm,1.3s
SMY Shemya 46.27 40 *e*P **P 01 19 21.8 -0.3**
comp=Z,304nm,1.3s
BRZS Berezniki 46.36 316⇓*i*P **P 01 19 22.8 -0.2**
comp=Z,400nm,1.1s
BRZS *i* PP **PP 01 21 13.5 -0.4**
TIXI Tiksi 46.40 2 LR LR 01 42 47.5
comp=Z,683nm,18.1s,baz=194,slow=41
TIXI Tiksi 46.40 2*de*P **P 01 19 21.2 -1.7**
TIXI pmax pmax
comp=Z,253nm,1.0s
TIXI Tiksi 46.40 2 *e*P **P 01 19 21.0 -1.9**
TIXI *e*PcP **PcP 01 20 55.0 -0.3**
TIXI *e*ScP **ScP 01 24 33.6 -2.1**
MBWA Marble Bar 46.43 186 *e*P **P 01 19 22.8 -0.9**
comp=Z,120nm,0.8s
MBWA Marble Bar 46.43 186 P **P 01 19 23.7 0.0**
SNR=5.5
POO Poona 46.82 272 *e*P **P 01 19 26.7 -0.3**
KK31 Karatay Array 46.84 306 *e*P **P 01 19 26.3 -0.5**
KK31 pmax pmax
comp=Z,31nm,0.5s
KKAR Karatay Array 46.84 306 *e*P **P 01 19 26.8 0.0**
KKAR *e* 01 20 57.4
KKAR pmax pmax
comp=Z,34nm,0.4s
KKAR Karatay Array 46.84 306 *e*P **P 01 19 26.8 0.0**
comp=Z,34nm,0.4s
KKAR *e*PcP **PcP 01 20 57.4 -0.1**
KKAR *e*ScP **ScP 01 24 38.2 0.0**
IUG Iuzhnay 47.14 305⇓*i*P **P 01 19 29.7 +0.5**
comp=Z,3μm,1.4s
IUG *i* PP **PP 01 21 21.7 +0.5**
TRD Trivandrum 47.77 258 *e*P **P 01 19 34.1 -0.2**
GOA Goa 47.83 268 *e*P **P 01 19 34.5 -0.2**
KBL Kabul 48.02 295 *e*P **P 01 19 36.9 +0.7**
KBL pmax pmax
comp=Z,840nm,1.0s
KBL Kabul 48.02 295 *e*P **P 01 19 36.9 +0.7**
comp=Z,838nm,0.9s
KBL *e*ScP **ScP 01 24 44.4 +0.8**
VOSK Vostochnaya 48.02 319 *e*P **P 01 19 34.8 -0.9**
VOSK pmax pmax
comp=Z,670nm,1.8s
VOSK Vostochnaya 48.02 319 *e*P **P 01 19 34.8 -0.9**
comp=Z,668nm,1.8s
BVA0 Borovoye Array 48.44 319 *i* P **P 01 19 37.7 -1.2**
BVA0 pmax pmax
comp=Z,199nm,1.0s
BVAR Borovoye Array 48.44 319 P **P 01 19 38.4 -0.5**
comp=Z,31nm,0.3s,baz=107,slow=8.9,SNR=336
BVAR pP **pP 01 20 12.3 +1.5**
comp=Z,24nm,0.8s,baz=113,slow=11,SNR=3.1
BVAR PcP **PcP 01 21 03.1 +0.1**
comp=Z,87nm,0.8s,baz=110,slow=8.5,SNR=12
BVAR ScP **ScP 01 24 45.1 +0.4**
comp=Z,33nm,1.0s,baz=94,slow=4.5,SNR=10
BVAR ScS **ScS 01 29 15.2 -1.9**
comp=Z,1.9nm,0.8s,baz=96,slow=9.1,SNR=3.9
BRVK Borovoye 48.51 319 *e*P **P 01 19 39.2 -0.2**
BRVK pmax pmax
comp=Z,520nm,1.3s
BRVK Borovoye 48.51 319 *e*P **P 01 19 39.2 -0.2**
comp=Z,525nm,1.3s
BRVK *e*pP **pP 01 20 10.9 -0.4**
BRVK *e*PcP **PcP 01 21 02.8 -0.4**
BRVK *e*ScP **ScP 01 24 44.8 -0.2**
BRVK Borovoye 48.51 319 P **P 01 19 39.4 0.0**
SNR=175
BRVK P **P 01 19 39.4 0.0**
SNR=175
BRVK Borovoye 48.51 319 P **P 01 19 39.4 0.0**
SNR=175
NRIK Noril'sk 48.97 344 P **P 01 19 41.7 -1.0**
comp=Z,379nm,1.2s,baz=132,slow=8.2,SNR=250
NRIK PcP **PcP 01 21 05.1 +0.5**
comp=Z,126nm,0.9s,baz=117,slow=2.3,SNR=7.4

NRIK ScP **ScP 01 24 47.1 +0.4**
comp=Z,22nm,1.0s,baz=106,slow=5.9,SNR=4.0
NRIK LR LR 01 44 56.9
comp=Z,830nm,18.9s,baz=144,slow=41
HNR Honiara 49.19 130 P **P 01 19 45.8 +0.8**
comp=Z,93nm,0.5s,baz=160,slow=16,SNR=8.9
HNR Honiara 49.19 130 *e*P **P 01 19 45.0 0.0**
HNR pmax pmax
comp=Z,160nm,0.8s
HNR Honiara 49.19 130 *e*P **P 01 19 45.0 0.0**
comp=Z,162nm,0.8s
ZRNK Zerenda 49.24 319 *e*P **P 01 19 44.7 -0.3**
ZRNK pmax pmax
comp=Z,660nm,1.5s
ZRNK Zerenda 49.24 319 *e*P **P 01 19 44.7 -0.3**
comp=Z,664nm,1.5s
BHJ Bhuj 49.32 280 *e*P **P 01 19 45.7 -0.4**
AS31 Alice Springs 49.67 168 *e*P **P 01 19 49.4 +0.8**
comp=Z,21nm,0.8s
ASAR Alice Springs 49.67 168 P **P 01 19 49.2 +0.7**
comp=Z,53nm,0.6s,baz=354,slow=14,SNR=346
ASAR pP **pP 01 20 21.4 +0.8**
comp=Z,16nm,0.5s,baz=352,slow=7.4,SNR=3.4
ASAR ScP **ScP 01 24 50.9 +0.6**
comp=Z,5.5nm,1.1s,baz=344,slow=3.0,SNR=4.6
ASAR S **S 01 26 48.1 +1.4**
comp=Z,4.6nm,0.9s,baz=354,slow=16,SNR=8.4
ASAR ScS **ScS 01 29 24.9 -1.3**
comp=Z,1.4nm,0.8s,baz=336,slow=7.7,SNR=5.4
ASAR PKPPKP **P'P'df 01 50 45.0 +5.2**
comp=Z,1.3nm,0.8s,baz=153,slow=2.1,SNR=5.6
AS01 Alice Springs 49.67 168 *e*P **P 01 19 48.4 -0.2**
BILL Bilibino 49.71 19*de*P **P 01 19 46.6 -1.8**
BILL *e**PP pP 01 20 12.5 -7.9
BILL *e* 01 21 06.5
BILL *e* 01 21 39.3
BILL *e*PPP PPP 01 22 38.6
BILL *e*S **S 01 26 46.3 0.0**
BILL *i* 01 29 25.3
BILL pmax pmax
comp=Z,43nm,1.1s
BILL Bilibino 49.71 19 *e*P **P 01 19 48.2 -0.2**
comp=Z,158nm,1.2s
BILL *e*PcP **PcP 01 21 07.7 +0.4**
BILL *e*ScP **ScP 01 24 50.4 +0.6**
CTAO Charters Tower 50.08 152 *e*P **P 01 19 52.3 +0.6**
CTAO pmax pmax
comp=Z,180nm,1.1s
CTAO Charters Tower 50.08 152 *e*P **P 01 19 52.3 +0.6**
comp=Z,180nm,1.1s
MIDW Midway 51.95 73 *e*P **P 01 20 05.5 -0.2**
comp=Z,77nm,0.9s
TARA Tarawa 52.79 109 *e*P **P 01 20 10.9 -1.2**
comp=Z,204nm,1.1s
ATKA Atka Island 53.20 43 *e*P **P 01 20 13.8 -0.7**
comp=Z,428nm,1.6s
SVE Sverdlovsk 54.65 323*c i*P **P 01 20 24.9 -0.1**
SVE pmax pmax
comp=Z,1μm,1.2s
ARU Arti 55.75 322 P **P 01 20 32.9 +0.1**
comp=Z,643nm,1.0s,baz=95,slow=5.5,SNR=29
ARU Arti 55.75 322*d i*P **P 01 20 32.1 -0.8**
ARU *PP **pP 01 21 04.4 -1.1**
ARU 01 21 28.3
ARU 01 22 36.7
ARU PPP PPP 01 23 51.2
ARU S **S 01 28 09.7 +1.2**
ARU 01 30 02.9
ARU SS **SS 01 31 49.6 -6.0**
ARU pmax pmax
comp=Z,2μm,1.7s
ARU Arti 55.75 322 *e*P **P 01 20 32.0 -0.8**
comp=Z,875nm,1.0s
ARU *e*ScP **ScP 01 25 15.4 -0.9**
AKTO Aktyubinsk 55.76 315 P **P 01 20 32.9 -0.1**
comp=Z,102nm,0.9s,baz=94,slow=7.9,SNR=185
AKTO Aktyubinsk 55.76 315 P **P 01 20 32.4 -0.7**
AKTO pmax pmax
comp=Z,252nm,1.1s
GAMB Gambell 56.21 29 *e*P **P 01 20 35.8 -0.2**
comp=Z,161nm,1.7s
GAMB *e*PcP **PcP 01 21 32.0 0.0**
GAMB *e*ScP **ScP 01 25 19.4 +1.2**
ASHT Ashkhabad 56.23 300 P **P 01 20 37.8 +1.1**
ASHT pmax pmax
comp=Z,2μm,1.4s
GEYT Alibeck 56.45 300 P **P 01 20 39.4 +1.2**
comp=Z,470nm,0.9s,baz=64,slow=3.4,SNR=991
GEYT ScP **ScP 01 25 20.9 +1.0**
comp=Z,18nm,1.1s,baz=66,slow=3.5,SNR=5.2
NIKH Nikolski High 56.49 42 *e*P **P 01 20 37.6 -0.6**
comp=Z,159nm,0.8s
EIDS Eidsvold 56.81 151 *e*P **P 01 20 41.2 +0.5**
comp=Z,73nm,0.6s
EIDS *e*PP **PP 01 22 45.5 -3.3**
SOKR Solikamsk 56.99 326*d i*P **P 01 20 39.6 -1.9**
SOKR S **S 01 28 24.8 +0.1**
SOKR pmax pmax
comp=Z,560nm,0.8s
UNV Unalaska Valle 57.91 41 *e*P **P 01 20 47.3 -0.9**
comp=Z,96nm,1.1s
NWAO Narrogin (SRO) 58.33 187 *e*P **P 01 20 51.9 +0.7**
NWAO pmax pmax
comp=Z,130nm,0.9s
NWAO Narrogin (SRO) 58.33 187 *e*P **P 01 20 51.9 +0.7**
comp=Z,125nm,0.9s
AKUT Akutan 58.35 41 *e*P **P 01 20 49.4 -1.7**
comp=Z,210nm,1.1s
BBOO Buckleboo 58.97 168 *e*P **P 01 20 56.0 +0.3**
comp=Z,121nm,1.0s
STKA Stephens Creek 59.34 163 P **P 01 20 58.7 +0.5**
comp=Z,66nm,0.8s,baz=344,slow=6.6,SNR=139
STKA LR LR 01 48 49.6
comp=Z,370nm,18.4s,baz=333,slow=38
STKA PKP2bc 01 50 39.0
comp=Z,5.4nm,1.1s,baz=142,slow=5.3,SNR=5.9
STKA Stephens Creek 59.34 163 *e*P **P 01 20 58.8 +0.5**
comp=Z,18nm,0.9s
STKA ⇑*e* 01 50 39.0
BIDO Bidbid 59.46 283 P **P 01 21 00.2 +0.8**
SNR=38
BIDO Bidbid 59.46 283 P **P 01 21 00.2 +0.8**
SNR=38
SMDO Samad 59.66 283 P **P 01 21 01.6 +0.7**
SNR=42
SMDO Samad 59.66 283 P **P 01 21 01.6 +0.7**
SNR=42
FALS False Pass 59.71 40 *e*P **P 01 21 00.3 -0.2**
comp=Z,198nm,1.3s
DGAR Diego Garcia 59.80 244 *e*P **P 01 21 01.2 -0.6**
DGAR pmax pmax
comp=Z,400nm,1.3s
DGAR Diego Garcia 59.80 244 *e*P **P 01 21 01.2 -0.6**
comp=Z,398nm,1.4s
BANOM Banah 60.40 287 *i* P **P 01 21 07.0 +1.2**
SNR=10
BANOM Banah 60.40 287 P **P 01 21 07.2 +1.4**
SNR=15
UOSS Minazif 60.75 286 *e*P **P 01 21 07.9 -0.2**
comp=Z,7.4nm,1.0s
HATD Hatta, Dubai 60.84 285 *i* P **P 01 21 09.4 +0.6**
SNR=37
HATD Hatta, Dubai 60.84 285 P **P 01 21 09.2 +0.4**
SNR=23
HATD P **P 01 21 09.2 +0.4**
SNR=23
HATD Hatta, Dubai 60.84 285 P **P 01 21 09.2 +0.4**
SNR=23
ARQ Araqi 60.93 284 P **P 01 21 10.1 +0.7**
SNR=42
ARQ Araqi 60.93 284 P **P 01 21 10.1 +0.7**
SNR=42
ASHO Ashiyiah 60.95 285 *i* P **P 01 21 10.3 +0.8**
SNR=70
ASHO Ashiyiah 60.95 285 P **P 01 21 10.4 +0.8**
SNR=32
ASHO P **P 01 21 10.4 +0.8**
SNR=32
ASHO Ashiyiah 60.95 285 P **P 01 21 10.4 +0.8**
SNR=32
NAZ Nazwa, Dubai 61.21 286 *i* P **P 01 21 12.0 +0.8**
SNR=55
NAZ Nazwa, Dubai 61.21 286 P **P 01 21 11.9 +0.6**
SNR=29
NAZ Nazwa, Dubai 61.21 286 P **P 01 21 11.9 +0.6**
SNR=29

FAQ	Al Faqa, Dubai	61.34	285	*i*	P		P	01 21 12.7	+0.6	
	SNR=92									
FAQ	Al Faqa, Dubai	61.34	285		P		P	01 21 12.5	+0.4	
FAQ	Al Faqa, Dubai	61.34	285		P		P	01 21 12.5	+0.4	
	SNR=30									
SDPT	Sand Point	61.37	39	*e*	P		P	01 21 11.0	-0.8	
	comp=Z,163nm,0.7s									
ARMA	Armidale	61.44	153	*e*	P		P	01 21 13.5	+0.8	
	comp=Z,111nm,1.0s									
ASUD	Al Ashush, Dub	61.60	285	*i*	P		P	01 21 15.0	+1.0	
	SNR=15									
ASUD	Al Ashush, Dub	61.60	285		P		P	01 21 14.9	+1.0	
	SNR=21									
CHGN	Chignik	62.46	38	*e*	P		P	01 21 17.8	-1.2	
DZM	Mont Dzumac	62.58	135		LR		LR	01 44 16.9		
	comp=Z,1µm,20.8s,baz=322,slow=32									
TT01	Tatalina	63.19	30	*e*	P		P	01 21 24.3	+0.5	
TTA	Tatalina	63.20	30	*e*	P		P	01 21 24.3	+0.4	
TTA					pmax		pmax			
	comp=Z,170nm,1.6s									
TTA	Tatalina	63.20	30	*e*	P		P	01 21 24.3	+0.4	
	comp=Z,170nm,1.6s									
SHAO	Shalim	63.40	278		P		P	01 21 26.3	+0.3	
	SNR=14									
SHAO	Shalim	63.40	278		P		P	01 21 26.3	+0.3	
	SNR=14									
SVW2	Sparrevohn	63.53	32	*e*	P		P	01 21 26.6	+0.5	
	comp=Z,171nm,1.8s									
CAN	Canberra	64.82	158	*e*	P		P	01 21 36.6	+1.8	
CAN					pmax		pmax			
	comp=Z,65nm,0.8s									
CAN	Canberra	64.82	158	*e*	P		P	01 21 36.5	+1.8	
	comp=Z,65nm,0.8s									
RBK	Rabkut	64.84	278		P		P	01 21 35.5	0.0	
	SNR=102									
RBK	Rabkut	64.84	278		P		P	01 21 35.5	0.0	
	SNR=102									
CAST	Castle Rocks	64.93	30	*e*	P		P	01 21 35.9	+0.7	
	comp=Z,110nm,1.0s									
PPLA	Purkeypile	64.94	30	*e*	P		P	01 21 36.1	+0.7	
	comp=Z,108nm,0.9s									
RSO	Redoubt South	64.98	33	*e*	P		P	01 21 35.9	+0.2	
OHAK	Old Harbor	65.16	36	*e*	P		P	01 21 36.2	-0.4	
	comp=Z,316nm,1.3s									
SPU	Mount Spurr	65.22	32	*e*	P		P	01 21 37.3	+0.1	
COLD	Coldfoot	65.27	25	*e*	P		P	01 21 37.9	+0.6	
	comp=Z,118nm,1.4s									
MLY	Manley	65.31	28	*e*	P		P	01 21 38.4	+0.7	
	comp=Z,108nm,0.9s									
BPAW	Bear Paw Mtn.	65.33	29	*e*	P		P	01 21 38.1	+0.4	
	comp=Z,50nm,0.6s									
BPAW				*e*	PcP		PcP	01 22 09.4	+0.6	
BPAW				*e*	S		S	01 30 05.2	-5.0	
KTH	Kantishna Hill	65.43	29	*e*	P		P	01 21 38.6	+0.2	
	comp=Z,67nm,1.1s									
KDAK	Kodiak Island	65.45	36	*e*	P		P	01 21 53.6	+15	
	comp=Z,43nm,0.5s,baz=295,slow=4.5,SNR=9.8									
KDAK	Kodiak Island	65.45	36	*e*	P		P	01 21 38.6	+0.1	
KDAK					pmax		pmax			
	comp=Z,960nm,1.8s									
KDAK	Kodiak Island	65.45	36	*e*	P		P	01 21 38.6	+0.1	
	comp=Z,955nm,1.8s									
DGRG	David-gareji	65.50	306		P		P	01 21 40.1	+0.7	
DGRG	David-gareji	65.50	306	*e*	P		P	01 21 40.0	+0.7	
KLMR	Klimovskoe	65.56	328	*e*	P		P	01 21 34.4	-4.8	
KLMR				*e*				01 22 06.5		
KLMR				*e*	*SP		pP	01 22 19.8	+6.9	
KLMR					pmax		pmax			
	comp=Z,1µm,1.3s									
HOM	Homer	65.64	34	*e*	P		P	01 21 42.1	+2.3	
	comp=Z,390nm,1.4s									
TRF	Thorofare Moun	65.72	29	*e*	P		P	01 21 40.8	+0.3	
	comp=Z,153nm,1.7s									
LHI	Lord Howe Isla	65.73	147	*e*	P		P	01 21 41.1	+0.4	
	comp=Z,150nm,1.0s									
TMCR	Tamitsa	65.76	331	*e*	P		P	01 21 40.4	0.0	
TMCR					pmax		pmax			
	comp=Z,964nm,1.5s									
TBLG	Delisi	65.90	306		P		P	01 21 43.6	+1.7	
TBLG	Delisi	65.90	306	*e*	P		P	01 21 43.5	+1.7	
GUDG	Gudauri	65.93	307		P		P	01 21 43.9	+1.7	
VRH	Novokhopyorsk	65.97	317	*e*	P		P	01 21 41.6	-0.4	
VRH					pmax		pmax			
	comp=Z,1µm,1.2s									
BRLK	Bradley Lake	66.01	33	*e*	P		P	01 21 41.2	-1.0	
	comp=Z,165nm,1.4s									
ZEI	Tsey	66.27	308	⇓	*i* P		P	01 21 44.5	+0.1	
ZEI					pmax		pmax			
	comp=Z,2µm,1.1s									
GNI	Garni	66.27	305		P		P	01 21 45.7	+1.3	
	comp=Z,278nm,1.1s,baz=170,slow=6.8									
GNI	Garni	66.27	305	*i*	P		P	01 21 45.6	+1.2	
	SNR=98									
GNI	Garni	66.27	305	*de*	P		P	01 21 45.6	+1.3	
GNI					pmax		pmax			
	comp=Z,3µm,1.5s									
GNI	Garni	66.27	305	*e*	P		P	01 21 45.7	+1.3	
	comp=Z,1µm,1.5s									
GNI	Garni	66.27	305		P		P	01 21 45.8	+1.3	
	SNR=78									
MCK	McKinley	66.28	29	*e*	P		P	01 21 43.6	-0.2	
MCK					pmax		pmax			
	comp=Z,120nm,1.0s									
MCK	McKinley	66.28	29	*e*	P		P	01 21 43.6	-0.2	
	comp=Z,122nm,1.0s									
MCK				*e*	PcP		PcP	01 22 12.7	-0.1	
RC01	Rabbit Creek A	66.35	32	*e*	P		P	01 21 43.8	-0.5	
	comp=Z,531nm,1.9s									
RND	Reindeer	66.37	29	*e*	P		P	01 21 44.0	-0.5	
RND					pmax		pmax			
	comp=Z,320nm,1.2s									
RND	Reindeer	66.37	29	*e*	P		P	01 21 44.0	-0.5	
	comp=Z,324nm,1.2s									
RND				*e*	P'P'df		P'P'df	01 50 15.3	-2.4	
MDM	Murphy Dome	66.38	28	*e*	P		P	01 21 45.0	+0.5	
	comp=Z,209nm,1.0s									
WRH	Wood River Hil	66.52	28	*e*	P		P	01 21 44.9	-0.5	
	comp=Z,173nm,1.3s									
LVZ	Lovozero	66.55	336	*ce*	P		P	01 21 44.8	-0.7	
LVZ					pmax		pmax			
	comp=Z,288nm,1.6s									
LVZ	Lovozero	66.55	336	*e*	P		P	01 21 45.0	-0.5	
	comp=Z,351nm,1.5s									
LVZ				*e*	PcP		PcP	01 22 13.0	-0.8	
PMR	Palmer	66.55	31	*e*	P		P	01 21 45.0	-0.5	
PMR					pmax		pmax			
	comp=Z,340nm,1.5s									
PMR	Palmer	66.55	31	*e*	P		P	01 21 45.0	-0.5	
	comp=Z,340nm,1.5s									
COLA	College	66.55	28	*e*	P		P	01 21 46.2	+0.7	
COLA					pmax		pmax			
	comp=Z,63nm,0.9s									
COLA	College	66.55	28	*e*	P		P	01 21 46.2	+0.7	
	comp=Z,63nm,0.9s									
CCB	Clear Creek Bu	66.61	28	*e*	P		P	01 21 45.2	-0.7	
	comp=Z,57nm,1.2s									
ONI	Oni	66.63	307		P		P	01 21 47.6	+1.1	
ONI	Oni	66.63	307	*e*	P		P	01 21 47.6	+1.1	
SEW	Seward	66.66	33	*e*	P		P	01 21 46.0	-0.3	
	comp=Z,275nm,1.2s									
KBZ	Khabaz	66.77	309		P		P	01 21 47.7	+0.5	
	comp=Z,516nm,1.0s,baz=93,slow=5.3,SNR=462									
KBZ					LR		LR	01 56 24.1		
	comp=Z,547nm,18.3s,baz=70,slow=41									
KVAR	Kislovodsk Arr	66.85	309		P		P	01 21 48.9	+1.0	
	comp=Z,2µm,1.3s,baz=310,slow=1.8									
KIV	Kislovodsk	66.86	309	*i*	P		P	01 21 48.9	+0.9	
	SNR=17									
KIV	Kislovodsk	66.86	309	*d*	*i* P		P	01 21 48.7	+0.7	
KIV					*PP		pP	01 22 20.5	-1.3	
KIV				*e*				01 24 16.8		
KIV					ePPP		PPP	01 25 53.8		
KIV					eS		S	01 30 30.6	+1.0	
KIV					pmax		pmax			
	comp=Z,2µm,1.2s									
KIV	Kislovodsk	66.86	309	*e*	P		P	01 21 48.5	+0.5	
	comp=Z,3µm,1.3s									
KIV	Kislovodsk	66.86	309		P		P	01 21 48.9	+0.9	
	SNR=308									
KIV					P		P	01 21 48.9	+0.9	
	SNR=308									
KIV	Kislovodsk	66.86	309		P		P	01 21 48.9	+0.9	
	SNR=308									
SML	Sawmill	66.88	31	*e*	P		P	01 21 47.6	-0.2	
SML					pmax		pmax			
	comp=Z,270nm,1.2s									
SML	Sawmill	66.88	31	*e*	P		P	01 21 47.6	-0.2	
	comp=Z,269nm,1.3s									
AKH	Akhalkalaki	66.89	306		P		P	01 21 49.8	+1.4	
AKH	Akhalkalaki	66.89	306	*e*	P		P	01 21 49.7	+1.4	
EAK	Akyaka	66.98	305	⇓	*i* P		P	01 21 50.3	+1.4	
ILAR	Eielson Array	66.98	28		P		P	01 21 47.2	-1.0	
	comp=Z,11nm,0.4s,baz=268,slow=4.6,SNR=172									
ILAR					S		S	01 30 32.5	+2.3	
	comp=Z,1.3nm,1.1s,baz=313,slow=12,SNR=4.6									
ILAR					PKPPKP		P'P'df	01 50 08.8	-7.8	
	comp=Z,1.3nm,1.2s,baz=69,slow=2.1,SNR=5.3									
ILAR					PKP2bc			01 50 15.3		
	comp=Z,0.9nm,1.0s,baz=73,slow=2.0,SNR=4.9									
ILAR					LR		LR	01 55 56.9		
	comp=Z,165nm,18.2s,baz=304,slow=40									
ILB	Eielson Array	66.98	28	*e*	P		P	01 21 47.2	-1.0	
IL1	Eielson Array	66.98	28	*e*	P		P	01 21 46.5	-1.7	
NEY	Neytrino	67.00	308	*d*	*i* P		P	01 21 49.6	+0.6	
NEY					pmax		pmax			
	comp=Z,84nm,1.0s									
APA	Apatity	67.07	335	⇑	*i* P		P	01 21 49.0	+0.2	
APA					*PP		PcP	01 22 16.0	+0.1	
APA					*i* S		S	01 30 28.0	-3.1	
APA					*i*			01 31 38.0		
APA					*i* SS		SS	01 34 50.0	-2.0	
APA					pmax		pmax			
	comp=Z,317nm,1.0s									
APA					MLR		MLR			
	comp=Z,2µm,27.0s									
DHY	Denali Highway	67.08	30	*e*	P		P	01 21 48.5	-0.7	
	comp=Z,60nm,1.2s									
FYU	Fort Yukon	67.31	26	*e*	P		P	01 21 51.4	+1.1	
	comp=Z,173nm,1.2s									
SCM	Sheep Creek Mo	67.35	31	*e*	P		P	01 21 48.1	-2.6	
SCM					pmax		pmax			
	comp=Z,540nm,1.2s									
SCM	Sheep Creek Mo	67.35	31	*e*	P		P	01 21 48.1	-2.6	
	comp=Z,545nm,1.2s									
VORR	Voronezh	67.41	318	⇓	*i* P		P	01 21 50.0	-1.2	
VORR					pmax		pmax			
	comp=Z,2µm,1.6s									
EPOS	Posof	67.42	306	⇓	*i* P		P	01 21 52.9	+1.3	
VMUR	Van-Muradiye	67.43	304	⇓	*i* P		P	01 21 53.0	+1.2	
MOS	Moscow	67.46	322	κ	*i* P		P	01 21 50.6	-0.8	
MOS				*e*				01 22 16.6		
MOS				*e*	S		S	01 30 32.2	-3.9	
MOS				*e*	*SS		sS	01 31 27.4	-7.1	
MOS					pmax		pmax			
	comp=Z,2µm,1.4s									
MOS					pmax		pmax			
	comp=N,624nm,1.3s									
MOS					pmax		pmax			
	comp=E,569nm,1.3s									
MOS					pmax		pmax			
	comp=Z,3µm,1.7s									
MOS					pmax		pmax			
	comp=N,800nm,1.3s									
MOS					pmax		pmax			
	comp=E,700nm,1.2s									
VSR	Storozhevoye	67.54	317	*e*	P		P	01 21 51.3	-0.7	
VSR					pmax		pmax			
	comp=Z,1µm,1.2s									
CHVG	Ch'k'valeri	67.58	308		P		P	01 21 52.9	+0.4	
HOPEN	Hopen	67.62	345	*e*	P		P	01 21 52.1	0.0	
TVAN	Van	67.68	303	⇓	*i* P		P	01 21 53.7	+0.3	
MSVF	Nonsavu	67.81	124	*e*	P		P	01 21 56.0	+1.8	
MSVF					pmax		pmax			
	comp=Z,120nm,0.9s									
MSVF	Nonsavu	67.81	124	*e*	P		P	01 21 56.0	+1.8	
	comp=Z,118nm,0.9s									
MSVF				*e*	P'P'df		P'P'df	01 50 20.3	+5.9	
PAX	Paxson	67.96	30	*e*	P		P	01 21 54.6	+0.1	
PAX					pmax		pmax			
	comp=Z,260nm,1.6s									
PAX	Paxson	67.96	30	*e*	P		P	01 21 54.6	+0.1	
	comp=Z,261nm,1.6s									
GEVA	Gevas	68.00	303	⇓	*i* P		P	01 21 56.1	+0.7	
EATA	Eleskirt	68.01	305	⇓	*i* P		P	01 21 56.9	+1.3	
KLU	Klutina	68.08	31	*e*	P		P	01 21 46.9	-8.4	
	comp=Z,174nm,1.2s									
ARTV	Artvin	68.08	306	⇓	*i* P		P	01 21 56.7	+0.8	
DAGI	Agillar	68.12	306	⇓	*i* P		P	01 21 56.8	+0.8	
OBN	Obninsk	68.18	322		P		P	01 21 55.5	-0.4	
	comp=Z,479nm,1.0s,baz=9.4,slow=1.0,SNR=166									
OBN	Obninsk	68.18	322	*de*	P		P	01 21 55.3	-0.6	
OBN				*e*	*PP		PcP	01 22 23.4	+2.6	
OBN				*e*	*SP		pP	01 22 30.7	+0.9	
OBN				*e*	PPP		PPP	01 26 07.3		
OBN				*i*	S		S	01 30 41.8	-2.9	
OBN				*e*	SS		SS	01 35 12.5	+2.9	
OBN					pmax		pmax			
	comp=Z,1µm,1.4s									
OBN	Obninsk	68.18	322	*e*	P		P	01 21 54.8	-1.1	
	comp=Z,2µm,1.5s									
DIV	Divide	68.23	32	*e*	P		P	01 21 56.9	+0.7	
	comp=Z,477nm,1.2s									
DBOC	Borcka	68.23	307	⇓	*i* P		P	01 21 56.9	+0.3	
DDEM	Demirkent	68.29	306	⇓	*i* P		P	01 21 57.8	+0.7	
DBAD	Bademkaya	68.30	306	⇓	*i* P		P	01 21 57.5	+0.4	
EYAK	Cordova Ski Ar	68.37	32	*e*	P		P	01 21 58.0	+1.1	
	comp=Z,410nm,1.5s									
HOMI	Horasan	68.40	305	⇓	*i* P		P	01 21 59.0	+1.1	
DOT	Dot Lake	68.42	29	*e*	P		P	01 21 56.9	-0.4	
	comp=Z,146nm,0.8s									
TATV	Tatvan	68.54	303	⇓	*i* P		P	01 21 59.6	+0.9	
SIRN	S¨¨rnak	68.71	302	⇓	*i* P		P	01 22 00.2	+0.6	
MENT	Mentasta	68.74	29	*e*	P		P	01 21 60.0	+0.6	
	comp=Z,81nm,0.8s									
BMRM	Bremner River	68.82	32	*e*	P		P	01 22 00.4	+0.5	
	comp=Z,199nm,1.0s									
ERZM	Erzurum	68.84	305	⇓	*i* P		P	01 22 01.7	+1.0	
KEV	Kevo	68.85	338	*e*	P		P	01 21 59.6	-0.2	
KEV					pmax		pmax			
	comp=Z,180nm,1.0s									
KEV	Kevo	68.85	338	*e*	P		P	01 21 59.6	-0.2	
	comp=Z,183nm,1.0s									
SPA0	Spitsbergen Ar	68.89	348	⇓	*i* P		P	01 21 59.3	-0.7	
SPA0					IAmb		IAmb	01 22 00.7		
	comp=Z,361nm,1.1s									
SPA0	Spitsbergen Ar	68.89	348	*e*	P		P	01 21 59.9	-0.1	
SPITS	Spitsbergen Ar	68.89	348		P		P	01 21 59.6	-0.4	
	comp=Z,299nm,1.1s,baz=82,slow=7.7,SNR=242									
RAGM	Ragged Mountai	68.93	32	*e*	P		P	01 22 01.4	+0.8	
	comp=Z,564nm,1.2s									
SOC	Sochi	69.04	309	*d*	*i* P		P	01 22 01.4	-0.1	
SOC				*e*	*PP		PcP	01 22 29.5	+4.8	
SOC				*e*				01 24 31.0		
SOC				*e*	S		S	01 30 55.4	+0.1	
SOC				*e*				01 31 39.6		
SOC				*e*	*SS		ScS	01 31 50.3	+1.2	
SOC					pmax		pmax			
	comp=Z,836nm,1.0s									
BNGL	BINGOL	69.26	304	⇓	*i* P		P	01 22 04.5	+1.3	
EGAK	Eagle	69.37	27	*e*	P		P	01 22 03.1	0.0	
	comp=Z,50nm,0.8s									
EGAK					eS		S	01 30 57.8	-0.6	
KBS	Kingsbay	69.38	349	⇓	*i* P		P	01 22 02.5	-0.5	
KBS					IAmb		IAmb	01 22 03.5		
	comp=Z,142nm,1.2s									
KBS	Kingsbay	69.38	349	*e*	P		P	01 22 02.3	-0.7	
KBS					pmax		pmax			
	comp=Z,445nm,1.1s									
ARA0	ARCESS Array S	69.42	338	*e*	P		P	01 22 02.5	-0.8	
ARCES	ARCESS Array B	69.42	338		P		P	01 22 02.9	-0.4	
	comp=Z,116nm,1.1s,baz=84,slow=8.2,SNR=91									
ARE0	ARCESS Array S	69.42	338	*e*	P		P	01 22 03.4	+0.1	
ARE0					IAmb		IAmb	01 22 04.3		
	comp=Z,331nm,1.3s									
ARE0	ARCESS Array S	69.42	338	*e*	P		P	01 22 03.0	-0.3	
	comp=Z,213nm,1.0s									
BTMN	Batman	69.47	303	⇓	*i* P		P	01 22 04.8	+0.5	
HSPB	Hornsund (broa	69.52	347	⇓	*i* P		P	01 22 03.6	-0.2	
HSPB					IAmb		IAmb	01 22 04.7		
	comp=Z,384nm,1.2s									
BGOL	Bingol	69.61	304	⇓	*i* P		P	01 22 06.0	+0.8	
HAMF	Hammerfest	69.67	340	*e*	P		P	01 22 04.5	-0.4	
HAMF					IAmb		IAmb	01 22 05.5		
	comp=Z,270nm,1.2s									
MACK	Trabzon	69.72	307	⇓	*i* P		P	01 22 06.2	+0.4	
MARD	Mardin	70.01	303	⇓	*i* P		P	01 22 08.5	+0.8	
EUZM	Uzumlu	70.12	305	⇓	*i* P		P	01 22 09.5	+1.1	
PUL	Pulkovo	70.26	328	*de*	P		P	01 22 08.4	-0.2	
PUL					pmax		pmax			
	comp=Z,497nm,0.8s									
KBSD	Kabsdagh	70.28	302	*e*	P		P	01 22 09.8	+0.5	
ANN	Anapa	70.28	311	*d*	*i* P		P	01 22 08.8	-0.3	
ANN				*e*				01 22 30.2		
ANN				*e*	*PP		pP	01 22 41.8	-1.3	
ANN				*e*	S		S	01 31 11.7	+1.9	
ANN				*e*				01 31 55.3		
ANN					pmax		pmax			
	comp=N,463nm,1.3s									
ANN					pmax		pmax			
	comp=Z,2µm,1.3s									
ANN					pmax		pmax			
	comp=E,344nm,1.3s									
KELT	Kelkit	70.32	306	⇓	*i* P		P	01 22 10.4	+0.7	
DIYA	Diyarbakir	70.33	303	⇓	*i* P		P	01 22 10.3	+0.7	
KTK1	Kautokeino	70.35	338	⇓	*i* P		P	01 22 08.6	-0.4	
KTK1					IAmb		IAmb	01 22 09.9		
	comp=Z,251nm,1.2s									
TNCL	Tunceli-Merkez	70.41	305	⇓	*i* P		P	01 22 11.0	+0.9	
RAYN	Ar Rayn	70.47	287	*e*	P		P	01 22 10.9	+0.2	
	comp=Z,590nm,1.3s									
MZRK	Al-Mazaregh	70.55	301	*e*	P		P	01 22 11.8	+0.9	
SFNV	Sufian	70.79	302	*e*	P		P	01 22 12.9	+0.5	
GRSN	GIRESUNGRSN	70.81	307	*i*	P		P	01 22 11.0	-1.4	
REFA	Refahiye_ERZ¨	70.91	305	⇓	*i* P		P	01 22 13.4	+0.2	
ELZG	Elazig	71.01	304	⇓	*i* P		P	01 22 15.0	+1.2	
SUSE	Susehri	71.08	306	⇓	*i* P		P	01 22 14.3	+0.1	
ORDU	Ordu-Boztepe	71.09	307	⇓	*i* P		P	01 22 13.4	-0.7	
INK	Inuvik	71.16	23		P		P	01 22 13.8	-0.1	
	comp=Z,91nm,1.0s,baz=294,slow=7.0,SNR=226									
INK					S		S	01 31 20.0	+0.9	
	comp=Z,8.1nm,1.1s,baz=52,slow=30,SNR=23									
INK	Inuvik	71.16	23	*e*	P		P	01 22 13.7	-0.2	
	comp=Z,128nm,1.0s									
INK				*e*	PcP		PcP	01 22 33.2	+0.1	
INK					S		S	01 31 20.0	+0.9	
TAU	Tasmania Unive	71.24	162	*e*	P		P	01 22 16.5	+1.9	
TAU					pmax		pmax			
	comp=Z,90nm,1.1s									
TAU	Tasmania Unive	71.24	162	*e*	P		P	01 22 16.5	+1.9	
	comp=Z,90nm,1.1s									
TAU				*e*	PP		PP	01 24 49.9	-4.9	
CUZAR	Zara_SIVAS	71.49	306	⇓	*i* P		P	01 22 17.0	+0.3	
TRO	Tromso	71.55	339	*e*	P		P	01 22 16.0	-0.2	
TRO					IAmb		IAmb	01 22 16.7		
	comp=Z,212nm,1.3s									
FIA1	FINESS Array S	71.73	330	*e*	P		P	01 22 17.2	-0.3	
	comp=Z,487nm,1.3s									
FINES	FINESS Array B	71.73	330		P		P	01 22 17.1	-0.3	
	comp=Z,104nm,0.8s,baz=66,slow=5.1,SNR=351									
FINES					LR		LR	01 56 42.2		
	comp=Z,927nm,21.0s,baz=72,slow=38									
SURC	SANLIURFA_SURC	71.79	303	⇓	*i* P		P	01 22 18.9	+0.5	
KSRV	Kasrt alli	71.81	302	*e*	P		P	01 22 18.8	+0.3	
ATAB	Bozova	71.85	303	⇓	*i* P		P	01 22 19.4	+0.7	
AKCD	Akcadag	71.87	304	⇓	*i* P		P	01 22 19.9	+1.0	
CUKAN	kangal_SIVAS	71.89	305	⇓	*i* P		P	01 22 19.8	+0.7	
ERBA	Erbaa	71.98	307	⇓	*i* P		P	01 22 19.9	+0.4	
SAMS	Samsun-Alacam	72.18	308	⇓	*i* P		P	01 22 20.9	+0.4	
CUGUR	Gurin_S¨VAS	72.22	305	⇓	*i* P		P	01 22 22.3	+1.2	
TOKA	Tokat	72.30	307	⇓	*i* P		P	01 22 21.7	+0.4	
JHLN	Al Jahlan	72.31	302	*e*	P		P	01 22 19.5	-1.9	
CUALT	Altinyayla-SIV	72.42	306	⇓	*i* P		P	01 22 23.1	+0.8	
VSU	Vasula	72.42	327	*de*	P		P	01 22 21.6	0.0	
VSU					pmax		pmax			
	comp=Z,2µm,1.2s									
GZT	Gaziantep	72.44	303	⇓	*i* P		P	01 22 23.2	+0.9	
SIM	Simferopol'	72.49	312	*de*	P		P	01 22 22.3	0.0	
SIM					S		S	01 31 34.6	-0.6	
SIM					pmax		pmax			
	comp=Z,497nm,0.8s									
SLMH	Al Salmeh	72.53	302	*e*	P		P	01 22 20.1	-2.6	
HAVZ	Havza	72.61	308	⇓	*i* P		P	01 22 23.9	+0.7	
CUSAR	Sarkisla-SIVAS	72.75	306	⇓	*i* P		P	01 22 24.9	+0.7	
AYKD	Aykdinkavak	72.99	304	⇓	*i* P		P	01 22 25.9	+0.4	
KUZU	Kuzuini	72.99	303	⇓	*i* P		P	01 22 26.0	+0.5	
BOYT	Boyabat	73.08	308	⇓	*i* P		P	01 22 25.8	-0.2	
KAMA	Osmaniye	73.17	304	⇓	*i* P		P	01 22 27.0	+0.4	
MICGM	Minsk	73.17	323	⇓	*i* P		P	01 22 25.0	-1.1	
MICGM					PM			01 22 26.0		
	comp=Z,1.8nm,1.0s									
MICGM					PM			01 22 27.0		
	comp=E,1.7nm,1.0s				

BBAL Bala 74.99 307 ⇓ iP P 01 22 36.9 -0.3
KERG Konya-Eregli 75.00 304 ⇓ iP P 01 22 36.9 -0.4
BRBR Barbar 75.00 300 eP P 01 22 33.8 -3.6
STOK Stokkvaagen 75.00 337 eP P 01 22 37.5 +0.9
BHL Bhannes 75.06 301 eP P 01 22 38.0 +0.3
RCY Rachaya 75.06 300 eP P 01 22 38.5 +0.8
ANTO Ankara 75.11 307 eP P 01 22 38.2 +0.4
ANTO pmax pmax
comp=Z,530nm,1.0s
ANTO Ankara 75.11 307 eP P 01 22 38.2 +0.4
comp=Z,534nm,1.0s
BR231 Keskin MP Arra 75.13 307 eP P 01 22 38.4 +0.4
SORM Soroca 75.15 316 ⇑ iP P 01 22 37.4 -0.3
DQRL Deir Qamar 75.19 300 eP P 01 22 39.1 +0.7
TCHB Talchebab 75.25 299 eP P 01 22 35.4 -3.3
KKUL Konya-Kulu 75.27 307 ⇓ iP P 01 22 39.2 +0.5
KIS Kishinev 75.27 315 ⇓ iP P 01 22 38.0 -0.5
comp=Z,800nm,2.0s
KIS Kishinev 75.27 315 ⇑ iP P 01 22 38.0 -0.5
KIS Kishinev 75.27 315 κ iP P 01 22 38.0 -0.5
KIS pmax pmax
comp=E,500nm,2.0s
KIS pmax pmax
comp=Z,800nm,2.0s
KIS pmax pmax
comp=Z,2μm,4.0s
KIS pmax pmax
comp=N,500μm,5.0s
BCAM Yenicaga 75.30 308 ⇓ iP P 01 22 38.9 0.0
KIZK Mersin 75.31 304 ⇓ iP P 01 22 38.1 -0.7
MMAI Mount Meron Ar 75.57 300 P P 01 22 41.4 +0.8
comp=N,85nm,0.8s,baz=71,slow=8.1,SNR=234
DAG Danmarks Havn 75.59 352 i P P 01 22 38.5 -1.3
comp=N,198nm,1.3s
DAG Danmarks Havn 75.59 352 i P P 01 22 38.5 -1.3
DAG pmax pmax
comp=Z,380nm,1.3s
LEOM Leova 75.83 315 ⇑ iP P 01 22 41.3 -0.3
SUW Suwalki 75.92 323 eP P 01 22 41.8 -0.2
SUW Suwalki 75.92 323 ⇓ eP P 01 22 41.8 -0.2
PHNC Paralimni 75.92 302 P P 01 22 42.0 -0.4
TLCR 75.94 313 ⇑ iP P 01 22 42.5 +0.2
IAS Iasi 75.99 316 ⇑ iP P 01 22 42.6 0.0
AUMIH MIHALICIK 76.05 308 ⇓ iP P 01 22 42.9 -0.3
KDHN Kadinhani 76.08 306 ⇓ iP P 01 22 43.2 -0.3
BTAS Taskesti 76.14 308 ⇓ iP P 01 22 43.0 -0.6
SAHE Sakarya_HENDEK 76.14 309 ⇓ iP P 01 22 42.8 -0.8
KMER Konya-Meram 76.17 305 ⇓ iP P 01 22 43.2 -0.8
ERMK Ermenek 76.18 304 ⇓ iP P 01 22 43.8 -0.3
NSS Namsos 76.28 336 ⇓ iP P 01 22 43.0 -0.9
NSS IAmb IAmb 01 22 43.4
comp=Z,223nm,1.6s
OUZ Omahuta 76.36 140 eP P 01 22 47.9 +3.3
comp=Z,44nm,0.9s
WRAK Wrangell Islan 76.36 34 eP P 01 22 45.1 +0.6
comp=Z,358nm,1.0s
CRAG Craig 76.37 35 eP P 01 22 46.0 +1.5
comp=Z,490nm,1.1s
CFR Carcaliu 76.38 314 ⇓ iP P 01 22 44.5 -0.3
EFOR EFORIE 76.47 312 ⇑ iP P 01 22 46.1 +0.8
CSS Mathiatis 76.47 302 P P 01 22 45.8 +0.2
CSS Mathiatis 76.47 302 P P 01 22 45.5 -0.1
CSS Mathiatis 76.47 302 eP P 01 22 45.5 -0.1
comp=Z,93nm,0.9s
TIRR Tirgusor 76.47 313 ⇓ iP P 01 22 45.7 +0.4
TIRR Tirgusor 76.47 313 eP P 01 22 45.3 0.0
TIRR Tirgusor 76.47 313 eP P 01 22 45.2 0.0
comp=Z,307nm,1.2s
MAMC Mammari 76.48 303 P P 01 22 45.7 +0.1
KAND Kocaeli-Kandir 76.52 309 ⇓ iP P 01 22 45.0 -0.7
MANR Mangalia 76.60 312 ⇓ iP P 01 22 46.8 +0.8
DLBC Dease Lake 76.61 31 P P 01 22 47.6 +1.6
comp=Z,184nm,1.1s,baz=301,slow=5.2,SNR=154
DLBC Dease Lake 76.61 31 eP P 01 22 47.4 +1.4
comp=Z,455nm,1.3s
ESKT Eskisehir 76.64 307 ⇓ iP P 01 22 46.0 -0.5
HARR Harsova 76.70 313 ⇓ iP P 01 22 47.1 +0.5
PETR Petresti 76.77 314 ⇓ iP P 01 22 48.3 +1.4
PRAR RASCA 76.77 316 ⇑ iP P 01 22 47.0 0.0
TESR Tescani 76.83 315 ⇓ iP P 01 22 47.4 0.0
BOLV Bolvadin 76.86 307 ⇓ iP P 01 22 48.0 +0.2
ODBI Odobesti 76.86 314 ⇑ iP P 01 22 48.6 +1.1
SZAC Souni 76.89 302 P P 01 22 48.2 +0.3
PSN Preselentsi 76.92 312 eP P 01 22 48.1 +0.2
AUKIR K¯rka- Seyitg 76.95 307 ⇓ iP P 01 22 47.9 -0.4
ALFC Alefka 76.96 303 P P 01 22 47.8 -0.5
MSAB Monastry St. A 77.00 313 ⇓ iP P 01 22 48.9 +0.6
VRI Vrincioaia 77.03 315 ⇓ iP P 01 22 49.1 +0.6
GRER 77.06 314 ⇑ iP P 01 22 49.9 +1.2
AUKUT KUTAHYA 77.06 308 ⇓ iP P 01 22 50.2 +1.3
PLOR Plostina 77.09 315 ⇑ iP P 01 22 48.9 0.0
AMRR Amara 77.13 313 ⇓ iP P 01 22 50.4 +1.4
LVV L'vov 77.13 319 ⇑ iP P 01 22 48.9 0.0
LVV e 01 25 45.7
LVV eS S 01 32 25.5 -1.0
LVV e 01 33 26.7
LVV e 01 37 21.9
EIL Elat 77.15 297 P P 01 22 49.9 +0.4
comp=Z,227nm,1.1s,baz=49,slow=2.7,SNR=118
AKMC Akamas 77.21 303 P P 01 22 49.4 -0.3
PGOR Pogoanele 77.24 314 ⇓ iP P 01 22 51.0 +1.4
KLNR Kaliningrad 77.25 325 i P P 01 22 49.2 -0.2
KLNR pmax pmax
comp=Z,378nm,1.3s
BAGO Egridir - ISPA 77.25 306 ⇓ iP P 01 22 49.6 -0.4
PPCY Paphos 77.25 303 P P 01 22 49.6 -0.3
BUR08 Bucovina Ar. S 77.30 317 eP P 01 22 50.1 +0.1
BURAR Bucovina Array 77.30 317 ⇓ iP P 01 22 50.3 +0.2
BURAR Bucovina Array 77.30 317 P P 01 22 50.3 +0.2
ISK Istanbul-Kandi 77.32 309 P P 01 22 49.7 -0.5
ISK Istanbul-Kandi 77.32 309 P P 01 22 49.7 -0.5
ISK Istanbul-Kandi 77.32 309 P P 01 22 49.7 -0.5
BUY Buyukada 77.36 309 ⇓ iP P 01 22 50.1 -0.3
ISR Istrita 77.45 314 ⇓ iP P 01 22 52.2 +1.3
ISP Isparta 77.51 306 ⇑ iP P 01 22 51.3 -0.1
ISP Isparta 77.51 306 P P 01 22 50.7 -0.7
ISP Isparta 77.51 306 eP P 01 22 50.8 -0.7
ISP Isparta 77.51 306 eP P 01 22 50.8 -0.7
comp=Z,621nm,1.1s
TBLU Trondheim 77.59 335 eP P 01 22 50.2 -1.0
TBLU IAmb IAmb 01 22 51.3
comp=Z,534nm,1.6s
ULDT Uludag 77.62 309 ⇓ iP P 01 22 51.9 -0.2
PRD Provadia 77.63 312 eP P 01 22 50.9 -0.9
MLR Muntele Rosu 77.69 315 ⇑ iP P 01 22 52.7 +0.4
MLR Muntele Rosu 77.69 315 eP P 01 22 52.3 0.0
MLR Muntele Rosu 77.69 315 eP P 01 22 52.3 0.0
comp=Z,282nm,1.2s
GDZ Gediz 77.78 307 ⇓ iP P 01 22 52.5 -0.5
SECR 77.79 314 ⇑ iP P 01 22 53.9 +1.2
HFS Hagfors 77.80 331 P P 01 22 51.9 -0.5
comp=Z,109nm,0.8s,baz=101,slow=6.2,SNR=149
HFS PP PP 01 25 50.0 +0.7
comp=Z,20nm,0.9s,baz=37,slow=7.6,SNR=4.3
RAO Raoul Island 77.80 131 LR LR 01 51 29.0
comp=Z,662nm,21.5s,baz=353,slow=31
SULR 77.81 314 ⇓ iP P 01 22 53.6 +0.8
KORT Korkueli 77.95 305 ⇓ iP P 01 22 52.5 -1.4
KWP Kalwaria Pacla 77.99 319 eP P 01 22 54.2 +0.5
KWP Kalwaria Pacla 77.99 319 ⇓ iP P 01 22 54.2 +0.5
KWP Kalwaria Pacla 77.99 319 ⇓ eP P 01 22 54.3 +0.5
BTMR Bucharest-Geot 78.00 314 ⇓ iP P 01 22 54.5 +0.6
BAPR Bucharest-Chil 78.01 313 ⇓ iP P 01 22 55.1 +1.2
ARCR ARCALIA 78.05 316 ⇑ iP P 01 22 55.4 +1.3
KHAL Karahalli 78.05 307 ⇓ iP P 01 22 53.8 -0.6
BUC1 Bucharest 78.09 313 ⇓ iP P 01 22 55.2 +0.9
BUC1 Bucharest 78.09 313 ⇑ iP P 01 22 55.7 +1.4
NC405 NORSAR Array S 78.14 333 eP P 01 22 54.1 -0.2
BEL Belsk 78.14 322 eP P 01 22 54.9 +0.4
BEL Belsk 78.14 322 ⇓ eP P 01 22 54.9 +0.4
NC303 NORSAR Array S 78.22 333 eP P 01 22 54.5 -0.3
VOIR 78.28 315 ⇑ iP P 01 22 55.5 0.0
DURS Dursunbey 78.30 308 ⇓ iP P 01 22 55.2 -0.5
BMR Baia Mare 78.34 317 ⇓ iP P 01 22 56.5 +0.8
NB201 NORSAR Array S 78.34 333 eP P 01 22 55.0 -0.5
DEMI Demirci 78.35 308 ⇓ iP P 01 22 55.6 -0.4
MTUR Matau 78.36 315 ⇑ iP P 01 22 58.0 +2.0
NB2 NORSAR Subarra 78.38 333 P P 01 22 55.0 -0.7
comp=Z,285nm,1.1s,baz=55,slow=5.6
NB2 NORSAR Subarra 78.38 333 P P 01 22 55.0 -0.7
baz=55,slow=5.6
NOA NORSAR Array B 78.38 333 P P 01 22 55.0 -0.7
comp=Z,111nm,1.0s,baz=69,slow=6.7,SNR=128
NOA pP pP 01 23 32.0 +1.5
comp=Z,22nm,1.0s,baz=57,slow=5.5,SNR=2.2
NOA LR LR 01 58 55.3
comp=Z,626nm,20.7s,baz=50,slow=37
NC602 NORSAR Array S 78.41 332 eP P 01 22 55.0 -0.8
NC602 NORSAR Array S 78.41 332 eP P 01 22 55.0 -0.8
UZP Denizli 78.41 307 ⇓ iP P 01 22 56.2 -0.2
NC204 NORSAR Array S 78.44 333 eP P 01 22 56.1 +0.1
NBO02 NORSAR Array S 78.53 333 eP P 01 22 55.0 -1.4
KOLS Kolonicke sedl 78.54 319 eP P 01 22 56.6 -0.2
KOLS pmax pmax
comp=Z,94nm,1.4s
KOLS Kolonicke sedl 78.54 319 eP P 01 22 56.6 -0.2
NBO00 NORSAR Array S 78.57 333 eP P 01 22 56.2 -0.5
ARR Arges 78.58 315 ⇓ iP P 01 22 57.8 +0.7
GOLR 78.59 314 ⇑ iP P 01 22 57.5 +0.4
SZH Strazhica 78.59 312 eP P 01 22 56.8 -0.3
KULA Kula-Manisa 78.59 307 P P 01 22 57.0 -0.4
KULA Kula-Manisa 78.59 307 P P 01 22 57.0 -0.4
EDRB Edirne 78.62 311 P P 01 22 57.1 -0.2
EDRB Edirne 78.62 311 P P 01 22 57.1 -0.2
NAO01 NORSAR Array S 78.62 333 eP P 01 22 56.1 -0.8
UZH Uzhgorod 78.66 319 e iP P 01 22 57.0 -0.4
UZH e 01 23 08.0
UZH eS S 01 32 39.4 -3.5
UZH ePS PnS 01 33 24.6 -19
UZH eSSS SSS 01 41 10.0
CJR Cluj-Napoca 78.67 316 ⇓ iP P 01 22 58.7 +1.1
HUMR Humele 78.70 314 ⇑ iP P 01 22 57.8 +0.1
KNL Bal¯kesir 78.71 309 ⇓ iP P 01 22 56.6 -1.3
AKAS Kas 78.80 305 ⇓ iP P 01 22 57.1 -1.5
ZIMR 78.81 313 ⇓ iP P 01 22 58.5 +0.2
BALY Balya 78.85 309 ⇓ iP P 01 22 58.5 -0.2
STHS Stebnicka Huta 78.94 320 eP P 01 22 59.3 +0.3
STHS pmax pmax
comp=Z,109nm,1.3s
STHS Stebnicka Huta 78.94 320 eP P 01 22 59.3 +0.3
MRIV Mauritius Mete 78.97 241 eP P 01 23 00.0 +0.5
MOL Molde 79.01 335 ⇓ iP P 01 22 59.1 +0.1
MOL IAmb IAmb 01 23 00.3
comp=Z,392nm,1.4s
FETY Fethiye 79.03 305 P P 01 22 59.0 -0.7
FETY Fethiye 79.03 305 P P 01 22 59.0 -0.7
CRVS Cervenica-Dubn 79.04 319 eP P 01 23 00.0 +0.5
CRVS Cervenica-Dubn 79.04 319 eP P 01 23 00.0 +0.5
AKHS Akhisar 79.06 308 ⇓ iP P 01 22 58.9 -1.0
LOT Lotru 79.10 315 ⇓ iP P 01 23 00.3 +0.3
OSL Oslo 79.17 332 eP P 01 22 59.9 -0.1
OSL IAmb IAmb 01 23 00.8
comp=Z,1μm,2.1s
DRGR 79.19 317 ⇑ iP P 01 23 00.7 +0.2
TURN Turunc 79.29 306 ⇓ iP P 01 23 02.7 +1.7
HIZ Hauiti 79.39 142 eP P 01 23 04.2 +2.9
comp=Z,140nm,0.8s
YER Yerkesik 79.42 306 P P 01 23 02.0 +0.1
YER Yerkesik 79.42 306 P P 01 23 02.0 +0.1
YER Yerkesik 79.42 306 P P 01 23 02.0 +0.1
OJC Ojcow 79.42 321 eP P 01 23 01.9 +0.4
OJC Ojcow 79.42 321 ⇓ eP P 01 23 02.0 +0.4
OJC Ojcow 79.42 321 eP P 01 23 01.8 +0.4
comp=Z,473nm,1.2s
AKN Aaknes 79.44 335 ⇓ iP P 01 23 01.7 +0.3
AKN IAmb IAmb 01 23 02.7
comp=Z,484nm,1.3s
DEV Deva 79.46 316 ⇓ iP P 01 23 02.8 +1.0
ENEZ Enez 79.47 310 P P 01 23 01.8 -0.2
ALN Alexandroupoli 79.48 310 P P 01 23 01.4 -0.6
ALN Alexandroupoli 79.48 310 P P 01 23 01.4 -0.6
ALN Alexandroupoli 79.48 310 P P 01 23 01.4 -0.6
NIE Niedzica 79.49 320 eP P 01 23 02.7 +0.8
NIE Niedzica 79.49 320 ⇓ eP P 01 23 02.8 +0.8
AYDN Tasoluk 79.50 307 ⇓ iP P 01 23 02.5 +0.2
CRAR CRAIOVA 79.56 314 ⇓ iP P 01 23 03.6 +1.2
AYVA Ayvalik 79.68 309 ⇓ iP P 01 23 02.6 -0.5
BSD Bornholm Skovb 79.72 327 ⇓ iP P 01 23 02.7 -0.3
comp=Z,522nm,1.3s
BSD Bornholm Skovb 79.72 327 ⇓ iP P 01 23 02.7 -0.3
BSD pmax pmax
comp=Z,520nm,1.3s
EZN Ezine 79.73 309 P P 01 23 03.0 -0.4
EZN Ezine 79.73 309 P P 01 23 03.0 -0.4
EZN Ezine 79.73 309 P P 01 23 03.0 -0.4
GZR Gura Zlata 79.76 315 ⇓ iP P 01 23 03.8 +0.3
SRE Strehaia 79.80 315 ⇑ iP P 01 23 04.4 +0.7
KECS Kecovo 79.80 319 eP P 01 23 04.0 +0.4
KECS pmax pmax
comp=Z,91nm,1.3s
KECS Kecovo 79.80 319 eP P 01 23 04.0 +0.4
KONO Kongsberg 79.81 332 ⇓ iP P 01 23 01.4 -2.1
KONO IAmb IAmb 01 23 04.1
comp=Z,242nm,1.6s
KONO Kongsberg 79.81 332 eP P 01 23 03.0 -0.4
KONO Kongsberg 79.81 332 eP P 01 23 03.0 -0.4
comp=Z,222nm,1.5s
ARG Arkhangelos 79.90 305 P P 01 23 04.2 -0.2
ARG Arkhangelos 79.90 305 P P 01 23 04.2 -0.2
ARG Arkhangelos 79.90 305 P P 01 23 04.2 -0.2
BOZC Bozcaada 79.91 309 ⇓ iP P 01 23 03.7 -0.7
GCAM G?zelcaml? 79.95 307 ⇓ iP P 01 23 04.8 +0.2
PRK Paraskevi 80.00 309 P P 01 23 04.5 -0.4
PRK Paraskevi 80.00 309 P P 01 23 04.5 -0.4
PRK Paraskevi 80.00 309 P P 01 23 04.5 -0.4
SMTH Samothraki Isl 80.02 310 P P 01 23 03.2 -1.8
SMTH Samothraki Isl 80.02 310 P P 01 23 03.2 -1.8
BDRM Kayabasi 80.06 306 ⇓ iP P 01 23 04.5 -0.7
RZN Rozhen 80.06 311 eP P 01 23 05.7 +0.3
PGB Panagyurishte 80.07 312 eP P 01 23 06.0 +0.7
SIRR Siria 80.08 317 ⇑ iP P 01 23 05.6 +0.4
LANS Liptovska Anna 80.10 320 eP P 01 23 06.1 +0.8
LANS Liptovska Anna 80.10 320 eP P 01 23 06.1 +0.8
LANS e 01 25 38.1
URLA Izmir 80.14 308 ⇑ iP P 01 23 05.1 -0.6
BODT Bodrum 80.16 306 P P 01 23 05.3 -0.5
BODT Bodrum 80.16 306 P P 01 23 05.3 -0.5
SMG Samos 80.24 307 P P 01 23 05.9 -0.3
SMG Samos 80.24 307 P P 01 23 05.9 -0.3
ZEY ¯zmir 80.26 308 ⇓ iP P 01 23 05.7 -0.5
KULLO Kullorsuaq 80.30 0 ⇓ iP P 01 23 05.4 -0.4
comp=Z,350nm,1.3s
KULLO Kullorsuaq 80.30 0 ⇓ iP P 01 23 05.4 -0.4
KULLO pmax pmax
comp=Z,350nm,1.3s
SIGR SIGRI 80.31 309 P P 01 23 06.1 -0.4
SIGR SIGRI 80.31 309 P P 01 23 06.1 -0.4
HYA Hoyanger 80.34 334 ⇓ iP P 01 23 06.2 0.0
HYA IAmb IAmb 01 23 07.3
comp=Z,409nm,1.4s
RAC Raciborz 80.40 321 eP P 01 23 07.6 +0.8
RAC MLR MLR
comp=Z,700nm,23.8s
PSZ Piszkesteto 80.41 319 ⇑ iP P 01 23 07.6 +0.6
PSZ Piszkesteto 80.41 319 ⇓ eP P 01 23 07.2 +0.2
PSZ Piszkesteto 80.41 319 eP P 01 23 07.1 +0.1
PSZ Piszkesteto 80.41 319 eP P 01 23 07.1 +0.1
comp=Z,283nm,1.3s
FOZ Fox Glacier 80.42 148 eP P 01 23 08.4 +1.7
comp=Z,288nm,1.7s
NIS1 Nisyros Isl. 80.44 306 P P 01 23 06.4 -0.9
NIS1 Nisyros Isl. 80.44 306 P P 01 23 06.4 -0.9
URZ Urewera 80.49 140 LR LR 01 52 36.9
comp=Z,211nm,21.6s,baz=2.0,slow=31
URZ Urewera 80.49 140 eP P 01 23 07.6 +0.3
comp=Z,160nm,1.4s
KAVA Kavala 80.49 311 P P 01 23 07.2 -0.3
KAVA Kavala 80.49 311 P P 01 23 07.2 -0.3
LIA Limnos Island 80.50 310 P P 01 23 06.7 -0.8
LIA Limnos Island 80.50 310 P P 01 23 06.7 -0.8
BBB Bella Bella 80.51 36 P P 01 23 08.1 +0.8
comp=Z,89nm,1.1s,baz=294,slow=3.4,SNR=11
CHOS Chios island 80.52 308 P P 01 23 07.4 -0.4
CHOS Chios island 80.52 308 P P 01 23 07.4 -0.4
FOO Floro 80.53 335 eP P 01 23 07.3 +0.1
FOO IAmb IAmb 01 23 07.5
comp=Z,276nm,1.4s
OKC Ostrava-Krasne 80.54 321 ⇓ iP P 01 23 07.9 +0.3
OKC Ostrava-Krasne 80.54 321 ⇓ iP P 01 23 07.9 +0.3
TIM Timisoara 80.59 316 ⇓ iP P 01 23 07.9 +0.1
THZ Tophouse 80.65 145 eP P 01 23 09.2 +1.1
comp=Z,45nm,0.8s
COP Copenhagen 80.65 328 ⇓ iP P 01 23 08.3 +0.3
comp=Z,146nm,1.1s
COP Copenhagen 80.65 328 ⇓ iP P 01 23 08.3 +0.3
COP pmax pmax
comp=Z,150nm,1.1s
DCZ Deep Cove 80.67 151 eP P 01 23 10.5 +2.4
comp=Z,51nm,1.3s
VTS Vitosha 80.69 313 ⇓ iP P 01 23 09.4 +0.7
VTS Vitosha 80.69 313 P P 01 23 09.1 +0.4
VTS Vitosha 80.69 313 eP P 01 23 09.2 +0.5
VTS Vitosha 80.69 313 eP P 01 23 09.3 +0.5
VTS Vitosha 80.69 313 eP P 01 23 09.2 +0.5
comp=Z,516nm,1.2s
BKZ Black Stump Fm 80.76 141 eP P 01 23 09.4 +0.6
comp=Z,259nm,1.6s
VYHS Vyhne 80.77 319 eP P 01 23 09.4 +0.5
VYHS pmax pmax
comp=Z,191nm,1.4s
VYHS Vyhne 80.77 319 eP P 01 23 09.4 +0.5
MMB Musomiste 80.78 312 eP P 01 23 09.1 +0.1
NVR Nevrokopi 80.79 311 P P 01 23 08.5 -0.6
NVR Nevrokopi 80.79 311 P P 01 23 08.5 -0.6
BANR Banloc 80.80 316 ⇑ iP P 01 23 10.3 +1.3
RGN Rugen 80.80 326 eP P 01 23 09.3 +0.5
comp=Z,330nm,1.2s
RGN ePP PP 01 26 12.2 -2.2
RER Riviere de l'E 80.82 241 eP P 01 23 09.4 -0.1
comp=Z,286nm,1.2s
YKW3 Yellowknife Ar 80.83 24 eP P 01 23 08.8 0.0
comp=Z,341nm,1.2s
YKA Yellowknife Ar 80.87 24 P P 01 23 08.9 -0.1
comp=Z,158nm,1.1s,baz=313,slow=5.2,SNR=657
YKA pP pP 01 23 47.0 +3.0
comp=Z,18nm,0.7s,baz=299,slow=5.3,SNR=3.6
YKA PKKPbc PKKPbc 01 41 44.4 -3.0
comp=Z,2.5nm,0.5s,baz=129,slow=2.3,SNR=100
YKB5 Yellowknife Ar 80.87 24 eP P 01 23 06.8 -2.2
KARP Karpathos 80.89 305 P P 01 23 09.5 -0.3
KARP Karpathos 80.89 305 eP P 01 23 09.4 -0.3
comp=Z,344nm,1.1s
ODD1 Odda 80.90 333 eP P 01 23 09.2 -0.1
ODD1 IAmb IAmb 01 23 09.8
comp=Z,233nm,1.4s
MORC Moravsky Berou 80.92 321 ⇓ iP P 01 23 10.0 +0.4
MORC Moravsky Berou 80.92 321 eP P 01 23 09.5 -0.1
MORC Moravsky Berou 80.92 321 eP P 01 23 09.5 -0.1
comp=Z,811nm,1.2s
SUE Sulen 80.97 335 eP P 01 23 09.5 0.0
SUE IAmb IAmb 01 23 10.8
comp=Z,358nm,1.3s
HOMB Homborsund 81.05 331 ⇓ iP P 01 23 09.7 -0.4
HOMB IAmb IAmb 01 23 10.8
comp=Z,132nm,1.3s
LTZ Lake Taylor 81.06 146 eP P 01 23 12.2 +1.9
comp=Z,91nm,1.6s
SRS Serrai 81.07 311 P P 01 23 09.8 -0.8
SRS Serrai 81.07 311 P P 01 23 09.8 -0.8
SRS Serrai 81.07 311 P P 01 23 09.8 -0.8
KKB Krupnik 81.09 312 eP P 01 23 10.3 -0.4
KSP Ksiaz 81.10 322 eP P 01 23 10.9 +0.4
KSP Ksiaz 81.10 322 ⇓ eP P 01 23 10.9 +0.4
BUD Budapest 81.14 318 ⇓ eP P 01 23 11.0 +0.3
ASK Askoy 81.14 334 ⇓ iP P 01 23 10.4 -0.1
ASK IAmb IAmb 01 23 12.5
comp=Z,350nm,1.7s
OUR Ouranopolis 81.14 310 P P 01 23 10.5 -0.4
OUR Ouranopolis 81.14 310 P P 01 23 10.5 -0.4
OUR Ouranopolis 81.14 310 P P 01 23 10.5 -0.4
BER Bergen 81.14 334 ⇓ iP P 01 23 10.4 -0.1
BER IAmb IAmb 01 23 11.6
comp=Z,254nm,1.4s
RPZ Rata Peaks 81.15 148 LR LR 01 54 35.4
comp=Z,395nm,21.6s,baz=326,slow=32
RPZ Rata Peaks 81.15 148 eP P 01 23 11.9 +1.2
comp=Z,122nm,0.9s
KRLC Kraliky 81.20 321 ⇓ iP P 01 23 11.4 +0.3
KRLC ex x 01 23 49.3
KRLC Kraliky 81.20 321 ⇓ iP P 01 23 11.4 +0.3
LBZ Lake Benmore 81.23 148 eP P 01 23 12.5 +1.4
comp=Z,68nm,1.0s
PKS7 Kunszentmiklos 81.26 318 ⇓ eP P 01 23 11.4 0.0
BLS5 Blasjo 81.26 333 ⇓ iP P 01 23 11.3 +0.1
BLS5 IAmb IAmb 01 23 12.5
comp=Z,733nm,1.8s
DPC Dobruska-Polom 81.33 322 ⇓ iP P 01 23 12.1 +0.3
DPC eS S 01 33 11.2 +0.2
DPC Dobruska-Polom 81.33 322 ⇓ iP P 01 23 12.1 +0.3
DPC e 01 33 11.2
OXZ Oxford 81.34 147 eP P 01 23 12.8 +1.1
comp=Z,126nm,1.8s
SOH Sokhos 81.36 311 P P 01 23 11.3 -0.9
SOH Sokhos 81.36 311 P P 01 23 11.3 -0.9
SOH Sokhos 81.36 311 P P 01 23 11.3 -0.9
SCO Scoresbysund 81.42 349 i P P 01 23 12.2 +0.4
comp=Z,272nm,1.2s
SCO Scoresbysund 81.42 349 i P P 01 23 12.2 +0.4
SCO pmax pmax
comp=Z,270nm,1.2s
UPC Upice 81.42 322 ⇓ iP P 01 23 12.5 +0.3
UPC eS S 01 33 12.3 +0.4
UPC Upice 81.42 322 ⇓ iP P 01 23 12.5 +0.3
UPC e 01 33 12.3
KHZ Kahutara 81.44 145 eP P 01 23 12.7 +0.4
comp=Z,82nm,0.8s
APE Apeiranthos 81.45 307 ⇑ iP P 01 23 11.4 -1.3
APE Apeiranthos 81.45 307 d iP P 01 23 10.6 -2.1
APE pmax pmax
comp=Z,70nm,1.1s
PLG Polygyros 81.50 311 P P 01 23 12.1 -0.8
PLG Polygyros 81.50 311 P P 01 23 12.1 -0.8
PLG Polygyros 81.50 311 P P 01 23 12.1 -0.8
KNT Kendrikon 81.52 311 P P 01 23 12.3 -0.7
KNT Kendrikon 81.52 311 P P 01 23 12.3 -0.7
KNT Kendrikon 81.52 311 P P 01 23 12.3 -0.7
PAIG Paliouri 81.53 310 P P 01 23 12.3 -0.7
PAIG Paliouri 81.53 310 P P 01 23 12.3 -0.7
PAIG Paliouri 81.53 310 P P 01 23 12.3 -0.7
PKSG 81.56 319 ⇓ eP P 01 23 13.0 0.0
SNART Snartemo 81.57 332 ⇓ iP P 01 23 12.8 -0.1
SNART IAmb IAmb 01 23 13.2
comp=Z,134nm,1.1s
SMOL Smolenice 81.59 320 eP P 01 23 14.2 +1.1
SMOL Smolenice 81.59 320 eP P 01 23 14.2 +1.1
SUMG Summit 81.59 355 i P P 01 23 13.4 +0.2
comp=Z,392nm,1.3s
SUMG Summit 81.59 355 i P P 01 23 13.4 +0.2
SUMG pmax pmax
comp=Z,390nm,1.3s
SUMG Summit 81.59 355 eP P 01 23 13.2 0.0
comp=Z,402nm,1.3s
SUMG ePP PP 01 26 19.2 -1.6
HORT Hortiatis 81.64 311 P P 01 23 12.7 -0.9
HORT Hortiatis 81.64 311 P P 01 23 12.7 -0.9
CSKK Cs˙‡kako 81.65 319 ⇓ eP P 01 23 13.5 0.0
BFZ Birch Farm 81.67 143 eP P 01 23 14.3 +0.9
comp=Z,142nm,0.9s
VAY Valandovo 81.67 312 P P 01 23 13.2 -0.5
VAY Valandovo 81.67 312 ⇓ iPg P 01 23 13.3 -0.5
VAY Valandovo 81.67 312 P P 01 23 13.2 -0.5
VAY Valandovo 81.67 312 P P 01 23 13.2 -0.5
VRAC Vranov 81.69 321 P P 01 23 14.3 +0.6
comp=Z,137nm,1.0s,baz=68,slow=5.7,SNR=165
VRAC Vranov 81.69 321 ⇓ iP P 01 23 14.5 +0.9
THE Thessaloniki 81.71 311 P P 01 23 12.8 -1.1
THE Thessaloniki 81.71 311 P P 01 23 12.8 -1.1
THE Thessaloniki 81.71 311 P P 01 23 12.8 -1.1
AOS Alonnisos 81.72 309 P P 01 23 13.2 -0.8
AOS Alonnisos 81.72 309 P P 01 23 13.2 -0.8
MUD Monsted U'grnd 81.77 329 i P P 01 23 14.2 +0.3
comp=Z,298nm,1.1s
MUD Monsted U'grnd 81.77 329 i P P 01 23 14.2 +0.3
MUD pmax pmax
comp=Z,300nm,1.1s
ZKR Zakros 81.77 305 P P 01 23 14.1 -0.3
ZKR Zakros 81.77 305 P P 01 23 14.1 -0.3
SANT Santorini 81.80 306 ⇑ iP P 01 23 13.3 -1.2
SANT Santorini 81.80 306 P P 01 23 12.7 -1.8
SANT Santorini 81.80 306 eP P 01 23 12.8 -1.8
comp=Z,674nm,1.1s
THT1 Athinios (Pele 81.81 306 P P 01 23 12.6 -1.9
THR3 Thira Island, 81.82 306 P P 01 23 13.3 -1.3
THR3 Thira Island, 81.82 306 P P 01 23 13.3 -1.3
PKST T¯'s 81.83 319 ⇓ eP P 01 23 14.3 -0.2
THR6 Thira Island, 81.85 306 P P 01 23 13.1 -1.6
THR6 Thira Island, 81.85 306 P P 01 23 13.1 -1.6

THR5 **Thira Island,** 81.86 306 P P 01 23 12.9 -1.9
STAV **Stavanger** 81.86 333 ⇓*i*P P 01 23 14.0 -0.3
STAV IAmb IAmb 01 23 15.1
comp=Z,1μm,2.1s
KMY **Karmoy** 81.88 333 ⇓*i*P P 01 23 14.4 0.0
KMY IAmb IAmb 01 23 15.6
comp=Z,469nm,1.5s
MQZ **McQueen's Vall** 81.93 147 *e*P P 01 23 16.8 +2.1
comp=Z,86nm,1.1s
GRG **Griva** 81.95 311 P P 01 23 14.4 -0.8
GRG **Griva** 81.95 311 P P 01 23 14.4 -0.8
GRG **Griva** 81.95 311 P P 01 23 14.4 -0.8
PKSM **Moragy** 81.96 317 ⇓*i*P P 01 23 15.2 +0.1
PKSM **Moragy** 81.96 317 ⇓*e*P P 01 23 15.2 +0.1
PKS9 **Tamasi** 82.01 318 ⇓*e*P P 01 23 15.3 0.0
EREA **Eretria** 82.01 309 P P 01 23 14.4 -1.2
SKIA **Skiathos** 82.01 309 P P 01 23 14.2 -1.3
FURI **Furi** 82.08 276 *e*P P 01 23 19.2 +2.5
comp=Z,676nm,1.6s
FURI *e*PP PP 01 26 30.3 +3.8
XOR **Xorichti** 82.11 310 P P 01 23 14.6 -1.5
XOR **Xorichti** 82.11 310 P P 01 23 14.6 -1.5
SKO **Skopje** 82.14 313 P P 01 23 16.1 -0.1
SKO **Skopje** 82.14 313 ⇓*i*Pg P 01 23 16.2 0.0
SKO **Skopje** 82.14 313 P P 01 23 16.1 -0.1
SKO **Skopje** 82.14 313 P P 01 23 16.1 -0.1
NPS **Neapolis** 82.16 305 P P 01 23 15.7 -0.7
NPS **Neapolis** 82.16 305 P P 01 23 15.7 -0.7
NPS **Neapolis** 82.16 305 P P 01 23 15.7 -0.7
PVCC **Panska Ves** 82.21 323 ⇓*i*P P 01 23 16.7 +0.4
PVCC **Panska Ves** 82.21 323 ⇓*i*P P 01 23 16.7 +0.4
PTL **Penteli** 82.22 308 P P 01 23 15.1 -1.6
PTL **Penteli** 82.22 308 P P 01 23 15.1 -1.6
FYTO **Fytoko, Volos** 82.27 310 P P 01 23 15.6 -1.3
FYTO **Fytoko, Volos** 82.27 310 P P 01 23 15.6 -1.3
LIT **Litokhoron** 82.27 311 P P 01 23 15.8 -1.1
LIT **Litokhoron** 82.27 311 P P 01 23 15.8 -1.1
LIT **Litokhoron** 82.27 311 P P 01 23 15.8 -1.1
LAST **Lasithi** 82.30 305 ⇓*i*P P 01 23 17.5 +0.3
LAST **Lasithi** 82.30 305 P P 01 23 17.1 -0.1
LAST **Lasithi** 82.30 305 *e*P P 01 23 17.2 -0.1
comp=Z,1μm,1.4s
ATHU **Athens Univers** 82.31 308 P P 01 23 15.3 -1.8
ATHU **Athens Univers** 82.31 308 P P 01 23 15.3 -1.8
SMIA **Simia** 82.32 309 P P 01 23 16.0 -1.2
VLY **Voula,Athens** 82.36 308 P P 01 23 15.0 -2.4
VLY **Voula,Athens** 82.36 308 P P 01 23 15.0 -2.4
ATH **Athens Observa** 82.36 308 P P 01 23 15.5 -1.8
ATH **Athens Observa** 82.36 308 P P 01 23 15.5 -1.8
ATH **Athens Observa** 82.36 308 P P 01 23 15.5 -1.8
BRG **Berggiesshubel** 82.38 323 ⇓*i*P P 01 23 17.1 -0.1
comp=Z,113nm,1.3s
BRG *i* pP pP 01 23 52.8 +0.6
comp=Z,80nm,1.8s
BRG sP sP 01 24 07.0 -0.1
BRG PP PP 01 26 27.0 -0.4
BRG S S 01 33 21.0 -0.6
comp=N,537nm,16.7s
comp=E,607nm,15.9s
comp=Z,1μm,16.4s
BRG **Berggiesshubel** 82.38 323 ⇓*i*P P 01 23 17.1 -0.1
BRG *i* *PP pP 01 23 52.8 +0.6
BRG *SP sP 01 24 07.0 -0.1
BRG 01 26 27.0
BRG S S 01 33 21.0 -0.6
BRG pmax pmax
comp=Z,113nm,1.3s
BRG pmax pmax
comp=Z,80nm,1.8s
BRG MLR MLR
comp=N,537nm,16.7s
BRG MLR MLR
comp=E,607nm,15.9s
BRG MLR MLR
comp=Z,1μm,16.4s
GOPC **GO Pecny, Ondr** 82.40 322 ⇓*i*P P 01 23 17.8 +0.4
GOPC *e*pP pP 01 23 53.9 +1.5
GOPC *ex* x 01 33 35.6
GOPC **GO Pecny, Ondr** 82.40 322 ⇓*i*P P 01 23 17.8 +0.4
GOPC *e* 01 23 53.9
MHLO **Agia Marina, M** 82.43 307 P P 01 23 16.0 -1.7
PRU **Pruhonice** 82.50 322 ⇓*i*P P 01 23 18.1 +0.2
PRU AMS AMS 02 01 40.0
comp=Z,600nm,18.2s
PRU **Pruhonice** 82.50 322 ⇓*i*P P 01 23 18.1 +0.2
PRU MLR MLR
comp=Z,600nm,18.2s
SOP **Sopron** 82.50 319 ⇓*e*P P 01 23 18.1 +0.2
PRA **Prague** 82.52 322 ⇓*i*P P 01 23 18.4 +0.5
PRA **Prague** 82.52 322 ⇓*i*P P 01 23 18.4 +0.5
VILL **Villia** 82.56 309 P P 01 23 16.2 -2.3
LKR **Lokris** 82.56 309 P P 01 23 16.7 -1.7
LKR **Lokris** 82.56 309 P P 01 23 16.7 -1.7
BIA **Bitola** 82.65 312 ⇓*i*Pg P 01 23 17.2 -1.7
CLL **Collm** 82.66 324 ⇓*i*P P 01 23 18.5 -0.1
comp=Z,173nm,1.2s
CLL *e*Plp 01 23 20.0
comp=Z,400nm,20.3s
CLL *i* 01 23 21.1
CLL *e*pP pP 01 23 53.0 -0.7
CLL *e*PP PP 01 26 29.0 -0.7
CLL *e*pPP 01 27 03.0
CLL *e*sPP 01 27 18.0
CLL *e*PPP PPP 01 28 17.0
CLL *e* 01 30 37.0
CLL *e*S S 01 33 30.0 +5.6
CLL *e*SP SPn 01 34 12.0 -1.4
CLL *e*sS sS 01 34 23.0 -2.0
CLL *e*PPS PPS 01 35 10.0
CLL *e*SS SS 01 38 51.0 +2.5
CLL *e*sSS 01 39 38.0
CLL *e*SSS SSS 01 42 18.0
CLL *e*SKKP 01 44 51.0
CLL *e*SSSS 01 45 00.0
CLL **Collm** 82.66 324 ⇓*i*P P 01 23 18.5 -0.1
CLL *e**PP pP 01 23 53.0 -0.7
CLL *e*S S 01 33 30.0 +5.6
CLL pmax pmax
comp=Z,173nm,1.2s
CLL **Collm** 82.66 324 *e*P P 01 23 18.5 -0.1
comp=Z,232nm,1.2s
KZN **Kozani** 82.67 311 P P 01 23 17.9 -1.1
KZN **Kozani** 82.67 311 P P 01 23 17.9 -1.1
KZN **Kozani** 82.67 311 P P 01 23 17.9 -1.1
IDI **Anoyia** 82.68 305 P P 01 23 18.0 -1.1
comp=Z,100nm,1.0s,baz=35,slow=9.3,SNR=44
IDI **Anoyia** 82.68 305 ⇓*i*P P 01 23 18.4 -0.8
IDI **Anoyia** 82.68 305 P P 01 23 18.0 -1.1
IDI **Anoyia** 82.68 305 *e*P P 01 23 18.1 -1.1
comp=Z,139nm,1.0s
FNA **Florina** 82.72 312 P P 01 23 18.1 -1.2
FNA **Florina** 82.72 312 P P 01 23 18.1 -1.2
FNA **Florina** 82.72 312 P P 01 23 18.1 -1.2
IVA **Berane** 82.74 314 ⇑*i*P P 01 23 19.3 -0.1
CONA **Conrad Observa** 82.79 320 *i*P P 01 23 20.1 +0.6
comp=Z,306nm,1.3s,SNR=168
PVY **Plav** 82.83 314 ⇑*i*P P 01 23 19.2 -0.7
THL **Klokotos Trika** 82.84 310 P P 01 23 17.8 -2.0
PLE **Pljevlja** 82.86 315 ⇑*i*P P 01 23 20.5 +0.5
SIVA **Sivas** 82.86 305 ⇓*i*P P 01 23 20.0 0.0
SIVA **Sivas** 82.86 305 P P 01 23 19.8 -0.2
SIVA **Sivas** 82.86 305 P P 01 23 19.8 -0.2
LTK **Loutraki** 82.87 309 P P 01 23 17.2 -2.8
LTK **Loutraki** 82.87 309 P P 01 23 17.2 -2.8
DID **Didima** 82.91 308 P P 01 23 17.3 -3.0
DID **Didima** 82.91 308 P P 01 23 17.3 -3.0
OHR **Ohrid** 82.96 312 ⇓*i*Pg P 01 23 19.4 -1.1
BEHE **Becsehely** 82.97 318 ⇓*e*P P 01 23 20.7 +0.3
DSF **Desfina** 83.00 309 P P 01 23 18.3 -2.5
DSF **Desfina** 83.00 309 P P 01 23 18.3 -2.5
KRND **KRANIDI** 83.02 308 P P 01 23 18.0 -2.8
KPRO **Kipourio** 83.11 311 P P 01 23 19.8 -1.5
NEST **Nestorio** 83.11 311 P P 01 23 20.2 -1.1
VAM **Vamos** 83.14 306 P P 01 23 20.5 -0.9
VAM **Vamos** 83.14 306 P P 01 23 20.5 -0.9
VAM **Vamos** 83.14 306 P P 01 23 20.5 -0.9
UPM **Unac-Piva** 83.23 315 ⇑*i*P P 01 23 21.2 -0.8
IMMV **Iera Moni Meta** 83.27 306 P P 01 23 21.1 -1.0
EVR **Evrytania** 83.28 310 P P 01 23 20.8 -1.4
EVR **Evrytania** 83.28 310 P P 01 23 20.8 -1.4
KALE **Kalithea** 83.28 309 P P 01 23 19.8 -2.4
KALE **Kalithea** 83.28 309 P P 01 23 19.8 -2.4
KOGS **Kog** 83.30 318 *e*P P 01 23 21.6 -0.4
ARSA **Arzberg** 83.33 319 *i*P P 01 23 22.3 +0.1
comp=Z,137nm,1.4s,SNR=60
ARSA PP PP 01 26 35.0 -0.3
comp=Z,42nm,2.4s
SERG **Sergoula** 83.33 309 P P 01 23 20.4 -2.0
ANX **Ano Chora** 83.34 310 P P 01 23 21.3 -1.3
GUR **Goura** 83.35 309 P P 01 23 20.5 -2.1
GUR **Goura** 83.35 309 P P 01 23 20.5 -2.1
NKY **Niksic** 83.36 314 ⇑*i*P P 01 23 20.5 -2.1
PDG **Podgorica** 83.37 314 ⇓*i*P P 01 23 22.2 -0.2
PDG **Podgorica** 83.37 314 P P 01 23 22.2 -0.2
TTG **Podgorica** 83.37 314 ⇑*i*P P 01 23 22.1 -0.3
TTG **Podgorica** 83.37 314 P P 01 23 22.2 -0.2
TTG **Podgorica** 83.37 314 P P 01 23 22.2 -0.2
KLV **Kalavryta, Ach** 83.43 309 P P 01 23 21.1 -1.9
KLV **Kalavryta, Ach** 83.43 309 P P 01 23 21.1 -1.9
LAKA **Lakka** 83.47 309 P P 01 23 21.7 -1.4
LAKA **Lakka** 83.47 309 P P 01 23 21.7 -1.4
GVD **Gavdhos** 83.47 305 P P 01 23 22.4 -0.7
GVD **Gavdhos** 83.47 305 P P 01 23 22.4 -0.7
VLI **Veliai** 83.47 307 P P 01 23 20.7 -2.4
VLI **Veliai** 83.47 307 P P 01 23 20.7 -2.4
TIR **Tirane** 83.47 313 ⇓*i*P P 01 23 23.3 +0.3
TIR **Tirane** 83.47 313 *e*P P 01 23 23.0 -0.1
TIR **Tirane** 83.47 313 *e*P P 01 23 22.9 -0.1
comp=Z,954nm,1.4s
KHC **Kasperske Hory** 83.48 322 ⇓*i*P P 01 23 23.1 +0.1
KHC *ex* x 01 23 41.5
KHC *ex* x 01 26 19.0
KHC *e*PP PP 01 26 35.0 -1.5
KHC *e*S S 01 33 31.3 -1.6
KHC **Kasperske Hory** 83.48 322 ⇓*i*P P 01 23 23.1 +0.1
KHC *e* 01 26 35.0
KHC *e* 01 33 31.3
KHC **Kasperske Hory** 83.48 322 *e*P P 01 23 22.0 -1.0
comp=Z,78nm,1.3s
YEL1 **Yell** 83.50 336 ⇓*e*P P 01 23 22.6 -0.2
NKC **Novy Kostel** 83.52 323 ⇓*i*P P 01 23 23.3 +0.1
NKC *e*SKS S 01 33 30.8 -2.5
NKC **Novy Kostel** 83.52 323 ⇓*i*P P 01 23 23.3 +0.1
NKC *e* 01 33 30.8
GEC2 **GERESS Array S** 83.56 321 *e*P P 01 23 23.6 +0.1
GEC2 **GERESS Array S** 83.56 321 *e*P P 01 23 23.6 +0.1
comp=Z,181nm,1.1s
GERES **GERESS Array B** 83.56 321 P P 01 23 23.4 -0.1
comp=Z,85nm,1.0s,baz=57,slow=4.9,SNR=308
GERES PKKPbc PKKPbc 01 41 41.4 +0.4
comp=Z,0.9nm,0.9s,baz=226,slow=2.6,SNR=4.8
GERES LR LR 02 03 37.2
comp=Z,476nm,19.5s,baz=60,slow=38
GEA0 **GERESS Array S** 83.56 321 *e*P P 01 23 22.5 -1.0
BLY **Banja Luka** 83.57 317 ⇓*i*P P 01 23 23.9 +0.5
VLX **Vlachokerasia** 83.58 308 P P 01 23 22.0 -1.8
VLX **Vlachokerasia** 83.58 308 P P 01 23 22.0 -1.8
ANKY **Antikythira Is** 83.59 307 P P 01 23 22.4 -1.3
ANKY **Antikythira Is** 83.59 307 P P 01 23 22.4 -1.3
KYTH **Kithira** 83.59 307 P P 01 23 22.3 -1.5
KYTH **Kithira** 83.59 307 P P 01 23 22.3 -1.5
ULC **Ulcinj** 83.59 313 ⇑*i*P P 01 23 22.7 -1.0
JAN **Janina** 83.60 311 P P 01 23 23.1 -0.7
JAN **Janina** 83.60 311 P P 01 23 23.1 -0.7
JAN **Janina** 83.60 311 P P 01 23 23.1 -0.7
BRY **Bratogost** 83.61 315 ⇑*i*P P 01 23 22.6 -1.3
BUM **Brajici-Budva** 83.66 314 ⇑*i*P P 01 23 23.7 -0.4
DSL **Palaion Diasel** 83.67 310 P P 01 23 23.1 -1.0
DSL **Palaion Diasel** 83.67 310 P P 01 23 23.1 -1.0
SISC **Sisak** 83.71 318 P P 01 23 24.9 +0.7
MOA **Molln** 83.75 320 *i*P P 01 23 24.9 +0.5
comp=Z,97nm,1.0s,SNR=57
DRO **Drossia** 83.78 309 P P 01 23 23.9 -0.8
LRW **Lerwick** 83.81 336 ⇓*e*P P 01 23 23.8 -0.6
LRW AMB AMB 01 23 24.9
comp=Z,412nm,1.3s
HCY **Herceg Novi** 83.85 314 ⇑*i*P P 01 23 24.1 -0.9
PDO **Prodromos** 83.86 310 P P 01 23 23.6 -1.4
PERS **Pernice** 83.88 319 *i*P P 01 23 24.8 -0.3
WAL1 **Walls** 83.90 336 ⇓*e*P P 01 23 24.5 -0.3
AXS **Araxos** 83.91 309 P P 01 23 24.4 -0.9
RLS **Riolos of Patr** 83.91 309 P P 01 23 24.6 -0.7
RLS **Riolos of Patr** 83.91 309 P P 01 23 24.6 -0.7
SOKA **Soboth** 83.91 319 *i*P P 01 23 25.2 0.0
comp=Z,128nm,1.2s,SNR=67
SAN1 **Sandwick** 83.92 336 *e*P P 01 23 24.4 -0.5
AMT **Artemida-Makis** 83.98 309 P P 01 23 24.7 -1.0
ITM **Ithomi** 83.98 308 P P 01 23 24.6 -1.2
ITM **Ithomi** 83.98 308 P P 01 23 24.6 -1.2
IGT **Igoumenitsa** 84.01 311 P P 01 23 24.7 -1.1
IGT **Igoumenitsa** 84.01 311 P P 01 23 24.7 -1.1
IGT **Igoumenitsa** 84.01 311 P P 01 23 24.7 -1.1
SGD **Sagiada** 84.04 311 P P 01 23 21.5 -4.4
LKD2 **Lefkada island** 84.13 310 P P 01 23 25.3 -1.2
LKD2 **Lefkada island** 84.13 310 P P 01 23 25.3 -1.2
VTN **Vitineika** 84.17 309 P P 01 23 27.2 +0.6
PYL **PYLOS** 84.25 308 P P 01 23 25.3 -1.8
PYL **PYLOS** 84.25 308 P P 01 23 25.3 -1.8
OBKA **Obir** 84.28 319 *i*P P 01 23 27.1 -0.1
comp=Z,118nm,1.1s,SNR=22
OBKA *e*PP PP 01 26 42.0 -1.2
comp=Z,35nm,1.3s
KEK **Kerkira** 84.29 311 P P 01 23 26.1 -1.1
KEK **Kerkira** 84.29 311 P P 01 23 26.1 -1.1
KFL **Anninata** 84.36 310 P P 01 23 26.8 -0.8
BOJS **Bojanci** 84.38 318 *i*P P 01 23 27.7 +0.2
VLS **Valsamata** 84.47 310 P P 01 23 27.1 -1.1
VLS **Valsamata** 84.47 310 P P 01 23 27.1 -1.1
VLS **Valsamata** 84.47 310 P P 01 23 27.1 -1.1
VISS **Visnje** 84.47 318 *i*P P 01 23 27.9 -0.2
GRFO **Grafenberg** 84.48 323 *e*P P 01 23 28.5 +0.5
GRFO **Grafenberg** 84.48 323 *e*P P 01 23 28.5 +0.5
comp=Z,339nm,1.3s
LJU **Ljubljana** 84.53 319 *e*P P 01 23 28.2 -0.1
UDBI **Udbina** 84.56 317 P P 01 23 28.0 -0.6
KBA **Koelnbreinsper** 84.69 320 *i*P P 01 23 29.0 -0.3
comp=Z,98nm,1.1s,SNR=45
MYKA **Terra Mystica** 84.75 320 *i*P P 01 23 29.0 -0.5
comp=Z,54nm,1.2s,SNR=17
JAVS **Javornik** 84.89 319 *i*P P 01 23 29.6 -0.6
PGC **Sidney** 84.89 38 *e*P P 01 23 31.4 +1.4
comp=Z,279nm,1.4s
NVLJ **Novalja** 85.09 317 P P 01 23 30.3 -0.8
TRI **Trieste** 85.16 319 *e*P P 01 23 30.6 -0.8
TRI **Trieste** 85.16 319 *e*P P 01 23 30.6 -0.8
comp=Z,102nm,1.1s
A04D **Lummi Island** 85.27 38 P P 01 23 33.4 +1.5
baz=304,SNR=24
NLWA **Neilton Lookou** 85.34 39 *e*P P 01 23 34.2 +1.8
comp=Z,463nm,1.7s
ABTA **Abfaltersbach** 85.35 320 *i*P P 01 23 31.4 -1.1
comp=Z,118nm,1.2s,SNR=41
ABTA *e*PP PP 01 26 50.2 -1.7
comp=Z,20nm,1.6s
WTSB **Winterswijk** 85.50 327 *e*P P 01 23 33.0 +0.1
comp=Z,508nm,1.5s
WATA **Walderalm** 85.57 321 *i*P P 01 23 32.9 -0.7
comp=Z,164nm,1.3s,SNR=56
WTTA **Wattenberg** 85.58 321 *i*P P 01 23 33.4 -0.3
comp=Z,140nm,1.2s,SNR=44
WTTA *e*PP PP 01 26 53.2 -0.6
comp=Z,56nm,1.4s
ILULI **Ilulissat** 85.64 358 ⇓*i*P P 01 23 32.9 -0.4
comp=Z,302nm,1.2s
ILULI **Ilulissat** 85.64 358 ⇓*i*P P 01 23 32.9 -0.4
ILULI pmax pmax
comp=Z,300nm,1.2s
MOTA **Moosalm** 85.83 321 *i*PcP P 01 23 35.3 +0.3
comp=Z,111nm,1.2s,SNR=71
B05A **Bryant** 85.86 38 P P 01 23 36.4 +1.6
baz=304,SNR=37
MLA1 **Latheron** 85.89 335 ⇓*e*P P 01 23 34.2 -0.6
MATE **Matera** 85.91 313 ⇓*i*P P 01 23 35.1 -0.1
RETA **Reutte** 85.95 321 *i*PcP P 01 23 35.2 -0.2
comp=Z,37nm,1.2s,SNR=16
RETA PP PP 01 26 55.0 -1.6
comp=Z,47nm,1.3s
E03A **Lebam** 85.97 40 *e*P P 01 23 37.5 +2.1
comp=Z,227nm,1.1s
B06A **Marblemount** 86.05 37 *e*P P 01 23 37.0 +1.2
comp=Z,356nm,1.3s
STU **Stuttgart** 86.10 323 *e*P P 01 23 35.3 -0.7
STU **Stuttgart** 86.10 323 *e*P P 01 23 35.3 -0.7
comp=Z,218nm,1.1s
FETA **Feichten** 86.23 321 *i*PcP P 01 23 36.7 -0.2
comp=Z,131nm,1.3s,SNR=52
FETA *e*PP PP 01 26 56.2 -2.8
comp=Z,40nm,1.3s
F03A **Seaside** 86.31 40 *e*P P 01 23 39.4 +2.2
comp=Z,531nm,1.4s
MCD **Coleburn Disti** 86.35 335 ⇓*e*P P 01 23 36.3 -0.7
MME1 **Meikle Cairn** 86.42 334 ⇓*e*P P 01 23 36.2 -1.2
MVH1 **Achvaich** 86.47 335 ⇓*e*P P 01 23 36.7 -0.9
D05A **Enumclaw** 86.52 39 *e*P P 01 23 40.2 +2.1
comp=Z,514nm,1.4s
DAVA **Damuels** 86.56 322 *i*PcP P 01 23 38.4 -0.1
comp=Z,163nm,1.1s,SNR=57
DAVA *e*PP PP 01 26 60.0 -1.7
comp=Z,68nm,1.4s
TIP **Timpagrande** 86.61 312 ⇑*i*P P 01 23 39.2 +0.4
TIP **Timpagrande** 86.61 312 P P 01 23 38.8 0.0
TIP **Timpagrande** 86.61 312 *e*P P 01 23 38.8 0.0
comp=Z,491nm,1.4s
TIP *e*PP PP 01 26 50.1 -12
HGN **Heimansgroeve** 86.65 326 *e*P P 01 23 38.3 -0.3
comp=Z,397nm,1.5s
MEM **Membach** 86.70 326 P P 01 23 38.7 -0.2
comp=Z,113nm,1.7s
C06D **Leavenworth** 86.71 38 P P 01 23 40.4 +1.3
baz=305,SNR=8.4
FUORN **Ofenpass-Fuorn** 86.72 321 *e*P P 01 23 39.5 0.0
comp=Z,287nm,1.3s
LANF **Langenberg** 86.73 324 ⇓*e*P P 01 23 39.2 +0.1
BEBN **Eben Emael** 86.76 326 P P 01 23 39.0 -0.1
comp=Z,65nm,1.6s
BFO **Black Forest** 86.82 323 *ce*P P 01 23 39.2 -0.5
BFO **Black Forest** 86.82 323 *e*P P 01 23 39.1 -0.5
comp=Z,192nm,1.3s
CUC **Castrocucco** 86.82 313 *e*P P 01 23 39.2 -0.6
comp=Z,93nm,1.3s
DAVOX **Davos/Dischmat** 86.84 321 P P 01 23 39.9 -0.1
comp=Z,131nm,1.1s,baz=56,slow=1.8,SNR=90
DAVOX PP PP 01 27 03.5 -0.4
comp=Z,34nm,1.2s,baz=21,slow=4.8,SNR=5.7
LON **Longmire** 86.87 39 *e*P P 01 23 41.1 +1.2
LON **Longmire** 86.87 39 *e*P P 01 23 41.1 +1.2
comp=Z,188nm,1.8s
MDO **Dochfour** 86.88 335 ⇓*e*P P 01 23 38.2 -1.5
G03D **McMinnville, O** 86.88 41 P P 01 23 42.9 +3.0
baz=304,SNR=6.6
EDU **Dundee** 86.97 334 ⇓*e*P P 01 23 39.3 -0.8
F04A **Amboy** 86.97 40 *e*P P 01 23 41.8 +1.4
comp=Z,230nm,1.3s
STR **Strasbourg** 86.98 323 ⇓*e*P P 01 23 40.5 +0.2
AQU **L'Aquila** 87.15 316 *e*P P 01 23 40.7 -0.7
AQU pmax pmax
comp=Z,593nm,1.8s
AQU **L'Aquila** 87.15 316 *e*P P 01 23 40.7 -0.7
comp=Z,593nm,1.8s
BCLA **Clavier** 87.18 326 P P 01 23 40.8 -0.4
comp=Z,112nm,1.7s
KAC **Achnashellach** 87.19 335 ⇓*e*P P 01 23 40.0 -1.1
WLF **Walferdange** 87.20 325 P P 01 23 41.6 +0.3
comp=Z,219nm,1.6s
WLF **Walferdange** 87.20 325 *e*P P 01 23 41.7 +0.3
WLF **Walferdange** 87.20 325 *e*P P 01 23 41.7 +0.3
comp=Z,319nm,1.2s
COR **Corvallis** 87.20 41 *e*P P 01 23 44.2 +2.7
COR **Corvallis** 87.20 41 *e*P P 01 23 44.2 +2.7
comp=Z,217nm,1.0s
ETW **Entiat** 87.21 38 *e*P P 01 23 42.8 +1.2
LTY **Liberty** 87.22 38 *e*P P 01 23 42.5 +0.9
comp=Z,341nm,1.7s
ESY **Stoneypath** 87.25 333 ⇓*e*P P 01 23 40.7 -0.8
WLS **Welschbruch** 87.30 323 *e*P P 01 23 42.0 0.0
B08A **Colville Reser** 87.31 37 *e*P P 01 23 43.1 +1.1
comp=Z,385nm,1.4s
TUE **Stuetta** 87.32 321 *e*P P 01 23 42.1 -0.2
comp=Z,227nm,1.2s
UCC **Uccle** 87.42 326 P P 01 23 42.4 0.0
comp=Z,60nm,1.3s
KPL **Plockton** 87.44 335 *e*P P 01 23 41.7 -0.6
KPL AMB AMB 01 23 42.5
comp=Z,99nm,1.2s
KSB **Sheil Bridge** 87.45 335 ⇓*e*P P 01 23 41.0 -1.4
ECH **Echery** 87.53 323 ⇓*e*P P 01 23 42.6 -0.4
KMBO **Kilima Mbogo** 87.56 268 P P 01 23 44.9 +0.8
comp=Z,53nm,1.2s,baz=47,slow=6.5,SNR=74
KMBO pP pP 01 24 19.4 -0.1
comp=Z,27nm,1.2s,baz=57,slow=7.9,SNR=4.1
KMBO PP PP 01 27 11.6 +0.5
comp=Z,4.2nm,0.8s,baz=61,slow=11,SNR=5.6
KMBO **Kilima Mbogo** 87.56 268 *e*P P 01 23 44.9 +0.8
comp=Z,360nm,1.9s
KMBO *e*pP pP 01 24 19.1 -0.4
KMBO *e*PP PP 01 27 11.7 +0.5
KMBO **Kilima Mbogo** 87.56 268 P P 01 23 44.3 +0.3
SNR=67
KMBO **Kilima Mbogo** 87.56 268 P P 01 23 44.3 +0.3
SNR=67
SNF **Seneffe** 87.64 326 P P 01 23 43.1 -0.3
CEL **Celeste** 87.65 312 *e*P P 01 23 43.8 0.0
comp=Z,649nm,1.2s
CEL *e*PP PP 01 27 05.4 -5.2
I03D **Drain, OR** 87.66 42 P P 01 23 45.3 +1.7
baz=304
DOU **Dourbes** 87.74 326 P P 01 23 43.6 -0.3
comp=Z,70nm,1.8s
EAB **Aberfoyle** 87.75 334 ⇓*e*P P 01 23 42.9 -0.9
MOF **Molkenrain** 87.75 323 ⇓*e*P P 01 23 43.7 -0.5
H04A **Detroit Lake** 87.81 41 *e*P P 01 23 45.6 +1.1
comp=Z,133nm,1.3s
SFJD **Kangerlussuaq** 87.84 358 P P 01 23 43.3 -0.7
comp=Z,107nm,1.1s,baz=9.2,slow=5.6,SNR=43
SFJD PP PP 01 27 09.9 -1.1
comp=Z,42nm,1.1s,baz=0.7,slow=10.0,SNR=16
SFJD **Kangerlussuaq** 87.84 358 ⇓*i*P P 01 23 43.3 -0.7
comp=Z,179nm,1.2s
SFJD **Kangerlussuaq** 87.84 358 *e*P P 01 23 43.3 -0.7
comp=Z,196nm,1.2s
SFJD *e*PP PP 01 27 06.8 -4.3
EKA **Eskdalemuir Ar** 87.87 333 P P 01 23 43.9 -0.5
comp=Z,49nm,1.1s,baz=53,slow=4.4,SNR=53
EKA PP PP 01 27 10.9 -0.7
comp=Z,23nm,1.0s,baz=56,slow=9.2,SNR=4.0
ESK **Eskdalemuir** 87.90 333 ⇓*e*P P 01 23 43.9 -0.7
ESK AMB AMB 01 23 44.9
comp=Z,119nm,1.5s
ESK **Eskdalemuir** 87.90 333 *ce*P P 01 23 44.5 -0.1
ESK **Eskdalemuir** 87.90 333 *e*P P 01 23 44.2 -0.4
comp=Z,223nm,1.4s
ESK *e*PP PP 01 27 09.2 -2.7
LMK **Market Rasen** 87.93 330 ⇓*e*P P 01 23 44.5 -0.2
LMK AMB AMB 01 23 46.0
comp=Z,390nm,2.4s
ECK **Cauldkaine Hil** 87.97 333 ⇓*e*P P 01 23 44.3 -0.6
G05D **Wamic, OR** 88.00 40 P P 01 23 46.6 +1.3
baz=305
BHH **Howats Hill** 88.06 333 ⇓*e*P P 01 23 45.0 -0.3
PGBU **Glenifferbraes** 88.08 334 *e*P P 01 23 44.6 -0.8
PGBU AMB AMB 01 23 46.4
comp=Z,205nm,2.1s
THEF **They Montfort** 88.15 324 ⇓*e*P P 01 23 45.2 -0.7
I04A **Tendick Farm,** 88.17 42 P P 01 23 48.1 +1.9
baz=304
BWH **Wardlaw** 88.19 333 ⇓*e*P P 01 23 45.5 -0.5
C09A **Chrisman Ranch** 88.22 37 *e*P P 01 23 47.8 +1.5
comp=Z,548nm,1.6s
LOMF **Lomont** 88.22 323 ⇓*e*P P 01 23 46.0 -0.4
D08A **Wollman Farm,** 88.31 38 *e*P P 01 23 48.3 +1.6
comp=Z,455nm,1.7s
D08A *e*pP pP 01 24 25.5 +3.3
L02D **Cave Junction,** 88.35 43 P P 01 23 49.3 +2.3
baz=303
HAWA **Hanford** 88.36 38 *e*P P 01 23 48.5 +1.6
comp=Z,210nm,1.3s
KESW **Keswick, Cumbr** 88.37 332 *e*P P 01 23 46.3 -0.5
KESW AMB AMB 01 23 47.3
comp=Z,121nm,1.5s
G06A **Carlson Farm,** 88.40 40 *e*P P 01 23 48.9 +1.7
comp=Z,706nm,2.0s
HUMO **Hull Mountain** 88.50 43 *e*P P 01 23 50.0 +2.3
comp=Z,32nm,0.8s
I05D **Terrebonne, OR** 88.50 41 P P 01 23 49.8 +2.1
baz=305
SENIN **Lac Senin/Sane** 88.54 322 *e*P P 01 23 47.8 -0.3
comp=Z,94nm,1.1s
NEW **Newport** 88.55 36 P P 01 23 49.3 +1.4
comp=Z,114nm,1.0s,baz=305,slow=4.6,SNR=115
NEW pP pP 01 24 25.6 +2.1
comp=Z,44nm,0.7s,baz=295,slow=3.4,SNR=6.4

NEW **Newport** 88.55 36 P P 01 23 49.9 +2.0
baz=308
NEW **Newport** 88.55 36 eP P 01 23 49.3 +1.4
comp=Z,298nm,1.3s
NEW epP pP 01 24 25.1 +1.7
MENF Mencas 88.66 327↓ eP P 01 23 47.7 -0.5
ELSH Elham, Standar 88.78 328↓ eP P 01 23 48.1 -0.7
GAL1 Galloway 88.84 333 eP P 01 23 48.1 -0.9
CWF Charnwood Fore 88.85 330↓ eP P 01 23 47.8 -1.3
CWF AMB AMB 01 23 49.3
comp=Z,123nm,1.5s
CWF Charnwood Fore 88.85 330 eP P 01 23 48.5 -0.6
comp=Z,135nm,1.2s
OG01 Vacheresse 88.90 322↓ eP P 01 23 49.3 -0.3
KHMM Horse Mountain 88.97 45 eP P 01 23 54.4 +4.3
comp=Z,105nm,1.4s
STNC Stoke 89.01 331↓ eP P 01 23 49.7 -0.2
STNC AMB AMB 01 23 50.5
comp=Z,168nm,1.4s
VAE Valguarnera 89.06 311 P P 01 23 51.9 +1.4
comp=Z,34nm,1.0s,baz=88,slow=5.3,SNR=6.9
YBH Yreka Blue Hor 89.14 43 P P 01 23 52.4 +1.6
comp=Z,20nm,1.0s,baz=295,slow=3.2,SNR=19
YBH pP pP 01 24 29.5 +3.1
comp=Z,14nm,0.9s,baz=55,slow=3.6,SNR=3.5
YBH Yreka Blue Hor 89.14 43 eP P 01 23 51.6 +0.8
YBH pmax pmax
comp=Z,61nm,1.3s
YBH Yreka Blue Hor 89.14 43 eP P 01 23 51.6 +0.8
comp=Z,61nm,1.3s
YBH pP pP 01 24 29.5 +3.1
J05D Fort Rock, OR 89.17 42 P P 01 23 52.8 +1.9
baz=305
K04D Chiloquin, OR 89.22 42 P P 01 23 53.0 +1.8
baz=305
M02C Callahan 89.23 44 P P 01 23 53.0 +1.7
baz=304,SNR=10
SKP1 Kophill 89.31 329↓ eP P 01 23 49.9 -1.4
WIM Isle of Man 89.33 333↓ eP P 01 23 50.4 -0.9
HMNX Herstmonceux 89.34 328↓ eP P 01 23 51.4 0.0
HMNX AMB AMB 01 23 52.1
comp=Z,133nm,1.3s
N02D Trinity Center 89.56 44 P P 01 23 54.4 +1.6
baz=304
FOEL Foel Wylfa 89.59 331↓ eP P 01 23 52.1 -0.5
FOEL AMB AMB 01 23 53.2
comp=Z,222nm,1.3s
SSW Stow on the Wo 89.62 330↓ eP P 01 23 52.3 -0.4
WPM1 Penmaenmawr 89.64 332↓ eP P 01 23 52.4 -0.4
M04C Macdoel 89.65 43 P P 01 23 54.7 +1.4
baz=305,SNR=16
OG22 Abries 89.65 321↓ eP P 01 23 52.6 -0.7
K05A Summer Lake 89.69 42 eP P 01 23 55.5 +2.0
comp=Z,83nm,1.1s
HLM1 Long Mynd 89.70 331 eP P 01 23 52.6 -0.5
HLM1 AMB AMB 01 23 53.6
comp=Z,148nm,1.4s
WME Myndd Eilian 89.71 332↓ eP P 01 23 52.6 -0.4
WALA Waterton Lakes 89.72 34 eP P 01 23 55.0 +1.5
comp=Z,597nm,1.4s
GMM Mts of Mourne 89.79 333↓ eP P 01 23 52.6 -0.8
CLTB Caltabellotta 89.81 312 eP P 01 23 54.6 +0.5
comp=Z,214nm,1.5s
YLL Llanberis 89.83 332↓ eP P 01 23 53.2 -0.5
LOR Lormes 89.87 324 eP P 01 23 52.8 -1.2
LOR pmax pmax
comp=Z,74nm,1.3s
WDC Whiskeytown Da 89.88 44 eP P 01 23 55.9 +1.7
WDC Whiskeytown Da 89.88 44 eP P 01 23 55.9 +1.7
comp=Z,34nm,1.1s
F10A Beach Ranch, E 89.89 38 eP P 01 23 55.7 +1.4
comp=Z,287nm,1.7s
GDM Grand'Maison 89.89 321↓ eP P 01 23 54.4 0.0
STRD Stroud 89.89 330↓ eP P 01 23 53.5 -0.5
STRD AMB AMB 01 23 54.3
comp=Z,248nm,1.5s
SWN1 Swindon 89.91 330↓ eP P 01 23 53.6 -0.4
SWN1 AMB AMB 01 23 54.5
comp=Z,184nm,1.5s
YRC Rhoscolyn 89.93 332↓ eP P 01 23 53.6 -0.5
LUCF Luceram 89.97 320 eP P 01 23 54.4 -0.3
BSMT Bassoo Peak 90.04 35 eP P 01 23 56.9 +1.8
REVF Revere 90.05 320↓ eP P 01 23 54.5 -0.5
YRE Yr Eifl 90.05 332↓ eP P 01 23 54.3 -0.4
MVIF Mont Vial 90.08 320↓ eP P 01 23 54.8 -0.4
GRN Grenoble 90.08 322↓ eP P 01 23 55.4 +0.3
MCH1 Michaelchurch 90.12 330↓ eP P 01 23 54.3 -0.7
MCH1 AMB AMB 01 23 55.4
comp=Z,210nm,1.6s
MONM Monmouth 90.14 330 eP P 01 23 54.4 -0.7
MONM AMB AMB 01 23 55.3
comp=Z,93nm,1.8s
BLMT Blacktail Moun 90.16 35 eP P 01 23 57.3 +1.7
BATH Bath 90.20 330↓ eP P 01 23 54.7 -0.7
BATH AMB AMB 01 23 55.5
comp=Z,151nm,1.6s
CALN Calern 90.32 320↓ eP P 01 23 56.0 -0.3
JTMT Jette 90.37 35 eP P 01 23 58.1 +1.6
FCC Fort Churchill 90.42 19 eP P 01 23 56.2 -0.1
FCC Fort Churchill 90.42 19 eP P 01 23 56.2 -0.1
comp=Z,418nm,1.1s
YBMT Yellow Bay 90.43 35 eP P 01 23 58.5 +1.7
O03D Paynes Creek 90.51 44 P P 01 23 58.2 +1.0
baz=305,SNR=10
LPW Lampeter 90.51 331↓ eP P 01 23 56.5 -0.3
LPW AMB AMB 01 23 58.2
comp=Z,208nm,1.6s
MOD Modoc Plateau 90.52 42 eP P 01 23 59.0 +1.6
comp=Z,83nm,1.1s
BMO Blue Mountains 90.53 39 eP P 01 23 58.6 +1.3
comp=Z,132nm,1.3s
FRB Frobisher Bay 90.64 6 P P 01 23 56.5 -0.7
comp=Z,75nm,1.0s,baz=341,slow=4.9,SNR=72
FRB PP PP 01 27 32.6 -0.6
comp=Z,10nm,1.1s,baz=351,slow=6.6,SNR=3.0
SWMT Swartz Lake 90.67 35 eP P 01 23 59.1 +1.2
DSB Dublin 90.69 333 eP P 01 23 56.4 -1.3
comp=Z,114nm,1.1s
SSB Saint Sauveur 90.73 322↓ eP P 01 23 57.9 -0.2
SSB Saint Sauveur 90.73 322 eP P 01 23 57.2 -0.9
SSB Saint Sauveur 90.73 322 eP P 01 23 57.2 -0.9
comp=Z,105nm,1.1s
SSB ePP PP 01 27 35.2 +0.4
PLDF La Plantade 90.81 323 eP P 01 23 58.7 +0.2
FFC Flin Flon 91.00 25 eP P 01 23 59.5 +0.4
FFC Flin Flon 91.00 25 eP P 01 23 59.5 +0.4
comp=Z,430nm,1.0s
AGO Saint Agoulin 91.02 323↓ eP P 01 23 59.2 -0.2
LDF La Druitiere 91.07 327 eP P 01 23 57.9 -1.6
LDF pmax pmax
comp=Z,108nm,1.9s
ORV Oroville 91.12 45 eP P 01 24 00.7 +0.7
ORV Oroville 91.12 45 eP P 01 24 00.7 +0.7
comp=Z,54nm,1.4s
ORV epP pP 01 24 39.6 +4.1
MSO Missoula 91.13 36 P P 01 24 01.0 +1.0
baz=310,SNR=100
MSO Missoula 91.13 36 eP P 01 24 00.8 +0.8
comp=Z,241nm,1.4s
LEPF PUYLOUBIER 91.14 320↓ eP P 01 24 00.0 0.0
WVOR Wild Horse Val 91.21 41 eP P 01 24 02.1 +1.6
WVOR Wild Horse Val 91.21 41 eP P 01 24 02.1 +1.6
comp=Z,94nm,1.2s
WVOR ePKKPdf PKKPbc 01 41 23.9 +1.4
VSL Villasalto 91.27 315 eP P 01 24 00.8 +0.1
comp=Z,127nm,1.2s
PYM Petit Puy Mans 91.28 323↓ eP P 01 24 00.4 -0.3
CHMT Chamberlain Mo 91.44 35 eP P 01 24 02.4 +0.8
LBL Lubilhac 91.48 323 eP P 01 24 01.8 +0.2
DYA Yadsworthy 91.63 330↓ eP P 01 24 01.1 -0.9
DYA AMB AMB 01 24 02.9
comp=Z,100nm,1.8s
DYA Yadsworthy 91.63 330 eP P 01 24 01.8 -0.3
comp=Z,195nm,1.6s
FRNF Fournols 91.75 323↓ eP P 01 24 03.2 +0.4
AFDM Forest Hills D 91.80 45 eP P 01 24 04.6 +1.4
comp=Z,43nm,1.4s
CASY Casey 91.93 185 eP P 01 24 03.7 +0.9
comp=Z,7,0nm,1.4s
CASY epP pP 01 24 38.7 +0.3
MFID Camas Ranch 92.25 39 eP P 01 24 06.9 +1.6
comp=Z,122nm,1.1s
MFID epP pP 01 24 43.8 +2.9
CAF Calviac 92.32 323 eP P 01 24 05.3 -0.2
CAF pmax pmax
comp=Z,142nm,1.4s
EGMT Eagleton 92.47 33 P P 01 24 07.3 +1.1
baz=313
EGMT Eagleton 92.47 33 eP P 01 24 07.2 +1.0
comp=Z,226nm,1.3s
LRM Limekiln Ridge 92.57 36 eP P 01 24 08.1 +1.2
CMB Columbia Colle 92.70 45 eP P 01 24 08.4 +1.0
CMB Columbia Colle 92.70 45 eP P 01 24 08.4 +1.0
comp=Z,49nm,1.1s
CMB epP pP 01 24 45.2 +2.3
DLMT Dillon 92.80 36 eP P 01 24 09.0 +1.2
comp=Z,212nm,1.4s
HLID Hailey 92.96 38 P P 01 24 10.3 +1.7
baz=310,SNR=91
HLID Hailey 92.96 38 eP P 01 24 10.6 +1.9
comp=Z,81nm,1.0s
HLID epP pP 01 24 47.2 +3.0
MCMT McKenzie Canyo 93.01 37 eP P 01 24 10.0 +1.1
LFF La Frestale 93.03 324 eP P 01 24 08.7 +0.1
LFF pmax pmax
comp=Z,66nm,1.3s
WAKR Walker 93.04 45 eP P 01 24 10.5 +1.4
BOZ Bozeman (W) 93.12 35 P P 01 24 10.4 +1.2
baz=312,SNR=45
BOZ Bozeman (W) 93.12 35 eP P 01 24 10.5 +1.2
BOZ Bozeman (W) 93.12 35 eP P 01 24 10.5 +1.2
comp=Z,161nm,1.6s
VAL Valentia 93.24 334↓ iP P 01 24 10.0 +0.6
BMN Battle Mountai 93.27 42 eP P 01 24 11.9 +1.8
BMN Battle Mountai 93.27 42 eP P 01 24 11.9 +1.8
comp=Z,91nm,1.4s
BMN epP pP 01 24 50.9 +5.2
LRDF Laroque-de-Fa 93.32 321 eP P 01 24 09.8 -0.3
SJAF Saint Jean de 93.41 321↓ eP P 01 24 09.5 -1.0
KEST Kesra 93.43 312 P P 01 24 11.2 +0.4
comp=Z,78nm,1.0s,baz=318,slow=0.6,SNR=53
KEST LR LR 02 10 40.7
comp=Z,192nm,19.6s,baz=9.5,slow=38
KEST Kesra 93.43 312 eP P 01 24 11.1 +0.3
comp=Z,195nm,1.1s
CARF Carcanieres 93.71 321↓ eP P 01 24 11.5 -0.5
QLMT Earthquake Lak 93.77 36 eP P 01 24 14.1 +1.7
NVAR Mina Arroy Bea 93.80 44 P P 01 24 14.1 +1.4
comp=Z,20nm,0.7s,baz=290,slow=4.6,SNR=80
NVAR pP pP 01 24 50.1 +1.9
comp=Z,15nm,1.0s,baz=280,slow=5.3,SNR=4.1
MLAC Mammoth, Mammo 93.93 45 P P 01 24 14.4 +1.1
baz=306
VALF Valcebollere 93.96 321↓ eP P 01 24 13.3 +0.1
GCMT Greycliff 94.04 34 eP P 01 24 14.7 +1.2
YMR Madison River 94.12 36 eP P 01 24 16.0 +2.0
comp=Z,189nm,1.7s
YPM Purple Mountai 94.18 36 eP P 01 24 16.5 +2.1
CMAH Djebel Manchou 94.19 314 P P 01 24 13.8 -0.5
PPT Papeete 94.22 107 LR LR 01 58 47.7
comp=Z,547nm,21.3s,baz=334,slow=30
PPT2 Papeete2 94.22 107 ePP PP 01 28 00.4 -3.2
comp=Z,201nm,25.8s
PPT2 eS S 01 35 08.5 -5.9
comp=Z,685nm,25.0s
PPT2 Papeete2 94.22 107 eLR LR 01 54 40.1
comp=Z,2µm,25.2s
ELK Elko 94.26 41 eP P 01 24 16.5 +1.8
ELK Elko 94.26 41 eP P 01 24 16.5 +1.8
comp=Z,39nm,1.1s
ELK epP pP 01 24 54.0 +3.7
ELK ePP PP 01 27 58.2 -4.6
YFT Old Faithful 94.34 36 eP P 01 24 18.3 +3.3
comp=Z,218nm,1.8s
ABSA Djebel Ababsia 94.35 314 P P 01 24 14.8 -0.3
RCTC Rector, Farmer 94.45 46 P P 01 24 17.0 +1.6
baz=306
CAEH 'Ain El Ouahch 94.47 314 P P 01 24 15.4 -0.1
LKWY Lake 94.49 36 eP P 01 24 17.8 +2.0
LKWY pmax pmax
comp=Z,148nm,1.6s
LKWY Lake 94.49 36 eP P 01 24 17.8 +2.0
comp=Z,148nm,1.6s
H17A Grant Village 94.51 36 P P 01 24 18.9 +3.1
baz=312
H17A Grant Village 94.51 36 eP P 01 24 18.9 +3.1
comp=Z,188nm,1.5s
SMMC Simmler 94.53 48 P P 01 24 17.8 +1.9
baz=306
IMW Indian Meadow 94.65 36 eP P 01 24 18.4 +1.9
comp=Z,124nm,1.8s
FLWY Flagg Ranch 94.66 36 eP P 01 24 18.6 +2.2
comp=Z,237nm,1.8s
TIN Tinemaha, Big 94.66 45 P P 01 24 18.4 +1.9
baz=307
RLMT Red Lodge 94.70 35 P P 01 24 18.2 +1.5
baz=314,SNR=9.4
RLMT Red Lodge 94.70 35 eP P 01 24 17.9 +1.2
comp=Z,140nm,1.5s
VIEF Viey 94.77 322↓ eP P 01 24 17.0 +0.2
DGMT Dagmar 94.77 30 P P 01 24 17.4 +0.7
baz=318
DGMT Dagmar 94.77 30 eP P 01 24 17.3 +0.6
comp=Z,243nm,1.3s
CKFL Kef-Lekhel 94.77 314 P P 01 24 16.9 -0.1
FXWY Fox Creek 94.78 37 eP P 01 24 19.0 +1.9
comp=Z,64nm,1.7s
FXWY ePKKPdf PKKPbc 01 41 13.4 -0.2
MOOW Moose Ponds 94.86 36 eP P 01 24 18.9 +1.5
comp=Z,88nm,1.8s
MOOW ePKKPdf PKKPbc 01 41 13.0 -0.5
REYF Montagne du Re 94.87 323 eP P 01 24 18.1 +0.8
PKM Mcpherson Peak 94.89 48 P P 01 24 19.5 +1.8
baz=306
A25A Svangstu Ranch 94.91 29 P P 01 24 18.2 +1.0
baz=318
CASM Ain Smara 95.01 314 P P 01 24 17.5 -0.5
LOHW Long Hollow 95.02 36 eP P 01 24 19.2 +1.1
comp=Z,56nm,1.8s
HVU Hansel Valley 95.03 39 eP P 01 24 19.7 +1.6
HVU Hansel Valley 95.03 39 eP P 01 24 19.7 +1.6
comp=Z,47nm,1.5s
SNOW Snow King Moun 95.04 37 eP P 01 24 20.3 +2.0
comp=Z,12nm,1.0s
REDW Red Top Meadow 95.06 37 eP P 01 24 20.1 +1.8
comp=Z,75nm,1.7s
LAO LASA Array 95.12 32 P P 01 24 19.7 +1.3
baz=316,SNR=22
LAO LASArray 95.12 32 eP P 01 24 19.3 +1.0
comp=Z,132nm,1.3s
SBC Santa Barbara 95.22 48 P P 01 24 20.3 +1.4
baz=306
GRAC Grapevine Rang 95.25 45 P P 01 24 20.5 +1.4
baz=307,SNR=6.0
AHID Auburn Hatcher 95.32 37 eP P 01 24 20.5 +1.0
comp=Z,33nm,1.3s
ISA Isabella, Lake 95.33 47 P P 01 24 19.9 +0.3
baz=306
B25A Knox Farm, Ray 95.38 29 P P 01 24 20.8 +1.4
baz=318,SNR=9.2
A26A Wade Farm, Ken 95.40 29 P P 01 24 20.4 +0.9
baz=319
ARVC Arvin 95.41 47 P P 01 24 20.5 +0.7
baz=306
BGU Big Grassy Mou 95.44 40 eP P 01 24 22.1 +2.0
comp=Z,43nm,1.5s
SPUT South Promonto 95.52 39 eP P 01 24 22.3 +1.9
comp=Z,63nm,1.8s
SCZ2 Santa Cruz Isl 95.53 48 P P 01 24 21.5 +1.1
baz=306
DAC Darwin (Calif) 95.54 46 eP P 01 24 21.5 +0.9
DAC Darwin (Calif) 95.54 46 eP P 01 24 21.5 +0.9
comp=Z,21nm,0.9s
DAC epP pP 01 24 59.2 +3.0
DAC ePP PP 01 28 10.0 -2.8
R11A Troy Canyon, C 95.54 43 P P 01 24 21.6 +1.0
baz=309
R11A Troy Canyon, C 95.54 43 eP P 01 24 21.6 +1.0
comp=Z,13nm,0.8s
R11A ePP PP 01 28 00.1 -13
A27A Ledoux Ranch, 95.70 28 P P 01 24 21.7 +0.8
baz=320
B26A Jensen Ranch, 95.71 29 P P 01 24 21.8 +0.9
baz=319
MPMC Manual Prospec 95.74 46 P P 01 24 22.7 +1.1
baz=307,SNR=28
SET Setif 95.75 314 P P 01 24 22.0 +0.6
C25A Freed Ranch, W 95.76 30 P P 01 24 22.2 +1.1
baz=318,SNR=11
OSI Osito Audit: C 95.78 47 P P 01 24 23.1 +1.6
baz=306
HWUT Hardware Ranch 95.83 38 eP P 01 24 23.1 +1.3
comp=Z,122nm,1.9s
HWUT epP pP 01 25 00.0 +2.5
BLG Laguna Peak, P 95.85 48 P P 01 24 21.9 +0.1
baz=306
FURC Furnace Creek, 95.89 45 P P 01 24 23.3 +1.4
baz=308,SNR=15
LRMC Laurel Mtn Rad 95.96 46 P P 01 24 23.8 +1.4
baz=307,SNR=9.7
TPNV Topopah Spring 95.99 44 P P 01 24 23.6 +1.0
baz=308,SNR=20
TPNV Topopah Spring 95.99 44 eP P 01 24 23.7 +1.0
TPNV Topopah Spring 95.99 44 eP P 01 24 23.7 +1.0
comp=Z,27nm,1.1s
DUG Dugway, Tooele 96.04 40 P P 01 24 24.4 +1.6
baz=311
DUG Dugway, Tooele 96.04 40 eP P 01 24 24.2 +1.5
DUG Dugway, Tooele 96.04 40 eP P 01 24 24.2 +1.5
comp=Z,66nm,1.5s
EDW2 Edwards Air Fo 96.11 47 P P 01 24 24.3 +1.2
baz=307,SNR=13
D25A Fairfield 96.14 30 P P 01 24 23.7 +0.8
baz=318,SNR=18
A28A Rude Farm, Bot 96.15 28 P P 01 24 23.3 +0.4
baz=321,SNR=21
BW06 Boulder Array 96.16 37 P P 01 24 23.7 +0.4
baz=313
BW06 Boulder Array 96.16 37 eP P 01 24 23.5 +0.2
comp=Z,18nm,1.3s
PD31 Pinedale Array 96.16 37 eP P 01 24 23.9 +0.6
PDAR Pinedale Array 96.16 37 P P 01 24 23.4 +0.1
comp=Z,4.3nm,0.9s,baz=352,slow=0.4,SNR=21
PDAR pP pP 01 25 00.1 +1.1
comp=Z,1.9nm,0.8s,baz=288,slow=0.9,SNR=2.1
PDAR PP PP 01 28 17.4 +0.1
comp=Z,2.6nm,1.0s,baz=321,slow=2.1,SNR=4.0
PDAR PKKPbc PKKPdf 01 41 08.2 -1.5
comp=Z,0.2nm,0.3s,baz=126,slow=3.2,SNR=4.2
PDAR LR LR 02 10 10.5
comp=Z,68nm,19.7s,baz=351,slow=37
C26A Wahner Farm, P 96.19 29 P P 01 24 23.8 +0.7
baz=319,SNR=13
TCUT Toone Canyon 96.24 39 eP P 01 24 25.6 +1.8
comp=Z,109nm,1.6s
DECC Green Verdugo 96.25 48 P P 01 24 25.0 +1.4
baz=306
CTU Camp Tracy 96.33 39 eP P 01 24 26.4 +2.3
comp=Z,26nm,1.3s
MWC Mount Wilson 96.46 47 eP P 01 24 26.0 +1.2
MWC Mount Wilson 96.46 47 eP P 01 24 26.0 +1.2
comp=Z,40nm,1.4s
B28A Dugan Ranch, T 96.46 28 P P 01 24 24.9 +0.6
baz=321,SNR=7.7
PSUT Pine Spring 96.48 42 eP P 01 24 26.4 +1.5
comp=Z,16nm,1.0s
C27A Sayler Ranch, 96.53 29 P P 01 24 25.4 +0.7
baz=320,SNR=14
JLU Jordanelle 96.56 39 eP P 01 24 26.9 +1.7
comp=Z,17nm,1.2s
A29A Manning Farm, 96.57 27 P P 01 24 24.9 +0.1
baz=322,SNR=10
E25A Miller Ranch, 96.59 31 P P 01 24 26.0 +1.0
baz=318,SNR=8.2
SHOC Shoshone, Teco 96.61 45 P P 01 24 26.2 +1.0
baz=308
NLU North Lily Min 96.62 40 eP P 01 24 26.9 +1.4
comp=Z,29nm,1.3s
GSC Goldstone, Bar 96.64 46 P P 01 24 26.6 +1.1
baz=308,SNR=18
GSC Goldstone, Bar 96.64 46 eP P 01 24 26.6 +1.1
GSC Goldstone, Bar 96.64 46 eP P 01 24 26.6 +1.1
comp=Z,45nm,1.3s
GSC ePP PP 01 28 16.7 -4.4
D26A Manning 96.64 30 P P 01 24 26.3 +1.2
baz=319,SNR=23
BFSC Mount Baldy Ra 96.71 47 P P 01 24 27.0 +1.1
baz=307,SNR=7.3
TBI Tubuai 96.73 113 ePP PP 01 28 19.2 -3.6
comp=Z,169nm,28.5s
TBI eSKSac SKSac 01 34 45.8 -4.1
comp=Z,662nm,28.6s
TBI eS S 01 35 31.3 -4.4
comp=Z,1µm,28.0s
TBI Tubuai 96.73 113 eLR LR 01 56 10.5
comp=Z,697nm,31.5s
ULM Lac du Bonnet 96.83 25 P P 01 24 25.4 -0.5
comp=Z,54nm,1.1s,baz=330,slow=5.6,SNR=26
ULM LR LR 02 13 10.9
comp=Z,111nm,18.1s,baz=327,slow=38
ULM Lac du Bonnet 96.83 25 eP P 01 24 25.3 -0.5
comp=Z,75nm,1.1s
MPU Maple Canyon 96.84 40 eP P 01 24 28.2 +1.8
comp=Z,21nm,1.2s
B29A Wagenman Farm, 96.88 27 P P 01 24 26.7 +0.5
baz=322,SNR=9.5
A30A Hoffart Farm, 96.93 27 P P 01 24 26.5 0.0
baz=322,SNR=11
D27A Center 96.98 29 P P 01 24 27.7 +1.0
baz=320
F25A Bowman 96.99 31 P P 01 24 27.7 +0.9
baz=318,SNR=13
C28A Hausauer Farms 97.02 28 P Pdif 01 24 27.8 +0.9
baz=321
E26A Carlson Angus 97.04 30 P Pdif 01 24 27.9 +0.8
baz=319,SNR=6.0
TUQ Turquoise Moun 97.12 45 P Pdif 01 24 28.7 +0.9
baz=308,SNR=12
HEC Hector,Ludlow 97.23 46 P Pdif 01 24 29.1 +0.9
baz=308,SNR=13
MDND Maddock 97.25 28 P Pdif 01 24 28.4 +0.4
baz=321,SNR=9.0
MDND Maddock 97.25 28 eP Pdif 01 24 28.8 +0.9
comp=Z,160nm,1.4s
B30A Myrvik Farm, E 97.31 27 P Pdif 01 24 28.4 +0.2
baz=322,SNR=9.7
D28A Regan 97.34 29 P Pdif 01 24 28.8 +0.4
baz=320,SNR=10.0
MURC Murrieta 97.40 48 P Pdif 01 24 29.7 +0.7
baz=307
F26A Lodgepole 97.41 31 P Pdif 01 24 29.1 +0.4
baz=319,SNR=9.1
E27A Carson 97.48 30 P Pdif 01 24 29.7 +0.7
baz=320,SNR=14
MSU Marysvale 97.50 41 eP Pdif 01 24 31.9 +2.3
MSU Marysvale 97.50 41 eP Pdif 01 24 31.9 +2.3
G25A Newell 97.55 32 P Pdif 01 24 29.6 +0.2
baz=318,SNR=5.3
TMUT Trail Mountain 97.56 40 eP Pdif 01 24 31.7 +1.8
comp=Z,32nm,1.7s
B31A Greenbush Farm 97.61 27 P P 01 24 28.9 -0.5
baz=323
A32A Rocking H Ranc 97.67 26 P Pdif 01 24 30.0 +0.2
baz=324,SNR=8.1
GMRC Granite Mounta 97.69 46 P Pdif 01 24 30.8 +0.4
baz=308,SNR=9.5
F27A Lemmon 97.70 31 P Pdif 01 24 31.1 +1.1
baz=319,SNR=10
P17A Butcher Ranch, 97.72 40 eP Pdif 01 24 32.2 +1.8
comp=Z,48nm,1.6s
E28A Huff 97.76 29 P Pdif 01 24 31.1 +0.9
baz=320
MTPU Mount Pierson 97.81 41 eP Pdif 01 24 33.6 +2.5
comp=Z,22nm,1.2s
LCMT Little Creek M 97.83 43 eP Pdif 01 24 32.6 +1.7
comp=Z,12nm,1.0s
LCMT ePP PP 01 28 27.1 -3.1
C30A Mose, Pekin 97.84 27 P P 01 24 30.4 -0.1
baz=322,SNR=5.2
K22A Casper 97.85 35 P Pdif 01 24 31.9 +1.0
baz=315
K22A Casper 97.85 35 eP Pdif 01 24 31.6 +0.7
comp=Z,80nm,1.8s
G26A Maurine 97.86 31 P Pdif 01 24 31.8 +1.1
baz=319,SNR=13
D29A Pettibone, Tap 97.87 28 P Pdif 01 24 31.7 +1.0
baz=321
LDFC Landfair 97.87 45 eP Pdif 01 24 33.2 +2.1
comp=Z,34nm,1.2s
PFO Pinyon Flats O 97.89 47 P Pdif 01 24 32.8 +1.5
comp=Z,18nm,1.1s,baz=280,slow=2.2,SNR=10
PFO pP pP 01 25 09.4 +2.5
comp=Z,13nm,1.1s,baz=306,slow=5.5,SNR=2.8
PFO Pinyon Flats O 97.89 47 P Pdif 01 24 32.3 +1.1
baz=308,SNR=12
PFO Pinyon Flats O 97.89 47 eP Pdif 01 24 32.6 +1.4
comp=Z,27nm,1.1s
PFO pP pP 01 25 09.4 +2.5
H25A Fruitdale 97.89 32 P Pdif 01 24 31.6 +0.6

	baz=318,SNR=6.5							
P18A	**Preston Nutter**	**97.89**	**39**	*e*P		Pdif	01 24 33.0	+1.7
	comp=Z,90nm,2.0s							
BELC	**Belle Mtn. Jos**	**97.95**	**47**	P		**P**	**01 24 30.9**	**-0.6**
	baz=308							
RSSD	**Black Hills**	**98.04**	**33**	P		Pdif	01 24 32.3	+0.5
	baz=317							
RSSD	**Black Hills**	**98.04**	**33**	*e*P		Pdif	01 24 32.8	+1.0
RSSD	**Black Hills**	**98.04**	**33**	*e*P		Pdif	01 24 32.8	+0.9
	comp=Z,83nm,1.5s							
C31A	**Landman Farms,**	**98.08**	**27**	P		Pdif	01 24 32.0	+0.4
	baz=323,SNR=7.0							
SRU	**San Rafael Swe**	**98.08**	**40**	*e*P		Pdif	01 24 33.4	+1.3
SRU	**San Rafael Swe**	**98.08**	**40**	*e*P		Pdif	01 24 33.4	+1.4
	comp=Z,9.9nm,1.0s							
SRU				*e*PP		**PP**	**01 28 32.3**	**+0.2**
A33A	**Warroad**	**98.08**	**25**	P		**P**	**01 24 31.5**	**-0.1**
	baz=325,SNR=11							
KNB	**Kanab**	**98.08**	**43**	*e*P		Pdif	01 24 34.2	+2.1
KNB	**Kanab**	**98.08**	**43**	*e*P		Pdif	01 24 34.2	+2.1
	comp=Z,33nm,1.0s							
G27A	**Dupree**	**98.11**	**31**	P		Pdif	01 24 32.6	+0.8
	baz=319,SNR=14							
PKCU	**Pink Cliffs**	**98.12**	**42**	*e*P		Pdif	01 24 35.0	+2.5
	comp=Z,23nm,1.4s							
D30A	**Buchanan**	**98.19**	**28**	P		Pdif	01 24 32.8	+0.7
	baz=322,SNR=12							
E29A	**Napoleon**	**98.23**	**29**	P		Pdif	01 24 33.2	+0.9
	baz=321,SNR=9.0							
I25A	**Rochford**	**98.27**	**33**	P		Pdif	01 24 33.4	+0.7
	baz=318							
F28A	**McLaughlin**	**98.27**	**30**	P		Pdif	01 24 33.3	+0.8
	baz=320,SNR=6.6							
H26A	**Fairpoint**	**98.28**	**32**	P		Pdif	01 24 33.3	+0.6
	baz=318,SNR=6.5							
BAR	**Barrett**	**98.31**	**48**	*e*P		Pdif	01 24 37.8	+4.8
	comp=Z,12nm,1.0s							
MONP2	**Monument Peak**	**98.34**	**48**	P		Pdif	01 24 34.0	+0.6
	baz=308							
IRM	**Iron Mountain**	**98.42**	**46**	P		Pdif	01 24 33.9	+0.5
	baz=308,SNR=14							
AGMN	**Agassiz Nation**	**98.42**	**26**	P		**P**	**01 24 33.0**	**0.0**
	baz=324,SNR=5.9							
AGMN	**Agassiz Nation**	**98.42**	**26**	*e*P		**P**	**01 24 32.9**	**-0.2**
	comp=Z,20nm,1.3s							
BC3	**Big Chuckawall**	**98.52**	**47**	P		Pdif	01 24 34.4	+0.4
	baz=308,SNR=7.8							
E30A	**Jud**	**98.60**	**28**	P		Pdif	01 24 34.5	+0.5
	baz=322,SNR=14							
H27A	**Howes**	**98.60**	**31**	P		Pdif	01 24 34.7	+0.7
	baz=319,SNR=5.8							
I26A	**New Underwood**	**98.68**	**32**	P		**P**	**01 24 34.3**	**-0.2**
	baz=318							
O20A	**White River Ci**	**98.68**	**38**	P		Pdif	01 24 35.7	+1.0
	baz=314							
O20A	**White River Ci**	**98.68**	**38**	*e*P		Pdif	01 24 36.5	+1.8
	comp=Z,16nm,1.1s							
J25A	**Sunshine Ranch**	**98.69**	**33**	P		Pdif	01 24 34.9	+0.3
	baz=318							
F29A	**Eureka**	**98.72**	**29**	P		Pdif	01 24 35.3	+0.8
	baz=321,SNR=7.8							
SWSC	**Sam W. Stewart**	**98.73**	**47**	P		Pdif	01 24 35.7	+0.9
	baz=308							
B34A	**Aery, Baudette**	**98.73**	**25**	P		**P**	**01 24 34.0**	**-0.5**
	baz=325,SNR=7.1							
G28A	**Parade**	**98.81**	**30**	P		Pdif	01 24 35.5	+0.6
	baz=320							
C33A	**Trail**	**98.89**	**26**	P		**P**	**01 24 35.0**	**-0.2**
	baz=324							
TAOE	**Nuku Hiva Isla**	**98.96**	**96**	*e*PP		PP	01 28 36.7	-3.4
	comp=Z,168nm,27.4s							
TAOE				*e*S		**S**	**01 35 51.8**	**-3.5**
	comp=Z,624nm,28.3s							
TAOE	**Nuku Hiva Isla**	**98.96**	**96**	*e*LR		LR	01 57 05.6	
	comp=Z,870nm,30.7s							
PDMCI	**Parker Dam,Lak**	**98.97**	**45**	P		Pdif	01 24 36.9	+1.1
	baz=309							
I27A	**Quinn**	**99.04**	**32**	P		**Pdif**	**01 24 36.9**	**+0.8**
	baz=319							
H28A	**Mission Ridge**	**99.06**	**31**	P		**Pdif**	**01 24 37.4**	**+1.3**
	baz=320							
Y12C	**Blythe**	**99.07**	**46**	P		**Pdif**	**01 24 37.8**	**+1.5**
	baz=309,SNR=5.2							
Y12C	**Blythe**	**99.07**	**46**	*e*P		**Pdif**	**01 24 38.1**	**+1.8**
Y12C				*e*PP		**PP**	**01 28 38.7**	**-0.9**
ES19	**SONSECA Array**	**99.09**	**322**	*e*P		**Pdif**	**01 24 35.9**	**-0.5**
PBRG	**Braganca**	**99.14**	**325**	*e*Pdif		**Pdif**	**01 24 36.0**	**-0.5**
ESDC	**Sonseca Array**	**99.15**	**322**	P		**Pdif**	**01 24 35.7**	**-0.9**
	comp=Z,7.1nm,1.1s,baz=34,slow=4.7,SNR=15							
ESDC				PP		**PP**	**01 28 34.0**	**-6.0**
	comp=Z,11nm,1.0s,baz=46,slow=8.5,SNR=7.8							
ESDC				LR		LR	02 11 16.8	
	comp=Z,246nm,20.1s,baz=45,slow=36							
ESLA	**Sonseca Array**	**99.15**	**322**	*e*P		**Pdif**	**01 24 36.0**	**-0.6**
	comp=Z,17nm,1.1s							
G29A	**Hoven**	**99.17**	**30**	P		**Pdif**	**01 24 37.3**	**+0.8**
	baz=321							
B35A	**Bob, Littlefor**	**99.19**	**24**	P		**Pdif**	**01 24 36.4**	**-0.1**
	baz=326,SNR=8.9							
E32A	**Braaten, Kindr**	**99.30**	**27**	P		**Pdif**	**01 24 37.5**	**+0.5**
	baz=323							
GLA	**Glamis**	**99.31**	**47**	P		**Pdif**	**01 24 38.4**	**+1.0**
	baz=309,SNR=5.6							
C34A	**RKJ Ranch, Bem**	**99.32**	**26**	P		**Pdif**	**01 24 36.9**	**-0.3**
	baz=325							
D33A	**AnnSam, Waubun**	**99.36**	**26**	P		**Pdif**	**01 24 37.0**	**-0.4**
	baz=324							
F31A	**Hecla**	**99.38**	**28**	P		**Pdif**	**01 24 38.3**	**+0.8**
	baz=322							
N23A	**Red Feather La**	**99.40**	**36**	P		**Pdif**	**01 24 38.8**	**+0.8**
	baz=316							
N23A	**Red Feather La**	**99.40**	**36**	*e*Pdif		**Pdif**	**01 24 39.1**	**+1.1**
	comp=Z,56nm,1.8s							
H29A	**Onida**	**99.47**	**30**	P		**Pdif**	**01 24 39.0**	**+1.0**
	baz=320							
I28A	**Midland**	**99.51**	**31**	P		**Pdif**	**01 24 38.8**	**+0.7**
	baz=320							
G30A	**Faulkton**	**99.57**	**29**	P		**Pdif**	**01 24 39.2**	**+0.9**
	baz=321,SNR=11							
SCHQ	**Schefferville**	**99.59**	**6**	P		**Pdif**	**01 24 38.0**	**-0.2**
	comp=Z,15nm,1.0s,baz=328,slow=4.3,SNR=6.1							
SCHQ				PP		**PP**	**01 28 39.2**	**-3.4**
	comp=Z,28nm,1.2s,baz=11,slow=7.9,SNR=6.3							
SCHQ				LR		LR	02 11 54.8	
	comp=Z,181nm,19.9s,baz=6.0,slow=37							
SCHQ	**Schefferville**	**99.59**	**6**	*e*Pdif		**Pdif**	**01 24 38.0**	**-0.2**
SCHQ				*e*PP		**PP**	**01 28 39.9**	**-2.8**
C35A	**Jirik Farms, M**	**99.64**	**25**	P		**Pdif**	**01 24 38.4**	**-0.1**
	baz=326							
D34A	**Park Rapids**	**99.67**	**26**	P		**Pdif**	**01 24 39.2**	**+0.5**
	baz=325,SNR=7.7							
J27A	**Elkhorn Farm,**	**99.67**	**32**	P		**Pdif**	**01 24 39.9**	**+1.0**
	baz=319							
MVO	**Moncorvo**	**99.75**	**325**	*e*Pdif		**Pdif**	**01 24 39.0**	**-0.3**
MVO	**Moncorvo**	**99.75**	**325**	*e*LR		LR	01 59 33.2	
	comp=Z,400nm,20.0s							
PGAV	**Gavieira, Arco**	**99.81**	**326**	*e*Pdif		**Pdif**	**01 24 37.9**	**-1.6**
PGAV	**Gavieira, Arco**	**99.81**	**326**	*e*PP		PP	01 28 46.4	+1.4
PGAV				*e*SKS		**SKSac**	**01 35 06.3**	**+1.0**
PGAV	**Gavieira, Arco**	**99.81**	**326**	*e*LR		LR	01 59 28.5	
	comp=Z,539nm,18.0s							
E33A	**Westby DABS, E**	**99.81**	**27**	P		**Pdif**	**01 24 40.1**	**+0.8**
	baz=324							
PV01	**Paradox Valley**	**99.87**	**39**	*e*Pdif		**Pdif**	**01 24 41.2**	**+1.1**
	comp=Z,822nm,1.1s							
I29A	**Vivian Onida**	**99.90**	**31**	P		**Pdif**	**01 24 39.9**	**0.0**
	baz=320							
J28A	**Allard Ranch,**	**99.91**	**32**	P		**Pdif**	**01 24 40.4**	**+0.5**
	baz=320							
WUAZ	**Wupatki**	**99.94**	**43**	P		**Pdif**	**01 24 40.2**	**-0.2**
	baz=311							
WUAZ	**Wupatki**	**99.94**	**43**	*e*Pdif		**Pdif**	**01 24 42.2**	**+1.9**
	comp=Z,25nm,1.4s							
POLO	**Lamas de Olo**	**100.00**	**325**	*e*Pdif		**Pdif**	**01 24 38.8**	**-1.6**
POLO	**Lamas de Olo**	**100.00**	**325**	*e*PP		PP	01 28 47.5	+1.1
C36A	**Pine Crest Far**	**100.02**	**24**	P		**Pdif**	**01 24 40.1**	**-0.2**
	baz=327							
SMCO	**Snowmass**	**100.05**	**38**	*e*Pdif		**Pdif**	**01 24 42.1**	**+1.0**
D35A	**Remer**	**100.12**	**25**	P		**Pdif**	**01 24 41.0**	**+0.3**
	baz=326							
E34A	**Wadena**	**100.14**	**26**	P		**Pdif**	**01 24 40.7**	**-0.2**
	baz=325							
SUSD	**Miller**	**100.19**	**30**	P		**Pdif**	**01 24 41.7**	**+0.6**
	baz=321							
F33A	**5 Mile Ranch,**	**100.23**	**27**	P		**Pdif**	**01 24 41.3**	**0.0**
	baz=324							
C37A	**Embarrass**	**100.28**	**24**	P		**Pdif**	**01 24 41.9**	**+0.5**
	baz=327							
ISCO	**Idaho Springs**	**100.36**	**37**	P		**Pdif**	**01 24 42.2**	**-0.1**
	baz=316							
J29A	**Okreek**	**100.36**	**31**	P		**Pdif**	**01 24 43.0**	**+1.1**
	baz=320							
I30A	**Oacoma**	**100.38**	**30**	P		**Pdif**	**01 24 42.6**	**+0.6**
	baz=321							
PVIS	**Viseu**	**100.53**	**325**	*e*Pdif		**Pdif**	**01 24 43.0**	**+0.3**
MVCO	**Mesa Verde**	**100.54**	**40**	P		**Pdif**	**01 24 44.2**	**+1.1**
	baz=313							
MVCO	**Mesa Verde**	**100.54**	**40**	*e*Pdif		**Pdif**	**01 24 44.7**	**+1.6**
MVCO				*e*PP		**PP**	**01 28 51.6**	**+0.7**
MVCO				*e*PP		**PP**	**01 28 54.7**	**+3.8**
MTE	**Manteigas**	**100.57**	**324**	*e*Pdif		**Pdif**	**01 24 43.0**	**+0.1**
MTE	**Manteigas**	**100.57**	**324**	*e*PP		PP	01 28 52.1	+1.3
MTE				*e*SKS		**SKSac**	**01 35 11.1**	**+2.1**
MTE	**Manteigas**	**100.57**	**324**	*e*LR		LR	01 59 58.0	
	comp=Z,488nm,20.0s							
X16A	**Lo Mia Camp, P**	**100.62**	**44**	*e*Pdif		**Pdif**	**01 24 45.4**	**+2.0**
G33A	**Ortonville**	**100.69**	**28**	P		**Pdif**	**01 24 44.3**	**+1.0**
	baz=324							
J30A	**Dallas**	**100.81**	**31**	P		**Pdif**	**01 24 45.1**	**+1.2**
	baz=321							
H32A	**Carlson Farm,**	**100.81**	**29**	P		**Pdif**	**01 24 45.0**	**+1.1**
	baz=323							
E36A	**McGregor**	**100.89**	**25**	P		**Pdif**	**01 24 44.2**	**+0.1**
	baz=326							
H33A	**Prehn Over Nor**	**100.97**	**28**	P		**Pdif**	**01 24 45.3**	**+0.7**
	baz=323							
G34A	**Benson**	**100.98**	**27**	P		**Pdif**	**01 24 45.4**	**+0.8**
	baz=324							
S22A	**4UR Ranch, Cre**	**101.13**	**39**	P		**Pdif**	**01 24 47.1**	**+1.3**
	baz=315							
S22A	**4UR Ranch, Cre**	**101.13**	**39**	*e*Pdif		**Pdif**	**01 24 47.6**	**+1.8**
S22A				*e*PP		**PP**	**01 28 55.5**	**+0.1**
PMRV	**Marv??o**	**101.19**	**324**	*e*Pdif		**Pdif**	**01 24 46.0**	**+0.3**
PMRV	**Marv??o**	**101.19**	**324**	*e*SKS		**SKSac**	**01 35 13.2**	**+1.2**
PMRV	**Marv??o**	**101.19**	**324**	*e*LR		LR	02 00 15.8	
	comp=Z,493nm,16.0s							
Q24A	**Divide**	**101.20**	**37**	P		**Pdif**	**01 24 47.0**	**+0.9**
	baz=316							
214A	**Organ Pipe Nat**	**101.32**	**47**	P		**Pdif**	**01 24 48.2**	**+1.8**
	baz=310							
F36A	**Milaca**	**101.33**	**26**	P		**Pdif**	**01 24 45.7**	**-0.4**
	baz=326							
OGNE	**Ogallala**	**101.39**	**34**	P		**Pdif**	**01 24 47.1**	**+0.5**
	baz=319							
H34A	**Spellman Lake,**	**101.39**	**28**	P		**Pdif**	**01 24 47.6**	**+1.2**
	baz=324							
LSZ	**Lusaka**	**101.56**	**259**	*e*P		**Pdif**	**01 24 46.4**	**-1.4**
LSZ				pmax		pmax		
	comp=Z,29nm,1.3s							
LSZ	**Lusaka**	**101.56**	**259**	*e*Pdif		**Pdif**	**01 24 46.4**	**-1.4**
	comp=Z,29nm,1.3s							
LSZ				*e*PP		PP	01 28 51.6	-8.2
K31A	**O'Neill**	**101.69**	**31**	P		**Pdif**	**01 24 48.3**	**+0.5**
	baz=321							
PESTR	**Estremoz**	**101.71**	**323**	*e*Pdif		**Pdif**	**01 24 47.8**	**-0.2**
PESTR	**Estremoz**	**101.71**	**323**	*e*SKS		**SKSac**	**01 35 16.9**	**+2.5**
H35A	**Sunnyside Ranc**	**101.76**	**27**	P		**Pdif**	**01 24 48.7**	**+0.6**
	baz=325							
ECSD	**EROS Data Cent**	**101.78**	**29**	P		**Pdif**	**01 24 48.7**	**+0.5**
	baz=323							
ECSD	**EROS Data Cent**	**101.78**	**29**	*e*Pdif		**Pdif**	**01 24 48.6**	**+0.5**
SDCO	**Great Sand Dun**	**101.88**	**38**	P		**Pdif**	**01 24 50.5**	**+1.4**
	baz=316							
PMTG	**Montargil**	**101.90**	**324**	*i* P		PP	01 28 50.6	-10
PBAR	**Barrancos**	**101.90**	**323**	*e*Pdif		**Pdif**	**01 24 48.7**	**-0.1**
PBAR				*i* P		PP	01 28 52.9	-7.9
SPMN	**Marine on St.**	**102.14**	**26**	P		**Pdif**	**01 24 49.7**	**0.0**
	baz=326							
EVO	**Evora**	**102.18**	**323**	*e*Pdif		**Pdif**	**01 24 50.1**	**+0.1**
H36A	**Jessenland, He**	**102.23**	**27**	P		**Pdif**	**01 24 50.3**	**+0.2**
	baz=326							
PBEJ	**Beja**	**102.46**	**323**	*e*Pdif		**Pdif**	**01 24 50.2**	**-1.1**
PMAFR	**Mafra**	**102.54**	**324**	*e*PP		PP	01 29 05.7	+0.2
M31A	**Lambtecht Ranc**	**102.58**	**32**	P		**Pdif**	**01 24 51.3**	**-0.5**
	baz=321							
H37A	**Dierke Farm, C**	**102.63**	**26**	P		**Pdif**	**01 24 51.7**	**-0.2**
	baz=326							
I36A	**Fitzsimmons Fa**	**102.65**	**27**	P		**Pdif**	**01 24 52.5**	**+0.5**
	baz=325							
PNCL	**Nicolau / Gran**	**102.76**	**323**	*e*Pdif		**Pdif**	**01 24 52.8**	**+0.2**
PNCL	**Nicolau / Gran**	**102.76**	**323**	*e*PP		PP	01 29 10.6	+3.5
PNCL				*e*SKS		**SKSac**	**01 35 21.5**	**+2.2**
PVAQ	**Vaqueiros**	**102.83**	**322**	*e*Pdif		**Pdif**	**01 24 52.6**	**-0.4**
PVAQ				*i* P		PP	01 28 59.6	-8.1
PVAQ				*e*SKS		**SKSac**	**01 35 21.5**	**+1.8**
PVAQ	**Vaqueiros**	**102.83**	**322**	*e*LR		LR	02 00 36.7	
	comp=Z,346nm,18.0s							
PCVE	**Castro Verde**	**102.84**	**323**	*e*Pdif		**Pdif**	**01 24 53.9**	**+0.9**
PCVE	**Castro Verde**	**102.84**	**323**	*e*SKS		**SKSac**	**01 35 21.5**	**+1.7**
I37A	**Lemond, Waseca**	**102.91**	**27**	P		**Pdif**	**01 24 53.8**	**+0.6**
	baz=326							
T25A	**Trinidad**	**102.92**	**38**	P		**Pdif**	**01 24 53.0**	**-0.6**
	baz=316							
T25A	**Trinidad**	**102.92**	**38**	*e*PP		PP	01 29 07.5	-1.2
PBDV	**Barranco-do-Ve**	**103.06**	**322**	*e*SKS		**SKSac**	**01 35 23.4**	**+2.5**
MAW	**Mawson**	**103.08**	**200**	*e*PKKPbc		PKKPbc	01 40 49.2	-2.3
J36A	**Seneca 1, Swea**	**103.08**	**28**	P		**Pdif**	**01 24 54.1**	**+0.2**
	baz=325							
K35A	**Storm Lake**	**103.19**	**29**	P		**Pdif**	**01 24 54.3**	**-0.2**
	baz=324							
PTEO	**Sao Teotonio**	**103.28**	**323**	*e*Pdif		**Pdif**	**01 24 55.8**	**+0.9**
ANMO	**Albuquerque**	**103.30**	**41**	*e*P		**Pdif**	**01 24 56.1**	**+0.8**
ANMO				pmax		pmax		
	comp=Z,8.0nm,1.3s							
ANMO	**Albuquerque**	**103.30**	**41**	*e*Pdif		**Pdif**	**01 24 56.1**	**+0.8**
	comp=Z,7.7nm,1.3s							
MORF	**Marmelete**	**103.41**	**323**	*e*SKS		**SKSac**	**01 35 24.3**	**+1.7**
TAM	**Tamanrasset**	**103.56**	**303**	*e*P		**Pdif**	**01 24 56.8**	**+0.2**
TAM				*e*			01 29 12.5	
TAM	**Tamanrasset**	**103.56**	**303**	*e*Pdif		**Pdif**	**01 24 56.8**	**+0.2**
TAM				*e*PP		**PP**	**01 29 08.0**	**-6.0**
TAM				*e*PP		**PKiKP**	**01 29 12.5**	**-2.2**
PFVI	**Vila Bisbo**	**103.64**	**323**	*e*Pdif		**Pdif**	**01 24 54.5**	**-2.0**
PFVI	**Vila Bisbo**	**103.64**	**323**	*e*SKS		**SKSac**	**01 35 25.3**	**+1.8**
K37A	**Belmond**	**103.84**	**28**	P		**Pdif**	**01 24 56.8**	**-0.6**
	baz=326							
J38A	**Wedel Dairy, R**	**103.86**	**27**	P		**Pdif**	**01 24 56.7**	**-0.7**
	baz=327							
M35A	**Neola**	**104.00**	**30**	P		**Pdif**	**01 24 58.7**	**+0.6**
	baz=324							
N34A	**Lincoln**	**104.14**	**31**	P		**Pdif**	**01 24 59.6**	**+0.8**
	baz=323							
121A	**Cookes Peak, D**	**104.15**	**43**	P		**Pdif**	**01 24 58.9**	**-0.2**
	baz=313							
O33A	**Hebron**	**104.23**	**32**	P		**Pdif**	**01 24 59.4**	**+0.2**
	baz=322							
L37A	**Phoenix Point,**	**104.31**	**28**	P		**Pdif**	**01 25 00.3**	**+0.8**
	baz=325							
O34A	**Beatrice**	**104.57**	**31**	P		**Pdif**	**01 25 00.3**	**-0.4**
	baz=323							
L38A	**Oak Wood Farm,**	**104.64**	**28**	P		**Pdif**	**01 24 58.9**	**-2.0**
	baz=326							
P34A	**Walnut Farm, R**	**105.01**	**32**	P		**Pdif**	**01 25 01.1**	**-1.5**
	baz=322							
VNDA	**Vanda**	**105.09**	**172**	PKiKP		**PKiKP**	**01 29 16.6**	**+1.1**
	comp=Z,1.5nm,0.8s,baz=322,slow=2.5,SNR=5.2							
VNDA				PKKPbc		**PKKPbc**	**01 40 44.4**	**-1.2**
	comp=Z,9.8nm,1.1s,baz=190,slow=2.4,SNR=15							
VNDA	**Vanda**	**105.09**	**172**	*e*PKiKP		**PKiKP**	**01 29 20.4**	**+4.9**
VNDA				*e*PKKPbc		**PKKPbc**	**01 40 44.2**	**-1.4**
M38A	**Pleasantville**	**105.13**	**28**	P		**Pdif**	**01 25 04.0**	**+0.8**
	baz=326							
P35A	**Duane Minner,**	**105.40**	**31**	P		**PKiKP**	**01 29 17.9**	**+0.5**
	baz=323							
R33A	**Olander Ranch,**	**105.42**	**33**	P		**PKiKP**	**01 29 17.7**	**+0.2**
	baz=321							
AMTX	**Amarillo**	**106.07**	**38**	*e*PKP		**PKiKP**	**01 29 18.6**	**-0.3**
P37A	**Lathrop**	**106.12**	**30**	P		**PKiKP**	**01 29 18.1**	**-0.6**
	baz=324							
MSTX	**Muleshoe**	**106.13**	**39**	P		**PKiKP**	**01 29 19.4**	**+0.3**
	baz=317							
MSTX	**Muleshoe**	**106.13**	**39**	*e*PKP		**PKiKP**	**01 29 18.6**	**-0.5**
MSTX				*e*PP		**PP**	**01 29 31.4**	**-1.0**
MNTX	**Cornudas Mount**	**106.20**	**42**	P		**PKiKP**	**01 29 20.2**	**+1.1**
	baz=315							
MNTX	**Cornudas Mount**	**106.20**	**42**	*e*Pdif		**Pdif**	**01 25 15.3**	**+7.2**
MNTX				*e*PKiKP		**PKiKP**	**01 29 21.0**	**+1.8**
O40A	**La Belle**	**106.77**	**28**	P		**PKiKP**	**01 29 20.5**	**+0.6**
	baz=327							
U33A	**Lingo Farm, Me**	**106.81**	**34**	P		**PKiKP**	**01 29 20.2**	**+0.1**
	baz=321							
Q38A	**Cooks Store, C**	**106.96**	**30**	P		**PKiKP**	**01 29 20.6**	**+0.3**
	baz=325							
S36A	**Lake Cedric, C**	**107.04**	**32**	P		**PKiKP**	**01 29 20.3**	**-0.2**
	baz=323							
U34A	**Anderson Ranch**	**107.10**	**34**	P		**PKiKP**	**01 29 21.0**	**+0.3**
	baz=321							
Q39A	**Willow Grove F**	**107.18**	**29**	P		**PKiKP**	**01 29 21.5**	**+0.8**
	baz=326							
P40A	**Paris**	**107.19**	**28**	P		**PKiKP**	**01 29 22.1**	**+1.4**
	baz=326							
S37A	**Fort Scott**	**107.38**	**31**	P		**PKiKP**	**01 29 20.1**	**-1.0**
	baz=324							
R39A	**Chumby, Stover**	**107.75**	**30**	P		**PKiKP**	**01 29 21.0**	**-0.8**
	baz=325							
T37A	**Cheneyville 18**	**107.84**	**32**	P		**PKiKP**	**01 29 21.8**	**-0.3**
	baz=324							
R40A	**Maddies Statio**	**108.11**	**29**	P		**PKiKP**	**01 29 22.8**	**+0.3**
	baz=326							
S39A	**Bolivar**	**108.13**	**30**	P		**PKiKP**	**01 29 23.0**	**+0.5**
	baz=325							
T38A	**Diamond**	**108.21**	**31**	P		**PKiKP**	**01 29 23.1**	**+0.4**
	baz=324							
U37A	**Salina**	**108.32**	**32**	P		**PKiKP**	**01 29 23.3**	**+0.4**
	baz=323							
TUL1	**Leonard**	**108.38**	**33**	P		**PKiKP**	**01 29 23.3**	**+0.2**
	baz=323							
Y33A	**Hilltop Ranch,**	**108.39**	**36**	P		**PKiKP**	**01 29 23.4**	**+0.3**
	baz=320							
SFIN	**Lafayette**	**108.47**	**25**	P		**PKiKP**	**01 29 22.6**	**-0.4**
	baz=331							
S40A	**Lebanon**	**108.58**	**30**	P		**PKiKP**	**01 29 23.7**	**+0.3**
	baz=326							
U38A	**Gravette**	**108.64**	**32**	P		**PKiKP**	**01 29 22.6**	**-0.9**
	baz=324							
T39A	**Clever**	**108.65**	**31**	P		**PKiKP**	**01 29 24.0**	**+0.5**
	baz=325							
V37A	**Hulbert**	**108.72**	**33**	P		**PKiKP**	**01 29 24.1**	**+0.4**
	baz=323							
W36A	**Wetumka**	**108.77**	**34**	P		**PKiKP**	**01 29 23.7**	**-0.1**
	baz=322							
ABTX	**Abilene, Hawle**	**108.88**	**38**	P		**PKiKP**	**01 29 24.4**	**+0.2**
	baz=319							
TX31	**Lajitas Ar. Si**	**108.91**	**43**	*e*Pdif		**Pdif**	**01 25 21.4**	**+1.1**
TX31				*e*PKiKP		**PKiKP**	**01 29 24.6**	**+0.2**
TX31				*e*PP		**PP**	**01 29 48.9**	**-3.9**
TXAR	**Lajitas Array**	**108.91**	**43**	Pdiff		**Pdif**	**01 25 21.8**	**+1.5**
	comp=Z,1.6nm,1.1s,baz=325,slow=1.4,SNR=7.5							
TXAR				PKiKP		**PKiKP**	**01 29 24.4**	**0.0**
	comp=Z,1.7nm,0.7s,baz=200,slow=1.1,SNR=26							
TXAR				PKKPbc		**PKKPbc**	**01 40 34.9**	**+2.7**
	comp=Z,0.3nm,0.7s,baz=107,slow=1.3,SNR=4.2							
T40A	**Mansfield**	**108.94**	**30**	P		**PKiKP**	**01 29 23.7**	**-0.4**
	baz=326							
RKT	**Rikitea**	**108.98**	**107**	*e*LR		LR	02 01 11.7	
	comp=Z,1μm,42.0s							
V38A	**Canehill**	**109.10**	**32**	P		**PKiKP**	**01 29 23.8**	**-0.6**
	baz=324							
U39A	**Green Forest**	**109.12**	**31**	P		**PKiKP**	**01 29 23.3**	**-1.2**
	baz=325							
133A	**Hamilton Ranch**	**109.30**	**38**	P		**PKiKP**	**01 29 24.6**	**-0.3**
	baz=320							
U40A	**Yellville**	**109.44**	**31**	P		**PKiKP**	**01 29 25.5**	**+0.5**
	baz=325							
V39A	**Pettigrew**	**109.48**	**32**	P		**PKiKP**	**01 29 25.3**	**+0.1**
	baz=324							
W38A	**Poteau**	**109.68**	**33**	P		**PKiKP**	**01 29 25.8**	**+0.3**
	baz=324							
Y36A	**Durant**	**109.71**	**35**	P		**PKiKP**	**01 29 26.2**	**+0.6**
	baz=322							
233A	**Rising Star**	**109.75**	**38**	P		**PKiKP**	**01 29 26.6**	**+0.9**
	baz=319							
X38A	**Whitesboro**	**109.84**	**33**	P		**PKiKP**	**01 29 26.4**	**+0.6**
	baz=323							
V40A	**Witts Springs**	**109.90**	**31**	P		**PKiKP**	**01 29 26.0**	**0.0**
	baz=325							
SIUC	**Southern Illin**	**109.91**	**28**	*e*Pdif		**Pdif**	**01 25 25.4**	**+1.0**
M54A	**Oil Creek Stat**	**109.94**	**19**	P		**PKiKP**	**01 29 26.0**	**+0.2**
	baz=338							
234A	**Clairette**	**110.19**	**37**	P		**PKiKP**	**01 29 26.6**	**0.0**
	baz=320							
333A	**Richland Sprin**	**110.23**	**38**	P		**PKiKP**	**01 29 25.8**	**-0.9**
	baz=319							
W40A	**Ferguson Farm,

SNAA	**Sanae**	**125.16**	**198**	*e*PKIKP	**PKPdf**	**01 29 54.0**	**0.0**
SNAA	**Sanae**	**125.16**	**198**	*e*PKPdf	**PKPdf**	**01 29 54.0**	**0.0**
VNA2	**Neumayer--Watz** baz=92,slow=1.2	**126.81**	**198**	PKP	**PKPdf**	**01 29 58.5**	**+1.4**
VNA1	**Neumayer--Stat**	**127.20**	**198**	PKP	**PKPdf**	**01 29 57.9**	**+0.1**
SDDR	**Presa de Saban**	**133.47**	**20**	*e*PKPdf	**PKPdf**	**01 30 13.4**	**+2.0**
SDDR				*e*SKPbc	**SKPbc**	**01 33 26.6**	**-0.4**
JTS	**JuntasAbangare** comp=Z,4.7nm,0.5s,baz=313,slow=2.4,SNR=3.1	**134.69**	**42**	PKP	**PKPdf**	**01 30 13.9**	**+0.2**
JTS	**JuntasAbangare**	**134.69**	**42**	*e*PKPdf	**PKPdf**	**01 30 13.2**	**-0.5**
CELP	**Cerrillos**	**135.61**	**14**	*e*PKPdf	**PKPdf**	**01 30 15.4**	**+0.1**
SJG	**San Juan** comp=Z,5.9nm,0.6s,baz=261,slow=2.7,SNR=3.8	**135.67**	**14**	PKP	**PKPdf**	**01 30 15.6**	**+0.1**
STVI	**Saint Thomas**	**135.68**	**12**	*e*PKPdf	**PKPdf**	**01 30 16.0**	**+0.6**
HUMP	**Col San Antoni**	**135.70**	**14**	*e*PKPdf	**PKPdf**	**01 30 16.3**	**+0.8**
MLYT	**Lee's Yard**	**137.74**	**9**	*e*	**PKPdf**	**01 30 16.9**	**-2.4**
DEG	**La Desirade**	**138.28**	**7**	*e*	**PKPdf**	**01 30 19.4**	**-1.0**
BCIP	**Isla Barro Col**	**138.55**	**37**	*e*PKPdf	**PKPdf**	**01 30 20.7**	**-0.2**
TBG	**Guadaloupe-3**	**138.66**	**8**	*e*P	**PKPdf**	**01 30 19.6**	**-1.4**
FDF	**Fort de France**	**139.83**	**8**	*e*	**PKPdf**	**01 30 20.0**	**-3.3**
FDF	**Fort de France**	**139.83**	**8**	*e*PKHKP	PKPpre	01 30 16.5	
FDF				*e*		01 30 24.5	
FDF	**Fort de France**	**139.83**	**8**	*e*PKPpre	PKPpre	01 30 16.5	
FDF				*e*PKPdf	**PKiKP**	**01 30 24.5**	**-1.1**
MCLT	**Moule a Chique**	**140.87**	**8**	*e*	PKPpre	01 30 10.3	
GRGR	**Grenville**	**142.32**	**9**	*e*	PKPpre	01 30 22.2	
SDV	**Santo Domingo** comp=Z,29nm,0.4s,baz=331,slow=4.8,SNR=11	**143.09**	**25**	PKHKP	PKPpre	01 30 26.5	
SDV	**Santo Domingo**	**143.09**	**25**	*e*PKPdf	PKPbc	01 30 27.2	+0.7
SDV				*e*SKP		01 33 54.6	
GRMC	**Gramalote, San**	**143.26**	**29**	*e*P	PKPab	01 30 25.9	+0.3
TOSP	**Speyside**	**143.29**	**8**	*e*P	PKPbc	01 30 27.2	+0.4
BRRC	**Barranca, Sant**	**143.40**	**30**	*e*P	PKPab	01 30 25.3	-0.7
TRN	**Trinidad (W)**	**143.82**	**9**	*e*P	PKPbc	01 30 28.0	-0.3
TBH	**Brigand Hill**	**144.03**	**9**	*e*P	**PKPdf**	**01 30 31.4**	**+0.7**
BARC	**Barichara**	**144.09**	**30**	*e*P	PKPbc	01 30 29.3	-0.2
TPP	**Pointe-a-Pierr**	**144.14**	**9**	*e*P	PKPbc	01 30 29.4	+0.2
MALC	**Bahia Malaga**	**144.18**	**38**	*e*P	PKPbc	01 30 29.3	-0.2
NORC	**Norcasia**	**144.19**	**33**	*e*P	**PKPab**	**01 30 28.7**	**-0.4**
GUYC	**Guyana, Colomb**	**144.22**	**34**	*e*P	**PKPab**	**01 30 29.3**	**-0.4**
GRGC	**Isla de Gorgon**	**144.53**	**41**	*e*P	PKPbc	01 30 31.0	+0.5
TOLC	**Tolima**	**144.79**	**35**	*e*P	**PKPab**	**01 30 30.4**	**-1.3**
ROSC	**El Rosal** comp=Z,14nm,0.3s,baz=196,slow=1.3,SNR=41	**145.09**	**33**	PKPbc	**PKPdf**	**01 30 33.4**	**+0.3**
ROSC				*e*SKPbc	**SKiKP**	**01 34 00.6**	**+0.3**
TUMC	**Tumaco**	**145.13**	**43**	*e*P	**PKPbc**	**01 30 32.1**	**-0.3**
YOPC	**Yopal, Colombi**	**145.53**	**30**	*e*P	**PKPab**	**01 30 34.9**	**+0.7**
POPC	**Popayan, Colom**	**145.76**	**39**	*e*P	**PKPdf**	**01 30 33.8**	**-0.2**
VILC	**Villavicencio,**	**146.02**	**33**	*e*P	**PKPbc**	**01 30 34.9**	**-0.4**
CMBC	**Cumbal**	**146.37**	**42**	*e*P	**PKPab**	**01 30 39.5**	**+1.6**
CRUC	**La Cruz**	**146.39**	**40**	*e*P	**PKPbc**	**01 30 36.6**	**-0.1**
OTAV	**Otavalo**	**146.53**	**44**	*e*PKPdf	**PKPbc**	**01 30 37.3**	**0.0**
OTAV				*e*PP	**PP**	**01 34 00.6**	**0.0**
ATAH	**Atahualpa** comp=Z,9.4nm,0.8s,baz=11,slow=1.8,SNR=19	**151.94**	**54**	PKP	**PKPdf**	**01 30 45.4**	**+1.2**
ATAH				PKPbc	**PKiKP**	**01 30 52.4**	**+1.3**
	comp=Z,103nm,1.1s,baz=331,slow=2.6,SNR=23						
ATAH				PKPab	**PKPab**	**01 31 00.9**	**+0.5**
	comp=Z,52nm,1.0s,baz=107,slow=1.6,SNR=6.3						
RCBR	**Riachuelo** comp=Z,20nm,1.1s,baz=58,slow=5.8,SNR=2.4	**152.68**	**312**	PKP	**PKPdf**	**01 30 45.5**	**+0.7**
RCBR				PKPbc	**PKiKP**	**01 30 52.7**	**+0.5**
	comp=Z,46nm,0.8s,baz=59,slow=3.9,SNR=11						
RCBR				PKPab	**PKPab**	**01 31 02.8**	**-0.3**
	comp=Z,56nm,1.0s,baz=44,slow=5.6,SNR=5.8						
RCBR	**Riachuelo**	**152.68**	**312**	*e*PKPdf	**PKPdf**	**01 30 46.0**	**+1.2**
RCBR				*e*PKPbc	**PKiKP**	**01 30 52.6**	**+0.5**
RCBR				*e*PKPab	**PKPab**	**01 31 02.9**	**-0.1**
PTGA	**Pitinga** comp=Z,7.8nm,0.7s,baz=356,slow=2.2,SNR=24	**155.21**	**10**	PKP	**PKPdf**	**01 30 48.9**	**+0.6**
PTGA				PKPbc	PKPbc	01 30 58.5	
	comp=Z,16nm,0.7s,baz=6.1,slow=2.9,SNR=15						
PTGA				PKPab	**PKPab**	**01 31 12.8**	**-0.8**
	comp=Z,137nm,1.1s,baz=0.3,slow=5.2,SNR=32						
NNA	**Nana** comp=Z,6.7nm,0.4s,baz=253,slow=2.8,SNR=3.9	**156.22**	**60**	PKP	PKPbc	01 31 00.8	
NNA				PKPab	**PKPab**	**01 31 19.2**	**+1.1**
	comp=Z,8.1nm,0.5s,baz=37,slow=4.3,SNR=3.7						
PLCA	**Paso Flores** comp=Z,5.9nm,1.1s,baz=278,slow=2.7,SNR=7.0	**160.44**	**145**	PKP	**PKPdf**	**01 30 55.2**	**+1.1**
PLCA				PKPab	**PKPab**	**01 31 36.7**	**+0.9**
	comp=Z,3.7nm,0.9s,baz=276,slow=5.6,SNR=6.0						
PLCA	**Paso Flores**	**160.44**	**145**	*e*PKPdf	**PKPdf**	**01 30 55.8**	**+1.7**
PLCA				*e*PKPab	**PKPab**	**01 31 38.1**	**+2.3**
SAML	**Samuel**	**162.29**	**24**	*e*PKPdf	**PKPdf**	**01 30 57.1**	**+0.5**
SAML				*e*PKPab	**PKPab**	**01 31 43.0**	**-1.3**
SAML				*e*PP	**PP**	**01 35 25.1**	**-2.4**
LPAZ	**La Paz**	**165.49**	**54**	*i* P	**PKPdf**	**01 31 01.9**	**+1.6**
LPAZ	**La Paz** comp=Z,27nm,1.1s,baz=14,slow=3.1,SNR=58	**165.49**	**54**	PKP	**PKPdf**	**01 31 01.6**	**+1.3**
LPAZ				PKPab	**PKPab**	**01 31 59.1**	**-0.2**
	comp=Z,81nm,1.4s,baz=351,slow=2.9,SNR=11						
PB11	**IPOC Station P**	**166.19**	**69**	*e*PKPdf	**PKPdf**	**01 30 60.0**	**-0.2**
PB11				*e*PKPab	**PKPab**	**01 32 02.9**	**+1.2**
TRQA	**Tornquist**	**166.35**	**159**	*e*PKPdf	**PKPdf**	**01 31 01.3**	**+1.7**
AAGR	**Agrelo**	**166.40**	**127**	*i* P	**PKPdf**	**01 31 01.4**	**+1.4**
AUSP	**Uspallata**	**166.40**	**123**	*i* P	**PKPdf**	**01 31 01.6**	**+1.4**
ASAL	**Salagasta**	**166.64**	**126**	*i* P	**PKPdf**	**01 31 01.2**	**+1.1**
PB01	**IPOC Station P**	**166.85**	**74**	*e*PKPdf	**PKPdf**	**01 31 02.0**	**+1.4**
PB01				*e*PKPab	**PKPab**	**01 32 06.0**	**+1.9**
AGUA	**GUANDACOL**	**168.14**	**113**	*i* P	**PKPdf**	**01 31 03.0**	**+1.7**
VCA	**Vinchina**	**168.59**	**110**	*i* P	**PKPdf**	**01 31 03.5**	**+1.8**
SIV	**San Ignacio** comp=Z,38nm,1.1s,baz=346,slow=0.7,SNR=32	**169.53**	**28**	PKP	**PKPdf**	**01 31 03.2**	**+0.8**
SIV				PKPab	**PKPab**	**01 32 15.8**	**-0.4**
	comp=Z,34nm,1.1s,baz=352,slow=5.0,SNR=13						
YJA	**Yavi**	**170.70**	**72**	*i* P	**PKPdf**	**01 31 05.7**	**+2.3**
CYA	**Choya**	**170.70**	**111**	*i* P	**PKPdf**	**01 31 03.8**	**+1.0**
FSA	**Cafayete**	**170.94**	**97**	*i* P	**PKPdf**	**01 31 05.0**	**+1.8**
HJA	**Humahuaca**	**171.12**	**78**	*i* P	**PKPdf**	**01 31 05.6**	**+2.0**
AHML	**Horco Molle**	**171.46**	**102**	*i* P	**PKPdf**	**01 31 04.5**	**+1.3**
AZAP	**Zapla**	**171.66**	**84**	*i* P	**PKPdf**	**01 31 04.7**	**+1.0**
SPB	**Sao Paulo**	**172.03**	**281**	*e*PKPdf	**PKPdf**	**01 31 04.3**	**+0.8**
SPB				*e*PKPab	**PKPab**	**01 32 27.3**	**-0.1**
ASTB	**Santa Barbara**	**172.16**	**81**	*i* P	**PKPdf**	**01 31 05.4**	**+1.6**
ALOL	**LOMAS DE OLMED**	**172.55**	**80**	*i* P	**PKPdf**	**01 31 05.4**	**+1.6**
CPUP	**Villa Florida** comp=Z,13nm,1.1s,baz=115,slow=2.3,SNR=9.0	**178.44**	**129**	PKP	**PKPdf**	**01 31 05.7**	**+0.5**
CPUP				PKPab		01 32 56.5	
	comp=Z,5.2nm,1.0s,baz=176,slow=1.9,SNR=3.3						
CPUP	**Villa Florida**	**178.44**	**129**	*e*PKPdf	**PKPdf**	**01 31 06.0**	**+0.8**
CPUP				PKPab		01 32 56.5	

JMA 16 01:19:29.4±0.1, 36°.69N×141°.48E, h36km±2km, M3.5, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.68**	**307**	P	Pn	01 19 42.6	-0.1
ONAJ				*e*S	Sn	01 19 52.3	+0.2
JHO	**Hitachi**	**0.74**	**264**	P	Pn	01 19 43.2	-0.1
JHO				S	Sn	01 19 53.3	+0.1
JFK	**Kawauchi**	**0.83**	**325**	P	Pn	01 19 44.6	0.0
JFK				S	Sn	01 19 56.1	+0.4
JFT	**Otama**	**1.23**	**312**	*i* P	Pn	01 19 51.5	+1.4
JFT				*e*S	Sn	01 20 07.5	+2.0
JMM	**Marumori**	**1.29**	**335**	P	Pn	01 19 51.4	+0.5
JMM				S	Sn	01 20 07.8	+0.8
JFY	**Yanaizu**	**1.59**	**297**	P	Pn	01 19 57.3	+2.3
JFY				S	Sn	01 20 17.3	+3.0
JAG	**Ashikaga**	**1.65**	**261**	P	Pn	01 19 57.1	+1.2
JAG				*e*S	Sn	01 20 17.5	+1.7
JIO	**Ouri**	**1.76**	**357**	P	Pn	01 19 57.4	0.0
JIO				*e*S	Sn	01 20 19.0	+0.4
MAT	**Matsushiro**	**2.64**	**268**	P	Pn	01 20 11.6	+2.2
MAT				S	Sn	01 20 45.6	+5.4

*ISCJB **16** 01:25:09.4±0.4, 1°.80N±0°.04×127°.31E±0°.04, h100km, mb4.2/18, Error ellipse: s-maj=6.1km s-min=4.4km az=143.9*
*NEIC **16** 01:25:11.8±0.6, 1°.51N×127°.18E, h108km±5km, mb4.3/10, Error ellipse: s-maj=9.7km s-min=5.4km az=56.0*
*DJA **16** 01:25:11.3±0.4, 2°.N±3°×12°.7E±°, h66km±8km, M4.8/14, mb4.9/14, mB5.3/9, MLv4.7/14, Mw(mB)4.7/9*
*IDC **16** 01:25:13.4±3.1, 1°.53N×127°.16E, h123km±27km, mb4.0/10, mb1 4.1/12, mb1mx3.7/49, mbtmp4.4/12, Error ellipse: s-maj=31.1km s-min=9.9km az=73.0*
ISC 16 01:25:10.8±0.6, 1°.74N±0°.05×127°.28E±0°.06, h100km, n42, σ1$47/52, mb4.4/18, Halmahera

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TNTI	**Ternate**	**0.97**	**175**	P	**Pn**	**01 25 30.5**	**-0.4**
TNTI				S	**Sn**	**01 25 45.2**	**-0.8**
TNTI	**Ternate**	**0.97**	**175**	*e*Pn	**Pn**	**01 25 30.0**	**-0.9**
TNTI				*e*Sn	**Sn**	**01 25 46.7**	**+0.7**
LBMI	**Labuha**	**2.38**	**175**	P	**Pn**	**01 25 48.8**	**+0.5**
SGSI	**Sangihe**	**2.61**	**318**	P	**Pn**	**01 25 49.3**	**-2.0**
SGSI				S	**Sn**	**01 26 20.8**	**-1.7**
SANI	**Sanana**	**3.98**	**199**	P	**Pn**	**01 26 10.4**	**+0.6**
SWI	**Sorong**	**4.75**	**123**	P	**Pn**	**01 26 20.2**	**+0.1**
NLAI	**Namlea** 137nm,0.7s,6μm1.7nm	**4.95**	**182**	P	**Pn**	**01 26 23.4**	**+0.5**
LUWI	**Luwuk** 130nm,0.8s,8μm3.0nm	**5.29**	**239**	P	**Pn**	**01 26 28.0**	**+0.5**
LUWI				S	**Sn**	**01 27 29.3**	**+2.1**
	130nm,0.8s,8μm3.0nm						
LUWI	**Luwuk**	**5.29**	**239**	*e*Pn	**Pn**	**01 26 25.9**	**-1.6**
LUWI				*e*Sn	**Sn**	**01 27 25.4**	**-1.8**
MSAI	**Masohi** 49nm,0.6s,728nm0.2nm	**5.32**	**162**	P	**Pn**	**01 26 29.6**	**+1.7**
MSAI				S	**Sn**	**01 27 31.6**	**+3.7**
	49nm,0.6s,728nm0.2nm						
MRSI	**Marisa** 139nm,0.7s,0.6nm	**5.49**	**257**	P	**Pn**	**01 26 30.6**	**+0.5**
MRSI				S	**Sn**	**01 27 34.2**	**+2.2**
	139nm,0.7s,0.6nm						
APSI	**Ampana** 105nm,1.0s,3μm1.1nm	**6.22**	**245**	P	**Pn**	**01 26 40.6**	**+0.5**
APSI				S	**Sn**	**01 27 52.4**	**+2.6**
	105nm,1.0s,3μm1.1nm						
BNDI	**Bandanaira** 86nm,1.2s,3μm0.6nm	**6.75**	**157**	P	**Pn**	**01 26 49.2**	**+1.8**
FAKI	**Fak Fak** 30nm,0.8s,0.1nm	**6.79**	**133**	P	**Pn**	**01 26 48.9**	**+1.0**
FAKI	**Fak Fak** 15nm,0.5s	**6.79**	**133**	*e*Pn	**Pn**	**01 26 48.6**	**+0.7**
TTSI	**Tana Toraja** 52nm,0.6s,1μm	**8.85**	**237**	P	**Pn**	**01 27 16.2**	**+0.3**
SPSI	**Sidrap Palu** 48nm,0.4s,2μm	**9.41**	**233**	P	**Pn**	**01 27 24.1**	**+0.6**
KAPI	**Kappang** 3.2nm,0.3s,baz=42,slow=12,SNR=5.7	**10.08**	**228**	P	**Pn**	**01 27 33.7**	**+1.0**
KAPI				S	**Sn**	**01 29 20.4**	**-3.6**
	2.7nm,0.3s,baz=240,slow=19,SNR=6.6						
BSSI	**Bau Bau, Buton**	**10.36**	**221**	P	**Pn**	**01 27 37.7**	**+1.2**
SOEI	**Soe** 294nm,1.5s	**11.81**	**195**	*e*Pn	Pn	01 27 52.8	-3.3
KKM	**Kota Kinabalu**	**11.84**	**291**	*e*Pn	**Pn**	**01 27 57.7**	**+1.2**
FITZ	**Fitzroy Crossi** 1.7nm,0.3s,baz=2.5,slow=7.8,SNR=34	**19.79**	**185**	P	**P**	**01 29 31.8**	**-1.4**
FITZ	**Fitzroy Crossi** 12nm,0.8s	**19.79**	**185**	*e*P	**P**	**01 29 31.8**	**-1.4**
WRAB	**Tennant Creek** 25nm,0.8s	**22.63**	**162**	*e*P	**P**	**01 30 01.9**	**-1.7**
WRA	**Warramunga Arr** 11nm,0.4s,baz=340,slow=10,SNR=25	**22.64**	**163**	P	**P**	**01 30 02.0**	**-1.7**
WRA				S	**S**	**01 34 02.3**	**-2.1**
	1.9nm,1.0s,baz=335,slow=16,SNR=4.9						
MBWA	**Marble Bar** 6.7nm,0.7s	**23.93**	**198**	*e*P	**P**	**01 30 14.1**	**-1.6**
ASAR	**Alice Springs** 4.5nm,0.4s,baz=347,slow=7.4,SNR=54	**26.07**	**166**	P	**P**	**01 30 33.8**	**-1.3**
ASAR				S	**S**	**01 35 00.1**	**+1.0**
	0.3nm,0.6s,baz=352,slow=24,SNR=2.7						
KULM	**Kulim** 12nm,1.1s	**26.81**	**278**	*e*P	**P**	**01 30 41.8**	**-0.1**
STKA	**Stephens Creek** 14nm,0.7s,baz=334,slow=9.7,SNR=24	**36.09**	**159**	P	**P**	**01 32 02.3**	**-0.7**
MKAR	**Makanchi Array** 1.4nm,0.4s,baz=117,slow=7.8,SNR=32	**59.49**	**326**	P	**P**	**01 35 04.8**	**+1.2**
TKM2	**Tokmak 2** 2.1nm,0.5s	**61.59**	**319**	*e*P	**P**	**01 35 18.6**	**+0.5**
ZALV	**Zalesovo Beam** 0.4nm,0.4s,baz=111,slow=5.6,SNR=2.9	**62.60**	**333**	P	**P**	**01 35 25.7**	**+1.5**
EKS2	**Erkin-Say** 2.1nm,0.5s	**62.68**	**318**	*e*P	**P**	**01 35 25.9**	**+0.7**
KURBB	**Kurchatov Arra** 3.2nm,0.6s,baz=128,slow=6.2,SNR=28	**63.70**	**328**	P	**P**	**01 35 32.4**	**+0.7**
KURK	**Kurchatov** 14nm,0.6s	**63.70**	**328**	*e*P	**P**	**01 35 32.6**	**+0.9**
SEY	**Seymchan** 1.4nm,0.6s,baz=170,slow=3.2,SNR=6.5	**63.84**	**12**	P	**P**	**01 35 34.5**	**+2.2**
KKAR	**Karatay Array** 1.2nm,0.8s	**65.06**	**317**	*e*P	**P**	**01 35 42.1**	**+1.4**
GEYT	**Alibeck** 1.3nm,0.8s,baz=106,slow=3.2,SNR=3.9	**72.56**	**309**	P	**P**	**01 36 27.3**	**-0.1**
VNDA	**Vanda** 1.4nm,0.8s,baz=316,slow=5.7,SNR=9.9	**81.40**	**173**	P	**P**	**01 37 14.6**	**-1.5**
RAYN	**Ar Rayn** 1.5nm,0.9s	**81.77**	**293**	*e*P	**P**	**01 37 18.9**	**-0.4**
ARCES	**ARCESS Array B** 1.6nm,0.8s,baz=75,slow=4.8,SNR=3.3	**92.49**	**340**	P	**P**	**01 38 10.4**	**0.0**
TORD	**Torodi Ar. Bea** 0.8nm,0.7s,baz=74,slow=1.7,SNR=8.6	**124.04**	**287**	PKP	**PKPdf**	**01 43 57.8**	**-0.8**

*CSEM **16** 01:31:02.0, 45°.68N×26°.38E, h168km, MD3.0/2*
BUC 16 01:31:02.0±1.1, 45°.68N×26°.38E, h168km±9km, MD3.0/2, 15C-12D, Error ellipse: s-maj=8.0km s-min=6.9km az=25.0, Romania

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PLOR	**Plostina**	**0.26**	**47**	S	Sn	01 31 40.5	-1.5
PLOR	**Plostina**	**0.26**	**47**	*i* S	Sn	01 31 40.5	-1.5
PLOR	**Plostina**	**0.26**	**47**	*i* S	Sn	01 31 40.5	-1.5
VRI	**Vrincioaia**	**0.31**	**52**	⇓*i* P	Pn	01 31 24.9	+0.2
VRI	**Vrincioaia**	**0.31**	**52**	⇓*i* P	Pn	01 31 24.9	+0.2
VRI				*i* S	Sn	01 31 40.6	-1.6
VRI	**Vrincioaia**	**0.31**	**52**	⇓*i* P	Pn	01 31 24.9	+0.2
VRI				*i* S	Sn	01 31 40.6	-1.6
MLR	**Muntele Rosu**	**0.36**	**239**	⇓*i* P	Pn	01 31 25.4	+0.4
MLR	**Muntele Rosu**	**0.36**	**239**	⇓*i* P	Pn	01 31 25.4	+0.4
MLR				*i* S	Sn	01 31 40.7	-1.9
MLR	**Muntele Rosu**	**0.36**	**239**	⇓*i* P	Pn	01 31 25.4	+0.4
MLR				*i* S	Sn	01 31 40.7	-1.9
GRER		**0.51**	**125**	S	Sn	01 31 42.8	-0.6
GRER		**0.51**	**125**	*i* S	Sn	01 31 42.8	-0.6
GRER		**0.51**	**125**	*i* S	Sn	01 31 42.8	-0.6
ISR	**Istrita**	**0.57**	**169**	⇑*i* P	Pn	01 31 25.6	-0.2
ISR	**Istrita**	**0.57**	**169**	⇑*i* P	Pn	01 31 25.6	-0.2
ISR				*i* S	Sn	01 31 43.1	-0.9
ISR	**Istrita**	**0.57**	**169**	⇑*i* P	Pn	01 31 25.6	-0.2
ISR				*i* S	Sn	01 31 43.1	-0.9
SECR		**0.68**	**199**	S	Sn	01 31 44.2	-0.8
SECR		**0.68**	**199**	*i* S	Sn	01 31 44.2	-0.8
SECR		**0.68**	**199**	*i* S	Sn	01 31 44.2	-0.8
PLAR	**PLOIESTI**	**0.80**	**198**	S	Sn	01 31 45.2	-1.1
PLAR	**PLOIESTI**	**0.80**	**198**	*i* S	Sn	01 31 45.2	-1.1
PLAR	**PLOIESTI**	**0.80**	**198**	*i* S	Sn	01 31 45.2	-1.1
TESR	**Tescani**	**0.85**	**12**	⇓*i* P	Pn	01 31 27.5	+0.1
TESR	**Tescani**	**0.85**	**12**	⇓*i* P	Pn	01 31 27.5	+0.1
TESR				*i* S	Sn	01 31 45.9	-1.2
TESR	**Tescani**	**0.85**	**12**	⇓*i* P	Pn	01 31 27.5	+0.1
TESR				*i* S	Sn	01 31 45.9	-1.2
PGOR	**Pogoanele**	**0.88**	**151**	S	Sn	01 31 45.8	-1.4
PGOR	**Pogoanele**	**0.88**	**151**	*i* S	Sn	01 31 45.8	-1.4
PGOR	**Pogoanele**	**0.88**	**151**	*i* S	Sn	01 31 45.8	-1.4
VOIR		**0.97**	**256**	⇑*i* P	Pn	01 31 28.7	+0.4
VOIR		**0.97**	**256**	⇑*i* P	Pn	01 31 28.7	+0.4
VOIR				*i* S	Sn	01 31 47.0	-1.5
VOIR		**0.97**	**256**	⇑*i* P	Pn	01 31 28.7	+0.4
VOIR				*i* S	Sn	01 31 47.0	-1.5
SULR		**1.00**	**185**	⇑*i* P	Pn	01 31 28.6	+0.1
SULR		**1.00**	**185**	⇑*i* P	Pn	01 31 28.6	+0.1
SULR				*i* S	Sn	01 31 47.6	-1.2
SULR		**1.00**	**185**	⇑*i* P	Pn	01 31 28.6	+0.1
SULR				*i* S	Sn	01 31 47.6	-1.2
ARR	**Arges**	**1.27**	**256**	⇑*i* P	Pn	01 31 30.6	-0.2
ARR	**Arges**	**1.27**	**256**	⇑*i* P	Pn	01 31 30.6	-0.2
ARR				*i* S	Sn	01 31 52.1	-0.9
ARR	**Arges**	**1.27**	**256**	⇑*i* P	Pn	01 31 30.6	-0.2
ARR				*i* S	Sn	01 31 52.1	-0.9
CFR	**Carcaliu**	**1.33**	**111**	⇓*i* P	Pn	01 31 31.3	0.0
CFR	**Carcaliu**	**1.33**	**111**	⇓*i* P	Pn	01 31 31.3	0.0
CFR				*i* S	Sn	01 31 51.7	-2.1
CFR	**Carcaliu**	**1.33**	**111**	⇓*i* P	Pn	01 31 31.3	0.0
CFR				*i* S	Sn	01 31 51.7	-2.1
HARR	**Harsova**	**1.47**	**131**	⇑*i* P	Pn	01 31 32.6	-0.1
HARR	**Harsova**	**1.47**	**131**	⇑*i* P	Pn	01 31 32.6	-0.1
HARR	**Harsova**	**1.47**	**131**	⇑*i* P	Pn	01 31 32.6	-0.1

*ATH **16** 01:32:19.5, 36°.92N×26°.46E, h36km±3km, ML2.3/5, Error ellipse: s-maj=3.7km s-min=1.4km az=31.0*
*THE **16** 01:32:20.7, 36°.91N×26°.47E, h19km±3km, ML2.5/6, Error ellipse: s-maj=3.8km s-min=0.7km az=62.0*
*ISCJB **16** 01:32:20.8±0.4, 36°.89N±0°.02×26°.46E±0°.03, h30km±4km, Error ellipse: s-maj=4.5km s-min=3.0km az=148.8*
*CSEM **16** 01:32:21.4±0.2, 36°.92N×26°.45E, h22km±2km, ML2.3, Error ellipse: s-maj=4.1km s-min=2.7km az=154.0*
*ISK **16** 01:32:21.1, 36°.91N×26°.45E, h39km, MD2.8*
*DDA **16** 01:32:29.4, 37°.25N×27°.31E, h7km, Md2.7*
ISC 16 01:32:20.6±1.1, 36°.90N±0°.02×26°.46E±0°.02, h23km±13km, n68, σ1$04/106, Dodecanese Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
NISR	**Nisiros**	**0.61**	**118**	P	**Pb**	**01 32 32.4**	**-0.2**
NISR				S	**Sb**	**01 32 41.6**	**+0.9**
NISR	**Nisiros**	**0.61**	**118**	P	**Pb**	**01 32 32.4**	**-0.2**
NISR				S	**Sb**	**01 32 41.6**	**+0.9**
NISR	**Nisiros**	**0.61**	**118**	P	**Pb**	**01 32 32.1**	**-0.4**
NISR				S	**Sb**	**01 32 41.0**	**+0.2**
NISR				AML	AML	01 32 42.7	
	comp=N,1004μm,0.3s						
NISR				AML	AML	01 32 43.0	
	comp=E,1737μm,0.2s						
NIS1	**Nisyros Isl.**	**0.65**	**117**	P	**Pb**	**01 32 33.0**	**-0.3**
NIS1				S	**Sb**	**01 32 42.7**	**+0.8**
NIS1	**Nisyros Isl.**	**0.65**	**117**	P	**Pb**	**01 32 33.0**	**-0.3**
NIS1				S	**Sb**	**01 32 42.7**	**+0.8**
NIS1	**Nisyros Isl.**	**0.65**	**117**	P	**Pb**	**01 32 33.3**	**0.0**
BODT	**Bodrum**	**0.70**	**76**	*e*PG	**Pb**	**01 32 34.4**	**+0.2**
BODT				*e*SG	**Sn**	**01 32 45.5**	**+0.3**
BODT	**Bodrum**	**0.70**	**76**	P	**Pb**	**01 32 33.4**	**-0.8**
BODT				S	**Sb**	**01 32 43.5**	**+0.1**
BODT	**Bodrum**	**0.70**	**76**	P	**Pb**	**01 32 33.4**	**-0.8**
BODT	**Bodrum**	**0.70**	**76**	*e*Pg	**Pb**	**01 32 34.4**	**+0.2**
BODT				S	**Sb**	**01 32 43.5**	**+0.1**
BODT				*e*Sg	**Sn**	**01 32 45.5**	**+0.3**
APE	**Apeiranthos**	**0.76**	**283**	*e*PG	**Pb**	**01 32 35.1**	**-0.1**
APE				*e*SG	**Sn**	**01 32 47.1**	**+0.4**
APE	**Apeiranthos**	**0.76**	**283**	P	**Pb**	**01 32 34.5**	**-0.7**
APE				S	**Sb**	**01 32 45.4**	**+0.3**
APE	**Apeiranthos**	**0.76**	**283**	P	**Pb**	**01 32 34.3**	**-0.9**
APE	**Apeiranthos**	**0.76**	**283**	*e*Pg	**Pb**	**01 32 35.1**	**-0.1**
APE				S	**Sb**	**01 32 45.4**	**+0.3**
APE				*e*Sg	**Sn**	**01 32 47.1**	**+0.4**
APE	**Apeiranthos**	**0.76**	**283**	P	**Pb**	**01 32 34.3**	**-0.9**
APE				S	**Sb**	**01 32 45.1**	**-0.1**
APE				AML	AML	01 32 49.5	
	comp=E,372μm,0.2s						
APE				AML	AML	01 32 50.2	
	comp=N,405μm,0.2s						
BDRM	**Kayabasi**	**0.81**	**78**	*i* P	**Pb**	**01 32 35.2**	**-0.8**
BDRM				*i* S	**Sb

VMT			S	**Sn**	**01 32 55.4**	**-0.3**
KLU	**Klutina**	**0.43 69**	P	**Pn**	**01 32 50.5**	**+0.3**
KLU			S	**Sn**	**01 32 57.7**	**+0.4**
DIV	**Divide**	**0.53 113**	P	**Pn**	**01 32 51.6**	**0.0**
SCM	**Sheep Creek Mo**	**0.56 332**	P	**Pn**	**01 32 51.7**	**-0.5**
SCM			S	**Sn**	**01 33 00.6**	**+0.2**
PS12	**TAPS Pump St12**	**0.79 79**	P	**Pn**	**01 32 55.3**	**+0.1**
SML	**Sawmill**	**0.88 303**	P	**Pn**	**01 32 56.5**	**+0.1**
SML			S	**Sn**	**01 33 08.0**	**-0.1**
EYAK	**Cordova Ski Ar**	**0.94 147**	P	**Pn**	**01 32 58.5**	**+1.4**
EYAK			S	**Sn**	**01 33 11.8**	**+2.5**
PS11	**TAPS Pump St11**	**0.96 39**	P	**Pn**	**01 32 58.8**	**+1.3**
BMRM	**Bremner River**	**1.11 109**	P	**Pn**	**01 32 60.0**	**+0.4**
PMR	**Palmer**	**1.16 284**	P	**Pn**	**01 33 00.9**	**+0.7**
PMR			S	**Sn**	**01 33 15.8**	**+1.0**
PTE	**Portage**	**1.20 247**	P	**Pn**	**01 33 01.9**	**+1.2**
GOAT	**Goat Mountain**	**1.25 127**	P	**Pn**	**01 33 02.7**	**+1.2**
RAGM	**Ragged Mountai**	**1.40 132**	P	**Pn**	**01 33 04.7**	**+1.1**
RC01	**Rabbit Creek A**	**1.46 261**	P	**Pn**	**01 33 05.7**	**+1.4**
RC01			S	**Sn**	**01 33 25.1**	**+3.0**
VRDI	**Verde Repeater**	**1.60 93**	P	**Pn**	**01 33 07.5**	**+1.0**
VRDI			S	**Sn**	**01 33 27.8**	**+1.8**
FIB	**Fire Island**	**1.66 265**	P	**Pn**	**01 33 09.1**	**+2.1**
PAX	**Paxson**	**1.75 20**	P	**Pn**	**01 33 09.5**	**+1.1**
DHY	**Denali Highway**	**1.77 351**	P	**Pn**	**01 33 09.9**	**+1.2**
NICHA	**Nichawak Mount**	**1.77 128**	P	**Pn**	**01 33 09.5**	**+0.9**
BERG	**Berg Lake**	**1.78 121**	P	**Pn**	**01 33 09.4**	**+0.7**
MCARA	**McCarthy VSAT**	**1.81 87**	P	**Pn**	**01 33 10.5**	**+1.4**
SEW	**Seward**	**1.81 228**	P	**Pn**	**01 33 10.5**	**+1.4**
CRQM	**Cirque**	**1.86 107**	P	**Pn**	**01 33 11.3**	**+1.3**
SLKM	**Skilak Lake**	**1.88 245**	P	**Pn**	**01 33 11.6**	**+1.5**
KHIT	**Khitrov Hills**	**1.94 116**	P	**Pn**	**01 33 11.9**	**+0.9**
SUCK	**Suckling Hills**	**1.94 130**	P	**Pn**	**01 33 12.0**	**+1.0**
CUT	**Chulitna**	**1.97 304**	P	**Pn**	**01 33 13.3**	**+1.9**
TGL	**Tana Glacier**	**2.00 105**	P	**Pn**	**01 33 13.1**	**+1.2**
HUR	**Hurricane**	**2.12 322**	P	**Pn**	**01 33 15.1**	**+1.7**
PS10	**TAPS Pump St10**	**2.14 12**	P	**Pn**	**01 33 16.0**	**+2.3**
MENT	**Mentasta**	**2.15 40**	P	**Pn**	**01 33 14.9**	**+1.1**
BALM	**Baldy**	**2.16 96**	P	**Pn**	**01 33 15.2**	**+1.1**
KIAG	**Kiagna River**	**2.18 99**	P	**Pn**	**01 33 15.5**	**+1.1**
KULT	**Kultieth River**	**2.27 117**	P	**Pn**	**01 33 16.5**	**+1.0**
RND	**Reindeer**	**2.29 336**	P	**Pn**	**01 33 17.5**	**+1.7**
STLK	**Strandline Lak**	**2.44 276**	P	**Pn**	**01 33 19.4**	**+1.6**
BARN	**Barnard Glacie**	**2.49 94**	P	**Pn**	**01 33 20.0**	**+1.4**
MCK	**McKinley**	**2.60 338**	P	**Pn**	**01 33 22.1**	**+2.1**
SPCR	**Spurr Chakacha**	**2.63 269**	P	**Pn**	**01 33 21.4**	**+0.9**
DOT	**Dot Lake**	**2.63 27**	P	**Pn**	**01 33 22.7**	**+2.2**
MESA	**MESA**	**2.64 114**	P	**Pn**	**01 33 21.9**	**+1.2**
TRF	**Thorofare Moun**	**2.68 324**	P	**Pn**	**01 33 22.8**	**+1.6**
CKL	**Chakachamna La**	**2.69 269**	P	**Pn**	**01 33 23.3**	**+0.9**
SPWE	**Spurr West**	**2.79 271**	P	**Pn**	**01 33 24.0**	**+1.2**
RKAV	**Rock Avalanche**	**2.85 109**	P	**Pn**	**01 33 24.9**	**+1.3**
BCA3	**Beaver Creek A**	**2.91 51**	P	**Pn**	**01 33 26.2**	**+2.0**
KTH	**Kantishna Hill**	**2.94 321**	P	**Pn**	**01 33 26.5**	**+1.8**
PPLA	**Purkeypile**	**2.99 304**	P	**Pn**	**01 33 26.6**	**+1.2**
RDJH	**Redoubt Jeurge**	**3.04 258**	P	**Pn**	**01 33 27.0**	**+0.9**
RSO	**Redoubt South**	**3.06 256**	P	**Pn**	**01 33 27.4**	**+1.0**
NCT	**North Crescent**	**3.11 258**	P	**Pn**	**01 33 28.0**	**+1.0**
WRH	**Wood River Hil**	**3.20 350**	P	**Pn**	**01 33 29.5**	**+1.3**
PS08	**TAPS Pump Stn8**	**3.21 360**	P	**Pn**	**01 33 29.8**	**+1.4**
CAST	**Castle Rocks**	**3.24 312**	P	**Pn**	**01 33 30.0**	**+1.3**
INE	**Iliamna NE**	**3.35 250**	P	**Pn**	**01 33 31.7**	**+1.3**
CCB	**Clear Creek Bu**	**3.35 352**	P	**Pn**	**01 33 31.2**	**+0.9**
BPAW	**Bear Paw Mtn.**	**3.38 327**	P	**Pn**	**01 33 31.9**	**+1.1**
ILW	**Iliamna West**	**3.38 250**	P	**Pn**	**01 33 31.8**	**+0.9**
ILAR	**Eielson Array**	**3.44 359**	Pn	Pn	01 33 34.8	+3.2
	11nm,0.3s,baz=176,slow=13,SNR=272					
ILAR			Sn	**Sn**	**01 34 16.3**	**+5.3**
	14nm,0.3s,baz=180,slow=20,SNR=12					
ILB	**Eielson Array**	**3.44 359**	P	**Pn**	**01 33 32.0**	**+0.4**
COLA	**College**	**3.58 353**	P	**Pn**	**01 33 34.9**	**+1.5**
I53US	**FAIRBANKS INFR**	**3.58 353**	*i*		01 54 20.0	
	baz=179,slow=327,SNR=1.0					
CHUM	**Lake Minchumin**	**3.62 317**	P	**Pn**	**01 33 35.0**	**+1.2**
MDM	**Murphy Dome**	**3.69 350**	P	**Pn**	**01 33 36.4**	**+1.4**
AUE	**Augustine Isla**	**3.84 242**	P	**Pn**	**01 33 38.4**	**+1.5**
AUSE	**Augustine SEas**	**3.86 242**	P	**Pn**	**01 33 38.6**	**+1.5**
AUI	**Augustine Isla**	**3.87 242**	P	**Pn**	**01 33 38.9**	**+1.5**
MLY	**Manley**	**4.12 336**	P	**Pn**	**01 33 41.9**	**+1.0**
CDD	**Cape Douglas**	**4.20 238**	P	**Pn**	**01 33 43.3**	**+1.3**
FOPK	**Fourpeaked Vol**	**4.24 235**	P	**Pn**	**01 33 43.9**	**+1.3**
SVW2	**Sparrevohn**	**4.27 271**	P	**Pn**	**01 33 43.1**	**+0.3**
EGAK	**Eagle**	**4.29 34**	P	**Pn**	**01 33 43.8**	**+0.6**
DAWY	**Dawson**	**4.36 48**	P	**Pn**	**01 33 46.0**	**+1.9**
TT01	**Tatalina**	**4.62 294**	P	**Pn**	**01 33 47.9**	**+0.2**
TTA	**Tatalina**	**4.62 294**	P	**Pn**	**01 33 47.9**	**+0.1**
KDAK	**Kodiak Island**	**4.63 222**	P	**Pn**	**01 33 48.6**	**+0.7**
KABR	**Katmai Barrier**	**5.25 236**	P	**Pn**	**01 33 57.1**	**+0.7**
OHAK	**Old Harbor**	**5.31 222**	P	**Pn**	**01 33 57.3**	**+0.1**
PLBC	**Pleasant Camp**	**5.49 106**	P	**Pn**	**01 34 01.5**	**+1.9**
IM3	**Indian Mountai**	**5.60 329**	P	**Pn**	**01 34 02.2**	**+1.1**
WHY	**Whitehorse**	**5.82 92**	P	**Pn**	**01 34 04.8**	**+0.4**
SKAG	**Skagway**	**5.97 103**	*e*Pn	**Pn**	**01 34 07.8**	**+1.5**
COLD	**Coldfoot**	**6.10 347**	*e*Pn	**Pn**	**01 34 09.9**	**+1.9**
BM3	**Burnt Mountain**	**6.17 8**	P	**Pn**	**01 34 10.7**	**+1.6**
DLBC	**Dease Lake**	**8.90 102**	Pn	Pn	01 34 43.6	-2.8
	0.1nm,0.3s,baz=275,slow=12,SNR=1.3					
INK	**Inuvik**	**8.96 33**	Pn	**Pn**	**01 34 48.9**	**+1.8**
	0.2nm,0.3s,baz=233,slow=13,SNR=8.6					
YKA	**Yellowknife Ar**	**15.11 72**	Pn	**Pn**	**01 36 09.6**	**-1.2**
	0.0nm,0.3s,baz=274,slow=12,SNR=7.0					
ARCES	**ARCESS Array B**	**49.30 4**	P	**P**	**01 41 24.2**	**-0.7**
	2.5nm,0.8s,baz=0.7,slow=7.2,SNR=4.6					
FINES	**FINESS Array B**	**57.42 4**	P	**P**	**01 42 23.6**	**-1.0**
	1.1nm,0.7s,baz=358,slow=7.9,SNR=6.0					
MKAR	**Makanchi Array**	**65.14 325**	P	**P**	**01 43 15.0**	**-2.5**
	0.1nm,0.5s,baz=18,slow=6.4,SNR=2.5					
ESDC	**Sonseca Array**	**74.89 29**	P	**P**	**01 44 17.6**	**+0.5**
	0.8nm,0.7s,baz=354,slow=5.6,SNR=5.0					

IDC ***16*** *01:40:51.5±2.4, 10.82S×113.51E, h0km, mb3.6/4, mb1 3.9/5, mb1mx3.6/51, mbtmp3.7/5, ML3.4/1, Error ellipse: s-maj=132.3km s-min=20.8km az=46.0*
DJA ***16*** *01:40:58.7±2.7, 11.5S×11.4E±, h38km±39km, M4.7/17, mMB6.4/1, mb5.3/1, MLv4.3/17, Mw(mB)6.2/1*
ISC 16 01:40:56.0±1.1, 10.70S±0.08×113.67E±0.07, h23km, n18, σ1s91/20, mb3.7/4, South of Jawa

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JAGI	**Jajag, Banyuwa**	**2.26**	**12**	P	**Pb**	**01 41 35.6**	**-0.6**
JAGI				S	**Sb**	**01 42 04.7**	**+0.9**
GMJI	**Gumukmas**	**2.42**	**355**	P	**Pn**	**01 41 36.5**	**+2.3**
GMJI				S	**Sb**	**01 42 07.6**	**-0.7**
DNP	**Denpasar**	**2.52**	**37**	P	**Pb**	**01 41 38.7**	**-1.8**
DNP				S	**Sb**	**01 42 11.0**	**0.0**
ABJI	**Asem Bagus**	**2.94**	**11**	P	**Pn**	**01 41 44.4**	**+3.1**
ABJI				S	**Sb**	**01 42 20.8**	**-2.4**
SRBI	**Singaraja**	**3.01**	**30**	P	**Pn**	**01 41 44.5**	**+2.2**
PCJI	**Pacitan**	**3.50**	**315**	P	**Pn**	**01 41 51.0**	**+2.0**
TWSI	**Taliwang, Sumb**	**3.71**	**59**	P	Pn	01 41 55.4	+3.4
WOJI	**Wonogiri, Jawa**	**3.93**	**316**	P	**Pn**	**01 41 57.5**	**+2.6**
NGJI	**Ngawi**	**3.96**	**326**	P	**Pn**	**01 41 58.3**	**+2.9**
TBJI	**Tambak Boyo**	**4.26**	**335**	P	**Pn**	**01 42 01.8**	**+2.4**
PLAI	**Plampang**	**4.45**	**66**	P	**Pn**	**01 42 04.4**	**+2.3**
CISI	**Cisompet, Garu**	**6.57**	**298**	P	**Pn**	**01 42 31.6**	**+0.2**
FITZ	**Fitzroy Crossi**	**13.72**	**124**	Pn	Pn	01 44 06.6	-2.7
	0.1nm,0.3s,baz=307,slow=10.0,SNR=6.6						
FITZ				Sn	Sn	01 46 28.6	-13
	0.4nm,0.3s,baz=207,slow=19,SNR=7.4						
WRA	**Warramunga Arr**	**21.93**	**117**	P	**P**	**01 45 48.4**	**+0.4**
	1.1nm,0.4s,baz=291,slow=11,SNR=5.8						
WRA				S	S	01 49 42.9	-6.5
	0.6nm,0.7s,baz=294,slow=22,SNR=2.7						
ASAR	**Alice Springs**	**23.19**	**126**	P	**P**	**01 46 00.5**	**-0.9**
	0.8nm,0.5s,baz=303,slow=9.2,SNR=10.0						
CMAR	**Chiang Mai Arr**	**32.41**	**333**	P	**P**	**01 47 23.4**	**-0.9**
	0.4nm,0.3s,baz=168,slow=8.4,SNR=4.6						
MKAR	**Makanchi Array**	**63.74**	**336**	P	**P**	**01 51 25.6**	**-0.3**
	0.4nm,0.4s,baz=152,slow=7.3,SNR=6.2						
YKA	**Yellowknife Ar**	**117.84**	**23**	PKP	**PKPdf**	**01 59 39.7**	**-0.5**
	0.3nm,0.5s,baz=310,slow=1.9,SNR=11						

IDC 16 01:47:02.1±3.9, 3.69S×149.57E, h0km, mb3.8/3, mb1 4.0/3, mb1mx3.5/46, mbtmp3.8/3, MS3.2/3, Ms1 3.2/3, ms1mx3.1/33, Error ellipse: s-maj=139.1km s-min=47.6km az=114.0, Bismarck Sea

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
PMG	**Port Moresby**	**6.17**	**203**	LR	LR	01 51 13.0	
	comp=Z,232nm,19.9s,baz=214,slow=41						
GUMO	**Guam**	**17.78**	**345**	LR	LR	01 56 20.9	
	comp=Z,226nm,21.9s,baz=133,slow=31						
WRA	**Warramunga Arr**	**21.95**	**221**	P	P	01 51 56.9	-0.7
	2.0nm,0.8s,baz=46,slow=10.0,SNR=6.3						
ASAR	**Alice Springs**	**24.37**	**216**	P	P	01 52 28.1	+0.6
	0.9nm,0.9s,baz=54,slow=8.4,SNR=5.3						
FITZ	**Fitzroy Crossi**	**27.46**	**237**	P	P	01 52 50.2	+0.1
	3.8nm,1.0s,baz=23,slow=7.7,SNR=4.3						
NWAO	**Narrogin (SRO)**	**41.95**	**222**	LR	LR	02 11 58.4	
	comp=Z,9.9nm,20.0s,baz=82,slow=36						
TORD	**Torodi Ar. Bea**	**146.90**	**288**	PKPbc	PKPdf	02 06 46.6	+0.8
	0.4nm,0.9s,baz=60,slow=3.5,SNR=2.4						

ISCJB ***16*** *01:52:58.0±0.8, 6.0N±0.1×94.0E±0.2, h48km, mb3.8/11, Error ellipse: s-maj=27.2km s-min=15.4km az=144.2*
IDC ***16*** *01:53:04.3±4.2, 6.24N×94.24E, h84km±38km, mb3.5/11, mb1 3.7/13, mb1mx3.4/50, mbtmp3.8/13, Error ellipse: s-maj=53.2km s-min=15.5km az=54.0*
ISC 16 01:52:59.9±1.1, 6.0N±0.2×94.0E±0.2, h48km, n13, σ0s71/12, mb3.9/11, Nicobar Islands region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
PSI	**Prapat**	**5.84**	**123**	P	Pn	01 54 29.1	+5.0
	4.1nm,0.3s,baz=309,slow=14,SNR=8.1						
CMAR	**Chiang Mai Arr**	**13.25**	**21**	P	**Pn**	**01 56 06.0**	**+0.5**
	0.3nm,0.3s,baz=211,slow=15,SNR=7.8						
AAK	**Ala-Archa**	**40.35**	**338**	P	**P**	**02 00 32.8**	**-0.3**
	1.1nm,0.8s,baz=139,slow=12,SNR=4.4						
MKAR	**Makanchi Array**	**41.85**	**348**	P	**P**	**02 00 44.4**	**-0.9**
	0.6nm,0.5s,baz=169,slow=8.4,SNR=11						
GEYT	**Alibeck**	**45.50**	**319**	P	**P**	**02 01 14.8**	**0.0**
	1.4nm,0.5s,baz=133,slow=6.1,SNR=2.7						
WRA	**Warramunga Arr**	**47.31**	**124**	P	**P**	**02 01 28.9**	**-0.3**
	1.2nm,0.9s,baz=308,slow=8.7,SNR=6.4						
ZALV	**Zalesovo Beam**	**48.36**	**353**	P	**P**	**02 01 35.9**	**-0.8**
	0.6nm,0.3s,baz=190,slow=7.5,SNR=4.1						
ASAR	**Alice Springs**	**48.84**	**129**	P	**P**	**02 01 41.0**	**+0.1**
	1.1nm,0.5s,baz=299,slow=7.7,SNR=13						
AKTO	**Aktyubinsk**	**53.51**	**332**	P	**P**	**02 02 14.7**	**-0.8**
	0.8nm,0.5s,baz=133,slow=7.7,SNR=4.3						
BRTR	**Keskin Array B**	**63.55**	**312**	P	**P**	**02 03 25.8**	**-0.1**
	0.6nm,0.8s,baz=126,slow=7.2,SNR=3.9						
FINES	**FINESS Array B**	**74.28**	**332**	P	**P**	**02 04 32.1**	**+0.2**
	1.6nm,0.9s,baz=96,slow=4.6,SNR=8.5						
ARCES	**ARCESS Array B**	**76.95**	**340**	P	**P**	**02 04 47.0**	**0.0**
	1.9nm,0.8s,baz=105,slow=7.6,SNR=4.4						
GERES	**GERESS Array B**	**79.12**	**318**	P	**P**	**02 05 01.1**	**+1.5**
	0.2nm,0.5s,baz=91,slow=7.9,SNR=3.4						

JMA 16 02:04:49.5±0.3, 37.98N×142.94E, h13km, M3.6, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**1.34**	**291**	P	Pn	02 05 14.1	+0.2
JIO				S	Sn	02 05 31.7	+0.1
OFUJ	**Ofunato**	**1.48**	**318**	P	Pn	02 05 15.4	-0.5
OFUJ				S	Sn	02 05 35.1	0.0
JMK	**Ichinoseki**	**1.66**	**306**	P	Pb	02 05 19.4	-0.6
JMM	**Marumori**	**1.70**	**267**	P	Pn	02 05 18.4	-0.5
JMM				S	Sn	02 05 40.0	-0.5
JOU	**Okura**	**1.83**	**283**	P	Pn	02 05 21.7	+1.0
JOU				*e*S	Sb	02 05 45.6	-0.2
JOM	**Ohasama**	**1.97**	**320**	*e*S	Sn	02 05 47.7	+0.5
JFT	**Otama**	**2.11**	**258**	P	Pn	02 05 25.6	+1.0
JYK	**Kaneyama**	**2.23**	**296**	P	Pn	02 05 27.2	+1.0
JANG	**Nango**	**2.63**	**336**	P	Pb	02 05 34.2	-2.3
JTM	**Tenmabayashi**	**3.16**	**333**	P	Pb	02 05 42.9	-2.5

ISCJB ***16*** *02:06:32.2±2.0, 13.0N±0.3×90.4W±0.2, h24km, mb4.0/7, Error ellipse: s-maj=42.8km s-min=14.2km az=26.3*
IDC ***16*** *02:06:44.1±2.6, 13.38N×90.68W, h87km±22km, mb3.4/6, mb1 3.5/10, mb1mx3.3/49, mbtmp3.7/10, Error ellipse: s-maj=42.6km s-min=22.8km az=21.0*
MEX ***16*** *02:06:47.7±0.5, 13.52N×91.73W, h20km±436km, MD4.0*
ISC 16 02:06:34.0±1.5, 13.1N±0.2×90.3W±0.2, h24km, n12, σ0s91/12, mb4.0/7, Near coast of Guatemala

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
CCIG	**Comitan**	**3.68**	**331**	*e*P	**Pn**	**02 07 29.0**	**-0.6**
CCIG				*e*S	Sn	02 08 01.4	-11
JTS	**JuntasAbangare**	**5.90**	**117**	P	**Pb**	**02 08 15.8**	**-0.5**
	0.4nm,0.3s,baz=305,slow=17,SNR=4.7						
CMIG	**Matias Romero**	**5.99**	**311**	P	**Pn**	**02 08 02.2**	**+1.0**
	0.4nm,0.3s,baz=198,slow=7.6,SNR=3.5						
CMIG				S	**Sn**	**02 09 08.3**	**-0.8**
	0.4nm,0.3s,baz=252,slow=20,SNR=3.3						
TEIG	**Tepich**	**7.39**	**15**	P	Pn	02 08 28.2	+7.7
	0.6nm,0.3s,baz=89,slow=24,SNR=7.5						
TXAR	**Lajitas Array**	**20.42**	**325**	P	**P**	**02 11 08.7**	**-0.9**
	0.1nm,0.3s,baz=140,slow=12,SNR=7.9						
LPIG	**La Paz**	**21.90**	**303**	P	**P**	**02 11 24.2**	**-1.3**
	32nm,0.3s,baz=340,slow=8.1,SNR=6.7						
NVAR	**Mina Array Bea**	**35.45**	**321**	P	**P**	**02 13 29.6**	**+0.8**
	0.5nm,0.5s,baz=132,slow=8.8,SNR=4.6						
ULM	**Lac du Bonnet**	**37.38**	**354**	P	**P**	**02 13 44.1**	**-0.7**
	2.7nm,0.7s,baz=156,slow=9.7,SNR=3.2						
SCHQ	**Schefferville**	**45.55**	**19**	P	**P**	**02 14 52.9**	**+1.1**
	3.5nm,1.0s,baz=232,slow=12,SNR=2.7						
YKA	**Yellowknife Ar**	**52.34**	**346**	P	**P**	**02 15 43.7**	**0.0**
	0.1nm,0.5s,baz=138,slow=7.7,SNR=4.2						
RES	**Resolute Bay**	**61.68**	**359**	P	**P**	**02 16 50.2**	**+0.6**
	0.7nm,0.6s,baz=162,slow=20						
INK	**Inuvik**	**61.82**	**343**	P	**P**	**02 16 50.8**	**+0.1**
	0.4nm,0.6s,baz=128,slow=5.5,SNR=4.8						

NNC ***16*** *02:06:40.6±5.0, 42.49N×67.42E, h0km, mb3.5, mpv3.1, Error ellipse: s-maj=64.9km s-min=15.9km az=17.0*
SOME ***16*** *02:06:43.7, 42.17N×67.75E, h0km*
ISC 16 02:06:42.5±2.7, 42.2N±0.2×67.2E±0.1, h35km, n9, σ1s83/10, 4C-3D, Central Kazakhstan

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
CHM	**Chimkent**	**1.78**	**85**	*e*P	**Pn**	**02 07 10.5**	**-0.3**
	99nm,0.1s						
CHM				*e*S	**Sn**	**02 07 30.0**	**-2.2**
	638nm,0.3s						
BRLS	**Borolday**	**1.93**	**71**	*e*P	**Pn**	**02 07 13.8**	**+1.0**
	5.1nm,0.3s						
BRLS				*e*S	**Sn**	**02 07 35.1**	**-0.7**
	131nm,0.2s						
IUG	**Iuzhnay**	**2.10**	**90**	*e*P	**Pn**	**02 07 15.8**	**+0.6**
	51nm,0.5s						
IUG				*e*S	**Sn**	**02 07 39.6**	**-0.5**
	230nm,0.6s						
KK31	**Karatay Array**	**2.60**	**68**	⇑Pg	**Pn**	**02 07 25.0**	**+2.9**
	2.0nm,0.3s,baz=240,slow=18,SNR=4.7						
KK31				Lg	Lg	02 07 55.1	
	28nm,0.5s,baz=248,slow=26,SNR=28						
MNAS	**Manas**	**3.94**	**84**	⇓Pg	Pn	02 07 47.9	+7.4
	4.9nm,0.7s						
MNAS				⇑Lg	Lg	02 08 36.6	
	28nm,0.8s						
AB03	**Akbulak array**	**8.70**	**327**	⇑Sn	**Sn**	**02 10 20.2**	**-2.4**
	0.5nm,0.6s						
AB02	**Akbulak array**	**8.71**	**327**	⇑Lg	Lg	02 11 14.7	
	1.4nm,0.6s						
AB04	**Akbulak array**	**8.71**	**327**	⇓Pn	**Pn**	**02 08 45.8**	**-0.1**
	0.4nm,0.3s						
AKTO	**Aktyubinsk**	**10.41**	**326**	⇓Pn	**Pn**	**02 09 10.6**	**+1.4**
	0.9nm,0.7s						

DJA 16 02:10:47.6±0.4, 10.5S±3.1×10.8E±, h10km, M4.1/15, mb4.2/3, MLv4.1/15, South of Jawa

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
CMJI	**Cimerak**	**2.32**	**23**	P	Pn	02 11 25.6	-0.2
CMJI				S	Sn	02 11 54.3	-0.1
CISI	**Cisompet, Garu**	**2.38**	**7**	P	Pn	02 11 26.5	-0.2
CISI				S	Sn	02 11 55.3	-0.7
CNJI	**Cibinong**	**2.63**	**351**	P	Pn	02 11 30.1	-0.1
KPJI	**Karang Pucung**	**2.93**	**28**	P	Pn	02 11 35.4	+1.1
SKJI	**Sukabumi**	**3.06**	**342**	P	Pn	02 11 36.7	+0.6
SKJI				S	Sn	02 12 15.3	+2.5
LEM	**Lembang**	**3.08**	**2**	P	Pn	02 11 36.9	+0.3
UGM	**Wanagama**	**3.57**	**56**	P	Pn	02 11 42.7	-0.5
CGJI	**Cibinong**	**3.76**	**331**	P	Pn	02 11 47.1	+1.4
PCJI	**Pacitan**	**3.99**	**65**	P	Pn	02 11 47.7	-1.2
PCJI				S	Sn	02 12 33.1	-2.7
PWJI	**Pagerwojo**	**4.63**	**66**	P	Pn	02 11 57.6	0.0
PWJI				S	Sn	02 12 45.6	-5.9
GMJI	**Gumukmas**	**6.07**	**75**	P	Pn	02 12 17.8	+0.4
	16nm,0.8s,0.1nm						
JAGI	**Jajag, Banyuwa**	**6.70**	**78**	P	Pn	02 12 26.4	+0.3
	28nm,1.5s,0.2nm						
SRBI	**Singaraja**	**7.81**	**77**	P	Pn	02 12 40.2	-1.1

MEX 16 02:16:27.8±0.6, 17.03N×94.32W, h128km±25km, MD3.7, Chiapas

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
TGIG		**1.18**	**102**	*e*P	Pn	02 16 50.8	-1.5
TGIG				*i* S	Sn	02 17 09.4	-1.6
PCIG		**1.69**	**141**	*e*P	Pn	02 16 57.2	-0.8
PCIG				*i* S	Sn	02 17 18.9	-2.2
HUIG	**Huatulco**	**2.13**	**234**	*e*P	Pn	02 17 01.8	-1.5
VHO	**Vista Hermosa**	**2.31**	**271**	*e*P	Pn	02 17 05.7	0.0
VHO				*e*S	Sn	02 17 35.9	+1.1

CSEM ***16*** *02:19:05.3±0.3, 36.16N×43.73E, h20km, ML2.8, Error ellipse: s-maj=8.0km s-min=6.7km az=168.0*
ISN ***16*** *02:19:05.8±0.3, 36.21N×44.15E, h0km, ML3.2*
ISK ***16*** *02:19:06.2, 36.53N×44.36E, h5km, ML3.1*
TEH ***16*** *02:19:08.0, 36.17N×44.23E, h4km, ML2.8*
NSSC ***16*** *02:19:16.2±0.4, 35.89N×42.61E, h13km±22km, MD2.5, ML2.3*
DDA ***16*** *02:19:33.6, 36.16N×43.97E, h23km, Md3.4*
ISC 16 02:19:02.5±1.4, 36.14N±0.04×43.74E±0.03, h5km±11km, n50, σ1s60/71, Iraq

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
MSL	**Mosul**	**0.57**	**297**	*e*Pg	Pn	02 19 25.0	+7.7
	baz=103						
MSL				*e*Sg	Sn	02 19 38.5	+11
CUKT	**Cukurca**	**1.11**	**355**	*e*PG	**Pg**	**02 19 24.4**	**+0.6**
CUKT				*e*SG	**Sb**	**02 19 39.6**	**+0.5**
HAKT	**HAKKARI**	**1.41**	**359**	*i* P	**Pn**	**02 19 29.1**	**0.0**
HAKT				*i* S	**Sg**	**02 19 48.4**	**+0.5**
HAKT	**HAKKARI**	**1.41**	**359**	P	**Pn**	**02 19 29.1**	**0.0**
HAKT				S	**Sg**	**02 19 48.4**	**+0.5**
HKR	**Hakkari**	**1.43**	**0**	*e*PN	**Pn**	**02 19 29.5**	**+0.1**
HKR	**Hakkari**	**1.43**	**0**	*e*Pn	Pn	02 19 29.5	+0.1
SIRN	**S¯–rnak**	**1.72**	**322**	*i* P	**Pb**	**02 19 34.8**	**+0.2**
SIRN				*i* S	**Sg**	**02 19 57.9**	**+0.2**
SIRN	**S¯–rnak**	**1.72**	**322**	P	**Pb**	**02 19 34.8**	**+0.2**
SIRN				S	**Sg**	**02 19 57.9**	**+0.2**
GEVA	**Gevas**	**2.23**	**346**	*i* P	Pn	02 19 39.6	-0.8
GEVA				*i* S	Sn	02 20 00.2	-8.2
GEVA	**Gevas**	**2.23**	**346**	P	**Pn**	**02 19 39.6**	**-0.8**
TVAN	**Van**	**2.40**	**354**	*i* P	**Pn**	**02 19 41.9**	**-0.7**
TVAN				*i* S	**Sg**	**02 20 18.7**	**-0.8**
TVAN	**Van**	**2.40**	**354**	P	**Pn**	**02 19 41.9**	**-0.7**
VANB	**Van**	**2.46**	**354**	*e*PN	**Pn**	**02 19 45.2**	**+1.7**
VANB	**Van**	**2.46**	**354**	*e*Pn	**Pn**	**02

DBOC	**Borcka**	**0.31**	**233**	P	Pg	02 19 28.2	+0.4
DBOC				S	Sg	02 19 32.8	+0.9
ARTV	**Artvin**	**0.35**	**188**	*i* P	Pg	02 19 29.3	+0.6
ARTV				*i* S	Sb	02 19 34.8	-1.5
ARTV	**Artvin**	**0.35**	**188**	P	Pg	02 19 29.3	+0.6
ARTV				S	Sb	02 19 34.8	-1.4
DAGI	**Agillar**	**0.46**	**187**	*i* P	Pb	02 19 31.5	-0.7
DAGI				*i* S	Sg	02 19 37.1	+0.5
EPOS	**Posof**	**0.55**	**92**	*i* P	Pg	02 19 32.4	-0.2
EPOS				*i* S	Sb	02 19 41.0	-1.2
EPOS	**Posof**	**0.55**	**92**	P	Pg	02 19 32.3	-0.2
EPOS				S	Sb	02 19 41.0	-1.1
DBAD	**Bademkaya**	**0.56**	**204**	*i* P	Pg	02 19 32.8	+0.2
DBAD				*i* S	Sg	02 19 40.7	+0.8
DBAD	**Bademkaya**	**0.56**	**204**	P	Pg	02 19 32.8	+0.2
DBAD				S	Sg	02 19 40.7	+0.8
DDEM	**Demirkent**	**0.66**	**196**	*i* P	Pg	02 19 32.7	-1.9
DDEM				*i* S	Sg	02 19 42.5	-0.7
DDEM	**Demirkent**	**0.66**	**196**	P	Pg	02 19 32.7	-1.9
DDEM				S	Sg	02 19 42.5	-0.7

NIED **16** *02:19:00, 36˚.40N× 140˚.00E, h80km, Mw5.8 Best double couple: M₀5.02000×10¹⁷ NP1:φs162.00000°, δ24.00000°, λ37.00000°. NP2:φs38.00000°, δ76.00000°, λ110.00000°.*

MOS **16** *02:19:24.1±0.8, 36˚.38N× 139˚.72E, h31km, mb6.4/134, MS5.2/26, Error ellipse: s-maj=5.3km s-min=3.2km az=102.5*

BJI **16** *02:19:26.9, 36˚.30N× 139˚.90E, h71km, mb5.7/82, mB5.7/61, Ms5.3/97, Ms7 5.2/88*

NEIC **16** *02:19:29.0±0.0, 36˚.20N× 140˚.08E, h80km, Moment Tensor Solution. s44 Moment tensor: Scale 10¹⁷Nm; Mrr2.30; Mθθ0.40; Mφφ -2.70; Mrθ3.30; Mθφ -1.10; Mrφ3.80; Best double couple: M₀6.00000×10¹⁷ NP1:φs38.00000°, δ77.00000°, λ102.00000°. NP2:φs173.00000°, δ18.00000°, λ45.00000°. Principal axes: T 5.6000, Plg56.0000°, Azm325.0000°; N 0.2000, Plg12.0000°, Azm215.0000°; P -5.8000, Plg30.0000°, Azm118.0000°;*

NEIC **16** *02:19:30.8±0.1, 36˚.38N× 139˚.65E, h77km, mb5.9/298, ME5.8, MW5.8, MW5.8 Error ellipse: s-maj=2.3km s-min=1.8km az=144.0, Moment Tensor Solution. s67 Moment tensor: Scale 10¹⁷Nm; Mrr4.44; Mθθ-0.53; Mφφ -3.91; Mrθ3.68; Mθφ -0.96; Mrφ2.91; Best double couple: M₀6.40000×10¹⁷ NP1:φs181.00000°, δ26.00000°, λ54.00000°. NP2:φs39.00000°, δ69.00000°, λ106.00000°. Principal axes: T 6.8400, Plg62.0000°, Azm334.0000°; N -1.0600, Plg15.0000°, Azm214.0000°; P -5.7700, Plg23.0000°, Azm117.0000°; Broadband fault plane solution: P waves. NP1:φs186.00000°, δ18.00000°, λ57.00000°. NP2:φs40.00000°, δ75.00000°, λ100.00000°. Principal axes: T Plg59.0000°, Azm324.0000°; N Plg0.0000°, Azm0.0000°; P Plg29.0000°, Azm122.0000°; Depth from synthetics of broadband displacement seismograms. Energy computed from BB mechanism.*

NEIC Felt [IV] at Narita, Tokyo and Zushi and [III] at Atsugi, Yokohama and Yokosuka. Felt in much of Chiba, eastern Saitama, Kanagawa, southern Ibaraki and Tokyo. Recorded [5U JMA] in Ibaraki.

GCMT **16** *02:19:30.8±0.1, 36˚.40N× 140˚.00E, h81km, MW5.8/127, Moment Tensor Solution. s116, c248; s127, c342; Duration: 1ᵗ9 Moment tensor: Scale 10¹⁷Nm; Mrr3.34±.05; Mθθ0.44±.05; Mφφ -3.77±.05; Mrθ3.17±.04; Mθφ -1.13±.05; Mrφ2.95±.04; Best double couple: M₀5.72700×10¹⁷ NP1:φs38.00000°, δ71.00000°, λ109.00000°. NP2:φs171.00000°, δ27.00000°, λ46.00000°. Principal axes: T 5.7790, Plg59.0000°, Azm336.0000°; N -0.0960, Plg18.0000°, Azm212.0000°; P -5.6750, Plg24.0000°, Azm113.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface/mantle waves, cutoff=50s.*

IDC **16** *02:19:31.2±0.3, 36˚.35N× 139˚.79E, h81km±2km, mb5.8/42, mb1 5.8/44, mb1mx5.8/47, mbtmp6.1/44, MS4.9/41, Ms1 4.9/41, ms1mx4.7/64 Error ellipse: s-maj=8.9km s-min=5.5km az=90.0*

JMA **16** *02:19:31.6, 36˚.34N× 139˚.95E, h79km±1km, M5.9 Broadband fault plane solution: P waves. NP1: φs22.00000°, δ64.00000°, λ100.00000°. NP2: φs179.00000°, δ27.00000°, λ70.00000°. Principal axes: T Plg69.0000°, Azm312.0000°; N Plg9.0000°, Azm197.0000°; P Plg19.0000°, Azm104.0000°;*

ISCJB **16** *02:19:31.1±0.1, 36˚.35N±0˚.01× 139˚.78E±0˚.01, h91km±1km, mb5.9/557 Error ellipse: s-maj=2.2km s-min=1.6km az=154.1*

ISC 16 02:19:30.8±0.2, 36˚.39N±0˚.02× 139˚.85E±0˚.02, h78km±1km, h78km:pP-P, n2288, σ1ˢ44/2519, mb6.0/596, 253C-71D, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JAG	**Ashikaga**	**0.32**	**277**	⇑P	**Pn**	**02 19 44.5**	**+1.6**
JAG				S	**Sn**	**02 19 54.5**	**+2.6**
JYT	**Yasato**	**0.32**	**120**	⇑P	**Pn**	**02 19 43.6**	**+0.7**
JYT				S	**Sn**	**02 19 52.5**	**+0.6**
JSB	**Shiboa**	**0.58**	**6**	⇑P	**Pn**	**02 19 46.6**	**+1.5**
JKT	**Katashina**	**0.61**	**308**	⇓P	**Pn**	**02 19 47.5**	**+2.0**
JKT				S	**Sn**	**02 20 00.2**	**+3.8**
JHO	**Hitachi**	**0.62**	**69**	⇑P	**Pn**	**02 19 45.7**	**+0.2**
TOK	**Tokyo**	**0.70**	**186**	P	**Pn**	**02 19 48.3**	**+2.0**
JRY	**Ryogami san**	**0.85**	**244**	⇓P	**Pn**	**02 19 49.8**	**+1.8**
JRY				S	**Sn**	**02 20 03.0**	**+2.2**
JGK	**Kuni**	**0.99**	**280**	⇓P	**Pn**	**02 19 52.0**	**+2.4**
JFY	**Yanaizu**	**1.02**	**354**	⇓P	**Pn**	**02 19 51.6**	**+1.6**
JFY				S	**Sn**	**02 20 06.9**	**+2.6**
ONAJ	**Iwakimizuishiy**	**1.04**	**47**	⇑P	**Pn**	**02 19 50.9**	**+0.6**
JHK	**Hiroka**	**1.08**	**322**	⇓P	**Pn**	**02 19 53.0**	**+2.3**
JHK				S	**Sn**	**02 20 09.7**	**+4.0**
I30JP	**ISUMI INFRASON**	**1.14**	**160**	P	**Pn**	**02 19 50.0**	**-1.4**
	baz=325,slow=8.5,SNR=0.6						
JFT	**Otama**	**1.19**	**19**	⇑P	**Pn**	**02 19 53.7**	**+1.6**
JFT				S	**Sn**	**02 20 10.4**	**+2.3**
JFK	**Kawauchi**	**1.28**	**40**	⇑P	**Pn**	**02 19 54.0**	**+0.8**
JFK				S	**Sn**	**02 20 10.5**	**+0.5**
JOD2	**Odawara 2**	**1.28**	**209**	⇓P	**Pn**	**02 19 54.1**	**+0.9**
JOD2				S	**Sn**	**02 20 10.5**	**+0.4**
MJAR	**Matsushiro Arr**	**1.33**	**277**	P	**Pn**	**02 19 55.6**	**+1.9**
	3μm,0.3s,baz=91,slow=12						
MJAR				S	**Sn**	**02 20 16.4**	**+5.2**
	2μm,0.3s,baz=85,slow=26,SNR=8.8						
MAJO	**Matsushiro**	**1.33**	**277**	*d* iP	**Pn**	**02 19 56.0**	**+2.2**
MAJO	**Matsushiro**	**1.33**	**277**	*e*Pn	**Pn**	**02 19 56.1**	**+2.3**
MAT	**Matsushiro**	**1.33**	**277**	P	**Pn**	**02 19 56.2**	**+2.4**
MAT				S	**Sn**	**02 20 14.7**	**+3.5**
MAT	**Matsushiro**	**1.33**	**277**	P	**Pn**	**02 19 56.2**	**+2.4**
JYN	**Shimob**	**1.38**	**230**	⇓P	**Pn**	**02 19 56.5**	**+2.0**
JYN				S	**Sn**	**02 20 15.4**	**+3.0**
JNG	**Nsakai**	**1.41**	**271**	⇓P	**Pn**	**02 19 57.2**	**+2.3**
BSO4	**Boso 4**	**1.45**	**164**	⇑P	**Pn**	**02 19 55.9**	**+0.6**
JIZZ	**Izumozaki**	**1.46**	**322**	⇓P	**Pn**	**02 19 58.4**	**+3.0**
AJI	**Ajiro2**	**1.48**	**205**	⇑P	**Pn**	**02 19 56.2**	**+0.5**
JNT	**Takato**	**1.48**	**250**	⇓P	**Pn**	**02 19 58.5**	**+2.7**
JNS	**Sasagawa**	**1.49**	**344**	⇓P	**Pn**	**02 19 57.8**	**+2.0**
JNS				S	**Sn**	**02 20 17.2**	**+2.4**
JJN	**Nakama**	**1.53**	**298**	⇓P	**Pn**	**02 19 59.2**	**+2.9**
JMM	**Marumori**	**1.66**	**27**	⇑P	**Pn**	**02 19 59.4**	**+1.4**
BSO3	**Boso 3**	**1.67**	**161**	⇑P	**Pn**	**02 19 58.0**	**0.0**
JIM2	**Oshima 3**	**1.70**	**192**	P	**Pn**	**02 19 58.4**	**-0.3**
JYS	**Shirataka**	**1.84**	**5**	⇓P	**Pn**	**02 20 02.6**	**+2.2**
JIZS	**Izushimoda**	**1.84**	**206**	⇑P	**Pn**	**02 20 01.3**	**+0.8**
SHZ3	**Shizuoka 3**	**1.88**	**226**	⇓P	**Pn**	**02 20 03.2**	**+2.2**
JNY	**Yasuok**	**1.91**	**238**	⇓P	**Pn**	**02 20 04.1**	**+2.6**
JTT	**Ttatey**	**2.04**	**277**	⇓P	**Pn**	**02 20 06.4**	**+3.3**
JGN	**Niukaw**	**2.05**	**266**	⇓P	**Pn**	**02 20 06.3**	**+3.0**
JSD	**Sado**	**2.08**	**323**	⇓P	**Pn**	**02 20 05.3**	**+1.7**
JAW	**Awa shima**	**2.12**	**347**	⇓P	**Pn**	**02 20 05.8**	**+1.7**
JGF	**Kuroka**	**2.17**	**249**	⇓P	**Pn**	**02 20 07.4**	**+2.5**
JSG	**Sagara**	**2.18**	**219**	P	**Pn**	**02 20 07.3**	**+2.3**
JYA	**Atsumi**	**2.20**	**357**	⇓P	**Pn**	**02 20 07.6**	**+2.3**
JYZW	**Yoshizawa**	**2.21**	**232**	P	**Pn**	**02 20 07.4**	**+2.0**
JSZ	**Suzu**	**2.25**	**299**	P	**Pn**	**02 20 07.9**	**+2.0**
HMMJ	**Hamamatsu 2**	**2.31**	**229**	P	**Pn**	**02 20 08.9**	**+2.2**
JAO	**Obara**	**2.38**	**243**	⇓P	**Pn**	**02 20 10.3**	**+2.5**
JJH	**Hakui**	**2.52**	**283**	P	**Pn**	**02 20 12.2**	**+2.6**
JGM	**Miyama**	**2.63**	**256**	P	**Pn**	**02 20 13.8**	**+2.8**
JHG	**Hegura jima**	**2.75**	**303**	P	**Pn**	**02 20 14.8**	**+2.1**
JTB	**Tobi-shima**	**2.81**	**355**	P	**Pn**	**02 20 15.6**	**+2.1**
JKG	**Kaga**	**2.84**	**269**	⇓P	**Pn**	**02 20 16.9**	**+3.0**
JRG	**Rokugo**	**3.07**	**11**	P	**Pn**	**02 20 19.8**	**+2.9**
JFM	**Mihama**	**3.25**	**256**	P	**Pn**	**02 20 22.2**	**+2.8**
JHJ	**Hachijo jima 2**	**3.26**	**181**	P	**Pn**	**02 20 19.8**	**+0.1**
	4μm,0.3s,baz=322,slow=18,SNR=168						
JHJ				S	**Sn**	**02 20 58.1**	**+0.8**
	9μm,0.3s,baz=38,slow=23,SNR=10						
JHJ2	**Mitsune**	**3.27**	**180**	⇑P	**Pn**	**02 20 19.6**	**-0.1**
JHJ2	**Mitsune**	**3.27**	**180**	*e*Pn	**Pn**	**02 20 19.4**	**-0.3**
JOG2	**Oga 2**	**3.52**	**359**	P	**Pn**	**02 20 25.8**	**+2.7**
MIYJ	**Miyakonagasawa**	**3.54**	**26**	P	**Pn**	**02 20 24.2**	**+0.8**
JKN2	**Miekihoku**	**3.62**	**235**	P	**Pn**	**02 20 25.9**	**+1.4**
JKZ	**Kuzumaki**	**3.77**	**18**	P	**Pn**	**02 20 28.1**	**+1.5**
JTH	**Tanohata**	**3.88**	**24**	⇑P	**Pn**	**02 20 28.9**	**+0.9**
JAD	**Aida**	**4.84**	**254**	P	**Pn**	**02 20 43.3**	**+2.2**
JHS	**Saijyo**	**5.65**	**258**	P	**Pn**	**02 20 55.2**	**+3.0**
ERM	**Erimo**	**6.18**	**24**	*de*P	**Pn**	**02 20 57.3**	**-2.0**
ERM				pmax	pmax		
	comp=Z,1μm,0.8s						
ERM	**Erimo**	**6.18**	**24**	*e*Pn	**Pn**	**02 20 57.8**	**-1.5**
ERM				*e*Sn	**Sn**	**02 22 02.6**	**-5.9**
ASAJ	**Asahikawa**	**8.00**	**14**	P	**Pn**	**02 21 22.6**	**-1.5**
	comp=Z,56nm,0.3s,baz=223,slow=8.9,SNR=59						
ASAJ				S	**Sn**	**02 22 50.0**	**-2.9**
	comp=Z,27nm,0.3s,baz=278,slow=19,SNR=2.7						
ASAJ	**Asahikawa**	**8.00**	**14**	*e*Pn	**Pn**	**02 21 21.2**	**-2.9**
ASAJ				*e*Sn	**Sn**	**02 22 50.3**	**-2.7**
JNU	**Nakatsue**	**8.07**	**249**	P	**Pn**	**02 21 27.6**	**+2.4**
	comp=Z,20nm,0.3s,baz=48,slow=8.6,SNR=83						
JNU				LR	LR	02 24 46.6	
	comp=Z,11μm,20.1s,baz=70,slow=39						
JNU	**Nakatsue**	**8.07**	**249**	*e*Pn	**Pn**	**02 21 27.3**	**+2.1**
YUK	**Yuzh-Kuril'sk**	**8.91**	**29**	*e*P	**Pn**	**02 21 33.6**	**-3.0**
YUK				*e*S	**Sn**	**02 23 07.8**	**-7.5**
YUK				pmax	pmax		
	comp=Z,1μm,0.4s						
YUK				pmax	pmax		
	comp=E,495nm,0.5s						
YUK				pmax	pmax		
	comp=N,191nm,0.4s						
VLA	**Vladivostok**	**9.09**	**320**	*c* iP	**Pn**	**02 21 42.7**	**+3.6**
SHO	**Shikotan**	**9.19**	**33**	*e*P	**Pn**	**02 21 36.6**	**-3.7**
SHO				pmax	pmax		
	comp=Z,994nm,0.8s						
SHO				pmax	pmax		
	comp=N,381nm,0.4s						
SHO				pmax	pmax		
	comp=E,640nm,0.6s						
CBIJ	**Chichi jima**	**9.48**	**167**	*e*Pn	Pn	02 21 39.3	-5.1
CBIJ				*e*Sn	Sn	02 23 16.9	-12
CBIJ				S	Sn	02 23 20.3	-9.0
JCJ	**Chichijima**	**9.48**	**167**	P	**Pn**	**02 21 40.3**	**-4.1**
	baz=32,slow=5.4						
JCJ				S	Sn	02 23 20.3	-9.0
	comp=E,547nm,0.3s,baz=298,slow=21,SNR=6.9						
KSRS	**Korea Array**	**9.61**	**280**	P	Pn	02 21 51.1	+5.0
	comp=E,24nm,0.3s,baz=92,slow=14,SNR=401						
KSRS				LR	LR	02 25 30.1	
	comp=E,11μm,19.8s,baz=87,slow=37						
KSRS				ScP	**ScP**	**02 31 20.4**	**-0.5**
	comp=E,0.2nm,0.3s,baz=124,slow=1.0,SNR=10						
KSAR	**Wonju Array Be**	**9.64**	**280**	P	**Pn**	**02 21 51.1**	**+4.6**
KSAR	**Wonju Array Be**	**9.64**	**280**	P	**Pn**	**02 21 51.1**	**+4.6**
KSAR				ScP	**ScP**	**02 31 20.4**	**-0.6**
USRK	**Ussuriysk Ar.**	**9.84**	**325**	P	**Pn**	**02 21 52.8**	**+3.5**
	comp=E,20nm,0.3s,baz=140,slow=11,SNR=419						
USRK				LR	LR	02 25 30.1	
	comp=E,10μm,19.2s,baz=129,slow=36						
JHHJ	**Haha-jima-NKT**	**9.93**	**168**	P	Pn	02 21 46.0	-4.6
INCN	**Inchon**	**10.63**	**280**	*e*Pn	Pn	02 21 53.1	-7.0
INCN	**Inchon**	**10.63**	**280**	Pn	Pn	02 22 05.4	+5.2
	SNR=14						
INCN	**Inchon**	**10.63**	**280**	P	Pn	02 22 05.4	+5.2
	SNR=14						
KUR	**Kuril'sk**	**10.72**	**32**	*e*P	**Pn**	**02 21 59.2**	**-2.0**
KUR				*e*S	**Sn**	**02 23 51.0**	**-8.3**
KUR				pmax	pmax		
	comp=Z,774nm,0.7s						
KUR				pmax	pmax		
	comp=N,143nm,0.4s						
KUR				pmax	pmax		
	comp=E,323nm,0.8s						
KUR				MLR	MLR		
	comp=N,5μm,15.0s						
KUR				MLR	MLR		
	comp=Z,4μm,15.0s						
KUR				MLR	MLR		
	comp=E,4μm,8.0s						
YSS	**Yuzh-Sakhalins**	**10.78**	**11**	⇑P	**Pn**	**02 22 00.5**	**-1.5**
YSS				*e*S	**Sn**	**02 23 52.4**	**-8.3**
YSS				pmax	pmax		
	comp=Z,1.0nm,0.9s						
YSS				MLR	MLR		
	comp=Z,4μm,15.0s						
YSS				MLR	MLR		
	comp=N,3μm,10.0s						
YSS				MLR	MLR		
	comp=E,4μm,12.0s						
YSS	**Yuzh-Sakhalins**	**10.78**	**11**	*e*Pn	**Pn**	**02 21 59.5**	**-2.5**
MDJ	**Mudanjiang**	**11.33**	**320**	P	**Pn**	**02 22 11.0**	**+1.5**
MDJ				S	**Sn**	**02 24 19.9**	**+5.7**
MDJ				PcP	**PcP**	**02 27 56.4**	**-0.9**
MDJ				pmax	pmax		
	comp=E,710nm,1.1s						
MDJ				pmax	pmax		
	comp=E,4μm,7.5s						
MDJ				LR	LR		
	comp=E,9μm,19.4s						
MDJ				LR	LR		
	comp=E,7μm,19.6s						
MDJ				LR	LR		
	comp=E,14μm,21.3s						
MDJ	**Mudanjiang**	**11.33**	**320**	*e*Pn	**Pn**	**02 22 12.4**	**+2.8**
HABR	**Khabarovsk**	**12.58**	**345**	*de*P	Pn	02 22 20.6	-5.9
HABR				*e*S	**Sn**	**02 24 40.1**	**-4.5**
HABR				pmax	pmax		
	comp=N,24nm,1.1s						
HABR				pmax	pmax		
	comp=Z,57nm,1.1s						
HABR				pmax	pmax		
	comp=E,15nm,1.1s						
HABR				MLR	MLR		
	comp=Z,2μm,14.0s						
UGL	**Uglegorsk**	**12.79**	**7**	*e*P	**Pn**	**02 22 31.0**	**+1.7**
UGL				*e*		02 24 41.0	
UGL				pmax	pmax		
	comp=Z,370nm,0.8s						
UGL				pmax	pmax		
	comp=Z,3μm,4.0s						
UGL				MLR	MLR		
	comp=N,5μm,20.0s						
UGL				MLR	MLR		
	comp=Z,3μm,20.0s						
UGL				MLR	MLR		
	comp=E,6μm,18.0s						
CN2	**Changchun**	**13.27**	**308**	*e*P	**Pn**	**02 22 36.9**	**+1.1**
CN2				*e*S	**Sn**	**02 25 05.9**	**+4.5**
CN2				pmax	pmax		
	comp=E,200nm,4.0s						
CN2				LR	LR		
	comp=E,6μm,16.0s						
CN2				LR	LR		
	comp=E,7μm,16.0s						
CN2				LR	LR		
	comp=E,7μm,17.0s						
JOW	**Kunigami**	**13.70**	**229**	*e*Pn	**Pn**	**02 22 44.1**	**+2.5**
SNY	**Shenyang**	**13.74**	**298**	⇑P	**Pn**	**02 22 44.3**	**+2.3**
SNY				PP	P	02 22 56.1	+8.1
SNY				S	**Sn**	**02 25 16.0**	**+3.0**
SNY				sS	**S**	**02 25 30.1**	**-0.6**
SNY				pmax	pmax		
	comp=E,530nm,1.4s						
SNY				pmax	pmax		
	comp=E,5μm,2.8s						
SNY				LR	LR		
	comp=E,8μm,12.2s						
SNY				LR	LR		
	comp=E,8μm,15.7s						
SNY				LR	LR		
	comp=E,15μm,32.9s						
KLR	**Kul'dur**	**14.13**	**338**	P	**Pn**	**02 22 45.9**	**-1.1**
	comp=E,2.5nm,0.3s,baz=145,slow=11,SNR=117						
KLR				PcP	**PcP**	**02 28 01.3**	**+0.7**
	comp=E,0.7nm,0.3s,baz=298,slow=3.5,SNR=5.2						
KLR				LR	LR	02 28 05.7	
	comp=E,6μm,19.3s,baz=146,slow=36						
TYV	**Tymovskoe**	**14.61**	**7**	*e*P	**Pn**	**02 22 51.8**	**-1.4**
TYV				pmax	pmax		
	comp=Z,403nm,0.8s						
TYV				pmax	pmax		
	comp=E,2μm,5.0s						
TYV				pmax	pmax		
	comp=Z,3μm,7.0s						
TYV				MLR	MLR		
	comp=E,5μm,17.0s						
TYV				MLR	MLR		
	comp=Z,5μm,18.0s						
DL2	**Dalian**	**14.65**	**285**	⇑ *i* P	**P**	**02 22 57.1**	**-1.0**
DL2				S	**Sn**	**02 25 39.6**	**+4.6**
DL2				pmax	pmax		
	comp=Z,670nm,1.3s						
DL2				pmax	pmax		
	comp=Z,4μm,4.7s						
DL2				LR	LR		
	comp=Z,8μm,14.7s						
DL2				LR	LR		
	comp=Z,11μm,29.2s						
SSE	**Sheshan**	**16.39**	**257**	P	**Pn**	**02 23 16.6**	**+0.7**
SSE				sP	**sP**	**02 23 40.5**	**-2.2**
SSE				S	**Sn**	**02 26 19.3**	**+2.1**
SSE				pmax	pmax		
	comp=Z,150nm,0.9s						
SSE				pmax	pmax		
	comp=Z,2μm,5.4s						
SSE				LR	LR		
	comp=Z,2μm,12.0s						
SSE				LR	LR		
	comp=Z,3μm,12.0s						
SSE				LR	LR		
	comp=Z,4μm,12.2s						
NKL	**Nikolayevsk**	**16.77**	**2**	*i* P	**Pn**	**02 23 16.0**	**-4.4**
NKL				pmax	pmax		
	comp=Z,65nm,1.0s						
NKL				pmax	pmax		
	comp=N,1μm,7.0s						
NKL				pmax	pmax		
	comp=Z,2μm,7.0s						
NKL				MLR	MLR		
	comp=E,2μm,15.0s						
NKL				MLR	MLR		
	comp=Z,3μm,16.0s						
OKH	**Okha**	**17.30**	**6**	*e*P	**Pn**	**02 23 26.4**	**-0.5**
OKH				*e*S	**Sn**	**02 26 32.0**	**-6.7**
OKH				pmax	pmax		
	comp=Z,3μm,8.0s						
OKH				smax	smax		
	comp=E,4μm,9.0s						
OKH				smax	smax		
	comp=Z,2μm,16.0s						
NJ2	**Nanjing**	**17.89**	**262**	*e*P	**P**	**02 23 33.8**	**-0.1**
NJ2				S	**Sn**	**02 26 48.0**	**-5.3**
NJ2				pmax	pmax		
	comp=Z,260nm,1.0s						
NJ2				pmax	pmax		
	comp=Z,2μm,5.4s						
NJ2				LR	LR		
	comp=Z,5μm,8.7s						
NJ2				LR	LR		
	comp=Z,4μm,17.4s						
NJ2				LR	LR		
	comp=Z,5μm,22.8s						
TIA	**Tai'an**	**18.31**	**276**	⇑P	**P**	**02 23 38.4**	**-0.2**
TIA				pP	**pP**	**02 23 58.8**	**+4.6**
TIA				S	**Sn**	**02 27 04.8**	**+1.2**
TIA				pmax	pmax		
	comp=Z,450nm,1.1s						
TIA				pmax	pmax		
	comp=Z,4μm,3.5s						
TIA				LR	LR		
	comp=Z,3μm,11.0s						
TIA				LR	LR		
	comp=Z,3μm,11.8s						
TIA				LR	LR		
	comp=Z,3μm,12.6s						
SKR	**Severo-Kuril's**	**18.47**	**34**	*e*P	**P**	**02 23 35.0**	**-5.1**
SKR				*e*S	**S**	**02 27 02.0**	**-4.1**
SKR				pmax	pmax		
	comp=Z,670nm,1.0s						
SKR				pmax	pmax		
	comp=N,200nm,0.9s						
SKR				pmax	pmax		
	comp=E,230nm,0.9s						
SKR				pmax	pmax		
	comp=N,2μm,4.0s						
SKR				pmax	pmax		
	comp=Z,5μm,4.0s						
SKR				pmax	pmax		
	comp=E,2μm,6.0s						
SKR				MLR	MLR		
	comp=N,3μm,16.0s						
SKR				MLR	MLR		
	comp=E,3μm,16.0s						
SKR				MLR	MLR		
	comp=Z,3μm,16.0s						
YOJ	**Yonaguni jima**	**18.73**	**235**	*e*P	**P**	**02 23 40.5**	**-2.7**
YOJ				pmax	pmax		
	comp=Z,340nm,1.2s						
YOJ	**Yonaguni jima**	**18.73**	**235**	*e*P	**P**	**02 23 38.5**	**-4.8**
	comp=Z,339nm,1.2s						
BJI	**Beijing**	**18.94**	**288**	P	**P**	**02 23 44.4**	**-1.0**
BJI				pP	**pP**	**02 23 55.5**	**-5.5**
BJI				sP	**sP**	**02 24 04.8**	**-6.1**
BJI				S	**S**	**02 27 11.6**	**-4.7**
BJI				pmax	pmax		
	comp=Z,830nm,1.0s						
BJI				LR	LR		
	comp=Z,5μm,21.0s						
BJI				LR	LR		
	comp=Z,3μm,35.7s						
BJI				LR	LR		
	comp=Z,9μm,35.7s						
BJT	**Baijiatuau**	**18.94**	**288**	*e*P	**P**	**02 23 43.5**	**-2.0**
BJT				pmax	pmax		
	comp=Z,1μm,0.9s						
BJT	**Baijiatuau**	**18.94**	**288**	*e*P	**P**	**02 23 43.5**	**-2.0**
	comp=Z,1μm,0.9s						
BJT				*e*ScP	**ScP**	**02 31 36.1**	**-0.8**
TATO	**Taipei**	**19.43**	**239**	*e*P	**P**	**02 23 47.8**	**-3.0**
	comp=Z,233nm,1.0s						
HIA	**Hailar**	**19.50**	**318**	*e*P	**P**	**02 23 49.4**	**-2.1**
HIA				pmax	pmax		
	comp=Z,218nm,0.7s						
HIA	**Hailar**	**19.50**	**318**	*e*P	**P**	**02 23 49.4**	**-2.1**
	comp=Z,218nm,0.7s						
YHNB	**Yeheng**	**19.70**	**239**	*e*P	**P**	**02 23 51.8**	**-2.1**
	comp=Z,113nm,0.8s						
NACB	**Ninganchiao**	**19.88**	**237**	*e*P	**P**	**02 23 52.8**	**-3.0**
	comp=Z,81nm,0.5s						
SSLB	**Suanglung**	**20.57**	**238**	*e*P	**P**	**02 24 00.8**	**-2.5**
	comp=Z,88nm,0.8s						
SSLB				*e*S	**S**	**02 27 42.4**	**-6.6**
SSLB				LR	LR		
	comp=Z,4μm,21.0s						
YULB	**Yu-li**	**20.60**	**236**	*e*P	**P**	**02 23 58.7**	**-4.9**
	comp=Z,92nm,0.9s						
YULB				*e*S	**S**	**02 27 43.5**	**-6.1**
YULB				LR	LR		
	comp=Z,2μm,22.0s						
PEA0	**Petropavlovsk-**	**20.88**	**31**	*e*P	**P**	**02 24 05.8**	**-0.6**
PEA0				*e*ScP	**ScP**	**02 31 40.6**	**-0.6**
PEA0B	**Petropavlovsk-**	**20.88**	**31**	*e*P	**P**	**02 24 06.6**	**+0.2**
	comp=Z,513nm,0.9s						
PETK	**Petropavlovsk-**	**20.88**	**31**	P	**P**	**02 24 06.5**	**+0.

PET *i* S **S** **02 27 57.2 -4.3**
PET *e* 02 35 23.1
PET pmax pmax
comp=Z,3μm,7.6s
PET pmax pmax
comp=Z,590nm,1.0s
PET pmax pmax
comp=Z,2μm,6.9s
PET MLR MLR
comp=Z,2μm,18.0s
PET Petropavlovsk 21.23 33 *e*P **P** **02 24 10.3 +0.3**
comp=Z,512nm,1.0s
QZH Quanzhou 21.50 244⇑ *i*P **P** **02 24 07.6 -5.6**
QZH PP **PnPn** **02 24 34.0 -3.1**
QZH S S 02 27 55.3 -12
QZH pmax pmax
comp=Z,340nm,0.9s
QZH pmax pmax
comp=Z,2μm,2.8s
QZH LR LR
comp=Z,6μm,13.9s
QZH LR LR
comp=Z,2μm,7.9s
QZH LR LR
comp=Z,8μm,14.6s
TIY Taiyuan 21.89 282 *e*P **P** **02 24 15.3 -2.1**
TIY PP **PnPn** **02 24 42.1 -0.3**
TIY S **S** **02 28 14.0 -0.9**
TIY pmax pmax
comp=Z,68nm,0.6s
TIY pmax pmax
comp=Z,450nm,4.7s
TIY LR LR
comp=Z,2μm,13.0s
TIY LR LR
comp=Z,3μm,12.1s
TIY LR LR
comp=Z,6μm,15.6s
WHN Wuhan 22.02 262⇑P **P** **02 24 17.5 -1.2**
WHN S **S** **02 28 10.3 -6.9**
WHN pmax pmax
comp=Z,1μm,1.1s
WHN LR LR
comp=Z,10μm,14.8s
WHN LR LR
comp=Z,6μm,16.5s
WHN LR LR
comp=Z,11μm,16.1s
HHC Hu-ho-hao-te 22.50 290 *e*P **P** **02 24 20.8 -3.1**
HHC sP pP 02 24 44.3 +4.4
HHC PP **PnPn** **02 24 50.8 +0.2**
HHC S **S** **02 28 20.9 -4.4**
HHC pmax pmax
comp=Z,100nm,1.0s
HHC pmax pmax
comp=Z,960nm,4.3s
HHC LR LR
comp=Z,2μm,14.9s
HHC LR LR
comp=Z,1μm,12.8s
HHC LR LR
comp=Z,1μm,13.9s
CLNS Chul'man 22.79 339 *e*P **P** **02 24 24.2 -2.5**
CLNS *e**PP pP 02 24 35.3 -7.5
CLNS *e* 02 24 46.9
CLNS *e* 02 28 15.7
CLNS *e*S **S** **02 28 26.7 -3.0**
CLNS *e*SS **SnSn** **02 29 06.2 -1.7**
CLNS pmax pmax
comp=Z,542nm,1.0s
CLNS pmax pmax
comp=N,409nm,1.1s
CLNS pmax pmax
comp=E,197nm,0.8s
CLNS pmax pmax
comp=Z,186nm,0.8s
CLNS pmax pmax
comp=N,127nm,0.8s
CLNS pmax pmax
comp=E,124nm,0.8s
CLNS smax smax
comp=N,2μm,10.7s
CLNS smax smax
comp=E,1μm,11.5s
CLNS MLR MLR
comp=Z,2μm,13.0s
CLNS MLR MLR
comp=N,2μm,13.0s
CLNS MLR MLR
comp=E,861nm,11.0s
GUMO Guam 23.15 167 P **P** **02 24 29.7 -0.8**
comp=E,621nm,1.0s,baz=132,slow=2.3,SNR=14
GUMO LR LR 02 33 07.7
comp=E,3μm,20.6s,baz=9.0,slow=35
GUMO Guam 23.15 167 *e*P **P** **02 24 29.7 -0.8**
GUMO pmax pmax
comp=Z,2μm,1.0s
GUMO Guam 23.15 167 *e*P **P** **02 24 29.7 -0.8**
comp=Z,2μm,1.0s
BTO Baotou 23.66 289 *e*P **P** **02 24 31.4 -3.8**
MA2 Magadan 24.26 14 P **P** **02 24 40.5 +0.3**
comp=Z,1μm,0.8s,baz=223,slow=9.4,SNR=419
CIT Chita 24.30 318 *e*P **P** **02 24 38.2 -2.5**
CIT *e* 02 24 48.2
CIT *e* 02 25 21.6
CIT *e* 02 28 19.5
CIT *e*S **ScS** **02 35 47.4 +10**
CIT pmax pmax
comp=Z,522nm,1.1s
XAN Xi'an 25.32 274 P **P** **02 24 48.9 -1.3**
XAN pP pP 02 25 03.3 -4.9
XAN PP **PnPn** **02 25 28.8 -0.4**
XAN S **S** **02 29 05.3 -5.5**
XAN SS **SnSn** **02 30 08.9 -1.0**
XAN pmax pmax
comp=Z,410nm,0.8s
XAN pmax pmax
comp=Z,1μm,6.7s
XAN LR LR
comp=Z,2μm,13.4s
XAN LR LR
comp=Z,3μm,14.7s
XAN LR LR
comp=Z,3μm,14.5s
ENH Enshi 26.02 265 *e*P **P** **02 24 55.7 -0.9**
comp=Z,537nm,0.8s
ENH *e*ScP **ScP** **02 31 54.6 -0.8**
ENH LR LR
comp=Z,2μm,19.0s
HKC Hong Kong Obse 26.32 245 P **P** **02 24 59.0 -0.2**
YAK Yakutsk 26.45 349 P **P** **02 24 59.5 -0.4**
comp=Z,2μm,0.9s,baz=164,slow=3.2,SNR=199
YAK LR LR 02 35 14.8
comp=Z,3μm,21.3s,baz=175,slow=36
YAK Yakutsk 26.45 349*c i*P **P** **02 24 59.3 -0.6**
YAK *e* 02 25 46.7
YAK *e* 02 28 22.8
YAK *e*S **S** **02 29 21.9 -5.8**
YAK pmax pmax
comp=Z,1μm,1.1s
YAK pmax pmax
comp=N,960nm,1.3s
YAK pmax pmax
comp=E,305nm,1.1s
YAK pmax pmax
comp=Z,418nm,1.1s
YAK pmax pmax
comp=E,194nm,1.2s
YAK pmax pmax
comp=N,780nm,1.6s
YAK smax smax
comp=N,2μm,2.2s
YAK smax smax
comp=E,1μm,2.0s
YAK Yakutsk 26.45 349 *e*P **P** **02 24 59.4 -0.6**
comp=E,1μm,0.8s
GZH Guangzhou 26.46 247 P **P** **02 24 55.3 -5.2**
GZH PcP **PcP** **02 28 23.5 -0.3**
GZH S **S** **02 29 18.5 -10**
GZH pmax pmax
comp=E,2μm,6.1s
ULN Ulaanbaatar 26.69 306*ce*P **P** **02 25 01.7 -0.9**
ULN pmax pmax
comp=Z,361nm,1.0s
ULN Ulaanbaatar 26.69 306 *e*P **P** **02 25 01.9 -0.7**
comp=Z,218nm,0.7s

ULN LR LR
comp=Z,6μm,21.0s
ULN Ulaanbaatar 26.69 306 P **P** **02 25 02.2 -0.4**
SNR=179
ULN Ulaanbaatar 26.69 306 P **P** **02 25 02.2 -0.4**
SNR=179
MCO Taipa Grande 26.88 245 P **P** **02 25 05.0 +0.7**
SONA1 Songino Array 27.11 305 *e*P **P** **02 25 04.9 -1.4**
SONM Songino Array 27.12 305 P **P** **02 25 05.7 -0.6**
comp=Z,136nm,0.6s,baz=106,slow=9.0,SNR=248
SONM PcP **PcP** **02 28 25.7 +0.5**
comp=Z,29nm,0.8s,baz=106,slow=1.8,SNR=5.3
SONM LR LR 02 35 59.2
comp=Z,6μm,20.8s,baz=94,slow=36
BOD Bodaibo 27.42 330 *e*P **P** **02 25 09.0 +0.2**
BOD pmax pmax
comp=Z,589nm,0.9s
SEY Seymchan 27.68 12 P **P** **02 25 11.7 +0.7**
comp=Z,397nm,0.9s,baz=207,slow=7.1,SNR=338
TGY Tagaytay City 27.91 222 P **P** **02 25 13.2 -0.5**
comp=Z,208nm,0.4s,baz=302,slow=8.7,SNR=6.6
LZH Lanzhou 28.94 280⇑P **P** **02 25 22.0 -0.8**
LZH sP pP 02 25 43.3 +2.3
LZH PP **PnPn** **02 26 13.5 -4.6**
LZH PcP **PcP** **02 28 31.4 +1.5**
LZH S **S** **02 30 07.1 -0.8**
LZH sS sS 02 30 38.4 -0.9
LZH pmax pmax
comp=Z,380nm,1.1s
LZH pmax pmax
comp=Z,1μm,5.8s
LZH LR LR
comp=Z,2μm,12.3s
LZH LR LR
comp=Z,3μm,14.6s
LZH LR LR
comp=Z,4μm,15.4s
SMY Shemya 29.01 45 *e*P **P** **02 25 24.7 +1.7**
SMY pmax pmax
comp=Z,320nm,1.2s
SMY Shemya 29.01 45 *e*P **P** **02 25 24.7 +1.7**
comp=Z,316nm,1.2s
H11S3 WAKE ISLAND Hy 29.60 120 P **P** **02 25 29.1 +0.8**
baz=300,slow=6.2,SNR=6.3
H11S1 WAKE ISLAND Hy 29.60 120 P **P** **02 25 29.2 +0.9**
baz=300,slow=6.2,SNR=10
IRK Irkutsk 29.61 314⇑ *i*P **P** **02 25 27.2 -1.2**
IRK pmax pmax
comp=Z,336nm,0.9s
H11S2 WAKE ISLAND Hy 29.62 120 P **P** **02 25 29.0 +0.5**
baz=300,slow=6.2,SNR=6.5
ZAK Zakamensk 29.70 310 *e*P **P** **02 25 28.3 -0.9**
ZAK *e* 02 28 32.5
ZAK pmax pmax
comp=Z,132nm,1.2s
ZAK pmax pmax
comp=Z,46nm,1.0s
TLY Talaya 29.82 312 P **P** **02 25 30.2 +0.1**
comp=Z,123nm,0.9s,baz=119,slow=6.7,SNR=42
TLY PcP **PcP** **02 28 32.9 +1.2**
comp=Z,35nm,0.8s,baz=268,slow=0.7,SNR=5.4
TLY LR LR 02 38 14.3
comp=Z,4μm,18.9s,baz=116,slow=38
TLY Talaya 29.82 312 *e*P **P** **02 25 29.8 -0.3**
TLY *e* 02 26 43.7
TLY *e*S **S** **02 30 20.7 -0.4**
TLY pmax pmax
comp=Z,148nm,0.9s
TLY MLR MLR
comp=Z,4μm,17.0s
TLY Talaya 29.82 312 *e*P **P** **02 25 29.9 -0.3**
comp=Z,151nm,0.9s
TLY PcP **PcP** **02 28 32.9 +1.2**
TLY Talaya 29.82 312 P **P** **02 25 29.9 -0.3**
SNR=42
TLY Talaya 29.82 312 P **P** **02 25 29.9 -0.3**
SNR=42
TLY P **P** **02 25 29.9 -0.3**
SNR=42
GYA Guiyang 29.87 260⇑ *i*P **P** **02 25 29.8 -1.2**
GYA pP pP 02 25 46.4 -2.9
GYA sP sP 02 25 53.0 -5.4
GYA PP **PnPn** **02 26 30.3 0.0**
GYA PcP **PcP** **02 28 32.6 +0.2**
GYA S **S** **02 30 16.6 -6.0**
GYA sS sS 02 30 47.3 -6.7
GYA SS **SnSn** **02 31 59.0 -1.9**
GYA ScP **ScP** **02 32 08.9 +1.4**
GYA ScS **ScS** **02 36 02.4 -0.7**
GYA pmax pmax
comp=Z,870nm,1.1s
GYA pmax pmax
comp=Z,230nm,7.8s
GYA LR LR
comp=Z,2μm,14.6s
GYA LR LR
comp=Z,2μm,18.2s
GYA LR LR
comp=Z,3μm,18.6s
CD2 Chengdu 30.42 270 P **P** **02 25 34.5 -1.2**
CD2 S **S** **02 30 27.1 -3.9**
CD2 pmax pmax
comp=Z,580nm,0.8s
CD2 pmax pmax
comp=Z,920nm,5.2s
CD2 LR LR
comp=Z,4μm,14.4s
CD2 LR LR
comp=Z,5μm,21.6s
MOY Mondy 31.41 311 *e*P **P** **02 25 43.2 -1.1**
MOY pmax pmax
comp=Z,132nm,1.4s
QIZ Qiongzhong 31.52 245 P **P** **02 25 45.3 -0.1**
QIZ S **S** **02 30 47.9 -0.3**
QIZ LR LR
comp=Z,700nm,17.7s
QIZ LR LR
comp=Z,770nm,21.6s
GTA Gaotai 31.55 288⇑P **P** **02 25 44.9 -0.9**
GTA pP pP 02 26 03.5 -0.6
GTA sP sP 02 26 13.0 -0.2
GTA PcP **PcP** **02 28 37.9 +1.2**
GTA S **S** **02 30 47.8 -1.0**
GTA sS sS 02 31 18.0 -2.3
GTA SS **SnSn** **02 32 40.8 -0.7**
GTA pmax pmax
comp=Z,89nm,1.1s
GTA pmax pmax
comp=Z,1μm,6.3s
GTA LR LR
comp=Z,2μm,13.3s
GTA LR LR
comp=Z,2μm,15.2s
GTA LR LR
comp=Z,2μm,16.2s
DAV Davao City (W) 31.96 208 PFAKE 02 26 00.0 +11
DAV LR LR
comp=Z,2μm,19.0s
KMI Kunming 33.62 261 P **P** **02 26 03.6 -0.5**
KMI PP **PnPn** **02 27 18.3 +0.1**
KMI PcP **PcP** **02 28 43.3 +0.6**
KMI S **S** **02 31 15.8 -5.5**
KMI ScP **ScP** **02 32 20.1 -0.2**
KMI SS **SnSn** **02 33 22.8 -9.1**
KMI pmax pmax
comp=Z,660nm,1.0s
KMI pmax pmax
comp=Z,1μm,4.1s
KMI LR LR
comp=Z,2μm,14.7s
KMI LR LR
comp=Z,3μm,17.4s
KMI LR LR
comp=Z,3μm,19.2s
PATS Pohnpei 33.92 146 *e*P **P** **02 26 07.6 +1.1**
comp=Z,540nm,1.1s
PATS *e*PP **PnPn** **02 27 18.6 -3.3**
PATS LR LR
comp=Z,2μm,20.0s
BILL Bilibino 35.01 17*c i*P **P** **02 26 14.8 -0.5**
BILL *e* 02 27 32.9
BILL *e*PPP PPP 02 27 47.9
BILL *i*S **S** **02 31 36.6 -4.7**
BILL *i*SS **SnSn** **02 34 03.6 -0.5**
BILL pmax pmax
comp=Z,368nm,1.0s
BILL MLR MLR
comp=Z,2μm,23.0s
BILL Bilibino 35.01 17 *e*P **P** **02 26 14.9 -0.3**
comp=Z,340nm,1.0s
BILL *e*ScP **ScP** **02 32 23.4 -0.7**
TIXI Tiksi 35.79 354 P **P** **02 26 21.6 -0.4**
comp=Z,333nm,0.8s,baz=144,slow=7.9,SNR=482
TIXI LR LR 02 42 08.7
comp=Z,1μm,18.5s,baz=171,slow=38
TIXI Tiksi 35.79 354*ce*P **P** **02 26 21.2 -0.7**
TIXI pmax pmax
comp=Z,355nm,0.7s
TIXI MLR MLR
comp=Z,1μm,17.0s
TIXI Tiksi 35.79 354 *e*P **P** **02 26 21.4 -0.5**
comp=Z,349nm,0.7s
ATKA Atka Island 35.83 49 *e*P **P** **02 26 23.0 +0.5**
comp=Z,128nm,0.9s
MYLDM Lahad Datu 36.73 217⇑P **P** **02 26 31.7 +1.2**
MYLDM Lahad Datu 36.73 217 *e*P **P** **02 26 31.2 +0.7**
comp=Z,109nm,0.9s
MYLDM LR LR
comp=Z,4μm,20.0s
MIDW Midway 36.83 90 *e*P **P** **02 26 32.0 +0.7**
comp=Z,390nm,1.0s
SDKM Sandakan 36.99 220⇑P **P** **02 26 35.3 +2.5**
KRAR Krasnoyarsk 37.07 317*c i*P **P** **02 26 32.5 -0.5**
KRAR pmax pmax
comp=Z,217nm,0.9s
SKNT Sakolnakorn 37.14 248 P **P** **02 26 33.7 -0.4**
comp=Z,152nm,0.9s,comp=Z,4μm
KKM Kota Kinabalu 37.16 221 *e*P **P** **02 26 32.7 -1.6**
comp=Z,68nm,1.1s
KKM LR LR
comp=Z,2μm,20.0s
TNTI Ternate 37.28 201 P **P** **02 26 38.6 +3.4**
comp=Z,377nm,1.4s,comp=Z,5μm
TNTI Ternate 37.28 201 *e*P **P** **02 26 34.6 -0.6**
KWAJ Kwajalein Atol 37.30 131 *e*P **P** **02 26 37.0 +1.6**
KWAJ pmax pmax
comp=Z,490nm,1.1s
KWAJ Kwajalein Atol 37.30 131 *e*P **P** **02 26 37.0 +1.6**
comp=Z,493nm,1.1s
KWAJ LR LR
comp=Z,2μm,21.0s
TSM Tawau 37.80 218⇓P **P** **02 26 39.0 -0.6**
SWI Sorong 37.91 194 P **P** **02 26 40.5 0.0**
comp=Z,234nm,1.0s,comp=Z,2μm
CRAI Chiangrai 38.01 256 P **P** **02 26 42.3 +0.9**
comp=Z,203nm,1.3s,comp=Z,10μm
RKPI Ransiki, Papua 38.07 189 P **P** **02 26 41.9 0.0**
comp=Z,400nm,0.7s,comp=Z,4μm
KHON Khomkaen 38.40 249 P **P** **02 26 44.5 -0.2**
comp=Z,87nm,1.0s,comp=Z,1μm
LBMI Labuha 38.59 200 P **P** **02 26 48.3 +2.1**
comp=Z,309nm,1.0s,comp=Z,3μm
JAY Jayapura 38.71 179 P **P** **02 26 45.7 -1.6**
comp=Z,3.6nm,0.6s,baz=73,slow=19,SNR=8.6
JAY Jayapura 38.71 179 P **P** **02 26 47.4 +0.1**
comp=Z,106nm,1.0s,comp=Z,3μm
GENI Genyem 38.78 179 P **P** **02 26 48.7 +0.9**
MANU Manus Island 38.87 168 *e*P **P** **02 26 47.7 -0.9**
comp=Z,57nm,0.9s
MANU LR LR
comp=Z,600nm,20.0s
NIKH Nikolski High 39.15 48 *e*P **P** **02 26 51.4 +0.9**
comp=Z,147nm,0.7s
NIKH LR LR
comp=Z,1μm,20.0s
CMAI Chiengmai2 39.21 257 P **P** **02 26 51.7 +0.1**
comp=Z,194nm,1.3s,comp=Z,3μm
UTTA Uttaradit 39.28 252 P **P** **02 26 48.0 -4.0**
MRSI Marisa 39.41 209 P **P** **02 26 53.4 +0.4**
LAMP Lampang 39.54 254 P **P** **02 26 55.3 +1.1**
comp=Z,82nm,0.9s,comp=Z,569nm
PBKT Sadao Pong 39.66 251 P **P** **02 26 54.7 -0.5**
comp=Z,158nm,1.0s,comp=Z,2μm
PHIT Phitsanulok 39.71 252 P **P** **02 26 56.7 +1.1**
comp=Z,97nm,1.0s,comp=Z,853nm
FAKI Fak Fak 39.74 192 P **P** **02 26 55.8 0.0**
FAKI Fak Fak 39.74 192 *e*P **P** **02 26 55.4 -0.5**
comp=Z,328nm,0.6s
FAKI *e*S S 02 32 42.6 -12
CHTO Chiang Mai 39.91 255 *e*P **P** **02 26 56.8 -0.5**
CHTO pmax pmax
comp=Z,180nm,0.9s
CHTO Chiang Mai 39.91 255 *e*P **P** **02 26 56.8 -0.5**
comp=Z,176nm,0.9s
CHTO *e*PcP **PcP** **02 29 02.1 +0.5**
CHTO *e*ScP **ScP** **02 32 43.4 -0.1**
CHTO LR LR
comp=Z,1μm,19.0s
CHTO Chiang Mai 39.91 255 P **P** **02 26 57.2 -0.1**
SNR=72
CHTO Chiang Mai 39.91 255 P **P** **02 26 57.2 -0.1**
SNR=72
CHTO P **P** **02 26 57.2 -0.1**
SNR=72
GAMB Gambell 39.92 31 *e*P **P** **02 26 57.8 +1.0**
comp=Z,62nm,1.0s
GAMB *e*PcP **PcP** **02 29 01.5 +0.8**
GAMB *e*ScP **ScP** **02 32 41.5 -1.1**
GAMB LR LR
comp=Z,300nm,18.0s
WMQ Urumqi 40.01 297 P **P** **02 26 58.3 +0.4**
WMQ PP **PP** **02 28 30.3 -0.8**
WMQ PcP **PcP** **02 29 02.3 +0.7**
WMQ S **S** **02 33 01.3 +3.4**
WMQ SS **SS** **02 35 54.5 -3.0**
WMQ pmax pmax
comp=Z,280nm,0.8s
WMQ pmax pmax
comp=Z,1μm,3.8s
WMQ LR LR
comp=Z,2μm,16.2s
WMQ LR LR
comp=Z,860nm,16.2s
WMQ LR LR
comp=Z,960nm,28.2s
CM31 Chiang Mai Arr 40.11 255 *e*P **P** **02 26 59.0 +0.1**
CMAR Chiang Mai Arr 40.11 255 P **P** **02 26 59.5 +0.5**
comp=Z,34nm,0.9s,baz=50,slow=5.4,SNR=53
CMAR PcP **PcP** **02 29 03.6 +1.4**
comp=Z,40nm,0.9s,baz=15,slow=3.0,SNR=11
CMAR ScP **ScP** **02 32 41.3 -3.0**
comp=Z,12nm,1.1s,baz=17,slow=3.8,SNR=7.0
CMAR LR LR 02 44 48.5
comp=Z,1μm,18.3s,baz=58,slow=38
CM01 Chiang Mai Arr 40.12 255 *e*P **P** **02 26 58.4 -0.6**
KMPI Kaimana, Papua 40.25 190 P **P** **02 26 59.5 -0.5**
SANI Sanana 40.37 202 P **P** **02 27 01.7 +0.7**
LUWI Luwuk 40.49 207 P **P** **02 27 01.1 -0.9**
LUWI Luwuk 40.49 207 *e*P **P** **02 27 00.1 -1.9**
comp=Z,170nm,0.6s
LUWI *e*S **S** **02 32 57.9 -7.3**
UNV Unalaska Valle 40.61 47 *e*P **P** **02 27 01.0 -1.5**
comp=Z,30nm,0.8s
APSI Ampana 40.79 209 P **P** **02 27 03.3 -1.2**
MSAI Masohi 40.82 197 P **P** **02 27 08.2 +3.4**
LSA Lhasa 41.01 275 P **P** **02 27 08.8 +2.0**
LSA S **S** **02 33 11.8 -2.0**
LSA pmax pmax
comp=Z,880nm,1.0s
LSA pmax pmax
comp=Z,1μm,5.2s
LSA LR LR
comp=Z,750nm,18.0s
LSA LR LR
comp=Z,2μm,20.9s
LSA LR LR
comp=Z,3μm,34.2s
LSA Lhasa 41.01 275 *e*P **P** **02 27 08.1 +1.3**
LSA pmax pmax
comp=Z,676nm,0.9s
LSA MLR MLR
comp=Z,2μm,22.0s
LSA Lhasa 41.01 275 *e*P **P** **02 27 08.1 +1.3**
comp=Z,676nm,0.9s
LSA LR LR
comp=Z,2μm,22.0s
CHBT CHBT 41.06 245 P **P** **02 27 06.7 -0.1**
comp=Z,166nm,1.3s,comp=Z,2μm
NLAI Namlea 41.18 200 P **P** **02 27 08.6 +0.9**
BTM Bintulu 41.23 223⇑P **P** **02 27 08.9 +0.8**
ZAA0 Zalesovo Array 41.42 313 *e*P **P** **02 27 09.0 -0.3**

ZALV **Zalesovo Beam** 41.42 313 P **P** 02 27 09.9 +0.6
comp=Z,924nm,0.8s,baz=98,slow=6.7,SNR=1415
ZALV PcP **PcP** 02 29 05.8 0.0
comp=Z,142nm,0.7s,baz=106,slow=3.6,SNR=10
ZALV ScP **ScP** 02 32 46.8 -2.1
comp=Z,34nm,1.0s,baz=85,slow=4.9,SNR=7.7
ZALV LR LR 02 45 33.4
comp=Z,2μm,18.7s,baz=78,slow=38
BNDI **Bandanaira** 41.75 195 P **P** 02 27 12.7 +0.4
ZSN **Zaisan** 41.89 303⇑*i*P **P** 02 27 17.7 +4.4
comp=Z,10μm,1.0s
ZSN *e*S **S** 02 33 31.5 +6.0
RABL **Rabaul** 41.98 161 *e*P **P** 02 27 14.4 +0.1
comp=Z,316nm,0.9s
PATY **Pattaya** 42.03 246 P **P** 02 27 16.1 +1.4
comp=Z,27nm,0.9s,comp=Z,2μm
SHL **Shillong** 42.14 269 *e*P **P** 02 27 15.2 -0.5
SHL *e*S **S** 02 33 28.0 -2.0
SBUM **Sibu** 42.32 223⇑P **P** 02 27 16.8 -0.2
SBUM **Sibu** 42.32 223 *e*P **P** 02 27 16.6 -0.4
comp=Z,63nm,1.0s
SBUM LR LR
comp=Z,1μm,20.0s
NVS **Novosibirsk** 42.38 314⇑*i*P **P** 02 27 17.3 +0.2
NVS *e* 02 29 06.7
NVS *e*S **S** 02 33 31.3 -1.2
NVS pmax pmax
comp=Z,1μm,0.9s
NVS pmax pmax
comp=N,178nm,0.9s
NVS pmax pmax
comp=E,925nm,1.0s
NVS pmax pmax
comp=Z,147nm,1.3s
NVS smax smax
comp=N,98nm,1.9s
NVS smax smax
comp=E,260nm,2.3s
KHLT **Khaolaem Dam** 42.55 251 P **P** 02 27 19.4 +0.5
comp=E,49nm,1.2s,comp=E,818nm
NRIK **Noril'sk** 43.33 336 P **P** 02 27 24.4 -0.2
comp=E,432nm,0.9s,baz=112,slow=8.6,SNR=441
NRIK PcP **PcP** 02 29 12.6 +0.6
comp=E,192nm,1.0s,baz=106,slow=2.9,SNR=3.6
NRIK LR LR 02 46 30.1
comp=E,2μm,18.6s,baz=103,slow=37
MK01 **Makanchi Array** 43.39 302 *e*P **P** 02 27 25.5 +0.1
MK31 **Makanchi Array** 43.40 302 *i*P **P** 02 27 25.5 0.0
MK31 pmax pmax
comp=Z,971nm,0.9s
MK31 **Makanchi Array** 43.40 302 *e*P **P** 02 27 26.0 +0.5
MKAR **Makanchi Array** 43.40 302 P **P** 02 27 25.6 +0.1
comp=Z,668nm,0.9s,baz=87,slow=9.8,SNR=1982
MKAR PcP **PcP** 02 29 12.7 +0.1
comp=Z,56nm,0.8s,baz=60,slow=3.8,SNR=3.6
MKAR LR LR 02 46 35.4
comp=Z,3μm,18.1s,baz=89,slow=37
MKAR PKPPKP P'P'df 02 59 11.0 -9.3
comp=Z,0.5nm,1.0s,baz=222,slow=1.6,SNR=3.6
MKAR **Makanchi Array** 43.40 302 P **P** 02 27 25.6 +0.1
MKAR 02 29 12.7
MKAR pmax pmax
comp=Z,660nm,0.9s
MKAR pmax pmax
comp=Z,56nm,0.8s
MKAR MLR MLR
comp=Z,3μm,18.1s
MKAR **Makanchi Array** 43.40 302 *e*P **P** 02 27 26.1 +0.6
MKAR PcP **PcP** 02 29 12.7 +0.1
MKAR PP' 02 59 11.0
TTSI **Tana Toraja** 43.46 210 P **P** 02 27 27.6 +1.4
MAKZ **Makanchi** 43.61 303 *e*P **P** 02 27 27.5 +0.3
MAKZ pmax pmax
comp=Z,824nm,0.9s
MAKZ MLR MLR
comp=Z,4μm,22.0s
MAKZ **Makanchi** 43.61 303 *e*P **P** 02 27 27.5 +0.3
comp=Z,824nm,0.9s
MAKZ LR LR
comp=Z,4μm,22.0s
MTKI **Muara Teweh, K** 43.79 218 P **P** 02 27 29.8 +0.9
SDPT **Sand Point** 44.15 45 *e*P **P** 02 27 30.0 -1.3
comp=Z,171nm,0.7s
SDPT *e*PcP **PP** 02 29 15.3 0.0
KSM **Kuching** 44.20 225 *e*P **P** 02 27 32.4 +0.2
comp=Z,100nm,0.9s
KSM LR LR
comp=Z,800nm,20.0s
SPSI **Sidrap Palu** 44.31 209 P **P** 02 27 32.3 -0.7
SEM **Semipalatinsk** 44.34 308⇑*i*P **P** 02 27 32.9 0.0
comp=Z,7μm,1.1s
SEM *i*S **S** 02 34 01.2 0.0
SEM LR LR 02 46 13.9
comp=Z,2μm,17.9s
STKI **Sintang** 44.71 222 P **P** 02 27 36.6 +0.4
SAUI **Saumlaki** 44.86 192 P **P** 02 27 38.5 +1.1
SAUI **Saumlaki** 44.86 192 *e*P **P** 02 27 38.3 +0.9
KAPI **Kappang** 45.28 209 P **P** 02 27 39.9 -0.8
comp=Z,126nm,0.9s,baz=15,slow=3.6,SNR=30
KAPI **Kappang** 45.28 209 *e*P **P** 02 27 40.3 -0.4
comp=Z,314nm,1.2s
KAPI *e*PcP **PcP** 02 29 19.6 +0.3
KAPI *e*ScP **ScP** 02 33 06.0 +1.0
KAPI LR LR
comp=Z,1μm,22.0s
KAPI **Kappang** 45.28 209 P **P** 02 27 41.5 +0.8
SNR=28
CHGN **Chignik** 45.30 44 *e*P **P** 02 27 39.1 -1.3
KURK **Kurchatov** 45.34 308 P **P** 02 27 42.0 +1.1
KURK 02 29 19.4
KURK S **S** 02 34 16.4 +0.7
KURK pmax pmax
comp=Z,796nm,0.9s
KURK pmax pmax
comp=Z,60nm,0.8s
KURK smax smax
comp=N,18nm,1.2s
KURK **Kurchatov** 45.34 308 *e*P **P** 02 27 40.9 +0.1
comp=N,1μm,0.9s
KURK PcP **PcP** 02 29 19.4 +0.2
KURK S **S** 02 34 16.4 +0.7
KURK **Kurchatov** 45.34 308 P **P** 02 27 41.0 +0.2
SNR=845
KURK **Kurchatov** 45.34 308 P **P** 02 27 41.0 +0.2
SNR=845
KURK P **P** 02 27 41.0 +0.2
SNR=845
KURBB **Kurchatov Arra** 45.41 308 P **P** 02 27 42.0 +0.6
comp=N,805nm,0.9s,baz=85,slow=8.1,SNR=1157
KURBB PcP **PcP** 02 29 19.4 0.0
comp=N,60nm,0.8s,baz=83,slow=4.1,SNR=4.9
KURBB S **S** 02 34 16.4 -0.3
comp=N,18nm,1.1s,baz=75,slow=10,SNR=5.1
KTGM **Kuala Trenggan** 45.69 236⇑P **P** 02 27 44.6 +0.6
SHLS **Shalkode** 45.72 298⇑*i*P **P** 02 27 44.5 +0.2
comp=N,5μm,1.2s
SHLS *e*S **S** 02 34 21.4 -0.5
SHLS LR LR 02 47 18.6
comp=N,709nm,14.8s
GUN **Gumba** 45.96 275 *e*P **P** 02 27 47.2 +0.7
PDGK **Podgornoye** 45.97 298 P **P** 02 27 45.6 -0.3
PDGK pmax pmax
comp=Z,2μm,1.1s
BBKI **Banjar Baru** 46.01 216 P **P** 02 27 46.0 -0.5
PMG **Port Moresby** 46.07 170 LR LR 02 46 42.3
comp=Z,759nm,18.5s,baz=17,slow=35
PMG **Port Moresby** 46.07 170 *de*P **P** 02 27 46.8 -0.1
PMG pmax pmax
comp=Z,339nm,1.0s
PMG **Port Moresby** 46.07 170 *e*P **P** 02 27 47.1 +0.2
comp=Z,148nm,1.1s
SURT **Suratani** 46.17 244 P **P** 02 27 48.2 +0.4
comp=Z,47nm,1.5s,comp=Z,715nm
TRTT **Trang** 46.29 242 P **P** 02 27 49.0 +0.3
comp=Z,124nm,1.3s,comp=Z,1μm
UZB **Uzynbulak** 46.34 298⇑*i*P **P** 02 27 49.4 +0.4
comp=Z,7μm,1.2s
UZB *e*S **S** 02 34 32.1 +1.6
UZB LR LR 02 47 46.8
comp=Z,833nm,15.2s
TARA **Tarawa** 46.38 131 *e*P **P** 02 27 50.8 +1.4
comp=Z,510nm,1.1s
TARA LR LR
comp=Z,2μm,20.0s
PKIN **Phulchoki** 46.49 275 *e*P **P** 02 27 50.7 +0.1
KKN **Kakani** 46.50 276 *e*P **P** 02 27 51.0 +0.5

KKN **Kakani** 46.50 276 *e*P **P** 02 27 51.1 +0.5
comp=Z,2μm,1.1s
TT01 **Tatalina** 46.66 35 *e*P **P** 02 27 52.1 +1.1
TTA **Tatalina** 46.67 34 *e*P **P** 02 27 52.4 +1.2
TTA pmax pmax
comp=Z,120nm,1.0s
TTA **Tatalina** 46.67 34 *e*P **P** 02 27 52.4 +1.2
comp=Z,123nm,1.0s
DMN **Daman** 46.71 275 *e*P **P** 02 27 52.6 +0.3
SVW2 **Sparrevohn** 46.80 37 *e*P **P** 02 27 54.1 +1.9
comp=Z,267nm,0.8s
GKN **Gorkha** 46.92 276 *e*P **P** 02 27 54.3 +0.5
comp=Z,5μm,1.0s
GKN **Gorkha** 46.92 276 *e*P **P** 02 27 54.4 +0.6
PBKI **Pangkalan Bun** 46.94 220 P **P** 02 27 54.4 +0.6
PKDT **Phuket** 47.22 243 P **P** 02 27 56.7 +0.7
comp=Z,193nm,1.0s
KULM **Kulim** 47.41 239 *e*P **P** 02 27 57.8 +0.4
comp=Z,63nm,1.1s
KULM LR LR
comp=Z,2μm,22.0s
IPM **Ipoh** 47.73 238 *e*P **P** 02 27 59.1 -0.8
comp=Z,186nm,1.2s
MDOK **Medeo** 47.74 298⇓*i*P **P** 02 28 00.8 +0.9
comp=Z,5μm,1.4s
MDOK *i* PP **PP** 02 29 52.8 +0.7
MDOK *i* S **S** 02 34 51.2 +0.7
MDOK LRM MLR 02 49 46.5
comp=Z,2μm,16.9s
MMRI **Maumere** 47.75 204 P **P** 02 28 00.6 +0.6
MMRI **Maumere** 47.75 204 *e*P **P** 02 27 58.0 -2.1
AAA **Alma-Ata** 47.78 299 *e*P **P** 02 28 01.4 +1.2
AAA *e*S **S** 02 34 52.0 +1.1
AAA pmax pmax
comp=Z,4μm,18.6s
AAA smax smax
comp=E,1μm,3.6s
AAA **Alma-Ata** 47.78 299⇑*i*P **P** 02 28 01.9 +1.7
comp=E,6μm,1.4s
AAA LR LR 02 48 22.6
comp=E,1μm,16.7s
BOK **Bokaro** 47.79 270 *e*P **P** 02 28 00.1 -0.3
KOLN **Koldanda** 47.85 276 *e*P **P** 02 28 01.6 +0.5
MYKOM **Kota Tinggi** 47.87 232 *e*P **P** 02 28 00.7 -0.3
comp=E,55nm,1.1s
MYKOM LR LR
comp=Z,1μm,21.0s
DGPR **DIGLIPUR** 47.88 254 *e*P **P** 02 28 00.4 -0.7
KUU **Kurty** 48.06 300⇑*i*P **P** 02 28 02.5 +0.3
comp=Z,8μm,1.4s
KUU *e*S **S** 02 34 55.3 +0.5
KUU LR LR 02 48 47.6
comp=Z,2μm,17.5s
OHAK **Old Harbor** 48.08 42 *e*P **P** 02 28 02.3 +0.2
comp=Z,213nm,0.8s
OHAK *e*ScP **ScP** 02 33 14.3 -1.8
TPRI **Tanjung Pinang** 48.11 231 P **P** 02 28 04.8 +1.9
RSO **Redoubt South** 48.19 38 *e*P **P** 02 28 04.2 +1.0
SOEI **Soe** 48.19 201 P **P** 02 28 03.9 +0.4
SOEI **Soe** 48.19 201 *e*P **P** 02 28 02.5 -1.0
comp=Z,353nm,1.0s
PYUN **Piuthan** 48.20 277 *e*P **P** 02 28 04.4 +0.7
PYUN **Piuthan** 48.20 277 *e*P **P** 02 28 04.5 +0.7
comp=Z,1μm,0.9s
PPLA **Purkeypile** 48.41 35 *e*P **P** 02 28 06.6 +1.8
comp=Z,345nm,1.0s
PPLA *e*ScP **ScP** 02 33 15.4 -2.3
KDAK **Kodiak Island** 48.42 41 P P 02 28 20.2 +16
comp=Z,409nm,0.8s,baz=286,slow=3.4,SNR=352
KDAK **Kodiak Island** 48.42 41 *e*P **P** 02 28 04.8 +0.1
KDAK pmax pmax
comp=Z,410nm,0.8s
KDAK **Kodiak Island** 48.42 41 *e*P **P** 02 28 04.8 +0.1
comp=Z,410nm,0.8s
KDAK *e*ScP **ScP** 02 33 18.3 +0.8
KDAK *e*S **S** 02 34 57.5 -1.8
CAST **Castle Rocks** 48.46 34 *e*P **P** 02 28 06.8 +1.7
comp=Z,224nm,0.8s
SPU **Mount Spurr** 48.51 37 *e*P **P** 02 28 06.7 +1.3
SPU *e*ScP **ScP** 02 33 18.1 +0.1
JOHN **Johnston Islan** 48.74 100 *e*P **P** 02 28 08.8 +1.1
comp=Z,468nm,0.9s
HOM **Homer** 48.78 39 *e*P **P** 02 28 08.0 +0.5
comp=Z,323nm,1.0s
BATI **Baumata** 48.79 201 P **P** 02 28 06.5 -1.5
comp=Z,45nm,0.5s,baz=99,slow=24,SNR=11
BATI **Baumata** 48.79 201 P **P** 02 28 08.2 +0.2
TKM2 **Tokmak 2** 48.83 298 *e*P **P** 02 28 09.6 +1.2
TKM2 pmax pmax
comp=Z,2μm,1.7s
TKM2 **Tokmak 2** 48.83 298 *e*P **P** 02 28 09.6 +1.2
comp=Z,2μm,1.7s
TKM2 LR LR
comp=Z,4μm,20.0s
BPAW **Bear Paw Mtn.** 48.95 33 *e*P **P** 02 28 10.2 +1.4
comp=Z,132nm,0.8s
PBA **Port Blair** 48.96 252 *e*P P 02 28 10.2 +0.8
KTH **Kantishna Hill** 48.98 34 *e*P **P** 02 28 10.5 +1.4
comp=Z,441nm,0.9s
MLY **Manley** 49.06 32 *e*P **P** 02 28 11.1 +1.5
comp=Z,267nm,0.9s
BRLK **Bradley Lake** 49.16 39 *e*P **P** 02 28 09.9 -0.5
comp=Z,203nm,0.8s
BRLK *e*ScP **ScP** 02 33 21.5 +0.8
BRZS **Berezniki** 49.21 308⇑*i*P **P** 02 28 11.0 0.0
comp=Z,1μm,0.9s
BRZS *e*S **S** 02 35 10.9 +0.1
TRF **Thorofare Moun** 49.27 34 *e*P **P** 02 28 12.1 +0.7
comp=Z,208nm,0.8s
COLD **Coldfoot** 49.33 29 *e*P **P** 02 28 12.8 +1.3
comp=Z,85nm,0.8s
HNR **Honiara** 49.35 153 LR LR 02 47 42.0
comp=Z,1μm,21.6s,baz=330,slow=34
HNR **Honiara** 49.35 153 *e*P **P** 02 28 12.0 -0.3
HNR **Honiara** 49.35 153 *e*P **P** 02 28 13.1 +0.8
HNR pmax pmax
comp=Z,421nm,1.0s
HNR **Honiara** 49.35 153 *e*P **P** 02 28 13.1 +0.8
comp=Z,421nm,1.0s
KSH **Kashi** 49.52 294 P **P** 02 28 17.8 +4.2
KSH *e*pP pP 02 28 33.8 +0.8
KSH *e*sP sP 02 28 40.5 -1.3
KSH *e*ScP **ScP** 02 33 26.9 +4.1
KSH PcS **PcS** 02 33 33.8 +2.5
KSH S **S** 02 35 21.5 +5.9
KSH pmax pmax
comp=Z,270nm,0.9s
KSH pmax pmax
comp=Z,1μm,2.8s
KSH LR LR
comp=Z,2μm,15.6s
KSH LR LR
comp=Z,1μm,15.5s
KSH LR LR
comp=Z,2μm,18.4s
PLAI **Plampang** 49.53 209 P **P** 02 28 12.2 -1.5
FRU **Bishkek** 49.55 299⇑*i*P **P** 02 28 13.5 -0.2
FRU *i* S **S** 02 35 14.0 -1.7
FRU pmax pmax
comp=Z,790nm,1.5s
FRU smax smax
comp=E,860nm,2.8s
FRU smax smax
comp=E,2μm,4.0s
PPBI **Pangkal Pinang** 49.56 227 P **P** 02 28 14.9 +0.9
RC01 **Rabbit Creek A** 49.63 37 *e*P **P** 02 28 14.3 +0.3
comp=E,244nm,0.8s
RC01 *e*PcP **PcP** 02 29 34.2 0.0
RC01 *e*ScP **ScP** 02 33 22.3 -0.4
MTN **Manton Dam** 49.65 191 *e*P **P** 02 28 14.5 0.0
comp=E,320nm,1.1s
MTN LR LR
comp=Z,500nm,21.0s
AAK **Ala-Archa** 49.69 298 P **P** 02 28 15.5 +0.6
comp=Z,244nm,0.9s,baz=99,slow=4.3,SNR=6.4
AAK **Ala-Archa** 49.69 298 *e*P **P** 02 28 15.5 +0.6
AAK pmax pmax
comp=Z,320nm,1.0s
AAK **Ala-Archa** 49.69 298 *e*P **P** 02 28 15.5 +0.6
comp=Z,324nm,1.0s
AAK LR LR
comp=Z,4μm,19.0s
AAK **Ala-Archa** 49.69 298 P **P** 02 28 15.5 +0.6
SNR=226
AAK **Ala-Archa** 49.69 298 P **P** 02 28 15.5 +0.6
SNR=226

AAK P **P** 02 28 15.5 +0.6
SNR=226
VOSK **Vostochnaya** 49.77 312 P **P** 02 28 14.1 -1.1
VOSK pmax pmax
comp=Z,568nm,1.0s
VOSK **Vostochnaya** 49.77 312 *e*P **P** 02 28 14.9 -0.3
comp=Z,559nm,0.9s
VOSK LR LR
comp=Z,2μm,22.0s
OTUK **Ortayu** 49.78 306 P **P** 02 28 15.8 +0.4
OTUK pmax pmax
comp=Z,906nm,0.9s
TWSI **Taliwang, Sumb** 49.81 210 P **P** 02 28 14.8 -1.0
CHKZ **Chkalovo** 49.83 313 P **P** 02 28 15.5 -0.1
CHKZ pmax pmax
comp=Z,485nm,0.9s
SEW **Seward** 49.85 38 *e*P **P** 02 28 16.1 +0.5
comp=Z,228nm,0.8s
SEW *e*ScP **ScP** 02 33 23.5 -0.1
SEW LR LR
comp=Z,700nm,22.0s
MCK **McKinley** 49.87 33 *e*P **P** 02 28 16.6 +0.9
MCK pmax pmax
comp=Z,290nm,0.8s
MCK **McKinley** 49.87 33 *e*P **P** 02 28 16.6 +0.9
comp=Z,294nm,0.8s
PMR **Palmer** 49.89 36 *e*P **P** 02 28 15.7 -0.2
PMR pmax pmax
comp=Z,220nm,0.8s
PMR **Palmer** 49.89 36 *e*P **P** 02 28 15.7 -0.2
comp=Z,217nm,0.8s
PMR *e*ScP **ScP** 02 33 24.4 +0.6
RND **Reindeer** 49.92 34 *e*P **P** 02 28 16.5 +0.3
RND pmax pmax
comp=Z,400nm,0.8s
RND **Reindeer** 49.92 34 *e*P **P** 02 28 16.5 +0.3
comp=Z,401nm,0.8s
SRBI **Singaraja** 49.93 213 P **P** 02 28 17.9 +1.2
LHMI **Lhok Sumawe** 50.05 242 P **P** 02 28 18.0 +0.3
LHMI **Lhok Sumawe** 50.05 242 *e*P **P** 02 28 16.6 -1.1
comp=Z,102nm,0.7s
BVA0 **Borovoye Array** 50.08 312 *i*P **P** 02 28 17.1 -0.4
BVA0 pmax pmax
comp=Z,199nm,0.8s
BVAR **Borovoye Array** 50.08 312 P **P** 02 28 17.5 0.0
comp=Z,109nm,0.6s,baz=84,slow=7.6,SNR=370
BVAR LR LR 02 50 52.4
comp=Z,3μm,18.5s,baz=76,slow=38
ABJI **Asem Bagus** 50.10 214 P **P** 02 28 18.9 +0.9
MDM **Murphy Dome** 50.13 32 *e*P **P** 02 28 19.0 +1.3
comp=Z,755nm,0.9s
TSI **Tuntungan** 50.13 239 P **P** 02 28 19.0 +0.7
BRVK **Borovoye** 50.13 313 *ce*P **P** 02 28 17.9 0.0
BRVK pmax pmax
comp=Z,419nm,1.2s
BRVK pmax pmax
comp=Z,663nm,1.1s
BRVK **Borovoye** 50.13 313 *e*P **P** 02 28 18.0 +0.1
comp=Z,329nm,0.9s
BRVK LR LR
comp=Z,3μm,18.0s
BRVK **Borovoye** 50.13 313 P **P** 02 28 17.8 -0.1
SNR=204
BRVK **Borovoye** 50.13 313 P **P** 02 28 17.8 -0.1
SNR=204
COEN **Coen** 50.17 176 *e*P **P** 02 28 19.2 +0.7
comp=Z,208nm,1.1s
COEN LR LR
comp=Z,1μm,22.0s
EKS2 **Erkin-Say** 50.19 299 *e*P **P** 02 28 19.3 +0.7
EKS2 pmax pmax
comp=Z,230nm,1.0s
EKS2 **Erkin-Say** 50.19 299 *e*P **P** 02 28 19.3 +0.7
comp=Z,233nm,0.9s
EKS2 *e*PcP **PcP** 02 29 37.1 +0.3
EKS2 *e*ScP **ScP** 02 33 23.6 -2.1
EKS2 LR LR
comp=Z,3μm,20.0s
WRH **Wood River Hil** 50.21 32 *e*P **P** 02 28 18.9 +0.7
comp=Z,208nm,0.8s
WRH LR LR
comp=Z,400nm,19.0s
SML **Sawmill** 50.25 36 *e*P **P** 02 28 19.5 +0.8
SML pmax pmax
comp=Z,390nm,0.8s
SML **Sawmill** 50.25 36 *e*P **P** 02 28 19.5 +0.8
comp=Z,394nm,0.8s
COLA **College** 50.29 32 *e*P **P** 02 28 20.1 +1.2
COLA pmax pmax
comp=Z,340nm,0.8s
COLA **College** 50.29 32 *e*P **P** 02 28 20.1 +1.2
comp=Z,341nm,0.8s
CCB **Clear Creek Bu** 50.32 32 *e*P **P** 02 28 19.7 +0.6
comp=Z,102nm,0.8s
PSI **Prapat** 50.38 238 P **P** 02 28 20.3 -0.1
comp=Z,47nm,0.8s,baz=13,slow=9.4,SNR=21
PSI pP **pP** 02 28 39.8 0.0
comp=Z,54nm,0.9s,baz=37,slow=1.5,SNR=5.0
PSI **Prapat** 50.38 238 *e*P **P** 02 28 19.5 -0.9
comp=Z,68nm,0.9s
PSI pP **pP** 02 28 39.8 0.0
PSI LR LR
comp=Z,1μm,20.0s
DNP **Denpasar** 50.46 212 P **P** 02 28 21.7 +1.0
UWJI **Ujung Watu** 50.47 219 P **P** 02 28 22.5 +1.7
DHY **Denali Highway** 50.60 34 *e*P **P** 02 28 22.0 +0.5
comp=Z,159nm,0.9s
KCSI **Kotacane, Aceh** 50.66 240 P **P** 02 28 21.4 -1.0
HDA **Harding Lake** 50.70 32 *e*P **P** 02 28 22.2 +0.2
comp=Z,457nm,0.9s
IL1 **Eielson Array** 50.71 32 *e*P **P** 02 28 21.1 -0.9
ILAR **Eielson Array** 50.71 32 P **P** 02 28 22.4 +0.3
comp=Z,327nm,0.8s,baz=272,slow=6.0,SNR=1880
ILAR pP **pP** 02 28 42.4 +0.9
comp=Z,72nm,0.9s,baz=288,slow=6.6,SNR=2.7
ILAR LR LR 02 52 11.4
comp=Z,449nm,18.8s,baz=272,slow=39
ILAR PKP2bc 02 59 25.1
comp=Z,0.7nm,0.9s,baz=75,slow=0.6,SNR=5.0
ILB **Eielson Array** 50.71 32 *e*P **P** 02 28 22.3 +0.3
SCM **Sheep Creek Mo** 50.73 36 *e*P **P** 02 28 20.5 -1.8
SCM pmax pmax
comp=Z,330nm,0.8s
SCM **Sheep Creek Mo** 50.73 36 *e*P **P** 02 28 20.5 -1.8
comp=Z,330nm,0.8s
JAGI **Jajag, Banyuwa** 50.74 214 P **P** 02 28 22.5 -0.3
JAGI **Jajag, Banyuwa** 50.74 214 *e*P **P** 02 28 20.9 -2.0
comp=Z,253nm,1.3s
BKNI **Bangkinang** 50.79 234 P **P** 02 28 24.0 +0.7
GMJI **Gumukmas** 50.88 215 P **P** 02 28 23.3 -0.6
ZRNK **Zerenda** 50.91 313 P **P** 02 28 23.0 -0.8
ZRNK pmax pmax
comp=Z,609nm,1.0s
ZRNK **Zerenda** 50.91 313 *e*P **P** 02 28 24.0 +0.2
comp=Z,573nm,0.9s
ZRNK LR LR
comp=Z,3μm,18.0s
PMBI **Palembang** 50.98 228 P P 02 28 31.8 +7.1
NGJI **Ngawi** 51.03 217 P **P** 02 28 25.8 +0.8
CMBY **CAMPBELL BAY** 51.04 246 *e*P **P** 02 28 25.0 -0.1
MNAS **Manas** 51.14 299 P **P** 02 28 25.9 +0.1
MNAS pmax pmax
comp=Z,700nm,0.9s
SFK **Sufi-Kurgan** 51.17 295 P **P** 02 28 26.8 +0.6
SFK pmax pmax
comp=Z,375nm,0.9s
DDI **Dehra Dun** 51.21 282 *e*P **P** 02 28 26.0 -0.4
TPTI 51.26 240 P **P** 02 28 24.7 -2.1
SMRI **Semarang** 51.27 219 P **P** 02 28 28.1 +1.3
SMRI **Semarang** 51.27 219 *e*P **P** 02 28 27.9 +1.1
comp=Z,164nm,1.0s
FYU **Fort Yukon** 51.29 30 *e*P **P** 02 28 28.4 +2.0
comp=Z,358nm,1.0s
MNSI **Mandailing Nat** 51.41 236 P **P** 02 28 26.5 -1.4
KLU **Klutina** 51.43 36 *e*P **P** 02 28 27.3 -0.3
comp=Z,212nm,0.8s
PAX **Paxson** 51.48 34 *e*P **P** 02 28 28.8 +0.8
PAX pmax pmax
comp=Z,81nm,0.8s
PAX **Paxson** 51.48 34 *e*P **P** 02 28 28.8 +0.8
comp=Z,81nm,0.8s
SDSI **Sungai Dareh** 51.50 233 P **P** 02 28 28.7 +0.2
DIV **Divide** 51.55 37 *e*P **P** 02 28 29.9 +1.4
comp=Z,310nm,0.9s
DIV *e*ScP **ScP** 02 33 32.2 +1.2
DIV LR LR

	comp=Z,900nm,20.0s								
SMLA	**Simla**	**51.58**	**283**	*i*	P		**P**	**02 28 29.7**	**+0.6**
SMLA	**Simla**	**51.58**	**283**	*e*	P		**P**	**02 28 29.0**	**0.0**
SDNR	**Sundarnagar**	**51.58**	**284**	*e*	P		**P**	**02 28 30.0**	**+0.9**
EYAK	**Cordova Ski Ar**	**51.63**	**37**	*e*	P		**P**	**02 28 30.4**	**+1.4**
	comp=Z,225nm,0.8s								
EYAK				*e*	ScP		**ScP**	**02 33 33.2**	**+2.0**
WOJI	**Wonogiri, Jawa**	**51.70**	**218**		P		**P**	**02 28 30.7**	**+0.7**
DHRM	**DHARAMSHALA**	**51.81**	**285**	*e*	P		**P**	**02 28 30.9**	**-0.1**
CHLP	**Challavanipeta**	**51.91**	**266**	*e*	P		**P**	**02 28 31.5**	**-0.1**
CHLP					IAmb		IAmb	02 28 33.7	
	comp=Z,214nm,0.8s								
CHLP				*e*	S		**S**	**02 35 47.6**	**-1.2**
CHLP					IVMs_BB		IVMs_BB	02 48 49.1	
	comp=Z,589nm,36.3s								
UGM	**Wanagama**	**51.97**	**218**		P		**P**	**02 28 31.9**	**-0.1**
DOT	**Dot Lake**	**52.04**	**33**	*e*	P		**P**	**02 28 32.3**	**+0.3**
	comp=Z,601nm,0.8s								
DOT				*e*	ScP		**ScP**	**02 33 30.3**	**-2.8**
PDSI	**Padang**	**52.10**	**234**		P		**P**	**02 28 33.7**	**+0.6**
BMRM	**Bremner River**	**52.13**	**37**	*e*	P		**P**	**02 28 34.1**	**+1.3**
	comp=Z,293nm,0.8s								
BMRM				*e*	ScP		**ScP**	**02 33 34.2**	**+0.6**
BMRM					LR		LR		
	comp=Z,1μm,21.0s								
RAGM	**Ragged Mountai**	**52.18**	**37**	*e*	P		**P**	**02 28 34.7**	**+1.5**
	comp=Z,204nm,0.9s								
MENT	**Mentasta**	**52.28**	**34**	*e*	P		**P**	**02 28 35.4**	**+1.6**
	comp=Z,283nm,0.8s								
MENT					LR		LR		
	comp=Z,600nm,21.0s								
KPJI	**Karang Pucung**	**52.28**	**220**		P		**P**	**02 28 34.1**	**-0.2**
KKR	**Kurukshetra**	**52.33**	**282**	*e*	P		**P**	**02 28 33.9**	**-0.7**
KK31	**Karatay Array**	**52.36**	**300**	*i*	P		**P**	**02 28 35.0**	**+0.3**
KK31					pmax		pmax		
	comp=Z,692nm,1.0s								
KKAR	**Karatay Array**	**52.36**	**300**	*e*	P		**P**	**02 28 34.8**	**+0.1**
KKAR					pmax		pmax		
	comp=Z,609nm,0.9s								
KKAR	**Karatay Array**	**52.36**	**300**	*e*	P		**P**	**02 28 34.8**	**+0.1**
	comp=Z,609nm,0.9s								
GSI	**Gunungsitoli**	**52.39**	**238**		P		**P**	**02 28 35.8**	**+0.6**
GSI	**Gunungsitoli**	**52.39**	**238**	*e*	P		**P**	**02 28 34.1**	**-1.1**
BISR	**Bishrakh**	**52.43**	**280**	*e*	P		**P**	**02 28 34.0**	**-1.4**
LHSI	**Lahat**	**52.45**	**228**		P		**P**	**02 28 36.1**	**+0.5**
KLI	**Kotabumi**	**52.48**	**226**		P		**P**	**02 28 35.4**	**-0.5**
LEM	**Lembang**	**52.55**	**222**		P		P	02 28 41.6	+5.1
	comp=Z,357nm,1.0s,baz=65,slow=5.3,SNR=52								
LEM					pP		pP	02 29 00.6	+4.5
	comp=Z,422nm,0.8s,baz=28,slow=1.3,SNR=8.8								
LEM					LR		LR	02 53 02.4	
	comp=Z,741nm,19.6s,baz=20,slow=38								
LEM	**Lembang**	**52.55**	**222**		P		P	02 28 41.8	+5.3
NDI	**New Delhi**	**52.56**	**281**	*ex*			**P**	**02 28 33.0**	**-3.4**
NDI				*ex*			x	02 29 12.5	
MDSI	**Maura Dua**	**52.58**	**227**		P		**P**	**02 28 35.7**	**-0.9**
BLSI	**Bandar Lampung**	**52.67**	**225**		P		**P**	**02 28 37.6**	**+0.4**
MASI	**Maura Aman, Be**	**52.69**	**230**		P		**P**	**02 28 38.1**	**+0.6**
BHGR	**Bahadurgarh**	**52.77**	**281**	*e*	P		**P**	**02 28 37.9**	**-0.1**
DBJI	**Dramaga**	**52.80**	**223**		P		**P**	**02 28 37.5**	**-0.7**
CMJI	**Cimerak**	**52.91**	**220**		P		**P**	**02 28 37.4**	**-1.6**
VIS	**Vishakhapatnam**	**52.91**	**265**	*e*	P		**P**	**02 28 37.2**	**-1.9**
IUG	**Iuzhnay**	**52.99**	**299**	⇑*i*	P		**P**	**02 28 40.5**	**+0.9**
	comp=Z,14μm,1.0s								
IUG				*e*	S		**S**	**02 36 05.0**	**+1.7**
IUG					LR		LR	02 51 23.8	
	comp=Z,594nm,16.9s								
RTK	**Rohtak**	**53.04**	**281**	*e*	P		**P**	**02 28 39.7**	**-0.1**
CISI	**Cisompet, Garu**	**53.05**	**221**		P		**P**	**02 28 37.9**	**-2.2**
CISI	**Cisompet, Garu**	**53.05**	**221**	*e*	P		**P**	**02 28 37.2**	**-2.9**
LWLI	**Liwa**	**53.08**	**227**		P		**P**	**02 28 41.2**	**+0.8**
EGAK	**Eagle**	**53.15**	**32**	*e*	P		**P**	**02 28 40.7**	**+0.5**
	comp=Z,198nm,0.8s								
CNJI	**Cibinong**	**53.22**	**222**		P		**P**	**02 28 38.6**	**-2.6**
KASI	**Kota Agung**	**53.23**	**226**		P		**P**	**02 28 39.9**	**-1.4**
KUDL	**Kundal**	**53.37**	**280**	*e*	P		**P**	**02 28 41.9**	**-0.4**
KUDL					IAmb		IAmb	02 28 42.8	
	comp=Z,72nm,0.7s								
CGJI	**Cibinong**	**53.43**	**224**		P		**P**	**02 28 39.9**	**-2.9**
PPSI	**Pulau Pagai**	**53.80**	**232**		P		**P**	**02 28 45.2**	**-0.3**
KHET	**Khetri**	**53.94**	**281**	*e*	P		**P**	**02 28 46.3**	**-0.2**
KHET					IAmb		IAmb	02 28 47.6	
	comp=Z,69nm,0.7s								
PVM	**Polavaram**	**54.54**	**266**	*e*	P		**P**	**02 28 50.1**	**-0.8**
PVM					IAmb		IAmb	02 28 52.7	
	comp=Z,265nm,0.9s								
PVM				*e*	S		**S**	**02 36 24.1**	**-0.4**
PVM					IVMs_BB		IVMs_BB	02 50 04.1	
	comp=Z,563nm,33.2s								
SVE	**Sverdlovsk**	**54.80**	**319**	*d*	*i* P		**P**	**02 28 52.8**	**+0.5**
SVE				*e*	S		**S**	**02 36 23.7**	**-3.3**
SVE					pmax		pmax		
	comp=Z,462nm,1.4s								
SVE					pmax		pmax		
	comp=Z,382nm,7.9s								
SVE					MLR		MLR		
	comp=Z,3μm,20.0s								
BHPL	**Bhopal**	**54.87**	**275**	*e*	P		**P**	**02 28 52.7**	**-0.7**
OPA	**Opana**	**55.41**	**87**	*e*	P		**P**	**02 28 59.4**	**+2.2**
OPA					pmax		pmax		
	comp=Z,260nm,0.8s								
OPA	**Opana**	**55.41**	**87**	*e*	P		**P**	**02 28 59.4**	**+2.2**
	comp=Z,265nm,0.8s								
INK	**Inuvik**	**55.53**	**27**	*e*	P		**P**	**02 28 58.2**	**+0.8**
	comp=Z,240nm,0.8s,baz=290,slow=6.8,SNR=1026								
INK	**Inuvik**	**55.53**	**27**	*e*	P		**P**	**02 28 58.0**	**+0.7**
INK					pmax		pmax		
	comp=Z,290nm,0.9s								
INK	**Inuvik**	**55.53**	**27**	*e*	P		**P**	**02 28 58.0**	**+0.7**
	comp=Z,286nm,0.8s								
KIP	**Kipapa**	**55.54**	**88**	*e*	P		**P**	**02 28 59.7**	**+1.6**
KIP					pmax		pmax		
	comp=Z,160nm,0.8s								
KIP	**Kipapa**	**55.54**	**88**	*e*	P		**P**	**02 28 59.7**	**+1.6**
	comp=Z,161nm,0.8s								
RPR	**Rampur**	**55.57**	**269**	*e*	P		**P**	**02 28 57.7**	**-0.6**
RPR					IAmb		IAmb	02 28 59.8	
	comp=Z,429nm,0.8s								
RPR				*e*	S		**S**	**02 36 37.4**	**-0.8**
FITZ	**Fitzroy Crossi**	**55.84**	**196**	*e*	P		**P**	**02 29 00.7**	**+0.6**
	comp=Z,963nm,2.0s								
ARU	**Arti**	**56.01**	**319**		LR		LR	02 55 21.4	
	comp=Z,2μm,18.4s,baz=76,slow=38								
ARU	**Arti**	**56.01**	**319**	*c*	*i* P		**P**	**02 29 00.7**	**-0.3**
ARU								02 29 58.5	
ARU								02 31 04.4	
ARU					PPP		PPP	02 32 20.2	
ARU					S		**S**	**02 36 47.5**	**+4.4**
ARU								02 38 44.4	
ARU					SS		**SS**	**02 40 33.5**	**+3.9**
ARU					pmax		pmax		
	comp=Z,320nm,0.7s								
ARU					MLR		MLR		
	comp=Z,2μm,19.0s								
ARU	**Arti**	**56.01**	**319**	*e*	P		**P**	**02 29 01.0**	**0.0**
	comp=Z,319nm,0.7s								
SOKR	**Solikamsk**	**56.07**	**323**	*c*	*i* P		**P**	**02 28 59.6**	**-1.7**
SOKR					S		**S**	**02 36 43.5**	**-0.2**
SOKR					pmax		pmax		
	comp=Z,412nm,1.5s								
SOKR					MLR		MLR		
	comp=Z,3μm,22.0s								
WB8	**Warramunga Arr**	**56.14**	**186**		PFAKE			02 29 10.0	+7.8
WB8					LR		LR		
	comp=Z,800nm,22.0s								
WB6	**Warramunga Arr**	**56.18**	**186**		PFAKE			02 29 10.0	+7.5
WB6					LR		LR		
	comp=Z,900nm,22.0s								
WB4	**Warramunga Arr**	**56.23**	**186**		PFAKE			02 29 20.0	+17
WB4					LR		LR		
	comp=Z,1μm,22.0s								
WRAB	**Tennant Creek**	**56.26**	**186**	*de*	P		**P**	**02 29 02.6**	**-0.5**
WRAB					pmax		pmax		
	comp=Z,575nm,1.7s								
WRAB	**Tennant Creek**	**56.26**	**186**	*e*	P		**P**	**02 29 02.8**	**-0.3**
	comp=Z,397nm,0.9s								
WRAB					LR		LR		
	comp=Z,900nm,22.0s								
WB2	**Warramunga Arr**	**56.27**	**186**	*e*	P		**P**	**02 29 02.5**	**-0.7**
	comp=Z,445nm,0.9s								
WB2					LR		LR		
	comp=Z,1μm,22.0s								
WR8	**Warramunga Arr**	**56.27**	**186**		PFAKE			02 29 20.0	+17
WR8					LR		LR		
	comp=Z,900nm,22.0s								
WR7	**Warramunga Arr**	**56.27**	**186**		PFAKE			02 29 20.0	+17
WR7					LR		LR		
	comp=Z,900nm,22.0s								
WRA	**Warramunga Arr**	**56.27**	**186**		P		**P**	**02 29 02.5**	**-0.7**
	comp=Z,83nm,0.7s,baz=2.0,slow=7.5,SNR=188								
WRA					pP		**pP**	**02 29 23.1**	**+0.2**
	comp=Z,350nm,0.9s,baz=2.0,slow=7.6,SNR=19								
WRA					ScP		**ScP**	**02 33 51.8**	**-0.2**
	comp=Z,19nm,1.1s,baz=3.1,slow=4.4,SNR=4.6								
WRA					S		**S**	**02 36 45.4**	**-1.9**
	comp=Z,15nm,1.1s,baz=7.5,slow=14,SNR=8.2								
WRA					LR		LR	02 52 51.5	
	comp=Z,845nm,21.9s,baz=0.0,slow=36								
WRA					PKPPKP		**P'P'df**	**02 58 59.1**	**+3.2**
	comp=Z,3.8nm,1.0s,baz=156,slow=2.2,SNR=6.9								
WRA					PKP2bc			02 59 12.2	
	comp=Z,3.3nm,0.9s,baz=186,slow=1.8,SNR=7.6								
WR3	**Warramunga Arr**	**56.27**	**186**		PFAKE			02 29 20.0	+17
WR3					LR		LR		
	comp=Z,900nm,22.0s								
WR5	**Warramunga Arr**	**56.27**	**186**		PFAKE			02 29 20.0	+17
WR5					LR		LR		
	comp=Z,700nm,21.0s								
WR6	**Warramunga Arr**	**56.27**	**186**		PFAKE			02 29 20.0	+17
WR6					LR		LR		
	comp=Z,700nm,21.0s								
WR4	**Warramunga Arr**	**56.27**	**186**		PFAKE			02 29 20.0	+17
WR4					LR		LR		
	comp=Z,800nm,21.0s								
WC4	**Warramunga Arr**	**56.29**	**186**		PFAKE			02 29 20.0	+17
WC4					LR		LR		
	comp=Z,1μm,21.0s								
SRSP	**Sriramsagar**	**56.30**	**270**	*e*	P		**P**	**02 29 02.3**	**-1.3**
SRSP					IAmb		IAmb	02 29 04.9	
	comp=Z,799nm,1.0s								
SRSP				*e*	S		**S**	**02 36 46.8**	**-1.2**
KBL	**Kabul**	**56.47**	**291**	*e*	P		**P**	**02 29 04.5**	**-0.4**
KBL					pmax		pmax		
	comp=Z,170nm,0.9s								
KBL	**Kabul**	**56.47**	**291**	*e*	P		**P**	**02 29 04.5**	**-0.4**
	comp=Z,165nm,0.9s								
KBL					LR		LR		
	comp=Z,1μm,19.0s								
CTAO	**Charters Tower**	**56.50**	**173**	*e*	P		**P**	**02 29 04.6**	**-0.2**
CTAO					pmax		pmax		
	comp=Z,82nm,1.0s								
CTAO	**Charters Tower**	**56.50**	**173**	*e*	P		**P**	**02 29 04.6**	**-0.2**
	comp=Z,82nm,1.0s								
CTAO					LR		LR		
	comp=Z,800nm,20.0s								
ADKI	**Addanki**	**56.63**	**265**	*e*	P		**P**	**02 29 05.3**	**-0.7**
ADKI					IAmb		IAmb	02 29 07.9	
	comp=Z,159nm,0.9s								
ADKI				*e*	S		**S**	**02 36 53.0**	**+0.7**
ADKI					IVMs_BB		IVMs_BB	02 51 17.2	
	comp=Z,616nm,35.3s								
XMIS	**Christmas Isla**	**56.66**	**221**	*e*	P		**P**	**02 29 04.5**	**-1.6**
	comp=Z,149nm,1.0s								
NJS	**Nagarjunasagar**	**56.78**	**267**	*e*	P		**P**	**02 29 06.2**	**-0.8**
NJS					IAmb		IAmb	02 29 08.3	
	comp=Z,204nm,0.9s								
NJS				*e*	S		**S**	**02 36 53.1**	**-1.2**
NJS					IVMs_BB		IVMs_BB	02 50 36.3	
	comp=Z,395nm,30.6s								
HYB	**Hyderabad**	**56.92**	**268**	*i*	P		**P**	**02 29 08.5**	**+0.4**
	comp=Z,360nm,1.0s								
HYB				*e*	pP		**pP**	**02 29 30.0**	**+2.1**
HYB				*e*	PcP		**PcP**	**02 30 02.5**	**-0.2**
HYB				*e*	S		**S**	**02 36 56.0**	**-0.3**
HYB	**Hyderabad**	**56.92**	**268**	*e*	P		**P**	**02 29 07.9**	**-0.2**
HYBB	**Hyderabad (bro**	**56.92**	**268**	*e*	P		**P**	**02 29 07.2**	**-0.9**
HYBB					IAmb		IAmb	02 29 09.3	
	comp=Z,447nm,0.8s								
HYBB				*e*	S		**S**	**02 36 54.6**	**-1.7**
HYBB					IVMs_BB		IVMs_BB	02 54 25.7	
	comp=Z,463nm,22.0s								
SKAG	**Skagway**	**56.97**	**37**	*e*	P		**P**	**02 29 09.8**	**+2.0**
	comp=Z,205nm,1.0s								
HLK	**Haleakala**	**57.30**	**87**	*e*	P		**P**	**02 29 13.0**	**+2.1**
	comp=Z,385nm,1.4s								
SRLM	**Srisailam**	**57.36**	**266**	*e*	P		**P**	**02 29 09.6**	**-1.5**
SRLM					IAmb		IAmb	02 29 12.2	
	comp=Z,221nm,1.0s								
SRLM				*e*	S		**S**	**02 37 01.0**	**-1.1**
SRLM					IVMs_BB		IVMs_BB	02 51 43.2	
	comp=Z,524nm,29.4s								
RCLA	**Racherla**	**57.66**	**266**	*e*	P		**P**	**02 29 12.1**	**-1.2**
RCLA					IAmb		IAmb	02 29 14.7	
	comp=Z,288nm,0.9s								
RCLA				*e*	S		**S**	**02 37 05.8**	**-0.1**
RCLA					IVMs_BB		IVMs_BB	02 51 50.1	
	comp=Z,613nm,29.0s								
MDRS	**Chennai**	**57.95**	**263**	*e*	P		**P**	**02 29 16.0**	**+0.7**
SKHT	**Srikalahasti**	**58.01**	**264**	*e*	P		**P**	**02 29 15.1**	**-0.5**
SKHT					IAmb		IAmb	02 29 17.7	
	comp=Z,434nm,0.9s								
SKHT				*e*	S		**S**	**02 37 11.4**	**+1.0**
SKHT					IVMs_BB		IVMs_BB	02 50 06.3	
	comp=Z,343nm,45.6s								
KLRI	**Killari**	**58.16**	**270**	*e*	P		**P**	**02 29 15.1**	**-1.6**
KLRI					IAmb		IAmb	02 29 17.6	
	comp=Z,814nm,0.7s								
KLRI				*e*	S		**S**	**02 37 09.9**	**-2.6**
KLRI					IVMs_BB		IVMs_BB	02 56 44.5	
	comp=Z,513nm,14.1s								
AKTO	**Aktyubinsk**	**58.17**	**312**		LR		LR	02 55 42.0	
	comp=Z,2μm,19.9s,baz=78,slow=37								
AKTO	**Aktyubinsk**	**58.17**	**312**		P		**P**	**02 29 16.1**	**-0.2**
AKTO					pmax		pmax		
	comp=Z,318nm,1.0s								
POHA	**Pohakuloa**	**58.38**	**88**	*e*	P		**P**	**02 29 20.3**	**+1.7**
	comp=Z,236nm,0.9s								
MLOA	**Mauna Loa Obse**	**58.46**	**88**	*e*	P		**P**	**02 29 21.3**	**+1.9**
URV	**Uravakonda**	**59.30**	**266**	*e*	P		**P**	**02 29 23.8**	**-0.9**
URV					IAmb		IAmb	02 29 25.9	
	comp=Z,164nm,1.0s								
URV				*e*	S		**S**	**02 37 25.9**	**-1.5**
URV					IVMs_BB		IVMs_BB	02 52 49.7	
	comp=Z,493nm,29.5s								
CRAG	**Craig**	**59.38**	**41**	*e*	P		**P**	**02 29 26.9**	**+2.3**
	comp=Z,94nm,0.9s								
WRAK	**Wrangell Islan**	**59.45**	**40**	*e*	P		**P**	**02 29 27.1**	**+2.0**
	comp=Z,164nm,1.3s								
DLBC	**Dease Lake**	**59.91**	**37**	*e*	P		**P**	**02 29 30.4**	**+2.1**
	comp=Z,149nm,0.9s								
AS01	**Alice Springs**	**59.99**	**186**	*e*	P		**P**	**02 29 28.2**	**-0.9**
AS31	**Alice Springs**	**59.99**	**186**	*e*	P		**P**	**02 29 28.9**	**-0.2**
	comp=Z,24nm,0.8s								
AS31				⇑*e*				02 58 56.2	
ASAR	**Alice Springs**	**59.99**	**186**		P		**P**	**02 29 28.8**	**-0.4**
	comp=Z,27nm,0.9s,baz=7.4,slow=5.2,SNR=176								
ASAR					pP		**pP**	**02 29 50.2**	**+1.1**
	comp=Z,71nm,0.8s,baz=2.4,slow=7.5,SNR=9.6								
ASAR					S		**S**	**02 37 34.9**	**-0.9**
	comp=Z,7.9nm,1.1s,baz=7.5,slow=11,SNR=7.6								
ASAR					LR		LR	02 56 01.9	
	comp=Z,559nm,20.8s,baz=12,slow=36								
ASAR					PKPPKP		P'P'df	02 58 42.0	-8.2
	comp=Z,0.9nm,0.8s,baz=158,slow=1.3,SNR=4.5								
ASAR					PKP2bc			02 59 03.9	
	comp=Z,13nm,0.9s,baz=168,slow=1.9,SNR=21								
POO	**Poona**	**60.13**	**272**	*e*	P		**P**	**02 29 30.2**	**-0.2**
MBWA	**Marble Bar**	**60.31**	**202**	*e*	P		**P**	**02 29 31.6**	**+0.3**
	comp=Z,141nm,0.8s								
MBWA	**Marble Bar**	**60.31**	**202**		P		**P**	**02 29 31.5**	**+0.2**
	SNR=12								
HOPEN	**Hopen**	**60.36**	**346**	*e*	P		**P**	**02 29 31.8**	**+0.8**
HOPEN					IAmb		IAmb	02 29 32.8	
	comp=Z,354nm,0.8s								
HOPEN				*e*	S		**S**	**02 37 43.4**	**+4.2**
SPA0	**Spitsbergen Ar**	**60.91**	**349**	⇑*i*	P		**P**	**02 29 35.0**	**+0.3**
SPA0					IAmb		IAmb	02 29 35.7	
	comp=Z,185nm,1.0s								
SPA0				*e*	S		**S**	**02 37 43.7**	**-2.6**
SPA0	**Spitsbergen Ar**	**60.91**	**349**	*e*	P		**P**	**02 29 35.6**	**+0.8**
KBS	**Kingsbay**	**61.07**	**350**	⇑*i*	P		**P**	**02 29 36.7**	**+0.9**
KBS					IAmb		IAmb	02 29 37.7	
	comp=Z,393nm,0.9s								
KBS				*e*	S		**S**	**02 37 53.3**	**+5.1**
KBS	**Kingsbay**	**61.07**	**350**	*e*	P		**P**	**02 29 36.8**	**+0.9**
KBS					pmax		pmax		
	comp=Z,360nm,0.9s								
KBS	**Kingsbay**	**61.07**	**350**	*e*	P		**P**	**02 29 36.8**	**+0.9**
	comp=Z,364nm,0.8s								
KBS					LR		LR		
	comp=Z,700nm,18.0s								
BHJ	**Bhuj**	**61.09**	**279**	*e*	P		**P**	**02 29 36.8**	**0.0**
GOA	**Goa**	**61.77**	**269**	*e*	P		**P**	**02 29 40.0**	**-1.5**
GOA					IAmb		IAmb	02 29 43.1	
HSPB	**Hornsund (broa**	**61.81**	**348**	⇑*i*	P		**P**	**02 29 41.6**	**+0.8**
HSPB					IAmb		IAmb	02 29 42.6	
	comp=Z,470nm,0.9s								
HSPB				*e*	S		**S**	**02 38 00.0**	**+2.4**
HSPB	**Hornsund (broa**	**61.81**	**348**	*e*	P		**P**	**02 29 41.7**	**+0.9**
LVZ	**Lovozero**	**62.18**	**336**	*c**e*	P		**P**	**02 29 42.8**	**-0.7**
LVZ					pmax		pmax		
	comp=Z,212nm,1.0s								
LVZ	**Lovozero**	**62.18**	**336**	*e*	P		**P**	**02 29 43.0**	**-0.5**
	comp=Z,154nm,0.8s								
LVZ					LR		LR		
	comp=Z,3μm,19.0s								
EIDS	**Eidsvold**	**62.34**	**169**	*e*	P		**P**	**02 29 45.5**	**+0.6**
	comp=Z,102nm,0.9s								
EIDS					LR		LR		
	comp=Z,800nm,22.0s								
TMCR	**Tamitsa**	**62.70**	**331**	*e*	P		**P**	**02 29 47.1**	**+0.2**
TMCR					pmax		pmax		
	comp=Z,399nm,0.9s								
BJO	**Bjornoya**	**62.72**	**345**	*e*	P		**P**	**02 29 47.4**	**+0.5**
BJO					IAmb		IAmb	02 29 48.0	
	comp=Z,215nm,0.9s								
APA	**Apatity**	**62.75**	**336**	⇓*i*	P		**P**	**02 29 46.8**	**-0.4**
APA				*i*				02 32 03.0	
APA				*i*	S		**S**	**02 38 06.0**	**-3.7**
APA					MLR		MLR		
	comp=Z,3μm,18.0s								
GEYT	**Alibeck**	**63.04**	**299**		P		**P**	**02 29 50.4**	**+0.6**
	comp=Z,209nm,0.9s,baz=37,slow=3.7,SNR=316								
GEYT					pP		**pP**	**02 30 11.8**	**+2.0**
	comp=Z,72nm,0.8s,baz=107,slow=1.5,SNR=3.0								
GEYT					LR		LR	02 59 27.3	
	comp=Z,1μm,19.5s,baz=40,slow=38								
COCO	**West Island**	**63.07**	**228**	*i*	P		**P**	**02 29 51.9**	**+1.9**
TRD	**Trivandrum**	**63.22**	**260**	*e*	P		**P**	**02 29 50.8**	**-0.4**
TRD					IAmb		IAmb	02 29 52.8	
	comp=Z,214nm,1.1s								
KEV	**Kevo**	**63.59**	**339**	*e*	P		**P**	**02 29 53.0**	**+0.3**
KEV					pmax		pmax		
	comp=Z,230nm,0.9s								
KEV	**Kevo**	**63.59**	**339**	*e*	P		**P**	**02 29 53.0**	**+0.3**
	comp=Z,233nm,0.8s								
KEV					LR		LR		
	comp=Z,2μm,20.0s								
KLMR	**Klimovskoe**	**63.62**	**327**	*e*	P		**P**	**02 29 50.5**	**-2.6**
KLMR				*e**	PP		pP	02 30 00.6	-13
KLMR				*e*				02 30 27.5	
KLMR				*e*				02 32 09.8	
KLMR					pmax		pmax		
	comp=Z,528nm,0.9s								
HAMF	**Hammerfest**	**64.01**	**341**	*e*	P		**P**	**02 29 55.6**	**+0.1**
HAMF					IAmb		IAmb	02 29 56.2	
	comp=Z,248nm,0.8s								
ARA0	**ARCESS Array S**	**64.15**	**339**	*e*	P		**P**	**02 29 56.1**	**-0.3**
ARCES	**ARCESS Array B**	**64.15**	**339**		P		**P**	**02 29 56.6**	**+0.1**
	comp=Z,205nm,0.8s,baz=62,slow=8.4,SNR=221								
ARCES					PP		**PP**	**02 32 17.8**	**0.0**
	comp=Z,54nm,0.8s,baz=39,slow=7.8,SNR=5.3								
ARCES					LR		LR	03 01 04.9	
	comp=Z,2μm,20.1s,baz=58,slow=39								
ARE0	**ARCESS Array S**	**64.15**	**339**	*e*	P		**P**	**02 29 57.0**	**+0.6**
ARE0					IAmb		IAmb	02 29 57.8	
	comp=Z,254nm,0.9s								
ARE0				*e*	S		**S**	**02 38 32.7**	**+5.6**
ARE0	**ARCESS Array S**	**64.15**	**339**	*e*	P		**P**	**02 29 56.7**	**+0.2**
	comp=Z,255nm,0.9s								
ARE0					LR		LR		
	comp=Z,2μm,21.0s								
MSVF	**Nonsavu**	**64.82**	**139**	*e*	P		**P**	**02 30 03.9**	**+2.4**
MSVF					pmax		pmax		
	comp=Z,260nm,1.2s								
MSVF	**Nonsavu**	**64.82**	**139**	*e*	P		**P**	**02 30 03.9**	**+2.4**
	comp=Z,257nm,1.2s								
YKW3	**Yellowknife Ar**	**64.95**	**30**	*e*	P		**P**	**02 30 01.9**	**+0.1**
	comp=Z,112nm,0.9s								
YKW3				*e*				02 58 44.4	
YKA	**Yellowknife An**	**64.99**	**30**		P		**P**	**02 30 02.1**	**+0.1**
	comp=Z,120nm,0.8s,baz=300,slow=6.6,SNR=1084								
YKA					pP		**pP**	**02 30 23.8**	**+1.6**
	comp=Z,23nm,0.8s,baz=297,slow=6.9,SNR=2.9								
YKA					PKP2bc			02 58 46.0	
	comp=Z,2.9nm,1.0s,baz=114,slow=2.2,SNR=13								
KTK1	**Kautokeino**	**65.11**	**339**	⇑*i*	P		**P**	**02 30 02.6**	**-0.1**

LPSR	**Galich'ya Gora**	**67.98**	**320**	*e*P		**P**	**02 30 20.6**	**-0.6**
LPSR				pmax		pmax		
	comp=Z,860nm,0.9s							
LPSR				pmax		pmax		
	comp=Z,680nm,0.8s							
LPSR				MLR		MLR		
	comp=Z,2µm,17.0s							
STEI	**Steigen**	**68.06**	**340**	*e*P		**P**	**02 30 21.7**	**+0.3**
STEI				lAmb		lAmb	02 30 22.4	
	comp=Z,284nm,0.8s							
NLWA	**Neilton Lookou**	**68.08**	**47**	*e*P		**P**	**02 30 23.8**	**+1.8**
	comp=Z,109nm,0.9s							
A04D	**Lummi Island**	**68.08**	**45**	P		**P**	**02 30 23.2**	**+1.3**
	baz=301							
PUL	**Pulkovo**	**68.10**	**329**	*ce*P		**P**	**02 30 22.1**	**+0.3**
PUL				pmax		pmax		
	comp=Z,912nm,1.0s							
VORR	**Voronezh**	**68.32**	**319⇑**	*i*P		**P**	**02 30 22.0**	**-1.4**
VORR				pmax		pmax		
	comp=Z,1µm,1.0s							
LOF	**Lofoten**	**68.37**	**341**	*e*P		**P**	**02 30 23.2**	**-0.1**
LOF				lAmb		lAmb	02 30 24.6	
	comp=Z,166nm,1.0s							
VSR	**Storozhevoye**	**68.58**	**318**	*e*P		**P**	**02 30 24.9**	**-0.1**
VSR				*e*S		**S**	**02 39 18.0**	**-3.2**
VSR				pmax		pmax		
	comp=Z,930nm,0.9s							
VSR				pmax		pmax		
	comp=Z,580nm,0.8s							
VSR				smax		smax		
	comp=E,370nm,2.5s							
B05A	**Bryant**	**68.66**	**45**	P		**P**	**02 30 26.8**	**+1.2**
	baz=301,SNR=29							
E03A	**Lebam**	**68.68**	**47**	*e*P		**P**	**02 30 27.8**	**+2.0**
	comp=E,95nm,0.8s							
KULLO	**Kullorsuaq**	**68.73**	**5⇑**	*i*P		**P**	**02 30 25.6**	**+0.1**
	comp=E,296nm,0.8s							
KULLO	**Kullorsuaq**	**68.73**	**5⇑**	*i*P		**P**	**02 30 25.6**	**+0.1**
KULLO				pmax		pmax		
	comp=Z,300nm,0.8s							
FIA1	**FINESS Array S**	**68.79**	**332**	*e*P		**P**	**02 30 25.9**	**-0.2**
	comp=Z,679nm,0.9s							
FINES	**FINESS Array B**	**68.79**	**332**	P		**P**	**02 30 25.9**	**-0.3**
	comp=Z,455nm,0.9s,baz=57,slow=7.0,SNR=622							
FINES				pP		**pP**	**02 30 47.0**	**+0.5**
	comp=Z,56nm,0.7s,baz=67,slow=4.8,SNR=2.5							
FINES				LR		LR	03 02 57.6	
	comp=Z,2µm,18.6s,baz=53,slow=38							
FINES	**FINESS Array B**	**68.79**	**332**	*i* P		**P**	**02 30 25.8**	**-0.3**
FINES				pmax		pmax		
	comp=Z,456nm,0.9s							
JCW	**Jim Creek**	**68.79**	**45**	*e*P		**P**	**02 30 27.7**	**+1.3**
B06A	**Marblemount**	**68.88**	**45**	*e*P		**P**	**02 30 27.8**	**+0.9**
	comp=Z,95nm,1.1s							
BBOO	**Buckleboo**	**68.93**	**183**	*e*P		**P**	**02 30 27.2**	**0.0**
	comp=Z,57nm,0.8s							
F04D	**Rainier, OR**	**69.25**	**48**	P		**P**	**02 30 30.6**	**+1.3**
	baz=301							
D05A	**Enumclaw**	**69.28**	**46**	*e*P		**P**	**02 30 31.3**	**+1.8**
	comp=Z,115nm,1.0s							
MOR8	**Moi Rana**	**69.52**	**339**	*e*P		**P**	**02 30 29.2**	**-1.4**
MOR8				lAmb		lAmb	02 30 30.4	
	comp=Z,668nm,0.8s							
C06D	**Leavenworth**	**69.53**	**45**	P		**P**	**02 30 32.1**	**+1.1**
	baz=302							
G03D	**McMinnville, O**	**69.55**	**49**	P		**P**	**02 30 32.7**	**+1.6**
	baz=301							
LON	**Longmire**	**69.61**	**47**	*e*P		**P**	**02 30 32.5**	**+0.9**
LON				pmax		pmax		
	comp=Z,28nm,0.9s							
LON	**Longmire**	**69.61**	**47**	*e*P		**P**	**02 30 32.5**	**+0.9**
	comp=Z,28nm,0.9s							
KONS	**Konsvik**	**69.66**	**340**	*e*P		**P**	**02 30 31.0**	**-0.4**
KONS				lAmb		lAmb	02 30 33.3	
	comp=Z,212nm,0.9s							
F04A	**Amboy**	**69.68**	**48**	*e*P		**P**	**02 30 33.2**	**+1.3**
	comp=Z,119nm,0.8s							
STOK	**Stokkvaagen**	**69.81**	**340**	*e*P		**P**	**02 30 31.9**	**-0.4**
COR	**Corvallis**	**69.85**	**49**	*e*P		**P**	**02 30 35.3**	**+2.3**
COR				pmax		pmax		
	comp=Z,130nm,0.9s							
COR	**Corvallis**	**69.85**	**49**	*e*P		**P**	**02 30 35.3**	**+2.3**
	comp=Z,126nm,0.9s							
LHI	**Lord Howe Isla**	**69.92**	**163**	*e*P		**P**	**02 30 34.5**	**+1.2**
	comp=Z,175nm,1.0s							
DGRG	**David-gareji**	**69.99**	**307**	P		**P**	**02 30 33.9**	**-0.1**
DGRG	**David-gareji**	**69.99**	**307**	*e*P		**P**	**02 30 33.8**	**-0.1**
LTY	**Liberty**	**70.01**	**46**	*e*P		**P**	**02 30 34.7**	**+0.7**
	comp=Z,36nm,0.8s							
ETW	**Entiat**	**70.02**	**45**	*e*P		**P**	**02 30 35.1**	**+0.9**
BIDO	**Bidbid**	**70.06**	**285**	P		**P**	**02 30 34.9**	**+0.2**
	SNR=7.1							
BIDO	**Bidbid**	**70.06**	**285**	P		**P**	**02 30 34.9**	**+0.2**
	SNR=7.1							
DUS	**Dusheti**	**70.09**	**308**	P		**P**	**02 30 35.5**	**+0.8**
DUS	**Dusheti**	**70.09**	**308**	*e*P		**P**	**02 30 35.4**	**+0.8**
B08A	**Colville Reser**	**70.18**	**44**	*e*P		**P**	**02 30 35.7**	**+0.7**
	comp=Z,47nm,0.9s							
BANOM	**Banah**	**70.22**	**288**	*i* P		**P**	**02 30 36.0**	**+0.5**
	SNR=6.1							
BANOM	**Banah**	**70.22**	**288**	P		**P**	**02 30 36.1**	**+0.5**
	SNR=6.6							
BANOM	**Banah**	**70.22**	**288**	P		**P**	**02 30 36.1**	**+0.5**
	SNR=6.6							
ZEI	**Tsey**	**70.23**	**309⇑**	*i*P		**P**	**02 30 35.0**	**-0.6**
ZEI				pmax		pmax		
	comp=Z,560nm,0.9s							
TBLG	**Delisi**	**70.25**	**308**	P		**P**	**02 30 37.3**	**+1.7**
TBLG	**Delisi**	**70.25**	**308**	*e*P		**P**	**02 30 37.2**	**+1.7**
I03D	**Drain, OR**	**70.29**	**50**	P		**P**	**02 30 37.4**	**+1.7**
	baz=302							
KBZ	**Khabaz**	**70.36**	**310**	P		**P**	**02 30 36.4**	**+0.3**
	comp=Z,465nm,0.9s,baz=62,slow=3.4,SNR=486							
KBZ				LR		LR	03 03 33.9	
	comp=Z,1µm,20.9s,baz=54,slow=38							
SMDO	**Samad**	**70.36**	**285**	P		**P**	**02 30 37.3**	**+0.8**
	SNR=19							
SMDO	**Samad**	**70.36**	**285**	P		**P**	**02 30 37.3**	**+0.8**
	SNR=19							
VSU	**Vasula**	**70.36**	**329**	*ce*P		**P**	**02 30 35.9**	**+0.1**
VSU				pmax		pmax		
	comp=Z,2µm,1.0s							
KIV	**Kislovodsk**	**70.37**	**310**	*i* P		**P**	**02 30 36.7**	**+0.4**
	SNR=277							
KIV	**Kislovodsk**	**70.37**	**310**	*c i*P		**P**	**02 30 36.6**	**+0.3**
KIV				*e*			02 30 43.3	
KIV				*i*			02 30 57.5	
KIV				*i*			02 33 14.3	
KIV				pmax		pmax		
	comp=Z,1µm,1.0s							
KIV				pmax		pmax		
	comp=Z,1µm,0.8s							
KIV				MLR		MLR		
	comp=Z,1µm,20.0s							
KIV	**Kislovodsk**	**70.37**	**310**	*e*P		**P**	**02 30 36.0**	**-0.3**
	comp=Z,1µm,0.9s							
KIV				LR		LR		
	comp=Z,1µm,22.0s							
KIV	**Kislovodsk**	**70.37**	**310**	P		**P**	**02 30 36.8**	**+0.5**
	SNR=202							
KIV	**Kislovodsk**	**70.37**	**310**	P		**P**	**02 30 36.8**	**+0.5**
	SNR=202							
KIV				P		**P**	**02 30 36.8**	**+0.5**
	SNR=202							
H04A	**Detroit Lake**	**70.48**	**49**	*e*P		**P**	**02 30 38.1**	**+1.2**
	comp=Z,101nm,0.8s							
JMIC	**Jan Mayen**	**70.55**	**349**	P		**P**	**02 30 36.5**	**-0.3**
	comp=Z,210nm,0.3s,baz=158,slow=3.9,SNR=5.7							
ONI	**Oni**	**70.61**	**309**	P		**P**	**02 30 38.4**	**+0.6**
ONI	**Oni**	**70.61**	**309**	*e*P		**P**	**02 30 38.3**	**+0.6**
G05D	**Wamic, OR**	**70.70**	**48**	P		**P**	**02 30 38.8**	**+0.5**
	baz=302							
NEY	**Neytrino**	**70.72**	**310**	*c i*P		**P**	**02 30 38.6**	**0.0**
NEY				pmax		pmax		
	comp=Z,62nm,0.9s							
UOSS	**Minazif**	**70.80**	**287**	*e*P		**P**	**02 30 39.6**	**+0.5**
	comp=Z,8.8nm,0.9s							
UOSS				LR		LR		
	comp=Z,600nm,20.0s							
I04A	**Tendick Farm,**	**70.81**	**49**	P		**P**	**02 30 39.8**	**+0.8**
	baz=302							
HATD	**Hatta, Dubai**	**70.92**	**287**	*i* P		**P**	**02 30 40.2**	**+0.4**
	SNR=28							
HATD	**Hatta, Dubai**	**70.92**	**287**	P		**P**	**02 30 40.2**	**+0.4**
	SNR=11							
HATD	**Hatta, Dubai**	**70.92**	**287**	P		**P**	**02 30 40.2**	**+0.4**
	SNR=11							
L02D	**Cave Junction,**	**70.94**	**51**	P		**P**	**02 30 41.0**	**+1.3**
	baz=302,SNR=7.6							
ASHO	**Ashiyiah**	**71.05**	**287**	*i* P		**P**	**02 30 40.9**	**+0.2**
	SNR=26							
ASHO	**Ashiyiah**	**71.05**	**287**	P		**P**	**02 30 40.9**	**+0.2**
	SNR=13							
ASHO	**Ashiyiah**	**71.05**	**287**	P		**P**	**02 30 40.9**	**+0.2**
	SNR=13							
GNI	**Garni**	**71.08**	**306**	*i* P		**P**	**02 30 41.6**	**+0.9**
	SNR=62							
GNI	**Garni**	**71.08**	**306**	*ce*P		**P**	**02 30 41.8**	**+1.1**
GNI				pmax		pmax		
	comp=Z,1µm,0.8s							
GNI	**Garni**	**71.08**	**306**	*e*P		**P**	**02 30 41.9**	**+1.2**
	comp=Z,392nm,0.9s							
GNI				LR		LR		
	comp=Z,2µm,21.0s							
GNI	**Garni**	**71.08**	**306**	P		**P**	**02 30 42.0**	**+1.2**
	SNR=37							
GNI	**Garni**	**71.08**	**306**	P		**P**	**02 30 42.0**	**+1.2**
	SNR=37							
C09A	**Chrisman Ranch**	**71.08**	**44**	*e*P		**P**	**02 30 41.3**	**+0.9**
	comp=Z,86nm,0.8s							
HUMO	**Hull Mountain**	**71.11**	**51**	*e*P		**P**	**02 30 42.6**	**+1.9**
	comp=Z,51nm,1.3s							
G06A	**Carlson Farm,**	**71.11**	**47**	*e*P		**P**	**02 30 42.0**	**+1.3**
	comp=Z,64nm,0.9s							
D08A	**Wollman Farm,**	**71.12**	**45**	*e*P		**P**	**02 30 41.6**	**+0.9**
	comp=Z,66nm,0.8s							
HAWA	**Hanford**	**71.13**	**46**	*e*P		**P**	**02 30 41.8**	**+1.0**
	comp=Z,52nm,0.9s							
I05D	**Terrebonne, OR**	**71.17**	**49**	P		**P**	**02 30 42.1**	**+0.9**
	baz=303							
NAZ	**Nazwa, Dubai**	**71.19**	**288**	*i* P		**P**	**02 30 41.5**	**0.0**
	SNR=10							
NAZ	**Nazwa, Dubai**	**71.19**	**288**	P		**P**	**02 30 41.5**	**0.0**
	SNR=9.2							
NAZ	**Nazwa, Dubai**	**71.19**	**288**	P		**P**	**02 30 41.5**	**0.0**
	SNR=9.2							
AKH	**Akhalkalaki**	**71.21**	**308**	P		**P**	**02 30 42.2**	**+0.6**
AKH	**Akhalkalaki**	**71.21**	**308⇑**	*i*P		**P**	**02 30 42.7**	**+1.1**
AKH	**Akhalkalaki**	**71.21**	**308**	*e*P		**P**	**02 30 42.2**	**+0.6**
SUMG	**Summit**	**71.32**	**359⇑**	*i*P		**P**	**02 30 43.1**	**+1.1**
	comp=Z,782nm,0.9s							
SUMG	**Summit**	**71.32**	**359**	*e*P		**P**	**02 30 42.9**	**+0.9**
SUMG				pmax		pmax		
	comp=Z,810nm,0.9s							
SUMG	**Summit**	**71.32**	**359**	*e*P		**P**	**02 30 42.9**	**+0.9**
	comp=Z,811nm,0.9s							
SUMG				LR		LR		
	comp=Z,1µm,21.0s							
FAQ	**Al Faqa, Dubai**	**71.38**	**287**	*i* P		**P**	**02 30 42.6**	**0.0**
	SNR=8.2							
FAQ	**Al Faqa, Dubai**	**71.38**	**287**	P		**P**	**02 30 42.6**	**0.0**
	SNR=11							
FAQ	**Al Faqa, Dubai**	**71.38**	**287**	P		**P**	**02 30 42.6**	**0.0**
	SNR=11							
JCC	**Jacoby Creek,**	**71.38**	**53**	*e*P		**P**	**02 30 44.4**	**+2.1**
	comp=Z,98nm,0.9s							
CHVG	**Ch'k'valeri**	**71.40**	**310**	P		**P**	**02 30 42.7**	**+0.2**
CHVG	**Ch'k'valeri**	**71.40**	**310⇓**	*i*P		**P**	**02 30 43.5**	**+1.0**
ARQ	**Araqi**	**71.41**	**286**	P		**P**	**02 30 43.0**	**+0.2**
	SNR=28							
ARQ	**Araqi**	**71.41**	**286**	P		**P**	**02 30 43.0**	**+0.2**
	SNR=28							
NSS	**Namsos**	**71.44**	**339**	*e*P		**P**	**02 30 41.9**	**-0.3**
NSS				lAmb		lAmb	02 30 43.0	
	comp=Z,216nm,1.0s							
NEW	**Newport**	**71.46**	**43**	P		**P**	**02 30 43.5**	**+0.7**
	baz=304							
NEW	**Newport**	**71.46**	**43**	*e*P		**P**	**02 30 43.5**	**+0.7**
NEW				pmax		pmax		
	comp=Z,56nm,0.9s							
NEW	**Newport**	**71.46**	**43**	*e*P		**P**	**02 30 43.5**	**+0.7**
	comp=Z,56nm,0.8s							
EAK	**Akyaka**	**71.53**	**307**	*i* P		**P**	**02 30 44.5**	**+1.0**
KHMM	**Horse Mountain**	**71.54**	**53**	*e*P		**P**	**02 30 45.7**	**+2.2**
	comp=Z,64nm,0.9s							
ASUD	**Al Ashush, Dub**	**71.64**	**287**	*i* P		**P**	**02 30 44.7**	**+0.4**
	SNR=11							
ASUD	**Al Ashush, Dub**	**71.64**	**287**	P		**P**	**02 30 44.6**	**+0.4**
	SNR=9.8							
ASUD	**Al Ashush, Dub**	**71.64**	**287**	P		**P**	**02 30 44.6**	**+0.4**
	SNR=9.8							
EPOS	**Posof**	**71.65**	**308**	*i* P		**P**	**02 30 45.1**	**+1.0**
YBH	**Yreka Blue Hor**	**71.73**	**51**	*e*P		**P**	**02 30 46.2**	**+1.6**
YBH				pmax		pmax		
	comp=Z,29nm,0.8s							
YBH	**Yreka Blue Hor**	**71.73**	**51**	*e*P		**P**	**02 30 46.2**	**+1.6**
	comp=Z,29nm,0.8s							
J05D	**Fort Rock, OR**	**71.81**	**49**	P		**P**	**02 30 46.1**	**+1.0**
	baz=303							
M02C	**Callahan**	**71.82**	**52**	P		**P**	**02 30 46.2**	**+1.1**
	baz=303,SNR=17							
K04D	**Chiloquin, OR**	**71.85**	**50**	P		**P**	**02 30 46.7**	**+1.4**
	baz=303							
CAN	**Canberra**	**71.85**	**172**	*e*P		**P**	**02 30 46.3**	**+1.2**
CAN				pmax		pmax		
	comp=Z,95nm,1.2s							
CAN	**Canberra**	**71.85**	**172**	*e*P		**P**	**02 30 46.3**	**+1.2**
	comp=Z,95nm,1.2s							
CAN				LR		LR		
	comp=Z,800nm,20.0s							
KMRM	**Mail Ridge**	**71.91**	**53**	*e*P		**P**	**02 30 47.8**	**+2.2**
	comp=Z,59nm,0.9s							
DYDN	**Diyadin**	**72.08**	**306**	*i* P		**P**	**02 30 48.2**	**+1.4**
NWAO	**Narrogin (SRO)**	**72.13**	**200**	*e*P		**P**	**02 30 46.7**	**0.0**
NWAO				pmax		pmax		
	comp=Z,160nm,1.1s							
NWAO	**Narrogin (SRO)**	**72.13**	**200**	*e*P		**P**	**02 30 46.7**	**0.0**
	comp=Z,162nm,1.1s							
N02D	**Trinity Center**	**72.14**	**52**	P		**P**	**02 30 48.5**	**+1.4**
	baz=303,SNR=21							
M04C	**Macdoel**	**72.25**	**51**	P		**P**	**02 30 49.2**	**+1.4**
	baz=303,SNR=44							
IZAR	**Zarasai**	**72.27**	**327**	*e*P		**P**	**02 30 47.8**	**+0.4**
IZAR				lAmb		lAmb	02 30 49.4	
	comp=Z,234nm,0.9s							
MICGM	**Minsk**	**72.31**	**325⇑**	*i*P		**P**	**02 30 47.0**	**-0.7**
MICGM				PM			02 30 48.0	
	comp=Z,2.0nm,1.0s							
MICGM				PM			02 30 48.0	
	comp=N,1.5nm,1.0s							
MICGM				PM			02 30 48.0	
	comp=E,0.8nm,1.0s							
MICGM				*e*PcP		**sP**	**02 31 15.0**	**-1.8**
MICGM				*e*PP		**PP**	**02 33 24.0**	**-4.7**
MICGM				*e*S		**S**	**02 40 06.0**	**+1.5**
MICGM				*e*LR		LR	02 55 00.0	
MNK	**Minsk**	**72.31**	**325⇑**	*i*P		**P**	**02 30 47.0**	**-0.7**
MNK				*e*			02 33 24.0	
MNK				*e*S		**S**	**02 40 06.0**	**+1.5**
MNK				pmax		pmax		
	comp=Z,2µm,1.0s							
MNK				pmax		pmax		
	comp=N,1µm,1.0s							
MNK				pmax		pmax		
	comp=E,800nm,1.0s							
IDID	**Didziasalis**	**72.32**	**327**	*e*P		**P**	**02 30 48.0**	**+0.3**
IDID				lAmb		lAmb	02 30 49.8	
	comp=Z,278nm,0.9s							
K05A	**Summer Lake**	**72.32**	**50**	*e*P		**P**	**02 30 49.9**	**+1.7**
	comp=Z,111nm,0.9s							
ARTV	**Artvin**	**72.33**	**308**	*i* P		**P**	**02 30 49.0**	**+0.7**
SOC	**Sochi**	**72.38**	**311**	*c i*P		**P**	**02 30 48.1**	**-0.2**
SOC				*e**PP		PcP	02 30 57.2	-8.6
SOC				*e*			02 31 03.9	
SOC				*e*PPP		PPP	02 35 13.1	
SOC				*e*S		**S**	**02 40 09.8**	**+4.1**
SOC				*e**SS		sS	02 40 32.5	-8.1
SOC				*e*SS		**SS**	**02 44 52.0**	**+7.4**
SOC				pmax		pmax		
	comp=Z,285nm,0.8s							
SOC				pmax		pmax		
	comp=Z,556nm,1.1s							
SOC				MLR		MLR		
	comp=Z,1µm,19.0s							
DAGI	**Agillar**	**72.39**	**308**	*i* P		**P**	**02 30 49.3**	**+0.7**
DBOC	**Borcka**	**72.41**	**309**	*i* P		**P**	**02 30 49.0**	**+0.5**
ISAL	**Salakas**	**72.43**	**327**	*e*P		**P**	**02 30 48.8**	**+0.4**
ISAL				lAmb		lAmb	02 30 50.5	
	comp=Z,495nm,0.9s							
VMUR	**Van-Muradiye**	**72.46**	**306**	*i* P		**P**	**02 30 50.3**	**+1.2**
WDC	**Whiskeytown Da**	**72.46**	**52**	*e*P		**P**	**02 30 50.1**	**+1.2**
WDC				pmax		pmax		
	comp=Z,41nm,1.0s							
WDC	**Whiskeytown Da**	**72.46**	**52**	*e*P		**P**	**02 30 50.1**	**+1.2**
	comp=Z,41nm,1.0s							
IIGN	**Ignalina**	**72.53**	**327**	*e*P		**P**	**02 30 49.3**	**+0.3**
IIGN				lAmb		lAmb	02 30 51.0	
	comp=Z,311nm,1.0s							
NACGM	**Naroch**	**72.56**	**326**	*e*P		**P**	**02 30 49.0**	**-0.2**
NACGM				*e*P		**P**	**02 30 49.0**	**-0.2**
NACGM				*e*PP		**PP**	**02 33 30.0**	**-0.8**
NACGM				*e*S		**S**	**02 40 07.0**	**-0.3**
NACGM				*e*PS		**PnS**	**02 40 46.0**	**-1.9**
NACGM				*e*SS		SS	02 45 04.0	+17
NACGM				*e*LQ		LQ	02 57 24.0	
NACGM				*e*LR		LR	02 59 22.0	
DBAD	**Bademkaya**	**72.57**	**308**	*i* P		**P**	**02 30 50.3**	**+0.7**
DDEM	**Demirkent**	**72.60**	**308**	*i* P		**P**	**02 30 50.8**	**+1.0**
SCO	**Scoresbysund**	**72.62**	**354⇑**	*i*P		**P**	**02 30 50.5**	**+1.3**
	comp=Z,322nm,1.0s							
SCO	**Scoresbysund**	**72.62**	**354⇑**	*i*P		**P**	**02 30 50.5**	**+1.3**
SCO				pmax		pmax		
	comp=Z,320nm,1.0s							
EATA	**Eleskirt**	**72.69**	**307**	*i* P		**P**	**02 30 52.1**	**+1.5**
F10A	**Beach Ranch, E**	**72.69**	**45**	*e*P		**P**	**02 30 51.0**	**+0.7**
	comp=Z,68nm,0.8s							
WALA	**Waterton Lakes**	**72.76**	**41**	*e*P		**P**	**02 30 51.3**	**+0.7**
	comp=Z,60nm,0.8s							
WALA				LR		LR		
	comp=Z,400nm,20.0s							
TVAN	**Van**	**72.82**	**305**	*i* P		**P**	**02 30 51.9**	**+0.7**
TBLU	**Trondheim**	**72.90**	**339**	*e*P		**P**	**02 30 50.0**	**-0.9**
TBLU				lAmb		lAmb	02 30 51.2	
	comp=Z,396nm,0.9s							
TBLU				*e*PP		**PP**	**02 33 31.3**	**-2.2**
HOMI	**Horasan**	**72.96**	**307**	*i* P		**P**	**02 30 53.8**	**+1.6**
HOPS	**Hopland Field**	**72.98**	**54**	*e*P		**P**	**02 30 53.4**	**+1.5**
	comp=Z,100nm,1.6s							
BSMT	**Bassoo Peak**	**72.99**	**43**	*e*P		**P**	**02 30 53.1**	**+1.0**
ANN	**Anapa**	**73.06**	**313**	*e*P		**P**	**02 30 51.8**	**-0.5**
ANN				*e*			02 31 09.3	
ANN				*e*S		**SKiKP**	**02 40 17.3**	**+0.2**
ANN				*e*			02 40 43.2	
ANN				pmax		pmax		
	comp=Z,664nm,1.1s							
ANN				pmax		pmax		
	comp=N,190nm,1.1s							
ANN				pmax		pmax		
	comp=E,191nm,1.1s							
ANN				MLR		MLR		
	comp=N,1µm,18.0s							
ANN				MLR		MLR		
	comp=Z,1µm,18.0s							
ANN				MLR		MLR		
	comp=E,537nm,18.0s							
O03D	**Paynes Creek**	**73.09**	**52**	P		**P**	**02 30 53.3**	**+0.6**
	baz=304,SNR=24							
BLMT	**Blacktail Moun**	**73.12**	**42**	*e*P		**P**	**02 30 54.0**	**+1.1**
HAKT	**HAKKARI**	**73.14**	**304**	*i* P		**P**	**02 30 53.4**	**+0.1**
MOD	**Modoc Plateau**	**73.14**	**50**	*e*P		**P**	**02 30 54.2**	**+1.1**
	comp=E,39nm,0.8s							
GEVA	**Gevas**	**73.16**	**305**	*i* P		**P**	**02 30 53.9**	**+0.6**
BMO	**Blue Mountains**	**73.29**	**46**	*e*P		**P**	**02 30 54.8**	**+1.0**
	comp=E,70nm,0.8s							
JTMT	**Jette**	**73.32**	**43**	*e*P		**P**	**02 30 55.0**	**+1.0**
ERZM	**Erzurum**	**73.39**	**307**	*i* P		**P**	**02 30 56.6**	**+1.9**
YBMT	**Yellow Bay**	**73.40**	**42**	*e*P		**P**	**02 30 55.5**	**+1.0**
MCCM	**Marconi Confer**	**73.57**	**55**	*e*P		**P**	**02 30 56.5**	**+1.1**
	comp=E,77nm,0.8s							
SWMT	**Swartz Lake**	**73.62**	**43**	*e*P		**P**	**02 30 56.5**	**+0.8**
ORV	**Oroville**	**73.69**	**53**	*e*P		**P**	**02 30 56.5**	**+0.4**
ORV				pmax		pmax		
	comp=Z,45nm,0.8s							
ORV	**Oroville**	**73.69**	**53**	*e*P		**P**	**02 30 56.5**	**+0.4**
	comp=Z,45nm,0.8s							
WVOR	**Wild Horse Val**	**73.87**	**49**	*e*P		**P**	**02 30 57.8**	**+0.5**
WVOR				pmax		pmax		
	comp=Z,39nm,0.9s							
WVOR	**Wild Horse Val**	**73.87**	**49**	*e*P		**P**	**02 30 57.8**	**+0.5**
	comp=Z,39nm,0.9s							
KOPT	**Kop Dagi**	**73.88**	**308**	*i* P		**P**	**02 30 58.4**	**+0.8**
AKASG	**Malin Array Be**	**74.03**	**322**	P		**P**	**02 30 57.5**	**-0.4**
	comp=Z,501nm,0.8s,baz=47,slow=6.1,SNR=1183							
AKASG				pP		**pP**	**02 31 19.3**	**+0.9**
	comp=Z,51nm,0.7s,baz=48,slow=6.1,SNR=2.5							
AKASG				PP		**PP**	**02 33 43.7**	**+0.3**
	comp=Z,40nm,0.9s,baz=46,slow=8.8,SNR=5.8							
AKASG				LR		LR	03 06 08.8	
	comp=Z,4µm,19.5s,baz=45,slow=38							
AKBB	**Malin Array Si**	**74.03**	**322**	*e*P		P	02 30 49.2	-8.7
AKBB	**Malin Array Si**	**74.03**	**322**	PFAKE			02 31 10.0	+12
AKBB				LR		LR		
	comp=Z,4µm,19.0s							
SIRN	**S¯¯rnak**	**74.04**	**305**	*i* P		**P**	**02 30 58.8**	**+0.5**
KIEV	**Kiev**	**74.04**	**322**	*e*P		**P**	**02 30 57.5**	**-0.4**
KIEV				pmax		pmax		
	comp=Z,560nm,0.8s							
KIEV	**Kiev**	**74.04**	**322**	*e*P		**P**	**02 30 57.5**	**-0.4**
	comp=Z,565nm,0.8s							
KIEV				LR		LR		
	comp=Z,4µm,19.0s							
MSO	**Missoula**	**74.05**	**43**	P		**P**	**02 30 58.6**	**+0.4**
	baz=306							
MSO	**Missoula**	**74.05**	**43**	*e*P		**P**	**02 30 58.6**	**+0.4**
	comp=Z,44nm,0.9s							
BNGL	**BINGOL**	**74.06**	**307**	*i* P		**P**	**02 30 59.9**	**+1.3**
NC405	**NORSAR Array S**	**74.07**	**337**	*e*P		**P**	**02 30 58.0**	**0.0**
AK11

SNR=6.3
TNCL Tunceli-Merkez 75.00 308 *i* P **P** **02 31 04.9 +1.1**
FCC Fort Churchill 75.13 26 *eP* **P** **02 31 04.3 +0.2**
FCC pmax pmax
comp=Z,230nm,1.0s
FCC Fort Churchill 75.13 26 *eP* **P** **02 31 04.2 +0.2**
comp=Z,226nm,0.9s
SUSE Susehri 75.22 309 *i* P **P** **02 31 04.9 -0.3**
CMB Columbia Colle 75.27 54 *eP* **P** **02 31 05.7 +0.4**
CMB pmax pmax
comp=Z,53nm,0.8s
CMB Columbia Colle 75.27 54 *eP* **P** **02 31 05.7 +0.4**
comp=Z,53nm,0.8s
OSL Oslo 75.28 336⇑ *iP* **P** **02 31 05.2 +0.3**
OSL IAmb IAmb 02 31 06.2
comp=Z,415nm,0.9s
SAO San Andreas Ge 75.29 55 *eP* **P** **02 31 06.6 +1.2**
SAO pmax pmax
comp=Z,32nm,0.9s
SAO San Andreas Ge 75.29 55 *eP* **P** **02 31 06.6 +1.2**
comp=Z,32nm,0.9s
DIYA Diyarbakir 75.30 306 *i* P **P** **02 31 06.7 +1.1**
REFA Refahiye_ERZ˝ 75.33 308 *i* P **P** **02 31 05.6 -0.3**
LRM Limekiln Ridge 75.48 43 *eP* **P** **02 31 07.5 +0.8**
KBSD Kabsdagh 75.55 305 *eP* **P** **02 31 07.8 +0.8**
EGMT Eagleton 75.58 41 P **P** **02 31 07.7 +0.7**
baz=309
EGMT Eagleton 75.58 41 *eP* **P** **02 31 07.7 +0.7**
comp=Z,207nm,0.9s
WAKR Walker 75.61 53 *eP* **P** **02 31 08.7 +1.2**
KLNR Kaliningrad 75.62 329 *i* P **P** **02 31 06.5 -0.5**
KLNR pmax pmax
comp=Z,557nm,1.0s
CUZAR Zara_SIVAS 75.67 309 *i* P **P** **02 31 08.5 +0.7**
DLMT Dillon 75.68 44 *eP* **P** **02 31 08.4 +0.7**
comp=Z,122nm,0.8s
FOO Floro 75.70 340 *eP* **P** **02 31 08.1 +0.8**
FOO IAmb IAmb 02 31 08.7
comp=Z,258nm,0.9s
ELZG Elazig 75.71 307 *i* P **P** **02 31 08.6 +0.5**
HYA Hoyanger 75.72 339⇑ *iP* **P** **02 31 07.7 +0.3**
HYA IAmb IAmb 02 31 08.8
comp=Z,396nm,0.9s
HLID Hailey 75.73 46 P **P** **02 31 08.9 +0.9**
baz=307
HLID Hailey 75.73 46 *eP* **P** **02 31 09.1 +1.0**
comp=Z,38nm,0.8s
SAMS Samsun-Alacam 75.79 311 *i* P **P** **02 31 09.0 +0.8**
ERBA Erbaa 75.84 310 *i* P **P** **02 31 09.3 +0.8**
MCMT McKenzie Canyo 75.86 44 *eP* **P** **02 31 09.2 +0.3**
KONO Kongsberg 75.87 336⇑ *iP* **P** **02 31 08.2 -0.1**
KONO IAmb IAmb 02 31 09.4
comp=Z,204nm,0.8s
KONO *eS* **S** **02 40 49.9 +5.7**
KONO Kongsberg 75.87 336 *eP* **P** **02 31 08.4 +0.1**
KONO pmax pmax
comp=Z,220nm,0.9s
KONO Kongsberg 75.87 336 *eP* **P** **02 31 08.4 +0.1**
comp=Z,217nm,0.9s
BMN Battle Mountai 75.89 50 *eP* **P** **02 31 10.4 +1.4**
BMN pmax pmax
comp=Z,95nm,0.8s
BMN Battle Mountai 75.89 50 *eP* **P** **02 31 10.4 +1.4**
comp=Z,95nm,0.8s
BOZ Bozeman (W) 76.05 43 P **P** **02 31 10.5 +0.7**
baz=308
BOZ Bozeman (W) 76.05 43 *eP* **P** **02 31 10.8 +1.0**
BOZ pmax pmax
comp=Z,83nm,0.8s
BOZ Bozeman (W) 76.05 43 *eP* **P** **02 31 10.8 +1.0**
comp=Z,83nm,0.8s
BOZ LR LR
comp=Z,300nm,19.0s
BGMT Barton Gulch 76.07 44 *eP* **P** **02 31 10.9 +0.9**
SORM Soroca 76.08 320⇓ *iP* **P** **02 31 09.9 +0.2**
MZRK Al-Mazaregh 76.15 304 *eP* **P** **02 31 10.7 +0.3**
MZRK Al-Mazaregh 76.15 304 *eP* **P** **02 31 11.5 +1.1**
SFNV Sufian 76.17 305 *eP* **P** **02 31 11.7 +1.2**
SFNV Sufian 76.17 305 *eP* **P** **02 31 11.4 +0.8**
CUKAN kangal_SIVAS 76.20 309 *i* P **P** **02 31 11.8 +1.0**
TOKA Tokat 76.22 310 *i* P **P** **02 31 11.7 +0.9**
HAVZ Havza 76.25 311 *i* P **P** **02 31 12.1 +1.2**
NVAR Mina Array Bea 76.38 52 P **P** **02 31 13.2 +1.3**
comp=Z,71nm,0.8s,baz=284,slow=5.9,SNR=140
NVAR pP **pP** **02 31 33.5 +0.9**
comp=Z,54nm,0.7s,baz=294,slow=4.9,SNR=6.6
NVAR LR LR 03 01 47.4
comp=Z,140nm,19.6s,baz=289,slow=33
RBK Rabkut 76.40 282 P **P** **02 31 11.3 -0.7**
SNR=32
RBK Rabkut 76.40 282 P **P** **02 31 11.3 -0.7**
SNR=32
MLAC Mammoth, Mammo 76.50 53 P **P** **02 31 13.6 +1.0**
baz=306
AKCD Akcadag 76.50 308 *i* P **P** **02 31 13.8 +1.3**
KIS Kishinev 76.56 319⇑ *iP* **P** **02 31 12.0 -0.4**
comp=Z,800nm,1.0s
KIS LRM MLR 03 07 20.0
comp=Z,2µm,16.0s
KIS Kishinev 76.56 319⇓ *iP* **P** **02 31 12.5 +0.1**
KIS Kishinev 76.56 319α *iP* **P** **02 31 12.0 -0.4**
KIS *i* 02 31 31.0
KIS *e* 02 41 50.0
KIS pmax pmax
comp=Z,800nm,1.0s
KIS pmax pmax
comp=E,400nm,2.0s
KIS pmax pmax
comp=Z,1µm,3.0s
KIS MLR MLR
comp=Z,2µm,16.0s
KIS MLR MLR
comp=N,1µm,17.0s
KIS MLR MLR
comp=E,600nm,15.0s
ASK Askoy 76.56 339 *eP* **P** **02 31 13.0 +0.8**
ASK IAmb IAmb 02 31 13.8
comp=Z,335nm,0.8s
ODD1 Odda 76.60 338⇑ *iP* **P** **02 31 12.8 +0.3**
ODD1 IAmb IAmb 02 31 14.0
comp=Z,320nm,0.9s
BER Bergen 76.60 339 *eP* **P** **02 31 13.0 +0.6**
BER IAmb IAmb 02 31 14.0
comp=Z,349nm,0.8s
SFJD Kangerlussuaq 76.63 4⇑ *iP* **P** **02 31 13.0 +0.5**
comp=Z,194nm,0.8s
SFJD Kangerlussuaq 76.63 4 *eP* **P** **02 31 12.9 +0.5**
SFJD pmax pmax
comp=Z,230nm,0.9s
SFJD Kangerlussuaq 76.63 4 *eP* **P** **02 31 12.9 +0.5**
comp=Z,231nm,0.8s
QLMT Earthquake Lak 76.66 44 *eP* **P** **02 31 14.5 +1.1**
CUGUR Gurin_S¨VAS 76.67 308 *i* P **P** **02 31 15.4 +2.0**
CUALT Altinyayla-SIV 76.67 309 *i* P **P** **02 31 14.7 +1.3**
YHB Horse Butte 76.84 44 *eP* **P** **02 31 15.7 +1.3**
SURC SANLIURFA_SURC 76.88 306 *i* P **P** **02 31 15.4 +0.9**
CUSAR Sarkisla-SIVAS 76.91 309 *i* P **P** **02 31 15.9 +1.1**
ELK Elko 76.92 49 *eP* **P** **02 31 16.2 +1.3**
ELK pmax pmax
comp=Z,33nm,0.8s
ELK Elko 76.92 49 *eP* **P** **02 31 16.2 +1.3**
comp=Z,32nm,0.8s
YMC Maple Creek 76.94 44 *eP* **P** **02 31 16.2 +1.3**
CRMT Chrome Mountai 76.98 43 *eP* **P** **02 31 16.1 +0.8**
RCTC Rector, Farmer 77.01 54 P **P** **02 31 15.3 +0.1**
baz=306
YMR Madison River 77.02 44 *eP* **P** **02 31 16.9 +1.4**
comp=Z,64nm,0.8s
YMR LR LR
comp=Z,300nm,20.0s
GCMT Greycliff 77.03 42 *eP* **P** **02 31 16.4 +1.1**
BLS5 Blasjo 77.04 338 *eP* **P** **02 31 15.2 +0.2**
BLS5 IAmb IAmb 02 31 16.6
comp=Z,344nm,0.9s
YPM Purple Mountai 77.08 44 *eP* **P** **02 31 17.6 +1.7**
SMMC Simmler 77.08 56 P **P** **02 31 17.3 +1.6**
baz=306
IAS Iasi 77.09 320⇓ *iP* **P** **02 31 15.8 +0.4**
LVV L'vov 77.15 323⇓ *iP* **P** **02 31 15.9 +0.2**
LVV *eS* **S** **02 40 57.7 -0.8**
LVV *i* 02 41 24.3
LVV MLR MLR
comp=N,800nm,21.0s
LVV MLR MLR
comp=Z,1µm,21.0s
LVV MLR MLR
comp=E,1µm,20.0s
COAL Corum-Alaca 77.18 311 *i* P **P** **02 31 17.3 +1.0**
LEOM Leova 77.20 319⇑ *iP* **P** **02 31 16.0 0.0**
MCID Moose Creek 77.20 44 *eP* **P** **02 31 18.2 +1.8**
KSRV Kasrt alli 77.22 305 *eP* **P** **02 31 17.4 +1.0**
KSRV Kasrt alli 77.22 305 *eP* **P** **02 31 17.2 +0.9**
YFT Old Faithful 77.23 44 *eP* **P** **02 31 19.3 +2.7**
comp=E,99nm,0.9s
TIN Tinemaha, Big 77.23 53 P **P** **02 31 17.7 +1.1**
baz=306
GZT Gaziantep 77.28 307 *i* P **P** **02 31 18.6 +1.7**
BEL Belsk 77.29 326 *eP* **P** **02 31 17.1 +0.7**
BEL *ePP* **PP** **02 34 08.2 -2.6**
BEL Belsk 77.29 326⇑ *eP* **P** **02 31 17.1 +0.7**
BEL *e* 02 34 08.2
HOMB Homborsund 77.30 336⇑ *iP* **P** **02 31 16.4 0.0**
HOMB IAmb IAmb 02 31 17.4
comp=Z,274nm,0.9s
LKWY Lake 77.40 44 *eP* **P** **02 31 19.7 +2.1**
LKWY pmax pmax
comp=Z,86nm,0.9s
LKWY Lake 77.40 44 *eP* **P** **02 31 19.7 +2.1**
comp=Z,86nm,0.9s
BSD Bornholm Skovb 77.41 331⇑ *iP* **P** **02 31 16.7 -0.3**
comp=Z,677nm,0.9s
BSD Bornholm Skovb 77.41 331⇑ *iP* **P** **02 31 16.7 -0.3**
BSD pmax pmax
comp=Z,680nm,0.9s
H17A Grant Village 77.41 44 P **P** **02 31 20.1 +2.4**
baz=309
H17A Grant Village 77.41 44 *eP* **P** **02 31 20.4 +2.8**
comp=Z,130nm,0.9s
PKM Mcpherson Peak 77.45 56 P **P** **02 31 19.2 +1.2**
baz=306,SNR=11
ILGA Ilgaz 77.47 312 *i* P **P** **02 31 19.3 +1.3**
IMW Indian Meadow 77.52 44 *eP* **P** **02 31 20.0 +1.8**
comp=Z,72nm,0.8s
FLWY Flagg Ranch 77.53 44 *eP* **P** **02 31 20.3 +2.0**
comp=Z,303nm,1.7s
YTP The Promontory 77.57 44 *eP* **P** **02 31 20.6 +2.0**
KMY Karmoy 77.58 338⇑ *iP* **P** **02 31 18.5 +0.6**
KMY IAmb IAmb 02 31 19.5
comp=Z,257nm,0.8s
FXWY Fox Creek 77.63 45 *eP* **P** **02 31 20.2 +1.4**
comp=Z,48nm,1.0s
STAV Stavanger 77.66 338⇑ *iP* **P** **02 31 18.7 +0.4**
STAV IAmb IAmb 02 31 19.7
comp=Z,360nm,0.9s
SNART Snartemo 77.67 337⇑ *iP* **P** **02 31 18.8 +0.3**
SNART IAmb IAmb 02 31 19.8
comp=Z,362nm,0.8s
RLMT Red Lodge 77.67 43 P **P** **02 31 19.8 +0.7**
baz=310
RLMT Red Lodge 77.67 43 *eP* **P** **02 31 19.5 +0.5**
comp=Z,52nm,0.8s
PRAR RASCA 77.68 320⇓ *iP* **P** **02 31 19.0 +0.3**
NPI North Pocatell 77.69 46 *eP* **P** **02 31 20.5 +1.3**
TLCR 77.71 318⇓ *iP* **P** **02 31 19.3 +0.4**
MOOW Moose Ponds 77.72 44 *eP* **P** **02 31 20.6 +1.3**
comp=Z,260nm,2.0s
AYKD Aykdinkavak 77.74 307 *i* P **P** **02 31 20.4 +1.1**
HVU Hansel Valley 77.77 47 *eP* **P** **02 31 20.8 +1.3**
HVU pmax pmax
comp=Z,64nm,0.8s
HVU Hansel Valley 77.77 47 *eP* **P** **02 31 20.8 +1.3**
comp=Z,64nm,0.8s
SBC Santa Barbara 77.78 56 P **P** **02 31 20.8 +1.3**
baz=306
GRAC Grapevine Rang 77.82 53 P **P** **02 31 20.8 +1.0**
baz=307
LOHW Long Hollow 77.88 44 *eP* **P** **02 31 21.4 +1.2**
comp=Z,152nm,1.9s
ISA Isabella, Lake 77.89 55 P **P** **02 31 20.2 0.0**
baz=306,SNR=7.7
ISA Isabella, Lake 77.89 55 *eP* **P** **02 31 20.7 +0.5**
ISA pmax pmax
comp=Z,20nm,0.8s
ISA Isabella, Lake 77.89 55 *eP* **P** **02 31 20.7 +0.5**
comp=Z,20nm,0.8s
SNOW Snow King Moun 77.89 45 *eP* **P** **02 31 21.7 +1.4**
comp=Z,45nm,0.8s
REDW Red Top Meadow 77.90 45 *eP* **P** **02 31 21.5 +1.1**
comp=Z,64nm,1.1s
KWP Kalwaria Pacla 77.91 324 *eP* **P** **02 31 20.7 +0.7**
KWP Kalwaria Pacla 77.91 324⇑ *iP* **P** **02 31 21.3 +1.3**
KWP Kalwaria Pacla 77.91 324⇑ *eP* **P** **02 31 20.7 +0.7**
COP Copenhagen 77.92 333⇑ *iP* **P** **02 31 20.2 +0.3**
comp=Z,410nm,0.8s
COP Copenhagen 77.92 333⇑ *iP* **P** **02 31 20.2 +0.3**
COP pmax pmax
comp=Z,410nm,0.8s
CDAG Cicekdag 77.94 310 *i* P **P** **02 31 21.1 +0.6**
KUZU Kuzuini 77.94 307 *i* P **P** **02 31 21.5 +1.0**
KAMA Osmaniye 77.96 307 *i* P **P** **02 31 21.4 +0.8**
ARVC Arvin 77.97 55 P **P** **02 31 20.9 +0.4**
baz=306,SNR=10
BTIN Bart¨–n 77.99 313 *i* P **P** **02 31 20.6 +0.1**
ELDT Eldivan 77.99 312 *i* P **P** **02 31 21.8 +1.0**
MLI Malad Range 78.00 46 *eP* **P** **02 31 22.0 +1.2**
MTUT Morton Thiokol 78.00 47 *eP* **P** **02 31 25.5 +4.7**
TESR Tescani 78.01 320⇑ *iP* **P** **02 31 20.6 0.0**
BUR08 Bucovina Ar. S 78.02 321 *eP* **P** **02 31 21.1 +0.4**
BURAR Bucovina Array 78.03 321⇓ *iP* **P** **02 31 21.5 +0.7**
SCZ2 Santa Cruz Isl 78.09 57 P **P** **02 31 21.9 +0.5**
baz=306
DAC Darwin (Calif) 78.10 54 *eP* **P** **02 31 22.1 +0.6**
DAC pmax pmax
comp=Z,30nm,0.9s
DAC Darwin (Calif) 78.10 54 *eP* **P** **02 31 22.1 +0.6**
comp=Z,30nm,0.9s
BORG Borgarnes 78.11 352 P **P** **02 31 23.6 +2.9**
comp=Z,430nm,0.9s,baz=19,slow=4.2,SNR=50
BORG Borgarnes 78.11 352 *eP* **P** **02 31 23.7 +2.9**
BORG pmax pmax
comp=Z,470nm,1.0s
BORG Borgarnes 78.11 352 *eP* **P** **02 31 23.7 +2.9**
comp=Z,468nm,0.9s
DGMT Dagmar 78.12 38 P **P** **02 31 21.6 +0.4**
baz=312,SNR=47
DGMT Dagmar 78.12 38 *eP* **P** **02 31 21.6 +0.4**
comp=Z,179nm,1.1s
AHID Auburn Hatcher 78.13 45 *eP* **P** **02 31 22.4 +0.8**
comp=Z,46nm,0.9s
AVNS Nevsehir-Avano 78.14 310 *i* P **P** **02 31 22.1 +0.5**
BEI Bear River Ran 78.14 46 *eP* **P** **02 31 23.0 +1.4**
BGU Big Grassy Mou 78.14 48 *eP* **P** **02 31 22.7 +1.1**
comp=Z,45nm,0.9s
R11A Troy Canyon, C 78.15 51 P **P** **02 31 22.5 +0.8**
baz=307
R11A Troy Canyon, C 78.15 51 *eP* **P** **02 31 22.3 +0.6**
comp=Z,46nm,0.8s
LTU Little Mountai 78.20 47 *eP* **P** **02 31 22.3 +0.4**
PETR Petresti 78.22 319⇓ *iP* **P** **02 31 24.0 +2.3**
EPU East Promontor 78.23 47 *eP* **P** **02 31 23.3 +1.3**
SPUT South Promonto 78.25 47 *eP* **P** **02 31 23.4 +1.2**
comp=Z,37nm,1.0s
LAO LASA Array 78.28 40 P **P** **02 31 22.8 +0.7**
baz=311
LAO LASA Array 78.28 40 *eP* **P** **02 31 22.9 +0.7**
comp=Z,124nm,1.0s
ODBI Odobesti 78.29 319⇑ *iP* **P** **02 31 24.3 +2.2**
DRWC Darouich 78.30 307 *eP* **P** **02 31 23.1 +0.6**
DRWC Darouich 78.30 307 *eP* **P** **02 31 23.1 +0.6**
MPMC Manual Prospec 78.30 54 P **P** **02 31 23.4 +0.7**
baz=307,SNR=44
BR131 Keskin Array S 78.33 311 *eP* **P** **02 31 22.8 +0.1**
BRTR Keskin Array B 78.33 311 P **P** **02 31 22.8 +0.1**
comp=Z,222nm,1.1s,baz=106,slow=3.4,SNR=319
BRTR PP **PP** **02 34 20.9 +0.8**
comp=Z,36nm,0.9s,baz=77,slow=5.4,SNR=6.0
BRTR LR LR 03 10 35.3
comp=Z,546nm,19.4s,baz=54,slow=39
A25A Svangstu Ranch 78.33 37 P **P** **02 31 23.0 +0.6**
baz=313,SNR=28
OSI Osito Audit: C 78.34 56 P **P** **02 31 23.7 +1.0**
baz=306
OSI Osito Audit: C 78.34 56 *eP* **P** **02 31 24.2 +1.5**
comp=Z,69nm,1.1s
HDU Hyde Park 78.35 46 *eP* **P** **02 31 24.1 +1.3**
VRI Vrincioaia 78.39 319⇑ *iP* **P** **02 31 23.2 +0.5**
TIRR Tirgusor 78.40 317⇓ *iP* **P** **02 31 23.4 +0.7**
TIRR Tirgusor 78.40 317 *eP* **P** **02 31 22.8 +0.1**
TIRR pmax pmax
comp=Z,170nm,0.9s
TIRR Tirgusor 78.40 317 *eP* **P** **02 31 22.8 +0.1**
comp=Z,168nm,0.9s
TIRR LR LR
comp=Z,1µm,21.0s
BLG Laguna Peak, P 78.41 56 P **P** **02 31 23.6 +0.6**
baz=306
PLOR Plostina 78.44 319⇑ *iP* **P** **02 31 23.6 +0.6**
RGN Rugen 78.45 331 *eP* **P** **02 31 23.4 +0.7**
comp=Z,554nm,0.9s
FURC Furnace Creek, 78.46 53 P **P** **02 31 24.3 +1.1**
baz=307,SNR=27
SNUT Stansbury Nort 78.48 48 *eP* **P** **02 31 24.8 +1.3**
MUD Monsted U'grnd 78.50 335⇑ *iP* **P** **02 31 23.3 +0.3**
comp=Z,337nm,1.0s
MUD Monsted U'grnd 78.50 335⇑ *iP* **P** **02 31 23.3 +0.3**
MUD pmax pmax
comp=Z,340nm,1.0s
HARR Harsova 78.51 318⇓ *iP* **P** **02 31 24.0 +0.7**
LRMC Laurel Mtn Rad 78.52 54 P **P** **02 31 24.4 +0.6**
baz=307,SNR=12
EFOR EFORIE 78.52 317⇓ *iP* **P** **02 31 24.6 +1.2**
BMUT Black Mountain 78.56 46 *eP* **P** **02 31 25.2 +1.1**
NAIU Northern Antel 78.57 47 *eP* **P** **02 31 25.0 +1.0**
TPNV Topopah Spring 78.57 53 P **P** **02 31 24.9 +0.9**
baz=307
TPNV Topopah Spring 78.57 53 *eP* **P** **02 31 25.0 +0.9**
TPNV pmax pmax
comp=Z,77nm,0.8s
TPNV Topopah Spring 78.57 53 *eP* **P** **02 31 25.0 +0.9**
comp=Z,77nm,0.8s
AKO Adana 78.58 308 *i* P **P** **02 31 25.1 +1.2**
GRER 78.58 319⇓ *iP* **P** **02 31 26.3 +2.6**
HWUT Hardware Ranch 78.59 46 *eP* **P** **02 31 25.2 +1.1**
comp=Z,86nm,1.0s
KOLS Kolonicke sedl 78.59 323 *eP* **P** **02 31 24.1 +0.3**
KOLS pmax pmax
comp=Z,209nm,1.0s
KOLS Kolonicke sedl 78.59 323 *eP* **P** **02 31 24.1 +0.3**
KOLS *ePP* **PP** **02 34 23.9 +2.1**
SNCC San Nicolas Is 78.60 57 P **P** **02 31 24.4 +0.3**
baz=306
BCAM Yenicaga 78.60 313 *i* P **P** **02 31 24.6 +0.5**
RSUT Red Spur Mount 78.66 46 *eP* **P** **02 31 24.6 0.0**
EDW2 Edwards Air Fo 78.67 55 P **P** **02 31 25.4 +0.9**
baz=307,SNR=17
FSU Fish Springs 78.67 49 *eP* **P** **02 31 25.7 +1.1**
CVDA Cernavoda 78.68 317⇓ *iP* **P** **02 31 25.3 +1.0**
SAIU Southern Antel 78.69 47 *eP* **P** **02 31 27.3 +2.6**
MANR Mangalia 78.71 317⇓ *iP* **P** **02 31 25.3 +0.8**
MCU Monte Cristo P 78.71 47 *eP* **P** **02 31 22.7 -2.2**
DUG Dugway, Tooele 78.72 48 P **P** **02 31 26.1 +1.2**
baz=308
DUG Dugway, Tooele 78.72 48 *eP* **P** **02 31 26.1 +1.2**
DUG pmax pmax
comp=Z,81nm,0.9s
DUG Dugway, Tooele 78.72 48 *eP* **P** **02 31 26.1 +1.2**
comp=Z,82nm,0.9s
ANTO Ankara 78.75 311 *eP* **P** **02 31 25.5 +0.6**
ANTO pmax pmax
comp=Z,240nm,0.9s
ANTO Ankara 78.75 311 *eP* **P** **02 31 25.5 +0.6**
comp=Z,242nm,0.8s
STHS Stebnicka Huta 78.75 324 *eP* **P** **02 31 25.6 +1.0**
STHS pmax pmax
comp=Z,300nm,0.9s
STHS pmax pmax
comp=N,4.0nm,0.7s
STHS Stebnicka Huta 78.75 324 *eP* **P** **02 31 25.6 +1.0**
STHS *ePP* **PP** **02 34 23.6 +0.5**
STHS *eS* **S** **02 41 14.6 -1.3**
BBAL Bala 78.75 311 *i* P **P** **02 31 25.4 +0.4**
B25A Knox Farm, Ray 78.76 37 P **P** **02 31 25.7 +0.9**
baz=313,SNR=10
BR231 Keskin MP Arra 78.78 311 *eP* **P** **02 31 25.4 +0.3**
BTCH Batrach 78.78 307 *eP* **P** **02 31 25.0 -0.1**
BTCH Batrach 78.78 307 *eP* **P** **02 31 24.7 -0.4**
UZH Uzhgorod 78.79 323 *dP* **P** **02 31 24.8 0.0**
UZH *e* 02 31 30.2
UZH *eS* **S** **02 41 15.6 -0.6**
UZH *e* 02 41 34.8
UZH *ePS* **PnS** **02 42 09.8 +2.1**
UZH *eSSS* SSS 02 49 47.4
UZH MLR MLR
comp=N,1µm,20.0s
UZH MLR MLR
comp=E,1µm,20.0s
UZH MLR MLR
comp=Z,1µm,20.0s
DECC Green Verdugo 78.81 56 P **P** **02 31 26.1 +0.9**
baz=307
ARCR ARCALIA 78.82 321⇑ *iP* **P** **02 31 26.6 +1.6**
YURE YUREGIR 78.84 308 *i* P **P** **02 31 27.3 +1.9**
BMR Baia Mare 78.85 322⇑ *iP* **P** **02 31 26.1 +0.9**
OJC Ojcow 78.86 325 *eP* **P** **02 31 25.7 +0.5**
OJC *ePP* **PP** **02 34 24.3 +0.3**
OJC Ojcow 78.86 325 *eP* **P** **02 31 25.3 +0.1**
OJC pmax pmax
comp=Z,680nm,1.0s
OJC Ojcow 78.86 325 *eP* **P** **02 31 25.3 +0.1**
comp=Z,684nm,1.0s
A26A Wade Farm, Ken 78.88 36 P **P** **02 31 25.9 +0.5**
baz=314,SNR=47
PGOR Pogoanele 78.88 318⇓ *iP* **P** **02 31 27.3 +1.9**
AMRR Amara 78.89 318⇑ *iP* **P** **02 31 27.1 +1.7**
AKSY AKSARAY - Alti 78.91 310 *i* P **P** **02 31 26.2 +0.4**
MSAB Monastry St. A 78.96 317⇑ *iP* **P** **02 31 26.6 +0.8**
PASC Pasadena Art C 78.96 56 *eP* **P** **02 31 27.0 +1.0**
comp=Z,44nm,1.2s
ISR Istrita 78.98 319⇓ *iP* **P** **02 31 27.5 +1.5**
TCUT Toone Canyon 78.99 47 *eP* **P** **02 31 27.6 +1.2**
comp=Z,112nm,0.8s
TCUT LR LR
comp=Z,400nm,21.0s
CRVS Cervenica-Dubn 79.00 324 *eP* **P** **02 31 26.7 +0.7**
CRVS *e* 02 34 26.7
CRVS Cervenica-Dubn 79.00 324 *eP* **P** **02 31 26.7 +0.7**
CRVS *ePP* **PP** **02 34 26.7 +1.4**
YAYL Yayladag 79.01 307 *i* P **P** **02 31 26.5 0.0**
BW06 Boulder Array 79.01 45 P **P** **02 31 26.8 +0.3**
baz=310
BW06 Boulder Array 79.01 45 *eP* **P** **02 31 26.8 +0.3**
comp=Z,36nm,0.8s
PD31 Pinedale Array 79.01 45 *eP* **P** **02 31 26.8 +0.3**
PDAR Pinedale Array 79.01 45 P **P** **02 31 26.7 +0.3**
comp=Z,48nm,0.9s,baz=267,slow=3.1,SNR=227
PDAR pP **pP** **02 31 48.9 +1.6**
comp=Z,20nm,0.7s,baz=153,slow=0.3,SNR=4.8
PDAR PKKPbc **PKKPbc** **02 50 17.6 +0.3**
comp=Z,1.4nm,0.7s,baz=126,slow=3.2,SNR=11
MWC Mount Wilson 79.01 56 *eP* **P** **02 31 27.2 +0.7**
MWC pmax pmax
comp=Z,77nm,1.3s
MWC Mount Wilson 79.01 56 *eP* **P** **02 31 27.2 +0.7**
comp=Z,77nm,1.3s
TRPA Tarpa 79.02 323⇑ *eP* **P** **02 31 26.9 +0.9**
PSN Preselentsi 79.02 317 *eP* **P** **02 31 26.1 -0.1**
CTU Camp Tracy 79.05 47 *eP* **P** **02 31 27.7 +1.1**
comp=Z,53nm,0.9s
MLR Muntele Rosu 79.05 319⇑ *iP* **P** **02 31 27.0 +0.5**
MLR Muntele Rosu 79.05 319 *eP* **P** **02 31 26.6 +0.1**
MLR pmax pmax
comp=Z,260nm,1.3s
MLR Muntele Rosu 79.05 319 *eP* **P** **02 31 26.6 +0.1**
comp=Z,262nm,1.3s
MLR LR LR
comp=Z,2µm,19.0s
C25A Freed Ranch, W 79.10 38 P **P** **02 31 27.3 +0.7**
baz=313,SNR=9.7
KKUL Konya-Kulu 79.11 311 *i* P **P** **02 31 27.7 +0.8**
PSUT Pine Spring 79.11 50 *eP* **P** **02 31 28.1 +1.0**
comp=Z,65nm,0.9s
GMU Granite Mounta 79.12 47 *eP* **P** **02 31 31.3 +4.3**
B26A Jensen Ranch, 79.14 37 P **P** **02 31 27.5 +0.7**
baz=314,SNR=26
FMP Fort Macarthur 79.16 56 P **P** **02 31 27.9 +0.7**
baz=307
SHOC Shoshone, Teco 79.18 53 P **P** **02 31 28.2 +0.9**
baz=307,SNR=6.5
NIE Niedzica 79.19 325 *eP* **P** **02 31 28.0 +0.9**
NIE *ePP* **PP** **02 34 27.3 +0.5**
NIE Niedzica 79.19 325⇑ *eP* **P** **02 31 28.0 +0.9**
NIE *e* 02 34 27.3
GSC Goldstone, Bar 79.20 54 P **P** **02 31 28.0 +0.6**
baz=307,SNR=28
GSC Goldstone, Bar 79.20 54 *eP* **P** **02 31 28.2 +0.8**

GSC pmax pmax
comp=Z,39nm,1.0s
GSC Goldstone, Bar 79.20 54 *e*P **P 02 31 28.2 +0.8**
comp=Z,39nm,1.0s
SLNF Slenfeh 79.20 306 *e*P **P 02 31 28.0 +0.5**
SLNF Slenfeh 79.20 306 *e*P **P 02 31 27.8 +0.3**
ARNB Al Arnab 79.20 307 *e*P **P 02 31 26.9 -0.6**
ARNB Al Arnab 79.20 307 *e*P **P 02 31 27.0 -0.4**
TAU Tasmania Unive 79.22 174 PFAKE 02 31 40.0 +13
TAU LR LR
comp=Z,1µm,20.0s
A27A Ledoux Ranch, 79.22 36 P **P 02 31 27.8 +0.6**
baz=314
RABH Abou Rabah 79.25 305 *e*P **P 02 31 26.9 -0.8**
RABH Abou Rabah 79.25 305 *e*P **P 02 31 26.9 -0.8**
CIS Catalina Islan 79.26 56 P **P 02 31 28.1 +0.4**
baz=307
BFSC Mount Baldy Ra 79.27 55 P **P 02 31 28.4 +0.5**
baz=307,SNR=11
JLU Jordanelle 79.29 47 *e*P **P 02 31 29.1 +1.1**
comp=Z,74nm,1.3s
DED Mersin 79.29 308 *i* P **P 02 31 28.4 +0.6**
SECR 79.29 319⇑*i*P **P 02 31 28.6 +0.9**
SAHE Sakarya_HENDEK 79.30 313 *i* P **P 02 31 27.6 -0.2**
NLU North Lily Min 79.32 48 *e*P **P 02 31 29.3 +1.2**
comp=Z,55nm,0.8s
RRX Edison Barstow 79.33 55 P **P 02 31 28.6 +0.6**
baz=307
ROOS tl_alroos 79.35 305 *e*P **P 02 31 27.4 -0.9**
ROOS tl_alroos 79.35 305 *e*P **P 02 31 29.1 +0.8**
HTU Hoyt Peak 79.38 47 *e*P **P 02 31 32.3 +3.7**
BTAS Taskesti 79.39 313 *i* P **P 02 31 28.5 +0.2**
PLAR PLOIESTI 79.39 319⇓*i*P **P 02 31 29.6 +1.4**
SCI2 San Clemente I 79.42 57 P **P 02 31 29.2 +0.7**
baz=307
SULR 79.42 318⇓*i*P **P 02 31 29.4 +1.1**
MDB Medias 79.44 320⇑*i*P **P 02 31 30.4 +2.0**
KERG Konya-Eregli 79.44 309 *i* P **P 02 31 28.7 -0.1**
D25A Fairfield 79.45 38 P **P 02 31 29.0 +0.5**
baz=313,SNR=14
CJR Cluj-Napoca 79.45 321⇑*i*P **P 02 31 29.8 +1.2**
DAU Daniels Canyon 79.52 47 *e*P **P 02 31 30.7 +1.3**
DAU Daniels Canyon 79.52 47 *e*P **P 02 31 30.7 +1.3**
KAND Kocaeli-Kandir 79.53 314 *i* P **P 02 31 29.2 +0.2**
MPU Maple Canyon 79.55 48 *e*P **P 02 31 30.5 +1.1**
comp=Z,83nm,0.8s
C26A Wahner Farm, P 79.59 37 P **P 02 31 29.6 +0.3**
baz=314,SNR=13
B27A Peters Farms, 79.59 36 P **P 02 31 29.5 +0.3**
baz=314,SNR=8.2
FLU Fool Peak 79.62 49 *e*P **P 02 31 31.1 +1.3**
BTMR Bucharest-Geot 79.66 318⇓*i*P **P 02 31 30.6 +1.0**
RAC Raciborz 79.69 326 *e*P **P 02 31 30.7 +1.0**
RAC MLR MLR
comp=Z,1µm,25.3s
TUQ Turquoise Moun 79.69 54 P **P 02 31 30.8 +0.6**
baz=308,SNR=50
MTUR Matau 79.69 319⇑*i*P **P 02 31 30.5 +0.6**
A28A Rude Farm, Bot 79.71 36 P **P 02 31 30.4 +0.5**
baz=315,SNR=89
RAYN Ar Rayn 79.73 292 *e*P **P 02 31 30.4 -0.1**
comp=Z,178nm,0.9s
RAYN LR LR
comp=Z,700nm,19.0s
BBRC Big Bear Solar 79.74 55 P **P 02 31 30.7 +0.1**
baz=307
LEVU Levan 79.75 48 *e*P **P 02 31 31.8 +1.3**
KECS Kecovo 79.76 324 *e*P **P 02 31 30.9 +0.8**
KECS pmax pmax
comp=Z,75nm,0.9s
KECS Kecovo 79.76 324 *e*P **P 02 31 30.9 +0.8**
KECS *e*PP **PP 02 34 33.4 +1.9**
KECS *e*S **S 02 41 25.6 -0.9**
BUC1 Bucharest 79.77 318⇑*i*P **P 02 31 27.2 -3.0**
BUC1 Bucharest 79.77 318⇑*i*P **P 02 31 31.2 +1.0**
PRD Provadia 79.77 317 *e*P **P 02 31 30.4 +0.2**
LANS Liptovska Anna 79.77 325 *e*P **P 02 31 31.5 +1.3**
LANS *e* 02 34 34.4
LANS *e*S **S 02 41 26.7 0.0**
LANS Liptovska Anna 79.77 325 *e*P **P 02 31 31.5 +1.3**
LANS *e*PP **PP 02 34 34.4 +2.8**
LANS *e*S **S 02 41 26.7 0.0**
HEC Hector,Ludlow 79.79 54 P **P 02 31 31.3 +0.6**
baz=307,SNR=6.1
ARR Arges 79.83 320⇑*i*P **P 02 31 32.0 +1.4**
DRGR 79.84 322⇓*i*P **P 02 31 31.7 +1.0**
E25A Miller Ranch, 79.85 39 P **P 02 31 31.3 +0.6**
baz=313,SNR=20
OKC Ostrava-Krasne 79.89 326⇑*i*P **P 02 31 31.1 +0.3**
OKC *e*PP **PP 02 34 33.7 +1.2**
OKC *e*S **S 02 41 27.1 -0.7**
OKC AMS AMS 03 11 00.0
comp=Z,2µm,15.4s
OKC Ostrava-Krasne 79.89 326⇑*i*P **P 02 31 31.1 +0.3**
OKC *e* 02 34 33.7
OKC *e* 02 41 27.1
OKC MLR MLR
comp=Z,2µm,15.4s
DWU Dry Willow Pea 79.91 50 *e*P **P 02 31 32.6 +1.1**
C27A Sayler Ranch, 79.96 37 P **P 02 31 32.0 +0.7**
baz=314,SNR=30
MURC Murrieta 79.96 56 P **P 02 31 31.9 +0.4**
baz=307,SNR=9.7
D26A Manning 79.97 38 P **P 02 31 31.8 +0.4**
baz=314,SNR=14
MARH Ras Al Marh 79.97 305 *e*P **P 02 31 27.5 -4.4**
MARH Ras Al Marh 79.97 305 *e*P **P 02 31 27.8 -4.2**
KSP Ksiaz 79.98 328 *e*P **P 02 31 31.9 +0.7**
KSP *e*PP **PP 02 34 34.4 +1.2**
KSP Ksiaz 79.98 328⇑*e*P **P 02 31 31.9 +0.7**
KSP *e* 02 34 34.5
B28A Dugan Ranch, T 79.99 36 P **P 02 31 31.8 +0.4**
baz=315,SNR=63
KIZK Mersin 80.00 308 *i* P **P 02 31 31.6 0.0**
KDHN Kadinhani 80.00 311 *i* P **P 02 31 31.7 0.0**
GOLR 80.01 319⇑*i*P **P 02 31 32.1 +0.6**
SGU Sterling 80.06 48 *e*P **P 02 31 33.7 +1.5**
ZALF Zalf 80.07 304 *e*P **P 02 31 27.5 -4.7**
ZALF Zalf 80.07 304 *e*P **P 02 31 27.4 -4.7**
ESKT Eskisehir 80.14 312 *i* P **P 02 31 32.6 0.0**
MSU Marysvale 80.16 49 *e*P **P 02 31 34.3 +1.5**
MSU Marysvale 80.16 49 *e*P **P 02 31 34.3 +1.5**
HWQ Hawqa 80.17 305 *e*P **P 02 31 32.8 0.0**
A29A Manning Farm, 80.18 35 P **P 02 31 32.6 +0.1**
baz=316,SNR=95
MORC Moravsky Berou 80.20 326⇑*i*P **P 02 31 33.2 +0.7**
MORC Moravsky Berou 80.20 326 *e*P **P 02 31 33.0 +0.4**
MORC pmax pmax
comp=Z,1µm,1.0s
MORC Moravsky Berou 80.20 326 *e*P **P 02 31 33.0 +0.4**
comp=Z,1µm,1.0s
MORC LR LR
comp=Z,4µm,18.0s
HUMR Humele 80.20 319⇓*i*P **P 02 31 32.5 -0.1**
ISK Istanbul-Kandi 80.21 314 P **P 02 31 32.2 -0.5**
ISK Istanbul-Kandi 80.21 314 P **P 02 31 32.2 -0.5**
ISK Istanbul-Kandi 80.21 314 P **P 02 31 32.2 -0.5**
F25A Bowman 80.22 39 P **P 02 31 33.2 +0.5**
baz=313,SNR=41
LOT Lotru 80.22 320⇑*i*P **P 02 31 33.3 +0.5**
TMUT Trail Mountain 80.25 48 *e*P **P 02 31 34.4 +1.1**
comp=Z,40nm,0.9s
GMRC Granite Mounta 80.26 54 P **P 02 31 33.7 +0.4**
baz=308,SNR=45
BUY Buyukada 80.31 314 *i* P **P 02 31 33.7 +0.4**
KMER Konya-Meram 80.32 310 *i* P **P 02 31 33.5 0.0**
KRLC Kraliky 80.32 327⇑*i*P **P 02 31 33.6 +0.4**
KRLC *e*PP **PP 02 34 37.1 +0.9**
KRLC Kraliky 80.32 327⇑*i*P **P 02 31 33.6 +0.4**
KRLC *e* 02 34 37.1
DPC Dobruska-Polom 80.33 327⇑*i*P **P 02 31 33.9 +0.7**
DPC *e*PP **PP 02 34 35.6 -0.6**
DPC *e*S **S 02 41 31.4 -1.1**
DPC AMS AMS 03 11 30.0
comp=Z,1µm,15.2s
DPC Dobruska-Polom 80.33 327⇑*i*P **P 02 31 33.9 +0.7**
DPC *e* 02 34 35.6
DPC MLR MLR
comp=Z,1µm,15.2s
E26A Carlson Angus 80.34 38 P **P 02 31 33.6 +0.2**
baz=314,SNR=20
UPC Upice 80.34 327⇑*i*P **P 02 31 33.6 +0.4**
UPC AMS AMS 03 11 40.0
comp=Z,2µm,12.5s
UPC Upice 80.34 327⇑*i*P **P 02 31 33.6 +0.4**
UPC MLR MLR
comp=Z,2µm,12.5s
D27A Center 80.37 37 P **P 02 31 34.1 +0.7**
baz=314,SNR=26
DEV Deva 80.37 321⇓*i*P **P 02 31 34.7 +1.3**
TOTH TOTAH 80.41 304 *e*P **P 02 31 34.7 +0.7**
TOTH TOTAH 80.41 304 *e*P **P 02 31 34.4 +0.5**
P17A Butcher Ranch, 80.42 48 *e*P **P 02 31 35.3 +1.2**
comp=Z,124nm,0.8s
LCMT Little Creek M 80.43 51 *e*P **P 02 31 35.4 +1.2**
comp=Z,52nn,0.9s
LDFC Landfair 80.44 53 *e*P **P 02 31 35.0 +0.8**
comp=Z,116nn,1.1s
PSZ Piszkesteto 80.44 324⇑*i*P **P 02 31 34.8 +0.9**
PSZ Piszkesteto 80.44 324⇑*e*P **P 02 31 34.7 +0.9**
PSZ Piszkesteto 80.44 324 *e*P **P 02 31 34.1 +0.2**
PSZ pmax pmax
comp=Z,520nm,1.0s
PSZ Piszkesteto 80.44 324 *e*P **P 02 31 34.1 +0.2**
comp=Z,518nm,1.0s
PSZ LR LR
comp=Z,2µm,21.0s
PFO Pinyon Flats O 80.44 55 P **P 02 31 34.8 +0.6**
comp=Z,31nm,0.9s,baz=304,slow=4.1,SNR=26
PFO LR LR 03 01 15.6
comp=Z,357nm,20.7s,baz=310,slow=31
PFO Pinyon Flats O 80.44 55 P **P 02 31 34.8 +0.6**
baz=308,SNR=21
PFO Pinyon Flats O 80.44 55 *e*P **P 02 31 34.8 +0.6**
PFO pmax pmax
comp=Z,89nm,1.1s
PFO Pinyon Flats O 80.44 55 *e*P **P 02 31 34.8 +0.6**
comp=Z,89nm,1.1s
109C Camp Elliot, M 80.45 56 P **P 02 31 34.5 +0.4**
baz=307,SNR=9.7
MTPU Mount Pierson 80.45 50 *e*P **P 02 31 36.4 +1.9**
comp=Z,56nn,0.8s
B29A Wagenman Farm, 80.45 35 P **P 02 31 34.3 +0.4**
baz=316,SNR=51
AUKIR K¨¬rka- Seyitg 80.49 312 *i* P **P 02 31 34.5 +0.2**
C28A Hausauer Farms 80.49 36 P **P 02 31 34.8 +0.7**
baz=315,SNR=12
BELC Belle Mtn. Jos 80.51 55 P **P 02 31 35.1 +0.4**
baz=308,SNR=31
VYHS Vyhne 80.53 325 *e*P **P 02 31 35.1 +0.8**
VYHS pmax pmax
comp=Z,166nm,1.1s
VYHS Vyhne 80.53 325 *e*P **P 02 31 35.1 +0.8**
VYHS *e*PP **PP 02 34 35.4 -2.5**
VYHS *e*S **S 02 41 41.8 +7.2**
SZH Strazhica 80.53 317 *e*P **P 02 31 34.0 -0.4**
ZIMR 80.58 318⇑*i*P **P 02 31 35.1 +0.5**
BOLV Bolvadin 80.59 311 *i* P **P 02 31 35.2 +0.3**
BHL Bhannes 80.59 305 *e*P **P 02 31 35.1 +0.1**
SALA Sala 80.60 304 *e*P **P 02 31 33.5 -1.7**
SALA Sala 80.60 304 *e*P **P 02 31 33.4 -1.7**
A30A Hoffart Farm, 80.60 35 P **P 02 31 35.0 +0.4**
baz=316,SNR=184
P18A Preston Nutter 80.62 47 *e*P **P 02 31 36.3 +1.0**
comp=Z,74nm,0.7s
IGD Bursa 80.64 313 *i* P **P 02 31 34.1 -0.9**
F26A Lodgepole 80.67 39 P **P 02 31 35.5 +0.4**
baz=314,SNR=27
ERMK Ermenek 80.68 309 *i* P **P 02 31 35.2 -0.4**
KNB Kanab 80.69 51 *e*P **P 02 31 37.0 +1.4**
KNB pmax pmax
comp=Z,89nm,1.1s
KNB Kanab 80.69 51 *e*P **P 02 31 37.0 +1.4**
comp=Z,89nm,1.1s
BRBR Barbar 80.70 305 *e*P **P 02 31 36.2 +0.5**
RCY Rachaya 80.72 305 *e*P **P 02 31 36.3 +0.5**
ULM Lac du Bonnet 80.73 33 P **P 02 31 35.1 -0.1**
comp=Z,81nm,0.9s,baz=310,slow=6.5,SNR=75
ULM LR LR 03 10 10.2
comp=Z,202nm,18.7s,baz=320,slow=38
ULM Lac du Bonnet 80.73 33 *e*P **P 02 31 34.9 -0.4**
comp=Z,106nm,1.0s
SIRR Siria 80.73 322⇑*i*P **P 02 31 36.0 +0.6**
G25A Newell 80.73 40 P **P 02 31 35.6 0.0**
baz=313,SNR=22
PKCU Pink Cliffs 80.75 50 *e*P **P 02 31 38.2 +2.1**
comp=Z,55nn,1.0s
ULDT Uludag 80.76 313 *i* P **P 02 31 36.5 +0.6**
MLA1 Latheron 80.76 341⇑*e*P **P 02 31 35.6 +0.3**
DQRL Deir Qamar 80.77 305 *e*P **P 02 31 36.3 +0.3**
GZR Gura Zlata 80.77 321⇑*i*P **P 02 31 36.1 +0.4**
D28A Regan 80.77 37 P **P 02 31 36.2 +0.6**
baz=315,SNR=31
MDND Maddock 80.78 36 P **P 02 31 36.3 +0.7**
baz=316,SNR=10
MDND Maddock 80.78 36 *e*P **P 02 31 36.2 +0.7**
comp=Z,179nm,0.8s
SRU San Rafael Swe 80.78 48 *e*P **P 02 31 36.9 +0.9**
SRU pmax pmax
comp=Z,100nm,0.8s
SRU San Rafael Swe 80.78 48 *e*P **P 02 31 36.9 +0.9**
comp=Z,102nm,0.8s
K22A Casper 80.78 43 P **P 02 31 36.1 +0.2**
baz=312
K22A Casper 80.78 43 *e*P **P 02 31 36.0 0.0**
comp=Z,62nn,0.8s
BTU Barney Top 80.82 50 *e*P **P 02 31 38.2 +1.7**
E27A Carson 80.82 38 P **P 02 31 36.3 +0.4**
baz=314,SNR=45
EKU East Kanab 80.86 51 *e*P **P 02 31 37.8 +1.3**
BAR Barrett 80.86 56 *e*P **P 02 31 37.0 +0.6**
comp=Z,55nn,0.9s
PVL Pavlikeni 80.89 318 *e*P **P 02 31 36.6 +0.3**
MMU Miners Mountai 80.89 49 *e*P **P 02 31 38.2 +1.4**
MONP2 Monument Peak 80.90 56 P **P 02 31 37.3 +0.5**
baz=308,SNR=17
B30A Myrvik Farm, E 80.94 35 P **P 02 31 36.9 +0.4**
baz=316,SNR=98
PVCC Panska Ves 80.95 328⇑*i*P **P 02 31 37.0 +0.5**
PVCC Panska Ves 80.95 328⇑*i*P **P 02 31 37.0 +0.5**
BRG Berggiesshubel 80.96 329⇑*i*P **P 02 31 37.0 +0.5**
comp=Z,306nm,1.0s
BRG *i* pP **pP 02 31 52.2 -5.1**
comp=Z,107nm,1.3s
BRG PP **PP 02 34 36.0 -5.3**
BRG S **S 02 41 37.0 -1.9**
comp=N,2µm,21.0s
comp=E,563nm,23.2s
comp=Z,2µm,20.9s
BRG Berggiesshubel 80.96 329⇑*i*P **P 02 31 37.0 +0.5**
BRG *i* *PP **pP 02 31 52.2 -5.1**
BRG S **S 02 41 37.0 -1.9**
BRG pmax pmax
comp=Z,306nm,1.0s
BRG pmax pmax
comp=Z,107nm,1.3s
BRG MLR MLR
comp=N,2µm,21.0s
BRG MLR MLR
comp=E,563nm,23.2s
comp=Z,2µm,20.9s
BRG MLR MLR
CRAR CRAIOVA 80.97 319⇓*i*P **P 02 31 36.7 +0.1**
VRAC Vranov 80.97 326⇑*i*P **P 02 31 37.1 +0.5**
IRM Iron Mountain 80.98 54 P **P 02 31 37.5 +0.6**
baz=308,SNR=33
PHNC Paralimni 80.98 307 P **P 02 31 36.7 -0.2**
F27A Lemmon 80.98 39 P **P 02 31 36.9 +0.1**
baz=314,SNR=5.3
CLL Collm 81.02 329⇑*i*P **P 02 31 36.8 0.0**
comp=Z,626nm,0.9s
CLL *e* 02 31 43.0
CLL *e* 02 34 38.0
CLL *i* PP **PP 02 34 41.8 0.0**
comp=Z,119nm,0.9s
CLL *e*PPP PPP 02 36 29.0
CLL *e*S **S 02 41 41.0 +1.4**
CLL *e* 02 42 15.0
CLL *e*SS **SS 02 46 48.0 -6.2**
CLL *e* 02 48 18.0
CLL *e*SSS SSS 02 50 24.0
CLL Collm 81.02 329⇑*i*P **P 02 31 36.8 0.0**
CLL *e* 02 31 43.0
CLL *e*S **S 02 41 41.0 +1.4**
CLL pmax pmax
comp=Z,626nm,0.9s
CLL Collm 81.02 329 *e*P **P 02 31 36.5 -0.3**
comp=Z,638nm,0.9s
CLL LR LR
comp=Z,2µm,18.0s
CLL Collm 81.02 329 *e*PPP PPP 02 42 15.0
CLL *e*PPPP 02 42 31.0
EDRB Edirne 81.02 316 P **P 02 31 37.5 +0.5**
EDRB Edirne 81.02 316 P **P 02 31 37.5 +0.5**
H25A Fruitdale 81.03 40 P **P 02 31 37.1 0.0**
baz=313,SNR=32
SRE Strehaia 81.05 320⇓*i*P **P 02 31 38.3 +1.2**
BC3 Big Chuckawall 81.08 55 P **P 02 31 38.1 +0.4**
baz=308,SNR=24
G26A Maurine 81.09 39 P **P 02 31 37.6 +0.2**
baz=314,SNR=50
A31A Linda, St. Vin 81.11 34 P **P 02 31 37.3 0.0**
baz=317
TCHB Talchebab 81.14 304 *e*P **P 02 31 33.6 -4.2**
TCHB Talchebab 81.14 304 *e*P **P 02 31 33.6 -4.2**
RSSD Black Hills 81.14 41 P **P 02 31 37.9 0.0**
baz=313
RSSD Black Hills 81.14 41 *e*P **P 02 31 38.1 +0.2**
RSSD pmax pmax
comp=Z,32nn,0.8s
RSSD Black Hills 81.14 41 *e*P **P 02 31 38.1 +0.2**
comp=Z,32nn,0.8s
BAGO Egridir - ISPA 81.15 311 *i* P **P 02 31 38.0 +0.1**
E28A Huff 81.15 37 P **P 02 31 37.7 +0.1**
baz=315,SNR=10
BUD Budapest 81.16 324⇑*e*P **P 02 31 38.3 +0.7**
SMOL Smolenice 81.17 325 *e*P **P 02 31 38.9 +1.2**
SMOL Smolenice 81.17 325 *e*P **P 02 31 38.9 +1.2**
RSC Scourie 81.18 342⇑*e*P **P 02 31 37.9 +0.4**
BZS Buzias 81.21 321⇓*i*P **P 02 31 37.7 -0.2**
GDZ Gediz 81.23 312 *i* P **P 02 31 38.3 -0.1**
HIZ Hauiti 81.25 153 *e*P **P 02 31 40.3 +2.3**
comp=Z,337nm,1.4s
B31A Greenbush Farm 81.27 35 P **P 02 31 38.2 0.0**
baz=317,SNR=34
SWSC Sam W. Stewart 81.28 55 P **P 02 31 39.2 +0.6**
baz=308,SNR=5.9
MVH1 Achvaich 81.31 342⇑*e*P **P 02 31 38.2 0.0**
GOPC GO Pecny, Ondr 81.31 328⇑*i*P **P 02 31 38.9 +0.5**
GOPC *e*PP **PP 02 34 44.6 +0.3**
GOPC AMS AMS 03 11 00.0
comp=Z,2µm,13.5s
GOPC GO Pecny, Ondr 81.31 328⇑*i*P **P 02 31 38.9 +0.5**
GOPC *e* 02 34 44.6
GOPC MLR MLR
comp=Z,2µm,13.5s
TIM Timisoara 81.32 322⇑*i*P **P 02 31 39.5 +1.0**
D29A Pettibone, Tap 81.34 37 P **P 02 31 38.6 0.0**
baz=316,SNR=16
PRA Prague 81.35 328⇑*i*P **P 02 31 39.2 +0.6**
PRA AMS AMS 03 11 00.0
comp=Z,2µm,20.0s
PRA Prague 81.35 328⇑*i*P **P 02 31 39.2 +0.6**
PRA MLR MLR
comp=Z,2µm,20.0s
PRU Pruhonice 81.36 328⇑*i*P **P 02 31 39.1 +0.4**
PRU *e*PP **PP 02 34 44.6 -0.1**
PRU *e*S **S 02 41 42.1 -1.1**
PRU AMS AMS 03 12 30.0
comp=Z,2µm,12.7s
PRU Pruhonice 81.36 328⇑*i*P **P 02 31 39.1 +0.4**
PRU *e* 02 34 44.6
PRU MLR MLR
comp=Z,2µm,12.7s
G27A Dupree 81.37 39 P **P 02 31 39.2 +0.4**
baz=314,SNR=38
MCD Coleburn Disti 81.37 341⇑*e*P **P 02 31 38.5 -0.1**
I25A Rochford 81.37 41 P **P 02 31 39.2 +0.1**
baz=313
MAMC Mammari 81.40 307 P **P 02 31 39.7 +0.6**
C30A Mose, Pekin 81.41 36 P **P 02 31 38.8 -0.2**
baz=316,SNR=42
PKS7 Kunszentmiklos 81.41 324⇑*e*P **P 02 31 39.5 +0.6**
ISP Isparta 81.42 311⇓*i*P **P 02 31 39.4 +0.1**
ISP Isparta 81.42 311 P **P 02 31 38.6 -0.7**
ISP Isparta 81.42 311 *e*P **P 02 31 39.4 +0.1**
ISP pmax pmax
comp=Z,190nm,1.0s
ISP Isparta 81.42 311 *e*P **P 02 31 39.4 +0.1**
comp=Z,189nm,1.0s
ISP LR LR
comp=Z,599nm,20.0s
A32A Rocking H Ranc 81.44 34 P **P 02 31 38.7 -0.3**
baz=317,SNR=44
CSS Mathiatis 81.46 307 P **P 02 31 39.8 +0.3**
CSS Mathiatis 81.46 307 P **P 02 31 39.1 -0.4**
CSS Mathiatis 81.46 307 *e*P **P 02 31 39.5 +0.1**
comp=Z,45nn,0.9s
CSS LR LR
comp=Z,200nm,22.0s
H26A Fairpoint 81.46 40 P **P 02 31 39.6 +0.2**
baz=314,SNR=5.7
O20A White River Ci 81.47 46 P **P 02 31 40.2 +0.5**
baz=311,SNR=58
O20A White River Ci 81.47 46 *e*P **P 02 31 40.0 +0.3**
comp=Z,68nn,0.9s
TREC Trest 81.47 327⇑*i*P **P 02 31 39.5 +0.2**
TREC *e*PP **PP 02 34 46.2 +0.6**
TREC AMS AMS 03 12 00.0
comp=Z,1µm,17.8s
TREC Trest 81.47 327⇑*i*P **P 02 31 39.5 +0.2**
TREC *e* 02 34 46.2
TREC MLR MLR
comp=Z,1µm,17.8s
DURS Dursunbey 81.50 313 *i* P **P 02 31 39.6 0.0**
MME1 Meikle Cairn 81.53 341⇑*e*P **P 02 31 39.0 -0.3**
PKSG 81.53 324⇓*e*P **P 02 31 40.5 +0.9**
PDMCI Parker Dam,Lak 81.54 54 P **P 02 31 40.5 +0.6**
baz=309,SNR=44
F28A McLaughlin 81.61 38 P **P 02 31 40.4 +0.3**
baz=315,SNR=27
CSKK Cs¨¡kako 81.61 324⇓*e*P **P 02 31 40.9 +0.9**
BANR Banloc 81.61 321⇑*i*P **P 02 31 40.9 +0.9**
Y12C Blythe 81.63 54 P **P 02 31 41.1 +0.7**
baz=308,SNR=40
Y12C Blythe 81.63 54 *e*P **P 02 31 41.4 +1.0**
comp=Z,60nn,0.8s
E29A Napoleon 81.67 37 P **P 02 31 40.3 -0.1**
baz=316,SNR=11
KHAL Karahalli 81.69 312 *i* P **P 02 31 40.6 -0.1**
C31A Landman Farms, 81.69 35 P **P 02 31 40.3 -0.1**
baz=317,SNR=54
D30A Buchanan 81.70 36 P **P 02 31 40.6 +0.1**
baz=316,SNR=48
DEMI Demirci 81.72 313 *i* P **P 02 31 40.8 -0.1**
DRUM Mains of Drumt 81.75 340 *e*P **P 02 31 40.6 +0.1**
DRUM AMB AMB 02 31 41.4
comp=Z,176nm,1.0s
J25A Sunshine Ranch 81.77 41 P **P 02 31 40.7 -0.3**
baz=313
RRR Rubha Reidh 81.78 342⇑*e*P **P 02 31 40.3 -0.4**
MDO Dochfour 81.78 341⇑*e*P **P 02 31 40.3 -0.4**
PKST T¨s 81.79 324⇓*e*P **P 02 31 41.6 +0.6**
B32A Ashes, Strandq 81.80 34 P **P 02 31 40.6 -0.4**
baz=317,SNR=74
ALFC Alefka 81.80 308 P **P 02 31 40.9 -0.4**
H27A Howes 81.81 40 P **P 02 31 41.4 +0.2**
baz=314,SNR=64
I26A New Underwood 81.82 40 P **P 02 31 41.6 +0.3**
baz=314
GLA Glamis 81.86 55 P **P 02 31 42.5 +0.8**
baz=308,SNR=52
GLA Glamis 81.86 55 *e*P **P 02 31 42.7 +1.0**
GLA pmax pmax
comp=Z,63nn,0.8s
GLA Glamis 81.86 55 *e*P **P 02 31 42.7 +1.0**
comp=Z,63nn,0.8s
SZAC Souni 81.87 307 P **P 02 31 41.9 +0.2**
URZ Urewera 81.88 151 *e*P **P 02 31 41.0 -0.2**
comp=Z,46nn,1.1s
A33A Warroad 81.91 33 P **P 02 31 41.2 -0.3**
baz=318,SNR=44
RRH Rhenigidale 81.93 343⇑*e*P **P 02 31 41.9 +0.4**
KAC Achnashellach 81.97 342⇑*e*P **P 02 31 42.1 +0.4**
PGB Panagyurishte 81.97 318 *e*P **P 02 31 42.7 +0.6**
PV09 Paradox Valley 82.01 48 *e*P **P 02 31 43.7 +1.0**
ALN Alexandroupoli 82.05 316 P **P 02 31 42.3 -0.1**
ALN Alexandroupoli 82.05 316 P **P 02 31 42.3 -0.1**
ALN Alexandroupoli 82.05 316 P **P 02 31 42.3 -0.1**
KORT Korkueli 82.05 310 *i* P **P 02 31 41.9 -0.8**
AKMC Akamas 82.06 308 P **P 02 31 42.3 -0.3**
NKC Novy Kostel 82.06 329⇑*i*P **P 02 31 42.3 -0.1**
NKC *e*PP **PP 02 34 50.5 0.0**
NKC *e*S **S 02 41 42.2 -8.3**

NKC AMS AMS 03 15 10.0
comp=Z,1µm,18.4s
NKC Novy Kostel 82.06 329⇑ *i*P P 02 31 42.3 -0.1
NKC *e* 02 34 50.5
NKC MLR MLR
comp=Z,1µm,18.4s
E30A Jud 82.07 37 P P 02 31 42.7 +0.2
baz=316,SNR=36
ENEZ Enez 82.09 315 P P 02 31 42.9 +0.3
G28A Parade 82.09 39 P P 02 31 43.0 +0.3
baz=315,SNR=32
KULA Kula-Manisa 82.09 312 P P 02 31 42.6 -0.2
KULA Kula-Manisa 82.09 312 P P 02 31 42.6 -0.2
F29A Eureka 82.10 38 P P 02 31 42.6 0.0
baz=316,SNR=23
UZP Denizli 82.10 312 *i* P P 02 31 43.1 +0.2
PPCY Paphos 82.14 308 P P 02 31 42.6 -0.4
PV10 Paradox Valley 82.14 48 *e*P P 02 31 44.6 +1.2
PKS9 Tamasi 82.16 324⇓ *e*P P 02 31 43.3 +0.4
SOP Sopron 82.17 325⇑ *e*P P 02 31 43.9 +0.9
AGMN Agassiz Nation 82.18 34 P P 02 31 42.4 -0.6
baz=318,SNR=41
AGMN Agassiz Nation 82.18 34 *e*P P 02 31 42.4 -0.6
comp=Z,61nm,0.8s
KPL Plockton 82.20 342⇑ *e*P P 02 31 43.1 +0.2
KPL AMB AMB 02 31 44.7
comp=Z,582nm,0.9s
J26A Sides Ranch, S 82.20 41 P P 02 31 43.3 0.0
baz=314
PV04 Paradox Valley 82.21 48 *e*P P 02 31 44.3 +0.7
I27A Quinn 82.22 40 P P 02 31 43.3 0.0
baz=314
C32A Crookston 82.22 34 P P 02 31 43.1 -0.2
baz=318,SNR=11
D31A Mcclaflin, Tow 82.24 36 P P 02 31 43.3 -0.1
baz=317,SNR=31
KSB Sheil Bridge 82.26 342⇑ *e*P P 02 31 43.3 +0.1
PKSM Moragy 82.26 323⇑ *i*P P 02 31 43.4 0.0
PKSM Moragy 82.26 323⇑ *e*P P 02 31 43.5 0.0
RZN Rozhen 82.26 317 *e*P P 02 31 44.5 +0.7
PHWY Pilot Hill 82.28 44 *e*P P 02 31 44.5 +0.5
comp=Z,38nm,1.0s
N23A Red Feather La 82.28 44 P P 02 31 45.0 +1.0
baz=312,SNR=62
N23A Red Feather La 82.28 44 *e*P P 02 31 45.0 +1.0
comp=Z,92nm,1.0s
PV05 Paradox Valley 82.30 48 *e*P P 02 31 45.2 +1.1
CONA Conrad Observa 82.31 326 *i* P P 02 31 44.6 +0.8
comp=Z,214nm,0.9s,SNR=165
B33A Robert and Kas 82.32 34 P P 02 31 43.0 -0.7
baz=318,SNR=9.9
H28A Mission Ridge 82.32 39 P P 02 31 44.2 +0.4
baz=315,SNR=62
AKHS Akhisar 82.36 313 *i* P P 02 31 44.4 +0.3
KHC Kasperske Hory 82.42 328⇑ *i*P P 02 31 44.5 +0.1
KHC *es*P **sP 02 32 13.5 -0.2**
KHC *e*PP **PP 02 34 53.4 -0.1**
KHC *e*S **S 02 41 53.3 -0.9**
KHC AMS AMS 03 11 40.0
comp=Z,2µm,15.6s
KHC Kasperske Hory 82.42 328 *e*P P 02 31 44.4 +0.1
KHC pmax pmax
comp=Z,140nm,1.0s
KHC Kasperske Hory 82.42 328 *e*P P 02 31 44.4 +0.1
comp=Z,138nm,1.0s
KHC LR LR
comp=Z,700nm,18.0s
BKZ Black Stump Fm 82.43 152 *e*P P 02 31 44.2 0.0
comp=Z,83nm,1.3s
BKZ LR LR
comp=Z,2µm,20.0s
VTS Vitosha 82.46 318⇑ *i*P P 02 31 45.7 +0.9
VTS Vitosha 82.46 318 P P 02 31 45.1 +0.3
VTS Vitosha 82.46 318 *e*P P 02 31 45.2 +0.4
VTS pmax pmax
comp=Z,200nm,0.8s
VTS Vitosha 82.46 318 *e*P P 02 31 45.0 +0.3
VTS Vitosha 82.46 318 *e*P P 02 31 45.1 +0.3
comp=Z,202nm,0.8s
VTS LR LR
comp=Z,1µm,20.0s
F30A Leola 82.49 37 P P 02 31 44.6 -0.1
baz=316
D32A Dogwood Acres, 82.50 35 P P 02 31 44.4 -0.3
baz=317,SNR=23
G29A Hoven 82.51 38 P P 02 31 44.7 -0.1
baz=316,SNR=16
E31A Nome 82.52 36 P P 02 31 44.8 0.0
baz=317,SNR=48
WUAZ Wupatki 82.55 51 P P 02 31 46.6 +1.3
baz=310,SNR=47
WUAZ Wupatki 82.55 51 *e*P P 02 31 46.5 +1.1
comp=Z,50nm,0.8s
B34A Aery, Baudette 82.58 33 P P 02 31 44.6 -0.5
baz=319,SNR=14
PV01 Paradox Valley 82.58 48 *e*P P 02 31 46.5 +0.9
GEC2 GERESS Array S 82.58 327 *e*P P 02 31 45.1 -0.1
GEC2 pmax pmax
comp=Z,190nm,1.0s
GEC2 GERESS Array S 82.58 327 *e*P P 02 31 45.1 -0.1
comp=Z,194nm,1.0s
GEC2 LR LR
comp=Z,2µm,18.0s
GERES GERESS Array B 82.58 327 P P 02 31 45.0 -0.1
comp=Z,107nm,0.8s,baz=36,slow=5.0,SNR=598
GERES pP **pP 02 32 06.5 +0.3**
comp=Z,16nm,1.0s,baz=292,slow=33,SNR=4.2
GERES PP **PP 02 34 55.0 +0.1**
comp=Z,22nm,0.8s,baz=39,slow=8.6,SNR=9.1
GERES PKKPbc **PKKPbc 02 50 09.0 -0.3**
comp=Z,0.5nm,0.7s,baz=231,slow=0.9,SNR=4.9
GERES LR LR 03 11 02.7
comp=Z,910nm,20.9s,baz=40,slow=37
GEA0 GERESS Array S 82.59 327 *e*P P 02 31 44.0 -1.2
EZN Ezine 82.60 315 P P 02 31 45.2 -0.1
EZN Ezine 82.60 315 P P 02 31 45.2 -0.1
EZN Ezine 82.60 315 P P 02 31 45.2 -0.1
C33A Trail 82.62 34 P P 02 31 44.8 -0.5
baz=318,SNR=35
SMTH Samothraki Isl 82.62 315 P P 02 31 44.8 -0.7
SMTH Samothraki Isl 82.62 315 P P 02 31 44.8 -0.7
NRS Narsarsuaq 82.70 3 *i* P P 02 31 45.5 +0.1
comp=Z,101nm,0.8s
NRS Narsarsuaq 82.70 3 *i* P P 02 31 45.5 +0.1
NRS pmax pmax
comp=Z,100nm,0.8s
I28A Midland 82.72 40 P P 02 31 46.2 +0.3
baz=315
AYVA Ayvalik 82.73 314 *i* P P 02 31 45.8 -0.2
113A Mohawk Valley, 82.74 55 *e*P P 02 31 46.8 +0.6
comp=Z,201nm,1.9s
BOZC Bozcaada 82.75 315 *i* P P 02 31 45.8 -0.3
H29A Onida 82.76 39 P P 02 31 46.2 +0.1
baz=315,SNR=25
J27A Elkhorn Farm, 82.81 40 P P 02 31 46.9 +0.4
baz=314
SMCO Snowmass 82.83 46 *e*P P 02 31 47.9 +0.8
comp=Z,59nm,0.9s
KAVA Kavala 82.84 316 P P 02 31 46.6 +0.1
KAVA Kavala 82.84 316 P P 02 31 46.6 +0.1
F31A Hecla 82.85 37 P P 02 31 46.4 -0.1
baz=317,SNR=38
MMB Musomiste 82.87 317 *e*P P 02 31 47.3 +0.5
E32A Braaten, Kindr 82.88 36 P P 02 31 46.6 -0.1
baz=317,SNR=9.8
WTSB Winterswijk 82.92 333 *e*P P 02 31 46.4 -0.3
comp=Z,209nm,0.8s
G30A Faulkton 82.94 38 P P 02 31 46.9 -0.1
baz=316,SNR=44
NVR Nevrokopi 82.96 317 P P 02 31 47.5 +0.3
NVR Nevrokopi 82.96 317 P P 02 31 47.5 +0.3
BEHE Becsehely 82.96 324⇑ *e*P P 02 31 47.3 +0.2
ARSA Arzberg 82.97 325 *i* P P 02 31 47.5 +0.3
comp=Z,177nm,1.1s,SNR=77
GRFO Grafenberg 82.99 329 *e*P P 02 31 47.6 +0.4
GRFO pmax pmax
comp=Z,610nm,0.9s
GRFO Grafenberg 82.99 329 *e*P P 02 31 47.6 +0.4
comp=Z,606nm,0.9s
PRK Paraskevi 83.02 314 P P 02 31 47.4 -0.1
PRK Paraskevi 83.02 314 P P 02 31 47.4 -0.1
PRK Paraskevi 83.02 314 P P 02 31 47.4 -0.1
KKB Krupnik 83.03 318 *e*P P 02 31 48.4 +0.8
D33A AnnSam, Waubun 83.04 35 P P 02 31 47.0 -0.5
baz=318
FETY Fethiye 83.06 311 P P 02 31 47.3 -0.5
FETY Fethiye 83.06 311 P P 02 31 47.3 -0.5
B35A Bob, Littlefor 83.08 33 P P 02 31 47.4 -0.2
baz=319
C34A RKJ Ranch, Bem 83.08 34 P P 02 31 47.2 -0.5
baz=319,SNR=25
MOA Molln 83.09 327 *i* P P 02 31 48.0 +0.3
comp=Z,209nm,1.1s,SNR=120
J28A Allard Ranch, 83.09 40 P P 02 31 48.4 +0.5
baz=315
AYDN Tasoluk 83.12 312 *i* P P 02 31 48.9 +0.8
I29A Vivian Onida 83.15 39 P P 02 31 48.3 +0.2
baz=315
TURN Turunc 83.20 311 *i* P P 02 31 50.4 +2.0
ISCO Idaho Springs 83.20 45 P P 02 31 50.1 +1.3
baz=313,SNR=44
ISCO Idaho Springs 83.20 45 *e*P P 02 31 49.7 +0.8
ISCO pmax pmax
comp=Z,31nm,0.8s
ISCO Idaho Springs 83.20 45 *e*P P 02 31 49.7 +0.8
comp=Z,31nm,0.8s
LIA Limnos Island 83.20 315 P P 02 31 48.0 -0.4
LIA Limnos Island 83.20 315 P P 02 31 48.0 -0.4
X16A Lo Mia Camp, P 83.20 52 *e*P P 02 31 50.0 +1.2
comp=Z,65nm,1.0s
YER Yerkesik 83.22 312 P P 02 31 49.0 +0.3
YER Yerkesik 83.22 312 P P 02 31 49.0 +0.3
YER Yerkesik 83.22 312 P P 02 31 49.0 +0.3
KOGS Kog 83.22 325 *e*P P 02 31 47.9 -0.5
MVCO Mesa Verde 83.22 48 P P 02 31 50.0 +1.0
baz=311,SNR=42
MVCO Mesa Verde 83.22 48 *e*P P 02 31 49.9 +0.9
comp=Z,138nm,1.4s
PGBU Glenifferbraes 83.25 341⇑ *e*P P 02 31 48.8 +0.4
PGBU AMB AMB 02 31 50.5
comp=Z,616nm,0.8s
SRS Serrai 83.27 317 P P 02 31 48.5 -0.3
SRS Serrai 83.27 317 P P 02 31 48.5 -0.3
SRS Serrai 83.27 317 P P 02 31 48.5 -0.3
SIGR SIGRI 83.28 314 P P 02 31 48.4 -0.4
SIGR SIGRI 83.28 314 P P 02 31 48.4 -0.4
G31A Conde 83.33 37 P P 02 31 49.4 +0.4
baz=317,SNR=16
ESK Eskdalemuir 83.34 340⇑ *e*P P 02 31 49.1 +0.3
ESK AMB AMB 02 31 49.8
comp=Z,176nm,1.0s
ESK Eskdalemuir 83.34 340 *e*P P 02 31 48.8 0.0
ESK pmax pmax
comp=Z,150nm,0.9s
ESK Eskdalemuir 83.34 340 *e*P P 02 31 48.8 0.0
comp=Z,147nm,0.8s
F32A Veblen 83.38 36 P P 02 31 49.6 +0.3
baz=317
D34A Park Rapids 83.38 34 P P 02 31 49.3 +0.1
baz=318,SNR=45
URLA Izmir 83.42 313 *i* P P 02 31 49.6 0.0
E33A Westby DABS, E 83.44 35 P P 02 31 50.0 +0.5
baz=318,SNR=44
THZ Tophouse 83.45 156 *e*P P 02 31 49.6 +0.1
comp=Z,84nm,0.9s
C35A Jirik Farms, M 83.46 33 P P 02 31 49.6 -0.1
baz=319,SNR=34
GCAM G?zelcaml? 83.48 313 *i* P P 02 31 50.4 +0.5
SUSD Miller 83.52 38 P P 02 31 50.6 +0.5
baz=316,SNR=18
BHH Howats Hill 83.53 340⇑ *e*P P 02 31 50.1 +0.2
ZEY ˙zmir 83.55 313 *i* P P 02 31 50.1 -0.2
J29A Okreek 83.57 40 P P 02 31 50.6 +0.2
baz=315
BWH Wardlaw 83.58 340⇑ *e*P P 02 31 50.3 +0.2
OUR Ouranopolis 83.58 316 P P 02 31 50.1 -0.3
OUR Ouranopolis 83.58 316 P P 02 31 50.1 -0.3
OUR Ouranopolis 83.58 316 P P 02 31 50.1 -0.3
SOH Sokhos 83.60 317 P P 02 31 50.1 -0.4
SOH Sokhos 83.60 317 P P 02 31 50.1 -0.4
SOH Sokhos 83.60 317 P P 02 31 50.1 -0.4
PERS Pernice 83.61 325 *i* P P 02 31 50.5 +0.1
KNT Kendrikon 83.62 317 P P 02 31 50.4 -0.2
KNT Kendrikon 83.62 317 P P 02 31 50.4 -0.2
KNT Kendrikon 83.62 317 P P 02 31 50.4 -0.2
SOKA Soboth 83.62 325 *i* P P 02 31 50.7 +0.1
comp=Z,601nm,0.9s,SNR=225
G32A Webster 83.65 37 P P 02 31 50.7 0.0
baz=317,SNR=21
BFZ Birch Farm 83.66 153 *e*P P 02 31 50.7 +0.2
comp=Z,67nm,0.9s
SNZO South Karori 83.67 154 *e*P P 02 31 49.8 -0.6
comp=Z,190nm,0.9s
SNZO LR LR
comp=Z,500nm,18.0s
I30A Oacoma 83.67 39 P P 02 31 51.0 +0.2
baz=316
VAY Valandovo 83.68 318 P P 02 31 51.1 +0.2
VAY Valandovo 83.68 318⇑ *e*P P 02 31 51.1 +0.2
VAY Valandovo 83.68 318 P P 02 31 51.1 +0.2
VAY Valandovo 83.68 318 P P 02 31 51.1 +0.2
SMG Samos 83.71 313 P P 02 31 50.6 -0.5
SMG Samos 83.71 313 P P 02 31 50.6 -0.5
CHOS Chios island 83.72 314 P P 02 31 50.9 -0.3
CHOS Chios island 83.72 314 P P 02 31 50.9 -0.3
H31A Wolsey 83.73 38 P P 02 31 51.4 +0.3
baz=316
BDRM Kayabasi 83.77 312 *i* P P 02 31 51.7 +0.3
F33A 5 Mile Ranch, 83.80 36 P P 02 31 51.4 0.0
baz=318,SNR=41
E34A Wadena 83.82 35 P P 02 31 51.1 -0.4
baz=318,SNR=15
W18A Petrified Fore 83.83 51 P P 02 31 52.5 +0.5
baz=311
W18A Petrified Fore 83.83 51 *e*P P 02 31 53.7 +1.7
comp=Z,56nm,0.8s
SKO Skopje 83.84 319 P P 02 31 52.5 +0.8
SKO Skopje 83.84 319⇑ *e*P P 02 31 52.5 +0.8
SKO Skopje 83.84 319 P P 02 31 52.5 +0.8
SKO Skopje 83.84 319 P P 02 31 52.5 +0.8
BODT Bodrum 83.85 312 P P 02 31 51.8 -0.1
BODT Bodrum 83.85 312 P P 02 31 51.8 -0.1
PLG Polygyros 83.86 317 P P 02 31 51.5 -0.3
PLG Polygyros 83.86 317 P P 02 31 51.5 -0.3
PLG Polygyros 83.86 317 P P 02 31 51.5 -0.3
S22A 4UR Ranch, Cre 83.87 47 P P 02 31 53.4 +1.1
baz=312
S22A 4UR Ranch, Cre 83.87 47 *e*P P 02 31 53.8 +1.5
comp=Z,69nm,0.9s
214A Organ Pipe Nat 83.88 55 P P 02 31 52.9 +0.8
baz=309
214A Organ Pipe Nat 83.88 55 *e*P P 02 31 52.6 +0.5
comp=Z,316nm,1.0s
SISC Sisak 83.89 324 P P 02 31 52.1 +0.3
HORT Hortiatis 83.89 317 P P 02 31 51.4 -0.7
HORT Hortiatis 83.89 317 P P 02 31 51.4 -0.7
D35A Remer 83.90 34 P P 02 31 51.3 -0.6
baz=319,SNR=13
ARG Arkhangelos 83.92 311 P P 02 31 52.3 +0.1
ARG Arkhangelos 83.92 311 P P 02 31 52.3 +0.1
ARG Arkhangelos 83.92 311 P P 02 31 52.3 +0.1
C36A Pine Crest Far 83.92 33 P P 02 31 51.8 -0.2
baz=320
KESW Keswick, Cumbr 83.94 339⇑ *e*P P 02 31 51.2 -0.8
KESW AMB AMB 02 31 53.2
comp=Z,318nm,1.1s
THE Thessaloniki 83.94 317 P P 02 31 51.5 -0.7
THE Thessaloniki 83.94 317 P P 02 31 51.5 -0.7
THE Thessaloniki 83.94 317 P P 02 31 51.5 -0.7
PLE Pljevlja 83.95 321⇑ *i*P P 02 31 53.0 +0.6
OBKA Obir 83.97 325 *i* P P 02 31 52.1 -0.2
comp=Z,113nm,0.8s,SNR=34
IVA Berane 84.02 320⇑ *i*P P 02 31 53.4 +0.7
BLY Banja Luka 84.02 323⇑ *i*P P 02 31 52.8 +0.2
Q24A Divide 84.03 45 P P 02 31 53.6 +0.5
baz=313,SNR=27
Q24A Divide 84.03 45 *e*P P 02 31 53.8 +0.7
comp=Z,35nm,0.8s
GRG Griva 84.03 317 P P 02 31 52.4 -0.3
GRG Griva 84.03 317 P P 02 31 52.4 -0.3
GRG Griva 84.03 317 P P 02 31 52.4 -0.3
I31A Royce, Wessing 84.03 38 P P 02 31 53.3 +0.7
baz=316
PAIG Paliouri 84.03 316 P P 02 31 52.3 -0.4
PAIG Paliouri 84.03 316 P P 02 31 52.3 -0.4
PAIG Paliouri 84.03 316 P P 02 31 52.3 -0.4
J30A Dallas 84.06 39 P P 02 31 52.7 -0.1
baz=316
X18A Snowflake 84.08 51 *e*P P 02 31 54.4 +1.1
comp=Z,54nm,0.9s
KBA Koelnbreinsper 84.08 326 *i* P P 02 31 52.8 -0.2
comp=Z,168nm,0.8s,SNR=94
FOZ Fox Glacier 84.09 159 *e*P P 02 31 53.5 +1.0
comp=Z,59nm,0.8s
LMK Market Rasen 84.10 337⇑ *e*P P 02 31 52.7 0.0
LMK AMB AMB 02 31 53.6
comp=Z,455nm,1.1s
E35A Pequot Lakes 84.13 34 P P 02 31 52.7 -0.4
baz=319,SNR=12
GAL1 Galloway 84.15 340⇑ *e*P P 02 31 53.1 +0.1
GAL1 AMB AMB 02 31 53.9
comp=Z,142nm,0.9s
LTZ Lake Taylor 84.16 157 *e*P P 02 31 53.9 +0.9
comp=Z,105nm,1.5s
PVY Plav 84.18 320 *e*P P 02 31 53.6 0.0
G33A Ortonville 84.20 36 P P 02 31 53.3 -0.2
baz=318,SNR=41
HGN Heimansgroeve 84.21 333 *e*P P 02 31 53.1 -0.3
comp=Z,245nm,0.9s
D36A Goodland 84.22 33 P P 02 31 52.9 -0.6
baz=320
C37A Embarrass 84.23 32 P P 02 31 53.3 -0.3
baz=320
H32A Carlson Farm, 84.23 37 P P 02 31 53.5 -0.2
baz=317,SNR=16
NIS1 Nisyros Isl. 84.24 312 P P 02 31 54.1 +0.3
NIS1 Nisyros Isl. 84.24 312 P P 02 31 54.1 +0.3
KHZ Kahutara 84.25 156 *e*P P 02 31 53.1 -0.2
comp=Z,88nm,1.1s
NISR Nisiros 84.26 312 P P 02 31 53.2 -0.7
NISR Nisiros 84.26 312 P P 02 31 53.2 -0.7
BEBN Eben Emael 84.28 333 P P 02 31 53.3 -0.4
comp=Z,95nm,1.2s
MYKA Terra Mystica 84.29 326 *i* P P 02 31 53.4 -0.6
comp=Z,143nm,0.7s,SNR=65
UPM Unac-Piva 84.29 321 *e*P P 02 31 53.8 -0.4
MEM Membach 84.31 332 P P 02 31 53.5 -0.4
comp=Z,162nm,1.1s
F34A Alexandria 84.31 35 P P 02 31 53.9 -0.1
baz=318,SNR=12
LJU Ljubljana 84.32 325 *e*P P 02 31 53.7 -0.4
LJU *e* 02 34 12.0
EYMN Ely 84.35 32 P P 02 31 54.1 -0.1
baz=321
EYMN Ely 84.35 32 *e*P P 02 31 54.2 0.0
comp=Z,142nm,0.9s
VISS Visnje 84.36 325 *i* P P 02 31 53.8 -0.4
BOJS Bojanci 84.39 324 *i* P P 02 31 54.2 -0.2
OGNE Ogallala 84.40 42 P P 02 31 54.8 +0.1
baz=315,SNR=13
OGNE Ogallala 84.40 42 *e*P P 02 31 55.0 +0.3
comp=Z,96nm,0.8s
H33A Prehn Over Nor 84.44 37 P P 02 31 54.8 +0.1
baz=318,SNR=71
AOS Alonnisos 84.44 315 P P 02 31 54.2 -0.6
AOS Alonnisos 84.44 315 P P 02 31 54.2 -0.6
K30A Basset 84.46 40 P P 02 31 55.2 +0.3
baz=316
J31A Geddes 84.46 39 P P 02 31 54.8 -0.1
baz=316
NKY Niksic 84.52 321⇑ *i*P P 02 31 54.8 -0.5
STU Stuttgart 84.54 330 *e*P P 02 31 55.3 +0.2
STU *e* 02 35 07.3
STU pmax pmax
comp=Z,460nm,0.9s
STU Stuttgart 84.54 330 *e*P P 02 31 55.2 +0.2
comp=Z,458nm,0.9s
STU *e*PP **PP 02 35 07.2 -3.4**
G34A Benson 84.55 36 P P 02 31 55.3 +0.1
baz=318,SNR=39
D37A Cotton 84.56 33 P P 02 31 54.4 -0.9
baz=320
I32A Karley and Nic 84.56 38 P P 02 31 55.1 -0.2
baz=317
BIA Bitola 84.57 318 P P 02 31 54.9 -0.6
BIA Bitola 84.57 318⇑ *e*P P 02 31 54.8 -0.7
BIA Bitola 84.57 318 P P 02 31 54.9 -0.6
LIT Litokhoron 84.57 317 P P 02 31 54.9 -0.6
LIT Litokhoron 84.57 317 P P 02 31 54.9 -0.6
LIT Litokhoron 84.57 317 P P 02 31 54.9 -0.6
NKME Niksic 84.58 321⇑ *i*P P 02 31 55.2 -0.3
OXZ Oxford 84.58 157 *e*P P 02 31 55.4 +0.3
comp=Z,72nm,0.8s
F35A Swanville 84.58 35 P P 02 31 55.1 -0.3
baz=315,SNR=13
C38A Sawbill Land. 84.63 32 P P 02 31 55.1 -0.5
baz=321
RPZ Rata Peaks 84.63 158 LR LR 03 05 56.6
comp=Z,391nm,21.2s,baz=277,slow=33
RPZ Rata Peaks 84.63 158 *e*P P 02 31 55.0 -0.3
comp=Z,37nm,0.8s
SDCO Great Sand Dun 84.65 46 P P 02 31 57.1 +0.9
baz=313,SNR=110
SDCO Great Sand Dun 84.65 46 *e*P P 02 31 57.1 +0.9
comp=Z,48nm,0.9s
JAVS Javornik 84.65 325 *i* P P 02 31 54.9 -0.9
WATA Walderalm 84.66 328 *i* P P 02 31 55.6 -0.3
comp=Z,48nm,0.7s,SNR=22
PDG Podgorica 84.66 320⇓ *i*P P 02 31 56.4 +0.6
PDG Podgorica 84.66 320 P P 02 31 55.9 +0.1
TTG Podgorica 84.66 320⇑ *i*P P 02 31 55.9 +0.1
TTG Podgorica 84.66 320 P P 02 31 55.9 +0.1
TTG Podgorica 84.66 320 P P 02 31 55.9 +0.1
SKIA Skiathos 84.67 316 P P 02 31 55.1 -0.9
E36A McGregor 84.68 34 P P 02 31 55.1 -0.8
baz=320
WTTA Wattenberg 84.69 327 *i* P P 02 31 56.0 -0.2
comp=Z,65nm,0.8s,SNR=26
BRY Bratogost 84.69 321⇑ *i*P P 02 31 55.8 -0.4
XOR Xorichti 84.69 316 P P 02 31 55.0 -1.1
XOR Xorichti 84.69 316 P P 02 31 55.0 -1.1
ABTA Abfaltersbach 84.70 327 *i* P P 02 31 55.2 -0.9
comp=Z,202nm,1.0s,SNR=90
FNA Florina 84.71 318 P P 02 31 55.5 -0.7
FNA Florina 84.71 318 P P 02 31 55.5 -0.7
FNA Florina 84.71 318 P P 02 31 55.5 -0.7
BCLA Clavier 84.72 333 P P 02 31 55.5 -0.4
comp=Z,139nm,1.3s
CEME Cevo 84.75 320⇑ *i*P P 02 31 56.1 -0.3
UCC Uccle 84.76 333 P P 02 31 55.9 -0.3
OHR Ohrid 84.79 318⇑ *e*P P 02 31 56.2 -0.3
FYTO Fytoko, Volos 84.80 316 P P 02 31 55.7 -0.9
FYTO Fytoko, Volos 84.80 316 P P 02 31 55.7 -0.9
KZN Kozani 84.83 317 P P 02 31 55.8 -1.0
KZN Kozani 84.83 317 P P 02 31 55.8 -1.0
KZN Kozani 84.83 317 P P 02 31 55.8 -1.0
J32A Parkston 84.85 38 P P 02 31 56.6 -0.2
baz=317
MOTA Moosalm 84.86 328 *i* P P 02 31 57.7 +0.8
comp=Z,118nm,1.0s,SNR=90
DRME Dracevica, Mon 84.87 320⇑ *i*P P 02 31 57.2 +0.3
UDBI Udbina 84.87 324 P P 02 31 56.5 -0.5
I33A Coleman 84.88 37 P P 02 31 56.8 -0.1
baz=318
RETA Reutte 84.89 328 *i* P P 02 31 57.1 +0.1
comp=Z,250nm,0.9s,SNR=162
APE Apeiranthos 84.91 313⇓ *i*P P 02 31 56.9 -0.3
APE Apeiranthos 84.91 313 P P 02 31 55.7 -1.5
APE Apeiranthos 84.91 313 *c* P P 02 31 55.4 -1.8
APE pmax pmax
comp=Z,262nm,0.9s
APE Apeiranthos 84.91 313 P P 02 31 55.7 -1.5
H34A Spellman Lake, 84.91 36 P P 02 31 57.1 0.0
baz=318,SNR=11
EREA Eretria 84.92 315 P P 02 31 56.0 -1.2
TRI Trieste 84.93 325 *e*P P 02 31 55.8 -1.3
TRI pmax pmax
comp=Z,220nm,0.8s
TRI Trieste 84.93 325 *e*P P 02 31 55.8 -1.3
comp=Z,220nm,0.8s
TRI LR LR
comp=Z,2µm,20.0s
LANF Langenberg 84.93 331⇑ *e*P P 02 31 57.3 +0.2
K31A O'Neill 84.94 39 P P 02 31 57.2 0.0
baz=316
BUM Brajici-Budva 84.94 320⇑ *i*P P 02 31 57.2 -0.1
KARP Karpathos 84.94 311 P P 02 31 56.9 -0.5
KARP Karpathos 84.94 311 *e*P P 02 31 57.0 -0.5
comp=Z,212nm,1.1s
KARP LR LR
comp=Z,300nm,22.0s
TUC Tucson 84.97 53 P P 02 31 58.1 +0.4
baz=310
TUC Tucson 84.97 53 *e*P P 02 31 58.5 +0.8
TUC pmax pmax

comp=Z,47nm,0.9s
TUC Tucson 84.97 53 *e*P **P 02 31 58.5 +0.8**
comp=Z,47nm,0.9s
LBZ Lake Benmore 84.98 159 *e*P **P 02 31 57.9 +0.9**
comp=Z,99nm,0.9s
STNC Stoke 84.99 338⇑*e*P **P 02 31 57.5 +0.3**
STNC AMB AMB 02 31 58.4
comp=Z,257nm,1.1s
ULC Ulcinj 85.00 320⇑*i*P **P 02 31 57.5 -0.1**
SMIA Simia 85.02 316 P **P 02 31 56.7 -1.0**
CWF Charnwood Fore 85.02 337⇑*e*P **P 02 31 57.3 -0.2**
CWF AMB AMB 02 31 58.1
comp=Z,351nm,0.9s
CWF Charnwood Fore 85.02 337 *e*P **P 02 31 57.2 -0.2**
comp=Z,365nm,0.9s
WLF Walferdange 85.02 332 P **P 02 31 57.5 +0.1**
comp=Z,202nm,1.8s
WLF Walferdange 85.02 332 *e*P **P 02 31 57.3 -0.2**
WLF pmax pmax
comp=Z,460nm,1.5s
WLF Walferdange 85.02 332 *e*P **P 02 31 57.3 -0.2**
comp=Z,455nm,1.5s
SNF Seneffe 85.03 333 P **P 02 31 57.2 -0.2**
C39A Grand Marais 85.03 31 P **P 02 31 57.0 -0.6**
baz=322
HCY Herceg Novi 85.04 321⇑*i*P **P 02 31 57.0 -0.7**
F36A Milaca 85.06 34 P **P 02 31 56.9 -0.9**
baz=320,SNR=7.6
PMOR Pomariorio Ree 85.09 113 *e*P **P 02 31 59.8 +1.6**
comp=Z,168nm,1.1s
PMOR *e*pP **pP 02 32 20.4 +1.1**
comp=Z,224nm,1.2s
PMOR Pomariorio Ree 85.09 113 *e*T T 04 04 46.0
comp=Z,30nm,0.2s
G35A Watkins 85.10 35 P **P 02 31 58.1 +0.1**
baz=319,SNR=11
TIR Tirane 85.11 319⇑*i*P **P 02 31 58.4 +0.3**
TIR Tirane 85.11 319 *e*P **P 02 31 58.3 +0.2**
TIR pmax pmax
comp=Z,440nm,0.8s
TIR Tirane 85.11 319 *e*P **P 02 31 58.3 +0.2**
comp=Z,443nm,0.8s
TIR LR LR
comp=Z,3µm,20.0s
DCZ Deep Cove 85.13 161 *e*P **P 02 31 57.9 +0.1**
comp=Z,28nm,0.9s
NEST Nestorio 85.14 318 P **P 02 31 57.6 -0.8**
ECSD EROS Data Cent 85.20 37 P **P 02 31 58.4 -0.1**
baz=318,SNR=97
ECSD EROS Data Cent 85.20 37 *e*P **P 02 31 58.4 -0.1**
comp=Z,87nm,0.8s
ECSD *e*PKKPbc **PKKPbc 02 50 03.6 +0.4**
THL Klokotos Trika 85.21 317 P **P 02 31 56.7 -1.9**
PTL Penteli 85.21 315 P **P 02 31 56.9 -1.8**
PTL Penteli 85.21 315 P **P 02 31 56.9 -1.8**
L31A Butterfield Fa 85.22 40 P **P 02 31 58.8 +0.1**
baz=316
BFO Black Forest 85.24 330 *i* P **P 02 31 58.3 -0.4**
BFO Black Forest 85.24 330 *e*P **P 02 31 57.6 -1.0**
comp=Z,411nm,1.0s
BFO LR LR
comp=Z,700nm,19.0s
DOU Dourbes 85.25 333 P **P 02 31 58.2 -0.4**
comp=Z,78nm,1.3s
STR Strasbourg 85.26 330⇑*e*P **P 02 31 59.4 +0.7**
FETA Feichten 85.27 328 *i* P **P 02 31 58.9 -0.1**
comp=Z,165nm,0.9s,SNR=60
NVLJ Novalja 85.27 324 P **P 02 31 58.0 -0.8**
LKR Lokris 85.29 315 P **P 02 31 57.5 -1.6**
LKR Lokris 85.29 315 P **P 02 31 57.5 -1.6**
KPRO Kipourio 85.29 317 P **P 02 31 57.6 -1.5**
MLZ Mavora Lakes 85.30 160 *e*P **P 02 31 59.5 +0.8**
comp=Z,59nm,1.1s
K32A Verdigre 85.31 39 P **P 02 31 58.8 -0.3**
baz=317
ATHU Athens Univers 85.31 315 P **P 02 31 57.5 -1.7**
ATHU Athens Univers 85.31 315 P **P 02 31 57.5 -1.7**
J33A Davis 85.33 38 P **P 02 31 59.1 -0.1**
baz=318
H35A Sunnyside Ranc 85.33 36 P **P 02 31 59.5 +0.3**
baz=319,SNR=107
I34A Hadley 85.34 37 P **P 02 31 59.3 +0.1**
baz=318
ATH Athens Observa 85.35 315 P **P 02 31 57.8 -1.5**
ATH Athens Observa 85.35 315 P **P 02 31 57.8 -1.5**
ATH Athens Observa 85.35 315 P **P 02 31 57.8 -1.5**
CMBO Columbo, Santo 85.38 313 P **P 02 31 57.5 -2.0**
VLY Voula,Athens 85.39 314 P **P 02 31 57.3 -2.3**
VLY Voula,Athens 85.39 314 P **P 02 31 57.3 -2.3**
SANT Santorini 85.42 312⇓*i*P **P 02 31 59.0 -0.8**
SANT Santorini 85.42 312 P **P 02 31 57.6 -2.2**
SANT Santorini 85.42 312 *e*P **P 02 31 57.9 -1.9**
comp=Z,297nm,0.8s
SANT LR LR
comp=Z,500nm,19.0s
DAVA Damuels 85.42 328 *i* P **P 02 31 59.6 -0.1**
comp=Z,333nm,0.9s,SNR=136
KSCO Kaye Shedlock' 85.42 44 P **P 02 32 00.1 +0.2**
baz=314
KSCO Kaye Shedlock' 85.42 44 *e*P **P 02 32 00.2 +0.3**
comp=Z,122nm,1.4s
THT1 Athinios (Pele 85.43 313 P **P 02 31 57.2 -2.5**
THR3 Thira Island, 85.43 313 P **P 02 31 59.4 -0.4**
THR3 Thira Island, 85.43 313 P **P 02 31 59.4 -0.4**
G36A St. Michael 85.43 35 P **P 02 31 59.6 0.0**
baz=320,SNR=10.0
VAH Vaihoa 85.43 113 *e*P **P 02 32 01.4 +1.5**
comp=Z,79nm,1.1s
VILL Villia 85.45 315 P **P 02 31 57.9 -2.0**
FOEL Foel Wylfa 85.46 339⇑*e*P **P 02 31 59.9 +0.3**
FOEL AMB AMB 02 32 00.8
comp=Z,482nm,0.9s
THR6 Thira Island, 85.47 313 P **P 02 31 59.0 -1.0**
THR6 Thira Island, 85.47 313 P **P 02 31 59.0 -1.0**
PPT Papeete 85.48 116 LR LR 03 09 04.9
comp=Z,589nm,18.8s,baz=320,slow=35
PPT2 Papeete2 85.50 116 *e*P **P 02 32 02.1 +1.8**
comp=Z,86nm,1.3s
PPT2 Papeete2 85.50 116 *e*S **S 02 42 21.2 -4.6**
comp=Z,1µm,24.5s
PPT2 Papeete2 85.50 116 *e*LR LR 02 58 27.9
comp=Z,7µm,35.2s,baz=318
PPT2 Papeete2 85.50 116 *e*T T 04 05 10.9
comp=Z,8.4nm,0.3s
WLS Welschbruch 85.56 330 *e*P **P 02 32 00.1 -0.2**
ELSH Elham, Standar 85.59 335⇑*e*P **P 02 31 59.9 -0.3**
ELSH AMB AMB 02 32 01.4
comp=Z,736nm,0.9s
TIAR Tiarei 85.64 115 *e*P **P 02 32 02.7 +1.7**
comp=Z,27nm,1.0s
HLM1 Long Mynd 85.69 338⇑*e*P **P 02 32 00.6 -0.1**
HLM1 AMB AMB 02 32 02.1
comp=Z,146nm,1.1s
T25A Trinidad 85.70 46 P **P 02 32 02.1 +0.7**
baz=313
T25A Trinidad 85.70 46 *e*P **P 02 32 02.2 +0.7**
comp=Z,109nm,0.8s
DSF Desfina 85.72 316 P **P 02 31 59.2 -2.1**
DSF Desfina 85.72 316 P **P 02 31 59.2 -2.1**
MENF Mencas 85.74 334⇑*e*P **P 02 32 00.6 -0.4**
LTK Loutraki 85.74 315 P **P 02 31 58.7 -2.6**
LTK Loutraki 85.74 315 P **P 02 31 58.7 -2.6**
M31A Lambtecht Ranc 85.75 40 P **P 02 32 01.1 -0.2**
baz=316
L32A Elgin 85.77 39 P **P 02 32 01.4 0.0**
baz=317,SNR=9.9
EVR Evrytania 85.78 316 P **P 02 32 00.1 -1.5**
EVR Evrytania 85.78 316 P **P 02 32 00.1 -1.5**
FUORN Ofenpass-Fuorn 85.78 328 *e*P **P 02 32 01.6 -0.1**
comp=Z,310nm,0.8s
FUORN LR LR
comp=Z,2µm,18.0s
JAN Janina 85.78 317 P **P 02 32 01.1 -0.4**
JAN Janina 85.78 317 P **P 02 32 01.1 -0.4**
JAN Janina 85.78 317 P **P 02 32 01.1 -0.4**
DAMY Dhamar 85.79 285 *e*P **P 02 32 03.5 +1.2**
comp=Z,248nm,1.1s
DAMY LR LR
comp=Z,800nm,21.0s
ECH Echery 85.80 330⇑*e*P **P 02 32 01.2 -0.2**
ZKR Zakros 85.81 311 P **P 02 32 01.4 -0.3**
ZKR Zakros 85.81 311 P **P 02 32 01.4 -0.3**
K33A Hardington 85.84 38 P **P 02 32 01.9 +0.1**
baz=318
H36A Jessenland, He 85.85 35 P **P 02 32 02.3 +0.6**
baz=320,SNR=39
J34A George 85.85 37 P **P 02 32 01.4 -0.4**
baz=318
SPMN Marine on St. 85.87 34 P **P 02 32 01.6 -0.3**
baz=320
SPMN Marine on St. 85.87 34 *e*P **P 02 32 01.1 -0.7**
comp=Z,62nm,0.9s
I35A Creekview Farm 85.89 36 P **P 02 32 01.4 -0.5**
baz=319
THAL Thalero 85.91 315 P **P 02 32 00.0 -2.1**
LAZ Ladron 85.91 50 *e*P **P 02 32 03.4 +1.0**
ANX Ano Chora 85.94 316 P **P 02 32 01.2 -1.2**
DID Didima 85.95 315 P **P 02 31 59.3 -3.1**
DID Didima 85.95 315 P **P 02 31 59.3 -3.1**
KALE Kalithea 85.96 316 P **P 02 32 00.6 -1.9**
KALE Kalithea 85.96 316 P **P 02 32 00.6 -1.9**
ANMO Albuquerque 85.96 49 P **P 02 32 03.4 +0.7**
baz=312
ANMO Albuquerque 85.96 49 *e*P **P 02 32 03.6 +0.9**
ANMO pmax pmax
comp=Z,42nm,1.0s
ANMO Albuquerque 85.96 49 *e*P **P 02 32 03.6 +0.9**
comp=Z,42nm,1.0s
SERG Sergoula 85.99 316 P **P 02 32 00.7 -1.9**
DSL Palaion Diasel 86.02 317 P **P 02 32 01.8 -0.9**
DSL Palaion Diasel 86.02 317 P **P 02 32 01.8 -0.9**
L33A Hoskins 86.02 39 P **P 02 32 02.6 -0.1**
baz=317
DSB Dublin 86.04 340 *e*P **P 02 32 01.7 -0.8**
comp=Z,279nm,0.8s
DSB LR LR
comp=Z,900nm,21.0s
NPS Neapolis 86.08 312 P **P 02 32 01.4 -1.6**
NPS Neapolis 86.08 312 P **P 02 32 01.4 -1.6**
NPS Neapolis 86.08 312 P **P 02 32 01.4 -1.6**
KRND KRANIDI 86.08 314 P **P 02 32 00.2 -2.8**
HMNX Herstmonceux 86.09 336⇑*e*P **P 02 32 03.1 +0.3**
HMNX AMB AMB 02 32 04.5
comp=Z,943nm,0.8s
MOF Molkenrain 86.10 330⇑*e*P **P 02 32 02.7 -0.3**
STRD Stroud 86.12 337⇑*e*P **P 02 32 03.0 +0.1**
STRD AMB AMB 02 32 04.3
comp=Z,1µm,0.9s
BGNE Belgrade 86.13 40 P **P 02 32 03.0 -0.2**
baz=317
BGNE Belgrade 86.13 40 *e*P **P 02 32 03.5 +0.3**
comp=Z,210nm,0.8s
N31A Bailey Ranch, 86.13 41 P **P 02 32 02.9 -0.3**
baz=316
SGD Sagiada 86.15 318 P **P 02 32 02.5 -0.8**
LAKA Lakka 86.15 316 P **P 02 32 02.1 -1.3**
LAKA Lakka 86.15 316 P **P 02 32 02.1 -1.3**
J35A Milford 86.15 37 P **P 02 32 03.2 -0.1**
baz=319
IGT Igoumenitsa 86.16 318 P **P 02 32 03.6 +0.3**
IGT Igoumenitsa 86.16 318 P **P 02 32 03.6 +0.3**
IGT Igoumenitsa 86.16 318 P **P 02 32 03.6 +0.3**
GUR Goura 86.16 315 P **P 02 32 01.5 -2.0**
GUR Goura 86.16 315 P **P 02 32 01.5 -2.0**
MCH1 Michaelchurch 86.18 338⇑*e*P **P 02 32 03.1 0.0**
MCH1 AMB AMB 02 32 04.1
comp=Z,457nm,1.0s
KLV Kalavryta, Ach 86.19 316 P **P 02 32 01.7 -1.9**
KLV Kalavryta, Ach 86.19 316 P **P 02 32 01.7 -1.9**
WOL Wolverton 86.22 337⇑*e*P **P 02 32 03.0 -0.4**
WOL AMB AMB 02 32 04.0
comp=Z,500nm,0.9s
LAST Lasithi 86.22 312⇓*i*P **P 02 32 04.2 +0.3**
LAST Lasithi 86.22 312 P **P 02 32 03.3 -0.6**
LAST Lasithi 86.22 312 *e*P **P 02 32 03.4 -0.4**
comp=Z,326nm,0.9s
LAST LR LR
comp=Z,500nm,20.0s
K34A Le Mars 86.23 38 P **P 02 32 03.5 -0.1**
baz=318
I36A Fitzsimmons Fa 86.23 36 P **P 02 32 03.7 +0.1**
baz=319
SWN1 Swindon 86.23 337⇑*e*P **P 02 32 03.6 +0.2**
SWN1 AMB AMB 02 32 04.5
comp=Z,706nm,1.0s
THEF They Montfort 86.25 331⇑*e*P **P 02 32 03.6 -0.1**
MONM Monmouth 86.26 338⇑*e*P **P 02 32 03.4 -0.2**
MONM AMB AMB 02 32 04.4
comp=Z,527nm,1.0s
Y22D IRIS PASSCAL I 86.26 50 P **P 02 32 05.2 +1.0**
baz=312
LPM Los Pinos Moun 86.28 50 *e*P **P 02 32 05.0 +0.7**
TUE Stuetta 86.29 328 *e*P **P 02 32 03.3 -0.9**
comp=Z,148nm,1.2s
TUE LR LR
comp=Z,2µm,18.0s
SCHQ Schefferville 86.29 15 P **P 02 32 04.3 +0.6**
comp=Z,126nm,0.8s,baz=358,slow=5.2,SNR=117
SCHQ PP **PP 02 35 27.3 +2.7**
comp=Z,18nm,0.8s,baz=0.8,slow=8.2,SNR=3.9
SCHQ PKKPbc **PKKPbc 02 49 59.1 -1.8**
comp=Z,3.1nm,0.6s,baz=228,slow=4.2,SNR=7.2
SCHQ LR LR 03 14 56.4
comp=Z,411nm,19.3s,baz=5.0,slow=38
SCHQ Schefferville 86.29 15 *e*P **P 02 32 04.2 +0.4**
comp=Z,141nm,0.8s
SCHQ PP **PP 02 35 27.3 +2.7**
SCHQ PKKPbc **PKKPbc 02 49 59.1 -1.8**
H37A Dierke Farm, C 86.31 35 P **P 02 32 04.3 +0.3**
baz=320,SNR=16
KEK Kerkira 86.32 318 P **P 02 32 03.1 -1.0**
KEK Kerkira 86.32 318 P **P 02 32 03.1 -1.0**
OLDB Oldbury-Upon-S 86.34 338⇑*e*P **P 02 32 03.7 -0.2**
OLDB AMB AMB 02 32 04.5
comp=Z,231nm,0.9s
PDO Prodromos 86.35 316 P **P 02 32 03.2 -1.1**
BNM Barren Site 86.39 50 *e*P **P 02 32 05.6 +0.7**
LPW Lampeter 86.39 339⇑*e*P **P 02 32 04.2 -0.1**
LPW AMB AMB 02 32 05.6
comp=Z,524nm,0.8s
O31A Woolen Ranch, 86.42 41 P **P 02 32 04.4 -0.3**
baz=316
BATH Bath 86.46 337⇑*e*P **P 02 32 04.3 -0.3**
BATH AMB AMB 02 32 05.2
comp=Z,320nm,1.1s
IDI Anoyia 86.49 312⇓*i*P **P 02 32 04.4 -0.7**
IDI Anoyia 86.49 312 P **P 02 32 03.5 -1.6**
IDI Anoyia 86.49 312 *e*P **P 02 32 03.7 -1.5**
comp=Z,198nm,0.9s
IDI LR LR
comp=Z,400nm,20.0s
M33A Taylor Creek F 86.50 39 P **P 02 32 04.9 -0.1**
baz=318,SNR=11
LKD2 Lefkada island 86.50 317 P **P 02 32 03.8 -1.3**
LKD2 Lefkada island 86.50 317 P **P 02 32 03.8 -1.3**
DRO Drossia 86.50 316 P **P 02 32 04.0 -1.1**
N32A Stulken Farm, 86.52 40 P **P 02 32 04.8 -0.4**
baz=317
AXS Araxos 86.52 316 P **P 02 32 05.1 0.0**
I37A Lemond, Waseca 86.52 35 P **P 02 32 05.3 +0.3**
baz=320
VLX Vlachokerasia 86.53 315 P **P 02 32 03.3 -2.0**
VLX Vlachokerasia 86.53 315 P **P 02 32 03.3 -2.0**
319A Douglas 86.55 53 *e*P **P 02 32 06.8 +1.2**
comp=Z,72nm,1.1s
RLS Riolos of Patr 86.57 316 P **P 02 32 04.8 -0.6**
RLS Riolos of Patr 86.57 316 P **P 02 32 04.8 -0.6**
J36A Seneca 1, Swea 86.60 36 P **P 02 32 05.3 -0.2**
baz=319
L34A Svendsen Farm, 86.62 38 P **P 02 32 05.5 -0.1**
baz=318,SNR=10
K35A Storm Lake 86.62 37 P **P 02 32 05.3 -0.3**
baz=319
LOMF Lomont 86.63 330⇑*e*P **P 02 32 05.4 -0.2**
VLI Veliai 86.66 314 P **P 02 32 03.3 -2.6**
VLI Veliai 86.66 314 P **P 02 32 03.3 -2.6**
SIVA Sivas 86.72 312⇑*i*P **P 02 32 06.1 -0.1**
SIVA Sivas 86.72 312 P **P 02 32 05.7 -0.5**
SIVA Sivas 86.72 312 P **P 02 32 05.7 -0.5**
121A Cookes Peak, D 86.75 51 P **P 02 32 07.8 +1.2**
baz=312
121A Cookes Peak, D 86.75 51 *e*P **P 02 32 07.1 +0.5**
comp=Z,41nm,1.0s
AMT Artemida-Makis 86.80 315 P **P 02 32 05.2 -1.4**
COWI Conover 86.80 32 *e*P **P 02 32 06.8 +0.4**
comp=Z,85nm,0.8s
VAM Vamos 86.82 312 P **P 02 32 05.2 -1.5**
VAM Vamos 86.82 312 P **P 02 32 05.2 -1.5**
VAM Vamos 86.82 312 P **P 02 32 05.2 -1.5**
VTN Vitineika 86.83 316 P **P 02 32 06.9 +0.3**
M34A Aspy Farms, Fr 86.86 39 P **P 02 32 06.3 -0.4**
baz=318
O32A Brockman Farm, 86.90 41 P **P 02 32 05.9 -1.1**
baz=317
KFL Anninata 86.91 316 P **P 02 32 05.8 -1.3**
KYTH Kithira 86.91 314 P **P 02 32 05.1 -2.0**
KYTH Kithira 86.91 314 P **P 02 32 05.1 -2.0**
IMMV Iera Moni Meta 86.92 313 P **P 02 32 06.3 -0.8**
ITM Ithomi 86.92 315 P **P 02 32 05.7 -1.5**
ITM Ithomi 86.92 315 P **P 02 32 05.7 -1.5**
L35A Bielow Farm, R 86.93 38 P **P 02 32 06.9 -0.1**
baz=318
VLS Valsamata 86.97 316 P **P 02 32 06.0 -1.4**
VLS Valsamata 86.97 316 P **P 02 32 06.0 -1.4**
VLS Valsamata 86.97 316 P **P 02 32 06.0 -1.4**
N33A J Bar K, Exete 86.98 40 P **P 02 32 06.9 -0.5**
baz=317
HSIG 86.98 56 *e*P **P 02 32 08.0 +0.4**
comp=Z,23nm,0.9s
J37A Redenius Farm, 86.99 36 P **P 02 32 07.2 -0.2**
baz=320
I38A Scanlan Farm, 87.00 35 P **P 02 32 07.3 -0.1**
baz=321
ANKY Antikythira Is 87.04 313 P **P 02 32 06.4 -1.3**
ANKY Antikythira Is 87.04 313 P **P 02 32 06.4 -1.3**
K36A Gilmore City 87.07 37 P **P 02 32 07.8 +0.1**
baz=319
CBKS Cedar Bluff 87.16 42 P **P 02 32 07.8 -0.5**
baz=316
CBKS Cedar Bluff 87.16 42 *e*P **P 02 32 08.3 0.0**
CBKS pmax pmax
comp=Z,81nm,1.0s
CBKS Cedar Bluff 87.16 42 *e*P **P 02 32 08.2 0.0**
comp=Z,81nm,1.0s
P32A Huiting Farm, 87.19 41 P **P 02 32 07.8 -0.6**
baz=317
PYL PYLOS 87.23 315 P **P 02 32 06.5 -2.1**
PYL PYLOS 87.23 315 P **P 02 32 06.5 -2.1**
SENIN Lac Senin/Sane 87.23 329 *e*P **P 02 32 08.1 -0.7**
comp=Z,188nm,1.6s
TAOE Nuku Hiva Isla 87.25 103 *e*S **S 02 42 38.0 -5.0**
comp=Z,578nm,25.3s
TAOE Nuku Hiva Isla 87.25 103 *e*LR LR 02 59 37.0
comp=Z,4µm,34.9s,baz=313
MATE Matera 87.27 320⇑*i*P **P 02 32 08.6 -0.1**
GVD Gavdhos 87.28 312 P **P 02 32 07.8 -1.1**
GVD Gavdhos 87.28 312 P **P 02 32 07.8 -1.1**
M35A Neola 87.33 38 P **P 02 32 09.2 +0.2**
baz=318,SNR=12
K37A Belmond 87.36 36 P **P 02 32 09.1 0.0**
baz=320
L36A Harm Buss Farm 87.37 37 P **P 02 32 08.9 -0.2**
baz=319,SNR=11
N34A Lincoln 87.39 39 P **P 02 32 08.8 -0.5**
baz=318,SNR=14
O33A Hebron 87.39 40 P **P 02 32 08.8 -0.6**
baz=317
J38A Wedel Dairy, R 87.49 35 P **P 02 32 09.7 0.0**
baz=320
HTL Hartland 87.50 338⇑*e*P **P 02 32 09.8 +0.2**
HTL AMB AMB 02 32 10.7
comp=Z,172nm,0.9s
OG01 Vacheresse 87.51 330⇑*e*P **P 02 32 09.5 -0.4**
AQU L'Aquila 87.64 323 *e*P **P 02 32 10.4 -0.1**
AQU pmax pmax
comp=Z,427nm,0.8s
AQU MLR MLR
comp=Z,3µm,19.0s
AQU L'Aquila 87.64 323 *e*P **P 02 32 10.4 -0.1**
comp=Z,427nm,0.8s
AQU LR LR
comp=Z,3µm,19.0s
VLC Villacollemand 87.65 326 *e*P **P 02 32 09.8 -0.7**
comp=Z,33nm,0.9s
Q32A Meitler Ranch, 87.67 42 P **P 02 32 10.2 -0.5**
baz=317
O34A Beatrice 87.78 40 P **P 02 32 10.7 -0.4**
baz=318,SNR=8.3
M36A Felix, Anita 87.79 38 P **P 02 32 11.4 +0.2**
baz=319,SNR=17
L37A Phoenix Point, 87.79 37 P **P 02 32 10.9 -0.3**
baz=320,SNR=13
P33A Williams Farm, 87.80 41 P **P 02 32 11.0 -0.4**
baz=317,SNR=6.3
N35A Tabor 87.81 39 P **P 02 32 11.6 +0.3**
baz=318,SNR=15
DYA Yadsworthy 87.83 338⇑*e*P **P 02 32 10.5 -0.7**
DYA AMB AMB 02 32 11.8
comp=Z,301nm,1.1s
DYA Yadsworthy 87.83 338 *e*P **P 02 32 10.1 -1.2**
comp=Z,264nm,0.9s
DYA LR LR
comp=Z,2µm,18.0s
LOR Lormes 87.86 332 *e*P **P 02 32 10.2 -1.3**
LOR pmax pmax
comp=Z,162nm,1.2s
K38A Parkersburg 87.86 36 P **P 02 32 11.3 -0.2**
baz=320
R32A Long Quarter, 88.00 42 P **P 02 32 12.0 -0.3**
baz=317
Q33A Connelly Farm, 88.05 41 P **P 02 32 12.1 -0.4**
baz=317,SNR=14
O35A Humboldt 88.12 39 P **P 02 32 12.5 -0.3**
baz=318,SNR=7.0
LPL La Plagne 88.15 329 *e*P **P 02 32 12.7 -0.4**
LPL pmax pmax
comp=Z,47nm,0.7s
LPG La Plagne 88.16 329 *e*P **P 02 32 11.8 -1.4**
LPG pmax pmax
comp=Z,80nm,0.8s
L38A Oak Wood Farm, 88.16 36 P **P 02 32 13.1 +0.2**
baz=320,SNR=9.6
P34A Walnut Farm, R 88.18 40 P **P 02 32 12.9 -0.2**
baz=318,SNR=15
N36A Muff Farm, Cla 88.19 38 P **P 02 32 13.6 +0.5**
baz=319
LDF La Druitiere 88.19 335 *e*P **P 02 32 11.7 -1.3**
LDF pmax pmax
comp=Z,186nm,1.4s
M37A Trindle Farm, 88.19 37 P **P 02 32 13.6 +0.5**
baz=320,SNR=22
CUC Castrocucco 88.21 320 *e*P **P 02 32 12.0 -1.3**
comp=Z,71nm,1.1s
CUC LR LR
comp=Z,1µm,19.0s
SCIA State Center 88.22 37 *e*P **P 02 32 14.3 +1.0**
comp=Z,158nm,1.0s
TIP Timpagrande 88.32 319⇑*i*P **P 02 32 13.9 0.0**
TIP Timpagrande 88.32 319 P **P 02 32 13.1 -0.8**
TIP Timpagrande 88.32 319 *e*P **P 02 32 13.5 -0.4**
comp=Z,108nm,1.0s
TIP *e*PP **PP 02 35 42.9 +1.3**
TIP LR LR
comp=Z,2µm,21.0s
JRS Jersey 88.34 336⇑*e*P **P 02 32 13.2 -0.4**
JRS AMB AMB 02 32 16.0
comp=Z,66nm,0.7s
JSA Saint Aubin 88.37 336⇑*e*P **P 02 32 13.4 -0.3**
JSA AMB AMB 02 32 14.5
comp=Z,234nm,1.1s
S32A Newby Ranch, P 88.40 43 P **P 02 32 14.3 0.0**
baz=317
CCA1 Carnmenellis 88.44 338⇑*e*P **P 02 32 13.4 -0.7**
CCA1 AMB AMB 02 32 14.8
comp=Z,280nm,1.1s
R33A Olander Ranch, 88.47 42 P **P 02 32 14.1 -0.5**
baz=317,SNR=6.1
BNI Bardonecchia 88.55 329 *e*P P 02 32 02.8 -12
BNI LR LR
comp=Z,2µm,19.0s
Q34A Chapman 88.58 41 P **P 02 32 15.0 0.0**
baz=318,SNR=8.9
M38A Pleasantville 88.60 37 P **P 02 32 15.4 +0.4**
baz=320,SNR=33
N37A Lee Faris, Mou 88.61 38 P **P 02 32 15.8 +0.7**
baz=319,SNR=40
P35A Duane Minner, 88.61 40 P **P 02 32 15.0 -0.2**
baz=318,SNR=12
KSU1 Kansas State U 88.62 40 P **P 02 32 15.1 -0.1**
baz=318,SNR=28
KSU1 Kansas State U 88.62 40 *e*P **P 02 32 15.3 +0.1**
comp=Z,128nm,0.8s
OG22 Abries 88.62 329⇑*e*P **P 02 32 14.6 -0.7**
GDM Grand'Maison 88.66 329⇑*e*P **P 02 32 15.2 -0.2**
O36A Bolckow 88.70 39 P **P 02 32 15.7 +0.1**
baz=319,SNR=12

GRN Grenoble 88.78 330⇑ eP P 02 32 15.9 0.0
T32A Huddler Ranch, 88.78 43 P P 02 32 16.2 +0.2
baz=317
MNTX Cornudas Mount 88.81 51 P P 02 32 16.6 +0.4
baz=313
MNTX Cornudas Mount 88.81 51 eP P 02 32 16.6 +0.4
comp=Z,19nm,1.2s
JFWS Jewell Farm 88.83 34 eP P 02 32 16.3 +0.2
JFWS pmax pmax
comp=Z,100nm,0.9s
JFWS Jewell Farm 88.83 34 eP P 02 32 16.3 +0.2
comp=Z,103nm,0.9s
MSTX Muleshoe 88.85 48 P P 02 32 16.7 +0.2
baz=314
MSTX Muleshoe 88.85 48 eP P 02 32 16.5 0.0
comp=Z,28nm,1.1s
MSTX ePKKPdf PKKPbc 02 49 55.5 +1.2
AMTX Amarillo 88.85 46 P P 02 32 17.1 +0.6
baz=315
AMTX Amarillo 88.85 46 eP P 02 32 17.2 +0.7
comp=Z,87nm,0.9s
R34A Isabella, Hill 88.87 41 P P 02 32 16.3 -0.1
baz=318,SNR=13
P36A Good Intent, A 88.96 39 P P 02 32 16.7 -0.1
baz=319,SNR=8.3
S33A Kaszmaul Farm, 88.98 42 P P 02 32 16.4 -0.6
baz=317
PLDF La Plantade 89.03 331 eP P 02 32 17.0 -0.1
N38A Joes South For 89.06 37 P P 02 32 17.2 0.0
baz=320,SNR=25
O37A Wolven Farm, M 89.08 38 P P 02 32 17.7 +0.4
baz=320,SNR=20
Q35A Mercer Eighty, 89.10 40 P P 02 32 17.4 -0.1
baz=318
AGO Saint Agoulin 89.15 331⇑ eP P 02 32 17.7 +0.1
LUCF Luceram 89.20 328 eP P 02 32 16.8 -1.1
T33A Patterson Ranc 89.22 43 P P 02 32 18.2 +0.2
baz=317
SSB Saint Sauveur 89.24 330⇑ eP P 02 32 17.7 -0.3
SSB Saint Sauveur 89.24 330 eP P 02 32 17.6 -0.4
SSB pmax pmax
comp=Z,63nm,1.0s
SSB Saint Sauveur 89.24 330 eP P 02 32 17.6 -0.4
comp=Z,63nm,1.0s
MVIF Mont Vial 89.28 328⇑ eP P 02 32 17.6 -0.8
TBI Tubuai 89.29 120 eLR LR 03 00 20.7
comp=Z,3µm,34.5s,baz=307
TBI Tubuai 89.29 120 eT T 04 10 17.8
comp=Z,54nm,0.3s
REVF Revere 89.31 328⇑ eP P 02 32 17.6 -0.8
U32A Winter Ranch, 89.31 44 P P 02 32 18.1 -0.4
baz=317
Q36A Arnold C. Orve 89.32 40 P P 02 32 18.1 -0.4
baz=319,SNR=5.7
N39A Derby Farms, D 89.35 37 P P 02 32 18.9 +0.3
baz=320,SNR=29
S34A Willow Spring 89.39 42 P P 02 32 18.9 +0.1
baz=318,SNR=16
R35A Emporia Munici 89.41 41 P P 02 32 19.3 +0.4
baz=318,SNR=8.7
P37A Lathrop 89.42 39 P P 02 32 18.9 0.0
baz=319,SNR=12
PYM Petit Puy Mans 89.45 331⇑ eP P 02 32 18.8 -0.2
O38A Galt 89.45 38 P P 02 32 19.2 +0.1
baz=320,SNR=14
CEL Celeste 89.46 319 eP P 02 32 18.6 -0.6
comp=Z,303nm,0.8s
CEL LR LR
comp=Z,2µm,21.0s
CALN Calern 89.51 328⇑ eP P 02 32 18.9 -0.5
VLDQ Val d'Or 89.53 24 eP P 02 32 18.6 -0.6
comp=Z,109nm,0.8s
V32A Arapaho 89.77 44 P P 02 32 21.7 +1.0
baz=316,SNR=23
U33A Lingo Farm, Me 89.77 43 P P 02 32 20.8 +0.2
baz=317
R36A Gordon, Harris 89.78 40 P P 02 32 20.7 +0.1
baz=319,SNR=11
LBL Lubilhac 89.79 331 eP P 02 32 20.8 +0.2
P38A Dawn 89.80 38 P P 02 32 20.9 +0.2
baz=320,SNR=18
O39A Kirksville 89.81 37 P P 02 32 21.0 +0.3
baz=320,SNR=16
S35A Otter Creek Ra 89.82 41 P P 02 32 21.1 +0.2
baz=318,SNR=38
T34A McClaskey Farm 89.84 42 P P 02 32 21.2 +0.3
baz=318
Q37A Longview Farm, 89.90 39 P P 02 32 21.3 +0.1
baz=319
FRNF Fournols 89.92 331⇑ eP P 02 32 21.6 +0.4
W32A Sentinel 90.08 45 P P 02 32 22.9 +0.7
baz=316,SNR=24
U34A Anderson Ranch 90.08 43 P P 02 32 21.9 -0.2
baz=317
U34A Anderson Ranch 90.08 43 eP P 02 32 22.8 +0.7
comp=Z,114nm,0.8s
V33A Lossen Ranch, 90.12 44 P P 02 32 22.4 +0.1
baz=317,SNR=12
R37A Teagarden Farm 90.13 40 P P 02 32 21.9 -0.4
baz=319,SNR=5.3
S36A Lake Cedric, C 90.18 41 P P 02 32 22.5 0.0
baz=319,SNR=29
LEPF PUYLOUBIER 90.20 329⇑ eP P 02 32 22.1 -0.4
O40A La Belle 90.24 37 P P 02 32 22.8 +0.1
baz=321
Q38A Cooks Store, C 90.26 39 P P 02 32 22.7 -0.2
baz=320,SNR=10
T35A Sooner Cattle 90.29 42 P P 02 32 23.1 +0.1
baz=318
W33A Caddo, Fort Co 90.50 44 P P 02 32 24.6 +0.6
baz=317,SNR=16
CAF Calviac 90.50 331 eP P 02 32 22.7 -1.2
CAF pmax pmax
comp=Z,134nm,1.0s
T36A Boggs Farm, Ca 90.52 41 P P 02 32 24.3 +0.2
baz=318
Q39A Willow Grove F 90.52 38 P P 02 32 24.2 +0.1
baz=320,SNR=28
V34A Guthrie 90.53 43 P P 02 32 24.6 +0.4
baz=317,SNR=50
V34A Guthrie 90.53 43 eP P 02 32 24.7 +0.5
comp=Z,133nm,0.8s
S37A Fort Scott 90.55 40 P P 02 32 24.0 -0.2
baz=319,SNR=56
X32A Elmer 90.56 45 P P 02 32 24.7 +0.3
baz=316,SNR=50
U35A Pawnee 90.57 42 P P 02 32 24.7 +0.4
baz=318
LPIG La Paz 90.60 59 LR LR 03 07 25.2
comp=Z,125nm,20.2s,baz=304,slow=32
P40A Paris 90.61 37 P P 02 32 24.8 +0.3
baz=321
WMOK Wichita Mounta 90.62 45 eP P 02 32 24.9 +0.2
WMOK pmax pmax
comp=Z,45nm,1.0s
WMOK Wichita Mounta 90.62 45 eP P 02 32 24.9 +0.2
comp=Z,45nm,0.9s
WMOK ePKKPdf PKKPbc 02 49 51.0 +1.1
R38A Fenwick Farm, 90.70 39 P P 02 32 24.3 -0.7
baz=320,SNR=14
W34A Bridge Creek, 90.83 44 P P 02 32 26.2 +0.6
baz=317,SNR=13
W34A Bridge Creek, 90.83 44 eP P 02 32 26.4 +0.8
comp=Z,93nm,0.9s
X33A Lawton 90.93 45 P P 02 32 26.2 +0.1
baz=317,SNR=14
V35A Meyer Ranch, C 90.96 43 P P 02 32 26.2 +0.1
baz=318,SNR=12
T37A Cheneyville 18 90.98 41 P P 02 32 26.2 0.0
baz=319
Q40A Laux Farm, Aux 91.01 38 P P 02 32 26.4 0.0
baz=321
R39A Chumby, Stover 91.05 39 P P 02 32 26.2 -0.3
baz=320
U36A Oologah 91.09 42 P P 02 32 27.0 +0.2
baz=318
SLBS Sierra La Lagu 91.12 59 eP P 02 32 29.2 +1.9
comp=Z,121nm,1.9s
HDIL Hopedale 91.12 35 P P 02 32 27.0 +0.2
baz=323
HDIL Hopedale 91.12 35 eP P 02 32 27.2 +0.3
comp=Z,134nm,0.8s
S38A Stockton 91.13 40 P P 02 32 26.2 -0.7
baz=320,SNR=14
Y33A Hilltop Ranch, 91.24 45 P P 02 32 27.5 0.0
baz=317,SNR=36
X34A Smith Ranch, M 91.26 44 P P 02 32 28.2 +0.6
baz=317,SNR=15
CLTB Caltabellotta 91.36 320 PFAKE 02 32 40.0 +12
CLTB LR LR
comp=Z,2µm,19.0s
T38A Diamond 91.38 40 P P 02 32 28.0 0.0
baz=319
S39A Bolivar 91.38 39 P P 02 32 27.3 -0.8
baz=320,SNR=34
W35A Tecumseh 91.39 43 P P 02 32 28.3 +0.2
baz=318,SNR=18
U37A Salina 91.41 41 P P 02 32 28.1 -0.1
baz=319
TUL1 Leonard 91.42 42 P P 02 32 28.4 0.0
baz=318
TUL1 Leonard 91.42 42 eP P 02 32 28.6 +0.3
comp=Z,79nm,0.8s
V36A Jenks 91.43 42 P P 02 32 28.5 +0.1
baz=318,SNR=26
R40A Maddies Statio 91.46 38 P P 02 32 28.1 -0.3
baz=321
TX31 Lajitas Ar. Si 91.51 51 eP P 02 32 29.5 +0.6
TX31 ePKKPdf PKKPbc 02 49 48.1 +0.4
TXAR Lajitas Array 91.51 51 P P 02 32 29.5 +0.6
comp=Z,21nm,0.9s,baz=294,slow=3.4,SNR=156
TXAR pP pP 02 32 50.3 +0.1
comp=Z,14nm,0.7s,baz=286,slow=3.1,SNR=6.9
TXAR PKKPbc PKKPbc 02 49 47.7 0.0
comp=Z,1.0nm,0.5s,baz=146,slow=5.9,SNR=22
TXAR PKPPKP P'P'df 02 57 58.8 -2.6
comp=Z,0.7nm,1.0s,baz=156,slow=6.3,SNR=3.8
TXAR LR LR 03 07 39.9
comp=Z,180nm,21.7s,baz=0.0,slow=32
ABTX Abilene, Hawle 91.65 47 P P 02 32 29.9 +0.5
baz=316,SNR=25
ABTX Abilene, Hawle 91.65 47 eP P 02 32 30.0 +0.5
comp=Z,89nm,1.0s
Z33A Wilder Ranch 91.68 46 P P 02 32 29.7 +0.1
baz=317,SNR=22
W36A Wetumka 91.76 43 P P 02 32 30.1 +0.3
baz=318,SNR=22
Y34A Reagan Ranch, 91.77 45 P P 02 32 29.9 0.0
baz=317,SNR=17
U38A Gravette 91.78 41 P P 02 32 29.9 -0.1
baz=319
VSL Villasalto 91.78 324 eP P 02 32 29.6 -0.4
comp=Z,75nm,1.0s
VSL LR LR
comp=Z,1µm,19.0s
V37A Hulbert 91.79 42 P P 02 32 30.1 0.0
baz=319,SNR=55
SADO Sadowa 91.84 27 eP P 02 32 30.5 +0.4
comp=Z,27nm,1.0s
HPIG 91.86 54 eP P 02 32 31.7 +0.9
comp=Z,35nm,1.0s
T39A Clever 91.86 40 P P 02 32 30.0 -0.3
baz=320
S40A Lebanon 91.87 39 P P 02 32 30.1 -0.3
baz=320
X35A Drake 91.89 44 P P 02 32 30.4 -0.1
baz=318,SNR=37
WDD Wied Dalam 91.97 318 PFAKE 02 32 40.0 +9.2
WDD LR LR
comp=Z,1µm,21.0s
133A Hamilton Ranch 92.08 46 P P 02 32 31.9 +0.4
baz=317,SNR=13
X36A Centrahoma 92.11 43 P P 02 32 31.9 +0.4
baz=318,SNR=39
Z34A Collier Ranch, 92.11 45 P P 02 32 31.6 0.0
baz=317,SNR=18
HHAR Hobbs 92.13 41 eP P 02 32 32.0 +0.4
comp=Z,49nm,1.0s
LMQ La Malbaie 92.18 20 eP P 02 32 32.0 +0.4
comp=Z,91nm,0.8s
AAM Ann Arbor 92.18 31 eP P 02 32 32.6 +0.9
AAM pmax pmax
comp=Z,56nm,0.9s
AAM Ann Arbor 92.18 31 eP P 02 32 32.6 +0.9
comp=Z,56nm,0.8s
SLM Saint Louis 92.19 37 eP P 02 32 32.3 +0.5
SLM pmax pmax
comp=Z,100nm,1.0s
SLM Saint Louis 92.19 37 eP P 02 32 32.3 +0.5
comp=Z,100nm,1.0s
W37B Quinton 92.19 42 P P 02 32 32.2 +0.3
baz=319,SNR=7.6
V38A Canehill 92.20 41 P P 02 32 31.8 -0.2
baz=319,SNR=37
T40A Mansfield 92.20 39 P P 02 32 31.4 -0.6
baz=320
Y35A Marietta 92.22 44 P P 02 32 32.0 0.0
baz=318
SJAF Saint Jean de 92.22 330⇑ eP P 02 32 31.5 -0.4
SFIN Lafayette 92.27 34 P P 02 32 32.5 +0.3
baz=324
SFIN Lafayette 92.27 34 eP P 02 32 32.5 +0.3
comp=Z,74nm,0.9s
SFIN LR LR
comp=Z,400nm,19.0s
FILF Fillols 92.29 330⇑ eP P 02 32 32.3 0.0
U39A Green Forest 92.30 40 P P 02 32 32.2 -0.1
baz=320
CARF Carcanieres 92.34 330⇑ eP P 02 32 32.4 -0.2
Z35A Perchaven, San 92.52 45 P P 02 32 33.4 0.0
baz=318,SNR=35
233A Rising Star 92.52 47 P P 02 32 34.0 +0.5
baz=317,SNR=43
134A White-Moore Ra 92.60 46 P P 02 32 34.2 +0.3
baz=317,SNR=18
V39A Pettigrew 92.62 41 P P 02 32 33.4 -0.5
baz=320
X37A Clayton 92.63 43 P P 02 32 33.9 0.0
baz=319,SNR=9.1
U40A Yellville 92.64 40 P P 02 32 33.7 -0.3
baz=320
VALF Valcebollere 92.64 330⇑ eP P 02 32 34.2 +0.2
Y36A Durant 92.64 44 P P 02 32 33.9 -0.1
baz=318,SNR=19
SALF Salau 92.67 331⇑ eP P 02 32 33.5 -0.5
W38A Poteau 92.74 42 P P 02 32 34.8 +0.4
baz=319,SNR=8.7
MELF Melles 92.74 331⇑ eP P 02 32 34.2 -0.2
LABF Labassere 92.86 332⇑ eP P 02 32 34.5 -0.4
X38A Whitesboro 92.87 42 P P 02 32 35.4 +0.3
baz=319,SNR=24
Y37A Hugo 92.95 43 P P 02 32 35.6 +0.2
baz=318
333A Richland Sprin 92.97 47 P P 02 32 36.0 +0.4
baz=316,SNR=37
234A Clairette 92.98 46 P P 02 32 36.0 +0.4
baz=317,SNR=9.3
135A Vickery Place, 92.99 45 P P 02 32 36.0 +0.3
baz=317
REYF Montagne du Re 93.02 332⇑ eP P 02 32 35.3 -0.4
VIEF Vey 93.02 332⇑ eP P 02 32 36.3 +0.6
Z36A Blue Ridge 93.02 44 P P 02 32 35.8 0.0
baz=318,SNR=9.5
W39A Magazine 93.03 41 P P 02 32 35.7 -0.1
baz=320
V40A Witts Springs 93.08 40 P P 02 32 35.6 -0.4
baz=320
JCT Junction City 93.09 48 P P 02 32 36.2 +0.1
baz=316,SNR=12
JCT Junction City 93.09 48 eP P 02 32 36.4 +0.2
JCT pmax pmax
comp=Z,29nm,0.9s
JCT Junction City 93.09 48 eP P 02 32 36.4 +0.2
comp=Z,29nm,0.9s
JCT ePKKPbc PKKPbc 02 49 43.8 +0.2
JCT LR LR
comp=Z,400nm,20.0s
ATE Arette 93.12 332 eP P 02 32 35.7 -0.3
OLIL Olney 93.13 36 eP P 02 32 37.0 +0.9
comp=Z,101nm,0.9s
LARF Larrau 93.27 332⇑ eP P 02 32 37.6 +0.8
433A Art 93.32 48 P P 02 32 37.0 -0.2
baz=316,SNR=15
X39A Fountain Ranch 93.38 42 P P 02 32 37.4 0.0
baz=319
WHTX Lake Whitney, 93.38 46 P P 02 32 37.8 +0.4
baz=317,SNR=11
WHTX Lake Whitney, 93.38 46 eP P 02 32 38.3 +0.8
comp=Z,66nm,0.9s
334A Lometa 93.40 47 P P 02 32 37.7 +0.1
baz=317,SNR=26
SIUC Southern Illin 93.41 37 eP P 02 32 38.1 +0.7
comp=Z,119nm,0.8s
SIUC LR LR
comp=Z,500nm,21.0s
W40A Ferguson Farm, 93.42 41 P P 02 32 37.4 -0.2
baz=320
Y38A Idabel 93.48 43 P P 02 32 38.2 +0.4
baz=319,SNR=7.3
BLO Bloomington 93.51 34 eP P 02 32 38.5 +0.6
BLO pmax pmax
comp=Z,50nm,1.0s
BLO Bloomington 93.51 34 eP P 02 32 38.5 +0.6
comp=Z,50nm,1.0s
Z37A Pogue Cattle C 93.53 44 P P 02 32 38.4 +0.3
baz=318,SNR=6.7
LONY Lake Ozonia 93.54 24 eP P 02 32 37.8 -0.1
comp=Z,23nm,1.1s
PBMO Poplar Bluff 93.55 38 eP P 02 32 38.1 0.0
comp=Z,51nm,0.8s
136A Ennis 93.56 45 P P 02 32 38.5 +0.3
baz=318
MIAR Mount Ida 93.64 42 P P 02 32 38.7 +0.2
baz=320
MIAR Mount Ida 93.64 42 eP P 02 32 39.0 +0.4
MIAR pmax pmax
comp=Z,74nm,1.2s
MIAR Mount Ida 93.64 42 eP P 02 32 39.0 +0.4
comp=Z,74nm,1.2s
FURI Furi 93.65 284 eP P 02 32 41.2 +1.8
comp=Z,148nm,1.0s
FRNY Flat Rock 93.67 23 eP P 02 32 38.7 +0.2
comp=Z,21nm,1.0s
X201 Greenbrier Sit 93.71 40 eP P 02 32 39.1 +0.2
comp=Z,55nm,1.0s
X201 LR LR
comp=Z,400nm,20.0s
X301 Greenbrier Sit 93.73 40 eP P 02 32 39.0 +0.1
comp=Z,28nm,0.9s
WHAR Woolly Hollow 93.75 40 eP P 02 32 39.3 +0.2
comp=Z,55nm,1.0s
434A Burnet 93.76 47 P P 02 32 39.0 -0.3
baz=317,SNR=9.7
ERPA Erie 93.80 29 eP P 02 32 39.6 +0.4
comp=Z,52nm,0.9s
Y39A Lockesburg 93.82 42 P P 02 32 39.5 +0.1
baz=319
533A Kerrville 93.84 48 P P 02 32 39.8 +0.1
baz=316,SNR=5.8
Z38A Mt. Pleasant 93.85 43 P P 02 32 39.6 +0.1
baz=319
W41A Tony Mavity, V 93.86 40 P P 02 32 39.2 -0.3
baz=321
W41B Gary Mavity, V 93.86 40 P P 02 32 39.3 -0.3
baz=321
236A Katherine and 93.91 45 P P 02 32 39.9 +0.1
baz=318
335A Moody 93.92 46 P P 02 32 39.9 0.0
baz=317
USIN University of 93.95 36 eP P 02 32 40.5 +0.6
comp=Z,43nm,0.8s
MMNY Mt. Morris Dam 94.05 27 eP P 02 32 40.9 +0.6
MMNY LR LR
comp=Z,900nm,21.0s
X40A Basin Creek Fa 94.08 41 P P 02 32 40.5 -0.1
baz=320
UALR University of 94.12 41 eP P 02 32 41.3 +0.5
comp=Z,16nm,0.9s
ALLY Alegheny Colle 94.14 29 eP P 02 32 41.6 +0.9
comp=Z,52nm,0.9s
336A Riesel 94.18 46 P P 02 32 41.3 +0.2
baz=318
435B Jarrell 94.19 47 P P 02 32 41.4 +0.2
baz=317
ACSO Alum Creek Sta 94.19 31 eP P 02 32 41.3 +0.3
comp=Z,102nm,0.8s
633A Saathoff Ranch 94.20 49 P P 02 32 41.5 +0.2
baz=316,SNR=16
Y40A Okolona 94.20 42 P P 02 32 41.1 0.0
baz=320
534A Blanco 94.21 48 P P 02 32 41.3 0.0
baz=317,SNR=16
138A Matatall Enter 94.23 44 P P 02 32 41.6 +0.3
baz=319
Z39A Irene McRaven, 94.30 43 P P 02 32 42.0 +0.4
baz=319
WCI Wyandotte Cave 94.38 35 eP P 02 32 42.2 +0.3
WCI pmax pmax
comp=Z,64nm,0.8s
WCI Wyandotte Cave 94.38 35 eP P 02 32 42.2 +0.3
comp=Z,64nm,0.8s
M54A Oil Creek Stat 94.45 29 P P 02 32 42.4 +0.2
baz=329
WLAR White Oak Lake 94.54 42 eP P 02 32 43.6 +0.9
comp=Z,48nm,0.9s
832A Faith Ranch, C 94.55 50 P P 02 32 43.3 +0.5
baz=316,SNR=9.1
MDV Middlebury 94.55 23 eP P 02 32 43.3 +0.7
PKME Peaks-Kenny Pk 94.56 20 eP P 02 32 43.5 +0.9
comp=Z,43nm,0.8s
139A Bunkhouse Ranc 94.60 43 P P 02 32 43.5 +0.5
baz=319
733A Divot King Ran 94.66 49 P P 02 32 43.8 +0.5
baz=316,SNR=6.8
436A Wall Ranch, Ga 94.66 46 P P 02 32 43.9 +0.6
baz=318
238A Jacksonville 94.70 44 P P 02 32 44.0 +0.5
baz=319
Z40A Long Farm, Mag 94.71 42 P P 02 32 43.9 +0.4
baz=320
535A Dale 94.75 47 P P 02 32 44.0 +0.3
baz=317
KEST Kesra 94.76 322 P P 02 32 43.6 -0.2
comp=Z,61nm,0.9s,baz=310,slow=2.5,SNR=42
KEST PP PP 02 36 35.2 +2.9
comp=Z,12nm,0.8s,baz=351,slow=2.8,SNR=4.4
KEST LR LR 03 19 44.2
comp=Z,1µm,18.4s,baz=354,slow=38
KEST Kesra 94.76 322 eP P 02 32 43.6 -0.2
comp=Z,99nm,1.1s
KEST ePP PP 02 36 33.3 +1.0
337A Centerville 94.78 45 P P 02 32 44.5 +0.6
baz=318
N54A Moraine State 94.79 29 P P 02 32 43.9 +0.2
baz=329
833A Chaparral WMA, 94.88 49 P P 02 32 44.9 +0.5
baz=316,SNR=5.9
ACCN Adirondack Com 94.94 24 eP P 02 32 45.1 +0.7
comp=Z,62nm,1.5s
437A Phantom Ranch, 95.00 46 P P 02 32 45.8 +0.9
baz=318
CMAH Djebel Manchou 95.00 323 P P 02 32 44.0 -0.8
536A Bastrop 95.01 47 P P 02 32 45.2 +0.3
baz=318
734A La Parita Cree 95.01 49 P P 02 32 45.7 +0.7
baz=317
239A Gary 95.06 44 P P 02 32 44.9 -0.2
baz=319
338A Crockett 95.08 45 P P 02 32 45.2 0.0
baz=319
140A Cam and Jess, 95.08 43 P P 02 32 45.2 0.0
baz=320
635A Leesville 95.09 48 P P 02 32 45.4 +0.1
baz=317
Y42A Garnett, Star 95.13 41 P P 02 32 44.4 -1.0
baz=321
CAEH 'Ain El Ouahch 95.14 324 P P 02 32 45.5 +0.1
NATX Nacogdoches 95.14 44 P P 02 32 45.8 +0.3
baz=319
LMN Caledonia Moun 95.17 17 eP P 02 32 45.9 +0.5
comp=Z,63nm,0.8s
BINY Binghamton 95.21 26 eP P 02 32 46.2 +0.6
comp=Z,20nm,0.8s
BINY LR LR
comp=Z,500nm,20.0s
ABSA Djebel Ababsia 95.25 323 P P 02 32 45.2 -0.8
WVT Waverly 95.34 37 eP P 02 32 45.8 -0.5
WVT pmax pmax
comp=Z,31nm,0.9s
WVT Waverly 95.34 37 eP P 02 32 45.8 -0.5
comp=Z,31nm,0.8s
WVT LR LR
comp=Z,400nm,20.0s
GGN Saint George 95.35 19 eP P 02 32 47.0 +0.8
comp=Z,42nm,0.8s
240A Hunter Patters 95.44 43 P P 02 32 47.1 +0.3
baz=320
438A Sam Houston St 95.44 45 P P 02 32 46.8 0.0
baz=318
537A Green Hill Far 95.44 46 P P 02 32 46.7 -0.2
baz=318

636A	**Smothers Creek**	**95.45**	**47**	P		**P**	02 32 48.0	+1.1
	baz=318,SNR=11							
735A	**Kenedy**	**95.46**	**48**	P		**P**	02 32 47.8	+0.9
	baz=317							
933A	**Laredo**	**95.46**	**50**	P		**P**	02 32 48.0	+1.0
	baz=316,SNR=9.4							
141A	**Papa Simpson,**	**95.48**	**42**	P		**P**	02 32 47.1	+0.1
	baz=320							
CKFL	**Kef-Lekhel**	**95.51**	**324**	P		**P**	02 32 46.5	-0.8
834A	**Tilden**	**95.53**	**49**	P		**P**	02 32 48.8	+1.4
	baz=317							
CASM	**Ain Smara**	**95.73**	**324**	P		**P**	02 32 47.1	-1.1
HKT	**Hockley**	**95.82**	**46**	P		**P**	02 32 50.5	+2.0
736A	**Circle Diamond**	**95.83**	**48**	P		**P**	02 32 49.6	+0.9
	baz=317,SNR=9.7							
OXF	**Oxford**	**95.84**	**39**	*e*P		**P**	02 32 49.3	+0.7
OXF				pmax		pmax		
	comp=Z,52nm,1.0s							
OXF	**Oxford**	**95.84**	**39**	*e*P		**P**	02 32 49.3	+0.7
	comp=Z,52nm,1.0s							
KSPA	**Keystone Colle**	**95.85**	**26**	*e*P		**P**	02 32 49.2	+0.7
	comp=Z,17nm,0.8s							
835A	**Beeville**	**95.86**	**49**	P		**P**	02 32 49.0	+0.2
	baz=317							
SSPA	**Standing Stone**	**95.88**	**28**	*e*P		**P**	02 32 49.2	+0.5
	comp=Z,13nm,0.9s							
637A	**Eagle Lake**	**95.91**	**47**	P		**P**	02 32 50.7	+1.7
	baz=318							
934A	**Benavides**	**95.93**	**49**	P		**P**	02 32 49.9	+0.7
	baz=317							
CTEI	**Djebel Teioual**	**95.93**	**324**	P		**P**	02 32 48.9	-0.3
O56A	**Blue Knob Stat**	**95.94**	**29**	P		**P**	02 32 48.8	-0.2
	baz=330							
MCWV	**Mont Chateau**	**95.96**	**30**	*e*P		**P**	02 32 50.0	+1.0
	comp=Z,19nm,0.9s							
PLAL	**Pickwick Lake**	**96.14**	**38**	*e*P		**P**	02 32 49.4	-0.6
	comp=Z,11nm,0.9s							
PLAL				LR		LR		
	comp=Z,300nm,19.0s							
034A	**Hebbronville**	**96.22**	**50**	P		**P**	02 32 52.4	+1.9
	baz=316							
SET	**Setif**	**96.30**	**324**	P		**P**	02 32 52.0	+1.2
341A	**Kurthwood**	**96.30**	**43**	P		**P**	02 32 50.8	0.0
	baz=320							
242A	**Grayson**	**96.30**	**42**	P		**P**	02 32 50.5	-0.3
	baz=320							
737A	**Port Lavaca**	**96.34**	**47**	P		**P**	02 32 51.2	+0.2
	baz=318							
PBRG	**Braganca**	**96.39**	**336**	*e*P		**P**	02 32 50.8	-0.3
	comp=Z,132nm,0.9s							
PBRG	**Braganca**	**96.39**	**336**	*e*PP		PP	02 36 47.2	+2.6
CKHR	**Kef el Ahmar**	**96.39**	**324**	P		**P**	02 32 51.2	-0.1
N59A	**State Game Lan**	**96.41**	**26**	P		**P**	02 32 49.4	-1.7
	baz=332							
638A	**Rosharon**	**96.44**	**46**	P		**P**	02 32 51.7	+0.3
	baz=318							
Y46A	**Houston**	**96.62**	**39**	P		**P**	02 32 51.9	-0.3
	baz=323							
035A	**Encino**	**96.67**	**50**	P		**P**	02 32 51.6	-0.9
	baz=317							
ODNJ	**Ogdensburg**	**96.68**	**26**	*e*P		**P**	02 32 53.0	+0.7
	comp=Z,51nm,1.9s							
ODNJ				LR		LR		
	comp=Z,500nm,20.0s							
PGAV	**Gavieira, Arco**	**96.75**	**337**	*e*P		**P**	02 32 52.6	-0.1
	comp=Z,133nm,0.9s							
PGAV	**Gavieira, Arco**	**96.75**	**337**	*e*LR		LR	03 06 47.2	
	comp=Z,609nm,22.0s							
ZAIG	**Zacatecas**	**96.75**	**55**	*e*P		**P**	02 32 55.0	+1.6
	comp=Z,19nm,1.0s							
LUPA	**Lehigh Univers**	**96.84**	**26**	PFAKE			02 33 00.0	+7.0
LUPA				LR		LR		
	comp=Z,500nm,20.0s							
PCAB	**Cabril**	**96.90**	**336**	*e*P		**P**	02 32 52.9	-0.4
	comp=Z,96nm,1.3s							
PCAB	**Cabril**	**96.90**	**336**	*e*PP		PP	02 36 52.6	+4.1
SWET	**Sewanee**	**96.99**	**36**	*e*P		**P**	02 32 53.8	-0.1
	comp=Z,15nm,0.9s							
TZTN	**Tazewell**	**97.01**	**34**	*e*P		Pdif	02 32 54.4	+0.4
	comp=Z,29nm,0.8s							
BRNJ	**Basking Ridge**	**97.05**	**26**	*e*P		Pdif	02 32 55.0	+1.0
	comp=Z,65nm,1.4s							
MVO	**Moncorvo**	**97.06**	**335**	*e*P		**P**	02 32 53.8	-0.3
	comp=Z,101nm,0.9s							
MVO	**Moncorvo**	**97.06**	**335**	*e*PP		PP	02 36 51.3	+1.5
MVO				*e*SKS		**SKSac**	**02 43 26.1**	**+1.7**
MVO	**Moncorvo**	**97.06**	**335**	*e*LR		LR	03 05 24.2	
	comp=Z,725nm,20.0s							
244A	**Avery, Jackson**	**97.11**	**41**	P		Pdif	02 32 54.4	-0.1
	baz=321							
Y47A	**UCPARC, Winfie**	**97.11**	**38**	P		Pdif	02 32 54.7	+0.2
	baz=323							
POLO	**Lamas de Olo**	**97.12**	**336**	*e*P		**P**	02 32 53.8	-0.7
	comp=Z,83nm,1.0s							
POLO	**Lamas de Olo**	**97.12**	**336**	*e*PP		PP	02 36 53.2	+2.9
PVRL	**Vila Real**	**97.19**	**336**	*e*P		Pdif	02 32 54.8	+0.1
PVRL	**Vila Real**	**97.19**	**336**	*e*PP		PP	02 36 53.5	+2.8
ES19	**SONSECA Array**	**97.25**	**333**	*e*P		**P**	02 32 54.3	-0.7
ESDC	**Sonseca Array**	**97.30**	**333**	P		**P**	02 32 55.1	-0.1
	comp=Z,17nm,0.8s,baz=19,slow=4.3,SNR=78							
ESDC				LR		LR	03 21 07.9	
	comp=Z,630nm,18.7s,baz=40,slow=38							
ESLA	**Sonseca Array**	**97.30**	**333**	*e*P		**P**	02 32 55.1	-0.1
	comp=Z,24nm,0.9s							
ESLA				LR		LR		
	comp=Z,1μm,22.0s							
CPCT	**Cooper Cave**	**97.46**	**35**	*e*P		Pdif	02 32 56.2	+0.1
	comp=Z,16nm,0.9s							
CPCT				LR		LR		
	comp=Z,300nm,20.0s							
146A	**Union**	**97.50**	**40**	P		**P**	02 32 55.0	-1.2
	baz=322							
245A	**Little AP, Sta**	**97.53**	**41**	P		**P**	02 32 55.8	-0.5
	baz=322							
344A	**Westbrook Farm**	**97.54**	**42**	P		**P**	02 32 55.9	-0.5
	baz=321							
PAB	**San Pablo**	**97.55**	**333**	*e*P		**P**	02 32 56.2	-0.2
PAB	**San Pablo**	**97.55**	**333**	*e*P		**P**	02 32 56.2	-0.2
	comp=Z,30nm,0.9s							
PAB				LR		LR		
	comp=Z,1μm,20.0s							
PTO	**Porto**	**97.60**	**337**	*e*P		Pdif	02 32 56.6	+0.1
	comp=Z,79nm,1.1s							
TKL	**Tuckaleechee C**	**97.64**	**35**	*e*P		Pdif	02 32 57.1	+0.3
TKL	**Tuckaleechee C**	**97.64**	**35**	*e*P		Pdif	02 32 57.1	+0.3
	comp=Z,37nm,0.8s							
PVIS	**Viseu**	**97.75**	**336**	*e*P		**P**	02 32 57.1	-0.1
PVIS	**Viseu**	**97.75**	**336**	*e*PP		PP	02 36 57.9	+2.9
BLA	**Blacksburg**	**97.81**	**31**	*e*P		Pdif	02 32 58.0	+0.4
BLA	**Blacksburg**	**97.81**	**31**	*e*P		Pdif	02 32 58.0	+0.4
	comp=Z,29nm,0.8s							
147A	**Livingston**	**97.87**	**39**	P		**P**	02 32 57.4	-0.4
	baz=323							
MTE	**Manteigas**	**97.92**	**335**	*e*P		**P**	02 32 57.7	-0.3
MTE	**Manteigas**	**97.92**	**335**	*e*PP		PP	02 36 59.4	+3.1
MTE				*e*SKS		**SKSac**	**02 43 32.7**	**+3.9**
MTE	**Manteigas**	**97.92**	**335**	*e*LR		LR	03 06 52.0	
	comp=Z,887nm,22.0s							
MTE	**Manteigas**	**97.92**	**335**	*e*P		**P**	02 32 57.2	-0.7
	comp=Z,65nm,1.0s							
MTE				LR		LR		
	comp=Z,1μm,21.0s							
PCBR	**Castelo Branco**	**98.40**	**335**	*e*P		**P**	02 32 59.2	-0.9
PCBR	**Castelo Branco**	**98.40**	**335**	*e*PP		PP	02 37 02.7	+2.8
PCAS	**Casmilo, Conde**	**98.55**	**336**	*e*P		**P**	02 33 00.4	-0.3
	comp=Z,58nm,1.2s							
PCAS	**Casmilo, Conde**	**98.55**	**336**	*e*PP		PP	02 37 04.1	+3.0
PMRV	**Marv??o**	**98.74**	**335**	*e*P		**P**	02 33 01.1	-0.5
	comp=Z,79nm,1.1s							
PMRV	**Marv??o**	**98.74**	**335**	*e*PP		PP	02 37 04.3	+1.7
PMRV				*e*SKS		**SKSac**	**02 43 36.3**	**+3.5**
PMRV	**Marv??o**	**98.74**	**335**	*e*LR		LR	03 07 09.7	
	comp=Z,784nm,18.0s							
PTOM	**Tomar**	**98.91**	**336**	*e*P		**P**	02 33 02.1	-0.3
PTOM	**Tomar**	**98.91**	**336**	*e*PP		PP	02 37 06.5	+2.7
KMSC	**Kings Mountain**	**99.16**	**33**	P		**Pdif**	02 33 03.3	-0.3
	baz=328							
KMSC	**Kings Mountain**	**99.16**	**33**	*e*P		**Pdif**	02 33 03.8	+0.2
	comp=Z,18nm,0.8s							
PESTR	**Estremoz**	**99.31**	**335**	*e*P		**Pdif**	02 33 03.6	-0.6
PESTR	**Estremoz**	**99.31**	**335**	*e*PP		PP	02 37 09.2	+2.3
PESTR				*e*SKS		**SKSac**	**02 43 38.5**	**+2.8**
PMTG	**Montargil**	**99.34**	**335**	*e*P		**Pdif**	**02 33 03.5**	**-0.8**
PMTG	**Montargil**	**99.34**	**335**	*e*PP		PP	02 37 08.7	+1.6
RKT	**Rikitea**	**99.68**	**111**	*e*LR		LR	03 05 04.9	
	comp=Z,2μm,35.5s,baz=307							

PBAR	**Barrancos**	**99.73**	**334**	*e*P		**Pdif**	**02 33 05.5**	**-0.6**
PBAR	**Barrancos**	**99.73**	**334**	*e*PP		PP	02 37 11.0	+0.8
EVO	**Evora**	**99.75**	**335**	*e*P		**Pdif**	**02 33 06.1**	**0.0**
EVO	**Evora**	**99.75**	**335**	*e*PP		PP	02 37 12.1	+1.8
PMAFR	**Mafra**	**99.80**	**336**	*e*P		**Pdif**	**02 33 06.7**	**+0.4**
PMAFR	**Mafra**	**99.80**	**336**	*e*PP		PP	02 37 14.1	+3.5
PACT	**Alcochete**	**99.82**	**336**	*e*P		**Pdif**	**02 33 07.0**	**+0.6**
PACT	**Alcochete**	**99.82**	**336**	*e*PP		PP	02 37 11.9	+1.2
PMST	**Lisbon--Monsan**	**99.96**	**336**	*e*P		**Pdif**	**02 33 07.4**	**+0.3**
PBEJ	**Beja**	**100.16**	**335**	*e*P		**Pdif**	**02 33 07.7**	**-0.3**
PBEJ	**Beja**	**100.16**	**335**	*e*PP		PP	02 37 13.9	+0.5
PNCL	**Nicolau / Gran**	**100.31**	**335**	*e*P		**Pdif**	**02 33 08.2**	**-0.4**
PNCL	**Nicolau / Gran**	**100.31**	**335**	*e*PP		PP	02 37 16.9	+2.4
PNCL				*e*SKS		**SKSac**	**02 43 47.8**	**+7.2**
MESJ	**Messejana**	**100.45**	**335**	*e*P		**Pdif**	**02 33 08.8**	**-0.4**
MESJ				AMS		AMS	03 23 16.4	
	comp=Z,894nm,21.4s							
MESJ	**Messejana**	**100.45**	**335**	*e*P		**Pdif**	**02 33 08.9**	**-0.3**
MESJ	**Messejana**	**100.45**	**335**	*e*PP		PP	02 37 17.8	+2.3
MESJ	**Messejana**	**100.45**	**335**	*e*P		**Pdif**	**02 33 08.8**	**-0.4**
PCVE	**Castro Verde**	**100.57**	**335**	*e*P		**Pdif**	**02 33 09.5**	**-0.3**
PCVE	**Castro Verde**	**100.57**	**335**	*e*PP		PP	02 37 20.0	+3.5
PCVE				*e*SKS		**SKSac**	**02 43 44.3**	**+2.4**
PVAQ	**Vaqueiros**	**100.66**	**334**	*e*P		**Pdif**	**02 33 10.1**	**-0.1**
PVAQ	**Vaqueiros**	**100.66**	**334**	*e*PP		PP	02 37 19.4	+2.2
PVAQ				*e*SKS		**SKSac**	**02 43 46.9**	**+4.5**
PVAQ	**Vaqueiros**	**100.66**	**334**	*e*LR		LR	03 07 39.0	
	comp=Z,1μm,20.0s							
KMBO	**Kilima Mbogo**	**100.80**	**277**	P		**Pdif**	**02 33 11.2**	**-0.3**
	comp=Z,4.4nm,0.9s,baz=33,slow=7.7,SNR=12							
KMBO	**Kilima Mbogo**	**100.80**	**277**	*e*Pdif		**Pdif**	**02 33 11.4**	**-0.1**
KMBO				*e*PP		**PP**	**02 37 19.4**	**-0.7**
PBDV	**Barranco-do-Ve**	**100.88**	**334**	*e*P		**Pdif**	**02 33 09.6**	**-1.6**
PBDV	**Barranco-do-Ve**	**100.88**	**334**	*e*PP		PP	02 37 21.8	+2.9
PBDV				*e*SKS		**SKSac**	**02 43 47.3**	**+3.8**
PTEO	**Sao Teotonio**	**100.88**	**335**	*e*P		**Pdif**	**02 33 11.8**	**+0.6**
PTEO	**Sao Teotonio**	**100.88**	**335**	*e*PP		PP	02 37 21.1	+2.3
MORF	**Marmelete**	**101.08**	**335**	*e*P		**Pdif**	**02 33 12.1**	**-0.1**
MORF				AMS		AMS	03 25 17.3	
	comp=Z,780nm,18.7s							
MORF	**Marmelete**	**101.08**	**335**	*e*P		**Pdif**	**02 33 11.5**	**-0.6**
MORF	**Marmelete**	**101.08**	**335**	*e*PP		PP	02 37 22.5	+2.1
MORF				*e*SKS		**SKSac**	**02 43 47.3**	**+2.8**
MORF	**Marmelete**	**101.08**	**335**	*e*P		**Pdif**	**02 33 12.0**	**-0.1**
TIGA	**Tifton**	**101.20**	**37**	P		**Pdif**	**02 33 12.0**	**-0.7**
	baz=326							
PFVI	**Vila Bisbo**	**101.29**	**335**	*e*PP		PP	02 37 24.1	+2.2
TAM	**Tamanrasset**	**107.02**	**316**	*e*P		**Pdif**	**02 33 39.1**	**+0.1**
TAM	**Tamanrasset**	**107.02**	**316**	*e*Pdif		**Pdif**	**02 33 39.1**	**+0.1**
TAM				*e*PKP		**PKiKP**	**02 37 48.8**	**+0.6**
PMOZ	**Porto Moniz, M**	**107.88**	**340**	*e*LR		LR	03 11 30.4	
	comp=Z,493nm,18.0s							
VNDA	**Vanda**	**114.44**	**175**	PKP		PKPdf	02 38 00.7	+0.4
	comp=Z,4.1nm,0.9s,baz=326,slow=4.8,SNR=12							
VNDA				PKKPbc		**PKKPbc**	**02 48 41.4**	**-0.1**
	comp=Z,3.7nm,1.0s,baz=263,slow=2.0,SNR=7.1							
LSZ	**Lusaka**	**116.24**	**270**	*e*PKIKP		**PKPdf**	**02 38 05.7**	**0.0**
LSZ	**Lusaka**	**116.24**	**270**	*e*PKPdf		**PKPdf**	**02 38 05.7**	**0.0**
TOA0	**Torodi Ar. Sit**	**116.87**	**313**	*e*PKPdf		**PKPdf**	**02 38 05.0**	**-1.8**
TOA0				*e*PKPdf		**PKiKP**	**02 38 06.1**	**-0.8**
TOA0				*e*PKKPbc		**PKKPbc**	**02 48 33.8**	**+2.1**
TORD	**Torodi Ar. Bea**	**116.87**	**313**	Pdiff		**Pdif**	**02 34 25.7**	**+3.0**
	comp=Z,0.9nm,0.8s,baz=36,slow=4.0,SNR=6.6							
TORD				PKP		**PKPdf**	**02 38 06.0**	**-0.9**
	comp=Z,24nm,0.8s,baz=18,slow=1.5,SNR=108							
TORD				PKKPbc		**PKKPbc**	**02 48 31.1**	**-0.6**
	comp=Z,3.1nm,0.9s,baz=207,slow=2.1,SNR=18							
JTS	**JuntasAbangare**	**117.30**	**51**	*e*PKIKP		**PKPdf**	**02 38 07.8**	**+0.1**
JTS	**JuntasAbangare**	**117.30**	**51**	*e*PKPdf		**PKPdf**	**02 38 07.8**	**+0.1**
MAW	**Mawson**	**118.42**	**205**	PKP		**PKPdf**	**02 38 08.4**	**+0.3**
	comp=Z,15nm,0.8s,baz=87,slow=1.4,SNR=32							
MAW				PKKPbc		**PKKPab**	**02 48 26.6**	**+0.5**
	comp=Z,8.5nm,0.8s,baz=272,slow=4.0,SNR=11							
MAW	**Mawson**	**118.42**	**205**	PKIKP		**PKPdf**	**02 38 08.4**	**+0.3**
MAW				pmax		pmax		
	comp=Z,11nm,0.6s							
MAW				pmax		pmax		
	comp=Z,9.0nm,0.8s							
MAW	**Mawson**	**118.42**	**205**	*e*PKPdf		**PKPdf**	**02 38 08.5**	**+0.4**
MAW				*e*PKKPbc		**PKKPbc**	**02 48 27.1**	**-0.2**
LBTB	**Lobatse**	**123.30**	**262**	*e*PKIKP		**PKPdf**	**02 38 19.5**	**+0.5**
LBTB	**Lobatse**	**123.30**	**262**	*e*PKPdf		**PKPdf**	**02 38 19.4**	**+0.5**
BOSA	**Boshof**	**125.21**	**258**	PKP		**PKPdf**	**02 38 22.9**	**+0.3**
	comp=Z,52nm,0.9s,baz=81,slow=1.7,SNR=54							
BOSA				pPKP		**pPKPdf**	**02 38 44.9**	**+0.2**
	comp=Z,15nm,0.8s,baz=341,slow=3.4,SNR=3.8							
BOSA				PP		**PP**	**02 40 17.0**	**+3.4**
	comp=Z,25nm,1.1s,baz=63,slow=6.1,SNR=4.5							
BOSA	**Boshof**	**125.21**	**258**	*e*PKPdf		**PKPdf**	**02 38 22.1**	**-0.6**
BOSA				pPKP		**pPKPdf**	**02 38 44.9**	**+0.2**
BOSA				*e*PP		**PP**	**02 40 17.0**	**+3.4**
FDF	**Fort de France**	**125.42**	**25**	*e*PKIKP		**PKPdf**	**02 38 23.1**	**-0.2**
FDF	**Fort de France**	**125.42**	**25**	*e*PKPdf		**PKPdf**	**02 38 23.1**	**-0.2**
OCAC	**Ocana**	**125.77**	**42**	*e*P		**PKPdf**	**02 38 24.2**	**0.0**
DBIC	**Dimbokro**	**125.87**	**315**	PKP		**PKPdf**	**02 38 23.8**	**-0.4**
	comp=Z,61nm,0.8s,baz=14,slow=2.1,SNR=83							
DBIC				pPKP		**pPKPdf**	**02 38 46.6**	**+0.4**
	comp=Z,13nm,0.7s,baz=12,slow=3.4,SNR=2.5							
DBIC				PP		PP	02 40 07.0	-10
	comp=Z,32nm,1.0s,baz=15,slow=7.4,SNR=3.0							
TIC	**Toumodi**	**125.99**	**315**	*e*PKIKP		**PKPdf**	**02 38 23.8**	**-0.6**
KIC	**Kosan Boka**	**126.06**	**315**	*e*PKIKP		**PKPdf**	**02 38 23.9**	**-0.7**
	comp=Z,166nm,0.9s							
QSPA	**South Pole Qui**	**126.13**	**180**	*e*PKPdf		**PKPdf**	**02 38 22.8**	**-0.3**
LIC	**Lamto**	**126.33**	**315**	*e*PKIKP		**PKPdf**	**02 38 24.3**	**-0.8**
	comp=Z,92nm,0.9s							
GRMC	**Gramalote, San**	**126.48**	**42**	*e*P		**PKPdf**	**02 38 24.8**	**-0.8**
BRRC	**Barranca, Sant**	**126.49**	**43**	*e*P		**PKPdf**	**02 38 25.4**	**0.0**
SDV	**Santo Domingo**	**126.62**	**39**	*e*PKPdf		**PKPdf**	**02 38 26.2**	**+0.4**
TSUM	**Tsumeb**	**126.88**	**272**	*e*PKPdf		**PKPdf**	**02 38 26.5**	**+0.4**
SYO	**Syowa Base**	**127.07**	**206**	*e*P		**PKPdf**	**02 38 23.4**	**-1.3**
SYO	**Syowa Base**	**127.07**	**206**	*e*P		**PKPdf**	**02 38 24.2**	**-0.5**
GUYC	**Guyana, Colomb**	**127.08**	**46**	*e*P		**PKPdf**	**02 38 26.5**	**-0.6**
NORC	**Norcasia**	**127.11**	**45**	*e*P		**PKPdf**	**02 38 25.9**	**-0.7**
GRGC	**Isla de Gorgon**	**127.17**	**51**	*e*P		**PKPdf**	**02 38 26.5**	**-0.2**
BARC	**Barichara**	**127.21**	**43**	*e*P		**PKPdf**	**02 38 27.0**	**0.0**
TOLC	**Tolima**	**127.64**	**46**	*e*P		**PKPdf**	**02 38 26.5**	**-1.5**
ROSC	**El Rosal**	**128.01**	**45**	PKP		**PKPdf**	**02 38 29.3**	**+0.6**
	comp=Z,44nm,1.0s,baz=139,slow=2.5,SNR=23							
ROSC	**El Rosal**	**128.01**	**45**	*e*PKPdf		**PKPdf**	**02 38 29.9**	**+1.1**
POPC	**Popayan, Colom**	**128.45**	**49**	*e*P		**PKPdf**	**02 38 29.3**	**-0.1**
CMBC	**Cumbal**	**128.97**	**52**	*e*P		**PKPdf**	**02 38 32.1**	**+1.5**
OTAV	**Otavalo**	**129.11**	**53**	*e*PKPpre		PKPpre	02 38 24.9	
OTAV				*e*PKPdf		**PKPdf**	**02 38 31.1**	**+0.1**
SUR	**Sutherland**	**130.25**	**256**	*e*PKPdf		**PKPdf**	**02 38 32.5**	**+0.3**
ATAH	**Atahualpa**	**134.57**	**60**	PKP		**PKPdf**	**02 38 41.5**	**+0.3**
	comp=Z,16nm,0.8s,baz=175,slow=1.0,SNR=8.8							
ATAH				pPKP		**pPKPdf**	**02 39 04.0**	**+0.7**
	comp=Z,19nm,0.7s,baz=204,slow=3.5,SNR=3.8							
ATAH				SKPbc		**SKPbc**	**02 42 03.6**	**-0.6**
	comp=Z,14nm,1.0s,baz=275,slow=3.1,SNR=7.2							
NVL	**N'lazarevskaya**	**136.22**	**202**	*e*PKHKP		PKPpre	02 38 24.5	
NNA	**Nana**	**139.03**	**63**	PKhKP		PKPpre	02 38 39.3	
	comp=Z,12nm,0.7s,baz=313,slow=7.8,SNR=6.2							
NNA				PKP		**PKPdf**	**02 38 47.2**	**-1.7**
	comp=Z,28nm,0.8s,baz=1.1,slow=3.9,SNR=5.5							
NNA				pPKP		pPKPdf	02 39 12.0	+1.1
	comp=Z,23nm,0.7s,baz=267,slow=5.4,SNR=3.3							
NNA	**Nana**	**139.03**	**63**	*e*PKPpre		PKPpre	02 38 42.5	
NNA				*e*PKPdf		**PKiKP**	**02 38 50.6**	**-0.5**
NNA				pPKP		pPKPdf	02 39 12.0	+1.1
SNAA	**Sanae**	**139.76**	**197**	PKP		PKPpre	02 38 38.1	
SNAA	**Sanae**	**139.76**	**197**	*e*PKHKP		PKPpre	02 38 38.6	
SNAA				*e*			02 38 47.6	
SNAA	**Sanae**	**139.76**	**197**	*e*PKPpre		PKPpre	02 38 38.6	
SNAA				*e*PKPdf		**PKPdf**	**02 38 47.6**	**-0.9**
PTGA	**Pitinga**	**140.05**	**32**	PKhKP		PKPpre	02 38 42.1	
	comp=Z,11nm,0.8s,baz=359,slow=5.2,SNR=17							
PTGA				PKP		**PKPdf**	**02 38 50.2**	**-0.6**
	comp=Z,14nm,0.7s,baz=320,slow=2.4,SNR=7.9							
PTGA	**Pitinga**	**140.05**	**32**	*e*PKPpre		PKPpre	02 38 42.4	
PTGA				PKP		**PKPdf**	**02 38 50.2**	**-0.6**
PTGA				*e*PP		**PP**	**02 41 46.4**	**-0.8**
VNA1	**Neumayer--Stat**	**141.75**	**197**	PKP		PKPpre	02 38 46.8	
ASCN	**Ascension**	**143.19**	**314**	*e*PKPdf		PKPbc	02 38 54.3	+0.8
SAML	**Samuel**	**145.58**	**43**	*e*PKPdf		**PKPdf**	**02 39 00.4**	**-0.1**
LPAZ	**La Paz**	**148.10**	**59**	PKPbc		**PKPbc**	**02 39 07.0**	**-1.6**
	comp=Z,67nm,0.7s,baz=328,slow=2.2,SNR=57							
LPAZ	**La Paz**	**148.10**	**59**	*e*PKPdf		**PKPdf**	**02 39 06.2**	**+0.8**
PMSA	**Palmer Station**	**148.19**	**161**	*e*PKPbc		**PKPbc**	**02 39 08.0**	**+1.4**
PB11	**IPOC Station P**	**149.31**	**65**	*e*PKPdf		**PKPdf**	**02 39 07.2**	**+0.5**
RCBR	**Riachuelo**	**149.33**	**352**	PKP		**PKPdf**	**02 39 07.7**	**+0.9**
	comp=Z,122nm,1.1s,baz=350,slow=2.2,SNR=19							
RCBR				PKPbc		**PKPbc**	**02 39 11.6**	**+0.4**
	comp=Z,122nm,0.9s,baz=10,slow=1.8,SNR=21							
RCBR				pPKPbc		**pPKPbc**	**02 39 33.4**	**+0.3**
	comp=Z,55nm,0.9s,baz=290,slow=0.4,SNR=3.2							
RCBR	**Riachuelo**	**149.33**	**352**	*e*PKPdf		**PKPdf**	**02 39 07.7**	**+0.9**
RCBR				*e*PKPbc		**PKPbc**	**02 39 11.2**	**0.0**
RCBR				*e*PKPab		**PKPab**	**02 39 16.0**	**+0.1**
RCBR				pPKPbc		**pPKPbc**	**02 39 33.4**	**+0.3**
PB01	**IPOC Station P**	**150.22**	**67**	*e*PKPdf		**PKPdf**	**02 39 09.0**	**+0.9**
PB04	**IPOC Station P**	**150.48**	**70**	*e*PKPbc		**PKPbc**	**02 39 14.3**	**+0.4**
PB10	**IPOC Station P**	**150.83**	**72**	*e*PKPdf		**PKPdf**	**02 39 10.0**	**+1.2**
SIV	**San Ignacio**	**152.45**	**48**	PKP		**PKPdf**	**02 39 12.3**	**+0.8**
	comp=Z,24nm,0.9s,baz=249,slow=0.2,SNR=32							
SIV				PKPbc		**PKiKP**	**02 39 18.9**	**+0.2**
	comp=Z,79nm,0.9s,baz=307,slow=2.5,SNR=47							
SIV				PKPab		**PKPab**	**02 39 28.6**	**-0.3**
	comp=Z,38nm,0.9s,baz=265,slow=2.3,SNR=6.1							
LCO	**Las Campanas**	**153.34**	**83**	*e*PKPdf		**PKPdf**	**02 39 13.2**	**+0.5**
LCO				*e*PKPbc		**PKiKP**	**02 39 21.2**	**+0.7**
LCO				*e*PKPab		**PKPab**	**02 39 32.9**	**+0.2**
ROC1	**El Roble**	**154.45**	**91**	*e*pPKPdf		**PKPbc**	**02 39 20.1**	**-2.5**
PLCA	**Paso Flores**	**155.90**	**110**	PKP		**PKPdf**	**02 39 15.6**	**-0.1**
	comp=Z,6.0nm,1.0s,baz=272,slow=2.1,SNR=12							
PLCA				PKPab		**PKPab**	**02 39 43.2**	**+0.1**
	comp=Z,12nm,0.9s,baz=271,slow=4.7,SNR=9.3							
PLCA				pPKPab		**pPKPab**	**02 40 05.7**	**+1.2**
	comp=Z,40nm,0.9s,baz=292,slow=3.5,SNR=8.8							
PLCA	**Paso Flores**	**155.90**	**110**	*e*PKPdf		**PKPdf**	**02 39 14.9**

comp=Z,6µm,0.9s
MOY Mondy 6.56 13 *e*P **Pn** **02 31 18.5 +2.2**
MOY *e*S **Sn** **02 32 31.6 +0.4**
BYO Bayan-Olgiy 7.00 304 *j*/Pn Pn 02 31 27.1 +4.4
BYO *e*Sg Sg 02 33 17.9 -6.7
comp=Z,1µm,0.7s
TLY Talaya 7.19 25 Pn **Pn** **02 31 27.0 +2.1**
comp=Z,0.0nm,0.3s,baz=198,slow=7.1,SNR=9.7
TLY Lg Lg 02 33 24.1
comp=Z,0.6nm,0.3s,baz=53,slow=16,SNR=15
TLY Talaya 7.19 25 *e*P **Pn** **02 31 26.9 +2.1**
TLY pmax pmax
comp=Z,46nm,0.6s
TLY Talaya 7.19 25 *e*Pn **Pn** **02 31 25.0 +0.2**
comp=Z,66nm,0.4s
TLY *e*Pg Pg 02 31 53.3 -4.0
TLY *e*Sg Sg 02 33 23.4 -7.0
TLY Lg Lg 02 33 24.1
IRK Irkutsk 7.87 26 *e*P Pn 02 31 39.3 +5.1
IRK pmax pmax
comp=Z,163nm,0.2s
WMQ Urumqi 7.99 263 Pn Pn 02 31 40.3 +4.4
WMQ Sn **Sn** **02 33 04.8 -1.5**
WMQ smax smax
comp=Z,880nm,0.5s
WMQ smax smax
comp=Z,520nm,0.4s
MKAR Makanchi Array 11.50 283 Pn **Pn** **02 32 25.7 +1.8**
comp=Z,0.6nm,0.3s,baz=98,slow=14,SNR=5.5
MKAR Lg Lg 02 35 41.4
comp=Z,3.3nm,0.3s,baz=83,slow=31,SNR=3.9
MK01 Makanchi Array 11.53 283 *j*/Pn Pn 02 32 56.2 +32
ZALV Zalesovo Beam 12.47 319 Pn **Pn** **02 32 37.7 +0.7**
comp=Z,0.1nm,0.3s,baz=129,slow=11,SNR=2.9
ZALV Lg Lg 02 36 04.9
comp=Z,0.9nm,0.3s,baz=127,slow=24,SNR=5.0
KURK Kurchatov 14.47 299 *e*P **Pn** **02 33 03.5 -1.0**
KURK Kurchatov 14.47 299 *e*Pn **Pn** **02 33 03.5 -1.0**
KURK *e*P **P** **02 33 11.0 -0.2**
KURK Lg Lg 02 37 15.3
KURBB Kurchatov Arra 14.51 299 Pn **Pn** **02 33 03.6 -1.2**
comp=Z,0.1nm,0.3s,baz=102,slow=14,SNR=7.9
KURBB Lg Lg 02 37 15.3
comp=Z,0.3nm,0.3s,baz=96,slow=30,SNR=8.9
HIA Hailar 14.82 67 *e*P **Pn** **02 33 10.4 +1.2**
HIA Hailar 14.82 67 *e*Pn **Pn** **02 33 10.4 +1.2**
LSA Lhasa 16.66 203 *e*P **Pn** **02 33 33.1 -0.5**
LSA Lhasa 16.66 203 *e*Pn **Pn** **02 33 33.1 -0.5**
TKM2 Tokmak 2 16.75 270 *e*P **Pn** **02 33 31.8 -2.6**
TKM2 Tokmak 2 16.75 270 *e*Pn **Pn** **02 33 31.8 -2.6**
AAK Ala-Archa 17.61 270 *e*P **P** **02 33 47.3 +1.1**
AAK pmax pmax
comp=Z,39nm,0.8s
AAK Ala-Archa 17.61 270 *e*Pn **P** **02 33 47.1 +0.9**
EKS2 Erkin-Say 18.10 271 *e*P **Pn** **02 33 51.3 0.0**
EKS2 Erkin-Say 18.10 271 *e*Pn **Pn** **02 33 51.2 0.0**
BVAR Borovoye Array 19.96 303 P **P** **02 34 12.1 +0.3**
comp=Z,2.7nm,0.3s,baz=104,slow=9.2,SNR=19
BRVK Borovoye 20.03 303 *e*P **P** **02 34 13.1 +0.5**
BRVK pmax pmax
comp=Z,41nm,0.9s
BRVK Borovoye 20.03 303 *e*P **P** **02 34 13.1 +0.5**
comp=Z,41nm,0.9s
KLR Kul'dur 22.67 68 P **P** **02 34 40.4 -0.6**
comp=Z,4.0nm,0.9s,baz=267,slow=17,SNR=3.0
KSAR Wonju Array Be 23.18 99 P **P** **02 34 47.4 +1.0**
KSAR Wonju Array Be 23.18 99 P **P** **02 34 47.4 +1.0**
KSRS Korea Array 23.20 99 P **P** **02 34 47.4 +0.8**
comp=Z,4.5nm,0.7s,baz=286,slow=8.8,SNR=7.9
KSRS Korea Array 23.20 99 P **P** **02 34 47.4 +0.8**
KSRS pmax pmax
comp=Z,6.0nm,0.7s
USRK Ussuriysk Ar. 23.59 81 P **P** **02 34 50.9 +0.5**
comp=Z,8.2nm,1.0s,baz=282,slow=9.2,SNR=5.7
NRIK Noril'sk 24.77 351 P **P** **02 35 01.2 0.0**
comp=Z,20nm,0.8s,baz=149,slow=9.1,SNR=4.2
NRIK Noril'sk 24.77 351 *e*P **P** **02 35 03.4 +2.2**
NRIK pmax pmax
comp=Z,19nm,1.0s
HABR Khabarovsk 24.91 70 *e*P P 02 35 16.0 +13
HABR *e* 02 35 35.3
HABR *e* 02 38 37.5
HABR *e*S **S** **02 39 23.4 -2.2**
HABR *e*SSS SSS 02 40 28.1
HABR *e* 02 46 02.0
HABR pmax pmax
comp=N,22nm,2.0s
HABR pmax pmax
comp=E,96nm,2.2s
HABR pmax pmax
comp=Z,87nm,2.2s
HABR MLR MLR
comp=Z,552nm,19.0s
SVE Sverdlovsk 26.20 310 *e*P **P** **02 35 15.0 +0.7**
SVE pmax pmax
comp=Z,65nm,0.8s
CHTO Chiang Mai 26.40 179 *e*P **P** **02 35 16.0 -0.3**
CHTO pmax pmax
comp=Z,3.0nm,0.7s
CHTO Chiang Mai 26.40 179 *e*P **P** **02 35 16.0 -0.3**
comp=Z,2.5nm,0.7s
CMAR Chiang Mai Arr 26.75 179 P **P** **02 35 20.6 +1.0**
comp=Z,0.9nm,0.7s,baz=357,slow=8.8,SNR=3.3
ARU Arti 27.28 309 *e*P **P** **02 35 23.9 0.0**
ARU pmax pmax
comp=Z,23nm,1.0s
ARU Arti 27.28 309 *e*P **P** **02 35 23.9 0.0**
comp=Z,23nm,1.0s
MAJO Matsushiro 30.86 92 *e*P **P** **02 35 56.0 0.0**
MAJO pmax pmax
comp=Z,20nm,0.7s
MAJO Matsushiro 30.86 92 *e*P **P** **02 35 56.0 0.0**
comp=Z,20nm,0.7s
KLMR Klimovskoe 37.37 316 *e*P **P** **02 36 51.4 -0.7**
KLMR *e**PP **sP** **02 37 00.9 +4.4**
KLMR *e* 02 38 16.0
KLMR *e*S **S** **02 42 34.7 -5.0**
KLMR pmax pmax
comp=Z,33nm,1.0s
GNI Garni 39.35 282 *e*P **P** **02 37 09.4 +0.2**
GNI pmax pmax
comp=Z,58nm,0.8s
GNI Garni 39.35 282 *e*P **P** **02 37 09.4 +0.2**
comp=Z,58nm,0.8s
OBN Obninsk 39.70 307 P **P** **02 37 11.5 -0.3**
comp=Z,12nm,0.4s,baz=139,slow=19,SNR=3.5
ARCES ARCESS Array B 42.70 330 P **P** **02 37 36.5 +0.2**
comp=Z,11nm,0.8s,baz=83,slow=9.7,SNR=11
ARCES ARCESS Array B 42.70 330 *e*P **P** **02 37 37.3 +1.0**
ARCES pmax pmax
comp=Z,11nm,0.7s
FINES FINESS Array B 43.74 318 P **P** **02 37 45.3 +0.6**
comp=Z,2.9nm,0.4s,baz=77,slow=9.3,SNR=14
AKASG Malin Array Be 45.24 303 P **P** **02 37 56.7 -0.2**
comp=Z,5.7nm,0.5s,baz=58,slow=8.9,SNR=7.3
KIEV Kiev 45.26 303 *e*P **P** **02 37 56.2 -0.8**
KIEV pmax pmax
comp=Z,7.0nm,0.6s
KIEV Kiev 45.26 303 *e*P **P** **02 37 56.2 -0.8**
comp=Z,7.2nm,0.6s
BRTR Keskin Array B 47.12 287 P **P** **02 38 12.8 +0.8**
comp=Z,3.5nm,0.9s,baz=68,slow=4.3,SNR=4.6
HFS Hagfors 49.91 319 P **P** **02 38 33.1 +0.1**
comp=Z,122nm,1.4s,baz=72,slow=9.5,SNR=25
NB2 NORSAR Subarra 50.66 321 P **P** **02 38 38.6 -0.2**
comp=Z,18nm,0.9s,baz=65,slow=7.9
NB2 NORSAR Subarra 50.66 321 P **P** **02 38 38.3 -0.5**
NB2 pmax pmax
comp=Z,14nm,0.9s
NOA NORSAR Array B 50.66 321 P **P** **02 38 38.6 -0.2**
comp=Z,13nm,0.9s,baz=65,slow=7.5,SNR=8.6
NOA NORSAR Array B 50.66 321 *e*P **P** **02 38 38.6 -0.2**
NOA pmax pmax
comp=Z,14nm,0.9s
DPC Dobruska-Polom 52.85 307 *e*P **P** **02 38 56.3 +1.0**
DPC Dobruska-Polom 52.85 307 *e*P **P** **02 38 56.3 +1.0**
UPC Upice 52.95 307 *e*P **P** **02 38 56.9 +1.0**
UPC Upice 52.95 307 *e*P **P** **02 38 56.9 +1.0**
VRAC Vranov 53.20 306 LR LR 03 02 01.4
comp=Z,344nm,18.5s,baz=295,slow=37
PVCC Panska Ves 53.74 308 *e*P **P** **02 39 02.7 +0.9**
PVCC Panska Ves 53.74 308 *e*P **P** **02 39 02.7 +0.9**
TREC Trest 53.84 306 *e*P **P** **02 39 03.2 +0.7**
TREC Trest 53.84 306 *e*P **P** **02 39 03.2 +0.7**
BRG Berggiesshubel 53.92 309 *e*P **P** **02 39 03.4 +0.4**
comp=Z,25nm,1.7s
BRG Berggiesshubel 53.92 309 *e*P **P** **02 39 03.4 +0.4**
BRG pmax pmax
comp=Z,25nm,1.7s
GOPC GO Pecny, Ondr 53.92 307 *e*P **P** **02 39 03.6 +0.5**
GOPC GO Pecny, Ondr 53.92 307 *e*P **P** **02 39 03.6 +0.5**
PRU Pruhonice 54.02 307 *e*P **P** **02 39 04.5 +0.7**
PRU Pruhonice 54.02 307 *e*P **P** **02 39 04.5 +0.7**
CLL Collm 54.22 310 *i*/P **P** **02 39 05.4 +0.2**
comp=Z,9.0nm,0.6s
CLL Collm 54.22 310 *i*/P **P** **02 39 05.4 +0.2**
CLL pmax pmax
comp=Z,9.0nm,0.6s
CONA Conrad Observa 54.31 305 *i* P **P** **02 39 07.8 +1.8**
comp=Z,15nm,0.9s
KHC Kasperske Hory 55.00 307 *e*P **P** **02 39 11.4 +0.4**
KHC Kasperske Hory 55.00 307 *e*P **P** **02 39 11.4 +0.4**
IDI Anoyia 55.36 287 P **P** **02 39 12.6 -1.2**
comp=Z,3.8nm,0.6s,baz=16,slow=6.8,SNR=6.3
SOKA Soboth 55.43 304 *i* P **P** **02 39 14.9 +0.7**
comp=Z,7.3nm,1.1s
KBA Koelnbreinsper 56.21 305 *i* P **P** **02 39 21.2 +1.3**
comp=Z,11nm,0.9s
COLD Coldfoot 56.40 26 *e*P **P** **02 39 21.1 +0.5**
comp=Z,8.3nm,1.2s
WTTA Wattenberg 57.09 306 *i* P **P** **02 39 27.1 +1.0**
comp=Z,13nm,1.2s
MOTA Moosalm 57.35 306 *i* P **P** **02 39 29.7 +1.8**
comp=Z,9.9nm,1.0s
RETA Reute 57.47 306 *i* P **P** **02 39 29.7 +1.0**
comp=Z,7.7nm,0.8s
DAVOX Davos/Dischmat 58.36 306 P **P** **02 39 35.0 0.0**
comp=Z,6.3nm,0.9s,baz=20,slow=2.0,SNR=4.5
KTH Kantishna Hill 58.45 30 *e*P **P** **02 39 36.3 +1.0**
comp=Z,21nm,1.1s
TIP Timpagrande 58.49 295 *e*P **P** **02 39 35.9 -0.1**
comp=Z,20nm,1.0s
COLA College 58.63 27 *e*P **P** **02 39 36.5 +0.1**
COLA pmax pmax
comp=Z,10.0nm,1.1s
COLA College 58.63 27 *e*P **P** **02 39 36.5 +0.1**
comp=Z,10nm,1.1s
CDF Champ du Feu 58.90 309 *e*P **P** **02 39 38.3 -0.4**
CDF pmax pmax
comp=Z,7.0nm,1.0s
ILAR Eielson Array 59.01 27 P **P** **02 39 39.4 +0.2**
comp=Z,2.4nm,0.9s,baz=316,slow=4.6,SNR=8.9
EKA Eskdalemuir Ar 60.10 320 P **P** **02 39 46.6 -0.1**
comp=Z,4.5nm,0.8s,baz=37,slow=7.3,SNR=9.2
ESK Eskdalemuir 60.13 320 *e*P **P** **02 39 47.2 +0.2**
ESK pmax pmax
comp=Z,8.0nm,0.8s
ESK Eskdalemuir 60.13 320 *e*P **P** **02 39 47.2 +0.2**
comp=Z,8.0nm,0.8s
INK Inuvik 60.22 20 P **P** **02 39 47.5 +0.2**
comp=Z,4.5nm,0.8s,baz=346,slow=10,SNR=6.9
INK Inuvik 60.22 20 *e*P **P** **02 39 46.9 -0.4**
INK pmax pmax
comp=Z,5.0nm,0.9s
INK Inuvik 60.22 20 *e*P **P** **02 39 46.9 -0.4**
comp=Z,5.5nm,0.9s
EGAK Eagle 60.79 25 *e*P **P** **02 39 51.6 +0.3**
comp=Z,8.4nm,1.2s
LPG La Plagne 60.88 306 *e*P **P** **02 39 54.0 +1.4**
LPG pmax pmax
comp=Z,7.0nm,0.8s
LPL La Plagne 60.88 306 *e*P **P** **02 39 52.8 +0.3**
LPL pmax pmax
comp=Z,3.0nm,0.5s
MBDF Montbardon 61.32 306 *e*P **P** **02 39 55.1 -0.3**
MBDF pmax pmax
comp=Z,10.0nm,0.8s
LOR Lormes 61.43 309 *e*P **P** **02 39 55.2 -0.8**
LOR pmax pmax
comp=Z,8.0nm,0.8s
KDAK Kodiak Island 61.53 35 P P 02 40 12.0 +16
comp=Z,8.8nm,0.5s,baz=296,slow=3.4,SNR=25
KDAK Kodiak Island 61.53 35 *i* P **P** **02 39 56.5 +0.1**
SMF Signal de Mont 61.82 309 *e*P **P** **02 39 58.0 -0.6**
SMF pmax pmax
comp=Z,6.0nm,0.9s
AVF Avril sur Loir 62.00 309 *e*P **P** **02 39 59.1 -0.7**
AVF pmax pmax
comp=Z,6.0nm,0.7s
LDF La Druitiere 62.75 312 *e*P **P** **02 40 04.3 -0.5**
LDF pmax pmax
comp=Z,12nm,0.6s
LFF La Frestale 64.58 309 *e*P **P** **02 40 17.2 +0.3**
LFF pmax pmax
comp=Z,21nm,0.9s
KEST Kesra 65.27 296 P **P** **02 40 21.9 +0.3**
comp=Z,4.3nm,0.9s,baz=358,slow=2.6,SNR=7.1
EPF Esparros 66.02 307 *e*P **P** **02 40 25.6 -0.8**
EPF pmax pmax
comp=Z,4.0nm,0.8s
MBWA Marble Bar 68.85 159 *e*P **P** **02 40 45.1 +0.9**
comp=Z,14nm,1.0s
YKA Yellowknife Ar 69.31 16 P **P** **02 40 46.4 -0.2**
comp=Z,2.4nm,0.8s,baz=336,slow=5.4,SNR=11
ESDC Sonseca Array 70.67 307 P **P** **02 40 55.2 -0.3**
comp=Z,2.1nm,0.7s,baz=44,slow=5.3,SNR=5.2
KMBO Kilima Mbogo 71.12 248 P **P** **02 40 58.1 -0.6**
comp=Z,1.6nm,0.7s,baz=341,slow=10,SNR=3.5
KMBO Kilima Mbogo 71.12 248 *e*P **P** **02 40 57.8 -1.0**
KMBO pmax pmax
comp=Z,2.0nm,0.6s
KMBO Kilima Mbogo 71.12 248 *e*P **P** **02 40 57.8 -1.0**
comp=Z,2.3nm,0.6s
WRA Warramunga Arr 72.57 145 P **P** **02 41 08.1 +1.1**
comp=Z,1.5nm,0.8s,baz=341,slow=6.1,SNR=3.7
ASAR Alice Springs 75.75 147 P **P** **02 41 27.9 +2.4**
comp=Z,1.0nm,0.9s,baz=328,slow=5.2,SNR=3.4
FCC Fort Churchill 75.78 7 *e*P **P** **02 41 24.5 -0.7**
FCC pmax pmax
comp=Z,9.0nm,0.9s
FCC Fort Churchill 75.78 7 *e*P **P** **02 41 24.5 -0.7**
comp=Z,8.8nm,0.9s
TAM Tamanrasset 76.30 288 *e*P **P** **02 41 28.9 -0.2**
TAM pmax pmax
comp=Z,5.0nm,1.1s
TAM Tamanrasset 76.30 288 *e*P **P** **02 41 28.9 -0.2**
comp=Z,4.6nm,1.1s
FFC Flin Flon 78.83 12 *e*P **P** **02 41 42.2 -0.2**
FFC pmax pmax
comp=Z,5.0nm,0.8s
FFC Flin Flon 78.83 12 *e*P **P** **02 41 42.2 -0.2**
comp=Z,4.8nm,0.8s
ULM Lac du Bonnet 84.00 9 P **P** **02 42 08.2 -1.7**
comp=Z,3.9nm,0.8s,baz=344,slow=7.4,SNR=3.6
TORD Torodi Ar. Bea 85.62 284 P **P** **02 42 18.6 0.0**
comp=Z,1.5nm,0.5s,baz=46,slow=4.1,SNR=18
STKA Stephens Creek 86.12 145 P P 02 42 28.4 +7.8
comp=Z,1.9nm,0.7s,baz=327,slow=4.2,SNR=3.2
STKA Stephens Creek 86.12 145 *e*P P 02 42 29.7 +9.1
STKA pmax pmax
comp=Z,2.0nm,0.9s
PDAR Pinedale Array 88.78 20 P **P** **02 42 34.2 +0.4**
comp=Z,0.9nm,1.0s,baz=46,slow=2.6,SNR=3.0
NVAR Mina Array Bea 90.25 28 P **P** **02 42 40.9 +0.1**
comp=Z,1.1nm,0.6s,baz=330,slow=2.7,SNR=4.3
R11A Troy Canyon, C 91.20 26 *e*P **P** **02 42 45.6 +0.4**
comp=Z,2.3nm,1.1s
SIV San Ignacio 146.20 323 PKPbc **PKPbc** **02 49 20.4 -0.1**
comp=Z,4.0nm,0.7s,baz=86,slow=5.6,SNR=5.0
CPUP Villa Florida 153.04 306 PKPbc **PKPbc** **02 49 36.2 -1.1**
comp=Z,5.7nm,1.0s,baz=63,slow=2.3,SNR=2.9
CPUP PKPab **PKPab** **02 49 47.9 -0.9**
comp=Z,5.1nm,1.0s,baz=18,slow=3.1,SNR=4.4

*ISCJB **16** 02:43:23.7±0.8,50°.26N±0°.05×19°.22E±0°.04, h0km, Error ellipse: s-maj=7.9km s-min=3.5km az=4.6*
*PRU **16** 02:43:24.7, 50°.26N×19°.27E, h0km*
*CSEM **16** 02:43:24.1±0.4,50°.27N×19°.25E, h1km, Error ellipse: s-maj=9.7km s-min=4.6km az=6.0*
ISC 16 02:43:24.1±1.0,**50°.25N**±0°.05×**19°.24E**±0°.03,**h0km**,**n14**, **σ0°79/24**,**Poland**

Code	Station Name	Δ°	AZ°	Phase	ID Op	ID ISC	Time h m s	Res ISC
OJC	**Ojcow**	**0.36**	**94**	*e*Pg		**Pg**	**02 43 31.3**	**+0.3**
OJC				*e*Sg		**Sg**	**02 43 35.9**	**+0.2**
OJC	**Ojcow**	**0.36**	**94**	*e*Pg		**Pg**	**02 43 31.3**	**+0.3**
OJC				*e*Sg		**Sg**	**02 43 35.9**	**+0.2**
OKC	**Ostrava-Krasne**	**0.82**	**240**	*e*SG		**Sb**	**02 43 52.4**	**-0.3**
OKC	**Ostrava-Krasne**	**0.82**	**240**	Sg		**Sb**	**02 43 52.4**	**-0.3**
LANS	**Liptovska Anna**	**1.11**	**172**	*e*Pg		**Pg**	**02 43 45.8**	**+0.4**
LANS				*e*Sg		**Sg**	**02 44 00.7**	**+1.0**
LANS	**Liptovska Anna**	**1.11**	**172**	*e*PG		**Pg**	**02 43 45.8**	**+0.4**
LANS				*e*SG		**Sg**	**02 44 00.7**	**+1.0**
MORC	**Moravsky Berou**	**1.19**	**247**	*e*Pg		**Pb**	**02 43 48.1**	**+0.5**
MORC				*e*Sg		**Sb**	**02 44 04.4**	**+0.8**
STHS	**Stebnicka Huta**	**1.54**	**122**	*e*PN		**Pb**	**02 43 53.8**	**+0.2**
STHS				*e*SN		**Sb**	**02 44 14.6**	**+1.0**
STHS				*e*LG		Lg	02 44 16.9	
KRLC	**Kraliky**	**1.59**	**265**	*e*SG		**Sg**	**02 44 16.0**	**+0.8**
KRLC	**Kraliky**	**1.59**	**265**	Sg		**Sg**	**02 44 16.0**	**+0.8**
VYHS	**Vyhne**	**1.78**	**189**	*e*Pn		**Pn**	**02 43 55.6**	**-0.5**
VYHS				*e*Sn		**Sn**	**02 44 17.7**	**-1.7**
VYHS	**Vyhne**	**1.78**	**189**	*e*PN		**Pn**	**02 43 55.6**	**-0.5**
VYHS				*e*SN		**Sn**	**02 44 17.7**	**-1.7**
VYHS				*e*LG		Lg	02 44 19.7	
DPC	**Dobruska-Polom**	**1.87**	**274**	*e*PG		**Pb**	**02 43 59.1**	**-0.2**
DPC				*e*SG		**Sg**	**02 44 25.1**	**+0.8**
	comp=Z,2.6nm,0.4s							
DPC	**Dobruska-Polom**	**1.87**	**274**	Pg		**Pb**	**02 43 59.1**	**-0.2**
DPC				Sg		**Sg**	**02 44 25.1**	**+0.8**
	2.6nm,0.4s							

*ISCJB **16** 02:49:30.7±0.6,38°.39N±0°.02×30°.87E±0°.03, h4km±5km, Error ellipse: s-maj=4.1km s-min=3.6km az=144.4*
*CSEM **16** 02:49:30.8±0.1,38°.38N×30°.86E, h8km, MD2.9, Error ellipse: s-maj=2.5km s-min=2.1km az=179.0*
*ISK **16** 02:49:30.7, 38°.37N×30°.87E, h10km, MD2.9*
*DDA **16** 02:49:30.2, 38°.39N×30°.84E, h18km, Md2.9*
ISC 16 02:49:30.7±0.9,**38°.38N**±0°.02×**30°.88E**±0°.02,**h14**km±8km, **n40**,**σ0°56/63**,**Turkey**

Code	Station Name	Δ°	AZ°	Phase	ID Op	ID ISC	Time h m s	Res ISC
BOLV	**Bolvadin**	**0.34**	**10**	*i* P		**Pg**	**02 49 37.8**	**+0.1**
BOLV				*i* S		**Sg**	**02 49 42.4**	**-0.1**
BOLV	**Bolvadin**	**0.34**	**10**	P		**Pg**	**02 49 37.8**	**+0.1**
BOLV				S		**Sg**	**02 49 42.4**	**-0.1**
BAGO	**Egridir - ISPA**	**0.40**	**190**	*i* P		**Pg**	**02 49 38.8**	**+0.1**
BAGO				*i* S		**Sb**	**02 49 45.1**	**-0.5**
ISP	**Isparta**	**0.62**	**207**	*e*PG		**Pg**	**02 49 42.9**	**-0.1**
ISP				*e*SG		**Sb**	**02 49 52.2**	**+0.1**
ISP	**Isparta**	**0.62**	**207**	*e*Pg		**Pg**	**02 49 42.9**	**-0.1**
ISP				*e*Sg		**Sb**	**02 49 52.2**	**+0.1**
KIZT	**Kizilcal**	**0.93**	**57**	*e*PG		**Pn**	**02 49 49.3**	**-0.2**
KIZT				*e*SG		**Sn**	**02 50 02.6**	**0.0**
KIZT	**Kizilcal**	**0.93**	**57**	*e*Pg		**Pn**	**02 49 49.3**	**-0.2**
KIZT				*e*Sg		**Sn**	**02 50 02.7**	**0.0**
AUKIR	**K¨–rka- Seyitg**	**0.93**	**343**	*i* P		**Pb**	**02 49 48.4**	**-0.3**
AUKIR				*i* S		**Sb**	**02 50 00.9**	**-0.2**
AUKIR	**K¨–rka- Seyitg**	**0.93**	**343**	P		**Pb**	**02 49 48.4**	**-0.3**
AUKIR				S		**Sb**	**02 50 00.9**	**-0.2**
KDHN	**Kadinhani**	**0.98**	**82**	*i* P		**Pb**	**02 49 49.3**	**-0.3**
KDHN				*i* S		**Sn**	**02 50 03.8**	**-0.2**
KDHN	**Kadinhani**	**0.98**	**82**	P		**Pb**	**02 49 49.3**	**-0.3**
KDHN				S		**Sn**	**02 50 03.8**	**-0.2**
KHL	**Karahalli**	**1.07**	**267**	*e*PG		**Pn**	**02 49 51.5**	**+0.2**
KHL	**Karahalli**	**1.07**	**267**	*e*Pg		**Pn**	**02 49 51.5**	**+0.2**
KHAL	**Karahalli**	**1.09**	**270**	*i* P		**Pb**	**02 49 50.8**	**-0.6**
KHAL				*i* S		**Sn**	**02 50 07.2**	**+0.6**
KHAL	**Karahalli**	**1.09**	**270**	P		**Pb**	**02 49 50.8**	**-0.6**
KHAL				S		**Sn**	**02 50 07.2**	**+0.6**
ESKT	**Eskisehir**	**1.14**	**359**	*i* P		**Pb**	**02 49 52.1**	**-0.1**
ESKT				*i* S		**Sn**	**02 50 07.6**	**-0.2**
SEYT	**Eskypehyr**	**1.14**	**359**	P		**Pb**	**02 49 52.1**	**-0.1**
SEYT				S		**Sn**	**02 50 07.6**	**-0.2**
SVRH	**Sivrihisar-ESK**	**1.18**	**25**	*e*PN		**Pg**	**02 49 53.9**	**+0.5**
SVRH	**Sivrihisar-ESK**	**1.18**	**25**	*e*Pn		**Pg**	**02 49 53.9**	**+0.5**
LADK	**Ladik-KONYA**	**1.19**	**98**	*e*PN		**Pg**	**02 49 53.9**	**+0.4**
LADK	**Ladik-KONYA**	**1.19**	**98**	*e*Pn		**Pg**	**02 49 53.9**	**+0.4**
KONT	**Konya--Tatoy**	**1.25**	**110**	*e*PN		**Pg**	**02 49 54.6**	**-0.1**
KONT	**Konya--Tatoy**	**1.25**	**110**	*e*Pn		**Pg**	**02 49 54.6**	**-0.1**
GDZ	**Gediz**	**1.30**	**303**	*i* P		**Pb**	**02 49 54.7**	**-0.3**
GDZ				*i* S		**Sg**	**02 50 12.2**	**-0.5**
GDZ	**Gediz**	**1.30**	**303**	P		**Pb**	**02 49 54.7**	**-0.3**
GDZ				S		**Sg**	**02 50 12.2**	**-0.5**
KMER	**Konya-Meram**	**1.33**	**117**	*i* P		**Pb**	**02 49 55.7**	**+0.2**
KMER				*i* S		**Sg**	**02 50 13.5**	**0.0**
KMER	**Konya-Meram**	**1.33**	**117**	P		**Pb**	**02 49 55.7**	**+0.2**
KMER				S		**Sg**	**02 50 13.5**	**0.0**
UZP	**Denizli**	**1.39**	**256**	*i* P		**Pn**	**02 49 54.9**	**-0.8**
UZP				*i* S		**Sg**	**02 50 18.1**	**+2.7**
TVSB	**Tavsanli**	**1.54**	**314**	*e*PN		**Pb**	**02 49 58.8**	**-0.2**
TVSB	**Tavsanli**	**1.54**	**314**	*e*Pn		**Pb**	**02 49 58.8**	**-0.2**
AUMIH	**MIHALICIK**	**1.56**	**17**	*i* P		**Pb**	**02 49 59.6**	**+0.2**
AUMIH				*i* S		**Sg**	**02 50 20.0**	**-0.9**
AUMIH	**MIHALICIK**	**1.56**	**17**	P		**Pb**	**02 49 59.6**	**+0.2**
AUMIH				S		**Sg**	**02 50 20.0**	**-0.9**
CHBY	**Cihanbeyli**	**1.59**	**82**	*e*PN		**Pb**	**02 49 59.7**	**-0.3**
CHBY	**Cihanbeyli**	**1.59**	**82**	*e*Pn		**Pb**	**02 49 59.7**	**-0.3**
KULA	**Kula-Manisa**	**1.75**	**275**	*e*PN		**Pb**	**02 50 01.8**	**-0.8**
KULA	**Kula-Manisa**	**1.75**	**275**	*e*Pn		**Pb**	**02 50 01.8**	**-0.8**
DEMI	**Demirci**	**1.81**	**292**	*i* P		**Pn**	**02 50 01.8**	**+0.2**
DEMI				*i* S		**Sg**	**02 50 28.7**	**-0.4**
DEMI	**Demirci**	**1.81**	**292**	P		**Pn**	**02 50 01.8**	**+0.2**
GULT	**Gulveren**	**2.07**	**352**	*e*PN		**Pn**	**02 50 06.2**	**+1.2**
GULT	**Gulveren**	**2.07**	**352**	*e*Pn		**Pn**	**02 50 06.3**	**+1.2**

*ISCJB **16** 02:51:19.7±0.5,49°.81N±0°.04×18°.50E±0°.03, h0km, Error ellipse: s-maj=5.9km s-min=3.2km az=8.7*
*IPEC **16** 02:51:20.7±0.2,49°.80N×18°.54E, h0km±3km, ML1.4/4, Error ellipse: s-maj=2.1km s-min=1.1km az=161.0*
*CSEM **16** 02:51:20.6±0.3,49°.81N×18°.50E, h1km, ML2.5/4, Error ellipse: s-maj=8.5km s-min=4.3km az=9.0*
ISC 16 02:51:20.2±0.9,**49°.81N**±0°.03×**18°.51E**±0°.02,**h0km**,**n17**, **σ0°82/32**,**Czech and Slovak Republics**

Code	Station Name	Δ°	AZ°	Phase	ID Op	ID ISC	Time h m s	Res ISC
OKC	**Ostrava-Krasne**	**0.24**	**278**	*e*PG		**Pg**	**02 51 26.1**	**+1.3**
OKC				*e*SG		**Sg**	**02 51 29.1**	**+1.2**
	comp=Z,17nm,0.4s							
OKC	**Ostrava-Krasne**	**0.24**	**278**	Pg		**Pg**	**02 51 26.1**	**+1.3**
OKC				Sg		**Sg**	**02 51 29.1**	**+1.2**
	17nm,0.4s							
MORC	**Moravsky Berou**	**0.63**	**268**	*e*Pg		**Pb**	**02 51 33.3**	**-0.9**
MORC				*e*Sg		**Sg**	**02 51 40.9**	**+0.4**
	9.5nm,0.2s							
LANS	**Liptovska Anna**	**0.91**	**136**	*e*Pg		**Pg**	**02 51 37.9**	**+0.4**
LANS				*e*Sg		**Sb**	**02 51 51.9**	**+0.5**
LANS	**Liptovska Anna**	**0.91**	**136**	*e*PG		**Pg**	**02 51 37.9**	**+0.4**
LANS				*e*SG		**Sb**	**02 51 51.9**	**+0.5**
OJC	**Ojcow**	**0.93**	**63**	*e*Pg		**Pg**	**02 51 37.6**	**-0.4**
OJC				*e*Sg		**Sg**	**02 51 49.7**	**-0.3**
OJC	**Ojcow**	**0.93**	**63**	*e*Pg		**Pg**	**02 51 37.6**	**-0.4**
OJC				*e*Sg		**Sg**	**02 51 49.7**	**-0.3**
KRLC	**Kraliky**	**1.15**	**284**	*e*PG		**Pg**	**02 51 42.1**	**-0.2**
KRLC				*e*SG		**Sb**	**02 51 58.3**	**-0.2**
KRLC	**Kraliky**	**1.15**	**284**	Pg		**Pg**	**02 51 42.1**	**-0.2**
KRLC				Sg		**Sb**	**02 51 58.3**	**-0.2**
VYHS	**Vyhne**	**1.33**	**171**	*e*Pn		**Pg**	**02 51 45.2**	**+0.5**
VYHS				*e*Sn		**Sg**	**02 52 03.0**	**+0.1**
VYHS	**Vyhne**	**1.33**	**171**	*e*PN		**Pg**	**02 51 45.2**	**-0.5**
VYHS				*e*SN		**Sg**	**02 52 03.0**	**+0.1**
VRAC	**Vranov**	**1.35**	**249**	*e*Pg		**Pn**	**02 51 46.1**	**-0.2**
VRAC				*e*Sg		**Sg**	**02 52 03.0**	**-0.5**
	6.8nm,0.2s							
DPC	**Dobruska-Polom**	**1.51**	**292**	*e*PG		**Pn**	**02 51 48.7**	**+0.1**
DPC				*e*SG		**Sg**	**02 52 08.7**	**-0.1**
	comp=Z,3.9nm,0.3s							
DPC	**Dobruska-Polom**	**1.51**	**292**	Pg		**Pn**	**02 51 48.7**	**+0.1**
DPC				Sg		**Sg**	**02 52 08.7**	**-0.1**
	3.9nm,0.3s							
KRUC	**Moravsky**	**1.57

KSRS	**Korea Array**	**29.56**	**8**	LR	LR	03 11 41.1			
	comp=Z,1763nm,21.3s,baz=232,slow=37								
WRA	**Warramunga Arr**	**30.00**	**158**	P	P	02 59 36.7	+1.4		
	0.6nm,0.4s,baz=339,slow=8.9,SNR=5.9								
ASAR	**Alice Springs**	**33.31**	**162**	P	P	03 00 03.2	-1.2		
	3.3nm,0.5s,baz=347,slow=11,SNR=36								
RAO	**Raoul Island**	**67.85**	**126**	LR	LR	03 32 09.4			
	comp=Z,780nm,21.6s,baz=167,slow=34								
ILAR	**Eielson Array**	**82.77**	**26**	P	P	03 05 51.5	+1.0		
	0.3nm,0.7s,baz=276,slow=4.7,SNR=7.1								
INK	**Inuvik**	**87.46**	**21**	P	P	03 06 13.8	0.0		
	0.5nm,0.7s,baz=280,slow=5.3,SNR=4.1								
YKA	**Yellowknife Ar**	**97.02**	**23**	P	P	03 06 56.9	-1.3		
	0.6nm,0.8s,baz=302,slow=4.5,SNR=13								

IDC 16 03:04:56.9±18.0, 18°49S×169°34E, h220km±55km, mb3.7/5, mb1 3.8/6, mb1mx3.4/37, mbtmp4.2/6, MS4.1/1, Ms1 4.1/1, ms1mx3.0/30, Error ellipse: s-maj=258.4km s-min=77.9km az=69.0, Vanuatu Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
DZM	**Mont Dzumac**	**4.48**	**217**	P	Pn	03 06 05.4	-0.1
	3.9nm,0.3s,baz=0,slow=9.1,SNR=38						
RAO	**Raoul Island**	**15.81**	**135**	LR	LR	03 13 02.8	
	comp=Z,576nm,18.3s,baz=102,slow=31						
CTA	**Charters Tower**	**21.85**	**262**	P	P	03 09 32.1	-0.1
	2.6nm,0.9s,baz=98,slow=7.1,SNR=2.8						
STKA	**Stephens Creek**	**28.33**	**237**	P	P	03 10 30.8	+0.3
	1.4nm,0.5s,baz=86,slow=11,SNR=5.9						
WRA	**Warramunga Arr**	**33.05**	**262**	P	P	03 11 11.4	-0.7
	0.5nm,0.3s,baz=97,slow=8.1,SNR=5.5						
ASAR	**Alice Springs**	**33.41**	**255**	P	P	03 11 15.1	-0.1
	11nm,0.5s,baz=83,slow=8.8,SNR=157						
FITZ	**Fitzroy Crossi**	**41.42**	**263**	P	P	03 12 22.4	+0.2
	3.9nm,0.6s,baz=85,slow=6.3,SNR=10						

IDC 16 03:08:41.7±2.1, 12°83S×167°59E, h0km, mb3.8/5, mb1 4.0/5, mb1mx3.6/39, mbtmp3.8/5, Error ellipse: s-maj=104.2km s-min=26.0km az=136.0, Santa Cruz Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
STKA	**Stephens Creek**	**30.48**	**227**	P	P	03 14 57.2	+0.8
	0.5nm,0.3s,baz=14,slow=8.3,SNR=4.8						
WRA	**Warramunga Arr**	**32.63**	**253**	P	P	03 15 15.6	+0.1
	0.2nm,0.4s,baz=86,slow=8.9,SNR=3.2						
ASAR	**Alice Springs**	**33.67**	**247**	P	P	03 15 24.1	-0.5
	0.6nm,0.5s,baz=74,slow=9.2,SNR=13						
ILAR	**Eielson Array**	**84.64**	**18**	P	P	03 21 17.6	+0.8
	0.3nm,0.6s,baz=232,slow=4.4,SNR=9.2						
MKAR	**Makanchi Array**	**96.05**	**316**	P	P	03 22 11.3	+0.2
	0.3nm,0.5s,baz=97,slow=5.3,SNR=5.0						
ARCES	**ARCESS Array B**	**118.50**	**346**	PKP	PKPdf	03 27 29.7	-1.2
	2.8nm,0.9s,baz=39,slow=2.3,SNR=5.2						
FINES	**FINESS Array B**	**124.08**	**339**	PKP	PKPdf	03 27 40.9	-0.9
	1.6nm,1.0s,baz=29,slow=1.8,SNR=2.3						

*ISCJB **16** 03:11:41.4±0.6,26°2S±0.1×178°0W±0.1, h250km, mb3.8/14, Error ellipse: s-maj=19.3km s-min=14.4km az=174.9*

*IDC **16** 03:11:43.4±6.2,26°18S×177°97W, h258km±56km, mb3.6/14, mb1 3.9/15, mb1mx3.7/33, mbtmp4.2/15, Error ellipse: s-maj=22.0km s-min=16.3km az=67.0*

ISC 16 03:11:42.5±0.6, 26°2S±0.1×177°9W±0.1, h250km, n23, σ0°75/25, mb3.9/14, South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
DZM	**Mont Dzumac**	**14.85**	**283**	P	**P**	**03 15 01.0**	**+0.1**
	0.8nm,0.3s,baz=74,slow=18,SNR=8.3						
CTA	**Charters Tower**	**33.43**	**273**	P	**P**	**03 17 58.8**	**+0.6**
	1.7nm,0.4s,baz=99,slow=9.1,SNR=5.4						
ASAR	**Alice Springs**	**43.57**	**262**	P	**P**	**03 19 21.4**	**-0.9**
	1.2nm,0.5s,baz=96,slow=7.0,SNR=14						
WRA	**Warramunga Arr**	**44.17**	**268**	P	**P**	**03 19 25.8**	**-1.3**
	0.7nm,0.5s,baz=104,slow=6.1,SNR=11						
VNDA	**Vanda**	**52.28**	**185**	P	**P**	**03 20 28.2**	**+0.2**
	0.7nm,0.4s,baz=4.9,slow=7.6,SNR=15						
MAW	**Mawson**	**76.27**	**200**	P	**P**	**03 23 03.4**	**+0.1**
	2.2nm,0.5s,baz=124,slow=4.2,SNR=7.4						
USRK	**Ussuriysk Ar.**	**83.70**	**326**	P	**P**	**03 23 44.2**	**+1.0**
	1.6nm,0.6s,baz=130,slow=3.2,SNR=4.7						
NVAR	**Mina Array Bea**	**85.10**	**43**	P	**P**	**03 23 51.0**	**+0.3**
	3.0nm,0.7s,baz=220,slow=8.6,SNR=18						
PLCA	**Paso Flores**	**85.33**	**133**	P	**P**	**03 23 52.3**	**+0.5**
	1.1nm,0.8s,baz=245,slow=7.4,SNR=3.6						
KLR	**Kul'dur**	**87.44**	**340**	P	**P**	**03 24 01.5**	**0.0**
	2.2nm,0.7s,baz=113,slow=2.0,SNR=7.1						
TXAR	**Lajitas Array**	**90.05**	**57**	P	**P**	**03 24 14.7**	**+0.3**
	0.7nm,0.8s,baz=217,slow=6.0,SNR=6.8						
SEY	**Seymchan**	**91.90**	**347**	P	**P**	**03 24 22.0**	**+0.1**
	0.9nm,0.6s,baz=167,slow=4.8,SNR=5.3						
CMAR	**Chiang Mai Arr**	**92.08**	**289**	P	**P**	**03 24 24.9**	**+1.2**
	0.3nm,0.3s,baz=137,slow=4.7,SNR=4.2						
PDAR	**Pinedale Array**	**93.03**	**43**	P	**P**	**03 24 27.5**	**-0.4**
	1.4nm,0.7s,baz=218,slow=3.1,SNR=15						
ILAR	**Eielson Array**	**93.81**	**13**	P	**P**	**03 24 29.9**	**-0.8**
	0.5nm,0.8s,baz=220,slow=6.2,SNR=6.6						
MKAR	**Makanchi Array**	**115.08**	**312**	PKP	**PKPdf**	**03 29 53.6**	**-0.1**
	0.8nm,0.8s,baz=61,slow=2.7,SNR=5.6						
ARCES	**ARCESS Array B**	**134.49**	**349**	PKP	**PKPdf**	**03 30 28.6**	**-1.5**
	4.4nm,1.0s,baz=99,slow=2.1,SNR=12						
FINES	**FINESS Array B**	**141.20**	**342**	PKhKP	PKPpre	03 30 36.8	
	0.6nm,0.4s,baz=30,slow=3.0,SNR=7.2						
FINES				PKP	**PKPdf**	**03 30 41.9**	**-0.7**
	0.6nm,0.4s,baz=113,slow=1.8,SNR=8.2						
NB2	**NORSAR Subarra**	**144.60**	**352**	PKP	**PKPab**	**03 30 47.5**	**-0.5**
	comp=Z,2.7nm,0.6s,baz=12,slow=3.8						
NOA	**NORSAR Array B**	**144.60**	**352**	PKP	**PKPab**	**03 30 47.6**	**-0.4**
	comp=Z,1.4nm,0.6s,baz=17,slow=2.5,SNR=17						
AKASG	**Malin Array Be**	**147.91**	**327**	PKPbc	**PKPdf**	**03 30 55.8**	**+1.3**
	comp=Z,1.0nm,0.4s,baz=46,slow=4.2,SNR=7.7						
BRTR	**Keskin Array B**	**150.44**	**305**	PKPbc	**PKPbc**	**03 31 04.5**	**-0.2**
	comp=Z,1.3nm,0.6s,baz=147,slow=4.3,SNR=8.4						
BRTR				PKPab	**PKPab**	**03 31 12.5**	**+0.3**
	comp=Z,3.5nm,0.6s,baz=87,slow=4.2,SNR=16						
TORD	**Torodi Ar. Bea**	**167.03**	**178**	PKP	**PKPdf**	**03 31 18.4**	**-0.6**
	comp=Z,0.5nm,0.7s,baz=325,slow=0.7,SNR=9.9						
TORD				PKPab	**PKPab**	**03 32 23.4**	**-0.7**
	comp=Z,0.3nm,0.5s,baz=187,slow=3.7,SNR=11						

*NIED **16** 03:22:00,38°20N×141°80E, h56km, Mw4.1 Best double couple: M₀1.87000×10¹⁵ NP1:φ₀188.00000°,δ45.00000°,λ99.00000°. NP2:φ₀356.00000°,δ46.00000°,λ81.00000°.*

*MOS **16** 03:22:37.8±1.2,38°29N×142°05E, h54km, mb4.4/20, Error ellipse: s-maj=9.4km s-min=6.1km az=78.9*

*ISCJB **16** 03:22:37.7±0.5,38°22N±0.0°03×142°05E±0.0°05, h55km±4km, mb4.1/42, MS3.9/2, Error ellipse: s-maj=7.0km s-min=4.2km az=27.4*

*NEIC **16** 03:22:39.7±0.6,38°20N×141°99E, h56km±6km, mb4.3/19, Error ellipse: s-maj=7.5km s-min=5.3km az=124.0*

*JMA **16** 03:22:40.2±0.1,38°25N×141°84E, h60km±1km, M4.1*

JMA Felt II J1.

*IDC **16** 03:22:40.4±0.6,38°22N×141°81E, h61km±5km, mb3.9/20, mb1 4.1/23, mb1mx4.0/40, mbtmp4.2/23, MS3.7/2, Ms1 3.7/2, ms1mx2.9/43, Error ellipse: s-maj=15.6km s-min=11.2km az=108.0*

ISC 16 03:22:39.5±0.6, 38°21N±0.0°04×142°06E±0.0°05, h58km±5km, n109, σ1s54/121, mb4.2/42, 3C, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**0.61**	**294**	P	**Pn**	**03 22 51.7**	**-0.8**
JIO				S	**Sn**	**03 22 59.5**	**-2.5**
OFUJ	**Ofunato**	**0.92**	**341**	P	**Pn**	**03 22 56.2**	**-0.2**
OFUJ				S	**Sn**	**03 23 07.6**	**-1.3**
JMK	**Ichinoseki**	**0.99**	**319**	P	**Pn**	**03 22 56.7**	**-0.6**
JMK				S	**Sn**	**03 23 08.5**	**-2.0**
JMM	**Marumori**	**1.06**	**251**	P	**Pn**	**03 22 56.9**	**-1.3**
JMM				S	**Sn**	**03 23 09.2**	**-2.9**
JOU	**Okura**	**1.11**	**278**	P	**Pn**	**03 22 57.7**	**-1.2**
JOU				S	**Sn**	**03 23 10.5**	**-2.8**
JFK	**Kawauchi**	**1.26**	**228**	P	**Pn**	**03 23 00.4**	**-0.6**
JFK				S	**Sn**	**03 23 15.2**	**-1.8**
JOM	**Ohasama**	**1.39**	**335**	P	**Pn**	**03 23 02.4**	**-0.3**
JOM				S	**Sn**	**03 23 19.1**	**-1.0**
JYK	**Kaneyama**	**1.50**	**298**	P	**Pn**	**03 23 03.1**	**-1.1**
JYK				eS	**Sn**	**03 23 19.7**	**-3.1**
JYS	**Shirataka**	**1.57**	**271**	P	**Pn**	**03 23 04.1**	**-1.0**
JYS				eS	**Sn**	**03 23 22.4**	**-2.0**
MJA0	**Matsu Arr-Jizo**	**3.46**	**242**	eP	**Pn**	**03 23 32.1**	**+1.1**
MJA0				pmax	pmax		
	comp=Z,7.0nm,0.3s						
MJAR	**Matsushiro Arr**	**3.49**	**243**	P	**Pn**	**03 23 32.1**	**+0.8**
	comp=Z,7.4nm,0.3s,baz=55,slow=11,SNR=52						
MAJO	**Matsushiro**	**3.49**	**243**	eP	**Pn**	**03 23 31.9**	**+0.5**
MAJO	**Matsushiro**	**3.49**	**243**	ePn	**Pn**	**03 23 31.9**	**+0.5**
MAT	**Matsushiro**	**3.49**	**243**	P	**Pn**	**03 23 32.0**	**+0.7**
MAT				S	**Sn**	**03 24 14.8**	**+3.4**
ERM	**Erimo**	**3.89**	**12**	eP	**Pn**	**03 23 36.0**	**-0.8**
ERM				e		03 24 17.9	
ERM	**Erimo**	**3.89**	**12**	ePn	**Pn**	**03 23 36.0**	**-0.8**
ERM				eSn	**Sn**	**03 24 17.9**	**-3.2**
JHJ2	**Mitsune**	**5.41**	**200**	ePn	**Pn**	**03 23 56.7**	**-0.9**
JHJ	**Hachijo jima 2**	**5.41**	**201**	P	**Pn**	**03 23 57.0**	**-0.7**
	comp=Z,42nm,0.3s,baz=339,slow=19,SNR=14						
JHJ				S	**Sn**	**03 24 54.7**	**-3.8**
	comp=Z,27nm,0.3s,baz=28,slow=22,SNR=6.9						
ASAJ	**Asahikawa**	**5.91**	**4**	P	**Pn**	**03 24 04.0**	**-0.4**
	comp=Z,5.9nm,0.3s,baz=214,slow=9.6,SNR=55						
ASAJ				S	**Sn**	**03 25 10.1**	**-0.7**
	comp=Z,2.8nm,0.3s,baz=73,slow=22,SNR=5.8						
ASAJ	**Asahikawa**	**5.91**	**4**	ePn	**Pn**	**03 24 03.3**	**-1.2**
	comp=Z,11nm,0.8s						
ASAJ				eSn	**Sn**	**03 25 09.0**	**-1.8**
YUK	**Yuzh-Kuril'sk**	**6.49**	**25**	eP	**Pn**	**03 24 11.2**	**-1.1**
YUK				eS	**Sn**	**03 25 18.9**	**-5.9**
YUK				pmax	pmax		
	comp=Z,284nm,0.3s						
YUK				pmax	pmax		
	comp=N,96nm,0.2s						
YUK				pmax	pmax		
	comp=E,117nm,0.2s						
SHO	**Shikotan**	**6.70**	**31**	eP	**Pn**	**03 24 13.1**	**-2.2**
SHO				eS	Sn	03 25 22.7	-7.5
SHO				pmax	pmax		
	comp=Z,38nm,0.7s						
SHO				pmax	pmax		
	comp=E,35nm,0.6s						
SHO				pmax	pmax		
	comp=N,15nm,0.2s						
KUR	**Kuril'sk**	**8.25**	**30**	eP	**Pn**	**03 24 36.0**	**-0.4**
KUR				eS	**Sn**	**03 26 03.7**	**-4.4**
YSS	**Yuzh-Sakhalins**	**8.75**	**3**	eP	**Pn**	**03 24 40.6**	**-2.7**
USRK	**Ussuriysk Ar.**	**9.66**	**311**	P	**Pn**	**03 24 55.8**	**+0.1**
	comp=N,3.2nm,0.3s,baz=126,slow=14,SNR=24						
JNU	**Nakatsue**	**10.41**	**244**	LR	LR	03 29 42.2	
	comp=N,159nm,18.6s,baz=112,slow=41						
CBIJ	**Chichi jima**	**11.09**	**179**	ePn	**Pn**	**03 25 14.1**	**-1.3**
JCJ	**Chichijima**	**11.09**	**179**	P	**Pn**	**03 25 13.1**	**-2.2**
	comp=N,5.2nm,0.3s,baz=345,slow=22,SNR=7.5						
KSRS	**Korea Array**	**11.21**	**270**	P	**Pn**	**03 25 19.1**	**+2.2**
	comp=N,4.0nm,0.3s,baz=78,slow=14,SNR=4.5						
KSAR	**Wonju Array Be**	**11.24**	**270**	P	**Pn**	**03 25 19.1**	**+1.8**
KSAR	**Wonju Array Be**	**11.24**	**270**	P	**Pn**	**03 25 19.1**	**+1.8**
KLR	**Kul'dur**	**13.28**	**329**	eP	**Pn**	**03 25 44.3**	**-0.8**
MA2	**Magadan**	**22.10**	**12**	P	**P**	**03 27 30.2**	**+0.6**
	comp=N,4.9nm,0.8s,baz=255,slow=10,SNR=4.8						
YHNB	**Yeheng**	**22.15**	**238**	eP	**P**	**03 27 29.5**	**-1.1**
	comp=N,6.2nm,0.5s						
SEY	**Seymchan**	**25.54**	**11**	P	**P**	**03 28 03.5**	**+1.1**
	comp=N,2.7nm,0.5s,baz=208,slow=7.2,SNR=15						
SEY	**Seymchan**	**25.54**	**11**	eP	**P**	**03 28 04.6**	**+2.2**
ULN	**Ulaanbaatar**	**27.14**	**302**	eP	**P**	**03 28 18.1**	**+0.9**
ULN				pmax	pmax		
	comp=Z,7.0nm,2.5s						
ULN	**Ulaanbaatar**	**27.14**	**302**	eP	**P**	**03 28 17.2**	**0.0**
	comp=Z,1.6nm,0.6s						
SONM	**Songino Array**	**27.57**	**302**	P	**P**	**03 28 17.9**	**-3.2**
	comp=Z,1.1nm,0.6s,baz=94,slow=9.4,SNR=3.8						
ENH	**Enshi**	**27.96**	**263**	eP	**P**	**03 28 23.4**	**-1.1**
	comp=Z,11nm,0.6s						
H11N2	**WAKE ISLAND Hy**	**28.34**	**124**	T	T	03 59 00.8	
	baz=316,slow=76,SNR=279						
H11N1	**WAKE ISLAND Hy**	**28.35**	**124**	T	T	03 59 01.6	
	baz=316,slow=76,SNR=253						
H11N3	**WAKE ISLAND Hy**	**28.36**	**124**	T	T	03 58 49.5	
	baz=316,slow=76,SNR=361						
H11S1	**WAKE ISLAND Hy**	**29.10**	**126**	T	T	03 59 53.6	
	baz=318,slow=76,SNR=9.8						
H11S3	**WAKE ISLAND Hy**	**29.10**	**126**	T	T	03 59 43.0	
	baz=318,slow=76,SNR=14						
H11S2	**WAKE ISLAND Hy**	**29.12**	**126**	T	T	03 59 53.4	
	baz=318,slow=76,SNR=11						
ZAK	**Zakamensk**	**29.96**	**307**	eP	**P**	**03 28 41.2**	**-1.0**
ZAK				pmax	pmax		
	comp=Z,1.0nm,0.8s						
BILL	**Bilibino**	**32.75**	**17**	eP	**P**	**03 29 07.5**	**+1.1**
BILL				e		03 30 16.5	
BILL				eS	**S**	**03 34 15.0**	**-3.7**
BILL				pmax	pmax		
	comp=Z,5.0nm,2.5s						
BILL				MLR	MLR		
	comp=Z,101nm,18.0s						
ZALV	**Zalesovo Beam**	**41.51**	**311**	P	**P**	**03 30 20.1**	**-0.6**
	comp=Z,2.4nm,0.5s,baz=85,slow=7.5,SNR=13						
ZALV	**Zalesovo Beam**	**41.51**	**311**	eP	**P**	**03 30 21.1**	**+0.4**
ZALV				pmax	pmax		
	comp=Z,2.0nm,0.5s						
CMAR	**Chiang Mai Arr**	**42.30**	**255**	P	**P**	**03 30 27.1**	**-0.5**
	comp=Z,0.4nm,0.5s,baz=38,slow=8.1,SNR=2.7						
MKAR	**Makanchi Array**	**43.94**	**301**	P	**P**	**03 30 40.6**	**+0.1**
	comp=Z,2.3nm,0.5s,baz=87,slow=9.6,SNR=25						
MKAR	**Makanchi Array**	**43.94**	**301**	eP	**P**	**03 30 40.5**	**-0.1**
MKAR				pmax	pmax		
	comp=Z,2.0nm,0.5s						
KURK	**Kurchatov**	**45.62**	**307**	eP	**P**	**03 30 53.4**	**-0.4**
KURK				pmax	pmax		
	comp=Z,9.0nm,0.8s						
KURK	**Kurchatov**	**45.62**	**307**	eP	**P**	**03 30 53.4**	**-0.4**
	comp=Z,8.8nm,0.8s						
KDAK	**Kodiak Island**	**45.88**	**43**	eP	**P**	**03 30 57.0**	**+1.2**
RC01	**Rabbit Creek A**	**47.12**	**38**	eP	**P**	**03 31 06.2**	**+0.7**
	comp=Z,4.9nm,1.0s						
GUN	**Gumba**	**47.55**	**275**	eP	**P**	**03 31 08.6**	**-1.1**
	comp=Z,12nm,0.5s						
SML	**Sawmill**	**47.74**	**37**	eP	**P**	**03 31 11.4**	**+1.1**
SML				pmax	pmax		
	comp=Z,1.0nm,0.8s						
SML	**Sawmill**	**47.74**	**37**	eP	**P**	**03 31 11.4**	**+1.1**
	comp=Z,0.8nm,0.8s						
KKN	**Kakani**	**48.08**	**275**	eP	**P**	**03 31 12.9**	**-0.7**
ILAR	**Eielson Array**	**48.23**	**33**	P	**P**	**03 31 15.3**	**+1.3**
	comp=Z,1.4nm,0.7s,baz=269,slow=6.5,SNR=25						
ILAR				pP	**pP**	**03 31 31.3**	**+2.1**
	comp=Z,0.9nm,0.8s,baz=280,slow=7.1,SNR=6.5						
DIV	**Divide**	**49.03**	**38**	eP	**P**	**03 31 21.6**	**+1.3**
	comp=Z,5.0nm,0.6s						
KOLN	**Koldanda**	**49.41**	**276**	eP	**P**	**03 31 24.5**	**+0.7**
	comp=Z,6.2nm,0.5s						
TKM2	**Tokmak 2**	**49.53**	**298**	eP	**P**	**03 31 25.3**	**+0.8**
TKM2				pmax	pmax		
	comp=Z,2.0nm,0.5s						
TKM2	**Tokmak 2**	**49.53**	**298**	eP	**P**	**03 31 25.3**	**+0.8**
	comp=Z,2.2nm,0.5s						
DOT	**Dot Lake**	**49.54**	**34**	eP	**P**	**03 31 25.1**	**+1.0**
	comp=Z,3.1nm,0.8s						
PYUN	**Piuthan**	**49.73**	**277**	eP	**P**	**03 31 27.9**	**+1.6**
	comp=Z,14nm,0.5s						
BRVK	**Borovoye**	**50.22**	**312**	eP	**P**	**03 31 29.2**	**-0.2**
BRVK				pmax	pmax		
	comp=Z,2.0nm,0.9s						
BRVK	**Borovoye**	**50.22**	**312**	eP	**P**	**03 31 29.2**	**-0.2**
	comp=Z,2.4nm,0.9s						
AAK	**Ala-Archa**	**50.39**	**298**	*i* P	**P**	**03 31 31.4**	**+0.4**
AAK				pmax	pmax		
	comp=Z,2.0nm,0.8s						
AAK	**Ala-Archa**	**50.39**	**298**	eP	**P**	**03 31 31.9**	**+0.9**
	comp=Z,1.3nm,0.8s						
EKS2	**Erkin-Say**	**50.88**	**298**	eP	**P**	**03 31 34.9**	**+0.3**
EKS2				pmax	pmax		
	comp=Z,2.0nm,0.7s						
EKS2	**Erkin-Say**	**50.88**	**298**	eP	**P**	**03 31 34.9**	**+0.3**
	comp=Z,1.6nm,0.7s						
INK	**Inuvik**	**53.11**	**28**	eP	**P**	**03 31 51.8**	**+1.2**
INK				pmax	pmax		
	comp=Z,2.0nm,0.9s						
INK	**Inuvik**	**53.11**	**28**	eP	**P**	**03 31 51.8**	**+1.2**
	comp=Z,2.0nm,0.9s						
ARU	**Arti**	**55.82**	**318**	eP	**P**	**03 32 10.1**	**-0.4**
ARU				pmax	pmax		
	comp=Z,2.0nm,0.4s						
ARU	**Arti**	**55.82**	**318**	eP	**P**	**03 32 10.1**	**-0.4**
	comp=Z,1.9nm,0.4s						
WRAB	**Tennant Creek**	**58.29**	**189**	eP	**P**	**03 32 27.6**	**-0.7**
WRAB				pmax	pmax		
	comp=Z,4.0nm,1.0s						
WRAB	**Tennant Creek**	**58.29**	**189**	eP	**P**	**03 32 27.6**	**-0.7**
	comp=Z,4.5nm,1.0s						
WRA	**Warramunga Arr**	**58.30**	**189**	P	**P**	**03 32 28.2**	**-0.1**
	comp=Z,2.6nm,0.5s,baz=6.4,slow=7.3,SNR=18						
WRA				pP	**pP**	**03 32 44.3**	**+0.3**
	comp=Z,1.4nm,0.5s,baz=6.7,slow=7.4,SNR=5.5						
WRA	**Warramunga Arr**	**58.30**	**189**	eP	**P**	**03 32 28.2**	**-0.1**
WRA				pmax	pmax		
	comp=Z,2.0nm,0.5s						
ASAR	**Alice Springs**	**62.03**	**188**	P	**P**	**03 32 54.4**	**+0.6**
	comp=Z,1.5nm,0.7s,baz=11,slow=6.7,SNR=19						
ASAR				pP	**pP**	**03 33 10.8**	**+1.2**
	comp=Z,1.1nm,0.7s,baz=4.8,slow=7.1,SNR=7.4						
YKA	**Yellowknife Ar**	**62.53**	**31**	P	**P**	**03 32 57.7**	**+0.9**
	comp=Z,0.7nm,0.7s,baz=304,slow=6.9,SNR=16						
ARCES	**ARCESS Array B**	**63.07**	**339**	P	**P**	**03 33 00.4**	**+0.1**
	comp=Z,2.7nm,0.6s,baz=52,slow=8.0,SNR=15						
FINES	**FINESS Array B**	**68.01**	**332**	P	**P**	**03 33 31.9**	**-0.3**
	comp=Z,3.5nm,0.6s,baz=45,slow=8.9,SNR=13						
SUMG	**Summit**	**69.51**	**0**	eP	**P**	**03 33 41.8**	**0.0**
SUMG				pmax	pmax		
	comp=Z,3.0nm,0.6s						
SUMG	**Summit**	**69.51**	**0**	eP	**P**	**03 33 41.8**	**0.0**
	comp=Z,2.9nm,0.6s						
KBZ	**Khabaz**	**70.52**	**311**	P	**P**	**03 33 48.2**	**+0.2**
	comp=Z,1.4nm,0.8s,baz=34,slow=7.4,SNR=3.3						
BMO	**Blue Mountains**	**70.76**	**48**	eP	**P**	**03 33 49.9**	**+0.2**
	comp=Z,2.0nm,0.7s						
FFC	**Flin Flon**	**72.44**	**33**	eP	**P**	**03 34 00.2**	**+0.8**
FFC				pmax	pmax		
	comp=Z,2.0nm,0.7s						
FFC	**Flin Flon**	**72.44**	**33**	eP	**P**	**03 34 00.2**	**+0.8**
	comp=Z,1.8nm,0.7s						
NB2	**NORSAR Subarra**	**73.30**	**337**	P	**P**	**03 34 04.2**	**-0.2**
	comp=Z,1.4nm,0.7s,baz=36,slow=6.2						
NOA	**NORSAR Array B**	**73.30**	**337**	P	**P**	**03 34 04.3**	**-0.2**
	comp=Z,2.4nm,0.7s,baz=39,slow=5.9,SNR=7.9						
AKASG	**Malin Array Be**	**73.68**	**322**	P	**P**	**03 34 06.2**	**-0.6**
	comp=Z,1.7nm,0.4s,baz=46,slow=5.7,SNR=12						
NVAR	**Mina Array Bea**	**73.88**	**54**	P	**P**	**03 34 11.7**	**+3.2**
	comp=Z,0.4nm,0.3s,baz=267,slow=7.4,SNR=5.3						
R11A	**Troy Canyon, C**	**75.64**	**52**	eP	**P**	**03 34 20.0**	**+1.4**
	comp=Z,0.8nm,0.8s						
PDAR	**Pinedale Array**	**76.48**	**46**	P	**P**	**03 34 24.9**	**+1.4**
	comp=Z,1.2nm,0.6s,baz=257,slow=1.4,SNR=20						
PDAR				pP	**pP**	**03 34 41.6**	**+2.0**
	comp=Z,0.6nm,0.5s,baz=264,slow=2.0,SNR=4.8						
BRTR	**Keskin Array B**	**78.45**	**312**	P	**P**	**03 34 34.2**	**-0.1**
	comp=Z,0.5nm,0.4s,baz=117,slow=3.5,SNR=7.0						
CLL	**Collm**	**80.33**	**330**	eP	**P**	**03 34 44.0**	**-0.1**
CLL	**Collm**	**80.33**	**330**	eP	**P**	**03 34 44.0**	**-0.1**
GERES	**GERESS Array B**	**81.98**	**328**	P	**P**	**03 34 52.9**	**-0.2**
	comp=Z,0.4nm,0.5s,baz=38,slow=6.8,SNR=5.1						
URZ	**Urewera**	**82.66**	**153**	LR	LR	04 13 15.6	
	comp=Z,81nm,18.1s,baz=3.0,slow=37						
SCHQ	**Schefferville**	**84.06**	**16**	P	**P**	**03 35 04.2**	**+0.5**
	comp=Z,3.0nm,0.8s,baz=244,slow=8.1,SNR=3.6						
TXAR	**Lajitas Array**	**89.00**	**53**	P	**P**	**03 35 30.0**	**+1.7**
	comp=Z,1.1nm,0.6s,baz=296,slow=2.9,SNR=21						
H06S1	**SOCORRO T**	**91.23**	**65**	T	T	05 15 12.5	
	SNR=9.3						
TORD	**Torodi Ar. Bea**	**116.85**	**316**	PKP	**PKPdf**	**03 41 16.9**	**-1.1**
	comp=Z,0.3nm,1.0s,baz=51,slow=1.2,SNR=4.1						
LPAZ	**La Paz**	**145.65**	**59**	PKPbc	**PKPab**	**03 42 13.7**	**+0.5**
	comp=Z,2.3nm,0.6s,baz=282,slow=2.1,SNR=11						
LCO	**Las Campanas**	**151.34**	**81**	ePKPbc	**PKPbc**	**03 42 28.2**	**+1.1**

CASC 16 03:26:39.8±5.2, 9°21N×78°93W, h12km±98km, ML3.5, Panama

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
BCIP	**Isla Barro Col**	**0.90**	**267**	eP	Pg	03 26 57.1	0.0
BCIP				eS	Sg	03 27 03.9	-4.9
ZANG	**Zanguenga, Cho**	**0.96**	**255**	eP	Pn	03 26 58.7	-0.3
ZANG				eS	Sg	03 27 07.4	-3.4
AZU	**Azuero**	**1.94**	**223**	eP	Pn	03 27 13.7	+1.1
AZU				eS	Sn	03 27 32.5

KOPT	**Kop Dagi**	**1.81**	**306**	*i* P	**Pb**	**04 00 40.0**	**+1.6**
KOPT				*i* S	**Sg**	**04 01 05.6**	**+1.5**
KOPT	**Kop Dagi**	**1.81**	**306**	P	**Pb**	**04 00 40.0**	**+1.6**
MAZI	**Mazidag**	**2.15**	**226**	*e*PN	**Pg**	**04 00 46.2**	**-0.7**
MAZI	**Mazidag**	**2.15**	**226**	*e*Pn	**Pg**	**04 00 46.2**	**-0.7**

JMA **16** *04:00:05.3±0.7, 46.°57N×153.°17E, h30km, M5.4*
BJI **16** *04:00:06.8, 46.°81N×153.°09E, h55km, mb4.7/37, mB4.9/27, Ms4.3/17, Ms7 4.1/14*
ISCJB **16** *04:00:07.2±0.5, 46.°67N±0.°03×152.°75E±0.°04, h45km±4km, mb4.6/151, MS3.8/9, Error ellipse: s-maj=5.9km s-min=3.0km az=145.1*
MOS **16** *04:00:07.9±0.9, 46.°73N×152.°74E, h51km, mb4.8/52, Error ellipse: s-maj=6.7km s-min=4.7km az=96.4*
SKHL **16** *04:00:08.9±1.0, 46.°54N×152.°93E, h70km±10km, mb4.9/11, Ms4.1/2*
IDC **16** *04:00:11.6±2.1, 46.°76N×152.°66E, h69km±18km, mb4.1/29, mb1 4.3/35, mb1mx4.2/56, mbtmp4.5/35, MS3.7/9, Ms1 3.7/9, ms1mx3.3/36, Error ellipse: s-maj=13.7km s-min=9.7km az=140.0*
NEIC **16** *04:00:11.5±0.5, 46.°78N×152.°66E, h68km±4km, mb4.6/82, Error ellipse: s-maj=4.9km s-min=2.7km az=149.0*
ISC 16 04:00:08.4±0.6, 46.°63N±0.°04×152.°78E±0.°04, h44km±4km, h44km:pP-P, n425, σ1°06/433, mb4.6/152, MS3.9/9, 23C-27D, Kuril Islands

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
KUR	**Kuril'sk**	**3.70**	**250**	*i* P		**Pn**	**04 01 04.8**	**+1.8**
KUR					AMB	AMB	04 01 10.0	
	140nm,0.4s							
KUR					AMB	AMB	04 01 10.0	
	80nm,0.4s							
KUR					AMB	AMB	04 01 10.0	
	240nm,0.4s							
KUR				*i* S		**Sn**	**04 01 46.0**	**+0.7**
KUR					A	A	04 02 05.3	
	220nm,0.5s							
KUR					A	A	04 02 05.3	
	810nm,0.5s							
KUR	**Kuril'sk**	**3.70**	**250**	*d i* PN		**Pn**	**04 01 04.8**	**+1.8**
KUR				*i* S		**Sn**	**04 01 47.1**	**+1.8**
KUR					pmax	pmax		
	comp=Z,474nm,0.3s							
KUR					pmax	pmax		
	comp=E,204nm,0.4s							
KUR					pmax	pmax		
	comp=N,231nm,0.1s							
KUR					smax	smax		
	comp=N,935nm,0.5s							
KUR					smax	smax		
	comp=E,1μm,0.6s							
SKR	**Severo-Kuril's**	**4.62**	**27**	*e*P		**Pn**	**04 01 16.9**	**+1.4**
SKR					AMB	AMB	04 01 23.5	
	comp=E,120nm,0.5s							
SKR				*e*S		**Sn**	**04 02 05.8**	**-2.0**
SKR					A	A	04 02 13.6	
	comp=E,460nm,0.6s							
SKR	**Severo-Kuril's**	**4.62**	**27**	*i* PN		**Pn**	**04 01 17.1**	**+1.6**
SHO	**Shikotan**	**5.03**	**239**	*i* P		**Pn**	**04 01 20.9**	**-0.3**
SHO					AMB	AMB	04 01 24.1	
	comp=E,170nm,0.4s							
SHO					AMB	AMB	04 01 24.1	
	comp=E,120nm,0.4s							
SHO				*i* S		**Sn**	**04 02 15.5**	**-2.5**
SHO					A	A	04 02 20.6	
	comp=E,230nm,0.3s							
SHO					A	A	04 02 20.6	
	comp=E,140nm,0.3s							
SHO	**Shikotan**	**5.03**	**239**	*c i* PN		**Pn**	**04 01 20.9**	**-0.3**
SHO					pmax	pmax		
	comp=Z,306nm,0.6s							
SHO					pmax	pmax		
	comp=N,119nm,0.3s							
SHO					pmax	pmax		
	comp=E,270nm,0.4s							
PAU	**Pauzhetka**	**5.52**	**27**	*e*P		**Pn**	**04 01 30.5**	**+2.7**
PAU				*e*S		**Sn**	**04 02 31.8**	**+1.9**
PAU					A	A	04 02 51.0	
	comp=E,400nm,0.4s							
PAU					A	A	04 02 51.0	
	comp=E,500nm,0.4s							
YUK	**Yuzh-Kuril'sk**	**5.53**	**244**	*i* P		**Pn**	**04 01 29.9**	**+1.9**
YUK					AMB	AMB	04 01 32.7	
	comp=E,320nm,0.5s							
YUK					AMB	AMB	04 01 32.7	
	comp=E,190nm,0.5s							
YUK					AMB	AMB	04 01 32.7	
	comp=E,240nm,0.5s							
YUK				*i* S		**Sn**	**04 02 31.4**	**+1.2**
YUK					A	A	04 02 48.9	
	comp=E,250nm,0.6s							
YUK					A	A	04 02 48.9	
	comp=E,190nm,0.6s							
YUK	**Yuzh-Kuril'sk**	**5.53**	**244**	*c i* PN		**Pn**	**04 01 29.8**	**+1.8**
YUK				*i* S		**Sn**	**04 02 31.4**	**+1.2**
YUK					pmax	pmax		
	comp=N,224nm,0.2s							
YUK					pmax	pmax		
	comp=E,161nm,0.2s							
YUK					pmax	pmax		
	comp=E,460nm,0.2s							
YUK					smax	smax		
	comp=E,767nm,0.6s							
YUK					smax	smax		
	comp=N,534nm,0.3s							
NEM2	**Nemuro 2**	**5.96**	**239**	P		**Pn**	**04 01 33.5**	**-0.5**
NEM2				*e*S		**Sn**	**04 02 38.6**	**-2.4**
JNK	**Nakash**	**6.47**	**245**	P		**Pn**	**04 01 42.4**	**+1.5**
JTKR	**Abashiri--Toko**	**6.80**	**250**	P		**Pn**	**04 01 48.2**	**+2.7**
JAK	**Akkeshi**	**6.80**	**241**	P		**Pn**	**04 01 45.1**	**-0.4**
JAK				*e*S		**Sn**	**04 02 58.7**	**-2.9**
YSS	**Yuzh-Sakhalins**	**6.89**	**276**	*i* P		Pn	04 01 50.2	+3.5
YSS					AMS	AMS	04 04 20.0	
	comp=N,800nm,13.0s							
YSS	**Yuzh-Sakhalins**	**6.89**	**276**	*e*PN		Pn	04 01 50.2	+3.5
YSS					MLR	MLR		
	comp=Z,800nm,13.0s							
YSS	**Yuzh-Sakhalins**	**6.89**	**276**	*e*Pn		Pn	04 01 50.3	+3.5
JMP	**Maruseppu**	**7.14**	**252**	P		**Pn**	**04 01 53.4**	**+3.2**
JAR	**Ashorobuto**	**7.21**	**246**	P		**Pn**	**04 01 52.6**	**+1.5**
PEA0	**Petropavlovsk-**	**7.22**	**24**	*e*Pn		**Pn**	**04 01 52.3**	**+1.1**
PEA0B	**Petropavlovsk-**	**7.22**	**24**	*e*Pn		**Pn**	**04 01 52.4**	**+1.2**
PETK	**Petropavlovsk-**	**7.22**	**24**	P		**Pn**	**04 01 51.9**	**+0.7**
	comp=Z,1.6nm,0.3s,baz=185,slow=14,SNR=19							
PETK					LR	LR	04 05 19.9	
	comp=Z,118nm,18.6s,baz=209,slow=43							
JOB	**Onbets**	**7.38**	**243**	P		**Pn**	**04 01 54.0**	**+0.6**
JOB				*e*S		**Sn**	**04 03 13.8**	**-1.9**
PET	**Petropavlovsk**	**7.44**	**29**	*e*P		Pn	04 01 57.5	+3.3
PET				*e*S		**Sn**	**04 03 14.5**	**-2.6**
PET	**Petropavlovsk**	**7.44**	**29**	*e*PN		**Pn**	**04 01 52.4**	**-1.8**
PET					MLR	MLR		
	comp=Z,500nm,15.0s							
PET					MLR	MLR		
	comp=Z,200nm,16.0s							
JKA	**Kamikawa-asahi**	**7.60**	**254**	*e*P		Pn	04 02 00.2	+3.8
JKK2	**Kamakawa 2**	**7.60**	**252**	P		**Pn**	**04 01 59.5**	**+3.0**
ASAJ	**Asahikawa**	**7.60**	**254**	P		Pn	04 02 00.2	+3.7
	comp=Z,4.8nm,0.3s,baz=80,slow=17,SNR=55							
ASAJ	**Asahikawa**	**7.60**	**254**	P		Pn	04 02 00.0	+3.5
UGL	**Uglegorsk**	**7.61**	**293**	*e*P		**Pn**	**04 01 59.0**	**+2.4**
JWK2	**Keihoku**	**7.70**	**264**	P		Pn	04 02 03.4	+5.6
JCH	**Churui**	**7.83**	**243**	P		**Pn**	**04 01 59.6**	**0.0**
JCH				*e*S		**Sn**	**04 03 23.8**	**-3.0**
TYV	**Tymovskoe**	**7.92**	**306**	*e*P		Pn	04 02 04.5	+3.7
TYV					AMB	AMB	04 02 07.8	
	comp=Z,30nm,0.8s							
TYV				*e*S		**Sn**	**04 03 28.9**	**-0.1**
TYV					AMS	AMS	04 04 56.0	
	comp=Z,1μm,16.0s							
TYV	**Tymovskoe**	**7.92**	**306**	*e*PN		Pn	04 02 04.5	+3.7
TYV					pmax	pmax		
	comp=Z,33nm,0.8s							
TYV					MLR	MLR		
	comp=E,1μm,15.0s							
TYV					MLR	MLR		
	comp=Z,1μm,16.0s							
ERM	**Erimo**	**8.30**	**240**	*e*P		**Pn**	**04 02 07.5**	**+1.5**
ERM	**Erimo**	**8.30**	**240**	*e*PN		**Pn**	**04 02 07.0**	**+1.0**
ERM	**Erimo**	**8.30**	**240**	*e*Pn		**Pn**	**04 02 07.0**	**+1.0**
ERM				*e*Sn		Sn	04 03 32.7	-5.7
JNBK	**Urakawa-nobuka**	**8.39**	**242**	P		**Pn**	**04 02 06.8**	**-0.5**
JNB	**Noboribetsu**	**9.36**	**248**	P		**Pn**	**04 02 21.1**	**+0.6**
JNB				*e*S		**Sn**	**04 04 02.0**	**-2.4**
JKB	**Kayabe**	**9.67**	**245**	P		**Pn**	**04 02 24.1**	**-0.7**
JKB				*e*S		Sn	04 04 06.5	-5.5
JYM2	**Yakumo 2**	**9.96**	**248**	P		**Pn**	**04 02 29.2**	**+0.4**
NKL	**Nikolayevsk**	**10.17**	**314**	*e*P		**Pn**	**04 02 33.6**	**+2.1**
NKL					AMB	AMB	04 02 37.0	
	comp=Z,30nm,1.0s							
NKL					AMB	AMB	04 02 37.0	
	comp=Z,60nm,1.0s							
NKL					AMS	AMS	04 06 56.0	
	comp=Z,400nm,18.0s							
NKL					AMS	AMS	04 06 56.0	
	comp=Z,700nm,18.0s							
NKL	**Nikolayevsk**	**10.17**	**314**	*e*PN		**Pn**	**04 02 33.6**	**+2.1**
NKL					pmax	pmax		
	comp=N,30nm,1.1s							
NKL					pmax	pmax		
	comp=E,30nm,1.1s							
NKL					pmax	pmax		
	comp=Z,60nm,1.1s							
NKL					MLR	MLR		
	comp=N,400nm,18.0s							
NKL					MLR	MLR		
	comp=E,400nm,18.0s							
NKL					MLR	MLR		
	comp=Z,700nm,18.0s							
JTM	**Tenmabayashi**	**10.29**	**240**	P		**Pn**	**04 02 31.9**	**-1.4**
JTM				*e*S		Sn	04 04 19.6	-7.7
JANG	**Nango**	**10.30**	**237**	P		Pn	04 02 30.3	-3.1
JANG				*e*S		Sn	04 04 17.8	-10
JTH	**Tanohata**	**10.39**	**234**	*e*S		Sn	04 04 18.0	-12
JOSM	**Okushiri--Mats**	**10.56**	**249**	P		**Pn**	**04 02 37.3**	**+0.4**
TEY	**Ternei**	**11.40**	**268**	*e*P		**Pn**	**04 02 51.0**	**+2.5**
TEY					AMB	AMB	04 02 57.2	
	comp=Z,50nm,1.0s							
JRG	**Rokugo**	**11.45**	**235**	P		**Pn**	**04 02 47.5**	**-1.7**
GRNR	**Gornyy**	**11.57**	**297**	*e*P		**Pn**	**04 02 53.2**	**+2.4**
GRNR					AMB	AMB	04 02 57.5	
	comp=Z,20nm,0.7s							
HABR	**Khabarovsk**	**12.12**	**285**	*e*P		**Pn**	**04 02 59.2**	**+0.9**
HABR	**Khabarovsk**	**12.12**	**285**	*e*PN		**Pn**	**04 02 59.2**	**+0.9**
HABR					pmax	pmax		
	comp=E,15nm,1.0s							
HABR					pmax	pmax		
	comp=E,13nm,1.0s							
HABR					pmax	pmax		
	comp=Z,13nm,1.0s							
HABR					MLR	MLR		
	comp=Z,148nm,13.0s							
MA2	**Magadan**		**13.02**	**355**	P	**Pn**	**04 03 11.7**	**+1.1**
	comp=Z,4.2nm,0.3s,baz=188,slow=11,SNR=19							
EKMR	**Ekimchan**		**14.30**	**304**	*e*P	**Pn**	**04 03 27.9**	**0.0**
EKMR					AMB	AMB	04 03 38.7	
	comp=Z,10.0nm,0.6s							
KLR	**Kul'dur**		**14.33**	**288**	P	**P**	**04 03 32.5**	**-2.0**
	comp=Z,0.4nm,0.3s,baz=87,slow=11,SNR=12							
KLR					LR	LR	04 09 30.7	
	comp=Z,207nm,19.6s,baz=158,slow=39							
USRK	**Ussuriysk Ar.**		**14.80**	**268**	P	**Pn**	**04 03 36.2**	**+1.6**
	comp=Z,1.8nm,0.3s,baz=79,slow=14,SNR=17							
USRK					LR	LR	04 09 00.1	
	comp=Z,161nm,19.2s,baz=59,slow=36							
MAJO	**Matsushiro**		**14.83**	**232**	*e*P	**P**	**04 03 41.2**	**+1.1**
MAJO	**Matsushiro**		**14.83**	**232**	*e*Pn	**P**	**04 03 41.2**	**+1.1**
MAJO					*e*		04 12 16.1	
MAT	**Matsushiro**		**14.83**	**232**	P	**Pn**	**04 03 34.0**	**-1.0**
MJAR	**Matsushiro Arr**		**14.83**	**232**	P	**Pn**	**04 03 36.9**	**+1.9**
	comp=Z,0.5nm,0.3s,baz=31,slow=13,SNR=4.7							
MDJ	**Mudanjiang**		**16.34**	**271**	P	**Pn**	**04 03 54.5**	**+0.1**
MDJ					pP	pP	04 04 08.3	+1.0
MDJ					sP	sP	04 04 14.9	+2.0
MDJ					S	**Sn**	**04 06 54.3**	**-0.3**
MDJ					PcP	**PcP**	**04 08 43.1**	**-2.3**
MDJ					pmax	pmax		
	comp=Z,5.0nm,0.9s							
MDJ					pmax	pmax		
	comp=Z,28nm,2.8s							
SEY	**Seymchan**		**16.34**	**359**	P	**Pn**	**04 03 55.5**	**+1.2**
	comp=Z,0.8nm,0.3s,baz=186,slow=9.7,SNR=14							
SEY	**Seymchan**		**16.34**	**359**	*e*P	**P**	**04 03 58.0**	**+1.4**
BMKR	**Bomnak**		**17.13**	**307**	*e*P	**P**	**04 04 05.2**	**-0.3**
BMKR					AMB	AMB	04 04 10.5	
	comp=Z,20nm,0.6s							
ZEA	**Zeya**		**17.77**	**303**	*e*P	**Pn**	**04 04 11.3**	**-0.8**
ZEA					AMB	AMB	04 04 17.0	
	comp=Z,20nm,0.5s							
KROS	**Kirovskiy**		**18.09**	**305**	*e*P	**P**	**04 04 16.0**	**-0.1**
KROS					AMB	AMB	04 04 20.8	
	comp=Z,10.0nm,1.0s							
KROS					AMB	AMB	04 04 20.8	
	comp=Z,30nm,1.0s							
CN2	**Changchun**		**19.43**	**272**	*e*P	**P**	**04 04 31.1**	**+0.3**
CN2					pmax	pmax		
	comp=Z,10.0nm,0.4s							
YAK	**Yakutsk**		**20.30**	**328**	P	**P**	**04 04 39.9**	**-0.2**
	comp=Z,46nm,0.6s,baz=155,slow=2.0,SNR=6.0							
YAK	**Yakutsk**		**20.30**	**328**	*e*P	**P**	**04 04 40.6**	**+0.5**
YAK	**Yakutsk**		**20.30**	**328**	*e*P	**P**	**04 04 40.6**	**+0.5**
YAK					pmax	pmax		
	comp=Z,20nm,0.8s							
YAK	**Yakutsk**		**20.30**	**328**	*e*P	**P**	**04 04 40.1**	**0.0**
	comp=Z,52nm,0.6s							
KSRS	**Korea Array**		**20.54**	**252**	P	Pn	04 04 45.2	-0.3
	comp=Z,9.3nm,0.7s,baz=63,slow=8.9,SNR=20							
KSRS					LR	LR	04 11 34.6	
	comp=Z,100nm,20.9s,baz=185,slow=33							
KSAR	**Wonju Array Be**		**20.58**	**252**	P	Pn	04 04 45.2	-0.7
KSAR	**Wonju Array Be**		**20.58**	**252**	P	Pn	04 04 45.2	-0.7
JNU	**Nakatsue**		**21.46**	**239**	P	**P**	**04 04 54.0**	**+1.1**
	comp=Z,16nm,0.8s,baz=143,slow=4.7,SNR=6.2							
JNU	**Nakatsue**		**21.46**	**239**	*e*P	**P**	**04 04 54.0**	**+1.1**
	comp=Z,12nm,0.9s							
BILL	**Bilibino**		**22.56**	**13**	*e*P	**P**	**04 05 05.1**	**+0.8**
BILL	**Bilibino**		**22.56**	**13**	*i*P	**P**	**04 05 05.1**	**+0.8**
BILL					pmax	pmax		
	comp=Z,4.0nm,0.7s							
BILL					MLR	MLR		
	comp=Z,86nm,16.0s							
BILL	**Bilibino**		**22.56**	**13**	*e*P	**P**	**04 05 04.8**	**+0.4**
	comp=Z,3.6nm,0.5s							
BOD	**Bodaibo**		**25.89**	**310**	*e*P	**P**	**04 05 33.4**	**-2.3**
BOD					pmax	pmax		
	comp=Z,4.0nm,1.3s							
GAMB	**Gambell**		**26.05**	**36**	*e*P	**P**	**04 05 37.3**	**+0.2**
	comp=Z,4.9nm,0.9s							
BJI	**Beijing**		**27.25**	**269**	P	**P**	**04 05 47.3**	**-0.8**
BJI					pmax	pmax		
	comp=Z,7.0nm,1.2s							
TIXI	**Tiksi**		**27.52**	**344**	PcP	**PcP**	**04 09 07.1**	**0.0**
	comp=Z,0.7nm,0.3s,baz=61,slow=2.6,SNR=4.0							
TIXI	**Tiksi**		**27.52**	**344**	*e*P	**P**	**04 05 49.6**	**-0.6**
TIXI	**Tiksi**		**27.52**	**344**	*e*P	**P**	**04 05 49.6**	**-0.6**
TIXI					pmax	pmax		
	comp=Z,1.0nm,1.0s							
H11N2	**WAKE ISLAND Hy**		**29.22**	**152**	T	T	04 37 31.2	
	baz=340,slow=76							
H11N1	**WAKE ISLAND Hy**		**29.23**	**152**	T	T	04 37 36.4	
	baz=340,slow=76							
H11N3	**WAKE ISLAND Hy**		**29.24**	**152**	T	T	04 37 34.6	
	baz=340,slow=76,SNR=6786							
NJ2	**Nanjing**		**29.75**	**253**	*e*P	**P**	**04 06 12.1**	**+1.7**
NJ2					pmax	pmax		
	comp=Z,14nm,0.5s							
HHC	**Hu-ho-hao-te**		**30.07**	**274**	*e*P	**P**	**04 06 14.3**	**+0.9**
HHC					pmax	pmax		
	comp=Z,21nm,0.9s							
HHC					pmax	pmax		
	comp=Z,93nm,4.7s							
H11S1	**WAKE ISLAND Hy**		**30.30**	**153**	T	T	04 38 54.4	
	baz=340,slow=76,SNR=4755							
H11S3	**WAKE ISLAND Hy**		**30.31**	**153**	T	T	04 38 52.4	
	baz=340,slow=76,SNR=3879							
H11S2	**WAKE ISLAND Hy**		**30.32**	**153**	T	T	04 38 54.0	
	baz=340,slow=76,SNR=3585							
ULN	**Ulaanbaatar**		**30.72**	**289**	*e*P	**P**	**04 06 18.8**	**-0.3**
ULN	**Ulaanbaatar**		**30.72**	**289**	*e*P	**P**	**04 06 18.8**	**-0.3**
ULN					pmax	pmax		
	comp=Z,6.0nm,1.0s							
ULN	**Ulaanbaatar**		**30.72**	**289**	*e*P	**P**	**04 06 20.3**	**+1.2**
	comp=Z,5.0nm,0.8s							
SONA1	**Songino Array**		**31.15**	**289**	*e*P	**P**	**04 06 22.2**	**-0.7**
SONA1					*e*pP	pP	04 06 27.3	-7.4
SONM	**Songino Array**		**31.16**	**289**	P	**P**	**04 06 22.2**	**-0.7**
	comp=Z,2.1nm,0.7s,baz=77,slow=9.6,SNR=3.9							
SONM					PcP	**PcP**	**04 09 16.0**	**-1.0**
	comp=Z,0.4nm,0.5s,baz=106,slow=4.7,SNR=3.7							
TLY	**Talaya**		**32.03**	**297**	LR	LR	04 20 06.5	
	comp=Z,169nm,19.2s,baz=75,slow=38							
TLY	**Talaya**		**32.03**	**297**	*e*P	**P**	**04 06 30.3**	**-0.1**
TLY					pmax	pmax		
	comp=Z,2.0nm,0.8s							
ZAK	**Zakamensk**		**32.52**	**295**	*e*P	**P**	**04 06 34.1**	**-0.7**
ZAK					pmax	pmax		
	comp=Z,2.0nm,0.9s							
TT01	**Tatalina**		**32.65**	**41**	*e*P	**P**	**04 06 36.3**	**+0.6**
TT01					*e*pP	**pP**	**04 06 43.4**	**-4.1**
TTA	**Tatalina**		**32.66**	**41**	*e*P	**P**	**04 06 36.4**	**+0.5**
TTA					pmax	pmax		
	comp=Z,4.0nm,0.7s							
TTA	**Tatalina**		**32.66**	**41**	*e*P	**P**	**04 06 36.4**	**+0.5**
	comp=Z,3.7nm,0.7s							
YULB	**Yu-li**		**34.31**	**238**	*e*P	**P**	**04 06 52.1**	**+1.6**
	comp=Z,4.9nm,0.6s							
KDAK	**Kodiak Island**		**34.35**	**51**	*e*P	**P**	**04 06 50.0**	**-0.5**
KDAK	**Kodiak Island**		**34.35**	**51**	*i* P	**P**	**04 06 50.0**	**-0.5**
CAST	**Castle Rocks**		**34.47**	**41**	*e*P	**P**	**04 06 52.2**	**+0.6**
	comp=Z,2.5nm,0.7s							
TPUB	**Ta-pu**		**34.77**	**239**	*e*P	**P**	**04 06 54.9**	**+0.3**
	comp=Z,16nm,0.7s							
BPAW	**Bear Paw Mtn.**		**34.99**	**40**	*e*P	**P**	**04 06 56.5**	**+0.5**
	comp=Z,3.2nm,0.8s							
KTH	**Kantishna Hill**		**35.00**	**41**	*e*P	**P**	**04 06 57.6**	**+1.4**
	comp=Z,12nm,1.0s							
MLY	**Manley**		**35.15**	**38**	*e*P	**P**	**04 06 58.1**	**+0.7**
	comp=Z,3.4nm,0.8s							
XAN	**Xi'an**		**35.28**	**265**	P	**P**	**04 06 58.5**	**-0.4**
XAN					pmax	pmax		
	comp=Z,10.0nm,1.0s							
XAN					pmax	pmax		
	comp=Z,47nm,7.1s							
TRF	**Thorofare Moun**		**35.28**	**41**	*e*P	**P**	**04 06 58.8**	**+0.1**
	comp=Z,5.2nm,0.9s							
COLD	**Coldfoot**		**35.56**	**34**	*e*P	**P**	**04 07 01.0**	**+0.2**
	comp=Z,3.8nm,0.6s							
SEW	**Seward**		**35.78**	**46**	*e*P	**P**	**04 07 01.6**	**-1.1**
	comp=Z,6.4nm,0.6s							
MCK	**McKinley**		**35.89**	**40**	*e*P	**P**	**04 07 04.3**	**+0.5**
MCK	**McKinley**		**35.89**	**40**	*e*P	**P**	**04 07 04.3**	**+0.5**
MCK					pmax	pmax		
	comp=Z,6.0nm,1.0s							
MCK	**McKinley**		**35.89**	**40**	*e*P	**P**	**04 07 04.2**	**+0.5**
	comp=Z,5.9nm,1.0s							
RND	**Reindeer**		**35.93**	**41**	*e*P	**P**	**04 07 03.7**	**-0.4**
RND					pmax	pmax		
	comp=Z,10.0nm,1.3s							
RND	**Reindeer**		**35.93**	**41**	*e*P	**P**	**04 07 03.7**	**-0.4**
	comp=Z,9.5nm,1.3s							
MDM	**Murphy Dome**		**36.21**	**38**	*e*P	**P**	**04 07 07.5**	**+1.1**
	comp=Z,6.4nm,0.8s							
WRH	**Wood River Hil**		**36.26**	**39**	*e*P	**P**	**04 07 07.5**	**+0.7**
	comp=Z,3.2nm,0.7s							
COLA	**College**		**36.37**	**38**	*e*P	**P**	**04 07 08.4**	**+0.6**
COLA	**College**		**36.37**	**38**	*e*P	**P**	**04 07 08.4**	**+0.6**
COLA					pmax	pmax		
	comp=Z,9.0nm,0.9s							
COLA	**College**		**36.37**	**38**	*e*P	**P**	**04 07 07.6**	**-0.2**
	comp=Z,9.7nm,0.8s							
CCB	**Clear Creek Bu**		**36.39**	**39**	*e*P	**P**	**04 07 08.6**	**+0.6**
	comp=Z,2.1nm,0.8s							
DHY	**Denali Highway**		**36.60**	**41**	*e*P	**P**	**04 07 10.3**	**+0.3**
	comp=Z,4.4nm,0.8s							
IL1	**Eielson Array**		**36.78**	**38**	*e*P	**P**	**04 07 10.8**	**-0.5**
ILAR	**Eielson Array**		**36.78**	**38**	P	**P**	**04 07 11.5**	**+0.2**
	comp=Z,2.0nm,0.9s,baz=255,slow=8.5,SNR=22							
ILB	**Eielson Array**		**36.78**	**38**	*e*P	**P**	**04 07 11.6**	**+0.2**
FYU	**Fort Yukon**		**37.48**	**35**	*e*P	**P**	**04 07 18.0**	**+0.9**
	comp=Z,16nm,1.1s							
PAX	**Paxson**		**37.48**	**41**	*e*P	**P**	**04 07 17.1**	**-0.2**
PAX					pmax	pmax		
	comp=Z,4.0nm,0.7s							
PAX	**Paxson**		**37.48**	**41**	*e*P	**P**	**04 07 17.1**	**-0.2**
	comp=Z,3.7nm,0.7s							
DOT	**Dot Lake**		**38.06**	**40**	*e*P	P	04 07 18.0	-4.2
	comp=Z,1.1nm,0.9s							
BMRM	**Bremner River**		**38.08**	**45**	*e*P	P	04 07 19.2	-3.2
	comp=Z,7.0nm,1.0s							
GTA	**Gaotai**		**38.76**	**279**	*e*P	**P**	**04 07 29.1**	**+0.6**
GTA					pP	sP	04 07 44.3	-1.5
GTA					sP	pP	04 07 51.9	+11
GTA					PcP	**PcP**	**04 09 40.3**	**+1.0**
GTA					pmax	pmax		
	comp=Z,5.0nm,0.9s							
EGAK	**Eagle**		**39.23**	**38**	*e*P	**P**	**04 07 31.9**	**0.0**
	comp=Z,7.7nm,0.8s							
CD2	**Chengdu**		**40.64**	**265**	P	**P**	**04 07 44.8**	**+0.7**
CD2					pP	pP	04 07 58.9	+2.7
CD2					PP	**PP**	**04 09 19.0**	**+0.8**
CD2					S	**S**	**04 13 51.5**	**+0.6**
CD2					sS	sS	04 14 15.0	+4.0
CD2					SS	**SS**	**04 16 51.9**	**-0.2**
CD2					pmax	pmax		
	comp=Z,40nm,0.8s							
CD2					pmax	pmax		
	comp=Z,80nm,4.7s							
CD2					LR	LR		
	comp=Z,190nm,5.4s							
CD2					LR	LR		
	comp=Z,190nm,7.2s							
INK	**Inuvik**		**41.87**	**32**	P	**P**	**04 07 54.7**	**+1.1**
	comp=Z,4.9nm,0.8s,baz=299,slow=6.4,SNR=27							
INK	**Inuvik**		**41.87**	**32**	*e*P	**P**	**04 07 54.6**	**+0.9**
INK	**Inuvik**		**41.87**	**32**	*e*P	**P**	**04 07 54.6**	**+0.9**
INK					pmax	pmax		
	comp=Z,9.0nm,1.1

VOSK Vostochnaya 50.58 309 *e*P P 04 09 01.3 -1.0
comp=Z,3.6nm,0.7s
BVAR Borovoye Array 50.76 309 P P 04 09 03.0 -0.6
comp=Z,1.8nm,0.4s,baz=54,slow=6.8,SNR=12
BVAR PcP **PcP** 04 10 20.1 0.0
comp=Z,2.6nm,0.4s,baz=81,slow=2.6,SNR=7.9
BRVK Borovoye 50.80 309 *e*P P 04 09 03.6 -0.3
BRVK Borovoye 50.80 309 *c e*P P 04 09 03.6 -0.3
BRVK pmax pmax
comp=Z,3.0nm,0.6s
BRVK Borovoye 50.80 309 *e*P P 04 09 03.2 -0.7
comp=Z,3.4nm,0.6s
KHON Khomkaen 51.08 251 P P 04 09 08.5 +2.1
comp=Z,7.0nm,1.0s
YKA Yellowknife Ar 51.16 37 P P 04 09 06.8 +0.4
comp=Z,1.6nm,0.7s,baz=297,slow=7.0,SNR=33
YKA PcP **PcP** 04 10 21.6 +0.3
comp=Z,0.6nm,0.4s,baz=304,slow=3.6,SNR=7.7
YKB5 Yellowknife Ar 51.16 37 *e*P P 04 09 05.4 -1.0
YKB5 *e*PcP **PcP** 04 10 21.1 -0.2
KKM Kota Kinabalu 51.23 229 *e*P P 04 09 09.4 +1.8
ZRNK Zerenda 51.53 310 *e*P P 04 09 08.0 -1.4
ZRNK pmax pmax
comp=Z,3.0nm,0.6s
ZRNK Zerenda 51.53 310 *e*P P 04 09 08.0 -1.4
comp=Z,3.2nm,0.6s
UTTA Uttaradit 51.55 254 P P 04 09 11.7 +1.8
comp=Z,5.5nm,0.8s
LAMP Lampang 51.62 256 P P 04 09 12.2 +1.8
comp=Z,6.5nm,0.8s
CMMT Chiang Mai 51.87 256 P P 04 09 13.3 +1.0
comp=Z,14nm,0.8s
CHTO Chiang Mai 51.87 256 P P 04 09 13.3 +1.0
comp=Z,61nm,0.8s
CHTO Chiang Mai 51.87 256 *e*P P 04 09 13.4 +1.1
CHTO pmax pmax
comp=Z,10.0nm,0.7s
CHTO Chiang Mai 51.87 256 *e*P P 04 09 13.4 +1.1
comp=Z,9.7nm,0.7s
OTUK Ortayu 52.02 303 P P 04 09 13.5 +0.4
OTUK pmax pmax
comp=Z,4.0nm,1.0s
CMAR Chiang Mai Arr 52.12 256 P P 04 09 15.6 +1.4
comp=Z,6.5nm,0.8s,baz=37,slow=7.3,SNR=42
PBKT Sadao Pong 52.12 253 P P 04 09 15.4 +1.2
comp=Z,10nm,0.8s
CM01 Chiang Mai Arr 52.14 256 *e*P P 04 09 15.3 +1.0
TKM2 Tokmak 2 52.85 296 *e*P P 04 09 19.4 -0.2
TKM2 pmax pmax
comp=Z,2.0nm,0.5s
TKM2 Tokmak 2 52.85 296 *e*P P 04 09 19.4 -0.2
comp=Z,1.6nm,0.5s
AAK Ala-Archa 53.68 296 *d i*P P 04 09 25.7 0.0
AAK pmax pmax
comp=Z,8.0nm,1.0s
AAK Ala-Archa 53.68 296 *e*P P 04 09 26.0 +0.3
comp=Z,2.8nm,0.8s
SANI Sanana 53.91 214 P P 04 09 27.7 +0.4
comp=Z,8.0nm,1.0s
CHBT CHBT 54.05 248 P P 04 09 30.2 +1.8
EKS2 Erkin-Say 54.11 297 *e*P P 04 09 28.4 -0.3
EKS2 pmax pmax
comp=Z,4.0nm,0.8s
EKS2 Erkin-Say 54.11 297 *e*P P 04 09 28.4 -0.3
comp=Z,4.0nm,0.8s
KSH Kashi 54.49 292 P P 04 09 36.1 +4.6
KSH *ep*P sP 04 09 51.8 +2.7
KSH S **S** **04 17 09.9 +2.6**
KSH SS **SS** **04 20 53.4 +3.8**
KSH pmax pmax
comp=Z,110nm,5.7s
KSH LR LR
comp=Z,130nm,6.6s
KSH LR LR
comp=Z,130nm,7.5s
GUN Gumba 54.78 275 *e*P P 04 09 34.7 +0.6
comp=Z,37nm,0.5s
ARU Arti 54.95 317 *e*P P 04 09 34.1 -0.3
ARU Arti 54.95 317 *c i*P P 04 09 34.4 0.0
ARU 04 10 32.8
ARU 04 11 35.2
ARU S **S** **04 17 13.5 +0.8**
ARU SS **SS** **04 20 56.7 +0.8**
ARU pmax pmax
comp=Z,9.0nm,1.7s
ARU Arti 54.95 317 *e*P P 04 09 32.9 -1.5
comp=Z,4.2nm,0.4s
MNAS Manas 54.99 297 P P 04 09 35.5 +0.4
MNAS pmax pmax
comp=Z,3.0nm,0.9s
KKN Kakani 55.27 275 *e*P P 04 09 38.4 +1.0
comp=Z,73nm,0.6s
DMN Daman 55.51 275 *e*P P 04 09 40.1 +0.9
comp=Z,78nm,0.7s
GKN Gorkha 55.58 276 *e*P P 04 09 40.3 +0.7
comp=Z,94nm,0.6s
KKAR Karatay Array 55.86 299 *e*P P 04 09 40.2 -1.0
KKAR pmax pmax
comp=Z,1.0nm,0.4s
KKAR Karatay Array 55.86 299 *e*P P 04 09 40.2 -1.0
comp=Z,1.0nm,0.4s
KOLN Koldanda 56.44 276 *e*P P 04 09 46.6 +0.8
comp=Z,54nm,0.6s
PYUN Piuthan 56.65 277 *e*P P 04 09 48.0 +0.8
comp=Z,59nm,0.6s
DAG Danmarks Havn 56.76 358 *i*P P 04 09 45.3 -1.7
comp=Z,3.5nm,0.9s
DAG Danmarks Havn 56.76 358 *e*P P 04 09 45.3 -1.7
DAG pmax pmax
comp=Z,3.0nm,0.9s
ARCES ARCESS Array B 57.89 341 P P 04 09 54.7 -0.5
comp=Z,2.8nm,0.7s,baz=35,slow=7.3,SNR=23
WALA Waterton Lakes 58.69 50 *e*P P 04 10 02.2 +1.0
comp=Z,4.4nm,0.9s
MOD Modoc Plateau 59.35 60 *e*P P 04 10 06.7 +0.8
comp=Z,3.6nm,0.6s
MSO Missoula 60.01 52 *e*P P 04 10 11.4 +1.1
comp=Z,5.3nm,1.2s
KULM Kulim 60.82 244 *e*P P 04 10 16.8 +0.7
comp=Z,7.3nm,0.7s
SUMG Summit 60.83 4 *i*P P 04 10 15.2 -0.7
comp=Z,11nm,0.6s
SUMG Summit 60.83 4 *e*P P 04 10 15.8 -0.1
SUMG pmax pmax
comp=Z,27nm,1.2s
SUMG Summit 60.83 4 *e*P P 04 10 15.8 -0.1
comp=Z,27nm,1.2s
FFC Flin Flon 60.98 40 *e*P P 04 10 17.0 +0.3
FFC pmax pmax
comp=Z,7.0nm,0.7s
FFC Flin Flon 60.98 40 *e*P P 04 10 16.9 +0.3
comp=Z,7.0nm,0.7s
FCC Fort Churchill 61.49 33 *e*P P 04 10 20.0 0.0
FCC Fort Churchill 61.49 33 *e*P P 04 10 20.0 0.0
FCC pmax pmax
comp=Z,8.0nm,0.8s
FCC Fort Churchill 61.49 33 *e*P P 04 10 20.0 0.0
comp=Z,8.3nm,0.8s
EGMT Eagleton 61.51 49 *e*P P 04 10 20.5 0.0
comp=Z,1.1nm,0.5s
KBL Kabul 61.90 292 P P 04 10 23.6 +0.1
KBL pmax pmax
comp=Z,16nm,0.8s
BOZ Bozeman (W) 62.01 52 *e*P P 04 10 25.4 +1.5
BOZ pmax pmax
comp=Z,22nm,1.9s
BOZ Bozeman (W) 62.01 52 *e*P P 04 10 25.4 +1.5
comp=Z,22nm,1.9s
NVAR Mina Array Bea 62.69 62 P P 04 10 29.9 +1.2
comp=Z,1.3nm,0.7s,baz=296,slow=7.3,SNR=7.5
SCO Scoresbysund 63.14 358 *i*P P 04 10 30.8 -0.1
comp=Z,5.5nm,0.8s
SCO Scoresbysund 63.14 358 *i*P P 04 10 30.8 -0.1
SCO pmax pmax
comp=Z,6.0nm,0.8s
H17A Grant Village 63.38 53 *e*P P 04 10 33.2 0.0
comp=Z,3.4nm,1.0s
REDW Red Top Meadow 63.89 54 *e*P P 04 10 36.6 -0.1
REDW *ep*P **pP** **04 10 51.8 +2.5**
FIA1 FINESS Array S 64.05 335 *e*P P 04 10 36.2 -0.8
comp=Z,13nm,0.5s
FINES FINESS Array B 64.05 335 P P 04 10 36.1 -0.9
comp=Z,10.0nm,0.4s,baz=33,slow=7.8,SNR=167
FINES FINESS Array B 64.05 335 *e*P P 04 10 35.9 -1.1
FINES FINESS Array B 64.05 335 *i*P P 04 10 35.9 -1.1
FINES pmax pmax
comp=Z,10.0nm,0.4s
DGMT Dagmar 64.05 46 *e*P P 04 10 38.2 +0.9
comp=Z,9.4nm,0.8s
DUG Dugway, Tooele 64.83 58 *e*P P 04 10 43.2 +0.5
DUG *e**PP **pP** 04 10 58.4 +2.9
DUG Dugway, Tooele 64.83 58 *e*P P 04 10 43.2 +0.5
DUG *ep*P **pP** 04 10 58.4 +2.9
BW06 Boulder Array 65.00 54 *e*P P 04 10 44.2 +0.3
PD31 Pinedale Array 65.00 54 *e*P P 04 10 44.4 +0.5
PD31 *ep*P **pP** 04 10 58.3 +1.7
PDAR Pinedale Array 65.00 54 P P 04 10 44.5 +0.6
comp=Z,1.0nm,0.7s,baz=251,slow=2.3,SNR=11
OBN Obninsk 65.28 325 *e*P P 04 10 43.3 -1.8
OBN Obninsk 65.28 325 *i e*P P 04 10 41.0 -4.1
OBN *e* 04 13 07.8
OBN *e*PPP PPP 04 14 44.3
OBN *e*S S 04 19 55.9 +31
OBN pmax pmax
comp=Z,3.0nm,0.8s
OBN MLR MLR
comp=Z,80nm,13.0s
SFJD Kangerlussuaq 65.31 10 *i*P P 04 10 44.5 -0.6
comp=Z,3.5nm,0.8s
SFJD Kangerlussuaq 65.31 10 *e*P P 04 10 44.5 -0.6
SFJD pmax pmax
comp=Z,4.0nm,0.6s
GEYT Alibeck 66.47 301 P P 04 10 53.9 +0.8
comp=Z,5.4nm,0.5s,baz=49,slow=2.7,SNR=7.5
LCMT Little Creek M 66.66 60 *e*P P 04 10 56.2 +1.7
LCMT *ep*P **pP** 04 11 05.6 -1.7
K22A Casper 66.74 52 *e*P P 04 10 55.6 +0.6
comp=Z,2.4nm,0.6s
ULM Lac du Bonnet 66.76 41 P P 04 10 54.2 -0.5
comp=Z,3.6nm,0.7s,baz=323,slow=7.3,SNR=5.0
SRU San Rafael Swe 66.87 57 *e*P P 04 10 57.2 +1.3
SRU pmax pmax
comp=Z,27nm,2.0s
SRU San Rafael Swe 66.87 57 *e*P P 04 10 57.2 +1.3
comp=Z,27nm,2.0s
NC303 NORSAR Array S 68.07 341 *e*P P 04 11 02.5 -0.3
NC405 NORSAR Array S 68.09 341 *e*P P 04 11 02.8 -0.2
NC204 NORSAR Array S 68.16 341 *e*P P 04 11 03.6 +0.2
PV10 Paradox Valley 68.22 57 *e*P P 04 11 04.6 +0.1
NB201 NORSAR Array S 68.24 341 *e*P P 04 11 03.7 -0.2
NB2 NORSAR Subarra 68.27 341 P P 04 11 03.4 -0.7
comp=Z,7.7nm,0.5s,baz=27,slow=6.5
NB2 NORSAR Subarra 68.27 341 P P 04 11 03.4 -0.7
baz=27,slow=6.5
NOA NORSAR Array B 68.27 341 P P 04 11 03.6 -0.5
comp=Z,10nm,0.6s,baz=29,slow=6.6,SNR=55
WRAB Tennant Creek 68.31 199 *e*P P 04 11 07.0 +2.2
WRAB pmax pmax
comp=Z,11nm,1.0s
WRAB Tennant Creek 68.31 199 *e*P P 04 11 07.0 +2.2
comp=Z,11nm,1.0s
WB2 Warramunga Arr 68.32 199 *e*P P 04 11 08.6 +3.7
comp=Z,10nm,1.0s
WRA Warramunga Arr 68.33 199 P P 04 11 05.1 +0.3
comp=Z,1.7nm,0.7s,baz=21,slow=6.6,SNR=9.7
NBO02 NORSAR Array S 68.34 341 *e*P P 04 11 04.2 -0.4
SMCO Snowmass 68.86 55 *e*P P 04 11 08.7 +0.1
comp=Z,1.8nm,0.7s
FITZ Fitzroy Crossi 68.93 208 P P 04 11 09.2 +0.6
comp=Z,1.7nm,0.7s,baz=321,slow=6.5,SNR=3.0
MVCO Mesa Verde 69.33 58 *e*P P 04 11 11.3 -0.1
comp=Z,11nm,1.4s
S22A 4UR Ranch, Cre 69.93 56 *e*P P 04 11 16.6 +1.5
S22A *ep*P **pP** 04 11 29.9 +1.8
KBZ Khabaz 70.78 314 P P 04 11 19.9 +0.1
comp=Z,5.5nm,0.8s,baz=24,slow=6.1,SNR=11
KBZ LR LR 04 47 13.6
comp=Z,70nm,19.5s,baz=250,slow=40
AKASG Malin Array Be 71.52 326 P P 04 11 23.3 -0.9
comp=Z,10nm,0.5s,baz=34,slow=6.2,SNR=54
AKASG LR LR 04 44 40.3
comp=Z,88nm,18.9s,baz=315,slow=37
KIEV Kiev 71.53 326 *e*P P 04 11 23.3 -1.0
KIEV pmax pmax
comp=Z,12nm,0.6s
KIEV Kiev 71.53 326 *e*P P 04 11 23.2 -1.0
comp=Z,12nm,0.6s
AK11 Malin Array Si 71.56 326 *e*P P 04 11 23.9 -0.6
AS01 Alice Springs 72.01 198 *e*P P 04 11 27.2 -0.2
AS31 Alice Springs 72.02 198 *e*P P 04 11 28.7 +1.3
comp=Z,1.4nm,0.6s
ASAR Alice Springs 72.02 198 P P 04 11 28.4 +1.0
comp=Z,2.8nm,0.6s,baz=10,slow=5.4,SNR=45
GNI Garni 72.43 310 *e*P P 04 11 27.6 -2.5
GNI pmax pmax
comp=Z,68nm,0.9s
GNI Garni 72.43 310 *e*P P 04 11 27.6 -2.5
comp=Z,68nm,0.9s
SCHQ Schefferville 73.51 23 P P 04 11 35.7 -0.3
comp=Z,2.6nm,0.7s,baz=318,slow=9.9,SNR=4.1
KWP Kalwaria Pacla 74.81 329 *i*P P 04 11 44.0 +0.3
KWP Kalwaria Pacla 74.81 329 *e*P P 04 11 44.0 +0.3
AMTX Amarillo 74.88 55 *e*P P 04 11 45.1 +0.7
comp=Z,2.9nm,0.3s
LEOM Leova 75.30 324 *i*P P 04 11 46.8 +0.3
LEOM Leova 75.30 324 *e*P P 04 11 46.8 +0.3
OJC Ojcow 75.31 331 *e*P P 04 11 46.6 0.0
OJC pmax pmax
comp=Z,18nm,1.3s
OJC Ojcow 75.31 331 *e*P P 04 11 46.6 0.0
comp=Z,18nm,1.3s
STHS Stebnicka Huta 75.50 330 *e*P P 04 11 48.5 +0.8
STHS pmax pmax
comp=Z,7.0nm,0.8s
STHS Stebnicka Huta 75.50 330 *e*P P 04 11 48.5 +0.8
BUR08 Bucovina Ar. S 75.54 326 *e*P P 04 11 47.6 -0.4
KOLS Kolonicke sedl 75.55 329 *e*P P 04 11 47.4 -0.5
KOLS pmax pmax
comp=Z,11nm,1.2s
KOLS Kolonicke sedl 75.55 329 *e*P P 04 11 47.4 -0.5
BURAR Bucovina Array 75.56 326 *i*P P 04 11 47.9 -0.3
BURAR Bucovina Array 75.56 326 *i*P P 04 11 47.9 -0.3
CRVS Cervenica-Dubn 75.86 329 *e*P P 04 11 49.7 0.0
CRVS Cervenica-Dubn 75.86 329 *e*P P 04 11 49.7 0.0
TESR Tescani 75.91 325 *i*P P 04 11 50.0 -0.1
TLCR 76.11 323 *i*P P 04 11 51.5 +0.3
TLCR 76.11 323 *i*P P 04 11 51.5 +0.3
OKC Ostrava-Krasne 76.19 332 *e*P P 04 11 51.5 0.0
OKC Ostrava-Krasne 76.19 332 *e*P P 04 11 51.5 0.0
DPC Dobruska-Polom 76.33 333 *i*P P 04 11 52.5 +0.1
DPC Dobruska-Polom 76.33 333 *i*P P 04 11 52.5 +0.1
ARCR ARCALIA 76.33 327 *i*P P 04 11 53.3 +0.9
LANS Liptovska Anna 76.34 331 *e*P P 04 11 53.5 +1.0
LANS Liptovska Anna 76.34 331 *e*P P 04 11 53.5 +1.0
CFR Carcaliu 76.40 323 *i*P P 04 11 52.7 -0.1
CFR Carcaliu 76.40 323 *i*P P 04 11 52.7 -0.1
VRI Vrincioaia 76.41 324 *i*P P 04 11 53.3 +0.4
VRI Vrincioaia 76.41 324 *i*P P 04 11 53.3 +0.4
KRLC Kraliky 76.42 333 *e*P P 04 11 52.7 -0.2
KRLC Kraliky 76.42 333 *e*P P 04 11 52.7 -0.2
ESK Eskdalemuir 76.42 346 *e*P P 04 11 52.7 -0.1
ESK pmax pmax
comp=Z,5.0nm,0.7s
ESK Eskdalemuir 76.42 346 *e*P P 04 11 52.7 -0.1
comp=Z,4.8nm,0.7s
MORC Moravsky Berou 76.44 332 *i*P P 04 11 53.2 +0.2
MORC Moravsky Berou 76.44 332 *e*P P 04 11 53.3 +0.2
MORC pmax pmax
comp=Z,44nm,1.0s
MORC Moravsky Berou 76.44 332 *e*P P 04 11 53.3 +0.2
comp=Z,44nm,1.0s
PLOR Plostina 76.45 325 *i*P P 04 11 53.0 -0.2
PLOR Plostina 76.45 325 *i*P P 04 11 53.0 -0.2
CLL Collm 76.48 335 *e*P P 04 11 52.3 -0.8
CLL Collm 76.48 335 *i*P P 04 11 52.7 -0.5
comp=Z,15nm,0.7s
CLL Collm 76.48 335 *i*P P 04 11 52.7 -0.5
CLL pmax pmax
comp=Z,15nm,0.7s
CLL Collm 76.48 335 *e*P P 04 11 52.4 -0.8
comp=Z,17nm,0.7s
KECS Kecovo 76.56 330 *e*P P 04 11 53.9 +0.2
KECS pmax pmax
comp=Z,4.0nm,0.9s
KECS Kecovo 76.56 330 *e*P P 04 11 53.9 +0.2
BRG Berggiesshubel 76.59 335 *e*P P 04 11 53.3 -0.5
comp=Z,9.1nm,1.3s
BRG Berggiesshubel 76.59 335 *e*P P 04 11 53.3 -0.5
BRG pmax pmax
comp=Z,9.0nm,1.3s
PVCC Panska Ves 76.71 334 *e*P P 04 11 54.6 +0.1
PVCC Panska Ves 76.71 334 *e*P P 04 11 54.6 +0.1
CJR Cluj-Napoca 76.93 327 *i*P P 04 11 56.2 +0.4
CJR Cluj-Napoca 76.93 327 *i*P P 04 11 56.2 +0.4
MLR Muntele Rosu 77.03 325 *i*P P 04 11 56.9 +0.3
MLR Muntele Rosu 77.03 325 *e*P P 04 11 56.5 -0.1
MLR pmax pmax
comp=Z,10.0nm,0.6s
MLR Muntele Rosu 77.03 325 *e*P P 04 11 56.5 -0.1
comp=Z,10nm,0.6s
ISR Istrita 77.10 324 *i*P P 04 11 57.5 +0.7
ISR Istrita 77.10 324 *i*P P 04 11 57.5 +0.7
VYHS Vyhne 77.12 331 *e*P P 04 11 56.8 -0.1
VYHS pmax pmax
comp=Z,5.0nm,1.1s
VYHS Vyhne 77.12 331 *e*P P 04 11 56.8 -0.1
VRAC Vranov 77.15 332 *i*P P 04 11 57.4 +0.4
VRAC Vranov 77.15 332 *i*P P 04 11 57.4 +0.4
PRA Prague 77.16 334 *e*P P 04 11 57.3 +0.3
PRA Prague 77.16 334 *e*P P 04 11 57.3 +0.3
GOPC GO Pecny, Ondr 77.19 334 *e*P P 04 11 57.1 -0.1
GOPC GO Pecny, Ondr 77.19 334 *e*P P 04 11 57.1 -0.1
DRGR 77.19 327 *i*P P 04 11 57.1 -0.3
DRGR 77.19 327 *i*P P 04 11 57.1 -0.3
PRU Pruhonice 77.19 334 *i*P P 04 11 57.1 -0.1
PRU Pruhonice 77.19 334 *i*P P 04 11 57.1 -0.1
PSZ Piszkesteto 77.25 330 *i*P P 04 11 58.7 +1.0
PSZ Piszkesteto 77.25 330 *e*P P 04 11 57.6 -0.1
PSZ pmax pmax
comp=Z,5.0nm,0.8s
PSZ Piszkesteto 77.25 330 *e*P P 04 11 57.6 -0.1
comp=Z,5.4nm,0.8s
MSAB Monastry St. A 77.41 323 *i*P P 04 11 59.2 +0.7
ARR Arges 77.65 325 *i*P P 04 12 01.4 +1.4
TX31 Lajitas Ar. Si 77.75 60 *e*P P 04 12 01.4 +0.6
TXAR Lajitas Array 77.75 60 P P 04 12 01.3 +0.5
comp=Z,1.2nm,0.8s,baz=304,slow=3.7,SNR=12
SIRR Siria 78.02 328 *i*P P 04 12 02.5 +0.6
KHC Kasperske Hory 78.25 334 *i*P P 04 12 03.0 -0.2
KHC AMS AMS 04 12 10.0
KHC Kasperske Hory 78.25 334 *i*P P 04 12 03.0 -0.2
KHC Kasperske Hory 78.25 334 *e*P P 04 12 03.0 -0.2
comp=Z,4.1nm,0.8s
BR131 Keskin Array S 78.32 317 *e*P P 04 12 04.4 +0.5
BRTR Keskin Array B 78.32 317 P P 04 12 04.3 +0.5
comp=Z,4.2nm,0.8s,baz=78,slow=4.0,SNR=22
GZR Gura Zlata 78.34 327 *i*P P 04 12 03.7 -0.1
GZR Gura Zlata 78.34 327 *i*P P 04 12 03.7 -0.1
GRFO Grafenberg 78.44 336 *e*P P 04 12 04.6 +0.5
GRFO pmax pmax
comp=Z,13nm,0.8s
GRFO Grafenberg 78.44 336 *e*P P 04 12 04.6 +0.5
comp=Z,13nm,0.8s
GEC2 GERESS Array S 78.46 334 *e*P P 04 12 04.3 -0.1
GEC2 pmax pmax
comp=Z,5.0nm,0.7s
GEC2 GERESS Array S 78.46 334 *e*P P 04 12 04.3 -0.1
comp=Z,4.5nm,0.7s
GERES GERESS Array B 78.46 334 P P 04 12 04.3 -0.1
comp=Z,2.9nm,0.5s,baz=32,slow=5.7,SNR=32
GEA0 GERESS Array S 78.47 334 *e*P P 04 12 03.9 -0.5
BZS Buzias 78.59 327 *i*P P 04 12 05.3 +0.2
BZS Buzias 78.59 327 *i*P P 04 12 05.3 +0.2
CONA Conrad Observa 78.59 332 *i*P P 04 12 06.0 +0.8
comp=Z,7.1nm,0.6s,SNR=5.9
BR231 Keskin MP Arra 78.64 317 *e*P P 04 12 04.9 -0.7
MEM Membach 78.98 339 P P 04 12 07.2 +0.1
PKSM Moragy 79.16 330 *i*P P 04 12 07.7 -0.4
PKSM Moragy 79.16 330 *i*P P 04 12 07.7 -0.4
MOA Molln 79.17 333 *i*P P 04 12 08.6 +0.4
comp=Z,5.2nm,0.7s
ARSA Arzberg 79.30 332 *i*P P 04 12 09.4 +0.5
comp=Z,3.9nm,0.6s
BCLA Clavier 79.32 340 P P 04 12 08.8 -0.2
SNF Seneffe 79.48 340 P P 04 12 09.9 +0.1
SOKA Soboth 79.96 332 *i*P P 04 12 12.9 +0.3
comp=Z,7.6nm,0.8s,SNR=5.1
KBA Koelnbreinsper 80.14 333 *i*P P 04 12 14.5 +0.7
comp=Z,15nm,0.6s,SNR=11
WATA Walderalm 80.45 334 *i*P P 04 12 15.8 +0.4
comp=Z,9.9nm,0.5s,SNR=6.1
BFO Black Forest 80.47 337 *e*P P 04 12 14.9 -0.4
BFO pmax pmax
comp=Z,6.0nm,1.0s
BFO Black Forest 80.47 337 *e*P P 04 12 14.9 -0.4
comp=Z,5.8nm,1.0s
WTTA Wattenberg 80.50 334 *i*P P 04 12 16.4 +0.7
comp=Z,9.2nm,0.5s
VTS Vitosha 80.54 325 *i*P P 04 12 16.1 +0.2
VTS Vitosha 80.54 325 *e*P P 04 12 15.9 0.0
VTS pmax pmax
comp=Z,16nm,0.8s
VTS Vitosha 80.54 325 *e*P P 04 12 15.8 0.0
comp=Z,16nm,0.8s
RETA Reute 80.56 335 *i*P P 04 12 16.1 +0.3
comp=Z,6.4nm,0.9s
MOTA Moosalm 80.58 335 *i*PcP P 04 12 17.4 +1.3
comp=Z,6.3nm,0.6s,SNR=6.9
CDF Champ du Feu 80.68 338 *e*P P 04 12 16.2 -0.3
CDF pmax pmax
comp=Z,7.0nm,0.9s
FETA Feichten 80.99 335 *i*P P 04 12 18.8 +0.6
comp=Z,5.0nm,1.0s
DAVA Damuels 80.99 335 *i*P P 04 12 18.5 +0.3
comp=Z,7.8nm,0.9s
PMOR Pomariorio Ree 81.18 123 *e*T T 05 41 58.5
comp=Z,25nm,0.2s
FUORN Ofenpass-Fuorn 81.48 335 *e*P P 04 12 21.6 +0.6
comp=Z,5.5nm,0.8s
TUE Stuetta 81.89 335 *e*P P 04 12 24.0 +0.9
comp=Z,5.9nm,0.8s
PDG Podgorica 82.20 327 *i*P P 04 12 23.4 -1.1
CSS Mathiatis 82.24 314 *e*P P 04 12 24.1 -0.8
comp=Z,3.2nm,0.7s
PPT2 Papeete2 82.29 126 *e*LR LR 04 38 25.2
comp=Z,160nm,26.0s
LOR Lormes 82.61 339 *e*P P 04 12 26.2 -0.4
LOR pmax pmax
comp=Z,3.0nm,0.6s
LPL La Plagne 83.49 337 *e*P P 04 12 31.8 +0.4
LPL pmax pmax
comp=Z,2.0nm,0.6s
LPG La Plagne 83.50 337 *e*P P 04 12 32.0 +0.4
LPG pmax pmax
comp=Z,7.0nm,1.0s
RAYN Ar Rayn 84.28 298 *e*P P 04 12 35.2 -0.3
comp=Z,4.0nm,0.6s
AQU L'Aquila 84.34 331 *e*P P 04 12 36.2 +0.6
AQU pmax pmax
comp=Z,17nm,1.0s
AQU L'Aquila 84.34 331 *e*P P 04 12 36.2 +0.6
comp=Z,17nm,1.0s
KARP Karpathos 84.72 318 *e*P P 04 12 36.9 -0.7
comp=Z,8.2nm,0.8s
CAF Calviac 85.24 340 *e*P P 04 12 44.0 +4.0
CAF pmax pmax
comp=Z,2.0nm,0.6s
LFF La Frestale 85.54 340 *e*P P 04 12 45.2 +3.7
LFF pmax pmax
comp=Z,42nm,1.8s
LAST Lasithi 85.80 319 *i*P P 04 12 42.7 -0.4
LAST Lasithi 85.80 319 *e*P P 04 12 41.3 -1.7
comp=Z,36nm,1.0s
TIP Timpagrande 85.96 327 *e*P P 04 12 43.7 -0.1
comp=Z,19nm,1.2s
SIVA Sivas 86.22 320 *i*P P 04 12 44.6 -0.4
TBI Tubuai 87.00 129 *e*T T 05 49 15.9
comp=Z,19nm,0.2s
ES19 SONSECA Array 91.56 342 *e*P P 04 13 09.6 -0.7
ESDC Sonseca Array 91.60 342 P P 04 13 08.7 -1.8
comp=Z,0.6nm,0.6s,baz=354,slow=3.7,SNR=6.8
KEST Kesra 91.66 331 P P 04 13 10.4 -0.4
comp=Z,2.2nm,0.8s,baz=302,slow=3.3,SNR=4.2
JTS JuntasAbangare 103.50 59 *e*P Pdif 04 14 04.6 0.0
JTS pmax pmax
comp=Z,2.0nm,0.3s
JTS JuntasAbangare 103.50 59 *e*P Pdif 04 14 04.6 0.0
comp=Z,1.8nm,0.3s
TORD Torodi Ar. Bea 115.08 329 PKP PKPdf 04 18 44.2 -0.7
comp=Z,0.5nm,0.6s,baz=35,slow=1.0,SNR=3.6
VNDA Vanda 124.00 178 PKP PKPdf 04 18 59.9 -0.2
comp=Z,1.2nm,0.9s,baz=322,slow=4.9,SNR=7.6
LSZ Lusaka 124.57 285 *e*PKIKP PKPdf 04 19 02.6 -0.5
LSZ Lusaka 124.57 285 *e*PKPdf PKPdf 04 19 02.6 -0.5
ASCN Ascension 139.89 340 *e*PKPdf PKPdf 04 19 31.8 -0.1

PLCA	**Paso Flores**	**148.42**	**95**	PKPbc	**PKPbc**	**04 19 50.2**	**+0.6**	
	comp=Z,3.8nm,0.9s,baz=311,slow=4.5,SNR=9.0							
CPUP	**Villa Florida**	**148.72**	**60**	PKPbc	**PKPbc**	**04 19 50.5**	**-0.1**	
	comp=Z,3.4nm,0.8s,baz=300,slow=2.8,SNR=6.0							
SNAA	**Sanae**	**152.38**	**196**	PKP	**PKPbc**	**04 19 57.3**	**-0.7**	
SNAA	**Sanae**	**152.38**	**196**	*e*PKIKP	**PKPbc**	**04 19 57.4**	**-0.7**	
SNAA	**Sanae**	**152.38**	**196**	*e*PKPbc	**PKPbc**	**04 19 57.4**	**-0.7**	
TRQA	**Tornquist**	**153.09**	**84**	*e*PKPbc	**PKPbc**	**04 20 00.5**	**-0.1**	
TRQA				*e*PKPab	**PKPab**	**04 20 12.2**	**-0.2**	
VNA2	**Neumayer--Watz**	**153.83**	**195**	PKP	**PKPdf**	**04 19 54.1**	**+0.8**	
	baz=327,slow=1.5							
VNA1	**Neumayer--Stat**	**154.22**	**194**	PKP	**PKPbc**	**04 19 59.7**	**-2.3**	

JMA ***16*** *04:11:26.9±0.2,36.6°N×142.0°E,h25km±3km,M3.6*
IDC ***16*** *04:11:35.5±2.4,37.5°N×140.9°E,h0km,mb3.7/4, mb1 3.7/5,mb1mx3.4/38,mbtmp3.6/5,ML3.3/1,MS2.6/1, Ms1 2.6/1,ms1mx2.2/38,Error ellipse: s-maj=56.3km s-min=29.3km az=71.0*

ISC 16 04:11:26.0±2.7,36.7°N±0.7°×142.0°E±0.1°,h1km±11km, n14,σ0966/21,mb3.7/4,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.98**	**289**	P		**Pb**	**04 11 46.1**	**+0.2**
ONAJ				S		**Sn**	**04 12 00.7**	**-0.9**
JFK	**Kawauchi**	**1.04**	**304**	P		**Pb**	**04 11 47.3**	**+0.4**
JHO	**Hitachi**	**1.13**	**262**	P		**Pg**	**04 11 47.7**	**+0.1**
JHO				*e*S		**Sg**	**04 12 02.1**	**-0.1**
JMM	**Marumori**	**1.42**	**320**	P		**Pg**	**04 11 53.4**	**+0.1**
JMM				*e*S		**Sn**	**04 12 12.9**	**+0.4**
JFT	**Otama**	**1.49**	**300**	P		**Pg**	**04 11 54.7**	**+0.2**
JFT				*e*S		**Sn**	**04 12 14.2**	**+0.1**
JIO	**Ouri**	**1.74**	**344**	P		**Pb**	**04 11 58.4**	**-0.3**
JIO				*e*S		**Sg**	**04 12 22.1**	**+0.2**
JOU	**Okura**	**1.88**	**327**	P		**Pb**	**04 12 01.0**	**-0.3**
JOU				S		**Sg**	**04 12 25.8**	**-0.8**
JAG	**Ashikaga**	**2.04**	**261**	P		**Pn**	**04 12 00.9**	**-0.7**
JAG				S		**Sn**	**04 12 26.2**	**-1.6**
MJAR	**Matsushiro Arr**	**3.02**	**267**	Pn		**Pn**	**04 12 15.9**	**+0.8**
	6.4nm,0.3s,baz=99,slow=9.5,SNR=59							
MJAR				LR		LR	04 13 30.8	
	comp=Z,121nm,21.2s,baz=80,slow=49							
MAT	**Matsushiro**	**3.02**	**267**	P		**Pn**	**04 12 15.6**	**+0.5**
MAT				S		**Sn**	**04 12 53.0**	**+1.0**
SONM	**Songino Array**	**28.29**	**304**	P		**P**	**04 17 21.1**	**0.0**
	1.2nm,0.7s,baz=99,slow=9.2,SNR=4.2							
ZALV	**Zalesovo Beam**	**42.40**	**313**	P		**P**	**04 19 22.3**	**+0.4**
	0.6nm,0.3s,baz=102,slow=6.1,SNR=3.2							
MKAR	**Makanchi Array**	**44.62**	**302**	P		**P**	**04 19 39.9**	**-0.1**
	0.4nm,0.6s,baz=87,slow=11,SNR=5.6							
WRA	**Warramunga Arr**	**56.88**	**189**	P		P	04 21 26.6	+14
	0.6nm,1.0s,baz=4.9,slow=7.4,SNR=5.2							

NIED ***16*** *04:19:00,37.60N×141.60E,h56km,Mw4.4 Best double couple: M05.06000×10^15 NP1:φs12.00000°,δ45.00000°, λ79.00000°. NP2:φs207.00000°,δ46.00000°,λ101.00000°.*
BJI ***16*** *04:19:48.5,37.46N×141.75E,h33km,mb4.6/43,mB4.8/24, Ms4.4/7,Ms7 4.3/3*
ISCJB ***16*** *04:19:53.7±0.5,37.64N±0.03°×141.54E±0.04,h58km±3km, mb4.5/88,MS3.6/7,Error ellipse: s-maj=6.0km s-min=4.0km az=38.8*
MOS ***16*** *04:19:53.0±1.1,37.68N×141.62E,h53km,mb4.7/40,Error ellipse: s-maj=7.7km s-min=5.4km az=93.4*
JMA ***16*** *04:19:54.2±0.1,37.63N×141.58E,h46km±2km,M4.4*
JMA Felt III J1.
IDC ***16*** *04:19:54.9±0.5,37.63N×141.53E,h56km±4km,mb4.1/22, mb1 4.2/27,mb1mx4.1/38,mbtmp4.3/27,MS3.4/10, Ms1 3.4/10,ms1mx3.2/52,Error ellipse: s-maj=14.0km s-min=9.5km az=107.0*
NEIC ***16*** *04:19:55.6±0.6,37.67N×141.48E,h59km±5km,mb4.6/49, Error ellipse: s-maj=5.5km s-min=3.8km az=139.0*
NEIC Recorded [3 JMA] in Miyagi.

ISC 16 04:19:54.3±0.5,37.61N±0.04°×141.65E±0.04,h52km±4km, h52km:pP-P,n215,σ1s24/231,mb4.5/88,MS3.6/7,4C-4D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**0.66**	**249**	P		**Pn**	**04 20 06.8**	**-0.8**
JFK				S		**Sn**	**04 20 15.2**	**-2.1**
JMM	**Marumori**	**0.72**	**291**	P		**Pn**	**04 20 07.4**	**-1.0**
JMM				*e*S		**Sn**	**04 20 16.6**	**-2.1**
ONAJ	**Iwakimizuishiy**	**0.84**	**234**	P		**Pn**	**04 20 09.3**	**-0.7**
ONAJ				S		**Sn**	**04 20 19.8**	**-1.7**
JIO	**Ouri**	**0.88**	**345**	P		**Pn**	**04 20 09.7**	**-0.7**
JIO				S		**Sn**	**04 20 20.4**	**-1.9**
JFT	**Otama**	**1.04**	**266**	P		**Pn**	**04 20 12.5**	**-0.1**
JFT				S		**Sn**	**04 20 25.6**	**-0.6**
JOU	**Okura**	**1.09**	**315**	P		**Pn**	**04 20 12.3**	**-0.9**
JOU				S		**Sn**	**04 20 25.7**	**-1.5**
JYS	**Shirataka**	**1.39**	**297**	P		**Pn**	**04 20 16.7**	**-0.6**
JYS				S		**Sn**	**04 20 34.6**	**-0.1**
MJAR	**Matsushiro Arr**	**2.95**	**250**	P		**Pn**	**04 20 39.4**	**+0.8**
	22nm,0.3s,baz=54,slow=11,SNR=95							
MJAR				LR		LR	04 22 00.1	
	comp=Z,758nm,19.3s,baz=65,slow=44							
MAJO	**Matsushiro**	**2.95**	**250**	*e*P		**Pn**	**04 20 39.5**	**+0.9**
MAJO	**Matsushiro**	**2.95**	**250**	*e*Pn		**Pn**	**04 20 39.5**	**+0.9**
MAT	**Matsushiro**	**2.95**	**250**	P		**Pn**	**04 20 39.5**	**+0.9**
MAT				S		**Sn**	**04 21 15.7**	**+2.9**
MJB9	**Matsu-Tunnel**	**2.95**	**250**	*e*Pn		**Pn**	**04 20 39.6**	**+1.0**
INU	**Inuyama**	**4.36**	**240**	*e*Pn		**Pn**	**04 21 00.1**	**+2.2**
ERM	**Erimo**	**4.55**	**14**	*e*P		**Pn**	**04 20 59.4**	**-1.2**
ERM				*e*			04 21 48.4	
ERM	**Erimo**	**4.55**	**14**	*e*Pn		**Pn**	**04 20 59.4**	**-1.2**
ERM				*e*Sn		**Sn**	**04 21 48.4**	**-3.8**
JHJ	**Hachijo jima 2**	**4.73**	**199**	S		**Sn**	**04 21 55.2**	**-1.3**
	94nm,0.3s,baz=218,slow=20,SNR=10							
ASAJ	**Asahikawa**	**6.54**	**6**	P		**Pn**	**04 21 26.7**	**-1.2**
	2.7nm,0.3s,baz=195,slow=14,SNR=19							
ASAJ				S		**Sn**	**04 22 40.6**	**-0.5**
	1.4nm,0.3s,baz=78,slow=20,SNR=3.4							
ASAJ	**Asahikawa**	**6.54**	**6**	*e*Pn		**Pn**	**04 21 26.2**	**-1.7**
ASAJ				S		**Sn**	**04 22 40.6**	**-0.5**
YUK	**Yuzh-Kuril'sk**	**7.17**	**25**	*e*P		**Pn**	**04 21 36.5**	**+0.1**
YUK				*e*S		**Sn**	**04 22 52.4**	**-4.1**
YUK				pmax		pmax		
	comp=Z,204nm,0.7s							
YUK				pmax		pmax		
	comp=E,93nm,0.3s							
YUK				pmax		pmax		
	comp=N,110nm,0.4s							
SHO	**Shikotan**	**7.39**	**31**	*e*P		**Pn**	**04 21 36.8**	**-2.6**
SHO				*e*S		Sn	04 22 55.2	-6.7
SHO				pmax		pmax		
	comp=N,46nm,0.6s							
SHO				pmax		pmax		
	comp=Z,48nm,0.6s							
SHO				pmax		pmax		
	comp=E,20nm,0.5s							
KUR	**Kuril'sk**	**8.94**	**30**	*e*P		**Pn**	**04 22 01.2**	**+0.6**
KUR				*e*S		**Sn**	**04 23 36.4**	**-3.3**
KUR				smax		smax		
	comp=E,31nm,0.4s							
MSHR	**Mys Shultsa**	**9.45**	**305**	*ce*P		**Pn**	**04 22 10.5**	**+2.9**
USRK	**Ussuriysk Ar.**	**9.84**	**315**	P		**Pn**	**04 22 13.2**	**+0.3**
	comp=E,1.0nm,0.3s,baz=134,slow=16,SNR=22							
USRK				LR		LR	04 25 51.4	
	comp=E,179nm,19.9s,baz=135,slow=36							
JNU	**Nakatsue**	**9.86**	**246**	P		**Pn**	**04 22 12.6**	**-0.8**
	comp=E,0.5nm,0.3s,baz=41,slow=20,SNR=3.4							
JNU				LR		LR	04 26 22.8	
	comp=E,299nm,21.5s,baz=114,slow=40							
JNU	**Nakatsue**	**9.86**	**246**	*e*Pn		Pn	04 22 07.3	-6.1
CBIJ	**Chichi jima**	**10.49**	**177**	*e*Pn		**Pn**	**04 22 19.5**	**-2.4**
CBIJ				*e*Sn		Sn	04 24 06.6	-11
JCJ	**Chichijima**	**10.49**	**177**	P		**Pn**	**04 22 19.6**	**-2.3**
	comp=E,16nm,0.3s,baz=94,slow=22,SNR=12							
JCJ				S		Sn	04 24 06.7	-11
	baz=338,slow=19							
KSRS	**Korea Array**	**10.90**	**273**	P		Pn	04 22 30.9	+3.3
	comp=E,0.7nm,0.3s,baz=84,slow=14,SNR=14							
KSRS				LR		LR	04 26 16.8	
	comp=E,198nm,21.7s,baz=66,slow=35							
KSAR	**Wonju Array Be**	**10.93**	**273**	P		**Pn**	**04 22 30.9**	**+2.9**
KSAR	**Wonju Array Be**	**10.93**	**273**	P		**Pn**	**04 22 30.9**	**+2.9**
MDJ	**Mudanjiang**	**11.47**	**311**	P		**Pn**	**04 22 33.5**	**-1.7**
MDJ				pmax		pmax		
	comp=E,5.0nm,0.6s							
MDJ				pmax		pmax		
	comp=E,100nm,3.9s							
KLR	**Kul'dur**	**13.65**	**331**	P		Pn	04 23 08.2	+3.3
	comp=E,0.2nm,0.3s,baz=134,slow=12,SNR=10							
KLR				LR		LR	04 28 24.5	
	comp=E,144nm,18.8s,baz=144,slow=38							
CN2	**Changchun**	**13.75**	**302**	*e*P		**Pn**	**04 23 05.9**	**-0.5**
CN2				pmax		pmax		
	comp=E,10.0nm,0.4s							
PETK	**Petropavlovsk-**	**19.10**	**31**	P		**P**	**04 24 12.6**	**+0.1**
	baz=191,slow=7.2,SNR=3.8							
PETK				LR		LR	04 32 29.0	
	comp=E,40nm,19.4s,baz=223,slow=39							
NJ2	**Nanjing**	**19.50**	**260**	*e*P		**P**	**04 24 16.4**	**-0.6**
NJ2				pmax		pmax		
	comp=E,10.0nm,0.6s							
TIA	**Tai'an**	**19.65**	**273**	⇑P		**P**	**04 24 17.5**	**-1.2**
TIA				pmax		pmax		
	comp=E,20nm,1.2s							
BJI	**Beijing**	**19.98**	**285**	P		**P**	**04 24 19.8**	**-2.4**
BJI				pmax		pmax		
	comp=E,10.0nm,0.8s							
BJT	**Baijiatuau**	**19.98**	**285**	*e*P		**P**	**04 24 19.8**	**-2.5**
BJT				pmax		pmax		
	comp=E,22nm,0.6s							
BJT	**Baijiatuau**	**19.98**	**285**	*e*P		**P**	**04 24 19.8**	**-2.5**
	comp=E,22nm,0.6s							
MA2	**Magadan**	**22.76**	**12**	LR		LR	04 33 24.5	
	comp=E,67nm,20.6s,baz=169,slow=36							
MA2	**Magadan**	**22.76**	**12**	*e*P		**P**	**04 24 52.7**	**+0.8**
HHC	**Hu-ho-hao-te**	**23.47**	**287**	*e*P		**P**	**04 24 55.3**	**-4.0**
HHC				pmax		pmax		
	comp=E,41nm,0.8s							
HHC				pmax		pmax		
	comp=Z,150nm,6.6s							
YAK	**Yakutsk**	**25.55**	**347**	P		**P**	**04 25 17.5**	**-0.3**
	comp=Z,15nm,0.4s,baz=349,slow=1.3,SNR=4.2							
YAK	**Yakutsk**	**25.55**	**347**	*e*P		**P**	**04 25 17.5**	**-0.3**
YAK				*e*			04 29 40.9	
YAK				pmax		pmax		
	comp=Z,19nm,0.8s							
SEY	**Seymchan**	**26.20**	**11**	P		**P**	**04 25 24.6**	**+0.9**
	comp=Z,6.2nm,0.9s,baz=192,slow=7.9,SNR=16							
SEY	**Seymchan**	**26.20**	**11**	*e*P		**P**	**04 25 25.1**	**+1.4**
XAN	**Xi'an**	**26.70**	**272**	P		**P**	**04 25 28.9**	**+0.3**
XAN				pP		pP	04 25 35.0	-6.8
XAN				pmax		pmax		
	comp=Z,20nm,0.6s							
XAN				pmax		pmax		
	comp=Z,36nm,6.9s							
BOD	**Bodaibo**	**27.15**	**327**	*e*P		**P**	**04 25 30.3**	**-2.0**
BOD				pmax		pmax		
	comp=Z,3.0nm,0.8s							
ULN	**Ulaanbaatar**	**27.19**	**303**	*ce*P		**P**	**04 25 33.9**	**+0.9**
ULN				pmax		pmax		
	comp=Z,8.0nm,1.7s							
ULN	**Ulaanbaatar**	**27.19**	**303**	*e*P		**P**	**04 25 32.1**	**-0.9**
	comp=Z,7.8nm,1.3s							
ENH	**Enshi**	**27.57**	**264**	*e*P		**P**	**04 25 34.7**	**-1.7**
	comp=Z,32nm,0.9s							
SONA1	**Songino Array**	**27.62**	**303**	*e*P		**P**	**04 25 37.0**	**+0.1**
SONM	**Songino Array**	**27.62**	**303**	P		**P**	**04 25 37.1**	**+0.3**
	comp=Z,3.3nm,0.6s,baz=103,slow=8.9,SNR=12							
H11N2	**WAKE ISLAND Hy**	**28.29**	**122**	T		T	04 55 59.8	
	baz=315,slow=75,SNR=646							
H11N1	**WAKE ISLAND Hy**	**28.29**	**122**	T		T	04 56 02.0	
	baz=315,slow=75,SNR=1023							
H11N3	**WAKE ISLAND Hy**	**28.30**	**122**	T		T	04 56 01.1	
	baz=315,slow=75,SNR=796							
H11S1	**WAKE ISLAND Hy**	**29.02**	**124**	T		T	04 56 51.4	
	baz=317,slow=76,SNR=590							
H11S3	**WAKE ISLAND Hy**	**29.02**	**124**	T		T	04 56 58.8	
	baz=317,slow=76,SNR=421							
H11S2	**WAKE ISLAND Hy**	**29.04**	**124**	T		T	04 57 03.3	
	baz=317,slow=76,SNR=242							
ZAK	**Zakamensk**	**30.07**	**308**	*e*P		**P**	**04 25 58.4**	**-0.1**
ZAK				pmax		pmax		
	comp=Z,3.0nm,0.9s							
TLY	**Talaya**	**30.10**	**310**	*e*P		**P**	**04 25 58.2**	**-0.5**
TLY				pmax		pmax		
	comp=Z,5.0nm,1.1s							
LZH	**Lanzhou**	**30.16**	**279**	*e*P		**P**	**04 25 59.5**	**0.0**
LZH				pP		pP	04 26 08.6	-4.2
LZH				sP		sP	04 26 12.8	-6.2
LZH				pmax		pmax		
	comp=Z,14nm,1.0s							
GYA	**Guiyang**	**31.50**	**260**	*e*P		**P**	**04 26 11.8**	**+0.4**
GYA				pmax		pmax		
	comp=Z,10.0nm,0.8s							
CD2	**Chengdu**	**31.86**	**269**	P		**P**	**04 26 12.4**	**-2.0**
CD2				pmax		pmax		
	comp=Z,1.0nm,0.5s							
GTA	**Gaotai**	**32.58**	**286**	*e*P		**P**	**04 26 20.9**	**+0.2**
GTA				pP		pP	04 26 28.1	-6.0
GTA				sP		sP	04 26 31.3	-8.9
GTA				S		**S**	**04 31 33.9**	**+1.2**
GTA				sS		sS	04 31 46.8	-8.4
GTA				SS		**SnSn**	**04 33 31.8**	**+1.2**
GTA				pmax		pmax		
	comp=Z,5.0nm,1.1s							
GTA				pmax		pmax		
	comp=Z,84nm,7.2s							
GTA				LR		LR		
	comp=Z,170nm,14.7s							
GTA				LR		LR		
	comp=Z,220nm,17.6s							
BILL	**Bilibino**	**33.43**	**17**	*de*P		**P**	**04 26 27.4**	**-0.2**
BILL				*e*			04 27 39.1	
BILL				*e*SS		SS	04 34 18.7	+8.1
BILL				pmax		pmax		
	comp=Z,2.0nm,1.0s							
BILL				MLR		MLR		
	comp=Z,70nm,19.0s							
TIXI	**Tiksi**	**34.75**	**353**	P		**P**	**04 26 38.4**	**-0.6**
	comp=Z,1.2nm,0.4s,baz=128,slow=4.1,SNR=5.0							
TIXI	**Tiksi**	**34.75**	**353**	*e*P		**P**	**04 26 38.6**	**-0.4**
TIXI				pmax		pmax		
	comp=Z,5.0nm,1.7s							
TIXI	**Tiksi**	**34.75**	**353**	*e*P		**P**	**04 26 38.5**	**-0.5**
	comp=Z,2.1nm,0.8s							
KMI	**Kunming**	**35.23**	**261**	P		**P**	**04 26 44.6**	**+0.6**
KMI				pmax		pmax		
	comp=Z,14nm,0.8s							
KMI				pmax		pmax		
	comp=Z,120nm,5.1s							
WMQ	**Urumqi**	**40.75**	**296**	*e*P		**P**	**04 27 30.8**	**+0.7**
WMQ				pP		pP	04 27 40.6	-3.2
WMQ				sP		sP	04 27 45.3	-4.5
WMQ				pmax		pmax		
	comp=Z,4.0nm,0.6s							
WMQ				pmax		pmax		
	comp=Z,55nm,4.4s							
FAKI	**Fak Fak**	**41.25**	**194**	*e*P		**P**	**04 27 34.8**	**+0.4**
	comp=Z,12nm,0.7s							
ZAA0	**Zalesovo Array**	**41.67**	**312**	*e*P		**P**	**04 27 37.2**	**-0.2**
ZALV	**Zalesovo Beam**	**41.67**	**312**	P		**P**	**04 27 37.1**	**-0.4**
	comp=Z,5.9nm,0.8s,baz=93,slow=7.4,SNR=13							
ZALV	**Zalesovo Beam**	**41.67**	**312**	*i* P		**P**	**04 27 37.0**	**-0.4**
ZALV				pmax		pmax		
	comp=Z,4.0nm,0.6s							
CMAR	**Chiang Mai Arr**	**41.82**	**255**	P		**P**	**04 27 38.6**	**-0.5**
	comp=Z,1.0nm,0.5s,baz=44,slow=8.7,SNR=5.9							
CMAR				LR		LR	04 45 16.4	
	comp=Z,30nm,20.7s,baz=265,slow=36							
CMAR	**Chiang Mai Arr**	**41.82**	**255**	*ce*P		**P**	**04 27 39.9**	**+0.8**
CMAR				pmax		pmax		
	comp=Z,1.0nm,0.5s							
NVS	**Novosibirsk**	**42.58**	**313**	*e*P		**P**	**04 27 43.1**	**-1.7**
MK01	**Makanchi Array**	**43.97**	**302**	*e*P		**P**	**04 27 55.6**	**-0.6**
MK31	**Makanchi Array**	**43.98**	**302**	*e*P		**P**	**04 27 55.8**	**-0.4**
MK31	**Makanchi Array**	**43.98**	**302**	*e*P		**P**	**04 27 55.8**	**-0.4**
MKAR	**Makanchi Array**	**43.98**	**302**	P		**P**	**04 27 55.9**	**-0.4**
	comp=Z,3.9nm,0.7s,baz=83,slow=9.9,SNR=24							
KURK	**Kurchatov**	**45.73**	**308**	P		**P**	**04 28 08.1**	**-2.0**
KURK				pmax		pmax		
	comp=Z,42nm,0.7s							
KURK	**Kurchatov**	**45.73**	**308**	*e*P		**P**	**04 28 09.8**	**-0.3**
	comp=Z,25nm,0.7s							
RSO	**Redoubt South**	**46.34**	**39**	*e*P		**P**	**04 28 15.3**	**+0.3**
KDAK	**Kodiak Island**	**46.55**	**42**	*i* P		**P**	**04 28 16.8**	**+0.4**
CAST	**Castle Rocks**	**46.65**	**34**	*e*P		**P**	**04 28 19.4**	**+2.2**
	comp=Z,4.3nm,1.1s							
SPU	**Mount Spurr**	**46.67**	**38**	*e*P		**P**	**04 28 17.7**	**+0.3**
KTH	**Kantishna Hill**	**47.17**	**34**	*e*P		**P**	**04 28 22.4**	**+1.1**
	comp=Z,15nm,1.6s							
MLY	**Manley**	**47.27**	**32**	*e*P		**P**	**04 28 24.1**	**+2.1**
	comp=Z,4.9nm,1.2s							
GUN	**Gumba**	**47.29**	**275**	*e*P		**P**	**04 28 22.9**	**-0.1**
	comp=Z,26nm,0.4s							
KKN	**Kakani**	**47.81**	**275**	*e*P		**P**	**04 28 27.0**	**+0.1**
	comp=Z,24nm,0.6s							
SEW	**Seward**	**48.00**	**39**	*e*P		**P**	**04 28 28.3**	**+0.6**
	comp=Z,10nm,1.1s							
MCK	**McKinley**	**48.06**	**34**	*e*P		**P**	**04 28 29.8**	**+1.7**
MCK				pmax		pmax		
	comp=Z,8.0nm,1.3s							
MCK	**McKinley**	**48.06**	**34**	*e*P		**P**	**04 28 29.8**	**+1.7**
	comp=Z,7.5nm,1.3s							
PMR	**Palmer**	**48.06**	**37**	*e*P		**P**	**04 28 28.6**	**+0.5**
PMR				pmax		pmax		
	comp=Z,10.0nm,1.3s							
PMR	**Palmer**	**48.06**	**37**	*e*P		**P**	**04 28 28.6**	**+0.5**
	comp=Z,9.8nm,1.3s							
RND	**Reindeer**	**48.10**	**34**	*e*P		**P**	**04 28 29.6**	**+1.1**
RND				pmax		pmax		
	comp=Z,5.0nm,0.9s							
RND	**Reindeer**	**48.10**	**34**	*e*P		**P**	**04 28 29.6**	**+1.1**
	comp=Z,4.9nm,0.9s							
GKN	**Gorkha**	**48.23**	**276**	*e*P		**P**	**04 28 29.6**	**-0.5**
	comp=Z,18nm,0.4s							
MDM	**Murphy Dome**	**48.33**	**32**	*e*P		**P**	**04 28 31.5**	**+1.3**
	comp=Z,8.1nm,1.0s							
SML	**Sawmill**	**48.42**	**37**	*e*P		**P**	**04 28 31.4**	**+0.5**
SML				pmax		pmax		
	comp=Z,5.0nm,0.8s							
SML	**Sawmill**	**48.42**	**37**	*e*P		**P**	**04 28 31.4**	**+0.5**
	comp=Z,5.2nm,0.8s							
COLA	**College**	**48.50**	**33**	⇓*i*P		P	04 28 34.6	+3.2
COLA				pmax		pmax		
	comp=Z,3.0nm,0.9s							
SCM	**Sheep Creek Mo**	**48.90**	**37**	*e*P		**P**	**04 28 35.1**	**+0.5**
SCM				pmax		pmax		
	comp=Z,7.0nm,1.1s							
SCM	**Sheep Creek Mo**	**48.90**	**37**	*e*P		**P**	**04 28 35.1**	**+0.5**
	comp=Z,7.4nm,1.1s							
ILAR	**Eielson Array**	**48.91**	**33**	P		**P**	**04 28 35.4**	**+0.8**
	comp=Z,3.0nm,0.8s,baz=270,slow=6.3,SNR=36							
ILAR				pP		**pP**	**04 28 49.8**	**+1.2**
	comp=Z,2.3nm,0.8s,baz=268,slow=6.2,SNR=9.0							
ILB	**Eielson Array**	**48.91**	**33**	*e*P		**P**	**04 28 35.5**	**+0.8**
IL1	**Eielson Array**	**48.91**	**33**	*e*P		**P**	**04 28 34.8**	**+0.2**
KOLN	**Koldanda**	**49.15**	**276**	*e*P		**P**	**04 28 37.0**	**-0.2**
	comp=Z,9.3nm,0.5s							
PYUN	**Piuthan**	**49.48**	**277**	*e*P		**P**	**04 28 39.5**	**-0.3**
	comp=Z,32nm,0.6s							
TKM2	**Tokmak 2**	**49.52**	**298**	*e*P		**P**	**04 28 40.3**	**+0.4**
TKM2				pmax		pmax		
	comp=Z,9.0nm,0.6s							
TKM2	**Tokmak 2**	**49.52**	**298**	*e*P		**P**	**04 28 40.3**	**+0.4**
	comp=Z,9.0nm,0.6s							
DIV	**Divide**	**49.71**	**37**	*e*P		**P**	**04 28 41.9**	**+1.1**
	comp=Z,7.7nm,0.9s							
VOSK	**Vostochnaya**	**50.04**	**312**	*e*P		**P**	**04 28 43.1**	**-0.3**
VOSK				pmax		pmax		
	comp=Z,7.0nm,0.9s							
VOSK	**Vostochnaya**	**50.04**	**312**	*e*P		**P**	**04 28 43.1**	**-0.3**
	comp=Z,6.5nm,0.9s							
DOT	**Dot Lake**	**50.23**	**34**	*e*P		**P**	**04 28 45.0**	**+0.3**
	comp=Z,4.9nm,0.8s							
BRVK	**Borovoye**	**50.38**	**312**	*i* P		**P**	**04 28 46.2**	**+0.2**
BRVK				pmax		pmax		
	comp=Z,5.0nm,0.8s							
BRVK	**Borovoye**	**50.38**	**312**	*e*P		**P**	**04 28 45.8**	**-0.1**
	comp=Z,5.8nm,0.8s							
AAK	**Ala-Archa**	**50.38**	**298**	LR		LR	04 50 45.5	
	comp=Z,108nm,21.2s,baz=79,slow=37							
AAK	**Ala-Archa**	**50.38**	**298**	*e*P		**P**	**04 28 45.1**	**-1.3**
AAK				pmax		pmax		
	comp=Z,4.0nm,0.8s							
AAK	**Ala-Archa**	**50.38**	**298**	*e*P		**P**	**04 28 45.0**	**-1.3**
	comp=Z,4.3nm,0.8s							
MENT	**Mentasta**	**50.46**	**35**	*e*P		**P**	**04 28 48.3**	**+1.8**
	comp=Z,3.7nm,0.9s							
EKS2	**Erkin-Say**	**50.88**	**298**	*e*P		**P**	**04 28 49.1**	**-0.9**
EKS2				pmax		pmax		
	comp=Z,3.0nm,0.7s							
EKS2	**Erkin-Say**	**50.88**	**298**	*e*P		**P**	**04 28 49.1**	**-0.9**
	comp=Z,3.4nm,0.7s							
ZRNK	**Zerenda**	**51.16**	**312**	*e*P		**P**	**04 28 51.8**	**0.0**
ZRNK				pmax		pmax		
	comp=Z,5.0nm,1.0s							
ZRNK	**Zerenda**	**51.16**	**312**	*e*P		**P**	**04 28 51.8**	**0.0**
	comp=Z,5.3nm,1.0s							
COEN	**Coen**	**51.31**	**178**	*e*P		**P**	**04 28 53.8**	**+0.5**
	comp=Z,10nm,1.0s							
MNAS	**Manas**	**51.82**	**298**	P		**P**	**04 28 56.0**	**-1.1**
MNAS				pmax		pmax		
	comp=Z,8.0nm,0.9s							
KKAR	**Karatay Array**	**53.00**	**300**	*e*P	

FFC	**Flin Flon**	**73.12**	**33**	*e*P		**P**	**04 31 19.0**	**+0.1**
FFC				pmax		pmax			
	comp=Z,7.0nm,1.1s								
FFC	**Flin Flon**	**73.12**	**33**	*e*P		**P**	**04 31 18.9**	**+0.1**
	comp=Z,6.7nm,1.1s								
FCC	**Fort Churchill**	**73.41**	**27**	*e*P		**P**	**04 31 21.0**	**+0.5**
FCC				pmax		pmax			
	comp=Z,14nm,1.3s								
FCC	**Fort Churchill**	**73.41**	**27**	*e*P		**P**	**04 31 21.0**	**+0.5**
	comp=Z,14nm,1.3s								
LRM	**Limekiln Ridge**	**73.61**	**45**	*e*P		**P**	**04 31 23.9**	**+1.6**
LRM				*e*pP		**PcP**	**04 31 37.5**	**-0.5**
EGMT	**Eagleton**	**73.72**	**42**	*e*P		**P**	**04 31 24.0**	**+1.3**
	comp=Z,8.0nm,1.0s								
NB2	**NORSAR Subarra**	**73.73**	**337**	P		**P**	**04 31 21.8**	**-0.6**
	comp=Z,1.8nm,0.7s,baz=38,slow=6.2								
NOA	**NORSAR Array B**	**73.73**	**337**	P		**P**	**04 31 22.2**	**-0.2**
	comp=Z,4.2nm,0.8s,baz=38,slow=6.0,SNR=11								
NOA				LR		LR	05 07 45.2		
	comp=Z,32nm,18.9s,baz=255,slow=39								
HLID	**Hailey**	**73.85**	**47**	*e*P		**P**	**04 31 24.4**	**+0.8**
	comp=Z,3.0nm,1.1s								
AKASG	**Malin Array Be**	**73.96**	**322**	P		**P**	**04 31 23.3**	**-0.6**
	comp=Z,2.6nm,0.4s,baz=46,slow=6.0,SNR=27								
KIEV	**Kiev**	**73.97**	**322**	*e*P		**P**	**04 31 22.7**	**-1.2**
KIEV				pmax		pmax			
	comp=Z,4.0nm,0.5s								
KIEV	**Kiev**	**73.97**	**322**	*e*P		**P**	**04 31 22.7**	**-1.2**
	comp=Z,3.5nm,0.5s								
BOZ	**Bozeman (W)**	**74.17**	**44**	*e*P		**P**	**04 31 27.2**	**+1.8**
BOZ				pmax		pmax			
	comp=Z,13nm,1.6s								
BOZ	**Bozeman (W)**	**74.17**	**44**	*e*P		**P**	**04 31 27.2**	**+1.8**
	comp=Z,13nm,1.6s								
H17A	**Grant Village**	**75.53**	**45**	*e*P		**P**	**04 31 35.3**	**+1.8**
	comp=Z,5.5nm,0.9s								
FXWY	**Fox Creek**	**75.75**	**46**	*e*P		**P**	**04 31 36.9**	**+2.2**
	comp=Z,9.3nm,1.6s								
MOOW	**Moose Ponds**	**75.84**	**45**	*e*P		**P**	**04 31 36.6**	**+1.5**
MOOW				*e*pP		**pP**	**04 31 52.1**	**+2.2**
R11A	**Troy Canyon, C**	**76.26**	**52**	*e*P		**P**	**04 31 39.2**	**+1.6**
R11A				*e*pP		**pP**	**04 31 54.3**	**+1.8**
TPNV	**Topopah Spring**	**76.69**	**54**	*e*P		**P**	**04 31 41.4**	**+1.4**
TPNV				pmax		pmax			
	comp=Z,5.0nm,0.9s								
TPNV	**Topopah Spring**	**76.69**	**54**	*e*P		**P**	**04 31 41.4**	**+1.4**
	comp=Z,4.6nm,0.9s								
BW06	**Boulder Array**	**77.13**	**46**	*e*P		**P**	**04 31 43.2**	**+0.7**
PD31	**Pinedale Array**	**77.13**	**46**	*e*P		**P**	**04 31 43.3**	**+0.8**
PD31				*e*PcP		**pP**	**04 31 58.4**	**+1.0**
PDAR	**Pinedale Array**	**77.13**	**46**	P		**P**	**04 31 43.4**	**+0.8**
	comp=Z,1.4nm,0.8s,baz=265,slow=2.1,SNR=11								
PDAR				pP		**pP**	**04 31 58.5**	**+1.2**
	comp=Z,1.4nm,0.6s,baz=270,slow=2.5,SNR=12								
PFO	**Pinyon Flats O**	**78.57**	**56**	*i* P		P	04 31 42.1	-8.4
STHS	**Stebnicka Huta**	**78.60**	**325**	*e*P		**P**	**04 31 50.7**	**+0.4**
STHS	**Stebnicka Huta**	**78.60**	**325**	*e*P		**P**	**04 31 50.7**	**+0.4**
BRTR	**Keskin Array B**	**78.61**	**312**	P		**P**	**04 31 50.7**	**0.0**
	comp=Z,1.7nm,1.0s,baz=51,slow=5.9,SNR=5.7								
BR231	**Keskin MP Arra**	**79.05**	**312**	*e*P		**P**	**04 31 51.2**	**-1.8**
MORC	**Moravsky Berou**	**79.98**	**327**	*e*P		**P**	**04 31 56.8**	**-1.0**
MORC				pmax		pmax			
	comp=Z,20nm,1.2s								
MORC	**Moravsky Berou**	**79.98**	**327**	*e*P		**P**	**04 31 56.8**	**-1.0**
	comp=Z,20nm,1.2s								
DPC	**Dobruska-Polom**	**80.07**	**328**	*e*P		**P**	**04 31 58.8**	**+0.5**
DPC	**Dobruska-Polom**	**80.07**	**328**	*e*P		**P**	**04 31 58.8**	**+0.5**
KRLC	**Kraliky**	**80.08**	**328**	*e*P		**P**	**04 31 58.4**	**0.0**
KRLC	**Kraliky**	**80.08**	**328**	*e*P		**P**	**04 31 58.4**	**0.0**
PSZ	**Piszkesteto**	**80.30**	**325**	*e*P		**P**	**04 31 59.9**	**+0.3**
PSZ				pmax		pmax			
	comp=Z,8.0nm,1.3s								
PSZ	**Piszkesteto**	**80.30**	**325**	*e*P		**P**	**04 31 59.9**	**+0.3**
	comp=Z,7.5nm,1.3s								
VYHS	**Vyhne**	**80.36**	**325**	*e*P		**P**	**04 31 59.3**	**-0.5**
VYHS	**Vyhne**	**80.36**	**325**	*e*P		**P**	**04 31 59.3**	**-0.5**
RAYN	**Ar Rayn**	**80.61**	**292**	*e*P		**P**	**04 32 01.0**	**-0.7**
	comp=Z,2.0nm,0.7s								
BRG	**Berggiesshubel**	**80.66**	**329**	*e*P		**P**	**04 32 01.5**	**+0.2**
	comp=Z,8.1nm,1.3s								
BRG	**Berggiesshubel**	**80.66**	**329**	*e*P		**P**	**04 32 01.5**	**+0.2**
BRG				pmax		pmax			
	comp=Z,8.0nm,1.3s								
CLL	**Collm**	**80.69**	**330**	*e*P		**P**	**04 32 00.0**	**-1.5**
	comp=Z,6.0nm,1.1s								
CLL	**Collm**	**80.69**	**330**	*e*P		**P**	**04 32 00.0**	**-1.5**
CLL				pmax		pmax			
	comp=Z,6.0nm,1.1s								
PRU	**Pruhonice**	**81.09**	**329**	*e*P		**P**	**04 32 04.2**	**+0.5**
PRU	**Pruhonice**	**81.09**	**329**	*e*P		**P**	**04 32 04.2**	**+0.5**
X16A	**Lo Mia Camp, P**	**81.32**	**53**	*e*P		**P**	**04 32 07.0**	**+1.5**
X16A				*e*pP		**pP**	**04 32 22.5**	**+2.1**
KHC	**Kasperske Hory**	**82.15**	**329**	*i* P		**P**	**04 32 09.4**	**+0.1**
KHC	**Kasperske Hory**	**82.15**	**329**	*e*P		**P**	**04 32 09.5**	**+0.1**
KHC				pmax		pmax			
	comp=Z,1.0nm,1.0s								
KHC	**Kasperske Hory**	**82.15**	**329**	*e*P		**P**	**04 32 09.5**	**+0.1**
	comp=Z,1.2nm,1.0s								
GERES	**GERESS Array B**	**82.32**	**328**	P		**P**	**04 32 10.1**	**-0.3**
	comp=Z,0.8nm,0.5s,baz=38,slow=5.1,SNR=7.7								
ANMO	**Albuquerque**	**84.08**	**50**	*e*P		**P**	**04 32 20.8**	**+1.0**
ANMO				pmax		pmax			
	comp=Z,4.0nm,1.2s								
ANMO	**Albuquerque**	**84.08**	**50**	*e*P		**P**	**04 32 20.3**	**+0.5**
	comp=Z,3.6nm,1.1s								
BFO	**Black Forest**	**84.90**	**331**	*i* P		**P**	**04 32 23.9**	**+0.5**
FUORN	**Ofenpass-Fuorn**	**85.51**	**329**	*e*P		**P**	**04 32 27.2**	**+0.4**
	comp=Z,7.2nm,1.0s								
TX31	**Lajitas Ar. Si**	**89.62**	**53**	*e*P		**P**	**04 32 47.5**	**+0.8**
TXAR	**Lajitas Array**	**89.63**	**53**	P		**P**	**04 32 47.8**	**+1.1**
	comp=Z,1.3nm,0.7s,baz=306,slow=3.7,SNR=17								
TXAR				pP		**pP**	**04 33 03.5**	**+1.7**
	comp=Z,0.7nm,0.5s,baz=293,slow=2.9,SNR=4.9								
TORD	**Torodi Ar. Bea**	**117.06**	**315**	PKP		**PKPdf**	**04 38 31.7**	**-2.2**
	comp=Z,0.2nm,0.8s,baz=64,slow=1.2,SNR=4.6								
LPAZ	**La Paz**	**146.24**	**59**	PKPbc		**PKPbc**	**04 39 30.5**	**+0.4**
	comp=Z,4.0nm,0.8s,baz=9.3,slow=3.9,SNR=14								
LPAZ				pPKPbc		pPKPbc	04 39 47.3	+1.7	
	comp=Z,4.0nm,0.9s,baz=35,slow=6.2,SNR=5.7								
LCO	**Las Campanas**	**151.75**	**82**	*e*PKPbc		**PKPbc**	**04 39 44.4**	**+0.9**

IDC **16** *04:49:07.6±4.5, 23˚.57S×68˚.54W, h0km, mb3.9/1, mb1 3.7/2, mb1mx3.4/20, mbtmp3.6/2, ML3.2/1, Error ellipse: s-maj=136.9km s-min=55.8km az=70.0*

GUC **16** *04:49:22.4±0.4, 22˚.58S×68˚.72W, h109km±4km, ML3.6*

ISC 16 04:49:23.4±1.5, **22˚.59S**±0˚.08×**68˚.8W**±0˚.2, **h112km**±17km, **n10**, σ0**960**/15, **1C-1D, Northern Chile**

Code	Station Name	Δ°	AZ°	Phase ID		ISC	Time		Res
				Op			h m s		ISC
PB06	**IPOC Station P**	**0.75**	**261**	*e*P		**Pn**	**04 49 42.2**		**-0.3**
PB06				*e*S		**Sn**	**04 49 57.0**		**+0.1**
PB06				IAML			04 49 58.7		
	comp=E,2μm,0.1s								
PB04	**IPOC Station P**	**1.30**	**281**	⇑*e*P		**Pn**	**04 49 48.3**		**+0.1**
PB04				*e*S		**Sn**	**04 50 07.6**		**+0.7**
PB04				IAML			04 50 10.5		
	comp=N,2μm,0.7s								
PB07	**IPOC Station P**	**1.34**	**310**	*e*P		**Pn**	**04 49 48.4**		**-0.4**
PB07				*e*S		**Sn**	**04 50 08.3**		**+0.4**
PB07				IAML			04 50 10.8		
	comp=N,1μm,0.4s								
PB01	**IPOC Station P**	**1.68**	**337**	*e*P		**Pn**	**04 49 52.2**		**-0.5**
PB01				*e*S		**Sn**	**04 50 14.6**		**-0.2**
PB01				IAML			04 50 17.1		
	comp=E,750nm,0.4s								
PB10	**IPOC Station P**	**1.88**	**240**	*e*P		**Pn**	**04 49 55.0**		**+0.1**
PB08	**IPOC Station P**	**2.47**	**352**	⇓*e*P		**Pn**	**04 50 02.8**		**0.0**
PB08				*e*S		**Sn**	**04 50 33.9**		**+0.9**
PB08				IAML			04 50 39.9		
	comp=E,120nm,0.3s								
PB14	**IPOC Station P**	**2.52**	**216**	*e*P		**Pn**	**04 50 04.0**		**+0.6**
LPAZ	**La Paz**	**6.30**	**6**	Pn		**Pn**	**04 50 55.5**		**+1.0**
	comp=E,0.2nm,0.3s,baz=180,slow=7.1,SNR=6.8								
TORD	**Torodi Ar. Bea**	**77.61**	**70**	P		**P**	**05 01 07.0**		**-0.9**
	comp=E,0.4nm,0.4s,baz=256,slow=5.5,SNR=26								
MKAR	**Makanchi Array**	**146.44**	**37**	PKPbc		**PKPbc**	**05 08 51.6**		**+0.2**
	comp=E,0.4nm,0.7s,baz=281,slow=3.8,SNR=3.7								

ISCJB **16** *05:14:23.3±0.7, 7˚.41N±0˚.05×73˚.17W±0˚.05, h139km±6km, Error ellipse: s-maj=11.1km s-min=5.7km az=135.1*

FUNV **16** *05:14:24.5, 7˚.38N×73˚.24W, h138km, MW2.5*

RSNC **16** *05:14:25.1±0.8, 7˚.39N×73˚.20W, h131km±6km, ML2.5*

ISC 16 05:14:23.8±1.5, **7˚.41N**±0˚.06×**73˚.17W**±0˚.06, **h139km**±8km, **n21**, σ0**962**/30, **1C, Northern Colombia**

Code	Station Name	Δ°	AZ°	Phase ID		ISC	Time		Res
				Op			h m s		ISC
GIRC	**Giron, Santand**	**0.33**	**184**	*e*P		**Pn**	**05 14 43.3**		**0.0**
GIRC				*e*S		**Sn**	**05 14 56.9**		**-1.1**
PAMC	**Pamplona, Colo**	**0.47**	**98**	*e*P		**Pn**	**05 14 44.7**		**+0.4**
PAMC				*e*S		**Sn**	**05 14 59.9**		**+0.1**
PAMC				*i*			05 15 02.5		
	comp=Z,22nm,0.3s								
GRMC	**Gramalote, San**	**0.48**	**50**	*i* P		**Pn**	**05 14 45.1**		**+1.2**
GRMC				*e*S		**Sn**	**05 15 00.3**		**+1.2**
GRMC				*i*			05 15 01.5		
	comp=Z,129nm,0.3s								
BTLC	**Betulia, Santa**	**0.50**	**191**	*e*P		**Pn**	**05 14 43.4**		**-0.7**
BRRC	**Barranca, Sant**	**0.61**	**241**	*e*P		**Pn**	**05 14 44.4**		**-0.1**
BRRC				*i*			05 14 45.0		
	comp=Z,96nm,0.1s								
BRRC				*e*S		**Sn**	**05 14 59.5**		**-0.7**
BARC	**Barichara**	**0.81**	**181**	*e*P		**Pn**	**05 14 46.1**		**-0.1**
BARC				*i*			05 15 03.9		
	comp=Z,153nm,0.1s								
OCAC	**Ocana**	**0.84**	**350**	*e*P		**Pn**	**05 14 45.8**		**-0.6**
CAPV	**Capacho**	**0.96**	**62**	⇑*i*P		**Pn**	**05 14 48.1**		**+0.7**
CAPV				*e*S		**Sn**	**05 15 06.0**		**+0.6**
YOPC	**Yopal, Colombi**	**2.17**	**160**	*e*P		**Pn**	**05 15 00.5**		**0.0**
YOPC				*e*S		**Sn**	**05 15 28.5**		**-0.2**
VIGV	**El Vigia**	**2.29**	**51**	*e*P		**Pn**	**05 15 01.5**		**-0.3**
VIGV				*e*S		**Sn**	**05 15 30.5**		**-0.4**
SOCV	**Socops**	**2.45**	**69**	*e*P		**Pn**	**05 15 04.1**		**+0.3**
SOCV				*e*S		**Sn**	**05 15 33.8**		**-0.9**
NORC	**Norcasia**	**2.49**	**223**	*e*P		**Pn**	**05 15 04.9**		**+0.5**
NORC				*e*S		**Sn**	**05 15 35.0**		**-0.6**
HELC	**Santa Helena**	**2.63**	**243**	*e*P		**Pn**	**05 15 07.7**		**+1.2**
HELC				*i*			05 15 47.3		
	comp=Z,5.8nm,0.3s								
VIRV	**Villa del Rosa**	**3.17**	**14**	*e*P		**Pn**	**05 15 12.9**		**0.0**
ELOV	**Elorza**	**3.68**	**96**	*e*P		**Pn**	**05 15 19.8**		**+0.2**
QARV	**Quebrada Arrib**	**3.82**	**43**	*e*P		**Pn**	**05 15 21.8**		**+0.3**
CURV	**Curarigua**	**4.09**	**51**	*e*P		**Pn**	**05 15 25.3**		**+0.1**
SANV	**Sanarito**	**4.15**	**60**	*e*P		**Pn**	**05 15 25.9**		**-0.1**
MAPV	**Macapo**	**5.25**	**62**	*e*P		**Pn**	**05 15 40.7**		**+0.3**
BAUV	**El Baul**	**5.30**	**73**	*e*P		**Pn**	**05 15 41.3**		**+0.2**
MONV	**Montecano**	**5.51**	**35**	*e*P		**Pn**	**05 15 43.5**		**-0.4**

BJI **16** *05:31:15.1, 19˚.95S×148˚.17E, h7km, mb5.1/55, mB5.0/39, Ms4.9/25, Ms7 4.5/25*

ISCJB **16** *05:31:17.2±0.2, 20˚.06S±0˚.03×147˚.68E±0˚.03, h10km, mb5.1/103, MS4.2/19, Error ellipse: s-maj=4.1km s-min=3.7km az=165.8*

IDC **16** *05:31:17.3±0.5, 19˚.89S×147˚.77E, h0km, mb4.8/22, mb1 4.9/25, mb1mx4.8/41, mbtmp4.8/25, ML4.8/3, MS4.2/17, Ms1 4.3/17, ms1mx4.0/35, Error ellipse: s-maj=16.3km s-min=11.9km az=145.0*

GCMT **16** *05:31:18.0±0.2, 20˚.08S×147˚.77E, h26km±1km, MW5.2/87, Moment Tensor Solution. s53,c73; s87,c136; Duration: 0 Moment tensor: Scale 10^16Nm; Mrr0.95±.18; Mθθ-0.25±.18; Mφφ-0.69±.19; Mrθ1.01±.35; Mφθ6.33±.12; Mφr0.72±.34; Best double couple: M0 6.48100×10^16 NP1:φs92.00000°, δ82.00000°, λ10.00000°. NP2: φs0.00000°, δ80.00000°, λ171.00000°. Principal axes: T 6.1500, Plg13.0000°, Azm316.0000°; N 0.6610, Plg77.0000°, Azm130.0000°; P -6.8120, Plg1.0000°, Azm226.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

MOS **16** *05:31:18.0±1.3, 19˚.88S×147˚.61E, h10km, mb5.2/29 Error ellipse: s-maj=9.3km s-min=7.3km az=109.7*

NEIC **16** *05:31:18.0, 20˚.09S×147˚.76E, h7km, mb5.2/51, MW5.0, ML5.3(AUST), Moment Tensor Solution. s7 Moment tensor: Scale 10^16Nm; Mrr0.01; Mθθ-0.10; Mφφ0.09; Mrθ-1.60; Mθφ3.19; Mφr0.81; Best double couple: M0 3.70000×10^16 NP1:φs182.00000°, δ66.00000°, λ-170.00000°. NP2:φs88.00000°, δ81.00000°, λ-25.00000°. Principal axes: T 3.2900, Plg11.0000°, Azm137.0000°; N 0.6500, Plg64.0000°, Azm250.0000°; P -3.9500, Plg24.0000°, Azm42.0000°; After AUST.*

NEIC Felt [IV] at Ayr and Bowen; [III] at Charters Towers, Mackay, Moranbah and Townsville; [II] at Atherton, Brisbane, Emerald, Gold Coast, Ingham and Innisfail. Also felt at Bundaberg, Cairns, Coolum Beach, Maroochydore, Mooloolaba, Rockhampton, Toowoomba and Warwick. Felt at Casino, New South Wales.

AUST **16** *05:31:18.2±1.1, 20˚.09S×147˚.76E, h7km Error ellipse: s-maj=0.9km s-min=0.3km az=30.0*

ISC 16 05:31:19.3±0.3, **20˚.01S**±0˚.04×**147˚.68E**±0˚.04, **h10km**, **n329**, σ1**954**/354, **mb5.2**/103, **MS4.3**/19, **25C-11D, Queensland**

Code	Station Name	Δ°	AZ°	Phase ID		ISC	Time		Res
				Op			h m s		ISC
CTA	**Charters Tower**	**1.34**	**266**	Pg		**Pn**	**05 31 44.8**		**+0.7**
	840nm,0.3s,baz=89,slow=14,SNR=2980								
CTA				Lg		Lg	05 32 03.1		
	2μm,0.3s,baz=12,slow=19,SNR=51								
CTAO	**Charters Tower**	**1.34**	**266**	*e*P		**Pb**	**05 31 45.2**		**+0.6**
CTAO				*e*			05 32 03.2		
CTAO	**Charters Tower**	**1.34**	**266**	*e*Pn		**Pb**	**05 31 45.1**		**+0.6**
CTAO				*e*Sg		**Sn**	**05 32 03.1**		**+1.1**
MTSU	**Mount Surprise**	**3.68**	**300**	P		**Pn**	**05 32 17.6**		**+1.2**
	baz=3.8,SNR=356								
MTSU	**Mount Surprise**	**3.68**	**300**	P		**Pn**	**05 32 18.9**		**+2.6**
MTSU				S		**Sg**	**05 33 18.0**		**+0.4**
EIDS	**Eidsvold**	**6.20**	**150**	P		**Pn**	**05 32 50.5**		**-0.4**
	baz=6.1,SNR=133								
EIDS	**Eidsvold**	**6.20**	**150**	*e*Pn		**Pn**	**05 32 50.2**		**-0.7**
EIDS				*e*Sg		**Sb**	**05 34 27.6**		**+6.0**
RMQ	**Roma**	**6.53**	**171**	P		**Pn**	**05 32 55.0**		**-0.4**
	baz=6.5,SNR=71								
RMQ	**Roma**	**6.53**	**171**	P		**Pn**	**05 32 56.0**		**+0.5**
QLP	**Quilpie**	**7.27**	**205**	P		**Pn**	**05 33 05.6**		**-0.1**
	baz=7.3,SNR=344								
COEN	**Coen**	**7.40**	**324**	*e*Pn		**Pn**	**05 33 09.6**		**+2.2**
COEN				*e*Sg		**Sg**	**05 35 13.1**		**-3.7**
QIS	**Mount Isa**	**7.60**	**264**	P		**Pn**	**05 33 11.3**		**+1.2**
	baz=7.7,SNR=54								
PMG	**Port Moresby**	**10.55**	**357**	Pn		**Pn**	**05 33 51.6**		**+1.0**
	3.3nm,0.3s,baz=180,slow=9.1,SNR=17								
PMG				Sn		**Sn**	**05 35 45.5**		**-3.5**
	2.6nm,0.3s,baz=180,slow=20,SNR=3.9								
PMG				LR		LR	05 37 56.2		
	comp=Z,3μm,18.2s,baz=184,slow=38								
PMG	**Port Moresby**	**10.55**	**357**	P		**Pn**	**05 33 52.6**		**+2.0**
	baz=11,SNR=24								
ARMA	**Armidale**	**10.97**	**162**	P		**Pn**	**05 33 56.4**		**0.0**
	baz=11,SNR=12								
ARMA	**Armidale**	**10.97**	**162**	*e*Pn		**Pn**	**05 33 56.1**		**-0.3**
CMSA	**Cobar Meteorol**	**11.62**	**188**	P		**Pn**	**05 34 03.8**		**-1.5**
	baz=12								
WB2	**Warramunga Arr**	**12.53**	**268**	*e*Pn		**Pn**	**05 34 17.5**		**-0.3**
WRAB	**Tennant Creek**	**12.53**	**268**	*ce*P		**Pn**	**05 34 18.8**		**+1.0**
WRAB				pmax		pmax			
	comp=Z,94nm,1.0s								
WRAB	**Tennant Creek**	**12.53**	**268**	*e*Pn		**Pn**	**05 34 17.6**		**-0.2**
WRA	**Warramunga Arr**	**12.54**	**268**	Pn		**Pn**	**05 34 17.5**		**-0.5**
	comp=Z,2.0nm,0.3s,baz=92,slow=12,SNR=72								
WRA				Sn		**Sn**	**05 36 44.6**		**+6.8**
	comp=Z,5.3nm,0.3s,baz=101,slow=22,SNR=5.9								
WRA				Lg		Lg	05 37 52.6		
	comp=Z,22nm,0.3s,baz=98,slow=27,SNR=24								
WRA				LR		LR	05 39 20.5		
	comp=Z,3μm,18.6s,baz=100,slow=38								
STKA	**Stephens Creek**	**13.02**	**204**	Pn		**Pn**	**05 34 23.7**		**-0.7**
	comp=Z,9.6nm,0.3s,baz=8.3,slow=12,SNR=183								
STKA				Sn		**Sn**	**05 36 48.8**		**-0.6**
	comp=Z,6.9nm,0.3s,baz=324,slow=16,SNR=3.0								
STKA				Lg		Lg	05 38 06.8		
	comp=Z,7.9nm,0.3s,baz=312,slow=15,SNR=3.6								
STKA				LR		LR	05 39 53.9		
	comp=Z,2μm,19.1s,baz=18,slow=39								
STKA	**Stephens Creek**	**13.02**	**204**	P		**Pn**	**05 34 23.4**		**-1.0**
	baz=13,SNR=64								
STKA	**Stephens Creek**	**13.02**	**204**	*e*Pn		**Pn**	**05 34 22.8**		**-1.7**
STKA				Sn		**Sn**	**05 36 48.8**		**-0.6**
STKA				Lg		Lg	05 38 06.8		
AS01	**Alice Springs**	**13.26**	**252**	*e*Pn		**Pn**	**05 34 26.8**		**-1.0**
AS31	**Alice Springs**	**13.30**	**252**	*e*Pn		**Pn**	**05 34 27.5**		**-0.8**
ASAR	**Alice Springs**	**13.30**	**252**	Pn		**Pn**	**05 34 27.1**		**-1.1**
	comp=Z,3.2nm,0.3s,baz=77,slow=13,SNR=158								
ASAR				Sn		**Sn**	**05 36 48.6**		**-7.7**
	comp=Z,3.6nm,0.3s,baz=78,slow=18,SNR=4.8								
ASAR				Lg		Lg	05 38 22.7		
	comp=Z,21nm,0.3s,baz=73,slow=23,SNR=10								
ASAR				LR		LR	05 39 44.9		
	comp=Z,2μm,18.3s,baz=85,slow=38								
YNG	**Young**	**14.25**	**178**	P		**Pn**	**05 34 40.9**		**-0.4**
	baz=14,SNR=21								
CAN	**Canberra**	**15.30**	**176**	*e*P		**Pn**	**05 34 55.0**		**-0.5**
CAN				pmax		pmax			
	comp=Z,56nm,1.0s								
CAN	**Canberra**	**15.30**	**176**	*e*Pn		**Pn**	**05 34 55.0**		**-0.5**
	comp=Z,56nm,1.0s								
LHI	**Lord Howe Isla**	**15.37**	**140**	*e*Pn		**Pn**	**05 34 56.7**		**+0.4**
	comp=Z,82nm,0.8s								
HTT	**Hallett**	**15.48**	**208**	P		**Pn**	**05 34 56.3**		**-1.5**
	baz=16,SNR=21								
HNR	**Honiara**	**15.84**	**50**	LR		LR	05 40 29.6		
	comp=Z,620nm,18.6s,baz=227,slow=35								
RABL	**Rabaul**	**16.32**	**16**	*e*Pn		**Pn**	**05 35 07.2**		**-1.4**
	comp=Z,160nm,1.0s								
BBOO	**Buckleboo**	**16.44**	**217**	*e*Pn		**Pn**	**05 35 06.1**		**-4.1**
	comp=Z,270nm,1.2s								
MTN	**Manton Dam**	**17.39**	**292**	*e*Pn		**Pn**	**05 35 21.9**		**-0.3**
	comp=Z,86nm,1.1s								
DZM	**Mont Dzumac**	**17.64**	**100**	P		**P**	**05 35 27.4**		**+1.0**
	comp=Z,1.1nm,0.3s,baz=308,slow=14,SNR=13								
DZM				LR		LR	05 41 20.5		
	comp=Z,1μm,20.0s,baz=286,slow=34								
MANU	**Manus Island**	**17.85**	**359**	*e*Pn		**P**	**05 35 29.5**		**+0.8**
	comp=Z,129nm,1.0s								
JAY	**Jayapura**	**18.67**	**338**	P		**Pn**	**05 35 37.9**		**-0.2**
	comp=Z,0.1nm,0.3s,baz=327,slow=23,SNR=4.6								
JAY	**Jayapura**	**18.67**	**338**	P		Pn	05 35 48.8		+11
GENI	**Genyem**	**18.80**	**336**	P		**Pn**	**05 35 41.4**		**+1.9**
	comp=Z,137nm,1.1s,comp=Z,2μm								
SAUI	**Saumlaki**	**19.86**	**305**	P		**Pn**	**05 35 53.4**		**+1.1**
	comp=Z,451nm,0.9s,comp=Z,5μm								
SAUI	**Saumlaki**	**19.86**	**305**	*e*P		**Pn**	**05 35 52.8**		**+0.5**
	comp=Z,358nm,0.9s								
FITZ	**Fitzroy Crossi**	**20.92**	**272**	P		**P**	**05 36 02.5**		**+0.3**
	comp=Z,24nm,0.7s,baz=99,slow=10,SNR=29								
FITZ				S		**S**	**05 39 51.3**		**-4.2**
	comp=Z,13nm,0.7s,baz=86,slow=16,SNR=1.9								
FITZ				Lg		Lg	05 42 10.2		
	comp=Z,118nm,0.9s,baz=185,slow=16,SNR=3.6								
FITZ				LR		LR	05 44 31.7		
	comp=Z,2μm,18.4s,baz=101,slow=38								
FITZ	**Fitzroy Crossi**	**20.92**	**272**	P		**P**	**05 36 02.3**		**+0.2**
	baz=21,SNR=14								
FITZ	**Fitzroy Crossi**	**20.92**	**272**	*e*P		**P**	**05 36 02.3**		**+0.2**
	comp=Z,50nm,0.9s								
FITZ				S		**S**	**05 39 51.3**		**-4.2**
FITZ				Lg		Lg	05 42 10.2		
FAKI	**Fak Fak**	**22.70**	**316**	P		**P**	**05 36 23.4**		**+2.1**
	comp=Z,146nm,0.9s,comp=Z,2μm								
FAKI	**Fak Fak**	**22.70**	**316**	*e*P		**P**	**05 36 20.4**		**-0.9**
	comp=Z,146nm,1.0s								
TAU	**Tasmania Unive**	**22.84**	**181**	*e*P		**P**	**05 36 23.5**		**+0.9**
TAU				pmax		pmax			
	comp=Z,254nm,1.3s								
TAU	**Tasmania Unive**	**22.84**	**181**	*e*P		**P**	**05 36 23.5**		**+0.9**
	comp=Z,254nm,1.3s								
**B

PSI	**Prapat**	**52.93**	**290**	*e*P		**P**	**05 40 35.2**	**-1.2**
	comp=Z,14nm,1.0s								
TRTT	**Trang**	**54.72**	**296**	P		**P**	**05 40 49.2**	**-0.1**
	comp=Z,23nm,1.0s								
JNU	**Nakatsue**	**55.21**	**343**	P		**P**	**05 40 51.9**	**-0.6**
	comp=Z,11nm,0.9s,baz=204,slow=5.7,SNR=4.1								
SURT	**Suratani**	**56.06**	**296**	P		**P**	**05 40 58.7**	**-0.2**
	comp=Z,9.5nm,1.2s,comp=Z,149nm								
SKNT	**Sakolnakorn**	**56.49**	**308**	P		**P**	**05 41 01.7**	**-0.3**
	comp=Z,23nm,2.0s,comp=Z,3μm								
MJAR	**Matsushiro Arr**	**56.95**	**351**	P		**P**	**05 41 02.7**	**-2.1**
	comp=Z,2.6nm,0.7s,baz=176,slow=8.3,SNR=7.4								
KHON	**Khomkaen**	**56.98**	**306**	P		**P**	**05 41 05.2**	**-0.2**
	comp=Z,13nm,0.9s,comp=Z,909nm								
VNDA	**Vanda**	**57.98**	**176**	P		**P**	**05 41 11.9**	**+0.3**
	comp=Z,2.3nm,1.2s,baz=330,slow=9.3,SNR=3.8								
VNDA	**Vanda**	**57.98**	**176**	*e*P		**P**	**05 41 11.5**	**-0.1**
VNDA					pmax	pmax			
	comp=Z,9.0nm,1.3s								
VNDA	**Vanda**	**57.98**	**176**	*e*P		**P**	**05 41 11.5**	**-0.1**
	comp=Z,8.7nm,1.3s								
TBI	**Tubuai**	**58.11**	**106**	*e*S		**S**	**05 49 14.2**	**-0.7**
	comp=Z,75nm,31.0s								
TBI				*e*LQ		LQ	05 55 53.5		
	comp=Z,996nm,28.5s								
TBI				*e*LR		LR	05 58 08.2		
	comp=Z,208nm,27.2s								
PBKT	**Sadao Pong**	**58.53**	**305**	P		**P**	**05 41 16.2**	**-0.1**
	comp=Z,8.5nm,0.9s								
NJ2	**Nanjing**	**58.67**	**331**	*e*P		**P**	**05 41 17.1**	**+0.2**
NJ2					pmax	pmax			
	comp=Z,17nm,0.6s								
SRDT	**SRDT**	**58.70**	**302**	P		**P**	**05 41 17.8**	**+0.3**
	comp=Z,60nm,1.1s,comp=Z,12μm								
PPT2	**Papeete2**	**59.14**	**99**	*e*LQ		LQ	05 56 13.3		
	comp=Z,827nm,29.0s								
PPT2				*e*LR		LR	05 58 44.5		
	comp=Z,312nm,27.5s								
KHLT	**Khaolaem Dam**	**59.38**	**302**	P		**P**	**05 41 22.7**	**+0.5**
	comp=Z,11nm,1.1s,comp=Z,198nm								
UTTA	**Uttaradit**	**59.55**	**306**	P		**P**	**05 41 24.5**	**+1.2**
	comp=Z,3.2nm,1.1s								
WHN	**Wuhan**	**59.61**	**327**	⇓P		**P**	**05 41 23.9**	**+0.4**
WHN					LR	LR			
	comp=Z,560nm,25.6s								
KSRS	**Korea Array**	**60.10**	**342**	P		**P**	**05 41 26.4**	**-0.4**
	comp=Z,5.7nm,0.8s,baz=162,slow=7.3,SNR=10								
KSRS					LR	LR	06 06 42.4		
	comp=Z,92nm,18.8s,baz=160,slow=35								
KSAR	**Wonju Array Be**	**60.11**	**342**	P		**P**	**05 41 26.4**	**-0.4**
KSAR	**Wonju Array Be**	**60.11**	**342**	P		**P**	**05 41 26.4**	**-0.4**
KS01	**Wonju Array Si**	**60.13**	**342**	*e*P		**P**	**05 41 25.9**	**-1.1**
GYA	**Guiyang**	**60.96**	**318**	P		**P**	**05 41 36.0**	**+3.0**
GYA				PcP		**PcP**	**05 42 18.4**	**+2.0**
GYA				PP		**PP**	**05 43 52.8**	**+5.2**
GYA				ScP		**ScP**	**05 46 17.3**	**-0.8**
GYA				S		**S**	**05 49 54.0**	**+2.3**
GYA				SS		**SS**	**05 53 55.8**	**+4.3**
GYA					pmax	pmax			
	comp=Z,20nm,1.0s								
GYA					pmax	pmax			
	comp=Z,130nm,5.8s								
GYA					LR	LR			
	comp=Z,560nm,19.6s								
GYA					LR	LR			
	comp=Z,540nm,18.4s								
GYA					LR	LR			
	comp=Z,530nm,18.6s								
CM01	**Chiang Mai Arr**	**61.17**	**305**	*e*P		**P**	**05 41 34.6**	**+0.2**
CRAI	**Chiangrai**	**61.19**	**308**	P		**P**	**05 41 35.5**	**+0.9**
	comp=Z,12nm,1.2s								
CM31	**Chiang Mai Arr**	**61.20**	**305**	*e*P		**P**	**05 41 35.2**	**+0.6**
CMAR	**Chiang Mai Arr**	**61.20**	**305**	P		**P**	**05 41 34.8**	**+0.1**
	comp=Z,14nm,0.8s,baz=137,slow=5.5,SNR=98								
CMAR					LR	LR	06 11 00.1		
	comp=Z,139nm,19.3s,baz=162,slow=39								
CMMT	**Chiang Mai**	**61.41**	**306**	P		**P**	**05 41 35.9**	**-0.2**
	comp=Z,22nm,1.2s,comp=Z,370nm								
CHTO	**Chiang Mai**	**61.41**	**306**	P		**P**	**05 41 36.0**	**0.0**
	comp=Z,82nm,1.5s								
CHTO	**Chiang Mai**	**61.41**	**306**	*e*P		**P**	**05 41 36.1**	**0.0**
CHTO					pmax	pmax			
	comp=Z,13nm,0.9s								
CHTO	**Chiang Mai**	**61.41**	**306**	*e*P		**P**	**05 41 36.1**	**0.0**
	comp=Z,13nm,0.9s								
CMAI	**Chiengmai2**	**62.00**	**307**	P		**P**	**05 41 40.3**	**+0.1**
	comp=Z,15nm,1.0s								
ENH	**Enshi**	**62.04**	**323**	*e*P		**P**	**05 41 39.7**	**-0.5**
	comp=Z,22nm,1.0s								
KMI	**Kunming**	**62.62**	**314**	P		**P**	**05 41 45.5**	**+1.1**
KMI					pP	sP	05 41 49.6	+0.8	
KMI					pmax	pmax			
	comp=Z,23nm,1.0s								
KMI					pmax	pmax			
	comp=Z,79nm,4.6s								
KMI					LR	LR			
	comp=Z,190nm,15.9s								
KMI					LR	LR			
	comp=Z,280nm,17.8s								
KMI					LR	LR			
	comp=Z,210nm,17.3s								
TIA	**Tai'an**	**62.94**	**333**	⇓P		**P**	**05 41 45.3**	**-0.7**
TIA					pmax	pmax			
	comp=Z,30nm,0.9s								
KUR	**Kuril'sk**	**64.92**	**0**	*e*P		**P**	**05 41 59.3**	**+0.5**
XAN	**Xi'an**	**65.20**	**325**	P		**P**	**05 42 00.0**	**-1.0**
XAN					pP	sP	05 42 05.6	+0.2	
XAN					pmax	pmax			
	comp=Z,29nm,1.0s								
XAN					pmax	pmax			
	comp=Z,47nm,5.0s								
USRK	**Ussuriysk Ar.**	**65.49**	**348**	P		**P**	**05 42 01.9**	**-0.6**
	comp=Z,5.3nm,0.8s,baz=145,slow=5.4,SNR=9.6								
USRK					LR	LR	06 07 19.0		
	comp=Z,115nm,21.7s,baz=157,slow=33								
CD2	**Chengdu**	**65.90**	**319**	P		**P**	**05 42 06.4**	**+0.8**
CD2					sP	sP	05 42 10.9	+0.9	
CD2					PP	**PP**	**05 44 31.8**	**+0.9**
CD2					S	**S**	**05 50 55.6**	**+2.6**
CD2					sS	sS	05 51 01.1	+2.8	
CD2					SS	**SS**	**05 55 12.3**	**+3.9**
CD2					pmax	pmax			
	comp=Z,20nm,0.9s								
CD2					pmax	pmax			
	comp=Z,80nm,4.2s								
MDJ	**Mudanjiang**	**66.40**	**346**	P		**P**	**05 42 07.8**	**-0.6**
MDJ					pmax	pmax			
	comp=Z,12nm,1.1s								
MDJ					pmax	pmax			
	comp=Z,82nm,4.0s								
BJI	**Beijing**	**66.57**	**334**	P		**P**	**05 42 08.6**	**-1.0**
BJI					pmax	pmax			
	comp=Z,11nm,1.8s								
CN2	**Changchun**	**66.69**	**343**	*e*P		**P**	**05 42 12.8**	**+2.5**
HHC	**Hu-ho-hao-te**	**69.22**	**331**	*e*P		**P**	**05 42 28.9**	**+2.4**
HHC					pP	sP	05 42 33.1	+2.2	
HHC					S	**S**	**05 51 39.9**	**+7.2**
HHC					pmax	pmax			
	comp=Z,33nm,1.2s								
HHC					pmax	pmax			
	comp=Z,81nm,7.7s								
HHC					LR	LR			
	comp=Z,440nm,16.7s								
HHC					LR	LR			
	comp=Z,780nm,17.6s								
HHC					LR	LR			
	comp=Z,600nm,18.8s								
LZH	**Lanzhou**	**69.51**	**323**	*e*P		**P**	**05 42 29.4**	**+1.0**
LZH					pP	sP	05 42 35.5	+2.6	
LZH					sP	pP	05 42 39.5	+7.8	
LZH				*e*S		**S**	**05 51 34.5**	**-1.9**
LZH					sS	sS	05 51 45.3	+3.6	
LZH					pmax	pmax			
	comp=Z,51nm,1.0s								
LZH					pmax	pmax			
	comp=Z,120nm,4.9s								
LZH					LR	LR			
	comp=Z,460nm,14.0s								
LZH					LR	LR			
	comp=Z,590nm,15.2s								
LZH					LR	LR			
	comp=Z,760nm,16.7s								
MAW	**Mawson**	**69.71**	**204**	P		**P**	**05 42 30.5**	**+1.5**
	comp=Z,7.8nm,0.6s,baz=102,slow=7.2,SNR=16								
MAW	**Mawson**	**69.71**	**204**	*e*P		**P**	**05 42 31.7**	**+2.7**
MAW					pmax	pmax			
	comp=Z,9.0nm,1.4s								
MAW	**Mawson**	**69.71**	**204**	*e*P		**P**	**05 42 31.7**	**+2.7**
	comp=Z,8.5nm,1.4s								
QSPA	**South Pole Qui**	**70.05**	**180**	*e*P		**P**	**05 42 31.4**	**+0.1**
TAOE	**Nuku Hiva Isla**	**70.34**	**92**	*e*LR		LR	06 04 04.0		
	comp=Z,210nm,22.2s								
KLR	**Kul'dur**	**70.37**	**349**	P		**P**	**05 42 32.5**	**-0.7**
	comp=Z,5.2nm,0.8s,baz=215,slow=2.5,SNR=15								
SHL	**Shillong**	**70.64**	**308**	*e*P		**P**	**05 42 35.5**	**-0.1**
NKL	**Nikolayevsk**	**73.10**	**356**	*e*P		**P**	**05 42 47.8**	**-1.7**
NKL					pmax	pmax			
	comp=Z,20nm,1.0s								
PEA0	**Petropavlovsk-**	**73.32**	**6**	*e*P		**P**	**05 42 50.6**	**-0.3**
PEA0B	**Petropavlovsk-**	**73.32**	**6**	*e*P		**P**	**05 42 51.0**	**+0.2**
	comp=Z,38nm,1.1s								
PETK	**Petropavlovsk-**	**73.32**	**6**	P		**P**	**05 42 50.1**	**-0.7**
	comp=Z,14nm,0.6s,baz=116,slow=3.4,SNR=9.9								
PETK					LR	LR	06 10 14.5		
	comp=Z,118nm,21.9s,baz=184,slow=32								
LSA	**Lhasa**	**73.52**	**311**	*e*P		**P**	**05 42 53.2**	**0.0**
LSA					pmax	pmax			
	comp=Z,9.0nm,1.0s								
LSA	**Lhasa**	**73.52**	**311**	*e*P		**P**	**05 42 53.2**	**0.0**
	comp=Z,8.6nm,1.0s								
GTA	**Gaotai**	**74.11**	**323**	⇑P		**P**	**05 42 56.4**	**+0.4**
GTA					pP	sP	05 43 01.1	+0.6	
GTA					sP	pP	05 43 03.5	+4.2	
GTA					S	**S**	**05 52 30.4**	**+1.2**
GTA					sS	sS	05 52 39.0	+4.4	
GTA					SKS	**SKSac**	**05 52 59.0**	**-4.7**
GTA					SS	**SS**	**05 57 19.3**	**+4.4**
GTA					pmax	pmax			
	comp=Z,16nm,1.1s								
GTA					pmax	pmax			
	comp=Z,120nm,5.5s								
GTA					LR	LR			
	comp=Z,200nm,19.0s								
GTA					LR	LR			
	comp=Z,170nm,20.4s								
GTA					LR	LR			
	comp=Z,160nm,20.4s								
GUN	**Gumba**	**76.41**	**307**	*e*P		**P**	**05 43 09.5**	**-0.3**
	comp=Z,77nm,1.0s								
ULN	**Ulaanbaatar**	**76.75**	**333**	*ce*P		**P**	**05 43 11.3**	**+0.3**
ULN					pmax	pmax			
	comp=Z,33nm,1.2s								
ULN	**Ulaanbaatar**	**76.75**	**333**	*e*P		**P**	**05 43 11.5**	**+0.5**
	comp=Z,27nm,1.1s								
KKN	**Kakani**	**76.80**	**306**	*e*P		**P**	**05 43 11.9**	**+0.1**
	comp=Z,75nm,0.9s								
DMN	**Daman**	**76.84**	**306**	*e*P		**P**	**05 43 11.6**	**-0.5**
	comp=Z,85nm,1.1s								
SONM	**Songino Array**	**77.01**	**333**	P		**P**	**05 43 13.2**	**+0.8**
	comp=Z,22nm,1.0s,baz=158,slow=5.3,SNR=28								
SONA1	**Songino Array**	**77.01**	**333**	*e*P		**P**	**05 43 12.7**	**+0.2**
HYB	**Hyderabad**	**77.36**	**294**	*i* P		**P**	**05 43 15.0**	**+0.1**
GKN	**Gorkha**	**77.40**	**306**	*e*P		**P**	**05 43 14.6**	**-0.5**
SYO	**Syowa Base**	**77.76**	**201**	⇑*e*P		**P**	**05 43 13.4**	**-2.8**
SYO	**Syowa Base**	**77.76**	**201**	⇓*es*P		**P**	**05 43 18.6**	**+2.4**
KOLN	**Koldanda**	**78.07**	**305**	*e*P		**P**	**05 43 18.5**	**-0.4**
	comp=Z,38nm,0.9s								
PYUN	**Piuthan**	**78.70**	**305**	*e*P		**P**	**05 43 21.7**	**-0.7**
	comp=Z,135nm,0.9s								
MA2	**Magadan**	**79.33**	**2**	P		**P**	**05 43 23.8**	**-1.0**
	comp=Z,2.2nm,0.4s,baz=192,slow=19,SNR=4.0								
ZAK	**Zakamensk**	**80.27**	**333**	*e*P		**P**	**05 43 30.4**	**+0.1**
ZAK					pmax	pmax			
	comp=Z,22nm,1.1s								
TLY	**Talaya**	**81.09**	**334**	*e*P		**P**	**05 43 35.1**	**+0.5**
TLY					pmax	pmax			
	comp=Z,12nm,1.0s								
TLY	**Talaya**	**81.09**	**334**	*e*P		**P**	**05 43 34.4**	**-0.1**
	comp=Z,10nm,1.0s								
IRK	**Irkutsk**	**81.26**	**335**	*e*P		**P**	**05 43 34.7**	**-0.7**
IRK					pmax	pmax			
	comp=Z,38nm,2.0s								
POO	**Poona**	**81.89**	**293**	*e*P		**P**	**05 43 35.0**	**-4.5**
MOY	**Mondy**	**82.20**	**333**	*e*P		**P**	**05 43 40.6**	**+0.1**
BOD	**Bodaibo**	**82.44**	**343**	*e*P		**P**	**05 43 40.1**	**-1.4**
BOD					pmax	pmax			
	comp=Z,6.0nm,1.4s								
SEY	**Seymchan**	**82.74**	**2**	*ce*P		**P**	**05 43 42.5**	**-0.4**
	comp=Z,5.2nm,0.7s,baz=164,slow=3.5,SNR=23								
SEY	**Seymchan**	**82.74**	**2**	*ce*P		**P**	**05 43 42.6**	**-0.3**
YAK	**Yakutsk**	**83.01**	**352**	*e*P		**P**	**05 43 44.1**	**-0.2**
YAK					pmax	pmax			
	comp=Z,6.0nm,0.5s								
WMQ	**Urumqi**	**83.92**	**321**	P		**P**	**05 43 49.3**	**-0.3**
WMQ					pP	sP	05 43 55.1	+1.0	
WMQ					sP	PcP	05 43 57.4	+3.8	
WMQ					S	**S**	**05 54 13.6**	**+0.1**
WMQ					SS	**SS**	**05 59 42.9**	**+1.0**
WMQ					pmax	pmax			
	comp=Z,11nm,0.8s								
WMQ					pmax	pmax			
	comp=Z,58nm,5.2s								
WMQ					LR	LR			
	comp=Z,44nm,22.4s								
WMQ					LR	LR			
	comp=Z,120nm,20.4s								
SNAA	**Sanae**	**86.35**	**189**	P		**P**	**05 44 00.9**	**-0.5**
SNAA	**Sanae**	**86.35**	**189**	*e*P		**P**	**05 44 01.3**	**-0.1**
SNAA	**Sanae**	**86.35**	**189**	*e*P		**P**	**05 44 01.3**	**-0.1**
	comp=Z,2μm,1.1s								
VNA2	**Neumayer--Watz**	**87.66**	**188**	P		**P**	**05 44 11.5**	**+3.8**
	baz=148,slow=0.8								
VNA1	**Neumayer--Stat**	**88.03**	**188**	P		P	05 44 03.2	-6.2	
CHGN	**Chignik**	**88.48**	**27**	*e*P		**P**	**05 44 11.5**	**-0.1**
MK01	**Makanchi Array**	**88.72**	**321**	*e*P		**P**	**05 44 12.1**	**-0.9**
MK31	**Makanchi Array**	**88.74**	**321**	*e*P		**P**	**05 44 12.4**	**-0.8**
MK31	**Makanchi Array**	**88.74**	**321**	*e*P		**P**	**05 44 12.3**	**-0.8**
MKAR	**Makanchi Array**	**88.74**	**321**	P		**P**	**05 44 12.3**	**-0.8**
	comp=Z,16nm,0.8s,baz=115,slow=5.6,SNR=112								
BILL	**Bilibino**	**88.84**	**7**	*d*/*i*P		**P**	**05 44 12.7**	**-0.4**
BILL				*e*			05 47 44.4		
BILL				*e*SS		SS	06 00 51.8	-1.2	
BILL					pmax	pmax			
	comp=Z,7.0nm,1.7s								
BILL	**Bilibino**	**88.84**	**7**	*e*P		**P**	**05 44 14.3**	**+1.2**
	comp=Z,7.1nm,1.0s								
MAKZ	**Makanchi**	**88.93**	**321**	*e*P		**P**	**05 44 10.7**	**-3.3**
MAKZ					pmax	pmax			
	comp=Z,17nm,0.8s								
MAKZ	**Makanchi**	**88.93**	**321**	*e*P		**P**	**05 44 10.7**	**-3.3**
	comp=Z,17nm,0.8s								
KSH	**Kashi**	**89.26**	**313**	P		**P**	**05 44 16.4**	**+0.5**
KSH				*es*P		sP	05 44 23.3	+2.9	
KSH				*e*PP		**PP**	**05 47 50.4**	**+3.6**
KSH				SKS		**SKSac**	**05 54 43.8**	**-2.4**
KSH				S		**S**	**05 55 03.8**	**-1.9**
KSH					pmax	pmax			
	comp=Z,18nm,1.0s								
KSH					pmax	pmax			
	comp=Z,120nm,6.5s								
KSH					LR	LR			
	comp=Z,170nm,6.8s								
KSH					LR	LR			
	comp=Z,160nm,6.3s								
KSH					LR	LR			
	comp=Z,180nm,7.7s								
ZAA0	**Zalesovo Array**	**91.19**	**328**	*e*P		**P**	**05 44 22.6**	**-1.7**
ZALV	**Zalesovo Beam**	**91.19**	**328**	P		**P**	**05 44 23.1**	**-1.2**
	comp=Z,5.9nm,0.8s,baz=122,slow=3.8,SNR=25								
OHAK	**Old Harbor**	**91.27**	**28**	*e*P		**P**	**05 44 24.5**	**-0.1**
	comp=Z,30nm,1.4s								
AAK	**Ala-Archa**	**91.64**	**315**	P		**P**	**05 44 26.3**	**-0.7**
	comp=Z,4.9nm,0.8s,baz=86,slow=3.6,SNR=12								
AAK					LR	LR	06 28 15.6		
	comp=Z,113nm,21.5s,baz=118,slow=37								
AAK	**Ala-Archa**	**91.64**	**315**	*c* /*i*P		**P**	**05 44 26.1**	**-0.9**
AAK					pmax	pmax			
	comp=Z,29nm,1.4s								
AAK	**Ala-Archa**	**91.64**	**315**	*e*P		**P**	**05 44 26.8**	**-0.2**
	comp=Z,12nm,1.3s								
EKS2	**Erkin-Say**	**92.13**	**315**	*e*P		**P**	**05 44 28.7**	**-0.5**
EKS2					pmax	pmax			
	comp=Z,10.0nm,1.2s								
EKS2	**Erkin-Say**	**92.13**	**315**	*e*P		**P**	**05 44 28.7**	**-0.5**
	comp=Z,10.0nm,1.2s								
TIXI	**Tiksi**	**92.33**	**354**	*ce*P		**P**	**05 44 26.7**	**-2.5**
TIXI					pmax	pmax			
	comp=Z,8.0nm,2.6s								
SVW2	**Sparrevohn**	**92.68**	**24**	*e*P		**P**	**05 44 31.0**	**-0.1**
	comp=Z,22nm,2.0s								
KURK	**Kurchatov**	**92.80**	**324**	*e*P		**P**	**05 44 30.7**	**-1.1**
KURK					pmax	pmax			
	comp=Z,3.0nm,0.7s								
KURK	**Kurchatov**	**92.80**	**324**	*e*P		**P**	**05 44 30.7**	**-1.1**
	comp=Z,2.6nm,0.7s								
KURBB	**Kurchatov Arra**	**92.80**	**323**	P		**P**	**05 44 30.3**	**-1.6**
	comp=Z,3.0nm,1.0s,baz=112,slow=4.0,SNR=15								
TT01	**Tatalina**	**93.64**	**22**	*e*P		**P**	**05 44 36.3**	**+0.8**
TTA	**Tatalina**	**93.66**	**22**	*e*P		**P**	**05 44 35.0**	**-0.6**
TTA					pmax	pmax			
	comp=Z,17nm,1.8s								
TTA	**Tatalina**	**93.66**	**22**	*e*P		**P**	**05 44 35.0**	**-0.6**
	comp=Z,17nm,1.8s								
RC01	**Rabbit Creek A**	**94.98**	**26**	*e*P		**P**	**05 44 43.2**	**+1.5**
	comp=Z,22nm,1.7s								
MCK	**McKinley**	**96.73**	**24**	*e*P		**P**	**05 44 49.2**	**-0.4**
MCK					pmax	pmax			
	comp=Z,31nm,2.0s								
MCK	**McKinley**	**96.73**	**24**	*e*P		**P**	**05 44 49.2**	**-0.4**
	comp=Z,31nm,2.0s								
WSAR	**Wadi Sarin**	**96.83**	**292**	LR		LR	06 29 03.7		
	comp=Z,141nm,20.9s,slow=36								
ILAR	**Eielson Array**	**98.03**	**23**	P		**P**	**05 44 54.4**	**-1.1**
	comp=Z,0.7nm,1.1s,baz=256,slow=4.2,SNR=5.0								
BVAR	**Borovoye Array**	**98.40**	**323**	P		**P**	**05 44 55.1**	**-2.2**
	comp=Z,2.2nm,0.9s,baz=108,slow=4.8,SNR=8.1								
BRVK	**Borovoye**	**98.47**	**323**	*ce*P		**P**	**05 44 54.8**	**-2.9**
BRVK					pmax	pmax			
	comp=Z,2.0nm,1.1s								
NRIK	**Noril'sk**	**98.72**	**342**	P		**P**	**05 44 57.5**	**-1.0**
	comp=Z,4.4nm,0.7s,baz=117,slow=2.9,SNR=7.4								
NRIK					LR	LR	06 32 09.8		
	comp=Z,94nm,19.3s,baz=121,slow=37								
YKA	**Yellowknife Ar**	**111.09**	**30**	Pdiff		**Pdif**	**05 45 54.1**	**+0.5**
	comp=Z,0.2nm,0.8s,baz=268,slow=4.5,SNR=2.8								
YKA					PKiKP	**PKiKP**	**05 49 51.3**	**-1.2**	
	comp=Z,0.4nm,0.7s,baz=271,slow=1.7,SNR=9.4								
YKA					PKKPbc	**PKKPbc**	**06 00 53.2**	**+1.8**	
	comp=Z,0.1nm,0.7s,baz=75,slow=4.1,SNR=3.8								
TX31	**Lajitas Ar. Si**	**115.37**	**66**	*e*PKPdf		**PKPdf**	**05 50 01.5**	**-0.4**
TXAR	**Lajitas Array**	**115.37**	**66**	PKP		**PKPdf**	**05 50 01.1**	**-0.8**
	comp=Z,0.5nm,0.8s,baz=247,slow=1.2,SNR=6.8								
TXAR					PKKPab	**PKKPab**	**06 00 41.5**	**+0.9**	
	comp=Z,0.3nm,0.6s,baz=96,slow=5.7,SNR=5.3								
OBN	**Obninsk**	**118.22**	**323**	⇑*i*PKIKP		**PKPdf**	**05 50 05.6**	**-0.8**
OBN				*e*			05 51 24.9		
OBN				*e*PPP		PPP	05 53 47.8		
OBN					pmax	pmax			
	comp=Z,5μm,1.0s								
ARA0	**ARCESS Array S**	**119.63**	**340**	*e*PKPdf		**PKPdf**	**05 50 08.1**	**-0.7**
ARCES	**ARCESS Array B**	**119.63**	**340**	PKP		**PKPdf**	**05 50 07.8**	**-1.0**
	comp=Z,5.9nm,1.1s,baz=103,slow=1.6,SNR=5.5								
A29A	**Manning Farm,**	**119.93**	**44**	P		**PKPdf**	**05 50 09.5**	**-0.5**
	baz=273								
WMOK	**Wichita Mounta**	**120.15**	**61**	*e*PKIKP		**PKPdf**	**05 50 10.0**	**-0.9**
WMOK	**Wichita Mounta**	**120.15**	**61**	*e*PKPdf		**PKPdf**	**05 50 10.0**	**-0.9**
BRTR	**Keskin Array B**	**120.79**	**305**	PKP		**PKPdf**	**05 50 10.7**	**-1.5**
	comp=Z,1.7nm,1.0s,baz=147,slow=2.5,SNR=5.3								
BRTR	**Keskin Array B**	**120.79**	**305**	*c* /*i*PKIKP		**PKPdf**	**05 50 11.6**	**-0.5**
BRTR					pmax	pmax			
	comp=Z,2.0nm,1.0s								
BR231	**Keskin MP Arra**	**121.46**	**305**	*e*PKPdf		**PKPdf**	**05 50 11.3**	**-2.0**
FCC	**Fort Churchill**	**121.47**	**33**	*e*PKIKP		**PKPdf**	**05 50 11.1**	**-1.5**
FCC	**Fort Churchill**	**121.47**	**33**	*e*PKPdf		**PKPdf**	**05 50 11.1**	**-1.5**
A32A	**Rocking H Ranc**	**121.73**	**44**	P		**PKPdf**	**05 50 12.5**	**-1.0**
	baz=276								
B32A	**Ashes, Strandq**	**121.75**	**45**	P		**PKPdf**	**05 50 12.3**	**-1.1**
	baz=275								
ULM	**Lac du Bonnet**	**121.98**	**43**	PKP		**PKPdf**	**05 50 11.6**	**-2.2**
	comp=Z,2.4nm,0.6s,baz=316,slow=5.3,SNR=4.0								
ECSD	**EROS Data Cent**	**122.00**	**50**	P		**PKPdf**	**05 50 13.0**	**-1.1**
	baz=272								
ECSD	**EROS Data Cent**	**122.00**	**50**	*e*PKPdf		**PKPdf**	**05 50 12.9**	**-1.3**
G33A	**Ortonville**	**122.06**	**49**	P		**PKPdf**	**05 50 13.5**	**-0.7**
	baz=273								
FIA1	**FINESS Array S**	**122.34**	**331**	*e*PKPdf		**PKPdf**	**05 50 13.5**	**-0.7**
FINES	**FINESS Array B**	**122.34**	**331**	PKP		**PKPdf**	**05 50 13.6**	**-0.6**
	comp=Z,3.5nm,0.8s,baz=66,slow=6.5,SNR=8.7								
FINES	**FINESS Array B**	**122.34**	**331**	*c* /*i*PKIKP		**PKPdf**	**05 50 13.3**	**-0.9**
FINES					pmax	pmax			
	comp=Z,4.0nm,0.8s								
K34A	**Le Mars**	**122.42**	**52**	P		**PKPdf**	**05 50 14.3**	**-0.7**
	baz=272								
D34A	**Park Rapids**	**122.77**	**46**	P		**PKPdf**	**05 50 15.1**	**-0.5**
	baz=275								
X37A	**Clayton**	**122.94**	**61**	P		**PKPdf**	**05 50 15.7**	**-0.5**
	baz=267								
AK11	**Malin Array Si**	**123.22**	**318**	*e*PKPdf		**PKPdf**	**05 50 15.5**	**-0.7**
H35A	**Sunnyside Ranc**

PTGA	**Pitinga**	**145.96**	**124**	*e*PKPdf	**PKPdf**	**05 50 59.5**	**0.0**
TOA0	**Torodi Ar. Sit**	**146.74**	**264**	*e*PKPdf	**PKPbc**	**05 51 01.5**	**-0.9**
TORD	**Torodi Ar. Bea**	**146.74**	**264**	PKPbc	**PKPdf**	**05 51 01.4**	**+0.7**
	comp=Z,20nm,0.8s,baz=97,slow=3.0,SNR=99						
SJG	**San Juan**	**148.00**	**88**	*e*PKP2	**PKPbc**	**05 51 04.5**	**-1.3**
SJG	**San Juan**	**148.00**	**88**	*e*PKPbc	**PKPbc**	**05 51 04.5**	**-1.3**
HUMP	**Col San Antoni**	**148.29**	**88**	*e*PKPbc	**PKPbc**	**05 51 05.8**	**-0.8**
ES19	**SONSECA Array**	**148.69**	**315**	*e*PKPbc	**PKPbc**	**05 51 07.0**	**-0.1**
ESDC	**Sonseca Array**	**148.75**	**315**	PKPbc	**PKPbc**	**05 51 06.7**	**-0.6**
	comp=Z,5.2nm,0.8s,baz=25,slow=3.7,SNR=18						
PBRG	**Braganca**	**149.32**	**321**	*e*PKPbc	**PKPbc**	**05 51 08.4**	**-0.2**
MVO	**Moncorvo**	**149.87**	**320**	*e*PKPbc	**PKPbc**	**05 51 10.5**	**+0.4**
POLO	**Lamas de Olo**	**150.21**	**321**	*e*PKPbc	**PKPbc**	**05 51 11.3**	**+0.4**
PVRL	**Vila Real**	**150.22**	**321**	*e*PKPbc	**PKPbc**	**05 51 11.4**	**+0.5**
DBIC	**Dimbokro**	**150.23**	**247**	PKPbc	**PKPbc**	**05 51 10.7**	**-1.0**
	comp=Z,11nm,0.8s,baz=117,slow=3.4,SNR=10						
MTE	**Manteigas**	**150.64**	**319**	*e*PKPbc	**PKPbc**	**05 51 12.4**	**+0.5**
MTE	**Manteigas**	**150.64**	**319**	*e*PKPbc	**PKPbc**	**05 51 12.4**	**+0.5**
PVIS	**Viseu**	**150.67**	**320**	*e*PKPbc	**PKPbc**	**05 51 12.6**	**+0.6**
SMRT	**St. Maarten**	**150.88**	**89**	*e*PKPbc	**PKPbc**	**05 51 11.8**	**-1.2**
PCBR	**Castelo Branco**	**150.93**	**318**	*e*PKPbc	**PKPbc**	**05 51 13.1**	**+0.6**
PMRV	**Marv??o**	**151.12**	**317**	*e*PKPbc	**PKPbc**	**05 51 13.1**	**+0.1**
PCAS	**Casmilo, Conde**	**151.44**	**320**	*e*PKPbc	**PKPbc**	**05 51 14.2**	**+0.5**
PESTR	**Estremoz**	**151.56**	**317**	*e*PKPbc	**PKPbc**	**05 51 14.1**	**+0.1**
PBAR	**Barrancos**	**151.58**	**315**	*e*PKPbc	**PKPbc**	**05 51 14.4**	**+0.3**
PTOM	**Tomar**	**151.64**	**318**	*e*PKPbc	**PKPbc**	**05 51 14.6**	**+0.4**
PMTG	**Montargil**	**151.85**	**318**	*e*PKPbc	**PKPbc**	**05 51 14.3**	**-0.4**
EVO	**Evora**	**152.02**	**317**	*e*PKPbc	**PKPbc**	**05 51 15.5**	**+0.4**
MDT	**Midelt**	**152.19**	**303**	PKPbc	**PKPbc**	**05 51 15.3**	**-0.6**
	comp=Z,7.6nm,0.8s,baz=92,slow=2.8,SNR=14						
PNCL	**Nicolau / Gran**	**152.59**	**316**	*e*PKPbc	**PKPbc**	**05 51 16.5**	**+0.1**

IDC ***16*** *05:39:43.1±1.0,35˚.35N×26˚.72E,h0km,mb3.6/4, mb1 3.6/7,mb1mx3.4/52,mbtmp3.5/7,ML3.6/3,Error ellipse: s-maj=29.1km s-min=11.7km az=176.0*

ISK ***16*** *05:39:44.7,35˚.65N×26˚.58E,h3km,ML3.3*

ATH ***16*** *05:39:44.8,35˚.53N×26˚.56E,h26km±2km,ML3.4/3,Error ellipse: s-maj=3.9km s-min=1.0km az=157.0*

HLW ***16*** *05:39:45.2,35˚.62N×26˚.73E,h33km±4km,Md3.6,Ml2.9*

CSEM ***16*** *05:39:45.8±0.1,35˚.48N×26˚.56E,h15km,ML3.3,Error ellipse: s-maj=3.5km s-min=2.7km az=154.0*

THE ***16*** *05:39:45.7,35˚.51N×26˚.57E,h3km±2km,ML3.5/12,Error ellipse: s-maj=2.8km s-min=0.8km az=148.0*

ISCJB ***16*** *05:39:45.8±0.4,35˚.43N±0˚.02×26˚.60E±0˚.02,h27km±4km, mb3.5/4,Error ellipse: s-maj=4.0km s-min=3.0km az=156.0*

DDA ***16*** *05:39:59.3,35˚.42N×26˚.32E,h11km,Md3.5*

ISC 16 05:39:45.8±0.9,35˚.46N±0˚.02×26˚.57E±0˚.02,h16km±7km, n147,σ1s08/186,mb3.5/4,Crete

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ZKR	**Zakros**	**0.45**	**220**	P	**Pg**	**05 39 55.1**	**+0.1**
ZKR				S	**Sb**	**05 40 02.1**	**+0.1**
ZKR	**Zakros**	**0.45**	**220**	P	**Pg**	**05 39 55.1**	**+0.1**
ZKR				S	**Sg**	**05 40 01.1**	**0.0**
ZKR	**Zakros**	**0.45**	**220**	P	**Pb**	**05 39 55.3**	**-0.1**
ZKR				S	**Sg**	**05 40 01.1**	**0.0**
ZKR				AML	AML	05 40 05.5	
	comp=N,5764μm,0.5s						
ZKR				AML	AML	05 40 08.4	
	comp=E,4242μm,0.5s						
KARP	**Karpathos**	**0.49**	**80**	*e*PG	**Pg**	**05 39 55.1**	**-0.5**
KARP				*e*SG	**Sg**	**05 40 02.2**	**0.0**
KARP	**Karpathos**	**0.49**	**80**	P	**Pg**	**05 39 55.3**	**-0.3**
KARP				S	**Sg**	**05 40 02.1**	**-0.1**
KARP	**Karpathos**	**0.49**	**80**	P	**Pg**	**05 39 55.3**	**-0.3**
KARP				*e*Sg	**Sg**	**05 40 02.2**	**0.0**
KARP	**Karpathos**	**0.49**	**80**	P	**Pg**	**05 39 55.5**	**-0.1**
KARP				S	**Sg**	**05 40 01.3**	**-0.8**
KARP				AML	AML	05 40 02.9	
	comp=E,18468μm,0.2s						
KARP				AML	AML	05 40 03.0	
	comp=N,11890μm,0.3s						
NPS	**Neapolis**	**0.81**	**256**	P	**Pg**	**05 40 01.9**	**+0.3**
NPS				S	**Sn**	**05 40 13.6**	**-0.7**
NPS	**Neapolis**	**0.81**	**256**	P	**Pg**	**05 40 01.9**	**+0.3**
NPS				S	**Sg**	**05 40 12.7**	**+0.4**
NPS	**Neapolis**	**0.81**	**256**	P	**Pn**	**05 40 02.2**	**-0.4**
NPS				S	**Sg**	**05 40 12.7**	**+0.4**
NPS				AML	AML	05 40 15.4	
	comp=E,11403μm,0.4s						
NPS				AML	AML	05 40 15.6	
	comp=N,6022μm,0.3s						
LAST	**Lasithi**	**0.94**	**252**	P	**Pb**	**05 40 03.9**	**0.0**
LAST				S	**Sn**	**05 40 17.8**	**+0.1**
LAST	**Lasithi**	**0.94**	**252**	P	**Pb**	**05 40 03.9**	**0.0**
LAST				S	**Sb**	**05 40 16.1**	**-0.1**
LAST	**Lasithi**	**0.94**	**252**	P	**Pn**	**05 40 05.2**	**+0.6**
NISR	**Nisiros**	**1.23**	**21**	P	**Pn**	**05 40 08.2**	**-0.2**
NISR				S	**Sg**	**05 40 25.2**	**-0.4**
NISR	**Nisiros**	**1.23**	**21**	P	**Pn**	**05 40 08.2**	**-0.2**
NISR				S	**Sg**	**05 40 25.2**	**-0.4**
NISR	**Nisiros**	**1.23**	**21**	P	**Pn**	**05 40 05.9**	**-2.5**
NIS1	**Nisyros Isl.**	**1.24**	**23**	*e*PG	**Pn**	**05 40 05.7**	**-2.9**
NIS1	**Nisyros Isl.**	**1.24**	**23**	P	**Pb**	**05 40 09.0**	**+0.2**
NIS1	**Nisyros Isl.**	**1.24**	**23**	P	**Pb**	**05 40 09.0**	**+0.2**
NIS1	**Nisyros Isl.**	**1.24**	**23**	P	**Pb**	**05 40 09.1**	**+0.2**
IACM	**Heraklion**	**1.24**	**263**	P	**Pg**	**05 40 09.6**	**-0.1**
IACM				S	**Sg**	**05 40 26.9**	**+1.0**
IACM	**Heraklion**	**1.24**	**263**	P	**Pg**	**05 40 09.6**	**-0.1**
IACM				S	**Sg**	**05 40 26.9**	**+1.0**
SANT	**Santorini**	**1.28**	**315**	P	**Pn**	**05 40 08.2**	**-0.9**
SANT				S	**Sn**	**05 40 25.8**	**-0.2**
SANT	**Santorini**	**1.28**	**315**	P	**Pn**	**05 40 08.2**	**-0.9**
SANT				S	**Sn**	**05 40 25.8**	**-0.2**
SANT	**Santorini**	**1.28**	**315**	P	**Pn**	**05 40 08.1**	**-0.9**
THR6	**Thira Island,**	**1.30**	**313**	P	**Pn**	**05 40 09.1**	**-0.3**
THR6	**Thira Island,**	**1.30**	**313**	P	**Pn**	**05 40 09.1**	**-0.3**
THT1	**Athinios (Pele**	**1.31**	**315**	P	**Pn**	**05 40 08.7**	**-0.7**
THT1	**Athinios (Pele**	**1.31**	**315**	P	**Pn**	**05 40 08.7**	**-0.7**
THR7	**Fira-Santorini**	**1.33**	**316**	P	**Pn**	**05 40 09.5**	**-0.3**
THR7	**Fira-Santorini**	**1.33**	**316**	P	**Pn**	**05 40 09.5**	**-0.3**
THR3	**Thira Island,**	**1.34**	**315**	P	**Pn**	**05 40 09.2**	**-0.7**
THR3	**Thira Island,**	**1.34**	**315**	P	**Pn**	**05 40 09.2**	**-0.7**
THR2	**Thira island,**	**1.35**	**317**	P	**Pn**	**05 40 09.4**	**-0.6**
THR2	**Thira island,**	**1.35**	**317**	P	**Pn**	**05 40 09.4**	**-0.6**
THR5	**Thira Island,**	**1.38**	**314**	*e*PN	**Pn**	**05 40 09.4**	**-1.0**
THR5	**Thira Island,**	**1.38**	**314**	P	**Pn**	**05 40 10.5**	**+0.1**
THR5	**Thira Island,**	**1.38**	**314**	*e*Pn	**Pn**	**05 40 09.4**	**-1.0**
THR5	**Thira Island,**	**1.38**	**314**	P	**Pn**	**05 40 10.5**	**+0.1**
CMBO	**Columbo, Santo**	**1.38**	**317**	P	**Pn**	**05 40 09.9**	**-0.5**
CMBO	**Columbo, Santo**	**1.38**	**317**	P	**Pn**	**05 40 09.9**	**-0.5**
CMBO	**Columbo, Santo**	**1.38**	**317**	P	**Pn**	**05 40 10.0**	**-0.4**
IDI	**Anoyia**	**1.39**	**263**	Pg	**Pn**	**05 40 09.9**	**-0.7**
	comp=N,15nm,0.3s,baz=57,slow=5.5,SNR=62						
IDI				Lg	Lg	05 40 30.0	
	comp=N,137nm,0.3s,baz=340,slow=20,SNR=28						
IDI				LR	LR	05 40 46.4	
	comp=N,34nm,19.9s,baz=274,slow=42						
IDI	**Anoyia**	**1.39**	**263**	P	**Pn**	**05 40 09.9**	**-0.7**
IDI	**Anoyia**	**1.39**	**263**	P	**Pn**	**05 40 09.0**	**-1.6**
ARG	**Arkhangelos**	**1.47**	**59**	P	**Pn**	**05 40 11.7**	**+0.1**
ARG				S	**Sn**	**05 40 30.1**	**-0.4**
ARG	**Arkhangelos**	**1.47**	**59**	P	**Pn**	**05 40 11.7**	**+0.1**
ARG				S	**Sn**	**05 40 30.1**	**-0.4**
SIVA	**Sivas**	**1.51**	**253**	P	**Pb**	**05 40 13.3**	**-0.2**
SIVA				S	**Sg**	**05 40 34.6**	**+0.1**
SIVA	**Sivas**	**1.51**	**253**	P	**Pb**	**05 40 13.3**	**-0.2**
SIVA				S	**Sg**	**05 40 34.6**	**+0.1**
SIVA	**Sivas**	**1.51**	**253**	P	**Pg**	**05 40 14.4**	**-0.5**
BODT	**Bodrum**	**1.70**	**20**	*e*PN	**Pn**	**05 40 13.4**	**-1.4**
BODT	**Bodrum**	**1.70**	**20**	P	**Pn**	**05 40 14.6**	**-0.3**
BODT	**Bodrum**	**1.70**	**20**	*e*Pn	**Pn**	**05 40 13.5**	**-1.4**
BODT	**Bodrum**	**1.70**	**20**	P	**Pn**	**05 40 14.6**	**-0.3**
BDRM	**Kayabasi**	**1.75**	**24**	*i*P	**Pn**	**05 40 15.6**	**+0.1**
BDRM				*i*S	**Sb**	**05 40 39.0**	**-0.2**
BDRM	**Kayabasi**	**1.75**	**24**	P	**Pn**	**05 40 15.6**	**+0.1**
BDRM				S	**Sb**	**05 40 39.0**	**-0.2**
APE	**Apeiranthos**	**1.81**	**333**	*e*PN	**Pn**	**05 40 15.6**	**-0.8**
APE	**Apeiranthos**	**1.81**	**333**	P	**Pn**	**05 40 15.5**	**-0.9**
APE				S	**Sn**	**05 40 37.7**	**-1.4**
APE	**Apeiranthos**	**1.81**	**333**	*e*Pn	**Pn**	**05 40 15.6**	**-0.8**
APE				S	**Sn**	**05 40 37.7**	**-1.4**
APE	**Apeiranthos**	**1.81**	**333**	P	**Pn**	**05 40 15.2**	**-1.2**
VAM	**Vamos**	**1.94**	**269**	P	**Pn**	**05 40 17.8**	**-0.3**
VAM				S	**Sb**	**05 40 43.4**	**-1.3**
VAM	**Vamos**	**1.94**	**269**	P	**Pn**	**05 40 17.8**	**-0.3**
VAM				S	**Sb**	**05 40 43.4**	**-1.3**
IMMV	**Iera Moni Meta**	**2.12**	**271**	P	**Pn**	**05 40 20.4**	**-0.2**
IMMV	**Iera Moni Meta**	**2.12**	**271**	P	**Pn**	**05 40 20.4**	**-0.2**
IMMV	**Iera Moni Meta**	**2.12**	**271**	P	**Pn**	**05 40 18.7**	**-1.8**
GVD	**Gavdhos**	**2.13**	**254**	P	**Pb**	**05 40 24.0**	**0.0**
GVD	**Gavdhos**	**2.13**	**254**	P	**Pn**	**05 40 22.3**	**+1.6**
GVD	**Gavdhos**	**2.13**	**254**	P	**Pn**	**05 40 22.3**	**+1.6**
MHLO	**Agia Marina, M**	**2.14**	**305**	P	**Pn**	**05 40 21.3**	**+0.4**
MHLO				S	**Sn**	**05 40 47.0**	**-0.2**
MHLO	**Agia Marina, M**	**2.14**	**305**	P	**Pn**	**05 40 21.3**	**+0.4**
MHLO				S	**Sn**	**05 40 47.0**	**-0.2**
MHLO	**Agia Marina, M**	**2.14**	**305**	P	**Pn**	**05 40 21.3**	**+0.4**
DALY	**Dalyan (Mu˙la**	**2.16**	**51**	*e*PN	**Pn**	**05 40 20.8**	**-0.3**
DALY	**Dalyan (Mu˙la**	**2.16**	**51**	*e*Pn	**Pn**	**05 40 20.8**	**-0.3**
TURN	**Turunc**	**2.16**	**49**	*i*P	Pn	05 40 16.4	-4.8
TURN				*i*S	Sn	05 40 39.4	-8.2
TURN	**Turunc**	**2.16**	**49**	P	Pn	05 40 16.4	-4.8
YER	**Yerkesik**	**2.17**	**39**	*e*PN	**Pn**	**05 40 20.9**	**-0.4**
YER	**Yerkesik**	**2.17**	**39**	P	**Pn**	**05 40 21.3**	**0.0**
YER	**Yerkesik**	**2.17**	**39**	*e*Pn	**Pn**	**05 40 20.9**	**-0.4**
YER	**Yerkesik**	**2.17**	**39**	P	**Pn**	**05 40 21.3**	**0.0**
SMG	**Samos**	**2.25**	**5**	P	**Pn**	**05 40 23.0**	**+0.6**
SMG	**Samos**	**2.25**	**5**	P	**Pn**	**05 40 21.6**	**-0.8**
SMG	**Samos**	**2.25**	**5**	P	**Pn**	**05 40 21.6**	**-0.8**
GCAM	**G?zelcaml?**	**2.29**	**13**	*i*P	**Pn**	**05 40 23.4**	**+0.4**
GCAM				*i*S	**Sg**	**05 41 02.7**	**+3.1**
GCAM	**G?zelcaml?**	**2.29**	**13**	P	**Pn**	**05 40 23.4**	**+0.4**
FETY	**Fethiye**	**2.35**	**59**	*e*PN	**Pn**	**05 40 24.3**	**+0.5**
FETY	**Fethiye**	**2.35**	**59**	P	**Pn**	**05 40 25.4**	**+1.6**
FETY	**Fethiye**	**2.35**	**59**	*e*Pn	**Pn**	**05 40 24.3**	**+0.5**
FETY	**Fethiye**	**2.35**	**59**	P	**Pn**	**05 40 25.4**	**+1.6**
AYDN	**Tasoluk**	**2.43**	**25**	*i*P	**Pn**	**05 40 25.4**	**+0.4**
AYDN				*i*S	**Sb**	**05 40 58.8**	**-0.2**
AYDN	**Tasoluk**	**2.43**	**25**	P	**Pn**	**05 40 25.4**	**+0.4**
AKAS	**Kas**	**2.58**	**72**	*i*P	**Pn**	**05 40 28.4**	**+1.3**
AKAS				*i*S	**Sn**	**05 40 59.1**	**+0.9**
AKAS	**Kas**	**2.58**	**72**	P	**Pn**	**05 40 28.4**	**+1.3**
AKAS				S	**Sn**	**05 40 59.1**	**+0.9**
ANKY	**Antikythira Is**	**2.69**	**280**	P	**Pn**	**05 40 27.6**	**-0.9**
ANKY	**Antikythira Is**	**2.69**	**280**	P	**Pn**	**05 40 27.6**	**-0.9**
ANKY	**Antikythira Is**	**2.69**	**280**	P	**Pn**	**05 40 27.0**	**-1.5**
AYDB	**Zeytinkoy-Aydi**	**2.69**	**23**	*e*PN	**Pn**	**05 40 28.8**	**+0.2**
AYDB	**Zeytinkoy-Aydi**	**2.69**	**23**	*e*Pn	**Pn**	**05 40 28.8**	**+0.2**
BLCB	**Balcova**	**2.94**	**7**	*e*PN	**Pn**	**05 40 31.1**	**-0.8**
BLCB	**Balcova**	**2.94**	**7**	*e*Pn	**Pn**	**05 40 31.1**	**-0.8**
CHOS	**Chios island**	**2.95**	**352**	P	**Pn**	**05 40 31.1**	**-1.0**
CHOS	**Chios island**	**2.95**	**352**	P	**Pn**	**05 40 31.1**	**-1.0**
CHOS	**Chios island**	**2.95**	**352**	P	**Pn**	**05 40 30.2**	**-1.8**
KYTH	**Kithira**	**2.99**	**287**	P	**Pn**	**05 40 30.9**	**-1.6**
KYTH	**Kithira**	**2.99**	**287**	P	**Pn**	**05 40 30.9**	**-1.6**
VLI	**Veliai**	**3.20**	**294**	P	**Pn**	**05 40 35.1**	**-0.4**
VLI	**Veliai**	**3.20**	**294**	P	**Pn**	**05 40 34.9**	**-0.5**
VLI	**Veliai**	**3.20**	**294**	P	**Pn**	**05 40 34.9**	**-0.5**
DID	**Didima**	**3.37**	**308**	P	**Pn**	**05 40 39.0**	**+1.1**
DID	**Didima**	**3.37**	**308**	P	**Pn**	**05 40 39.0**	**+1.1**
KORT	**Korkueli**	**3.42**	**62**	*i*P	**Pn**	**05 40 41.2**	**+2.6**
KORT				*i*S	**Sn**	**05 41 22.1**	**+3.3**
KORT	**Korkueli**	**3.42**	**62**	P	**Pn**	**05 40 41.2**	**+2.6**
KORT				S	**Sn**	**05 41 22.1**	**+3.3**
KULA	**Kula-Manisa**	**3.47**	**28**	*e*PN	**Pn**	**05 40 39.9**	**+0.6**
KULA	**Kula-Manisa**	**3.47**	**28**	*e*Pn	**Pn**	**05 40 39.9**	**+0.6**
KHAL	**Karahalli**	**3.73**	**38**	*i*P	**Pn**	**05 40 43.6**	**+0.8**
KHAL				*i*S	**Sn**	**05 41 24.1**	**-2.3**
KHAL	**Karahalli**	**3.73**	**38**	P	**Pn**	**05 40 43.6**	**+0.8**
KHAL				S	**Sn**	**05 41 24.1**	**-2.3**
SIGR	**SIGRI**	**3.78**	**352**	*e*PN	**Pn**	**05 40 43.2**	**-0.3**
SIGR	**SIGRI**	**3.78**	**352**	P	**Pn**	**05 40 42.7**	**-0.8**
SIGR	**SIGRI**	**3.78**	**352**	P	**Pn**	**05 40 42.7**	**-0.8**
SIGR	**SIGRI**	**3.78**	**352**	*e*Pn	**Pn**	**05 40 43.2**	**-0.3**
SIGR	**SIGRI**	**3.78**	**352**	P	**Pn**	**05 40 41.6**	**-1.8**
VLX	**Vlachokerasia**	**3.88**	**301**	P	**Pn**	**05 40 45.8**	**+0.9**
VLX	**Vlachokerasia**	**3.88**	**301**	P	**Pn**	**05 40 45.8**	**+0.9**
SLUM	**Salum**	**4.12**	**196**	P	**Pn**	**05 40 48.5**	**+0.4**
	baz=198						
SLUM				AMP		05 41 00.0	
	comp=E,20μm,0.7s,logA/T=4.5,baz=198						
SLUM				S	**Sn**	**05 41 35.8**	**-0.2**
	baz=198						
SLUM	**Salum**	**4.12**	**196**	P	**Pn**	**05 40 48.5**	**+0.4**
SLUM				S	**Sn**	**05 41 35.8**	**-0.2**
HMAT	**Matruh**	**4.38**	**174**	P	**Pn**	**05 40 51.9**	**+0.1**
	baz=175						
HMAT				S	**Sn**	**05 41 42.1**	**-0.3**
	baz=175						
HMAT	**Matruh**	**4.38**	**174**	P	**Pn**	**05 40 51.8**	**+0.1**
HMAT				S	**Sn**	**05 41 42.1**	**-0.3**
GAZI	**Gazipasa**	**4.73**	**79**	*i*S	Sn	05 41 42.5	-8.5
LEF	**Lefka**	**5.18**	**92**	*e*PN	**Pn**	**05 41 04.5**	**+1.9**
LEF	**Lefka**	**5.18**	**92**	*e*Pn	**Pn**	**05 41 04.5**	**+1.9**
ERIK	**Erikli-Kesan**	**5.20**	**359**	*e*PN	**Pn**	**05 41 03.7**	**+0.8**
ERIK	**Erikli-Kesan**	**5.20**	**359**	*e*Pn	**Pn**	**05 41 03.7**	**+0.8**
IKL	**Isikli**	**5.83**	**80**	*e*PN	Pn	05 41 15.0	+3.4
SWA2		**6.28**	**189**	P	**Pn**	**05 41 18.4**	**+0.7**
	baz=190						
SWA2				AMP		05 42 00.0	
	comp=N,20μm,0.5s,logA/T=4.6,baz=190						
SWA2		**6.28**	**189**	P	**Pn**	**05 41 18.4**	**+0.7**
GLL	**Jalalah**	**7.30**	**142**	P	**Pn**	**05 41 30.7**	**-1.1**
	baz=143						
GLL	**Jalalah**	**7.30**	**142**	P	**Pn**	**05 41 30.7**	**-1.1**
MMAI	**Mount Meron Ar**	**7.71**	**106**	Pn	**Pn**	**05 41 35.1**	**-2.4**
	comp=N,1.1nm,0.3s,baz=302,slow=12,SNR=3.7						
MMAI				Sn	**Sn**	**05 43 00.5**	**-4.1**
	comp=N,3.1nm,0.3s,baz=302,slow=26,SNR=7.1						
HNKL	**Nakhl**	**8.33**	**129**	P	**Pn**	**05 41 44.1**	**-1.9**
	baz=130						
HNKL	**Nakhl**	**8.33**	**129**	P	**Pn**	**05 41 44.1**	**-1.9**
EIL	**Elat**	**9.13**	**127**	Pn	**Pn**	**05 41 54.5**	**-2.4**
	comp=N,0.4nm,0.3s,baz=335,slow=3.9,SNR=6.4						
EIL				Sn	Sn	05 43 30.5	-8.8
	comp=N,1.1nm,0.3s,baz=57,slow=4.7,SNR=5.6						
HBST	**Basata**	**9.29**	**130**	P	**Pn**	**05 41 58.2**	**-1.0**
	baz=131						
HBST	**Basata**	**9.29**	**130**	P	**Pn**	**05 41 58.2**	**-1.0**
GERES	**GERESS Array B**	**16.39**	**329**	Pn	**P**	**05 43 37.9**	**-0.2**
	comp=N,0.1nm,0.3s,baz=142,slow=14,SNR=3.6						
ESDC	**Sonseca Array**	**24.50**	**289**	P	**P**	**05 45 07.3**	**+2.8**
	comp=N,0.4nm,0.5s,baz=83,slow=9.3,SNR=4.4						
TORD	**Torodi Ar. Bea**	**31.58**	**232**	P	**P**	**05 46 07.8**	**0.0**
	comp=N,0.3nm,0.4s,baz=27,slow=8.6,SNR=10						
KURBB	**Kurchatov Arra**	**40.03**	**51**	P	**P**	**05 47 18.8**	**-1.1**
	comp=N,0.4nm,0.4s,baz=276,slow=8.6,SNR=3.7						
MKAR	**Makanchi Array**	**42.64**	**57**		**P**	**05 47 40.8**	**-0.7**
	comp=N,0.5nm,0.3s,baz=270,slow=7.8,SNR=10						

IDC 16 05:41:26.2±1.4,35˚.36N×142˚.89E,h0km,mb3.7/3, mb1 3.9/4,mb1mx3.4/64,mbtmp3.6/4,ML3.2/1,MS2.9/1, Ms1 2.9/1,ms1mx2.2/49,Error ellipse: s-maj=44.2km s-min=28.2km az=115.0,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MJAR	**Matsushiro Arr**	**3.97**	**289**	Pn	Pn	05 42 28.0	-0.4
	1.5nm,0.3s,baz=116,slow=7.7,SNR=4.5						
MAT	**Matsushiro**	**3.97**	**289**	P	Pn	05 42 28.4	-0.1
MAT				*e*S	Sn	05 43 11.0	-4.8
MA2	**Magadan**	**24.77**	**10**	LR	LR	05 57 24.4	
	comp=Z,28nm,19.5s,baz=102,slow=39						
ILAR	**Eielson Array**	**50.28**	**32**	P	P	05 50 23.6	-0.4
	0.7nm,0.8s,baz=260,slow=6.7,SNR=5.6						
INK	**Inuvik**	**55.34**	**27**	P	P	05 51 01.6	+0.2
	0.8nm,1.0s,baz=266,slow=8.5,SNR=3.7						
WRA	**Warramunga Arr**	**55.59**	**190**	P	P	05 51 03.6	-0.1
	1.8nm,1.0s,baz=6.7,slow=7.4,SNR=2.3						

ISCJB ***16*** *05:49:20.6±0.3,43˚.61S±0˚.03×172˚.91E±0˚.03,h10km, mb5.0/46,MS4.3/26,Error ellipse: s-maj=4.6km s-min=2.1km az=142.0*

BJI ***16*** *05:49:21.8,43˚.90S×172˚.42E,h7km,mb5.4/13,mB5.4/11, Ms5.3/7,Ms7 5.1/5*

IDC ***16*** *05:49:21.8±0.5,43˚.40S×172˚.77E,h0km,mb4.6/10, mb1 4.7/11,mb1mx4.5/27,mbtmp4.6/11,ML4.3/1,MS4.3/24, Ms1 4.3/24,ms1mx4.2/30,Error ellipse: s-maj=17.9km s-min=12.8km az=167.0*

WEL ***16*** *05:49:22.7±0.1,43˚.60S×172˚.76E,h9km,ML5.3/59,Error ellipse: s-maj=1.2km s-min=0.5km az=90.0*

WEL Felt from Wairarapa to Southland, maximum reported intensity MM 8.

GCMT ***16*** *05:49:22.2±0.2,43˚.59S×172˚.73E,h12km,MW5.0/83, Moment Tensor Solution. s27,c31; s83,c126; Duration: 0 Moment tensor: Scale 10¹⁶Nm; Mrr1.22±.10; Mθθ0.32±.11; Mϕϕ-1.55±.09; Mrθ0.41±.26; Mθϕ-3.53±.07; Mϕr0.82±.29; Best double couple: Mo3.73200×10¹⁶ NP1:φs173.00000°,δ88.00000°,λ-10.00000°. NP2: φs263.00000°,δ80.00000°,λ-178.00000°. Principal axes: T 3.0550, Plg6.0000°, Azm218.0000°; N 1.3450, Plg79.0000°, Azm340.0000°; P -4.4090, Plg9.0000°, Azm127.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

NEIC ***16*** *05:49:22.2,43.61S×172.79E,h11km,mb5.2/27,MW5.0, ML5.3(WEL),Moment Tensor Solution. s36 Moment tensor: Scale 10¹⁶Nm; Mrr1.25; Mθθ0.51; Mϕϕ-1.76; Mrθ1.65; Mθϕ-2.53; Mϕr-0.33; Best double couple: Mo3.40000×10¹⁶ NP1:φs174.00000°,δ58.00000°, λ23.00000°. NP2:φs71.00000°,δ71.00000°,λ146.00000°. Principal axes: T 3.3400, Plg37.0000°, Azm29.0000°; N 0.1400, Plg51.0000°, Azm226.0000°; P -3.4900, Plg8.0000°, Azm125.0000°; After WEL.*

NEIC Felt [V] at Christchurch and [IV] at Rangiora. Also felt at Ashburton, Lyttelton, Oxford, Pleasant Point, Tai Tapu, Timaru and Woodend.

MOS ***16*** *05:49:23.0±1.2,43˚.48S×172˚.54E,h10km,mb5.5/10 Error ellipse: s-maj=16.7km s-min=11.5km az=129.4*

ISC 16 05:49:23.6±0.3,43˚.57S±0˚.03×172˚.81E±0˚.04,h10km,n324, σ1s79/309,mb5.2/46,MS4.3/26,15C-9D,South Island

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CRLZ	**Canterbury Las**	**0.14**	**268**	PG	**Pg**	**05 49 24.9**	**-1.8**
CRLZ				AML	AML	05 49 26.5	
CRLZ				AML	AML	05 49 27.1	
CRLZ				AML	AML	05 49 27.8	
CRLZ	**Canterbury Las**	**0.14**	**268**	*e*Pg	**Pg**	**05 49 25.1**	**-1.6**
CRLZ				*e*Sg	**Sg**	**05 49 27.3**	**-1.6**
MQZ	**McQueen's Vall**	**0.18**	**220**	PG	**Pg**	**05 49 25.8**	**-1.7**
MQZ				SG	**Sg**	**05 49 28.0**	**-2.0**
MQZ	**McQueen's Vall**	**0.18**	**220**	*e*Pg	**Pg**	**05 49 25.7**	**-1.7**
MQZ				*e*Sg	**Sg**	**05 49 29.1**	**-0.9**
OXZ	**Oxford**	**0.61**	**293**	⇓P*	**Pg**	**05 49 33.8**	**-1.7**
OXZ	**Oxford**	**0.61**	**293**	*e*Pg	**Pg**	**05 49 34.0**	**-1.5**
LTZ	**Lake Taylor**	**0.88**	**333**	*e*P*	**Pg**	**05 49 38.8**	**-1.8**
LTZ				AML	AML	05 49 55.3	
LTZ				AML	AML	05 49 55.3	
LTZ

TUZ AML AML 05 51 17.2
TUZ AML AML 05 51 17.3
HOWZ Holdsworth Sta 3.34 38 PN **Pn 05 50 13.3 -2.7**
MRZ Mangatainoka R 3.56 36 PN **Pn 05 50 15.9 -3.0**
TIWZ Tintock 3.61 40 PN **Pn 05 50 17.0 -2.7**
TIWZ AML AML 05 51 03.5
TIWZ AML AML 05 52 12.3
MSZ Milford Sound 3.69 251 PN **Pn 05 50 18.7 -1.9**
MSZ AML AML 05 51 26.9
MSZ AML AML 05 51 29.4
MLZ Mavora Lakes 3.81 240 ⇓PN **Pn 05 50 19.3 -3.0**
MLZ AML AML 05 51 35.4
MLZ AML AML 05 51 37.0
MLZ Mavora Lakes 3.81 240 *e*Pn **Pn 05 50 19.8 -2.6**
OHWZ Ohakea 3.85 30 PN **Pn 05 50 22.2 -0.7**
BFZ Birch Farm 3.85 43 PN **Pn 05 50 20.1 -2.9**
BFZ AML AML 05 51 08.7
BFZ AML AML 05 51 08.8
BFZ AML AML 05 52 02.7
BFZ AML AML 05 52 02.7
BFZ Birch Farm 3.85 43 *e*Pn **Pn 05 50 20.6 -2.4**
POWZ Post Office Ro 3.87 36 PN **Pn 05 50 21.1 -2.1**
SYZ Scrubby Hill 3.94 220 PN **Pn 05 50 22.3 -1.9**
SYZ AML AML 05 51 38.1
SYZ AML AML 05 51 38.1
SYZ AML AML 05 51 44.9
SYZ AML AML 05 51 44.9
DVHZ Dannevirke 4.12 39 PN **Pn 05 50 23.3 -3.3**
ANWZ Angora Road 4.14 43 PN **Pn 05 50 24.3 -2.5**
WAZ Wanganui 4.15 24 PN **Pn 05 50 27.0 0.0**
WAZ AML AML 05 52 06.0
WAZ AML AML 05 52 14.6
WHZ Wether Hill Ro 4.17 234 PN **Pn 05 50 23.9 -3.4**
WHZ AML AML 05 51 49.3
WHZ AML AML 05 51 52.1
WHZ Wether Hill Ro 4.17 234 *e*Pn **Pn 05 50 24.5 -2.9**
TSZ Takapari Road 4.23 35 AML AML 05 51 20.1
TSZ AML AML 05 51 50.8
NMEZ Namu Road 4.23 11 PN **Pn 05 50 28.6 +0.5**
PREZ Palmer Road 4.34 14 PN **Pn 05 50 29.8 +0.1**
NWEZ Newall Road 4.37 11 PN **Pn 05 50 30.5 +0.5**
KHEZ Kahui Hut 4.37 12 PN **Pn 05 50 30.2 +0.1**
NEZ North Egmont 4.40 13 PN **Pn 05 50 30.5 -0.1**
WPHZ Waipukurau 4.43 39 PN **Pn 05 50 29.1 -1.8**
PNHZ Pukenui 4.45 36 PN **Pn 05 50 28.2 -2.9**
PKE Pukeiti 4.46 12 PN **Pn 05 50 31.0 -0.4**
PKE AML AML 05 51 52.2
PKE AML AML 05 51 54.3
DCZ Deep Cove 4.47 243 PN **Pn 05 50 28.6 -2.8**
DCZ AML AML 05 51 50.4
DCZ AML AML 05 51 50.4
DCZ AML AML 05 51 52.6
DCZ AML AML 05 51 52.6
DCZ Deep Cove 4.47 243 *e*Pn **Pn 05 50 29.3 -2.1**
DREZ Durham Road 4.50 14 PN **Pn 05 50 31.7 -0.2**
MHEZ Mangahewa 4.63 15 PN **Pn 05 50 33.7 +0.1**
PXZ Pawanui 4.66 42 PN **Pn 05 50 32.1 -1.9**
PXZ AML AML 05 51 28.2
PXZ AML AML 05 52 07.8
PXZ AML AML 05 52 35.7
PXZ AML AML 05 52 43.9
VRZ Vera Road 4.68 19 AML AML 05 51 35.9
VRZ AML AML 05 52 40.6
MOVZ Moawhango 4.71 29 AML AML 05 52 23.6
MOVZ AML AML 05 52 24.6
APZ The Paps 4.72 225 AML AML 05 51 59.1
APZ AML AML 05 52 06.4
WNVZ Wahianoa 4.73 27 PN **Pn 05 50 34.2 -1.0**
TRVZ Turoa 4.74 27 PN **Pn 05 50 35.2 -0.1**
TRVZ AML AML 05 50 41.6
TRVZ AML AML 05 50 45.7
WHVZ Whangaehu Hut 4.77 27 PN **Pn 05 50 35.1 -0.6**
FWVZ Far West T-bar 4.78 26 PN **Pn 05 50 35.0 -0.9**
FWVZ AML AML 05 52 10.9
FWVZ AML AML 05 52 29.8
TUVZ Tukino 4.80 27 PN **Pn 05 50 35.7 -0.5**
TUVZ AML AML 05 50 58.3
TUVZ AML AML 05 51 00.7
KAHZ Kahuranaki 4.85 40 PN **Pn 05 50 34.1 -2.6**
NGZ Ngauruhoe 4.87 27 AML AML 05 52 20.3
NGZ AML AML 05 52 25.6
OTVZ Oturere 4.90 27 AML AML 05 52 27.4
OTVZ AML AML 05 52 28.5
TWVZ Taurewa 4.91 25 PN **Pn 05 50 35.9 -1.7**
TWVZ AML AML 05 52 07.0
TWVZ AML AML 05 52 12.2
WTVZ West Tongariro 4.92 26 PN **Pn 05 50 35.8 -1.9**
WTVZ AML AML 05 52 31.3
WTVZ AML AML 05 52 38.9
KRVZ Karewarewa 4.95 26 AML AML 05 52 10.5
KRVZ AML AML 05 52 25.2
PYZ Puysegur Point 5.07 237 PN **Pn 05 50 36.4 -3.3**
PYZ Puysegur Point 5.07 237 *e*Pn **Pn 05 50 36.9 -2.8**
KATZ Kakaramea 5.08 26 PN **Pn 05 50 38.9 -1.0**
BKZ Black Stump Fm 5.20 33 AML AML 05 52 43.0
BKZ AML AML 05 52 53.8
BKZ Black Stump Fm 5.20 33 *e*Pn **Pn 05 50 39.2 -2.3**
HIZ Hauiti 5.28 18 PN **Pn 05 50 41.3 -1.3**
HIZ AML AML 05 52 35.6
HIZ AML AML 05 52 45.9
HIZ Hauiti 5.28 18 *e*Pn **Pn 05 50 42.0 -0.6**
NMHZ Naumai 5.39 35 PN **Pn 05 50 41.9 -2.2**
MRHZ Matea Rd 5.46 31 PN **Pn 05 50 42.2 -2.8**
WHHZ Waihua 5.59 38 PN **Pn 05 50 47.7 +0.9**
TLZ Tolley Road 5.63 22 PN **Pn 05 50 45.7 -1.7**
WPRZ Whakapapatarin 5.65 28 PN **Pn 05 50 45.0 -2.6**
PRRZ Plateau Road 5.75 29 PN **Pn 05 50 46.3 -2.6**
KNZ Kokohu 5.84 41 AML AML 05 53 11.9
KNZ AML AML 05 53 19.5
RIGZ Rimuhau 6.13 39 PN **Pn 05 50 50.8 -3.5**
TOZ Tahuroa Road 6.18 20 PN **Pn 05 50 53.1 -1.8**
TOZ AML AML 05 53 28.6
TOZ AML AML 05 53 35.5
URZ Urewera 6.22 33 Pn **Pn 05 50 52.5 -3.0**
7.1nm,0.3s,baz=228,slow=4.7,SNR=37
URZ Sn **Sn 05 52 01.5 -5.2**
26nm,0.3s,baz=291,slow=18,SNR=9.3
URZ Urewera 6.22 33 PN **Pn 05 50 51.6 -3.9**
URZ AML AML 05 53 24.0
URZ AML AML 05 53 28.5
MWZ Matawai 6.33 36 PN **Pn 05 50 53.2 -3.8**
MWZ AML AML 05 52 11.6
MWZ AML AML 05 52 48.6
AWAZ Awhitu Peninsu 6.65 13 PN **Pn 05 51 00.3 -1.0**
TWGZ Tauwhareparae 6.66 38 PN **Pn 05 50 58.7 -2.9**
MKAZ Moumakai 6.70 16 PN **Pn 05 51 00.3 -1.8**
MKAZ AML AML 05 53 14.1
MKAZ AML AML 05 53 25.1
ETAZ East Tamaki Re 6.80 14 PN **Pn 05 51 02.4 -1.1**
PUZ Puketiti 6.87 39 PN **Pn 05 51 01.4 -3.0**
PUZ AML AML 05 52 24.7
PUZ AML AML 05 53 49.6
RVAZ Riverhead Bore 6.93 12 PN **Pn 05 51 04.3 -0.8**
HAZ Te Kaha 6.93 35 PN **Pn 05 51 01.4 -3.8**
WIAZ Waiheke Island 7.00 15 PN **Pn 05 51 05.0 -1.1**
WMGZ Waiomatatini S 7.15 38 PN **Pn 05 51 04.7 -3.5**
MXZ Matakaoa Point 7.31 37 *e*Pn **Pn 05 51 09.2 -1.3**
CTZ Chatham Island 7.67 95 PN **Pn 05 51 12.7 -2.7**
WCZ Waipu Caves 7.71 9 PN **Pn 05 51 15.9 -0.1**
WCZ AML AML 05 54 14.3
WCZ AML AML 05 54 29.7
I36NZ CHATHAM INFRAS 7.76 96 *i* 06 32 40.0
baz=268,slow=315,SNR=0.3
OUZ Omahuta 8.36 4 *e*Pn **Pn 05 51 24.8 -0.1**
RAO Raoul Island 16.10 31 LR LR 05 59 21.3
comp=Z,2μm,18.7s,baz=189,slow=38
TAU Tasmania Unive 18.57 263 *e*P **P 05 53 38.8 -1.7**
TAU pmax pmax
comp=Z,60nm,1.3s
TAU Tasmania Unive 18.57 263 *e*P **P 05 53 38.8 -1.7**
comp=Z,60nm,1.3s
CAN Canberra 20.10 286 *e*P **P 05 53 57.4 0.0**
CAN pmax pmax
comp=Z,147nm,2.0s
CAN Canberra 20.10 286 *e*P **P 05 53 57.4 0.0**
comp=Z,147nm,2.0s
ARMA Armidale 21.34 301 *e*P **P 05 54 10.5 -0.4**
comp=Z,99nm,2.0s
DZM Mont Dzumac 22.08 344 P **P 05 54 17.6 -1.3**
comp=Z,12nm,1.1s,baz=115,slow=17,SNR=2.7

DZM LR LR 06 02 04.3
comp=Z,1μm,18.8s,baz=173,slow=35
EIDS Eidsvold 25.38 309 *e*P **P 05 54 50.2 -0.8**
comp=Z,58nm,1.8s
MSVF Nonsavu 26.14 11 *e*P **P 05 54 57.2 -0.8**
MSVF pmax pmax
comp=Z,14nm,0.9s
MSVF Nonsavu 26.14 11 *e*P **P 05 54 57.2 -0.8**
comp=Z,14nm,0.9s
STKA Stephens Creek 27.15 285 P **P 05 55 07.7 +0.7**
comp=Z,21nm,0.9s,baz=117,slow=9.1,SNR=14
STKA LR LR 06 04 00.7
comp=Z,846nm,21.4s,baz=132,slow=32
STKA Stephens Creek 27.15 285 *e*P **P 05 55 06.8 -0.2**
STKA pmax pmax
comp=Z,6.0nm,0.9s
STKA Stephens Creek 27.15 285 *e*P **P 05 55 06.8 -0.2**
comp=Z,5.7nm,0.9s
BBOO Buckleboo 30.59 278 *e*P **P 05 55 36.5 -1.1**
comp=Z,51nm,1.2s
CTA Charters Tower 32.27 308 P **P 05 55 51.6 -0.8**
comp=Z,2.0nm,0.3s,baz=135,slow=14,SNR=5.2
CTAO Charters Tower 32.27 308 *e*P **P 05 55 52.6 +0.2**
CTAO pmax pmax
comp=Z,63nm,2.0s
CTAO Charters Tower 32.27 308 *e*P **P 05 55 52.6 +0.2**
comp=Z,63nm,2.0s
AFI Afiamalu 32.38 29 LR LR 06 07 55.3
comp=Z,391nm,20.2s,baz=196,slow=34
VNDA Vanda 34.35 184 P **P 05 56 11.7 +1.7**
comp=Z,2.2nm,1.1s,baz=342,slow=8.0,SNR=3.4
VNDA LR LR 06 07 15.4
comp=Z,245nm,21.0s,baz=14,slow=31
TBI Tubuai 36.97 69 *e*LR LR 06 06 24.8
comp=Z,410nm,24.5s
TBI Tubuai 36.97 69 *e*T T 06 34 42.2
comp=Z,38nm,0.3s
AS01 Alice Springs 37.53 289 *e*P **P 05 56 36.6 -1.2**
AS31 Alice Springs 37.56 289 *e*P **P 05 56 37.4 -0.8**
comp=Z,18nm,1.1s
ASAR Alice Springs 37.56 289 P **P 05 56 37.0 -1.2**
comp=Z,25nm,0.9s,baz=131,slow=8.8,SNR=68
ASAR PcP **PcP 05 58 55.0 -1.0**
comp=Z,2.4nm,0.9s,baz=120,slow=4.3,SNR=6.0
ASAR LR LR 06 11 01.0
comp=Z,642nm,20.6s,baz=136,slow=35
COEN Coen 38.92 310 *e*P **P 05 56 49.1 -0.6**
comp=Z,28nm,1.4s
WB2 Warramunga Arr 39.80 294 *e*P **P 05 56 56.0 -1.0**
comp=Z,131nm,1.6s
WRA Warramunga Arr 39.80 294 P **P 05 56 55.6 -1.4**
comp=Z,24nm,0.8s,baz=135,slow=7.8,SNR=78
WRA LR LR 06 12 21.0
comp=Z,1μm,20.2s,baz=130,slow=35
WRAB Tennant Creek 39.80 294 *e*P **P 05 56 56.3 -0.7**
WRAB pmax pmax
comp=Z,116nm,1.5s
WRAB Tennant Creek 39.80 294 *e*P **P 05 56 56.3 -0.7**
comp=Z,116nm,1.5s
PMG Port Moresby 40.71 319 P **P 05 57 06.4 +1.9**
comp=Z,29nm,0.9s,baz=132,slow=3.6,SNR=8.2
PMG Port Moresby 40.71 319 *de*P **P 05 57 01.9 -2.6**
PMG pmax pmax
comp=Z,52nm,1.1s
PAE Paea 40.88 63 *e*T T 06 39 35.1
comp=Z,30nm,0.3s
PPT2 Papeete2 40.93 63 *e*LR LR 06 08 07.3
comp=Z,634nm,29.5s
PPT2 Papeete2 40.93 63 *e*T T 06 39 39.8
comp=Z,16nm,0.3s
PPT Papeete 40.95 63 LR LR 06 12 17.0
comp=Z,237nm,18.7s,baz=232,slow=34
TVO Taravao 41.00 63 *e*T T 06 39 44.6
comp=Z,3.3nm,0.3s
RABL Rabaul 43.26 329 *e*P **P 05 57 24.8 -0.5**
comp=Z,83nm,0.4s
VAH Vaihoa 43.92 62 *e*T T 06 43 22.8
comp=Z,11nm,0.2s
PMOR Pomariorio Ree 43.93 62 *e*T T 06 43 23.3
comp=Z,8.4nm,0.3s
NWAO Narrogin (SRO) 44.18 265 *e*P **P 05 57 33.0 +0.4**
NWAO pmax pmax
comp=Z,106nm,1.5s
NWAO Narrogin (SRO) 44.18 265 *e*P **P 05 57 33.0 +0.4**
comp=Z,106nm,1.5s
QSPA South Pole Qui 46.56 180 *e*P **P 05 57 53.3 +2.0**
FITZ Fitzroy Crossi 46.99 287 *e*P **P 05 57 54.6 -0.4**
comp=Z,24nm,1.0s
MTN Manton Dam 47.06 298 *e*P **P 05 57 55.2 -0.3**
comp=Z,42nm,1.1s
RKT Rikitea 47.30 82 *e*T T 06 47 38.7
comp=Z,1.6nm,0.3s
MBWA Marble Bar 49.16 279 *e*P **P 05 58 10.8 -1.0**
comp=Z,19nm,0.9s
TAOE Nuu Hiva Isla 53.52 64 *e*LR LR 06 14 04.3
comp=Z,372nm,26.5s,baz=229
BATI Baumata 53.92 293 LR LR 06 21 15.6
comp=Z,417nm,20.2s,baz=79,slow=36
MAW Mawson 57.36 205 P **P 05 59 13.2 +1.8**
comp=Z,2.4nm,0.8s,baz=86,slow=8.1,SNR=5.3
MAW LR LR 06 22 42.2
comp=Z,415nm,19.4s,baz=75,slow=35
KAPI Kappang 60.34 294 LR LR 06 25 49.3
comp=Z,311nm,19.4s,baz=156,slow=36
GUMO Guam 62.35 329 LR LR 06 25 20.8
comp=Z,94nm,18.9s,baz=166,slow=35
SYO Syowa Base 62.53 197 ⇑*i*PP **P 05 59 46.0 -0.9**
SNAA Sanae 65.03 182 ⇓*e*P **P 06 00 03.7 +0.2**
NVL N'lazarevskaya 65.15 187 *e*P **P 06 00 06.8 +2.7**
DAV Davao City (W) 66.05 307 LR LR 06 29 58.8
comp=Z,204nm,19.4s,baz=158,slow=37
CISI Cisompet, Garu 66.78 282 *e*P **P 06 00 15.0 -0.5**
comp=Z,57nm,1.0s
LEM Lembang 67.42 283 LR LR 06 28 33.8
comp=Z,403nm,18.6s,baz=200,slow=35
SDKM Sandakan 70.03 299 ⇑P **P 06 00 36.5 +0.6**
SBUM Sibu 70.89 293 *e*P **P 06 00 41.2 +0.1**
comp=Z,23nm,1.1s
KKM Kota Kinabalu 70.97 299 ⇑P **P 06 00 41.4 -0.2**
KKM Kota Kinabalu 70.97 299 *e*P **P 06 00 41.9 +0.3**
comp=Z,31nm,0.9s
KSM Kuching 71.46 291 *e*P **P 06 00 44.1 -0.4**
comp=Z,23nm,0.9s
JCJ Chichijima 75.73 332 LR LR 06 29 40.9
comp=Z,122nm,20.9s,baz=15,slow=32
BKNI Bangkinang 77.09 283 *e*P **P 06 01 17.8 +0.5**
comp=Z,47nm,0.6s
PLCA Paso Flores 78.53 136 P **P 06 01 26.3 +1.1**
comp=Z,3.2nm,1.0s,baz=231,slow=4.6,SNR=6.2
PLCA LR LR 06 29 46.7
comp=Z,210nm,18.6s,baz=228,slow=31
IPM Ipoh 80.02 286 *e*P **P 06 01 32.6 -1.0**
comp=Z,22nm,1.0s
GSI Gunungsitoli 80.23 281 *e*P **P 06 01 33.5 -1.2**
comp=Z,113nm,1.1s
PSI Prapat 80.32 283 *e*P **P 06 01 33.7 -1.6**
PSI pmax pmax
comp=Z,27nm,1.1s
PSI Prapat 80.32 283 *e*P **P 06 01 33.7 -1.6**
comp=Z,27nm,1.1s
KULM Kulim 80.86 286 *e*P **P 06 01 37.1 -0.9**
comp=Z,45nm,1.1s
SKLT Songkhla 82.22 288 P **P 06 01 47.9 +2.7**
comp=Z,32nm,1.1s
TRTT Trang 83.33 287 P **P 06 01 52.7 +1.7**
comp=Z,53nm,1.2s
PKDT Phuket 84.32 286 P **P 06 01 58.9 +2.9**
comp=Z,44nm,1.0s
JNU Nakatsue 85.40 326 LR LR 06 34 29.4
comp=Z,75nm,21.4s,baz=122,slow=32
MJAR Matsushiro Arr 85.72 333 LR LR 06 36 24.6
comp=Z,39nm,20.9s,baz=240,slow=33
SKNT Sainakorn 87.02 297 P **P 06 02 11.7 +2.3**
comp=Z,13nm,1.3s
SRDT SRDT 88.36 291 P **P 06 02 19.4 +3.6**
comp=Z,33nm,0.9s,comp=Z,12μm
KHLT Khaolaem Dam 89.03 291 P **P 06 02 21.9 +2.9**
comp=Z,7.1nm,1.3s,comp=Z,307nm
ERM Erimo 89.27 338 ⇑*e*P **P 06 02 19.4 0.0**
ERM pmax pmax
comp=Z,47nm,1.7s
NJ2 Nanjing 89.97 317 *e*P **P 06 02 23.1 +0.1**
NJ2 pmax pmax
comp=Z,7.0nm,0.5s
KSRS Korea Array 90.35 326 P **P 06 02 25.2 +0.7**
comp=Z,2.1nm,0.7s,baz=148,slow=5.1,SNR=4.1
KSRS LR LR 06 39 45.1
comp=Z,48nm,19.3s,baz=167,slow=34

KSAR Wonju Array Be 90.35 326 P **P 06 02 25.3 +0.7**
KSAR Wonju Array Be 90.35 326 P **P 06 02 25.2 +0.7**
KS01 Wonju Array Si 90.38 326 *e*P **P 06 02 24.8 +0.1**
CM01 Chiang Mai Arr 91.36 294 *e*P **P 06 02 30.1 +0.3**
CMAR Chiang Mai Arr 91.40 294 P **P 06 02 30.6 +0.6**
comp=Z,2.9nm,0.8s,baz=157,slow=3.6,SNR=22
CMAR LR LR 06 47 54.1
comp=Z,138nm,18.2s,baz=176,slow=38
CMMT Chiang Mai 91.65 294 P **P 06 02 34.4 +3.3**
comp=Z,7.7nm,1.7s
CHTO Chiang Mai 91.65 294 P **P 06 02 34.5 +3.4**
comp=Z,35nm,1.6s
CHTO Chiang Mai 91.65 294 *e*P **P 06 02 31.3 +0.2**
CHTO pmax pmax
comp=Z,35nm,1.8s
CHTO Chiang Mai 91.65 294 *e*P **P 06 02 31.3 +0.2**
comp=Z,35nm,1.8s
CRAI Chiangrai 91.72 296 P **P 06 02 35.5 +4.0**
GYA Guiyang 92.34 305 P **P 06 02 33.8 -0.5**
GYA PP **PP 06 06 19.3 +3.9**
GYA SKS **SKSac 06 13 06.0 -1.7**
GYA S **S 06 13 37.8 +0.1**
GYA SS **SS 06 19 52.8 +3.7**
GYA pmax pmax
comp=Z,20nm,1.0s
GYA pmax pmax
comp=Z,120nm,6.3s
GYA LR LR
comp=Z,520nm,21.6s
GYA LR LR
comp=Z,500nm,20.4s
GYA LR LR
comp=Z,530nm,20.2s
KMI Kunming 93.75 301 P **P 06 02 41.6 +0.6**
KMI pmax pmax
comp=Z,13nm,0.5s
KMI pmax pmax
comp=Z,53nm,4.6s
USRK Ussuriysk Ar. 94.68 332 LR LR 06 42 09.2
comp=Z,89nm,20.7s,baz=141,slow=34
NNA Nana 96.06 113 *i* P **P 06 02 51.9 +0.2**
CPUP Villa Florida 96.61 136 LR LR 06 39 02.4
comp=Z,205nm,20.7s,baz=207,slow=31
CN2 Changchun 96.73 328 *e*P **P 06 02 54.3 +0.5**
PETK Petropavlovsk- 97.17 351 LR LR 06 45 03.6
comp=Z,79nm,18.1s,baz=154,slow=34
CD2 Chengdu 97.34 306 P **P 06 02 56.8 -0.2**
CD2 pmax pmax
comp=Z,2.0nm,0.6s
LPAZ La Paz 98.49 122 LR LR 06 37 32.5
comp=Z,109nm,20.2s,baz=188,slow=29
HHC Hu-ho-hao-te 100.50 317 *e*P **Pdif 06 03 11.8 +0.8**
HHC PP **PP 06 07 17.4 -0.9**
HHC SKS **SKSac 06 13 49.0 -0.7**
HHC S **Sdif 06 14 44.0 -3.3**
HHC SS **SS 06 21 47.3 +3.0**
HHC pmax pmax
comp=Z,36nm,1.2s
HHC pmax pmax
comp=Z,71nm,5.4s
HHC LR LR
comp=Z,200nm,19.2s
HHC LR LR
comp=Z,480nm,20.0s
HHC LR LR
comp=Z,130nm,16.7s
LZH Lanzhou 101.04 310 *e*P **Pdif 06 03 17.3 +3.8**
LZH pP pP 06 03 22.3 +5.3
LZH sP 06 03 25.8
LZH pmax pmax
comp=Z,17nm,1.0s
COLA College 112.40 17 ⇑*i*PKIKP 06 07 58.9
ILAR Eielson Array 112.52 17 PKiKP **PKiKP 06 07 58.9 0.0**
comp=Z,0.7nm,0.9s,baz=239,slow=2.9,SNR=5.9
ILAR PKKPab **PKKPab 06 18 53.7 +0.4**
comp=Z,1.3nm,1.1s,baz=328,slow=3.2,SNR=6.9
WMQ Urumqi 115.41 307 *e*PKP **PKPdf 06 08 04.5 -0.6**
WMQ LR LR
comp=Z,43nm,22.2s
WMQ LR LR
comp=Z,250nm,22.2s
X301 Greenbrier Sit 116.37 66 *e*PKPdf **PKPdf 06 08 07.8 +0.7**
INK Inuvik 118.52 20 PKKPab PKKPab 06 18 29.9 +2.9
comp=Z,1.1nm,0.9s,baz=23,slow=6.9,SNR=4.1
INK Inuvik 118.52 20 *e*PKIKP **PKPdf 06 08 09.2 -1.1**
INK Inuvik 118.52 20 *e*PKPdf **PKPdf 06 08 09.2 -1.1**
INK PKKPab **PKKPbc 06 18 29.9 +1.7**
TIXI Tiksi 119.06 345 ⇑*i*PKIKP **PKPdf 06 08 10.2 -1.0**
TIXI pmax pmax
comp=Z,10.0nm,1.7s
TIXI Tiksi 119.06 345 *e*PKPdf **PKPdf 06 08 10.7 -0.5**
PLAL Pickwick Lake 119.11 68 *e*PKPdf **PKPdf 06 08 12.2 -0.2**
WVT Waverly 119.93 67 *e*PKIKP **PKPdf 06 08 13.6 -0.4**
WVT Waverly 119.93 67 *e*PKPdf **PKPdf 06 08 13.6 -0.4**
KSH Kashi 120.14 297 *e*PKP **PKPdf 06 08 15.1 +0.6**
KSH *e*PP **PP 06 09 42.8 +2.5**
KSH PKS **PKSdf 06 11 51.1 -0.1**
KSH SKS **SKSdf 06 15 25.8 -0.7**
KSH SKKS **SKKSac 06 16 36.6 -3.0**
KSH SS **SS 06 26 10.1 +2.4**
KSH AMB AMB
comp=Z,98nm,4.0s
KSH LR LR
comp=Z,220nm,5.7s
KSH LR LR
comp=Z,120nm,7.4s
KSH LR LR
comp=Z,160nm,6.7s
MK01 Makanchi Array 120.22 307 *e*PKPdf **PKPdf 06 08 12.6 -1.6**
MK31 Makanchi Array 120.24 307 *e*PKIKP **PKPdf 06 08 12.4 -1.9**
MK31 Makanchi Array 120.24 307 *e*PKPdf **PKPdf 06 08 12.4 -1.9**
MKAR Makanchi Array 120.24 307 PKP **PKPdf 06 08 12.9 -1.4**
comp=Z,4.8nm,0.9s,baz=104,slow=1.5,SNR=23
MKAR Makanchi Array 120.24 307 *e*PKIKP **PKPdf 06 08 12.4 -1.9**
MKAR Makanchi Array 120.24 307 *e*PKPdf **PKPdf 06 08 12.4 -1.9**
YKA Yellowknife Ar 120.48 31 PKP **PKPdf 06 08 12.7 -1.5**
comp=Z,1.4nm,0.8s,baz=230,slow=1.8,SNR=22
YKA PKKPbc **PKKPab 06 18 20.8 +1.9**
comp=Z,0.9nm,0.9s,baz=49,slow=4.6,SNR=12
YKB5 Yellowknife Ar 120.48 31 *e*PKPdf **PKPdf 06 08 13.0 -1.2**
YKW3 Yellowknife Ar 120.52 31 *e*PKPdf **PKPdf 06 08 13.4 -0.8**
FFC Flin Flon 121.62 43 *e*PKIKP **PKPdf 06 08 16.5 -0.1**
FFC Flin Flon 121.62 43 *e*PKPdf **PKPdf 06 08 16.5 -0.1**
WCI Wyandotte Cave 122.10 66 *e*PKIKP **PKPdf 06 08 17.9 -0.3**
WCI Wyandotte Cave 122.10 66 *e*PKPdf **PKPdf 06 08 17.9 -0.3**
ULM Lac du Bonnet 122.50 50 PKP **PKPdf 06 08 17.1 -1.3**
comp=Z,4.2nm,0.8s,baz=205,slow=8.3,SNR=3.8
ZAA0 Zalesovo Array 122.61 315 *e*PKPdf **PKPdf 06 08 16.7 -1.8**
ZALV Zalesovo Beam 122.61 315 PKP **PKPdf 06 08 16.1 -2.5**
comp=Z,1.4nm,0.6s,baz=131,slow=1.8,SNR=7.8
AAK Ala-Archa 122.75 300 ⇑*i*PKIKP **PKPdf 06 08 19.3 -0.2**
AAK Ala-Archa 122.75 300 *e*PKPdf **PKPdf 06 08 19.8 +0.4**
KURK Kurchatov 124.33 310 *e*PKIKP **PKPdf 06 08 20.5 -1.4**
KURK Kurchatov 124.33 310 *e*PKPdf **PKPdf 06 08 20.5 -1.4**
HUMP Col San Antoni 124.89 98 *e*PKPdf **PKPdf 06 08 24.7 +0.6**
KKAR Karatay Array 125.52 298 *e*PKIKP **PKPdf 06 08 23.8 -0.8**
KKAR *e* 06 08 24.4
KKAR Karatay Array 125.52 298 *e*PKPpre PKPpre 06 08 23.8
KKAR *e*PKPdf **PKPdf 06 08 24.4 -0.1**
NRIK Noril'sk 128.37 333 PKP **PKPdf 06 08 28.5 -0.7**
comp=Z,3.8nm,0.7s,baz=80,slow=3.4,SNR=8.2
VOSK Vostochnaya 129.48 310 *e*PKIKP **PKPdf 06 08 31.8 0.0**
VOSK Vostochnaya 129.48 310 *e*PKPdf **PKPdf 06 08 31.8 0.0**
BRVK Borovoye 130.00 310 *di*PKIKP **PKPdf 06 08 33.4 +0.7**
BRVK pmax pmax
comp=Z,14nm,1.7s
BRVK Borovoye 130.00 310 *e*PKPdf **PKPdf 06 08 33.2 +0.5**
ZRNK Zerenda 130.67 309 *e*PKIKP **PKPdf 06 08 33.7 -0.3**
ZRNK Zerenda 130.67 309 *e*PKPdf **PKPdf 06 08 33.7 -0.3**
GEYT Alibeck 131.34 287 PKP **PKPdf 06 08 35.3 -0.5**
comp=Z,1.4nm,0.3s,baz=350,slow=7.9,SNR=3.4
ARU Arti 137.47 311 *i* PKIKP **PKPdf 06 08 46.6 0.0**
ARU 06 11 30.5
SOKR Solikamsk 138.90 316 *e*PKIKP **PKPdf 06 08 51.8 +2.7**
SOKR pmax pmax
comp=Z,18nm,1.0s
DBIC Dimbokro 143.19 184 PKhKP PKPpre 06 08 53.8
comp=Z,3.3nm,0.6s,baz=170,slow=5.4,SNR=6.8
SPA0 Spitsbergen Ar 144.04 352 *e*PKPdf PKPbc 06 08 57.5 +1.6
NEY Neytrino 144.18 287 ⇑*e*PKIKP **PKPab 06 08 57.9 +0.7**
KBZ Khabaz 144.21 288 PKP **PKPab 06 08 56.5 -0.4**
comp=Z,3.7nm,0.8s,baz=80,slow=1.4,SNR=6.4
KIV Kislovodsk 144.42 288 *i* PKIKP **PKPab 06 08 58.7 +0.8**
KIV pmax pmax

	comp=Z,5.0nm,0.9s								
DAG	**Danmarks Havn**	**146.35**	**5**	*i* P		**PKPdf**	**06 09 00.9**	**-1.0**
	comp=Z,11nm,0.8s								
DAG	**Danmarks Havn**	**146.35**	**5**	*i* PKIKP		**PKPdf**	**06 09 00.9**	**-1.0**
DAG				pmax	pmax				
	comp=Z,8.0nm,0.8s								
VRH	**Novokhopyorsk**	**146.55**	**301**	*e*PKP2		**PKPdf**	**06 09 04.6**	**+1.7**
VRH				pmax	pmax				
	comp=Z,10.0nm,0.7s								
SFJD	**Kangerlussuaq**	**147.03**	**30**	*i* P		**PKPdf**	**06 09 05.0**	**+1.7**
	comp=Z,34nm,1.3s								
SFJD	**Kangerlussuaq**	**147.03**	**30**	*i* PKP2		**PKPdf**	**06 09 05.0**	**+1.7**
SFJD				pmax	pmax				
	comp=Z,34nm,1.3s								
SFJD	**Kangerlussuaq**	**147.03**	**30**	*e*PKPbc		**PKPdf**	**06 09 04.9**	**+1.6**
LVZ	**Lovozero**	**147.21**	**332**	⇑*i*PKP2		**PKPdf**	**06 09 05.6**	**+2.0**
LVZ				pmax	pmax				
	comp=Z,68nm,1.2s								
LVZ	**Lovozero**	**147.21**	**332**	*e*PKPbc		**PKPdf**	**06 09 05.0**	**+1.4**
TMCR	**Tamitsa**	**147.32**	**325**	*e*PKP2		**PKPdf**	**06 09 05.8**	**+2.0**
TMCR				pmax	pmax				
	comp=Z,35nm,0.9s								
SUMG	**Summit**	**147.36**	**17**	*i* P		**PKPdf**	**06 09 05.9**	**+1.7**
SUMG	**Summit**	**147.36**	**17**	*e*PKIKP		**PKPdf**	**06 09 05.0**	**+0.8**
SUMG				*e*			06 09 06.5		
SUMG	**Summit**	**147.36**	**17**	*e*PKPdf		**PKPdf**	**06 09 05.0**	**+0.8**
SUMG						**PKPbc**	**06 09 06.5**	**-0.2**
KLMR	**Klimovskoe**	**147.44**	**319**	*e*PKIKP		**PKPdf**	**06 09 02.5**	**-1.6**
KLMR				pmax	pmax				
	comp=Z,128nm,1.0s								
CSS	**Mathiatis**	**147.74**	**268**	*e*PKPbc		**PKPbc**	**06 09 08.5**	**+0.1**
VSR	**Storozhevoye**	**148.15**	**300**	*e*PKIKP		**PKPdf**	**06 09 06.9**	**+1.3**
VSR				pmax	pmax				
	comp=Z,20nm,1.0s								
LPSR	**Galich'ya Gora**	**148.38**	**303**	*e*PKP2		**PKPbc**	**06 09 09.0**	**-0.4**
LPSR				pmax	pmax				
	comp=Z,30nm,1.6s								
KEV	**Kevo**	**148.55**	**338**	*e*PKP2		**PKPbc**	**06 09 08.7**	**-0.7**
KEV	**Kevo**	**148.55**	**338**	*e*PKPbc		**PKPbc**	**06 09 08.7**	**-0.7**
TOA0	**Torodi Ar. Sit**	**148.73**	**197**	*e*PKPbc		**PKPbc**	**06 09 11.0**	**-0.5**
TORD	**Torodi Ar. Bea**	**148.73**	**197**	PKPbc		**PKPbc**	**06 09 11.1**	**-0.4**
	comp=Z,5.6nm,0.6s,baz=176,slow=1.1,SNR=21								
ARA0	**ARCESS Array S**	**149.10**	**338**	*e*PKPbc		**PKPbc**	**06 09 10.3**	**-0.6**
ARCES	**ARCESS Array B**	**149.10**	**338**	PKPbc		**PKPdf**	**06 09 09.6**	**+2.9**
	comp=Z,8.1nm,0.7s,baz=71,slow=1.3,SNR=41								
ARE0	**ARCESS Array S**	**149.10**	**338**	*e*PKPbc		**PKPbc**	**06 09 11.4**	**+0.6**
BR131	**Keskin Array S**	**149.47**	**277**	*e*PKPbc		**PKPbc**	**06 09 11.8**	**-1.1**
BRTR	**Keskin Array B**	**149.47**	**277**	PKPbc		**PKPbc**	**06 09 11.8**	**-1.1**
	comp=Z,14nm,1.0s,baz=140,slow=4.9,SNR=31								
BRTR	**Keskin Array B**	**149.47**	**277**	*c i*PKP2		**PKPab**	**06 09 17.8**	**0.0**
BRTR				pmax	pmax				
	comp=Z,6.0nm,0.8s								
OBN	**Obninsk**	**149.74**	**308**	⇑*i*PKP2		**PKPbc**	**06 09 13.7**	**+1.0**
OBN				pmax	pmax				
	comp=Z,110nm,1.2s								
BR231	**Keskin MP Arra**	**150.13**	**277**	*e*PKPbc		**PKPbc**	**06 09 12.9**	**-1.5**
SCO	**Scoresbysund**	**152.01**	**11**	*i* P		**PKPdf**	**06 09 14.6**	**+3.5**
SCO	**Scoresbysund**	**152.01**	**11**	*i* PKIKP		**PKPdf**	**06 09 14.6**	**+3.5**
FIA1	**FINESS Array S**	**153.42**	**324**	*e*PKPbc		**PKPbc**	**06 09 20.3**	**-0.8**
FINES	**FINESS Array B**	**153.42**	**324**	PKPbc		**PKPbc**	**06 09 20.6**	**-0.5**
	comp=Z,6.3nm,0.7s,baz=87,slow=4.2,SNR=16								
LAST	**Lasithi**	**153.52**	**263**	*e*PKPbc		**PKPbc**	**06 09 22.3**	**0.0**
VSU	**Vasula**	**154.33**	**317**	⇓*e*PKIKP		**PKPdf**	**06 09 13.6**	**-1.2**
AKASG	**Malin Array Be**	**154.42**	**299**	PKPbc		**PKPbc**	**06 09 21.6**	**-1.9**
	comp=Z,4.3nm,0.8s,baz=74,slow=2.3,SNR=11								
AKASG				PKPab		**PKPab**	**06 09 36.5**	**-1.5**
	comp=Z,2.0nm,0.5s,baz=74,slow=3.9,SNR=6.0								
AK11	**Malin Array Si**	**154.46**	**299**	*e*PKPbc		**PKPbc**	**06 09 24.9**	**+1.2**
KOLS	**Kolonicke sedl**	**159.01**	**295**	*e*PKIKP		**PKPdf**	**06 09 22.2**	**+1.0**
KOLS				*e*			06 09 53.7		
KOLS	**Kolonicke sedl**	**159.01**	**295**	*e*PKP		**PKPdf**	**06 09 22.2**	**+1.0**
KOLS				*e*			06 09 53.7		
HFS	**Hagfors**	**159.14**	**330**	PKPab		**PKPab**	**06 09 56.9**	**-1.0**
	comp=Z,3.8nm,0.8s,baz=81,slow=2.0,SNR=5.2								
NB2	**NORSAR Subarra**	**159.33**	**334**	P		**PKPab**	**06 09 57.1**	**-1.7**
	comp=Z,2.4nm,0.8s,baz=43,slow=5.1								
NOA	**NORSAR Array B**	**159.33**	**334**	PKPab		**PKPab**	**06 09 57.4**	**-1.5**
	comp=Z,2.7nm,0.8s,baz=44,slow=4.6,SNR=7.0								
NBO02	**NORSAR Array S**	**159.44**	**335**	*e*PKPdf		**PKPdf**	**06 09 21.4**	**+0.1**
VYHS	**Vyhne**	**161.31**	**294**	*e*PKP2		**PKPab**	**06 10 08.4**	**+0.5**
VYHS	**Vyhne**	**161.31**	**294**	*e*PKP		**PKPab**	**06 10 08.4**	**+0.5**
BRG	**Berggiesshubel**	**163.93**	**304**	*e*PKP2		**PKPab**	**06 10 19.7**	**+0.5**
BRG				pmax	pmax				
	comp=Z,9.0nm,1.2s								
CLL	**Collm**	**164.33**	**307**	*e*PKPdf		**PKPdf**	**06 09 34.0**	**+7.4**
CLL				*i* PKPab		**PKPab**	**06 10 22.7**	**+1.7**
	comp=Z,32nm,2.0s								
CLL				LmH			07 22 00.0		
	comp=N,200nm,18.5s								
CLL				LmH			07 22 00.0		
	comp=E,200nm,19.3s								
CLL	**Collm**	**164.33**	**307**	*i* PKP2		**PKPab**	**06 10 22.7**	**+1.7**
CLL				pmax	pmax				
	comp=Z,32nm,2.0s								
GERES	**GERESS Array B**	**164.62**	**297**	PKPab		**PKPab**	**06 10 21.8**	**-0.7**
	comp=Z,1.1nm,0.8s,baz=94,slow=4.3,SNR=5.3								

WEL 16 05:55:37.5±0.1, 43.58S×172.74E, *h*7km, ML3.7/4, 1C-1D, Error ellipse: s-maj=1.1km s-min=0.6km az=90.0, South Island

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CRLZ	**Canterbury Las**	**0.09**	**276**	⇓P	Pg	05 55 39.6	0.0
MQZ	**McQueen's Vall**	**0.14**	**207**	⇑P	Pg	05 55 40.6	+0.1
MQZ					SG	05 55 42.8	+0.4
OXZ	**Oxford**	**0.57**	**297**	P*	Pg	05 55 48.5	0.0
LTZ	**Lake Taylor**	**0.87**	**337**	P*	Pg	05 55 54.4	+0.1
RPZ	**Rata Peaks**	**1.23**	**263**	P*	Pb	05 55 59.7	-1.5

MEX 16 06:13:38.3±0.6, 16.70N×98.57W, *h*17km±999km, MD3.7, Near coast of Guerrero

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PNIG	**Pinotepa**	**0.52**	**126**	*e*P	Pg	06 13 46.5	-2.1
PNIG				*e*S	Sg	06 13 53.9	-1.7
ACX	**Acapulco**	**1.25**	**278**	*e*P	Pn	06 13 51.5	-10
ACX				*e*S	Sb	06 14 07.2	-10
VHO	**Vista Hermosa**	**1.79**	**78**	*e*P	Pn	06 14 06.7	-2.0
VHO				*e*S	Sn	06 14 27.3	-3.9

*IDC **16** 06:19:51.6±3.2, 6.67S×130.10E, h42km±28km, mb4.2/8, mb1 4.4/12, mb1mx3.9/51, mbtmp4.5/12, ML4.6/4, Error ellipse: s-maj=42.7km s-min=19.2km az=58.0*
*ISCJB **16** 06:19:59.4±0.4, 7.21S±0.04×129.80E±0.04, h150km, mb4.2/14, Error ellipse: s-maj=6.0km s-min=5.3km az=0.4*
*NEIC **16** 06:19:60.0±1.1, 7.11S×129.73E, h123km±12km, mb4.4/9, Error ellipse: s-maj=12.4km s-min=10.5km az=64.0*
*DJA **16** 06:20:01.1±0.2, 7.52S×13.06E±0.05°, h166km±7km, M4.4/6, mB5.4/2, mb4.3/6, MLv4.5/4, Mw(mB)4.9/2*
ISC 16 06:20:01.7±0.5, 7.02S±0.05×129.69E±0.04, *h*150km, n38, σ2s06/40, mb4.2/14, Banda Sea

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SAUI	**Saumlaki**	**1.86**	**121**	P	**Pn**	**06 20 35.7**	**+0.5**
SAUI				S	**Sn**	**06 21 01.7**	**+0.8**
BNDI	**Bandanaira**	**2.49**	**5**	P	**Pn**	**06 20 42.5**	**-0.3**
MSAI	**Masohi**	**3.73**	**348**	P	**Pn**	**06 20 59.4**	**+0.9**
NLAI	**Namlea**	**4.56**	**325**	P	**Pn**	**06 21 08.8**	**-0.5**
FAKI	**Fak Fak**	**4.81**	**32**	P	**Pn**	**06 21 11.5**	**-1.1**
FAKI				S	**Sn**	**06 22 04.7**	**-3.2**
FAKI	**Fak Fak**	**4.81**	**32**	*e*Pn	**Pn**	**06 21 11.1**	**-1.5**
FAKI				*e*Sn	**Sn**	**06 22 05.7**	**-2.3**
KMPI	**Kaimana, Papua**	**5.21**	**50**	P	**Pn**	**06 21 18.0**	**+0.1**
	106nm,0.8s,3μm						
KMPI				S	**Sn**	**06 22 13.4**	**-4.0**
	106nm,0.8s,3μm						
SOEI	**Soe**	**6.01**	**243**	P	**Pn**	**06 21 28.9**	**+0.2**
SOEI	**Soe**	**6.01**	**243**	*e*Pn	**Pn**	**06 21 28.6**	**-0.2**
	38nm,0.6s						
SOEI				*e*Sn	**Sn**	**06 22 34.5**	**-2.3**
SANI	**Sanana**	**6.17**	**323**	P	**Pn**	**06 21 33.3**	**+2.6**
SWI	**Sorong**	**6.32**	**14**	P	**Pn**	**06 21 31.4**	**-1.3**
BATI	**Baumata**	**6.75**	**242**	P	**Pn**	**06 21 37.1**	**-1.3**
	10nm,0.3s,baz=113,slow=24,SNR=13						
BATI				S	**Sn**	**06 22 48.4**	**-5.8**
	20nm,0.3s,baz=84,slow=23,SNR=16						
BATI	**Baumata**	**6.75**	**242**	P	**Pn**	**06 21 37.8**	**-0.6**
	28nm,1.4s						
BATI				S	**Sn**	**06 22 49.8**	**-4.4**
	28nm,1.4s						
FITZ	**Fitzroy Crossi**	**11.70**	**199**	P	Pn	06 22 40.4	-3.7
	3.9nm,0.3s,baz=34,slow=12,SNR=66						
FITZ				S	Sn	06 24 41.3	-12
	5.7nm,0.3s,baz=72,slow=19,SNR=8.3						
FITZ	**Fitzroy Crossi**	**11.70**	**199**	*e*Pn	Pn	06 22 40.3	-3.7
FITZ				*e*Sn	Sn	06 24 41.1	-12
FITZ				S	Sn	06 24 41.3	-12
PLAI	**Plampang**	**11.94**	**261**	P	**Pn**	**06 22 44.6**	**-2.6**
TWSI	**Taliwang, Sumb**	**12.80**	**262**	P	**Pn**	**06 22 58.3**	**-0.1**
WRAB	**Tennant Creek**	**13.61**	**161**	*e*Pn	Pn	06 23 04.8	-3.9
	10nm,0.6s						
WRAB				*e*Sn	Sn	06 25 26.7	-13
WRA	**Warramunga Arr**	**13.61**	**161**	P	Pn	06 23 04.7	-4.0
	2.6nm,0.3s,baz=338,slow=13,SNR=54						
WRA				S	Sn	06 25 26.4	-13
	9.8nm,0.3s,baz=333,slow=23,SNR=10						
COEN	**Coen**	**14.94**	**119**	*e*Pn	**P**	**06 23 25.9**	**-1.4**
COEN				*e*Sn	Sn	06 26 00.5	-11
ASAR	**Alice Springs**	**17.04**	**167**	P	**Pn**	**06 23 49.9**	**-1.2**
	2.1nm,0.3s,baz=340,slow=9.6,SNR=88						
ASAR				S	S	06 26 46.3	-14
	1.0nm,0.3s,baz=339,slow=16,SNR=10						
MBWA	**Marble Bar**	**17.04**	**213**	*e*P	**Pn**	**06 23 51.7**	**+0.6**
	5.9nm,0.7s						
MBWA				*e*S	S	06 26 42.0	-19
PCJI	**Pacitan**	**18.39**	**265**	P	**P**	**06 24 03.9**	**-1.4**
CISI	**Cisompet, Garu**	**21.70**	**267**	*e*P	**P**	**06 24 40.3**	**-0.8**
	26nm,0.7s						
STKA	**Stephens Creek**	**27.11**	**157**	P	**P**	**06 25 32.9**	**+2.3**
	3.0nm,0.4s,baz=323,slow=8.7,SNR=8.5						
PSI	**Prapat**	**32.22**	**287**	P	**P**	**06 26 17.9**	**+1.7**
	11nm,0.8s,baz=123,slow=3.9,SNR=12						
CMAR	**Chiang Mai Arr**	**39.51**	**310**	P	**P**	**06 27 19.6**	**+1.6**
	2.3nm,0.5s,baz=137,slow=7.0,SNR=10						
CMAR				ScP	**S**	**06 33 11.6**	**+2.2**
	0.2nm,0.3s,baz=128,slow=4.2,SNR=4.7						
CHTO	**Chiang Mai**	**39.73**	**311**	*e*P	**P**	**06 27 20.5**	**+0.7**
	5.8nm,0.8s						
MKAR	**Makanchi Array**	**68.08**	**327**	P	**P**	**06 30 47.0**	**+1.8**
	2.3nm,0.4s,baz=120,slow=7.6,SNR=33						
AAK	**Ala-Archa**	**70.36**	**320**	*e*P	P	06 31 02.5	+3.0
	0.9nm,0.3s						
ZALV	**Zalesovo Beam**	**71.47**	**334**	P	**P**	**06 31 06.4**	**+0.7**
	1.4nm,0.5s,baz=123,slow=5.8,SNR=8.6						
KURBB	**Kurchatov Arra**	**72.37**	**329**	P	**P**	**06 31 12.8**	**+1.6**
	1.1nm,0.4s,baz=129,slow=4.9,SNR=10						
KURK	**Kurchatov**	**72.38**	**329**	*e*P	**P**	**06 31 11.5**	**+0.3**
	2.8nm,0.5s						
KKAR	**Karatay Array**	**73.16**	**319**	*e*P	**P**	**06 31 17.7**	**+1.6**
	1.0nm,0.5s						
BVAR	**Borovoye Array**	**77.92**	**328**	P	**P**	**06 31 44.3**	**+1.4**
	0.5nm,0.5s,baz=134,slow=4.3,SNR=4.9						
QSPA	**South Pole Qui**	**82.95**	**180**	*e*P	P	06 32 16.3	+6.5
	26nm,1.5s						
ARU	**Arti**	**85.56**	**328**	P	**P**	**06 32 24.7**	**+1.8**
	2.0nm,0.3s,baz=100,slow=3.6,SNR=4.5						
TORD	**Torodi Ar. Bea**	**128.51**	**281**	PKP	**PKPdf**	**06 38 54.4**	**+2.5**
	0.3nm,0.6s,baz=63,slow=1.5,SNR=4.0						

*SJA **16** 06:21:15.4±0.4, 28.41S×71.47W, h252km±64km, ML4.1, MW4.0*
*GUC **16** 06:21:19.9±0.3, 28.73S×71.38W, h42km±1km, ML4.2*
ISC 16 06:21:15.9±3.3, 28.69S±0.04×71.55W±0.10, *h*1km±19km, n16, σ2s88/25, Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
VACH	**Vallenar**	**0.70**	**81**	*e*P	**Pb**	**06 21 31.8**	**+0.9**
VACH				*e*S	**Sb**	**06 21 40.6**	**-0.5**
LCO	**Las Campanas**	**0.81**	**114**	*i* P	**Pb**	**06 21 33.6**	**+0.7**
LCO				*e*S	**Sb**	**06 21 43.3**	**-1.2**
LCO				IAML		06 21 45.6	
	comp=Z,2μm,0.3s						
TLL	**Tololo Astrono**	**1.61**	**156**	*e*P	**Pn**	**06 21 46.1**	**+0.3**
TLL				*e*S	**Sn**	**06 22 06.0**	**-1.3**
TLL				IAML		06 22 09.6	
	comp=E,5μm,0.6s						
CPCH	**Copiapo**	**1.69**	**39**	*e*P	**Pn**	**06 21 46.1**	**-0.5**
CPCH				*e*S	**Sn**	**06 22 08.1**	**-0.9**
CDCH	**Caldera**	**1.73**	**22**	*e*P	**Pn**	**06 21 48.2**	**+1.0**
CDCH				*e*S	**Sn**	**06 22 09.7**	**-0.2**
AGUA	**GUANDACOL**	**2.79**	**107**	*e*P	**Pb**	**06 22 06.8**	**+0.2**
AGUA				*e*S	**Sg**	**06 22 44.3**	**-1.4**
AMOG	**MOGNA**	**3.48**	**131**	*e*P	**Pn**	**06 22 15.0**	**+3.8**
AMOG				*e*S	**Sb**	**06 22 59.9**	**-1.2**
RTLS	**Leoncito**	**3.66**	**148**	*e*P	**Pn**	**06 22 18.2**	**+4.3**
RTLS				*e*S	**Sb**	**06 23 06.2**	**-0.5**
RTLL	**Cerro Villicun**	**3.75**	**135**	*e*P	**Pn**	**06 22 18.2**	**+3.3**
RTLL				*e*S	**Sb**	**06 23 03.9**	**-5.0**
SJA	**San Juan**	**3.84**	**138**	IAML		06 23 20.1	
	comp=Z,98nm,0.4s						
RTCV	**Cerro Valdivia**	**4.10**	**141**	*e*P	**Pn**	**06 22 23.3**	**+3.5**
RTCV				*e*S	**Sb**	**06 23 13.7**	**-5.3**
ARCO	**CERRO ARCO**	**4.71**	**152**	*e*P	**Pn**	**06 22 32.0**	**+3.7**
ARCO				*e*S	**Sb**	**06 23 31.4**	**-5.4**
ARCO				IAML		06 23 57.1	
	comp=Z,79nm,0.7s						
CYA	**Choya**	**5.06**	**89**	*e*P	**Pn**	**06 22 35.6**	**+2.6**
	baz=249,slow=10						
CYA				IAML		06 22 39.4	
	comp=Z,71nm,0.2s						
CYA				*e*S	**Sn**	**06 23 33.5**	**+1.4**
FSA	**Cafayete**	**5.57**	**64**	*e*P	Pn	06 22 46.6	+6.5
MRA	**San Martin**	**6.25**	**128**	*i* P	**Pn**	**06 22 51.2**	**+1.8**
MRA				IAML		06 24 11.1	
	comp=Z,50nm,0.5s						
AZAP	**Zapla**	**7.31**	**54**	IAML		06 23 39.2	
	comp=Z,11nm,0.3s						

IDC 16 06:21:24.8±7.0, 18.57S×177.62E, h588km±66km, mb3.8/2, mb1 3.8/3, mb1mx2.9/41, mbtmp4.7/3, Error ellipse: s-maj=81.3km s-min=62.6km az=148.0, Fiji Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
DZM	**Mont Dzumac**	**11.04**	**250**	P	P	06 23 53.2	-0.7
	0.4nm,0.3s,baz=91,slow=21,SNR=5.5						
CTA	**Charters Tower**	**29.61**	**262**	P	P	06 26 45.9	+1.9
	11nm,0.4s,baz=92,slow=12,SNR=7.2						
WRA	**Warramunga Arr**	**40.80**	**261**	P	P	06 28 14.7	-1.8
	4.8nm,0.4s,baz=102,slow=8.4,SNR=4.4						
BVAR	**Borovoye Array**	**114.96**	**320**	PKP	PKPdf	06 38 58.0	-1.3
	0.5nm,0.3s,baz=120,slow=2.7,SNR=4.4						
ARCES	**ARCESS Array B**	**126.25**	**348**	PKP	PKPdf	06 39 20.2	-0.4
	6.4nm,1.1s,baz=64,slow=2.1,SNR=5.2						
FINES	**FINESS Array B**	**132.72**	**342**	PKhKP	PKPpre	06 39 24.2	
	0.4nm,0.6s,baz=64,slow=4.4,SNR=3.5						
FINES				PKP	PKPdf	06 39 33.5	+0.5
	0.6nm,0.3s,baz=51,slow=0.8,SNR=6.4						
AKASG	**Malin Array Be**	**139.29**	**329**	PKP	PKPdf	06 39 44.6	-0.9
	0.9nm,0.4s,baz=44,slow=4.2,SNR=9.7						
BRTR	**Keskin Array B**	**142.49**	**312**	PKP	PKPdf	06 39 52.4	+0.6
	1.2nm,0.8s,baz=157,slow=5.0,SNR=5.3						
TORD	**Torodi Ar. Bea**	**173.33**	**217**	PKPab	PKPab	06 42 00.6	-0.1
	0.8nm,1.0s,baz=244,slow=3.0,SNR=3.5						

JMA 16 06:24:47.9±0.1, 32.69N×136.09E, *h*40km±2km, M3.6, 5C, Southeast of Shikoku

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JWZ	**Kozaga**	**0.90**	**340**	⇑P	Pn	06 25 04.2	+0.2
JWZ				S	Sn	06 25 15.6	-0.2
TTO1	**TONANKAI O.B.S**	**1.10**	**32**	P	Pn	06 25 07.2	+0.7
TTO1				S	Sn	06 25 21.4	+1.1
TTO2	**TONANKAI O.B.S**	**1.30**	**37**	P	Pn	06 25 10.2	+0.8
TTO2				S	Sn	06 25 27.5	+2.1
JWM	**Minabe**	**1.31**	**332**	⇑P	Pn	06 25 10.6	+0.9
JWM				S	Sn	06 25 26.2	+0.2
JKN2	**Miekihoku**	**1.55**	**6**	⇑P	Pn	06 25 13.8	+0.8
JKN2				S	Sn	06 25 32.2	+0.2
JWY	**Kouya**	**1.58**	**345**	⇑P	Pn	06 25 14.8	+1.3
JWY				S	Sn	06 25 34.1	+1.3
TTO3	**TONANKAI O.B.S**	**1.60**	**43**	P	Pn	06 25 13.9	+0.3
TTO3				S	Sn	06 25 34.4	+1.4
JAI	**Aioi**	**1.76**	**309**	P	Pn	06 25 17.0	+1.1
JAI				S	Sn	06 25 37.2	+0.1
JIE	**Ise**	**1.77**	**17**	P	Pn	06 25 17.1	+1.0
JIE				S	Sn	06 25 37.5	+0.1
TK02	**Tokai 2**	**1.88**	**48**	S	Sn	06 25 38.9	-0.7
JHE	**Heguri**	**1.99**	**350**	P	Pn	06 25 20.7	+1.7
JHE				S	Sn	06 25 44.6	+1.9
JAJ2	**Tsuna**	**2.00**	**330**	⇑P	Pn	06 25 21.0	+1.9
JAJ2				S	Sn	06 25 44.8	+1.9
TSUJ	**Tsu 2**	**2.03**	**8**	P	Pn	06 25 20.6	+1.0
TSUJ				S	Sn	06 25 44.8	+1.0
JMN	**Monobe**	**2.12**	**300**	P	Pn	06 25 22.0	+1.1
JMN				S	Sn	06 25 46.2	+0.1
TK04	**Tokai 4**	**2.25**	**41**	S	Sn	06 25 48.9	-0.2
MAT	**Matsushiro**	**4.22**	**24**	P	Pn	06 25 57.8	+8.1
MAT				S	Sn	06 26 38.5	+0.7

*ISCJB **16** 06:26:48.6±0.4, 39.12N±0.02×29.09E±0.02, h9km±4km, Error ellipse: s-maj=4.3km s-min=4.2km az=3.2*
*CSEM **16** 06:26:48.6±0.1, 39.12N×29.08E, h12km, MD2.8, Error ellipse: s-maj=2.1km s-min=1.8km az=79.0*
*ISK **16** 06:26:48.1, 39.11N×29.09E, h12km, MD2.7*
*DDA **16** 06:26:48.6, 39.12N×29.05E, h7km, Md2.8*
ISC 16 06:26:48.4±1.0, 39.12N±0.02×29.09E±0.02, *h*11km±9km, n37, σ0s38/54, Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
GDZ	**Gediz**	**0.30**	**96**	*i* P	**Pb**	**06 26 55.8**	**-0.2**
GDZ				*i* S	**Sb**	**06 27 00.7**	**-0.3**
GDZ	**Gediz**	**0.30**	**96**	P	**Pb**	**06 26 55.8**	**-0.2**
GDZ				S	**Sb**	**06 27 00.7**	**-0.3**
DEMI	**Demirci**	**0.30**	**255**	*i* P	**Pg**	**06 26 55.0**	**+0.4**
DEMI				*i* S	**Sg**	**06 26 58.4**	**-0.4**
DEMI	**Demirci**	**0.30**	**255**	P	**Pg**	**06 26 55.0**	**+0.4**
DEMI				S	**Sg**	**06 26 58.4**	**-0.4**
TVSB	**Tavsanli**	**0.43**	**41**	*e*PG	**Pg**	**06 26 57.2**	**+0.1**
TVSB				*e*SG	**Sb**	**06 27 04.1**	**-0.7**
TVSB	**Tavsanli**	**0.43**	**41**	*e*Pg	**Pg**	**06 26 57.2**	**+0.1**
TVSB				*e*Sg	**Sb**	**06 27 04.1**	**-0.7**
DURS	**Dursunbey**	**0.68**	**315**	*i* P	**Pb**	**06 27 02.5**	**+0.1**
DURS				*i* S	**Sg**	**06 27 10.8**	**+0.2**
DURS	**Dursunbey**	**0.68**	**315**	P	**Pb**	**06 27 02.5**	**+0.1**
DURS				S	**Sg**	**06 27 10.8**	**+0.2**
KULA	**Kula-Manisa**	**0.69**	**209**	*e*PG	**Pg**	**06 27 02.0**	**+0.1**
KULA				*e*SG	**Sb**	**06 27 11.8**	**-0.4**
KULA	**Kula-Manisa**	**0.69**	**209**	*e*Pg	**Pg**	**06 27 02.0**	**+0.1**
KULA				*e*Sg	**Sb**	**06 27 11.8**	**-0.4**
KHAL	**Karahalli**	**0.81**	**157**	*i* P	**Pb**	**06 27 04.8**	**+0.2**
KHAL				*i* S	**Sb**	**06 27 15.9**	**+0.3**
KHAL	**Karahalli**	**0.81**	**157**	P	**Pb**	**06 27 04.8**	**+0.2**
KHAL				S	**Sb**	**06 27 15.9**	**+0.3**
KHL	**Karahalli**	**0.86**	**157**	*e*PG	**Pg**	**06 27 04.9**	**-0.2**
KHL	**Karahalli**	**0.86**	**157**	*e*Pg	**Pg**	**06 27 04.9**	**-0.2**
ORLT	**Orhaneli**	**0.94**	**351**	*e*PG	**Pg**	**06 27 06.5**	**0.0**
ORLT	**Orhaneli**	**0.94**	**351**	*e*Pg	**Pg**	**06 27 06.5**	**0.0**
ULDT	**Uludag**	**1.02**	**2**	*i* P	**Pb**	**06 27 08.4**	**+0.2**
ULDT				*i* S	**Sb**	**06 27 21.9**	**+0.2**
ULDT	**Uludag**	**1.02**	**2**	P	**Pb**	**06 27 08.4**	**+0.2**
ULDT				S	**Sb**	**06 27 21.9**	**+0.2**
BALB	**Balikesir**	**1.07**	**299**	*e*PG	**Pg**	**06 27 09.2**	**+0.1**
BALB	**Balikesir**	**1.07**	**299**	*e*Pg	**Pg**	**06 27 09.2**	**+0.1**
IGD	**Bursa**	**1.14**	**4**	*i* P	**Pb**	**06 27 09.9**	**-0.3**
IGD				*i* S	**Sn**	**06 27 26.8**	**+0.8**
CAVI	**Cavuskoy**	**1.22**	**28**	*e*PN	**Pn**	**06 27 11.5**	**0.0**
CAVI	**Cavuskoy**	**1.22**	**28**	*e*Pn	**Pn**	**06 27 11.5**	**0.0**
IZI	**Iznik**	**1.25**	**13**	*e*PN	**Pn**	**06 27

MK31	**Makanchi Array**	**7.84**	**201**	⇑Pn	Pn	06 37 39.4 +0.9
	0.2nm,0.4s,baz=26,slow=14,SNR=8.1					
MK31				⇑Sn	Sn	06 39 07.7 -0.2
	1.2nm,0.8s					
MK31				⇓Lg	Lg	06 39 48.1
	2.8nm,1.1s,baz=28,slow=32,SNR=3.6					
MKAR	**Makanchi Array**	**7.84**	**201**	Pn	Pn	06 37 39.5 +1.0
	0.3nm,0.3s,baz=23,slow=14,SNR=8.1					
MKAR				Sn	Sn	06 39 08.3 +0.5
	0.1nm,0.3s,baz=27,slow=25,SNR=5.5					
MKAR				Lg	Lg	06 39 53.0
	0.1nm,0.3s,baz=30,slow=29,SNR=3.8					

WEL 16 06:35:54.8±0.2, 44°50S×168°34E, h5km, ML2.9/9, 2C-3D, Error ellipse: s-maj=2.4km s-min=1.9km az=90.0, South Island

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MSZ	**Milford Sound**	**0.34**	**239**	⇑PG	Pg	06 36 01.8	+0.4
MSZ				SG	Sg	06 36 06.8	+0.8
MSZ				AML	AML	06 36 07.0	
MSZ				AML	AML	06 36 07.0	
MSZ				AML	AML	06 36 07.3	
JCZ	**Jackson Bay**	**0.53**	**37**	PG	Pg	06 36 04.9	-0.1
JCZ				SG	Sg	06 36 12.4	+0.4
JCZ				AML	AML	06 36 15.5	
WKZ	**Wanaka**	**0.58**	**124**	⇓P*	Pg	06 36 06.3	+0.2
WKZ				SG	Sg	06 36 13.6	-0.1
WKZ				AML	AML	06 36 14.8	
WKZ				AML	AML	06 36 15.7	
WKZ				AML	AML	06 36 15.7	
MLZ	**Mavora Lakes**	**0.88**	**190**	⇑P*	Pg	06 36 11.2	-0.6
MLZ				AML	AML	06 36 27.1	
MLZ				AML	AML	06 36 28.1	
EAZ	**Earnscleugh**	**1.01**	**137**	P*	Pg	06 36 13.5	-0.6
EAZ				AML	AML	06 36 32.8	
EAZ				AML	AML	06 36 32.8	
EAZ				AML	AML	06 36 32.9	
EAZ				AML	AML	06 36 32.9	
DCZ	**Deep Cove**	**1.28**	**221**	P*	Pn	06 36 17.7	-1.6
DCZ				AML	AML	06 36 36.3	
DCZ				AML	AML	06 36 36.4	
LBZ	**Lake Benmore**	**1.33**	**86**	⇓P*	Pb	06 36 20.1	0.0
LBZ				AML	AML	06 36 41.1	
LBZ				AML	AML	06 36 42.3	
WHZ	**Wether Hill Ro**	**1.42**	**191**	⇓PN	Pn	06 36 20.7	-0.6
FOZ	**Fox Glacier**	**1.44**	**48**	PN	Pn	06 36 21.1	-0.3
TUZ	**Tuapeka**	**1.72**	**148**	PN	Pn	06 36 26.1	+0.7
TUZ				AML	AML	06 36 50.3	
TUZ				AML	AML	06 36 51.1	
ODZ	**Otahua Downs**	**1.73**	**109**	PN	Pb	06 36 26.4	-0.7
PYZ	**Puysegur Point**	**2.04**	**214**	PN	Pn	06 36 30.6	+0.9

ISK 16 06:36:12.8, 37°83N×29°13E, h22km, MD2.6
CSEM 16 06:36:13.0±0.3, 37°76N×29°16E, h8km, MD2.6, Error ellipse: s-maj=8.6km s-min=4.7km az=127.0
DDA 16 06:36:13.7, 37°85N×29°09E, h7km, Md2.4
ISC 16 06:36:13.5±1.0, 37°80N±0°03×29°14E±0°04, h14km±6km, n19, σ1§22/29, Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
DENT	**Denizli**	**0.09**	**242**	*e*PG	**Pg**	**06 36 16.4**	**-0.3**
DENT				*e*SG	**Sg**	**06 36 21.3**	**+2.5**
DENT	**Denizli**	**0.09**	**242**	*e*Pg	**Pg**	**06 36 16.4**	**-0.3**
UZP	**Denizli**	**0.23**	**7**	*i* P	**Pg**	**06 36 18.1**	**-0.7**
UZP				*i* S	**Sg**	**06 36 21.1**	**-1.2**
KHL	**Karahalli**	**0.61**	**30**	*e*PG	**Pb**	**06 36 25.6**	**-0.3**
KHL	**Karahalli**	**0.61**	**30**	*e*Pg	**Pb**	**06 36 25.6**	**-0.3**
KHAL	**Karahalli**	**0.64**	**26**	*i* P	**Pg**	**06 36 25.0**	**-1.0**
KHAL				*i* S	**Sb**	**06 36 34.1**	**-1.1**
KHAL	**Karahalli**	**0.64**	**26**	P	**Pg**	**06 36 25.0**	**-1.0**
KHAL				S	**Sb**	**06 36 34.2**	**-1.1**
KULA	**Kula-Manisa**	**0.81**	**332**	*e*PG	**Pb**	**06 36 28.7**	**-0.7**
KULA				*e*SG	**Sb**	**06 36 40.0**	**-0.1**
KULA	**Kula-Manisa**	**0.81**	**332**	*e*Pg	**Pb**	**06 36 28.7**	**-0.7**
KULA				*e*Sg	**Sb**	**06 36 40.0**	**-0.1**
YER	**Yerkesik**	**0.95**	**226**	*e*PG	**Pg**	**06 36 31.3**	**-0.6**
YER	**Yerkesik**	**0.95**	**226**	*e*Pg	**Pg**	**06 36 31.3**	**-0.6**
AYDB	**Zeytinkoy-Aydi**	**1.00**	**279**	*e*PG	**Pg**	**06 36 32.0**	**-0.8**
AYDB	**Zeytinkoy-Aydi**	**1.00**	**279**	*e*Pg	**Pg**	**06 36 32.0**	**-0.8**
AYDN	**Tasoluk**	**1.01**	**263**	*i* P	**Pn**	**06 36 33.3**	**+0.1**
AYDN				*i* S	**Sg**	**06 36 45.6**	**-0.6**
AYDN	**Tasoluk**	**1.01**	**263**	P	**Pn**	**06 36 33.3**	**+0.1**
AYDN				S	**Sg**	**06 36 45.6**	**-0.6**
FETY	**Fethiye**	**1.16**	**182**	*e*PN	**Pb**	**06 36 34.6**	**-0.7**
FETY	**Fethiye**	**1.16**	**182**	*e*Pn	**Pb**	**06 36 34.6**	**-0.7**
GDZ	**Gediz**	**1.32**	**12**	*i* P	**Pg**	**06 36 38.8**	**-0.1**
GDZ				*i* S	**Sn**	**06 36 58.1**	**+3.1**
GDZ	**Gediz**	**1.32**	**12**	P	**Pg**	**06 36 38.8**	**-0.1**
GDZ				S	**Sn**	**06 36 58.1**	**+3.1**

IDC 16 06:49:23.2±3.0, 24°11S×179°82W, h479km±27km, mb3.4/6, mb1 3.6/6, mb1mx3.3/34, mbtmp4.3/6, Error ellipse: s-maj=28.0km s-min=21.4km az=55.0
ISC 16 06:49:27.1±1.0, 24°2S±0°2×179°9W±0°2, h518km, n15, σ1§53/17, mb4.0/6, South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
DZM	**Mont Dzumac**	**12.78**	**277**	P	**P**	**06 52 14.5**	**+0.5**
	0.6nm,0.3s,baz=342,slow=17,SNR=6.4						
STKA	**Stephens Creek**	**34.71**	**249**	P	**P**	**06 55 32.9**	**-0.6**
	3.5nm,0.5s,baz=94,slow=10,SNR=13						
ASAR	**Alice Springs**	**42.10**	**261**	P	**P**	**06 56 32.6**	**-1.1**
	2.9nm,0.5s,baz=93,slow=6.5,SNR=51						
ASAR				ScP	**ScP**	**07 01 19.6**	**+2.0**
	0.3nm,0.4s,baz=116,slow=4.2,SNR=5.0						
WRA	**Warramunga Arr**	**42.51**	**266**	P	**P**	**06 56 35.5**	**-1.4**
	8.0nm,0.5s,baz=97,slow=8.4,SNR=144						
WRA				ScP	**ScP**	**07 01 23.4**	**+4.2**
	1.6nm,1.3s,baz=105,slow=4.5,SNR=6.0						
VNDA	**Vanda**	**54.05**	**185**	P	**P**	**06 58 02.5**	**+0.5**
	0.4nm,0.8s,baz=27,slow=6.8,SNR=2.7						
MAW	**Mawson**	**77.47**	**200**	P	**P**	**07 00 28.8**	**+0.4**
	0.5nm,0.5s,baz=194,slow=5.6,SNR=7.8						
CMAR	**Chiang Mai Arr**	**89.76**	**290**	P	**P**	**07 01 31.8**	**+1.3**
	1.2nm,0.8s,baz=120,slow=3.0,SNR=7.5						
MKAR	**Makanchi Array**	**112.47**	**313**	PKiKP	**PKiKP**	**07 07 02.6**	**-1.5**
	0.1nm,0.4s,baz=77,slow=0.6,SNR=4.6						
BVAR	**Borovoye Array**	**120.78**	**319**	PKP	**PKPdf**	**07 07 19.1**	**-0.7**
	0.7nm,0.3s,baz=128,slow=3.0,SNR=7.6						
AKTO	**Aktyubinsk**	**128.63**	**316**	PKP	**PKPdf**	**07 07 33.8**	**-1.2**
	0.5nm,0.6s,baz=346,slow=4.2,SNR=4.1						
ARCES	**ARCESS Array B**	**132.25**	**348**	PKP	**PKPdf**	**07 07 41.7**	**+0.5**
	2.9nm,0.9s,baz=75,slow=1.5,SNR=6.2						
FINES	**FINESS Array B**	**138.81**	**341**	PKhKP	PKPpre	07 07 44.4	
	0.6nm,0.5s,baz=27,slow=4.7,SNR=5.0						
FINES				PKP	**PKPdf**	**07 07 53.2**	**-0.3**
	0.4nm,0.3s,baz=107,slow=1.9,SNR=7.8						
AKASG	**Malin Array Be**	**145.32**	**327**	PKPbc	**PKPdf**	**07 08 05.6**	**+0.2**
	2.2nm,0.4s,baz=46,slow=4.0,SNR=12						
BRTR	**Keskin Array B**	**147.88**	**307**	PKPbc	**PKPbc**	**07 08 13.7**	**-0.4**
	1.3nm,0.6s,baz=154,slow=6.1,SNR=8.4						
TORD	**Torodi Ar. Bea**	**168.87**	**188**	PKPab	**PKPab**	**07 09 48.4**	**-1.0**
	0.3nm,0.7s,baz=164,slow=5.8,SNR=2.6						

JMA 16 06:54:08.7±0.2, 39°94N×143°69E, h10km, M3.5, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JTH	**Tanohata**	**1.40**	**271**	P	Pn	06 54 34.5	+0.2
JTH				*e*S	Sn	06 54 52.7	-0.2
MIYJ	**Miyakonagasawa**	**1.49**	**256**	P	Pn	06 54 35.7	+0.2
MIYJ				*e*S	Sb	06 54 55.2	-0.1
JANG	**Nango**	**1.72**	**285**	P	Pn	06 54 39.0	+0.3
JOM	**Ohasama**	**1.91**	**257**	P	Pn	06 54 42.2	+0.9
JOM				*e*S	Sb	06 55 06.9	-0.5
JMK	**Ichinoseki**	**2.15**	**243**	P	Pn	06 54 45.0	+0.4
JTM	**Tenmabayashi**	**2.17**	**294**	P	Pn	06 54 46.4	+1.5
JRG	**Rokugo**	**2.42**	**258**	P	Pn	06 54 50.1	+1.8
JCH	**Churui**	**2.68**	**355**	*e*S	Sn	06 55 25.5	+1.0
JAR	**Ashorobuto**	**3.35**	**1**	P	Pn	06 55 03.0	+1.8

ISCJB 16 07:04:35.9±1.3, 9°92S±0°04×107°52E±0°03, h15km±10km, mb4.3/22, MS3.4/3, Error ellipse: s-maj=6.6km s-min=5.2km az=19.8
IDC 16 07:04:36.6±0.8, 9°66S×107°49E, h0km, mb4.3/17, mb1 4.3/19, mb1mx4.1/50, mbtmp4.2/19, ML4.0/2, MS3.5/4, Ms1 3.5/4, ms1mx3.1/37, Error ellipse: s-maj=36.6km s-min=13.7km az=53.0
DJA 16 07:04:36.9±0.3, 10°S±3°×107°7E±°, h10km, M4.8/27, mb5.0/10, mB5.3/9, MLv4.9/27, Mw(mB)4.7/9
NEIC 16 07:04:38.8±3.1, 9.76S×107.45E, h16km±19km, mb4.5/8, Error ellipse: s-maj=10.6km s-min=8.3km az=207.0
ISC 16 07:04:40.1±1.8, 9.75S±0.06×107.59E±0.04, h24km±12km, n66, σ1§44/81, mb4.3/22, MS3.4/3, South of Jawa

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
XMIS	**Christmas Isla**	**2.04**	**249**	*e*Pn	Pn	07 05 07.9	-5.0
XMIS				*e*Sn	Sn	07 05 29.3	-8.4
CMJI	**Cimerak**	**2.13**	**24**	P	**Pn**	**07 05 14.3**	**+0.2**
CMJI				S	**Sb**	**07 05 44.7**	**+0.8**
CISI	**Cisompet, Garu**	**2.19**	**6**	P	**Pn**	**07 05 15.9**	**+0.9**
CISI				S	**Sb**	**07 05 45.8**	**0.0**
CISI	**Cisompet, Garu**	**2.19**	**6**	*e*Pn	**Pn**	**07 05 15.3**	**+0.3**
CISI				*e*Sn	**Sn**	**07 05 42.4**	**+1.1**
CNJI	**Cibinong**	**2.46**	**349**	P	**Pn**	**07 05 19.0**	**+0.3**
CNJI				S	**Sn**	**07 05 49.7**	**+1.6**
KPJI	**Karang Pucung**	**2.74**	**29**	P	**Pn**	**07 05 24.7**	**+2.2**
KPJI				S	**Sb**	**07 06 00.9**	**-0.7**
LEM	**Lembang**	**2.90**	**1**	Pn	**Pb**	**07 05 32.3**	**+1.0**
	123nm,0.3s,baz=11,slow=7.7,SNR=45						
LEM				Sn	**Sb**	**07 06 06.3**	**-0.1**
	78nm,0.3s,baz=168,slow=21,SNR=4.3						
LEM				LR	LR	07 06 55.0	
	comp=Z,713nm,20.0s,baz=232,slow=49						
LEM	**Lembang**	**2.90**	**1**	P	**Pn**	**07 05 26.7**	**+1.8**
SKJI	**Sukabumi**	**2.91**	**339**	P	**Pn**	**07 05 25.7**	**+0.8**
SKJI				S	**Sn**	**07 06 00.6**	**+1.5**
DBJI	**Dramaga**	**3.28**	**345**	P	**Pn**	**07 05 31.0**	**+1.0**
DBJI				S	**Sb**	**07 06 13.8**	**-3.4**
UGM	**Wanagama**	**3.42**	**58**	P	**Pn**	**07 05 31.6**	**-0.4**
UGM				S	**Sn**	**07 06 10.6**	**-1.2**
CGJI	**Cibinong**	**3.64**	**329**	P	**Pn**	**07 05 34.7**	**-0.2**
PCJI	**Pacitan**	**3.87**	**67**	P	**Pn**	**07 05 38.9**	**+0.9**
PCJI				S	**Sn**	**07 06 21.6**	**-1.0**
SMRI	**Semarang**	**3.89**	**47**	P	**Pn**	**07 05 39.7**	**+1.3**
SMRI	**Semarang**	**3.89**	**47**	*e*Pn	**Pn**	**07 05 40.9**	**+2.5**
NGJI	**Ngawi**	**4.50**	**59**	P	**Pn**	**07 05 48.2**	**+1.5**
PWJI	**Pagerwojo**	**4.50**	**68**	P	**Pn**	**07 05 44.9**	**-1.9**
PWJI				S	**Sn**	**07 06 39.1**	**+0.7**
UWJI	**Ujung Watu**	**4.69**	**45**	P	**Pn**	**07 05 51.2**	**+1.9**
UWJI				S	**Sn**	**07 06 42.9**	**-0.1**
KASI	**Kota Agung**	**5.20**	**324**	P	**Pn**	**07 05 55.8**	**-0.5**
	69nm,0.8s,3µm0.7nm						
KASI				S	**Sn**	**07 06 51.9**	**-3.6**
	69nm,0.8s,3µm0.7nm						
LWLI	**Liwa**	**5.86**	**323**	P	**Pn**	**07 06 05.1**	**-0.5**
	109nm,0.6s,9µm1.3nm						
LWLI				S	**Sn**	**07 07 12.8**	**+0.7**
	109nm,0.6s,9µm1.3nm						
GMJI	**Gumukmas**	**5.96**	**76**	P	**Pn**	**07 06 07.2**	**+0.3**
	56nm,0.8s,2µm0.3nm						
MDSI	**Maura Dua**	**6.23**	**327**	P	**Pn**	**07 06 09.2**	**-1.3**
	37nm,0.8s,1µm0.2nm						
JAGI	**Jajag, Banyuwa**	**6.60**	**79**	P	**Pn**	**07 06 14.2**	**-1.5**
	86nm,0.4s,2µm0.6nm						
JAGI				S	**Sn**	**07 07 27.4**	**-2.8**
	86nm,0.4s,2µm0.6nm						
JAGI	**Jajag, Banyuwa**	**6.60**	**79**	*e*Pn	**Pn**	**07 06 14.7**	**-1.0**
	79nm,0.5s						
JAGI				*e*Sn	**Sn**	**07 07 25.8**	**-4.4**
ABJI	**Asem Bagus**	**6.85**	**74**	P	**Pn**	**07 06 20.5**	**+1.5**
	113nm,0.6s,2µm0.5nm						
MNAI	**Manna**	**7.06**	**319**	P	**Pn**	**07 06 21.5**	**-0.4**
	138nm,1.1s,6µm0.8nm						
MNAI	**Manna**	**7.06**	**319**	*e*Pn	**Pn**	**07 06 19.7**	**-2.2**
MNAI				*e*Sn	**Sn**	**07 07 36.6**	**-4.8**
TWSI	**Taliwang, Sumb**	**9.23**	**85**	P	**Pn**	**07 06 51.2**	**-0.5**
	37nm,1.1s						
PLAI	**Plampang**	**10.10**	**86**	P	**Pn**	**07 07 02.3**	**-1.3**
COCO	**West Island**	**10.84**	**256**	*e*Pn	**Pn**	**07 07 13.0**	**-0.7**
PSI	**Prapat**	**15.16**	**325**	Pn	**Pn**	**07 08 11.7**	**-1.2**
	0.4nm,0.3s,baz=0.0,slow=20,SNR=3.3						
MBWA	**Marble Bar**	**16.29**	**136**	*e*P	Pn	07 08 21.4	-5.9
	27nm,1.2s						
FITZ	**Fitzroy Crossi**	**19.37**	**117**	P	**Pn**	**07 09 05.0**	**-0.5**
	0.5nm,0.3s,baz=329,slow=13,SNR=10						
FITZ	**Fitzroy Crossi**	**19.37**	**117**	*e*P	**Pn**	**07 09 05.8**	**+0.3**
	8.2nm,1.0s						
NWAO	**Narrogin (SRO)**	**24.73**	**160**	P	**P**	**07 10 00.1**	**+0.6**
	5.4nm,0.6s,baz=69,slow=0.1,SNR=3.7						
NWAO	**Narrogin (SRO)**	**24.73**	**160**	*e*P	**P**	**07 10 00.2**	**+0.6**
	134nm,1.9s						
FAKI	**Fak Fak**	**25.41**	**76**	*e*P	**P**	**07 10 04.8**	**-1.3**
	8.7nm,0.8s						
WRA	**Warramunga Arr**	**27.73**	**114**	P	**P**	**07 10 29.9**	**+3.0**
	3.1nm,0.8s,baz=285,slow=11,SNR=4.9						
ASAR	**Alice Springs**	**28.68**	**122**	P	**P**	**07 10 38.2**	**+2.8**
	0.8nm,0.5s,baz=302,slow=9.6,SNR=6.3						
ASAR				LR	LR	07 22 34.8	
	comp=Z,111nm,19.5s,baz=308,slow=37						
CMAR	**Chiang Mai Arr**	**29.30**	**343**	P	**P**	**07 10 41.7**	**+0.9**
	0.9nm,0.7s,baz=176,slow=7.9,SNR=9.7						
CMAR				LR	LR	07 25 04.2	
	comp=Z,82nm,18.6s,baz=190,slow=42						
STKA	**Stephens Creek**	**38.41**	**130**	P	**P**	**07 12 00.8**	**+1.1**
	2.7nm,0.6s,baz=310,slow=16,SNR=2.4						
STKA				LR	LR	07 28 43.6	
	comp=Z,57nm,18.8s,baz=330,slow=38						
LSA	**Lhasa**	**42.30**	**339**	*e*P	**P**	**07 12 33.2**	**+0.7**
	15nm,0.8s						
GUN	**Gumba**	**42.93**	**331**	*e*P	**P**	**07 12 38.1**	**+0.6**
GKN	**Gorkha**	**43.61**	**330**	*e*P	**P**	**07 12 43.0**	**+0.2**
KOLN	**Koldanda**	**43.94**	**329**	*e*P	**P**	**07 12 45.9**	**+0.4**
	9.0nm,0.4s						
PYUN	**Piuthan**	**44.52**	**328**	*e*P	**P**	**07 12 50.6**	**+0.4**
SONM	**Songino Array**	**57.34**	**359**	P	**P**	**07 14 25.6**	**-0.6**
	2.1nm,0.7s,baz=176,slow=8.5,SNR=6.6						
ULN	**Ulaanbaatar**	**57.36**	**360**	*e*P	**P**	**07 14 26.7**	**+0.3**
	1.4nm,0.4s						
USRK	**Ussurisk Ar.**	**58.07**	**20**	P	**P**	**07 14 30.6**	**-0.7**
	1.3nm,0.6s,baz=184,slow=5.2,SNR=4.4						
MKAR	**Makanchi Array**	**60.65**	**340**	P	**P**	**07 14 49.4**	**+0.3**
	1.9nm,0.4s,baz=157,slow=6.1,SNR=15						
KLR	**Kul'dur**	**62.45**	**18**	P	**P**	**07 15 00.2**	**-0.9**
	3.2nm,0.7s,baz=255,slow=4.9,SNR=9.7						
ZALV	**Zalesovo Beam**	**66.32**	**346**	P	**P**	**07 15 26.1**	**-0.3**
	2.5nm,0.3s,baz=163,slow=5.4,SNR=3.6						
BVAR	**Borovoye Array**	**70.11**	**337**	P	**P**	**07 15 50.4**	**+0.3**
	1.1nm,0.3s,baz=147,slow=8.8,SNR=12						
BRVK	**Borovoye**	**70.18**	**337**	*e*P	**P**	**07 15 50.7**	**+0.1**
	9.8nm,1.6s						
AKTO	**Aktyubinsk**	**73.77**	**330**	P	**P**	**07 16 12.2**	**0.0**
	1.7nm,0.6s,baz=140,slow=7.2,SNR=5.4						
ARU	**Arti**	**77.34**	**335**	*e*P	**P**	**07 16 32.8**	**+0.3**
	9.2nm,1.2s						
KBZ	**Khabaz**	**79.07**	**318**	P	**P**	**07 16 42.2**	**-0.1**
	2.9nm,0.9s,baz=165,slow=5.0,SNR=5.1						
NRIK	**Noril'sk**	**80.13**	**353**	P	**P**	**07 16 47.7**	**+0.1**
	2.2nm,0.7s,baz=118,slow=4.7,SNR=4.7						
SEY	**Seymchan**	**80.19**	**19**	P	**P**	**07 16 48.6**	**+0.6**
	1.1nm,0.5s,baz=47,slow=2.3,SNR=4.9						
TIXI	**Tiksi**	**82.45**	**7**	P	**P**	**07 16 59.1**	**-0.8**
	2.9nm,0.2s,baz=215,slow=3.1,SNR=4.5						
BRTR	**Keskin Array B**	**84.08**	**312**	P	**P**	**07 17 08.5**	**-0.7**
	1.4nm,0.8s,baz=146,slow=9.0,SNR=7.5						
YKA	**Yellowknife Ar**	**119.21**	**21**	PKP	**PKPdf**	**07 23 26.0**	**-0.7**
	0.3nm,0.8s,baz=319,slow=2.2,SNR=4.9						
TXAR	**Lajitas Array**	**144.86**	**52**	PKP	**PKPdf**	**07 24 15.6**	**-0.2**
	1.0nm,0.8s,baz=321,slow=1.8,SNR=8.1						
WMOK	**Wichita Mounta**	**145.36**	**40**	*e*PKPdf	**PKPab**	**07 24 16.6**	**+0.1**
JCT	**Junction City**	**147.19**	**47**	*e*PKPdf	**PKPdf**	**07 24 19.9**	**+0.2**
MIAR	**Mount Ida**	**148.62**	**35**	*e*PKPbc	**PKPbc**	**07 24 25.6**	**0.0**

ISCJB 16 07:06:03.7±0.2, 55°76N±0°02×161°57W±0°04, h10km, mb4.4/48, MS3.6/6, Error ellipse: s-maj=4.1km s-min=2.3km az=135.7
BJI 16 07:06:03.0, 55°70N×161°50W, h5km, mb4.5/6, mB4.8/5, Ms4.5/3, Ms7 4.1/2
NEIC 16 07:06:06.2, 55°56N×161°48W, h9km, mb4.4/29, ML4.1(AEIC), After AEIC.
IDC 16 07:06:12.0±3.8, 55°93N×161°41W, h61km±34km, mb3.9/20, mb1 4.1/23, mb1mx3.8/60, mbtmp4.1/23, ML3.4/3, MS3.3/7, Ms1 3.4/7, ms1mx3.0/45, Error ellipse: s-maj=26.7km s-min=11.2km az=15.0

ISC 16 07:06:05.0±0.4, 55°63N±0°06×161°50W±0°03, h10km, n142, σ1§00/135, mb4.4/48, MS3.5/6, Alaska Peninsula

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PS1A	**Pavlof South-1**	**0.25**	**214**	P	**Pg**	**07 06 10.8**	**+0.7**
PN6	**Pavlof North-6**	**0.30**	**234**	P	**Pg**	**07 06 11.8**	**+0.8**
PN6				S	**Sb**	**07 06 17.2**	**-0.2**
PVV	**Pavlof Volcano**	**0.30**	**213**	P	**Pg**	**07 06 11.7**	**+0.6**
PS4A	**Pavlof South-4**	**0.35**	**216**	P	**Pg**	**07 06 12.4**	**+0.5**
HAG	**Hague Volcano**	**0.39**	**217**	P	**Pg**	**07 06 13.3**	**+0.7**
DOL	**Dolgoi Island**	**0.52**	**204**	P	**Pg**	**07 06 15.4**	**+0.2**
DTNA	**Dutton South F**	**0.64**	**222**	P	**Pg**	**07 06 17.7**	**+0.2**
SDPT	**Sand Point**	**0.65**	**115**	P	**Pg**	**07 06 17.7**	**+0.2**
SDPT				S	**Sb**	**07 06 27.2**	**-0.2**
DT1	**Dutton Round H**	**0.69**	**221**	P	**Pg**	**07 06 18.1**	**-0.1**
BALA	**Baldy Mountain**	**0.85**	**240**	P	**Pg**	**07 06 21.9**	**+0.5**
VNSW	**Veniaminof 7**	**1.18**	**67**	P	**Pb**	**07 06 26.9**	**-0.7**
VNSW				S	**Sb**	**07 06 44.1**	**+1.2**
VNWF	**Veniaminof 8**	**1.21**	**63**	P	**Pn**	**07 06 27.8**	**-0.3**
FALS	**False Pass**	**1.34**	**236**	P	**Pn**	**07 06 28.5**	**-1.2**
VNNF	**Veniaminof 3**	**1.39**	**61**	P	**Pn**	**07 06 30.4**	**-0.2**
ISLZ	**Isanotski Laza**	**1.56**	**235**	P	**Pn**	**07 06 31.6**	**-1.1**
SSLN	**Shishaldin Nor**	**1.65**	**241**	P	**Pn**	**07 06 33.1**	**-1.0**
SSLS	**Shishaldin Sou**	**1.70**	**238**	P	**Pn**	**07 06 34.1**	**-0.7**
CHGN	**Chignik**	**1.86**	**67**	P	**Pn**	**07 06 35.9**	**-1.0**
ANPB	**Aniakchak Plen**	**2.15**	**55**	P	**Pn**	**07 06 39.8**	**-1.1**
WESP	**Westdahl Peak**	**2.17**	**240**	P	**Pn**	**07 06 40.3**	**-1.0**
ANPK	**Aniakchak Peak**	**2.24**	**56**	P	**Pn**	**07 06 41.2**	**-1.1**
ANNE	**Aniakchak Nort**	**2.31**	**55**	P	**Pn**	**07 06 42.4**	**-0.8**
AKSA	**Akutan Strait**	**2.85**	**240**	P	**Pn**	**07 06 50.3**	**-0.2**
AKUT	**Akutan**	**2.88**	**241**	*e*Pn	**Pn**	**07 06 53.1**	**+2.1**
UNV	**Unalaska Valle**	**3.41**	**240**	P	**Pn**	**07 06 57.7**	**-0.4**
PLK4	**Peulik 4**	**3.48**	**53**	P	**Pn**	**07 06 58.9**	**-0.4**
KELA	**Mount Kelaz**	**4.22**	**46**	P	**Pn**	**07 07 08.5**	**-0.9**
KCE	**Katmai Mt Cerb**	**4.34**	**50**	P	**Pn**	**07 07 10.6**	**-0.4**
KAMR	**Katmai Barrier**	**4.37**	**52**	P	**Pn**	**07 07 11.0**	**-0.6**
KVTA	**Katmai Vly 10**	**4.37**	**48**	P	**Pn**	**07 07 10.9**	**-0.5**
KAKN	**Katmai Knife C**	**4.42**	**50**	P	**Pn**	**07 07 11.9**	**-0.3**
OHAK	**Old Harbor**	**4.83**	**67**	P	**Pn**	**07 07 17.4**	**-0.2**
FOSS	**Fourpeaked Sta**	**5.30**	**50**	P	**Pn**	**07 07 24.2**	**+0.1**
KDAK	**Kodiak Island**	**5.37**	**63**	P	Pb	07 07 40.1	+1.3
	13nm,0.3s,baz=242,slow=7.2,SNR=239						
CDD	**Cape Douglas**	**5.40**	**49**	P	**Pn**	**07 07 25.7**	**+0.2**
SVW2	**Sparrevohn**	**6.31**	**27**	*e*Pn	Pn	07 07 36.7	-1.3
HOM	**Homer**	**6.66**	**49**	*e*Pn	**Pn**	**07 07 44.9**	**+2.2**
RSO	**Redoubt South**	**6.71**	**40**	*e*Pn	**Pn**	**07 07 44.6**	**+0.9**
BRLK	**Bradley Lake**	**7.04**	**50**	*e*Pn	**Pn**	**07 07 48.8**	**+0.8**
SPU	**Mount Spurr**	**7.45**	**38**	*e*Pn	**Pn**	**07 07 54.4**	**+0.7**
TT01	**Tatalina**	**7.82**	**19**	*e*Pn	Pn	07 07 57.3	-1.4
SEW	**Seward**	**7.83**	**50**	*e*Pn	**Pn**	**07 08 00.0**	**+1.2**
TTA	**Tatalina**	**7.84**	**19**	*e*Pn	Pn	07 07 57.3	-1.8
RC01	**Rabbit Creek A**	**8.25**	**44**	*e*Pn	**Pn**	**07 08 04.8**	**+1.6**
PPLA	**Purkeypile**	**8.70**	**29**	*e*Pn	**Pn**	**07 08 11.8**	**+0.8**
PMR	**Palmer**	**8.79**	**42**	*e*Pn	**Pn**	**07 08 13.4**	**+1.5**
CAST	**Castle Rocks**	**9.15**	**28**	*e*Pn	Pn	07 08 14.8	-2.2
SML	**Sawmill**	**9.22**	**42**	*e*Pn	**Pn**	**07 08 20.2**	**+2.2**
KTH	**Kantishna Hill**	**9.57**	**30**	*e*

BW06	**Boulder Array**	**35.44**	**89**	*eP*		**P**	07 13 01.8	**+0.4**		
PDAR	**Pinedale Array**	**35.44**	**89**	P		**P**	**07 13 02.2**	**+0.8**		
	0.9nm,0.6s,baz=318,slow=3.8,SNR=13									
TPNV	**Topopah Spring**	**35.63**	**102**	*eP*		**P**	**07 13 03.2**	**+0.3**		
	8.1nm,1.2s									
SRU	**San Rafael Swe**	**37.32**	**94**	*eP*		**P**	**07 13 19.1**	**+1.7**		
	6.4nm,1.1s									
O20A	**White River Ci**	**37.92**	**91**	*eP*		**P**	**07 13 23.2**	**+0.8**		
	10nm,0.9s									
MDND	**Maddock**	**37.94**	**75**	*eP*		**P**	**07 13 23.3**	**+1.0**		
	24nm,1.0s									
ULM	**Lac du Bonnet**	**38.58**	**70**	P		**P**	**07 13 27.4**	**-0.3**		
	3.3nm,0.8s,baz=334,slow=11,SNR=2.6									
PV01	**Paradox Valley**	**39.10**	**94**	*eP*		**P**	**07 13 33.2**	**+0.8**		
	196nm,0.8s									
AGMN	**Agassiz Nation**	**39.71**	**72**	*eP*		**P**	**07 13 36.7**	**-0.4**		
	7.8nm,0.9s									
SDCO	**Great Sand Dun**	**41.11**	**92**	*eP*		**P**	**07 13 50.5**	**+1.3**		
	2.9nm,0.9s									
KSCO	**Kaye Shedlock'**	**41.86**	**88**	*eP*		**P**	**07 13 56.7**	**+1.5**		
	12nm,0.8s									
T25A	**Trinidad**	**42.15**	**91**	*eP*		**P**	**07 13 59.0**	**+1.4**		
	7.4nm,1.0s									
FRB	**Frobisher Bay**	**43.56**	**40**	P		**P**	**07 14 07.0**	**-1.4**		
	3.9nm,0.8s,baz=310,slow=5.1,SNR=4.7									
NRIK	**Noril'sk**	**45.73**	**332**	P		**P**	**07 14 25.7**	**0.0**		
	7.9nm,0.9s,baz=63,slow=7.7,SNR=9.3									
CN2	**Changchun**	**46.55**	**287**	*eP*		**P**	**07 14 31.8**	**-0.7**		
TX31	**Lajitas Ar. Si**	**48.31**	**98**	*eP*		**P**	**07 14 47.2**	**+0.7**		
TXAR	**Lajitas Array**	**48.31**	**98**	P		**P**	**07 14 47.1**	**+0.6**		
	1.0nm,0.6s,baz=302,slow=5.0,SNR=14									
TXAR					LR	LR	07 33 23.4			
	comp=Z,64nm,19.1s,baz=0.0,slow=34									
JCT	**Junction City**	**49.62**	**94**	*eP*		**P**	**07 14 56.7**	**+0.2**		
	5.8nm,0.8s									
SCHQ	**Schefferville**	**49.83**	**49**	P		P	07 14 55.9	-1.8		
	6.9nm,0.9s,baz=312,slow=9.3,SNR=5.5									
HHC	**Hu-ho-hao-te**	**55.97**	**294**	*eP*		**P**	**07 15 44.6**	**+1.2**		
HHC					PP	**PP**	**07 17 47.5**	**-0.3**		
HHC					S	**S**	**07 23 31.8**	**+0.6**		
HHC					pmax	pmax				
	comp=Z,24nm,1.1s									
HHC					pmax	pmax				
	comp=Z,80nm,6.3s									
HHC					LR	LR				
	comp=N,200nm,14.9s									
HHC					LR	LR				
	comp=E,280nm,15.7s									
HHC					LR	LR				
	comp=Z,100nm,15.6s									
FINES	**FINESS Array B**	**63.12**	**356**	P		P	07 16 29.9	-2.2		
	2.5nm,0.8s,baz=15,slow=7.9,SNR=8.7									
NB2	**NORSAR Subarra**	**63.53**	**4**	P		P	07 16 33.4	-1.6		
	comp=Z,0.8nm,0.7s,baz=356,slow=6.9									
NOA	**NORSAR Array B**	**63.53**	**4**	P		P	07 16 33.4	-1.6		
	comp=Z,1.8nm,0.9s,baz=356,slow=6.7,SNR=4.3									
MKAR	**Makanchi Array**	**64.77**	**317**	P		**P**	**07 16 43.3**	**0.0**		
	comp=Z,0.5nm,0.7s,baz=56,slow=5.9,SNR=2.2									
WMQ	**Urumqi**	**65.01**	**312**	*eP*		**P**	**07 16 47.1**	**+2.1**		
WMQ					pmax	pmax				
	comp=Z,3.0nm,0.5s									
WMQ					pmax	pmax				
	comp=Z,39nm,4.6s									
WMQ					LR	LR				
	comp=Z,44nm,23.6s									
WMQ					LR	LR				
	comp=Z,250nm,23.6s									
CD2	**Chengdu**	**67.62**	**292**	P		**P**	**07 17 00.9**	**-1.0**		
CD2					pmax	pmax				
	comp=Z,1.0nm,0.5s									
AKASG	**Malin Array Be**	**73.66**	**353**	P		P	07 17 35.8	-2.5		
	comp=Z,1.2nm,0.4s,baz=4.3,slow=5.6,SNR=6.9									
AKASG	**Malin Array Be**	**73.66**	**353**	P		P	07 17 35.8	-2.5		
GERES	**GERESS Array B**	**75.82**	**3**	P		P	07 17 49.0	-2.0		
	comp=Z,0.4nm,0.4s,baz=347,slow=4.1,SNR=5.5									
CMAR	**Chiang Mai Arr**	**80.22**	**288**	P		**P**	**07 18 15.1**	**-0.7**		
	comp=Z,0.3nm,0.3s,baz=15,slow=5.5,SNR=4.5									
ESDC	**Sonseca Array**	**83.15**	**17**	P		**P**	**07 18 29.4**	**-1.6**		
	comp=Z,0.1nm,0.2s,baz=340,slow=4.2,SNR=5.0									

ISCJB ***16*** *07:06:52.8±0.6,20.37S±0.05×147.57E±0.06,h10km, mb4.4/5,Error ellipse: s-maj=8.2km s-min=6.7km az=139.5*

NEIC ***16*** *07:06:52.0,20.17S×147.68E,h0km,mb4.0/2, ML4.1(AUST),After AUST.*

NEIC Felt [IV] at Bowen and [II] at Mackay and Townsville. Also felt at Atherton, Ayr, Emerald and Ingham.

AUST ***16*** *07:06:52.2±0.4,20.17S×147.68E,h0km,Error ellipse: s-maj=5.9km s-min=1.8km az=20.0*

IDC ***16*** *07:06:52.2±1.9,20.37S×147.68E,h0km,mb3.9/1, mb1 3.9/4,mb1mx3.6/36,mbtmp3.8/4,ML3.7/3,Error ellipse: s-maj=37.4km s-min=20.0km az=15.0*

BJI ***16*** *07:06:54.5,20.30S×147.60E,h10km,mb4.5/6,mB4.8/3, Ms7 4.5/1*

ISC 16 07:06:55.0±0.8,20.34S±0.06×147.60E±0.09,h10km,n33, σ1§53/37,mb4.3/5,Queensland

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CTA	**Charters Tower**	**1.28**	**281**	Pg	**Pn**	**07 07 18.1**	**-1.0**
	41nm,0.3s,baz=94,slow=17,SNR=280						
CTA				Lg	Lg	07 07 36.5	
	398nm,0.3s,baz=7.4,slow=22,SNR=40						
CTA	**Charters Tower**	**1.28**	**281**	P	**Pn**	**07 07 18.0**	**-1.0**
	baz=1.3						
CTAO	**Charters Tower**	**1.28**	**281**	*e*Pn	**Pn**	**07 07 17.8**	**-1.3**
CTAO				*e*Sg	**Sn**	**07 07 36.5**	**+0.1**
MTSU	**Mount Surprise**	**3.80**	**305**	P	**Pn**	**07 07 51.9**	**-1.8**
	baz=3.8,SNR=26						
MTSU	**Mount Surprise**	**3.80**	**305**	P	**Pn**	**07 07 53.7**	**0.0**
MTSU				S	**Sb**	**07 08 48.7**	**+0.4**
EIDS	**Eidsvold**	**5.95**	**148**	P	**Pn**	**07 08 23.2**	**0.0**
	baz=6.1,SNR=22						
EIDS	**Eidsvold**	**5.95**	**148**	*e*Pn	**Pn**	**07 08 23.2**	**0.0**
QLP	**Quilpie**	**6.94**	**206**	P	**Pn**	**07 08 38.8**	**+1.9**
	baz=7.2,SNR=14						
QLP	**Quilpie**	**6.94**	**206**	P	**Pn**	**07 08 39.7**	**+2.9**
QIS	**Mount Isa**	**7.50**	**267**	P	**Pn**	**07 08 44.4**	**-0.1**
	baz=7.6,SNR=5.0						
COEN	**Coen**	**7.62**	**326**	P	**Pn**	**07 08 43.4**	**-2.9**
	baz=7.6,SNR=13						
COEN	**Coen**	**7.62**	**326**	*e*Pn	**Pn**	**07 08 44.9**	**-1.4**
COEN				*e*Sg	**Sb**	**07 10 40.9**	**+2.5**
WB2	**Warramunga Arr**	**12.45**	**270**	*e*Pn	**Pn**	**07 09 51.5**	**-0.9**
WRAB	**Tennant Creek**	**12.45**	**270**	*e*Pn	**Pn**	**07 09 51.7**	**-0.7**
WRA	**Warramunga Arr**	**12.46**	**270**	P	**Pn**	**07 09 50.9**	**-1.7**
	0.2nm,0.3s,baz=91,slow=12,SNR=5.9						
WRA				Sn	Sn	07 12 21.6	+10
	0.3nm,0.3s,baz=86,slow=14,SNR=3.7						
WRA				Lg	Lg	07 13 23.1	
	0.9nm,0.3s,baz=85,slow=27,SNR=6.0						
STKA	**Stephens Creek**	**12.69**	**204**	Pn	**Pn**	**07 09 55.9**	**+0.3**
	0.6nm,0.3s,baz=7.6,slow=11,SNR=10						
STKA				Sn	**Sn**	**07 12 17.1**	**+0.1**
	0.4nm,0.3s,baz=294,slow=20,SNR=2.7						
STKA	**Stephens Creek**	**12.69**	**204**	P	**Pn**	**07 09 56.4**	**+0.7**
	baz=13,SNR=5.9						
STKA	**Stephens Creek**	**12.69**	**204**	*e*Pn	**Pn**	**07 09 56.3**	**+0.7**
STKA				Sn	**Sn**	**07 12 17.1**	**+0.1**
AS01	**Alice Springs**	**13.08**	**253**	*e*Pn	**Pn**	**07 10 00.1**	**-1.0**
AS31	**Alice Springs**	**13.12**	**253**	*e*Pn	**Pn**	**07 10 00.8**	**-0.9**
ASAR	**Alice Springs**	**13.12**	**253**	Pn	**Pn**	**07 10 00.8**	**-0.9**
	0.2nm,0.3s,baz=74,slow=14,SNR=18						
ASAR				Sn	Sn	07 12 20.6	-7.2
	0.2nm,0.3s,baz=78,slow=15,SNR=3.1						
ASAR				Lg	Lg	07 13 51.1	
	0.9nm,0.3s,baz=62,slow=24,SNR=5.1						
BBOO	**Buckleboo**	**16.13**	**217**	*e*P	**Pn**	**07 10 40.9**	**-1.1**
	10nm,1.1s						
SBUM	**Sibu**	**41.43**	**299**	*e*P	**P**	**07 14 41.3**	**-0.9**
	4.9nm,1.1s						
NJ2	**Nanjing**	**58.92**	**332**	*e*P	**P**	**07 16 54.0**	**-0.5**
NJ2				pmax	pmax		
	comp=Z,3.0nm,0.5s						
KMI	**Kunming**	**62.80**	**314**	P	**P**	**07 17 23.3**	**+2.0**
KMI				pmax	pmax		
	comp=Z,14nm,0.8s						
KMI				pmax	pmax		
	comp=Z,68nm,6.3s						
ASAJ	**Asahikawa**	**64.30**	**356**	*e*P	**P**	**07 17 28.9**	**-1.7**
CD2	**Chengdu**	**66.10**	**319**	P	**P**	**07 17 41.4**	**-1.2**
CD2				pmax	pmax		
	comp=Z,1.0nm,0.5s						
CN2	**Changchun**	**66.98**	**343**	*e*P	**P**	**07 17 50.6**	**+2.7**
HHC	**Hu-ho-hao-te**	**69.48**	**332**	*e*P	P	07 18 07.6	+3.8
HHC				pmax	pmax		
	comp=Z,88nm,5.7s						
MK01	**Makanchi Array**	**88.93**	**321**	*e*P	**P**	**07 19 50.0**	**+0.2**
MKAR	**Makanchi Array**	**88.95**	**321**	P	**P**	**07 19 50.5**	**+0.7**
	0.4nm,0.6s,baz=105,slow=6.1,SNR=4.2						
KSH	**Kashi**	**89.44**	**313**	*e*P	P	07 19 56.4	+4.0
KSH				*e*sP	sP	07 20 03.8	+6.8
KSH				S	**S**	**07 30 46.9**	**+3.9**
TORD	**Torodi Ar. Bea**	**146.62**	**263**	PKPbc	**PKPdf**	**07 26 34.6**	**-1.6**
	0.7nm,0.5s,baz=110,slow=4.7,SNR=2.9						

IDC 16 07:18:38.3±2.2,3.66S×152.00E,h0km,mb4.1/3, mb1 4.3/3,mb1mx3.6/41,mbtmp4.1/3,Error ellipse: s-maj=46.7km s-min=36.9km az=14.0,New Ireland region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**23.05**	**144**	P	P	07 23 45.7	+0.1
	11nm,0.9s,baz=276,slow=10,SNR=9.3						
WRA	**Warramunga Arr**	**23.64**	**225**	P	P	07 23 52.3	+0.8
	7.3nm,0.6s,baz=51,slow=9.9,SNR=99						
ASAR	**Alice Springs**	**26.48**	**220**	P	P	07 24 17.2	-0.3
	0.4nm,0.6s,baz=55,slow=8.7,SNR=6.7						
TORD	**Torodi Ar. Bea**	**149.19**	**290**	PKPbc	PKPbc	07 38 29.0	-1.0
	0.4nm,0.6s,baz=45,slow=2.0,SNR=2.9						

ISCJB ***16*** *07:20:19.8±0.7,38.29N±0.04×141.98E±0.06,h48km±4km, mb4.3/49,MS3.3/6,Error ellipse: s-maj=8.6km s-min=4.7km az=30.8*

MOS ***16*** *07:20:19.8±1.1,38.34N×141.98E,h46km,mb4.6/22,Error ellipse: s-maj=8.9km s-min=5.5km az=93.8*

BJI ***16*** *07:20:20.0,38.40N×141.90E,h48km,mb4.5/18,mB4.8/11, Ms4.3/4,Ms7 4.1/3*

JMA ***16*** *07:20:21.0±0.1,38.30N×141.90E,h47km±2km,M4.1 JMA Felt II J1.*

IDC ***16*** *07:20:21.8±0.7,38.30N×141.86E,h50km±6km,mb4.0/22, mb1 4.1/25,mb1mx4.0/50,mbtmp4.2/25,MS3.2/9, Ms1 3.2/9,ms1mx3.0/39,Error ellipse: s-maj=15.3km s-min=12.7km az=117.0*

NEIC ***16*** *07:20:22.7±0.8,38.27N×141.96E,h61km±6km,mb4.5/15, Error ellipse: s-maj=9.5km s-min=6.0km az=127.0*

ISC 16 07:20:21.8±0.7,38.35N±0.06×141.92E±0.06,h47km±5km, n146,σ1§18/149,mb4.4/49,MS3.3/6,8C-16D,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**0.46**	**284**	P	**Pn**	**07 20 31.7**	**-0.7**
JIO				S	**Sn**	**07 20 38.9**	**-1.0**
OFUJ	**Ofunato**	**0.76**	**345**	P	**Pn**	**07 20 35.9**	**-0.3**
OFUJ				S	**Sn**	**07 20 46.1**	**-0.5**
JMK	**Ichinoseki**	**0.81**	**318**	P	**Pn**	**07 20 36.9**	**0.0**
JMK				S	**Sn**	**07 20 47.8**	**-0.1**
JOU	**Okura**	**0.98**	**271**	P	**Pn**	**07 20 38.8**	**-0.4**
JOU				S	**Sn**	**07 20 51.6**	**-0.5**
JMM	**Marumori**	**1.01**	**242**	P	**Pn**	**07 20 38.1**	**-1.4**
JMM				*e*S	**Sn**	**07 20 51.4**	**-1.2**
JOM	**Ohasama**	**1.22**	**337**	P	**Pn**	**07 20 42.7**	**+0.2**
JOM				*e*S	**Sn**	**07 20 58.5**	**+0.6**
JFK	**Kawauchi**	**1.28**	**220**	P	**Pn**	**07 20 41.6**	**-1.7**
JFK				S	**Sn**	**07 20 56.7**	**-2.6**
MJAR	**Matsushiro Arr**	**3.46**	**240**	P	**Pn**	**07 21 13.7**	**+0.6**
	5.5nm,0.3s,baz=62,slow=10,SNR=10						
MJAR				LR	LR	07 22 46.7	
	comp=Z,472nm,19.8s,baz=55,slow=43						
MAJO	**Matsushiro**	**3.46**	**240**	*e*P	**Pn**	**07 21 13.6**	**+0.5**
MAJO	**Matsushiro**	**3.46**	**240**	*e*Pn	**Pn**	**07 21 13.6**	**+0.5**
MAT	**Matsushiro**	**3.46**	**240**	P	**Pn**	**07 21 13.5**	**+0.4**
MAT				S	**Sn**	**07 21 57.4**	**+4.6**
ERM	**Erimo**	**3.79**	**14**	*e*P	**Pn**	**07 21 17.9**	**+0.3**
ERM				*e*		07 22 05.6	
ERM	**Erimo**	**3.79**	**14**	*e*Pn	**Pn**	**07 21 17.9**	**+0.3**
ERM				*e*Sn	**Sn**	**07 22 05.5**	**+4.8**
JHJ	**Hachijo jima 2**	**5.50**	**199**	LR	LR	07 23 42.7	
	comp=Z,114nm,19.9s,baz=344,slow=37						
ASAJ	**Asahikawa**	**5.79**	**5**	P	**Pn**	**07 21 45.2**	**+0.2**
	3.5nm,0.3s,baz=202,slow=13,SNR=21						
ASAJ	**Asahikawa**	**5.79**	**5**	*e*Pn	**Pn**	**07 21 45.0**	**0.0**
	13nm,0.8s						
YUK	**Yuzh-Kuril'sk**	**6.41**	**26**	*e*P	**Pn**	**07 21 51.4**	**-2.2**
YUK				*e*S	**Sn**	**07 23 00.8**	**-4.6**
YUK				pmax	pmax		
	comp=Z,113nm,0.3s						
SHO	**Shikotan**	**6.65**	**32**	*e*P	Pn	07 21 51.9	-4.9
SHO				pmax	pmax		
	comp=Z,68nm,0.6s						
SHO				pmax	pmax		
	comp=N,23nm,0.5s						
SHO				pmax	pmax		
	comp=E,44nm,0.3s						
KUR	**Kuril'sk**	**8.19**	**31**	*e*P	**Pn**	**07 22 16.9**	**-1.0**
KUR				*i* S	**Sn**	**07 23 44.0**	**-5.0**
KUR				smax	smax		
	comp=N,45nm,0.6s						
YSS	**Yuzh-Sakhalins**	**8.62**	**4**	*e*P	**Pn**	**07 22 23.6**	**-0.3**
USRK	**Ussuriysk Ar.**	**9.48**	**311**	P	**Pn**	**07 22 36.6**	**+1.0**
	comp=N,0.8nm,0.3s,baz=122,slow=14,SNR=12						
USRK				LR	LR	07 26 05.9	
	comp=N,181nm,19.1s,baz=102,slow=36						
JNU	**Nakatsue**	**10.37**	**243**	LR	LR	07 27 07.6	
	comp=N,263nm,20.1s,baz=80,slow=39						
KSRS	**Korea Array**	**11.09**	**270**	P	Pn	07 23 01.0	+3.3
	comp=N,0.2nm,0.3s,baz=84,slow=14,SNR=2.7						
KSRS				LR	LR	07 27 03.1	
	comp=N,143nm,18.7s,baz=108,slow=36						
KSAR	**Wonju Array Be**	**11.13**	**270**	P	**Pn**	**07 23 01.0**	**+2.8**
KSAR	**Wonju Array Be**	**11.13**	**270**	P	**Pn**	**07 23 01.0**	**+2.8**
MDJ	**Mudanjiang**	**11.16**	**308**	P	Pn	07 23 02.8	+4.2
MDJ				pmax	pmax		
	comp=N,19nm,1.0s						
MDJ				pmax	pmax		
	comp=N,54nm,3.2s						
MDJ	**Mudanjiang**	**11.16**	**308**	*e*Pn	Pn	07 23 02.6	+4.0
	comp=N,7.4nm,0.5s						
KLR	**Kul'dur**	**13.11**	**329**	P	Pn	07 23 28.4	+3.2
	comp=N,0.1nm,0.3s,baz=115,slow=14,SNR=3.4						
KLR				LR	LR	07 28 22.2	
	comp=N,129nm,19.9s,baz=138,slow=36						
PET	**Petropavlovsk**	**18.70**	**33**	*e*P	**Pn**	**07 24 37.4**	**+0.7**
MA2	**Magadan**	**21.99**	**12**	P	**P**	**07 25 12.4**	**+0.9**
	comp=N,13nm,0.8s,baz=209,slow=8.1,SNR=6.9						
MA2				LR	LR	07 33 52.8	
	comp=N,14nm,21.0s,baz=316,slow=37						
YAK	**Yakutsk**	**24.88**	**346**	*e*P	**P**	**07 25 38.8**	**-0.9**
YAK				pmax	pmax		
	comp=Z,10.0nm,0.6s						
SEY	**Seymchan**	**25.43**	**11**	P	**P**	**07 25 45.8**	**+1.1**
	comp=Z,4.3nm,0.9s,baz=194,slow=5.4,SNR=19						
BOD	**Bodaibo**	**26.65**	**326**	*e*P	**P**	**07 25 54.8**	**-1.0**
BOD				pmax	pmax		
	comp=Z,8.0nm,0.8s						
ULN	**Ulaanbaatar**	**26.97**	**302**	*e*P	**P**	**07 25 59.7**	**+0.7**
ULN				pmax	pmax		
	comp=Z,2.0nm,0.8s						
ULN	**Ulaanbaatar**	**26.97**	**302**	*e*P	**P**	**07 25 59.7**	**+0.7**
	comp=Z,2.4nm,0.8s						
ENH	**Enshi**	**27.86**	**263**	*e*P	**P**	**07 26 06.3**	**-0.8**
	comp=Z,14nm,0.7s						
H11N2	**WAKE ISLAND Hy**	**28.51**	**124**	T	T	07 56 16.4	
	baz=316,slow=75,SNR=291						
H11N1	**WAKE ISLAND Hy**	**28.52**	**124**	T	T	07 56 27.2	
	baz=316,slow=75,SNR=366						
H11N3	**WAKE ISLAND Hy**	**28.53**	**124**	T	T	07 56 21.0	
	baz=316,slow=75,SNR=330						
H11S1	**WAKE ISLAND Hy**	**29.27**	**126**	T	T	07 57 24.6	
	baz=318,slow=76,SNR=99						
H11S3	**WAKE ISLAND Hy**	**29.27**	**126**	T	T	07 57 21.6	
	baz=318,slow=76,SNR=204						
H11S2	**WAKE ISLAND Hy**	**29.28**	**126**	T	T	07 57 27.1	
	baz=318,slow=76,SNR=160						
ZAK	**Zakamensk**	**29.79**	**306**	*e*P	**P**	**07 26 23.6**	**-0.4**
ZAK				pmax	pmax		
	comp=Z,4.0nm,1.0s						
TLY	**Talaya**	**29.79**	**309**	P	**P**	**07 26 23.0**	**-0.9**
	comp=Z,2.0nm,0.5s,baz=117,slow=5.2,SNR=3.7						
TLY	**Talaya**	**29.79**	**309**	*e*P	**P**	**07 26 23.9**	**0.0**
TLY				pmax	pmax		
	comp=Z,3.0nm,0.6s						
TLY				MLR	MLR		
	comp=Z,102nm,18.0s						
BILL	**Bilibino**	**32.66**	**17**	*e*P	**P**	**07 26 49.0**	**+0.1**
BILL				*e*		07 27 53.6	
BILL				*e*PPP	PPP	07 28 16.5	
BILL				pmax	pmax		
	comp=Z,2.0nm,1.0s						
BILL				MLR	MLR		
	comp=Z,39nm,18.0s						
TIXI	**Tiksi**	**34.04**	**353**	P	**P**	**07 27 00.3**	**-0.6**
	comp=Z,1.1nm,0.4s,baz=28,slow=0.7,SNR=3.4						
TIXI	**Tiksi**	**34.04**	**353**	*e*P	**P**	**07 27 00.4**	**-0.5**
TIXI				pmax	pmax		
	comp=Z,3.0nm,1.2s						
KRAR	**Krasnoyarsk**	**36.80**	**315**	*e*P	**P**	**07 27 26.1**	**+1.3**
KRAR				pmax	pmax		
	comp=Z,14nm,0.9s						
WMQ	**Urumqi**	**40.62**	**296**	P	**P**	**07 27 58.3**	**+1.3**
WMQ				pmax	pmax		
	comp=Z,32nm,0.5s						
WMQ				pmax	pmax		
	comp=Z,26nm,3.8s						
WMQ				LR	LR		
	comp=Z,56nm,10.0s						
WMQ				LR	LR		
	comp=Z,94nm,10.6s						
WMQ				LR	LR		
	comp=Z,56nm,11.2s						
ZALV	**Zalesovo Beam**	**41.34**	**311**	P	**P**	**07 28 02.7**	**0.0**
	comp=Z,4.8nm,0.5s,baz=87,slow=7.8,SNR=17						
ZALV				PcP	**PcP**	**07 29 59.6**	**-0.6**
	comp=Z,1.9nm,0.8s,baz=62,slow=3.5,SNR=3.5						
CMAR	**Chiang Mai Arr**	**42.22**	**254**	P	**P**	**07 28 09.7**	**-0.7**
	comp=Z,1.2nm,0.8s,baz=42,slow=5.1,SNR=7.5						
CMAR				LR	LR	07 45 21.6	
	comp=Z,26nm,20.4s,baz=40,slow=36						
CMAR	**Chiang Mai Arr**	**42.22**	**254**	*ce*P	**P**	**07 28 10.1**	**-0.3**
CMAR				pmax	pmax		
	comp=Z,1.0nm,0.8s						
NVS	**Novosibirsk**	**42.23**	**313**	*e*P	**P**	**07 28 06.9**	**-3.1**
NRIK	**Noril'sk**	**42.25**	**335**	LR	LR	07 45 42.9	
	comp=Z,78nm,18.8s,baz=299,slow=36						
MKAR	**Makanchi Array**	**43.77**	**301**	P	**P**	**07 28 22.3**	**-0.3**
	comp=Z,2.9nm,0.7s,baz=89,slow=9.5,SNR=28						
MKAR	**Makanchi Array**	**43.77**	**301**	*i* P	**P**	**07 28 22.2**	**-0.4**
MKAR				pmax	pmax		
	comp=Z,3.0nm,0.7s						
KURK	**Kurchatov**	**45.45**	**307**	*e*P	**P**	**07 28 35.0**	**-0.8**
KURK				pmax	pmax		
	comp=Z,42nm,0.9s						
KURK	**Kurchatov**	**45.45**	**307**	*e*P	**P**	**07 28 35.0**	**-0.8**
	comp=Z,42nm,0.9s						
KURBB	**Kurchatov Arra**	**45.52**	**307**	P	**P**	**07 28 36.0**	**-0.4**
	comp=Z,13nm,0.8s,baz=83,slow=8.2,SNR=91						
KDAK	**Kodiak Island**	**45.86**	**43**	*i* P	**P**	**07 28 40.9**	**+1.9**
GUN	**Gumba**	**47.43**	**275**	*e*P	**P**	**07 28 52.0**	**-0.2**
	comp=Z,22nm,0.7s						
GUN	**Gumba**	**47.43**	**275**	*e*P	**P**	**07 28 52.0**	**-0.2**
COLA	**College**	**47.76**	**33**	*e*P	**P**	**07 28 55.0**	**+1.3**
COLA				pmax	pmax		
	comp=Z,2.0nm,0.9s						
KKN	**Kakani**	**47.96**	**275**	*e*P	**P**	**07 28 56.0**	**0.0**
	comp=Z,28nm,0.7s						
KKN	**Kakani**	**47.96**	**275**	*e*P	**P**	**07 28 56.1**	**0.0**
	comp=Z,40nm,0.8s						
ILAR	**Eielson Array**	**48.18**	**33**	P	**P**	**07 28 57.4**	**+0.4**
	comp=Z,0.8nm,0.7s,baz=270,slow=6.4,SNR=16						
ILAR				pP	**pP**	**07 29 10.8**	**+0.8**
	comp=Z,1.1nm,0.7s,baz=267,slow=6.7,SNR=8.7						
GKN	**Gorkha**	**48.36**	**276**	*e*P	**P**	**07 28 58.8**	**-0.3**
	comp=Z,42nm,0.9s						
GKN	**Gorkha**	**48.36**	**276**	*e*P	**P**	**07 28 58.8**	**-0.3**
	comp=Z,42nm,0.9s						
KOLN	**Koldanda**	**49.28**	**276**	*e*P	**P**	**07 29 05.9**	**-0.3**
	comp=Z,6.2nm,0.5s						
KOLN	**Koldanda**	**49.28**	**276**	*e*P	**P**	**07 29 06.1**	**-0.1**
	comp=Z,5.5nm,0.4s						
TKM2	**Tokmak 2**	**49.37**	**298**	*e*P	**P**	**07 29 06.3**	**-0.4**
TKM2				pmax	pmax		
	comp=Z,3.0nm,0.6s						
TKM2	**Tokmak 2**	**49.37**	**298**	*e*P	**P**	**07 29 06.3**	**-0.4**
	comp=Z,3.4nm,0.6s						
PYUN	**Piuthan**	**49.60**	**277**	*e*P	**P**	**07 29 08.6**	**-0.1**
	comp=Z,14nm,0.4s						
PYUN	**Piuthan**	**49.60**	**277**	*e*P	**P**	**07 29 08.7**	**0.0**
BRVK	**Borovoye**	**50.05**	**312**	*de*P	**P**	**07 29 11.5**	**+0.1**
BRVK				pmax	pmax		
	comp=Z,4.0nm,1.7s						
AAK	**Ala-Archa**	**50.23**	**298**	*e*P	**P**	**07 29 12.8**	**-0.4**
AAK				pmax	pmax		
	comp=Z,2.0nm,0.7s						
AAK	**Ala-Archa**	**50.23**	**298**	*e*P	**P**	**07 29 12.8**	**-0.4**
	comp=Z,1.7nm,0.7s						
KKAR	**Karatay Array**	**52.82**	**299**	*e*P	**P**	**07 29 31.8**	**-0.6**
KKAR				pmax	pmax		
	comp=Z,1.0nm,0.8s						
KKAR	**Karatay Array**	**52.82**	**299**	*e*P	**P**	**07 29 31.8**	**-0.6**
	comp=Z,1.4nm,0.8s						
INK	**Inuvik**	**53.

comp=Z,2.9nm,0.5s,baz=46,slow=6.1,SNR=23
KIEV Kiev 73.52 322 *e*P **P 07 31 48.6 -0.7**
KIEV pmax pmax
comp=Z,9.0nm,1.0s
KIEV Kiev 73.52 322 *e*P **P 07 31 48.5 -0.7**
comp=Z,9.4nm,1.0s
BW06 Boulder Array 76.47 46 *e*P **P 07 32 06.9 +0.1**
comp=Z,2.1nm,0.6s
BW06 *e* 07 32 20.6
PDAR Pinedale Array 76.47 46 P **P 07 32 07.2 +0.4**
comp=Z,0.5nm,0.5s,baz=292,slow=2.0,SNR=7.0
PDAR pP **pP 07 32 20.8 +0.2**
comp=Z,1.8nm,0.6s,baz=256,slow=2.1,SNR=15
KWP Kalwaria Pacla 77.30 324 ⇑*i*P **P 07 32 11.3 +0.2**
KWP Kalwaria Pacla 77.30 324 ⇑P **P 07 32 11.3 +0.2**
BURAR Bucovina Array 77.53 322 ⇓*i*P **P 07 32 13.0 +0.5**
BURAR Bucovina Array 77.53 322 ⇓P **P 07 32 13.0 +0.5**
VRI Vrincioaia 77.98 320 ⇓*i*P **P 07 32 15.3 +0.3**
VRI Vrincioaia 77.98 320 ⇓P **P 07 32 15.3 +0.3**
STHS Stebnicka Huta 78.11 325 *e*P **P 07 32 16.7 +1.1**
STHS Stebnicka Huta 78.11 325 *e*P **P 07 32 16.7 +1.1**
BRTR Keskin Array B 78.28 312 P **P 07 32 16.6 -0.2**
comp=Z,1.1nm,0.6s,baz=88,slow=4.0,SNR=5.9
ARR Arges 79.39 320 ⇓*i*P **P 07 32 24.1 +1.3**
MORC Moravsky Berou 79.48 327 ⇓*i*P **P 07 32 23.8 +0.7**
MORC Moravsky Berou 79.48 327 ⇓P **P 07 32 23.8 +0.7**
DPC Dobruska-Polom 79.56 328 *e*P **P 07 32 24.1 +0.5**
DPC Dobruska-Polom 79.56 328 *e*P **P 07 32 24.1 +0.5**
KRLC Kraliky 79.57 328 *e*P **P 07 32 23.9 +0.2**
KRLC Kraliky 79.57 328 *e*P **P 07 32 23.9 +0.2**
BRG Berggiesshubel 80.12 330 *e*P **P 07 32 26.4 -0.1**
comp=Z,3.2nm,0.8s
BRG Berggiesshubel 80.12 330 *e*P **P 07 32 26.4 -0.1**
BRG pmax pmax
comp=Z,3.0nm,0.8s
CLL Collm 80.16 330 *i*P **P 07 32 26.4 -0.3**
comp=Z,7.0nm,1.0s
CLL *e* 07 32 44.0
CLL Collm 80.16 330 *i*P **P 07 32 26.4 -0.3**
CLL *e* 07 32 44.0
CLL pmax pmax
comp=Z,7.0nm,1.0s
VRAC Vranov 80.23 327 ⇓*i*P **P 07 32 28.3 +1.1**
VRAC Vranov 80.23 327 ⇓P **P 07 32 28.3 +1.1**
GZR Gura Zlata 80.29 321 ⇑*i*P **P 07 32 27.7 0.0**
GZR Gura Zlata 80.29 321 ⇑P **P 07 32 27.7 0.0**
RAYN Ar Rayn 80.53 292 *e*P **P 07 32 28.7 -0.6**
comp=Z,5.5nm,1.0s
PRU Pruhonice 80.57 329 *e*P **P 07 32 29.4 +0.4**
PRU Pruhonice 80.57 329 *e*P **P 07 32 29.4 +0.4**
KHC Kasperske Hory 81.63 329 *e*P **P 07 32 34.9 +0.2**
KHC Kasperske Hory 81.63 329 *e*P **P 07 32 35.2 +0.5**
KHC pmax pmax
comp=Z,1.0nm,0.9s
KHC Kasperske Hory 81.63 329 *e*P **P 07 32 35.2 +0.5**
comp=Z,1.0nm,0.9s
GERES GERESS Array B 81.81 328 P **P 07 32 35.4 -0.3**
comp=Z,1.5nm,0.8s,baz=46,slow=5.8,SNR=9.1
BFO Black Forest 84.35 331 *i*P **P 07 32 49.8 +1.0**
TXAR Lajitas Array 89.01 53 P **P 07 33 12.7 +0.8**
comp=Z,0.3nm,0.6s,baz=307,slow=3.1,SNR=5.7
TXAR pP **pP 07 33 26.9 +1.0**
comp=Z,1.2nm,0.6s,baz=304,slow=3.5,SNR=13
LPAZ La Paz 145.68 59 PKPbc **PKPdf 07 39 56.3 +0.1**
comp=Z,1.7nm,0.8s,baz=32,slow=6.0,SNR=6.1

*ISK **16** 07:22:31.9, 40.28N×29.92E, h3km, MD2.5*
*ISCJB **16** 07:22:32.5±0.7, 40.26N±0.05×29.91E±0.05, h8km±6km, Error ellipse: s-maj=8.5km s-min=5.8km az=145.5*
*CSEM **16** 07:22:32.5±0.3, 40.26N×29.92E, h10km, MD2.5, Error ellipse: s-maj=6.1km s-min=5.1km az=144.0*
ISC 16 07:22:32.2±1.0, 40.26N±0.04×29.93E±0.03, h8km±7km, n19, σ0s49/25, Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
					Op ISC	h m s	ISC
CAVI	**Cavuskoy**	**0.09**	**229**	*e*PG	**Pg**	**07 22 34.2**	**-0.2**
CAVI				*e*SG	**Sg**	**07 22 36.3**	**+0.3**
CAVI	**Cavuskoy**	**0.09**	**229**	*e*Pg	**Pg**	**07 22 34.2**	**-0.2**
CAVI				*e*Sg	**Sg**	**07 22 36.3**	**+0.3**
ADVT	**Abdulvahap**	**0.23**	**320**	*e*PG	**Pg**	**07 22 36.9**	**+0.1**
ADVT	**Abdulvahap**	**0.23**	**320**	*e*Pg	**Pg**	**07 22 36.9**	**+0.1**
IZI	**Iznik**	**0.36**	**282**	*e*PG	**Pg**	**07 22 39.5**	**+0.2**
IZI	**Iznik**	**0.36**	**282**	*e*Pg	**Pg**	**07 22 39.5**	**+0.2**
GULT	**Gulveren**	**0.48**	**69**	*e*PG	**Pg**	**07 22 42.1**	**+0.6**
GULT				*e*SG	**Sb**	**07 22 49.7**	**-0.5**
GULT	**Gulveren**	**0.48**	**69**	*e*Pg	**Pg**	**07 22 42.1**	**+0.6**
GULT				*e*Sg	**Sb**	**07 22 49.7**	**-0.5**
ULDT	**Uludag**	**0.62**	**259**	*i*P	**Pb**	**07 22 46.3**	**+0.9**
ULDT	**Uludag**	**0.62**	**259**	P	**Pb**	**07 22 46.3**	**+0.9**
ARMT	**Armutlu**	**0.87**	**291**	*e*PG	**Pb**	**07 22 49.2**	**-0.4**
ARMT	**Armutlu**	**0.87**	**291**	*e*Pg	**Pb**	**07 22 49.2**	**-0.4**
TVSB	**Tavsanli**	**0.89**	**204**	*e*PG	**Pb**	**07 22 50.0**	**+0.1**
TVSB	**Tavsanli**	**0.89**	**204**	*e*Pg	**Pb**	**07 22 50.0**	**+0.1**
ISK	**Istanbul-Kandi**	**1.04**	**321**	*e*PG	**Pb**	**07 22 52.3**	**-0.2**
ISK	**Istanbul-Kandi**	**1.04**	**321**	*e*Pg	**Pb**	**07 22 52.3**	**-0.2**
GDZ	**Gediz**	**1.22**	**197**	*i*P	Pg	07 22 50.3	-5.3
GDZ				*i*S	**Sg**	**07 23 10.4**	**-1.0**
DURS	**Dursunbey**	**1.30**	**240**	*i*P	**Pn**	**07 22 56.5**	**-0.2**
DURS				*i*S	**Sb**	**07 23 14.1**	**+0.3**
DURS	**Dursunbey**	**1.30**	**240**	P	**Pn**	**07 22 56.5**	**-0.2**
DURS				S	**Sb**	**07 23 14.1**	**+0.3**

*CSEM **16** 07:23:23.6±1.4, 35.76N×29.58E, h2km, MD2.8, Error ellipse: s-maj=31.4km s-min=17.5km az=123.0*
*ISK **16** 07:23:23.6, 35.67N×29.21E, h5km, MD3.0*
DDA 16 07:23:25.7, 36.06N×29.32E, h5km, Md2.8, Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
					Op ISC	h m s	ISC
AKAS	**Kas**	**0.29**	**52**	*i*P	Pg	07 23 31.0	-0.4
AKAS				*i*S	Sb	07 23 37.8	-0.9
AKAS	**Kas**	**0.29**	**52**	P	Pg	07 23 31.0	-0.4
AKAS				S	Sb	07 23 37.8	-0.9
FETY	**Fethiye**	**0.61**	**342**	*e*PG	Pn	07 23 42.3	+1.3
FETY				*e*SG	Sn	07 23 56.5	+5.2
FETY	**Fethiye**	**0.61**	**342**	*e*Pg	Pn	07 23 42.3	+1.2
FETY				*e*Sg	Sn	07 23 56.5	+5.2
DALY	**Dalyan (Mu˘la**	**0.93**	**325**	*e*PN	Pn	07 23 47.9	+2.5
DALY	**Dalyan (Mu˘la**	**0.93**	**325**	*e*Pn	Pn	07 23 47.9	+2.5
YER	**Yerkesik**	**1.36**	**323**	*e*PN	Pg	07 23 54.0	+2.1
YER	**Yerkesik**	**1.36**	**323**	*e*Pn	Pg	07 23 54.0	+2.2
DENT	**Denizli**	**1.71**	**352**	*e*PN	Pg	07 24 00.3	+1.8
DENT	**Denizli**	**1.71**	**352**	*e*Pn	Pg	07 24 00.3	+1.8
BDRM	**Kayabasi**	**1.82**	**304**	*i*P	Pg	07 24 00.4	-0.1
BDRM	**Kayabasi**	**1.82**	**304**	P	Pg	07 24 00.4	-0.1
KARP	**Karpathos**	**1.83**	**255**	*e*PN	Pn	07 23 53.7	-4.1
KARP	**Karpathos**	**1.83**	**255**	*e*Pn	Pn	07 23 53.7	-4.1
BODT	**Bodrum**	**1.91**	**302**	*e*PN	Pb	07 24 00.3	-0.6
BODT	**Bodrum**	**1.91**	**302**	*e*Pn	Pb	07 24 00.3	-0.6
AYDN	**Tasoluk**	**1.98**	**325**	*i*P	Pg	07 24 04.2	+0.7
AYDN	**Tasoluk**	**1.98**	**325**	P	Pg	07 24 04.2	+0.6
UZP	**Denizli**	**1.98**	**357**	*i*P	Pn	07 23 59.5	-0.4
AYDB	**Zeytinkoy-Aydi**	**2.21**	**329**	*e*PN	Pb	07 24 06.5	+0.3
AYDB	**Zeytinkoy-Aydi**	**2.21**	**329**	*e*Pn	Pb	07 24 06.5	+0.3
KHAL	**Karahalli**	**2.31**	**3**	*i*P	Pb	07 24 07.5	-0.5
KHAL				*i*S	Sb	07 24 37.7	+0.8
KHAL	**Karahalli**	**2.31**	**3**	P	Pb	07 24 07.5	-0.5
KHAL				S	Sb	07 24 37.7	+0.7
KULA	**Kula-Manisa**	**2.51**	**348**	*e*PN	Pb	07 24 11.5	+0.2
KULA	**Kula-Manisa**	**2.51**	**348**	*e*Pn	Pb	07 24 11.5	+0.2

JMA 16 07:24:38.0, 36.94N×140.75E, h14km±1km, M3.6, 4C-2D Broadband fault plane solution: P waves. NP1: φs152.00000°, δ65.00000°, λ-104.00000°. **NP2:** φs2.00000°, δ28.00000°, λ-63.00000°. **Principal axes:** T Plg19.0000°, Azm252.0000°; N Plg12.0000°, Azm158.0000°; P Plg67.0000°, Azm37.0000°; **Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
					Op ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.17**	**13**	⇑P	Pg	07 24 42.0	-0.1
ONAJ				S	Sg	07 24 44.9	0.0
JHO	**Hitachi**	**0.36**	**204**	⇑P	Pg	07 24 45.1	-0.2
JHO				S	Sg	07 24 50.0	-0.2
JFK	**Kawauchi**	**0.44**	**13**	⇑P	Pg	07 24 46.5	-0.2
JFK				S	Sg	07 24 52.6	-0.1
JFT	**Otama**	**0.67**	**330**	⇓P	Pg	07 24 50.8	-0.2
JFT				S	Sg	07 24 59.7	-0.1
JSB	**Shiboa**	**0.67**	**273**	⇑P	Pb	07 24 51.3	-0.1
JSB				S	Sb	07 25 00.4	-0.1
JYT	**Yasato**	**0.84**	**212**	P	Pg	07 24 53.5	-0.8
JYT				S	Sg	07 25 04.8	-0.5
JMM	**Marumori**	**0.93**	**2**	⇓P	Pb	07 24 54.9	-0.9
JMM				S	Sb	07 25 07.0	-1.0
JFY	**Yanaizu**	**0.96**	**299**	P	Pb	07 24 55.8	-0.6
JFY				S	Sb	07 25 08.0	-0.9
MAT	**Matsushiro**	**2.08**	**260**	P	Pn	07 25 13.5	+1.0
MAT				S	Sb	07 25 40.8	-0.5

JMA 16 07:28:31.4, 37.04N×140.66E, h7km±1km, M2.6, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
					Op ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.13**	**61**	P	Pg	07 28 34.4	+0.2
ONAJ				S	Sg	07 28 36.3	+0.3
JFK	**Kawauchi**	**0.37**	**28**	P	Pg	07 28 38.8	+0.2
JFK				S	Sg	07 28 43.9	+0.4
JHO	**Hitachi**	**0.43**	**190**	P	Pg	07 28 39.7	-0.1
JHO				S	Sg	07 28 45.6	+0.1
MAT	**Matsushiro**	**2.03**	**257**	P	Pn	07 29 07.0	+0.9
MAT				S	Sb	07 29 33.8	-0.3

*NIED **16** 07:29:00, 37.00N×140.60E, h8km, Mw4.0 Best double couple: Mo1.04000×10^15 NP1:φs166.00000°, δ11.00000°, λ24.00000°. NP2:φs52.00000°, δ85.00000°, λ100.00000°.*
*ISCJB **16** 07:29:54.5±0.5, 37.02N±0.03×140.69E±0.05, h24km±3km, mb3.6/9, Error ellipse: s-maj=6.6km s-min=4.4km az=23.5*
*JMA **16** 07:29:55.1, 37.03N×140.61E, h15km±1km, M4.1 Broadband fault plane solution: P waves. NP1: φs50.00000°, δ69.00000°, λ108.00000°. NP2: φs187.00000°, δ28.00000°, λ51.00000°. Principal axes: T Plg62.0000°, Azm348.0000°; N Plg17.0000°, Azm223.0000°; P Plg22.0000°, Azm126.0000°;*
JMA Felt III J1.
*IDC **16** 07:30:01.2±3.5, 37.16N×140.66E, h63km±32km, mb3.4/9, mb1 3.6/12, mb1mx3.5/36, mbtmp3.7/12, ML3.4/3, MS2.8/3, Ms1 2.8/3, ms1mx2.6/23 Error ellipse: s-maj=25.8km s-min=17.2km az=109.0*
ISC 16 07:29:55.0±0.9, 37.03N±0.03×140.62E±0.04, h15km±6km, n29, σ0s96/28, mb3.5/9, 1C-3D, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
					Op ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.16**	**64**	⇑P	**Pg**	**07 29 59.2**	**+0.1**
ONAJ				S	**Sb**	**07 30 02.3**	**-0.7**
JFK	**Kawauchi**	**0.39**	**31**	P	**Pg**	**07 30 02.9**	**-0.1**
JFK				S	**Sg**	**07 30 08.6**	**+0.2**
JHO	**Hitachi**	**0.42**	**185**	P	**Pg**	**07 30 03.3**	**-0.1**
JHO				S	**Sg**	**07 30 08.7**	**-0.4**
JFT	**Otama**	**0.54**	**336**	⇓P	**Pb**	**07 30 05.7**	**-0.4**
JFT				S	**Sb**	**07 30 13.1**	**-0.6**
JSB	**Shiboa**	**0.56**	**264**	⇓P	**Pb**	**07 30 06.5**	**0.0**
JSB				S	**Sb**	**07 30 14.5**	**+0.1**
JFY	**Yanaizu**	**0.82**	**298**	⇓P	**Pg**	**07 30 10.5**	**-0.4**
JFY				S	**Sg**	**07 30 21.0**	**-0.7**
JMM	**Marumori**	**0.85**	**10**	P	**Pb**	**07 30 10.8**	**-0.6**
JMM				S	**Sg**	**07 30 21.9**	**-0.7**
JYT	**Yasato**	**0.87**	**203**	P	**Pb**	**07 30 11.2**	**-0.6**
JYT				S	**Sg**	**07 30 23.3**	**0.0**
MJAR	**Matsushiro Arr**	**1.99**	**257**	S	**Sb**	**07 30 54.8**	**-0.8**
	32nm,0.3s,baz=63,slow=29,SNR=8.1						
ASAJ	**Asahikawa**	**7.24**	**11**	P	**Pn**	**07 31 41.5**	**+1.3**
	0.7nm,0.3s,baz=253,slow=16,SNR=3.5						
ASAJ				LR	LR	07 34 52.1	
	comp=Z,28nm,19.1s,baz=240,slow=41						
JNU	**Nakatsue**	**8.88**	**247**	LR	LR	07 36 09.5	
	comp=Z,63nm,19.7s,baz=290,slow=41						
USRK	**Ussuriysk Ar.**	**9.71**	**320**	P	Pn	07 32 19.9	+5.8
	0.2nm,0.3s,baz=136,slow=12,SNR=16						
USRK				LR	LR	07 35 46.7	
	comp=Z,137nm,18.7s,baz=179,slow=36						
KSRS	**Korea Array**	**10.13**	**276**	P	Pn	07 32 25.9	+6.1
	0.2nm,0.3s,baz=74,slow=16,SNR=4.8						
KLR	**Kul'dur**	**13.79**	**335**	P	**Pn**	**07 33 12.5**	**+2.6**
	0.2nm,0.3s,baz=96,slow=16,SNR=4.3						
SEY	**Seymchan**	**26.92**	**12**	P	**P**	**07 35 35.3**	**0.0**
	2.4nm,0.9s,baz=222,slow=7.7,SNR=6.0						
H11N2	**WAKE ISLAND Hy**	**28.70**	**120**	T	T	08 05 44.1	
	baz=313,slow=75,SNR=21						
H11N1	**WAKE ISLAND Hy**	**28.70**	**120**	T	T	08 05 44.6	
	baz=313,slow=75,SNR=24						
H11N3	**WAKE ISLAND Hy**	**28.71**	**120**	T	T	08 05 45.4	
	baz=313,slow=75,SNR=19						
H11S1	**WAKE ISLAND Hy**	**29.40**	**122**	T	T	08 06 35.1	
	baz=314,slow=75,SNR=46						
H11S3	**WAKE ISLAND Hy**	**29.40**	**122**	T	T	08 06 33.8	
	baz=314,slow=75,SNR=28						
H11S2	**WAKE ISLAND Hy**	**29.41**	**122**	T	T	08 06 36.2	
	baz=314,slow=75,SNR=30						
ZALV	**Zalesovo Beam**	**41.45**	**312**	P	**P**	**07 37 40.6**	**-0.2**
	0.4nm,0.4s,baz=70,slow=9.7,SNR=3.3						
MKAR	**Makanchi Array**	**43.58**	**302**	P	**P**	**07 37 58.1**	**-0.2**
	0.4nm,0.7s,baz=94,slow=9.2,SNR=5.4						
ILAR	**Eielson Array**	**49.84**	**32**	P	**P**	**07 38 45.6**	**-1.4**
	0.4nm,0.8s,baz=279,slow=6.6,SNR=5.8						
WRA	**Warramunga Arr**	**56.97**	**187**	P	**P**	**07 39 39.5**	**-0.5**
	1.2nm,0.5s,baz=2.9,slow=7.4,SNR=5.7						
ASAR	**Alice Springs**	**60.70**	**187**	P	**P**	**07 40 07.8**	**+2.0**
	0.4nm,0.4s,baz=20,slow=13,SNR=11						
YKA	**Yellowknife Ar**	**64.13**	**30**	P	**P**	**07 40 26.7**	**-1.6**
	0.2nm,0.8s,baz=308,slow=7.2,SNR=5.4						
FINES	**FINESS Array B**	**68.52**	**332**	P	**P**	**07 40 55.9**	**-0.6**
	1.7nm,0.8s,baz=35,slow=7.9,SNR=4.4						
PDAR	**Pinedale Array**	**78.12**	**45**	P	**P**	**07 41 54.5**	**+0.7**
	0.2nm,0.7s,baz=272,slow=5.9,SNR=2.5						

JMA 16 07:32:44.5±0.3, 38.84N×144.22E, h36km, M3.8, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
					Op ISC	h m s	ISC
OFUJ	**Ofunato**	**2.00**	**278**	P	Pn	07 33 16.8	+1.0
OFUJ				*e*S	Sn	07 33 41.6	+2.0
JTH	**Tanohata**	**2.13**	**302**	P	Pn	07 33 18.7	+1.2
JIO	**Ouri**	**2.28**	**261**	P	Pn	07 33 20.8	+1.2
JIO				S	Sn	07 33 48.1	+1.7
JMK	**Ichinoseki**	**2.34**	**274**	P	Pn	07 33 22.3	+1.9
JOM	**Ohasama**	**2.36**	**286**	P	Pn	07 33 22.6	+1.9
JANG	**Nango**	**2.59**	**307**	P	Pn	07 33 24.8	+1.0
JOU	**Okura**	**2.83**	**261**	P	Pn	07 33 29.1	+2.0
JRG	**Rokugo**	**2.84**	**282**	P	Pn	07 33 29.6	+2.3
JMM	**Marumori**	**2.86**	**251**	P	Pn	07 33 28.8	+1.2
JMM				S	Sn	07 34 01.4	+0.6
JYK	**Kaneyama**	**3.01**	**273**	P	Pn	07 33 31.9	+2.2
JTM	**Tenmabayashi**	**3.11**	**310**	P	Pn	07 33 32.4	+1.4
JTM				S	Sn	07 34 08.1	+1.2
JFT	**Otama**	**3.33**	**248**	P	Pn	07 33 35.8	+1.7
JFT				S	Sn	07 34 14.4	+2.0
MAT	**Matsushiro**	**5.29**	**246**	P	Pn	07 34 01.7	+0.7

IDC 16 07:33:31.6±3.0, 3.87S×103.73W, h0km, mb3.6/4, mb1 3.9/4, mb1mx3.7/23, mbtmp3.6/4, MS3.1/2, Ms1 3.1/2, ms1mx2.7/25, Error ellipse: s-maj=246.4km s-min=31.3km az=68.0, Central East Pacific Rise

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
					Op ISC	h m s	ISC
ATAH	**Atahualpa**	**25.42**	**98**	LR	LR	07 46 41.2	
	comp=Z,43nm,21.8s,baz=349,slow=31						
NNA	**Nana**	**27.80**	**108**	LR	LR	07 46 50.9	
	comp=Z,56nm,21.2s,baz=294,slow=29						
PDAR	**Pinedale Array**	**46.72**	**354**	P	P	07 42 02.5	-0.3
	0.7nm,0.9s,baz=146,slow=5.0,SNR=5.8						
PLCA	**Paso Flores**	**47.30**	**146**	P	P	07 42 07.0	-0.1
	1.7nm,1.0s,baz=304,slow=4.1,SNR=2.9						
YKA	**Yellowknife Ar**	**66.70**	**355**	P	P	07 44 24.3	+0.2
	0.3nm,0.9s,baz=168,slow=5.9,SNR=5.5						
ILAR	**Eielson Array**	**75.44**	**342**	P	P	07 45 17.2	0.0
	0.4nm,0.9s,baz=155,slow=5.3,SNR=4.8						

JMA 16 07:35:46.3±0.2, 37.30N×142.55E, h0km, M3.7, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
					Op ISC	h m s	ISC
JFK	**Kawauchi**	**1.34**	**273**	P	Pg	07 36 11.8	-0.1
ONAJ	**Iwakimizuishiy**	**1.41**	**262**	*e*S	Sn	07 36 32.6	-0.1
JIO	**Ouri**	**1.49**	**321**	P	Pn	07 36 14.3	-0.1
JMM	**Marumori**	**1.51**	**293**	P	Pn	07 36 14.6	+0.1
JFT	**Otama**	**1.78**	**278**	P	Pb	07 36 19.2	-0.5
JFT				*e*S	Sb	07 36 42.9	+0.3
JOU	**Okura**	**1.83**	**306**	P	Pn	07 36 19.7	+0.6
MAT	**Matsushiro**	**3.56**	**259**	P	Pb	07 36 47.3	-2.9
MAT				S	Sb	07 37 30.5	-3.5

IDC 16 07:46:11.4±1.4, 28.06N×140.21E, h0km, mb3.6/4, mb1 3.9/5, mb1mx3.4/35, mbtmp3.6/5, ML3.4/1, Error ellipse: s-maj=44.4km s-min=25.4km az=106.0, Bonin Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
					Op ISC	h m s	ISC
JCJ	**Chichijima**	**2.00**	**118**	Pn	Pb	07 46 47.7	-1.0
	14nm,0.3s,baz=286,slow=23,SNR=8.3						
JCJ				Sn	Sn	07 47 08.3	-3.9
	18nm,0.3s,baz=267,slow=23,SNR=8.3						
WRA	**Warramunga Arr**	**48.06**	**187**	P	P	07 54 53.4	+0.6
	1.3nm,0.7s,baz=12,slow=8.6,SNR=10						
ASAR	**Alice Springs**	**51.79**	**187**	P	P	07 55 20.0	-1.1
	0.3nm,0.6s,baz=0.1,slow=6.5,SNR=4.7						
YKA	**Yellowknife Ar**	**72.12**	**28**	P	P	07 57 38.5	+1.1
	0.2nm,0.7s,baz=290,slow=5.2,SNR=3.4						
NVAR	**Mina Array Bea**	**81.29**	**51**	P	P	07 58 28.3	-1.8
	0.5nm,0.7s,baz=285,slow=4.0,SNR=4.8						

*IDC **16** 07:56:38.5±0.6, 55.36S×27.89W, h0km, mb4.5/12, mb1 4.5/12, mb1mx4.3/20, mbtmp4.5/12, MS3.8/9, Ms1 3.8/9, ms1mx3.7/18, Error ellipse: s-maj=19.3km s-min=17.0km az=0.0*
*NEIC **16** 07:56:39.8±3.7, 55.38S×27.90W, h9km±22km, mb5.0/8, Error ellipse: s-maj=9.5km s-min=6.8km az=214.0*
*ISCJB **16** 07:56:40.3±0.4, 55.39S±0.08×27.79W±0.1, h26km, mb4.6/18, MS3.8/9, Error ellipse: s-maj=11.7km s-min=8.9km az=18.2*
ISC 16 07:56:42.3±0.5, 55.37S±0.10×28.05W±0.07, h26km, n43, σ0s94/40, mb4.7/17, MS3.8/8, 2D, South Sandwich Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
					Op ISC	h m s	ISC
HOPE	**Hope Point**	**5.00**	**279**	*e*Pn	**Pn**	**07 57 55.4**	**-0.2**
	633nm,0.6s						
HOPE				*e*Sn	**Sn**	**07 58 49.7**	**-2.8**
EFI	**East Falkland**	**18.15**	**269**	*e*P	**P**	**08 00 53.8**	**+1.4**
	311nm,1.8s						
SNAA	**Sanae**	**19.56**	**156**	*e*P	**P**	**08 01 07.7**	**-0.2**
	801nm,0.7s						
PMSA	**Palmer Station**	**19.99**	**227**	P	**P**	**08 01 12.8**	**+0.4**
	25nm,0.8s,baz=91,slow=7.9,SNR=4.9						
PMSA				LR	LR	08 07 40.9	
	comp=Z,235nm,19.6s,baz=70,slow=33						
USHA	**Ushuaia**	**22.89**	**255**	P	**P**	**08 01 44.2**	**+0.6**
	46nm,0.9s,baz=108,slow=3.2,SNR=3.4						
TRQA	**Tornquist**	**28.61**	**293**	*e*P	**P**	**08 02 37.5**	**+1.2**
	110nm,2.2s						
PLCA	**Paso Flores**	**31.40**	**280**	P	**P**	**08 03 01.3**	**+0.3**
	1.4nm,0.9s,baz=150,slow=9.9,SNR=3.5						
PLCA				LR	LR	08 16 44.0	
	comp=Z,128nm,19.6s,baz=153,slow=38						
SYO	**Syowa Base**	**32.42**	**142**	*e*pP	**P**	**08 03 10.0**	**+0.5**
SYO	**Syowa Base**	**32.42**	**142**	*e*X		08 03 19.2	
QSPA	**South Pole Qui**	**34.88**	**180**	*e*P	**P**	**08 03 31.7**	**+0.4**
	66nm,1.2s						
CPUP	**Villa Florida**	**36.00**	**312**	P	**P**	**08 03 39.8**	**-1.1**
	8.2nm,0.9s,baz=146,slow=6.0,SNR=7.1						
CPUP				LR	LR	08 17 26.1	
	comp=Z,114nm,20.1s,baz=146,slow=35						
MAW	**Mawson**	**40.98**	**144**	P	**P**	**08 04 20.9**	**-1.5**
	2.3nm,0.8s,baz=270,slow=10,SNR=4.2						
BOSA	**Boshof**	**46.28**	**77**	P	**P**	**08 05 04.1**	**-1.6**
	2.2nm,0.7s,baz=228,slow=6.2,SNR=3.6						
BOSA				LR	LR	08 20 53.9	
	comp=Z,125nm,18.1s,baz=210,slow=32						
VNDA	**Vanda**	**47.23**	**183**	P	**P**	**08 05 13.0**	**+0.7**
	5.8nm,0.8s,baz=184,slow=7.0,SNR=29						
LBTB	**Lobatse**	**49.29**	**75**	P	**P**	**08 05 28.9**	**0.0**
	2.9nm,0.8s,baz=264,slow=11,SNR=4.3						
LPAZ	**La Paz**	**49.59**	**306**	P	**P**	**08 05 33.2**	**+1.3**
	10.0nm,0.9s,baz=125,slow=4.7,SNR=31						
LPAZ				LR	LR	08 26 47.5	
	comp=Z,50nm,20.4s,baz=187,slow=36						
TSUM	**Tsumeb**	**49.79**	**62**	*e*P	**P**	**08 05 33.0**	**+0.1**
	4.4nm,0.9s						
SAML	**Samuel**	**53.98**	**315**	*e*P	**P**	**08 06 03.7**	**-0.3**
	8.6nm,1.0s						
DBIC	**Dimbokro**	**64.76**	**26**	P	**P**	**08 07 17.1**	**-1.2**
	3.1nm,0.6s,baz=165,slow=9.6,SNR=6.9						
DBIC				LR	LR	08 28 06.1	
	comp=Z,65nm,21.9s,baz=142,slow=29						
OTAV	**Otavalo**	**68.87**	**304**	*e*P	**P**	**08 07 45.8**	**+0.6**
	3.6nm,1.1s						
TORD	**Torodi Ar. Bea**	**72.71**	**30**	P	**P**	**08 08 08.4**	**+0.6**
	2.4nm,0.5s,baz=200,slow=6.3,SNR=34						
TORD				LR	LR	08 34 31.6	
	comp=Z,97nm,19.8s,baz=80,slow=31						
KMBO	**Kilima Mbogo**	**75.26**	**70**	LR	LR	08 40 20.5	
	comp=Z,164nm,18.3s,baz=92,slow=35						
JTS	**JuntasAbangare**	**80.73**	**303**

MJAR	**Matsushiro Arr**	**3.37**	**259**	Pn		**Pn**	**08 11 57.7**	**+2.7**
	3.1nm,0.3s,baz=89,slow=16,SNR=19							
MAT	**Matsushiro**	**3.37**	**259**	P		**Pn**	**08 11 57.8**	**+2.8**
MAT				*e*S		**Sb**	**08 12 39.5**	**-3.6**
JHJ	**Hachijo jima 2**	**4.62**	**207**	Pn		**Pn**	**08 12 11.6**	**-0.6**
	12nm,0.3s,baz=141,slow=23,SNR=6.8							
JHJ				Sn		**Sn**	**08 13 02.7**	**-2.5**
	15nm,0.3s,baz=29,slow=16,SNR=3.4							
ASAJ	**Asahikawa**	**6.85**	**2**	Pn		**Pn**	**08 12 42.9**	**+0.1**
	0.5nm,0.3s,baz=108,slow=20,SNR=4.3							
JNU	**Nakatsue**	**10.23**	**250**	LR		LR	08 17 50.7	
	comp=Z,68nm,21.9s,baz=290,slow=39							
USRK	**Ussuriysk Ar.**	**10.45**	**315**	Pn		**Pn**	**08 13 33.6**	**+1.5**
	0.1nm,0.3s,baz=99,slow=15,SNR=2.3							
KSRS	**Korea Array**	**11.46**	**275**	LR		LR	08 17 45.0	
	comp=Z,57nm,19.8s,baz=74,slow=34							
KLR	**Kul'dur**	**14.21**	**331**	LR		LR	08 20 45.7	
	comp=Z,45nm,18.2s,baz=281,slow=41							
SEY	**Seymchan**	**26.43**	**10**	P		**P**	**08 16 39.4**	**+0.8**
	1.5nm,0.6s,baz=186,slow=8.7,SNR=8.0							
H11N2	**WAKE ISLAND Hy**	**27.65**	**122**	T		T	08 45 39.0	
	baz=315,slow=75,SNR=540							
H11N1	**WAKE ISLAND Hy**	**27.66**	**122**	T		T	08 45 40.2	
	baz=315,slow=75,SNR=377							
H11N3	**WAKE ISLAND Hy**	**27.67**	**122**	T		T	08 45 42.5	
	baz=315,slow=75,SNR=429							
H11S1	**WAKE ISLAND Hy**	**28.39**	**125**	T		T	08 46 32.7	
	baz=317,slow=76,SNR=464							
H11S3	**WAKE ISLAND Hy**	**28.39**	**125**	T		T	08 46 34.5	
	baz=317,slow=76,SNR=464							
H11S2	**WAKE ISLAND Hy**	**28.40**	**125**	T		T	08 46 34.3	
	baz=317,slow=76,SNR=574							
CMAR	**Chiang Mai Arr**	**42.25**	**256**	LR		LR	08 36 08.9	
	comp=Z,21nm,19.5s,baz=230,slow=36							
ZALV	**Zalesovo Beam**	**42.29**	**312**	P		**P**	**08 18 56.1**	**+0.7**
	0.9nm,0.4s,baz=96,slow=7.7,SNR=5.6							
MKAR	**Makanchi Array**	**44.61**	**302**	P		**P**	**08 19 15.0**	**+0.7**
	0.9nm,0.7s,baz=87,slow=6.8,SNR=6.4							
KURBB	**Kurchatov Arra**	**46.43**	**308**	P		**P**	**08 19 29.1**	**+0.5**
	1.8nm,0.6s,baz=83,slow=8.0,SNR=19							
ILAR	**Eielson Array**	**48.92**	**32**	P		**P**	**08 19 47.4**	**-0.3**
	0.6nm,0.8s,baz=264,slow=5.8,SNR=6.4							
INK	**Inuvik**	**53.86**	**27**	P		**P**	**08 20 24.9**	**+0.3**
	0.4nm,0.4s,baz=36,slow=1.8,SNR=4.1							
WRA	**Warramunga Arr**	**57.39**	**189**	P		**P**	**08 20 50.4**	**-0.1**
	0.4nm,0.4s,baz=6.8,slow=7.1,SNR=7.1							
YKA	**Yellowknife Ar**	**63.25**	**30**	P		**P**	**08 21 30.1**	**+0.1**
	0.2nm,0.6s,baz=303,slow=6.5,SNR=6.9							
FINES	**FINESS Array B**	**68.95**	**332**	P		**P**	**08 22 06.5**	**-0.2**
	2.2nm,0.8s,baz=35,slow=7.0,SNR=4.8							
NVAR	**Mina Array Bea**	**74.28**	**54**	P		**P**	**08 22 40.4**	**+0.9**
	0.3nm,0.5s,baz=278,slow=5.9,SNR=4.5							
AKASG	**Malin Array Be**	**74.56**	**323**	P		**P**	**08 22 40.9**	**+0.3**
	0.6nm,0.4s,baz=47,slow=5.8,SNR=4.7							
PDAR	**Pinedale Array**	**76.99**	**46**	P		**P**	**08 22 54.7**	**-0.3**
	0.2nm,0.7s,baz=282,slow=4.3,SNR=2.5							
TXAR	**Lajitas Array**	**89.41**	**53**	P		**P**	**08 23 59.1**	**0.0**
	0.5nm,0.9s,baz=265,slow=2.3,SNR=3.9							
LPAZ	**La Paz**	**145.96**	**60**	PKPbc		**PKPdf**	**08 30 40.0**	**-2.1**
	1.0nm,0.8s,baz=346,slow=4.2,SNR=2.6							

CSEM ***16*** *08:15:32.7±0.4,39.23N×27.76E,h1km,MD2.7,Error ellipse: s-maj=9.5km s-min=5.6km az=79.0,Suspected Mining explosion.*
DDA ***16*** *08:15:32.2,39.27N×27.73E,h7km,Md2.7,Suspected Mining explosion.*
ISCJB ***16*** *08:15:33.0±0.9,39.23N±0.03×27.79E±0.07,h0km,Error ellipse: s-maj=8.1km s-min=4.4km az=0.0*
ISK ***16*** *08:15:33.2,39.23N×27.90E,h5km,MD2.6*

ISC 16 08:15:31.7±1.2,39.22N±0.03×27.71E±0.06,h0km,n18, σ0s47/29,Turkey

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
AKHS	**Akhisar**	**0.35**	**167**	*i* P		**Pb**	**Pb**	**08 15 40.1**	**-0.7**
AKHS				*i* S		**Sb**	**Sb**	**08 15 47.3**	**+0.5**
AKHS	**Akhisar**	**0.35**	**167**	P		**Pb**	**Pb**	**08 15 40.1**	**-0.7**
BALB	**Balikesir**	**0.44**	**17**	*e*PG		**Pb**	**Pb**	**08 15 41.9**	**-0.5**
BALB				*e*SG		**Sb**	**Sb**	**08 15 49.4**	**-0.1**
BALB	**Balikesir**	**0.44**	**17**	*e*Pg		**Pb**	**Pb**	**08 15 41.9**	**-0.5**
BALB				*e*Sg		**Sb**	**Sb**	**08 15 49.4**	**-0.1**
BALY	**Balya**	**0.53**	**352**	*i* P		**Pg**	**Pg**	**08 15 42.0**	**+0.2**
BALY	**Balya**	**0.53**	**352**	P		**Pg**	**Pg**	**08 15 42.0**	**+0.2**
DURS	**Dursunbey**	**0.70**	**57**	*i* P		**Pg**	**Pg**	**08 15 44.8**	**-0.4**
DURS				*i* S		**Sg**	**Sg**	**08 15 55.2**	**+0.9**
DURS	**Dursunbey**	**0.70**	**57**	P		**Pg**	**Pg**	**08 15 44.8**	**-0.4**
DURS				S		**Sg**	**Sg**	**08 15 55.2**	**+0.9**
DEMI	**Demirci**	**0.80**	**102**	*i* P		**Pg**	**Pg**	**08 15 47.5**	**+0.5**
DEMI	**Demirci**	**0.80**	**102**	P		**Pg**	**Pg**	**08 15 47.5**	**+0.5**
KULA	**Kula-Manisa**	**1.02**	**133**	*e*PG		**Sb**	**Pb**	**08 15 51.9**	**-0.4**
KULA				*e*SG		**Sb**	**Sb**	**08 16 06.2**	**0.0**
KULA	**Kula-Manisa**	**1.02**	**133**	*e*Pg		**Pb**	**Pb**	**08 15 51.9**	**-0.4**
KULA				*e*Sg		**Sb**	**Sb**	**08 16 06.2**	**0.0**
TVSB	**Tavsanli**	**1.38**	**80**	*e*PN		**Pg**	**Pg**	**08 15 57.6**	**-0.5**
TVSB				*e*SN		**Sg**	**Sg**	**08 16 15.9**	**0.0**
TVSB	**Tavsanli**	**1.38**	**80**	*e*Pn		**Pg**	**Pg**	**08 15 57.6**	**-0.5**
TVSB				*e*Sn		**Sg**	**Sg**	**08 16 15.9**	**0.0**
GDZ	**Gediz**	**1.38**	**95**	*i* P		**Pg**	**Pg**	**08 15 58.2**	**+0.1**
GDZ	**Gediz**	**1.38**	**95**	P		**Pg**	**Pg**	**08 15 58.2**	**+0.1**
ULDT	**Uludag**	**1.44**	**50**	*i* P		**Pn**	**Pn**	**08 15 59.0**	**-0.2**
ULDT				*i* S		**Sn**	**Sn**	**08 16 19.5**	**+0.7**
ULDT	**Uludag**	**1.44**	**50**	P		**Pn**	**Pn**	**08 15 59.0**	**-0.2**
ULDT				S		**Sn**	**Sn**	**08 16 19.5**	**+0.7**

CASC 16 08:18:20.1±2.9,11.22N×87.83W,h82km±113km,MD4.1, ML3.1,Near coast of Nicaragua

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
COPN	**Copaltepe**	**1.54**	**52**	*e*P		**Pn**	Pn	08 18 45.7	-0.3
COPN					AML	AML	AML	08 19 14.0	
	comp=Z,579nm,0.4s								
TEL3	**Telica 3**	**1.66**	**35**	*e*P		Pn	Pn	08 18 47.3	-0.3
CRIN	**San Cristobal**	**1.66**	**27**	*e*P		Pn	Pn	08 18 46.9	-0.7
CNGN	**Cerro Negro**	**1.69**	**41**	*e*P		Pn	Pn	08 18 47.3	-0.7
MOMN	**Momotombo**	**1.73**	**47**	*e*P		Pn	Pn	08 18 47.9	-0.6
XAVN	**Gruta Xavier**	**1.74**	**58**	*e*P		Pn	Pn	08 18 48.6	0.0
CSGN	**Cosiguina Volc**	**1.77**	**8**	*e*P		Pn	Pn	08 18 47.5	-1.6
CSGN				*e*S		Sn	Sn	08 19 09.4	-1.6
CSGN				*e*				08 19 09.4	
TISN	**Laguna Tiscapa**	**1.78**	**59**	*e*P		Pn	Pn	08 18 49.5	+0.3
TISN					AML	AML	AML	08 19 20.1	
	comp=Z,261nm,0.2s								
MGAN	**Managua**	**1.80**	**59**	*e*P		Pn	Pn	08 18 49.6	+0.1
MGAN				*e*S		Sn	Sn	08 19 14.5	+2.7
MGAN					AML	AML	AML	08 19 18.2	
	comp=N,65nm,0.2s								
ESTN	**Estel**	**2.35**	**37**	*e*P		Pn	Pn	08 18 56.6	-0.3
BOAB	**BOACO BROADBAN**	**2.44**	**60**	*e*P		Pn	Pn	08 18 57.8	-0.2
JCR	**Jicaral**	**3.00**	**117**	*e*P		Pn	Pn	08 19 06.6	+1.1
JCR				*e*S		Sn	Sn	08 19 40.9	+0.4
URSC	**Urasca**	**4.21**	**109**	*e*P		Pn	Pn	08 19 25.6	+3.4
URSC				*e*S		Sn	Sn	08 20 11.0	+0.8
BUS	**Buena Vista**	**4.33**	**112**	*e*P		Pn	Pn	08 19 26.4	+2.4
BUS				*e*S		Sn	Sn	08 20 13.1	-0.5

IDC 16 08:25:32.8±15.0,37.57N×143.82E,h0km,mb3.5/2, mb1 3.6/3,mb1mx3.2/51,mbtmp3.3/3,ML3.1/1,Error ellipse: s-maj=330.1km s-min=53.1km az=19.0,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
MJAR	**Matsushiro Arr**	**4.61**	**259**	Pn		Pn	Pn	08 26 43.1	-0.5
	1.0nm,0.3s,baz=74,slow=9.3,SNR=5.8								
H11N2	**WAKE ISLAND Hy**	**26.83**	**125**	T		T	T	08 59 11.7	
	baz=313,slow=75,SNR=7.9								
H11N1	**WAKE ISLAND Hy**	**26.84**	**125**	T		T	T	08 59 13.8	
	baz=313,slow=75,SNR=9.7								
H11N3	**WAKE ISLAND Hy**	**26.84**	**125**	T		T	T	08 59 13.2	
	baz=313,slow=75,SNR=10								
WRA	**Warramunga Arr**	**57.90**	**191**	P		P	P	08 35 26.0	-0.6
	0.6nm,0.7s,baz=9.8,slow=7.2,SNR=4.9								
ASAR	**Alice Springs**	**61.62**	**190**	P		P	P	08 35 52.7	+0.5
	0.2nm,0.6s,baz=12,slow=10,SNR=4.5								

ISCJB ***16*** *08:26:59.0±0.4,55.74N±0.04×161.58W±0.06,h10km, mb3.8/8,MS3.7/1,Error ellipse: s-maj=6.8km s-min=3.3km az=141.5*

NEIC ***16*** *08:27:00.2,55.60N×161.49W,h11km,ML3.5(AEIC),After AEIC.*
IDC ***16*** *08:27:06.5±6.2,55.95N×161.71W,h60km±52km,mb3.4/7, mb1 3.7/9,mb1mx3.4/46,mbtmp3.7/9,ML3.4/2,MS3.1/2, Ms1 3.1/2,ms1mx2.6/42,Error ellipse: s-maj=46.7km s-min=19.7km az=30.0*

ISC 16 08:26:59.8±0.6,55.65N±0.06×161.53W±0.04,h10km,n33, σ0s94/36,mb3.7/8,Alaska Peninsula

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
PS1A	**Pavlof South-1**	**0.26**	**207**	P		**Pg**	**Pg**	**08 27 05.9**	**+0.8**
PN6	**Pavlof North-6**	**0.30**	**228**	P		**Pb**	**Pb**	**08 27 06.9**	**-0.4**
PN6				S		**Sb**	**Sb**	**08 27 12.2**	**-0.1**
PVV	**Pavlof Volcano**	**0.32**	**207**	P		**Pb**	**Pb**	**08 27 06.8**	**-0.7**
PS4A	**Pavlof South-4**	**0.36**	**211**	P		**Pb**	**Pb**	**08 27 07.5**	**-0.8**
HAG	**Hague Volcano**	**0.40**	**212**	P		**Pb**	**Pb**	**08 27 08.4**	**-0.5**
DOL	**Dolgoi Island**	**0.54**	**200**	P		**Pb**	**Pb**	**08 27 10.5**	**-0.9**
DTNA	**Dutton South F**	**0.65**	**219**	P		**Pb**	**Pb**	**08 27 12.9**	**-0.4**
SDPT	**Sand Point**	**0.68**	**117**	P		**Pb**	**Pb**	**08 27 12.8**	**-0.9**
SDPT				S		**Sb**	**Sb**	**08 27 22.2**	**-0.9**
DT1	**Dutton Round H**	**0.69**	**218**	P		**Pg**	**Pg**	**08 27 13.3**	**+0.1**
BALA	**Baldy Mountain**	**0.85**	**238**	P		**Pb**	**Pb**	**08 27 17.0**	**+0.4**
VNWF	**Veniaminof 8**	**1.22**	**65**	P		**Pn**	**Pn**	**08 27 23.0**	**0.0**
FALS	**False Pass**	**1.34**	**234**	P		**Pn**	**Pn**	**08 27 23.7**	**-0.9**
FALS				S		**Sb**	**Sb**	**08 27 41.4**	**-0.9**
VNNF	**Veniaminof 3**	**1.40**	**62**	P		**Pn**	**Pn**	**08 27 25.6**	**+0.1**
VNHG	**Veniaminof 1**	**1.45**	**66**	P		**Pn**	**Pn**	**08 27 26.3**	**+0.2**
ISLZ	**Isanotski Laza**	**1.56**	**234**	P		**Pn**	**Pn**	**08 27 26.9**	**-0.7**
SSLN	**Shishaldin Nor**	**1.64**	**240**	P		**Pn**	**Pn**	**08 27 28.6**	**-0.3**
SSLS	**Shishaldin Sou**	**1.70**	**237**	P		**Pn**	**Pn**	**08 27 29.7**	**+0.1**
SSLS				S		**Sb**	**Sb**	**08 27 53.5**	**+0.8**
SSLW	**Shishaldin Wes**	**1.73**	**240**	P		**Pn**	**Pn**	**08 27 29.1**	**-0.8**
CHGN	**Chignik**	**1.87**	**68**	P		**Pn**	**Pn**	**08 27 31.4**	**-0.5**
ANPB	**Aniakchak Plen**	**2.15**	**56**	P		**Pn**	**Pn**	**08 27 35.2**	**-0.6**
ANNW	**Aniakchak Nort**	**2.27**	**53**	P		**Pn**	**Pn**	**08 27 37.2**	**-0.2**
UNV	**Unalaska Valle**	**3.40**	**240**	P		**Pn**	**Pn**	**08 27 53.8**	**+0.9**
KDAK	**Kodiak Island**	**5.37**	**63**	P		Pb	Pb	08 28 35.4	+1.8
	5.5nm,0.3s,baz=244,slow=6.8,SNR=103								
ILAR	**Eielson Array**	**11.65**	**32**	P		**Pn**	**Pn**	**08 29 47.4**	**+1.4**
	0.1nm,0.3s,baz=225,slow=13,SNR=13								
ILAR					LR	LR	LR	08 34 27.3	
	comp=Z,26nm,18.4s,baz=243,slow=38								
INK	**Inuvik**	**18.04**	**34**	P		**Pn**	**Pn**	**08 31 09.6**	**-0.6**
	0.1nm,0.3s,baz=235,slow=14,SNR=11								
SEY	**Seymchan**	**24.15**	**306**	P		**P**	**P**	**08 32 14.2**	**-1.5**
	1.3nm,0.7s,baz=111,slow=9.1,SNR=9.0								
YKA	**Yellowknife Ar**	**24.58**	**55**	P		**P**	**P**	**08 32 19.8**	**+0.3**
	1.3nm,0.5s,baz=274,slow=8.7,SNR=39								
NVAR	**Mina Array Bea**	**33.46**	**103**	P		**P**	**P**	**08 33 41.3**	**+2.2**
	0.3nm,0.6s,baz=306,slow=7.7,SNR=3.1								
PDAR	**Pinedale Array**	**35.46**	**89**	P		**P**	**P**	**08 33 57.6**	**+1.2**
	0.6nm,0.9s,baz=319,slow=4.3,SNR=4.5								
NRIK	**Noril'sk**	**45.70**	**332**	P		**P**	**P**	**08 35 20.9**	**+0.7**
	1.8nm,0.5s,baz=108,slow=4.3,SNR=3.9								
TXAR	**Lajitas Array**	**48.33**	**98**	P		**P**	**P**	**08 35 42.8**	**+1.3**
	0.3nm,0.7s,baz=316,slow=5.9,SNR=4.0								
FINES	**FINESS Array B**	**63.09**	**356**	P		**P**	**P**	**08 37 25.0**	**-1.8**
	3.7nm,1.1s,baz=346,slow=16,SNR=3.3								
FINES					LR	LR	LR	09 04 55.9	
	comp=Z,59nm,20.5s,baz=215,slow=36								
AKASG	**Malin Array Be**	**73.64**	**353**	P		**P**	**P**	**08 38 31.3**	**-1.7**
	1.0nm,0.6s,baz=5.6,slow=5.4,SNR=4.0								

JMA ***16*** *08:28:24.4±0.1,37.21N×142.52E,h0km,M4.2*
IDC ***16*** *08:28:28.1±3.0,37.15N×142.44E,h0km,mb3.4/2, mb1 3.5/3,mb1mx3.2/48,mbtmp3.3/3,ML3.2/1,Error ellipse: s-maj=72.7km s-min=34.6km az=57.0*

ISC 16 08:28:31.4±1.8,37.3N±0.1×142.2E±0.1,h19km,n13, σ1s63/9,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**1.03**	**277**	P		**Pb**	**Pb**	**08 28 49.7**	**-0.9**
JMM	**Marumori**	**1.25**	**300**	P		**Pn**	**Pn**	**08 28 52.7**	**-1.1**
JMM				*e*S		**Sg**	**Sg**	**08 29 13.4**	**+1.6**
JFT	**Otama**	**1.47**	**281**	P		**Pn**	**Pn**	**08 28 57.2**	**+0.3**
MJAR	**Matsushiro Arr**	**3.24**	**259**	Pn		**Pn**	**Pn**	**08 29 22.7**	**+1.4**
	2.1nm,0.3s,baz=82,slow=15,SNR=7.9								
MAT	**Matsushiro**	**3.24**	**259**	P		**Pn**	**Pn**	**08 29 22.6**	**+1.3**
MAT				*e*S		**Sn**	**Sn**	**08 29 57.1**	**-2.3**
H11N2	**WAKE ISLAND Hy**	**27.75**	**122**	T		T	T	09 03 08.8	
	baz=315,slow=75,SNR=24								
H11N1	**WAKE ISLAND Hy**	**27.76**	**122**	T		T	T	09 03 09.1	
	baz=315,slow=75,SNR=15								
H11N3	**WAKE ISLAND Hy**	**27.77**	**122**	T		T	T	09 03 12.0	
	baz=315,slow=75,SNR=22								
H11S1	**WAKE ISLAND Hy**	**28.48**	**124**	T		T	T	09 04 03.6	
	baz=317,slow=76,SNR=30								
H11S3	**WAKE ISLAND Hy**	**28.48**	**124**	T		T	T	09 04 01.6	
	baz=317,slow=76,SNR=25								
H11S2	**WAKE ISLAND Hy**	**28.50**	**124**	T		T	T	09 04 04.9	
	baz=317,slow=76,SNR=24								
MKAR	**Makanchi Array**	**44.51**	**302**	P		**P**	**P**	**08 36 42.9**	**+1.4**
	0.3nm,0.6s,baz=70,slow=8.3,SNR=3.2								
WRA	**Warramunga Arr**	**57.36**	**189**	P		**P**	**P**	**08 38 17.6**	**-0.7**
	0.3nm,0.6s,baz=8.2,slow=7.3,SNR=5.0								

IDC 16 08:28:50.6±0.9,21.41S×68.71E,h0km,mb3.9/7, mb1 4.0/7,mb1mx3.7/46,mbtmp3.9/7,MS3.6/3,Ms1 3.5/3, ms1mx3.0/41,Error ellipse: s-maj=28.0km s-min=24.3km az=26.0,Mid-Indian Ridge

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
BOSA	**Boshof**	**39.85**	**251**	P		P	P	08 36 26.5	+0.3
	2.1nm,0.8s,baz=82,slow=11,SNR=3.4								
BOSA						LR	LR	08 50 27.8	
	comp=Z,95nm,19.6s,baz=48,slow=32								
MAW	**Mawson**	**46.34**	**183**	P		P	P	08 37 18.3	+0.3
	3.4nm,0.8s,baz=1.3,slow=3.6,SNR=5.0								
CMAR	**Chiang Mai Arr**	**49.46**	**39**	P		P	P	08 37 44.1	+1.3
	0.3nm,0.4s,baz=231,slow=9.0,SNR=5.0								
ASAR	**Alice Springs**	**59.78**	**106**	P		P	P	08 38 57.6	-0.3
	1.5nm,0.8s,baz=260,slow=6.1,SNR=18								
WRA	**Warramunga Arr**	**61.01**	**102**	P		P	P	08 39 06.0	-0.4
	0.8nm,0.7s,baz=258,slow=6.2,SNR=6.9								
STKA	**Stephens Creek**	**64.92**	**116**	LR		LR	LR	09 04 43.0	
	comp=Z,50nm,18.7s,baz=205,slow=33								
BRTR	**Keskin Array B**	**69.07**	**332**	P		P	P	08 39 58.7	+0.2
	0.9nm,0.8s,baz=157,slow=7.9,SNR=4.5								
AKASG	**Malin Array Be**	**79.79**	**336**	P		P	P	08 40 59.4	-1.0
	0.4nm,0.4s,baz=131,slow=4.3,SNR=6.2								
AKASG						LR	LR	09 14 28.4	
	comp=Z,18nm,20.2s,baz=325,slow=34								

CSEM ***16*** *08:29:06.8±0.4,61.90N×2.41E,h10km,ML2.2,Error ellipse: s-maj=7.5km s-min=5.7km az=155.0*
BER ***16*** *08:29:07.8±2.1,62.02N×2.28E,h15km±10km,MD2.5, ML2.2,ML2.0(NAO)*
NAO ***16*** *08:29:09.4±6.3,62.23N×3.02E,h10km±26km,ML2.0*
UPP ***16*** *08:29:12.2,61.73N×3.14E,h0km,ML1.4*

ISC 16 08:29:04.2±1.8,62.01N±0.05×2.26E±0.06,h14km±12km, n42,σ1s59/73,Norwegian Sea

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
FOO	**Floro**	**1.38**	**106**	*e*P		**Pg**	**Pg**	**08 29 30.5**	**-0.2**
FOO				*e*S		**Sn**	**Sn**	**08 29 47.7**	**+0.7**
FOO					IAML			08 29 49.1	
	comp=Z,53nm,0.1s								
FOO	**Floro**	**1.38**	**106**	*e*P		**Pg**	**Pg**	**08 29 30.5**	**-0.2**
	SNR=70								
FOO				*e*S		**Sn**	**Sn**	**08 29 47.7**	**+0.7**
	SNR=70								
SUE	**Sulen**	**1.53**	**127**	*e*P		**Pb**	**Pb**	**08 29 32.7**	**+0.5**
SUE				*e*S		**Sb**	**Sb**	**08 29 51.5**	**+0.1**
SUE					IAML			08 29 52.5	
	comp=Z,91nm,0.5s								
SUE	**Sulen**	**1.53**	**127**	*e*P		**Pb**	**Pb**	**08 29 32.7**	**+0.5**
	SNR=50								
SUE				*e*S		**Sb**	**Sb**	**08 29 51.5**	**+0.1**
	SNR=50								
HYA	**Hoyanger**	**2.06**	**112**	*e*P		**Pb**	**Pb**	**08 29 40.5**	**-0.7**
HYA				*e*S		**Sn**	**Sn**	**08 30 04.6**	**+1.0**
HYA					IAML			08 30 08.1	
	comp=Z,31nm,0.1s								
HYA	**Hoyanger**	**2.06**	**112**	*e*P		**Pb**	**Pb**	**08 29 40.5**	**-0.7**
	SNR=50								
HYA				*e*S		**Sn**	**Sn**	**08 30 04.6**	**+1.0**
	SNR=50								

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
ASK	**Askoy**	**2.08**	**136**	*e*P		**Pb**	**Pb**	**08 29 40.6**	**-1.1**
ASK				*e*S		**Sn**	**Sn**	**08 30 05.0**	**+0.7**
ASK					IAML			08 30 07.2	
	comp=Z,34nm,0.2s								
BER	**Bergen**	**2.20**	**136**	*e*P		**Pb**	**Pb**	**08 29 42.5**	**-1.2**
BER				*e*S		**Sn**	**Sn**	**08 30 07.9**	**+0.6**
BER					IAML			08 30 09.7	
	comp=Z,34nm,0.1s								
BER	**Bergen**	**2.20**	**136**	*e*P		**Pb**	**Pb**	**08 29 42.5**	**-1.2**
	SNR=50								
BER				*e*S		**Sn**	**Sn**	**08 30 07.9**	**+0.6**
	SNR=50								
AKN	**Aaknes**	**2.23**	**83**	Pg		**Pb**	**Pb**	**08 29 43.7**	**-0.6**
AKN				Lg		Lg	Lg	08 30 08.5	
AKN	**Aaknes**	**2.23**	**83**	*e*P		**Pn**	**Pn**	**08 29 43.5**	**+2.8**
AKN				Pg		**Pb**	**Pb**	**08 29 43.7**	**-0.6**
AKN				*e*S		**Sn**	**Sn**	**08 30 08.4**	**+0.3**
AKN					IAML			08 30 11.5	
	comp=Z,37nm,0.1s								
AKN	**Aaknes**	**2.23**	**83**	*e*P		**Pn**	**Pn**	**08 29 43.5**	**+2.8**
	SNR=50								
AKN				*e*S		**Sn**	**Sn**	**08 30 08.4**	**+0.3**
	SNR=50								
LRW	**Lerwick**	**2.51**	**223**	*e*P		**Pn**	**Pn**	**08 29 46.1**	**+1.6**
LRW	**Lerwick**	**2.51**	**223**	*e*P		**Pn**	**Pn**	**08 29 46.1**	**+1.6**
	SNR=50								
MOL	**Molde**	**2.53**	**75**	*e*S		**Sn**	**Sn**	**08 30 14.4**	**-1.0**
ODD1	**Odda**	**2.99**	**133**	*e*P		**Pn**	**Pn**	**08 29 53.4**	**+2.3**
ODD1				*e*S		**Sn**	**Sn**	**08 30 27.1**	**+0.3**
ODD1					IAML			08 30 28.5	
	comp=Z,28nm,0.1s								
ODD1	**Odda**	**2.99**	**133**	*e*P		**Pn**	**Pn**	**08 29 53.4**	**+2.3**
	SNR=50								
ODD1				*e*S		**Sn**	**Sn**	**08 30 27.1**	**+0.3**
	SNR=50								
KMY	**Karmoy**	**3.17**	**151**	*e*P		**Pn**	**Pn**	**08 29 55.2**	**+1.7**
KMY				*e*S		**Sn**	**Sn**	**08 30 30.6**	**-0.4**
KMY					IAML			08 30 34.2	
	comp=Z,22nm,0.1s								
KMY	**Karmoy**	**3.17**	**151**	*e*P		**Pn**	**Pn**	**08 29 55.2**	**+1.7**
	SNR=50								
KMY				*e*S		**Sn**	**Sn**	**08 30 30.6**	**-0.4**
	SNR=50								
BLS5	**Blasjo**	**3.31**	**140**	*e*P		**Pn**	**Pn**	**08 29 57.6**	**+2.1**
BLS5				*e*S		**Sn**	**Sn**	**08 30 34.4**	**-0.2**
BLS5					IAML			08 30 35.8	
	comp=Z,34nm,0.1s								
BLS5	**Blasjo**	**3.31**	**140**	*e*P		**Pn**	**Pn**	**08 29 57.6**	**+2.1**
	SNR=50								
BLS5				*e*S		**Sn**	**Sn**	**08 30 34.4**	**-0.2**
	SNR=50								
STAV	**Stavanger**	**3.52**	**150**	*e*P		**Pn**	**Pn**	**08 29 59.8**	**+1.5**
STAV				*e*S		**Sn**	**Sn**	**08 30 38.6**	**-1.1**
STAV					IAML			08 30 40.7	
	comp=Z,25nm,0.1s								
STAV	**Stavanger**	**3.52**	**150**	*e*P		**Pn**

FOPK	Fourpeaked Vol	5.37	51	P	Pn	08 36 19.4	+0.8	
KDAK	Kodiak Island	5.37	63	P	Pb	08 36 34.2	+1.9	
	5.0nm,0.3s,baz=242,slow=7.2,SNR=87							
KDAK	Kodiak Island	5.37	63	P	Pn	08 36 20.1	+1.6	
CDD	Cape Douglas	5.39	49	P	Pn	08 36 20.1	+1.3	
ILAR	Eielson Array	11.65	32	P	Pn	08 37 46.0	+1.4	
	0.1nm,0.3s,baz=226,slow=12,SNR=8.5							
DLBC	Dease Lake	17.28	68	P	P	08 39 03.0	+1.9	
	0.1nm,0.3s,baz=235,slow=12,SNR=2.6							
INK	Inuvik	18.03	34	P	Pn	08 39 07.9	-0.9	
	0.1nm,0.3s,baz=239,slow=13,SNR=10							
SEY	Seymchan	24.15	306	P	P	08 40 14.7	+0.4	
	2.0nm,0.8s,baz=75,slow=6.5,SNR=5.8							
YKA	Yellowknife Ar	24.57	55	P	P	08 40 18.4	+0.3	
	0.9nm,0.4s,baz=276,slow=10,SNR=37							
PDAR	Pinedale Array	35.46	89	P	P	08 41 56.1	+1.1	
	0.3nm,0.5s,baz=323,slow=5.2,SNR=5.4							
NRIK	Noril'sk	45.69	332	P	P	08 43 18.6	-0.3	
	1.7nm,0.6s,baz=91,slow=3.9,SNR=3.9							
TXAR	Lajitas Array	48.34	98	P	P	08 43 41.3	+1.2	
	0.4nm,0.7s,baz=308,slow=6.2,SNR=7.4							
FINES	FINESS Array B	63.08	356	P	P	08 45 23.4	-2.0	
	1.0nm,0.8s,baz=4.6,slow=7.0,SNR=3.6							
AKASG	Malin Array Be	73.63	353	P	P	08 46 30.3	-1.2	
	0.5nm,0.4s,baz=11,slow=6.2,SNR=4.1							

*ISCJB **16** 08:40:40.9±0.7,43°.65S±0°.04×172°.88E±0°.05,h14km±4km, mb3.2/2,MS3.5/1, Error ellipse: s-maj=7.5km s-min=4.2km az=44.7*

*IDC **16** 08:40:41.3±1.8,43°.24S×172°.64E,h0km,mb3.3/2, mb1 3.6/3,mb1mx3.5/25,mbtmp3.5/3,ML3.5/1,MS3.5/1, Ms1 3.5/1,ms1mx2.9/7, Error ellipse: s-maj=46.5km s-min=15.5km az=148.0*

*WEL **16** 08:40:43.0±0.2,43°.60S×172°.76E,h10km,ML4.0/26, Error ellipse: s-maj=1.4km s-min=0.7km az=90.0*

WEL Felt in the Canterbury region, maximum reported intensity MM 6.

*NEIC **16** 08:40:43.3,43°.59S×172°.72E,h9km,ML4.1(WEL), After WEL.*

NEIC Felt in the Christchurch area.

ISC 16 08:40:41.5±1.0,43°.57S±0°.04×172°.81E±0°.04,h12km±6km, n81,σ1§14/85,1D,South Island

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
CRLZ	Canterbury Las	0.14	267	PG	Pg	Pg	08 40 44.7	-0.1
CRLZ				SG	Sg	Sg	08 40 46.6	-0.6
CRLZ				AML	AML	AML	08 40 47.0	
CRLZ				AML	AML	AML	08 40 47.0	
CRLZ				AML	AML	AML	08 40 47.1	
CRLZ	Canterbury Las	0.14	267	Pg	Pg	Pg	08 40 44.7	-0.1
CRLZ				Sg	Sg	Sg	08 40 46.6	-0.6
MQZ	McQueen's Vall	0.18	220	PG	Pg	Pg	08 40 46.3	+0.8
MQZ				SG	Sg	Sg	08 40 48.6	+0.3
MQZ				AML	AML	AML	08 40 48.8	
MQZ	McQueen's Vall	0.18	220	Pg	Pg	Pg	08 40 46.4	+0.8
MQZ				Sg	Sg	Sg	08 40 48.6	+0.3
OXZ	Oxford	0.61	293	P*	Pb	Pb	08 40 54.0	-0.1
OXZ				S*	Sb	Sb	08 41 02.5	-0.2
OXZ	Oxford	0.61	293	P*	Pb	Pb	08 40 54.0	-0.1
OXZ				S*	Sb	Sb	08 41 02.5	-0.2
LTZ	Lake Taylor	0.88	333	P*	Pn	Pn	08 41 00.1	+0.4
LTZ				S*	Sn	Sn	08 41 11.8	-0.7
LTZ				AML	AML	AML	08 41 12.6	
LTZ	Lake Taylor	0.88	333	P*	Pn	Pn	08 41 00.1	+0.4
LTZ				S*	Sn	Sn	08 41 11.8	-0.7
KHZ	Kahutara	1.27	25	PN	Pn	Pn	08 41 05.7	+0.7
KHZ	Kahutara	1.27	25	Pn	Pn	Pn	08 41 05.7	+0.7
RPZ	Rata Peaks	1.28	263	Pn	Pn	Pn	08 41 05.2	-0.1
	118nm,0.3s,baz=115,slow=3.4,SNR=181							
RPZ				Lg	Lg		08 41 22.1	
	313nm,0.3s,baz=24,slow=16,SNR=30							
RPZ	Rata Peaks	1.28	263	P*	Pn	Pn	08 41 05.1	-0.1
RPZ				AML	AML	AML	08 41 24.4	
RPZ				AML	AML	AML	08 41 28.6	
INZ	Inchbonnie	1.31	310	⇓PN	Pg	Pg	08 41 06.8	+0.2
WVZ	Waitaha Valley	1.59	287	PN	Pn	Pn	08 41 10.0	+0.5
WVZ				AML	AML	AML	08 41 35.3	
WVZ				AML	AML	AML	08 41 41.6	
WVZ	Waitaha Valley	1.59	287	Pn	Pn	Pn	08 41 10.0	+0.5
THZ	Tophouse	1.81	2	PN	Pn	Pn	08 41 13.3	+0.8
THZ				AML	AML	AML	08 41 53.8	
THZ				AML	AML	AML	08 41 54.3	
THZ	Tophouse	1.81	2	Pn	Pn	Pn	08 41 13.2	+0.8
DSZ	Denniston Nort	1.97	338	PN	Pb	Pb	08 41 16.1	-1.1
DSZ				AML	AML	AML	08 41 44.0	
DSZ				AML	AML	AML	08 41 44.1	
DSZ				AML	AML	AML	08 41 44.3	
DSZ				AML	AML	AML	08 41 44.4	
DSZ	Denniston Nort	1.97	338	Pn	Pb	Pb	08 41 16.1	-1.1
BSWZ	Blackbirch Sta	2.01	23	PN	Pn	Pn	08 41 16.5	+1.2
BSWZ				AML	AML	AML	08 42 04.3	
BSWZ				AML	AML	AML	08 42 13.7	
BSWZ	Blackbirch Sta	2.01	23	Pn	Pn	Pn	08 41 16.5	+1.2
LBZ	Lake Benmore	2.06	246	PN	Pn	Pn	08 41 16.3	+0.3
LBZ				AML	AML	AML	08 41 52.2	
LBZ				AML	AML	AML	08 41 52.2	
LBZ				AML	AML	AML	08 41 54.7	
LBZ				AML	AML	AML	08 41 54.7	
LBZ	Lake Benmore	2.06	246	Pn	Pn	Pn	08 41 16.3	+0.3
ODZ	Otahua Downs	2.14	226	PN	Pn	Pn	08 41 16.9	-0.2
ODZ				AML	AML	AML	08 41 50.0	
ODZ				AML	AML	AML	08 41 50.0	
ODZ				AML	AML	AML	08 41 57.5	
ODZ				AML	AML	AML	08 41 57.5	
ODZ	Otahua Downs	2.14	226	Pn	Pn	Pn	08 41 16.9	-0.2
FOZ	Fox Glacier	2.18	270	PN	Pn	Pn	08 41 18.8	+1.3
FOZ				AML	AML	AML	08 41 46.1	
FOZ				AML	AML	AML	08 41 46.2	
FOZ				AML	AML	AML	08 41 58.0	
FOZ				AML	AML	AML	08 41 58.1	
FOZ	Fox Glacier	2.18	270	Pn	Pn	Pn	08 41 18.9	+1.3
TUWZ	Tuamarina	2.30	22	PN	Pn	Pn	08 41 19.7	+0.6
TUWZ				AML	AML	AML	08 41 33.0	
TUWZ				AML	AML	AML	08 42 15.7	
TUWZ	Tuamarina	2.30	22	Pn	Pn	Pn	08 41 19.7	+0.6
NNZ	Nelson	2.39	10	PN	Pn	Pn	08 41 21.8	+1.4
NNZ				AML	AML	AML	08 42 09.1	
NNZ				AML	AML	AML	08 42 09.2	
NNZ				AML	AML	AML	08 42 11.1	
NNZ	Nelson	2.39	10	Pn	Pn	Pn	08 41 21.8	+1.4
TCW	Tory Channel	2.59	25	PN	Pn	Pn	08 41 23.8	+0.6
TCW				AML	AML	AML	08 42 09.0	
TCW				AML	AML	AML	08 42 15.1	
TCW	Tory Channel	2.59	25	Pn	Pn	Pn	08 41 23.8	+0.6
QRZ	Quartz Range	2.75	356	AML	AML	AML	08 42 14.8	
QRZ				AML	AML	AML	08 42 14.8	
QRZ				AML	AML	AML	08 42 17.4	
QRZ				AML	AML	AML	08 42 17.4	
DUWZ	D'Urville Isla	2.88	17	AML	AML	AML	08 42 11.0	
DUWZ				AML	AML	AML	08 42 31.3	
JCZ	Jackson Bay	2.96	259	PN	Pn	Pn	08 41 28.9	+0.5
JCZ				AML	AML	AML	08 42 19.4	
JCZ				AML	AML	AML	08 42 22.0	
JCZ	Jackson Bay	2.96	259	Pn	Pn	Pn	08 41 28.9	+0.5
CAW	Cannon Point	2.97	35	PN	Pn	Pn	08 41 28.8	+0.3
CAW				AML	AML	AML	08 42 07.2	
CAW				AML	AML	AML	08 42 08.2	
CAW	Cannon Point	2.97	35	Pn	Pn	Pn	08 41 28.8	+0.3
WKZ	Wanaka	3.00	244	PN	Pn	Pn	08 41 29.3	+0.4
WKZ				AML	AML	AML	08 42 23.9	
WKZ				AML	AML	AML	08 42 28.8	
WKZ	Wanaka	3.00	244	Pn	Pn	Pn	08 41 29.3	+0.4
EAZ	Earnscleugh	3.01	235	PN	Pn	Pn	08 41 29.2	+0.2
EAZ				AML	AML	AML	08 42 21.9	
EAZ				AML	AML	AML	08 42 23.6	
EAZ				AML	AML	AML	08 42 23.6	
EAZ	Earnscleugh	3.01	235	Pn	Pn	Pn	08 41 29.2	+0.2
KIW	Kapiti Island	3.12	31	PN	Pn	Pn	08 41 31.1	+0.6
KIW	Kapiti Island	3.12	31	Pn	Pn	Pn	08 41 31.1	+0.6
MTW	Mount Morrison	3.13	41	PN	Pn	Pn	08 41 30.6	0.0
MTW	Mount Morrison	3.13	41	Pn	Pn	Pn	08 41 30.6	0.0
TUZ	Tuapeka	3.29	222	PN	Pn	Pn	08 41 32.8	0.0
TUZ				AML	AML	AML	08 42 32.8	
TUZ				AML	AML	AML	08 42 32.8	
TUZ				AML	AML	AML	08 42 39.3	
TUZ				AML	AML	AML	08 42 39.3	
TUZ	Tuapeka	3.29	222	Pn	Pn	Pn	08 41 32.8	0.0
MRZ	Mangatainoka R	3.56	36	PN	Pn	Pn	08 41 36.6	0.0
MRZ	Mangatainoka R	3.56	36	Pn	Pn	Pn	08 41 36.6	0.0
MSZ	Milford Sound	3.69	251	AML	AML	AML	08 42 41.4	
MSZ				AML	AML	AML	08 42 43.9	
MLZ	Mavora Lakes	3.81	240	PN	Pn	Pn	08 41 39.8	-0.2
MLZ				AML	AML	AML	08 42 56.7	
MLZ				AML	AML	AML	08 42 57.9	
MLZ	Mavora Lakes	3.81	240	Pn	Pn	Pn	08 41 39.8	-0.2
BFZ	Birch Farm	3.85	43	PN	Pn	Pn	08 41 40.2	-0.4
BFZ	Birch Farm	3.85	43	Pn	Pn	Pn	08 41 40.2	-0.4
SYZ	Scrubby Hill	3.95	220	PN	Pn	Pn	08 41 42.7	+0.9
SYZ				AML	AML	AML	08 42 58.1	
SYZ				AML	AML	AML	08 42 59.1	
SYZ	Scrubby Hill	3.95	220	Pn	Pn	Pn	08 41 42.7	+0.9
WHZ	Wether Hill Ro	4.17	234	PN	Pn	Pn	08 41 44.2	-0.8
WHZ				AML	AML	AML	08 43 04.5	
WHZ	Wether Hill Ro	4.17	234	Pn	Pn	Pn	08 41 44.2	-0.8
LREZ	Lake Rotokare	4.28	17	PN	Pn	Pn	08 41 50.0	+3.6
PKE	Pukeiti	4.46	12	PN	Pn	Pn	08 41 51.7	+2.7
PKE	Pukeiti	4.46	12	Pn	Pn	Pn	08 41 51.7	+2.7
DCZ	Deep Cove	4.47	243	AML	AML	AML	08 43 07.6	
DCZ				AML	AML	AML	08 44 20.7	
DREZ	Durham Road	4.50	14	PN	Pn	Pn	08 41 51.9	+2.4
DREZ	Durham Road	4.50	14	Pn	Pn	Pn	08 41 51.9	+2.4
MHEZ	Mangahewa	4.63	15	PN	Pn	Pn	08 41 53.9	+2.7
MHEZ	Mangahewa	4.63	15	Pn	Pn	Pn	08 41 53.9	+2.7
VRZ	Vera Road	4.68	19	PN	Pn	Pn	08 41 54.5	+2.6
VRZ	Vera Road	4.68	19	Pn	Pn	Pn	08 41 54.5	+2.6
APZ	The Paps	4.72	225	PN	Pn	Pn	08 41 53.2	+0.8
APZ	The Paps	4.72	225	Pn	Pn	Pn	08 41 53.2	+0.8
WNVZ	Wahianoa	4.73	27	PN	Pn	Pn	08 41 54.5	+1.8
WNVZ	Wahianoa	4.73	27	Pn	Pn	Pn	08 41 54.5	+1.8
BHHZ	Black Hill Sta	4.75	32	PN	Pn	Pn	08 41 53.4	+0.4
BHHZ	Black Hill Sta	4.75	32	Pn	Pn	Pn	08 41 53.4	+0.4
URZ	Urewera	6.22	33	Pn	Pn	Pn	08 42 11.8	-1.3
	1.1nm,0.3s,baz=220,slow=5.6,SNR=11							
URZ				Sn	Sn	Sn	08 43 21.3	-2.9
	0.5nm,0.3s,baz=156,slow=20,SNR=2.5							
MKAZ	Moumakai	6.70	16	Pn	Pn	Pn	08 42 20.4	+0.7
ASAR	Alice Springs	37.56	289	P	P	P	08 47 54.7	-1.0
	0.1nm,0.4s,baz=124,slow=7.9,SNR=2.8							
ASAR				LR	LR	LR	09 02 24.6	
	comp=Z,70nm,18.3s,baz=304,slow=35							
WRA	Warramunga Arr	39.80	294	P	P	P	08 48 14.9	+0.3
	0.7nm,0.9s,baz=138,slow=7.8,SNR=5.6							
TORD	Torodi Ar. Bea	148.74	197	PKPbc	PKPbc	PKPbc	09 00 31.3	+2.2
	0.6nm,0.9s,baz=180,slow=0.7,SNR=2.5							

*IDC **16** 08:45:48.5±0.7,38°.54N×144°.11E,h0km,mb3.9/16, mb1 4.1/22,mb1mx4.0/45,mbtmp4.0/22,ML4.0/5,MS3.3/8, Ms1 3.3/8,ms1mx2.9/54, Error ellipse: s-maj=18.3km s-min=14.0km az=103.0*

*NEIC **16** 08:45:49.9±0.4,38°.54N×144°.14E,h10km,mb4.3/4, Error ellipse: s-maj=9.8km s-min=6.2km az=105.0*

*ISCJB **16** 08:45:50.8±1.5,38°.61N±0°.04×143°.95E±0°.05, h26km±11km,mb4.0/20,MS3.5/4, Error ellipse: s-maj=7.5km s-min=5.0km az=137.4*

*JMA **16** 08:45:52.4±0.2,38°.67N×143°.92E,h47km,M4.3*

ISC 16 08:45:50.2±4.1,38°.56N±0°.05×144°.07E±0°.07,h12km±25km, n55,σ1§81/63,mb4.0/20,MS3.5/4,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
OFUJ	Ofunato	1.95	286	P	Pn	Pn	08 46 21.7	-1.3
OFUJ				eS	Sn	Sn	08 46 44.1	-3.3
JIO	Ouri	2.14	268	P	Pn	Pn	08 46 24.9	-0.8
JIO				S	Sn	Sn	08 46 48.5	-3.6
JTH	Tanohata	2.20	309	P	Pn	Pn	08 46 24.9	-1.6
JTH				eS	Sn	Sn	08 46 49.1	-4.5
JMK	Ichinoseki	2.26	281	P	Pn	Pn	08 46 27.0	-0.4
JOM	Ohasama	2.35	294	P	Pn	Pn	08 46 27.6	-1.0
JMM	Marumori	2.67	256	P	Pn	Pn	08 46 32.8	-0.2
JMM				S	Sn	Sn	08 47 02.2	-3.1
JANG	Nango	2.68	313	P	Pn	Pn	08 46 31.6	-1.5
JOU	Okura	2.68	267	P	Pn	Pn	08 46 33.2	0.0
JOU				eS	Sn	Sn	08 47 03.3	-2.3
JFK	Kawauchi	2.79	246	P	Pn	Pn	08 46 34.2	-0.5
JFK				eS	Sn	Sn	08 47 05.3	-3.1
JRG	Rokugo	2.81	288	P	Pn	Pn	08 46 34.8	0.0
JYK	Kaneyama	2.92	278	P	Pn	Pn	08 46 36.2	-0.3
JFT	Otama	3.13	252	P	Pn	Pn	08 46 40.1	+0.8
JFT				S	Sn	Sn	08 47 15.0	-1.5
JTM	Tenmabayashi	3.21	315	P	Pn	Pn	08 46 38.8	-1.6
JTM				S	Sn	Sn	08 47 13.0	-5.6
ERM	Erimo	3.52	349	ePn	Pn	Pn	08 46 43.8	-0.8
JNBK	Urakawa-nobuka	3.85	345	P	Pn	Pn	08 46 47.5	-1.7
JCH	Churui	4.08	353	P	Pn	Pn	08 46 50.0	-2.4
JCH				S	Sn	Sn	08 47 33.4	-6.7
JRY	Ryogami san	4.84	240	P	Pn	Pn	08 47 03.0	+0.1
JRY				eS	Sn	Sn	08 47 57.4	-1.5
MJAR	Matsushiro Arr	5.08	248	Pn	Pn	Pn	08 47 07.5	+1.4
	5.7nm,0.3s,baz=57,slow=11,SNR=30							
MJAR				LR	LR	LR	08 49 23.0	
	comp=Z,170nm,18.5s,baz=75,slow=42							
MAJO	Matsushiro	5.08	248	ePn	Pn	Pn	08 47 07.6	+1.5
	31nm,0.4s							
MAT	Matsushiro	5.08	248	P	Pn	Pn	08 47 07.6	+1.5
MAT				S	Sn	Sn	08 48 08.1	+3.5
ASAJ	Asahikawa	5.66	349	Pn	Pn	Pn	08 47 12.7	-1.4
	3.0nm,0.3s,baz=190,slow=12,SNR=12							
ASAJ				Sn	Sn	Sn	08 48 11.7	-7.2
	baz=248,slow=11,SNR=2.8							
JHJ2	Mitsune	6.44	214	ePn	Pn	Pn	08 47 24.7	-0.2
JHJ2				eSn	Sn	Sn	08 48 33.3	-5.0
JHJ	Hachijo jima 2	6.45	214	Pn	Pn	Pn	08 47 24.9	0.0
	24nm,0.3s,baz=94,slow=20,SNR=8.0							
JHJ				Sn	Sn	Sn	08 48 33.1	-5.4
	22nm,0.3s,baz=53,slow=23,SNR=7.0							
USRK	Ussuriysk Ar.	10.68	306	Pn	Pn	Pn	08 48 23.1	+0.2
	0.3nm,0.3s,baz=113,slow=12,SNR=9.0							
USRK				LR	LR	LR	08 52 16.5	
	comp=Z,133nm,19.3s,baz=127,slow=36							
CBIJ	Chichi jima	11.54	188	Pn	Pn	Pn	08 48 32.3	-2.5
JCJ	Chichijima	11.54	188	Pn	Pn	Pn	08 48 32.3	-2.5
	3.1nm,0.3s,baz=106,slow=22,SNR=7.1							
KSRS	Korea Array	12.79	270	LR	LR	LR	08 53 31.5	
	comp=Z,52nm,19.6s,baz=184,slow=36							
KLR	Kul'dur	13.86	324	Pn	Pn	Pn	08 49 06.8	+0.5
	0.1nm,0.3s,baz=140,slow=18,SNR=2.3							
KLR				LR	LR	LR	08 54 52.8	
	comp=Z,66nm,18.4s,baz=145,slow=39							
SEY	Seymchan	24.92	9	P	P	P	08 51 14.3	+1.6
	2.9nm,0.7s,baz=184,slow=7.1,SNR=13							
SONM	Songino Array	28.74	301	P	P	P	08 51 49.1	+1.6
	1.2nm,0.5s,baz=96,slow=8.9,SNR=2.7							
SONM				LR	LR	LR	09 02 21.8	
	comp=Z,70nm,21.9s,baz=64,slow=34							
TLY	Talaya	30.98	308	LR	LR	LR	09 03 41.3	
	comp=Z,46nm,20.4s,baz=148,slow=35							
BILL	Bilibino	31.98	16	eP	P	P	08 52 15.8	+0.1
	1.4nm,0.4s							
ZALV	Zalesovo Beam	42.47	311	P	P	P	08 53 45.0	+0.2
	0.8nm,0.5s,baz=140,slow=7.2,SNR=3.7							
ZALV				PcP	PcP	PcP	08 55 37.8	+0.3
	1.6nm,0.7s,baz=82,slow=3.3,SNR=4.8							
NRIK	Noril'sk	42.79	334	P	P		08 53 50.8	+3.6
	1.6nm,0.4s,baz=170,slow=1.3,SNR=3.6							
CMAR	Chiang Mai Arr	43.92	256	P	P	P	08 53 58.3	+1.4
	0.8nm,0.6s,baz=39,slow=7.4,SNR=7.1							
MKAR	Makanchi Array	45.11	301	P	P	P	08 54 06.2	+0.1
	1.2nm,0.7s,baz=84,slow=11,SNR=12							
ILAR	Eielson Array	47.07	33	P	P	P	08 54 21.6	+0.3
	0.9nm,0.7s,baz=263,slow=7.0,SNR=12							
TKM2	Tokmak 2	50.76	298	eP	P	P	08 54 50.9	+0.7
	3.2nm,0.7s							
BVAR	Borovoye Array	51.11	312	P	P	P	08 54 52.6	+0.1
	0.9nm,0.7s,baz=74,slow=7.8,SNR=2.6							
BVAR				PcP	PcP	PcP	08 56 08.8	+0.8
	0.8nm,0.5s,baz=64,slow=3.4,SNR=3.0							
INK	Inuvik	52.06	28	P	P	P	08 55 00.2	+1.0
	0.5nm,0.5s,baz=298,slow=6.9,SNR=3.8							
INK	Inuvik	52.06	28	eP	P	P	08 55 00.3	+1.0
	4.1nm,1.3s							
WRAB	Tennant Creek	58.90	191	eP	P	P	08 55 48.8	-0.2
	4.0nm,0.8s							
WRA	Warramunga Arr	58.91	191	P	P	P	08 55 49.0	-0.1
	2.6nm,0.8s,baz=9.5,slow=7.2,SNR=19							
ASAR	Alice Springs	62.63	191	P	P	P	08 56 14.8	+0.3
	0.8nm,0.7s,baz=10,slow=6.2,SNR=11							
FINES	FINESS Array B	68.43	333	P	P	P	08 56 51.2	-0.2
	2.2nm,0.8s,baz=28,slow=4.5,SNR=6.7							
KBZ	Khabaz	71.49	311	P	P	P	08 57 11.6	+1.0
	2.6nm,0.8s,baz=17,slow=2.7,SNR=6.5							
NVAR	Mina Array Bea	72.39	55	P	P	P	08 57 17.0	+0.6
	0.4nm,0.8s,baz=335,slow=2.1,SNR=3.5							
NB2	NORSAR Subarra	73.57	338	P	P	P	08 57 22.6	-0.2
	comp=Z,3.5nm,1.0s,baz=42,slow=6.2							
NOA	NORSAR Array B	73.57	338	P	P	P	08 57 22.6	-0.2
	comp=Z,1.4nm,0.8s,baz=38,slow=5.9,SNR=4.1							
AKASG	Malin Array Be	74.36	323	P	P	P	08 57 27.1	-0.3
	comp=Z,0.7nm,0.4s,baz=43,slow=5.6,SNR=2.8							
VRAC	Vranov	80.96	328	LR	LR	LR	09 39 16.9	
	comp=Z,67nm,18.9s,baz=336,slow=40							
MMAI	Mount Meron Ar	82.77	307	LR	LR	LR	09 37 38.3	
	comp=Z,32nm,18.3s,baz=305,slow=38							
TXAR	Lajitas Array	87.52	54	P	P	P	08 58 38.9	+0.7
	comp=Z,0.3nm,0.6s,baz=302,slow=2.7,SNR=6.7							
TORD	Torodi Ar. Bea	117.68	318	PKP	PKPdf	PKPdf	09 04 36.0	-0.7
	comp=Z,0.3nm,0.6s,baz=42,slow=2.7,SNR=2.5							
QSPA	South Pole Qui	128.30	180	ePKPdf	PKPdf	PKPdf	09 04 55.6	+0.1

*ISCJB **16** 08:53:54.7±0.4,24°.34N±0°.02×122°.13E±0°.02,h3km±4km, Error ellipse: s-maj=3.9km s-min=2.5km az=168.5*

*JMA **16** 08:53:55.4±0.1,24°.30N×122°.04E,h23km±4km,M2.7*

*TAP **16** 08:53:56.1,24°.37N×122°.00E,h20km,ML3.4,C*

ISC 16 08:53:53.6±1.2,24°.31N±0°.03×122°.17E±0°.02,h1km±10km, n45,σ0§65/70,5C,Taiwan region

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
EHP	Heping Village	0.39	270	eP	Pb	Pb	08 54 02.6	-0.7
	baz=260							
ENA	Nanau	0.40	287	⇑iP	Pg	Pg	08 54 02.0	+0.6
	baz=289							
ENA				S	Sg	Sg	08 54 06.1	-0.5
	baz=289							
TWC	Suao	0.41	316	⇑iP	Pg	Pg	08 54 02.5	+0.9
	baz=337							
TWC				iS	Sg	Sg	08 54 06.6	-0.3
	baz=337							
TWD	Chiawan	0.57	246	eP	Pb	Pb	08 54 05.6	-0.8
	baz=234							
EGS		0.57	338	iP	Pb	Pb	08 54 06.1	-0.3
	baz=350							
EGS				eS	Sg	Sg	08 54 12.5	+0.5
	baz=350							
ILA	Ilan	0.59	320	eP	Pb	Pb	08 54 06.1	-0.7
	baz=329							
ILA				eS	Sg	Sg	08 54 12.9	+0.3
	baz=329							
TWE	Neicheng	0.61	312	⇑P	Pg	Pg	08 54 05.8	+0.5
	baz=322							
TWE				S	Sg	Sg	08 54 12.2	-1.0
	baz=322							
ENTT	Nioudou	0.64	301	⇑iP	Pg	Pg	08 54 06.3	+0.5
	baz=305							
ENTT				eS	Sg	Sg	08 54 12.8	-1.3
	baz=305							
TWB1	Santiao Chiao	0.71	347	eP	Pb	Pb	08 54 08.7	-0.2
	baz=354							
TWB1				S	Sg	Sg	08 54 17.2	+0.6
	baz=354							
JYNG	Yonagunijimaku	0.72	79	P	Pn	Pn	08 54 11.0	0.0
JYNG				S	Sn	Sn	08 54 22.3	-0.4
NNS	Nan Shan	0.73	280	P	Pg	Pg	08 54 07.8	+0.2
	baz=282							
NNS				eS	Sg	Sg	08 54 16.1	-1.1
	baz=282							
YOJ	Yonaguni jima	0.79	79	P	Pn	Pn	08 54 11.9	+0.1
YOJ				S	Sn	Sn	08 54 24.0	-0.2
NSK	Sanguang	0.82	296	P	Pg	Pg	08 54 09.5	+0.1
	baz=301							
NSK				S	Sg	Sg	08 54 18.3	-1.7
	baz=301							
ESL	Shilin	0.83	234	eP	Pb	Pb	08 54 10.5	-0.4
	baz=222							
NWF	Wu-fen Shan	0.83	335	eP	Pb	Pb	08 54 11.0	0.0
	baz=338							
NWF				eS	Sg	Sg	08 54 20.7	+0.3
	baz=338							
WHF	Hehuan Shan	0.84	259	P	Pg	Pg	08 54 10.1	+0.3
	baz=257							
WHF				eS	Sb	Sb	08 54 23.1	0.0
	baz=257							
TWT	Tachien	0.90	267	eP	Pg	Pg	08 54 11.6	+0.6
	baz=265							
TWT				eS	Sb	Sb	08 54 24

ISC 16 08:58:16.9±0.8, 39°14N±0°03×27°57E±0°03, h0km, n27, σ0665/40, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AKHS	**Akhisar**	**0.32**	**144**	*i* P	**Pg**	**08 58 23.2**	**+0.1**
AKHS				*i* S	**Sg**	**08 58 28.9**	**+1.6**
AKHS	**Akhisar**	**0.32**	**144**	P	**Pg**	**08 58 23.2**	**+0.1**
AKHS				S	**Sg**	**08 58 28.9**	**+1.6**
BALY	**Balya**	**0.60**	**4**	*i* P	**Pb**	**08 58 30.6**	**+0.2**
BALY	**Balya**	**0.60**	**4**	P	**Pb**	**08 58 30.6**	**+0.2**
IZM	**Izmir**	**0.78**	**198**	*e*PG	**Pg**	**08 58 32.2**	**+0.3**
IZM	**Izmir**	**0.78**	**198**	*e*Pg	**Pg**	**08 58 32.2**	**+0.3**
DURS	**Dursunbey**	**0.84**	**56**	*i* P	**Pb**	**08 58 34.7**	**+0.3**
DURS				*i* S	**Sn**	**08 58 48.5**	**-0.7**
DURS	**Dursunbey**	**0.84**	**56**	P	**Pb**	**08 58 34.7**	**+0.3**
DURS				S	**Sn**	**08 58 48.5**	**-0.7**
BLCB	**Balcova**	**0.86**	**209**	*e*PG	**Pg**	**08 58 33.9**	**+0.5**
BLCB				*e*SG	**Sb**	**08 58 46.6**	**-0.2**
BLCB	**Balcova**	**0.86**	**209**	*e*Pg	**Pg**	**08 58 33.9**	**+0.5**
BLCB				*e*Sg	**Sb**	**08 58 46.6**	**-0.2**
DEMI	**Demirci**	**0.90**	**96**	*i* P	**Pn**	**08 58 36.5**	**-0.4**
DEMI				*i* S	**Sb**	**08 58 48.0**	**0.0**
DEMI	**Demirci**	**0.90**	**96**	P	**Pn**	**08 58 36.5**	**-0.4**
DEMI				S	**Sb**	**08 58 48.0**	**0.0**
KULA	**Kula-Manisa**	**1.05**	**126**	*e*PG	**Pg**	**08 58 37.5**	**+0.3**
KULA				*e*SG	**Sb**	**08 58 52.3**	**-0.2**
KULA	**Kula-Manisa**	**1.05**	**126**	*e*Pg	**Pg**	**08 58 37.5**	**+0.3**
KULA				*e*Sg	**Sb**	**08 58 52.3**	**-0.2**
URLA	**Izmir**	**1.09**	**225**	*i* P	**Pn**	**08 58 40.2**	**+0.7**
URLA	**Izmir**	**1.09**	**225**	P	**Pn**	**08 58 40.2**	**+0.7**
AYDB	**Zeytinkoy-Aydi**	**1.22**	**168**	*e*PN	**Pg**	**08 58 40.3**	**0.0**
AYDB	**Zeytinkoy-Aydi**	**1.22**	**168**	*e*Pn	**Pg**	**08 58 40.3**	**0.0**
ZEY	**˙zmir**	**1.23**	**223**	*i* P	**Pg**	**08 58 40.0**	**-0.4**
ZEY				*i* S	**Sb**	**08 58 57.5**	**+0.1**
SIGR	**SIGRI**	**1.34**	**274**	*e*PN	**Pn**	**08 58 42.9**	**0.0**
SIGR	**SIGRI**	**1.34**	**274**	*e*Pn	**Pn**	**08 58 42.9**	**0.0**
AYDN	**Tasoluk**	**1.50**	**171**	*i* P	**Pb**	**08 58 45.7**	**+0.1**
AYDN				*i* S	**Sg**	**08 59 03.2**	**-1.8**
AYDN	**Tasoluk**	**1.50**	**171**	P	**Pb**	**08 58 45.7**	**+0.1**
AYDN				S	**Sg**	**08 59 03.2**	**-1.8**
TVSB	**Tavsanli**	**1.50**	**77**	*e*PN	**Pn**	**08 58 45.4**	**+0.2**
TVSB	**Tavsanli**	**1.50**	**77**	*e*Pn	**Pn**	**08 58 45.4**	**+0.2**
GELI	**Tayfur-Gelibol**	**1.52**	**326**	*e*PN	**Pg**	**08 58 46.1**	**+0.1**
GELI	**Tayfur-Gelibol**	**1.52**	**326**	*e*Pn	**Pg**	**08 58 46.1**	**+0.1**

MAN 16 09:05:45.1, 3.56N×120.70E, h119km, mb4.0, ML2.7, MS2.4, Mindoro

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PGP	**Puerto Galera**	**0.25**	**104**	*e*P	Pn	09 06 03.1	+1.4
BOAC	**Boac**	**1.12**	**95**	*e*P	Pn	09 06 08.7	+0.6
SJMP	**San Jose**	**1.17**	**159**	*e*P	Pn	09 06 09.1	+0.5
SJMP				*e*S	Sn	09 06 27.9	+1.3
BUSP	**Coron**	**1.62**	**198**	*e*P	Pn	09 06 14.4	+0.5
ENPP	**El Nido**	**2.65**	**208**	*e*P	Pn	09 06 27.9	+1.2

JMA 16 09:14:43.9, 37.05N×140.78E, h11km, M2.6, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.05**	**16**	P	Pg	09 14 46.1	-0.1
ONAJ				S	Sg	09 14 47.8	0.0
JFK	**Kawauchi**	**0.33**	**13**	P	Pg	09 14 50.5	0.0
JFK				*e*S	Sg	09 14 55.1	+0.2
JHO	**Hitachi**	**0.47**	**201**	P	Pg	09 14 53.1	0.0
JHO				S	Sg	09 14 59.3	0.0
JFT	**Otama**	**0.59**	**323**	P	Pg	09 14 55.5	+0.2
JFT				S	Sg	09 15 03.4	+0.3
JMM	**Marumori**	**0.81**	**1**	P	Pg	09 14 59.3	-0.3
JFY	**Yanaizu**	**0.93**	**293**	P	Pg	09 15 01.6	-0.2
JFY				S	Sg	09 15 13.6	-0.3
MAT	**Matsushiro**	**2.13**	**257**	P	Pn	09 15 20.3	+0.9
MAT				S	Sb	09 15 48.3	-0.6

*ISK **16** 09:17:30.9, 40.12N×28.81E, h23km, MD2.4*
*CSEM **16** 09:17:31.7±0.3, 40.10N×28.74E, h20km, MD2.4, Error ellipse: s-maj=7.0km s-min=6.8km az=60.0*
*DDA **16** 09:17:32.3, 40.03N×28.70E, h7km, Md2.6*

ISC 16 09:17:31.7±1.0, 40.08N±0.03×28.73E±0.03, h13km±8km, n20, σ0881/30, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ORLT	**Orhaneli**	**0.13**	**104**	*e*PG	**Pg**	**09 17 35.6**	**+0.5**
ORLT	**Orhaneli**	**0.13**	**104**	*e*Pg	**Pg**	**09 17 35.6**	**+0.5**
ULDT	**Uludag**	**0.32**	**78**	*i* P	**Pb**	**09 17 39.4**	**0.0**
ULDT				*i* S	**Sb**	**09 17 45.5**	**+0.9**
ULDT	**Uludag**	**0.32**	**78**	P	**Pb**	**09 17 39.4**	**0.0**
ULDT				S	**Sb**	**09 17 45.5**	**+0.9**
KCTX	**Karacabey (Bur**	**0.34**	**303**	*e*PG	**Pb**	**09 17 39.6**	**-0.1**
KCTX				*e*SG	**Sb**	**09 17 46.2**	**+1.1**
KCTX	**Karacabey (Bur**	**0.34**	**303**	*e*Pg	**Pb**	**09 17 39.6**	**-0.1**
KCTX				*e*Sg	**Sb**	**09 17 46.2**	**+1.1**
ARMT	**Armutlu**	**0.50**	**12**	*e*PG	**Pg**	**09 17 40.8**	**-0.7**
ARMT	**Armutlu**	**0.50**	**12**	*e*Pg	**Pg**	**09 17 40.8**	**-0.7**
DURS	**Dursunbey**	**0.52**	**202**	*i* P	**Pg**	**09 17 41.2**	**-0.7**
DURS				*i* S	**Sg**	**09 17 48.3**	**-0.4**
DURS	**Dursunbey**	**0.52**	**202**	P	**Pg**	**09 17 41.2**	**-0.7**
DURS				S	**Sg**	**09 17 48.3**	**-0.4**
TVSB	**Tavsanli**	**0.84**	**138**	*e*PG	**Pg**	**09 17 47.7**	**-0.4**
TVSB	**Tavsanli**	**0.84**	**138**	*e*Pg	**Pg**	**09 17 47.7**	**-0.4**
CAVI	**Cavuskoy**	**0.86**	**81**	*e*PG	**Pg**	**09 17 47.0**	**-1.4**
CAVI	**Cavuskoy**	**0.86**	**81**	*e*Pg	**Pg**	**09 17 47.0**	**-1.4**
BALY	**Balya**	**0.92**	**249**	*i* P	**Pg**	**09 17 49.1**	**-0.3**
BALY	**Balya**	**0.92**	**249**	P	**Pg**	**09 17 49.1**	**-0.3**
DEMI	**Demirci**	**1.03**	**181**	*i* P	**Pn**	**09 17 52.1**	**+0.1**
DEMI				*i* S	**Sg**	**09 18 03.6**	**-1.5**
DEMI	**Demirci**	**1.03**	**181**	P	**Pn**	**09 17 52.1**	**+0.1**
DEMI				S	**Sg**	**09 18 03.6**	**-1.5**
GDZ	**Gediz**	**1.15**	**149**	*i* P	**Pn**	**09 17 54.0**	**+0.4**
GDZ				*i* S	**Sn**	**09 18 10.0**	**+0.7**
GDZ	**Gediz**	**1.15**	**149**	P	**Pn**	**09 17 54.0**	**+0.4**
GDZ				S	**Sn**	**09 18 10.0**	**+0.7**

MEX 16 09:19:36.4±0.3, 17.18N×94.24W, h57km±29km, MD3.7, Chiapas

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TGIG		**1.15**	**110**	*e*P	Pn	09 19 54.8	-1.5
TGIG				*e*S	Sn	09 20 09.2	-1.9
PCIG		**1.77**	**146**	*e*P	Pn	09 20 03.2	-1.5
PCIG				*e*S	Sn	09 20 24.2	-1.9
CCIG	**Comitan**	**2.21**	**114**	*e*P	Pn	09 20 09.5	-1.4
CCIG				*i* S	Sn	09 20 35.5	-1.6

*NIED **16** 09:20:00, 27.90N×139.60E, h540km, Mw5.0 Best double couple: M0 3.83000×10^16 NP1:φ=50.00000°, δ=57.00000°, λ=-161.00000°. NP2:φ=310.00000°, δ=74.00000°, λ=-34.00000°.*
*BJI **16** 09:20:23.0, 27.83N×139.44E, h490km, mb5.1/70, mB4.8/47*
*ISCJB **16** 09:20:25.8±0.2, 27.92N±0.02×139.42E±0.02, h521km±2km, mb4.7/186, Error ellipse: s-maj=3.2km s-min=2.4km az=141.7*
*NEIC **16** 09:20:25.7±0.1, 27.94N×139.40E, mb4.8/55, Error ellipse: s-maj=4.2km s-min=3.0km az=133.0*
*JMA **16** 09:20:25.3±0.2, 27.92N×139.59E, h529km±4km, M5.1*
*GCMT **16** 09:20:25.7±0.5, 27.88N×139.24E, h517km±4km, MW5.2/53, Moment Tensor Solution. s53,c72; Duration: 0 Moment tensor: Scale 10^16 Nm; Mrr=1.99±.30; Mθθ=4.95±.40; Mφφ=-2.96±.48; Mrθ=3.47±.57; Mrφ=-1.18±.37; Mθφ=-4.72±.40; Best double couple: M0=7.37000×10^16 NP1:φ=317.00000°, δ=81.00000°, λ=-56.00000°. NP2: φ=60.00000°, δ=35.00000°, λ=-163.00000°. Principal axes: T 7.3330, Plg28.0000°, Azm20.0000°; N 0.0750, Plg33.0000°, Azm130.0000°; P -7.4080, Plg44.0000°, Azm260.0000°; nsta1 refers to body waves, cutoff=40s.*
*MOS **16** 09:20:26.7±0.9, 27.98N×139.35E, h533km, mb4.6/56 Error ellipse: s-maj=7.7km s-min=4.4km az=105.1*
*IDC **16** 09:20:26.9±0.5, 27.95N×139.39E, h523km±4km, mb4.0/46, mb1 4.1/53, mb1mx4.1/65, mbtmp4.9/53, Error ellipse: s-maj=7.7km s-min=5.6km az=82.0*

ISC 16 09:20:26.5±0.3, 27.98N±0.03×139.46E±0.04, h521km±3km, h521km: pP-P, n661, σ1518/762, mb4.7/186, 40C-18D, Bonin Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CBIJ	**Chichi jima**	**2.58**	**109**	P	**P**	**09 21 35.6**	**-0.9**
CBIJ				S	**S**	**09 22 30.5**	**-3.0**
CBIJ	**Chichi jima**	**2.58**	**109**	*e*P	**P**	**09 21 35.6**	**-0.9**
CBIJ				*e*S	**S**	**09 22 31.1**	**-2.3**
JCJ	**Chichijima** baz=270,slow=7.1	**2.58**	**109**	P	**P**	**09 21 35.8**	**-0.8**
JCJ	baz=307,slow=20			S	**S**	**09 22 30.1**	**-3.4**
JHHJ	**Haha-jima-NKT**	**2.77**	**118**	P	**P**	**09 21 37.2**	**-0.5**
JHHJ				*e*S	**S**	**09 22 33.4**	**-2.2**
JHCJ	**Hachijojimakas**	**5.08**	**3**	P	**P**	**09 21 56.3**	**+1.1**
JHCJ				*e*S	**S**	**09 23 05.0**	**-2.7**
JHJ2	**Mitsune**	**5.12**	**3**	P	**P**	**09 21 56.3**	**+0.8**
JHJ2				*e*S	**S**	**09 23 07.3**	**-1.1**
JHJ2	**Mitsune**	**5.12**	**3**	*e*P	**P**	**09 21 56.3**	**+0.8**
JHJ2				*e*S	**S**	**09 23 06.8**	**-1.5**
JHJ	**Hachijo jima 2** 151nm,0.3s,baz=130,slow=4.0,SNR=45	**5.13**	**3**	P	**P**	**09 21 56.0**	**+0.5**
JHJ	252nm,0.3s,baz=260,slow=22,SNR=14			S	**S**	**09 23 07.7**	**-0.8**
TTO1	**TONANKAI O.B.S**	**6.07**	**338**	P	P	09 22 07.1	+3.2
JWZ	**Kozaga**	**6.40**	**331**	P	**P**	**09 22 09.2**	**+1.8**
JWZ				*e*S	**S**	**09 23 30.9**	**+0.9**
BSO1	**Boso 1**	**6.78**	**11**	P	**P**	**09 22 10.9**	**+0.5**
BSO1				*e*S	**S**	**09 23 35.9**	**+0.2**
JIE	**Ise**	**6.81**	**340**	P	**P**	**09 22 13.5**	**+2.2**
JIE				*e*S	**S**	**09 23 38.0**	**+0.7**
TSUJ	**Tsu 2**	**7.19**	**340**	P	**P**	**09 22 17.0**	**+1.9**
JOD2	**Odawara 2**	**7.26**	**358**	P	**P**	**09 22 15.5**	**-0.3**
JOD2				*e*S	**S**	**09 23 44.2**	**-1.4**
JTO	**Tosashimizu**	**7.52**	**312**	P	**P**	**09 22 20.7**	**+2.2**
JTO				*e*S	**S**	**09 23 52.0**	**+1.7**
INU	**Inuyama**	**7.63**	**345**	*e*P	**P**	**09 22 21.3**	**+1.9**
JMZ	**Minamidaito 2**	**7.66**	**256**	P	**P**	**09 22 20.1**	**+0.1**
JMZ				S	**S**	**09 23 52.8**	**-0.2**
JRY	**Ryogami san**	**8.02**	**357**	P	**P**	**09 22 23.4**	**-0.1**
JRY				*e*S	**S**	**09 23 55.7**	**-3.9**
JFM	**Mihama**	**8.08**	**339**	P	**P**	**09 22 25.5**	**+1.5**
JGN	**Niukaw**	**8.41**	**348**	P	**P**	**09 22 27.7**	**+0.2**
JNG	**Nsakai**	**8.48**	**353**	P	**P**	**09 22 28.1**	**-0.1**
MJAR	**Matsushiro Arr** 21nm,0.3s,baz=169,slow=12,SNR=200	**8.60**	**353**	P	**P**	**09 22 28.7**	**-0.7**
MJAR	3.5nm,0.3s,baz=166,slow=16,SNR=5.2			S	**S**	**09 24 10.5**	**+0.2**
MAJO	**Matsushiro**	**8.60**	**353**	*c*/*i* P	**P**	**09 22 29.0**	**-0.4**
MAJO	**Matsushiro**	**8.60**	**353**	*e*P	**P**	**09 22 28.9**	**-0.4**
MAT	**Matsushiro**	**8.60**	**353**	P	**P**	**09 22 28.7**	**-0.7**
MAT				S	**S**	**09 24 04.4**	**-5.9**
MAT	**Matsushiro**	**8.60**	**353**	P	**P**	**09 22 28.9**	**-0.5**
MJB9	**Matsu-Tunnel**	**8.60**	**353**	*e*P	**P**	**09 22 28.9**	**-0.4**
JZO	**Okuchi**	**8.72**	**301**	P	**P**	**09 22 32.5**	**+1.8**
JHS	**Saijyo**	**8.84**	**324**	P	**P**	**09 22 34.0**	**+2.1**
JHS				*e*S	**S**	**09 24 16.0**	**+1.1**
JNU	**Nakatsue** 4.7nm,0.3s,baz=145,slow=3.6,SNR=49	**8.99**	**307**	P	**P**	**09 22 35.3**	**+1.8**
JNU	**Nakatsue**	**8.99**	**307**	P	**P**	**09 22 35.4**	**+1.9**
JNU	**Nakatsue**	**8.99**	**307**	*e*P	**P**	**09 22 35.6**	**+2.1**
JAMN	**Amaminishikomi**	**9.08**	**274**	P	**P**	**09 22 35.9**	**+1.5**
JSJ	**Shimokoshiki**	**9.22**	**296**	P	**P**	**09 22 36.4**	**+0.5**
JSJ				*e*S	**S**	**09 24 21.6**	**-0.7**
JOI	**OKI**	**9.81**	**329**	P	**P**	**09 22 42.9**	**+1.0**
JOW	**Kunigami**	**10.00**	**266**	P	**P**	**09 22 45.0**	**+0.9**
JOW	**Kunigami**	**10.00**	**266**	*e*P	**P**	**09 22 45.4**	**+1.4**
JMK	**Ichinoseki**	**11.04**	**7**	P	**P**	**09 22 55.8**	**+1.1**
JMK				*e*S	**S**	**09 24 55.9**	**-0.8**
JKE	**Kume jima 2**	**11.40**	**265**	P	**P**	**09 22 58.8**	**+0.1**
JKE				*e*S	**S**	**09 25 02.3**	**-1.8**
JRG	**Rokugo**	**11.43**	**5**	P	**P**	**09 23 00.3**	**+1.6**
JOM	**Ohasama**	**11.56**	**7**	P	**P**	**09 23 01.4**	**+1.2**
MIYJ	**Miyakonagasawa**	**11.73**	**9**	P	**P**	**09 23 03.0**	**+1.1**
JOT	**Ohata**	**13.43**	**5**	P	**P**	**09 23 20.7**	**+1.0**
KSRS	**Korea Array** 0.6nm,0.3s,baz=132,slow=9.8,SNR=15	**13.53**	**317**	P	**P**	**09 23 20.4**	**-0.4**
KSRS	baz=127,slow=21,SNR=7.9			S	**S**	**09 25 46.5**	**+1.8**
KSRS	0.2nm,0.3s,baz=189,slow=1.4,SNR=6.9			ScP	**ScP**	**09 30 49.7**	**+0.3**
KSAR	**Wonju Array Be**	**13.55**	**317**	P	**P**	**09 23 20.5**	**-0.6**
KSAR				S	**S**	**09 25 46.5**	**+1.5**
KSAR	**Wonju Array Be**	**13.55**	**317**	P	**P**	**09 23 20.4**	**-0.6**
KSAR				S	**S**	**09 25 46.5**	**+1.5**
KSAR				ScP	**ScP**	**09 30 49.7**	**+0.3**
JKB	**Kayabe**	**13.93**	**5**	P	**P**	**09 23 24.8**	**-0.1**
JOSM	**Okushiri--Mats**	**14.07**	**0**	P	**P**	**09 23 27.0**	**+0.6**
ERM	**Erimo**	**14.32**	**11**	*d*/*i* P	**P**	**09 23 30.4**	**+1.4**
ERM	comp=Z,56nm,0.6s			pmax	pmax		
ERM	**Erimo**	**14.32**	**11**	*e*P	**P**	**09 23 28.7**	**-0.3**
INCN	**Inchon**	**14.35**	**315**	P	**P**	**09 23 28.5**	**-1.0**
JCH	**Churui**	**14.94**	**11**	P	**P**	**09 23 36.2**	**+0.7**
YOJ	**Yonaguni jima**	**15.17**	**260**	P	**P**	**09 23 36.2**	**-2.0**
GUMO	**Guam** comp=Z,20nm,0.3s,baz=202,slow=1.7,SNR=24	**15.19**	**160**	P	**P**	**09 23 39.3**	**+0.8**
GUMO	**Guam** comp=Z,1μm,1.0s	**15.19**	**160**	*e*P	**P**	**09 23 39.5**	**+1.0**
JHR	**Hokuryu**	**15.83**	**6**	P	**P**	**09 23 45.9**	**+1.1**
MSHR	**Mys Shultsa**	**16.05**	**337**	*ce*P	**P**	**09 23 49.0**	**+2.0**
NEM2	**Nemuro 2**	**16.17**	**17**	P	**P**	**09 23 47.8**	**-0.3**
ASAJ	**Asahikawa** comp=Z,3.7nm,0.3s,baz=218,slow=12,SNR=24	**16.30**	**8**	P	**P**	**09 23 50.3**	**+0.8**
ASAJ	comp=Z,0.3nm,0.3s,baz=114,slow=7.6,SNR=6.2			ScP	**ScP**	**09 30 54.5**	**+0.2**
ASAJ	**Asahikawa** comp=Z,83nm,1.1s	**16.30**	**8**	*e*P	**P**	**09 23 50.6**	**+1.1**
ASAJ				ScP	**ScP**	**09 30 54.5**	**+0.2**
VLA	**Vladivostok**	**16.30**	**340**	*d*/*i* P	**P**	**09 23 50.5**	**+1.0**
JTKR	**Abashiri--Toko**	**16.35**	**11**	P	**P**	**09 23 50.8**	**+0.8**
NACB	**Ninganchiao** comp=Z,91nm,1.1s	**16.49**	**261**	*e*P	**P**	**09 23 49.0**	**-2.6**
YHNB	**Yeheng** comp=Z,112nm,0.8s	**16.54**	**263**	*e*P	**P**	**09 23 50.0**	**-2.2**
YUK	**Yuzh-Kuril'sk**	**16.83**	**16**	*e*P	**P**	**09 23 55.4**	**+0.8**
YUK	comp=N,50nm,0.4s			pmax	pmax		
YUK	comp=E,80nm,0.4s			pmax	pmax		
YUK	comp=Z,267nm,0.4s			pmax	pmax		
SHO	**Shikotan**	**16.93**	**19**	*e*P	**P**	**09 23 55.4**	**-0.2**
SHO	comp=N,60nm,1.0s			pmax	pmax		
SHO	comp=Z,91nm,1.0s			pmax	pmax		
SHO	comp=E,21nm,0.5s			pmax	pmax		
YULB	**Yu-li** comp=E,83nm,0.8s	**16.99**	**258**	*e*P	**P**	**09 23 55.0**	**-1.6**
SSLB	**Suanglung** comp=E,519nm,1.1s	**17.16**	**260**	*e*P	**P**	**09 23 57.5**	**-0.7**
SSLB				*e*S	**S**	**09 26 53.1**	**+1.9**
USRK	**Ussuriysk Ar.** comp=E,6.9nm,0.3s,baz=138,slow=10,SNR=116	**17.26**	**342**	P	**P**	**09 23 59.6**	**+0.9**
USRK	comp=E,0.1nm,0.3s,baz=142,slow=5.4,SNR=5.4			S	**S**	**09 26 53.8**	**+1.7**
TWG	**Pinlang** comp=E,399nm,0.8s	**17.38**	**257**	*e*P	**P**	**09 23 58.7**	**-1.6**
TPUB	**Ta-pu** comp=E,63nm,0.8s	**17.60**	**259**	*e*P	**P**	**09 24 01.5**	**-0.8**
MDJ	**Mudanjiang**	**18.38**	**337**	P	**P**	**09 24 10.1**	**+1.1**
MDJ				sP	sP	09 26 15.1	-6.3
MDJ				S	**S**	**09 27 10.5**	**+0.2**
MDJ				PcS	**PcS**	**09 31 45.8**	**-3.6**
MDJ				ScS	**ScS**	**09 34 39.5**	**-0.5**
MDJ	comp=E,31nm,1.1s			pmax	pmax		
MDJ	comp=E,290nm,5.0s			pmax	pmax		
MDJ	**Mudanjiang** comp=E,25nm,0.9s	**18.38**	**337**	*e*P	**P**	**09 24 09.6**	**+0.6**
MDJ				*e*S	**S**	**09 27 11.4**	**+1.1**
DL2	**Dalian**	**18.41**	**311**	P	**P**	**09 24 09.1**	**-0.2**
DL2	comp=E,22nm,0.5s			pmax	pmax		
KUR	**Kuril'sk**	**18.47**	**19**	*e*P	**P**	**09 24 11.9**	**+2.1**
KUR	comp=E,22nm,1.0s			pmax	pmax		
QZH	**Quanzhou** comp=Z,73nm,1.0s	**18.92**	**266**	*i*/↓P	**P**	**09 24 10.4**	**-3.8**
QZH				S	S	09 27 12.1	-7.5
QZH	comp=Z,280nm,0.8s			pmax	pmax		
SNY	**Shenyang**	**18.94**	**321**	↑P	**P**	**09 24 14.8**	**+0.7**
SNY				S	**S**	**09 27 23.1**	**+3.7**
SNY	comp=Z,82nm,1.4s			pmax	pmax		
YSS	**Yuzh-Sakhalins**	**19.11**	**7**	↑*i*P	**P**	**09 24 17.6**	**+1.9**
YSS				*e*		09 27 22.0	
YSS	comp=Z,40nm,0.5s			pmax	pmax		
YSS	**Yuzh-Sakhalins** comp=Z,113nm,1.3s	**19.11**	**7**	*e*P	**P**	**09 24 17.5**	**+1.9**
CN2	**Changchun**	**19.40**	**328**	*e*P	**P**	**09 24 19.3**	**+1.0**
CN2				*e*S	**S**	**09 27 28.4**	**+1.6**
CN2	comp=Z,10.0nm,0.4s			pmax	pmax		
CN2	comp=Z,200nm,3.0s			pmax	pmax		
TIA	**Tai'an**	**20.59**	**299**	↓P	**P**	**09 24 29.3**	**0.0**
HABR	**Khabarovsk**	**20.74**	**352**	*e*P	**P**	**09 24 30.4**	**0.0**
HABR				*e**SP	**sP**	**09 26 44.3**	**-3.2**
HABR				*e*S	**S**	**09 27 49.4**	**+1.3**
HABR				*e*		09 34 49.0	
HABR	comp=N,5.0nm,0.7s			pmax	pmax		
HABR	comp=E,15nm,1.4s			pmax	pmax		
HABR	comp=Z,32nm,1.4s			pmax	pmax		
HABR	comp=Z,49nm,16.0s			MLR	MLR		
KLR	**Kul'dur** comp=Z,18nm,0.8s,baz=160,slow=7.8,SNR=41	**22.03**	**346**	P	**P**	**09 24 43.0**	**+0.9**
KLR	comp=Z,4.8nm,0.9s,baz=66,slow=23,SNR=18			S	**S**	**09 28 08.9**	**+0.4**
KLR	comp=Z,4.3nm,0.5s,baz=148,slow=3.1,SNR=15			ScP	**ScP**	**09 31 07.3**	**-0.1**
WHN	**Wuhan**	**22.04**	**283**	↑P	**P**	**09 24 42.6**	**+0.2**
WHN				S	S	09 28 19.8	+11
WHN	comp=Z,290nm,0.7s			pmax	pmax		
WHN	comp=Z,330nm,10.2s			pmax	pmax		
TGY	**Tagaytay City** comp=Z,280nm,0.3s,baz=141,slow=2.1,SNR=8.8	**22.08**	**235**	P	**P**	**09 24 42.9**	**-0.2**
BJT	**Baijiatuau**	**22.66**	**308**	*e*P	**P**	**09 24 47.2**	**-0.7**
BJT	comp=Z,13nm,0.6s			pmax	pmax		
BJT	**Baijiatuau** comp=Z,13nm,0.6s	**22.66**	**308**	*e*P	**P**	**09 24 47.2**	**-0.7**
BJI	**Beijing**	**22.67**	**308**	P	**P**	**09 24 47.1**	**-0.8**
BJI				S	**S**	**09 28 20.0**	**+1.2**
BJI	comp=Z,17nm,1.0s			pmax	pmax		
BJI	comp=Z,130nm,3.4s			pmax	pmax		
TYV	**Tymovskoe**	**22.98**	**5**	*e*P	**P**	**09 24 52.5**	**+2.0**
TYV	comp=Z,72nm,1.2s			pmax	pmax		
NKL	**Nikolayevsk**	**25.16**	**2**	*i* P	**P**	**09 25 11.0**	**+1.2**
NKL	comp=N,47nm,1.0s			pmax	pmax		
NKL	comp=E,24nm,1.0s			pmax	pmax		
NKL	comp=Z,130nm,1.0s			pmax	pmax		
HIA	**Hailar**	**26.10**	**330**	*e*P	**P**	**09 25 18.9**	**+0.6**
HIA	comp=Z,10.0nm,0.8s			pmax	pmax		
HIA	**Hailar** comp=Z,9.8nm,0.8s	**26.10**	**330**	*e*P	**P**	**09 25 18.9**	**+0.6**
HIA				*e*pP	**pP**	**09 26 42.5**	**-1.5**
HHC	**Hu-ho-hao-te**	**26.22**	**307**	*e*P	**P**	**09 25 19.8**	**+0.2**
HHC	comp=Z,49nm,1.0s			pmax	pmax		
HHC	comp=Z,80nm,6.3s			pmax	pmax		
ENH	**Enshi** comp=Z,305nm,0.9s	**26.25**	**282**	*e*P	**P**	**09 25 19.6**	**-0.3**
XAN	**Xi'an**	**26.80**	**291**	P	**P**	**09 25 24.4**	**-0.3**
XAN				sP	sP	09 27 47.0	-4.8
XAN				PcP	**PcP**	**09 28 32.6**	**+2.1**
XAN				S	**S**	**09 29 20.6**	**-3.4**
XAN	comp=Z,49nm,1.0s			pmax	pmax		
XAN	comp=Z,100nm,5.0s			pmax	pmax		
PEA0	**Petropavlovsk-**	**28.50**	**23**	*e*P	**P**	**09 25 41.1**	**+1.8**
PETK	**Petropavlovsk-** comp=Z,2.1nm,0.5s,baz=86,slow=15,SNR=7.7	**28.50**	**23**	P	**P**	**09 25 41.5**	**+2.2**
PETK	comp=Z,4.3nm,0.8s,baz=207,slow=6.3,SNR=4.1			ScP	**ScP**	**09 31 24.5**	**-1.6**
QIZ	**Qiongzhong**	**28.52**	**258**	P	**P**	**09 25 40.5**	**+0.6**
QIZ				S	**S**	**09 29 52.4**	**+1.3**
PET	**Petropavlovsk**	**28.78**	**24**	↓*i*P	**P**	**09 25 43.3**	**+1.7**
PET				*e*S	**S**	**09 29 54.4**	**+0.2**
PET	comp=Z,68nm,1.2s			pmax	pmax		
PET	comp=Z,100nm,16.0s			MLR	MLR		
PET	**Petropavlovsk** comp=Z,86nm,1.2s	**28.78**	**24**	*e*P	**P**	**09 25 43.2**	**+1.6**
GYA	**Guiyang**	**29.16**	**275**	↓*i*P	**P**	**09 25 45.3**	**-0.2**
GYA				sP	sP	09 28 11.0	-2.2
GYA				PcP	**PcP**	**09 28 38.4**	**+1.8**
GYA				S	**S**	**09 30 02.6**	**+1.5**
GYA				ScP	**ScP**	**09 31 30.3**	**+1.4**
GYA				ScS	**ScS**	**09 35 25.4**	**+0.9**
GYA	comp=Z,100nm,1.2s			pmax	pmax		
GYA	comp=Z,180nm,6.5s			pmax	pmax		
SWI	**Sorong**	**29.74**	**197**	P	**P**	**09 25 50.3**	**-0.2**
KDM	**Kudat**	**29.97**	**230**	↑P	**P**	**09 25 52.7**	**+0.2**
KDM	**Kudat**	**29.97**	**230**	↓P	**P**	**09 25 53.3**	**+0.9**
MYLDM	**Lahad Datu**	**30.18**	**225**	↑P	**P**	**09 25 54.2**	**-0.1**
MYLDM	**Lahad Datu** comp=Z,80nm,1.0s	**30.18**	**225**	*e*P	**P**	**09 25 56.4**	**+2.0**
GENI	**Geny

FAKI **Fak Fak** 31.50 194 P **P** 09 26 05.6 0.0
FAKI **Fak Fak** 31.50 194 *e*P **P** 09 26 05.0 -0.6
comp=E,33nm,1.0s
ULN **Ulaanbaatar** 32.02 317*d i*P **P** 09 26 10.2 +0.3
ULN pmax pmax
comp=Z,17nm,0.9s
ULN **Ulaanbaatar** 32.02 317 *e*P **P** 09 26 10.8 +0.9
comp=Z,14nm,0.8s
ULN **Ulaanbaatar** 32.02 317 P **P** 09 26 11.2 +1.3
SNR=6.5
ULN **Ulaanbaatar** 32.02 317 P **P** 09 26 11.2 +1.3
SNR=6.5
MRSI **Marisa** 32.09 215 P **P** 09 26 10.1 -0.6
comp=Z,79nm,0.9s
SONA1 **Songino Array** 32.40 317 *e*P **P** 09 26 13.1 0.0
SONM **Songino Array** 32.40 317 P **P** 09 26 13.6 +0.5
comp=Z,5.3nm,0.6s,baz=126,slow=8.0,SNR=13
SONM PcP **PcP** 09 28 46.2 +1.1
comp=Z,1.2nm,0.5s,baz=106,slow=3.1,SNR=4.4
SONM ScP **ScP** 09 31 38.6 -0.8
comp=Z,4.2nm,0.7s,baz=130,slow=3.5,SNR=11
MA2 **Magadan** 32.53 11 P **P** 09 26 14.6 +0.8
comp=Z,60nm,0.8s,baz=191,slow=8.1,SNR=22
SANI **Sanana** 32.55 206 P **P** 09 26 15.2 +0.6
KMI **Kunming** 32.89 274 P **P** 09 26 18.3 +0.6
KMI pmax pmax
comp=Z,79nm,1.1s
KMI pmax pmax
comp=Z,200nm,3.1s
APSI **Ampana** 33.43 214 P **P** 09 26 21.5 -0.6
PANO **Nakornpanom** 33.83 259 P **P** 09 26 26.2 +0.8
comp=Z,44nm,1.5s
SKNT **Sakolnakorn** 34.45 259 P **P** 09 26 30.9 +0.3
comp=Z,90nm,1.2s
GTA **Gaotai** 34.64 300 ⇓P **P** 09 26 32.1 0.0
GTA pP pP 09 28 05.1 +3.3
GTA S **S** 09 31 24.8 +0.2
GTA ScP **ScP** 09 31 48.1 +0.6
GTA sS sS 09 34 05.0 -5.3
GTA SS SS 09 34 18.3 -12
GTA pmax pmax
comp=Z,53nm,1.1s
GTA pmax pmax
comp=Z,150nm,5.8s
YAK **Yakutsk** 34.66 352 P **P** 09 26 32.4 +0.7
comp=Z,17nm,0.3s,baz=176,slow=1.2,SNR=8.3
YAK **Yakutsk** 34.66 352 *e*P **P** 09 26 31.3 -0.4
YAK *e**PP **PP** 09 28 07.0 -4.4
YAK *e*S **S** 09 31 19.8 -4.1
YAK *e* 09 35 47.2
YAK pmax pmax
comp=Z,46nm,0.9s
YAK pmax pmax
comp=N,32nm,1.4s
YAK pmax pmax
comp=E,5.0nm,0.8s
YAK pmax pmax
comp=Z,12nm,0.4s
YAK smax smax
comp=E,97nm,1.4s
YAK smax smax
comp=N,87nm,1.6s
NONG **Nongkai** 34.73 261 P **P** 09 26 33.3 +0.3
comp=N,174nm,1.0s
BOD **Bodaibo** 34.75 336 *e*P **P** 09 26 32.0 -0.6
BOD pmax pmax
comp=Z,9.0nm,1.3s
BTM **Bintulu** 35.21 230 ⇑P **P** 09 26 36.5 -0.5
BTM **Bintulu** 35.21 230 ⇓P **P** 09 26 37.9 +0.9
ZAK **Zakamensk** 35.35 319 *e*P **P** 09 26 37.2 -0.7
ZAK *e* 09 31 33.1
ZAK pmax pmax
comp=Z,8.0nm,1.1s
KHON **Khomkaen** 35.72 259 P **P** 09 26 41.6 +0.4
comp=Z,37nm,0.9s,comp=Z,2μm
TLY **Talaya** 35.73 321 *e*P **P** 09 26 41.6 +0.7
TLY pmax pmax
comp=Z,6.0nm,0.6s
SEY **Seymchan** 35.97 10 P **P** 09 26 43.5 +0.9
comp=Z,33nm,1.0s,baz=197,slow=6.9,SNR=75
SEY pP **PP** 09 28 19.3 -3.3
comp=Z,4.5nm,1.0s,baz=135,slow=10.0,SNR=2.5
SEY ScP **ScP** 09 31 51.0 -0.7
comp=Z,2.3nm,0.6s,baz=186,slow=3.8,SNR=5.6
SBUM **Sibu** 36.35 230 ⇑P **P** 09 26 45.7 -0.8
SBUM **Sibu** 36.35 230 ⇑P **P** 09 26 47.7 +1.3
SBUM **Sibu** 36.35 230 *e*P **P** 09 26 46.8 +0.3
comp=Z,53nm,1.6s
CRAI **Chiangrai** 36.38 266 P **P** 09 26 48.2 +1.5
comp=Z,52nm,1.2s
LOEI **Loei** 36.60 262 P P 09 26 45.2 -3.3
comp=Z,86nm,1.0s,comp=Z,1μm
CHAI **Chaiyaphum** 36.63 259 P **P** 09 26 48.6 -0.2
comp=Z,90nm,0.9s,comp=Z,933nm
UTTA **Uttaradit** 37.13 263 P **P** 09 26 52.7 -0.1
comp=Z,34nm,0.9s,comp=Z,229nm
MTKI **Muara Teweh, K** 37.19 223 P **P** 09 26 53.1 -0.3
PBKT **Sadao Pong** 37.23 261 P **P** 09 26 53.8 +0.1
comp=Z,118nm,1.1s,comp=Z,1μm
SRAK **Srakaew** 37.43 256 P P 09 26 51.6 -3.7
comp=Z,725nm,0.9s,comp=Z,5μm
PHIT **Phitsanulok** 37.47 262 P **P** 09 26 56.5 +0.9
comp=Z,53nm,0.9s
LAMP **Lampang** 37.64 264 P **P** 09 26 57.4 +0.3
comp=Z,17nm,0.9s,comp=Z,183nm
CMAI **Chiengmai2** 37.65 267 P **P** 09 26 57.7 +0.4
comp=Z,40nm,1.2s
CHBT **CHBT** 37.78 254 P **P** 09 26 58.6 +0.4
comp=Z,82nm,1.1s,comp=Z,3μm
PMG **Port Moresby** 37.91 168*ce*P **P** 09 26 58.9 -0.3
PMG pmax pmax
comp=Z,174nm,1.2s
PMG **Port Moresby** 37.91 168 *e*P **P** 09 26 59.5 +0.3
comp=Z,39nm,1.1s
NAYO **Nakonayok** 37.91 257 P **P** 09 26 59.4 +0.1
comp=Z,105nm,1.2s,comp=Z,1μm
SUKH **Sukhothai** 38.04 263 P **P** 09 27 00.7 +0.4
comp=Z,9.4nm,1.3s,comp=Z,101nm
CMMT **Chiang Mai** 38.14 265 P **P** 09 27 00.6 -0.5
comp=Z,87nm,1.0s,comp=Z,908nm
CHTO **Chiang Mai** 38.14 265 P **P** 09 27 00.6 -0.5
comp=Z,379nm,1.1s,comp=Z,4μm
CHTO **Chiang Mai** 38.14 265 *e*P **P** 09 27 00.9 -0.2
CHTO pmax pmax
comp=Z,66nm,0.8s
CHTO **Chiang Mai** 38.14 265 *e*P **P** 09 27 00.9 -0.2
comp=Z,66nm,0.8s
CHTO **Chiang Mai** 38.14 265 P **P** 09 27 01.1 -0.1
SNR=38
CHTO **Chiang Mai** 38.14 265 P **P** 09 27 01.1 -0.1
SNR=38
CM01 **Chiang Mai Arr** 38.27 265 *e*P **P** 09 27 01.1 -1.1
CM31 **Chiang Mai Arr** 38.27 265 *e*P **P** 09 27 02.9 +0.6
CMAR **Chiang Mai Arr** 38.27 265 P **P** 09 27 02.2 0.0
comp=Z,16nm,0.7s,baz=53,slow=8.7,SNR=158
CMAR PcP **PcP** 09 29 04.4 +1.4
comp=Z,3.6nm,0.9s,baz=80,slow=1.4,SNR=7.1
CMAR ScP **ScP** 09 32 02.1 +0.9
comp=Z,0.4nm,0.6s,baz=30,slow=2.9,SNR=4.3
STKI **Sintang** 38.60 229 P **P** 09 27 05.5 +0.6
comp=Z,53nm,0.5s,comp=Z,19μm
PATY **Pattaya** 38.95 255 P **P** 09 27 09.0 +1.3
comp=Z,23nm,0.9s,comp=Z,2μm
BBKI **Banjar Baru** 39.23 221 P **P** 09 27 09.9 -0.1
MHMT **Maesarieng** 39.27 265 P **P** 09 27 10.6 +0.3
comp=Z,58nm,1.1s,comp=Z,541nm
PHET **Kaeng Krachan** 40.02 256 P **P** 09 27 17.2 +0.9
comp=Z,26nm,1.0s,comp=Z,251nm
KHLT **Khaolaem Dam** 40.06 260 P **P** 09 27 17.3 +0.6
comp=Z,29nm,0.9s,comp=Z,326nm
KTGM **Kuala Trenggan** 41.19 244 ⇑P **P** 09 27 25.0 -0.7
KTGM **Kuala Trenggan** 41.19 244 ⇓P **P** 09 27 27.6 +1.9
MTN **Manton Dam** 41.38 192 *e*P **P** 09 27 26.8 -0.3
comp=Z,24nm,0.9s
COEN **Coen** 41.85 175 *e*P **P** 09 27 31.7 +0.9
comp=Z,18nm,0.8s
LSA **Lhasa** 42.11 284 *e*P **P** 09 27 34.1 +0.8
LSA pmax pmax
comp=Z,22nm,0.6s
LSA **Lhasa** 42.11 284 *e*P **P** 09 27 34.1 +0.8
comp=Z,22nm,0.6s
LSA *e*ScP **ScP** 09 32 16.8 -0.1
SKLT **Songkhla** 42.15 248 P **P** 09 27 34.0 +0.8
comp=Z,92nm,1.0s,comp=Z,821nm
PLAI **Plampang** 42.18 213 P **P** 09 27 31.9 -1.5
SHL **Shillong** 42.33 278 *i* P **P** 09 27 35.5 +0.7

SHL *e*S **ScS** 09 36 34.5 -3.8
TWSI **Taliwang, Sumb** 42.54 214 P **P** 09 27 35.3 -1.0
TRTT **Trang** 42.54 250 P **P** 09 27 37.1 +0.7
comp=Z,76nm,1.1s
SURT **Suratani** 42.69 252 P **P** 09 27 38.3 +0.8
comp=Z,24nm,1.3s
KRAB **Krabi** 42.75 250 P **P** 09 27 38.8 +0.8
comp=Z,174nm,0.8s
MYKOM **Kota Tinggi** 42.85 239 ⇑P **P** 09 27 38.3 -0.4
MYKOM **Kota Tinggi** 42.85 239 *e*P **P** 09 27 40.0 +1.2
comp=Z,26nm,0.8s
KGM **Kluang** 43.10 240 ⇑P **P** 09 27 39.8 -1.0
BILL **Bilibino** 43.17 14⇑ *i*P **P** 09 27 41.1 +0.6
BILL *e**PP **PcP** 09 29 23.2 +4.9
BILL *e* 09 29 40.0
BILL *e*SS SS 09 36 47.6 -8.9
BILL pmax pmax
comp=Z,97nm,1.0s
BILL **Bilibino** 43.17 14 *e*P **P** 09 27 40.7 +0.2
comp=Z,84nm,1.0s
KULM **Kulim** 43.20 246 ⇑P **P** 09 27 40.3 -1.2
KULM **Kulim** 43.20 246 *e*P **P** 09 27 41.2 -0.2
comp=Z,82nm,0.8s
IPM **Ipoh** 43.37 244 ⇑P **P** 09 27 41.5 -1.4
IPM **Ipoh** 43.37 244 *e*P **P** 09 27 42.6 -0.2
comp=Z,56nm,0.8s
PKDT **Phuket** 43.64 251 P **P** 09 27 45.7 +0.7
comp=Z,148nm,0.9s
FRIM **Kepong** 43.65 243 ⇑P **P** 09 27 43.7 -1.3
JAGI **Jajag, Banyuwa** 43.73 218 P **P** 09 27 45.6 0.0
comp=Z,42nm,1.1s
JAGI **Jajag, Banyuwa** 43.73 218 *e*P **P** 09 27 44.2 -1.4
comp=Z,48nm,1.1s
PPBI **Pangkal Pinang** 43.86 232 P **P** 09 27 46.3 -0.4
WMQ **Urumqi** 44.09 305 P **P** 09 27 49.3 +1.2
WMQ pP pP 09 29 23.1 -0.3
WMQ PP **PP** 09 29 39.0 -2.1
WMQ S **S** 09 33 40.8 -1.8
WMQ SS **SS** 09 37 07.3 -5.0
WMQ pmax pmax
comp=Z,47nm,1.0s
WMQ pmax pmax
comp=Z,170nm,3.6s
TIXI **Tiksi** 44.10 355 P **P** 09 27 47.7 0.0
comp=Z,4.8nm,0.3s,baz=143,slow=6.7,SNR=19
TIXI PP **PP** 09 29 40.6 0.0
comp=Z,2.9nm,0.3s,baz=141,slow=12,SNR=5.2
TIXI **Tiksi** 44.10 355*ce*P **P** 09 27 47.4 -0.3
TIXI pmax pmax
comp=Z,19nm,1.1s
TIXI **Tiksi** 44.10 355 *e*P **P** 09 27 47.6 -0.1
comp=Z,14nm,0.9s
TIXI PP **PP** 09 29 40.6 0.0
NGJI **Ngawi** 44.35 222 P **P** 09 27 51.5 +1.1
comp=Z,64nm,1.2s,comp=Z,3μm
KPJI **Karang Pucung** 45.85 225 P **P** 09 28 01.4 -0.5
BKNI **Bangkinang** 45.93 240 *e*P **P** 09 28 02.8 +0.3
comp=Z,49nm,0.9s
PSI **Prapat** 46.05 244 *e*P **P** 09 28 03.6 0.0
PSI pmax pmax
comp=Z,64nm,0.8s
PSI **Prapat** 46.05 244 *e*P **P** 09 28 03.6 0.0
comp=Z,64nm,0.8s
LEM **Lembang** 46.29 226 P P 09 28 11.0 +5.5
SDSI **Sungai Dareh** 46.45 238 P **P** 09 28 07.3 +0.8
comp=Z,46nm,1.0s,comp=Z,64μm
KCSI **Kotacane, Aceh** 46.55 246 P **P** 09 28 06.1 -1.2
DBJI **Dramaga** 46.65 228 P **P** 09 28 08.1 +0.1
comp=Z,80nm,1.3s,comp=Z,7μm
KLI **Kotabumi** 46.68 231 P **P** 09 28 08.6 +0.4
comp=Z,129nm,0.9s,comp=Z,5μm
MNSI **Mandailing Nat** 46.76 242 P **P** 09 28 08.6 -0.3
comp=Z,89nm,0.7s
LHSI **Lahat** 46.88 233 P **P** 09 28 10.4 +0.7
comp=Z,137nm,1.0s,comp=Z,7μm
MDSI **Maura Dua** 46.88 232 P **P** 09 28 09.1 -0.7
comp=Z,249nm,1.0s,comp=Z,2μm
GUN **Gumba** 47.00 283 *e*P **P** 09 28 11.7 +0.7
comp=Z,214nm,0.5s
PDSI **Padang** 47.16 239 P **P** 09 28 11.6 -0.4
ZALV **Zalesovo Beam** 47.23 319 P **P** 09 28 11.8 0.0
comp=Z,8.9nm,0.4s,baz=105,slow=7.1,SNR=60
ZALV PcP **PcP** 09 29 32.2 -0.6
comp=Z,6.1nm,0.5s,baz=120,slow=3.2,SNR=12
ZALV ScP **ScP** 09 32 34.8 -2.2
comp=Z,6.1nm,0.6s,baz=115,slow=4.1,SNR=15
MASI **Maura Aman, Be** 47.33 235 P **P** 09 28 12.9 -0.3
LWLI **Liwa** 47.34 232 P **P** 09 28 13.0 -0.4
KASI **Kota Agung** 47.40 231 P **P** 09 28 11.9 -1.8
GAMB **Gambell** 47.41 27 *e*P **P** 09 28 14.2 +1.2
comp=Z,16nm,1.0s
PKIN **Phulchoki** 47.49 283 *e*P **P** 09 28 14.6 0.0
comp=Z,46nm,0.5s
KKN **Kakani** 47.54 283 *e*P **P** 09 28 15.2 +0.3
comp=Z,174nm,0.9s
FITZ **Fitzroy Crossi** 47.73 198 *e*P **P** 09 28 16.2 +0.2
comp=Z,9.2nm,0.8s
DMN **Daman** 47.73 283 *e*P **P** 09 28 16.7 +0.3
comp=Z,81nm,0.5s
WRAB **Tennant Creek** 47.89 186*c i*P **P** 09 28 16.7 -0.5
WRAB pmax pmax
comp=Z,24nm,0.6s
WRAB **Tennant Creek** 47.89 186 *e*P **P** 09 28 16.8 -0.5
comp=Z,13nm,0.5s
WB2 **Warramunga Arr** 47.90 186 *e*P **P** 09 28 16.8 -0.5
WRA **Warramunga Arr** 47.90 186 P **P** 09 28 16.5 -0.8
comp=Z,19nm,0.6s,baz=2.2,slow=7.8,SNR=228
WRA PcP **PcP** 09 29 36.2 +0.5
comp=Z,3.4nm,0.7s,baz=0.5,slow=3.6,SNR=6.8
WRA pP **pP** 09 29 53.9 -1.0
comp=Z,3.2nm,0.9s,baz=5.9,slow=8.5,SNR=2.9
WRA PP **PP** 09 30 14.7 -1.4
comp=Z,4.7nm,0.7s,baz=11,slow=8.4,SNR=5.0
WRA ScP **ScP** 09 32 39.6 -0.6
comp=Z,3.1nm,0.8s,baz=3.5,slow=4.6,SNR=7.5
WRA S S 09 34 28.9 -7.2
comp=Z,6.7nm,1.0s,baz=3.8,slow=13,SNR=6.7
GSI **Gunungsitoli** 48.02 244 P **P** 09 28 18.3 -0.1
GSI **Gunungsitoli** 48.02 244 *e*P **P** 09 28 18.4 -0.1
comp=Z,180nm,0.9s
MK01 **Makanchi Array** 48.03 309 *e*P **P** 09 28 17.8 -0.3
MK31 **Makanchi Array** 48.04 309 *i* P **P** 09 28 18.1 0.0
MK31 pmax pmax
comp=Z,53nm,1.1s
MK31 **Makanchi Array** 48.04 309 *e*P **P** 09 28 18.4 +0.3
MKAR **Makanchi Array** 48.04 309 P **P** 09 28 18.3 +0.2
comp=Z,11nm,0.5s,baz=90,slow=9.7,SNR=142
MKAR PcP **PcP** 09 29 36.1 +0.1
comp=Z,4.0nm,0.7s,baz=75,slow=7.0,SNR=4.5
MKAR ScP **ScP** 09 32 39.7 -1.0
comp=Z,4.1nm,0.6s,baz=85,slow=5.1,SNR=11
MKAR S **S** 09 34 36.4 -1.3
comp=Z,0.9nm,0.7s,baz=89,slow=17,SNR=4.3
GKN **Gorkha** 48.04 284 *e*P **P** 09 28 18.9 +0.3
comp=N,160nm,0.8s
CTAO **Charters Tower** 48.24 171 *e*P **P** 09 28 20.2 +0.4
CTAO pmax pmax
comp=Z,21nm,1.5s
CTAO **Charters Tower** 48.24 171 *e*P **P** 09 28 20.2 +0.4
comp=Z,21nm,1.5s
MAKZ **Makanchi** 48.26 309 P **P** 09 28 19.5 -0.2
MAKZ pmax pmax
comp=Z,55nm,1.3s
NVS **Novosibirsk** 48.30 320 *e*P **P** 09 28 18.7 -1.2
NVS *e*S **S** 09 34 38.6 -2.3
NVS pmax pmax
comp=Z,25nm,1.5s
NVS pmax pmax
comp=E,15nm,1.2s
NVS smax smax
comp=N,80nm,3.3s
KOLN **Koldanda** 48.99 284 *e*P **P** 09 28 26.0 +0.3
comp=N,31nm,0.3s
PYUN **Piuthan** 49.44 284 *e*P **P** 09 28 29.4 +0.4
comp=N,120nm,0.3s
PDGK **Podgornoye** 50.05 305 P **P** 09 28 33.1 +0.1
PDGK pmax pmax
comp=Z,69nm,0.8s
SDPT **Sand Point** 50.57 40 *e*P **P** 09 28 36.4 -0.1
comp=Z,177nm,0.5s
KURK **Kurchatov** 50.63 314 P **P** 09 28 37.8 +0.7
KURK S S 09 35 05.3 -7.5
KURK pmax pmax
comp=Z,61nm,0.6s
KURK pmax pmax
comp=N,1.0nm,0.8s

KURK smax smax
comp=N,1.0nm,0.8s
KURK **Kurchatov** 50.63 314 *e*P **P** 09 28 37.1 0.0
comp=N,50nm,0.7s
KURK ScP **ScP** 09 32 50.6 -1.0
KURK S S 09 35 05.2 -7.5
KURK **Kurchatov** 50.63 314 P **P** 09 28 37.2 +0.1
SNR=21
KURK **Kurchatov** 50.63 314 P **P** 09 28 37.2 +0.1
SNR=21
KURBB **Kurchatov Arra** 50.69 314 P **P** 09 28 37.8 +0.3
comp=N,61nm,0.6s,baz=92,slow=8.1,SNR=21
KURBB ScP **ScP** 09 32 50.6 -1.3
comp=N,1.1nm,0.8s,baz=106,slow=3.2,SNR=4.6
KURBB S S 09 35 05.2 -8.2
comp=N,0.7nm,0.8s,baz=94,slow=15,SNR=6.1
NRIK **Noril'sk** 50.95 339 P **P** 09 28 39.2 +0.1
comp=N,4.2nm,0.3s,baz=121,slow=6.1,SNR=10
NRIK S **S** 09 35 15.3 -1.2
comp=N,1.3nm,0.3s,baz=208,slow=23,SNR=26
AS01 **Alice Springs** 51.62 186 *e*P **P** 09 28 43.8 -0.8
AS31 **Alice Springs** 51.63 186 *e*P **P** 09 28 44.0 -0.7
ASAR **Alice Springs** 51.63 186 P **P** 09 28 44.0 -0.7
comp=N,5.0nm,0.4s,baz=2.1,slow=6.4,SNR=185
ASAR PcP **PcP** 09 29 50.7 +1.2
comp=N,3.3nm,0.8s,baz=11,slow=3.5,SNR=12
ASAR ScP **ScP** 09 32 55.7 -0.6
comp=N,1.3nm,0.6s,baz=3.1,slow=4.6,SNR=6.4
ASAR S **S** 09 35 24.4 -2.4
comp=N,1.7nm,0.8s,baz=7.4,slow=13,SNR=10
TKM2 **Tokmak 2** 52.92 304 P **P** 09 28 54.8 +0.7
TKM2 pmax pmax
comp=Z,22nm,0.6s
TKM2 **Tokmak 2** 52.92 304 *e*P **P** 09 28 55.0 +0.9
KSH **Kashi** 53.04 300 P P 09 28 58.5 +3.6
KSH *e*PcP **PcP** 09 29 58.1 +3.1
KSH *e*pP pP 09 30 36.8 +1.6
KSH *e*PP **PP** 09 31 06.8 +5.0
KSH S **S** 09 35 50.8 +5.1
KSH pmax pmax
comp=Z,48nm,0.7s
FRU **Bishkek** 53.65 304 *e*P **P** 09 29 00.0 +1.0
FRU *e* 09 29 57.0
FRU *e*S **S** 09 35 53.0 -0.4
FRU smax smax
comp=N,57nm,2.2s
AAK **Ala-Archa** 53.76 304 P **P** 09 29 00.3 +0.3
comp=N,18nm,0.6s,baz=124,slow=5.7,SNR=28
AAK ScP **ScP** 09 33 04.9 -0.8
comp=N,2.3nm,0.7s,baz=118,slow=4.7,SNR=3.7
AAK S **S** 09 35 55.8 +0.7
comp=N,0.4nm,0.3s,baz=4.1,slow=21,SNR=6.7
AAK **Ala-Archa** 53.76 304 P **P** 09 29 00.5 +0.5
SNR=10
AAK **Ala-Archa** 53.76 304 P **P** 09 29 00.5 +0.5
SNR=10
TTA **Tatalina** 53.91 31 *e*P **P** 09 29 01.5 +0.9
TTA **Tatalina** 53.91 31 *e*P **P** 09 29 01.5 +0.9
EKS2 **Erkin-Say** 54.28 304 *e*P **P** 09 29 04.1 +0.5
EKS2 **Erkin-Say** 54.28 304 *e*P **P** 09 29 04.1 +0.5
THN **Thein Dam** 54.55 291 *e*P **P** 09 29 04.0 -1.4
OHAK **Old Harbor** 54.72 38 *e*P **P** 09 29 06.5 +0.3
OTUK **Ortayu** 54.76 311 P **P** 09 29 06.8 +0.1
OTUK pmax pmax
comp=Z,72nm,1.4s
SFK **Sufi-Kurgan** 54.85 301 P **P** 09 29 07.9 +0.1
SFK pmax pmax
comp=Z,35nm,0.7s
KDAK **Kodiak Island** 55.12 37 P P 09 29 24.4 +15
comp=Z,8.7nm,0.4s,baz=284,slow=1.5,SNR=45
KDAK **Kodiak Island** 55.12 37 *e*P **P** 09 29 09.6 +0.6
KDAK **Kodiak Island** 55.12 37 *e*P **P** 09 29 09.6 +0.6
RSO **Redoubt South** 55.17 34 *e*P **P** 09 29 10.7 +1.1
MNAS **Manas** 55.23 304 P **P** 09 29 11.0 +0.7
MNAS pmax pmax
comp=Z,14nm,0.9s
SPU **Mount Spurr** 55.57 33 *e*P **P** 09 29 13.4 +1.2
CHKZ **Chkalovo** 55.59 318 P **P** 09 29 12.0 -0.4
CHKZ pmax pmax
comp=Z,31nm,0.8s
PPLA **Purkeypile** 55.65 31 *e*P **P** 09 29 14.8 +2.0
CAST **Castle Rocks** 55.74 30 *e*P **P** 09 29 14.8 +1.5
BVA0 **Borovoye Array** 55.75 317 *i* P **P** 09 29 13.9 +0.4
BVA0 pmax pmax
comp=Z,41nm,0.6s
BVAR **Borovoye Array** 55.75 317 P **P** 09 29 13.8 +0.3
comp=Z,56nm,0.4s,baz=91,slow=6.9,SNR=294
BVAR ScP **ScP** 09 33 12.7 -1.3
comp=Z,3.6nm,0.6s,baz=90,slow=5.2,SNR=7.9
BVAR S **S** 09 36 19.2 -1.2
comp=Z,6.3nm,0.8s,baz=91,slow=12,SNR=18
BRVK **Borovoye** 55.81 317*d i*P **P** 09 29 14.4 +0.5
BRVK pmax pmax
comp=Z,64nm,0.9s
BRVK **Borovoye** 55.81 317 *e*P **P** 09 29 14.1 +0.2
BRVK **Borovoye** 55.81 317 P **P** 09 29 14.9 +1.0
SNR=14
BRVK **Borovoye** 55.81 317 P **P** 09 29 14.9 +1.0
SNR=14
BRLK **Bradley Lake** 56.07 35 *e*P **P** 09 29 16.3 +0.7
KTH **Kantishna Hill** 56.27 30 *e*P **P** 09 29 18.4 +1.4
BPAW **Bear Paw Mtn.** 56.29 30 *e*P **P** 09 29 18.3 +1.2
MLY **Manley** 56.48 29 *e*P **P** 09 29 19.7 +1.2
TRF **Thorofare Moun** 56.55 30 *e*P **P** 09 29 19.5 +0.4
ZRNK **Zerenda** 56.59 317 P **P** 09 29 19.0 -0.3
ZRNK pmax pmax
comp=Z,49nm,1.1s
ZRNK **Zerenda** 56.59 317 *e*P **P** 09 29 19.5 +0.2
KK31 **Karatay Array** 56.60 305 *i* P **P** 09 29 19.8 +0.2
KK31 pmax pmax
comp=Z,55nm,0.8s
KKAR **Karatay Array** 56.60 305 *e*P **P** 09 29 20.0 +0.4
KKAR pmax pmax
comp=Z,38nm,0.6s
KKAR **Karatay Array** 56.60 305 *e*P **P** 09 29 20.0 +0.4
comp=Z,38nm,0.6s
HYB **Hyderabad** 56.67 273 *i* P **P** 09 29 20.0 -0.5
RC01 **Rabbit Creek A** 56.69 33 *e*P **P** 09 29 20.2 +0.3
SEW **Seward** 56.80 34 *e*P **P** 09 29 20.7 +0.1
COLD **Coldfoot** 56.92 26 *e*P **P** 09 29 23.2 +1.9
PMR **Palmer** 56.99 33 *e*P **P** 09 29 21.6 -0.3
PMR **Palmer** 56.99 33 *e*P **P** 09 29 21.6 -0.3
MCK **McKinley** 57.17 30 *e*P **P** 09 29 23.5 +0.3
MCK **McKinley** 57.17 30 *e*P **P** 09 29 23.5 +0.3
SML **Sawmill** 57.38 32 *e*P **P** 09 29 25.2 +0.6
SML **Sawmill** 57.38 32 *e*P **P** 09 29 25.2 +0.6
MDM **Murphy Dome** 57.54 29 *e*P **P** 09 29 26.6 +0.9
WRH **Wood River Hil** 57.58 29 *e*P **P** 09 29 26.7 +0.8
COLA **College** 57.70 29*d i*P **P** 09 29 28.1 +1.5
COLA pmax pmax
comp=Z,14nm,1.1s
COLA **College** 57.70 29 *e*P **P** 09 29 27.9 +1.2
CCB **Clear Creek Bu** 57.71 29 *e*P **P** 09 29 27.0 +0.2
DHY **Denali Highway** 57.85 31 *e*P **P** 09 29 28.2 +0.3
SCM **Sheep Creek Mo** 57.86 32 *e*P **P** 09 29 28.8 +0.9
SCM **Sheep Creek Mo** 57.86 32 *e*P **P** 09 29 28.8 +0.9
HDA **Harding Lake** 58.07 29 *e*P **P** 09 29 28.3 -0.9
IL1 **Eielson Array** 58.10 29 *e*P **P** 09 29 28.1 -1.3
ILAR **Eielson Array** 58.10 29 P **P** 09 29 28.9 -0.6
comp=Z,5.0nm,0.5s,baz=259,slow=5.3,SNR=75
ILAR pP **pP** 09 31 10.0 -2.3
comp=Z,0.5nm,0.7s,baz=267,slow=6.1,SNR=2.4
ILAR S **S** 09 36 51.6 +1.3
comp=Z,0.7nm,1.1s,baz=255,slow=9.1,SNR=4.7
ILB **Eielson Array** 58.10 29 *e*P **P** 09 29 29.1 -0.4
KLU **Klutina** 58.53 33 *e*P **P** 09 29 33.4 +0.9
DIV **Divide** 58.61 33 *e*P **P** 09 29 34.4 +1.4
EYAK **Cordova Ski Ar** 58.64 34 *e*P **P** 09 29 34.0 +0.9
PAX **Paxson** 58.72 31 *e*P **P** 09 29 34.4 +0.7
PAX **Paxson** 58.72 31 *e*P **P** 09 29 34.4 +0.7
FYU **Fort Yukon** 58.84 27 *e*P **P** 09 29 34.8 +0.5
RAGM **Ragged Mountai** 59.18 34 *e*P **P** 09 29 37.9 +1.1
BMRM **Bremner River** 59.19 33 *e*P **P** 09 29 37.9 +1.0
DOT **Dot Lake** 59.34 30 *e*P **P** 09 29 38.1 +0.3
KBL **Kabul** 59.46 295 *e*P **P** 09 29 39.9 +0.5
KBL **Kabul** 59.46 295 *e*P **P** 09 29 39.9 +0.5
MENT **Mentasta** 59.52 31 *e*P **P** 09 29 40.3 +1.2
STKA **Stephens Creek** 59.56 178 P **P** 09 29 39.2 -0.5
comp=Z,5.0nm,0.6s,baz=346,slow=8.1,SNR=19
STKA **Stephens Creek** 59.56 178 *e*P **P** 09 29 39.5 -0.1
EGAK **Eagle** 60.56 29 *e*P **P** 09 29 46.3 +0.4
ARU **Arti** 62.23 322 P **P** 09 29 57.0 0.0
comp=Z,22nm,0.4s,baz=82,slow=4.0,SNR=42
ARU **Arti** 62.23 322*c i*P **P** 09 29 56.9 0.0

ARU 09 30 29.7
ARU 09 32 19.0
ARU S **S** **09 37 40.6 -1.4**
ARU pmax pmax
comp=Z,28nm,0.7s
ARU Arti 62.23 322 *e*P **P** 09 29 56.9 -0.1
SOKR Solikamsk 62.66 325 *e*P P 09 29 55.6 -4.0
SOKR pmax pmax
comp=Z,18nm,0.9s
INK Inuvik 63.23 25 P **P** **09 30 03.4 +0.2**
comp=Z,3.7nm,0.3s,baz=286,slow=5.7,SNR=63
INK Inuvik 63.23 25 P **P** **09 30 03.4 +0.2**
INK *e* 09 30 32.1
INK pmax pmax
comp=Z,4.0nm,0.9s
INK Inuvik 63.23 25 P **P** **09 30 03.4 +0.2**
comp=Z,3.6nm,0.9s
INK *e*PcP **PcP** **09 30 32.0 -2.8**
AKTO Aktyubinsk 63.70 315 P **P** **09 30 06.3 -0.2**
comp=Z,17nm,0.7s,baz=86,slow=7.7,SNR=62
AKTO S **S** **09 38 00.7 +0.5**
comp=Z,2.0nm,0.8s,baz=98,slow=20,SNR=5.6
SKAG Skagway 63.96 34 *e*P **P** **09 30 09.2 +1.2**
DLBC Dease Lake 66.87 35 P **P** **09 30 27.8 +1.4**
comp=Z,9.4nm,1.0s,baz=287,slow=6.2,SNR=15
DLBC Dease Lake 66.87 35 *e*P **P** **09 30 27.3 +0.9**
comp=Z,24nm,1.4s
GEYT Alibeck 66.98 302 P **P** **09 30 28.0 +0.5**
comp=Z,6.3nm,0.5s,baz=45,slow=2.7,SNR=13
SPITS Spitsbergen Ar 69.07 349 P **P** **09 30 40.4 +1.0**
comp=Z,0.9nm,0.3s,baz=104,slow=7.1,SNR=36
KLMR Klimovskoe 70.59 329 *e*P **P** **09 30 47.2 -1.5**
KLMR pmax pmax
comp=Z,6.0nm,0.6s
WSAR Wadi Sarin 71.77 287 P **P** **09 30 56.6 +0.2**
comp=Z,14nm,1.0s,baz=47,slow=4.4,SNR=6.2
ARCES ARCESS Array B 71.90 340 P **P** **09 30 57.0 +0.8**
comp=Z,7.0nm,0.6s,baz=67,slow=8.3,SNR=51
YKA Yellowknife Ar 72.50 28 P **P** **09 30 59.9 +0.1**
comp=Z,7.1nm,0.7s,baz=296,slow=5.7,SNR=128
YKA pP **pP** **09 32 47.4 -1.6**
comp=Z,0.6nm,0.7s,baz=295,slow=6.2,SNR=3.3
HOQ Hoqain 72.75 288 P **P** **09 31 02.8 +0.7**
SNR=9.5
HOQ Hoqain 72.75 288 P **P** **09 31 02.8 +0.7**
SNR=9.5
BSY Bisya 73.18 287 P **P** **09 31 06.5 +2.0**
SNR=5.8
VRH Novokhopyorsk 73.27 319 *e*P **P** **09 31 03.5 -0.9**
VRH pmax pmax
comp=Z,20nm,0.6s
ARQ Araqi 73.51 288 P **P** **09 31 07.4 +1.0**
SNR=9.3
ARQ Araqi 73.51 288 P **P** **09 31 07.4 +1.0**
SNR=9.3
OBN Obninsk 74.41 324⇑ *e*P **P** **09 31 11.2 +0.4**
OBN *e**PP **pP** **09 33 00.8 0.0**
OBN *e* 09 34 06.9
OBN *e*PPP PPP 09 35 54.9
OBN pmax pmax
comp=Z,10.0nm,0.5s
VSR Storozhevoye 74.72 320 *e*P **P** **09 31 11.6 -1.1**
VSR pmax pmax
comp=Z,30nm,1.1s
B05A Bryant 74.90 43 P **P** **09 31 14.9 +1.1**
baz=295
ZEI Tsey 75.35 311 *e*P **P** **09 31 15.6 -1.1**
ZEI pmax pmax
comp=Z,14nm,0.7s
G03D McMinnville, O 75.47 46 P **P** **09 31 18.8 +1.8**
baz=295
KBZ Khabaz 75.62 312 P **P** **09 31 18.5 +0.7**
comp=Z,16nm,0.8s,baz=88,slow=4.0,SNR=38
KVAR Kislovodsk Arr 75.66 312 P **P** **09 31 19.1 +0.8**
comp=Z,13nm,0.9s,baz=246,slow=6.7,SNR=8.1
KIV Kislovodsk 75.67 312*c i*P **P** **09 31 19.0 +0.7**
KIV *i* 09 31 27.4
KIV pmax pmax
comp=Z,19nm,1.1s
ONI Oni 75.73 311 P **P** **09 31 19.2 +0.5**
ONI Oni 75.73 311 *e*P **P** **09 31 19.1 +0.5**
C06D Leavenworth 75.78 43 P **P** **09 31 20.1 +1.4**
baz=296
GNI Garni 75.87 308 P **P** **09 31 19.5 0.0**
comp=Z,8.6nm,0.7s,baz=47,slow=11,SNR=3.4
GNI Garni 75.87 308⇑ *e*P **P** **09 31 20.7 +1.1**
GNI pmax pmax
comp=Z,64nm,1.2s
NEY Neytrino 75.94 312⇑ *e*P **P** **09 31 21.1 +1.2**
NEY pmax pmax
comp=Z,1.0nm,0.9s
I03D Drain, OR 76.06 48 P **P** **09 31 22.3 +2.0**
baz=295
FINES FINESS Array B 76.07 333 P **P** **09 31 19.7 -0.3**
comp=Z,16nm,0.4s,baz=67,slow=5.2,SNR=202
L02D Cave Junction, 76.55 49 P **P** **09 31 24.7 +1.7**
baz=296
I04A Tendick Farm, 76.63 47 P **P** **09 31 24.6 +1.1**
baz=296
G05D Wamic, OR 76.69 46 P **P** **09 31 24.8 +1.0**
baz=296
I05D Terrebonne, OR 77.08 47 P **P** **09 31 27.7 +1.7**
baz=296
M02C Callahan 77.39 50 P **P** **09 31 29.4 +1.7**
baz=296
VSU Vasula 77.44 330⇑ *e*P **P** **09 31 28.0 +0.5**
VSU pmax pmax
comp=Z,51nm,0.8s
K04D Chiloquin, OR 77.57 48 P **P** **09 31 30.2 +1.4**
baz=297
J05D Fort Rock, OR 77.62 48 P **P** **09 31 30.7 +1.6**
baz=297
N02D Trinity Center 77.67 50 P **P** **09 31 31.2 +1.9**
baz=296
NEW Newport 77.87 42 P **P** **09 31 31.9 +1.7**
baz=298
NEW Newport 77.87 42 *e*P **P** **09 31 30.9 +0.7**
NEW pmax pmax
comp=Z,16nm,1.1s
NEW Newport 77.87 42 *e*P **P** **09 31 30.9 +0.7**
comp=Z,16nm,1.1s
M04C Macdoel 77.89 49 P **P** **09 31 32.3 +1.8**
baz=297
WDC Whiskeytown Da 77.96 50 *e*P **P** **09 31 32.0 +1.2**
WDC pmax pmax
comp=Z,17nm,1.4s
WDC Whiskeytown Da 77.96 50 *e*P **P** **09 31 32.0 +1.2**
comp=Z,17nm,1.4s
WDC *e*pP **pP** **09 33 20.8 -1.1**
O03D Paynes Creek 78.59 50 P **P** **09 31 35.2 +0.9**
baz=297
ABTO Aybut 78.76 284 P **P** **09 31 35.6 +0.1**
SNR=8.4
ABTO Aybut 78.76 284 P **P** **09 31 35.6 +0.1**
SNR=8.4
MOD Modoc Plateau 78.86 48 *e*P **P** **09 31 36.8 +1.0**
comp=Z,13nm,1.2s
WALA Waterton Lakes 79.34 40 *e*P **P** **09 31 38.5 +0.4**
comp=Z,19nm,1.2s
NACGM Naroch 79.39 327 *e* **P** **09 31 38.0 -0.1**
BMO Blue Mountains 79.40 45 *e*P **P** **09 31 39.8 +1.3**
BMO pmax pmax
comp=Z,26nm,1.5s
BMO Blue Mountains 79.40 45 *e*P **P** **09 31 39.8 +1.3**
comp=Z,26nm,1.5s
SUMG Summit 79.70 359 *i* P **P** **09 31 39.9 0.0**
comp=Z,10nm,1.1s
SUMG Summit 79.70 359 *i* P **P** **09 31 39.9 0.0**
SUMG pmax pmax
comp=Z,10.0nm,1.1s
WVOR Wild Horse Val 79.71 47 *e*P **P** **09 31 41.0 +0.8**
WVOR pmax pmax
comp=Z,7.0nm,1.0s
WVOR Wild Horse Val 79.71 47 *e*P **P** **09 31 41.0 +0.8**
comp=Z,6.7nm,1.0s
MSO Missoula 80.45 42 P **P** **09 31 44.7 +0.7**
baz=301
AKASG Malin Array Be 80.46 323 P **P** **09 31 43.0 -0.8**
comp=Z,2.6nm,0.5s,baz=47,slow=5.7,SNR=26
AKASG Malin Array Be 80.46 323 P **P** **09 31 43.0 -0.8**
KIEV Kiev 80.47 323⇑ *e*P **P** **09 31 43.7 -0.1**
KIEV pmax pmax
comp=Z,10.0nm,0.9s
MFID Camas Ranch 81.03 46 *e*P **P** **09 31 47.8 +0.8**
comp=Z,43nm,1.6s
HFS Hagfors 81.64 336 P **P** **09 31 48.9 -0.8**
comp=Z,7.0nm,0.6s,baz=92,slow=4.5,SNR=34
HLID Hailey 81.84 45 P **P** **09 31 52.9 +1.6**
baz=301
HLID Hailey 81.84 45 *e*P **P** **09 31 52.4 +1.0**
comp=Z,4.7nm,0.9s
NVAR Mina Array Bea 81.86 51 P **P** **09 31 52.9 +1.4**
comp=Z,3.0nm,0.5s,baz=281,slow=5.4,SNR=18
NVAR pP **pP** **09 33 44.6 +0.4**
comp=Z,0.8nm,0.6s,baz=297,slow=2.9,SNR=3.6
NB2 NORSAR Subarra 81.88 337 P **P** **09 31 49.9 -1.0**
comp=Z,10.0nm,0.7s,baz=46,slow=4.8
NB2 NORSAR Subarra 81.88 337 P **P** **09 31 49.9 -1.0**
baz=46,slow=4.8
NOA NORSAR Array B 81.88 337 P **P** **09 31 50.2 -0.8**
comp=Z,9.3nm,0.6s,baz=46,slow=4.9,SNR=37
MLAC Mammoth, Mammo 81.88 52 P **P** **09 31 52.8 +1.2**
baz=299
DLMT Dillon 82.02 43 *e*P **P** **09 31 52.9 +0.8**
comp=Z,21nm,1.3s
EGMT Eagleton 82.23 39 P **P** **09 31 54.4 +1.3**
baz=304,SNR=11
EGMT Eagleton 82.23 39 *e*P **P** **09 31 54.0 +0.9**
comp=Z,24nm,1.1s
RCTC Rector, Farmer 82.23 53 P **P** **09 31 54.7 +1.5**
baz=299
BOZ Bozeman (W) 82.44 42 P **P** **09 31 55.8 +1.6**
baz=302,SNR=7.4
BOZ Bozeman (W) 82.44 42 *e*P **P** **09 31 54.9 +0.6**
BOZ pmax pmax
comp=Z,7.0nm,1.1s
BOZ Bozeman (W) 82.44 42 *e*P **P** **09 31 54.9 +0.6**
comp=Z,7.0nm,1.1s
PKM Mcpherson Peak 82.51 55 P **P** **09 31 56.3 +1.5**
baz=299
RAYN Ar Rayn 82.57 293 *e*P **P** **09 31 55.5 +0.3**
comp=Z,85nm,0.9s
ELK Elko 82.76 48 *e*P **P** **09 31 57.7 +1.6**
ELK pmax pmax
comp=Z,11nm,1.3s
ELK Elko 82.76 48 *e*P **P** **09 31 57.7 +1.6**
comp=Z,11nm,1.3s
SBC Santa Barbara 82.80 55 P **P** **09 31 56.7 +0.7**
baz=299
FCC Fort Churchill 82.85 25 *e*P **P** **09 31 55.4 -0.4**
FCC pmax pmax
comp=Z,8.0nm,1.0s
FCC Fort Churchill 82.85 25 *e*P **P** **09 31 55.4 -0.4**
comp=Z,8.4nm,1.0s
SCZ2 Santa Cruz Isl 83.07 55 P **P** **09 31 58.8 +1.3**
baz=299
ISA Isabella, Lake 83.09 53 P **P** **09 31 58.2 +0.5**
baz=300
MPMC Manual Prospec 83.59 53 P **P** **09 32 01.0 +0.7**
baz=300,SNR=6.9
BRTR Keskin Array B 83.61 312 P **P** **09 31 59.8 -0.5**
comp=Z,4.2nm,0.7s,baz=104,slow=3.6,SNR=25
LRMC Laurel Mtn Rad 83.74 53 P **P** **09 32 01.8 +0.8**
baz=300,SNR=6.7
H17A Grant Village 83.75 43 P **P** **09 32 01.7 +0.8**
baz=303,SNR=13
H17A Grant Village 83.75 43 *e*P **P** **09 32 04.1 +3.1**
comp=Z,27nm,1.3s
R11A Troy Canyon, C 83.75 50 P **P** **09 32 02.1 +1.1**
baz=301,SNR=14
R11A Troy Canyon, C 83.75 50 *e*P **P** **09 32 01.8 +0.8**
comp=Z,10nm,1.2s
LKWY Lake 83.76 42 *e*P **P** **09 32 03.9 +2.9**
LKWY pmax pmax
comp=Z,19nm,1.2s
LKWY Lake 83.76 42 *e*P **P** **09 32 03.9 +2.9**
comp=Z,19nm,1.2s
IMW Indian Meadow 83.80 43 *e*P **P** **09 32 03.3 +2.0**
comp=Z,11nm,1.1s
EDW2 Edwards Air Fo 83.82 54 P **P** **09 32 01.8 +0.6**
baz=300,SNR=6.6
FURC Furnace Creek, 83.82 52 P **P** **09 32 01.7 +0.6**
baz=300,SNR=9.5
FLWY Flagg Ranch 83.84 43 *e*P **P** **09 32 03.3 +1.9**
comp=Z,17nm,1.2s
MOOW Moose Ponds 84.00 43 *e*P **P** **09 32 02.5 +0.3**
comp=Z,6.9nm,1.2s
TPNV Topopah Spring 84.01 51 P **P** **09 32 03.0 +0.7**
baz=301,SNR=12
RLMT Red Lodge 84.12 42 P **P** **09 32 03.6 +0.8**
baz=300,SNR=9.9
RLMT Red Lodge 84.12 42 *e*P **P** **09 32 03.6 +0.8**
comp=Z,13nm,1.1s
RLMT *e*pP **pP** **09 33 57.9 +1.8**
SNOW Snow King Moun 84.15 44 *e*P **P** **09 32 04.2 +1.2**
comp=Z,5.7nm,1.0s
LOHW Long Hollow 84.16 43 *e*P **P** **09 32 04.1 +1.1**
comp=Z,4.5nm,1.1s
AHID Auburn Hatcher 84.32 44 *e*P **P** **09 32 04.9 +1.1**
comp=Z,3.1nm,0.9s
BURAR Bucovina Array 84.37 322⇑ *i*P **P** **09 32 04.0 +0.2**
BURAR Bucovina Array 84.37 322 ⇑P **P** **09 32 04.0 +0.2**
BFSC Mount Baldy Ra 84.38 54 P **P** **09 32 04.1 0.0**
baz=300
GSC Goldstone, Bar 84.45 53 P **P** **09 32 05.2 +0.8**
baz=300,SNR=7.0
SHOC Shoshone, Teco 84.52 52 P **P** **09 32 05.0 +0.4**
baz=301
VRI Vrincioaia 84.54 320⇓ *i*P **P** **09 32 06.3 +1.8**
VRI Vrincioaia 84.54 320 ⇓P **P** **09 32 06.3 +1.8**
DUG Dugway, Tooele 84.62 47 P **P** **09 32 06.0 +0.8**
baz=302,SNR=10
DUG Dugway, Tooele 84.62 47 *e*P **P** **09 32 06.1 +0.8**
DUG pmax pmax
comp=Z,13nm,1.2s
DUG Dugway, Tooele 84.62 47 *e*P **P** **09 32 06.1 +0.8**
comp=Z,13nm,1.2s
HWUT Hardware Ranch 84.66 45 *e*P **P** **09 32 06.7 +1.3**
comp=Z,14nm,1.1s
BBRC Big Bear Solar 84.89 54 P **P** **09 32 06.8 +0.1**
baz=300
LAO LASA Array 84.96 39 P **P** **09 32 07.9 +1.3**
baz=306
LAO LASA Array 84.96 39 *e*P **P** **09 32 07.9 +1.3**
comp=Z,19nm,1.6s
DGMT Dagmar 85.00 37 P **P** **09 32 06.1 -0.6**
baz=307
TUQ Turquoise Moun 85.00 52 P **P** **09 32 07.8 +0.6**
baz=301,SNR=8.7
HEC Hector,Ludlow 85.02 53 P **P** **09 32 07.7 +0.5**
baz=301
MURC Murrieta 85.03 55 P **P** **09 32 07.5 +0.3**
baz=300
ASF Jabal al Asfar 85.17 304 P **P** **09 32 08.0 0.0**
comp=Z,5.5nm,0.9s,baz=48,slow=0.6,SNR=6.8
ASF Jabal al Asfar 85.17 304 P **P** **09 32 08.0 0.0**
MLR Muntele Rosu 85.20 320*i*P **P** **09 32 08.3 +0.4**
MLR Muntele Rosu 85.20 320 ⇑P **P** **09 32 08.3 +0.4**
BW06 Boulder Array 85.27 44 P **P** **09 32 08.8 +0.4**
baz=304,SNR=6.3
BW06 Boulder Array 85.27 44 *e*P **P** **09 32 08.8 +0.4**
comp=Z,4.9nm,1.1s
PDAR Pinedale Array 85.27 44 P **P** **09 32 09.3 +0.9**
comp=Z,2.6nm,0.9s,baz=288,slow=1.4,SNR=16
PDAR pP pP 09 34 07.6 +5.4
comp=Z,0.5nm,0.6s,baz=275,slow=3.7,SNR=3.9
A25A Svangstu Ranch 85.28 36 P **P** **09 32 09.2 +1.1**
baz=308
STHS Stebnicka Huta 85.39 325 *e*P **P** **09 32 07.8 -0.8**
STHS pmax pmax
comp=Z,4.0nm,1.5s
STHS Stebnicka Huta 85.39 325 *e*P **P** **09 32 07.8 -0.8**
109C Camp Elliot, M 85.45 55 P **P** **09 32 09.5 +0.3**
baz=300
GMRC Granite Mounta 85.52 53 P **P** **09 32 10.1 +0.4**
baz=301
PFO Pinyon Flats O 85.55 54 P **P** **09 32 11.0 +1.1**
comp=Z,7.9nm,0.8s,baz=278,slow=4.9,SNR=11
PFO pP **pP** **09 34 08.0 +4.2**
comp=Z,4.8nm,0.8s,baz=260,slow=3.9,SNR=5.0
PFO Pinyon Flats O 85.55 54 P **P** **09 32 10.2 +0.4**
baz=301,SNR=5.5
PFO Pinyon Flats O 85.55 54 *e*P **P** **09 32 10.9 +1.1**
PFO *PP **pP** **09 34 08.0 +4.2**
PFO pmax pmax
comp=Z,9.0nm,1.1s
PFO Pinyon Flats O 85.55 54 *e*P **P** **09 32 10.9 +1.1**
comp=Z,8.9nm,1.1s
PFO pP **pP** **09 34 08.0 +4.2**
CRVS Cervenica-Dubn 85.60 324 *e*P **P** **09 32 08.0 -1.6**
CRVS Cervenica-Dubn 85.60 324 *e*P **P** **09 32 08.0 -1.6**
B25A Knox Farm, Ray 85.67 37 P **P** **09 32 09.2 -0.8**
baz=308
BELC Belle Mtn. Jos 85.68 54 P **P** **09 32 10.8 +0.3**
baz=301
VOIR 85.75 320⇑ *i*P **P** **09 32 10.5 0.0**
VOIR 85.75 320 ⇑P **P** **09 32 10.5 0.0**
MMAI Mount Meron Ar 85.83 305 P **P** **09 32 11.2 0.0**
comp=Z,7.2nm,0.7s,baz=39,slow=5.9,SNR=13
A26A Wade Farm, Ken 85.86 36 P **P** **09 32 11.3 +0.4**
baz=309
MONP2 Monument Peak 85.94 55 P **P** **09 32 12.1 +0.2**
baz=301
ARR Arges 86.03 320⇑ *i*P **P** **09 32 11.8 0.0**
IRM Iron Mountain 86.21 53 P **P** **09 32 13.0 +0.1**
baz=301,SNR=5.5
BC3 Big Chuckawall 86.25 54 P **P** **09 32 13.8 +0.7**
baz=301
D25A Fairfield 86.27 37 P **P** **09 32 12.8 -0.1**
baz=308
SWSC Sam W. Stewart 86.37 55 P **P** **09 32 13.8 +0.2**
baz=301
LOT Lotru 86.47 321⇓ *i*P **P** **09 32 13.3 -0.6**
C26A Wahner Farm, P 86.50 36 P **P** **09 32 14.8 +0.8**
baz=309
E25A Miller Ranch, 86.63 38 P **P** **09 32 14.8 +0.2**
baz=308
A28A Rude Farm, Bot 86.76 35 P **P** **09 32 15.7 +0.6**
baz=310
D26A Manning 86.82 37 P **P** **09 32 15.8 +0.3**
baz=309
PDMCI Parker Dam,Lak 86.84 53 P **P** **09 32 16.7 +0.9**
baz=302
C27A Sayler Ranch, 86.89 36 P **P** **09 32 16.0 +0.2**
baz=309
F25A Bowman 86.95 38 P **P** **09 32 16.4 +0.2**
baz=308
B28A Dugan Ranch, T 87.00 35 P **P** **09 32 16.9 +0.7**
baz=310
GLA Glamis 87.01 54 P **P** **09 32 17.4 +0.7**
baz=302
E26A Carlson Angus 87.16 38 P **P** **09 32 17.2 +0.1**
baz=309
K22A Casper 87.16 42 P **P** **09 32 17.3 0.0**
baz=306
VYHS Vyhne 87.20 325 *e*P **P** **09 32 17.4 +0.2**
VYHS pmax pmax
comp=Z,3.0nm,0.8s
VYHS Vyhne 87.20 325 *e*P **P** **09 32 17.4 +0.2**
D27A Center 87.26 37 P **P** **09 32 17.7 +0.1**
baz=309
A29A Manning Farm, 87.27 34 P **P** **09 32 17.8 +0.3**
baz=311
F26A Lodgepole 87.43 38 P **P** **09 32 18.9 +0.5**
baz=309
B29A Wagenman Farm, 87.51 35 P **P** **09 32 19.4 +0.8**
baz=311
O20A White River Ci 87.57 45 P **P** **09 32 19.5 +0.2**
baz=305
E27A Carson 87.67 37 P **P** **09 32 20.0 +0.5**
baz=309
H25A Fruitdale 87.68 40 P **P** **09 32 20.0 +0.4**
baz=308
D28A Regan 87.71 36 P **P** **09 32 20.2 +0.5**
baz=310
A30A Hoffart Farm, 87.72 34 P **P** **09 32 20.1 +0.5**
baz=312
RSSD Black Hills 87.73 40 P **P** **09 32 20.2 +0.1**
baz=308
F27A Lemmon 87.77 38 P **P** **09 32 20.4 +0.4**
baz=309
VRAC Vranov 87.78 327 P **P** **09 32 20.2 +0.3**
comp=Z,2.4nm,0.4s,baz=56,slow=3.6,SNR=3.4
MDND Maddock 87.78 35 P **P** **09 32 20.3 +0.3**
baz=311
G26A Maurine 87.82 39 P **P** **09 32 20.6 +0.4**
baz=309
BRG Berggiesshubel 87.96 329 *e*P **P** **09 32 19.9 -0.7**
comp=Z,2.4nm,0.6s
BRG Berggiesshubel 87.96 329 *e*P **P** **09 32 19.9 -0.8**
BRG pmax pmax
comp=Z,2.0nm,0.6s
I25A Rochford 87.97 40 P **P** **09 32 21.5 +0.3**
baz=308
ULM Lac du Bonnet 88.00 32 P **P** **09 32 20.6 -0.2**
comp=Z,1.5nm,0.7s,baz=132,slow=5.9,SNR=3.0
B30A Myrvik Farm, E 88.03 34 P **P** **09 32 21.9 +0.8**
baz=312
E28A Huff 88.04 37 P **P** **09 32 22.2 +1.1**
baz=310
CLL Collm 88.08 330 *i* P **P** **09 32 20.4 -0.8**
comp=Z,4.0nm,0.5s
CLL *es*P sP 09 35 02.0 -6.9
CLL Collm 88.08 330 *i* P **P** **09 32 20.4 -0.8**
CLL pmax pmax
comp=Z,4.0nm,0.5s
WUAZ Wupatki 88.11 50 P **P** **09 32 23.2 +1.3**
baz=303
G27A Dupree 88.13 38 P **P** **09 32 22.4 +0.8**
baz=309
H26A Fairpoint 88.14 39 P **P** **09 32 22.7 +0.9**
baz=309
A31A Linda, St. Vin 88.27 33 P **P** **09 32 22.4 +0.2**
baz=312
J25A Sunshine Ranch 88.31 41 P **P** **09 32 23.1 +0.4**
baz=308
B31A Greenbush Farm 88.39 34 P **P** **09 32 23.2 +0.5**
baz=312
F28A McLaughlin 88.45 37 P **P** **09 32 23.8 +0.7**
baz=310
C30A Mose, Pekin 88.45 35 P **P** **09 32 23.6 +0.6**
baz=312
I26A New Underwood 88.46 40 P **P** **09 32 23.7 +0.4**
baz=308
H27A Howes 88.52 39 P **P** **09 32 23.9 +0.4**
baz=309
N23A Red Feather La 88.55 44 P **P** **09 32 24.1 +0.1**
baz=307
E29A Napoleon 88.59 36 P **P** **09 32 24.6 +0.8**
baz=311
A32A Rocking H Ranc 88.62 33 P **P** **09 32 24.5 +0.7**
baz=313
D30A Buchanan 88.70 36 P **P** **09 32 25.0 +0.8**
baz=311
C31A Landman Farms, 88.77 35 P **P** **09 32 24.8 +0.3**
baz=312
G28A Parade 88.88 38 P **P** **09 32 25.8 +0.6**
baz=310
I27A Quinn 88.89 39 P **P** **09 32 26.1 +0.8**
baz=309
B32A Ashes, Strandq 88.95 34 P **P** **09 32 25.7 +0.3**
baz=313
F29A Eureka 88.97 37 P **P** **09 32 25.9 +0.4**
baz=311
E30A Jud 89.02 36 P **P** **09 32 26.0 +0.3**
baz=311
214A Organ Pipe Nat 89.03 54 P **P** **09 32 26.2 +0.1**
baz=303
H28A Mission Ridge 89.08 38 P **P** **09 32 26.2 +0.1**
baz=310
MVCO Mesa Verde 89.08 48 P **P** **09 32 26.5 0.0**
baz=305
A33A Warroad 89.13 33 P **P** **09 32 26.4 +0.2**
baz=314
AGMN Agassiz Nation 89.35 33 P **P** **09 32 26.5 -0.7**
baz=313
ISCO Idaho Springs 89.41 44 P **P** **09 32 27.6 -0.4**
baz=307
I28A Midland 89.42 39 P **P** **09 32 27.6 -0.1**
baz=310
J27A Elkhorn Farm, 89.43 40 P **P** **09 32 27.9 +0.1**
baz=309
W18A Petrified Fore 89.44 50 P **P** **09 32 28.1 -0.1**
baz=304
GERES GERESS Array B 89.48 328 P **P** **09 32 27.4 -0.5**
comp=Z,1.3nm,0.7s,baz=52,slow=5.2,SNR=9.0
B33A Robert and Kas 89.50 33 P **P** **09 32 28.0 +0.1**
baz=314
E31A Nome 89.51 36 P **P** **09 32 28.0 0.0**
baz=312
J28A Allard Ranch, 89.75 39 P **P** **09 32 29.4 +0.2**
baz=310
C33A Trail 89.76 34 P **P** **09 32 29.0 -0.1**
baz=314
F31A Hecla 89.79 36 P **P** **09 32 30.2 +0.9**
baz=312
B34A Aery, Baudette 89.80 33 P **P** **09 32 29.7 +0.4**
baz=314
G30A Faulkton 89.80 37 P **P** **09 32 30.0 +0.6**
baz=311
S22A 4UR Ranch, Cre 89.85 47 P **P** **09 32 30.3 +0.2**
baz=306

I29A	**Vivian Onida** baz=310	**89.89**	**39**	P		**P**	**09 32 29.6**	**-0.3**
D33A	**AnnSam, Waubun** baz=314	**90.15**	**34**	P		**P**	**09 32 30.5**	**-0.4**
C34A	**RKJ Ranch, Bem** baz=314	**90.26**	**33**	P		**P**	**09 32 30.7**	**-0.8**
J29A	**Okreek** baz=310	**90.28**	**39**	P		**P**	**09 32 31.3**	**-0.3**
TUC	**Tucson** baz=304	**90.28**	**53**	P		**P**	**09 32 32.1**	**+0.2**
B35A	**Bob, Littlefor** baz=315	**90.33**	**32**	P		**P**	**09 32 31.6**	**-0.2**
D34A	**Park Rapids** baz=314	**90.51**	**34**	P		**P**	**09 32 33.0**	**+0.4**
C35A	**Jirik Farms, M** baz=315	**90.67**	**33**	P		**P**	**09 32 33.4**	**+0.1**
SDCO	**Great Sand Dun** baz=307	**90.70**	**46**	P		**P**	**09 32 34.0**	**-0.1**
J30A	**Dallas** baz=311	**90.79**	**39**	P		**P**	**09 32 34.2**	**+0.2**
F33A	**5 Mile Ranch,** baz=313	**90.81**	**35**	P		**P**	**09 32 34.6**	**+0.6**
OGNE	**Ogallala** baz=309	**90.86**	**42**	P		**P**	**09 32 34.2**	**-0.3**
EKA	**Eskdalemuir Ar** comp=Z,0.5nm,0.5s,baz=52,slow=4.7,SNR=3.9	**91.06**	**340**	P		**P**	**09 32 34.1**	**-0.8**
K30A	**Basset** baz=311	**91.15**	**39**	P		**P**	**09 32 36.2**	**+0.5**
G33A	**Ortonville** baz=313	**91.18**	**36**	P		**P**	**09 32 36.5**	**+0.7**
J31A	**Geddes** baz=311	**91.23**	**38**	P		**P**	**09 32 36.5**	**+0.5**
E35A	**Pequot Lakes** baz=314	**91.27**	**34**	P		**P**	**09 32 36.9**	**+0.8**
H33A	**Prehn Over Nor** baz=313	**91.37**	**36**	P		**P**	**09 32 36.8**	**+0.1**
F34A	**Alexandria** baz=314	**91.37**	**35**	P		**P**	**09 32 37.2**	**+0.6**
G34A	**Benson** baz=314	**91.56**	**35**	P		**P**	**09 32 36.8**	**-0.6**
K31A	**O'Neill** baz=311	**91.66**	**39**	P		**P**	**09 32 37.2**	**-0.9**
F35A	**Swanville** baz=314	**91.67**	**34**	P		**P**	**09 32 37.3**	**-0.7**
ANMO	**Albuquerque** baz=306	**91.74**	**49**	P		**P**	**09 32 39.3**	**+0.5**
ANMO ANMO	**Albuquerque** comp=Z,8.0nm,1.1s	**91.74**	**49**	*d* iP pmax		**P** pmax	**09 32 39.9**	**+1.1**
T25A	**Trinidad** baz=308	**91.76**	**46**	P		**P**	**09 32 38.6**	**-0.2**
L31A	**Butterfield Fa** baz=311	**91.91**	**39**	P		**P**	**09 32 39.2**	**0.0**
C38A	**Sawbill Land.** baz=317	**91.93**	**32**	P		**P**	**09 32 39.4**	**+0.3**
Y22D	**IRIS PASSCAL I** baz=306	**91.94**	**50**	P		**P**	**09 32 39.8**	**+0.1**
ECSD	**EROS Data Cent** baz=313	**92.08**	**37**	P		**P**	**09 32 40.2**	**+0.3**
121A	**Cookes Peak, D** baz=305	**92.25**	**51**	P		**P**	**09 32 41.4**	**+0.3**
H35A	**Sunnyside Ranc** baz=314	**92.35**	**35**	P		**P**	**09 32 41.2**	**+0.1**
DAVOX	**Davos/Dischmat** comp=Z,2.5nm,0.7s,baz=26,slow=6.2,SNR=4.9	**92.76**	**328**	P		**P**	**09 32 41.9**	**-1.3**
H36A	**Jessenland, He** baz=315	**92.89**	**35**	P		**P**	**09 32 42.9**	**-0.8**
H37A	**Dierke Farm, C** baz=316	**93.40**	**35**	P		**P**	**09 32 45.9**	**-0.1**
O33A	**Hebron** baz=312	**94.01**	**40**	P		**P**	**09 32 48.5**	**-0.3**
I38A	**Scanlan Farm,** baz=316	**94.08**	**35**	P		**P**	**09 32 49.3**	**+0.3**
K37A	**Belmond** baz=315	**94.32**	**36**	P		**P**	**09 32 50.1**	**-0.1**
MNTX	**Cornudas Mount** baz=307	**94.39**	**51**	P		**P**	**09 32 50.4**	**-0.3**
P34A	**Walnut Farm, R** baz=313	**94.79**	**40**	P		**P**	**09 32 52.5**	**0.0**
K38A	**Parkersburg** baz=316	**94.85**	**36**	P		**P**	**09 32 52.5**	**-0.1**
Q35A	**Mercer Eighty,** baz=313	**95.71**	**40**	P		**P**	**09 32 56.4**	**-0.2**
Q36A	**Arnold C. Orve** baz=313	**95.97**	**40**	P		**P**	**09 32 58.0**	**+0.2**
P37A	**Lathrop** baz=314	**96.16**	**39**	P		**P**	**09 32 58.3**	**-0.2**
T34A	**McClaskey Farm** baz=312	**96.28**	**42**	P		**P**	**09 32 59.3**	**+0.1**
P38A	**Dawn** baz=315	**96.59**	**38**	P		**P**	**09 33 00.5**	**0.0**
Q37A	**Longview Farm,** baz=314	**96.60**	**39**	P		**P**	**09 33 00.4**	**-0.1**
V34A	**Guthrie** baz=312	**96.87**	**43**	P		**P**	**09 33 01.0**	**-0.8**
TXAR	**Lajitas Array** comp=Z,0.7nm,0.7s,baz=287,slow=2.9,SNR=13	**96.98**	**52**	P		**P**	**09 33 03.4**	**+0.8**
TXAR	comp=Z,1.5nm,1.1s,baz=289,slow=3.8,SNR=5.8			pP		**pP**	**09 34 58.0**	**-0.4**
U35A	**Pawnee** baz=312	**96.99**	**43**	P		**P**	**09 33 02.2**	**-0.1**
Q38A	**Cooks Store, C** baz=315	**97.00**	**39**	P		**P**	**09 33 01.5**	**-0.9**
T36A	**Boggs Farm, Ca** baz=313	**97.03**	**42**	P		**P**	**09 33 01.7**	**-0.8**
O40A	**La Belle** baz=316	**97.13**	**37**	P		Pdif	09 33 03.0	+0.1
Q39A	**Willow Grove F** baz=315	**97.30**	**38**	P		**P**	**09 33 01.9**	**-1.8**
T38A	**Diamond** baz=314	**97.96**	**41**	P		Pdif	09 33 06.6	-0.1
W36A	**Wetumka** baz=313	**98.12**	**43**	P		Pdif	09 33 06.0	-1.4
X35A	**Drake** baz=312	**98.16**	**44**	P		Pdif	09 33 07.3	-0.2
HDIL	**Hopedale** baz=318	**98.16**	**35**	P		Pdif	09 33 07.0	-0.5
V37A	**Hulbert** baz=313	**98.26**	**42**	P		Pdif	09 33 07.8	-0.2
U38A	**Gravette** baz=314	**98.32**	**41**	P		Pdif	09 33 08.2	-0.1
U39A	**Green Forest** baz=315	**98.89**	**41**	P		**P**	**09 33 11.0**	**+0.1**
333A	**Richland Sprin** baz=310	**98.90**	**48**	P		**P**	**09 33 11.1**	**+0.1**
X37A	**Clayton** baz=313	**99.01**	**43**	P		**Pdif**	**09 33 10.2**	**-1.1**
433A	**Art** baz=310	**99.19**	**48**	P		**Pdif**	**09 33 12.2**	**-0.1**
Y37A	**Hugo** baz=313	**99.27**	**44**	P		**Pdif**	**09 33 12.4**	**-0.2**
W39A	**Magazine** baz=314	**99.54**	**42**	P		**Pdif**	**09 33 13.2**	**-0.5**
X39A	**Fountain Ranch** baz=314	**99.81**	**42**	P		**Pdif**	**09 33 14.9**	**-0.1**
633A	**Saathoff Ranch** baz=310	**99.97**	**49**	P		**Pdif**	**09 33 14.4**	**-1.3**
MIAR	**Mount Ida** baz=314	**100.11**	**42**	P		**Pdif**	**09 33 15.3**	**-1.0**
137A	**Heron Place, G** baz=313	**100.12**	**45**	P		**Pdif**	**09 33 14.8**	**-1.5**
832A	**Faith Ranch, C** baz=310	**100.17**	**50**	P		**Pdif**	**09 33 15.2**	**-1.5**
Y39A	**Lockesburg** baz=314	**100.22**	**43**	P		**Pdif**	**09 33 15.2**	**-1.5**
336A	**Riesel** baz=312	**100.24**	**46**	P		**Pdif**	**09 33 16.8**	**-0.1**
W41A	**Tony Mavity, V** baz=315	**100.45**	**41**	P		**Pdif**	**09 33 16.7**	**-1.1**
W41B	**Gary Mavity, V** baz=315	**100.45**	**41**	P		**Pdif**	**09 33 17.3**	**-0.5**
634A	**China Grove, S** baz=311	**100.57**	**49**	P		**Pdif**	**09 33 18.0**	**-0.4**
Z39A	**Irene McRaven,** baz=314	**100.65**	**43**	P		**Pdif**	**09 33 17.8**	**-0.9**
SYO	**Syowa Base**	**119.34**	**204**	‖ *e* Pdiff		**Pdif**	**09 34 41.0**	**+0.3**
TORD	**Torodi Ar. Bea** comp=Z,2.2nm,0.7s,baz=23,slow=2.8,SNR=15	**122.16**	**309**	PKP		**PKPdf**	**09 38 22.0**	**-0.7**
TORD	comp=Z,0.7nm,0.8s,baz=46,slow=8.5,SNR=3.6			PP		PP	09 39 53.9	-12
TORD	comp=Z,0.7nm,0.7s,baz=70,slow=1.0,SNR=3.5			SKP		**SKPdf**	**09 41 08.4**	**-0.2**
BOSA	**Boshof** comp=Z,1.8nm,0.6s,baz=179,slow=1.9,SNR=5.2	**122.76**	**252**	PKP		**PKPdf**	**09 38 22.4**	**-1.2**
DBIC	**Dimbokro** comp=Z,2.6nm,0.8s,baz=62,slow=1.0,SNR=3.8	**131.27**	**310**	PKP		**PKPdf**	**09 38 40.4**	**+0.3**
TIC	**Toumodi**	**131.40**	**310**	*e*P		**SKPbc**	**09 41 16.3**	**-0.7**
KIC	**Kosan Boka**	**131.42**	**309**	*e*P		**SKPbc**	**09 41 16.5**	**-0.5**
	comp=Z,145nm,1.7s							
SNAA	**Sanae**	**131.62**	**195**	PKP		**PKPdf**	**09 38 38.8**	**-0.3**
LIC	**Lamto** comp=Z,39nm,1.5s	**131.71**	**309**	*e*P		**SKPbc**	**09 41 14.8**	**-3.2**
VNA1	**Neumayer--Stat**	**133.57**	**194**	PKP		**PKPdf**	**09 38 43.5**	**+0.9**
PTGA	**Pitinga** baz=322,slow=7.5	**147.13**	**38**	PKPbc		**PKPbc**	**09 39 12.2**	**+0.5**
LPAZ	**La Paz** comp=Z,1.9nm,0.6s,baz=333,slow=3.1,SNR=9.9	**151.99**	**71**	PKPbc		**PKPbc**	**09 39 25.0**	**+1.0**
LPAZ	comp=Z,1.6nm,0.8s,baz=219,slow=4.0,SNR=3.9			pPKPbc		**pPKPbc**	**09 41 28.4**	**+2.4**
PLCA	**Paso Flores** comp=Z,4.6nm,0.6s,baz=268,slow=2.5,SNR=32	**152.30**	**125**	PKPbc		**PKPbc**	**09 39 23.9**	**+0.6**
SIV	**San Ignacio** comp=Z,1.7nm,0.8s,baz=8.4,slow=2.1,SNR=3.8	**157.57**	**62**	PKPab		**PKPab**	**09 39 57.4**	**-1.8**

MAN 16 09:29:11.8±85.N×124.34E±0.6, h44km±3km, mb3.7, ML2.4, MS2.0, 2C, Mindanao

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CGP	**Cagayan de Oro**	**0.53**	**138**	‖ *i* P	Pn	09 29 23.4	+1.1
CGP				*i* S	Sn	09 29 34.0	+3.6
TBP	**Tagbilaran**	**0.96**	**331**	‖ *i* P	Pn	09 29 28.9	+0.9
BUKP	**Musuan**	**1.20**	**143**	*e*P	Pn	09 29 33.9	+2.5
BUKP				*e*S	Sn	09 29 47.6	+1.0
PAGZ	**Pagadian**	**1.37**	**224**	*e*P	Pn	09 29 34.6	+0.9
PAGZ				*e*S	Sn	09 29 43.8	-6.9

ISCJB ***16*** *09:31:23.9±1.6, 34.80S±0.04×72.0W±0.2, h48km±13km, Error ellipse: s-maj=22.8km s-min=7.5km az=178.9*
GUC ***16*** *09:31:24.4±0.3, 34.795×71.95W, h46km±3km, ML3.8*

ISC 16 09:31:24.1±3.0, 34.80S±0.05×72.1W±0.2, h42km±29km, n15, σ0.81/21, Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHPI	**Pichilemu**	**0.41**	**7**	*e*P	**Pn**	**09 31 33.7**	**-0.1**
CHPI				*e*S	**Sn**	**09 31 41.0**	**+0.4**
TALC	**Talca**	**0.69**	**150**	*e*P	**Pn**	**09 31 37.4**	**-0.1**
TALC				*e*S	**Sn**	**09 31 47.0**	**-0.1**
ANTU	**Antumapu**	**1.71**	**44**	*e*P	**Pn**	**09 31 50.9**	**-0.5**
ANTU				*e*S	**Sn**	**09 32 11.2**	**-0.8**
ANTU	comp=E,2μm,0.3s			IAML		09 32 12.7	
CLCH	**Cerro Calan**	**1.89**	**43**	*e*P	**Pn**	**09 31 53.3**	**-0.7**
CLCH				*e*S	**Sn**	**09 32 15.6**	**-0.9**
CLCH	comp=N,2μm,0.3s			IAML		09 32 20.1	
PEL	**Peldehue**	**2.01**	**35**	*e*P	**Pn**	**09 31 55.4**	**-0.3**
PEL				*e*S	**Sn**	**09 32 18.8**	**-0.8**
PEL	comp=N,988nm,0.4s			IAML		09 32 23.3	
ROC1	**El Roble** baz=209,slow=22	**2.02**	**26**	*i* P	**Pn**	**09 31 55.7**	**-0.2**
ROC1				*e*S	**Sn**	**09 32 20.7**	**+0.7**
ROCH	**El Roble**	**2.02**	**26**	*e*P	**Pn**	**09 31 56.0**	**0.0**
ROCH				*e*S	**Sn**	**09 32 20.1**	**-0.1**
ARCO	**CERRO ARCO**	**3.25**	**54**	*e*P	**Pn**	**09 32 14.4**	**+1.6**
ARCO	comp=Z,70nm,0.5s			IAML		09 32 32.7	
AUSP	**Uspallata**	**3.40**	**42**	*e*P	**Pn**	**09 32 16.2**	**+1.1**
ASAL	**Salagasta**	**3.48**	**52**	*e*P	**Pn**	**09 32 17.1**	**+1.3**
RTLS	**Leoncito**	**3.78**	**38**	*e*P	**Pn**	**09 32 21.6**	**+1.4**
RTCV	**Cerro Valdivia**	**4.16**	**46**	*e*P	**Pn**	**09 32 25.2**	**+0.1**
RTLL	**Cerro Villicun**	**4.59**	**42**	*e*P	**Pn**	**09 32 30.7**	**-0.4**
RTLL				*e*S	Sn	09 33 30.2	+7.1
AMOG	**MOGNA**	**4.88**	**39**	*e*P	**Pn**	**09 32 34.9**	**-0.3**
VCA	**Vinchina** comp=Z,19nm,0.5s	**6.88**	**30**	IAML		09 34 37.1	

ISCJB ***16*** *09:34:58.2±0.5, 36.97N±0.04×140.37E±0.06, h96km±3km, mb3.5/6, Error ellipse: s-maj=8.4km s-min=5.6km az=25.6*
IDC ***16*** *09:34:58.6±1.6, 37.00N×140.42E, h84km±14km, mb3.3/6, mb1 3.4/9, mb1mx3.2/56, mbtmp3.8/9, Error ellipse: s-maj=25.0km s-min=10.9km az=85.0*
JMA ***16*** *09:34:59.9±0.1, 36.97N×140.32E, h86km±1km, M3.5 Broadband fault plane solution: P waves. NP1: φs316.00000°, δ68.00000°, λ-45.00000°. NP2: φs67.00000°, δ49.00000°, λ-150.00000°. Principal axes: T Plg11.0000°, Azm15.0000°; N Plg41.0000°, Azm115.0000°; P Plg47.0000°, Azm273.0000°;*
JMA Felt II J1.

ISC 16 09:34:59.6±0.9, 36.97N±0.05×140.33E±0.06, h89km±7km, n23, σ0.96/34, mb3.7/6, 3C-1D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JSB	**Shiboa**	**0.33**	**269**	P	**Pn**	**09 35 13.2**	**+0.1**
JSB				S	**Sn**	**09 35 22.9**	**-0.2**
JFT	**Otama**	**0.55**	**1**	P	**Pn**	**09 35 14.8**	**+0.2**
JFT				S	**Sn**	**09 35 26.0**	**+0.2**
JFK	**Kawauchi**	**0.59**	**48**	‖ P	**Pn**	**09 35 15.2**	**+0.2**
JFK				S	**Sn**	**09 35 26.1**	**-0.4**
JFY	**Yanaizu**	**0.66**	**311**	⇑ P	**Pn**	**09 35 15.7**	**0.0**
JFY				S	**Sn**	**09 35 27.2**	**-0.5**
JKT	**Katashina**	**0.89**	**257**	⇑ P	**Pn**	**09 35 18.3**	**+0.2**
JAG	**Ashikaga**	**0.89**	**233**	⇑ P	**Pn**	**09 35 18.2**	**+0.2**
JAG				S	**Sn**	**09 35 31.6**	**-0.2**
JMM	**Marumori**	**0.96**	**22**	P	**Pn**	**09 35 19.2**	**+0.4**
JMM				S	**Sn**	**09 35 33.0**	**-0.2**
JHK	**Hiroka**	**1.09**	**285**	P	**Pn**	**09 35 20.2**	**0.0**
JHK				S	**Sn**	**09 35 35.2**	**-0.5**
JNS	**Sasagawa**	**1.17**	**317**	P	**Pn**	**09 35 20.9**	**-0.3**
JNS				S	**Sn**	**09 35 36.6**	**-0.8**
JYS	**Shirataka**	**1.26**	**350**	P	**Pn**	**09 35 22.8**	**+0.4**
JYS				S	**Sn**	**09 35 42.1**	**+2.6**
MJAR	**Matsushiro Arr** 11nm,0.3s,baz=87,slow=16,SNR=37	**1.76**	**256**	P	**Pn**	**09 35 28.3**	**-0.4**
MAT	**Matsushiro**	**1.76**	**257**	P	**Pn**	**09 35 29.0**	**+0.4**
MAT				S	**Sn**	**09 35 51.0**	**+0.3**
JHJ	**Hachijo jima 2** 23nm,0.3s,baz=330,slow=22,SNR=9.8	**3.87**	**187**	P	**Pn**	**09 35 57.0**	**+0.1**
JHJ	26nm,0.3s,baz=242,slow=22,SNR=6.2			S	**Sn**	**09 36 40.8**	**-0.4**
ASAJ	**Asahikawa** 0.8nm,0.3s,baz=214,slow=14,SNR=8.2	**7.34**	**13**	P	**Pn**	**09 36 42.4**	**-1.7**
ASAJ	0.6nm,0.3s,baz=90,slow=20,SNR=2.2			S	**Sn**	**09 38 04.2**	**-1.6**
USRK	**Usuriysk Ar.** 0.2nm,0.3s,baz=144,slow=14,SNR=4.1	**9.61**	**321**	P	**Pn**	**09 37 17.5**	**+2.6**
KSRS	**Korea Array** 0.2nm,0.3s,baz=91,slow=14,SNR=6.5	**9.91**	**277**	P	**Pn**	**09 37 21.1**	**+2.0**
JCJ	**Chichijima** 3.5nm,0.3s,baz=275,slow=20,SNR=5.8	**9.97**	**170**	P	Pn	09 37 16.2	-3.8
SONM	**Songino Array** 1.6nm,0.7s,baz=104,slow=8.8,SNR=5.9	**27.10**	**304**	P	**P**	**09 40 33.2**	**-0.9**
ZALV	**Zalesovo Beam** 0.5nm,0.3s,baz=104,slow=7.3,SNR=4.3	**41.32**	**312**	P	**P**	**09 42 36.1**	**-0.1**
MKAR	**Makanchi Array** 0.3nm,0.5s,baz=93,slow=9.2,SNR=4.6	**43.42**	**302**	P	**P**	**09 42 52.9**	**-0.5**
KURBB	**Kurchatov Arra** 1.8nm,0.6s,baz=84,slow=8.1,SNR=15	**45.36**	**308**	P	**P**	**09 43 07.9**	**-0.8**
WRA	**Warramunga Arr** 0.3nm,0.5s,baz=2.6,slow=7.6,SNR=6.0	**56.89**	**187**	P	**P**	**09 44 35.0**	**-0.3**
ASAR	**Alice Springs** 0.1nm,0.7s,baz=7.9,slow=14,SNR=2.8	**60.62**	**187**	P	**P**	**09 45 01.4**	**+0.3**

NEIC ***16*** *09:46:32.0, 38.28N×118.19W, h13km, MW3.6, ML4.0(REN), Moment Tensor Solution. s18 Moment tensor: Scale 10^14 Nm; Mrr-0.56; Mθθ-2.15; Mφφ2.71; Mrθ 1.24; Mθφ1.73; Mφr-0.20; Best double couple: M☉3.30000×10^14 NP1:φs335.00000°, δ71.00000°, λ-164.00000°. NP2:φs240.00000°, δ75.00000°, λ-20.00000°. Principal axes: T 3.2700, Plg3.0000°, Azm288.0000°; N 0.0000, Plg65.0000°, Azm25.0000°; P -3.2700, Plg25.0000°, Azm197.0000°; After REN.*

ISC 16 09:46:30.6±1.1, 38.35N±0.02×118.18W±0.03, h4km±11km, n36, σ1.926/61, California-Nevada border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MLAC	**Mammoth, Mammo** baz=38	**0.89**	**216**	P	**Pg**	**09 46 48.0**	**+0.3**
MLAC				S	**Sg**	**09 46 59.8**	**+0.5**
TIN	**Tinemaha, Big**	**1.30**	**182**	Pb	**Pg**	**09 46 55.4**	**-0.1**
TIN	baz=1.4			S	**Sg**	**09 47 12.1**	**-0.2**
GRAC	**Grapevine Rang** baz=333	**1.50**	**154**	P	**Pn**	**09 46 58.2**	**-0.2**
GRAC	baz=333			Sb	**Sg**	**09 47 19.1**	**+0.2**
CMB	**Columbia Colle**	**1.77**	**260**	*e*Pn	**Pn**	**09 47 01.9**	**-0.1**
CMB				*e*Sn	**Sn**	**09 47 24.2**	**-0.8**
R11A	**Troy Canyon, C** baz=269	**2.04**	**89**	P	**Pn**	**09 47 05.7**	**-0.2**
R11A	baz=269			Sb	**Sg**	**09 47 36.6**	**+0.4**
R11A	**Troy Canyon, C**	**2.04**	**89**	*e*Pn	**Pn**	**09 47 05.7**	**-0.2**
R11A				*e*Sg	**Sg**	**09 47 36.4**	**+0.2**
TPNV	**Topopah Spring** baz=312	**2.08**	**132**	P	**Pn**	**09 47 06.1**	**-0.2**
DAC	**Darwin (Calif)**	**2.12**	**167**	*e*Pn	**Pn**	**09 47 06.8**	**-0.3**
DAC				*e*Sg	**Sg**	**09 47 37.9**	**-1.1**
FURC	**Furnace Creek,** baz=330	**2.16**	**151**	Pb	**Pb**	**09 47 10.2**	**0.0**
FURC	baz=330			Sb	**Sg**	**09 47 39.5**	**-0.4**
BMN	**Battle Mountai**	**2.20**	**19**	*e*Pn	**Pn**	**09 47 09.1**	**+1.0**
BMN				*e*Sn	**Sb**	**09 47 38.1**	**-0.7**
RCTC	**Rector, Farmer** baz=23	**2.21**	**203**	Pb	**Pn**	**09 47 08.7**	**+0.6**
RCTC	baz=23			Sb	**Sb**	**09 47 39.4**	**+0.5**
MPMC	**Manual Prospec** baz=346	**2.36**	**166**	P	**Pn**	**09 47 10.0**	**-0.2**
MPMC	baz=346			Sb	**Sg**	**09 47 45.6**	**-0.8**
ISA	**Isabella, Lake** baz=4.8	**2.70**	**185**	Pb	**Pb**	**09 47 20.0**	**+0.6**
ISA	baz=4.8			Sb	**Sb**	**09 47 53.7**	**+0.8**
SHOC	**Shoshone, Teco** baz=328	**2.88**	**148**	Pb	**Pb**	**09 47 23.4**	**+0.7**
SHOC	baz=328			Sb	**Sg**	**09 48 01.4**	**-1.9**
SAO	**San Andreas Ge**	**3.04**	**240**	*e*Pn	**Pb**	**09 47 25.1**	**-0.2**
SAO				*e*Sg	**Sb**	**09 48 05.3**	**+2.5**
ARVC	**Arvin** baz=9.0	**3.26**	**189**	Pb	**Pb**	**09 47 29.3**	**+0.2**
ARVC	baz=9.0			Sb	**Sb**	**09 48 11.6**	**+2.5**
ELK	**Elko**	**3.30**	**43**	*e*Pn	**Pn**	**09 47 24.5**	**+1.3**
ELK				*e*Sg	**Sg**	**09 48 15.4**	**-1.2**
O03D	**Paynes Creek** baz=125	**3.41**	**306**	Pb	**Pb**	**09 47 29.9**	**-1.8**
TUQ	**Turquoise Moun** baz=328	**3.43**	**147**	P	**Pn**	**09 47 24.7**	**-0.2**
EDW2	**Edwards Air Fo** baz=357	**3.47**	**177**	Pb	**Pb**	**09 47 33.9**	**+1.3**
OSI	**Osito Audit: C** baz=6.5	**3.76**	**187**	Pb	**Pb**	**09 47 38.5**	**+1.0**
MOD	**Modoc Plateau**	**3.90**	**336**	*e*Pg	**Pg**	**09 47 46.1**	**+0.7**
MOD				*e*Sn	**Sn**	**09 48 15.6**	**-2.1**
WDC	**Whiskeytown Da**	**4.04**	**305**	*e*Pn	**Pn**	**09 47 34.1**	**+0.9**
WDC				*e*Sg	**Sg**	**09 48 39.7**	**-0.8**
WVOR	**Wild Horse Val**	**4.09**	**355**	*e*Pn	**Pn**	**09 47 34.1**	**0.0**
WVOR				*e*Sg	**Sg**	**09 48 41.5**	**-0.5**
GMRC	**Granite Mounta** baz=331	**4.10**	**150**	Pb	**Pb**	**09 47 45.2**	**+1.8**
PASC	**Pasadena Art C**	**4.17**	**180**	*e*Pg	**Pg**	**09 47 49.6**	**-1.0**
DUG	**Dugway, Tooele**	**4.55**	**65**	*e*Pn	**Pn**	**09 47 38.9**	**-1.5**
DUG				*e*Sg	**Sg**	**09 48 55.4**	**-1.4**
PFO	**Pinyon Flats O**	**4.93**	**163**	*e*Pn	**Pn**	**09 47 44.2**	**-1.4**
PFO				*e*Sg	**Sg**	**09 49 06.0**	**-3.1**
MFID	**Camas Ranch** 18nm,0.6s	**5.36**	**19**	Pn	**Pn**	**09 47 51.3**	**-0.2**
MFID				*e*Sg	**Sg**	**09 49 24.1**	**+1.3**
HLID	**Hailey** 18nm,0.8s	**5.93**	**28**	Pg	**Pg**	**09 48 24.9**	**+0.6**
HLID				*e*Sg	**Sg**	**09 49 44.1**	**+3.0**
HWUT	**Hardware Ranch** 6.7nm,0.8s	**6.03**	**55**	*e*Pn	Pn	09 48 07.3	+6.6
HWUT				*e*Sg	**Sg**	**09 49 44.1**	**-0.2**
WUAZ	**Wupatki** 31nm,0.8s	**6.14**	**115**	*e*Pg	**Pg**	**09 48 25.9**	**-2.4**
WUAZ				*e*Sg	**Sg**	**09 49 49.1**	**+1.2**
AHID	**Auburn Hatcher** 7.3nm,0.8s	**6.96**	**48**	Pg	**Pg**	**09 48 45.9**	**+1.9**
AHID				*e*Sg	**Sg**	**09 50 14.9**	**+0.9**
PV04	**Paradox Valley**	**7.29**	**87**	Pn	**Pn**	**09 48 20.6**	**+2.6**
PV01	**Paradox Valley** 156nm,0.6s	**7.57**	**89**	*e*Pn	**Pn**	**09 48 23.0**	**+1.1**
MVCO	**Mesa Verde** 31nm,1.1s	**7.75**	**95**	Pn	**Pn**	**09 48 23.9**	**-0.5**

IDC 16 09:52:13.0±2.8, 54.35N×87.07E, h0km, mb1 3.0/2, mb1mx2.9/55, mbtmp3.0/2, ML2.6/2, Error ellipse: s-maj=22.9km s-min=16.4km az=62.0, Southwestern Siberia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
I46RU	**ZALESOVO INFRA** baz=70,slow=319,SNR=9.3	**1.39**	**254**	*i*		10 01 00.8	
ZALV	**Zalesovo Beam** 1.5nm,0.3s,baz=73,slow=14,SNR=17	**1.39**	**254**	Pg	Pg	09 52 37.1	-2.4
ZALV	2.3nm,0.3s,baz=75,slow=26,SNR=15			Lg	Lg	09 52 57.9	
KURBB	**Kurchatov Arra** 0.1nm,0.3s,baz=55,slow=14,SNR=9.0	**6.42**	**238**	Pn	Pn	09 53 50.0	+1.4
KURBB	0.1nm,0.3s,baz=29,slow=30,SNR=4.3			Sn	Sn	09 55 00.8	-1.7
KURBB	0.1nm,0.3s,baz=52,slow=34,SNR=7.7			Lg	Lg	09 55 35.9	
MKAR	**Makanchi Array** 0.1nm,0.3s,baz=27,slow=15,SNR=4.4	**8.16**	**204**	Pn	Pn	09 54 13.4	+0.8
MKAR	0.3nm,0.3s,baz=17,slow=25,SNR=5.8			Sn	Sn	09 55 45.2	-0.1
MKAR	0.1nm,0.3s,baz=32,slow=30,SNR=6.0			Lg	Lg	09 56 31.6	

IDC ***16*** *10:01:55.0±1.9, 37.13N×144.70E, h0km, mb3.5/2, mb1 3.8/5, mb1mx3.4/39, mbtmp3.7/5, ML3.4/3, Error ellipse: s-maj=47.2km s-min=26.9km az=78.0*

ISC 16 10:02:00.1±1.9, 36.9N±0.1×144.5E±0.2, h26km, n10, σ0.71/7, mb3.6/3, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MJAR	**Matsushiro Arr** 1.5nm,0.3s,baz=90,slow=15,SNR=14	**5.10**	**268**	Pn	**Pn**	**10 03 15.2**	**+0.3**
MAT	**Matsushiro**	**5.10**	**268**	P	**Pn**	**10 03 15.6**	**+0.7**
JHJ	**Hachijo jima 2** 5.7nm,0.3s,baz=12,slow=20,SNR=4.6	**5.43**	**227**	Pn	**Pn**	**10 03 19.6**	**+0.2**
JHJ	11nm,0.3s,baz=74,slow=17,SNR=3.7			Sn	**Sn**	**10 04 20.6**	**-0.5**
ASAJ	**Asahikawa** 0.4nm,0.3s,baz=180,slow=10,SNR=4.1	**7.35**	**349**	Pn	Pn	10 03 40.0	-5.8
H11N2	**WAKE ISLAND Hy 25.98** baz=317,slow=76,SNR=11	**25.98**	**125**	T	T	10 34 41.3	
H11N1	**WAKE ISLAND Hy 25.99** baz=317,slow=76,SNR=5.4	**25.99**	**125**	T	T	10 34 42.4	
H11N3	**WAKE ISLAND Hy 26.00** baz=317,slow=76,SNR=4.2	**26.00**	**125**	T	T	10 34 44.4	
WRA	**Warramunga Arr** 0.3nm,0.5s,baz=10,slow=7.3,SNR=9.8	**57.36**	**191**	P	**P**	**10 11 46.9**	**+0.8**
ASAR	**Alice Springs** 0.1nm,0.6s,baz=8.8,slow=6.7,SNR=4.1	**61.08**	**191**	P	**P**	**10 12 11.8**	**-0.1**
GEYT	**Alibeck** 6.0nm,0.3s,baz=69,slow=7.9

NIED ***16*** *10:16:00.39°.50N×142°.80E, h20km, Mw3.6 Best double couple: M₀3.04000×10¹⁴ NP1:ϕ₉106.00000°, δ46.00000°, λ-45.00000°. NP2:ϕ₉231.00000°, δ59.00000°, λ-127.00000°.*

JMA ***16*** *10:16:11.6±0.2, 39°.55N×142°.82E, h25km±2km, M3.5*

ISCJB ***16*** *10:16:12.5±0.7, 39°.53N±0°.06×142°.78E±0°.06, h29km, mb3.5/6, Error ellipse: s-maj=8.6km s-min=6.2km az=153.1*

IDC ***16*** *10:16:16.4±3.5, 39°.48N×142°.77E, h54km±34km, mb3.2/6, mb1 3.4/8, mb1mx3.3/44, mbtmp3.4/8, ML3.3/2, Error ellipse: s-maj=43.1km s-min=19.7km az=114.0*

ISC 16 10:16:14.1±0.8, **39°.56N**±0°.05×**142°.65E**±0°.07, **h29**km, **n26, σ1°29/23, mb3.6/6, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MIYJ	**Miyakonagasawa**	**0.64**	**272**	P	**Pb**	**10 16 26.1**	**-0.6**
MIYJ				*eS*	**Sb**	**10 16 36.6**	**+1.2**
JTH	**Tanohata**	**0.71**	**302**	P	**Pb**	**10 16 27.1**	**-0.9**
JTH				S	**Sb**	**10 16 38.3**	**+0.8**
OFUJ	**Ofunato**	**0.90**	**238**	P	**Pn**	**10 16 29.7**	**-1.0**
OFUJ				S	**Sn**	**10 16 42.6**	**-0.1**
JOM	**Ohasama**	**1.05**	**266**	P	**Pn**	**10 16 32.7**	**-0.1**
JKZ	**Kuzumaki**	**1.10**	**293**	P	**Pn**	**10 16 33.3**	**-0.3**
JANG	**Nango**	**1.19**	**313**	P	**Pn**	**10 16 33.9**	**-0.9**
JMK	**Ichinoseki**	**1.26**	**242**	P	**Pn**	**10 16 35.5**	**-0.2**
JRG	**Rokugo**	**1.57**	**265**	P	**Pb**	**10 16 42.1**	**-0.3**
JAH	**Hinai**	**1.67**	**293**	P	**Pn**	**10 16 42.8**	**+1.5**
JTM	**Tenmabayashi**	**1.72**	**316**	P	**Pn**	**10 16 42.5**	**+0.4**
ASAJ	**Asahikawa**	**4.55**	**360**	P	**Pn**	**10 17 23.5**	**+2.6**
	1.1nm,0.3s,baz=234,slow=16,SNR=7.6						
MJAR	**Matsushiro Arr**	**4.62**	**231**	P	**Pn**	**10 17 24.6**	**+2.6**
	1.0nm,0.3s,baz=36,slow=12,SNR=16						
MAT	**Matsushiro**	**4.62**	**231**	P	**Pn**	**10 17 24.6**	**+2.7**
MAT				*eS*	**Sb**	**10 18 30.9**	**+1.3**
JHJ	**Hachijo jima 2**	**6.83**	**201**	S	Sn	10 19 02.2	-6.8
	4.0nm,0.3s,baz=255,slow=20,SNR=2.2						
SEY	**Seymchan**	**24.13**	**11**	P	**P**	**10 21 26.4**	**-0.7**
	2.5nm,0.9s,baz=150,slow=3.8,SNR=6.6						
H11N2	**WAKE ISLAND Hy**	**28.73**	**126**	T	T	10 52 10.4	
	baz=320,slow=75,SNR=64						
H11N1	**WAKE ISLAND Hy**	**28.74**	**126**	T	T	10 52 15.4	
	baz=320,slow=75,SNR=57						
H11N3	**WAKE ISLAND Hy**	**28.75**	**126**	T	T	10 52 18.9	
	baz=320,slow=75,SNR=50						
H11S1	**WAKE ISLAND Hy**	**29.54**	**128**	T	T	10 53 11.3	
	baz=321,slow=76,SNR=15						
H11S3	**WAKE ISLAND Hy**	**29.54**	**128**	T	T	10 53 03.3	
	baz=321,slow=76,SNR=14						
H11S2	**WAKE ISLAND Hy**	**29.55**	**128**	T	T	10 53 13.7	
	baz=321,slow=76,SNR=14						
MKAR	**Makanchi Array**	**43.65**	**300**	P	**P**	**10 24 16.6**	**+0.7**
	0.2nm,0.4s,baz=81,slow=11,SNR=3.7						
ILAR	**Eielson Array**	**46.85**	**34**	P	**P**	**10 24 41.0**	**-0.1**
	0.4nm,0.6s,baz=266,slow=6.1,SNR=6.2						
WRA	**Warramunga Arr**	**59.70**	**189**	P	**P**	**10 26 14.4**	**-1.5**
	0.5nm,0.8s,baz=7.1,slow=6.8,SNR=5.5						
YKA	**Yellowknife Ar**	**61.14**	**31**	P	**P**	**10 26 25.2**	**-0.1**
	0.2nm,0.5s,baz=298,slow=6.2,SNR=4.6						
TXAR	**Lajitas Array**	**87.82**	**53**	P	**P**	**10 29 00.3**	**-0.6**
	0.1nm,0.3s,baz=308,slow=3.5,SNR=3.7						

IDC 16 10:22:51.1±2.5, **32°.10S×57°.51E, h0**km, **mb3.6**/5, **mb1 3.8**/5, **mb1mx3.5**/49, **mbtmp3.6**/5, **MS3.4**/2, **Ms1 3.4**/2, **ms1mx2.8**/52, **Error ellipse: s-maj=86.3km s-min=35.0km az=49.0, Southwest Indian Ridge**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MATP	**Matopo**	**28.40**	**287**	LR	LR	10 38 25.7	
	comp=Z,50nm,19.5s,baz=194,slow=33						
H08N3	**Diego Garcia H**	**28.55**	**29**	T	T	10 58 55.8	
	baz=203,slow=76,SNR=5.0						
H08N1	**Diego Garcia H**	**28.56**	**29**	T	T	10 58 43.1	
	baz=203						
H08N2	**Diego Garcia H**	**28.57**	**29**	T	T	10 58 45.2	
	baz=203,slow=76,SNR=4.1						
MAW	**Mawson**	**35.69**	**176**	LR	LR	10 42 02.6	
	comp=Z,102nm,19.9s,baz=57,slow=32						
CMAR	**Chiang Mai Arr**	**64.05**	**44**	P	P	10 33 26.8	-0.1
	0.6nm,0.7s,baz=233,slow=6.4,SNR=4.9						
ASAR	**Alice Springs**	**66.79**	**104**	P	P	10 33 44.2	-0.6
	0.5nm,0.7s,baz=240,slow=5.5,SNR=9.3						
WRA	**Warramunga Arr**	**68.83**	**101**	P	P	10 33 58.4	+0.7
	0.6nm,0.8s,baz=242,slow=5.4,SNR=7.3						
MKAR	**Makanchi Array**	**81.65**	**17**	P	P	10 35 10.9	+0.1
	0.2nm,0.8s,baz=201,slow=6.0,SNR=2.9						
KURBB	**Kurchatov Arra**	**84.43**	**13**	P	P	10 35 25.1	0.0
	0.2nm,0.3s,baz=205,slow=5.8,SNR=3.5						
YKA	**Yellowknife Ar**	**149.17**	**353**	PKPbc	PKPbc	10 42 40.1	-0.6
	0.8nm,0.7s,baz=2.9,slow=2.6,SNR=22						

NNC ***16*** *10:35:52.0±4.1, 37°.09N×70°.79E, h124km±123km, mb2.8, mpv3.5, Error ellipse: s-maj=51.3km s-min=31.5km az=69.0*

IDC ***16*** *10:35:54.5±9.1, 37°.19N×71°.41E, h220km±58km, mb3.0/3, mb1 3.0/6, mb1mx2.8/53, mbtmp3.5/6, Error ellipse: s-maj=88.3km s-min=39.5km az=1.0*

ISC 16 10:35:46.0±1.8, **36°.8N**±0°.1×**70°.8E**±0°.1, **h150**km, **n11, σ1°74/12, mb3.4/3, 3C-4D, Hindu Kush region**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SFK	**Sufi-Kurgan**	**3.82**	**33**	⇑P	**Pn**	**10 36 46.7**	**+2.5**
	4.9nm,0.2s						
SFK				⇑S	**Sn**	**10 37 28.8**	**-0.5**
	20nm,0.2s						
MNAS	**Manas**	**5.81**	**12**	⇑P	**Pn**	**10 37 12.9**	**+2.7**
	1.5nm,0.3s						
MNAS				⇓S	**Sn**	**10 38 15.9**	**-0.2**
	15nm,0.8s						
KK31	**Karatay Array**	**6.28**	**358**	P	Pn	10 37 19.8	+3.4
	1.5nm,0.4s,baz=177,slow=12,SNR=16						
KK31				⇓S	**Sn**	**10 38 27.6**	**+0.4**
	2.9nm,0.3s,baz=181,slow=23,SNR=11						
AAK	**Ala-Archa**	**6.46**	**25**	P	**Pn**	**10 37 21.2**	**+2.2**
	0.5nm,0.3s,baz=157,slow=5.2,SNR=7.0						
AAK				S	**Sn**	**10 38 30.5**	**-1.2**
	0.6nm,0.3s,baz=118,slow=22,SNR=9.9						
MKAR	**Makanchi Array**	**13.12**	**37**	P	**Pn**	**10 38 46.2**	**-0.4**
	0.0nm,0.3s,baz=220,slow=8.8,SNR=2.3						
AB02	**Akbulak array**	**14.74**	**331**	⇓S	**Sn**	**10 41 48.4**	**-2.0**
	0.9nm,0.6s						
AB04	**Akbulak array**	**14.74**	**331**	⇓P	**P**	**10 39 08.9**	**-0.2**
	0.4nm,0.5s						
AKTO	**Aktyubinsk**	**16.43**	**330**	P	P	10 39 31.9	+4.0
	0.2nm,0.3s,baz=128,slow=13,SNR=4.0						
FINES	**FINESS Array B**	**37.14**	**326**	P	P	10 42 43.8	+1.9
	1.5nm,1.0s,baz=118,slow=14,SNR=3.0						
NOA	**NORSAR Array B**	**44.04**	**323**	P	**P**	**10 43 39.3**	**+0.8**
	0.8nm,0.8s,baz=100,slow=7.9,SNR=2.8						
YKA	**Yellowknife Ar**	**80.94**	**3**	P	**P**	**10 47 41.8**	**-1.3**
	0.2nm,0.5s,baz=351,slow=5.5,SNR=7.9						

IDC 16 10:37:14.7±326.0, **47°.88N×49°.35E, h0**km, **Error ellipse: s-maj=140.5km s-min=107.5km az=19.0, Western Kazakhstan**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
I31KZ	**AKTYUBINSK INF**	**6.24**	**63**	*i*		11 19 40.0	
	baz=249,slow=322,SNR=1.9						
I43RU	**DUBNA INFRASON**	**11.54**	**325**	*i*		11 47 30.0	
	baz=138,slow=320,SNR=1.4						
I46RU	**ZALESOVO INFRA**	**23.00**	**61**	*i*		12 55 20.0	
	baz=270,slow=321,SNR=2.7						
I26DE	**FREYUNG INFRAS**	**23.57**	**286**	*i*		13 02 50.0	
	baz=77,slow=329,SNR=0.8						

IDC 16 10:38:19.0±2.3, **3°.87N×126°.96E, h0**km, **mb3.3**/3, **mb1 3.6**/3, **mb1mx3.3**/48, **mbtmp3.3**/3, **Error ellipse: s-maj=192.1km s-min=25.8km az=66.0, Talaud Islands**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
WRA	**Warramunga Arr**	**24.75**	**163**	P	P	10 43 42.7	+0.2
	0.6nm,0.7s,baz=342,slow=10,SNR=9.5						
ASAR	**Alice Springs**	**28.19**	**166**	P	P	10 44 13.3	-0.2
	0.3nm,0.7s,baz=348,slow=7.3,SNR=5.3						
MKAR	**Makanchi Array**	**57.58**	**325**	P	P	10 48 10.6	-0.1
	0.1nm,0.3s,baz=129,slow=6.4,SNR=3.7						

JMA 16 11:03:06.3±0.1, **36°.34N×139°.94E, h76**km±1km, **M1.6, Eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JYT	**Yasato**	**0.23**	**119**	P	Pn	11 03 17.9	+0.2
JYT				S	Sn	11 03 26.6	+0.4
JAG	**Ashikaga**	**0.40**	**282**	P	Pn	11 03 18.8	-0.1
JAG				S	Sn	11 03 28.2	+0.1
JKT	**Katashina**	**0.70**	**308**	P	Pn	11 03 21.9	+0.1
JKT				S	Sn	11 03 33.8	+0.6
JRY	**Ryogami san**	**0.90**	**249**	P	Pn	11 03 24.2	+0.3
JRY				*eS*	Sn	11 03 37.3	+0.2

MEX 16 11:14:45.6±0.3, **14°.27N×91°.77W, h42**km, **MD3.7, Guatemala**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PCIG		**2.00**	**316**	*i* P	Pn	11 15 15.4	-1.5
PCIG				*eP*	Pn	11 15 15.4	-1.5
PCIG				*eS*	Sn	11 15 38.8	-2.1

BJI ***16*** *11:15:17.5, 38°.65S×176°.61E, h211km, mb4.6/2*

ISCJB ***16*** *11:15:18.7±0.2, 38°.38S±0°.02×175°.88E±0°.04, h200km±2km, mb3.8/11, Error ellipse: s-maj=5.3km s-min=3.6km az=15.2*

IDC ***16*** *11:15:18.9±0.5, 38°.39S×176°.04E, h188km±6km, mb3.4/5, mb1 3.6/7, mb1mx3.5/31, mbtmp4.1/7, Error ellipse: s-maj=23.0km s-min=18.5km az=20.0*

NEIC ***16*** *11:15:19.9, 38°.26S×175°.99E, h194km, mb4.1/4, After WEL.*

NEIC Widely felt on the North Island.

WEL ***16*** *11:15:20.4±0.3, 38°.26S×176°.00E, h190km±2km, ML5.1/22, Error ellipse: s-maj=1.3km s-min=1.0km az=90.0, MM 5.*

WEL Felt between Bay of Plenty, Nelson and Gisborne, maximum reported intensity.

ISC 16 11:15:19.6±0.6, **38°.43S**±0°.04×**175°.89E**±0°.04, **h196**km±5km, **n280, σ1°23/296, mb3.7**/11, **60C-17D, North Island**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
KUTZ	**Kaahu Road**	**0.08**	**223**	⇑PN	**Pn**	**11 15 45.7**	**+0.5**
KUTZ	**Kaahu Road**	**0.08**	**223**	Pn	**Pn**	**11 15 45.7**	**+0.5**
GRRZ	**Galatos Road**	**0.19**	**65**	⇑PN	**Pn**	**11 15 45.5**	**+0.1**
WPRZ	**Whakapapatarin**	**0.23**	**112**	⇑PN	**Pn**	**11 15 45.6**	**+0.2**
WPRZ	**Whakapapatarin**	**0.23**	**112**	Pn	**Pn**	**11 15 45.6**	**+0.2**
TLZ	**Tolley Road**	**0.30**	**290**	PN	**Pn**	**11 15 46.1**	**+0.5**
TLZ	**Tolley Road**	**0.30**	**290**	Pn	**Pn**	**11 15 45.5**	**-0.1**
WATZ	**Wairara**	**0.30**	**204**	⇑PN	**Pn**	**11 15 46.4**	**+0.8**
WATZ	**Wairara**	**0.30**	**204**	Pn	**Pn**	**11 15 46.4**	**+0.8**
HSRZ	**Hossack Road**	**0.30**	**67**	⇑PN	**Pn**	**11 15 45.6**	**0.0**
HSRZ				SN	**Sn**	**11 16 05.1**	**-0.5**
HRRZ	**Handcock Road**	**0.31**	**82**	⇑PN	**Pn**	**11 15 45.7**	**0.0**
HRRZ				SN	**Sn**	**11 16 05.0**	**-0.7**
HRRZ	**Handcock Road**	**0.31**	**82**	Pn	**Pn**	**11 15 45.7**	**0.0**
HRRZ				Sn	**Sn**	**11 16 05.0**	**-0.7**
UTU	**Utuhina**	**0.35**	**43**	⇓PN	**Pn**	**11 15 45.7**	**-0.1**
UTU				SN	**Sn**	**11 15 45.7**	**-0.1**
UTU	**Utuhina**	**0.35**	**43**	Pn	**Pn**	**11 15 45.7**	**-0.1**
UTU				Sn	**Sn**	**11 16 05.8**	**-0.1**
ALRZ	**Allen Road**	**0.38**	**110**	⇑PN	**Pn**	**11 15 45.5**	**-0.2**
ALRZ	**Allen Road**	**0.38**	**110**	Pn	**Pn**	**11 15 45.5**	**-0.2**
PRRZ	**Plateau Road**	**0.40**	**100**	⇑PN	**Pn**	**11 15 45.7**	**-0.2**
PRRZ	**Plateau Road**	**0.40**	**100**	Pn	**Pn**	**11 15 45.7**	**-0.2**
RATZ	**Rangitukua**	**0.44**	**192**	PN	**Pn**	**11 15 46.7**	**+0.7**
RATZ	**Rangitukua**	**0.44**	**192**	Pn	**Pn**	**11 15 46.1**	**+0.1**
HATZ	**Hinemaiaia**	**0.48**	**161**	PN	**Pn**	**11 15 46.6**	**+0.5**
HATZ	**Hinemaiaia**	**0.48**	**161**	Pn	**Pn**	**11 15 46.6**	**+0.5**
KARZ	**Kaharoa**	**0.50**	**34**	⇓PN	**Pn**	**11 15 45.7**	**-0.5**
KARZ	**Kaharoa**	**0.50**	**34**	Pn	**Pn**	**11 15 45.7**	**-0.5**
OMRZ	**Omania**	**0.50**	**49**	⇓PN	**Pn**	**11 15 45.8**	**-0.4**
OMRZ				SN	**Sn**	**11 16 05.2**	**-1.5**
OMRZ	**Omania**	**0.50**	**49**	Pn	**Pn**	**11 15 45.8**	**-0.4**
OMRZ				Sn	**Sn**	**11 16 05.2**	**-1.5**
RRRZ	**Republican Roa**	**0.50**	**79**	PN	**Pn**	**11 15 45.8**	**-0.4**
RRRZ	**Republican Roa**	**0.50**	**79**	Pn	**Pn**	**11 15 45.8**	**-0.4**
TARZ	**Mount Tarawera**	**0.52**	**68**	PN	**Pn**	**11 15 45.8**	**-0.6**
TARZ	**Mount Tarawera**	**0.52**	**68**	Pn	**Pn**	**11 15 45.8**	**-0.6**
RITZ	**Rihia Road**	**0.55**	**183**	⇑PN	**Pn**	**11 15 47.4**	**+1.0**
RITZ	**Rihia Road**	**0.55**	**183**	Pn	**Pn**	**11 15 47.4**	**+1.0**
KATZ	**Kakaramea**	**0.56**	**196**	⇑PN	**Pn**	**11 15 47.5**	**+0.9**
KATZ	**Kakaramea**	**0.56**	**196**	Pn	**Pn**	**11 15 47.5**	**+0.9**
MRHZ	**Matea Rd**	**0.57**	**134**	⇑PN	**Pn**	**11 15 46.8**	**+0.2**
LIRZ	**Lichensteins R**	**0.58**	**42**	PN	**Pn**	**11 15 45.9**	**-0.7**
LIRZ	**Lichensteins R**	**0.58**	**42**	Pn	**Pn**	**11 15 45.9**	**-0.7**
KMRZ	**Kaimai**	**0.59**	**4**	⇓PN	**Pn**	**11 15 46.1**	**-0.5**
KRVZ	**Karewarewa**	**0.69**	**196**	PN	**Pn**	**11 15 48.0**	**+0.9**
KRVZ	**Karewarewa**	**0.69**	**196**	Pn	**Pn**	**11 15 48.0**	**+0.9**
MUGZ	**Murupara**	**0.69**	**94**	PN	**Pn**	**11 15 46.1**	**-0.9**
WTVZ	**West Tongariro**	**0.72**	**199**	⇑PN	**Pn**	**11 15 48.3**	**+1.0**
WTVZ	**West Tongariro**	**0.72**	**199**	Pn	**Pn**	**11 15 48.3**	**+1.0**
TWVZ	**Taurewa**	**0.73**	**209**	⇑PN	**Pn**	**11 15 48.5**	**+1.1**
TWVZ	**Taurewa**	**0.73**	**209**	Pn	**Pn**	**11 15 48.5**	**+1.1**
EDRZ	**Edgecumbe**	**0.74**	**64**	⇓PN	**Pn**	**11 15 46.5**	**-0.9**
EDRZ	**Edgecumbe**	**0.74**	**64**	Pn	**Pn**	**11 15 46.5**	**-0.9**
OTVZ	**Oturere**	**0.75**	**194**	⇑PN	**Pn**	**11 15 48.5**	**+1.0**
OTVZ	**Oturere**	**0.75**	**194**	Pn	**Pn**	**11 15 48.5**	**+1.0**
TGRZ	**Tauranga**	**0.76**	**23**	⇓PN	**Pn**	**11 15 46.5**	**-0.9**
TGRZ	**Tauranga**	**0.76**	**23**	Pn	**Pn**	**11 15 46.5**	**-0.9**
TOZ	**Tahuroa Road**	**0.76**	**336**	PN	**Pn**	**11 15 46.8**	**-0.6**
TOZ	**Tahuroa Road**	**0.76**	**336**	Pn	**Pn**	**11 15 46.8**	**-0.6**
NGZ	**Ngauruhoe**	**0.78**	**197**	PN	**Pn**	**11 15 48.5**	**+0.9**
NGZ	**Ngauruhoe**	**0.78**	**197**	Pn	**Pn**	**11 15 48.5**	**+0.9**
OPRZ	**Ohinepanea**	**0.79**	**42**	PN	**Pn**	**11 15 46.2**	**-1.4**
OPRZ	**Ohinepanea**	**0.79**	**42**	Pn	**Pn**	**11 15 46.2**	**-1.4**
HIZ	**Hauiti**	**0.82**	**264**	PN	**Pn**	**11 15 48.6**	**+0.9**
HIZ	**Hauiti**	**0.82**	**264**	*e*Pn	**Pn**	**11 15 48.5**	**+0.8**
HIZ				*e*Sn	**Sn**	**11 16 06.5**	**-2.9**
TUVZ	**Tukino**	**0.85**	**192**	PN	**Pn**	**11 15 49.3**	**+1.2**
TUVZ	**Tukino**	**0.85**	**192**	Pn	**Pn**	**11 15 49.3**	**+1.2**
FWVZ	**Far West T-bar**	**0.86**	**198**	⇓PN	**Pn**	**11 15 49.0**	**+0.8**
FWVZ	**Far West T-bar**	**0.86**	**198**	Pn	**Pn**	**11 15 49.0**	**+0.8**
BKZ	**Black Stump Fm**	**0.87**	**148**	⇓PN	**Pn**	**11 15 48.7**	**+0.7**
BKZ				AML	AML	11 16 11.3	
BKZ				AML	AML	11 16 11.6	
BKZ	**Black Stump Fm**	**0.87**	**148**	*e*Pn	**Pn**	**11 15 48.8**	**+0.7**
BKZ				*e*Sn	**Sn**	**11 16 05.4**	**-4.9**
DRZ	**Dome Shelter**	**0.88**	**197**	PN	**Pn**	**11 15 49.6**	**+1.2**
DRZ	**Dome Shelter**	**0.88**	**197**	Pn	**Pn**	**11 15 49.6**	**+1.2**
WHVZ	**Whangaehu Hut**	**0.88**	**195**	Pn	**Pn**	**11 15 49.2**	**+0.8**
TRVZ	**Turoa**	**0.91**	**197**	PN	**Pn**	**11 15 49.5**	**+1.0**
WNVZ	**Wahianoa**	**0.92**	**194**	⇑PN	**Pn**	**11 15 49.8**	**+1.2**
WNVZ	**Wahianoa**	**0.92**	**194**	Pn	**Pn**	**11 15 49.8**	**+1.2**
PKVZ	**Pokaka**	**0.96**	**206**	⇑PN	**Pn**	**11 15 50.0**	**+1.3**
PKVZ	**Pokaka**	**0.96**	**206**	Pn	**Pn**	**11 15 50.0**	**+1.3**
URZ	**Urewera**	**0.97**	**80**	P	**Pn**	**11 15 47.6**	**-1.1**
	105nm,0.3s,baz=259,slow=1.5,SNR=858						
URZ				S	**Sn**	**11 16 07.9**	**-3.3**
	1um,0.3s,baz=0.0,slow=20,SNR=150						
URZ	**Urewera**	**0.97**	**80**	PN	**Pn**	**11 15 47.2**	**-1.5**
URZ				SN	**Sn**	**11 16 07.6**	**-3.5**
URZ				AML	AML	11 16 08.8	
URZ	**Urewera**	**0.97**	**80**	*e*Pn	**Pn**	**11 15 47.6**	**-1.1**
URZ				*e*Sn	Sn	11 16 03.8	-7.4
NMHZ	**Naumai**	**0.98**	**133**	⇑PN	**Pn**	**11 15 50.2**	**+1.4**
NMHZ	**Naumai**	**0.98**	**133**	Pn	**Pn**	**11 15 50.2**	**+1.4**
MOVZ	**Moawhango**	**0.98**	**186**	⇑PN	**Pn**	**11 15 49.8**	**+1.0**
MOVZ	**Moawhango**	**0.98**	**186**	Pn	**Pn**	**11 15 49.8**	**+1.0**
MTVZ	**Mangateitei**	**1.01**	**199**	⇑PN	**Pn**	**11 15 50.3**	**+1.4**
MTVZ	**Mangateitei**	**1.01**	**199**	Pn	**Pn**	**11 15 50.3**	**+1.4**
RAHZ	**Arahi**	**1.05**	**118**	⇑PN	**Pn**	**11 15 50.0**	**+0.7**
RAHZ				SN	**Sn**	**11 16 12.0**	**-0.3**
RAHZ	**Arahi**	**1.05**	**118**	Pn	**Pn**	**11 15 50.0**	**+0.7**
BHHZ	**Black Hill Sta**	**1.06**	**173**	PN	**Pn**	**11 15 50.4**	**+1.1**
KWHZ	**Kaweka Forest**	**1.07**	**157**	⇑PN	**Pn**	**11 15 50.7**	**+1.2**
VRZ	**Vera Road**	**1.12**	**232**	PN	**Pn**	**11 15 50.9**	**+1.2**
VRZ	**Vera Road**	**1.12**	**232**	Pn	**Pn**	**11 15 50.9**	**+1.2**
MYRZ	**Mayor Island**	**1.18**	**14**	PN	**Pn**	**11 15 49.1**	**-1.1**
SNGZ	**Shannon Statio**	**1.19**	**108**	⇑PN	**Pn**	**11 15 50.6**	**+0.3**
SNGZ	**Shannon Statio**	**1.19**	**108**	Pn	**Pn**	**11 15 50.6**	**+0.3**
MCHZ	**McNeill Hill**	**1.19**	**148**	⇑PN	**Pn**	**11 15 52.0**	**+1.7**
MCHZ	**McNeill Hill**	**1.19**	**148**	Pn	**Pn**	**11 15 52.0**	**+1.7**
ARHZ	**Aropaoanui**	**1.20**	**134**	⇑PN	**Pn**	**11 15 51.6**	**+1.3**
ARHZ	**Aropaoanui**	**1.20**	**134**	Pn	**Pn**	**11 15 51.6**	**+1.3**
RAGZ	**Rawiri**	**1.20**	**94**	⇑PN	**Pn**	**11 15 50.1**	**-0.3**
RAGZ				SN	**Sn**	**11 16 12.4**	**-1.9**
RAGZ	**Rawiri**	**1.20**	**94**	Pn	**Pn**	**11 15 50.1**	**-0.3**
WHHZ	**Waihua**	**1.23**	**122**	⇑PN	**Pn**	**11 15 51.4**	**+0.8**
KRHZ	**Kereru**	**1.27**	**163**	⇑PN	**Pn**	**11 15 52.2**	**+1.4**
MWZ	**Matawai**	**1.29**	**86**	PN	**Pn**	**11 15 50.3**	**-0.8**
MWZ				SN	**Sn**	**11 16 12.4**	**-3.1**
MWZ				AML	AML	11 16 13.8	
MWZ				AML	AML	11 16 13.8	
MWZ				AML	AML	11 16 14.0	
MWZ	**Matawai**	**1.29**	**86**	Pn	**Pn**	**11 15 50.3**	**-0.8**
MHEZ	**Mangahewa**	**1.39**	**242**	⇑PN	**Pn**	**11 15 53.9**	**+2.0**
MHEZ	**Mangahewa**	**1.39**	**242**	Pn	**Pn**	**11 15 53.9**	**+2.0**
MKAZ	**Moumakai**	**1.45**	**336**	PN	**Pn**	**11 15 51.0**	**-1.4**
MKAZ	**Moumakai**	**1.45**	**336**	Pn	**Pn**	**11 15 51.0**	**-1.4**
RIGZ	**Rimuhau**	**1.49**	**101**	⇑PN	**Pn**	**11 15 52.9**	**+0.1**
WAZ	**Wanganui**	**1.50**	**208**	PN	**Pn**	**11 15 54.1**	**+1.3**
WAZ	**Wanganui**	**1.50**	**208**	Pn	**Pn**	**11 15 54.1**	**+1.3**
PNHZ	**Pukenui**	**1.50**	**171**	⇑PN	**Pn**	**11 15 54.2**	**+1.3**
PNHZ	**Pukenui**	**1.50**	**171**	Pn	**Pn**	**11 15 54.2**	**+1.3**
KNZ	**Kokohu**	**1.51**	**113**	PN	**Pn**	**11 15 53.3**	**+0.4**
KNZ				AML	AML	11 16 19.5	
KNZ				AML	AML	11 16 19.7	
CKHZ	**Cape Kidnapper**	**1.53**	**143**	⇑PN	**Pn**	**11 15 54.6**	**+1.5**
CKHZ	**Cape Kidnapper**	**1.53**	**143**	Pn	**Pn**	**11 15 54.6**	**+1.5**
TKGZ	**Te Karaka**	**1.54**	**91**	PN	**Pn**	**11 15 52.8**	**-0.4**
TKGZ	**Te Karaka**	**1.54**	**91**	Pn	**Pn**	**11 15 52.8**	**-0.4**
LREZ	**Lake Rotokare**	**1.55**	**228**	PN	**Pn**	**11 15 55.1**	**+1.8**
KBAZ	**Karaka Road Bo**	**1.55**	**329**	⇑PN	**Pn**	**11 15 52.9**	**-0.5**
KBAZ	**Karaka Road Bo**	**1.55**	**329**	Pn	**Pn**	**11 15 52.9**	**-0.5**
KAHZ	**Kahuranaki**	**1.56**	**151**	⇑PN	**Pn**	**11 15 55.1**	**+1.6**
KAHZ	**Kahuranaki**	**1.56**	**151**	Pn	**Pn**	**11 15 55.1**	**+1.6**
TSZ	**Takapari Road**	**1.62**	**178**	PN	**Pn**	**11 15 54.7**	**+0.6**
TSZ				AML	AML	11 15 56.2	
TSZ				AML	AML	11 15 56.6	
TSZ	**Takapari Road**	**1.62**	**178**	Pn	**Pn**	**11 15 54.7**	**+0.6**
PREZ	**Palmer Road**	**1.63**	**236**	PN	**Pn**	**11 15 56.0**	**+1.9**
PREZ	**Palmer Road**	**1.63**	**236**	Pn	**Pn**	**11 15 56.0**	**+1.9**
NEZ	**North Egmont**	**1.63**	**239**	PN	**Pn**	**11 15 56.1**	**+1.9**
NEZ	**North Egmont**	**1.63**	**239**	Pn	**Pn**	**11 15 56.1**	**+1.9**
PRGZ	**Paritu Road**	**1.63**	**108**	⇑PN	**Pn**	**11 15 54.3**	**+0.2**
PRGZ	**Paritu Road**	**1.63**	**108**	Pn	**Pn**	**11 15 54.3**	**+0.2**
HAZ	**Te Kaha**	**1.64**	**66**	PN	**Pn**	**11 15 51.7**	**-2.4**
ETAZ	**East Tamaki Re**	**1.66**	**332**	⇓PN	**Pn**	**11 15 53.6**	**-0.8**
ETAZ	**East Tamaki Re**	**1.66**	**332**	Pn	**Pn**	**11 15 53.6**	**-0.8**
TWGZ	**Tauwhareparae**	**1.66**	**82**	⇓PN	**Pn**	**11 15 53.7**	**-0.8**
TWGZ	**Tauwhareparae**	**1.66**	**82**	Pn	**Pn**	**11 15 53.7**	**-0.8**
PKE	**Pukeiti**	**1.67**

TUWZ	**Tuamarina**	**3.35**	**206**	⇑PN	**Pn**	**11 16 13.1**	**0.0**
TUWZ				AML	AML	11 16 56.4	
TUWZ				AML	AML	11 16 57.7	
NNZ	**Nelson**	**3.39**	**214**	⇓PN	**Pn**	**11 16 13.3**	**-0.3**
NNZ	**Nelson**	**3.39**	**214**	Pn	**Pn**	**11 16 13.3**	**-0.3**
QRZ	**Quartz Range**	**3.53**	**226**	PN	**Pn**	**11 16 14.5**	**-0.7**
CMWZ	**Cape Campbell**	**3.55**	**201**	PN	**Pn**	**11 16 16.4**	**+0.8**
CMWZ				AML	AML	11 17 08.5	
CMWZ				AML	AML	11 17 08.9	
CMWZ	**Cape Campbell**	**3.55**	**201**	Pn	**Pn**	**11 16 16.4**	**+0.8**
BSWZ	**Blackbirch Sta**	**3.62**	**205**	⇑PN	**Pn**	**11 16 16.7**	**+0.2**
BSWZ				AML	AML	11 17 05.0	
BSWZ				AML	AML	11 17 05.5	
BSWZ	**Blackbirch Sta**	**3.62**	**205**	Pn	**Pn**	**11 16 16.7**	**+0.2**
OUZ	**Omahuta**	**3.70**	**329**	*e*Pn	**Pn**	**11 16 16.6**	**-0.8**
THZ	**Tophouse**	**4.04**	**214**	PN	**Pn**	**11 16 21.2**	**-0.5**
THZ	**Tophouse**	**4.04**	**214**	*e*Pn	**Pn**	**11 16 21.1**	**-0.5**
THZ				*e*Sn	Sn	11 16 58.8	-12
KHZ	**Kahutara**	**4.37**	**204**	PN	**Pn**	**11 16 26.0**	**+0.3**
KHZ	**Kahutara**	**4.37**	**204**	*e*Pn	**Pn**	**11 16 25.8**	**+0.1**
KHZ				*e*Sn	Sn	11 17 10.4	-7.4
DSZ	**Denniston Nort**	**4.56**	**222**	⇓PN	**Pn**	**11 16 27.0**	**-1.2**
DSZ	**Denniston Nort**	**4.56**	**222**	Pn	**Pn**	**11 16 27.0**	**-1.2**
LTZ	**Lake Taylor**	**5.14**	**211**	*e*Pn	**Pn**	**11 16 34.9**	**-0.8**
LTZ				*e*Sn	Sn	11 17 24.8	-11
INZ	**Inchbonnie**	**5.46**	**217**	PN	**Pn**	**11 16 38.7**	**-1.0**
OXZ	**Oxford**	**5.69**	**210**	PN	**Pn**	**11 16 41.0**	**-1.7**
OXZ	**Oxford**	**5.69**	**210**	*e*Pn	**Pn**	**11 16 40.9**	**-1.8**
OXZ				*e*Sn	Sn	11 17 37.1	-11
CRLZ	**Canterbury Las**	**5.70**	**205**	*e*Pn	**Pn**	**11 16 41.1**	**-1.6**
CRLZ				*e*Sn	Sn	11 17 36.1	-12
MQZ	**McQueen's Vall**	**5.81**	**204**	*e*Pn	**Pn**	**11 16 42.5**	**-1.6**
MQZ				*e*Sn	Sn	11 17 40.0	-11
WVZ	**Waitaha Valley**	**6.07**	**219**	⇓PN	**Pn**	**11 16 46.9**	**-0.6**
WVZ	**Waitaha Valley**	**6.07**	**219**	Pn	**Pn**	**11 16 46.9**	**-0.6**
RPZ	**Rata Peaks**	**6.42**	**213**	P	**Pn**	**11 16 51.6**	**-0.5**
	22nm,0.3s,baz=199,slow=3.4,SNR=100						
RPZ				S	**Sn**	**11 18 01.2**	**-4.2**
	29nm,0.3s,baz=303,slow=5.7,SNR=17						
RPZ	**Rata Peaks**	**6.42**	**213**	*e*Pn	**Pn**	**11 16 51.3**	**-0.8**
RPZ				*e*Sn	Sn	11 17 49.4	-16
FOZ	**Fox Glacier**	**6.86**	**220**	PN	**Pn**	**11 16 56.8**	**-1.0**
FOZ	**Fox Glacier**	**6.86**	**220**	*e*Pn	**Pn**	**11 16 56.6**	**-1.3**
FOZ				*e*Sn	Sn	11 18 02.7	-13
LBZ	**Lake Benmore**	**7.33**	**214**	PN	**Pn**	**11 17 02.8**	**-1.1**
LBZ	**Lake Benmore**	**7.33**	**214**	*e*Pn	**Pn**	**11 17 02.9**	**-1.1**
LBZ				*e*Sn	Sn	11 18 12.8	-14
ODZ	**Otahua Downs**	**7.68**	**209**	*e*Pn	**Pn**	**11 17 08.0**	**-0.5**
ODZ				*e*Sn	Sn	11 18 24.9	-10
CTZ	**Chatham Island**	**7.75**	**136**	PN	**Pn**	**11 17 11.7**	**+2.3**
CTZ	**Chatham Island**	**7.75**	**136**	Pn	**Pn**	**11 17 11.7**	**+2.3**
JCZ	**Jackson Bay**	**7.77**	**221**	PN	**Pn**	**11 17 07.3**	**-2.5**
JCZ	**Jackson Bay**	**7.77**	**221**	Pn	**Pn**	**11 17 07.3**	**-2.5**
WKZ	**Wanaka**	**8.20**	**217**	PN	**Pn**	**11 17 12.6**	**-2.7**
WKZ	**Wanaka**	**8.20**	**217**	*e*Pn	**Pn**	**11 17 13.5**	**-1.9**
WKZ				*e*Sn	Sn	11 18 34.7	-13
EAZ	**Earnscleugh**	**8.38**	**214**	PN	**Pn**	**11 17 15.8**	**-1.9**
EAZ				SN	Sn	11 18 45.0	-6.8
EAZ	**Earnscleugh**	**8.38**	**214**	Pn	**Pn**	**11 17 15.8**	**-1.9**
HHSZ	**Highcliff Hill**	**8.42**	**206**	PN	**Pn**	**11 17 18.3**	**+0.1**
HHSZ	**Highcliff Hill**	**8.42**	**206**	Pn	**Pn**	**11 17 18.3**	**+0.1**
MSZ	**Milford Sound**	**8.63**	**221**	PN	**Pn**	**11 17 19.5**	**-1.4**
MSZ	**Milford Sound**	**8.63**	**221**	Pn	**Pn**	**11 17 19.5**	**-1.4**
TUZ	**Tuapeka**	**8.83**	**210**	PN	**Pn**	**11 17 23.4**	**-0.2**
TUZ	**Tuapeka**	**8.83**	**210**	Pn	**Pn**	**11 17 23.4**	**-0.2**
MLZ	**Mavora Lakes**	**9.03**	**217**	*e*Pn	**Pn**	**11 17 25.0**	**-1.2**
MLZ				*e*Sn	Sn	11 18 59.5	-7.8
WHZ	**Wether Hill Ro**	**9.50**	**216**	*e*Pn	**Pn**	**11 17 30.8**	**-1.4**
WHZ				*e*Sn	Sn	11 19 10.9	-7.5
SYZ	**Scrubby Hill**	**9.51**	**209**	Pn	**Pn**	**11 17 32.6**	**+0.3**
DCZ	**Deep Cove**	**9.57**	**220**	*e*Pn	**Pn**	**11 17 31.5**	**-1.7**
DCZ				*e*Sn	Sn	11 19 05.6	-14
PYZ	**Puysegur Point**	**10.30**	**218**	*e*Pn	**Pn**	**11 17 41.7**	**-0.9**
PYZ				*e*Sn	Sn	11 19 30.8	-6.7
DZM	**Mont Dzumac**	**18.21**	**331**	P	**P**	**11 19 18.8**	**+0.7**
	0.5nm,0.3s,baz=162,slow=12,SNR=5.7						
MSVF	**Nonsavu**	**20.71**	**6**	*e*P	**P**	**11 19 43.2**	**-1.7**
	17nm,0.8s						
STKA	**Stephens Creek**	**28.68**	**273**	P	**P**	**11 20 60.0**	**+1.7**
	1.1nm,0.7s,baz=102,slow=9.9,SNR=3.2						
BBOO	**Buckleboo**	**32.68**	**268**	*e*P	**P**	**11 21 34.8**	**+1.4**
	1.9nm,0.6s						
COEN	**Coen**	**37.83**	**301**	*e*P	**P**	**11 22 17.6**	**+0.3**
	6.6nm,0.8s						
AS01	**Alice Springs**	**38.49**	**280**	*e*P	**P**	**11 22 23.4**	**+0.4**
AS31	**Alice Springs**	**38.52**	**280**	*e*P	**P**	**11 22 24.4**	**+1.1**
	1.2nm,1.0s						
ASAR	**Alice Springs**	**38.53**	**280**	P	**P**	**11 22 24.1**	**+0.9**
	0.9nm,0.4s,baz=122,slow=7.0,SNR=28						
VNDA	**Vanda**	**39.65**	**185**	P	P	11 22 36.0	+4.2
	1.1nm,0.7s,baz=4.6,slow=7.9,SNR=6.9						
WRAB	**Tennant Creek**	**40.28**	**285**	*e*P	**P**	**11 22 39.7**	**+2.0**
	2.7nm,0.9s						
WRA	**Warramunga Arr**	**40.29**	**285**	P	**P**	**11 22 38.2**	**+0.4**
	0.5nm,0.8s,baz=121,slow=8.0,SNR=6.4						
QSPA	**South Pole Qui**	**51.69**	**180**	*e*P	P	11 24 09.6	+3.3
	52nm,0.5s						
SNAA	**Sanae**	**70.20**	**180**	P	**P**	**11 26 12.1**	**+1.4**
PLCA	**Paso Flores**	**80.57**	**135**	P	**P**	**11 27 11.0**	**+0.8**
	1.4nm,0.9s,baz=232,slow=9.0,SNR=3.6						
KSRS	**Korea Array**	**87.50**	**324**	P	**P**	**11 27 46.0**	**+1.2**
	1.4nm,0.8s,baz=152,slow=6.4,SNR=4.2						
CD2	**Chengdu**	**96.28**	**305**	P	**P**	**11 28 25.0**	**-0.7**
HHC	**Hu-ho-hao-te**	**98.35**	**316**	*e*P	**P**	**11 28 34.3**	**-0.5**
WMQ	**Urumqi**	**114.16**	**308**	*e*PKP	PKPdf	11 33 33.8	-1.4
ARCES	**ARCESS Array B**	**145.04**	**342**	PKPbc	**PKPbc**	**11 34 30.8**	**-1.4**
	1.8nm,0.7s,baz=51,slow=2.9,SNR=4.1						
LIC	**Lamto**	**147.93**	**178**	*e*PKP2	**PKPab**	**11 34 45.3**	**+0.2**
	13nm,0.5s						
KIC	**Kosan Boka**	**148.07**	**179**	*e*PKP2	**PKPab**	**11 34 46.0**	**+0.3**
	15nm,0.7s						
TIC	**Toumodi**	**148.34**	**178**	*e*PKP2	**PKPab**	**11 34 46.9**	**+0.1**
DBIC	**Dimbokro**	**148.37**	**179**	PKPbc	**PKPbc**	**11 34 43.7**	**+0.4**
	4.8nm,0.5s,baz=155,slow=3.6,SNR=3.8						
FINES	**FINESS Array B**	**150.35**	**331**	PKPbc	**PKPbc**	**11 34 44.6**	**-2.1**
	2.0nm,0.9s,baz=46,slow=4.0,SNR=3.3						
TORD	**Torodi Ar. Bea**	**154.29**	**193**	PKPab	**PKPab**	**11 35 11.4**	**-0.2**
	0.7nm,0.5s,baz=166,slow=3.8,SNR=11						

NIED ***16*** *11:21:00,34°.90N×141°.20E,h5km,Mw3.9 Best double couple: M₀7.25000×10¹⁴ NP1:φ=285.00000°,δ67.00000°, λ13.00000°. NP2:φ=190.00000°,δ78.00000°,λ156.00000°.*

IDC ***16*** *11:21:31.0±0.9,34°.85N×141°.37E,h0km,mb3.7/7, mb1 3.8/11,mb1mx3.6/59,mbtmp3.8/11,ML3.6/4,MS3.0/4, Ms1 3.1/4,ms1mx2.7/54,Error ellipse: s-maj=27.6km s-min=15.6km az=91.0*

JMA ***16*** *11:21:33.5±0.2,34°.87N×141°.19E,h41km±3km,M3.5*

ISC 16 11:21:32.6±3.2,34°.85N±0°.05×141°.21E±0°.06,h15km±21km, n23,σ1°9.70/24,mb3.6/7,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
BSO1	**Boso 1**	**0.27**	**224**	P	**Pn**	**11 21 41.4**	**-0.1**
BSO3	**Boso 3**	**0.57**	**266**	P	**Pb**	**11 21 45.3**	**+1.1**
BSO3				*eX*		11 21 54.4	
BSO4	**Boso 4**	**0.73**	**282**	P	**Pb**	**11 21 47.7**	**+0.8**
KTR	**Katsuura**	**0.79**	**293**	P	**Pb**	**11 21 48.1**	**+0.1**
KTR				S	**Sb**	**11 21 58.3**	**-0.3**
CHOJ	**Chosi**	**0.90**	**342**	P	**Pb**	**11 21 49.6**	**-0.2**
JCN	**Nagara**	**1.00**	**305**	P	**Pb**	**11 21 51.8**	**+0.2**
JIM2	**Oshima 3**	**1.47**	**265**	P	**Pn**	**11 21 57.2**	**-1.3**
JIM2				S	**Sn**	**11 22 13.5**	**-4.0**
JHJ	**Hachijo jima 2**	**2.09**	**215**	Pn	**Pn**	**11 22 06.2**	**-0.9**
	47nm,0.3s,baz=284,slow=23,SNR=18						
JHJ				Sn	**Sn**	**11 22 30.1**	**-2.7**
	66nm,0.3s,baz=248,slow=18,SNR=6.8						
MJAR	**Matsushiro Arr**	**2.97**	**306**	Pn	**Pn**	**11 22 19.4**	**+0.2**
	2.6nm,0.3s,baz=126,slow=22,SNR=19						
MJAR				Sn	**Sn**	**11 22 55.2**	**+0.7**
	6.0nm,0.3s,baz=318,slow=33,SNR=6.8						
MAT	**Matsushiro**	**2.97**	**306**	P	**Pn**	**11 22 19.7**	**+0.5**
MAT				S	**Sn**	**11 22 52.2**	**-2.4**
JCJ	**Chichijima**	**7.77**	**174**	Pn	**Pn**	**11 23 24.1**	**-1.1**
	3.2nm,0.3s,baz=281,slow=19,SNR=5.5						
JNU	**Nakatsue**	**8.75**	**262**	LR	LR	11 27 24.7	
	comp=Z,66nm,21.1s,baz=125,slow=40						
ASAJ	**Asahikawa**	**9.32**	**6**	Pn	**Pn**	**11 23 44.3**	**-2.0**
	0.5nm,0.3s,baz=348,slow=18,SNR=4.9						
KSRS	**Korea Array**	**11.05**	**287**	LR	LR	11 28 23.7	
	comp=Z,68nm,19.5s,baz=103,slow=37						
PETK	**Petropavlovsk-**	**21.68**	**28**	LR	LR	11 34 22.2	
	comp=Z,34nm,21.6s,baz=193,slow=36						
SEY	**Seymchan**	**28.97**	**11**	P	**P**	**11 27 30.6**	**-0.6**
	1.3nm,0.4s,baz=210,slow=7.7,SNR=11						
CMAR	**Chiang Mai Arr**	**40.82**	**258**	LR	LR	11 49 26.2	
	comp=Z,37nm,18.3s,baz=190,slow=41						
ZALV	**Zalesovo Beam**	**43.29**	**314**	P	**P**	**11 29 36.4**	**+2.9**
	0.8nm,0.7s,baz=83,slow=6.0,SNR=3.5						
MKAR	**Makanchi Array**	**45.17**	**304**	P	**P**	**11 29 50.9**	**+2.2**
	0.3nm,0.5s,baz=89,slow=10,SNR=2.9						
KURBB	**Kurchatov Arra**	**47.24**	**310**	P	**P**	**11 30 06.1**	**+1.2**
	1.0nm,0.6s,baz=83,slow=7.6,SNR=6.4						
ILAR	**Eielson Array**	**51.44**	**31**	P	**P**	**11 30 37.3**	**+0.5**
	0.1nm,0.5s,baz=297,slow=4.0,SNR=3.5						
WRA	**Warramunga Arr**	**54.88**	**188**	P	**P**	**11 31 03.6**	**+1.1**
	1.2nm,0.6s,baz=4.7,slow=7.5,SNR=22						
ASAR	**Alice Springs**	**58.60**	**188**	P	**P**	**11 31 30.3**	**+1.3**
	0.4nm,0.8s,baz=358,slow=7.1,SNR=6.6						

ISCJB ***16*** *11:22:57.0±0.6,42°.31N±0°.07×133°.0E±0°.1,h476km, mb3.4/11,Error ellipse: s-maj=14.3km s-min=9.9km az=177.8*

IDC ***16*** *11:22:58.5±0.6,42°.39N×132°.86E,h481km±6km,mb3.0/11, mb1 3.1/14,mb1mx2.9/56,mbtmp3.9/14,Error ellipse: s-maj=14.9km s-min=11.1km az=82.0*

ISC 16 11:22:58.3±0.8,42°.38N±0°.09×133°.0E±0°.1,h476km,n15, σ0°.86/17,mb3.5/11,Primorye

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
USRK	**Ussuriysk Ar.**	**1.95**	**339**	P	**P**	**11 24 01.9**	**+1.1**
	6.6nm,0.3s,baz=138,slow=3.2,SNR=102						
USRK				S	**S**	**11 24 52.5**	**+0.7**
	baz=149,slow=17,SNR=2.7						
KSRS	**Korea Array**	**6.26**	**220**	P	**P**	**11 24 37.8**	**+1.5**
	1.5nm,0.3s,baz=34,slow=10,SNR=41						
KLR	**Kul'dur**	**6.90**	**353**	P	**P**	**11 24 43.6**	**+1.1**
	0.4nm,0.3s,baz=190,slow=12,SNR=9.3						
KLR				S	**S**	**11 26 08.7**	**+0.7**
	0.1nm,0.3s,baz=323,slow=20,SNR=5.7						
ASAJ	**Asahikawa**	**7.25**	**73**	P	**P**	**11 24 46.4**	**+0.2**
	1.4nm,0.3s,baz=225,slow=2.4,SNR=6.6						
ZALV	**Zalesovo Beam**	**33.49**	**307**	P	**P**	**11 28 55.6**	**-1.1**
	0.5nm,0.3s,baz=83,slow=8.2,SNR=3.0						
MKAR	**Makanchi Array**	**35.84**	**295**	P	**P**	**11 29 15.8**	**-0.8**
	0.3nm,0.5s,baz=86,slow=9.0,SNR=3.7						
KURBB	**Kurchatov Arra**	**37.60**	**302**	P	**P**	**11 29 30.1**	**-1.0**
	3.4nm,0.6s,baz=81,slow=8.7,SNR=14						
ILAR	**Eielson Array**	**48.62**	**34**	P	**P**	**11 30 57.3**	**+0.1**
	0.5nm,0.7s,baz=287,slow=7.6,SNR=6.4						
INK	**Inuvik**	**52.66**	**28**	P	**P**	**11 31 26.6**	**-0.1**
	0.8nm,0.5s,baz=295,slow=6.4,SNR=9.0						
FINES	**FINESS Array B**	**60.95**	**328**	P	**P**	**11 32 23.2**	**-0.7**
	1.2nm,0.6s,baz=103,slow=6.1,SNR=9.2						
WRA	**Warramunga Arr**	**62.02**	**179**	P	**P**	**11 32 30.5**	**-0.9**
	0.6nm,0.3s,baz=356,slow=7.0,SNR=9.8						
YKA	**Yellowknife Ar**	**62.39**	**29**	P	**P**	**11 32 33.1**	**-0.1**
	0.3nm,0.7s,baz=310,slow=6.2,SNR=6.6						
ASAR	**Alice Springs**	**65.72**	**179**	P	**P**	**11 32 54.8**	**-0.3**
	0.4nm,0.4s,baz=357,slow=7.1,SNR=10						
HFS	**Hagfors**	**66.41**	**332**	P	**P**	**11 32 58.4**	**-0.5**
	0.6nm,0.4s,baz=83,slow=5.1,SNR=6.0						
STKA	**Stephens Creek**	**74.32**	**172**	P	**P**	**11 33 46.6**	**+0.5**
	1.1nm,0.4s,baz=6.8,slow=6.2,SNR=7.7						

IDC 16 11:28:32.3±336.0,47°.63N×49°.00E,h0km,Error ellipse: s-maj=147.3km s-min=109.5km az=16.0,Western Kazakhstan

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
I31KZ	**AKTYUBINSK INF**	**6.56**	**62**	*i*		12 11 40.0	
	baz=248,slow=322,SNR=1.2						
I43RU	**DUBNA INFRASON**	**11.61**	**326**	*i*		12 40 20.0	
	baz=138,slow=320,SNR=1.1						
I46RU	**ZALESOVO INFRA**	**23.32**	**61**	*i*		13 49 50.0	
	baz=269,slow=321,SNR=1.5						
I26DE	**FREYUNG INFRAS**	**23.41**	**286**	*i*		13 52 20.0	
	baz=79,slow=328,SNR=0.7						

ISCJB ***16*** *11:32:42.0±1.1,36°.52N±0°.04×141°.10E±0°.07,h24km±7km, mb3.7/7,MS3.2/1,Error ellipse: s-maj=10.8km s-min=5.9km az=24.5*

JMA ***16*** *11:32:43.0±0.1,36°.52N×141°.03E,h36km±1km,M3.9*

JMA Felt II J1.

IDC ***16*** *11:32:44.3±0.8,36°.48N×140°.95E,h27km±5km,mb3.5/7, mb1 3.7/10,mb1mx3.5/42,mbtmp3.7/10,ML3.2/3,MS3.2/1, Ms1 3.2/1,ms1mx2.3/49,Error ellipse: s-maj=21.3km s-min=15.3km az=109.0*

ISC 16 11:32:44.0±0.8,36°.56N±0°.04×141°.01E±0°.06,h26km±6km, n27,σ0°.90/26,mb3.8/7,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JHO	**Hitachi**	**0.36**	**279**	P	**Pb**	**11 32 51.7**	**-0.3**
JHO				S	**Sb**	**11 32 57.5**	**+0.1**
ONAJ	**Iwakimizuishiy**	**0.57**	**343**	P	**Pb**	**11 32 54.8**	**-0.7**
JYT	**Yasato**	**0.73**	**244**	P	**Pb**	**11 32 56.8**	**-1.4**
JYT				S	**Sb**	**11 33 06.5**	**-1.3**
JFK	**Kawauchi**	**0.82**	**353**	P	**Pb**	**11 32 58.1**	**-1.5**
JFK				S	**Sb**	**11 33 08.6**	**-1.7**
JFT	**Otama**	**1.10**	**331**	P	**Pb**	**11 33 03.8**	**-0.6**
JFT				S	**Sn**	**11 33 17.9**	**-0.2**
MJAR	**Matsushiro Arr**	**2.25**	**270**	Pn	**Pn**	**11 33 19.2**	**-0.4**
	18nm,0.3s,baz=157,slow=4.1,SNR=149						
MAT	**Matsushiro**	**2.25**	**271**	P	**Pn**	**11 33 20.1**	**+0.5**
MAT				S	**Sn**	**11 33 47.4**	**+0.8**
JHJ	**Hachijo jima 2**	**3.57**	**197**	Pn	**Pn**	**11 33 37.6**	**-0.1**
	8.2nm,0.3s,baz=54,slow=19,SNR=3.6						
JHJ				Sn	**Sn**	**11 34 19.0**	**-0.1**
	18nm,0.3s,baz=312,slow=15,SNR=3.0						
ASAJ	**Asahikawa**	**7.65**	**9**	Pn	**Pn**	**11 34 33.2**	**-0.4**
	0.3nm,0.3s,baz=229,slow=19,SNR=3.9						
KSRS	**Korea Array**	**10.50**	**279**	Pn	Pn	11 35 17.0	+4.2
	0.3nm,0.3s,baz=90,slow=14,SNR=9.0						
H11N2	**WAKE ISLAND Hy**	**28.19**	**119**	T	T	12 07 59.2	
	baz=312,slow=75,SNR=127						
H11N1	**WAKE ISLAND Hy**	**28.20**	**119**	T	T	12 08 02.6	
	baz=312,slow=75,SNR=168						
H11N3	**WAKE ISLAND Hy**	**28.21**	**119**	T	T	12 08 19.0	
	baz=312,slow=75,SNR=149						
H11S1	**WAKE ISLAND Hy**	**28.88**	**122**	T	T	12 08 56.9	
	baz=314,slow=76,SNR=880						
H11S3	**WAKE ISLAND Hy**	**28.88**	**122**	T	T	12 08 51.4	
	baz=314,slow=76,SNR=565						
H11S2	**WAKE ISLAND Hy**	**28.90**	**122**	T	T	12 08 59.7	
	baz=314,slow=76,SNR=318						
TIXI	**Tiksi**	**35.73**	**353**	LR	LR	11 57 47.4	
	comp=Z,35nm,18.7s,baz=246,slow=42						
ZALV	**Zalesovo Beam**	**42.00**	**313**	P	**P**	**11 40 32.9**	**+0.1**
	0.7nm,0.4s,baz=91,slow=7.9,SNR=5.0						
ZALV				pP	**pP**	**11 40 40.9**	**+0.2**
	1.5nm,0.6s,baz=87,slow=7.5,SNR=4.8						
KURBB	**Kurchatov Arra**	**46.04**	**308**	P	**P**	**11 41 05.4**	**+0.2**
	0.9nm,0.6s,baz=85,slow=7.7,SNR=7.1						
ILAR	**Eielson Array**	**50.07**	**32**	P	**P**	**11 41 37.1**	**+0.9**
	0.4nm,0.9s,baz=259,slow=6.1,SNR=5.2						
ILAR				pP	**pP**	**11 41 45.4**	**+1.1**
	0.9nm,0.8s,baz=271,slow=6.0,SNR=7.9						
INK	**Inuvik**	**54.96**	**27**	P	**P**	**11 42 13.3**	**+1.0**
	0.3nm,0.5s,baz=268,slow=2.7,SNR=2.1						
INK				pP	**pP**	**11 42 21.6**	**+1.2**
	0.8nm,0.7s,baz=317,slow=6.6,SNR=3.4						
WRA	**Warramunga Arr**	**56.54**	**188**	P	**P**	**11 42 23.2**	**-0.9**
	1.3nm,0.5s,baz=5.2,slow=7.5,SNR=28						
ASAR	**Alice Springs**	**60.27**	**188**	P	**P**	**11 42 49.6**	**-0.6**
	0.8nm,0.7s,baz=14,slow=7.0,SNR=15						
YKA	**Yellowknife Ar**	**64.39**	**30**	pP	pP	11 43 25.6	+0.1
	0.3nm,0.6s,baz=306,slow=6.9,SNR=6.2						
NVAR	**Mina Array Bea**	**75.54**	**53**	pP	pP	11 44 36.9	+2.0
	0.8nm,0.8s,baz=294,slow=5.1,SNR=5.3						
PDAR	**Pinedale Array**	**78.23**	**45**	P	**P**	**11 44 42.6**	**+1.0**
	0.2nm,0.6s,baz=45,slow=4.1,SNR=2.6						
PDAR				pP	**PcP**	**11 44 50.8**	**-0.2**
	0.4nm,0.6s,baz=264,slow=2.1,SNR=4.8						
TXAR	**Lajitas Array**	**90.67**	**52**	pP	pP	11 45 53.4	+0.2
	0.3nm,0.7s,baz=305,slow=3.2,SNR=2.9						

JMA 16 11:32:58.5±0.2,36°.52N×141°.02E,h34km±3km,M3.7, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JHO	**Hitachi**	**0.37**	**284**	P	**Pb**	**11 33 07.0**	**-0.3**
JHO				S	**Sb**	**11 33 13.0**	**-0.4**

IDC ***16*** *11:37:37.5±0.8,35°.10N×141°.41E,h0km,mb3.6/7, mb1 3.8/11,mb1mx3.6/41,mbtmp3.7/11,ML3.6/4,MS3.0/5, Ms1 3.0/5,ms1mx2.7/54,Error ellipse: s-maj=27.5km s-min=16.1km az=93.0*

ISCJB ***16*** *11:37:39.2±0.7,35°.03N±0°.05×141°.51E±0°.08,h27km, mb3.6/7,MS3.2/3,Error ellipse: s-maj=9.5km s-min=7.1km az=173.7*

JMA ***16*** *11:37:41.0±0.4,35°.11N×141°.27E,h17km,M2.7*

ISC 16 11:37:41.5±0.8,35°.08N±0°.06×141°.28E±0°.09,h27km,n25, σ1°.16/16,mb3.5/7,MS3.0/3,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
BSO1	**Boso 1**	**0.50**	**210**	P	**Pb**	**11 37 51.0**	**-0.4**
BSO1				X		11 37 57.4	
BSO3	**Boso 3**	**0.69**	**246**	P	**Pb**	**11 37 54.6**	**-0.2**
BSO3				X		11 38 04.1	
CHOJ	**Chosi**	**0.71**	**331**	S	**Sb**	**11 38 02.9**	**-1.8**
JHJ	**Hachijo jima 2**	**2.32**	**213**	Pn	**Pn**	**11 38 18.3**	**+0.4**
	15nm,0.3s,baz=317,slow=20,SNR=9.3						
JHJ				Sn	**Sn**	**11 38 46.0**	**+0.4**
	14nm,0.3s,baz=72,slow=20,SNR=4.1						
MJAR	**Matsushiro Arr**	**2.89**	**301**	Pn	**Pn**	**11 38 27.5**	**+1.7**
	1.9nm,0.3s,baz=140,slow=5.3,SNR=8.7						
MJAR				LR		11 39 19.1	
	comp=Z,30nm,18.4s,baz=135,slow=35						
MAT	**Matsushiro**	**2.89**	**301**	P	**Pn**	**11 38 27.2**	**+1.4**
MAT				S	**Sb**	**11 39 05.1**	**-2.3**
JCJ	**Chichijima**	**8.00**	**174**	Pn	**Pn**	**11 39 34.2**	**-1.8**
	4.4nm,0.3s,baz=263,slow=19,SNR=5.2						
JCJ				Sn	Sn	11 40 59.4	-6.2
	2.4nm,0.3s,baz=299,slow=19,SNR=2.6						
ASAJ	**Asahikawa**	**9.08**	**6**	Pn	Pn	11 39 47.4	-3.3
	1.1nm,0.3s,baz=233,slow=11,SNR=8.5						
KSRS	**Korea Array**	**11.04**	**286**	LR	LR	11 44 56.4	
	comp=Z,64nm,18.1s,baz=285,slow=39						
PETK	**Petropavlovsk-**	**21.44**	**28**	LR	LR	11 51 43.4	
	comp=Z,21nm,19.1s,baz=235,slow=40						
H11N2	**WAKE ISLAND Hy**	**27.29**	**117**	T	T	12 13 09.3	
	baz=310,slow=76,SNR=7.0						
H11N1	**WAKE ISLAND Hy**	**27.30**	**117**	T	T	12 13 13.3	
	baz=310,slow=76,SNR=7.2						
H11N3	**WAKE ISLAND Hy**	**27.31**	**117**	T	T	12 13 14.4	
	baz=310,slow=76,SNR=7.4						
H11S3	**WAKE ISLAND Hy**	**27.84**	**120**	T	T	12 13 54.1	
	baz=312,slow=76,SNR=12						
H11S1	**WAKE ISLAND Hy**	**27.94**	**120**	T	T	12 13 54.0	
	baz=312,slow=76,SNR=14						
H11S2	**WAKE ISLAND Hy**	**27.95**	**120**	T	T	12 13 54.6	
	baz=312,slow=76,SNR=14						
DAV	**Davao City (W)**	**31.40**	**211**	LR	LR	11 57 01.9	
	comp=Z,35nm,19.4s,baz=347,slow=37						
ZALV	**Zalesovo Beam**	**43.17**	**314**	P	**P**	**11 45 39.7**	**+0.1**

CHN3					*e*S		**Sn**	11 45 11.9	+2.0
	baz=356								
SGST	**Jiashian**	**0.88**	**21**	*e*P			**Pb**	11 44 59.0	-0.7
	baz=25								
SGST					*e*S		**Sn**	11 45 11.9	+0.6
	baz=25								
SCLT	**Jiali**	**0.91**	**357**	*e*P			**Pb**	11 45 00.9	+0.6
	baz=1.0								
SCLT					*e*S		**Sn**	11 45 12.2	0.0
	baz=1.0								
TWG	**Pinlang**	**0.95**	**54**	*i* P			**Pb**	11 45 00.5	-0.4
	baz=57								
TWG					*e*S		**Sn**	11 45 12.7	-0.4
	baz=57								
CHN1	**Nanshi**	**0.96**	**16**	*e*P			**Pn**	11 44 59.9	-0.8
	baz=19								
TTN	**Taitung**	**0.97**	**59**	*e*P			**Pb**	11 45 01.3	+0.1
	baz=62								
STYT	**Tauyuan**	**1.02**	**28**	*e*P			**Pn**	11 45 00.4	-1.0
	baz=15								
TWK	**Hsinying**	**1.03**	**13**	*e*P			**Pn**	11 45 00.8	-0.8
	baz=17								
WTP	**Ta-pu**	**1.04**	**19**	*e*P			**Pn**	11 45 01.1	-0.7
	baz=23								
CHN4	**Tsaushan**	**1.13**	**16**	*e*P			**Pb**	11 45 03.7	-0.3
	baz=19								
CHN4					*e*S		**Sb**	11 45 18.6	+0.2
	baz=19								
WDGT	**Dungji**	**1.13**	**332**	*e*P			**Pn**	11 45 01.3	-1.7
	baz=334								
ELDTW	**Lidau**	**1.17**	**37**	*e*P			**Pb**	11 45 04.1	-0.6
	baz=55								
CHY	**Chiayi**	**1.25**	**8**	*e*P			**Pn**	11 45 04.7	+0.2
	baz=11								
CHN2	**Minshiung**	**1.29**	**9**	*e*P			**Pn**	11 45 05.5	+0.4
	baz=12								
CHKT	**Chengkung**	**1.33**	**51**	*e*P			**Pn**	11 45 05.8	+0.1
	baz=68								
ALS	**Alishan**	**1.35**	**22**	*e*P			**Pn**	11 45 06.0	-0.3
	baz=25								
YUS	**Yu-Shan**	**1.39**	**28**	*e*P			**Pn**	11 45 06.1	-0.8
	baz=30								
CHN5	**Tsauling**	**1.39**	**17**	*e*P			**Pn**	11 45 05.7	-0.9
	baz=6.0								
PNG	**Penghu**	**1.45**	**334**	*e*P			**Pn**	11 45 06.1	-1.3
	baz=350								
TWF1	**Yuli**	**1.46**	**41**	*e*P			**Pn**	11 45 07.5	+0.1
	baz=44								
WDT	**Danda**	**1.70**	**29**	*e*P			**Pn**	11 45 10.7	-0.4
	baz=31								
SMLT	**Sun Moon Lake**	**1.73**	**20**	*e*P			**Pn**	11 45 10.2	-1.0
	baz=22								
TYC	**Yuchr**	**1.73**	**19**	*e*P			**Pn**	11 45 10.7	-0.6
	baz=21								
WHF	**Hehuan Shan**	**2.10**	**26**	*e*P			**Pn**	11 45 17.2	+0.5
	baz=28								
TWQ1	**Liyutan**	**2.14**	**13**	*e*P			**Pn**	11 45 16.3	-0.5
	baz=15								
NNS	**Nan Shan**	**2.41**	**25**	*e*P			**Pb**	11 45 23.4	-2.3
	baz=26								
NSK	**Sanguang**	**2.62**	**23**	*e*P			**Pn**	11 45 23.6	+0.2
	baz=23								
ENTT	**Nioudou**	**2.66**	**27**	*e*P			**Pn**	11 45 25.1	+1.1
	baz=28								
TWE	**Neicheng**	**2.78**	**28**	*e*P			**Pn**	11 45 26.9	+1.3
	baz=28								
JYNG	**Yonagunijimaku**	**3.31**	**48**	*e*S			**Sn**	11 46 11.8	+0.6
YOJ	**Yonaguni jima**	**3.36**	**49**	*e*P			**Pn**	11 45 34.5	+0.9
	baz=50								
HATJ	**Hateruma jima**	**3.73**	**61**	P			**Pn**	11 45 39.1	+0.4
HATJ					*e*S		**Sn**	11 46 20.5	-1.3
IRIF	**Iriomote-Funau**	**3.81**	**56**	P			**Pn**	11 45 40.5	+0.7
IRIF					*e*S		**Sn**	11 46 23.2	-0.5
JKRS	**Kuro-shima**	**3.98**	**60**	P			**Pn**	11 45 42.6	+0.4
JKRS					*e*S		**Sn**	11 46 28.1	+0.1
JIJ	**Ishigaki jima**	**4.15**	**59**	P			**Pn**	11 45 44.4	-0.1
JIJ					S		**Sn**	11 46 29.7	-2.4
JISG	**Ishigakijimahi**	**4.39**	**57**	P			**Pn**	11 45 47.6	-0.2
JISG					*e*S		**Sn**	11 46 37.2	-0.9
JTJ	**Tarama**	**4.73**	**59**	*e*S			**Sn**	11 46 45.5	-0.9
CMAR	**Chiang Mai Arr**	**20.32**	**263**	P			Pn	11 49 22.2	+3.0
	0.7nm,0.8s,baz=83,slow=11,SNR=4.9								
KLR	**Kul'dur**	**28.42**	**16**	LR			LR	12 03 46.8	
	comp=Z,70nm,18.2s,baz=198,slow=41								
MKAR	**Makanchi Array**	**39.15**	**318**	P			**P**	**11 52 09.4**	**+1.2**
	0.8nm,0.6s,baz=108,slow=10,SNR=9.0								
WRA	**Warramunga Arr**	**44.15**	**161**	P			**P**	**11 52 48.8**	**-0.5**
	0.2nm,0.4s,baz=343,slow=8.7,SNR=5.0								
ASAR	**Alice Springs**	**47.54**	**163**	P			**P**	**11 53 16.2**	**+0.1**
	0.2nm,0.4s,baz=342,slow=6.9,SNR=14								

IDC 16 11:48:32.1±1.1, 17°.60N×146°.27E, h0km, mb3.8/5, mb1 4.0/5, mb1mx3.5/53, mbtmp3.8/5, Error ellipse: s-maj=77.8km s-min=21.0km az=99.0, Mariana Islands

Code	Station Name	Δ°	AZ°	Phase ID			Time	Res
				Op	ISC		h m s	ISC
KLR	**Kul'dur**	**33.67**	**343**	P		P	11 55 14.9	+0.2
	0.4nm,0.4s,baz=156,slow=10.0,SNR=4.1							
WRA	**Warramunga Arr**	**39.10**	**198**	P		P	11 56 01.8	+0.4
	2.5nm,0.6s,baz=17,slow=8.4,SNR=26							
ASAR	**Alice Springs**	**42.76**	**197**	P		P	11 56 31.7	+0.2
	0.7nm,0.5s,baz=16,slow=8.3,SNR=20							
STKA	**Stephens Creek**	**49.40**	**185**	P		P	11 57 22.5	-1.2
	0.7nm,0.5s,baz=348,slow=9.3,SNR=2.6							
YKA	**Yellowknife Ar**	**78.70**	**28**	P		P	12 00 36.0	0.0
	0.1nm,0.6s,baz=283,slow=4.9,SNR=3.4							

JMA 16 11:55:35.7, 36°.97N×140°.65E, h9km±1km, M2.5, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID			Time	Res
				Op	ISC		h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.18**	**42**	P		Pg	11 55 39.7	+0.2
JHO	**Hitachi**	**0.36**	**190**	P		Pg	11 55 42.8	-0.1
JFK	**Kawauchi**	**0.43**	**24**	P		Pg	11 55 44.2	0.0
JFK				S		Sg	11 55 50.2	+0.2
MAT	**Matsushiro**	**2.01**	**258**	P		Pn	11 56 11.0	+1.2
MAT				S		Sb	11 56 38.0	+0.5

*ISCJB **16** 11:59:41.2±0.5, 29°.69N±0°.02×16°.99W±0°.05, h10km, Error ellipse: s-maj=6.2km s-min=3.4km az=0.2*
*CSEM **16** 11:59:45.8±0.3, 29°.60N×17°.17W, h60km, mb4.0, Error ellipse: s-maj=9.4km s-min=4.8km az=101.0*
*MDD **16** 11:59:49.5±0.3, 29°.43N×17°.15W, h65km±6km, mb4.0/14, Error ellipse: s-maj=3.6km s-min=1.5km az=172.0, PRXIMO TT-model: canary*
*INMG **16** 11:59:49.3±2.1, 29°.63N×17°.19W, h10km, ML3.2, Error ellipse: s-maj=6.2km s-min=3.5km az=93.0*

ISC 16 11:59:42.1±0.8, 29°.64N±0°.03×17°.16W±0°.04, h10km, n40, σ26°22/60, 5C-4D, Canary Islands region

Code	Station Name	Δ°	AZ°	Phase ID			Time	Res
				Op	ISC		h m s	ISC
EHIG	**Higuera**	**1.22**	**208**	⇑P		**Pg**	**12 00 07.1**	**+1.7**
	388nm,0.2s,SNR=18							
EHIG				S		**Sb**	12 00 20.2	-0.8
	404nm,0.2s,SNR=11							
EHIG	**Higuera**	**1.22**	**208**	P		**Pg**	**12 00 07.1**	**+1.7**
	388nm,0.2s,SNR=18							
EHIG				S		**Sb**	12 00 20.2	-0.8
	404nm,0.2s,SNR=11							
EBAJ	**Bajamar**	**1.31**	**147**	⇓P		**Pb**	12 00 08.8	+2.0
	15nm,0.3s,SNR=18							
EBAJ				S		**Sb**	12 00 21.6	-2.0
	19nm,0.2s,SNR=16							
EBAJ	**Bajamar**	**1.31**	**147**	P		**Pb**	12 00 08.8	+2.0
	15nm,0.3s,SNR=18							
EBAJ				S		**Sb**	12 00 21.6	-2.0
	19nm,0.2s,SNR=16							
CRAJ	**Montana Rajada**	**1.45**	**160**	P		**Pn**	12 00 10.6	+1.9
	50nm,0.2s,SNR=5.5							
CRAJ				S		**Sb**	12 00 25.8	-2.3
	46nm,0.2s,SNR=5.6							
CRAJ	**Montana Rajada**	**1.45**	**160**	P		**Pn**	12 00 10.6	+1.9
	50nm,0.2s,SNR=5.5							
CRAJ				S		**Sb**	12 00 25.8	-2.3
	46nm,0.2s,SNR=5.6							
EGOM	**La Gomera**	**1.47**	**182**	⇑P		**Pn**	12 00 09.8	+1.1
	55nm,0.3s,SNR=18							
EGOM				S		**Sn**	12 00 25.6	-2.4
	214nm,0.4s,SNR=27							
EGOM	**La Gomera**	**1.47**	**182**	P		**Pn**	12 00 09.8	+1.1
	55nm,0.3s,SNR=18							
EGOM				S		**Sn**	12 00 25.6	-2.4
	214nm,0.4s,SNR=27							
CCAN	**Las Canadas**	**1.49**	**161**	⇓P		**Pn**	12 00 10.8	+1.6
	10nm,0.1s,SNR=18							
CCAN				S		**Sb**	12 00 25.8	-3.4
	11nm,0.3s,SNR=8.8							
CCAN	**Las Canadas**	**1.49**	**161**	P		**Pn**	12 00 10.8	+1.6
	10nm,0.1s,SNR=18							
CCAN				S		**Sb**	12 00 25.8	-3.4
	11nm,0.3s,SNR=8.8							
CTIG	**El Hierro**	**1.96**	**200**	⇑P		**Pn**	12 00 16.4	+1.1
	44nm,0.1s,SNR=18							
CTIG				S		**Sn**	12 00 37.0	-3.0
	88nm,0.1s,SNR=7.9							
CTIG	**El Hierro**	**1.96**	**200**	P		**Pn**	12 00 16.4	+1.1
	44nm,0.1s,SNR=18							
CTIG				S		**Sn**	12 00 37.0	-3.0
	88nm,0.1s,SNR=7.9							
CHIE	**El Hierro**	**2.03**	**200**	P		**Pn**	12 00 17.1	+0.8
	9.7nm,0.1s,SNR=7.9							
CHIE				S		**Sn**	12 00 38.6	-3.1
	19nm,0.2s,SNR=7.9							
CHIE	**El Hierro**	**2.03**	**200**	P		**Pn**	12 00 17.1	+0.8
	9.7nm,0.1s,SNR=7.9							
CHIE				S		**Sn**	12 00 38.6	-3.1
	19nm,0.2s,SNR=7.9							
EOSO	**Osorio**	**2.10**	**137**	P		**Pn**	12 00 18.7	+1.3
	4.2nm,0.4s,SNR=6.6							
EOSO				S		**Sn**	12 00 41.1	-2.6
	14nm,0.2s							
EOSO	**Osorio**	**2.10**	**137**	P		**Pn**	12 00 18.7	+1.3
	4.2nm,0.4s,SNR=6.6							
EOSO				S		**Sn**	12 00 41.1	-2.6
	14nm,0.2s							
CFTV	**Fuerteventura**	**2.96**	**114**	P		**Pn**	12 00 31.0	+1.8
	1.2nm,0.1s,SNR=7.9							
CFTV				S		**Sn**	12 01 02.2	-2.6
	5.9nm,0.1s,SNR=7.9							
CFTV	**Fuerteventura**	**2.96**	**114**	P		**Pn**	12 00 31.0	+1.8
	1.2nm,0.1s,SNR=7.9							
CFTV				S		**Sn**	12 01 02.2	-2.6
	5.9nm,0.1s,SNR=7.9							
CFUE	**Fuerteventura**	**2.99**	**108**	P		**Pn**	12 00 32.0	+2.5
	5.8nm,0.1s,SNR=7.9							
CFUE				S		**Sn**	12 01 01.9	-3.6
	86nm,0.2s,SNR=7.9							
CFUE	**Fuerteventura**	**2.99**	**108**	P		**Pn**	12 00 32.0	+2.5
	5.8nm,0.1s,SNR=7.9							
PMAR	**Madeira**	**3.08**	**4**	⇓P		**Pn**	**12 00 32.5**	**+1.5**
PMAR				*e*S		Sn	12 01 03.9	-4.2
PMAR				A		A	12 01 11.4	
	97nm,0.2s							
PMAR	**Madeira**	**3.08**	**4**	⇓*e*P		**Pn**	**12 00 32.5**	**+1.5**
PMAR				*e*S		Sn	12 01 03.9	-4.2
	97nm,0.2s							
PMOZ	**Porto Moniz, M**	**3.18**	**359**	⇑*e*P		**Pn**	**12 00 33.7**	**+1.5**
PMOZ				*e*S		**Sn**	**12 01 06.2**	**-4.0**
PMOZ				A		A	12 01 14.4	
	151nm,0.5s							
PMOZ	**Porto Moniz, M**	**3.18**	**359**	⇑P		**Pn**	**12 00 33.7**	**+1.5**
	28nm,0.2s,SNR=18							
PMOZ				S		Sn	12 01 06.2	-4.1
	395nm,0.4s,SNR=7.9							
PMOZ	**Porto Moniz, M**	**3.18**	**359**	P		**Pn**	**12 00 33.7**	**+1.5**
	28nm,0.2s,SNR=18							
PMOZ				*e*S		**Sn**	**12 01 06.2**	**-4.0**
	151nm,0.5s							
EFAM	**Famara**	**3.21**	**98**	P		Pn	12 00 38.2	+5.6
	2.0nm,0.5s,SNR=7.9							
EFAM				S		Sn	12 01 04.5	-6.4
	32nm,0.3s,SNR=7.9							
PMPS	**Porto Santo**	**3.48**	**12**	*e*P		**Pn**	**12 00 37.9**	**+1.6**
PMPS				*e*S		**Sn**	**12 01 13.8**	**-3.8**
PMPS				A		A	12 01 20.2	
	26nm,0.2s							
PMPS	**Porto Santo**	**3.48**	**12**	*e*P		**Pn**	**12 00 37.9**	**+1.6**
PMPS				*e*S		**Sn**	**12 01 13.8**	**-3.8**
	26nm,0.2s							
PVAQ	**Vaqueiros**	**11.04**	**43**	*e*P		**Pn**	**12 02 21.1**	**+1.0**
PVAQ				*e*S		Sn	12 04 15.7	-8.0
PVAQ				A		A	12 04 19.8	
	3.2nm,0.8s							
PVAQ	**Vaqueiros**	**11.04**	**43**	*e*P		**Pn**	**12 02 21.1**	**+1.0**
PNCL	**Nicolau / Gran**	**11.08**	**38**	*e*P		**Pn**	**12 02 22.5**	**+1.9**
PNCL				*e*S		Sn	12 04 15.6	-9.0
PNCL	**Nicolau / Gran**	**11.08**	**38**	*e*P		**Pn**	**12 02 22.5**	**+1.9**
EGRO	**El Granado**	**11.27**	**43**	S		Sn	12 04 20.4	-8.9
	2.9nm,0.5s,SNR=7.9							
EMIN	**Mina Concepcio**	**11.91**	**44**	P		**Pn**	**12 02 31.3**	**-0.7**
	4.2nm,0.6s,SNR=7.9							
EMIN				S		Sn	12 04 36.9	-8.0
	2.4nm,0.5s,SNR=7.9							
EMIN	**Mina Concepcio**	**11.91**	**44**	P		**Pn**	**12 02 31.3**	**-0.7**
	4.2nm,0.6s,SNR=7.9							
PMTG	**Montargil**	**11.95**	**36**	*e*P		**Pn**	**12 02 34.6**	**+2.1**
PMTG				*e*S		Sn	12 04 38.2	-7.7
PMTG	**Montargil**	**11.95**	**36**	*e*P		**Pn**	**12 02 34.6**	**+2.1**
ECAB	**El Cabril**	**12.88**	**46**	P		**Pn**	**12 02 45.4**	**+0.2**
	3.8nm,0.5s,SNR=4.0							
ECAB				S		Sn	12 04 59.2	-9.4
	1.8nm,0.5s,SNR=7.9							
ECAB	**El Cabril**	**12.88**	**46**	P		**Pn**	**12 02 45.4**	**+0.2**
	3.8nm,0.5s,SNR=4.0							
EADA	**Adamuz**	**13.47**	**48**	S		Sn	12 05 12.8	-10
	7.1nm,0.6s,SNR=7.9							

IDC 16 12:00:43.1±7.5, 17°.79S×176°.25W, h0km, mb3.7/3, mb1 4.0/3, mb1mx3.6/35, mbtmp3.7/3, MS4.4/1, Ms1 4.4/1, ms1mx2.8/33, Error ellipse: s-maj=327.6km s-min=36.8km az=142.0, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID			Time	Res
				Op	ISC		h m s	ISC
RAO	**Raoul Island**	**11.51**	**187**	LR		LR	12 06 36.6	
	comp=Z,2μm,21.0s,baz=227,slow=31							
WRA	**Warramunga Arr**	**46.68**	**259**	P		P	12 09 13.2	-0.8
	0.2nm,0.4s,baz=95,slow=8.3,SNR=7.2							
ASAR	**Alice Springs**	**46.80**	**254**	P		P	12 09 15.3	+0.4
	2.2nm,0.5s,baz=89,slow=8.2,SNR=60							
ILAR	**Eielson Array**	**85.33**	**12**	P		P	12 13 21.6	0.0
	0.2nm,0.5s,baz=220,slow=5.8,SNR=6.5							

MAN 16 12:02:15, 12°.56N×121°.15E, h15km, mb4.4, ML3.2, MS3.1, Mindoro

Code	Station Name	Δ°	AZ°	Phase ID			Time	Res
				Op	ISC		h m s	ISC
SJMP	**San Jose**	**0.11**	**198**	*e*P		Pb	12 02 20.0	+1.2
SJMP				*e*S		Sb	12 02 25.4	+4.1
OTRP	**Odiongan**	**0.87**	**103**	*e*P		Pn	12 02 32.4	-0.4
OTRP				*e*S		Sn	12 02 46.4	+1.2
BUSP	**Coron**	**1.08**	**239**	*e*P		Pb	12 02 35.5	0.0
BUSP				*e*S		Sn	12 02 52.1	+1.7
CUYO	**Cuyo Island**	**1.71**	**184**	*e*P		Pb	12 02 45.2	-0.9
ENPP	**El Nido**	**2.16**	**232**	*e*P		Pn	12 02 49.6	-0.9

JMA 16 12:02:31.8±0.3, 37°.81N×143°.95E, h60km, M3.7, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID			Time	Res
				Op	ISC		h m s	ISC
JMK	**Ichinoseki**	**2.43**	**299**	P		Pn	12 03 09.0	-0.1
JMM	**Marumori**	**2.50**	**272**	P		Pn	12 03 11.0	+1.0
JOU	**Okura**	**2.65**	**283**	S		Sn	12 03 45.0	+1.9
JFT	**Otama**	**2.88**	**265**	S		Sn	12 03 49.8	+1.0
JYK	**Kaneyama**	**3.03**	**292**	P		Pn	12 03 18.9	+1.6
JYK				*e*S		Sn	12 03 54.4	+2.0
JRG	**Rokugo**	**3.04**	**302**	P		Pn	12 03 18.7	+1.2
JRG				*e*S		Sn	12 03 54.4	+1.7
JNBK	**Urakawa-nobuka**	**4.56**	**349**	P		Pn	12 03 40.2	+2.0
JNBK				*e*S		Sn	12 04 31.2	+1.4
JCH	**Churui**	**4.82**	**355**	P		Pn	12 03 43.3	+1.5

*ISK **16** 12:05:03.5, 40°.55N×37°.23E, h5km, MD2.6*
*ISCJB **16** 12:05:05.4±0.6, 40°.54N±0°.03×37°.31E±0°.03, h4km±5km, Error ellipse: s-maj=5.5km s-min=4.3km az=171.9*
*CSEM **16** 12:05:05.5±0.2, 40°.52N×37°.29E, h8km, MD2.6, Error ellipse: s-maj=6.0km s-min=4.2km az=162.0*
*DDA **16** 12:05:05.7, 40°.52N×37°.34E, h7km, Md2.7*

ISC 16 12:05:04.7±1.2, 40°.55N±0°.03×37°.28E±0°.02, h4km±10km, n38, σ0°71/51, Turkey

Code	Station Name	Δ°	AZ°	Phase ID			Time	Res
				Op	ISC		h m s	ISC
RSDY	**Resadiye-TOKAT**	**0.16**	**168**	*e*PG		**Pg**	**12 05 08.0**	**+0.2**
RSDY				*e*SG		**Sg**	**12 05 10.7**	**+0.9**
RSDY	**Resadiye-TOKAT**	**0.16**	**168**	*e*Pg		**Pg**	**12 05 08.0**	**+0.2**
RSDY				*e*Sg		**Sg**	**12 05 10.7**	**+0.9**
ERBA	**Erbaa**	**0.42**	**288**	*i* P		**Pb**	**12 05 14.7**	**-0.1**
ERBA				*i* S		**Sb**	**12 05 22.3**	**+0.7**
ERBA	**Erbaa**	**0.42**	**288**	P		**Pb**	**12 05 14.7**	**-0.1**
TOKT	**Tokat**	**0.61**	**248**	*e*PG		**Pg**	**12 05 15.6**	**-0.8**
TOKT	**Tokat**	**0.61**	**248**	*e*Pg		**Pg**	**12 05 15.6**	**-0.8**
ORDU	**Ordu-Boztepe**	**0.62**	**44**	*i* P		**Pb**	**12 05 17.8**	**-0.3**
ORDU	**Ordu-Boztepe**	**0.62**	**44**	P		**Pb**	**12 05 17.8**	**-0.3**
TOKA	**Tokat**	**0.66**	**250**	*i* P		**Pn**	**12 05 19.9**	**-0.9**
TOKA				*i* S		**Sn**	**12 05 31.2**	**-0.4**
TOKA	**Tokat**	**0.66**	**250**	P		**Pn**	**12 05 19.9**	**-0.9**
SVSK	**Karacayir**	**0.67**	**199**	*e*PG		**Pg**	**12 05 17.4**	**-0.1**
SVSK				*e*SG		**Sb**	**12 05 27.6**	**-0.9**
SVSK	**Karacayir**	**0.67**	**199**	*e*Pg		**Pg**	**12 05 17.4**	**-0.1**
SVSK				*e*Sg		**Sb**	**12 05 27.6**	**-0.9**
CUZAR	**Zara_SIVAS**	**0.76**	**150**	*i* P		**Pg**	**12 05 18.7**	**-0.5**
CUZAR	**Zara_SIVAS**	**0.76**	**150**	P		**Pg**	**12 05 18.7**	**-0.5**
SUSE	**Susehri**	**0.78**	**116**	*i* P		**Pb**	**12 05 20.3**	**-0.6**
SUSE				*i* S		**Sb**	**12 05 32.3**	**+0.3**
SUSE	**Susehri**	**0.78**	**116**	P		**Pb**	**12 05 20.3**	**-0.6**
SUSE				S		**Sb**	**12 05 32.3**	**+0.3**
GRSN	**GIRESUNGRSN**	**0.84**	**63**	*i* P		**Pb**	**12 05 22.0**	**+0.2**
GRSN	**GIRESUNGRSN**	**0.84**	**63**	P		**Pb**	**12 05 22.0**	**+0.2**
ESPY	**Espiye-Giresun**	**1.16**	**71**	*e*PN		**Pn**	**12 05 27.4**	**-0.3**
ESPY	**Espiye-Giresun**	**1.16**	**71**	*e*Pn		**Pn**	**12 05 27.4**	**-0.3**
CUKAN	**kangal_SIVAS**	**1.24**	**173**	*i* P		**Pg**	**12 05 27.5**	**-1.0**
CUKAN				*i* S		**Sn**	**12 05 46.8**	**+0.6**
CUKAN	**kangal_SIVAS**	**1.24**	**173**	P		**Pg**	**12 05 27.5**	**-1.0**
CUALT	**Altinyayla-SIV**	**1.34**	**198**	*i* P		**Pb**	**12 05 30.9**	**+0.5**
CUALT	**Altinyayla-SIV**	**1.34**	**198**	P		**Pb**	**12 05 30.9**	**+0.5**
CUSAR	**Sarkisla-SIVAS**	**1.38**	**216**	*i* P		**Pb**	**12 05 31.0**	**-0.2**
CUSAR				*i* S		**Sn**	**12 05 51.7**	**+2.0**
CUSAR	**Sarkisla-SIVAS**	**1.38**	**216**	P		**Pb**	**12 05 31.0**	**-0.2**
CUSAR				S		**Sn**	**12 05 51.7**	**+2.0**
KELT	**Kelkit**	**1.56**	**104**	*i* P		**Pb**	**12 05 33.9**	**-0.3**
KELT				*i* S		**Sg**	**12 05 55.3**	**+0.5**
KELT	**Kelkit**	**1.56**	**104**	P		**Pb**	**12 05 33.9**	**-0.3**
KELT				S		**Sg**	**12 05 55.3**	**+0.5**
GUMT	**Gumushane**	**1.68**	**92**	*e*PN		**Pb**	**12 05 35.7**	**-0.5**
GUMT	**Gumushane**	**1.68**	**92**	*e*Pn		**Pb**	**12 05 35.7**	**-0.5**
YOZ	**Yozgat**	**1.76**	**240**	*e*PN		**Pn**	**12 05 36.1**	**0.0**
YOZ	**Yozgat**	**1.76**	**240**	*e*Pn		**Pn**	**12 05 36.1**	**0.0**
DARE	**Darende-Malaty**	**1.98**	**175**	*e*PN		**Pb**	**12 05 40.2**	**-1.2**
DARE	**Darende-Malaty**	**1.98**	**175**	*e*Pn		**Pb**	**12 05 40.2**	**-1.2**
BNN	**Bunyan**	**2.03**	**214**	*e*PN		**Pn**	**12 05 39.8**	**0.0**
BNN	**Bunyan**	**2.03**	**214**	*e*Pn		**Pn**	**12 05 39.8**	**0.0**
CORM	**Corum**	**2.06**	**260**	*e*PN		**Pn**	**12 05 39.9**	**-0.3**
CORM	**Corum**	**2.06**	**260**	*e*Pn		**Pn**	**12 05 39.9**	**-0.3**

*ISCJB **16** 12:10:32.9±0.7, 36°.29N±0°.05×71°.5E±0°.1, h114km, mb3.3/3, Error ellipse: s-maj=11.9km s-min=6.7km az=165.0*
*IDC **16** 12:10:33.3±7.6, 36°.12N×71°.45E, h105km±52km, mb3.1/4, mb1 3.3/6, mb1mx3.0/50, mbtmp3.6/6, Error ellipse: s-maj=84.2km s-min=40.1km az=151.0*
*NNC **16** 12:10:43.9±5.0, 36°.96N×71°.09E, h166km±169km, mb2.5, mpv3.4, Error ellipse: s-maj=113.1km s-min=33.0km az=66.0*

ISC 16 12:10:34.1±1.0, 36°.31N±0°.08×71°.5E±0°.1, h114km, n14, σ1°77/16, mb3.4/3, 6C-2D, Afghanistan-Tajikistan border region

Code	Station Name	Δ°	AZ°	Phase ID			Time	Res
				Op	ISC		h m s	ISC
SFK	**Sufi-Kurgan**	**4.04**	**23**	⇑P		Pn	12 11 39.8	+5.6
	2.5nm,0.3s							
SFK				⇑S		**Sn**	**12 12 22.7**	**+2.0**
	5.8nm,0.3s							
MNAS	**Manas**	**6.22**	**7**	⇓P		Pn	12 12 07.2	+3.6
	3.2nm,0.7s							
MNAS				⇑S		**Sn**	**12 13 11.9**	**-1.5**
	3.6nm,0.4s							
AAK	**Ala-Archa**	**6.74**	**19**	P		**Pn**	**12 12 11.9**	**+1.4**
	1.4nm,0.3s,baz=185,slow=8.8,SNR=13							
AAK				S		**Sn**	**12 13 24.6**	**-1.3**
	0.4nm,0.3s,baz=314,slow=19,SNR=1.9							
KK31	**Karatay Array**	**6.83**	**354**	⇑P		**Pn**	**12 12 11.8**	**+0.2**
	1.2nm,0.3s,baz=170,slow=12,SNR=3.0							
KK31				⇑S		**Sn**	**12 13 23.9**	**-4.0**
	1.4nm,0.4s,baz=178,slow=22,SNR=4.4							

ISC 16 12:33:00.9±0.8, 35°53N±0′09×142°6E±0′1, h59km, n24, σ0§85/15, mb3.7/10, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHJ	**Hachijo jima 2**	**3.34**	**225**	Pn	**Pn**	**12 33 50.2**	**-0.4**
	11nm,0.3s,baz=126,slow=20,SNR=8.1						
JHJ				Sn	**Sn**	**12 34 29.2**	**+0.1**
	99nm,0.3s,baz=61,slow=20,SNR=14						
MJAR	**Matsushiro Arr**	**3.69**	**287**	Pn	**Pn**	**12 33 54.8**	**-0.7**
	4.9nm,0.3s,baz=305,slow=21,SNR=35						
MJAR				LR	LR	12 35 34.5	
	comp=Z,149nm,21.9s,baz=100,slow=41						
MAT	**Matsushiro**	**3.69**	**287**	P	**Pn**	**12 33 54.9**	**-0.6**
MAT				S	Sn	12 34 23.5	-14
JCJ	**Chichijima**	**8.41**	**182**	Pn	Pn	12 34 53.8	-6.4
	baz=324,slow=19						
JCJ				Sn	Sn	12 36 23.2	-10
	5.4nm,0.3s,baz=287,slow=19,SNR=3.2						
ASAJ	**Asahikawa**	**8.58**	**0**	LR	LR	12 38 09.6	
	comp=Z,53nm,19.0s,baz=140,slow=37						
KSRS	**Korea Array**	**11.96**	**284**	LR	LR	12 41 04.5	
	comp=Z,68nm,18.6s,baz=175,slow=40						
KLR	**Kul'dur**	**15.84**	**333**	Pn	**P**	**12 36 43.4**	**+0.7**
	0.1nm,0.3s,baz=162,slow=9.7,SNR=4.0						
H11N2	**WAKE ISLAND Hy**	**26.57**	**120**	T	T	13 06 04.4	
	baz=313						
H11N1	**WAKE ISLAND Hy**	**26.58**	**120**	T	T	13 06 04.7	
	baz=313						
H11N3	**WAKE ISLAND Hy**	**26.59**	**120**	T	T	13 06 06.0	
	baz=313						
H11S1	**WAKE ISLAND Hy**	**27.25**	**122**	T	T	13 06 47.0	
	baz=312,slow=74						
H11S3	**WAKE ISLAND Hy**	**27.25**	**122**	T	T	13 07 01.6	
	baz=312,slow=74						
H11S2	**WAKE ISLAND Hy**	**27.27**	**122**	T	T	13 07 00.2	
	baz=312						
SEY	**Seymchan**	**28.10**	**10**	P	**P**	**12 38 47.0**	**+0.2**
	1.1nm,0.7s,baz=216,slow=4.3,SNR=4.9						
ILAR	**Eielson Array**	**50.27**	**32**	P	**P**	**12 41 50.5**	**-0.3**
	0.8nm,0.9s,baz=263,slow=5.9,SNR=7.4						
INK	**Inuvik**	**55.30**	**27**	P	**P**	**12 42 26.4**	**-1.5**
	0.4nm,0.6s,baz=308,slow=4.3,SNR=3.4						
WRA	**Warramunga Arr**	**55.72**	**189**	P	**P**	**12 42 31.7**	**+0.3**
	1.1nm,1.0s,baz=11,slow=7.7,SNR=4.1						
ASAR	**Alice Springs**	**59.44**	**189**	P	**P**	**12 42 57.4**	**-0.2**
	0.2nm,0.7s,baz=13,slow=16,SNR=4.2						
ASAR				LR	LR	13 11 33.3	
	comp=Z,42nm,19.2s,baz=308,slow=39						
YKA	**Yellowknife Ar**	**64.63**	**30**	P	**P**	**12 43 31.1**	**-0.8**
	0.4nm,0.8s,baz=299,slow=6.4,SNR=7.2						
FINES	**FINESS Array B**	**70.58**	**333**	P	**P**	**12 44 11.3**	**+1.9**
	1.0nm,0.9s,baz=31,slow=8.4,SNR=2.9						
NOA	**NORSAR Array B**	**75.94**	**338**	P	**P**	**12 44 40.6**	**-0.4**
	0.9nm,0.8s,baz=56,slow=9.5,SNR=3.2						
PDAR	**Pinedale Array**	**78.04**	**46**	P	**P**	**12 44 53.9**	**+0.4**
	0.2nm,0.6s,baz=252,slow=5.3,SNR=3.5						
VRAC	**Vranov**	**82.90**	**328**	LR	LR	13 26 50.0	
	comp=Z,49nm,18.9s,baz=352,slow=39						
TXAR	**Lajitas Array**	**90.28**	**53**	P	**P**	**12 45 56.1**	**+0.5**
	0.3nm,0.8s,baz=270,slow=0.1,SNR=3.2						

NIED ***16*** *12:33:00, 37.°10N×141.°90E, h5km, Mw3.9 Best double couple: M₀6.82000×10¹⁴ NP1:φ₀=201.00000°, δ17.00000°, λ=-7.00000°. NP2:φ₀=298.00000°, δ88.00000°, λ=-107.00000°.*

IDC ***16*** *12:33:23.6±1.7, 37.°05N×142.°23E, h0km, mb3.8/3, mb1 4.0/6, mb1mx3.6/36, mbtmp3.9/6, ML3.9/3, Error ellipse: s-maj=46.2km s-min=23.9km az=74.0*

ISCJB ***16*** *12:33:24.6±0.8, 37.°04N±0.°05×142.°10E±0.°07, h19km, mb3.9/3, Error ellipse: s-maj=8.4km s-min=6.0km az=152.5*

JMA ***16*** *12:33:28.1±0.3, 37.°13N×141.°90E, h39km, M3.7*

ISC 16 12:33:26.5±1.0, 37.°07N±0.°05×141.°83E±0.°06, h19km, n21, σ1§09/20, mb3.9/3, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**0.82**	**292**	P	**Pn**	**12 33 44.0**	**+0.9**
JFK				*e*S	**Sn**	**12 33 55.5**	**+0.7**
ONAJ	**Iwakimizuishiy**	**0.83**	**273**	P	**Pn**	**12 33 44.6**	**+1.4**
JHO	**Hitachi**	**1.11**	**246**	P	**Pg**	**12 33 49.1**	**+1.0**
JMM	**Marumori**	**1.15**	**314**	P	**Pg**	**12 33 48.6**	**-0.2**
JMM				*e*S	**Sg**	**12 34 03.3**	**-0.6**
JFT	**Otama**	**1.27**	**291**	P	**Pg**	**12 33 50.6**	**+0.6**
JFT				*e*S	**Sg**	**12 34 08.0**	**+0.1**
JIO	**Ouri**	**1.44**	**345**	P	**Pb**	**12 33 52.0**	**-0.7**
JOU	**Okura**	**1.59**	**325**	P	**Pb**	**12 33 55.0**	**-0.4**
JOU				S	**Sg**	**12 34 15.8**	**-2.2**
MJAR	**Matsushiro Arr**	**2.96**	**261**	Pn	**Pb**	**12 34 17.0**	**-1.6**
	6.1nm,0.3s,baz=78,slow=14,SNR=9.9						
MAT	**Matsushiro**	**2.96**	**261**	P	**Pb**	**12 34 16.9**	**-1.7**
MAT				S	**Sb**	**12 34 53.4**	**-1.0**
JHJ	**Hachijo jima 2**	**4.28**	**204**	Sn	**Sn**	**12 35 19.8**	**-0.4**
	19nm,0.3s,baz=73,slow=19,SNR=2.4						
ASAJ	**Asahikawa**	**7.06**	**4**	Pn	**Pn**	**12 35 09.7**	**+0.8**
	1.6nm,0.3s,baz=214,slow=18,SNR=7.3						
JCJ	**Chichijima**	**8.41**	**178**	Pn	**Pn**	**12 35 47.5**	**-1.0**
	5.9nm,0.3s,baz=270,slow=20,SNR=3.2						
H11N2	**WAKE ISLAND Hy**	**27.88**	**121**	T	T	13 08 42.9	
	baz=314,slow=75,SNR=68						
H11N1	**WAKE ISLAND Hy**	**27.89**	**121**	T	T	13 08 47.0	
	baz=314,slow=75,SNR=51						
H11N3	**WAKE ISLAND Hy**	**27.90**	**121**	T	T	13 08 22.1	
	baz=314,slow=75,SNR=39						
H11S1	**WAKE ISLAND Hy**	**28.60**	**124**	T	T	13 09 37.7	
	baz=316,slow=76,SNR=43						
H11S3	**WAKE ISLAND Hy**	**28.60**	**124**	T	T	13 09 32.6	
	baz=316,slow=76,SNR=35						
H11S2	**WAKE ISLAND Hy**	**28.61**	**124**	T	T	13 09 33.8	
	baz=316,slow=76,SNR=30						
MKAR	**Makanchi Array**	**44.38**	**302**	P	**P**	**12 41 36.8**	**+1.0**
	0.6nm,0.7s,baz=78,slow=8.1,SNR=4.8						
WRA	**Warramunga Arr**	**57.14**	**188**	P	**P**	**12 43 12.1**	**+0.1**
	1.2nm,0.6s,baz=7.8,slow=7.4,SNR=9.2						
ASAR	**Alice Springs**	**60.87**	**188**	P	**P**	**12 43 38.4**	**+0.6**
	0.7nm,0.7s,baz=12,slow=7.4,SNR=9.7						

IDC ***16*** *12:33:35.0±10.0, 38.°92N×139.°55E, h41km±70km, mb3.5/9, mb1 3.8/10, mb1mx3.5/34, mbtmp3.7/10, ML3.5/1, Error ellipse: s-maj=96.9km s-min=21.6km az=174.0*

ISC 16 12:33:30.7±1.6, 38.7N±0.3×139.6E±0.2, h17km, n11, σ0§97/11, mb3.7/9, Near west coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ASAJ	**Asahikawa**	**5.87**	**22**	P	**Pn**	**12 34 57.0**	**+0.1**
	1.3nm,0.3s,baz=220,slow=14,SNR=21						
SONM	**Songino Array**	**25.67**	**302**	P	**P**	**12 39 01.1**	**+1.4**
	0.6nm,0.6s,baz=98,slow=8.4,SNR=4.1						
ZALV	**Zalesovo Beam**	**39.73**	**311**	P	**P**	**12 41 02.0**	**0.0**
	1.1nm,0.7s,baz=82,slow=6.3,SNR=5.4						
MKAR	**Makanchi Array**	**42.02**	**300**	P	**P**	**12 41 19.6**	**-1.4**
	0.5nm,0.6s,baz=90,slow=9.7,SNR=6.0						
ILAR	**Eielson Array**	**48.88**	**33**	P	**P**	**12 42 13.8**	**-1.3**
	1.6nm,0.8s,baz=267,slow=6.4,SNR=16						
INK	**Inuvik**	**53.58**	**27**	P	**P**	**12 42 50.5**	**+0.3**
	1.0nm,0.6s,baz=301,slow=6.7,SNR=7.8						
YKA	**Yellowknife Ar**	**63.10**	**30**	P	**P**	**12 43 56.2**	**-0.7**
	0.3nm,0.7s,baz=303,slow=6.5,SNR=5.1						
NVAR	**Mina Array Bea**	**75.14**	**53**	P	**P**	**12 45 12.8**	**+0.5**
	0.6nm,0.7s,baz=300,slow=5.6,SNR=4.0						
PDAR	**Pinedale Array**	**77.52**	**45**	P	**P**	**12 45 26.2**	**+0.5**
	0.6nm,0.7s,baz=255,slow=2.4,SNR=7.0						
TXAR	**Lajitas Array**	**90.28**	**51**	P	**P**	**12 46 31.5**	**+0.8**
	0.2nm,0.6s,baz=304,slow=2.9,SNR=3.7						
LPAZ	**La Paz**	**147.02**	**55**	PKPbc	**PKPbc**	**12 53 13.2**	**-0.5**
	0.8nm,0.6s,baz=6.2,slow=6.7,SNR=5.0						

NIED ***16*** *12:48:00, 24.°40N×121.°70E, h8km, Mw3.7 Best double couple: M₀4.02000×10¹⁴ NP1:φ₀=254.00000°, δ57.00000°, λ=-35.00000°. NP2:φ₀=6.00000°, δ61.00000°, λ=-141.00000°.*

TAP ***16*** *12:48:58.2, 24.°44N×121.°74E, h7km, ML3.9, B*

JMA ***16*** *12:48:58.2±0.1, 24.°41N×121.°67E, h16km±4km, M3.5*

ISC 16 12:48:58.6±0.8, 24.°43N±0.°02×121.°78E±0.°02, h9km±5km, n68, σ0§66/110, 12C-9D, Taiwan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ENA	**Nanau**	**0.03**	**264**	⇓*i*P	**Pg**	**12 48 59.8**	**-0.5**
	baz=126						
EHP	**Heping Village**	**0.12**	**195**	*e*P	**Pg**	**12 49 02.1**	**+0.6**
	baz=174						
EHP				*e*S	**Sg**	**12 49 04.5**	**+1.0**
	baz=174						
TWC	**Suao**	**0.19**	**21**	⇑*i*P	**Pg**	**12 49 02.8**	**+0.2**
	baz=26						
TWC				*e*S	**Sg**	**12 49 05.3**	**0.0**
	baz=26						
ENTT	**Nioudou**	**0.28**	**317**	⇓*i*P	**Pg**	**12 49 04.0**	**-0.4**
	baz=332						
TWE	**Neicheng**	**0.30**	**341**	⇓*i*P	**Pg**	**12 49 04.7**	**-0.1**
	baz=360						
TWE				S	**Sg**	**12 49 08.4**	**-0.4**
	baz=360						
ILA	**Ilan**	**0.33**	**356**	⇑*i*P	**Pg**	**12 49 05.5**	**+0.3**
	baz=355						
ILA				*i* S	**Sg**	**12 49 10.3**	**+0.6**
	baz=355						
NNS	**Nan Shan**	**0.37**	**271**	⇓*i*P	**Pg**	**12 49 05.2**	**-0.8**
	baz=271						
NNS				S	**Sg**	**12 49 09.5**	**-1.3**
	baz=271						
TWD	**Chiawan**	**0.39**	**205**	⇑P	**Pg**	**12 49 05.9**	**-0.3**
	baz=199						
TWD				S	**Sg**	**12 49 11.3**	**-0.1**
	baz=199						
EGS		**0.44**	**19**	⇑*i*P	**Pg**	**12 49 07.6**	**+0.4**
	baz=34						
EGS				*e*S	**Sb**	**12 49 14.5**	**-0.6**
	baz=34						
NSK	**Sanguang**	**0.45**	**303**	⇓*i*P	**Pg**	**12 49 07.1**	**-0.4**
	baz=306						
NSK				S	**Sg**	**12 49 13.8**	**+0.3**
	baz=306						
HWA	**Hwalien**	**0.48**	**199**	*e*P	**Pg**	**12 49 08.0**	**+0.1**
	baz=194						
WHF	**Hehuan Shan**	**0.55**	**239**	⇑P	**Pg**	**12 49 08.7**	**-0.6**
	baz=236						
WHF				*e*S	**Sg**	**12 49 15.5**	**-1.1**
	baz=236						
TWT	**Tachien**	**0.57**	**252**	⇑*i*P	**Pg**	**12 49 09.7**	**-0.1**
	baz=251						
TWT				S	**Sg**	**12 49 16.7**	**-0.7**
	baz=251						
TWB1	**Santiao Chiao**	**0.61**	**19**	P	**Pg**	**12 49 10.3**	**-0.1**
	baz=13						
TWB1				S	**Sg**	**12 49 18.7**	**+0.4**
	baz=13						
ESF	**Shoufeng Towns**	**0.61**	**204**	*e*P	**Pg**	**12 49 10.2**	**-0.3**
	baz=200						
NWF	**Wu-fen Shan**	**0.64**	**0**	⇑P	**Pg**	**12 49 11.3**	**+0.3**
	baz=354						
NWF				S	**Sg**	**12 49 19.2**	**-0.1**
	baz=354						
TAP1	**Taipei**	**0.65**	**339**	*e*P	**Pg**	**12 49 11.6**	**+0.4**
	baz=342						
TAP1				*e*S	**Sg**	**12 49 19.5**	**-0.2**
	baz=342						
TAP	**Taipei**	**0.65**	**338**	*e*P	**Pg**	**12 49 10.8**	**-0.5**
	baz=342						
TAP				*e*S	**Sg**	**12 49 19.7**	**-0.1**
	baz=342						
NSTT	**Nanjuang**	**0.73**	**286**	⇓*i*P	**Pg**	**12 49 12.8**	**0.0**
	baz=287						
NSTT				*e*S	**Sg**	**12 49 22.5**	**+0.2**
	baz=287						
TWS1	**Kuangyinshan**	**0.74**	**334**	*e*P	**Pb**	**12 49 13.8**	**+0.1**
	baz=337						
TWS1				*e*S	**Sb**	**12 49 23.4**	**-0.6**
	baz=337						
NCU	**National Centr**	**0.76**	**315**	P	**Pb**	**12 49 14.3**	**+0.3**
	baz=317						
NCU				*e*S	**Sn**	**12 49 26.1**	**-1.0**
	baz=317						
HSN	**Hsinchu**	**0.82**	**297**	⇓*e*P	**Pb**	**12 49 15.4**	**+0.3**
	baz=292						
TWY	**Chenhua**	**0.86**	**349**	*e*P	**Pb**	**12 49 15.8**	**+0.1**
	baz=352						
WDT	**Danda**	**0.89**	**221**	⇑P	**Pg**	**12 49 15.2**	**-0.7**
	baz=219						
WDT				*e*S	**Sb**	**12 49 28.3**	**-0.3**
	baz=219						
TWQ1	**Liyutan**	**0.92**	**265**	P	**Pb**	**12 49 16.8**	**+0.1**
	baz=265						
TWQ1				*e*S	**Sb**	**12 49 29.1**	**0.0**
	baz=265						
NSY	**Sanyi**	**0.93**	**269**	*e*P	**Pb**	**12 49 17.1**	**+0.2**
	baz=269						
NSY				*e*S	**Sb**	**12 49 29.5**	**+0.2**
	baz=269						
SMLT	**Sun Moon Lake**	**0.97**	**236**	⇑P	**Pg**	**12 49 17.0**	**-0.3**
	baz=234						
TYC	**Yuchr**	**0.99**	**238**	*e*P	**Pg**	**12 49 17.2**	**-0.5**
	baz=237						
TYC				*e*S	**Sg**	**12 49 29.5**	**-1.0**
	baz=237						
TCU	**Taichung**	**1.04**	**254**	*e*P	**Pn**	**12 49 20.1**	**+0.7**
	baz=265						
TCU				*e*S	**Sn**	**12 49 34.2**	**+0.1**
	baz=265						
JYNG	**Yonagunijimaku**	**1.07**	**89**	P	**Pg**	**12 49 19.1**	**0.0**
JYNG				S	**Sb**	**12 49 33.4**	**+0.1**
YOJ	**Yonaguni jima**	**1.13**	**88**	P	**Pg**	**12 49 20.2**	**-0.1**
YOJ				S	**Sb**	**12 49 35.4**	**+0.4**
YOJ	**Yonaguni jima**	**1.13**	**88**	⇓P	**Pg**	**12 49 20.0**	**-0.3**
	baz=88						
YOJ				*e*S	**Sg**	**12 49 34.8**	**-0.1**
	baz=88						
WNT	**Mingjian**	**1.14**	**241**	*e*P	**Pn**	**12 49 21.9**	**+1.1**
	baz=236						
WNT				*e*S	**Sn**	**12 49 36.4**	**-0.1**
	baz=236						
TWF1	**Yuli**	**1.16**	**202**	*e*P	**Pg**	**12 49 19.1**	**-1.8**
	baz=200						
YUS	**Yu-Shan**	**1.20**	**219**	⇑P	**Pg**	**12 49 21.2**	**-0.6**
	baz=227						
PCYT	**Pengchaiyu**	**1.22**	**13**	*e*P	**Pb**	**12 49 21.7**	**-0.2**
	baz=15						
ALS	**Alishan**	**1.28**	**224**	⇑P	**Pn**	**12 49 22.8**	**-0.1**
	baz=222						
CHN5	**Tsauling**	**1.30**	**231**	⇑*i*P	**Pg**	**12 49 24.0**	**+0.3**
	baz=230						
CHN5				*e*S	**Sn**	**12 49 42.6**	**+1.9**
	baz=230						
WGK	**Gukeng**	**1.33**	**236**	*e*P	**Pg**	**12 49 24.5**	**+0.3**
	baz=236						
WGK				*e*S	**Sg**	**12 49 43.2**	**+1.6**
	baz=236						
CHKT	**Chengkung**	**1.38**	**196**	*e*P	**Pn**	**12 49 23.2**	**-0.8**
	baz=209						
ELDTW	**Lidau**	**1.42**	**209**	*e*P	**Pn**	**12 49 24.1**	**-0.6**
	baz=197						
WTCT	**Ta-ch'eng**	**1.48**	**248**	*e*P	**Pg**	**12 49 26.6**	**-0.3**
	baz=246						
CHN2	**Minshiung**	**1.49**	**233**	*e*P	**Pg**	**12 49 27.3**	**+0.1**
	baz=232						
CHN4	**Tsaushan**	**1.53**	**225**	P	**Pg**	**12 49 28.1**	**+0.2**
	baz=225						
CHN4				*e*S	**Sg**	**12 49 49.2**	**+1.5**
	baz=225						
CHY	**Chiayi**	**1.55**	**233**	*e*P	**Pg**	**12 49 28.0**	**-0.3**
	baz=232						
STYT	**Tauyuan**	**1.57**	**217**	*e*P	**Pb**	**12 49 27.6**	**-0.3**
	baz=200						
WTP	**Ta-pu**	**1.59**	**222**	*e*P	**Pg**	**12 49 28.9**	**-0.2**
	baz=221						
WTP				*e*S	**Sg**	**12 49 50.9**	**+1.1**
	baz=221						
WSF	**Szhu**	**1.62**	**241**	*e*P	**Pb**	**12 49 29.1**	**+0.3**
	baz=240						
TWK	**Hsinying**	**1.65**	**226**	⇓P	**Pg**	**12 49 30.1**	**-0.3**
	baz=225						
TWK				*e*S	**Sg**	**12 49 53.4**	**+1.6**
	baz=225						
CHN1	**Nanshi**	**1.69**	**223**	*e*P	**Pb**	**12 49 30.3**	**+0.5**
	baz=222						
CHN1				*e*S	**Sg**	**12 49 53.7**	**+0.8**
	baz=222						
TWG	**Pinlang**	**1.73**	**202**	*e*P	**Pn**	**12 49 29.2**	**+0.3**
	baz=200						
SGST	**Jiashian**	**1.73**	**219**	*e*P	**Pb**	**12 49 30.9**	**+0.3**
	baz=208						
SGST				*e*S	**Sg**	**12 49 54.6**	**+0.3**
	baz=208						
IRIF	**Iriomote-Funau**	**1.79**	**93**	P	**Pn**	**12 49 29.1**	**-0.5**
IRIF				S	**Sn**	**12 49 52.4**	**0.0**
CHN8	**Yiju**	**1.79**	**233**	*e*P	**Pb**	**12 49 31.6**	**-0.1**
	baz=233						
CHN8				*e*S	**Sg**	**12 49 56.5**	**+0.2**
	baz=233						
CHN3	**Shinhua**	**1.87**	**224**	*e*P	**Pg**	**12 49 33.7**	**-0.8**
	baz=233						
HATJ	**Hateruma jima**	**1.89**	**101**	S	**Sb**	**12 49 56.2**	**-0.8**
ECL	**Taimali**	**1.98**	**203**	*e*P	**Pn**	**12 49 33.0**	**+0.7**
	baz=187						
SSD	**Sandimen**	**1.98**	**212**	*e*P	**Pb**	**12 49 34.5**	**-0.3**
	baz=211						
SSD				*e*S	**Sb**	**12 50 00.7**	**+1.1**
	baz=211						
TWM1	**Shoushan**	**2.02**	**218**	*e*P	**Pb**	**12 49 35.5**	**-0.2**
	baz=216						
JKRS	**Kuro-shima**	**2.05**	**95**	P	**Pn**	**12 49 33.4**	**+0.2**
JKRS				S	**Sn**	**12 49 58.5**	**-0.4**
SGLT	**Jiouru**	**2.07**	**215**	*e*P	**Pb**	**12 49 36.8**	**+0.5**
	baz=213						
JIJ	**Ishigaki jima**	**2.16**	**91**	P	**Pn**	**12 49 34.7**	**-0.1**
JIJ				S	**Sn**	**12 50 00.8**	**-0.9**
PNG	**Penghu**	**2.21**	**247**	*e*P	**Pn**	**12 49 35.8**	**+0.4**
	baz=248						
PNG				*e*S	**Sb**	**12 50 05.0**	**-1.1**
	baz=248						
EAST	**Anshuo**	**2.21**	**203**	*e*P	**Pn**	**12 49 37.0**	**+1.4**
	baz=189						
WDGT	**Dungji**	**2.26**	**239**	*e*P	**Pb**	**12 49 38.6**	**-1.0**
	baz=239						
WDGT				*e*S	**Sb**	**12 50 07.2**	**-0.5**
	baz=239						
SCZT	**Fangliau**	**2.31**	**208**	*e*P	**Pb**	**12 49 38.9**	**-1.6**
	baz=205						
JISG	**Ishigakijimahi**	**2.31**	**86**	P	**Pn**	**12 49 36.5**	**-0.4**
JISG				S	**Sn**	**12 50 05.7**	**+0.2**
JTJ	**Tarama**	**2.67**	**85**	P	**Pn**	**12 49 42.6**	**+0.7**
JTJ				S	**Sn**	**12 50 15.5**	**+1.1**

ISCJB ***16*** *12:56:55.2±0.4, 40.°89N±0.°03×30.°03E±0.°03, h1km±6km, Error ellipse: s-maj=4.7km s-min=3.6km az=168.8*

CSEM ***16*** *12:56:55.7±0.2, 40.°88N×30.°04E, h2km, MD2.5, Error ellipse: s-maj=4.4km s-min=3.2km az=15.0*

ISK ***16*** *12:56:55.8, 40.°84N×30.°00E, h10km, MD2.8*

DDA ***16*** *12:56:55.0, 40.°89N×30.°09E, h7km, Md2.5*

ISC 16 12:56:55.1±1.0, 40.88N±0.°02×30.06E±0.°02, h8km±11km, n53, σ0§55/64, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KAND	**Kocaeli-Kandir**	**0.24**	**25**	*i* P	**Pg**	**12 56 60.0**	**+0.1**
KAND				*i* S	**Sg**	**12 57 02.3**	**-0.8**
KAND	**Kocaeli-Kandir**	**0.24**	**25**	P	**Pg**	**12 57 00.0**	**+0.1**
KAND				S	**Sg**	**12 57 02.3**	**-0.8**
SPNC	**Sapanca-Adapaz**	**0.27**	**135**	*e*PG	**Pb**	**12 57 01.7**	**-0.5**
SPNC				*e*SG	**Sb**	**12 57 06.1**	**-0.9**
SPNC	**Sapanca-Adapaz**	**0.27**	**135**	*e*Pg	**Pb**	**12 57 01.7**	**-0.5**
SPNC				*e*Sg	**Sb**	**12 57 06.1**	**-0.9**
HRT	**Hereke**	**0.30**	**259**	*e*PG	**Pg**	**12 57 01.4**	**+0.3**
HRT	**Hereke**	**0.30**	**259**	*e*Pg	**Pg**	**12 57 01.4**	**+0.3**
SILT	**Sile**	**0.42**	**311**	*e*PG	**Pb**	**12 57 04.4**	**-0.4**
SILT	**Sile**	**0.42**	**311**	*e*Pg	**Pb**	**12 57 04.4**	**-0.4**
ADVT	**Abdulvahap**	**0.51**	**209**	*e*PG	**Pg**	**12 57 05.1**	**+0.2**
ADVT				*e*SG	**Sg**	**12 57 12.1**	**+0.6**
ADVT	**Abdulvahap**	**0.51**	**209**	*e*Pg	**Pg**	**12 57 05.1**	**+0.2**
ADVT				*e*Sg	**Sg**	**12 57 12.1**	**+0.6**
GULT	**Gulveren**	**0.56**	**142**	*e*PG	**Pb**	**12 57 07.1**	**-0.2**
GULT	**Gulveren**	**0.56**	**142**	*e*Pg	**Pb**	**12 57 07.1**	**-0.2**
SAHE	**Sakarya_HENDEK**	**0.60**	**92**	*i* P	**Pg**	**12 57 06.6**	**-0.2**
SAHE				*i* S	**Sg**	**12 57 14.8**	**+0.1**
SAHE	**Sakarya_HENDEK**	**0.60**	**92**	P	**Pg**	**12 57 06.6**	**-0.2**
SAHE				S	**Sg**	**12 57 14.8**	**+0.1**
GPA	**Golpazari**	**0.62**	**162**	*e*PG	**Pb**	**12 57 08.4**	**+0.1**
GPA	**Golpazari**	**0.62**	**162**	*e*Pg	**Pb**	**12 57 08.4**	**+0.1**
CAVI	**Cavuskoy**	**0.70**	**194**	*e*PG	**Pg**	**12 57 08.9**	**+0.4**
CAVI	**Cavuskoy**	**0.70**	**194**	*e*Pg	**Pg**	**12 57 08.9**	**+0.4**
IZI	**Iznik**	**0.70**	**220**	*e*PG	**Pg**	**12 57 08.3**	**-0.3**
IZI	**Iznik**	**0.70**	**220**	*e*Pg	**Pg**	**12 57 08.3**	**-0.3**
ISK	**Istanbul-Kandi**	**0.78**	**284**	*e*PG	**Pb**	**12 57 10.8**	**-0.1**
ISK	**Istanbul-Kandi**	**0.78**	**284**	*e*Pg	**Pb**	**12 57 10.8**	**-0.1**
KLYT	**Kilyos**	**0.85**	**296**	*e*PG	**Pb**	**12 57 12.4**	**+0.2**
KLYT	**Kilyos**	**0.85**	**296**	*e*Pg	**Pb**	**12 57 12.4**	**+0.2**
IGD	**Bursa**	**0.90**	**227**	*i* P	**Pg**	**12 57 12.3**	**0.0**
IGD				*i* S	**Sg**	**12 57 24.4**	**+0.4**
MDUB	**Mudurnu**	**0.96**	**115**	*e*PG	**Pn**	**12 57 15.2**	**+0.2**
MDUB	**Mudurnu**	**0.96**	**115**	*e*Pg	**Pn**	**12 57 15.2**	**+0.2**
ARMT	**Armutlu**	**0.96**	**251**	*e*PG	**Pg**	**12 57 13.2**	**-0.3**
ARMT	**Armutlu**	**0.96**	**251**	*e*Pg	**Pg**	**12 57 13.3**	**-0.3**
BGKT	**Bogazkoy**	**1.02**	**288**	*e*PG	**Pn**	**12 57 15.4**	**-0.4**
BGKT	**Bogazkoy**	**1.02**	**288**	*e*Pg	**Pn**	**12 57 15.4**	**-0.4**
ULDT	**Uludag**	**1.02**	**224**	*i* P	**Pn**	**12 57 15.6**	**-0.3**
ULDT	**Uludag**	**1.02**	**224**	P	**Pn**	**12 57 15.6**	**-0.3**
MDNY	**Mudanya-Bursa**	**1.03**	**241**	*e*PG	**Pg**	**12 57 14.9**	**0.0**
MDNY	**Mudanya-Bursa**	**1.03**	**241**	*e*Pg	**Pg**	**12 57 14.9**	**0.0**
KDZE	**Karadeniz Ereo**	**1.13**	**67**	*e*PN	**Pn**	**12 57 19.2**	**+1.9**
KDZE	**Karadeniz Ereo**	**1.13**	**67**	*e*Pn	**Pn**	**12 57 19.3**	**+1.9**
ORLT	**Orhaneli**	**1.22**	**227**	*e*PN	**Pb**	**12 57 18.1**	**-0.3**
ORLT	**Orhaneli**	**1.22**	**227**	*e*Pn	**Pb**	**12 57 18.1

JCJ	**Chichijima**	**11.54**	**180**	Pn	**Pn**	**13 04 00.8**	**-1.6**
	1.7nm,0.3s,baz=108,slow=20,SNR=4.0						
JCJ				Sn	Sn	13 05 57.5	-13
	0.6nm,0.3s,baz=288,slow=20,SNR=1.6						
KLR	**Kul'dur**	**12.97**	**328**	LR	LR	13 09 20.6	
	comp=Z,88nm,18.1s,baz=182,slow=37						
H11N2	**WAKE ISLAND Hy**	**28.47**	**125**	T	T	13 37 38.7	
	baz=317,slow=75,SNR=474						
H11N1	**WAKE ISLAND Hy**	**28.48**	**125**	T	T	13 37 40.1	
	baz=317,slow=75,SNR=352						
H11N3	**WAKE ISLAND Hy**	**28.48**	**125**	T	T	13 37 40.2	
	baz=317,slow=75,SNR=540						
H11S1	**WAKE ISLAND Hy**	**29.24**	**127**	T	T	13 38 38.2	
	baz=319,slow=76,SNR=68						
H11S3	**WAKE ISLAND Hy**	**29.24**	**127**	T	T	13 38 38.1	
	baz=319,slow=76,SNR=103						
H11S2	**WAKE ISLAND Hy**	**29.26**	**127**	T	T	13 38 39.5	
	baz=319,slow=76,SNR=76						
ZALV	**Zalesovo Beam**	**41.33**	**311**	P	**P**	**13 09 03.0**	**+0.5**
	1.4nm,0.5s,baz=95,slow=8.3,SNR=5.8						
ZALV				LR	LR	13 27 19.1	
	comp=Z,28nm,18.5s,baz=147,slow=38						
MKAR	**Makanchi Array**	**43.84**	**301**	P	**P**	**13 09 23.3**	**+0.2**
	0.3nm,0.5s,baz=85,slow=9.7,SNR=4.4						
ILAR	**Eielson Array**	**47.76**	**33**	P	**P**	**13 09 54.4**	**+0.6**
	0.3nm,0.6s,baz=257,slow=6.5,SNR=6.0						
WRA	**Warramunga Arr**	**58.77**	**189**	P	**P**	**13 11 15.3**	**0.0**
	1.2nm,0.8s,baz=6.1,slow=7.1,SNR=8.5						
YKA	**Yellowknife Ar**	**62.06**	**31**	P	**P**	**13 11 37.1**	**0.0**
	0.1nm,0.7s,baz=297,slow=5.5,SNR=3.0						
ASAR	**Alice Springs**	**62.50**	**189**	P	**P**	**13 11 40.9**	**+0.3**
	0.4nm,0.7s,baz=14,slow=6.5,SNR=6.7						
PDAR	**Pinedale Array**	**76.05**	**46**	P	**P**	**13 13 05.7**	**+1.0**
	0.4nm,0.6s,baz=308,slow=1.7,SNR=5.0						
TXAR	**Lajitas Array**	**88.60**	**53**	P	**P**	**13 14 09.6**	**-0.6**
	0.2nm,0.6s,baz=274,slow=4.7,SNR=4.2						

NNC ***16*** *13:10:29.4±1.8,44.70N×82.25E, h0km, mb3.3, mpv2.8, Error ellipse: s-maj=24.9km s-min=4.1km az=116.0*
SOME ***16*** *13:10:29.8,44.72N×82.08E, h20km*
ISC 16 13:10:29.0±3.0, 44°65N±0.09×82°2E±0.1, h0km±24km, n7, σ0§63/14, 4C-1D, Northern Xinjiang

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
KTMS	**Ketmen**	**1.79**	**228**	*e*P	**Pb**	**13 11 02.8**	**0.0**
	4.1nm,0.1s						
KTMS				*e*S	**Sg**	**13 11 26.6**	**+0.1**
	28nm,0.4s						
KAPS	**Kapalarasan**	**2.11**	**289**	*e*P	**Pn**	**13 11 06.0**	**+0.4**
	3.2nm,0.1s						
KAPS				*e*S	**Sn**	**13 11 31.7**	**-0.9**
	8.9nm,0.2s						
MK31	**Makanchi Array**	**2.15**	**2**	⇑Pn	**Pn**	**13 11 06.5**	**+0.4**
	5.9nm,0.3s,baz=180,slow=14,SNR=115						
MK31				Sn	**Sn**	**13 11 33.3**	**-0.1**
	4.5nm,0.4s,baz=183,slow=28,SNR=15						
MAKZ	**Makanchi**	**2.16**	**356**	⇑Pn	**Pn**	**13 11 06.0**	**-0.3**
	4.2nm,0.5s						
MAKZ				⇑Sn	**Sn**	**13 11 34.2**	**+0.3**
	4.1nm,0.6s						
PDGK	**Podgornoye**	**2.36**	**237**	⇓Pn	**Pn**	**13 11 09.5**	**+0.6**
	0.7nm,0.3s						
PDGK				⇑Sn	**Sb**	**13 11 42.0**	**+0.1**
	8.5nm,0.6s						
UZB	**Uzynbulak**	**2.74**	**238**	*e*P	**Pb**	**13 11 18.0**	**-0.9**
	1.0nm,0.2s						
UZB				*e*S	**Sb**	**13 11 52.5**	**-0.6**
	4.2nm,0.2s						
ARXS	**Arharly**	**3.15**	**264**	*e*P	**Pb**	**13 11 25.8**	**-0.2**
	1.7nm,0.2s						
ARXS				*e*S	**Sb**	**13 12 06.1**	**+1.1**
	10nm,0.2s						

CSEM ***16*** *13:10:30.1,36.57N×36.31E, h7km, MD2.7*
DDA ***16*** *13:10:30.1,36.57N×36.31E, h7km, Md2.7*
ISC 16 13:10:29.4±1.3, 36°57N±0.04×36°29E±0.04, h2km±14km, n11, σ0§61/19, Jordan-Syria region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
TAHT	**Tahtakopru-Hat**	**0.21**	**203**	*e*PG	**Pg**	**13 10 33.4**	**-0.1**
TAHT				*e*SG	**Sg**	**13 10 36.4**	**+0.1**
YAYL	**Yayladag**	**0.56**	**195**	*i* P	**Pg**	**13 10 40.3**	**+0.2**
YAYL				*i* S	**Sb**	**13 10 49.0**	**+0.2**
YAYL	**Yayladag**	**0.56**	**195**	P	**Pg**	**13 10 40.3**	**+0.2**
YAYL				S	**Sb**	**13 10 50.3**	**0.0**
KUZU	**Kuzuini**	**0.66**	**72**	*i* P	**Pg**	**13 10 42.3**	**+0.2**
KUZU				*i* S	**Sb**	**13 10 52.8**	**-0.6**
KUZU	**Kuzuini**	**0.66**	**72**	P	**Pg**	**13 10 42.3**	**+0.2**
KUZU				S	**Sb**	**13 10 52.8**	**-0.6**
KOZT	**Kozan**	**0.98**	**338**	*e*PG	**Pg**	**13 10 47.4**	**-0.8**
GZT	**Gaziantep**	**1.29**	**52**	*i* P	**Pg**	**13 10 54.8**	**+0.8**
GZT				*i* S	**Sn**	**13 11 13.3**	**+1.0**
GULE	**Gulek**	**1.41**	**301**	*i* P	**Pg**	**13 10 57.0**	**+0.7**
GULE	**Gulek**	**1.41**	**301**	P	**Pg**	**13 10 57.0**	**+0.7**
SURC	**SANLIURFA_SURC**	**1.89**	**80**	*i* P	**Pb**	**13 11 03.9**	**-0.7**
SURC				*i* S	**Sg**	**13 11 30.6**	**+0.4**
SURC	**SANLIURFA_SURC**	**1.89**	**80**	P	**Pb**	**13 11 03.9**	**-0.7**
SURC				S	**Sg**	**13 11 30.6**	**+0.4**

ISCJB ***16*** *13:10:56.9±0.8,38.18N±0.04×141.85E±0.10, h59km±7km, mb3.8/8, Error ellipse: s-maj=13.2km s-min=5.6km az=17.4*
IDC ***16*** *13:10:58.4±2.4,38.16N×141.85E, h57km±22km, mb3.3/7, mb1 3.5/11, mb1mx3.3/56, mbtmp3.6/11, ML2.9/4, MS1.8/1, Ms1 1.8/1, ms1mx1.7/41, Error ellipse: s-maj=25.6km s-min=15.8km az=89.0*
JMA ***16*** *13:10:58.2±0.1,38.18N×141.77E, h55km±1km, M3.7*
JMA Felt I J1.
ISC 16 13:10:57.0±1.6, 38°13N±0.05×141°91E±0.10, h44km±15km, n29, σ1§01/32, mb3.7/8, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**0.55**	**307**	P	**Pn**	**13 11 09.0**	**+0.5**
JIO				S	**Sn**	**13 11 16.5**	**-0.2**
JMM	**Marumori**	**0.92**	**254**	P	**Pn**	**13 11 13.6**	**+0.1**
JMM				S	**Sn**	**13 11 25.0**	**-0.5**
JMK	**Ichinoseki**	**0.98**	**327**	P	**Pn**	**13 11 14.7**	**+0.3**
JMK				S	**Sn**	**13 11 26.4**	**-0.7**
JOU	**Okura**	**1.01**	**284**	P	**Pn**	**13 11 14.8**	**+0.1**
JOU				S	**Sn**	**13 11 27.0**	**-0.7**
JFK	**Kawauchi**	**1.12**	**227**	P	**Pn**	**13 11 17.1**	**+0.8**
JFK				S	**Sn**	**13 11 30.9**	**+0.4**
JFT	**Otama**	**1.38**	**244**	P	**Pn**	**13 11 20.9**	**+1.0**
JFT				S	**Sn**	**13 11 37.2**	**+0.2**
JOM	**Ohasama**	**1.43**	**341**	P	**Pn**	**13 11 21.1**	**+0.7**
JOM				S	**Sn**	**13 11 37.8**	**-0.2**
JYK	**Kaneyama**	**1.45**	**303**	P	**Pn**	**13 11 20.7**	**0.0**
JYS	**Shirataka**	**1.45**	**274**	P	**Pn**	**13 11 21.3**	**+0.5**
JYS				S	**Sn**	**13 11 38.4**	**-0.3**
JRG	**Rokugo**	**1.61**	**322**	P	**Pn**	**13 11 23.4**	**+0.4**
MJAR	**Matsushiro Arr**	**3.34**	**243**	P	**Pn**	**13 11 49.0**	**+2.2**
	1.3nm,0.3s,baz=58,slow=11,SNR=9.9						
MJAR				LR	LR	13 13 35.2	
	comp=Z,13nm,18.1s,baz=15,slow=48						
MAT	**Matsushiro**	**3.35**	**243**	P	Pn	13 11 50.2	+3.4
MAT				S	Sn	13 12 35.6	+10
JHJ	**Hachijo jima 2**	**5.29**	**200**	P	**Pn**	**13 12 14.8**	**+1.3**
	3.7nm,0.3s,baz=73,slow=19,SNR=3.5						
JHJ				S	**Sn**	**13 13 09.9**	**-3.2**
	7.8nm,0.3s,baz=24,slow=20,SNR=3.9						
ASAJ	**Asahikawa**	**6.00**	**5**	P	**Pn**	**13 12 22.8**	**-0.4**
	0.3nm,0.3s,baz=351,slow=19,SNR=4.3						
ASAJ				S	**Sn**	**13 13 31.1**	**+0.4**
	0.3nm,0.3s,baz=211,slow=19,SNR=2.5						
USRK	**Ussuriysk Ar.**	**9.62**	**312**	P	**Pn**	**13 13 13.9**	**+1.0**
	0.3nm,0.3s,baz=124,slow=14,SNR=3.5						
H11N2	**WAKE ISLAND Hy**	**28.39**	**123**	T	T	13 47 07.8	
	baz=316,slow=75,SNR=34						
H11N1	**WAKE ISLAND Hy**	**28.40**	**123**	T	T	13 47 13.7	
	baz=316,slow=75,SNR=43						
H11N3	**WAKE ISLAND Hy**	**28.41**	**123**	T	T	13 47 09.8	
	baz=316,slow=75,SNR=30						
H11S1	**WAKE ISLAND Hy**	**29.15**	**125**	T	T	13 48 02.9	
	baz=318,slow=76,SNR=20						
H11S3	**WAKE ISLAND Hy**	**29.15**	**125**	T	T	13 48 03.1	
	baz=318,slow=76,SNR=25						
H11S2	**WAKE ISLAND Hy**	**29.16**	**125**	T	T	13 48 04.2	
	baz=318,slow=76,SNR=20						
ZALV	**Zalesovo Beam**	**41.48**	**311**	P	**P**	**13 18 37.3**	**-2.1**
	0.5nm,0.4s,baz=88,slow=10,SNR=3.1						
MKAR	**Makanchi Array**	**43.88**	**301**	P	**P**	**13 18 59.4**	**+0.4**
	0.2nm,0.7s,baz=87,slow=8.8,SNR=3.3						
KURBB	**Kurchatov Arra**	**45.64**	**307**	P	**P**	**13 19 12.6**	**-0.4**
	3.6nm,0.2s,baz=82,slow=8.4,SNR=2.4						
ILAR	**Eielson Array**	**48.36**	**33**	P	**P**	**13 19 34.3**	**+0.3**
	0.2nm,0.6s,baz=254,slow=6.5,SNR=3.8						
WRA	**Warramunga Arr**	**58.20**	**188**	P	**P**	**13 20 46.3**	**-0.4**
	0.6nm,0.5s,baz=5.4,slow=7.2,SNR=14						
ASAR	**Alice Springs**	**61.92**	**188**	P	**P**	**13 21 12.1**	**-0.1**
	0.6nm,0.7s,baz=3.8,slow=5.4,SNR=5.6						
HFS	**Hagfors**	**73.25**	**336**	P	**P**	**13 22 23.2**	**-0.1**
	1.4nm,0.8s,baz=56,slow=18,SNR=2.4						
TXAR	**Lajitas Array**	**89.15**	**53**	P	**P**	**13 23 48.9**	**+0.7**
	0.2nm,0.5s,baz=282,slow=3.4,SNR=3.6						

CSEM ***16*** *13:12:05.6±0.5,35.76N×29.72E, h2km, ML3.1, Error ellipse: s-maj=9.7km s-min=6.3km az=164.0*
ISK ***16*** *13:12:05.8,35.77N×29.67E, h9km, MD3.1*
DDA ***16*** *13:12:25.2,36.28N×29.64E, h5km, Ml3.1*
ISC 16 13:12:05.5±2.1, 35°77N±0.08×29°75E±0.05, h4km±12km, n47, σ0§83/54, Eastern Mediterranean Sea

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
AKAS	**Kas**	**0.48**	**346**	*i* P	**Pg**	**13 12 13.4**	**-1.4**
AKAS				*i* S	**Sg**	**13 12 21.0**	**-0.1**
AKAS	**Kas**	**0.48**	**346**	P	**Pg**	**13 12 13.4**	**-1.4**
AKAS				S	**Sg**	**13 12 21.0**	**-0.1**
FETY	**Fethiye**	**1.02**	**328**	*e*PG	**Pb**	**13 12 25.2**	**-0.6**
FETY				*e*SG	**Sb**	**13 12 39.3**	**-0.3**
FETY	**Fethiye**	**1.02**	**328**	*e*Pg	**Pb**	**13 12 25.2**	**-0.6**
FETY				*e*Sg	**Sb**	**13 12 39.3**	**-0.3**
KORT	**Korkueli**	**1.33**	**21**	*i* P	**Pn**	**13 12 28.2**	**-2.8**
ANTB	**Antalya**	**1.35**	**33**	*e*PN	**Pb**	**13 12 32.0**	**+0.6**
ANTB	**Antalya**	**1.35**	**33**	*e*Pn	**Pb**	**13 12 32.0**	**+0.6**
DALY	**Dalyan (Mu˘la**	**1.37**	**320**	*e*PN	**Pb**	**13 12 31.2**	**-0.6**
DALY				*e*SN	**Sn**	**13 12 49.9**	**-0.2**
DALY	**Dalyan (Mu˘la**	**1.37**	**320**	*e*Pn	**Pb**	**13 12 31.2**	**-0.6**
DALY				*e*Sn	**Sn**	**13 12 49.9**	**-0.2**
TURN	**Turunc**	**1.44**	**320**	*i* P	**Pg**	**13 12 34.1**	**+0.9**
TURN				*i* S	**Sg**	**13 12 54.1**	**+2.3**
TURN	**Turunc**	**1.44**	**320**	P	**Pg**	**13 12 34.1**	**+0.9**
YER	**Yerkesik**	**1.81**	**320**	*e*PN	**Pn**	**13 12 37.3**	**-0.2**
YER	**Yerkesik**	**1.81**	**320**	*e*Pn	**Pn**	**13 12 37.3**	**-0.2**
BCK	**Bucak**	**1.82**	**22**	*e*PN	**Pn**	**13 12 38.7**	**+0.9**
BCK	**Bucak**	**1.82**	**22**	*e*Pn	**Pn**	**13 12 38.7**	**+0.9**
DENT	**Denizli**	**2.07**	**344**	*e*PN	**Pn**	**13 12 41.1**	**0.0**
DENT	**Denizli**	**2.07**	**344**	*e*Pn	**Pn**	**13 12 41.1**	**0.0**
KARP	**Karpathos**	**2.12**	**265**	*e*PN	**Pn**	**13 12 41.8**	**0.0**
KARP	**Karpathos**	**2.12**	**265**	*e*Pn	**Pn**	**13 12 41.8**	**0.0**
ISP	**Isparta**	**2.15**	**17**	*e*PN	**Pn**	**13 12 43.1**	**+0.9**
ISP	**Isparta**	**2.15**	**17**	*e*Pn	**Pn**	**13 12 43.1**	**+0.9**
BDRM	**Kayabasi**	**2.27**	**306**	*i* P	**Pn**	**13 12 43.5**	**-0.3**
BDRM	**Kayabasi**	**2.27**	**306**	P	**Pn**	**13 12 43.5**	**-0.3**
BODT	**Bodrum**	**2.35**	**304**	*e*PN	**Pn**	**13 12 44.7**	**-0.3**
BODT	**Bodrum**	**2.35**	**304**	*e*Pn	**Pn**	**13 12 44.7**	**-0.3**
AYDN	**Tasoluk**	**2.42**	**322**	*i* P	**Pn**	**13 12 46.4**	**+0.5**
AYDN	**Tasoluk**	**2.42**	**322**	P	**Pn**	**13 12 46.4**	**+0.5**
KHL	**Karahalli**	**2.56**	**356**	*e*PN	**Pn**	**13 12 48.3**	**+0.4**
KHL	**Karahalli**	**2.56**	**356**	*e*Pn	**Pn**	**13 12 48.3**	**+0.4**
KHAL	**Karahalli**	**2.61**	**356**	*i* P	**Pn**	**13 12 49.7**	**+1.1**
KHAL	**Karahalli**	**2.61**	**356**	P	**Pn**	**13 12 49.7**	**+1.1**
AYDB	**Zeytinkoy-Aydi**	**2.64**	**326**	*e*PN	**Pn**	**13 12 49.0**	**0.0**
AYDB	**Zeytinkoy-Aydi**	**2.64**	**326**	*e*Pn	**Pn**	**13 12 49.0**	**0.0**
GCAM	**G?zelcaml?**	**2.79**	**314**	*i* P	**Pn**	**13 12 50.7**	**-0.3**
GCAM	**G?zelcaml?**	**2.79**	**314**	P	**Pn**	**13 12 50.7**	**-0.3**
KULA	**Kula-Manisa**	**2.88**	**343**	*e*PN	**Pn**	**13 12 52.7**	**+0.4**
KULA	**Kula-Manisa**	**2.88**	**343**	*e*Pn	**Pn**	**13 12 52.7**	**+0.4**
BOLV	**Bolvadin**	**3.10**	**18**	*i* P	**Pn**	**13 12 55.0**	**-0.4**
BOLV	**Bolvadin**	**3.10**	**18**	P	**Pn**	**13 12 55.0**	**-0.4**
IZM	**Izmir**	**3.29**	**324**	*e*PN	**Pn**	**13 12 58.5**	**+0.6**
IZM	**Izmir**	**3.29**	**324**	*e*Pn	**Pn**	**13 12 58.5**	**+0.5**
GDZ	**Gediz**	**3.33**	**356**	*i* P	**Pn**	**13 12 58.9**	**+0.4**
GDZ	**Gediz**	**3.33**	**356**	P	**Pn**	**13 12 58.9**	**+0.4**
KDHN	**Kadinhani**	**3.34**	**34**	*i* P	**Pn**	**13 12 58.8**	**+0.1**
KDHN	**Kadinhani**	**3.34**	**34**	P	**Pn**	**13 12 58.8**	**+0.1**
DEMI	**Demirci**	**3.37**	**346**	*i* P	**Pn**	**13 13 00.7**	**+1.6**
DEMI	**Demirci**	**3.37**	**346**	P	**Pn**	**13 13 00.7**	**+1.6**

JMA 16 13:15:35.4±0.1, 37°66N×141°77E, h42km±2km, M3.5, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JFK	**Kawauchi**	**0.77**	**248**	P	Pn	13 15 50.1	+0.2
JFK				S	Sn	13 16 00.5	+0.2
JMM	**Marumori**	**0.80**	**285**	P	Pn	13 15 50.5	+0.3
JMM				S	Sn	13 16 01.0	0.0
JIO	**Ouri**	**0.86**	**337**	P	Pn	13 15 51.2	+0.1
JIO				S	Sn	13 16 02.1	-0.4
ONAJ	**Iwakimizuishiy**	**0.95**	**235**	P	Pn	13 15 52.7	+0.3
ONAJ				S	Sn	13 16 05.0	+0.2
JOU	**Okura**	**1.12**	**309**	P	Pn	13 15 55.0	+0.3
JOU				S	Sn	13 16 09.1	+0.2
JFT	**Otama**	**1.15**	**263**	P	Pn	13 15 56.0	+1.0
JFT				S	Sn	13 16 10.8	+1.3
JHO	**Hitachi**	**1.42**	**223**	P	Pn	13 15 59.0	+0.3
MAT	**Matsushiro**	**3.06**	**250**	P	Pn	13 16 23.3	+2.0
MAT				S	Sn	13 17 01.2	+4.6

NIED ***16*** *13:22:00,37.50N×141.30E, h20km, Mw3.5 Best double couple: Mo1.85000×10¹⁴ NP1:φs286.00000°, δ58.00000°, λ-146.00000°. NP2:φs177.00000°, δ62.00000°, λ-37.00000°.*
JMA ***16*** *13:22:56.2±0.1,37.47N×141.32E, h28km±1km, M3.5*
JMA Felt I J1.
IDC ***16*** *13:22:56.7±1.6,36.77N×141.37E, h0km, mb3.4/2, mb1 3.7/3, mb1mx3.2/45, mbtmp3.3/3, ML3.3/1, Error ellipse: s-maj=40.0km s-min=26.8km az=150.0*
ISC 16 13:22:52.1±3.3, 37°48N±0.06×141°5E±0.1, h2km±18km, n9, σ0§68/15, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JFK	**Kawauchi**	**0.54**	**258**	P	**Pb**	**13 23 04.4**	**0.0**
JFK				S	**Sg**	**13 23 10.0**	**+0.5**
ONAJ	**Iwakimizuishiy**	**0.70**	**238**	P	**Pb**	**13 23 07.0**	**-0.1**
ONAJ				S	**Sg**	**13 23 14.8**	**+0.1**
JMM	**Marumori**	**0.71**	**303**	P	**Pb**	**13 23 07.2**	**0.0**
JMM				S	**Sg**	**13 23 15.1**	**+0.2**
JFT	**Otama**	**0.96**	**273**	P	**Pb**	**13 23 11.3**	**-0.2**
JFT				S	**Sg**	**13 23 21.4**	**-1.5**
JOU	**Okura**	**1.12**	**322**	P	**Pn**	**13 23 15.1**	**+0.2**
JOU				S	**Sg**	**13 23 28.5**	**+0.2**
MJAR	**Matsushiro Arr**	**2.83**	**252**	Pn	**Pn**	**13 23 38.9**	**+0.6**
	6.2nm,0.3s,baz=80,slow=16,SNR=45						
MJAR				Sn	**Sn**	**13 24 12.1**	**-0.8**
	1.8nm,0.3s,baz=90,slow=28,SNR=4.8						
MAT	**Matsushiro**	**2.83**	**252**	P	**Pn**	**13 23 38.9**	**+0.6**
MAT				S	**Sn**	**13 24 13.9**	**+0.9**
ILAR	**Eielson Array**	**49.06**	**33**	P	P	13 31 50.4	+10
	0.4nm,0.7s,baz=275,slow=6.2,SNR=5.4						
WRA	**Warramunga Arr**	**57.51**	**188**	P	**P**	**13 32 42.4**	**-0.5**
	0.4nm,0.8s,baz=5.1,slow=7.4,SNR=3.6						
PMG				LR	LR	13 32 11.2	
	comp=Z,76nm,20.0s,baz=316,slow=34						
DZM	**Mont Dzumac**	**19.90**	**145**	P	**P**	**13 32 12.3**	**-3.5**
	0.3nm,0.3s,baz=292,slow=19,SNR=3.0						
WRA	**Warramunga Arr**	**23.86**	**232**	P	**P**	**13 32 55.7**	**-1.4**
	0.8nm,1.0s,baz=58,slow=9.5,SNR=5.0						
WRA				PcP	**PcP**	**13 36 38.1**	**-1.2**
	0.3nm,0.3s,baz=54,slow=2.4,SNR=9.6						
ASAR	**Alice Springs**	**26.36**	**226**	P	**P**	**13 33 16.1**	**-3.9**
	0.2nm,0.4s,baz=55,slow=9.4,SNR=7.5						
ASAR				PcP	**PcP**	**13 36 43.6**	**-1.3**
	0.3nm,0.5s,baz=60,slow=2.6,SNR=7.4						
JCJ	**Chichijima**	**34.86**	**341**	LR	LR	13 45 18.2	
	comp=Z,78nm,21.8s,baz=285,slow=30						
SONM	**Songino Array**	**68.06**	**327**	P	**P**	**13 38 47.0**	**+4.2**
	0.4nm,0.5s,baz=117,slow=1.7,SNR=3.7						
MKAR	**Makanchi Array**	**82.14**	**319**	P	**P**	**13 40 02.0**	**-1.8**
	0.2nm,0.9s,baz=121,slow=7.2,SNR=2.3						
ILAR	**Eielson Array**	**82.66**	**22**	P	**P**	**13 40 06.6**	**+0.5**
	0.4nm,0.7s,baz=242,slow=5.9,SNR=6.0						
TORD	**Torodi Ar. Bea**	**152.04**	**287**	PKPbc	**PKPbc**	**13 47 37.1**	**-2.0**
	0.2nm,0.4s,baz=75,slow=2.1,SNR=4.7						

NIED ***16*** *13:36:00,39.60N×142.10E, h56km, Mw3.8 Best double couple: Mo5.01000×10¹⁴ NP1:φs17.00000°, δ52.00000°, λ-173.00000°. NP2:φs282.00000°, δ84.00000°, λ-39.00000°.*
ISCJB ***16*** *13:36:36.6±0.6,39.57N±0.04×142.15E±0.09, h57km±4km, mb3.8/20, Error ellipse: s-maj=12.1km s-min=6.2km az=9.7*
JMA ***16*** *13:36:38.0±0.1,39.64N×142.10E, h48km±1km, M3.8*
JMA Felt II J1.
IDC ***16*** *13:36:41.9±2.1,39.48N×142.02E, h92km±19km, mb3.5/19, mb1 3.6/24, mb1mx3.5/61, mbtmp3.9/24, MS2.7/2, Ms1 2.7/2, ms1mx2.3/38, Error ellipse: s-maj=16.7km s-min=13.3km az=100.0*
ISC 16 13:36:37.7±0.8, 39°58N±0.04×142°07E±0.09, h50km±7km, n42, σ1§03/40, mb3.9/20, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MIYJ	**Miyakonagasawa**	**0.19**	**269**	P	**Pn**	**13 36 46.3**	**+0.3**
MIYJ				S	**Sn**	**13 36 52.1**	**+0.1**
JTH	**Tanohata**	**0.39**	**336**	P	**Pn**	**13 36 47.5**	**-0.3**
JTH				S	**Sn**	**13 36 54.1**	**-0.9**
OFUJ	**Ofunato**	**0.59**	**212**	P	**Pn**	**13 36 50.8**	**+0.8**
OFUJ				S	**Sn**	**13 36 59.8**	**+0.9**
JOM	**Ohasama**	**0.61**	**260**	P	**Pn**	**13 36 51.1**	**+0.8**
JOM				S	**Sn**	**13 37 00.6**	**+1.2**
JKZ	**Kuzumaki**	**0.70**	**306**	P	**Pn**	**13 36 51.7**	**+0.2**
JKZ				S	**Sn**	**13 37 01.3**	**-0.2**
JANG	**Nango**	**0.90**	**332**	P	**Pn**	**13 36 53.6**	**-0.5**
JMK	**Ichinoseki**	**0.91**	**227**	P	**Pn**	**13 36 55.3**	**+1.1**
MAT	**Matsushiro**	**4.30**	**226**	P	Pn	13 37 44.8	+4.2
MAT				S	Sn	13 38 35.6	+6.2
MJAR	**Matsushiro Arr**	**4.30**	**226**	P	Pn	13 37 44.6	+4.0
	3.0nm,0.3s,baz=33,slow=13,SNR=44						
ASAJ	**Asahikawa**	**4.55**	**5**	P	**Pn**	**13 37 44.2**	**+0.2**
	2.4nm,0.3s,baz=187,slow=17,SNR=14						
ASAJ				S	**Sn**	**13 38 39.2**	**+3.7**
	baz=127,slow=20,SNR=3.2						
ASAJ				LR	LR	13 40 00.6	
	comp=Z,60nm,20.4s,baz=187,slow=43						
JHJ	**Hachijo jima 2**	**6.71**	**197**	P	**Pn**	**13 38 14.5**	**+1.0**
	4.5nm,0.3s,baz=29,slow=19,SNR=3.7						
JHJ				S	**Sn**	**13 39 26.6**	**-2.0**
	7.1nm,0.3s,baz=72,slow=20,SNR=2.8						
USRK	**Ussuriysk Ar.**	**8.82**	**305**	P	Pn	13 38 46.1	+3.7
	0.4nm,0.3s,baz=111,slow=14,SNR=11						
KSRS	**Korea Array**	**11.28**	**264**	P	Pn	13 39 21.2	+5.0
	0.7nm,0.3s,baz=70,slow=14,SNR=11						
KLR	**Kul'dur**	**12.13**	**326**	P	P	13 39 33.8	-5.2
	0.1nm,0.3s,baz=122,slow=19,SNR=2.4						
KLR				LR	LR	13 43 47.5	
	comp=Z,50nm,19.3s,baz=178,slow=35						
JCJ	**Chichijima**	**12.45**	**180**	P	**Pn**	**13 39 31.3**	**-0.9**
	baz=348,slow=19						
YAK	**Yakutsk**	**23.72**	**345**	P	**P**	**13 41 42.8**	**-1.9**
	10.0nm,0.5s,baz=175,slow=1.7,SNR=3.7						
SEY	**Seymchan**	**24.20**	**12**	P	**P**	**13 41 49.7**	**+0.6**
	3.2nm,0.8s,baz=204,slow=10.0,SNR=13						
SONM	**Songino Array**	**26.88**	**300**	P	**P**	**13 42 14.1**	**+0.3**
	0.5nm,0.6s,baz=75,slow=8.5,SNR=4.7						
H11N2	**WAKE ISLAND Hy**	**29.11**	**126**	T	T	14 13 07.6	
	baz=318,slow=76,SNR=572						
H11N1	**WAKE ISLAND Hy**	**29.12**	**126**	T	T	14 13 10.7	
	baz=318,slow=76,SNR=806						
H11N3	**WAKE ISLAND Hy**	**29.13**	**126**	T	T	14 13 11.6	
	baz=318,slow=76,SNR=445						
H11S1	**WAKE ISLAND Hy**	**29.91**	**128**	T	T	14 14 13.6	
	baz=320,slow=76,SNR=116						
H11S3	**WAKE ISLAND Hy**	**29.91**	**128**	T	T	14 14 09.1	
	baz=320,slow=76,SNR=99						
H11S2	**WAKE ISLAND Hy**	**29.92**	**128**	T	T	14 14 10.2	
	baz=320,slow=76,SNR=116			

YOJ	**Yonaguni jima**	**0.53**	**18**	⇓*i*P	**Pb**	**13 40 03.5**	**0.0**
	baz=11							
YOJ				*i* S	**Sb**	**13 40 10.4**	**-0.9**
	baz=11							
HATJ	**Hateruma jima**	**0.90**	**83**	P	**Pb**	**13 40 09.6**	**0.0**
HATJ				S	**Sb**	**13 40 22.2**	**+0.3**
IRIF	**Iriomote-Funau**	**0.90**	**65**	P	**Pb**	**13 40 09.9**	**+0.1**
IRIF				eS	**Sb**	**13 40 22.1**	**0.0**
ENA	**Nanau**	**1.10**	**296**	⇓*i*P	**Pn**	**13 40 13.9**	**+0.2**
	baz=292							
ENA				eS	**Sn**	**13 40 28.8**	**-0.5**
	baz=292							
TWC	**Suao**	**1.11**	**306**	⇓*i*P	**Pn**	**13 40 13.6**	**-0.2**
	baz=302							
TWC				eS	**Sg**	**13 40 26.9**	**-0.4**
	baz=302							
JKRS	**Kuro-shima**	**1.11**	**75**	P	**Pn**	**13 40 13.5**	**-0.3**
JKRS				S	**Sn**	**13 40 29.1**	**-0.4**
HWA	**Hwalien**	**1.12**	**271**	*e*P	**Pn**	**13 40 14.2**	**+0.3**
	baz=269							
TWD	**Chiawan**	**1.14**	**277**	⇑*e*P	**Pn**	**13 40 14.4**	**+0.3**
	baz=274							
TWD				eS	**Sg**	**13 40 28.4**	**+0.1**
	baz=274							
NACB	**Ninganchiao**	**1.15**	**281**	*e*Pn	**Pn**	**13 40 14.4**	**0.0**
EGS		**1.21**	**317**	*e*P	**Pn**	**13 40 15.9**	**+0.8**
	baz=314							
EGS				eS	**Sn**	**13 40 32.1**	**+0.2**
	baz=314							
JIJ	**Ishigaki jima**	**1.27**	**71**	P	**Pn**	**13 40 15.9**	**0.0**
JIJ				S	**Sg**	**13 40 31.5**	**-0.8**
ILA	**Ilan**	**1.28**	**309**	*e*P	**Pn**	**13 40 17.2**	**+1.1**
	baz=306							
ILA				eS	**Sn**	**13 40 34.0**	**+0.5**
	baz=306							
TWB1	**Santiao Chiao**	**1.30**	**324**	⇓*e*P	**Pb**	**13 40 16.6**	**+0.1**
	baz=333							
TWB1				S	**Sg**	**13 40 32.7**	**-0.8**
	baz=333							
TWE	**Neicheng**	**1.31**	**306**	⇓*i*P	**Pb**	**13 40 17.5**	**+0.9**
	baz=303							
TWE				eS	**Sg**	**13 40 33.4**	**-0.4**
	baz=303							
ENTT	**Nioudou**	**1.34**	**301**	⇓*i*P	**Pb**	**13 40 18.3**	**+1.1**
	baz=298							
ENTT				eS	**Sn**	**13 40 37.5**	**+2.3**
	baz=298							
NNS	**Nan Shan**	**1.42**	**290**	⇓P	**Pg**	**13 40 19.4**	**+0.5**
	baz=287							
NNS				eS	**Sn**	**13 40 37.6**	**+0.4**
	baz=287							
WHF	**Hehuan Shan**	**1.45**	**278**	S	**Sg**	**13 40 38.0**	**-0.2**
	baz=275							
NWF	**Wu-fen Shan**	**1.47**	**319**	⇓*e*P	**Pb**	**13 40 19.3**	**-0.1**
	baz=316							
NWF				eS	**Sb**	**13 40 37.5**	**-0.9**
	baz=316							
JISG	**Ishigakijimahi**	**1.49**	**65**	P	**Pn**	**13 40 18.4**	**-0.6**
JISG				S	**Sn**	**13 40 36.7**	**-2.1**
YHNB	**Yeheng**	**1.51**	**298**	*e*Pn	**Pg**	**13 40 20.8**	**+0.2**
YHNB				eSn	**Sn**	**13 40 37.4**	**-2.0**
YULB	**Yu-li**	**1.51**	**249**	*e*Pn	**Pn**	**13 40 19.3**	**-0.1**
YULB				eSn	**Sb**	**13 40 39.6**	**-0.1**
NSK	**Sanguang**	**1.52**	**298**	⇓P	**Pg**	**13 40 21.3**	**+0.4**
	baz=295							
NSK				eS	**Sg**	**13 40 40.4**	**-0.2**
	baz=295							
TWF1	**Yuli**	**1.53**	**247**	⇑*i*P	**Pb**	**13 40 19.9**	**-0.6**
	baz=233							
TWF1				eS	**Sb**	**13 40 39.9**	**-0.2**
	baz=233							
TWT	**Tachien**	**1.54**	**281**	⇓P	**Pg**	**13 40 21.6**	**+0.4**
	baz=279							
WDT	**Danda**	**1.57**	**263**	⇑*i*P	**Pb**	**13 40 20.9**	**-0.3**
	baz=261							
WDT				eS	**Sn**	**13 40 40.7**	**-0.5**
	baz=261							
TATO	**Taipei**	**1.59**	**310**	*e*Pn	**Pg**	**13 40 22.2**	**0.0**
TATO				eSn	**Sn**	**13 40 40.7**	**-0.6**
CHKT	**Chengkung**	**1.59**	**238**	⇑*i*P	**Pn**	**13 40 20.3**	**-0.2**
	baz=225							
CHKT				eS	**Sn**	**13 40 38.8**	**-2.6**
	baz=225							
TAP1	**Taipei**	**1.61**	**312**	*e*P	**Pg**	**13 40 24.0**	**+1.5**
	baz=309							
TAP1				eS	**Sg**	**13 40 43.7**	**+0.3**
	baz=309							
TAP	**Taipei**	**1.62**	**312**	*e*P	**Pg**	**13 40 23.1**	**+0.3**
	baz=309							
TAP				eS	**Sg**	**13 40 43.7**	**0.0**
	baz=309							
TWS1	**Kuangyinshan**	**1.72**	**312**	*e*P	**Pg**	**13 40 24.6**	**-0.1**
	baz=323							
TWS1				eS	**Sg**	**13 40 46.5**	**-0.5**
	baz=323							
SSLB	**Suanglung**	**1.73**	**265**	*e*Pn	**Pb**	**13 40 23.0**	**-0.9**
SSLB				eSn	**Sn**	**13 40 43.8**	**-1.0**
TWY	**Chenhua**	**1.73**	**320**	*e*P	**Pb**	**13 40 23.3**	**-0.6**
	baz=317							
TWY				eS	**Sn**	**13 40 44.5**	**-0.2**
	baz=317							
SMLT	**Sun Moon Lake**	**1.77**	**268**	⇑P	**Pb**	**13 40 24.4**	**-0.2**
	baz=266							
SMLT				eS	**Sb**	**13 40 47.5**	**+0.3**
	baz=266							
YUS	**Yu-Shan**	**1.78**	**255**	⇑P	**Pb**	**13 40 24.6**	**-0.5**
	baz=253							
YUS				S	**Sn**	**13 40 46.1**	**-0.7**
	baz=253							
NSTT	**Nanjuang**	**1.80**	**292**	⇓*i*P	**Pg**	**13 40 25.9**	**-0.3**
	baz=290							
PCYT	**Pengchaiyu**	**1.81**	**338**	⇓*e*P	**Pn**	**13 40 23.7**	**+0.3**
	baz=335							
PCYT				eS	**Sn**	**13 40 44.4**	**-2.2**
	baz=335							
NCU	**National Centr**	**1.81**	**304**	*e*P	**Pg**	**13 40 25.7**	**-0.6**
	baz=302							
TYC	**Yuchr**	**1.81**	**269**	*e*P	**Pb**	**13 40 24.8**	**-0.4**
	baz=268							
ELDTW	**Lidau**	**1.83**	**246**	⇑P	**Pn**	**13 40 24.1**	**+0.2**
	baz=245							
JTJ	**Tarama**	**1.84**	**68**	P	**Pb**	**13 40 24.7**	**-1.0**
JTJ				eS	**Sb**	**13 40 49.3**	**+0.3**
HSN	**Hsinchu**	**1.90**	**297**	*e*P	**Pg**	**13 40 27.8**	**-0.2**
	baz=295							
HSN				eS	**Sg**	**13 40 52.0**	**-0.6**
	baz=295							
ALS	**Alishan**	**1.91**	**257**	⇑P	**Pb**	**13 40 26.7**	**-0.4**
	baz=245							
TWQ1	**Liyutan**	**1.92**	**282**	*e*P	**Pb**	**13 40 27.6**	**+0.5**
	baz=268							
TWQ1				eS	**Sb**	**13 40 51.9**	**+0.4**
	baz=268							
NSY	**Sanyi**	**1.95**	**284**	*e*P	**Pg**	**13 40 28.4**	**-0.6**
	baz=281							
NSY				eS	**Sb**	**13 40 53.1**	**+0.9**
	baz=281							
TTN	**Taitung**	**1.96**	**233**	⇓*e*P	**Pb**	**13 40 27.1**	**-0.6**
	baz=232							
WNT	**Mingjian**	**1.97**	**268**	*e*P	**Pb**	**13 40 28.1**	**+0.2**
	baz=266							
WNT				eS	**Sb**	**13 40 53.1**	**+0.4**
	baz=266							
TWG	**Pinlang**	**1.97**	**235**	⇓P	**Pn**	**13 40 25.9**	**+0.2**
	baz=224							
TWG				eS	**Sn**	**13 40 49.8**	**-1.0**
	baz=224							
TWG	**Pinlang**	**1.97**	**235**	*e*Pn	**Pn**	**13 40 25.5**	**-0.2**
TWG				eSn	**Sn**	**13 40 49.7**	**-1.0**
TCU	**Taichung**	**1.98**	**276**	*e*P	**Pg**	**13 40 28.7**	**-0.9**
	baz=273							
TCU				eS	**Sg**	**13 40 54.3**	**-1.0**
	baz=273							
CHN5	**Tsauling**	**2.00**	**260**	⇑*i*P	**Pb**	**13 40 28.4**	**-0.2**
	baz=248							
CHN5				eS	**Sb**	**13 40 54.2**	**+0.3**
	baz=248							
STYT	**Tauyuan**	**2.06**	**248**	⇑P	**Pb**	**13 40 28.3**	**-1.3**
	baz=236							
STYT				eS	**Sn**	**13 40 53.9**	**+0.9**
	baz=236							
WGK	**Gukeng**	**2.10**	**263**	*e*P	**Pg**	**13 40 31.1**	**-0.7**
	baz=261							
WGK				eS	**Sb**	**13 40 56.4**	**-0.1**
	baz=261							
TPUB	**Ta-pu**	**2.12**	**253**	*e*Pn	**Pb**	**13 40 29.3**	**-1.3**
TPUB				eSn	**Sb**	**13 40 56.6**	**-0.7**
CHN4	**Tsaushan**	**2.14**	**254**	⇑P	**Pb**	**13 40 30.4**	**-0.5**
	baz=242							
CHN4				eS	**Sg**	**13 40 59.1**	**-1.3**
	baz=242							
WTP	**Ta-pu**	**2.15**	**251**	⇑*i*P	**Pb**	**13 40 30.4**	**-0.8**
	baz=239							
WTP				eS	**Sb**	**13 40 58.2**	**+0.1**
	baz=239							
ECL	**Taimali**	**2.19**	**232**	⇑P	**Pn**	**13 40 28.7**	**0.0**
	baz=245							
CHN2	**Minshiung**	**2.20**	**259**	*e*P	**Pb**	**13 40 31.8**	**-0.1**
	baz=257							
CHN2				eS	**Sb**	**13 40 59.5**	**+0.1**
	baz=257							
SGST	**Jiashian**	**2.24**	**248**	*e*P	**Pb**	**13 40 31.8**	**-0.8**
	baz=235							
SGST				eS	**Sb**	**13 41 01.0**	**+0.4**
	baz=235							
LAY	**Lan-yu**	**2.24**	**212**	*e*P	**Pn**	**13 40 28.7**	**-0.7**
	baz=223							
CHN1	**Nanshi**	**2.25**	**251**	⇑*i*P	**Pb**	**13 40 32.1**	**-0.6**
	baz=249							
CHN1				eS	**Sb**	**13 41 01.0**	**+0.2**
	baz=249							
CHY	**Chiayi**	**2.25**	**259**	*e*P	**Pb**	**13 40 32.8**	**0.0**
	baz=256							
CHY				eS	**Sn**	**13 40 59.1**	**+1.4**
	baz=256							
TWK	**Hsinying**	**2.26**	**253**	*e*P	**Pb**	**13 40 32.2**	**-0.7**
	baz=250							
TWK				eS	**Sb**	**13 40 60.0**	**-1.2**
	baz=250							
JIRB	**Irabujima**	**2.31**	**67**	P	**Pn**	**13 40 30.9**	**+0.7**
WTCT	**Ta-ch'eng**	**2.34**	**268**	*e*P	**Pb**	**13 40 33.1**	**-1.1**
	baz=280							
WTCT				eS	**Sb**	**13 41 02.4**	**-0.9**
	baz=280							
SSD	**Sandimen**	**2.35**	**240**	*e*P	**Pn**	**13 40 32.4**	**+1.5**
	baz=231							
TAW	**Tawu**	**2.39**	**229**	*e*P	**Pn**	**13 40 31.4**	**0.0**
	baz=239							
JMJ	**Miyako jima 2**	**2.40**	**69**	P	**Pb**	**13 40 34.2**	**-1.1**
JMJ				eS	**Sn**	**13 41 02.5**	**+1.1**
JMJ	**Miyako jima 2**	**2.40**	**69**	*e*P	**Pb**	**13 40 33.5**	**-1.8**
	baz=69							
EAST	**Anshuo**	**2.40**	**230**	⇑P	**Pn**	**13 40 32.0**	**+0.4**
	baz=240							
JIKM	**Ikemajima**	**2.40**	**66**	P	**Pn**	**13 40 32.6**	**+1.0**
JIKM				eS	**Sn**	**13 41 03.0**	**+1.6**
WSF	**Szhu**	**2.41**	**263**	*e*P	**Pb**	**13 40 34.6**	**-0.9**
	baz=261							
WSF				eS	**Sb**	**13 41 05.0**	**-0.5**
	baz=261							
CHN3	**Shinhua**	**2.43**	**249**	*e*P	**Pb**	**13 40 35.6**	**-0.1**
	baz=249							
SGLT	**Jiouru**	**2.48**	**241**	*e*P	**Pb**	**13 40 36.4**	**-0.2**
	baz=233							
CHN8	**Yiju**	**2.48**	**256**	*e*P	**Pb**	**13 40 35.1**	**-1.5**
	baz=254							
CHN8				eS	**Sb**	**13 41 05.8**	**-1.7**
	baz=254							
JOGS	**Gusukube**	**2.48**	**71**	P	**Pb**	**13 40 34.8**	**-1.9**
TWM1	**Shoushan**	**2.48**	**244**	*e*P	**Pb**	**13 40 36.4**	**-0.3**
	baz=243							
SCLT	**Jiali**	**2.54**	**253**	*e*P	**Pb**	**13 40 36.0**	**-1.7**
	baz=250							
SCLT				eS	**Sb**	**13 41 07.4**	**-1.8**
	baz=250							
TAI1	**Yung-k'ang**	**2.56**	**250**	*e*P	**Pb**	**13 40 36.7**	**-1.2**
	baz=247							
TAI1				eS	**Sb**	**13 41 07.7**	**-2.0**
	baz=247							
SCZT	**Fangliau**	**2.57**	**233**	*e*P	**Pn**	**13 40 34.9**	**+1.0**
	baz=232							
TSEB	**Hengchuen, Pin**	**2.71**	**221**	*e*P	**Pn**	**13 40 37.8**	**+2.0**
	baz=230							
TSEB				eS	**Sn**	**13 41 09.9**	**+1.0**
	baz=230							
HEN	**Hengchun**	**2.74**	**225**	*e*P	**Pn**	**13 40 37.7**	**+1.6**
	baz=224							
HEN				eS	**Sn**	**13 41 10.0**	**+0.4**
	baz=224							
TWK1	**Hengchun**	**2.74**	**223**	*e*P	**Pn**	**13 40 37.6**	**+1.4**
	baz=222							
TWK1				eS	**Sn**	**13 41 10.2**	**+0.5**
	baz=222							
TWP	**Hsiaoliuchiu**	**2.78**	**235**	*e*P	**Pb**	**13 40 40.9**	**-0.8**
	baz=229							
WDGT	**Dungji**	**2.99**	**257**	⇑*e*P	**Pn**	**13 40 41.2**	**+1.5**
	baz=255							
WDGT				eS	**Sn**	**13 41 15.8**	**-0.1**
	baz=255							
PNG	**Penghu**	**3.03**	**263**	*e*P	**Pn**	**13 40 41.4**	**+1.2**
	baz=261							
PNG				eS	**Sn**	**13 41 17.5**	**+0.7**
	baz=261							
QZH	**Quanzhou**	**3.99**	**285**	⇑*i*Pn	**Pn**	**13 40 50.9**	**-2.5**
QZH				Sn	**Sn**	**13 41 35.3**	**-5.2**
QZH				smax	smax		
	comp=N,460nm,0.8s							
QZH				smax	smax		
	comp=E,280nm,0.6s							
QZH				LR	LR		
	comp=N,3μm,12.9s							
QZH				LR	LR		
	comp=E,1μm,11.0s							
QZH				LR	LR		
	comp=Z,2μm,13.3s							
KNM	**Kinmen**	**4.04**	**277**	*e*P	**Pn**	**13 40 55.1**	**+0.9**
	baz=274							
JKE	**Kume jima 2**	**4.29**	**56**	P	**Pn**	**13 40 57.9**	**+0.3**
JAGN	**Aguni-jima**	**4.78**	**56**	P	**Pn**	**13 41 04.6**	**+0.4**
JIH	**Iheya**	**5.56**	**55**	P	**Pn**	**13 41 15.1**	**+0.1**
JOW	**Kunigami**	**5.70**	**59**	P	**Pn**	**13 41 16.1**	**-0.8**
JAM	**Amami Oshima**	**7.53**	**52**	P	**Pn**	**13 41 40.2**	**-1.9**
TGY	**Tagaytay City**	**9.96**	**191**	LR	LR	13 45 55.2	
	comp=Z,73nm,21.9s,baz=104,slow=36							
KSAR	**Wonju Array Be**	**14.12**	**17**	Pn	**Pn**	**13 43 14.8**	**+2.5**
KSRS	**Korea Array**	**14.15**	**17**	Pn	**Pn**	**13 43 14.8**	**+2.2**
	0.2nm,0.3s,baz=14,slow=40,SNR=9.9							
KSRS				LR	LR	13 48 48.5	
	comp=Z,120nm,19.1s,baz=202,slow=39							
MJAR	**Matsushiro Arr**	**18.24**	**43**	P	**Pn**	**13 44 04.6**	**-1.0**
	baz=229,slow=8.9,SNR=3.1							
USRK	**Ussuriysk Ar.**	**21.54**	**18**	P	**P**	**13 44 39.8**	**-1.9**
	5.0nm,0.6s,baz=203,slow=10,SNR=14							
CHTO	**Chiang Mai**	**22.81**	**262**	*e*P	**P**	**13 44 55.0**	**-0.5**
	3.2nm,0.8s							
CMAR	**Chiang Mai Arr**	**22.92**	**261**	P	**P**	**13 44 58.4**	**+1.8**
	1.7nm,0.9s,baz=66,slow=7.6,SNR=14							
CMAR				LR	LR	13 54 46.1	
	comp=Z,101nm,20.7s,baz=70,slow=39							
GUMO	**Guam**	**23.24**	**112**	LR	LR	13 54 23.7	
	comp=Z,31nm,18.9s,baz=39,slow=38							
GTA	**Gaotai**	**24.82**	**314**	*e*P	**P**	**13 45 19.6**	**+4.7**
GTA				pP	sP	13 45 25.8	+8.5
GTA				sP	pP	13 45 29.3	+13
GTA				pmax	pmax		
	comp=Z,3.0nm,1.2s							
LBMI	**Labuha**	**24.86**	**169**	P	**P**	**13 45 18.7**	**+3.5**
ASAJ	**Asahikawa**	**25.82**	**34**	P	**P**	**13 45 21.2**	**-2.5**
	9.8nm,0.7s,baz=245,slow=13,SNR=9.4							
KLR	**Kul'dur**	**26.18**	**13**	P	**P**	**13 45 25.3**	**-1.6**
	3.8nm,0.7s,baz=208,slow=7.0,SNR=11							
SONM	**Songino Array**	**27.18**	**335**	P	**P**	**13 45 35.3**	**-0.8**
	1.4nm,1.0s,baz=162,slow=10,SNR=5.6							
GUN	**Gumba**	**33.38**	**285**	*e*P	**P**	**13 46 30.3**	**-1.2**
PKIN	**Phulchoki**	**33.82**	**284**	*e*P	**P**	**13 46 35.9**	**+0.7**
	4.0nm,0.4s							
GKN	**Gorkha**	**34.48**	**285**	*e*P	**P**	**13 46 41.4**	**+0.6**
	7.4nm,0.4s							
KOLN	**Koldanda**	**35.41**	**285**	*e*P	**P**	**13 46 49.9**	**+1.0**
	16nm,0.8s							
PYUN	**Piuthan**	**35.93**	**285**	*e*P	**P**	**13 46 54.2**	**+0.8**
MKAR	**Makanchi Array**	**39.55**	**315**	P	**P**	**13 47 22.9**	**-0.7**
	0.5nm,0.4s,baz=99,slow=9.9,SNR=11							
MA2	**Magadan**	**40.63**	**21**	LR	LR	14 04 50.5	
	comp=Z,85nm,19.9s,baz=250,slow=37							
ZALV	**Zalesovo Beam**	**41.26**	**326**	P	**P**	**13 47 35.2**	**-2.3**
	1.0nm,0.4s,baz=128,slow=9.4,SNR=4.3							
ZALV				LR	LR	14 05 27.1	
	comp=Z,50nm,21.4s,baz=70,slow=37							
FITZ	**Fitzroy Crossi**	**41.89**	**176**	P	**P**	**13 47 43.2**	**+0.2**
	4.9nm,0.5s,baz=2.5,slow=12,SNR=9.2							
TKM2	**Tokmak 2**	**43.09**	**308**	*e*P	**P**	**13 47 53.0**	**+0.1**
	5.4nm,0.9s							
KURK	**Kurchatov**	**43.24**	**320**	P	**P**	**13 47 52.0**	**-1.7**
KURBB	**Kurchatov Arra**	**43.26**	**320**	P	**P**	**13 47 52.0**	**-1.8**
	0.4nm,0.5s,baz=106,slow=9.6,SNR=4.1							
SEY	**Seymchan**	**43.69**	**19**	P	**P**	**13 47 55.1**	**-2.0**
	1.7nm,0.7s,baz=79,slow=21,SNR=10							
AAK	**Ala-Archa**	**43.84**	**307**	P	**P**	**13 48 00.4**	**+1.4**
	0.5nm,0.4s,baz=180,slow=12,SNR=2.5							
WRA	**Warramunga Arr**	**45.05**	**165**	P	**P**	**13 48 09.7**	**+1.1**
	2.3nm,0.7s,baz=346,slow=8.7,SNR=13							
TIXI	**Tiksi**	**47.84**	**3**	P	**P**	**13 48 28.8**	**-1.1**
	1.3nm,0.5s,baz=155,slow=2.4,SNR=6.6							
ASAR	**Alice Springs**	**48.54**	**166**	P	**P**	**13 48 37.5**	**+1.7**
	1.9nm,0.5s,baz=346,slow=7.0,SNR=74							
ABKAR	**Akbulak array**	**54.68**	**314**	*e*P	**P**	**13 49 21.1**	**-0.5**
	0.8nm,0.5s							
GEYT	**Alibeck**	**56.21**	**301**	P	**P**	**13 49 33.0**	**+0.2**
	1.2nm,0.5s,baz=75,slow=13,SNR=2.3							
STKA	**Stephens Creek**	**58.35**	**161**	P	**P**	**13 49 49.4**	**+1.6**
	2.4nm,0.6s,baz=332,slow=9.5,SNR=5.7							
GNI	**Garni**	**66.17**	**305**	LR	LR	14 22 05.0	
	comp=Z,35nm,19.5s,baz=76,slow=38							
ILAR	**Eielson Array**	**68.72**	**27**	P	**P**	**13 50 54.7**	**-1.3**
	0.6nm,0.4s,baz=265,slow=4.8,SNR=13							
FINES	**FINESS Array B**	**72.40**	**330**	P	**P**	**13 51 17.4**	**-1.1**
	0.9nm,0.5s,baz=55,slow=5.7,SNR=13							
INK	**Inuvik**	**72.87**	**22**	P	**P**	**13 51 20.2**	**-0.9**
	1.4nm,0.7s,baz=290,slow=5.0,SNR=12							
AKASG	**Malin Array Be**	**74.04**	**319**	P	**P**	**13 51 27.9**	**-0.5**
	0.3nm,0.4s,baz=57,slow=6.2,SNR=2.8							
BRTR	**Keskin Array B**	**74.52**	**307**	P	**P**	**13 51 33.7**	**+2.1**
	0.5nm,0.5s,baz=117,slow=5.5,SNR=3.2							
NOA	**NORSAR Array B**	**79.12**	**333**	P	**P**	**13 51 55.8**	**-1.2**
	0.6nm,0.7s,baz=99,slow=11,SNR=3.9							
YKA	**Yellowknife Ar**	**82.59**	**23**	P	**P**	**13 52 14.7**	**-0.7**
	2.4nm,0.7s,baz=308,slow=5.1,SNR=46							
GERES	**GERESS Array B**	**83.97**	**321**	P	**P**	**13 52 24.2**	**+1.2**
	0.3nm,0.7s,baz=89,slow=5.4,SNR=2.5							
NVAR	**Mina Array Bea**	**95.56**	**44**	P	**P**	**13 53 18.3**	**-0.1**
	0.4nm,0.5s,baz=302,slow=5.2,SNR=5.3							

NIED ***16*** *13:52:00.38˚30N×141˚.80E, h65km, Mw4.0 Best double couple: M0 1.26000×10^15 NP1:φ=50.00000°, δ=31.00000°, λ=100.00000°. NP2:φ=218.00000°, δ=59.00000°, λ=84.00000°.*

ISCJB ***16*** *13:52:21.8±0.7, 38˚.31N±0˚.04×141˚.85E±0˚.08, h56km±6km, mb3.8/15, MS3.6/2, Error ellipse: s-maj=11.3km s-min=5.9km az=19.8*

JMA ***16*** *13:52:23.0±0.1, 38˚.33N×141˚.75E, h57km±1km, M4.1*

JMA Felt I J1.

IDC ***16*** *13:52:23.7±2.7, 38˚.27N×141˚.78E, h60km±25km, mb3.5/14, mb1 3.8/17, mb1mx3.6/36, mbtmp3.9/17, ML3.4/3, MS3.3/3, Ms1 3.4/3, ms1mx2.7/47, Error ellipse: s-maj=20.4km s-min=14.9km az=94.0*

ISC 16 13:52:21.7±1.2, 38˚.27N±0˚.04×141˚.96E±0˚.08, h41km±12km, n40, σ1°35/40, mb3.9/15, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**0.52**	**291**	P	**Pn**	**13 52 33.3**	**+0.6**
JIO				S	**Sn**	**13 52 40.3**	**-0.1**
OFUJ	**Ofunato**	**0.84**	**344**	P	**Pn**	**13 52 37.7**	**+0.6**
OFUJ				S	**Sn**	**13 52 48.3**	**0.0**
JMK	**Ichinoseki**	**0.90**	**320**	P	**Pn**	**13 52 37.9**	**+0.1**
JMK				S	**Sn**	**13 52 48.5**	**-1.1**
JMM	**Marumori**	**1.01**	**247**	P	**Pn**	**13 52 39.3**	**0.0**
JMM				S	**Sn**	**13 52 51.3**	**-1.0**
JOU	**Okura**	**1.02**	**276**	P	**Pn**	**13 52 39.4**	**-0.2**
JFK	**Kawauchi**	**1.25**	**224**	P	**Pn**	**13 52 43.7**	**+1.0**
JOM	**Ohasama**	**1.31**	**337**	P	**Pn**	**13 52 43.9**	**+0.4**
JOM				S	**Sn**	**13 52 59.3**	**-0.6**
JYK	**Kaneyama**	**1.41**	**298**	P	**Pn**	**13 52 44.4**	**-0.5**
JYK				S	**Sn**	**13 53 00.2**	**-2.1**
JYS	**Shirataka**	**1.49**	**269**	P	**Pn**	**13 52 46.0**	**0.0**
JYS				S	**Sn**	**13 53 02.9**	**-1.4**
MJAR	**Matsushiro Arr**	**3.45**	**241**	P	**Pn**	**13 53 14.7**	**+1.7**
	5.4nm,0.3s,baz=35,slow=14,SNR=30						
MAT	**Matsushiro**	**3.45**	**241**	P	**Pn**	**13 53 14.9**	**+2.0**
MAT				S	**Sn**	**13 53 56.5**	**+3.9**
JHJ	**Hachijo jima 2**	**5.43**	**200**	P	**Pn**	**13 53 40.6**	**+0.4**
	6.5nm,0.3s,baz=320,slow=23,SNR=8.9						
JHJ				S	**Sn**	**13 54 38.4**	**-3.0**
	5.1nm,0.3s,baz=234,slow=19,SNR=2.3						
ASAJ	**Asahikawa**	**5.86**	**4**	P	**Pn**	**13 53 45.8**	**-0.3**
	1.7nm,0.3s,baz=208,slow=14,SNR=18						
ASAJ				S	Sn	13 54 45.8	-6.2
	0.5nm,0.3s,baz=180,slow=13,SNR=2.4						
USRK	**Ussuriysk Ar.**	**9.56**	**311**	P	**Pn**	**13 54 37.5**	**+0.7**
	1.5nm,0.3s,baz=124,slow=15,SNR=26						
KSRS	**Korea Array**	**11.13**	**270**	P	**Pn**	**13 55 00.7**	**+2.5**
	0.2nm,0.3s,baz=72,slow=13,SNR=4.5						
KSRS				LR	LR	13 58 33.1	
	comp=Z,62nm,20.4s,baz=130,slow=34						
JCJ	**Chichijima**	**11.14**	**179**	P	**Pn**	**13 54 57.3**	**-1.2**
	1.1nm,0.3s,baz=350,slow=22,SNR=6.8						
SEY	**Seymchan**	**25.50**	**11**	P	**P**	**13 57 47.1**	**+1.2**
	0.5nm,0.5s,baz=233,slow=20,SNR=3.0						
SONM	**Songino Array**	**27.48**	**302**	P	**P**	**13 58 02.9**	**-1.2**
	1.0nm,0.7s,baz=99,slow=8.9,SNR=4.7						
H11N2	**WAKE ISLAND Hy**	**28.43**	**123**	T	T	14 28 30.9	
	baz=316,slow=75,SNR=147						
H11N1	**WAKE ISLAND Hy**	**28.44**	**124**	T	T	14 28 35.1	
	baz=316,slow=75,SNR=75						
H11N3	**WAKE ISLAND Hy**	**28.45**	**123**	T	T	14 28 42.4	
	baz=316,slow=75,SNR=70						
H11S1	**WAKE ISLAND Hy**	**29.19**	**125**	T	T

comp=Z,72nm,21.1s,baz=330,slow=37
FITZ Fitzroy Crossi 18.80 203 P **Pn** 14 08 52.3 **+1.0**
0.2nm,0.3s,baz=39,slow=13,SNR=3.1
WRA Warramunga Arr 19.13 177 P **Pn** 14 08 55.8 **+0.5**
0.2nm,0.3s,baz=356,slow=11,SNR=20
ASAR Alice Springs 22.81 178 P **P** 14 09 34.6 **+0.5**
2.8nm,0.7s,baz=4,slow=9.2,SNR=30
STKA Stephens Creek 31.98 166 P **P** 14 10 57.3 **+0.2**
0.8nm,0.6s,baz=348,slow=9.3,SNR=3.5
MJAR Matsushiro Arr 37.37 7 LR LR 14 25 50.6
comp=Z,26nm,19.4s,baz=315,slow=34
H11N1 WAKE ISLAND Hy 38.77 57 T T 14 52 56.0
baz=243,slow=75,SNR=18
H11N2 WAKE ISLAND Hy 38.79 57 T T 14 52 57.0
baz=243,slow=75,SNR=14
H11N3 WAKE ISLAND Hy 38.79 57 T T 14 53 12.0
baz=243,slow=75,SNR=15
AFI Afiamalu 55.97 106 LR LR 14 33 55.2
comp=Z,129nm,21.4s,baz=222,slow=32
MKAR Makanchi Array 64.91 324 P P 14 15 08.9 **-1.3**
0.5nm,0.8s,baz=111,slow=8.3,SNR=2.8

NIED ***16*** *14:04:00,36.80N×141.80E,h29km,Mw3.7 Best double couple: M₀4.23000×10¹⁴ NP1:φs246.00000°,δ27.00000°, λ177.00000°. NP2:φs338.00000°,δ89.00000°,λ63.00000°.*

JMA 16 14:04:36.2±0.3,36.78N×141.83E,h22km±4km,M3.6, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.89**	**292**	P	Pb	14 04 52.5	-0.4
ONAJ				S	Sb	14 05 04.7	+0.3
JFK	**Kawauchi**	**0.96**	**308**	P	Pb	14 04 53.7	-0.5
JHO	**Hitachi**	**1.03**	**261**	P	Pn	14 04 54.7	-0.6
JHO				S	Sb	14 05 07.3	-1.0
JMM	**Marumori**	**1.36**	**323**	P	Pn	14 04 59.9	0.0
JFT	**Otama**	**1.40**	**302**	P	Pb	14 05 01.3	-0.4
JFT				S	Sn	14 05 18.6	+0.3
JIO	**Ouri**	**1.71**	**347**	P	Pn	14 05 05.1	+0.4
JIO				S	Sn	14 05 25.3	-0.6
JOU	**Okura**	**1.83**	**330**	P	Pb	14 05 07.9	-1.2
JOU				S	Sn	14 05 29.8	+0.8
JAG	**Ashikaga**	**1.94**	**260**	P	Pn	14 05 08.2	+0.3
JYS	**Shirataka**	**2.01**	**316**	P	Pb	14 05 11.0	-1.0
JYS				S	Sn	14 05 34.9	+1.6
JKT	**Katashina**	**2.07**	**270**	P	Pb	14 05 11.7	-1.5
JKT				S	Sn	14 05 36.5	+1.6
MAT	**Matsushiro**	**2.92**	**266**	P	Pn	14 05 23.3	+1.9
MAT				S	Sn	14 05 58.5	+2.7

NIED ***16*** *14:08:00,36.10N×141.10E,h29km,Mw3.6 Best double couple: M₀2.40000×10¹⁴ NP1:φs48.00000°,δ42.00000°, λ-66.00000°. NP2:φs196.00000°,δ52.00000°, λ-111.00000°.*
IDC ***16*** *14:08:14.7±0.8,36.06N×141.36E,h0km,mb3.4/8, mb1 3.7/11,mb1mx3.6/57,mbtmp3.5/11,ML3.6/3,Error ellipse: s-maj=23.9km s-min=17.9km az=94.0*
ISCJB ***16*** *14:08:17.8±0.6,36.18N±0.04×141.20E±0.06,h31km, mb3.4/8,Error ellipse: s-maj=7.4km s-min=6.1km az=17.8*
JMA ***16*** *14:08:19.5±0.1,36.12N×141.08E,h42km±2km,M3.5*
JMA Felt I J1.

ISC 16 14:08:19.3±0.7,36.17N±0.05×141.16E±0.07,h31km,n22, σ1s20/20,mb3.5/8,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.52**	**208**	P	**Pb**	**14 08 29.7**	**-0.4**
CHOJ				S	**Sb**	**14 08 36.7**	**-0.8**
JHO	**Hitachi**	**0.65**	**313**	P	**Pb**	**14 08 31.8**	**-0.4**
JYT	**Yasato**	**0.78**	**275**	P	**Pn**	**14 08 33.5**	**-0.7**
JYT				S	**Sb**	**14 08 43.0**	**-1.7**
MJAR	**Matsushiro Arr**	**2.41**	**280**	Pn	**Pn**	**14 08 57.2**	**+0.6**
	6.5nm,0.3s,baz=95,slow=16,SNR=28						
MAT	**Matsushiro**	**2.41**	**280**	P	**Pn**	**14 08 57.4**	**+0.8**
MAT				S	**Sn**	**14 09 24.0**	**-1.1**
JHJ	**Hachijo jima 2**	**3.24**	**201**	Pn	**Pn**	**14 09 09.2**	**+1.2**
	4.1nm,0.3s,baz=70,slow=15,SNR=5.7						
JHJ				Sn	**Sn**	**14 09 46.8**	**+1.2**
	16nm,0.3s,baz=292,slow=22,SNR=6.0						
ASAJ	**Asahikawa**	**8.02**	**7**	Pn	**Pn**	**14 10 12.8**	**-0.8**
	0.6nm,0.3s,baz=220,slow=15,SNR=5.9						
JCJ	**Chichijima**	**9.09**	**174**	Pn	**Pn**	**14 10 26.3**	**-2.0**
	2.5nm,0.3s,baz=340,slow=22,SNR=6.1						
JCJ				Sn	Sn	14 11 59.2	-10
	2.2nm,0.3s,baz=180,slow=20,SNR=2.8						
H11N2	**WAKE ISLAND Hy**	**27.89**	**119**	T	T	14 43 17.2	
	baz=311,slow=75,SNR=16						
H11N1	**WAKE ISLAND Hy**	**27.90**	**119**	T	T	14 43 16.5	
	baz=311,slow=75,SNR=18						
H11N3	**WAKE ISLAND Hy**	**27.91**	**119**	T	T	14 43 18.0	
	baz=311,slow=75,SNR=17						
H11S1	**WAKE ISLAND Hy**	**28.57**	**121**	T	T	14 44 13.3	
	baz=314,slow=75,SNR=24						
H11S3	**WAKE ISLAND Hy**	**28.57**	**121**	T	T	14 44 14.2	
	baz=314,slow=75,SNR=18						
H11S2	**WAKE ISLAND Hy**	**28.59**	**121**	T	T	14 44 05.8	
	baz=314,slow=75,SNR=18						
ZALV	**Zalesovo Beam**	**42.35**	**313**	P	**P**	**14 16 11.3**	**+1.1**
	0.3nm,0.3s,baz=98,slow=7.9,SNR=2.5						
MKAR	**Makanchi Array**	**44.41**	**303**	P	**P**	**14 16 29.1**	**+2.0**
	0.1nm,0.5s,baz=97,slow=9.2,SNR=2.6						
ILAR	**Eielson Array**	**50.34**	**32**	P	**P**	**14 17 12.2**	**-0.6**
	0.4nm,0.7s,baz=269,slow=5.7,SNR=7.5						
WRA	**Warramunga Arr**	**56.17**	**188**	P	**P**	**14 17 55.9**	**-0.3**
	0.3nm,0.3s,baz=6.1,slow=7.4,SNR=7.9						
ASAR	**Alice Springs**	**59.90**	**188**	P	**P**	**14 18 21.3**	**-1.0**
	0.2nm,0.3s,baz=11,slow=5.7,SNR=3.8						
YKA	**Yellowknife Ar**	**64.66**	**30**	P	**P**	**14 18 54.8**	**+1.2**
	0.2nm,0.6s,baz=305,slow=7.3,SNR=5.0						
NOA	**NORSAR Array B**	**74.91**	**337**	P	**P**	**14 19 58.2**	**+1.4**
	0.4nm,0.6s,baz=38,slow=5.8,SNR=2.6						
PDAR	**Pinedale Array**	**78.42**	**45**	P	**P**	**14 20 17.2**	**0.0**
	0.1nm,0.3s,baz=256,slow=7.3,SNR=2.8						

JMA 16 14:10:17.7±0.1,36.38N×140.96E,h34km±1km,M2.6, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHO	**Hitachi**	**0.39**	**306**	P	Pb	14 10 26.4	-0.4
JHO				S	Sb	14 10 32.7	-0.3
ONAJ	**Iwakimizuishiy**	**0.73**	**350**	S	Sn	14 10 40.8	-0.9
JFK	**Kawauchi**	**0.99**	**356**	S	Sn	14 10 46.6	-1.4
JFT	**Otama**	**1.24**	**336**	P	Pb	14 10 39.8	-0.8
JFT				S	Sb	14 10 55.5	-0.9
MAT	**Matsushiro**	**2.23**	**275**	P	Pn	14 10 54.1	+1.9
MAT				S	Sn	14 11 19.3	+0.8

IDC 16 14:17:34.5±4.1,12.66S×167.65E,h0km,mb3.5/3, mb1 3.8/3,mb1mx3.5/34,mbtmp3.5/3,Error ellipse: s-maj=229.4km s-min=31.9km az=142.0,Santa Cruz Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**32.74**	**253**	P	P	14 24 09.9	**+0.6**
	0.3nm,0.4s,baz=85,slow=9.1,SNR=2.4						
ASAR	**Alice Springs**	**33.80**	**246**	P	P	14 24 18.4	-0.2
	0.3nm,0.5s,baz=68,slow=9.2,SNR=8.1						
ILAR	**Eielson Array**	**84.46**	**18**	P	P	14 30 09.5	+0.7
	0.4nm,0.6s,baz=237,slow=5.5,SNR=8.2						
ARCES	**ARCESS Array B**	**118.35**	**346**	PKP	PKPdf	14 36 22.0	-1.5
	2.8nm,0.9s,baz=57,slow=2.4,SNR=7.1						

IDC ***16*** *14:22:38.8±4.6, 19.63S×167.71E,h0km,mb3.9/5, mb1 4.1/6,mb1mx3.7/37,mbtmp3.9/6,ML3.5/1,MS3.2/3, Ms1 3.2/3,ms1mx2.9/27,Error ellipse: s-maj=85.0km s-min=39.9km az=93.0*

ISC 16 14:22:42.3±3.9,19.8S±0.2×167.8E±0.5,h27km,n8, σ0s99/7,mb3.8/4,Vanuatu Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**2.58**	**210**	Pn	**Pn**	**14 23 21.5**	**-0.9**
	7.8nm,0.3s,baz=24,slow=20,SNR=23						
DZM				Sn	**Sn**	**14 23 53.5**	**+0.6**
	28nm,0.3s,baz=72,slow=22,SNR=9.1						
DZM				LR	LR	14 24 25.3	
	comp=Z,350nm,18.3s,baz=198,slow=40						

CTA Charters Tower 20.27 266 P **P** 14 27 15.6 **-0.4**
0.7nm,0.3s,baz=72,slow=16,SNR=2.0
PMG Port Moresby 22.49 294 LR LR 14 34 26.9
comp=Z,27nm,21.3s,baz=280,slow=32
STKA Stephens Creek 26.40 238 P **P** 14 28 18.1 **+1.4**
1.3nm,0.6s,baz=104,slow=12,SNR=3.5
RAR Rarotonga 30.36 98 LR LR 14 37 56.1
comp=Z,112nm,20.3s,baz=291,slow=30
WRA Warramunga Arr 31.46 264 P **P** 14 29 01.1 **-0.7**
0.8nm,0.5s,baz=87,slow=8.4,SNR=21
ASAR Alice Springs 31.69 257 P **P** 14 29 03.9 **0.0**
3.2nm,0.6s,baz=86,slow=8.9,SNR=51
CMAR Chiang Mai Arr 77.53 295 P **P** 14 34 36.5 **+0.3**
0.6nm,0.9s,baz=142,slow=3.4,SNR=5.5

ISK ***16*** *14:28:56.3,36.45N×28.78E,h6km,MD3.1,ML2.9*
ISCJB ***16*** *14:28:57.8±0.7,36.50N±0.04×28.79E±0.03,h7km±5km, Error ellipse: s-maj=6.7km s-min=3.9km az=24.2*
CSEM ***16*** *14:28:57.8±0.2,36.50N×28.79E,h8km,ML2.7,Error ellipse: s-maj=4.8km s-min=3.4km az=21.0*
DDA ***16*** *14:28:57.0,36.44N×28.72E,h24km,Ml3.0*
THE ***16*** *14:28:57.4,36.54N×28.83E,h0km±1km,ML2.7/2,Error ellipse: s-maj=1.9km s-min=1.1km az=201.0*

ISC 16 14:28:57.4±1.2,36.49N±0.03×28.75E±0.02,h0km±11km, n44,σ0s73/63,Dodecanese Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FETY	**Fethiye**	**0.30**	**61**	*e*PG	**Pg**	**14 29 03.1**	**0.0**
FETY				*e*SG	**Sg**	**14 29 07.5**	**+0.4**
FETY	**Fethiye**	**0.30**	**61**	P	**Pg**	**14 29 02.7**	**-0.5**
FETY				S	**Sg**	**14 29 07.6**	**+0.5**
FETY	**Fethiye**	**0.30**	**61**	P	**Pg**	**14 29 02.7**	**-0.5**
FETY	**Fethiye**	**0.30**	**61**	*e*Pg	**Pg**	**14 29 03.2**	**0.0**
FETY				S	**Sg**	**14 29 07.6**	**+0.5**
DALY	**Dalyan (Mu¨la**	**0.34**	**346**	*e*PG	**Pg**	**14 29 03.9**	**+0.1**
DALY				*e*SG	**Sb**	**14 29 10.8**	**-1.4**
DALY	**Dalyan (Mu¨la**	**0.34**	**346**	*e*Pg	**Pg**	**14 29 03.9**	**+0.1**
DALY				*e*Sg	**Sb**	**14 29 10.8**	**-1.4**
TURN	**Turunc**	**0.40**	**342**	*i* P	**Pb**	**14 29 07.0**	**-0.4**
TURN				*i* S	**Sb**	**14 29 15.5**	**+1.5**
TURN	**Turunc**	**0.40**	**342**	P	**Pb**	**14 29 07.0**	**-0.4**
TURN				S	**Sb**	**14 29 15.5**	**+1.5**
ARG	**Arkhangelos**	**0.58**	**242**	P	**Pb**	**14 29 10.5**	**+0.2**
ARG	**Arkhangelos**	**0.58**	**242**	P	**Pb**	**14 29 10.5**	**+0.2**
AKAS	**Kas**	**0.73**	**110**	*i* P	**Pg**	**14 29 10.8**	**-0.6**
AKAS				*i* S	**Sb**	**14 29 22.7**	**-1.0**
AKAS	**Kas**	**0.73**	**110**	P	**Pg**	**14 29 10.8**	**-0.6**
AKAS				S	**Sb**	**14 29 22.7**	**-1.0**
YER	**Yerkesik**	**0.75**	**330**	*e*PG	**Pg**	**14 29 11.7**	**0.0**
YER	**Yerkesik**	**0.75**	**330**	P	**Pg**	**14 29 11.4**	**-0.3**
YER				S	**Sb**	**14 29 23.6**	**-0.4**
YER	**Yerkesik**	**0.75**	**330**	P	**Pg**	**14 29 11.4**	**-0.3**
YER	**Yerkesik**	**0.75**	**330**	*e*Pg	**Pg**	**14 29 11.7**	**0.0**
YER				S	**Sb**	**14 29 23.6**	**-0.4**
KSL	**Kastellorizon**	**0.75**	**117**	P	**Pg**	**14 29 11.3**	**-0.5**
KSL				S	**Sb**	**14 29 23.5**	**-0.5**
BDRM	**Kayabasi**	**1.20**	**299**	*i* P	**Pb**	**14 29 20.9**	**0.0**
BDRM	**Kayabasi**	**1.20**	**299**	P	**Pb**	**14 29 20.9**	**0.0**
NIS1	**Nisyros Isl.**	**1.27**	**276**	*e*PN	**Pg**	**14 29 21.4**	**-0.4**
NIS1	**Nisyros Isl.**	**1.27**	**276**	*e*Pn	**Pg**	**14 29 21.4**	**-0.4**
BODT	**Bodrum**	**1.29**	**297**	*e*PN	**Pg**	**14 29 22.0**	**-0.2**
BODT	**Bodrum**	**1.29**	**297**	P	**Pg**	**14 29 21.8**	**-0.4**
BODT				S	**Sn**	**14 29 41.0**	**+0.3**
BODT	**Bodrum**	**1.29**	**297**	*e*Pn	**Pg**	**14 29 22.0**	**-0.2**
BODT				S	**Sn**	**14 29 41.0**	**+0.3**
AYDN	**Tasoluk**	**1.36**	**329**	*i* P	**Pg**	**14 29 23.3**	**-0.2**
AYDN	**Tasoluk**	**1.36**	**329**	P	**Pg**	**14 29 23.3**	**-0.2**
KORT	**Korkueli**	**1.38**	**68**	*i* P	**Pb**	**14 29 24.7**	**+0.6**
KORT				*i* S	**Sn**	**14 29 46.0**	**+3.0**
KORT	**Korkueli**	**1.38**	**68**	P	**Pb**	**14 29 24.7**	**+0.6**
KARP	**Karpathos**	**1.60**	**234**	*e*PN	**Pn**	**14 29 26.3**	**-0.6**
KARP	**Karpathos**	**1.60**	**234**	P	**Pn**	**14 29 27.0**	**+0.1**
KARP				S	**Sg**	**14 29 49.7**	**+1.0**
KARP	**Karpathos**	**1.60**	**234**	*e*Pn	**Pn**	**14 29 26.3**	**-0.6**
KARP	**Karpathos**	**1.60**	**234**	P	**Pn**	**14 29 27.0**	**+0.1**
KARP				S	**Sg**	**14 29 49.7**	**+1.0**
AYDB	**Zeytinkoy-Aydi**	**1.61**	**335**	*e*PN	**Pn**	**14 29 26.5**	**-0.7**
AYDB	**Zeytinkoy-Aydi**	**1.61**	**335**	*e*Pn	**Pn**	**14 29 26.5**	**-0.7**
GCAM	**G?zelcaml?**	**1.71**	**315**	*i* P	**Pn**	**14 29 27.9**	**-0.6**
GCAM	**G?zelcaml?**	**1.71**	**315**	P	**Pn**	**14 29 27.9**	**-0.6**
BCK	**Bucak**	**1.76**	**56**	*e*PN	**Pn**	**14 29 28.6**	**-0.6**
BCK	**Bucak**	**1.76**	**56**	*e*Pn	**Pn**	**14 29 28.6**	**-0.6**
SMG	**Samos**	**1.96**	**309**	P	**Pn**	**14 29 31.9**	**+0.1**
SMG				S	**Sn**	**14 29 56.6**	**-0.5**
SMG	**Samos**	**1.96**	**309**	P	**Pn**	**14 29 31.9**	**+0.1**
SMG				S	**Sn**	**14 29 56.6**	**-0.5**
KHAL	**Karahalli**	**1.97**	**17**	*i* P	**Pn**	**14 29 31.7**	**-0.4**
KHAL	**Karahalli**	**1.97**	**17**	P	**Pn**	**14 29 31.7**	**-0.4**
KULA	**Kula-Manisa**	**2.02**	**358**	*e*PN	**Pn**	**14 29 31.7**	**-1.1**
KULA	**Kula-Manisa**	**2.02**	**358**	*e*Pn	**Pn**	**14 29 31.7**	**-1.1**

JMA 16 14:42:17.8±0.1,38.38N×142.25E,h37km±2km,M3.7, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**0.71**	**276**	P	Pn	14 42 31.3	0.0
JIO				S	Sn	14 42 40.6	-0.4
OFUJ	**Ofunato**	**0.83**	**327**	P	Pn	14 42 33.1	+0.1
OFUJ				S	Sn	14 42 44.0	-0.1
JMK	**Ichinoseki**	**0.99**	**306**	P	Pn	14 42 35.7	+0.6
JMK				S	Sn	14 42 48.4	+0.6
MIYJ	**Miyakonagasawa**	**1.24**	**344**	P	Pn	14 42 39.3	+0.7
MIYJ				*e*S	Sn	14 42 55.0	+0.9
JOU	**Okura**	**1.25**	**270**	P	Pn	14 42 39.5	+0.8
JMM	**Marumori**	**1.26**	**246**	P	Pn	14 42 39.1	+0.3
JMM				*e*S	Sn	14 42 55.1	+0.6
JOM	**Ohasama**	**1.32**	**326**	P	Pn	14 42 40.7	+1.0
JOM				S	Sn	14 42 57.6	+1.5
JFK	**Kawauchi**	**1.49**	**228**	P	Pn	14 42 43.0	+1.0
JYK	**Kaneyama**	**1.57**	**291**	P	Pn	14 42 44.4	+1.2
JFT	**Otama**	**1.74**	**241**	P	Pn	14 42 46.4	+0.9
JFT				S	Sn	14 43 07.1	+0.7
JKZ	**Kuzumaki**	**1.75**	**336**	P	Pn	14 42 47.1	+1.4
JANG	**Nango**	**2.07**	**344**	P	Pn	14 42 51.4	+1.4

ISK ***16*** *14:46:33.7,39.41N×36.47E,h5km,MD2.9*
CSEM ***16*** *14:46:35.8±0.3,39.42N×36.41E,h10km,MD2.8,Error ellipse: s-maj=9.3km s-min=5.2km az=169.0*
DDA ***16*** *14:46:35.5,39.56N×36.44E,h7km,Md2.8*
ISCJB ***16*** *14:46:36.7±0.6,39.51N±0.05×36.41E±0.03,h3km±9km, Error ellipse: s-maj=8.6km s-min=4.4km az=178.9*

ISC 16 14:46:36.4±0.9,39.43N±0.04×36.44E±0.02,h13km±7km, n18,σ1s01/32,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CUSAR	**Sarkisla-SIVAS**	**0.15**	**267**	*i* P	**Pg**	**14 46 39.7**	**-0.5**
CUSAR				*i* S	**Sg**	**14 46 43.9**	**+1.0**
CUSAR	**Sarkisla-SIVAS**	**0.15**	**267**	P	**Pg**	**14 46 39.7**	**-0.5**
CUSAR				S	**Sg**	**14 46 43.9**	**+1.0**
CUALT	**Altinyayla-SIV**	**0.29**	**122**	*i* P	**Pb**	**14 46 42.9**	**-0.6**
CUALT				*i* S	**Sb**	**14 46 49.2**	**+0.9**
CUALT	**Altinyayla-SIV**	**0.29**	**122**	P	**Pb**	**14 46 42.9**	**-0.6**
CUALT				S	**Sb**	**14 46 49.2**	**+0.9**
SVSK	**Karacayir**	**0.65**	**41**	*e*PG	**Pg**	**14 46 47.4**	**-1.7**
SVSK				*e*SG	**Sg**	**14 46 57.8**	**+0.1**
SVSK	**Karacayir**	**0.65**	**41**	*e*Pg	**Pg**	**14 46 47.4**	**-1.7**
SVSK				*e*Sg	**Sg**	**14 46 57.8**	**+0.1**
BNN	**Bunyan**	**0.74**	**219**	*e*PG	**Pg**	**14 46 48.9**	**-1.8**
BNN	**Bunyan**	**0.74**	**219**	*e*Pg	**Pg**	**14 46 48.9**	**-1.8**
CUKAN	**kangal_SIVAS**	**0.80**	**98**	*i* P	**Pg**	**14 46 51.3**	**-0.7**
CUKAN				*i* S	**Sn**	**14 47 06.5**	**+1.0**
CUKAN	**kangal_SIVAS**	**0.80**	**98**	P	**Pg**	**14 46 51.3**	**-0.7**
CUKAN				S	**Sn**	**14 47 06.5**	**+1.0**
YOZ	**Yozgat**	**0.89**	**284**	*e*PG	**Pg**	**14 46 52.3**	**-1.4**
YOZ				*e*SG	**Sb**	**14 47 06.6**	**+0.9**
YOZ	**Yozgat**	**0.89**	**284**	*e*Pg	**Pg**	**14 46 52.3**	**-1.4**
YOZ				*e*Sg	**Sb**	**14 47 06.6**	**+0.9**
CUZAR	**Zara_SIVAS**	**1.12**	**65**	*i* P	**Pg**	**14 46 57.8**	**-0.3**
CUZAR				*i* S	**Sn**	**14 47 14.4**	**+1.0**
CUZAR	**Zara_SIVAS**	**1.12**	**65**	P	**Pg**	**14 46 57.8**	**-0.3**
CUZAR				S	**Sn**	**14 47 14.4**	**+1.0**
SUSE	**Susehri**	**1.57**	**60**	*i* P	**Pn**	**14 47 04.2**	**+0.2**
SUSE				*i* S	**Sg**	**14 47 26.2**	**-0.6**
SUSE	**Susehri**	**1.57**	**60**	P	**Pn**	**14 47 04.2**	**+0.2**
SUSE				S	**Sg**	**14 47 26.2**	**-0.6**
CORM	**Corum**	**1.58**	**299**	*e*PN	**Pn**	**14 47 04.5**	**+0.2**
CORM	**Corum**	**1.58**	**299**	*e*Pn	**Pn**	**14 47 04.5**	**+0.2**

JMA 16 14:46:58.7,36.88N×140.69E,h7km,M2.8,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.24**	**21**	P	Pg	14 47 03.7	+0.2
ONAJ				S	Sg	14 47 07.5	+0.8
JHO	**Hitachi**	**0.29**	**200**	P	Pg	14 47 04.4	+0.1
JHO				S	Sg	14 47 08.5	+0.4
JFK	**Kawauchi**	**0.51**	**17**	P	Pg	14 47 08.4	-0.1
JFK				S	Sg	14 47 15.4	+0.2
MAT	**Matsushiro**	**2.02**	**261**	P	Pn	14 47 34.2	+0.9
MAT				S	Sb	14 48 00.7	-0.5

JMA ***16*** *14:51:36.6±0.1,23.47N×121.54E,h47km±2km*
ISCJB ***16*** *14:51:37.4±0.3,23.46N±0.02×121.63E±0.02,h31km±2km, Error ellipse: s-maj=3.3km s-min=2.2km az=137.6*
TAP ***16*** *14:51:37.6,23.48N×121.56E,h38km,MJ.3,C*

ISC 16 14:51:37.6±0.9,23.48N±0.02×121.59E±0.02,h32km±7km, n60,σ0s69/105,4C,Taiwan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TEGC	**Jichi Village**	**0.24**	**349**	*e*P	**Pn**	**14 51 45.6**	**+0.8**
	baz=3.0						
EHY	**Hungye**	**0.25**	**277**	⇑*i*P	**Pb**	**14 51 44.7**	**0.0**
	baz=277						
EHY				*i* S	**Sb**	**14 51 49.6**	**+0.1**
	baz=277						
TWF1	**Yuli**	**0.30**	**245**	*e*P	**Pb**	**14 51 45.3**	**0.0**
	baz=252						
TWF1				S	**Sn**	**14 51 51.2**	**+0.1**
	baz=252						
ESL	**Shilin**	**0.36**	**337**	*e*P	**Pb**	**14 51 45.7**	**-0.5**
	baz=335						
ESL				S	**Sn**	**14 51 52.5**	**-0.3**
	baz=335						
ESF	**Shoufeng Towns**	**0.40**	**349**	*e*P	**Pn**	**14 51 47.1**	**0.0**
	baz=344						
CHKT	**Chengkung**	**0.43**	**209**	*e*P	**Pb**	**14 51 47.1**	**0.0**
	baz=198						
CHKT				S	**Sn**	**14 51 54.8**	**+0.5**
	baz=198						
HWA	**Hwalien**	**0.50**	**2**	*e*P	**Pn**	**14 51 48.6**	**+0.1**
	baz=14						
WDT	**Danda**	**0.50**	**304**	⇑P	**Pb**	**14 51 48.3**	**-0.2**
	baz=300						
WDT				*e*S	**Sb**	**14 51 56.0**	**0.0**
	baz=300						
YUS	**Yu-Shan**	**0.59**	**271**	*i* P	**Pb**	**14 51 49.9**	**0.0**
	baz=278						
YUS				S	**Sb**	**14 51 58.0**	**-0.3**
	baz=278						
ELDTW	**Lidau**	**0.60**	**242**	*e*P	**Pb**	**14 51 48.7**	**-1.2**
	baz=234						
TWD	**Chiawan**	**0.60**	**1**	*e*P	**Pb**	**14 51 49.6**	**-0.3**
	baz=352						
TWD				S	**Sn**	**14 51 58.6**	**+0.1**
	baz=352						
ALS	**Alishan**	**0.72**	**273**	*i* P	**Pn**	**14 51 52.1**	**+0.2**
	baz=281						
ALS				*e*S	**Sb**	**14 52 00.7**	**-1.1**
	baz=281						
WHF	**Hehuan Shan**	**0.73**	**336**	*e*P	**Pb**	**14 51 51.4**	**-0.9**
	baz=339						
WHF				S	**Sb**	**14 52 01.2**	**-0.9**
	baz=339						
SMLT	**Sun Moon Lake**	**0.75**	**303**	⇑*i*P	**Pb**	**14 51 52.1**	**-0.3**
	baz=304						
SMLT				*e*S	**Sn**	**14 52 03.1**	**+0.7**
	baz=304						
TYC	**Yuchr**	**0.80**	**302**	*e*P	**Pb**	**14 51 52.9**	**-0.1**
	baz=304						
TYC				*e*S	**Sn**	**14 52 04.1**	**+0.8**
	baz=304						
TWG	**Pinlang**	**0.81**	**216**	*e*P	**Pn**	**14 51 51.3**	**-1.5**
	baz=214						
STYT	**Tauyuan**	**0.83**	**248**	P	**Pn**	**14 51 52.8**	**-0.3**
	baz=243						
STYT				*e*S	**Sb**	**14 52 03.8**	**-0.7**
	baz=243						
CHN5	**Tsauling**	**0.85**	**278**	*i* P	**Pb**	**14 51 53.8**	**-0.1**
	baz=278						
CHN5				*i* S	**Sn**	**14 52 05.8**	**+1.1**
	baz=278						
TWT	**Tachien**	**0.86**	**334**	⇑P	**Pb**	**14 51 53.9**	**-0.4**
	baz=340						
TWT				*e*S	**Sb**	**14 52 05.1**	**-0.5**
	baz=340						
WNT	**Mingjian**	**0.92**	**296**	*e*P	**Pb**	**14 51 54.8**	**-0.4**
	baz=284						
WNT				*e*S	**Sb**	**14 52 08.1**	**+0.9**
	baz=284						
CHN4	**Tsaushan**	**0.93**	**262**	P	**Pb**	**14 51 55.2**	**0.0**
	baz=257						
CHN4				S	**Sb**	**14 52 07.8**	**+0.6**
	baz=257						
WTP	**Ta-pu**	**0.93**	**256**	P	**Pn**	**14 51 54.9**	**+0.5**
	baz=255						
WTP				S	**Sb**	**14 52 07.7**	**+0.4**
	baz=255						
ENA	**Nanau**	**0.96**	**8**	*e*P	**Pn**	**14 51 54.4**	**-0.4**
	baz=358						
ENA				*e*S	**Sn**	**14 52 07.1**	**-0.2**
	baz=358						
WGK	**Gukeng**	**0.97**	**283**	*e*P	**Pn**	**14 51 55.2**	**+0.3**
	baz=283						
WGK				*e*S	**Sb**	**14 52 08.2**	**-0.2**
	baz=283						
NNS	**Nan Shan**	**0.98**	**348**	*e*P	**Pn**	**14 51 55.0

NSK					*e*S		**Sn**	14 52 13.8	0.0
	baz=352								
TWE	**Neicheng**	**1.24**	**3**	*e*P			**Pb**	14 51 59.9	-0.6
	baz=5.0								
TWE					*e*S		**Sb**	14 52 16.1	0.0
	baz=5.0								
WTCT	**Ta-ch'eng**	**1.26**	**288**	*e*P			**Pn**	14 51 59.7	+0.8
	baz=277								
WTCT					*e*S		**Sb**	14 52 16.2	-0.5
	baz=277								
NSTT	**Nanjuang**	**1.27**	**335**	*e*P			**Pb**	14 51 60.0	-1.0
	baz=336								
NSTT					*e*S		**Sb**	14 52 16.2	-0.8
	baz=336								
CHN8	**Yiju**	**1.27**	**264**	*e*P			**Pn**	14 51 59.6	+0.5
	baz=264								
CHN8					*e*S		**Sb**	14 52 16.5	-0.6
	baz=264								
EAST	**Anshuo**	**1.29**	**212**	*e*P			**Pn**	14 51 59.6	+0.3
	baz=204								
EGS		**1.40**	**13**	*e*P			**Pb**	14 52 02.9	-0.3
	baz=23								
EGS					*e*S		**Sb**	14 52 20.1	-0.6
	baz=23								
SCZT	**Fangliau**	**1.42**	**219**	*e*P			**Pn**	14 52 02.5	+1.3
	baz=215								
SCZT					*e*S		**Sn**	14 52 20.1	+1.4
	baz=215								
LAY	**Lan-yu**	**1.43**	**181**	*e*P			**Pn**	14 51 59.4	-2.0
	baz=173								
TWB1	**Santiao Chiao**	**1.57**	**13**	*e*P			**Pn**	14 52 04.5	+1.3
JYNG	**Yonagunijimaku**	**1.57**	**52**	P			**Pn**	14 52 04.6	+1.3
JYNG					*e*S		**Sn**	14 52 23.6	+1.1
NWF	**Wu-fen Shan**	**1.60**	**6**	*e*P			**Pn**	14 52 04.5	+0.9
	baz=354								
NWF					*e*S		**Sn**	14 52 24.3	+1.1
	baz=354								
TWS1	**Kuangyinshan**	**1.62**	**354**	*e*P			**Pb**	14 52 05.8	-1.2
	baz=10.0								
TWK1	**Hengchun**	**1.69**	**206**	*e*P			**Pn**	14 52 05.4	+0.5
	baz=196								
TSEB	**Hengchuen, Pin**	**1.69**	**202**	*e*P			**Pn**	14 52 06.3	+1.3
	baz=204								
TSEB					*e*S		**Sn**	14 52 25.9	+0.4
	baz=204								
WDGT	**Dungji**	**1.79**	**263**	*e*P			**Pn**	14 52 05.5	-0.7
	baz=263								
WDGT					*e*S		**Sn**	14 52 25.8	-2.0
	baz=263								
PNG	**Penghu**	**1.87**	**273**	*e*P			**Pn**	14 52 07.5	+0.1
	baz=272								
PNG					*e*S		**Sn**	14 52 29.1	-0.8
	baz=272								
HATJ	**Hateruma jima**	**2.11**	**74**	S			**Sn**	14 52 35.3	-0.5
IRIF	**Iriomote-Funau**	**2.14**	**66**	*e*S			**Sn**	14 52 37.2	+0.8
JKRS	**Kuro-shima**	**2.34**	**71**	P			**Pn**	14 52 14.4	+0.6
JIJ	**Ishigaki jima**	**2.50**	**69**	P			**Pn**	14 52 16.2	+0.2
JIJ					*e*S		**Sn**	14 52 45.6	+0.3
JISG	**Ishigakijimahi**	**2.72**	**65**	P			**Pn**	14 52 18.9	-0.2
JISG					*e*S		**Sn**	14 52 51.0	+0.1
JTJ	**Tarama**	**3.07**	**67**	*e*S			**Sn**	14 52 59.8	+0.3

IDC 16 14:53:20.6±2.9, 22°.85S×179°.91E, h505km±26km, mb3.4/5, mb1 3.7/5, mb1mx3.2/25, mbtmp4.3/5, Error ellipse: s-maj=109.2km s-min=21.2km az=158.0, South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
STKA	**Stephens Creek**	**35.05**	**247**	P	P	14 59 30.4	-0.2
	2.7nm,0.6s,baz=98,slow=12,SNR=11						
ASAR	**Alice Springs**	**42.13**	**259**	P	P	15 00 28.4	-0.1
	6.5nm,0.7s,baz=102,slow=7.0,SNR=85						
ASAR				ScP	ScP	15 05 13.1	-0.6
	0.8nm,0.9s,baz=123,slow=4.1,SNR=5.3						
WRA	**Warramunga Arr**	**42.40**	**265**	P	P	15 00 30.5	-0.1
	3.7nm,0.4s,baz=92,slow=8.5,SNR=133						
WRA				ScP	ScP	15 05 14.5	-0.3
	0.3nm,0.7s,baz=100,slow=3.1,SNR=2.2						
TXAR	**Lajitas Array**	**89.95**	**58**	P	P	15 05 26.4	+0.3
	0.6nm,0.7s,baz=221,slow=5.0,SNR=8.2						
PDAR	**Pinedale Array**	**92.00**	**44**	P	P	15 05 34.8	-0.5
	0.4nm,0.8s,baz=186,slow=7.9,SNR=2.7						
AKASG	**Malin Array Be**	**144.04**	**328**	PKP	PKPbc	15 11 57.0	-0.4
	0.5nm,0.5s,baz=42,slow=3.6,SNR=4.7						

*ISCJB **16** 14:58:28.0±0.6, 37°.07N±0°.04×35°.23E±0°.04, h12km±8km, Error ellipse: s-maj=6.8km s-min=4.8km az=2.3*
*DDA **16** 14:58:27.8, 37°.03N×35°.20E, h7km, Md2.7*
*ISK **16** 14:58:27.0, 37°.10N×35°.21E, h2km, MD2.4*
*CSEM **16** 14:58:28.3±0.4, 37°.08N×35°.22E, h5km, MD2.7, Error ellipse: s-maj=10.0km s-min=5.4km az=31.0*

ISC 16 14:58:27.3±1.4, 37°.06N±0°.04×35°.21E±0°.03, h8km±16km, n12, σ0°.47/24, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DED	**Mersin**	**0.35**	**253**	*i* P	**Pg**	14 58 34.0	-0.1
DED				*i* S	**Sb**	14 58 40.0	-1.4
YURE	**YUREGIR**	**0.41**	**125**	*i* P	**Pg**	14 58 35.4	+0.1
YURE				*i* S	**Sb**	14 58 42.8	-0.4
YURE	**YUREGIR**	**0.41**	**125**	P	**Pg**	14 58 35.4	+0.1
YURE				S	**Sb**	14 58 42.8	-0.4
GULE	**Gulek**	**0.41**	**303**	*i* P	**Pb**	14 58 37.3	+0.3
GULE				*i* S	**Sb**	14 58 44.1	+0.6
GULE	**Gulek**	**0.41**	**303**	P	**Pb**	14 58 37.3	+0.3
GULE				S	**Sb**	14 58 44.1	+0.6
KRTS	**Karatas**	**0.50**	**165**	*e*PG	**Pb**	14 58 38.6	+0.2
KRTS				*e*SG	**Sb**	14 58 46.4	+0.5
KRTS	**Karatas**	**0.50**	**165**	*e*Pg	**Pb**	14 58 38.6	+0.2
KRTS				*e*Sg	**Sb**	14 58 46.4	+0.5
MERS	**Mersin**	**0.59**	**251**	*e*PG	**Pb**	14 58 39.6	-0.2
MERS				*e*SG	**Sb**	14 58 48.4	0.0
MERS	**Mersin**	**0.59**	**251**	*e*Pg	**Pb**	14 58 39.6	-0.2
MERS				*e*Sg	**Sb**	14 58 48.4	0.0
KOZT	**Kozan**	**0.64**	**49**	*e*PG	**Pg**	14 58 39.4	-0.3
KOZT				*e*SG	**Sb**	14 58 49.5	-0.5
KERG	**Konya-Eregli**	**0.94**	**292**	*i* P	**Pg**	14 58 45.4	0.0
KERG				*i* S	**Sb**	14 58 58.5	-0.1
KERG	**Konya-Eregli**	**0.94**	**292**	P	**Pg**	14 58 45.3	0.0
KERG				S	**Sb**	14 58 58.5	-0.1

IDC 16 15:01:49.6±1.9, 10°.02N×85°.45E, h0km, mb3.4/4, mb1 3.6/5, mb1mx3.3/34, mbtmp3.4/5, ML3.5/1, Error ellipse: s-maj=69.7km s-min=27.6km az=55.0, Bay of Bengal

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CMAR	**Chiang Mai Arr**	**15.53**	**56**	Pn	Pn	15 05 31.6	+1.5
	0.1nm,0.3s,baz=242,slow=15,SNR=5.5						
ZALV	**Zalesovo Beam**	**43.81**	**359**	P	P	15 09 56.4	-0.8
	0.9nm,0.6s,baz=198,slow=9.7,SNR=4.5						
WRA	**Warramunga Arr**	**56.59**	**122**	P	P	15 11 34.3	-0.3
	0.2nm,0.7s,baz=302,slow=7.8,SNR=4.2						
ASAR	**Alice Springs**	**58.00**	**126**	P	P	15 11 44.7	+0.1
	0.2nm,0.8s,baz=304,slow=7.4,SNR=2.8						
FINES	**FINESS Array B**	**66.88**	**333**	P	P	15 12 43.8	+0.4
	3.8nm,1.2s,baz=100,slow=7.2,SNR=4.1						

*NIED **16** 15:14:00, 36°.90N×140°.70E, h5km, Mw3.7 Best double couple: M₀4.50000×10¹⁴ NP1:φs8.00000°, δ26.00000°, λ-58.00000°. NP2:φs153.00000°, δ68.00000°, λ-104.00000°.*
*ISCJB **16** 15:14:17.7±0.8, 36°.86N±0°.03×140°.82E±0°.05, h13km±4km, mb3.7/15, Error ellipse: s-maj=6.9km s-min=4.5km az=25.0*
*IDC **16** 15:14:17.1±0.6, 36°.87N×140°.71E, h0km, mb3.7/15, mb1 4.0/18, mb1mx3.8/40, mbtmp3.8/18, ML3.7/3, MS2.5/2, Ms1 2.5/2, ms1mx2.3/35, Error ellipse: s-maj=17.9km s-min=12.9km az=110.0*
*JMA **16** 15:14:18.6, 36°.88N×140°.69E, h7km, M3.9 Broadband fault plane solution: P waves. NP1:φs158.00000°, δ78.00000°, λ-91.00000°. NP2:φs343.00000°, δ12.00000°, λ-86.00000°. Principal axes: T Plg33.0000°, Azm249.0000°; N Plg1.0000°, Azm158.0000°; P Plg57.0000°, Azm67.0000°;*
JMA Felt II J1.

ISC 16 15:14:18.5±1.1, 36°.87N±0°.03×140°.70E±0°.05, h9km±7km, n37, σ0°.75/41, mb3.7/15, 5C-1D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.24**	**19**	⇑P	**Pg**	15 14 23.6	+0.2
JHO	**Hitachi**	**0.28**	**202**	⇑P	**Pg**	15 14 24.3	+0.2
JHO				S	**Sg**	15 14 28.4	+0.5
JFK	**Kawauchi**	**0.51**	**16**	⇑P	**Pg**	15 14 28.4	-0.1
JFK				S	**Sg**	15 14 35.5	+0.3
JSB	**Shiboa**	**0.63**	**279**	⇑P	**Pb**	15 14 31.4	-0.3
JSB				S	**Sb**	15 14 40.1	-0.6
JFT	**Otama**	**0.71**	**336**	⇓P	**Pg**	15 14 32.2	+0.1
JFT				S	**Sg**	15 14 41.6	+0.2
JYT	**Yasato**	**0.76**	**213**	⇑P	**Pg**	15 14 33.0	-0.2
MJAR	**Matsushiro Arr**	**2.03**	**261**	Pn	**Pn**	15 14 53.4	+0.6
	59nm,0.3s,baz=75,slow=17,SNR=466						
MJAR				Sn	**Sb**	15 15 20.2	-0.7
	64nm,0.3s,baz=81,slow=30,SNR=15						
MJAR				LR	LR	15 15 57.0	
	comp=Z,115nm,21.5s,baz=55,slow=50						
MAT	**Matsushiro**	**2.03**	**261**	P	**Pn**	15 14 53.8	+0.9
MAT				S	**Sb**	15 15 21.0	+0.1
JHJ	**Hachijo jima 2**	**3.82**	**192**	Pn	**Pn**	15 15 19.1	+1.7
	13nm,0.3s,baz=144,slow=23,SNR=8.2						
JHJ				Sn	**Sn**	15 16 03.6	+1.2
	19nm,0.3s,baz=73,slow=19,SNR=3.5						
ASAJ	**Asahikawa**	**7.38**	**11**	Pn	**Pn**	15 16 07.3	+1.0
	0.9nm,0.3s,baz=239,slow=12,SNR=8.5						
ASAJ				Sn	**Sn**	15 17 31.3	+1.2
	0.3nm,0.3s,baz=120,slow=20,SNR=2.6						
JCJ	**Chichijima**	**9.83**	**172**	Pn	**Pn**	15 16 37.6	-2.3
	baz=252,slow=20						
JCJ				Sn	Sn	15 18 23.3	-7.2
	1.5nm,0.3s,baz=287,slow=19,SNR=3.0						
USRK	**Ussuriysk Ar.**	**9.87**	**321**	Pn	Pn	15 16 46.1	+5.6
	0.1nm,0.3s,baz=133,slow=14,SNR=8.9						
KSRS	**Korea Array**	**10.22**	**277**	Pn	Pn	15 16 49.6	+4.3
	0.2nm,0.3s,baz=93,slow=13,SNR=6.0						
KSRS				LR	LR	15 20 26.3	
	comp=Z,320nm,19.7s,baz=65,slow=36						
KLR	**Kul'dur**	**13.96**	**335**	Pn	**P**	15 17 43.2	-1.3
	0.1nm,0.3s,baz=140,slow=12,SNR=4.0						
MA2	**Magadan**	**23.63**	**13**	P	**P**	15 19 28.8	-0.9
	6.3nm,0.8s,baz=233,slow=5.4,SNR=4.4						
SEY	**Seymchan**	**27.06**	**12**	P	**P**	15 20 01.7	+0.8
	1.8nm,0.7s,baz=181,slow=12,SNR=4.9						
SONM	**Songino Array**	**27.40**	**304**	P	**P**	15 20 04.5	+0.2
	1.0nm,0.6s,baz=106,slow=8.5,SNR=5.2						
H11N2	**WAKE ISLAND Hy**	**28.56**	**120**	T	T	15 50 02.0	
	baz=313,slow=75,SNR=100						
H11N1	**WAKE ISLAND Hy**	**28.57**	**120**	T	T	15 50 01.4	
	baz=313,slow=75,SNR=123						
H11N3	**WAKE ISLAND Hy**	**28.58**	**120**	T	T	15 50 02.2	
	baz=313,slow=75,SNR=111						
H11S1	**WAKE ISLAND Hy**	**29.26**	**122**	T	T	15 50 52.5	
	baz=314,slow=75,SNR=166						
H11S3	**WAKE ISLAND Hy**	**29.26**	**122**	T	T	15 50 52.5	
	baz=314,slow=75,SNR=148						
H11S2	**WAKE ISLAND Hy**	**29.27**	**122**	T	T	15 50 54.0	
	baz=314,slow=75,SNR=128						
ZALV	**Zalesovo Beam**	**41.60**	**313**	P	**P**	15 22 06.5	0.0
	0.6nm,0.5s,baz=101,slow=6.8,SNR=3.9						
ZALV				PcP	**PcP**	15 24 03.2	-0.2
	0.8nm,0.7s,baz=132,slow=2.2,SNR=3.7						
MKAR	**Makanchi Array**	**43.72**	**302**	P	**P**	15 22 23.8	-0.1
	0.5nm,0.6s,baz=84,slow=11,SNR=7.2						
MKAR				PcP	**PcP**	15 24 10.6	-0.1
	0.2nm,0.6s,baz=90,slow=2.9,SNR=2.6						
ILAR	**Eielson Array**	**49.94**	**32**	P	**P**	15 23 12.8	+0.6
	0.4nm,0.9s,baz=264,slow=5.8,SNR=5.9						
ILAR				PcP	**PcP**	15 24 32.1	-0.2
	0.3nm,0.6s,baz=282,slow=3.6,SNR=4.7						
INK	**Inuvik**	**54.79**	**27**	P	**P**	15 23 48.0	-0.1
	0.3nm,0.3s,baz=257,slow=6.0,SNR=4.1						
WRA	**Warramunga Arr**	**56.83**	**187**	P	**P**	15 24 02.9	-0.4
	1.3nm,0.7s,baz=4.6,slow=7.2,SNR=14						
ASAR	**Alice Springs**	**60.55**	**187**	P	**P**	15 24 29.1	-0.1
	0.9nm,0.9s,baz=8.8,slow=5.7,SNR=7.4						
YKA	**Yellowknife Ar**	**64.23**	**30**	P	**P**	15 24 53.8	+0.4
	0.3nm,0.7s,baz=303,slow=7.0,SNR=7.1						
YKA				PcP	**PcP**	15 25 29.0	+0.9
	0.3nm,0.6s,baz=300,slow=4.2,SNR=7.1						
FINES	**FINESS Array B**	**68.69**	**332**	P	**P**	15 25 21.6	-0.3
	1.7nm,0.8s,baz=150,slow=7.9,SNR=6.5						
NOA	**NORSAR Array B**	**74.11**	**337**	P	**P**	15 25 54.2	-0.5
	0.5nm,0.6s,baz=39,slow=5.8,SNR=2.5						
PDAR	**Pinedale Array**	**78.19**	**45**	P	**P**	15 26 18.0	-0.5
	0.2nm,0.7s,baz=294,slow=0.9,SNR=2.6						
GERES	**GERESS Array B**	**82.55**	**328**	P	**P**	15 26 41.4	-0.3
	0.3nm,0.4s,baz=38,slow=5.3,SNR=4.9						
TXAR	**Lajitas Array**	**90.67**	**52**	P	**P**	15 27 22.8	+0.9
	0.3nm,0.7s,baz=273,slow=2.7,SNR=5.0						
TORD	**Torodi Ar. Bea**	**117.04**	**314**	PKP	**PKPdf**	15 33 04.3	-0.1
	0.1nm,0.4s,baz=122,slow=1.9,SNR=3.7						
LPAZ	**La Paz**	**147.27**	**59**	PKPbc	**PKPbc**	15 34 03.9	+0.4
	0.9nm,0.8s,baz=256,slow=4.2,SNR=3.2						

*IDC **16** 15:14:27.2±1.3, 19°.07N×81°.04W, h0km, mb3.8/9, mb1 4.2/11, mb1mx3.9/33, mbtmp3.9/11, ML4.2/2, MS3.2/4, Ms1 3.2/4, ms1mx2.7/39, Error ellipse: s-maj=35.5km s-min=23.6km az=3.0*
*JSN **16** 15:14:29.0±1.2, 18°.53N×81°.11W, h50km±99km, MD4.5*

ISC 16 15:14:30.3±0.9, 18°.9N±0°.2×80°.93W±0°.09, h35km, n20, σ1°.59/18, mb4.0/9, 1C, North of Honduras

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MCJ	**Malvern**	**3.21**	**106**	*e*S	**Sn**	15 15 53.4	-2.1
BBJ	**Bamboo Saint A**	**3.50**	**97**	*i* P	**Pn**	15 15 21.8	-0.5
PCJ	**Portland Cotta**	**3.75**	**107**	*i* P	**Pn**	15 15 25.2	-0.5
STH	**Stony Hill**	**3.99**	**101**	⇑*i* P	**Pn**	15 15 28.4	-0.6
STH				*i* S	**Sn**	15 16 13.3	-1.2
TEIG	**Tepich**	**7.06**	**282**	Pn	**Pn**	15 16 08.9	-2.3
	5.1nm,0.3s,baz=269,slow=23,SNR=46						
TEIG				Sn	Sn	15 17 23.4	-6.9
	4.4nm,0.3s,baz=356,slow=23,SNR=5.1						
JTS	**JutasAbangare**	**9.37**	**205**	LR	LR	15 20 16.9	
	comp=Z,67nm,18.4s,baz=5.0,slow=37						
TKL	**Tuckaleechee C**	**16.92**	**352**	Pn	**Pn**	15 18 20.8	-3.5
	0.8nm,0.3s,baz=168,slow=16,SNR=6.5						
TKL				LR	LR	15 24 04.4	
	comp=Z,47nm,18.1s,baz=210,slow=35						
TXAR	**Lajitas Array**	**23.19**	**301**	P	**P**	15 19 34.1	-0.1
	1.3nm,0.9s,baz=115,slow=9.9,SNR=10						
PTGA	**Pitinga**	**28.34**	**131**	LR	LR	15 31 52.5	
	comp=Z,27nm,20.8s,baz=72,slow=37						
PDAR	**Pinedale Array**	**33.96**	**321**	P	**P**	15 21 10.9	+0.3
	0.6nm,0.7s,baz=111,slow=11,SNR=6.4						
NVAR	**Mina Array Bea**	**37.82**	**309**	P	**P**	15 21 44.5	+0.7
	0.8nm,1.0s,baz=100,slow=8.7,SNR=4.2						
YKA	**Yellowknife Ar**	**49.42**	**340**	P	**P**	15 23 16.1	-0.4
	0.2nm,0.7s,baz=132,slow=8.4,SNR=6.8						
INK	**Inuvik**	**59.19**	**340**	P	**P**	15 24 28.6	+1.2
	1.9nm,1.0s,baz=113,slow=6.7,SNR=5.7						
ILAR	**Eielson Array**	**62.89**	**334**	P	**P**	15 24 53.4	+0.8
	1.0nm,0.8s,baz=101,slow=4.7,SNR=12						
ESDC	**Sonseca Array**	**68.34**	**54**	P	**P**	15 25 30.9	+2.6
	1.1nm,0.7s,baz=280,slow=5.9,SNR=8.0						
ARCES	**ARCESS Array B**	**78.08**	**20**	P	**P**	15 26 26.3	+1.1
	1.7nm,0.8s,baz=329,slow=4.5,SNR=3.9						
FINES	**FINESS Array B**	**81.45**	**28**	P	**P**	15 26 45.0	+1.5
	2.9nm,1.1s,baz=273,slow=3.2,SNR=5.8						
ARU	**Arti**	**97.63**	**21**	LR	LR	16 13 59.0	
	comp=Z,40nm,18.2s,slow=37						
WRA	**Warramunga Arr**	**146.75**	**262**	PKPbc	**PKPbc**	15 34 10.1	+0.7
	0.5nm,0.8s,baz=86,slow=3.8,SNR=9.2						
ASAR	**Alice Springs**	**147.24**	**255**	PKPbc	**PKPab**	15 34 13.2	+0.6
	0.5nm,0.6s,baz=102,slow=3.8,SNR=14						

JMA 16 15:21:12.0, 36°.91N×140°.64E, h10km±1km, M2.6, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.23**	**33**	P	Pg	15 21 16.9	+0.1
ONAJ				S	Sg	15 21 20.3	+0.3
JHO	**Hitachi**	**0.30**	**191**	P	Pg	15 21 18.0	-0.1
JHO				S	Sg	15 21 22.1	-0.1
JFK	**Kawauchi**	**0.49**	**22**	P	Pg	15 21 21.5	-0.1
JFK				S	Sg	15 21 28.3	+0.1
JFT	**Otama**	**0.65**	**338**	P	Pg	15 21 24.7	0.0
JFT				S	Sg	15 21 33.5	+0.2
JMM	**Marumori**	**0.96**	**7**	P	Pg	15 21 29.7	-0.8
JMM				S	Sg	15 21 42.3	-0.8
MAT	**Matsushiro**	**1.99**	**260**	P	Pg	15 21 49.6	-0.5
MAT				S	Sb	15 22 13.3	+0.2

*ISCJB **16** 15:41:56.3±0.7, 41°.5S±0°.2×85°.1E±0°.2, h10km, mb4.0/9, MS3.8/8, Error ellipse: s-maj=23.9km s-min=17.9km az=3.4*
*IDC **16** 15:41:56.5±0.8, 41°.51S×85°.10E, h0km, mb4.0/9, mb1 4.1/9, mb1mx3.9/40, mbtmp3.9/9, MS3.8/8, Ms1 3.8/8, ms1mx3.4/30, Error ellipse: s-maj=29.2km s-min=21.8km az=3.0*

ISC 16 15:41:57.9±0.8, 41°.5S±0°.2×85°.1E±0°.2, h10km, n17, σ0°.73/10, mb4.0/9, MS3.8/8, Southeast Indian Ridge

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
H01W2	**Cape Leeuwin H**	**23.67**	**83**	T	T	16 11 33.6	
	baz=244,slow=74,SNR=42						
H01W3	**Cape Leeuwin H**	**23.68**	**83**	T	T	16 11 33.6	
	baz=244,slow=74,SNR=75						
H01W1	**Cape Leeuwin H**	**23.69**	**83**	T	T	16 11 33.6	
	baz=244,slow=74,SNR=61						
MAW	**Mawson**	**28.81**	**198**	LR	LR	15 56 55.9	
	comp=Z,93nm,21.4s,baz=57,slow=31						
ASAR	**Alice Springs**	**44.17**	**82**	P	**P**	15 50 07.3	+0.3
	1.2nm,0.7s,baz=230,slow=8.1,SNR=11						
ASAR				LR	LR	16 06 22.4	
	comp=Z,132nm,20.9s,baz=240,slow=33						
STKA	**Stephens Creek**	**45.59**	**97**	P	**P**	15 50 18.4	+0.3
	2.7nm,0.7s,baz=242,slow=5.6,SNR=7.8						
STKA				LR	LR	16 07 20.4	
	comp=Z,80nm,19.5s,baz=207,slow=33						
WRA	**Warramunga Arr**	**46.74**	**78**	P	**P**	15 50 27.8	+0.4
	0.7nm,0.4s,baz=333,slow=25,SNR=6.4						
VNDA	**Vanda**	**47.00**	**163**	P	**P**	15 50 28.2	-0.5
	0.6nm,0.7s,baz=281,slow=6.5,SNR=5.5						
VNDA				LR	LR	16 07 16.4	
	comp=Z,145nm,21.4s,baz=284,slow=32						
BOSA	**Boshof**	**49.75**	**265**	P	**P**	15 50 51.1	+0.4
	5.9nm,1.1s,baz=102,slow=9.4,SNR=2.2						
BOSA				LR	LR	16 07 57.0	
	comp=Z,79nm,18.1s,baz=162,slow=31						
DAV	**Davao City (W)**	**60.90**	**47**	LR	LR	16 18 12.6	
	comp=Z,129nm,18.3s,baz=270,slow=36						
CMAR	**Chiang Mai Arr**	**61.02**	**15**	P	**P**	15 52 12.1	+0.4
	0.9nm,0.8s,baz=203,slow=7.6,SNR=7.5						
MKAR	**Makanchi Array**	**87.96**	**358**	P	**P**	15 54 47.4	-0.1
	0.4nm,0.8s,baz=168,slow=2.7,SNR=4.4						
SONM	**Songino Array**	**90.94**	**14**	P	**P**	15 55 00.1	-1.6
	0.8nm,0.9s,baz=197,slow=4.5,SNR=2.6						
TORD	**Torodi Ar. Bea**	**93.75**	**284**	P	**P**	15 55 15.5	+0.3
	0.5nm,0.7s,baz=119,slow=5.6,SNR=3.1						
TLY	**Talaya**	**94.20**	**11**	LR	LR	16 37 30.3	
	comp=Z,31nm,18.1s,baz=142,slow=35						
PLCA	**Paso Flores**	**95.21**	**198**	LR	LR	16 38 16.7	
	comp=Z,66nm,19.3s,baz=181,slow=36						
INK	**Inuvik**	**146.21**	**25**	PKPbc	**PKPbc**	16 01 37.9	+0.6
	1.7nm,0.8s,baz=315,slow=2.3,SNR=8.0						

*NNC **16** 15:45:46.9±2.7, 38°.02N×68°.55E, h0km, mb3.4, mpv3.0, Error ellipse: s-maj=20.4km s-min=13.8km az=18.0*
*IDC **16** 15:45:55.2±10.0, 39°.09N×68°.15E, h0km, mb3.5/1, mb1 3.6/3, mb1mx3.2/44, mbtmp3.4/3, ML2.7/2, Error ellipse: s-maj=265.9km s-min=44.2km az=159.0*

ISC 16 15:45:45.2±2.7, 37°.8N±0°.2×68°.4E±0°.1, h10km, n8, σ1°.99/15, 8C-7D, Afghanistan-Tajikistan border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SFK	**Sufi-Kurgan**	**4.52**	**60**	⇓Pn	**Pn**	15 46 53.9	-0.1
	0.4nm,0.2s						
SFK				⇑Pg	**Pb**	15 47 06.9	+2.0
	1.0nm,0.2s						
SFK				⇑Sn	**Sn**	15 47 47.0	+0.2
	4.5nm,0.3s						
SFK				⇑Lg	Lg	15 48 06.7	
	7.7nm,0.4s						
KK31	**Karatay Array**	**5.51**	**16**	Pn	**Pn**	15 47 09.3	+2.0
	0.2nm,0.2s,baz=200,slow=12,SNR=13						
KK31				⇓Pg	**Pb**	15 47 23.9	+2.5
	0.7nm,0.3s,baz=200,slow=18,SNR=4.1						
KK31				⇑Sn	**Sn**	15 48 11.8	+1.0
	1.4nm,0.3s						
KK31				⇑Lg	Lg	15 48 35.9	
	3.1nm,0.4s,baz=197,slow=26,SNR=4.0						
MNAS	**Manas**	**5.61**	**33**	⇓Pn	**Pn**	15 47 09.2	+0.4
	0.4nm,0.4s						
MNAS				⇓Pg	**Pb**	15 47 25.7	+2.4
	0.8nm,0.4s						
MNAS				⇓Sn	**Sn**	15 48 11.5	-1.9
	1.7nm,0.5s						
MNAS				⇑Lg	Lg	15 48 37.8	
	4.0nm,0.6s						
TKM2	**Tokmak 2**	**7.47**	**45**	⇓Pn	**Pn**	15 47 33.4	-1.1
	1.8nm,0.4s						
TKM2				⇑Sn	**

H11N3 WAKE ISLAND Hy 27.58 121 T T 16 25 38.6
baz=313,slow=75,SNR=6.2
H11S1 WAKE ISLAND Hy 28.27 123 T T 16 26 32.9
baz=314,slow=75,SNR=6.6
H11S3 WAKE ISLAND Hy 28.27 123 T T 16 26 32.9
baz=314,slow=75,SNR=3.8
H11S2 WAKE ISLAND Hy 28.29 123 T T 16 26 32.9
baz=314,slow=75,SNR=3.0
SONM Songino Array 28.37 304 P **P** **15 56 33.7 +1.1**
0.3nm,0.3s,baz=96,slow=10,SNR=2.8
KURBB **Kurchatov Arra 46.59 308** P **P** **15 59 06.6 +0.4**
0.2nm,0.3s,baz=81,slow=7.3
ILAR Eielson Array 49.53 32 P **P** **15 59 28.9 +0.1**
0.2nm,0.6s,baz=289,slow=5.6,SNR=2.9
WRA Warramunga Arr 56.79 189 P **P** **16 00 22.5 -0.2**
0.4nm,0.9s,baz=4.8,slow=7.3,SNR=2.7
ASAR Alice Springs 60.52 189 P **P** **16 00 49.4 +0.7**
0.3nm,1.0s,baz=2.7,slow=7.1,SNR=2.6
YKA Yellowknife Ar 63.87 30 P **P** **16 01 10.3 -0.4**
0.1nm,0.7s,baz=286,slow=2.5,SNR=3.3

IDC 16 15:51:48.3±3.3, 31°25'S×177°64'W, h0km, mb3.4/2, mb1 3.7/3, mb1mx3.5/32, mbtmp3.6/3, ML3.1/1, Error ellipse: s-maj=77.3km s-min=38.2km az=113.0, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
URZ	**Urewera**	**8.21**	**210**	Pn	Pn	15 53 49.7	+1.0
	0.3nm,0.3s,baz=184,slow=19,SNR=2.5						
URZ				Sn	Sn	15 55 21.0	-1.2
	0.2nm,0.3s,baz=163,slow=19,SNR=3.1						
ASAR	**Alice Springs**	**43.38**	**268**	P	P	15 59 52.8	0.0
	0.4nm,0.7s,baz=105,slow=7.5,SNR=11						
WRA	**Warramunga Arr**	**44.45**	**273**	P	P	16 00 01.1	-0.3
	0.4nm,0.4s,baz=112,slow=8.1,SNR=3.7						
FINES	**FINESS Array B**	**146.05**	**340**	PKPbc	PKPdf	16 11 28.4	-0.2
	2.4nm,1.1s,baz=29,slow=3.1,SNR=3.9						

IDC ***16*** *15:53:58.8±0.8, 37°43N×144°45E, h0km, mb3.6/6, mb1 3.9/10, mb1mx3.6/41, mbtmp3.8/10, ML3.5/4, Error ellipse: s-maj=28.8km s-min=17.0km az=116.0*
ISCJB ***16*** *15:54:01.7±0.7, 37°59N±0°05×144°31E±0°05, h33km, mb3.7/6, Error ellipse: s-maj=7.8km s-min=5.6km az=22.0*
JMA ***16*** *15:54:04.2±0.3, 37°71N×144°23E, h46km, M3.7*
ISC 16 15:54:04.1±1.0, 37°62N±0°07×144°29E±0°08, h35km, n22, σ1§09/25, mb3.7/6, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**2.47**	**291**	P	**Pn**	**15 54 42.3**	**+0.5**
JIO				S	**Sn**	**15 55 10.3**	**-0.4**
OFUJ	**Ofunato**	**2.52**	**306**	P	**Pn**	**15 54 42.5**	**-0.1**
OFUJ				S	**Sn**	**15 55 11.9**	**-0.3**
JFK	**Kawauchi**	**2.73**	**266**	*e*S	**Sn**	**15 55 16.4**	**-0.8**
JMK	**Ichinoseki**	**2.76**	**300**	P	**Pn**	**15 54 46.1**	**+0.3**
JMK				S	**Sn**	**15 55 17.8**	**-0.1**
JMM	**Marumori**	**2.78**	**276**	*e*S	**Sn**	**15 55 18.3**	**-0.2**
JOU	**Okura**	**2.96**	**286**	*e*S	**Sn**	**15 55 23.5**	**+0.6**
JOM	**Ohasama**	**2.99**	**309**	P	**Pn**	**15 54 49.6**	**+0.5**
JOM				S	**Sn**	**15 55 24.1**	**+0.4**
JTH	**Tanohata**	**3.00**	**322**	*e*S	**Sn**	**15 55 22.3**	**-1.4**
JFT	**Otama**	**3.14**	**269**	*e*S	**Sn**	**15 55 27.3**	**-0.1**
JYK	**Kaneyama**	**3.35**	**294**	*e*S	**Sn**	**15 55 33.1**	**+0.5**
JANG	**Nango**	**3.50**	**323**	S	**Sn**	**15 55 34.0**	**-2.2**
JTM	**Tenmabayashi**	**4.04**	**323**	S	**Sn**	**15 55 47.2**	**-2.2**
MJAR	**Matsushiro Arr**	**4.98**	**259**	Pn	**Pn**	**15 55 17.2**	**+0.9**
	1.0nm,0.3s,baz=91,slow=15,SNR=6.8						
JHJ	**Hachijo jima 2**	**5.88**	**221**	Pn	**Pn**	**15 55 25.8**	**-1.9**
	3.5nm,0.3s,baz=72,slow=20,SNR=5.4						
ASAJ	**Asahikawa**	**6.62**	**349**	Pn	**Pn**	**15 55 38.3**	**-0.6**
	0.7nm,0.3s,baz=195,slow=12,SNR=8.0						
JCJ	**Chichijima**	**10.64**	**190**	Pn	Pn	15 56 29.2	-4.8
	1.6nm,0.3s,baz=290,slow=18,SNR=2.5						
MKAR	**Makanchi Array**	**45.75**	**302**	P	**P**	**16 02 23.3**	**+1.3**
	0.7nm,0.8s,baz=83,slow=10,SNR=7.2						
ILAR	**Eielson Array**	**47.77**	**33**	P	**P**	**16 02 37.6**	**+0.2**
	0.7nm,0.8s,baz=263,slow=6.7,SNR=9.3						
INK	**Inuvik**	**52.82**	**28**	P	**P**	**16 03 16.2**	**+0.7**
	0.8nm,0.9s,baz=274,slow=3.6,SNR=2.5						
WRA	**Warramunga Arr**	**58.01**	**191**	P	**P**	**16 03 51.6**	**-1.8**
	1.2nm,0.8s,baz=11,slow=7.3,SNR=6.9						
ASAR	**Alice Springs**	**61.73**	**191**	P	**P**	**16 04 17.9**	**-1.1**
	0.5nm,0.8s,baz=6.9,slow=7.3,SNR=6.3						
NVAR	**Mina Array Bea**	**72.80**	**55**	P	**P**	**16 05 30.2**	**+0.9**
	0.3nm,0.8s,baz=299,slow=5.6,SNR=2.5						

NIED ***16*** *15:56:00, 37°10N×138°70E, h5km, Mw4.7 Best double couple: Mo1.16000×10^16 NP1:φs72.00000°, δ43.00000°, λ117.00000°. NP2:φs217.00000°, δ52.00000°, λ67.00000°.*
ISCJB ***16*** *15:56:21.7±0.4, 37°02N±0°02×138°65E±0°02, h11km±2km, mb4.5/128, MS4.1/19, Error ellipse: s-maj=3.4km s-min=2.9km az=155.4*
IDC ***16*** *15:56:21.1±0.4, 37°06N×138°64E, h0km, mb4.3/28, mb1 4.4/32, mb1mx4.3/45, mbtmp4.3/32, ML4.3/3, MS4.0/11, Ms1 4.0/11, ms1mx3.7/23, Error ellipse: s-maj=12.7km s-min=6.6km az=112.0*
BJI ***16*** *15:56:22.8, 37°10N×138°60E, h9km, mb4.4/54, mB4.9/35, Ms4.6/41, Ms7 4.3/38*
JMA ***16*** *15:56:22.4, 37°02N×138°69E, h8km±2km, M4.9 Broadband fault plane solution: P waves. NP1: φs85.00000°, δ66.00000°, λ-122.00000°. NP2: φs322.00000°, δ39.00000°, λ-41.00000°. Principal axes: T Plg15.0000°, Azm198.0000°; N Plg29.0000°, Azm100.0000°; P Plg57.0000°, Azm312.0000°;*
MOS ***16*** *15:56:23.0±1.3, 36°94N×138°62E, h23km, mb4.9/46, MS4.1/9 Error ellipse: s-maj=7.2km s-min=4.5km az=97.0*
NEIC ***16*** *15:56:23.8±0.9, 36°98N×138°55E, h17km±6km, mb4.7/80, Error ellipse: s-maj=6.0km s-min=5.0km az=153.0*
NEIC Recorded [5L JMA] in Niigata.
ISC 16 15:56:22.7±0.5, 37°00N±0°03×138°70E±0°02, h8km±2km, h8km: pP-P, n303, σ1§65/336, mb4.7/128, MS4.1/20, 27C-19D, Near west coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JHK	**Hiroka**	**0.35**	**46**	⇓P	**Pg**	**15 56 29.0**	**-0.7**
JHK				*e*S	**Sg**	**15 56 34.3**	**-0.1**
JJN	**Nakama**	**0.44**	**283**	⇓P	**Pg**	**15 56 30.7**	**-0.5**
JJN				*e*S	**Sg**	**15 56 37.0**	**0.0**
JGK	**Kuni**	**0.44**	**186**	⇑P	**Pg**	**15 56 31.6**	**+0.3**
JKT	**Katashina**	**0.50**	**118**	⇓P	**Pg**	**15 56 32.4**	**-0.1**
JKT				S	**Sg**	**15 56 40.1**	**+1.0**
JIZZ	**Izumozaki**	**0.53**	**1**	⇓P	**Pg**	**15 56 33.0**	**+0.1**
MAJO	**Matsushiro**	**0.60**	**221**	*e*P	**Pg**	**15 56 33.7**	**-0.7**
MAJO				*e*		15 56 41.4	
MAJO	**Matsushiro**	**0.60**	**221**	*e*Pg	**Pg**	**15 56 33.7**	**-0.7**
MAJO				*e*Sg	**Sg**	**15 56 41.4**	**-0.9**
MAT	**Matsushiro**	**0.60**	**221**	P	**Pg**	**15 56 33.7**	**-0.7**
MAT				S	**Sg**	**15 56 42.0**	**-0.3**
MAT	**Matsushiro**	**0.60**	**221**	P	**Pg**	**15 56 33.7**	**-0.7**
MJAR	**Matsushiro Arr**	**0.60**	**220**	Pg	**Pg**	**15 56 33.8**	**-0.5**
	336nm,0.3s,baz=33,slow=18,SNR=638						
MJAR				Lg	Lg	15 56 42.5	
	1μm,0.3s,baz=34,slow=31,SNR=66						
MJAR				LR	LR	15 57 05.2	
	comp=Z,4μm,18.5s,baz=40,slow=72						
MJB9	**Matsu-Tunnel**	**0.60**	**221**	*e*Pg	**Pg**	**15 56 33.8**	**-0.6**
JAG	**Ashikaga**	**0.84**	**133**	⇓P	**Pg**	**15 56 38.9**	**+0.1**
JAG				S	**Sg**	**15 56 50.6**	**+0.9**
INU	**Inuyama**	**2.14**	**220**	*e*Pn	**Pn**	**15 56 59.2**	**+0.5**
JHJ	**Hachijo jima 2**	**3.98**	**167**	Pn	**Pn**	**15 57 26.5**	**+2.6**
	43nm,0.3s,baz=69,slow=7.9,SNR=15						
JHJ				Sn	**Sn**	**15 58 14.4**	**+3.8**
	31nm,0.3s,baz=84,slow=22,SNR=6.4						
JHJ2	**Mitsune**	**3.99**	**166**	*e*Pn	**Pn**	**15 57 25.8**	**+1.7**
JHJ2				*e*Sn	**Sn**	**15 58 09.5**	**-1.5**
ERM	**Erimo**	**6.08**	**33**	⇑*e*P	**Pn**	**15 57 56.7**	**+3.9**
ERM	**Erimo**	**6.08**	**33**	*e*Pn	**Pn**	**15 57 49.8**	**-2.9**
JNU	**Nakatsue**	**7.49**	**241**	Pn	**Pn**	**15 58 15.4**	**+3.3**
	0.3nm,0.3s,baz=38,slow=17,SNR=4.0						
JNU				Lg	Lg	16 00 11.2	
	0.1nm,0.3s,baz=307,slow=20,SNR=2.0						
JNU				LR	LR	16 01 25.9	
	comp=Z,692nm,19.6s,baz=309,slow=41						
JNU	**Nakatsue**	**7.49**	**241**	*e*Pn	**Pn**	**15 58 09.6**	**-2.6**
JNU				Lg	Lg	16 00 11.2	
ASAJ	**Asahikawa**	**7.70**	**21**	Pn	**Pn**	**15 58 18.1**	**+3.1**
	1.3nm,0.3s,baz=225,slow=14,SNR=6.7						
ASAJ				Sn	**Sn**	**15 59 44.7**	**+2.3**
	baz=24,slow=20,SNR=1.5						
ASAJ				LR	LR	16 01 43.2	
	comp=Z,918nm,18.7s,baz=183,slow=42						
KSRS	**Korea Array**	**8.61**	**276**	Pn	**Pn**	**15 58 28.7**	**+1.2**
	1.8nm,0.3s,baz=92,slow=14,SNR=19						
KSRS				Sn	**Sn**	**16 00 08.0**	**+3.4**
	0.4nm,0.3s,baz=92,slow=24,SNR=4.0						
KS01	**Wonju Array Si**	**8.63**	**276**	*e*Pn	**Pn**	**15 58 26.8**	**-1.0**
KS15	**Wonju Array Si**	**8.64**	**276**	*e*Pn	**Pn**	**15 58 29.1**	**+1.2**
KSAR	**Wonju Array Be**	**8.64**	**276**	P	**Pn**	**15 58 28.7**	**+0.8**
KSAR						16 00 08.0	
KSAR	**Wonju Array Be**	**8.64**	**276**	Pn	**Pn**	**15 58 28.7**	**+0.8**
KSAR				Sn	**Sn**	**16 00 08.0**	**+2.6**
USRK	**Ussuriysk Ar.**	**8.81**	**327**	Pn	**Pn**	**15 58 30.1**	**-0.2**
	0.3nm,0.3s,baz=146,slow=13,SNR=4.4						
USRK				Sn	**Sn**	**16 00 06.3**	**-3.4**
	0.1nm,0.3s,baz=137,slow=26,SNR=3.2						
MDJ	**Mudanjiang**	**10.26**	**321**	P	**Pn**	**15 58 53.3**	**+3.1**
MDJ				pmax	pmax		
	comp=Z,12nm,0.8s						
MDJ				pmax	pmax		
	comp=Z,150nm,3.1s						
CBIJ	**Chichi jima**	**10.31**	**162**	*e*Pn	**Pn**	**15 58 49.8**	**-1.1**
JCJ	**Chichijima**	**10.31**	**162**	Pn	**Pn**	**15 58 50.0**	**-0.9**
	5.2nm,0.3s,baz=274,slow=14,SNR=4.9						
YSS	**Yuzh-Sakhalins**	**10.39**	**16**	*e*P	**Pn**	**15 58 54.9**	**+3.0**
YSS				pmax	pmax		
	comp=Z,60nm,0.9s						
YSS	**Yuzh-Sakhalins**	**10.39**	**16**	Pn	**Pn**	**15 58 52.1**	**+0.2**
KUR	**Kuril'sk**	**10.74**	**37**	*e*P	Pn	15 59 02.3	+5.7
HABR	**Khabarovsk**	**11.77**	**348**	P	**Pn**	**15 59 10.5**	**-0.2**
HABR				*e*S	**Sn**	**16 01 21.2**	**-1.0**
HABR				pmax	pmax		
	comp=Z,15nm,1.8s						
HABR				MLR	MLR		
	comp=Z,377nm,14.0s						
CN2	**Changchun**	**12.16**	**308**	*e*P	**Pn**	**15 59 17.1**	**+1.0**
CN2				*e*S	**Sn**	**16 01 36.9**	**+5.1**
CN2				pmax	pmax		
	comp=Z,10.0nm,0.5s						
CN2				pmax	pmax		
	comp=Z,200nm,3.0s						
CN2				LR	LR		
	comp=Z,800nm,14.0s						
CN2				LR	LR		
	comp=Z,1μm,14.0s						
CN2				LR	LR		
	comp=Z,900nm,14.0s						
KLR	**Kul'dur**	**13.22**	**340**	Pn	**Pn**	**15 59 33.0**	**+2.4**
	comp=Z,0.3nm,0.3s,baz=149,slow=14,SNR=18						
KLR				LR	LR	16 04 18.8	
	comp=Z,848nm,19.9s,baz=150,slow=36						
KLR	**Kul'dur**	**13.22**	**340**	P	**Pn**	**15 59 33.0**	**+2.4**
TYV	**Tymovskoe**	**14.14**	**10**	*e*P	**Pn**	**15 59 44.2**	**+1.1**
TYV				*e*		16 02 30.0	
TYV				pmax	pmax		
	comp=Z,18nm,0.8s						
TYV				MLR	MLR		
	comp=N,500nm,15.0s						
TYV				MLR	MLR		
	comp=Z,1μm,15.0s						
NKL	**Nikolayevsk**	**16.21**	**4**	*e*P	**Pn**	**16 00 09.0**	**-1.5**
NKL				pmax	pmax		
	comp=Z,30nm,1.3s						
NKL				MLR	MLR		
	comp=N,500nm,15.0s						
NKL				MLR	MLR		
	comp=E,400nm,15.0s						
NKL				MLR	MLR		
	comp=Z,700nm,15.0s						
NJ2	**Nanjing**	**17.07**	**259**	*e*P	**Pn**	**16 00 21.5**	**-0.2**
NJ2				pmax	pmax		
	comp=Z,14nm,0.6s						
TIA	**Tai'an**	**17.34**	**274**	⇓P	**P**	**16 00 28.6**	**+2.2**
TIA				pmax	pmax		
	comp=Z,20nm,1.0s						
BJI	**Beijing**	**17.87**	**287**	P	**P**	**16 00 33.3**	**+1.0**
BJI				S	**Sn**	**16 03 53.1**	**+2.2**
BJI				pmax	pmax		
	comp=Z,29nm,1.5s						
BJI				pmax	pmax		
	comp=Z,590nm,5.1s						
BJI				LR	LR		
	comp=Z,430nm,12.7s						
BJI				LR	LR		
	comp=Z,510nm,11.0s						
BJI				LR	LR		
	comp=Z,440nm,29.1s						
BJT	**Baijiatuau**	**17.88**	**287**	*e*P	**Pn**	**16 00 29.4**	**-2.3**
BJT				pmax	pmax		
	comp=Z,20nm,0.8s						
BJT	**Baijiatuau**	**17.88**	**287**	*e*Pn	**Pn**	**16 00 29.4**	**-2.3**
	comp=Z,20nm,0.8s						
WHN	**Wuhan**	**21.21**	**259**	⇓P	**P**	**16 01 15.4**	**+6.6**
PET	**Petropavlovsk**	**21.23**	**35**	*e*P	**P**	**16 01 11.3**	**+2.5**
PET				*e*S	**S**	**16 05 05.8**	**+1.0**
PET				MLR	MLR		
	comp=Z,400nm,17.0s						
HHC	**Hu-ho-hao-te**	**21.42**	**289**	*e*P	**P**	**16 01 10.1**	**-1.0**
HHC				sP	sP	16 01 20.1	+5.5
HHC				PP	**PnPn**	**16 01 38.9**	**+7.9**
HHC				S	**S**	**16 05 03.0**	**-5.9**
HHC				sS	sS	16 05 11.8	-1.0
HHC				pmax	pmax		
	comp=Z,20nm,1.1s						
HHC				pmax	pmax		
	comp=Z,170nm,5.3s						
HHC				LR	LR		
	comp=Z,550nm,11.1s						
HHC				LR	LR		
	comp=Z,550nm,11.0s						
HHC				LR	LR		
	comp=Z,630nm,10.9s						
MA2	**Magadan**	**23.90**	**15**	P	**P**	**16 01 35.5**	**-1.0**
	comp=Z,14nm,0.8s,baz=256,slow=12,SNR=4.6						
MA2				LR	LR	16 11 17.6	
	comp=Z,308nm,18.7s,baz=228,slow=38						
GUMO	**Guam**	**23.96**	**165**	LR	LR	16 10 44.4	
	comp=Z,139nm,18.1s,baz=358,slow=36						
ENH	**Enshi**	**25.17**	**263**	*e*P	**P**	**16 01 45.4**	**-3.1**
	comp=Z,32nm,0.9s						
ULN	**Ulaanbaatar**	**25.58**	**305**	⇓*e*P	**P**	**16 01 51.5**	**-0.8**
ULN				pmax	pmax		
	comp=Z,15nm,1.2s						
ULN	**Ulaanbaatar**	**25.58**	**305**	*e*P	**P**	**16 01 48.9**	**-3.4**
	comp=Z,14nm,1.2s						
YAK	**Yakutsk**	**25.68**	**350**	P	**P**	**16 01 51.9**	**-0.8**
	comp=Z,5.5nm,0.3s,baz=178,slow=2.5,SNR=8.1						
YAK	**Yakutsk**	**25.68**	**350**	*c* i P	**P**	**16 01 54.2**	**+1.5**
YAK				*e**PP	**sP**	**16 01 58.1**	**+1.8**
YAK				*e*PPP	PPP	16 02 36.6	
YAK				*e*S	**S**	**16 06 20.5**	**-0.6**
YAK				*e*SSS	SSS	16 07 26.5	
YAK				pmax	pmax		
	comp=Z,17nm,0.9s						
YAK				pmax	pmax		
	comp=E,2.0nm,0.9s						
YAK				pmax	pmax		
	comp=N,10.0nm,1.3s						
YAK				pmax	pmax		
	comp=Z,9.0nm,0.5s						
YAK				smax	smax		
	comp=E,68nm,2.7s						
YAK				smax	smax		
	comp=N,254nm,3.7s						
YAK				MLR	MLR		
	comp=Z,549nm,17.0s						
YAK				MLR	MLR		
	comp=N,438nm,18.0s						
YAK				MLR	MLR		
	comp=E,123nm,13.0s						
YAK	**Yakutsk**	**25.68**	**350**	*e*P	**P**	**16 01 51.2**	**-1.5**
	comp=E,19nm,0.7s						
SONA1	**Songino Array**	**26.00**	**305**	*e*P	**P**	**16 01 54.5**	**-1.5**
SONM	**Songino Array**	**26.01**	**305**	P	**P**	**16 01 55.0**	**-1.1**
	comp=E,9.9nm,1.3s,baz=96,slow=7.9,SNR=17						
BOD	**Bodaibo**	**26.43**	**330**	*e*P	**P**	**16 01 58.0**	**-1.6**
BOD				pmax	pmax		
	comp=Z,6.0nm,1.4s						
SEY	**Seymchan**	**27.29**	**14**	P	**P**	**16 02 08.1**	**+0.8**
	comp=Z,3.5nm,0.7s,baz=220,slow=7.3,SNR=11						
ZAK	**Zakamensk**	**28.59**	**309**	*e*P	**P**	**16 02 17.1**	**-2.1**
ZAK				pmax	pmax		
	comp=Z,4.0nm,1.5s						
TLY	**Talaya**	**28.72**	**312**	*e*P	**P**	**16 02 22.3**	**+2.0**
TLY				*e*S	**S**	**16 07 15.8**	**+6.4**
TLY				*e*SSS	SSS	16 08 56.9	
TLY				pmax	pmax		
	comp=Z,1.0nm,0.6s						
TLY				MLR	MLR		
	comp=Z,465nm,17.0s						
CD2	**Chengdu**	**29.50**	**268**	P	**P**	**16 02 25.1**	**-2.3**
CD2				pmax	pmax		
	comp=Z,1.0nm,0.5s						
GTA	**Gaotai**	**30.49**	**287**	*e*P	**P**	**16 02 36.9**	**+0.7**
GTA				pP	sP	16 02 41.3	+1.5
GTA				sP	pP	16 02 43.9	+5.1
GTA				S	**S**	**16 07 38.8**	**+1.1**
GTA				sS	sS	16 07 46.5	+4.6
GTA				SS	**ScP**	**16 09 21.5**	**+3.5**
GTA				pmax	pmax		
	comp=Z,3.0nm,1.1s						
GTA				pmax	pmax		
	comp=Z,40nm,4.6s						
GTA				LR	LR		
	comp=Z,460nm,13.3s						
GTA				LR	LR		
	comp=Z,380nm,15.7s						
GTA				LR	LR		
	comp=Z,340nm,16.2s						
KMI	**Kunming**	**32.81**	**259**	P	**P**	**16 02 58.6**	**+1.7**
KMI				pP	sP	16 03 00.8	+0.3
KMI				PP	**PnPn**	**16 04 06.5**	**+1.3**
KMI				pmax	pmax		
	comp=Z,14nm,1.0s						
KMI				pmax	pmax		
	comp=Z,72nm,6.4s						
KMI				LR	LR		
	comp=Z,570nm,15.1s						
KMI				LR	LR		
	comp=Z,570nm,18.0s						
KMI				LR	LR		
	comp=Z,730nm,15.1s						
BILL	**Bilibino**	**34.70**	**18**	⇓*e*P	**P**	**16 03 11.3**	**-1.2**
BILL				*e*		16 04 35.7	
BILL				*e*SS	SS	16 10 49.6	-23
BILL				pmax	pmax		
	comp=Z,16nm,2.5s						
BILL				MLR	MLR		
	comp=Z,269nm,19.0s						
BILL	**Bilibino**	**34.70**	**18**	*e*P	**P**	**16 03 10.3**	**-2.2**
	comp=Z,4.6nm,1.0s						
TIXI	**Tiksi**	**35.09**	**355**	P	**P**	**16 03 14.1**	**-1.7**
	comp=Z,2.8nm,0.7s,baz=148,slow=5.0,SNR=12						
TIXI				LR	LR	16 17 36.2	
	comp=Z,175nm,18.4s,baz=164,slow=36						
TIXI	**Tiksi**	**35.09**	**355**	⇑*e*P	**P**	**16 03 14.9**	**-0.9**
TIXI				pmax	pmax		
	comp=Z,8.0nm,1.2s						
TIXI	**Tiksi**	**35.09**	**355**	*e*P	**P**	**16 03 14.2**	**-1.7**
	comp=Z,4.4nm,0.8s						
WMQ	**Urumqi**	**38.91**	**296**	*e*P	**P**	**16 03 48.8**	**0.0**
WMQ				pP	sP	16 03 51.8	-0.6
WMQ				sP	pP	16 03 54.9	+3.5
WMQ				S	**S**	**16 09 48.8**	**+1.6**
WMQ				pmax	pmax		
	comp=Z,3.0nm,0.6s						
WMQ				pmax	pmax		
	comp=Z,40nm,4.4s						
WMQ				LR	LR		
	comp=Z,230nm,12.8s						
WMQ				LR	LR		
	comp=Z,120nm,12.8s						
WMQ				LR	LR		
	comp=Z,96nm,21.6s						
CMAR	**Chiang Mai Arr**	**39.40**	**253**	P	**P**	**16 03 50.9**	**-2.1**
	comp=Z,0.3nm,0.7s,baz=53,slow=8.0,SNR=2.0						
CMAR				PcP	**PcP**	**16 06 00.2**	**-1.1**
	comp=Z,0.5nm,0.9s,baz=3.8,slow=2.7,SNR=4.5						
GAMB	**Gambell**	**39.88**	**32**	*e*P	**P**	**16 03 55.4**	**-1.1**
	comp=Z,7.5nm,1.4s						
ZAA0	**Zalesovo Array**	**40.33**	**312**	*e*P	**P**	**16 03 59.4**	**-1.0**
ZALV	**Zalesovo Beam**	**40.33**	**312**	P	**P**	**16 04 00.1**	**-0.2**
	comp=Z,0.3nm,0.3s,baz=79,slow=7.5,SNR=3.1						
ZALV				PcP	**PcP**	**16 06 02.8**	**-0.9**
	comp=Z,2.2nm,0.7s,baz=96,slow=2.3,SNR=8.4						
NVS	**Novosibirsk**	**41.29**	**314**	*e*P	**P**	**16 04 08.8**	**+0.5**
MK01	**Makanchi Array**	**42.28**	**302**	*e*P	**P**	**16 04 15.4**	**-1.2**
MKAR	**Makanchi Array**	**42.29**	**302**	P	**P**	**16 04 15.6**	**-1.0**
	comp=Z,1.0nm,0.9s,baz=93,slow=8.5,SNR=7.4						
MKAR				PcP	**PcP**	**16 06 09.5**	**-0.8**
	comp=Z,1.4nm,0.8s,baz=77,slow=5.2,SNR=6.7						
NRIK	**Noril'sk**	**42.39**	**336**	P	**P**	**16 04 16.2**	**-0.9**
	comp=Z,11nm,1.0s,baz=122,slow=6.8,SNR=13						
KURK	**Kurchatov**	**44.24**	**308**	P	**P**	**16 04 31.8**	**-0.4**
KURK						16 06 15.6	
KURK	**Kurchatov**	**44.24**	**308**	P	**P**	**16 04 31.8**	**-0.4**
KURK				PcP	**PcP**	**16 06 15.6**	**-1.0**
KURBB	**Kurchatov Arra**	**44.30**	**308**	P	**P**	**16 04 31.8**	**-0.9**
	comp=Z,0.7nm,0.4s,baz=81,slow=7.6,SNR=2.7						
KURBB				PcP	**PP**	**16 06 15.6**	**-0.2**
	comp=Z,0.8nm,0.7s,baz=83,slow=3.3,SNR=5.1						
PDGK	**Podgornoye**	**44.87**	**297**	P	**P**	**16 04 39.6**	**+2.3**
PDGK				pmax	pmax		
	comp=Z,3.0nm,1.0s						
GUN	**Gumba**	**44.99**	**274**	*e*P	**P**	**16 04 38.3**	**-0.7**
	comp=Z,17nm,0.8s						
KKN	**Kakani**	**45.52**	**274**	*e*P	**P**	**16 04 42.6**	**-0.5**
	comp=Z,3.0nm,0.2s						
GKN	**Gorkha**	**45.94**	**275**	*e*P	**P**	**16 04 44.8**	**-1.5**
	comp=Z,4.4nm,0.3s						
PMG	**Port Moresby**	**46.84**	**169**	LR	LR	16 23 19.5	
	comp=Z,133nm,19.6s,baz=0.5,slow=34						
SVW2	**Sparrevohn**	**46.87**	**37**	*e*P	**P**	**16 04 54.1**	**+1.2**
	comp=Z,6.7nm,1.0s						
KOLN	**Koldanda**	**46.87**	**275**	*e*P	**P**	**16 04 52.3**	**-1.4**
PYUN	**Piuthan**	**47.21**	**276**	*e*P	**P**	**16 04 55.8**	**-0.5**
TKM2	**Tokmak 2**	**47.73**	**298**	*e*P	**P**	**16 05 02.1**	**+1.9**
TKM2				pmax	pmax		
	comp=Z,8.0nm,1.4s						
TKM2	**Tokmak 2**	**47.73**	**298**	*e*P	**P**	**16 05 02.1**	**+1.9**
	comp=Z,8.4nm,1.4s						
KSH	**Kashi**	**48.42**	**293**	*e*P	**P**	**16 05 08.9**	**+3.4**
KSH				*es*P	sP	16 05 15.4	+6.2
KSH				S	**S**	**16 12 09.3**	**+2.8**
KSH				ScS	**ScS**	**16 14 57.6**	**-1.2**
KSH				SS	**SS**	**16 15 34.3**	**-1.5**
KSH				pmax	pmax		
	comp=Z,86nm,4.0s						
KSH				LR	LR		
	comp=Z,180nm,8.6s						
KSH				LR	LR		
	comp=Z,210nm,10.9s						
KSH				LR	LR		
	comp=Z,

ZRNK Zerenda 49.82 312 *e*P P 16 05 15.3 -0.5
ZRNK pmax pmax
comp=Z,9.0nm,1.1s
ZRNK Zerenda 49.82 312 *e*P P 16 05 15.3 -0.5
comp=Z,8.6nm,1.1s
MCK McKinley 49.87 34 *e*P P 16 05 16.3 +0.2
MCK pmax pmax
comp=Z,8.0nm,1.2s
MCK McKinley 49.87 34 *e*P P 16 05 16.2 +0.2
comp=Z,7.7nm,1.2s
RND Reindeer 49.92 34 *e*P P 16 05 16.3 -0.3
RND pmax pmax
comp=Z,7.0nm,1.0s
RND Reindeer 49.92 34 *e*P P 16 05 16.3 -0.3
comp=Z,7.1nm,1.0s
PMR Palmer 49.95 36 *e*P P 16 05 16.7 +0.1
PMR pmax pmax
comp=Z,20nm,1.6s
PMR Palmer 49.95 36 *e*P P 16 05 16.7 +0.1
comp=Z,20nm,1.6s
MNAS Manas 50.03 298 P P 16 05 20.7 +2.9
SFK Sufi-Kurgan 50.08 295 P P 16 05 19.3 +1.0
SFK pmax pmax
comp=Z,5.0nm,1.1s
MDM Murphy Dome 50.10 32 *e*P P 16 05 16.7 -1.1
comp=Z,7.6nm,0.8s
WRH Wood River Hil 50.19 33 *e*P P 16 05 18.0 -0.4
comp=Z,5.6nm,1.0s
COLA College 50.26 32|| *e*P P 16 05 19.3 +0.3
COLA pmax pmax
comp=Z,2.0nm,0.8s
CCB Clear Creek Bu 50.30 32 *e*P P 16 05 20.9 +1.6
comp=Z,6.7nm,1.5s
SML Sawmill 50.30 36 *e*P P 16 05 18.8 -0.6
SML pmax pmax
comp=Z,6.0nm,0.8s
SML Sawmill 50.30 36 *e*P P 16 05 18.8 -0.6
comp=Z,6.0nm,0.8s
IL1 Eielson Array 50.68 32 *e*P P 16 05 21.1 -1.1
ILAR Eielson Array 50.68 32 P P 16 05 22.0 -0.2
comp=Z,2.7nm,0.8s,baz=278,slow=5.5,SNR=24
ILAR LR LR 16 28 20.9
comp=Z,49nm,19.1s,baz=322,slow=38
ILAR Eielson Array 50.68 32 P P 16 05 22.0 -0.2
ILB Eielson Array 50.68 32 *e*P P 16 05 21.9 -0.2
HDA Harding Lake 50.69 33 *e*P P 16 05 21.8 -0.5
comp=Z,13nm,1.4s
SCM Sheep Creek Mo 50.77 36 *e*P P 16 05 22.7 -0.3
SCM pmax pmax
comp=Z,43nm,1.8s
SCM Sheep Creek Mo 50.77 36 *e*P P 16 05 22.7 -0.3
comp=Z,43nm,1.8s
KLU Klutina 51.48 36 *e*P P 16 05 27.8 -0.6
comp=Z,6.3nm,0.9s
DIV Divide 51.61 37 *e*P P 16 05 29.8 +0.6
comp=Z,11nm,0.9s
DOT Dot Lake 52.03 34 *e*P P 16 05 32.8 +0.4
comp=Z,10nm,0.8s
MENT Mentasta 52.29 34 *e*P P 16 05 35.2 +0.9
comp=Z,5.2nm,0.8s
EGAK Eagle 53.12 32 *e*P P 16 05 40.6 +0.3
comp=Z,4.7nm,0.8s
SVE Sverdlovsk 53.73 318|| *e*P P 16 05 45.6 +0.7
SVE pmax pmax
comp=Z,17nm,1.1s
ARU Arti 54.94 318 *d i*P P 16 05 53.6 -0.1
ARU 16 07 55.1
ARU S S 16 13 34.6 -0.7
ARU SS SS 16 17 17.3 -0.9
ARU pmax pmax
comp=Z,24nm,1.2s
ARU MLR MLR
comp=Z,462nm,17.0s
ARU Arti 54.94 318 *e*P P 16 05 53.4 -0.4
comp=Z,28nm,1.3s
KBL Kabul 55.39 290 *e*P P 16 05 56.7 -0.9
KBL pmax pmax
comp=Z,14nm,1.4s
KBL Kabul 55.39 290 *e*P P 16 05 56.7 -0.9
comp=Z,14nm,1.4s
INK Inuvik 55.40 27 *e*P P 16 05 56.4 -0.4
comp=Z,3.6nm,0.8s,baz=299,slow=5.9,SNR=13
INK Inuvik 55.40 27 *e*P P 16 05 56.5 -0.4
INK pmax pmax
comp=Z,6.0nm,0.9s
INK Inuvik 55.40 27 *e*P P 16 05 56.5 -0.4
comp=Z,5.9nm,0.9s
WRAB Tennant Creek 56.78 185 ⇑ *e*P P 16 06 06.7 -0.6
WRAB pmax pmax
comp=Z,36nm,1.1s
WRAB Tennant Creek 56.78 185 *e*P P 16 06 05.9 -1.3
comp=Z,22nm,1.1s
WB2 Warramunga Arr 56.79 185 *e*P P 16 06 06.4 -0.9
comp=Z,22nm,1.1s
WRA Warramunga Arr 56.79 185 P P 16 06 06.0 -1.3
comp=Z,7.5nm,0.6s,baz=2.0,slow=7.2,SNR=37
WRA PcP PcP 16 07 03.4 +0.2
comp=Z,3.2nm,0.8s,baz=357,slow=4.5,SNR=4.8
DLBC Dease Lake 59.98 37 P P 16 06 30.4 +1.0
comp=Z,1.7nm,0.9s,baz=272,slow=8.1,SNR=4.1
AS01 Alice Springs 60.51 185 *e*P P 16 06 32.1 -1.1
AS31 Alice Springs 60.51 185 *e*P P 16 06 33.1 -0.2
comp=Z,1.9nm,0.9s
ASAR Alice Springs 60.51 185 P P 16 06 32.6 -0.7
comp=Z,2.3nm,0.6s,baz=0.7,slow=5.5,SNR=60
GEYT Alibeck 61.94 298 P P 16 06 43.3 +0.3
comp=Z,3.3nm,1.0s,baz=67,slow=3.9,SNR=5.4
YKW3 Yellowknife Ar 64.87 29 *e*P P 16 07 02.3 +0.4
comp=Z,22nm,2.0s
YKA Yellowknife Ar 64.92 29 P P 16 07 01.5 -0.6
comp=Z,1.8nm,0.7s,baz=305,slow=6.7,SNR=18
YKB5 Yellowknife Ar 64.92 29 *e*P P 16 07 01.8 -0.4
DAG Danmarks Havn 65.61 354 *i*P P 16 07 05.5 -0.9
DAG Danmarks Havn 65.61 354 *e*P P 16 07 05.5 -0.9
VRH Novokhopyorsk 66.13 317 *e*P P 16 07 09.1 -1.1
VRH pmax pmax
comp=Z,9.0nm,0.7s
OBN Obninsk 66.80 322|| *e*P P 16 07 15.3 +0.9
OBN pmax pmax
comp=Z,42nm,2.5s
OBN MLR MLR
comp=Z,322nm,17.0s
LPSR Galich'ya Gora 66.92 319 *e*P P 16 07 13.5 -1.7
LPSR pmax pmax
comp=Z,10.0nm,1.0s
VSR Storozhevoye 67.51 318 *e*P P 16 07 18.0 -1.0
VSR pmax pmax
comp=Z,4.0nm,0.6s
FIA1 FINESS Array S 67.81 331 *e*P P 16 07 20.5 -0.2
FINES FINESS Array B 67.81 331 P P 16 07 19.3 -1.4
comp=Z,3.7nm,0.8s,baz=72,slow=5.3,SNR=6.9
STKA Stephens Creek 68.58 177 P P 16 07 25.2 -0.6
comp=Z,3.9nm,0.7s,baz=327,slow=8.4,SNR=12
KBZ Khabaz 69.26 310 P P 16 07 29.9 -0.2
comp=Z,3.1nm,1.0s,baz=40,slow=12,SNR=4.2
KIV Kislovodsk 69.27 310 *i*P P 16 07 29.9 -0.4
KIV *i* 16 07 53.0
KIV pmax pmax
comp=Z,14nm,1.1s
KIV MLR MLR
comp=Z,138nm,15.0s
KIV Kislovodsk 69.27 310 *e*P P 16 07 30.2 -0.1
comp=Z,15nm,1.1s
VSU Vasula 69.36 329 ⇑ *e*P P 16 07 31.6 +1.1
VSU pmax pmax
comp=Z,57nm,1.2s
NEY Neytrino 69.62 309 ⇑ *e*P P 16 07 31.8 -0.8
NEY pmax pmax
comp=Z,2.0nm,1.4s
GNI Garni 69.97 306 *c i*P P 16 07 35.8 +1.0
GNI pmax pmax
comp=Z,61nm,1.2s
SUMG Summit 70.70 359 *i*P P 16 07 38.5 -0.5
SUMG Summit 70.70 359 *e*P P 16 07 37.3 -1.7
SUMG pmax pmax
comp=Z,12nm,0.8s
SUMG Summit 70.70 359 *e*P P 16 07 37.2 -1.7
comp=Z,12nm,0.8s
WALA Waterton Lakes 72.90 41 *e*P P 16 07 54.2 +1.9
comp=Z,23nm,1.8s
AKASG Malin Array Be 72.97 321 P P 16 07 51.5 -1.0
comp=Z,5.7nm,0.8s,baz=45,slow=6.1,SNR=17
AKASG LR LR 16 42 36.7
comp=Z,479nm,19.1s,baz=50,slow=38
KIEV Kiev 72.99 321 ⇑ *e*P P 16 07 52.2 -0.4
KIEV pmax pmax
comp=Z,16nm,1.0s
KIEV Kiev 72.99 321 *e*P P 16 07 52.1 -0.5
comp=Z,13nm,0.9s
AK11 Malin Array Si 73.02 321 *e*P P 16 07 52.6 -0.1
NB2 NORSAR Subarra 73.36 336 P P 16 07 54.1 -0.6
comp=Z,16nm,1.2s,baz=41,slow=5.9
NOA NORSAR Array B 73.36 336 P P 16 07 54.4 -0.3
comp=Z,6.7nm,1.1s,baz=40,slow=5.8,SNR=6.0
JTMT Jette 73.50 42 *e*P P 16 07 56.7 +0.8
SWMT Swartz Lake 73.79 42 *e*P P 16 07 59.0 +1.4
FFC Flin Flon 74.89 32 *e*P P 16 08 02.4 -1.3
FFC pmax pmax
comp=Z,5.0nm,1.0s
FFC Flin Flon 74.89 32 *e*P P 16 08 02.4 -1.3
comp=Z,4.6nm,1.0s
FCC Fort Churchill 74.98 25 *e*P P 16 08 04.5 +0.4
FCC pmax pmax
comp=Z,8.0nm,1.0s
FCC Fort Churchill 74.98 25 *e*P P 16 08 04.5 +0.4
comp=Z,8.0nm,1.0s
MFID Camas Ranch 75.24 47 *e*P P 16 08 06.9 +0.8
comp=Z,4.1nm,1.0s
CMB Columbia Colle 75.64 53 *e*P P 16 08 09.2 +0.8
CMB pmax pmax
comp=Z,8.0nm,1.1s
CMB Columbia Colle 75.64 53 *e*P P 16 08 09.2 +0.8
comp=Z,7.8nm,1.1s
LRM Limekiln Ridge 75.67 43 *e*P P 16 08 08.3 -0.3
EGMT Eagleton 75.71 40 *e*P P 16 08 09.8 +1.2
comp=Z,8.3nm,0.8s
DLMT Dillon 75.88 44 *e*P P 16 08 11.1 +1.3
comp=Z,15nm,1.3s
HLID Hailey 75.97 46 *e*P P 16 08 11.9 +1.6
comp=Z,8.6nm,1.6s
BOZ Bozeman (W) 76.23 43 *e*P P 16 08 12.7 +1.0
BOZ pmax pmax
comp=Z,7.0nm,0.9s
BOZ Bozeman (W) 76.23 43 *e*P P 16 08 12.7 +1.0
comp=Z,6.5nm,0.9s
NVAR Mina Array Bea 76.73 52 P P 16 08 15.2 +0.4
comp=Z,3.3nm,0.9s,baz=287,slow=6.1,SNR=18
KWP Kalwaria Pacla 76.87 323 ⇑ *i*P P 16 08 16.1 +1.0
KWP Kalwaria Pacla 76.87 323 ⇑ P P 16 08 16.1 +1.0
TESR Tescani 76.95 319 ⇑ *i*P P 16 08 15.4 -0.2
BUR08 Bucovina Ar. S 76.96 320 *e*P P 16 08 15.9 +0.2
BURAR Bucovina Array 76.97 320 ⇑ *i*P P 16 08 15.8 0.0
BURAR Bucovina Array 76.97 320 ⇑ P P 16 08 15.8 0.0
CFR Carcaliu 77.01 317 ⇑ *i*P P 16 08 17.6 +1.7
CFR Carcaliu 77.01 317 ⇑ P P 16 08 17.6 +1.7
BRTR Keskin Array B 77.23 310 P P 16 08 17.6 +0.1
comp=Z,2.2nm,1.0s,baz=108,slow=2.9,SNR=7.4
VRI Vrincioaia 77.32 318 ⇑ *i*P P 16 08 18.9 +1.2
VRI Vrincioaia 77.32 318 ⇑ P P 16 08 18.9 +1.2
KOLS Kolonicke sedl 77.55 323 *e*P P 16 08 22.6 +3.7
KOLS pmax pmax
comp=Z,10.0nm,1.3s
KOLS Kolonicke sedl 77.55 323 *e*P P 16 08 22.6 +3.7
H17A Grant Village 77.60 43 *e*P P 16 08 22.1 +2.5
comp=Z,20nm,1.4s
BR231 Keskin MP Arra 77.68 311 *e*P P 16 08 18.7 -1.2
STHS Stebnicka Huta 77.71 324 *e*P P 16 08 21.0 +1.2
STHS pmax pmax
comp=Z,8.0nm,1.2s
STHS Stebnicka Huta 77.71 324 *e*P P 16 08 21.0 +1.2
IMW Indian Meadow 77.72 44 *e*P P 16 08 22.5 +2.2
comp=Z,4.1nm,0.9s
FLWY Flagg Ranch 77.73 44 *e*P P 16 08 21.9 +1.6
comp=Z,21nm,1.6s
OJC Ojcow 77.83 325 *e*P P 16 08 20.5 0.0
OJC Ojcow 77.83 325 *e*P P 16 08 20.3 -0.2
OJC pmax pmax
comp=Z,26nm,1.2s
OJC Ojcow 77.83 325 *e*P P 16 08 20.3 -0.2
comp=Z,26nm,1.2s
RLMT Red Lodge 77.84 42 *e*P P 16 08 21.1 +0.2
comp=Z,9.9nm,0.6s
MSAB Monastry St. A 77.88 316 ⇑ *i*P P 16 08 20.8 0.0
MOOW Moose Ponds 77.92 44 *e*P P 16 08 22.1 +0.7
comp=Z,17nm,1.8s
CRVS Cervenica-Dubn 77.96 323 *e*P P 16 08 22.2 +1.0
CRVS Cervenica-Dubn 77.96 323 *e*P P 16 08 22.2 +1.0
MLR Muntele Rosu 77.98 318 ⇑ *i*P P 16 08 22.4 +0.8
MLR Muntele Rosu 77.98 318 *e*P P 16 08 23.4 +1.8
MLR pmax pmax
comp=Z,10.0nm,1.3s
MLR Muntele Rosu 77.98 318 *e*P P 16 08 23.4 +1.8
comp=Z,9.9nm,1.3s
NIE Niedzica 78.16 324 *e*P P 16 08 23.7 +1.4
NIE Niedzica 78.16 324 *e*P P 16 08 23.7 +1.4
R11A Troy Canyon, C 78.48 51 *e*P P 16 08 24.0 -0.5
comp=Z,12nm,1.5s
VOIR 78.49 319 || *i*P P 16 08 25.5 +1.2
VOIR 78.49 319 || P P 16 08 25.5 +1.2
RAYN Ar Rayn 78.64 291 *e*P P 16 08 21.9 -3.5
comp=Z,9.2nm,1.3s
LANS Liptovska Anna 78.73 324 *e*P P 16 08 27.9 +2.4
LANS Liptovska Anna 78.73 324 *e*P P 16 08 27.9 +2.4
DRGR 78.79 321 || *i*P P 16 08 27.5 +1.6
DRGR 78.79 321 || P P 16 08 27.5 +1.6
HWUT Hardware Ranch 78.83 46 *e*P P 16 08 23.6 -2.8
comp=Z,15nm,1.6s
OKC Ostrava-Krasne 78.86 325 *e*P P 16 08 27.5 +1.4
OKC *e*pP sP 16 08 29.7 -0.2
OKC Ostrava-Krasne 78.86 325 *e*P P 16 08 27.5 +1.4
OKC *e* 16 08 29.7
TPNV Topopah Spring 78.92 52 *e*P P 16 08 22.9 -4.1
TPNV pmax pmax
comp=Z,14nm,1.4s
TPNV Topopah Spring 78.92 52 *e*P P 16 08 22.9 -4.1
comp=Z,14nm,1.4s
DUG Dugway, Tooele 79.00 48 *e*P P 16 08 26.9 -0.4
DUG pmax pmax
comp=Z,5.0nm,1.2s
DUG Dugway, Tooele 79.00 48 *e*P P 16 08 26.9 -0.4
comp=Z,5.3nm,1.2s
MORC Moravsky Berou 79.18 326 ⇑ *i*P P 16 08 27.4 -0.5
MORC Moravsky Berou 79.18 326 *e*P P 16 08 29.5 +1.6
MORC pmax pmax
comp=Z,51nm,1.2s
MORC Moravsky Berou 79.18 326 *e*P P 16 08 29.5 +1.6
comp=Z,51nm,1.2s
BW06 Boulder Array 79.22 44 *e*P P 16 08 29.4 +0.8
PD31 Pinedale Array 79.22 44 *e*P P 16 08 29.9 +1.3
PDAR Pinedale Array 79.22 44 P P 16 08 29.2 +0.6
comp=Z,1.8nm,0.7s,baz=280,slow=1.2,SNR=14
KRLC Kraliky 79.30 326 *e*P P 16 08 27.2 -1.4
KRLC Kraliky 79.30 326 *e*P P 16 08 27.2 -1.4
DPC Dobruska-Polom 79.31 327 *e*P P 16 08 29.7 +1.1
DPC *e*pP sP 16 08 32.0 -0.4
DPC Dobruska-Polom 79.31 327 *e*P P 16 08 29.7 +1.1
DPC *e* 16 08 32.0
PSZ Piszkesteto 79.40 323 *e*P P 16 08 29.7 +0.5
PSZ pmax pmax
comp=Z,16nm,1.1s
PSZ Piszkesteto 79.40 323 *e*P P 16 08 29.7 +0.5
comp=Z,16nm,1.1s
VYHS Vyhne 79.49 324 *e*P P 16 08 31.2 +1.5
VYHS pmax pmax
comp=Z,20nm,2.1s
VYHS Vyhne 79.49 324 *e*P P 16 08 31.2 +1.5
GZR Gura Zlata 79.71 320 ⇑ *i*P P 16 08 30.7 -0.2
GZR Gura Zlata 79.71 320 ⇑ P P 16 08 30.7 -0.2
BRG Berggiesshubel 79.95 328 *e*P P 16 08 32.7 +0.7
comp=Z,8.0nm,1.3s
BRG Berggiesshubel 79.95 328 *e*P P 16 08 32.7 +0.7
BRG pmax pmax
comp=Z,8.0nm,1.3s
CLL Collm 80.02 329 *e*P P 16 08 32.0 -0.4
comp=Z,11nm,1.1s
CLL *i* 16 08 34.3
comp=Z,11nm,1.1s
CLL Collm 80.02 329 *e*P P 16 08 32.9 +0.5
CLL pmax pmax
comp=Z,10.0nm,1.0s
CLL Collm 80.02 329 *e*P P 16 08 32.9 +0.5
comp=Z,10nm,1.0s
PRU Pruhonice 80.35 327 *e*P P 16 08 34.3 +0.1
PRU *e*pP sP 16 08 37.5 -0.5
PRU Pruhonice 80.35 327 *e*P P 16 08 34.3 +0.1
PRU *e* 16 08 37.5
ULM Lac du Bonnet 80.70 32 P P 16 08 35.5 -0.7
comp=Z,5.4nm,0.8s,baz=272,slow=4.7,SNR=6.2
LCMT Little Creek M 80.76 50 *e*P P 16 08 38.6 +1.7
comp=Z,5.5nm,1.3s
P18A Preston Nutter 80.88 47 *e*P P 16 08 36.8 -0.9
comp=Z,12nm,1.5s
PKSM Moragy 81.21 323 ⇑ *i*P P 16 08 38.2 -0.7
PKSM Moragy 81.21 323 ⇑ P P 16 08 38.2 -0.7
VTS Vitosha 81.39 318 ⇑ *i*P P 16 08 40.3 +0.2
VTS Vitosha 81.39 318 *e*P P 16 08 35.7 -4.5
VTS pmax pmax
comp=Z,7.0nm,1.1s
VTS Vitosha 81.39 318 *e*P P 16 08 35.7 -4.5
comp=Z,6.9nm,1.1s
KHC Kasperske Hory 81.41 327 *e*P P 16 08 39.4 -0.5
KHC *e*pP pP 16 08 42.4 -0.4
KHC Kasperske Hory 81.41 327 *e*P P 16 08 39.5 -0.5
KHC pmax pmax
comp=Z,2.0nm,1.0s
KHC Kasperske Hory 81.41 327 *e*P P 16 08 39.5 -0.5
comp=Z,2.3nm,1.0s
GEC2 GERESS Array S 81.57 327 *e*P P 16 08 37.9 -3.0
GEC2 pmax pmax
comp=Z,6.0nm,1.1s
GEC2 GERESS Array S 81.57 327 *e*P P 16 08 37.9 -3.0
comp=Z,5.5nm,1.1s
GERES GERESS Array B 81.57 327 P P 16 08 39.7 -1.2
comp=Z,1.6nm,0.8s,baz=35,slow=4.9,SNR=11
GEA0 GERESS Array S 81.58 327 *e*P P 16 08 39.8 -1.1
GRFO Grafenberg 81.99 329 *e*P P 16 08 42.6 -0.4
GRFO pmax pmax
comp=Z,17nm,1.1s
GRFO Grafenberg 81.99 329 *e*P P 16 08 42.6 -0.4
comp=Z,17nm,1.1s
N23A Red Feather La 82.48 44 *e*P P 16 08 46.9 +0.8
comp=Z,13nm,1.3s
PV05 Paradox Valley 82.57 47 *e*P P 16 08 47.2 +0.7
SMCO Snowmass 83.07 46 *e*P P 16 08 52.1 +2.7
comp=Z,13nm,1.9s
X16A Lo Mia Camp, P 83.55 51 *e*P P 16 08 52.5 +0.9
comp=Z,17nm,1.8s
S22A 4UR Ranch, Cre 84.12 46 *e*P P 16 08 54.5 -0.1
comp=Z,9.9nm,1.6s
BFO Black Forest 84.24 329 *e*P P 16 08 54.2 -0.5
BFO pmax pmax
comp=Z,5.0nm,0.8s
BFO Black Forest 84.24 329 *e*P P 16 08 54.2 -0.5
comp=Z,5.0nm,0.8s
LAST Lasithi 85.12 311 *e*P P 16 08 57.3 -2.2
comp=Z,19nm,1.1s
TUC Tucson 85.34 53 *e*P P 16 09 01.0 +0.4
TUC pmax pmax
comp=Z,5.0nm,1.3s
TUC Tucson 85.34 53 *e*P P 16 09 01.0 +0.4
comp=Z,5.4nm,1.3s
T25A Trinidad 85.93 46 *e*P P 16 09 04.8 +1.2
comp=Z,6.0nm,1.0s
SCHQ Schefferville 85.94 14 LR LR 16 51 43.2
comp=Z,47nm,18.4s,baz=104,slow=39
ANMO Albuquerque 86.25 48 || *e*P P 16 09 06.0 +0.8
ANMO pmax pmax
comp=Z,6.0nm,2.5s
TX31 Lajitas Ar. Si 91.84 51 *e*P P 16 09 33.0 +1.4
TXAR Lajitas Array 91.84 51 P P 16 09 31.7 0.0
comp=Z,1.1nm,0.8s,baz=294,slow=3.2,SNR=11
KEST Kesra 93.70 321 LR LR 16 55 60.0
comp=Z,110nm,18.1s,baz=297,slow=38
TORD Torodi Ar. Bea 115.78 312 PKP **PKPdf** 16 15 04.6 -1.7
comp=Z,0.2nm,0.4s,baz=322,slow=1.0,SNR=3.8
SNAA Sanae 140.07 198 PKP PKPpre 16 15 45.1
VNA2 Neumayer--Watz 141.66 197 PKP PKPpre 16 15 45.9
baz=298,slow=2.7
LPAZ La Paz 148.55 56 PKPbc **PKPbc** 16 16 11.7 +0.4
comp=Z,3.6nm,0.8s,baz=8.2,slow=9.2,SNR=9.3

KRSC 16 15:58:07.7±1.1, 53°39N×160°65E, h50km±15km, ML3.6, Near east coast of Kamchatka Peninsula

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SPN	**Mys Shipunski**	**0.47**	**233**	*e*P	Pn	15 58 20.6	+2.0
SPN				*e*S	Sn	15 58 28.0	+1.6
NLC	**Nalytchevo**	**0.81**	**255**	*e*P	Pn	15 58 24.2	+1.3
NLC				*e*S	Sn	15 58 34.6	+0.7
KII	**Karymskiy**	**0.96**	**313**	*e*P	Pn	15 58 25.8	+0.8
SDLR	**Sedlovina**	**1.06**	**265**	*e*P	Pn	15 58 27.9	+1.5
SDLR				*e*S	Sn	15 58 41.0	+0.9
UGLR	**Uglovaya**	**1.11**	**262**	*e*P	Pn	15 58 28.8	+1.8
UGLR				*e*S	Sn	15 58 42.8	+1.6
SMAR	**Somma**	**1.11**	**264**	*e*P	Pn	15 58 28.6	+1.5
SMAR				*e*S	Sn	15 58 42.3	+0.8
AVH	**Avacha**	**1.15**	**265**	*e*P	Pn	15 58 29.4	+1.9
AVH				*e*S	Sn	15 58 43.7	+1.5
DALK	**Dalny**	**1.19**	**253**	*e*P	Pn	15 58 29.6	+1.6
DALK				*e*S	Sn	15 58 43.9	+0.8
KRX	**Arik**	**1.20**	**269**	*e*P	Pn	15 58 29.1	+0.9
KRX				*e*S	Sn	15 58 43.6	+0.2
KOK	**Koryaka**	**1.21**	**266**	*e*P	Pn	15 58 30.0	+1.7
KOK				*e*S	Sn	15 58 44.4	+0.8
PET	**Petropavlovsk**	**1.25**	**254**	*e*P	Pn	15 58 30.4	+1.6
PET				*e*S	Sn	15 58 45.3	+0.8
MKZ	**Mys Kozlova**	**1.34**	**28**	*e*P	Pn	15 58 32.5	+2.6
MKZ				*e*S	Sn	15 58 49.5	+2.9
RUS	**Russkaya**	**1.61**	**234**	*e*P	Pn	15 58 35.6	+2.0
RUS				*e*S	Sn	15 58 54.3	+1.2
KRMR	**Karymshinskiy**	**1.61**	**251**	*e*P	Pn	15 58 35.9	+2.1
KRMR				*e*S	Sn	15 58 54.8	+1.4
GNL	**Ganaly**	**1.64**	**282**	*e*P	Pn	15 58 36.0	+1.7
MTVR	**Mutnovka**	**1.74**	**240**	*e*P	Pn	15 58 38.0	+2.3
MTVR				*e*S	Sn	15 58 58.3	+1.5
TUMD	**Tumrok D**	**1.83**	**356**	*e*P	Pn	15 58 38.5	+1.8
TUMD				*e*S	Sn	15 58 59.2	+0.6
TUMR	**Tumrok**	**1.92**	**351**	*e*P	Pn	15 58 40.7	+2.6
TUMR				*e*S	Sn	15 59 03.5	+2.4
ASAK	**Asacha**	**1.94**	**240**	*e*P	Pn	15 58 41.4	+3.1
ASAK				*e*S	Sn	15 59 04.6	+3.0
APC	**Apacha**	**2.15**	**259**	*e*P	Pn	15 58 45.5	+4.4
APC				*e*S	Sn	15 59 10.5	+4.0
KMNR	**Kamenistaya**	**2.39**	**354**	*e*P	Pn	15 58 47.8	+3.4
KMNR				*e*S	Sn	15 59 15.6	+3.1
ZLN	**Zelenaya**	**2.64**	**2**	*e*P	Pn	15 58 51.7	+3.8
ZLN				*e*S	Sn	15 59 23.0	+4.3
ESO	**Esso**	**2.78**	**337**	*e*P	Pn	15 58 51.8	+2.0
KBTR	**Krutoberegovo**	**3.10**	**23**	*e*P	Pn	15 58 57.4	+3.4
KBTR				*e*S	Sn	15 59 34.3	+4.6
BDR	**Baidarnaya**	**3.21**	**6**	*e*P	Pn	15 59 00.5	+4.9
BDR				*e*S	Sn	15 59 37.8	+5.2
SMKR	**Semkarok**	**3.24**	**8**	*e*P	Pn	15 59 00.5	+4.5
SMKR				*e*S	Sn	15 59 36.8	+3.4
BKI	**Bering**	**3.61**	**58**	*e*P	Pn	15 59 04.3	+3.2
BKI				*e*S	Sn	15 59 42.4	0.0

ISCJB ***16*** *16:01:08.8±0.9, 38°.32N±0°.04×142°.00E±0°.10, h69km±6km, mb3.6/6, Error ellipse: s-maj=13.3km s-min=5.9km az=15.8*

IDC ***16*** *16:01:08.6±2.4, 38°.37N×142°.27E, h58km±19km, mb3.4/6, mb1 3.6/10, mb1mx3.2/53, mbtmp3.7/10, ML3.3/4, Error ellipse: s-maj=36.9km s-min=14.9km az=95.0*

JMA ***16*** *16:01:10.8±0.1, 38°.34N×141°.88E, h63km±1km, M3.8*
JMA Felt I J1.

ISC 16 16:01:09.7±1.5, 38°.32N±0°.05×142°.0E±0°.1, h57km±11km, n28, σ1°37/34, mb3.7/6, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**0.53**	**285**	P	**Pn**	**16 01 22.5**	**+0.8**
JIO				S	**Sn**	**16 01 30.6**	**+0.2**
OFUJ	**Ofunato**	**0.80**	**341**	P	**Pn**	**16 01 26.0**	**+0.9**
OFUJ				S	**Sn**	**16 01 36.8**	**+0.5**
JMK	**Ichinoseki**	**0.88**	**316**	P	**Pn**	**16 01 26.8**	**+0.8**
JMK				S	**Sn**	**16 01 38.2**	**+0.2**
JOU	**Okura**	**1.05**	**273**	S	**Sn**	**16 01 41.8**	**-0.3**
JMM	**Marumori**	**1.05**	**245**	P	**Pn**	**16 01 28.4**	**+0.1**
JMM				S	**Sn**	**16 01 41.5**	**-0.6**
JOM	**Ohasama**	**1.28**	**335**	P	**Pn**	**16 01 32.1**	**+0.8**
JOM				S	**Sn**	**16 01 48.0**	**+0.5**
JFK	**Kawauchi**	**1.30**	**223**	P	**Pn**	**16 01 32.2**	**+0.5**
JFK				S	**Sn**	**16 01 48.0**	**-0.1**
JYK	**Kaneyama**	**1.42**	**295**	P	**Pn**	**16 01 33.6**	**+0.4**
JYK				S	**Sn**	**16 01 50.6**	**-0.2**
JRG	**Rokugo**	**1.51**	**316**	P	**Pn**	**16 01 35.2**	**+0.7**
JYS	**Shirataka**	**1.52**	**267**	P	**Pn**	**16 01 35.2**	**+0.6**
JYS				S	**Sn**	**16 01 53.5**	**+0.1**
JFT	**Otama**	**1.54**	**239**	P	**Pn**	**16 01 35.6**	**+0.7**

JFT				S		Sn	16 01 54.1	+0.3
MJAR	**Matsushiro Arr**	**3.50**	**241**	P		**Pn**	**16 02 03.6**	**+2.0**
	3.8nm,0.3s,baz=60,slow=9.8,SNR=11							
MAT	**Matsushiro**	**3.50**	**241**	P		**Pn**	**16 02 03.4**	**+1.8**
MAT				S		**Sn**	**16 02 46.2**	**+4.4**
JHJ	**Hachijo jima 2**	**5.49**	**200**	P		**Pn**	**16 02 28.4**	**-0.6**
	8.9nm,0.3s,baz=323,slow=23,SNR=9.3							
JHJ				S		**Sn**	**16 03 27.1**	**-3.6**
	22nm,0.3s,baz=118,slow=22,SNR=8.6							
ASAJ	**Asahikawa**	**5.81**	**4**	P		**Pn**	**16 02 32.4**	**-0.8**
	1.0nm,0.3s,baz=206,slow=17,SNR=12							
ASAJ				S		**Sn**	**16 03 35.8**	**-2.7**
	0.9nm,0.3s,baz=66,slow=24,SNR=4.2							
USRK	**Ussuriysk Ar.**	**9.55**	**311**	P		**Pn**	**16 03 25.6**	**+1.2**
	0.3nm,0.3s,baz=120,slow=14,SNR=5.3							
H11N2	**WAKE ISLAND Hy 28.44**		**124**	T		T	16 37 18.7	
	baz=316,slow=76,SNR=15							
H11N1	**WAKE ISLAND Hy 28.45**		**124**	T		T	16 37 19.5	
	baz=316,slow=76,SNR=22							
H11N3	**WAKE ISLAND Hy 28.46**		**124**	T		T	16 37 24.9	
	baz=316,slow=76,SNR=16							
H11S1	**WAKE ISLAND Hy 29.20**		**126**	T		T	16 38 17.6	
	baz=318,slow=76,SNR=17							
H11S3	**WAKE ISLAND Hy 29.20**		**126**	T		T	16 38 17.9	
	baz=318,slow=76,SNR=22							
H11S2	**WAKE ISLAND Hy 29.22**		**126**	T		T	16 38 19.0	
	baz=318,slow=76,SNR=16							
ZALV	**Zalesovo Beam**	**41.40**	**311**	P		**P**	**16 08 49.8**	**-0.4**
	0.9nm,0.5s,baz=83,slow=6.9,SNR=4.5							
MKAR	**Makanchi Array**	**43.84**	**301**	P		**P**	**16 09 10.2**	**+0.2**
	0.6nm,0.7s,baz=86,slow=9.6,SNR=6.5							
KURBB	**Kurchatov Arra**	**45.59**	**307**	P		**P**	**16 09 23.0**	**-0.8**
	0.7nm,0.3s,baz=81,slow=8.4,SNR=10.0							
BVAR	**Borovoye Array**	**50.06**	**312**	P		**P**	**16 09 57.9**	**-0.6**
	0.3nm,0.5s,baz=77,slow=6.5,SNR=2.6							
WRA	**Warramunga Arr**	**58.40**	**188**	P		**P**	**16 10 58.6**	**-0.7**
	0.2nm,0.5s,baz=6.3,slow=7.2,SNR=3.9							
FINES	**FINESS Array B**	**67.89**	**332**	P		**P**	**16 12 01.3**	**-0.5**
	1.1nm,0.7s,baz=25,slow=11,SNR=3.6							

KRSC 16 16:04:11.4±1.8, 54°.71N×158°.24E, h305km±21km, ML3.8, Kamchatka Peninsula

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GNL	**Ganaly**	**1.03**	**190**	*eP*	Pn	16 04 53.6	+1.0
ESO	**Esso**	**1.25**	**12**	*eP*	Pn	16 04 54.7	+1.3
AVH	**Avacha**	**1.47**	**168**	*eP*	Pn	16 04 56.3	+1.3
SDLR	**Sedlovina**	**1.48**	**165**	*eP*	Pn	16 04 56.5	+1.4
SMAR	**Somma**	**1.48**	**167**	*eP*	Pn	16 04 56.7	+1.5
UGLR	**Uglovaya**	**1.54**	**167**	*eP*	Pn	16 04 56.8	+1.4
KMNR	**Kamenistaya**	**1.56**	**47**	*eP*	Pn	16 04 57.4	+2.0
NLC	**Nalytchevo**	**1.67**	**157**	*eS*	S	16 05 33.6	+1.8
DALK	**Dalny**	**1.71**	**169**	*eP*	Pn	16 04 57.2	+0.8
DALK				*eS*	S	16 05 32.7	+0.4
KRMR	**Karymshinskiy**	**1.88**	**182**	*eP*	Pn	16 04 58.4	+0.7
APC	**Apacha**	**1.90**	**200**	*eP*	Pn	16 04 58.4	+0.6
SPN	**Mys Shipunski**	**1.93**	**146**	*eP*	Pn	16 04 58.1	+0.1
SPN				*eS*	S	16 05 33.8	-1.4
MKZ	**Mys Kozlova**	**2.04**	**93**	*eP*	Pn	16 04 58.9	+0.2
MKZ				*eS*	S	16 05 35.2	-1.3
RUS	**Russkaya**	**2.28**	**176**	*eP*	Pn	16 05 00.9	0.0
RUS				*eS*	S	16 05 38.1	-2.3
KBTR	**Krutoberegovo**	**3.01**	**58**	*eP*	Pn	16 05 08.1	+0.7
KBTR				*eS*	S	16 05 52.0	-0.3
BKI	**Bering**	**4.49**	**80**	*eS*	S	16 06 22.0	+1.4

*BJI **16** 16:18:37.8, 23°.87N×121°.76E, h7km, mb3.8/3, ML3.7/3*
*JMA **16** 16:18:38.0±0.1, 23°.81N×121°.86E, h0km, M3.4*
*ISCJB **16** 16:18:39.3±0.3, 23°.79N±0°.02×121°.87E±0°.02, h20km±3km, mb3.5/10, MS3.3/1, Error ellipse: s-maj=3.2km s-min=1.9km az=142.1*
*TAP **16** 16:18:39.9, 23°.83N×121°.78E, h22km, ML4.2, B*
*IDC **16** 16:18:51.6±6.0, 23°.71N×121°.68E, h134km±59km, mb3.2/10, mb1 3.4/11, mb1mx3.2/40, mbtmp3.6/11, MS3.4/1, Ms1 3.4/1, ms1mx2.5/28, Error ellipse: s-maj=25.7km s-min=14.5km az=82.0*

ISC 16 16:18:39.0±1.0, 23°.78N±0°.02×121°.83E±0°.02, h17km±6km, n102, σ0°.70/147, mb3.5/10, 9C-18D, Taiwan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TEGC	**Jichi Village**	**0.27**	**255**	*eP*	**Pn**	**16 18 46.8**	**-1.4**
	baz=238						
TEGC				*eS*	**Sn**	**16 18 51.9**	**-2.0**
	baz=238						
HWA	**Hwalien**	**0.28**	**314**	⇑*iP*	**Pb**	**16 18 45.5**	**-0.1**
	baz=317						
HWA				S	**Sb**	**16 18 50.2**	**+0.1**
	baz=317						
ESF	**Shoufeng Towns**	**0.30**	**287**	⇓P	**Pb**	**16 18 46.5**	**+0.5**
	baz=279						
ESF				S	**Sb**	**16 18 51.1**	**+0.4**
	baz=279						
ESL	**Shilin**	**0.36**	**276**	⇑*eP*	**Pg**	**16 18 46.4**	**-0.1**
	baz=267						
TWD	**Chiawan**	**0.36**	**325**	⇑*iP*	**Pg**	**16 18 46.7**	**+0.1**
	baz=329						
TWD				S	**Sg**	**16 18 51.5**	**-0.2**
	baz=329						
EHP	**Heping Village**	**0.53**	**352**	*eP*	**Pg**	**16 18 49.3**	**-0.4**
	baz=351						
WHF	**Hehuan Shan**	**0.63**	**305**	⇑*iP*	**Pg**	**16 18 51.1**	**-0.5**
	baz=295						
WHF				S	**Sg**	**16 18 59.1**	**-0.9**
	baz=295						
TWF1	**Yuli**	**0.65**	**229**	⇑P	**Pg**	**16 18 52.2**	**+0.4**
	baz=235						
TWF1				*eS*	**Sb**	**16 19 01.6**	**+1.0**
	baz=235						
ENA	**Nanau**	**0.65**	**353**	⇓*iP*	**Pg**	**16 18 52.0**	**+0.1**
	baz=7.0						
ENA				S	**Sb**	**16 19 00.6**	**-0.1**
	baz=7.0						
TWT	**Tachien**	**0.76**	**309**	⇑*iP*	**Pg**	**16 18 53.9**	**0.0**
	baz=299						
TWT				*eS*	**Sb**	**16 19 03.7**	**-0.3**
	baz=299						
NNS	**Nan Shan**	**0.78**	**328**	⇓*iP*	**Pb**	**16 18 53.9**	**-0.3**
	baz=320						
NNS				*eS*	**Sb**	**16 19 03.9**	**-0.6**
	baz=320						
CHKT	**Chengkung**	**0.80**	**212**	*eP*	**Pb**	**16 18 53.8**	**-0.6**
	baz=190						
TWC	**Suao**	**0.83**	**2**	⇓*iP*	**Pg**	**16 18 55.3**	**+0.1**
	baz=9.0						
TWC				S	**Sg**	**16 19 06.5**	**+0.4**
	baz=9.0						
YUS	**Yu-Shan**	**0.85**	**250**	⇓P	**Pg**	**16 18 56.0**	**+0.3**
	baz=229						
YUS				*eS*	**Sg**	**16 19 07.4**	**+0.3**
	baz=229						
SMLT	**Sun Moon Lake**	**0.85**	**277**	⇑*iP*	**Pb**	**16 18 55.4**	**-0.1**
	baz=281						
SMLT				S	**Sb**	**16 19 06.3**	**-0.4**
	baz=281						
ENTT	**Nioudou**	**0.89**	**345**	⇓*iP*	**Pb**	**16 18 55.9**	**-0.1**
	baz=350						
ENTT				S	**Sg**	**16 19 08.0**	**0.0**
	baz=350						
TYC	**Yuchr**	**0.90**	**278**	⇑*iP*	**Pb**	**16 18 55.8**	**-0.3**
	baz=282						
TYC				S	**Sb**	**16 19 07.0**	**-0.7**
	baz=282						
ELDTW	**Lidau**	**0.95**	**232**	*eP*	**Pb**	**16 18 56.4**	**-0.7**
	baz=225						
TWE	**Neicheng**	**0.95**	**351**	⇓*iP*	**Pb**	**16 18 57.0**	**-0.1**
	baz=358						
TWE				*eS*	**Sb**	**16 19 09.1**	**-0.2**
	baz=358						
ALS	**Alishan**	**0.97**	**254**	⇓P	**Pn**	**16 18 58.0**	**-0.1**
	baz=247						
ALS				*eS*	**Sg**	**16 19 11.1**	**+0.3**
	baz=247						
ILA	**Ilan**	**0.98**	**356**	*eP*	**Pb**	**16 18 56.2**	**-1.4**
	baz=353						
NSK	**Sanguang**	**0.99**	**335**	⇓*iP*	**Pb**	**16 18 57.3**	**-0.4**
	baz=339						
NSK				S	**Sb**	**16 19 09.4**	**-1.2**
	baz=339						
WNT	**Mingjian**	**1.05**	**276**	⇓*iP*	**Pg**	**16 18 59.5**	**+0.2**
	baz=271						
WNT				*i* S	**Sg**	**16 19 13.8**	**+0.7**
	baz=271						
EGS		**1.06**	**5**	P	**Pg**	**16 18 59.6**	**0.0**
	baz=12						
CHN5	**Tsauling**	**1.07**	**260**	⇓*iP*	**Pg**	**16 18 59.8**	**+0.1**
	baz=254						
CHN5				S	**Sg**	**16 19 13.8**	**+0.1**
	baz=254						
TCU	**Taichung**	**1.11**	**289**	P	**Pg**	**16 19 00.5**	**0.0**
	baz=287						
TCU				S	**Sg**	**16 19 16.1**	**+0.9**
	baz=287						
TWQ1	**Liyutan**	**1.12**	**301**	P	**Pg**	**16 19 00.5**	**-0.1**
	baz=301						
TWQ1				*eS*	**Sg**	**16 19 15.5**	**+0.2**
	baz=301						
NSTT	**Nanjuang**	**1.13**	**319**	⇓*iP*	**Pb**	**16 19 00.2**	**+0.1**
	baz=321						
NSTT				*eS*	**Sb**	**16 19 13.8**	**-0.9**
	baz=321						
STYT	**Tauyuan**	**1.16**	**238**	⇑*iP*	**Pb**	**16 19 00.6**	**0.0**
	baz=230						
STYT				S	**Sg**	**16 19 16.4**	**-0.1**
	baz=230						
NSY	**Sanyi**	**1.16**	**303**	⇓*iP*	**Pg**	**16 19 01.4**	**0.0**
	baz=304						
NSY				*eS*	**Sb**	**16 19 15.2**	**-0.2**
	baz=304						
WGK	**Gukeng**	**1.16**	**266**	*eP*	**Pb**	**16 19 00.9**	**+0.3**
	baz=260						
WGK				*eS*	**Sg**	**16 19 16.8**	**+0.2**
	baz=260						
TWG	**Pinlang**	**1.18**	**216**	*eP*	**Pn**	**16 18 59.8**	**-1.0**
	baz=210						
TTN	**Taitung**	**1.20**	**212**	*eP*	**Pn**	**16 18 59.8**	**-1.1**
	baz=191						
CHN4	**Tsaushan**	**1.21**	**250**	⇓*iP*	**Pg**	**16 19 02.1**	**-0.2**
	baz=242						
CHN4				S	**Sg**	**16 19 19.2**	**+1.1**
	baz=242						
JYNG	**Yonagunijimaku**	**1.22**	**57**	P	**Pb**	**16 19 01.5**	**-0.2**
JYNG				*eS*	**Sb**	**16 19 17.0**	**-0.2**
TWB1	**Santiao Chiao**	**1.23**	**7**	*eP*	**Pb**	**16 19 02.2**	**+0.4**
	baz=32						
TWB1				*eS*	**Sg**	**16 19 18.8**	**-0.1**
	baz=32						
WTP	**Ta-pu**	**1.23**	**245**	⇓*iP*	**Pg**	**16 19 02.4**	**-0.4**
	baz=229						
WTP				*eS*	**Sg**	**16 19 19.0**	**+0.1**
	baz=229						
CHN2	**Minshiung**	**1.26**	**259**	*eP*	**Pb**	**16 19 02.5**	**+0.2**
	baz=253						
CHN2				*eS*	**Sg**	**16 19 21.1**	**+1.2**
	baz=253						
YOJ	**Yonaguni jima**	**1.28**	**58**	P	**Pn**	**16 19 02.2**	**+0.1**
YOJ				S	**Sb**	**16 19 18.7**	**-0.1**
YOJ	**Yonaguni jima**	**1.28**	**58**	⇓*eP*	**Pn**	**16 19 02.0**	**-0.1**
	baz=62						
HSN	**Hsinchu**	**1.28**	**323**	*eP*	**Pg**	**16 19 03.2**	**-0.6**
	baz=328						
HSN				*eS*	**Sg**	**16 19 20.2**	**-0.3**
	baz=328						
TAP1	**Taipei**	**1.28**	**348**	*eP*	**Pn**	**16 19 01.4**	**-0.8**
	baz=353						
NWF	**Wu-fen Shan**	**1.29**	**358**	*eP*	**Pb**	**16 19 03.0**	**+0.2**
	baz=350						
NWF				*eS*	**Sg**	**16 19 21.2**	**+0.5**
	baz=350						
TAP	**Taipei**	**1.29**	**347**	*eP*	**Pn**	**16 19 02.2**	**0.0**
	baz=354						
TAP				*eS*	**Sb**	**16 19 18.8**	**-0.3**
	baz=354						
CHY	**Chiayi**	**1.31**	**258**	⇓*eP*	**Pb**	**16 19 03.1**	**-0.1**
	baz=252						
CHY				*eS*	**Sg**	**16 19 20.8**	**-0.7**
	baz=252						
NCU	**National Centr**	**1.32**	**334**	*eP*	**Pb**	**16 19 03.3**	**0.0**
	baz=340						
NCU				*eS*	**Sg**	**16 19 21.1**	**-0.6**
	baz=340						
TWK	**Hsinying**	**1.33**	**248**	⇓*eP*	**Pb**	**16 19 04.0**	**+0.5**
	baz=240						
TWK				*eS*	**Sg**	**16 19 22.0**	**0.0**
	baz=240						
CHN1	**Nanshi**	**1.33**	**244**	*eP*	**Pb**	**16 19 03.8**	**+0.3**
	baz=236						
CHN1				*eS*	**Sg**	**16 19 21.8**	**-0.3**
	baz=236						
SGST	**Jiashian**	**1.34**	**239**	*eP*	**Pb**	**16 19 03.8**	**+0.2**
	baz=231						
SGST				*eS*	**Sg**	**16 19 22.7**	**+0.5**
	baz=231						
TWS1	**Kuangyinshan**	**1.37**	**344**	*eP*	**Pb**	**16 19 03.8**	**-0.4**
	baz=351						
TWS1				S	**Sg**	**16 19 22.8**	**-0.4**
	baz=351						
WTCT	**Ta-ch'eng**	**1.42**	**274**	*eP*	**Pb**	**16 19 05.0**	**0.0**
	baz=269						
WTCT				*eS*	**Sg**	**16 19 23.9**	**-0.9**
	baz=269						
ECL	**Taimali**	**1.42**	**214**	*eP*	**Pn**	**16 19 02.6**	**-1.5**
	baz=207						
WSF	**Szhu**	**1.48**	**265**	*eP*	**Pb**	**16 19 05.7**	**-0.3**
	baz=259						
WSF				*eS*	**Sg**	**16 19 26.2**	**-0.5**
	baz=259						
SSD	**Sandimen**	**1.50**	**227**	*eP*	**Pn**	**16 19 05.8**	**+0.6**
	baz=212						
SSD				*eS*	**Sg**	**16 19 27.8**	**+0.2**
	baz=212						
TWY	**Chenhua**	**1.50**	**352**	*eP*	**Pb**	**16 19 05.9**	**-0.6**
	baz=340						
CHN3	**Shinhua**	**1.51**	**243**	*eP*	**Pg**	**16 19 07.5**	**-0.6**
	baz=234						
CHN3				*eS*	**Sg**	**16 19 29.5**	**+1.6**
	baz=234						
CHN8	**Yiju**	**1.54**	**254**	*eP*	**Pb**	**16 19 06.6**	**-0.6**
	baz=247						
CHN8				*eS*	**Sb**	**16 19 27.3**	**+0.9**
	baz=247						
TWM1	**Shoushan**	**1.60**	**234**	*eP*	**Pg**	**16 19 09.5**	**-0.4**
	baz=227						
SCLT	**Jiali**	**1.61**	**248**	*eP*	**Pn**	**16 19 06.6**	**-0.1**
	baz=240						
SCLT				*eS*	**Sb**	**16 19 29.3**	**+0.9**
	baz=240						
SGLT	**Jiouru**	**1.61**	**230**	*eP*	**Pb**	**16 19 08.6**	**+0.2**
	baz=207						
TAI1	**Yung-k'ang**	**1.64**	**244**	*eP*	**Pb**	**16 19 08.8**	**0.0**
	baz=237						
TAW	**Tawu**	**1.65**	**211**	*eP*	**Pb**	**16 19 09.2**	**+0.2**
	baz=204						
EAST	**Anshuo**	**1.66**	**213**	*eP*	**Pn**	**16 19 06.5**	**-0.8**
	baz=206						
LAY	**Lan-yu**	**1.75**	**188**	*eP*	**Pn**	**16 19 06.6**	**-2.0**
	baz=182						
SCZT	**Fangliau**	**1.79**	**219**	*eP*	**Pb**	**16 19 10.9**	**-0.4**
	baz=202						
IRIF	**Iriomote-Funau**	**1.83**	**72**	P	**Pn**	**16 19 10.0**	**+0.4**
IRIF				S	**Sn**	**16 19 33.2**	**+0.8**
HATJ	**Hateruma jima**	**1.83**	**81**	P	**Pn**	**16 19 10.0**	**+0.3**
HATJ				*eS*	**Sn**	**16 19 32.5**	**0.0**
PCYT	**Pengchaiyu**	**1.85**	**7**	*eP*	**Pb**	**16 19 11.2**	**-1.3**
	baz=15						
TWP	**Hsiaoliuchiu**	**1.96**	**224**	*eP*	**Pb**	**16 19 13.6**	**-0.7**
	baz=213						
HEN	**Hengchun**	**2.03**	**210**	*eP*	**Pb**	**16 19 14.7**	**-0.8**
	baz=189						
JKRS	**Kuro-shima**	**2.05**	**77**	P	**Pn**	**16 19 13.2**	**+0.5**
JKRS				S	**Sb**	**16 19 39.7**	**-1.3**
WDGT	**Dungji**	**2.05**	**256**	*eP*	**Pn**	**16 19 12.8**	**0.0**
	baz=251						
TSEB	**Hengchuen, Pin**	**2.06**	**205**	*eP*	**Pb**	**16 19 15.2**	**-0.7**
	baz=190						
TWK1	**Hengchun**	**2.06**	**207**	*eP*	**Pn**	**16 19 12.4**	**-0.4**
	baz=190						
PNG	**Penghu**	**2.09**	**265**	P	**Pn**	**16 19 13.4**	**+0.1**
	baz=259						
PNG				*eS*	**Sn**	**16 19 39.1**	**+0.2**
	baz=259						
JIJ	**Ishigaki jima**	**2.20**	**74**	P	**Pn**	**16 19 14.7**	**0.0**
JIJ				S	**Sn**	**16 19 40.5**	**-1.0**
JISG	**Ishigakijimahi**	**2.41**	**70**	P	**Pn**	**16 19 17.6**	**0.0**
JISG				S	**Sn**	**16 19 46.0**	**-0.7**
JTJ	**Tarama**	**2.76**	**71**	P	**Pn**	**16 19 22.8**	**+0.3**
KNM	**Kinmen**	**3.16**	**282**	*eP*	**Pn**	**16 19 28.9**	**+0.9**
	baz=281						
QZH	**Quanzhou**	**3.17**	**292**	Pn	Pn	16 19 24.3	-3.8
QZH				Sn	Sn	16 19 57.8	-7.7
QZH				smax	smax		
	comp=N,370nm,0.4s						
QZH				smax	smax		
	comp=E,250nm,0.5s						
JIRB	**Irabujima**	**3.23**	**70**	P	**Pn**	**16 19 29.2**	**+0.3**
JIRB				S	**Sn**	**16 20 07.8**	**+0.8**
JIKM	**Ikemajima**	**3.32**	**69**	P	**Pn**	**16 19 30.9**	**+0.7**
JOGS	**Gusukube**	**3.41**	**73**	P	**Pn**	**16 19 32.4**	**+1.0**
JKE	**Kume jima 2**	**5.16**	**60**	P	**Pn**	**16 19 55.4**	**-0.1**
KSRS	**Korea Array**	**14.60**	**20**	P	**P**	**16 22 11.7**	**+0.5**
	0.2nm,0.3s,baz=200,slow=11,SNR=8.8						
CMAR	**Chiang Mai Arr**	**21.98**	**260**	P	**P**	**16 23 34.2**	**+1.9**
	0.6nm,0.7s,baz=64,slow=10.0,SNR=6.2						
KLR	**Kul'dur**	**26.58**	**15**	P	**P**	**16 24 19.5**	**+3.4**
	0.9nm,0.7s,baz=202,slow=18,SNR=3.6						
KAPI	**Kappang**	**28.69**	**184**	LR	LR	16 37 34.8	
	comp=Z,73nm,18.4s,baz=18,slow=39						
MKAR	**Makanchi Array**	**39.03**	**316**	P	**P**	**16 26 04.8**	**0.0**
	1.1nm,0.7s,baz=109,slow=9.9,SNR=15						
ZALV	**Zalesovo Beam**	**40.90**	**327**	P	**P**	**16 26 19.1**	**-1.0**
	0.6nm,0.6s,baz=113,slow=8.1,SNR=3.9						
H11N1	**WAKE ISLAND Hy 41.92**		**87**	T	T	17 11 38.1	
	baz=283,slow=74,SNR=5.8						
H11N2	**WAKE ISLAND Hy 41.93**		**87**	T	T	17 11 37.5	
	baz=283,slow=74,SNR=6.8						
H11N3	**WAKE ISLAND Hy 41.94**		**87**	T	T	17 11 36.3	
	baz=283,slow=74,SNR=6.2						
H11S3	**WAKE ISLAND Hy 42.04**		**88**	T	T	17 11 43.2	
	baz=284,slow=75,SNR=33						
H11S1	**WAKE ISLAND Hy 42.05**		**88**	T	T	17 11 43.7	
	baz=284,slow=75,SNR=18						
H11S2	**WAKE ISLAND Hy 42.06**		**88**	T	T	17 11 44.6	
	baz=284,slow=75,SNR=13						
WRA	**Warramunga Arr**	**45.14**	**163**	P	**P**	**16 26 53.5**	**-1.3**
	0.3nm,0.5s,baz=345,slow=8.6,SNR=4.7						
ASAR	**Alice Springs**	**48.60**	**165**	P	**P**	**16 27 21.9**	**0.0**
	0.2nm,0.4s,baz=342,slow=7.1,SNR=7.0						
STKA	**Stephens Creek**	**58.48**	**160**	P	**P**	**16 28 34.4**	**+0.1**
	1.8nm,1.1s,baz=331,slow=7.4,SNR=3.7						
ILAR	**Eielson Array**	**69.30**	**27**	P	**P**	**16 29 44.7**	**-0.4**
	0.2nm,0.7s,baz=284,slow=6.5,SNR=3.8						
INK	**Inuvik**	**73.38**	**22**	P	**P**	**16 30 09.2**	**-0.5**
	0.7nm,0.8s,baz=323,slow=4.4,SNR=3.3						
YKA	**Yellowknife Ar**	**83.11**	**23**	P	**P**	**16 31 02.8**	**-0.8**
	0.7nm,0.6s,baz=315,slow=4.9,SNR=19						

*ISCJB **16** 16:21:16.4±0.7, 38°.67N±0°.04×141°.74E±0°.09, h59km±5km, mb3.5/5, Error ellipse: s-maj=11.7km s-min=5.8km az=14.5*
*IDC **16** 16:21:17.9±2.1, 38°.71N×141°.77E, h59km±21km, mb3.3/4, mb1 3.5/7, mb1mx3.2/44, mbtmp3.7/7, ML3.7/3, Error ellipse: s-maj=35.1km s-min=14.1km az=94.0*
*JMA **16** 16:21:18.0±0.1, 38°.68N×141°.63E, h55km±1km, M3.8*
JMA Felt II J1.

ISC 16 16:21:17.6±1.1, 38°.66N±0°.04×141°.75E±0°.08, h49km±8km, n18, σ1°.55/28, mb3.4/5, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**0.38**	**237**	P	**Pn**	**16 21 27.7**	**+0.3**
JIO				S	**Sn**	**16 21 34.1**	**-0.3**
OFUJ	**Ofunato**	**0.42**	**351**	P	**Pn**	**16 21 28.4**	**+0.4**
OFUJ				S	**Sn**	**16 21 35.7**	**+0.4**
JMK	**Ichinoseki**	**0.51**	**305**	P	**Pn**	**16 21 28.9**	**0.0**
JMK				S	**Sn**	**16 21 36.5**	**-0.5**
JOM	**Ohasama**	**0.88**	**336**	P	**Pn**	**16 21 33.7**	**-0.1**
JOM				S	**Sn**	**16 21 45.2**	**-0.4**
JOU	**Okura**	**0.90**	**251**	P	**Pn**	**16 21 33.5**	**-0.5**
JOU				S	**Sn**	**16 21 44.9**	**-1.2**
JMM	**Marumori**	**1.09**	**224**	P	**Pn**	**16 21 35.9**	**-0.7**
JMM				S	**Sn**	**16 21 49.2**	**-1.1**
JYK	**Kaneyama**	**1.12**	**284**	P	**Pn**	**16 21 36.3**	**-0.6**
JYK				S	**Sn**	**16 21 50.0**	**-1.2**
JRG	**Rokugo**	**1.14**	**310**	P	**Pn**	**16 21 36.8**	**-0.4**
JRG				S	**Sn**	**16 21 51.1**	**-0.6**
MAT	**Matsushiro**	**3.52**	**234**	P	**Pn**	**16 22 11.1**	**+1.3**
MAT				*eS*	**Sn**	**16 22 55.1**	**+4.9**
MJAR	**Matsushiro Arr**	**3.52**	**234**	P	**Pn**	**16 22 11.3**	**+1.5**
	5.2nm,0.3s,baz=40,slow=12,SNR=34						
ASAJ	**Asahikawa**	**5.49**	**6**	P	**Pn**	**16 22 36.8**	**0.0**
	2.0nm,0.3s,baz=235,slow=9.3,SNR=16						
ASAJ				S	**Sn**	**16 23 37.9**	**-0.6**
	0.2nm,0.3s,baz=139,slow=20,SNR=2.2						
JHJ	**Hachijo jima 2**	**5.76**	**197**	P	**Pn**	**16 22 40.5**	**0.0**
	11nm,0.3s,baz=302,slow=20,SNR=8.5						
JHJ				S	**Sn**	**16 23 42.1**	**-3.1**
	5.5nm,0.3s,baz=72,slow=20,SNR=2.3						
USRK	**Ussuriysk Ar.**	**9.18**	**310**	P	Pn	16 23 30.8	+3.4
	0.2nm,0.3s,baz=118,slow=14,SNR=4.7						
SEY	**Seymchan**	**25.14**	**11**	P	**P**	**16 26 41.1**	**+3.3**
	0.3nm,0.3s,baz=73,slow=22,SNR=4.6						
ZALV	**Zalesovo Beam**	**41.03**	**311**	P	**P**	**16 28 55.1**	**-0.7**
	1.3nm,0.4s,baz=81,slow=9.0,SNR=7.8						
MKAR	**Makanchi Array**	**43.50**	**301**	P	**P**	**16 29 15.0**	**-1.0**
	1.6nm,0.8s,baz=90,slow=9.5,SNR=14						
WRA	**Warramunga Arr**	**58.71**	**188**	P	**P**	**16 31 09.4**	**-0.8**
	0.2nm,0.8s,baz=4.4,slow=7.1,SNR=3.1						
ASAR	**Alice Springs**	**62.44**	**188**	P	**P**	**16 31 35.5**	**-0.1**
	0.2nm,0.9s,baz=350,slow=4.0,SNR=3.1						

*ECX **16** 16:27:24.5±0.4, 32°.27N×115°.35W, h6km, MD2.7, ML2.9*
*MEX **16** 16:27:25.3±0.6, 32°.36N×115°.24W, h16km±39km, MD3.8*

ISC 16 16:27:22.2±1.0, 32°.33N±0°.05×115°.27W±0°.05, h27km±8km, n16, σ0°.38/22, 2C-2D, California-Baja California border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CPBX	**Cerro Prieto**	**0.09**	**343**	⇑*eP*	**Pb**	**16 27 27.4**	**+0.4**
CPBX				⇓*e*		16 27 31.8	
CPBX				AML	AML	16 27 31.8	
	comp=E,21μm,0.2s						
CPBX				AML	AML	16 27 32.7	
	comp=N,7μm,

SGSI	**Sangihe**	**2.28**	**336**	P	**Pn**	**16 30 04.3**	**-2.5**
SGSI				S	**Sn**	**16 30 31.1**	**-2.6**
LBMI	**Labuha**	**2.45**	**155**	P	**Pn**	**16 30 09.2**	**0.0**
LBMI				S	Sn	16 30 30.7	-7.2
SANI	**Sanana**	**3.65**	**188**	P	**Pn**	**16 30 26.4**	**+0.7**
MRSI	**Marisa**	**4.66**	**256**	P	**Pn**	**16 30 41.7**	**+2.2**
NLAI	**Namlea**	**4.84**	**172**	P	**Pn**	**16 30 42.2**	**+0.1**
	24nm,0.5s,769nm0.2nm						
SWI	**Sorong**	**5.38**	**117**	P	**Pn**	**16 30 47.2**	**-2.2**
	13nm,1.0s,0.1nm						
APSI	**Anpana**	**5.42**	**243**	P	**Pn**	**16 30 52.7**	**+2.7**
	124nm,0.6s,2µm0.6nm						
TTSI	**Tana Toraja**	**8.09**	**235**	P	**Pn**	**16 31 26.6**	**0.0**
	26nm,0.6s						
SPSI	**Sidrap Palu**	**8.68**	**230**	P	**Pn**	**16 31 35.2**	**+0.5**
KAPI	**Kappang**	**9.39**	**226**	Pn	**Pn**	**16 31 45.5**	**+1.1**
	2.2nm,0.3s,baz=62,slow=7.6,SNR=5.2						
KAPI				Sn	**Sn**	**16 33 26.6**	**-2.0**
	2.9nm,0.3s,baz=136,slow=22,SNR=5.8						
KAPI	**Kappang**	**9.39**	**226**	*e*Pn	**Pn**	**16 31 45.3**	**+0.9**
	7.7nm,0.4s						
KAPI				Sn	**Sn**	**16 33 26.6**	**-2.0**
FITZ	**Fitzroy Crossi**	**19.59**	**182**	P	**P**	**16 33 53.9**	**-2.1**
	0.3nm,0.3s,baz=16,slow=8.7,SNR=7.0						
FITZ	**Fitzroy Crossi**	**19.59**	**182**	*e*P	**P**	**16 33 54.6**	**-1.4**
WRAB	**Tennant Creek**	**22.75**	**161**	*e*P	**P**	**16 34 28.0**	**-2.1**
	14nm,0.6s						
WRA	**Warramunga Arr**	**22.76**	**161**	P	**P**	**16 34 28.5**	**-1.7**
	15nm,0.6s,baz=341,slow=11,SNR=79						
WRA				PcP	**PcP**	**16 38 20.7**	**-0.1**
	0.5nm,0.6s,baz=324,slow=2.2,SNR=4.6						
ASAR	**Alice Springs**	**26.13**	**164**	P	**P**	**16 35 01.2**	**-0.3**
	3.9nm,0.4s,baz=349,slow=14,SNR=104						
ASAR				PcP	**PcP**	**16 38 28.6**	**+0.4**
	0.8nm,0.5s,baz=347,slow=2.5,SNR=8.4						
CMAR	**Chiang Mai Arr**	**31.77**	**304**	P	**P**	**16 35 52.4**	**+0.6**
	0.3nm,0.8s,baz=131,slow=6.5,SNR=3.0						
CMAR				PcP	**PcP**	**16 38 42.8**	**+0.4**
	0.4nm,0.8s,baz=151,slow=2.1,SNR=4.1						
ENH	**Enshi**	**32.76**	**332**	P	**P**	**16 35 59.4**	**-0.9**
	1.2nm,0.3s						
KSAR	**Wonju Array Be**	**35.69**	**2**	P	**P**	**16 36 27.8**	**+2.2**
KSRS	**Korea Array**	**35.71**	**2**	P	**P**	**16 36 27.8**	**+2.1**
	0.7nm,0.7s,baz=178,slow=10,SNR=3.6						
STKA	**Stephens Creek**	**36.25**	**158**	P	**P**	**16 36 30.1**	**-0.3**
	4.5nm,0.8s,baz=325,slow=8.6,SNR=9.7						
KLR	**Kul'dur**	**47.67**	**5**	P	**P**	**16 38 03.6**	**+0.3**
	0.6nm,0.5s,baz=159,slow=10,SNR=4.8						
KLR				LR	LR	17 00 39.1	
	comp=Z,38nm,18.0s,slow=39						
SONM	**Songino Array**	**49.23**	**342**	P	**P**	**16 38 16.7**	**+1.1**
	1.5nm,0.8s,baz=156,slow=6.1,SNR=6.0						
PETK	**Petropavlovsk-**	**57.49**	**22**	P	**P**	**16 39 15.7**	**-0.2**
	2.6nm,0.9s,baz=239,slow=4.5,SNR=4.3						
MKAR	**Makanchi Array**	**59.16**	**326**	P	**P**	**16 39 27.2**	**-0.5**
	0.8nm,0.5s,baz=121,slow=7.8,SNR=16						
MKAR				PcP	**PcP**	**16 40 14.6**	**-1.3**
	1.0nm,0.9s,baz=130,slow=3.8,SNR=4.0						
ZALV	**Zalesovo Beam**	**62.36**	**334**	P	**P**	**16 39 48.8**	**-0.6**
	0.3nm,0.3s,baz=148,slow=8.5,SNR=2.3						
NRIK	**Noril'sk**	**72.43**	**346**	P	**P**	**16 40 53.4**	**+0.7**
	3.0nm,0.7s,baz=88,slow=5.8,SNR=6.6						
ABKAR	**Akbulak array**	**73.63**	**321**	*e*P	**P**	**16 41 00.0**	**-0.2**
	0.3nm,0.4s						
RAYN	**Ar Rayn**	**81.08**	**293**	P	**P**	**16 41 42.2**	**-0.3**
	1.5nm,0.7s						
VNDA	**Vanda**	**81.36**	**173**	P	**P**	**16 41 44.4**	**+1.5**
	0.5nm,0.5s,baz=331,slow=5.7,SNR=6.7						
BRTR	**Keskin Array B**	**91.17**	**310**	P	**P**	**16 42 33.9**	**+1.8**
	0.5nm,0.7s,baz=97,slow=1.7,SNR=3.3						
AKASG	**Malin Array Be**	**93.37**	**321**	P	**P**	**16 42 41.2**	**-0.6**
	0.8nm,0.6s,baz=89,slow=11,SNR=5.0						
FINES	**FINESS Array B**	**93.57**	**332**	P	**P**	**16 42 41.5**	**-1.0**
	1.7nm,0.9s,baz=96,slow=2.8,SNR=2.6						
YKA	**Yellowknife Ar**	**101.54**	**25**	P	**Pdif**	**16 43 18.0**	**-0.4**
	0.1nm,0.7s,baz=292,slow=3.9,SNR=2.7						
YKA	**Yellowknife Ar**	**101.54**	**25**	P	**Pdif**	**16 43 18.0**	**-0.4**
TORD	**Torodi Ar. Bea**	**123.30**	**287**	PKP	**PKPdf**	**16 48 25.6**	**+1.1**
	0.4nm,0.8s,baz=112,slow=1.6,SNR=2.7						

CASC 16 16:45:47.0±1.6, 8°67N×82°33W, h11km±6km, MD3.7, Panama-Costa Rica border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TBS2		**0.35**	**291**	*i* P	Pb	16 45 54.7	-0.7
TBS2				*e*S	Sb	16 45 59.8	-1.1
BRU2	**Volca**	**0.38**	**289**	*e*P	Pb	16 45 55.3	-0.6
BRU2				*e*S	Sb	16 46 01.8	-0.1
BUS	**Buena Vista**	**1.66**	**302**	*e*P	Pn	16 46 16.3	-0.3
BUS				*e*S	Sn	16 46 38.5	+0.3
URSC	**Urasca**	**1.84**	**309**	*e*P	Pn	16 46 19.3	+0.5
URSC				*e*S	Sn	16 46 43.0	+0.8
QCR	**Quepos**	**1.96**	**293**	*e*P	Pn	16 46 18.6	-1.7
QCR				*e*S	Sb	16 46 46.7	-0.7

IDC 16 16:48:57.0±2.5, 17°00S×175°47W, h264km±34km, mb3.5/5, mb1 3.6/6, mb1mx3.1/45, mbtmp4.1/6, Error ellipse: s-maj=36.7km s-min=23.0km az=115.0, Tonga Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AFI	**Afiamalu**	**4.70**	**50**	P	Pn	16 50 09.8	0.0
	7.5nm,0.3s,baz=214,slow=15,SNR=9.1						
AFI				S	S	16 51 03.9	-4.0
	24nm,0.3s,baz=359,slow=23,SNR=14						
URZ	**Urewera**	**22.16**	**196**	P	P	16 53 31.2	+0.1
	8.1nm,0.4s,baz=9.6,slow=10,SNR=18						
STKA	**Stephens Creek**	**41.52**	**241**	P	P	16 56 18.8	-0.1
	1.2nm,0.8s,baz=105,slow=16,SNR=2.9						
WRA	**Warramunga Arr**	**47.56**	**258**	P	P	16 57 06.3	-0.3
	0.5nm,0.6s,baz=96,slow=7.6,SNR=15						
ASAR	**Alice Springs**	**47.73**	**253**	P	P	16 57 08.0	0.0
	8.9nm,0.5s,baz=88,slow=8.7,SNR=285						
ILAR	**Eielson Array**	**84.40**	**12**	P	P	17 00 59.2	0.0
	0.2nm,0.4s,baz=225,slow=6.7,SNR=5.0						

*JMA **16** 16:54:04.6±0.2, 37°.85N×144°.20E, h32km, M3.7*
*IDC **16** 16:54:15.8±2.3, 37°.30N×143°.06E, h0km, mb3.3/3, mb1 3.6/5, mb1mx3.3/48, mbtmp3.5/5, ML3.1/2, Error ellipse: s-maj=47.0km s-min=31.7km az=70.0*
ISC 16 16:54:04.2±2.9, 37°.77N±0°.07×144°.4E±0°.2, h35km, n24, σ0°.95/19, mb3.4/3, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**2.48**	**287**	P	**Pn**	**16 54 41.9**	**-0.1**
JIO				S	**Sn**	**16 55 09.7**	**-1.3**
OFUJ	**Ofunato**	**2.49**	**303**	P	**Pn**	**16 54 42.2**	**0.0**
JMK	**Ichinoseki**	**2.74**	**297**	P	**Pn**	**16 54 46.0**	**+0.3**
JFK	**Kawauchi**	**2.80**	**263**	P	**Pn**	**16 54 46.4**	**-0.1**
JMM	**Marumori**	**2.83**	**273**	P	**Pn**	**16 54 46.8**	**-0.1**
JTH	**Tanohata**	**2.92**	**319**	P	**Pn**	**16 54 48.3**	**+0.2**
JTH				S	**Sn**	**16 55 20.0**	**-2.0**
JOM	**Ohasama**	**2.95**	**306**	P	**Pn**	**16 54 48.8**	**+0.3**
JOU	**Okura**	**2.98**	**283**	P	**Pn**	**16 54 49.7**	**+0.7**
JFT	**Otama**	**3.21**	**267**	P	**Pn**	**16 54 53.1**	**+1.0**
JFT				S	**Sn**	**16 55 28.5**	**-0.6**
JRG	**Rokugo**	**3.35**	**300**	P	**Pn**	**16 54 55.2**	**+1.2**
JRG				*e*S	**Sn**	**16 55 33.3**	**+0.8**
JYK	**Kaneyama**	**3.35**	**291**	P	**Pn**	**16 54 55.2**	**+1.1**
JANG	**Nango**	**3.42**	**320**	P	**Pn**	**16 54 55.7**	**+0.7**
JTM	**Tenmabayashi**	**3.96**	**321**	P	**Pn**	**16 55 03.1**	**+0.8**
MJAR	**Matsushiro Arr**	**5.07**	**258**	Pn	**Pn**	**16 55 19.2**	**+1.5**
	0.8nm,0.3s,baz=80,slow=15,SNR=6.7						
JHJ	**Hachijo jima 2**	**5.96**	**220**	Pn	**Pn**	**16 55 29.7**	**-0.2**
	3.8nm,0.3s,baz=24,slow=8.9,SNR=2.7						
JHJ				Sn	Sn	16 56 29.7	-7.1
	4.2nm,0.3s,baz=233,slow=20,SNR=3.1						
H11N2	**WAKE ISLAND Hy**	**26.59**	**126**	T	T	17 26 34.8	
	baz=317,slow=75,SNR=55						
H11N1	**WAKE ISLAND Hy**	**26.60**	**126**	T	T	17 26 34.7	
	baz=317,slow=75,SNR=36						
H11N3	**WAKE ISLAND Hy**	**26.61**	**126**	T	T	17 26 39.7	
	baz=317,slow=75,SNR=44						
H11S1	**WAKE ISLAND Hy**	**27.37**	**128**	T	T	17 27 27.8	
	baz=318,slow=76,SNR=9.9						
H11S3	**WAKE ISLAND Hy**	**27.38**	**128**	T	T	17 27 27.9	
	baz=318,slow=76,SNR=7.7						
H11S2	**WAKE ISLAND Hy**	**27.39**	**128**	T	T	17 27 32.1	
	baz=318,slow=76,SNR=8.7						
MKAR	**Makanchi Array**	**45.72**	**302**	P	P	17 02 32.8	+11
	0.3nm,0.9s,baz=68,slow=8.4,SNR=3.5						
WRA	**Warramunga Arr**	**58.17**	**191**	P	P	17 04 07.3	+13
	1.0nm,1.1s,baz=9.7,slow=7.1,SNR=6.2						
ASAR	**Alice Springs**	**61.89**	**191**	P	P	17 04 33.0	+13
	0.3nm,1.0s,baz=3.9,slow=7.3,SNR=4.9						

*ISCJB **16** 16:58:15.9±0.5, 15°.61N±0°.04×93°.48W±0°.03, h101km±2km, mb4.1/27, Error ellipse: s-maj=6.8km s-min=4.8km az=33.8*
*MEX **16** 16:58:17.5±0.8, 15°.70N×93°.64W, h97km±6km, MD4.4*
*NEIC **16** 16:58:17.5, 15°.69N×93°.64W, h97km, mb4.2/24, MD4.4(MEX), After MEX.*
*IDC **16** 16:58:18.3±0.9, 15°.85N×93°.36W, h98km±5km, mb3.8/13, mb1 4.0/16, mb1mx3.7/45, mbtmp4.2/16, MS3.0/6, Ms1 3.0/6, ms1mx2.8/35, Error ellipse: s-maj=19.0km s-min=13.3km az=30.0*
ISC 16 16:58:17.0±0.5, 15°.64N±0°.05×93°.60W±0°.03, h98km±4km, n307, σ1°35/328, mb4.2/27, Near coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PCIG		**0.37**	**79**	*i* P	**Pn**	**16 58 31.3**	**-0.4**
PCIG				*i* S	**Sn**	**16 58 41.9**	**-0.8**
PCIG		**0.37**	**79**	*i* P	**Pn**	**16 58 31.3**	**-0.4**
PCIG				*i* S	**Sn**	**16 58 41.9**	**-0.8**
TGIG		**1.22**	**22**	*i* P	**Pn**	**16 58 39.2**	**-0.7**
TGIG				*i* S	**Sn**	**16 58 54.3**	**-2.8**
TGIG		**1.22**	**22**	*i* P	**Pn**	**16 58 39.2**	**-0.7**
TGIG				*i* S	**Sn**	**16 58 54.3**	**-2.8**
TGBT	**Tuxtla Gutierr**	**1.23**	**23**	*e*P	**Pn**	**16 58 39.4**	**-0.5**
TGBT				*e*S	**Sn**	**16 58 54.7**	**-2.5**
THIG		**1.48**	**119**	*e*P	**Pn**	**16 58 42.5**	**-0.3**
THIG		**1.48**	**119**	*e*P	**Pn**	**16 58 42.5**	**-0.3**
CCIG	**Comitan**	**1.54**	**65**	*e*Pn	**Pn**	**16 58 44.5**	**+0.7**
CCIG				*e*S	**Sn**	**16 59 03.6**	**-0.6**
CCIG	**Comitan**	**1.54**	**65**	*i* P	**Pn**	**16 58 43.6**	**-0.3**
CCIG				*e*S	**Sn**	**16 59 03.6**	**-0.6**
CMIG	**Matias Romero**	**1.90**	**320**	P	**Pn**	**16 58 48.0**	**-0.2**
	55nm,0.3s,baz=144,slow=13,SNR=244						
CMIG				S	**Sn**	**16 59 11.1**	**-1.0**
	142nm,0.3s,baz=104,slow=10,SNR=22						
HUIG	**Huatulco**	**2.42**	**273**	*i* P	**Pn**	**16 58 53.6**	**-1.4**
HUIG				*e*S	**Sn**	**16 59 19.9**	**-4.3**
HUIG	**Huatulco**	**2.42**	**273**	*i* P	**Pn**	**16 58 53.6**	**-1.4**
HUIG				*e*S	**Sn**	**16 59 19.9**	**-4.3**
TUIG	**Tuzandepetl**	**2.51**	**342**	*e*P	**Pn**	**16 58 55.2**	**-1.0**
TUIG				*e*S	**Sn**	**16 59 23.6**	**-2.7**
TUIG	**Tuzandepetl**	**2.51**	**342**	*e*P	**Pn**	**16 58 55.2**	**-1.0**
TUIG				*e*S	**Sn**	**16 59 23.6**	**-2.7**
VHO	**Vista Hermosa**	**3.33**	**296**	*e*P	**Pn**	**16 59 05.3**	**-2.1**
VHO				*e*S	**Sn**	**16 59 43.8**	**-2.4**
VHO	**Vista Hermosa**	**3.33**	**296**	*e*P	**Pn**	**16 59 05.3**	**-2.1**
VHO				*e*S	**Sn**	**16 59 43.8**	**-2.4**
SCIG	**Sabancuy**	**4.03**	**34**	*i* P	**Pn**	**16 59 15.5**	**-1.1**
SCIG	**Sabancuy**	**4.03**	**34**	*i* P	**Pn**	**16 59 15.5**	**-1.1**
PNIG	**Pinotepa**	**4.42**	**280**	*i* P	**Pn**	**16 59 21.4**	**-0.5**
PNIG				*e*S	**Sn**	**17 00 10.8**	**-1.5**
PNIG	**Pinotepa**	**4.42**	**280**	*i* P	**Pn**	**16 59 21.4**	**-0.5**
PNIG				*e*S	**Sn**	**17 00 10.8**	**-1.5**
TLIG	**Tlapa**	**5.13**	**293**	*e*Pn	**Pn**	**16 59 33.4**	**+1.8**
TEIG	**Tepich**	**6.82**	**47**	P	**Pn**	**16 59 52.1**	**-2.3**
	22nm,0.3s,baz=88,slow=24,SNR=86						
TEIG				S	**Sn**	**17 01 05.1**	**-5.4**
	44nm,0.3s,baz=180,slow=22,SNR=10						
TEIG				LR	LR	17 03 02.6	
	comp=Z,37nm,18.5s,baz=14,slow=44						
TEIG	**Tepich**	**6.82**	**47**	*e*Pn	**Pn**	**16 59 52.1**	**-2.3**
TEIG				S	**Sn**	**17 01 05.1**	**-5.4**
TEIG				*e*Sn	Sn	17 01 06.1	-4.5
JTS	**JuntasAbangare**	**9.96**	**121**	P	**Pn**	**17 00 38.1**	**+0.8**
	6.5nm,0.3s,baz=318,slow=11,SNR=10						
JTS	**JuntasAbangare**	**9.96**	**121**	*e*Pn	**Pn**	**17 00 36.1**	**-1.2**
JTS				*e*Sn	**Sn**	**17 02 24.7**	**-2.5**
035Z	**Hargill**	**11.55**	**340**	S	**Sn**	**17 03 08.6**	**+2.9**
	baz=158						
833A	**Chaparral WMA,**	**13.72**	**338**	P	**P**	**17 01 31.1**	**-1.6**
	baz=156						
832A	**Faith Ranch, C**	**13.90**	**336**	P	**P**	**17 01 36.3**	**+1.6**
	baz=154						
733A	**Divot King Ran**	**14.04**	**339**	P	**P**	**17 01 36.0**	**-0.3**
	baz=157						
537A	**Green Hill Far**	**14.59**	**351**	P	**P**	**17 01 43.2**	**+0.8**
	baz=170						
538A	**Harpers Horsep**	**14.62**	**353**	P	**Pn**	**17 01 40.3**	**+1.3**
	baz=173						
633A	**Saathoff Ranch**	**14.69**	**340**	P	**P**	**17 01 42.6**	**-0.8**
	baz=158						
535A	**Dale**	**14.78**	**346**	P	**P**	**17 01 43.1**	**-1.5**
	baz=165						
534A	**Blanco**	**15.01**	**343**	P	**P**	**17 01 46.4**	**-0.7**
	baz=162,SNR=14						
438A	**Sam Houston St**	**15.14**	**354**	P	**Pn**	**17 01 46.9**	**+1.2**
	baz=173						
533A	**Kerrville**	**15.21**	**342**	P	**P**	**17 01 50.2**	**+0.9**
	baz=160						
444A	**Pine Grove**	**15.23**	**9**	P	**Pn**	**17 01 47.7**	**+0.9**
	baz=191						
435B	**Jarrell**	**15.51**	**347**	P	**P**	**17 01 51.9**	**-0.7**
	baz=166						
446A	**Poplarville**	**15.57**	**14**	P	**Pn**	**17 01 50.9**	**-0.2**
	baz=196						
341A	**Kurthwood**	**15.63**	**1**	P	**Pn**	**17 01 52.0**	**+0.2**
	baz=182						
339A	**Huntington**	**15.65**	**357**	P	**Pn**	**17 01 53.0**	**+1.0**
	baz=177						
434A	**Burnet**	**15.70**	**345**	P	**P**	**17 01 54.2**	**-0.5**
	baz=163						
342A	**Flagon Creek P**	**15.71**	**4**	P	**Pn**	**17 01 53.6**	**+0.8**
	baz=185						
340A	**Bronson**	**15.71**	**359**	P	**P**	**17 01 54.1**	**-0.7**
	baz=179						
338A	**Crockett**	**15.73**	**355**	P	**P**	**17 01 54.2**	**-0.7**
	baz=174						
337A	**Centerville**	**15.75**	**353**	P	**P**	**17 01 55.0**	**-0.2**
	baz=172						
447A	**Lucedale**	**15.75**	**16**	P	**Pn**	**17 01 53.6**	**+0.2**
	baz=198						
JCT	**Junction City**	**15.83**	**340**	P	**P**	**17 01 58.0**	**+1.8**
	baz=158						
JCT	**Junction City**	**15.83**	**340**	*e*Pn	**P**	**17 01 57.8**	**+1.6**
	4.3nm,0.3s						
433A	**Art**	**15.87**	**342**	P	**P**	**17 01 58.8**	**+2.2**
	baz=160,SNR=8.5						
345A	**Thompson Farm,**	**15.94**	**11**	P	**Pn**	**17 01 56.0**	**+0.3**
	baz=193						
336A	**Riesel**	**15.96**	**350**	P	**P**	**17 01 57.8**	**+0.3**
	baz=169						
344A	**Westbrook Farm**	**15.96**	**9**	P	**Pn**	**17 01 56.4**	**+0.5**
	baz=190						
335A	**Moody**	**15.96**	**348**	P	**P**	**17 01 57.6**	**0.0**
	baz=167						
NATX	**Nacogdoches**	**16.08**	**357**	P	**P**	**17 01 58.9**	**0.0**
	baz=176						
448A	**Bay Minette**	**16.10**	**18**	P	**P**	**17 01 58.9**	**-0.2**
	baz=200						
334A	**Lometa**	**16.19**	**346**	P	**P**	**17 02 02.4**	**+2.2**
	baz=164						
241A	**Mo Tay, Goldon**	**16.32**	**2**	P	**P**	**17 02 03.0**	**+1.5**
	baz=182						
347A	**Saraland**	**16.36**	**16**	P	**P**	**17 02 02.4**	**+0.5**
	baz=198						
333A	**Richland Sprin**	**16.37**	**343**	P	**P**	**17 02 05.0**	**+2.8**
	baz=162						
237A	**Washetta, Mont**	**16.41**	**353**	P	**P**	**17 02 04.5**	**+1.9**
	baz=173						
TXAR	**Lajitas Array**	**16.49**	**327**	P	**P**	**17 02 05.0**	**+1.4**
	0.1nm,0.3s,baz=147,slow=12,SNR=15						
TXAR				LR	LR	17 08 49.1	
	comp=Z,31nm,20.6s,baz=0.0,slow=38						
TXAR	**Lajitas Array**	**16.49**	**327**	P	**P**	**17 02 05.0**	**+1.4**
TX31	**Lajitas Ar. Si**	**16.49**	**327**	*e*Pn	**Pn**	**17 02 02.9**	**+0.3**
348A	**Jackson**	**16.54**	**17**	P	**P**	**17 02 03.9**	**-0.1**
	baz=200						
WHTX	**Lake Whitney,**	**16.66**	**348**	P	**P**	**17 02 06.2**	**+0.9**
	baz=167						
WHTX	**Lake Whitney,**	**16.66**	**348**	*e*Pn	**P**	**17 02 05.1**	**-0.2**
	22nm,1.3s						
234A	**Clairette**	**16.81**	**347**	P	**P**	**17 02 08.2**	**+1.2**
	baz=165,SNR=5.8						
247A	**Quitman**	**16.96**	**15**	P	**Pn**	**17 02 08.3**	**0.0**
	baz=197						
233A	**Rising Star**	**17.01**	**344**	P	**P**	**17 02 10.5**	**+1.3**
	baz=162						
248A	**Dixon Mills**	**17.23**	**17**	P	**Pn**	**17 02 11.4**	**-0.2**
	baz=200						
134A	**White-Moore Ra**	**17.35**	**347**	P	**Pn**	**17 02 14.3**	**+1.4**
	baz=166						
Z40A	**Long Farm, Mag**	**17.55**	**1**	P	**Pn**	**17 02 15.9**	**+0.6**
	baz=181						
133A	**Hamilton Ranch**	**17.57**	**345**	P	**Pn**	**17 02 16.6**	**+0.9**
	baz=163						
147A	**Livingston**	**17.64**	**15**	P	**P**	**17 02 16.2**	**+0.1**
	baz=197						
Z36A	**Blue Ridge**	**17.74**	**352**	P	**Pn**	**17 02 18.0**	**+0.3**
	baz=171						
ABTX	**Abilene, Hawle**	**17.78**	**343**	P	**Pn**	**17 02 19.2**	**+0.9**
	baz=161						
LPIG	**La Paz**	**17.82**	**301**	LR	LR	17 10 16.2	
	comp=Z,24nm,18.9s,baz=226,slow=40						
Z35A	**Perchaven, San**	**17.93**	**350**	P	**Pn**	**17 02 20.5**	**+0.6**
	baz=169						
Z34A	**Collier Ranch,**	**18.09**	**348**	P	**Pn**	**17 02 22.7**	**+0.8**
	baz=167						
Z33A	**Whitaker Ranch**	**18.18**	**346**	P	**Pn**	**17 02 23.9**	**+0.7**
	baz=164,SNR=5.8						
TIGA	**Tifton**	**18.19**	**28**	P	**P**	**17 02 21.0**	**-1.2**
	baz=212						
Y39A	**Lockesburg**	**18.23**	**359**	P	**Pn**	**17 02 23.6**	**0.0**
	baz=179						
Y38A	**Idabel**	**18.24**	**357**	P	**Pn**	**17 02 24.0**	**+0.2**
	baz=177						
Y40A	**Okolona**	**18.30**	**1**	P	**Pn**	**17 02 24.2**	**-0.2**
	baz=181						
Y36A	**Durant**	**18.34**	**353**	P	**Pn**	**17 02 25.3**	**+0.3**
	baz=172						
Y37A	**Hugo**	**18.35**	**355**	P	**Pn**	**17 02 25.2**	**+0.1**
	baz=174						
Y35A	**Marietta**	**18.45**	**351**	P	**P**	**17 02 25.7**	**+0.6**
	baz=170						
Z48A	**Northport**	**18.49**	**16**	P	**P**	**17 02 25.3**	**-0.1**
	baz=199						
Y34A	**Reagan Ranch,**	**18.62**	**349**	P	**P**	**17 02 27.3**	**+0.4**
	baz=168						
Y46A	**Houston**	**18.66**	**12**	P	**P**	**17 02 27.4**	**0.0**
	baz=194						
X40A	**Basin Creek Fa**	**18.78**	**2**	P	**P**	**17 02 28.6**	**0.0**
	baz=182						
X39A	**Fountain Ranch**	**18.80**	**359**	P	**P**	**17 02 29.3**	**+0.5**
	baz=179						
MIAR	**Mount Ida**	**18.83**	**0**	P	**P**	**17 02 29.9**	**+0.8**
	baz=180						
MIAR	**Mount Ida**	**18.83**	**0**	*e*P	**P**	**17 02 27.0**	**-2.1**
	10nm,0.8s						
Y33A	**Hilltop Ranch,**	**18.85**	**347**	P	**Pn**	**17 02 31.1**	**+0.1**
	baz=165						
Y47A	**UCPARC, Winfie**	**18.91**	**15**	P	**P**	**17 02 30.5**	**+0.4**
	baz=197						
X35A	**Drake**	**18.93**	**351**	P	**Pn**	**17 02 31.3**	**-0.7**
	baz=170						
X37A	**Clayton**	**18.94**	**355**	P	**Pn**	**17 02 33.5**	**+1.5**
	baz=175						
X38A	**Whitesboro**	**18.98**	**357**	P	**P**	**17 02 31.6**	**+0.8**
	baz=176						
X36A	**Centrahoma**	**19.02**	**353**	P	**Pn**	**17 02 32.8**	**-0.1**
	baz=172						
X34A	**Smith Ranch, M**	**19.26**	**349**	P	**Pn**	**17 02 35.2**	**-0.7**
	baz=168						
MNTX	**Cornudas Mount**	**19.27**	**328**	P	**Pn**	**17 02 35.6**	**-0.4**
	baz=144						
MNTX	**Cornudas Mount**	**19.27**	**328**	*e*P	**P**	**17 02 33.4**	**-0.5**
	10nm,1.8s						
X33A	**Lawton**	**19.33**	**348**	P	**P**	**17 02 35.6**	**+1.0**
	baz=166						
W38A	**Poteau**	**19.37**	**358**	P	**Pn**	**17 02 36.2**	**-0.9**
	baz=177						
X32A	**Elmer**	**19.39**	**346**	P	**P**	**17 02 36.0**	**+0.7**
	baz=163,SNR=12						
W39A	**Magazine**	**19.48**	**360**	P	**Pn**	**17 02 39.5**	**+1.2**
	baz=180						
W37B	**Quinton**	**19.49**	**355**	P	**Pn**	**17 02 39.1**	**+0.6**
	baz=175						
W41A	**Tony Mavity, V**	**19.49**	**3**	P	**P**	**17 02 36.3**	**-0.1**
	baz=184						
W41B	**Gary Mavity, V**	**19.49**	**3**	P	**P**	**17 02 36.2**	**-0.1**
	baz=184						
W36A	**Wetumka**	**19.56**	**354**	P	**P**	**17 02 37.2**	**+0.1**
	baz=173						
WMOK	**Wichita Mounta**	**19.58**	**347**	*e*P	**P**	**17 02 35.1**	**-2.3**
	30nm,1.9s						
W35A	**Tecumseh**	**19.66**	**352**	P	**P**	**17 02 38.5**	**+0.4**
	baz=171						
W34A	**Bridge Creek,**	**19.87**	**350**	P	**P**	**17 02 40.4**	**-0.1**
	baz=168						
W33A	**Caddo, Fort Co**	**19.92**	**348**	P	**Pn**	**17 02 42.4**	**-1.2**
	baz=166						
GOGA	**Godfrey**	**19.93**	**26**	*e*P	**P**	**17 02 40.0**	**-1.1**
	108nm,2.0s						
MSTX	**Muleshoe**	**20.04**	**337**	P	Pn	17 02 44.0	-1.1

S40A	Lebanon baz=183	21.90	2	P	P	17 03 02.5	+0.3
S38A	Stockton baz=179	21.91	359	P	P	17 03 02.7	+0.4
S39A	Bolivar baz=181	21.97	1	P	P	17 03 03.2	+0.3
T32A	Huddler Ranch, baz=166	21.97	349	P	P	17 03 04.2	+1.2
S37A	Fort Scott baz=177	22.06	357	P	P	17 03 04.9	+1.0
S36A	Lake Cedric, C baz=175	22.07	356	P	P	17 03 04.1	+0.1
S35A	Otter Creek Ra baz=173	22.09	354	P	P	17 03 04.3	+0.1
S34A	Willow Spring baz=171	22.20	353	P	P	17 03 05.8	+0.4
KMSC	Kings Mountain baz=213	22.32	27	P	P	17 03 05.0	-1.6
ANMO	Albuquerque 2.1nm,0.6s,baz=151,slow=11,SNR=9.6	22.43	331	P	P	17 03 09.6	+1.6
ANMO	1.3nm,0.7s,baz=166,slow=12,SNR=3.0			pP	pP	17 03 28.0	+0.9
ANMO	Albuquerque baz=146	22.43	331	P	P	17 03 09.4	+1.4
ANMO	Albuquerque 3.8nm,0.9s	22.43	331	eP	P	17 03 05.5	-2.5
ANMO				pP	pP	17 03 28.0	+0.9
R38A	Fenwick Farm, baz=179	22.46	359	P	P	17 03 07.4	-0.7
S32A	Newby Ranch, P baz=167	22.48	349	P	P	17 03 08.8	+0.5
R39A	Chumby, Stover baz=182	22.59	1	P	P	17 03 09.2	-0.3
R40A	Maddies Statio baz=183	22.60	3	P	P	17 03 09.5	0.0
R37A	Teagarden Farm baz=177	22.61	357	P	P	17 03 09.8	+0.2
R36A	Gordon, Harris baz=175	22.66	356	P	P	17 03 10.3	+0.1
TUC	Tucson baz=133	22.80	320	P	P	17 03 13.6	+2.0
R34A	Isabella, Hill baz=171	22.80	353	P	P	17 03 11.5	-0.1
R33A	Olander Ranch, baz=169	22.91	351	P	P	17 03 13.2	+0.5
R32A	Long Quarter, baz=168	23.14	350	P	P	17 03 14.9	0.0
Q35A	Mercer Eighty, baz=174	23.23	355	P	P	17 03 14.7	-1.0
Q38A	Cooks Store, C baz=180	23.23	360	P	P	17 03 14.6	-1.2
Q40A	Laux Farm, Aux baz=184	23.31	3	P	P	17 03 16.7	+0.3
Q39A	Willow Grove F baz=182	23.33	1	P	P	17 03 15.7	-0.9
SDV	Santo Domingo 2.6nm,0.4s,baz=22,slow=2.6,SNR=5.1	23.41	104	P	P	17 03 19.0	+1.2
SDV	Santo Domingo 2.4nm,0.9s	23.41	104	P	P	17 03 19.0	+1.2
T25A	Trinidad baz=153	23.47	338	P	P	17 03 20.5	+2.4
T25A	Trinidad 13nm,0.8s	23.47	338	eP	P	17 03 20.8	+2.6
KSU1	Kansas State U baz=173	23.52	354	P	P	17 03 18.2	-0.2
Q33A	Connelly Farm, baz=170	23.57	352	P	P	17 03 21.0	+2.2
Q32A	Meitler Ranch, baz=168	23.67	350	P	P	17 03 19.7	0.0
CBKS	Cedar Bluff baz=165	23.71	348	P	P	17 03 20.3	+0.2
P40A	Paris baz=184	23.84	3	P	P	17 03 19.8	-1.4
P37A	Lathrop baz=178	23.87	359	P	P	17 03 20.4	-1.1
P35A	Duane Minner, baz=174	23.90	355	P	P	17 03 20.6	-1.1
P38A	Dawn baz=180	23.90	0	P	P	17 03 21.5	-0.3
P36A	Good Intent, A baz=176	23.94	357	P	P	17 03 21.2	-0.8
P33A	Williams Farm, baz=170	23.98	352	P	P	17 03 23.0	+0.5
P34A	Walnut Farm, R baz=172	23.99	354	P	P	17 03 22.2	-0.4
W18A	Petrified Fore baz=139	24.20	326	P	P	17 03 27.3	+2.5
P32A	Huiting Farm, baz=168	24.29	351	P	P	17 03 25.2	-0.1
O38A	Galt baz=180	24.39	0	P	P	17 03 26.4	+0.2
SDCO	Great Sand Dun baz=151	24.41	337	P	P	17 03 28.0	+1.3
O36A	Bolckow baz=177	24.43	357	P	P	17 03 29.5	+3.0
O40A	La Belle baz=184	24.44	3	P	P	17 03 26.1	-0.5
O37A	Wolven Farm, M baz=179	24.44	359	P	P	17 03 27.2	+0.6
O39A	Kirksville baz=182	24.54	2	P	P	17 03 27.8	+0.2
O33A	Hebron baz=171	24.60	353	P	P	17 03 27.8	-0.2
KSCO	Kaye Shedlock' baz=159	24.60	343	P	P	17 03 29.7	+1.4
O34A	Beatrice baz=173	24.61	354	P	P	17 03 28.0	-0.2
O32A	Brockman Farm, baz=169	24.87	351	P	P	17 03 31.2	+0.6
S22A	4UR Ranch, Cre baz=149	24.94	335	P	P	17 03 34.1	+2.6
S22A	4UR Ranch, Cre 3.3nm,1.1s	24.94	335	eP	P	17 03 34.3	+2.7
N39A	Derby Farms, D baz=183	25.17	2	P	P	17 03 35.5	+2.3
N35A	Tabor baz=176	25.20	356	P	P	17 03 33.9	+0.4
MVCO	Mesa Verde baz=145	25.23	331	P	P	17 03 36.0	+1.9
MVCO	Mesa Verde 6.8nm,1.0s	25.23	331	P	P	17 03 34.6	+0.5
N33A	J Bar K, Exete baz=171	25.23	353	P	P	17 03 34.5	+0.6
SFIN	Lafayette baz=195	25.29	12	P	P	17 03 35.4	+1.1
Q24A	Divide baz=153	25.36	339	P	P	17 03 36.8	+1.4
N32A	Stulken Farm, baz=170	25.37	352	P	P	17 03 35.9	+0.9
WUAZ	Wupatki baz=137	25.40	324	P	P	17 03 38.1	+2.5
M37A	Trindle Farm, baz=179	25.68	359	P	P	17 03 37.0	-0.9
M38A	Pleasantville baz=181	25.69	1	P	P	17 03 37.3	-0.7
M34A	Aspy Farms, Fr baz=174	25.90	355	P	P	17 03 39.4	-0.5
PV01	Paradox Valley	26.01	332	eP	P	17 03 40.3	-0.9
M33A	Taylor Creek F baz=172	26.03	354	P	P	17 03 40.6	-0.5
M31A	Lambtecht Ranc baz=168	26.04	351	P	P	17 03 41.6	+0.5
SMCO	Snowmass 11nm,1.4s	26.22	336	eP	P	17 03 44.7	+1.4
ISCO	Idaho Springs baz=153	26.26	339	P	P	17 03 44.9	+1.3
MURC	Murrieta baz=124	27.82	314	P	P	17 03 59.1	+1.8
ECSD	EROS Data Cent baz=174,SNR=5.9	28.12	355	P	P	17 03 58.8	-1.0
ECSD	EROS Data Cent 6.4nm,0.8s	28.12	355	eP	P	17 03 58.8	-1.0
J28A	Allard Ranch, baz=164	28.45	348	P	P	17 04 03.9	+1.2
GSC	Goldstone, Bar baz=128	28.55	318	P	P	17 04 06.0	+2.3
FMP	Fort Macarthur baz=123	28.64	313	P	P	17 04 06.2	+1.7
J26A	Sides Ranch, S baz=161	28.75	346	P	P	17 04 06.5	+1.1
H36A	Jessenland, He baz=179	28.85	360	P	P	17 04 06.2	0.0
H37A	Dierke Farm, C baz=181	28.86	1	P	P	17 04 06.7	+0.5
H33A	Prehn Over Nor baz=174	29.07	355	P	P	17 04 07.2	-1.0
WTU	Western Traver	29.44	331	eP	P	17 04 11.2	-0.5
MPMC	Manual Prospec	29.45	318	P	P	17 04 14.9	+3.1
	baz=128						
I25A	Rochford baz=160	29.57	345	P	P	17 04 14.2	+1.4
BW06	Boulder Array baz=148	30.30	336	P	P	17 04 20.6	+1.2
PDAR	Pinedale Array 0.6nm,0.7s,baz=126,slow=10.0,SNR=6.3	30.30	336	P	P	17 04 20.3	+0.9
G26A	Maurine baz=163	30.52	347	P	P	17 04 21.5	+0.4
E33A	Westby DABS, E baz=176	30.84	357	P	P	17 04 22.1	-1.6
MLAC	Mammoth, Mammo baz=128	31.27	319	P	P	17 04 30.9	+3.0
F25A	Bowman baz=162	31.31	347	P	P	17 04 29.1	+1.1
REDW	Red Top Meadow 12nm,1.1s	31.32	335	eP	P	17 04 30.3	+2.0
E28A	Huff baz=167	31.41	351	P	P	17 04 29.1	+0.3
E27A	Carson baz=165	31.41	349	P	P	17 04 29.5	+0.6
LOHW	Long Hollow 6.2nm,1.1s	31.43	336	eP	P	17 04 30.9	+1.6
NVAR	Mina Array Bea 1.2nm,0.6s,baz=138,slow=8.8,SNR=9.7	31.43	321	P	P	17 04 31.9	+2.5
NVAR	2.6nm,1.0s,baz=131,slow=9.2,SNR=4.4			pP	pP	17 04 53.5	+2.2
D33A	AnnSam, Waubun baz=176	31.47	357	P	P	17 04 30.1	+0.9
SADO	Sadowa comp=Z,27nm,18.4s,baz=146,slow=40	31.51	20	LR	LR	17 19 21.5	
E26A	Carlson Angus baz=164	31.62	348	P	P	17 04 31.4	+0.7
IMW	Indian Meadow 6.0nm,1.4s	31.80	336	eP	P	17 04 33.8	+1.2
E25A	Miller Ranch, baz=162	31.84	347	P	P	17 04 33.7	+1.0
C35A	Jirik Farms, M baz=179	31.97	360	P	P	17 04 32.1	-1.7
D28A	Regan baz=167	31.99	351	P	P	17 04 34.4	+0.5
C36A	Pine Crest Far baz=181	32.03	1	P	P	17 04 34.8	+0.5
D27A	Center baz=166	32.06	350	P	P	17 04 35.0	+0.5
D26A	Manning baz=164	32.15	349	P	P	17 04 35.5	+0.2
C30A	Mose, Pekin baz=171,SNR=7.2	32.23	354	P	P	17 04 35.3	-0.7
RLMT	Red Lodge baz=151	32.23	339	P	P	17 04 36.8	+0.6
C31A	Landman Farms, baz=173,SNR=5.5	32.25	355	P	P	17 04 35.2	-0.9
EYMN	Ely baz=184	32.26	3	P	P	17 04 35.7	-0.5
D25A	Fairfield baz=162,SNR=5.1	32.45	348	P	P	17 04 38.9	+1.0
AGMN	Agassiz Nation baz=176	32.62	357	P	P	17 04 38.6	-0.8
B35A	Bob, Littlefor baz=180	32.63	360	P	P	17 04 39.7	+0.2
C27A	Sayler Ranch, baz=166	32.65	350	P	P	17 04 39.8	+0.1
B32A	Ashes, Strandq baz=175	32.76	356	P	P	17 04 40.0	-0.5
B34A	Aery, Baudette baz=178	32.77	359	P	P	17 04 40.0	-0.7
C26A	Wahner Farm, P baz=165	32.86	349	P	P	17 04 41.5	0.0
B31A	Greenbush Farm baz=173	32.87	355	P	P	17 04 41.3	-0.2
B30A	Myrvik Farm, E baz=172,SNR=6.3	32.95	354	P	P	17 04 41.7	-0.6
HLID	Hailey baz=141	33.01	332	P	P	17 04 44.3	+1.2
B29A	Wagenman Farm, baz=170,SNR=6.4	33.08	353	P	P	17 04 43.0	-0.4
B28A	Dugan Ranch, T baz=168,SNR=5.4	33.19	352	P	P	17 04 44.3	0.0
A33A	Warroad baz=177	33.24	358	P	P	17 04 44.5	-0.3
MCMT	McKenzie Canyo	33.34	335	eP	P	17 04 48.9	+2.9
A30A	Hoffart Farm, baz=172,SNR=6.6	33.44	354	P	P	17 04 45.8	-0.7
A29A	Manning Farm, baz=170,SNR=9.3	33.52	353	P	P	17 04 46.6	-0.6
A28A	Rude Farm, Bot baz=168	33.63	352	P	P	17 04 47.8	-0.4
DGMT	Dagmar baz=162	33.88	347	P	P	17 04 50.7	+0.4
A26A	Wadade Farm, Ken baz=165,SNR=7.7	33.88	350	P	P	17 04 50.4	0.0
LRM	Limekiln Ridge	34.00	336	eP	P	17 04 53.6	+1.9
A25A	Svangstu Ranch baz=164	34.11	349	P	P	17 04 52.8	+0.4
ULM	Lac du Bonnet 1.9nm,0.5s,baz=180,slow=11,SNR=3.1	34.57	357	P	P	17 04 54.1	-2.1
O03D	Paynes Creek baz=127	34.72	321	P	P	17 04 59.6	+1.8
EGMT	Eagleton baz=152	34.94	341	P	P	17 05 00.3	+0.7
MSO	Missoula baz=145	35.41	336	P	P	17 05 04.9	+1.2
YBH	Yreka Blue Hor comp=Z,36nm,18.2s,baz=343,slow=37	36.13	322	LR	LR	17 20 24.1	
I03D	Drain, OR baz=129	37.71	324	P	P	17 05 25.0	+1.9
SAML	Samuel 3.7nm,0.9s	38.78	127	eP	P	17 05 31.6	-0.8
FFC	Flin Flon 25nm,1.8s	39.55	352	eP	P	17 05 37.8	-0.5
SIV	San Ignacio 3.0nm,0.8s,baz=314,slow=7.5,SNR=5.2	44.93	133	P	P	17 06 23.2	+0.6
YKA	Yellowknife Ar 3.5nm,0.4s,baz=152,slow=7.3,SNR=102	49.09	347	P	P	17 06 53.8	-0.4
YKA	1.9nm,0.8s,baz=148,slow=7.8,SNR=4.5			pP	pP	17 07 16.9	-0.7
YKB5	Yellowknife Ar	49.09	347	eP	P	17 06 53.2	-1.0
YKW3	Yellowknife Ar	49.16	347	eP	P	17 06 53.6	-1.0
DLBC	Dease Lake	50.54	336	eP	P	17 07 08.3	+2.9
ILAR	Eielson Array 0.7nm,0.7s,baz=142,slow=5.4,SNR=9.3	60.73	337	P	P	17 08 18.6	+0.4
ILAR	0.7nm,0.6s,baz=156,slow=5.4,SNR=5.6			pP	pP	17 08 42.6	+0.3
ILAR	0.7nm,0.8s,baz=117,slow=7.0,SNR=3.1			sP	sP	17 08 54.5	+1.4
NOA	NORSAR Array B 0.7nm,0.8s,baz=284,slow=5.5,SNR=3.3	83.45	28	P	P	17 10 33.5	-0.1
NOA	comp=Z,28nm,18.6s,baz=290,slow=38			LR	LR	17 50 49.5	
ARCES	ARCESS Array B 3.0nm,0.8s,baz=282,slow=5.2,SNR=10	85.07	18	P	P	17 10 41.2	-0.4
SEY	Seymchan 0.7nm,0.5s,baz=83,slow=21,SNR=9.7	86.63	335	P	P	17 10 50.1	+0.7
FINES	FINESS Array B 1.3nm,0.8s,baz=321,slow=2.7,SNR=6.9	89.67	25	P	P	17 11 02.6	-1.2
MKAR	Makanchi Array 0.1nm,0.6s,baz=357,slow=2.9,SNR=2.6	117.75	3	PKP	PKPdf	17 16 51.7	-0.4
CD2	Chengdu	130.80	340	PKP	PKPdf	17 17 16.3	-1.3
WRA	Warramunga Arr 0.2nm,0.5s,baz=20,slow=0.9,SNR=4.5	134.27	257	PKP	PKPdf	17 17 26.1	+1.8
ASAR	Alice Springs 0.3nm,0.8s,baz=69,slow=1.6,SNR=4.2	134.72	252	PKP	PKPdf	17 17 26.8	+1.7
CMAR	Chiang Mai Arr 0.5nm,0.7s,baz=332,slow=3.7,SNR=5.2	143.94	340	PKP	PKPbc	17 17 40.4	+0.5
HYB	Hyderabad	146.26	14	*i* PKP	PKPdf	17 17 46.0	0.0

NEIC 16 17:01:39.0, 15°.89S×72°.82W, h44km, MG4.2(ARE), After ARE., Southern Peru

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
LPAZ	La Paz	4.53	96	*e*Pn	Pn	17 02 52.9	+7.4
PB11	IPOC Station P	4.89	142	*e*Pn	Pn	17 02 52.3	+2.1
PB11				*e*Sn	Sn	17 03 50.1	+4.5
NNA	Nana	5.50	314	*e*Pn	Pn	17 02 57.6	-1.0
PB01	IPOC Station P	6.02	149	*e*Pn	Pn	17 03 08.1	+2.4
PB01				*e*Sn	Sn	17 04 14.8	+1.4
PB04	IPOC Station P	6.89	159	*e*Pn	Pn	17 03 20.2	+2.6
PB04				*e*Sn	Sn	17 04 34.3	-0.6
PB10	IPOC Station P	7.88	165	*e*Pn	Pn	17 03 32.8	+1.8
PB10				*e*Sn	Sn	17 04 57.0	-1.9

*JMA **16** 17:12:13.3±0.2, 37°.29N×141°.59E, h41km±2km, M3.1*
*IDC **16** 17:12:22.0±8.1, 36°.93N×141°.01E, h97km±52km, mb3.0/2, mb1 3.1/4, mb1mx2.8/59, mbtmp3.4/4, Error ellipse: s-maj=106.0km s-min=19.4km az=70.0*

ISC 16 17:12:10.2±1.7, 37°.29N±0°.04×141°.63E±0°.07, h16km±10km, n12, σ1°23/19, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JFK	Kawauchi	0.61	278	P	Pn	17 12 25.2	+1.0
JFK				S	Sn	17 12 33.3	-0.4
ONAJ	Iwakimizuishiy	0.69	255	P	Pn	17 12 26.3	+1.0
ONAJ				S	Sn	17 12 35.4	-0.3
JMM	Marumori	0.88	311	P	Pn	17 12 28.7	+0.8
JFT	Otama	1.06	283	P	Pg	17 12 32.2	+1.5
JFT				S	Sn	17 12 45.5	+0.8
JHO	Hitachi	1.09	232	P	Pg	17 12 31.3	+0.1
JHO				S	Sg	17 12 44.9	-0.6
JIO	Ouri	1.19	349	P	Pg	17 12 33.1	0.0
JIO				S	Sb	17 12 47.0	-0.3
JOU	Okura	1.32	325	P	Pg	17 12 35.7	0.0
MJAR	Matsushiro Arr 1.5nm,0.3s,baz=85,slow=15,SNR=14	2.84	256	P	Pb	17 12 58.7	-1.9
MAT	Matsushiro	2.84	256	P	Pb	17 12 59.3	-1.3
MAT				S	Sb	17 13 35.0	-0.1
JHJ	Hachijo jima 2 3.2nm,0.3s,baz=66,slow=20,SNR=2.6	4.43	201	P	Pn	17 13 19.2	+2.6
JHJ	3.3nm,0.3s,baz=90,slow=20,SNR=3.0			S	Sn	17 14 05.8	-2.1
MKAR	Makanchi Array 0.3nm,0.6s,baz=91,slow=9.7,SNR=4.5	44.13	302	P	P	17 20 18.0	+0.2
WRA	Warramunga Arr 0.3nm,0.8s,baz=6.4,slow=7.3,SNR=3.8	57.34	188	P	P	17 21 57.4	0.0

*ISCJB **16** 17:16:15.7±0.3, 44°.406N±0°.010×17°.71E±0°.01, h2km±2km, mb3.5/10, MS3.9/1, Error ellipse: s-maj=1.8km s-min=1.3km az=35.7*
*BEO **16** 17:16:16.5±0.3, 44°.36N×17°.65E, h0km, M3.7/1*
*IDC **16** 17:16:16.7±0.7, 44°.32N×17°.52E, h0km, mb3.6/10, mb1 3.8/18, mb1mx3.7/45, mbtmp3.7/18, ML3.6/8, MS3.3/2, Ms1 3.3/2, ms1mx2.5/69, Error ellipse: s-maj=15.7km s-min=9.2km az=63.0*
*ROM **16** 17:16:17.7±0.4, 44°.35N×17°.80E, h10km, Ml4.0/45, Error ellipse: s-maj=6.4km s-min=2.9km az=63.0*
*CSEM **16** 17:16:17.0±0.1, 44°.38N×17°.73E, h2km, ML4.1/7, Error ellipse: s-maj=1.9km s-min=1.4km az=28.0*
*PDG **16** 17:16:17.4±0.8, 44°.41N×17°.83E, h12km±1km, MD3.8/5, ML3.8/10, Error ellipse: s-maj=0.6km s-min=0.8km az=0.0*
*LDG **16** 17:16:17.3±0.1, 44°.42N×17°.86E, h10km, Ml3.9/26, Error ellipse: s-maj=1.9km s-min=1.5km az=38.0*
*PRU **16** 17:16:18.4, 44°.43N×17°.76E, h0km*
*THE **16** 17:16:18.1, 44°.46N×17°.62E, h29km±22km, ML3.6/1, Error ellipse: s-maj=26.2km s-min=3.4km az=320.0*
*TIR **16** 17:16:27.8, 42°.37N×16°.85E, h7km, ML4.0*
*STR **16** 17:16:29.9±5.7, 44°.65N×16°.52E, h5km, Ml3.9, Error ellipse: s-maj=0.0km s-min=0.0km az=0.0*

ISC 16 17:16:17.1±1.0, 44°.38N±0°.02×17°.73E±0°.02, h7km±7km, n447, σ1°37/573, mb3.6/10, 34C-39D, Northwestern Balkan Peninsula

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
DOB	Doboj	0.44	36	*i* Pg	Pg	17 16 25.3	-0.4
DOB				*e*Sg	Sb	17 16 32.8	-1.4
BLY	Banja Luka	0.54	314	*i* P	Pg	17 16 27.8	+0.5
BLY				S	Sb	17 16 36.8	-0.1
BLY	Banja Luka	0.54	314	*e*Pg	Pg	17 16 27.5	0.0
BLY				*e*Sg	Sg	17 16 34.7	+0.1
BLY	Banja Luka	0.54	314	*i* P	Pg	17 16 28.0	+0.5
BLY				*e*Sg	Sg	17 16 34.7	+0.1
HAPS	Han Pijesak,Bl	0.92	108	*i* Pg	Pg	17 16 33.5	-1.3
HAPS				*e*Sg	Sg	17 16 46.2	-0.6
BLJ	Bijeljina	1.17	69	*e*Pg	Pg	17 16 37.9	-1.6
BLJ				*e*Sg	Sg	17 16 53.2	-1.5
TEKS	Tekeris	1.30	82	*e*Pn	Pn	17 16 41.8	+0.1
TEKS				*e*Sn	Sn	17 17 02.1	+2.7
TEKS	Tekeris	1.30	82	*i* Pg	Pn	17 16 41.5	-0.2
TEKS	Tekeris	1.30	82	*e*Pn	Pn	17 16 41.8	+0.1
TEKS				*e*Sg	Sb	17 16 58.5	-0.3
TEKS				*e*Sn	Sn	17 17 02.1	+2.7
BBLS	Lazići	1.31	112	*e*Pn	Pn	17 16 41.4	-0.5
BBLS				*e*Sn	Sn	17 17 01.7	+2.0
BBLS	Lazići	1.31	112	*e*Pg	Pn	17 16 40.5	-1.4
BBLS	Lazići	1.31	112	*e*Pn	Pn	17 16 41.4	-0.5
BBLS				*e*Sg	Sb	17 16 58.5	-0.6
BBLS				*e*Sn	Sn	17 17 01.7	+2.0
UDBI	Udbina	1.42	277	*i* Pn	Pn	17 16 42.6	-0.8
UDBI				Sn	Sg	17 17 03.2	+0.6
UDBI	Udbina	1.42	277	*i* Pn	Pn	17 16 42.6	-0.8
UDBI				Sn	Sg	17 17 03.2	+0.6
UPM	Unac-Piva	1.45	144	*i* Pg	Pn	17 16 43.0	-1.0
UPM				*e*Sg	Sg	17 17 05.5	+1.9
UPM	Unac-Piva	1.45	144	P	Pn	17 16 42.9	-1.0
UPM				*e*Sg	Sg	17 17 05.5	+1.9
STON	Ston	1.50	181	*i* Pn	Pn	17 16 43.7	-0.8
STON				Sn	Sn	17 17 04.1	-0.2
STON	Ston	1.50	181	*e*Pn	Pn	17 16 43.8	-0.7
STON	Ston	1.50	181	*e*Pn	Pn	17 16 43.8	-0.7
STON				Sn	Sn	17 17 04.1	-0.2
BRY	Bratogost	1.59	158	*i* Pn	Pn	17 16 45.6	-0.2
BRY				*e*Sn	Sg	17 17 09.4	+1.4
BRY	Bratogost	1.59	158	*i* Pn	Pn	17 16 45.6	-0.2
BRY				*e*Sn	Sn	17 17 06.4	-0.2
PLE	Pljevlja	1.59	130	*i* Pg	Pn	17 16 45.9	+0.1
PLE				*e*Sg	Sg	17 17 08.9	+0.7
PLE	Pljevlja	1.59	130	*i* Pg	Pn	17 16 45.9	+0.1
PLE				*e*Sg	Sg	17 17 08.9	+0.7
DIVS	Divibare	1.65	99	*e*Pn	Pn	17 16 46.3	-0.3
DIVS				*e*Sn	Sg	17 17 10.8	+0.8
DIVS	Divibare	1.65	99	*e*Pn	Pn	17 16 46.3	-0.3
DIVS				*e*Sn	Sg	17 17 10.8	+0.8
FGSL	Fruska Gora	1.68	61	*e*Pn	Pn	17 16 46.6	-0.3
FGSL				*e*Sn	Sg	17 17 11.5	+0.6
FRGS	Fruska Gora	1.68	61	*e*Pn	Pn	17 16 46.6	-0.3
FRGS				*e*Sn	Sg	17 17 11.5	+0.6
TREB	Trebinje	1.72	165	*e*Pn	Pn	17 16 47.5	+0.1
TREB				*i* Sg	Sg	17 17 12.0	-0.2
TREB	Trebinje	1.72	165	*e*Pn	Pn	17 16 47.5	+0.1
TREB				*e*Sn	Sn	17 17 09.6	-0.1
TREB				*i* Sg	Sg	17 17 12.0	-0.2
NKY	Niksic	1.81	149	*i* Pn	Pn	17 16 49.6	+0.8
NKY				*e*Sn	Sg	17 17 14.9	-0.3
NKY	Niksic	1.81	149	*i* Pn	Pn	17 16 49.6	+0.8
NKY				*e*Sn	Sg	17 17 14.9	-0.3
NKME	Niksic	1.84	151	*i* Pn	Pn	17 16 49.6	+0.5
NKME				*e*Sn	Sb	17 17 15.1	+0.8
NKME	Niksic	1.84	151	*i* Pn	Pn	17 16 49.6	+0.5
NKME				*e*Sn	Sb	17 17 15.1	+0.8
ZAG	Zagreb	1.91	320	*e*Pn	Pn	17 16 50.3	+0.3
IVAS	Ivanjica	1.92	114	*e*Pn	Pn	17 16 50.2	-0.1
IVAS				*e*Sn	Sb	17 17 16.7	0.0
IVAS	Ivanjica	1.92	114	*e*Pn	Pn	17 16 50.2	-0.1
IVAS				*e*Sn	Sb	17 17 16.7	0.0
TRUS	Trudelj	1.93	94	*e*Pn	Pb	17 16 51.6	-0.9
TRUS				*e*Sn	Sb	17 17 17.4	+0.6
TRUS	Trudelj	1.93	94	*e*Pn	Pb	17 16 51.6	-0.9
TRUS				*e*Sn	Sb	17 17 17.4	+0.6
PKSM	Moragy	1.95	19	*i* P	Pn	17 16 50.7	+0.1
PKSM	Moragy	1.95	19	*e*Pn	Pn	17 16 50.6	0.0
PKSM				*e*Sn	Sb	17 17 17.3	-0.1
PKSM	Moragy	1.95	19	*i* P	Pn	17 16 50.7	+0.1
PKSM				*e*Sn	Sb	17 17 16.9	-0.5
SJES	Sjenica	1.97	124	*e*Pn	Pn	17 16 51.2	+0.2
SJES				*e*Sn	Sn	17 17 17.1	+1.1
HCY	Herceg Novi	2.01	164	*i* Pn	Pn	17 16 52.5	+1.1
HCY				*e*Sn	Sb	17 17 20.0	+0.9
HCY	Herceg Novi	2.01	164	*i* Pn	Pn	17 16 52.5	+1.1
HCY				*e*Sn	Sn	17 17 16.5	-0.3
CEME	Cevo	2.02	154	*i* Pn	Pn	17 16 52.5	+0.8
CEME				*e*Sn	Sb	17 17 20.0	+0.4
CEME	Cevo	2.02	154	*i* Pn	Pn	17 16 52.5	+0.8
CEME				*e*Sn	Sb	17 17 20.0	+0.4
NVLJ	Novalja	2.06	276	*i* Pn	Pb	17 16 53.9	-0.9
NVLJ				Sn	Sb	17 17 21.2	+0.7
NVLJ	Novalja	2.06	276	*i* Pn	Pb	17 16 53.8	-0.9
NVLJ				Sn	Sb	17 17 21.2	+0.7
BOJS	Bojan

BOJS	**Bojanci**	**2.09**	**304**	*i* Pn		**Pn**	17 16 53.3	+0.7
BOJS				*i* Sn		**Sn**	17 17 20.0	+1.1
	comp=Z,525nm,0.5s							
CRES	**Cresnjev**	**2.17**	**313**	⇑*i* Pn		**Pn**	17 16 54.2	+0.6
CRES				*e*Sn		**Sn**	17 17 21.7	+0.9
BEY	**Berane**	**2.17**	**133**	⇑*i* Pn		**Pn**	17 16 53.9	+0.1
BEY	**Berane**	**2.17**	**133**	P		**Pn**	17 16 54.2	+0.4
BEY				*e*Sn		**Sn**	17 17 22.5	+1.5
IVA	**Berane**	**2.17**	**133**	⇑*i* Pn		**Pn**	17 16 53.9	+0.1
IVA				*e*Sn		**Sn**	17 17 22.5	+1.5
BEHE	**Becsehely**	**2.20**	**343**	⇑*i* Pn		**Pn**	17 16 55.2	+1.1
BEHE				*e*Sn		**Sb**	17 17 23.4	-1.3
GRUS	**Gruza**	**2.20**	**102**	*e*Pn		**Pn**	17 16 54.1	0.0
GRUS				*e*Sn		**Sn**	17 17 23.3	+1.7
GRUS	**Gruza**	**2.20**	**102**	*e*Pn		**Pn**	17 16 54.1	0.0
GRUS				*e*Sn		**Sn**	17 17 23.3	+1.7
PDG	**Podgorica**	**2.24**	**150**	Pn		**Pb**	17 16 56.6	-1.3
	comp=Z,501nm,0.6s							
PDG	**Podgorica**	**2.24**	**150**	⇑*i* P		**Pn**	17 16 56.1	+1.5
PDG	**Podgorica**	**2.24**	**150**	S		**Sb**	17 17 25.1	-0.7
PDG	**Podgorica**	**2.24**	**150**	P		**Pn**	17 16 55.7	+1.1
PDG				S		**Sn**	17 17 23.5	+1.0
PDG	**Podgorica**	**2.24**	**150**	*e*Pn		**Pn**	17 16 55.9	+1.3
PDG				*e*Sn		**Sn**	17 17 23.2	+0.7
PDG	**Podgorica**	**2.24**	**150**	*e*Pn		**Pn**	17 16 55.1	+0.5
PDG	**Podgorica**	**2.24**	**150**	P		**Pn**	17 16 55.7	+1.1
PDG				*e*Sn		**Sn**	17 17 23.2	+0.7
TTG	**Podgorica**	**2.24**	**150**	⇓*i* Pn		**Pn**	17 16 55.9	+1.3
TTG				*e*Sn		**Sb**	17 17 25.1	-0.7
BUM	**Brajici-Budva**	**2.24**	**157**	⇓*i* Pn		**Pn**	17 16 56.0	+1.3
BUM				*e*Sn		**Sb**	17 17 25.6	-0.3
BUM	**Brajici-Budva**	**2.24**	**157**	⇓*i* Pn		**Pn**	17 16 56.0	+1.3
BUM				*e*Sn		**Sb**	17 17 25.6	-0.3
PVY	**Plav**	**2.41**	**137**	⇓*i* Pn		**Pn**	17 16 57.5	+0.5
PVY				*e*Sn		**Sn**	17 17 28.2	+1.3
PVY	**Plav**	**2.41**	**137**	⇓*i* Pn		**Pn**	17 16 57.5	+0.5
PVY				*e*Sn		**Sn**	17 17 28.2	+1.3
DRME	**Dracevica, Mon**	**2.43**	**154**	⇓*i* Pn		**Pn**	17 16 58.9	+1.6
DRME				*e*Sn		**Sb**	17 17 30.1	-1.2
DRME	**Dracevica, Mon**	**2.43**	**154**	*e*Pn		**Pn**	17 16 57.5	+0.2
DRME				*e*Sn		**Sn**	17 17 27.8	+0.5
PDKS	**Podkum**	**2.56**	**312**	*i* Pn		**Pn**	17 16 59.8	+0.7
PDKS	**Podkum**	**2.56**	**312**	*i* Pn		**Pn**	17 16 59.8	+0.7
BANR	**Banloc**	**2.62**	**66**	⇑*i* P		**Pb**	17 17 04.4	0.0
BANR	**Banloc**	**2.62**	**66**	⇑*i* P		**Pb**	17 17 04.4	0.0
BANR				S		**Sn**	17 17 32.1	+0.2
ULC	**Ulcinj**	**2.65**	**155**	⇑*i* Pn		**Pn**	17 17 01.2	+0.9
ULC				*e*Sn		**Sb**	17 17 35.6	-2.1
ULC	**Ulcinj**	**2.65**	**155**	⇑*i* Pn		**Pn**	17 17 01.2	+0.9
ULC	**Ulcinj**	**2.65**	**155**	P		**Pb**	17 17 03.9	-1.0
ULC				*e*Sn		**Sb**	17 17 35.6	-2.1
CEY	**Cerknica**	**2.71**	**301**	*e*Pn		**Pn**	17 17 02.2	+1.1
CEY				*e*Sn		**Sn**	17 17 35.5	+1.3
VNDS	**Vrh nad Dolski**	**2.75**	**310**	*i* Pn		**Pn**	17 17 02.3	+0.6
VNDS	**Vrh nad Dolski**	**2.75**	**310**	*i* Pn		**Pn**	17 17 02.3	+0.6
LJU	**Ljubljana**	**2.81**	**308**	*e*Pn		**Pn**	17 17 03.6	+1.0
LJU				*e*			17 17 10.1	
LJU				*e*			17 17 48.0	
LJU	**Ljubljana**	**2.81**	**308**	*e*Pn		**Pn**	17 17 03.5	+1.0
LJU				*e*Sn		**Sn**	17 17 37.9	+1.2
KUBS	**Kucevo**	**2.83**	**88**	*e*Pn		**Pn**	17 17 03.6	+0.9
KUBS				*e*Sn		**Sn**	17 17 39.9	+2.8
KUBS	**Kucevo**	**2.83**	**88**	*e*Pn		**Pn**	17 17 03.6	+0.9
KUBS				*e*Sn		**Sn**	17 17 39.9	+2.8
SKDS	**Skadanscina**	**2.89**	**295**	*i* Pn		**Pn**	17 17 04.7	+1.2
SKDS	**Skadanscina**	**2.89**	**295**	*i* Pn		**Pn**	17 17 04.7	+1.2
BOVS	**Bovan**	**2.96**	**103**	*e*Pn		**Pn**	17 17 04.5	0.0
BOVS				*e*Sn		**Sn**	17 17 42.7	+2.4
BOVS	**Bovan**	**2.96**	**103**	*e*Pn		**Pn**	17 17 04.5	0.0
BOVS				*e*Sn		**Sn**	17 17 42.7	+2.4
MSAG	**Monte S. Angel**	**2.98**	**207**	Pn		**Pn**	17 17 04.6	-0.2
	comp=Z,522nm,0.5s							
MSAG	**Monte S. Angel**	**2.98**	**207**	Pn		**Pn**	17 17 04.6	-0.2
	comp=Z,522nm,0.5s							
SOKA	**Soboth**	**2.98**	**321**	*e*Pn		**Pn**	17 17 05.5	+0.6
	comp=Z,16nm,0.3s,SNR=19							
SOKA				*e*Sn		**Sn**	17 17 39.2	-1.8
	comp=Z,75nm,0.5s							
SOKA	**Soboth**	**2.98**	**321**	Pn		**Pn**	17 17 05.5	+0.6
	comp=Z,16nm,0.3s,SNR=19							
SOKA				Sn		**Sn**	17 17 39.2	-1.8
	comp=Z,75nm,0.5s							
SGRT	**San Giovanni R**	**3.00**	**210**	Pn		**Pn**	17 17 04.8	-0.3
	comp=Z,434nm,0.8s							
SGRT	**San Giovanni R**	**3.00**	**210**	Pn		**Pn**	17 17 04.8	-0.3
	comp=Z,434nm,0.8s							
JAVS	**Javornik**	**3.01**	**302**	*i* Pn		**Pn**	17 17 06.5	+1.2
JAVS	**Javornik**	**3.01**	**302**	*i* Pn		**Pn**	17 17 06.5	+1.2
BZS	**Buzias**	**3.02**	**64**	⇓*i* P		**Pn**	17 17 04.8	-0.6
BZS	**Buzias**	**3.02**	**64**	*e*Pn		**Pn**	17 17 04.9	-0.5
BZS				*e*Sn		**Sn**	17 17 44.0	+2.1
BZS	**Buzias**	**3.02**	**64**	*e*Pn		**Pn**	17 17 04.9	-0.5
BZS				S		**Sn**	17 17 40.8	-1.1
BZS				*e*Sn		**Sn**	17 17 44.0	+2.1
BOLS	**Boljevac**	**3.09**	**99**	*e*Pn		**Pn**	17 17 07.1	+0.8
BOLS	**Boljevac**	**3.09**	**99**	*e*Pn		**Pn**	17 17 07.1	+0.8
AOI	**Ancona**	**3.09**	**256**	Pn		**Pn**	17 17 07.7	+1.3
AOI	**Ancona**	**3.09**	**256**	Pn		**Pn**	17 17 07.7	+1.3
OBKA	**Obir**	**3.09**	**315**	*i* Pn		**Pn**	17 17 07.7	+1.2
	comp=Z,17nm,0.2s							
OBKA				*e*Sg		**Sg**	17 17 58.4	+2.0
	comp=Z,147nm,0.4s							
OBKA	**Obir**	**3.09**	**315**	Pn		**Pn**	17 17 07.7	+1.2
	comp=Z,17nm,0.2s							
OBKA				Sg		**Sg**	17 17 58.4	+2.0
	comp=Z,147nm,0.4s							
VOJS	**Vojsko**	**3.18**	**303**	*i* Pn		**Pn**	17 17 09.0	+1.3
VOJS	**Vojsko**	**3.18**	**303**	*i* Pn		**Pn**	17 17 09.0	+1.3
ARSA	**Arzberg**	**3.26**	**333**	*i* Pn		**Pn**	17 17 09.7	+1.0
	comp=Z,157nm,0.4s,SNR=128							
ARSA				*i* Sn		**Sn**	17 17 46.7	-1.2
	comp=Z,51nm,0.4s							
ARSA	**Arzberg**	**3.26**	**333**	Pn		**Pn**	17 17 09.7	+1.0
	comp=Z,157nm,0.4s,SNR=128							
ARSA				Sn		**Sn**	17 17 46.7	-1.2
	comp=Z,51nm,0.4s							
OFFI	**Offida**	**3.27**	**245**	Pn		**Pn**	17 17 11.6	+2.8
	comp=Z,2µm,0.7s							
OFFI	**Offida**	**3.27**	**245**	Pn		**Pn**	17 17 11.6	+2.8
	comp=Z,2µm,0.7s							
FRES	**Fresagrandinar**	**3.28**	**224**	Pn		**Pn**	17 17 10.4	+1.4
	comp=Z,704nm,1.0s							
FRES	**Fresagrandinar**	**3.28**	**224**	Pn		**Pn**	17 17 10.4	+1.4
	comp=Z,704nm,1.0s							
GJIK	**Gjilan**	**3.31**	**124**	P		**Pn**	17 17 09.5	+0.2
BAI	**Bari**	**3.33**	**191**	*e*Pn		**Pn**	17 17 09.0	-0.5
BAI				Sn		**Sn**	17 17 47.6	-1.7
SABO	**M.te Sabotino**	**3.33**	**300**	Pn		**Pn**	17 17 10.8	+1.1
	comp=Z,856nm,0.9s							
SABO	**M.te Sabotino**	**3.33**	**300**	Pn		**Pn**	17 17 10.8	+1.1
	comp=Z,856nm,0.9s							
BARS	**Barje**	**3.35**	**116**	*e*Pn		**Pn**	17 17 09.9	0.0
BARS				*e*Sn		**Sn**	17 17 51.7	+1.7
BARS	**Barje**	**3.35**	**116**	*e*Pn		**Pn**	17 17 09.9	0.0
BARS				*e*Sn		**Sn**	17 17 51.7	+1.7
SIRR	**Siria**	**3.35**	**54**	⇑*i* P		**Pn**	17 17 09.9	-0.1
SIRR	**Siria**	**3.35**	**54**	⇑*i* P		**Pn**	17 17 09.9	-0.1
TIR	**Tirane**	**3.41**	**152**	*i* PG		**Pn**	17 17 11.4	+0.7
TIR				*i* SG		**Sn**	17 17 51.4	+0.1
TIR	**Tirane**	**3.41**	**152**	⇑*i* P		**Pn**	17 17 11.9	+1.2
TIR	**Tirane**	**3.41**	**152**	*i* Pg		**Pn**	17 17 11.4	+0.7
TIR	**Tirane**	**3.41**	**152**	⇑*i* P		**Pn**	17 17 11.9	+1.2
TIR				*i* Sg		**Sn**	17 17 51.4	0.0
CIGN	**Sant'Elia a Pi**	**3.42**	**218**	Pn		**Pn**	17 17 12.0	+1.2
	comp=Z,466nm,1.3s							
CIGN	**Sant'Elia a Pi**	**3.42**	**218**	Pn		**Pn**	17 17 12.0	+1.2
	comp=Z,466nm,1.3s							
CING	**Cingoli**	**3.43**	**255**	Pn		**Pn**	17 17 12.0	+1.0
	comp=Z,217nm,0.7s							
CING	**Cingoli**	**3.43**	**255**	Pn		**Pn**	17 17 12.0	+1.0
	comp=Z,217nm,0.7s							
DJES	**Djerdap**	**3.44**	**83**	*e*Pn		**Pn**	17 17 11.0	-0.1
DJES	**Djerdap**	**3.44**	**83**	*e*Pn		**Pn**	17 17 11.0	-0.1
VCEL	**Villa Celiera**	**3.46**	**236**	Pn		**Pn**	17 17 12.8	+1.3
	comp=Z,426nm,0.7s							
VCEL	**Villa Celiera**	**3.46**	**236**	Pn		**Pn**	17 17 12.8	+1.3
	comp=Z,426nm,0.7s							
CDT	**Castel del Mon**	**3.46**	**199**	*e*Pn		**Pn**	17 17 12.8	+1.3
TERO	**Teramo**	**3.48**	**241**	Pn		**Pn**	17 17 12.7	+1.0
	comp=Z,215nm,0.6s							
TERO	**Teramo**	**3.48**	**241**	Pn		**Pn**	17 17 12.7	+1.0
	comp=Z,215nm,0.6s							
TRIV	**Trivento**	**3.50**	**223**	Pn		**Pn**	17 17 13.7	+1.8
	comp=Z,658nm,1.3s							
TRIV	**Trivento**	**3.50**	**223**	Pn		**Pn**	17 17 13.7	+1.8
	comp=Z,658nm,1.3s							
MRVN	**Minervino Murg**	**3.50**	**199**	Pn		**Pn**	17 17 12.1	+0.1
	comp=Z,206nm,0.9s							
MRVN	**Minervino Murg**	**3.50**	**199**	Pn		**Pn**	17 17 12.1	+0.1
	comp=Z,206nm,0.9s							
GATE	**Gambatesa**	**3.53**	**217**	Pn		**Pn**	17 17 14.3	+1.9
	comp=Z,166nm,0.5s							
GATE	**Gambatesa**	**3.53**	**217**	Pn		**Pn**	17 17 14.3	+1.9
	comp=Z,166nm,0.5s							
MOCO	**Biccari - m.te**	**3.55**	**213**	Pn		**Pn**	17 17 14.5	+1.8
	comp=Z,378nm,1.4s							
RMGR	**Halanga-Turnu**	**3.56**	**84**	⇑*i* P		**Pn**	17 17 15.6	+2.9
RMGR	**Halanga-Turnu**	**3.56**	**84**	⇑*i* P		**Sn**	17 17 55.6	+0.5
RMGR	**Halanga-Turnu**	**3.56**	**84**	⇑*i* P		**Pn**	17 17 15.6	+2.9
ARVD	**Arcevia**	**3.57**	**257**	Pn		**Pn**	17 17 14.2	+1.3
	comp=Z,275nm,1.1s							
ARVD	**Arcevia**	**3.57**	**257**	Pn		**Pn**	17 17 14.2	+1.3
	comp=Z,275nm,1.1s							
NOCI	**Noci**	**3.62**	**188**	Pn		**Pn**	17 17 13.2	-0.4
	comp=Z,282nm,0.8s							
NOCI	**Noci**	**3.62**	**188**	Pn		**Pn**	17 17 13.2	-0.4
	comp=Z,282nm,0.8s							
SG1	**Sgolgore (BA)**	**3.62**	**193**	*e*Pn		**Pn**	17 17 14.0	+0.4
SG1				Sn		**Sn**	17 17 55.0	-1.6
FDMO	**Fiordimonte**	**3.62**	**250**	Pn		**Pn**	17 17 14.8	+1.1
	comp=Z,188nm,0.6s							
FDMO	**Fiordimonte**	**3.62**	**250**	Pn		**Pn**	17 17 14.8	+1.1
	comp=Z,188nm,0.6s							
SKO	**Skopje**	**3.62**	**130**	*e*Pn		Pn	17 17 07.6	-6.1
SMA1	**SAN MARTINO**	**3.64**	**243**	Pn		**Pn**	17 17 15.2	+1.2
	comp=Z,326nm,0.6s							
SMA1	**SAN MARTINO**	**3.64**	**243**	Pn		**Pn**	17 17 15.2	+1.2
	comp=Z,326nm,0.6s							
SNTG	**Esanatoglia**	**3.64**	**254**	Pn		**Pn**	17 17 15.5	+1.5
	comp=Z,466nm,1.1s							
SNTG	**Esanatoglia**	**3.64**	**254**	Pn		**Pn**	17 17 15.5	+1.5
	comp=Z,466nm,1.1s							
CAMP	**Campotosto**	**3.65**	**241**	Pn		**Pn**	17 17 15.1	+1.0
	comp=Z,284nm,1.1s							
CAMP	**Campotosto**	**3.65**	**241**	Pn		**Pn**	17 17 15.1	+1.0
	comp=Z,284nm,1.1s							
MYKA	**Terra Mystica**	**3.65**	**310**	*i* Pn		**Pn**	17 17 16.1	+2.0
	comp=Z,9.1nm,0.3s							
MYKA	**Terra Mystica**	**3.65**	**310**	Pn		**Pn**	17 17 16.1	+2.0
	comp=Z,9.1nm,0.3s							
VINO	**Villanova**	**3.66**	**302**	Pn		**Pn**	17 17 15.9	+1.7
	comp=Z,228nm,0.6s							
VINO	**Villanova**	**3.66**	**302**	Pn		**Pn**	17 17 15.9	+1.7
	comp=Z,228nm,0.6s							
INTR	**Introdacqua**	**3.66**	**231**	Pn		**Pn**	17 17 15.3	+1.1
	comp=Z,493nm,0.9s							
INTR	**Introdacqua**	**3.66**	**231**	Pn		**Pn**	17 17 15.3	+1.1
	comp=Z,493nm,0.9s							
SGTA	**Sant Agata di**	**3.68**	**209**	Pn		**Pn**	17 17 14.8	+0.3
	comp=Z,348nm,0.9s							
SGTA	**Sant Agata di**	**3.68**	**209**	Pn		**Pn**	17 17 14.8	+0.3
	comp=Z,348nm,0.9s							
ACOM	**Acomizza, Ital**	**3.68**	**308**	Pn		**Pn**	17 17 15.5	+0.9
	comp=Z,329nm,0.7s							
ACOM	**Acomizza, Ital**	**3.68**	**308**	Pn		**Pn**	17 17 15.5	+0.9
	comp=Z,329nm,0.7s							
FAGN	**Fagnano**	**3.69**	**237**	Pn		**Pn**	17 17 16.1	+1.5
	comp=Z,522nm,0.5s							
FAGN	**Fagnano**	**3.69**	**237**	Pn		**Pn**	17 17 16.1	+1.5
	comp=Z,522nm,0.5s							
NRCA	**Norcia**	**3.69**	**247**	Pn		**Pn**	17 17 16.1	+1.5
	comp=Z,174nm,0.7s							
NRCA	**Norcia**	**3.69**	**247**	Pn		**Pn**	17 17 16.1	+1.5
	comp=Z,174nm,0.7s							
PTCC	**Patocco-Chiusa**	**3.69**	**305**	Pn		**Pn**	17 17 15.6	+1.0
	comp=Z,170nm,0.9s							
PTCC	**Patocco-Chiusa**	**3.69**	**305**	Pn		**Pn**	17 17 15.6	+1.0
	comp=Z,170nm,0.9s							
RM32	**Poggio Cancell**	**3.70**	**242**	Pn		**Pn**	17 17 16.0	+1.2
	comp=Z,334nm,0.8s							
RM32	**Poggio Cancell**	**3.70**	**242**	Pn		**Pn**	17 17 16.0	+1.2
	comp=Z,334nm,0.8s							
FRON	**Frontone**	**3.71**	**258**	Pn		**Pn**	17 17 16.1	+1.2
	comp=Z,260nm,0.8s							
FRON	**Frontone**	**3.71**	**258**	Pn		**Pn**	17 17 16.1	+1.2
	comp=Z,260nm,0.8s							
SACR	**S. Croce Del S**	**3.71**	**218**	Pn		**Pn**	17 17 16.1	+1.1
	comp=Z,407nm,1.6s							
SACR	**S. Croce Del S**	**3.71**	**218**	Pn		**Pn**	17 17 16.1	+1.1
	comp=Z,407nm,1.6s							
ZAPS	**Zavoj**	**3.71**	**106**	*e*Pn		**Pn**	17 17 15.5	+0.6
ZAPS				*e*Sn		**Sn**	17 18 00.3	+1.3
GZR	**Gura Zlata**	**3.73**	**72**	*e*Pn		**Pn**	17 17 14.9	-0.2
GZR	**Gura Zlata**	**3.73**	**72**	*e*Pn		**Pn**	17 17 14.9	-0.2
MIDA	**Miranda**	**3.74**	**224**	Pn		**Pn**	17 17 15.9	+0.6
	comp=Z,171nm,0.4s							
MIDA	**Miranda**	**3.74**	**224**	Pn		**Pn**	17 17 15.9	+0.6
	comp=Z,171nm,0.4s							
AQU	**L'Aquila**	**3.75**	**239**	*e*Pn		**Pn**	17 17 16.3	+0.9
CESI	**CESI - Serrava**	**3.76**	**250**	Pn		**Pn**	17 17 16.8	+1.2
	comp=Z,88nm,0.5s							
CESI	**CESI - Serrava**	**3.76**	**250**	Pn		**Pn**	17 17 16.8	+1.2
	comp=Z,88nm,0.5s							
RM29	**Verrico (Monte**	**3.76**	**243**	Pn		**Pn**	17 17 17.2	+1.5
RM29	**Verrico (Monte**	**3.76**	**243**	Pn		**Pn**	17 17 17.2	+1.5
CONA	**Conrad Observa**	**3.78**	**341**	*i* Pn		**Pn**	17 17 16.7	+0.8
	comp=Z,36nm,0.3s,SNR=42							
CONA				*e*Sn		**Sn**	17 18 01.6	+0.8
	comp=Z,54nm,0.4s							
CONA	**Conrad Observa**	**3.78**	**341**	Pn		**Pn**	17 17 16.7	+0.8
	comp=Z,36nm,0.3s,SNR=42							
CONA				Sn		**Sn**	17 18 01.6	+0.8
	comp=Z,54nm,0.4s							
MATE	**Matera**	**3.80**	**192**	Pn		**Pn**	17 17 15.8	-0.2
	comp=Z,416nm,0.9s							
MATE	**Matera**	**3.80**	**192**	⇓*i* P		**Pn**	17 17 16.3	+0.3
MATE	**Matera**	**3.80**	**192**	S		**Sn**	17 17 58.9	-2.1
MATE	**Matera**	**3.80**	**192**	Pn		**Pn**	17 17 15.8	-0.2
	comp=Z,416nm,0.9s							
MATE	**Matera**	**3.80**	**192**	⇓*i* P		**Pn**	17 17 16.3	+0.3
PSB1	**Pescosannita**	**3.81**	**215**	Pn		**Pn**	17 17 17.4	+1.1
	comp=Z,131nm,1.1s							
PSB1	**Pescosannita**	**3.81**	**215**	Pn		**Pn**	17 17 17.4	+1.1
	comp=Z,131nm,1.1s							
CAFE	**Carife**	**3.82**	**210**	Pn		**Pn**	17 17 17.1	+0.7
	comp=Z,658nm,1.6s							
CAFE	**Carife**	**3.82**	**210**	Pn		**Pn**	17 17 17.1	+0.7
	comp=Z,658nm,1.6s							
PTRJ	**Pietraroja**	**3.82**	**219**	Pn		**Pn**	17 17 17.3	+0.9
	comp=Z,461nm,0.7s							
PTRJ	**Pietraroja**	**3.82**	**219**	Pn		**Pn**	17 17 17.3	+0.9
	comp=Z,461nm,0.7s							
ACER	**Acerenza**	**3.82**	**201**	Pn		**Pn**	17 17 17.1	+0.7
	comp=Z,399nm,0.6s							
ACER	**Acerenza**	**3.82**	**201**	Pn		**Pn**	17 17 17.1	+0.7
	comp=Z,399nm,0.6s							
LTRZ	**Laterza**	**3.83**	**190**	Pn		**Pn**	17 17 15.9	-0.6
	comp=Z,163nm,0.4s							
LTRZ	**Laterza**	**3.83**	**190**	Pn		**Pn**	17 17 15.9	-0.6
	comp=Z,163nm,0.4s							
MRB1	**Monte Rocchett**	**3.83**	**213**	Pn		**Pn**	17 17 17.8	+1.3
	comp=Z,311nm,0.7s							
MRB1	**Monte Rocchett**	**3.83**	**213**	Pn		**Pn**	17 17 17.8	+1.3
	comp=Z,311nm,0.7s							
PIEI	**Pieia**	**3.84**	**259**	Pn		**Pn**	17 17 17.5	+0.8
	comp=Z,121nm,0.3s							
PIEI	**Pieia**	**3.84**	**259**	Pn		**Pn**	17 17 17.5	+0.8
	comp=Z,121nm,0.3s							
LNSS	**Leonessa**	**3.85**	**244**	Pn		**Pn**	17 17 18.1	+1.3
	comp=Z,293nm,0.6s							
LNSS	**Leonessa**	**3.85**	**244**	Pn		**Pn**	17 17 18.1	+1.3
	comp=Z,293nm,0.6s							
PSZ	**Piszkesteto**	**3.85**	**22**	⇓*i* P		**Pn**	17 17 16.6	-0.2
PSZ	**Piszkesteto**	**3.85**	**22**	⇓*i* P		**Pn**	17 17 16.6	-0.2
TAR1	**Taranto**	**3.86**	**185**	*e*Pn		**Pn**	17 17 17.9	+1.0
CERA	**Filignano**	**3.89**	**226**	Pn		**Pn**	17 17 18.9	+1.5
	comp=Z,306nm,0.9s							
CERA	**Filignano**	**3.89**	**226**	Pn		**Pn**	17 17 18.9	+1.5
	comp=Z,306nm,0.9s							
VVLD	**Villa Vallelon**	**3.91**	**232**	Pn		**Pn**	17 17 18.9	+1.2
VVLD	**Villa Vallelon**	**3.91**	**232**	Pn		**Pn**	17 17 18.9	+1.2
SNAL	**S. Angelo Dei**	**3.92**	**209**	Pn		**Pn**	17 17 18.1	+0.3
	comp=Z,238nm,0.7s							
SNAL	**S. Angelo Dei**	**3.92**	**209**	Pn		**Pn**	17 17 18.1	+0.3
	comp=Z,238nm,0.7s							
VAGA	**Valle Agricola**	**3.92**	**222**	Pn		**Pn**	17 17 19.4	+1.6
	comp=Z,253nm,0.6s							
VAGA	**Valle Agricola**	**3.92**	**222**	Pn		**Pn**	17 17 19.4	+1.6
	comp=Z,253nm,0.6s							
SRE	**Strehaia**	**3.93**	**84**	⇓*i* P		**Pn**	17 17 19.2	+1.4
SRE	**Strehaia**	**3.93**	**84**	⇓*i* P		**Pn**	17 17 19.2	+1.4
SRE				S		**Sn**	17 18 06.0	+1.9
DEV	**Deva**	**3.96**	**66**	⇑*i* P		**Pn**	17 17 18.2	0.0
DEV	**Deva**	**3.96**	**66**	⇑*i* P		**Pn**	17 17 18.2	0.0
DEV				S		**Sn**	17 18 02.9	-2.0
OHR	**Ohrid**	**3.97**	**144**	*i* Pn		Pn	17 17 22.6	+4.1
OHR	**Ohrid**	**3.97**	**144**	*i* Pn		Pn	17 17 22.5	+4.1
MRLC	**Muro Lucano**	**3.98**	**205**	Pn		**Pn**	17 17 18.6	0.0
	comp=Z,172nm,0.8s							
MRLC	**Muro Lucano**	**3.98**	**205**	Pn		**Pn**	17 17 18.6	0.0
	comp=Z,172nm,0.8s							
KBA	**Koelnbreinsper**	**4.09**	**313**	*i* Pn		**Pn**	17 17 21.8	+1.6
	comp=Z,12nm,0.3s,SNR=12							
KBA				*e*Sn		**Sn**	17 18 07.8	-0.7
	comp=Z,51nm,0.6s							
KBA	**Koelnbreinsper**	**4.09**	**313**	Pn		**Pn**	17 17 21.8	+1.6
	comp=Z,12nm,0.3s,SNR=12							
KBA				Sn		**Sn**	17 18 07.8	-0.7
	comp=Z,51nm,0.6s							
SMOL	**Smolenice**	**4.14**	**357**	*e*PN		**Pn**	17 17 21.6	+0.8
SMOL				*e*SN		**Sn**	17 18 09.7	+0.2
VYHS	**Vyhne**	**4.19**	**10**	*e*PN		**Pn**	17 17 22.3	+0.9
VYHS				*e*SN		**Sn**	17 18 09.8	-0.9
MOA	**Molln**	**4.23**	**326**	*i* Pn		**Pn**	17 17 23.6	+1.6
	comp=Z,66nm,0.3s,SNR=62							
MOA				*i* Sn		**Sn**	17 18 12.3	+0.7
	comp=Z,120nm,0.5s							
MOA	**Molln**	**4.23**	**326**	Pn		**Pn**	17 17 23.6	+1.6
	comp=Z,66nm,0.3s,SNR=62							
MOA				Sn		**Sn**	17 18 12.3	+0.7
	comp=Z,120nm,0.5s							
DRGR		**4.25**	**54**	⇓*i* P		**Pn**	17 17 23.0	+0.7
DRGR		**4.25**	**54**	⇓*i* P		**Pn**	17 17 23.0	+0.7
ABTA	**Abfaltersbach**	**4.37**	**305**	*i* Pn		**Pn**	17 17 25.8	+1.9
	comp=Z,18nm,0.5s,SNR=13							
ABTA

OJC	**Ojcow**	**6.01**	**13**	*e*Pn	**Pn**	**17 17 48.2**	**+1.7**
OJC				*e*Sn	**Sn**	**17 18 53.6**	**-2.0**
PRU	**Pruhonice**	**6.02**	**340**	*e*PN	**Pn**	**17 17 47.1**	**+0.5**
PRU				*ex*	x	17 17 55.8	
PRU	**Pruhonice**	**6.02**	**340**	*e*Pn	**Pn**	**17 17 47.1**	**+0.5**
DPC	**Dobruska-Polom**	**6.05**	**351**	*e*PN	**Pn**	**17 17 47.8**	**+0.7**
DPC	**Dobruska-Polom**	**6.05**	**351**	Pn	**Pn**	**17 17 47.8**	**+0.7**
BURAR	**Bucovina Array**	**6.14**	**56**⇃	*j*P	**Pn**	**17 17 48.1**	**-0.2**
BURAR	**Bucovina Array**	**6.14**	**56**⇃	*j*P	**Pn**	**17 17 48.1**	**-0.2**
DAVA	**Damuels**	**6.21**	**301**	*i* Pn	**Pn**	**17 17 50.0**	**+0.7**
	comp=Z,2.8nm,0.3s						
DAVA	**Damuels**	**6.21**	**301**	Pn	**Pn**	**17 17 50.0**	**+0.7**
	comp=Z,2.8nm,0.3s						
PCP	**Piancastagn**	**6.58**	**275**	P	**Pn**	**17 17 53.9**	**-0.4**
PGF	**Pioggiola**	**6.61**	**257**	*e*Pn	**Pn**	**17 17 54.6**	**-0.2**
PGF				*e*Sn	**Sn**	**17 19 06.8**	**-3.7**
	comp=Z,12nm,0.5s						
IMI	**Imperia**	**7.09**	**270**	P	**Pn**	**17 18 00.7**	**-0.7**
SPAK	**Spaichingen-Ko**	**7.24**	**304**	P	**Pn**	**17 18 03.9**	**+0.6**
NEGI	**Seborga**	**7.24**	**269**	P	**Pn**	**17 18 02.6**	**-0.7**
SBF	**Sospel**	**7.43**	**270**	*e*Pn	**Pn**	**17 18 05.0**	**-1.0**
SBF				*e*Sn	**Sn**	**17 19 26.2**	**-4.3**
	comp=Z,46nm,0.7s						
SBF	**Sospel**	**7.43**	**270**	*e*Pn	**Pn**	**17 18 05.0**	**-1.0**
CFR	**Carcaliu**	**7.45**	**80**⇑	*i*P	**Pn**	**17 18 06.9**	**+0.8**
CFR	**Carcaliu**	**7.45**	**80**	S	**Sn**	**17 19 28.5**	**-2.4**
CFR	**Carcaliu**	**7.45**	**80**⇑	*i*P	**Pn**	**17 18 06.9**	**+0.8**
STV	**Sant Anna di V**	**7.47**	**273**	P	**Pn**	**17 18 06.1**	**-0.4**
FELD	**Feldberg im Sc**	**7.61**	**301**	P	**Pn**	**17 18 08.9**	**+0.4**
CLL	**Collm**	**7.63**	**337**	*e*Pn	**Pn**	**17 18 10.0**	**+1.4**
CLL				*e*Sn	Sn	17 19 23.0	-12
CLL				*e*		17 19 35.0	
CLL				*e*Sb	**Sb**	**17 19 59.0**	**-1.7**
CLL				*e*Sg	**Sg**	**17 20 23.0**	**+1.2**
BBS	**Basel-Blauen**	**7.77**	**297**	P	**Pn**	**17 18 11.2**	**+0.6**
RRL	**Rocca Remolon**	**7.82**	**278**	P	**Pn**	**17 18 11.2**	**-0.3**
MBDF	**Montbardon**	**7.84**	**276**	*e*Pn	**Pn**	**17 18 10.1**	**-1.6**
MBDF				*e*Sn	**Sn**	**17 19 36.1**	**-4.6**
	comp=Z,32nm,0.7s						
LPG	**La Plagne**	**7.87**	**282**	*e*Pn	**Pn**	**17 18 12.2**	**-0.1**
LPG				*e*Sn	**Sn**	**17 19 36.7**	**-5.0**
	comp=Z,35nm,0.6s						
LPG	**La Plagne**	**7.87**	**282**	*e*Pn	**Pn**	**17 18 12.2**	**-0.1**
LPL	**La Plagne**	**7.89**	**282**	*e*Pn	**Pn**	**17 18 12.2**	**-0.2**
LPL				*e*Sn	**Sn**	**17 19 37.0**	**-5.0**
	comp=Z,56nm,0.9s						
LPL	**La Plagne**	**7.89**	**282**	*e*Pn	**Pn**	**17 18 12.2**	**-0.2**
TOD	**Tromm**	**8.04**	**314**	P	**Pn**	**17 18 15.1**	**+0.9**
FRF	**La Foret Royal**	**8.04**	**268**	*e*Pn	**Pn**	**17 18 13.5**	**-0.8**
FRF				*e*Sn	**Sn**	**17 19 40.7**	**-4.7**
	comp=Z,22nm,0.7s						
FRF	**La Foret Royal**	**8.04**	**268**	*e*Pn	**Pn**	**17 18 13.5**	**-0.8**
MOF	**Molkenrain**	**8.14**	**299**	P	**Pn**	**17 18 16.0**	**+0.2**
MOF	**Molkenrain**	**8.14**	**299**	P	**Pn**	**17 18 16.0**	**+0.2**
LMR	**La Mourre**	**8.18**	**267**	*e*Pn	**Pn**	**17 18 15.4**	**-0.8**
LMR				*e*Sn	**Sn**	**17 19 43.9**	**-4.9**
	comp=Z,7.2nm,0.6s						
LMR	**La Mourre**	**8.18**	**267**	*e*Pn	**Pn**	**17 18 15.4**	**-0.8**
WLS	**Welschbruch**	**8.23**	**303**	P	**Pn**	**17 18 17.1**	**+0.2**
WLS	**Welschbruch**	**8.23**	**303**	P	**Pn**	**17 18 17.1**	**+0.2**
KTD	**Kalmit**	**8.26**	**310**	P	**Pn**	**17 18 18.9**	**+1.6**
ECH	**Echery**	**8.27**	**301**	P	**Pn**	**17 18 18.2**	**+0.8**
ECH	**Echery**	**8.27**	**301**	P	**Pn**	**17 18 18.2**	**+0.8**
CDF	**Champ du Feu**	**8.28**	**303**	*e*Pn	**Pn**	**17 18 16.6**	**-1.0**
CDF	**Champ du Feu**	**8.28**	**303**	*e*Pn	**Pn**	**17 18 16.6**	**-1.0**
HINF	**Hinteralfeld**	**8.31**	**298**	*e*Pn	**Pn**	**17 18 17.2**	**-0.8**
HINF				*e*Sn	**Sn**	**17 19 46.9**	**-5.1**
	comp=Z,11nm,0.5s						
HINF	**Hinteralfeld**	**8.31**	**298**	*e*Pn	**Pn**	**17 18 17.2**	**-0.8**
ORIF	**Oris-en-Rattie**	**8.47**	**278**	*e*Pn	**Pn**	**17 18 19.9**	**-0.4**
ORIF				*e*Sn	**Sn**	**17 19 50.8**	**-5.3**
	comp=Z,68nm,0.9s						
ORIF	**Oris-en-Rattie**	**8.47**	**278**	*e*Pn	**Pn**	**17 18 19.9**	**-0.4**
CABF	**La Chapelle**	**8.48**	**289**	*e*Pn	**Pn**	**17 18 19.7**	**-0.7**
CABF				*e*Sn	**Sn**	**17 19 50.9**	**-5.5**
	comp=Z,26nm,0.9s						
CABF	**La Chapelle**	**8.48**	**289**	*e*Pn	**Pn**	**17 18 19.7**	**-0.7**
HAU	**Haudompre**	**8.69**	**299**	*e*Pn	**Pn**	**17 18 22.3**	**-0.9**
HAU				*e*Sn	**Sn**	**17 19 55.7**	**-5.7**
	comp=Z,13nm,0.5s						
HAU	**Haudompre**	**8.69**	**299**	*e*Pn	**Pn**	**17 18 22.3**	**-0.9**
SMRF	**Simiane la Rot**	**8.75**	**272**	*e*Pn	**Pn**	**17 18 23.5**	**-0.5**
SMRF				*e*Sn	**Sn**	**17 19 57.6**	**-5.3**
	comp=Z,36nm,1.2s						
SMRF	**Simiane la Rot**	**8.75**	**272**	*e*Pn	**Pn**	**17 18 23.5**	**-0.5**
ABF	**Alteburg**	**8.86**	**312**	P	**Pn**	**17 18 26.9**	**+1.4**
RUP	**Ruppelstein**	**9.02**	**310**	P	**Pn**	**17 18 29.6**	**+1.8**
PAGF	**Fort de Pagny**	**9.28**	**301**	*e*Pn	**Pn**	**17 18 30.3**	**-0.9**
PAGF	**Fort de Pagny**	**9.28**	**301**	*e*Pn	**Pn**	**17 18 30.3**	**-0.9**
VIVF	**Saint-Julien-l**	**9.33**	**278**	*e*Pn	**Pn**	**17 18 30.8**	**-1.2**
VIVF				*e*Sn	**Sn**	**17 20 11.5**	**-5.7**
	comp=Z,7.6nm,0.5s						
VIVF	**Saint-Julien-l**	**9.33**	**278**	*e*Pn	**Pn**	**17 18 30.8**	**-1.2**
SFTF	**Sexfontaines**	**9.58**	**298**	*e*Pn	**Pn**	**17 18 34.3**	**-1.1**
SFTF	**Sexfontaines**	**9.58**	**298**	*e*Pn	**Pn**	**17 18 34.3**	**-1.1**
MEZF	**Maizieres J'vi**	**9.68**	**300**	*e*Pn	**Pn**	**17 18 35.4**	**-1.3**
	baz=117						
MEZF	**Maizieres J'vi**	**9.68**	**300**	*e*Pn	**Pn**	**17 18 35.4**	**-1.3**
LASF	**Ste Croix**	**9.97**	**273**	*e*Pn	**Pn**	**17 18 40.1**	**-0.6**
LASF				*e*Sn	Sn	17 20 26.7	-6.1
	comp=Z,8.5nm,0.8s						
LASF	**Ste Croix**	**9.97**	**273**	*e*Pn	**Pn**	**17 18 40.1**	**-0.6**
SMF	**Signal de Mont**	**10.01**	**288**	*e*Pn	**Pn**	**17 18 40.5**	**-0.8**
SMF				*e*Sn	Sn	17 20 27.5	-6.4
	comp=Z,14nm,0.7s						
SMF	**Signal de Mont**	**10.01**	**288**	*e*Pn	**Pn**	**17 18 40.5**	**-0.8**
PLDF	**La Plantade**	**10.09**	**284**	P	**Pn**	**17 18 43.0**	**+0.5**
PLDF	**La Plantade**	**10.09**	**284**	P	**Pn**	**17 18 43.0**	**+0.5**
LOR	**Lormes**	**10.11**	**292**	*e*Pn	**Pn**	**17 18 41.7**	**-0.9**
	baz=111						
LOR				*e*Sn	Sn	17 20 29.6	-6.6
	comp=Z,9.2nm,0.6s						
LOR	**Lormes**	**10.11**	**292**	*e*Pn	**Pn**	**17 18 41.7**	**-0.9**
SSF	**Saint Saulge**	**10.30**	**290**	*e*Pn	**Pn**	**17 18 44.3**	**-1.0**
SSF				*e*Sn	Sn	17 20 34.5	-6.6
	comp=Z,6.1nm,0.6s						
SSF	**Saint Saulge**	**10.30**	**290**	*e*Pn	**Pn**	**17 18 44.3**	**-1.0**
LBL	**Lubilhac**	**10.33**	**280**	P	**Pn**	**17 18 45.7**	**-0.1**
LBL	**Lubilhac**	**10.33**	**280**	P	**Pn**	**17 18 45.7**	**-0.1**
AVF	**Avril sur Loir**	**10.37**	**289**	*e*Pn	**Pn**	**17 18 45.2**	**-0.9**
AVF				*e*Sn	Sn	17 20 36.1	-6.4
	comp=Z,6.4nm,0.8s						
AVF	**Avril sur Loir**	**10.37**	**289**	*e*Pn	**Pn**	**17 18 45.2**	**-0.9**
AGO	**Saint Agoulin**	**10.44**	**284**	P	**Pn**	**17 18 47.0**	**-0.2**
AGO	**Saint Agoulin**	**10.44**	**284**	P	**Pn**	**17 18 47.0**	**-0.2**
GIVF	**Givet**	**10.47**	**308**	*e*Pn	**Pn**	**17 18 46.4**	**-1.2**
GIVF	**Givet**	**10.47**	**308**	*e*Pn	**Pn**	**17 18 46.4**	**-1.2**
IDI	**Anoyia**	**10.61**	**146**	Pn	**Pn**	**17 18 50.4**	**+0.8**
	comp=Z,0.4nm,0.3s,baz=331,slow=14,SNR=4.5						
BGF	**Bois d'Agland**	**10.68**	**287**	*e*Pn	**Pn**	**17 18 49.5**	**-1.0**
BGF				*e*Sn	Sn	17 20 43.7	-6.6
	comp=Z,6.9nm,0.4s						
BGF	**Bois d'Agland**	**10.68**	**287**	*e*Pn	**Pn**	**17 18 49.5**	**-1.0**
KEST	**Kesra**	**10.76**	**219**	Pn	Pn	17 18 55.8	+4.2
	comp=Z,0.2nm,0.3s,baz=309,slow=6.5,SNR=2.8						
BAIF	**Baives**	**10.81**	**307**	*e*Pn	**Pn**	**17 18 50.8**	**-1.3**
BAIF	**Baives**	**10.81**	**307**	*e*Pn	**Pn**	**17 18 50.8**	**-1.3**
TCF	**Toulx Ste Croi**	**11.10**	**285**	*e*Pn	**Pn**	**17 18 55.3**	**-0.9**
TCF				*e*Sn	Sn	17 20 53.4	-7.1
	comp=Z,9.8nm,0.8s						
TCF	**Toulx Ste Croi**	**11.10**	**285**	*e*Pn	**Pn**	**17 18 55.3**	**-0.9**
CAF	**Calviac**	**11.18**	**278**	*e*Pn	**Pn**	**17 18 56.4**	**-0.9**
CAF	**Calviac**	**11.18**	**278**	*e*Pn	**Pn**	**17 18 56.4**	**-0.9**
MTLF	**Montolieu**	**11.25**	**270**	*e*Pn	**Pn**	**17 18 57.5**	**-0.8**
MTLF				*e*Sn	Sn	17 20 57.5	-6.8
	comp=Z,0.6nm,0.4s						
MTLF	**Montolieu**	**11.25**	**270**	*e*Pn	**Pn**	**17 18 57.5**	**-0.8**
RJF	**Les Rejaudoux**	**11.55**	**280**	*e*Pn	**Pn**	**17 19 01.4**	**-1.0**
RJF	**Les Rejaudoux**	**11.55**	**280**	*e*Pn	**Pn**	**17 19 01.4**	**-1.0**
LFF	**La Frestale**	**12.12**	**279**	*e*Pn	**Pn**	**17 19 09.2**	**-0.9**
LFF	**La Frestale**	**12.12**	**279**	*e*Pn	**Pn**	**17 19 09.2**	**-0.9**
EPF	**Esparros**	**12.66**	**270**	*e*Pn	**Pn**	**17 19 16.7**	**-0.9**
EPF				*e*Sn	Sn	17 21 31.2	-7.6
	comp=Z,1.3nm,0.5s						
EPF	**Esparros**	**12.66**	**270**	*e*Pn	**Pn**	**17 19 16.7**	**-0.9**
BRTR	**Keskin Array B**	**12.70**	**106**	Pn	Pn	17 19 22.9	+4.7
	comp=Z,0.1nm,0.3s,baz=323,slow=5.3,SNR=4.1						
HFS	**Hagfors**	**15.97**	**353**	Pn	**Pn**	**17 20 02.7**	**+0.7**
	comp=Z,0.1nm,0.3s,baz=159,slow=12,SNR=4.4						
ESDC	**Sonseca Array**	**16.78**	**261**	Pn	**Pn**	**17 20 12.7**	**+0.1**
	comp=Z,0.0nm,0.3s,baz=64,slow=12,SNR=7.4						
EKA	**Eskdalemuir Ar**	**17.29**	**317**	P	**P**	**17 20 22.0**	**+1.6**
	baz=306,slow=10,SNR=4.5						
FINES	**FINESS Array B**	**17.80**	**13**	P	**Pn**	**17 20 25.3**	**+0.3**
	comp=Z,0.3nm,0.3s,baz=192,slow=11,SNR=9.8						
MMAI	**Mount Meron Ar**	**17.82**	**124**	P	**P**	**17 20 27.0**	**+0.6**
	comp=Z,0.7nm,0.3s,baz=327,slow=7.4,SNR=5.5						
GNI	**Garni**	**20.39**	**93**	P	Pn	17 20 57.7	+1.0
	comp=Z,3.4nm,0.6s,baz=300,slow=3.9,SNR=3.3						
MDT	**Midelt**	**20.86**	**244**	P	P	17 20 53.6	-6.1
	comp=Z,3.3nm,0.7s,baz=250,slow=6.2,SNR=5.4						
TORD	**Torodi Ar. Bea**	**34.01**	**209**	P	**P**	**17 23 00.8**	**-0.9**
	comp=Z,0.3nm,0.5s,baz=21,slow=8.4,SNR=3.6						
NRIK	**Noril'sk**	**42.32**	**30**	P	P	17 24 14.7	+3.5
	comp=Z,2.6nm,0.5s,baz=241,slow=3.4,SNR=4.1						
DBIC	**Dimbokro**	**42.43**	**214**	P	**P**	**17 24 11.1**	**-1.4**
	comp=Z,2.2nm,0.8s,baz=35,slow=6.4,SNR=3.6						
ZALV	**Zalesovo Beam**	**43.35**	**52**	P	**P**	**17 24 20.0**	**+0.4**
	comp=Z,0.8nm,0.8s,baz=285,slow=7.3,SNR=2.3						
MKAR	**Makanchi Array**	**44.11**	**63**	P	**P**	**17 24 26.3**	**+0.4**
	comp=Z,0.4nm,0.9s,baz=276,slow=4.2,SNR=5.1						
YKA	**Yellowknife Ar**	**66.86**	**338**	P	**P**	**17 27 09.1**	**-0.1**
	comp=Z,0.6nm,1.0s,baz=34,slow=6.6,SNR=7.0						
ILAR	**Eielson Array**	**70.53**	**353**	P	**P**	**17 27 33.2**	**+1.1**
	comp=Z,0.2nm,0.7s,baz=4.8,slow=3.3,SNR=3.5						
CMAR	**Chiang Mai Arr**	**71.14**	**82**	P	**P**	**17 27 38.6**	**+2.0**
	comp=Z,0.3nm,0.6s,baz=297,slow=6.0,SNR=4.3						
PDAR	**Pinedale Array**	**81.28**	**324**	P	**P**	**17 28 35.1**	**+0.9**
	comp=Z,0.1nm,0.4s,baz=64,slow=8.1,SNR=2.3						
TXAR	**Lajitas Array**	**89.23**	**312**	P	**P**	**17 29 15.1**	**+1.1**
	comp=Z,0.7nm,0.8s,baz=39,slow=6.4,SNR=6.5						
JCJ	**Chichijima**	**92.63**	**47**	LR	LR	18 13 33.5	
	comp=Z,47nm,20.6s,baz=339,slow=37						

JMA 16 17:24:25.4±0.5,**35.55N**×**142.69E**,**h0**km,**M3.5**,**Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
BSO1	**Boso 1**	**1.66**	**238**	P	Pn	17 24 55.4	+0.1
BSO3	**Boso 3**	**1.94**	**248**	P	Pb	17 25 00.9	-0.5
JHU	**Hanno**	**2.79**	**277**	P	Pn	17 25 13.4	+2.1
JYN	**Shimob**	**3.38**	**270**	*e*S	Sn	17 26 03.6	+3.2

MEX 16 17:26:14.9±0.5,**16.84N**×**100.74W**,**h20**km±51km,**MD3.5**, **Near coast of Guerrero**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CAIG	**El Cayaco**	**0.50**	**65**	*e*P	Pb	17 26 23.4	-1.7
CAIG				*e*S	Sb	17 26 29.1	-2.8
ZIIG	**Zihuatanejo**	**1.03**	**318**	*e*P	Pb	17 26 30.8	-3.3
ZIIG				*i* S	Sb	17 26 42.7	-4.5
ARIG	**Puente Sto Nin**	**1.49**	**15**	*e*P	Pn	17 26 37.5	-3.0
ARIG				*i* S	Sn	17 26 55.0	-4.4
MEIG	**Mezcala**	**1.52**	**44**	*e*P	Pn	17 26 39.3	-1.8

BJI **16** *17:30:46.0,11.61N×143.40E,h27km,mb4.7/47,mB4.9/35, Ms4.4/25,Ms7 4.2/24*

IDC **16** *17:30:48.2±0.4,12.02N×143.01E,h0km,mb4.6/34, mb1 4.7/35,mb1mx4.6/52,mbtmp4.6/35,ML5.1/1,MS3.8/21, Ms1 3.8/21,ms1mx3.7/43,Error ellipse: s-maj=15.5km s-min=9.1km az=85.0*

MOS **16** *17:30:51.6±1.0,12.01N×142.92E,h37km,mb5.1/38,Error ellipse: s-maj=9.6km s-min=5.3km az=98.1*

NEIC **16** *17:30:51.8±1.9,12.01N×143.01E,h25km±13km,mb5.0/99, Error ellipse: s-maj=4.1km s-min=3.3km az=92.0*

GCMT **16** *17:30:51.8±0.4,11.93N×142.85E,h25km±1km,MW4.8/56, Moment Tensor Solution. s24,c27; s56,c81; Duration: 0 Moment tensor: Scale 10^16Nm; Mrr1.95±.16; Mθθ-1.84±.10; Mϕϕ-0.11±.10; Mrθ0.63±.17; Mθϕ0.15±.07; Mϕr0.71±.26; Best double couple: Mo2.10600×10^16 NP1:ϕs77.00000°,δ56.00000°,λ70.00000°. NP2: ϕs290.00000°,δ39.00000°,λ117.00000°. Principal axes: T 2.2710, Plg71.0000°, Azm298.0000°; N -0.3340, Plg17.0000°, Azm88.0000°; P -1.9420, Plg9.0000°, Azm181.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

ISCJB **16** *17:30:51.6±0.2,12.02N±0.03×142.98E±0.03,h33km, mb4.8/153,MS3.9/24 Error ellipse: s-maj=4.4km s-min=4.0km az=153.1*

DJA **16** *17:30:56.4±0.8,12°N±5°×14°3E±°,h72km±12km,M4.8/13, mB5.2/2,mb4.7/13,MLv4.9/1,Mw(mB)4.6/2*

ISC 16 17:30:52.3±0.6,**12.04N**±0.04×**143.08E**±0.05,**h28**km±3km, **n308**,σ1§**17**/343,**mb4.9**/153,**MS3.9**/26,**9C-3D**,**South of Mariana Islands**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
GUMO	**Guam**	**2.33**	**48**	Pn	**Pn**	**17 31 30.1**	**+1.3**
	458nm,0.3s,baz=49,slow=2.6,SNR=130						
GUMO				Sn	**Sn**	**17 31 59.5**	**+2.9**
	326nm,0.3s,baz=54,slow=23,SNR=11						
GUMO				LR	LR	17 32 31.8	
	comp=Z,2μm,18.4s,baz=228,slow=43						
GUMO	**Guam**	**2.33**	**48**	*e*P	**Pn**	**17 31 29.9**	**+1.1**
GUMO				*e*		17 31 52.0	
GUMO	**Guam**	**2.33**	**48**	*e*Pn	**Pn**	**17 31 29.9**	**+1.1**
GUMO				*e*Sn	**Sn**	**17 31 52.0**	**-4.6**
GENI	**Genyem**	**14.82**	**191**	P	**Pn**	**17 34 22.2**	**+2.0**
	45nm,1.6s						
CBIJ	**Chichi jima**	**15.00**	**357**	*e*Pn	Pn	17 34 15.7	-6.8
	57nm,0.7s						
JCJ	**Chichijima**	**15.00**	**357**	Pn	**P**	**17 34 29.5**	**+1.8**
	6.2nm,0.3s,baz=232,slow=19,SNR=3.8						
JCJ				LR	LR	17 37 48.9	
	comp=Z,72nm,21.6s,baz=196,slow=28						
PATS	**Pohnpei**	**15.89**	**108**	*e*Pn	**Pn**	**17 34 30.9**	**-3.2**
	123nm,1.3s						
SIJI	**Sorong**	**17.38**	**223**	Pn	**P**	**17 34 57.2**	**+3.1**
	21nm,0.3s,baz=181,slow=18,SNR=3.9						
DAV	**Davao City (W)**	**17.95**	**256**	LR	LR	17 40 00.1	
	comp=Z,189nm,21.6s,baz=318,slow=31						
RABL	**Rabaul**	**18.48**	**150**	*e*P	**P**	**17 35 06.1**	**-0.2**
	39nm,0.7s						
JOW	**Kunigami**	**20.25**	**319**	*e*P	**P**	**17 35 25.5**	**-0.1**
	50nm,1.0s						
JHJ	**Hachijo jima 2**	**21.20**	**352**	LR	LR	17 42 35.4	
	comp=Z,394nm,18.4s,baz=122,slow=33						
PMG	**Port Moresby**	**21.69**	**169**	P	**P**	**17 35 39.7**	**-1.4**
	7.5nm,0.5s,baz=128,slow=6.6,SNR=8.6						
PMG				LR	LR	17 44 05.0	
	comp=Z,221nm,18.4s,baz=338,slow=37						
PMG	**Port Moresby**	**21.69**	**169**⇑	*e*P	**P**	**17 35 40.5**	**-0.6**
PMG				pmax	pmax		
	comp=Z,80nm,1.1s						
PMG	**Port Moresby**	**21.69**	**169**	*e*P	**P**	**17 35 39.8**	**-1.4**
	comp=Z,24nm,0.8s						
YULB	**Yu-li**	**23.58**	**302**	*e*P	**P**	**17 36 01.5**	**+0.6**
	comp=Z,48nm,1.5s						
H11S3	**WAKE ISLAND Hy**	**23.65**	**71**	T	T	18 00 38.4	
	baz=257,slow=75,SNR=13						
H11S1	**WAKE ISLAND Hy**	**23.66**	**71**	T	T	18 00 42.3	
	baz=257,slow=75,SNR=10						
H11S2	**WAKE ISLAND Hy**	**23.66**	**71**	T	T	18 00 38.7	
	baz=257,slow=75,SNR=14						
NACB	**Ninganchiao**	**23.68**	**304**	*e*P	**P**	**17 36 00.8**	**-1.0**
	comp=Z,27nm,1.0s						
JNU	**Nakatsue**	**23.77**	**334**	P	**P**	**17 36 03.1**	**+0.4**
	comp=Z,21nm,0.6s,baz=199,slow=5.5,SNR=19						
JNU				LR	LR	17 44 00.4	
	comp=Z,231nm,20.1s,baz=144,slow=33						
JNU	**Nakatsue**	**23.77**	**334**	*e*P	**P**	**17 36 03.0**	**+0.3**
	comp=Z,28nm,0.8s						
INU	**Inuyama**	**23.85**	**348**	*e*P	**P**	**17 36 04.1**	**+0.9**
	comp=Z,12nm,0.9s						
MRSI	**Marisa**	**23.91**	**243**	P	**P**	**17 36 04.5**	**+0.4**
	comp=Z,31nm,1.1s,comp=Z,2μm						
SSLB	**Suanglung**	**24.04**	**302**	*e*P	**P**	**17 36 04.9**	**-0.4**
	comp=Z,30nm,0.7s						
YHNB	**Yeheng**	**24.08**	**304**	*e*P	**P**	**17 36 04.5**	**-1.2**
	comp=Z,75nm,1.2s						
TPUB	**Ta-pu**	**24.11**	**301**	*e*P	**P**	**17 36 04.5**	**-1.3**
	comp=Z,42nm,1.3s						
H11N1	**WAKE ISLAND Hy**	**24.12**	**69**	T	T	18 01 16.1	
	baz=255,slow=75,SNR=12						
H11N2	**WAKE ISLAND Hy**	**24.13**	**69**	T	T	18 01 15.9	
	baz=255,slow=75,SNR=23						
H11N3	**WAKE ISLAND Hy**	**24.14**	**69**	T	T	18 01 18.3	
	baz=255,slow=75,SNR=19						
MJAR	**Matsushiro Arr**	**24.79**	**351**	P	**P**	**17 36 10.9**	**-1.0**
	comp=Z,3.3nm,0.6s,baz=172,slow=9.7,SNR=26						
MJAR				PcP	**PcP**	**17 39 49.0**	**+0.9**
	comp=Z,1.8nm,0.6s,baz=188,slow=2.8,SNR=5.4						
MAJO	**Matsushiro**	**24.79**	**351**⇃	*e*P	**P**	**17 36 12.5**	**+0.5**
MAJO				pmax	pmax		
	comp=Z,73nm,0.7s						
MAJO	**Matsushiro**	**24.79**	**351**	*e*P	**P**	**17 36 11.2**	**-0.8**
	comp=Z,13nm,0.8s						
MJB9	**Matsu-Tunnel**	**24.79**	**351**	*e*P	**P**	**17 36 11.2**	**-0.8**
	comp=Z,3.2nm,0.7s						
APSI	**Ampana**	**24.87**	**240**	P	**P**	**17 36 14.4**	**+1.5**
	comp=Z,26nm,1.0s						
MYLDM	**Lahad Datu**	**25.22**	**256**	*e*P	**P**	**17 36 17.5**	**+1.4**
	comp=Z,40nm,1.0s						
COEN	**Coen**	**25.83**	**180**	*e*P	**P**	**17 36 20.5**	**-1.0**
	comp=Z,29nm,1.4s						
HNR	**Honiara**	**27.13**	**141**	P	**P**	**17 36 34.4**	**+1.1**
	comp=Z,17nm,0.5s,baz=200,slow=8.1,SNR=3.8						
HNR				LR	LR	17 48 00.2	
	comp=Z,134nm,18.4s,baz=311,slow=38						
KSRS	**Korea Array**	**28.72**	**334**	P	**P**	**17 36 47.0**	**-0.2**
	comp=Z,2.0nm,0.6s,baz=149,slow=9.4,SNR=9.2						
KSRS				PcP	**PcP**	**17 39 58.2**	**+0.9**
	comp=Z,1.1nm,0.7s,baz=142,slow=3.2,SNR=5.1						
KSRS				LR	LR	17 47 59.4	
	comp=Z,133nm,18.2s,baz=180,slow=36						
KS15	**Wonju Array Si**	**28.73**	**334**	*e*P	**P**	**17 36 47.0**	**-0.3**
KSAR	**Wonju Array Be**	**28.73**	**334**	P	**P**	**17 36 47.1**	**-0.3**
KSAR						17 39 58.2	
KSAR	**Wonju Array Be**	**28.73**	**334**	P	**P**	**17 36 47.0**	**-0.3**
KSAR				PcP	**PcP**	**17 39 58.2**	**+0.8**
ERM	**Erimo**	**29.86**	**0**⇑	*e*P	**P**	**17 36 57.3**	**0.0**
ERM				pmax	pmax		
	comp=Z,63nm,1.1s						
NJ2	**Nanjing**	**29.88**	**316**	*e*P	**P**	**17 36 58.4**	**+0.7**
NJ2				pmax	pmax		
	comp=Z,11nm,0.7s						
ASAJ	**Asahikawa**	**31.97**	**359**	P	**P**	**17 37 16.2**	**+0.3**
	comp=Z,20nm,1.1s,baz=173,slow=19,SNR=4.0						
ASAJ	**Asahikawa**	**31.97**	**359**	*e*P	**P**	**17 37 16.1**	**+0.3**
	comp=Z,248nm,1.9s						
SBUM	**Sibu**	**32.02**	**255**	*e*P	**P**	**17 37 16.7**	**-0.1**
	comp=Z,21nm,1.5s						
CTA	**Charters Tower**	**32.08**	**174**	P	**P**	**17 37 16.8**	**-0.3**
	comp=Z,4.4nm,0.6s,baz=356,slow=11,SNR=7.4						
CTAO	**Charters Tower**	**32.08**	**174**	*e*P	**P**	**17 37 16.7**	**-0.4**
CTAO				pmax	pmax		
	comp=Z,18nm,1.4s						
CTAO	**Charters Tower**	**32.08**	**174**	*e*P	**P**	**17 37 16.7**	**-0.4**
	comp=Z,18nm,1.4s						
QIZ	**Qiongzhong**	**32.73**	**286**	P	**P**	**17 37 21.6**	**-1.3**
QIZ				S	**S**	**17 42 38.0**	**-0.1**
QIZ				LR	LR		
	comp=Z,90nm,12.4s						
QIZ				LR	LR		
	comp=Z,41nm

CD2	**Chengdu**	**40.85**	**304**	P	**P**	**17 38 32.1**	**+0.1**
CD2				sP	sP	17 38 42.6	-1.0
CD2				PP	**PP**	**17 40 06.5**	**0.0**
CD2				S	**S**	**17 44 42.4**	**+0.6**
CD2				sS	sS	17 44 55.0	-0.4
CD2				SS	**SS**	**17 47 43.8**	**+0.2**
CD2				pmax	pmax		
	comp=Z,30nm,0.5s						
CD2				pmax	pmax		
	comp=Z,70nm,4.8s						
CD2				LR	LR		
	comp=Z,200nm,12.5s						
CD2				LR	LR		
	comp=Z,240nm,17.8s						
DZM	**Mont Dzumac**	**40.92**	**146**	P	**P**	**17 38 33.1**	**+0.4**
	comp=Z,14nm,0.5s,baz=229,slow=6.1,SNR=22						
DZM				LR	LR	17 52 39.5	
	comp=Z,196nm,21.9s,baz=286,slow=32						
NKL	**Nikolayevsk**	**41.05**	**358**	*e*P	**P**	**17 38 32.8**	**-0.4**
IPM	**Ipoh**	**42.24**	**263**	*e*P	**P**	**17 38 43.8**	**+0.2**
	comp=Z,15nm,1.2s						
KULM	**Kulim**	**42.44**	**265**	*e*P	**P**	**17 38 45.5**	**+0.3**
	comp=Z,23nm,1.3s						
PETK	**Petropavlovsk-**	**42.60**	**13**	P	**P**	**17 38 46.7**	**+0.7**
	comp=Z,3.7nm,1.0s,baz=171,slow=9.8,SNR=3.8						
PETK				PcP	**PcP**	**17 40 38.1**	**+0.3**
	comp=Z,1.4nm,0.5s,baz=158,slow=3.9,SNR=9.1						
PETK				LR	LR	17 54 26.2	
	comp=Z,164nm,20.1s,baz=205,slow=33						
PEA1	**Petropavlovsk-**	**42.61**	**13**	*e*P	**P**	**17 38 46.7**	**+0.7**
PEA1				*e*PcP	**PcP**	**17 40 38.1**	**+0.3**
LZH	**Lanzhou**	**42.67**	**311**	*e*P	**P**	**17 38 47.9**	**+1.0**
LZH				pP	pP	17 38 53.8	-1.4
LZH				sP	sP	17 38 57.6	-1.0
LZH				pmax	pmax		
	comp=Z,15nm,1.0s						
CM01	**Chiang Mai Arr**	**42.96**	**284**	*e*P	**P**	**17 38 49.0**	**-0.3**
CM31	**Chiang Mai Arr**	**42.97**	**284**	*e*P	**P**	**17 38 50.0**	**+0.5**
CMAR	**Chiang Mai Arr**	**42.97**	**284**	P	**P**	**17 38 50.1**	**+0.6**
	comp=Z,2.7nm,0.5s,baz=85,slow=6.4,SNR=59						
CMAR				PcP	**PcP**	**17 40 41.1**	**+1.3**
	comp=Z,2.0nm,0.6s,baz=83,slow=1.7,SNR=12						
CMAR				LR	LR	17 55 38.4	
	comp=Z,146nm,19.3s,baz=126,slow=35						
STKA	**Stephens Creek**	**43.69**	**182**	P	**P**	**17 38 53.2**	**-1.7**
	comp=Z,2.3nm,0.4s,baz=3.6,slow=6.9,SNR=13						
STKA				LR	LR	17 58 03.4	
	comp=Z,84nm,19.3s,baz=21,slow=38						
STKA	**Stephens Creek**	**43.69**	**182**	*e*P	**P**	**17 38 53.2**	**-1.7**
STKA				pmax	pmax		
	comp=Z,1.0nm,0.8s						
STKA	**Stephens Creek**	**43.69**	**182**	*e*P	**P**	**17 38 53.2**	**-1.7**
	comp=Z,1.0nm,0.8s						
PSI	**Prapat**	**44.67**	**262**	P	**P**	**17 39 02.5**	**-0.8**
	comp=Z,4.7nm,0.6s,baz=100,slow=13,SNR=4.6						
PSI	**Prapat**	**44.67**	**262**	*e*P	**P**	**17 39 03.3**	**0.0**
PSI				pmax	pmax		
	comp=Z,10.0nm,0.9s						
PSI	**Prapat**	**44.67**	**262**	*e*P	**P**	**17 39 03.3**	**0.0**
	comp=Z,9.5nm,0.9s						
BBOO	**Buckleboo**	**45.10**	**188**	*e*P	**P**	**17 39 05.6**	**-0.6**
	comp=Z,17nm,0.9s						
KCSI	**Kotacane, Aceh**	**45.62**	**263**	P	**P**	**17 39 10.1**	**-0.6**
	comp=Z,20nm,0.8s						
ULN	**Ulaanbaatar**	**46.69**	**327**‖	*e*P	**P**	**17 39 19.2**	**+0.4**
ULN				pmax	pmax		
	comp=Z,4.0nm,1.0s						
ULN	**Ulaanbaatar**	**46.69**	**327**	*e*P	**P**	**17 39 18.7**	**-0.1**
	comp=Z,4.3nm,1.0s						
GTA	**Gaotai**	**46.93**	**313**	*e*P	**P**	**17 39 21.3**	**+0.5**
GTA				pP	pP	17 39 28.3	-0.9
GTA				sP	sP	17 39 31.6	-0.9
GTA				PcP	**PcP**	**17 40 54.1**	**+0.9**
GTA				S	**S**	**17 46 10.5**	**+0.1**
GTA				sS	sS	17 46 22.9	-1.3
GTA				SS	**SS**	**17 49 30.4**	**-6.9**
GTA				pmax	pmax		
	comp=Z,6.0nm,1.0s						
GTA				pmax	pmax		
	comp=Z,61nm,4.9s						
GTA				LR	LR		
	comp=Z,120nm,14.7s						
GTA				LR	LR		
	comp=Z,180nm,19.4s						
GTA				LR	LR		
	comp=Z,210nm,18.1s						
SONA0	**Songino Array**	**47.02**	**327**	*e*P	**P**	**17 39 21.8**	**+0.4**
SONA0				*e*PcP	**PcP**	**17 40 53.7**	**+0.3**
SONM	**Songino Array**	**47.02**	**327**	P	**P**	**17 39 21.8**	**+0.4**
	comp=Z,2.4nm,0.6s,baz=145,slow=7.2,SNR=9.8						
SONM				PcP	**PcP**	**17 40 53.7**	**+0.3**
	comp=Z,2.0nm,0.7s,baz=129,slow=3.5,SNR=5.9						
SONM				LR	LR	17 59 36.3	
	comp=Z,172nm,18.8s,baz=87,slow=37						
SONA1	**Songino Array**	**47.02**	**327**	*e*P	**P**	**17 39 21.2**	**-0.3**
SONA1				*e*PcP	**PcP**	**17 40 52.9**	**-0.4**
MA2	**Magadan**	**47.79**	**5**	P	**P**	**17 39 27.6**	**+0.6**
	comp=Z,5.8nm,0.7s,baz=198,slow=20,SNR=2.5						
MA2				LR	LR	17 57 55.2	
	comp=Z,53nm,22.0s,baz=258,slow=34						
ZAK	**Zakamensk**	**50.18**	**328**	*e*P	**P**	**17 39 45.3**	**-0.3**
ZAK				pmax	pmax		
	comp=Z,7.0nm,1.1s						
BOD	**Bodaibo**	**50.76**	**340**	*e*P	**P**	**17 39 47.3**	**-2.4**
BOD				pmax	pmax		
	comp=Z,2.0nm,1.1s						
TLY	**Talaya**	**50.76**	**329**	P	**P**	**17 39 50.6**	**+0.7**
	comp=Z,1.9nm,0.6s,baz=156,slow=10.0						
TLY	**Talaya**	**50.76**	**329**	*e*P	**P**	**17 39 50.5**	**+0.6**
TLY				pmax	pmax		
	comp=Z,3.0nm,0.8s						
YAK	**Yakutsk**	**50.84**	**352**	P	**P**	**17 39 49.8**	**-0.4**
	comp=Z,10nm,0.5s,baz=159,slow=1.9,SNR=7.5						
YAK	**Yakutsk**	**50.84**	**352**	*e*P	**P**	**17 39 50.3**	**0.0**
YAK				pmax	pmax		
	comp=Z,23nm,0.9s						
YAK				pmax	pmax		
	comp=N,11nm,1.1s						
YAK	**Yakutsk**	**50.84**	**352**	*e*P	**P**	**17 39 49.5**	**-0.8**
	comp=N,23nm,0.9s						
NWAO	**Narrogin (SRO)**	**51.07**	**208**	P	**P**	**17 39 52.2**	**-0.2**
	comp=N,4.2nm,0.7s,baz=103,slow=0.3,SNR=4.3						
NWAO	**Narrogin (SRO)**	**51.07**	**208**	*e*P	**P**	**17 39 52.1**	**-0.3**
NWAO				pmax	pmax		
	comp=Z,37nm,1.5s						
NWAO	**Narrogin (SRO)**	**51.07**	**208**	*e*P	**P**	**17 39 52.1**	**-0.3**
	comp=Z,37nm,1.5s						
SEY	**Seymchan**	**51.25**	**5**	P	**P**	**17 39 54.0**	**+0.7**
	comp=Z,2.1nm,0.5s,baz=174,slow=10,SNR=7.3						
SEY				PcP	**PcP**	**17 41 09.4**	**+1.2**
	comp=Z,1.6nm,0.6s,baz=239,slow=1.9,SNR=2.9						
MOY	**Mondy**	**52.10**	**328**	*e*P	**P**	**17 40 00.9**	**+0.9**
GUN	**Gumba**	**55.56**	**296**	*e*P	**P**	**17 40 25.4**	**-0.7**
	comp=Z,26nm,0.7s						
PKIN	**Phulchoki**	**55.97**	**295**	*e*P	**P**	**17 40 27.7**	**-1.2**
	comp=Z,5.1nm,0.5s						
KKN	**Kakani**	**56.08**	**295**	*e*P	**P**	**17 40 29.2**	**-0.4**
	comp=Z,8.3nm,0.7s						
GKN	**Gorkha**	**56.66**	**296**	*e*P	**P**	**17 40 32.9**	**-0.8**
	comp=Z,16nm,0.6s						
WMQ	**Urumqi**	**56.96**	**315**	P	**P**	**17 40 35.6**	**+0.2**
WMQ				pP	pP	17 40 42.3	-1.7
WMQ				sP	sP	17 40 47.6	+0.3
WMQ				PcP	**PcP**	**17 41 29.9**	**-0.6**
WMQ				pmax	pmax		
	comp=Z,4.0nm,0.6s						
WMQ				pmax	pmax		
	comp=Z,54nm,5.2s						
WMQ				LR	LR		
	comp=Z,51nm,20.4s						
WMQ				LR	LR		
	comp=Z,52nm,20.4s						
WMQ				LR	LR		
	comp=Z,76nm,20.4s						
KOLN	**Koldanda**	**57.57**	**295**	*e*P	**P**	**17 40 39.9**	**-0.3**
	comp=Z,9.5nm,0.7s						
BILL	**Bilibino**	**57.98**	**10**	*ce*P	**P**	**17 40 42.1**	**0.0**
BILL				*e*PPP	PPP	17 44 10.0	
BILL				*e*S	S	17 48 58.9	+18
BILL				pmax	pmax		
	comp=Z,3.0nm,1.0s						
BILL	**Bilibino**	**57.98**	**10**	*e*P	**P**	**17 40 41.7**	**-0.4**
	comp=Z,4.1nm,0.4s						
PYUN	**Piuthan**	**58.12**	**296**	*e*P	**P**	**17 40 43.8**	**-0.3**
	comp=Z,43nm,0.9s						
TIXI	**Tiksi**	**60.20**	**355**	P	**P**	**17 40 56.5**	**-1.0**
	comp=Z,2.6nm,0.4s,baz=169,slow=5.8,SNR=6.1						
TIXI	**Tiksi**	**60.20**	**355**‖	*e*P	**P**	**17 40 56.4**	**-1.0**
TIXI				pmax	pmax		
	comp=Z,1.0nm,0.5s						
TIXI	**Tiksi**	**60.20**	**355**	*e*P	**P**	**17 40 56.2**	**-1.1**
	comp=Z,4.1nm,0.5s						
GAMB	**Gambell**	**60.54**	**21**	*e*P	**P**	**17 41 00.6**	**+0.8**
	comp=Z,8.1nm,1.2s						
SDPT	**Sand Point**	**61.38**	**33**	*e*P	**P**	**17 41 06.1**	**+0.4**
	comp=Z,24nm,0.6s						
MK01	**Makanchi Array**	**61.39**	**317**	*e*P	**P**	**17 41 05.8**	**-0.2**
MK31	**Makanchi Array**	**61.40**	**317**	*e*P	**P**	**17 41 06.1**	**0.0**
MK31	**Makanchi Array**	**61.40**	**317**	*e*P	**P**	**17 41 06.1**	**0.0**
MK32	**Makanchi Array**	**61.40**	**317**	*e*P	**P**	**17 41 06.3**	**+0.2**
MKAR	**Makanchi Array**	**61.40**	**317**	P	**P**	**17 41 06.3**	**+0.2**
	comp=Z,2.4nm,0.6s,baz=96,slow=7.9,SNR=26						
MKAR				LR	LR	18 09 34.6	
	comp=Z,78nm,18.0s,baz=104,slow=38						
MAKZ	**Makanchi**	**61.62**	**317**	*e*P	**P**	**17 41 07.6**	**+0.1**
MAKZ				pmax	pmax		
	comp=Z,5.0nm,0.8s						
MAKZ	**Makanchi**	**61.62**	**317**	*e*P	**P**	**17 41 07.6**	**+0.1**
	comp=Z,4.6nm,0.8s						
ZAA0	**Zalesovo Array**	**61.88**	**325**	*e*P	**P**	**17 41 07.9**	**-1.1**
ZAA0				*e*PcP	**PcP**	**17 41 48.0**	**-1.8**
ZAA0				*e*PcP	**PcP**	**17 41 48.2**	**-1.6**
ZALV	**Zalesovo Beam**	**61.88**	**325**	P	**P**	**17 41 08.6**	**-0.5**
	comp=Z,3.0nm,0.5s,baz=112,slow=7.3,SNR=23						
ZALV				PcP	**PcP**	**17 41 48.8**	**-1.0**
	comp=Z,3.1nm,0.6s,baz=134,slow=3.8,SNR=8.0						
ZAA1	**Zalesovo Array**	**61.88**	**325**	*e*P	**P**	**17 41 08.6**	**-0.5**
ZAA1				*e*PcP	**PcP**	**17 41 48.8**	**-1.0**
PDGK	**Podgornoye**	**62.66**	**313**	P	**P**	**17 41 15.4**	**+0.9**
PDGK				pmax	pmax		
	comp=Z,5.0nm,1.6s						
CHGN	**Chignik**	**62.81**	**32**	*e*P	**P**	**17 41 14.6**	**-0.7**
NVS	**Novosibirsk**	**63.04**	**326**	*e*P	**P**	**17 41 17.0**	**+0.2**
NVS				pmax	pmax		
	comp=Z,8.0nm,1.1s						
NVS				pmax	pmax		
	comp=E,6.0nm,1.2s						
KURK	**Kurchatov**	**64.65**	**321**	*e*P	**P**	**17 41 28.1**	**+0.6**
KURK				pmax	pmax		
	comp=Z,11nm,0.6s						
KSH	**Kashi**	**64.80**	**308**	P	**P**	**17 41 31.6**	**+2.7**
KSH				*e*pP	sP	17 41 39.5	-1.4
KSH				*e*ScP		17 46 04.1	
KSH				S	**S**	**17 50 10.5**	**+2.1**
KSH				ScS	**ScS**	**17 51 23.8**	**+1.6**
KSH				pmax	pmax		
	comp=Z,120nm,3.9s						
KSH				LR	LR		
	comp=Z,170nm,5.5s						
KSH				LR	LR		
	comp=Z,87nm,5.3s						
KSH				LR	LR		
	comp=Z,220nm,6.3s						
OHAK	**Old Harbor**	**65.78**	**32**	*e*P	**P**	**17 41 35.4**	**+0.7**
	comp=Z,18nm,1.3s						
SVW2	**Sparrevohn**	**65.85**	**28**	*e*P	**P**	**17 41 35.9**	**+0.7**
	comp=Z,13nm,0.6s						
AAK	**Ala-Archa**	**66.20**	**311**‖	*e*P	**P**	**17 41 37.5**	**-0.5**
AAK				pmax	pmax		
	comp=Z,3.0nm,1.1s						
TT01	**Tatalina**	**66.29**	**26**	*e*P	**P**	**17 41 38.4**	**+0.4**
KDAK	**Kodiak Island**	**66.30**	**32**	*i* P	**P**	**17 41 38.4**	**+0.4**
TTA	**Tatalina**	**66.30**	**26**	*e*P	**P**	**17 41 38.3**	**+0.2**
TTA				pmax	pmax		
	comp=Z,13nm,1.3s						
TTA	**Tatalina**	**66.30**	**26**	*e*P	**P**	**17 41 38.3**	**+0.2**
	comp=Z,13nm,1.3s						
SFK	**Sufi-Kurgan**	**66.74**	**308**	P	**P**	**17 41 41.1**	**-0.4**
SFK				pmax	pmax		
	comp=Z,4.0nm,0.6s						
RSO	**Redoubt South**	**66.97**	**29**	*e*P	**P**	**17 41 42.4**	**-0.1**
NRIK	**Noril'sk**	**67.03**	**341**	P	**P**	**17 41 42.2**	**-0.3**
	comp=Z,5.6nm,0.5s,baz=121,slow=7.2,SNR=7.3						
SPU	**Mount Spurr**	**67.50**	**28**	*e*P	**P**	**17 41 45.6**	**-0.2**
BRLK	**Bradley Lake**	**67.68**	**30**	*e*P	**P**	**17 41 46.3**	**-0.5**
	comp=Z,39nm,0.4s						
PPLA	**Purkeypile**	**67.95**	**27**	*e*P	**P**	**17 41 48.9**	**+0.2**
	comp=Z,16nm,0.6s						
CAST	**Castle Rocks**	**68.15**	**26**	*e*P	**P**	**17 41 50.0**	**+0.3**
	comp=Z,24nm,0.6s						
OTUK	**Ortayu**	**68.29**	**317**	P	**P**	**17 41 51.8**	**+0.8**
OTUK				pmax	pmax		
	comp=Z,6.0nm,1.1s						
SEW	**Seward**	**68.46**	**30**	*e*P	**P**	**17 41 51.5**	**-0.2**
	comp=Z,26nm,0.6s						
RC01	**Rabbit Creek A**	**68.56**	**29**	*e*P	**P**	**17 41 52.0**	**-0.4**
	comp=Z,61nm,0.5s						
KTH	**Kantishna Hill**	**68.69**	**26**	*e*P	**P**	**17 41 53.2**	**+0.1**
	comp=Z,18nm,0.8s						
BPAW	**Bear Paw Mtn.**	**68.81**	**25**	*e*P	**P**	**17 41 53.9**	**0.0**
	comp=Z,15nm,0.8s						
TRF	**Thorofare Moun**	**68.93**	**26**	*e*P	**P**	**17 41 53.8**	**-1.0**
	comp=Z,14nm,0.7s						
PMR	**Palmer**	**68.97**	**28**	*e*P	**P**	**17 41 54.2**	**-0.6**
PMR				pmax	pmax		
	comp=Z,32nm,0.6s						
PMR	**Palmer**	**68.97**	**28**	*e*P	**P**	**17 41 54.2**	**-0.6**
	comp=Z,32nm,0.6s						
KK31	**Karatay Array**	**69.16**	**312**	P	**P**	**17 41 55.7**	**-0.7**
KK31				pmax	pmax		
	comp=Z,3.0nm,1.0s						
KKAR	**Karatay Array**	**69.16**	**312**	*e*P	**P**	**17 41 56.2**	**-0.3**
KKAR	**Karatay Array**	**69.16**	**312**	*e*P	**P**	**17 41 56.2**	**-0.3**
MLY	**Manley**	**69.19**	**25**	*e*P	**P**	**17 41 56.7**	**+0.5**
	comp=Z,16nm,0.6s						
SML	**Sawmill**	**69.39**	**28**	*e*P	**P**	**17 41 57.4**	**-0.2**
SML				pmax	pmax		
	comp=Z,48nm,0.6s						
SML	**Sawmill**	**69.39**	**28**	*e*P	**P**	**17 41 57.4**	**-0.2**
	comp=Z,48nm,0.6s						
RND	**Reindeer**	**69.54**	**26**	*e*P	**P**	**17 41 57.9**	**-0.6**
RND				pmax	pmax		
	comp=Z,14nm,0.6s						
RND	**Reindeer**	**69.54**	**26**	*e*P	**P**	**17 41 57.9**	**-0.6**
	comp=Z,14nm,0.6s						
MCK	**McKinley**	**69.59**	**26**	*e*P	**P**	**17 41 58.2**	**-0.5**
MCK				pmax	pmax		
	comp=Z,9.0nm,0.8s						
MCK	**McKinley**	**69.59**	**26**	*e*P	**P**	**17 41 58.1**	**-0.5**
	comp=Z,9.1nm,0.8s						
VOSK	**Vostochnaya**	**69.67**	**322**	*e*P	**P**	**17 41 58.7**	**-0.7**
VOSK				pmax	pmax		
	comp=Z,9.0nm,1.5s						
VOSK	**Vostochnaya**	**69.67**	**322**	*e*P	**P**	**17 41 58.7**	**-0.7**
	comp=Z,9.3nm,1.5s						
SCM	**Sheep Creek Mo**	**69.86**	**28**	*e*P	**P**	**17 42 00.5**	**0.0**
SCM				pmax	pmax		
	comp=Z,31nm,0.7s						
SCM	**Sheep Creek Mo**	**69.86**	**28**	*e*P	**P**	**17 42 00.5**	**0.0**
	comp=Z,31nm,0.7s						
COLD	**Coldfoot**	**70.04**	**22**	*e*P	**P**	**17 42 02.6**	**+1.3**
	comp=Z,34nm,1.3s						
BVA0	**Borovoye Array**	**70.06**	**322**	*i* P	**P**	**17 42 01.4**	**-0.4**
BVA0				pmax	pmax		
	comp=Z,5.0nm,0.6s						
DHY	**Denali Highway**	**70.11**	**27**	*e*P	**P**	**17 42 02.2**	**+0.1**
	comp=Z,11nm,0.5s						
BRVK	**Borovoye**	**70.13**	**322**	*c i*P	**P**	**17 42 02.0**	**-0.2**
BRVK				pmax	pmax		
	comp=Z,8.0nm,1.0s						
BRVK	**Borovoye**	**70.13**	**322**	*e*P	**P**	**17 42 01.5**	**-0.7**
	comp=Z,9.0nm,1.0s						
WRH	**Wood River Hil**	**70.13**	**25**	*e*P	**P**	**17 42 01.5**	**-0.5**
	comp=Z,13nm,0.7s						
MDM	**Murphy Dome**	**70.19**	**25**	*e*P	**P**	**17 42 02.4**	**0.0**
	comp=Z,11nm,0.7s						
CCB	**Clear Creek Bu**	**70.29**	**25**	*e*P	**P**	**17 42 02.2**	**-0.7**
	comp=Z,7.2nm,0.8s						
COLA	**College**	**70.33**	**25**	*e*P	**P**	**17 42 03.1**	**-0.1**
COLA				pmax	pmax		
	comp=Z,8.0nm,0.8s						
COLA	**College**	**70.33**	**25**	*e*P	**P**	**17 42 03.1**	**-0.1**
	comp=Z,7.9nm,0.8s						
EYAK	**Cordova Ski Ar**	**70.36**	**30**	*e*P	**P**	**17 42 03.7**	**+0.3**
	comp=Z,29nm,0.6s						
KLU	**Klutina**	**70.45**	**29**	*e*P	**P**	**17 42 04.4**	**+0.3**
	comp=Z,25nm,0.6s						
DIV	**Divide**	**70.45**	**29**	*e*P	**P**	**17 42 04.0**	**-0.1**
	comp=Z,27nm,0.6s						
IL1	**Eielson Array**	**70.71**	**25**	*e*P	**P**	**17 42 04.5**	**-1.0**
ILAR	**Eielson Array**	**70.71**	**25**	P	**P**	**17 42 04.5**	**-1.0**
	comp=Z,10.0nm,0.5s,baz=249,slow=6.1,SNR=164						
ILB	**Eielson Array**	**70.71**	**25**	*e*P	**P**	**17 42 04.3**	**-1.2**
RAGM	**Ragged Mountai**	**70.85**	**30**	*e*P	**P**	**17 42 06.8**	**+0.3**
	comp=Z,19nm,0.6s						
ZRNK	**Zerenda**	**70.89**	**322**	P	**P**	**17 42 04.9**	**-1.9**
ZRNK				pmax	pmax		
	comp=Z,10.0nm,1.1s						
ZRNK	**Zerenda**	**70.89**	**322**	*e*P	**P**	**17 42 06.4**	**-0.4**
	comp=Z,7.6nm,1.0s						
PAX	**Paxson**	**70.94**	**27**	*e*P	**P**	**17 42 07.3**	**+0.2**
PAX				pmax	pmax		
	comp=Z,19nm,0.6s						
PAX	**Paxson**	**70.94**	**27**	*e*P	**P**	**17 42 07.2**	**+0.2**
	comp=Z,19nm,0.6s						
BMRM	**Bremner River**	**70.98**	**29**	*e*P	**P**	**17 42 07.7**	**+0.3**
	comp=Z,21nm,0.7s						
CRQM	**Cirque**	**71.66**	**30**	*e*P	**P**	**17 42 11.8**	**+0.3**
DOT	**Dot Lake**	**71.69**	**27**	*e*P	**P**	**17 42 11.4**	**-0.1**
	comp=Z,62nm,0.7s						
MENT	**Mentasta**	**71.72**	**27**	*e*P	**P**	**17 42 12.1**	**+0.4**
	comp=Z,9.2nm,0.6s						
FYU	**Fort Yukon**	**71.77**	**24**	*e*P	**P**	**17 42 12.9**	**+1.1**
	comp=Z,19nm,0.8s						
BALM	**Baldy**	**72.08**	**30**	*e*P	**P**	**17 42 14.1**	**+0.1**
BALM				pmax	pmax		
	comp=Z,16nm,0.6s						
BALM	**Baldy**	**72.08**	**30**	*e*P	**P**	**17 42 14.1**	**+0.1**
	comp=Z,16nm,0.6s						
EGAK	**Eagle**	**73.12**	**26**	*e*P	**P**	**17 42 20.4**	**+0.5**
	comp=Z,6.4nm,0.7s						
SKAG	**Skagway**	**75.45**	**31**	*e*P	**P**	**17 42 34.7**	**+1.1**
	comp=Z,13nm,1.0s						
INK	**Inuvik**	**76.46**	**22**	*e*P	**P**	**17 42 39.2**	**0.0**
INK				pmax	pmax		
	comp=Z,5.0nm,0.8s						
INK	**Inuvik**	**76.46**	**22**	*e*P	**P**	**17 42 39.2**	**0.0**
	comp=Z,5.3nm,0.8s						
AB31	**Akbulak array**	**76.52**	**318**	*i* P	**P**	**17 42 39.1**	**-0.8**
AB31				pmax	pmax		
	comp=Z,3.0nm,0.5s						
ABKAR	**Akbulak array**	**76.52**	**318**	*e*P	**P**	**17 42 38.9**	**-1.0**
ARU	**Arti**	**77.04**	**325**	*c i*P	**P**	**17 42 41.5**	**-1.2**
ARU						17 45 32.8	
ARU				S	**S**	**17 52 29.2**	**-0.3**
ARU				SS	**SS**	**17 57 24.0**	**-2.6**
ARU				pmax	pmax		
	comp=Z,10.0nm,1.7s						
ARU	**Arti**	**77.04**	**325**	*e*P	**P**	**17 42 41.8**	**-1.0**
	comp=Z,8.2nm,1.2s						
WRAK	**Wrangell Islan**	**77.07**	**35**	*e*P	**P**	**17 42 44.0**	**+1.2**
	comp=Z,14nm,0.6s						
DLBC	**Dease Lake**	**78.22**	**32**	*e*P	**P**	**17 42 50.2**	**+0.8**
	comp=Z,8.6nm,0.8s						
GEYT	**Alibeck**	**78.77**	**307**	P	**P**	**17 42 52.9**	**+0.1**
	comp=Z,2.1nm,0.7s,baz=64,slow=3.4,SNR=5.1						
B05A	**Bryant**	**84.31**	**42**	P	**P**	**17 43 23.1**	**+1.3**
	baz=282						
YKW3	**Yellowknife Ar**	**85.00**	**27**	*e*P	**P**	**17 43 24.6**	**-0.4**
	comp=Z,6.0nm,0.7s						
YKA	**Yellowknife Ar**	**85.03**	**27**	P	**P**	**17 43 25.4**	**+0.2**
	comp=Z,4.6nm,0.5s,baz=286,slow=5.1,SNR=83						
YKB5	**Yellowknife Ar**	**85.03**	**27**	*e*P	**P**	**17 43 24.9**	**-0.2**
N02D	**Trinity Center**	**85.36**	**49**	P	**P**	**17 43 28.9**	**+1.5**
	baz=282						
LTY	**Liberty**	**85.46**	**43**	*e*P	**P**	**17 43 28.3**	**+0.6**
	comp=Z,18nm,1.3s						
KLMR	**Klimovskoe**	**86.08**	**332**	*e*P	**P**	**17 43 27.6**	**-2.8**
KLMR				pmax	pmax		
	comp=Z,17nm,1.5s						
B08A	**Colville Reser**	**86.09**	**42**	*e*P	**P**	**17 43 31.5**	**+0.7**
	comp=Z,14nm,0.6s						
D08A	**Wollman Farm,**	**86.67**	**43**	*e*P	**P**	**17 43 34.5**	**+0.9**
	comp=Z,20nm,1.4s						
C09A	**Chrisman Ranch**	**86.91**	**42**	*e*P	**P**	**17 43 35.3**	**+0.5**
	comp=Z,24nm,1.4s						
MOD	**Modoc Plateau**	**86.92**	**48**	*e*P	**P**	**17 43 35.5**	**+0.3**
	comp=Z,9.6nm,1.4s						
NEW	**Newport**	**87.54**	**41**	P	**P**	**17 43 38.8**	**+0.9**
	baz=285						
NEW	**Newport**	**87.54**	**41**	*e*P	**P**	**17 43 38.6**	**+0.7**
NEW				pmax	pmax		
	comp=Z,15nm,1.3s						
NEW	**Newport**	**87.54**	**41**	*e*P	**P**	**17 43 38.6**	**+0.7**
	comp=Z,15nm,1.3s						
VRH	**Novokhopyorsk**	**87.71**	**322**	*e*P	**P**	**17 43 36.0**	**-2.6**
VRH				pmax	pmax		
	comp=Z,10.0nm,0.5s						
WVOR	**Wild Horse Val**	**88.00**	**47**	*e*P	**P**	**17 43 41.4**	**+1.1**
WVOR				pmax	pmax		
	comp=Z,11nm,1.4s						
WVOR	**Wild Horse Val**	**88.00**	**47**	*e*P	**P**	**17 43 41.4**	**+1.1**
	comp=Z,11nm,1.4s						
ARA0	**ARCESS Array S**	**88.01**	**342**	*e*P	**P**	**17 43 39.1**	**-0.5**
ARCES	**ARCESS Array B**	**88.01**	**342**	P	**P**	**17 43 39.1**	**-0.5**
	comp=Z,5.2nm,0.5s,baz=70,slow=6.9,SNR=63						
ARCES				LR	LR	18 26 52.2	
	comp=Z,83nm,19.3s,baz=59,slow=38						
WAKR	**Walker**	**88.37**	**51**	*e*P	**P**	**17 43 41.8**	**-0.4**
LPSR	**Galich'ya Gora**	**88.95**	**324**	*e*P	**P**	**17 43 42.8**	**-1.6**
LPSR				pmax	pmax		
	comp=Z,9.0nm,0.7s						
BSMT	**Bassoo Peak**	**89.16**	**41**	*e*P	**P**	**17 43 47.2**	**+1.5**
VSR	**Storoz

BELC	**Belle Mtn. Jos** baz=286	**92.22**	**55**	P		**P**	**17 44 01.3**	**+1.1**
GMRC	**Granite Mounta** baz=286	**92.27**	**54**	P		**P**	**17 44 02.3**	**+1.9**
YMR	**Madison River** comp=Z,6.0nm,0.7s	**92.68**	**43**	*e*P		**P**	**17 44 03.2**	**+0.9**
MLI	**Malad Range**	**92.75**	**46**	*e*P		**P**	**17 44 04.7**	**+2.1**
BC3	**Big Chuckawall** baz=286	**92.75**	**55**	P		**P**	**17 44 04.0**	**+1.4**
DUG	**Dugway, Tooele** baz=288	**92.83**	**48**	P		**P**	**17 44 04.1**	**+1.1**
IRM	**Iron Mountain** baz=287	**92.85**	**54**	P		**P**	**17 44 04.3**	**+1.3**
IMW	**Indian Meadow** comp=Z,2.6nm,0.6s	**92.95**	**44**	*e*P		**P**	**17 44 04.2**	**+0.6**
H17A	**Grant Village** baz=290	**93.03**	**44**	P		**P**	**17 44 06.7**	**+2.8**
H17A	**Grant Village** comp=Z,9.4nm,1.3s	**93.03**	**44**	*e*P		**P**	**17 44 06.0**	**+2.1**
FLWY	**Flagg Ranch** comp=Z,4.4nm,0.6s	**93.05**	**44**	*e*P		**P**	**17 44 05.2**	**+1.2**
MOOW	**Moose Ponds** comp=Z,6.5nm,1.5s	**93.14**	**44**	*e*P		**P**	**17 44 05.6**	**+1.2**
GLA	**Glamis** baz=287	**93.42**	**55**	P		**P**	**17 44 07.1**	**+1.5**
Y12C	**Blythe** baz=287	**93.46**	**55**	P		**P**	**17 44 06.4**	**+0.6**
PDMCI	**Parker Dam,Lak** baz=287	**93.61**	**54**	P		**P**	**17 44 07.9**	**+1.5**
RLMT	**Red Lodge** baz=291	**93.65**	**43**	P		**P**	**17 44 08.4**	**+1.7**
FFC	**Flin Flon** comp=Z,5.0nm,0.9s	**94.04**	**32**	*e*P		**P**	**17 44 08.5**	**+0.5**
FFC					pmax	pmax		
FFC	**Flin Flon** comp=Z,4.9nm,0.9s	**94.04**	**32**	*e*P		**P**	**17 44 08.5**	**+0.5**
BW06	**Boulder Array** baz=291	**94.29**	**45**	P		**P**	**17 44 10.1**	**+0.4**
BW06	**Boulder Array**	**94.29**	**45**	*e*P		**P**	**17 44 09.5**	**-0.2**
PD31	**Pinedale Array**	**94.29**	**45**	*e*P		**P**	**17 44 09.8**	**+0.1**
PDAR	**Pinedale Array** comp=Z,0.4nm,0.5s,baz=230,slow=0.7,SNR=8.8	**94.29**	**45**	P		**P**	**17 44 10.0**	**+0.3**
214A	**Organ Pipe Nat** baz=288	**95.37**	**56**	P		**P**	**17 44 15.2**	**+0.6**
FCC	**Fort Churchill** comp=Z,4.0nm,0.8s	**95.71**	**26**	*e*P		**P**	**17 44 15.2**	**-0.3**
FCC					pmax	pmax		
FCC	**Fort Churchill** comp=Z,3.9nm,0.8s	**95.71**	**26**	*e*P		**P**	**17 44 15.2**	**-0.3**
BRTR	**Keskin Array B** comp=Z,26nm,18.9s,baz=56,slow=38	**96.84**	**313**	LR		LR	18 32 52.5	
NB2	**NORSAR Subarra** comp=Z,1.3nm,0.6s,baz=47,slow=4.6	**97.86**	**339**	P		**P**	**17 44 23.4**	**-1.9**
NB2	**NORSAR Subarra** baz=47,slow=4.6	**97.86**	**339**	P		**P**	**17 44 23.4**	**-1.9**
NB200	**NORSAR Array S**	**97.86**	**339**	*e*P		**P**	**17 44 23.6**	**-1.7**
NOA	**NORSAR Array B** comp=Z,1.1nm,0.6s,baz=49,slow=4.8,SNR=4.8	**97.86**	**339**	P		**P**	**17 44 23.6**	**-1.7**
LTX	**Lajitas**	**103.67**	**56**	*e*P		**Pdif**	**17 44 53.4**	**+1.5**
LTX	**Lajitas**	**103.67**	**56**	*e*Pdif		**Pdif**	**17 44 53.4**	**+1.5**
TXAR	**Lajitas Array** comp=Z,0.1nm,0.6s,baz=298,slow=3.9,SNR=2.2	**103.67**	**56**	Pdiff		**Pdif**	**17 44 53.4**	**+1.5**
GERES	**GERESS Array B** comp=Z,0.2nm,0.4s,baz=101,slow=4.1,SNR=3.0	**104.74**	**328**	PKiKP		**PKiKP**	**17 49 12.2**	**+0.6**
SYO	**Syowa Base**	**105.99**	**201**↑	*e*Pdiff		**Pdif**	**17 45 00.6**	**-0.5**
TKL	**Tuckaleechee C** comp=Z,2.1nm,0.5s,baz=173,slow=5.3,SNR=3.5	**115.12**	**41**	PKP		**PKPdf**	**17 49 32.2**	**+0.7**
TOA1	**Torodi Ar. Sit**	**134.25**	**302**	*e*PKPdf		**PKPdf**	**17 50 09.0**	**+0.4**
TORD	**Torodi Ar. Bea** comp=Z,0.8nm,0.5s,baz=50,slow=3.0,SNR=8.3	**134.25**	**302**	PKP		**PKPdf**	**17 50 09.0**	**+0.4**
NNA	**Nana**	**140.98**	**94**	*i* PKIKP		**PKPdf**	**17 50 22.2**	**+1.2**
DBIC	**Dimbokro** comp=Z,3.7nm,0.5s,baz=50,slow=3.8,SNR=14	**143.09**	**299**	PKhKP		PKPpre	17 50 21.2	
DBIC				PKP		**PKPdf**	**17 50 25.7**	**+0.9**
PB11	**IPOC Station P** comp=Z,2.4nm,0.6s,baz=23,slow=4.5,SNR=3.7	**147.64**	**108**	*e*PKPbc		**PKPbc**	**17 50 35.9**	**+0.6**
LPAZ	**La Paz** comp=Z,2.7nm,0.5s,baz=297,slow=1.9,SNR=13	**149.47**	**102**	PKPbc		**PKPbc**	**17 50 42.0**	**+1.3**
LPAZ	**La Paz**	**149.47**	**102**	*e*PKPbc		**PKPbc**	**17 50 40.9**	**+0.2**
SAML	**Samuel**	**154.00**	**86**	*e*PKPdf		**PKPdf**	**17 50 41.3**	**-1.1**
SAML				*e*PKPbc		**PKPbc**	**17 50 50.2**	**-0.2**
SAML				*e*PKPab		**PKPab**	**17 51 03.5**	**-0.4**

IDC 16 17:40:22.2±455.0, 54.48N×41.91E, h0km, Error ellipse: s-maj=171.3km s-min=76.8km az=131.0, Baltic States-Belarus-Northwestern Russia

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
I43RU	**DUBNA INFRASON** baz=128,slow=320,SNR=1.5	**3.49**	**312**	*i*		18 02 50.0	
I31KZ	**AKTYUBINSK INF** baz=300,slow=333,SNR=0.4	**10.65**	**106**	*i*		18 47 20.0	
I26DE	**FREYUNG INFRAS** baz=62,slow=328,SNR=0.5	**18.30**	**264**	*i*		19 32 00.0	

IDC 16 17:42:01.0±6.6, 38.52N×142.83E, h0km, mb3.4/2, mb1 3.5/4, mb1mx3.2/51, mbtmp3.6/4, ML3.3/2, Error ellipse: s-maj=120.7km s-min=36.3km az=94.0, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MJAR	**Matsushiro Arr** 0.7nm,0.3s,baz=65,slow=12,SNR=15	**4.17**	**243**	Pn	Pn	17 43 05.1	-0.9
JHJ	**Hachijo jima 2** 5.7nm,0.3s,baz=72,slow=20,SNR=3.6	**5.93**	**206**	Pn	Pn	17 43 30.8	+0.7
JHJ				Sn	Sn	17 44 32.4	-6.4
SONM	**Songino Array** 0.6nm,0.5s,baz=115,slow=10,SNR=4.1	**27.93**	**301**	P	P	17 47 54.5	+1.6
MKAR	**Makanchi Array** 0.2nm,0.6s,baz=81,slow=8.9,SNR=3.0	**44.30**	**301**	P	P	17 50 11.2	-1.3

JMA 16 17:50:11.9±0.1, 39.19N×142.40E, h32km±1km, M3.5, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
OFUJ	**Ofunato**	**0.58**	**259**	P	Pb	17 50 23.4	-0.3
OFUJ				S	Sb	17 50 31.6	-0.2
MIYJ	**Miyakonagasawa**	**0.59**	**311**	P	Pb	17 50 23.5	-0.4
MIYJ				S	Sb	17 50 31.4	-0.8
JOM	**Ohasama**	**0.90**	**289**	P	Pn	17 50 28.6	+0.2
JOM				S	Sb	17 50 40.6	-0.3
JMK	**Ichinoseki**	**0.95**	**256**	P	Pn	17 50 29.1	+0.1
JMK				S	Sn	17 50 41.5	+0.1
JIO	**Ouri**	**1.10**	**229**	P	Pn	17 50 30.7	-0.4
JIO				S	Sn	17 50 44.3	-0.9
JKZ	**Kuzumaki**	**1.15**	**314**	P	Pn	17 50 32.3	+0.5
JKZ				S	Sb	17 50 47.1	-0.7
JANG	**Nango**	**1.36**	**330**	P	Pn	17 50 35.2	+0.5
JANG				S	Sn	17 50 52.7	+1.0
JRG	**Rokugo**	**1.39**	**279**	P	Pb	17 50 36.4	-0.8
JRG				S	Sb	17 50 54.8	+0.3
JOU	**Okura**	**1.59**	**239**	P	Pn	17 50 38.8	+1.0
JOU				S	Sb	17 50 59.5	-0.8
JYK	**Kaneyama**	**1.61**	**261**	P	Pb	17 50 39.6	-1.4
JMM	**Marumori**	**1.83**	**224**	P	Pn	17 50 41.9	+0.8

JMA 16 17:50:49.4±0.1, 38.12N×141.96E, h37km±2km, M3.6, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**0.58**	**305**	P	Pn	17 51 01.1	-0.2
JIO				S	Sn	17 51 09.3	-0.3
OFUJ	**Ofunato**	**0.98**	**347**	P	Pn	17 51 06.8	+0.1
OFUJ				S	Sn	17 51 19.6	+0.2
JMK	**Ichinoseki**	**1.01**	**325**	P	Pn	17 51 07.6	+0.6
JMK				S	Sn	17 51 20.8	+0.8
JFT	**Otama**	**1.42**	**245**	P	Pn	17 51 13.1	+0.5
MIYJ	**Miyakonagasawa**	**1.46**	**356**	S	Sn	17 51 30.9	-0.1
JYK	**Kaneyama**	**1.49**	**303**	P	Pn	17 51 14.1	+0.5
JYK				*e*S	Sn	17 51 33.4	+1.7
JYS	**Shirataka**	**1.50**	**274**	P	Pn	17 51 14.1	+0.4
JRG	**Rokugo**	**1.64**	**321**	P	Pn	17 51 17.5	+1.8
JRG				S	Sn	17 51 37.9	+2.3
JKZ	**Kuzumaki**	**1.93**	**345**	P	Pn	17 51 21.7	+2.1
JKZ				S	Sn	17 51 44.5	+1.9
JANG	**Nango**	**2.28**	**351**	S	Sn	17 51 53.5	+2.3
MAT	**Matsushiro**	**3.38**	**243**	P	Pn	17 51 42.3	+2.7
MAT				S	Sn	17 52 23.9	+5.4

NIED ***16*** *18:03:00.35˚.90N×140˚.90E, h8km, Mw3.6 Best double couple: M₀2.60000×10¹⁴ NP1:φs18.00000°, δ37.00000°, λ-47.00000°. NP2:φs149.00000°, δ64.00000°, λ-117.00000°.*

JMA 16 18:03:00.8±0.1, 35.86N×140.93E, h15km±1km, M3.7, 2C, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CHOJ	**Chosi**	**0.17**	**200**	↑P	Pg	18 03 04.8	-0.1
CHOJ				S	Sg	18 03 07.9	+0.2
JYT	**Yasato**	**0.70**	**302**	⇑P	Pg	18 03 14.1	-0.4
JYT				S	Sg	18 03 23.5	-0.2
JHO	**Hitachi**	**0.80**	**339**	P	Pg	18 03 15.8	-0.7
MAT	**Matsushiro**	**2.31**	**288**	P	Pn	18 03 37.5	-0.8
MAT				*e*S	Sn	18 04 04.5	-1.9

JMA ***16*** *18:03:28.6±0.1, 43.34N×146.07E, h50km±1km, M3.2*
SKHL ***16*** *18:03:29.2±0.3, 43.39N×146.12E, h21km±1km, mb4.7/2*

ISC 16 18:03:25.2±2.0, 43.22N±0.08×146.17E±0.06, h4km±13km, n11, σ1s39/18, Kuril Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
NEM2	**Nemuro 2**	**0.34**	**295**	P	**Pn**	**18 03 37.2**	**+0.2**
NEM2				*e*S	**Sb**	**18 03 43.4**	**+3.8**
SHO	**Shikotan**	**0.81**	**36**	*e*P	**Pb**	**18 03 41.8**	**0.0**
SHO	250nm,0.2s			AMB	AMB	18 03 41.9	
SHO				*i* S	**Sg**	**18 03 51.2**	**+0.1**
SHO	1μm,0.2s			A	A	18 03 51.9	
SHO	960nm,0.2s			A	A	18 03 51.9	
YUK	**Yuzh-Kuril'sk**	**0.84**	**345**	*i* P	**Pg**	**18 03 41.5**	**+0.2**
YUK	180nm,0.2s			AMB	AMB	18 03 43.0	
YUK	160nm,0.2s			AMB	AMB	18 03 43.0	
YUK	350nm,0.2s			AMB	AMB	18 03 43.0	
YUK				*i* S	**Sg**	**18 03 50.9**	**-1.3**
YUK	740nm,0.2s			A	A	18 03 53.1	
YUK	1μm,0.2s			A	A	18 03 53.1	
JRA	**Rausu**	**1.04**	**314**	P	**Pg**	**18 03 45.2**	**0.0**
JRA				*e*S	**Sg**	**18 03 57.3**	**-1.4**
JAK	**Akkeshi**	**1.10**	**259**	P	**Pb**	**18 03 47.1**	**+0.3**
JAK				*e*S	**Sg**	**18 04 00.6**	**0.0**
JNK	**Nakash**	**1.12**	**289**	P	**Pg**	**18 03 46.4**	**-0.2**
JOB	**Onbets**	**1.74**	**260**	P	**Pn**	**18 03 56.1**	**-0.1**
JOB				*e*S	**Sn**	**18 04 16.8**	**-2.0**
JAR	**Ashorobuto**	**1.75**	**273**	P	**Pn**	**18 03 56.1**	**-0.3**
JTKR	**Abashiri--Toko**	**1.80**	**295**	P	**Pn**	**18 03 56.5**	**-0.6**
KUR	**Kuril'sk**	**2.35**	**31**	*e*P	**Pn**	**18 04 05.2**	**+0.6**
KUR				*i* S	**Sn**	**18 04 32.0**	**-1.9**
KUR	130nm,0.5s			A	A	18 04 37.9	
KUR	560nm,0.5s			A	A	18 04 37.9	
YSS	**Yuzh-Sakhalins**	**4.44**	**328**	*e*P	**Pn**	**18 04 34.0**	**+0.6**

WEL 16 18:12:04.3±0.1, 43.58S×172.62E, h8km, ML3.5/12, 2C-2D, Error ellipse: s-maj=0.8km s-min=0.4km az=90.0, South Island

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CRLZ	**Canterbury Las**	**0.01**	**30**	⇓PG	Pg	18 12 05.7	0.0
CRLZ				SG	Sg	18 12 06.8	+0.1
CRLZ				AML	AML	18 12 06.8	
CRLZ				AML	AML	18 12 06.9	
CRLZ				AML	AML	18 12 06.9	
MQZ	**McQueen's Vall**	**0.13**	**168**	⇑PG	Pg	18 12 07.2	+0.1
MQZ				SG	Sg	18 12 09.3	+0.2
MQZ				SG		18 12 09.4	
MQZ				AML	AML	18 12 09.6	
OXZ	**Oxford**	**0.49**	**301**	⇓P*	Pg	18 12 13.8	-0.1
OXZ				SG	Sg	18 12 20.8	+0.5
LTZ	**Lake Taylor**	**0.84**	**342**	P*	Pg	18 12 20.2	-0.3
LTZ				S*	Sg	18 12 31.8	+0.4
LTZ				AML	AML	18 12 32.8	
RPZ	**Rata Peaks**	**1.14**	**263**	P*	Pg	18 12 25.0	-1.2
RPZ				S*	Sg	18 12 41.0	0.0
RPZ				AML	AML	18 12 47.9	
INZ	**Inchbonnie**	**1.21**	**315**	P*	Pb	18 12 27.0	-0.5
KHZ	**Kahutara**	**1.35**	**30**	⇑PN	Pn	18 12 27.1	-2.3
WVZ	**Waitaha Valley**	**1.46**	**290**	PN	Pn	18 12 30.5	-0.6
WVZ				AML	AML	18 12 56.8	
WVZ				AML	AML	18 15 00.4	
THZ	**Tophouse**	**1.83**	**7**	PN	Pn	18 12 34.2	-2.0
THZ				AML	AML	18 13 01.1	
THZ				AML	AML	18 13 04.3	
LBZ	**Lake Benmore**	**1.93**	**245**	PN	Pn	18 12 36.4	-1.1
LBZ				AML	AML	18 13 13.0	
LBZ				AML	AML	18 13 13.3	
DSZ	**Denniston Nort**	**1.93**	**342**	AML	AML	18 12 43.5	
DSZ				AML	AML	18 13 10.8	
ODZ	**Otahua Downs**	**2.03**	**223**	PN	Pn	18 12 37.3	-1.6
ODZ				AML	AML	18 13 10.0	
ODZ				AML	AML	18 13 10.2	
ODZ				AML	AML	18 13 16.6	
FOZ	**Fox Glacier**	**2.04**	**270**	PN	Pn	18 12 39.1	+0.2
BSWZ	**Blackbirch Sta**	**2.09**	**27**	PN	Pn	18 12 37.6	-2.0
JCZ	**Jackson Bay**	**2.81**	**259**	PN	Pn	18 12 49.8	+0.1
JCZ				AML	AML	18 13 42.8	
JCZ				AML	AML	18 14 40.1	
EAZ	**Earnscleugh**	**2.89**	**234**	PN	Pn	18 12 49.1	-1.5
EAZ				AML	AML	18 13 39.5	
EAZ				AML	AML	18 13 40.9	
TUZ	**Tuapeka**	**3.18**	**221**	PN	Pn	18 12 53.0	-1.6
TUZ				AML	AML	18 13 50.2	
TUZ				AML	AML	18 13 54.6	
SYZ	**Scrubby Hill**	**3.85**	**219**	PN	Pn	18 13 02.7	-1.1

JMA 16 18:15:39.5, 37.10N×140.63E, h14km±1km, M2.9, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.14**	**89**	P	Pg	18 15 43.1	0.0
ONAJ				S	Sg	18 15 45.6	0.0
JFK	**Kawauchi**	**0.33**	**36**	P	Pg	18 15 46.2	-0.1
JFK				S	Sg	18 15 50.8	-0.1
JFT	**Otama**	**0.48**	**331**	P	Pg	18 15 49.1	+0.1
JFT				S	Sg	18 15 55.5	+0.1
JHO	**Hitachi**	**0.49**	**186**	P	Pg	18 15 48.9	-0.3
JHO				S	Sg	18 15 55.4	-0.4
JMM	**Marumori**	**0.78**	**10**	P	Pg	18 15 54.0	-0.6
JMM				S	Sg	18 16 04.4	-0.4
MAT	**Matsushiro**	**2.02**	**255**	P	Pb	18 16 15.1	-0.9
MAT				*e*S	Sb	18 16 41.9	+0.8

NIED ***16*** *18:16:00.39˚.10N×142˚.60E, h5km, Mw3.4 Best double couple: M₀1.66000×10¹⁴ NP1:φs319.00000°, δ30.00000°, λ-44.00000°. NP2:φs89.00000°, δ69.00000°, λ-112.00000°.*

JMA 16 18:16:18.5±0.2, 39.06N×142.64E, h26km±2km, M3.5, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
OFUJ	**Ofunato**	**0.76**	**272**	P	Pb	18 16 32.7	-0.3
OFUJ				S	Sb	18 16 43.0	0.0
MIYJ	**Miyakonagasawa**	**0.82**	**309**	P	Pb	18 16 33.6	-0.5
MIYJ				S	Sb	18 16 44.5	-0.3
JMK	**Ichinoseki**	**1.11**	**265**	P	Pn	18 16 38.5	+0.1
JOM	**Ohasama**	**1.12**	**292**	P	Pn	18 16 38.7	+0.1
JIO	**Ouri**	**1.18**	**239**	P	Pn	18 16 38.9	-0.4
JANG	**Nango**	**1.57**	**327**	P	Pb	18 16 46.0	-0.9
JOU	**Okura**	**1.69**	**246**	P	Pb	18 16 47.7	-1.3

JMA 16 18:20:41.6, 36.84N×140.59E, h7km±1km, M2.5, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JHO	**Hitachi**	**0.23**	**184**	P	Pg	18 20 46.3	+0.2
JFK	**Kawauchi**	**0.57**	**23**	P	Pg	18 20 53.1	+0.4
JFT	**Otama**	**0.71**	**343**	P	Pg	18 20 55.3	+0.1
JFT				S	Sg	18 21 05.1	+0.7
MAT	**Matsushiro**	**1.94**	**262**	P	Pn	18 21 15.8	+0.8
MAT				S	Sb	18 21 41.1	-0.6

IDC ***16*** *18:25:00.8±0.8, 32.75S×178.20W, h0km, mb4.3/7, mb1 4.5/9, mb1mx4.2/40, mbtmp4.3/9, ML4.4/2, MS3.7/8, Ms1 3.7/8, ms1mx3.4/31, Error ellipse: s-maj=28.0km s-min=19.8km az=116.0*
ISCJB ***16*** *18:25:03.4±0.5, 33.29S±0.05×178.13W±0.09, h33km, mb4.5/14, MS3.7/7, Error ellipse: s-maj=12.1km s-min=5.0km az=28.1*
NEIC ***16*** *18:25:07.2±1.4, 33.41S×178.11W, h55km±13km, mb4.7/15, Error ellipse: s-maj=16.3km s-min=9.9km az=160.0*

ISC 16 18:25:05.5±0.5, 33.06S±0.08×178.2W±0.1, h34km, n87, σ1s48/86, mb4.7/14, MS3.6/7, South of Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
RAO	**Raoul Island** 57nm,0.3s,baz=112,slow=19,SNR=2.6	**3.81**	**4**	Pn	Pn	18 25 55.8	-6.0
RAO				Sn	Sn	18 26 38.0	-7.4
WMGZ	**Waiomatatini S**	**5.48**	**209**	PN	**Pn**	**18 26 25.0**	**+0.2**
PKGZ	**Pakihiroa**	**5.68**	**211**	PN	**Pn**	**18 26 27.0**	**-0.6**
PKGZ				SN	**Sn**	**18 27 34.6**	**+2.9**
HAZ	**Te Kaha**	**5.71**	**214**	PN	**Pn**	**18 26 28.2**	**+0.4**
HAZ				SN	Sn	18 27 37.6	+5.5
PUZ	**Puketiti**	**5.76**	**209**	PN	**Pn**	**18 26 27.3**	**-1.4**
PUZ				SN	**Sn**	**18 27 34.9**	**+1.4**
TWGZ	**Tauwhareparae**	**5.96**	**210**	PN	**Pn**	**18 26 30.4**	**-1.1**
TWGZ				eSN	**Sn**	**18 27 41.2**	**+2.6**
CNGZ	**Carnagh Statio**	**6.14**	**207**	PN	**Pn**	**18 26 32.8**	**-0.9**
MWZ	**Matawai**	**6.29**	**212**	PN	**Pn**	**18 26 34.7**	**-1.2**
URZ	**Urewera** 4.0nm,0.3s,baz=250,slow=4.7,SNR=28	**6.43**	**215**	Pn	**Pn**	**18 26 38.6**	**+0.9**
URZ	3.4nm,0.3s,baz=74,slow=12,SNR=3.3			Sn	**Sn**	**18 27 50.8**	**+1.0**
URZ	**Urewera**	**6.43**	**215**	PN	**Pn**	**18 26 37.4**	**-0.4**
URZ				*e*SN	**Sn**	**18 27 50.1**	**+0.2**
URZ	**Urewera**	**6.43**	**215**	*e*Pn	**Pn**	**18 26 37.2**	**-0.5**
URZ				*e*Sn	**Sn**	**18 27 46.9**	**-2.9**
RIGZ	**Rimuhau**	**6.50**	**209**	PN	**Pn**	**18 26 37.7**	**-1.2**
OUZ	**Omahuta**	**7.12**	**250**	*e*Pn	Pn	18 26 50.3	+3.1
BKZ	**Black Stump Fm**	**7.44**	**214**	*e*Pn	**Pn**	**18 26 50.2**	**-1.5**
BKZ				*e*Sn	Sn	18 28 03.1	-12
HIZ	**Hauiti**	**7.82**	**224**	*e*Pn	**Pn**	**18 26 57.2**	**+0.3**
BFZ	**Birch Farm**	**8.80**	**209**	*e*Pn	**Pn**	**18 27 08.4**	**-1.8**
BFZ				*e*Sn	**Sn**	**18 28 44.5**	**-3.7**
SNZO	**South Karori**	**9.97**	**212**	*e*Pn	**Pn**	**18 27 23.6**	**-2.8**
SNZO				*e*Sn	Sn	18 29 10.3	-6.7
THZ	**Tophouse**	**11.18**	**217**	*e*Pn	**Pn**	**18 27 43.0**	**+0.1**
THZ				*e*Sn	Sn	18 29 34.3	-12
KHZ	**Kahutara**	**11.38**	**213**	SN	Sn	18 29 43.8	-7.7
KHZ	**Kahutara**	**11.38**	**213**	*e*Pn	**Pn**	**18 27 44.5**	**-1.1**
KHZ				*e*Sn	Sn	18 29 35.5	-16
LTZ	**Lake Taylor**	**12.26**	**215**	*e*Pn	**Pn**	**18 27 56.7**	**-0.9**
CRLZ	**Canterbury Las**	**12.71**	**212**	*e*Pn	**Pn**	**18 28 02.6**	**-1.1**
OXZ	**Oxford**	**12.78**	**214**	*e*Pn	**Pn**	**18 28 02.3**	**-2.5**
OXZ				*e*Sn	Sn	18 30 14.0	-12
MQZ	**McQueen's Vall**	**12.80**	**211**	*e*Pn	**Pn**	**18 28 03.3**	**-1.7**
MQZ				*e*Sn	Sn	18 30 17.0	-9.2
RPZ	**Rata Peaks** 0.9nm,0.3s,baz=33,slow=3.8,SNR=6	**13.54**	**215**	Pn	Pn	18 28 11.9	-3.3
RPZ	1.0nm,0.3s,baz=129,slow=24,SNR=8.6			Sn	Sn	18 30 35.9	-8.5
FOZ	**Fox Glacier**	**14.04**	**218**	*e*Pn	Pn	18 28 16.8	-5.0
LBZ	**Lake Benmore**	**14.46**	**215**	*e*Pn	Pn	18 28 23.0	-4.7
ODZ	**Otahua Downs**	**14.74**	**213**	*e*Pn	Pn	18 28 27.5	-4.0
WKZ	**Wanaka** 122nm,1.5s	**15.36**	**216**	*e*Pn	**Pn**	**18 28 36.4**	**-3.3**
MSVF	**Nonsavu** 29nm,1.4s	**15.63**	**347**	*e*Pn	**Pn**	**18 28 40.6**	**-2.8**
MLZ	**Mavora Lakes** 158nm,1.8s	**16.19**	**217**	*e*Pn	**Pn**	**18 28 48.5**	**-1.9**
WHZ	**Wether Hill Ro** 126nm,1.9s	**16.64**	**216**	*e*Pn	**Pn**	**18 28 52.7**	**-3.4**
DCZ	**Deep Cove** 58nm,1.5s	**16.75**	**218**	*e*Pn	**Pn**	**18 28 54.4**	**-3.0**
DZM	**Mont Dzumac** comp=Z,471nm,18.5s,baz=112,slow=33	**17.43**	**305**	LR	LR	18 34 35.6	
PYZ	**Puysegur Point** 88nm,1.2s	**17.47**	**217**	*e*Pn	**Pn**	**18 29 03.9**	**-2.5**
RAR	**Rarotonga** 228nm,1.8s	**20.18**	**59**	*e*P	**P**	**18 29 37.3**	**0.0**
EIDS	**Eidsvold** 61nm,1.9s	**27.80**	**278**	*e*P	**P**	**18 30 53.6**	**+2.1**
PPT	**Papeete** comp=Z,94nm,18.8s,baz=238,slow=33	**30.01**	**66**	LR	LR	18 41 24.6	
PPT	**Papeete**	**30.01**	**66**	*e*P	**P**	**18 31 11.0**	**-0.3**
STKA	**Stephens Creek** 2.2nm,1.0s,baz=121,slow=7.8,SNR=4.2	**33.78**	**261**	P	**P**	**18 31 46.9**	**+2.6**
STKA	comp=Z,112nm,18.8s,baz=40,slow=35			LR	LR	18 44 33.2	
STKA	**Stephens Creek** 3.2nm,1.8s	**33.78**	**261**	*e*P	**P**	**18 31 46.1**	**+1.8**
AS01	**Alice Springs**	**42.81**	**270**	*e*P	**P**	**18 33 00.4**	**+0.1**
AS31	**Alice Springs** 2.6nm,0.8s	**42.85**	**270**	*e*P	**P**	**18 33 00.2**	**-0.4**
ASAR	**Alice Springs** 9.2nm,0.9s,baz=107,slow=7.1,SNR=56	**42.85**	**270**	P	**P**	**18 33 00.6**	**0.0**
ASAR	comp=Z,58nm,18.9s,baz=124,slow=37			LR	LR	18 51 14.7	
WB2	**Warramunga Arr** 12nm,0.9s	**44.06**	**275**	*e*P	**P**	**18 33 10.1**	**-0.4**
WRAB	**Tennant Creek** 46nm,1.8s	**44.07**	**275**	*e*P	**P**	**18 33 10.0**	**-0.5**
WR1	**Warramunga Arr** 18nm,1.1s	**44.08**	**275**	*e*P	**P**	**18 33 10.1**	**-0.4**
WRA	**Warramunga Arr** 3.8nm,0.3s,baz=116,slow=7.7,SNR=60	**44.08**	**275**	P	**P**	**18 33 10.1**	**-0.4**
VNDA	**Vanda** 0.6nm,0.7s,baz=7.4,slow=9.2,SNR=3.6	**45.43**	**186**	P	P	18 33 24.1	+3.6
QSPA	**South Pole Qui**	**57.05**	**180**	*e*P	P	18 34 51.5	+3.5
KAPI	**Kappang** comp=Z,101nm,18.7s,baz=184,slow=36	**63.93**	**282**	LR	LR	19 03 18.8	
PLCA	**Paso Flores** 12nm,1.3s	**80.84**	**133**	*

NOA	**NORSAR Array B**	**151.34**	**350**	PKPbc	**PKPbc**	**18 44 55.2**	**+0.3**
	comp=Z,1.2nm,0.8s,baz=15,slow=4.1,SNR=4.4						
MMAI	**Mount Meron Ar**	**151.88**	**279**	PKPbc	**PKPbc**	**18 44 58.0**	**+1.0**
	comp=Z,7.8nm,1.0s,baz=69,slow=4.6,SNR=13						
MMAI				PKPab	**PKPab**	**18 45 08.1**	**+1.8**
	comp=Z,7.6nm,1.0s,baz=83,slow=3.4,SNR=6.5						
NACGM	**Naroch**	**151.98**	**329**	*e*	**PKPab**	**18 45 07.0**	**+1.1**
AKASG	**Malin Array Be**	**153.25**	**319**	PKPbc	**PKPbc**	**18 44 58.2**	**-1.2**
	comp=Z,0.3nm,0.3s,baz=59,slow=1.8,SNR=8.0						
AKASG				PKPab	**PKPab**	**18 45 09.8**	**-1.6**
	comp=Z,1.8nm,0.6s,baz=49,slow=4.9,SNR=9.4						
AKBB	**Malin Array Si**	**153.25**	**319**	*e*PKPbc	**PKPbc**	**18 44 58.8**	**-0.7**
AK11	**Malin Array Si**	**153.29**	**319**	*e*PKPbc	**PKPbc**	**18 44 59.1**	**-0.4**
AK11				*e*PKPab	**PKPab**	**18 45 09.6**	**-1.9**
BR101	**Keskin Array S**	**153.60**	**294**	*e*PKPbc	**PKPbc**	**18 45 00.9**	**+0.2**
BR101				*e*PKPab	**PKPab**	**18 45 11.0**	**-2.4**
BRTR	**Keskin Array B**	**153.60**	**294**	PKPbc	**PKPbc**	**18 45 00.9**	**+0.2**
	comp=Z,1.3nm,0.8s,baz=178,slow=3.5,SNR=7.6						
BRTR				PKPab	**PKPab**	**18 45 11.0**	**-2.5**
	comp=Z,0.9nm,0.8s,baz=132,slow=1.5,SNR=5.0						
BR231	**Keskin MP Arra**	**154.25**	**294**	*e*PKPbc	**PKPbc**	**18 45 00.2**	**-1.9**
BRG	**Berggiesshubel**	**160.09**	**337**	*e*P	PKPdf	18 44 50.5	-10
	comp=Z,4.5nm,0.9s						
TORD	**Torodi Ar. Bea**	**160.17**	**180**	PKP	**PKPdf**	**18 45 03.0**	**+1.0**
	comp=Z,0.4nm,0.8s,baz=191,slow=7.1,SNR=3.7						
TORD				PKPab	**PKPab**	**18 45 42.7**	**+0.8**
	comp=Z,3.8nm,1.2s,baz=197,slow=4.0,SNR=5.3						
TOA1	**Torodi Ar. Sit**	**160.18**	**180**	*e*PKPdf	**PKPdf**	**18 45 03.0**	**+1.0**
TOA1				*e*PKPab	**PKPab**	**18 45 42.7**	**+0.7**

IDC 16 18:41:36.3±2.5, 4°36.36N×127°16.16E, h0km, mb3.3/3, mb1 3.4/3, mb1mx3.2/36, mbtmp3.3/3, Error ellipse: s-maj=212.6km s-min=25.6km az=66.0, Talaud Islands

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**25.16**	**164**	P		P	18 47 03.8	+0.3
	0.4nm,0.6s,baz=344,slow=9.5,SNR=9.7							
ASAR	**Alice Springs**	**28.62**	**167**	P		P	18 47 34.5	-0.2
	0.1nm,0.3s,baz=347,slow=12,SNR=3.1							
MKAR	**Makanchi Array**	**57.29**	**325**	P		P	18 51 25.8	-0.1
	0.2nm,0.3s,baz=119,slow=7.4,SNR=7.1							

NIED ***16*** *18:49:00, 37.90N×143.70E, h35km, Mw3.6 Best double couple: M₀3.13000×10¹⁴ NP1:φs338.00000°, δ43.00000°, λ-151.00000°. NP2:φs226.00000°, δ71.00000°, λ-51.00000°.*

IDC ***16*** *18:49:34.3±1.2, 37.77N×144.09E, h0km, mb3.4/5, mb1 3.7/9, mb1mx3.5/50, mbtmp3.6/9, ML3.7/3, MS3.0/1, Ms1 3.1/1, ms1mx2.3/21, Error ellipse: s-maj=29.8km s-min=20.4km az=85.0*

ISCJB ***16*** *18:49:37.5±0.8, 37.77N±0.07°×143.84E±0.08, h33km, mb3.4/5, MS3.0/1, Error ellipse: s-maj=10.8km s-min=9.3km az=13.2*

JMA ***16*** *18:49:38.9±0.3, 37.92N×143.74E, h43km, M3.7*

ISC 16 18:49:39.7±1.2, 37.78N±0.08°×143.8E±0.1°, h35km, n20, σ1s58/21, mb3.3/5, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
JIO	**Ouri**	**2.04**	**290**	P		**Pn**	**18 50 10.6**	**-0.9**
OFUJ	**Ofunato**	**2.11**	**309**	P		**Pn**	**18 50 11.2**	**-1.3**
JMK	**Ichinoseki**	**2.33**	**301**	P		**Pn**	**18 50 14.8**	**-0.8**
JMM	**Marumori**	**2.37**	**273**	P		**Pn**	**18 50 15.8**	**-0.4**
JMM				S		**Sn**	**18 50 42.3**	**-1.7**
JOU	**Okura**	**2.53**	**284**	P		**Pn**	**18 50 18.6**	**+0.2**
JOM	**Ohasama**	**2.58**	**312**	P		**Pn**	**18 50 18.3**	**-0.7**
JFT	**Otama**	**2.75**	**266**	S		**Sn**	**18 50 53.2**	**-0.2**
JYK	**Kaneyama**	**2.92**	**294**	P		**Pn**	**18 50 23.6**	**-0.1**
JRG	**Rokugo**	**2.95**	**304**	P		**Pn**	**18 50 24.0**	**-0.1**
MJAR	**Matsushiro Arr**	**4.63**	**256**	Pn		**Pn**	**18 50 48.6**	**+1.5**
	1.9nm,0.3s,baz=85,slow=15,SNR=26							
MAT	**Matsushiro**	**4.63**	**256**	P		**Pn**	**18 50 48.9**	**+1.7**
MAT				*e*S		Sn	18 51 09.8	-30
JHJ	**Hachijo jima 2**	**5.69**	**216**	Pn		**Pn**	**18 51 01.0**	**-0.7**
	7.8nm,0.3s,baz=87,slow=18,SNR=5.2							
JHJ				Sn		**Sn**	**18 52 01.3**	**-4.5**
	5.2nm,0.3s,baz=90,slow=20,SNR=3.5							
ASAJ	**Asahikawa**	**6.39**	**352**	Pn		**Pn**	**18 51 08.9**	**-2.5**
	1.5nm,0.3s,baz=252,slow=10,SNR=10							
USRK	**Ussuriysk Ar.**	**10.98**	**309**	Pn		**Pn**	**18 52 14.8**	**+0.6**
	0.1nm,0.3s,baz=101,slow=15,SNR=3.2							
SONM	**Songino Array**	**28.96**	**302**	P		**P**	**18 55 38.0**	**+2.2**
	0.3nm,0.5s,baz=91,slow=8.2,SNR=2.3							
MKAR	**Makanchi Array**	**45.33**	**302**	P		**P**	**18 57 55.0**	**+0.8**
	0.3nm,0.7s,baz=82,slow=10,SNR=3.2							
ILAR	**Eielson Array**	**47.85**	**33**	LR		LR	19 17 33.1	
	comp=Z,18nm,21.0s,baz=169,slow=35							
WRA	**Warramunga Arr**	**58.10**	**190**	P		**P**	**18 59 29.9**	**+0.2**
	1.0nm,0.9s,baz=8.3,slow=7.3,SNR=4.7							
ASAR	**Alice Springs**	**61.83**	**190**	P		**P**	**18 59 55.0**	**-0.2**
	0.2nm,0.8s,baz=13,slow=8.8,SNR=2.8							
YKA	**Yellowknife Ar**	**62.20**	**31**	P		**P**	**18 59 56.7**	**-0.6**
	0.1nm,0.7s,baz=304,slow=6.5,SNR=4.1							

IDC 16 19:00:19.0±5.2, 4°29.96N×124°36.86E, h229km±67km, mb3.0/4, mb1 3.1/5, mb1mx2.9/34, mbtmp3.6/5, Error ellipse: s-maj=179.5km s-min=15.3km az=66.0, Celebes Sea

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
DAV	**Davao City (W)**	**2.85**	**15**	P		Pn	19 01 08.6	0.0
	70nm,0.3s,baz=298,slow=22,SNR=8.0							
WRA	**Warramunga Arr**	**25.82**	**159**	P		P	19 05 28.9	-0.6
	0.5nm,1.1s,baz=337,slow=10,SNR=6.0							
ASAR	**Alice Springs**	**29.16**	**163**	P		P	19 05 59.4	+0.3
	0.2nm,0.9s,baz=354,slow=7.7,SNR=3.6							
STKA	**Stephens Creek**	**39.34**	**157**	P		P	19 07 26.6	+0.3
	1.8nm,0.9s,baz=335,slow=8.3,SNR=3.0							
MKAR	**Makanchi Array**	**56.04**	**326**	P		P	19 09 34.0	-0.1
	0.9nm,0.6s,baz=121,slow=8.5,SNR=16							

MAN 16 19:00:57, 18.80N×121.03E, h22km, mb4.5, ML3.3, MS3.2, 1C, Luzon

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
PIP	**Pasuquin**	**0.61**	**219**	↑ *i*	P	Pb	19 01 09.5	+0.5
APYP	**Conner**	**0.95**	**167**	*e*	P	Pb	19 01 14.8	-0.1
APYP				*e*	S	Sn	19 01 28.6	+0.6
SGCP	**Mt. Cagua**	**1.11**	**120**	*e*	P	Pn	19 01 17.1	-0.2
SGCP				*e*	S	Sn	19 01 33.0	+1.0
ABRA	**Dolores**	**1.18**	**195**	*e*	P	Pn	19 01 17.8	-0.4
CAUP	**Cauayan**	**1.99**	**158**	*e*	P	Pb	19 01 31.2	-1.4

JMA 16 19:02:20.6, 36.85N×140.65E, h6km±1km, M2.6, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
JHO	**Hitachi**	**0.25**	**195**	P		Pg	19 02 25.6	+0.2
ONAJ	**Iwakimizuishiy**	**0.28**	**25**	P		Pg	19 02 26.4	+0.3
JFK	**Kawauchi**	**0.55**	**19**	*e*	S	Sg	19 02 38.4	+0.1
JFT	**Otama**	**0.71**	**340**	P		Pg	19 02 34.3	0.0
JFT				S		Sg	19 02 43.7	+0.1
MAT	**Matsushiro**	**1.99**	**262**	P		Pn	19 02 54.8	0.0
MAT				S		Sn	19 03 20.9	+0.9

ISCJB ***16*** *19:16:11.7±0.5, 39.71N±0.03°×29.10E±0.04, h6km±6km, Error ellipse: s-maj=5.0km s-min=4.7km az=147.2*

CSEM ***16*** *19:16:11.9±0.1, 39.71N×29.11E, h7km±1km, MD2.8, Error ellipse: s-maj=2.0km s-min=1.9km az=177.0*

DDA ***16*** *19:16:11.5, 39.73N×29.10E, h7km, Md2.8*

ISK ***16*** *19:16:11.0, 39.71N×29.11E, h6km, MD2.7*

ISC 16 19:16:11.2±0.9, 39°09.96N±0.03°×29°14.46E±0.03, h16km±9km, n21, σ0s41/35, Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
GDZ	**Gediz**	**0.27**	**90**	*i* P		**Pb**	**19 16 18.1**	**+0.3**
GDZ				*i* S		**Sb**	**19 16 22.4**	**+0.2**
GDZ	**Gediz**	**0.27**	**90**	P		**Pb**	**19 16 18.1**	**+0.3**
GDZ				S		**Sb**	**19 16 22.4**	**+0.2**
DEMI	**Demirci**	**0.33**	**262**	*i* P		**Pg**	**19 16 18.2**	**+0.1**
DEMI				*i* S		**Sg**	**19 16 22.5**	**-0.4**
DEMI	**Demirci**	**0.33**	**262**	P		**Pg**	**19 16 18.2**	**+0.1**
DEMI				S		**Sg**	**19 16 22.5**	**-0.4**
TVSB	**Tavsanli**	**0.44**	**35**	*e*PG		**Pg**	**19 16 20.3**	**+0.2**
TVSB				*e*SG		**Sg**	**19 16 25.9**	**-0.2**
TVSB	**Tavsanli**	**0.44**	**35**	*e*Pg		**Pg**	**19 16 20.3**	**+0.2**
TVSB				*e*Sg		**Sg**	**19 16 26.0**	**-0.2**
KULA	**Kula-Manisa**	**0.68**	**213**	*e*PG		**Pb**	**19 16 25.1**	**+0.3**
KULA				*e*SG		**Sb**	**19 16 34.3**	**+0.3**
KULA	**Kula-Manisa**	**0.68**	**213**	*e*Pg		**Pb**	**19 16 25.1**	**+0.3**
DURS	**Dursunbey**	**0.72**	**315**	*i* P		**Pb**	**19 16 26.1**	**+0.5**
DURS				*i* S		**Sg**	**19 16 34.2**	**-0.8**
DURS	**Dursunbey**	**0.72**	**315**	P		**Pb**	**19 16 26.0**	**+0.5**
DURS				S		**Sg**	**19 16 34.2**	**-0.8**
KHAL	**Karahalli**	**0.77**	**159**	*i* P		**Pn**	**19 16 27.6**	**+0.1**
KHAL				*i* S		**Sn**	**19 16 38.2**	**-0.6**
KHAL	**Karahalli**	**0.77**	**159**	P		**Pn**	**19 16 27.6**	**+0.1**
KHAL				S		**Sn**	**19 16 38.2**	**-0.6**
IGD	**Bursa**	**1.17**	**2**	*i* P		**Pn**	**19 16 32.4**	**-0.6**
IGD				*i* S		**Sg**	**19 16 49.8**	**+0.6**
KCTX	**Karacabey (Bur**	**1.32**	**333**	*e*PN		**Pb**	**19 16 36.0**	**+0.4**
KCTX				*e*SN		**Sg**	**19 16 54.1**	**+0.3**
KCTX	**Karacabey (Bur**	**1.32**	**333**	*e*Pn		**Pb**	**19 16 36.0**	**+0.4**
KCTX				*e*Sn		**Sg**	**19 16 54.1**	**+0.3**
GONE	**Gonen-Balikesi**	**1.47**	**311**	*e*PN		**Pb**	**19 16 38.6**	**+0.4**
GONE	**Gonen-Balikesi**	**1.47**	**311**	*e*Pn		**Pb**	**19 16 38.6**	**+0.4**
ARMT	**Armutlu**	**1.49**	**352**	*e*PN		**Pb**	**19 16 38.7**	**+0.2**
ARMT	**Armutlu**	**1.49**	**352**	*e*Pn		**Pb**	**19 16 38.7**	**+0.2**
GULT	**Gulveren**	**1.71**	**38**	*e*PN		**Pb**	**19 16 42.3**	**0.0**
GULT	**Gulveren**	**1.71**	**38**	*e*Pn		**Pb**	**19 16 42.3**	**0.0**

MEX 16 19:17:01.9±0.3, 14.59N×91.94W, h97km±12km, MD3.8, Guatemala

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
PCIG		**1.66**	**312**	*e*S		Sn	19 17 51.4	+0.1
CCIG	**Comitan**	**1.69**	**354**	*e*P		Pn	19 17 29.5	-1.2

IDC ***16*** *19:17:50.2±1.3, 37.07N×138.71E, h0km, mb3.6/3, mb1 3.8/4, mb1mx3.3/50, mbtmp3.6/4, ML3.4/1, MS3.1/4, Ms1 3.1/4, ms1mx2.6/45, Error ellipse: s-maj=11.3km s-min=11.0km az=142.0*

ISCJB ***16*** *19:17:51.7±0.4, 37.04N±0.03°×138.68E±0.04, h24km±5km, mb3.7/3, MS3.2/3, Error ellipse: s-maj=5.8km s-min=4.1km az=137.1*

JMA ***16*** *19:17:52.1, 37.03N×138.69E, h8km±2km, M3.2 Broadband fault plane solution: P waves. NP1: φs191.00000°, δ72.00000°, λ39.00000°. NP2:φs87.00000°, δ53.00000°, λ157.00000°. Principal axes: T Plg40.0000°, Azm55.0000°; N Plg48.0000°, Azm212.0000°; P Plg12.0000°, Azm315.0000°;*

JMA Felt III J1.

ISC 16 19:17:51.7±1.0, 37.03N±0.03°×138.70E±0.03, h9km±9km, n19, σ0s64/26, mb3.7/3, MS2.9/3, 3C-4D, Near west coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
JHK	**Hiroka**	**0.34**	**49**	↑↑P		**Pg**	**19 17 58.4**	**0.0**
JHK				S		**Sg**	**19 18 03.5**	**+0.6**
JJN	**Nakama**	**0.43**	**280**	↓↓P		**Pg**	**19 18 00.3**	**+0.1**
JJN				S		**Sb**	**19 18 07.0**	**-1.2**
JGK	**Kuni**	**0.47**	**186**	P		**Pb**	**19 18 01.6**	**-0.5**
JGK				*e*S		**Sb**	**19 18 08.4**	**-0.7**
JIZZ	**Izumozaki**	**0.51**	**1**	↓↓P		**Pb**	**19 18 02.4**	**-0.3**
JKT	**Katashina**	**0.51**	**120**	↓↓P		**Pg**	**19 18 02.0**	**+0.3**
JKT				S		**Sb**	**19 18 09.5**	**-0.9**
MAT	**Matsushiro**	**0.62**	**219**	P		**Pg**	**19 18 03.5**	**-0.3**
MAT				S		**Sg**	**19 18 11.7**	**-0.2**
MAT	**Matsushiro**	**0.62**	**219**	P		**Pg**	**19 18 03.5**	**-0.3**
MAT				S		**Sg**	**19 18 11.9**	**0.0**
MJAR	**Matsushiro Arr**	**0.62**	**219**	Pg		**Pg**	**19 18 03.6**	**-0.2**
	68nm,0.3s,baz=33,slow=18,SNR=196							
MJAR				Lg		Lg	19 18 11.7	
	222nm,0.3s,baz=33,slow=31,SNR=76							
JNG	**Nsakai**	**0.78**	**218**	↑↑P		**Pg**	**19 18 06.6**	**-0.2**
JNG				S		**Sg**	**19 18 16.9**	**-0.1**
JAG	**Ashikaga**	**0.85**	**134**	↓↓P		**Pb**	**19 18 08.5**	**-0.2**
JAG				S		**Sb**	**19 18 20.0**	**-0.2**
JFY	**Yanaizu**	**0.89**	**64**	↑↑P		**Pg**	**19 18 08.5**	**-0.3**
JFY				S		**Sg**	**19 18 20.5**	**+0.1**
JNS	**Sasagawa**	**0.93**	**32**	P		**Pg**	**19 18 08.8**	**-0.8**
JNS				S		**Sg**	**19 18 21.5**	**-0.3**
KSRS	**Korea Array**	**8.61**	**276**	Pn		**Pn**	**19 19 58.4**	**+2.0**
	0.4nm,0.3s,baz=86,slow=14,SNR=5.4							
KSRS				LR		LR	19 22 56.2	
	comp=Z,36nm,20.5s,baz=40,slow=35							
GUMO	**Guam**	**23.98**	**165**	LR		LR	19 31 12.5	
	comp=Z,21nm,19.9s,baz=94,slow=33							
SONM	**Songino Array**	**26.00**	**305**	LR		LR	19 32 35.2	
	comp=Z,33nm,18.4s,baz=234,slow=34							
WRA	**Warramunga Arr**	**56.81**	**185**	P		**P**	**19 27 36.0**	**-0.4**
	1.0nm,0.5s,baz=1.0,slow=7.4,SNR=23							
ASAR	**Alice Springs**	**60.54**	**185**	P		**P**	**19 28 02.1**	**-0.2**
	0.2nm,0.3s,baz=17,slow=12,SNR=4.9							
YKA	**Yellowknife Ar**	**64.89**	**29**	P		**P**	**19 28 30.8**	**-0.1**
	0.2nm,0.6s,baz=305,slow=6.5,SNR=5.0							
RAO	**Raoul Island**	**77.48**	**142**	LR		LR	20 00 55.7	
	comp=Z,94nm,18.1s,baz=244,slow=33							

JMA 16 19:27:22.0±0.2, 38.83N×144.20E, h43km, M3.7, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**1.99**	**278**	P		Pn	19 27 54.1	+1.0
OFUJ				*e*S		Sn	19 28 18.2	+1.4
JTH	**Tanohata**	**2.12**	**302**	P		Pn	19 27 55.9	+0.9
JTH				*e*S		Sn	19 28 21.0	+0.9
JIO	**Ouri**	**2.26**	**261**	P		Pn	19 27 57.9	+1.0
JIO				S		Sn	19 28 23.9	+0.3
JMK	**Ichinoseki**	**2.33**	**274**	P		Pn	19 27 59.2	+1.4
JOM	**Ohasama**	**2.35**	**287**	P		Pn	19 27 59.5	+1.4
JOM				S		Sn	19 28 26.4	+0.7
JANG	**Nango**	**2.58**	**307**	P		Pn	19 28 01.9	+0.6
JANG				*e*S		Sn	19 28 32.5	+1.0
JOU	**Okura**	**2.81**	**262**	P		Pn	19 28 05.9	+1.5
JOU				*e*S		Sn	19 28 39.2	+2.1
JRG	**Rokugo**	**2.83**	**283**	P		Pn	19 28 06.9	+2.2
JRG				S		Sn	19 28 40.6	+3.0
JMM	**Marumori**	**2.85**	**251**	P		Pn	19 28 05.8	+0.9
JMM				S		Sn	19 28 37.9	0.0
JYK	**Kaneyama**	**3.00**	**273**	P		Pn	19 28 09.0	+2.0
JTM	**Tenmabayashi**	**3.10**	**310**	P		Pn	19 28 09.6	+1.2
JTM				S		Sn	19 28 44.9	+0.6

MEX 16 19:30:27.1±0.4, 32.47N×115.10W, h5km, MD3.6, California-Baja California border region

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
MBIG	**Mexicali**	**0.10**	**233**	*e*P		Pg	19 30 28.4	-0.9
MBIG				*e*S		Sg	19 30 30.7	0.0
CBX	**Cerro Bola**	**1.33**	**264**	*e*P		Pn	19 30 48.5	-4.0
CBX				*i* S		Sg	19 31 05.7	-4.3
TJIG	**Tijuana**	**1.33**	**269**	*e*P		Pn	19 30 48.7	-3.6
TJIG				*e*S		Sg	19 31 05.0	-5.0
SPIG	**San Pedro Mart**	**1.46**	**192**	*e*P		Pn	19 30 51.4	-2.9

KRSC 16 19:30:28.1±0.9, 56.17N×162.47E, h21km±8km, ML3.8, Near east coast of Kamchatka Peninsula

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
KBG	**Krutoberegovo**	**0.16**	**56**	*e*P		Pb	19 30 33.7	-0.2
KBG				*e*S		Sb	19 30 38.1	0.0
SMKR	**Semkarok**	**0.70**	**307**	*e*P		Pb	19 30 39.9	-1.7
SMKR				*e*S		Sb	19 30 48.5	-2.3
BDR	**Baidarnaya**	**0.81**	**300**	*e*P		Pb	19 30 42.3	-1.2
BDR				*e*S		Sb	19 30 52.6	-1.4
SRKR	**Sorokina**	**0.88**	**304**	*e*P		Pb	19 30 43.1	-1.5
SRKR				*e*S		Sb	19 30 54.5	-1.3
ZLN	**Zelenaya**	**0.95**	**262**	*e*P		Pn	19 30 46.6	+0.4
ZLN				*e*S		Sn	19 31 00.3	+1.2
CIRR	**Tsirk**	**0.97**	**268**	*e*P		Pn	19 30 46.5	0.0
CIRR				*e*S		Sn	19 31 00.0	+0.4
LGNR	**Loginova**	**1.00**	**266**	*e*P		Pn	19 30 47.4	+0.3
LGNR				*e*S		Sn	19 31 01.4	+0.7
KLY	**Klyuchi**	**1.03**	**279**	*e*P		Pb	19 30 44.5	-2.6
KLY				*e*S		Sb	19 30 57.4	-2.7
KRSR	**Krestovskiy**	**1.07**	**273**	*e*P		Pn	19 30 47.2	-0.6
KRSR				*e*S		Sb	19 31 01.2	-0.2
BZMR	**Bezymyannaya**	**1.14**	**259**	*e*P		Pb	19 30 49.5	+0.4
BZMR				*e*S		Sn	19 31 05.6	+1.8
KPT	**Kopyto**	**1.28**	**262**	*e*P		Pb	19 30 51.3	-0.2
KPT				*e*S		Sb	19 31 08.7	+1.2
KMNR	**Kamenistaya**	**1.32**	**253**	*e*P		Pb	19 30 52.9	+0.7
KMNR				*e*S		Sb	19 31 08.6	-0.2
KOZ	**Kozyrevsk**	**1.46**	**267**	*e*P		Pb	19 30 54.4	-0.1
KOZ				*e*S		Sb	19 31 14.5	+1.9
TUMR	**Tumrok**	**1.59**	**237**	*e*P		Pb	19 30 57.6	+0.9
TUMR				*e*S		Sb	19 31 19.2	+2.8
MKZ	**Mys Kozlova**	**1.67**	**195**	*e*P		Pb	19 30 58.0	0.0
MKZ				*e*S		Sb	19 31 20.7	+2.1
ESO	**Esso**	**2.13**	**265**	*e*P		Pb	19 31 04.2	-1.7
ESO				*e*S		Sb	19 31 31.9	0.0
BKI	**Bering**	**2.20**	**115**	*e*P		Pb	19 31 06.0	-1.1
BKI				*e*S		Sb	19 31 33.3	-0.6
OSSR	**Ossora**	**3.11**	**6**	*e*P		Pb	19 31 19.2	-3.3
PALN	**Palana**	**3.23**	**336**	*e*P		Pb	19 31 22.0	-2.5
PALN				*e*S		Sb	19 32 01.7	-1.6
SPN	**Mys Shipunski**	**3.39**	**206**	*e*P		Pn	19 31 21.7	+2.1
SPN				*e*S		Sn	19 32 01.7	+2.6
NLC	**Nalytchevo**	**3.51**	**212**	*e*S		Sn	19 32 05.4	+3.3
SDLR	**Sedlovina**	**3.57**	**217**	*e*P		Pn	19 31 25.1	+2.9
GNL	**Ganaly**	**3.60**	**228**	*e*P		Pn	19 31 25.6	+2.9
SMAR	**Somma**	**3.61**	**218**	*e*P		Pn	19 31 25.9	+3.1
AVH	**Avacha**	**3.63**	**218**	*e*P		Pn	19 31 26.6	+3.6
UGLR	**Uglovaya**	**3.64**	**217**	*e*P		Pn	19 31 26.5	+3.3
DALK	**Dalny**	**3.82**	**216**	*e*P		Pn	19 31 28.4	+2.9
DALK				*e*S		Sn	19 32 12.6	+3.0
KRMR	**Karymshinskiy**	**4.20**	**219**	*e*S		Sn	19 32 24.6	+5.6
RUS	**Russkaya**	**4.40**	**213**	*e*P		Pn	19 31 36.3	+2.8

ISCJB ***16*** *19:36:35.4±0.4, 36.39N±0.06°×137.05E±0.09, h300km, mb3.3/10, Error ellipse: s-maj=10.7km s-min=8.0km az=150.1*

JMA ***16*** *19:36:36.3±0.2, 36.35N×136.86E, h280km±2km, M3.4*

IDC ***16*** *19:36:37.0±0.5, 36.31N×136.89E, h279km±5km, mb3.0/9, mb1 3.3/13, mb1mx3.0/43, mbtmp3.7/13, Error ellipse: s-maj=13.6km s-min=9.9km az=79.0*

ISC 16 19:36:36.8±0.7, 36.36N±0.08°×136.98E±0.08, h300km, n24, σ2s50/25, mb3.3/10, Near west coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
JTT	**Ttatey**	**0.38**	**49**	P		**Pn**	**19 37 12.6**	**-2.5**
JKG	**Kaga**	**0.53**	**262**	P		Pn	19 37 12.8	-2.6
JKG				S		**S**	**19 37 41.0**	**-5.2**
JGM	**Miyama**	**0.69**	**198**	P		Pn	19 37 13.2	-2.9
JNG	**Nsakai**	**0.91**	**86**	P		**Pn**	**19 37 14.8**	**-2.1**
MAT	**Matsushiro**	**1.01**	**79**	P		**Pn**	**19 37 14.9**	**-2.3**
MAT				S		**S**	**19 37 45.1**	**-4.2**
MAT	**Matsushiro**	**1.01**	**79**	P		**Pn**	**19 37 14.9**	**-2.3**
MJAR	**Matsushiro Arr**	**1.01**	**79**	Pn		**Pn**	**19 37 14.7**	**-2.5**
	13nm,0.3s,baz=258,slow=6.9,SNR=96							
MJAR				S		**S**	**19 37 46.6**	**-2.7**
	1.2nm,0.3s,baz=228,slow=50,SNR=9.4							
JSZ	**Suzu**	**1.13**	**16**	P		**Pn**	**19 37 15.4**	**-2.3**
JHJ	**Hachijo jima 2**	**3.97**	**144**	P		**Pn**	**19 37 41.8**	**-1.0**
	7.2nm,0.3s,baz=308,slow=23,SNR=4.3							
JHJ				S		**S**	**19 38 35.6**	**+0.1**
	29nm,0.3s,baz=78,slow=22,SNR=12							
JNU	**Nakatsue**	**5.97**	**239**	P		**Pn**	**19 38 04.7**	**-1.2**
	1.8nm,0.3s,baz=47,slow=2.9,SNR=22							
KSRS	**Korea Array**	**7.34**	**281**	P		**Pn**	**19 38 22.2**	**0.0**
	0.5nm,0.3s,baz=103,slow=13,SNR=24							
USRK	**Ussuriysk Ar.**	**8.71**	**336**	P		**Pn**	**19 38 39.2**	**+0.3**
	0.4nm,0.3s,baz=151,slow=12,SNR=19							
ASAJ	**Asahikawa**	**8.86**	**27**	P		**Pn**	**19 38 38.8**	**-1.9**
	12nm,0.3s,baz=222,slow=14,SNR=106							
KLR	**Kul'dur**	**13.42**	**345**	P		**Pn**	**19 39 35.1**	**-1.2**
	1.3nm,0.3s,baz=177,slow=10,SNR=31							
SONM	**Songino Array**	**25.26**	**307**	P		**P**	**19 41 38.8**	**+2.5**
	0.2nm,0.4s,baz=111,slow=9.3,SNR=2.9							
TIXI	**Tiksi**	**35.61**	**356**	P		**P**	**19 43 07.6**	**+1.5**
	0.5nm,0.4s,baz=152,slow=2.7,SNR=4.1							
**MKAR

3.7nm,0.3s,baz=114,slow=20,SNR=8.5
JHJ Sn **Sn** **19 54 21.8 +0.9**
18nm,0.3s,baz=74,slow=22,SNR=5.6
WRA **Warramunga Arr** **56.26 189** P **P** **20 02 20.8 -0.1**
0.7nm,0.7s,baz=11,slow=7.5,SNR=6.9
ASAR **Alice Springs** **59.99 189** P **P** **20 02 48.4 +1.4**
0.3nm,0.6s,baz=3.7,slow=7.2,SNR=7.6

IDC ***16*** *20:03:39.4±1.3,8˚.99S×123˚.11E,h0km,mb3.8/4, mb1 3.9/7,mb1mx3.6/37,mbtmp3.8/7,ML3.7/3,Error ellipse: s-maj=77.0km s-min=22.2km az=66.0*
ISCJB ***16*** *20:03:47.2±0.4,9˚.32S±0˚.06×123˚.40E±0˚.06,h100km, mb4.2/10,Error ellipse: s-maj=10.5km s-min=4.2km az=135.8*
NEIC ***16*** *20:03:50.0±1.4,9˚.52S×123˚.11E,h117km±15km,mb4.4/9, Error ellipse: s-maj=26.7km s-min=9.7km az=54.0*
DJA ***16*** *20:03:54.6±0.3,9˚S±5˚×12˚3E±˚,h10km,M4.2/7,mB4.9/2, mb4.6/4,MLv4.0/7,Mw(mB)4.2/2*
ISC 16 20:03:48.3±0.6,9˚32S±0˚06×123˚40E±0˚07,h100km,n34, σ2§81/39,mb4.3/10,Timor region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BATI	**Baumata**	**0.92**	**164**	P	Pn	20 04 17.7	+10
SOEI	**Soe**	**0.96**	**117**	P	Pn	20 04 18.1	+10
SOEI				S	Sn	20 04 39.5	+16
MMRI	**Maumere**	**1.34**	**301**	P	**Pn**	**20 04 09.6**	**-3.0**
MMRI				S	**Sn**	**20 04 24.4**	**-6.6**
BASI	**Baing, Sumba**	**2.92**	**252**	P	**Pn**	**20 04 34.3**	**+1.3**
PLAI	**Plampang**	**5.58**	**275**	P	**Pn**	**20 05 08.6**	**-0.3**
	52nm,0.7s,1μm0.3nm						
KAPI	**Kappang**	**5.61**	**320**	*e*Pn	**Pn**	**20 05 10.2**	**+0.9**
KAPI				*e*Sn	Sn	20 06 04.5	-7.9
TWSI	**Taliwang, Sumb**	**6.46**	**275**	P	**Pn**	**20 05 22.6**	**+1.6**
	23nm,0.5s,857nm0.2nm						
MTN	**Manton Dam**	**8.36**	**115**	*e*Pn	Pn	20 05 52.0	+5.3
MTN				*e*Sn	**Sn**	**20 07 22.0**	**+2.6**
FITZ	**Fitzroy Crossi**	**8.99**	**166**	Pn	**Pn**	**20 05 57.0**	**+1.6**
	0.5nm,0.3s,baz=357,slow=9.5,SNR=18						
FITZ				Sn	**Sn**	**20 07 33.2**	**-1.8**
	4.9nm,0.3s,baz=193,slow=14,SNR=19						
FITZ	**Fitzroy Crossi**	**8.99**	**166**	*e*Pn	**Pn**	**20 05 57.2**	**+1.8**
FITZ				*e*Sn	**Sn**	**20 07 32.4**	**-2.5**
WRA	**Warramunga Arr**	**14.94**	**136**	Pn	**P**	**20 07 16.9**	**-0.7**
	0.3nm,0.3s,baz=308,slow=12,SNR=27						
WRA				Sn	**Sn**	**20 09 56.1**	**-3.2**
	1.3nm,0.3s,baz=297,slow=23,SNR=12						
WR1	**Warramunga Arr**	**14.94**	**136**	*e*Pn	**P**	**20 07 16.9**	**-0.6**
	16nm,1.4s						
WR1				*e*Sn	**Sn**	**20 09 56.1**	**-3.2**
WRAB	**Tennant Creek**	**14.94**	**136**	*e*Pn	**Pn**	**20 07 14.5**	**+0.1**
	31nm,1.7s						
WB2	**Warramunga Arr**	**14.95**	**136**	*e*Pn	**Pn**	**20 07 15.3**	**+0.8**
	26nm,1.8s						
WB2				*e*Sn	Sn	20 09 48.0	-12
AS31	**Alice Springs**	**17.45**	**146**	*e*P	**P**	**20 07 44.0**	**-1.3**
	2.8nm,1.4s						
AS31				*e*Sn	**Sn**	**20 10 52.5**	**-7.2**
ASAR	**Alice Springs**	**17.45**	**146**	P	**Pn**	**20 07 49.8**	**+4.3**
	0.4nm,0.3s,baz=319,slow=12,SNR=24						
ASAR				S	**Sn**	**20 10 56.7**	**-3.1**
	0.7nm,0.3s,baz=319,slow=24,SNR=11						
AS01	**Alice Springs**	**17.47**	**146**	*e*P	**P**	**20 07 43.8**	**-1.7**
BLSI	**Bandar Lampung**	**18.43**	**281**	P	**Pn**	**20 08 04.2**	**+6.9**
NWAO	**Narrogin (SRO)**	**24.17**	**193**	*e*P	**P**	**20 08 54.0**	**-1.3**
	26nm,1.5s						
BBOO	**Buckleboo**	**26.14**	**155**	*e*P	**P**	**20 09 14.3**	**+1.1**
	31nm,1.5s						
PSI	**Prapat**	**27.20**	**295**	*e*P	**P**	**20 09 18.4**	**-4.7**
	6.5nm,1.1s						
ENH	**Enshi**	**41.58**	**342**	*e*P	**P**	**20 11 24.3**	**-2.1**
	16nm,1.8s						
MSVF	**Nonsavu**	**53.63**	**105**	*e*P	**P**	**20 13 00.7**	**+0.7**
	22nm,1.4s						
USRK	**Ussuriysk Ar.**	**53.84**	**8**	P	**P**	**20 13 01.9**	**+1.0**
	0.9nm,0.4s,baz=199,slow=7.6,SNR=8.0						
SONA0	**Songino Array**	**58.87**	**347**	*e*P	**P**	**20 13 38.5**	**+1.7**
	12nm,2.0s						
SONM	**Songino Array**	**58.87**	**347**	P	**P**	**20 13 38.5**	**+1.7**
	0.2nm,0.4s,baz=149,slow=8.3,SNR=3.6						
MK01	**Makanchi Array**	**66.78**	**331**	*e*P	**P**	**20 14 29.5**	**+0.4**
MK31	**Makanchi Array**	**66.80**	**331**	*e*P	**P**	**20 14 31.5**	**+2.2**
MK32	**Makanchi Array**	**66.80**	**331**	*e*P	**P**	**20 14 30.4**	**+1.2**
MKAR	**Makanchi Array**	**66.80**	**331**	P	**P**	**20 14 30.4**	**+1.2**
	0.6nm,0.5s,baz=138,slow=6.4,SNR=15						
MKAR	**Makanchi Array**	**66.80**	**331**	*e*P	**P**	**20 14 31.5**	**+2.3**
ZAA0	**Zalesovo Array**	**70.96**	**337**	*e*P	**P**	**20 14 54.7**	**-0.1**
ZALV	**Zalesovo Beam**	**70.96**	**337**	P	**P**	**20 14 54.9**	**+0.1**
	0.4nm,0.3s,baz=132,slow=6.3,SNR=3.3						
ZAA1	**Zalesovo Array**	**70.96**	**337**	*e*P	**P**	**20 14 54.9**	**0.0**

IDC ***16*** *20:10:12.6±0.9,18˚.71N×147˚.89E,h0km,mb3.6/10, mb1 3.9/11,mb1mx3.6/47,mbtmp3.7/11,ML4.1/1,MS2.7/1, Ms1 2.7/1,ms1mx2.3/47,Error ellipse: s-maj=32.2km s-min=18.0km az=100.0*
NEIC ***16*** *20:10:13.9±0.4,18˚.67N×147˚.90E,h10km,mb4.4/5,Error ellipse: s-maj=13.4km s-min=7.3km az=78.0*
ISCJB ***16*** *20:10:15.4±0.5,18˚.64N±0˚.06×147˚.9E±0˚.1,h33km, mb3.7/12,Error ellipse: s-maj=16.3km s-min=9.1km az=171.6*
ISC 16 20:10:17.3±0.7,18˚59N±0˚07×147˚8E±0˚1,h35km,n27, σ1§38/25,mb3.7/12,Mariana Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GUMO	**Guam**	**5.70**	**210**	Pn	**Pn**	**20 11 40.5**	**+0.9**
	5.5nm,0.3s,baz=98,slow=3.8,SNR=8.0						
GUMO				Sn	**Sn**	**20 12 40.8**	**-3.0**
	2.1nm,0.3s,baz=64,slow=1.8,SNR=3.6						
GUMO				LR	LR	20 14 02.4	
	comp=Z,68nm,19.7s,baz=73,slow=39						
CBIJ	**Chichi jima**	**9.90**	**330**	*e*Pn	**Pn**	**20 12 34.5**	**-2.7**
CBIJ				*e*Sn	Sn	20 14 13.4	-14
PATS	**Pohnpei**	**15.56**	**137**	*e*Pn	**Pn**	**20 13 52.2**	**-1.9**
	124nm,1.2s						
H11S3	**WAKE ISLAND Hy**	**17.94**	**87**	T	T	20 32 50.1	
	baz=276,slow=74,SNR=20						
H11S1	**WAKE ISLAND Hy**	**17.95**	**87**	T	T	20 32 53.5	
	baz=276,slow=74,SNR=20						
H11S2	**WAKE ISLAND Hy**	**17.96**	**87**	T	T	20 32 44.9	
	baz=276,slow=74,SNR=19						
MAJO	**Matsushiro**	**19.77**	**337**	*e*P	**P**	**20 14 45.0**	**+0.7**
	44nm,1.8s						
MJB9	**Matsu-Tunnel**	**19.77**	**337**	*e*P	**P**	**20 14 44.6**	**+0.2**
	11nm,1.8s						
KSRS	**Korea Array**	**25.59**	**321**	P	**P**	**20 15 44.9**	**+1.6**
	0.7nm,0.8s,baz=145,slow=8.8,SNR=3.5						
KSAR	**Wonju Array Be**	**25.61**	**321**	P	**P**	**20 15 44.9**	**+1.5**
WR1	**Warramunga Arr**	**40.50**	**200**	*e*P	**P**	**20 17 54.3**	**+1.3**
	11nm,1.3s						
WRA	**Warramunga Arr**	**40.50**	**200**	P	**P**	**20 17 54.3**	**+1.3**
	1.5nm,0.8s,baz=17,slow=8.3,SNR=4.5						
ASAR	**Alice Springs**	**44.13**	**198**	P	**P**	**20 18 24.6**	**+2.0**
	0.3nm,0.6s,baz=12,slow=6.0,SNR=4.1						
SONA0	**Songino Array**	**44.46**	**321**	*e*P	**P**	**20 18 24.7**	**-0.5**
	7.1nm,1.8s						
SONA1	**Songino Array**	**44.46**	**321**	*e*P	**P**	**20 18 26.5**	**+1.3**
SONM	**Songino Array**	**44.46**	**321**	P	**P**	**20 18 24.7**	**-0.5**
	0.3nm,0.6s,baz=125,slow=9.0,SNR=3.0						
ZALV	**Zalesovo Beam**	**59.30**	**322**	P	**P**	**20 20 15.1**	**-0.3**
	0.3nm,0.3s,baz=100,slow=6.1,SNR=3.5						
ZAA1	**Zalesovo Array**	**59.30**	**322**	*e*P	**P**	**20 20 15.1**	**-0.4**
MK32	**Makanchi Array**	**59.95**	**314**	*e*P	**P**	**20 20 21.4**	**+1.2**
MKAR	**Makanchi Array**	**59.95**	**314**	P	**P**	**20 20 21.4**	**+1.2**
	0.3nm,0.6s,baz=98,slow=6.8,SNR=6.1						
ILAR	**Eielson Array**	**62.88**	**26**	P	**P**	**20 20 38.7**	**-0.9**
	0.4nm,0.7s,baz=250,slow=5.6,SNR=4.8						
INK	**Inuvik**	**68.70**	**23**	P	**P**	**20 21 17.1**	**+0.2**
	0.7nm,0.7s,baz=237,slow=4.8,SNR=4.4						
ABKAR	**Akbulak array**	**74.75**	**317**	*e*P	**P**	**20 21 54.5**	**+0.7**
YKA	**Yellowknife Ar**	**77.16**	**28**	P	**P**	**20 22 07.6**	**+0.5**
	0.4nm,0.6s,baz=287,slow=5.3,SNR=7.9						
YKB5	**Yellowknife Ar**	**77.16**	**28**	*e*P	**P**	**20 22 08.0**	**+0.8**
FIA0	**FINESS Array S**	**87.79**	**336**	*e*P	**P**	**20 23 02.1**	**-0.5**
FINES	**FINESS Array B**	**87.79**	**336**	P	**P**	**20 23 02.1**	**-0.5**
	2.3nm,1.0s,baz=302,slow=8.7,SNR=3.1						

JMA 16 20:19:15.1,37˚70N×139˚96E,h9km±1km,M1.4,Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFY	**Yanaizu**	**0.36**	**215**	S	Sg	20 19 26.8	0.0

NIED ***16*** *20:19:00,37˚10N×140˚90E,h5km,Mw4.2 Best double couple: M₀2.44000×10¹⁵ NP1:φs75.00000°,δ26.00000°, λ-77.00000°. NP2:φs241.00000°,δ64.00000°, λ-96.00000°.*
ISCJB ***16*** *20:19:15.7±0.8,37˚09N±0˚03×140˚88E±0˚04,h14km±4km, mb4.5/84,MS4.1/3,Error ellipse: s-maj=5.7km s-min=3.6km az=33.0*
IDC ***16*** *20:19:15.0±0.5,37˚08N×140˚82E,h0km,mb4.3/26, mb1 4.3/33,mb1mx4.2/60,mbtmp4.2/33,ML3.5/6,Error ellipse: s-maj=14.5km s-min=10.7km az=110.0*
JMA ***16*** *20:19:16.4,37˚10N×140˚83E,h8km±1km,M4.5 Broadband fault plane solution: P waves. NP1: φs238.00000°,δ58.00000°,λ-98.00000°. NP2:φs74.00000°, δ32.00000°,λ-77.00000°. Principal axes: T Plg13.0000°, Azm334.0000°; N Plg7.0000°, Azm242.0000°; P Plg75.0000°, Azm125.0000°;*
JMA Felt III J1.
BJI ***16*** *20:19:16.9,36˚87N×140˚97E,h34km,mb4.5/34,mB4.9/21, Ms4.2/14,Ms7 4.0/7*
MOS ***16*** *20:19:17.6±1.1,37˚15N×140˚82E,h25km,mb4.8/33,Error ellipse: s-maj=8.1km s-min=5.6km az=110.1*
NEIC ***16*** *20:19:18.9±1.3,37˚09N×140˚85E,h25km±9km,mb4.7/39, Error ellipse: s-maj=5.1km s-min=4.0km az=129.0*
NEIC Recorded [3 JMA] in Fukushima and Ibaraki.
ISC 16 20:19:16.9±0.9,37˚09N±0˚03×140˚88E±0˚04,h13km±5km, n208,σ1§11/228,mb4.6/84,MS4.3/3,5C-1D,Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.07**	**281**	||P	**Pg**	**20 19 17.7**	**-1.9**
JFK	**Kawauchi**	**0.28**	**358**	||P	**Pg**	**20 19 22.0**	**-0.7**
JFK				S	**Sg**	**20 19 26.0**	**-0.6**
JHO	**Hitachi**	**0.54**	**208**	||P	**Pg**	**20 19 26.5**	**-1.0**
JHO				S	**Sg**	**20 19 33.8**	**-0.8**
JFT	**Otama**	**0.61**	**315**	||P	**Pg**	**20 19 27.8**	**-1.1**
JMM	**Marumori**	**0.78**	**355**	||P	**Pg**	**20 19 30.9**	**-1.1**
JMM				S	**Sg**	**20 19 41.7**	**-0.6**
JSB	**Shiboa**	**0.78**	**261**	||P	**Pg**	**20 19 31.2**	**-0.8**
JSB				S	**Sg**	**20 19 41.6**	**-0.7**
MJAR	**Matsushiro Arr**	**2.21**	**257**	Pn	**Pn**	**20 19 53.9**	**+0.5**
	56nm,0.3s,baz=80,slow=16,SNR=268						
MAJO	**Matsushiro**	**2.22**	**257**	*e*P	**Pn**	**20 19 54.5**	**+1.1**
MAJO	**Matsushiro**	**2.22**	**257**	*e*Pn	**Pn**	**20 19 54.5**	**+1.1**
MAT	**Matsushiro**	**2.22**	**257**	P	**Pn**	**20 19 54.2**	**+0.8**
MAT				S	**Sb**	**20 20 23.3**	**-0.9**
MJB9	**Matsu-Tunnel**	**2.22**	**257**	*e*Pn	**Pn**	**20 19 54.4**	**+1.0**
INU	**Inuyama**	**3.58**	**242**	*e*Pn	**Pn**	**20 20 14.2**	**+2.1**
JHJ	**Hachijo jima 2**	**4.06**	**193**	Pn	**Pn**	**20 20 19.0**	**+0.2**
	21nm,0.3s,baz=281,slow=21,SNR=11						
JHJ				Sn	**Sn**	**20 21 06.2**	**+0.1**
	82nm,0.3s,baz=250,slow=24,SNR=12						
JHJ2	**Mitsune**	**4.06**	**193**	*e*Pn	**Pn**	**20 20 19.2**	**+0.5**
ERM	**Erimo**	**5.22**	**19**	*e*P	**Pn**	**20 20 34.6**	**-0.1**
ERM	**Erimo**	**5.22**	**19**	*e*Pn	**Pn**	**20 20 34.6**	**-0.1**
ASAJ	**Asahikawa**	**7.14**	**10**	Pn	**Pn**	**20 21 01.5**	**+0.5**
	2.1nm,0.3s,baz=216,slow=11,SNR=16						
ASAJ				Sn	**Sn**	**20 22 21.8**	**-0.2**
	baz=312,slow=30,SNR=2.3						
ASAJ	**Asahikawa**	**7.14**	**10**	*e*Pn	**Pn**	**20 21 00.9**	**-0.1**
ASAJ				*e*Sn	**Sn**	**20 22 21.8**	**-0.2**
YUK	**Yuzh-Kuril'sk**	**7.90**	**27**	P	**Pn**	**20 21 13.8**	**+2.3**
YUK				S	**Sn**	**20 22 35.7**	**-5.1**
YUK				pmax	pmax		
	comp=N,88nm,0.5s						
YUK				pmax	pmax		
	comp=Z,142nm,0.5s						
YUK				pmax	pmax		
	comp=E,77nm,0.2s						
SHO	**Shikotan**	**8.15**	**32**	*e*P	**Pn**	**20 21 16.1**	**+1.3**
SHO				*e*S	Sn	20 22 40.5	-6.3
SHO				pmax	pmax		
	comp=Z,54nm,0.8s						
SHO				pmax	pmax		
	comp=N,14nm,0.6s						
SHO				pmax	pmax		
	comp=E,6.0nm,0.3s						
JNU	**Nakatsue**	**9.10**	**247**	Pn	**Pn**	**20 21 28.4**	**+0.4**
	comp=E,0.1nm,0.3s,baz=41,slow=9.3,SNR=3.0						
JNU	**Nakatsue**	**9.10**	**247**	*e*Pn	**Pn**	**20 21 30.9**	**+2.9**
KUR	**Kuril'sk**	**9.69**	**31**	*e*P	Pn	20 21 46.9	+11
KUR				pmax	pmax		
	comp=E,44nm,0.2s						
KUR				pmax	pmax		
	comp=Z,33nm,0.2s						
USRK	**Ussuriysk Ar.**	**9.80**	**319**	Pn	**Pn**	**20 21 37.0**	**-0.5**
	baz=124,slow=12,SNR=2.5						
CBIJ	**Chichi jima**	**10.02**	**173**	*e*Pn	**Pn**	**20 21 38.6**	**-2.0**
KSRS	**Korea Array**	**10.34**	**276**	Pn	**Pn**	**20 21 44.5**	**-0.3**
	comp=E,0.1nm,0.3s,baz=88,slow=14,SNR=2.7						
KS15	**Wonju Array Si**	**10.37**	**276**	*e*Pn	**Pn**	**20 21 44.5**	**-0.8**
KSAR	**Wonju Array Be**	**10.37**	**276**	P	**Pn**	**20 21 44.6**	**-0.7**
KSAR	**Wonju Array Be**	**10.37**	**276**	Pn	**Pn**	**20 21 44.5**	**-0.7**
MDJ	**Mudanjiang**	**11.38**	**315**	*e*Pn	Pn	20 22 03.5	+4.4
CN2	**Changchun**	**13.52**	**305**	*e*P	**Pn**	**20 22 29.8**	**+1.4**
KLR	**Kul'dur**	**13.83**	**334**	Pn	**Pn**	**20 22 34.0**	**+1.4**
	comp=Z,0.1nm,0.3s,baz=137,slow=13,SNR=4.6						
BJI	**Beijing**	**19.53**	**286**	P	**P**	**20 23 44.1**	**+0.1**
BJI				pmax	pmax		
	comp=Z,7.0nm,1.6s						
BJT	**Baijiatuan**	**19.54**	**286**	*e*P	**P**	**20 23 44.2**	**+0.1**
BJT				pmax	pmax		
	comp=Z,14nm,1.2s						
BJT	**Baijiatuan**	**19.54**	**286**	*e*P	**P**	**20 23 44.2**	**+0.1**
	comp=Z,14nm,1.2s						
HHC	**Hu-ho-hao-te**	**23.05**	**288**	*e*P	**P**	**20 24 20.8**	**-1.3**
HHC				pP	sP	20 24 33.0	+5.6
HHC				PP	**PnPn**	**20 24 53.3**	**+6.3**
HHC				S	**S**	**20 28 28.5**	**-4.2**
HHC				sS	Sn	20 28 45.4	-3.7
HHC				pmax	pmax		
	comp=Z,23nm,1.1s						
HHC				pmax	pmax		
	comp=Z,67nm,6.7s						
HHC				LR	LR		
	comp=Z,590nm,10.4s						
HHC				LR	LR		
	comp=Z,580nm,12.2s						
HHC				LR	LR		
	comp=Z,830nm,14.9s						
YAK	**Yakutsk**	**25.93**	**348**	P	**P**	**20 24 48.2**	**-0.3**
	comp=Z,30nm,0.9s,baz=343,slow=1.7,SNR=9.3						
YAK	**Yakutsk**	**25.93**	**348**	*e*P	**P**	**20 24 47.1**	**-1.4**
YAK				pmax	pmax		
	comp=Z,23nm,1.0s						
YAK				pmax	pmax		
	comp=N,10.0nm,1.2s						
YAK				pmax	pmax		
	comp=E,6.0nm,1.0s						
YAK	**Yakutsk**	**25.93**	**348**	*e*P	**P**	**20 24 48.0**	**-0.6**
	comp=E,24nm,0.9s						
SEY	**Seymchan**	**26.82**	**12**	P	**P**	**20 24 57.5**	**+0.9**
	comp=E,3.2nm,0.8s,baz=191,slow=7.6,SNR=9.5						
ENH	**Enshi**	**26.92**	**265**	*e*P	**P**	**20 24 57.1**	**-0.7**
	comp=E,5.7nm,0.6s						
ULN	**Ulaanbaatar**	**26.97**	**304**	*e*P	**P**	**20 24 57.7**	**-0.7**
ULN				pmax	pmax		
	comp=Z,4.0nm,0.7s						
ULN	**Ulaanbaatar**	**26.97**	**304**	*e*P	**P**	**20 24 57.7**	**-0.7**
	comp=Z,3.8nm,0.7s						
BOD	**Bodaibo**	**27.26**	**328**	*e*P	**P**	**20 24 58.3**	**-2.3**
BOD				pmax	pmax		
	comp=Z,3.0nm,0.7s						
SONA1	**Songino Array**	**27.40**	**304**	*e*P	**P**	**20 25 02.2**	**0.0**
SONA0	**Songino Array**	**27.40**	**304**	*e*P	**P**	**20 25 01.3**	**-0.9**
	comp=Z,4.9nm,0.8s						
SONM	**Songino Array**	**27.40**	**304**	P	**P**	**20 25 01.3**	**-0.9**
	comp=Z,4.2nm,0.7s,baz=103,slow=8.1,SNR=31						
LZH	**Lanzhou**	**29.64**	**279**	*e*P	**P**	**20 25 23.0**	**+0.7**
LZH				pP	sP	20 25 33.4	+5.6
LZH				sP	pP	20 25 37.1	+11
LZH				pmax	pmax		
	comp=Z,17nm,1.0s						
GYA	**Guiyang**	**30.81**	**260**	P	**P**	**20 25 32.8**	**+0.1**
GYA				pP	sP	20 25 43.8	+5.6
GYA				PP	**PnPn**	**20 26 36.0**	**+3.2**
GYA				PcP	**PcP**	**20 28 31.3**	**+1.5**
GYA				S	**S**	**20 30 34.5**	**-1.5**
GYA				sS	sS	20 30 50.8	+8.3
GYA				ScP	**ScP**	**20 32 10.4**	**-1.8**
GYA				SS	**SnSn**	**20 32 17.0**	**+2.2**
GYA				ScS	**ScS**	**20 36 05.8**	**-3.3**
GYA				pmax	pmax		
	comp=Z,20nm,1.0s						
GYA				pmax	pmax		
	comp=Z,120nm,4.9s						
GYA				LR	LR		
	comp=Z,500nm,17.8s						
GYA				LR	LR		
	comp=Z,530nm,17.6s						
GYA				LR	LR		
	comp=Z,510nm,17.4s						
CD2	**Chengdu**	**31.25**	**270**	P	**P**	**20 25 35.0**	**-1.4**
CD2				pmax	pmax		
	comp=Z,1.0nm,0.5s						
GTA	**Gaotai**	**32.14**	**287**	*e*P	**P**	**20 25 44.6**	**+0.3**
GTA				pP	sP	20 25 54.0	+4.2
GTA				sP	pP	20 25 58.4	+10
GTA				pmax	pmax		
	comp=Z,4.0nm,1.0s						
KMI	**Kunming**	**34.55**	**261**	P	**P**	**20 26 05.8**	**+0.3**
KMI				pmax	pmax		
	comp=Z,7.0nm,0.6s						
KMI				pmax	pmax		
	comp=Z,120nm,5.3s						
TIXI	**Tiksi**	**35.19**	**353**	P	**P**	**20 26 09.5**	**-0.7**
	comp=Z,3.4nm,0.8s,baz=322,slow=2.0,SNR=4.1						
MYLDM	**Lahad Datu**	**37.79**	**218**	*e*P	**P**	**20 26 34.0**	**+1.0**
	comp=Z,36nm,1.8s						
WMQ	**Urumqi**	**40.44**	**297**	P	**P**	**20 26 55.3**	**+0.3**
WMQ				pP	sP	20 27 03.3	+2.7
WMQ				sP	pP	20 27 08.6	+10
WMQ				PP	**PnPn**	**20 28 31.6**	**-0.2**
WMQ				pmax	pmax		
	comp=Z,5.0nm,0.8s						
WMQ				pmax	pmax		
	comp=Z,66nm,4.6s						
WMQ				LR	LR		
	comp=Z,59nm,20.6s						
WMQ				LR	LR		
	comp=Z,95nm,19.2s						
CMAR	**Chiang Mai Arr**	**41.10**	**255**	P	**P**	**20 26 59.5**	**-1.2**
	comp=Z,0.3nm,0.5s,baz=50,slow=7.0,SNR=6.4						
CMAR				PcP	**PcP**	**20 29 00.9**	**+0.7**
	comp=Z,0.6nm,0.8s,baz=350,slow=2.1,SNR=6.3						
CM01	**Chiang Mai Arr**	**41.11**	**255**	*e*P	**P**	**20 27 00.7**	**0.0**
CM01				*e*PcP	**PcP**	**20 29 00.9**	**+0.7**
ZAA1	**Zalesovo Array**	**41.56**	**312**	*e*P	**P**	**20 27 03.8**	**-0.3**
ZAA1				*e*PcP	**PcP**	**20 29 00.8**	**-0.3**
ZALV	**Zalesovo Beam**	**41.56**	**312**	P	**P**	**20 27 03.8**	**-0.3**
	comp=Z,3.6nm,0.6s,baz=101,slow=7.1,SNR=22						
ZALV				PcP	**PcP**	**20 29 00.8**	**-0.3**
	comp=Z,2.1nm,0.6s,baz=123,slow=2.6,SNR=6.5						
LSA	**Lhasa**	**41.78**	**275**	*e*P	**P**	**20 27 06.9**	**+0.2**
LSA				pmax	pmax		
	comp=Z,3.0nm,0.9s						
LSA	**Lhasa**	**41.78**	**275**	*e*P	**P**	**20 27 06.9**	**+0.2**
	comp=Z,2.6nm,0.9s						
NVS	**Novosibirsk**	**42.50**	**314**	*e*P	P	20 27 07.0	-4.6
MK01	**Makanchi Array**	**43.73**	**302**	*e*P	**P**	**20 27 21.2**	**-0.6**
MK01				*e*PcP	**PcP**	**20 29 07.6**	**-0.9**
MK31	**Makanchi Array**	**43.73**	**302**	*e*P	**P**	**20 27 21.8**	**0.0**
MK31	**Makanchi Array**	**43.73**	**302**	*e*P	**P**	**20 27 21.8**	**0.0**
MK32	**Makanchi Array**	**43.73**	**302**	*e*P	**P**	**20 27 21.9**	**+0.1**
MKAR	**Makanchi Array**	**43.73**	**302**	P	**P**	**20 27 21.9**	**+0.1**
	comp=Z,3.0nm,0.7s,baz=86,slow=9.5,SNR=33						
MAKZ	**Makanchi**	**43.94**	**302**	*e*P	**P**	**20 27 23.4**	**-0.1**
MAKZ				pmax	pmax		
	comp=Z,3.0nm,0.6s						
MAKZ	**Makanchi**	**43.94**	**302**	*e*P	**P**	**20 27 23.4**	**-0.1**
	comp=Z,2.5nm,0.6s						
KURK	**Kurchatov**	**45.56**	**308**	*e*P	**P**	**20 27 35.5**	**-0.9**
KURK				pmax	pmax		
	comp=Z,9.0nm,0.9s						
KURK	**Kurchatov**	**45.56**	**308**	*e*P	**P**	**20 27 35.5**	**-0.9**
	comp=Z,9.0nm,0.9s						
SVW2	**Sparrevohn**	**45.74**	**37**	*e*P	**P**	**20 27 37.9**	**+0.3**
	comp=Z,6.2nm,1.0s						
KAPI	**Kappang**	**46.30**	**210**	P	**P**	**20 27 42.2**	**-0.2**
	comp=Z,12nm,0.7s,baz=350,slow=2.5,SNR=12						
KAPI	**Kappang**	**46.30**	**210**	*e*P	**P**	**20 27 42.6**	**+0.2**
	comp=Z,18nm,0.8s						
PDGK	**Podgornoye**	**46.38**	**298**	P	**P**	**20 27 44.5**	**+1.7**
PDGK				pmax	pmax		
	comp=Z,5.0nm,1.0s						
GUN	**Gumba**	**46.73**	**275**	*e*P	**P**	**20 27 45.6**	**-0.6**
KKN	**Kakani**	**47.26**	**275**	*e*P	**P**	**20 27 50.1**	**-0.1**
	comp=Z,12nm,0.8s						
PKIN	**Phulchoki**	**47.26**	**275**	*e*P	**P**	**20 27 50.4**	**+0.1**
	comp=Z,4.3nm,0.6s						
GKN	**Gorkha**	**47.68**	**276**	*e*P	**P**	**20 27 52.8**	**-0.6**
	comp=Z,54nm,1.1s						
MLY	**Manley**	**48.03**	**32**	*e*P	**P**	**20 27 56.9**	**+1.4**
	comp=Z,2.9nm,1.0s						
KOLN	**Koldanda**	**48.60**	**276**	*e*P	**P**	**20 28 00.1**	**-0.5**
	comp=Z,5.1nm,0.6s						
PMR	**Palmer**	**48.83**	**37**	*e*P	**P**	**20 28 01.3**	**-0.3**
PMR				pmax	pmax		
	comp=Z,10.0nm,1.3s						
PMR	**Palmer**	**48.83**	**37**	*e*P

comp=Z,4.0nm,0.5s
KKAR Karatay Array 52.73 300 *e*P **P 20 28 31.1 -0.2**
KKAR Karatay Array 52.73 300 *e*P **P 20 28 31.1 -0.2**
INK Inuvik 54.53 27 P **P 20 28 44.1 +0.1**
comp=Z,0.9nm,0.5s,baz=307,slow=7.0,SNR=6.0
INK Inuvik 54.53 27 *e*P **P 20 28 44.8 +0.7**
ARU Arti 56.04 318 *e*P **P 20 28 54.9 -0.3**
ARU pmax pmax
comp=Z,12nm,1.3s
ARU Arti 56.04 318 *e*P **P 20 28 54.9 -0.3**
comp=Z,12nm,1.3s
FITZ Fitzroy Crossi 56.75 197 P **P 20 29 01.0 +0.4**
comp=Z,1.8nm,0.5s,baz=7.2,slow=8.8,SNR=5.6
FITZ Fitzroy Crossi 56.75 197 *e*P **P 20 29 00.8 +0.3**
comp=Z,65nm,2.0s
WR1 Warramunga Arr 57.06 187 *e*P **P 20 29 02.0 -0.7**
comp=Z,8.3nm,0.6s
WRA Warramunga Arr 57.06 187 P **P 20 29 02.0 -0.7**
comp=Z,3.5nm,0.5s,baz=4.0,slow=7.3,SNR=57
ABKAR Akbulak arr 57.58 310 *e*P **P 20 29 05.7 -0.6**
AS31 Alice Springs 60.78 187 *e*P **P 20 29 29.5 +0.9**
comp=Z,1.3nm,0.8s
ASAR Alice Springs 60.79 187 P **P 20 29 28.5 -0.1**
comp=Z,1.2nm,0.7s,baz=15,slow=6.7,SNR=16
GEYT Alibeck 63.44 299 P **P 20 29 46.8 +0.3**
comp=Z,5.2nm,1.1s,baz=89,slow=6.7,SNR=5.6
ARA0 ARCESS Array S 63.80 339 *e*P **P 20 29 48.2 -0.1**
ARCES ARCESS Array B 63.80 339 P **P 20 29 48.2 -0.1**
comp=Z,5.7nm,1.0s,baz=69,slow=8.1,SNR=5.0
YKA Yellowknife Ar 63.97 30 P **P 20 29 49.6 +0.1**
comp=Z,0.5nm,0.8s,baz=302,slow=6.6,SNR=9.6
YKB5 Yellowknife Ar 63.97 30 *e*P **P 20 29 49.6 +0.1**
VRH Novokhopyorsk 67.25 318 *e*P **P 20 30 10.1 -0.8**
VRH pmax pmax
comp=Z,10.0nm,1.3s
FIA1 FINESS Array S 68.57 332 *e*P **P 20 30 18.3 -0.7**
comp=Z,29nm,0.8s
FIA0 FINESS Array S 68.57 332 *e*P **P 20 30 19.0 0.0**
FIA0 FINESS Array S 68.57 332 *e*P **P 20 30 19.0 0.0**
FINES FINESS Array B 68.57 332 P **P 20 30 19.0 0.0**
comp=Z,7.4nm,0.8s,baz=49,slow=8.6,SNR=18
FINES FINESS Array B 68.57 332 P **P 20 30 19.0 0.0**
VSR Storozhevoye 68.61 319 *e*P **P 20 30 19.1 -0.3**
VSR pmax pmax
comp=Z,6.0nm,0.7s
KBZ Khabaz 70.55 310 P **P 20 30 31.9 +0.4**
comp=Z,2.5nm,0.9s,baz=172,slow=4.3,SNR=6.2
KIV Kislovodsk 70.55 311 *e*P **P 20 30 32.4 +0.7**
KIV pmax pmax
comp=Z,37nm,0.8s
KIV Kislovodsk 70.55 311 *e*P **P 20 30 32.4 +0.7**
comp=Z,37nm,0.8s
SUMG Summit 70.63 360 *e*P **P 20 30 32.3 +0.2**
SUMG pmax pmax
comp=Z,14nm,1.0s
SUMG Summit 70.63 360 *e*P **P 20 30 32.3 +0.2**
comp=Z,14nm,1.0s
NB2 NORSAR Subarra 73.97 337 P **P 20 30 51.6 -0.2**
comp=Z,7.4nm,1.0s,baz=40,slow=6.2
NB200 NORSAR Array S 73.97 337 *e*P **P 20 30 51.8 0.0**
NOA NORSAR Array B 73.97 337 P **P 20 30 51.8 0.0**
comp=Z,3.5nm,0.7s,baz=39,slow=5.9,SNR=13
AKASG Malin Array Be 74.00 322 P **P 20 30 51.1 -0.8**
comp=Z,2.9nm,0.7s,baz=46,slow=6.2,SNR=10.0
AKBB Malin Array Si 74.00 322 *e*P **P 20 30 52.1 +0.1**
AKBB pmax pmax
comp=Z,26nm,0.8s
AKBB Malin Array Si 74.00 322 *e*P **P 20 30 52.0 +0.1**
comp=Z,26nm,0.8s
NV01 Mina Array S 75.29 53 *e*P **P 20 31 02.0 +1.9**
NVAR Mina Array Bea 75.29 53 P **P 20 31 02.0 +1.9**
comp=Z,0.6nm,0.8s,baz=292,slow=4.8,SNR=3.2
FRB Frobisher Bay 76.82 13 P **P 20 31 07.7 -0.2**
comp=Z,2.6nm,0.7s,baz=8.6,slow=4.0,SNR=2.9
R11A Troy Canyon, C 77.06 52 *e*P **P 20 31 10.9 +0.9**
comp=Z,6.1nm,1.1s
PD31 Pinedale Array 77.93 45 *e*P **P 20 31 15.2 +0.2**
PDAR Pinedale Array 77.93 45 P **P 20 31 15.5 +0.6**
comp=Z,0.7nm,0.8s,baz=259,slow=2.3,SNR=6.8
BUR08 Bucovina Ar. S 77.99 321 *e*P **P 20 31 14.9 -0.2**
BR101 Keskin Array S 78.50 311 *e*P **P 20 31 19.4 +1.4**
BRTR Keskin Array B 78.50 311 P **P 20 31 19.4 +1.4**
comp=Z,1.2nm,0.8s,baz=93,slow=3.3,SNR=6.3
STHS Stebnicka Huta 78.67 325 *e*P **P 20 31 20.2 +1.6**
STHS pmax pmax
comp=Z,4.0nm,1.1s
STHS Stebnicka Huta 78.67 325 *e*P **P 20 31 20.2 +1.6**
OJC Ojcow 78.76 326 *e*P **P 20 31 19.4 +0.3**
OJC pmax pmax
comp=Z,19nm,0.9s
OJC Ojcow 78.76 326 *e*P **P 20 31 19.4 +0.3**
comp=Z,19nm,0.9s
BR231 Keskin MP Arra 78.94 312 *e*P **P 20 31 19.7 -0.7**
MORC Moravsky Berou 80.08 327 *e*P **P 20 31 26.8 +0.5**
MORC pmax pmax
comp=Z,55nm,1.2s
MORC Moravsky Berou 80.08 327 *e*P **P 20 31 26.8 +0.5**
comp=Z,55nm,1.2s
DPC Dobruska-Polom 80.19 328 *e*P **P 20 31 27.5 +0.6**
DPC Dobruska-Polom 80.19 328 *e*P **P 20 31 27.5 +0.6**
KRLC Kraliky 80.19 327 *e*P **P 20 31 27.8 +0.9**
KRLC Kraliky 80.19 327 *e*P **P 20 31 27.8 +0.9**
VYHS Vyhne 80.44 325 *e*P **P 20 31 28.5 +0.2**
VYHS Vyhne 80.44 325 *e*P **P 20 31 28.5 +0.2**
BRG Berggiesshubel 80.79 329 *e*P **P 20 31 30.3 +0.2**
comp=Z,4.5nm,0.9s
BRG Berggiesshubel 80.79 329 *e*P **P 20 31 30.3 +0.2**
BRG pmax pmax
comp=Z,5.0nm,0.9s
PVCC Panska Ves 80.79 329 *e*P **P 20 31 31.2 +1.1**
PVCC Panska Ves 80.79 329 *e*P **P 20 31 31.2 +1.1**
CLL Collm 80.84 330 *e*P **P 20 31 28.0 -2.3**
comp=Z,7.0nm,0.9s
CLL *i* 20 31 30.2
comp=Z,7.0nm,0.9s
CLL *i* 20 31 41.2
CLL *e* 20 31 55.0
CLL Collm 80.84 330 *e*P **P 20 31 28.0 -2.3**
CLL *i* 20 31 41.2
CLL pmax pmax
comp=Z,7.0nm,0.9s
CLL Collm 80.84 330 *e*P **P 20 31 29.0 -1.3**
GOPC GO Pecny, Ondr 81.17 328 *e*P **P 20 31 32.2 +0.1**
GOPC GO Pecny, Ondr 81.17 328 *e*P **P 20 31 32.2 +0.1**
PRU Pruhonice 81.21 328 *e*P **P 20 31 32.4 +0.1**
PRU Pruhonice 81.21 328 *e*P **P 20 31 32.4 +0.1**
TREC Trest 81.33 327 *e*P **P 20 31 33.6 +0.6**
TREC Trest 81.33 327 *e*P **P 20 31 33.6 +0.6**
NKC Novy Kostel 81.89 329 *e*P **P 20 31 36.6 +0.6**
NKC Novy Kostel 81.89 329 *e*P **P 20 31 36.6 +0.6**
MOX Moxa 81.91 330 P **P 20 31 38.3 +2.3**
MOX pmax pmax
comp=Z,5.0nm,0.5s
KHC Kasperske Hory 82.27 328 *e*P **P 20 31 38.3 +0.3**
KHC Kasperske Hory 82.27 328 *e*P **P 20 31 38.1 +0.1**
KHC pmax pmax
comp=Z,5.0nm,1.0s
KHC Kasperske Hory 82.27 328 *e*P **P 20 31 38.1 +0.1**
comp=Z,4.9nm,1.0s
GEC2 GERESS Array S 82.44 328 *e*P **P 20 31 38.6 -0.4**
GEC2 pmax pmax
comp=Z,7.0nm,1.1s
GEC2 GERESS Array S 82.44 328 *e*P **P 20 31 38.6 -0.4**
comp=Z,7.4nm,1.1s
GERES GERESS Array B 82.44 328 P **P 20 31 38.8 -0.2**
comp=Z,2.0nm,0.8s,baz=29,slow=6.1,SNR=16
GEA0 GERESS Array S 82.45 328 *e*P **P 20 31 38.6 -0.4**
GRFO Grafenberg 82.81 330 *e*P **P 20 31 40.9 +0.1**
GRFO pmax pmax
comp=Z,15nm,0.8s
GRFO Grafenberg 82.81 330 *e*P **P 20 31 40.9 +0.1**
comp=Z,15nm,0.8s
BFO Black Forest 85.05 330 *e*P **P 20 31 51.8 -0.4**
BFO pmax pmax
comp=Z,13nm,0.9s
BFO Black Forest 85.05 330 *e*P **P 20 31 51.8 -0.4**
comp=Z,13nm,0.9s
FUORN Ofenpass-Fuorn 85.63 328 *e*P **P 20 31 55.8 +0.3**
comp=Z,26nm,1.4s
LOR Lormes 87.64 332 *e*P **P 20 32 05.4 +0.4**
LOR pmax pmax
comp=Z,3.0nm,1.0s
LDF La Druitiere 87.91 335 *e*P **P 20 32 07.3 +1.1**
LDF pmax pmax
comp=Z,19nm,1.8s
LPL La Plagne 87.97 330 *e*P **P 20 32 07.6 +0.7**
LPL pmax pmax
comp=Z,4.0nm,1.0s
LPG La Plagne 87.98 330 *e*P **P 20 32 07.1 +0.1**
LPG pmax pmax
comp=Z,2.0nm,0.7s
CAF Calviac 90.28 332 *e*P **P 20 32 19.9 +2.4**
CAF pmax pmax
comp=Z,14nm,1.7s
LTX Lajitas 90.42 52 *e*P **P 20 32 19.4 +0.9**
LTX Lajitas 90.42 52 *e*P **P 20 32 19.4 +0.9**
TXAR Lajitas Array 90.42 52 P **P 20 32 19.4 +0.9**
comp=Z,0.4nm,0.6s,baz=316,slow=3.2,SNR=7.6
BINY Binghamton 94.22 27 *e*P **P** 20 32 40.8 +5.1
comp=Z,23nm,0.6s
TOA1 Torodi Ar. Sit 116.99 314 *e*PKPdf **PKPdf 20 38 00.9 -1.1**
TORD Torodi Ar. Bea 116.99 314 PKP **PKPdf 20 38 00.9 -1.1**
comp=Z,0.3nm,0.5s,baz=54,slow=2.7,SNR=4.2
SDV Santo Domingo 125.55 39 PKP **PKPdf 20 38 18.2 -0.6**
comp=Z,3.2nm,0.7s,baz=326,slow=2.1,SNR=3.7
DBIC Dimbokro 125.96 316 PKP **PKPdf 20 38 18.2 -1.1**
comp=Z,1.8nm,0.8s,baz=38,slow=5.9,SNR=3.5
LPAZ La Paz 147.03 59 PKPbc **PKPbc 20 39 01.2 +0.6**
comp=Z,1.8nm,0.6s,baz=306,slow=3.0,SNR=6.5

NIED **16** *20:21:00,36˚.20N×141˚.00E,h53km,Mw4.7 Best double couple: M₀1.30000×10¹⁶ NP1:φs101.00000°,δ31.00000°, λ-144.00000°. NP2:φs339.00000°,δ72.00000°, λ-64.00000°.*

BJI **16** *20:21:29.8,36˚.10N×141˚.10E,h49km,mb4.8/59,mB4.7/37, Ms4.4/20,Ms7 4.1/17*

ISCJB **16** *20:21:32.2±0.4,36˚.14N±0˚.03×140˚.94E±0˚.03,h54km±3km, mb4.8/181,MS4.0/8,Error ellipse: s-maj=4.8km s-min=3.8km az=151.3*

JMA **16** *20:21:32.5±0.1,36˚.18N×140˚.97E,h52km±1km,M4.7*

JMA Felt III J1.

MOS **16** *20:21:33.8±0.8,36˚.59N×140˚.91E,h50km,mb5.1/89,Error ellipse: s-maj=6.5km s-min=4.0km az=109.1*

IDC **16** *20:21:34.4± 1.5,36˚.16N×140˚.90E,h59km±13km,mb4.3/33, mb1 4.4/37,mb1mx4.3/58,mbtmp4.6/37,MS3.6/6, Ms1 3.6/6,ms1mx3.3/58,Error ellipse: s-maj=12.9km s-min=8.0km az=96.0*

NEIC **16** *20:21:34.4±0.5,36˚.13N×140˚.89E,h62km±4km,mb4.8/113, Error ellipse: s-maj=3.8km s-min=2.7km az=154.0*

NEIC Recorded [3 JMA] in Fukushima and Ibaraki.

ISC 16 20:21:32.0±0.6,36˚.19N±0˚.04×141˚.09E±0˚.04,h43km±4km, n476,σ1°35/510,mb4.9/187,MS4.0/8,23C-23D,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.52**	**202**	P		**Pn**		**20 21 43.8**	**+0.7**
CHOJ				S		**Sn**		**20 21 51.9**	**+0.9**
JHO	**Hitachi**	**0.60**	**315**	P		**Pn**		**20 21 44.1**	**-0.1**
JYT	**Yasato**	**0.73**	**274**	P		**Pn**		**20 21 45.6**	**-0.3**
ONAJ	**Iwakimizuishiy**	**0.94**	**346**	P		**Pn**		**20 21 49.1**	**+0.2**
JFK	**Kawauchi**	**1.19**	**352**	P		**Pn**		**20 21 52.3**	**0.0**
MJAR	**Matsushiro Arr**	**2.35**	**280**	P		**Pn**		**20 22 08.7**	**+0.5**
	97nm,0.3s,baz=85,slow=10,SNR=23								
MJAR					LR	LR		20 23 21.1	
	comp=Z,2μm,20.8s,baz=120,slow=49								
MAJO	**Matsushiro**	**2.36**	**280**	*c*	*i*P	**Pn**		**20 22 09.5**	**+1.3**
MAT	**Matsushiro**	**2.36**	**280**	P		**Pn**		**20 22 09.3**	**+1.1**
MAT				S		**Sn**		**20 22 39.1**	**+3.2**
JHJ2	**Mitsune**	**3.24**	**199**	*e*Pn		**Pn**		**20 22 21.2**	**+0.9**
JHJ2				*e*Sn		**Sn**		**20 22 55.1**	**-2.6**
JHJ	**Hachijo jima 2**	**3.24**	**200**	P		**Pn**		**20 22 21.1**	**+0.8**
	130nm,0.3s,baz=333,slow=15,SNR=13								
JHJ				S		**Sn**		**20 22 59.0**	**+1.3**
	322nm,0.3s,baz=65,slow=22,SNR=13								
JHJ				LR		LR		20 23 24.6	
	comp=Z,421nm,20.9s,baz=27,slow=35								
INU	**Inuyama**	**3.42**	**257**	*e*Pn		**Pn**		**20 22 24.0**	**+1.2**
ERM	**Erimo**	**6.04**	**15**	*e*P		**Pn**		**20 22 57.3**	**-1.4**
ERM				*e*				20 24 02.9	
ERM	**Erimo**	**6.04**	**15**	*e*Pn		**Pn**		**20 22 57.3**	**-1.4**
ERM				*e*Sn		**Sn**		**20 24 02.9**	**-3.6**
ASAJ	**Asahikawa**	**8.01**	**8**	P		**Pn**		**20 23 24.3**	**-1.4**
	12nm,0.3s,baz=223,slow=12,SNR=17								
ASAJ				S		**Sn**		**20 24 53.1**	**-1.8**
	4.2nm,0.3s,baz=291,slow=21,SNR=3.4								
ASAJ	**Asahikawa**	**8.01**	**8**	*e*Pn		**Pn**		**20 23 23.9**	**-1.8**
ASAJ				*e*Sn		**Sn**		**20 24 51.4**	**-3.5**
YUK	**Yuzh-Kuril'sk**	**8.65**	**24**	*e*P		**Pn**		**20 23 34.0**	**-0.5**
YUK				*e*S		**Sn**		**20 25 05.1**	**-5.5**
YUK				pmax	pmax				
	comp=Z,280nm,0.4s								
YUK				pmax	pmax				
	comp=N,118nm,0.2s								
YUK				pmax	pmax				
	comp=E,54nm,0.2s								
SHO	**Shikotan**	**8.85**	**28**	*e*P		**Pn**		**20 23 34.0**	**-3.2**
SHO				*e*S		Sn		20 25 06.3	-9.2
SHO				pmax	pmax				
	comp=Z,166nm,0.7s								
SHO				pmax	pmax				
	comp=N,77nm,0.4s								
SHO				pmax	pmax				
	comp=E,83nm,0.4s								
JNU	**Nakatsue**	**8.95**	**253**	P		**Pn**		**20 23 40.8**	**+2.0**
	comp=E,1.2nm,0.3s,baz=45,slow=5.5,SNR=13								
JNU				LR		LR		20 27 23.9	
	comp=E,1μm,19.8s,baz=65,slow=40								
JNU	**Nakatsue**	**8.95**	**253**	*e*Pn		**Pn**		**20 23 41.6**	**+2.8**
CBIJ	**Chichi jima**	**9.11**	**174**	*e*Pn		**Pn**		**20 23 38.2**	**-2.7**
CBIJ				*e*Sn		Sn		20 25 09.3	-13
JCJ	**Chichijima**	**9.11**	**174**	P		**Pn**		**20 23 38.9**	**-2.0**
JCJ				S		**Sn**		**20 25 14.1**	**-8.0**
	comp=E,74nm,0.3s,baz=310,slow=23,SNR=7.3								
VLA	**Vladivostok**	**9.91**	**317**	*e*P		**Pn**		**20 23 53.5**	**+1.7**
KUR	**Kuril'sk**	**10.39**	**28**	*e*P		**Pn**		**20 23 57.3**	**-1.1**
KUR				*i* S		**Sn**		**20 25 46.1**	**-7.3**
KUR				pmax	pmax				
	comp=Z,104nm,0.5s								
KUR				pmax	pmax				
	comp=N,38nm,0.4s								
KUR				pmax	pmax				
	comp=E,37nm,0.4s								
USRK	**Ussuriysk Ar.**	**10.60**	**322**	P		**Pn**		**20 24 03.1**	**+1.9**
	comp=E,1.1nm,0.3s,baz=138,slow=12,SNR=14								
USRK				LR		LR		20 28 00.9	
	comp=E,321nm,18.2s,baz=125,slow=37								
KSRS	**Korea Array**	**10.63**	**281**	P		Pn		20 24 06.0	+4.3
	comp=E,1.0nm,0.3s,baz=90,slow=13,SNR=22								
KSRS				LR		LR		20 28 08.1	
	comp=E,304nm,18.8s,baz=83,slow=37								
KS15	**Wonju Array Si**	**10.66**	**281**	*e*Pn		**Pn**		**20 24 03.5**	**+1.4**
KSAR	**Wonju Array Be**	**10.66**	**281**	P		**Pn**		**20 24 06.0**	**+3.8**
KSAR	**Wonju Array Be**	**10.66**	**281**	P		**Pn**		**20 24 06.0**	**+3.8**
YSS	**Yuzh-Sakhalins**	**10.83**	**6**	*e*P		**Pn**		**20 24 03.0**	**-1.3**
YSS	**Yuzh-Sakhalins**	**10.83**	**6**	*e*Pn		**Pn**		**20 24 03.0**	**-1.3**
MDJ	**Mudanjiang**	**12.15**	**317**	*e*Pn		**Pn**		**20 24 25.9**	**+3.6**
CN2	**Changchun**	**14.19**	**307**	*e*P		**P**		**20 24 55.6**	**-1.1**
TYV	**Tymovskoe**	**14.72**	**4**	*e*P		**Pn**		**20 24 55.0**	**-2.2**
TYV				pmax	pmax				
	comp=Z,13nm,1.0s								
KLR	**Kul'dur**	**14.72**	**335**	P		**Pn**		**20 24 55.2**	**-2.1**
	comp=Z,0.3nm,0.3s,baz=158,slow=10,SNR=6.6								
KLR				LR		LR		20 30 30.9	
	comp=Z,227nm,18.6s,baz=149,slow=36								
NKL	**Nikolayevsk**	**16.97**	**359**	*e*P		**Pn**		**20 25 23.5**	**-2.5**
NKL				*e*				20 28 20.0	
NKL				MLR		MLR			
	comp=Z,800nm,16.0s								
NJ2	**Nanjing**	**18.86**	**264**	*e*P		**Pn**		**20 25 49.0**	**-0.4**
NJ2				pmax	pmax				
	comp=Z,16nm,0.5s								
TIA	**Tai'an**	**19.34**	**277**	⇑P		**P**		**20 25 52.1**	**-1.6**
TIA				pmax	pmax				
	comp=Z,40nm,0.9s								
BJI	**Beijing**	**19.96**	**289**	P		**P**		**20 25 58.1**	**-2.3**
BJI				pP		**pP**		**20 26 09.3**	**-1.6**
BJI				S		**Sn**		**20 29 43.5**	**-2.4**
BJI				pmax	pmax				
	comp=Z,45nm,1.0s								
BJT	**Baijiatuau**	**19.96**	**289**	*e*P		**P**		**20 25 59.7**	**-0.8**
BJT				pmax	pmax				
	comp=Z,39nm,0.9s								
BJT	**Baijiatuau**	**19.96**	**289**	*e*P		**P**		**20 25 59.7**	**-0.8**
	comp=Z,39nm,0.9s								
HIA	**Hailar**	**20.33**	**317**	*e*P		**P**		**20 26 02.4**	**-2.0**
HIA				pmax	pmax				
	comp=Z,17nm,0.8s								
HIA	**Hailar**	**20.33**	**317**	*e*P		**P**		**20 26 02.4**	**-2.0**
	comp=Z,17nm,0.8s								
YHNB	**Yeheng**	**20.47**	**241**	*e*P		**P**		**20 26 05.5**	**-0.7**
	comp=Z,232nm,2.0s								
PETK	**Petropavlovsk-**	**20.55**	**29**	P		Pn		20 26 08.6	-0.7
	comp=Z,24nm,1.0s,baz=198,slow=9.0,SNR=12								
PEA1	**Petropavlovsk-**	**20.55**	**29**	*e*P		Pn		20 26 08.6	-0.7
NACB	**Ninganchiao**	**20.63**	**240**	*e*P		**P**		**20 26 05.8**	**-2.0**
	comp=Z,42nm,1.2s								
PET	**Petropavlovsk**	**20.88**	**31**	⇑*i*P		**P**		**20 26 11.6**	**+1.4**
PET				pmax	pmax				
	comp=Z,62nm,1.1s								
PET				MLR		MLR			
	comp=Z,300nm,20.0s								
PET	**Petropavlovsk**	**20.88**	**31**	*e*P		**P**		**20 26 11.4**	**+1.2**
	comp=Z,64nm,1.1s								
HHC	**Hu-ho-hao-te**	**23.51**	**290**	*e*P		**P**		**20 26 38.1**	**-0.1**
HHC				pP		pP		20 26 47.3	-2.0
HHC				PP		**PnPn**		**20 27 05.3**	**-0.7**
HHC				S		**S**		**20 30 47.8**	**-1.1**
HHC				sS		sS		20 31 07.4	-0.8
HHC				pmax	pmax				
	comp=Z,18nm,1.0s								
HHC				pmax	pmax				
	comp=Z,60nm,6.7s								
HHC				LR		LR			
	comp=Z,690nm,11.2s								
HHC				LR		LR			
	comp=Z,690nm,12.2s								
HHC				LR		LR			
	comp=Z,830nm,14.5s								
MA2	**Magadan**	**24.24**	**12**	P		**P**		**20 26 46.0**	**+1.4**
	comp=Z,16nm,0.7s,baz=238,slow=7.6,SNR=8.1								
MA2	**Magadan**	**24.24**	**12**	*e*P		**P**		**20 26 46.0**	**+1.4**
CIT	**Chita**	**25.12**	**318**	*e*P		**P**		**20 26 51.7**	**-1.0**
CIT				*e*				20 27 09.4	
CIT				*e*				20 27 25.1	
XAN	**Xi'an**	**26.34**	**275**	P		**P**		**20 27 03.0**	**-1.0**
XAN				pP		pP		20 27 16.8	+1.3
XAN				pmax	pmax				
	comp=Z,32nm,0.9s								
XAN				pmax	pmax				
	comp=Z,61nm,8.3s								
YAK	**Yakutsk**	**26.84**	**348**	P		**P**		**20 27 08.0**	**-0.1**
	comp=Z,15nm,0.5s,baz=124,slow=1.3,SNR=6.9								
YAK	**Yakutsk**	**26.84**	**348**	*e*P		**P**		**20 27 07.3**	**-0.8**
YAK				pmax	pmax				
	comp=Z,18nm,1.1s								
YAK				pmax	pmax				
	comp=N,11nm,1.2s								
YAK				pmax	pmax				
	comp=E,4.0nm,1.0s								
YAK	**Yakutsk**	**26.84**	**348**	*e*P		**P**		**20 27 07.0**	**-1.1**
	comp=E,23nm,0.7s								
ENH	**Enshi**	**27.01**	**267**	*e*P		**P**		**20 27 08.4**	**-1.6**
	comp=E,27nm,0.8s								
ULN	**Ulaanbaatar**	**27.63**	**306**	*de*P		**P**		**20 27 14.3**	**-1.2**
ULN				pmax	pmax				
	comp=Z,19nm,1.2s								
ULN	**Ulaanbaatar**	**27.63**	**306**	*e*P		**P**		**20 27 14.4**	**-1.1**
	comp=Z,11nm,0.9s								
ULN	**Ulaanbaatar**	**27.63**	**306**	P		**P**		**20 27 15.2**	**-0.4**
	SNR=7.1								
ULN	**Ulaanbaatar**	**27.63**	**306**	P		**P**		**20 27 15.2**	**-0.4**
	SNR=7.1								
SEY	**Seymchan**	**27.67**	**11**	P		**P**		**20 27 15.8**	**+0.3**
	comp=Z,4.7nm,0.8s,baz=193,slow=8.9,SNR=7.3								
H11N2	**WAKE ISLAND Hy**	**27.95**	**119**	T		T		20 56 35.8	
	baz=312,slow=75,SNR=244								
H11N1	**WAKE ISLAND Hy**	**27.96**	**119**	T		T		20 56 41.4	
	baz=312,slow=75,SNR=5.3								
H11N3	**WAKE ISLAND Hy**	**27.97**	**119**	T		T		20 56 50.0	
	baz=312,slow=75,SNR=6.0								
SONA1	**Songino Array**	**28.05**	**305**	*e*P		**P**		**20 27 18.1**	**-1.2**
SONA0	**Songino Array**	**28.05**	**305**	*e*P		**P**		**20 27 18.7**	**-0.6**
	comp=Z,28nm,1.2s								
SONA0				*e*PcP		**PcP**		**20 30 33.4**	**+0.4**
SONM	**Songino Array**	**28.05**	**305**	P		**P**		**20 27 18.7**	**-0.6**
	comp=Z,7.1nm,0.5s,baz=107,slow=9.3,SNR=32								
SONM				PcP		**PcP**		**20 30 33.4**	**+0.4**
	comp=Z,1.2nm,0.7s,baz=115,slow=3.4,SNR=3.5								
BOD	**Bodaibo**	**28.11**	**329**	⇑*i*P		**P**		**20 27 19.0**	**-0.6**
BOD				pmax	pmax				
	comp=Z,145nm,1.2s								
H11S1	**WAKE ISLAND Hy**	**28.63**	**121**	T		T		20 57 29.8	
	baz=314,slow=76,SNR=25								
H11S3	**WAKE ISLAND Hy**	**28.63**	**121**	T		T		20 57 33.6	
	baz=314,slow=76,SNR=20								
H11S2	**WAKE ISLAND Hy**	**28.64**	**121**	T		T		20 57 34.6	
	baz=314,slow=76,SNR=24								
LZH	**Lanzhou**	**29.96**	**281**	*e*P		**P**		**20 27 36.4**	**0.0**
LZH				pP		pP		20 27 47.0	-1.1
LZH				sP		sP		20 27 52.9	-0.3
LZH				pmax	pmax				
	comp=Z,19nm,1.0s								
ZAK	**Zakamensk**	**30.60**	**310**	*e*P		**P**		**20 27 40.8**	**-1.0**
ZAK				*e*				20 30 35.4	
ZAK				pmax	pmax				
	comp=Z,5.0nm,1.1s								
ZAK				pmax	pmax				
	comp=Z,2.0nm,1.0s								
TLY	**Talaya**	**30.70**	**312**	*e*P		**P**		**20 27 42.0**	**-0.6**
TLY				pmax	pmax				
	comp=Z,19nm,1.0s								
TLY				MLR		MLR			
	comp=Z,79nm,15.0s								
TLY	**Talaya**	**30.70**	**312**	*e*P		**P**		**20 27 42.5**	**-0.1**
	comp=Z,13nm,0.8s								
TLY				*e*PcP		**PcP**		**20 30 39.8**	**+0.3**
TLY	**Talaya**	**30.70**	**312**	P		**P**		**20 27 43.2**	**+0.6**
	SNR=5.7								
TLY	**Talaya**	**30.70**	**312**	P		**P**		**20 27 43.2**	**+0.6**
	SNR=5.7								
GYA	**Guiyang**	**30.83**	**261**	⇑*i*P		**P**		**20 27 42.5**	**-1.6**
GYA				pP		pP		20 27 58.8	+3.0
GYA				PP		**PnPn**		**20 28 48.4**	**+2.9**
GYA				PcP		**PcP**		**20 30 42.0**	**+1.6**
GYA				S		**S**		**20 32 43.1**	**-1.9**
GYA				sS		sS		20 33 06.3	+1.9
GYA				ScP		**ScP**		**20 34 19.0**	**-0.6**
GYA				SS		**SnSn**		**20 34 27.8**	**+1.2**
GYA				ScS		**ScS**		**20 38 15.6**	**-1.0**
GYA				pmax	pmax				
	comp=Z,20nm,1.0s								
GYA				pmax	pmax				
	comp=Z,120nm,5.2s								
GYA				LR		LR			
	comp=Z,550nm,17.6s								
GYA				LR		LR			
	comp=Z,530nm,17.9s								
GYA				LR		LR			
	comp=Z,510nm,18.0s								
CD2	**Chengdu**	**31.43**	**271**	P		**P**		**20 27 47.9**	**-1.3**
CD2				sP		sP		20 28 07.5	+1.5
CD2				S		**S**		**20 32 51.8**	**-2.3**
CD2				sS		sS		20 33 14.6	+1.1
CD2				pmax	pmax				
	comp=Z,30nm,0.7s								
CD2				pmax	pmax				
	comp=Z,50nm,4.3s								
CD2				LR		LR			
	comp=

	comp=Z,12nm,0.8s										
KMI						pmax	pmax				
	comp=Z,73nm,4.1s										
BILL	**Bilibino**	**34.91**	**16**	⇓	*i*	P	**P**	**20**	**28**	**21.0**	**+1.9**
BILL					*e*			20	29	40.3	
BILL						pmax	pmax				
	comp=Z,1.0nm,1.0s										
BILL						MLR	MLR				
	comp=Z,144nm,14.0s										
BILL	**Bilibino**	**34.91**	**16**		*e*	P	**P**	**20**	**28**	**21.0**	**+1.9**
	comp=Z,9.3nm,1.2s										
TIXI	**Tiksi**	**36.10**	**353**			P	**P**	**20**	**28**	**29.2**	**-0.1**
	comp=Z,4.2nm,0.7s,baz=143,slow=6.1,SNR=7.7										
TIXI	**Tiksi**	**36.10**	**353**	⇑	*i*	P	**P**	**20**	**28**	**29.3**	**0.0**
TIXI						pmax	pmax				
	comp=Z,3.0nm,0.7s										
TIXI	**Tiksi**	**36.10**	**353**		*e*	P	**P**	**20**	**28**	**29.0**	**-0.2**
	comp=Z,4.0nm,0.8s										
CHTO	**Chiang Mai**	**40.84**	**256**		*e*	P	**P**	**20**	**29**	**08.9**	**-0.8**
CHTO						pmax	pmax				
	comp=Z,12nm,1.7s										
CHTO	**Chiang Mai**	**40.84**	**256**		*e*	P	**P**	**20**	**29**	**08.9**	**-0.8**
	comp=Z,12nm,1.7s										
WMQ	**Urumqi**	**41.00**	**298**			P	**P**	**20**	**29**	**12.0**	**+1.2**
WMQ						pP	pP	20	29	25.5	+2.8
WMQ						sP	sP	20	29	30.0	+2.2
WMQ						PcP	**PcP**	**20**	**31**	**11.4**	**+1.2**
WMQ						S	**S**	**20**	**35**	**18.3**	**-1.7**
WMQ						ScS	**ScS**	**20**	**39**	**12.6**	**+0.9**
WMQ						pmax	pmax				
	comp=Z,29nm,0.8s										
WMQ						pmax	pmax				
	comp=Z,36nm,4.2s										
CM31	**Chiang Mai Arr**	**41.04**	**256**		*e*	P	**P**	**20**	**29**	**10.8**	**-0.5**
CM31					*e*	PcP	**PcP**	**20**	**31**	**10.9**	**+0.3**
CMAR	**Chiang Mai Arr**	**41.04**	**256**			P	**P**	**20**	**29**	**09.9**	**-1.4**
	comp=Z,1.2nm,0.6s,baz=53,slow=4.9,SNR=19										
CMAR						PcP	**PcP**	**20**	**31**	**10.9**	**+0.3**
	comp=Z,1.1nm,0.8s,baz=16,slow=2.1,SNR=4.9										
CM01	**Chiang Mai Arr**	**41.05**	**256**		*e*	P	**P**	**20**	**29**	**09.9**	**-1.5**
LSA	**Lhasa**	**42.03**	**276**		*e*	P	**P**	**20**	**29**	**20.3**	**+0.4**
LSA						pmax	pmax				
	comp=Z,8.0nm,0.8s										
LSA	**Lhasa**	**42.03**	**276**		*e*	P	**P**	**20**	**29**	**20.3**	**+0.4**
	comp=Z,8.2nm,0.8s										
ZAA0	**Zalesovo Array**	**42.30**	**313**		*e*	P	**P**	**20**	**29**	**20.5**	**-0.8**
ZAA0					*e*	PcP	**PcP**	**20**	**31**	**13.7**	**-0.5**
ZAA1	**Zalesovo Array**	**42.30**	**313**		*e*	P	**P**	**20**	**29**	**21.5**	**+0.3**
ZAA1					*e*	PcP	**PcP**	**20**	**31**	**14.3**	**+0.1**
ZALV	**Zalesovo Beam**	**42.30**	**313**			P	**P**	**20**	**29**	**21.5**	**+0.3**
	comp=Z,12nm,0.5s,baz=92,slow=6.6,SNR=45										
ZALV						PcP	**PcP**	**20**	**31**	**14.3**	**+0.1**
	comp=Z,7.1nm,0.7s,baz=96,slow=2.8,SNR=6.4										
NVS	**Novosibirsk**	**43.24**	**314**		*e*	P	**P**	**20**	**29**	**29.1**	**+0.3**
NVS						pmax	pmax				
	comp=Z,14nm,0.7s										
NVS						pmax	pmax				
	comp=N,3.0nm,0.8s										
NVS						pmax	pmax				
	comp=E,12nm,0.7s										
NRIK	**Noril'sk**	**43.93**	**336**			P	**P**	**20**	**29**	**34.0**	**-0.1**
	comp=E,7.2nm,0.9s,baz=119,slow=5.4,SNR=9.9										
MK01	**Makanchi Array**	**44.35**	**303**		*e*	P	**P**	**20**	**29**	**37.8**	**-0.1**
MK01					*e*	PcP	**PP**	**20**	**31**	**21.2**	**-0.5**
MK31	**Makanchi Array**	**44.36**	**303**		*e*	P	**P**	**20**	**29**	**38.0**	**0.0**
MK31					*e*			20	31	20.3	
MK31	**Makanchi Array**	**44.36**	**303**		*e*	P	**P**	**20**	**29**	**38.0**	**0.0**
MK31					*e*	PcP	**PcP**	**20**	**31**	**20.3**	**-1.0**
MK32	**Makanchi Array**	**44.36**	**303**		*e*	P	**P**	**20**	**29**	**38.0**	**+0.1**
MKAR	**Makanchi Array**	**44.36**	**303**			P	**P**	**20**	**29**	**38.0**	**0.0**
	comp=E,13nm,0.7s,baz=89,slow=9.7,SNR=42										
MKAR	**Makanchi Array**	**44.36**	**303**		*e*	P	**P**	**20**	**29**	**38.0**	**0.0**
MAKZ	**Makanchi**	**44.57**	**303**		*e*	P	**P**	**20**	**29**	**39.5**	**-0.2**
MAKZ						pmax	pmax				
	comp=Z,15nm,0.9s										
MAKZ	**Makanchi**	**44.57**	**303**		*e*	P	**P**	**20**	**29**	**39.5**	**-0.2**
	comp=Z,15nm,0.9s										
KAPI	**Kappang**	**45.60**	**210**			P	**P**	**20**	**29**	**48.4**	**+0.4**
	comp=Z,10nm,0.7s,baz=282,slow=2.3,SNR=9.0										
KAPI	**Kappang**	**45.60**	**210**		*e*	P	**P**	**20**	**29**	**47.1**	**-1.0**
	comp=Z,32nm,1.4s										
KURK	**Kurchatov**	**46.26**	**309**		*e*	P	**P**	**20**	**29**	**52.5**	**-0.4**
KURK						pmax	pmax				
	comp=Z,46nm,0.7s										
KURK	**Kurchatov**	**46.26**	**309**		*e*	P	**P**	**20**	**29**	**52.5**	**-0.4**
	comp=Z,46nm,0.7s										
KURK	**Kurchatov**	**46.26**	**309**			P	**P**	**20**	**29**	**52.8**	**-0.1**
	SNR=16										
KURK	**Kurchatov**	**46.26**	**309**			P	**P**	**20**	**29**	**52.8**	**-0.1**
	SNR=16										
TT01	**Tatalina**	**46.26**	**34**		*e*	P	**P**	**20**	**29**	**54.7**	**+1.9**
TTA	**Tatalina**	**46.27**	**34**		*e*	P	**P**	**20**	**29**	**55.0**	**+2.1**
TTA						pmax	pmax				
	comp=Z,7.0nm,1.1s										
TTA	**Tatalina**	**46.27**	**34**		*e*	P	**P**	**20**	**29**	**55.0**	**+2.1**
	comp=Z,7.4nm,1.1s										
SVW2	**Sparrevohn**	**46.35**	**37**		*e*	P	**P**	**20**	**29**	**56.1**	**+2.6**
	comp=Z,11nm,1.0s										
PDGK	**Podgornoye**	**46.95**	**299**		*i*	P	**P**	**20**	**29**	**58.7**	**+0.3**
PDGK						pmax	pmax				
	comp=Z,60nm,1.1s										
GUN	**Gumba**	**46.99**	**276**		*e*	P	**P**	**20**	**29**	**59.5**	**+0.1**
	comp=Z,82nm,0.8s										
PKIN	**Phulchoki**	**47.52**	**276**		*e*	P	**P**	**20**	**30**	**02.8**	**-0.6**
	comp=Z,49nm,0.9s										
KKN	**Kakani**	**47.52**	**276**		*e*	P	**P**	**20**	**30**	**03.1**	**-0.3**
	comp=Z,89nm,1.0s										
DMN	**Daman**	**47.73**	**276**		*e*	P	**P**	**20**	**30**	**04.9**	**-0.2**
	comp=Z,36nm,0.7s										
KDAK	**Kodiak Island**	**47.90**	**41**		*e*	P	**P**	**20**	**30**	**06.4**	**+0.8**
KDAK						pmax	pmax				
	comp=Z,20nm,0.8s										
KDAK	**Kodiak Island**	**47.90**	**41**		*e*	P	**P**	**20**	**30**	**06.4**	**+0.8**
	comp=Z,20nm,0.8s										
GKN	**Gorkha**	**47.95**	**277**		*e*	P	**P**	**20**	**30**	**06.5**	**-0.1**
	comp=Z,279nm,0.9s										
SPU	**Mount Spurr**	**48.06**	**37**		*e*	P	**P**	**20**	**30**	**09.1**	**+2.2**
CAST	**Castle Rocks**	**48.07**	**34**		*e*	P	**P**	**20**	**30**	**09.6**	**+2.7**
	comp=Z,7.3nm,0.8s										
IPM	**Ipoh**	**48.48**	**239**		*e*	P	**P**	**20**	**30**	**09.0**	**-1.6**
	comp=Z,29nm,1.8s										
BPAW	**Bear Paw Mtn.**	**48.58**	**33**		*e*	P	**P**	**20**	**30**	**13.0**	**+2.3**
	comp=Z,7.9nm,1.0s										
KTH	**Kantishna Hill**	**48.59**	**34**		*e*	P	**P**	**20**	**30**	**13.2**	**+2.2**
	comp=Z,16nm,1.0s										
MLY	**Manley**	**48.71**	**32**		*e*	P	**P**	**20**	**30**	**14.2**	**+2.4**
	comp=Z,13nm,1.0s										
KOLN	**Koldanda**	**48.88**	**277**		*e*	P	**P**	**20**	**30**	**13.8**	**0.0**
	comp=Z,44nm,0.8s										
TRF	**Thorofare Moun**	**48.88**	**34**		*e*	P	**P**	**20**	**30**	**16.0**	**+2.7**
	comp=Z,6.8nm,0.8s										
RC01	**Rabbit Creek A**	**49.19**	**37**		*e*	P	**P**	**20**	**30**	**16.3**	**+0.8**
	comp=Z,13nm,1.0s										
PYUN	**Piuthan**	**49.23**	**278**		*e*	P	**P**	**20**	**30**	**16.8**	**+0.3**
	comp=Z,296nm,1.0s										
SEW	**Seward**	**49.39**	**38**		*e*	P	**P**	**20**	**30**	**18.4**	**+1.5**
	comp=Z,12nm,0.7s										
PMR	**Palmer**	**49.46**	**36**		*e*	P	**P**	**20**	**30**	**18.5**	**+1.0**
PMR						pmax	pmax				
	comp=Z,9.0nm,0.7s										
PMR	**Palmer**	**49.46**	**36**		*e*	P	**P**	**20**	**30**	**18.5**	**+1.0**
	comp=Z,9.2nm,0.7s										
MCK	**McKinley**	**49.48**	**33**		*e*	P	**P**	**20**	**30**	**19.2**	**+1.5**
MCK						pmax	pmax				
	comp=Z,8.0nm,1.0s										
MCK	**McKinley**	**49.48**	**33**		*e*	P	**P**	**20**	**30**	**19.2**	**+1.5**
	comp=Z,8.2nm,1.0s										
RND	**Reindeer**	**49.52**	**34**		*e*	P	**P**	**20**	**30**	**19.6**	**+1.5**
RND						pmax	pmax				
	comp=Z,12nm,0.8s										
RND	**Reindeer**	**49.52**	**34**		*e*	P	**P**	**20**	**30**	**19.6**	**+1.5**
	comp=Z,12nm,0.8s										
MDM	**Murphy Dome**	**49.77**	**32**		*e*	P	**P**	**20**	**30**	**22.2**	**+2.3**
	comp=Z,27nm,0.9s										
TKM2	**Tokmak 2**	**49.81**	**299**		*i*	P	**P**	**20**	**30**	**21.3**	**+0.6**
TKM2						pmax	pmax				
	comp=Z,34nm,0.9s										
TKM2	**Tokmak 2**	**49.81**	**299**		*e*	P	**P**	**20**	**30**	**21.4**	**+0.6**
	comp=Z,32nm,0.8s										
SML	**Sawmill**	**49.83**	**36**		*e*	P	**P**	**20**	**30**	**22.4**	**+2.0**
SML						pmax	pmax				
	comp=Z,12nm,0.7s										
SML	**Sawmill**	**49.83**	**36**		*e*	P	**P**	**20**	**30**	**22.4**	**+2.0**
	comp=Z,12nm,0.7s										
WRH	**Wood River Hil**	**49.84**	**32**		*e*	P	**P**	**20**	**30**	**22.0**	**+1.6**
	comp=Z,7.6nm,0.8s										
COLA	**College**	**49.93**	**32**		*c*	*i*	P	**P**	**20**	**30**	**22.5**	**+1.5**
COLA							pmax	pmax				
	comp=Z,6.0nm,0.9s										
SCM	**Sheep Creek Mo**	**50.30**	**36**		*e*	P		**P**	**20**	**30**	**25.5**	**+1.5**
SCM							pmax	pmax				
	comp=Z,15nm,0.9s											
SCM	**Sheep Creek Mo**	**50.30**	**36**		*e*	P		**P**	**20**	**30**	**25.5**	**+1.5**
	comp=Z,15nm,0.9s											
HDA	**Harding Lake**	**50.34**	**32**		*e*	P		**P**	**20**	**30**	**25.3**	**+1.1**
	comp=Z,11nm,0.9s											
IL1	**Eielson Array**	**50.35**	**32**		*e*	P		**P**	**20**	**30**	**25.2**	**+1.0**
ILAR	**Eielson Array**	**50.35**	**32**			P		**P**	**20**	**30**	**25.9**	**+1.7**
	comp=Z,4.3nm,0.8s,baz=270,slow=6.5,SNR=24											
ILB	**Eielson Array**	**50.35**	**32**		*e*	P		**P**	**20**	**30**	**25.8**	**+1.5**
KSH	**Kashi**	**50.52**	**295**			P		P	20	30	30.1	+4.0
KSH						*e*	pP	sP	20	30	42.6	-0.7
KSH						*e*	PP	**PP**	**20**	**32**	**27.8**	**+5.9**
KSH							S	**S**	**20**	**37**	**39.8**	**+2.6**
KSH							pmax	pmax				
	comp=Z,20nm,1.1s											
KSH							pmax	pmax				
	comp=Z,140nm,5.9s											
FRU	**Bishkek**	**50.53**	**299**	⇓	*e*	P		**P**	**20**	**30**	**26.0**	**0.0**
FRU							pmax	pmax				
	comp=Z,47nm,1.5s											
VOSK	**Vostochnaya**	**50.66**	**312**		*i*	P		**P**	**20**	**30**	**26.3**	**-0.5**
VOSK							pmax	pmax				
	comp=Z,19nm,0.8s											
VOSK	**Vostochnaya**	**50.66**	**312**		*e*	P		**P**	**20**	**30**	**26.1**	**-0.6**
	comp=Z,20nm,0.8s											
AAK	**Ala-Archa**	**50.67**	**299**		*e*	P		**P**	**20**	**30**	**27.3**	**+0.1**
AAK							pmax	pmax				
	comp=Z,31nm,1.5s											
AAK	**Ala-Archa**	**50.67**	**299**		*e*	P		**P**	**20**	**30**	**27.3**	**+0.1**
	comp=Z,31nm,1.5s											
AAK	**Ala-Archa**	**50.67**	**299**			P		**P**	**20**	**30**	**28.0**	**+0.8**
	SNR=6.7											
AAK	**Ala-Archa**	**50.67**	**299**			P		**P**	**20**	**30**	**28.0**	**+0.8**
	SNR=6.7											
CHKZ	**Chkalovo**	**50.71**	**314**		*i*	P		**P**	**20**	**30**	**26.3**	**-0.8**
CHKZ							pmax	pmax				
	comp=Z,15nm,0.6s											
OTUK	**Ortayu**	**50.72**	**306**		*i*	P		**P**	**20**	**30**	**26.9**	**-0.4**
OTUK							pmax	pmax				
	comp=Z,13nm,0.7s											
FYU	**Fort Yukon**	**50.97**	**30**		*e*	P		**P**	**20**	**30**	**31.6**	**+2.7**
	comp=Z,80nm,2.0s											
KLU	**Klutina**	**51.00**	**36**		*e*	P		**P**	**20**	**30**	**30.4**	**+1.1**
	comp=Z,9.8nm,0.7s											
BRVK	**Borovoye**	**51.01**	**313**		*d*	*i*	P	**P**				
BRVK							pmax	pmax	**20**	**30**	**29.4**	**0.0**
	comp=Z,17nm,1.0s											
BRVK	**Borovoye**	**51.01**	**313**		*e*	P		**P**	**20**	**30**	**29.2**	**-0.2**
	comp=Z,13nm,0.7s											
BRVK	**Borovoye**	**51.01**	**313**			P		**P**	**20**	**30**	**29.5**	**+0.1**
	SNR=6.1											
BRVK	**Borovoye**	**51.01**	**313**			P		**P**	**20**	**30**	**29.5**	**+0.1**
	SNR=6.1											
EKS2	**Erkin-Say**	**51.17**	**299**		*e*	P		**P**	**20**	**30**	**30.9**	**0.0**
EKS2							pmax	pmax				
	comp=Z,8.0nm,0.8s											
EKS2	**Erkin-Say**	**51.17**	**299**		*e*	P		**P**	**20**	**30**	**30.9**	**0.0**
	comp=Z,8.5nm,0.8s											
EYAK	**Cordova Ski Ar**	**51.18**	**37**		*e*	P		**P**	**20**	**30**	**32.4**	**+1.9**
	comp=Z,16nm,0.8s											
DOT	**Dot Lake**	**51.65**	**33**		*e*	P		**P**	**20**	**30**	**35.5**	**+1.4**
	comp=Z,24nm,0.8s											
BMRM	**Bremner River**	**51.69**	**37**		*e*	P		**P**	**20**	**30**	**36.4**	**+1.9**
	comp=Z,17nm,0.8s											
ZRNK	**Zerenda**	**51.79**	**313**		*e*	P		**P**	**20**	**30**	**35.2**	**-0.1**
ZRNK							pmax	pmax				
	comp=Z,61nm,1.4s											
ZRNK	**Zerenda**	**51.79**	**313**		*e*	P		**P**	**20**	**30**	**35.2**	**-0.1**
	comp=Z,61nm,1.4s											
MENT	**Mentasta**	**51.88**	**34**		*e*	P		**P**	**20**	**30**	**36.3**	**+0.5**
	comp=Z,14nm,1.0s											
MNAS	**Manas**	**52.12**	**299**		*i*	P		**P**	**20**	**30**	**38.3**	**+0.3**
MNAS							pmax	pmax				
	comp=Z,26nm,0.9s											
SFK	**Sufi-Kurgan**	**52.17**	**296**		*i*	P		**P**	**20**	**30**	**38.5**	**-0.1**
SFK							pmax	pmax				
	comp=Z,20nm,0.7s											
CRQM	**Cirque**	**52.43**	**37**		*e*	P		**P**	**20**	**30**	**42.5**	**+2.4**
BALM	**Baldy**	**52.77**	**36**		*e*	P		**P**	**20**	**30**	**44.1**	**+1.6**
BALM							pmax	pmax				
	comp=Z,8.0nm,0.8s											
BALM	**Baldy**	**52.77**	**36**		*e*	P		**P**	**20**	**30**	**44.1**	**+1.6**
	comp=Z,8.0nm,0.8s											
EGAK	**Eagle**	**52.80**	**32**		*e*	P		**P**	**20**	**30**	**44.0**	**+1.5**
	comp=Z,7.1nm,0.6s											
LEM	**Lembang**	**53.08**	**223**			P		P	20	30	49.7	+4.3
	comp=Z,34nm,0.6s,baz=44,slow=6.1,SNR=14											
THN	**Thein Dam**	**53.22**	**286**		*e*	P		**P**	**20**	**30**	**44.0**	**-2.1**
KK31	**Karatay Array**	**53.33**	**301**		*i*	P		**P**	**20**	**30**	**47.3**	**+0.5**
KK31							pmax	pmax				
	comp=Z,22nm,0.9s											
KKAR	**Karatay Array**	**53.33**	**301**		*e*	P		**P**	**20**	**30**	**46.9**	**+0.1**
KKAR	**Karatay Array**	**53.33**	**301**		*e*	P		**P**	**20**	**30**	**46.9**	**+0.1**
INK	**Inuvik**	**55.26**	**27**			P		**P**	**20**	**31**	**02.4**	**+2.0**
	comp=Z,3.1nm,0.6s,baz=310,slow=6.8,SNR=16											
INK	**Inuvik**	**55.26**	**27**		*e*	P		**P**	**20**	**31**	**02.0**	**+1.6**
INK							pmax	pmax				
	comp=Z,7.0nm,0.8s											
INK	**Inuvik**	**55.26**	**27**		*e*	P		**P**	**20**	**31**	**01.9**	**+1.6**
	comp=Z,7.4nm,0.8s											
SVE	**Sverdlovsk**	**55.62**	**319**	⇑	*e*	P		**P**	**20**	**31**	**03.6**	**+0.5**
SVE							pmax	pmax				
	comp=Z,43nm,0.9s											
FITZ	**Fitzroy Crossi**	**55.94**	**198**			P		**P**	**20**	**31**	**06.1**	**+0.3**
	comp=Z,2.4nm,0.5s,baz=26,slow=7.4,SNR=9.0											
FITZ	**Fitzroy Crossi**	**55.94**	**198**		*e*	P		**P**	**20**	**31**	**05.8**	**0.0**
	comp=Z,41nm,1.7s											
WRAB	**Tennant Creek**	**56.18**	**188**		*c*	*e*	P	**P**	**20**	**31**	**06.7**	**-0.8**
WRAB							pmax	pmax				
	comp=Z,36nm,1.2s											
WB2	**Warramunga Arr**	**56.19**	**188**		*e*	P		**P**	**20**	**31**	**06.8**	**-0.7**
	comp=Z,12nm,0.8s											
WR1	**Warramunga Arr**	**56.19**	**188**		*e*	P		**P**	**20**	**31**	**07.2**	**-0.3**
	comp=Z,13nm,0.8s											
WRA	**Warramunga Arr**	**56.19**	**188**			P		**P**	**20**	**31**	**07.2**	**-0.3**
	comp=Z,4.6nm,0.4s,baz=5.7,slow=7.3,SNR=39											
WRA	**Warramunga Arr**	**56.19**	**188**		*i*	P		**P**	**20**	**31**	**07.1**	**-0.5**
WRA							pmax	pmax				
	comp=Z,4.0nm,0.4s											
ARU	**Arti**	**56.83**	**319**		*d*	*i*	P	**P**	**20**	**31**	**11.7**	**-0.1**
ARU									20	32	07.0	
ARU									20	33	18.0	
ARU							S	**S**	**20**	**39**	**02.4**	**+0.6**
ARU							SS	**SS**	**20**	**42**	**46.3**	**-3.4**
ARU							pmax	pmax				
	comp=Z,62nm,1.0s											
ARU	**Arti**	**56.83**	**319**		*e*	P		**P**	**20**	**31**	**11.4**	**-0.4**
	comp=Z,42nm,0.7s											
SOKR	**Solikamsk**	**56.84**	**323**		*e*	P		**P**	**20**	**31**	**10.9**	**-0.9**
SOKR							pmax	pmax				
	comp=Z,16nm,1.0s											
KBL	**Kabul**	**57.48**	**291**		*e*	P		**P**	**20**	**31**	**16.6**	**-0.4**
KBL							pmax	pmax				
	comp=Z,13nm,0.8s											
KBL	**Kabul**	**57.48**	**291**		*e*	P		**P**	**20**	**31**	**16.6**	**-0.4**
	comp=Z,13nm,0.8s											
HYB	**Hyderabad**	**57.92**	**269**		*i*	P		**P**	**20**	**31**	**20.0**	**-0.1**
AB31	**Akbulak array**	**58.29**	**310**		*i*	P		**P**	**20**	**31**	**21.6**	**-0.6**
AB31							pmax	pmax				
	comp=Z,21nm,0.8s											
ABKAR	**Akbulak array**	**58.29**	**310**		*e*	P		**P**	**20**	**31**	**21.8**	**-0.4**
AKTO	**Aktyubinsk**	**59.05**	**312**		*i*	P		**P**	**20**	**31**	**27.5**	**0.0**
AKTO							pmax	pmax				
	comp=Z,14nm,0.8s											
DLBC	**Dease Lake**	**59.45**	**38**		*e*	P		**P**	**20**	**31**	**33.8**	**+3.6**
	comp=Z,8.8nm,1.0s											
AS01	**Alice Springs**	**59.91**	**188**		*e*	P		**P**	**20**	**31**	**33.4**	**-0.2**
AS31	**Alice Springs**	**59.91**	**188**		*e*	P		**P**	**20**	**31**	**33.6**	**-0.1**
	comp=Z,1.8nm,0.6s											
ASAR	**Alice Springs**	**59.91**	**188**			P		**P**	**20**	**31**	**33.5**	**-0.1**
	comp=Z,3.1nm,0.7s,baz=8.5,slow=5.6,SNR=23											
TMCR	**Tamitsa**	**63.37**	**331**		*e*	P		**P**	**20**	**31**	**57.0**	**+0.6**
TMCR							pmax	pmax				
	comp=Z,19nm,0.9s											
GEYT	**Alibeck**	**64.02**	**299**			P		**P**	**20**	**32**	**02.0**	**+0.7**
	comp=Z,3.6nm,0.6s,baz=51,slow=2.8,SNR=11											
KLMR	**Klimovskoe**	**64.34**	**328**		*e*	P		**P**	**20**	**32**	**01.0**	**-1.8**
KLMR							pmax	pmax				
	comp=Z,16nm,0.8s											
YKW3	**Yellowknife Ar**	**64.63**	**30**		*e*	P		**P**	**20**	**32**	**05.9**	**+1.2**
	comp=Z,13nm,1.5s											
YKA	**Yellowknife Ar**	**64.67**	**30**			P		**P**	**20**	**32**	**06.1**	**+1.1**
	comp=Z,1.4nm,0.7s,baz=301,slow=6.6,SNR=20											
YKB5	**Yellowknife Ar**	**64.67**	**30**		*e*	P		**P**	**20**	**32**	**05.5**	**+0.5**
ARA0	**ARCESS Array S**	**64.70**	**339**		*e*	P		**P**	**20**	**32**	**05.4**	**+0.3**
ARCES	**ARCESS Array B**	**64.70**	**339**			P		**P**	**20**	**32**	**05.4**	**+0.3**
	comp=Z,4.0nm,0.9s,baz=59,slow=10,SNR=6.2											
DAG	**Danmarks Havn**	**66.60**	**355**		*i*	P		**P**	**20**	**32**	**17.4**	**+0.2**
	comp=Z,4.9nm,0.9s											
DAG	**Danmarks Havn**	**66.60**	**355**		*i*	P		**P**	**20**	**32**	**17.4**	**+0.2**
DAG							pmax	pmax				
	comp=Z,4.0nm,0.9s											
STKA	**Stephens Creek**	**67.71**	**180**			P		**P**	**20**	**32**	**25.6**	**+0.9**
	comp=Z,2.2nm,0.7s,baz=335,slow=9.5,SNR=4.3											
STKA	**Stephens Creek**	**67.71**	**180**		*e*	P		**P**	**20**	**32**	**25.7**	**+0.9**
STKA							pmax	pmax				
	comp=Z,5.0nm,1.8s											
STKA	**Stephens Creek**	**67.71**	**180**		*e*	P		**P**	**20**	**32**	**25.7**	**+0.9**
	comp=Z,4.8nm,1.8s											
VRH	**Novokhopyorsk**	**68.04**	**318**		*e*	P		**P**	**20**	**32**	**25.8**	**-0.9**
VRH							pmax	pmax				
	comp=Z,20nm,0.6s											
OBN	**Obninsk**	**68.62**	**323**	⇑	*e*	P		**P**	**20**	**32**	**30.1**	**-0.2**
OBN					*e*			20	34	56.7		
OBN							pmax	pmax				
	comp=Z,9.0nm,0.6s											
OBN							MLR	MLR				
	comp=Z,205nm,17.0s											
LPSR	**Galich'ya Gora**	**68.79**	**320**		*e*	P		**P**	**20**	**32**	**31.1**	**-0.3**
LPSR							pmax	pmax				
	comp=Z,20nm,0.7s											
VSR	**Storozhevoye**	**69.40**	**319**		*e*	P		**P**	**20**	**32**	**34.8**	**-0.4**
VSR							pmax	pmax				
	comp=Z,20nm,0.6s											
FIA1	**FINESS Array S**	**69.44**	**332**		*e*	P		**P**	**20**	**32**	**34.9**	**-0.4**
FIA0	**FINESS Array S**	**69.44**	**332**		*e*	P		**P**	**20**	**32**	**35.4**	**+0.1**
FIA0	**FINESS Array S**	**69.44**	**332**		*e*	P		**P**	**20**	**32**	**35.4**	**+0.1**
FINES	**FINESS Array B**	**69.44**	**332**			P		**P**	**20**	**32**	**35.4**	**+0.1**
	comp=Z,20nm,0.8s,baz=58,slow=7.2,SNR=42											
GOF	**Gofitskoye**	**70.47**	**312**	⇑	*e*	P		**P**	**20**	**32**	**42.6**	**+0.7**
GOF							pmax	pmax				
	comp=

comp=Z,1.5nm,0.7s,baz=285,slow=5.9,SNR=8.5
SIM Simferopol' 75.75 316 P P 20 33 13.6 +0.5
SIM pmax pmax
comp=Z,18nm,0.7s
KLNR Kaliningrad 76.32 329 *e*P P 20 33 16.7 +0.6
KLNR pmax pmax
comp=Z,61nm,1.1s
H17A Grant Village 76.86 44 *e*P P 20 33 23.3 +3.6
comp=Z,12nm,0.9s
SORM Soroca 76.88 321⇑ *i*P P 20 33 19.5 +0.1
IMW Indian Meadow 76.95 45 *e*P P 20 33 22.5 +2.2
comp=Z,8.4nm,1.0s
FXWY Fox Creek 77.06 45 *e*P P 20 33 21.8 +0.9
comp=Z,4.4nm,1.1s
RLMT Red Lodge 77.14 43 *e*P P 20 33 21.6 +0.3
comp=Z,3.6nm,0.8s
MOOW Moose Ponds 77.16 45 *e*P P 20 33 21.5 +0.1
comp=Z,3.7nm,1.2s
R11A Troy Canyon, C 77.49 52 *e*P P 20 33 25.0 +1.7
comp=Z,6.1nm,1.1s
FRB Frobisher Bay 77.66 13 P P 20 33 24.3 +0.8
comp=Z,5.7nm,0.5s,baz=345,slow=5.8,SNR=11
LAO LASA Array 77.78 41 *e*P P 20 33 26.2 +1.6
comp=Z,9.8nm,0.8s
WSHM Spangler Hills 77.87 55 *e*P P 20 33 27.2 +1.9
TPNV Topopah Spring 77.89 53 *e*P P 20 33 26.1 +0.6
TPNV pmax pmax
comp=Z,4.0nm,0.8s
TPNV Topopah Spring 77.89 53 *e*P P 20 33 26.1 +0.6
comp=Z,4.4nm,0.8s
LVV L'vov 77.91 324 *e*P P 20 33 25.5 +0.3
HWUT Hardware Ranch 77.99 47 *e*P P 20 33 27.2 +1.1
comp=Z,25nm,1.9s
LEOM Leova 78.01 319⇑ *i*P P 20 33 26.2 +0.4
BEL Belsk 78.01 327 *e*P P 20 33 26.8 +1.1
BEL Belsk 78.01 327 *e*P P 20 33 26.9 +1.2
BSD Bornholm Skovb 78.07 332 *i*P P 20 33 25.8 -0.1
comp=Z,28nm,0.9s
BSD Bornholm Skovb 78.07 332 *i*P P 20 33 25.8 -0.1
BSD pmax pmax
comp=Z,28nm,0.9s
DUG Dugway, Tooele 78.11 49 *e*P P 20 33 28.1 +1.4
DUG pmax pmax
comp=Z,11nm,1.3s
DUG Dugway, Tooele 78.11 49 *e*P P 20 33 28.1 +1.4
comp=Z,11nm,1.3s
BW06 Boulder Array 78.44 45 *e*P P 20 33 29.6 +1.0
PD31 Pinedale Array 78.45 45 *e*P P 20 33 29.6 +1.0
PDAR Pinedale Array 78.45 45 P P 20 33 29.9 +1.3
comp=Z,1.2nm,0.6s,baz=274,slow=2.4,SNR=16
PRAR RASCA 78.47 321⇓ *i*P P 20 33 28.8 +0.4
COP Copenhagen 78.56 333 *i*P P 20 33 29.4 +0.7
comp=Z,21nm,0.8s
COP Copenhagen 78.56 333 *i*P P 20 33 29.4 +0.7
COP pmax pmax
comp=Z,21nm,0.8s
KWP Kalwaria Pacla 78.67 324 *e*P P 20 33 30.5 +1.1
KWP Kalwaria Pacla 78.67 324 *e*P P 20 33 30.5 +1.1
NLU North Lily Min 78.70 49 *e*P P 20 33 30.6 +0.6
comp=Z,3.7nm,0.9s
BUR08 Bucovina Ar. S 78.81 322 *e*P P 20 33 30.6 +0.3
BURAR Bucovina Array 78.82 322⇑ *i*P P 20 33 31.4 +1.0
TESR Tescani 78.82 320⇓ *i*P P 20 33 30.9 +0.6
CFR Carcaliu 78.91 318⇓ *i*P P 20 33 31.5 +0.7
VRI Vrincioaia 79.20 320⇓ *i*P P 20 33 33.9 +1.5
BR101 Keskin Array S 79.22 312 *e*P P 20 33 33.1 +0.3
BR131 Keskin Array S 79.22 312 *e*P P 20 33 32.9 +0.1
BRTR Keskin Array B 79.22 312 P P 20 33 33.1 +0.3
comp=Z,6.6nm,0.8s,baz=107,slow=3.7,SNR=34
TIRR Tirgusor 79.23 318⇑ *i*P P 20 33 33.2 +0.7
TIRR Tirgusor 79.23 318 *e*P P 20 33 32.6 +0.1
TIRR pmax pmax
comp=Z,6.0nm,0.9s
TIRR Tirgusor 79.23 318 *e*P P 20 33 32.6 +0.1
comp=Z,5.8nm,0.9s
PLOR Plostina 79.26 320⇑ *i*P P 20 33 33.7 +1.0
KOLS Kolonicke sedl 79.36 324 *e*P P 20 33 34.0 +0.8
KOLS pmax pmax
comp=Z,6.0nm,1.0s
KOLS Kolonicke sedl 79.36 324 *e*P P 20 33 34.0 +0.8
STHS Stebnicka Huta 79.50 325 *e*P P 20 33 35.2 +1.2
STHS pmax pmax
comp=Z,9.0nm,0.9s
STHS Stebnicka Huta 79.50 325 *e*P P 20 33 35.2 +1.2
MSU Marysvale 79.52 50 *e*P P 20 33 35.0 +0.4
MSU Marysvale 79.52 50 *e*P P 20 33 35.0 +0.4
UZH Uzhgorod 79.56 324 *e*P P 20 33 34.0 -0.2
UZH *e* 20 33 44.8
OJC Ojcow 79.60 326 *e*P P 20 33 35.2 +0.7
OJC Ojcow 79.60 326 *e*P P 20 33 34.8 +0.3
OJC pmax pmax
comp=Z,19nm,0.9s
OJC Ojcow 79.60 326 *e*P P 20 33 34.8 +0.3
comp=Z,19nm,0.9s
ARCR ARCALIA 79.61 322⇓ *i*P P 20 33 36.3 +1.7
BMR Baia Mare 79.63 322⇓ *i*P P 20 33 36.4 +1.7
ANTO Ankara 79.64 312 *e*P P 20 33 35.6 +0.6
ANTO pmax pmax
comp=Z,16nm,0.8s
ANTO Ankara 79.64 312 *e*P P 20 33 35.6 +0.6
comp=Z,16nm,0.8s
BR231 Keskin MP Arra 79.67 312 *e*P P 20 33 33.8 -1.4
CRVS Cervenica-Dubn 79.76 324 *e*P P 20 33 36.3 +0.9
CRVS Cervenica-Dubn 79.76 324 *e*P P 20 33 36.3 +0.9
LCMT Little Creek M 79.78 52 *e*P P 20 33 37.6 +1.8
comp=Z,5.6nm,1.0s
MSAB Monastry St. A 79.79 318⇑ *i*P P 20 33 36.7 +1.1
MLR Muntele Rosu 79.86 320⇑ *i*P P 20 33 36.9 +0.7
MLR Muntele Rosu 79.86 320 *e*P P 20 33 36.4 +0.2
MLR pmax pmax
comp=Z,11nm,1.3s
MLR Muntele Rosu 79.86 320 *e*P P 20 33 36.4 +0.2
comp=Z,11nm,1.3s
NIE Niedzica 79.94 325 *e*P P 20 33 37.5 +1.1
NIE Niedzica 79.94 325 *e*P P 20 33 37.5 +1.1
KNB Kanab 80.04 51 *e*P P 20 33 38.7 +1.3
KNB pmax pmax
comp=Z,11nm,1.2s
KNB Kanab 80.04 51 *e*P P 20 33 38.6 +1.3
comp=Z,11nm,1.2s
SRU San Rafael Swe 80.17 49 *e*P P 20 33 40.1 +2.1
SRU pmax pmax
comp=Z,7.0nm,0.7s
SRU San Rafael Swe 80.17 49 *e*P P 20 33 40.1 +2.1
comp=Z,7.4nm,0.7s
VOIR 80.37 320⇓ *i*P P 20 33 39.5 +0.7
OKC Ostrava-Krasne 80.61 327 *e*P P 20 33 40.5 +0.6
OKC Ostrava-Krasne 80.61 327 *e*P P 20 33 40.5 +0.6
DRGR 80.63 322⇓ *i*P P 20 33 40.8 +0.6
ARR Arges 80.63 320⇑ *i*P P 20 33 42.1 +1.9
KSP Ksiaz 80.69 328 *e*P P 20 33 41.2 +0.9
KSP Ksiaz 80.69 328 *e*P P 20 33 41.3 +0.9
RAYN Ar Rayn 80.74 292 *e*P P 20 33 41.2 +0.1
comp=Z,16nm,0.8s
O20A White River Ci 80.88 47 *e*P P 20 33 41.6 -0.2
comp=Z,6.7nm,0.9s
MORC Moravsky Berou 80.93 327⇓ *i*P P 20 33 42.7 +1.0
MORC Moravsky Berou 80.93 327 *e*P P 20 33 42.2 +0.5
MORC pmax pmax
comp=Z,55nm,1.2s
MORC Moravsky Berou 80.93 327 *e*P P 20 33 42.2 +0.5
comp=Z,55nm,1.2s
DPC Dobruska-Polom 81.04 328 *e*P P 20 33 43.2 +0.9
DPC *e*pP pP 20 33 56.7 +1.5
DPC *e*PP PP 20 36 46.3 -0.5
DPC Dobruska-Polom 81.04 328 *e*P P 20 33 43.2 +0.9
DPC *e* 20 33 56.7
DPC *e* 20 36 46.3
KRLC Kraliky 81.04 327 *e*P P 20 33 43.0 +0.7
KRLC Kraliky 81.04 327 *e*P P 20 33 43.0 +0.7
PSZ Piszkesteto 81.20 324⇓ *i*P P 20 33 44.9 +1.7
PSZ Piszkesteto 81.20 324 *e*P P 20 33 44.0 +0.8
PSZ pmax pmax
comp=Z,18nm,1.0s
PSZ Piszkesteto 81.20 324 *e*P P 20 33 44.0 +0.8
comp=Z,18nm,1.0s
VYHS Vyhne 81.28 325 *e*P P 20 33 44.5 +1.0
VYHS pmax pmax
comp=Z,7.0nm,1.3s
VYHS Vyhne 81.28 325 *e*P P 20 33 44.5 +1.0
BRG Berggiesshubel 81.65 329 *e*P P 20 33 45.8 +0.4
comp=Z,9.6nm,0.9s
BRG Berggiesshubel 81.65 329 *e*P P 20 33 45.8 +0.4
BRG pmax pmax
comp=Z,10.0nm,0.9s
PVCC Panska Ves 81.65 329 *e*P P 20 33 46.3 +0.9
PVCC Panska Ves 81.65 329 *e*P P 20 33 46.3 +0.9
VRAC Vranov 81.69 327⇓ *i*P P 20 33 46.6 +0.9
CLL Collm 81.70 330 *i*P P 20 33 45.8 +0.1
comp=Z,20nm,0.8s
CLL *e* 20 33 56.0
CLL *i* 20 34 00.9
CLL *i* 20 34 11.3
CLL *i* 20 34 17.0
CLL *e*PP PP 20 36 48.0 -4.2
CLL Collm 81.70 330 *i*P P 20 33 45.8 +0.1
CLL *i* 20 34 00.9
CLL pmax pmax
comp=Z,20nm,0.8s
CLL Collm 81.70 330 *e*P P 20 33 45.8 +0.1
comp=Z,17nm,0.8s
N23A Red Feather La 81.72 45 *e*P P 20 33 47.4 +1.0
comp=Z,6.0nm,0.9s
WUAZ Wupatki 81.89 52 *e*P P 20 33 46.9 -0.3
BZS Buzias 81.99 322⇑ *i*P P 20 33 47.9 +0.6
GOPC GO Pecny, Ondr 82.02 328 *e*P P 20 33 48.1 +0.7
GOPC GO Pecny, Ondr 82.02 328 *e*P P 20 33 48.1 +0.7
PRA Prague 82.05 329 *e*P P 20 33 48.4 +0.8
PRA Prague 82.05 329 *e*P P 20 33 48.4 +0.8
PRU Pruhonice 82.07 328 *e*P P 20 33 48.3 +0.6
PRU *e*pP pP 20 34 03.0 +2.4
PRU Pruhonice 82.07 328 *e*P P 20 33 48.3 +0.6
PRU *e* 20 34 03.0
TREC Trest 82.19 328 *e*P P 20 33 48.9 +0.6
TREC Trest 82.19 328 *e*P P 20 33 48.9 +0.6
SMCO Snowmass 82.24 47 *e*P P 20 33 50.8 +1.5
comp=Z,4.2nm,0.9s
CSS Mathiatis 82.38 308 *e*P P 20 33 50.0 +0.4
comp=Z,3.3nm,0.8s
X16A Lo Mia Camp, P 82.53 53 *e*P P 20 33 50.4 -0.2
comp=Z,6.0nm,1.3s
NKC Novy Kostel 82.75 330 *e*P P 20 33 52.0 +0.7
NKC Novy Kostel 82.75 330 *e*P P 20 33 52.0 +0.7
PKSM Moragy 83.02 324⇓ *i*P P 20 33 52.8 +0.1
CONA Conrad Observa 83.04 326 *i* PcP P 20 33 54.3 +1.4
comp=Z,10nm,1.0s,SNR=5.8
KHC Kasperske Hory 83.13 328 *e*P P 20 33 53.7 +0.4
KHC *e*pP pP 20 34 08.8 +2.6
KHC Kasperske Hory 83.13 328 *e*P P 20 33 52.8 -0.5
KHC pmax pmax
comp=Z,5.0nm,1.0s
KHC Kasperske Hory 83.13 328 *e*P P 20 33 52.8 -0.5
comp=Z,4.9nm,1.0s
VTS Vitosha 83.28 319⇑ *i*P P 20 33 55.5 +1.2
VTS Vitosha 83.28 319 *e*P P 20 33 55.0 +0.7
VTS pmax pmax
comp=Z,8.0nm,0.9s
VTS Vitosha 83.28 319 *e*P P 20 33 55.0 +0.7
comp=Z,8.3nm,0.9s
GEC2 GERESS Array S 83.30 328 *e*P P 20 33 54.3 +0.1
GEC2 pmax pmax
comp=Z,7.0nm,1.1s
GEC2 GERESS Array S 83.30 328 *e*P P 20 33 54.3 +0.1
comp=Z,7.4nm,1.1s
GERES GERESS Array B 83.30 328 P P 20 33 54.3 +0.1
comp=Z,3.2nm,0.6s,baz=37,slow=5.7,SNR=28
GEA0 GERESS Array S 83.30 328 *e*P P 20 33 54.0 -0.2
GRFO Grafenberg 83.68 330 *e*P P 20 33 57.1 +1.1
GRFO pmax pmax
comp=Z,15nm,0.8s
GRFO Grafenberg 83.68 330 *e*P P 20 33 57.1 +1.1
comp=Z,15nm,0.8s
ARSA Arzberg 83.70 326 *i* PcP P 20 33 57.3 +1.0
comp=Z,4.5nm,0.9s
MOA Molln 83.81 327 *i* PcP P 20 33 57.6 +0.9
comp=Z,7.1nm,1.1s
SOKA Soboth 84.35 326 *i* PcP P 20 34 00.4 +0.7
comp=Z,16nm,1.0s,SNR=6.3
BEBN Eben Emael 84.92 333 P P 20 34 02.7 +0.5
MEM Membach 84.95 333 P P 20 34 02.8 +0.4
T25A Trinidad 85.11 47 *e*P P 20 34 05.0 +1.3
comp=Z,5.5nm,0.8s
STU Stuttgart 85.22 330 *e*P P 20 34 04.1 +0.3
STU pmax pmax
comp=Z,17nm,0.8s
STU Stuttgart 85.22 330 *e*P P 20 34 04.1 +0.3
comp=Z,17nm,0.8s
ANMO Albuquerque 85.33 50 *e*P P 20 34 05.5 +0.6
ANMO pmax pmax
comp=Z,4.0nm,1.0s
ANMO Albuquerque 85.33 50 *e*P P 20 34 05.5 +0.6
comp=Z,3.8nm,1.0s
BCLA Clavier 85.36 333 P P 20 34 04.7 +0.2
ABTA Ahaltertsbach 85.42 327 *i*P P 20 34 04.3 -0.6
comp=Z,9.3nm,1.1s
PDG Podgorica 85.46 321⇑ *i*P P 20 34 05.8 +0.7
CWF Charnwood Fore 85.59 338 *e*P P 20 34 05.6 0.0
comp=Z,8.8nm,0.9s
RETA Reutte 85.59 329 *i* PcP P 20 34 06.4 +0.6
comp=Z,8.0nm,0.8s
SNF Seneffe 85.65 334 P P 20 34 06.3 +0.4
WLF Walferdange 85.67 333 P P 20 34 07.5 +1.5
BFO Black Forest 85.92 331 *e*P P 20 34 06.9 -0.5
BFO pmax pmax
comp=Z,13nm,0.9s
BFO Black Forest 85.92 331 *e*P P 20 34 06.9 -0.5
comp=Z,13nm,0.9s
FETA Feichten 85.97 328 *i* PcP P 20 34 08.2 +0.4
comp=Z,7.0nm,1.1s
DAVA Damuels 86.12 329 *i* PcP P 20 34 08.9 +0.4
comp=Z,14nm,1.0s,SNR=6.6
FUORN Ofenpass-Fuorn 86.49 328 *e*P P 20 34 10.9 +0.4
comp=Z,26nm,1.4s
AQU L'Aquila 88.40 324 *e*P P 20 34 20.7 +1.2
AQU pmax pmax
comp=Z,18nm,0.9s
AQU L'Aquila 88.40 324 *e*P P 20 34 20.7 +1.2
comp=Z,18nm,0.9s
LDF La Druitiere 88.80 335 *e*P P 20 34 21.3 +0.1
LDF pmax pmax
comp=Z,9.0nm,1.4s
LPL La Plagne 88.84 330 *e*P P 20 34 20.9 -0.8
LPL pmax pmax
comp=Z,2.0nm,0.7s
LPG La Plagne 88.84 330 *e*P P 20 34 21.1 -0.7
LPG pmax pmax
comp=Z,3.0nm,0.7s
MFF Saint Martin d 90.53 334 *e*P P 20 34 29.0 -0.3
MFF pmax pmax
comp=Z,8.0nm,0.9s
TX31 Lajitas Ar. Si 90.84 52 *e*P P 20 34 32.8 +1.6
LTX Lajitas 90.84 52 *e*P P 20 34 32.4 +1.2
LTX Lajitas 90.84 52 *e*P P 20 34 32.4 +1.2
TXAR Lajitas Array 90.84 52 P P 20 34 32.4 +1.2
comp=Z,0.6nm,0.8s,baz=273,slow=3.7,SNR=5.6
LFF La Frestale 91.64 333 *e*P P 20 34 34.4 -0.1
LFF pmax pmax
comp=Z,7.0nm,0.8s
ESDC Sonseca Array 97.93 333 P Pdif 20 35 03.6 +0.1
comp=Z,0.1nm,0.3s,baz=37,slow=3.7,SNR=4.6
TOA1 Torodi Ar. Sit 117.74 314 *e*PKPdf **PKPdf** 20 40 13.1 -1.0
TORD Torodi Ar. Bea 117.74 314 PKP **PKPdf** 20 40 13.1 -1.0
comp=Z,1.2nm,0.8s,baz=30,slow=1.1,SNR=5.2
QSPA South Pole Qui 125.93 180 *e*PKPdf **PKPdf** 20 40 28.3 +0.1
BOSA Boshof 126.16 259 PKP **PKPdf** 20 40 30.0 0.0
comp=Z,1.3nm,0.5s,baz=151,slow=1.3,SNR=4.0
DBIC Dimbokro 126.73 316 PKP **PKPdf** 20 40 31.9 +0.5
comp=Z,2.5nm,0.6s,baz=345,slow=4.5,SNR=4.8
DBIC Dimbokro 126.73 316 *e*PKPdf **PKPdf** 20 40 31.5 +0.2
LPAZ La Paz 147.34 60 PKPbc **PKPab** 20 41 13.1 -1.0
comp=Z,2.8nm,0.5s,baz=339,slow=2.5,SNR=10
LPAZ La Paz 147.34 60 *e*PKPbc **PKPbc** 20 41 12.3 +0.1
PB11 IPOC Station P 148.47 67 *e*PKPbc **PKPbc** 20 41 15.1 +0.5

WEL 16 20:25:06.2±0.4, 37°.32S×178°.97E, h33km, ML3.9/6, 1C-4D, Error ellipse: s-maj=3.6km s-min=3.2km az=90.0, Off east coast of North Island

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
MXZ	**Matakaoa Point**	**0.58**	**245**	⇓P	N		Pb	20 25 15.3	-2.9
MXZ				S	N		Sb	20 25 21.3	-5.0
MXZ				S	N		Sn	20 25 22.2	-4.4
MXZ				AML	AML			20 25 22.4	
MXZ				AML	AML			20 26 18.0	
WMGZ	**Waiomatatini S**	**0.67**	**221**	⇓P	N		Pn	20 25 18.5	-0.9
WMGZ				S	N		Sb	20 25 28.3	-0.3
PKGZ	**Pakihiroa**	**0.91**	**231**	P	N		Pn	20 25 21.7	-1.1
PKGZ				S	N		Sn	20 25 33.9	-0.9
PUZ	**Puketiti**	**0.94**	**217**	⇓P	N		Pn	20 25 22.3	-0.9
PUZ				S	N		Sn	20 25 35.2	-0.4
PUZ				AML	AML			20 25 36.3	
HAZ	**Te Kaha**	**1.04**	**245**	P	N		Pn	20 25 24.2	-0.3
HAZ				S	N		Sn	20 25 37.5	-0.4
TWGZ	**Tauwhareparae**	**1.17**	**222**	⇑P	N		Pn	20 25 25.6	-0.7
TWGZ				S	N		Sn	20 25 41.5	+0.4
CNGZ	**Carnagh Statio**	**1.31**	**207**	P	N		Pn	20 25 28.2	0.0
TKGZ	**Te Karaka**	**1.43**	**218**	⇓P	N		Pn	20 25 29.1	-0.7
MWZ	**Matawai**	**1.53**	**228**	P	N		Pn	20 25 30.6	-0.7
MWZ				AML	AML			20 25 53.9	
MWZ				AML	AML			20 25 57.7	
RIGZ	**Rimuhau**	**1.69**	**214**	P	N		Pn	20 25 32.7	-1.0
RAGZ	**Rawiri**	**1.70**	**226**	P	N		Pn	20 25 32.9	-0.7
URZ	**Urewera**	**1.75**	**237**	P	N		Pn	20 25 34.1	-0.1
URZ				AML	AML			20 26 00.8	
URZ				AML	AML			20 26 01.4	
PRGZ	**Paritu Road**	**1.82**	**208**	P	N		Pn	20 25 34.0	-1.2
EDRZ	**Edgecumbe**	**1.94**	**245**	P	N		Pn	20 25 36.7	-0.1
EDRZ				AML	AML			20 26 02.3	
EDRZ				AML	AML			20 26 08.1	
SNGZ	**Shannon Statio**	**1.95**	**221**	P	N		Pn	20 25 36.0	-1.0
KNZ	**Kokohu**	**1.99**	**211**	P	N		Pn	20 25 35.6	-1.9
OPRZ	**Ohinepanea**	**1.99**	**254**	P	N		Pn	20 25 36.7	-0.8
OPRZ				S	N		Sn	20 25 59.7	-1.6
MHGZ	**Mahia Peninsul**	**2.02**	**204**	P	N		Pn	20 25 36.5	-1.4
MUGZ	**Murupara**	**2.09**	**236**	P	N		Pn	20 25 38.4	-0.6
TARZ	**Mount Tarawera**	**2.16**	**244**	P	N		Pn	20 25 40.1	+0.1
RAHZ	**Arahi**	**2.18**	**222**	P	N		Pn	20 25 39.5	-0.7
RRRZ	**Republican Roa**	**2.20**	**242**	P	N		Pn	20 25 40.3	-0.1
WHHZ	**Waihua**	**2.23**	**217**	P	N		Pn	20 25 39.5	-1.4
KARZ	**Kaharoa**	**2.28**	**251**	P	N		Pn	20 25 41.2	-0.2
PRRZ	**Plateau Road**	**2.36**	**239**	P	N		Pn	20 25 42.3	-0.3
ALRZ	**Allen Road**	**2.42**	**238**	P	N		Pn	20 25 43.4	-0.1
NMHZ	**Naumai**	**2.46**	**223**	P	N		Pn	20 25 43.4	-0.7
MRHZ	**Matea Rd**	**2.52**	**232**	P	N		Pn	20 25 44.2	-0.7
KUZ	**Kuaotunu**	**2.66**	**281**	P	N		Pn	20 25 44.3	-2.5
BKZ	**Black Stump Fm**	**2.69**	**226**	P	N		Pn	20 25 46.2	-1.0
BKZ				AML	AML			20 26 18.4	
BKZ				AML	AML			20 26 18.5	
CKHZ	**Cape Kidnapper**	**2.77**	**212**	P	N		Pn	20 25 46.2	-2.1
MCHZ	**McNeill Hill**	**2.78**	**219**	P	N		Pn	20 25 47.0	-1.4
KAHZ	**Kahuranaki**	**2.97**	**213**	P	N		Pn	20 25 48.7	-2.4
GRZ	**Great Barrier**	**3.02**	**290**	P	N		Pn	20 25 51.8	+0.1
MKAZ	**Moumakai**	**3.05**	**273**	P	N		Pn	20 25 51.8	-0.3
KRHZ	**Kereru**	**3.09**	**221**	P	N		Pn	20 25 50.5	-2.3
BHHZ	**Black Hill Sta**	**3.15**	**226**	P	N		Pn	20 25 52.0	-1.5
KRVZ	**Karewarewa**	**3.17**	**235**	P	N		Pn	20 25 53.0	-0.8
PXZ	**Pawanui**	**3.17**	**211**	P	N		Pn	20 25 50.8	-3.0
PXZ				S	N		Sn	20 26 25.1	-5.4
ETAZ	**East Tamaki Re**	**3.25**	**275**	P	N		Pn	20 25 55.0	+0.1
MOVZ	**Moawhango**	**3.28**	**229**	P	N		Pn	20 25 54.1	-1.3
WNVZ	**Wahianoa**	**3.33**	**232**	P	N		Pn	20 25 54.9	-1.2
PNHZ	**Pukenui**	**3.38**	**219**	P	N		Pn	20 25 53.8	-2.9
AWAZ	**Awhitu Peninsu**	**3.47**	**273**	P	N		Pn	20 25 58.4	+0.6
PRHZ	**Porangahau**	**3.47**	**211**	P	N		Pn	20 25 54.5	-3.3
RVAZ	**Riverhead Bore**	**3.56**	**277**	P	N		Pn	20 25 57.9	-1.2
ANWZ	**Angora Road**	**3.69**	**211**	P	N		Pn	20 25 57.6	-3.3
DVHZ	**Dannevirke**	**3.70**	**215**	P	N		Pn	20 25 57.9	-3.1
WAZ	**Wanganui**	**3.96**	**231**	P	N		Pn	20 26 04.3	-0.3
BFZ	**Birch Farm**	**3.98**	**211**	P	N		Pn	20 26 01.0	-3.8
PRWZ	**Pori Road**	**3.99**	**215**	P	N		Pn	20 26 02.2	-2.8
TMWZ	**Te Maipa**	**4.48**	**211**	P	N		Pn	20 26 07.1	-4.6
OGWZ	**Otaki Gorge**	**4.58**	**219**	P	N		Pn	20 26 08.8	-4.4
MTW	**Mount Morrison**	**4.69**	**214**	P	N		Pn	20 26 09.6	-5.0
KIW	**Kapiti Island**	**4.75**	**221**	P	N		Pn	20 26 11.2	-4.3
PLWZ	**Palliser**	**5.13**	**213**	P	N		Pn	20 26 15.2	-5.5
TUWZ	**Tuamarina**	**5.66**	**222**	P	N		Pn	20 26 23.0	-5.0
NNZ	**Nelson**	**5.83**	**226**	P	N		Pn	20 26 26.1	-4.2
THZ	**Tophouse**	**6.46**	**225**	P	N		Pn	20 26 34.2	-4.8
INZ	**Inchbonnie**	**7.91**	**225**	P	N		Pn	20 26 53.6	-5.2
OXZ	**Oxford**	**8.00**	**219**	P	N		Pn	20 26 54.8	-5.3

*IDC **16** 20:28:14.0±0.6, 19°.06N×66°.97W, h0km, mb4.1/15, mb1 4.3/18, mb1mx4.1/42, mbtmp4.2/18, ML3.2/3, MS3.2/8, Ms1 3.2/8, ms1mx3.1/41, Error ellipse: s-maj=15.8km s-min=12.5km az=60.0*

*ISCJB **16** 20:28:16.8±0.7, 19°.09N±0°.02×66°.96W±0°.02, h31km±5km, mb4.5/65, MS3.3/6, Error ellipse: s-maj=3.7km s-min=2.3km az=39.7*

*NEIC **16** 20:28:17.0, 19°.22N×67°.01W, h18km, mb4.6/57, MW4.4, MD4.4(RSPR), Moment Tensor Solution. s14 Moment tensor: Scale 10^15^Nm; Mrr0.74; Mθθ-1.62; Mφφ0.88; Mrθ-1.17; Mθφ-1.20; Mφr3.92; Best double couple: Mo4.50000×10^15^ NP1:φs268.00000°, δ10.00000°, λ-172.00000°. NP2:φs170.00000°, δ89.00000°, λ-80.00000°. Principal axes: T 5.1500, Plg43.0000°, Azm251.0000°; N -2.0400, Plg10.0000°, Azm350.0000°; P -3.1100, Plg45.0000°, Azm90.0000°; After RSPR.*

NEIC Felt [III] at Mayaguez. Felt widely in northwestern Puerto Rico.

*RSPR **16** 20:28:17.0, 19°.22N×67°.01W, h18km±7km, MD4.4/18*

*BJI **16** 20:28:19.8, 19°.00N×67°.00W, h49km, Ms4.9/2, Ms7 4.5/2*

ISC 16 20:28:15.9±1.2, 19°.07N±0°.03×66°.94W±0°.03, h14km±7km, n384, σ0.991/401, mb4.6/65, MS3.1/6, 12C-11D, Puerto Rico region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
AGPR	**Aguadilla, PR**	**0.61**	**195**	⇓*e*P			**Pn**	**20 28 29.5**	**-0.6**
AGPR	**Aguadilla, PR**	**0.61**	**195**	*e*S			**Sn**	**20 28 39.4**	**-0.5**
AGPR	**Aguadilla, PR**	**0.61**	**195**	⇓*e*P			**Pn**	**20 28 29.5**	**-0.6**
AGPR				*e*S			**Sn**	**20 28 39.4**	**-0.5**
AGP	**Aguadilla**	**0.68**	**196**	*e*Pn			**Pb**	**20 28 29.5**	**0.0**
AGP				*e*Sn			**Sb**	**20 28 39.4**	**+0.6**
AOPR	**Arecibo Observ**	**0.74**	**166**	⇓*e*P			**Pn**	**20 28 31.6**	**-0.3**
AOPR	**Arecibo Observ**	**0.74**	**166**	*e*S			**Sn**	**20 28 43.9**	**+1.0**
AOPR	**Arecibo Observ**	**0.74**	**166**	*e*Pn			**Pn**	**20 28 31.6**	**-0.3**
AOPR				*e*Sn			**Sn**	**20 28 43.9**	**+1.0**
LRS	**Lares**	**0.78**	**173**	⇓*i*P			**Pb**	**20 28 31.9**	**+0.7**
LRS	**Lares**	**0.78**	**173**	*e*Pn			**Pb**	**20 28 31.3**	**+0.2**
IDE	**Isla Desecheo**	**0.84**	**217**	⇑*e*P			**Pn**	**20 28 33.1**	**-0.2**
IDE	**Isla Desecheo**	**0.84**	**217**	*e*S			**Sg**	**20 28 43.3**	**+0.1**
IDE	**Isla Desecheo**	**0.84**	**217**	*e*Pn			**Pn**	**20 28 33.1**	**-0.2**
IDE				*e*Sn			**Sg**	**20 28 43.3**	**+0.1**
MPR	**Mayaguez**	**0.87**	**192**	⇓*e*P			**Pb**	**20 28 33.2**	**+0.5**
MPR	**Mayaguez**	**0.87**	**192**	*e*S			**Sn**	**20 28 46.6**	**+0.5**
MPR	**Mayaguez**	**0.87**	**192**	*e*Pn			**Pb**	**20 28 33.2**	**+0.5**
MPR				*e*Sn			**Sb**	**20 28 44.4**	**+0.2**
LSP	**Las Mesas**	**0.89**	**189**	⇑*e*P			**Pb**	**20 28 33.7**	**+0.5**
LSP	**Las Mesas**	**0.89**	**189**	*e*Pn			**Pb**	**20 28 33.7**	**+0.5**
CELP	**Cerrillos**	**1.04**	**161**	⇓*e*P			**Pn**	**20 28 36.4**	**+0.3**
CELP	**Cerrillos**	**1.04**	**161**	*e*Pn			**Pg**	**20 28 36.0**	**0.0**
CRPR	**Cabo Rojo, PR**	**1.06**	**189**	⇓*e*P			**Pg**	**20 28 36.3**	**-0.1**
CRPR	**Cabo Rojo, PR**	**1.06**	**189**	*e*S			**Sn**	**20 28 51.0**	**+0.1**
CRPR	**Cabo Rojo, PR**	**1.06**	**189**	*e*Pn			**Pg**	**20 28 36.3**	**-0.1**
CRPR				*e*Sn			**Sn**	**20 28 51.0**	**+0.1**
OBIP	**Obispado Ponce**	**1.07**	**162**	⇓*e*P			**Pn**	**20 28 36.7**	**+0.3**
OBIP	**Obispado Ponce**	**1.07**	**162**	*e*S			**Sg**	**20 28 50.4**	**0.0**
OBIP	**Obispado Ponce**	**1.07**	**162**	*e*Pn			**Pn**	**20 28 36.7**	**+0.3**
OBIP				*e*Sn			**Sg**	**20 28 50.4**	**0.0**
GBPR	**Guanica, Bosqu**	**1.08**	**177**	⇑*e*P			**Pn**	**20 28 36.9**	**+0.2**
GBPR	**Guanica, Bosqu**	**1.08**	**177**	*e*S			**Sn**	**20 28 52.0**	**+0.5**
GBPR	**Guanica, Bosqu**	**1.08**	**177**	*e*Pn			**Pn**	**20

HUMP eS Sb 20 28 59.8 +0.7
HUMP Col San Antoni 1.39 131 ePn Pn 20 28 40.9 +0.1
HUMP eSn Sn 20 28 57.2 -1.6
MTP Monte Pirata 1.63 126⇑ eP Pn 20 28 44.0 -0.1
MTP Monte Pirata 1.63 126 eS Sn 20 29 05.4 +0.4
MTP Monte Pirata 1.63 126 ePn Pn 20 28 44.0 -0.1
MTP eSn Sn 20 29 05.4 +0.4
STVI Saint Thomas 2.02 110⇑ eP Pn 20 28 49.2 -0.3
STVI Saint Thomas 2.02 110⇑ eP Pn 20 28 49.5 +0.1
STVI eS Sn 20 29 13.7 -0.8
STVI Saint Thomas 2.02 110 ePn Pn 20 28 49.2 -0.3
CDVI St. Croix 2.44 122⇑ eP Pn 20 28 56.3 +0.9
CDVI St. Croix 2.44 122 eS Sn 20 29 25.8 +0.8
CDVI St. Croix 2.44 122 ePn Pn 20 28 56.3 +0.9
CDVI eSn Sn 20 29 25.8 +0.8
ABV Anegada 2.50 97⇑ eP Pn 20 28 54.6 -1.4
ABV Anegada 2.50 97 eS Sn 20 29 26.1 -0.2
ABVI Anegada Island 2.50 97 ePn Pn 20 28 57.1 +1.1
ABVI eSn Sn 20 29 27.5 +1.2
SDD Santo Domingo 2.88 258 ePn Pn 20 29 02.6 +1.3
SABA Saba 3.80 112 ePn Pn 20 29 15.1 +1.1
SMRT St. Maarten 3.81 105⇑ eP Pn 20 29 15.0 +0.8
SMRT St. Maarten 3.81 105 eS Sn 20 29 59.3 +0.6
SMRT St. Maarten 3.81 105 eP Pn 20 29 14.6 +0.5
SMRT St. Maarten 3.81 105 ePn Pn 20 29 14.6 +0.5
SMRT eSn Sn 20 29 59.3 +0.6
SEUS St. Eustatius 4.08 112 ePn Pn 20 29 13.6 -4.2
SDDR Presa de Saban 4.11 270 ePn Pn 20 29 19.9 +1.5
GRTK Grand Turk 4.62 302 ePn Pn 20 29 24.4 -0.9
GRTK eSn Sn 20 30 12.1 -6.7
ANWB Willy Bob 5.09 105 ePn Pn 20 29 33.2 +1.4
PAPH Port-au-Prince 5.10 265 ePn Pn 20 29 33.7 +1.8
GDHS Morne Mazeau, 5.66 119 ePn Pn 20 29 41.1 +1.4
MLG Mont-d'or 5.82 120 eP Pn 20 29 43.9 +2.1
SSG Sans Toucher 5.83 120 eP Pn 20 29 43.8 +1.8
FNG Fond-Bernard 5.84 120 eP Pn 20 29 43.6 +1.5
HMG Houelmont 5.87 121 eP Pn 20 29 44.4 +2.0
MGG Marie-Galante 6.21 119 eP Pn 20 29 49.9 +2.7
FDF Fort de France 7.02 127 ePn Pn 20 29 57.0 -1.4
GTBY Guantanamo Bay 7.75 278 ePn Pn 20 30 06.3 -2.0
SVB Belmont 7.94 136 ePn Pn 20 30 10.8 -0.1
SDV Santo Domingo 10.73 200 Pn Pn 20 30 50.5 +1.1
1.4nm,0.3s,baz=18,slow=7.5,SNR=5.9
SDV Sn Sn 20 32 49.8 +0.3
1.4nm,0.3s,baz=312,slow=23,SNR=3.3
SDV LR LR 20 35 22.5
comp=Z,118nm,21.2s,baz=352,slow=40
SDV Santo Domingo 10.73 200 ePn Pn 20 30 50.1 +0.7
SDV Sn Sn 20 32 49.8 +0.3
SDV Santo Domingo 10.73 200 eP Pn 20 30 50.2 +0.8
OCAC Ocana 12.41 211 eP Pn 20 31 13.4 +1.1
CBRI Barrientos, No 12.63 208 eP Pn 20 31 15.1 -0.3
GRMC Gramalote, San 12.63 208 eP Pn 20 31 12.4 -3.0
BBSR BB Station 13.40 8 ePn Pn 20 31 24.4 -1.3
BARC Barichara 13.80 207 eP Pn 20 31 29.9 -1.6
HELC Santa Helena 15.29 214 ePn Pn 20 31 52.8 +1.1
58nm,0.9s
HELC Santa Helena 15.29 214 eP Pn 20 31 52.5 +0.8
NORC Norcasia 15.48 211 eP Pn 20 31 53.0 -1.0
ROSC El Rosal 15.87 208 Pn Pn 20 32 01.0 +1.8
1.0nm,0.3s,baz=15,slow=8.1,SNR=16
ROSC Sn Sn 20 34 56.7 +1.5
1.2nm,0.3s,baz=172,slow=22,SNR=2.1
ROSC LR LR 20 38 55.9
comp=Z,108nm,18.3s,baz=354,slow=40
ROSC El Rosal 15.87 208 ePn Pn 20 32 01.3 +2.0
22nm,0.8s
ROSC Sn Sn 20 34 56.7 +1.5
BCIP Isla Barro Col 15.90 234 ePn Pn 20 31 55.4 -4.0
20nm,0.8s
GUYC Guyana, Colomb 16.03 212 eP Pn 20 32 02.1 +0.6
TOLC Tolima 16.55 211 eP Pn 20 32 07.8 -0.3
PRAC Prado 17.12 208 ePn Pn 20 32 12.7 -2.2
28nm,1.0s
JTS JuntasAbangare 19.47 246 P P 20 32 41.4 -1.0
0.2nm,0.3s,baz=39,slow=9.8,SNR=6.2
JTS LR LR 20 39 57.0
comp=Z,69nm,18.4s,baz=126,slow=36
JTS JuntasAbangare 19.47 246 eP Pn 20 32 43.6 0.0
14nm,0.9s
TEIG Tepich 20.13 277 P P 20 32 49.4 -0.2
3.4nm,0.6s,baz=273,slow=23,SNR=5.5
TEIG LR LR 20 40 45.6
comp=Z,64nm,20.4s,baz=245,slow=37
TEIG Tepich 20.13 277 eP P 20 32 49.4 -0.2
29nm,1.5s
PTGA Pitinga 20.83 160 P P 20 32 58.5 +1.3
2.3nm,0.6s,baz=319,slow=20,SNR=3.4
PTGA Pitinga 20.83 160 eP Pn 20 32 59.0 -0.7
6.9nm,0.7s
BLA Blacksburg 21.59 330 eP P 20 33 10.3 +5.0
25nm,0.8s
OTAV Otavalo 21.85 212 eP P 20 33 09.9 +1.2
29nm,1.1s
TKL Tuckaleechee C 22.23 321 LR LR 20 41 09.4
comp=Z,54nm,20.7s,baz=175,slow=35
TKL Tuckaleechee C 22.23 321 eP P 20 33 11.2 -0.9
51nm,1.6s
BRNJ Basking Ridge 22.52 345 eP P 20 33 20.6 +5.4
CPCT Cooper Cave 22.54 320 eP P 20 33 13.8 -1.6
12nm,0.6s
LRAL Lakeview Retre 22.71 312 eP P 20 33 17.8 +0.5
46nm,1.6s
TZTN Tazewell 22.72 323 eP P 20 33 17.8 +0.4
447A Lucedale 22.84 305 P P 20 33 20.0 +1.3
baz=116
ODNJ Ogdensburg 22.91 345 eP P 20 33 21.0 +1.7
Z48A Northport 23.28 312 P P 20 33 23.5 +0.3
baz=123
247A Quitman 23.38 308 P P 20 33 25.2 +1.0
baz=119
446A Poplarville 23.40 304 P P 20 33 25.3 +1.0
baz=115
147A Livingston 23.43 310 P P 20 33 25.9 +1.2
baz=120
SSPA Standing Stone 23.46 339 eP P 20 33 27.0 +2.1
Z47A Carrollton 23.56 311 P P 20 33 26.4 +0.5
baz=122
HRV Adam Dziewonsk 23.69 351 eP P 20 33 30.0 +2.8
346A Big Creek Wild 23.73 306 P P 20 33 27.9 +0.3
baz=116
Y47A UCPARC, Winfie 23.77 313 P P 20 33 28.2 +0.1
baz=124
CCIG Comitan 24.16 267 eP P 20 33 31.9 -0.1
19nm,0.6s
444A Pine Grove 24.45 303 P P 20 33 35.8 +1.4
baz=113
Y46A Houston 24.47 311 P P 20 33 34.7 +0.2
baz=122
M54A Oil Creek Stat 24.86 337 P P 20 33 40.0 +2.0
baz=151
Y45A Yeager Farm, C 24.95 311 P P 20 33 40.6 +1.7
baz=121
143A Socs Landing, 25.78 307 P P 20 33 47.7 +1.3
baz=116
342A Flagon Creek P 25.96 303 P P 20 33 50.2 +2.2
baz=112
242A Grayson 26.09 305 P P 20 33 50.0 +0.8
baz=114
341A Kurthwood 26.61 302 P P 20 33 53.6 -0.4
baz=111
CMIG Matias Romero 26.62 270 LR LR 20 44 33.4
comp=Z,66nm,19.3s,baz=358,slow=37
141A Papa Simpson, 26.89 305 P P 20 33 56.7 +0.2
baz=114
240A Hunter Patters 27.34 303 P P 20 34 00.2 -0.3
baz=112
140A Cam and Jess, 27.42 305 P P 20 34 01.1 -0.1
baz=113
W41A Tony Mavity, V 27.54 311 P P 20 34 02.0 -0.2
baz=119
W41B Gary Mavity, V 27.54 311 P P 20 34 01.9 -0.3
baz=119
SADO Sadowa 27.58 341 LR LR 20 45 00.6
comp=Z,46nm,19.4s,baz=341,slow=36
WHAR Wooly Hollow 27.62 311 eP P 20 34 03.4 +0.4
8.0nm,0.8s
X40A Basin Creek Fa 27.64 309 P P 20 34 02.9 -0.2
baz=117
X301 Greenbrier Sit 27.68 311 eP P 20 34 03.8 +0.3
8.1nm,0.8s
NATX Nacogdoches 27.96 302 P P 20 34 05.7 -0.3
baz=110
139A Bunkhouse Ranc 28.07 304 P P 20 34 06.7 -0.4
baz=112
SAML Samuel 28.08 172 eP P 20 34 05.2 -2.0
5.7nm,0.7s
Z39A Irene McRaven, 28.13 306 P P 20 34 07.8 +0.3
baz=114
W40A Ferguson Farm, 28.14 310 P P 20 34 07.3 -0.3
baz=118
538A Harpers Horsep 28.15 299 P P 20 34 07.2 -0.5
baz=107
MIAR Mount Ida 28.22 308 P P 20 34 07.9 -0.4
baz=117
V40A Witts Springs 28.26 311 P P 20 34 09.2 +0.5
baz=120
ATAH Atahualpa 28.38 204 P P 20 34 10.0 -0.3
12nm,0.8s,baz=19,slow=2.2,SNR=4.8
ATAH LR LR 20 47 09.2
comp=Z,90nm,20.9s,baz=17,slow=40
238A Jacksonville 28.41 303 P P 20 34 10.8 +0.8
baz=110
U40A Yellville 28.55 312 P P 20 34 11.8 +0.5
baz=120
X39A Fountain Ranch 28.60 308 P P 20 34 12.5 +0.7
baz=116
138A Matatall Enter 28.61 304 P P 20 34 12.1 +0.2
baz=112
W39A Magazine 28.66 310 P P 20 34 13.5 +1.3
baz=117
T40A Mansfield 28.73 314 P P 20 34 13.4 +0.6
baz=122
337A Centerville 28.80 301 P P 20 34 14.1 +0.6
baz=108
V39A Pettigrew 28.86 311 P P 20 34 14.8 +0.7
baz=119,SNR=13
S40A Lebanon 28.95 315 P P 20 34 15.0 +0.1
baz=123
237A Washetta, Mont 28.96 302 P P 20 34 15.1 +0.2
baz=110
U39A Green Forest 29.00 312 P P 20 34 15.1 -0.2
baz=120
936A North Padre Is 29.06 292 P P 20 34 14.9 -0.9
baz=100
137A Heron Place, G 29.12 303 P P 20 34 17.5 +1.1
baz=111
W38A Poteau 29.14 309 P P 20 34 17.0 +0.4
baz=116
R40A Maddies Statio 29.18 316 P P 20 34 17.7 +0.9
baz=124
X38A Whitesboro 29.20 308 P P 20 34 17.3 +0.2
baz=115
Z37A Pogue Cattle C 29.23 305 P P 20 34 17.3 0.0
baz=112
T39A Clever 29.25 313 P P 20 34 18.0 +0.5
baz=121
636A Smothers Creek 29.27 297 P P 20 34 17.1 -0.6
baz=104
HHAR Hobbs 29.28 311 eP P 20 34 18.2 +0.5
8.7nm,0.8s
V38A Canehill 29.42 310 P P 20 34 19.4 +0.4
baz=118
Q40A Laux Farm, Aux 29.45 318 P P 20 34 20.0 +0.8
baz=126
Y37A Hugo 29.52 306 P P 20 34 20.3 +0.4
baz=113
S39A Bolivar 29.56 314 P P 20 34 20.9 +0.7
baz=122
035Z Hargill 29.58 290 P P 20 34 20.4 0.0
baz=98
U38A Gravette 29.67 311 P P 20 34 21.7 +0.5
baz=119
035A Encino 29.67 291 P P 20 34 20.6 -0.8
baz=99
R39A Chumby, Stover 29.70 316 P P 20 34 21.7 +0.3
baz=123
P40A Paris 29.75 319 P P 20 34 22.7 +0.9
baz=126
W37B Quinton 29.85 308 P P 20 34 23.6 +0.7
baz=115
Z36A Blue Ridge 29.89 304 P P 20 34 23.7 +0.5
baz=111
T38A Diamond 29.89 312 P P 20 34 23.8 +0.6
baz=120
S38A Stockton 29.92 314 P P 20 34 23.9 +0.4
baz=121
V37A Hulbert 29.96 310 P P 20 34 24.1 +0.4
baz=117
435B Jarrell 30.04 299 P P 20 34 25.4 +0.8
baz=106
TLIG Tlapa 30.04 272 eP P 20 34 25.1 +0.3
14nm,1.0s
335A Moody 30.05 300 P P 20 34 26.0 +1.4
baz=107
Q39A Willow Grove F 30.06 317 P P 20 34 25.6 +0.9
baz=124
934A Benavides 30.15 292 P P 20 34 25.9 +0.4
baz=100
U37A Salina 30.18 311 P P 20 34 26.2 +0.5
baz=118
034A Hebbronville 30.21 291 P P 20 34 26.4 +0.3
baz=99
R38A Fenwick Farm, 30.21 315 P P 20 34 25.9 -0.1
baz=122
WHTX Lake Whitney, 30.28 301 P P 20 34 26.5 -0.2
baz=108
WHTX Lake Whitney, 30.28 301 eP P 20 34 26.8 +0.2
12nm,0.8s
X36A Centrahoma 30.31 307 P P 20 34 27.3 +0.4
baz=113
T37A Cheneyville 18 30.37 312 P P 20 34 27.6 +0.2
baz=119
734A La Parita Cree 30.41 295 P P 20 34 28.4 +0.6
baz=102
Q38A Cooks Store, C 30.43 316 P P 20 34 28.8 +0.8
baz=123
W36A Wetumka 30.44 308 P P 20 34 28.1 0.0
baz=114
TUL1 Leonard 30.44 309 P P 20 34 28.6 +0.5
baz=116
V36A Jenks 30.50 309 P P 20 34 29.3 +0.7
baz=116
Z35A Perchaven, San 30.55 304 P P 20 34 29.7 +0.6
baz=110
Y35A Marietta 30.59 305 P P 20 34 29.8 +0.5
baz=112
534A Blanco 30.59 297 P P 20 34 29.6 +0.1
baz=104
434A Burnet 30.61 299 P P 20 34 29.1 -0.6
baz=105
S37A Fort Scott 30.62 313 P P 20 34 30.1 +0.5
baz=120
X35A Drake 30.72 306 P P 20 34 31.0 +0.4
baz=112
334A Lometa 30.73 300 P P 20 34 30.3 -0.4
baz=106,SNR=6.9
R37A Teagarden Farm 30.90 314 P P 20 34 32.4 +0.3
baz=121
W35A Tecumseh 30.93 307 P P 20 34 32.3 -0.1
baz=114
134A White-Moore Ra 30.96 302 P P 20 34 33.4 +0.7
baz=108
733A Divot King Ran 31.02 294 P P 20 34 33.5 +0.3
baz=101
T36A Boggs Farm, Ca 31.02 311 P P 20 34 33.0 -0.2
baz=118
833A Chaparral WMA, 31.03 293 P P 20 34 33.4 +0.1
baz=100
633A Saathoff Ranch 31.06 296 P P 20 34 33.8 +0.2
baz=102,SNR=6.3
533A Kerrville 31.08 297 P P 20 34 34.1 +0.3
baz=104
Z34A Collier Ranch, 31.09 303 P P 20 34 34.8 +1.0
baz=110,SNR=6.9
S36A Lake Cedric, C 31.13 313 P P 20 34 34.2 +0.1
baz=119,SNR=9.1
V35A Meyer Ranch, C 31.15 308 P P 20 34 34.0 -0.3
baz=115
Y34A Reagan Ranch, 31.16 305 P P 20 34 35.5 +1.1
baz=111,SNR=6.3
P37A Lathrop 31.25 317 P P 20 34 35.2 +0.1
baz=123
433A Art 31.28 298 P P 20 34 35.8 +0.2
baz=104,SNR=8.4
U35A Pawnee 31.33 310 P P 20 34 36.2 +0.3
baz=116
333A Richland Sprin 31.34 299 P P 20 34 36.2 +0.1
baz=106
T35A Sooner Cattle 31.41 311 P P 20 34 37.1 +0.5
baz=117
233A Rising Star 31.46 301 P P 20 34 37.2 +0.1
baz=107,SNR=7.4
M38A Pleasantville 31.57 321 P P 20 34 38.2 +0.2
baz=127
S35A Otter Creek Ra 31.62 312 P P 20 34 38.8 +0.4
baz=118,SNR=5.6
V34A Guthrie 31.68 308 P P 20 34 39.8 +0.7
baz=114
JCT Junction City 31.82 297 P P 20 34 40.5 +0.2
baz=104
JCT Junction City 31.82 297 eP P 20 34 40.5 +0.2
11nm,0.9s
P36A Good Intent, A 31.82 316 P P 20 34 39.9 -0.3
baz=122
Y33A Hilltop Ranch, 31.86 304 P P 20 34 41.7 +1.1
baz=110
O36A Bolckow 31.94 317 P P 20 34 41.7 +0.5
baz=123
T34A McClaskey Farm 31.94 310 P P 20 34 41.8 +0.5
baz=116
X33A Lawton 31.94 305 P P 20 34 42.3 +0.9
baz=111
Q35A Mercer Eighty, 31.99 314 P P 20 34 41.7 0.0
baz=120
W33A Caddo, Fort Co 32.14 306 P P 20 34 42.5 -0.6
baz=112
S34A Willow Spring 32.19 312 P P 20 34 43.5 +0.1
baz=117
WMOK Wichita Mounta 32.23 305 eP P 20 34 44.1 +0.2
4.3nm,0.9s
ABTX Abilene, Hawle 32.23 301 P P 20 34 44.0 +0.1
baz=107,SNR=11
ABTX Abilene, Hawle 32.23 301 eP P 20 34 44.2 +0.2
28nm,0.8s
P35A Duane Minner, 32.31 315 P P 20 34 44.2 -0.4
baz=121
J38A Wedel Dairy, R 32.34 324 P P 20 34 44.9 +0.2
baz=131
U33A Lingo Farm, Me 32.37 309 P P 20 34 44.8 -0.3
baz=114
X32A Elmer 32.51 305 P P 20 34 46.5 +0.2
baz=110,SNR=5.9
W32A Sentinel 32.72 306 P P 20 34 47.7 -0.5
baz=111
P34A Walnut Farm, R 32.86 315 P P 20 34 49.3 -0.1
baz=120
R33A Olander Ranch, 33.07 312 P P 20 34 51.7 +0.5
baz=117
Q33A Connelly Farm, 33.28 313 P P 20 34 53.7 +0.6
baz=118
S32A Newby Ranch, P 33.49 310 P P 20 34 54.4 -0.5
baz=115
R32A Long Quarter, 33.64 312 P P 20 34 56.4 +0.3
baz=116
Q32A Meitler Ranch, 33.78 313 P P 20 34 57.2 -0.2
baz=117
P32A Huiting Farm, 34.10 314 P P 20 35 00.2 0.0
baz=118
CBKS Cedar Bluff 34.53 312 P P 20 35 04.2 +0.3
baz=116
H35A Sunnyside Ranc 34.53 324 P P 20 35 03.8 0.0
baz=129
O31A Woolen Ranch, 34.84 314 P P 20 35 06.6 +0.1
baz=118
LTX Lajitas 34.89 294 eP P 20 35 07.8 +0.5
LTX ePcP PcP 20 37 40.5 +0.4
TX31 Lajitas Ar. Si 34.89 294 eP P 20 35 07.0 -0.3
TXAR Lajitas Array 34.89 294 P P 20 35 07.8 +0.5
7.1nm,0.7s,baz=111,slow=9.7,SNR=49
TXAR PcP PcP 20 37 40.5 +0.4
0.8nm,0.7s,baz=130,slow=6.1,SNR=3.6
ECSD EROS Data Cent 34.98 321 P P 20 35 07.4 -0.3
baz=126
ECSD EROS Data Cent 34.98 321 eP P 20 35 07.4 -0.3
16nm,1.7s
EYMN Ely 35.04 331 P P 20 35 09.1 +0.9
baz=137
MSTX Muleshoe 35.13 302 P P 20 35 08.4 -0.8
baz=106,SNR=7.1
MSTX Muleshoe 35.13 302 eP P 20 35 08.8 -0.4
14nm,0.9s
LPAZ La Paz 35.15 182 P P 20 35 07.5 -2.6
2.0nm,0.8s,baz=354,slow=9.2,SNR=5.7
LPAZ La Paz 35.15 182 eP P 20 35 07.4 -2.6
3.0nm,0.8s
L31A Butterfield Fa 35.50 317 P P 20 35 12.2 0.0
baz=121
K31A O'Neill 35.68 318 P P 20 35 14.4 +0.6
baz=122
K30A Basset 36.25 318 P P 20 35 19.1 +0.5
baz=120
MNTX Cornudas Mount 36.75 298 P P 20 35 22.6 -0.4
baz=101,SNR=9.5
MNTX Cornudas Mount 36.75 298 eP P 20 35 23.6 +0.6
9.0nm,1.0s
J29A Okreek 37.07 318 P P 20 35 25.7 +0.1
baz=120
T25A Trinidad 37.34 307 P P 20 35 27.5 -0.7
baz=109
A33A Warroad 37.58 329 P P 20 35 30.0 +0.2
baz=133
B32A Ashes, Strandq 37.80 328 P P 20 35 31.8 +0.1
baz=131
C31A Landman Farms, 38.03 326 P P 20 35 33.4 -0.3
baz=128
J27A Elkhorn Farm, 38.06 317 P P 20 35 34.4 +0.2
baz=118
BNM Barren Site 38.27 301 eP P 20 35 37.0 +0.8
G28A Parade 38.29 320 P P 20 35 36.4 +0.5
baz=122
LPM Los Pinos Moun 38.31 301 eP P 20 35 37.5 +1.0
ANMO Albuquerque 38.32 303 P P 20 35 36.8 +0.3
baz=104
ANMO Albuquerque 38.32 303 eP P 20 35 36.9 +0.4
3.8nm,1.0s
SDCO Great Sand Dun 38.35 307 P P 20 35 37.2 +0.3
baz=108,SNR=9.2
SDCO Great Sand Dun 38.35 307 eP P 20 35 37.2 +0.3
7.1nm,0.9s
I27A Quinn 38.48 318 P P 20 35 37.9 +0.3
baz=119
Q24A Divide 38.49 309 P P 20 35 38.1 +0.1
baz=110
LAZ Ladron 38.74 301 eP P 20 35 41.1 +1.1
B30A Myrvik Farm, E 38.76 326 P P 20 35 39.9 +0.2
baz=128
H27A Howes 38.78 319 P P 20 35 40.8 +0.7
baz=120
121A Cookes Peak, D 38.90 298 P P 20 35 41.2 -0.3
baz=100
I26A New Underwood 38.98 318 P P 20 35 42.5 +0.7
baz=118
G27A Dupree 39.06 320 P P 20 35 43.2 +0.7
baz=121,SNR=5.3
ISCO Idaho Springs 39.11 310 P P 20 35 43.9 +0.7
baz=111
S22A 4UR Ranch, Cre 39.35 307 P P 20 35 45.0 -0.3
baz=107
F27A Lemmon 39.37 321 P P 20 35 46.0 +1.0
baz=121
G26A Maurine 39.42 320 P P 20 35 46.1 +0.6
baz=120,SNR=6.5
I25A Rochford 39.53 317 P P 20 35 46.8 +0.3
baz=117
H25A Fruitdale 39.72 318 P P 20 35 48.2 +0.3
baz=118
N23A Red Feather La 39.74 312 P P 20 35 48.7 +0.3
baz=112
G25A Newell 39.88 319 P P 20 35 50.3 +1.0
baz=119
PB01 IPOC Station P 39.94 184 eP P 20 35 45.8 -4.1
6.9nm,0.7s
C26A Wahner Farm, P 40.45 323 P P 20 35 54.5 +0.7
baz=123
X18A Snowflake 41.04 301 eP P 20 35 59.9 +0.7
4.3nm,0.8s
TUC Tucson 41.38 297 P P 20 36 02.3 +0.5
baz=98
LAO LASA Array 42.31 320 P P 20 36 09.5 +0.3
baz=117
WUAZ Wupatki 42.37 302 P P 20 36 10.3 +0.3
baz=101,SNR=11
WUAZ Wupatki 42.37 302 eP P 20 36 11.2 +1.1
12nm,0.9s
BW06 Boulder Array 42.93 313 P P 20 36 14.5 -0.1
baz=110
BW06 Boulder Array 42.93 313 eP P 20 36 14.1 -0.4
PD31 Pinedale Array 42.93 313 eP P 20 36 14.9 +0.3
PDAR Pinedale Array 42.93 313 P P 20 36 14.5 0.0
1.3nm,0.8s,baz=108,slow=8.4,SNR=6.0

RLMT	**Red Lodge**	**43.58**	**316**	P		**P**	**20 36 20.1**	**+0.3**
	baz=113,SNR=11							
RLMT	**Red Lodge**	**43.58**	**316**	*e*P		**P**	**20 36 19.8**	**+0.1**
	9.1nm,0.7s							
LOHW	**Long Hollow**	**43.93**	**314**	*e*P		**P**	**20 36 22.6**	**0.0**
	7.2nm,0.9s							
REDW	**Red Top Meadow**	**44.02**	**313**	*e*P		**P**	**20 36 24.1**	**+0.8**
	6.6nm,1.0s							
MOOW	**Moose Ponds**	**44.07**	**314**	*e*P		**P**	**20 36 24.6**	**+0.8**
	2.3nm,0.8s							
FLWY	**Flagg Ranch**	**44.16**	**314**	*e*P		**P**	**20 36 25.2**	**+0.8**
	4.3nm,0.8s							
FXWY	**Fox Creek**	**44.23**	**314**	*e*P		**P**	**20 36 25.0**	**0.0**
	3.3nm,0.9s							
IMW	**Indian Meadow**	**44.26**	**314**	*e*P		**P**	**20 36 25.1**	**-0.2**
	2.6nm,0.8s							
DUG	**Dugway, Tooele**	**44.51**	**308**	P		**P**	**20 36 27.5**	**+0.4**
	baz=105							
GLA	**Glamis**	**44.85**	**298**	P		**P**	**20 36 30.9**	**+1.0**
	baz=96							
PSUT	**Pine Spring**	**44.91**	**306**	*e*P		**P**	**20 36 31.3**	**+0.7**
	4.1nm,1.0s							
EGMT	**Eagleton**	**45.05**	**320**	P		**P**	**20 36 31.5**	**+0.1**
	baz=115							
EGMT	**Eagleton**	**45.05**	**320**	*e*P		**P**	**20 36 32.3**	**+1.0**
	10.0nm,1.1s							
IRM	**Iron Mountain**	**45.23**	**299**	P		**P**	**20 36 34.0**	**+1.1**
	baz=97,SNR=9.9							
LDFC	**Landfair**	**45.32**	**301**	*e*P		**P**	**20 36 35.5**	**+1.8**
	16nm,0.8s							
BOZ	**Bozeman (W)**	**45.32**	**316**	P		**P**	**20 36 32.7**	**-1.0**
	baz=111,SNR=5.1							
BOZ	**Bozeman (W)**	**45.32**	**316**	*e*P		**P**	**20 36 30.6**	**-3.0**
	7.2nm,1.0s							
BC3	**Big Chuckawall**	**45.43**	**299**	P		**P**	**20 36 35.9**	**+1.3**
	baz=96							
SWSC	**Sam W. Stewart**	**45.65**	**298**	P		**P**	**20 36 37.4**	**+1.2**
	baz=95							
GMRC	**Granite Mounta**	**45.73**	**300**	P		**P**	**20 36 37.9**	**+0.9**
	baz=97,SNR=6.1							
TUQ	**Turquoise Moun**	**46.03**	**301**	P		**P**	**20 36 40.8**	**+1.5**
	baz=98,SNR=6.2							
CPUP	**Villa Florida**	**46.08**	**168**	P		P	20 36 36.4	-3.1
	3.6nm,0.8s,baz=356,slow=8.9,SNR=5.0							
CPUP	**Villa Florida**	**46.08**	**168**	*e*P		**P**	**20 36 36.6**	**-2.9**
MONP2	**Monument Peak**	**46.17**	**298**	P		**P**	**20 36 41.8**	**+1.2**
	baz=95							
R11A	**Troy Canyon, C**	**46.21**	**305**	P		**P**	**20 36 42.3**	**+1.5**
	baz=101							
TPNV	**Topopah Spring**	**46.50**	**303**	P		**P**	**20 36 43.8**	**+0.8**
	baz=99,SNR=5.4							
TPNV	**Topopah Spring**	**46.50**	**303**	*e*P		**P**	**20 36 44.3**	**+1.2**
	4.1nm,0.8s							
HLID	**Hailey**	**46.55**	**312**	P		**P**	**20 36 43.0**	**-0.4**
	baz=106							
GSC	**Goldstone, Bar**	**46.73**	**301**	P		**P**	**20 36 46.2**	**+1.5**
	baz=97,SNR=5.0							
GSC	**Goldstone, Bar**	**46.73**	**301**	*e*P		**P**	**20 36 45.9**	**+1.1**
	7.4nm,0.9s							
MURC	**Murrieta**	**46.87**	**298**	P		**P**	**20 36 46.7**	**+0.9**
	baz=95							
MSO	**Missoula**	**47.24**	**317**	P		**P**	**20 36 48.7**	**+0.2**
	baz=110							
MSO	**Missoula**	**47.24**	**317**	*e*P		**P**	**20 36 48.8**	**+0.2**
	3.3nm,0.8s							
BFSC	**Mount Baldy Ra**	**47.31**	**299**	P		**P**	**20 36 49.5**	**+0.1**
	baz=95							
MPMC	**Manual Prospec**	**47.37**	**302**	P		**P**	**20 36 50.7**	**+0.8**
	baz=97							
LRMC	**Laurel Mtn Rad**	**47.46**	**301**	P		**P**	**20 36 49.7**	**-0.8**
	baz=96							
DAC	**Darwin (Calif)**	**47.48**	**302**	*e*P		**P**	**20 36 51.8**	**+1.0**
	6.4nm,0.8s							
SWMT	**Swartz Lake**	**47.51**	**318**	*e*P		**P**	**20 36 50.7**	**+0.1**
EDW2	**Edwards Air Fo**	**47.65**	**300**	P		**P**	**20 36 51.8**	**-0.1**
	baz=96,SNR=5.6							
LCO	**Las Campanas**	**47.93**	**184**	*e*P		P	20 36 49.7	-4.6
	122nm,1.8s							
NV01	**Mina Array Sit**	**48.33**	**305**	*e*P		**P**	**20 36 58.2**	**+0.9**
NV01				*e*PcP		**PcP**	**20 38 24.7**	**+0.7**
NVAR	**Mina Array Bea**	**48.33**	**305**	P		**P**	**20 36 58.2**	**+0.9**
	3.6nm,0.9s,baz=101,slow=6.4,SNR=18							
NVAR				PcP		**PcP**	**20 38 24.7**	**+0.7**
	1.0nm,0.7s,baz=160,slow=3.4,SNR=4.2							
PKM	**Mcpherson Peak**	**49.14**	**300**	P		**P**	**20 37 03.4**	**-0.2**
	baz=95							
NEW	**Newport**	**49.74**	**318**	P		**P**	**20 37 07.7**	**-0.1**
	baz=108,SNR=10							
NEW	**Newport**	**49.74**	**318**	*e*P		**P**	**20 37 07.5**	**-0.3**
	11nm,0.8s							
N02D	**Trinity Center**	**52.05**	**307**	P		**P**	**20 37 23.5**	**-1.8**
	baz=98							
G03D	**McMinnville, O**	**53.10**	**313**	P		**P**	**20 37 32.1**	**-0.8**
	baz=100							
YKA	**Yellowknife Ar**	**54.31**	**335**	P		**P**	**20 37 40.9**	**-0.6**
	1.0nm,0.6s,baz=112,slow=7.6,SNR=19							
YKB5	**Yellowknife Ar**	**54.31**	**335**	*e*P		**P**	**20 37 41.1**	**-0.4**
ESDC	**Sonseca Array**	**57.45**	**55**	P		**P**	**20 38 05.6**	**+1.1**
	3.7nm,0.7s,baz=273,slow=7.4,SNR=25							
ES19	**SONSECA Array**	**57.50**	**55**	*e*P		**P**	**20 38 05.1**	**+0.3**
INK	**Inuvik**	**63.82**	**338**	P		**P**	**20 38 47.1**	**-0.2**
	1.8nm,0.7s,baz=93,slow=5.4,SNR=10							
INK	**Inuvik**	**63.82**	**338**	*e*P		**P**	**20 38 46.8**	**-0.5**
	12nm,1.8s							
TOA1	**Torodi Ar. Sit**	**65.86**	**84**	*e*P		**P**	**20 39 01.4**	**-0.1**
	24nm,2.0s							
TOA0	**Torodi Ar. Sit**	**65.86**	**84**	*e*P		**P**	**20 39 00.6**	**-0.9**
TORD	**Torodi Ar. Bea**	**65.86**	**84**	P		**P**	**20 39 01.4**	**-0.1**
	2.3nm,1.0s,baz=270,slow=6.0,SNR=5.0							
EGAK	**Eagle**	**66.20**	**333**	*e*P		**P**	**20 39 03.3**	**+0.4**
	6.1nm,1.1s							
DOT	**Dot Lake**	**67.38**	**332**	*e*P		**P**	**20 39 10.9**	**+0.5**
	8.8nm,1.1s							
NB200	**NORSAR Array S**	**67.78**	**31**	*e*P		**P**	**20 39 14.5**	**+1.4**
NOA	**NORSAR Array B**	**67.78**	**31**	P		**P**	**20 39 14.5**	**+1.4**
	0.8nm,0.8s,baz=322,slow=6.5,SNR=3.3							
IL1	**Eielson Array**	**68.64**	**333**	*e*P		**P**	**20 39 16.9**	**-1.5**
ILAR	**Eielson Array**	**68.64**	**333**	P		**P**	**20 39 18.1**	**-0.2**
	1.7nm,0.8s,baz=108,slow=4.7,SNR=23							
ILB	**Eielson Array**	**68.64**	**333**	*e*P		**P**	**20 39 17.0**	**-1.4**
MDM	**Murphy Dome**	**69.22**	**333**	*e*P		**P**	**20 39 21.8**	**-0.2**
	3.4nm,0.8s							
RND	**Reindeer**	**69.52**	**332**	*e*P		**P**	**20 39 24.6**	**+0.6**
	6.5nm,0.4s							
KHC	**Kasperske Hory**	**69.69**	**44**	*e*P		**P**	**20 39 23.0**	**-2.2**
TRF	**Thorofare Moun**	**70.17**	**332**	*e*P		**P**	**20 39 27.4**	**-0.6**
	6.7nm,0.9s							
BPAW	**Bear Paw Mtn.**	**70.44**	**332**	*e*P		**P**	**20 39 28.7**	**-0.8**
	7.6nm,0.4s							
KTH	**Kantishna Hill**	**70.44**	**332**	*e*P		**P**	**20 39 29.4**	**-0.2**
	12nm,1.0s							
CAST	**Castle Rocks**	**70.97**	**332**	*e*P		**P**	**20 39 32.0**	**-0.8**
	99nm,0.3s							
ARA0	**ARCESS Array S**	**73.16**	**22**	*e*P		**P**	**20 39 47.5**	**+1.8**
ARCES	**ARCESS Array B**	**73.16**	**22**	P		**P**	**20 39 47.5**	**+1.8**
	2.1nm,0.9s,baz=335,slow=5.4,SNR=4.9							
FIA0	**FINESS Array S**	**74.88**	**30**	*e*P		**P**	**20 39 56.3**	**+0.4**
FINES	**FINESS Array B**	**74.88**	**30**	P		**P**	**20 39 56.3**	**+0.4**
	1.7nm,0.9s,baz=298,slow=4.1,SNR=3.4							
MLR	**Muntele Rosu**	**78.62**	**46**	*e*P		**P**	**20 40 19.4**	**+1.8**
	4.8nm,1.0s							
TIXI	**Tiksi**	**88.87**	**355**	P		**P**	**20 41 09.7**	**+0.4**
	0.7nm,0.3s,baz=34,slow=3.4,SNR=2.8							
WMQ	**Urumqi**	**113.24**	**20**	*e*PKP		**PKiKP**	**20 46 50.3**	**-3.1**
WMQ				LR		LR		
	comp=N,43nm,15.6s							
WMQ				LR		LR		
	comp=E,60nm,13.0s							
WMQ				LR		LR		
	comp=Z,30nm,15.6s							
HHC	**Hu-ho-hao-te**	**120.38**	**1**	*e*PKP		**PKPdf**	**20 47 10.0**	**+2.7**
CD2	**Chengdu**	**129.51**	**10**	PKP		**PKPdf**	**20 47 21.5**	**-3.5**

IDC **16** *20:30:23.4±1.0, 22°.26N×144°.49E, h0km, mb3.7/10, mb1 3.8/11, mb1mx3.7/40, mbtmp3.7/11, ML4.1/1, Error ellipse: s-maj=36.5km s-min=16.5km az=83.0*

ISCJB **16** *20:30:26.9±0.7, 22°.25N±0°.07×144°.4E±0°.2, h33km, mb4.0/15, Error ellipse: s-maj=27.2km s-min=8.4km az=166.2*

NEIC **16** *20:30:30.3±2.3, 22°.28N×144°.44E, h48km±20km, mb4.2/5, Error ellipse: s-maj=28.9km s-min=10.3km az=76.0*

ISC 16 20:30:29.0±0.9, 22°.32N±0°.09×144°.3E±0°.2, h33km, n27, σ1s28/27, mb4.0/15, Volcano Islands region

Code	Station Name	Δ°	AZ°	Phase	Op	ID	Time	Res
						ISC	h m s	ISC
CBIJ	**Chichi jima**	**5.13**	**338**	*e*Pn		**Pn**	**20 31 45.0**	**+1.4**
CBIJ				*e*Sn		**Sn**	**20 32 38.9**	**-2.8**
JCJ	**Chichijima**	**5.13**	**338**	Pn		**Pn**	**20 31 45.1**	**+1.5**
	6.5nm,0.3s,baz=42,slow=9.5,SNR=24							
JCJ				Sn		**Sn**	**20 32 40.4**	**-1.3**
	18nm,0.3s,baz=288,slow=21,SNR=8.6							
KSRS	**Korea Array**	**20.67**	**320**	P		Pn	20 35 10.4	+1.8
	0.8nm,0.7s,baz=145,slow=8.9,SNR=7.4							
KSAR	**Wonju Array Be**	**20.68**	**320**	P		Pn	20 35 10.4	+1.6
KLR	**Kul'dur**	**28.64**	**343**	P		**P**	**20 36 23.9**	**+1.5**
	0.8nm,0.7s,baz=134,slow=1.4,SNR=3.9							
SONA0	**Songino Array**	**39.53**	**319**	*e*P		**P**	**20 37 56.2**	**-0.7**
	5.4nm,1.6s							
SONM	**Songino Array**	**39.53**	**319**	P		**P**	**20 37 56.2**	**-0.7**
	0.5nm,0.5s,baz=142,slow=8.5,SNR=5.8							
SONA1	**Songino Array**	**39.53**	**319**	*e*P		**P**	**20 37 55.1**	**-1.8**
CMAR	**Chiang Mai Arr**	**42.58**	**273**	P		**P**	**20 38 22.9**	**+0.7**
	0.2nm,0.4s,baz=61,slow=7.8,SNR=5.2							
TLY	**Talaya**	**42.88**	**323**	*e*P		**P**	**20 38 24.6**	**+0.4**
	3.1nm,0.5s							
WR1	**Warramunga Arr**	**43.12**	**194**	*e*P		**P**	**20 38 25.6**	**-0.9**
	30nm,1.9s							
WRA	**Warramunga Arr**	**43.12**	**194**	P		**P**	**20 38 25.6**	**-0.9**
	1.0nm,0.3s,baz=15,slow=8.8,SNR=51							
AS01	**Alice Springs**	**46.81**	**193**	*e*P		**P**	**20 38 55.1**	**-0.7**
ASAR	**Alice Springs**	**46.82**	**193**	P		**P**	**20 38 54.4**	**-1.5**
	0.3nm,0.3s,baz=15,slow=6.4,SNR=7.7							
STKA	**Stephens Creek**	**53.36**	**183**	P		**P**	**20 39 49.2**	**-0.4**
	1.6nm,0.6s,baz=343,slow=9.1,SNR=5.8							
ZALV	**Zalesovo Beam**	**54.38**	**321**	P		**P**	**20 39 53.3**	**+0.8**
	0.6nm,0.4s,baz=107,slow=7.3,SNR=2.9							
ZAA1	**Zalesovo Array**	**54.38**	**321**	*e*P		**P**	**20 39 53.3**	**+0.8**
MK01	**Makanchi Array**	**55.04**	**312**	*e*P		**P**	**20 39 59.2**	**+1.7**
MK31	**Makanchi Array**	**55.05**	**312**	*e*P		**P**	**20 39 58.3**	**+0.7**
MK32	**Makanchi Array**	**55.05**	**312**	*e*P		**P**	**20 39 58.3**	**+0.7**
MKAR	**Makanchi Array**	**55.05**	**312**	P		**P**	**20 39 58.3**	**+0.7**
	0.4nm,0.6s,baz=87,slow=8.0,SNR=6.9							
MKAR	**Makanchi Array**	**55.05**	**312**	*e*P		**P**	**20 39 58.5**	**+0.9**
MAKZ	**Makanchi**	**55.27**	**312**	*e*P		**P**	**20 40 01.0**	**+1.8**
	5.8nm,1.8s							
LHI	**Lord Howe Isla**	**55.37**	**165**	*e*P		**P**	**20 40 00.8**	**+0.9**
	272nm,1.7s							
YKA	**Yellowknife Ar**	**75.41**	**28**	P		**P**	**20 42 08.8**	**-0.5**
	0.2nm,0.6s,baz=293,slow=5.8,SNR=3.7							
FIA0	**FINESS Array S**	**83.07**	**335**	*e*P		**P**	**20 42 49.7**	**-1.3**
FINES	**FINESS Array B**	**83.07**	**335**	P		**P**	**20 42 49.7**	**-1.3**
	0.7nm,0.8s,baz=46,slow=4.8,SNR=4.8							

NIED **16** *20:36:00, 36°.90N×143°.80E, h8km, Mw5.4 Best double couple: M0 1.54000×10^17 NP1:φs 57.00000°, δ 31.00000°, λ -95.00000°. NP2:φs 243.00000°, δ 60.00000°, λ -87.00000°.*

IDC **16** *20:36:44.0±0.3, 36°.88N×144°.03E, h0km, mb5.3/34, mb1 5.4/41, mb1mx5.3/49, mbtmp5.3/41, ML4.9/5, MS4.7/37, Ms1 4.7/37, ms1mx4.6/48, Error ellipse: s-maj=11.5km s-min=8.9km az=100.0*

GCMT **16** *20:36:46.3±0.1, 36°.95N×143°.92E, h12km, MW5.5/119, Moment Tensor Solution. s91,c176; s119,c304; Duration: 1s3 Moment tensor: Scale 10^17 Nm; Mrr -1.75±.02; Mθθ 1.41±.02; Mφφ 0.34±.02; Mrθ 0.42±.04; Mθφ 0.81±.01; Mrφ 0.91±.05; Best double couple: M0 2.06000×10^17 NP1:φs 225.00000°, δ 59.00000°, λ -108.00000°. NP2:φs 78.00000°, δ 35.00000°, λ -63.00000°. Principal axes: T 2.0230, Plg13.0000°, Azm328.0000°; N 0.0750, Plg15.0000°, Azm235.0000°; P -2.0960, Plg70.0000°, Azm96.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface/mantle waves, cutoff=50s.*

NEIC **16** *20:36:46.3±1.2, 36°.88N×143°.92E, h15km±7km, mb5.8/299, MS4.9/129, MW5.5 Error ellipse: s-maj=2.7km s-min=1.9km az=151.0, Moment Tensor Solution. s42 Moment tensor: Scale 10^17 Nm; Mrr -1.62; Mθθ 1.51; Mφφ 0.11; Mrθ 0.40; Mθφ 0.96; Mrφ 0.59; Best double couple: M0 2.00000×10^17 NP1:φs 77.00000°, δ 37.00000°, λ -68.00000°. NP2:φs 230.00000°, δ 56.00000°, λ -106.00000°. Principal axes: T 2.1000, Plg10.0000°, Azm332.0000°; N -0.3000, Plg13.0000°, Azm239.0000°; P -1.8100, Plg74.0000°, Azm97.0000°;*

ISCJB **16** *20:36:47.9±0.1, 36°.80N±0°.02×143°.94E±0°.01, h36km, mb5.7/493, MS5.0/203 Error ellipse: s-maj=2.5km s-min=1.5km az=163.3*

MOS **16** *20:36:47.7±0.8, 37°.14N×143°.93E, h25km, mb5.9/143, MS5.0/55, Error ellipse: s-maj=5.5km s-min=3.5km az=109.0*

JMA **16** *20:36:48.1±0.3, 36°.94N×143°.76E, h54km, M5.4*

JMA Felt I J1.

BJI **16** *20:36:49.2, 37°.14N×143°.43E, h22km, mb5.3/72, mB5.5/63, Ms5.3/96, Ms7 5.1/90*

ISC 16 20:36:47.9±0.3, 36°.87N±0°.03×143°.90E±0°.03, h25km±1km, h25km:pP-P, n1819, σ1s15/1922, mb5.8/528, MS4.9/205, 83C-121D, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	Op	ID	Time	Res
						ISC	h m s	ISC
JFK	**Kawauchi**	**2.47**	**282**	⇑P		**Pn**	**20 37 25.4**	**-1.1**
JFK				S		**Sn**	**20 37 52.5**	**-3.4**
ONAJ	**Iwakimizuishiy**	**2.50**	**276**	P		**Pn**	**20 37 25.7**	**-1.2**
ONAJ				S		**Sn**	**20 37 53.7**	**-2.9**
JIO	**Ouri**	**2.57**	**309**	⇑P		**Pn**	**20 37 26.4**	**-1.4**
JIO				S		**Sn**	**20 37 54.0**	**-4.2**
JMM	**Marumori**	**2.67**	**293**	⇑P		**Pn**	**20 37 28.1**	**-1.1**
JMM				S		**Sn**	**20 37 57.4**	**-3.3**
JFT	**Otama**	**2.92**	**284**	⇑P		**Pn**	**20 37 32.4**	**-0.3**
JFT				S		**Sn**	**20 38 04.8**	**-2.1**
JMK	**Ichinoseki**	**2.97**	**315**	⇑P		**Pn**	**20 37 31.8**	**-1.5**
BSO1	**Boso 1**	**3.25**	**228**	P		**Pn**	**20 37 36.0**	**-0.7**
JOM	**Ohasama**	**3.31**	**322**	P		**Pn**	**20 37 36.6**	**-1.5**
JOM				S		**Sn**	**20 38 12.7**	**-3.9**
JYK	**Kaneyama**	**3.47**	**307**	P		**Pn**	**20 37 39.4**	**-0.8**
JAG	**Ashikaga**	**3.60**	**264**	P		**Pn**	**20 37 41.8**	**-0.3**
JNS	**Sasagawa**	**3.77**	**286**	P		**Pn**	**20 37 44.8**	**+0.4**
JRY	**Ryogami san**	**4.12**	**260**	P		**Pn**	**20 37 48.5**	**-0.7**
JRY				*e*S		**Sn**	**20 38 32.6**	**-4.0**
JOD2	**Odawara 2**	**4.22**	**249**	P		**Pn**	**20 37 49.9**	**-0.6**
MJAR	**Matsushiro Arr**	**4.59**	**268**	Pn		**Pn**	**20 37 56.1**	**+0.5**
	86nm,0.3s,baz=86,slow=15,SNR=894							
MJAR				LR		LR	20 40 24.2	
	comp=Z,8μm,18.2s,baz=85,slow=47							
MAJO	**Matsushiro**	**4.59**	**268**	*e*P		**Pn**	**20 37 56.3**	**+0.7**
MAJO	**Matsushiro**	**4.59**	**268**	*e*Pn		**Pn**	**20 37 56.3**	**+0.7**
MAT	**Matsushiro**	**4.59**	**268**	P		**Pn**	**20 37 56.3**	**+0.7**
MAT				S		**Sn**	**20 38 46.7**	**-1.4**
MJB9	**Matsu-Tunnel**	**4.59**	**268**	*e*Pn		**Pn**	**20 37 56.1**	**+0.4**
JOT	**Ohata**	**5.02**	**335**	P		**Pn**	**20 37 59.6**	**-1.9**
JHJ2	**Mitsune**	**5.03**	**223**	P		**Pn**	**20 37 59.9**	**-1.8**
JHJ2	**Mitsune**	**5.03**	**223**	*e*Pn		**Pn**	**20 37 60.0**	**-1.8**
JHJ2				*e*Sn		**Sn**	**20 38 55.7**	**-3.4**
JHJ	**Hachijo jima 2**	**5.04**	**223**	Pn		**Pn**	**20 37 60.0**	**-1.9**
	332nm,0.3s,baz=335,slow=19,SNR=123							
JHJ				Sn		**Sn**	**20 38 54.3**	**-5.0**
	1μm,0.3s,baz=249,slow=21,SNR=17							
JHJ				LR		LR	20 40 22.3	
	comp=Z,3μm,19.7s,baz=84,slow=43							
ERM	**Erimo**	**5.17**	**354**	*e*P		**Pn**	**20 38 00.4**	**-3.2**
ERM	**Erimo**	**5.17**	**354**	*e*Pn		**Pn**	**20 38 00.3**	**-3.2**
JKB	**Kayabe**	**5.48**	**337**	P		**Pn**	**20 38 05.4**	**-2.4**
JKB				*e*S		Sn	20 39 03.0	-7.0
JCH	**Churui**	**5.75**	**356**	P		Pn	20 38 07.9	-3.6
JCH				*e*S		Sn	20 39 07.6	-9.1
INU	**Inuyama**	**5.78**	**257**	*e*Pn		**Pn**	**20 38 12.3**	**+0.4**
JOSM	**Okushiri--Mats**	**6.23**	**328**	P		**Pn**	**20 38 15.6**	**-2.5**
JOSM				*e*S		Sn	20 39 21.6	-6.8
JIE	**Ise**	**6.36**	**249**	P		**Pn**	**20 38 20.3**	**+0.3**
NEM2	**Nemuro 2**	**6.64**	**12**	P		Pn	20 38 18.5	-5.2
NEM2				*e*S		Sn	20 39 27.3	-11
JHR	**Hokuryu**	**7.06**	**347**	P		**Pn**	**20 38 27.8**	**-1.7**
JTKR	**Abashiri--Toko**	**7.09**	**0**	P		Pn	20 38 26.1	-3.8
JTKR				*e*S		Sn	20 39 40.3	-9.3
ASAJ	**Asahikawa**	**7.30**	**353**	Pn		**Pn**	**20 38 31.2**	**-1.7**
	48nm,0.3s,baz=195,slow=9.0,SNR=129							
ASAJ				Sn		Sn	20 39 48.5	-6.4
	26nm,0.3s,baz=53,slow=23,SNR=6.2							
ASAJ	**Asahikawa**	**7.30**	**353**	*e*Pn		**Pn**	**20 38 30.2**	**-2.6**
ASAJ				*e*Sn		Sn	20 39 48.5	-6.4
YUK	**Yuzh-Kuril'sk**	**7.31**	**11**	*d*P		Pn	20 38 28.3	-4.6
YUK				*i*S		Sn	20 39 44.5	-11
YUK				pmax		pmax		
	comp=Z,1μm,0.3s							
YUK				pmax		pmax		
	comp=N,686nm,0.4s							
YUK				pmax		pmax		
	comp=E,433nm,0.4s							
SHO	**Shikotan**	**7.34**	**17**	*c*P		Pn	20 38 28.0	-5.3
SHO				*i*S		Sn	20 39 43.4	-12
SHO				pmax		pmax		
	comp=Z,2μm,0.7s							
SHO				pmax		pmax		
	comp=N,2μm,0.9s							
SHO				pmax		pmax		
	comp=E,521nm,0.4s							
KUR	**Kuril'sk**	**8.87**	**18**	*e*P		Pn	20 38 50.3	-4.1
KUR				*e*S		Sn	20 40 22.4	-11
KUR				pmax		pmax		
	comp=Z,1μm,3.0s							
KUR				pmax		pmax		
	comp=N,40nm,0.5s							
KUR				pmax		pmax		
	comp=E,141nm,0.5s							
KUR				pmax		pmax		
	comp=Z,200nm,0.5s							
KUR				smax		smax		
	comp=N,758nm,0.7s							
KUR				smax		smax		
	comp=E,544nm,0.7s							
KUR				pmax		pmax		
	comp=N,2μm,2.0s							
KUR				pmax		pmax		
	comp=E,1μm,2.0s							
KUR				MLR		MLR		
	comp=N,3μm,14.0s							
KUR				MLR		MLR		
	comp=E,11μm,14.0s							
KUR				MLR		MLR		
	comp=Z,4μm,14.0s							
CBIJ	**Chichi jima**	**9.86**	**189**	*e*Pn		Pn	20 39 02.9	-5.1
CBIJ				*e*Sn		Sn	20 40 42.8	-15
JCJ	**Chichijima**	**9.86**	**189**	Pn		Pn	20 39 02.8	-5.2
	comp=Z,112nm,0.3s,baz=62,slow=13,SNR=96							
JCJ				Sn		Sn	20 40 46.5	-11
JCJ				LR		LR	20 42 48.5	
	comp=Z,2μm,21.7s,baz=7.0,slow=37							
YSS	**Yuzh-Sakhalins**	**10.11**	**356**	⇑*e*P		**Pn**	**20 39 11.0**	**-0.3**
YSS				*e*S		Sn	20 40 55.8	-8.0
YSS				pmax		pmax		
	comp=Z,228nm,0.7s							
YSS				MLR		MLR		
	comp=Z,8μm,14.0s							
YSS				MLR		MLR		
	comp=N,5μm,15.0s							
YSS				MLR		MLR		
	comp=E,6μm,14.0s							
YSS	**Yuzh-Sakhalins**	**10.11**	**356**	*e*Pn		**Pn**	**20 39 08.7**	**-2.6**
VLA	**Vladivostok**	**11.12**	**308**	*c*P		Pn	**20 39 24.7**	**-0.5**
JNU	**Nakatsue**	**11.32**	**255**	Pn		**Pn**	**20 39 29.5**	**+1.6**
	comp=E,2.3nm,0.3s,baz=66,slow=6.0,SNR=21							
JNU				LR		LR	20 44 21.7	
	comp=E,4μm,20.0s,baz=86,slow=40							
JNU	**Nakatsue**	**11.32**	**255**	*e*Pn		**Pn**	**20 39 29.4**	**+1.5**
MSHR	**Mys Shultsa**	**11.34**	**304**	*ce*P		**Pn**	**20 39 28.7**	**+0.5**
USRK	**Ussuriysk Ar.**	**11.64**	**313**	Pn		**Pn**	**20 39 32.5**	**+0.2**
	comp=E,2.7nm,0.3s,baz=121,slow=12,SNR=79							
USRK				Sn		**Sn**	**20 41 44.5**	**+3.1**
	baz=105,slow=26,SNR=1.7							
USRK				LR		LR	20 44 04.2	
	comp=E,7μm,18.5s,baz=111,slow=38							
UGL	**Uglegorsk**	**12.27**	**354**	*e*P		Pn	20 39 36.0	-4.9
UGL				pmax		pmax		
	comp=Z,1μm,2.0s							
UGL				pmax		pmax		
	comp=Z,240nm,0.8s							
KSRS	**Korea Array**	**12.76**	**277**	Pn		**Pn**	**20 39 49.9**	**+2.2**
	comp=Z,1.4nm,0.3s,baz=90,slow=14,SNR=42							
KSRS				LR		LR	20 45 00.4	
	comp=Z,5μm,18.2s,baz=78,slow=38							
KS01	**Wonju Array Si**	**12.79**	**278**	*e*Pn		**Pn**	**20 39 45.8**	**-2.1**
KS15	**Wonju Array Si**	**12.79**	**277**	*e*Pn		**Pn**	**20 39 49.1**	**+1.0**
KSAR	**Wonju Array Be**	**12.79**	**277**	P		**Pn**	**20 39 49.9**	**+1.8**
KSAR	**Wonju Array Be**	**12.79**	**277**	Pn		**Pn**	**20 39 49.9**	**+1.8**
HABR	**Khabarovsk**	**13.28**	**334**	*c*P		Pn	20 39 51.2	-3.5
HABR				*e*S		**Sn**	**20 42 16.0**	**-5.5**
HABR				pmax		pmax		
	comp=Z,323nm,2.4s							
HABR				pmax		pmax		
	comp=N,

SNY				LR	LR				
	comp=Z,14μm,16.2s								
OKH	**Okha**	**16.69**	**358**	*e*P	**Pn**	**20**	**40**	**39.8**	**0.0**
OKH				*e*S	**Sn**	**20**	**43**	**43.0**	**-1.3**
OKH				smax	smax				
	comp=N,3μm,16.0s								
DL2	**Dalian**	**17.70**	**283**	P	**Pn**	**20**	**40**	**51.9**	**-0.6**
DL2				pmax	pmax				
	comp=N,210nm,1.5s								
DL2				pmax	pmax				
	comp=N,1μm,7.8s								
DL2				LR	LR				
	comp=N,6μm,17.6s								
DL2				LR	LR				
	comp=N,6μm,14.0s								
PETK	**Petropavlovsk-**	**18.88**	**26**	P	**P**	**20**	**41**	**03.7**	**-2.5**
	comp=N,1.0nm,0.3s,baz=201,slow=11,SNR=22								
PEA1	**Petropavlovsk-**	**18.89**	**26**	*e*P	**P**	**20**	**41**	**03.7**	**-2.5**
PET	**Petropavlovsk**	**19.17**	**28**	*i*P	**P**	**20**	**41**	**09.2**	**-0.1**
PET				*e*S	**Sn**	**20**	**44**	**42.9**	**-1.3**
PET				pmax	pmax				
	comp=Z,68nm,1.3s								
PET				pmax	pmax				
	comp=Z,3μm,5.3s								
PET				pmax	pmax				
	comp=Z,2μm,9.4s								
PET				MLR	MLR				
	comp=Z,3μm,17.0s								
PET	**Petropavlovsk**	**19.17**	**28**	*e*P	**P**	**20**	**41**	**07.5**	**-1.7**
	comp=Z,96nm,1.2s								
SSE	**Sheshan**	**19.68**	**260**	P	**Pn**	**20**	**41**	**16.1**	**-0.5**
SSE				S	**S**	**20**	**44**	**50.1**	**-5.6**
SSE				pmax	pmax				
	comp=Z,430nm,6.2s								
SSE				LR	LR				
	comp=Z,7μm,18.2s								
SSE				LR	LR				
	comp=Z,3μm,18.0s								
SSE				LR	LR				
	comp=Z,4μm,17.2s								
NJ2	**Nanjing**	**21.18**	**264**	*e*P	**P**	**20**	**41**	**31.5**	**+0.2**
NJ2				sP	**sP**	**20**	**41**	**45.3**	**+3.8**
NJ2				S	**S**	**20**	**45**	**21.1**	**-4.5**
NJ2				pmax	pmax				
	comp=Z,100nm,1.3s								
NJ2				pmax	pmax				
	comp=Z,2μm,6.2s								
NJ2				LR	LR				
	comp=Z,4μm,14.6s								
NJ2				LR	LR				
	comp=Z,4μm,14.6s								
NJ2				LR	LR				
	comp=Z,4μm,15.2s								
HIA	**Hailar**	**21.45**	**313**	*e*P	**P**	**20**	**41**	**32.3**	**-1.9**
HIA				pmax	pmax				
	comp=Z,149nm,1.0s								
HIA				MLR	MLR				
	comp=Z,6μm,19.0s								
HIA	**Hailar**	**21.45**	**313**	*e*P	**P**	**20**	**41**	**32.3**	**-1.9**
	comp=Z,149nm,1.0s								
HIA				LR	LR				
	comp=Z,6μm,19.0s								
TIA	**Tai'an**	**21.50**	**276**	⇑P	**P**	**20**	**41**	**33.4**	**-1.4**
TIA				pP	**pP**	**20**	**41**	**41.4**	**-0.4**
TIA				S	**S**	**20**	**45**	**28.5**	**-3.5**
TIA				pmax	pmax				
	comp=Z,140nm,1.1s								
TIA				LR	LR				
	comp=Z,5μm,14.3s								
TIA				LR	LR				
	comp=Z,4μm,13.5s								
TIA				LR	LR				
	comp=Z,5μm,15.2s								
BJI	**Beijing**	**21.91**	**287**	P	**P**	**20**	**41**	**38.8**	**-0.3**
BJI				pP	**sP**	**20**	**41**	**48.6**	**-0.6**
BJI				S	**S**	**20**	**45**	**33.8**	**-5.9**
BJI				pmax	pmax				
	comp=Z,380nm,3.2s								
BJI				LR	LR				
	comp=Z,4μm,18.0s								
BJI				LR	LR				
	comp=Z,1μm,16.2s								
BJI				LR	LR				
	comp=Z,2μm,26.3s								
BJT	**Baijiatuau**	**21.91**	**287**	*e*P	**P**	**20**	**41**	**38.6**	**-0.5**
BJT				pmax	pmax				
	comp=Z,249nm,1.2s								
BJT				MLR	MLR				
	comp=Z,1μm,19.0s								
BJT	**Baijiatuau**	**21.91**	**287**	*e*P	**P**	**20**	**41**	**38.6**	**-0.5**
	comp=Z,250nm,1.2s								
BJT				LR	LR				
	comp=Z,1μm,19.0s								
TATO	**Taipei**	**22.53**	**245**	PFAKE				20 42 00.0	+14
TATO				LR	LR				
	comp=Z,2μm,19.0s								
YHNB	**Yeheng**	**22.80**	**244**	PFAKE				20 42 00.0	+11
YHNB				LR	LR				
	comp=Z,1μm,20.0s								
NACB	**Ninganchiao**	**22.94**	**243**	*e*P	**P**	**20**	**41**	**48.9**	**-1.3**
	comp=Z,54nm,0.9s								
MA2	**Magadan**	**23.15**	**9**	P	**P**	**20**	**41**	**50.8**	**-1.2**
	comp=Z,72nm,1.0s,baz=215,slow=12,SNR=9.8								
MA2	**Magadan**	**23.15**	**9**	*e*P	**P**	**20**	**41**	**50.8**	**-1.2**
MA2				MLR	MLR				
	comp=Z,21nm,20.0s								
MA2	**Magadan**	**23.15**	**9**	*e*P	**P**	**20**	**41**	**50.8**	**-1.2**
MA2				LR	LR				
	comp=Z,21nm,20.0s								
GUMO	**Guam**	**23.20**	**178**	P	P	20	42	01.1	+8.2
	comp=Z,260nm,1.0s,baz=227,slow=5.0,SNR=7.0								
GUMO				LR	LR	20	49	27.4	
	comp=Z,1μm,21.6s,baz=356,slow=33								
SSLB	**Suanglung**	**23.64**	**243**	*e*P	**P**	**20**	**41**	**54.6**	**-2.6**
	comp=Z,72nm,1.0s								
YULB	**Yu-li**	**23.65**	**242**	*e*P	**P**	**20**	**41**	**56.0**	**-1.2**
	comp=Z,114nm,1.0s								
CLNS	**Chul'man**	**23.68**	**334**	*e*P	**P**	**20**	**41**	**58.4**	**+1.1**
CLNS				*e**PP	**sP**	**20**	**42**	**06.8**	**-0.9**
CLNS				*e*		20	42	23.3	
CLNS				*e*		20	45	36.9	
CLNS				*e*S	**S**	**20**	**46**	**13.7**	**+3.2**
CLNS				*e*SS	**SnSn**	**20**	**46**	**53.2**	**+4.4**
CLNS				*e*		20	52	58.9	
CLNS				pmax	pmax				
	comp=Z,356nm,0.9s								
CLNS				pmax	pmax				
	comp=N,308nm,1.0s								
CLNS				pmax	pmax				
	comp=E,242nm,1.1s								
CLNS				pmax	pmax				
	comp=E,216nm,1.2s								
CLNS				pmax	pmax				
	comp=N,251nm,1.1s								
CLNS				pmax	pmax				
	comp=Z,141nm,1.0s								
CLNS				smax	smax				
	comp=E,165nm,1.2s								
CLNS				smax	smax				
	comp=N,317nm,1.3s								
CLNS				MLR	MLR				
	comp=Z,4μm,14.0s								
CLNS				MLR	MLR				
	comp=N,4μm,15.0s								
CLNS				MLR	MLR				
	comp=E,2μm,13.0s								
TWG	**Pinlang**	**24.17**	**241**	*e*P	**P**	**20**	**42**	**00.9**	**-1.3**
	comp=E,582nm,1.0s								
TPUB	**Ta-pu**	**24.18**	**242**	*e*P	**P**	**20**	**42**	**01.9**	**-0.3**
	comp=E,248nm,1.1s								
TIY	**Taiyuan**	**24.99**	**282**	*e*P	**P**	**20**	**42**	**10.4**	**+0.8**
TIY				S	**S**	**20**	**46**	**27.4**	**-4.7**
TIY				sS	**sS**	**20**	**46**	**42.5**	**-1.8**
TIY				pmax	pmax				
	comp=E,310nm,1.3s								
TIY				pmax	pmax				
	comp=E,1μm,3.8s								
TIY				LR	LR				
	comp=E,1μm,11.8s								
TIY				LR	LR				
	comp=E,4μm,13.0s								
TIY				LR	LR				
	comp=E,6μm,14.6s								
WHN	**Wuhan**	**25.32**	**264**	⇑P	**P**	**20**	**42**	**13.5**	**+1.0**
WHN				pP	**sP**	**20**	**42**	**25.3**	**+2.2**
WHN				S	**S**	**20**	**46**	**36.3**	**-0.9**
WHN				pmax	pmax				
	comp=E,340nm,1.1s								
WHN				LR	LR				
	comp=E,12μm,15.4s								
WHN				LR	LR				
	comp=E,6μm,12.9s								
WHN				LR	LR				
	comp=E,12μm,14.0s								
HHC	**Hu-ho-hao-te**	**25.41**	**289**	*e*P	**P**	**20**	**42**	**15.4**	**+2.0**
HHC				PP	**PnPn**	**20**	**42**	**51.9**	**+3.1**
HHC				pmax	pmax				
	comp=E,1μm,8.3s								
HHC				LR	LR				
	comp=E,4μm,14.2s								
HHC				LR	LR				
	comp=E,3μm,13.1s								
HHC				LR	LR				
	comp=E,3μm,14.1s								
CIT	**Chita**	**26.19**	**315**	*e*P	**P**	**20**	**42**	**21.3**	**+1.0**
CIT				*e*		20	43	08.3	
CIT				*e*S	**S**	**20**	**46**	**53.0**	**+2.3**
CIT				pmax	pmax				
	comp=Z,708nm,1.4s								
H11N2	**WAKE ISLAND Hy**	**26.38**	**124**	T	T	21	09	22.1	
	SNR=183								
H11N1	**WAKE ISLAND Hy**	**26.39**	**124**	T	T	21	09	56.2	
	baz=315,slow=74,SNR=58								
SMY	**Shemya**	**26.39**	**43**	*e*P	**P**	**20**	**42**	**23.1**	**+1.1**
SMY				pmax	pmax				
	comp=Z,460nm,1.5s								
SMY	**Shemya**	**26.39**	**43**	*e*P	**P**	**20**	**42**	**23.1**	**+1.1**
	comp=Z,464nm,1.5s								
H11N3	**WAKE ISLAND Hy**	**26.40**	**124**	T	T	21	09	57.5	
	baz=198,slow=74,SNR=79								
BTO	**Baotou**	**26.59**	**289**	*e*P	**P**	**20**	**42**	**23.6**	**-0.5**
SEY	**Seymchan**	**26.61**	**9**	P	**P**	**20**	**42**	**24.7**	**+0.8**
	comp=Z,163nm,1.2s,baz=192,slow=7.0,SNR=77								
YAK	**Yakutsk**	**26.70**	**345**	P	**P**	**20**	**42**	**24.5**	**-0.3**
	comp=Z,81nm,0.6s,baz=151,slow=3.6,SNR=34								
YAK				LR	LR	20	53	04.4	
	comp=Z,1μm,19.6s,baz=158,slow=37								
YAK	**Yakutsk**	**26.70**	**345**	*e*P	**P**	**20**	**42**	**24.4**	**-0.3**
YAK				*e**PP	**pP**	**20**	**42**	**29.7**	**-2.5**
YAK				*e*PPP	PPP	20	43	08.8	
YAK				*e*S	**S**	**20**	**46**	**55.7**	**-2.7**
YAK				*e**SS	sS	20	47	03.3	-7.4
YAK				*e*SSS	SSS	20	48	25.5	
YAK				pmax	pmax				
	comp=Z,116nm,0.9s								
YAK				pmax	pmax				
	comp=E,32nm,1.3s								
YAK				pmax	pmax				
	comp=N,84nm,1.2s								
YAK				pmax	pmax				
	comp=Z,169nm,0.9s								
YAK				pmax	pmax				
	comp=E,333nm,1.9s								
YAK				pmax	pmax				
	comp=N,501nm,1.7s								
YAK				smax	smax				
	comp=E,524nm,3.3s								
YAK				smax	smax				
	comp=N,415nm,2.8s								
YAK				MLR	MLR				
	comp=E,2μm,15.0s								
YAK				MLR	MLR				
	comp=Z,3μm,16.0s								
YAK				MLR	MLR				
	comp=N,2μm,16.0s								
YAK	**Yakutsk**	**26.70**	**345**	*e*P	**P**	**20**	**42**	**23.8**	**-0.9**
	comp=N,360nm,0.9s								
H11S1	**WAKE ISLAND Hy**	**27.13**	**126**	T	T	21	10	51.6	
	baz=318,slow=76,SNR=46								
H11S3	**WAKE ISLAND Hy**	**27.13**	**126**	T	T	21	10	51.8	
	baz=318,slow=76,SNR=37								
H11S2	**WAKE ISLAND Hy**	**27.14**	**126**	T	T	21	10	53.2	
	baz=318,slow=76,SNR=43								
APYP	**Conner**	**27.51**	**233**	*e*P	**P**	**20**	**42**	**30.7**	**-1.7**
CAUP	**Cauayan**	**27.84**	**230**	*e*P	**P**	**20**	**42**	**36.1**	**+0.8**
ABRA	**Dolores**	**28.01**	**233**	*e*P	**P**	**20**	**42**	**35.8**	**-1.1**
XAN	**Xi'an**	**28.54**	**275**	P	**P**	**20**	**42**	**42.0**	**+0.4**
XAN				sP	sP	20	42	55.8	+3.7
XAN				PP	**PnPn**	**20**	**43**	**32.5**	**+1.0**
XAN				PcP	**PcP**	**20**	**45**	**54.8**	**+2.1**
XAN				S	**S**	**20**	**47**	**23.8**	**-4.3**
XAN				SS	**SnSn**	**20**	**48**	**48.5**	**+0.5**
XAN				pmax	pmax				
	comp=N,180nm,1.3s								
XAN				pmax	pmax				
	comp=N,900nm,7.9s								
XAN				LR	LR				
	comp=N,3μm,16.2s								
XAN				LR	LR				
	comp=N,2μm,15.7s								
XAN				LR	LR				
	comp=N,3μm,14.8s								
BALP	**Baler**	**28.91**	**229**	*e*P	**P**	**20**	**42**	**47.0**	**+2.2**
BCPH	**Baguio City Da**	**29.04**	**232**	⇓*e*P	**P**	**20**	**42**	**45.4**	**-0.8**
ULN	**Ulaanbaatar**	**29.10**	**304**	*e*P	**P**	**20**	**42**	**47.3**	**+0.8**
ULN				pmax	pmax				
	comp=Z,170nm,1.2s								
ULN	**Ulaanbaatar**	**29.10**	**304**	*e*P	**P**	**20**	**42**	**47.2**	**+0.8**
	comp=Z,167nm,1.2s								
ULN				LR	LR				
	comp=Z,2μm,20.0s								
ULN	**Ulaanbaatar**	**29.10**	**304**	P	P	20	42	50.0	+3.4
	SNR=65								
ULN	**Ulaanbaatar**	**29.10**	**304**	P	P	20	42	50.0	+3.4
	SNR=65								
ENH	**Enshi**	**29.31**	**267**	*e*P	**P**	**20**	**42**	**48.8**	**+0.4**
	comp=Z,582nm,1.6s								
ENH				LR	LR				
	comp=Z,2μm,19.0s								
BOLP	**Bolinao**	**29.46**	**233**	*e*P	P	20	42	45.1	-4.6
HKC	**Hong Kong Obse**	**29.50**	**249**	P	**P**	**20**	**42**	**52.0**	**+1.9**
SONA1	**Songino Array**	**29.53**	**304**	*e*P	**P**	**20**	**42**	**50.9**	**+0.6**
SONA0	**Songino Array**	**29.53**	**304**	*e*P	**P**	**20**	**42**	**52.0**	**+1.7**
	comp=Z,142nm,1.0s								
SONM	**Songino Array**	**29.53**	**304**	P	**P**	**20**	**42**	**52.0**	**+1.7**
	comp=Z,61nm,1.0s,baz=95,slow=7.2,SNR=32								
SONM				LR	LR	20	56	21.3	
	comp=Z,2μm,19.3s,baz=108,slow=40								
GZH	**Guangzhou**	**29.68**	**251**	P	P	20	42	48.3	-3.4
GZH				PcP	**PcP**	**20**	**45**	**55.1**	**-0.5**
GZH				S	S	20	47	39.3	-6.7
GZH				SS	**SnSn**	**20**	**49**	**18.1**	**+2.2**
GZH				pmax	pmax				
	comp=Z,850nm,5.3s								
MCO	**Taipa Grande**	**30.07**	**249**	P	**P**	**20**	**42**	**57.0**	**+1.8**
IRK	**Irkutsk**	**31.69**	**312**	*e*P	**P**	**20**	**43**	**09.8**	**+0.6**
IRK				pmax	pmax				
	comp=Z,174nm,2.8s								
ZAK	**Zakamensk**	**31.93**	**308**	*e*P	**P**	**20**	**43**	**11.8**	**+0.3**
ZAK				pmax	pmax				
	comp=Z,68nm,1.3s								
TLY	**Talaya**	**31.95**	**310**	LR	LR	20	56	59.8	
	comp=Z,3μm,18.5s,baz=114,slow=38								
TLY	**Talaya**	**31.95**	**310**	*e*P	**P**	**20**	**43**	**12.8**	**+1.3**
TLY				*e*		20	44	28.4	
TLY				*e*S	**S**	**20**	**48**	**23.9**	**+2.8**
TLY						20	53	38.4	
TLY				pmax	pmax				
	comp=Z,63nm,1.1s								
TLY				MLR	MLR				
	comp=Z,4μm,14.0s								
TLY	**Talaya**	**31.95**	**310**	*e*P	**P**	**20**	**43**	**12.2**	**+0.8**
	comp=Z,43nm,0.9s								
TLY	**Talaya**	**31.95**	**310**	P	**P**	**20**	**43**	**12.6**	**+1.1**
	SNR=35								
TLY	**Talaya**	**31.95**	**310**	P	**P**	**20**	**43**	**12.6**	**+1.1**
	SNR=35								
LZH	**Lanzhou**	**32.06**	**281**	⇑P	**P**	**20**	**43**	**14.3**	**+1.5**
LZH				pP	sP	20	43	24.4	+1.0
LZH				sP	pP	20	43	29.3	+9.0
LZH				PP	**PP**	**20**	**44**	**22.3**	**-3.0**
LZH				PcP	**PcP**	**20**	**46**	**03.6**	**+1.6**
LZH				S	**S**	**20**	**48**	**24.3**	**+0.9**
LZH				sS	sS	20	48	39.0	+3.2
LZH				SS	**SnSn**	**20**	**50**	**11.0**	**-2.8**
LZH				pmax	pmax				
	comp=Z,280nm,1.4s								
LZH				pmax	pmax				
	comp=Z,540nm,5.1s								
LZH				LR	LR				
	comp=Z,4μm,13.4s								
LZH				LR	LR				
	comp=Z,4μm,13.7s								
LZH				LR	LR				
	comp=Z,5μm,15.2s								
GYA	**Guiyang**	**33.17**	**263**	⇑*i*P	**P**	**20**	**43**	**21.8**	**-0.7**
GYA				pP	sP	20	43	33.8	+0.7
GYA				PP	**PP**	**20**	**44**	**36.3**	**-1.4**
GYA				PcP	**PcP**	**20**	**46**	**07.0**	**+1.9**
GYA				S	**S**	**20**	**48**	**38.6**	**-2.2**
GYA				ScP	**ScP**	**20**	**49**	**47.8**	**+0.1**
GYA				SS	**SnSn**	**20**	**50**	**42.4**	**+1.5**
GYA				ScS	**ScS**	**20**	**53**	**47.0**	**-1.5**
GYA				pmax	pmax				
	comp=Z,50nm,1.0s								
GYA				pmax	pmax				
	comp=Z,230nm,9.3s								
GYA				LR	LR				
	comp=Z,4μm,19.5s								
GYA				LR	LR				
	comp=Z,2μm,20.4s								
GYA				LR	LR				
	comp=Z,2μm,18.3s								
MOY	**Mondy**	**33.57**	**310**	*e*P	**P**	**20**	**43**	**27.6**	**+1.8**
MOY				pmax	pmax				
	comp=Z,132nm,3.4s								
MIDW	**Midway**	**33.59**	**94**	*e*P	**P**	**20**	**43**	**25.0**	**-1.0**
	comp=Z,438nm,1.7s								
BILL	**Bilibino**	**33.64**	**15**	*d i*P	**P**	**20**	**43**	**24.7**	**-1.4**
BILL				*e*		20	44	39.3	
BILL				*e*S	S	20	48	38.4	-8.6
BILL				*e*SS	**SnSn**	**20**	**50**	**52.4**	**+1.2**
BILL				pmax	pmax				
	comp=Z,165nm,1.7s								
BILL				MLR	MLR				
	comp=Z,1μm,17.0s								
BILL	**Bilibino**	**33.64**	**15**	*e*P	**P**	**20**	**43**	**25.1**	**-0.9**
	comp=Z,142nm,1.3s								
BILL				LR	LR				
	comp=Z,1μm,22.0s								
CD2	**Chengdu**	**33.67**	**272**	P	**P**	**20**	**43**	**26.3**	**-0.5**
CD2				sP	sP	20	43	40.1	+2.7
CD2				PP	**PP**	**20**	**44**	**42.8**	**-0.3**
CD2				S	**S**	**20**	**48**	**47.5**	**-0.8**
CD2				sS	sS	20	49	03.9	+3.2
CD2				pmax	pmax				
	comp=Z,110nm,0.7s								
CD2				pmax	pmax				
	comp=Z,450nm,6.5s								
CD2				LR	LR				
	comp=Z,3μm,14.3s								
CD2				LR	LR				
	comp=Z,4μm,15.5s								
DAV	**Davao City (W)**	**34.05**	**214**	PFAKE				20 43 40.0	+10
DAV				LR	LR				
	comp=Z,986nm,22.0s								
GTA	**Gaotai**	**34.51**	**288**	⇓P	**P**	**20**	**43**	**35.4**	**+1.3**
GTA				pP	sP	20	43	43.3	-1.4
GTA				sP	pP	20	43	46.9	+5.3
GTA				PcP	**PcP**	**20**	**46**	**09.8**	**+1.0**
GTA				S	**S**	**20**	**49**	**01.9**	**+0.5**
GTA				sS	sS	20	49	14.3	+0.5
GTA				PcS	**PcS**	**20**	**49**	**55.3**	**0.0**
GTA				pmax	pmax				
	comp=Z,38nm,1.0s								
GTA				pmax	pmax				
	comp=Z,560nm,7.0s								
GTA				LR	LR				
	comp=Z,4μm,19.0s								
GTA				LR	LR				
	comp=Z,3μm,18.5s								
GTA				LR	LR				
	comp=Z,3μm,17.1s								
QIZ	**Qiongzhong**	**34.70**	**249**	P	**P**	**20**	**43**	**37.5**	**+1.7**
QIZ				S	**S**	**20**	**49**	**08.0**	**+3.6**
QIZ				LR	LR				
	comp=Z,760nm,17.2s								
QIZ				LR	LR				
	comp=Z,1μm,17.2s								
TIXI	**Tiksi**	**35.71**	**352**	P	**P**	**20**	**43**	**43.1**	**-0.7**
	comp=Z,8.0nm,0.9s,baz=129,slow=4.6,SNR=16								
TIXI				LR	LR	21	01	13.9	
	comp=Z,778nm,18.7s,baz=186,slow=41								
TIXI	**Tiksi**	**35.71**	**352**	*e*P	**P**	**20**	**43**	**43.0**	**-0.8**
TIXI				pmax	pmax				
	comp=Z,25nm,0.9s								
TIXI	**Tiksi**	**35.71**	**352**	*e*P	**P**	**20**	**43**	**42.5**	**-1.3**
	comp=Z,25nm,0.9s								
KMI	**Kunming**	**36.91**	**263**	P	**P**	**20**	**43**	**55.3**	**+0.3**
KMI				pP	sP	20	44	06.1	+0.5
KMI				sP	pP	20	44	11.5	+9.0
KMI				PP	**PnPn**	**20**	**45**	**23.3**	**+3.9**
KMI				S	**S**	**20**	**49**	**36.8**	**-1.9**
KMI				SS	**SnSn**	**20**	**52**	**02.8**	**-9.1**
KMI				pmax	pmax				
	comp=Z,55nm,1.4s								
KMI				pmax	pmax				
	comp=Z,430nm,5.5s								
KMI				LR	LR				
	comp=Z,1μm,15.6s								
KMI				LR	LR				
	comp=Z,2μm,15.1s								
KMI				LR	LR				
	comp=Z,2μm,15.0s								
GAMB	**Gambell**	**37.83**	**30**	*e*P	**P**	**20**	**44**	**02.0**	**0.0**
	comp=Z,54nm,1.8s								
TNTI	**Ternate**	**39.04**	**207**	P	**P**	**20**	**44**	**14.1**	**+1.4**
	comp=Z,206nm,1.4s,comp=Z,3μm								
MYLDM	**Lahad Datu**	**39.19**	**223**	*e*P	**P**	**20**	**44**	**14.7**	**+0.7**
	comp=Z,115nm,1.2s								
JAY	**Jayapura**	**39.30**	**185**	P	**P**	**20**	**44**	**15.2**	**+0.4**
	comp=Z,2.6nm,1.0s								
JAY				LR	LR	20	59	40.7	
	comp=Z,15nm,19.2s,baz=42,slow=35								
JAY	**Jayapura**	**39.30**	**185**	P	**P**	**20**	**44**	**15.8**	**+0.9**
	comp=Z,35nm,1.6s,comp=Z,564nm								
SWI	**Sorong**	**39.34**	**200**	P	**P**	**20**	**44**	**16.8**	**+1.7**
	comp=Z,51nm,1.2s,comp=Z,878nm								
GENI	**Genyem**	**39.42**	**186**	P	**P**	**20**	**44**	**15.0**	**-0.8**
	comp=Z,147nm,1.2s								
KKM	**Kota Kinabalu**	**39.77**	**226**	PFAKE				20 44 30.0	+11
KKM				LR	LR				
	comp=Z,774nm,19.0s								
PANO	**Nakornpanom**	**39.78**	**251**	P	**P**	**20**	**44**	**20.5**	**+1.6**
	comp=Z,43nm,0.9s								
LBMI	**Labuha**	**40.30**	**206**	P	**P**	**20**	**44**	**21.7**	**-1.5**
	comp=Z,236nm,1.5s,comp=Z,3μm								
NONG	**Nongkai**	**40.36**	**254**	P	**P**	**20**	**44**	**24.7**	**+1.0**
	comp=Z,89nm,1.4s,comp=Z,2μm								
SKNT	**Sakolnakorn**	**40.37**	**251**	P	**P**	**20**	**44**	**24.8**	**+1.0**
	comp=Z,100nm,1.0s								
CRAI	**Chiangrai**	**41.29**	**259**	P	**P**	**20**	**44**	**33.7**	**+2.3**
	comp=Z,59nm,1.2s,comp=Z,3μm								
MRSI	**Marisa**	**41.53**	**214**	P	**P**	**20**	**44**	**35.2**	**+1.9**
	comp=Z,189nm,1.4s,comp=Z,3μm								
KHON	**Khomkaen**	**41.63**	**252**	P	**P**	**20**	**44**	**35.1**	**+0.9**
	comp=Z,18nm,1.0s,comp=Z,234nm								
SANI	**Sanana**	**42.16**	**207**	P	**P**	**20**	**44**	**39.2**	**+0.8**
	comp=Z,175nm,1.3s,comp=Z,2μm								
MSAI	**Masohi**	**42.38**	**202**	P	**P**	**20**	**44**	**43.0**	**+2.8**
CMAI	**Chiengmai2**	**42.50**	**259**	P	**P**	**20**	**44**	**43.1**	**+1.7**
	comp=Z,81nm,1.5s								
CHAI	**Chaiyaphum**	**42.54**	**252**	P	**P**	**20**	**44**	**42.2**	**+0.7**
	comp=Z,34nm,1.0s,comp=Z,279nm								
UTTA	**Uttaradit**	**42.55**	**255**	P	**P**	**20**	**44**	**42.6**	**+1.0**
	comp=Z,10nm,0.8s,comp=Z,102nm								
WMQ	**Urumqi**	**42.69**	**297**	P	P	**20**	**44**	**44.4**	**+1.8**
WMQ				pP	sP	20	44	54.8	+1.5
WMQ				sP	pP	20	44	58.1	+7.9
WMQ				PP	PcP	20	46	28.8	-5.3
WMQ				S	**S**	**20**	**51**	**04.8**	**+0.3**
WMQ			

CMMT Chiang Mai 43.19 258 P **P** **20 44 47.7 +0.8**
comp=Z,84nm,1.2s,comp=Z,1µm
CHTO Chiang Mai 43.20 258 P **P** **20 44 47.7 +0.8**
comp=Z,379nm,1.6s,comp=Z,5µm
CHTO Chiang Mai 43.20 258 *eP* **P** **20 44 47.6 +0.7**
CHTO pmax pmax
comp=Z,99nm,1.1s
CHTO MLR MLR
comp=Z,1µm,19.0s
CHTO Chiang Mai 43.20 258 *eP* **P** **20 44 47.6 +0.7**
comp=Z,100nm,1.1s
CHTO LR LR
comp=Z,1µm,19.0s
CHTO Chiang Mai 43.20 258 P **P** **20 44 48.2 +1.3**
SNR=68
CHTO P **P** **20 44 48.2 +1.3**
SNR=68
CHTO Chiang Mai 43.20 258 P **P** **20 44 48.2 +1.3**
SNR=68
BNDI Bandanaira 43.21 201 P P 20 44 51.6 +4.7
comp=Z,268nm,1.7s,comp=Z,3µm
CM31 Chiang Mai Arr 43.40 257 *eP* **P** **20 44 49.5 +1.0**
CM31 *ePP* **PcP** **20 46 36.6 -0.2**
CMAR Chiang Mai Arr 43.40 257 P **P** **20 44 49.8 +1.3**
comp=Z,21nm,0.9s,baz=45,slow=6.3,SNR=156
CMAR PcP **PcP** **20 46 37.6 +0.9**
comp=Z,14nm,1.1s,baz=29,slow=3.2,SNR=8.5
CMAR LR LR 21 04 04.5
comp=Z,1µm,18.7s,baz=52,slow=38
CM01 Chiang Mai Arr 43.40 257 *eP* **P** **20 44 49.1 +0.5**
SUKH Sukhothai 43.41 256 P **P** **20 44 50.0 +1.4**
comp=Z,19nm,1.1s,comp=Z,167nm
ZAA0 Zalesovo Array 43.49 313 *eP* **P** **20 44 48.8 -0.1**
ZAA0 *ePP* **PcP** **20 46 36.1 -0.4**
ZAA1 Zalesovo Array 43.49 313 *eP* **P** **20 44 49.5 +0.6**
ZAA1 *ePP* **PcP** **20 46 36.6 +0.1**
ZALV Zalesovo Beam 43.49 313 P **P** **20 44 49.5 +0.6**
comp=Z,28nm,1.0s,baz=90,slow=7.4,SNR=48
ZALV PcP **PcP** **20 46 36.6 +0.1**
comp=Z,23nm,0.9s,baz=96,slow=2.9,SNR=5.8
ZALV LR LR 21 03 55.5
comp=Z,2µm,18.3s,baz=64,slow=38
SRAK Srakaew 43.66 250 P **P** **20 44 48.3 -2.3**
NAYO Nakonayok 44.02 251 P **P** **20 44 54.9 +1.4**
comp=Z,68nm,1.3s
LSA Lhasa 44.21 277 P **P** **20 44 57.4 +1.9**
LSA Lhasa 44.21 277 *eP* **P** **20 44 56.6 +1.1**
LSA pmax pmax
comp=Z,41nm,0.8s
LSA MLR MLR
comp=Z,874nm,20.0s
LSA Lhasa 44.21 277 *eP* **P** **20 44 56.6 +1.1**
comp=Z,41nm,0.8s
LSA LR LR
comp=Z,874nm,20.0s
CHBT CHBT 44.24 248 P **P** **20 44 56.7 +1.4**
comp=Z,108nm,1.0s,comp=Z,2µm
NRIK Noril'sk 44.25 335 P **P** **20 44 54.8 +0.1**
comp=Z,15nm,0.9s,baz=123,slow=6.3,SNR=35
NRIK LR LR 21 04 01.4
comp=Z,3µm,20.2s,baz=105,slow=37
MHMT Maesarieng 44.35 258 P **P** **20 44 57.8 +1.7**
comp=Z,71nm,1.1s,comp=Z,675nm
TARA Tarawa 44.35 136 PFAKE 20 45 10.0 +14
TARA LR LR
comp=Z,128nm,21.0s
NVS Novosibirsk 44.39 314 *eP* **P** **20 44 56.9 +0.9**
NVS *e* 20 46 40.1
NVS *eS* **S** **20 51 23.4 -5.5**
NVS pmax pmax
comp=Z,127nm,1.9s
NVS pmax pmax
comp=E,163nm,2.5s
NVS smax smax
comp=E,90nm,1.9s
NVS smax smax
comp=N,25nm,2.3s
TT01 Tatalina 44.41 35 *eP* **P** **20 44 56.5 +0.4**
TT01 *ePcP* **PP** **20 46 40.1 +0.4**
TTA Tatalina 44.42 35 *eP* P 20 44 52.4 -3.9
TTA Tatalina 44.42 35 *eP* P 20 44 52.4 -3.9
SVW2 Sparrevohn 44.44 37 *eP* **P** **20 44 56.9 +0.5**
comp=N,151nm,1.7s
SVW2 *ePcP* **PP** **20 46 40.9 +0.8**
SBUM Sibu 45.00 228 *eP* **P** **20 45 01.9 +0.5**
comp=N,103nm,1.1s
PATY Pattaya 45.23 250 P **P** **20 45 05.1 +1.9**
comp=N,27nm,1.2s,comp=N,846nm
BKB Balikpapan 45.47 220 P **P** **20 45 04.9 -0.2**
comp=N,169nm,1.0s,comp=N,3µm
OHAK Old Harbor 45.52 43 *eP* **P** **20 45 04.3 -0.7**
OHAK *ePcP* **PcP** **20 46 43.0 -0.4**
TTSI Tana Toraja 45.61 215 P **P** **20 45 07.2 +1.1**
comp=N,26nm,1.3s,comp=N,551nm
JOHN Johnston Islan 45.64 103 *eP* **P** **20 45 05.9 -0.5**
comp=N,493nm,1.4s
SRDT SRDT 45.67 253 P **P** **20 45 07.9 +1.2**
comp=N,325nm,1.2s,comp=N,4µm
KHLT Khaolaem Dam 45.80 254 P **P** **20 45 09.5 +1.7**
comp=N,38nm,1.1s,comp=N,453nm
MK01 Makanchi Array 45.88 303 *eP* **P** **20 45 08.3 +0.2**
MK01 *ePcP* **PcP** **20 46 45.0 +0.1**
KDAK Kodiak Island 45.89 42 *eP* **P** **20 45 06.8 -1.1**
KDAK *e* 20 46 45.3
KDAK pmax pmax
comp=Z,96nm,1.3s
KDAK MLR MLR
comp=Z,805nm,21.0s
KDAK Kodiak Island 45.89 42 *eP* **P** **20 45 06.8 -1.1**
comp=Z,96nm,1.3s
KDAK *ePcP* **PcP** **20 46 45.3 +0.6**
KDAK LR LR
comp=Z,805nm,21.0s
MK31 Makanchi Array 45.89 303 *eP* **P** **20 45 08.4 +0.3**
MK31 *e* 20 46 45.3
MK31 Makanchi Array 45.89 303 *eP* **P** **20 45 08.4 +0.3**
MK31 *ePcP* **PcP** **20 46 45.3 +0.3**
MK32 Makanchi Array 45.89 303 *eP* **P** **20 45 08.6 +0.5**
MKAR Makanchi Array 45.89 303 P **P** **20 45 08.6 +0.5**
comp=Z,18nm,1.0s,baz=88,slow=8.9,SNR=71
MKAR LR LR 21 05 43.2
comp=Z,1µm,18.3s,baz=83,slow=38
MKAR Makanchi Array 45.89 303 *eP* **P** **20 45 08.4 +0.3**
MKAR *ePcP* **PcP** **20 46 45.1 +0.2**
MAKZ Makanchi 46.10 303 *eP* **P** **20 45 10.4 +0.6**
MAKZ pmax pmax
comp=Z,82nm,1.1s
MAKZ Makanchi 46.10 303 *eP* **P** **20 45 10.4 +0.6**
comp=Z,82nm,1.1s
PMG Port Moresby 46.13 176 LR LR 21 01 42.9
comp=Z,238nm,21.3s,baz=356,slow=32
PMG Port Moresby 46.13 176 *ceP* **P** **20 45 09.8 -0.4**
PMG pmax pmax
comp=Z,288nm,1.7s
PMG Port Moresby 46.13 176 *eP* **P** **20 45 10.2 -0.1**
comp=Z,72nm,1.3s
SPU Mount Spurr 46.16 37 *eP* **P** **20 45 10.2 +0.2**
SPU *ePcP* **PcP** **20 46 44.9 -0.7**
PPLA Purkeypile 46.16 35 *eP* **P** **20 45 10.9 +0.8**
comp=Z,223nm,1.6s
PPLA *ePcP* **PcP** **20 46 46.0 +0.3**
CAST Castle Rocks 46.24 34 *eP* **P** **20 45 11.3 +0.6**
comp=Z,81nm,1.3s
MTKI Muara Teweh, K 46.25 222 P **P** **20 45 11.6 +0.3**
comp=Z,129nm,0.5s
SPSI Sidrap Palu 46.45 214 P **P** **20 45 11.9 -0.8**
comp=Z,34nm,1.2s,comp=Z,749nm
SEM Semipalatinsk 46.62 308 ⇓*iP* **P** **20 45 13.8 0.0**
comp=Z,253nm,1.4s
SEM *ePP* **PP** **20 47 03.5 +0.2**
SEM *eS* **S** **20 52 01.4 +0.3**
SEM LRM MLR 21 07 03.9
comp=Z,2µm,15.7s
BRLK Bradley Lake 46.73 39 *eP* **P** **20 45 14.9 +0.4**
BRLK *ePcP* **PcP** **20 46 47.3 -0.3**
BPAW Bear Paw Mtn. 46.77 33 *eP* **P** **20 45 15.0 +0.2**
comp=Z,61nm,1.4s
KTH Kantishna Hill 46.77 34 *eP* **P** **20 45 15.2 +0.3**
comp=Z,192nm,1.6s
KTH *ePcP* **PcP** **20 46 47.5 -0.3**
MLY Manley 46.93 32 *eP* **P** **20 45 16.6 +0.5**
comp=Z,172nm,1.7s
MLY *ePcP* **PcP** **20 46 48.7 +0.4**
TRF Thorofare Moun 47.05 34 *eP* **P** **20 45 16.8 -0.3**
comp=Z,150nm,1.9s
TRF *ePcP* **PcP** **20 46 48.4 -0.5**

RC01 Rabbit Creek A 47.28 37 *eP* **P** **20 45 18.5 -0.3**
comp=Z,128nm,1.5s
RC01 *ePcP* **PcP** **20 46 48.2 -1.3**
COLD Coldfoot 47.33 29 *eP* **P** **20 45 19.1 0.0**
COLD *ePcP* **PcP** **20 46 49.7 +0.1**
STKI Sintang 47.35 227 P **P** **20 45 20.9 +1.1**
comp=Z,176nm,1.4s,comp=Z,5µm
KAPI Kappang 47.38 214 P **P** **20 45 20.7 +0.7**
comp=Z,36nm,1.1s,baz=47,slow=3.0,SNR=18
KAPI Kappang 47.38 214 *eP* **P** **20 45 20.2 +0.2**
KAPI comp=Z,77nm,1.1s LR LR
comp=Z,398nm,19.0s
KAPI Kappang 47.38 214 P **P** **20 45 20.8 +0.7**
SNR=18
KAPI Kappang 47.38 214 P **P** **20 45 20.8 +0.7**
SNR=18
SEW Seward 47.44 39 *eP* **P** **20 45 19.4 -0.7**
comp=Z,94nm,1.4s
SEW *ePcP* **PcP** **20 46 49.8 -0.3**
PMR Palmer 47.56 37 *eP* **P** **20 45 20.3 -0.6**
PMR *e* 20 46 50.6
PMR pmax pmax
comp=Z,114nm,1.4s
PMR Palmer 47.56 37 *eP* **P** **20 45 20.3 -0.6**
comp=Z,114nm,1.4s
PMR *ePcP* **PcP** **20 46 50.6 +0.1**
KURK Kurchatov 47.59 309 *eP* **P** **20 45 21.0 -0.4**
KURK pmax pmax
comp=Z,133nm,1.0s
KURK MLR MLR
comp=Z,4µm,20.0s
KURK Kurchatov 47.59 309 *eP* **P** **20 45 21.0 -0.4**
comp=Z,133nm,1.0s
KURK LR LR
comp=Z,4µm,20.0s
KURK Kurchatov 47.59 309 P **P** **20 45 21.8 +0.5**
SNR=66
KURK P **P** **20 45 21.8 +0.5**
SNR=66
KURK Kurchatov 47.59 309 P **P** **20 45 21.8 +0.5**
SNR=66
MCK McKinley 47.66 34 *eP* **P** **20 45 21.6 -0.1**
MCK pmax pmax
comp=Z,240nm,2.0s
MCK McKinley 47.66 34 *eP* **P** **20 45 21.0 -0.7**
comp=Z,238nm,2.0s
RND Reindeer 47.69 34 *eP* **P** **20 45 21.3 -0.8**
RND *e* 20 46 51.0
RND pmax pmax
comp=Z,200nm,1.7s
RND Reindeer 47.69 34 *eP* **P** **20 45 21.3 -0.8**
comp=Z,200nm,1.7s
RND *ePcP* **PcP** **20 46 51.0 -0.1**
SML Sawmill 47.94 36 *eP* **P** **20 45 24.1 +0.1**
SML pmax pmax
comp=Z,89nm,1.1s
SML Sawmill 47.94 36 *eP* **P** **20 45 23.6 -0.3**
comp=Z,89nm,1.1s
MDM Murphy Dome 47.99 32 *eP* **P** **20 45 24.4 +0.1**
comp=Z,244nm,1.6s
WRH Wood River Hil 48.04 33 *eP* **P** **20 45 24.1 -0.5**
WRH *ePcP* **PcP** **20 46 51.9 -0.3**
BSSI Bau Bau, Buton 48.07 212 P **P** **20 45 24.7 -0.7**
comp=Z,132nm,1.2s,comp=Z,2µm
COLA College 48.15 32 *eP* **P** **20 45 25.8 +0.3**
COLA pmax pmax
comp=Z,78nm,1.4s
COLA MLR MLR
comp=Z,460nm,19.0s
COLA College 48.15 32 *eP* **P** **20 45 25.8 +0.3**
comp=Z,78nm,1.4s
COLA LR LR
comp=Z,460nm,19.0s
CCB Clear Creek Bu 48.17 32 *eP* **P** **20 45 25.2 -0.3**
CCB *ePcP* **PcP** **20 46 51.6 -1.0**
DHY Denali Highway 48.36 35 *eP* **P** **20 45 26.6 -0.7**
DHY *ePcP* **PcP** **20 46 53.4 -0.2**
SCM Sheep Creek Mo 48.42 36 *eP* **P** **20 45 27.9 +0.2**
SCM pmax pmax
comp=Z,180nm,1.4s
SCM Sheep Creek Mo 48.42 36 *eP* **P** **20 45 27.6 -0.1**
comp=Z,179nm,1.5s
HNR Honiara 48.46 159 LR LR 21 03 45.3
comp=Z,784nm,21.6s,baz=319,slow=34
IL1 Eielson Array 48.56 32 *eP* **P** **20 45 27.8 -0.9**
ILAR Eielson Array 48.56 32 P **P** **20 45 28.1 -0.5**
comp=Z,17nm,0.7s,baz=262,slow=6.1,SNR=194
ILB Eielson Array 48.56 32 *eP* **P** **20 45 28.0 -0.6**
UZB Uzynbulak 48.98 299 ⇓*iP* **P** **20 45 32.8 +0.4**
comp=Z,228nm,0.8s
UZB LRM MLR 21 08 51.6
comp=Z,777nm,13.0s
KLU Klutina 49.10 37 *eP* **P** **20 45 32.9 -0.1**
comp=Z,111nm,1.2s
GUN Gumba 49.15 277 *eP* **P** **20 45 35.2 +1.1**
comp=Z,300nm,0.9s
DIV Divide 49.20 37 *eP* **P** **20 45 33.8 +0.1**
comp=Z,247nm,1.4s
SKLT Songkhla 49.20 244 P **P** **20 45 35.9 +1.7**
comp=Z,134nm,1.1s,comp=Z,2µm
PAX Paxson 49.23 35 *eP* **P** **20 45 33.8 -0.1**
PAX pmax pmax
comp=Z,98nm,1.3s
PAX Paxson 49.23 35 *eP* **P** **20 45 34.0 0.0**
PAX *ePcP* **PcP** **20 46 56.7 +0.1**
FYU Fort Yukon 49.25 30 *eP* **P** **20 45 34.8 +0.9**
comp=Z,416nm,1.7s
FYU *ePcP* **PcP** **20 46 57.7 +1.2**
EYAK Cordova Ski Ar 49.26 38 *eP* **P** **20 45 34.4 +0.4**
comp=Z,196nm,1.6s
SURT Suratani 49.34 247 P **P** **20 45 36.9 +1.7**
comp=Z,49nm,1.3s,comp=Z,685nm
TRTT Trang 49.43 245 P **P** **20 45 37.4 +1.5**
comp=Z,167nm,1.0s,comp=Z,1µm
PBKI Pangkalan Bun 49.49 224 P **P** **20 45 35.9 -0.4**
comp=Z,155nm,1.2s,comp=Z,2µm
MMRI Maumere 49.62 209 P **P** **20 45 37.6 +0.3**
comp=Z,136nm,1.1s,comp=Z,2µm
KKN Kakani 49.68 277 *eP* **P** **20 45 38.9 +0.9**
comp=Z,231nm,1.1s
PKIN Phulchoki 49.68 277 *eP* **P** **20 45 38.6 +0.5**
comp=Z,85nm,0.9s
BMRM Bremner River 49.78 37 *eP* **P** **20 45 38.3 +0.2**
comp=Z,157nm,1.3s
BMRM *ePcP* **PcP** **20 46 59.1 +0.5**
RAGM Ragged Mountai 49.80 38 *eP* **P** **20 45 38.6 +0.3**
comp=Z,178nm,1.4s
DOT Dot Lake 49.83 34 *eP* **P** **20 45 37.7 -0.7**
comp=Z,53nm,0.8s
DOT *ePcP* **PcP** **20 46 58.8 +0.1**
DMN Daman 49.90 277 *eP* **P** **20 45 40.9 +1.2**
comp=Z,68nm,0.8s
SOEI Soe 49.92 206 P P 20 45 50.8 +11
MENT Mentasta 50.03 35 *eP* **P** **20 45 40.3 +0.4**
comp=Z,108nm,1.6s
GKN Gorkha 50.10 278 *eP* **P** **20 45 41.9 +0.8**
comp=Z,451nm,1.1s
CHKK Chushkaly 50.20 300 ⇓*iP* **P** **20 45 42.0 +0.5**
comp=Z,741nm,1.3s
MDOK Medeo 50.37 299 ⇑*iP* **P** **20 45 44.2 +1.2**
comp=Z,571nm,1.3s
MDOK *i* PP **PP** **20 47 39.9 +1.6**
MDOK *eSS* **SS** **20 56 31.3 +3.2**
MDOK LR LR 21 07 25.4
comp=Z,904nm,15.8s
PKDT Phuket 50.38 247 P **P** **20 45 45.0 +1.8**
comp=Z,311nm,1.0s,comp=Z,3µm
AAA Alma-Ata 50.41 299 *eP* **P** **20 45 44.6 +1.5**
comp=Z,542nm,0.8s
AAA *ePP* **PP** **20 47 43.7 +5.1**
AAA LRM MLR 21 09 15.2
comp=Z,709nm,16.2s
KULM Kulim 50.48 242 *eP* **P** **20 45 45.0 +1.1**
comp=Z,162nm,1.3s
KULM LR LR
comp=Z,803nm,19.0s
CRQM Cirque 50.52 37 *eP* **P** **20 45 44.6 +0.8**
COEN Coen 50.56 181 *eP* **P** **20 45 44.3 -0.1**
comp=Z,104nm,1.4s
IPM Ipoh 50.78 241 *eP* **P** **20 45 46.6 +0.4**
comp=Z,158nm,1.1s
MYKOM Kota Tinggi 50.80 236 *eP* **P** **20 45 47.3 +1.0**
comp=Z,68nm,1.1s
BALM Baldy 50.87 37 *eP* **P** **20 45 46.4 0.0**
BALM pmax pmax
comp=Z,148nm,1.5s
BALM Baldy 50.87 37 *eP* **P** **20 45 46.4 0.0**
comp=Z,148nm,1.5s
MTN Manton Dam 50.89 196 *eP* **P** **20 45 46.1 -0.7**
comp=Z,87nm,0.9s
TPRI Tanjung Pinang 51.00 235 P **P** **20 45 49.2 +1.4**
comp=Z,71nm,1.3s
EGAK Eagle 51.02 32 *eP* **P** **20 45 46.7 -0.6**
comp=Z,78nm,1.6s
EGAK LR LR
comp=Z,509nm,19.0s
KOLN Koldanda 51.03 278 *eP* **P** **20 45 49.1 +0.9**
comp=Z,177nm,1.4s
PYUN Piuthan 51.37 279 *eP* **P** **20 45 51.8 +1.1**
comp=Z,768nm,1.6s
TKM2 Tokmak 2 51.45 299 *eP* **P** **20 45 52.4 +1.2**
TKM2 pmax pmax
comp=Z,226nm,1.2s
TKM2 MLR MLR
comp=Z,1µm,21.0s
TKM2 Tokmak 2 51.45 299 *eP* **P** **20 45 52.4 +1.2**
comp=Z,226nm,1.2s
TKM2 LR LR
comp=Z,1µm,21.0s
BRZS Berezniki 51.47 309 *i* P **P** **20 45 51.0 0.0**
comp=Z,44nm,1.4s
BRZS *i* PP **PP** **20 47 49.1 +1.1**
BRZS *eS* **S** **20 53 07.0 -2.4**
PLAI Plampang 51.65 214 P **P** **20 45 51.2 -1.4**
comp=Z,68nm,1.1s,comp=Z,912nm
VOSK Vostochnaya 51.87 312 *eP* **P** **20 45 53.8 -0.1**
VOSK pmax pmax
comp=Z,62nm,0.9s
VOSK Vostochnaya 51.87 312 *eP* **P** **20 45 53.8 -0.1**
comp=Z,62nm,0.9s
TWSI Taliwang, Sumb 51.97 215 P **P** **20 45 54.8 -0.2**
comp=Z,62nm,1.2s,comp=Z,948nm
OPA Opana 52.14 90 *eP* **P** **20 45 56.9 +0.6**
OPA pmax pmax
comp=Z,313nm,1.3s
OPA Opana 52.14 90 *eP* **P** **20 45 56.9 +0.6**
comp=Z,313nm,1.3s
FRU Bishkek 52.16 299 ⇓*iP* **P** **20 45 57.0 +0.7**
FRU *eS* **S** **20 53 24.0 +4.8**
FRU pmax pmax
comp=Z,280nm,1.6s
BRVK Borovoye 52.20 313 *eP* **P** **20 45 56.1 -0.2**
BRVK pmax pmax
comp=Z,84nm,1.3s
BRVK MLR MLR
comp=Z,2µm,20.0s
BRVK Borovoye 52.20 313 *eP* **P** **20 45 56.1 -0.2**
comp=Z,84nm,1.3s
BRVK LR LR
comp=Z,2µm,20.0s
BRVK Borovoye 52.20 313 P **P** **20 45 56.9 +0.6**
SNR=21
BRVK P **P** **20 45 56.9 +0.6**
SNR=21
BRVK Borovoye 52.20 313 P **P** **20 45 56.9 +0.6**
SNR=21
KIP Kipapa 52.27 90 ⇑*eP* **P** **20 45 58.4 +1.2**
KIP pmax pmax
comp=Z,2µm,2.5s
KSH Kashi 52.28 295 P P 20 46 02.0 +4.7
KSH *eS*P sP 20 46 15.9 +7.7
KSH *ePcP* **PcP** **20 47 12.0 +3.6**
KSH S **S** **20 53 25.8 +4.7**
KSH ScS **ScS** **20 55 46.3 +0.5**
KSH SS **SS** **20 57 03.4 +4.9**
KSH pmax pmax
comp=Z,97nm,1.3s
KSH pmax pmax
comp=Z,450nm,3.8s
KSH LR LR
comp=Z,3µm,16.6s
KSH LR LR
comp=Z,3µm,15.8s
KSH LR LR
comp=Z,4µm,15.7s
AAK Ala-Archa 52.31 299 P **P** **20 45 58.2 +0.7**
comp=Z,24nm,1.0s,baz=88,slow=6.7,SNR=6.9
AAK Ala-Archa 52.31 299 *eP* **P** **20 45 58.0 +0.4**
AAK pmax pmax
comp=Z,72nm,1.3s
AAK MLR MLR
comp=Z,1µm,22.0s
AAK Ala-Archa 52.31 299 *eP* **P** **20 45 58.0 +0.4**
comp=Z,72nm,1.3s
AAK LR LR
comp=Z,1µm,22.0s
AAK Ala-Archa 52.31 299 P **P** **20 45 58.7 +1.2**
SNR=51
AAK P **P** **20 45 58.7 +1.2**
SNR=51
AAK Ala-Archa 52.31 299 P **P** **20 45 58.7 +1.2**
SNR=51
PPBI Pangkal Pinang 52.33 231 P **P** **20 45 57.5 -0.2**
comp=Z,74nm,1.5s,comp=Z,1µm
ABJI Asem Bagus 52.42 218 P **P** **20 45 58.5 +0.2**
comp=Z,85nm,1.6s,comp=Z,2µm
EKS2 Erkin-Say 52.81 299 *eP* **P** **20 46 01.8 +0.6**
EKS2 pmax pmax
comp=Z,57nm,1.1s
EKS2 MLR MLR
comp=Z,1µm,21.0s
EKS2 Erkin-Say 52.81 299 *eP* **P** **20 46 01.8 +0.6**
comp=Z,57nm,1.1s
EKS2 LR LR
comp=Z,1µm,21.0s
LGTI Lohaghat 52.94 282 *eP* **P** **20 46 05.2 +3.1**
UWJI Ujung Watu 52.96 223 P **P** **20 46 03.1 +0.8**
comp=Z,229nm,1.6s,comp=Z,3µm
ZRNK Zerenda 52.98 313 *eP* **P** **20 46 02.7 +0.6**
ZRNK pmax pmax
comp=Z,67nm,1.1s
ZRNK Zerenda 52.98 313 *eP* **P** **20 46 02.4 +0.3**
comp=Z,67nm,1.1s
JAGI Jajag, Banyuwa 53.04 218 P **P** **20 46 03.2 +0.3**
comp=Z,53nm,1.7s,comp=Z,984nm
LHMI Lhok Sumawe 53.19 245 P P 20 46 08.2 +4.1
TSI Tuntungan 53.21 242 P **P** **20 46 05.6 +1.4**
comp=Z,70nm,1.1s
GMJI Gumukmas 53.22 219 P **P** **20 46 02.2 -2.0**
comp=Z,31nm,1.2s
RGRI Rengat 53.39 236 P **P** **20 46 06.5 +0.9**
comp=Z,198nm,1.4s,comp=Z,3µm
PSI Prapat 53.45 242 P **P** **20 46 06.9 +0.7**
comp=Z,24nm,0.8s,baz=6.0,slow=5.1,SNR=25
PSI LR LR 21 10 13.3
comp=Z,685nm,18.1s,baz=26,slow=38
PSI Prapat 53.45 242 *eP* **P** **20 46 06.6 +0.5**
PSI pmax pmax
comp=Z,52nm,1.0s
PSI Prapat 53.45 242 *eP* **P** **20 46 06.6 +0.5**
comp=Z,52nm,1.0s
NGJI Ngawi 53.48 221 P **P** **20 46 07.0 +0.9**
comp=Z,178nm,1.0s
INK Inuvik 53.62 27 P **P** **20 46 06.7 +0.1**
BKNI Bangkinang 53.76 237 P **P** **20 46 09.6 +1.3**
comp=Z,330nm,1.1s,comp=Z,4µm
KCSI Kotacane, Aceh 53.76 243 P **P** **20 46 07.1 -1.2**
comp=Z,34nm,1.3s,comp=Z,573nm
HLK Haleakala 54.02 90 *eP* **P** **20 46 11.4 +0.9**
comp=Z,326nm,1.4s
PCJI Pacitan 54.32 221 P **P** **20 46 12.7 +0.4**
comp=Z,100nm,1.1s
MNSI Mandailing Nat 54.42 239 P **P** **20 46 14.7 +1.6**
comp=Z,44nm,1.6s
SDSI Sungai Dareh 54.43 236 P **P** **20 46 13.8 +0.7**
comp=Z,160nm,1.4s,comp=Z,38µm
UGM Wanagama 54.44 222 P **P** **20 46 11.8 -1.4**
comp=Z,495nm,1.4s,comp=Z,6µm
SKAG Skagway 54.59 38 *eP* **P** **20 46 14.7 +0.9**
comp=Z,90nm,1.4s
KKAR Karatay Array 54.92 301 *eP* **P** **20 46 16.7 +0.2**
KKAR Karatay Array 54.92 301 *eP* **P** **20 46 16.7 +0.2**
POHA Pohakuloa 55.12 90 *eP* **P** **20 46 18.0 -0.4**
comp=Z,387nm,1.4s
LEM Lembang 55.16 226 P P 20 46 24.3 +5.7
comp=Z,259nm,0.9s,baz=38,slow=3.8,SNR=83
LEM LR LR 21 09 37.3
comp=Z,223nm,20.8s,baz=22,slow=36
LEM Lembang 55.16 226 P P 20 46 22.8 +4.2
THN Thein Dam 55.19 287 ⇓*iP* **P** **20 46 18.0 -0.5**
CHLP Challavanipeta 55.20 268 *eP* **P** **20 46 19.9 +1.2**
CHLP IAmb IAmb 20 46 21.5

comp=Z,228nm,1.8s
CHLP eS S 20 54 04.7 +4.0
CHLP IVMs_BB IVMs_BB 21 15 13.7
comp=Z,322nm,14.7s
MLOA Mauna Loa Obse 55.20 91 eP P **20 46 19.5 +0.3**
KLI Kotabumi 55.23 230 P P **20 46 19.2 +0.3**
comp=Z,185nm,1.2s,comp=Z,2µm
LHSI Lahat 55.26 232 P P **20 46 20.0 +0.9**
comp=Z,258nm,1.4s,comp=Z,3µm
CBJI Citeko 55.27 227 P P **20 46 20.2 +1.0**
comp=Z,379nm,1.0s,comp=Z,6µm
MDSI Maura Dua 55.35 231 P P **20 46 18.4 -1.4**
comp=Z,188nm,1.2s,comp=Z,2µm
BLSI Bandar Lampung 55.39 229 P P **20 46 21.0 +0.9**
comp=Z,169nm,1.2s
DBJI Dramaga 55.44 227 P P **20 46 19.6 -0.8**
comp=Z,126nm,1.6s
GSI Gunungsitoli 55.45 241 P P **20 46 21.8 +1.2**
comp=Z,304nm,1.5s,comp=Z,6µm
SBJI Serang 55.46 228 P P **20 46 19.6 -0.9**
comp=Z,117nm,1.3s,comp=Z,2µm
MASI Maura Aman, Be 55.55 234 P P **20 46 21.8 +0.5**
comp=Z,311nm,1.5s,comp=Z,5µm
IUG Iuzhnay 55.59 300⇓ *i* P P **20 46 22.5 +1.1**
comp=Z,2µm,1.4s
IUG LRM MLR 21 13 43.5
comp=Z,1µm,16.9s
CISI Cisompet, Garu 55.64 225 P P **20 46 19.9 -2.0**
comp=Z,113nm,1.1s,comp=Z,1µm
CNJI Cibinong 55.83 226 P P **20 46 20.5 -2.7**
LWLI Liwa 55.84 230 P P **20 46 22.2 -1.3**
comp=Z,109nm,0.9s
KASI Kota Agung 55.97 230 P P **20 46 22.5 -1.7**
comp=Z,69nm,1.2s
CGJI Cibinong 56.11 228 P P **20 46 23.6 -1.6**
comp=Z,61nm,1.1s
SVE Sverdlovsk 56.58 319*c i* P P **20 46 28.9 +0.8**
SVE eS S **20 54 19.9 +1.8**
SVE pmax pmax
comp=Z,109nm,1.1s
SVE MLR MLR
comp=Z,6µm,16.0s
SVE MLR MLR
comp=E,4µm,16.0s
CTAO Charters Tower 56.70 177 eP P **20 46 28.7 -0.6**
CTAO pmax pmax
comp=Z,30nm,1.2s
CTAO MLR MLR
comp=Z,559nm,21.0s
CTAO Charters Tower 56.70 177 eP P **20 46 28.7 -0.6**
comp=Z,30nm,1.2s
CTAO LR LR
comp=Z,559nm,21.0s
CRAG Craig 56.84 42 eP P **20 46 30.3 +0.3**
comp=Z,100nm,1.5s
WRAK Wrangell Islan 56.96 41 eP P **20 46 31.8 +1.0**
comp=Z,79nm,1.4s
WRAK LR LR
comp=Z,582nm,19.0s
WRAB Tennant Creek 57.22 191 eP P **20 46 31.6 -1.4**
WRAB pmax pmax
comp=Z,133nm,1.1s
WRAB MLR MLR
comp=Z,571nm,22.0s
WRAB Tennant Creek 57.22 191 eP P **20 46 31.6 -1.4**
comp=Z,133nm,1.1s
WRAB LR LR
comp=Z,571nm,22.0s
WB2 Warramunga Arr 57.22 191 eP P **20 46 32.2 -0.8**
comp=Z,135nm,1.2s
WR1 Warramunga Arr 57.23 191 eP P **20 46 32.1 -0.9**
comp=Z,136nm,1.2s
WR1 eS S **20 54 22.6 -4.8**
WRA Warramunga Arr 57.23 191 P P **20 46 32.1 -0.9**
comp=Z,22nm,0.4s,baz=9.1,slow=7.0,SNR=252
WRA S S **20 54 22.6 -4.8**
comp=Z,3.0nm,1.2s,baz=3.8,slow=12,SNR=4.8
WRA LR LR 21 10 43.3
comp=Z,192nm,21.9s,baz=10.0,slow=36
FITZ Fitzroy Crossi 57.33 201 P P **20 46 34.2 +0.4**
comp=Z,34nm,1.1s,baz=18,slow=8.2,SNR=34
FITZ Fitzroy Crossi 57.33 201 eP P **20 46 33.9 +0.1**
comp=Z,119nm,1.4s
DLBC Dease Lake 57.52 38 eP P **20 46 35.6 +0.8**
comp=Z,163nm,1.7s
SOKR Solikamsk 57.66 323*c i* P P **20 46 35.4 -0.2**
SOKR S S **20 54 32.2 0.0**
SOKR SS SS **20 58 25.5 +3.6**
SOKR pmax pmax
comp=Z,50nm,1.0s
SOKR MLR MLR
comp=Z,1µm,15.0s
ARU Arti 57.79 319*d i* P P **20 46 37.0 +0.3**
ARU 20 47 28.5
ARU 20 48 47.6
ARU S S **20 54 35.3 +1.2**
ARU SS SS **20 58 24.8 +0.5**
ARU pmax pmax
comp=Z,178nm,1.7s
ARU MLR MLR
comp=Z,6µm,18.0s
ARU Arti 57.79 319 eP P **20 46 37.0 +0.3**
comp=Z,151nm,1.3s
ARU LR LR
comp=Z,4µm,20.0s
PVM Polavaram 57.82 268 eP P **20 46 37.7 +0.3**
PVM IAmb IAmb 20 46 39.7
comp=Z,198nm,1.7s
PVM eS S **20 54 38.4 +2.9**
PVM IVMs_BB IVMs_BB 21 16 13.3
comp=Z,275nm,17.6s
RPR Rampur 58.83 271 eP P **20 46 44.6 +0.2**
RPR IAmb IAmb 20 46 46.5
comp=Z,174nm,1.1s
RPR eS S **20 54 51.5 +2.9**
RPR IVMs_BB IVMs_BB 21 17 56.5
comp=Z,285nm,23.2s
KBL Kabul 59.33 292 eP P **20 46 47.9 -0.1**
KBL pmax pmax
comp=Z,94nm,1.0s
KBL Kabul 59.33 292 eP P **20 46 47.9 -0.1**
comp=Z,94nm,1.0s
SRSP Sriramsagar 59.55 272 eP P **20 46 49.2 -0.3**
SRSP IAmb IAmb 20 46 51.3
comp=Z,355nm,1.1s
SRSP eS S **20 55 00.0 +2.0**
SRSP IVMs_BB IVMs_BB 21 18 33.5
comp=Z,350nm,16.4s
ABKAR Akbulak array 59.56 311 eP P **20 46 48.9 -0.2**
ADKI Addanki 59.92 268 eP P **20 46 52.7 +0.8**
ADKI IAmb IAmb 20 46 54.4
comp=Z,220nm,1.9s
ADKI eS S **20 55 05.8 +3.1**
ADKI IVMs_BB IVMs_BB 21 17 00.5
comp=Z,354nm,10.1s
NJS Nagarjunasagar 60.06 269 eP P **20 46 52.8 -0.2**
NJS IAmb IAmb 20 46 54.8
comp=Z,86nm,1.2s
NJS eS S **20 55 06.9 +2.3**
NJS IVMs_BB IVMs_BB 21 12 16.1
comp=Z,276nm,14.3s
HYBB Hyderabad (bro 60.19 270 eP P **20 46 54.1 +0.1**
HYBB IAmb IAmb 20 46 55.6
comp=Z,161nm,1.1s
HYBB eS S **20 55 08.2 +1.9**
HYBB IVMs_BB IVMs_BB 21 17 11.1
comp=Z,282nm,16.2s
HYB Hyderabad 60.19 270 *i* P P **20 46 55.0 +1.1**
SRLM Srisailam 60.64 269 eP P **20 46 57.2 +0.2**
SRLM IAmb IAmb 20 46 58.6
comp=Z,83nm,1.1s
SRLM eS S **20 55 08.3 -3.7**
SRLM IVMs_BB IVMs_BB 21 12 29.2
comp=Z,238nm,6.5s
AS01 Alice Springs 60.94 190 eP P **20 46 57.8 -1.0**
RCLA Racherla 60.94 268 eP P **20 46 58.4 -0.6**
RCLA IAmb IAmb 20 47 00.9
comp=Z,108nm,1.1s
RCLA eS S **20 55 18.3 +2.4**
RCLA IVMs_BB IVMs_BB 21 14 10.1
comp=Z,294nm,12.4s
AS31 Alice Springs 60.95 190 eP P **20 46 57.8 -1.0**
comp=Z,11nm,0.9s
AS31 eS S **20 55 15.3 -0.2**
AS31 ⇑*e* 21 16 16.8
ASAR Alice Springs 60.95 190 P P **20 46 58.3 -0.5**
comp=Z,24nm,0.9s,baz=11,slow=5.5,SNR=161
ASAR S S **20 55 15.3 -0.2**
comp=Z,0.2nm,0.4s,baz=25,slow=15,SNR=5.2
ASAR LR LR 21 12 58.2
comp=Z,174nm,21.6s,baz=2.5,slow=36
ASAR PKPPKP P'P'df 21 16 16.8 +7.4
comp=Z,1.0nm,1.1s,baz=202,slow=1.3,SNR=4.1
KBS Kingsbay 61.15 351 PFAKE 20 47 10.0 +10
KBS LR LR
comp=Z,596nm,20.0s
SKHT Srikalahasti 61.30 266 eP P **20 47 01.9 +0.5**
SKHT IAmb IAmb 20 47 03.9
comp=Z,86nm,1.0s
SKHT eS S **20 55 23.6 +3.2**
SKHT IVMs_BB IVMs_BB 21 19 38.2
comp=Z,212nm,5.7s
KLRI Killari 61.41 272 eP P **20 47 01.4 -0.8**
KLRI IAmb IAmb 20 47 03.6
comp=Z,262nm,1.1s
KLRI eS S **20 55 21.6 -0.4**
KLRI IVMs_BB IVMs_BB 21 23 04.5
comp=Z,347nm,11.3s
MBWA Marble Bar 62.06 206 eP P **20 47 05.9 -0.4**
comp=Z,133nm,1.3s
MBWA Marble Bar 62.06 206 P P **20 47 06.3 0.0**
SNR=6.8
MBWA Marble Bar 62.06 206 P P **20 47 06.3 0.0**
SNR=6.8
EIDS Eidsvold 62.28 173 eP P **20 47 07.7 +0.1**
comp=Z,48nm,1.3s
DZM Mont Dzumac 62.37 156 P P **20 47 09.3 +0.8**
comp=Z,76nm,1.2s
URV Uravakonda 62.58 268 eP P **20 47 09.7 -0.5**
URV IAmb IAmb 20 47 11.8
comp=Z,149nm,1.4s
URV eS S **20 55 38.6 +1.9**
YKW3 Yellowknife Ar 62.90 31 eP P **20 47 10.7 -0.7**
comp=Z,90nm,1.6s
YKA Yellowknife Ar 62.94 31 P P **20 47 11.2 -0.5**
comp=Z,9.0nm,0.7s,baz=299,slow=6.6,SNR=138
YKA PKPPKP P'P'df 21 16 09.8 -9.2
comp=Z,0.6nm,1.0s,baz=105,slow=1.7,SNR=4.3
YKB5 Yellowknife Ar 62.94 31 eP P **20 47 10.2 -1.6**
YKB5 ePcP **PcP** **20 47 49.8 +0.1**
LVZ Lovozero 63.06 336*de* P P **20 47 12.3 -0.3**
LVZ pmax pmax
comp=Z,75nm,1.7s
LVZ Lovozero 63.06 336 eP P **20 47 12.0 -0.6**
comp=Z,72nm,1.2s
LVZ LR LR
comp=Z,1µm,21.0s
MSVF Nonsavu 63.15 143 eP P **20 47 15.1 +1.3**
MSVF pmax pmax
comp=Z,132nm,1.7s
MSVF MLR MLR
comp=Z,2µm,19.0s
MSVF Nonsavu 63.15 143 eP P **20 47 15.1 +1.3**
comp=Z,132nm,1.7s
MSVF LR LR
comp=Z,2µm,19.0s
APA Apatity 63.64 336⇑ *i* P P 20 47 12.4 -3.9
APA pmax pmax
comp=Z,127nm,1.4s
APA MLR MLR
comp=Z,2µm,14.0s
TMCR Tamitsa 63.83 332 eP P **20 47 17.3 -0.3**
TMCR pmax pmax
comp=Z,180nm,1.4s
XMAS Kiritimati 64.02 108 PFAKE 20 47 30.0 +10
XMAS LR LR
comp=Z,3.0nm,22.0s
KEV Kevo 64.29 340 PFAKE 20 47 30.0 +9.5
KEV LR LR
comp=Z,2µm,21.0s
ARA0 ARCESS Array S 64.84 340 eP P **20 47 23.9 -0.3**
ARCES ARCESS Array B 64.84 340 P P **20 47 24.4 +0.2**
comp=Z,35nm,1.1s,baz=44,slow=5.4,SNR=23
ARCES LR LR 21 19 36.8
comp=Z,559nm,18.9s,baz=36,slow=40
ARE0 ARCESS Array S 64.84 340 eP P **20 47 24.6 +0.4**
comp=Z,86nm,1.4s
KLMR Klimovskoe 64.95 328 eP P **20 47 22.4 -2.5**
KLMR *e**PP **sP** **20 47 34.2 -1.7**
KLMR *e* 20 47 55.5
KLMR *e* 20 49 45.2
KLMR *e*SS SS 21 00 13.9 -2.0
KLMR pmax pmax
comp=Z,118nm,1.5s
KLMR MLR MLR
comp=Z,2µm,13.0s
NLWA Neilton Lookou 65.34 48 eP P **20 47 28.6 +0.8**
comp=Z,254nm,1.4s
NLWA LR LR
comp=Z,597nm,20.0s
A04D Lummi Island 65.40 47 P P **20 47 26.4 -1.7**
baz=298
GEYT Alibeck 65.65 300 P P **20 47 30.8 +0.8**
comp=Z,72nm,1.1s,baz=33,slow=3.5,SNR=96
GEYT LR LR 21 19 35.5
comp=Z,1µm,18.1s,baz=70,slow=39
COCO West Island 65.88 232 *i* P P **20 47 34.4 +2.9**
E03A Lebam 65.93 49 eP P **20 47 33.0 +1.4**
comp=Z,123nm,1.3s
B05A Bryant 65.98 47 P P **20 47 32.2 +0.3**
baz=299
DAG Danmarks Havn 66.09 356⇓ *i* P P **20 47 31.9 -0.2**
comp=Z,151nm,1.4s
DAG Danmarks Havn 66.09 356⇓ *i* P P **20 47 31.9 -0.2**
DAG pmax pmax
comp=Z,350nm,1.4s
B06A Marblemount 66.21 46 eP P **20 47 33.7 +0.4**
comp=Z,120nm,1.5s
F03A Seaside 66.23 50 eP P **20 47 35.8 +2.3**
comp=Z,486nm,1.8s
F04D Rainier, OR 66.49 49 P P **20 47 36.1 +0.9**
baz=299
D05A Enumclaw 66.56 48 eP P **20 47 36.8 +1.1**
comp=Z,277nm,1.5s
G03D McMinnville, O 66.76 50 P P **20 47 37.6 +0.7**
baz=299
LON Longmire 66.89 48 eP P **20 47 38.2 +0.4**
LON pmax pmax
comp=Z,19nm,1.0s
LON Longmire 66.89 48 eP P **20 47 37.7 -0.1**
comp=Z,18nm,1.0s
F04A Amboy 66.92 49 eP P **20 47 38.5 +0.6**
comp=Z,152nm,1.4s
COR Corvallis 67.04 51 eP P **20 47 40.7 +2.0**
COR pmax pmax
comp=Z,230nm,1.5s
COR Corvallis 67.04 51 eP P **20 47 38.9 +0.1**
comp=Z,231nm,1.5s
LTY Liberty 67.31 47 eP P **20 47 41.1 +0.6**
comp=Z,158nm,1.7s
ARMA Armidale 67.33 173 eP P **20 47 41.6 +0.9**
comp=Z,100nm,1.4s
I03D Drain, OR 67.45 52 P P **20 47 41.5 +0.1**
baz=300
B08A Colville Reser 67.53 46 eP P **20 47 42.1 +0.3**
comp=Z,136nm,1.6s
H04A Detroit Lake 67.69 50 eP P **20 47 43.3 +0.5**
comp=Z,186nm,1.5s
G05D Wamic, OR 67.94 49 P P **20 47 45.0 +0.6**
baz=300,SNR=5.1
I04A Tendick Farm, 68.00 51 P P **20 47 45.3 +0.4**
baz=300
L02D Cave Junction, 68.06 53 P P **20 47 45.5 +0.2**
baz=300
HUMO Hull Mountain 68.25 53 eP P **20 47 47.1 +0.7**
comp=Z,94nm,1.7s
G06A Carlson Farm, 68.36 49 eP P **20 47 47.5 +0.5**
comp=Z,204nm,1.7s
I05D Terrebonne, OR 68.38 50 P P **20 47 47.7 +0.4**
baz=301
HAWA Hanford 68.42 48 eP P **20 47 47.7 +0.3**
comp=Z,138nm,1.7s
HAWA LR LR
comp=Z,380nm,19.0s
STKA Stephens Creek 68.43 182 P P **20 47 47.3 -0.1**
comp=Z,33nm,0.9s,baz=351,slow=7.8,SNR=60
STKA Stephens Creek 68.43 182 eP P **20 47 46.7 -0.7**
STKA pmax pmax
comp=Z,12nm,0.9s
STKA Stephens Creek 68.43 182 eP P **20 47 46.7 -0.7**
comp=Z,12nm,0.9s
C09A Chrisman Ranch 68.43 46 eP P **20 47 47.6 +0.2**
comp=Z,130nm,1.5s
D08A Wollman Farm, 68.44 47 eP P **20 47 47.3 -0.2**
comp=Z,158nm,1.8s
JCC Jacoby Creek, 68.47 55 eP P **20 47 48.5 +0.8**
comp=Z,224nm,1.4s
MOS Moscow 68.55 324 eP P **20 47 47.6 -0.4**
MOS *e* 20 50 20.4
MOS *e* 20 57 25.7
MOS pmax pmax
comp=Z,195nm,1.5s
MOS pmax pmax
comp=Z,400nm,1.9s
MOS MLR MLR
comp=N,1µm,16.0s
MOS MLR MLR
comp=E,2µm,16.0s
MOS MLR MLR
comp=Z,3µm,16.0s
KHMM Horse Mountain 68.63 54 eP P **20 47 50.3 +1.3**
comp=Z,71nm,1.1s
NEW Newport 68.84 45 P P **20 47 50.2 +0.2**
baz=302
NEW Newport 68.84 45 eP P **20 47 50.0 -0.1**
NEW pmax pmax
comp=Z,116nm,1.6s
NEW MLR MLR
comp=Z,420nm,20.0s
NEW Newport 68.84 45 eP P **20 47 50.0 -0.1**
comp=Z,116nm,1.6s
NEW LR LR
comp=Z,420nm,20.0s
YBH Yreka Blue Hor 68.85 53 LR LR 21 10 35.1
comp=Z,161nm,20.5s,baz=298,slow=30
YBH Yreka Blue Hor 68.85 53 eP P **20 47 51.4 +1.1**
YBH pmax pmax
comp=Z,83nm,1.4s
YBH Yreka Blue Hor 68.85 53 eP P **20 47 50.6 +0.3**
comp=Z,83nm,1.4s
M02C Callahan 68.94 54 P P **20 47 52.5 +1.7**
baz=301,SNR=12
KMRM Mail Ridge 68.98 55 eP P **20 47 52.4 +1.3**
comp=Z,164nm,1.7s
J05D Fort Rock, OR 68.99 51 P P **20 47 52.6 +1.4**
baz=301
K04D Chiloquin, OR 69.00 52 P P **20 47 52.1 +0.8**
baz=301
VRH Novokhopyorsk 69.02 319 eP P **20 47 50.7 -0.3**
VRH pmax pmax
comp=Z,80nm,1.3s
VRH MLR MLR
comp=Z,4µm,16.0s
N02D Trinity Center 69.25 54 P P **20 47 53.9 +1.2**
baz=301,SNR=19
PUL Pulkovo 69.33 330*d i* P P **20 47 53.4 +0.6**
PUL pmax pmax
comp=Z,247nm,1.7s
M04C Macdoel 69.39 53 P P **20 47 54.7 +1.0**
baz=301,SNR=15
OBN Obninsk 69.41 324*d i* P P **20 47 53.3 0.0**
OBN *e* 20 50 22.1
OBN *e*PPP PPP 20 52 07.1
OBN *i* S S 20 56 51.2 -7.4
OBN *i* SS **SS** **21 01 20.7 -4.4**
OBN pmax pmax
comp=Z,152nm,1.7s
OBN MLR MLR
comp=Z,2µm,12.0s
OBN Obninsk 69.41 324 eP P **20 47 53.8 +0.4**
comp=Z,114nm,1.2s
OBN LR LR
comp=Z,948nm,20.0s
K05A Summer Lake 69.50 52 eP P **20 47 55.2 +0.8**
comp=Z,232nm,1.4s
WDC Whiskeytown Da 69.56 54 eP P **20 47 55.4 +0.8**
WDC pmax pmax
comp=Z,85nm,1.3s
WDC Whiskeytown Da 69.56 54 eP P **20 47 55.0 +0.4**
comp=Z,85nm,1.4s
LPSR Galich'ya Gora 69.69 321 eP P **20 47 54.8 -0.3**
LPSR pmax pmax
comp=Z,90nm,1.3s
LPSR MLR MLR
comp=Z,3µm,17.0s
BBOO Buckleboo 69.71 187 eP P **20 47 54.9 -0.4**
comp=Z,99nm,1.2s
FIA1 FINESS Array S 69.87 333 eP P **20 47 56.0 -0.1**
comp=Z,133nm,1.0s
FIA0 FINESS Array S 69.87 333 eP P **20 47 56.5 +0.4**
FIA0 FINESS Array S 69.87 333 eP P **20 47 56.5 +0.4**
FINES FINESS Array B 69.87 333 P P **20 47 56.5 +0.4**
comp=Z,63nm,0.8s,baz=47,slow=8.4,SNR=139
FINES LR LR 21 21 05.4
comp=Z,1µm,18.8s,baz=45,slow=38
F10A Beach Ranch, E 70.00 47 eP P **20 47 57.2 -0.2**
comp=Z,21nm,1.0s
HOPS Hopland Field 70.04 56 eP P **20 47 57.9 +0.4**
comp=Z,121nm,1.6s
VORR Voronezh 70.07 320 P P **20 47 56.0 -1.5**
VORR pmax pmax
comp=Z,250nm,1.2s
O03D Paynes Creek 70.19 54 P P **20 47 58.4 -0.2**
baz=302
MOR8 Moi Rana 70.19 341 eP P **20 47 57.0 -1.0**
MOR8 IAmb IAmb 20 47 58.4
comp=Z,137nm,1.3s
WALA Waterton Lakes 70.20 43 eP P **20 47 58.4 -0.2**
comp=Z,72nm,1.6s
MOD Modoc Plateau 70.30 52 eP P **20 47 59.5 +0.2**
comp=Z,70nm,1.4s
VSR Storozhevoye 70.35 320 eP P **20 47 59.1 -0.1**
VSR pmax pmax
comp=Z,120nm,1.4s
VSR MLR MLR
comp=Z,3µm,14.0s
BSMT Bassoo Peak 70.39 45 eP P **20 48 00.1 +0.3**
BLMT Blacktail Moun 70.53 44 eP P **20 48 01.5 +0.8**
BMO Blue Mountains 70.56 48 eP P **20 48 01.1 +0.3**
comp=Z,113nm,1.6s
JTMT Jette 70.73 44 eP P **20 48 02.0 +0.2**
ORV Oroville 70.78 55 eP P **20 48 02.1 0.0**
ORV pmax pmax
comp=Z,84nm,1.3s
ORV Oroville 70.78 55 eP P **20 48 01.9 -0.2**
comp=Z,84nm,1.4s
YBMT Yellow Bay 70.81 44 eP P **20 48 02.7 +0.4**
SUMG Summit 70.83 1⇓ *i* P P **20 48 03.0 +0.7**
comp=Z,84nm,0.9s
SUMG Summit 70.83 1 eP P **20 48 02.4 +0.1**
SUMG pmax pmax
comp=Z,262nm,1.5s
SUMG Summit 70.83 1 eP P **20 48 02.4 +0.1**
comp=Z,262nm,1.5s
SWMT Swartz Lake 71.02 45 eP P **20 48 03.5 0.0**
WVOR Wild Horse Val 71.06 51 eP P **20 48 03.9 0.0**
WVOR pmax pmax
comp=Z,151nm,1.6s
WVOR MLR MLR
comp=Z,349nm,20.0s
WVOR Wild Horse Val 71.06 51 eP P **20 48 03.9 0.0**
comp=Z,151nm,1.6s
WVOR LR LR
comp=Z,349nm,20.0s
MSO Missoula 71.43 45 P P **20 48 06.1 0.0**
baz=304
MSO Missoula 71.43 45 eP P **20 48 05.3 -0.7**
comp=Z,71nm,1.5s
AFDM Forest Hills D 71.45 55 eP P **20 48 06.7 +0.5**
comp=Z,121nm,1.7s
VSU Vasula 71.59 330*d i* P P **20 48 07.0 +0.4**
VSU pmax pmax
comp=Z,599nm,1.7s
GOF Gofitskoye 71.67 313⇑ eP P **20 48 08.2 +0.8**
GOF pmax pmax
comp=Z,235nm,1.0s
CHMT Chamberlain Mo 71.78 45 eP P **20 48 07.7 -0.6**
CAN Canberra 71.98 176 eP P **20 48 09.0 -0.2**
CAN pmax pmax
comp=Z,150nm,1.7s
CAN MLR MLR
comp=Z,579nm,19.0s
CAN Canberra 71.98 176 eP P **20 48 09.0 -0.2**
comp=Z,150nm,1.7s
CAN LR LR
comp=Z,579nm,19.0s
MFID Camas Ranch 72.24 49 eP P **20 48 10.7 -0.3**
comp=Z,165nm,1.7s
GUDG Gudauri 72.26 310 P P **20 48 13.0 +1.8**
DGRG David-gareji 72.27 309 P P **20 48 11.7 +0.7**

DGRG **David-gareji** 72.27 309 *e*P P 20 48 11.7 +0.7
SAO **San Andreas Ge** 72.31 57 *e*P P 20 48 11.7 +0.3
SAO pmax pmax
comp=Z,69nm,1.5s
SAO **San Andreas Ge** 72.31 57 *e*P P 20 48 11.7 +0.3
comp=Z,69nm,1.5s
CMB **Columbia Colle** 72.33 56 *e*P P 20 48 12.1 +0.6
CMB pmax pmax
comp=Z,110nm,1.3s
CMB **Columbia Colle** 72.33 56 *e*P P 20 48 11.8 +0.3
comp=Z,107nm,1.4s
ZEI **Tsey** 72.43 310 *e*P P 20 48 12.2 0.0
ZEI pmax pmax
comp=Z,120nm,0.9s
SCO **Scoresbysund** 72.46 355 *i* P P 20 48 12.4 +0.8
comp=Z,127nm,1.3s
SCO **Scoresbysund** 72.46 355 *i* P P 20 48 12.4 +0.8
SCO pmax pmax
comp=Z,130nm,1.3s
KIV **Kislovodsk** 72.50 312 *i* P P 20 48 13.7 +1.2
SNR=50
KIV **Kislovodsk** 72.50 312 *d i* P P 20 48 13.6 +1.1
KIV *i* 20 48 25.0
KIV *i* 20 50 59.1
KIV *i* SS SS 21 02 08.0 -5.4
KIV pmax pmax
comp=Z,317nm,1.0s
KIV MLR MLR
comp=Z,1µm,17.0s
KIV **Kislovodsk** 72.50 312 *e*P P 20 48 13.2 +0.7
comp=Z,276nm,1.0s
KIV LR LR
comp=Z,1µm,19.0s
KIV **Kislovodsk** 72.50 312 P P 20 48 13.2 +0.7
SNR=86
KIV P P 20 48 13.2 +0.7
SNR=86
KIV **Kislovodsk** 72.50 312 P P 20 48 13.2 +0.7
SNR=86
TBLG **Delisi** 72.50 309 *e*P P 20 48 15.1 +2.6
TBLG **Delisi** 72.50 309 *e*P P 20 48 15.1 +2.6
KBZ **Khabaz** 72.51 312 P P 20 48 13.5 +1.2
comp=Z,112nm,0.9s,baz=62,slow=4.5,SNR=206
KBZ LR LR 21 23 06.8
comp=Z,1µm,18.2s,baz=56,slow=38
HRY **Holter Researc** 72.69 44 *e*P P 20 48 14.3 +0.7
WAKR **Walker** 72.69 55 *e*P P 20 48 14.4 +0.5
FFC **Flin Flon** 72.75 34 *e*P P 20 48 13.2 -0.4
FFC pmax pmax
comp=Z,77nm,1.2s
FFC MLR MLR
comp=Z,368nm,20.0s
FFC **Flin Flon** 72.75 34 *e*P P 20 48 13.2 -0.4
comp=Z,77nm,1.2s
FFC LR LR
comp=Z,368nm,20.0s
ONI **Oni** 72.81 311 P P 20 48 15.8 +1.5
ONI **Oni** 72.81 311 *e*P P 20 48 15.8 +1.5
LRM **Limekiln Ridge** 72.86 45 *e*P P 20 48 14.8 0.0
NEY **Neytrino** 72.88 311⇓ *e*P P 20 48 16.3 +1.4
NEY pmax pmax
comp=Z,7.0nm,0.9s
HLID **Hailey** 73.01 48 P P 20 48 16.3 +0.7
baz=305
HLID **Hailey** 73.01 48 *e*P P 20 48 15.8 +0.2
comp=Z,80nm,1.6s
HLID LR LR
comp=Z,301nm,22.0s
DLMT **Dillon** 73.04 46 *e*P P 20 48 16.1 +0.4
comp=Z,111nm,1.5s
BMN **Battle Mountai** 73.05 52 *e*P P 20 48 16.8 +0.9
BMN pmax pmax
comp=Z,140nm,1.5s
BMN **Battle Mountai** 73.05 52 *e*P P 20 48 16.1 +0.2
comp=Z,138nm,1.5s
EGMT **Eagleton** 73.06 42 P P 20 48 16.0 +0.2
baz=306
EGMT **Eagleton** 73.06 42 *e*P P 20 48 15.2 -0.5
comp=Z,119nm,1.6s
EGMT LR LR
comp=Z,385nm,20.0s
BIDO **Bidbid** 73.06 287 P P 20 48 16.9 +0.9
SNR=29
BIDO P P 20 48 16.9 +0.9
SNR=29
BIDO **Bidbid** 73.06 287 P P 20 48 16.9 +0.9
SNR=29
BANOM **Banah** 73.14 290 *i* P P 20 48 17.3 +0.8
SNR=35
BANOM **Banah** 73.14 290 P P 20 48 17.4 +0.9
SNR=15
BANOM P P 20 48 17.4 +0.9
SNR=15
BANOM **Banah** 73.14 290 P P 20 48 17.4 +0.9
SNR=15
MCMT **McKenzie Canyo** 73.20 46 *e*P P 20 48 16.3 -0.5
FCC **Fort Churchill** 73.24 27 *e*P P 20 48 15.8 -0.6
FCC pmax pmax
comp=Z,150nm,1.4s
FCC **Fort Churchill** 73.24 27 *e*P P 20 48 15.3 -1.1
comp=Z,150nm,1.4s
SMDO **Samad** 73.38 287 P P 20 48 19.1 +1.1
SNR=33
SMDO **Samad** 73.38 287 P P 20 48 19.1 +1.1
SNR=33
GNI **Garni** 73.39 308 *i* P P 20 48 19.5 +1.6
SNR=29
GNI **Garni** 73.39 308 *d i* P P 20 48 19.1 +1.2
GNI pmax pmax
comp=Z,884nm,1.7s
GNI **Garni** 73.39 308 *e*P P 20 48 18.8 +0.9
comp=Z,119nm,1.1s
GNI LR LR
comp=Z,952nm,19.0s
GNI **Garni** 73.39 308 P P 20 48 19.5 +1.6
SNR=35
GNI P P 20 48 19.5 +1.6
SNR=35
GNI **Garni** 73.39 308 P P 20 48 19.5 +1.6
SNR=35
BOZ **Bozeman (W)** 73.42 45 P P 20 48 18.7 +0.7
baz=306
BOZ **Bozeman (W)** 73.42 45 *e*P P 20 48 18.0 0.0
BOZ pmax pmax
comp=Z,132nm,1.6s
BOZ MLR MLR
comp=Z,409nm,21.0s
BOZ **Bozeman (W)** 73.42 45 *e*P P 20 48 18.0 0.0
comp=Z,132nm,1.6s
BOZ LR LR
comp=Z,409nm,21.0s
AKH **Akhalkalaki** 73.46 309 P P 20 48 19.9 +1.5
AKH **Akhalkalaki** 73.46 309⇓ *i* P P 20 48 20.1 +1.8
AKH **Akhalkalaki** 73.46 309 *e*P P 20 48 19.8 +1.5
NV01 **Mina Array Sit** 73.48 54 *e*P P 20 48 19.2 +0.7
NVAR **Mina Array Bea** 73.48 54 P P 20 48 19.2 +0.7
comp=Z,17nm,0.9s,baz=286,slow=5.7,SNR=103
CHVG **Ch'k'valeri** 73.57 311 P P 20 48 19.8 +1.0
CHVG **Ch'k'valeri** 73.57 311⇓ *i* P P 20 48 20.2 +1.5
MLAC **Mammoth, Mammo** 73.57 55 P P 20 48 20.4 +1.2
baz=304
IZAR **Zarasai** 73.60 329 *e*P P 20 48 19.5 +0.9
IZAR IAmb IAmb 20 48 20.6
comp=Z,55nm,1.2s
ILULI **Ilulissat** 73.64 6⇓ *i* P P 20 48 18.6 0.0
comp=Z,167nm,1.4s
ILULI **Ilulissat** 73.64 6⇓ *i* P P 20 48 18.6 0.0
ILULI pmax pmax
comp=Z,170nm,1.4s
IDID **Didziasalis** 73.68 328 *e*P P 20 48 20.1 +1.0
IDID IAmb IAmb 20 48 21.1
comp=Z,67nm,1.3s
MICGM **Minsk** 73.73 327⇓ *e*P P 20 48 20.0 +0.6
MICGM PM 20 48 21.0
comp=Z,0.3nm,1.6s
MICGM PM 20 48 21.0
comp=E,0.3nm,1.4s
MICGM PM 20 48 22.0
comp=N,0.3nm,1.8s
MICGM *e*LR LR 21 18 06.0
MICGM LRM MLR 21 23 52.0
comp=Z,5.2nm,16.0s
MNK **Minsk** 73.73 327 *e*P P 20 48 20.0 +0.6
MNK pmax pmax
comp=E,290nm,1.4s
MNK pmax pmax
comp=Z,260nm,1.6s
MNK pmax pmax
comp=N,310nm,1.8s
MNK MLR MLR
comp=Z,5µm,16.0s
UOSS **Minazif** 73.75 289 *e*P P 20 48 20.2 +0.2
comp=Z,7.8nm,0.9s
ISAL **Salakas** 73.77 328 *e*P P 20 48 20.6 +1.0
ISAL IAmb IAmb 20 48 21.8
comp=Z,85nm,1.1s
NWAO **Narrogin (SRO)** 73.77 203 *e*P P 20 48 19.6 -0.2
NWAO pmax pmax
comp=Z,99nm,1.3s
NWAO **Narrogin (SRO)** 73.77 203 *e*P P 20 48 19.2 -0.6
comp=Z,99nm,1.3s
EAK **Akyaka** 73.80 309 *i* P P 20 48 21.8 +1.5
HATD **Hatta, Dubai** 73.87 289 *i* P P 20 48 21.3 +0.6
SNR=39
HATD **Hatta, Dubai** 73.87 289 P P 20 48 21.5 +0.7
SNR=26
HATD P P 20 48 21.5 +0.7
SNR=26
HATD **Hatta, Dubai** 73.87 289 P P 20 48 21.5 +0.7
SNR=26
EPOS **Posof** 73.88 310 *i* P P 20 48 22.4 +1.7
IIGN **Ignalina** 73.88 328 *e*P P 20 48 21.2 +1.0
IIGN IAmb IAmb 20 48 22.4
comp=Z,64nm,1.2s
NACGM **Naroch** 73.94 328 *e*P P 20 48 21.0 +0.4
NACGM PM 20 48 22.0
comp=Z,0.3nm,1.0s
NACGM *e*LR LR 21 20 03.0
NACGM LRM MLR 21 23 51.0
comp=Z,4.7nm,17.0s
ASHO **Ashiyiah** 74.00 289 *i* P P 20 48 22.2 +0.6
SNR=26
ASHO **Ashiyiah** 74.00 289 P P 20 48 22.1 +0.6
SNR=29
ASHO P P 20 48 22.1 +0.6
SNR=29
ASHO **Ashiyiah** 74.00 289 P P 20 48 22.1 +0.6
SNR=29
QLMT **Earthquake Lak** 74.02 46 *e*P P 20 48 22.3 +0.7
ELK **Elko** 74.12 51 *e*P P 20 48 22.9 +0.6
ELK pmax pmax
comp=Z,100nm,1.7s
ELK **Elko** 74.12 51 *e*P P 20 48 22.5 +0.2
comp=Z,100nm,1.8s
NAZ **Nazwa, Dubai** 74.14 289 *i* P P 20 48 22.6 +0.3
SNR=17
NAZ **Nazwa, Dubai** 74.14 289 P P 20 48 22.6 +0.3
SNR=12
NAZ P P 20 48 22.6 +0.3
SNR=12
NAZ **Nazwa, Dubai** 74.14 289 P P 20 48 22.6 +0.3
SNR=12
FAQ **Al Faqa, Dubai** 74.32 289 *i* P P 20 48 23.6 +0.2
SNR=19
FAQ **Al Faqa, Dubai** 74.32 289 P P 20 48 23.7 +0.2
SNR=7.2
FAQ P P 20 48 23.7 +0.2
SNR=7.2
FAQ **Al Faqa, Dubai** 74.32 289 P P 20 48 23.7 +0.2
SNR=7.2
YMR **Madison River** 74.38 46 *e*P P 20 48 24.2 +0.4
comp=Z,144nm,1.6s
ARQ **Araqi** 74.39 288 P P 20 48 24.7 +0.9
SNR=30
ARQ **Araqi** 74.39 288 P P 20 48 24.7 +0.9
SNR=30
GCMT **Greycliff** 74.44 44 *e*P P 20 48 23.4 -0.5
PKM **Mcpherson Peak** 74.45 58 P P 20 48 25.4 +1.2
baz=304,SNR=9.0
SOC **Sochi** 74.48 313 *d i* P P 20 48 24.4 +0.4
SOC *e**SP **sP** 20 48 36.2 +1.2
SOC *e* 20 51 09.6
SOC *e*PPP PPP 20 52 54.3
SOC *e*S S 20 57 58.1 +0.8
SOC *e* 20 58 22.3
SOC *e*SS SS 21 02 38.9 -4.3
SOC pmax pmax
comp=Z,104nm,1.2s
SOC MLR MLR
comp=Z,1µm,19.0s
ARTV **Artvin** 74.55 310 *i* P P 20 48 26.1 +1.3
YFT **Old Faithful** 74.59 46 *e*P P 20 48 26.6 +1.6
comp=Z,169nm,1.7s
ASUD **Al Ashush, Dub** 74.59 289 *i* P P 20 48 26.0 +1.0
SNR=11
ASUD **Al Ashush, Dub** 74.59 289 P P 20 48 25.7 +0.8
SNR=7.1
ASUD P P 20 48 25.7 +0.8
SNR=7.1
ASUD **Al Ashush, Dub** 74.59 289 P P 20 48 25.7 +0.8
SNR=7.1
DBOC **Borcka** 74.62 310 *i* P P 20 48 26.1 +1.2
DAGI **Agillar** 74.62 310 *i* P P 20 48 26.3 +1.3
LKWY **Lake** 74.77 45 PFAKE 20 48 40.0 +14
LKWY LR LR
comp=Z,730nm,20.0s
H17A **Grant Village** 74.77 46 P P 20 48 28.5 +2.5
baz=307
H17A **Grant Village** 74.77 46 *e*P P 20 48 27.8 +1.7
comp=Z,116nm,1.4s
SBC **Santa Barbara** 74.77 58 P P 20 48 27.4 +1.6
baz=304
DBAD **Bademkaya** 74.79 310 *i* P P 20 48 27.4 +1.4
DDEM **Demirkent** 74.83 310 *i* P P 20 48 27.5 +1.3
IMW **Indian Meadow** 74.86 46 *e*P P 20 48 27.3 +0.7
comp=Z,131nm,1.5s
NC405 **NORSAR Array S** 74.88 338 *e*P P 20 48 26.3 +0.2
MOL **Molde** 74.88 341 *e*P P 20 48 26.6 +0.7
FLWY **Flagg Ranch** 74.89 46 *e*P P 20 48 27.5 +0.8
comp=Z,213nm,1.6s
NC303 **NORSAR Array S** 74.90 338 *e*P P 20 48 26.1 0.0
GRAC **Grapevine Rang** 74.90 55 P P 20 48 27.5 +0.8
baz=305
ISA **Isabella, Lake** 74.92 57 P P 20 48 26.2 -0.7
baz=305,SNR=11
ISA **Isabella, Lake** 74.92 57 *e*P P 20 48 26.4 -0.4
ISA pmax pmax
comp=Z,57nm,1.4s
ISA **Isabella, Lake** 74.92 57 *e*P P 20 48 25.9 -0.9
comp=Z,56nm,1.4s
FXWY **Fox Creek** 74.96 47 *e*P P 20 48 27.4 +0.3
comp=Z,126nm,1.5s
EATA **Eleskirt** 74.97 309 *i* P P 20 48 29.3 +1.9
ARVC **Arvin** 74.98 57 P P 20 48 27.3 +0.2
baz=305,SNR=7.0
HVU **Hansel Valley** 75.03 49 *e*P P 20 48 28.2 +0.8
HVU pmax pmax
comp=Z,95nm,1.6s
HVU **Hansel Valley** 75.03 49 *e*P P 20 48 28.2 +0.8
comp=Z,95nm,1.6s
NC204 **NORSAR Array S** 75.03 339 *e*P P 20 48 26.6 -0.4
NB201 **NORSAR Array S** 75.06 338 *e*P P 20 48 27.1 +0.1
MOOW **Moose Ponds** 75.06 46 *e*P P 20 48 27.9 +0.3
comp=Z,136nm,1.6s
ANN **Anapa** 75.06 315 *e*P P 20 48 26.4 -0.9
ANN *e* 20 48 39.1
ANN *e* 20 51 13.5
ANN *e*PPP PPP 20 53 00.3
ANN *e*S S 20 58 00.9 -2.9
ANN *e*SS SS 21 02 55.9 +3.9
ANN pmax pmax
comp=Z,177nm,1.7s
RLMT **Red Lodge** 75.07 45 P P 20 48 28.3 +0.6
baz=308
RLMT **Red Lodge** 75.07 45 *e*P P 20 48 27.9 +0.2
comp=Z,120nm,1.6s
RLMT LR LR
comp=Z,473nm,20.0s
NB2 **NORSAR Subarra** 75.09 338 P P 20 48 27.4 +0.1
comp=Z,83nm,0.8s,baz=38,slow=5.9
NB2 **NORSAR Subarra** 75.09 338 P P 20 48 27.4 +0.1
baz=38,slow=5.9
NB200 **NORSAR Array S** 75.09 338 *e*P P 20 48 27.6 +0.4
NOA **NORSAR Array B** 75.09 338 P P 20 48 27.6 +0.4
comp=Z,61nm,0.9s,baz=38,slow=5.8,SNR=121
NOA LR LR 21 26 49.2
comp=Z,605nm,19.7s,baz=30,slow=40
DAC **Darwin (Calif)** 75.16 56 *e*P P 20 48 28.5 +0.2
DAC pmax pmax
comp=Z,82nm,1.4s
DAC **Darwin (Calif)** 75.16 56 *e*P P 20 48 28.4 +0.1
comp=Z,82nm,1.4s
TVAN **Van** 75.16 307 *i* P P 20 48 31.4 +3.1
NBO02 **NORSAR Array S** 75.19 338 *e*P P 20 48 27.6 -0.2
LOHW **Long Hollow** 75.22 46 *e*P P 20 48 28.9 +0.3
comp=Z,86nm,1.6s
NBO00 **NORSAR Array S** 75.22 338 *e*P P 20 48 28.1 +0.1
SNOW **Snow King Moun** 75.22 47 *e*P P 20 48 29.0 +0.4
comp=Z,72nm,1.4s
REDW **Red Top Meadow** 75.23 47 *e*P P 20 48 29.1 +0.4
comp=Z,102nm,1.4s
HOMI **Horasan** 75.23 309 *i* P P 20 48 30.4 +1.6
NC602 **NORSAR Array S** 75.23 338 *e*P P 20 48 28.4 +0.3
NC602 IAmb IAmb 20 48 30.2
comp=Z,301nm,2.0s
NC602 **NORSAR Array S** 75.23 338 *e*P P 20 48 27.9 -0.2
R11A **Troy Canyon, C** 75.28 53 P P 20 48 29.3 +0.3
baz=306
R11A **Troy Canyon, C** 75.28 53 *e*P P 20 48 29.2 +0.3
comp=Z,136nm,1.5s
NAO01 **NORSAR Array S** 75.34 338 *e*P P 20 48 28.8 +0.1
OSI **Osito Audit: C** 75.35 58 P P 20 48 30.0 +0.7
baz=305
OSI **Osito Audit: C** 75.35 58 *e*P P 20 48 29.8 +0.5
comp=Z,151nm,1.6s
AKN **Aaknes** 75.35 341 *e*P P 20 48 29.8 +1.1
AKN IAmb IAmb 20 48 31.4
comp=Z,161nm,1.5s
MPMC **Manual Prospec** 75.35 56 P P 20 48 29.7 +0.2
baz=305,SNR=55
BGU **Big Grassy Mou** 75.38 50 *e*P P 20 48 29.9 +0.5
comp=Z,112nm,1.8s
BLG **Laguna Peak, P** 75.40 58 P P 20 48 29.0 -0.6
baz=305
AHID **Auburn Hatcher** 75.44 47 *e*P P 20 48 30.0 +0.2
comp=Z,114nm,1.6s
AHID LR LR
comp=Z,451nm,20.0s
SPUT **South Promonto** 75.50 49 *e*P P 20 48 30.4 +0.2
comp=Z,92nm,1.5s
FURC **Furnace Creek,** 75.53 55 P P 20 48 30.9 +0.8
baz=305,SNR=28
LRMC **Laurel Mtn Rad** 75.56 56 P P 20 48 30.5 -0.1
baz=305,SNR=31
AKASG **Malin Array Be** 75.63 323 P P 20 48 30.7 +0.2
comp=Z,37nm,0.8s,baz=42,slow=5.8,SNR=227
AKASG LR LR 21 26 03.3
comp=Z,1µm,21.8s,baz=55,slow=39
AKBB **Malin Array Si** 75.63 323 *e*P P 20 48 30.8 +0.3
AKBB pmax pmax
comp=Z,89nm,1.0s
AKBB **Malin Array Si** 75.63 323 *e*P P 20 48 30.4 0.0
comp=Z,89nm,1.0s
KIEV **Kiev** 75.64 323 *e*P P 20 48 30.4 -0.1
KIEV pmax pmax
comp=Z,98nm,1.1s
KIEV MLR MLR
comp=Z,2µm,22.0s
KIEV **Kiev** 75.64 323 *e*P P 20 48 30.4 -0.1
comp=Z,98nm,1.1s
KIEV LR LR
comp=Z,2µm,22.0s
ERZM **Erzurum** 75.65 309 *i* P P 20 48 33.2 +2.1
TPNV **Topopah Spring** 75.66 55 P P 20 48 31.4 +0.3
baz=306,SNR=56
TPNV **Topopah Spring** 75.66 55 *e*P P 20 48 31.4 +0.3
TPNV pmax pmax
comp=Z,190nm,1.6s
TPNV **Topopah Spring** 75.66 55 *e*P P 20 48 31.3 +0.1
comp=Z,186nm,1.6s
AK11 **Malin Array Si** 75.67 323 *e*P P 20 48 30.4 -0.3
EDW2 **Edwards Air Fo** 75.69 57 P P 20 48 31.6 +0.3
baz=305,SNR=40
DGMT **Dagmar** 75.71 40 P P 20 48 30.9 -0.1
baz=310
DGMT **Dagmar** 75.71 40 *e*P P 20 48 30.3 -0.7
comp=Z,145nm,1.5s
DGMT LR LR
comp=Z,447nm,19.0s
LAO **LASA Array** 75.78 42 P P 20 48 32.4 +0.9
baz=309
LAO **LASA Array** 75.78 42 *e*P P 20 48 31.5 0.0
comp=Z,173nm,1.5s
LAO LR LR
comp=Z,402nm,20.0s
DECC **Green Verdugo** 75.82 58 P P 20 48 32.0 +0.1
baz=305
HWUT **Hardware Ranch** 75.86 48 *e*P P 20 48 32.4 +0.2
comp=Z,187nm,1.5s
HWUT LR LR
comp=Z,329nm,20.0s
SFJD **Kangerlussuaq** 75.86 6⇓ *i* P P 20 48 31.6 +0.1
comp=Z,119nm,1.4s
SFJD **Kangerlussuaq** 75.86 6 *e*P P 20 48 31.7 +0.2
SFJD pmax pmax
comp=Z,170nm,1.5s
SFJD **Kangerlussuaq** 75.86 6 *e*P P 20 48 31.2 -0.3
comp=Z,167nm,1.5s
SFJD LR LR
comp=Z,912nm,19.0s
RSUT **Red Spur Mount** 75.93 48 *e*P P 20 48 33.5 +0.7
DUG **Dugway, Tooele** 75.94 50 P P 20 48 33.2 +0.5
baz=306
DUG **Dugway, Tooele** 75.94 50 *e*P P 20 48 33.0 +0.3
DUG pmax pmax
comp=Z,154nm,1.5s
DUG MLR MLR
comp=Z,304nm,20.0s
DUG **Dugway, Tooele** 75.94 50 *e*P P 20 48 33.0 +0.3
comp=Z,154nm,1.5s
DUG LR LR
comp=Z,304nm,20.0s
A25A **Svangstu Ranch** 75.95 39 P P 20 48 32.7 +0.3
baz=310
PASC **Pasadena Art C** 75.97 58 *e*P P 20 48 32.8 0.0
comp=Z,94nm,1.4s
MWC **Mount Wilson** 76.02 58 *e*P P 20 48 33.3 0.0
MWC pmax pmax
comp=Z,96nm,1.3s
MWC **Mount Wilson** 76.02 58 *e*P P 20 48 33.3 0.0
comp=Z,96nm,1.3s
SUW **Suwalki** 76.08 328 *e*P P 20 48 33.1 +0.1
SUW *e*pP PcP 20 48 44.5 -0.6
SUW *e*sP sP 20 48 57.2 +13
SUW **Suwalki** 76.08 328 *e*P P 20 48 33.1 +0.1
SUW *e**PP PcP 20 48 44.5 -0.6
OSL **Oslo** 76.12 338 *e*P P 20 48 33.2 +0.2
KOPT **Kop Dagi** 76.12 310 *i* P P 20 48 35.9 +2.0
GSC **Goldstone, Bar** 76.24 56 P P 20 48 34.5 +0.1
baz=306,SNR=21
GSC **Goldstone, Bar** 76.24 56 *e*P P 20 48 34.2 -0.2
GSC pmax pmax
comp=Z,83nm,1.4s
GSC **Goldstone, Bar** 76.24 56 *e*P P 20 48 34.2 -0.2
comp=Z,83nm,1.4s
TCUT **Toone Canyon** 76.25 49 *e*P P 20 48 35.4 +0.9
comp=Z,80nm,0.9s
CIS **Catalina Islan** 76.25 59 P P 20 48 34.3 -0.1
baz=305
PSUT **Pine Spring** 76.27 52 *e*P P 20 48 34.8 +0.1
comp=Z,104nm,1.4s
BFSC **Mount Baldy Ra** 76.28 58 P P 20 48 35.0 +0.3
baz=305,SNR=16
CTU **Camp Tracy** 76.29 49 *e*P P 20 48 34.9 +0.2
comp=Z,140nm,1.7s
BW06 **Boulder Array** 76.34 47 P P 20 48 34.9 -0.2
baz=308
BW06 **Boulder Array** 76.34 47 *e*P P 20 48 34.0 -1.1
BW06 LR LR
comp=Z,366nm,19.0s
PD31 **Pinedale Array** 76.34 47 *e*P P 20 48 34.4 -0.7
PDAR **Pinedale Array** 76.34 47 P P 20 48 34.8 -0.2
comp=Z,2.8nm,0.6s,baz=259,slow=1.5,SNR=40
BNGL **BINGOL** 76.34 308 *i* P P 20 48 37.1 +2.0
SIRN **S¨¨rnak** 76.40 307 *i* P P 20 48 36.3 +1.0
HYA **Hoyanger** 76.41 340 *e*P P 20 48 35.5 +0.8
HYA IAmb IAmb 20 48 36.9
comp=Z,114nm,1.1s
A26A **Wade Farm, Ken** 76.52 38 P P 20 48 35.5 -0.1
baz=311,SNR=11
JLU **Jordanelle** 76.53 49 *e*P P 20 48 36.4 +0.2
comp=Z,136nm,1.6s
NLU **North Lily Min** 76.54 50 *e*P P 20 48 36.4 +0.2
comp=Z,77nm,1.5s
KONO **Kongsberg** 76.69 338 *e*P P 20 48 37.0 +0.6
KONO **Kongsberg** 76.69 338 *e*P P 20 48 36.4 +0.1
KONO pmax pmax
comp=Z,88nm,1.3s
KONO MLR MLR

comp=Z,2µm,22.0s
KONO **Kongsberg** 76.69 338 *e*P P 20 48 36.4 +0.1
comp=Z,88nm,1.3s
KONO LR LR
comp=Z,2µm,22.0s
TUQ **Turquoise Moun** 76.75 56 P P 20 48 37.8 +0.4
baz=306,SNR=19
MPU **Maple Canyon** 76.77 50 *e*P P 20 48 38.0 +0.5
comp=Z,133nm,1.5s
EUZM **Uzumlu** 76.80 310 *i* P P 20 48 39.3 +1.8
KELT **Kelkit** 76.80 310 *i* P P 20 48 39.2 +1.5
SIM **Simferopol'** 76.83 317 *de*P P 20 48 37.9 +0.5
SIM *PP PcP 20 48 49.2 +0.6
SIM S S 20 58 19.4 -3.9
SIM pmax pmax
comp=Z,65nm,0.8s
HEC **Hector,Ludlow** 76.83 56 P P 20 48 38.0 +0.2
baz=306,SNR=18
KLNR **Kaliningrad** 76.87 330 *i* P P 20 48 37.5 +0.1
KLNR pmax pmax
comp=Z,211nm,1.2s
BTMN **Batman** 76.90 308 *i* P P 20 48 39.9 +1.9
MURC **Murrieta** 76.97 58 P P 20 48 38.3 -0.2
baz=306,SNR=11
ORDU **Ordu-Boztepe** 77.14 312 *i* P P 20 48 40.5 +1.3
C26A **Wahner Farm, P** 77.19 39 P P 20 48 39.4 -0.1
baz=311,SNR=9.0
ASK **Askoy** 77.25 340 *e*P P 20 48 40.4 +1.0
TNCL **Tunceli-Merkez** 77.25 309 *i* P P 20 48 42.0 +1.9
BER **Bergen** 77.30 340 *e*P P 20 48 40.4 +0.7
BER IAmb IAmb 20 48 44.1
comp=Z,215nm,1.4s
GMRC **Granite Mounta** 77.31 56 P P 20 48 40.6 +0.1
baz=306,SNR=21
ODD1 **Odda** 77.33 339 *e*P P 20 48 41.0 +0.9
ODD1 IAmb IAmb 20 48 41.4
comp=Z,71nm,1.1s
MSU **Marysvale** 77.34 51 *e*P P 20 48 41.7 +1.0
MSU **Marysvale** 77.34 51 *e*P P 20 48 41.5 +0.7
A28A **Rude Farm, Bot** 77.38 37 P P 20 48 40.8 +0.3
baz=312,SNR=21
SUSE **Susehri** 77.41 311 *i* P P 20 48 41.6 +0.7
109C **Camp Elliot, M** 77.44 58 P P 20 48 41.1 0.0
baz=306,SNR=5.9
PFO **Pinyon Flats O** 77.46 57 P P 20 48 41.0 -0.3
baz=306,SNR=14
PFO **Pinyon Flats O** 77.46 57 *e*P P 20 48 41.2 -0.1
PFO pmax pmax
comp=Z,109nm,1.4s
PFO MLR MLR
comp=Z,954nm,19.0s
PFO **Pinyon Flats O** 77.46 57 *e*P P 20 48 41.2 -0.1
comp=Z,109nm,1.4s
PFO LR LR
comp=Z,954nm,19.0s
TMUT **Trail Mountain** 77.47 50 *e*P P 20 48 41.8 +0.2
comp=Z,93nm,1.5s
LDFC **Landfair** 77.50 56 *e*P P 20 48 40.8 -0.7
comp=Z,188nm,1.5s
BELC **Belle Mtn. Jos** 77.54 57 P P 20 48 41.5 -0.3
baz=306,SNR=17
D26A **Manning** 77.55 40 P P 20 48 41.1 -0.4
baz=311,SNR=6.5
MARD **Mardin** 77.56 307 *i* P P 20 48 43.3 +1.5
REFA **Refahiye_ERZ** 77.56 310 *i* P P 20 48 41.8 -0.1
LCMT **Little Creek M** 77.57 53 *e*P P 20 48 42.5 +0.5
comp=Z,150nm,1.5s
C27A **Sayler Ranch,** 77.57 39 P P 20 48 42.1 +0.5
baz=312,SNR=11
DIYA **Diyarbakir** 77.61 308 *i* P P 20 48 43.4 +1.4
MTPU **Mount Pierson** 77.62 52 *e*P P 20 48 42.8 +0.3
comp=Z,168nm,1.7s
B28A **Dugan Ranch, T** 77.64 38 P P 20 48 42.0 0.0
baz=312
P17A **Butcher Ranch,** 77.65 50 *e*P P 20 48 42.5 +0.1
comp=Z,226nm,1.5s
F25A **Bowman** 77.74 41 P P 20 48 42.8 +0.2
baz=311,SNR=8.7
SORM **Soroca** 77.76 322⇑ *i*P P 20 48 43.3 +0.7
SORM **Soroca** 77.76 322 ⇑P P 20 48 43.3 +0.7
BLS5 **Blasjo** 77.79 339 *e*P P 20 48 43.5 +1.0
BLS5 IAmb IAmb 20 48 45.3
comp=Z,167nm,1.4s
KNB **Kanab** 77.83 53 *e*P P 20 48 44.4 +1.0
KNB pmax pmax
comp=Z,240nm,1.4s
KNB **Kanab** 77.83 53 *e*P P 20 48 44.1 +0.6
comp=Z,236nm,1.5s
P18A **Preston Nutter** 77.86 49 *e*P P 20 48 43.9 +0.2
comp=Z,170nm,1.6s
BAR **Barrett** 77.86 58 *e*P P 20 48 43.0 -0.4
comp=Z,112nm,1.5s
CUZAR **Zara_SIVAS** 77.86 311 *i* P P 20 48 44.8 +1.3
A29A **Manning Farm,** 77.88 37 P P 20 48 42.9 -0.4
baz=313,SNR=29
KBSD **Kabsdagh** 77.89 307 *i* P P 20 48 45.2 +1.6
PKCU **Pink Cliffs** 77.90 52 *e*P P 20 48 45.0 +1.0
comp=Z,95nm,1.8s
E26A **Carlson Angus** 77.90 40 P P 20 48 43.3 -0.2
baz=311
MONP2 **Monument Peak** 77.91 58 P P 20 48 43.4 -0.5
baz=306,SNR=17
D27A **Center** 77.96 39 P P 20 48 43.0 -0.8
baz=312
ELZG **Elazig** 77.97 309 *i* P P 20 48 46.2 +2.0
ERBA **Erbaa** 77.98 312 *i* P P 20 48 45.5 +1.4
SRU **San Rafael Swe** 78.00 50 *e*P P 20 48 44.6 +0.2
SRU pmax pmax
comp=Z,143nm,1.4s
SRU **San Rafael Swe** 78.00 50 *e*P P 20 48 44.6 +0.2
comp=Z,143nm,1.4s
NEE2 **Needles Airpor** 78.01 56 P P 20 48 44.5 +0.2
baz=307
IRM **Iron Mountain** 78.02 56 P P 20 48 44.5 +0.2
baz=306,SNR=37
BORG **Borgarnes** 78.05 354 *e*P P 20 48 46.4 +2.6
BORG pmax pmax
comp=Z,190nm,1.1s
BORG **Borgarnes** 78.05 354 *e*P P 20 48 45.9 +2.1
comp=Z,190nm,1.1s
MMU **Miners Mountai** 78.08 51 *e*P P 20 48 45.8 +0.9
BC3 **Big Chuckawall** 78.11 57 P P 20 48 44.9 -0.1
baz=306,SNR=31
C28A **Hausauer Farms** 78.13 38 P P 20 48 45.1 +0.5
baz=312,SNR=6.0
B29A **Wagenman Farm,** 78.13 37 P P 20 48 44.5 -0.2
baz=313,SNR=16
HOMB **Homborsund** 78.14 338 *e*P P 20 48 44.7 +0.2
HOMB IAmb IAmb 20 48 46.6
comp=Z,133nm,1.2s
HOMB *ppP sP 20 48 55.9 +0.4
K22A **Casper** 78.16 45 P P 20 48 45.2 +0.1
baz=310
K22A **Casper** 78.16 45 *e*P P 20 48 44.7 -0.5
comp=Z,159nm,1.6s
F26A **Lodgepole** 78.20 41 P P 20 48 45.3 +0.1
baz=311,SNR=7.8
G25A **Newell** 78.24 42 P P 20 48 45.4 0.0
baz=311
KIS **Kishinev** 78.29 321⇑ *i*P P 20 48 47.0 +1.4
comp=Z,200nm,1.0s
KIS *eLR LR 21 24 20.0
comp=Z,2µm,16.0s
KIS **Kishinev** 78.29 321⇑ *i*P P 20 48 47.0 +1.4
KIS *e* 20 48 58.0
KIS pmax pmax
comp=Z,200nm,1.0s
SWSC **Sam W. Stewart** 78.30 58 P P 20 48 45.8 0.0
baz=306,SNR=12
KMY **Karmoy** 78.31 340 *e*P P 20 48 46.3 +1.0
KMY IAmb IAmb 20 48 48.3
comp=Z,288nm,1.8s
A30A **Hoffart Farm,** 78.31 37 P P 20 48 45.6 -0.1
baz=314,SNR=22
HAVZ **Havza** 78.35 313 *i* P P 20 48 47.8 +1.7
TOKA **Tokat** 78.37 312 *i* P P 20 48 48.0 +1.8
D28A **Regan** 78.39 39 P P 20 48 46.2 0.0
baz=312,SNR=11
E27A **Carson** 78.39 40 P P 20 48 45.9 -0.3
baz=312,SNR=12
CUKAN **kangal_SIVAS** 78.40 311 *i* P P 20 48 48.1 +1.6
STAV **Stavanger** 78.41 339 *e*P P 20 48 46.7 +0.8
MDND **Maddock** 78.43 38 P P 20 48 46.2 -0.1
baz=313,SNR=17
MDND **Maddock** 78.43 38 *e*P P 20 48 46.4 +0.1
comp=Z,345nm,1.5s
SNART **Snartemo** 78.47 338 *e*P P 20 48 47.0 +0.7
SNART *epP sP 20 48 57.9 +0.5
BSD **Bornholm Skovb** 78.51 333 *i* P P 20 48 46.9 +0.3
comp=Z,282nm,1.3s
BSD **Bornholm Skovb** 78.51 333 *i* P P 20 48 46.9 +0.3
BSD pmax pmax
comp=Z,280nm,1.3s
H25A **Fruitdale** 78.52 42 P P 20 48 46.9 -0.1
baz=311,SNR=8.6
SFNV **Sufian** 78.52 307 *i* P P 20 48 48.7 +1.6
SFNV **Sufian** 78.52 307 *i* P P 20 48 49.4 +2.2
ULM **Lac du Bonnet** 78.52 34 P P 20 48 45.9 -0.9
comp=Z,32nm,1.2s,baz=321,slow=5.9,SNR=18
ULM **Lac du Bonnet** 78.52 34 *e*P P 20 48 46.0 -0.8
ULM pmax pmax
comp=Z,120nm,1.5s
F27A **Lemmon** 78.53 41 P P 20 48 46.6 -0.4
baz=312,SNR=14
U15A **North Rim** 78.53 53 *e*P P 20 48 47.9 +0.5
comp=Z,197nm,1.7s
MZRK **Al-Mazaregh** 78.53 306 *i* P P 20 48 47.9 +0.8
MZRK **Al-Mazaregh** 78.53 306 *i* P P 20 48 48.3 +1.2
PDMCI **Parker Dam,Lak** 78.60 56 P P 20 48 47.2 -0.3
baz=307,SNR=9.7
RSSD **Black Hills** 78.61 43 P P 20 48 47.2 -0.4
baz=311
RSSD **Black Hills** 78.61 43 *e*P P 20 48 47.2 -0.4
RSSD pmax pmax
comp=Z,69nm,1.4s
RSSD **Black Hills** 78.61 43 *e*P P 20 48 46.7 -0.9
comp=Z,69nm,1.4s
G26A **Maurine** 78.61 41 P P 20 48 47.0 -0.4
baz=312,SNR=21
BOYT **Boyabat** 78.61 313 *i* P P 20 48 49.3 +1.8
B30A **Myrvik Farm, E** 78.63 37 P P 20 48 47.6 +0.1
baz=314,SNR=25
BEL **Belsk** 78.65 328 *e*P P 20 48 48.7 +1.3
BEL *epP sP 20 48 59.8 +1.3
BEL **Belsk** 78.65 328 *e*P P 20 48 48.7 +1.3
BEL *e*PP sP 20 48 59.9 +1.4
LVV **L'vov** 78.67 325 *e*P P 20 48 46.5 -1.1
LVV *e* 20 51 45.1
LVV *e* 20 53 37.0
LVV *e*S S 20 58 40.8 -2.2
LVV MLR MLR
comp=Z,2µm,15.0s
LVV MLR MLR
comp=N,900nm,16.0s
LVV MLR MLR
comp=E,1µm,15.0s
Y12C **Blythe** 78.68 56 P P 20 48 47.7 -0.2
baz=307,SNR=18
Y12C **Blythe** 78.68 56 *e*P P 20 48 48.2 +0.3
comp=E,116nm,1.4s
E28A **Huff** 78.74 39 P P 20 48 48.0 -0.1
baz=312,SNR=5.8
O20A **White River Ci** 78.75 48 P P 20 48 48.5 0.0
baz=309,SNR=7.1
O20A **White River Ci** 78.75 48 *e*P P 20 48 47.7 -0.8
comp=E,127nm,1.5s
AKCD **Akcadag** 78.75 310 *i* P P 20 48 50.3 +1.8
IAS **Iasi** 78.80 321 *i*P P 20 48 49.2 +0.9
IAS **Iasi** 78.80 321 ⇓P P 20 48 49.2 +0.9
I25A **Rochford** 78.84 43 P P 20 48 48.7 -0.1
baz=311
CUALT **Altinyayla-SIV** 78.86 311 *i* P P 20 48 50.9 +1.8
GLA **Glamis** 78.89 57 P P 20 48 49.4 +0.2
baz=307,SNR=16
GLA **Glamis** 78.89 57 *e*P P 20 48 49.8 +0.6
GLA pmax pmax
comp=Z,110nm,1.3s
GLA **Glamis** 78.89 57 *e*P P 20 48 49.1 -0.1
comp=Z,107nm,1.3s
G27A **Dupree** 78.90 41 P P 20 48 48.9 -0.2
baz=312,SNR=20
LEOM **Leova** 78.94 321⇑ *i*P P 20 48 50.1 +1.0
LEOM **Leova** 78.94 321 ⇑P P 20 48 50.1 +1.0
COP **Copenhagen** 78.95 334 *i* P P 20 48 49.8 +0.8
comp=Z,89nm,1.1s
COP **Copenhagen** 78.95 334 *i* P P 20 48 49.8 +0.8
COP pmax pmax
comp=Z,89nm,1.1s
H26A **Fairpoint** 78.96 42 P P 20 48 49.1 -0.3
baz=312,SNR=8.2
D29A **Pettibone, Tap** 78.97 39 P P 20 48 49.1 -0.2
baz=313,SNR=6.6
B31A **Greenbush Farm** 78.98 37 P P 20 48 48.9 -0.4
baz=314,SNR=7.0
C30A **Mose, Pekin** 79.08 38 P P 20 48 49.5 -0.4
baz=314,SNR=23
CUSAR **Sarkisla-SIVAS** 79.08 311 *i* P P 20 48 51.6 +1.3
F28A **McLaughlin** 79.18 40 P P 20 48 49.6 -0.9
baz=312
A32A **Rocking H Ranc** 79.18 36 P P 20 48 49.7 -0.7
baz=315,SNR=6.8
SURC **SANLIURFA_SURC** 79.19 308 *i* P P 20 48 52.1 +1.4
J25A **Sunshine Ranch** 79.21 43 P P 20 48 50.0 -0.9
baz=311
PV09 **Paradox Valley** 79.23 50 *e*P P 20 48 51.5 +0.2
E29A **Napoleon** 79.28 39 P P 20 48 50.7 -0.3
baz=313
COAL **Corum-Alaca** 79.30 313 *i* P P 20 48 52.6 +1.3
I26A **New Underwood** 79.30 42 P P 20 48 51.4 +0.1
baz=312
H27A **Howes** 79.32 42 P P 20 48 51.3 -0.1
baz=312,SNR=14
PRAR **RASCA** 79.34 322⇓ *i*P P 20 48 51.9 +0.6
D30A **Buchanan** 79.35 38 P P 20 48 51.2 -0.2
baz=314,SNR=9.9
PV10 **Paradox Valley** 79.37 50 *e*P P 20 48 52.4 +0.4
C31A **Landman Farms,** 79.38 37 P P 20 48 50.8 -0.7
baz=314,SNR=12
KWP **Kalwaria Pacla** 79.41 326 *e*P P 20 48 52.7 +1.1
KWP **Kalwaria Pacla** 79.41 326⇑ *i*P P 20 48 53.4 +1.8
KWP **Kalwaria Pacla** 79.41 326 *e*P P 20 48 52.8 +1.1
MUD **Monsted U'grnd** 79.42 336⇓ *i*P P 20 48 52.3 +0.8
comp=Z,75nm,1.1s
MUD **Monsted U'grnd** 79.42 336⇓ *i*P P 20 48 52.3 +0.8
MUD pmax pmax
comp=Z,75nm,1.1s
TAU **Tasmania Unive** 79.47 177 PFAKE 20 49 00.0 +8.3
TAU LR LR
comp=Z,648nm,22.0s
RBK **Rabkut** 79.48 284 P P 20 48 52.0 -0.5
SNR=13
RBK **Rabkut** 79.48 284 P P 20 48 52.0 -0.5
SNR=13
TLCR 79.51 319⇑ *i*P P 20 48 52.9 +0.6
TLCR 79.51 319 ⇑P P 20 48 52.9 +0.6
PV05 **Paradox Valley** 79.52 50 *e*P P 20 48 52.8 0.0
B32A **Ashes, Strandq** 79.53 36 P P 20 48 51.2 -1.1
baz=315,SNR=15
RGN **Rugen** 79.53 333 *e*P P 20 48 52.9 +0.7
comp=Z,200nm,1.2s
ILGA **Ilgaz** 79.54 314 *i* P P 20 48 54.5 +1.7
GZT **Gaziantep** 79.56 309 *i* P P 20 48 54.6 +1.8
KSRV **Kasrt alli** 79.57 307 *i* P P 20 48 54.4 +1.6
KSRV **Kasrt alli** 79.57 307 *i* P P 20 48 54.8 +2.0
N23A **Red Feather La** 79.62 46 P P 20 48 53.3 0.0
baz=310,SNR=25
N23A **Red Feather La** 79.62 46 *e*P P 20 48 53.4 0.0
comp=Z,158nm,1.5s
G28A **Parade** 79.64 41 P P 20 48 53.2 +0.1
baz=312,SNR=11
BUR08 **Bucovina Ar. S** 79.64 323 *e*P P 20 48 53.2 +0.1
BURAR **Bucovina Array** 79.66 323⇓ *i*P P 20 48 54.3 +1.1
BURAR **Bucovina Array** 79.66 323 ⇓P P 20 48 54.3 +1.1
J26A **Sides Ranch, S** 79.66 43 P P 20 48 53.0 -0.3
baz=312
WUAZ **Wupatki** 79.67 53 P P 20 48 53.6 +0.1
baz=308,SNR=45
WUAZ **Wupatki** 79.67 53 *e*P P 20 48 53.6 +0.1
comp=Z,132nm,1.4s
WUAZ LR LR
comp=Z,364nm,20.0s
A33A **Warroad** 79.68 35 P P 20 48 52.2 -0.9
baz=316,SNR=17
F29A **Eureka** 79.69 40 P P 20 48 53.1 -0.2
baz=313,SNR=7.6
E30A **Jud** 79.69 39 P P 20 48 53.0 -0.3
baz=314,SNR=7.5
I27A **Quinn** 79.71 42 P P 20 48 53.6 +0.1
baz=312
TESR **Tescani** 79.72 321⇑ *i*P P 20 48 54.6 +1.2
113A **Mohawk Valley,** 79.77 57 *e*P P 20 48 53.7 -0.3
comp=Z,109nm,1.5s
PV01 **Paradox Valley** 79.81 50 *e*P P 20 48 54.1 -0.2
DGAR **Diego Garcia** 79.84 253 PFAKE 20 49 10.0 +16
DGAR LR LR
comp=Z,431nm,20.0s
H28A **Mission Ridge** 79.86 41 P P 20 48 54.3 +0.1
baz=312,SNR=11
CFR **Carcaliu** 79.87 320⇑ *i*P P 20 48 55.1 +0.9
CFR **Carcaliu** 79.87 320 ⇑P P 20 48 55.1 +0.9
AGMN **Agassiz Nation** 79.92 36 P P 20 48 53.5 -0.9
baz=315,SNR=15
AGMN **Agassiz Nation** 79.92 36 *e*P P 20 48 53.5 -0.9
comp=Z,94nm,1.4s
AGMN LR LR
comp=Z,445nm,20.0s
C32A **Crookston** 79.94 37 P P 20 48 53.1 -1.4
baz=315
PETR **Petresti** 79.97 321⇓ *i*P P 20 48 57.1 +2.4
BTIN **Bart¯–n** 80.00 315 *i* P P 20 48 51.8 -3.2
ODBI **Odobesti** 80.03 321⇑ *i*P P 20 48 57.7 +2.6
SLMH **Al Salmeh** 80.04 308 *i* P P 20 48 56.4 +1.0
SLMH **Al Salmeh** 80.04 308 *i* P P 20 48 56.8 +1.4
B33A **Robert and Kas** 80.06 36 P P 20 48 54.7 -0.5
baz=316
ELDT **Eldivan** 80.07 314 *i* P P 20 48 56.7 +1.1
CDAG **Cicekdag** 80.07 312 *i* P P 20 48 56.6 +1.0
G29A **Hoven** 80.08 40 P P 20 48 55.3 -0.1
baz=313
F30A **Leola** 80.09 39 P P 20 48 55.1 -0.4
baz=314
KOLS **Kolonicke sedl** 80.11 325 *e*P P 20 48 56.3 +0.8
KOLS pmax pmax
comp=Z,70nm,1.2s
KOLS **Kolonicke sedl** 80.11 325 *e*P P 20 48 56.3 +0.8
KOLS *e*PP PP 20 51 58.3 +1.3
SMCO **Snowmass** 80.11 48 *e*P P 20 48 56.2 0.0
comp=Z,81nm,1.4s
VRI **Vrincioaia** 80.12 321⇓ *i*P P 20 48 57.5 +1.9
VRI **Vrincioaia** 80.12 321 ⇓P P 20 48 57.5 +1.9
E31A **Nome** 80.16 38 P P 20 48 55.7 -0.1
baz=314,SNR=8.0
ANDN **Andirin** 80.17 310 *i* P P 20 48 57.7 +1.5
PLOR **Plostina** 80.17 321⇑ *i*P P 20 48 57.6 +1.7
PLOR **Plostina** 80.17 321 ⇑P P 20 48 57.6 +1.7
D32A **Dogwood Acres,** 80.19 37 P P 20 48 55.5 -0.4
baz=315
TIRR **Tirgusor** 80.22 319⇑ *i*P P 20 48 57.3 +1.2
TIRR **Tirgusor** 80.22 319 *e*P P 20 48 56.3 +0.2
TIRR pmax pmax
comp=Z,53nm,1.1s
TIRR **Tirgusor** 80.22 319 *e*P P 20 48 56.2 +0.2
comp=Z,53nm,1.1s
STHS **Stebnicka Huta** 80.22 326 *e*P P 20 48 57.2 +1.1
STHS pmax pmax
comp=Z,61nm,1.2s
STHS **Stebnicka Huta** 80.22 326 *e*P P 20 48 57.2 +1.1
KAMA **Osmaniye** 80.22 309 *i* P P 20 48 57.6 +1.2
KUZU **Kuzuini** 80.23 309 *i* P P 20 48 57.9 +1.5
I28A **Midland** 80.23 42 P P 20 48 56.5 +0.2
baz=312
OJC **Ojcow** 80.27 327 *e*P P 20 48 57.1 +0.8
OJC *epP sP 20 49 08.3 +0.9
OJC *es*P pP 20 49 25.2 +21
OJC **Ojcow** 80.27 327 *e*P P 20 48 56.9 +0.6
OJC pmax pmax
comp=Z,263nm,1.2s
OJC **Ojcow** 80.27 327 *e*P P 20 48 56.9 +0.6
comp=Z,262nm,1.2s
J27A **Elkhorn Farm,** 80.28 43 P P 20 48 56.9 +0.2
baz=312
X16A **Lo Mia Camp, P** 80.31 54 *e*P P 20 48 57.5 +0.4
comp=Z,103nm,1.4s
AVNS **Nevsehir-Avano** 80.31 311 *i* P P 20 48 57.9 +1.0
H29A **Onida** 80.31 41 P P 20 48 56.4 -0.3
baz=313,SNR=15
HARR **Harsova** 80.31 319⇑ *i*P P 20 48 58.0 +1.4
HARR **Harsova** 80.31 319 ⇑P P 20 48 58.0 +1.4
UZH **Uzhgorod** 80.31 325 *c* *i*P P 20 48 56.4 -0.1
UZH *e* 20 49 01.8
UZH *e*S S 20 58 59.0 -1.4
UZH MLR MLR
comp=N,1µm,19.0s
UZH MLR MLR
comp=E,500nm,19.0s
UZH MLR MLR
comp=Z,1µm,19.0s
GRER 80.33 320⇑ *i*P P 20 48 59.3 +2.6
C33A **Trail** 80.34 36 P P 20 48 56.1 -0.7
baz=316,SNR=9.6
B34A **Aery, Baudette** 80.34 35 P P 20 48 56.1 -0.7
baz=316,SNR=11
EFOR **EFORIE** 80.36 319⇓ *i*P P 20 48 58.7 +1.9
MVCO **Mesa Verde** 80.43 51 P P 20 48 58.1 +0.4
baz=309,SNR=30
MVCO **Mesa Verde** 80.43 51 *e*P P 20 48 57.9 +0.2
comp=Z,141nm,1.4s
MVCO LR LR
comp=Z,367nm,21.0s
BR101 **Keskin Array S** 80.44 313 *e*P P 20 48 58.2 +0.6
BR131 **Keskin Array S** 80.44 313 *e*P P 20 48 58.1 +0.5
BRTR **Keskin Array B** 80.44 313 P P 20 48 58.2 +0.6
comp=Z,42nm,1.1s,baz=107,slow=4.3,SNR=128
BRTR LR LR 21 29 05.9
comp=Z,551nm,18.3s,baz=52,slow=39
BMR **Baia Mare** 80.44 324⇑ *i*P P 20 48 58.6 +1.3
BMR **Baia Mare** 80.44 324 ⇑P P 20 48 58.6 +1.3
ARCR **ARCALIA** 80.45 323⇑ *i*P P 20 48 59.4 +2.1
F31A **Hecla** 80.47 39 P P 20 48 56.9 -0.6
baz=314,SNR=5.8
CRVS **Cervenica-Dubn** 80.50 326 *e*P P 20 48 58.3 +0.7
CRVS **Cervenica-Dubn** 80.50 326 *e*P P 20 48 58.3 +0.7
ISCO **Idaho Springs** 80.52 47 P P 20 48 57.9 -0.3
baz=310,SNR=16
ISCO **Idaho Springs** 80.52 47 *e*P P 20 48 58.8 +0.6
ISCO pmax pmax
comp=Z,90nm,1.7s
ISCO **Idaho Springs** 80.52 47 *e*P P 20 48 58.8 +0.6
comp=Z,90nm,1.7s
ISCO LR LR
comp=Z,430nm,20.0s
G30A **Faulkton** 80.52 40 P P 20 48 57.3 -0.5
baz=314,SNR=16
TRPA **Tarpa** 80.56 325⇓ *e*PKPPKPdP P 20 48 59.1 +1.2
DRWC **Darouich** 80.58 309 *i* P P 20 48 59.4 +1.0
DRWC **Darouich** 80.58 309 *i* P P 20 49 00.1 +1.7
J28A **Allard Ranch,** 80.58 42 P P 20 48 58.1 -0.1
baz=313
NIE **Niedzica** 80.64 327 *e*P P 20 48 59.5 +1.2
NIE *epP sP 20 49 10.8 +1.4
NIE **Niedzica** 80.64 327 *e*P P 20 48 59.5 +1.2
NIE *e**PP sP 20 49 10.9 +1.5
BCAM **Yenicaga** 80.64 314 *i* P P 20 48 60.0 +1.3
PGOR **Pogoanele** 80.65 320⇑ *i*P P 20 48 59.1 +0.7
I29A **Vivian Onida** 80.68 41 P P 20 48 58.4 -0.3
baz=313
AMRR **Amara** 80.68 320⇑ *i*P P 20 49 00.2 +1.6
AMRR **Amara** 80.68 320 ⇑P P 20 49 00.2 +1.6
ISR **Istrita** 80.73 320⇑ *i*P P 20 49 00.9 +1.9
ISR **Istrita** 80.73 320 ⇑P P 20 49 00.9 +1.9
D33A **AnnSam, Waubun** 80.75 37 P P 20 48 58.3 -0.6
baz=316
MSAB **Monastry St. A** 80.78 319⇑ *i*P P 20 49 00.7 +1.6
MLR **Muntele Rosu** 80.78 321⇑ *i*P P 20 49 00.6 +1.3
MLR **Muntele Rosu** 80.78 321 *e*P P 20 48 59.2 -0.1
MLR pmax pmax
comp=Z,110nm,1.3s
MLR **Muntele Rosu** 80.78 321 *e*P P 20 48 59.5 +0.2
comp=Z,109nm,1.3s
AKO **Adana** 80.80 310 *i* P P 20 49 00.9 +1.5
URZ **Urewera** 80.81 154 LR LR 21 18 51.4
comp=Z,235nm,20.1s,baz=0.5,slow=31
ANTO **Ankara** 80.84 313 *e*P P 20 49 00.6 +1.0
ANTO pmax pmax
comp=Z,125nm,1.0s
ANTO MLR MLR
comp=Z,112nm,21.0s
ANTO **Ankara** 80.84 313 *e*P P 20 49 00.6 +1.0
comp=Z,125nm,1.0s
ANTO LR LR
comp=Z,112nm,21.0s
BBAL **Bala** 80.86 313 *i* P P 20 49 00.7 +0.9
B35A **Bob, Littlefor** 80.86 35 P P 20 48 58.8 -0.7
baz=317,SNR=7.9
BR231 **Keskin MP Arra** 80.87 313 *e*P P 20 48 59.0 -0.8
PSN **Preselentsi** 80.87 319 P P 20 49 00.4 +0.8
214A **Organ Pipe Nat** 80.91 57 P P 20 49 00.2 +0.1

baz=308
G31A Conde 80.93 39 P P 20 48 59.8 -0.1
baz=314
W18A Petrified Fore 80.97 53 P P 20 49 00.8 +0.3
baz=309
W18A Petrified Fore 80.97 53 *e*P P 20 49 00.9 +0.3
comp=Z,47nm,1.3s
F32A Veblen 81.02 38 P P 20 48 59.3 -1.1
baz=315
SECR 81.03 321⇓*i*P P 20 49 02.4 +1.9
RAC Raciborz 81.06 328 *e*P P 20 49 01.5 +1.0
RAC MLR MLR
comp=Z,3μm,17.6s
AKSY AKSARAY - Alti 81.06 312 *i* P P 20 49 02.0 +1.1
CJR Cluj-Napoca 81.08 323⇑*i*P P 20 49 02.5 +1.7
CJR Cluj-Napoca 81.08 323⇑P P 20 49 02.5 +1.7
J29A Okreek 81.08 42 P P 20 49 00.5 -0.4
baz=313
SUSD Miller 81.09 40 P P 20 49 00.5 -0.3
baz=314
YURE YUREGIR 81.09 310 *i* P P 20 49 02.5 +1.5
D34A Park Rapids 81.10 36 P P 20 49 00.0 -0.8
baz=316,SNR=6.6
S22A 4UR Ranch, Cre 81.12 49 P P 20 49 02.2 +0.8
baz=310,SNR=51
S22A 4UR Ranch, Cre 81.12 49 *e*P P 20 49 02.3 +0.8
comp=Z,126nm,1.4s
E33A Westby DABS, E 81.12 37 P P 20 49 00.5 -0.5
baz=316,SNR=11
SULR 81.19 320⇑*i*P P 20 49 02.2 +0.9
X18A Snowflake 81.20 53 *e*P P 20 49 02.0 +0.2
comp=Z,64nm,1.3s
LANS Liptovska Anna 81.20 327 *e*P P 20 49 02.9 +1.5
LANS *e* 20 52 08.0
LANS Liptovska Anna 81.20 327 *e*P P 20 49 02.9 +1.5
LANS *e*PP PP 20 52 08.0 +1.8
I30A Oacoma 81.21 41 P P 20 49 01.2 -0.3
baz=314
KKUL Konya-Kulu 81.22 313 *i* P P 20 49 03.1 +1.3
C35A Jirik Farms, M 81.22 35 P P 20 49 00.6 -0.9
baz=317,SNR=7.8
KECS Kecovo 81.25 326 *e*P P 20 49 03.0 +1.5
KECS pmax pmax
comp=Z,24nm,1.2s
KECS Kecovo 81.25 326 *e*P P 20 49 03.0 +1.5
KECS *e*PP PP 20 52 04.0 -2.5
OKC Ostrava-Krasne 81.26 328⇓*i*P P 20 49 02.5 +0.9
OKC *ex* x 20 49 13.9
OKC AMS AMS 21 28 20.0
comp=Z,2μm,14.8s
OKC Ostrava-Krasne 81.26 328⇓*i*P P 20 49 02.5 +0.9
OKC *e* 20 49 13.9
OKC MLR MLR
comp=Z,2μm,14.8s
VOIR 81.27 321⇓*i*P P 20 49 03.5 +1.7
VOIR 81.27 321 ⇓P P 20 49 03.5 +1.7
G32A Webster 81.27 39 P P 20 49 01.5 -0.3
baz=315
KSP Ksiaz 81.27 329 *e*P P 20 49 02.3 +0.7
KSP *ep*P sP 20 49 13.9 +1.2
KSP Ksiaz 81.27 329 *e*P P 20 49 02.4 +0.8
KSP *e**PP sP 20 49 14.0 +1.2
YAYL Yayladag 81.30 309 *i* P P 20 49 02.9 +0.7
SAHE Sakarya_HENDEK 81.31 315 *i* P P 20 49 02.8 +0.7
H31A Wolsey 81.31 40 P P 20 49 01.6 -0.4
baz=314
Q24A Divide 81.33 47 P P 20 49 02.7 +0.1
baz=311
Q24A Divide 81.33 47 *e*P P 20 49 03.4 +0.7
comp=Z,52nm,1.5s
MTUR Matau 81.41 321⇑*i*P P 20 49 05.2 +2.6
MTUR Matau 81.41 321 ⇑P P 20 49 05.2 +2.6
BTAS Taskesti 81.41 315 *i* P P 20 49 03.4 +0.7
DRGR 81.44 324⇓*i*P P 20 49 03.6 +0.9
DRGR 81.44 324 ⇓P P 20 49 03.6 +0.9
F33A 5 Mile Ranch, 81.46 38 P P 20 49 02.3 -0.4
baz=315,SNR=26
ARNB Al Arnab 81.49 309 *i* P P 20 49 05.1 +1.9
ARNB Al Arnab 81.49 309 *i* P P 20 49 05.1 +1.9
DED Mersin 81.52 310 *i* P P 20 49 04.0 +0.7
KAND Kocaeli-Kandir 81.52 316 *i* P P 20 48 57.5 -5.6
E34A Wadena 81.52 37 P P 20 49 02.5 -0.5
baz=316
ARR Arges 81.52 322⇑*i*P P 20 49 05.5 +2.3
MORC Moravsky Berou 81.56 328⇑*i*P P 20 49 04.7 +1.4
MORC Moravsky Berou 81.56 328 *e*P P 20 49 04.0 +0.7
MORC pmax pmax
comp=Z,430nm,1.1s
MORC Moravsky Berou 81.56 328 *e*P P 20 49 03.8 +0.5
comp=Z,426nm,1.1s
J30A Dallas 81.58 41 P P 20 49 02.9 -0.6
baz=314
AUMIH MIHALICIK 81.60 314 *i* P P 20 49 04.3 +0.5
PRD Provadia 81.61 319 P P 20 49 04.8 +1.2
DPC Dobruska-Polom 81.64 329⇓*i*P P 20 49 04.7 +1.1
DPC *ex* x 20 49 14.8
DPC *e*PP PP 20 52 11.6 +1.9
DPC *e*S S 20 59 16.6 +2.3
DPC AMS AMS 21 30 00.0
comp=Z,2μm,15.5s
DPC Dobruska-Polom 81.64 329⇓*i*P P 20 49 04.7 +1.1
DPC *e* 20 49 14.8
DPC *e* 20 52 11.6
DPC *e*S S 20 59 16.6 +2.3
DPC MLR MLR
comp=Z,2μm,15.5s
KERG Konya-Eregli 81.64 311 *i* P P 20 49 04.4 +0.3
D35A Remer 81.64 36 P P 20 49 02.8 -0.9
baz=317
KRLC Kraliky 81.66 329⇓*i*P P 20 49 04.6 +0.8
KRLC *ex* x 20 49 16.0
KRLC Kraliky 81.66 329⇓*i*P P 20 49 04.6 +0.8
KRLC *e* 20 49 16.0
C36A Pine Crest Far 81.71 35 P P 20 49 03.4 -0.6
baz=317,SNR=8.1
ROOS tl_alroos 81.72 307 *i* P P 20 49 04.1 -0.3
GOLR 81.73 321⇑*i*P P 20 49 05.8 +1.6
OGNE Ogallala 81.82 44 P P 20 49 04.4 -0.5
baz=312,SNR=8.8
OGNE Ogallala 81.82 44 *e*P P 20 49 04.8 0.0
comp=Z,150nm,1.3s
OGNE LR LR
comp=Z,584nm,21.0s
H32A Carlson Farm, 81.83 39 P P 20 49 04.2 -0.6
baz=315
G33A Ortonville 81.84 38 P P 20 49 04.4 -0.4
baz=315,SNR=13
E35A Pequot Lakes 81.85 36 P P 20 49 04.2 -0.6
baz=316,SNR=6.0
LOT Lotru 81.89 322⇓*i*P P 20 49 06.1 +0.9
SDCO Great Sand Dun 81.92 49 P P 20 49 05.5 -0.2
baz=311,SNR=31
SDCO Great Sand Dun 81.92 49 *e*P P 20 49 05.9 +0.2
comp=Z,74nm,1.4s
SDCO LR LR
comp=Z,414nm,19.0s
MCD Coleburn Disti 81.92 343⇓*e*P P 20 49 05.0 +0.1
PSZ Piszkesteto 81.93 326⇓*i*P P 20 49 07.2 +1.9
PSZ Piszkesteto 81.93 326⇓*ep*PKiKP P 20 49 06.3 +1.0
PSZ Piszkesteto 81.93 326 *e*P P 20 49 05.7 +0.4
PSZ pmax pmax
comp=Z,142nm,1.1s
PSZ MLR MLR
comp=Z,1μm,20.0s
PSZ Piszkesteto 81.93 326 *e*P P 20 49 05.7 +0.4
comp=Z,142nm,1.1s
PSZ LR LR
comp=Z,1μm,20.0s
HUMR Humele 81.94 321⇓*i*P P 20 49 06.7 +1.4
K30A Basset 81.97 42 P P 20 49 05.6 +0.1
baz=314
VYHS Vyhne 81.97 327 *e*P P 20 49 06.4 +1.0
VYHS pmax pmax
comp=Z,49nm,1.2s
VYHS Vyhne 81.97 327 *e*P P 20 49 06.4 +1.0
VYHS *e*PP PP 20 52 15.6 +3.1
D36A Goodland 81.98 35 P P 20 49 04.7 -0.8
baz=317,SNR=5.2
F34A Alexandria 81.99 37 P P 20 49 05.1 -0.5
baz=316,SNR=9.3
DEV Deva 82.01 323⇑*i*P P 20 49 07.0 +1.4
DEV Deva 82.01 323 ⇑P P 20 49 07.0 +1.4
C37A Embarrass 82.03 34 P P 20 49 05.1 -0.6
baz=318,SNR=6.4
TUC Tucson 82.04 56 P P 20 49 06.5 +0.3
baz=309
TUC Tucson 82.04 56 *e*P P 20 49 06.3 +0.1
TUC pmax pmax
comp=Z,79nm,1.5s
TUC MLR MLR
comp=Z,585nm,19.0s
TUC Tucson 82.04 56 *e*P P 20 49 06.3 +0.1
comp=Z,79nm,1.5s
TUC LR LR
comp=Z,585nm,19.0s
H33A Prehn Over Nor 82.05 39 P P 20 49 05.5 -0.5
baz=315,SNR=11
MME1 Meikle Cairn 82.10 343 *e*P P 20 49 06.3 +0.4
KDHN Kadinhani 82.12 313 *i* P P 20 49 07.0 +0.5
I32A Karley and Nic 82.15 40 P P 20 49 06.0 -0.5
baz=315
EYMN Ely 82.18 34 P P 20 49 05.9 -0.7
baz=318,SNR=6.1
EYMN Ely 82.18 34 *e*P P 20 49 05.8 -0.7
comp=Z,130nm,1.4s
EYMN LR LR
comp=Z,452nm,19.0s
BRG Berggiesshubel 82.19 331⇓*i*P P 20 49 07.0 +0.6
comp=Z,77nm,1.2s
BRG *i* 20 49 18.4
comp=Z,35nm,0.9s
BRG *i* PP PP 20 52 15.0 +0.9
comp=Z,23nm,1.3s
BRG Berggiesshubel 82.19 331⇓*i*P P 20 49 07.1 +0.6
BRG *i* 20 49 18.4
BRG *i* 20 52 15.0
BRG pmax pmax
comp=Z,77nm,1.2s
BRG pmax pmax
comp=Z,35nm,0.9s
BRG pmax pmax
comp=Z,23nm,1.3s
ESKT Eskisehir 82.19 314 *i* P P 20 49 07.5 +0.6
G34A Benson 82.20 38 P P 20 49 06.6 -0.1
baz=316,SNR=11
CLL Collm 82.21 331⇓*i*P P 20 49 06.7 +0.1
comp=Z,136nm,1.1s
CLL *i* 20 49 18.0
comp=Z,106nm,0.9s
CLL *e* 20 49 25.0
CLL *e*PP PP 20 52 11.0 -3.3
CLL *e*S S 20 59 16.0 -4.0
CLL *e*SS SS 21 04 30.0 -8.8
CLL *e* 21 05 24.0
CLL *e*SSS SSS 21 08 12.0
CLL Collm 82.21 331⇓*i*P P 20 49 06.7 +0.1
CLL *i* 20 49 18.0
CLL *e*S S 20 59 16.0 -4.0
CLL pmax pmax
comp=Z,136nm,1.1s
CLL Collm 82.21 331 *e*P P 20 49 06.4 -0.2
comp=Z,114nm,0.9s
PVCC Panska Ves 82.21 330⇓*i*P P 20 49 07.4 +0.8
PVCC *ex* x 20 49 19.1
PVCC *e*S S 20 59 21.0 +0.9
PVCC AMS AMS 21 29 00.0
comp=Z,2μm,16.3s
PVCC Panska Ves 82.21 330⇓*i*P P 20 49 07.4 +0.8
PVCC *e* 20 49 19.1
PVCC *e*S S 20 59 21.0 +0.9
PVCC MLR MLR
comp=Z,2μm,16.3s
KIZK Mersin 82.23 310 *i* P P 20 49 07.6 +0.6
F35A Swanville 82.28 37 P P 20 49 06.7 -0.4
baz=316,SNR=9.2
PMOR Pomariorio Ree 82.30 115 *e*T T 22 19 05.4
comp=Z,4.7nm,0.2s
VRAC Vranov 82.32 328⇑*i*P P 20 49 08.7 +1.5
VRAC Vranov 82.32 328 ⇑P P 20 49 08.7 +1.5
SIRR Siria 82.33 324⇓*i*P P 20 49 08.2 +0.9
MARH Ras Al Marh 82.33 307 *i* P P 20 49 07.6 -0.4
SZH Strazhica 82.34 319 P P 20 49 07.4 0.0
D37A Cotton 82.34 35 P P 20 49 06.4 -0.9
baz=318
ZIMR 82.36 320⇓*i*P P 20 49 08.6 +1.1
ZIMR 82.36 320 ⇓P P 20 49 08.6 +1.1
J32A Parkston 82.41 40 P P 20 49 07.1 -0.7
baz=315
E36A McGregor 82.43 36 P P 20 49 07.2 -0.6
baz=317,SNR=7.3
C38A Sawbill Land. 82.45 34 P P 20 49 07.2 -0.7
baz=318
K31A O'Neill 82.46 41 P P 20 49 07.7 -0.4
baz=314
KMER Konya-Meram 82.46 312 *i* P P 20 49 09.0 +0.6
KAC Achnashellach 82.47 344⇓*e*P P 20 49 08.7 +0.9
I33A Coleman 82.47 39 P P 20 49 07.5 -0.7
baz=315
ZALF Zalf 82.48 306 *i* P P 20 49 07.2 -1.2
ZALF Zalf 82.48 306 *i* P P 20 49 05.9 -2.5
AUKIR K¨-rka- Seyitg 82.54 314 *i* P P 20 49 03.6 -5.1
H34A Spellman Lake, 82.55 38 P P 20 49 08.4 -0.1
baz=316
JMB Yambol 82.55 318 P P 20 49 09.9 +1.4
RAYN Ar Rayn 82.55 294 *e*P P 20 49 09.0 +0.1
comp=Z,92nm,1.4s
RAYN LR LR
comp=Z,619nm,19.0s
SMOL Smolenice 82.57 327 *e*P P 20 49 10.1 +1.6
SMOL Smolenice 82.57 327 *e*P P 20 49 10.1 +1.6
GOPC GO Pecny, Ondr 82.60 330⇓*i*P P 20 49 09.5 +0.8
GOPC *ex* x 20 49 20.7
GOPC AMS AMS 21 29 10.0
comp=Z,2μm,16.5s
GOPC GO Pecny, Ondr 82.60 330⇓*i*P P 20 49 09.5 +0.8
GOPC *e* 20 49 20.7
GOPC MLR MLR
comp=Z,2μm,16.5s
PRA Prague 82.62 330⇓*i*P P 20 49 09.7 +1.0
PRA *e*S S 20 59 25.5 +1.2
PRA AMS AMS 21 29 10.0
comp=Z,2μm,17.8s
PRA Prague 82.62 330⇓*i*P P 20 49 09.7 +1.0
PRA *e*S S 20 59 25.5 +1.2
PRA MLR MLR
comp=Z,2μm,17.8s
THZ Tophouse 82.63 159 *e*P P 20 49 08.0 -0.7
comp=Z,282nm,1.9s
PRU Pruhonice 82.64 330⇓*i*P P 20 49 09.5 +0.6
PRU *ex* x 20 49 20.6
PRU *e*S S 20 59 21.1 -3.4
PRU AMS AMS 21 29 10.0
comp=Z,2μm,16.9s
PRU Pruhonice 82.64 330⇓*i*P P 20 49 09.5 +0.6
PRU *e* 20 49 20.6
PRU *e*S S 20 59 21.1 -3.4
PRU MLR MLR
comp=Z,2μm,16.9s
BOLV Bolvadin 82.67 313 *i* P P 20 49 10.4 +1.0
PVL Pavlikeni 82.69 320 P P 20 49 10.5 +1.3
KPL Plockton 82.69 344⇓*e*P P 20 49 10.0 +1.1
KPL AMB AMB 20 49 11.6
comp=Z,316nm,1.5s
L31A Butterfield Fa 82.72 42 P P 20 49 08.9 -0.6
baz=314,SNR=19
ULDT Uludag 82.75 315 *i* P P 20 49 10.7 +0.8
KSB Sheil Bridge 82.76 344⇓*e*P P 20 49 10.1 +0.8
KSCO Kaye Shedlock' 82.78 46 P P 20 49 10.1 +0.1
baz=312
KSCO Kaye Shedlock' 82.78 46 *e*P P 20 49 09.7 -0.2
comp=Z,137nm,1.4s
F36A Milaca 82.78 36 P P 20 49 08.8 -0.8
baz=317,SNR=7.7
G35A Watkins 82.78 37 P P 20 49 09.7 0.0
baz=317,SNR=18
PPT Papeete 82.79 118 LR LR 21 26 30.1
comp=Z,300nm,18.4s,baz=352,slow=36
ECSD EROS Data Cent 82.79 39 P P 20 49 09.3 -0.5
baz=315,SNR=27
ECSD EROS Data Cent 82.79 39 *e*P P 20 49 09.3 -0.5
comp=Z,124nm,1.4s
ECSD LR LR
comp=Z,446nm,20.0s
TREC Trest 82.79 329⇓*i*P P 20 49 10.4 +0.7
TREC AMS AMS 21 30 40.0
comp=Z,2μm,17.0s
TREC Trest 82.79 329⇓*i*P P 20 49 10.4 +0.7
TREC MLR MLR
comp=Z,2μm,17.0s
EDU Dundee 82.80 342⇓*e*P P 20 49 10.1 +0.6
PPT2 Papeete2 82.80 118 *e*S S 20 59 27.7 +0.6
comp=Z,217nm,22.8s
PPT2 Papeete2 82.80 118 *e*LR LR 21 14 33.8
comp=Z,2μm,31.5s,baz=312
BZS Buzias 82.82 323⇑*i*P P 20 49 10.7 +0.8
BZS Buzias 82.82 323 ⇑P P 20 49 10.7 +0.8
K32A Verdigre 82.85 41 P P 20 49 09.4 -0.7
baz=315
ERMK Ermenek 82.88 311 *i* P P 20 49 10.9 +0.3
EDRB Edirne 82.90 318 P P 20 49 11.2 +0.9
EDRB Edirne 82.90 318 P P 20 49 11.2 +0.9
J33A Davis 82.91 40 P P 20 49 09.9 -0.5
baz=315
I34A Hadley 82.95 39 P P 20 49 10.5 -0.2
baz=316
T25A Trinidad 82.97 48 P P 20 49 11.6 +0.5
baz=311
T25A Trinidad 82.97 48 *e*P P 20 49 11.3 +0.2
comp=Z,176nm,1.5s
H35A Sunnyside Ranc 82.99 38 P P 20 49 10.9 +0.1
baz=316,SNR=26
SALA Sala 83.00 306 *i* P P 20 49 09.6 -1.7
BRBR Barbar 83.06 307 *i* P P 20 49 11.1 -0.6
BRBR Barbar 83.06 307 *i* P P 20 49 10.2 -1.4
LAZ Ladron 83.07 52 *e*P P 20 49 12.5 +0.8
G36A St. Michael 83.13 37 P P 20 49 11.2 -0.3
baz=317
ANMO Albuquerque 83.15 51 P P 20 49 12.5 +0.4
baz=311
ANMO Albuquerque 83.15 51 *e*P P 20 49 12.1 0.0
ANMO pmax pmax
comp=Z,116nm,1.4s
ANMO MLR MLR
comp=Z,423nm,20.0s
ANMO Albuquerque 83.15 51 *e*P P 20 49 12.1 0.0
comp=Z,116nm,1.4s
ANMO LR LR
comp=Z,423nm,20.0s
BANR Banloc 83.22 323⇑*i*P P 20 49 13.4 +1.5
M31A Lambtecht Ranc 83.23 42 P P 20 49 11.5 -0.6
baz=314
BAGO Egridir - ISPA 83.25 313 *i* P P 20 49 13.2 +0.8
ESY Stoneypath 83.27 342⇓*e*P P 20 49 12.5 +0.5
GDZ Gediz 83.27 314 *i* P P 20 49 13.4 +0.9
NKC Novy Kostel 83.28 331⇓*i*P P 20 49 12.7 +0.5
NKC *ex* x 20 49 21.0
NKC AMS AMS 21 33 20.0
comp=Z,2μm,18.1s
NKC Novy Kostel 83.28 331⇓*i*P P 20 49 12.7 +0.5
NKC *e* 20 49 21.0
NKC MLR MLR
comp=Z,2μm,18.1s
L32A Elgin 83.29 41 P P 20 49 12.4 0.0
baz=315
K33A Hardington 83.39 40 P P 20 49 12.7 -0.2
baz=315
DIM Dimitrovgrad 83.40 319 P P 20 49 14.6 +1.7
MPEP Malo Peshtene 83.41 321 P P 20 49 13.9 +1.0
Y22D IRIS PASSCAL I 83.42 52 P P 20 49 14.4 +1.0
baz=310
EAB Aberfoyle 83.44 343⇓*e*P P 20 49 13.8 +1.0
J34A George 83.45 39 P P 20 49 13.0 -0.1
baz=316
LPM Los Pinos Moun 83.45 52 *e*P P 20 49 13.4 -0.2
DURS Dursunbey 83.49 315 *i* P P 20 49 14.1 +0.5
ISP Isparta 83.52 313 *e*P P 20 49 14.2 +0.4
ISP pmax pmax
comp=Z,75nm,0.9s
ISP MLR MLR
comp=Z,417nm,19.0s
ISP Isparta 83.52 313 *e*P P 20 49 14.2 +0.4
comp=Z,75nm,0.9s
ISP LR LR
comp=Z,417nm,19.0s
H36A Jessenland, He 83.52 38 P P 20 49 13.6 +0.1
baz=317,SNR=7.7
I35A Creekview Farm 83.53 39 P P 20 49 13.4 -0.2
baz=316
BNM Barren Site 83.56 52 *e*P P 20 49 14.2 0.0
L33A Hoskins 83.56 41 P P 20 49 13.1 -0.7
baz=315
SPMN Marine on St. 83.59 36 P P 20 49 13.4 -0.5
baz=318,SNR=8.7
SPMN Marine on St. 83.59 36 *e*P P 20 49 13.2 -0.7
comp=Z,110nm,1.4s
N31A Bailey Ranch, 83.60 43 P P 20 49 13.6 -0.5
baz=314
319A Douglas 83.62 55 *e*P P 20 49 14.5 +0.1
comp=Z,145nm,1.3s
BGNE Belgrade 83.63 42 P P 20 49 13.5 -0.6
baz=315
CONA Conrad Observa 83.69 328 *i* PcP P 20 49 15.6 +1.1
comp=Z,138nm,1.8s,SNR=50
KHC Kasperske Hory 83.70 330⇓*i*P P 20 49 14.9 +0.5
KHC *ex* x 20 49 26.7
KHC *e*PP PP 20 52 28.5 +1.9
KHC AMS AMS 21 29 40.0
comp=Z,2μm,16.5s
KHC Kasperske Hory 83.70 330 *e*P P 20 49 14.4 0.0
KHC pmax pmax
comp=Z,43nm,1.1s
KHC Kasperske Hory 83.70 330 *e*P P 20 49 14.4 0.0
comp=Z,43nm,1.1s
CSS Mathiatis 83.72 309 P P 20 49 15.1 +0.4
CSS Mathiatis 83.72 309 *e*P P 20 49 14.8 0.0
comp=Z,23nm,0.8s
CSS LR LR
comp=Z,155nm,19.0s
DEMI Demirci 83.74 315 *i* P P 20 49 15.2 +0.3
KDZ Kurdzhali 83.75 318 P P 20 49 16.4 +1.7
KHAL Karahalli 83.75 314 *i* P P 20 49 15.4 +0.4
J35A Milford 83.77 39 P P 20 49 14.4 -0.4
baz=316
PKSM Moragy 83.77 325⇑*i*P P 20 49 15.2 +0.5
PKSM Moragy 83.77 325 ⇑P P 20 49 15.2 +0.5
PLD Plovdiv 83.80 319 P P 20 49 16.4 +1.4
K34A Le Mars 83.80 40 P P 20 49 14.4 -0.6
baz=316
PGBU Glenifferbraes 83.82 343⇓*e*P P 20 49 15.7 +0.9
PGBU AMB AMB 20 49 17.4
comp=Z,367nm,1.5s
OXZ Oxford 83.83 160 *e*P P 20 49 14.0 -0.7
comp=Z,75nm,1.1s
121A Cookes Peak, D 83.86 54 P P 20 49 16.4 +0.7
baz=310
O31A Woolen Ranch, 83.86 43 P P 20 49 14.9 -0.5
baz=314
BALY Balya 83.88 316 *i* P P 20 49 16.3 +0.8
GEC2 GERESS Array S 83.88 330 *e*P P 20 49 15.5 +0.1
GEC2 pmax pmax
comp=Z,62nm,1.1s
GEC2 GERESS Array S 83.88 330 *e*P P 20 49 15.1 -0.3
comp=Z,62nm,1.1s
GERES GERESS Array B 83.88 330 P P 20 49 15.6 +0.1
comp=Z,20nm,0.9s,baz=36,slow=5.0,SNR=122
GERES LR LR 21 29 10.2
comp=Z,778nm,21.9s,baz=27,slow=38
GEA0 GERESS Array S 83.89 330 *e*P P 20 49 15.1 -0.3
I36A Fitzsimmons Fa 83.89 38 P P 20 49 15.2 -0.2
baz=317
WTSB Winterswijk 83.92 335 *e*P P 20 49 15.6 +0.2
comp=Z,132nm,1.5s
RPZ Rata Peaks 83.92 161 LR LR 21 19 53.5
comp=Z,442nm,21.3s,baz=354,slow=31
ALN Alexandroupoli 83.94 318 P P 20 49 15.7 0.0
ALN Alexandroupoli 83.94 318 P P 20 49 15.7 0.0
ALN Alexandroupoli 83.94 318 P P 20 49 15.7 0.0
ESK Eskdalemuir 83.95 342 *e*P P 20 49 16.2 +0.7
ESK pmax pmax
comp=Z,230nm,1.4s
ESK Eskdalemuir 83.95 342 *e*P P 20 49 16.0 +0.5
comp=Z,234nm,1.4s
HSIG 83.98 58 *e*P P 20 49 15.7 -0.5
comp=Z,73nm,1.3s
H37A Dierke Farm, C 84.01 37 P P 20 49 16.2 +0.1
baz=318,SNR=8.2
M33A Taylor Creek F 84.02 41 P P 20 49 15.5 -0.7
baz=315
ECK Cauldkaine Hil 84.06 342⇓*e*P P 20 49 16.6 +0.6
RZN Rozhen 84.09 319 P P 20 49 17.4 +0.7
KULA Kula-Manisa 84.13 314 P P 20 49 17.2 +0.3
KULA Kula-Manisa 84.13 314 P P 20 49 17.2 +0.3
BHH Howats Hill 84.16 342⇓*e*P P 20 49 17.4 +0.9
UZP Denizli 84.16 314 *i* P P 20 49 18.0 +0.9
L34A Svendsen Farm, 84.17 41 P P 20 49 16.7 -0.2
baz=316

KORT Korkueli 84.17 312 *i* P P 20 49 17.4 +0.3
GRFO Grafenberg 84.19 331 *e*P P 20 49 17.4 +0.6
GRFO pmax pmax
comp=Z,205nm,1.3s
GRFO Grafenberg 84.19 331 *e*P P 20 49 17.4 +0.6
comp=Z,205nm,1.3s
BWH Wardlaw 84.19 342⇓*e*P P 20 49 17.2 +0.5
I37A Lemond, Waseca 84.19 38 P P 20 49 17.2 +0.2
baz=317
TAOE Nuku Hiva Isla 84.20 106 *e*S S 20 59 42.6 +1.1
comp=Z,356nm,27.4s
TAOE Nuku Hiva Isla 84.20 106 *e*LR LR 21 15 18.6
comp=Z,1μm,33.9s
K35A Storm Lake 84.22 39 P P 20 49 16.6 -0.5
baz=316
VTS Vitosha 84.23 320⇑*i*P P 20 49 18.8 +1.4
VTS Vitosha 84.23 320 P P 20 49 18.0 +0.6
VTS Vitosha 84.23 320 *e*P P 20 49 18.0 +0.6
VTS pmax pmax
comp=Z,130nm,1.1s
VTS Vitosha 84.23 320 P P 20 49 17.4 0.0
VTS Vitosha 84.23 320 *e*P P 20 49 17.7 +0.4
comp=Z,127nm,1.1s
J36A Seneca 1, Swea 84.23 39 P P 20 49 16.5 -0.7
baz=317
LBZ Lake Benmore 84.32 161 *e*P P 20 49 17.2 0.0
comp=Z,136nm,1.4s
AKHS Akhisar 84.36 315 *i*P P 20 49 18.7 +0.8
ARSA Arzberg 84.36 328 *i*PcP P 20 49 18.4 +0.6
comp=Z,55nm,1.6s,SNR=26
O32A Brockman Farm, 84.36 43 P P 20 49 16.6 -1.4
baz=315
M34A Aspy Farms, Fr 84.39 41 P P 20 49 17.3 -0.7
baz=316
BEHE Becsehely 84.42 326⇓*e*S P 20 49 18.1 +0.1
MOA Molln 84.43 329 *i*PcP P 20 49 18.8 +0.6
comp=Z,65nm,1.3s,SNR=34
L35A Bielow Farm, R 84.50 40 P P 20 49 18.0 -0.6
baz=316
GMK Mull of Kintyr 84.50 343⇓*e*P P 20 49 19.0 +0.8
SMTH Samothraki Isl 84.51 318 P P 20 49 18.2 -0.5
CBKS Cedar Bluff 84.56 45 P P 20 49 18.2 -0.9
baz=314
CBKS Cedar Bluff 84.56 45 *e*P P 20 49 18.1 -0.9
CBKS pmax pmax
comp=Z,123nm,1.3s
CBKS MLR MLR
comp=Z,514nm,19.0s
CBKS Cedar Bluff 84.56 45 *e*P P 20 49 18.1 -0.9
comp=Z,123nm,1.3s
CBKS LR LR
comp=Z,514nm,19.0s
KESW Keswick, Cumbr 84.58 341⇓*e*P P 20 49 19.6 +0.8
KESW AMB AMB 20 49 21.3
comp=Z,316nm,1.6s
COWI Conover 84.63 34 *e*P P 20 49 18.4 -0.7
comp=Z,82nm,1.4s
COWI LR LR
comp=Z,501nm,20.0s
P32A Huiting Farm, 84.63 43 P P 20 49 18.3 -1.0
baz=314
J37A Redenius Farm, 84.64 38 P P 20 49 18.9 -0.4
baz=317
K36A Gilmore City 84.68 39 P P 20 49 18.7 -0.8
baz=317
MMB Musomiste 84.68 319 P P 20 49 20.3 +0.8
KAVA Kavala 84.69 319 P P 20 49 18.4 -1.1
I38A Scanlan Farm, 84.69 37 P P 20 49 18.8 -0.7
baz=318
GAL1 Galloway 84.73 342⇓*e*P P 20 49 19.7 +0.3
GAL1 AMB AMB 20 49 20.8
comp=Z,77nm,1.4s
NVR Nevrokopi 84.78 319 P P 20 49 19.9 -0.1
NVR Nevrokopi 84.78 319 P P 20 49 19.9 -0.1
KKB Krupnik 84.81 320 P P 20 49 21.0 +0.8
LMK Market Rasen 84.85 339⇓*e*P P 20 49 19.4 -0.7
LMK AMB AMB 20 49 22.4
comp=Z,240nm,1.6s
O33A Hebron 84.87 43 P P 20 49 19.4 -1.1
baz=315
M35A Neola 84.89 41 P P 20 49 20.3 -0.3
baz=316,SNR=8.1
N34A Lincoln 84.91 41 P P 20 49 19.7 -1.0
baz=316
SCHQ Schefferville 84.92 17 P P 20 49 20.2 -0.2
comp=Z,30nm,1.1s,baz=355,slow=6.3,SNR=11
SCHQ Schefferville 84.92 17 *e*P P 20 49 19.9 -0.5
comp=Z,87nm,1.5s
PRK Paraskevi 84.97 316 P P 20 49 20.7 -0.2
PRK Paraskevi 84.97 316 P P 20 49 20.7 -0.2
PRK Paraskevi 84.97 316 P P 20 49 20.7 -0.2
K37A Belmond 84.99 39 P P 20 49 20.7 -0.4
baz=317
PERS Pernice 85.02 327 *i*P P 20 49 21.0 -0.1
SOKA Soboth 85.02 327 *i*PcP P 20 49 21.5 +0.3
comp=Z,103nm,1.5s,SNR=50
SRS Serrai 85.09 319 P P 20 49 21.5 -0.1
Q32A Meitler Ranch, 85.10 44 P P 20 49 20.9 -0.7
baz=315
AKAS Kas 85.13 312 *i*P P 20 49 22.2 +0.2
J38A Wedel Dairy, R 85.16 38 P P 20 49 21.6 -0.3
baz=318
AYDN Tasoluk 85.16 314 *i*P P 20 49 23.3 +1.2
FETY Fethiye 85.17 313 P P 20 49 22.1 +0.1
FETY Fethiye 85.17 313 *e*P P 20 49 22.1 +0.1
SIGR SIGRI 85.22 317 P P 20 49 22.5 +0.3
HGN Heimansgroeve 85.22 335 *e*P P 20 49 22.1 +0.1
comp=Z,154nm,1.3s
P33A Williams Farm, 85.26 43 P P 20 49 21.7 -0.8
baz=315
O34A Beatrice 85.28 42 P P 20 49 21.2 -1.3
baz=316,SNR=7.9
BEBN Eben Emael 85.28 335 P P 20 49 22.5 +0.2
comp=Z,33nm,1.4s
TURN Turunc 85.29 313 *i*P P 20 49 24.9 +2.3
YER Yerkesik 85.29 314 P P 20 49 23.4 +0.7
MEM Membach 85.33 335 P P 20 49 22.6 +0.1
comp=Z,48nm,1.6s
N35A Tabor 85.35 41 P P 20 49 22.7 -0.2
baz=316,SNR=7.7
M36A Felix, Anita 85.36 40 P P 20 49 22.7 -0.2
baz=317,SNR=7.7
OBKA Obir 85.36 328 *e*P P 20 49 22.5 -0.4
comp=Z,29nm,1.9s
WIM Isle of Man 85.38 342 *e*P P 20 49 23.6 +0.8
L37A Phoenix Point, 85.41 39 P P 20 49 22.7 -0.4
baz=317,SNR=5.4
R32A Long Quarter, 85.41 44 P P 20 49 22.4 -0.9
baz=314
KNT Kendrikon 85.42 320 P P 20 49 23.5 +0.3
KNT Kendrikon 85.42 320 P P 20 49 23.5 +0.3
KNT Kendrikon 85.42 320 P P 20 49 23.5 +0.3
KBA Koelnbreinsper 85.42 329 *i*PcP P 20 49 23.3 0.0
comp=Z,49nm,1.4s,SNR=18
SOH Sokhos 85.42 319 P P 20 49 23.1 -0.2
SOH Sokhos 85.42 319 *e*P P 20 49 23.1 -0.2
SOH Sokhos 85.42 319 *e*P P 20 49 23.1 -0.2
OUR Ouranopolis 85.44 318 P P 20 49 23.3 0.0
VAY Valandovo 85.47 320 P P 20 49 23.5 +0.1
VAY Valandovo 85.47 320 *i*P P 20 49 24.5 +1.1
Q33A Connelly Farm, 85.50 44 P P 20 49 22.7 -0.9
baz=315,SNR=12
GCAM G?zelcaml? 85.51 315 *i*P P 20 49 24.5 +0.8
ZEY ˙zmir 85.54 315 *i*P P 20 49 24.6 +0.8
BLY Banja Luka 85.55 325⇑*i*P P 20 49 24.5 +0.7
SKO Skopje 85.58 321 *i*P P 20 49 25.1 +1.1
PLE Pljevlja 85.58 323⇓*i*P P 20 49 25.0 +0.9
GMM Mts of Mourne 85.60 343 *e*P P 20 49 22.9 -0.9
O35A Humboldt 85.64 42 P P 20 49 23.5 -0.8
baz=316
MYKA Terra Mystica 85.65 328 *i*P P 20 49 23.9 -0.4
comp=Z,44nm,1.5s,SNR=8.7
P34A Walnut Farm, R 85.66 43 P P 20 49 23.4 -1.1
baz=316,SNR=12
IVA Berane 85.68 322 *e*P P 20 49 25.1 +0.5
STNC Stoke 85.69 340⇓*e*P P 20 49 25.4 +1.1
STNC AMB AMB 20 49 26.8
comp=Z,168nm,1.8s
PLG Polygyros 85.70 319 P P 20 49 24.7 +0.1
PLG Polygyros 85.70 319 P P 20 49 24.7 +0.1
PLG Polygyros 85.70 319 P P 20 49 24.7 +0.1
STU Stuttgart 85.71 332 *e*P P 20 49 24.4 -0.1
STU pmax pmax
comp=Z,121nm,1.1s
STU Stuttgart 85.71 332 *e*P P 20 49 24.4 -0.1
comp=Z,121nm,1.1s
BCLA Clavier 85.73 335 P P 20 49 24.8 +0.2
comp=Z,53nm,1.7s
LJU Ljubljana 85.73 327 *e*P P 20 49 25.3 +0.6
N36A Muff Farm, Cla 85.74 41 P P 20 49 24.1 -0.7
baz=317,SNR=5.3
CWF Charnwood Fore 85.76 340⇓*e*P P 20 49 24.9 +0.2
CWF AMB AMB 20 49 25.9
comp=Z,135nm,1.4s
CWF Charnwood Fore 85.76 340 *e*P P 20 49 24.6 0.0
comp=Z,183nm,1.3s
THE Thessaloniki 85.77 319 P P 20 49 24.4 -0.5
M37A Trindle Farm, 85.78 40 P P 20 49 24.9 0.0
baz=317,SNR=5.7
S32A Newby Ranch, P 85.79 45 P P 20 49 24.9 -0.3
baz=314
VISS Visnje 85.79 327 *i*P P 20 49 24.1 -0.8
L38A Oak Wood Farm, 85.79 39 P P 20 49 24.3 -0.7
baz=318
GRG Griva 85.83 320 P P 20 49 25.0 -0.3
BDRM Kayabasi 85.83 314 *i*P P 20 49 25.5 +0.2
SCIA State Center 85.84 39 *e*P P 20 49 25.4 +0.2
comp=Z,262nm,1.4s
SCIA LR LR
comp=Z,553nm,21.0s
BOJS Bojanci 85.84 327 *i*P P 20 49 24.6 -0.6
PVY Plav 85.86 322⇓*i*P P 20 49 25.5 0.0
PAIG Paliouri 85.90 318 P P 20 49 25.0 -0.6
R33A Olander Ranch, 85.90 44 P P 20 49 25.0 -0.6
baz=315,SNR=6.1
BODT Bodrum 85.91 314 P P 20 49 25.4 -0.3
UPM Unac-Piva 85.91 323 *e*P P 20 49 25.5 -0.3
WATA Walderalm 85.94 330 *i*PcP P 20 49 25.6 -0.2
comp=Z,52nm,1.5s,SNR=7.1
MNTX Cornudas Mount 85.95 53 P P 20 49 26.0 0.0
baz=311
MNTX Cornudas Mount 85.95 53 *e*P P 20 49 25.6 -0.5
comp=Z,88nm,1.4s
MNTX LR LR
comp=Z,312nm,19.0s
WME Myndd Eilian 85.97 342 *e*P P 20 49 26.6 +0.9
WTTA Wattenberg 85.98 330 *i*PcP P 20 49 26.2 +0.1
comp=Z,30nm,1.6s,SNR=7.3
WPM1 Penmaenmawr 85.99 341 *e*P P 20 49 26.8 +1.0
SNF Seneffe 86.00 336 P P 20 49 26.3 +0.5
ARG Arkhangelos 86.02 313 P P 20 49 26.1 -0.1
ARG Arkhangelos 86.02 313 P P 20 49 26.1 -0.1
ARG Arkhangelos 86.02 313 P P 20 49 26.1 -0.1
ABTA Abfaltersbach 86.03 329 *i*P P 20 49 25.2 -1.0
comp=Z,32nm,1.3s,SNR=16
Q34A Chapman 86.04 43 P P 20 49 25.6 -0.7
baz=316,SNR=14
JAVS Javornik 86.05 327 *i*P P 20 49 25.3 -1.1
LANF Langenberg 86.05 333⇓*e*P P 20 49 26.4 +0.2
WLF Walferdange 86.08 334 P P 20 49 26.9 +0.6
comp=Z,90nm,1.9s
WLF Walferdange 86.08 334 *e*P P 20 49 26.5 +0.2
WLF pmax pmax
comp=Z,360nm,2.0s
WLF MLR MLR
comp=Z,1μm,19.0s
WLF Walferdange 86.08 334 *e*P P 20 49 26.5 +0.2
comp=Z,360nm,2.0s
WLF LR LR
comp=Z,1μm,19.0s
MSTX Muleshoe 86.08 50 P P 20 49 26.4 -0.4
baz=313
MSTX Muleshoe 86.08 50 *e*P P 20 49 26.2 -0.5
comp=Z,64nm,1.4s
KSU1 Kansas State U 86.09 43 P P 20 49 25.8 -0.8
baz=316,SNR=9.9
KSU1 Kansas State U 86.09 43 *e*P P 20 49 25.3 -1.2
comp=Z,101nm,1.3s
KSU1 LR LR
comp=Z,288nm,20.0s
P35A Duane Minner, 86.11 42 P P 20 49 25.8 -0.8
baz=316,SNR=8.1
AMTX Amarillo 86.12 49 P P 20 49 27.5 +0.5
baz=313
AMTX Amarillo 86.12 49 *e*P P 20 49 26.8 -0.1
comp=Z,204nm,1.4s
MOTA Moosalm 86.13 330 *i*PcP P 20 49 27.6 +0.8
comp=Z,62nm,1.4s,SNR=25
FOEL Foel Wylfa 86.14 341⇓*e*P P 20 49 27.2 +0.6
FOEL AMB AMB 20 49 28.9
comp=Z,191nm,1.5s
RETA Reutte 86.15 330 *i*PcP P 20 49 27.1 +0.3
comp=Z,85nm,1.3s,SNR=31
T32A Huddler Ranch, 86.16 45 P P 20 49 26.8 -0.2
baz=314
NKY Niksic 86.16 323⇓*i*P P 20 49 27.0 0.0
YLL Lianberis 86.17 341 *e*P P 20 49 27.3 +0.7
N37A Lee Faris, Mou 86.17 40 P P 20 49 27.0 0.0
baz=317,SNR=14
M38A Pleasantville 86.21 39 P P 20 49 27.0 -0.1
baz=318,SNR=14
NKME Niksic 86.22 323⇓*i*P P 20 49 26.7 -0.5
O36A Bolckow 86.23 41 P P 20 49 26.9 -0.4
baz=317,SNR=6.6
DOU Dourbes 86.25 335 P P 20 49 27.2 +0.1
comp=Z,33nm,1.9s
NIS1 Nisyros Isl. 86.30 314 P P 20 49 28.0 +0.3
R34A Isabella, Hill 86.31 44 P P 20 49 27.1 -0.6
baz=315
BRY Bratogost 86.32 323⇓*i*P P 20 49 27.2 -0.6
NISR Nisiros 86.32 314 P P 20 49 28.1 +0.4
NISR Nisiros 86.32 314 *e*P P 20 49 28.1 +0.4
PDG Podgorica 86.32 322⇑*i*P P 20 49 28.4 +0.8
PDG Podgorica 86.32 322 P P 20 49 27.3 -0.3
TTG Podgorica 86.32 322⇓*i*P P 20 49 27.7 +0.1
TTG Podgorica 86.32 322 P P 20 49 27.3 -0.3
TTG Podgorica 86.32 322 P P 20 49 27.3 -0.3
TRI Trieste 86.33 328 *e*P P 20 49 25.8 -1.8
TRI pmax pmax
comp=Z,72nm,1.4s
TRI Trieste 86.33 328 *e*P P 20 49 25.8 -1.8
comp=Z,72nm,1.4s
BIA Bitola 86.33 320 *i*P P 20 49 27.3 -0.5
UDBI Udbina 86.37 326 P P 20 49 26.6 -1.3
S33A Kaszmaul Farm, 86.39 45 P P 20 49 27.9 -0.2
baz=315,SNR=6.5
STR Strasbourg 86.40 333⇓*e*P P 20 49 28.8 +0.9
BFO Black Forest 86.40 332 *e*P P 20 49 27.4 -0.5
BFO pmax pmax
comp=Z,108nm,1.2s
BFO MLR MLR
comp=Z,842nm,20.0s
BFO Black Forest 86.40 332 *e*P P 20 49 27.4 -0.5
comp=Z,108nm,1.2s
BFO LR LR
comp=Z,842nm,20.0s
CEME Cevo 86.40 323⇓*i*P P 20 49 27.7 -0.4
LIT Litokhoron 86.40 319 *i*P P 20 49 27.6 -0.5
LIT Litokhoron 86.40 319 *e*P P 20 49 27.6 -0.5
LIT Litokhoron 86.40 319 *e*P P 20 49 27.6 -0.5
ELSH Elham, Standar 86.45 338⇓*e*P P 20 49 28.4 +0.4
ELSH AMB AMB 20 49 29.9
comp=Z,177nm,1.8s
P36A Good Intent, A 86.47 42 P P 20 49 27.9 -0.6
baz=316,SNR=18
FNA Florina 86.48 320 P P 20 49 27.8 -0.7
FNA Florina 86.48 320 P P 20 49 27.8 -0.7
FNA Florina 86.48 320 P P 20 49 27.8 -0.7
SKP1 Kophill 86.52 339⇓*e*P P 20 49 27.9 -0.5
OHR Ohrid 86.53 321 *i*P P 20 49 28.7 -0.1
FETA Feichten 86.54 330 *i*PcP P 20 49 29.0 +0.2
comp=Z,24nm,1.1s,SNR=12
DRME Dracevica, Mon 86.54 322⇓*i*P P 20 49 29.2 +0.5
JFWS Jewell Farm 86.54 37 PFAKE 20 49 40.0 +11
JFWS LR LR
comp=Z,400nm,20.0s
XOR Xorichti 86.56 318 P P 20 49 27.1 -1.8
XOR Xorichti 86.56 318 P P 20 49 27.1 -1.8
Q35A Mercer Eighty, 86.58 43 P P 20 49 28.5 -0.5
baz=316
BUM Brajici-Budva 86.60 323⇓*i*P P 20 49 28.6 -0.5
SSW Stow on the Wo 86.60 340⇓*e*P P 20 49 29.2 +0.4
T33A Patterson Ranc 86.61 45 P P 20 49 29.1 -0.1
baz=315
DSB Dublin 86.62 343 *e*P P 20 49 28.6 -0.2
comp=Z,100nm,1.9s
KZN Kozani 86.63 320 P P 20 49 28.6 -0.7
KZN Kozani 86.63 320 P P 20 49 28.6 -0.7
KZN Kozani 86.63 320 P P 20 49 28.6 -0.7
O37A Wolven Farm, M 86.64 41 P P 20 49 29.1 -0.2
baz=317,SNR=7.9
MENF Mencas 86.65 337 *e*P P 20 49 28.9 -0.1
N38A Joes South For 86.65 40 P P 20 49 28.9 -0.4
baz=318,SNR=6.8
DAVA Damuels 86.66 331 *i*PcP P 20 49 29.6 +0.1
comp=Z,64nm,1.2s,SNR=21
U32A Winter Ranch, 86.67 46 P P 20 49 29.3 -0.2
baz=314
ULC Ulcinj 86.68 322⇓*i*P P 20 49 29.0 -0.4
HCY Herceg Novi 86.68 323⇓*i*P P 20 49 29.1 -0.3
WLS Welschbruch 86.69 333 *e*P P 20 49 29.4 0.0
CDF Champ du Feu 86.72 333 *e*P P 20 49 29.1 -0.5
CDF pmax pmax
comp=Z,90nm,1.3s
NVLJ Novalja 86.74 326 P P 20 49 29.0 -0.6
STON Ston 86.74 324 P P 20 49 24.0 -5.6
TBI Tubuai 86.74 122 *e*S S 21 00 06.6 +0.7
comp=Z,823nm,36.2s
TBI Tubuai 86.74 122 *e*LR LR 21 16 11.9
comp=Z,1μm,35.8s
TBI Tubuai 86.74 122 *e*T T 22 24 35.6
comp=Z,14nm,0.3s
S34A Willow Spring 86.81 44 P P 20 49 30.0 -0.2
baz=316,SNR=9.7
Q36A Arnold C. Orve 86.81 42 P P 20 49 29.4 -0.7
baz=316,SNR=6.6
TIR Tirane 86.83 321⇑*i*P P 20 49 30.6 +0.5
TIR Tirane 86.83 321 *e*P P 20 49 29.7 -0.5
TIR pmax pmax
comp=Z,57nm,1.0s
TIR MLR MLR
comp=Z,1μm,21.0s
TIR Tirane 86.83 321 *e*P P 20 49 29.7 -0.5
comp=Z,57nm,1.0s
TIR LR LR
comp=Z,1μm,21.0s
STRD Stroud 86.86 340⇓*e*P P 20 49 30.5 +0.4
STRD AMB AMB 20 49 32.1
comp=Z,248nm,1.8s
R35A Emporia Munici 86.87 43 P P 20 49 30.5 0.0
baz=316,SNR=8.4
MCH1 Michaelchurch 86.89 340⇓*e*P P 20 49 29.7 -0.5
MCH1 AMB AMB 20 49 31.3
comp=Z,94nm,1.9s
NEST Nestorio 86.92 320 P P 20 49 30.1 -0.6
ECH Echery 86.93 333⇓*e*P P 20 49 30.5 0.0
HMNX Herstmonceux 86.94 338⇓*e*P P 20 49 31.4 +1.0
HMNX AMB AMB 20 49 32.9
comp=Z,230nm,1.8s
P37A Lathrop 86.95 41 P P 20 49 30.3 -0.5
baz=317,SNR=14
N39A Derby Farms, D 86.96 39 P P 20 49 30.6 -0.1
baz=318,SNR=14
WOL Wolverton 87.00 339⇓*e*P P 20 49 30.7 -0.1
WOL AMB AMB 20 49 31.7
comp=Z,153nm,1.5s
THL Klokotos Trika 87.04 319 P P 20 49 30.7 -0.5
KARP Karpathos 87.04 313 *e*P P 20 49 31.6 +0.3
comp=Z,19nm,0.9s
FUORN Ofenpass-Fuorn 87.05 330 *e*P P 20 49 31.0 -0.5
comp=Z,94nm,1.4s
LPW Lampeter 87.07 341 *e*P P 20 49 31.0 -0.1
V32A Arapaho 87.11 47 P P 20 49 32.1 +0.4
baz=314
U33A Lingo Farm, Me 87.14 45 P P 20 49 31.6 -0.2
baz=315
LKR Lokris 87.18 318 P P 20 49 30.4 -1.5
LKR Lokris 87.18 318 P P 20 49 30.4 -1.5
MOF Molkenrain 87.24 332⇓*e*P P 20 49 32.0 -0.1
R36A Gordon, Harris 87.25 43 P P 20 49 32.0 -0.3
baz=316,SNR=26
T34A McClaskey Farm 87.25 45 P P 20 49 32.3 0.0
baz=316
S35A Otter Creek Ra 87.27 44 P P 20 49 32.4 0.0
baz=316,SNR=29
THEF They Montfort 87.35 333⇓*e*P P 20 49 32.7 +0.2
P38A Dawn 87.36 41 P P 20 49 32.5 -0.2
baz=318,SNR=14
O39A Kirksville 87.40 40 P P 20 49 32.8 -0.1
baz=318,SNR=6.4
W32A Sentinel 87.40 47 P P 20 49 33.4 +0.3
baz=314
Q37A Longview Farm, 87.42 42 P P 20 49 32.7 -0.3
baz=317
SANT Santorini 87.45 315 PFAKE 20 49 40.0 +6.7
SANT LR LR
comp=Z,514nm,21.0s
U34A Anderson Ranch 87.47 45 P P 20 49 33.4 +0.1
baz=315
U34A Anderson Ranch 87.47 45 *e*P P 20 49 33.4 +0.1
comp=Z,240nm,1.3s
V33A Lossen Ranch, 87.47 46 P P 20 49 33.2 -0.2
baz=315,SNR=5.6
TUE Stuetta 87.54 330 *e*P P 20 49 33.9 +0.1
comp=Z,112nm,1.8s
TUE LR LR
comp=Z,1μm,19.0s
JAN Janina 87.58 320 P P 20 49 33.7 -0.2
JAN Janina 87.58 320 P P 20 49 33.7 -0.2
JAN Janina 87.58 320 P P 20 49 33.7 -0.2
R37A Teagarden Farm 87.62 42 P P 20 49 33.2 -0.9
baz=317,SNR=11
S36A Lake Cedric, C 87.64 43 P P 20 49 33.3 -0.8
baz=316,SNR=9.1
VLDQ Val d'Or 87.70 26 *e*P P 20 49 32.9 -1.3
comp=Z,122nm,1.4s
T35A Sooner Cattle 87.71 44 P P 20 49 33.9 -0.6
baz=316
LOMF Lomont 87.78 332⇓*e*P P 20 49 34.6 -0.1
Q38A Cooks Store, C 87.80 41 P P 20 49 34.1 -0.7
baz=318,SNR=9.7
W33A Caddo, Fort Co 87.84 47 P P 20 49 35.5 +0.3
baz=315,SNR=11
O40A La Belle 87.84 39 P P 20 49 34.8 -0.3
baz=318,SNR=17
X32A Elmer 87.87 48 P P 20 49 35.0 -0.3
baz=314,SNR=9.0
V34A Guthrie 87.91 46 P P 20 49 35.3 -0.1
baz=315,SNR=18
V34A Guthrie 87.91 46 *e*P P 20 49 35.0 -0.5
comp=Z,177nm,1.3s
WMOK Wichita Mounta 87.95 47 *e*P P 20 49 35.0 -0.7
WMOK pmax pmax
comp=Z,82nm,1.4s
WMOK MLR MLR
comp=Z,509nm,19.0s
WMOK Wichita Mounta 87.95 47 *e*P P 20 49 35.0 -0.7
comp=Z,82nm,1.4s
WMOK LR LR
comp=Z,509nm,19.0s
T36A Boggs Farm, Ca 87.96 44 P P 20 49 35.5 -0.2
baz=316
U35A Pawnee 87.97 45 P P 20 49 35.6 -0.2
baz=316
S37A Fort Scott 88.03 43 P P 20 49 35.4 -0.5
baz=317,SNR=14
SLBS Sierra La Lagu 88.04 62 *e*P P 20 49 36.6 +0.2
comp=Z,144nm,1.8s
Q39A Willow Grove F 88.07 41 P P 20 49 35.9 -0.3
baz=318,SNR=30
KEK Kerkira 88.08 320 P P 20 49 34.7 -1.5
KEK Kerkira 88.08 320 P P 20 49 34.7 -1.5
W34A Bridge Creek, 88.18 46 P P 20 49 37.0 +0.2
baz=315,SNR=9.2
W34A Bridge Creek, 88.18 46 *e*P P 20 49 37.1 +0.3
comp=Z,115nm,1.2s
P40A Paris 88.19 40 P P 20 49 36.4 -0.3
baz=318,SNR=19
R38A Fenwick Farm, 88.21 42 P P 20 49 35.7 -1.2
baz=317,SNR=8.1
X33A Lawton 88.25 47 P P 20 49 36.5 -0.6
baz=315
LAST Lasithi 88.29 314⇑*i*P P 20 49 38.0 +0.6
LAST Lasithi 88.29 314 P P 20 49 34.0 -3.4
LAST Lasithi 88.29 314 *e*P P 20 49 37.6 +0.2
comp=Z,79nm,1.1s
V35A Meyer Ranch, C 88.35 45 P P 20 49 36.7 -0.8
baz=316,SNR=6.9
SENIN Lac Senin/Sane 88.42 332 *e*P P 20 49 38.0 0.0
comp=Z,42nm,1.4s
T37A Cheneyville 18 88.44 43 P P 20 49 37.6 -0.4
baz=317
U36A Oologah 88.52 44 P P 20 49 38.1 -0.2
baz=316
IDI Anoyia 88.54 314⇓*i*P P 20 49 35.5 -3.1
IDI Anoyia 88.54 314 P P 20 49 36.6 -2.0
IDI Anoyia 88.54 314 *e*P P 20 49 36.5 -2.0

	comp=Z,59nm,1.1s									
Y33A	**Hilltop Ranch,** baz=315,SNR=11	**88.55**	**47**	P		**P**	**20 49 38.2**	**-0.4**
DYA	**Yadsworthy** comp=Z,62nm,1.4s	**88.55**	**340**	*e*P		**P**	**20 49 38.0**	**-0.2**
Q40A	**Laux Farm, Aux** baz=318,SNR=13	**88.58**	**40**	P		**P**	**20 49 38.4**	**-0.2**
R39A	**Chumby, Stover** baz=318,SNR=10	**88.58**	**41**	P		**P**	**20 49 37.8**	**-0.8**
X34A	**Smith Ranch, M** baz=315,SNR=8.7	**88.60**	**47**	P		**P**	**20 49 38.8**	**0.0**
S38A	**Stockton** baz=317,SNR=9.5	**88.62**	**42**	P		**P**	**20 49 37.8**	**-1.0**
LTX	**Lajitas**	**88.62**	**54**	*e*P		**P**	**20 49 39.0**	**-0.1**
LTX	**Lajitas**	**88.62**	**54**	*e*P		**P**	**20 49 39.0**	**-0.1**
TX31	**Lajitas Ar. Si**	**88.62**	**54**	*e*P		**P**	**20 49 38.5**	**-0.5**
TXAR	**Lajitas Array** comp=Z,11nn1,0.7s,baz=304,slow=3.3,SNR=128	**88.62**	**54**	P		**P**	**20 49 39.0**	**-0.1**
TXAR				LR		LR	21 27 54.7	
	comp=Z,433nm,18.3s,baz=0.0,slow=35							
W35A	**Tecumseh** baz=316,SNR=13	**88.76**	**46**	P		**P**	**20 49 39.3**	**-0.2**
SIVA	**Sivas**	**88.78**	**314**	P		**P**	**20 49 39.1**	**-0.5**
SIVA	**Sivas**	**88.78**	**314**	P		**P**	**20 49 39.1**	**-0.5**
DAMY	**Dhamar** comp=Z,36nm,1.1s	**88.79**	**287**	*e*P		**P**	**20 49 40.5**	**+0.2**
HDIL	**Hopedale** baz=320	**88.80**	**38**	P		**P**	**20 49 39.5**	**-0.1**
HDIL	**Hopedale** comp=Z,229nm,1.2s	**88.80**	**38**	*e*P		**P**	**20 49 39.2**	**-0.4**
HDIL				LR		LR		
	comp=Z,663nm,20.0s							
TUL1	**Leonard** baz=316	**88.83**	**45**	P		**P**	**20 49 39.7**	**-0.2**
TUL1	**Leonard** comp=Z,147nm,1.5s	**88.83**	**45**	*e*P		**P**	**20 49 39.6**	**-0.2**
V36A	**Jenks** baz=316,SNR=8.5	**88.84**	**45**	P		**P**	**20 49 39.7**	**-0.2**
T38A	**Diamond** baz=317	**88.85**	**43**	P		**P**	**20 49 39.2**	**-0.6**
U37A	**Salina** baz=317	**88.85**	**44**	P		**P**	**20 49 39.6**	**-0.3**
S39A	**Bolivar** baz=318,SNR=15	**88.89**	**42**	P		**P**	**20 49 39.1**	**-0.9**
HPIG	comp=Z,51nm,1.3s	**88.90**	**57**	*e*P		**P**	**20 49 40.3**	**-0.2**
ABTX	**Abilene, Hawle** baz=314,SNR=9.0	**88.91**	**49**	P		**P**	**20 49 40.1**	**-0.2**
ABTX	**Abilene, Hawle** comp=Z,105nm,1.4s	**88.91**	**49**	*e*P		**P**	**20 49 40.2**	**-0.1**
LOR	**Lormes**	**88.92**	**334**	*e*P		**P**	**20 49 39.4**	**-0.6**
LOR	comp=Z,96nm,1.5s			pmax		pmax		
MATE	**Matera**	**88.92**	**323**	⇑*i*P		**P**	**20 49 40.3**	**+0.2**
IMMV	**Iera Moni Meta**	**88.94**	**315**	P		**P**	**20 49 39.9**	**-0.4**
Z33A	**Whitaker Ranch** baz=315,SNR=10	**88.97**	**48**	P		**P**	**20 49 40.3**	**-0.2**
VLC	**Villacollemand**	**89.00**	**329**	PFAKE			20 49 50.0	+9.5
VLC	comp=Z,990nm,19.0s			LR		LR		
R40A	**Maddies Statio** baz=318,SNR=18	**89.00**	**41**	P		**P**	**20 49 40.0**	**-0.6**
LDF	**La Druitiere**	**89.08**	**337**	*e*P		**P**	**20 49 40.1**	**-0.7**
LDF	comp=Z,90nm,1.6s			pmax		pmax		
Y34A	**Reagan Ranch,** baz=315,SNR=7.9	**89.10**	**47**	P		**P**	**20 49 40.5**	**-0.6**
AQU	**L'Aquila**	**89.14**	**326**	*e*P		**P**	**20 49 42.0**	**+0.8**
AQU	comp=Z,67nm,1.0s			pmax		pmax		
AQU	**L'Aquila** comp=Z,68nm,1.0s	**89.14**	**326**	*e*P		**P**	**20 49 42.0**	**+0.8**
AQU	comp=Z,2µm,19.0s			LR		LR		
W36A	**Wetumka** baz=316,SNR=13	**89.14**	**45**	P		**P**	**20 49 40.9**	**-0.3**
PYL	**PYLOS**	**89.14**	**317**	P		**P**	**20 49 39.9**	**-1.4**
V37A	**Hulbert** baz=317,SNR=22	**89.22**	**44**	P		**P**	**20 49 41.3**	**-0.3**
X35A	**Drake** baz=316,SNR=7.9	**89.24**	**46**	P		**P**	**20 49 41.3**	**-0.4**
LPL	**La Plagne**	**89.35**	**331**	*e*P		**P**	**20 49 42.9**	**+0.6**
LPL	comp=Z,52nm,1.4s			pmax		pmax		
T39A	**Clever** baz=318	**89.35**	**42**	P		**P**	**20 49 41.7**	**-0.6**
133A	**Hamilton Ranch** baz=315,SNR=5.9	**89.36**	**49**	P		**P**	**20 49 42.1**	**-0.2**
LPG	**La Plagne** comp=Z,47nm,1.2s	**89.36**	**331**	*e*P		**P**	**20 49 43.1**	**+0.6**
LPG				pmax		pmax		
S40A	**Lebanon** baz=318,SNR=15	**89.40**	**41**	P		**P**	**20 49 41.7**	**-0.8**
Z34A	**Collier Ranch,** baz=315,SNR=8.9	**89.42**	**48**	P		**P**	**20 49 42.0**	**-0.6**
SMF	**Signal de Mont**	**89.46**	**334**	*e*P		**P**	**20 49 42.0**	**-0.6**
SMF	comp=Z,58nm,1.4s			pmax		pmax		
X36A	**Centrahoma** baz=316,SNR=18	**89.48**	**46**	P		**P**	**20 49 42.7**	**-0.2**
Y35A	**Marietta** baz=316	**89.55**	**47**	P		**P**	**20 49 42.6**	**-0.6**
HHAR	**Hobbs** comp=Z,84nm,1.5s	**89.59**	**43**	*e*P		**P**	**20 49 42.4**	**-1.0**
W37B	**Quinton** baz=316,SNR=12	**89.59**	**45**	P		**P**	**20 49 43.2**	**-0.2**
V38A	**Canehill** baz=317,SNR=22	**89.64**	**44**	P		**P**	**20 49 43.2**	**-0.5**
T40A	**Mansfield** baz=318	**89.72**	**42**	P		**P**	**20 49 43.3**	**-0.7**
BNI	**Bardonecchia**	**89.76**	**331**	PFAKE			20 50 00.0	+16
BNI	comp=Z,1µm,19.0s			LR		LR		
U39A	**Green Forest** baz=318	**89.77**	**43**	P		**P**	**20 49 43.6**	**-0.6**
233A	**Rising Star** baz=315,SNR=16	**89.78**	**49**	P		**P**	**20 49 44.3**	**-0.1**
SLM	**Saint Louis**	**89.79**	**39**	*e*P		**P**	**20 49 43.5**	**-0.8**
SLM	comp=Z,172nm,1.2s			pmax		pmax		
SLM	**Saint Louis** comp=Z,172nm,1.2s	**89.79**	**39**	*e*P		**P**	**20 49 43.5**	**-0.8**
Z35A	**Perchaven, San** baz=316,SNR=12	**89.84**	**47**	P		**P**	**20 49 44.2**	**-0.4**
CUC	**Castrocucco** comp=Z,34nm,1.3s	**89.86**	**323**	*e*P		**P**	**20 49 43.8**	**-0.9**
CUC				LR		LR		
	comp=Z,539nm,21.0s							
134A	**White-Moore Ra** baz=315,SNR=9.4	**89.88**	**48**	P		**P**	**20 49 44.8**	**0.0**
Y36A	**Durant** baz=316	**90.00**	**46**	P		**P**	**20 49 45.2**	**-0.1**
SFIN	**Lafayette** baz=322	**90.00**	**36**	P		**P**	**20 49 44.9**	**-0.3**
SFIN	**Lafayette** comp=Z,163nm,1.4s	**90.00**	**36**	*e*P		**P**	**20 49 45.3**	**+0.2**
X37A	**Clayton** baz=316,SNR=7.9	**90.02**	**45**	P		**P**	**20 49 45.2**	**-0.3**
TIP	**Timpagrande**	**90.02**	**322**	⇑*i*P		**P**	**20 49 46.1**	**+0.7**
TIP	**Timpagrande** comp=Z,94nm,1.5s	**90.02**	**322**	*e*P		**P**	**20 49 45.2**	**-0.2**
TIP	comp=Z,1µm,20.0s			LR		LR		
AAM	**Ann Arbor**	**90.05**	**33**	PFAKE			20 50 00.0	+15
AAM	comp=Z,336nm,19.0s			LR		LR		
V39A	**Pettigrew** baz=318,SNR=11	**90.08**	**43**	P		**P**	**20 49 44.9**	**-0.8**
PLDF	**La Plantade**	**90.12**	**334**	*e*P		**P**	**20 49 46.2**	**+0.5**
U40A	**Yellville** baz=318	**90.13**	**42**	P		**P**	**20 49 45.4**	**-0.5**
W38A	**Poteau** baz=317,SNR=11	**90.16**	**44**	P		**P**	**20 49 45.8**	**-0.2**
333A	**Richland Sprin** baz=315,SNR=20	**90.21**	**50**	P		**P**	**20 49 46.1**	**-0.3**
AGO	**Saint Agoulin**	**90.22**	**334**	*e*P		**P**	**20 49 46.7**	**+0.6**
234A	**Clairette** baz=315,SNR=18	**90.25**	**49**	P		**P**	**20 49 46.4**	**-0.1**
X38A	**Whitesboro** baz=317,SNR=18	**90.27**	**45**	P		**P**	**20 49 46.5**	**0.0**
135A	**Vickery Place,** baz=315,SNR=7.8	**90.29**	**48**	P		**P**	**20 49 46.7**	**0.0**
JCT	**Junction City** baz=314,SNR=6.2	**90.30**	**51**	P		**P**	**20 49 46.4**	**-0.5**
JCT	**Junction City**	**90.30**	**51**	*e*P		**P**	**20 49 46.2**	**-0.6**
JCT	comp=Z,25nm,0.9s			pmax		pmax		
JCT	comp=Z,298nm,21.0s			MLR		MLR		
JCT	**Junction City** comp=Z,25nm,0.9s	**90.30**	**51**	*e*P		**P**	**20 49 46.2**	**-0.6**
JCT				LR		LR		
	comp=Z,298nm,21.0s							
Y37A	**Hugo** baz=316	**90.32**	**46**	P		**P**	**20 49 46.6**	**-0.2**
Z36A	**Blue Ridge** baz=316,SNR=10	**90.36**	**47**	P		**P**	**20 49 46.6**	**-0.4**
SSB	**Saint Sauveur**	**90.37**	**333**	‖*e*P		**P**	**20 49 47.0**	**+0.2**
SSB	**Saint Sauveur**	**90.37**	**333**	*e*P		**P**	**20 49 47.1**	**+0.2**
SSB	comp=Z,15nm,1.1s			pmax		pmax		
SSB	**Saint Sauveur** comp=Z,15nm,1.1s	**90.37**	**333**	*e*P		**P**	**20 49 47.1**	**+0.2**
SSB	comp=Z,829nm,19.0s			LR		LR		
LUCF	**Luceram**	**90.47**	**330**	*e*P		**P**	**20 49 46.9**	**-0.5**
W39A	**Magazine** baz=317,SNR=8.2	**90.47**	**44**	P		**P**	**20 49 47.1**	**-0.4**
PYM	**Petit Puy Mans**	**90.52**	**334**	‖*e*P		**P**	**20 49 48.2**	**+0.6**
MVIF	**Mont Vial**	**90.54**	**330**	*e*P		**P**	**20 49 46.7**	**-1.2**
433A	**Art** baz=314,SNR=8.2	**90.54**	**50**	P		**P**	**20 49 47.3**	**-0.7**
LMQ	**La Malbaie** comp=Z,142nm,1.4s	**90.55**	**22**	*e*P		**P**	**20 49 47.0**	**-0.7**
V40A	**Witts Springs** baz=318	**90.55**	**43**	P		**P**	**20 49 47.0**	**-0.9**
REVF	**Revere**	**90.58**	**330**	*e*P		**P**	**20 49 47.1**	**-0.8**
334A	**Lometa** baz=315,SNR=23	**90.66**	**49**	P		**P**	**20 49 48.2**	**-0.2**
WHTX	**Lake Whitney,** baz=315,SNR=32	**90.67**	**48**	P		**P**	**20 49 48.5**	**0.0**
WHTX	**Lake Whitney,** comp=Z,145nm,1.3s	**90.67**	**48**	*e*P		**P**	**20 49 48.2**	**-0.3**
CALN	**Calern**	**90.77**	**330**	*e*P		**P**	**20 49 48.2**	**-0.7**
OLIL	**Olney** comp=Z,202nm,1.3s	**90.79**	**38**	*e*P		**P**	**20 49 48.6**	**-0.3**
X39A	**Fountain Ranch** baz=317,SNR=29	**90.79**	**44**	P		**P**	**20 49 49.1**	**+0.1**
Y38A	**Idabel** baz=317	**90.87**	**45**	P		**P**	**20 49 48.9**	**-0.5**
W40A	**Ferguson Farm,** baz=318,SNR=7.3	**90.87**	**43**	P		**P**	**20 49 49.2**	**-0.1**
136A	**Ennis** baz=316	**90.87**	**47**	P		**P**	**20 49 49.3**	**-0.1**
Z37A	**Pogue Cattle C** baz=316,SNR=12	**90.88**	**46**	P		**P**	**20 49 49.2**	**-0.3**
LBL	**Lubilhac**	**90.88**	**333**	*e*P		**P**	**20 49 50.2**	**+0.9**
434A	**Burnet** baz=315,SNR=10	**91.00**	**50**	P		**P**	**20 49 49.4**	**-0.7**
SIUC	**Southern Illin** comp=Z,128nm,1.3s	**91.02**	**39**	*e*P		**P**	**20 49 49.4**	**-0.6**
533A	**Kerrville** baz=315	**91.05**	**51**	P		**P**	**20 49 50.1**	**-0.2**
MIAR	**Mount Ida** baz=318,SNR=34	**91.07**	**44**	P		**P**	**20 49 50.3**	**0.0**
MIAR	**Mount Ida**	**91.07**	**44**	*e*P		**P**	**20 49 50.3**	**0.0**
MIAR	comp=Z,170nm,1.2s			pmax		pmax		
MIAR	**Mount Ida** comp=Z,168nm,1.3s	**91.07**	**44**	*e*P		**P**	**20 49 50.3**	**0.0**
MIAR	comp=Z,336nm,19.0s			LR		LR		
CEL	**Celeste** comp=Z,41nm,1.0s	**91.16**	**322**	*e*P		**P**	**20 49 50.8**	**0.0**
CEL	comp=Z,978nm,19.0s			LR		LR		
X201	**Greenbrier Sit** comp=Z,138nm,1.3s	**91.18**	**43**	*e*P		**P**	**20 49 50.3**	**-0.5**
335A	**Moody** baz=315	**91.19**	**49**	P		**P**	**20 49 50.5**	**-0.4**
X301	**Greenbrier Sit** comp=Z,100nm,1.3s	**91.20**	**43**	*e*P		**P**	**20 49 49.9**	**-1.0**
236A	**Katherine and** baz=316	**91.21**	**48**	P		**P**	**20 49 50.7**	**-0.3**
Z38A	**Mt. Pleasant** baz=317,SNR=5.5	**91.21**	**46**	P		**P**	**20 49 50.9**	**0.0**
BLO	**Bloomington**	**91.22**	**37**	*e*P		**P**	**20 49 50.4**	**-0.5**
BLO	comp=Z,113nm,1.4s			pmax		pmax		
BLO	**Bloomington** comp=Z,113nm,1.4s	**91.22**	**37**	*e*P		**P**	**20 49 50.4**	**-0.5**
Y39A	**Lockesburg** baz=317,SNR=9.5	**91.22**	**45**	P		**P**	**20 49 50.8**	**-0.2**
WHAR	**Wooly Hollow** comp=Z,180nm,1.3s	**91.23**	**43**	*e*P		**P**	**20 49 50.5**	**-0.5**
W41A	**Tony Mavity, V** baz=318	**91.33**	**43**	P		**P**	**20 49 50.9**	**-0.6**
W41B	**Gary Mavity, V** baz=318	**91.33**	**43**	P		**P**	**20 49 50.9**	**-0.6**
633A	**Saathoff Ranch** baz=314,SNR=6.4	**91.39**	**51**	P		**P**	**20 49 51.9**	**0.0**
LEPF	**PULOUBIER**	**91.42**	**331**	*e*P		**P**	**20 49 51.4**	**-0.4**
534A	**Blanco** baz=315,SNR=14	**91.43**	**50**	P		**P**	**20 49 51.6**	**-0.5**
435B	**Jarrell** baz=315	**91.44**	**49**	P		**P**	**20 49 51.7**	**-0.4**
336A	**Riesel** baz=316,SNR=5.7	**91.46**	**48**	P		**P**	**20 49 52.0**	**-0.2**
X40A	**Basin Creek Fa** baz=318,SNR=12	**91.52**	**44**	P		**P**	**20 49 52.0**	**-0.4**
PARMO	**Parma**	**91.54**	**40**	*e*P		**P**	**20 49 52.0**	**-0.4**
CAF	**Calviac**	**91.57**	**334**	*e*P		**P**	**20 49 52.6**	**+0.1**
CAF	comp=Z,57nm,1.2s			pmax		pmax		
UALR	**University of** comp=Z,72nm,1.3s	**91.58**	**43**	*e*P		**P**	**20 49 52.3**	**-0.3**
138A	**Matatall Enter** baz=317	**91.58**	**46**	P		**P**	**20 49 52.6**	**-0.1**
Y40A	**Okolona** baz=318,SNR=6.2	**91.62**	**44**	P		**P**	**20 49 52.6**	**-0.3**
237A	**Washetta, Mont** baz=316	**91.64**	**47**	P		**P**	**20 49 53.3**	**+0.3**
Z39A	**Irene McRaven,** baz=317	**91.68**	**45**	P		**P**	**20 49 53.4**	**+0.3**
832A	**Faith Ranch, C** baz=314,SNR=5.9	**91.71**	**52**	P		**P**	**20 49 53.5**	**+0.1**
LONY	**Lake Ozonia** comp=Z,45nm,1.4s	**91.72**	**26**	*e*P		**P**	**20 49 52.4**	**-0.7**
LONY	comp=Z,601nm,19.0s			LR		LR		
733A	**Divot King Ran** baz=314	**91.83**	**52**	P		**P**	**20 49 53.9**	**0.0**
FRNY	**Flat Rock** comp=Z,25nm,1.3s	**91.88**	**26**	*e*P		**P**	**20 49 53.0**	**-0.8**
436A	**Wall Ranch, Ga** baz=316,SNR=6.4	**91.93**	**49**	P		**P**	**20 49 54.7**	**+0.4**
WLAR	**White Oak Lake** comp=Z,179nm,1.2s	**91.96**	**44**	*e*P		**P**	**20 49 54.5**	**0.0**
535A	**Dale** baz=315	**91.98**	**50**	P		**P**	**20 49 54.7**	**+0.1**
ACSO	**Alum Creek Sta**	**92.02**	**34**	PFAKE			20 50 10.0	+15
ACSO	comp=Z,531nm,21.0s			LR		LR		
238A	**Jacksonville** baz=317	**92.04**	**47**	P		**P**	**20 49 55.1**	**+0.3**
833A	**Chaparral WMA,** baz=314	**92.05**	**52**	P		**P**	**20 49 55.2**	**+0.3**
WCI	**Wyandotte Cave** comp=Z,110nm,1.3s	**92.07**	**37**	*e*P		**P**	**20 49 55.1**	**+0.2**
WCI				pmax		pmax		
WCI	**Wyandotte Cave** comp=Z,109nm,1.4s	**92.07**	**37**	*e*P		**P**	**20 49 54.7**	**-0.2**
337A	**Centerville** baz=316	**92.08**	**48**	P		**P**	**20 49 55.4**	**+0.3**
MMNY	**Mt. Morris Dam** comp=Z,144nm,1.2s	**92.09**	**29**	*e*P		**P**	**20 49 54.2**	**-0.6**
Z40A	**Long Farm, Mag** baz=318	**92.11**	**45**	P		**P**	**20 49 55.6**	**+0.4**
734A	**La Parita Cree** baz=315	**92.21**	**51**	P		**P**	**20 49 55.8**	**+0.1**
UTMT	**University of** comp=Z,220nm,1.2s	**92.25**	**40**	*e*P		**P**	**20 49 55.9**	**+0.2**
536A	**Bastrop** baz=316,SNR=5.4	**92.26**	**49**	P		**P**	**20 49 56.1**	**+0.2**
437A	**Phantom Ranch,** baz=316	**92.28**	**48**	P		**P**	**20 49 56.3**	**+0.4**
635A	**Leesville** baz=315	**92.31**	**50**	P		**P**	**20 49 56.6**	**+0.5**
338A	**Crockett** baz=316	**92.39**	**47**	P		**P**	**20 49 57.0**	**+0.5**
M54A	**Oil Creek Stat** baz=326	**92.40**	**31**	P		**P**	**20 49 56.5**	**+0.1**
239A	**Gary** baz=317	**92.41**	**46**	P		**P**	**20 49 56.8**	**+0.3**
NCB	**Newcomb**	**92.41**	**26**	PFAKE			20 50 10.0	+14
NCB	comp=Z,2µm,19.0s			LR		LR		
NATX	**Nacogdoches** baz=317	**92.48**	**47**	P		**P**	**20 49 57.2**	**+0.3**
NATX	**Nacogdoches**	**92.48**	**47**	PFAKE			20 50 10.0	+13
NATX	comp=Z,485nm,19.0s			LR		LR		
Y42A	**Garnett, Star** baz=319	**92.58**	**43**	P		**P**	**20 49 57.6**	**+0.3**
933A	**Laredo** baz=314,SNR=15	**92.61**	**52**	P		**P**	**20 49 58.1**	**+0.6**
735A	**Kenedy** baz=315	**92.67**	**51**	P		**P**	**20 49 57.6**	**-0.1**
636A	**Smothers Creek** baz=316,SNR=11	**92.69**	**50**	P		**P**	**20 49 58.6**	**+0.7**
537A	**Green Hill Far** baz=316	**92.71**	**49**	P		**P**	**20 49 58.4**	**+0.4**
N54A	**Moraine State** baz=326	**92.72**	**32**	P		**P**	**20 49 57.7**	**-0.1**
438A	**Sam Houston St** baz=316,SNR=8.4	**92.73**	**48**	P		**P**	**20 49 58.6**	**+0.5**
240A	**Hunter Patters** baz=317	**92.80**	**46**	P		**P**	**20 49 58.8**	**+0.4**
141A	**Papa Simpson,** baz=318	**92.87**	**45**	P		**P**	**20 49 59.7**	**+1.1**
PKME	**Peaks-Kenny Pk** comp=Z,39nm,1.1s	**92.92**	**23**	*e*P		**P**	**20 49 58.3**	**-0.3**
PKME	comp=Z,509nm,19.0s			LR		LR		
WVT	**Waverly**	**92.94**	**40**	*e*P		**P**	**20 49 58.3**	**-0.6**
WVT	comp=Z,57nm,1.4s			pmax		pmax		
WVT	**Waverly** comp=Z,57nm,1.4s	**92.94**	**40**	*e*P		**P**	**20 49 58.3**	**-0.6**
Y43A	**Makayla and Ka** baz=319	**93.00**	**43**	P		**P**	**20 49 59.7**	**+0.4**
CLTB	**Caltabellotta**	**93.01**	**323**	PFAKE			20 50 10.0	+11
CLTB	comp=Z,469nm,19.0s			LR		LR		
736A	**Circle Diamond** baz=316	**93.05**	**50**	P		**P**	**20 50 00.5**	**+0.9**
835A	**Beeville** baz=315	**93.05**	**51**	P		**P**	**20 49 59.6**	**+0.1**
HKT	**Hockley**	**93.09**	**49**	*e*P		**P**	**20 49 59.9**	**+0.3**
HKT	comp=Z,74nm,1.6s			pmax		pmax		
HKT	**Hockley** comp=Z,74nm,1.6s	**93.09**	**49**	*e*P		**P**	**20 49 59.9**	**+0.3**
934A	**Benavides** baz=315	**93.10**	**52**	P		**P**	**20 50 00.6**	**+0.8**
ACCN	**Adirondack Com** comp=Z,32nm,1.4s	**93.12**	**26**	*e*P		**P**	**20 49 59.3**	**-0.3**
VSL	**Villasalto**	**93.24**	**326**	PFAKE			20 50 10.0	+10
VSL	comp=Z,827nm,19.0s			LR		LR		
BINY	**Binghamton**	**93.29**	**29**	PFAKE			20 50 10.0	+10
BINY	comp=Z,439nm,22.0s			LR		LR		
Y44A	**Strider, Charl** baz=320	**93.35**	**42**	P		**P**	**20 50 01.0**	**+0.2**
OXF	**Oxford**	**93.36**	**42**	*e*P		**P**	**20 50 00.5**	**-0.4**
OXF	comp=Z,165nm,1.2s			pmax		pmax		
OXF	**Oxford** comp=Z,165nm,1.2s	**93.36**	**42**	*e*P		**P**	**20 50 00.5**	**-0.4**
034A	**Hebbronville** baz=315,SNR=6.2	**93.37**	**52**	P		**P**	**20 50 01.9**	**+0.8**
KVTX	**Kingsville**	**93.54**	**52**	PFAKE			20 50 10.0	+8.2
KVTX	comp=Z,526nm,21.0s			LR		LR		
341A	**Kurthwood** baz=318	**93.66**	**46**	P		**P**	**20 50 02.8**	**+0.5**
LMN	**Caledonia Moun** comp=Z,73nm,1.4s	**93.68**	**20**	*e*P		**P**	**20 50 02.1**	**0.0**
242A	**Grayson** baz=318	**93.70**	**45**	P		**P**	**20 50 02.8**	**+0.3**
638A	**Rosharon** baz=316	**93.71**	**49**	P		**P**	**20 50 02.6**	**0.0**
ZAIG	**Zacatecas** comp=Z,59nm,1.4s	**93.76**	**58**	*e*P		**P**	**20 50 03.3**	**0.0**
Y45A	**Yeager Farm, C** baz=320	**93.78**	**42**	P		**P**	**20 50 02.9**	**0.0**
035A	**Encino** baz=315	**93.83**	**52**	P		**P**	**20 50 03.8**	**+0.6**
MCWV	**Mont Chateau** comp=Z,40nm,1.4s	**93.86**	**32**	*e*P		**P**	**20 50 02.0**	**-1.1**
O56A	**Blue Knob Stat** baz=327	**93.90**	**31**	P		**P**	**20 50 03.3**	**-0.1**
Y46A	**Houston** baz=320	**94.14**	**42**	P		**P**	**20 50 04.4**	**0.0**
N59A	**State Game Lan** baz=329	**94.47**	**29**	P		**P**	**20 50 05.2**	**-0.7**
244A	**Avery, Jackson** baz=319	**94.54**	**44**	P		**P**	**20 50 05.7**	**-0.6**
SWET	**Sewanee** comp=Z,21nm,1.3s	**94.62**	**39**	*e*P		**P**	**20 50 05.8**	**-0.9**
Y47A	**UCPARC, Winfie** baz=321	**94.66**	**41**	P		**P**	**20 50 06.3**	**-0.5**
TZTN	**Tazewell** comp=Z,68nm,1.3s	**94.73**	**37**	*e*P		**P**	**20 50 06.8**	**-0.4**
344A	**Westbrook Farm** baz=319	**94.96**	**44**	P		**P**	**20 50 07.6**	**-0.7**
146A	**Union** baz=320	**94.98**	**43**	P		**P**	**20 50 07.9**	**-0.5**
Z47A	**Carrollton** baz=321	**95.08**	**42**	P		**P**	**20 50 08.3**	**-0.4**
CPCT	**Cooper Cave** comp=Z,25nm,1.3s	**95.14**	**38**	*e*P		**P**	**20 50 08.8**	**-0.2**
Z48A	**Northport** baz=321	**95.22**	**41**	P		**P**	**20 50 09.0**	**-0.4**
TKL	**Tuckaleechee C**	**95.33**	**37**	*e*P		**P**	**20 50 09.9**	**0.0**
TKL	comp=Z,64nm,1.3s			pmax		pmax		
TKL	**Tuckaleechee C** comp=Z,64nm,1.4s	**95.33**	**37**	*e*P		**P**	**20 50 09.6**	**-0.4**
147A	**Livingston** baz=321	**95.38**	**42**	P		**P**	**20 50 10.1**	**0.0**
BLA	**Blacksburg**	**95.64**	**34**	PFAKE			20 50 20.0	+8.7
BLA	comp=Z,496nm,20.0s			LR		LR		
247A	**Quitman** baz=320	**95.67**	**43**	P		**P**	**20 50 11.9**	**+0.4**
248A	**Dixon Mills** baz=321	**96.11**	**42**	P		**P**	**20 50 13.9**	**+0.4**
CBN	**Corbin Frederi**	**96.13**	**32**	PFAKE			20 50 20.0	+6.5
CBN	comp=Z,541nm,21.0s			LR		LR		
347A	**Saraland** baz=320	**96.21**	**43**	P		**P**	**20 50 14.4**	**+0.5**
KEST	**Kesra** comp=Z,12nm,1.1s,baz=358,slow=14,SNR=4.4	**96.34**	**324**	P		**P**	**20 50 14.5**	**-0.1**
KEST	comp=Z,1µm,18.8s,baz=324,slow=39			LR		LR	21 39 49.3	
KEST	**Kesra** comp=Z,52nm,1.4s	**96.34**	**324**	*e*P		**P**	**20 50 14.5**	**-0.1**
FURI	**Furi** comp=Z,59nm,1.4s	**96.68**	**286**	*e*P		**P**	**20 50 18.5**	**+1.8**
RKT	**Rikitea** comp=Z,218nm,30.0s	**96.86**	**114**	*e*SP		SP	21 02 57.3	-1.3
RKT	comp=Z,289nm,29.2s			*e*SS		**SS**	**21 08 10.9**	**-3.1**
RKT	**Rikitea** comp=Z,739nm,27.0s,baz=311	**96.86**	**114**	*e*LR		LR	21 21 12.1	
GOGA	**Godfrey**	**97.29**	**38**	*e*P		Pdif	20 50 19.0	+0.1
GOGA	comp=Z,37nm,1.4s			pmax		pmax		
GOGA	comp=Z,423nm,19.0s			MLR		MLR		
GOGA	**Godfrey** comp=Z,37nm,1.4s	**97.29**	**38**	*e*P		Pdif	20 50 19.0	+0.1
GOGA	comp=Z,423nm,19.0s			LR		LR		
ES19	**SONSECA Array**	**98.24**	**335**	*e*P		**P**	**20 50 22.6**	**-0.5**
ESDC	**Sonseca Array** comp=Z,2.3nm,0.8s,baz=26,slow=4.7,SNR=12	**98.29**	**335**	P		Pdif	20 50 23.4	+0.1
ESDC				LR		LR	21 40 27.9	
	comp=Z,687nm,18.1s,baz=50,slow=39							
CNNC	**Cliffs of the**	**98.41**	**33**	PFAKE			20 50 30.0	+6.2
CNNC	comp=Z,4µm,20.0s			LR		LR		
PAB	**San Pablo**	**98.53**	**336**	PFAKE			20 50 40.0	+16
PAB	comp=Z,1µm,21.0s			LR		LR		
MTE	**Manteigas**	**98.75**	**338**	PFAKE			20 50 40.0	+15
MTE	comp=Z,935nm,20.0s			LR		LR		
KMBO	**Kilima Mbogo**	**103.97**	**279**	PFAKE			20 51 00.0	+11

KMBO LR LR
comp=Z,411nm,21.0s
TEIG Tepich 104.86 50 PFAKE 20 51 00.0 +7.2
TEIG LR LR
comp=Z,149nm,19.0s
TAM Tamanrasset 108.85 320 PFAKE 20 55 30.0
TAM LR LR
comp=Z,537nm,20.0s
GTBY Guantanamo Bay 112.57 40 PFAKE 20 55 30.0
GTBY LR LR
comp=Z,221nm,19.0s
MTDJ Mount Denham 112.68 43 PFAKE 20 55 30.0
MTDJ LR LR
comp=Z,204nm,20.0s
GRTK Grand Turk 113.18 36 PFAKE 20 55 40.0
GRTK LR LR
comp=Z,299nm,19.0s
JTS JuntasAbangare 114.41 54 PFAKE 20 55 40.0 +14
JTS LR LR
comp=Z,215nm,20.0s
SDDR Presa de Saban 115.28 37 PFAKE 20 55 40.0 +12
SDDR LR LR
comp=Z,365nm,19.0s
SBA Scott Base 115.30 175 PFAKE 20 55 40.0 +14
SBA LR LR
comp=Z,379nm,22.0s
SJG San Juan 118.39 33 PFAKE 20 55 50.0 +16
SJG LR LR
comp=Z,230nm,22.0s
BCIP Isla Barro Col 118.52 51 PFAKE 20 55 50.0 +16
BCIP LR LR
comp=Z,248nm,21.0s
TOA1 Torodi Ar. Sit 118.83 317 *e*PKPdf **PKPdf 20 55 33.5 -1.1**
TOA1 *e*PP **PP 20 56 53.9 +1.6**
TOA1 *e*PKKPbc **PKKPbc 21 05 48.9 +0.4**
TOA0 Torodi Ar. Sit 118.83 317 *e*PKPdf **PKPdf 20 55 33.0 -1.5**
TOA0 *e*PKPdf **PKiKP 20 55 33.4 -1.2**
TORD Torodi Ar. Bea 118.83 317 PKP **PKPdf 20 55 33.5 -1.1**
comp=Z,5.4nm,1.0s,baz=9.6,slow=1.5,SNR=20
TORD PP **PP 20 56 53.9 +1.6**
comp=Z,1.7nm,1.0s,baz=28,slow=7.0,SNR=4.1
TORD PKKPbc **PKKPbc 21 05 48.9 +0.5**
comp=Z,0.8nm,0.9s,baz=223,slow=3.0,SNR=4.8
LSZ Lusaka 119.49 273 *e*PKPdf **PKPdf 20 55 36.0 +0.2**
LSZ *e*PP **PP 20 56 56.6 -1.4**
ANWB Willy Bob 120.58 29 PFAKE 20 55 50.0 +12
ANWB LR LR
comp=Z,316nm,20.0s
TBG Guadaloupe-3 122.28 29⇑ *i*P **PKPdf 20 55 44.4 +3.3**
MGG Marie-Galante 122.35 29⇑ *i*P **PKPdf 20 55 46.1 +4.8**
FDF Fort de France 123.50 29 PFAKE 20 55 50.0 +6.5
FDF LR LR
comp=Z,261nm,21.0s
SDV Santo Domingo 124.13 43 *e*PKPdf **PKPdf 20 55 44.4 -0.6**
SDV LR LR
comp=Z,268nm,19.0s
ROSC El Rosal 125.29 49 PKP **PKPdf 20 55 48.1 +0.6**
comp=Z,11nm,1.0s,baz=250,slow=1.5,SNR=13
ROSC El Rosal 125.29 49 *e*PKPdf **PKPdf 20 55 47.8 +0.3**
GRGR Grenville 125.64 31 PFAKE 20 56 00.0 +12
GRGR LR LR
comp=Z,412nm,20.0s
OTAV Otavalo 126.17 57 *e*PKPdf **PKPdf 20 55 49.0 -0.2**
OTAV LR LR
comp=Z,247nm,19.0s
LBTB Lobatse 126.60 264 *e*PKIKP **PKPdf 20 55 49.1 -0.1**
LBTB Lobatse 126.60 264 *e*PKPdf **PKPdf 20 55 49.1 -0.1**
QSPA South Pole Qui 126.62 180 *e*PKPdf **PKPdf 20 55 46.7 -1.2**
QSPA LR LR
comp=Z,487nm,21.0s
DBIC Dimbokro 127.74 319 PKP **PKPdf 20 55 50.9 -0.8**
comp=Z,12nm,1.1s,baz=24,slow=1.5,SNR=6.1
DBIC Dimbokro 127.74 319 *e*PKPdf **PKPdf 20 55 51.3 -0.4**
BOSA Boshof 128.51 260 PKP **PKPdf 20 55 53.0 +0.2**
comp=Z,28nm,1.3s,baz=119,slow=6.4,SNR=5.0
BOSA Boshof 128.51 260 PKIKP **PKPdf 20 55 53.0 +0.2**
BOSA pmax pmax
comp=Z,28nm,1.3s
BOSA Boshof 128.51 260 *e*PKPdf **PKPdf 20 55 52.7 -0.1**
SYO Syowa Base 128.96 207⇑ *e*X **PKPdf 20 55 50.2 -2.0**
SYO Syowa Base 128.96 207⇑ *e*PP PP 20 58 03.4 +3.1
TSUM Tsumeb 130.10 275 *e*PKPdf **PKPdf 20 55 55.9 -0.2**
NNA Nana 135.87 67 PFAKE 20 56 20.0 +13
NNA LR LR
comp=Z,162nm,20.0s
PTGA Pitinga 137.80 37 *e*PKPpre PKPpre 20 55 54.6
PTGA *e*PKPdf **PKPdf 20 56 10.2 -0.4**
SNAA Sanae 141.16 196 *e*PKIKP **PKPdf 20 56 15.8 +0.8**
SNAA Sanae 141.16 196 *e*PKPdf **PKPdf 20 56 14.4 -0.6**
SNAA *e*PP **PP 20 59 15.5 -1.7**
SAML Samuel 142.91 48 *e*PKPpre PKPpre 20 56 15.9
SAML LR LR
comp=Z,211nm,19.0s
LPAZ La Paz 145.03 63 *i*P **PKPbc 20 56 22.9 -0.6**
LPAZ La Paz 145.03 63 PKP **PKPbc 20 56 23.1 -0.4**
comp=Z,8.6nm,0.5s,baz=343,slow=3.1,SNR=32
LPAZ La Paz 145.03 63 *e*PKIKP **PKPbc 20 56 22.9 -0.6**
LPAZ La Paz 145.03 63 *e*PKPbc **PKPbc 20 56 22.9 -0.6**
ASCN Ascension 145.06 320 PFAKE 20 56 40.0 +16
ASCN LR LR
comp=Z,1μm,22.0s
PB11 IPOC Station P 146.12 69 *e*PKPdf **PKPbc 20 56 25.9 -0.4**
PB01 IPOC Station P 147.00 71 *e*PKPdf **PKPdf 20 56 26.8 0.0**
PB04 IPOC Station P 147.24 73 *e*PKPdf **PKPdf 20 56 27.7 +0.5**
PB10 IPOC Station P 147.56 76 *e*PKPdf **PKPdf 20 56 28.4 +0.9**
RCBR Riachuelo 149.10 360 *e*PKPbc **PKPbc 20 56 34.2 -0.3**
RCBR LR LR
comp=Z,354nm,21.0s
LCO Las Campanas 150.04 85 PFAKE 20 56 40.0 -2.6
LCO LR LR
comp=Z,878nm,21.0s
YJA Yavi 150.65 68 *i*P **PKPdf 20 56 33.9 +0.8**
YJA *i*P **PKPdf 20 56 33.9 +0.8**
YJA *i*P **PKPbc 20 56 34.5 -4.1**
ROC1 El Roble 151.21 93 *e*PKPdf **PKPdf 20 56 32.3 -1.1**
ROC1 *e*PKPbc **PKPbc 20 56 38.4 -1.0**
CHRN Cochrane 151.23 123 *e*PKPdf **PKPdf 20 56 31.1 -1.5**
CHRN *e*PKPbc **PKPbc 20 56 37.7 -1.1**
HJA Humahuaca 151.33 70 *i*P **PKPdf 20 56 35.0 +1.0**
USHA Ushuaia 151.56 139 PKPbc **PKPbc 20 56 38.9 -0.1**
comp=Z,246nm,1.0s,baz=235,slow=1.6,SNR=8.3
VCA Vinchina 151.92 83 *i*P **PKPdf 20 56 34.7 +0.3**
AGUA GUANDACOL 152.00 84 *i*P **PKPdf 20 56 35.1 +0.6**
AZAP Zapla 152.16 71 *i*P **PKPdf 20 56 35.3 +0.2**
RTLS Leoncito 152.21 89 *i*P **PKPdf 20 56 35.3 +0.3**
AUSP Uspallata 152.28 90 *i*P **PKPdf 20 56 35.9 +0.8**
ASTB Santa Barbara 152.47 70 *i*P **PKPbc 20 56 42.4 0.0**
AMOG MOGNA 152.55 87 *i*P **PKPdf 20 56 36.1 +0.9**
ALOL LOMAS DE OLMED 152.75 69 *i*P **PKPdf 20 56 36.8 +1.1**
ASAL Salagasta 152.84 91 *i*P **PKPdf 20 56 35.9 +0.2**
RTCV Cerro Valdivia 152.84 89 *i*P **PKPdf 20 56 35.9 +0.3**
PLCA Paso Flores 152.98 109 *i*P **PKPdf 20 56 35.0 -0.5**
PLCA Paso Flores 152.98 109 PKP **PKPdf 20 56 35.5 0.0**
comp=Z,11nm,1.3s,baz=333,slow=2.4,SNR=3.5
PLCA PKPbc **PKiKP 20 56 43.3 +0.3**
comp=Z,18nm,1.1s,baz=315,slow=3.1,SNR=9.3
PLCA PKPab **PKPab 20 56 54.7 +0.4**
comp=Z,38nm,1.0s,baz=281,slow=4.4,SNR=17
PLCA Paso Flores 152.98 109 *e*PKIKP **PKPdf 20 56 35.2 -0.3**
PLCA *e* 20 56 43.4
PLCA *e* 20 56 55.2
PLCA Paso Flores 152.98 109 *e*PKPdf **PKPdf 20 56 35.2 -0.3**
PLCA *e*PKPbc **PKiKP 20 56 43.4 +0.4**
PLCA *e*PKPab **PKPab 20 56 55.2 +1.0**
AAGR Agrelo 152.99 92 *i*P **PKPdf 20 56 36.0 +0.1**
AHML Horco Molle 153.29 76 *i*P **PKPdf 20 56 36.9 +0.5**
CYA Choya 153.70 80 *i*P **PKPdf 20 56 36.7 -0.2**
CYA *i*P **PKPdf 20 56 36.7 -0.2**
CPUP Villa Florida 159.13 66 PKP **PKPdf 20 56 43.8 -0.2**
comp=Z,9.4nm,1.1s,baz=37,slow=2.9,SNR=5.1
CPUP PKPab **PKPab 20 57 20.4 -0.5**
comp=Z,19nm,1.2s,baz=297,slow=5.7,SNR=6.2
TRQA Tornquist 159.44 101 *e*PKPab **PKPab 20 57 21.7 -0.3**
TRQA LR LR
comp=Z,2μm,20.0s
SPB Sao Paulo 163.55 40 PFAKE 20 57 00.0 +11
SPB LR LR
comp=Z,415nm,20.0s

ISCJB **16** *20:44:41.5±0.4, 35°.35N±0°.01×92°.67W±0°.02, h4km±3km, Error ellipse: s-maj=2.5km s-min=2.2km az=4.4*
NEIC **16** *20:44:42.0, 35°.35N×92°.67W, h3km, MN3.0(CERI), After CERI.*
NEIC Felt at Cabot and Solgohachia.
ISC 16 20:44:41.7±0.9, 35°.37N±0°.02×92°.67W±0°.01, h11km±7km, n70, σ1§85/127, Arkansas

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
X301	**Greenbrier Sit**	**0.26**	**120**	*e*Pg		**Pg**		**20 44 46.8**	**-0.1**
X301				*e*Sg		**Sg**		**20 44 50.9**	**+0.4**
X201	**Greenbrier Sit**	**0.26**	**107**	*e*Pg		**Pg**		**20 44 46.0**	**-1.0**
X201				*e*Sg		**Sb**		**20 44 52.2**	**-0.7**
WHAR	**Wooly Hollow**	**0.32**	**104**	*e*P		**Pg**		**20 44 48.0**	**-0.1**
WHAR				*e*Sg		**Sg**		**20 44 53.7**	**+1.3**
W40A	**Ferguson Farm,** baz=64,SNR=51	**0.37**	**242**	P		**Pg**		**20 44 48.8**	**-0.3**
W40A				S		**Sg**		**20 44 53.6**	**-0.4**
W41A	**Tony Mavity, V** baz=298,SNR=41	**0.40**	**119**	P		**Pg**		**20 44 49.6**	**+0.1**
W41A				S		**Sg**		**20 44 55.2**	**+0.5**
W41B	**Gary Mavity, V** baz=298,SNR=41	**0.40**	**119**	P		**Pg**		**20 44 49.3**	**-0.2**
W41B				S		**Sg**		**20 44 54.8**	**+0.1**
V40A	**Witts Springs** baz=164,SNR=142	**0.45**	**344**	P		**Pg**		**20 44 50.6**	**0.0**
V40A				S		**Sg**		**20 44 57.4**	**+0.7**
UALR	**University of**	**0.65**	**156**	*e*Pg		**Pg**		**20 44 54.2**	**0.0**
UALR				*e*Sb		**Sg**		**20 45 03.1**	**+0.3**
X40A	**Basin Creek Fa** baz=9.1,SNR=79	**0.89**	**189**	P		**Pg**		**20 44 58.7**	**-0.1**
X40A				S		**Sg**		**20 45 09.8**	**-0.6**
V39A	**Pettigrew** baz=121,SNR=324	**0.92**	**301**	P		**Pg**		**20 44 59.0**	**-0.5**
V39A				S		**Sg**		**20 45 11.4**	**-0.1**
W39A	**Magazine** baz=80,SNR=13	**0.93**	**260**	P		**Pg**		**20 44 59.1**	**-0.5**
W39A				S		**Sg**		**20 45 11.7**	**+0.1**
U40A	**Yellville** baz=171	**1.00**	**351**	P		**Pg**		**20 45 00.8**	**-0.1**
U40A				S		**Sg**		**20 45 14.1**	**+0.2**
MIAR	**Mount Ida** baz=43,SNR=120	**1.11**	**222**	P		**Pb**		**20 45 02.1**	**-0.8**
MIAR				Sn		**Sn**		**20 45 20.5**	**+2.1**
MIAR	**Mount Ida**	**1.11**	**222**	*e*Pg		**Pb**		**20 45 01.9**	**-0.9**
MIAR				*e*Sg		**Sg**		**20 45 15.8**	**-1.6**
U39A	**Green Forest** baz=147	**1.21**	**327**	P		**Pn**		**20 45 04.3**	**-0.2**
HHAR	**Hobbs**	**1.38**	**312**	*e*Pn		**Pn**		**20 45 07.0**	**+0.2**
HHAR				*e*Sn		**Sb**		**20 45 25.6**	**+0.6**
Y40A	**Okolona** baz=21,SNR=46	**1.44**	**201**	P		**Pn**		**20 45 08.2**	**+0.5**
Y40A				S		**Sg**		**20 45 27.8**	**-0.3**
X39A	**Fountain Ranch** baz=54,SNR=64	**1.46**	**235**	P		**Pn**		**20 45 08.2**	**+0.2**
X39A				S		**Sg**		**20 45 29.1**	**+0.4**
V38A	**Canehill** baz=109,SNR=77	**1.50**	**290**	P		**Pn**		**20 45 09.1**	**+0.6**
V38A				S		**Sb**		**20 45 29.2**	**+0.6**
W38A	**Poteau** baz=79,SNR=43	**1.54**	**259**	P		**Pn**		**20 45 09.6**	**+0.5**
W38A				S		**Sb**		**20 45 30.8**	**+1.0**
HBAR	**Harrisburg**	**1.65**	**83**	*e*Pn		**Pn**		**20 45 10.6**	**0.0**
HBAR				*e*Sn		**Sb**		**20 45 34.3**	**+1.3**
Y42A	**Garnett, Star** baz=335	**1.69**	**154**	P		**Pn**		**20 45 12.1**	**+1.0**
Y42A				S		**Sg**		**20 45 35.3**	**-0.8**
WLAR	**White Oak Lake**	**1.72**	**192**	*e*Pn		**Pn**		**20 45 12.3**	**+0.8**
WLAR				*e*Sn		**Sn**		**20 45 32.2**	**-1.1**
T39A	**Clever** baz=161	**1.75**	**341**	P		**Pn**		**20 45 13.6**	**+1.6**
T39A				S		**Sb**		**20 45 37.2**	**+1.5**
U38A	**Gravette** baz=128	**1.76**	**308**	P		**Pn**		**20 45 13.3**	**+1.3**
U38A				S		**Sb**		**20 45 37.3**	**+1.3**
T40A	**Mansfield** baz=184	**1.78**	**4**	P		**Pb**		**20 45 14.2**	**-0.2**
T40A				S		**Sb**		**20 45 38.5**	**+1.7**
Y39A	**Lockesburg** baz=39,SNR=8.1	**1.85**	**220**	P		**Pn**		**20 45 14.4**	**+1.2**
Y39A				S		**Sb**		**20 45 38.4**	**-0.1**
X38A	**Whitesboro** baz=68,SNR=19	**1.91**	**249**	Pb		**Pb**		**20 45 16.3**	**-0.1**
X38A				Sb		**Sg**		**20 45 42.0**	**-0.9**
Y43A	**Makayla and Ka** baz=316	**2.04**	**135**	P		**Pb**		**20 45 18.0**	**-0.8**
V37A	**Hulbert** baz=104,SNR=65	**2.08**	**285**	P		**Pn**		**20 45 18.1**	**+1.6**
T38A	**Diamond** baz=142	**2.12**	**322**	P		**Pn**		**20 45 19.1**	**+2.0**
T38A				S		**Sb**		**20 45 47.0**	**+0.6**
Z40A	**Long Farm, Mag** baz=16	**2.19**	**196**	P		**Pn**		**20 45 19.7**	**+1.7**
Y38A	**Idabel** baz=50	**2.23**	**230**	P		**Pn**		**20 45 20.0**	**+1.5**
S40A	**Lebanon** baz=183,SNR=102	**2.23**	**3**	P		**Pn**		**20 45 20.9**	**+2.4**
U37A	**Salina** baz=117	**2.24**	**298**	P		**Pn**		**20 45 20.7**	**+2.0**
W37B	**Quinton** baz=84,SNR=15	**2.27**	**265**	P		**Pn**		**20 45 21.1**	**+1.9**
PBMO	**Poplar Bluff**	**2.30**	**52**	*e*Pn		**Pb**		**20 45 22.3**	**-0.8**
PBMO				*e*Sn		**Sb**		**20 45 52.0**	**+0.5**
X37A	**Clayton** baz=70	**2.35**	**251**	Pb		**Pb**		**20 45 23.3**	**-0.7**
X37A				Sb		**Sb**		**20 45 55.0**	**+1.9**
S39A	**Bolivar** baz=167,SNR=34	**2.38**	**347**	P		**Pn**		**20 45 22.6**	**+2.0**
S38A	**Stockton** baz=156,SNR=41	**2.47**	**337**	P		**Pn**		**20 45 23.8**	**+1.9**
T37A	**Cheneyville 18** baz=134	**2.52**	**315**	P		**Pn**		**20 45 23.8**	**+1.2**
TUL1	**Leonard** baz=102	**2.60**	**283**	P		**Pn**		**20 45 25.2**	**+1.6**
TUL1	**Leonard**	**2.60**	**283**	*e*Pn		**Pn**		**20 45 25.0**	**+1.4**
TUL1				*e*Sn		**Sn**		**20 45 56.8**	**+1.6**
PARMO	**Parma**	**2.69**	**60**	*e*Pn		**Pn**		**20 45 25.5**	**+0.5**
PARMO				*e*Sn		**Sb**		**20 46 01.2**	**-1.8**
V36A	**Jenks** baz=98,SNR=11	**2.70**	**280**	P		**Pn**		**20 45 26.7**	**+1.6**
OXF	**Oxford**	**2.81**	**107**	*e*Pn		**Pn**		**20 45 24.6**	**-2.0**
OXF				*e*Sn		**Sn**		**20 46 01.3**	**+0.9**
OXF				*e*Sg		**Sg**		**20 46 11.0**	**-0.9**
W36A	**Wetumka** baz=85,SNR=9.7	**2.92**	**267**	P		**Pn**		**20 45 29.9**	**+1.8**
R40A	**Maddies Statio** baz=186,SNR=6.9	**2.94**	**6**	P		**Pn**		**20 45 30.7**	**+2.4**
S37A	**Fort Scott** baz=144,SNR=13	**2.95**	**325**	P		**Pn**		**20 45 30.9**	**+2.5**
R39A	**Chumby, Stover** baz=174,SNR=17	**2.96**	**354**	P		**Pn**		**20 45 30.7**	**+2.2**
R38A	**Fenwick Farm,** baz=160,SNR=17	**2.98**	**341**	P		**Pn**		**20 45 31.6**	**+2.7**
S36A	**Lake Cedric, C** baz=134,SNR=7.7	**3.33**	**316**	P		**Pn**		**20 45 35.6**	**+2.0**
R37A	**Teagarden Farm** baz=149,SNR=8.6	**3.41**	**330**	P		**Pn**		**20 45 37.1**	**+2.3**
SIUC	**Southern Illin**	**3.63**	**49**	*e*Pn		**Pn**		**20 45 37.8**	**0.0**
SIUC				*e*Pb		**Pb**		**20 45 46.8**	**+0.9**
SIUC				*e*Sn		**Sn**		**20 46 16.5**	**-4.2**
SIUC				*e*Sg		**Sb**		**20 46 34.4**	**+4.4**
PLAL	**Pickwick Lake**	**3.78**	**95**	*e*Pn		**Pn**		**20 45 41.5**	**+1.7**
PLAL				*e*Sn		**Sn**		**20 46 24.1**	**-0.3**
PLAL				*e*Sb		**Sb**		**20 46 37.8**	**+3.6**
SLM	**Saint Louis**	**3.80**	**30**	*e*Pn		**Pn**		**20 45 38.8**	**-1.3**
SLM				*e*Sg		**Sb**		**20 46 38.8**	**+4.1**
V34A	**Guthrie**	**3.98**	**278**	*e*Pn		**Pn**		**20 45 44.4**	**+1.8**
V34A				*e*Pb		**Pb**		**20 45 52.9**	**+1.1**
V34A				*e*Sg		**Sg**		**20 46 45.3**	**-4.1**
WVT	**Waverly**	**4.01**	**78**	*e*Pn		**Pn**		**20 45 45.3**	**+2.3**
WVT				*e*Pb		**Pb**		**20 45 52.6**	**+0.3**
WVT				*e*Sn		**Sn**		**20 46 28.2**	**-1.8**
WVT				*e*Sg		**Sb**		**20 46 45.5**	**+4.7**
U34A	**Anderson Ranch**	**4.09**	**287**	*e*Pn		**Pn**		**20 45 43.1**	**-1.0**
U34A				*e*Sg		**Sg**		**20 46 50.4**	**-2.6**
W34A	**Bridge Creek,**	**4.18**	**270**	*e*Pn		**Pn**		**20 45 45.0**	**-0.3**
W34A				*e*Sg		**Sb**		**20 46 49.6**	**+4.0**
KSU1	**Kansas State U**	**4.87**	**321**	*e*Pn		**Pn**		**20 45 54.0**	**-0.9**
KSU1				*e*Pg		Pg		20 46 12.2	-2.9
KSU1				*e*Sg		**Sg**		**20 47 15.8**	**-2.3**
WMOK	**Wichita Mounta**	**5.05**	**265**	*e*Pn		**Pn**		**20 45 58.4**	**+1.0**
WMOK				*e*Pg		**Pg**		**20 46 15.6**	**-2.8**
WMOK				*e*Sn		**Sn**		**20 46 57.5**	**+1.7**
WMOK				*e*Sb		**Sg**		**20 47 18.9**	**-4.9**
LRAL	**Lakeview Retre**	**5.24**	**115**	*e*Pn		**Pn**		**20 45 59.6**	**-0.4**
LRAL				*e*Pb		Pb		20 46 09.1	-4.2
LRAL				*e*Pg		Pg		20 46 18.2	-3.8
LRAL				*e*Sg		Sg		20 47 23.7	-6.3
SWET	**Sewanee**	**5.51**	**90**	*e*Pn		**Pn**		**20 46 01.0**	**-2.7**
SWET				*e*Pg		Pg		20 46 23.2	-4.0
SWET				*e*Sn		**Sn**		**20 47 02.4**	**-4.7**
SWET				*e*Sg		Sg		20 47 32.1	-6.5
HDIL	**Hopedale**	**5.82**	**26**	*e*Pn		**Pn**		**20 46 09.3**	**+1.4**
HDIL				*e*Sg		**Sg**		**20 47 45.5**	**-3.1**
WCI	**Wyandotte Cave**	**5.86**	**59**	*e*Pn		**Pn**		**20 46 11.2**	**+2.8**
WCI				*e*Sg		**Sg**		**20 47 44.7**	**-5.0**
SCIA	**State Center**	**6.54**	**356**	*e*Pn		**Pn**		**20 46 15.4**	**-2.4**
SCIA				*e*Sn		**Sn**		**20 47 33.4**	**+1.0**
SCIA				*e*Sb		Sb		20 47 45.5	-8.1
CPCT	**Cooper Cave**	**6.65**	**87**	*e*Pn		**Pn**		**20 46 20.8**	**+1.4**
CPCT				*e*Sn		**Sn**		**20 47 35.3**	**+0.1**
CPCT				*e*Sg		Sg		20 48 07.0	-8.2
JFWS	**Jewell Farm**	**7.77**	**13**	*e*Sg		**Sg**		**20 48 50.2**	**-0.6**
ECSD	**EROS Data Cent**	**8.89**	**341**	*e*Pn		**Pn**		**20 46 49.9**	**-0.2**
ECSD				*e*Sn		**Sn**		**20 48 26.0**	**-4.2**

IDC **16** *20:48:12.6±0.9, 35°.75N×142°.09E, h0km, mb3.7/7, mb1 3.8/11, mb1mx3.6/66, mbtmp3.8/11, ML3.5/2, Error ellipse: s-maj=25.6km s-min=16.7km az=92.0*
ISCJB **16** *20:48:13.3±0.7, 35°.78N±0°.05×142°.24E±0°.06, h23km, mb3.7/7, Error ellipse: s-maj=7.5km s-min=6.6km az=27.6*
JMA **16** *20:48:14.3±0.3, 35°.87N×142°.21E, h61km, M3.3*
ISC 16 20:48:16.0±0.9, 35°.78N±0°.06×142°.13E±0°.08, h23km, n21, σ1§14/25, mb3.7/7, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**1.04**	**266**	P		**Pn**		**20 48 34.1**	**-1.1**
CHOJ				*e*S		**Sn**		**20 48 49.3**	**+0.3**
JHO	**Hitachi**	**1.51**	**304**	P		**Pn**		**20 48 39.6**	**-2.1**
BSO3	**Boso 3**	**1.64**	**234**	P		**Pn**		**20 48 43.4**	**+0.1**
BSO3				*e*S		**Sb**		**20 49 05.3**	**-0.4**
JFK	**Kawauchi**	**1.88**	**328**	P		**Pn**		**20 48 44.2**	**-2.6**
JFT	**Otama**	**2.26**	**321**	P		**Pn**		**20 48 51.0**	**-1.0**
JAG	**Ashikaga**	**2.26**	**287**	P		**Pn**		**20 48 50.8**	**-1.2**
JOD2	**Odawara 2**	**2.54**	**259**	P		**Pn**		**20 48 55.2**	**-0.6**
JRY	**Ryogami san**	**2.63**	**276**	P		**Pn**		**20 48 56.3**	**-0.9**
JYN	**Shimob**	**2.94**	**266**	P		**Pn**		**20 49 01.2**	**-0.1**
MJAR	**Matsushiro Arr** 3.2nm,0.3s,baz=92,slow=9.5,SNR=48	**3.27**	**285**	Pn		**Pn**		**20 49 04.8**	**-1.0**
MAT	**Matsushiro**	**3.27**	**285**	P		**Pn**		**20 49 05.2**	**-0.7**
MAT				*e*S		**Sn**		**20 49 45.0**	**+1.0**
JHJ	**Hachijo jima 2** 22nm,0.3s,baz=316,slow=20,SNR=22	**3.28**	**217**	Pn		**Pn**		**20 49 05.5**	**-0.6**
JHJ				Sn		**Sn**		**20 49 43.9**	**-0.6**
JCJ	**Chichijima** 59nm,0.3s,baz=13,slow=23,SNR=7.3	**8.65**	**180**	Pn		**Pn**		**20 50 18.6**	**-1.2**
USRK	**Ussuriysk Ar.** 3.9nm,0.3s,baz=280,slow=23,SNR=5.2	**11.45**	**320**	Pn		**Pn**		**20 50 59.4**	**+1.3**
SONM	**Songino Array** 0.1nm,0.3s,baz=118,slow=15,SNR=3.4	**28.98**	**306**	P		**P**		**20 54 15.1**	**+1.2**
KURBB	**Kurchatov Arra** 0.5nm,0.6s,baz=102,slow=8.3,SNR=4.5	**47.24**	**309**	P		**P**		**20 56 45.6**	**-1.5**
INK	**Inuvik** 0.9nm,0.4s,baz=87,slow=8.8,SNR=5.6	**55.24**	**27**	P		**P**		**20 57 47.8**	**+1.0**
WRA	**Warramunga Arr** 1.5nm,0.6s,baz=6.8,slow=7.2,SNR=9.4	**55.90**	**189**	P		**P**		**20 57 52.4**	**+0.2**
ASAR	**Alice Springs** 0.5nm,0.8s,baz=3.2,slow=6.7,SNR=4.4	**59.63**	**189**	P		**P**		**20 58 17.9**	**-0.3**
YKA	**Yellowknife Ar** 0.3nm,0.8s,baz=304,slow=7.0,SNR=4.8	**64.60**	**30**	P		**P**		**20 58 51.7**	**+0.5**
AKASG	**Malin Array Be** 0.4nm,0.4s,baz=47,slow=6.0,SNR=3.7	**75.65**	**323**	P		**P**		**20 59 58.3**	**-0.7**

IDC **16** *20:48:47.7±1.4, 34°.31S×179°.54W, h0km, mb4.1/2, mb1 4.3/3, mb1mx3.8/42, mbtmp4.1/3, ML3.8/1, Error ellipse: s-maj=43.6km s-min=37.0km az=149.0*
NEIC **16** *20:48:48.6±1.1, 34°.39S×179°.45W, h10km, mb4.9/6, Error ellipse: s-maj=23.8km s-min=10.9km az=105.0*
ISCJB **16** *20:48:56.7±1.4, 34°.76S±0°.05×179°.8W±0°.2, h76km, mb4.5/8, Error ellipse: s-maj=24.3km s-min=7.0km az=3.6*
ISC 16 20:48:57.3±1.1, 34°.66S±0°.08×179°.9W±0°.1, h76km, n35, σ1§87/41, mb4.8/8, South of Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
WMGZ	**Waiomatatini S**	**3.44**	**203**	PN		**Pn**		**20 49 48.8**	**+0.1**
WMGZ				SN		**Sn**		**20 50 31.5**	**+3.2**
HAZ	**Te Kaha**	**3.63**	**211**	PN		**Pn**		**20 49 50.6**	**-0.5**
HAZ				eSN		**Sn**		**20 50 33.9**	**+1.2**
PUZ	**Puketiti**	**3.73**	**204**	PN		**Pn**		**20 49 51.8**	**-0.7**
PUZ				eSN		**Sn**		**20 50 34.5**	**-0.7**
TWGZ	**Tauwhareparae**	**3.92**	**206**	PN		**Pn**		**20 49 54.3**	**-0.8**
TWGZ				SN		**Sn**		**20 50 39.5**	**-0.4**
CNGZ	**Carnagh Statio**	**4.12**	**202**	PN		**Pn**		**20 49 57.4**	**-0.4**
MWZ	**Matawai**	**4.22**	**209**	PN		**Pn**		**20 49 58.5**	**-0.8**
URZ	**Urewera** 4.2nm,0.3s,baz=265,slow=5.1,SNR=16	**4.34**	**213**	Pn		**Pn**		**20 50 01.0**	**+0.2**
URZ				Sn		**Sn**		**20 50 48.9**	**-1.2**
URZ	**Urewera** 1.9nm,0.3s,baz=287,slow=21,SNR=3.8	**4.34**	**213**	PN		**Pn**		**20 49 60.0**	**-0.8**
URZ				SN		**Sn**		**20 50 46.2**	**-3.9**
RIGZ	**Rimuhau**	**4.46**	**205**	PN		**Pn**		**20 50 02.0**	**-0.6**
BKZ	**Black Stump Fm**	**5.36**	**212**	*e*Pn		**Pn**		**20 50 14.6**	**-0.2**
OUZ	**Omahuta**	**5.41**	**262**	*e*Pn		**Pn**		**20 50 15.9**	**+0.6**
HIZ	**Hauiti**	**5.73**	**226**	*e*Pn		**Pn**		**20 50 20.8**	**+1.0**
PXZ	**Pawanui**	**5.96**	**205**	SN		**Sn**		**20 51 26.9**	**-2.9**
BFZ	**Birch Farm**	**6.75**	**206**	*e*Pn		**Pn**		**20 50 35.4**	**+1.6**
SNZO	**South Karori**	**7.90**	**211**	*e*Pn		**Pn**		**20 50 45.7**	**-3.7**
THZ	**Tophouse**	**9.09**	**217**	*e*Pn		**Pn**		**20 51 03.0**	**-2.7**
KHZ	**Kahutara**	**9.31**	**212**	*e*Pn		**Pn**		**20 51 05.3**	**-3.2**
LBZ	**Lake Benmore**	**12.37**	**215**	*e*Pn		**Pn**		**20 51 52.3**	**+1.9**
ODZ	**Otahua Downs**	**12.67**	**212**	*e*Pn		**Pn**		**20 51 56.7**	**+2.3**
WKZ	**Wanaka**	**13.26**	**217**	*e*Pn		**Pn**		**20 52 01.5**	**-0.8**
PYZ	**Puysegur Point** 80nm,1.1s	**15.37**	**218**	*e*Pn		**Pn**		**20 52

mb4.6/110, Error ellipse: s-maj=2.7km s-min=2.2km az=164.5
MOS ***16*** *20:50:09.8±1.0, 38°22N×75°98E, h129km, mb4.6/47, Error ellipse: s-maj=6.4km s-min=3.7km az=117.1*
NNC ***16*** *20:50:10.5±3.5, 38°57N×75°93E, h0km, mb5.0, mpv4.5, Error ellipse: s-maj=29.4km s-min=14.1km az=173.0*
NEIC ***16*** *20:50:10.1±0.5, 38°20N×75°96E, h120km±4km, mb4.6/44, Error ellipse: s-maj=4.9km s-min=3.6km az=184.0*
BJI ***16*** *20:50:10.4, 38°24N×76°06E, h120km, mb4.6/37, mB4.8/16*
IDC ***16*** *20:50:11.3±2.3, 38°15N×75°98E, h132km±20km, mb4.1/30, mb1 4.2/34, mb1mx4.0/64, mbtmp4.5/34, Error ellipse: s-maj=12.4km s-min=8.4km az=3.0*
ISC 16 20:50:10.0±0.3, 38°15N±0°03×75°93E±0°03, h120km, n340, σ1ᵍ37/369, mb4.6/109, 26C-51D, Southern Xinjiang

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op		ISC	h m s	ISC
KSH	**Kashi**	**1.36**	**1**	P		**Pn**	**20 50 33.3**	**-2.6**
KSH				S		Sn	20 50 48.1	-7.6
KSH				smax		smax		
	comp=N,8μm,0.2s							
KSH				smax		smax		
	comp=E,11μm,0.6s							
SFK	**Sufi-Kurgan**	**2.65**	**315**	⇓Pn		**Pn**	**20 50 51.9**	**0.0**
	26nm,0.2s							
SFK				⇑Sn		**Sn**	**20 51 22.8**	**-1.3**
	2μm,0.4s							
SFK	**Sufi-Kurgan**	**2.65**	**315**	PN		**Pn**	**20 50 53.3**	**+1.5**
AAK	**Ala-Archa**	**4.61**	**347**	P		**Pn**	**20 51 18.4**	**+0.7**
	14nm,0.3s,baz=143,slow=7.8,SNR=149							
AAK				S		**Sn**	**20 52 08.8**	**-1.5**
	24nm,0.3s,baz=166,slow=16,SNR=7.3							
AAK	**Ala-Archa**	**4.61**	**347**	*e*Pn		**Pn**	**20 51 18.1**	**+0.4**
TKM2	**Tokmak 2**	**4.77**	**357**	⇓Pn		**Pn**	**20 51 20.3**	**+0.4**
	62nm,0.7s							
TKM2				⇓Sn		**Sn**	**20 52 12.4**	**-1.9**
	128nm,0.8s							
TKM2	**Tokmak 2**	**4.77**	**357**	*e*PN		**Pn**	**20 51 20.7**	**+0.8**
TKM2	**Tokmak 2**	**4.77**	**357**	*e*Pn		**Pn**	**20 51 20.7**	**+0.8**
FRU	**Bishkek**	**4.78**	**348**	⇓*i*PN		**Pn**	**20 51 20.0**	**+0.1**
FRU				pmax	pmax			
	comp=Z,180nm,1.8s							
EKS2	**Erkin-Say**	**4.79**	**341**	*e*PN		**Pn**	**20 51 20.6**	**+0.4**
EKS2	**Erkin-Say**	**4.79**	**341**	*e*Pn		**Pn**	**20 51 20.6**	**+0.4**
EKS2				*e*Sn		Sn	20 52 00.2	-15
CHCP	**Chirah Chowk**	**4.98**	**207**	P		**Pn**	**20 51 25.6**	**+2.9**
MNAS	**Manas**	**5.06**	**330**	⇑Pn		**Pn**	**20 51 23.2**	**-0.5**
	comp=Z,8.6nm,0.3s							
MNAS				⇓Sn		**Sn**	**20 52 18.0**	**-3.1**
	comp=Z,180nm,0.6s							
MNAS	**Manas**	**5.06**	**330**	PN		**Pn**	**20 51 24.8**	**+1.0**
MNAS				pmax	pmax			
	comp=Z,49nm,0.7s							
KNDC	**Almaty**	**5.12**	**9**	⇑Pn		**Pn**	**20 51 25.3**	**+0.8**
CEP	**Cherat**	**5.41**	**218**	P		**Pn**	**20 51 30.4**	**+1.8**
CEP				S		**Sn**	**20 52 27.0**	**-2.8**
THN	**Thein Dam**	**5.71**	**182**	*ex*		Pn	20 51 38.8	+6.3
THN				*e*S		**Sn**	**20 52 34.6**	**-2.2**
PDGK	**Podgornoye**	**5.83**	**26**	⇓Pn		**Pn**	**20 51 34.0**	**0.0**
	comp=Z,124nm,0.5s							
PDGK				⇑Sn		**Sn**	**20 52 38.1**	**-1.4**
	comp=Z,202nm,0.7s							
PDGK	**Podgornoye**	**5.83**	**26**	PN		**Pn**	**20 51 34.4**	**+0.4**
PDGK				pmax	pmax			
	comp=Z,194nm,0.6s							
DHRM	**DHARAMSHALA**	**5.90**	**177**	*e*P		**Pn**	**20 51 36.9**	**+1.7**
DHRM				*e*S		**Sn**	**20 52 40.7**	**-1.0**
DHRM				IAML			20 52 45.8	
	comp=E,2μm,0.8s							
DHRM				IAML			20 52 47.0	
	comp=N,2μm,0.6s							
JWA	**Jwalamukhi**	**6.28**	**177**	*e*P		**Pn**	**20 51 42.0**	**+1.8**
JWA				*e*S		**Sn**	**20 52 49.0**	**-1.6**
THW	**Thamme Wali**	**6.34**	**214**	P		**Pn**	**20 51 41.8**	**+0.7**
KK31	**Karatay Array**	**6.43**	**322**	Pn		**Pn**	**20 51 41.3**	**-0.9**
	comp=N,20nm,0.5s,baz=126,slow=11,SNR=209							
KK31				⇓Sn		**Sn**	**20 52 49.2**	**-5.0**
	comp=N,196nm,0.7s,baz=135,slow=21,SNR=11							
KKAR	**Karatay Array**	**6.43**	**322**	*e*PN		**Pn**	**20 51 41.6**	**-0.6**
KKAR	**Karatay Array**	**6.43**	**322**	*e*Pn		**Pn**	**20 51 41.6**	**-0.6**
KKAR				*e*Sn		Sn	20 52 46.2	-8.0
KBL	**Kabul**	**6.62**	**239**	*e*PN		**Pn**	**20 51 45.7**	**+0.7**
KBL	**Kabul**	**6.62**	**239**	*e*Pn		**Pn**	**20 51 45.7**	**+0.7**
KBL				*e*Sn		Sn	20 52 52.5	-6.7
SDNR	**Sundarnagar**	**6.69**	**172**	*e*P		**Pn**	**20 51 48.0**	**+2.2**
SDNR				*e*S		**Sn**	**20 53 00.0**	**-0.7**
SARP	**Sargodha**	**6.77**	**204**	P		**Pn**	**20 51 47.3**	**+0.6**
SMLA	**Simla**	**7.08**	**171**	*i* P		**Pn**	**20 51 51.3**	**+0.3**
SMLA				*i* S		**Sn**	**20 53 08.1**	**-1.9**
DDI	**Dehra Dun**	**8.01**	**167**	*e*P		**Pn**	**20 52 05.0**	**+1.4**
DDI				*e*S		**Sn**	**20 53 28.6**	**-4.0**
DDI				IAML			20 53 34.1	
	comp=N,634nm,0.4s							
DDI				IAML			20 53 34.8	
	comp=E,781nm,0.5s							
KKR	**Kurukshetra**	**8.21**	**175**	*ex*		**Sn**	**20 53 33.9**	**-3.4**
RTK	**Rohtak**	**9.11**	**177**	*ex*		Sn	20 53 48.5	-11
LGTI	**Lohaghat**	**9.39**	**156**	*e*P		**Pn**	**20 52 23.6**	**+1.4**
LGTI				*e*S		**Sn**	**20 54 01.2**	**-4.8**
BHGR	**Bahadurgarh**	**9.48**	**175**	*ex*		Sn	20 53 59.9	-8.2
BISR	**Bishrakh**	**9.64**	**172**	*ex*		Sn	20 54 03.9	-8.1
MAKZ	**Makanchi**	**9.73**	**25**	*e*P		**Pn**	**20 52 25.2**	**-1.5**
MAKZ	**Makanchi**	**9.73**	**25**	*e*Pn		**Pn**	**20 52 25.2**	**-1.5**
MK01	**Makanchi Array**	**9.81**	**27**	*e*Pn		**Pn**	**20 52 26.5**	**-1.3**
MK31	**Makanchi Array**	**9.83**	**26**	Pn		**Pn**	**20 52 27.2**	**-0.8**
	comp=E,5.5nm,0.6s,baz=192,slow=11,SNR=80							
MK31				⇑Sn		**Sn**	**20 54 13.3**	**-3.1**
	comp=E,9.9nm,0.8s,baz=200,slow=24,SNR=3.5							
MK31	**Makanchi Array**	**9.83**	**26**	*e*P		**Pn**	**20 52 27.4**	**-0.6**
MK31	**Makanchi Array**	**9.83**	**26**	*e*Pn		**Pn**	**20 52 27.4**	**-0.6**
MK32	**Makanchi Array**	**9.83**	**26**	*e*Pn		**Pn**	**20 52 27.4**	**-0.6**
MK32				*e*Sn		**Sn**	**20 54 14.7**	**-1.7**
MKAR	**Makanchi Array**	**9.83**	**26**	P		**Pn**	**20 52 27.4**	**-0.5**
	comp=E,1.5nm,0.3s,baz=187,slow=13,SNR=66							
MKAR				S		**Sn**	**20 54 14.7**	**-1.7**
	comp=E,0.7nm,0.3s,baz=203,slow=20,SNR=3.8							
KUDL	**Kundal**	**9.99**	**177**	*e*P		**Pn**	**20 52 29.5**	**-0.8**
KUDL				*e*S		Sn	20 54 13.2	-7.4
KUDL				IAML			20 54 19.9	
	comp=N,93nm,0.4s							
KUDL				IAML			20 54 20.0	
	comp=E,75nm,0.4s							
KHET	**Khetri**	**10.05**	**181**	*e*P		**Pn**	**20 52 31.6**	**+0.5**
KHET				*e*S		Sn	20 54 13.9	-8.2
OTUK	**Ortayu**	**10.42**	**347**	⇓Pn		**Pn**	**20 52 33.4**	**-2.6**
	comp=E,11nm,0.9s							
OTUK				⇑Lg		Lg	20 55 28.7	
WMQ	**Urumqi**	**10.54**	**54**	P		**Pn**	**20 52 35.5**	**-2.1**
WMQ				sP			20 53 07.6	
WMQ				S		**Sn**	**20 54 32.3**	**-1.4**
WMQ				pmax	pmax			
	comp=E,32nm,0.8s							
WMQ				pmax	pmax			
	comp=E,100nm,5.0s							
WMQ				LR	LR			
	comp=E,2μm,19.2s							
WMQ				LR	LR			
	comp=E,600nm,19.2s							
WMQ				LR	LR			
	comp=E,760nm,21.8s							
PYUN	**Piuthan**	**11.64**	**147**	*e*P		**Pn**	**20 52 49.8**	**-2.8**
	comp=E,94nm,0.3s							
PYUN				*e*S		Sn	20 54 52.2	-8.6
KOLN	**Koldanda**	**12.19**	**146**	*e*P		Pn	20 52 56.6	-3.2
	comp=E,66nm,0.4s							
GKN	**Gorkha**	**12.47**	**142**	*e*P		**Pn**	**20 53 00.6**	**-2.9**
	comp=E,119nm,0.4s							
KURBB	**Kurchatov Arra**	**12.60**	**8**	P		**Pn**	**20 53 02.6**	**-2.2**
	comp=E,0.1nm,0.3s,baz=194,slow=12,SNR=11							
KURK	**Kurchatov**	**12.70**	**8**	*e*P		Pn	20 53 02.6	-3.5
KURK	**Kurchatov**	**12.70**	**8**	*e*Pn		Pn	20 53 02.6	-3.5
KKN	**Kakani**	**12.97**	**140**	*e*P		**Pn**	**20 53 07.6**	**-2.4**
	comp=E,36nm,0.4s							
DMN	**Daman**	**13.03**	**141**	*e*P		**Pn**	**20 53 08.0**	**-2.8**
	comp=E,62nm,0.4s							
GUN	**Gumba**	**13.18**	**138**	*e*P		**Pn**	**20 53 10.6**	**-2.3**
	comp=E,59nm,0.4s							
PKIN	**Phulchoki**	**13.20**	**140**	*e*P		Pn	20 53 09.9	-3.2
	comp=E,23nm,0.2s							
GEYT	**Alibeck**	**14.04**	**275**	P		**Pn**	**20 53 21.0**	**-2.6**
	comp=E,1.7nm,0.3s,baz=105,slow=9,SNR=16							
BHPL	**Bhopal**	**14.92**	**175**	*e*P		**Pn**	**20 53 35.6**	**+0.8**
BHPL				IAmb		IAmb	20 53 39.6	
	comp=Z,13nm,0.4s							
BHPL				*ex*		x	20 56 05.0	
VOSK	**Vostochnaya**	**14.97**	**348**	⇓Pn		**P**	**20 53 38.0**	**+0.3**
	comp=Z,28nm,0.8s							
VOSK	**Vostochnaya**	**14.97**	**348**	*e*P		**Pn**	**20 53 33.3**	**-1.9**
VOSK	**Vostochnaya**	**14.97**	**348**	*e*Pn		**Pn**	**20 53 33.3**	**-1.9**
LSA	**Lhasa**	**15.18**	**119**	*e*P		**P**	**20 53 40.3**	**-0.4**
LSA				pmax	pmax			
	comp=Z,9.0nm,0.7s							
LSA	**Lhasa**	**15.18**	**119**	*e*Pn		**P**	**20 53 40.3**	**-0.4**
	comp=Z,8.9nm,0.7s							
BVA0	**Borovoye Array**	**15.36**	**347**	Pn		**Pn**	**20 53 40.6**	**+0.5**
	comp=Z,85nm,1.4s,baz=151,slow=12,SNR=240							
BVAR	**Borovoye Array**	**15.36**	**347**	P		**Pn**	**20 53 38.3**	**-1.8**
	comp=Z,0.7nm,0.3s,baz=158,slow=10,SNR=26							
BRVK	**Borovoye**	**15.41**	**347**	⇓Pn		**Pn**	**20 53 41.1**	**+0.4**
	comp=Z,149nm,1.0s							
BRVK	**Borovoye**	**15.41**	**347**	*e*P		**Pn**	**20 53 40.0**	**-0.7**
BRVK				pmax	pmax			
	comp=Z,82nm,0.9s							
BRVK	**Borovoye**	**15.41**	**347**	*e*Pn		**Pn**	**20 53 40.0**	**-0.7**
	comp=Z,82nm,0.9s							
ZRNK	**Zerenda**	**15.56**	**344**	⇓Pn		**P**	**20 53 43.7**	**-0.6**
	comp=Z,39nm,0.8s							
ZRNK	**Zerenda**	**15.56**	**344**	*e*P		**Pn**	**20 53 41.7**	**-0.8**
ZRNK				pmax	pmax			
	comp=Z,37nm,0.8s							
ZRNK	**Zerenda**	**15.56**	**344**	*e*Pn		**Pn**	**20 53 41.7**	**-0.8**
	comp=Z,37nm,0.8s							
CHKZ	**Chkalovo**	**15.95**	**348**	⇓Pn		**Pn**	**20 53 46.2**	**-1.2**
	comp=Z,35nm,0.7s							
AB31	**Akbulak array**	**15.99**	**319**	⇓Pn		**Pn**	**20 53 45.8**	**-2.1**
	comp=Z,9.3nm,0.5s							
ABKAR	**Akbulak array**	**15.99**	**319**	*e*Pn		**Pn**	**20 53 45.6**	**-2.3**
ZAA0	**Zalesovo Array**	**16.94**	**18**	*e*P		**Pn**	**20 53 58.8**	**-0.7**
ZALV	**Zalesovo Beam**	**16.94**	**18**	P		**Pn**	**20 53 59.3**	**-0.1**
	comp=Z,4.1nm,0.3s,baz=214,slow=11,SNR=70							
ZALV				S		**Sn**	**20 57 07.2**	**-0.6**
	baz=226,slow=18,SNR=4.3							
ZAA1	**Zalesovo Array**	**16.94**	**18**	*e*P		**Pn**	**20 53 59.3**	**-0.2**
ZAA1				*e*S		**Sn**	**20 57 07.2**	**-0.7**
NVS	**Novosibirsk**	**17.41**	**14**	*e*P		**P**	**20 54 04.5**	**-0.2**
NVS				*e*			20 57 09.9	
NVS				pmax	pmax			
	comp=N,24nm,0.9s							
AKTO	**Aktyubinsk**	**17.70**	**320**	P		**P**	**20 54 08.5**	**+0.7**
	comp=N,3.6nm,0.3s,baz=120,slow=11,SNR=59							
AKTO				S		S	20 57 18.2	-7.2
	comp=N,0.8nm,0.3s,baz=355,slow=21,SNR=6.6							
AKTO	**Aktyubinsk**	**17.70**	**320**	⇑Pn		**P**	**20 54 07.1**	**-0.7**
	comp=N,36nm,1.3s							
SHL	**Shillong**	**18.44**	**128**	*e*P		**P**	**20 54 15.4**	**-0.9**
SHL				*e*P		**Pn**	**20 54 17.5**	**-0.3**
SHL				*ex*		x	20 57 21.5	
SHL				*ex*		x	20 57 35.0	
GTA	**Gaotai**	**18.66**	**79**	⇑P		**Pn**	**20 54 20.3**	**0.0**
GTA				sP		sP	20 54 55.4	0.0
GTA				pmax	pmax			
	comp=N,25nm,1.0s							
HYB	**Hyderabad**	**20.79**	**173**	*i* P		**P**	**20 54 43.0**	**+1.4**
HYB				*e*S		**S**	**20 58 30.0**	**+2.9**
WSAR	**Wadi Sarin**	**20.98**	**230**	P		**P**	**20 54 45.1**	**+1.5**
	comp=N,8.5nm,0.7s,baz=36,slow=1.9,SNR=12							
SVE	**Sverdlovsk**	**21.26**	**336**	⇑*e*P		**P**	**20 54 46.5**	**+0.2**
SVE				pmax	pmax			
	comp=Z,50nm,1.0s							
ARU	**Arti**	**21.64**	**333**	P		**P**	**20 54 50.6**	**+0.2**
	comp=Z,12nm,0.3s,baz=124,slow=3.4,SNR=28							
ARU	**Arti**	**21.64**	**333**	*d* iP		**P**	**20 54 49.9**	**-0.5**
ARU							20 55 23.5	
ARU				S		**S**	**20 58 42.5**	**0.0**
ARU				SS		**SnSn**	**20 59 19.9**	**+1.3**
ARU				pmax	pmax			
	comp=Z,39nm,0.8s							
ARU	**Arti**	**21.64**	**333**	*e*P		**P**	**20 54 50.2**	**-0.2**
	comp=Z,38nm,0.9s							
LZH	**Lanzhou**	**22.32**	**87**	*e*P		**P**	**20 54 57.8**	**-0.1**
LZH				pP		pP	20 55 23.3	+2.8
LZH				sP		sP	20 55 41.4	+6.0
LZH				pmax	pmax			
	comp=Z,23nm,1.0s							
LZH				pmax	pmax			
	comp=Z,89nm,4.3s							
ZAK	**Zakamensk**	**22.94**	**49**	*e*P		**P**	**20 55 04.0**	**+0.2**
ZAK				pmax	pmax			
	comp=Z,6.0nm,0.9s							
DGRG	**David-gareji**	**23.64**	**288**	P		**P**	**20 55 12.6**	**+2.3**
DGRG	**David-gareji**	**23.64**	**288**	*e*P		**P**	**20 55 12.6**	**+2.3**
TLY	**Talaya**	**23.66**	**46**	*e*P		**P**	**20 55 09.5**	**-0.8**
TLY				pmax	pmax			
	comp=Z,2.0nm,0.9s							
TLY	**Talaya**	**23.66**	**46**	*e*P		**P**	**20 55 11.3**	**+1.1**
	comp=Z,3.0nm,1.0s							
CD2	**Chengdu**	**23.98**	**99**	P		**P**	**20 55 13.1**	**-0.3**
CD2				pP		pP	20 55 39.0	+0.8
CD2				sP		sP	20 55 54.9	+2.0
CD2				S		**S**	**20 59 21.4**	**-0.2**
CD2				SS		**SnSn**	**21 00 20.0**	**+4.1**
CD2				pmax	pmax			
	comp=Z,20nm,0.9s							
CD2				pmax	pmax			
	comp=Z,1μm,13.2s							
CD2				LR	LR			
	comp=Z,4μm,15.2s							
CD2				LR	LR			
	comp=Z,3μm,14.7s							
CD2				LR	LR			
	comp=Z,4μm,14.3s							
SONA0	**Songino Array**	**24.16**	**57**	*e*P		**P**	**20 55 15.9**	**+1.0**
	comp=Z,27nm,0.9s							
SONM	**Songino Array**	**24.16**	**57**	P		**P**	**20 55 15.9**	**+1.0**
	comp=Z,19nm,0.6s,baz=256,slow=10,SNR=80							
SONA1	**Songino Array**	**24.16**	**57**	*e*P		**P**	**20 55 15.4**	**+0.4**
GNI	**Garni**	**24.21**	**285**	P		**P**	**20 55 17.8**	**+2.3**
	comp=Z,9.8nm,0.8s,baz=9.1,slow=2.7,SNR=11							
GNI	**Garni**	**24.21**	**285**	*d* iP		**P**	**20 55 17.0**	**+1.5**
GNI				pmax	pmax			
	comp=Z,40nm,0.9s							
GNI	**Garni**	**24.21**	**285**	*e*P		**P**	**20 55 17.5**	**+2.0**
	comp=Z,36nm,1.3s							
GUDG	**Gudauri**	**24.29**	**290**	P		**P**	**20 55 19.6**	**+3.3**
ULN	**Ulaanbaatar**	**24.59**	**57**	⇓*i*P		**P**	**20 55 19.3**	**+0.4**
ULN				*i* *PP		**pP**	**20 55 49.2**	**+4.8**
ULN				pmax	pmax			
	comp=Z,13nm,1.0s							
ULN	**Ulaanbaatar**	**24.59**	**57**	*e*P		**P**	**20 55 19.7**	**+0.8**
	comp=Z,12nm,0.8s							
SOKR	**Solikamsk**	**24.70**	**336**	*d* iP		**P**	**20 55 18.9**	**-0.6**
SOKR				pmax	pmax			
	comp=Z,60nm,1.3s							
ZEI	**Tsey**	**24.71**	**291**	*e*P		**P**	**20 55 24.3**	**+4.2**
ZEI				pmax	pmax			
	comp=Z,22nm,0.6s							
ONI	**Oni**	**25.05**	**291**	P		**P**	**20 55 25.5**	**+2.5**
ONI	**Oni**	**25.05**	**291**	*e*P		**P**	**20 55 25.4**	**+2.5**
AKH	**Akhalkalaki**	**25.06**	**288**	⇓*i*P		**P**	**20 55 26.7**	**+3.5**
KBZ	**Khabaz**	**25.46**	**293**	P		**P**	**20 55 28.5**	**+1.9**
	comp=Z,3.8nm,0.8s,baz=116,slow=9.0,SNR=8.9							
KVAR	**Kislovodsk Arr**	**25.61**	**294**	P		**P**	**20 55 30.9**	**+2.8**
	comp=Z,4.3nm,0.6s,baz=240,slow=1.8,SNR=6.9							
KIV	**Kislovodsk**	**25.62**	**294**	*i* P		**P**	**20 55 27.3**	**-0.8**
KIV				*i*			20 56 17.9	
KIV				pmax	pmax			
	comp=Z,5.0nm,1.1s							
KIV	**Kislovodsk**	**25.62**	**294**	*e*P		**P**	**20 55 27.6**	**-0.5**
	comp=Z,13nm,0.7s							
CHVG	**Ch'k'valeri**	**26.05**	**291**	⇓*i*P		P	20 55 37.3	+5.3
KMI	**Kunming**	**26.16**	**112**	P		**P**	**20 55 35.3**	**+1.9**
KMI				pmax	pmax			
	comp=Z,7.0nm,0.7s							
KMI				pmax	pmax			
	comp=Z,200nm,8.6s							
VRH	**Novokhopyorsk**	**27.33**	**310**	*e*P		**P**	**20 55 42.6**	**-0.7**
VRH				pmax	pmax			
	comp=Z,20nm,0.6s							
HHC	**Hu-ho-hao-te**	**27.51**	**73**	*e*P		**P**	**20 55 47.1**	**+1.9**
HHC				pmax	pmax			
	comp=Z,10.0nm,0.9s							
HHC				pmax	pmax			
	comp=Z,1μm,9.2s							
CHTO	**Chiang Mai**	**27.81**	**127**	*e*P		**P**	**20 55 47.5**	**-0.4**
CHTO				pmax	pmax			
	comp=Z,3.0nm,0.8s							
CHTO	**Chiang Mai**	**27.81**	**127**	*e*P		**P**	**20 55 47.5**	**-0.4**
	comp=Z,3.1nm,0.8s							
CM31	**Chiang Mai Arr**	**28.07**	**128**	*e*P		**P**	**20 55 49.4**	**-0.9**
CMAR	**Chiang Mai Arr**	**28.07**	**128**	P		**P**	**20 55 49.9**	**-0.4**
	comp=Z,0.6nm,0.4s,baz=310,slow=9.6,SNR=8.0							
CMAR	**Chiang Mai Arr**	**28.07**	**128**	*i* P		**P**	**20 55 50.4**	**+0.1**
CMAR				pmax	pmax			
	comp=Z,1.0nm,0.4s							
CM01	**Chiang Mai Arr**	**28.11**	**128**	*e*P		**P**	**20 55 50.5**	**-0.1**
GYA	**Guiyang**	**28.35**	**105**	*e*P		**P**	**20 55 52.6**	**-0.2**
GYA				pP		pP	20 56 21.3	+2.5
GYA				sP		sP	20 56 37.0	+4.3
GYA				PP		**PnPn**	**20 56 51.0**	**+2.8**
GYA				PcP		**PcP**	**20 59 03.4**	**+0.8**
GYA				S		**S**	**21 00 30.6**	**-0.2**
GYA				sS		sS	21 01 19.8	+3.5
GYA				ScP		**ScP**	**21 02 31.3**	**-1.2**
GYA				ScS		**ScS**	**21 06 24.5**	**-1.4**
GYA				pmax	pmax			
	comp=Z,10.0nm,0.9s							
LPSR	**Galich'ya Gora**	**29.36**	**312**	*e*P		**P**	**20 56 01.2**	**-0.1**
LPSR				pmax	pmax			
	comp=Z,20nm,0.8s							
RAYN	**Ar Rayn**	**29.76**	**249**	*e*P		**P**	**20 56 05.2**	**0.0**
	comp=Z,3.3nm,0.9s							
BJI	**Beijing**	**31.11**	**74**	P		**P**	**20 56 17.4**	**+0.5**
BJI				pmax	pmax			
	comp=Z,9.0nm,1.2s							
OBN	**Obninsk**	**31.38**	**316**	⇓*e*P		**P**	**20 56 19.0**	**0.0**
OBN				*e**PP		**pP**	**20 56 45.6**	**+0.3**
OBN				*e*			20 57 24.6	
OBN				*i* S		**S**	**21 01 22.9**	**+5.5**
OBN				pmax	pmax			
	comp=Z,19nm,1.1s							
SIM	**Simferopol'**	**31.74**	**296**	P		**P**	**20 56 23.1**	**+0.7**
SIM				pmax	pmax			
	comp=Z,21nm,0.8s							
NRIK	**Noril'sk**	**31.87**	**8**	P		**P**	**20 56 23.6**	**+0.3**
	comp=Z,5.2nm,0.6s,baz=172,slow=6.2,SNR=4.6							
KLMR	**Klimovskoe**	**32.11**	**327**	*e*P		**P**	**20 56 22.9**	**-2.5**
KLMR				pmax	pmax			
	comp=Z,36nm,1.0s							
BR101	**Keskin Array S**	**32.71**	**286**	*e*P		**P**	**20 56 32.1**	**+1.0**
BR131	**Keskin Array S**	**32.71**	**286**	*e*P		**P**	**20 56 31.9**	**+0.7**
BRTR	**Keskin Array B**	**32.71**	**286**	P		**P**	**20 56 32.1**	**+1.0**
	comp=Z,4.9nm,0.8s,baz=92,slow=7.7,SNR=20							
ANTO	**Ankara**	**33.32**	**287**	*e*P		**P**	**20 56 37.0**	**+0.6**
ANTO				pmax	pmax			
	comp=Z,14nm,1.3s							
ANTO	**Ankara**	**33.32**	**287**	*e*P		**P**	**20 56 37.0**	**+0.6**
	comp=Z,14nm,1.3s							
BR231	**Keskin MP Arra**	**33.34**	**287**	*e*P		P	20 56 32.9	-3.7
TMCR	**Tamitsa**	**34.35**	**332**	*e*P		**P**	**20 56 45.2**	**+0.4**
TMCR				pmax	pmax			
	comp=Z,43nm,0.7s							
AKASG	**Malin Array Be**	**35.06**	**306**	P		**P**	**20 56 51.1**	**0.0**
	comp=Z,5.1nm,0.4s,baz=79,slow=7.2,SNR=43							
AKBB	**Malin Array Si**	**35.06**	**306**	*e*P		**P**	**20 56 50.6**	**-0.5**
AKBB				pmax	pmax			
	comp=Z,20nm,1.0s							
AKBB	**Malin Array Si**	**35.06**	**306**	*e*P		**P**	**20 56 50.6**	**-0.5**
	comp=Z,20nm,1.0s							
KIEV	**Kiev**	**35.07**	**306**	*e*P		**P**	**20 56 50.8**	**-0.3**
KIEV				pmax	pmax			
	comp=Z,18nm,0.9s							
KIEV	**Kiev**	**35.07**	**306**	*e*P		**P**	**20 56 50.8**	**-0.3**
	comp=Z,18nm,0.9s							
AK11	**Malin Array Si**	**35.09**	**306**	*e*P		**P**	**20 56 50.9**	**-0.5**
NJ2	**Nanjing**	**35.40**	**87**	*e*P		**P**	**20 56 55.1**	**+0.9**
NJ2				pmax	pmax			
	comp=Z,16nm,0.6s							
SORM	**Soroca**	**35.61**	**302**	⇑*i*P		**P**	**20 56 56.0**	**+0.2**
CFR	**Carcaliu**	**35.95**	**297**	⇑*i*P		**P**	**20 56 59.9**	**+1.1**
MSAB	**Monastry St. A**	**36.30**	**295**	⇑*i*P		**P**	**20 57 03.4**	**+1.6**
ODBI	**Odobesti**	**36.65**	**298**	⇑*i*P		**P**	**20 57 06.4**	**+1.7**
TESR	**Tescani**	**36.86**	**299**	⇓*i*P		**P**	**20 57 07.3**	**+0.8**
NACGM	**Naroch**	**36.86**	**313**	*e*		**P**	**20 57 06.0**	**-0.4**
VRI	**Vrincioaia**	**36.87**	**298**	⇓*i*P		**P**	**20 57 08.8**	**+2.2**
VRI	**Vrincioaia**	**36.87**	**298**	P		**P**	**20 57 08.9**	**+2.3**
VRI				pmax	pmax			
	comp=Z,78nm,1.0s							
PLOR	**Plostina**	**36.92**	**

OJC	**Ojcow**	**41.09 306**	*eP*	**P**	**20 57 42.4 +0.8**
OJC	**Ojcow**	**41.09 306**	*eP*	**P**	**20 57 42.0 +0.4**
OJC			pmax	pmax	
	comp=Z,19nm,0.6s				
OJC	**Ojcow**	**41.09 306**	*eP*	**P**	**20 57 42.0 +0.4**
	comp=Z,19nm,0.6s				
ARA0	**ARCESS Array S**	**41.19 336**	*eP*	**P**	**20 57 42.5 +0.3**
ARCES	**ARCESS Array B**	**41.19 336**	P	**P**	**20 57 42.9 +0.7**
	comp=Z,23nm,0.6s,baz=107,slow=8.5,SNR=111				
LANS	**Liptovska Anna**	**41.41 304**	*eP*	**P**	**20 57 45.8 +1.5**
LANS	**Liptovska Anna**	**41.41 304**	*eP*	**P**	**20 57 45.8 +1.5**
VYHS	**Vyhne**	**41.90 303**	*eP*	**P**	**20 57 49.0 +0.6**
VYHS			pmax	pmax	
	comp=Z,5.0nm,1.2s				
VYHS	**Vyhne**	**41.90 303**	*eP*	**P**	**20 57 49.0 +0.6**
USRK	**Ussuriysk Ar.**	**41.93 63**	P	**P**	**20 57 48.2 -0.3**
	comp=Z,1.2nm,0.6s,baz=275,slow=8.4,SNR=2.9				
OKC	**Ostrava-Krasne**	**42.19 305**	*iP*	**P**	**20 57 51.2 +0.6**
OKC	**Ostrava-Krasne**	**42.19 305**	*iP*	**P**	**20 57 51.2 +0.6**
PKSM	**Moragy**	**42.39 300**	*iP*	**P**	**20 57 53.7 +1.4**
MORC	**Moravsky Berou**	**42.58 305**	*iP*	**P**	**20 57 55.2 +1.3**
MORC	**Moravsky Berou**	**42.58 305**	*eP*	**P**	**20 57 54.3 +0.4**
MORC			pmax	pmax	
	comp=Z,38nm,0.7s				
MORC	**Moravsky Berou**	**42.58 305**	*eP*	**P**	**20 57 54.3 +0.4**
	comp=Z,38nm,0.7s				
PDG	**Podgorica**	**42.76 294**	*iP*	**P**	**20 57 56.4 +1.1**
TIXI	**Tiksi**	**42.77 22**	P	**P**	**20 57 55.1 0.0**
	comp=Z,2.4nm,0.3s,baz=297,slow=6.0,SNR=17				
TIXI	**Tiksi**	**42.77 22**	*eP*	**P**	**20 57 55.5 +0.5**
TIXI			pmax	pmax	
	comp=Z,3.0nm,1.0s				
TIXI	**Tiksi**	**42.77 22**	*eP*	**P**	**20 57 54.7 -0.3**
	comp=Z,3.3nm,0.7s				
KRLC	**Kraliky**	**43.03 306**	*iP*	**P**	**20 57 58.4 +0.9**
KRLC	**Kraliky**	**43.03 306**	*iP*	**P**	**20 57 58.4 +0.9**
HABR	**Khabarovsk**	**43.24 56**	*eP*	**P**	**20 57 57.7 -1.4**
HABR			*e**PP	**pP**	**20 58 27.0 +0.6**
HABR			*e**SP	**sP**	**20 58 41.9 +1.9**
HABR			*eS*	**S**	**21 04 15.2 -1.8**
HABR			*e**SS	**sS**	**21 05 05.8 +1.5**
HABR			*e*		21 07 44.0
HABR			pmax	pmax	
	comp=Z,29nm,2.0s				
HABR			pmax	pmax	
	comp=Z,16nm,1.6s				
HABR			pmax	pmax	
	comp=E,30nm,1.7s				
HABR			MLR	MLR	
	comp=Z,160nm,13.0s				
KSP	**Ksiaz**	**43.25 307**	*eP*	**P**	**20 58 00.2 +1.1**
KSP	**Ksiaz**	**43.25 307**	*eP*	**P**	**20 58 00.3 +1.1**
VRAC	**Vranov**	**43.26 305**	*iP*	**P**	**20 58 01.0 +1.7**
VRAC	**Vranov**	**43.26 305**	P	**P**	**20 58 00.9 +1.7**
DPC	**Dobruska-Polom**	**43.29 306**	*iP*	**P**	**20 58 00.6 +1.0**
DPC			*ex*	x	20 58 46.1
DPC	**Dobruska-Polom**	**43.29 306**	*iP*	**P**	**20 58 00.6 +1.0**
DPC			*e*		20 58 46.1
CONA	**Conrad Observa**	**43.96 303**	*iP*	**P**	**20 58 05.9 +1.0**
	comp=Z,16nm,0.7s,SNR=8.3				
TREC	**Trest**	**43.98 305**	*eP*	**P**	**20 58 06.1 +1.1**
TREC	**Trest**	**43.98 305**	*eP*	**P**	**20 58 06.1 +1.1**
GOPC	**GO Pecny, Ondr**	**44.33 306**	*eP*	**P**	**20 58 08.8 +1.0**
GOPC	**GO Pecny, Ondr**	**44.33 306**	*eP*	**P**	**20 58 08.8 +1.0**
PVCC	**Panska Ves**	**44.38 307**	*iP*	**P**	**20 58 09.1 +0.9**
PVCC	**Panska Ves**	**44.38 307**	*iP*	**P**	**20 58 09.1 +0.9**
PRU	**Pruhonice**	**44.47 306**	*iP*	**P**	**20 58 09.9 +0.9**
PRU			*ex*	x	20 58 55.5
PRU	**Pruhonice**	**44.47 306**	*iP*	**P**	**20 58 09.9 +0.9**
PRU			*e*		20 58 55.5
BRG	**Berggiesshubel**	**44.72 307**	*iP*	**P**	**20 58 11.7 +0.8**
	comp=Z,15nm,1.0s				
BRG			SS	**S**	**21 04 39.0 +0.6**
	comp=N,1μm,18.9s comp=E,1μm,15.7s comp=Z,3μm,16.2s				
BRG	**Berggiesshubel**	**44.72 307**	*iP*	**P**	**20 58 11.7 +0.8**
BRG			SS	**S**	**21 04 39.0 +0.6**
BRG			pmax	pmax	
	comp=Z,15nm,1.0s				
BRG			MLR	MLR	
	comp=N,1μm,18.9s				
BRG			MLR	MLR	
	comp=E,1μm,15.7s				
BRG			MLR	MLR	
	comp=Z,3μm,16.2s				
SOKA	**Soboth**	**44.75 301**	*iP*	**P**	**20 58 12.2 +0.9**
	comp=Z,18nm,0.7s,SNR=10				
MOA	**Molln**	**45.03 303**	*iP*	**P**	**20 58 14.0 +0.6**
	comp=Z,7.1nm,0.6s,SNR=5.4				
GEC2	**GERESS Array S**	**45.21 305**	*eP*	**P**	**20 58 15.8 +0.9**
GEC2			pmax	pmax	
	comp=Z,10.0nm,0.7s				
GEC2	**GERESS Array S**	**45.21 305**	*eP*	**P**	**20 58 15.8 +0.9**
	comp=Z,9.9nm,0.7s				
GERES	**GERESS Array B**	**45.21 305**	P	**P**	**20 58 15.5 +0.6**
	comp=Z,8.9nm,0.8s,baz=66,slow=7.3,SNR=58				
GEA0	**GERESS Array S**	**45.21 305**	*eP*	**P**	**20 58 15.3 +0.4**
NC405	**NORSAR Array S**	**45.22 322**	*eP*	**P**	**20 58 14.9 +0.2**
KHC	**Kasperske Hory**	**45.24 305**	*iP*	**P**	**20 58 16.0 +0.9**
KHC			*ex*	x	20 59 02.0
KHC	**Kasperske Hory**	**45.24 305**	*eP*	**P**	**20 58 15.9 +0.9**
KHC			pmax	pmax	
	comp=Z,6.0nm,0.7s				
KHC	**Kasperske Hory**	**45.24 305**	*eP*	**P**	**20 58 15.9 +0.9**
	comp=Z,6.0nm,0.7s				
CLL	**Collm**	**45.24 308**	*iP*	**P**	**20 58 15.4 +0.4**
	comp=Z,10.0nm,0.7s				
CLL			*e*		20 58 53.0
CLL			*e*PP	**PP**	**21 00 03.0 +0.1**
CLL	**Collm**	**45.24 308**	*iP*	**P**	**20 58 15.4 +0.4**
CLL			pmax	pmax	
	comp=Z,10.0nm,0.7s				
CLL	**Collm**	**45.24 308**	*eP*	**P**	**20 58 15.0 0.0**
	comp=Z,12nm,0.6s				
NC303	**NORSAR Array S**	**45.39 322**	*eP*	**P**	**20 58 16.4 +0.3**
NB201	**NORSAR Array S**	**45.43 322**	*eP*	**P**	**20 58 16.2 -0.2**
NB2	**NORSAR Subarra**	**45.47 322**	P	**P**	**20 58 16.6 -0.2**
	comp=Z,15nm,0.6s,baz=90,slow=7.9				
NB2	**NORSAR Subarra**	**45.47 322**	P	**P**	**20 58 16.6 -0.2**
	baz=90,slow=7.9				
NB200	**NORSAR Array S**	**45.47 322**	*eP*	**P**	**20 58 16.5 -0.2**
NOA	**NORSAR Array B**	**45.47 322**	P	**P**	**20 58 16.5 -0.2**
	comp=Z,14nm,0.6s,baz=91,slow=7.6,SNR=58				
NAO01	**NORSAR Array S**	**45.63 322**	*eP*	**P**	**20 58 17.7 -0.2**
NBO00	**NORSAR Array S**	**45.68 322**	*eP*	**P**	**20 58 18.0 -0.4**
NC204	**NORSAR Array S**	**45.68 322**	*eP*	**P**	**20 58 18.0 -0.5**
NKC	**Novy Kostel**	**45.76 307**	*iP*	**P**	**20 58 19.9 +0.7**
NKC	**Novy Kostel**	**45.76 307**	*iP*	**P**	**20 58 19.9 +0.7**
MOX	**Moxa**	**46.21 307**	P	**P**	**20 58 23.9 +1.2**
MOX			pmax	pmax	
	comp=Z,8.0nm,0.9s				
GRFO	**Grafenberg**	**46.64 306**	*eP*	**P**	**20 58 26.6 +0.5**
GRFO			pmax	pmax	
	comp=Z,11nm,0.8s				
GRFO	**Grafenberg**	**46.64 306**	*eP*	**P**	**20 58 26.6 +0.5**
	comp=Z,11nm,0.8s				
MOTA	**Moosalm**	**47.23 303**	*iP*	**P**	**20 58 31.7 +0.9**
	comp=Z,7.8nm,0.7s,SNR=8.5				
FUORN	**Ofenpass-Fuorn**	**47.96 302**	*eP*	**P**	**20 58 36.4 -0.2**
	comp=Z,11nm,0.7s				
DAVA	**Damuels**	**48.05 303**	*iP*	**P**	**20 58 37.3 +0.1**
	comp=Z,22nm,0.6s,SNR=13				
TUE	**Stuetta**	**48.61 302**	*eP*	**P**	**20 58 40.7 -0.8**
	comp=Z,7.6nm,0.6s				
MJAR	**Matsushiro Arr**	**48.70 72**	P	**P**	**20 58 42.5 +0.4**
	comp=Z,1.5nm,0.5s,baz=285,slow=9.4,SNR=4.3				
BFO	**Black Forest**	**48.80 305**	*eP*	**P**	**20 58 42.8 +0.1**
BFO			pmax	pmax	
	comp=Z,5.0nm,0.8s				
BFO	**Black Forest**	**48.80 305**	*eP*	**P**	**20 58 42.8 +0.1**
	comp=Z,5.2nm,0.8s				
CDF	**Champ du Feu**	**49.46 305**	*eP*	**P**	**20 58 47.5 -0.3**
CDF			pmax	pmax	
	comp=Z,9.0nm,1.2s				
MEM	**Membach**	**49.71 308**	P	**P**	**20 58 50.6 +1.0**
WLF	**Walferdange**	**49.86 307**	P	**P**	**20 58 51.8 +1.1**
SENIN	**Lac Senin/Sane**	**50.00 303**	*eP*	**P**	**20 58 51.9 -0.2**
	comp=Z,8.7nm,0.8s				
BCLA	**Clavier**	**50.20 308**	P	**P**	**20 58 53.7 +0.5**
LPG	**La Plagne**	**50.62 302**	*eP*	**P**	**20 58 57.8 +0.9**
LPG			pmax	pmax	
	comp=Z,14nm,0.7s				
LPL	**La Plagne**	**50.63 302**	*eP*	**P**	**20 58 57.7 +0.8**
LPL			pmax	pmax	
	comp=Z,24nm,0.9s				
DOU	**Dourbes**	**50.72 308**	P	**P**	**20 58 57.9 +0.7**
SNF	**Seneffe**	**50.80 309**	P	**P**	**20 58 57.9 +0.1**
LOR	**Lormes**	**51.99 305**	*eP*	**P**	**20 59 05.8 -0.9**
LOR			pmax	pmax	
	comp=Z,5.0nm,0.8s				
SSB	**Saint Sauveur**	**52.17 302**	*eP*	**P**	**20 59 08.1 0.0**
SSB			pmax	pmax	
	comp=Z,9.0nm,0.8s				
SSB	**Saint Sauveur**	**52.17 302**	*eP*	**P**	**20 59 08.1 0.0**
	comp=Z,8.8nm,0.8s				
SMF	**Signal de Mont**	**52.20 304**	*eP*	**P**	**20 59 07.6 -0.7**
SMF			pmax	pmax	
	comp=Z,8.0nm,0.7s				
KEST	**Kesra**	**52.22 289**	P	**P**	**20 59 09.3 +0.7**
	comp=Z,3.3nm,0.6s,baz=47,slow=8.8,SNR=7.4				
KEST	**Kesra**	**52.22 289**	*eP*	**P**	**20 59 08.5 -0.2**
	comp=Z,48nm,1.8s				
CAF	**Calviac**	**53.94 302**	*eP*	**P**	**20 59 21.1 0.0**
CAF			pmax	pmax	
	comp=Z,8.0nm,0.8s				
LDF	**La Druitiere**	**54.11 307**	*eP*	**P**	**20 59 21.4 -0.8**
LDF			pmax	pmax	
	comp=Z,9.0nm,0.5s				
MFF	**Saint Martin d**	**54.80 305**	*eP*	**P**	**20 59 26.5 -0.8**
MFF			pmax	pmax	
	comp=Z,9.0nm,1.2s				
BORG	**Borgarnes**	**59.13 330**	*iP*	P	20 59 54.3 -3.1
ES19	**SONSECA Array**	**60.08 299**	*eP*	**P**	**21 00 04.3 -0.1**
ESDC	**Sonseca Array**	**60.13 299**	P	**P**	**21 00 04.5 -0.3**
	comp=Z,1.9nm,0.7s,baz=56,slow=7.2,SNR=17				
SUMG	**Summit**	**60.75 342**	*eP*	**P**	**21 00 09.6 +0.7**
SUMG			pmax	pmax	
	comp=Z,11nm,1.0s				
SUMG	**Summit**	**60.75 342**	*eP*	**P**	**21 00 09.6 +0.7**
	comp=Z,11nm,1.0s				
TAM	**Tamanrasset**	**61.25 277**	*eP*	**P**	**21 00 12.1 -0.7**
TAM			pmax	pmax	
	comp=Z,3.0nm,0.7s				
TAM	**Tamanrasset**	**61.25 277**	*eP*	**P**	**21 00 12.1 -0.7**
	comp=Z,3.1nm,0.7s				
TOA1	**Torodi Ar. Sit**	**69.65 271**	*eP*	**P**	**21 01 05.9 -0.8**
	comp=Z,9.4nm,0.6s				
TOA0	**Torodi Ar. Sit**	**69.65 271**	*eP*	**P**	**21 01 05.5 -1.2**
	comp=Z,9.9nm,0.6s				
TORD	**Torodi Ar. Bea**	**69.65 271**	P	**P**	**21 01 05.9 -0.8**
	comp=Z,10.0nm,0.6s,baz=47,slow=5.5,SNR=202				
BPAW	**Bear Paw Mtn.**	**71.57 20**	*eP*	**P**	**21 01 17.5 -0.1**
	comp=Z,6.6nm,1.3s				
INK	**Inuvik**	**71.59 11**	P	**P**	**21 01 17.9 +0.3**
	comp=Z,6.8nm,0.9s,baz=354,slow=7.3,SNR=27				
COLA	**College**	**71.74 18**	*iP*	**P**	**21 01 18.7 +0.1**
COLA			pmax	pmax	
	comp=Z,5.0nm,0.9s				
CAST	**Castle Rocks**	**71.81 21**	*eP*	**P**	**21 01 19.5 +0.4**
	comp=Z,8.2nm,1.2s				
IL1	**Eielson Array**	**72.06 18**	*eP*	**P**	**21 01 19.8 -0.7**
ILAR	**Eielson Array**	**72.06 18**	P	**P**	**21 01 19.3 -1.2**
	comp=Z,2.0nm,0.9s,baz=317,slow=5.2,SNR=18				
ILB	**Eielson Array**	**72.06 18**	*eP*	**P**	**21 01 19.5 -1.0**
PAX	**Paxson**	**73.92 18**	*eP*	**P**	**21 01 31.1 -0.5**
PAX			pmax	pmax	
	comp=Z,12nm,1.4s				
PAX	**Paxson**	**73.92 18**	*eP*	**P**	**21 01 31.1 -0.5**
	comp=Z,12nm,1.4s				
KDAK	**Kodiak Island**	**76.13 24**	*iP*	**P**	**21 01 46.1 +1.9**
DBIC	**Dimbokro**	**78.67 270**	P	**P**	**21 01 58.9 -0.2**
	comp=Z,8.5nm,0.7s,baz=47,slow=5.7,SNR=16				
DBIC	**Dimbokro**	**78.67 270**	*eP*	**P**	**21 01 58.7 -0.4**
	comp=Z,9.7nm,0.8s				
KIC	**Ksan Boka**	**78.77 269**	*eP*	**P**	**21 01 59.7 0.0**
	comp=Z,23nm,0.6s				
TIC	**Toumodi**	**78.82 270**	*eP*	**P**	**21 01 59.8 -0.2**
LIC	**Lamto**	**79.08 269**	*eP*	P	21 01 57.1 -4.3
	comp=Z,39nm,1.4s				
YKW3	**Yellowknife Ar**	**79.27 5**	*eP*	**P**	**21 02 01.4 -0.2**
	comp=Z,4.7nm,0.9s				
YKA	**Yellowknife Ar**	**79.34 5**	P	**P**	**21 02 01.9 0.0**
	comp=Z,4.0nm,0.5s,baz=346,slow=5.6,SNR=115				
YKB5	**Yellowknife Ar**	**79.34 5**	*eP*	**P**	**21 02 01.3 -0.6**
WR1	**Warramunga Arr**	**79.64 125**	*eP*	**P**	**21 02 03.7 -0.5**
	comp=Z,12nm,1.3s				
WRA	**Warramunga Arr**	**79.64 125**	P	**P**	**21 02 03.7 -0.5**
	comp=Z,0.8nm,0.5s,baz=319,slow=4.3,SNR=21				
DLBC	**Dease Lake**	**81.35 13**	P	**P**	**21 02 13.3 +0.4**
	comp=Z,1.6nm,0.7s,baz=296,slow=10,SNR=5.7				
DLBC	**Dease Lake**	**81.35 13**	*eP*	**P**	**21 02 13.8 +0.9**
	comp=Z,3.9nm,0.7s				
BOSA	**Boshof**	**81.59 223**	P	**P**	**21 02 14.7 +0.1**
	comp=Z,2.6nm,0.9s,baz=72,slow=5.9,SNR=3.8				
AS31	**Alice Springs**	**82.08 128**	*eP*	**P**	**21 02 16.3 -0.8**
	comp=Z,1.0nm,0.6s				
ASAR	**Alice Springs**	**82.08 128**	P	**P**	**21 02 16.8 -0.3**
	comp=Z,1.1nm,0.6s,baz=313,slow=5.3,SNR=21				
FFC	**Flin Flon**	**87.47 359**	*eP*	**P**	**21 02 43.5 -0.2**
FFC			pmax	pmax	
	comp=Z,7.0nm,0.9s				
FFC	**Flin Flon**	**87.47 359**	*eP*	**P**	**21 02 43.5 -0.2**
	comp=Z,6.6nm,0.9s				
CTA	**Charters Towers**	**87.74 118**	P	**P**	**21 02 45.5 0.0**
	comp=Z,3.1nm,0.7s,baz=359,slow=3.1,SNR=4.1				

IDC 16 20:53:29.4±1.7, 14.10N×143.50E, h0km, mb3.6/3, mb1 3.9/3, mb1mx3.3/54, mbtmp3.6/3, MS3.8/1, Ms1 3.8/1, ms1mx3.1/35, Error ellipse: s-maj=38.6km s-min=28.8km az=139.0, Mariana Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
GUMO	**Guam**	**1.42**	**111**	Pn	Pn	20 53 56.3	-0.3
	64nm,0.3s,baz=95,slow=5.0,SNR=41						
GUMO				Sn	Sn	20 54 22.4	+6.4
	28nm,0.3s,baz=352,slow=23,SNR=12						
WRA	**Warramunga Arr**	**35.01**	**195**	P	P	21 00 23.8	-0.1
	1.7nm,0.9s,baz=11,slow=8.9,SNR=4.7						
KLR	**Kul'dur**	**36.34**	**347**	LR	LR	21 12 37.4	
	comp=Z,135nm,19.6s,baz=140,slow=32						
ASAR	**Alice Springs**	**38.69**	**194**	P	P	21 00 55.2	0.0
	0.3nm,0.9s,baz=23,slow=12,SNR=2.8						
YKA	**Yellowknife Ar**	**83.02**	**27**	P	P	21 05 56.5	+0.1
	0.2nm,0.6s,baz=282,slow=5.5,SNR=4.4						

RSNC 16 20:53:50.7±0.5, 6.71N×73.10W, h137km±6km, ML1.8, Northern Colombia

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
BARC	**Barichara**	**0.14**	**213**	*eP*	Pn	20 54 08.9	-0.7
BARC				*eS*	Sn	20 54 23.7	-0.1
BARC				*i*		20 54 25.6	
	comp=Z,15nm,0.2s						
BRRC	**Barranca, Sant**	**0.72**	**303**	*eP*	Pn	20 54 11.7	-0.3
BRRC				*eS*	Sn	20 54 27.4	-0.7
PAMC	**Pamplona, Colo**	**0.74**	**33**	*eP*	Pn	20 54 12.4	-0.2
PAMC				*eS*	Sn	20 54 29.3	0.0
PAMC				*i*		20 54 31.2	
	comp=Z,6.5nm,0.7s						
CBRI	**Barrientos, No**	**1.04**	**17**	*eP*	Pn	20 54 14.2	-0.6
CBRI				*eS*	Sn	20 54 33.1	-0.1
NORC	**Norcasia**	**2.10**	**237**	*eP*	Pn	20 54 26.2	-0.1

NIED ***16*** *20:54:00, 38.60N×141.90E, h53km, Mw4.3 Best double couple: M0 2.89000×10^15 NP1:ϕs 194.00000°, δ24.00000°, λ94.00000°. NP2:ϕs 11.00000°, δ66.00000°, λ88.00000°.*

ISCJB ***16*** *20:54:08.9±0.5, 38.65N±0.03×141.88E±0.06, h57km±3km, mb4.2/42, MS3.2/2, Error ellipse: s-maj=8.5km s-min=4.5km az=27.2*

BJI ***16*** *20:54:08.3, 38.86N×141.48E, h27km, mb4.5/26, mB5.1/8, Ms4.5/6, Ms7 4.3/6*

MOS ***16*** *20:54:08.7±0.9, 38.69N×141.93E, h56km, mb4.6/20, Error ellipse: s-maj=10.4km s-min=7.0km az=91.6*

JMA ***16*** *20:54:09.9±0.1, 38.64N×141.89E, h49km±1km, M4.0 JMA Felt II J1.*

IDC ***16*** *20:54:10.7±2.0, 38.63N×141.87E, h58km±17km, mb3.7/22, mb1 3.9/27, mb1mx3.8/57, mbtmp4.0/27, ML3.5/5, MS2.6/1, Ms1 2.6/1, ms1mx2.6/40, Error ellipse: s-maj=15.7km s-min=12.7km az=119.0*

NEIC ***16*** *20:54:11.8±0.9, 38.85N×141.51E, h45km±9km, mb4.6/15, Error ellipse: s-maj=14.4km s-min=8.4km az=122.0*

ISC 16 20:54:09.3±1.0, 38.63N±0.05×141.96E±0.06, h48km±8km,

n105, σ1§29/104, mb4.2/42, 1C, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
OFUJ	**Ofunato**	**0.50**	**333**	P	**Pn**	**20 54 20.7**	**+0.2**
OFUJ				S	**Sn**	**20 54 28.3**	**-0.2**
JIO	**Ouri**	**0.51**	**250**	P	**Pn**	**20 54 20.5**	**-0.1**
JIO				S	**Sn**	**20 54 27.8**	**-0.9**
JMK	**Ichinoseki**	**0.66**	**299**	P	**Pn**	**20 54 22.5**	**0.0**
JMK				S	**Sn**	**20 54 31.5**	**-0.5**
JOM	**Ohasama**	**0.99**	**328**	P	**Pn**	**20 54 27.1**	**+0.2**
JOU	**Okura**	**1.05**	**256**	P	**Pn**	**20 54 27.6**	**-0.1**
JMM	**Marumori**	**1.20**	**231**	P	**Pn**	**20 54 29.2**	**-0.5**
JMM				S	**Sn**	**20 54 43.8**	**-1.0**
JYK	**Kaneyama**	**1.28**	**283**	P	**Pn**	**20 54 30.9**	**0.0**
JYK				S	**Sn**	**20 54 43.3**	**-3.6**
JRG	**Rokugo**	**1.28**	**307**	P	**Pn**	**20 54 30.9**	**0.0**
JYS	**Shirataka**	**1.54**	**255**	P	**Pn**	**20 54 34.7**	**+0.3**
ERM	**Erimo**	**3.50**	**15**	*eP*	**Pn**	**20 55 02.2**	**+1.0**
ERM	**Erimo**	**3.50**	**15**	*ePn*	**Pn**	**20 55 02.2**	**+1.0**
MJAR	**Matsushiro Arr**	**3.64**	**236**	P	**Pn**	**20 55 04.3**	**+1.2**
	3.4nm,0.3s,baz=43,slow=11,SNR=33						
MAJO	**Matsushiro**	**3.64**	**236**	*eP*	**Pn**	**20 55 05.0**	**+1.9**
MAJO	**Matsushiro**	**3.64**	**236**	*ePn*	**Pn**	**20 55 05.0**	**+1.9**
MAT	**Matsushiro**	**3.64**	**236**	P	**Pn**	**20 55 04.8**	**+1.6**
MAT				*eS*	**Sn**	**20 55 43.7**	**-1.1**
MJB9	**Matsu-Tunnel**	**3.64**	**236**	*ePn*	**Pn**	**20 55 05.1**	**+1.9**
INU	**Inuyama**	**5.14**	**232**	*ePn*	**Pn**	**20 55 25.5**	**+1.8**
ASAJ	**Asahikawa**	**5.50**	**5**	P	**Pn**	**20 55 29.2**	**+0.5**
	3.3nm,0.3s,baz=210,slow=14,SNR=20						
ASAJ				S	**Sn**	**20 56 34.5**	**+3.9**
	3.1nm,0.3s,baz=78,slow=23,SNR=4.4						
JHJ2	**Mitsune**	**5.78**	**198**	*ePn*	**Pn**	**20 55 33.5**	**+1.0**
JHJ	**Hachijo jima 2**	**5.78**	**198**	P	**Pn**	**20 55 32.4**	**-0.1**
	5.1nm,0.3s,baz=319,slow=22,SNR=11						
JHJ				S	**Sn**	**20 56 36.6**	**-0.8**
	8.2nm,0.3s,baz=74,slow=22,SNR=3.6						
YUK	**Yuzh-Kuril'sk**	**6.14**	**27**	*eP*	**Pn**	**20 55 38.0**	**+0.6**
YUK				*eS*	**Sn**	**20 56 41.9**	**-4.4**
YUK				pmax	pmax		
	comp=Z,181nm,0.2s						
YUK				pmax	pmax		
	comp=N,34nm,0.1s						
YUK				pmax	pmax		
	comp=E,20nm,0.1s						
KUR	**Kuril'sk**	**7.93**	**32**	*eP*	**Pn**	**20 56 02.1**	**+0.2**
KUR				*eS*	**Sn**	**20 57 25.2**	**-4.9**
KUR				pmax	pmax		
	comp=Z,34nm,0.6s						
KUR				pmax	pmax		
	comp=N,16nm,0.2s						
KUR				pmax	pmax		
	comp=E,16nm,0.3s						
USRK	**Ussuriysk Ar.**	**9.33**	**310**	P	**Pn**	**20 56 22.0**	**+0.9**
	comp=E,0.8nm,0.3s,baz=113,slow=14,SNR=11						
MDJ	**Mudanjiang**	**11.02**	**307**	P	Pn	20 56 39.6	-4.6
MDJ				pmax	pmax		
	comp=E,6.0nm,1.2s						
MDJ				pmax	pmax		
	comp=E,380nm,6.0s						
KSRS	**Korea Array**	**11.13**	**268**	P	**Pn**	**20 56 47.9**	**+2.0**
	comp=E,0.3nm,0.3s,baz=84,slow=14,SNR=8.6						
KS01	**Wonju Array Si**	**11.15**	**268**	*ePn*	Pn	20 56 41.3	-4.8
CN2	**Changchun**	**13.46**	**298**	*eP*	Pn	20 57 11.8	-5.7
NJ2	**Nanjing**	**19.93**	**258**	*eP*	**P**	**20 58 37.4**	**+0.3**
NJ2				pmax	pmax		
	comp=E,11nm,0.6s						
BJI	**Beijing**	**19.98**	**282**	P	**P**	**20 58 35.3**	**-2.2**
BJI				pmax	pmax		
	comp=E,9.0nm,0.6s						
MA2	**Magadan**	**21.70**	**12**	P	**P**	**20 58 56.5**	**+0.6**
	comp=E,10nm,0.8s,baz=329,slow=18,SNR=3.6						
MA2	**Magadan**	**21.70**	**12**	P	**P**	**20 58 56.5**	**+0.6**
MA2				pmax	pmax		
	comp=Z,10.0nm,0.8s						
HHC	**Hu-ho-hao-te**	**23.43**	**285**	*eP*	**P**	**20 59 12.9**	**-1.3**
HHC				pmax	pmax		
	comp=Z,30nm,1.0s						
HHC				pmax	pmax		
	comp=Z,770nm,8.8s						
TPUB	**Ta-pu**	**23.75**	**236**	*eP*	**P**	**20 59 18.5**	**+1.2**
	comp=Z,33nm,1.2s						
YAK	**Yakutsk**	**24.62**	**346**	*eP*	**P**	**20 59 22.2**	**-2.6**
YAK				pmax	pmax		
	comp=Z,14nm,0.9s						
YAK				pmax	pmax		
	comp=N,8.0nm,1.1s						
SEY	**Seymchan**	**25.14**	**11**	P	**P**	**20 59 30.2**	**+0.7**
	comp=N,8.1nm,0.8s,baz=197,slow=5.6,SNR=25						
BOD	**Bodaibo**	**26.43**	**326**	*eP*	**P**	**20 59 38.9**	**-2.4**
BOD				pmax	pmax		
	comp=Z,3.0nm,1.1s						
ULN	**Ulaanbaatar**	**26.85**	**301**	*eP*	**P**	**20 59 45.6**	**+0.2**
ULN				pmax	pmax		
	comp=Z,5.0nm,1.0s						
ULN	**Ulaanbaatar**	**26.85**	**301**	*eP*	**P**	**20 59 45.5**	**+0.2**
	comp=Z,5.4nm,1.0s						
SONA1	**Songino Array**	**27.29**	**301**	*eP*	**P**	**20 59 48.8**	**-0.5**
SONM	**Songino Array**	**27.29**	**301**	P	**P**	**20 59 49.7**	**+0.5**
	comp=Z,1.0nm,0.6s,baz=96,slow=8.4,SNR=6.3						
ENH	**Enshi**	**27.93**	**263**	*eP*	**P**	**20 59 54.2**	**-0.9**
	comp=Z,10nm,0.7s						
H11N2	**WAKE ISLAND Hy**	**28.64**	**124**	T	T	21 30 31.7	
	baz=317,slow=75,SNR=795						
H11N1	**WAKE ISLAND Hy**	**28.65**	**124**	T	T	21 30 31.1	
	baz=317,slow=75,SNR=969						
H11N3	**WAKE ISLAND Hy**	**28.66**	**124**	T	T	21 30 32.

MAKZ	**Makanchi**	**43.86**	**301**	*eP*	**P**	**21 02 11.2**	**+0.4**
MAKZ				pmax	pmax			
	comp=Z,20nm,1.6s							
MAKZ	**Makanchi**	**43.86**	**301**	*eP*	**P**	**21 02 11.2**	**+0.4**
	comp=Z,20nm,1.6s							
KURK	**Kurchatov**	**45.30**	**307**	*eP*	**P**	**21 02 21.5**	**-0.6**
KURK				pmax	pmax			
	comp=Z,18nm,0.6s							
KURK	**Kurchatov**	**45.30**	**307**	*eP*	**P**	**21 02 21.5**	**-0.6**
	comp=Z,18nm,0.6s							
ILAR	**Eielson Array**	**47.92**	**33**	P	**P**	**21 02 43.4**	**+0.9**
	comp=Z,1.0nm,0.7s,baz=267,slow=6.5,SNR=11							
TKM2	**Tokmak 2**	**49.27**	**297**	*eP*	**P**	**21 02 54.0**	**+0.6**
TKM2				pmax	pmax			
	comp=Z,7.0nm,1.0s							
TKM2	**Tokmak 2**	**49.27**	**297**	*eP*	**P**	**21 02 54.0**	**+0.6**
	comp=Z,7.1nm,1.0s							
BRVK	**Borovoye**	**49.88**	**311**	*eP*	**P**	**21 02 57.4**	**-0.2**
BRVK				pmax	pmax			
	comp=Z,7.0nm,1.0s							
BRVK	**Borovoye**	**49.88**	**311**	*eP*	**P**	**21 02 57.4**	**-0.2**
	comp=Z,6.7nm,1.0s							
KSH	**Kashi**	**50.16**	**293**	*eP*	**P**	21 03 04.0	+3.9
KSH				*ep*	pP	21 03 11.4	-2.0
KSH				pmax	pmax			
	comp=Z,200nm,7.9s							
KKAR	**Karatay Array**	**52.71**	**299**	*eP*	**P**	**21 03 18.7**	**-0.3**
KKAR	**Karatay Array**	**52.71**	**299**	*eP*	**P**	**21 03 18.7**	**-0.3**
ABKAR	**Akbulak array**	**57.25**	**310**	*eP*	**P**	**21 03 50.9**	**-0.7**
WRA	**Warramunga Arr**	**58.70**	**188**	P	**P**	**21 04 01.9**	**-0.2**
	comp=Z,0.6nm,0.5s,baz=6.4,slow=7.1,SNR=6.1							
YKA	**Yellowknife Ar**	**62.21**	**31**	P	**P**	**21 04 26.3**	**+0.9**
	comp=Z,0.5nm,0.6s,baz=301,slow=6.5,SNR=6.3							
ASAR	**Alice Springs**	**62.43**	**188**	P	**P**	**21 04 27.4**	**+0.1**
	comp=Z,0.4nm,0.8s,baz=15,slow=6.6,SNR=3.2							
GEYT	**Alibeck**	**63.45**	**298**	P	**P**	**21 04 34.3**	**+0.1**
	comp=Z,1.0nm,0.6s,baz=39,slow=5.7,SNR=3.6							
FINES	**FINESS Array B**	**67.61**	**332**	P	**P**	**21 05 00.5**	**0.0**
	comp=Z,2.7nm,0.7s,baz=23,slow=11,SNR=9.6							
KIV	**Kislovodsk**	**70.19**	**311**	*i*P	**P**	**21 05 18.1**	**+1.0**
KIV				*i*		21 05 34.6		
KIV				pmax	pmax			
	comp=Z,9.0nm,0.9s							
KIV	**Kislovodsk**	**70.19**	**311**	*eP*	**P**	**21 05 17.6**	**+0.6**
	comp=Z,9.1nm,0.9s							
KBZ	**Khabaz**	**70.19**	**310**	P	**P**	**21 05 16.9**	**0.0**
	comp=Z,2.4nm,0.8s,baz=336,slow=1.5,SNR=6.9							
NB2	**NORSAR Subarra**	**72.88**	**337**	P	**P**	**21 05 32.8**	**-0.1**
	comp=Z,1.6nm,0.7s,baz=36,slow=6.2							
NOA	**NORSAR Array B**	**72.89**	**337**	P	**P**	**21 05 33.1**	**+0.3**
	comp=Z,3.0nm,0.8s,baz=38,slow=6.0,SNR=7.2							
AKASG	**Malin Array Be**	**73.30**	**322**	P	**P**	**21 05 35.1**	**-0.4**
	comp=Z,1.2nm,0.5s,baz=47,slow=5.8,SNR=13							
NVAR	**Mina Array Bea**	**73.69**	**54**	P	**P**	**21 05 39.7**	**+1.4**
	comp=Z,0.1nm,0.3s,baz=321,slow=7.0,SNR=2.6							
PDAR	**Pinedale Array**	**76.24**	**46**	P	**P**	**21 05 53.8**	**+0.8**
	comp=Z,0.6nm,0.6s,baz=250,slow=2.1,SNR=8.2							
BRTR	**Keskin Array B**	**78.12**	**312**	P	**P**	**21 06 03.4**	**-0.1**
	comp=Z,0.6nm,0.4s,baz=115,slow=3.5,SNR=8.5							
MORC	**Moravsky Berou**	**79.26**	**327**	*eP*	**P**	**21 06 09.7**	**+0.3**
MORC				pmax	pmax			
	comp=Z,38nm,1.7s							
MORC	**Moravsky Berou**	**79.26**	**327**	*eP*	**P**	**21 06 09.7**	**+0.3**
	comp=Z,38nm,1.7s							
CLL	**Collm**	**79.93**	**330**	*i* P	**P**	**21 06 12.7**	**-0.2**
	comp=Z,5.0nm,1.0s							
CLL				*e*		21 06 33.0		
CLL	**Collm**	**79.93**	**330**	*i* P	**P**	**21 06 12.7**	**-0.2**
CLL				pmax	pmax			
	comp=Z,5.0nm,1.0s							
CLL	**Collm**	**79.93**	**330**	*eP*	**P**	**21 06 12.8**	**-0.2**
	comp=Z,5.0nm,1.0s							
GERES	**GERESS Array B**	**81.58**	**328**	P	**P**	**21 06 22.3**	**+0.4**
	comp=Z,0.9nm,0.7s,baz=45,slow=7.7,SNR=7.3							
BCLA	**Clavier**	**83.48**	**334**	P	**P**	**21 06 32.2**	**+0.6**
BFO	**Black Forest**	**84.12**	**331**	*eP*	**P**	**21 06 35.5**	**+0.5**
BFO				pmax	pmax			
	comp=Z,8.0nm,1.2s							
BFO	**Black Forest**	**84.12**	**331**	*eP*	**P**	**21 06 35.5**	**+0.5**
	comp=Z,8.0nm,1.2s							
FUORN	**Ofenpass-Fuorn**	**84.76**	**329**	*eP*	**P**	**21 06 38.6**	**+0.1**
	comp=Z,5.9nm,0.8s							
TXAR	**Lajitas Array**	**88.81**	**53**	P	**P**	**21 06 59.5**	**+1.2**
	comp=Z,0.2nm,0.6s,baz=310,slow=5.6,SNR=2.3							

IDC 16 20:58:10.1±6.6, 31°.91S×179°.68E, h0km, mb3.5/2, mb1 3.8/2, mb1mx3.5/37, mbtmp3.5/2, MS4.1/1, Ms1 4.1/1, ms1mx3.1/21, Error ellipse: s-maj=274.8km s-min=57.5km az=159.0, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**37.53**	**299**	LR	LR	21 18 19.7	
	comp=Z,273nm,18.2s,baz=334,slow=32						
ASAR	**Alice Springs**	**41.08**	**270**	P	P	21 05 55.5	-0.3
	0.6nm,0.8s,baz=111,slow=7.4,SNR=3.7						
WRA	**Warramunga Arr**	**42.21**	**275**	P	P	21 06 05.0	0.0
	0.6nm,0.5s,baz=115,slow=7.8,SNR=4.6						
FINES	**FINESS Array B**	**145.83**	**338**	PKPbc	PKPdf	21 17 49.7	-0.3
	0.9nm,0.5s,baz=30,slow=2.4,SNR=7.1						

*ISCJB **16** 21:03:53.7±0.5, 10°.60S±0°.04×123°.20E±0°.04, h35km, mb4.0/7, MS3.6/1, Error ellipse: s-maj=6.1km s-min=5.2km az=142.5*
*DJA **16** 21:03:54.9±0.6, 11°S±3°×12°3E±°, h15km±5km, M4.6/12, mb4.7/12, mB5.3/3, MLv4.5/9, Mw(mB)4.8/3*
*NEIC **16** 21:03:55.5±0.8, 10°.08S×123°.97E, h52km±11km, mb4.2/3, Error ellipse: s-maj=26.9km s-min=7.6km az=50.0*
*IDC **16** 21:03:55.6±1.6, 10°.11S×123°.93E, h51km±19km, mb3.6/4, mb1 4.0/8, mb1mx3.6/40, mbtmp4.0/8, ML4.1/4, MS3.7/1, Ms1 3.7/1, ms1mx3.0/36, Error ellipse: s-maj=43.6km s-min=19.9km az=52.0*
ISC 16 21:03:54.0±0.6, 10°.56S±0°.05×123°.23E±0°.05, h35km, n29, σ2s58/32, mb4.1/7, Timor region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BATI	**Baumata**	**0.55**	**51**	P	**Pn**	**21 04 05.6**	**+0.3**
	1μm,0.3s,baz=228,slow=2.8,SNR=1779						
BATI				S	**Sn**	**21 04 13.9**	**+0.5**
	3μm,0.3s,baz=186,slow=1.5,SNR=70						
BATI	**Baumata**	**0.55**	**51**	P	**Pn**	**21 04 05.7**	**+0.3**
BATI				S	**Sn**	**21 04 14.3**	**+0.9**
SOEI	**Soe**	**1.30**	**52**	P	**Pn**	**21 04 17.3**	**+1.6**
SOEI				S	**Sn**	**21 04 34.7**	**+2.8**
MMRI	**Maumere**	**2.15**	**333**	P	**Pn**	**21 04 28.0**	**+0.7**
MMRI				S	**Sn**	**21 04 53.0**	**+0.2**
BSSI	**Bau Bau, Buton**	**5.16**	**328**	P	**Pn**	**21 05 13.2**	**+4.5**
	97nm,0.7s,0.3nm						
PLAI	**Plampang**	**5.64**	**287**	P	**Pn**	**21 05 19.1**	**+3.7**
	113nm,0.6s,2μm0.5nm						
PLAI				S	**Sn**	**21 06 15.8**	**-3.3**
	113nm,0.6s,2μm0.5nm						
KAPI	**Kappang**	**6.50**	**328**	P	**Pn**	**21 05 29.4**	**+2.2**
	1.3nm,0.3s,baz=196,slow=11,SNR=3.9						
KAPI	**Kappang**	**6.50**	**328**	*e*Pn	**Pn**	**21 05 29.0**	**+1.8**
	25nm,0.8s						
TWSI	**Taliwang, Sumb**	**6.51**	**286**	P	**Pn**	**21 05 30.7**	**+3.3**
	71nm,0.7s,972nm0.3nm						
SPSI	**Sidrap Palu**	**7.40**	**332**	P	Pn	21 05 56.0	+16
FITZ	**Fitzroy Crossi**	**7.85**	**163**	P	**Pn**	**21 05 49.5**	**+3.8**
	1.1nm,0.3s,baz=357,slow=9.4,SNR=30						
FITZ				S	**Sn**	**21 07 17.0**	**+3.6**
	3.1nm,0.3s,baz=91,slow=11,SNR=12						
TTSI	**Tana Toraja**	**8.20**	**335**	P	**Pn**	**21 05 52.6**	**+2.1**
	19nm,1.0s						
JAGI	**Jajag, Banyuwa**	**9.19**	**282**	P	**Pn**	**21 06 04.6**	**+0.4**
	31nm,0.7s						
APSI	**Ampana**	**9.71**	**351**	P	**Pn**	**21 06 15.6**	**+4.3**
	18nm,0.9s						
WRA	**Warramunga Arr**	**14.20**	**132**	P	**Pn**	**21 07 11.6**	**-1.1**
	1.8nm,0.3s,baz=312,slow=13,SNR=50						
WRA				S	Sn	21 09 40.2	-9.0
	0.7nm,0.3s,baz=308,slow=25,SNR=4.8						
WRAB	**Tennant Creek**	**14.20**	**132**	*e*Pn	**Pn**	**21 07 11.8**	**-0.9**
	13nm,0.6s						
ASAR	**Alice Springs**	**16.54**	**143**	P	**Pn**	**21 07 44.4**	**+1.0**
	1.0nm,0.3s,baz=325,slow=13,SNR=76						
ASAR				S	**Sn**	**21 10 39.5**	**-6.5**
	0.3nm,0.3s,baz=318,slow=22,SNR=7.4						
CBJI	**Citeko**	**16.71**	**283**	P	**P**	**21 07 47.8**	**+0.2**
	120nm,0.9s,6μm						
DBJI	**Dramaga**	**16.77**	**282**	P	P	21 08 00.9	+13
KASI	**Kota Agung**	**19.21**	**284**	P	**Pn**	**21 08 17.4**	**+1.2**
CTA	**Charters Tower**	**24.11**	**116**	LR	LR	21 19 57.2	
	comp=Z,207nm,20.5s,baz=316,slow=41						
CHTO	**Chiang Mai**	**37.76**	**320**	*eP*	**P**	**21 11 08.1**	**+1.3**
	1.7nm,0.5s						
ENH	**Enshi**	**42.70**	**342**	*eP*	**P**	**21 11 46.1**	**-1.6**
	1.2nm,0.3s						
USRK	**Ussuriysk Ar.**	**55.08**	**8**	P	**P**	**21 13 20.4**	**-1.9**
	0.7nm,0.5s,baz=195,slow=8.5,SNR=4.1						
SONM	**Songino Array**	**60.03**	**347**	P	**P**	**21 13 55.0**	**-2.3**
	0.4nm,0.6s,baz=163,slow=7.9,SNR=4.7						
MKAR	**Makanchi Array**	**67.79**	**331**	P	**P**	**21 14 47.4**	**-0.9**
	1.7nm,0.6s,baz=140,slow=7.3,SNR=20						
ZALV	**Zalesovo Beam**	**72.03**	**337**	P	**P**	**21 15 12.1**	**-2.1**
	0.5nm,0.4s,baz=145,slow=5.4,SNR=5.9						
MA2	**Magadan**	**73.32**	**14**	*eP*	P	21 15 16.9	-4.8
	1.8nm,0.5s						
TORD	**Torodi Ar. Bea**	**122.83**	**279**	PKP	**PKPdf**	**21 22 49.3**	**+2.0**
	1.1nm,0.8s,baz=72,slow=1.4,SNR=8.4						

*IDC **16** 21:13:51.3±2.6, 38°.38N×142°.63E, h0km, mb3.5/3, mb1 3.6/5, mb1mx3.3/46, mbtmp3.6/5, ML3.4/2, Error ellipse: s-maj=61.8km s-min=27.9km az=76.0*
*ISCJB **16** 21:14:00.7±1.0, 38°.30N±0°.04×142°.0E±0°.1, h65km±7km, mb3.4/3, Error ellipse: s-maj=14.5km s-min=5.7km az=21.0*
*JMA **16** 21:14:01.6±0.1, 38°.31N×141°.90E, h63km±1km, M3.5*
ISC 16 21:13:59.6±1.5, 38°.23N±0°.04×142°.12E±0°.09, h51km±15km, n16, σ1s05/28, mb3.5/3, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**0.65**	**291**	P	**Pn**	**21 14 13.5**	**+0.7**
JIO				S	**Sn**	**21 14 21.6**	**-0.7**
OFUJ	**Ofunato**	**0.92**	**337**	P	**Pn**	**21 14 17.2**	**+0.8**
OFUJ				S	**Sn**	**21 14 28.3**	**-0.3**
JMK	**Ichinoseki**	**1.01**	**316**	P	**Pn**	**21 14 18.0**	**+0.5**
JMK				S	**Sn**	**21 14 29.6**	**-1.1**
JMM	**Marumori**	**1.11**	**252**	P	**Pn**	**21 14 19.6**	**+0.8**
JMM				S	**Sn**	**21 14 32.2**	**-0.9**
JOU	**Okura**	**1.16**	**277**	P	**Pn**	**21 14 19.6**	**+0.1**
JOU				S	**Sn**	**21 14 32.7**	**-1.6**
JFK	**Kawauchi**	**1.31**	**229**	P	**Pn**	**21 14 23.1**	**+1.5**
JFK				S	**Sn**	**21 14 38.8**	**+0.8**
MIYJ	**Miyakonagasawa**	**1.37**	**350**	P	**Pn**	**21 14 23.1**	**+0.7**
MIYJ				S	**Sn**	**21 14 38.7**	**-0.7**
JOM	**Ohasama**	**1.40**	**333**	P	**Pn**	**21 14 23.6**	**+0.8**
JOM				S	**Sn**	**21 14 39.5**	**-0.7**
JYK	**Kaneyama**	**1.55**	**297**	P	**Pn**	**21 14 24.7**	**-0.1**
JYK				S	**Sn**	**21 14 42.4**	**-1.3**
JFT	**Otama**	**1.58**	**244**	P	**Pn**	**21 14 26.7**	**+1.4**
JFT				S	**Sn**	**21 14 44.1**	**-0.5**
JYS	**Shirataka**	**1.62**	**270**	P	**Pn**	**21 14 26.1**	**+0.3**
JYS				S	**Sn**	**21 14 44.5**	**-1.0**
MJAR	**Matsushiro Arr**	**3.54**	**243**	Pn	**Pn**	**21 14 54.0**	**+1.9**
	0.9nm,0.3s,baz=58,slow=9.5,SNR=9.5						
JHJ	**Hachijo jima 2**	**5.44**	**201**	Pn	**Pn**	**21 15 16.6**	**-1.5**
	7.9nm,0.3s,baz=76,slow=21,SNR=5.5						
JHJ				Sn	**Sn**	**21 16 17.8**	**-1.6**
	9.6nm,0.3s,baz=152,slow=22,SNR=5.5						
ZALV	**Zalesovo Beam**	**41.54**	**311**	P	**P**	**21 21 42.0**	**+0.2**
	0.5nm,0.5s,baz=76,slow=6.3,SNR=3.6						
MKAR	**Makanchi Array**	**43.97**	**301**	P	**P**	**21 22 01.8**	**+0.1**
	0.2nm,0.5s,baz=81,slow=9.8,SNR=3.4						
WRA	**Warramunga Arr**	**58.32**	**189**	P	**P**	**21 23 49.6**	**+0.2**
	0.2nm,0.4s,baz=5.6,slow=7.1,SNR=5.9						

*ISCJB **16** 21:18:22.8±0.8, 13°.0N±0°.1×143°.7E±0°.1, h150km, mb3.5/5, Error ellipse: s-maj=20.9km s-min=13.0km az=153.1*
*IDC **16** 21:18:23.6±2.5, 13°.03N×143°.54E, h136km±44km, mb3.2/5, mb1 3.4/5, mb1mx3.1/46, mbtmp3.6/5, Error ellipse: s-maj=65.9km s-min=17.7km az=81.0*
ISC 16 21:18:24.2±1.0, 13°.0N±0°.2×143°.7E±0°.1, h150km, n6, σ0s20/7, mb3.6/5, South of Mariana Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GUMO	**Guam**	**1.25**	**64**	P	**Pn**	**21 18 51.1**	**-0.1**
	20nm,0.3s,baz=83,slow=2.9,SNR=12						
GUMO				S	**Sn**	**21 19 12.0**	**+0.1**
	62nm,0.3s,baz=59,slow=22,SNR=31						
WRA	**Warramunga Arr**	**34.05**	**196**	P	**P**	**21 24 54.0**	**-0.2**
	1.0nm,0.7s,baz=6.7,slow=9.6,SNR=9.9						
ASAR	**Alice Springs**	**37.72**	**195**	P	**P**	**21 25 25.8**	**+0.3**
	0.5nm,0.4s,baz=18,slow=13,SNR=17						
CMAR	**Chiang Mai Arr**	**43.34**	**283**	P	**P**	**21 26 11.8**	**0.0**
	0.4nm,0.5s,baz=78,slow=7.2,SNR=7.5						
SONM	**Songino Array**	**46.54**	**326**	P	**P**	**21 26 36.9**	**+0.1**
	0.5nm,0.5s,baz=144,slow=8.2,SNR=6.1						
MKAR	**Makanchi Array**	**61.10**	**316**	P	**P**	**21 28 22.5**	**0.0**
	0.6nm,0.6s,baz=92,slow=8.5,SNR=12						

IDC 16 21:21:59.9±2.3, 2°.60N×128°.58E, h0km, mb3.2/3, mb1 3.5/3, mb1mx3.2/41, mbtmp3.3/3, Error ellipse: s-maj=165.8km s-min=24.7km az=68.0, Halmahera

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**23.10**	**166**	P	P	21 27 08.3	+0.7
	0.6nm,0.4s,baz=346,slow=10,SNR=14						
ASAR	**Alice Springs**	**26.62**	**169**	P	P	21 27 39.2	-1.1
	0.2nm,0.6s,baz=358,slow=8.3,SNR=4.3						
MKAR	**Makanchi Array**	**59.53**	**325**	P	P	21 32 05.6	+0.3
	0.2nm,0.6s,baz=121,slow=8.4,SNR=3.2						

*IDC **16** 21:25:45.3±3.2, 38°.60N×142°.86E, h0km, mb3.2/2, mb1 3.4/3, mb1mx3.1/42, mbtmp3.1/3, ML2.8/1, Error ellipse: s-maj=73.8km s-min=35.3km az=60.0*
*ISCJB **16** 21:25:52.7±1.5, 37°.9N±0°.1×142°.3E±0°.1, h24km, mb3.0/2, Error ellipse: s-maj=17.0km s-min=13.5km az=156.7*
*JMA **16** 21:25:53.7±0.3, 37°.99N×142°.32E, h35km, M3.5*
ISC 16 21:25:53.2±1.8, 38°.0N±0°.1×142°.3E±0°.1, h24km, n7, σ1s97/7, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JMM	**Marumori**	**1.17**	**265**	P	**Pn**	**21 26 14.8**	**+0.8**
JMM				*e*S	**Sn**	**21 26 29.5**	**+0.3**
JMK	**Ichinoseki**	**1.27**	**320**	P	**Pn**	**21 26 16.0**	**+0.6**
JOU	**Okura**	**1.32**	**287**	P	**Pb**	**21 26 17.7**	**+0.4**
JKZ	**Kuzumaki**	**2.13**	**340**	P	**Pn**	**21 26 28.6**	**+1.3**
MJAR	**Matsushiro Arr**	**3.54**	**247**	Pn	Pn	21 26 50.7	+4.1
	0.6nm,0.3s,baz=53,slow=13,SNR=4.4						
SONM	**Songino Array**	**27.84**	**302**	P	**P**	**21 31 37.2**	**-3.5**
	0.1nm,0.5s,baz=98,slow=10,SNR=2.4						
WRA	**Warramunga Arr**	**58.09**	**189**	P	**P**	**21 35 45.2**	**+0.6**
	0.3nm,0.9s,baz=7.3,slow=7.0,SNR=4.7						

*IDC **16** 21:29:36.9±2.9, 38°.24N×142°.07E, h43km±24km, mb3.3/3, mb1 3.6/7, mb1mx3.2/45, mbtmp3.7/7, ML3.2/4, Error ellipse: s-maj=44.0km s-min=16.1km az=90.0*
*ISCJB **16** 21:29:37.1±0.9, 38°.29N±0°.05×142°.0E±0°.1, h63km±8km, mb3.5/3, Error ellipse: s-maj=14.6km s-min=6.3km az=19.0*
*JMA **16** 21:29:39.1±0.1, 38°.32N×141°.81E, h58km±1km, M3.9*
JMA Felt II J1.
ISC 16 21:29:37.5±1.6, 38°.27N±0°.05×142°.0E±0°.1, h47km±16km, n25, σ1s20/29, mb3.4/3, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**0.55**	**290**	P	**Pn**	**21 29 49.8**	**+0.6**
JIO				S	**Sn**	**21 29 57.2**	**-0.3**
OFUJ	**Ofunato**	**0.85**	**342**	P	**Pn**	**21 29 54.0**	**+0.9**
OFUJ				S	**Sn**	**21 30 04.7**	**+0.2**
JMK	**Ichinoseki**	**0.92**	**318**	P	**Pn**	**21 29 54.5**	**+0.5**
JMK				S	**Sn**	**21 30 05.4**	**-0.7**
JMM	**Marumori**	**1.04**	**247**	P	**Pn**	**21 29 55.8**	**+0.1**
JMM				S	**Sn**	**21 30 07.9**	**-1.2**
JOU	**Okura**	**1.06**	**275**	P	**Pn**	**21 29 56.0**	**0.0**
JOU				*e*S	**Sn**	**21 30 08.5**	**-1.1**
JFK	**Kawauchi**	**1.27**	**225**	P	**Pn**	**21 29 59.9**	**+1.0**
JOM	**Ohasama**	**1.32**	**335**	P	**Pn**	**21 30 00.2**	**+0.6**
JOM				*e*S	**Sn**	**21 30 16.3**	**+0.3**
JYK	**Kaneyama**	**1.44**	**297**	P	**Pn**	**21 30 01.2**	**0.0**
JFT	**Otama**	**1.52**	**241**	P	**Pn**	**21 30 03.1**	**+0.8**
JFT				S	**Sn**	**21 30 20.6**	**-0.3**
JYS	**Shirataka**	**1.53**	**269**	P	**Pn**	**21 30 02.6**	**+0.2**
JYS				S	**Sn**	**21 30 20.6**	**-0.5**
JRG	**Rokugo**	**1.55**	**317**	P	**Pn**	**21 30 03.1**	**+0.4**
MJAR	**Matsushiro Arr**	**3.48**	**241**	P	**Pn**	**21 30 30.3**	**+1.2**
	3.1nm,0.3s,baz=59,slow=9.8,SNR=20						
MAT	**Matsushiro**	**3.48**	**241**	P	**Pn**	**21 30 31.2**	**+2.0**
MAT				*e*S	**Sn**	**21 31 13.1**	**+3.9**
JHJ	**Hachijo jima 2**	**5.45**	**200**	P	**Pn**	**21 30 56.4**	**+0.2**
	7.8nm,0.3s,baz=246,slow=20,SNR=9.0						
JHJ				S	**Sn**	**21 31 55.4**	**-2.2**
	14nm,0.3s,baz=53,slow=20,SNR=4.8						
ASAJ	**Asahikawa**	**5.86**	**4**	P	**Pn**	**21 31 00.4**	**-1.3**
	0.5nm,0.3s,baz=322,slow=12,SNR=4.8						
USRK	**Ussuriysk Ar.**	**9.59**	**311**	P	**Pn**	**21 31 53.6**	**+0.8**
	0.3nm,0.3s,baz=128,slow=14,SNR=4.8						
H11N2	**WAKE ISLAND Hy 28.41**	**124**		T	T	22 05 50.3	
	baz=316,slow=75,SNR=40						
H11N1	**WAKE ISLAND Hy 28.42**	**124**		T	T	22 05 51.1	
	baz=316,slow=75,SNR=45						
H11N3	**WAKE ISLAND Hy 28.43**	**124**		T	T	22 05 51.8	
	baz=316,slow=75,SNR=52						
H11S1	**WAKE ISLAND Hy 29.17**	**126**		T	T	22 06 45.8	
	baz=318,slow=76,SNR=44						
H11S3	**WAKE ISLAND Hy 29.17**	**126**		T	T	22 06 45.9	
	baz=318,slow=76,SNR=40						
H11S2	**WAKE ISLAND Hy 29.18**	**126**		T	T	22 06 48.1	
	baz=318,slow=76,SNR=42						
MKAR	**Makanchi Array**	**43.87**	**301**	P	**P**	**21 37 38.5**	**-0.6**
	0.3nm,0.6s,baz=89,slow=9.7,SNR=5.2						
WRA	**Warramunga Arr**	**58.35**	**188**	P	**P**	**21 39 27.5**	**-0.4**
	0.6nm,0.4s,baz=6.1,slow=6.9,SNR=15						
ASAR	**Alice Springs**	**62.08**	**188**	P	**P**	**21 39 53.4**	**+0.1**
	0.2nm,0.6s,baz=8.1,slow=6.5,SNR=6.0						

IDC 16 21:35:50.4±7.0, 3°.57S×150°.04E, h109km±59km, mb3.2/2, mb1 3.4/3, mb1mx3.0/30, mbtmp3.7/3, Error ellipse: s-maj=129.1km s-min=48.4km az=120.0, New Ireland region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**6.47**	**206**	P	Pn	21 37 25.2	+2.0
	3.0nm,0.3s,baz=28,slow=11,SNR=8.1						
PMG				S	Sn	21 38 36.4	+0.8
	0.3nm,0.3s,baz=292,slow=19,SNR=2.8						
WRA	**Warramunga Arr**	**22.35**	**222**	P	P	21 40 39.5	-0.1
	1.5nm,0.5s,baz=50,slow=10,SNR=22						
ASAR	**Alice Springs**	**25.34**	**217**	P	P	21 41 06.9	-0.5
	0.4nm,0.7s,baz=49,slow=9.1,SNR=4.5						
TORD	**Torodi Ar. Bea**	**147.31**	**289**	PKPbc	PKPbc	21 55 21.5	-0.9
	0.1nm,0.4s,baz=79,slow=2.0,SNR=4.0						

*TAP **16** 21:54:16.7, 25°.26N×122°.80E, h173km±1km, ML3.4, C*
*ISCJB **16** 21:54:17.7±1.0, 25°.09N±0°.09×122°.78E±0°.03, h168km±7km, Error ellipse: s-maj=15.1km s-min=4.4km az=179.4*
*JMA **16** 21:54:18.3±0.3, 25°.12N×122°.76E, h165km, M2.5*
ISC 16 21:54:16.7±2.6, 25°.1N±0°.1×122°.77E±0°.04, h180km±17km, n25, σ0s85/42, Taiwan region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TWB1	**Santiao Chiao**	**0.72**	**263**	*eP*	**Pn**	**21 54 42.6**	**0.0**
	baz=257						
TWB1				*e*S	**Sn**	**21 55 01.1**	**-1.2**
	baz=257						
NWF	**Wu-fen Shan**	**0.90**	**268**	*eP*	**Pn**	**21 54 44.1**	**+0.3**
	baz=259						
NWF				*e*S	**Sn**	**21 55 03.7**	**-0.9**
	baz=259						
TWC	**Suao**	**0.97**	**240**	*eP*	**Pn**	**21 54 45.2**	**+1.1**
	baz=227						
TWE	**Neicheng**	**1.07**	**250**	*eP*	**Pn**	**21 54 45.2**	**+0.2**
	baz=242						
TWE				*e*S	**Sn**	**21 55 06.0**	**-0.6**
	baz=242						
ENA	**Nanau**	**1.15**	**235**	*eP*	**Pn**	**21 54 46.1**	**+0.5**
	baz=223						
ENA				*e*S	**Sn**	**21 55 07.8**	**-0.1**
	baz=223						
IRIF	**Iriomote-Funau**	**1.16**	**131**	P	**Pn**	**21 54 45.7**	**0.0**
IRIF				*e*S	**Sn**	**21 55 07.5**	**-0.5**
ENTT	**Nioudou**	**1.19**	**247**	*eP*	**Pn**	**21 54 46.3**	**+0.4**
	baz=241						
ENTT				*e*S	**Sn**	**21 55 08.8**	**+0.4**
	baz=241						
NSK	**Sanguang**	**1.35**	**252**	*eP*	**Pn**	**21 54 47.8**	**+0.4**
	baz=237						
NSK				*e*S	**Sn**	**21 55 10.6**	**-0.4**
	baz=237						
NSK	**Sanguang**	**1.35**	**252**	*eP*	**Pn**	**21 54 48.0**	**+0.7**
	baz=343						
HATJ	**Hateruma jima**	**1.40**	**138**	P	**Pn**

ellipse: s-maj=22.6km s-min=8.0km az=65.0
ISC 16 21:57:30.6±1.2,7°30S±0°1×128°2E±0°2,h35km,n10,
σ0$57/11,mb3.8/4,Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**11.35**	**193**	Pn	**Pn**	**22 00 10.2**	**-0.1**
	1.7nm,0.3s,baz=28,slow=10,SNR=27						
WRAB	**Tennant Creek**	**14.20**	**156**	*e*Pn	**Pn**	**22 00 49.5**	**+0.2**
	9.8nm,0.7s						
WRA	**Warramunga Arr**	**14.20**	**156**	Pn	**Pn**	**22 00 48.5**	**-0.8**
	1.9nm,0.3s,baz=333,slow=11,SNR=69						
WRA				Sn	**Sn**	**22 03 25.8**	**+0.1**
	1.8nm,0.3s,baz=332,slow=21,SNR=5.0						
ASAR	**Alice Springs**	**17.48**	**162**	P	**Pn**	**22 01 32.0**	**+0.3**
	1.4nm,0.3s,baz=341,slow=11,SNR=193						
COCO	**West Island**	**31.35**	**258**	*e*P	**P**	**22 03 48.1**	**-0.1**
CHTO	**Chiang Mai**	**38.59**	**312**	*e*P	**P**	**22 04 49.7**	**-0.8**
	1.3nm,0.4s						
MKAR	**Makanchi Array**	**67.24**	**328**	P	**P**	**22 08 22.2**	**+0.8**
	0.3nm,0.5s,baz=121,slow=7.9,SNR=14						
ZALV	**Zalesovo Beam**	**70.78**	**335**	P	**P**	**22 08 43.8**	**+0.5**
	0.5nm,0.4s,baz=138,slow=6.4,SNR=3.3						
KURBB	**Kurchatov Arra**	**71.57**	**329**	P	**P**	**22 08 48.5**	**+0.4**
	0.3nm,0.5s,baz=129,slow=4.9,SNR=6.5						
KURK	**Kurchatov**	**71.58**	**329**	P	**P**	**22 08 48.5**	**+0.3**

*IDC **16** 21:57:41.0±2.5, 43°.79N× 105°.48W, h0km, mb1 3.1/2, mb1mx2.9/55, mbtmp2.8/2, ML4.1/1, Error ellipse: s-maj=29.5km s-min=18.0km az=148.0*
*ISCJB **16** 21:57:43.8±0.4, 43°.97N±0°.03× 105°.28W±0°.03, h0km, Error ellipse: s-maj=4.3km s-min=3.0km az=19.5*
*NEIC **16** 21:57:44.5±0.7, 43°.99N× 105°.30W, h0km, ML3.0, Error ellipse: s-maj=10.7km s-min=8.3km az=197.0, Suspected Mining explosion.*
NEIC 37 km [23 miles] SSE of Gillette.
ISC 16 21:57:44.8±0.8,43°.94N±0°.03×105°.31W±0°.03,h0km,n17,
σ1$22/43,Wyoming

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RSSD	**Black Hills**	**0.94**	**78**	*e*Pg	**Pg**	**21 58 00.8**	**-2.0**
RSSD				*e*Sg	**Sg**	**21 58 15.9**	**+0.9**
LAO	**LASA Array**	**2.83**	**347**	*e*Pn	**Pn**	**21 58 31.3**	**0.0**
LAO				*e*Pb	**Pb**	**21 58 36.1**	**-0.1**
LAO				*e*Sg	**Sg**	**21 59 16.1**	**+0.5**
RLMT	**Red Lodge**	**3.07**	**294**	*e*Pn	**Pn**	**21 58 33.7**	**-1.0**
RLMT				*e*Pb	**Pb**	**21 58 41.0**	**+0.7**
RLMT				*e*Sn	**Sn**	**21 59 12.5**	**+0.3**
RLMT				*e*Sb	**Sb**	**21 59 18.0**	**-0.4**
PDAR	**Pinedale Array**	**3.31**	**251**	Pn	**Pn**	**21 58 35.4**	**-2.7**
	3.0nm,0.3s,baz=78,slow=17,SNR=25						
PDAR				Lg	Lg	21 59 19.2	
	17nm,0.3s,baz=72,slow=35,SNR=20						
H17A	**Grant Village**	**3.81**	**279**	*e*Pn	**Pn**	**21 58 44.8**	**-0.3**
H17A				*e*Pb	**Pb**	**21 58 52.6**	**-0.5**
H17A				*e*Sn	**Sn**	**21 59 31.7**	**+1.0**
H17A				*e*Sb	**Sb**	**21 59 41.1**	**+1.1**
LOHW	**Long Hollow**	**3.85**	**267**	*e*Pn	**Pn**	**21 58 44.2**	**-1.2**
LOHW				*e*Sb	**Sb**	**21 59 40.4**	**-0.4**
OGNE	**Ogallala**	**3.85**	**140**	*e*Pn	**Pn**	**21 58 45.5**	**+0.1**
OGNE				*e*Sn	**Sn**	**21 59 31.8**	**+0.4**
OGNE				*e*Sb	**Sb**	**21 59 41.4**	**+0.6**
FLWY	**Flagg Ranch**	**3.89**	**274**	*e*Pn	**Pn**	**21 58 45.2**	**-0.8**
FLWY				*e*Pb	**Pb**	**21 58 53.5**	**-0.9**
FLWY				*e*Sn	**Sn**	**21 59 33.5**	**+1.1**
FLWY				*e*Sb	**Sb**	**21 59 43.7**	**+1.6**
SNOW	**Snow King Moun**	**3.98**	**265**	*e*Pn	**Pn**	**21 58 47.6**	**+0.4**
SNOW				*e*Pb	**Pb**	**21 58 55.2**	**-0.7**
SNOW				*e*Sb	**Sb**	**21 59 43.8**	**-0.8**
REDW	**Red Top Meadow**	**4.06**	**264**	*e*Pn	**Pn**	**21 58 50.1**	**+1.7**
REDW				*e*Sb	**Sb**	**21 59 47.9**	**+0.8**
IMW	**Indian Meadow**	**4.07**	**271**	*e*Pn	**Pn**	**21 58 46.3**	**-2.2**
IMW				*e*Pb	**Pb**	**21 58 55.5**	**-1.9**
IMW				*e*Sg	**Sg**	**21 59 54.0**	**-1.4**
SMCO	**Snowmass**	**4.92**	**195**	*e*Pn	**Pn**	**21 59 00.3**	**0.0**
SMCO				*e*Sn	**Sn**	**22 00 00.2**	**+2.2**
EGMT	**Eagleton**	**5.13**	**324**	*e*Pn	**Pn**	**21 59 03.3**	**+0.5**
	7.7nm,0.5s						
EGMT				*e*Pb	**Pb**	**21 59 16.6**	**+1.2**
EGMT				*e*Pg	**Pg**	**21 59 23.9**	**+0.9**
EGMT				*e*Sg	**Sg**	**22 00 29.7**	**+0.3**
HWUT	**Hardware Ranch**	**5.16**	**245**	*e*Pn	**Pn**	**21 59 04.9**	**+1.5**
	5.3nm,0.6s						
HWUT				*e*Pb	**Pb**	**21 59 16.4**	**+0.4**
HWUT				*e*Sn	**Sn**	**22 00 05.5**	**+1.8**
HWUT				*e*Sg	**Sg**	**22 00 31.0**	**+0.5**
KSCO	**Kaye Shedlock'**	**5.32**	**157**	*e*Pn	**Pn**	**21 59 07.4**	**+1.8**
	16nm,0.3s						
TXAR	**Lajitas Array**	**14.63**	**174**	Pg	Pg	22 02 06.1	
	0.1nm,0.3s,baz=359,slow=17,SNR=4.7						
TXAR				Lg	Lg	22 05 10.7	
	0.1nm,0.3s,baz=358,slow=33,SNR=3.3						
YKA	**Yellowknife Ar**	**19.36**	**347**	P	**P**	**22 02 09.7**	**-2.0**
	baz=154,slow=12,SNR=2.1						

*IDC **16** 21:58:17.8±1.7, 38°.12S× 73°.59W, h0km, mb3.9/4, mb1 4.0/6, mb1mx3.8/31, mbtmp3.8/6, ML4.2/2, MS4.2/7, Ms1 4.2/7, ms1mx3.7/24, Error ellipse: s-maj=50.3km s-min=19.0km az=56.0*
*NEIC **16** 21:58:18.0, 38°.19S× 74°.04W, h41km, mb4.2/1, After GUC.*
NEIC Felt [III] at Tirua and [II] at Puerto Saavedra.
*GUC **16** 21:58:18.3±0.7, 38°.19S× 74°.04W, h41km±5km, ML4.1*
ISC 16 21:58:18.1±2.0,38°.14S±0°.05×73°.98W±0°.09,h9km±12km,
n36,σ1$37/32,mb3.7/5,MS4.1/5,1C-3D,Near coast of
central Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PSCH	**Puerto Saavedr**	**0.81**	**145**	⇓*i*P	**Pg**	**21 58 33.6**	**0.0**
PSCH				*i* S	**Sg**	**21 58 44.4**	**+0.3**
CCSP	**San Pedro de C**	**1.47**	**29**	*e*P	**Pn**	**21 58 43.6**	**-1.0**
CCSP				*i* S	**Sn**	**21 59 02.2**	**-1.8**
CCSP				IAML		21 59 10.2	
	comp=N,3μm,0.6s						
VLCH	**Valdivia**	**1.76**	**161**	⇓*i*P	**Pn**	**21 58 46.7**	**-2.0**
VLCH				*i* S	**Sn**	**21 59 08.4**	**-2.9**
CCHI	**Chillan**	**2.16**	**45**	⇓*i*P	**Pn**	**21 58 54.0**	**-0.2**
CCHI				*e*S	**Sn**	**21 59 21.7**	**+0.7**
CCHI				IAML		21 59 42.1	
	comp=E,3μm,0.9s						
COCH	**Cobquecura**	**2.22**	**26**	⇑*i*P	**Pn**	**21 58 53.9**	**-1.1**
COCH				IAML		21 59 32.9	
	comp=E,1μm,0.7s						
CANA	**Caviahue**	**2.32**	**85**	*e*P	**Pn**	**21 58 57.1**	**+0.5**
CANA				*e*S	**Sb**	**21 59 29.6**	**+0.6**
TALC	**Talca**	**3.32**	**35**	*i* P	**Pn**	**21 59 09.7**	**-0.5**
PLCA	**Paso Flores**	**3.71**	**135**	*e*P	**Pn**	**21 59 15.3**	**-0.3**
PLCA				*e*S	**Sb**	**22 00 10.5**	**+1.5**
PLCA				IAML		22 00 21.0	
	comp=Z,98nm,0.5s						
PLCA	**Paso Flores**	**3.71**	**135**	Pn	**Pn**	**21 59 15.3**	**-0.3**
	comp=Z,6.4nm,0.3s,baz=317,slow=8.9,SNR=27						
PLCA				Lg	Lg	22 00 10.1	
	comp=Z,15nm,0.3s,baz=235,slow=20,SNR=5.7						
ROC1	**El Roble**	**5.69**	**26**	*i* P	**Pn**	**21 59 42.1**	**-0.8**
	baz=218,slow=18						
AUSP	**Uspallata**	**7.00**	**34**	*e*P	**Pn**	**22 00 00.7**	**-0.3**
RTLS	**Leoncito**	**7.40**	**33**	*e*P	**Pn**	**22 00 06.7**	**+0.1**
AMOG	**MOGNA**	**8.49**	**34**	*e*P	**Pn**	**22 00 19.2**	**-2.0**
TRQA	**Tornquist**	**9.46**	**93**	*e*Pn	Pn	22 00 31.8	-2.8
LCO	**Las Campanas**	**9.50**	**18**	*e*Pn	**Pn**	**22 00 33.9**	**-1.5**
	comp=Z,14nm,0.5s						
USHA	**Ushuaia**	**17.12**	**169**	LR	LR	22 09 54.2	
	comp=Z,3μm,18.9s,baz=345,slow=41						
CPUP	**Villa Florida**	**18.32**	**55**	P	**Pn**	**22 02 30.4**	**-2.2**
	comp=Z,0.1nm,0.3s,baz=219,slow=13,SNR=3.0						
CPUP				LR	LR	22 10 16.2	
	comp=Z,1μm,18.3s,baz=231,slow=40						
LPAZ	**La Paz**	**22.37**	**15**	P	**P**	**22 03 18.7**	**+1.5**
	comp=Z,1.8nm,0.6s,baz=188,slow=7.3,SNR=4.7						
SIV	**San Ignacio**	**24.82**	**31**	LR	LR	22 14 57.0	
	comp=Z,401nm,19.3s,baz=212,slow=40						
PMSA	**Palmer Station**	**27.32**	**171**	LR	LR	22 15 24.4	
	comp=Z,313nm,18.5s,baz=311,slow=38						
RKT	**Rikitea**	**53.69**	**268**	*e*T	T	23 05 19.9	
	comp=Z,2.1nm,0.3s						
TBI	**Tubuai**	**64.91**	**259**	*e*LR	LR	22 28 38.2	
	comp=Z,186nm,28.5s						
TAOE	**Nuku Hiva Isla**	**65.86**	**278**	*e*LR	LR	22 29 34.5	
	comp=Z,115nm,22.6s						
TIAR	**Tiarei**	**68.01**	**265**	*e*T	T	23 23 15.1	
	comp=Z,4.5nm,0.2s						
PPT2	**Papeete2**	**68.17**	**264**	*e*LR	LR	22 30 09.8	
	comp=Z,131nm,25.8s						
MAW	**Mawson**	**69.66**	**164**	LR	LR	22 38 22.4	
	comp=Z,118nm,21.5s,baz=240,slow=35						
TXAR	**Lajitas Array**	**72.64**	**333**	P	**P**	**22 09 48.1**	**+2.1**
	comp=Z,0.3nm,0.7s,baz=157,slow=6.8,SNR=4.6						
TXAR				LR	LR	22 36 55.7	
	comp=Z,102nm,18.2s,baz=0.0,slow=32						
DBIC	**Dimbokro**	**77.99**	**72**	P	**P**	**22 10 15.9**	**-1.2**
	comp=Z,2.2nm,0.8s,baz=215,slow=3.0,SNR=3.1						
ANMO	**Albuquerque**	**78.71**	**333**	*e*P	**P**	**22 10 23.4**	**+2.7**
	comp=Z,2.8nm,1.0s						
BOSA	**Boshof**	**79.53**	**118**	LR	LR	22 42 20.6	
	comp=Z,128nm,18.0s,baz=215,slow=33						
TORD	**Torodi Ar. Bea**	**87.08**	**71**	P	**P**	**22 11 03.5**	**-1.0**
	comp=Z,0.5nm,1.0s,baz=209,slow=4.9,SNR=8.1						
ABKAR	**Akbulak array**	**145.39**	**56**	*e*PKPbc	**PKPdf**	**22 17 55.9**	**+0.1**
BRVK	**Borovoye**	**151.24**	**47**	*e*PKPbc	**PKPbc**	**22 18 11.9**	**+0.7**
BRVK				*e*PKPab	**PKPab**	**22 18 19.8**	**+0.5**
ZALV	**Zalesovo Beam**	**158.53**	**36**	PKPab	**PKPab**	**22 18 50.0**	**-0.2**
	comp=Z,0.4nm,0.5s,baz=298,slow=6.2,SNR=3.3						
MKAR	**Makanchi Array**	**160.53**	**56**	PKPab	**PKPab**	**22 18 58.6**	**-0.7**
	comp=Z,0.5nm,0.8s,baz=296,slow=4.1,SNR=5.7						
SONM	**Songino Array**	**170.30**	**358**	PKPab	**PKPab**	**22 19 43.5**	**+1.2**
	comp=Z,0.2nm,0.6s,baz=0.0,slow=2.9,SNR=2.4						

*IDC **16** 21:59:50.1±5.0, 33°.61S× 179°.62W, h243km±49km, mb3.6/3, mb1 3.7/5, mb1mx3.3/42, mbtmp4.1/5, MS3.6/1, Ms1 3.5/1, ms1mx2.8/19, Error ellipse: s-maj=53.1km s-min=37.6km az=9.0*
ISC 16 21:59:50.6±1.8,33°.53S±0°.10×179°.7W±0°.2,h250km,n28,
σ2$05/32,mb3.8/3,South of Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WMGZ	**Waiomatatini S**	**4.55**	**199**	PN	**Pn**	**22 01 00.4**	**-0.5**
HAZ	**Te Kaha**	**4.70**	**205**	PN	**Pn**	**22 01 02.1**	**-0.5**
HAZ				SN	S	22 02 05.0	+5.0
PKGZ	**Pakihiroa**	**4.72**	**202**	PN	**Pn**	**22 01 01.3**	**-1.6**
PUZ	**Puketiti**	**4.83**	**200**	PN	**Pn**	**22 01 03.0**	**-1.4**
PUZ				SN	S	22 02 07.7	+4.6
TWGZ	**Tauwhareparae**	**5.01**	**202**	PN	**Pn**	**22 01 06.0**	**-0.5**
TWGZ				SN	S	22 02 12.9	+5.8
CNGZ	**Carnagh Statio**	**5.24**	**198**	PN	**Pn**	**22 01 08.7**	**-0.5**
MWZ	**Matawai**	**5.30**	**204**	PN	**Pn**	**22 01 09.3**	**-0.8**
MWZ				SN	S	22 02 19.6	+6.1
URZ	**Urewera**	**5.39**	**208**	P	**Pn**	**22 01 10.1**	**-1.0**
	1.7nm,0.3s,baz=258,slow=5.6,SNR=15						
URZ				S	**S**	**22 02 19.8**	**+4.4**
	11nm,0.3s,baz=286,slow=18,SNR=12						
URZ	**Urewera**	**5.39**	**208**	PN	**Pn**	**22 01 10.0**	**-1.0**
URZ				*e*SN	S	22 02 20.4	+5.0
RIGZ	**Rimuhau**	**5.57**	**201**	SN	S	22 02 26.0	+6.5
BKZ	**Black Stump Fm**	**6.42**	**208**	PN	**Pn**	**22 01 21.5**	**-2.5**
MCHZ	**McNeill Hill**	**6.59**	**205**	PN	**Pn**	**22 01 25.3**	**-0.7**
MCHZ				SN	S	22 02 48.0	+5.6
KAHZ	**Kahuranaki**	**6.84**	**203**	PN	**Pn**	**22 01 27.3**	**-1.9**
KRHZ	**Kereru**	**6.88**	**206**	SN	**S**	**22 02 52.5**	**+3.3**
PXZ	**Pawanui**	**7.06**	**202**	PN	**Pn**	**22 01 29.1**	**-2.8**
PXZ				SN	**S**	**22 02 55.5**	**+2.2**
MRZ	**Mangatainoka R**	**8.06**	**207**	PN	**Pn**	**22 01 41.6**	**-3.0**
MRZ				*e*SN	**S**	**22 03 16.8**	**+0.3**
KIW	**Kapiti Island**	**8.49**	**209**	PN	**Pn**	**22 01 47.4**	**-2.6**
KIW				SN	**S**	**22 03 28.9**	**+2.4**
PLWZ	**Palliser**	**8.98**	**205**	PN	Pn	22 01 52.6	-3.5
TCW	**Tory Channel**	**9.05**	**210**	PN	**Pn**	**22 01 54.3**	**-2.8**
TCW				SN	**S**	**22 03 41.3**	**+2.0**
THZ	**Tophouse**	**10.10**	**213**	*e*PN	**Pn**	**22 02 07.9**	**-2.5**
THZ				SN	**S**	**22 04 05.3**	**+1.4**
MQZ	**McQueen's Vall**	**11.79**	**208**	*e*SN	**S**	**22 04 39.5**	**-3.4**
RPZ	**Rata Peaks**	**12.48**	**213**	P	**Pn**	**22 02 38.4**	**-1.6**
	0.5nm,0.3s,baz=22,slow=11,SNR=2.9						
RPZ				S	**S**	**22 04 57.0**	**-1.8**
	1.2nm,0.3s,baz=130,slow=23,SNR=9.9						
STKA	**Stephens Creek**	**32.50**	**262**	LR	LR	22 18 01.1	
	comp=Z,94nm,18.1s,baz=14,slow=34						
CTA	**Charters Tower**	**33.05**	**285**	P	**P**	**22 06 03.7**	**+0.7**
	1.7nm,0.5s,baz=104,slow=6.7,SNR=4.9						
ASAR	**Alice Springs**	**41.62**	**271**	P	**P**	**22 07 15.6**	**+0.8**
	1.4nm,0.4s,baz=112,slow=7.8,SNR=5.7						
WRA	**Warramunga Arr**	**42.90**	**276**	P	**P**	**22 07 25.1**	**+0.1**
	1.5nm,0.3s,baz=115,slow=7.8,SNR=6.6						
FINES	**FINESS Array B**	**147.52**	**337**	PKPbc	**PKPbc**	**22 19 04.2**	**-0.2**
	2.5nm,0.4s,baz=44,slow=4.4,SNR=37						
NB2	**NORSAR Subarra**	**151.57**	**349**	PKP	**PKPbc**	**22 19 14.7**	**+0.3**
	comp=Z,0.5nm,0.5s,baz=11,slow=2.6						

*IDC **16** 22:02:25.4±1.3, 3°.50S× 128°.12E, h0km, mb3.6/3, mb1 3.9/5, mb1mx3.5/47, mbtmp3.8/5, ML4.1/1, Error ellipse: s-maj=45.9km s-min=25.1km az=71.0*
*ISCJB **16** 22:02:27.0±0.6, 3°.53S±0°.05×128°.37E±0°.03, h10km, mb3.5/2, Error ellipse: s-maj=6.6km s-min=4.0km az=9.3*
*DJA **16** 22:02:28.3±0.3, 4°S±2°×12°.8E±°, h10km, M3.6/9, MLv3.6/9*
ISC 16 22:02:27.5±0.8,3°.54S±0°.06×128°.35E±0°.04,h10km,n13,
σ1$23/21,Seram

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MSAI	**Masohi**	**0.61**	**72**	P	**Pg**	**22 02 39.1**	**-0.2**
MSAI				S	**Sg**	**22 02 47.3**	**0.0**
NLAI	**Namlea**	**1.28**	**283**	P	**Pn**	**22 02 51.3**	**-0.2**
NLAI				S	**Sb**	**22 03 07.4**	**-0.9**
BNDI	**Bandanaira**	**1.83**	**122**	P	**Pn**	**22 03 00.7**	**+1.6**
BNDI				S	**Sn**	**22 03 23.5**	**+1.1**
SANI	**Sanana**	**2.78**	**302**	P	**Pn**	**22 03 13.9**	**+1.8**
SANI				S	**Sn**	**22 03 46.9**	**+1.1**
LBMI	**Labuha**	**3.00**	**344**	P	**Pn**	**22 03 16.8**	**+1.6**
LBMI				S	**Sn**	**22 03 52.0**	**+0.7**
SWI	**Sorong**	**3.94**	**48**	P	**Pn**	**22 03 29.4**	**+1.3**
SWI				S	**Sn**	**22 04 13.8**	**-0.6**
SIJI	**Sorong**	**3.94**	**48**	Pn	**Pn**	**22 03 29.8**	**+1.7**
	12nm,0.3s,baz=181,slow=6.7,SNR=3.9						
SIJI				Sn	**Sn**	**22 04 14.9**	**+0.5**
	16nm,0.3s,baz=194,slow=6.7,SNR=3.6						
FAKI	**Fak Fak**	**3.94**	**81**	P	**Pn**	**22 03 28.3**	**+0.2**
FAKI				S	**Sn**	**22 04 12.5**	**-2.0**
TNTI	**Ternate**	**4.39**	**347**	P	**Pn**	**22 03 35.1**	**+0.8**
WRA	**Warramunga Arr**	**17.32**	**161**	P	**Pn**	**22 06 29.4**	**-0.2**
	baz=344,slow=12,SNR=2.8						
ASAR	**Alice Springs**	**20.72**	**165**	P	**P**	**22 07 09.2**	**+0.9**
	2.7nm,0.6s,baz=348,slow=12,SNR=8.3						
MKAR	**Makanchi Array**	**64.45**	**327**	P	**P**	**22 13 03.2**	**-1.0**
	0.2nm,0.5s,baz=125,slow=7.8,SNR=4.7						
KURBB	**Kurchatov Arra**	**68.72**	**329**	P	**P**	**22 13 29.5**	**-1.9**
	0.4nm,0.6s,baz=131,slow=5.6,SNR=6.2						

IDC 16 22:08:39.3±2.1,6°.75S×128°.95E,h0km,mb3.6/1,
mb1 3.6/3,mb1mx3.3/31,mbtmp3.5/3,ML3.4/2,MS3.8/2,
Ms1 3.8/2,ms1mx3.0/26,Error ellipse: s-maj=134.1km
s-min=32.4km az=67.0,Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**14.12**	**159**	Pn	Pn	22 12 00.1	-0.6
	0.2nm,0.3s,baz=337,slow=13,SNR=8.3						
WRA				Sn	Sn	22 14 25.2	-13
	0.2nm,0.3s,baz=335,slow=22,SNR=6.7						
ASAR	**Alice Springs**	**17.48**	**165**	Pn	Pn	22 12 45.3	+0.5
	0.1nm,0.3s,baz=347,slow=11,SNR=6.2						
KLR	**Kul'dur**	**55.79**	**2**	LR	LR	22 39 00.9	
	comp=Z,31nm,21.5s,baz=230,slow=33						
MKAR	**Makanchi Array**	**67.45**	**327**	P	P	22 19 37.0	0.0
	0.2nm,0.3s,baz=117,slow=7.6,SNR=7.0						
RAR	**Rarotonga**	**70.15**	**110**	LR	LR	22 44 36.2	
	comp=Z,203nm,20.9s,baz=174,slow=31						

*MOS **16** 22:22:46.3±1.3, 53°.05N× 108°.25E, h8km, mb4.4/1, Error ellipse: s-maj=16.4km s-min=9.0km az=48.6*
*IDC **16** 22:22:47.6±1.5, 53°.01N× 108°.06E, h0km, mb3.1/2, mb1 3.2/6, mb1mx3.1/44, mbtmp3.1/6, ML2.5/4, Error ellipse: s-maj=23.0km s-min=13.4km az=141.0*
*BYKL **16** 22:22:47.3±0.2, 53°.08N× 108°.10E*
ISC 16 22:22:46.6±1.2,53°.04N±0°.02×108°.09E±0°.02,h0km±9km,
n49,σ1$90/101,2C-3D,Lake Baykal region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OGRR	**Ongureny**	**0.67**	**334**	⇑*i*Pg	**Pg**	**22 22 59.3**	**-0.2**
OGRR				*e*Sg	**Sg**	**22 23 08.3**	**+0.1**
OGRR				*e*Sb	**Sn**	**22 23 13.8**	**-0.8**
OGRR				Pmax			
	137nm,0.3s						
OGRR				max			
	569nm,0.2s						
ZRHB	**Zarechye**	**0.75**	**230**	*e*Pg	**Pg**	**22 23 01.5**	**+0.6**
ZRHB				*e*Sg	**Sb**	**22 23 12.6**	**-0.6**
ZRHB				Pmax			
	268nm,0.2s						
ZRHB				Smax			
	2μm,0.4s						
TRG	**Tyrgan**	**1.09**	**256**	*e*Pg	**Pg**	**22 23 07.4**	**-0.1**
TRG				*e*Pb	**Pn**	**22 23 08.8**	**-0.3**
TRG				*e*Sg	**Sn**	**22 23 23.0**	**-1.9**
TRG				max			
	215nm,0.2s						
TRG				Smax			
	2μm,0.2s						
TRG	**Tyrgan**	**1.09**	**256**	*e*PG	**Pg**	**22 23 07.4**	**-0.1**
TRG				*e*		22 23 23.1	
TRG				pmax	pmax		
	comp=Z,210nm,0.2s						
TRG				smax	smax		
	comp=N,2μm,0.2s						
UUDB	**Ulan-Yde**	**1.21**	**193**	*e*Pg	**Pb**	**22 23 09.7**	**-0.6**
UUDB				*e*Pb	**Pg**	**22 23 11.8**	**+2.1**
UUDB				*e*Sg	**Sn**	**22 23 26.3**	**-1.4**
UUDB				*e*		22 23 30.6	
UUDB				max			
	comp=N,398nm,0.2s						
UUDB				max			
	comp=N,1μm,0.2s						
SYVR	**Suvo**	**1.30**	**61**	*e*Pg	**Pn**	**22 23 10.3**	**-1.7**
SYVR				⇑*i*Pb	**Pb**	**22 23 11.8**	**-0.1**
SYVR				*e*Sg	**Sb**	**22 23 27.3**	**-1.9**
SYVR				*e*Sb	**Sn**	**22 23 29.7**	**-0.4**
SYVR				max			
	comp=N,247nm,0.3s						
SYVR				max			
	comp=N,833nm,0.5s						
SYVR	**Suvo**	**1.30**	**61**	*e*PG	**Pn**	**22 23 10.3**	**-1.7**
SYVR				*e*		22 23 27.2	
SYVR				pmax	pmax		
	comp=Z,248nm,0.3s						
SYVR				smax	smax		
	comp=E,855nm,0.5s						
KAB	**Kabansk**	**1.32**	**222**	*e*Pg	**Pg**	**22 23 13.3**	**+1.4**
HRMR	**Khuramsha**	**1.58**	**207**	⇓*i*Pg	**Pb**	**22 23 16.2**	**-0.4**
HRMR				*e*		22 23 17.5	
HRMR				*e*Sg	**Sg**	**22 23 38.3**	**+1.1**
HRMR				max			
	comp=E,708nm,0.3s						
HRMR				Smax			
	comp=E,5μm,0.3s						
LSTR	**Listvyanka**	**2.31**	**241**	⇓*i*Pn	**Pn**	**22 23 26.1**	**+0.1**
LSTR				*e*Pg	**Pb**	**22 23 29.8**	**+0.7**
LSTR				*e*Sn	**Sb**	**22 23 55.7**	**-2.5**
LSTR				*e*Sg	**Sg**	**22 23 59.4**	**-1.4**
LSTR				Pmax			
	comp=E,20nm,0.2s						
LSTR				Smax			
	comp=E,211nm,0.5s						
LSTR	**Listvyanka**	**2.31**	**241**	*e*PN	**Pn**	**22 23 26.0**	**+0.1**
LSTR				*e*		22 23 30.0	
LSTR				*e*S	**Sb**	**22 23 55.8**	**-2.5**
LSTR				*e*		22 23 59.2	
LSTR				pmax	pmax		
	comp=Z,20nm,0.2s						
LSTR				smax	smax		
	comp=N,210nm,0.6s						
IRK	**Irkutsk**	**2.46**	**253**	*e*Sg	**Sg**	**22 24 04.2**	**-1.3**
IRK				Smax			
	comp=N,1μm,0.4s						
IRK	**Irkutsk**	**2.46**	**253**	*e*PN	**Pb**	**22 23 31.4**	**-0.2**
IRK				*e*S	**Sn**	**22 23 58.0**	**-0.6**
IRK				*e*		22 24 03.5	
IRK				pmax	pmax		
	comp=Z,93nm,0.2s						
IRK				smax	smax		
	comp=N,1μm,0.4s						
YLYR	**Ulyunkhan**	**2.58**	**43**	⇓*i*Pn	**Pn**	**22 23 29.2**	**-0.4**
YLYR				*e*Pg	**Pb**	**22 23 32.2**	**-1.6**
YLYR				*e*Sg	**Sb**	**22 24 06.8**	**+0.7**
YLYR				Pmax			
	comp=N,35nm,0.3s						
YLYR				Smax			
	comp=N,187nm,0.4s						
YLYR	**Ulyunkhan**	**2.58**	**43**	*e*PN	**Pn**	**22 23 29.2**	**-0.4**
YLYR				*e*		22 23 32.2	
YLYR				*e*S	**Sn**	**22 23 59.1**	**-2.6**
YLYR				*e*		22 24 05.5	
YLYR				pmax	pmax		
	comp=Z,54nm,0.5s						
YLYR				smax	smax		
	comp=N,299nm,1.1s						
NIZ	**Nizh Angarsk**	**2.87**	**17**	*e*Pn	**Pn**	**22 23 33.7**	**+0.2**
NIZ				*e*Pg	**Pb**	**22 23 37.9**	**-0.7**
NIZ		

ZAK					*e*Sn	**Sn**	**22 24 36.5**	**-0.4**
ZAK					*e*Sg	**Sg**	**22 24 52.9**	**-2.2**
ZAK					Pmax			
	comp=E,7.0nm,0.2s							
ZAK					Smax			
	comp=E,46nm,0.3s							
ZAK	**Zakamensk**	**4.00**	**230**		*e*PN	**Pb**	**22 24 00.3**	**+2.2**
ZAK					*e*		22 24 52.9	
ZAK					pmax	pmax		
	comp=Z,6.0nm,0.3s							
ZAK					smax	smax		
	comp=N,68nm,0.9s							
UKT	**Uakit**	**4.07**	**51**		*e*Pn	**Pn**	**22 23 50.1**	**0.0**
UKT					*e*Pg	**Pb**	**22 24 00.8**	**+1.7**
UKT					*e*Sn	**Sn**	**22 24 35.3**	**-3.1**
UKT					*e*Sg	**Sb**	**22 24 52.8**	**+4.0**
UKT					Pmax			
	comp=N,20nm,1.1s							
UKT					Smax			
	comp=N,57nm,0.4s							
KPC	**Khapcheranga**	**4.29**	**139**		*e*Pn	**Pn**	**22 23 52.5**	**-0.6**
KPC					*e*Pg	**Pb**	**22 24 04.2**	**+1.4**
KPC					*e*Sn	**Sn**	**22 24 42.1**	**-1.7**
KPC					*e*Sg	**Sg**	**22 25 00.0**	**-4.3**
KPC					*e*		22 25 05.3	
KPC					Pmax			
	comp=N,14nm,0.3s							
KPC					max			
	comp=N,159nm,0.7s							
KPC	**Khapcheranga**	**4.29**	**139**		*e*PN	**Pn**	**22 23 52.5**	**-0.6**
KPC					*e*		22 24 05.8	
KPC					*e*S	**Sn**	**22 24 42.3**	**-1.5**
KPC					*e*		22 24 59.1	
KPC					pmax	pmax		
	comp=Z,10.0nm,0.4s							
KPC					smax	smax		
	comp=E,160nm,1.3s							
SVKR	**Severomuysk**	**4.43**	**44**		*e*Pg	**Pb**	**22 24 06.3**	**+1.1**
SVKR					*e*Sn	**Sn**	**22 24 43.9**	**-3.4**
SVKR					*e*Sg	**Sb**	**22 25 03.7**	**+4.5**
SVKR					Pmax			
	comp=E,29nm,0.1s							
SVKR					Smax			
	comp=E,214nm,0.6s							
MOY	**Mondy**	**4.56**	**255**		*e*Pn	**Pn**	**22 23 58.9**	**+2.0**
MOY					*e*Pg	**Pb**	**22 24 08.7**	**+1.2**
MOY					*e*		22 24 54.2	
MOY					*e*Sg	**Sb**	**22 25 07.4**	**+4.4**
MOY					Pmax			
	comp=E,25nm,1.0s							
MOY					Smax			
	comp=E,164nm,1.0s							
MOY	**Mondy**	**4.56**	**255**		*e*PN	**Pn**	**22 23 59.3**	**+2.4**
MOY					*e*		22 24 10.1	
MOY					*e*S	**Sn**	**22 24 49.0**	**-1.6**
MOY					*e*		22 25 06.4	
MOY					pmax	pmax		
	comp=Z,25nm,1.0s							
MOY					smax	smax		
	comp=E,163nm,0.8s							
ORL	**Orlik**	**5.05**	**268**		*e*Pn	**Pn**	**22 24 05.4**	**+1.8**
ORL					*e*		22 25 04.1	
ORL					*e*Sg	**Sg**	**22 25 24.3**	**-4.4**
ORL					Smax			
	comp=E,87nm,0.7s							
ORL	**Orlik**	**5.05**	**268**		*e*PN	**Pn**	**22 24 06.1**	**+2.5**
ORL					*e*		22 24 20.2	
ORL					*e*S	**Sn**	**22 25 03.1**	**+0.5**
ORL					*e*		22 25 23.6	
ORL					pmax	pmax		
	comp=Z,15nm,0.5s							
ORL					smax	smax		
	comp=N,88nm,0.9s							
ULN	**Ulaanbaatar**	**5.22**	**188**		*e*Pg	Pg	22 24 23.0	-3.7
ULN					*e*Sg	**Sg**	**22 25 31.0**	**-3.3**
SONM	**Songino Array**	**5.32**	**192**		Pn	**Pn**	**22 24 08.6**	**+1.2**
	comp=N,0.6nm,0.3s,baz=5.2,slow=13,SNR=19							
SONM					Pg	Pb	22 24 24.0	+3.4
	comp=N,3.7nm,0.3s,baz=7.4,slow=15,SNR=20							
SONM					Sn	**Sn**	**22 25 10.2**	**+0.8**
	comp=N,2.2nm,0.3s,baz=10,slow=25,SNR=5.7							
SONM					Lg	Lg	22 25 35.6	
	comp=N,5.2nm,0.3s,baz=8.0,slow=28,SNR=5.2							
NLYR	**Nelyaty**	**5.60**	**49**		*e*Pn	**Pn**	**22 24 09.5**	**-1.6**
NLYR					*e*Pg	**Pb**	**22 24 27.8**	**+2.7**
NLYR					*e*Sn	**Sn**	**22 25 13.6**	**-2.5**
NLYR					*e*Sg	Sb	22 25 40.5	+7.7
NLYR					Pmax			
	comp=N,6.0nm,0.6s							
NLYR					Smax			
	comp=N,124nm,1.1s							
BOD	**Bodaibo**	**5.85**	**33**		*e*Pn	**Pn**	**22 24 13.6**	**-0.9**
BOD					*e*Pg	**Pb**	**22 24 30.7**	**+1.3**
BOD					*e*Sg	Sb	22 25 46.8	+6.8
BOD					Pmax			
	comp=N,3.0nm,0.2s							
BOD					Smax			
	comp=N,29nm,1.3s							
CRS	**Chara**	**7.02**	**53**		*e*Pg	Pb	22 24 54.0	+4.7
CRS					*e*Sg	Sb	22 26 23.4	+10
CRS					Pmax			
	comp=N,31nm,1.5s							
CRS					Smax			
	comp=N,92nm,1.5s							
CRS	**Chara**	**7.02**	**53**		*e*PG	Pb	22 24 55.4	+6.1
CRS					*e*		22 26 25.3	
CRS					pmax	pmax		
	comp=Z,45nm,1.3s							
CRS					smax	smax		
	comp=E,93nm,1.5s							
TUP	**Tupik**	**7.18**	**74**		*e*Pn	**Pn**	**22 24 31.7**	**-1.0**
TUP					*e*Pg	Pb	22 24 56.4	+4.4
TUP					*e*Sg	Sb	22 26 28.0	+10
TUP					Pmax			
	comp=E,5.0nm,0.3s							
TUP					Smax			
	comp=E,78nm,0.9s							
TUP	**Tupik**	**7.18**	**74**		*e*PN	**Pn**	**22 24 32.1**	**-0.6**
TUP					*e*		22 24 54.8	
TUP					*e*S	**Sn**	**22 25 51.7**	**-3.1**
TUP					*e*		22 26 27.6	
TUP					pmax	pmax		
	comp=Z,5.0nm,0.5s							
TUP					smax	smax		
	comp=N,77nm,1.1s							
ZALV	**Zalesovo Beam**	**13.87**	**283**		Lg	Lg	22 30 07.7	
	comp=N,0.1nm,0.3s,baz=84,slow=30,SNR=3.9							
KLR	**Kul'dur**	**15.31**	**95**		Lg	Lg	22 30 50.5	
	comp=N,0.1nm,0.3s,baz=342,slow=20,SNR=3.0							
MKAR	**Makanchi Array**	**17.69**	**260**		P	**P**	**22 26 54.5**	**-0.7**
	comp=N,0.0nm,0.3s,baz=67,slow=11,SNR=5.4							
KURK	**Kurchatov**	**18.28**	**275**		P	**P**	**22 27 02.3**	**+0.7**
KURBB	**Kurchatov Arra**	**18.37**	**274**		P	**P**	**22 27 02.3**	**-0.2**
	comp=N,0.2nm,0.3s,baz=64,slow=12,SNR=3.1							
BVAR	**Borovoye Array**	**22.50**	**285**		P	**P**	**22 27 50.2**	**+2.7**
	comp=N,0.2nm,0.3s,baz=70,slow=12,SNR=4.9							
ILAR	**Eielson Array**	**49.22**	**33**		P	**P**	**22 31 36.6**	**+0.5**
	comp=N,0.2nm,0.5s,baz=307,slow=7.1,SNR=3.1							

IDC ***16*** *22:28:48.0±1.6, 32.°82S×178.°36W, h0km, mb4.3/2, mb1 4.4/3, mb1mx3.8/34, mbtmp4.2/3, ML3.8/1, MS3.6/2, Ms1 3.6/2, ms1mx2.9/31, Error ellipse: s-maj=61.9km s-min=34.1km az=147.0*

NEIC ***16*** *22:28:53.2±0.8, 32.°85S×178.°40W, h35km, mb4.5/3, Error ellipse: s-maj=22.2km s-min=12.2km az=119.0*

ISC 16 22:28:53.2±1.4, 32.°9S±0.°1×178.°5W±0.°3, h32km, n14, σ0s91/13, mb4.3/5, South of Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
URZ	**Urewera**	**6.45**	**212**	Pn		**Pn**	**Pn**	**22 30 26.0**	**+0.1**
	2.0nm,0.3s,baz=67,slow=18,SNR=9.2								
URZ						Sn	**Sn**	**22 31 37.6**	**-0.8**
	5.7nm,0.3s,baz=102,slow=24,SNR=9.6								
DZM	**Mont Dzumac**	**17.14**	**305**	LR		LR	LR	22 37 56.7	
	comp=Z,211nm,18.8s,baz=88,slow=32								
FUNA	**Funafuti**	**24.33**	**354**	*e*P		**P**	**P**	**22 34 06.4**	**-1.7**
	14nm,0.4s								
CTAO	**Charters Tower**	**33.87**	**283**	*e*P		**P**	**P**	**22 35 33.3**	**+0.3**
	3.4nm,0.6s								
ASAR	**Alice Springs**	**42.62**	**270**	P		**P**	**P**	**22 36 47.1**	**+0.5**
	1.4nm,0.4s,baz=108,slow=7.6,SNR=23								
WRAB	**Tennant Creek**	**43.83**	**275**	*e*P		**P**	**P**	**22 36 56.9**	**+0.4**
	2.6nm,0.5s								
WRA	**Warramunga Arr**	**43.83**	**275**	P		**P**	**P**	**22 36 56.6**	**+0.2**
	2.9nm,0.5s,baz=114,slow=7.7,SNR=30								
KLR	**Kul'dur**	**92.96**	**330**	LR		LR	LR	23 25 54.0	
	comp=Z,24nm,18.2s,baz=1.0,slow=37								
MKAR	**Makanchi Array**	**119.02**	**309**	PKP		**PKPdf**	**PKPdf**	**22 47 37.9**	**-0.4**
	0.2nm,0.6s,baz=113,slow=3.3,SNR=2.6								
FINES	**FINESS Array B**	**147.31**	**338**	PKPbc		**PKPdf**	**PKPdf**	**22 48 32.2**	**+2.0**
	2.1nm,0.5s,baz=50,slow=4.2,SNR=22								
NB2	**NORSAR Subarra**	**151.12**	**350**	PKP		**PKPbc**	**PKPbc**	**22 48 42.2**	**-0.2**
	comp=Z,0.6nm,0.6s,baz=16,slow=2.7								
NOA	**NORSAR Array B**	**151.12**	**350**	PKPbc		**PKPbc**	**PKPbc**	**22 48 42.3**	**0.0**
	comp=Z,1.1nm,0.8s,baz=13,slow=4.1,SNR=3.9								
AKASG	**Malin Array Be**	**152.96**	**319**	PKPbc		**PKPbc**	**PKPbc**	**22 48 46.5**	**-0.2**
	comp=Z,0.2nm,0.4s,baz=79,slow=2.3,SNR=3.8								
BRTR	**Keskin Array B**	**153.31**	**294**	PKPbc		**PKPbc**	**PKPbc**	**22 48 48.1**	**0.0**
	comp=Z,0.7nm,0.5s,baz=137,slow=3.4,SNR=7.2								

ISCJB ***16*** *22:30:52.7±0.4, 6.°72N±0.°04×72.°97W±0.°04, h165km±3km, mb3.5/6, Error ellipse: s-maj=7.6km s-min=4.1km az=139.7*

FUNV ***16*** *22:30:54.2, 6.°77N×73.°12W, h169km, MW4.0*

IDC ***16*** *22:30:54.5±1.4, 6.°73N×72.°87W, h172km±13km, mb3.3/6, mb1 3.6/8, mb1mx3.3/29, mbtmp3.9/8, Error ellipse: s-maj=21.0km s-min=18.0km az=116.0*

RSNC ***16*** *22:30:55.4±0.7, 6.°76N×73.°12W, h149km±4km, ML4.0*

ISC 16 22:30:53.8±0.7, 6.°76N±0.°05×73.°01W±0.°05, h164km±5km, n44, σ1s55/64, mb3.5/6, 3C, Northern Colombia

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
BARC	**Barichara**	**0.24**	**226**	*e*P		**P**	**Pn**	**22 31 15.5**	**-0.6**
BARC				*e*S		**Sn**	**Sn**	**22 31 30.5**	**-2.6**
PAMC	**Pamplona, Colo**	**0.65**	**28**	*e*P		**P**	**Pn**	**22 31 18.3**	**+0.3**
PAMC				*i*				22 31 18.6	
	comp=Z,1μm,0.2s								
PAMC				*e*S		**Sn**	**Sn**	**22 31 35.6**	**-1.0**
BRRC	**Barranca, Sant**	**0.78**	**296**	*e*P		**P**	**Pn**	**22 31 17.4**	**-0.9**
BRRC				*i*				22 31 17.6	
	comp=Z,2μm,0.2s								
BRRC				*e*S		**Sn**	**Sn**	**22 31 34.3**	**-2.7**
CBRI	**Barrientos, No**	**0.97**	**13**	*i* P		**Pn**	**Pn**	**22 31 20.0**	**+0.1**
CBRI				*e*S		**Sn**	**Sn**	**22 31 39.1**	**-0.9**
CBRI				*i*				22 31 44.6	
	comp=Z,1μm,0.5s								
GRMC	**Gramalote, San**	**0.97**	**12**	*i* P		**Pn**	**Pn**	**22 31 21.3**	**+1.5**
GRMC				*i*				22 31 22.5	
	comp=Z,1μm,0.3s								
GRMC				*e*S		**Sn**	**Sn**	**22 31 41.2**	**+1.3**
CAPV	**Capacho**	**1.30**	**32**	⇑*i*P		**Pn**	**Pn**	**22 31 23.4**	**+0.7**
CAPV				*e*S		**Sn**	**Sn**	**22 31 44.5**	**-0.4**
OCAC	**Ocana**	**1.50**	**348**	*e*P		**P**	**Pn**	**22 31 23.6**	**-0.9**
OCAC				*e*S		**Sn**	**Sn**	**22 31 47.2**	**-1.2**
OCAC				*i*				22 31 52.4	
	comp=Z,2μm,0.4s								
NORC	**Norcasia**	**2.20**	**237**	*e*P		**P**	**Pn**	**22 31 31.3**	**-0.8**
NORC				*e*S		**Sn**	**Sn**	**22 31 59.5**	**-2.2**
ROSC	**El Rosal**	**2.31**	**214**	P		**Pn**	**Pn**	**22 31 35.2**	**+1.5**
	comp=Z,106nm,0.3s,baz=304,slow=22,SNR=535								
ROSC				S		**Sn**	**Sn**	**22 32 02.0**	**-2.5**
	comp=Z,191nm,0.3s,baz=132,slow=19,SNR=9.0								
SOCV	**Socops**	**2.62**	**55**	*e*P		**P**	**Pn**	**22 31 37.8**	**+0.8**
SOCV				*e*S		**Sn**	**Sn**	**22 32 09.4**	**-1.1**
TOLC	**Tolima**	**3.15**	**227**	*e*P		**P**	**Pn**	**22 31 43.9**	**-0.1**
SDV	**Santo Domingo**	**3.16**	**48**	P		**Pn**	**Pn**	**22 31 44.9**	**+1.0**
	comp=Z,115nm,0.3s,baz=212,slow=3.8,SNR=63								
SDV				S		**Sn**	**Sn**	**22 32 22.7**	**-0.2**
	comp=Z,26nm,0.3s,baz=64,slow=22,SNR=8.8								
ELOV	**Elorza**	**3.51**	**86**	*e*P		**P**	**Pn**	**22 31 49.5**	**+1.4**
ELOV				*e*S		**Sn**	**Sn**	**22 32 29.7**	**-0.7**
PRAC	**Prado**	**3.56**	**212**	*e*P		**P**	**Pn**	**22 31 48.8**	**0.0**
PRAC				*e*S		**Sn**	**Sn**	**22 32 30.6**	**-1.0**
VIRV	**Villa del Rosa**	**3.77**	**9**	*e*P		**P**	**Pn**	**22 31 50.1**	**-1.3**
VIRV				*e*S		**Sn**	**Sn**	**22 32 33.2**	**-3.2**
QARV	**Quebrada Arrib**	**4.22**	**35**	⇑*i*P		**Pn**	**Pn**	**22 31 57.8**	**+0.5**
QARV				*e*S		**Sn**	**Sn**	**22 32 44.0**	**-2.8**
SANV	**Sanarito**	**4.39**	**51**	*e*P		**P**	**Pn**	**22 31 59.6**	**+0.1**
SANV				*e*S		**Sn**	**Sn**	**22 32 48.6**	**-2.3**
CURV	**Curarigua**	**4.42**	**43**	*e*P		**P**	**Pn**	**22 32 00.1**	**+0.2**
CURV				*e*S		**Sn**	**Sn**	**22 32 48.9**	**-2.7**
DABV	**Dabajuro**	**4.75**	**29**	*e*P		**P**	**Pn**	**22 32 04.4**	**+0.2**
DABV				*e*S		**Sn**	**Sn**	**22 32 55.2**	**-4.1**
TEPV	**Terepaima**	**4.94**	**50**	*e*P		**P**	**Pn**	**22 32 06.9**	**+0.2**
SIQV	**Siquisique**	**5.00**	**39**	*e*P		**P**	**Pn**	**22 32 06.3**	**-1.1**
BAUV	**El Baul**	**5.38**	**66**	⇑*i*P		**P**	**Pn**	**22 32 11.5**	**-1.0**
BAUV				*e*S		**Sn**	**Sn**	**22 33 09.7**	**-4.3**
MAPV	**Macapo**	**5.44**	**56**	*e*P		**P**	**Pn**	**22 32 13.3**	**0.0**
MONV	**Montecano**	**5.97**	**30**	*e*P		**P**	**Pn**	**22 32 19.3**	**-0.9**
MONV				*e*S		Sn	Sn	22 33 21.8	-6.2
TURV	**Turiamo**	**6.29**	**54**	*e*P		**P**	**Pn**	**22 32 24.1**	**-0.4**
MERV	**Las Mercedes**	**7.09**	**69**	*e*P		**P**	**Pn**	**22 32 34.2**	**-1.0**
FUNV	**FUNVISIS**	**7.15**	**59**	*e*P		**P**	**Pn**	**22 32 35.5**	**-0.5**
BIRV	**Birongo**	**7.62**	**61**	*e*P		**P**	**Pn**	**22 32 41.3**	**-0.9**
CUPV	**Cepira**	**7.86**	**65**	*e*P		**P**	**Pn**	**22 32 44.7**	**-0.7**
PCJ	**Portland Cotta**	**11.64**	**340**	*i* P		**Pn**	**Pn**	**22 33 37.0**	**+2.0**
STH	**Stony Hill**	**11.84**	**342**	*i* P		**Pn**	**Pn**	**22 33 39.4**	**+1.7**
MCJ	**Malvern**	**12.00**	**338**	*i* P		**Pn**	**Pn**	**22 33 41.7**	**+1.9**
CVJ	**Coleyville**	**12.22**	**339**	*i* P		**Pn**	**Pn**	**22 33 44.8**	**+2.1**
BBJ	**Bamboo Saint A**	**12.28**	**341**	*e*P		**Pn**	**Pn**	**22 33 46.0**	**+2.7**
LPAZ	**La Paz**	**23.40**	**168**	pP		pP	pP	22 36 21.8	+1.9
	comp=Z,2.1nm,0.7s,baz=347,slow=13,SNR=5.9								
TXAR	**Lajitas Array**	**36.59**	**312**	P		**P**	**P**	**22 37 44.8**	**+0.5**
	comp=Z,0.3nm,0.4s,baz=123,slow=8.2,SNR=9.8								
TXAR				PcP		**PcP**	**PcP**	**22 40 05.6**	**+1.4**
	comp=Z,0.2nm,0.7s,baz=107,slow=4.8,SNR=3.2								
ULM	**Lac du Bonnet**	**47.38**	**340**	P		**P**	**P**	**22 39 11.1**	**-0.2**
	comp=Z,2.1nm,0.4s,baz=155,slow=6.2,SNR=4.1								
PDAR	**Pinedale Array**	**48.19**	**324**	P		**P**	**P**	**22 39 18.2**	**+0.2**
	comp=Z,0.3nm,0.5s,baz=111,slow=9.8,SNR=4.7								
SCHQ	**Schefferville**	**48.19**	**5**	P		**P**	**P**	**22 39 18.0**	**+0.5**
	comp=Z,1.6nm,0.8s,baz=191,slow=10,SNR=3.7								
YKA	**Yellowknife Ar**	**63.36**	**340**	P		**P**	**P**	**22 41 05.4**	**+0.2**
	comp=Z,1.1nm,0.5s,baz=133,slow=6.6,SNR=44								
YKA				pP		**pP**	**pP**	**22 41 44.2**	**+0.4**
	comp=Z,0.3nm,0.5s,baz=128,slow=6.8,SNR=2.2								
TORD	**Torodi Ar. Bea**	**73.64**	**78**	P		**P**	**P**	**22 42 08.2**	**-1.8**
	comp=Z,0.1nm,0.5s,baz=289,slow=6.8,SNR=3.1								
ASAR	**Alice Springs**	**149.16**	**234**	PKPbc		**PKPbc**	**PKPbc**	**22 50 23.7**	**-0.1**
	comp=Z,1.7nm,0.7s,baz=118,slow=3.5,SNR=22								
WRA	**Warramunga Arr**	**150.40**	**241**	PKPbc		**PKPbc**	**PKPbc**	**22 50 26.6**	**-0.2**
	comp=Z,0.8nm,0.4s,baz=108,slow=2.6,SNR=14								
CMAR	**Chiang Mai Arr**	**153.72**	**17**	PKPbc		**PKPbc**	**PKPbc**	**22 50 33.9**	**-0.5**
	comp=Z,0.3nm,0.5s,baz=309,slow=2.6,SNR=3.4								

ISCJB ***16*** *22:41:25.2±1.4, 36.°32N±0.°06×142.°4E±0.°1, h19km, mb3.6/2, MS3.6/1, Error ellipse: s-maj=16.8km s-min=8.4km az=178.6*

IDC ***16*** *22:41:25.0±4.5, 36.°26N×142.°37E, h0km, mb3.8/2, mb1 3.6/5, mb1mx3.3/34, mbtmp3.8/5, ML3.3/3, MS3.6/1, Ms1 3.6/1, ms1mx2.4/56, Error ellipse: s-maj=77.8km s-min=33.2km az=110.0*

JMA ***16*** *22:41:27.1±0.3, 36.°31N×142.°27E, h45km, M3.1*

ISC 16 22:41:28.0±1.7, 36.°26N±0.°06×142.°2E±0.°1, h19km, n21, σ1s42/16, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**1.18**	**242**	P		P	**Pn**	**22 41 49.3**	**-0.2**
JHO	**Hitachi**	**1.32**	**286**	P		P	**Pn**	**22 41 50.7**	**-0.7**
JFK	**Kawauchi**	**1.50**	**318**	*e*S		**Sn**	**Sn**	**22 42 11.9**	**-1.2**
BSO1	**Boso 1**	**1.87**	**211**	P		P	**Pn**	**22 41 58.6**	**+0.2**
JFT	**Otama**	**1.92**	**311**	P		P	**Pn**	**22 41 59.7**	**+0.1**
JMM	**Marumori**	**1.93**	**326**	P		P	**Pn**	**22 41 58.4**	**-1.4**
BSO3	**Boso 3**	**1.98**	**223**	P		P	**Pn**	**22 42 00.4**	**+0.3**
JAG	**Ashikaga**	**2.18**	**275**	P		P	**Pn**	**22 42 03.8**	**+0.6**
MJAR	**Matsushiro Arr**	**3.19**	**276**	Pn		Pn	**Pn**	**22 42 17.9**	**+0.8**
	2.4nm,0.3s,baz=110,slow=8.4,SNR=18								
MAT	**Matsushiro**	**3.19**	**276**	P		P	**Pn**	**22 42 17.4**	**+0.3**
MAT				*e*S		**Sg**	**Sg**	**22 43 10.0**	**-0.5**
JHJ	**Hachijo jima 2**	**3.69**	**213**	Pn		Pn	**Pn**	**22 42 23.8**	**-0.2**
	17nm,0.3s,baz=111,slow=22,SNR=5.1								
JHJ				Sn		**Sn**	**Sn**	**22 43 03.5**	**-3.5**
	12nm,0.3s,baz=257,slow=19,SNR=2.4								
ASAJ	**Asahikawa**	**7.85**	**2**	Pn		Pn	**Pn**	**22 43 19.4**	**-1.7**
	0.3nm,0.3s,baz=217,slow=20,SNR=2.8								
H11N2	**WAKE ISLAND Hy**	**27.25**	**121**	T		T	T	23 15 35.1	
	baz=313								
H11N1	**WAKE ISLAND Hy**	**27.25**	**121**	T		T	T	23 15 38.9	
	baz=313								
H11N3	**WAKE ISLAND Hy**	**27.27**	**121**	T		T	T	23 15 34.1	
	baz=313								
H11S1	**WAKE ISLAND Hy**	**27.95**	**123**	T		T	T	23 16 35.7	
	baz=315,slow=74								
H11S3	**WAKE ISLAND Hy**	**27.95**	**123**	T		T	T	23 16 35.3	
	baz=315,slow=74								
H11S2	**WAKE ISLAND Hy**	**27.96**	**123**	T		T	T	23 16 38.0	
	baz=315								
SONM	**Songino Array**	**28.71**	**305**	P		P	**P**	**22 47 24.3**	**+0.4**
	1.1nm,0.9s,baz=98,slow=9.3,SNR=6.9								
MKAR	**Makanchi Array**	**45.03**	**303**	P		P	**P**	**22 49 44.8**	**+2.4**
	1.1nm,0.8s,baz=86,slow=8.9,SNR=12								
AKTO	**Aktyubinsk**	**59.63**	**312**	LR		LR	LR	23 20 29.6	
	comp=Z,49nm,19.7s,slow=39								

JMA 16 23:01:23.1, 37.°02N×140.°59E, h7km±1km, M3.5, 6C, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.19**	**64**	⇑P		P	Pg	23 01 27.2	+0.3
ONAJ				*e*S		S	Sg	23 01 30.2	+0.8
JHO	**Hitachi**	**0.41**	**182**	⇑P		P	Pg	23 01 31.0	0.0
JHO				*e*S		S	Sg	23 01 36.4	0.0
JFK	**Kawauchi**	**0.41**	**33**	⇑P		P	Pg	23 01 31.3	+0.1
JFK				*e*S		S	Sg	23 01 37.1	+0.5
JFT	**Otama**	**0.54**	**338**	⇑P		P	Pg	23 01 33.8	+0.3
JFT				*e*S		S	Sg	23 01 41.1	+0.6
JSB	**Shiboa**	**0.54**	**265**	⇑P		P	Pg	23 01 34.1	+0.6
JSB				*e*S		S	Sb	23 01 41.8	-1.1
JFY	**Yanaizu**	**0.81**	**299**	⇑P		P	Pg	23 01 38.5	-0.1
JFY				*e*S		S	Sg	23 01 48.9	-0.2
JYT	**Yasato**	**0.85**	**202**	P		P	Pg	23 01 39.0	-0.5
JYT				*e*S		S	Sg	23 01 50.1	-0.4
JAG	**Ashikaga**	**1.09**	**237**	P		P	Pg	23 01 43.2	-0.8
JAG				*e*S		S	Sg	23 01 57.4	-0.7
MAT	**Matsushiro**	**1.97**	**257**	P		P	Pn	23 01 57.4	+0.5
MAT				*e*S		S	Sb	23 02 24.1	0.0

ISCJB ***16*** *23:01:32.0±0.4, 49.°84N±0.°03×18.°46E±0.°03, h0km, Error ellipse: s-maj=4.8km s-min=2.4km az=11.1*

IPEC ***16*** *23:01:33.4±0.2, 49.°80N×18.°59E, h0km, ML1.7/3, Error ellipse: s-maj=2.1km s-min=1.1km az=161.0*

CSEM ***16*** *23:01:33.4±0.2, 49.°80N×18.°50E, h1km, ML2.5/7, Error ellipse: s-maj=6.2km s-min=3.0km az=6.0*

PRU ***16*** *23:01:34.4, 49.°86N×18.°50E, h0km*

VIE ***16*** *23:01:35.3±0.7, 49.°61N×18.°42E, h0km, mb1.9/3, ml2.2/4, Error ellipse: s-maj=4.4km s-min=3.5km az=71.0, Suspected Mining induced.*

ISC 16 23:01:32.6±0.8, 49.°83N±0.°03×18.°53E±0.°02, h0km, n31, σ0s92/56, 2D, Czech and Slovak Republics

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
OKC	**Ostrava-Krasne**	**0.25**	**271**	⇓*i*PG		**Pb**	**Pb**	**23 01 39.4**	**+2.1**
OKC				*e*SG		**Sb**	**Sb**	**23 01 43.1**	**+2.5**
	comp=Z,39nm,0.8s								
OKC	**Ostrava-Krasne**	**0.25**	**271**	Pg		**Pb**	**Pb**	**23 01 39.4**	**+2.1**
OKC				Sg		**Sb**	**Sb**	**23 01 43.1**	**+2.5**
	39nm,0.8s								
MORC	**Moravsky Berou**	**0.64**	**265**	*e*Pg		**Pb**	**Pb**	**23 01 46.5**	**-0.2**
MORC				*e*Sg		**Sg**	**Sg**	**23 01 54.4**	**+1.2**
	12nm,0.3s								
OJC	**Ojcow**	**0.91**	**64**	*e*Pg		**Pb**	**Pb**	**23 01 50.6**	**-0.6**
OJC				*e*Sg		**Sb**	**Sb**	**23 02 02.6**	**-1.2**
OJC	**Ojcow**	**0.91**	**64**	*e*Pg		**Pb**	**Pb**	**23 01 50.6**	**-0.6**
OJC				*e*Sg		**Sb**	**Sb**	**23 02 02.6**	**-1.2**
LANS	**Liptovska Anna**	**0.92**	**138**	*e*Pg		**Pb**	**Pb**	**23 01 51.0**	**-0.4**
LANS				*e*Sg		**Sb**	**Sb**	**23 02 04.3**	**+0.2**
LANS	**Liptovska Anna**	**0.92**	**138**	*e*PG		**Pb**	**Pb**	**23 01 51.0**	**-0.4**
LANS				*e*SG		**Sb**	**Sb**	**23 02 04.2**	**+0.2**
**KRL

RUS				eS	Sn	23 32 01.7	+3.3				
MTVR	**Mutnovka**	**2.45**	**1**	*e*P	Pn	23 31 33.7	+3.0				
MTVR				eS	Sn	23 32 03.6	+4.1				
PET	**Petropavlovsk**	**3.01**	**6**	eS	Sn	23 32 16.8	+3.7				
DALK	**Dalny**	**3.03**	**8**	eP	Pn	23 31 41.7	+3.2				
DALK				eS	Sn	23 32 17.0	+3.6				
UGLR	**Uglovaya**	**3.21**	**8**	eP	Pn	23 31 45.3	+4.2				
AVH	**Avacha**	**3.26**	**7**	eP	Pn	23 31 46.0	+4.3				
AVH				eS	Sn	23 32 24.8	+5.5				
SMAR	**Somma**	**3.26**	**7**	eP	Pn	23 31 46.7	+4.8				
SDLR	**Sedlovina**	**3.28**	**8**	eP	Pn	23 31 45.4	+3.3				
SPN	**Mys Shipunski**	**3.29**	**21**	eP	Pn	23 31 46.2	+4.1				
SPN				eS	Sn	23 32 23.8	+3.8				
KRX	**Arik**	**3.35**	**6**	eP	Pn	23 31 46.8	+3.8				
GNL	**Ganaly**	**3.67**	**359**	eP	Pn	23 31 52.0	+4.7				
MKZ	**Mys Kozlova**	**5.05**	**25**	eP	Pn	23 32 08.7	+2.6				
MKZ				eS	Sn	23 33 06.0	+3.0				

ISCJB ***16*** *23:37:40.9±0.8,34°.58N±0'.02×24°.88E±0'.03,h6km±5km, mb3.2/5, Error ellipse: s-maj=4.8km s-min=3.4km az=137.2*

IDC ***16*** *23:37:41.6±1.1,34°.69N×24°.85E,h0km,mb3.4/5, mb1 3.6/11,mb1mx3.4/49,mbtmp3.4/11,ML3.6/6, Error ellipse: s-maj=20.9km s-min=10.4km az=93.0*

CSEM ***16*** *23:37:42.7±0.3,34°.64N×24°.85E,h2km,ML3.6, Error ellipse: s-maj=6.2km s-min=4.4km az=49.0*

ATH ***16*** *23:37:44.0,34°.78N×24°.85E,h15km±1km,ML3.7/4, Error ellipse: s-maj=3.0km s-min=1.3km az=1.0*

THE ***16*** *23:37:45.0,34°.81N×24°.84E,h0km±2km,ML3.6/10, Error ellipse: s-maj=3.0km s-min=1.2km az=178.0*

HLW ***16*** *23:37:46.8,34°.70N×25°.20E,h28km±11km,Md3.0,Ml2.8*

GII ***16*** *23:37:51.9±0.0,34°.17N×25°.63E,h1km,MD3.5/1*

ISC 16 23:37:41.7±1.3,34°.64N±0'.03×24°.89E±0'.02,h6km±8km, n106,σ1°66/135,mb3.5/5,Crete

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SIVA	**Sivas**	**0.38**	**350**	P	**Pg**	**23 37 49.8**	**+0.7**
SIVA				S	**Sg**	**23 37 53.8**	**-0.3**
SIVA	**Sivas**	**0.38**	**350**	P	**Pg**	**23 37 49.8**	**+0.7**
SIVA				S	**Sg**	**23 37 54.2**	**+0.1**
SIVA	**Sivas**	**0.38**	**350**	P	**Pb**	**23 37 50.3**	**-0.6**
SIVA				S	**Sg**	**23 37 54.2**	**+0.1**
SIVA				AML	AML	23 37 54.3	
SIVA				AML	AML	23 37 55.8	
IDI	**Anoyia**	**0.64**	**360**	Pg	**Pg**	**23 37 53.9**	**-0.2**
	77nm,0.3s,baz=276,slow=7.1,SNR=1562						
IDI				Lg	Lg	23 38 00.6	
	1μm,0.3s,baz=287,slow=19,SNR=168						
IDI	**Anoyia**	**0.64**	**360**	P	**Pg**	**23 37 53.8**	**-0.4**
IDI				S	**Sg**	**23 38 01.2**	**-1.4**
IDI	**Anoyia**	**0.64**	**360**	P	**Pg**	**23 37 53.8**	**-0.4**
IDI				S	**Sg**	**23 38 01.2**	**-1.4**
IDI	**Anoyia**	**0.64**	**360**	P	**Pg**	**23 37 53.6**	**-0.5**
IDI				S	**Sg**	**23 38 00.7**	**-1.8**
IDI				AML	AML	23 38 01.2	
	comp=E,16741μm,0.3s						
IDI				AML	AML	23 38 02.6	
	comp=N,13527μm,0.3s						
IACM	**Heraklion**	**0.68**	**12**	P	**Pg**	**23 37 55.4**	**+0.6**
IACM				S	**Sg**	**23 38 03.3**	**-0.3**
IACM	**Heraklion**	**0.68**	**12**	P	**Pg**	**23 37 55.4**	**+0.6**
IACM				S	**Sg**	**23 38 03.3**	**-0.3**
GVD	**Gavdhos**	**0.69**	**287**	P	**Pb**	**23 37 56.4**	**+0.2**
GVD				S	**Sb**	**23 38 07.1**	**+1.1**
GVD	**Gavdhos**	**0.69**	**287**	P	**Pb**	**23 37 56.4**	**+0.2**
GVD				S	**Sb**	**23 38 06.1**	**+0.1**
GVD	**Gavdhos**	**0.69**	**287**	P	**Pb**	**23 37 56.7**	**+0.5**
GVD				S	**Sb**	**23 38 06.1**	**+0.1**
GVD				AML	AML	23 38 08.6	
	comp=N,24444μm,0.3s						
GVD				AML	AML	23 38 10.3	
	comp=E,32310μm,0.4s						
LAST	**Lasithi**	**0.71**	**43**	P	**Pg**	**23 37 56.2**	**+0.8**
LAST				S	**Sb**	**23 38 06.3**	**-0.2**
LAST	**Lasithi**	**0.71**	**43**	P	**Pg**	**23 37 56.2**	**+0.8**
LAST				S	**Sb**	**23 38 06.3**	**-0.2**
LAST	**Lasithi**	**0.71**	**43**	P	**Pg**	**23 37 56.2**	**+0.8**
NPS	**Neapolis**	**0.85**	**44**	P	**Pg**	**23 37 58.9**	**+0.7**
NPS				S	**Sb**	**23 38 11.6**	**+0.9**
NPS	**Neapolis**	**0.85**	**44**	P	**Pg**	**23 37 58.6**	**+0.4**
NPS				S	**Sb**	**23 38 11.6**	**+0.9**
NPS	**Neapolis**	**0.85**	**44**	P	**Pg**	**23 37 58.6**	**+0.4**
VAM	**Vamos**	**0.95**	**323**	P	**Pg**	**23 37 59.4**	**-0.6**
VAM				S	**Sg**	**23 38 12.4**	**0.0**
VAM	**Vamos**	**0.95**	**323**	P	**Pg**	**23 37 59.4**	**-0.6**
VAM				S	**Sb**	**23 38 13.2**	**-0.3**
IMMV	**Iera Moni Meta**	**1.11**	**318**	P	**Pg**	**23 38 02.2**	**-0.8**
IMMV				S	**Sb**	**23 38 17.4**	**-0.6**
IMMV	**Iera Moni Meta**	**1.11**	**318**	P	**Pg**	**23 38 02.2**	**-0.8**
IMMV				S	**Sb**	**23 38 17.4**	**-0.6**
IMMV	**Iera Moni Meta**	**1.11**	**318**	P	**Pg**	**23 38 00.9**	**-2.0**
ZKR	**Zakros**	**1.19**	**66**	P	**Pn**	**23 38 05.9**	**+1.0**
ZKR				S	**Sn**	**23 38 24.7**	**+3.4**
ZKR	**Zakros**	**1.19**	**66**	P	**Pn**	**23 38 05.5**	**+0.6**
ZKR				S	**Sn**	**23 38 22.2**	**+0.9**
ZKR	**Zakros**	**1.19**	**66**	P	**Pn**	**23 38 05.5**	**+0.6**
ZKR				S	**Sn**	**23 38 22.2**	**+0.9**
ZKR				AML	AML	23 38 30.6	
	comp=E,2864μm,0.6s						
ZKR				AML	AML	23 38 31.0	
	comp=N,2060μm,0.6s						
THR6	**Thira Island,**	**1.76**	**13**	P	**Pb**	**23 38 14.1**	**-0.3**
THR6	**Thira Island,**	**1.76**	**13**	P	**Pb**	**23 38 14.1**	**-0.3**
ANKY	**Antikythira Is**	**1.79**	**314**	P	**Pb**	**23 38 15.0**	**+0.2**
ANKY				S	**Sn**	**23 38 36.0**	**-0.1**
ANKY	**Antikythira Is**	**1.79**	**314**	P	**Pb**	**23 38 15.0**	**+0.2**
ANKY				S	**Sn**	**23 38 36.0**	**-0.1**
ANKY	**Antikythira Is**	**1.79**	**314**	P	**Pg**	**23 38 16.0**	**0.0**
CMBO	**Columbo, Santo**	**1.87**	**13**	P	**Pb**	**23 38 16.1**	**-0.2**
CMBO				S	**Sn**	**23 38 38.0**	**-0.2**
CMBO	**Columbo, Santo**	**1.87**	**13**	P	**Pb**	**23 38 16.1**	**-0.2**
CMBO				S	**Sn**	**23 38 38.0**	**-0.2**
CMBO	**Columbo, Santo**	**1.87**	**13**	P	**Pb**	**23 38 16.6**	**+0.2**
KARP	**Karpathos**	**2.07**	**63**	P	**Pb**	**23 38 20.7**	**+1.0**
KARP	**Karpathos**	**2.07**	**63**	P	**Pb**	**23 38 20.7**	**+1.0**
KARP	**Karpathos**	**2.07**	**63**	P	**Pg**	**23 38 22.0**	**+0.6**
MHLO	**Agia Marina, M**	**2.08**	**349**	P	**Pn**	**23 38 18.1**	**+0.9**
MHLO	**Agia Marina, M**	**2.08**	**349**	P	**Pn**	**23 38 18.1**	**+0.9**
APE	**Apeiranthos**	**2.48**	**12**	P	**Pn**	**23 38 23.5**	**+0.9**
APE	**Apeiranthos**	**2.48**	**12**	P	**Pn**	**23 38 23.5**	**+0.9**
VLI	**Veliai**	**2.61**	**323**	P	**Pn**	**23 38 25.9**	**+1.4**
VLI	**Veliai**	**2.61**	**323**	P	**Pn**	**23 38 25.9**	**+1.4**
NIS1	**Nisyros Isl.**	**2.70**	**43**	P	**Pn**	**23 38 28.0**	**+2.3**
NIS1	**Nisyros Isl.**	**2.70**	**43**	P	**Pn**	**23 38 28.0**	**+2.3**
ARG	**Arkhangelos**	**3.07**	**58**	P	**Pb**	**23 38 34.5**	**-2.3**
ARG				S	**Sn**	**23 39 10.3**	**+2.5**
ARG	**Arkhangelos**	**3.07**	**58**	P	**Pb**	**23 38 34.5**	**-2.3**
ARG				S	**Sn**	**23 39 10.3**	**+2.5**
SLUM	**Salum**	**3.15**	**175**	P	**Pn**	**23 38 34.8**	**+2.9**
	baz=179						
SLUM				AMP		23 39 00.0	
	comp=E,30μm,0.5s,logA/T=4.8,baz=179						
SLUM				S	**Sn**	**23 39 11.6**	**+1.7**
	baz=179						
SLUM	**Salum**	**3.15**	**175**	P	**Pn**	**23 38 34.8**	**+2.9**
SLUM				S	**Sn**	**23 39 11.6**	**+1.7**
BDRM	**Kayabasi**	**3.18**	**40**	*i* P	**Pb**	**23 38 36.5**	**-2.2**
BDRM	**Kayabasi**	**3.18**	**40**	P	**Pb**	**23 38 36.5**	**-2.2**
TURN	**Turunc**	**3.75**	**53**	*i* P	**Pn**	**23 38 39.4**	**-0.7**
TURN	**Turunc**	**3.75**	**53**	P	**Pn**	**23 38 39.4**	**-0.7**
AYDN	**Tasoluk**	**3.86**	**38**	*i* P	Pn	23 38 46.2	+4.5
AYDN	**Tasoluk**	**3.86**	**38**	P	Pb	23 38 46.2	-4.1
HMAT	**Matruh**	**4.00**	**152**	P	**Pn**	**23 38 44.9**	**+1.4**
	baz=155						
HMAT				AMP		23 39 00.0	
	comp=E,30μm,0.8s,logA/T=4.6,baz=155						
HMAT				S	**Sn**	**23 39 29.2**	**-1.4**
	baz=155						
HMAT	**Matruh**	**4.00**	**152**	P	**Pn**	**23 38 44.9**	**+1.4**
HMAT				S	**Sn**	**23 39 29.2**	**-1.4**
AKAS	**Kas**	**4.16**	**66**	*i* P	Pn	23 38 50.0	+4.1
AKAS	**Kas**	**4.16**	**66**	P	Pn	23 38 50.0	+4.1
UZP	**Denizli**	**4.83**	**44**	*i* P	Pb	23 39 01.4	-5.5
KORT	**Korkueli**	**5.02**	**60**	*i* P	Pn	23 39 02.0	+4.3
KORT	**Korkueli**	**5.02**	**60**	P	Pn	23 39 02.0	+4.3
KHAL	**Karahalli**	**5.25**	**44**	*i* P	**Pn**	**23 39 03.5**	**+2.7**
KHAL	**Karahalli**	**5.25**	**44**	P	**Pn**	**23 39 03.5**	**+2.7**
DEMI	**Demirci**	**5.36**	**34**	*i* P	Pn	23 39 07.6	+5.3
DEMI	**Demirci**	**5.36**	**34**	P	Pn	23 39 07.6	+5.3
ERMK	**Ermenek**	**6.83**	**71**	*i* P	**Pn**	**23 39 25.7**	**+3.1**
ERMK	**Ermenek**	**6.83**	**71**	P	**Pn**	**23 39 25.7**	**+3.1**
HNAT	**Natroun**	**6.96**	**134**	P	**Pn**	**23 39 25.8**	**+1.5**
	baz=136						
HNAT	**Natroun**	**6.96**	**134**	P	**Pn**	**23 39 25.8**	**+1.5**
KDHN	**Kadinhani**	**6.98**	**54**	*i* P	**Pn**	**23 39 27.8**	**+3.2**
KDHN	**Kadinhani**	**6.98**	**54**	P	**Pn**	**23 39 27.8**	**+3.2**
GLL	**Jalalah**	**7.67**	**129**	P	**Pn**	**23 39 35.1**	**+1.0**
	baz=131						
GLL	**Jalalah**	**7.67**	**129**	P	**Pn**	**23 39 35.1**	**+1.0**
KERG	**Konya-Eregli**	**7.97**	**67**	*i* P	**Pn**	**23 39 40.8**	**+2.5**
KERG	**Konya-Eregli**	**7.97**	**67**	P	**Pn**	**23 39 40.8**	**+2.5**
SUZ	**Suez**	**8.25**	**123**	P	**Pn**	**23 39 42.9**	**+0.9**
	baz=124						
SUZ	**Suez**	**8.25**	**123**	P	**Pn**	**23 39 42.9**	**+0.9**
BRTR	**Keskin Array B**	**8.63**	**51**	Pn	**Pn**	**23 39 50.0**	**+2.8**
	comp=E,0.1nm,0.3s,baz=225,slow=14,SNR=8.5						
SLTI	**Sal'it**	**8.81**	**103**	Pn	**Pn**	**23 39 50.7**	**+1.0**
SLTI				Sn	**Sn**	**23 41 24.6**	**-4.7**
SLTI	**Sal'it**	**8.81**	**103**	Pn	**Pn**	**23 39 50.7**	**+1.0**
MMA0B	**Mount Meron ar**	**8.89**	**98**	Pn	**Pn**	**23 39 52.5**	**+1.7**
MMA0B				Sn	**Sn**	**23 41 28.3**	**-3.1**
MMA0B	**Mount Meron ar**	**8.89**	**98**	Pn	**Pn**	**23 39 52.5**	**+1.7**
MMAI	**Mount Meron Ar**	**8.89**	**98**	Pn	**Pn**	**23 39 52.4**	**+1.5**
	comp=E,0.8nm,0.3s,baz=290,slow=12,SNR=6.7						
MMAI				Sn	**Sn**	**23 41 27.6**	**-3.8**
	comp=E,0.7nm,0.3s,baz=257,slow=19,SNR=4.3						
HNKL	**Nakhl**	**9.01**	**119**	P	**Pn**	**23 39 53.1**	**+0.6**
	baz=120						
HNKL	**Nakhl**	**9.01**	**119**	P	**Pn**	**23 39 53.1**	**+0.6**
HMDT	**Nahal Hemdat**	**9.20**	**102**	Pn	**Pn**	**23 39 56.5**	**+1.5**
HMDT				Sn	**Sn**	**23 41 34.0**	**-4.8**
HMDT	**Nahal Hemdat**	**9.20**	**102**	Pn	**Pn**	**23 39 56.5**	**+1.5**
DSI	**Dead Sea**	**9.31**	**106**	Pn	**Pn**	**23 39 57.2**	**+0.7**
DSI				Sn	**Sn**	**23 41 37.1**	**-4.5**
DSI	**Dead Sea**	**9.31**	**106**	Pn	**Pn**	**23 39 57.2**	**+0.7**
PRNI	**Paran**	**9.55**	**114**	Pn	**Pn**	**23 40 00.3**	**+0.5**
PRNI				Sn	Sn	23 41 40.9	-6.6
PRNI	**Paran**	**9.55**	**114**	Pn	**Pn**	**23 40 00.3**	**+0.5**
HRFI	**Mount Harif**	**9.73**	**115**	Pn	**Pn**	**23 40 03.8**	**+1.5**
HRFI	**Mount Harif**	**9.73**	**115**	Pn	**Pn**	**23 40 03.8**	**+1.5**
MBRI	**Mt Berech**	**9.77**	**117**	Pn	**Pn**	**23 40 03.2**	**+0.4**
MBRI				Sn	Sn	23 41 47.1	-5.8
MBRI	**Mt Berech**	**9.77**	**117**	Pn	**Pn**	**23 40 03.2**	**+0.4**
EIL	**Elat**	**9.86**	**117**	Pn	**Pn**	**23 40 05.1**	**+1.0**
	comp=E,0.4nm,0.3s,baz=270,slow=3.0,SNR=5.6						
EIL				Sn	**Sn**	**23 41 49.9**	**-5.2**
	comp=E,0.5nm,0.3s,baz=10,slow=17,SNR=2.6						
STON	**Ston**	**9.95**	**328**	*e*Pn	**Pn**	**23 40 02.3**	**-2.8**
STON				Sn	Sn	23 41 44.6	-12
AKASG	**Malin Array Be**	**16.36**	**10**	Pn	**Pn**	**23 41 32.0**	**+0.2**
	comp=E,0.9nm,0.3s,baz=200,slow=10,SNR=6.2						
GERES	**GERESS Array B**	**16.44**	**333**	Pn	**P**	**23 41 35.3**	**-0.5**
	comp=E,0.1nm,0.3s,baz=148,slow=11,SNR=11						
KBZ	**Khabaz**	**16.62**	**52**	Pn	**P**	**23 41 39.8**	**+2.1**
	comp=E,0.1nm,0.3s,baz=224,slow=10,SNR=4.5						
FINES	**FINESS Array B**	**26.83**	**1**	P	**P**	**23 43 21.9**	**-0.7**
	comp=E,0.8nm,0.8s,baz=193,slow=5.7,SNR=3.4						
EKA	**Eskdalemuir Ar**	**28.34**	**326**	P	**P**	**23 43 37.2**	**+1.0**
	comp=E,0.2nm,0.5s,baz=120,slow=10,SNR=3.9						
TORD	**Torodi Ar. Bea**	**29.99**	**230**	P	**P**	**23 43 52.3**	**+1.1**
	comp=E,0.5nm,0.6s,baz=36,slow=8.5,SNR=9.8						
MKAR	**Makanchi Array**	**44.24**	**56**	P	**P**	**23 45 52.4**	**+0.6**
	comp=E,0.3nm,0.4s,baz=272,slow=8.0,SNR=5.8						
YKA	**Yellowknife Ar**	**77.87**	**342**	P	**P**	**23 49 39.2**	**-0.7**
	comp=E,0.1nm,0.5s,baz=32,slow=5.0,SNR=2.9						

ISCJB ***16*** *23:49:27.4±0.2,44°.31N±0'.01×6°.15E±0'.02,h13km±2km, Error ellipse: s-maj=2.0km s-min=1.8km az=135.7*

CSEM ***16*** *23:49:28.4±0.1,44°.29N×6°.20E,h12km,ML2.7/39, Error ellipse: s-maj=1.9km s-min=1.7km az=26.0*

MDD ***16*** *23:49:28.7±0.7,44°.26N×6°.22E,h17km±6km,mb3.7/4, Error ellipse: s-maj=4.4km s-min=3.8km az=91.0,PRXIMO*

STR ***16*** *23:49:29.6±0.1,44°.27N×6°.22E,h4km,Ml2.8, Error ellipse: s-maj=0.0km s-min=0.0km az=0.0*

GEN ***16*** *23:49:29.5,44°.29N×6°.22E,h1km,ML2.4*

LDG ***16*** *23:49:29.2±0.0,44°.27N×6°.25E,h3km,Md3.1/4,Ml2.8/37, Error ellipse: s-maj=1.0km s-min=0.8km az=75.0*

ROM ***16*** *23:49:30.2±0.5,44°.28N×6°.32E,h10km,Md2.7/14, Ml2.3/12, Error ellipse: s-maj=6.4km s-min=3.0km az=63.0*

ISC 16 23:49:28.2±0.5,44°.28N±0'.01×6°.21E±0'.01,h17km±2km, n220,σ1°39/359,France

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SMRF	**Simiane la Rot**	**0.55**	**236**	*e*Pg	**Pg**	**23 49 39.7**	**+0.6**
SMRF				*e*Sg	**Sg**	**23 49 46.9**	**+0.4**
	154nm,0.4s						
SMRF	**Simiane la Rot**	**0.55**	**236**	Pg	**Pg**	**23 49 39.7**	**+0.6**
SMRF				Lg	Lg	23 49 46.9	
	154nm,0.4s						
SMRF	**Simiane la Rot**	**0.55**	**236**	Pg	**Pg**	**23 49 39.7**	**+0.6**
SMRF				*e*Sg	**Sg**	**23 49 46.9**	**+0.4**
	77nm,0.4s						
MBDF	**Montbardon**	**0.60**	**42**	*e*Pg	**Pg**	**23 49 40.6**	**+0.5**
MBDF	**Montbardon**	**0.60**	**42**	*e*Pn	**Pb**	**23 49 43.0**	**+2.7**
MBDF				*e*Sg	**Sg**	**23 49 48.3**	**+0.2**
	84nm,0.5s						
MBDF	**Montbardon**	**0.60**	**42**	Pg	**Pg**	**23 49 40.6**	**+0.5**
MBDF				Pn	**Pb**	**23 49 43.0**	**+2.7**
MBDF				Lg	Lg	23 49 48.3	
	42nm,0.5s						
MBDF	**Montbardon**	**0.60**	**42**	Pg	**Pg**	**23 49 40.6**	**+0.5**
MBDF	**Montbardon**	**0.60**	**42**	Pn	**Pb**	**23 49 43.0**	**+2.7**
MBDF				*e*Sg	**Sg**	**23 49 48.3**	**+0.2**
	42nm,0.5s						
ORIF	**Oris-en-Rattie**	**0.68**	**340**	*e*Pg	**Pg**	**23 49 41.9**	**+0.4**
ORIF	**Oris-en-Rattie**	**0.68**	**340**	*e*Pn	**Pn**	**23 49 44.7**	**+1.5**
ORIF				*e*Sg	**Sg**	**23 49 51.5**	**+0.9**
	175nm,0.5s						
ORIF	**Oris-en-Rattie**	**0.68**	**340**	Pg	**Pg**	**23 49 41.9**	**+0.4**
ORIF				Pn	**Pn**	**23 49 44.7**	**+1.5**
ORIF				Lg	Lg	23 49 51.5	
	87nm,0.5s						
ORIF	**Oris-en-Rattie**	**0.68**	**340**	Pg	**Pg**	**23 49 41.9**	**+0.4**
ORIF	**Oris-en-Rattie**	**0.68**	**340**	Pn	**Pn**	**23 49 44.7**	**+1.5**
ORIF				*e*Sg	**Sg**	**23 49 51.5**	**+0.9**
	87nm,0.5s						
PZZ	**Stroppo**	**0.69**	**71**	Pg	**Pg**	**23 49 41.9**	**+0.2**
PZZ				Sg	**Sg**	**23 49 51.4**	**+0.6**
	122nm,0.4s						
CALN	**Calern**	**0.72**	**137**	Pg	**Pg**	**23 49 42.9**	**+0.6**
CALN				Sg	**Sb**	**23 49 53.6**	**+1.5**
CALN	**Calern**	**0.72**	**137**	Pg	**Pg**	**23 49 42.9**	**+0.6**
CALN				Sg	**Sb**	**23 49 53.6**	**+1.5**
RRL	**Rocca Remolon**	**0.76**	**33**	Pg	**Pg**	**23 49 43.9**	**+0.8**
	48nm,0.4s						
RRL	**Rocca Remolon**	**0.76**	**33**	Pg	**Pg**	**23 49 43.9**	**+0.8**
	48nm,0.4s						
DOI	**San Damiano**	**0.78**	**73**	Pg	**Pg**	**23 49 43.5**	**+0.2**
	81nm,0.3s						
DOI	**San Damiano**	**0.78**	**73**	Pg	**Pg**	**23 49 43.5**	**+0.2**
	81nm,0.3s						
MVIF	**Mont Vial**	**0.78**	**119**	Pg	**Pg**	**23 49 43.6**	**+0.2**
MVIF				Sg	**Sb**	**23 49 55.8**	**+2.0**
MVIF	**Mont Vial**	**0.78**	**119**	Pg	**Pg**	**23 49 43.6**	**+0.2**
MVIF				Sg	**Sb**	**23 49 55.8**	**+2.0**
FRF	**La Foret Royal**	**0.79**	**156**	*e*Pg	**Pg**	**23 49 43.4**	**-0.1**
FRF	**La Foret Royal**	**0.79**	**156**	*e*Pn	**Pb**	**23 49 45.4**	**+2.0**
FRF				*e*Sg	**Sg**	**23 49 53.2**	**-0.7**
	99nm,0.3s						
FRF	**La Foret Royal**	**0.79**	**156**	Pg	**Pg**	**23 49 43.4**	**-0.1**
FRF				Pn	**Pb**	**23 49 45.4**	**+2.0**
FRF				Lg	Lg	23 49 53.2	
	50nm,0.3s						
FRF	**La Foret Royal**	**0.79**	**156**	Pg	**Pg**	**23 49 43.4**	**-0.1**
FRF	**La Foret Royal**	**0.79**	**156**	Pn	**Pb**	**23 49 45.4**	**+2.0**
FRF				*e*Sg	**Sg**	**23 49 53.2**	**-0.7**
	50nm,0.3s						
STV	**Sant Anna di V**	**0.80**	**92**	Pg	**Pg**	**23 49 43.8**	**0.0**
STV	**Sant Anna di V**	**0.80**	**92**	Pg	**Pg**	**23 49 43.8**	**0.0**
STV				S	**Sg**	**23 49 55.0**	**+0.6**
LEPF	**PUYLOUBIER**	**0.84**	**206**	Pg	**Pg**	**23 49 45.1**	**+0.5**
LEPF				Sg	**Sb**	**23 49 57.3**	**+1.9**
LEPF	**PUYLOUBIER**	**0.84**	**206**	Pg	**Pg**	**23 49 45.1**	**+0.5**
LEPF				Sg	**Sb**	**23 49 57.3**	**+1.9**
ENR	**Entracque**	**0.87**	**93**	P	**Pg**	**23 49 45.0**	**-0.1**
ENR				S	**Sg**	**23 49 56.8**	**+0.2**
LUCF	**Luceram**	**0.91**	**115**	Pg	**Pg**	**23 49 45.9**	**+0.1**
LUCF				Sg	**Sg**	**23 49 58.4**	**+0.7**
LUCF	**Luceram**	**0.91**	**115**	Pg	**Pg**	**23 49 45.9**	**+0.1**
LUCF				Sg	**Sg**	**23 49 58.4**	**+0.7**
GDM	**Grand'Maison**	**0.92**	**356**	Pg	**Pg**	**23 49 47.5**	**+1.3**
GDM	**Grand'Maison**	**0.92**	**356**	Pg	**Pg**	**23 49 47.5**	**+1.3**
BHB	**Bricherasio**	**0.94**	**53**	Pg	**Pg**	**23 49 46.8**	**+0.4**
	32nm,0.4s						
BHB	**Bricherasio**	**0.94**	**53**	Pg	**Pg**	**23 49 46.8**	**+0.4**
	32nm,0.4s						
BHB				S	**Sg**	**23 49 59.5**	**+0.8**
LMR	**La Mourre**	**0.97**	**167**	*e*Pg	**Pg**	**23 49 46.5**	**-0.5**
LMR	**La Mourre**	**0.97**	**167**	*e*Pn	**Pg**	**23 49 47.5**	**+0.5**
LMR				*e*Sg	**Sg**	**23 49 59.0**	**-0.8**
	61nm,0.2s						
LMR	**La Mourre**	**0.97**	**167**	Pg	**Pg**	**23 49 46.5**	**-0.5**
LMR				Lg	Lg	23 49 59.0	
	30nm,0.2s						
LMR	**La Mourre**	**0.97**	**167**	Pg	**Pg**	**23 49 46.5**	**-0.5**
LMR	**La Mourre**	**0.97**	**167**	*e*Pn	**Pg**	**23 49 47.5**	**+0.5**
LMR				*e*Sg	**Sg**	**23 49 59.0**	**-0.8**
	30nm,0.2s						
SBF	**Sospel**	**0.98**	**115**	*e*Pg	**Pg**	**23 49 47.0**	**-0.1**
SBF	**Sospel**	**0.98**	**115**	*e*Pn	**Pg**	**23 49 47.8**	**+0.7**
SBF				*e*Sg	**Sg**	**23 49 59.1**	**-0.9**
	115nm,0.2s						
SBF	**Sospel**	**0.98**	**115**	Pg	**Pg**	**23 49 47.0**	**-0.1**
SBF				Lg	Lg	23 49 59.1	
	58nm,0.2s						
SBF	**Sospel**	**0.98**	**115**	Pg	**Pg**	**23 49 47.0**	**-0.1**
SBF	**Sospel**	**0.98**	**115**	*e*Pn	**Pg**	**23 49 47.8**	**+0.7**
SBF				*e*Sg	**Sg**	**23 49 59.1**	**-0.9**
	58nm,0.2s						
REVF	**Revere**	**1.00**	**123**	Pg	**Pg**	**23 49 48.5**	**+1.0**
REVF				Sg	**Sb**	**23 50 01.9**	**+2.0**
REVF	**Revere**	**1.00**	**123**	Pg	**Pg**	**23 49 48.5**	**+1.0**
REVF				Sg	**Sb**	**23 50 01.9**	**+2.0**
GRN	**Grenoble**	**1.02**	**341**	Pg	**Pg**	**23 49 49.0**	**+1.1**
GRN	**Grenoble**	**1.02**	**341**	Pg	**Pg**	**23 49 49.0**	**+1.1**
RSP	**Reno Superiore**	**1.15**	**41**	Pg	**Pb**	**23 49 50.9**	**+1.2**
	34nm,0.4s						
RSP	**Reno Superiore**	**1.15**	**41**	Pg	**Pb**	**23 49 50.9**	**+1.2**
	34nm,0.4s						
NEGI	**Seborga**	**1.16**	**111**	P	**Pb**	**23 49 51.1**	**+1.3**
VIVF	**Saint-Julien-l**	**1.24**	**298**	*e*Pn	**Pn**	**23 49 52.2**	**+1.4**
VIVF				*e*Sg	**Sb**	**23 50 09.0**	**+2.1**
	34nm,0.3s						
VIVF	**Saint-Julien-l**	**1.24**	**298**	Pn	**Pn**	**23 49 52.2**	**+1.4**
VIVF				Lg	Lg	23 50 09.0	
	17nm,0.3s						
VIVF	**Saint-Julien-l**	**1.24**	**298**	Pn	**Pn**	**23 49 52.2**	**+1.4**
VIVF				*e*Sg	**Sb**	**23 50 09.0**	**+2.1**
	17nm,0.3s						
IMI	**Imperia**	**1.27**	**106**	Pg	**Pn**	**23 49 52.3**	**+1.1**
	163nm,0.5s						
IMI	**Imperia**	**1.27**	**106**	P	**Pn**	**23 49 52.5**	**+1.3**
LPG	**La Plagne**	**1.27**	**17**	*e*Pg	**Pn**	**23 49 53.6**	**+2.1**
LPG				*e*Sg	**Sb**	**23 50 09.9**	**+1.7**
	35nm,0.5s						
LPG	**La Plagne**	**1.27**	**17**	Pg	**Pn**	**23 49 53.6**	**+2.1**
LPG				Lg	Lg	23 50 09.9	
	17nm,0.

	2.9nm,0.3s								
SJAF	**Saint Jean de**	**3.02**	**235**	Pn	**Pn**	**23 50 16.8**	**+1.6**
	2.8nm,0.3s,SNR=7.9								
SJAF				Sn	**Sn**	**23 50 50.8**	**-0.2**
	0.5nm,0.2s,SNR=7.9								
SJAF	**Saint Jean de**	**3.02**	**235**	Pn	**Pn**	**23 50 16.8**	**+1.6**
	2.8nm,0.3s,SNR=7.9								
SJAF				Sn	**Sn**	**23 50 50.8**	**-0.2**
	0.5nm,0.2s,SNR=7.9								
CAF	**Calviac**	**3.03**	**284**	*e*Pn	**Pn**	**23 50 17.0**	**+1.6**
CAF				*e*Sn	**Sn**	**23 50 51.4**	**0.0**
	3.0nm,0.3s								
CAF	**Calviac**	**3.03**	**284**	Pn	**Pn**	**23 50 17.0**	**+1.6**
CAF				Sn	**Sn**	**23 50 51.4**	**0.0**
	1.5nm,0.3s								
CAF	**Calviac**	**3.03**	**284**	Pn	**Pn**	**23 50 17.0**	**+1.6**
CAF				*e*Sn	**Sn**	**23 50 51.4**	**0.0**
	1.5nm,0.3s								
EJON	**La Jonquera**	**3.04**	**234**	Pn	**Pn**	**23 50 16.8**	**+1.3**
	3.2nm,0.3s,SNR=7.9								
EJON				Sn	**Sn**	**23 50 51.1**	**-0.4**
	0.6nm,0.1s,SNR=7.9								
EJON	**La Jonquera**	**3.04**	**234**	Pn	**Pn**	**23 50 16.8**	**+1.3**
	3.2nm,0.3s,SNR=7.9								
EJON				Sn	**Sn**	**23 50 51.1**	**-0.4**
	0.6nm,0.1s,SNR=7.9								
MTLF	**Montolieu**	**3.04**	**253**	*e*Pn	**Pn**	**23 50 16.5**	**+1.0**
MTLF				*e*Sn	**Sn**	**23 50 51.3**	**-0.2**
	8.0nm,0.4s								
MTLF	**Montolieu**	**3.04**	**253**	Pn	**Pn**	**23 50 16.5**	**+1.0**
MTLF				Sn	**Sn**	**23 50 51.3**	**-0.2**
	4.0nm,0.4s								
MTLF	**Montolieu**	**3.04**	**253**	Pn	**Pn**	**23 50 16.5**	**+1.0**
MTLF				*e*Sn	**Sn**	**23 50 51.3**	**-0.2**
	4.0nm,0.4s								
LOMF	**Lomont**	**3.10**	**8**	Pg	**Pg**	**23 50 28.2**	**+0.6**
LOMF	**Lomont**	**3.10**	**8**	Pg	**Pg**	**23 50 28.2**	**+0.6**
AVF	**Avril sur Loir**	**3.21**	**322**	*e*Pn	**Pn**	**23 50 19.8**	**+1.9**
AVF				*e*Sg	**Sg**	**23 51 10.6**	**-0.7**
	11nm,0.7s								
AVF	**Avril sur Loir**	**3.21**	**322**	Pn	**Pn**	**23 50 19.8**	**+1.9**
AVF				Lg	Lg	23 51 10.6	
	5.4nm,0.7s								
AVF	**Avril sur Loir**	**3.21**	**322**	Pn	**Pn**	**23 50 19.8**	**+1.9**
AVF				*e*Sg	**Sg**	**23 51 10.6**	**-0.7**
	5.4nm,0.7s								
BGF	**Bois d'Agland**	**3.28**	**315**	*e*Pn	**Pn**	**23 50 20.7**	**+1.8**
BGF	**Bois d'Agland**	**3.28**	**315**	*e*Pg	Pb	23 50 30.2	+4.2
BGF				*e*Sg	**Sg**	**23 51 12.9**	**-0.7**
	12nm,0.5s								
BGF	**Bois d'Agland**	**3.28**	**315**	Pn	**Pn**	**23 50 20.7**	**+1.8**
BGF				Pg	Pb	23 50 30.2	+4.2
BGF				Lg	Lg	23 51 12.9	
	6.1nm,0.5s								
BGF	**Bois d'Agland**	**3.28**	**315**	Pn	**Pn**	**23 50 20.7**	**+1.8**
BGF	**Bois d'Agland**	**3.28**	**315**	Pg	Pb	23 50 30.2	+4.2
BGF				*e*Sg	**Sg**	**23 51 12.9**	**-0.7**
	6.1nm,0.5s								
BBS	**Basel-Blauen**	**3.31**	**15**	Pn	**Pn**	**23 50 20.6**	**+1.3**
BBS				Sg	**Sg**	**23 51 17.7**	**+3.3**
SSF	**Saint Saulge**	**3.36**	**327**	*e*Pn	**Pn**	**23 50 21.0**	**+1.0**
SSF	**Saint Saulge**	**3.36**	**327**	*e*Pg	Pb	23 50 31.2	+3.8
SSF				*e*Sn	**Sn**	**23 50 59.3**	**-0.2**
SSF				*e*Sg	**Sg**	**23 51 15.2**	**-1.0**
	9.0nm,0.6s								
SSF	**Saint Saulge**	**3.36**	**327**	Pn	**Pn**	**23 50 21.0**	**+1.0**
SSF				Pg	Pb	23 50 31.2	+3.8
SSF				Sn	**Sn**	**23 50 59.3**	**-0.2**
SSF				Lg	Lg	23 51 15.2	
	4.5nm,0.6s								
SSF	**Saint Saulge**	**3.36**	**327**	Pn	**Pn**	**23 50 21.0**	**+1.0**
SSF	**Saint Saulge**	**3.36**	**327**	Pg	Pb	23 50 31.2	+3.8
SSF				Sn	**Sn**	**23 50 59.3**	**-0.2**
SSF				*e*Sg	**Sg**	**23 51 15.2**	**-1.0**
	4.5nm,0.6s								
LOR	**Lormes**	**3.41**	**332**	*e*Pn	**Pn**	**23 50 21.5**	**+0.9**
	baz=153								
LOR	**Lormes**	**3.41**	**332**	*e*Pg	Pb	23 50 32.0	+3.9
LOR				*e*Sn	**Sn**	**23 51 00.4**	**-0.3**
	baz=146								
LOR				*e*Sg	**Sg**	**23 51 16.5**	**-1.1**
	6.8nm,0.3s,baz=152								
LOR	**Lormes**	**3.41**	**332**	Pn	**Pn**	**23 50 21.5**	**+0.9**
LOR				Pg	Pb	23 50 32.0	+3.9
LOR				Sn	**Sn**	**23 51 00.4**	**-0.3**
LOR				Lg	Lg	23 51 16.5	
	3.4nm,0.3s								
LOR	**Lormes**	**3.41**	**332**	Pn	**Pn**	**23 50 21.5**	**+0.9**
LOR	**Lormes**	**3.41**	**332**	Pg	Pb	23 50 32.0	+3.9
LOR				Sn	**Sn**	**23 51 00.4**	**-0.3**
LOR				*e*Sg	**Sg**	**23 51 16.5**	**-1.1**
	3.4nm,0.3s								
TCF	**Toulx Ste Croi**	**3.46**	**307**	*e*Pn	**Pn**	**23 50 22.4**	**+1.0**
TCF	**Toulx Ste Croi**	**3.46**	**307**	*e*Pg	Pb	23 50 33.2	+4.1
TCF				*e*Sn	**Sn**	**23 51 01.8**	**-0.2**
TCF				*e*Sg	**Sg**	**23 51 18.4**	**-1.0**
	5.2nm,0.5s								
TCF	**Toulx Ste Croi**	**3.46**	**307**	Pn	**Pn**	**23 50 22.4**	**+1.0**
TCF				Pg	Pb	23 50 33.2	+4.1
TCF				Sn	**Sn**	**23 51 01.8**	**-0.2**
TCF				Lg	Lg	23 51 18.4	
	2.6nm,0.5s								
TCF	**Toulx Ste Croi**	**3.46**	**307**	Pn	**Pn**	**23 50 22.4**	**+1.0**
TCF	**Toulx Ste Croi**	**3.46**	**307**	Pg	Pb	23 50 33.2	+4.1
TCF				Sn	**Sn**	**23 51 01.8**	**-0.2**
TCF				*e*Sg	**Sg**	**23 51 18.4**	**-1.0**
	2.6nm,0.5s								
RJF	**Les Rejaudoux**	**3.49**	**289**	*e*Pn	**Pn**	**23 50 22.8**	**+1.0**
RJF				*e*Sn	**Sn**	**23 51 02.3**	**-0.5**
RJF				*e*Sg	**Sg**	**23 51 19.4**	**-1.0**
	4.3nm,0.5s								
RJF	**Les Rejaudoux**	**3.49**	**289**	Pn	**Pn**	**23 50 22.8**	**+1.0**
RJF				Sn	**Sn**	**23 51 02.3**	**-0.5**
RJF				Lg	Lg	23 51 19.4	
	2.2nm,0.5s								
RJF	**Les Rejaudoux**	**3.49**	**289**	Pn	**Pn**	**23 50 22.8**	**+1.0**
RJF				Sn	**Sn**	**23 51 02.3**	**-0.5**
RJF				*e*Sg	**Sg**	**23 51 19.4**	**-1.0**
	2.2nm,0.5s								
HINF	**Hinteralfeld**	**3.56**	**7**	*e*Pn	**Pn**	**23 50 23.5**	**+0.7**
HINF	**Hinteralfeld**	**3.56**	**7**	*e*Pg	**Pg**	**23 50 35.3**	**-1.1**
HINF				*e*Sg	**Sg**	**23 51 21.3**	**-1.3**
	6.7nm,0.4s								
HINF	**Hinteralfeld**	**3.56**	**7**	Pn	**Pn**	**23 50 23.5**	**+0.7**
HINF				Pg	**Pg**	**23 50 35.3**	**-1.1**
HINF				Lg	Lg	23 51 21.3	
	3.3nm,0.4s								
HINF	**Hinteralfeld**	**3.56**	**7**	Pn	**Pn**	**23 50 23.5**	**+0.7**
HINF	**Hinteralfeld**	**3.56**	**7**	Pg	**Pg**	**23 50 35.3**	**-1.1**
HINF				*e*Sg	**Sg**	**23 51 21.3**	**-1.3**
	3.3nm,0.4s								
CLLI	**Llivia**	**3.58**	**241**	Pn	**Pn**	**23 50 25.4**	**+2.4**
	1.0nm,0.2s,SNR=16								
CLLI				Sn	**Sn**	**23 51 04.0**	**-0.9**
	0.4nm,0.2s								
CLLI	**Llivia**	**3.58**	**241**	Pn	**Pn**	**23 50 25.4**	**+2.4**
	1.0nm,0.2s,SNR=16								
CLLI				Sn	**Sn**	**23 51 04.0**	**-0.9**
	0.4nm,0.2s								
HAU	**Haudompre**	**3.73**	**1**	*e*Pn	**Pn**	**23 50 25.4**	**+0.4**
HAU	**Haudompre**	**3.73**	**1**	*e*Pg	**Pg**	**23 50 38.3**	**-1.2**
HAU				*e*Sn	**Sn**	**23 51 07.6**	**-0.9**
HAU				*e*Sg	**Sg**	**23 51 26.2**	**-1.6**
	5.6nm,0.4s								
HAU	**Haudompre**	**3.73**	**1**	Pn	**Pn**	**23 50 25.4**	**+0.4**
HAU				Pg	**Pg**	**23 50 38.3**	**-1.2**
HAU				Sn	**Sn**	**23 51 07.6**	**-0.9**
HAU				Lg	Lg	23 51 26.2	
	2.8nm,0.4s								
HAU	**Haudompre**	**3.73**	**1**	Pn	**Pn**	**23 50 25.4**	**+0.4**
HAU	**Haudompre**	**3.73**	**1**	Pg	**Pg**	**23 50 38.3**	**-1.2**
HAU				Sn	**Sn**	**23 51 07.6**	**-0.9**
HAU				*e*Sg	**Sg**	**23 51 26.2**	**-1.6**
	2.8nm,0.4s								
CFON	**Fontmartina**	**3.74**	**229**	Pn	**Pn**	**23 50 27.4**	**+2.1**
	1.5nm,0.2s,SNR=10.0								
CFON				Sn	**Sn**	**23 51 08.8**	**-0.2**
	1.8nm,0.2s,SNR=11								
CFON	**Fontmartina**	**3.74**	**229**	Pn	**Pn**	**23 50 27.4**	**+2.1**
	1.5nm,0.2s,SNR=10.0								
CFON				Sn	**Sn**	**23 51 08.8**	**-0.2**
	1.8nm,0.2s,SNR=11								
FELD	**Feldberg im Sc**	**3.81**	**19**	Pn	**Pn**	**23 50 27.3**	**+1.1**
HYF	**Humbligny**	**3.89**	**321**	*e*Pn	**Pn**	**23 50 28.1**	**+0.8**
HYF				*e*Sg	**Sg**	**23 51 31.7**	**-1.4**
HYF	**Humbligny**	**3.89**	**321**	Pn	**Pn**	**23 50 28.1**	**+0.8**
HYF				Lg	Lg	23 51 31.7	
HYF	**Humbligny**	**3.89**	**321**	Pn	**Pn**	**23 50 28.1**	**+0.8**
HYF				*e*Sg	**Sg**	**23 51 31.7**	**-1.4**
DAVA	**Damuels**	**3.95**	**39**	*i* Pn	Pn	23 50 32.9	+4.7
	0.7nm,0.2s								
DAVA	**Damuels**	**3.95**	**39**	Pn	Pn	23 50 32.9	+4.7
	0.7nm,0.2s								
LFF	**La Frestale**	**3.96**	**281**	*e*Pn	**Pn**	**23 50 28.9**	**+0.7**
LFF				*e*Sn	**Sn**	**23 51 13.6**	**-0.6**
	4.0nm,0.3s								
LFF	**La Frestale**	**3.96**	**281**	Pn	**Pn**	**23 50 28.9**	**+0.7**
LFF				Sn	**Sn**	**23 51 13.6**	**-0.6**
	2.0nm,0.3s								
LFF	**La Frestale**	**3.96**	**281**	Pn	**Pn**	**23 50 28.9**	**+0.7**
LFF				*e*Sn	**Sn**	**23 51 13.6**	**-0.6**
	2.0nm,0.3s								
ECH	**Echery**	**3.99**	**9**	Pn	**Pn**	**23 50 29.6**	**+1.0**
ECH				Sg	**Sg**	**23 51 40.5**	**+4.3**
ECH	**Echery**	**3.99**	**9**	Pn	**Pn**	**23 50 29.6**	**+1.0**
ECH				Sg	**Sg**	**23 51 40.5**	**+4.3**
SFTF	**Sexfontaines**	**4.01**	**349**	*e*Pn	**Pn**	**23 50 29.7**	**+0.9**
	baz=169								
SFTF				*e*Sn	**Sn**	**23 51 14.5**	**-0.9**
SFTF				*e*Sg	**Sg**	**23 51 35.2**	**-1.6**
	9.3nm,0.6s,baz=166								
SFTF	**Sexfontaines**	**4.01**	**349**	Pn	**Pn**	**23 50 29.7**	**+0.9**
SFTF				Sn	**Sn**	**23 51 14.5**	**-0.9**
SFTF				Lg	Lg	23 51 35.2	
	9.3nm,0.6s								
SFTF	**Sexfontaines**	**4.01**	**349**	Pn	**Pn**	**23 50 29.7**	**+0.9**
SFTF				Sn	**Sn**	**23 51 14.5**	**-0.9**
SFTF				*e*Sg	**Sg**	**23 51 35.2**	**-1.6**
	4.7nm,0.6s								
CSOR	**Sort**	**4.17**	**245**	Pn	**Pn**	**23 50 34.0**	**+2.9**
	1.4nm,0.2s,SNR=17								
CSOR				Sn	**Sn**	**23 51 17.9**	**-1.6**
	6.9nm,0.6s								
CSOR	**Sort**	**4.17**	**245**	Pn	**Pn**	**23 50 34.0**	**+2.9**
	1.4nm,0.2s,SNR=17								
CSOR				Sn	**Sn**	**23 51 17.9**	**-1.6**
	6.9nm,0.6s								
CDF	**Champ du Feu**	**4.20**	**10**	*e*Pn	**Pn**	**23 50 32.0**	**+0.5**
CDF				*e*Sn	**Sn**	**23 51 19.0**	**-1.2**
CDF				*e*Sg	**Sg**	**23 51 41.0**	**-1.9**
	4.7nm,0.7s								
CDF	**Champ du Feu**	**4.20**	**10**	Pn	**Pn**	**23 50 32.0**	**+0.5**
CDF				Sn	**Sn**	**23 51 19.0**	**-1.2**
CDF				Lg	Lg	23 51 41.0	
	2.3nm,0.7s								
CDF	**Champ du Feu**	**4.20**	**10**	Pn	**Pn**	**23 50 32.0**	**+0.5**
CDF				*e*Sn	**Sn**	**23 51 19.0**	**-1.2**
CDF				*e*Sg	**Sg**	**23 51 41.0**	**-1.9**
	2.3nm,0.7s								
PAGF	**Fort de Pagny**	**4.29**	**356**	*e*Pn	**Pn**	**23 50 33.3**	**+0.6**
	baz=171								
PAGF				*e*Sn	**Sn**	**23 51 21.2**	**-1.1**
PAGF				*e*Sg	**Sg**	**23 51 43.7**	**-2.0**
	2.6nm,0.7s,baz=175								
PAGF	**Fort de Pagny**	**4.29**	**356**	*e*Pn	**Pn**	**23 50 33.3**	**+0.6**
PAGF				*e*Sn	**Sn**	**23 51 21.2**	**-1.1**
PAGF				*e*Sg	**Sg**	**23 51 43.7**	**-2.0**
	1.3nm,0.7s								
MEZF	**Maizieres J'vi**	**4.30**	**350**	*e*Pn	**Pn**	**23 50 33.5**	**+0.7**
	baz=172								
MEZF				*e*Sn	**Sn**	**23 51 21.5**	**-1.0**
	baz=166								
MEZF				*e*Sg	**Sg**	**23 51 44.3**	**-1.7**
	5.5nm,0.4s,baz=164								
MEZF	**Maizieres J'vi**	**4.30**	**350**	Pn	**Pn**	**23 50 33.5**	**+0.7**
MEZF				Sn	**Sn**	**23 51 21.5**	**-1.0**
MEZF				Lg	Lg	23 51 44.3	
	5.5nm,0.4s								
MEZF	**Maizieres J'vi**	**4.30**	**350**	Pn	**Pn**	**23 50 33.5**	**+0.7**
MEZF				*e*Sn	**Sn**	**23 51 21.5**	**-1.0**
MEZF				*e*Sg	**Sg**	**23 51 44.3**	**-1.7**
	2.8nm,0.4s								
EPF	**Esparros**	**4.44**	**256**	*e*Pn	**Pn**	**23 50 35.4**	**+0.6**
EPF				*e*Sn	**Sn**	**23 51 24.8**	**-1.3**
EPF				*e*Sg	**Sg**	**23 51 48.6**	**-2.1**
	3.1nm,0.5s								
EPF	**Esparros**	**4.44**	**256**	Pn	**Pn**	**23 50 35.4**	**+0.6**
EPF				Sn	**Sn**	**23 51 24.8**	**-1.3**
EPF				Lg	Lg	23 51 48.6	
	1.6nm,0.5s								
EPF	**Esparros**	**4.44**	**256**	Pn	**Pn**	**23 50 35.4**	**+0.6**
EPF				Sn	**Sn**	**23 51 24.8**	**-1.3**
EPF				*e*Sg	**Sg**	**23 51 48.6**	**-2.1**
	1.5nm,0.5s								
MOTA	**Moosalm**	**4.59**	**46**	*e*Pn	Pn	23 50 42.0	+5.0
	0.5nm,0.2s								
MOTA	**Moosalm**	**4.59**	**46**	Pn	Pn	23 50 42.0	+5.0
	0.5nm,0.2s								
EPOB	**Poblet**	**4.78**	**234**	Pn	Pn	23 50 38.0	-1.4
	0.3nm,0.1s,SNR=4.0								
EPOB				Sn	**Sn**	**23 51 34.2**	**-0.3**
	0.2nm,0.2s,SNR=7.9								
EPOB	**Poblet**	**4.78**	**234**	Pn	Pn	23 50 38.0	-1.4
	0.3nm,0.1s,SNR=4.0								
EPOB				Sn	**Sn**	**23 51 34.2**	**-0.3**
	0.2nm,0.2s,SNR=7.9								
MFF	**Saint Martin d**	**5.04**	**300**	*e*Pn	**Pn**	**23 50 43.6**	**+0.6**
MFF				*e*Sg	**Sg**	**23 52 07.5**	**-2.3**
	3.2nm,0.6s								
MFF	**Saint Martin d**	**5.04**	**300**	Pn	**Pn**	**23 50 43.6**	**+0.6**
MFF				Lg	Lg	23 52 07.5	
	1.6nm,0.6s								
MFF	**Saint Martin d**	**5.04**	**300**	Pn	**Pn**	**23 50 43.6**	**+0.6**
MFF				*e*Sg	**Sg**	**23 52 07.5**	**-2.3**
	1.6nm,0.6s								
ETSF	**Etsaut**	**5.11**	**257**	*e*Pn	**Pn**	**23 50 44.8**	**+0.8**
ETSF				*e*Sn	**Sn**	**23 51 41.0**	**-1.6**
	7.0nm,0.5s								
ETSF	**Etsaut**	**5.11**	**257**	Pn	**Pn**	**23 50 44.8**	**+0.8**
ETSF				Sn	**Sn**	**23 51 41.0**	**-1.6**
	3.5nm,0.5s								
ETSF	**Etsaut**	**5.11**	**257**	Pn	**Pn**	**23 50 44.8**	**+0.8**
ETSF				*e*Sn	**Sn**	**23 51 41.0**	**-1.6**
	3.5nm,0.5s								
ATE	**Arette**	**5.15**	**259**	Pn	Pn	23 50 48.2	+3.6
	0.3nm,0.2s,SNR=7.9								
ATE				Sn	**Sn**	**23 51 43.5**	**-0.2**
	0.1nm,0.1s,SNR=7.9								
ETOS	**Mallorca**	**5.17**	**210**	Pn	**Pn**	**23 50 46.4**	**+1.6**
	0.3nm,0.1s,SNR=7.9								
ETOS				Sn	**Sn**	**23 51 41.7**	**-2.5**
	0.1nm,0.2s,SNR=7.9								
ETOS	**Mallorca**	**5.17**	**210**	Pn	**Pn**	**23 50 46.4**	**+1.6**
	0.3nm,0.1s,SNR=7.9								
ERTA	**Horta de San J**	**5.46**	**235**	Pn	**Pn**	**23 50 52.0**	**+3.2**
	0.8nm,0.1s,SNR=6.2								
ERTA				Sn	Sn	23 51 47.9	-3.5
	0.1nm,0.2s,SNR=4.0								
SJPF	**Ste Jean**	**5.52**	**260**	*e*Pn	**Pn**	**23 50 50.0**	**+0.4**
SJPF				*e*Sn	**Sn**	**23 51 50.5**	**-2.1**
	0.5nm,0.3s								
SJPF	**Ste Jean**	**5.52**	**260**	Pn	**Pn**	**23 50 50.0**	**+0.4**
SJPF	**Ste Jean**	**5.52**	**260**	Pn	**Pn**	**23 50 50.0**	**+0.4**
IELO	**Elcoad**	**5.60**	**258**	Pn	**Pn**	**23 50 52.6**	**+1.8**
	0.3nm,0.2s,SNR=7.9								
IELO				Sn	**Sn**	**23 51 54.4**	**-0.3**
	0.3nm,0.2s,SNR=7.9								
IELO	**Elcoad**	**5.60**	**258**	Pn	**Pn**	**23 50 52.6**	**+1.8**
	0.3nm,0.2s,SNR=7.9								
IELO				Sn	**Sn**	**23 51 54.4**	**-0.3**
	0.3nm,0.2s,SNR=7.9								
BAIF	**Baives**	**5.94**	**347**	*e*Pn	**Pn**	**23 50 55.9**	**+0.6**
BAIF				*e*Sn	**Sn**	**23 52 00.6**	**-2.3**
	2.0nm,0.5s								
BAIF	**Baives**	**5.94**	**347**	*e*Pn	**Pn**	**23 50 55.9**	**+0.6**
LDF	**La Druitiere**	**6.14**	**317**	*e*Pn	**Pn**	**23 50 58.9**	**+0.8**
LDF	**La Druitiere**	**6.14**	**317**	*e*Pn	**Pn**	**23 50 58.9**	**+0.8**
GRR	**Gorron**	**6.39**	**312**	*e*Pn	**Pn**	**23 51 02.1**	**+0.6**
GRR				*e*Sn	**Sn**	**23 52 11.5**	**-2.5**
	0.5nm,0.2s								
GRR	**Gorron**	**6.39**	**312**	Pn	**Pn**	**23 51 02.1**	**+0.6**
GRR				Sn	**Sn**	**23 52 11.5**	**-2.5**
	0.2nm,0.2s								
GRR	**Gorron**	**6.39**	**312**	Pn	**Pn**	**23 51 02.1**	**+0.6**
FLN	**La Foliniere**	**6.43**	**317**	*e*Pn	**Pn**	**23 51 02.8**	**+0.7**
	baz=141								
FLN	**La Foliniere**	**6.43**	**317**	Pn	**Pn**	**23 51 02.8**	**+0.7**
FLN	**La Foliniere**	**6.43**	**317**	Pn	**Pn**	**23 51 02.8**	**+0.7**

ISCJB ***16*** *23:54:34.9±0.7, 19.18N±0.09×38.86E±0.10, h13km, mb3.8/11, MS3.4/10, Error ellipse: s-maj=14.7km s-min=11.8km az=41.8*

IDC ***16*** *23:54:35.0±1.0, 19.21N×38.86E, h0km, mb3.7/13, mb1 3.8/15, mb1mx3.7/48, mbtmp3.8/15, ML3.2/2, MS3.4/13, Ms1 3.4/13, ms1mx3.1/41, Error ellipse: s-maj=24.7km s-min=16.8km az=145.0*

ISC 16 23:54:36.8±0.9, 19.2N±0.1×38.9E±0.1, h13km, n21, σ0§66/15, mb3.8/11, MS3.5/10, Red Sea

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
EIL	**Elat**	**11.01**	**342**	LR	LR		00 00 31.4	
	comp=Z,133nm,19.5s,baz=190,slow=32							
ASF	**Jabal al Asfar**	**13.03**	**353**	Pn	**Pn**		**23 57 42.1**	**+0.3**
	0.1nm,0.3s,baz=135,slow=11,SNR=3.6							
MMAI	**Mount Meron Ar**	**14.10**	**348**	LR	LR		00 02 32.9	
	comp=Z,110nm,19.2s,baz=130,slow=34							
WSAR	**Wadi Sarin**	**18.88**	**74**	P	**P**		**23 58 57.1**	**+0.1**
	0.1nm,0.3s,baz=270,slow=4.0,SNR=3.3							
WSAR				LR	LR		00 07 03.7	
	comp=Z,182nm,18.4s,baz=285,slow=40							
KMBO	**Kilima Mbogo**	**20.26**	**185**	P	**P**		**23 59 12.4**	**0.0**
	0.7nm,0.4s,baz=22,slow=19,SNR=3.4							
BRTR	**Keskin Array B**	**20.94**	**349**	P	**P**		**23 59 20.2**	**+0.7**
	1.5nm,0.9s,baz=172,slow=13,SNR=11							
GNI	**Garni**	**21.48**	**12**	P	**P**		**23 59 26.3**	**+0.9**
	3.6nm,0.8s,baz=225,slow=13,SNR=3.0							
GNI				LR	LR		00 08 17.8	
	comp=Z,76nm,18.6s,baz=194,slow=38							
KBZ	**Khabaz**	**24.69**	**7**	P	**P**		**23 59 57.7**	**+0.2**
	1.1nm,0.9s,baz=180,slow=6.1,SNR=3.6							
KVAR	**Kislovodsk Arr**	**24.89**	**7**	LR	LR		00 10 21.0	
	comp=Z,38nm,18.8s,baz=218,slow=38							
GEYT	**Alibeck**	**25.10**	**38**	P	**P**		**00 00 01.2**	**-0.2**
	1.4nm,0.8s,baz=248,slow=3.9,SNR=4.3							
GEYT				LR	LR		00 10 54.5	
	comp=Z,144nm,19.8s,baz=70,slow=39							
KEST	**Kesra**	**30.76**	**308**	LR	LR		00 14 01.4	
	comp=Z,21nm,18.8s,baz=280,slow=38							
GERES	**GERRESS Array B**	**35.85**	**321**	P	**P**		**00 01 36.1**	**-0.2**
	0.3nm,0.7s,baz=133,slow=8.4,SNR=4.0							
TORD	**Torodi Ar. Bea**	**36.13**	**266**	P	**P**		**00 01 40.3**	**+1.2**
	4.3nm,0.8s,baz=76,slow=7.7,SNR=37							
TORD				LR	LR		00 16 26.4	
	comp=Z,99nm,18.9s,baz=45,slow=36							
ESDC	**Sonseca Array**	**42.01**	**308**	P	**P**		**00 02 26.8**	**-1.3**
	0.7nm,0.9s,baz=96,slow=6.4,SNR=4.3							
DBIC	**Dimbokro**	**44.24**	**260**	P	**P**		**00 02 46.3**	**0.0**
	7.0nm,1.2s,baz=30,slow=8.7,SNR=3.5							
DBIC				LR	LR		00 21 13.8	
	comp=Z,64nm,19.4s,baz=92,slow=36							
MKAR	**Makanchi Array**	**44.85**	**42**	P	**P**		**00 02 50.9**	**+0.1**
	1.2nm,0.8s,baz=242,slow=7.4,SNR=13							
MKAR				LR	LR		00 22 44.5	
	comp=Z,36nm,21.1s,baz=228,slow=38							
ZALV	**Zalesovo Beam**	**49.31**	**34**	P	**P**		**00 03 25.6**	**+0.1**
	1.1nm,0.8s,baz=262,slow=7.1,SNR=5.5							
ARCES	**ARCESS Array B**	**50.99**	**354**	LR	LR		00 28 45.4	
	comp=Z,40nm,20.6s,baz=228,slow=40							
NRIK	**Noril'sk**	**58.20**	**18**	LR	LR		00 33 53.4	
	comp=Z,38nm,20.9s,baz=132,slow=40							
SONM	**Songino Array**	**61.00**	**45**	P	**P**		**00 04 50.1**	**-0.1**
	0.3nm,0.4s,baz=263,slow=8.0,SNR=2.6							
SONM				LR	LR		00 34 39.6	
	comp=Z,57nm,18.5s,baz=224,slow=39							
YKA	**Yellowknife Ar**	**95.91**	**348**	P	**P**		**00 08 02.5**	**-0.6**
	0.3nm,0.8s,baz=26,slow=5.4,SNR=4.0							

JMA 17 00:11:14.9, 36.88N×140.72E, h11km±1km, M2.8, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.23**	**16**	P	Pg		00 11 19.8	0.0
ONAJ				S	Sg		00 11 23.2	+0.2
JHO	**Hitachi**	**0.29**	**204**	P	Pg		00 11 20.9	0.0
JHO				S	Sg		00 11 25.1	+0.2
JFK	**Kawauchi**	**0.50**	**14**	P	Pg		00 11 24.5	-0.2
JFK

R11A Sb **Sg** **00 46 56.1 -0.3**
baz=272
R11A Troy Canyon, C 2.47 90 *e*Pn **Pn** **00 46 17.5 -1.0**
R11A *e*Pb **Pb** **00 46 21.8 -0.4**
R11A *e*Pg **Pg** **00 46 26.2 +1.8**
R11A *e*Sg **Sg** **00 46 56.6 +0.2**
MPMC Manual Prospec 2.55 157 P **Pn** **00 46 19.6 0.0**
baz=337
SAO San Andreas Ge 2.71 234 *e*Pn **Pn** **00 46 21.3 -0.4**
SAO *e*Sg **Sb** **00 47 02.2 +2.2**
ISA Isabella, Lake 2.75 176 Pb **Pb** **00 46 25.6 -1.3**
baz=356
ISA Sb **Sb** **00 47 02.0 +0.8**
baz=356
O03D Paynes Creek 3.03 309 P **Pn** **00 46 27.5 +1.3**
baz=128
LRMC Laurel Mtn Rad 3.04 164 Pb **Pb** **00 46 33.7 +1.7**
baz=344
SHOC Shoshone, Teco 3.18 141 P **Pn** **00 46 28.2 0.0**
baz=323
SMMC Simmler 3.25 199 P **Pn** **00 46 30.1 +1.0**
baz=18
MCCM Marconi Confer 3.27 267 *e*Pn **Pn** **00 46 26.4 -3.0**
MCCM *e*Pb **Pb** **00 46 34.7 -1.1**
ARVC Arvin 3.28 181 P **Pn** **00 46 31.8 +2.4**
baz=1.3
HOPS Hopland Field 3.44 281 *e*Pn **Pn** **00 46 31.2 -0.5**
HOPS *e*Pb **Pb** **00 46 38.5 -0.3**
HOPS *e*Pg **Pg** **00 46 43.1 +0.2**
GSC Goldstone, Bar 3.47 153 P **Pn** **00 46 32.3 +0.2**
baz=334
ELK Elko 3.57 48 Pn **Pn** **00 46 34.1 +0.5**
36nm,0.3s,baz=224,slow=0.0,SNR=11
ELK Lg Lg 00 47 30.0
151nm,0.3s,baz=221,slow=0.0,SNR=8.8
ELK Elko 3.57 48 ∥ *i*Pn **Pn** **00 46 33.1 -0.5**
ELK *e*Sg **Sg** **00 47 30.5 -1.0**
PKM Mcpherson Peak 3.62 194 P **Pn** **00 46 35.4 +1.1**
baz=14
WDC Whiskeytown Da 3.66 308 *e*Pn **Pn** **00 46 33.9 -0.7**
WDC Pb Pg 00 46 44.4 -2.6
WDC *e*Sg **Sg** **00 47 35.2 +0.9**
MOD Modoc Plateau 3.69 341 *e*Pn **Pn** **00 46 35.4 +0.2**
MOD *e*Pg **Pg** **00 46 48.8 +1.2**
MOD *e*Sg **Sg** **00 47 36.8 +1.4**
TUQ Turquoise Moun 3.73 142 P **Pn** **00 46 35.4 -0.3**
baz=324
N02D Trinity Center 3.99 311 P Pn 00 46 41.0 +1.7
baz=129
WVOR Wild Horse Val 4.02 1 *e*Pn **Pn** **00 46 38.8 -1.0**
WVOR *e*Pg **Pg** **00 46 54.8 +0.9**
WVOR *e*Sg **Sg** **00 47 46.6 +0.6**
HEC Hector,Ludlow 4.06 151 P **Pn** **00 46 40.6 +0.3**
baz=332
M04C Macdoel 4.12 326 P Pb 00 46 44.7 -5.7
baz=144
PASC Pasadena Art C 4.25 174 *e*Pn **Pn** **00 46 41.1 -1.7**
PASC *e*Pb Pb 00 46 48.8 -3.7
PASC *e*Pg **Pg** **00 46 57.6 -0.8**
PASC *e*Sg **Sg** **00 47 53.5 0.0**
M02C Callahan 4.35 315 P Pn 00 46 46.7 +2.5
baz=132
GMRC Granite Mounta 4.38 145 P **Pn** **00 46 45.7 +1.0**
baz=326
YBH Yreka Blue Hor 4.51 319 Pn Pn 00 46 48.7 +2.3
4.3nm,0.3s,baz=130,slow=9.4,SNR=92
YBH Lg Lg 00 48 00.1
baz=217,slow=20,SNR=2.1
YBH LR LR 00 48 49.1
comp=Z,6μm,18.1s,baz=154,slow=42
YBH Yreka Blue Hor 4.51 319 *e*Pn **Pn** **00 46 45.9 -0.5**
K04D Chiloquin, OR 4.80 332 P Pn 00 46 54.0 +3.6
baz=150
BELC Belle Mtn. Jos 4.92 153 P **Pn** **00 46 52.5 +0.3**
baz=334
DUG Dugway, Tooele 4.92 67 P **Pn** **00 46 53.3 +1.1**
baz=250
DUG Dugway, Tooele 4.92 67 *e*Pn **Pn** **00 46 52.0 -0.2**
DUG *e*Pg **Pg** **00 47 12.2 +0.9**
DUG *e*Sg **Sg** **00 48 14.0 -1.1**
PFO Pinyon Flats O 5.13 158 Pn **Pn** **00 46 56.0 +1.0**
1.4nm,0.3s,baz=347,slow=14,SNR=19
PFO Lg Lg 00 48 19.4
1.4nm,0.3s,baz=235,slow=19,SNR=1.8
PFO Pinyon Flats O 5.13 158 P **Pn** **00 46 56.0 +1.0**
baz=340
PFO Pinyon Flats O 5.13 158 *e*Pn **Pn** **00 46 54.6 -0.5**
PFO *e*Pg Pg 00 47 12.8 -2.5
IRM Iron Mountain 5.14 145 P **Pn** **00 46 55.6 +0.6**
baz=327
J05D Fort Rock, OR 5.22 340 P Pn 00 47 00.7 +4.3
baz=158
L02D Cave Junction, 5.28 317 P Pb 00 47 01.9 -8.1
baz=134
HUMO Hull Mountain 5.28 324 *e*Pn **Pn** **00 46 56.1 -0.9**
HUMO *e*Pg **Pg** **00 47 18.6 +0.5**
HUMO *e*Sg **Sg** **00 48 27.3 +0.7**
BC3 Big Chuckawall 5.44 150 P **Pn** **00 46 59.1 -0.1**
baz=332
MFID Camas Ranch 5.46 23 *e*Pn **Pn** **00 46 59.5 -0.1**
MFID *e*Sg **Sg** **00 48 31.8 -0.5**
Y12C Blythe 5.76 142 P **Pn** **00 47 05.4 +1.8**
baz=325
I04A Tendick Farm, 6.05 334 P Pn 00 47 12.5 +4.9
baz=152
HLID Hailey 6.09 31 *e*Pn **Pn** **00 47 07.5 -0.7**
HLID *e*Sg **Sg** **00 48 53.4 +0.7**
I05D Terrebonne, OR 6.24 343 P Pn 00 47 15.2 +5.1
baz=161
I03D Drain, OR 6.33 328 P Pn 00 47 17.0 +5.7
baz=145
HWUT Hardware Ranch 6.36 58 *e*Pn **Pn** **00 47 11.1 -0.9**
HWUT *e*Sg **Sg** **00 48 58.6 -2.6**
BMO Blue Mountains 6.52 9 *e*Pn **Pn** **00 47 12.3 -1.8**
BMO *e*Sg **Sg** **00 49 06.0 -0.4**
WUAZ Wupatki 6.56 114 *e*Pn **Pn** **00 47 13.5 -1.2**
WUAZ *e*Pg Pg 00 47 40.1 -2.5
WUAZ *e*Sg **Sg** **00 49 07.0 -0.7**
COR Corvallis 7.06 332 *e*Pn **Pn** **00 47 20.6 -0.7**
G05D Wamic, OR 7.09 345 P Pn 00 47 28.0 +6.2
baz=163
AHID Auburn Hatcher 7.25 51 *e*Pn **Pn** **00 47 23.1 -1.1**
PV04 Paradox Valley 7.72 87 *e*Pn **Pn** **00 47 29.6 -1.0**
REDW Red Top Meadow 7.75 48 *e*Pn **Pn** **00 47 29.1 -2.0**
REDW *e*Sb **Sb** **00 49 23.9 -1.2**
SNOW Snow King Moun 7.87 48 *e*Pn **Pn** **00 47 31.9 -0.8**
HAWA Hanford 8.00 356 *e*Pn Pn 00 47 39.3 +5.1
PV01 Paradox Valley 8.00 89 *e*Pn **Pn** **00 47 34.3 -0.2**
IMW Indian Meadow 8.04 45 *e*Pn Pn 00 47 40.0 +5.0
LOHW Long Hollow 8.05 47 *e*Pn **Pn** **00 47 34.5 -0.7**
MOOW Moose Ponds 8.05 46 *e*Pn **Pn** **00 47 35.6 +0.4**
214A Organ Pipe Nat 8.06 141 *e*Pn **Pn** **00 47 34.5 -0.6**
MVCO Mesa Verde 8.19 95 *e*Pn **Pn** **00 47 35.9 -1.2**
BW06 Boulder Array 8.22 55 P Pn 00 47 42.3 +4.7
baz=241
BW06 Boulder Array 8.22 55 *e*Pn Pn 00 47 40.3 +2.7
PDAR Pinedale Array 8.22 55 Pn Pn 00 47 40.8 +3.2
0.7nm,0.3s,baz=226,slow=12,SNR=76
PDAR Lg Lg 00 49 58.1
1.0nm,0.3s,baz=244,slow=29,SNR=5.5
PDAR LR LR 00 51 09.6
comp=Z,1μm,19.1s,baz=250,slow=40
FLWY Flagg Ranch 8.29 44 *e*P **Pn** **00 47 37.6 -0.8**
DLMT Dillon 8.32 31 *e*Pn **Pn** **00 47 37.7 -1.0**
O20A White River Ci 8.32 75 P Pn 00 47 43.7 +4.8
baz=261
O20A White River Ci 8.32 75 *e*Pn **Pn** **00 47 37.6 -1.2**
H17A Grant Village 8.56 43 *e*Pn Pn 00 47 47.9 +5.7
TUC Tucson 8.90 131 P Pn 00 47 49.0 +2.3
baz=315
TUC Tucson 8.90 131 *e*Pn **Pn** **00 47 45.2 -1.5**
BOZ Bozeman (W) 8.95 34 P Pn 00 47 51.8 +4.3
baz=218
BOZ Bozeman (W) 8.95 34 *e*Pn **Pn** **00 47 46.6 -0.9**
MSO Missoula 9.12 21 P Pn 00 47 54.6 +4.9
baz=204
SMCO Snowmass 9.21 82 *e*Pn **Pn** **00 47 48.5 -2.8**
NEW Newport 9.92 6 Pn Pn 00 48 04.7 +4.1
0.2nm,0.3s,baz=184,slow=14,SNR=13
NEW Lg Lg 00 50 51.2
0.1nm,0.3s,baz=108,slow=14,SNR=2.2
NEW Newport 9.92 6 P Pn 00 48 06.3 +5.7
baz=187
NEW Newport 9.92 6 *e*Pn **Pn** **00 47 59.6 -1.0**

ANMO Albuquerque 10.45 106 Pn Pn 00 48 15.3 +7.3
0.1nm,0.3s,baz=293,slow=9.2,SNR=3.8
ANMO Lg Lg 00 51 06.5
0.1nm,0.3s,baz=204,slow=20,SNR=3.5
ANMO LR LR 00 52 40.0
comp=Z,2μm,19.4s,baz=308,slow=40
ANMO Albuquerque 10.45 106 *e*Pn **Pn** **00 48 06.2 -1.8**
121A Cookes Peak, D 10.68 120 *e*Pn **Pn** **00 48 08.9 -2.2**
WALA Waterton Lakes 11.20 17 *e*Pn Pn 00 48 14.7 -3.5
EGMT Eagleton 11.62 31 *e*Pn **Pn** **00 48 23.9 0.0**
RSSD Black Hills 12.44 58 *e*Pn **Pn** **00 48 35.0 -0.2**
MNTX Cornudas Mount 12.82 117 *e*Pn **Pn** **00 48 39.1 -1.2**
MSTX Muleshoe 13.63 104 P P 00 48 57.2 -3.4
baz=294
MSTX Muleshoe 13.63 104 *e*Pn **Pn** **00 48 49.9 -1.5**
DGMT Dagmar 14.56 42 P **P** **00 49 10.5 -0.3**
baz=232
DGMT Dagmar 14.56 42 *e*Pn **Pn** **00 49 03.4 -0.6**
J30A Dallas 15.35 65 P **P** **00 49 19.7 +0.1**
baz=258
A25A Swangstu Ranch 15.41 42 P **P** **00 49 21.6 +1.4**
baz=233
TXAR Lajitas Array 15.43 121 Pn **P** **00 49 20.3 -0.3**
0.0nm,0.3s,baz=306,slow=9.9,SNR=44
TXAR Lg Lg 00 53 45.7
0.0nm,0.3s,baz=319,slow=30,SNR=2.4
TXAR LR LR 00 56 24.1
comp=Z,507nm,20.1s,baz=0.0,slow=42
T32A Huddler Ranch, 15.71 88 P **P** **00 49 23.4 -0.2**
baz=280
D28A Regan 15.93 51 P **P** **00 49 26.6 +0.6**
baz=243
V32A Arapaho 15.95 94 P **P** **00 49 26.3 +0.1**
baz=286
W32A Sentinel 15.96 96 P **P** **00 49 27.9 +1.5**
baz=288
A26A Wade Farm, Ken 15.96 44 P **P** **00 49 27.8 +1.5**
baz=235
LPIG La Paz 15.97 151 Pn **P** **00 49 26.9 +0.4**
8.6nm,0.3s,baz=306,slow=18,SNR=4.0
LPIG LR LR 00 55 09.9
comp=Z,384nm,20.6s,baz=338,slow=36
V33A Lossen Ranch, 16.51 93 P **P** **00 49 32.2 -0.3**
baz=285
ABTX Abilene, Hawle 16.57 105 P **P** **00 49 32.7 -0.4**
baz=296
Y33A Hilltop Ranch, 16.81 99 P **P** **00 49 36.2 +0.4**
baz=291
U34A Anderson Ranch 16.95 90 *e*Pn **Pn** **00 49 34.0 -1.3**
37nm,1.3s
V34A Guthrie 17.11 92 P **P** **00 49 40.2 +1.0**
baz=285
V34A Guthrie 17.11 92 *e*Pn **Pn** **00 49 36.0 -1.4**
31nm,1.2s
133A Hamilton Ranch 17.13 104 P **P** **00 49 41.4 +2.1**
baz=295
O34A Beatrice 17.15 77 P **P** **00 49 41.5 +2.0**
baz=271
X34A Smith Ranch, M 17.22 96 P **P** **00 49 43.1 +2.7**
baz=289
B29A Wagenman Farm, 17.25 48 P **P** **00 49 42.5 +1.9**
baz=241
KSU1 Kansas State U 17.27 81 P **P** **00 49 42.5 +1.7**
baz=275
KSU1 Kansas State U 17.27 81 *e*Pn **Pn** **00 49 35.8 -3.4**
19nm,1.0s
233A Rising Star 17.40 105 P **P** **00 49 44.8 +2.4**
baz=297
JCT Junction City 17.48 111 *e*Pn **Pn** **00 49 40.1 -1.9**
60nm,1.6s
ECSD EROS Data Cent 17.49 65 *e*Pn **Pn** **00 49 40.4 -1.6**
22nm,1.4s
Y34A Reagan Ranch, 17.50 98 P **P** **00 49 45.2 +1.7**
baz=291
A29A Manning Farm, 17.54 47 P **P** **00 49 45.5 +1.7**
baz=240
Z34A Collier Ranch, 17.59 100 P **P** **00 49 47.1 +2.7**
baz=293
U35A Pawnee 17.60 90 P **P** **00 49 46.1 +1.5**
baz=283
T35A Sooner Cattle 17.66 88 P **P** **00 49 46.9 +1.8**
baz=282
B30A Myrvik Farm, E 17.85 49 P **P** **00 49 48.5 +1.3**
baz=243
C31A Landman Farms, 17.93 52 P **P** **00 49 49.1 +1.1**
baz=246
A30A Hoffart Farm, 18.09 48 P **P** **00 49 52.2 +2.4**
baz=242
Z35A Perchaven, San 18.12 100 P **P** **00 49 53.1 +2.9**
baz=292
F33A 5 Mile Ranch, 18.19 59 P **P** **00 49 52.7 +1.7**
baz=254
334A Lometa 18.22 107 P **P** **00 49 53.7 +2.2**
baz=298
H34A Spellman Lake, 18.26 63 P **P** **00 49 53.9 +2.2**
baz=258
W36A Wetumka 18.32 93 P **P** **00 49 54.6 +2.2**
baz=287
V36A Jenks 18.36 91 P **P** **00 49 54.5 +1.6**
baz=285
X36A Centrahoma 18.39 95 P **Pn** **00 49 55.5 +2.3**
baz=289
434A Burnet 18.45 108 P **Pn** **00 49 55.3 +1.4**
baz=300
TUL1 Leonard 18.45 91 P **Pn** **00 49 55.6 +1.8**
baz=285
TUL1 Leonard 18.45 91 *e*P **Pn** **00 49 52.7 -1.1**
37nm,1.0s
WHTX Lake Whitney, 18.51 104 P Pn 00 49 58.8 +4.2
baz=296
WHTX Lake Whitney, 18.51 104 *e*P **P** **00 49 52.7 -1.9**
157nm,1.6s
832A Faith Ranch, C 18.61 117 P Pn 00 50 00.7 +4.8
baz=306
534A Blanco 18.70 110 P **Pn** **00 50 00.2 +3.2**
baz=302
S37A Fort Scott 18.82 85 P **Pn** **00 50 01.2 +2.7**
baz=279
U37A Salina 18.86 89 P **Pn** **00 50 01.9 +3.0**
baz=283
T37A Cheneyville 18 18.86 87 P **Pn** **00 50 01.3 +2.3**
baz=281
B32A Ashes, Strandq 18.90 51 P **Pn** **00 50 00.5 +1.1**
baz=246
H35A Sunnyside Ranc 18.93 63 P **Pn** **00 50 01.7 +2.1**
baz=259
W37B Quinton 18.94 93 P Pn 00 50 03.3 +3.4
baz=287
833A Chaparral WMA, 19.00 116 P Pn 00 50 05.0 +4.5
baz=307
M37A Trindle Farm, 19.15 73 P Pn 00 50 07.8 +5.4
baz=269
X37A Clayton 19.15 94 P **Pn** **00 50 04.8 +2.4**
baz=288
336A Riesel 19.25 105 P **Pn** **00 50 06.0 +2.4**
baz=297
AGMN Agassiz Nation 19.28 52 P **Pn** **00 50 04.4 +0.5**
baz=248
AGMN Agassiz Nation 19.28 52 *e*P **Pn** **00 50 02.1 -1.8**
22nm,0.8s
U38A Gravette 19.43 88 P **Pn** **00 50 07.6 +1.9**
baz=283
B33A Robert and Kas 19.44 52 P **Pn** **00 50 06.2 +0.5**
baz=248
R38A Fenwick Farm, 19.48 83 P **Pn** **00 50 08.3 +2.0**
baz=278
933A Laredo 19.51 118 P Pn 00 50 11.5 +4.7
baz=308
K37A Belmond 19.52 69 P Pn 00 50 11.6 +4.8
baz=266
P38A Dawn 19.61 79 P Pn 00 50 12.5 +4.6
baz=274
W38A Poteau 19.68 92 P Pn 00 50 12.6 +3.9
baz=287
834A Tilden 19.71 115 P Pn 00 50 13.3 +4.1
baz=307
FFC Flin Flon 19.89 29 *e*P **Pn** **00 50 09.4 -1.7**
16nm,0.8s
L38A Oak Wood Farm, 19.99 71 P **Pn** **00 50 12.5 +0.1**
baz=268
S39A Bolivar 20.01 84 P Pn 00 50 16.2 +3.5
baz=280
Q39A Willow Grove F 20.09 80 P Pn 00 50 17.0 +3.4
baz=276
ULM Lac du Bonnet 20.09 47 P Pn 00 50 12.5 -1.1
23nm,1.0s,baz=245,slow=10,SNR=15
ULM LR LR 00 58 14.4
comp=Z,334nm,19.7s,baz=256,slow=38

B34A Aery, Baudette 20.10 52 P Pn 00 50 13.3 -0.4
baz=249
R39A Chumby, Stover 20.13 82 P Pn 00 50 17.1 +2.9
baz=278
X39A Fountain Ranch 20.16 94 P Pn 00 50 17.6 +3.1
baz=288
C35A Jirik Farms, M 20.26 55 P Pn 00 50 14.6 -0.9
baz=252
034A Hebbronville 20.26 118 P Pn 00 50 18.9 +3.2
baz=309
E36A McGregor 20.40 58 P Pn 00 50 17.1 -0.1
baz=256
SPMN Marine on St. 20.44 62 *e*P **P** **00 50 14.4 -1.2**
9.9nm,1.4s
MIAR Mount Ida 20.57 93 *e*P **P** **00 50 15.6 -1.5**
28nm,1.1s
I38A Scanlan Farm, 20.59 66 P Pn 00 50 20.0 +0.5
baz=263
B35A Bob, Littlefor 20.63 53 P Pn 00 50 20.1 +0.1
baz=250
D36A Goodland 20.63 57 P Pn 00 50 20.5 +0.5
baz=254
U40A Yellville 20.65 88 P Pn 00 50 20.3 +0.1
baz=284
S40A Lebanon 20.67 84 P Pn 00 50 20.6 +0.1
baz=280
HKT Hockley 20.70 107 *e*P **P** **00 50 16.4 -2.0**
37nm,1.5s
R40A Maddies Statio 20.74 82 P Pn 00 50 22.0 +0.8
baz=279
Q40A Laux Farm, Aux 20.79 80 P Pn 00 50 21.8 -0.1
baz=277
V40A Witts Springs 20.81 89 P Pn 00 50 21.3 -0.8
baz=285
O40A La Belle 20.84 77 P Pn 00 50 23.0 +0.6
baz=274
C36A Pine Crest Far 21.01 55 P **P** **00 50 24.3 +2.5**
baz=253
DLBC Dease Lake 21.34 344 P **P** **00 50 27.6 +2.3**
7.6nm,0.9s,baz=158,slow=11,SNR=9.0
DLBC LR LR 00 59 23.9
comp=Z,913nm,18.0s,baz=154,slow=39
W41A Tony Mavity, V 21.43 90 P **P** **00 50 28.8 +2.4**
baz=286
W41B Gary Mavity, V 21.43 90 P **P** **00 50 29.0 +2.6**
baz=286
141A Papa Simpson, 21.77 98 P **P** **00 50 33.1 +3.0**
baz=293
HDIL Hopedale 22.78 75 *e*P **P** **00 50 39.8 -1.0**
14nm,0.7s
YKA Yellowknife Ar 24.24 5 P **P** **00 50 56.1 +1.0**
4.8nm,0.8s,baz=184,slow=9.9,SNR=84
SFIN Lafayette 24.46 75 P **P** **00 50 58.6 +1.2**
baz=276
FCC Fort Churchill 25.82 30 *e*P **P** **00 51 09.2 -0.2**
16nm,1.2s
TKL Tuckaleechee C 27.94 85 P **P** **00 51 29.7 +0.9**
5.6nm,1.0s,baz=270,slow=10,SNR=3.5
TKL LR LR 01 03 23.6
comp=Z,1μm,20.1s,baz=294,slow=38
KDAK Kodiak Island 29.31 322 LR LR 01 01 49.9
comp=Z,547nm,20.5s,baz=106,slow=33
DOT Dot Lake 29.47 337 *e*P **P** **00 51 40.0 -2.1**
60nm,1.8s
EGAK Eagle 29.52 341 *e*P **P** **00 51 41.2 -1.3**
5.5nm,1.2s
CMIG Matias Romero 29.78 129 LR LR 01 04 21.9
comp=Z,349nm,18.8s,baz=338,slow=38
PMR Palmer 29.84 331 *e*P **P** **00 51 43.6 -1.7**
15nm,1.1s
SADO Sadowa 30.06 65 LR LR 01 04 00.8
comp=Z,212nm,21.3s,baz=284,slow=37
INK Inuvik 31.04 349 P P 00 51 57.9 +2.0
7.7nm,1.1s,baz=155,slow=8.5,SNR=18
MCK McKinley 31.11 334 *e*P **P** **00 51 55.5 -1.1**
12nm,1.1s
ILAR Eielson Array 31.14 337 P P 00 51 59.1 +2.2
4.0nm,0.9s,baz=155,slow=7.9,SNR=42
ILAR PcP **PcP** **00 54 53.5 +1.7**
0.9nm,0.9s,baz=162,slow=2.2,SNR=5.5
ILAR LR LR 01 03 42.4
comp=Z,360nm,20.6s,baz=144,slow=35
PPLA Purkeypile 31.76 331 *e*P **P** **00 52 01.7 -0.8**
36nm,1.6s
BPAW Bear Paw Mtn. 32.04 334 *e*P **P** **00 52 03.9 -0.9**
2.9nm,1.1s
SCHQ Schefferville 38.27 47 P **P** **00 52 59.3 +0.8**
4.5nm,0.8s,baz=278,slow=8.8,SNR=6.6
SCHQ LR LR 01 09 19.5
comp=Z,365nm,18.8s,baz=284,slow=37
PETK Petropavlovsk- 56.86 314 LR LR 01 19 24.9
comp=Z,65nm,18.1s,baz=70,slow=36
MA2 Magadan 58.05 323 LR LR 01 19 20.5
comp=Z,157nm,20.4s,baz=114,slow=35
NRIK Noril'sk 70.82 350 P P 00 56 56.2 +1.5
1.3nm,0.4s,baz=28,slow=4.2,SNR=6.3
LPAZ La Paz 72.16 129 P **P** **00 57 04.8 +0.7**
0.8nm,0.6s,baz=338,slow=5.4,SNR=3.8
MJAR Matsushiro Arr 77.06 306 P **P** **00 57 33.0 +1.2**
4.1nm,1.3s,baz=44,slow=4.9,SNR=8.3
JHJ Hachijo jima 2 78.16 303 LR LR 01 24 52.8
comp=Z,265nm,21.7s,baz=300,slow=30
GERES GERESS Array B 83.44 29 P P 00 58 07.6 +1.5
0.6nm,0.9s,baz=327,slow=5.3,SNR=5.4
SONM Songino Array 85.19 331 P P 00 58 16.6 +1.6
2.5nm,1.1s,baz=46,slow=4.3,SNR=11
ARU Arti 85.50 2 P **P** **00 58 16.6 +0.3**
2.5nm,0.6s,baz=37,slow=4.4,SNR=7.1
ZALV Zalesovo Beam 85.79 346 P P 00 58 19.3 +1.6
1.2nm,0.9s,baz=19,slow=5.2,SNR=5.1
AKASG Malin Array Be 86.90 20 P **P** **00 58 23.5 +0.3**
0.2nm,0.3s,baz=328,slow=4.2,SNR=9.4
BRVK Borovoye 88.57 355 *e*P **P** **00 58 29.1 -2.1**
9.2nm,1.0s
BVAR Borovoye Array 88.59 355 P P 00 58 32.6 +1.3
4.5nm,0.9s,baz=7.6,slow=4.5,SNR=20
KURK Kurchatov 89.95 349 P P 00 58 39.1 +1.4
KURBB Kurchatov Arra 90.05 349 P **P** **00 58 39.1 +0.9**
2.4nm,0.8s,baz=17,slow=4.4,SNR=7.1
ABKAR Akbulak array 92.70 1 *e*P **P** **00 58 48.8 -1.7**
2.7nm,0.9s
MKAR Makanchi Array 93.11 346 P P 00 58 54.0 +1.5
0.7nm,0.8s,baz=355,slow=4.3,SNR=5.5
BOSA Boshof 148.59 83 PKPbc **PKPab** **01 05 26.8 -2.7**
6.8nm,1.0s,baz=289,slow=3.6,SNR=5.1

*ISCJB **17** 00:52:42.0±1.6, 42.5°N±0.1°×84.6°E±0.1°, h10km, Error ellipse: s-maj=18.4km s-min=13.7km az=22.2*
*NNC **17** 00:52:43.5±3.4, 42.3°N×84.4°E, h10km±13km, mb3.5, mpv3.1, Error ellipse: s-maj=25.2km s-min=10.4km az=132.0*
*IDC **17** 00:52:44.3±3.1, 42.6°N×85.0°E, h0km, mb1 2.9/6, mb1mx2.8/57, mbtmp2.9/6, ML2.4/6, Error ellipse: s-maj=33.1km s-min=28.8km az=73.0*

ISC 17 00:52:42.5±2.2, 42.5°N±0.2°×84.9°E±0.1°, h10km, n10, σ1§89/12, 3C-6D, Northern Xinjiang

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
PDGK	**Podgornoye**	**4.03**	**284**	⇑Pn		**Pn**		00 53 42.1	-2.1
	1.2nm,0.5s								
PDGK				⇓Pg		**Pb**		**00 53 52.7**	**-0.8**
	6.9nm,0.7s								
PDGK				⇑Lg		Lg		00 54 44.9	
	26nm,0.7s								
MK31	**Makanchi Array**	**4.67**	**338**	⇑Pn		**Pn**		**00 53 55.4**	**+2.3**
MK31				⇓Pg		**Pg**		**00 54 10.3**	**-1.6**
	3.7nm,0.6s,baz=151,slow=16,SNR=42								
MK31				Lg		Lg		00 55 14.5	
	12nm,0.6s,baz=160,slow=30,SNR=9.4								
MKAR	**Makanchi Array**	**4.67**	**338**	Pn		**Pn**		**00 53 55.5**	**+2.4**
	0.1nm,0.3s,baz=156,slow=15,SNR=10								
MKAR				Pg		**Pg**		**00 54 10.2**	**-1.7**
	1.9nm,0.3s,baz=151,slow=16,SNR=23								
MKAR				Sn		**Sn**		**00 54 47.7**	**+0.4**
	0.9nm,0.3s,baz=166,slow=24,SNR=3.5								
MKAR				Lg		Lg		00 55 14.4	
	2.7nm,0.3s,baz=158,slow=30,SNR=12								
MAKZ	**Makanchi**	**4.77**	**336**	⇓Pn		**Pn**		**00 53 56.4**	**+1.9**
	0.6nm,0.6s								
MAKZ				⇓Pg		**Pg**		**00 54 12.2**	**-1.7**
	2.3nm,0.5s								
MAKZ				⇓Lg		Lg		00 55 16.3	
	6.0nm,0.6s								
AAK	**Ala-Archa**	**7.65**	**274**	Pn		Pn		00 54 42.3	+8.2
	0.1nm,0.3s,baz=73,slow=17,SNR=1.8								

AAK				Lg	Lg	00 56 37.2			
	baz=255,slow=20,SNR=2.3								
KURBB	**Kurchatov Arra**	**9.21**	**334**	Pn	**Pn**	**00 54 58.1**	**+2.7**		
	0.0nm,0.3s,baz=150,slow=12,SNR=3.0								
KURBB				Lg	Lg	00 57 37.1			
	0.1nm,0.3s,baz=148,slow=30,SNR=3.5								
KURK	**Kurchatov**	**9.27**	**335**	‖Lg	Lg	00 57 38.6			
	14nm,1.3s								
ZALV	**Zalesovo Beam**	**11.46**	**360**	Pn	**Pn**	**00 55 27.1**	**+1.1**		
	0.2nm,0.3s,baz=183,slow=14,SNR=2.7								
BVAR	**Borovoye Array**	**14.30**	**322**	Pn	**Pn**	**00 56 05.1**	**+0.1**		
	0.0nm,0.3s,baz=125,slow=12,SNR=2.6								
SONM	**Songino Array**	**16.09**	**63**	Pn	**P**	**00 56 31.6**	**-0.6**		
	0.0nm,0.3s,baz=256,slow=12,SNR=3.8								

NEIC ***17*** *00:55:46.3, 38.37N×118.73W, h13km, ML4.1(REN), MW4.0(SLM), After REN.*
NEIC Felt at Hawthorne.
IDC ***17*** *00:55:47.0±0.9, 38.32N×118.69W, h0km, mb3.6/3, mb1 4.0/9, mb1mx3.7/51, mbtmp3.7/9, ML3.7/6, MS3.4/11, Ms1 3.4/11, ms1mx3.2/56, Error ellipse: s-maj=10.1km s-min=8.3km az=21.0*
ISCJB ***17*** *00:55:47.4±0.3, 38.30N±0.02×118.71W±0.03, h10km, mb3.5/2, MS3.4/5, Error ellipse: s-maj=3.9km s-min=2.8km az=147.0*

ISC 17 00:55:47.8±0.7, 38.27N±0.03×118.79W±0.03, h10km, n65, σ1$49/64, MS3.3/5, 1C, California-Nevada border region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
NVAR	**Mina Array Bea**	**0.41**	**67**	Pg	**Pg**	**00 55 53.1**	**-2.9**
	1um,0.3s,baz=256,slow=20,SNR=448						
MLAC	**Mammoth, Mammo**	**0.64**	**183**	P	**Pb**	**00 56 00.6**	**-0.6**
	baz=6.6						
MLAC				S	**Sb**	**00 56 10.7**	**+0.4**
	baz=6.6						
CMB	**Columbia Colle**	**1.28**	**260**	⇑*i*Pg	**Pn**	**00 56 11.1**	**-0.8**
CMB				S	**Sb**	**00 56 28.0**	**-0.6**
TIN	**Tinemaha, Big**	**1.29**	**160**	P	**Pg**	**00 56 12.5**	**-0.2**
	baz=344						
GRAC	**Grapevine Rang**	**1.70**	**138**	P	**Pb**	**00 56 17.9**	**-1.4**
	baz=322						
RCTC	**Rector, Farmer**	**1.99**	**191**	Pb	**Pb**	**00 56 24.3**	**+0.1**
	baz=11						
RCTC				Sb	**Sg**	**00 56 53.7**	**+1.8**
	baz=11						
DAC	**Darwin (Calif)**	**2.21**	**154**	*e*Pn	**Pn**	**00 56 24.9**	**+0.2**
DAC				*e*Pg	**Pg**	**00 56 29.6**	**-0.5**
FURC	**Furnace Creek,**	**2.37**	**139**	P	**Pn**	**00 56 27.2**	**+0.6**
	baz=323						
TPNV	**Topopah Spring**	**2.41**	**122**	P	**Pn**	**00 56 27.1**	**-0.4**
	baz=307						
TPNV				Sg	**Sg**	**00 57 06.2**	**+0.9**
	baz=307						
MPMC	**Manual Prospec**	**2.44**	**154**	P	**Pn**	**00 56 28.4**	**+0.5**
	baz=337						
BMN	**Battle Mountai**	**2.48**	**29**	*e*Pn	**Pn**	**00 56 25.5**	**-2.9**
R11A	**Troy Canyon, C**	**2.52**	**87**	P	**Pn**	**00 56 27.0**	**-2.0**
	baz=271						
R11A				Sb	**Sb**	**00 57 04.7**	**+0.3**
	baz=271						
SAO	**San Andreas Ge**	**2.59**	**235**	*e*Pn	**Pn**	**00 56 31.4**	**+1.5**
ISA	**Isabella, Lake**	**2.61**	**174**	Pb	**Pb**	**00 56 34.8**	**0.0**
	baz=356						
ISA				Sb	**Sg**	**00 57 11.1**	**-0.7**
	baz=356						
O03D	**Paynes Creek**	**3.09**	**312**	P	**Pn**	**00 56 37.1**	**+0.4**
	baz=128						
MCCM	**Marconi Confer**	**3.22**	**269**	*e*Pn	**Pn**	**00 56 38.5**	**0.0**
GSC	**Goldstone, Bar**	**3.36**	**151**	P	**Pn**	**00 56 41.1**	**+0.6**
	baz=334						
HOPS	**Hopland Field**	**3.43**	**283**	*e*Pn	**Pn**	**00 56 41.2**	**-0.2**
ELK	**Elko**	**3.69**	**47**	Pn	**Pn**	**00 56 44.0**	**-1.2**
	7.7nm,0.3s,baz=235,slow=0.0,SNR=3.1						
ELK				Lg	Lg	00 57 40.0	
	70nm,0.3s,baz=218,slow=0.0,SNR=12						
ELK	**Elko**	**3.69**	**47**	Pn	**Pn**	**00 56 44.0**	**-1.2**
ELK				*e*Pg	**Pb**	**00 56 53.7**	**+0.3**
ELK				*e*Sg	**Sb**	**00 57 40.1**	**+1.8**
WDC	**Whiskeytown Da**	**3.71**	**310**	*e*Pn	**Pn**	**00 56 45.6**	**+0.4**
WDC				*e*Pb	**Pb**	**00 56 53.1**	**-0.3**
WDC				*e*Sg	**Sg**	**00 57 43.7**	**-3.3**
MOD	**Modoc Plateau**	**3.81**	**343**	*e*Pn	**Pn**	**00 56 48.0**	**+1.3**
MOD				*e*Pb	**Pb**	**00 56 56.5**	**+1.3**
HEC	**Hector,Ludlow**	**3.96**	**149**	P	**Pn**	**00 56 49.8**	**+1.1**
	baz=332						
N02D	**Trinity Center**	**4.05**	**313**	P	**Pn**	**00 56 50.3**	**+0.3**
	baz=129						
WVOR	**Wild Horse Val**	**4.16**	**2**	*e*Pn	**Pn**	**00 56 49.9**	**-1.6**
WVOR				*e*Sb	**Sb**	**00 57 55.3**	**+3.7**
M04C	**Macdoel**	**4.22**	**327**	P	**Pn**	**00 56 53.9**	**+1.6**
	baz=144						
M02C	**Callahan**	**4.42**	**316**	P	**Pn**	**00 56 56.3**	**+1.3**
	baz=132						
YBH	**Yreka Blue Hor**	**4.58**	**320**	Pn	**Pn**	**00 56 58.1**	**+0.8**
	1.0nm,0.3s,baz=137,slow=7.9,SNR=40						
YBH				Lg	Lg	00 58 12.7	
	baz=217,slow=20,SNR=2.2						
YBH				LR	LR	00 58 57.9	
	comp=Z,909nm,18.3s,baz=153,slow=42						
YBH	**Yreka Blue Hor**	**4.58**	**320**	*e*Pn	**Pn**	**00 56 58.9**	**+1.6**
BELC	**Belle Mtn. Jos**	**4.82**	**151**	P	**Pn**	**00 57 01.4**	**+0.8**
	baz=334						
K04D	**Chiloquin, OR**	**4.90**	**333**	P	**Pn**	**00 57 03.4**	**+1.7**
	baz=151						
PFO	**Pinyon Flats O**	**5.02**	**157**	Pn	**Pn**	**00 57 04.4**	**+1.1**
	0.6nm,0.3s,baz=344,slow=14,SNR=7.6						
PFO				LR	LR	00 59 16.3	
	comp=Z,442nm,18.5s,baz=2.0,slow=42						
DUG	**Dugway, Tooele**	**5.02**	**66**	P	**Pn**	**00 57 03.3**	**-0.1**
	baz=250						
J05D	**Fort Rock, OR**	**5.34**	**340**	P	**Pn**	**00 57 10.1**	**+2.3**
	baz=158						
L02D	**Cave Junction,**	**5.35**	**318**	P	Pn	00 57 10.9	+3.1
	baz=134						
HUMO	**Hull Mountain**	**5.37**	**325**	*e*Pn	**Pn**	**00 57 10.2**	**+2.1**
	164nm,1.0s						
I04A	**Tendick Farm,**	**6.16**	**335**	P	Pn	00 57 22.0	+3.1
	baz=152						
I05D	**Terrebonne, OR**	**6.36**	**343**	P	Pn	00 57 25.4	+3.7
	baz=161						
I03D	**Drain, OR**	**6.42**	**329**	P	Pn	00 57 26.9	+4.4
	baz=145						
HWUT	**Hardware Ranch**	**6.47**	**57**	*e*Pn	**Pn**	**00 57 24.9**	**+1.5**
	17nm,0.7s						
WUAZ	**Wupatki**	**6.55**	**113**	*e*Pg	Pg	00 57 47.9	-5.3
G05D	**Wamic, OR**	**7.22**	**346**	P	Pn	00 57 37.9	+4.5
	baz=163						
G03D	**McMinnville, O**	**7.70**	**336**	P	Pn	00 57 44.4	+4.5
	baz=152						
PV04	**Paradox Valley**	**7.77**	**86**	*e*Pn	**Pn**	**00 57 38.3**	**-2.9**
PV01	**Paradox Valley**	**8.05**	**88**	Pn	**Pn**	**00 57 45.2**	**+0.2**
HAWA	**Hanford**	**8.14**	**356**	*e*Pn	**Pn**	**00 57 48.4**	**+2.5**
BW06	**Boulder Array**	**8.34**	**55**	P	**Pn**	**00 57 50.6**	**+1.6**
	baz=241						
BW06	**Boulder Array**	**8.34**	**55**	*e*Pn	**Pn**	**00 57 50.0**	**+1.0**
PDAR	**Pinedale Array**	**8.34**	**55**	Pn	**Pn**	**00 57 50.3**	**+1.3**
	0.2nm,0.3s,baz=238,slow=14,SNR=13						
PDAR				Lg	Lg	01 00 06.4	
	0.3nm,0.3s,baz=246,slow=29,SNR=5.8						
PDAR				LR	LR	01 01 06.9	
	comp=Z,263nm,18.9s,baz=252,slow=39						
O20A	**White River Ci**	**8.40**	**74**	Pn	**Pn**	**00 57 48.6**	**-1.2**
TUC	**Tucson**	**8.84**	**130**	P	Pn	00 57 58.3	+2.6
	baz=315						
BOZ	**Bozeman (W)**	**9.10**	**34**	P	**Pn**	**00 58 01.2**	**+2.0**
	baz=218						
NEW	**Newport**	**10.06**	**6**	Pn	**Pn**	**00 58 12.7**	**+0.3**
	0.2nm,0.3s,baz=157,slow=9.0,SNR=4.8						
NEW				Lg	Lg	01 01 04.2	
	0.2nm,0.3s,baz=248,slow=16,SNR=3.0						
NEW				LR	LR	01 02 44.6	
	comp=Z,40nm,18.8s,baz=140,slow=42						
NEW	**Newport**	**10.06**	**6**	P	**Pn**	**00 58 15.1**	**+2.7**
	baz=187						
NEW	**Newport**	**10.06**	**6**	*e*Pn	**Pn**	**00 58 14.0**	**+1.6**
ANMO	**Albuquerque**	**10.45**	**105**	Lg	Lg	01 01 15.5	
	0.1nm,0.3s,baz=199,slow=22,SNR=3.8						
BBB	**Bella Bella**	**15.37**	**338**	LR	LR	01 04 34.4	
	comp=Z,52nm,20.3s,baz=168,slow=34						
TXAR	**Lajitas Array**	**15.39**	**121**	Pn	**P**	**00 59 28.3**	**-1.6**
	0.0nm,0.3s,baz=306,slow=11,SNR=9.3						
LPIG	**La Paz**	**15.87**	**150**	LR	LR	01 05 33.2	
	comp=Z,79nm,19.5s,baz=326,slow=37						
ULM	**Lac du Bonnet**	**20.22**	**46**	P	**P**	**01 00 22.1**	**-0.8**
	3.7nm,0.7s,baz=225,slow=12,SNR=4.6						
ULM				LR	LR	01 08 32.5	
	comp=Z,133nm,19.8s,baz=310,slow=38						
DLBC	**Dease Lake**	**21.46**	**344**	LR	LR	01 09 16.2	
	comp=Z,118nm,18.6s,baz=148,slow=38						
YKA	**Yellowknife Ar**	**24.39**	**5**	P	**P**	**01 01 06.3**	**+0.3**
	0.7nm,0.8s,baz=184,slow=9.9,SNR=18						
TKL	**Tuckaleechee C**	**28.00**	**84**	LR	LR	01 13 32.8	
	comp=Z,238nm,20.2s,baz=302,slow=38						
SADO	**Sadowa**	**30.16**	**65**	LR	LR	01 13 56.6	
	comp=Z,75nm,18.4s,baz=263,slow=36						
ILAR	**Eielson Array**	**31.25**	**337**	P	**P**	**01 02 08.9**	**+1.5**
	1.4nm,0.9s,baz=155,slow=7.6,SNR=14						
ILAR				LR	LR	01 13 51.4	
	comp=Z,58nm,18.7s,baz=124,slow=35						

NEIC 17 00:57:50.0, 38.36N×118.74W, h15km, ML3.5(REN), After REN., California-Nevada border region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
CMB	**Columbia Colle**	**1.34**	**256**	*e*Pn	Pn	00 58 14.2	-0.1
CMB				*e*Sn	Sb	00 58 32.4	+0.5
BMN	**Battle Mountai**	**2.38**	**29**	*e*Pn	Pn	00 58 28.5	-0.2
R11A	**Troy Canyon, C**	**2.48**	**89**	*e*Pn	Pn	00 58 29.2	-0.9
R11A				*e*Pg	Pg	00 58 37.3	-0.3
SAO	**San Andreas Ge**	**2.68**	**234**	*e*Pn	Pn	00 58 32.8	+0.1
MCCM	**Marconi Confer**	**3.27**	**267**	*e*Pb	Pb	00 58 47.7	-0.1
HOPS	**Hopland Field**	**3.45**	**282**	Pn	Pn	00 58 43.9	+0.6
ELK	**Elko**	**3.60**	**48**	*e*Sg	Sg	00 59 42.9	-2.8
WDC	**Whiskeytown Da**	**3.68**	**308**	*e*Sg	Sg	00 59 46.9	-1.4
WVOR	**Wild Horse Val**	**4.07**	**1**	*e*Sg	Sg	01 00 00.4	-0.3

NIED ***17*** *01:02:00, 37.80N×143.70E, h5km, Mw4.2 Best double couple: M0 2.63000×10^15 NP1:φs=26.00000°, δ23.00000°, λ-83.00000°. NP2:φs198.00000°, δ67.00000°, λ-93.00000°.*
IDC ***17*** *01:02:24.4±0.6, 37.64N×143.88E, h0km, mb4.1/22, mb1 4.3/29, mb1mx4.2/45, mbtmp4.2/29, ML3.9/5, MS3.2/11, Ms1 3.3/11, ms1mx3.0/41, Error ellipse: s-maj=15.1km s-min=12.3km az=134.0*
ISCJB ***17*** *01:02:25.7±1.1, 37.74N±0.03×143.69E±0.03, h13km±7km, mb4.4/88, MS3.7/8, Error ellipse: s-maj=5.6km s-min=3.4km az=168.0*
BJI ***17*** *01:02:27.2, 38.02N×143.85E, h22km, mb4.5/40, mB4.8/25, Ms4.1/18, Ms7 3.9/13*
MOS ***17*** *01:02:27.7±1.5, 37.78N×143.81E, h29km, mb4.7/35, Error ellipse: s-maj=8.3km s-min=5.7km az=89.9*
NEIC ***17*** *01:02:27.5±2.3, 37.62N×143.82E, h17km±14km, mb4.6/50, Error ellipse: s-maj=6.6km s-min=3.8km az=147.0*
JMA ***17*** *01:02:27.1±0.3, 37.75N×143.72E, h46km, M4.3*

ISC 17 01:02:25.3±2.1, 37.74N±0.05×143.80E±0.05, h3km±12km, n202, σ1$74/203, mb4.5/88, MS3.7/8, 5C-7D, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**2.06**	**291**	P	**Pn**	**01 02 59.6**	**-1.3**
JIO				S	**Sn**	**01 03 23.7**	**-3.4**
OFUJ	**Ofunato**	**2.14**	**309**	P	**Pn**	**01 03 00.5**	**-1.5**
OFUJ				S	**Sn**	**01 03 25.0**	**-4.2**
JMK	**Ichinoseki**	**2.36**	**302**	P	**Pn**	**01 03 03.9**	**-1.1**
JMK				S	**Sn**	**01 03 31.5**	**-3.0**
JOM	**Ohasama**	**2.62**	**312**	P	**Pn**	**01 03 07.6**	**-0.9**
JOM				*e*S	**Sn**	**01 03 36.9**	**-4.0**
JFT	**Otama**	**2.76**	**266**	P	**Pn**	**01 03 10.1**	**-0.4**
JFT				S	**Sn**	**01 03 41.6**	**-2.8**
JYK	**Kaneyama**	**2.95**	**294**	P	**Pn**	**01 03 12.7**	**-0.4**
JYK				S	**Sn**	**01 03 46.8**	**-2.3**
JANG	**Nango**	**3.17**	**327**	P	**Pn**	**01 03 15.8**	**-0.4**
JANG				*e*S	**Sn**	**01 03 49.9**	**-4.7**
JAG	**Ashikaga**	**3.72**	**251**	P	**Pn**	**01 03 22.6**	**-1.1**
JAG				*e*S	**Sn**	**01 04 04.3**	**-3.7**
JOT	**Ohata**	**4.21**	**330**	*e*S	**Sn**	**01 04 15.5**	**-4.7**
JRY	**Ryogami san**	**4.29**	**248**	P	**Pn**	**01 03 30.7**	**-0.9**
JRY				*e*S	**Sn**	**01 04 16.6**	**-5.6**
ERM	**Erimo**	**4.30**	**354**	*e*P	**Pn**	**01 03 32.5**	**+0.9**
ERM				*e*		01 04 18.2	
ERM	**Erimo**	**4.30**	**354**	*e*Pn	**Pn**	**01 03 32.5**	**+0.9**
ERM				*e*Sn	**Sn**	**01 04 18.2**	**-4.0**
JOD2	**Odawara 2**	**4.53**	**238**	P	**Pn**	**01 03 34.0**	**-0.9**
JOD2				*e*S	**Sn**	**01 04 23.0**	**-5.1**
MJAR	**Matsushiro Arr**	**4.63**	**257**	Pn	**Pn**	**01 03 36.4**	**+0.2**
	9.9nm,0.3s,baz=73,slow=9.3,SNR=162						
MJAR				LR	LR	01 05 34.9	
	comp=Z,324nm,20.2s,baz=50,slow=41						
MAJO	**Matsushiro**	**4.63**	**257**	*e*P	**Pn**	**01 03 37.0**	**+0.8**
MAJO	**Matsushiro**	**4.63**	**257**	*e*Pn	**Pn**	**01 03 37.0**	**+0.8**
MAT	**Matsushiro**	**4.63**	**257**	P	**Pn**	**01 03 36.6**	**+0.4**
MAT				S	**Sn**	**01 04 27.4**	**-3.1**
MJB9	**Matsu-Tunnel**	**4.63**	**257**	*e*Pn	**Pn**	**01 03 37.2**	**+1.0**
JKB	**Kayabe**	**4.66**	**334**	P	**Pn**	**01 03 36.6**	**+0.1**
JKB				*e*S	**Sn**	**01 04 25.7**	**-5.4**
JCH	**Churui**	**4.88**	**356**	P	**Pn**	**01 03 38.2**	**-1.4**
JCH				*e*S	Sn	01 04 30.2	-6.4
JHJ	**Hachijo jima 2**	**5.66**	**217**	Pn	**Pn**	**01 03 48.9**	**-1.5**
	24nm,0.3s,baz=325,slow=20,SNR=6.5						
JHJ				Sn	Sn	01 04 49.0	-6.9
	40nm,0.3s,baz=108,slow=23,SNR=4.6						
INU	**Inuyama**	**5.96**	**248**	*e*Pn	**Pn**	**01 03 54.7**	**+0.2**
ASAJ	**Asahikawa**	**6.43**	**352**	Pn	**Pn**	**01 04 00.3**	**-0.6**
	5.3nm,0.3s,baz=188,slow=8.0,SNR=25						
ASAJ				Sn	**Sn**	**01 05 09.9**	**-5.0**
	1.3nm,0.3s,baz=345,slow=19,SNR=3.7						
ASAJ				LR	LR	01 06 33.2	
	comp=Z,104nm,20.2s,baz=77,slow=38						
YUK	**Yuzh-Kuril'sk**	**6.48**	**13**	*e*P	**Pn**	**01 03 59.7**	**-1.8**
YUK				*i* S	Sn	01 05 08.8	-7.1
YUK				pmax	pmax		
	comp=Z,104nm,0.4s						
YUK				pmax	pmax		
	comp=N,47nm,0.3s						
YUK				pmax	pmax		
	comp=E,62nm,0.2s						
SHO	**Shikotan**	**6.54**	**20**	⇑*i*P	**Pn**	**01 04 01.1**	**-1.3**
SHO				*i* S	Sn	01 05 09.0	-8.4
SHO				pmax	pmax		
	comp=Z,95nm,0.5s						
SHO				pmax	pmax		
	comp=E,46nm,0.6s						
KUR	**Kuril'sk**	**8.08**	**21**	*e*P	**Pn**	**01 04 21.8**	**-1.7**
KUR				*i* S	Sn	01 05 46.5	-8.9
KUR				pmax	pmax		
	comp=N,21nm,0.6s						
KUR				pmax	pmax		
	comp=E,18nm,0.6s						
KUR				pmax	pmax		
	comp=Z,27nm,0.6s						
CBIJ	**Chichi jima**	**10.70**	**188**	Pn	Pn	01 04 54.2	-5.4
CBIJ				Sn	Sn	01 06 47.2	-13
JCJ	**Chichijima**	**10.70**	**188**	Pn	Pn	01 04 54.2	-5.4
	baz=328,slow=19						
JCJ				Sn	Sn	01 06 47.2	-13
	comp=Z,5.6nm,0.3s,baz=343,slow=19,SNR=4.7						
JCJ				LR	LR	01 11 39.5	
	comp=Z,23nm,18.2s,baz=94,slow=52						
USRK	**Ussuriysk Ar.**	**11.01**	**310**	Pn	**Pn**	**01 05 05.1**	**+1.4**
	comp=Z,0.3nm,0.3s,baz=106,slow=13,SNR=12						
USRK				LR	LR	01 09 05.8	
	comp=Z,197nm,19.8s,baz=129,slow=36						
JNU	**Nakatsue**	**11.51**	**250**	Pn	**Pn**	**01 05 10.4**	**-0.1**
	comp=Z,0.2nm,0.3s,baz=79,slow=16,SNR=3.5						
JNU				LR	LR	01 09 57.4	
	comp=Z,71nm,18.9s,baz=121,slow=39						
JNU	**Nakatsue**	**11.51**	**250**	*e*Pn	**Pn**	**01 05 10.0**	**-0.6**
KSRS	**Korea Array**	**12.60**	**274**	Pn	**Pn**	**01 05 26.4**	**+1.0**
	comp=Z,0.5nm,0.3s,baz=84,slow=14,SNR=9.7						
KSRS				LR	LR	01 10 13.6	
	comp=Z,122nm,18.2s,baz=71,slow=37						
KSAR	**Wonju Array Be**	**12.63**	**274**	P	**Pn**	**01 05 26.5**	**+0.6**
KSAR	**Wonju Array Be**	**12.63**	**274**	Pn	**Pn**	**01 05 26.4**	**+0.6**
MDJ	**Mudanjiang**	**12.71**	**307**	P	**Pn**	**01 05 27.3**	**+0.4**
MDJ				S	**Sn**	**01 07 47.3**	**-1.6**
MDJ				ScP	**ScP**	**01 14 34.9**	**-3.1**
MDJ				PcS	**PcS**	**01 14 37.3**	**-0.9**
MDJ				pmax	pmax		
	comp=Z,9.0nm,1.2s						
MDJ				pmax	pmax		
	comp=Z,54nm,3.4s						
MDJ				LR	LR		
	comp=Z,150nm,4.3s						
MDJ				LR	LR		
	comp=Z,170nm,8.4s						
MDJ				LR	LR		
	comp=Z,190nm,7.0s						
KLR	**Kul'dur**	**14.41**	**327**	Pn	**Pn**	**01 05 47.8**	**-2.4**
	comp=Z,0.3nm,0.3s,baz=133,slow=13,SNR=11						
KLR				LR	LR	01 11 17.8	
	comp=Z,87nm,21.2s,baz=132,slow=37						
KLR	**Kul'dur**	**14.41**	**327**	⇑*i*P	**Pn**	**01 05 48.5**	**-1.7**
PETK	**Petropavlovsk-**	**18.15**	**28**	P	**Pn**	**01 06 37.8**	**-0.5**
	comp=Z,0.1nm,0.3s,baz=197,slow=14,SNR=3.2						
NJ2	**Nanjing**	**21.21**	**262**	*e*P	**P**	**01 07 10.8**	**-1.4**
NJ2				pmax	pmax		
	comp=Z,14nm,0.6s						
TIA	**Tai'an**	**21.35**	**274**	*e*P	**P**	**01 07 12.5**	**-1.2**
TIA				pmax	pmax		
	comp=Z,10.0nm,0.9s						
BJI	**Beijing**	**21.60**	**285**	P	**P**	**01 07 18.1**	**+1.8**
BJI				pmax	pmax		
	comp=Z,17nm,1.0s						
BJI				LR	LR		
	comp=Z,170nm,12.4s						
BJI				LR	LR		
	comp=Z,140nm,13.9s						
HHC	**Hu-ho-hao-te**	**25.07**	**287**	*e*P	**P**	**01 07 52.4**	**+1.3**
HHC				sP	sP	01 08 05.0	+13
HHC				S	**S**	**01 12 13.3**	**-2.9**
HHC				SS	**SnSn**	**01 13 13.8**	**+9.2**
HHC				pmax	pmax		
	comp=Z,14nm,0.9s						
HHC				pmax	pmax		
	comp=Z,84nm,7.5s						
HHC				LR	LR		
	comp=Z,160nm,11.1s						
HHC				LR	LR		
	comp=Z,350nm,12.3s						
HHC				LR	LR		
	comp=Z,210nm,11.1s						
SEY	**Seymchan**	**25.76**	**9**	P	**P**	**01 07 57.6**	**+0.6**
	comp=Z,3.8nm,0.9s,baz=186,slow=6.1,SNR=11						
SEY	**Seymchan**	**25.76**	**9**	‖*e*P	**P**	**01 07 58.4**	**+1.4**
YAK	**Yakutsk**	**25.84**	**345**	*e*P	P	01 08 06.8	+9.1
YAK				pmax	pmax		
	comp=Z,18nm,0.9s						
YAK				pmax	pmax		
	comp=E,6.0nm,1.4s						
YAK				pmax	pmax		
	comp=N,9.0nm,1.3s						
H11N2	**WAKE ISLAND Hy**	**26.94**	**125**	T	T	01 36 16.1	
	baz=317,slow=75,SNR=18						
H11N1	**WAKE ISLAND Hy**	**26.95**	**125**	T	T	01 36 21.0	
	baz=317,slow=75,SNR=14						
H11N3	**WAKE ISLAND Hy**	**26.95**	**125**	T	T	01 36 12.9	
	baz=317,slow=75,SNR=19						
H11S1	**WAKE ISLAND Hy**	**27.71**	**127**	T	T	01 37 21.2	
	baz=319,slow=76,SNR=5.8						
H11S3	**WAKE ISLAND Hy**	**27.71**	**127**	T	T	01 37 24.7	
	baz=319,slow=76,SNR=6.7						
H11S2	**WAKE ISLAND Hy**	**27.73**	**127**	T	T	01 37 22.3	
	baz=319,slow=76,SNR=7.9						
BOD	**Bodaibo**	**27.99**	**325**	*e*P	**P**	**01 08 17.0**	**-0.1**
BOD				pmax	pmax		
	comp=Z,5.0nm,0.8s						
ULN	**Ulaanbaatar**	**28.56**	**303**	*de*P	**P**	**01 08 25.2**	**+2.7**
ULN				pmax	pmax		
	comp=Z,10.0nm,1.7s						
ULN	**Ulaanbaatar**	**28.56**	**303**	*e*P	**P**	**01 08 23.5**	**+1.0**
	comp=Z,2.8nm,0.5s						
SONA1	**Songino Array**	**28.99**	**302**	*e*P	**P**	**01 08 27.2**	**+0.9**
SONM	**Songino Array**	**28.99**	**302**	P	**P**	**01 08 27.0**	**+0.7**
	comp=Z,1.9nm,0.6s,baz=99,slow=8.1,SNR=11						
SONM				LR	LR	01 20 01.2	
	comp=Z,68nm,18.2s,baz=88,slow=36						
SONM	**Songino Array**	**28.99**	**302**	P	**P**	**01 08 27.0**	**+0.7**
ENH	**Enshi**	**29.29**	**266**	*e*P	**P**	**01 08 30.5**	**+1.5**
	comp=Z,17nm,1.0s						
TLY	**Talaya**	**31.33**	**309**	P	**P**	**01 08 46.7**	**-0.1**
	comp=Z,2.2nm,0.5s,baz=132,slow=12,SNR=5.0						
TLY	**Talaya**	**31.33**	**309**	*e*P	**P**	**01 08 50.0**	**+3.2**
TLY				pmax	pmax		
	comp=Z,4.0nm,0.8s						
TLY				MLR	MLR		
	comp=Z,74nm,13.0s						
TLY	**Talaya**	**31.33**	**309**	*e*P	**P**	**01 08 49.9**	**+3.0**
	comp=Z,3.8nm,0.7s						
ZAK	**Zakamensk**	**31.35**	**307**	*e*P	**P**	**01 08 46.9**	**-0.2**
ZAK				pmax	pmax		
	comp=Z,5.0nm,1.0s						
LZH	**Lanzhou**	**31.83**	**279**	*e*P	P	01 08 40.3	-11
LZH				pP	pP	01 08 48.6	-3.7
LZH				sP	sP	01 08 52.6	-0.1
LZH				pmax	pmax		
	comp=Z,18nm,1.0s						
BILL	**Bilibino**	**32.83**	**15**	‖*e*P	**P**	**01 08 59.8**	**+0.1**
BILL				*e*PPP	PPP	01 10 15.7	
BILL				pmax	pmax		
	comp=Z,10.0nm,2.5s						
BILL	**Bilibino**	**32.83**	**15**	*e*P	**P**	**01 08 58.6**	**-1.1**
	comp=Z,1.6nm,0.8s						
GYA	**Guiyang**	**33.21**	**261**	*e*P	**P**	**01 09 03.8**	**+0.1**
GYA				pmax	pmax		
	comp=Z,10.0nm,0.9s						
CD2	**Chengdu**	**33.57**	**270**	P	**P**	**01 09 06.4**	**-0.3**
CD2				pmax	pmax		
	comp=Z,2.0nm,0.5s						
GTA	**Gaotai**	**34.18**	**287**	P	**P**	**01 09 13.5**	**+1.5**
GTA				pP	s

PPLA	Purkeypile	45.50	35	eP		P	01 10 47.7 +1.9
	comp=Z,13nm,1.2s						
SPU	Mount Spurr	45.51	38	eP		P	01 10 47.1 +1.3
MAKZ	Makanchi	45.57	302	eP		P	01 10 46.5 +0.1
MAKZ				pmax	pmax		
	comp=Z,4.0nm,1.0s						
MAKZ	Makanchi	45.57	302	eP		P	01 10 46.5 +0.1
	comp=Z,3.9nm,1.0s						
CAST	Castle Rocks	45.57	35	eP		P	01 10 47.8 +1.6
	comp=Z,6.6nm,1.1s						
BPAW	Bear Paw Mtn.	46.09	34	eP		P	01 10 53.3 +3.0
	comp=Z,3.1nm,1.0s						
KTH	Kantishna Hill	46.09	34	eP		P	01 10 51.8 +1.3
	comp=Z,10nm,1.1s						
MLY	Manley	46.24	32	eP		P	01 10 53.0 +1.5
	comp=Z,5.5nm,1.0s						
RC01	Rabbit Creek A	46.64	38	eP		P	01 10 55.5 +0.8
	comp=Z,14nm,1.2s						
SEW	Seward	46.82	39	eP		P	01 10 55.6 -0.4
	comp=Z,14nm,1.0s						
PMR	Palmer	46.92	37	eP		P	01 10 56.9 +0.1
PMR				pmax	pmax		
	comp=Z,14nm,1.1s						
PMR	Palmer	46.92	37	eP		P	01 10 56.9 +0.1
	comp=Z,14nm,1.1s						
MCK	McKinley	46.98	34	eP		P	01 10 57.4 +0.1
MCK				pmax	pmax		
	comp=Z,6.0nm,1.0s						
MCK	McKinley	46.98	34	eP		P	01 10 57.4 +0.1
	comp=Z,6.1nm,1.0s						
KURK	Kurchatov	47.00	308	eP		P	01 10 57.8 +0.2
KURK				pmax	pmax		
	comp=Z,14nm,0.7s						
KURK	Kurchatov	47.00	308	eP		P	01 10 57.8 +0.2
	comp=Z,14nm,0.7s						
RND	Reindeer	47.02	35	eP		P	01 10 58.1 +0.4
RND				pmax	pmax		
	comp=Z,10.0nm,1.1s						
RND	Reindeer	47.02	35	eP		P	01 10 58.1 +0.4
	comp=Z,10nm,1.1s						
SML	Sawmill	47.29	37	eP		P	01 11 00.5 +0.7
SML				pmax	pmax		
	comp=Z,10.0nm,0.8s						
SML	Sawmill	47.29	37	eP		P	01 11 00.5 +0.7
	comp=Z,10nm,0.8s						
MDM	Murphy Dome	47.30	32	eP		P	01 11 01.1 +1.3
	comp=Z,15nm,1.2s						
WRH	Wood River Hil	47.36	33	eP		P	01 11 00.9 +0.7
	comp=Z,3.0nm,0.9s						
COLA	College	47.46	33⇓	eP		P	01 11 02.0 +1.0
COLA				pmax	pmax		
	comp=Z,3.0nm,0.8s						
SCM	Sheep Creek Mo	47.77	37	eP		P	01 11 04.8 +1.3
SCM				pmax	pmax		
	comp=Z,16nm,1.0s						
SCM	Sheep Creek Mo	47.77	37	eP		P	01 11 04.8 +1.3
	comp=Z,16nm,1.0s						
ILAR	Eielson Array	47.87	33	P		P	01 11 04.4 +0.1
	comp=Z,4.1nm,0.8s,baz=264,slow=6.5,SNR=53						
ILB	Eielson Array	47.87	33	eP		P	01 11 04.4 +0.1
IL1	Eielson Array	47.88	33	eP		P	01 11 03.9 -0.4
KLU	Klutina	48.46	37	eP		P	01 11 10.1 +1.2
	comp=Z,9.3nm,1.0s						
FYU	Fort Yukon	48.54	30	eP		P	01 11 11.3 +1.9
	comp=Z,14nm,1.3s						
DIV	Divide	48.56	38	eP		P	01 11 10.4 +0.7
	comp=Z,15nm,1.0s						
PAX	Paxson	48.57	35	eP		P	01 11 10.6 +0.9
PAX				pmax	pmax		
	comp=Z,4.0nm,1.2s						
PAX	Paxson	48.57	35	eP		P	01 11 10.6 +0.9
	comp=Z,3.6nm,1.2s						
BMRM	Bremner River	49.14	38	eP		P	01 11 14.3 +0.2
	comp=Z,7.3nm,0.9s						
DOT	Dot Lake	49.16	34	eP		P	01 11 14.5 +0.3
	comp=Z,9.0nm,0.9s						
MENT	Mentasta	49.37	35	eP		P	01 11 16.8 +1.0
	comp=Z,6.6nm,1.0s						
TKM2	Tokmak 2	50.97	299	eP		P	01 11 29.6 +1.1
TKM2				pmax	pmax		
	comp=Z,7.0nm,0.8s						
TKM2	Tokmak 2	50.97	299	eP		P	01 11 29.6 +1.1
	comp=Z,6.9nm,0.8s						
VOSK	Vostochnaya	51.23	312	eP		P	01 11 30.2 +0.2
VOSK				pmax	pmax		
	comp=Z,4.0nm,0.9s						
VOSK	Vostochnaya	51.23	312	eP		P	01 11 30.2 +0.2
	comp=Z,4.4nm,0.9s						
BRVK	Borovoye	51.56	312	eP		P	01 11 32.5 +0.1
BRVK				pmax	pmax		
	comp=Z,2.0nm,0.7s						
BRVK	Borovoye	51.56	312	eP		P	01 11 32.5 +0.1
	comp=Z,1.7nm,0.7s						
AAK	Ala-Archa	51.83	299	⇓eP		P	01 11 36.9 +2.1
AAK				pmax	pmax		
	comp=Z,3.0nm,0.9s						
AAK	Ala-Archa	51.83	299	eP		P	01 11 34.7 -0.1
	comp=Z,2.3nm,0.7s						
KSH	Kashi	51.85	294	eP		P	01 11 40.9 +5.9
KSH				epP		sP	01 11 51.0 +15
KSH				S		S	01 19 03.3 +5.0
KSH				pmax	pmax		
	comp=Z,95nm,4.8s						
KSH				LR	LR		
	comp=Z,170nm,6.8s						
KSH				LR	LR		
	comp=Z,70nm,5.2s						
EKS2	Erkin-Say	52.32	299	eP		P	01 11 37.8 -0.6
EKS2				pmax	pmax		
	comp=Z,3.0nm,0.8s						
EKS2	Erkin-Say	52.32	299	eP		P	01 11 37.8 -0.6
	comp=Z,3.1nm,0.8s						
ZRNK	Zerenda	52.33	312	eP		P	01 11 38.8 +0.6
ZRNK				pmax	pmax		
	comp=Z,3.0nm,0.8s						
ZRNK	Zerenda	52.33	312	eP		P	01 11 38.8 +0.6
	comp=Z,3.0nm,0.8s						
KIP	Kipapa	52.35	91⇑	eP		P	01 11 45.7 +6.9
KIP				pmax	pmax		
	comp=Z,1µm,2.5s						
INK	Inuvik	52.88	28	P		P	01 11 42.3 +0.2
	comp=Z,0.9nm,0.5s,baz=314,slow=6.2,SNR=10						
KKAR	Karatay Array	54.41	300	eP		P	01 11 54.1 +0.4
KKAR				pmax	pmax		
	comp=Z,5.0nm,1.0s						
KKAR	Karatay Array	54.41	300	eP		P	01 11 54.0 +0.4
	comp=Z,4.5nm,1.0s						
SVE	Sverdlovsk	55.87	319	eP		P	01 12 13.4 +9.4
WRAK	Wrangell Islan	56.36	42	eP		P	01 12 09.3 +1.8
DLBC	Dease Lake	56.89	39	P		P	01 12 11.8 +0.5
	comp=Z,1.3nm,0.7s,baz=257,slow=8.0,SNR=5.2						
DLBC	Dease Lake	56.89	39	eP		P	01 12 12.4 +1.1
	comp=Z,2.1nm,0.8s						
ARU	Arti	57.09	319	*d* iP		P	01 12 24.0 +11
ARU				S		S	01 20 26.7 +19
ARU				pmax	pmax		
	comp=Z,10.0nm,1.7s						
ARU	Arti	57.09	319	eP		P	01 12 13.2 +0.5
	comp=Z,4.8nm,0.9s						
WRAB	Tennant Creek	58.05	190	eP		P	01 12 18.1 -1.7
WRAB				pmax	pmax		
	comp=Z,13nm,0.8s						
WRAB	Tennant Creek	58.05	190	eP		P	01 12 18.1 -1.7
	comp=Z,13nm,0.8s						
WB2	Warramunga Arr	58.06	190	eP		P	01 12 18.6 -1.2
	comp=Z,16nm,0.9s						
WRA	Warramunga Arr	58.06	191	P		P	01 12 18.3 -1.5
	comp=Z,11nm,0.8s,baz=8.9,slow=7.4,SNR=44						
ABKAR	Akbulak array	58.93	310	eP		P	01 12 25.8 0.0
AS01	Alice Springs	61.78	190	eP		P	01 12 44.0 -1.4
ASAR	Alice Springs	61.79	190	P		P	01 12 44.2 -1.2
	comp=Z,3.5nm,0.8s,baz=11,slow=5.8,SNR=22						
YKA	Yellowknife Ar	62.23	31	P		P	01 12 48.0 0.0
	comp=Z,1.0nm,0.7s,baz=302,slow=6.7,SNR=26						
YKA	Yellowknife Ar	62.23	31	P		P	01 12 48.0 0.0
YKA	Yellowknife Ar	62.23	31	P		P	01 12 48.0 0.0
GEYT	Alibeck	65.15	300	P		P	01 13 07.9 +0.1
	comp=Z,1.0nm,0.8s,baz=59,slow=5.7,SNR=3.8						
COCO	West Island	66.36	231	*i* P		P	01 13 22.9 +7.3
FINES	FINESS Array B	69.06	333	P		P	01 13 32.1 0.0
	comp=Z,1.8nm,0.8s,baz=50,slow=7.4,SNR=6.4						
FINES	FINESS Array B	69.06	333	*i* P		P	01 13 31.5 -0.6
FINES				pmax	pmax		
	comp=Z,2.0nm,0.8s						
STKA	Stephens Creek	69.29	182	P		P	01 13 32.6 -1.2
	comp=Z,2.1nm,1.0s,baz=343,slow=17,SNR=3.5						
KVAR	Kislovodsk Arr	71.86	312	P		P	01 13 50.3 +0.6
	comp=Z,3.8nm,0.8s,baz=303,slow=6.4,SNR=4.0						
KIV	Kislovodsk	71.87	312	*de*P		P	01 13 51.1 +1.4
KIV				*e*			01 14 01.5
KIV				*e*			01 14 07.4
KIV				*e*			01 16 25.4
KIV				*e*PPP		PPP	01 18 15.9
KIV				pmax	pmax		
	comp=Z,13nm,1.7s						
KIV	Kislovodsk	71.87	312	eP		P	01 13 51.4 +1.6
	comp=Z,13nm,1.1s						
KBZ	Khabaz	71.87	311	P		P	01 13 50.2 +0.6
	comp=Z,1.5nm,0.8s,baz=76,slow=4.2,SNR=5.9						
FFC	Flin Flon	72.07	34	eP		P	01 13 50.2 -0.4
FFC				pmax	pmax		
	comp=Z,8.0nm,1.0s						
FFC	Flin Flon	72.07	34	eP		P	01 13 50.2 -0.4
	comp=Z,8.4nm,1.0s						
LRM	Limekiln Ridge	72.30	45	eP		P	01 13 53.1 +0.6
DLMT	Dillon	72.49	46	eP		P	01 13 55.2 +1.7
	comp=Z,5.8nm,0.9s						
FCC	Fort Churchill	72.51	28	eP		P	01 13 53.2 +0.1
FCC				pmax	pmax		
	comp=Z,6.0nm,1.1s						
FCC	Fort Churchill	72.51	28	eP		P	01 13 53.2 +0.1
	comp=Z,6.1nm,1.1s						
BOZ	Bozeman (W)	72.87	45	eP		P	01 13 55.8 +0.1
BOZ				pmax	pmax		
	comp=Z,3.0nm,0.8s						
BOZ	Bozeman (W)	72.87	45	eP		P	01 13 55.8 +0.1
	comp=Z,2.8nm,0.8s						
NVAR	Mina Array Bea	73.03	54	P		P	01 13 56.4 -0.6
	comp=Z,0.5nm,0.3s,baz=284,slow=5.3,SNR=1.9						
HFS	Hagfors	74.21	337	LR		LR	01 51 19.1
	comp=Z,42nm,18.4s,baz=338,slow=40						
H17A	Grant Village	74.22	46	eP		P	01 14 05.3 +1.5
	comp=Z,6.0nm,0.9s						
NB2	NORSAR Subarra	74.25	338	P		P	01 14 03.5 0.0
	comp=Z,1.9nm,1.0s,baz=38,slow=5.9						
NOA	NORSAR Array B	74.25	338	P		P	01 14 02.9 -0.6
	comp=Z,1.0nm,0.9s,baz=38,slow=5.8,SNR=2.8						
NOA				LR		LR	01 52 00.8
	comp=Z,25nm,18.6s,baz=0.0,slow=40						
FXWY	Fox Creek	74.42	47	eP		P	01 14 06.3 +1.2
	comp=Z,3.2nm,1.0s						
AKASG	Malin Array Be	74.89	323	P		P	01 14 07.0 -0.2
	comp=Z,0.4nm,0.4s,baz=44,slow=6.0,SNR=5.9						
AKASG	Malin Array Be	74.89	323	*ce*P		P	01 14 08.5 +1.3
BW06	Boulder Array	75.81	47	eP		P	01 14 11.9 -1.1
PD31	Pinedale Array	75.81	47	eP		P	01 14 13.2 +0.2
PDAR	Pinedale Array	75.81	47	P		P	01 14 12.4 -0.6
	comp=Z,1.4nm,0.7s,baz=276,slow=3.2,SNR=15						
BORG	Borgarnes	77.18	354	*i* P		P	01 14 22.8 +2.8
SRU	San Rafael Swe	77.51	50	eP		P	01 14 23.3 +0.7
SRU				pmax	pmax		
	comp=Z,5.0nm,0.9s						
SRU	San Rafael Swe	77.51	50	eP		P	01 14 23.3 +0.7
	comp=Z,4.6nm,0.9s						
PSZ	Piszkesteto	81.17	326	eP		P	01 14 42.9 +0.6
PSZ				pmax	pmax		
	comp=Z,3.0nm,0.8s						
PSZ	Piszkesteto	81.17	326	eP		P	01 14 42.9 +0.6
	comp=Z,2.8nm,0.8s						
VYHS	Vyhne	81.20	327	eP		P	01 14 44.0 +1.6
VYHS				pmax	pmax		
	comp=Z,8.0nm,1.8s						
VYHS	Vyhne	81.20	327	eP		P	01 14 44.0 +1.6
CLL	Collm	81.41	331	*i* P		P	01 14 43.6 +0.2
	comp=Z,12nm,1.5s						
CLL				*e*			01 14 54.0
CLL	Collm	81.41	331	*i* P		P	01 14 43.6 +0.2
CLL				pmax	pmax		
	comp=Z,12nm,1.5s						
RAYN	Ar Rayn	82.13	294	eP		P	01 14 47.2 -0.6
	comp=Z,2.5nm,1.1s						
ANMO	Albuquerque	82.67	51⇓	eP		P	01 14 51.6 +1.0
ANMO				pmax	pmax		
	comp=Z,4.0nm,1.7s						
BFO	Black Forest	85.60	332	eP		P	01 15 05.5 +0.5
BFO				pmax	pmax		
	comp=Z,9.0nm,1.4s						
BFO	Black Forest	85.60	332	eP		P	01 15 05.5 +0.5
	comp=Z,9.3nm,1.4s						
TXAR	Lajitas Array	88.17	54	P		P	01 15 17.5 -0.6
	comp=Z,0.3nm,0.6s,baz=299,slow=3.4,SNR=6.0						
SAML	Samuel	142.39	47	*e*PKPdf		PKPdf	01 21 58.9 -1.1
LPAZ	La Paz	144.69	62	PKP		PKPbc	01 22 03.7 +0.2
	comp=Z,0.9nm,0.8s,baz=115,slow=0.8,SNR=3.6						
LCO	Las Campanas	150.03	83	*e*PKPbc		PKPbc	01 22 17.5 -0.3

JMA 17 01:05:19.4±0.1, 39.92N×142.41E, h39km±1km, M3.8, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JTH	Tanohata	0.42	273	P	Pn	01 05 29.0	+0.1
JTH				S	Sn	01 05 35.7	-0.1
MIYJ	Miyakonagasawa	0.57	233	P	Pn	01 05 30.8	-0.3
MIYJ				S	Sn	01 05 38.6	-0.7
JANG	Nango	0.82	304	P	Pn	01 05 34.1	-0.4
JANG				S	Sn	01 05 44.3	-1.2
JKZ	Kuzumaki	0.83	275	P	Pn	01 05 35.1	+0.4
JKZ				eS	Sn	01 05 45.6	-0.2
JOM	Ohasama	0.97	243	P	Pn	01 05 36.7	+0.2
JOM				eS	Sn	01 05 48.6	-0.5
OFUJ	Ofunato	1.02	215	P	Pn	01 05 37.2	+0.1
OFUJ				eS	Sn	01 05 49.9	-0.3
JMK	Ichinoseki	1.34	224	P	Pn	01 05 42.0	+0.5
JMK				eS	Sn	01 05 58.1	+0.1
JTM	Tenmabayashi	1.34	311	P	Pn	01 05 42.4	+0.8
JTM				eS	Sn	01 05 58.6	+0.4
JAH	Hinai	1.39	282	P	Pn	01 05 43.1	+0.9
JRG	Rokugo	1.47	250	P	Pn	01 05 44.5	+1.2
JRG				S	Sn	01 06 04.0	+2.7
MAT	Matsushiro	4.72	226	P	Pn	01 06 31.3	+3.2
MAT				eS	Sn	01 07 27.8	+6.2

NIED ***17*** *01:09:00, 37.70N×142.00E, h14km, Mw3.4 Best double couple: M₀1.62000×10¹⁴ NP1:φ₀172.00000°, δ34.00000°, λ-39.00000°. NP2:φ₀296.00000°, δ69.00000°, λ-117.00000°.*

IDC ***17*** *01:09:43.8±2.4, 37.06N×142.10E, h0km, mb3.7/3, mb1 3.8/4, mb1mx3.4/33, mbtmp3.6/4, ML3.0/1, Error ellipse: s-maj=63.0km s-min=28.6km az=61.0*

JMA ***17*** *01:09:43.4±0.2, 37.67N×141.96E, h28km±3km, M3.5*

ISC 17 01:09:42.5±3.5, 37.68N±0.05×141.98E±0.08, h16km±24km, n16, σ0.94/24, mb3.9/3, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JIO	Ouri	0.92	327	P	Pb	01 10 00.2	+0.1
JIO				S	Sb	01 10 11.4	-0.7
JFK	Kawauchi	0.94	251	P	Pb	01 10 00.1	-0.3
JFK				S	Sb	01 10 11.7	-0.8
JMM	Marumori	0.96	282	P	Pb	01 10 00.6	-0.2
JMM				S	Sb	01 10 12.4	-0.8
ONAJ	Iwakimizuishiy	1.11	239	P	Pb	01 10 02.7	-0.6
ONAJ				S	Sb	01 10 15.7	-1.8
JOU	Okura	1.25	304	P	Pb	01 10 05.7	0.0
JOU				S	Sb	01 10 20.9	-0.6
JFT	Otama	1.32	263	P	Pn	01 10 06.6	-0.3
JFT				eS	Sn	01 10 22.7	-0.8
JMK	Ichinoseki	1.41	335	P	Pn	01 10 07.6	+0.2
JYS	Shirataka	1.61	290	P	Pn	01 10 10.3	0.0
JYS				S	Sb	01 10 32.0	+0.1
JYK	Kaneyama	1.78	315	P	Pn	01 10 13.6	+1.0
JFY	Yanaizu	1.83	262	P	Pn	01 10 14.3	+1.0
JFY				eS	Sn	01 10 36.4	+0.2
JOM	Ohasama	1.87	343	P	Pn	01 10 14.4	+0.5
MJAR	Matsushiro Arr	3.22	251	Pn	Pn	01 10 34.5	+2.0
	1.9nm,0.3s,baz=78,slow=16,SNR=12						
MAT	Matsushiro	3.22	251	P	Pn	01 10 34.2	+1.7
MAT				eS	Sn	01 11 11.8	+1.2
ZALV	Zalesovo Beam	41.82	312	P	P	01 17 38.9	+7.7
	0.5nm,0.5s,baz=91,slow=7.6,SNR=3.4						
WRA	Warramunga Arr	57.76	189	P	P	01 19 32.4	-0.4
	0.7nm,0.6s,baz=6.6,slow=7.2,SNR=4.1						
ASAR	Alice Springs	61.49	188	P	P	01 19 58.2	-0.3
	0.7nm,0.8s,baz=8.7,slow=6.7,SNR=5.3						

IDC ***17*** *01:19:25.7±1.9, 38.42N×118.80W, h0km, mb2.9/1, mb1 3.4/3, mb1mx3.2/47, mbtmp3.0/3, ML3.3/2, Error ellipse: s-maj=20.9km s-min=11.5km az=13.0*

NEIC ***17*** *01:19:26.2, 38.40N×118.74W, h12km, ML3.7(REN), After REN.*

NEIC Felt at Hawthorne.

ISC 17 01:19:25.1±1.2, 38.43N±0.02×118.74W±0.03, h1km±10km, n29, σ1.55/55, California-Nevada border region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
NVAR	Mina Array Bea	0.34	90	Pg	Pg	01 19 32.4	+0.8
	555nm,0.3s,baz=260,slow=19,SNR=71						
NVAR				Lg	Lg	01 19 38.0	
	2µm,0.3s,baz=253,slow=30,SNR=82						
MLAC	Mammoth, Mammo	0.80	186	P	Pg	01 19 41.2	+0.7
	baz=5.5						
MLAC				S	Sb	01 19 52.0	-1.4
	baz=5.5						
CMB	Columbia Colle	1.36	254	*e*Pn	Pn	01 19 50.8	-0.4
CMB				*e*Sn	Sb	01 20 08.4	-0.8
TIN	Tinemaha, Big	1.43	164	S	Sg	01 20 12.7	+1.6
	baz=344						
GRAC	Grapevine Rang	1.80	142	Sg	Sg	01 20 24.3	+1.5
	baz=323						
BMN	Battle Mountai	2.32	30	*e*Pn	Pn	01 20 04.3	-0.2
BMN				*e*Pg	Pb	01 20 09.7	+2.0
BMN				*e*Sg	Sg	01 20 40.3	+0.8
DAC	Darwin (Calif)	2.33	157	*e*Pg	Pg	01 20 09.3	-0.5
DAC				*e*Sg	Sb	01 20 38.4	+0.9
FURC	Furnace Creek,	2.46	142	Sg	Sg	01 20 45.5	+1.4
	baz=323						
TPNV	Topopah Spring	2.46	126	Pb	Pb	01 20 10.8	+0.5
	baz=307						
R11A	Troy Canyon, C	2.48	91	Pb	Pb	01 20 10.9	+0.4
	baz=272						
R11A				Sb	Sg	01 20 44.0	-0.6
	baz=272						
MPMC	Manual Prospec	2.57	157	Pg	Pg	01 20 14.0	-0.3
	baz=337						
MPMC				Sb	Sg	01 20 46.3	-1.3
	baz=337						
SAO	San Andreas Ge	2.72	233	*e*Pg	Pb	01 20 14.4	-0.2
SAO				*e*Sn	Sn	01 20 41.7	-1.8
SAO				*e*Sg	Sb	01 20 48.3	-0.1
ISA	Isabella, Lake	2.77	176	Sb	Sg	01 20 51.7	-2.4
	baz=356						
HOPS	Hopland Field	3.44	281	*e*Pn	Pn	01 20 19.8	+0.1
HOPS				*e*Pg	Pb	01 20 27.5	+0.7
HOPS				*e*Sn	Sn	01 20 59.9	-1.3
ELK	Elko	3.56	48	*e*Pn	Pn	01 20 21.4	-0.2
ELK				*e*Pg	Pb	01 20 32.0	+3.2
ELK				*e*Sn	Sn	01 21 03.5	-0.8
ELK				*e*Sg	Sg	01 21 18.1	-1.1
WDC	Whiskeytown Da	3.64	307	*e*Pn	Pn	01 20 21.9	-0.7
WDC				*e*Pg	Pb	01 20 33.0	+2.7
WDC				*e*Sg	Sb	01 21 19.4	+4.5
MOD	Modoc Plateau	3.67	341	*e*Pn	Pn	01 20 21.7	-1.4
MOD				*e*Pg	Pb	01 20 34.7	+3.4
MOD				*e*Sn	Sn	01 21 05.6	-1.5
MOD				*e*Sg	Sg	01 21 21.6	-1.3
WVOR	Wild Horse Val	4.00	1	*e*Pn	Pn	01 20 27.3	-0.3
WVOR				*e*Pg	Pg	01 20 40.5	-1.2
WVOR				*e*Sg	Sg	01 21 30.8	-2.7
DUG	Dugway, Tooele	4.92	67	*e*Pn	Pn	01 20 39.3	-0.9
DUG				*e*Pg	Pg	01 20 58.5	-0.9
DUG				*e*Sn	Sn	01 21 37.6	-0.3
DUG				*e*Sg	Sg	01 21 59.6	-3.4
HUMO	Hull Mountain	5.27	324	*e*Pn	Pn	01 20 44.7	-0.2
	40nm,1.0s						
MFID	Camas Ranch	5.44	23	*e*Pn	Pn	01 20 47.1	-0.3
	4.3nm,0.6s						
MFID				*e*Pg	Pg	01 21 06.9	-2.4
MFID				*e*Sn	Sn	01 21 50.2	-0.5
MFID				*e*Sg	Sg	01 22 17.3	-2.6
HLID	Hailey	6.08	31	*e*Pn	Pn	01 20 55.8	-0.4
	4.8nm,0.8s						
HLID				*e*Pg	Pg	01 21 17.9	-3.6
HLID				*e*Sg	Sg	01 22 34.6	-5.7
HWUT	Hardware Ranch	6.35	58	*e*Pn	Pn	01 20 59.6	-0.4
	14nm,0.9s						
HWUT				*e*Pg	Pg	01 21 24.5	-2.3
HWUT				*e*Sg	Sg	01 22 46.2	-2.9
WUAZ	Wupatki	6.57	114	*e*Pn	Pn	01 21 02.8	-0.1
	8.7nm,0.8s						
WUAZ				*e*Pg	Pg	01 21 28.3	-2.6
WUAZ				*e*Sg	Sg	01 22 50.4	-5.7
PV04	Paradox Valley	7.72	87	Pn	Pn	01 21 18.2	-0.6
PV04				*e*Lg	Lg	01 23 28.1	
MVCO	Mesa Verde	8.19	95	*e*Pn	Pn	01 21 24.7	-0.6
	14nm,1.4s						
MVCO				*e*Sn	Sn	01 22 56.9	-1.7
MVCO				*e*Lg	Lg	01 23 43.7	
PDAR	Pinedale Array	8.21	55	Pn	Pn	01 21 29.3	+3.8
	0.1nm,0.3s,baz=235,slow=11,SNR=3.1						
PDAR				Lg	Lg	01 23 42.9	
	0.1nm,0.3s,baz=246,slow=26,SNR=3.8						
TXAR	Lajitas Array	15.44	122	Pn	P	01 23 09.8	+1.0
	0.0nm,0.3s,baz=327,slow=13,SNR=3.2						

YKA **Yellowknife Ar** 24.22 5 P P 01 24 45.1 +2.1
0.3nm,0.7s,baz=186,slow=9.7,SNR=7.3

SJA ***17*** *01:24:27.3±1.2,27.˚77S×63.˚41W,h596km±12km,ML5.7, MW5.0*
ISCJB ***17*** *01:24:32.0±0.2,27.˚56S±0.˚02×63.˚23W±0.˚03,h557km±2km, mb5.1/188,Error ellipse: s-maj=4.1km s-min=3.5km az=145.2*
IDC ***17*** *01:24:33.4±0.3,27.˚53S×63.˚23W,h563km±3km,mb4.6/31, mb1 4.7/34,mb1mx4.7/38,mbtmp5.5/34,Error ellipse: s-maj=7.9km s-min=6.0km az=57.0*
NEIC ***17*** *01:24:33.2±0.1,27.˚62S×63.˚19W,mb5.1/126,MD5.6(SJA), Error ellipse: s-maj=4.3km s-min=3.1km az=58.0*
BJI ***17*** *01:24:33.4,27.˚60S×63.˚20W,h565km,mB5.1/23*
GCMT ***17*** *01:24:33.2±0.2,27.˚57S×63.˚14W,h585km±1km,MW5.4/99, Moment Tensor Solution. s99,c149; s15,c15; Duration: 1±3 Moment tensor: Scale 10¹⁷Nm; Mrr-1.53±.04; Mθθ0.44±.06; Mϕϕ 1.09±.07; Mrθ-0.34±.06; Mϕθ-0.77±.05; Mϕr0.84±.06; Best double couple: M₀1.80600×10¹⁷ NP1:ϕs152.00000°,δ60.00000°,λ-84.00000°. NP2: ϕs320.00000°,δ31.00000°,λ-100.00000°. Principal axes: T 1.8320, Plg15.0000°, Azm238.0000°; N -0.0520, Plg5.0000°, Azm329.0000°; P -1.7800, Plg74.0000°, Azm78.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to mantle waves, cutoff=125s.*
MOS ***17*** *01:24:34.3±0.9,27.˚36S×63.˚20W,h574km,mb5.2/41 Error ellipse: s-maj=10.9km s-min=6.4km az=106.9*
GUC ***17*** *01:24:35.4±1.9,27.˚58S×63.˚83W,h578km±77km,MW6.1*
ISC 17 01:24:32.9±0.3,27.˚61S±0.˚03×63.˚34W±0.˚04,h566km±2km, h566km:pP-P,n1282,σ1.23/1429,mb5.1/182,20C-47D, Santiago del Estero Province

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
AHML	**Horco Molle**	**1.96**	**294**	*eP*		**P**		**01 25 43.7**	**-0.3**
AHML				*eS*		**S**		**01 26 39.7**	**-2.0**
CYA	**Choya**	**2.33**	**249**	IAML				01 25 46.0	
	comp=Z,4μm,1.0s								
FSA	**Cafayete**	**2.79**	**302**	IAML				01 25 49.2	
	comp=Z,1μm,0.7s								
AZAP	**Zapla**	**3.71**	**335**	*i* P		**P**		**01 25 54.1**	**-0.2**
ASTB	**Santa Barbara**	**3.79**	**344**	*i* P		**P**		**01 25 55.7**	**+1.0**
ALOL	**LOMAS DE OLMED**	**3.83**	**351**	*eP*		**P**		**01 25 56.5**	**+1.6**
PIL	**Pilar**	**4.07**	**187**	*i* P		**P**		**01 25 55.2**	**-1.1**
VCA	**Vinchina**	**4.44**	**254**	IAML				01 27 16.4	
	comp=Z,4μm,0.8s								
HJA	**Humahuaca**	**4.77**	**336**	*i* P		**P**		**01 26 03.2**	**+0.8**
AGUA	**GUANDACOL**	**4.90**	**246**	*eP*		**P**		**01 26 03.0**	**0.0**
CPUP	**Villa Florida**	**5.51**	**78**	*i* P		**P**		**01 26 08.4**	**+0.4**
CPUP				*i* S		**S**		**01 27 26.2**	**+0.4**
CPUP	**Villa Florida**	**5.51**	**78**	P		**P**		**01 26 08.3**	**+0.3**
	comp=Z,55nm,0.3s,baz=250,slow=8.6,SNR=847								
CPUP				S		**S**		**01 27 24.3**	**-1.5**
	comp=Z,3.7nm,0.3s,baz=271,slow=12,SNR=2.9								
AMOG	**MOGNA**	**5.59**	**232**	*i* P		**P**		**01 26 09.0**	**+0.3**
YJA	**Yavi**	**5.76**	**339**	IAML				01 26 15.2	
	comp=Z,436nm,0.5s								
RTLL	**Cerro Villicun**	**5.81**	**229**	*i* P		**P**		**01 26 10.8**	**+0.2**
SUCO	**SUCO**	**5.87**	**193**	IAML				01 26 11.3	
	comp=Z,292nm,0.5s								
SJA	**San Juan**	**5.99**	**228**	IAML				01 26 13.9	
	comp=Z,969nm,0.5s								
LCO	**Las Campanas**	**6.64**	**256**	IAML				01 27 55.9	
	comp=E,864nm,0.8s								
LCO	**Las Campanas**	**6.64**	**256**	*eP*		**P**		**01 26 18.1**	**-0.3**
LCO				*eS*		**S**		**01 27 43.8**	**-0.9**
PB14	**IPOC Station P**	**7.01**	**294**	ǁ *eP*		**P**		**01 26 22.0**	**0.0**
PB14				*i* S		**S**		**01 27 49.4**	**-1.9**
ARCO	**CERRO ARCO**	**7.11**	**222**	IAML				01 26 24.6	
	comp=Z,735nm,0.3s								
AAGR	**Agrelo**	**7.23**	**220**	*eP*		**P**		**01 26 24.1**	**+0.4**
PB06	**IPOC Station P**	**7.46**	**310**	ǁ *eP*		**P**		**01 26 26.2**	**-0.1**
PB06				*i* S		**S**		**01 27 56.3**	**-2.6**
PB10	**IPOC Station P**	**7.69**	**300**	⇑ *eP*		**P**		**01 26 27.9**	**-0.3**
PB10	**IPOC Station P**	**7.69**	**300**	*eP*		**P**		**01 26 28.3**	**+0.1**
PB04	**IPOC Station P**	**8.11**	**309**	ǁ *eP*		**P**		**01 26 32.5**	**0.0**
PB04				*i* S		**S**		**01 28 08.6**	**-1.8**
PB04	**IPOC Station P**	**8.11**	**309**	*eP*		**P**		**01 26 32.6**	**0.0**
PB07	**IPOC Station P**	**8.35**	**313**	ǁ *eP*		**P**		**01 26 34.9**	**0.0**
PEL	**Peldehue**	**8.40**	**227**	⇑ *iP*		**P**		**01 26 34.8**	**-0.3**
PEL				*i* S		**S**		**01 28 13.9**	**-1.4**
CLCH	**Cerro Calan**	**8.47**	**225**	⇑ *iP*		**P**		**01 26 35.9**	**+0.2**
ROCH	**El Roble**	**8.51**	**229**	⇑ *iP*		**P**		**01 26 35.6**	**-0.7**
ROC1	**El Roble**	**8.52**	**229**	*eP*		**P**		**01 26 35.7**	**-0.7**
PB01	**IPOC Station P**	**8.61**	**318**	ǁ *eP*		**P**		**01 26 37.3**	**-0.1**
PB01	**IPOC Station P**	**8.61**	**318**	*eP*		**P**		**01 26 37.3**	**-0.1**
PB08	**IPOC Station P**	**9.14**	**323**	⇑ *eP*		**P**		**01 26 43.2**	**+0.2**
PATCX	**Puerto Patache**	**9.18**	**316**	ǁ *eP*		**P**		**01 26 43.0**	**0.0**
HMBC	**Humberstone**	**9.44**	**319**	ǁ *eP*		**P**		**01 26 45.4**	**-0.3**
PB11	**IPOC Station P**	**9.72**	**322**	ǁ *eP*		**P**		**01 26 48.5**	**-0.1**
PB11	**IPOC Station P**	**9.72**	**322**	*eP*		**P**		**01 26 48.2**	**-0.4**
PSGC	**Pisagua**	**10.11**	**321**	ǁ *eP*		**P**		**01 26 52.1**	**-0.3**
MNMC	**Minye Minye**	**10.21**	**324**	ǁ *eP*		**P**		**01 26 53.6**	**-0.1**
TRQA	**Tornquist**	**10.48**	**174**	*eP*		**P**		**01 26 54.0**	**-1.8**
TRQA				*eS*		**S**		**01 28 48.3**	**-4.9**
PB13	**IPOC Station P**	**10.84**	**327**	ǁ *eP*		**P**		**01 27 01.1**	**+0.7**
PB12	**IPOC Station P**	**11.02**	**323**	ǁ *eP*		**P**		**01 27 01.5**	**-0.3**
SIV	**San Ignacio**	**11.76**	**11**	P		**P**		**01 27 09.2**	**-0.1**
	comp=Z,32nm,0.3s,baz=211,slow=10,SNR=709								
SIV				S		**S**		**01 29 15.7**	**-2.0**
	baz=144,slow=19,SNR=2.0								
LPAZ	**La Paz**	**12.11**	**338**	P		**P**		**01 27 13.2**	**-0.3**
	comp=Z,59nm,0.3s,baz=131,slow=5.5,SNR=1140								
LPAZ				S		**S**		**01 29 21.2**	**-4.2**
	comp=Z,1.4nm,0.3s,baz=43,slow=19,SNR=8.3								
ARE	**Arequipa**	**13.42**	**324**	*eP*		**P**		**01 27 27.0**	**+0.4**
ARE				*eS*		**S**		**01 29 53.0**	**+3.6**
ARE	**Arequipa**	**13.42**	**324**	*eP*		**P**		**01 27 27.0**	**+0.4**
ARE				*eS*		**S**		**01 29 53.0**	**+3.6**
PLCA	**Paso Flores**	**14.38**	**203**	P		**P**		**01 27 33.9**	**-1.8**
	comp=Z,7.1nm,0.3s,baz=43,slow=11,SNR=303								
PLCA				S		**S**		**01 30 04.1**	**-1.9**
	comp=Z,0.5nm,0.3s,baz=13,slow=19,SNR=1.8								
PLCA				PcP		**PcP**		**01 32 08.2**	**-0.1**
	comp=Z,0.7nm,0.3s,baz=52,slow=1.7,SNR=4.8								
PLCA				ScP		**ScP**		**01 34 50.3**	**+1.2**
	comp=Z,1.0nm,0.3s,baz=44,slow=1.5,SNR=14								
PLCA				PKiKP		**PKiKP**		**01 40 02.7**	**-0.9**
	comp=Z,0.1nm,0.3s,baz=341,slow=3.1,SNR=3.5								
SPB	**Sao Paulo**	**14.90**	**78**	*eP*		**P**		**01 27 40.2**	**-0.9**
BDFB	**Brasilia**	**18.55**	**53**	P		**P**		**01 28 15.3**	**0.0**
	comp=Z,1μm,0.3s,baz=219,slow=0.0,SNR=171								
BDFB				S		**S**		**01 31 12.7**	**-3.3**
	comp=Z,964nm,0.3s,baz=209,slow=0.0,SNR=2.6								
SAML	**Samuel**	**18.57**	**0**	*eP*		**P**		**01 28 15.7**	**+0.3**
SAML				*eS*		**S**		**01 31 14.5**	**-1.7**
SAML				*ePcP*		**PcP**		**01 32 14.1**	**-1.3**
NNA	**Nana**	**20.05**	**318**	P		**P**		**01 28 29.6**	**+0.7**
	comp=Z,17nm,0.9s,baz=171,slow=10,SNR=5.3								
NNA				ScP		**ScP**		**01 35 02.4**	**+1.1**
	comp=Z,9.4nm,0.5s,baz=166,slow=1.6,SNR=3.8								
NNA	**Nana**	**20.05**	**318**	*eP*		**P**		**01 28 28.4**	**-0.5**
NNA	**Nana**	**20.05**	**318**	*eP*		**P**		**01 28 28.4**	**-0.5**
NNA				ScP		**ScP**		**01 35 02.4**	**+1.1**
CHRN	**Cochrane**	**20.90**	**198**	*eP*		**P**		**01 28 35.3**	**-0.8**
	comp=Z,40nm,1.0s								
EFI	**East Falkland**	**24.36**	**172**	ǁ *eP*		**P**		**01 29 03.1**	**-3.7**
EFI				pmax		pmax			
	comp=Z,82nm,1.5s								
ATAH	**Atahualpa**	**24.87**	**322**	P		**P**		**01 29 13.6**	**+1.2**
	comp=Z,12nm,0.8s,baz=159,slow=9.6,SNR=7.3								
ATAH				PcP		**PcP**		**01 32 28.4**	**-0.2**
	comp=Z,18nm,0.8s,baz=86,slow=3.4,SNR=3.6								
ATAH				ScP		**ScP**		**01 35 15.8**	**+1.4**
	comp=Z,16nm,0.8s,baz=167,slow=4.9,SNR=5.3								
PTGA	**Pitinga**	**26.92**	**7**	P		**P**		**01 29 29.7**	**-0.3**
	comp=Z,91nm,0.4s,baz=197,slow=13,SNR=198								
PTGA				S		**S**		**01 33 26.0**	**-2.0**
	comp=Z,20nm,0.7s,baz=2.3,slow=19,SNR=13								
USHA	**Ushuaia**	**27.45**	**186**	P		**P**		**01 29 33.6**	**-0.4**
	comp=Z,70nm,0.5s,baz=352,slow=8.4,SNR=30								
OTAV	**Otavalo**	**31.26**	**330**	*eP*		**P**		**01 30 09.2**	**+1.2**
	comp=Z,42nm,0.6s								
OTAV				*eS*		**S**		**01 34 36.3**	**+0.4**
OTAV				*e*ScP		**ScP**		**01 35 36.8**	**+2.2**
OTAV	**Otavalo**	**31.26**	**330**	*eP*		**P**		**01 30 09.4**	**+1.3**
CMBC	**Cumbal**	**31.62**	**332**	*eP*		**P**		**01 30 13.9**	**+2.8**
CRUC	**La Cruz**	**31.83**	**334**	*eP*		**P**		**01 30 13.9**	**+1.1**
SJAC	**San Juan de Ar**	**32.37**	**340**	*eP*		**P**		**01 30 17.3**	**+0.3**
POPC	**Popayan, Colom**	**32.62**	**335**	*eP*		**P**		**01 30 18.4**	**-0.8**
HOPE	**Hope Point**	**33.10**	**151**	*eP*		**P**		**01 30 21.6**	**-0.9**
	comp=Z,506nm,1.2s								
GRGC	**Isla de Gorgon**	**33.63**	**333**	*eP*		**P**		**01 30 26.9**	**-0.6**
RCBR	**Riachuelo**	**33.90**	**55**	P		**P**		**01 30 30.0**	**+0.1**
	comp=Z,88nm,1.0s,baz=221,slow=9.0,SNR=42								
RCBR				PcP		**PcP**		**01 32 52.3**	**+0.5**
	comp=Z,23nm,0.8s,baz=240,slow=4.4,SNR=3.8								
RCBR	**Riachuelo**	**33.90**	**55**	*eP*		**P**		**01 30 29.8**	**-0.1**
	comp=Z,78nm,0.9s								
RCBR				*e*PcP		**PcP**		**01 32 52.1**	**+0.2**
ROSC	**El Rosal**	**33.96**	**340**	P		**P**		**01 30 31.1**	**+0.3**
	comp=Z,18nm,0.5s,baz=180,slow=6.5,SNR=14								
ROSC				PcP		**PcP**		**01 32 53.2**	**+0.8**
	comp=Z,18nm,0.6s,baz=122,slow=9.7,SNR=4.7								
ROSC				S		**S**		**01 35 15.4**	**-1.3**
	comp=Z,6.8nm,0.6s,baz=126,slow=19,SNR=6.1								
ROSC	**El Rosal**	**33.96**	**340**	*eP*		**P**		**01 30 30.8**	**+0.1**
	comp=Z,19nm,0.7s								
ROSC				PcP		**PcP**		**01 32 53.2**	**+0.8**
ROSC				S		**S**		**01 35 15.4**	**-1.3**
GUYC	**Guyana, Colomb**	**34.66**	**339**	*eP*		**S**		**01 35 24.4**	**-3.0**
GUYC	**Guyana, Colomb**	**34.66**	**339**	*eP*		**P**		**01 30 35.4**	**-1.2**
NORC	**Norcasia**	**34.81**	**340**	*eP*		**S**		**01 35 22.8**	**-6.0**
NORC	**Norcasia**	**34.81**	**340**	*eP*		**P**		**01 30 36.5**	**-0.9**
BARC	**Barichara**	**35.31**	**343**	*eP*		**S**		**01 35 29.2**	**-7.4**
BARC	**Barichara**	**35.31**	**343**	*eP*		**P**		**01 30 38.8**	**-3.0**
HELC	**Santa Helena**	**35.61**	**339**	*eP*		**P**		**01 30 41.6**	**-2.8**
BRRC	**Barranca, Sant**	**35.95**	**342**	*eP*		S		01 35 27.0	-19
SDV	**Santo Domingo**	**36.96**	**348**	P		**P**		**01 30 54.2**	**-1.2**
	comp=Z,21nm,0.3s,baz=187,slow=6.1,SNR=5.1								
SDV				PcP		**PcP**		**01 33 01.5**	**+0.4**
	comp=Z,12nm,0.3s,baz=296,slow=3.0,SNR=3.6								
SDV				S		**S**		**01 35 55.0**	**-6.2**
	comp=Z,12nm,0.4s,baz=26,slow=12,SNR=3.1								
SDV	**Santo Domingo**	**36.96**	**348**	*eP*		**P**		**01 30 54.9**	**-0.5**
SDV				PcP		**PcP**		**01 33 01.5**	**+0.4**
SDV				S		**S**		**01 35 55.0**	**-6.2**
PMSA	**Palmer Station**	**37.17**	**181**	P		**P**		**01 30 57.2**	**+1.1**
	comp=Z,32nm,1.0s,baz=40,slow=11,SNR=5.1								
PMSA	**Palmer Station**	**37.17**	**181**	*eP*		**P**		**01 30 54.6**	**-1.5**
TOSP	**Speyside**	**38.77**	**4**	*eP*		**P**		**01 31 09.9**	**+0.1**
GRGR	**Grenville**	**39.54**	**3**	*eP*		**P**		**01 31 16.3**	**+0.3**
GRGR	**Grenville**	**39.54**	**3**	*eP*		**P**		**01 31 15.8**	**-0.2**
GRGR				*e*S		**S**		**01 36 36.2**	**-2.5**
BCIP	**Isla Barro Col**	**39.90**	**334**	*eP*		**P**		**01 31 19.2**	**+0.3**
	comp=Z,167nm,0.8s								
BCIP				*e*PcP		**PcP**		**01 33 11.6**	**+1.3**
SVB	**Belmont**	**40.69**	**3**	*i* P		**P**		**01 31 25.1**	**-0.1**
SVB	**Belmont**	**40.69**	**3**	*eP*		**P**		**01 31 24.5**	**-0.7**
SVV	**Soufriere Volc**	**40.74**	**3**	*i* P		**P**		**01 31 28.2**	**+2.7**
MCLT	**Moule a Chique**	**41.14**	**4**	*eP*		**P**		**01 31 28.1**	**-0.6**
H05S1	**Guadeloupe/Mar**	**41.86**	**4**	P		**P**		**01 31 33.7**	**-0.7**
	SNR=17								
TRMF	**Trois Ilets**	**41.96**	**3**	*eP*		**P**		**01 31 34.7**	**-0.4**
MVM	**Montagne Vaucl**	**41.98**	**4**	*eP*		**P**		**01 31 34.8**	**-0.6**
ZAM	**Aeronautique**	**41.99**	**3**	*eP*		**P**		**01 31 35.1**	**-0.3**
LPMF	**Morne Lapointe**	**42.00**	**3**	*eP*		**P**		**01 31 35.0**	**-0.5**
FDF	**Fort de France**	**42.15**	**3**	*eP*		**P**		**01 31 36.0**	**-0.6**
FDF	**Fort de France**	**42.15**	**3**	*eP*		**P**		**01 31 36.1**	**-0.6**
FDF	**Fort de France**	**42.15**	**3**	*eP*		**P**		**01 31 36.8**	**+0.1**
FDF	**Fort de France**	**42.15**	**3**	*eP*		**P**		**01 31 36.2**	**-0.5**
FDF				*e*				01 33 17.9	
FDF	**Fort de France**	**42.15**	**3**	*eP*		**P**		**01 31 36.2**	**-0.5**
FDF				*e*PcP		**PcP**		**01 33 17.9**	**+0.1**
PML	**Morne Lenard**	**42.19**	**3**	*eP*		**P**		**01 31 36.7**	**-0.3**
GBMF	**Grand Be**	**42.21**	**3**	*eP*		**P**		**01 31 36.8**	**-0.4**
PCM	**Pelee Case Pet**	**42.23**	**3**	*eP*		**P**		**01 31 36.7**	**-0.6**
PCM	**Pelee Case Pet**	**42.23**	**3**	*eP*		**P**		**01 31 36.8**	**-0.4**
BAMF	**Morne Balai**	**42.23**	**3**	*eP*		**P**		**01 31 36.7**	**-0.6**
HDC	**Heredia**	**42.47**	**329**	*eP*		**P**		**01 31 40.7**	**+1.4**
BBL	**Barber's Block**	**42.92**	**3**	*eP*		**P**		**01 31 41.7**	**-1.0**
JTS	**JuntasAbangare**	**43.11**	**328**	P		**P**		**01 31 46.0**	**+1.8**
	comp=Z,56nm,0.8s,baz=208,slow=1.5,SNR=41								
JTS				PcP		**PcP**		**01 33 21.7**	**+0.6**
	comp=Z,14nm,0.9s,baz=117,slow=3.4,SNR=3.8								
JTS				ScP		**ScP**		**01 36 19.2**	**+0.5**
	comp=Z,6.0nm,0.6s,baz=214,slow=3.6,SNR=4.2								
JTS	**JuntasAbangare**	**43.11**	**328**	*eP*		**P**		**01 31 45.7**	**+1.5**
JTS				*e*				01 33 21.3	
JTS				pmax		pmax			
	comp=Z,78nm,0.9s								
JTS	**JuntasAbangare**	**43.11**	**328**	*eP*		**P**		**01 31 45.7**	**+1.5**
	comp=Z,78nm,0.9s								
JTS				*e*PcP		**PcP**		**01 33 21.3**	**+0.2**
JTS				ScP		**ScP**		**01 36 19.2**	**+0.5**
MGG	**Marie-Galante**	**43.32**	**3**	*eP*		**P**		**01 31 45.7**	**0.0**
MGG	**Marie-Galante**	**43.32**	**3**	*eP*		**P**		**01 31 45.9**	**+0.2**
GDHS	**Morne Mazeau,**	**43.65**	**2**	*eP*		**P**		**01 31 47.9**	**-0.5**
TRIS	**Tristan da Cun**	**43.68**	**116**	*eP*		**P**		**01 31 47.3**	**-1.1**
DEG	**La Desirade**	**43.72**	**3**	*eP*		**P**		**01 31 47.9**	**-1.1**
H05N1	**Guadeloupe/Mar**	**43.72**	**3**	P		**P**		**01 31 47.9**	**-1.0**
	SNR=14								
ANWB				*e*PcP		**PcP**		**01 33 28.0**	**+0.4**
CDVI	**St. Croix**	**45.12**	**358**	*eP*		**P**		**01 31 57.2**	**-2.3**
MGAN	**Managua**	**45.34**	**328**	*eP*		**P**		**01 32 00.6**	**-0.8**
	comp=Z,0.2nm,0.5s								
SMRT	**St. Maarten**	**45.39**	**0**	*eP*		**P**		**01 32 00.9**	**-0.8**
	comp=Z,42nm,0.8s								
CELP	**Cerrillos**	**45.52**	**356**	*eP*		**P**		**01 32 01.4**	**-1.3**
SJG	**San Juan**	**45.53**	**356**	P		**P**		**01 32 01.2**	**-1.6**
	comp=Z,22nm,0.7s,baz=126,slow=3.2,SNR=9.5								
SJG				S		**S**		**01 37 59.4**	**-4.7**
	comp=Z,15nm,0.7s,baz=56,slow=12,SNR=16								
SJG	**San Juan**	**45.53**	**356**	*eP*		**P**		**01 32 01.5**	**-1.2**
SJG				S		**S**		**01 37 59.4**	**-4.7**
SJG				pmax		pmax			
	comp=Z,26nm,0.8s								
SJG	**San Juan**	**45.53**	**356**	*eP*		**P**		**01 32 01.5**	**-1.2**
	comp=Z,26nm,0.8s								
SJG				S		**S**		**01 37 59.4**	**-4.7**
HUMP	**Col San Antoni**	**45.55**	**357**	*eP*		**P**		**01 32 01.1**	**-1.8**
	comp=Z,26nm,0.8s								
CBYP	**Canovanas**	**45.68**	**357**	*eP*		**P**		**01 32 02.1**	**-1.9**
	comp=Z,48nm,0.9s								
MPR	**Mayaguez**	**45.70**	**355**	*eP*		**P**		**01 32 02.8**	**-1.2**
STVI	**Saint Thomas**	**45.72**	**358**	*eP*		**P**		**01 32 02.6**	**-1.6**
	comp=Z,50nm,1.0s								
LRS	**Lares**	**45.76**	**355**	*eP*		**P**		**01 32 03.1**	**-1.5**
ABVI	**Anegada Island**	**46.08**	**359**	*eP*		**P**		**01 32 05.9**	**-0.9**
PAPH	**Port-au-Prince**	**46.68**	**348**	*eP*		**P**		**01 32 11.1**	**-0.3**
SDDR	**Presa de Saban**	**46.95**	**350**	*eP*		**P**		**01 32 13.0**	**-0.6**
SDDR				*e*PcP		**PcP**		**01 33 35.1**	**+0.6**
TGUH	**Tegucigalpa,Un**	**47.48**	**328**	*eP*		**P**		**01 32 17.3**	**-0.2**
MTDJ	**Mount Denham**	**47.60**	**342**	*eP*		**P**		**01 32 18.0**	**-0.4**
GTBY	**Guantanamo Bay**	**48.61**	**345**	*eP*		**P**		**01 32 25.6**	**-0.3**
GRTK	**Grand Turk**	**49.41**	**350**	*eP*		**P**		**01 32 31.5**	**-0.2**
ASCN	**Ascension**	**50.20**	**77**	*eP*		**P**		**01 32 37.2**	**-0.6**
	comp=Z,199nm,0.9s								
CCIG	**Comitan**	**51.80**	**324**	*eP*		**P**		**01 32 49.3**	**-0.1**
VNA3	**Neumayer Olymp**	**52.68**	**161**	P		**P**		**01 32 55.6**	**+0.8**
VNA1	**Neumayer--Stat**	**52.84**	**160**	P		**P**		**01 32 57.0**	**+1.2**
VNA2	**Neumayer--Watz**	**53.22**	**160**	P		**P**		**01 32 58.7**	**+0.1**
	baz=289,slow=7.7								
TEIG	**Tepich**	**53.33**	**330**	P		**P**		**01 33 00.1**	**+0.1**
	comp=Z,56nm,0.6s,baz=89,slow=24,SNR=101								
TEIG				ScP		**ScP**		**01 37 03.1**	**+1.1**
	comp=Z,4.5nm,0.5s,baz=270,slow=20,SNR=5.2								
TEIG	**Tepich**	**53.33**	**330**	*eP*		**P**		**01 32 59.7**	**-0.3**
	comp=Z,63nm,0.6s								
TEIG				*e*PcP		**PcP**		**01 33 59.2**	**+0.9**
TEIG				ScP		**ScP**		**01 37 03.1**	**+1.1**
CMIG	**Matias Romero**	**53.94**	**322**	P		**P**		**01 33 04.5**	**+0.1**
	comp=Z,25nm,0.8s,baz=111,slow=5.4,SNR=40								
CMIG				PcP		**PcP**		**01 34 01.6**	**+0.9**
	comp=Z,16nm,0.9s,baz=184,slow=4.6,SNR=6.0								
CMIG				S		**S**		**01 39 56.5**	**-1.6**
	comp=Z,1.9nm,0.9s,baz=148,slow=9.5,SNR=2.2								
SNAA	**Sanae**	**54.86**	**160**	P		**P**		**01 33 10.6**	**+0.5**
SNAA	**Sanae**	**54.86**	**160**	*eP*		**P**		**01 33 09.9**	**-0.3**
SNAA				*e*				01 34 04.0	
SNAA	**Sanae**	**54.86**	**160**	*eP*		**P**		**01 33 09.9**	**-0.3**
	comp=Z,8μm,1.4s								
SNAA				*e*PcP		**PcP**		**01 34 04.0**	**+0.5**
TLIG	**Tlapa**	**56.41**	**319**	*eP*		**P**		**01 33 22.3**	**+0.6**
	comp=Z,54nm,0.9s								
DWPF	**Disney Wildern**	**58.06**	**341**	*eP*		**P**		**01 33 33.2**	**+0.6**
	comp=Z,293nm,0.8s								
UNM	**Universidad Na**	**58.16**	**319**	*eP*		**P**		**01 33 32.9**	**-0.8**
UNM	**Universidad Na**	**58.16**	**319**	*eP*		**P**		**01 33 32.9**	**-0.8**
NVL	**N'lazarevskaya**	**59.32**	**158**	*eP*		**P**		**01 33 40.0**	**-0.5**
MOIG	**Morelia**	**59.61**	**318**	*eP*		**P**		**01 33 44.7**	**+1.3**
BBSR	**BB Station**	**59.67**	**359**	*eP*		**P**		**01 33 43.6**	**+0.4**
	comp=Z,47nm,0.8s								
TIGA	**Tifton**	**61.82**	**340**	P		**P**		**01 33 57.8**	**+0.4**
	baz=160								
BBTS	**Babate**	**61.84**	**53**	P		**P**		**01 33 58.3**	**+0.4**
	comp=Z,103nm,1.0s,baz=245,slow=2.3,SNR=16								
NHSC	**New Hope**	**62.47**	**344**	*eP*		**P**		**01 34 02.0**	**+0.4**
	comp=Z,303nm,1.0s								
QSPA	**South Pole Qui**	**62.61**	**180**	*eP*		**P**		**01 34 03.0**	**+0.7**
	comp=Z,260nm,1.0s								
QSPA				*e*PcP		**PcP**		**01 34 35.2**	**+0.4**
BRAL	**Brewton**	**62.68**	**337**	*eP*		**P**		**01 34 03.5**	**+0.6**
448A	**Bay Minette**	**62.75**	**336**	P		**P**		**01 34 03.8**	**+0.4**
	baz=156,SNR=6.2								
ZAIG	**Zacatecas**	**62.80**	**319**	*eP*		**P**		**01 34 05.5**	**+1.2**
	comp=Z,51nm,1.0s								
ZAIG				*e*pP		pP		01 36 05.5	+8.9
447A	**Lucedale**	**62.91**	**336**	P		**P**		**01 34 05.1**	**+0.6**
	baz=155,SNR=7.1								
446A	**Poplarville**	**63.17**	**335**	P		**P**		**01 34 07.1**	**+0.9**
	baz=154,SNR=7.2								
348A	**Jackson**	**63.20**	**337**	P		**P**		**01 34 06.9**	**+0.6**
	baz=156,SNR=10								
035Z	**Hargill**	**63.30**	**325**	P		**P**		**01 34 08.3**	**+1.2**
	baz=146								
347A	**Saraland**	**63.42**	**336**	P		**P**		**01 34 08.2**	**+0.5**
	baz=155,SNR=16								
445A	**Amite**	**63.49**	**334**	P		**P**		**01 34 09.4**	**+1.2**
	baz=153								
GOGA	**Godfrey**	**63.63**	**341**	*eP*		**P**		**01 34 09.2**	**+0.2**
GOGA				*e*				01 34 38.9	
GOGA				pmax		pmax			
	comp=Z,61nm,1.1s								
GOGA	**Godfrey**	**63.63**	**341**	*eP*		**P**		**01 34 09.2**	**+0.2**
	comp=Z,61nm,1.1s								
GOGA				*e*PcP		**PcP**		**01 34 38.9**	**-0.4**
444A	**Pine Grove**	**63.63**	**334**	P		**P**		**01 34 10.4**	**+1.3**
	baz=153

TKL **Tuckaleechee C** 65.82 342 P **P** 01 34 22.9 +0.1
comp=Z,76nm,0.8s,baz=161,slow=7.6,SNR=80
TKL pP **pP** 01 36 16.0 -0.6
comp=Z,15nm,1.1s,baz=149,slow=7.9,SNR=3.0
CPCT **Cooper Cave** 65.84 341 *e*P **P** 01 34 23.2 +0.3
634A **China Grove, S** 65.84 327 P **P** 01 34 24.0 +0.9
baz=146,SNR=9.2
KIC **Kosan Boka** 65.87 68 *e*P **P** 01 34 23.6 0.0
comp=Z,388nm,1.0s
DBIC **Dimbokro** 65.95 68 P **P** 01 34 24.1 0.0
comp=Z,138nm,1.0s,baz=184,slow=3.5,SNR=134
DBIC pP **pP** 01 36 16.9 -1.0
comp=Z,20nm,1.1s,baz=185,slow=7.0,SNR=4.3
Y45A **Yeager Farm, C** 66.00 336 P **P** 01 34 24.6 +0.7
baz=155
535A **Dale** 66.00 328 P **P** 01 34 25.0 +1.0
baz=147,SNR=7.5
437A **Phantom Ranch,** 66.01 329 P **P** 01 34 25.8 +1.7
baz=148
240A **Hunter Patters** 66.02 332 P **P** 01 34 25.8 +1.7
baz=150,SNR=18
SWET **Sewanee** 66.04 340 *e*P **P** 01 34 24.5 +0.3
comp=Z,36nm,0.6s
338A **Crockett** 66.09 330 P **P** 01 34 26.5 +1.9
baz=149,SNR=31
NATX **Nacogdoches** 66.16 331 P **P** 01 34 26.6 +1.6
baz=150,SNR=26
NATX **Nacogdoches** 66.16 331 *e*P **P** 01 34 26.6 +1.6
comp=Z,312nm,0.9s
141A **Papa Simpson,** 66.16 333 P **P** 01 34 26.5 +1.5
baz=151,SNR=8.5
436A **Wall Ranch, Ga** 66.26 329 P **P** 01 34 27.3 +1.7
baz=148,SNR=12
239A **Gary** 66.30 331 P **P** 01 34 27.5 +1.6
baz=150,SNR=8.6
633A **Saathoff Ranch** 66.31 326 P **P** 01 34 27.4 +1.4
baz=145,SNR=22
337A **Centerville** 66.31 330 P **P** 01 34 28.0 +2.1
baz=149,SNR=22
Y44A **Strider, Charl** 66.33 336 P **P** 01 34 26.5 +0.5
baz=154
VWCC **Virginia Weste** 66.38 346 *e*P **P** 01 34 27.5 +1.2
534A **Blanco** 66.44 327 P **P** 01 34 27.2 +0.4
baz=146,SNR=33
BLA **Blacksburg** 66.45 345 *e*P **P** 01 34 28.0 +1.2
BLA pmax pmax
comp=Z,44nm,0.6s
BLA **Blacksburg** 66.45 345 *e*P **P** 01 34 28.0 +1.2
comp=Z,44nm,0.6s
140A **Cam and Jess,** 66.46 332 P **P** 01 34 28.4 +1.5
baz=151,SNR=23
PLAL **Pickwick Lake** 66.51 338 *e*P **P** 01 34 27.1 +0.1
OXF **Oxford** 66.53 337 *e*P **P** 01 34 27.1 -0.1
OXF pmax pmax
comp=Z,212nm,1.1s
OXF **Oxford** 66.53 337 *e*P **P** 01 34 27.1 -0.1
comp=Z,212nm,1.1s
Y43A **Makayla and Ka** 66.55 335 P **P** 01 34 28.4 +1.1
baz=153
238A **Jacksonville** 66.56 331 P **P** 01 34 29.4 +1.9
baz=149
TZTN **Tazewell** 66.59 342 *e*P **P** 01 34 27.8 +0.2
comp=Z,39nm,0.6s
435B **Jarrell** 66.64 328 P **P** 01 34 29.5 +1.5
baz=147,SNR=22
533A **Kerrville** 66.74 327 P **P** 01 34 29.6 +0.9
baz=146,SNR=43
CBN **Corbin Frederi** 66.78 348 *e*P **P** 01 34 30.0 +1.3
comp=Z,122nm,0.9s
Y42A **Garnett, Star** 66.80 334 P **P** 01 34 29.9 +1.0
baz=153,SNR=13
336A **Riesel** 66.81 329 P **P** 01 34 30.3 +1.3
baz=148,SNR=27
139A **Bunkhouse Ranc** 66.84 332 P **P** 01 34 30.5 +1.4
baz=150,SNR=5.9
237A **Washetta, Mont** 66.86 330 P **P** 01 34 30.8 +1.4
baz=149,SNR=20
CCAR **Cane Creek** 66.87 334 *e*P **P** 01 34 30.8 +1.5
Z40A **Long Farm, Mag** 66.93 333 P **P** 01 34 31.5 +1.8
baz=151,SNR=48
335A **Moody** 66.98 329 P **P** 01 34 31.4 +1.3
baz=147,SNR=80
434A **Burnet** 66.99 328 P **P** 01 34 31.1 +0.9
baz=146,SNR=82
138A **Matatall Enter** 67.11 331 P **P** 01 34 32.5 +1.6
baz=150,SNR=22
236A **Katherine and** 67.18 330 P **P** 01 34 32.5 +1.2
baz=148,SNR=19
WLAR **White Oak Lake** 67.19 333 *e*P **P** 01 34 32.7 +1.4
Z39A **Irene McRaven,** 67.24 332 P **P** 01 34 33.5 +1.9
baz=150,SNR=15
MET **Memphis--Engin** 67.27 337 *e*P **P** 01 34 32.5 +0.8
433A **Art** 67.33 327 P **P** 01 34 33.2 +0.9
baz=146,SNR=226
137A **Heron Place, G** 67.35 331 P **P** 01 34 33.9 +1.6
baz=149,SNR=33
334A **Lometa** 67.41 328 P **P** 01 34 33.6 +0.9
baz=147,SNR=108
JCT **Junction City** 67.45 326 P **P** 01 34 34.0 +1.0
baz=145,SNR=29
JCT **Junction City** 67.45 326 *e*P **P** 01 34 34.1 +1.0
JCT pmax pmax
comp=Z,115nm,0.7s
JCT **Junction City** 67.45 326 *e*P **P** 01 34 34.1 +1.0
comp=Z,115nm,0.7s
WVT **Waverly** 67.47 339 *e*P **P** 01 34 32.6 -0.4
WVT **Waverly** 67.47 339 *e*P **P** 01 34 32.6 -0.4
Y40A **Okolona** 67.54 333 P **P** 01 34 34.5 +1.1
baz=151,SNR=45
Z38A **Mt. Pleasant** 67.58 332 P **P** 01 34 35.3 +1.6
baz=150,SNR=8.9
136A **Ennis** 67.58 330 P **P** 01 34 34.9 +1.2
baz=148,SNR=24
WHTX **Lake Whitney,** 67.59 329 P **P** 01 34 34.7 +0.9
baz=147,SNR=25
WHTX **Lake Whitney,** 67.59 329 *e*P **P** 01 34 34.5 +0.7
comp=Z,62nm,0.7s
333A **Richland Sprin** 67.75 327 P **P** 01 34 35.6 +0.8
baz=146,SNR=46
HALT **Halls** 67.78 337 *e*P **P** 01 34 35.4 +0.6
X40A **Basin Creek Fa** 67.78 334 P **P** 01 34 35.6 +0.7
baz=152,SNR=12
HPIG 67.79 320 *e*P **P** 01 34 36.4 +1.0
Y39A **Lockesburg** 67.80 333 P **P** 01 34 36.0 +1.0
baz=151,SNR=60
Z37A **Pogue Cattle C** 67.81 331 P **P** 01 34 36.5 +1.4
baz=149,SNR=5.1
UALR **University of** 67.85 334 *e*P **P** 01 34 35.7 +0.4
SDMD **Soldier's Deli** 67.86 349 *e*P **P** 01 34 37.0 +1.8
HBAR **Harrisburg** 67.92 336 *e*P **P** 01 34 36.2 +0.6
234A **Clairette** 67.92 328 P **P** 01 34 36.7 +0.8
baz=147,SNR=77
CWPT **Cottonwood Poi** 67.96 337 *e*P **P** 01 34 37.1 +1.2
SLBS **Sierra La Lagu** 67.99 314 *e*P **P** 01 34 38.2 +1.7
comp=Z,22nm,0.8s
SLBS *e*pP pP 01 36 40.2 +8.9
135A **Vickery Place,** 68.05 329 P **P** 01 34 37.5 +0.9
baz=146,SNR=26
Y38A **Idabel** 68.06 332 P **P** 01 34 37.4 +0.8
baz=150,SNR=15
GNAR **Gosnell** 68.06 337 *e*P **P** 01 34 37.7 +1.1
GLAT **Glass** 68.08 338 *e*P **P** 01 34 37.5 +0.8
MIAR **Mount Ida** 68.12 333 P **P** 01 34 37.5 +0.5
baz=151,SNR=36
MIAR **Mount Ida** 68.12 333 *e*P **P** 01 34 37.7 +0.7
MIAR **Mount Ida** 68.12 333 *e*P **P** 01 34 37.7 +0.7
W41A **Tony Mavity, V** 68.16 335 P **P** 01 34 37.7 +0.5
baz=152,SNR=32
W41B **Gary Mavity, V** 68.16 335 P **P** 01 34 37.8 +0.6
baz=152,SNR=32
Z36A **Blue Ridge** 68.22 330 P **P** 01 34 38.4 +0.8
baz=149,SNR=56
X301 **Greenbrier Sit** 68.28 335 *e*P **P** 01 34 38.4 +0.6
WHAR **Wooly Hollow** 68.28 335 *e*P **P** 01 34 38.4 +0.5
233A **Rising Star** 68.29 328 P **P** 01 34 38.8 +0.8
baz=146,SNR=42
X39A **Fountain Ranch** 68.31 333 P **P** 01 34 39.4 +1.2
baz=151,SNR=83
X201 **Greenbrier Sit** 68.31 335 *e*P **P** 01 34 38.7 +0.6
PVMO **Portageville** 68.35 337 *e*P **P** 01 34 39.1 +0.8
134A **White-Moore Ra** 68.37 329 P **P** 01 34 39.3 +0.7
baz=147,SNR=39
Y37A **Hugo** 68.47 332 P **P** 01 34 40.6 +1.5
baz=149,SNR=45
W40A **Ferguson Farm,** 68.49 334 P **P** 01 34 40.5 +1.3
baz=152,SNR=48
TX31 **Lajitas Ar. Si** 68.53 323 *e*P **P** 01 34 40.6 +0.9

TXAR **Lajitas Array** 68.53 323 P **P** 01 34 40.3 +0.6
comp=Z,21nm,0.7s,baz=152,slow=8.2,SNR=283
TXAR PP **PP** 01 37 19.7 -1.7
comp=Z,3.1nm,0.7s,baz=142,slow=9.0,SNR=3.8
TXAR S **S** 01 42 58.7 +0.9
comp=Z,0.6nm,0.9s,baz=116,slow=18,SNR=3.5
TXAR PKPPKP **P'P'df** 02 02 47.0 +0.6
comp=Z,2.1nm,1.1s,baz=294,slow=4.0,SNR=10
PARMO **Parma** 68.60 337 *e*P **P** 01 34 40.3 +0.5
Z35A **Perchaven, San** 68.63 330 P **P** 01 34 41.3 +1.3
baz=148,SNR=31
MCWV **Mont Chateau** 68.67 346 *e*P **P** 01 34 40.0 -0.2
Y36A **Durant** 68.69 331 P **P** 01 34 41.5 +1.1
baz=149,SNR=8.4
X38A **Whitesboro** 68.74 332 P **P** 01 34 41.9 +1.2
baz=150,SNR=38
W39A **Magazine** 68.78 334 P **P** 01 34 42.2 +1.3
baz=151,SNR=66
LUPA **Lehigh Univers** 68.78 350 *e*P **P** 01 34 42.5 +1.7
133A **Hamilton Ranch** 68.78 328 P **P** 01 34 41.9 +0.8
baz=146,SNR=70
X37A **Clayton** 68.89 332 P **P** 01 34 42.7 +1.0
baz=150,SNR=25
WCI **Wyandotte Cave** 68.94 341 *e*P **P** 01 34 41.5 -0.3
WCI pmax pmax
comp=Z,498nm,0.9s
WCI **Wyandotte Cave** 68.94 341 *e*P **P** 01 34 41.5 -0.3
comp=Z,498nm,0.9s
V40A **Wills Springs** 68.94 335 P **P** 01 34 42.5 +0.6
baz=152,SNR=97
W38A **Poteau** 68.96 333 P **P** 01 34 43.5 +1.5
baz=150,SNR=76
Z34A **Collier Ranch,** 68.96 329 P **P** 01 34 42.8 +0.7
baz=147,SNR=43
SYO **Syowa Base** 68.99 158⇑ *i*P **P** 01 34 41.1 -0.6
SYO **Syowa Base** 68.99 158⇑ *e*PcP **PcP** 01 35 01.0 -0.3
SYO **Syowa Base** 68.99 158⇑ *e*pP pP 01 36 36.0 -0.8
O56A **Blue Knob Stat** 69.00 348 P **P** 01 34 43.6 +1.4
baz=166,SNR=15
Y35A **Marietta** 69.02 330 P **P** 01 34 43.5 +1.1
baz=148,SNR=13
USIN **University of** 69.11 340 *e*P **P** 01 34 42.5 -0.3
ABTX **Abilene, Hawle** 69.14 328 P **P** 01 34 44.0 +0.8
baz=146,SNR=26
ABTX **Abilene, Hawle** 69.14 328 *e*P **P** 01 34 44.0 +0.8
comp=Z,127nm,1.0s
ODNJ **Ogdensburg** 69.14 351 *e*P **P** 01 34 44.3 +1.4
comp=Z,42nm,0.9s
N59A **State Game Lan** 69.15 350 P **P** 01 34 44.6 +1.6
baz=168,SNR=11
SSPA **Standing Stone** 69.23 348 *e*P **P** 01 34 44.8 +1.3
Z33A **Whitaker Ranch** 69.28 329 P **P** 01 34 45.1 +1.1
baz=147,SNR=88
V39A **Pettigrew** 69.28 334 P **P** 01 34 44.8 +0.8
baz=151,SNR=167
X36A **Centrahoma** 69.29 331 P **P** 01 34 44.5 +0.5
baz=149,SNR=71
SIUC **Southern Illin** 69.37 338 *e*P **P** 01 34 44.1 -0.3
Y34A **Reagan Ranch,** 69.38 330 P **P** 01 34 45.4 +0.8
baz=148,SNR=25
W37B **Quinton** 69.39 332 P **P** 01 34 45.6 +1.0
baz=150,SNR=64
X35A **Drake** 69.41 331 P **P** 01 34 45.2 +0.5
baz=148,SNR=42
U40A **Yellville** 69.44 335 P **P** 01 34 45.4 +0.5
baz=152
V38A **Canehill** 69.61 333 P **P** 01 34 46.5 +0.6
baz=151,SNR=31
U39A **Green Forest** 69.70 334 P **P** 01 34 46.9 +0.4
baz=152
W36A **Wetumka** 69.72 332 P **P** 01 34 47.0 +0.4
baz=149,SNR=73
KSPA **Keystone Colle** 69.78 350 *e*P **P** 01 34 48.2 +1.5
HHAR **Hobbs** 69.79 334 *e*P **P** 01 34 47.5 +0.5
Y33A **Hilltop Ranch,** 69.82 329 P **P** 01 34 47.9 +0.7
baz=147,SNR=20
BLO **Bloomington** 69.88 341 *e*P **P** 01 34 47.4 0.0
BLO **Bloomington** 69.88 341 *e*P **P** 01 34 47.4 0.0
V37A **Hulbert** 69.92 333 P **P** 01 34 48.5 +0.8
baz=150,SNR=87
ACSO **Alum Creek Sta** 69.93 344 *e*P **P** 01 34 47.9 +0.2
comp=Z,126nm,0.8s
ACSO *e*pP **pP** 01 36 43.0 -0.4
OLIL **Olney** 69.94 340 *e*P **P** 01 34 47.2 -0.6
N54A **Moraine State** 69.95 347 P **P** 01 34 49.2 +1.4
baz=164,SNR=37
X34A **Smith Ranch, M** 69.96 330 P **P** 01 34 48.9 +0.9
baz=148,SNR=38
W35A **Tecumseh** 70.01 331 P **P** 01 34 48.5 +0.2
baz=149,SNR=14
T40A **Mansfield** 70.01 336 P **P** 01 34 48.7 +0.4
baz=153
U38A **Gravette** 70.10 334 P **P** 01 34 49.4 +0.6
baz=151
V36A **Jenks** 70.16 332 P **P** 01 34 50.0 +0.9
baz=149,SNR=62
TUL1 **Leonard** 70.20 332 P **P** 01 34 50.1 +0.7
baz=150
TUL1 **Leonard** 70.20 332 *e*P **P** 01 34 50.1 +0.7
comp=Z,93nm,0.7s
X33A **Lawton** 70.21 330 P **P** 01 34 49.6 +0.1
baz=147,SNR=26
T39A **Clever** 70.22 335 P **P** 01 34 49.9 +0.4
baz=152
U37A **Salina** 70.36 333 P **P** 01 34 51.0 +0.7
baz=150
S40A **Lebanon** 70.41 336 P **P** 01 34 51.3 +0.7
baz=153,SNR=61
M54A **Oil Creek Stat** 70.42 347 P **P** 01 34 51.5 +0.9
baz=165,SNR=18
BINY **Binghamton** 70.44 350 *e*P **P** 01 34 52.0 +1.3
comp=Z,119nm,0.9s
X32A **Elmer** 70.46 329 P **P** 01 34 51.8 +0.9
baz=146
W34A **Bridge Creek,** 70.47 331 P **P** 01 34 52.0 +0.9
baz=148,SNR=21
W34A **Bridge Creek,** 70.47 331 *e*P **P** 01 34 51.9 +0.9
comp=Z,101nm,0.7s
WMOK **Wichita Mounta** 70.50 330 *e*P **P** 01 34 51.3 +0.1
WMOK pmax pmax
comp=Z,54nm,1.0s
WMOK **Wichita Mounta** 70.50 330 *e*P **P** 01 34 51.3 +0.1
comp=Z,54nm,1.0s
V35A **Meyer Ranch, C** 70.51 332 P **P** 01 34 51.8 +0.5
baz=149,SNR=22
SLM **Saint Louis** 70.54 338 *e*P **P** 01 34 51.1 -0.2
SLM **Saint Louis** 70.54 338 *e*P **P** 01 34 51.1 -0.2
T38A **Diamond** 70.58 334 P **P** 01 34 52.5 +0.9
baz=151
U36A **Oologah** 70.60 333 P **P** 01 34 52.2 +0.5
baz=150
ALLY **Alegheny Colle** 70.65 347 *e*P **P** 01 34 52.9 +1.0
W33A **Caddo, Fort Co** 70.70 330 P **P** 01 34 53.8 +1.4
baz=147,SNR=87
SBA **Scott Base** 70.73 190 *e*P **P** 01 34 54.0 +2.1
SBA pmax pmax
comp=Z,17nm,1.1s
SBA **Scott Base** 70.73 190 *e*P **P** 01 34 54.0 +2.1
comp=Z,17nm,1.1s
S39A **Bolivar** 70.79 335 P **P** 01 34 53.6 +0.8
baz=152,SNR=124
V34A **Guthrie** 70.86 331 P **P** 01 34 53.9 +0.6
baz=148,SNR=19
V34A **Guthrie** 70.86 331 *e*P **P** 01 34 54.0 +0.6
comp=Z,139nm,1.1s
T37A **Cheneyville 18** 70.90 334 P **P** 01 34 54.0 +0.5
baz=150
S38A **Stockton** 70.96 335 P **P** 01 34 54.3 +0.5
baz=152,SNR=95
U35A **Pawnee** 70.99 332 P **P** 01 34 54.7 +0.7
baz=149
W32A **Sentinel** 71.03 329 P **P** 01 34 55.2 +0.9
baz=147,SNR=47
ERPA **Erie** 71.07 347 *e*P **P** 01 34 55.4 +1.0
SFIN **Lafayette** 71.16 341 P **P** 01 34 54.6 -0.3
baz=158,SNR=19
SFIN **Lafayette** 71.16 341 *e*P **P** 01 34 54.4 -0.6
V33A **Lossen Ranch,** 71.19 331 P **P** 01 34 56.3 +1.1
baz=148,SNR=29
SUR **Sutherland** 71.20 117 P **P** 01 34 56.4 +0.6
comp=Z,3.4nm,0.8s,baz=233,slow=6.6,SNR=42
SUR **Sutherland** 71.20 117 *e*P **P** 01 34 57.1 +1.3
T36A **Boggs Farm, Ca** 71.23 333 P **P** 01 34 56.2 +0.7
baz=150
R39A **Chumby, Stover** 71.23 336 P **P** 01 34 55.7 +0.2
baz=152,SNR=36
MMNY **Mt. Morris Dam** 71.27 349 *e*P **P** 01 34 56.6 +1.1

ACCN **Adirondack Com** 71.28 352 *e*P **P** 01 34 57.3 +1.7
comp=Z,19nm,0.8s
MNTX **Cornudas Mount** 71.30 323 P **P** 01 34 55.9 -0.1
baz=141,SNR=69
MNTX **Cornudas Mount** 71.30 323 *e*P **P** 01 34 55.8 -0.2
comp=Z,42nm,0.8s
T35A **Sooner Cattle** 71.36 332 P **P** 01 34 57.4 +1.2
baz=149
U34A **Anderson Ranch** 71.38 331 P **P** 01 34 57.5 +1.1
baz=148
U34A **Anderson Ranch** 71.38 331 *e*P **P** 01 34 57.3 +1.0
comp=Z,266nm,0.9s
S37A **Fort Scott** 71.42 334 P **P** 01 34 57.1 +0.5
baz=151,SNR=41
V32A **Arapaho** 71.44 330 P **P** 01 34 57.9 +1.2
baz=147
R38A **Fenwick Farm,** 71.44 335 P **P** 01 34 57.0 +0.4
baz=152,SNR=50
Q40A **Laux Farm, Aux** 71.49 337 P **P** 01 34 57.1 +0.2
baz=153,SNR=36
U33A **Lingo Farm, Me** 71.63 331 P **P** 01 34 58.4 +0.6
baz=148
S36A **Lake Cedric, C** 71.69 334 P **P** 01 34 58.7 +0.6
baz=150,SNR=34
VNDA **Vanda** 71.70 189 P **P** 01 34 59.1 +1.5
comp=Z,17nm,0.9s,baz=135,slow=4.7,SNR=48
VNDA PKPPKP P'P'df 02 02 32.5 -10
comp=Z,4.2nm,1.0s,baz=283,slow=4.5,SNR=12
VNDA **Vanda** 71.70 189 *e*P **P** 01 34 59.7 +2.1
VNDA pmax pmax
comp=Z,32nm,1.1s
VNDA **Vanda** 71.70 189 *e*P **P** 01 34 59.7 +2.1
comp=Z,32nm,1.1s
VNDA P'P' 02 02 32.5
T34A **McClaskey Farm** 71.73 332 P **P** 01 34 59.4 +1.0
baz=149
MSTX **Muleshoe** 71.75 326 P **P** 01 34 59.4 +0.7
baz=144,SNR=87
MSTX **Muleshoe** 71.75 326 *e*P **P** 01 34 59.2 +0.5
comp=Z,286nm,1.0s
MDV **Middlebury** 71.83 353 *e*P **P** 01 35 00.5 +1.7
Q39A **Willow Grove F** 71.86 336 P **P** 01 34 59.2 +0.1
baz=152,SNR=44
R37A **Teagarden Farm** 71.90 334 P **P** 01 34 59.5 +0.2
baz=151,SNR=25
S35A **Otter Creek Ra** 71.94 333 P **P** 01 35 00.4 +0.9
baz=149,SNR=59
AMTX **Amarillo** 71.96 328 P **P** 01 35 00.8 +1.0
baz=145
AMTX **Amarillo** 71.96 328 *e*P **P** 01 35 00.7 +0.9
comp=Z,97nm,0.8s
P40A **Paris** 71.96 337 P **P** 01 34 59.7 +0.1
baz=153,SNR=46
U32A **Winter Ranch,** 71.97 330 P **P** 01 35 00.6 +0.9
baz=147
HDIL **Hopedale** 71.98 339 P **P** 01 34 59.8 +0.1
baz=156,SNR=31
HDIL **Hopedale** 71.98 339 *e*P **P** 01 34 59.8 +0.1
SRIG **Santa Rosalia** 72.03 315 *e*P **P** 01 35 02.0 +1.7
AAM **Ann Arbor** 72.05 344 *e*P **P** 01 35 00.3 +0.3
AAM **Ann Arbor** 72.05 344 *e*P **P** 01 35 00.3 +0.3
R36A **Gordon, Harris** 72.17 334 P **P** 01 35 01.4 +0.5
baz=150,SNR=33
T33A **Patterson Ranc** 72.23 331 P **P** 01 35 02.7 +1.4
baz=148
Q37A **Longview Farm,** 72.25 335 P **P** 01 35 01.5 +0.2
baz=151,SNR=22
S34A **Willow Spring** 72.28 332 P **P** 01 35 02.4 +0.9
baz=149,SNR=34
O40A **La Belle** 72.43 337 P **P** 01 35 02.4 +0.1
baz=154,SNR=32
R35A **Emporia Munici** 72.45 333 P **P** 01 35 03.4 +0.9
baz=150,SNR=48
GGN **Saint George** 72.45 357 *e*P **P** 01 35 04.4 +2.1
HSIG 72.45 317 *e*P **P** 01 35 03.9 +1.1
S33A **Kaszmaul Farm,** 72.56 332 P **P** 01 35 04.3 +1.2
baz=148,SNR=10
P38A **Dawn** 72.57 336 P **P** 01 35 03.4 +0.2
baz=152,SNR=37
T32A **Huddler Ranch,** 72.61 331 P **P** 01 35 04.9 +1.4
baz=147
LONY **Lake Ozonia** 72.61 352 *e*P **P** 01 35 04.8 +1.5
FRNY **Flat Rock** 72.70 352 *e*P **P** 01 35 05.1 +1.3
Q36A **Arnold C. Orve** 72.71 334 P **P** 01 35 04.1 +0.1
baz=150,SNR=5.4
PKME **Peaks-Kenny Pk** 72.73 356 *e*P **P** 01 35 05.6 +1.7
O39A **Kirksville** 72.78 337 P **P** 01 35 04.5 +0.2
baz=153,SNR=28
P37A **Lathrop** 72.84 335 P **P** 01 35 04.5 -0.2
baz=151,SNR=30
Q35A **Mercer Eighty,** 72.85 334 P **P** 01 35 04.8 +0.1
baz=150,SNR=25
R34A **Isabella, Hill** 72.85 333 P **P** 01 35 05.7 +0.9
baz=149,SNR=27
O38A **Galt** 72.99 336 P **P** 01 35 05.7 +0.2
baz=152,SNR=6.8
S32A **Newby Ranch, P** 73.05 331 P **P** 01 35 07.3 +1.4
baz=147,SNR=26
LMN **Caledonia Moun** 73.13 359 *e*P **P** 01 35 07.6 +1.4
R33A **Olander Ranch,** 73.16 332 P **P** 01 35 07.5 +0.9
baz=148,SNR=16
P36A **Good Intent, A** 73.19 335 P **P** 01 35 06.6 -0.1
baz=151,SNR=25
319A **Douglas** 73.21 320 *e*P **P** 01 35 08.8 +1.7
121A **Cookes Peak, D** 73.24 322 P **P** 01 35 09.1 +1.7
baz=140,SNR=37
121A **Cookes Peak, D** 73.24 322 *e*P **P** 01 35 09.0 +1.7
comp=Z,70nm,1.0s
Q34A **Chapman** 73.26 333 P **P** 01 35 07.7 +0.6
baz=149,SNR=35
O37A **Wolven Farm, M** 73.27 336 P **P** 01 35 07.5 +0.4
baz=152,SNR=16
KSU1 **Kansas State U** 73.28 334 P **P** 01 35 07.6 +0.4
baz=149,SNR=35
KSU1 **Kansas State U** 73.28 334 *e*P **P** 01 35 07.6 +0.4
N39A **Derby Farms, D** 73.32 337 P **P** 01 35 07.5 +0.1
baz=153,SNR=42
P35A **Duane Minner,** 73.42 334 P **P** 01 35 08.4 +0.4
baz=150,SNR=17
SADO **Sadowa** 73.47 348 P **P** 01 35 08.7 +0.6
comp=Z,66nm,0.7s,baz=190,slow=5.8,SNR=30
SADO **Sadowa** 73.47 348 *e*P **P** 01 35 08.8 +0.7
N38A **Joes South For** 73.50 337 P **P** 01 35 08.6 +0.1
baz=152,SNR=13
O36A **Bolckow** 73.54 335 P **P** 01 35 08.6 0.0
baz=151,SNR=7.5
TSUM **Tsumeb** 73.56 103 *e*P **P** 01 35 10.1 +0.6
comp=Z,107nm,1.2s
R32A **Long Quarter,** 73.56 332 P **P** 01 35 10.2 +1.3
baz=148,SNR=62
Q33A **Connelly Farm,** 73.68 333 P **P** 01 35 10.4 +0.9
baz=148,SNR=35
P34A **Walnut Farm, R** 73.75 334 P **P** 01 35 10.6 +0.7
baz=149,SNR=59
N37A **Lee Faris, Mou** 73.81 336 P **P** 01 35 10.6 +0.4
baz=152,SNR=18
BNM **Barren Site** 73.86 324 *e*P **P** 01 35 12.6 +1.6
Y22D **IRIS PASSCAL I** 73.95 323 P **P** 01 35 13.1 +1.8
baz=140
Q32A **Meitler Ranch,** 73.98 332 P **P** 01 35 12.2 +1.0
baz=148,SNR=62
LPM **Los Pinos Moun** 73.98 324 *e*P **P** 01 35 13.2 +1.6
P33A **Williams Farm,** 74.00 333 P **P** 01 35 12.4 +1.1
baz=149,SNR=11
O35A **Humboldt** 74.02 335 P **P** 01 35 11.3 -0.1
baz=150,SNR=5.1
M38A **Pleasantville** 74.04 337 P **P** 01 35 11.5 +0.1
baz=153,SNR=34
N36A **Muff Farm, Cla** 74.14 336 P **P** 01 35 12.5 +0.4
baz=151,SNR=8.0
O34A **Beatrice** 74.24 334 P **P** 01 35 12.9 +0.2
baz=150,SNR=33
TAOE **Nuku Hiva Isla** 74.30 268 *e*S **S** 01 43 58.2 -4.8
comp=Z,183nm,26.9s
LAZ **Ladron** 74.32 324 *e*P **P** 01 35 15.2 +1.8
CBKS **Cedar Bluff** 74.32 331 P **P** 01 35 14.8 +1.6
baz=147,SNR=128
CBKS **Cedar Bluff** 74.32 331 *e*P **P** 01 35 14.8 +1.6
CBKS pmax pmax
comp=Z,520nm,0.9s
CBKS **Cedar Bluff** 74.32 331 *e*P **P** 01 35 14.8 +1.6
comp=Z,520nm,0.9s
M37A **Trindle Farm,** 74.33 336 P **P** 01 35 13.8 +0.7
baz=152,SNR=52
ANMO **Albuquerque** 74.38 324 P **P** 01 35 15.1 +1.3
comp=Z,48nm,0.7s,baz=139,slow=6.8,SNR=217
ANMO pP **pP** 01 37 11.9 +0.5

comp=Z,6.7nm,0.9s,baz=130,slow=9.7,SNR=3.2
ANMO Albuquerque 74.38 324 P **P** **01 35 15.5 +1.7**
baz=141
ANMO Albuquerque 74.38 324 *e*P **P** **01 35 15.4 +1.6**
ANMO *P **pP** **01 37 12.0 +0.5**
ANMO pmax pmax
comp=Z,68nm,0.8s
ANMO Albuquerque 74.38 324 *e*P **P** **01 35 15.4 +1.6**
comp=Z,68nm,0.8s
ANMO pP **pP** **01 37 11.9 +0.5**
JFWS Jewell Farm 74.42 340 *e*P **P** **01 35 14.1 +0.5**
JFWS Jewell Farm 74.42 340 *e*P **P** **01 35 14.1 +0.5**
N35A Tabor 74.43 335 P **P** **01 35 13.9 +0.2**
baz=150,SNR=34
FUL Funchal 74.44 39 *e*P **P** **01 35 15.1 +1.2**
SCIA State Center 74.48 337 *e*P **P** **01 35 14.6 +0.7**
PMAR Madeira 74.48 39 *e*P **P** **01 35 15.3 +0.9**
comp=Z,57nm,1.3s
O33A Hebron 74.50 333 P **P** **01 35 14.8 +0.7**
baz=149,SNR=62
P32A Huiting Farm, 74.53 332 P **P** **01 35 15.3 +1.0**
baz=148,SNR=38
L38A Oak Wood Farm, 74.60 338 P **P** **01 35 14.6 0.0**
baz=153,SNR=12
M36A Felix, Anita 74.64 336 P **P** **01 35 15.4 +0.5**
baz=151,SNR=14
N34A Lincoln 74.73 335 P **P** **01 35 15.6 +0.2**
baz=150,SNR=55
TUC Tucson 74.76 320 P **P** **01 35 17.2 +1.4**
baz=137
TUC Tucson 74.76 320 *e*P **P** **01 35 17.2 +1.4**
TUC pmax pmax
comp=Z,49nm,1.1s
TUC Tucson 74.76 320 *e*P **P** **01 35 17.2 +1.4**
comp=Z,49nm,1.1s
L37A Phoenix Point, 74.86 337 P **P** **01 35 16.1 0.0**
baz=152,SNR=10
TOA0 Torodi Ar. Sit 74.89 66 *e*P **P** **01 35 16.8 -0.1**
TORD Torodi Ar. Bea 74.89 66 P **P** **01 35 16.7 -0.2**
comp=Z,116nm,0.9s,baz=277,slow=7.0,SNR=11.04
TORD pP **pP** **01 37 15.1 +0.4**
comp=Z,9.1nm,0.7s,baz=247,slow=5.7,SNR=3.8
TORD PKiKP **PKiKP** **01 41 00.6 -0.6**
comp=Z,1.2nm,0.9s,baz=251,slow=1.5,SNR=7.0
TORD pPKiKP **pPKiKP** **01 43 13.6 -0.1**
comp=Z,0.5nm,0.4s,baz=264,slow=5.9,SNR=3.3
TORD S **S** **01 44 07.2 -2.0**
comp=Z,2.9nm,1.0s,baz=230,slow=10.0,SNR=6.9
O32A Brockman Farm, 74.94 333 P **P** **01 35 17.5 +0.9**
baz=148,SNR=20
M35A Neola 74.98 335 P **P** **01 35 17.2 +0.5**
baz=150,SNR=8.8
K38A Parkersburg 74.99 338 P **P** **01 35 17.0 +0.2**
baz=153
N33A J Bar K, Exete 75.02 334 P **P** **01 35 17.6 +0.7**
baz=149
LMQ La Malbaie 75.08 355 *e*P **P** **01 35 18.3 +1.2**
T25A Trinidad 75.08 327 P **P** **01 35 19.6 +1.9**
baz=143
T25A Trinidad 75.08 327 *e*P **P** **01 35 19.6 +1.9**
L36A Harm Buss Farm 75.16 336 P **P** **01 35 18.0 +0.3**
baz=152,SNR=11
O31A Woolen Ranch, 75.27 332 P **P** **01 35 19.5 +1.1**
baz=147,SNR=19
M34A Aspy Farms, Fr 75.34 335 P **P** **01 35 19.3 +0.6**
baz=150,SNR=17
N32A Stulken Farm, 75.37 333 P **P** **01 35 19.4 +0.4**
baz=148
K37A Belmond 75.39 337 P **P** **01 35 18.9 -0.1**
baz=152
L35A Bielow Farm, R 75.48 336 P **P** **01 35 19.8 +0.3**
baz=151,SNR=28
J38A Wedel Dairy, R 75.49 338 P **P** **01 35 19.6 +0.1**
baz=153
K36A Gilmore City 75.56 337 P **P** **01 35 20.5 +0.6**
baz=152
M33A Taylor Creek F 75.63 334 P **P** **01 35 21.4 +1.0**
baz=149
L34A Svendsen Farm, 75.66 335 P **P** **01 35 20.7 +0.2**
baz=150,SNR=32
214A Organ Pipe Nat 75.68 318 P **P** **01 35 22.7 +1.8**
baz=136,SNR=68
214A Organ Pipe Nat 75.68 318 *e*P **P** **01 35 22.4 +1.5**
comp=Z,323nm,0.8s
N31A Bailey Ranch, 75.69 333 P **P** **01 35 22.0 +1.3**
baz=148
KSCO Kaye Shedlock' 75.76 329 P **P** **01 35 22.9 +1.6**
baz=145
KSCO Kaye Shedlock' 75.76 329 *e*P **P** **01 35 22.7 +1.4**
J37A Redenius Farm, 75.84 338 P **P** **01 35 21.5 0.0**
baz=152
BGNE Belgrade 75.86 334 P **P** **01 35 22.4 +0.7**
baz=148,SNR=27
BGNE Belgrade 75.86 334 *e*P **P** **01 35 22.4 +0.7**
comp=Z,192nm,0.6s
K35A Storm Lake 75.90 336 P **P** **01 35 22.5 +0.7**
baz=151
X18A Snowflake 75.93 322 *e*P **P** **01 35 24.4 +2.0**
SDCO Great Sand Dun 76.09 327 P **P** **01 35 25.0 +1.7**
baz=142,SNR=83
SDCO Great Sand Dun 76.09 327 *e*P **P** **01 35 25.1 +1.7**
comp=Z,24nm,0.6s
I38A Scanlan Farm, 76.09 339 P **P** **01 35 23.3 +0.4**
baz=154
J36A Seneca 1, Swea 76.12 337 P **P** **01 35 23.5 +0.4**
baz=152
M31A Lambtecht Ranc 76.14 333 P **P** **01 35 24.5 +1.3**
baz=148,SNR=36
L33A Hoskins 76.17 335 P **P** **01 35 23.7 +0.4**
baz=149
K34A Le Mars 76.18 336 P **P** **01 35 23.6 +0.2**
baz=150
BOSA Boshof 76.19 115 P **P** **01 35 24.1 0.0**
comp=Z,54nm,0.7s,baz=252,slow=4.0,SNR=12.1
BOSA pP **pP** **01 37 22.3 0.0**
comp=Z,11nm,1.0s,baz=239,slow=6.8,SNR=4.5
BOSA Boshof 76.19 115 P **P** **01 35 24.1 0.0**
BOSA *P **pP** **01 37 22.3 0.0**
BOSA pmax pmax
comp=Z,54nm,0.7s
BOSA pmax pmax
comp=Z,9.0nm,0.9s
W18A Petrified Fore 76.25 322 P **P** **01 35 25.9 +1.7**
baz=139,SNR=12
W18A Petrified Fore 76.25 322 *e*P **P** **01 35 26.0 +1.8**
TBI Tubuai 76.30 251 *e*S **S** **01 44 21.0 -3.1**
comp=Z,184nm,32.2s
TBI Tubuai 76.30 251 *e*LR LR 01 59 54.5
comp=Z,304nm,24.2s
L32A Elgin 76.32 334 P **P** **01 35 25.1 +1.0**
baz=149
I37A Lemond, Waseca 76.42 338 P **P** **01 35 25.0 +0.4**
baz=153
VLDQ Val d'Or 76.44 350 *e*P **P** **01 35 25.6 +1.1**
K33A Hardington 76.45 335 P **P** **01 35 25.5 +0.7**
baz=150
J35A Milford 76.46 337 P **P** **01 35 25.2 +0.3**
baz=151
I36A Fitzsimmons Fa 76.62 338 P **P** **01 35 26.4 +0.6**
baz=152
J34A George 76.65 336 P **P** **01 35 26.5 +0.5**
baz=150
X16A Lo Mia Camp, P 76.67 321 *e*P **P** **01 35 28.1 +1.6**
DRLN Deer Lake 76.70 4 *e*P **P** **01 35 27.2 +1.2**
S22A 4UR Ranch, Cre 76.75 326 P **P** **01 35 28.6 +1.6**
baz=141,SNR=89
S22A 4UR Ranch, Cre 76.75 326 *e*P **P** **01 35 28.5 +1.6**
comp=Z,41nm,0.8s
H37A Dierke Farm, C 76.76 339 P **P** **01 35 27.0 +0.5**
baz=153,SNR=10
L31A Butterfield Fa 76.79 334 P **P** **01 35 27.9 +1.1**
baz=148,SNR=24
I35A Creekview Farm 76.81 337 P **P** **01 35 27.4 +0.6**
baz=151
113A Mohawk Valley, 76.83 318 *e*P **P** **01 35 28.6 +1.5**
K32A Verdigre 76.86 335 P **P** **01 35 27.6 +0.5**
baz=149
Q24A Divide 76.89 328 P **P** **01 35 29.4 +1.7**
baz=143,SNR=58
Q24A Divide 76.89 328 *e*P **P** **01 35 29.4 +1.7**
MAW Mawson 77.00 161 P **P** **01 35 27.8 +0.3**
comp=Z,37nm,1.0s,baz=222,slow=6.2,SNR=28.4
MAW pP **pP** **01 37 26.4 +0.3**
comp=Z,10nm,1.1s,baz=229,slow=7.2,SNR=5.5
MAW Mawson 77.00 161 *e*P **P** **01 35 28.4 +0.8**
comp=Z,19nm,1.3s
MAW *e*pP **pP** **01 37 27.4 +1.3**

COWI Conover 77.01 342 *e*P **P** **01 35 28.7 +0.9**
J33A Davis 77.05 335 P **P** **01 35 28.6 +0.5**
baz=150
OGNE Ogallala 77.08 331 P **P** **01 35 30.0 +1.6**
baz=145,SNR=11
OGNE Ogallala 77.08 331 *e*P **P** **01 35 30.0 +1.6**
H36A Jessenland, He 77.09 338 P **P** **01 35 29.2 +0.9**
baz=152,SNR=29
K31A O'Neill 77.13 334 P **P** **01 35 29.6 +1.0**
baz=148
MVCO Mesa Verde 77.18 325 P **P** **01 35 30.9 +1.7**
baz=140,SNR=28
MVCO Mesa Verde 77.18 325 *e*P **P** **01 35 30.8 +1.6**
comp=Z,77nm,0.8s
I34A Hadley 77.28 337 P **P** **01 35 30.0 +0.7**
baz=151
ECSD EROS Data Cent 77.28 336 P **P** **01 35 29.7 +0.3**
baz=150,SNR=84
ECSD EROS Data Cent 77.28 336 *e*P **P** **01 35 29.7 +0.3**
comp=Z,130nm,0.8s
SPMN Marine on St. 77.30 339 P **P** **01 35 29.7 +0.3**
baz=153,SNR=16
SPMN Marine on St. 77.30 339 *e*P **P** **01 35 29.6 +0.2**
comp=Z,52nm,0.6s
J32A Parkston 77.42 335 P **P** **01 35 30.5 +0.4**
baz=149
WUAZ Wupatki 77.44 322 P **P** **01 35 32.5 +1.8**
baz=138,SNR=62
WUAZ Wupatki 77.44 322 *e*P **P** **01 35 31.9 +1.2**
comp=Z,120nm,1.1s
H35A Sunnyside Ranc 77.50 338 P **P** **01 35 30.9 +0.4**
baz=152,SNR=41
K30A Basset 77.51 333 P **P** **01 35 31.7 +1.1**
baz=147
G36A St. Michael 77.61 339 P **P** **01 35 31.6 +0.5**
baz=153,SNR=6.1
I33A Coleman 77.62 336 P **P** **01 35 31.8 +0.6**
baz=150
GLA Glamis 77.66 318 P **P** **01 35 33.2 +1.6**
baz=135,SNR=17
GLA Glamis 77.66 318 *e*P **P** **01 35 33.3 +1.6**
GLA pmax pmax
comp=Z,40nm,0.9s
GLA Glamis 77.66 318 *e*P **P** **01 35 33.3 +1.6**
comp=Z,40nm,0.9s
J31A Geddes 77.69 334 P **P** **01 35 32.5 +0.9**
baz=148
ISCO Idaho Springs 77.77 328 P **P** **01 35 34.1 +1.6**
baz=142,SNR=72
ISCO Idaho Springs 77.77 328 *e*P **P** **01 35 34.1 +1.6**
ISCO pmax pmax
comp=Z,108nm,1.1s
ISCO Idaho Springs 77.77 328 *e*P **P** **01 35 34.1 +1.6**
comp=Z,108nm,1.1s
H34A Spellman Lake, 77.80 337 P **P** **01 35 32.6 +0.5**
baz=151,SNR=11
G35A Watkins 77.84 338 P **P** **01 35 32.8 +0.5**
baz=152
I32A Karley and Nic 77.84 336 P **P** **01 35 33.0 +0.6**
baz=149
PV01 Paradox Valley 77.92 325 *e*P **P** **01 35 35.0 +1.8**
SMCO Snowmass 77.93 327 *e*P **P** **01 35 35.3 +1.9**
Y12C Blythe 77.97 318 P **P** **01 35 35.3 +2.1**
baz=135,SNR=41
Y12C Blythe 77.97 318 *e*P **P** **01 35 35.0 +1.7**
J30A Dallas 78.01 334 P **P** **01 35 33.9 +0.6**
baz=148
F36A Milaca 78.10 339 P **P** **01 35 34.1 +0.4**
baz=153,SNR=28
PDMCI Parker Dam,Lak 78.13 319 P **P** **01 35 35.4 +1.3**
baz=135,SNR=16
PV05 Paradox Valley 78.15 325 *e*P **P** **01 35 35.8 +1.4**
H33A Prehn Over Nor 78.15 336 P **P** **01 35 34.5 +0.4**
baz=150,SNR=30
SWSC Sam W. Stewart 78.17 317 P **P** **01 35 35.9 +1.6**
baz=134,SNR=13
H32A Carlson Farm, 78.25 336 P **P** **01 35 35.2 +0.7**
baz=149,SNR=7.2
I31A Royce, Wessing 78.25 335 P **P** **01 35 35.3 +0.8**
baz=148
G34A Benson 78.25 337 P **P** **01 35 35.1 +0.6**
baz=151,SNR=6.5
PV04 Paradox Valley 78.29 325 *e*P **P** **01 35 36.5 +1.4**
PV10 Paradox Valley 78.34 325 *e*P **P** **01 35 36.6 +1.1**
E37A Wrenshall 78.38 340 P **P** **01 35 36.4 +1.3**
baz=154,SNR=5.7
J29A Okreek 78.41 333 P **P** **01 35 36.5 +1.1**
baz=147
F35A Swanville 78.44 338 P **P** **01 35 36.1 +0.6**
baz=152,SNR=10
BC3 Big Chuckawall 78.45 318 P **P** **01 35 37.2 +1.2**
baz=134,SNR=45
PV09 Paradox Valley 78.48 325 *e*P **P** **01 35 38.0 +1.7**
G33A Ortonville 78.49 337 P **P** **01 35 36.0 +0.2**
baz=150,SNR=16
I30A Oacoma 78.49 334 P **P** **01 35 36.4 +0.6**
baz=148
MONP2 Monument Peak 78.51 317 P **P** **01 35 38.0 +1.6**
baz=134,SNR=18
BAR Barrett 78.51 316 *e*P **P** **01 35 37.6 +1.3**
comp=Z,46nm,0.8s
E36A McGregor 78.60 339 P **P** **01 35 37.4 +1.0**
baz=153,SNR=26
F34A Alexandria 78.61 338 P **P** **01 35 37.1 +0.7**
baz=151,SNR=5.7
H31A Wolsey 78.61 335 P **P** **01 35 37.1 +0.7**
baz=149,SNR=9.0
U15A North Rim 78.62 322 *e*P **P** **01 35 39.2 +2.1**
U15A *epP **pP** **01 37 39.4 +2.9**
IRM Iron Mountain 78.62 318 P **P** **01 35 38.4 +1.6**
baz=135,SNR=48
SUSD Miller 78.75 335 P **P** **01 35 37.7 +0.5**
baz=148,SNR=18
N23A Red Feather La 78.79 328 P **P** **01 35 39.5 +1.7**
baz=142,SNR=33
N23A Red Feather La 78.79 328 *e*P **P** **01 35 39.5 +1.7**
comp=Z,60nm,0.9s
J28A Allard Ranch, 78.79 333 P **P** **01 35 38.6 +1.1**
baz=146
PPT2 Papeete2 78.81 256 *e*LR LR 02 01 15.3
comp=Z,150nm,23.8s
C39A Grand Marais 78.86 342 P **P** **01 35 38.3 +0.7**
baz=156,SNR=14
PHWY Pilot Hill 78.89 329 *e*P **P** **01 35 39.8 +1.4**
G32A Webster 78.92 336 P **P** **01 35 39.1 +1.0**
baz=149
I29A Vivian Onida 78.92 334 P **P** **01 35 38.8 +0.6**
baz=147
D37A Cotton 78.92 340 P **P** **01 35 38.9 +0.8**
baz=154,SNR=22
109C Camp Elliot, M 78.92 316 P **P** **01 35 39.7 +1.4**
baz=133
J27A Elkhorn Farm, 78.96 332 P **P** **01 35 40.2 +1.7**
baz=146
F33A 5 Mile Ranch, 79.00 337 P **P** **01 35 38.6 +0.2**
baz=150,SNR=17
E35A Pequot Lakes 79.00 339 P **P** **01 35 39.3 +0.8**
baz=152,SNR=18
BELC Belle Mtn. Jos 79.02 318 P **P** **01 35 40.8 +1.7**
baz=134,SNR=27
PFO Pinyon Flats O 79.02 317 P **P** **01 35 40.7 +1.6**
baz=134,SNR=25
PFO Pinyon Flats O 79.02 317 *e*P **P** **01 35 40.7 +1.6**
PFO pmax pmax
comp=Z,75nm,1.1s
PFO Pinyon Flats O 79.02 317 *e*P **P** **01 35 40.7 +1.6**
comp=Z,74nm,1.1s
C38A Sawbill Land. 79.09 341 P **P** **01 35 39.1 +0.1**
baz=155,SNR=23
G31A Conde 79.14 336 P **P** **01 35 39.8 +0.5**
baz=149,SNR=12
D36A Goodland 79.16 340 P **P** **01 35 39.9 +0.5**
baz=153,SNR=11
EKU East Kanab 79.20 322 *e*P **P** **01 35 42.2 +2.2**
E34A Wadena 79.21 338 P **P** **01 35 40.4 +0.8**
baz=152,SNR=8.6
I28A Midland 79.24 333 P **P** **01 35 40.8 +0.9**
baz=146
LDFC Landfair 79.25 319 *e*P **P** **01 35 42.2 +2.0**
O20A White River Ci 79.29 327 P **P** **01 35 42.0 +1.6**
baz=140,SNR=85
O20A White River Ci 79.29 327 *e*P **P** **01 35 42.1 +1.7**
F32A Veblen 79.31 337 P **P** **01 35 40.9 +0.7**
baz=150,SNR=5.3
KNB Kanab 79.34 322 *e*P **P** **01 35 42.9 +2.2**
KNB Kanab 79.34 322 *e*P **P** **01 35 42.9 +2.2**
D35A Remer 79.35 339 P **P** **01 35 41.5 +1.2**
baz=152,SNR=48
EYMN Ely 79.36 341 P **P** **01 35 40.7 +0.4**
baz=155,SNR=13
EYMN Ely 79.36 341 *e*P **P** **01 35 40.8 +0.4**
comp=Z,90nm,0.8s
C37A Embarrass 79.36 341 P **P** **01 35 41.1 +0.7**
baz=154,SNR=16
GMRC Granite Mounta 79.36 318 P **P** **01 35 42.6 +1.7**
baz=134,SNR=63
PKCU Pink Cliffs 79.37 322 *e*P **P** **01 35 42.8 +1.7**
comp=Z,34nm,0.7s
MMU Miners Mountai 79.38 323 *e*P **P** **01 35 42.6 +1.6**
H29A Onida 79.39 334 P **P** **01 35 41.5 +0.9**
baz=147,SNR=26
G30A Faulkton 79.41 335 P **P** **01 35 41.4 +0.7**
baz=148,SNR=15
J26A Sides Ranch, S 79.46 332 P **P** **01 35 42.7 +1.6**
baz=145
MURC Murrieta 79.46 317 P **P** **01 35 42.7 +1.4**
baz=133,SNR=13
E33A Westby DABS, E 79.48 338 P **P** **01 35 41.5 +0.5**
baz=151,SNR=12
LCMT Little Creek M 79.56 321 *e*P **P** **01 35 43.6 +1.7**
comp=Z,46nm,1.0s
C36A Pine Crest Far 79.58 340 P **P** **01 35 42.3 +0.8**
baz=154,SNR=34
I27A Quinn 79.66 333 P **P** **01 35 43.3 +1.2**
baz=146
SRU San Rafael Swe 79.66 325 *e*P **P** **01 35 43.9 +1.5**
SRU San Rafael Swe 79.66 325 *e*P **P** **01 35 43.9 +1.5**
F31A Hecla 79.70 336 P **P** **01 35 43.0 +0.8**
baz=149,SNR=29
D34A Park Rapids 79.72 338 P **P** **01 35 42.9 +0.6**
baz=152,SNR=13
MTPU Mount Pierson 79.74 323 *e*P **P** **01 35 44.7 +1.7**
H28A Mission Ridge 79.75 334 P **P** **01 35 43.4 +0.9**
baz=146,SNR=16
BBRC Big Bear Solar 79.75 317 P **P** **01 35 43.5 +0.5**
baz=134
G29A Hoven 79.76 335 P **P** **01 35 43.2 +0.7**
baz=148,SNR=23
HEC Hector,Ludlow 79.79 318 P **P** **01 35 44.9 +1.8**
baz=134,SNR=9.4
J25A Sunshine Ranch 79.83 331 P **P** **01 35 44.5 +1.4**
baz=144
SCI2 San Clemente I 79.87 315 P **P** **01 35 44.0 +0.6**
baz=132
C35A Jirik Farms, M 79.88 340 P **P** **01 35 43.8 +0.8**
baz=153,SNR=51
P18A Preston Nutter 79.90 325 *e*P **P** **01 35 45.7 +1.9**
E32A Braaten, Kindr 79.92 337 P **P** **01 35 44.5 +1.2**
baz=150,SNR=7.2
I26A New Underwood 79.96 332 P **P** **01 35 44.7 +1.0**
baz=145
F30A Leola 79.97 336 P **P** **01 35 44.5 +0.9**
baz=148,SNR=8.5
TUQ Turquoise Moun 79.97 319 P **P** **01 35 45.3 +1.3**
baz=134,SNR=27
D33A AnnSam, Waubun 79.98 338 P **P** **01 35 44.5 +0.9**
baz=151,SNR=33
ROA Roan Cliffs 79.99 325 *e*P **P** **01 35 46.2 +1.9**
P17A Butcher Ranch, 80.04 325 *e*P **P** **01 35 45.9 +1.6**
G28A Parade 80.04 334 P **P** **01 35 45.1 +1.0**
baz=147,SNR=42
CIS Catalina Islan 80.08 316 P **P** **01 35 45.6 +1.1**
baz=132
MSU Marysvale 80.08 323 *e*P **P** **01 35 46.6 +1.9**
MSU Marysvale 80.08 323 *e*P **P** **01 35 46.6 +1.9**
C34A RKJ Ranch, Bem 80.13 339 P **P** **01 35 45.0 +0.7**
baz=152,SNR=22
H27A Howes 80.13 333 P **P** **01 35 45.5 +0.9**
baz=146,SNR=68
TMUT Trail Mountain 80.15 324 *e*P **P** **01 35 46.6 +1.5**
comp=Z,42nm,0.8s
E31A Nome 80.17 337 P **P** **01 35 45.6 +0.9**
baz=149,SNR=15
BFSC Mount Baldy Ra 80.18 317 P **P** **01 35 46.2 +1.1**
baz=133,SNR=11
RRX Edison Barstow 80.22 318 P **P** **01 35 47.0 +1.8**
baz=134
F29A Eureka 80.26 335 P **P** **01 35 45.9 +0.7**
baz=148,SNR=25
SGU Sterling 80.29 324 *e*P **P** **01 35 47.9 +2.1**
I25A Rochford 80.31 332 P **P** **01 35 46.8 +1.1**
baz=144
D32A Dogwood Acres, 80.37 337 P **P** **01 35 46.6 +1.0**
baz=150,SNR=8.4
B35A Bob, Littlefor 80.39 340 P **P** **01 35 46.5 +0.8**
baz=153,SNR=65
GSC Goldstone, Bar 80.40 318 P **P** **01 35 47.8 +1.6**
baz=134,SNR=22
GSC Goldstone, Bar 80.40 318 *e*P **P** **01 35 47.7 +1.5**
GSC pmax pmax
comp=Z,45nm,1.1s
GSC Goldstone, Bar 80.40 318 *e*P **P** **01 35 47.7 +1.5**
comp=Z,45nm,1.1s
H26A Fairpoint 80.40 333 P **P** **01 35 46.8 +0.9**
baz=145
ELU Electric Lake 80.40 324 *e*P **P** **01 35 48.4 +1.9**
MWC Mount Wilson 80.41 317 *e*P **P** **01 35 47.6 +1.2**
MWC pmax pmax
comp=Z,50nm,0.9s
MWC Mount Wilson 80.41 317 *e*P **P** **01 35 47.6 +1.2**
comp=Z,50nm,0.9s
K22A Casper 80.44 329 P **P** **01 35 47.7 +1.4**
baz=142
K22A Casper 80.44 329 *e*P **P** **01 35 47.7 +1.4**
PASC Pasadena Art C 80.45 317 *e*P **P** **01 35 48.2 +1.7**
E30A Jud 80.49 336 P **P** **01 35 47.4 +1.1**
baz=148,SNR=23
C33A Trail 80.50 338 P **P** **01 35 47.1 +0.8**
baz=151,SNR=35
RSSD Black Hills 80.52 332 P **P** **01 35 47.5 +0.7**
baz=144
RSSD Black Hills 80.52 332 *e*P **P** **01 35 47.5 +0.7**
RSSD pmax pmax
comp=Z,62nm,1.1s
RSSD Black Hills 80.52 332 *e*P **P** **01 35 47.5 +0.7**
comp=Z,62nm,1.1s
D31A Mcclaflin, Tow 80.54 337 P **P** **01 35 47.5 +1.0**
baz=149,SNR=21
DECC Green Verdugo 80.60 317 P **P** **01 35 48.4 +1.2**
baz=133,SNR=7.7
F28A McLaughlin 80.64 334 P **P** **01 35 48.2 +1.1**
baz=147,SNR=19
SNCC San Nicolas Is 80.66 315 P **P** **01 35 48.0 +0.5**
baz=132
G27A Dupree 80.69 334 P **P** **01 35 48.2 +0.8**
baz=146,SNR=30
H25A Fruitdale 80.74 332 P **P** **01 35 48.6 +0.9**
baz=144,SNR=16
B34A Aery, Baudette 80.78 339 P **P** **01 35 48.5 +0.8**
baz=152,SNR=18
C32A Crookston 80.81 338 P **P** **01 35 48.9 +1.0**
baz=150
E29A Napoleon 80.81 336 P **P** **01 35 48.9 +0.9**
baz=148,SNR=10.0
EDW2 Edwards Air Fo 80.82 317 P **P** **01 35 49.2 +0.9**
baz=133,SNR=18
G26A Maurine 80.89 333 P **P** **01 35 48.9 +0.5**
baz=145,SNR=28
B33A Robert and Kas 80.89 339 P **P** **01 35 49.2 +0.9**
baz=151,SNR=19
MPU Maple Canyon 80.90 325 *e*P **P** **01 35 50.3 +1.4**
BLG Laguna Peak, P 80.95 316 P **P** **01 35 50.1 +1.1**
baz=132
D30A Buchanan 80.95 336 P **P** **01 35 49.8 +1.1**
baz=149,SNR=106
PSUT Pine Spring 81.00 322 *e*P **P** **01 35 51.2 +1.8**
AGMN Agassiz Nation 81.00 339 P **P** **01 35 49.8 +0.9**
baz=151,SNR=49
AGMN Agassiz Nation 81.00 339 *e*P **P** **01 35 49.7 +0.8**
comp=Z,166nm,0.9s
LRMC Laurel Mtn Rad 81.04 318 P **P** **01 35 50.9 +1.3**
baz=133,SNR=6.5
OSI Osito Audit: C 81.08 317 P **P** **01 35 50.9 +1.2**
baz=132,SNR=7.2
OSI Osito Audit: C 81.08 317 *e*P **P** **01 35 51.1 +1.4**
comp=Z,45nm,0.9s
NLU North Lily Min 81.09 324 *e*P **P** **01 35 51.4 +1.6**
comp=Z,25nm,0.8s
NLU *epP **pP** **01 37 52.5 +2.3**
F27A Lemmon 81.14 334 P **P** **01 35 50.6 +0.9**
baz=146,SNR=66
G25A Newell 81.14 333 P **P** **01 35 50.5 +0.7**
baz=145,SNR=36
HTU Hoyt Peak 81.18 325 *e*P **P** **01 35 52.1 +1.7**

C31A **Landman Farms,** 81.18 337 P P 01 35 50.6 +0.8
baz=150,SNR=58
E28A **Huff** 81.21 335 P P 01 35 51.4 +1.4
baz=147,SNR=38
TPNV **Topopah Spring** 81.21 320 P P 01 35 52.2 +1.8
baz=134,SNR=43
TPNV **Topopah Spring** 81.21 320 eP P 01 35 52.3 +1.8
TPNV pmax pmax
comp=Z,55nm,1.1s
TPNV **Topopah Spring** 81.21 320 eP P 01 35 52.3 +1.8
comp=Z,55nm,1.1s
D29A **Pettibone, Tap** 81.21 336 P P 01 35 50.8 +0.8
baz=148,SNR=28
SCZ2 **Santa Cruz Isl** 81.23 316 P P 01 35 52.1 +1.6
baz=132,SNR=5.9
FURC **Furnace Creek,** 81.23 319 P P 01 35 52.1 +1.8
baz=134,SNR=12
JLU **Jordanelle** 81.24 325 eP P 01 35 52.2 +1.6
B32A **Ashes, Strandq** 81.31 338 P P 01 35 51.1 +0.7
baz=150,SNR=135
MPMC **Manual Prospec** 81.32 318 P P 01 35 52.1 +1.1
baz=133,SNR=22
C30A **Mose, Pekin** 81.36 337 P P 01 35 51.9 +1.2
baz=149,SNR=69
F26A **Lodgepole** 81.37 333 P P 01 35 51.8 +0.9
baz=145,SNR=15
A33A **Warroad** 81.41 339 P P 01 35 51.8 +0.8
baz=152,SNR=51
E27A **Carson** 81.42 334 P P 01 35 52.2 +1.1
baz=146,SNR=22
CTU **Camp Tracy** 81.46 325 eP P 01 35 53.2 +1.5
comp=Z,21nm,0.8s
ARVC **Arvin** 81.49 317 P P 01 35 52.6 +0.9
baz=132
DAC **Darwin (Calif)** 81.53 318 eP P 01 35 53.6 +1.4
DAC e*PP pP 01 37 54.6 +1.9
DAC pmax pmax
comp=Z,67nm,1.2s
DAC **Darwin (Calif)** 81.53 318 eP P 01 35 53.6 +1.4
comp=Z,67nm,1.2s
DAC epP pP 01 37 54.6 +1.9
SBC **Santa Barbara** 81.57 316 P P 01 35 52.5 +0.4
baz=132
FSU **Fish Springs** 81.61 323 eP P 01 35 54.3 +1.9
TCUT **Toone Canyon** 81.61 325 eP P 01 35 53.9 +1.4
ISA **Isabella, Lake** 81.64 318 P P 01 35 54.1 +1.6
baz=133,SNR=13
ISA **Isabella, Lake** 81.64 318 eP P 01 35 54.2 +1.6
ISA pmax pmax
comp=Z,45nm,1.0s
ISA **Isabella, Lake** 81.64 318 eP P 01 35 54.2 +1.7
comp=Z,45nm,1.0s
DUG **Dugway, Tooele** 81.65 324 P P 01 35 54.0 +1.4
baz=137,SNR=67
DUG **Dugway, Tooele** 81.65 324 eP P 01 35 54.0 +1.4
DUG pmax pmax
comp=Z,39nm,0.8s
DUG **Dugway, Tooele** 81.65 324 eP P 01 35 54.0 +1.4
comp=Z,39nm,0.8s
D28A **Regan** 81.68 335 P P 01 35 53.6 +1.2
baz=147,SNR=25
B31A **Greenbush Farm** 81.70 338 P P 01 35 53.0 +0.6
baz=150,SNR=39
A32A **Rocking H Ranc** 81.75 339 P P 01 35 53.4 +0.8
baz=151,SNR=14
F25A **Bowman** 81.75 333 P P 01 35 53.6 +0.7
baz=145,SNR=13
E26A **Carlson Angus** 81.80 334 P P 01 35 54.0 +0.8
baz=146,SNR=7.0
R11A **Troy Canyon, C** 81.82 321 P P 01 35 55.3 +1.7
baz=135,SNR=78
R11A **Troy Canyon, C** 81.82 321 eP P 01 35 55.2 +1.7
comp=Z,41nm,0.9s
R11A epP pP 01 37 56.1 +1.8
MDND **Maddock** 81.89 336 P P 01 35 54.9 +1.4
baz=148,SNR=36
MDND **Maddock** 81.89 336 eP P 01 35 54.8 +1.4
comp=Z,541nm,0.9s
GRAC **Grapevine Rang** 81.89 319 P P 01 35 55.5 +1.7
baz=134
MCU **Monte Cristo P** 81.91 326 eP P 01 35 55.4 +1.3
PKM **Mcpherson Peak** 81.93 316 P P 01 35 55.6 +1.4
baz=132,SNR=19
BW06 **Boulder Array** 81.94 328 P P 01 35 55.0 +0.8
baz=140,SNR=43
BW06 **Boulder Array** 81.94 328 eP P 01 35 55.0 +0.8
comp=Z,37nm,0.8s
PD31 **Pinedale Array** 81.94 328 eP P 01 35 55.0 +0.9
PDAR **Pinedale Array** 81.94 328 P P 01 35 54.9 +0.7
comp=Z,26nm,0.7s,baz=132,slow=7.4,SNR=248
PDAR PKKPbc **PKKPbc** 01 54 19.1 -1.8
comp=Z,0.4nm,0.5s,baz=133,slow=1.1,SNR=4.2
NAIU **Northern Antel** 81.95 325 eP P 01 35 55.3 +1.2
B30A **Myrvik Farm, E** 81.95 337 P P 01 35 54.8 +1.0
baz=149,SNR=114
D27A **Center** 81.97 335 P P 01 35 55.3 +1.4
baz=146,SNR=11
A31A **Linda, St. Vin** 81.99 338 P P 01 35 54.8 +0.9
baz=150
SNUT **Stansbury Nort** 81.99 325 eP P 01 35 55.7 +1.3
MDT **Midelt** 82.00 47 P P 01 35 55.2 +0.7
comp=Z,27nm,0.9s,baz=235,slow=4.4,SNR=36
RSUT **Red Spur Mount** 82.00 326 eP P 01 35 55.6 +1.1
HWUT **Hardware Ranch** 82.05 326 eP P 01 35 55.9 +1.2
comp=Z,51nm,0.5s
C28A **Hausauer Farms** 82.06 336 P P 01 35 55.5 +1.2
baz=147
SCHQ **Schefferville** 82.16 358 P P 01 35 55.2 +0.5
comp=Z,90nm,0.8s,baz=168,slow=3.8,SNR=81
WVUT **Wellsville** 82.25 325 eP P 01 35 56.5 +0.8
D26A **Manning** 82.25 334 P P 01 35 56.5 +1.1
baz=146,SNR=28
SPUT **South Promonto** 82.28 325 eP P 01 35 57.2 +1.4
BGU **Big Grassy Mou** 82.29 324 eP P 01 35 57.0 +1.2
comp=Z,53nm,1.0s
HDU **Hyde Park** 82.30 326 eP P 01 35 57.0 +1.1
B29A **Wagenman Farm,** 82.32 337 P P 01 35 56.6 +1.0
baz=148,SNR=42
SMMC **Simmler** 82.32 316 P P 01 35 57.7 +1.7
baz=132,SNR=9.6
A30A **Hoffart Farm,** 82.36 338 P P 01 35 56.7 +0.8
baz=149,SNR=35
LTU **Little Mountai** 82.38 325 eP P 01 35 57.4 +1.1
TIN **Tinemaha, Big** 82.43 319 P P 01 35 58.2 +1.6
baz=133
C27A **Sayler Ranch,** 82.47 335 P P 01 35 57.8 +1.4
baz=146,SNR=35
RCTC **Rector, Farmer** 82.53 318 P P 01 35 57.8 +0.9
baz=132,SNR=5.9
MTUT **Morton Thiokol** 82.57 325 eP P 01 35 58.0 +0.8
PTEO **Sao Teotonio** 82.61 41 eP P 01 35 57.4 +0.1
comp=Z,170nm,1.5s
MLI **Malad Range** 82.64 326 eP P 01 35 58.7 +1.1
B28A **Dugan Ranch, T** 82.67 336 P P 01 35 58.6 +1.2
baz=147,SNR=44
A29A **Manning Farm,** 82.67 337 P P 01 35 58.5 +1.2
baz=148,SNR=65
AHID **Auburn Hatcher** 82.68 327 eP P 01 35 58.9 +1.1
D25A **Fairfield** 82.70 334 P P 01 35 59.2 +1.6
baz=145,SNR=37
ULM **Lac du Bonnet** 82.72 340 P P 01 35 58.0 +0.4
comp=Z,97nm,0.9s,baz=155,slow=5.5,SNR=77
ULM **Lac du Bonnet** 82.72 340 eP P 01 35 58.0 +0.4
C26A **Wahner Farm, P** 82.78 335 P P 01 35 59.4 +1.4
baz=146,SNR=30
HVU **Hansel Valley** 82.79 325 eP P 01 35 59.2 +0.9
HVU **Hansel Valley** 82.79 325 eP P 01 35 59.2 +0.9
PBDV **Barranco-do-Ve** 82.87 41 eP P 01 35 59.7 +1.0
NPI **North Pocatell** 82.93 325 eP P 01 35 60.0 +0.9
B27A **Peters Farms,** 82.95 336 P P 01 36 00.2 +1.4
baz=147
REDW **Red Top Meadow** 83.01 327 eP P 01 36 00.4 +0.9
comp=Z,21nm,0.7s
A28A **Rude Farm, Bot** 83.02 336 P P 01 36 00.2 +1.1
baz=148,SNR=24
SNOW **Snow King Moun** 83.04 327 eP P 01 36 00.8 +1.1
comp=Z,21nm,0.7s
PCVE **Castro Verde** 83.07 41 eP P 01 36 00.6 +1.0
comp=Z,107nm,1.7s
LOHW **Long Hollow** 83.08 327 eP P 01 36 01.0 +1.1
comp=Z,31nm,0.7s
PVAQ **Vaqueiros** 83.10 41 eP P 01 36 00.7 +0.9
comp=Z,86nm,1.5s
MESJ **Messejana** 83.10 41 eP P 01 36 00.5 +0.7
MESJ AMb AMB 01 36 01.6
comp=Z,61nm,1.2s
MESJ **Messejana** 83.10 41 eP P 01 36 00.7 +0.9
MESJ **Messejana** 83.10 41 eP P 01 36 00.4 +0.7
PNCL **Nicolau / Gran** 83.11 40 eP P 01 36 00.6 +0.8
comp=Z,73nm,1.4s
C25A **Freed Ranch, W** 83.13 334 P P 01 36 01.3 +1.6
baz=145,SNR=5.6
MLAC **Mammoth, Mammo** 83.18 319 P P 01 36 01.7 +1.2
baz=133
TAM **Tamanrasset** 83.24 60 eP P 01 36 01.3 +0.3
TAM pmax pmax
comp=Z,96nm,1.3s
TAM **Tamanrasset** 83.24 60 eP P 01 36 01.3 +0.3
comp=Z,96nm,1.3s
MOOW **Moose Ponds** 83.25 328 eP P 01 36 01.6 +1.0
comp=Z,23nm,0.9s
PMAFR **Mafra** 83.26 39 eP P 01 36 01.9 +1.4
FXWY **Fox Creek** 83.30 327 eP P 01 36 01.9 +0.9
ELK **Elko** 83.32 323 eP P 01 36 02.3 +1.2
ELK pmax pmax
comp=Z,51nm,0.9s
ELK **Elko** 83.32 323 eP P 01 36 02.3 +1.2
comp=Z,51nm,0.9s
PACT **Alcochete** 83.38 40 eP P 01 36 02.5 +1.4
A27A **Ledoux Ranch,** 83.41 336 P P 01 36 02.4 +1.4
baz=147
NVAR **Mina Array Bea** 83.41 320 P P 01 36 02.5 +0.8
comp=Z,18nm,0.8s,baz=144,slow=5.0,SNR=35
PBEJ **Beja** 83.43 41 eP P 01 36 00.9 -0.5
comp=Z,89nm,1.5s
IMW **Indian Meadow** 83.45 327 eP P 01 36 02.8 +1.0
comp=Z,61nm,0.8s
IMW epP pP 01 38 04.9 +1.8
FLWY **Flagg Ranch** 83.48 328 eP P 01 36 03.1 +1.3
LAO **LASA Array** 83.50 332 P P 01 36 02.6 +0.9
baz=142,SNR=30
LAO **LASA Array** 83.50 332 eP P 01 36 02.5 +0.9
LAO epP pP 01 38 05.6 +2.6
RLMT **Red Lodge** 83.61 329 P P 01 36 03.4 +1.0
baz=140,SNR=44
RLMT **Red Lodge** 83.61 329 eP P 01 36 03.4 +1.0
comp=Z,45nm,0.9s
A26A **Wade Farm, Ken** 83.65 335 P P 01 36 03.5 +1.3
baz=146,SNR=26
H17A **Grant Village** 83.66 328 P P 01 36 04.2 +1.5
baz=139,SNR=8.7
H17A **Grant Village** 83.66 328 eP P 01 36 03.5 +0.8
comp=Z,67nm,2.0s
EVO **Evora** 83.69 40 eP P 01 36 03.3 +0.6
comp=Z,50nm,2.1s
LKWY **Lake** 83.70 328 eP P 01 36 04.8 +1.8
LKWY pmax pmax
comp=Z,24nm,1.0s
LKWY **Lake** 83.70 328 eP P 01 36 04.8 +1.8
comp=Z,24nm,1.0s
MCID **Moose Creek** 83.79 328 eP P 01 36 04.8 +1.5
YFT **Old Faithful** 83.82 328 eP P 01 36 05.8 +2.3
comp=Z,37nm,1.1s
PMTG **Montargil** 83.93 40 eP P 01 36 04.5 +0.6
comp=Z,161nm,1.2s
PBAR **Barrancos** 84.02 41 eP P 01 36 04.8 +0.5
comp=Z,139nm,1.4s
YMR **Madison River** 84.05 328 eP P 01 36 06.4 +1.8
A25A **Svangstu Ranch** 84.08 335 P P 01 36 05.8 +1.4
baz=145,SNR=14
DGMT **Dagmar** 84.11 334 P P 01 36 06.0 +1.4
baz=144,SNR=26
DGMT **Dagmar** 84.11 334 eP P 01 36 06.0 +1.4
comp=Z,126nm,0.9s
DGMT epP pP 01 38 07.4 +1.2
WAKR **Walker** 84.12 319 eP P 01 36 06.6 +1.5
YMC **Maple Creek** 84.13 328 eP P 01 36 06.6 +1.6
PESTR **Estremoz** 84.16 40 eP P 01 36 05.9 +0.9
comp=Z,97nm,1.8s
SAO **San Andreas Ge** 84.16 317 eP P 01 36 06.4 +1.3
SAO pmax pmax
comp=Z,26nm,0.9s
SAO **San Andreas Ge** 84.16 317 eP P 01 36 06.4 +1.3
comp=Z,26nm,0.9s
BMN **Battle Mountai** 84.18 322 eP P 01 36 05.5 +0.2
BMN pmax pmax
comp=Z,10.0nm,0.8s
BMN **Battle Mountai** 84.18 322 eP P 01 36 05.5 +0.2
comp=Z,10.0nm,0.8s
PTOM **Tomar** 84.20 39 eP P 01 36 05.4 +0.2
comp=Z,178nm,1.1s
CMB **Columbia Colle** 84.36 318 eP P 01 36 07.0 +0.9
CMB pmax pmax
comp=Z,30nm,1.3s
CMB **Columbia Colle** 84.36 318 eP P 01 36 07.0 +0.9
comp=Z,30nm,1.3s
LSZ **Lusaka** 84.38 104 eP P 01 36 08.8 +1.9
LSZ e*PP pP 01 38 11.0 +2.6
LSZ pmax pmax
comp=Z,274nm,1.3s
LSZ **Lusaka** 84.38 104 eP P 01 36 08.8 +1.9
comp=Z,274nm,1.3s
LSZ epP pP 01 38 11.0 +2.6
LSZ **Lusaka** 84.38 104 P P 01 36 08.8 +1.9
SNR=52
LSZ **Lusaka** 84.38 104 P P 01 36 08.8 +1.9
SNR=52
QLMT **Earthquake Lak** 84.39 328 eP P 01 36 08.3 +2.1
PCAS **Camilo, Conde** 84.45 39 eP P 01 36 07.1 +0.7
comp=Z,124nm,1.2s
PMRV **Marv??o** 84.65 40 eP P 01 36 07.6 +0.2
comp=Z,73nm,1.2s
PCBR **Castelo Branco** 84.88 40 eP P 01 36 08.7 +0.2
comp=Z,100nm,1.2s
HLID **Hailey** 84.91 325 P P 01 36 10.6 +1.8
baz=136,SNR=218
HLID **Hailey** 84.91 325 eP P 01 36 10.6 +1.8
comp=Z,175nm,1.1s
MCMT **McKenzie Canyo** 85.06 327 eP P 01 36 11.2 +1.6
MCMT epP pP 01 38 14.2 +2.7
BOZ **Bozeman (W)** 85.09 328 P P 01 36 10.3 +0.6
baz=138,SNR=17
BOZ **Bozeman (W)** 85.09 328 eP P 01 36 10.2 +0.6
BOZ pmax pmax
comp=Z,62nm,1.8s
BOZ **Bozeman (W)** 85.09 328 eP P 01 36 10.2 +0.6
comp=Z,62nm,1.8s
PTO **Porto** 85.14 38 eP P 01 36 10.4 +0.7
comp=Z,164nm,1.5s
MTE **Manteigas** 85.22 39 eP P 01 36 10.7 +0.5
comp=Z,137nm,1.0s
MTE **Manteigas** 85.22 39 eP P 01 36 10.7 +0.5
comp=Z,105nm,1.0s
PVIS **Viseu** 85.24 39 eP P 01 36 10.0 -0.3
comp=Z,70nm,1.7s
AFDM **Forest Hills D** 85.31 319 eP P 01 36 11.7 +1.1
DLMT **Dillon** 85.33 328 eP P 01 36 12.1 +1.4
MFID **Camas Ranch** 85.53 325 eP P 01 36 12.4 +0.7
comp=Z,59nm,1.0s
LRM **Limekiln Ridge** 85.61 328 eP P 01 36 13.4 +1.3
LRM epP pP 01 38 16.5 +2.2
PVRL **Vila Real** 85.72 39 eP P 01 36 12.8 +0.2
comp=Z,147nm,1.1s
POLO **Lamas de Olo** 85.74 38 eP P 01 36 13.1 +0.4
comp=Z,54nm,1.2s
PCAB **Cabril** 85.84 38 eP P 01 36 14.1 +1.0
comp=Z,75nm,1.1s
PGAV **Gavieira, Arco** 85.88 38 eP P 01 36 14.3 +0.9
comp=Z,64nm,1.7s
ORV **Oroville** 86.02 319 eP P 01 36 15.2 +1.3
ORV e*PP pP 01 38 17.9 +1.7
ORV **Oroville** 86.02 319 eP P 01 36 15.2 +1.3
ORV epP pP 01 38 17.9 +1.7
MVO **Moncorvo** 86.03 39 eP P 01 36 14.5 +0.4
comp=Z,102nm,1.2s
EGMT **Eagleton** 86.05 331 P P 01 36 14.5 +0.4
baz=140,SNR=26
EGMT **Eagleton** 86.05 331 eP P 01 36 14.4 +0.4
CASY **Casey** 86.29 178 eP P 01 36 16.3 +1.5
WVOR **Wild Horse Val** 86.33 322 eP P 01 36 16.6 +1.1
WVOR pmax pmax
comp=Z,43nm,1.3s
WVOR **Wild Horse Val** 86.33 322 eP P 01 36 16.6 +1.1
comp=Z,43nm,1.3s
PAB **San Pablo** 86.50 42 eP P 01 36 16.9 +0.5
PAB **San Pablo** 86.50 42 eP P 01 36 16.9 +0.5
PBRG **Braganca** 86.62 39 eP P 01 36 17.4 +0.6
comp=Z,56nm,1.7s
O03D **Paynes Creek** 86.67 319 P P 01 36 17.5 +0.4
baz=131,SNR=26
CHMT **Chamberlain Mo** 86.79 328 eP P 01 36 18.8 +1.1
ESDC **Sonseca Array** 86.81 42 P P 01 36 18.1 +0.4
comp=Z,7.6nm,0.7s,baz=245,slow=4.6,SNR=39
ESDC pP pP 01 38 20.9 +0.6
comp=Z,1.8nm,0.9s,baz=225,slow=5.7,SNR=3.1
ESLA **Sonseca Array** 86.81 42 eP P 01 36 18.4 +0.7
comp=Z,43nm,1.4s
ES19 **SONSECA Array** 86.86 42 eP P 01 36 18.2 +0.2
ES19 epP pP 01 38 21.8 +1.2
MOD **Modoc Plateau** 86.88 321 eP P 01 36 19.5 +1.3
comp=Z,84nm,1.1s
MSO **Missoula** 87.05 328 P P 01 36 19.9 +1.2
baz=137,SNR=23
MSO **Missoula** 87.05 328 eP P 01 36 20.1 +1.3
WDC **Whiskeytown Da** 87.29 319 eP P 01 36 20.0 +0.1
WDC **Whiskeytown Da** 87.29 319 eP P 01 36 20.0 +0.1
BMO **Blue Mountains** 87.29 325 eP P 01 36 20.6 +0.6
comp=Z,24nm,1.0s
SWMT **Swartz Lake** 87.57 328 eP P 01 36 22.2 +1.0
N02D **Trinity Center** 87.64 319 P P 01 36 22.5 +0.8
baz=130,SNR=14
M04C **Macdoel** 87.67 320 P P 01 36 23.3 +1.4
baz=131,SNR=35
KMRM **Mail Ridge** 87.74 318 eP P 01 36 24.1 +2.0
K05A **Summer Lake** 87.76 322 eP P 01 36 23.9 +1.6
K05A epP pP 01 38 27.7 +2.5
YBMT **Yellow Bay** 87.83 329 eP P 01 36 23.6 +1.1
JTMT **Jette** 87.87 328 eP P 01 36 23.8 +1.1
M02C **Callahan** 87.99 320 P P 01 36 24.5 +1.2
baz=130,SNR=18
F10A **Beach Ranch, E** 88.03 326 eP P 01 36 24.1 +0.7
comp=Z,20nm,0.9s
BLMT **Blacktail Moun** 88.10 329 eP P 01 36 24.9 +1.1
YBH **Yreka Blue Hor** 88.13 320 eP P 01 36 24.2 +0.3
YBH pmax pmax
comp=Z,29nm,0.9s
YBH **Yreka Blue Hor** 88.13 320 eP P 01 36 24.2 +0.3
comp=Z,29nm,0.9s
K04D **Chiloquin, OR** 88.17 321 P P 01 36 25.3 +1.1
baz=131
KHMM **Horse Mountain** 88.17 319 eP P 01 36 26.1 +1.8
BSMT **Bassoo Peak** 88.18 328 eP P 01 36 25.1 +0.9
JCC **Jacoby Creek,** 88.31 319 eP P 01 36 26.8 +2.2
J05D **Fort Rock, OR** 88.31 322 P P 01 36 26.1 +1.3
baz=131
FFC **Flin Flon** 88.48 339 eP P 01 36 25.8 +0.7
FFC pmax pmax
comp=Z,50nm,1.1s
FFC **Flin Flon** 88.48 339 eP P 01 36 25.8 +0.7
comp=Z,50nm,1.1s
WALA **Waterton Lakes** 88.66 329 eP P 01 36 27.2 +0.9
HUMO **Hull Mountain** 88.83 320 eP P 01 36 27.9 +0.8
comp=Z,18nm,1.1s
L02D **Cave Junction,** 88.91 320 P P 01 36 29.1 +1.6
baz=130,SNR=11
I05D **Terrebonne, OR** 89.07 323 P P 01 36 29.8 +1.6
baz=131
G06A **Carlson Farm,** 89.28 324 eP P 01 36 30.9 +1.7
I04A **Tendick Farm,** 89.30 322 P P 01 36 30.0 +0.7
baz=130
HAWA **Hanford** 89.49 325 eP P 01 36 31.3 +1.3
comp=Z,22nm,0.9s
HAWA epP pP 01 38 35.8 +2.4
NEW **Newport** 89.58 327 P P 01 36 30.5 +0.1
baz=134,SNR=11
NEW **Newport** 89.58 327 eP P 01 36 30.4 -0.1
NEW pmax pmax
comp=Z,11nm,0.8s
NEW **Newport** 89.58 327 eP P 01 36 30.4 -0.1
comp=Z,11nm,0.8s
D08A **Wollman Farm,** 89.63 326 eP P 01 36 31.6 +0.9
G05D **Wamic, OR** 89.65 323 P P 01 36 32.4 +1.6
baz=131,SNR=8.5
H04A **Detroit Lake** 89.75 322 eP P 01 36 31.8 +0.5
I03D **Drain, OR** 89.75 321 P P 01 36 32.6 +1.3
baz=130
FCC **Fort Churchill** 89.77 345 eP P 01 36 31.5 +0.5
FCC **Fort Churchill** 89.77 345 eP P 01 36 31.5 +0.5
C09A **Chrisman Ranch** 89.82 327 eP P 01 36 32.2 +0.7
C09A epP pP 01 38 36.4 +1.4
COR **Corvallis** 90.30 322 eP P 01 36 35.7 +1.9
COR **Corvallis** 90.30 322 eP P 01 36 35.7 +1.9
SET **Setif** 90.62 49 P P 01 36 28.0 -7.6
G03D **McMinnville, O** 90.67 322 P P 01 36 37.0 +1.5
baz=130
F04A **Amboy** 90.69 323 eP P 01 36 36.1 +0.5
B08A **Colville Reser** 90.72 326 eP P 01 36 36.0 +0.2
comp=Z,9.3nm,1.0s
LON **Longmire** 90.90 324 eP P 01 36 37.0 +0.4
LON pmax pmax
comp=Z,18nm,1.1s
LON **Longmire** 90.90 324 eP P 01 36 37.0 +0.4
comp=Z,18nm,1.1s
REYF **Montagne du Re** 91.03 41 eP P 01 36 38.4 +1.1
F04D **Rainier, OR** 91.10 323 P P 01 36 39.0 +1.6
baz=130
D05A **Enumclaw** 91.28 324 eP P 01 36 39.0 +0.8
MELF **Melles** 91.58 41 eP P 01 36 41.2 +1.3
E03A **Lebam** 91.69 323 eP P 01 36 41.4 +1.2
SALF **Salau** 91.77 42 eP P 01 36 42.0 +1.3
B06A **Marblemount** 91.89 326 eP P 01 36 41.1 +0.1
B05A **Bryant** 92.03 325 P P 01 36 41.8 +0.1
baz=131
VALF **Valcebollere** 92.05 42 eP P 01 36 42.7 +0.6
CARF **Carcanieres** 92.28 42 eP P 01 36 44.0 +0.8
FILF **Fillols** 92.46 42 eP P 01 36 44.4 +0.5
SJAF **Sant Jean de** 92.61 43 eP P 01 36 45.0 +0.4
LFF **La Frestale** 92.81 40 eP P 01 36 45.2 -0.2
LFF pmax pmax
comp=Z,36nm,0.8s
KEST **Kesra** 93.05 51 P P 01 36 47.5 +0.7
comp=Z,15nm,1.1s,baz=262,slow=3.2,SNR=8.3
MFF **Saint Martin d** 93.33 38 eP P 01 36 47.4 -0.3
MFF pmax pmax
comp=Z,45nm,1.1s
CAF **Calviac** 93.56 40 eP P 01 36 48.7 -0.2
CAF pmax pmax
comp=Z,29nm,1.2s
LBL **Lubilhac** 94.42 41 eP P 01 36 54.1 +1.3
LDF **La Druitiere** 94.55 36 eP P 01 36 52.3 -0.9
LDF pmax pmax
comp=Z,20nm,1.0s
PYM **Petit Puy Mans** 94.58 40 eP P 01 36 54.4 +0.9
AGO **Saint Agoulin** 94.83 40 eP P 01 36 55.3 +0.7
VIVF **Saint-Julien-l** 95.04 41 eP P 01 36 55.6 0.0
VIVF pmax pmax
comp=Z,21nm,1.1s
PLDF **La Plantade** 95.06 40 eP P 01 36 56.5 +0.8
SSB **Saint Sauveur** 95.20 41 eP P 01 36 57.2 +1.0
SSB **Saint Sauveur** 95.20 41 eP P 01 36 57.3 +1.0
SSB pmax pmax
comp=Z,34nm,0.9s
SSB **Saint Sauveur** 95.20 41 eP P 01 36 57.3 +1.0
comp=Z,34nm,0.9s
CALN **Calern** 95.75 43 eP P 01 37 00.0 +1.1
LOR **Lormes** 95.94 39 eP P 01 36 58.9 -0.6
LOR pmax pmax
comp=Z,31nm,1.0s
MVIF **Mont Vial** 95.99 43 eP P 01 37 00.9 +0.9
REVF **Revere** 96.04 43 eP P 01 37 01.0 +0.9
LUCF **Luceram** 96.11 43 eP P 01 37 01.2 +0.7
CWF **Charnwood Fore** 96.49 33 eP P 01 37 01.9 +0.1
LPL **La Plagne** 96.61 42 eP P 01 37 03.3 +0.4
LPL pmax pmax
comp=Z,25nm,1.1s
LPG **La Plagne** 96.62 42 eP P 01 37 03.5 +0.5
LPG pmax pmax
comp=Z,26nm,1.1s
ESK **Eskdalemuir** 97.22 30 eP Pdif 01 37 04.0 -1.0
ESK pmax pmax
comp=Z,8.0nm,0.8s
ESK **Eskdalemuir** 97.22 30 eP Pdif 01 37 04.0 -1.0
comp=Z,8.0nm,0.8s
EKA **Eskdalemuir Ar** 97.25 30 P Pdif 01 37 04.3 -0.8
comp=Z,4.8nm,0.6s,baz=231,slow=3.8,SNR=25
SENIN **Lac Senin/Sane** 97.41 41 eP P 01 37 07.2 +0.9
LOMF **Lomont** 97.66 40 eP P 01 37 07.8 +0.4
THEF **They Montfort** 97.66 39 eP P 01 37 07.5 +0.3
DOU **Dourbes** 97.93 37 P P 01 37 08.8 +0.5
SNF **Seneffe** 98.00 37 P P 01 37 09.2 +0.6
MOF **Molkenrain** 98.11 40 eP P 01 37 09.4 +0.1
ECH **Echery** 98.32 40 eP P 01 37 10.5 +0.3
CDF **Champ du Feu** 98.49 39 eP Pdif 01 37 10.5 -0.5
CDF pmax pmax
comp=Z,20nm,1.0s
BCLA **Clavier** 98.49 37 P Pdif 01 37 10.8 0.0
WLS **Welschbruch** 98.53 39 eP P 01 37 11.4 +0.2

WLF Walferdange 98.54 38 *e*P **P 01 37 11.6 +0.5**
WLF Walferdange 98.54 38 *e*Pdif **P 01 37 11.6 +0.5**
YKA Yellowknife Ar 98.66 339 P **P 01 37 11.4 +0.1**
comp=Z,7.8nm,0.7s,baz=126,slow=4.5,SNR=238
YKA pP **pP 01 39 14.2 -1.4**
comp=Z,3.4nm,0.8s,baz=128,slow=4.4,SNR=7.3
YKA PP **PP 01 41 23.8 +1.7**
comp=Z,1.1nm,0.9s,baz=132,slow=7.4,SNR=4.4
YKA PKIKP **PKiKP 01 41 39.1 +0.2**
comp=Z,0.7nm,0.8s,baz=134,slow=1.5,SNR=5.9
YKA PKKPbc **PKKPbc 01 53 37.2 -1.9**
comp=Z,0.3nm,0.5s,baz=317,slow=3.7,SNR=10.0
YKA PKPPKP **P'P'df 02 01 48.5 -1.9**
comp=Z,0.3nm,1.0s,baz=330,slow=2.6,SNR=4.1
TUE Stuetta 98.67 42 *e*Pdif **P 01 37 12.6 +0.6**
YKW3 Yellowknife Ar 98.71 339 *e*Pdif **P 01 37 11.8 +0.3**
KMBO Kilima Mbogo 98.86 96 *e*P Pdif 01 37 12.7 -1.0
KMBO pmax pmax
comp=Z,1.0nm,0.3s
KMBO Kilima Mbogo 98.86 96 *e*Pdif Pdif 01 37 12.7 -1.0
comp=Z,0.7nm,0.3s
BEBN Eben Emael 98.90 37 P **P 01 37 13.3 +0.7**
MEM Membach 98.97 37 P **P 01 37 13.7 +0.6**
comp=Z,7.3nm,1.1s
BFO Black Forest 99.04 40 *e*P **Pdif 01 37 13.4 0.0**
BFO Black Forest 99.04 40 *e*Pdif **Pdif 01 37 13.4 0.0**
LANF Langenberg 99.09 39⇓ *e*P **Pdif 01 37 14.1 +0.6**
AQU L'Aquila 99.13 47 *e*P **Pdif 01 37 14.3 +0.4**
AQU L'Aquila 99.13 47 *e*Pdif **Pdif 01 37 14.3 +0.4**
DAVOX Davos/Dischmat 99.14 42 P **Pdif 01 37 14.1 0.0**
comp=Z,6.2nm,0.7s,baz=241,slow=4.9,SNR=10.0
FUORN Ofenpass-Fuorn 99.29 42 *e*Pdif **Pdif 01 37 15.9 +1.1**
DAVA Damuels 99.40 41 *i* Pdiff **Pdif 01 37 16.2 +1.1**
comp=Z,9.3nm,0.9s
STU Stuttgart 99.76 40 *e*P **Pdif 01 37 17.5 +1.0**
STU Stuttgart 99.76 40 *e*Pdif **Pdif 01 37 17.5 +1.0**
FETA Feichten 99.77 42 *e*Pdiff **Pdif 01 37 17.8 +0.9**
comp=Z,12nm,1.1s
RETA Reutte 100.02 41 *i* Pdiff **Pdif 01 37 18.8 +1.0**
comp=Z,9.2nm,1.2s
MOTA Moosalm 100.15 42 *i* Pdiff **Pdif 01 37 19.9 +1.4**
comp=Z,5.0nm,0.8s
WATA Walderalm 100.42 42 *i* Pdiff **Pdif 01 37 20.2 +0.6**
comp=Z,6.8nm,1.1s
ABTA Abfaltersbach 100.70 43 *e*Pdiff **Pdif 01 37 21.8 +1.0**
comp=Z,6.8nm,0.9s
MYKA Terra Mystica 101.32 43 *i* Pdiff **Pdif 01 37 24.6 +1.0**
comp=Z,7.3nm,1.1s
GRFO Grafenberg 101.37 40 *e*P **Pdif 01 37 25.1 +1.4**
GRFO Grafenberg 101.37 40 *e*Pdif **Pdif 01 37 25.1 +1.4**
DLBC Dease Lake 101.97 330 *e*Pdif **Pdif 01 37 27.9 +1.7**
MOA Molln 102.27 42 *e*Pdiff **Pdif 01 37 28.3 +0.6**
comp=Z,6.8nm,1.3s
GERES GERESS Array B 102.40 41 P **Pdif 01 37 28.8 +0.4**
comp=Z,0.2nm,0.3s,baz=242,slow=2.9,SNR=5.6
GERES PKiKP **PKiKP 01 41 46.3 +0.1**
comp=Z,1.6nm,0.8s,baz=195,slow=1.5,SNR=9.0
GERES PKKPbc **PKKPbc 01 53 27.6 -0.5**
comp=Z,0.7nm,0.7s,baz=31,slow=3.4,SNR=5.2
KHC Kasperske Hory 102.46 41 *e*PP PP 01 41 44.0 -6.8
CLL Collm 103.14 39 *e*Pdif **Pdif 01 37 33.0 +1.5**
comp=Z,6.0nm,1.0s
CLL *e*PP **PKiKP 01 41 48.0 +0.6**
CLL *ep*PP 01 43 45.0
CLL *es*PP 01 44 43.0
CLL *e*SP SP 01 50 09.0 -0.9
CLL *e* 01 53 47.0
CLL *e*SS **SKKPbc 01 56 18.0 +2.0**
CLL *es*SS 01 59 06.0
CLL *e* 01 59 36.0
CLL *e*SSS SSS 02 00 18.0
CLL *e*SSSS 02 03 32.0
CLL Collm 103.14 39 *e*P **Pdif 01 37 33.0 +1.5**
CLL pmax pmax
comp=Z,6.0nm,1.0s
VRAC Vranov 104.30 42 Pdiff **Pdif 01 37 37.5 +0.8**
comp=Z,0.5nm,0.3s,baz=117,slow=6.8,SNR=2.1
VRAC Vranov 104.30 42⇑ *i*P **PP 01 42 00.3 -4.0**
VTS Vitosha 105.75 50⇑ *i*P **PP 01 42 13.3 -1.9**
NIE Niedzica 106.56 43 *e*PKP **PKiKP 01 41 55.4 +1.6**
HFS Hagfors 107.43 31 PKiKP **PKiKP 01 41 54.3 -0.7**
comp=Z,2.1nm,0.7s,baz=256,slow=0.6,SNR=4.0
ARR Arges 107.75 48⇓ *i*P **PKiKP 01 41 56.6 +0.4**
KWP Kalwaria Pacla 108.09 43 *e*PKP **PKiKP 01 41 57.6 +1.0**
KWP Kalwaria Pacla 108.09 43⇑ *i*P **PKiKP 01 41 57.8 +1.2**
ARCR ARCALIA 108.19 46⇓ *i*P **PKiKP 01 41 57.5 +0.6**
INK Inuvik 108.43 338 Pdiff **Pdif 01 37 55.1 +0.6**
comp=Z,2.5nm,1.1s,baz=103,slow=8.5,SNR=6.4
INK PKiKP **PKiKP 01 41 56.0 -0.6**
comp=Z,2.3nm,0.8s,baz=128,slow=1.8,SNR=6.1
INK PKKPbc **PKKPbc 01 53 09.2 -1.0**
comp=Z,3.5nm,0.9s,baz=310,slow=3.6,SNR=10
INK Inuvik 108.43 338 *e*P **Pdif 01 37 55.0 +0.4**
MLR Muntele Rosu 108.66 48⇓ *i*P **PKiKP 01 41 58.6 +0.6**
PLOR Plostina 109.25 48⇑ *i*P **PKiKP 01 41 58.6 -0.4**
VRI Vrincioaia 109.30 48⇑ *i*P **PKiKP 01 41 58.3 -0.7**
TESR Tescani 109.47 47⇓ *i*P **PKiKP 01 41 59.2 -0.1**
SUW Suwalki 109.90 39 *e*PKP **PKiKP 01 42 00.0 +0.1**
TIRR Tirgusor 109.95 50⇓ *i*P **PKiKP 01 42 00.5 +0.2**
TIRR Tirgusor 109.95 50 *e*PKP **PKiKP 01 41 59.8 -0.5**
CFR Carcaliu 110.00 49⇓ *i*P **PKiKP 01 42 00.5 +0.2**
DOT Dot Lake 110.41 332 *e*PKP **PKiKP 01 42 01.1 +0.5**
DOT *e*PP **PP 01 42 46.4 -1.5**
LEOM Leova 110.50 48⇓ *i*P **PKiKP 01 42 01.4 +0.2**
LEOM Leova 110.50 48⇓ PKiKP **PKiKP 01 42 01.4 +0.2**
MILM Milestii Mici 111.01 47⇑ *i*P **PKiKP 01 42 02.2 0.0**
SORM Soroca 111.09 46⇑ *i*P **PKiKP 01 42 01.2 -1.1**
SORM Soroca 111.09 46 ⇑PKiKP **PKiKP 01 42 01.2 -1.1**
ILAR Eielson Array 111.95 333 PKiKP **PKiKP 01 42 03.5 +0.1**
comp=Z,3.6nm,1.0s,baz=197,slow=1.0,SNR=19
ILAR PP PP 01 42 48.9 -10
comp=Z,1.5nm,0.8s,baz=97,slow=7.4,SNR=5.2
ILAR PKKPbc **PKKPbc 01 52 56.5 -2.3**
comp=Z,0.8nm,1.0s,baz=304,slow=3.7,SNR=4.2
BRTR Keskin Array B 112.13 56 PKiKP **PKiKP 01 42 04.8 0.0**
comp=Z,3.1nm,0.8s,baz=247,slow=2.0,SNR=21
BRTR PP PP 01 42 50.7 -10
comp=Z,2.2nm,1.0s,baz=258,slow=6.2,SNR=5.1
BRTR SKiKP **SKiKP 01 44 48.2 +1.4**
comp=Z,0.8nm,0.7s,baz=151,slow=2.8,SNR=3.7
BRTR PKKPbc **PKKPbc 01 52 56.9 -0.9**
comp=Z,1.0nm,1.0s,baz=28,slow=6.5,SNR=3.8
COLA College 112.38 333⇑ *i*PKIKP **PKiKP 01 42 04.6 +0.4**
COLA College 112.38 333 *e*PKP **PKiKP 01 42 04.3 +0.1**
KIEV Kiev 112.39 43 *e*PKIKP **PKiKP 01 42 04.1 -0.6**
KIEV Kiev 112.39 43 *e*PKP **PKiKP 01 42 04.1 -0.6**
AKASG Malin Array Be 112.40 43 PKiKP **PKiKP 01 42 04.2 -0.5**
comp=Z,5.0nm,0.7s,baz=266,slow=2.5,SNR=23
AKASG SKiKP **SKiKP 01 44 47.1 +0.3**
comp=Z,1.8nm,0.7s,baz=262,slow=2.8,SNR=5.2
MCK McKinley 112.49 331 *e*PKIKP **PKiKP 01 42 04.8 +0.2**
MCK McKinley 112.49 331 *e*PKP **PKiKP 01 42 04.8 +0.2**
TRF Thorofare Moun 113.00 331 *e*PKP **PKiKP 01 42 05.9 +0.2**
VSU Vasula 113.13 35*d* *i*PKIKP **PKiKP 01 42 05.7 -0.1**
KTH Kantishna Hill 113.30 331 *e*PKP **PKiKP 01 42 06.2 0.0**
BPAW Bear Paw Mtn. 113.47 331 *e*PKP **PKiKP 01 42 06.6 +0.2**
FINES FINESS Array B 113.58 32 PKiKP **PKiKP 01 42 06.8 +0.1**
comp=Z,1.5nm,0.6s,baz=270,slow=0.6,SNR=12
FINES PKKPbc **PKKPbc 01 52 51.8 -1.6**
comp=Z,2.0nm,0.8s,baz=70,slow=3.2,SNR=5.9
PPLA Purkeypile 113.68 330 *e*PKP **PKiKP 01 42 07.0 0.0**
COLD Coldfoot 113.94 335 *e*PKP **PKiKP 01 42 08.2 +1.0**
SIM Simferopol' 113.98 50 *i* PKIKP **PKiKP 01 42 08.3 +0.3**
SIM pmax pmax
comp=Z,12nm,0.8s
ARCES ARCESS Array B 115.17 23 PKP **PKPdf 01 42 09.4 -0.1**
comp=Z,4.1nm,0.7s,baz=245,slow=3.9,SNR=26
ARCES PKKPbc **PKKPbc 01 52 47.2 -1.0**
comp=Z,0.8nm,0.3s,baz=91,slow=3.2,SNR=20
STKA Stephens Creek 116.25 204 PKKPbc PKKPbc 01 52 43.5 -1.1
comp=Z,3.4nm,0.8s,baz=314,slow=6.1,SNR=4.9
RAYN Ar Rayn 116.49 76 *e*PKPdif **PKPdf 01 42 14.0 +0.5**
OBN Obninsk 117.72 40*d* *i*PKIKP **PKPdf 01 42 14.7 -0.1**
OBN 01 43 39.0
OBN *e*SS SS 01 59 22.2 +14
OBN *e*SSS SSS 02 03 36.9
OBN pmax pmax
comp=Z,27nm,0.8s
MOS Moscow 118.40 39 *e*PKIKP **PKPdf 01 42 15.5 -0.6**
MOS pmax pmax
comp=Z,37nm,1.0s
VSR Storozhevoye 118.64 44 *e*PKIKP **PKPdf 01 42 15.8 -0.9**
VSR pmax pmax
comp=Z,20nm,1.0s

LPSR Galich'ya Gora 118.71 43 *e*PKIKP **PKPdf 01 42 16.5 -0.3**
LPSR pmax pmax
comp=Z,40nm,0.9s
CHVG Ch'k'valeri 119.05 54⇓ *i*P **PKPdf 01 42 21.6 +3.8**
TMCR Tamitsa 119.42 30 *e*PKIKP **PKPdf 01 42 17.7 -0.1**
TMCR pmax pmax
comp=Z,26nm,1.0s
NEY Neytrino 119.61 54⇓ *i*PKIKP **PKPdf 01 42 19.7 +0.6**
KIV Kislovodsk 119.72 53*d* *i*PKIKP **PKPdf 01 42 19.1 -0.1**
KIV *e* 01 43 54.4
KIV pmax pmax
comp=Z,28nm,1.0s
KIV Kislovodsk 119.72 53 *e*PKPdf **PKPdf 01 42 19.3 +0.2**
KIV Kislovodsk 119.72 53 PKPdf **PKPdf 01 42 19.4 +0.3**
SNR=6.7
KIV Kislovodsk 119.72 53 P **PKPdf 01 42 19.4 +0.3**
SNR=6.7
AKH Akhalkalaki 119.81 56⇓ *i*P **PKPdf 01 42 20.4 +0.9**
KBZ Khabaz 119.83 53 PKP **PKPdf 01 42 19.7 +0.5**
comp=Z,14nm,1.0s,baz=180,slow=2.8,SNR=23
ONI Oni 120.01 55 P **PKPdf 01 42 20.2 +0.5**
ONI Oni 120.01 55 *e*PKIKP **PKPdf 01 42 20.2 +0.5**
VRH Novokhopyorsk 120.23 45 *e*PKIKP **PKPdf 01 42 19.3 -0.4**
VRH pmax pmax
comp=Z,30nm,0.8s
ZEI Tsey 120.38 55 *e*PKIKP **PKPdf 01 42 20.6 0.0**
ZEI pmax pmax
comp=Z,29nm,0.9s
GNI Garni 120.48 58*d* *i*PKIKP **PKPdf 01 42 21.2 +0.4**
GNI Garni 120.48 58 *e*PKPdf **PKPdf 01 42 21.0 +0.2**
GUDG Gudauri 120.73 55 P **PKPdf 01 42 23.4 +2.1**
GAMB Gambell 122.50 330 *e*PKPdf **PKPdf 01 42 24.2 +0.5**
CTAO Charters Tower 124.60 214 *e*PKIKP **PKPdf 01 42 29.4 +0.2**
CTAO Charters Tower 124.60 214 *e*PKPdf **PKPdf 01 42 29.4 +0.2**
ASAR Alice Springs 126.37 200 PKP **PKPdf 01 42 32.4 -0.2**
comp=Z,23nm,0.9s,baz=153,slow=2.3,SNR=91
ASAR pPKP **pPKPdf 01 44 43.1 -1.2**
comp=Z,1.4nm,0.8s,baz=160,slow=1.9,SNR=3.7
ASAR SKPab SKPab 01 44 54.5
comp=Z,1.7nm,0.5s,baz=149,slow=3.5,SNR=9.3
ASAR PKKPbc **PKKPbc 01 52 06.0 -1.2**
comp=Z,2.2nm,0.8s,baz=347,slow=3.7,SNR=11
ASAR PKKP **PKKPdf 01 52 47.5 -0.3**
comp=Z,0.5nm,0.4s,baz=355,slow=1.8,SNR=6.1
ASAR SKKP **SKKPdf 01 55 28.1 -1.4**
comp=Z,0.8nm,0.9s,baz=351,slow=4.0,SNR=2.8
SMDO Samad 127.25 81 PKPdf **PKPdf 01 42 34.1 -0.2**
SNR=11
SMDO Samad 127.25 81 P **PKPdf 01 42 34.1 -0.2**
SNR=11
SOKR Solikamsk 128.57 34 *e*PKIKP **PKPdf 01 42 34.7 -0.7**
SOKR pmax pmax
comp=Z,28nm,0.8s
WRA Warramunga Arr 129.72 202 PKP **PKPdf 01 42 39.1 +0.1**
comp=Z,26nm,0.8s,baz=169,slow=1.6,SNR=51
WRA pPKP **pPKPdf 01 44 50.4 -0.3**
comp=Z,4.0nm,1.0s,baz=164,slow=1.6,SNR=5.3
WRA SKPab SKPbc 01 45 08.4 -0.5
comp=Z,41nm,0.8s,baz=158,slow=3.9,SNR=51
WRA SKKP **SKKPdf 01 55 23.5 +0.4**
comp=Z,1.0nm,0.8s,baz=343,slow=5.4,SNR=3.2
WRAB Tennant Creek 129.73 202 *e*PKPpre PKPpre 01 42 31.7
WRAB *e*PKPdf **PKPdf 01 42 39.2 +0.1**
WRAB *e*SKP 01 45 08.1
BILL Bilibino 130.05 338*d* *i*PKIKP **PKPdf 01 42 38.5 +0.5**
BILL *e* 01 45 08.7
BILL pmax pmax
comp=Z,46nm,1.1s
BILL Bilibino 130.05 338 *e*PKPdf **PKPdf 01 42 38.6 +0.5**
BILL *e*SKP 01 45 10.1
ARU Arti 130.08 38 PKP **PKPdf 01 42 38.9 +0.5**
comp=Z,13nm,0.5s,baz=281,slow=2.1,SNR=36
ARU pPKP **pPKPdf 01 44 50.0 -0.2**
comp=Z,4.1nm,0.8s,baz=338,slow=3.3,SNR=2.8
ARU SKPab **SKPab 01 45 09.3 0.0**
comp=Z,18nm,0.7s,baz=291,slow=3.1,SNR=13
ARU Arti 130.08 38 *i* PKIKP **PKPdf 01 42 39.2 +0.7**
ARU 01 45 09.7
ARU 01 48 55.6
ARU Arti 130.08 38 *e*PKPdf **PKPdf 01 42 39.1 +0.7**
ARU pPKP **pPKPdf 01 44 50.0 -0.2**
ARU *e*SKP 01 45 09.6
GEYT Alibeck 130.42 62 PKhKP PKPpre 01 42 25.9
comp=Z,1.6nm,0.8s,baz=328,slow=5.1,SNR=3.2
GEYT PKP **PKPdf 01 42 39.9 +0.1**
comp=Z,13nm,0.9s,baz=302,slow=2.8,SNR=8.2
GEYT pPKP pPKPdf 01 44 50.9 -0.6
comp=Z,2.0nm,0.9s,baz=242,slow=3.3,SNR=3.3
GEYT SKPbc **SKPab 01 45 11.6 +0.1**
comp=Z,2.4nm,0.6s,baz=289,slow=4.5,SNR=4.6
AKTO Aktyubinsk 130.52 46 PKP **PKPdf 01 42 40.0 +0.5**
comp=Z,20nm,1.0s,baz=287,slow=1.8,SNR=30
AKTO pPKP **pPKPdf 01 44 51.1 -0.2**
comp=Z,2.8nm,0.9s,baz=11,slow=5.2,SNR=3.1
AKTO SKPbc **SKPbc 01 45 10.5 -0.3**
comp=Z,10nm,0.8s,baz=281,slow=3.6,SNR=9.4
SVE Sverdlovsk 131.13 37 *e*PKIKP **PKPdf 01 42 42.0 +1.6**
SVE pmax pmax
comp=Z,33nm,1.5s
COEN Coen 131.33 215 *e*PKPdf **PKPdf 01 42 42.3 +0.1**
MBWA Marble Bar 131.42 184 *e*PKPdf **PKPdf 01 42 42.1 0.0**
AB31 Akbulak array 131.86 47 *i* PKIKP **PKPdf 01 42 41.7 -0.3**
AB31 pmax pmax
comp=Z,49nm,1.2s
ABKAR Akbulak array 131.86 47 *e*PKPdf **PKPdf 01 42 42.7 +0.7**
FITZ Fitzroy Crossi 133.73 192 *e*PKPdf **PKPdf 01 42 47.1 +0.5**
FITZ *e*SKP **SKPbc 01 45 23.2 +0.3**
NRIK Noril'sk 134.93 14 PKP **PKPdf 01 42 47.6 +0.4**
comp=Z,6.8nm,0.8s,baz=338,slow=1.0,SNR=12
NRIK pPKP **pPKPdf 01 44 58.9 -0.2**
comp=Z,3.1nm,0.6s,baz=194,slow=2.9,SNR=2.3
TIXI Tiksi 135.40 355 PKhKP PKPpre 01 42 32.5
comp=Z,1.2nm,0.3s,baz=23,slow=3.2,SNR=6.9
TIXI PKP **PKPdf 01 42 45.8 -2.2**
comp=Z,17nm,0.9s,baz=42,slow=0.6,SNR=14
TIXI pPKP pPKPdf 01 44 59.4 -0.5
comp=Z,1.9nm,0.5s,baz=122,slow=2.8,SNR=1.2
TIXI SKPbc **SKPbc 01 45 26.4 0.0**
comp=Z,9.8nm,0.8s,baz=30,slow=3.4,SNR=7.8
TIXI Tiksi 135.40 355⇑ *e*PKIKP **PKPdf 01 42 48.4 +0.4**
TIXI Tiksi 135.40 355 PKPpre PKPpre 01 42 32.5
TIXI *e*PKPdf **PKPdf 01 42 48.2 +0.2**
TIXI pPKP pPKPdf 01 44 59.4 -0.5
TIXI *e*SKPbc **SKPbc 01 45 26.4 0.0**
ZRNK Zerenda 136.78 41 PKHKP PKPpre 01 42 40.2
ZRNK pmax pmax
comp=Z,70nm,1.1s
CHKZ Chkalovo 137.48 39 PKHKP PKPpre 01 42 40.2
CHKZ pmax pmax
comp=Z,39nm,1.1s
BRVK Borovoye 137.49 40 *e*PKHKP PKPpre 01 42 42.5
BRVK *e* 01 42 53.6
BRVK Borovoye 137.49 40 *e*PKPpre PKPpre 01 42 42.5
BRVK *e*PKPdf **PKiKP 01 42 53.6 -0.9**
BRVK *e*SKP **SKPbc 01 45 34.6 +1.5**
BVA0 Borovoye Array 137.56 40 *i* PKIKP **PKPdf 01 42 53.7 +1.1**
BVA0 pmax pmax
comp=Z,24nm,0.8s
BVAR Borovoye Array 137.56 40 PKhKP PKPpre 01 42 42.6
comp=Z,1.3nm,0.4s,baz=289,slow=3.8,SNR=13
BVAR PKP **PKPdf 01 42 53.5 +0.9**
comp=Z,26nm,0.8s,baz=279,slow=2.9,SNR=58
BVAR pPKP pPKPdf 01 45 05.6 +1.1
comp=Z,2.9nm,0.8s,baz=254,slow=5.5,SNR=5.2
BVAR SKPbc **SKPbc 01 45 33.7 +0.4**
comp=Z,6.0nm,0.7s,baz=283,slow=3.0,SNR=10
SEY Seymchan 137.69 337 PKhKP PKPpre 01 42 42.1
comp=Z,6.8nm,0.7s,baz=125,slow=4.0,SNR=16
SEY PKP **PKPdf 01 42 53.5 +1.0**
comp=Z,46nm,0.9s,baz=76,slow=3.7,SNR=38
SEY SKPbc **SKPbc 01 45 33.6 +0.2**
comp=Z,9.7nm,0.8s,baz=93,slow=1.3,SNR=4.6
VOSK Vostochnaya 137.99 41 PKHKP PKPpre 01 42 43.2
VOSK pmax pmax
comp=Z,34nm,0.9s
TRD Trivandrum 137.99 109 *e*P **PKPdf 01 42 53.0 -1.5**
POO Poona 139.75 94 *e*P **PKPdf 01 42 56.8 -0.9**
KKAR Karatay Array 139.83 55 *e*PKIKP **PKPdf 01 42 56.1 -1.0**
KKAR Karatay Array 139.83 55 *e*PKPdf **PKPdf 01 42 56.1 -1.0**
KKAR *e*SKP **SKPbc 01 45 40.9 +1.0**
PET Petropavlovsk 139.98 321 *e*PKIKP **PKPdf 01 42 57.9 +1.0**
PETK Petropavlovsk- 140.48 322 PKhKP PKPpre 01 42 51.9
comp=Z,8.9nm,0.8s,baz=116,slow=5.4,SNR=7.7
PETK pPKP pPKPdf 01 45 10.7 +0.9
comp=Z,5.8nm,0.9s,baz=116,slow=5.3,SNR=3.2
PETK SKPbc **SKPbc 01 45 41.0 -0.2**
comp=Z,15nm,1.0s,baz=119,slow=4.4,SNR=6.3
JAY Jayapura 142.14 222 SKPbc **SKiKP 01 45 47.5 -0.7**
comp=Z,2.3nm,0.9s,baz=321,slow=23,SNR=6.8
EKS2 Erkin-Say 142.27 55 *e*PKHKP PKPpre 01 42 58.6
EKS2 Erkin-Say 142.27 55 *e*PKPdf PKPpre 01 42 58.5
AAK Ala-Archa 142.80 55 PKP **PKPdf 01 43 01.3 -1.3**
comp=Z,44nm,0.7s,baz=208,slow=2.4,SNR=145
AAK SKiKP **SKiKP 01 45 48.7 -0.1**
comp=Z,17nm,0.9s,baz=171,slow=3.2,SNR=5.1
AAK SKKPbc **SKKPab 01 54 03.0 -0.4**
comp=Z,8.7nm,0.8s,baz=133,slow=4.8,SNR=23
AAK Ala-Archa 142.80 55 *e*PKPdf **PKPdf 01 43 01.1 -1.5**
AAK *e*SKPbc **SKiKP 01 45 49.4 +0.7**
AAK SKKPbc **SKKPab 01 54 03.0 -0.4**
AAK Ala-Archa 142.80 55 PKPdf **PKPdf 01 43 01.1 -1.5**
SNR=68
FRU Bishkek 142.85 55 *i* PKHKP PKPpre 01 43 00.0
FRU pmax pmax
comp=Z,310nm,1.6s
MDRS Chennai 143.08 106 *e*P PKPab 01 43 01.3 0.0
KURBB Kurchatov Arra 143.13 41 PKP **PKPdf 01 43 01.8 -0.8**
comp=Z,102nm,0.9s,baz=292,slow=3.9,SNR=749
KURBB pPKP **pPKPdf 01 45 12.2 -2.4**
comp=Z,4.1nm,0.8s,baz=308,slow=3.8,SNR=3.7
KURBB SKPbc **SKPbc 01 45 48.3 +0.4**
comp=Z,2.9nm,0.5s,baz=301,slow=3.2,SNR=4.6
KURK Kurchatov 143.15 41 PKIKP PKPbc 01 43 01.8 +0.8
KURK 01 45 12.2
KURK pmax pmax
comp=Z,102nm,0.9s
KURK pmax pmax
comp=Z,4.0nm,0.8s
KURK pmax pmax
comp=N,3.0nm,0.5s
KURK Kurchatov 143.15 41 *e*PKPdf PKPbc 01 43 01.6 +0.6
KURK pPKP pPKPdf 01 45 12.2 -2.4
KURK SKPbc **SKPbc 01 45 48.3 +0.3**
KURK Kurchatov 143.15 41 PKPbc PKPbc 01 43 01.8 +0.8
SNR=78
HYB Hyderabad 143.49 98 *i* PKP PKPbc 01 43 03.0 -0.1
HYB *e* 01 45 16.0
HYB Hyderabad 143.49 98 *e*P PKPab 01 43 02.9 0.0
HYB IAMs_20 IAMs_20 01 56 21.9
comp=Z,201nm,7.4s
TKM2 Tokmak 2 143.54 54 PKIKP PKPbc 01 43 03.3 +0.5
TKM2 pmax pmax
comp=Z,383nm,1.2s
TKM2 Tokmak 2 143.54 54 *e*PKPdf PKPbc 01 43 03.0 +0.2
TKM2 *e*SKPbc **SKiKP 01 45 49.9 -0.4**
NVS Novosibirsk 143.56 32⇓ *i*PKIKP **PKPdf 01 43 03.5 +0.3**
NVS pmax pmax
comp=Z,428nm,1.2s
NVS pmax pmax
comp=N,27nm,0.8s
NVS pmax pmax
comp=E,27nm,0.8s
KHET Khetri 143.99 79 *e*P PKPbc 01 43 03.9 -0.5
KSH Kashi 144.36 60 PKP **PKPdf 01 43 05.4 +0.1**
KSH *es*PKP 01 46 05.1
KSH *e*PP **PP 01 46 26.8 -1.8**
KSH PKS **PKSdf 01 46 39.8 -1.1**
KSH SKS **SKSdf 01 49 22.9 +1.4**
KSH SKKS **SKKSac 01 52 19.6 -4.3**
THN Thein Dam 144.38 72 *e*P **PKPdf 01 43 05.0 -0.4**
BHPL Bhopal 144.40 88 *e*P **PKPdf 01 43 05.0 -0.8**
YAK Yakutsk 144.51 349 PKP PKPbc 01 43 04.9 +0.1
comp=E,135nm,0.6s,baz=202,slow=0.5,SNR=58
YAK SKPbc **SKiKP 01 45 51.1 -0.2**
comp=E,11nm,0.4s,baz=256,slow=2.5,SNR=2.8
YAK Yakutsk 144.51 349*d* *i*P **PKPab 01 43 05.3 -0.1**
YAK *e*PPP PPP 01 43 47.8
YAK *e*S 01 47 26.9
YAK *e**SS 01 47 42.0
YAK *es*SS SKSdf 01 48 24.5 -56
YAK pmax pmax
comp=Z,234nm,0.9s
YAK pmax pmax
comp=N,78nm,1.5s
YAK pmax pmax
comp=E,20nm,1.1s
YAK pmax pmax
comp=Z,24nm,0.8s
YAK pmax pmax
comp=N,20nm,1.1s
YAK pmax pmax
comp=E,13nm,1.0s
YAK smax smax
comp=N,69nm,2.0s
YAK smax smax
comp=E,44nm,1.6s
YAK MLR MLR
comp=Z,207nm,14.0s
YAK MLR MLR
comp=N,199nm,17.0s
YAK MLR MLR
comp=E,371nm,22.0s
YAK Yakutsk 144.51 349 *e*PKPdf **PKPab 01 43 05.3 -0.1**
YAK SKPbc **SKiKP 01 45 51.1 -0.2**
KUDL Kundal 144.60 80 *e*P PKPbc 01 43 06.1 0.0
RTK Rohtak 144.66 78 *e*P **PKPdf 01 43 05.0 -1.0**
ZALV Zalesovo Beam 144.83 33 PKP PKPbc 01 43 06.4 +0.3
comp=E,139nm,0.7s,baz=297,slow=4.6,SNR=532
ZALV pPKP pPKPdf 01 45 15.6 -1.9
comp=E,24nm,0.9s,baz=298,slow=3.2,SNR=6.1
ZALV SKPbc **SKiKP 01 45 52.4 +0.1**
comp=E,15nm,0.9s,baz=327,slow=2.4,SNR=4.4
ZALV SKKPbc **SKKPab 01 53 52.1 -2.0**
comp=E,1.3nm,0.5s,baz=131,slow=3.8,SNR=4.8
DHRM DHARAMSHALA 144.86 72 *e*P **PKPdf 01 43 06.2 -0.3**
BHGR Bahadurgarh 145.07 79 *e*P **PKPdf 01 43 06.9 +0.3**
AYAN Aya Nagar 145.21 79 *e*P **PKPbc 01 43 07.5 -0.5**
AYAN *e*P **PKPbc 01 43 07.5 -0.5**
AYAN IAmb IAmb 01 43 08.5
NDI New Delhi 145.31 79 *e*P **PKPdf 01 43 04.5 -2.6**
NDI *ex* x 01 43 11.0
SDNR Sundarnagar 145.39 74 *e*P **PKPbc 01 43 09.0 +0.5**
SMLA Simla 145.53 74 *e*P **PKPbc 01 43 08.8 -0.1**
SMLA IAmb IAmb 01 43 11.8
DDI Dehra Dun 146.22 76 *e*P **PKPdf 01 43 08.3 -0.3**
DDI IAMs_20 IAMs_20 01 56 30.1
comp=Z,185nm,6.6s
MAKZ Makanchi 146.75 45 PKHKP PKPpre 01 43 07.8
MAKZ pmax pmax
comp=Z,105nm,0.6s
KRAR Krasnoyarsk 146.88 24⇑ *e*PKIKP **PKPdf 01 43 10.1 +1.3**
MK31 Makanchi Array 146.96 45 *i* PKIKP **PKPdf 01 43 10.2 +0.8**
MK31 pmax pmax
comp=Z,165nm,0.9s
MKAR Makanchi Array 146.96 45 PKPbc **PKPbc 01 43 10.9 -1.4**
comp=Z,127nm,0.8s,baz=293,slow=2.4,SNR=239
MKAR pPKPbc pPKPbc 01 45 22.0 -0.1
comp=Z,46nm,0.9s,baz=292,slow=3.5,SNR=18
MKAR SKKPbc SKKPbc 01 53 42.1 -4.4
comp=Z,3.3nm,0.8s,baz=106,slow=5.6,SNR=10
KAPI Kappang 147.43 186 *e*PKPbc **PKPbc 01 43 15.2 +0.7**
KAPI Kappang 147.43 186 PKPdf **PKPbc 01 43 15.5 +1.1**
SNR=24
VIS Vishakhapatnam 147.79 101 *e*P **PKPdf 01 43 10.5 -1.0**
LGTI Lohaghat 148.03 78 *ex* **PKPbc 01 43 14.6 -1.0**
NKL Nikolayevsk 148.90 332 *e*PKHKP PKPpre 01 43 13.5
NKL pmax pmax
comp=Z,400nm,5.0s
NKL pmax pmax
comp=N,22nm,1.0s
NKL pmax pmax
comp=Z,230nm,1.0s
TYV Tymovskoe 149.55 327 *e*PKIKP **PKPdf 01 43 09.2 -4.1**
TYV pmax pmax
comp=Z,114nm,1.0s
BOD Bodaibo 149.75 3 *e*P **PKPdf 01 43 13.7 +0.3**
BOD pmax pmax
comp=Z,107nm,1.3s
GUMO Guam 150.23 248 PKPbc **PKPbc 01 43 21.3 +0.1**
comp=Z,86nm,0.5s,baz=187,slow=8.9,SNR=5.9
CMBY CAMPBELL BAY 150.26 129 *e*P **PKPdf 01 43 14.9 -0.7**
CMBY IAMs_20 IAMs_20 01 55 34.0
comp=Z,1μm,6.1s
WMQ Urumqi 151.65 48 PKPbc **PKPdf 01 43 16.3 -0.6**
WMQ PKPab **PKPab 01 43 36.3 +1.0**
WMQ sPKP 01 46 23.0
WMQ SKS **SKSdf 01 49 31.6 +0.5**
WMQ SKKS **SKKSac 01 53 03.3 -0.6**
WMQ AMB AMB
comp=Z,23nm,11.2s

YSS	**Yuzh-Sakhalins**	**151.86**	**320**	*e*PKIKP	**PKPdf**	**01 43 17.6**	**+0.6**
YSS				*e*		01 43 36.5		
YSS	**Yuzh-Sakhalins**	**151.86**	**320**	*e*PKPdf	**PKPdf**	**01 43 17.6**	**+0.6**
YSS				*e*PKPbc	**PKiKP**	**01 43 24.7**	**+0.5**
YSS				*e*PKPab	**PKPab**	**01 43 36.5**	**+0.6**
BOK	**Bokaro**	**152.05**	**91**	*e*P	**PKPdf**	**01 43 17.4**	**-0.7**
BOK				IAmb	IAmb	01 43 25.7		
	comp=Z,303nm,1.8s							
PKIN	**Phulchoki**	**152.33**	**83**	*e*P	**PKPdf**	**01 43 19.1**	**+0.4**
PBA	**Port Blair**	**152.53**	**121**	*e*P	PKPdf	01 43 17.8	-1.2
IPM	**Ipoh**	**152.59**	**144**	*e*PKPdf	**PKPdf**	**01 43 19.6**	**+0.5**
IPM				*e*PKPbc	**PKiKP**	**01 43 26.8**	**0.0**
IPM				*e*PKPab	**PKPab**	**01 43 39.9**	**0.0**
KULM	**Kulim**	**153.07**	**143**	*e*PKPdf	**PKPdf**	**01 43 20.4**	**+0.6**
KULM				*e*PKPbc	**PKiKP**	**01 43 27.8**	**0.0**
KULM				*e*PKPab	**PKPab**	**01 43 41.6**	**-0.3**
MOY	**Mondy**	**153.23**	**22**	*e*PKIKP	**PKPbc**	**01 43 26.7**	**-0.3**
MOY				*e*		01 45 40.0		
MOY				pmax	pmax			
	comp=Z,87nm,1.5s							
DGPR	**DIGLIPUR**	**153.59**	**118**	*e*P	**PKPdf**	**01 43 20.2**	**-0.2**
DGPR				IAmb	IAmb	01 43 22.6		
	comp=Z,43nm,0.5s							
IRK	**Irkutsk**	**153.70**	**17**	*e*PKIKP	**PKPdf**	**01 43 20.5**	**+1.0**
IRK				*e*		01 43 44.3		
IRK				pmax	pmax			
	comp=N,56nm,1.5s							
TLY	**Talaya**	**154.04**	**19**	PKP	**PKPdf**	**01 43 21.0**	**+1.0**
	comp=N,2.6nm,0.6s,baz=221,slow=4.3,SNR=5.5							
TLY				PKPbc	**PKPbc**	**01 43 28.4**	**-0.2**
	comp=N,7.0nm,0.8s,baz=198,slow=2.0,SNR=8.1							
TLY				PKPab	**PKPab**	**01 43 45.8**	**+0.7**
	comp=N,8.8nm,0.6s,baz=323,slow=4.1,SNR=20							
TLY	**Talaya**	**154.04**	**19**	*e*PKIKP	**PKPdf**	**01 43 21.3**	**+1.3**
TLY				pmax	pmax			
	comp=Z,2.0nm,0.6s							
TLY	**Talaya**	**154.04**	**19**	*e*P	**PKPab**	**01 43 46.1**	**+1.0**
TLY				pmax	pmax			
	comp=Z,85nm,1.4s							
TLY	**Talaya**	**154.04**	**19**	*e*PKPdf	**PKPdf**	**01 43 20.7**	**+0.7**
TLY				*e*PKPbc	**PKPbc**	**01 43 28.6**	**-0.1**
TLY				*e*PKPab	**PKPab**	**01 43 46.3**	**+1.2**
TLY	**Talaya**	**154.04**	**19**	PKPdf	**PKPdf**	**01 43 21.7**	**+1.7**
	SNR=11							
TLY	**Talaya**	**154.04**	**19**	P	**PKPdf**	**01 43 21.7**	**+1.7**
	SNR=11							
HABR	**Khabarovsk**	**154.76**	**331**	*e*PKIKP	**PKPdf**	**01 43 21.5**	**+0.5**
HABR				*e*		01 45 34.9		
HABR				*e*		01 47 28.9		
HABR				*e*		01 49 34.4		
HABR				*e*PPP	PPP	01 51 06.2		
HABR				*e*SS	SS	02 06 26.3	+3.6	
HABR				*e*SSS	SSS	02 12 32.9		
HABR				pmax	pmax			
	comp=Z,49nm,1.8s							
HABR				pmax	pmax			
	comp=N,30nm,1.8s							
HABR				pmax	pmax			
	comp=E,87nm,1.8s							
ZAK	**Zakamensk**	**155.08**	**21**	*e*P	**PKPab**	**01 43 49.5**	**-0.2**
ZAK				pmax	pmax			
	comp=Z,19nm,1.1s							
KLR	**Kul'dur**	**155.48**	**336**	PKP	**PKPdf**	**01 43 21.9**	**-0.1**
	comp=Z,22nm,1.1s,baz=36,slow=2.9,SNR=9.5							
KLR				PKPbc	PKPbc	01 43 31.6		
	comp=Z,8.0nm,0.9s,baz=288,slow=0.7,SNR=5.6							
KLR				PKPab	**PKPab**	**01 43 51.4**	**0.0**
	comp=Z,15nm,1.0s,baz=41,slow=4.9,SNR=5.4							
LSA	**Lhasa**	**157.53**	**79**	*e*PKIKP	**PKPdf**	**01 43 27.2**	**+1.4**
LSA	**Lhasa**	**157.53**	**79**	*e*PKPdf	**PKPdf**	**01 43 27.2**	**+1.4**
LSA				*e*PKPab	**PKPab**	**01 44 02.0**	**+0.4**
SHL	**Shillong**	**157.76**	**90**	*e*P	**PKPdf**	**01 43 25.5**	**-0.4**
SHL				IAmb	IAmb	01 43 27.3		
SONM	**Songino Array**	**158.28**	**19**	PKP	**PKPdf**	**01 43 26.5**	**+0.8**
	comp=Z,23nm,1.0s,baz=286,slow=0.9,SNR=110							
SONM				PKPab	**PKPab**	**01 44 03.0**	**-0.7**
	comp=Z,9.1nm,0.8s,baz=332,slow=4.8,SNR=11							
ULN	**Ulaanbaatar**	**158.44**	**18**	*e*PKPdf	**PKPdf**	**01 43 26.7**	**+0.7**
ULN				*e*PKPab	**PKPab**	**01 44 05.0**	**+0.6**
ULN				*e*PP	**PP**	**01 47 45.5**	**-1.0**
ULN	**Ulaanbaatar**	**158.44**	**18**	PKPdf	**PKPdf**	**01 43 27.1**	**+1.1**
	SNR=20							
ULN	**Ulaanbaatar**	**158.44**	**18**	P	**PKPdf**	**01 43 27.1**	**+1.1**
	SNR=20							
KKM	**Kota Kinabalu**	**158.54**	**179**	*e*PKPab	**PKPab**	**01 44 05.9**	**+0.4**
USRK	**Ussuriysk Ar.**	**159.37**	**327**	PKP	**PKPdf**	**01 43 26.7**	**-0.2**
	comp=Z,4.1nm,0.9s,baz=288,slow=1.4,SNR=5.5							
USRK				PKPab	**PKPab**	**01 44 09.1**	**+0.6**
	comp=Z,6.2nm,0.7s,baz=17,slow=2.9,SNR=7.3							
MJAR	**Matsushiro Arr**	**159.72**	**301**	PKPab	**PKPab**	**01 44 10.8**	**+0.4**
	comp=Z,15nm,0.9s,baz=82,slow=3.0,SNR=8.3							
MJAR				pPKPab	**pPKPab**	**01 46 14.8**	**-0.4**
	comp=Z,4.2nm,1.0s,baz=84,slow=2.6,SNR=7.0							
MAJO	**Matsushiro**	**159.72**	**301**	*e*PKP2	**PKPab**	**01 44 10.4**	**+0.1**
MAJO	**Matsushiro**	**159.72**	**301**	*e*PKPab	**PKPab**	**01 44 10.4**	**+0.1**
CMAR	**Chiang Mai Arr**	**161.34**	**115**	PKP	**PKPdf**	**01 43 30.5**	**+0.6**
	comp=Z,6.6nm,1.0s,baz=254,slow=2.5,SNR=41							
CMAR				PKPab	**PKPab**	**01 44 17.5**	**-0.4**
	comp=Z,5.2nm,1.0s,baz=246,slow=4.5,SNR=9.9							
CMAR				pPKPab	**pPKPab**	**01 46 21.3**	**-1.2**
	comp=Z,1.4nm,0.8s,baz=256,slow=3.6,SNR=2.8							
CMAR				PP	**PP**	**01 48 03.0**	**-0.2**
	comp=Z,3.4nm,1.0s,baz=253,slow=6.1,SNR=8.2							
CHTO	**Chiang Mai**	**161.53**	**115**	*e*PKIKP	**PKPdf**	**01 43 30.5**	**+0.4**
CHTO				*e*		01 44 18.5		
CHTO				*e*		01 48 00.8		
CHTO	**Chiang Mai**	**161.53**	**115**	*e*PKPdf	**PKPdf**	**01 43 30.5**	**+0.4**
CHTO				*e*PKPab	**PKPab**	**01 44 18.5**	**-0.2**
CHTO				*e*PP	**PP**	**01 48 00.8**	**-3.4**
CHTO	**Chiang Mai**	**161.53**	**115**	PKPdf	**PKPdf**	**01 43 30.8**	**+0.8**
	SNR=11							
CHTO	**Chiang Mai**	**161.53**	**115**	P	**PKPdf**	**01 43 30.8**	**+0.8**
	SNR=11							
GTA	**Gaotai**	**161.71**	**46**	⇓PKP	**PKPdf**	**01 43 30.8**	**+1.0**
GTA				PKPab	**PKPab**	**01 44 19.6**	**+0.5**
GTA				pPKP	pPKPdf	01 45 43.6	+0.9	
GTA				sPKP		01 46 32.5		
GTA				PP	**PP**	**01 48 08.5**	**+3.8**
GTA				SKS	**SKSdf**	**01 49 43.4**	**+1.7**
GTA				SKKS	**SKKSac**	**01 54 01.8**	**+4.7**
GTA				SS	**SS**	**02 07 40.9**	**+4.0**
GTA				AMB	AMB			
	comp=Z,97nm,7.1s							
PBKT	**Sadao Pong**	**161.80**	**124**	P	**PKPdf**	**01 43 31.1**	**+0.8**
	comp=Z,44nm,1.2s							
CHAI	**Chaiyaphum**	**162.09**	**128**	P	**PKPdf**	**01 43 31.4**	**+0.8**
	comp=Z,6.0nm,1.3s							
UTTA	**Uttaradit**	**162.20**	**120**	P	**PKPdf**	**01 43 32.0**	**+1.3**
	comp=Z,9.1nm,1.1s							
CN2	**Changchun**	**162.36**	**339**	*e*PKP	**PKPdf**	**01 43 26.8**	**-3.3**
KHON	**Khomkaen**	**162.97**	**128**	P	**PKPdf**	**01 43 33.2**	**+1.7**
SNY	**Shenyang**	**164.73**	**340**	⇑P	**PKPab**	**01 44 32.9**	**+0.9**
SNY				pmax	pmax			
	comp=Z,40nm,0.8s							
HHC	**Hu-ho-hao-te**	**166.14**	**16**	*e*PKP	**PKPdf**	**01 43 34.8**	**+1.1**
HHC				pPKP	pPKPdf	01 45 43.3	-3.4	
HHC				sPKP		01 46 36.3		
HHC				SS	SS	02 08 25.3	+5.2	
HHC				AMB	AMB			
	comp=Z,100nm,9.9s							
LZH	**Lanzhou**	**166.23**	**49**	*e*PKP	**PKPdf**	**01 43 35.8**	**+1.8**
LZH				pPKP	pPKPdf	01 45 48.9	+1.9	
LZH				sPKP		01 46 44.5		
LZH				PP	**PP**	**01 48 30.0**	**+1.8**
LZH				SS	SS	02 08 26.1	+3.2	
LZH				AMB	AMB			
	comp=Z,150nm,7.8s							
KSRS	**Korea Array**	**166.35**	**319**	PKP	**PKPdf**	**01 43 34.3**	**+0.5**
	comp=Z,4.5nm,0.9s,baz=192,slow=1.0,SNR=10							
KSRS				PKPab	**PKPab**	**01 44 40.5**	**+1.1**
	comp=Z,7.7nm,0.7s,baz=49,slow=4.4,SNR=13							
KSRS	**Korea Array**	**166.35**	**319**	PKIKP	**PKPdf**	**01 43 34.3**	**+0.5**
KSRS						01 44 40.5		
KSRS				pmax	pmax			
	comp=Z,4.0nm,0.8s							
KSRS				pmax	pmax			
	comp=Z,8.0nm,0.7s							
KSAR	**Wonju Array Be**	**166.38**	**319**	PKIKP	**PKPdf**	**01 43 34.3**	**+0.5**
KSAR						01 44 40.5		
KSAR	**Wonju Array Be**	**166.38**	**319**	PKP	**PKPdf**	**01 43 34.3**	**+0.5**
KSAR				PKPab	**PKPab**	**01 44 40.5**	**+1.0**
JNU	**Nakatsue**	**166.56**	**298**	PKPab	**PKPab**	**01 44 40.8**	**+0.2**
	comp=Z,11nm,0.9s,baz=346,slow=4.2,SNR=3.6							
KMI	**Kunming**	**167.28**	**98**	PKP	**PKPdf**	**01 43 33.6**	**-1.6**
BJI	**Beijing**	**167.60**	**2**	PKP	**PKPdf**	**01 43 35.6**	**+1.0**
BJI				PP	**PP**	**01 48 33.3**	**-0.4**
BJI				SS	SS	02 08 39.5	+5.5	
BJI				AMB	AMB			
	comp=Z,270nm,9.4s							
CD2	**Chengdu**	**168.27**	**71**	PKP	**PKPdf**	**01 43 36.3**	**+0.9**
CD2				pPKP	pPKPdf	01 45 50.1	+1.5	
CD2				sPKP		01 46 45.1		
CD2				PP	**PP**	**01 48 39.8**	**+0.8**
CD2				SKS	**SKSdf**	**01 49 46.5**	**+0.2**
CD2				SKKS	**SKKSac**	**01 54 30.0**	**-0.3**
CD2				SS	**SS**	**02 08 42.3**	**-1.8**
CD2				AMB	AMB			
	comp=Z,170nm,8.9s							
XAN	**Xi'an**	**170.77**	**44**	PKP	**PKPdf**	**01 43 35.6**	**-1.2**
GYA	**Guiyang**	**171.01**	**95**	*i* PKP	**PKPdf**	**01 43 37.8**	**+0.5**
GYA				PKPab	**PKPab**	**01 45 01.3**	**+0.6**
GYA				pPKP	pPKPdf	01 45 51.0	+0.6	
GYA				sPKP		01 46 44.3		
GYA				PKS	**PKSdf**	**01 47 07.6**	**-2.2**
GYA				PP	**PP**	**01 48 52.8**	**-0.1**
GYA				AMB	AMB			
	comp=Z,130nm,8.3s							
ENH	**Enshi**	**173.18**	**65**	*e*PKPdf	**PKPdf**	**01 43 38.3**	**+0.3**
ENH				*e*PKPab	**PKPab**	**01 45 09.8**	**-0.2**
SSLB	**Suanglung**	**174.57**	**226**	*e*PKPdf	**PKPdf**	**01 43 38.7**	**+0.1**
NJ2	**Nanjing**	**175.18**	**337**	*e*PKP	**PKPdf**	**01 43 38.4**	**-0.1**

NIED ***17*** *01:30:00, 37.70N×143.70E, h5km, Mw3.8 Best double couple: M0 6.35000×10^14 NP1:φs 13.00000°, δ21.00000°, λ-96.00000°. NP2:φs 199.00000°, δ69.00000°, λ-88.00000°.*

IDC ***17*** *01:30:23.6± 1.0, 37.64N× 143.91E, h0km, mb3.8/9, mb1 3.9/14, mb1mx3.7/51, mbtmp3.8/14, ML3.9/4, Error ellipse: s-maj=23.9km s-min=17.9km az=93.0*

NEIC ***17*** *01:30:25.4± 3.4, 37.70N× 143.88E, h12km± 20km, mb4.2/8, Error ellipse: s-maj=11.9km s-min=6.9km az=127.0*

ISCJB ***17*** *01:30:26.6± 0.5, 37.71N± 0.04× 143.72E± 0.05, h33km, mb4.0/17, Error ellipse: s-maj=6.1km s-min=5.3km az=156.6*

JMA ***17*** *01:30:26.6± 0.2, 37.73N× 143.71E, h46km, M3.7*

ISC 17 01:30:28.7±0.9, 37.77N±0.06× 143.77E±0.08, h35km, n35, σ1§61/44, mb4.0/17, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**2.03**	**290**	P	**Pn**	**01 30 59.0**	**-1.4**
JIO				S	**Sn**	**01 31 23.0**	**-1.6**
OFUJ	**Ofunato**	**2.11**	**309**	P	**Pn**	**01 31 00.2**	**-1.3**
OFUJ				*e*S	**Sn**	**01 31 24.6**	**-1.9**
JMK	**Ichinoseki**	**2.33**	**301**	P	**Pn**	**01 31 03.3**	**-1.2**
JMK				*e*S	**Sn**	**01 31 30.8**	**-1.1**
JOM	**Ohasama**	**2.58**	**312**	P	**Pn**	**01 31 07.1**	**-0.9**
JOM				S	**Sn**	**01 31 37.2**	**-1.0**
JFT	**Otama**	**2.74**	**266**	*e*S	**Sn**	**01 31 41.0**	**-1.1**
JYK	**Kaneyama**	**2.92**	**294**	P	**Pn**	**01 31 12.1**	**-0.5**
JYK				*e*S	**Sn**	**01 31 46.2**	**-0.3**
JAG	**Ashikaga**	**3.71**	**250**	P	**Pn**	**01 31 22.4**	**-1.0**
JAG				*e*S	**Sn**	**01 32 04.4**	**-1.5**
ERM	**Erimo**	**4.27**	**354**	*e*Pn	**Pn**	**01 31 31.1**	**-0.1**
JRY	**Ryogami san**	**4.28**	**247**	P	**Pn**	**01 31 30.1**	**-1.3**
JRY				*e*S	**Sn**	**01 32 16.2**	**-3.9**
JOD2	**Odawara 2**	**4.53**	**238**	*e*S	**Sn**	**01 32 22.5**	**-3.7**
MJAR	**Matsushiro Arr**	**4.61**	**256**	Pn	**Pn**	**01 31 35.6**	**-0.3**
	4.6nm,0.3s,baz=90,slow=16,SNR=31							
MAJO	**Matsushiro**	**4.61**	**256**	*e*Pn	**Pn**	**01 31 36.2**	**+0.3**
JCH	**Churui**	**4.85**	**356**	P	**Pn**	**01 31 37.7**	**-1.5**
JCH				*e*S	**Sn**	**01 32 28.9**	**-5.2**
JHJ	**Hachijo jima 2**	**5.67**	**216**	Pn	**Pn**	**01 31 49.0**	**-1.4**
	12nm,0.3s,baz=74,slow=20,SNR=2.6							
JHJ				Sn	Sn	01 32 45.1	-9.1	
	baz=195,slow=12,SNR=2.1							
ASAJ	**Asahikawa**	**6.41**	**352**	Pn	**Pn**	**01 31 59.8**	**-0.7**
	3.2nm,0.3s,baz=200,slow=9.9,SNR=20							
ASAJ				Sn	**Sn**	**01 33 09.0**	**-3.3**
	0.6nm,0.3s,baz=221,slow=20,SNR=2.2							
USRK	**Ussuriysk Ar.**	**10.98**	**310**	Pn	**Pn**	**01 33 03.8**	**+0.6**
	0.1nm,0.3s,baz=120,slow=14,SNR=5.4							
KSRS	**Korea Array**	**12.58**	**273**	Pn	**Pn**	**01 33 26.3**	**+1.2**
	0.2nm,0.3s,baz=84,slow=15,SNR=4.4							
KSAR	**Wonju Array Be**	**12.61**	**273**	Pn	**Pn**	**01 33 26.3**	**+0.8**
ULN	**Ulaanbaatar**	**28.52**	**303**	*e*P	**P**	**01 36 21.0**	**+0.1**
	1.6nm,0.7s							
SONM	**Songino Array**	**28.96**	**302**	P	**P**	**01 36 26.2**	**+1.4**
	0.5nm,0.5s,baz=101,slow=7.7,SNR=4.4							
ZALV	**Zalesovo Beam**	**42.82**	**312**	P	**P**	**01 38 24.4**	**+1.5**
	0.2nm,0.3s,baz=87,slow=7.4,SNR=2.5							
MKAR	**Makanchi Array**	**45.33**	**302**	P	**P**	**01 38 44.2**	**+1.0**
	0.7nm,0.8s,baz=95,slow=8.0,SNR=5.7							
KURK	**Kurchatov**	**46.96**	**308**	*e*P	**P**	**01 38 56.5**	**+0.6**
	8.0nm,0.5s							
KURBB	**Kurchatov Arra**	**47.04**	**308**	P	**P**	**01 38 57.5**	**+1.0**
	0.6nm,0.4s,baz=81,slow=8.3,SNR=2.8							
ILAR	**Eielson Array**	**47.87**	**33**	P	**P**	**01 39 03.4**	**+0.6**
	0.7nm,0.8s,baz=266,slow=6.6,SNR=5.9							
DOT	**Dot Lake**	**49.15**	**34**	*e*P	**P**	**01 39 13.2**	**+0.6**
	2.1nm,0.6s							
TKM2	**Tokmak 2**	**50.93**	**299**	*e*P	**P**	**01 39 27.6**	**+0.8**
	1.4nm,0.5s							
EKS2	**Erkin-Say**	**52.28**	**299**	*e*P	**P**	**01 39 36.8**	**0.0**
	1.0nm,0.6s							
INK	**Inuvik**	**52.87**	**28**	P	**P**	**01 39 41.4**	**+0.9**
	1.2nm,1.0s,baz=297,slow=2.3,SNR=2.6							
ARU	**Arti**	**57.05**	**319**	*e*P	**P**	**01 40 11.3**	**+0.4**
	2.0nm,0.7s							
WRA	**Warramunga Arr**	**58.09**	**190**	P	**P**	**01 40 17.4**	**-1.1**
	2.5nm,0.7s,baz=9.6,slow=7.1,SNR=10							
ABKAR	**Akbulak array**	**58.90**	**310**	*e*P	**P**	**01 40 24.6**	**+0.6**
	0.6nm,0.5s							
ASAR	**Alice Springs**	**61.81**	**190**	P	**P**	**01 40 43.6**	**-0.5**
	0.8nm,0.8s,baz=7.2,slow=6.0,SNR=7.3							
FINES	**FINESS Array B**	**69.03**	**333**	P	**P**	**01 41 31.6**	**+1.3**
	1.0nm,0.8s,baz=15,slow=5.8,SNR=3.5							
SUMG	**Summit**	**69.94**	**1**	*e*P	**P**	**01 41 36.3**	**0.0**
	7.2nm,1.0s							

NIED ***17*** *01:37:00, 38.70N× 142.40E, h47km, Mw4.7 Best double couple: M0 1.11000×10^16 NP1:φs 350.00000°, δ27.00000°, λ59.00000°. NP2:φs 204.00000°, δ68.00000°, λ104.00000°.*

BJI ***17*** *01:37:48.9, 38.60N× 142.42E, h36km, mb4.7/52, mB4.9/28, Ms4.3/27, Ms7 4.1/28*

MOS ***17*** *01:37:50.6± 1.1, 38.74N× 142.30E, h39km, mb5.0/39, Error ellipse: s-maj=7.7km s-min=5.0km az=95.6*

NEIC ***17*** *01:37:51.5± 0.7, 38.61N× 142.22E, h36km± 5km, mb4.7/41, Error ellipse: s-maj=5.8km s-min=4.4km az=149.0*

NEIC Recorded [3 JMA] in Miyagi.

JMA ***17*** *01:37:51.1± 0.1, 38.65N× 142.37E, h38km± 1km, M4.8*

JMA Felt III J1.

ISCJB ***17*** *01:37:51.5± 0.5, 38.68N± 0.03× 142.31E± 0.04, h48km± 3km, mb4.6/93, MS3.8/17, Error ellipse: s-maj=5.7km s-min=3.9km az=44.2*

IDC ***17*** *01:37:53.0± 1.9, 38.64N× 142.26E, h52km± 16km, mb4.1/30, mb1 4.3/37, mb1mx4.1/61, mbtmp4.4/37, ML3.9/7, MS3.8/15, Ms1 3.8/15, ms1mx3.5/60, Error ellipse: s-maj=13.6km s-min=12.1km az=120.0*

ISC 17 01:37:50.4±0.5, 38.62N±0.04× 142.41E±0.03, h31km± 2km, h31km:pP-P, n261, σ1§76/296, mb4.6/93, MS4.0/17, 24C-21D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
OFUJ	**Ofunato**	**0.73**	**309**	P	**Pb**	**01 38 04.5**	**-0.3**
OFUJ				S	**Sb**	**01 38 13.9**	**-0.6**
JIO	**Ouri**	**0.84**	**259**	P	**Pn**	**01 38 06.1**	**0.0**
JIO				S	**Sb**	**01 38 17.2**	**-0.4**
JMK	**Ichinoseki**	**0.98**	**290**	P	**Pn**	**01 38 08.1**	**+0.1**
JMK				S	**Sn**	**01 38 20.4**	**-0.5**
JOM	**Ohasama**	**1.21**	**315**	P	**Pn**	**01 38 11.6**	**+0.4**
JOM				S	**Sn**	**01 38 26.8**	**+0.2**
JTH	**Tanohata**	**1.38**	**342**	P	**Pn**	**01 38 13.8**	**+0.3**
JTH				S	**Sn**	**01 38 30.7**	**0.0**
JOU	**Okura**	**1.39**	**260**	P	**Pb**	**01 38 14.7**	**-1.1**
JOU				S	**Sb**	**01 38 32.1**	**-1.0**
JMM	**Marumori**	**1.48**	**240**	P	**Pn**	**01 38 15.5**	**+0.7**
JMM				S	**Sn**	**01 38 33.4**	**+0.4**
JRG	**Rokugo**	**1.58**	**300**	P	**Pn**	**01 38 16.9**	**+0.6**
JYK	**Kaneyama**	**1.63**	**281**	P	**Pn**	**01 38 17.6**	**+0.7**
JYK				S	**Sn**	**01 38 38.1**	**+1.3**
JFK	**Kawauchi**	**1.74**	**224**	P	**Pn**	**01 38 19.4**	**+0.9**
JFK				S	**Sn**	**01 38 40.5**	**+0.9**
ERM	**Erimo**	**3.44**	**9**	*e*P	**Pn**	**01 38 42.5**	**+0.7**
ERM				*e*		01 39 19.5		
ERM	**Erimo**	**3.44**	**9**	*e*Pn	**Pn**	**01 38 42.5**	**+0.7**
ERM				*e*Sn	**Sn**	**01 39 19.5**	**-1.9**
MJAR	**Matsushiro Arr**	**3.93**	**239**	P	**Pn**	**01 38 51.0**	**+2.5**
	12nm,0.3s,baz=39,slow=11,SNR=117							
MJAR				LR	LR	01 40 36.7		
	comp=Z,1μm,18.8s,baz=25,slow=43							
MAJO	**Matsushiro**	**3.93**	**239**	*i* P	**Pn**	**01 38 51.5**	**+3.0**
MAJO	**Matsushiro**	**3.93**	**239**	*e*Pn	**Pn**	**01 38 51.8**	**+3.3**
MAT	**Matsushiro**	**3.93**	**239**	P	**Pn**	**01 38 51.6**	**+3.1**
MAT				S	**Sb**	**01 39 39.8**	**-6.2**
MJB9	**Matsu-Tunnel**	**3.93**	**239**	*e*Pn	**Pn**	**01 38 51.8**	**+3.3**
INU	**Inuyama**	**5.41**	**235**	*e*Pn	**Pn**	**01 39 12.0**	**+3.1**
ASAJ	**Asahikawa**	**5.49**	**1**	P	**Pn**	**01 39 11.1**	**+1.0**
	6.3nm,0.3s,baz=202,slow=16,SNR=33							
ASAJ				S	**Sn**	**01 40 09.4**	**-2.7**
	6.1nm,0.3s,baz=231,slow=13,SNR=2.8							
ASAJ				LR	LR	01 41 49.6		
	comp=Z,997nm,21.3s,baz=166,slow=43							
ASAJ	**Asahikawa**	**5.49**	**1**	*e*Pn	**Pn**	**01 39 10.3**	**+0.3**
ASAJ				S	**Sn**	**01 40 09.4**	**-2.7**
JHJ	**Hachijo jima 2**	**5.89**	**202**	P	**Pn**	**01 39 16.5**	**+1.0**
	49nm,0.3s,baz=65,slow=17,SNR=7.6							
JHJ				S	**Sn**	**01 40 20.1**	**-1.7**
	66nm,0.3s,baz=90,slow=20,SNR=3.6							
YUK	**Yuzh-Kuril'sk**	**6.00**	**25**	*e*P	**Pn**	**01 39 16.8**	**-0.2**
YUK				*i* S	**Sn**	**01 40 20.2**	**-4.4**
YUK				pmax	pmax			
	comp=N,93nm,0.5s							
YUK				pmax	pmax			
	comp=Z,156nm,0.5s							
YUK				pmax	pmax			
	comp=E,64nm,0.3s							
SHO	**Shikotan**	**6.21**	**31**	*e*P	**Pn**	**01 39 18.7**	**-1.2**
SHO				*i* S	**Sn**	**01 40 23.0**	**-6.8**
SHO				pmax	pmax			
	comp=Z,48nm,0.4s							
SHO				pmax	pmax			
	comp=E,44nm,0.6s							
SHO				pmax	pmax			
	comp=N,20nm,0.4s							
KUR	**Kuril'sk**	**7.76**	**30**	*e*P	**Pn**	**01 39 41.3**	**+0.2**
KUR				*i* S	**Sn**	**01 41 02.7**	**-5.1**
KUR				pmax	pmax			
	comp=Z,85nm,0.5s							
KUR				pmax	pmax			
	comp=N,38nm,0.2s							
KUR				pmax	pmax			
	comp=E,38nm,0.5s							
YSS	**Yuzh-Sakhalins**	**8.33**	**2**	*e*P	**Pn**	**01 39 51.4**	**+2.4**
VLA	**Vladivostok**	**9.15**	**303**	*i* P	**Pn**	**01 40 03.6**	**+3.5**
USRK	**Ussuriysk Ar.**	**9.60**	**309**	P	**Pn**	**01 40 07.7**	**+1.3**
	comp=E,1.9nm,0.3s,baz=115,slow=12,SNR=66							
USRK				LR	LR	01 43 41.0		
	comp=E,861nm,19.2s,baz=115,slow=37							
JNU	**Nakatsue**	**10.84**	**243**	P	**Pn**	**01 40 24.8**	**+1.4**
	comp=E,0.7nm,0.3s,baz=31,slow=17,SNR=4.8							
JNU				LR	LR	01 44 57.3		
	comp=E,623nm,19.0s,baz=38,slow=40							
JNU	**Nakatsue**	**10.84**	**243**	*e*Pn	**Pn**	**01 40 22.5**	**-0.9**
MDJ	**Mudanjiang**	**11.30**	**306**	P	**Pn**	**01 40 27.3**	**-2.3**
MDJ				S	**Sn**	**01 42 30.0**	**-4.8**
MDJ				ScP	**ScP**	**01 49 54.5**	**+1.4**
MDJ				PcS	**PcS**	**01 49 57.6**	**+1.1**
MDJ				pmax	pmax			
	comp=E,5.0nm,1.1s							
MDJ				pmax	pmax			
	comp=E,18nm,4.2s							
MDJ				LR	LR			
	comp=E,320nm,17.7s							
MDJ				LR	LR			
	comp=E,420nm,21.9s							
MDJ				LR	LR			
	comp=E,730nm,21.9s							
MDJ	**Mudanjiang**	**11.30**	**306**	*e*Pn	**Pn**	**01 40 29.6**	**0.0**
	comp=E,97nm,1.1s							
KSRS	**Korea Array**	**11.48**	**269**	P	**Pn**	**01 40 34.0**	**+1.9**
	comp=E,0.5nm,0.3s,baz=83,

baz=317,slow=75,SNR=1878
H11N1 WAKE ISLAND Hy 28.35 125 T T 02 14 13.4
baz=317,slow=75,SNR=1843
H11N3 WAKE ISLAND Hy 28.36 125 T T 02 14 14.0
baz=317,slow=75,SNR=2005
H11S1 WAKE ISLAND Hy 29.12 127 T T 02 15 09.9
baz=318,slow=76,SNR=438
H11S3 WAKE ISLAND Hy 29.12 127 T T 02 15 04.9
baz=318,slow=76,SNR=500
H11S2 WAKE ISLAND Hy 29.13 127 T T 02 15 06.0
baz=318,slow=76,SNR=363
TLY Talaya 29.92 309 LR LR 01 56 27.0
comp=E,365nm,19.2s,baz=105,slow=37
LZH Lanzhou 30.61 277 *eP* **P** **01 44 03.8 +2.0**
LZH pP sP 01 44 12.8 -1.8
LZH sP pP 01 44 16.3 +5.5
LZH pmax pmax
comp=E,18nm,1.0s
GYA Guiyang 32.28 259 *eP* **P** **01 44 16.3 -0.2**
GYA pP pP 01 44 26.8 +1.2
GYA PP **PnPn** **01 45 23.0 -0.3**
GYA PcP **PcP** **01 47 05.4 +1.1**
GYA S **S** **01 49 26.3 -1.9**
GYA sS sS 01 49 42.6 -0.6
GYA ScP **ScP** **01 50 46.0 +0.4**
GYA SS **SnSn** **01 51 19.3 -1.8**
GYA pmax pmax
comp=E,10.0nm,0.8s
GYA pmax pmax
comp=E,110nm,4.9s
GYA LR LR
comp=E,520nm,17.0s
GYA LR LR
comp=E,480nm,16.8s
GYA LR LR
comp=E,500nm,17.3s
BILL Bilibino 32.28 17⇑ *eP* **P** **01 44 17.1 +1.2**
BILL *e* 01 45 25.1
BILL *e*PPP PPP 01 45 34.2
BILL pmax pmax
comp=Z,9.0nm,1.7s
BILL MLR MLR
comp=Z,56nm,19.0s
BILL Bilibino 32.28 17 *eP* **P** **01 44 15.4 -0.5**
comp=Z,3.7nm,0.8s
CD2 Chengdu 32.48 268 P **P** **01 44 17.1 -1.0**
CD2 pmax pmax
comp=Z,1.0nm,0.5s
GTA Gaotai 32.88 285 *eP* **P** **01 44 22.8 +1.2**
GTA pP pP 01 44 29.9 -0.8
GTA sP sP 01 44 33.1 -1.4
GTA S **S** **01 49 38.0 +0.7**
GTA sS sS 01 49 49.8 -2.5
GTA SS **SnSn** **01 51 35.8 +0.5**
GTA ScS **ScS** **01 54 48.8 +1.2**
GTA pmax pmax
comp=Z,10.0nm,1.3s
GTA pmax pmax
comp=Z,110nm,4.9s
GTA LR LR
comp=Z,170nm,19.5s
GTA LR LR
comp=Z,360nm,19.0s
GTA LR LR
comp=Z,420nm,20.0s
TIXI Tiksi 33.82 352⇓ *eP* **P** **01 44 28.1 -1.1**
TIXI pmax pmax
comp=Z,4.0nm,1.0s
KMI Kunming 35.99 260 P **P** **01 44 49.5 +0.7**
KMI pmax pmax
comp=Z,11nm,0.8s
KMI pmax pmax
comp=Z,87nm,5.1s
KRAR Krasnoyarsk 36.88 315⇑ *eP* **P** **01 44 55.8 0.0**
KRAR pmax pmax
comp=Z,34nm,1.1s
WMQ Urumqi 40.85 295 P **P** **01 45 29.8 +0.5**
WMQ pP sP 01 45 41.1 -1.1
WMQ PP **PnPn** **01 47 09.3 +1.4**
WMQ S **S** **01 51 38.6 +0.2**
WMQ sS sS 01 51 51.5 -2.1
WMQ SS **SS** **01 54 31.5 -8.5**
WMQ pmax pmax
comp=Z,12nm,1.2s
WMQ pmax pmax
comp=Z,52nm,4.0s
WMQ LR LR
comp=Z,46nm,24.6s
WMQ LR LR
comp=Z,24nm,20.2s
WMQ LR LR
comp=Z,62nm,23.6s
ZALV Zalesovo Beam 41.45 311 P **P** **01 45 33.5 -0.4**
comp=Z,7.2nm,0.6s,baz=88,slow=8.5,SNR=5.7
NRIK Noril'sk 42.17 334 LR LR 02 04 08.5
comp=Z,377nm,19.9s,baz=110,slow=37
CHTO Chiang Mai 42.45 255 *eP* **P** **01 45 41.6 -1.0**
CHTO pmax pmax
comp=Z,23nm,1.5s
CHTO Chiang Mai 42.45 255 *eP* **P** **01 45 41.6 -1.0**
comp=Z,23nm,1.5s
CMAR Chiang Mai Arr 42.67 254 P **P** **01 45 43.6 -0.8**
comp=Z,0.9nm,0.7s,baz=46,slow=9.3,SNR=4.3
CMAR LR LR 02 03 30.8
comp=Z,29nm,20.4s,baz=120,slow=36
CM01 Chiang Mai Arr 42.68 254 *eP* **P** **01 45 42.6 -1.8**
MKAR Makanchi Array 43.96 301 P **P** **01 45 54.1 -0.4**
comp=Z,12nm,0.9s,baz=79,slow=7.8,SNR=4.2
MKAR Makanchi Array 43.96 301 *i* P **P** **01 45 58.9 +4.4**
MKAR pmax pmax
comp=Z,11nm,0.8s
KDAK Kodiak Island 45.40 43 P P 01 46 20.6 +15
comp=Z,8.0nm,0.9s,baz=284,slow=4.2,SNR=4.0
KDAK Kodiak Island 45.40 43 *i* P **P** **01 46 06.6 +0.9**
KURK Kurchatov 45.59 307 *eP* **P** **01 46 06.4 -0.9**
KURK pmax pmax
comp=Z,92nm,1.0s
KURK Kurchatov 45.59 307 *eP* **P** **01 46 06.4 -0.9**
comp=Z,92nm,1.0s
KURBB Kurchatov Arra 45.66 307 P **P** **01 46 07.4 -0.5**
comp=Z,20nm,0.8s,baz=81,slow=8.3,SNR=15
KTH Kantishna Hill 46.00 35 *eP* **P** **01 46 09.2 -1.3**
comp=Z,17nm,1.1s
MLY Manley 46.09 33 *eP* **P** **01 46 13.2 +2.0**
MLY *ep*P **pP** **01 46 19.8 -0.8**
COLD Coldfoot 46.39 30 *eP* **P** **01 46 15.0 +1.6**
comp=Z,2.9nm,0.7s
MCK McKinley 46.88 35 *eP* **P** **01 46 18.1 +0.7**
MCK pmax pmax
comp=Z,8.0nm,1.1s
MCK McKinley 46.88 35 *eP* **P** **01 46 18.1 +0.7**
comp=Z,8.5nm,1.1s
RND Reindeer 46.93 35 *eP* **P** **01 46 19.1 +1.3**
RND *e**PP **sP** **01 46 31.0 +0.1**
RND Reindeer 46.93 35 *eP* **P** **01 46 19.1 +1.3**
RND *ep*P **sP** **01 46 31.0 +0.1**
MDM Murphy Dome 47.16 33 *eP* **P** **01 46 21.4 +1.9**
comp=Z,20nm,1.2s
SML Sawmill 47.25 37 *eP* **P** **01 46 20.5 +0.2**
SML pmax pmax
comp=Z,8.0nm,0.6s
SML Sawmill 47.25 37 *eP* **P** **01 46 20.5 +0.2**
comp=Z,8.4nm,0.6s
COLA College 47.32 33⇑ *eP* **P** **01 46 21.6 +0.9**
COLA pmax pmax
comp=Z,3.0nm,1.1s
ILAR Eielson Array 47.74 33 P **P** **01 46 24.8 +0.8**
comp=Z,1.3nm,0.7s,baz=262,slow=6.0,SNR=12
ILB Eielson Array 47.74 33 *eP* **P** **01 46 24.4 +0.4**
IL1 Eielson Array 47.74 33 *eP* **P** **01 46 24.0 0.0**
DOT Dot Lake 49.05 35 *eP* **P** **01 46 35.5 +1.3**
comp=Z,6.8nm,0.7s
TKM2 Tokmak 2 49.58 298 *eP* **P** **01 46 38.6 -0.1**
TKM2 pmax pmax
comp=Z,19nm,1.2s
TKM2 Tokmak 2 49.58 298 *eP* **P** **01 46 38.6 -0.1**
comp=Z,19nm,1.2s
BVAR Borovoye Array 50.10 312 P **P** **01 46 41.8 -0.5**
comp=Z,1.8nm,0.5s,baz=74,slow=8.0,SNR=5.0
BRVK Borovoye 50.15 312⇓ *eP* **P** **01 46 43.2 +0.6**
BRVK pmax pmax
comp=Z,12nm,1.7s
BRVK Borovoye 50.15 312 *eP* **P** **01 46 40.9 -1.8**
comp=Z,6.6nm,0.6s
EGAK Eagle 50.18 33 *eP* **P** **01 46 44.0 +1.3**
comp=Z,2.5nm,0.6s

KSH Kashi 50.49 293 P **P** **01 46 49.9 +4.3**
KSH *ep*P sP 01 46 59.3 +0.6
KSH *es*P pP 01 47 04.1 +9.1
KSH *e*PP **PP** **01 48 46.6 +5.4**
KSH S **S** **01 54 01.0 +3.5**
KSH SS **SS** **01 57 33.0 +1.7**
KSH pmax pmax
comp=Z,140nm,3.9s
KSH LR LR
comp=Z,100nm,5.5s
KSH LR LR
comp=Z,140nm,5.4s
KSH LR LR
comp=Z,150nm,7.4s
ZRNK Zerenda 50.93 312 *eP* **P** **01 46 48.5 0.0**
ZRNK pmax pmax
comp=Z,9.0nm,0.7s
ZRNK Zerenda 50.93 312 *eP* **P** **01 46 48.5 0.0**
comp=Z,9.0nm,0.7s
INK Inuvik 52.62 28 P **P** **01 47 01.1 +0.2**
comp=Z,0.9nm,0.6s,baz=272,slow=5.6,SNR=5.7
INK Inuvik 52.62 28 *eP* **P** **01 47 02.2 +1.4**
INK pmax pmax
comp=Z,14nm,1.3s
INK Inuvik 52.62 28 *eP* **P** **01 47 02.2 +1.4**
comp=Z,14nm,1.3s
SVE Sverdlovsk 54.49 318 *eP* **P** **01 47 14.8 +0.1**
SVE pmax pmax
comp=Z,22nm,0.9s
ARU Arti 55.70 318 P **P** **01 47 21.7 -1.8**
comp=Z,3.8nm,0.5s,baz=50,slow=4.1,SNR=6.6
ARU Arti 55.70 318 *d i*P **P** **01 47 21.5 -2.0**
ARU 01 48 22.5
ARU 01 49 26.0
ARU S **S** **01 55 05.4 -2.2**
ARU SS **SS** **01 58 49.9 -2.7**
ARU pmax pmax
comp=Z,19nm,1.2s
ARU Arti 55.70 318 *eP* **P** **01 47 23.4 -0.1**
comp=Z,12nm,0.7s
DLBC Dease Lake 56.90 39 P **P** **01 47 32.9 +0.8**
comp=Z,1.8nm,0.9s,baz=288,slow=6.4,SNR=4.3
DLBC Dease Lake 56.90 39 *eP* **P** **01 47 34.7 +2.6**
comp=Z,17nm,1.8s
KBL Kabul 57.59 290 *eP* **P** **01 47 39.3 +1.7**
KBL pmax pmax
comp=Z,12nm,0.9s
KBL Kabul 57.59 290 *eP* **P** **01 47 39.3 +1.7**
comp=Z,12nm,0.9s
AKTO Aktyubinsk 58.21 312 P **P** **01 47 40.9 -0.4**
comp=Z,5.6nm,0.8s,baz=52,slow=12,SNR=7.9
WRAB Tennant Creek 58.73 189 *de*P **P** **01 47 45.2 0.0**
WRAB pmax pmax
comp=Z,45nm,2.5s
WRAB Tennant Creek 58.73 189 *eP* **P** **01 47 44.9 -0.4**
comp=Z,11nm,0.9s
WRA Warramunga Arr 58.74 189 P **P** **01 47 45.0 -0.3**
comp=Z,9.7nm,0.8s,baz=6.4,slow=7.0,SNR=20
YKA Yellowknife Ar 62.05 31 P **P** **01 48 07.7 +0.3**
comp=Z,0.8nm,0.8s,baz=302,slow=6.6,SNR=8.4
AS01 Alice Springs 62.46 189 *eP* **P** **01 48 10.3 -0.3**
ASAR Alice Springs 62.47 189 P **P** **01 48 10.8 +0.1**
comp=Z,3.2nm,0.8s,baz=9.6,slow=5.7,SNR=15
ARCES ARCESS Array B 62.79 339 P **P** **01 48 12.4 +0.1**
comp=Z,4.4nm,0.8s,baz=51,slow=7.2,SNR=4.3
GEYT Alibeck 63.76 299 P **P** **01 48 19.0 -0.3**
comp=Z,5.9nm,0.8s,baz=29,slow=3.4,SNR=8.6
VRH Novokhopyorsk 66.93 318 *eP* **P** **01 48 37.8 -1.7**
VRH pmax pmax
comp=Z,9.0nm,0.7s
OBN Obninsk 67.30 323⇑ *eP* **P** **01 48 41.3 -0.5**
OBN *e**PP **pP** **01 48 52.5 +1.0**
OBN *eS* **S** **01 57 39.6 +5.0**
OBN SS **SS** **02 01 59.0 +5.3**
OBN pmax pmax
comp=Z,22nm,1.7s
OBN MLR MLR
comp=Z,111nm,18.0s
LPSR Galich'ya Gora 67.59 320 *eP* **P** **01 48 42.4 -1.3**
LPSR pmax pmax
comp=Z,10.0nm,1.6s
FIA1 FINESS Array S 67.78 332 *eP* **P** **01 48 44.1 -0.6**
FINES FINESS Array B 67.78 332 P **P** **01 48 44.2 -0.6**
comp=Z,7.1nm,1.0s,baz=67,slow=6.4,SNR=9.5
FINES FINESS Array B 67.78 332 *i* P **P** **01 48 44.5 -0.2**
FINES pmax pmax
comp=Z,7.0nm,1.0s
VSR Storozhevoye 68.26 319 *eP* **P** **01 48 45.7 -2.2**
VSR pmax pmax
comp=Z,10.0nm,1.3s
NEW Newport 68.45 45 *eP* **P** **01 48 50.7 +1.4**
NEW pmax pmax
comp=Z,5.0nm,1.1s
NEW Newport 68.45 45 *eP* **P** **01 48 50.7 +1.4**
comp=Z,4.9nm,1.1s
YBH Yreka Blue Hor 68.76 53 P **P** **01 48 52.8 +1.4**
comp=Z,2.5nm,0.9s,baz=307,slow=10,SNR=5.7
SUMG Summit 69.10 0 *eP* **P** **01 48 54.7 +1.4**
SUMG pmax pmax
comp=Z,6.0nm,0.8s
SUMG Summit 69.10 0 *eP* **P** **01 48 54.7 +1.4**
comp=Z,6.5nm,0.8s
K05A Summer Lake 69.34 51 *eP* **P** **01 48 57.7 +2.6**
comp=Z,19nm,1.2s
VSU Vasula 69.48 330⇓ *eP* **P** **01 48 55.9 +0.5**
VSU pmax pmax
comp=Z,104nm,2.5s
GOF Gofitskoye 69.62 312⇑ *eP* **P** **01 48 56.5 0.0**
GOF pmax pmax
comp=Z,19nm,0.8s
GUDG Gudauri 70.23 309 P **P** **01 49 00.4 -0.2**
ZEI Tsey 70.40 309 *eP* **P** **01 48 59.9 -1.7**
ZEI pmax pmax
comp=Z,7.0nm,0.8s
KVAR Kislovodsk Arr 70.46 311 P **P** **01 49 01.8 0.0**
comp=Z,16nm,1.1s,baz=70,slow=12,SNR=8.1
KIV Kislovodsk 70.46 311 *de*P **P** **01 49 01.9 +0.1**
KIV *e* 01 49 20.2
KIV *e* 01 51 37.6
KIV *e*PPP PPP 01 53 16.4
KIV pmax pmax
comp=Z,26nm,1.0s
KIV MLR MLR
comp=Z,83nm,16.0s
KIV Kislovodsk 70.46 311 *eP* **P** **01 49 01.9 +0.1**
comp=Z,21nm,0.9s
KBZ Khabaz 70.47 311 P **P** **01 49 01.8 +0.1**
comp=Z,7.0nm,0.9s,baz=76,slow=4.4,SNR=13
ORV Oroville 70.73 55 *eP* **P** **01 49 04.5 +1.1**
ORV pmax pmax
comp=Z,8.0nm,1.5s
ORV Oroville 70.73 55 *eP* **P** **01 49 04.5 +1.1**
comp=Z,8.3nm,1.5s
ONI Oni 70.78 309 P **P** **01 49 04.7 +0.8**
ONI Oni 70.78 309 *eP* **P** **01 49 04.6 +0.8**
FFC Flin Flon 71.95 33 *eP* **P** **01 49 11.4 +0.9**
FFC pmax pmax
comp=Z,6.0nm,1.0s
FFC Flin Flon 71.95 33 *eP* **P** **01 49 11.3 +0.9**
comp=Z,6.3nm,1.0s
EGMT Eagleton 72.57 42 *eP* **P** **01 49 15.9 +1.5**
comp=Z,6.0nm,0.9s
HFS Hagfors 72.97 336 P **P** **01 49 16.3 -0.2**
comp=Z,4.2nm,0.8s,baz=38,slow=5.6,SNR=8.6
ANN Anapa 73.00 314 *eP* **P** **01 49 16.5 -0.4**
ANN *e**PP **pP** **01 49 25.0 -1.7**
ANN *e* 01 51 55.9
ANN *ePPP* PPP 01 53 39.9
ANN *eS* **S** **01 58 42.4 +0.8**
ANN *eSS* **SS** **02 03 19.4 -2.3**
ANN pmax pmax
comp=Z,45nm,1.0s
NB2 NORSAR Subarra 73.03 337 P **P** **01 49 16.7 -0.2**
comp=Z,1.2nm,0.7s,baz=37,slow=6.2
NOA NORSAR Array B 73.03 337 P **P** **01 49 16.7 -0.2**
comp=Z,2.6nm,0.8s,baz=38,slow=6.0,SNR=5.6
NOA LR LR 02 25 35.0
comp=Z,94nm,18.0s,baz=30,slow=39
BOZ Bozeman (W) 73.03 45 *eP* **P** **01 49 18.9 +1.6**
BOZ pmax pmax
comp=Z,18nm,1.9s
BOZ Bozeman (W) 73.03 45 *eP* **P** **01 49 18.9 +1.6**
comp=Z,18nm,1.9s
AKASG Malin Array Be 73.52 322 P **P** **01 49 19.6 -0.3**
comp=Z,6.4nm,0.8s,baz=45,slow=6.2,SNR=19
KIEV Kiev 73.53 322⇑ *eP* **P** **01 49 19.5 -0.5**

KIEV pmax pmax
comp=Z,8.0nm,1.0s
FXWY Fox Creek 74.62 46 *eP* **P** **01 49 28.9 +2.1**
comp=Z,2.7nm,1.0s
MOOW Moose Ponds 74.71 46 *eP* **P** **01 49 29.4 +2.2**
comp=Z,4.6nm,1.2s
R11A Troy Canyon, C 75.17 53 *eP* **P** **01 49 31.5 +1.5**
comp=Z,9.1nm,1.4s
HWUT Hardware Ranch 75.58 48 *eP* **P** **01 49 34.1 +1.8**
SORM Soroca 75.66 321⇓ *iP* **P** **01 49 31.3 -1.0**
SORM Soroca 75.66 321 ⇓*iP* **P** **01 49 31.3 -1.0**
DUG Dugway, Tooele 75.73 50 *eP* **P** **01 49 34.0 +0.9**
DUG pmax pmax
comp=Z,7.0nm,1.1s
DUG Dugway, Tooele 75.73 50 *eP* **P** **01 49 34.0 +0.9**
comp=Z,6.7nm,1.1s
BW06 Boulder Array 76.00 46 *eP* **P** **01 49 35.7 +1.0**
comp=Z,4.4nm,1.1s
PD31 Pinedale Array 76.00 46 *eP* **P** **01 49 35.7 +1.0**
PDAR Pinedale Array 76.00 46 P **P** **01 49 35.2 +0.5**
comp=Z,1.6nm,0.7s,baz=262,slow=2.7,SNR=16
NLU North Lily Min 76.32 50 *eP* **P** **01 49 38.7 +2.1**
comp=Z,3.1nm,1.0s
MPU Maple Canyon 76.55 49 *eP* **P** **01 49 39.5 +1.7**
comp=Z,7.6nm,1.1s
KWP Kalwaria Pacla 77.30 325⇓ *iP* **P** **01 49 42.4 +0.8**
KWP Kalwaria Pacla 77.30 325 ⇓*iP* **P** **01 49 42.4 +0.8**
GIRR Girov 77.38 321 ⇓*iP* **P** **01 49 42.1 0.0**
P17A Butcher Ranch, 77.42 49 *eP* **P** **01 49 44.1 +1.3**
comp=Z,10nm,1.2s
LCMT Little Creek M 77.46 53 *eP* **P** **01 49 44.9 +1.9**
comp=Z,7.2nm,1.3s
BUR08 Bucovina Ar. S 77.54 322 *eP* **P** **01 49 43.5 +0.4**
BURAR Bucovina Array 77.55 322⇑ *iP* **P** **01 49 43.4 +0.2**
BURAR Bucovina Array 77.55 322 ⇑*iP* **P** **01 49 43.4 +0.2**
TESR Tescani 77.62 320 ⇓*iP* **P** **01 49 43.6 +0.1**
KNB Kanab 77.72 52 *eP* **P** **01 49 46.7 +2.3**
KNB pmax pmax
comp=Z,11nm,1.4s
KNB Kanab 77.72 52 *eP* **P** **01 49 46.7 +2.3**
comp=Z,11nm,1.4s
CFR Carcaliu 77.78 319⇑ *iP* **P** **01 49 44.3 0.0**
CFR Carcaliu 77.78 319 ⇑*iP* **P** **01 49 44.3 0.0**
SRU San Rafael Swe 77.78 50 *eP* **P** **01 49 46.2 +1.4**
SRU pmax pmax
comp=Z,6.0nm,0.9s
SRU San Rafael Swe 77.78 50 *eP* **P** **01 49 46.2 +1.4**
comp=Z,5.9nm,0.9s
KOLS Kolonicke sedl 78.00 324 *eP* **P** **01 49 45.4 -0.1**
KOLS Kolonicke sedl 78.00 324 *eP* **P** **01 49 45.4 -0.1**
VRI Vrincioaia 78.02 320 ⇓*iP* **P** **01 49 46.7 +0.9**
VRI Vrincioaia 78.02 320 ⇓*P* **P** **01 49 46.7 +0.9**
PLOR Plostina 78.07 320 ⇓*iP* sP 01 49 57.7 -1.8
STHS Stebnicka Huta 78.11 325 *eP* **P** **01 49 47.7 +1.5**
STHS pmax pmax
comp=Z,5.0nm,1.2s
STHS Stebnicka Huta 78.11 325 *eP* **P** **01 49 47.7 +1.5**
OJC Ojcow 78.16 326 *eP* **P** **01 49 46.0 -0.4**
OJC Ojcow 78.16 326 *eP* **P** **01 49 46.0 -0.4**
BRTR Keskin Array B 78.39 312 P **P** **01 49 47.9 -0.1**
comp=Z,1.6nm,1.0s,baz=106,slow=4.0,SNR=7.1
BRTR Keskin Array B 78.39 312 *ce*P **P** **01 49 48.0 -0.1**
BRTR pmax pmax
comp=Z,1.0nm,0.6s
ISR Istrita 78.64 319⇑ *iP* **P** **01 49 50.0 +0.8**
ISR Istrita 78.64 319 ⇑*P* **P** **01 49 50.0 +0.8**
MLR Muntele Rosu 78.68 320 ⇓*iP* P 01 49 56.7 +7.2
MLR Muntele Rosu 78.68 320 ⇓*P* P 01 49 56.7 +7.2
MSAB Monastry St. A 78.68 318⇑ *iP* **P** **01 49 47.8 -1.6**
BR231 Keskin MP Arra 78.81 312 *eP* **P** **01 49 48.8 -1.6**
LANS Liptovska Anna 79.09 326 *eP* **P** **01 49 53.5 +1.9**
LANS Liptovska Anna 79.09 326 *eP* **P** **01 49 53.5 +1.9**
PV10 Paradox Valley 79.14 49 *eP* **P** **01 49 54.2 +1.8**
VOIR 79.17 320 ⇓*iP* **P** **01 49 53.0 +0.9**
VOIR 79.17 320 ⇓*P* **P** **01 49 53.0 +0.9**
PV05 Paradox Valley 79.30 50 *eP* **P** **01 49 54.9 +1.7**
ARR Arges 79.42 321⇑ *iP* **P** **01 49 54.8 +1.3**
MORC Moravsky Berou 79.45 327 ⇑*iP* **P** **01 49 54.2 +0.6**
MORC Moravsky Berou 79.45 327 ⇑*P* **P** **01 49 54.2 +0.6**
MORC Moravsky Berou 79.45 327 *eP* **P** **01 49 54.2 +0.6**
DPC Dobruska-Polom 79.53 328 *eP* **P** **01 49 54.6 +0.6**
DPC *ep*P **sP** **01 50 08.1 +0.6**
DPC Dobruska-Polom 79.53 328 *eP* **P** **01 49 54.6 +0.6**
DPC *e* 01 50 08.1
KRLC Kraliky 79.55 328 *eP* **P** **01 49 54.3 +0.2**
KRLC *ep*P **sP** **01 50 07.0 -0.6**
KRLC Kraliky 79.55 328 *eP* **P** **01 49 54.3 +0.2**
KRLC *e* 01 50 07.0
WUAZ Wupatki 79.57 53 *eP* **P** **01 49 56.5 +1.8**
PV01 Paradox Valley 79.58 49 *eP* **P** **01 49 55.3 +0.6**
PSZ Piszkesteto 79.82 325 *eP* **P** **01 49 56.5 +0.8**
PSZ pmax pmax
comp=Z,7.0nm,1.0s
PSZ Piszkesteto 79.82 325 *eP* **P** **01 49 56.5 +0.8**
comp=Z,6.5nm,1.0s
BRG Berggiesshubel 80.08 330 *eP* sP 01 50 10.5 +0.2
comp=Z,7.1nm,1.2s
BRG Berggiesshubel 80.08 330 *eP* **P** **01 49 57.2 +0.3**
comp=Z,11nm,1.6s
BRG *i* 01 50 11.0
comp=Z,7.1nm,1.2s
BRG Berggiesshubel 80.08 330 *eP* **P** **01 49 57.2 +0.3**
BRG *i* 01 50 11.0
BRG pmax pmax
comp=Z,11nm,1.6s
BRG pmax pmax
comp=Z,7.0nm,1.3s
CLL Collm 80.11 331⇑ *iP* **P** **01 49 57.0 0.0**
comp=Z,7.0nm,1.0s
CLL *e* 01 50 08.0
CLL *i* 01 50 10.7
comp=Z,7.0nm,0.9s
CLL *i* 01 50 20.4
CLL Collm 80.11 331 ⇑*iP* **P** **01 49 57.0 0.0**
CLL *e* 01 50 08.0
CLL *i* 01 50 10.7
CLL pmax pmax
comp=Z,7.0nm,1.0s
CLL Collm 80.11 331 *eP* **P** **01 49 57.1 +0.1**
VRAC Vranov 80.21 327 P **P** **01 49 57.9 +0.2**
comp=Z,3.1nm,1.0s,baz=41,slow=6.9,SNR=3.1
VRAC Vranov 80.21 327 ⇑*iP* **P** **01 49 58.5 +0.8**
X16A Lo Mia Camp, P 80.24 54 *eP* **P** **01 50 00.2 +1.9**
PRU Pruhonice 80.54 329 *eP* **P** **01 49 59.7 +0.3**
PRU *ep*P **sP** **01 50 13.7 +0.9**
PRU Pruhonice 80.54 329 *eP* **P** **01 49 59.7 +0.3**
PRU *e* 01 50 13.7
TREC Trest 80.69 328 *eP* **P** **01 50 00.7 +0.5**
TREC *ep*P **sP** **01 50 13.2 -0.5**
TREC Trest 80.69 328 *eP* **P** **01 50 00.7 +0.5**
TREC *e* 01 50 13.2
RAYN Ar Rayn 80.78 293 *eP* **P** **01 50 00.2 -0.9**
comp=Z,4.5nm,1.0s
KHC Kasperske Hory 81.60 329 *eP* **P** **01 50 05.5 +0.4**
KHC *ep*P **sP** **01 50 17.0 -1.6**
KHC Kasperske Hory 81.60 329 *eP* **P** **01 50 03.9 -1.2**
KHC pmax pmax
comp=Z,2.0nm,1.0s
KHC Kasperske Hory 81.60 329 *eP* **P** **01 50 03.9 -1.2**
comp=Z,2.1nm,1.0s
GERES GERESS Array B 81.77 329 P **P** **01 50 05.7 -0.4**
comp=Z,0.7nm,0.7s,baz=35,slow=4.9,SNR=6.2
GRFO Grafenberg 82.09 330 *eP* **P** **01 50 08.1 +0.5**
GRFO pmax pmax
comp=Z,7.0nm,0.8s
GRFO Grafenberg 82.09 330 *eP* **P** **01 50 08.1 +0.5**
comp=Z,6.9nm,0.8s
VTS Vitosha 82.13 319⇑ *iP* **P** **01 50 08.8 +0.7**
VTS Vitosha 82.13 319 ⇑*P* **P** **01 50 08.8 +0.7**
ANMO Albuquerque 82.97 51⇓ *eP* **P** **01 50 14.1 +1.4**
ANMO pmax pmax
comp=Z,8.0nm,2.5s
ANMO Albuquerque 82.97 51 *eP* **P** **01 50 14.9 +2.1**
ANMO *ep*P **sP** **01 50 29.3 +3.0**
SCHQ Schefferville 83.60 17 P **P** **01 50 16.3 +1.0**
comp=Z,4.8nm,0.9s,baz=36,slow=4.8,SNR=3.6
BFO Black Forest 84.30 331 *iP* **P** **01 50 19.7 +0.6**
BFO Black Forest 84.30 331 *eP* **P** **01 50 19.4 +0.3**
FUORN Ofenpass-Fuorn 84.95 329 *eP* **P** **01 50 23.1 +0.4**
TX31 Lajitas Ar. Si 88.54 53 *eP* **P** **01 50 40.5 +0.3**
TXAR Lajitas Array 88.54 53 P **P** **01 50 40.8 +0.5**
comp=Z,0.9nm,0.7s,baz=293,slow=2.8,SNR=12
TORD Torodi Ar. Bea 116.75 316 PKP **PKPdf** **01 56 30.5 -1.6**
comp=Z,0.4nm,0.8s,baz=41,slow=2.4,SNR=2.8

SAML	**Samuel**	**142.57**	**45**	*e*PKPdf	**PKPdf**	**01 57 23.2**	**+2.5**
LPAZ	**La Paz**	**145.21**	**59**	PKPbc	**PKPbc**	**01 57 25.5**	**-0.1**
	comp=Z,1.1nm,0.5s,baz=35,slow=3.7,SNR=5.4						
SIV	**San Ignacio**	**149.45**	**49**	PKPbc	**PKPbc**	**01 57 36.7**	**-0.1**
	comp=Z,1.7nm,0.7s,baz=286,slow=1.3,SNR=2.3						

IDC ***17*** *01:40:13.5±0.8, 37.°02N×143.°36E, h0km, mb3.9/10, mb1 4.1/12, mb1mx3.8/55, mbtmp3.9/12, ML3.8/2, Error ellipse: s-maj=26.1km s-min=18.5km az=103.0*
ISCJB ***17*** *01:40:16.5±0.8, 37.°0N±0.°1×143.°3E±0.°1, h33km, mb4.0/13, Error ellipse: s-maj=17.0km s-min=13.3km az=43.6*
NEIC ***17*** *01:40:18.9±0.5, 37.°06N×143.°26E, h35km, mb4.1/2, Error ellipse: s-maj=12.5km s-min=9.5km az=126.0*

ISC 17 01:40:19.0±1.0, 37.°1N±0.°1×143.°3E±0.°1, h35km, n17, σ0§68/17, mb4.0/13, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MJAR	**Matsushiro Arr**	**4.09**	**264**	Pn	**Pn**	**01 41 18.9**	**-0.2**
	2.1nm,0.3s,baz=75,slow=18,SNR=3.9						
ASAJ	**Asahikawa**	**7.04**	**356**	Pn	**Pn**	**01 41 58.4**	**-1.1**
	2.4nm,0.3s,baz=201,slow=14,SNR=5.0						
ULN	**Ulaanbaatar**	**28.56**	**304**	*e*P	**P**	**01 46 10.5**	**-1.1**
	37nm,1.6s						
BILL	**Bilibino**	**33.57**	**15**	*e*P	**P**	**01 46 56.1**	**+0.9**
	1.8nm,0.5s						
MKAR	**Makanchi Array**	**45.35**	**302**	P	**P**	**01 48 33.8**	**+0.2**
	0.9nm,0.6s,baz=76,slow=7.6,SNR=2.1						
KURK	**Kurchatov**	**47.07**	**308**	P	**P**	**01 48 48.1**	**+1.1**
KURBB	**Kurchatov Arra**	**47.14**	**308**	P	**P**	**01 48 48.1**	**+0.5**
	1.8nm,0.7s,baz=82,slow=8.3,SNR=3.3						
ILAR	**Eielson Array**	**48.66**	**32**	P	**P**	**01 48 58.9**	**-0.3**
	0.8nm,0.6s,baz=266,slow=6.4,SNR=4.1						
BRVK	**Borovoye**	**51.69**	**313**	*e*P	**P**	**01 49 22.1**	**-0.2**
	1.2nm,0.6s						
INK	**Inuvik**	**53.66**	**27**	P	**P**	**01 49 36.8**	**+0.2**
	1.1nm,0.6s,baz=319,slow=4.6,SNR=4.1						
WRA	**Warramunga Arr**	**57.34**	**190**	P	**P**	**01 50 02.9**	**-0.7**
	1.7nm,0.6s,baz=8.2,slow=7.2,SNR=3.5						
ABKAR	**Akbulak array**	**59.04**	**311**	*e*P	**P**	**01 50 15.5**	**+0.3**
ASAR	**Alice Springs**	**61.07**	**190**	P	**P**	**01 50 28.7**	**-0.6**
	0.7nm,0.4s,baz=4.5,slow=7.2,SNR=8.5						
YKA	**Yellowknife Ar**	**63.01**	**31**	P	**P**	**01 50 42.2**	**+0.2**
	0.2nm,0.5s,baz=307,slow=7.5,SNR=3.1						
FINES	**FINESS Array B**	**69.45**	**333**	P	**P**	**01 51 23.7**	**+0.4**
	1.4nm,0.6s,baz=43,slow=8.4,SNR=4.0						
NOA	**NORSAR Array B**	**74.70**	**338**	P	**P**	**01 51 55.3**	**+0.5**
	0.9nm,0.8s,baz=36,slow=5.9,SNR=3.1						
GERES	**GERESS Array B**	**83.44**	**329**	P	**P**	**01 52 43.2**	**+0.4**
	0.4nm,0.6s,baz=12,slow=5.2,SNR=3.3						

ISCJB ***17*** *01:45:06.8±0.5, 50.°24N±0.°03×18.°63E±0.°03, h0km, Error ellipse: s-maj=5.1km s-min=2.5km az=9.1*
CSEM ***17*** *01:45:07.5±0.3, 50.°24N×18.°65E, h1km, ML2.6/4, Error ellipse: s-maj=7.2km s-min=3.2km az=12.0*
PRU ***17*** *01:45:08.2, 50.°24N×18.°63E, h0km*

ISC 17 01:45:07.8±0.8, 50.°14N±0.°04×18.°66E±0.°02, h0km, n28, σ0§59/49, 2C, Poland

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CHZP	**Chorzow**	**0.27**	**54**	*e*Pg	**Pg**	**01 45 12.6**	**-0.2**
CHZP				*e*Sg	**Sg**	**01 45 15.8**	**-0.5**
OKC	**Ostrava-Krasne**	**0.44**	**228**	⇑ *i*PG	**Pb**	**01 45 18.6**	**+0.1**
OKC				*e*SG	**Sb**	**01 45 26.1**	**+0.5**
	comp=Z,25nm,0.4s						
OKC	**Ostrava-Krasne**	**0.44**	**228**	Pg	**Pb**	**01 45 18.6**	**+0.1**
OKC				Sg	**Sb**	**01 45 26.1**	**+0.5**
	25nm,0.4s						
OJC	**Ojcow**	**0.74**	**83**	*e*Pg	**Pg**	**01 45 21.5**	**-0.4**
OJC				*e*Sg	**Sg**	**01 45 31.3**	**-0.1**
OJC	**Ojcow**	**0.74**	**83**	*e*Pg	**Pg**	**01 45 21.5**	**-0.4**
OJC				*e*Sg	**Sg**	**01 45 31.3**	**-0.1**
MORC	**Moravsky Berou**	**0.81**	**244**	*e*Pg	**Pb**	**01 45 24.4**	**-0.2**
MORC				*e*Sg	**Sb**	**01 45 36.2**	**+0.1**
LANS	**Liptovska Anna**	**1.12**	**152**	*e*Pg	**Pn**	**01 45 30.8**	**+0.1**
LANS				*e*Sg	**Sn**	**01 45 47.4**	**+0.6**
LANS	**Liptovska Anna**	**1.12**	**152**	*e*PG	**Pn**	**01 45 30.8**	**+0.1**
LANS				*e*SG	**Sn**	**01 45 47.4**	**+0.6**
KRLC	**Kraliky**	**1.21**	**268**	*i* PG	**Pg**	**01 45 30.5**	**-0.4**
KRLC				*e*SG	**Sg**	**01 45 46.2**	**-0.4**
KRLC	**Kraliky**	**1.21**	**268**	Pg	**Pg**	**01 45 30.5**	**-0.4**
KRLC				Sg	**Sg**	**01 45 46.2**	**-0.4**
NIE	**Niedzica**	**1.28**	**123**	*e*Pg	**Pb**	**01 45 32.9**	**+0.1**
NIE				*e*Sg	**Sn**	**01 45 51.6**	**+0.7**
DPC	**Dobruska-Polom**	**1.52**	**279**	*i* PG	**Pn**	**01 45 35.9**	**-0.3**
DPC				*e*SG	**Sg**	**01 45 56.1**	**-0.3**
	comp=Z,13nm,0.4s						
DPC	**Dobruska-Polom**	**1.52**	**279**	Pg	**Pn**	**01 45 35.9**	**-0.3**
DPC				Sg	**Sg**	**01 45 56.1**	**-0.3**
	13nm,0.4s						
VYHS	**Vyhne**	**1.65**	**176**	*e*Pn	**Pb**	**01 45 39.0**	**0.0**
VYHS				*e*Sn	**Sb**	**01 46 00.8**	**+0.5**
VYHS	**Vyhne**	**1.65**	**176**	*e*PN	**Pb**	**01 45 39.0**	**0.0**
VYHS				*e*SN	**Sb**	**01 46 00.8**	**+0.5**
VYHS				*e*LG	Lg	01 46 04.3	
KSP	**Ksiaz**	**1.67**	**296**	*e*Pg	**Pg**	**01 45 39.4**	**-0.3**
KSP				*e*Sg	**Sn**	**01 46 00.0**	**-0.3**
KSP	**Ksiaz**	**1.67**	**296**	*e*Pg	**Pg**	**01 45 39.4**	**-0.3**
KSP				*e*Sg	**Sn**	**01 46 00.0**	**-0.3**
STHS	**Stebnicka Huta**	**1.82**	**112**	*e*Pn	**Pb**	**01 45 42.3**	**+0.3**
STHS				*e*Sn	**Sb**	**01 46 05.5**	**+0.1**
STHS	**Stebnicka Huta**	**1.82**	**112**	*e*PN	**Pb**	**01 45 42.3**	**+0.3**
STHS				*e*SN	**Sb**	**01 46 05.5**	**+0.1**
STHS				*e*LG	Lg	01 46 12.5	
KECS	**Kecovo**	**2.04**	**143**	*e*Pn	**Pn**	**01 45 43.5**	**+0.2**
KECS				*e*Sn	**Sn**	**01 46 08.3**	**-1.2**
KECS	**Kecovo**	**2.04**	**143**	*e*PN	**Pn**	**01 45 43.5**	**+0.2**
KECS				*e*SN	**Sn**	**01 46 08.3**	**-1.2**
KECS				*e*LG	Lg	01 46 17.8	
GOPC	**GO Pecny, Ondr**	**2.51**	**266**	*e*SG	**Sb**	**01 46 26.1**	**+1.1**
	comp=Z,8.0nm,0.9s						
GOPC	**GO Pecny, Ondr**	**2.51**	**266**	Sg	**Sb**	**01 46 26.1**	**+1.1**
	8.0nm,0.9s						
PRU	**Pruhonice**	**2.66**	**268**	⇑ *e*SG	**Sb**	**01 46 30.8**	**+1.5**
PRU	**Pruhonice**	**2.66**	**268**	Sg	**Sb**	**01 46 30.8**	**+1.5**
BRG	**Berggiesshubel**	**3.10**	**286**	SG	**Sg**	**01 46 48.0**	**+0.7**
	4.3nm,0.6s						
KHC	**Kasperske Hory**	**3.45**	**255**	*e*SG	**Sg**	**01 46 57.9**	**-0.7**
	comp=Z,5.0nm,0.4s						
KHC	**Kasperske Hory**	**3.45**	**255**	Sg	**Sg**	**01 46 57.9**	**-0.7**
	5.0nm,0.4s						

ISK ***17*** *01:45:21.9, 36.°90N×29.°22E, h5km, MD2.9*
CSEM ***17*** *01:45:23.5±0.2, 36.°87N×29.°23E, h5km, MD2.9, Error ellipse: s-maj=5.3km s-min=4.6km az=2.0*
DDA ***17*** *01:45:23.6, 36.°90N×29.°23E, h7km, Md3.2*

ISC 17 01:45:23.8±1.1, 36.°89N±0.°02×29.°23E±0.°02, h3km±11km, n30, σ1§08/42, Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
FETY	**Fethiye**	**0.28**	**205**	*e*PG	**Pg**	**01 45 28.7**	**-0.4**
FETY				*e*SG	**Sg**	**01 45 33.8**	**+1.1**
FETY	**Fethiye**	**0.28**	**205**	*e*Pg	**Pg**	**01 45 28.7**	**-0.4**
FETY				*e*Sg	**Sg**	**01 45 33.8**	**+1.1**
DALY	**Dalyan (Mu¨la**	**0.47**	**262**	*e*PG	**Pg**	**01 45 32.1**	**-0.7**
DALY				*e*SG	**Sg**	**01 45 39.6**	**+0.8**
DALY	**Dalyan (Mu¨la**	**0.47**	**262**	*e*Pg	**Pg**	**01 45 32.1**	**-0.7**
DALY				*e*Sg	**Sg**	**01 45 39.6**	**+0.8**
TURN	**Turunc**	**0.50**	**269**	*i* P	**Pn**	**01 45 38.1**	**+0.2**
TURN				*i* S	**Sn**	**01 45 50.9**	**+3.9**
TURN	**Turunc**	**0.50**	**269**	P	**Pn**	**01 45 38.1**	**+0.2**
ELL	**Elmali**	**0.56**	**104**	*e*PG	**Pg**	**01 45 34.2**	**-0.4**
ELL	**Elmali**	**0.56**	**104**	*e*Pg	**Pg**	**01 45 34.2**	**-0.4**
AKAS	**Kas**	**0.72**	**155**	*i* P	**Pg**	**01 45 38.0**	**+0.4**
AKAS				*i* S	**Sn**	**01 45 52.2**	**-0.3**
AKAS	**Kas**	**0.72**	**155**	P	**Pg**	**01 45 38.0**	**+0.4**
AKAS				S	**Sn**	**01 45 52.2**	**-0.3**
YER	**Yerkesik**	**0.80**	**289**	*e*PG	**Pg**	**01 45 37.8**	**-1.3**
YER	**Yerkesik**	**0.80**	**289**	*e*Pg	**Pg**	**01 45 37.8**	**-1.3**
KORT	**Korkueli**	**0.91**	**82**	*i* P	**Pg**	**01 45 40.7**	**-0.5**
KORT				*i* S	**Sn**	**01 45 57.6**	**+0.4**
KORT	**Korkueli**	**0.91**	**82**	P	**Pg**	**01 45 40.7**	**-0.5**
BCK	**Bucak**	**1.23**	**62**	*e*PN	**Pb**	**01 45 46.9**	**-0.8**
BCK	**Bucak**	**1.23**	**62**	*e*Pn	**Pb**	**01 45 46.9**	**-0.8**
AYDN	**Tasoluk**	**1.33**	**306**	*i* P	**Pg**	**01 45 49.4**	**+0.1**
AYDN				*i* S	**Sg**	**01 46 07.8**	**+1.3**
AYDN	**Tasoluk**	**1.33**	**306**	P	**Pg**	**01 45 49.3**	**+0.1**
AYDN				S	**Sg**	**01 46 07.8**	**+1.3**
KHAL	**Karahalli**	**1.50**	**8**	*i* P	**Pg**	**01 45 52.5**	**0.0**
KHAL				*i* S	**Sg**	**01 46 13.7**	**+1.8**
KHAL	**Karahalli**	**1.50**	**8**	P	**Pg**	**01 45 52.5**	**0.0**
KHAL				S	**Sg**	**01 46 13.7**	**+1.8**
AYDB	**Zeytinkoy-Aydi**	**1.50**	**315**	*e*PN	**Pn**	**01 45 50.9**	**-0.9**
AYDB	**Zeytinkoy-Aydi**	**1.50**	**315**	*e*Pn	**Pn**	**01 45 50.9**	**-0.9**
BODT	**Bodrum**	**1.55**	**277**	*e*PN	**Pb**	**01 45 51.8**	**-1.3**
BODT	**Bodrum**	**1.55**	**277**	*e*Pn	**Pb**	**01 45 51.8**	**-1.3**
KULA	**Kula-Manisa**	**1.69**	**345**	*e*PN	**Pn**	**01 45 53.1**	**-1.2**
KULA	**Kula-Manisa**	**1.69**	**345**	*e*Pn	**Pn**	**01 45 53.1**	**-1.2**
KARP	**Karpathos**	**2.14**	**232**	*e*PN	**Pn**	**01 46 00.2**	**-0.3**
KARP	**Karpathos**	**2.14**	**232**	*e*Pn	**Pn**	**01 46 00.2**	**-0.3**
TVSB	**Tavsanli**	**2.57**	**4**	*e*PN	**Pn**	**01 46 06.2**	**-0.1**
TVSB	**Tavsanli**	**2.57**	**4**	*e*Pn	**Pn**	**01 46 06.3**	**-0.1**

IDC ***17*** *01:54:17.1±0.6, 39.°92N×143.°61E, h0km, mb4.3/25, mb1 4.4/32, mb1mx4.3/52, mbtmp4.3/32, ML3.7/7, MS3.8/11, Ms1 3.8/11, ms1mx3.4/72, Error ellipse: s-maj=16.0km s-min=11.5km az=109.0*
ISCJB ***17*** *01:54:18.6±1.1, 39.°95N±0.°03×143.°58E±0.°05, h16km±7km, mb4.5/114, MS4.1/11, Error ellipse: s-maj=7.3km s-min=4.2km az=41.2*
JMA ***17*** *01:54:19.0±0.2, 40.°01N×143.°57E, h18km, M4.5*
BJI ***17*** *01:54:22.4, 39.°98N×142.°97E, h23km, mb4.7/50, mB4.8/32, Ms4.4/28, Ms7 4.2/27*
MOS ***17*** *01:54:23.4±0.9, 40.°15N×143.°03E, h30km, mb4.8/49, Error ellipse: s-maj=9.4km s-min=5.1km az=115.9*
NEIC ***17*** *01:54:27.3±2.4, 40.°31N×142.°38E, h24km±17km, mb4.6/57, Error ellipse: s-maj=9.6km s-min=6.9km az=147.0*

ISC 17 01:54:21.3±0.4, 39.°98N±0.°04×143.°50E±0.°05, h26km±2km, h26km:pP-P, n289, σ1§65/276, mb4.6/94, MS4.2/11, 15C-17D, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JTH	**Tanohata**	**1.26**	**269**	P	**Pn**	**01 54 42.5**	**-0.7**
JTH				*e*S	**Sn**	**01 54 59.7**	**+0.4**
MIYJ	**Miyakonagasawa**	**1.36**	**253**	P	**Pn**	**01 54 44.3**	**-0.2**
MIYJ				S	**Sn**	**01 55 02.9**	**+1.2**
JANG	**Nango**	**1.57**	**285**	P	**Pn**	**01 54 47.1**	**-0.4**
JANG				S	**Sn**	**01 55 06.9**	**-0.1**
JKZ	**Kuzumaki**	**1.67**	**271**	P	**Pn**	**01 54 48.9**	**0.0**
JKZ				S	**Sn**	**01 55 11.1**	**+1.6**
OFUJ	**Ofunato**	**1.68**	**238**	P	**Pn**	**01 54 48.6**	**-0.3**
OFUJ				*e*S	**Sn**	**01 55 09.8**	**+0.2**
JOM	**Ohasama**	**1.78**	**254**	P	**Pn**	**01 54 50.9**	**+0.6**
JOM				*e*S	**Sn**	**01 55 13.2**	**+1.1**
JTM	**Tenmabayashi**	**2.03**	**294**	P	**Pn**	**01 54 54.1**	**+0.4**
JMK	**Ichinoseki**	**2.04**	**241**	P	**Pn**	**01 54 53.9**	**0.0**
ERM	**Erimo**	**2.05**	**353**	*e*P	**Pn**	**01 54 54.4**	**+0.4**
ERM	**Erimo**	**2.05**	**353**	*e*Pn	**Pn**	**01 54 54.4**	**+0.4**
JIO	**Ouri**	**2.26**	**228**	P	**Pn**	**01 54 56.0**	**-0.9**
JRG	**Rokugo**	**2.29**	**256**	P	**Pn**	**01 54 58.0**	**+0.7**
JOT	**Ohata**	**2.34**	**308**	P	**Pn**	**01 54 58.4**	**+0.5**
ASAJ	**Asahikawa**	**4.19**	**351**	Pn	**Pn**	**01 55 23.8**	**+0.4**
	7.1nm,0.3s,baz=220,slow=9.8,SNR=42						
ASAJ				Sn	**Sn**	**01 56 14.1**	**+2.6**
	11nm,0.3s,baz=144,slow=19,SNR=9.2						
ASAJ	**Asahikawa**	**4.19**	**351**	*e*Pn	**Pn**	**01 55 23.3**	**-0.1**
ASAJ				Sn	**Sn**	**01 56 14.1**	**+2.6**
YUK	**Yuzh-Kuril'sk**	**4.42**	**23**	⇑ *i*P	**Pn**	**01 55 24.8**	**-1.7**
YUK				*i* S	**Sn**	**01 56 12.6**	**-4.5**
YUK				pmax	pmax		
	comp=Z,225nm,0.3s						
YUK				pmax	pmax		
	comp=N,86nm,0.2s						
YUK				pmax	pmax		
	comp=E,38nm,0.2s						
SHO	**Shikotan**	**4.61**	**31**	⇑ *i*P	**Pn**	**01 55 26.4**	**-2.8**
SHO				pmax	pmax		
	comp=Z,123nm,0.5s						
SHO				pmax	pmax		
	comp=E,73nm,0.4s						
SHO				pmax	pmax		
	comp=N,53nm,0.3s						
MAJO	**Matsushiro**	**5.40**	**232**	*e*P	**Pn**	**01 55 41.2**	**+1.1**
MAJO	**Matsushiro**	**5.40**	**232**	*e*Pn	**Pn**	**01 55 41.2**	**+1.1**
MAT	**Matsushiro**	**5.40**	**232**	P	**Pn**	**01 55 41.0**	**+0.9**
MAT				*e*S	**Sn**	**01 56 44.5**	**+3.1**
MJAR	**Matsushiro Arr**	**5.40**	**232**	Pn	**Pn**	**01 55 40.1**	**+0.1**
	comp=N,6.3nm,0.3s,baz=36,slow=12,SNR=87						
MJAR				LR	LR	01 57 47.4	
	comp=N,336nm,20.5s,baz=60,slow=39						
MJB9	**Matsu-Tunnel**	**5.40**	**232**	*e*Pn	**Pn**	**01 55 41.2**	**+1.1**
KUR	**Kuril'sk**	**6.16**	**30**	*e*P	**Pn**	**01 55 48.9**	**-1.6**
KUR				pmax	pmax		
	comp=N,17nm,0.6s						
KUR				pmax	pmax		
	comp=E,33nm,0.6s						
KUR				pmax	pmax		
	comp=Z,61nm,0.6s						
INU	**Inuyama**	**6.91**	**230**	*e*Pn	**Pn**	**01 56 01.1**	**+0.2**
YSS	**Yuzh-Sakhalins**	**7.00**	**356**	*e*P	**Pn**	**01 56 04.7**	**+2.8**
JHJ	**Hachijo jima 2**	**7.47**	**205**	Pn	**Pn**	**01 56 08.6**	**+0.1**
	comp=Z,22nm,0.3s,baz=260,slow=22,SNR=3.9						
JHJ				Sn	**Sn**	**01 57 24.2**	**-8.2**
	comp=Z,33nm,0.3s,baz=269,slow=24,SNR=6.1						
JHJ				LR	LR	01 58 44.1	
	comp=Z,185nm,20.0s,baz=157,slow=36						
USRK	**Ussuriysk Ar.**	**9.54**	**300**	Pn	**Pn**	**01 56 39.0**	**+2.1**
	comp=Z,1.4nm,0.3s,baz=98,slow=14,SNR=27						
USRK				LR	LR	02 00 22.6	
	comp=Z,614nm,18.1s,baz=110,slow=38						
HABR	**Khabarovsk**	**10.43**	**327**	P	Pn	01 56 44.1	-4.9
HABR				*e*SS	**Sn**	**01 58 44.3**	**-0.6**
HABR				pmax	pmax		
	comp=Z,55nm,2.4s						
HABR				pmax	pmax		
	comp=Z,58nm,1.6s						
HABR				pmax	pmax		
	comp=Z,35nm,1.5s						
HABR				pmax	pmax		
	comp=Z,74nm,1.5s						
HABR				MLR	MLR		
	comp=Z,527nm,13.0s						
MDJ	**Mudanjiang**	**11.29**	**299**	P	Pn	01 56 54.8	-6.1
MDJ				S	Sn	01 58 49.8	-16
MDJ				ScP	**ScP**	**02 06 30.0**	**+4.8**
MDJ				PcS	**PcS**	**02 06 33.1**	**+4.9**
MDJ				pmax	pmax		
	comp=Z,6.0nm,0.5s						
MDJ				pmax	pmax		
	comp=Z,50nm,4.2s						
MDJ				LR	LR		
	comp=N,450nm,14.8s						
MDJ				LR	LR		
	comp=E,500nm,14.4s						
MDJ				LR	LR		
	comp=Z,770nm,15.2s						
MDJ	**Mudanjiang**	**11.29**	**299**	*e*Pn	Pn	01 56 54.4	-6.4
	comp=Z,30nm,1.0s						
JNU	**Nakatsue**	**12.24**	**240**	Pn	**Pn**	**01 57 13.7**	**-0.2**
	comp=Z,0.2nm,0.3s,baz=60,slow=17,SNR=2.9						
JNU				LR	LR	02 02 07.0	
	comp=Z,534nm,20.6s,baz=40,slow=38						
JNU	**Nakatsue**	**12.24**	**240**	*e*Pn	**Pn**	**01 57 11.7**	**-2.2**
KSRS	**Korea Array**	**12.43**	**263**	Pn	**Pn**	**01 57 17.0**	**+0.6**
	comp=Z,0.6nm,0.3s,baz=72,slow=16,SNR=4.2						
KSRS				LR	LR	02 01 48.1	
	comp=Z,557nm,18.6s,baz=76,slow=36						
KSAR	**Wonju Array Be**	**12.46**	**263**	P	**Pn**	**01 57 17.0**	**+0.1**
KSAR	**Wonju Array Be**	**12.46**	**263**	Pn	**Pn**	**01 57 17.0**	**+0.1**
KLR	**Kul'dur**	**12.46**	**322**	Pn	**Pn**	**01 57 17.6**	**+0.8**
	comp=Z,0.2nm,0.3s,baz=131,slow=12,SNR=11						
KLR	**Kul'dur**	**12.46**	**322**	⇑ *e*P	**Pn**	**01 57 17.9**	**+1.1**
CBIJ	**Chichi jima**	**12.89**	**185**	*e*Pn	**P**	**01 57 32.2**	**-1.1**
SKR	**Severo-Kuril's**	**13.88**	**35**	*e*P	**P**	**01 57 42.0**	**-2.1**
CN2	**Changchun**	**13.98**	**292**	*e*P	Pn	**01 57 34.0**	**-3.6**
PETK	**Petropavlovsk-**	**16.32**	**32**	LR	LR	02 03 58.1	
	comp=Z,140nm,19.8s,baz=207,slow=36						
MA2	**Magadan**	**20.15**	**11**	P	**P**	**01 58 53.0**	**-0.2**
	comp=Z,9.9nm,0.7s,baz=201,slow=9.8,SNR=5.7						
TIA	**Tai'an**	**21.07**	**268**	*e*P	**P**	**01 59 02.1**	**-1.3**
TIA				pmax	pmax		
	comp=Z,20nm,0.5s						
NJ2	**Nanjing**	**21.41**	**256**	*e*P	**P**	**01 59 05.8**	**-1.2**
NJ2				pmax	pmax		
	comp=Z,11nm,0.7s						
SEY	**Seymchan**	**23.60**	**10**	P	**P**	**01 59 29.2**	**-0.5**
	comp=Z,4.0nm,0.5s,baz=24,slow=11,SNR=4.6						
YAK	**Yakutsk**	**23.63**	**344**	P	**P**	**01 59 28.9**	**-1.0**
	comp=Z,46nm,0.7s,baz=0.3,slow=1.3,SNR=15						
YAK	**Yakutsk**	**23.63**	**344**	*e*P	**P**	**01 59 28.6**	**-1.4**
YAK				*e*PP	**pP**	**01 59 38.0**	**+0.5**
YAK				*e*PPP	PPP	02 00 03.1	
YAK				*e*S	**S**	**02 03 39.9**	**-2.8**
YAK				*e*SS	**sS**	**02 03 57.8**	**+2.4**
YAK				pmax	pmax		
	comp=Z,54nm,0.9s						
YAK				pmax	pmax		
	comp=N,13nm,1.1s						
YAK				pmax	pmax		
	comp=E,6.0nm,1.1s						
YAK				pmax	pmax		
	comp=Z,31nm,0.9s						
YAK				pmax	pmax		
	comp=N,14nm,0.9s						
YAK				pmax	pmax		
	comp=E,6.0nm,0.7s						
YAK				smax	smax		
	comp=N,71nm,2.8s						
YAK				smax	smax		
	comp=E,94nm,3.7s						
YAK				MLR	MLR		
	comp=Z,140nm,13.0s						
YAK				MLR	MLR		
	comp=N,176nm,13.0s						
YAK				MLR	MLR		
	comp=E,265nm,14.0s						
YAK	**Yakutsk**	**23.63**	**344**	*e*P	**P**	**01 59 29.0**	**-1.0**
	comp=E,60nm,0.8s						
YHNB	**Yeheng**	**24.05**	**237**	*e*P	**P**	**01 59 35.9**	**+1.5**
	comp=E,117nm,1.5s						
HHC	**Hu-ho-hao-te**	**24.27**	**282**	*e*P	**P**	**01 59 33.0**	**-3.3**
HHC				pP	pP	01 59 42.4	-1.6
HHC				sP	sP	01 59 46.3	-1.0
HHC				S	S	02 03 40.4	-13
HHC				pmax	pmax		
	comp=E,30nm,0.9s						
HHC				pmax	pmax		
	comp=E,150nm,7.7s						
HHC				LR	LR		
	comp=E,250nm,14.8s						
HHC				LR	LR		
	comp=E,1μm,13.6s						
HHC				LR	LR		
	comp=E,360nm,14.8s						
WHN	**Wuhan**	**25.50**	**257**	⇓ *i*P	**P**	**01 59 48.0**	**+0.5**
WHN				pmax	pmax		
	comp=E,130nm,1.1s						
WHN				LR	LR		
	comp=E,750nm,11.4s						
WHN				LR	LR		
	comp=E,710nm,12.4s						
WHN				LR	LR		
	comp=E,820nm,15.8s						
BOD	**Bodaibo**	**26.04**	**323**	*e*P	**P**	**01 59 52.4**	**+0.4**
BOD				pmax	pmax		
	comp=Z,17nm,1.0s						
ULN	**Ulaanbaatar**	**27.21**	**299**	*ce*P	**P**	**02 00 03.3**	**+0.3**
ULN				pmax	pmax		
	comp=Z,20nm,1.2s						
ULN	**Ulaanbaatar**	**27.21**	**299**	*e*P	**P**	**02 00 03.0**	**+0.1**
	comp=Z,17nm,0.8s						
SONA1	**Songino Array**	**27.65**	**299**	*e*P	**P**	**02 00 07.9**	**+1.1**
SONM	**Songino Array**	**27.65**	**299**	P	**P**	**02 00 07.4**	**+0.5**
	comp=Z,9.1nm,0.7s,baz=88,slow=8.8,SNR=79						
H11N2	**WAKE ISLAND Hy**	**28.46**	**128**	T	T	02 31 15.2	
	baz=318,slow=75,SNR=102						
H11N1	**WAKE ISLAND Hy**	**28.47**	**128**	T	T	02 31 16.3	
	baz=318,slow=75,SNR=84						
H11N3	**WAKE ISLAND Hy**	**28.48**	**128**	T	T	02 31 24.4	
	baz=318,slow=75,SNR=64						
ENH	**Enshi**	**29.31**	**261**	*e*P	**P**	**02 00 21.5**	**-0.2**
	comp=Z,66nm,1.2s						
BILL	**Bilibino**	**30.74**	**17**	*i* P	**P**	**02 00 32.9**	**-1.0**
BILL				*e*		02 00 41.0	
BILL				pmax	pmax		
	comp=Z,3.0nm,1.0s						
BILL	**Bilibino**	**30.74**	**17**	*e*P	**P**	**02 00 34.1**	**+0.2**
	comp=Z,10nm,1.1s						
LZH	**Lanzhou**	**31.30**	**276**	*e*P	**P**	**02 00 42.5**	**+3.1**
LZH				pP	sP	02 00 52.0	+1.7
LZH				sP	pP	02 00 56.4	+9.3
LZH				pmax	pmax		
	comp=Z,17nm,1.0s						
MOY	**Mondy**	**31.41**	**306**	*e*P	**P**	**02 00 41.3**	**+1.2**
TIXI	**Tiksi**	**32.59**	**351**	P	**P**	**02 00 49.8**	**-0.3**
	comp=Z,0.6nm,0.3s,baz=152,slow=6.3,SNR=4.2						
TIXI	**Tiksi**	**32.59**	**351**	*e*P	**P**	**02 00 49.4**	**-0.7**
	comp=Z,2.5nm,0.8s						
GTA	**Gaotai**	**33.37**	**283**	P	**P**	**02 00 59.0**	**+1.5**

MK31	**Makanchi Array**	**44.01**	**300**	*e*P		**P**	**02 02 27.1**	**+0.7**
MKAR	**Makanchi Array**	**44.01**	**300**	P		**P**	**02 02 26.9**	**+0.5**
	comp=Z,3.8nm,0.8s,baz=83,slow=9.2,SNR=26							
MKAR	**Makanchi Array**	**44.01**	**300**	*i* P		**P**	**02 02 27.0**	**+0.5**
MKAR				pmax	pmax			
	comp=Z,4.0nm,0.8s							
MKAR	**Makanchi Array**	**44.01**	**300**	*e*P		**P**	**02 02 27.1**	**+0.7**
MAKZ	**Makanchi**	**44.22**	**300**	*e*P		**P**	**02 02 28.6**	**+0.5**
MAKZ				pmax	pmax			
	comp=Z,7.0nm,0.9s							
MAKZ	**Makanchi**	**44.22**	**300**	*e*P		**P**	**02 02 28.6**	**+0.5**
	comp=Z,7.1nm,0.9s							
BPAW	**Bear Paw Mtn.**	**44.37**	**35**	*e*P		sP	02 02 39.5	-0.6
	comp=Z,16nm,2.0s							
SRAK	**Srakaew**	**44.53**	**246**	P		**P**	**02 02 29.6**	**-1.2**
	comp=Z,21nm,1.1s							
TRF	**Thorofare Moun**	**44.68**	**36**	*e*P		pP	02 02 39.5	-0.2
	comp=Z,3.6nm,1.0s							
RND	**Reindeer**	**45.33**	**36**	*e*P		**pP**	**02 02 45.6**	**+0.9**
RND				pmax	pmax			
	comp=Z,5.0nm,1.2s							
RND	**Reindeer**	**45.33**	**36**	*e*P		pP	02 02 45.6	+0.9
	comp=Z,5.2nm,1.2s							
KURK	**Kurchatov**	**45.47**	**306**	P		**P**	**02 02 37.3**	**-0.6**
KURK				pmax	pmax			
	comp=Z,62nm,0.9s							
KURK	**Kurchatov**	**45.47**	**306**	*e*P		**P**	**02 02 38.5**	**+0.6**
	comp=Z,32nm,0.9s							
MDM	**Murphy Dome**	**45.56**	**34**	*e*P		pP	02 02 47.9	+1.5
	comp=Z,5.8nm,0.9s							
WRH	**Wood River Hil**	**45.63**	**34**	*e*P		sP	02 02 49.7	-0.4
	comp=Z,4.6nm,1.1s							
COLA	**College**	**45.72**	**34**	*de*P		**sP**	**02 02 49.2**	**-1.6**
COLA				pmax	pmax			
	comp=Z,7.0nm,1.0s							
COLA	**College**	**45.72**	**34**	*e*P		pP	02 02 47.6	-0.1
	comp=Z,7.5nm,0.9s							
CCB	**Clear Creek Bu**	**45.75**	**34**	*e*P		pP	02 02 46.2	-1.7
	comp=Z,2.2nm,0.8s							
ILAR	**Eielson Array**	**46.14**	**34**	P		**P**	**02 02 42.9**	**-0.1**
	comp=Z,1.0nm,0.7s,baz=261,slow=6.7,SNR=15							
FYU	**Fort Yukon**	**46.74**	**31**	*e*P		sP	02 02 58.2	-0.7
	comp=Z,7.5nm,0.8s							
PDGK	**Podgornoye**	**46.91**	**296**	P		**P**	**02 02 50.0**	**+0.7**
PDGK				pmax	pmax			
	comp=Z,9.0nm,0.9s							
DIV	**Divide**	**46.95**	**39**	*e*P		pP	02 02 57.8	+0.3
	comp=Z,5.4nm,0.8s							
MENT	**Mentasta**	**47.69**	**36**	*e*P		sP	02 03 05.2	-1.2
	comp=Z,7.2nm,0.6s							
GUN	**Gumba**	**48.54**	**274**	*e*P		**P**	**02 03 03.6**	**+1.0**
EGAK	**Eagle**	**48.58**	**34**	*e*P		sP	02 03 11.0	-2.2
	comp=Z,5.5nm,0.9s							
KKN	**Kakani**	**49.06**	**274**	*e*P		**P**	**02 03 07.4**	**+0.9**
	comp=Z,22nm,0.6s							
DMN	**Daman**	**49.28**	**274**	*e*P		**P**	**02 03 09.0**	**+0.8**
GKN	**Gorkha**	**49.44**	**275**	*e*P		**P**	**02 03 09.9**	**+0.6**
CHKZ	**Chkalovo**	**49.54**	**312**	P		**P**	**02 03 08.2**	**-1.3**
CHKZ				pmax	pmax			
	comp=Z,13nm,0.9s							
VOSK	**Vostochnaya**	**49.59**	**310**	*e*P		**P**	**02 03 10.5**	**+0.6**
VOSK				pmax	pmax			
	comp=Z,13nm,1.0s							
VOSK	**Vostochnaya**	**49.59**	**310**	*e*P		**P**	**02 03 10.5**	**+0.6**
	comp=Z,13nm,1.0s							
TKM2	**Tokmak 2**	**49.72**	**297**	P		**P**	**02 03 11.9**	**+0.6**
TKM2				pmax	pmax			
	comp=Z,25nm,1.0s							
TKM2	**Tokmak 2**	**49.72**	**297**	*e*P		**P**	**02 03 12.1**	**+0.7**
	comp=Z,23nm,0.9s							
BVA0	**Borovoye Array**	**49.85**	**311**	*i* P		**P**	**02 03 12.8**	**+0.9**
BVA0				pmax	pmax			
	comp=Z,11nm,1.0s							
BRVK	**Borovoye**	**49.90**	**311**	*e*P		**P**	**02 03 13.6**	**+1.3**
BRVK				pmax	pmax			
	comp=Z,10.0nm,1.0s							
BRVK	**Borovoye**	**49.90**	**311**	*e*P		**P**	**02 03 13.6**	**+1.3**
	comp=Z,9.9nm,1.0s							
KOLN	**Koldanda**	**50.35**	**275**	*e*P		**P**	**02 03 17.1**	**+0.8**
	comp=Z,3.9nm,0.3s							
AAK	**Ala-Archa**	**50.58**	**297**	*e*P		**P**	**02 03 18.4**	**+0.6**
AAK				pmax	pmax			
	comp=Z,7.0nm,1.0s							
AAK	**Ala-Archa**	**50.58**	**297**	*e*P		**P**	**02 03 18.4**	**+0.6**
	comp=Z,6.8nm,1.0s							
PYUN	**Piuthan**	**50.66**	**276**	*e*P		**P**	**02 03 19.4**	**+0.8**
	comp=Z,52nm,1.0s							
ZRNK	**Zerenda**	**50.67**	**311**	*e*P		**P**	**02 03 19.1**	**+1.0**
ZRNK				pmax	pmax			
	comp=Z,11nm,0.7s							
ZRNK	**Zerenda**	**50.67**	**311**	*e*P		**P**	**02 03 19.1**	**+1.0**
	comp=Z,10nm,0.7s							
KSH	**Kashi**	**50.75**	**293**	*e*P		**P**	**02 03 23.4**	**+4.3**
KSH				*ep*P		sP	02 03 33.9	+3.7
KSH				S		**S**	**02 10 31.8**	**-1.2**
KSH				pmax	pmax			
	comp=Z,66nm,4.6s							
KSH				LR	LR			
	comp=Z,88nm,6.3s							
KSH				LR	LR			
	comp=Z,190nm,7.7s							
KSH				LR	LR			
	comp=Z,270nm,7.2s							
INK	**Inuvik**	**51.02**	**28**	P		**P**	**02 03 21.2**	**+0.7**
	comp=Z,1.4nm,0.5s,baz=286,slow=5.7,SNR=16							
INK	**Inuvik**	**51.02**	**28**	*e*P		**pP**	**02 03 29.3**	**+0.8**
INK				pmax	pmax			
	comp=Z,3.0nm,0.5s							
INK	**Inuvik**	**51.02**	**28**	*e*P		pP	02 03 29.3	+0.8
	comp=Z,3.2nm,0.5s							
EKS2	**Erkin-Say**	**51.06**	**297**	*e*P		**P**	**02 03 21.6**	**+0.2**
EKS2				pmax	pmax			
	comp=Z,8.0nm,0.8s							
EKS2	**Erkin-Say**	**51.06**	**297**	*e*P		**P**	**02 03 21.6**	**+0.2**
	comp=Z,7.7nm,0.8s							
MNAS	**Manas**	**52.00**	**297**	P		**P**	**02 03 29.3**	**+0.9**
MNAS				pmax	pmax			
	comp=Z,16nm,1.0s							
SFK	**Sufi-Kurgan**	**52.29**	**294**	P		**P**	**02 03 31.6**	**+0.9**
SFK				pmax	pmax			
	comp=Z,14nm,1.0s							
KKAR	**Karatay Array**	**53.11**	**299**	*e*P		**P**	**02 03 37.0**	**+0.6**
KKAR				pmax	pmax			
	comp=Z,4.0nm,0.6s							
KKAR	**Karatay Array**	**53.11**	**299**	*e*P		**P**	**02 03 37.0**	**+0.6**
	comp=Z,3.8nm,0.6s							
SVE	**Sverdlovsk**	**54.05**	**318**	*e*P		**P**	**02 03 43.6**	**+0.5**
SOKR	**Solikamsk**	**55.01**	**322**	*e*P		**pP**	**02 03 56.5**	**-1.6**
SOKR				pmax	pmax			
	comp=Z,16nm,1.2s							
ARU	**Arti**	**55.27**	**318**	*d* iP		**P**	**02 03 52.4**	**+0.5**
ARU				S		**S**	**02 11 30.1**	**-3.7**
ARU				SS		**SS**	**02 15 12.5**	**-5.1**
ARU				pmax	pmax			
	comp=Z,10.0nm,1.2s							
ARU	**Arti**	**55.27**	**318**	*e*P		**P**	**02 03 52.0**	**0.0**
	comp=Z,7.6nm,0.8s							
AB31	**Akbulak array**	**57.32**	**309**	*i* P		**P**	**02 04 07.4**	**+0.7**
AB31				pmax	pmax			
	comp=Z,4.0nm,0.5s							
ABKAR	**Akbulak array**	**57.32**	**309**	*e*P		**P**	**02 04 07.1**	**+0.4**
	comp=Z,5.4nm,0.5s							
KBL	**Kabul**	**57.92**	**290**	*e*P		**P**	**02 04 11.7**	**+0.3**
KBL				pmax	pmax			
	comp=Z,13nm,1.0s							
KBL	**Kabul**	**57.92**	**290**	*e*P		**P**	**02 04 11.7**	**+0.3**
	comp=Z,13nm,1.0s							
AKTO	**Aktyubinsk**	**57.95**	**311**	P		**P**	**02 04 09.6**	**-1.5**
AKTO				pmax	pmax			
	comp=Z,5.0nm,0.9s							
RES	**Resolute Bay**	**59.34**	**15**	*e*P		pP	02 04 28.1	-0.4
RES	**Resolute Bay**	**59.34**	**15**	*e*P		pP	02 04 28.1	-0.4
FITZ	**Fitzroy Crossi**	**60.13**	**200**	P		**P**	**02 04 25.7**	**-0.8**
	comp=Z,8.1nm,1.0s,baz=0.0,slow=10,SNR=5.0							
WRAB	**Tennant Creek**	**60.21**	**190**	*e*P		**pP**	**02 04 34.2**	**-0.9**
WRAB				pmax	pmax			
	comp=Z,5.0nm,0.7s							
WRAB	**Tennant Creek**	**60.21**	**190**	*e*P		pP	02 04 34.2	-0.9
	comp=Z,5.0nm,0.7s							
WRA	**Warramunga Arr**	**60.22**	**190**	P		**P**	**02 04 26.0**	**-1.1**
	comp=Z,2.1nm,0.5s,baz=7.9,slow=6.9,SNR=13							
WRA	**Warramunga Ar**	**60.22**	**190**	P		**P**	**02 04 26.0**	**-1.1**
YKA	**Yellowknife Ar**	**60.44**	**31**	P		**P**	**02 04 28.1**	**0.0**
	comp=Z,0.4nm,0.5s,baz=302,slow=6.5,SNR=16							
ARCES	**ARCESS Array B**	**61.82**	**339**	P		**P**	**02 04 37.7**	**+0.2**
	comp=Z,6.6nm,1.0s,baz=39,slow=7.8,SNR=7.8							

GEYT	**Alibeck**	**63.86**	**299**	P		**P**	**02 04 52.1**	**+0.6**
	comp=Z,3.7nm,0.8s,baz=72,slow=4.8,SNR=8.0							
ASAR	**Alice Springs**	**63.95**	**190**	P		**P**	**02 04 51.5**	**-0.5**
	comp=Z,1.4nm,0.8s,baz=10,slow=5.5,SNR=12							
DZM	**Mont Dzumac**	**65.33**	**157**	LR		LR	02 35 31.1	
	comp=Z,75nm,18.0s,baz=275,slow=38							
OBN	**Obninsk**	**66.72**	**323**	⇓*e*P		**P**	**02 05 10.4**	**+0.7**
OBN				*i*			02 05 18.5	
OBN				*e*			02 05 42.4	
OBN				pmax	pmax			
	comp=Z,4.0nm,1.0s							
OBN				pmax	pmax			
	comp=Z,9.0nm,0.9s							
OBN				MLR	MLR			
	comp=Z,301nm,16.0s							
FIA1	**FINESS Array S**	**66.97**	**332**	*e*P		**P**	**02 05 11.4**	**+0.2**
FINES	**FINESS Array B**	**66.97**	**332**	P		**P**	**02 05 11.6**	**+0.4**
	comp=Z,4.3nm,0.7s,baz=52,slow=6.8,SNR=24							
FINES	**FINESS Array B**	**66.97**	**332**	*i* P		**P**	**02 05 11.8**	**+0.6**
FINES				pmax	pmax			
	comp=Z,4.0nm,0.7s							
LPSR	**Galich'ya Gora**	**67.10**	**320**	*e*P		**P**	**02 05 11.9**	**-0.2**
LPSR				pmax	pmax			
	comp=Z,6.0nm,1.0s							
SUMG	**Summit**	**67.74**	**1**	*e*P		**pP**	**02 05 25.5**	**+0.9**
SUMG				pmax	pmax			
	comp=Z,8.0nm,0.9s							
SUMG	**Summit**	**67.74**	**1**	*e*P		pP	02 05 25.5	+0.9
	comp=Z,8.1nm,0.9s							
BMO	**Blue Mountains**	**68.74**	**49**	*e*P		pP	02 05 32.1	+1.0
	comp=Z,2.4nm,0.9s							
SWMT	**Swartz Lake**	**69.04**	**45**	*e*P		pP	02 05 34.5	+1.6
GUDG	**Gudauri**	**70.05**	**309**	P		**P**	**02 05 33.2**	**+2.2**
GUDG				S		**sP**	**02 05 42.4**	**-0.1**
ZEI	**Tsey**	**70.20**	**310**	*e*P		**P**	**02 05 31.6**	**-0.3**
ZEI				pmax	pmax			
	comp=Z,15nm,0.9s							
KIV	**Kislovodsk**	**70.22**	**311**	*d* iP		**P**	**02 05 33.7**	**+1.8**
KIV				*e*			02 05 41.3	
KIV				*e*			02 05 53.7	
KIV				*e*			02 08 09.4	
KIV				pmax	pmax			
	comp=Z,24nm,1.0s							
KIV	**Kislovodsk**	**70.22**	**311**	*e*P		**P**	**02 05 33.6**	**+1.8**
	comp=Z,33nm,1.0s							
KBZ	**Khabaz**	**70.23**	**311**	P		**P**	**02 05 32.6**	**+0.9**
	comp=Z,7.3nm,0.9s,baz=63,slow=3.2,SNR=22							
FFC	**Flin Flon**	**70.35**	**34**	*e*P		**pP**	**02 05 41.4**	**+0.7**
FFC				pmax	pmax			
	comp=Z,6.0nm,1.0s							
FFC	**Flin Flon**	**70.35**	**34**	*e*P		pP	02 05 41.4	+0.7
	comp=Z,5.7nm,1.0s							
ONI	**Oni**	**70.58**	**310**	P		**P**	**02 05 36.0**	**+1.9**
ONI	**Oni**	**70.58**	**310**	*e*P		**P**	**02 05 36.0**	**+1.9**
NEY	**Neytrino**	**70.62**	**310**	⇑*i*P		**P**	**02 05 36.7**	**+2.2**
NEY				pmax	pmax			
	comp=Z,1.0nm,0.9s							
EGMT	**Eagleton**	**70.99**	**43**	*e*P		pP	02 05 45.2	+0.3
	comp=Z,4.5nm,0.8s							
HLID	**Hailey**	**71.18**	**49**	*e*P		pP	02 05 47.0	+0.8
	comp=Z,1.8nm,0.9s							
BOZ	**Bozeman (W)**	**71.47**	**46**	*e*P		pP	02 05 48.4	+0.5
BOZ	**Bozeman (W)**	**71.47**	**46**	*e*P		pP	02 05 48.4	+0.5
WSAR	**Wadi Sarin**	**71.69**	**285**	LR		LR	02 41 09.4	
	comp=Z,116nm,18.1s,baz=186,slow=39							
NC204	**NORSAR Array S**	**72.04**	**338**	*e*P		**P**	**02 05 43.0**	**+0.4**
NB2	**NORSAR Subarra**	**72.10**	**338**	P		**P**	**02 05 43.5**	**+0.6**
	comp=Z,3.6nm,0.6s,baz=36,slow=6.2							
NOA	**NORSAR Array B**	**72.10**	**338**	*e*P		**P**	**02 05 43.5**	**+0.6**
	comp=Z,4.2nm,0.8s,baz=36,slow=6.0,SNR=11							
NBO02	**NORSAR Array S**	**72.19**	**338**	*e*P		**P**	**02 05 44.4**	**+0.9**
ANN	**Anapa**	**72.67**	**314**	*e*P		**P**	**02 05 46.1**	**-0.4**
ANN				*e**PP		**sP**	**02 05 56.6**	**-1.3**
ANN				*e*PPP		PPP	02 10 11.6	
ANN				*e*S		S	**02 15 03.9**	**-5.9**
ANN				*e*SSS		SSS	02 22 59.5	
ANN				pmax	pmax			
	comp=Z,47nm,1.5s							
H17A	**Grant Village**	**72.84**	**46**	*e*P		pP	02 05 56.4	+0.2
	comp=Z,4.5nm,1.0s							
AKASG	**Malin Array Be**	**72.96**	**323**	P		**P**	**02 05 48.6**	**+0.5**
	comp=Z,1.3nm,0.5s,baz=44,slow=5.8,SNR=14							
AKASG	**Malin Array Be**	**72.96**	**323**	*i* P		**P**	**02 05 48.5**	**+0.3**
AKASG				pmax	pmax			
	comp=Z,2.0nm,0.6s							
KIEV	**Kiev**	**72.98**	**323**	⇓*e*P		**P**	**02 05 48.7**	**+0.5**
KIEV				pmax	pmax			
	comp=Z,2.0nm,0.7s							
R11A	**Troy Canyon, C**	**73.68**	**54**	*e*P		pP	02 06 01.8	+0.5
	comp=Z,2.7nm,1.1s							
DAC	**Darwin (Calif)**	**73.69**	**56**	*e*P		**pP**	**02 06 00.0**	**-1.3**
DAC				pmax	pmax			
	comp=Z,3.0nm,0.8s							
DAC	**Darwin (Calif)**	**73.69**	**56**	*e*P		pP	02 06 00.0	-1.3
	comp=Z,2.6nm,0.8s							
TPNV	**Topopah Spring**	**74.13**	**55**	*e*P		**pP**	**02 06 04.7**	**+0.9**
TPNV				pmax	pmax			
	comp=Z,7.0nm,1.3s							
TPNV	**Topopah Spring**	**74.13**	**55**	*e*P		pP	02 06 04.7	+0.9
	comp=Z,7.2nm,1.3s							
DUG	**Dugway, Tooele**	**74.21**	**51**	*e*P		**sP**	**02 06 05.8**	**-1.5**
DUG				pmax	pmax			
	comp=Z,3.0nm,0.8s							
DUG	**Dugway, Tooele**	**74.21**	**51**	*e*P		sP	02 06 05.8	-1.5
	comp=Z,2.8nm,0.8s							
BW06	**Boulder Array**	**74.45**	**47**	*e*P		pP	02 06 06.2	+0.5
	comp=Z,1.7nm,0.8s							
PD31	**Pinedale Array**	**74.45**	**47**	*e*P		pP	02 06 06.7	+0.9
PDAR	**Pinedale Array**	**74.45**	**47**	P		**P**	**02 05 57.5**	**+0.1**
	comp=Z,0.6nm,0.7s,baz=238,slow=1.4,SNR=4.6							
LCMT	**Little Creek M**	**75.96**	**53**	*e*P		P	02 06 12.0	+5.9
	comp=Z,2.6nm,0.9s							
PFO	**Pinyon Flats O**	**76.06**	**58**	LR		LR	02 32 49.7	
	comp=Z,85nm,20.8s,baz=211,slow=30							
KWP	**Kalwaria Pacla**	**76.68**	**325**	⇑*i*P		**P**	**02 06 11.5**	**+1.8**
KWP	**Kalwaria Pacla**	**76.68**	**325**	⇑P		**P**	**02 06 11.5**	**+1.8**
BUR08	**Bucovina Ar. S**	**76.99**	**322**	*e*P		**P**	**02 06 12.9**	**+1.2**
BURAR	**Bucovina Array**	**77.00**	**322**	⇓*i*P		**P**	**02 06 12.9**	**+1.2**
BURAR	**Bucovina Array**	**77.00**	**322**	⇓P		**P**	**02 06 12.9**	**+1.2**
TESR	**Tescani**	**77.11**	**321**	⇑*i*P		**P**	**02 06 12.9**	**+0.7**
KOLS	**Kolonicke sedl**	**77.39**	**325**	*e*P		**P**	**02 06 15.4**	**+1.7**
KOLS	**Kolonicke sedl**	**77.39**	**325**	*e*P		**P**	**02 06 15.4**	**+1.7**
STHS	**Stebnicka Huta**	**77.48**	**326**	*e*P		**P**	**02 06 16.1**	**+1.9**
STHS				pmax	pmax			
	comp=Z,3.0nm,1.1s							
STHS	**Stebnicka Huta**	**77.48**	**326**	*e*P		**P**	**02 06 16.1**	**+1.9**
OJC	**Ojcow**	**77.50**	**327**	*e*P		**P**	**02 06 15.6**	**+1.3**
OJC				pmax	pmax			
	comp=Z,11nm,1.1s							
OJC	**Ojcow**	**77.50**	**327**	*e*P		**P**	**02 06 15.6**	**+1.3**
	comp=Z,11nm,1.1s							
VRI	**Vrincioaia**	**77.53**	**320**	⇓*i*P		**P**	**02 06 17.2**	**+2.6**
VRI	**Vrincioaia**	**77.53**	**320**	⇓P		**P**	**02 06 17.2**	**+2.6**
TIRR	**Tirgusor**	**77.68**	**318**	*e*P		**P**	**02 06 17.1**	**+1.7**
TIRR				pmax	pmax			
	comp=Z,1.0nm,0.8s							
CRVS	**Cervenica-Dubn**	**77.77**	**325**	*e*P		**P**	**02 06 16.9**	**+1.0**
CRVS	**Cervenica-Dubn**	**77.77**	**325**	*e*P		**P**	**02 06 16.9**	**+1.0**
WUAZ	**Wupatki**	**78.08**	**54**	*e*P		sP	02 06 28.4	-1.1
	comp=Z,5.4nm,0.9s							
BRTR	**Keskin Array B**	**78.11**	**312**	P		**P**	**02 06 18.9**	**+0.8**
	comp=Z,0.8nm,0.8s,baz=98,slow=5.1,SNR=6.7							
BRTR	**Keskin Array B**	**78.11**	**312**	*i* P		**P**	**02 06 19.0**	**+0.9**
BRTR				pmax	pmax			
	comp=Z,1.0nm,0.8s							
ISR	**Istrita**	**78.16**	**320**	⇓*i*P		**P**	**02 06 20.0**	**+1.9**
ISR	**Istrita**	**78.16**	**320**	⇓P		**P**	**02 06 20.0**	**+1.9**
MSAB	**Monastry St. A**	**78.24**	**318**	⇓*i*P		**P**	**02 06 20.1**	**+1.6**
LANS	**Liptovska Anna**	**78.45**	**326**	*e*P		**P**	**02 06 22.2**	**+2.6**
LANS	**Liptovska Anna**	**78.45**	**326**	*e*P		**P**	**02 06 22.2**	**+2.6**
OKC	**Ostrava-Krasne**	**78.47**	**327**	*e*P		**P**	**02 06 21.5**	**+1.8**
OKC				*ep*P		**PcP**	**02 06 29.5**	**+0.7**
OKC	**Ostrava-Krasne**	**78.47**	**327**	*e*P		**P**	**02 06 21.5**	**+1.8**
OKC				*e*			02 06 29.5	
KECS	**Kecovo**	**78.51**	**325**	*e*P		**P**	**02 06 20.8**	**+0.8**
KECS	**Kecovo**	**78.51**	**325**	*e*P		**P**	**02 06 20.8**	**+0.8**
BR231	**Keskin MP Arra**	**78.52**	**313**	*e*P		**P**	**02 06 19.8**	**-0.5**
VOIR		**78.66**	**321**	⇓*i*P		**P**	**02 06 22.4**	**+1.5**
VOIR		**78.66**	**321**	⇓P		**P**	**02 06 22.4**	**+1.5**
X16A	**Lo Mia Camp, P**	**78.75**	**54**	*e*P		sP	02 06 32.3	-1.0
	comp=Z,3.1nm,0.9s							
MORC	**Moravsky Berou**	**78.77**	**328**	⇑*i*P		**P**	**02 06 22.9**	**+1.5**
MORC	**Moravsky Berou**	**78.77**	**328**	*e*P		**P**	**02 06 22.7**	**+1.3**
MORC				pmax	pmax			
	comp=Z,26nm,1.0s							
MORC	**Moravsky Berou**	**78.77**	**328**	*e*P		**P**	**02 06 22.7**	**+1.3**
	comp=Z,26nm,1.0s							
DPC	**Dobruska-Polom**	**78.82**	**329**	*e*P		**P**	**02 06 23.1**	**+1.4**
DPC				*ep*P		**PcP**	**02 06 31.0**	**+0.6**
DPC	**Dobruska-Polom**	**78.82**	**329**	*e*P		**P**	**02 06 23.1**	**+1.4**
DPC				*e*			02 06 31.0	
KRLC	**Kraliky**	**78.85**	**328**	*e*P		**P**	**02 06 23.0**	**+1.1**
KRLC				*ep*P		**PcP**	**02 06 31.2**	**+0.7**
KRLC	**Kraliky**	**78.85**	**328**	*e*P		**P**	**02 06 23.0**	**+1.1**
KRLC				*e*			02 06 31.2	
ARR	**Arges**	**78.91**	**321**	⇑*i*P		**P**	**02 06 24.1**	**+1.8**
PSZ	**Piszkesteto**	**79.20**	**325**	*e*P		**P**	**02 06 25.5**	**+1.7**
PSZ				pmax	pmax			
	comp=Z,6.0nm,0.9s							
PSZ	**Piszkesteto**	**79.20**	**325**	*e*P		**P**	**02 06 25.5**	**+1.7**
	comp=Z,6.1nm,0.9s							
VYHS	**Vyhne**	**79.22**	**326**	*e*P		**P**	**02 06 25.0**	**+1.1**
VYHS				*e*			02 06 32.8	
VYHS	**Vyhne**	**79.22**	**326**	*e*P		**P**	**02 06 25.0**	**+1.1**
VYHS				*e*			02 06 32.8	
BRG	**Berggiesshubel**	**79.34**	**330**	*e*P		**P**	**02 06 25.8**	**+1.4**
	comp=Z,1.6nm,0.9s							
BRG	**Berggiesshubel**	**79.34**	**330**	*e*P		**P**	**02 06 25.8**	**+1.4**
BRG				pmax	pmax			
	comp=Z,2.0nm,0.9s							
CLL	**Collm**	**79.34**	**331**	⇑*i*P		**P**	**02 06 25.0**	**+0.5**
	comp=Z,5.0nm,0.9s							
CLL				*e*			02 06 33.0	
CLL				*ep*P		**PP**	**02 09 24.0**	**+0.2**
CLL	**Collm**	**79.34**	**331**	*e*P		**P**	**02 06 24.9**	**+0.5**
CLL				pmax	pmax			
	comp=Z,6.0nm,0.8s							
CLL	**Collm**	**79.34**	**331**	*e*P		**P**	**02 06 24.9**	**+0.5**
	comp=Z,6.3nm,0.8s							
PVCC	**Panska Ves**	**79.37**	**330**	*e*P		**P**	**02 06 25.9**	**+1.3**
PVCC				*ep*P		**pP**	**02 06 34.1**	**+1.1**
PVCC	**Panska Ves**	**79.37**	**330**	*e*P		**P**	**02 06 25.9**	**+1.3**
PVCC				*e*			02 06 34.1	
VRAC	**Vranov**	**79.53**	**328**	⇑*i*P		**P**	**02 06 25.9**	**+0.4**
VRAC	**Vranov**	**79.53**	**328**	⇑P		**P**	**02 06 25.9**	**+0.4**
GOPC	**GO Pecny, Ondr**	**79.77**	**329**	*e*P		**P**	**02 06 28.0**	**+1.1**
GOPC	**GO Pecny, Ondr**	**79.77**	**329**	*e*P		**P**	**02 06 28.0**	**+1.1**
GZR	**Gura Zlata**	**79.78**	**322**	⇑*i*P		**P**	**02 06 27.7**	**+0.7**
GZR	**Gura Zlata**	**79.78**	**322**	⇑P		**P**	**02 06 27.7**	**+0.7**
PRU	**Pruhonice**	**79.81**	**329**	*e*P		**P**	**02 06 28.2**	**+1.2**
PRU				*ep*P		**pP**	**02 06 36.3**	**+0.9**
PRU	**Pruhonice**	**79.81**	**329**	*e*P		**P**	**02 06 28.2**	**+1.2**
PRU				*e*			02 06 36.3	
TREC	**Trest**	**79.98**	**328**	*e*P		**P**	**02 06 29.3**	**+1.3**
TREC				*ep*P		**pP**	**02 06 37.1**	**+0.7**
TREC	**Trest**	**79.98**	**328**	*e*P		**P**	**02 06 29.3**	**+1.3**
TREC				*e*			02 06 37.1	
BZS	**Buzias**	**80.16**	**323**	⇓*i*P		**P**	**02 06 29.8**	**+0.8**
BZS	**Buzias**	**80.16**	**323**	⇓P		**P**	**02 06 29.8**	**+0.8**
KHC	**Kasperske Hory**	**80.87**	**329**	*e*P		**P**	**02 06 33.0**	**+0.2**
KHC				*ep*P		**pP**	**02 06 41.7**	**+0.5**
KHC	**Kasperske Hory**	**80.87**	**329**	*e*P		**P**	**02 06 33.0**	**+0.2**
KHC				*e*			02 06 41.7	
KHC	**Kasperske Hory**	**80.87**	**329**	*e*P		**P**	**02 06 33.0**	**+0.2**
	comp=Z,1.9nm,0.8s							
RAYN	**Ar Rayn**	**81.04**	**293**	*e*P		**P**	**02 06 34.8**	**+0.7**
	comp=Z,2.6nm,1.0s							
GEC2	**GERESS Array S**	**81.06**	**329**	*e*P		**P**	**02 06 35.1**	**+1.2**
GEC2				pmax	pmax			
	comp=Z,6.0nm,1.3s							
GEC2	**GERES

AHML ⇑eP P 02 00 00.5 +0.3
AHML ⇑eS S 02 00 55.4 -2.3
CYA Choya 2.38 248 eP P 02 00 01.0 -1.1
CYA ⇓eS S 02 00 57.7 -3.5
FSA Cafayete 2.79 300 eP P 02 00 04.4 -0.1
AZAP Zapla 3.67 334 eP P 02 00 10.4 +0.1
ASTB Santa Barbara 3.73 344 eP P 02 00 12.0 +1.3
VCA Vinchina 4.48 254 eP P 02 00 16.1 +0.1
VCA IAML 02 00 17.5
comp=Z,8µm,0.5s
VCA eS S 02 01 25.3 -1.4
VCA ⇓eS S 02 01 25.3 -1.4
HJA Humahuaca 4.72 336 eP P 02 00 19.8 +1.4
AGUA GUANDACOL 4.95 246 eP P 02 00 19.6 -0.1
MRA San Martin 5.28 203 eP P 02 00 20.8 -1.6
CPUP Villa Florida 5.47 79 eP P 02 00 24.9 +0.9
CPUP Villa Florida 5.47 79 P P 02 00 24.9 +0.9
comp=Z,278nm,0.3s,baz=253,slow=8.3,SNR=3976
CPUP S S 02 01 42.3 +1.1
baz=246,slow=20,SNR=0.8
CPUP ScP ScP 02 08 55.5 +0.2
comp=Z,0.5nm,0.3s,baz=140,slow=1.8,SNR=4.3
AMOG MOGNA 5.65 232⇓eP P 02 00 25.9 +0.3
YJA Yavi 5.71 339⇓eP P 02 00 28.3 +1.5
YJA IAML 02 00 30.5
comp=Z,240nm,0.4s
ACAN Cantantal 5.79 215⇓eP P 02 00 26.0 -0.8
ACAN ⇓eS S 02 01 43.0 -3.4
RTLL Cerro Villicun 5.87 229 eP P 02 00 27.6 +0.1
RTLL ⇓eS S 02 01 46.6 -1.2
SUCO SUCO 5.93 193 eP P 02 00 27.1 -0.9
SJA San Juan 6.05 228 IAML 02 00 31.6
comp=Z,4µm,0.4s
RTCV Cerro Valdivia 6.26 225 eP P 02 00 31.1 +0.1
RTCV eS S 02 01 52.5 -1.7
LCO Las Campanas 6.68 256 eP P 02 00 35.4 +0.2
LCO eS S 02 02 01.5 -0.2
LCO IAML 02 02 13.5
comp=Z,780nm,0.6s
LCO Las Campanas 6.68 256 eP P 02 00 35.1 -0.1
LCO eS S 02 02 00.9 -0.8
RTLS Leoncito 6.71 229 eP P 02 00 36.0 +0.5
RTLS eS S 02 02 02.6 +0.4
ASAL Salagasta 6.94 222 eP P 02 00 37.5 +0.2
ASAL eS S 02 02 03.6 -2.1
PB14 IPOC Station P 7.01 293⇓iP P 02 00 38.4 -0.1
PB14 iS S 02 02 06.0 -1.6
AUSP Uspallata 7.04 227 eP P 02 00 38.8 +0.3
ARCO CERRO ARCO 7.18 221⇓eP P 02 00 39.7 0.0
ARCO eS S 02 02 07.8 -2.1
ARCO IAML 02 02 17.6
comp=Z,1µm,0.6s
PB06 IPOC Station P 7.45 309⇓iP P 02 00 42.6 +0.1
PB06 iS S 02 02 13.4 -1.5
PB10 IPOC Station P 7.68 300⇓iP P 02 00 44.4 -0.1
PB10 IPOC Station P 7.68 300 eP P 02 00 44.4 -0.1
PB04 IPOC Station P 8.09 308⇓iP P 02 00 48.6 -0.1
PB04 iS S 02 02 25.3 -1.2
PB04 IPOC Station P 8.09 308 eP P 02 00 48.6 -0.1
PB07 IPOC Station P 8.33 313⇓iP P 02 00 51.0 -0.2
PB07 iS S 02 02 29.6 -1.2
PEL Peldehue 8.47 227⇑iP S 02 00 51.4 -0.7
PEL iS S 02 02 31.5 -1.3
CLCH Cerro Calan 8.53 225⇑iP S 02 00 52.5 -0.3
CLCH iS S 02 02 33.6 -0.4
ROC1 El Roble 8.58 229 eP P 02 00 52.4 -1.1
ROC1 eS S 02 02 32.8 -2.4
ROC1 El Roble 8.58 229 eP P 02 00 52.0 -1.5
ROC1 eScP ScP 02 08 58.7 +0.4
PB01 IPOC Station P 8.59 318⇓iP P 02 00 53.5 0.0
PB01 IPOC Station P 8.59 318 eP P 02 00 53.6 0.0
PB01 eScP ScP 02 08 59.0 +0.7
LPA La Plata 8.66 149cep P 02 00 56.0 +2.1
LPA sP 02 02 28.0
LPA s S 02 02 36.0 0.0
LPA PCP PcP 02 06 16.0 -2.7
LPA SCS ScS 02 12 34.0 +1.9
PB08 IPOC Station P 9.11 323⇓iP P 02 00 59.7 +0.6
PATCX Punta Patache 9.16 316⇑iP P 02 00 59.3 0.0
HMBC Humberstone 9.41 319⇓iP P 02 01 01.8 -0.1
PB11 IPOC Station P 9.69 322⇓iP P 02 01 04.7 0.0
PB11 IPOC Station P 9.69 322 eP P 02 01 04.8 0.0
PB11 eScP ScP 02 09 00.7 +1.1
PSGC Pisagua 10.08 320⇓iP P 02 01 08.5 -0.2
MNMC Minye Minye 10.18 324 eP P 02 01 10.0 +0.2
MNMC eS S 02 03 04.9 -0.1
TRQA Tornquist 10.54 174 eP P 02 01 10.7 -2.1
TRQA eS S 02 03 04.6 -6.2
TRQA eScP ScP 02 09 00.6 +0.4
PB13 IPOC Station P 10.80 327⇑iP P 02 01 17.7 +1.1
PB12 IPOC Station P 10.99 323⇓iP P 02 01 17.9 0.0
SIV San Ignacio 11.69 11 P P 02 01 25.5 +0.5
comp=Z,28nm,0.3s,baz=205,slow=10.0,SNR=571
SIV S S 02 03 33.7 +0.8
comp=Z,1.7nm,0.3s,baz=176,slow=17,SNR=6.7
SIV ScP ScP 02 09 02.7 +0.4
comp=Z,1.9nm,0.3s,baz=152,slow=2.0,SNR=6.8
LPAZ La Paz 12.07 337⇓eP P 02 01 29.9 +0.3
LPAZ ⇓eS S 02 03 38.0 -3.0
LPAZ La Paz 12.07 337 P P 02 01 29.6 +0.1
comp=Z,44nm,0.3s,baz=140,slow=10,SNR=550
LPAZ S S 02 03 37.5 -3.5
comp=Z,6.7nm,0.3s,baz=327,slow=18,SNR=6.1
LPAZ ScP ScP 02 09 03.5 -0.1
comp=Z,0.3nm,0.3s,baz=61,slow=3.2,SNR=9.9
ARE Arequipa 13.39 324 eP P 02 01 43.0 +0.2
ARE eS S 02 04 08.0 +2.7
ARE Arequipa 13.39 324 eP P 02 01 43.0 +0.2
ARE eS S 02 04 08.0 +2.7
PLCA Paso Flores 14.44 203 P P 02 01 50.8 -2.2
comp=Z,23nm,0.3s,baz=44,slow=11,SNR=406
PLCA S S 02 04 20.6 -3.4
comp=Z,0.7nm,0.3s,baz=29,slow=13,SNR=2.9
PLCA ScP ScP 02 09 06.6 +0.3
comp=Z,4.1nm,0.3s,baz=29,slow=2.0,SNR=20
SPB Sao Paulo 14.86 78 eP P 02 01 56.6 -0.7
BDFB Brasilia 18.49 53 P P 02 02 32.5 +1.0
comp=Z,809nm,0.3s,baz=192,slow=0.1,SNR=136
BDFB S S 02 05 29.9 -2.0
comp=Z,2µm,0.3s,baz=315,slow=0.0,SNR=2.4
SAML Samuel 18.50 0 eP P 02 02 31.7 +0.2
comp=Z,443nm,0.8s
SAML eS S 02 05 29.4 -2.7
SAML eScP ScP 02 09 15.7 +0.9
NNA Nana 20.02 318 P P 02 02 45.8 +0.4
comp=Z,12nm,0.3s,baz=148,slow=8.0,SNR=26
NNA S S 02 05 54.8 -1.6
comp=Z,0.2nm,0.3s,baz=107,slow=20,SNR=4.1
NNA ScP ScP 02 09 18.7 +0.3
comp=Z,2.2nm,0.3s,baz=96,slow=1.1,SNR=7.4
NNA Nana 20.02 318 eP P 02 02 46.0 +0.6
comp=Z,601nm,1.2s
NNA S S 02 05 54.8 -1.6
NNA ePcP PcP 02 06 35.6 +0.6
NNA eScP ScP 02 09 19.4 +1.0
CHRN Cochrane 20.97 198 eP P 02 02 52.5 -0.9
comp=Z,42nm,0.7s
CHRN eScP ScP 02 09 21.0 +0.9
EFI East Falkland 24.42 172 eP P 02 03 22.7 -1.4
EFI e 02 06 43.7
EFI pmax pmax
comp=Z,31nm,0.6s
EFI East Falkland 24.42 172 eP P 02 03 22.7 -1.4
comp=Z,31nm,0.6s
EFI ePcP PcP 02 06 43.7 +0.4
EFI eScP ScP 02 09 29.6 +0.4
ATAH Atahualpa 24.84 322 P P 02 03 29.9 +1.1
comp=Z,57nm,0.8s,baz=156,slow=8.7,SNR=31
ATAH S S 02 07 14.8 +1.8
comp=Z,23nm,1.0s,baz=169,slow=16,SNR=5.3
ATAH ScP ScP 02 09 33.1 +1.6
comp=Z,63nm,0.9s,baz=135,slow=3.5,SNR=10
PTGA Pitinga 26.86 7 P P 02 03 46.1 0.0
comp=Z,351nm,0.5s,baz=197,slow=12,SNR=714
PTGA S S 02 07 41.7 -2.2
comp=Z,19nm,0.6s,baz=353,slow=13,SNR=7.2
PTGA ScP ScP 02 09 37.4 +0.4
comp=Z,33nm,0.8s,baz=178,slow=4.0,SNR=6.2
USHA Ushuaia 27.51 186 P P 02 03 50.4 -0.8
comp=Z,279nm,0.6s,baz=355,slow=8.0,SNR=53
USHA PcP PcP 02 06 51.2 +0.6
comp=Z,162nm,0.9s,baz=222,slow=1.7,SNR=3.8
USHA ScP ScP 02 09 38.4 +0.1
comp=Z,131nm,0.8s,baz=8.2,slow=3.2,SNR=5.3
OTAV Otavalo 31.23 330 eP P 02 04 26.6 +2.1
comp=Z,161nm,0.7s
OTAV ePcP PcP 02 07 02.7 +1.1
OTAV eS S 02 08 53.9 +1.7
OTAV eScP ScP 02 09 52.8 +1.1
OTAV Otavalo 31.23 330 eP P 02 04 24.6 +1.9
FLOC Florencia 31.31 336 eP P 02 04 23.0 -1.7
CMBC Cumbal 31.58 331 eP P 02 04 29.8 +2.3
SJAC San Juan de Ar 32.32 340 eP P 02 04 33.2 -0.2
POPC Popayan, Colom 32.57 335 eP P 02 04 37.1 +1.5
POPC Popayan, Colom 32.57 335 eP ScP 02 09 56.3 +0.3
TUMC Tumaco 32.76 331 eP P 02 04 37.7 +0.7
PRAC Prado 33.03 338 eP P 02 04 38.8 -0.5
VILC Villavicencio, 33.03 341 eP P 02 04 40.5 +1.1
HOPE Hope Point 33.14 151 eP P 02 04 39.8 +0.1
comp=Z,599nm,0.9s
HOPE ePcP PcP 02 07 05.5 -0.2
HOPE eScP ScP 02 09 57.6 +0.6
GRGC Isla de Gorgon 33.58 332 eP P 02 04 43.9 0.0
RCBR Riachuelo 33.84 55 P P 02 04 47.1 +1.0
comp=Z,107nm,0.5s,baz=208,slow=9.3,SNR=142
RCBR PcP PcP 02 07 09.2 +0.7
comp=Z,24nm,0.6s,baz=243,slow=2.3,SNR=3.7
RCBR S S 02 09 28.8 -2.4
comp=Z,14nm,1.1s,baz=206,slow=15,SNR=3.0
RCBR ScP ScP 02 10 00.6 +0.3
comp=Z,18nm,1.0s,baz=133,slow=1.3,SNR=4.1
RCBR Riachuelo 33.84 55 eP P 02 04 46.1 0.0
comp=Z,489nm,1.3s
RCBR ePcP PcP 02 07 09.0 +0.5
RCBR S S 02 09 28.8 -2.4
RCBR ScP ScP 02 10 00.6 +0.3
YOPC Yopal, Colombi 33.88 344 eP P 02 04 46.7 +0.3
ROSC El Rosal 33.91 340 P P 02 04 47.8 +0.7
comp=Z,84nm,0.5s,baz=167,slow=8.5,SNR=78
ROSC S S 02 09 31.6 -1.3
comp=Z,11nm,0.8s,baz=180,slow=20,SNR=6.4
ROSC ScP ScP 02 10 01.2 +0.3
comp=Z,63nm,0.9s,baz=122,slow=2.3,SNR=6.2
ROSC El Rosal 33.91 340 eP P 02 04 47.7 +0.7
comp=Z,141nm,1.0s
ROSC eS S 02 09 34.4 +1.5
ROSC ScP ScP 02 10 01.2 +0.3
TOLC Tolima 33.99 338 eP P 02 04 46.2 -1.5
GUYC Guyana, Colomb 34.61 338 eP P 02 04 52.4 -0.6
NORC Norcasia 34.77 340 eP P 02 04 52.4 -1.4
NORC Norcasia 34.77 340 eP S 02 09 40.5 -4.6
BARC Barichara 35.26 343 eP P 02 04 56.4 -1.8
BARC Barichara 35.26 343 eP S 02 09 47.3 -5.6
HELC Santa Helena 35.56 339 eP P 02 04 58.6 -2.2
HELC Santa Helena 35.56 339 eP S 02 09 54.6 -3.0
OCAC Ocana 36.88 343 eP ScP 02 10 07.6 -3.9
SDV Santo Domingo 36.91 348 P P 02 05 10.6 -1.1
comp=Z,119nm,0.3s,baz=180,slow=7.1,SNR=37
SDV S S 02 10 10.8 -6.5
comp=Z,80nm,1.0s,baz=270,slow=16,SNR=10
SDV Santo Domingo 36.91 348 eP P 02 05 10.8 -0.9
comp=Z,334nm,1.0s
SDV S S 02 10 10.8 -6.5
SDV eScP ScP 02 10 11.7 0.0
SDV Santo Domingo 36.91 348 eP P 02 05 09.4 -2.3
PAYG Puerto Ayora 37.20 311 eScP ScP 02 10 14.3 +1.6
PMSA Palmer Station 37.24 181 P P 02 05 13.8 +0.4
comp=Z,20nm,0.7s,baz=6.3,slow=9.2,SNR=12
PMSA Palmer Station 37.24 181 eP P 02 05 13.4 0.0
comp=Z,101nm,1.3s
MOTC Monteria, Cord 38.05 340 eP ScP 02 10 17.2 +1.5
BOT Bacolet 38.57 4 eP P 02 05 23.2 -1.7
TOSP Speyside 38.71 4⇓eP P 02 05 26.3 +0.3
GRGR Grenville 39.48 3 eP P 02 05 32.1 -0.1
GRGR Grenville 39.48 3 eP P 02 05 32.1 -0.1
comp=Z,894nm,0.7s
BCIP Isla Barro Col 39.86 334 eP P 02 05 36.7 +1.4
BCIP Isla Barro Col 39.86 334 eP P 02 05 37.2 +1.8
comp=Z,580nm,0.8s
BCIP ePcP PcP 02 07 28.1 +1.0
BBSP Saint Philip 40.59 6 eP P 02 05 41.5 +0.4
BBGH Gun Hill 40.61 6 eP P 02 05 41.5 +0.2
BBGH Gun Hill 40.61 6 eP P 02 05 42.5 +1.2
comp=Z,845nm,1.4s
SVB Belmont 40.63 3 eP P 02 05 40.8 -0.6
SVB Belmont 40.63 3 eP P 02 05 40.0 -1.4
comp=Z,351nm,0.3s
RPN Rapa Nui 40.70 260 eP P 02 05 44.1 +2.1
RPN pmax pmax
comp=Z,830nm,1.1s
MCLT Moule a Chique 41.08 4 eP P 02 05 44.3 -0.7
MCLT Moule a Chique 41.08 4 e PcP 02 07 30.8 -0.2
SLW Petit Monier 41.39 3 eP P 02 05 47.4 -0.1
H05S1 Guadeloupe/Mar 41.79 4 P P 02 05 50.5 -0.1
SNR=166
BUS Buena Vista 41.87 329⇓eP P 02 05 54.2 +2.4
BIM Bigot 41.87 3 eP P 02 05 50.9 -0.4
TRMF Trois Ilets 41.89 3⇓eP P 02 05 51.0 -0.4
MVM Montagne Vaucl 41.92 3⇓eP P 02 05 51.3 -0.3
ZAM Aeronautique 41.93 3 eP P 02 05 51.6 0.0
LPMF Morne Lapointe 41.94 3 eP P 02 05 51.2 -0.5
QCR Quepos 41.95 328 eP P 02 05 53.9 +2.0
FDF Fort de France 42.08 3 eP P 02 05 52.1 -0.9
FDF Fort de France 42.08 3 e PcP 02 07 29.3 -5.2
FDF Fort de France 42.08 3 eP P 02 05 52.2 -0.8
FDF e 02 07 35.0
FDF pmax pmax
comp=Z,554nm,0.9s
FDF Fort de France 42.08 3 eP P 02 05 52.2 -0.8
comp=Z,554nm,0.9s
FDF ePcP PcP 02 07 35.0 +0.5
FDF eScP ScP 02 10 31.6 -0.3
URSC Urasca 42.13 329 eP P 02 05 55.7 +2.2
PML Morne Lenard 42.13 3 eP P 02 05 53.1 -0.2
GBMF Grand Be 42.15 3 eP P 02 05 53.2 -0.3
CXM Morne La Croix 42.16 3⇓eP P 02 05 53.3 -0.4
PCM Pelee Case Pet 42.16 3⇓eP P 02 05 53.0 -0.5
PCM Pelee Case Pet 42.16 3 eP P 02 05 53.2 -0.4
BAMF Morne Balai 42.17 3 eP P 02 05 53.4 -0.2
HDC Heredia 42.43 329 eP P 02 05 58.2 +2.4
comp=Z,415nm,0.7s
JCR Jicaral 42.76 327 eP P 02 06 00.7 +2.4
BBL Barber's Block 42.86 3 eP P 02 05 58.2 -0.8
JTS JuntasAbangare 43.07 328 P P 02 06 02.0 +1.3
comp=Z,119nm,0.8s,baz=153,slow=3.0,SNR=78
JTS ScP ScP 02 10 36.9 +1.1
comp=Z,36nm,0.9s,baz=94,slow=2.6,SNR=12
JTS S S 02 11 45.7 -0.9
comp=Z,1.7nm,0.7s,baz=300,slow=20,SNR=1.5
JTS JuntasAbangare 43.07 328 eP P 02 06 02.7 +2.0
comp=Z,166nm,0.9s
JTS ePcP pP 02 07 38.9 -1.7
JTS eScP ScP 02 10 35.9 +0.1
JTS S S 02 11 45.7 -0.9
TBG Guadaloupe-3 43.17 2 eP P 02 06 00.4 -1.0
MGG Marie-Galante 43.25 3 eP P 02 06 01.1 -0.9
MGG Marie-Galante 43.25 3 eP P 02 06 01.7 -0.3
GDHS Morne Mazeau, 43.59 2 eP P 02 06 03.8 -0.9
comp=Z,305nm,0.7s
DEG La Desirade 43.66 3 eP P 02 06 04.0 -1.2
DEG La Desirade 43.66 3 e PcP 02 07 40.3 +0.5
H05N1 Guadeloupe/Mar 43.66 3 P P 02 06 04.5 -0.7
SNR=103
TRIS Tristan da Cun 43.69 116 eP P 02 06 06.4 +1.2
comp=Z,293nm,0.9s
MLYT Lee's Yard 44.02 2 eP P 02 06 05.1 -2.9
MLYT Lee's Yard 44.02 2 e PcP 02 07 42.4 +1.3
BPA Boggy Peak 44.35 2 eP P 02 06 08.8 -1.7
SEUS St. Eustatius 44.78 0 eP P 02 06 13.1 -0.7
comp=Z,309nm,0.8s
SABA Saba 44.90 0 eP P 02 06 13.4 -1.3
SABA Saba 44.90 0 eP P 02 06 13.8 -0.9
comp=Z,468nm,0.8s
ANWB Willy Bob 44.97 2 eP P 02 06 13.0 -2.3
ANWB Willy Bob 44.97 2 e PcP 02 07 44.0 -0.3
ANWB Willy Bob 44.97 2 eP P 02 06 13.7 -1.6
comp=Z,689nm,0.6s
ANWB ePcP PcP 02 07 44.7 +0.4
CDVI St. Croix 45.05 358 eP P 02 06 14.8 -1.0
comp=Z,432nm,0.7s
SMRT St. Maarten 45.33 0 eP P 02 06 15.5 -2.5
comp=Z,147nm,0.6s
CELP Cerrillos 45.47 356 eP P 02 06 17.8 -1.3
SJG San Juan 45.48 356 P P 02 06 18.0 -1.1
comp=Z,161nm,0.7s,baz=129,slow=5.1,SNR=73
SJG PP PP 02 08 15.1 0.0
comp=Z,54nm,0.9s,baz=157,slow=5.3,SNR=5.1
SJG S S 02 12 14.0 -6.2
comp=Z,32nm,0.7s,baz=45,slow=19,SNR=12
SJG San Juan 45.48 356 eP P 02 06 18.0 -1.1
SJG pmax pmax
comp=Z,210nm,0.8s
SJG San Juan 45.48 356 eP P 02 06 18.0 -1.1
comp=Z,213nm,0.8s
SJG PP PP 02 08 15.1 0.0
SJG S S 02 12 14.0 -6.2
SJG eS S 02 12 16.0 -4.2
HUMP Col San Antoni 45.49 357 eP P 02 06 17.3 -1.8
comp=Z,117nm,0.5s
CBYP Canovanas 45.62 357 eP P 02 06 18.4 -1.9
comp=Z,296nm,0.7s
MPR Mayaguez 45.64 355 eP P 02 06 19.0 -1.4
comp=Z,290nm,0.7s
STVI Saint Thomas 45.66 358 eP P 02 06 18.4 -2.1
comp=Z,195nm,1.2s
ABVI Anegada Island 46.02 359 eP P 02 06 21.7 -1.5
comp=Z,432nm,0.8s
SDD Santo Domingo 46.18 351 eP P 02 06 23.8 -0.7
comp=Z,374nm,1.1s
PAPH Port-au-Prince 46.62 348 eP P 02 06 28.9 +1.2
comp=Z,913nm,0.7s
SDDR Presa de Saban 46.90 350 eP P 02 06 29.2 -0.7
comp=Z,112nm,0.8s
SDDR eScP ScP 02 10 52.6 +1.0
SDDR eS S 02 12 41.3 +1.1
STH Stony Hill 47.21 342⇑iP P 02 06 32.7 +0.5
MCJ Malvern 47.31 341⇓iP P 02 06 34.2 +1.2
TGUH Tegucigalpa,Un 47.45 328 eP P 02 06 34.5 +0.5
comp=Z,268nm,1.1s
BNJ Bonny Gate 47.48 342⇑iP P 02 06 34.6 +0.3
CVJ Coleyville 47.55 342⇓iP P 02 06 35.4 +0.5
MTDJ Mount Denham 47.55 342 eP P 02 06 34.5 -0.4
comp=Z,482nm,0.8s
BBJ Bamboo Saint A 47.62 342 *i* P P 02 06 36.2 +0.9
GTBY Guantanamo Bay 48.56 345 eP P 02 06 42.2 0.0
comp=Z,468nm,0.7s
GRTK Grand Turk 49.36 350 eP P 02 06 48.7 +0.6
comp=Z,2µm,1.6s
H10S3 ASCENSION HYDR 49.40 78 P P 02 06 48.9 +0.5
baz=255,slow=11,SNR=2.9
H10S2 ASCENSION HYDR 49.41 78 P P 02 06 49.1 +0.6
baz=255,slow=11,SNR=4.9
H10S1 ASCENSION HYDR 49.42 78 P P 02 06 49.0 +0.5
baz=255,slow=11,SNR=7.4
H10N3 ASCENSION HYDR 50.08 76 P P 02 06 54.5 +1.2
baz=231,slow=6.0,SNR=4.7
H10N1 ASCENSION HYDR 50.09 76 P P 02 06 54.3 +0.8
baz=231,slow=6.0,SNR=4.8
H10N2 ASCENSION HYDR 50.10 76 P P 02 06 54.6 +1.2
baz=231,slow=6.0,SNR=4.9
ASCN Ascension 50.16 77 eP P 02 06 54.5 +0.3
comp=Z,424nm,0.9s
CCIG Comitan 51.77 324 eP P 02 07 05.0 -0.9
comp=Z,172nm,0.7s
VNA3 Neumayer Olymp 52.73 161 P P 02 07 12.5 +0.7
VNA1 Neumayer--Stat 52.89 160 P P 02 07 13.5 +0.6
VNA2 Neumayer--Watz 53.27 160 P P 02 07 16.5 +0.9
baz=301,slow=7.7
TEIG Tepich 53.29 330 P P 02 07 16.6 0.0
comp=Z,116nm,0.5s,baz=178,slow=8.7,SNR=242
TEIG ScP ScP 02 11 20.0 +1.0
comp=Z,34nm,0.9s,baz=153,slow=5.8,SNR=8.6
TEIG Tepich 53.29 330 eP P 02 07 16.3 -0.3
comp=Z,282nm,1.1s
TEIG ePcP PcP 02 08 15.9 +0.9
TEIG eScP ScP 02 11 19.5 +0.5
TEIG eS S 02 14 03.3 -3.1
CMIG Matias Romero 53.91 322 P P 02 07 21.2 +0.2
comp=Z,42nm,0.8s,baz=120,slow=6.1,SNR=64
CMIG ScP ScP 02 11 22.4 +0.5
comp=Z,11nm,0.8s,baz=156,slow=4.6,SNR=5.5
CMIG S S 02 14 13.2 -1.4
comp=Z,8.3nm,1.2s,baz=150,slow=18,SNR=4.6
SHEL Horse Pasture 54.28 90 eP P 02 07 25.2 +1.4
SHEL pmax pmax
comp=Z,200nm,0.9s
SHEL Horse Pasture 54.28 90 eP P 02 07 25.2 +1.4
comp=Z,202nm,0.9s
SNAA Sanae 54.91 160*d* iP P 02 07 26.8 -0.5
SNAA *i* *PP pP 02 09 14.8 +0.2
SNAA Sanae 54.91 160 eP P 02 07 27.2 -0.1
comp=Z,9µm,1.1s
SNAA ePcP PcP 02 08 20.6 0.0
SNAA eScP ScP 02 11 25.5 0.0
TLIG Tlapa 56.38 319 eP P 02 07 40.0 +1.6
comp=Z,87nm,0.9s
DWPF Disney Wildern 58.01 341 eP P 02 07 50.1 +1.1
comp=Z,251nm,0.8s
NVL N'lazarevskaya 59.37 158 eP P 02 07 58.2 +0.6
NVL *e* 02 08 38.5
NVL e*PP pP 02 09 48.9 +1.5
NVL eS S 02 15 24.2 +1.0
MOIG Morelia 59.58 318 eP P 02 08 02.0 +2.0
comp=Z,138nm,0.8s
BBSR BB Station 59.60 359 eP P 02 08 00.7 +1.1
comp=Z,210nm,0.8s
TIGA Tifton 61.77 340 P P 02 08 14.4 +0.4
baz=160
TIGA Tifton 61.77 340 eP P 02 08 14.2 +0.2
comp=Z,194nm,0.9s
BBTS Babate 61.78 53 P P 02 08 14.7 +0.3
comp=Z,206nm,1.1s,baz=222,slow=3.3,SNR=25
645A Chauvin 62.42 333 P P 02 08 19.9 +1.8
baz=153
NHSC New Hope 62.42 344 eP P 02 08 19.5 +1.4
comp=Z,752nm,1.0s
BRAL Brewton 62.63 337 eP P 02 08 19.9 +0.4
comp=Z,457nm,0.8s
QSPA South Pole Qui 62.67 180 eP P 02 08 19.9 +0.3
comp=Z,422nm,0.8s
QSPA ePcP PcP 02 08 52.2 +0.2
448A Bay Minette 62.70 336 P P 02 08 20.4 +0.4
baz=156,SNR=14
546A Slidell 62.76 334 P P 02 08 22.1 +1.8
baz=154
ZAIG Zacatecas 62.78 319 eP P 02 08 22.9 +1.9
comp=Z,94nm,1.1s
447A Lucedale 62.87 336 P P 02 08 21.5 +0.5
baz=155,SNR=17
545A Edgard 62.89 334 P P 02 08 21.7 +0.5
baz=153
446A Poplarville 63.13 335 P P 02 08 23.3 +0.6
baz=154,SNR=21
348A Jackson 63.15 336 P P 02 08 23.4 +0.5
baz=156,SNR=32
544A White Castle 63.22 333 P P 02 08 24.5 +1.2
baz=152
035Z Hargill 63.26 325 P P 02 08 23.8 +0.2
baz=146
347A Saraland 63.37 336 P P 02 08 24.6 +0.3
baz=155,SNR=32
445A Amite 63.44 334 P P 02 08 25.8 +1.0
baz=153,SNR=6.3
543A St. Martinvill 63.48 332 P P 02 08 26.9 +2.0
baz=152
543A S S 02 16 20.6 +5.7
baz=152
GOGA Godfrey 63.58 341 eP P 02 08 25.8 +0.3
GOGA pmax pmax
comp=Z,130nm,1.0s
GOGA Godfrey 63.58 341 eP P 02 08 25.8 +0.3
comp=Z,131nm,1.0s
444A Pine Grove 63.59 334 P P 02 08 27.1 +1.5
baz=153,SNR=13
035A Encino 63.67 325 P P 02 08 27.6 +1.4
baz=146,SNR=11
936A North Padre Is 63.67 326 P P 02 08 27.9 +1.7
baz=146
346A Big Creek Wild 63.70 335 P P 02 08 26.7 +0.4
baz=154,SNR=15
248A Dixon Mills 63.71 337 P P 02 08 26.8 +0.3
baz=156,SNR=40
542A Morse 63.80 332 P P 02 08 29.4 +2.4
baz=151,SNR=13
345A Thompson Farm, 63.84 335 P P 02 08 27.6 +0.3
baz=154,SNR=19
247A Quitman 63.98 336 P P 02 08 28.4 +0.2
baz=155
541A Lake Charles 64.02 331 P P 02 08 30.5 +2.1
baz=151,SNR=15
443A Delano Plantat 64.05 333 P P 02 08 29.8 +1.3
baz=152,SNR=13
KVTX Kingsville 64.06 326 eP P 02 08 31.2 +2.4
comp=Z,534nm,0.8s

034A	**Hebbronville**	64.07 325	P		P	02 08 30.0	+1.2
	baz=145,SNR=23						
738A	**Farr-Stevens R**	64.07 329	P		P	02 08 30.1	+1.4
	baz=148						
RKT	**Rikitea**	64.10 256	*eP*		P	02 08 30.1	+0.9
RKT	comp=Z,124nm,1.4s			*eS*	S	02 16 24.2	+1.3
	comp=Z,582nm,27.8s						
246A	**Jackson Lee, B**	64.14 336	P		P	02 08 29.7	+0.5
	baz=155,SNR=11						
344A	**Westbrook Farm**	64.24 334	P		P	02 08 30.7	+0.9
	baz=153,SNR=27						
442A	**Mamou**	64.27 332	P		P	02 08 31.9	+2.0
	baz=151,SNR=9.6						
LRAL	**Lakeview Retre**	64.32 338	*eP*		P	02 08 30.1	-0.2
	comp=Z,205nm,0.7s						
737A	**Port Lavaca**	64.37 328	P		P	02 08 33.0	+2.3
	baz=148,SNR=9.1						
934A	**Benavides**	64.42 325	P		P	02 08 32.9	+1.9
	baz=146,SNR=31						
147A	**Livingston**	64.43 337	P		P	02 08 31.4	+0.5
	baz=156						
245A	**Little AP, Sta**	64.44 335	P		P	02 08 31.5	+0.5
	baz=154,SNR=77						
343A	**Vidalia**	64.44 333	P		P	02 08 31.2	+0.2
	baz=152						
638A	**Rosharon**	64.47 329	P		P	02 08 33.2	+2.0
	baz=148,SNR=5.4						
540A	**Vidor**	64.49 331	P		P	02 08 33.5	+2.2
	baz=150,SNR=6.4						
441A	**DeRidder**	64.62 332	P		P	02 08 34.4	+2.2
	baz=151,SNR=28						
KMSC	**Kings Mountain**	64.64 344	P		P	02 08 33.3	+1.0
	baz=162						
KMSC	**Kings Mountain**	64.64 344	*eP*		P	02 08 33.0	+0.7
	comp=Z,350nm,0.8s						
835A	**Beeville**	64.64 326	P		P	02 08 34.4	+2.0
	baz=146,SNR=16						
146A	**Union**	64.67 336	P		P	02 08 32.9	+0.4
	baz=155,SNR=42						
539A	**Cross D Ranch,**	64.73 330	P		P	02 08 35.1	+2.3
	baz=149,SNR=18						
244A	**Avery, Jackson**	64.75 334	P		P	02 08 33.6	+0.7
	baz=153,SNR=60						
342A	**Flagon Creek P**	64.80 333	P		P	02 08 34.9	+1.5
	baz=152,SNR=96						
933A	**Laredo**	64.82 325	P		P	02 08 34.9	+1.3
	baz=145,SNR=29						
736A	**Circle Diamond**	64.83 327	P		P	02 08 35.3	+1.8
	baz=147,SNR=78						
VBMS	**Vicksburg**	64.84 335	P		P	02 08 34.2	+0.6
	baz=153,SNR=13						
834A	**Tilden**	64.87 326	P		P	02 08 35.4	+1.6
	baz=146,SNR=79						
637A	**Eagle Lake**	64.89 328	P		P	02 08 36.0	+2.1
	baz=148,SNR=26						
440A	**Kirbyville**	64.94 331	P		P	02 08 36.5	+2.3
	baz=150,SNR=18						
145A	**Houston Renfro**	64.96 335	P		P	02 08 35.0	+0.7
	baz=154,SNR=60						
HKT	**Hockley**	65.09 329	*eP*		P	02 08 35.4	+0.3
HKT				pmax	pmax		
	comp=Z,250nm,1.3s						
HKT	**Hockley**	65.09 329	*eP*		P	02 08 35.4	+0.3
	comp=Z,246nm,1.3s						
735A	**Kenedy**	65.11 327	P		P	02 08 36.8	+1.5
	baz=146,SNR=35						
341A	**Kurthwood**	65.11 332	P		P	02 08 36.7	+1.4
	baz=151,SNR=108						
538A	**Harpers Horsep**	65.17 329	P		P	02 08 37.9	+2.2
	baz=149,SNR=17						
144A	**Alexander Plac**	65.17 335	P		P	02 08 36.7	+1.1
	baz=154,SNR=17						
636A	**Smothers Creek**	65.27 328	P		P	02 08 37.8	+1.5
	baz=147,SNR=45						
439A	**Center Grove,**	65.33 330	P		P	02 08 38.5	+1.8
	baz=149,SNR=93						
242A	**Grayson**	65.34 333	P		P	02 08 38.1	+1.4
	baz=152,SNR=33						
Y47A	**UCPARC, Winfie**	65.40 338	P		P	02 08 37.5	+0.5
	baz=156						
537A	**Green Hill Far**	65.42 329	P		P	02 08 38.6	+1.4
	baz=148,SNR=46						
833A	**Chaparral WMA,**	65.45 325	P		P	02 08 38.5	+1.0
	baz=145,SNR=186						
734A	**La Parita Cree**	65.47 326	P		P	02 08 38.7	+1.1
	baz=146,SNR=27						
340A	**Bronson**	65.49 331	P		P	02 08 38.9	+1.3
	baz=150,SNR=98						
LIC	**Lamto**	65.51 68	*eP*		P	02 08 37.3	-0.9
	comp=Z,470nm,1.5s						
635A	**Leesville**	65.53 327	P		P	02 08 38.7	+0.8
	baz=147,SNR=19						
143A	**Socs Landing,**	65.61 334	P		P	02 08 39.6	+1.3
	baz=153,SNR=55						
438A	**Sam Houston St**	65.61 330	P		P	02 08 40.2	+1.8
	baz=149,SNR=47						
241A	**Mo Tay, Goldon**	65.61 333	P		P	02 08 40.2	+1.8
	baz=151						
142A	**Monroe**	65.68 334	P		P	02 08 40.2	+1.4
	baz=152,SNR=50						
339A	**Huntington**	65.70 331	P		P	02 08 40.5	+1.5
	baz=150,SNR=48						
832A	**Faith Ranch, C**	65.72 325	P		P	02 08 40.0	+0.8
	baz=144,SNR=181						
Y46A	**Houston**	65.73 337	P		P	02 08 39.1	0.0
	baz=155						
733A	**Divot King Ran**	65.73 326	P		P	02 08 40.2	+1.0
	baz=145,SNR=32						
TIC	**Toumodi**	65.75 68	*eP*		P	02 08 38.8	-0.9
536A	**Bastrop**	65.77 328	P		P	02 08 40.5	+1.1
	baz=147,SNR=21						
TKL	**Tuckaleechee C**	65.77 342	*eP*		P	02 08 39.3	0.0
TKL				pmax	pmax		
	comp=Z,290nm,1.0s						
TKL	**Tuckaleechee C**	65.77 342	*eP*		P	02 08 39.3	0.0
	comp=Z,293nm,1.0s						
CPCT	**Cooper Cave**	65.79 341	*eP*		P	02 08 39.6	+0.2
	comp=Z,168nm,0.8s						
634A	**China Grove, S**	65.81 327	P		P	02 08 41.0	+1.3
	baz=146,SNR=14						
KIC	**Kosan Boka**	65.82 68	*eP*		P	02 08 39.3	-0.8
	comp=Z,1µm,1.1s						
DBIC	**Dimbokro**	65.90 68	P		P	02 08 40.6	+0.1
	comp=Z,114nm,0.4s,baz=212,slow=6.2,SNR=573						
DBIC				S	S	02 16 42.2	-2.2
	comp=Z,4.2nm,0.9s,baz=66,slow=20,SNR=4.9						
DBIC	**Dimbokro**	65.90 68	*eP*		P	02 08 40.7	+0.1
	comp=Z,510nm,1.3s						
DBIC				S	S	02 16 42.2	-2.2
Y45A	**Yeager Farm, C**	65.95 336	P		P	02 08 41.4	+1.0
	baz=155						
535A	**Dale**	65.97 328	P		P	02 08 41.6	+0.9
	baz=147,SNR=36						
240A	**Hunter Patters**	65.98 332	P		P	02 08 42.3	+1.7
	baz=150,SNR=29						
SWET	**Sewanee**	65.99 340	*eP*		P	02 08 40.8	0.0
	comp=Z,162nm,1.2s						
338A	**Crockett**	66.05 330	P		P	02 08 43.1	+1.9
	baz=149,SNR=49						
141A	**Papa Simpson,**	66.12 333	P		P	02 08 43.1	+1.6
	baz=151,SNR=62						
NATX	**Nacogdoches**	66.12 331	P		P	02 08 43.0	+1.5
	baz=150,SNR=52						
NATX	**Nacogdoches**	66.12 331	*eP*		P	02 08 43.0	+1.5
	comp=Z,486nm,0.8s						
436A	**Wall Ranch, Ga**	66.23 329	P		P	02 08 43.5	+1.3
	baz=148,SNR=24						
239A	**Gary**	66.26 331	P		P	02 08 43.8	+1.4
	baz=150,SNR=19						
337A	**Centerville**	66.27 330	P		P	02 08 44.4	+1.8
	baz=149,SNR=56						
633A	**Saathoff Ranch**	66.28 326	P		P	02 08 43.5	+0.9
	baz=145,SNR=114						
Y44A	**Strider, Charl**	66.28 336	P		P	02 08 43.1	+0.6
	baz=154						
VWCC	**Virginia Weste**	66.33 346	*eP*		P	02 08 43.8	+1.1
BLA	**Blacksburg**	66.40 345	*eP*		P	02 08 44.3	+1.1
BLA				pmax	pmax		
	comp=Z,690nm,1.4s						
BLA	**Blacksburg**	66.40 345	*eP*		P	02 08 44.3	+1.1
	comp=Z,691nm,1.4s						
534A	**Blanco**	66.40 327	P		P	02 08 43.7	+0.3
	baz=146,SNR=55						
140A	**Cam and Jess,**	66.42 332	P		P	02 08 44.6	+1.2
	baz=151,SNR=47						
PLAL	**Pickwick Lake**	66.46 338	*eP*		P	02 08 42.7	-0.9
	comp=Z,338nm,0.9s						
OXF	**Oxford**	66.49 337	*eP*		P	02 08 43.3	-0.5
OXF				pmax	pmax		
	comp=Z,510nm,1.2s						
OXF	**Oxford**	66.49 337	*eP*		P	02 08 43.3	-0.5
	comp=Z,511nm,1.3s						
Y43A	**Makayla and Ka**	66.50 335	P		P	02 08 44.8	+0.9
	baz=153						
238A	**Jacksonville**	66.52 331	P		P	02 08 45.4	+1.3
	baz=149,SNR=23						
TZTN	**Tazewell**	66.54 342	*eP*		P	02 08 44.3	+0.2
	comp=Z,372nm,1.4s						
435B	**Jarrell**	66.60 328	P		P	02 08 45.9	+1.3
	baz=147,SNR=34						
533A	**Kerrville**	66.71 327	P		P	02 08 46.5	+1.2
	baz=146,SNR=67						
CBN	**Corbin Frederi**	66.72 348	*eP*		P	02 08 46.7	+1.6
	comp=Z,273nm,1.0s						
Y42A	**Garnett, Star**	66.76 334	P		P	02 08 46.6	+1.1
	baz=153,SNR=26						
336A	**Riesel**	66.77 329	P		P	02 08 46.6	+1.0
	baz=148,SNR=95						
139A	**Bunkhouse Ranc**	66.80 332	P		P	02 08 46.9	+1.2
	baz=150,SNR=14						
237A	**Washetta, Mont**	66.82 330	P		P	02 08 47.3	+1.4
	baz=149,SNR=70						
CCAR	**Cane Creek**	66.83 334	*eP*		P	02 08 47.3	+1.4
	comp=Z,316nm,0.9s						
Z40A	**Long Farm, Mag**	66.89 333	P		P	02 08 47.8	+1.5
	baz=151,SNR=96						
335A	**Moody**	66.95 329	P		P	02 08 48.1	+1.4
	baz=147,SNR=100						
434A	**Burnet**	66.95 328	P		P	02 08 47.6	+0.8
	baz=146,SNR=142						
EBZ	**Ebenezer Churc**	67.04 337	*eP*		P	02 08 48.5	+1.3
138A	**Matatall Enter**	67.07 331	P		P	02 08 48.9	+1.5
	baz=150,SNR=60						
236A	**Katherine and**	67.14 330	P		P	02 08 49.0	+1.1
	baz=148,SNR=53						
WLAR	**White Oak Lake**	67.15 333	*eP*		P	02 08 49.4	+1.5
	comp=Z,980nm,1.0s						
Z39A	**Irene McRaven,**	67.19 332	P		P	02 08 49.6	+1.4
	baz=150,SNR=22						
MET	**Memphis--Engin**	67.22 337	*eP*		P	02 08 49.0	+0.7
	comp=Z,698nm,1.0s						
433A	**Art**	67.30 327	P		P	02 08 49.6	+0.7
	baz=146,SNR=420						
137A	**Heron Place, G**	67.31 331	P		P	02 08 50.3	+1.5
	baz=149,SNR=71						
334A	**Lometa**	67.37 328	P		P	02 08 50.1	+0.8
	baz=147,SNR=254						
JCT	**Junction City**	67.42 326	P		P	02 08 50.5	+0.8
	baz=145,SNR=72						
JCT	**Junction City**	67.42 326	*eP*		P	02 08 50.5	+0.8
JCT				pmax	pmax		
	comp=Z,220nm,0.8s						
JCT	**Junction City**	67.42 326	*eP*		P	02 08 50.5	+0.8
	comp=Z,223nm,0.8s						
WVT	**Waverly**	67.43 339	*eP*		P	02 08 49.0	-0.5
WVT				pmax	pmax		
	comp=Z,360nm,0.8s						
WVT	**Waverly**	67.43 339	*eP*		P	02 08 49.0	-0.5
	comp=Z,362nm,0.8s						
Y40A	**Okolona**	67.50 333	P		P	02 08 51.0	+1.0
	baz=151,SNR=110						
Z38A	**Mt. Pleasant**	67.54 332	P		P	02 08 51.5	+1.3
	baz=150,SNR=28						
136A	**Ennis**	67.55 330	P		P	02 08 51.4	+1.0
	baz=148,SNR=45						
WHTX	**Lake Whitney,**	67.56 329	P		P	02 08 51.3	+0.9
	baz=147,SNR=32						
WHTX	**Lake Whitney,**	67.56 329	*eP*		P	02 08 51.1	+0.7
	comp=Z,260nm,1.2s						
333A	**Richland Sprin**	67.72 327	P		P	02 08 52.2	+0.8
	baz=146,SNR=218						
X40A	**Basin Creek Fa**	67.74 334	P		P	02 08 51.6	+0.1
	baz=152,SNR=31						
Y39A	**Lockesburg**	67.76 333	P		P	02 08 52.5	+0.9
	baz=151,SNR=105						
HPIG		67.77 319	*eP*		P	02 08 53.0	+1.0
	comp=Z,102nm,1.0s						
Z37A	**Pogue Cattle C**	67.77 331	P		P	02 08 52.8	+1.2
	baz=149,SNR=24						
SDMD	**Soldier's Deli**	67.80 349	*eP*		P	02 08 53.5	+1.8
	comp=Z,146nm,1.0s						
UALR	**University of**	67.80 334	*eP*		P	02 08 52.1	+0.3
	comp=Z,225nm,0.8s						
234A	**Clairette**	67.88 328	P		P	02 08 52.9	+0.5
	baz=147,SNR=172						
CWPT	**Cottonwood Poi**	67.92 337	*eP*		P	02 08 53.5	+1.1
UTMT	**University of**	67.96 338	*eP*		P	02 08 53.2	+0.4
	comp=Z,742nm,1.1s						
SLBS	**Sierra La Lagu**	67.97 314	*eP*		P	02 08 54.8	+1.6
	comp=Z,32nm,0.9s						
135A	**Vickery Place,**	68.01 329	P		P	02 08 53.9	+0.7
	baz=146,SNR=37						
Y38A	**Idabel**	68.02 332	P		P	02 08 53.9	+0.7
	baz=150,SNR=34						
MIAR	**Mount Ida**	68.08 333	P		P	02 08 54.1	+0.5
	baz=151,SNR=75						
MIAR	**Mount Ida**	68.08 333	*eP*		P	02 08 54.0	+0.5
MIAR				pmax	pmax		
	comp=Z,550nm,1.5s						
MIAR	**Mount Ida**	68.08 333	*eP*		P	02 08 54.0	+0.5
	comp=Z,553nm,1.5s						
W41A	**Tony Mavity, V**	68.12 335	P		P	02 08 54.4	+0.6
	baz=152,SNR=59						
W41B	**Gary Mavity, V**	68.12 335	P		P	02 08 54.4	+0.6
	baz=152,SNR=59						
Z36A	**Blue Ridge**	68.18 330	P		P	02 08 54.9	+0.8
	baz=148,SNR=103						
X301	**Greenbrier Sit**	68.23 335	*eP*		P	02 08 54.9	+0.4
	comp=Z,934nm,1.6s						
WHAR	**Wooly Hollow**	68.24 335	*eP*		P	02 08 54.7	+0.2
	comp=Z,332nm,1.2s						
233A	**Rising Star**	68.25 328	P		P	02 08 55.3	+0.6
	baz=146,SNR=93						
X201	**Greenbrier Sit**	68.27 335	*eP*		P	02 08 55.1	+0.4
	comp=Z,356nm,1.2s						
X39A	**Fountain Ranch**	68.27 333	P		P	02 08 55.6	+0.9
	baz=151,SNR=145						
WADM	**Wardell**	68.30 337	*eP*		P	02 08 55.7	+0.9
PVMO	**Porageville**	68.31 337	*eP*		P	02 08 55.9	+1.0
	comp=Z,2µm,0.9s						
134A	**White-Moore Ra**	68.33 329	P		P	02 08 55.7	+0.6
	baz=147,SNR=69						
Y37A	**Hugo**	68.43 331	P		P	02 08 56.7	+1.0
	baz=149,SNR=124						
W40A	**Ferguson Farm,**	68.45 334	P		P	02 08 56.7	+1.0
	baz=152,SNR=115						
TXAR	**Lajitas Array**	68.50 323	P		P	02 08 56.8	+0.4
	comp=Z,37nm,0.7s,baz=150,slow=7.4,SNR=358						
TXAR				PP	PP	02 11 36.4	-1.5
	comp=Z,5.7nm,0.7s,baz=153,slow=8.4,SNR=4.4						
TXAR				S	S	02 17 15.2	+0.7
	comp=Z,1.6nm,1.1s,baz=122,slow=17,SNR=4.2						
TXAR				PKPPKP	P'P'df	02 36 56.6	-6.9
	comp=Z,0.4nm,0.9s,baz=326,slow=8.0,SNR=3.9						
TX31	**Lajitas Ar. Si**	68.50 323	*eP*		P	02 08 57.0	+0.6
PARMO	**Parma**	68.55 337	*eP*		P	02 08 56.7	+0.4
Z35A	**Perchaven, San**	68.59 330	P		P	02 08 57.7	+1.0
	baz=148,SNR=28						
MCWV	**Mont Chateau**	68.62 346	*eP*		P	02 08 58.0	+1.3
	comp=Z,146nm,0.8s						
Y36A	**Durant**	68.65 331	P		P	02 08 57.9	+0.9
	baz=149						
BRNJ	**Basking Ridge**	68.69 351	*eP*		P	02 08 58.6	+1.6
	comp=Z,197nm,0.8s						
X38A	**Whitesboro**	68.70 332	P		P	02 08 58.3	+1.0
	baz=150,SNR=87						
CPNY	**Central Park**	68.71 351	*eP*		P	02 08 58.8	+1.7
	comp=Z,197nm,1.3s						
LUPA	**Lehigh Univers**	68.72 350	*eP*		P	02 08 59.0	+1.7
	comp=Z,139nm,0.8s						
W39A	**Magazine**	68.73 334	P		P	02 08 58.4	+0.9
	baz=151,SNR=116						
133A	**Hamilton Ranch**	68.75 328	P		P	02 08 58.4	+0.7
	baz=146,SNR=144						
X37A	**Clayton**	68.85 332	P		P	02 08 59.0	+0.8
	baz=150,SNR=52						
WCI	**Wyandotte Cave**	68.89 341	*eP*		P	02 08 57.8	-0.6
WCI				pmax	pmax		
	comp=Z,290nm,1.0s						
WCI	**Wyandotte Cave**	68.89 341	*eP*		P	02 08 57.8	-0.6
	comp=Z,292nm,0.9s						
V40A	**Witts Springs**	68.89 335	P		P	02 08 58.7	+0.2
	baz=152,SNR=221						
PAL	**Palisades**	68.91 351	*eP*		P	02 09 00.0	+1.6
PAL				pmax	pmax		
	comp=Z,170nm,1.1s						
PAL	**Palisades**	68.91 351	*eP*		P	02 09 00.0	+1.6
	comp=Z,174nm,1.1s						
W38A	**Poteau**	68.92 333	P		P	02 08 59.7	+1.1
	baz=150,SNR=88						
Z34A	**Collier Ranch,**	68.92 329	P		P	02 08 59.4	+0.7
	baz=147,SNR=68						
O56A	**Blue Knob Stat**	68.95 348	P		P	02 08 59.9	+1.2
	baz=166,SNR=39						
Y35A	**Marietta**	68.98 330	P		P	02 09 00.1	+1.1
	baz=148,SNR=50						
SYO	**Syowa Base**	69.04 158⇑	*iP*		P	02 08 57.4	-1.4
USIN	**University of**	69.06 340	*eP*		P	02 08 58.9	-0.5
	comp=Z,222nm,0.8s						
ODNJ	**Ogdensburg**	69.08 351	*eP*		P	02 09 00.7	+1.3
	comp=Z,150nm,1.0s						
N59A	**State Game Lan**	69.09 350	P		P	02 09 00.8	+1.3
	baz=168,SNR=48						
ABTX	**Abilene, Hawle**	69.10 328	P		P	02 09 00.4	+0.6
	baz=146,SNR=46						
ABTX	**Abilene, Hawle**	69.10 328	*eP*		P	02 09 00.2	+0.4
	comp=Z,215nm,1.0s						
SSPA	**Standing Stone**	69.18 348	*eP*		P	02 09 01.4	+1.4
	comp=Z,230nm,1.0s						
Z33A	**Whitaker Ranch**	69.24 329	P		P	02 09 01.3	+0.7
	baz=147,SNR=182						
V39A	**Pettigrew**	69.24 334	P		P	02 09 01.2	+0.6
	baz=151,SNR=233						
X36A	**Centrahoma**	69.25 331	P		P	02 09 00.9	+0.3
	baz=149,SNR=114						
SIUC	**Southern Illin**	69.33 338	*eP*		P	02 09 00.5	-0.4
	comp=Z,274nm,0.6s						
Y34A	**Reagan Ranch,**	69.34 330	P		P	02 09 01.5	+0.4
	baz=148,SNR=82						
W37B	**Quinton**	69.35 332	P		P	02 09 01.8	+0.6
	baz=150,SNR=112						
X35A	**Drake**	69.37 331	P		P	02 09 01.6	+0.2
	baz=148,SNR=30						
U40A	**Yellville**	69.39 335	P		P	02 09 01.6	+0.2
	baz=152						
V38A	**Canehill**	69.56 333	P		P	02 09 02.8	+0.3
	baz=151,SNR=250						
U39A	**Green Forest**	69.65 334	P		P	02 09 03.3	+0.3
	baz=152						
W36A	**Wetumka**	69.68 332	P		P	02 09 03.4	+0.3
	baz=149,SNR=141						
KSPA	**Keystone Colle**	69.72 350	*eP*		P	02 09 04.7	+1.5
	comp=Z,347nm,1.1s						
HHAR	**Hobbs**	69.74 334	*eP*		P	02 09 03.9	+0.4
	comp=Z,243nm,0.9s						
Y33A	**Hilltop Ranch,**	69.78 329	P		P	02 09 04.2	+0.4
	baz=147,SNR=6.7						
BLO	**Bloomington**	69.83 341	*eP*		P	02 09 03.5	-0.4
BLO				pmax	pmax		
	comp=Z,250nm,0.8s						
BLO	**Bloomington**	69.83 341	*eP*		P	02 09 03.5	-0.4
	comp=Z,254nm,0.8s						
V37A	**Hulbert**	69.87 333	P		P	02 09 04.8	+0.5
	baz=150,SNR=178						
ACSO	**Alum Creek Sta**	69.88 344	*eP*		P	02 09 04.2	+0.1
	comp=Z,263nm,0.8s						
ACSO				*eP*	PcP	02 09 22.2	0.0
OLIL	**Olney**	69.90 340	*eP*		P	02 09 03.1	-1.3
	comp=Z,240nm,0.8s						
N54A	**Moraine State**	69.90 347	P		P	02 09 05.4	+1.0
	baz=164,SNR=74						
X34A	**Smith Ranch, M**	69.92 330	P		P	02 09 05.2	+0.6
	baz=148,SNR=82						
T40A	**Mansfield**	69.97 335	P		P	02 09 05.2	+0.4
	baz=153						
W35A	**Tecumseh**	69.97 331	P		P	02 09 05.0	+0.1
	baz=149,SNR=49						
U38A	**Gravette**	70.06 334	P		P	02 09 05.7	+0.3
	baz=151						
V36A	**Jenks**	70.12 332	P		P	02 09 06.1	+0.3
	baz=149,SNR=121						
HRV	**Adam Dziewonsk**	70.12 354	*eP*		P	02 09 07.0	+1.4
HRV				pmax	pmax		
	comp=Z,194nm,0.9s						
HRV	**Adam Dziewonsk**	70.12 354	*eP*		P	02 09 07.0	+1.4
	comp=Z,194nm,0.9s						
TUL1	**Leonard**	70.16 332	P		P	02 09 06.4	+0.4
	baz=150						
TUL1	**Leonard**	70.16 332	*eP*		P	02 09 06.3	+0.3
	comp=Z,186nm,0.8s						
X33A	**Lawton**	70.17 330	P		P	02 09 06.4	+0.3
	baz=147,SNR=50						
T39A	**Clever**	70.18 335	P		P	02 09 06.6	+0.5
	baz=152						
U37A	**Salina**	70.32 333	P		P	02 09 07.4	+0.5
	baz=150						
S40A	**Lebanon**	70.36 336	P		P	02 09 07.7	+0.5
	baz=153,SNR=139						
M54A	**Oil Creek Stat**	70.36 347	P		P	02 09 07.6	+0.6
	baz=165,SNR=64						
BINY	**Binghamton**	70.38 350	*eP*		P	02 09 08.4	+1.2
	comp=Z,254nm,0.9s						
X32A	**Elmer**	70.42 329	P		P	02 09 08.1	+0.5
	baz=146,SNR=40						
W34A	**Bridge Creek,**	70.43 331	P		P	02 09 08.2	+0.6
	baz=148,SNR=38						
W34A	**Bridge Creek,**	70.43 331	*eP*		P	02 09 08.0	+0.4
	comp=Z,159nm,0.6s						
WMOK	**Wichita Mounta**	70.46 330	*eP*		P	02 09 07.8	0.0
WMOK				pmax	pmax		
	comp=Z,86nm,0.9s						
WMOK	**Wichita Mounta**	70.46 330	*eP*		P	02 09 07.8	0.0
	comp=Z,86nm,0.9s						
V35A	**Meyer Ranch, C**	70.47 332	P		P	02 09 08.4	+0.5
	baz=149,SNR=116						
SLM	**Saint Louis**	70.50 338	*eP*		P	02 09 07.4	-0.5
SLM				pmax	pmax		
	comp=Z,180nm,0.9s						
SLM	**Saint Louis**	70.50 338	*eP*		P	02 09 07.4	-0.5
	comp=Z,183nm,0.9s						
T38A	**Diamond**	70.54 334	P		P	02 09 08.7	+0.5
	baz=151						
U36A	**Oologah**	70.56 333	P		P	02 09 08.8	+0.5
	baz=150						
ALLY	**Allegheny Colle**	70.59 347	*eP*		P	02 09 09.2	+0.8
	comp=Z,161nm,0.9s						
W33A	**Caddo, Fort Co**	70.67 330	P		P	02 09 10.1	+1.1
	baz=147,SNR=209						
S39A	**Bolivar**	70.75 335	P		P	02 09 09.5	+0.5
	baz=152,SNR=163						
SBA	**Scott Base**	70.80 190	*eP*		P	02 09 11.2	+2.0
SBA				pmax	pmax		
	comp=Z,90nm,1.9s						
SBA	**Scott Base**	70.80 190	*eP*		P	02 09 11.2	+2.0
	comp=Z,90nm,1.9s						
SBA				*epP*	pP	02 11 02.6	-1.9
V34A	**Guthrie**	70.83 331	P		P	02 09 10.4	+0.5
	baz=148,SNR=62						
V34A	**Guthrie**	70.83 331	*eP*		P	02 09 10.4	+0.5
	comp=Z,538nm,1.4s						
T37A	**Cheneyville 18**	70.86 334	P		P	02 09 10.5	+0.5
	baz=150						
R40A	**Maddies Statio**	70.89 336	P		P	02 09 09.8	-0.4
	baz=153,SNR=88						
S38A	**Stockton**	70.91 335	P		P	02 09 10.5	+0.1
	baz=152,SNR

T35A **Sooner Cattle** 71.32 332 P P 02 09 13.5 +0.6
baz=149
U34A **Anderson Ranch** 71.34 331 P P 02 09 13.7 +0.7
baz=148
U34A **Anderson Ranch** 71.34 331 eP P 02 09 13.7 +0.7
comp=Z,407nm,0.9s
U34A ePcP PcP 02 09 28.9 +0.3
S37A **Fort Scott** 71.38 334 P P 02 09 13.4 +0.3
baz=151,SNR=88
V32A **Arapaho** 71.40 330 P P 02 09 14.3 +1.0
baz=147
R38A **Fenwick Farm,** 71.40 335 P P 02 09 13.3 +0.1
baz=152,SNR=123
Q40A **Laux Farm, Aux** 71.45 337 P P 02 09 13.5 0.0
baz=153,SNR=82
U33A **Lingo Farm, Me** 71.59 331 P P 02 09 15.1 +0.7
baz=148
S36A **Lake Cedric, C** 71.65 333 P P 02 09 14.8 +0.1
baz=150,SNR=121
T34A **McClaskey Farm** 71.69 332 P P 02 09 15.7 +0.7
baz=149
MSTX **Muleshoe** 71.71 326 P P 02 09 15.6 +0.3
baz=144,SNR=182
MSTX **Muleshoe** 71.71 326 eP P 02 09 15.8 +0.4
comp=Z,526nm,1.0s
VNDA **Vanda** 71.77 189 P P 02 09 16.0 +1.2
comp=Z,27nm,0.9s,baz=140,slow=4.9,SNR=78
VNDA pP pP 02 11 11.3 +0.7
comp=Z,6.8nm,0.9s,baz=121,slow=5.9,SNR=4.3
VNDA S SKiKP 02 17 53.2 +0.6
comp=Z,0.4nm,0.6s,baz=270,slow=20,SNR=5.1
VNDA PKPPKP P'P'df 02 36 49.5 -10
comp=Z,8.0nm,1.0s,baz=297,slow=4.7,SNR=17
VNDA **Vanda** 71.77 189 eP P 02 09 16.1 +1.2
comp=Z,38nm,1.0s
VNDA pP pP 02 11 11.3 +0.7
VNDA S SKiKP 02 17 53.2 +0.6
VNDA P'P' 02 36 49.5
MDV **Middlebury** 71.77 353 eP P 02 09 16.7 +1.4
Q39A **Willow Grove F** 71.81 336 P P 02 09 15.5 -0.1
baz=152,SNR=153
R37A **Teagarden Farm** 71.86 334 P P 02 09 16.2 +0.3
baz=151,SNR=30
S35A **Otter Creek Ra** 71.90 333 P P 02 09 16.6 +0.4
baz=149,SNR=109
P40A **Paris** 71.92 337 P P 02 09 16.4 +0.2
baz=153,SNR=79
AMTX **Amarillo** 71.92 328 P P 02 09 16.9 +0.4
baz=145
AMTX **Amarillo** 71.92 328 eP P 02 09 17.2 +0.7
comp=Z,147nm,0.8s
U32A **Winter Ranch,** 71.93 330 P P 02 09 17.3 +0.9
baz=147
HDIL **Hopedale** 71.93 339 P P 02 09 16.1 -0.2
baz=156,SNR=80
HDIL **Hopedale** 71.93 339 eP P 02 09 16.1 -0.2
comp=Z,415nm,0.8s
Q38A **Cooks Store, C** 71.97 336 P P 02 09 16.6 +0.1
baz=152,SNR=68
AAM **Ann Arbor** 72.00 344 eP P 02 09 16.8 +0.2
AAM pmax pmax
comp=Z,120nm,0.9s
AAM **Ann Arbor** 72.00 344 eP P 02 09 16.8 +0.2
comp=Z,118nm,0.9s
SRIG **Santa Rosalia** 72.01 315 eP P 02 09 18.7 +1.7
comp=Z,109nm,1.0s
R36A **Gordon, Harris** 72.13 334 P P 02 09 17.6 +0.1
baz=150,SNR=49
T33A **Patterson Ranc** 72.19 331 P P 02 09 19.1 +1.2
baz=148
Q37A **Longview Farm,** 72.21 335 P P 02 09 17.9 0.0
baz=151,SNR=34
S34A **Willow Spring** 72.24 332 P P 02 09 18.6 +0.5
baz=149,SNR=82
O40A **La Belle** 72.39 337 P P 02 09 18.7 -0.2
baz=154,SNR=77
GGN **Saint George** 72.39 357 eP P 02 09 20.5 +1.8
comp=Z,201nm,0.8s
R35A **Emporia Munici** 72.41 333 P P 02 09 19.6 +0.6
baz=150,SNR=129
HSIG 72.43 317 eP P 02 09 20.5 +1.1
comp=Z,114nm,0.9s
S33A **Kaszmaul Farm,** 72.52 332 P P 02 09 20.5 +0.8
baz=148,SNR=38
P38A **Dawn** 72.53 336 P P 02 09 19.6 -0.1
baz=152,SNR=74
LONY **Lake Ozonia** 72.56 352 eP P 02 09 21.1 +1.3
comp=Z,298nm,1.1s
T32A **Huddler Ranch,** 72.56 331 P P 02 09 21.3 +1.3
baz=147
FRNY **Flat Rock** 72.64 352 eP P 02 09 21.5 +1.3
comp=Z,203nm,0.8s
Q36A **Arnold C. Orve** 72.67 334 P P 02 09 20.6 0.0
baz=150,SNR=23
PKME **Peaks-Kenny Pk** 72.67 356 eP P 02 09 22.2 +1.8
comp=Z,359nm,0.9s
O39A **Kirksville** 72.73 337 P P 02 09 20.8 -0.1
baz=153,SNR=41
P37A **Lathrop** 72.79 335 P P 02 09 21.3 +0.1
baz=151,SNR=50
Q35A **Mercer Eighty,** 72.80 334 P P 02 09 21.5 +0.1
baz=150,SNR=47
R34A **Isabella, Hill** 72.81 333 P P 02 09 22.1 +0.7
baz=149,SNR=43
O38A **Galt** 72.94 336 P P 02 09 22.0 -0.1
baz=152,SNR=51
S32A **Newby Ranch, P** 73.01 331 P P 02 09 23.8 +1.2
baz=147,SNR=49
H07S1 **FLORES T-PHASE** 73.01 26 eP P 02 09 23.7 +1.2
LMN **Caledonia Moun** 73.06 359 eP P 02 09 24.1 +1.5
comp=Z,308nm,0.9s
R33A **Olander Ranch,** 73.12 332 P P 02 09 23.8 +0.7
baz=148,SNR=50
P36A **Good Intent, A** 73.14 335 P P 02 09 23.1 -0.1
baz=151,SNR=41
319A **Douglas** 73.18 320 eP P 02 09 25.4 +1.6
comp=Z,215nm,0.9s
121A **Cookes Peak, D** 73.21 322 P P 02 09 25.6 +1.6
baz=140,SNR=81
121A **Cookes Peak, D** 73.21 322 eP P 02 09 25.4 +1.4
comp=Z,112nm,1.0s
Q34A **Chapman** 73.22 333 P P 02 09 24.2 +0.5
baz=149,SNR=73
O37A **Wolven Farm, M** 73.23 336 P P 02 09 23.7 0.0
baz=152,SNR=46
KSU1 **Kansas State U** 73.24 334 P P 02 09 23.9 +0.1
baz=149,SNR=85
KSU1 **Kansas State U** 73.24 334 eP P 02 09 23.9 +0.1
comp=Z,362nm,1.0s
KSU1 eS SKiKP 02 18 01.7 +6.1
N39A **Derby Farms, D** 73.28 337 P P 02 09 23.8 -0.2
baz=153,SNR=101
HOR **Horta** 73.30 28 eP P 02 09 26.5 +2.3
comp=Z,322nm,1.4s
PCAN **Candelaria** 73.31 28 eP P 02 09 26.3 +2.1
comp=Z,280nm,1.6s
H07N1 **FLORES T-PHASE** 73.31 25 eP P 02 09 26.6 +2.3
CALA **Caldeira** 73.32 28 eP P 02 09 27.0 +2.6
PICO **Pico** 73.37 28 eP P 02 09 26.1 +1.5
comp=Z,687nm,1.5s
P35A **Duane Minner,** 73.38 334 P P 02 09 24.4 -0.2
baz=150,SNR=44
SADO **Sadowa** 73.41 348 eP P 02 09 25.2 +0.6
comp=Z,228nm,0.9s
N38A **Joes South For** 73.45 337 P P 02 09 24.9 0.0
baz=152,SNR=35
O36A **Bolckow** 73.50 335 P P 02 09 25.0 -0.2
baz=151,SNR=39
R32A **Long Quarter,** 73.52 332 P P 02 09 26.3 +0.8
baz=148,SNR=138
TSUM **Tsumeb** 73.55 103 P P 02 09 26.6 +0.3
comp=Z,115nm,0.9s,baz=234,slow=6.5,SNR=157
TSUM pP pP 02 11 23.9 +1.0
comp=Z,12nm,0.8s,baz=216,slow=5.4,SNR=3.6
TSUM **Tsumeb** 73.55 103 eP P 02 09 26.6 +0.3
comp=Z,149nm,0.9s
TSUM pP pP 02 11 23.9 +1.0
PSMA **Santa Maria** 73.55 31 eP P 02 09 25.7 +0.1
comp=Z,357nm,1.5s
PSMN **Pico do Norte,** 73.59 31 eP P 02 09 26.3 +0.5
comp=Z,684nm,1.4s
PMAN **Manadas** 73.62 28 eP P 02 09 27.7 +1.7
comp=Z,745nm,1.4s
ROSA **Rosais** 73.63 28 eP P 02 09 27.8 +1.8
comp=Z,569nm,1.5s
ROSA **Rosais** 73.63 28 eP P 02 09 28.0 +2.0
comp=Z,238nm,0.9s

Q33A **Connelly Farm,** 73.64 333 P P 02 09 26.8 +0.7
baz=148,SNR=58
P34A **Walnut Farm, R** 73.71 334 P P 02 09 27.1 +0.6
baz=149,SNR=120
N37A **Lee Faris, Mou** 73.77 336 P P 02 09 26.9 +0.1
baz=152,SNR=54
BNM **Barren Site** 73.82 324 eP P 02 09 29.0 +1.4
Y22D **IRIS PASSCAL I** 73.92 323 P P 02 09 29.6 +1.6
baz=140
PDA **Ponta Delgada** 73.93 30 eP P 02 09 25.0 -2.7
comp=Z,510nm,1.7s
Q32A **Meitler Ranch,** 73.94 332 P P 02 09 28.5 +0.7
baz=148,SNR=129
LPM **Los Pinos Moun** 73.95 324 eP P 02 09 29.5 +1.3
P33A **Williams Farm,** 73.96 333 P P 02 09 28.5 +0.6
baz=149,SNR=37
O35A **Humboldt** 73.97 335 P P 02 09 27.4 -0.5
baz=150,SNR=34
M38A **Pleasantville** 73.99 337 P P 02 09 27.9 -0.2
baz=153,SNR=54
ADH **Angra Heroismo** 74.00 29 eP P 02 09 28.2 +0.1
comp=Z,525nm,1.4s
PGRA **Graciosa** 74.00 28 eP P 02 09 29.8 +1.7
comp=Z,413nm,1.8s
CMLA **Cha da Macela** 74.00 30 eP P 02 09 30.2 +2.0
comp=Z,450nm,1.7s
N36A **Muff Farm, Cla** 74.09 336 P P 02 09 28.9 +0.2
baz=151,SNR=23
BART **Pico Bartolome** 74.18 31 eP P 02 09 30.6 +1.3
comp=Z,589nm,1.2s
O34A **Beatrice** 74.20 334 P P 02 09 29.5 +0.2
baz=150,SNR=74
CBKS **Cedar Bluff** 74.28 331 P P 02 09 31.0 +1.2
baz=147,SNR=190
CBKS **Cedar Bluff** 74.28 331 eP P 02 09 31.0 +1.2
CBKS pmax pmax
comp=Z,650nm,0.8s
CBKS **Cedar Bluff** 74.28 331 eP P 02 09 31.0 +1.2
comp=Z,654nm,0.8s
M37A **Trindle Farm,** 74.28 336 P P 02 09 30.3 +0.6
baz=152,SNR=96
LAZ **Ladron** 74.29 323 eP P 02 09 31.6 +1.5
TAOE **Nuku Hiva Isla** 74.33 268 eP P 02 09 31.0 +0.3
comp=Z,321nm,1.1s
TAOE **Nuku Hiva Isla** 74.33 268 eLR LR 02 33 05.5
comp=Z,334nm,24.2s
ANMO **Albuquerque** 74.35 324 P P 02 09 31.7 +1.3
baz=141
ANMO **Albuquerque** 74.35 324 eP P 02 09 31.8 +1.3
ANMO pmax pmax
comp=Z,100nm,0.9s
ANMO **Albuquerque** 74.35 324 eP P 02 09 31.8 +1.3
comp=Z,102nm,0.9s
ANMO ePP PP 02 12 27.3 +0.1
FUL **Funchal** 74.37 39 eP P 02 09 31.3 +1.0
comp=Z,218nm,1.4s
JFWS **Jewell Farm** 74.38 340 eP P 02 09 30.3 +0.2
JFWS pmax pmax
comp=Z,500nm,0.6s
JFWS **Jewell Farm** 74.38 340 eP P 02 09 30.3 +0.2
comp=Z,495nm,0.6s
N35A **Tabor** 74.39 335 P P 02 09 30.5 +0.2
baz=150,SNR=54
PMAR **Madeira** 74.42 39 eP P 02 09 31.1 +0.2
comp=Z,189nm,1.5s
SCIA **State Center** 74.44 337 eP P 02 09 30.8 +0.3
comp=Z,195nm,0.9s
O33A **Hebron** 74.46 333 P P 02 09 31.3 +0.6
baz=149,SNR=99
P32A **Huiting Farm,** 74.49 332 P P 02 09 31.5 +0.6
baz=148,SNR=90
L38A **Oak Wood Farm,** 74.56 338 P P 02 09 31.1 -0.1
baz=153,SNR=14
M36A **Felix, Anita** 74.59 336 P P 02 09 31.5 0.0
baz=151,SNR=34
N34A **Lincoln** 74.69 334 P P 02 09 31.9 -0.1
baz=150,SNR=71
TUC **Tucson** 74.73 320 P P 02 09 33.5 +1.0
baz=137
TUC **Tucson** 74.73 320 eP P 02 09 33.6 +1.1
TUC pmax pmax
comp=Z,96nm,1.2s
TUC **Tucson** 74.73 320 eP P 02 09 33.6 +1.1
comp=Z,96nm,1.2s
L37A **Phoenix Point,** 74.81 337 P P 02 09 32.7 0.0
baz=152,SNR=8.7
TOA0 **Torodi Ar. Sit** 74.84 66 eP P 02 09 33.2 -0.2
TORD **Torodi Ar. Bea** 74.84 66 P P 02 09 33.2 -0.2
comp=Z,189nm,0.8s,baz=240,slow=4.8,SNR=2521
TORD pP pP 02 11 31.6 +1.0
comp=Z,40nm,0.7s,baz=231,slow=5.4,SNR=9.6
TORD PKiKP PKiKP 02 15 17.6 -0.5
comp=Z,1.0nm,0.4s,baz=260,slow=1.3,SNR=9.4
TORD S S 02 18 22.6 -3.0
comp=Z,5.5nm,1.1s,baz=238,slow=10.0,SNR=8.4
TORD PKKPbc PKKPbc 02 28 52.5 +0.9
comp=Z,0.4nm,0.8s,baz=33,slow=3.4,SNR=3.0
O32A **Brockman Farm,** 74.89 333 P P 02 09 33.7 +0.5
baz=148,SNR=38
M35A **Neola** 74.93 335 P P 02 09 33.4 +0.1
baz=150,SNR=24
K38A **Parkersburg** 74.94 338 P P 02 09 33.4 0.0
baz=153
N33A **J Bar K, Exete** 74.97 334 P P 02 09 34.0 +0.4
baz=149,SNR=16
PMPS **Porto Santo** 74.99 39 eP P 02 09 34.9 +1.1
comp=Z,432nm,1.6s
LMQ **La Malbaie** 75.02 355 eP P 02 09 34.5 +0.9
comp=Z,146nm,0.8s
T25A **Trinidad** 75.05 327 P P 02 09 35.8 +1.5
baz=143
T25A **Trinidad** 75.05 327 eP P 02 09 35.9 +1.5
comp=Z,229nm,0.9s
L36A **Harm Buss Farm** 75.11 336 P P 02 09 34.4 +0.1
baz=152,SNR=32
O31A **Woolen Ranch,** 75.23 332 P P 02 09 36.1 +1.0
baz=147,SNR=64
M34A **Aspy Farms, Fr** 75.30 335 P P 02 09 35.9 +0.6
baz=150,SNR=27
N32A **Stulken Farm,** 75.33 333 P P 02 09 36.0 +0.4
baz=148,SNR=6.1
K37A **Belmond** 75.34 337 P P 02 09 35.4 -0.2
baz=152
L35A **Bielow Farm, R** 75.44 336 P P 02 09 36.3 +0.2
baz=151,SNR=54
J38A **Wedel Dairy, R** 75.44 338 P P 02 09 36.1 -0.1
baz=153
K36A **Gilmore City** 75.51 337 P P 02 09 36.6 +0.1
baz=152
M33A **Taylor Creek F** 75.59 334 P P 02 09 37.4 +0.4
baz=149,SNR=16
L34A **Svedsen Farm,** 75.62 335 P P 02 09 37.3 +0.1
baz=150,SNR=33
N31A **Bailey Ranch,** 75.64 333 P P 02 09 38.4 +1.0
baz=148,SNR=17
214A **Organ Pipe Nat** 75.65 318 P P 02 09 39.1 +1.5
baz=136,SNR=85
214A **Organ Pipe Nat** 75.65 318 eP P 02 09 38.7 +1.1
comp=Z,384nm,0.8s
KSCO **Kaye Shedlock'** 75.72 329 P P 02 09 39.4 +1.5
baz=145
KSCO **Kaye Shedlock'** 75.72 329 eP P 02 09 39.4 +1.5
comp=Z,311nm,0.9s
J37A **Redenius Farm,** 75.80 338 P P 02 09 38.3 +0.3
baz=152
BGNE **Belgrade** 75.82 334 P P 02 09 38.7 +0.4
baz=148,SNR=76
BGNE **Belgrade** 75.82 334 eP P 02 09 38.7 +0.4
comp=Z,930nm,1.1s
K35A **Storm Lake** 75.86 336 P P 02 09 39.0 +0.6
baz=151
X18A **Snowflake** 75.90 322 eP P 02 09 40.8 +1.7
comp=Z,91nm,0.8s
I38A **Scanlan Farm,** 76.04 339 P P 02 09 39.5 +0.1
baz=154
SDCO **Great Sand Dun** 76.06 327 P P 02 09 41.4 +1.3
baz=142,SNR=148
SDCO **Great Sand Dun** 76.06 327 eP P 02 09 41.3 +1.3
comp=Z,226nm,1.4s
SDCO eS S 02 18 35.7 -2.8
J36A **Seneca 1, Swea** 76.08 337 P P 02 09 39.8 +0.2
baz=152
M31A **Lambtecht Ranc** 76.09 333 P P 02 09 40.8 +1.0
baz=148,SNR=46
L33A **Hoskins** 76.13 335 P P 02 09 40.5 +0.6
baz=149,SNR=9.6
K34A **Le Mars** 76.14 336 P P 02 09 40.3 +0.3
baz=150

BOSA **Boshof** 76.19 115 P P 02 09 40.8 -0.1
comp=Z,187nm,0.8s,baz=252,slow=4.0,SNR=536
BOSA **Boshof** 76.19 115 eP P 02 09 40.8 -0.1
BOSA pmax pmax
comp=Z,340nm,1.1s
BOSA **Boshof** 76.19 115 eP P 02 09 40.8 -0.1
comp=Z,342nm,1.1s
W18A **Petrified Fore** 76.22 322 P P 02 09 42.4 +1.5
baz=139,SNR=16
W18A **Petrified Fore** 76.22 322 eP P 02 09 41.7 +0.9
comp=Z,197nm,1.1s
L32A **Elgin** 76.27 334 P P 02 09 41.3 +0.6
baz=149,SNR=8.3
TBI **Tubuai** 76.35 251 eP P 02 09 43.1 +1.4
comp=Z,315nm,1.2s
TBI eS S 02 18 42.6 +0.9
comp=Z,1μm,31.2s
TBI **Tubuai** 76.35 251 eLR LR 02 34 11.1
comp=Z,768nm,25.0s
I37A **Lemond, Waseca** 76.37 338 P P 02 09 41.6 +0.4
baz=153
VLDQ **Val d'Or** 76.38 350 eP P 02 09 42.0 +0.9
comp=Z,322nm,1.2s
K33A **Hardington** 76.40 335 P P 02 09 42.2 +0.7
baz=150
J35A **Milford** 76.41 337 P P 02 09 41.7 +0.2
baz=151
I36A **Fitzsimmons Fa** 76.58 338 P P 02 09 42.5 +0.2
baz=152
J34A **George** 76.61 336 P P 02 09 42.9 +0.3
baz=150
DRLN **Deer Lake** 76.63 4 eP P 02 09 43.7 +1.2
comp=Z,342nm,0.8s
X16A **Lo Mia Camp, P** 76.64 321 eP P 02 09 45.0 +1.8
S22A **4UR Ranch, Cre** 76.71 326 P P 02 09 44.8 +1.2
baz=141,SNR=102
S22A **4UR Ranch, Cre** 76.71 326 eP P 02 09 45.0 +1.4
comp=Z,60nm,0.9s
H37A **Dierke Farm, C** 76.72 339 P P 02 09 43.5 +0.4
baz=153,SNR=36
L31A **Butterfield Fa** 76.74 334 P P 02 09 44.3 +1.0
baz=148,SNR=81
I35A **Creekview Farm** 76.77 337 P P 02 09 43.6 +0.2
baz=151
113A **Mohawk Valley,** 76.80 318 eP P 02 09 44.9 +1.1
K32A **Verdigre** 76.82 334 P P 02 09 44.0 +0.3
baz=149
Q24A **Divide** 76.85 328 P P 02 09 45.8 +1.4
baz=143,SNR=91
Q24A **Divide** 76.85 328 eP P 02 09 45.8 +1.4
comp=Z,232nm,0.9s
COWI **Conover** 76.96 342 eP P 02 09 45.0 +0.6
comp=Z,250nm,1.1s
J33A **Davis** 77.01 335 P P 02 09 44.9 +0.2
baz=150
OGNE **Ogallala** 77.03 331 P P 02 09 46.2 +1.2
baz=145,SNR=34
OGNE **Ogallala** 77.03 331 eP P 02 09 46.3 +1.2
comp=Z,212nm,0.8s
H36A **Jessenland, He** 77.04 338 P P 02 09 45.5 +0.7
baz=152,SNR=52
MAW **Mawson** 77.05 161 P P 02 09 44.9 +0.3
comp=Z,80nm,0.8s,baz=223,slow=6.5,SNR=92
MAW pP pP 02 11 43.2 +0.6
comp=Z,21nm,0.8s,baz=222,slow=7.7,SNR=8.7
MAW S S 02 18 46.6 -1.0
comp=Z,2.1nm,1.0s,baz=24,slow=19,SNR=2.4
MAW **Mawson** 77.05 161 eP P 02 09 45.0 +0.3
comp=Z,30nm,1.1s
MAW pP pP 02 11 43.2 +0.6
MAW S S 02 18 46.6 -1.0
K31A **O'Neill** 77.09 334 P P 02 09 45.8 +0.6
baz=148
MVCO **Mesa Verde** 77.14 324 P P 02 09 47.2 +1.4
baz=140,SNR=96
MVCO **Mesa Verde** 77.14 324 eP P 02 09 47.3 +1.4
comp=Z,126nm,0.9s
I34A **Hadley** 77.23 337 P P 02 09 46.5 +0.5
baz=151
ECSD **EROS Data Cent** 77.24 336 P P 02 09 46.2 +0.2
baz=150,SNR=139
ECSD **EROS Data Cent** 77.24 336 eP P 02 09 46.1 +0.2
comp=Z,248nm,0.9s
SPMN **Marine on St.** 77.25 339 P P 02 09 46.4 +0.4
baz=153,SNR=34
SPMN **Marine on St.** 77.25 339 eP P 02 09 46.1 +0.1
comp=Z,126nm,0.7s
J32A **Parkston** 77.38 335 P P 02 09 47.0 +0.3
baz=149
WUAZ **Wupatki** 77.41 322 P P 02 09 48.9 +1.6
baz=138,SNR=107
WUAZ **Wupatki** 77.41 322 eP P 02 09 48.9 +1.6
comp=Z,179nm,1.1s
MEH **Mehetia** 77.43 256 eP P 02 09 48.1 +0.4
comp=Z,61nm,1.2s
H35A **Sunnyside Ranc** 77.45 338 P P 02 09 47.4 +0.3
baz=152,SNR=80
K30A **Basset** 77.47 333 P P 02 09 47.9 +0.6
baz=147
G36A **St. Michael** 77.57 338 P P 02 09 48.3 +0.6
baz=153,SNR=15
I33A **Coleman** 77.58 336 P P 02 09 48.3 +0.5
baz=150
GLA **Glamis** 77.63 318 P P 02 09 49.6 +1.2
baz=135,SNR=8.3
GLA **Glamis** 77.63 318 eP P 02 09 49.9 +1.5
GLA pmax pmax
comp=Z,78nm,1.1s
GLA **Glamis** 77.63 318 eP P 02 09 49.9 +1.5
comp=Z,78nm,1.1s
J31A **Geddes** 77.65 334 P P 02 09 48.8 +0.6
baz=148
ISCO **Idaho Springs** 77.73 328 P P 02 09 50.4 +1.3
baz=142,SNR=157
ISCO **Idaho Springs** 77.73 328 eP P 02 09 50.4 +1.3
ISCO pmax pmax
comp=Z,130nm,1.0s
ISCO **Idaho Springs** 77.73 328 eP P 02 09 50.4 +1.3
comp=Z,131nm,0.9s
ISCO eS S 02 18 55.7 -0.5
H34A **Spellman Lake,** 77.75 337 P P 02 09 49.3 +0.6
baz=151
G35A **Watkins** 77.80 338 P P 02 09 49.4 +0.5
baz=152,SNR=14
I32A **Karley and Nic** 77.80 336 P P 02 09 49.3 +0.3
baz=149
PV01 **Paradox Valley** 77.89 325 eP P 02 09 51.4 +1.5
SMCO **Snowmass** 77.89 327 eP P 02 09 51.7 +1.6
comp=Z,150nm,0.8s
Y12C **Blythe** 77.94 318 P P 02 09 51.3 +1.4
baz=135,SNR=59
Y12C **Blythe** 77.94 318 eP P 02 09 51.5 +1.5
comp=Z,104nm,1.0s
LBTB **Lobatse** 77.94 112 eP P 02 09 50.4 -0.1
LBTB pmax pmax
comp=Z,470nm,1.1s
LBTB **Lobatse** 77.94 112 eP P 02 09 50.4 -0.1
comp=Z,466nm,1.1s
J30A **Dallas** 77.97 334 P P 02 09 50.4 +0.4
baz=148
F36A **Milaca** 78.05 339 P P 02 09 50.5 +0.3
baz=153,SNR=34
H33A **Prehn Over Nor** 78.10 336 P P 02 09 51.3 +0.7
baz=150,SNR=56
PDMCI **Parker Dam,Lak** 78.11 319 P P 02 09 51.9 +1.1
baz=135,SNR=22
PV05 **Paradox Valley** 78.11 325 eP P 02 09 52.3 +1.1
SWSC **Sam W. Stewart** 78.14 317 P P 02 09 52.5 +1.4
baz=134,SNR=17
VAH **Vaihoa** 78.17 259 eP P 02 09 52.1 +0.4
comp=Z,163nm,1.0s
H32A **Carlson Farm,** 78.20 336 P P 02 09 51.5 +0.4
baz=149,SNR=19
I31A **Royce, Wessing** 78.20 335 P P 02 09 51.5 +0.3
baz=148
G34A **Benson** 78.20 337 P P 02 09 51.6 +0.5
baz=151,SNR=11
PV04 **Paradox Valley** 78.25 325 eP P 02 09 53.1 +1.3
PV10 **Paradox Valley** 78.31 325 eP P 02 09 53.1 +0.9
E37A **Wrenshall** 78.33 340 P P 02 09 52.8 +1.0
baz=154,SNR=11
J29A **Okreek** 78.37 333 P P 02 09 52.6 +0.6
baz=147
F35A **Swanville** 78.39 338 P P 02 09 52.5 +0.4
baz=152,SNR=24
BC3 **Big Chuckawall** 78.42 318 P P 02 09 53.9 +1.2
baz=134,SNR=52
G33A **Ortonville** 78.44 337 P P 02 09 52.4 0.0

baz=150,SNR=35
I30A Oacoma 78.44 334 P P 02 09 52.8 +0.3
baz=148
PV09 Paradox Valley 78.45 325 eP P 02 09 54.5 +1.5
MONP2 Monument Peak 78.48 317 P P 02 09 54.4 +1.3
baz=134,SNR=20
BAR Barrett 78.49 316 eP P 02 09 54.5 +1.5
comp=Z,68nm,0.9s
PMOR Pomariorio Ree 78.50 259 eP P 02 09 54.0 +0.6
comp=Z,112nm,1.0s
E36A McGregor 78.55 339 P P 02 09 53.6 +0.7
baz=153,SNR=83
F34A Alexandria 78.56 338 P P 02 09 53.5 +0.5
baz=151,SNR=14
H31A Wolsey 78.56 335 P P 02 09 53.4 +0.4
baz=149,SNR=9.0
U15A North Rim 78.58 322 eP P 02 09 55.6 +1.9
IRM Iron Mountain 78.59 318 P P 02 09 54.8 +1.3
baz=135,SNR=50
SUSD Miller 78.71 335 P P 02 09 54.2 +0.3
baz=148,SNR=26
NEE2 Needles Airpor 78.71 319 P P 02 09 54.9 +0.8
baz=135
J28A Allard Ranch, 78.75 333 P P 02 09 55.0 +0.9
baz=146
N23A Red Feather La 78.75 328 P P 02 09 55.9 +1.4
baz=142,SNR=50
N23A Red Feather La 78.75 328 eP P 02 09 55.9 +1.4
comp=Z,103nm,0.9s
C39A Grand Marais 78.81 342 P P 02 09 54.7 +0.4
baz=156,SNR=33
PHWY Pilot Hill 78.85 329 eP P 02 09 56.2 +1.2
comp=Z,178nm,1.0s
PPT2 Papeete2 78.86 256 eP P 02 09 55.9 +0.5
comp=Z,106nm,1.1s
PPT2 eS S 02 19 08.2 -0.2
comp=Z,589nm,25.2s
PPT2 Papeete2 78.86 256 eLR LR 02 35 20.5
comp=Z,442nm,24.5s
PPT Papeete 78.86 256 P P 02 09 55.9 +0.5
comp=Z,117nm,1.0s,baz=96,slow=9.2,SNR=4.2
G32A Webster 78.87 336 P P 02 09 55.1 +0.4
baz=149
D37A Cotton 78.87 340 P P 02 09 55.4 +0.8
baz=154,SNR=32
I29A Vivian Onida 78.88 334 P P 02 09 55.4 +0.6
baz=147
109C Camp Elliot, M 78.90 316 P P 02 09 56.7 +1.6
baz=133,SNR=5.7
J27A Elkhorn Farm, 78.92 332 P P 02 09 56.5 +1.4
baz=146
E35A Pequot Lakes 78.95 339 P P 02 09 55.6 +0.5
baz=152,SNR=41
F33A 5 Mile Ranch, 78.95 337 P P 02 09 55.4 +0.3
baz=150,SNR=38
BELC Belle Mtn. Jos 78.99 318 P P 02 09 57.1 +1.3
baz=134,SNR=42
PFO Pinyon Flats O 79.00 317 P P 02 09 57.3 +1.5
baz=134,SNR=40
PFO Pinyon Flats O 79.00 317 eP P 02 09 57.2 +1.4
PFO pmax pmax
comp=Z,60nm,0.9s
PFO Pinyon Flats O 79.00 317 eP P 02 09 57.2 +1.4
comp=Z,60nm,0.9s
C38A Sawbill Land. 79.04 341 P P 02 09 55.6 +0.1
baz=155,SNR=57
G31A Conde 79.10 336 P P 02 09 56.4 +0.5
baz=149,SNR=21
D36A Goodland 79.11 340 P P 02 09 56.4 +0.5
baz=153,SNR=30
E34A Wadena 79.16 338 P P 02 09 56.8 +0.6
baz=152,SNR=10
I28A Midland 79.20 333 P P 02 09 57.4 +0.9
baz=146
LDFC Landfair 79.22 319 eP P 02 09 58.8 +1.9
comp=Z,99nm,0.9s
O20A White River Ci 79.25 327 P P 02 09 58.5 +1.4
baz=140,SNR=130
O20A White River Ci 79.25 327 eP P 02 09 58.5 +1.4
comp=Z,254nm,1.1s
F32A Veblen 79.27 337 P P 02 09 57.4 +0.6
baz=150,SNR=12
D35A Remer 79.30 339 P P 02 09 57.6 +0.7
baz=152,SNR=104
KNB Kanab 79.31 322 eP P 02 09 59.2 +1.8
KNB pmax pmax
comp=Z,310nm,0.9s
KNB Kanab 79.31 322 eP P 02 09 59.2 +1.8
comp=Z,312nm,0.9s
EYMN Ely 79.31 341 P P 02 09 57.1 +0.2
baz=155,SNR=25
EYMN Ely 79.31 341 eP P 02 09 57.1 +0.2
comp=Z,168nm,0.8s
C37A Embarrass 79.31 341 P P 02 09 57.5 +0.5
baz=154,SNR=35
BTU Barney Top 79.33 323 eP P 02 09 58.8 +1.0
GMRC Granite Mounta 79.33 318 P P 02 09 58.8 +1.3
baz=134,SNR=62
PKCU Pink Cliffs 79.34 322 eP P 02 09 59.2 +1.4
comp=Z,47nm,0.8s
H29A Onida 79.35 334 P P 02 09 57.7 +0.5
baz=147,SNR=56
MMU Miners Mountai 79.35 323 eP P 02 09 59.0 +1.3
G30A Faulkton 79.36 335 P P 02 09 57.8 +0.5
baz=148,SNR=21
J26A Sides Ranch, S 79.42 332 P P 02 09 59.3 +1.6
baz=145
E33A Westby DABS, E 79.43 338 P P 02 09 57.9 +0.2
baz=151,SNR=32
MURC Murrieta 79.44 317 P P 02 09 59.3 +1.3
baz=133,SNR=19
C36A Pine Crest Far 79.53 340 P P 02 09 58.6 +0.5
baz=154,SNR=62
LCMT Little Creek M 79.53 321 eP P 02 09 60.0 +1.4
comp=Z,79nm,1.1s
I27A Quinn 79.61 333 P P 02 09 59.4 +0.6
baz=146
SRU San Rafael Swe 79.62 325 eP P 02 10 00.2 +1.1
SRU pmax pmax
comp=Z,160nm,1.0s
SRU San Rafael Swe 79.62 325 eP P 02 10 00.2 +1.1
comp=Z,165nm,1.0s
F31A Hecla 79.66 336 P P 02 09 59.4 +0.6
baz=149,SNR=49
D34A Park Rapids 79.67 338 P P 02 09 59.2 +0.3
baz=152,SNR=23
H28A Mission Ridge 79.70 334 P P 02 10 00.3 +1.2
baz=146,SNR=27
MTPU Mount Pierson 79.70 323 eP P 02 10 01.6 +1.8
comp=Z,87nm,0.8s
G29A Hoven 79.71 335 P P 02 09 59.7 +0.5
baz=148,SNR=41
BBRC Big Bear Solar 79.72 317 P P 02 10 00.4 +0.6
baz=134
BHU Blowhard Mount 79.74 322 eP P 02 09 57.7 -2.2
HEC Hector,Ludlow 79.76 318 P P 02 10 01.2 +1.4
baz=134,SNR=15
J25A Sunshine Ranch 79.79 331 P P 02 10 00.9 +1.2
baz=144
C35A Jirik Farms, M 79.83 340 P P 02 10 00.2 +0.5
baz=153,SNR=107
SCI2 San Clemente I 79.85 315 P P 02 10 01.0 +0.8
baz=132
P18A Preston Nutter 79.87 325 eP P 02 10 02.0 +1.5
comp=Z,143nm,0.9s
E32A Braaten, Kindr 79.87 337 P P 02 10 00.7 +0.8
baz=150,SNR=9.6
I26A New Underwood 79.92 332 P P 02 10 01.1 +0.8
baz=145
F30A Leola 79.92 336 P P 02 10 01.1 +0.8
baz=148,SNR=16
D33A AnnSam, Waubun 79.94 338 P P 02 10 00.7 +0.5
baz=151,SNR=60
TUQ Turquoise Moun 79.94 319 P P 02 10 01.9 +1.1
baz=134,SNR=43
ROA Roan Cliffs 79.95 325 eP P 02 10 02.6 +1.6
G28A Parade 80.00 334 P P 02 10 01.5 +0.9
baz=147,SNR=66
P17A Butcher Ranch, 80.00 325 eP P 02 10 02.2 +1.2
comp=Z,168nm,1.1s
MSU Marysvale 80.05 323 eP P 02 10 02.8 +1.5
MSU Marysvale 80.05 323 eP P 02 10 02.8 +1.5
CIS Catalina Islan 80.05 316 P P 02 10 02.0 +0.7
baz=132,SNR=6.2
C34A RKJ Ranch, Bem 80.08 339 P P 02 10 01.5 +0.5
baz=152,SNR=53
H27A Howes 80.09 333 P P 02 10 01.8 +0.6
baz=146,SNR=162
TMUT Trail Mountain 80.12 324 eP P 02 10 03.1 +1.3
comp=Z,71nm,0.8s
E31A Nome 80.13 337 P P 02 10 01.9 +0.6
baz=149,SNR=36
BFSC Mount Baldy Ra 80.15 317 P P 02 10 02.9 +1.1
baz=133,SNR=18
ARGU Argyle Ridge 80.17 325 eP P 02 10 03.8 +1.8
FMP Fort Macarthur 80.19 316 P P 02 10 03.5 +1.7
baz=132
RRX Edison Barstow 80.19 318 P P 02 10 03.9 +2.0
baz=134,SNR=6.8
DWU Dry Willow Pea 80.19 322 eP P 02 10 03.6 +1.5
F29A Eureka 80.22 335 P P 02 10 02.5 +0.7
baz=148,SNR=63
SGU Sterling 80.26 324 eP P 02 10 04.2 +1.8
I25A Rochford 80.27 332 P P 02 10 03.2 +0.9
baz=144
SNO Snow College 80.30 324 eP P 02 10 04.4 +1.7
D32A Dogwood Acres, 80.32 337 P P 02 10 02.9 +0.6
baz=150,SNR=23
WCU Willow Creek 80.33 323 eP P 02 10 04.5 +1.6
B35A Bob, Littlefor 80.34 340 P P 02 10 02.8 +0.5
baz=153,SNR=94
H26A Fairpoint 80.36 333 P P 02 10 03.6 +1.0
baz=145,SNR=9.1
GSC Goldstone, Bar 80.37 318 P P 02 10 04.3 +1.4
baz=134,SNR=34
GSC Goldstone, Bar 80.37 318 eP P 02 10 04.2 +1.3
GSC pmax pmax
comp=Z,93nm,1.2s
GSC Goldstone, Bar 80.37 318 eP P 02 10 04.2 +1.3
comp=Z,93nm,1.3s
MWC Mount Wilson 80.39 317 eP P 02 10 04.6 +1.4
MWC pmax pmax
comp=Z,66nm,0.9s
MWC Mount Wilson 80.39 317 eP P 02 10 04.6 +1.4
comp=Z,66nm,0.9s
K22A Casper 80.40 329 P P 02 10 04.5 +1.5
baz=142
K22A Casper 80.40 329 eP P 02 10 04.1 +1.1
comp=Z,501nm,1.6s
PASC Pasadena Art C 80.43 317 eP P 02 10 04.3 +1.2
comp=Z,94nm,1.0s
E30A Jud 80.45 336 P P 02 10 03.7 +0.7
baz=148,SNR=42
C33A Trail 80.45 338 P P 02 10 03.4 +0.5
baz=151,SNR=127
SHOC Shoshone, Teco 80.47 319 P P 02 10 04.8 +1.5
baz=134
RSSD Black Hills 80.48 332 P P 02 10 03.9 +0.5
baz=144
RSSD Black Hills 80.48 332 eP P 02 10 03.6 +0.1
RSSD pmax pmax
comp=Z,120nm,1.0s
RSSD Black Hills 80.48 332 eP P 02 10 03.6 +0.1
comp=Z,116nm,1.0s
D31A Mcclaflin, Tow 80.49 337 P P 02 10 03.7 +0.5
baz=149,SNR=30
DECC Green Verdugo 80.58 317 P P 02 10 05.2 +1.3
baz=133,SNR=13
F28A McLaughlin 80.60 334 P P 02 10 04.5 +0.7
baz=147,SNR=53
SNCC San Nicolas Is 80.64 315 P P 02 10 04.8 +0.6
baz=132
G27A Dupree 80.65 334 P P 02 10 04.7 +0.6
baz=146,SNR=45
FLU Fool Peak 80.68 324 eP P 02 10 06.0 +1.4
H25A Fruitdale 80.70 332 P P 02 10 05.1 +0.7
baz=144,SNR=24
B34A Aery, Baudette 80.73 339 P P 02 10 04.8 +0.5
baz=152,SNR=27
C32A Crookston 80.76 338 P P 02 10 05.4 +0.9
baz=150,SNR=6.9
E29A Napoleon 80.77 336 P P 02 10 05.3 +0.7
baz=148,SNR=20
EDW2 Edwards Air Fo 80.79 317 P P 02 10 05.7 +0.7
baz=133,SNR=9.2
B33A Robert and Kas 80.84 339 P P 02 10 05.4 +0.5
baz=151,SNR=53
G26A Maurine 80.84 333 P P 02 10 05.4 +0.4
baz=145,SNR=64
MPU Maple Canyon 80.87 324 eP P 02 10 06.8 +1.2
comp=Z,67nm,0.8s
D30A Buchanan 80.91 336 P P 02 10 06.5 +1.1
baz=149,SNR=292
BLG Laguna Peak, P 80.93 316 P P 02 10 06.7 +1.0
baz=132,SNR=5.3
AGMN Agassiz Nation 80.95 339 P P 02 10 06.1 +0.7
baz=151,SNR=86
AGMN Agassiz Nation 80.95 339 eP P 02 10 06.0 +0.5
comp=Z,189nm,0.8s
PSUT Pine Spring 80.97 322 eP P 02 10 07.5 +1.5
comp=Z,94nm,0.9s
DAU Daniels Canyon 80.97 325 eP P 02 10 07.7 +1.5
DAU Daniels Canyon 80.97 325 eP P 02 10 07.7 +1.5
LRMC Laurel Mtn Rad 81.01 318 P P 02 10 07.4 +1.1
baz=133,SNR=12
NLU North Lily Min 81.05 324 eP P 02 10 07.7 +1.2
comp=Z,73nm,1.1s
OSI Osito Audit: C 81.06 317 P P 02 10 07.8 +1.3
baz=132,SNR=8.2
OSI Osito Audit: C 81.06 317 eP P 02 10 08.1 +1.6
comp=Z,68nm,1.0s
F27A Lemmon 81.09 334 P P 02 10 07.0 +0.7
baz=146,SNR=102
G25A Newell 81.09 333 P P 02 10 07.1 +0.7
baz=145,SNR=14
C31A Landman Farms, 81.14 337 P P 02 10 07.2 +0.8
baz=150,SNR=31
HTU Hoyt Peak 81.15 325 eP P 02 10 08.5 +1.5
E28A Huff 81.17 335 P P 02 10 07.8 +1.1
baz=147,SNR=56
D29A Pettibone, Tap 81.17 336 P P 02 10 07.5 +0.9
baz=148,SNR=40
LDJ Lady 81.17 325 eP P 02 10 08.7 +1.5
TPNV Topopah Spring 81.19 320 P P 02 10 08.6 +1.4
baz=134,SNR=52
TPNV Topopah Spring 81.19 320 eP P 02 10 08.7 +1.5
TPNV pmax pmax
comp=Z,87nm,1.1s
TPNV Topopah Spring 81.19 320 eP P 02 10 08.7 +1.5
comp=Z,87nm,1.1s
HLJ Hailstone 81.19 325 eP P 02 10 08.6 +1.5
SCZ2 Santa Cruz Isl 81.20 316 P P 02 10 08.1 +0.9
baz=132,SNR=7.7
FURC Furnace Creek, 81.21 319 P P 02 10 08.4 +1.3
baz=134,SNR=26
KLJ Keetly 81.21 325 eP P 02 10 08.6 +1.4
JLU Jordanelle 81.21 325 eP P 02 10 08.5 +1.2
comp=Z,140nm,1.1s
B32A Ashes, Strandq 81.26 338 P P 02 10 07.6 +0.6
baz=150,SNR=214
MPMC Manual Prospec 81.29 318 P P 02 10 08.6 +0.8
baz=133,SNR=39
C30A Mose, Pekin 81.32 337 P P 02 10 08.2 +0.8
baz=149,SNR=114
F26A Lodgepole 81.33 333 P P 02 10 08.2 +0.7
baz=145,SNR=28
A33A Warroad 81.36 339 P P 02 10 09.0 +1.4
baz=152,SNR=8.4
E27A Carson 81.38 334 P P 02 10 08.6 +0.9
baz=146,SNR=38
CWU Camp Williams 81.43 325 eP P 02 10 09.7 +1.3
CTU Camp Tracy 81.43 325 eP P 02 10 09.3 +1.0
comp=Z,31nm,0.8s
ARVC Arvin 81.46 317 P P 02 10 09.9 +1.5
baz=132,SNR=5.9
DAC Darwin (Calif) 81.50 318 eP P 02 10 09.8 +0.9
DAC pmax pmax
comp=Z,110nm,1.2s
DAC Darwin (Calif) 81.50 318 eP P 02 10 09.8 +0.9
comp=Z,108nm,1.2s
SBC Santa Barbara 81.55 316 P P 02 10 10.1 +1.3
baz=132
TCUT Tooene Canyon 81.57 325 eP P 02 10 10.9 +1.7
comp=Z,418nm,1.3s
FSU Fish Springs 81.57 323 eP P 02 10 10.3 +1.2
ISA Isabella, Lake 81.61 317 P P 02 10 10.5 +1.2
baz=133,SNR=12
ISA Isabella, Lake 81.61 317 eP P 02 10 10.8 +1.5
ISA pmax pmax
comp=Z,67nm,1.1s
ISA Isabella, Lake 81.61 317 eP P 02 10 10.8 +1.5
comp=Z,67nm,1.1s
DUG Dugway, Tooele 81.61 324 P P 02 10 10.4 +1.1
baz=137,SNR=85
DUG Dugway, Tooele 81.61 324 eP P 02 10 10.3 +1.1
DUG pmax pmax
comp=Z,58nm,0.9s
DUG Dugway, Tooele 81.61 324 eP P 02 10 10.3 +1.0
comp=Z,58nm,0.9s
D28A Regan 81.64 335 P P 02 10 10.0 +1.0
baz=147,SNR=42
B31A Greenbush Farm 81.65 338 P P 02 10 09.5 +0.4
baz=150,SNR=32
A32A Rocking H Ranc 81.70 339 P P 02 10 09.7 +0.4
baz=151,SNR=29
F25A Bowman 81.71 333 P P 02 10 10.4 +0.9
baz=145,SNR=19
FPU Francis Peak 81.72 325 eP P 02 10 11.2 +1.2
E26A Carlson Angus 81.76 334 P P 02 10 10.5 +0.8
baz=146,SNR=12
SAIU Southern Antel 81.77 325 eP P 02 10 10.8 +0.7
R11A Troy Canyon, C 81.79 321 P P 02 10 11.5 +1.3
baz=135,SNR=120
R11A Troy Canyon, C 81.79 321 eP P 02 10 11.7 +1.4
comp=Z,75nm,1.0s
MDND Maddock 81.84 336 P P 02 10 11.4 +1.3
baz=148,SNR=57
MDND Maddock 81.84 336 eP P 02 10 11.2 +1.2
comp=Z,955nm,1.0s
GRAC Grapevine Rang 81.86 319 P P 02 10 11.9 +1.4
baz=134,SNR=14
MCU Monte Cristo P 81.88 326 eP P 02 10 11.8 +1.0
PD31 Pinedale Array 81.90 327 eP P 02 10 11.3 +0.4
PDAR Pinedale Array 81.90 327 P P 02 10 11.2 +0.4
comp=Z,29nm,0.6s,baz=126,slow=8.0,SNR=272
PDAR S S 02 19 35.2 -3.3
comp=Z,4.3nm,1.2s,baz=139,slow=8.4,SNR=4.6
PDAR PKKPbc PKKPbc 02 28 36.1 -1.7
comp=Z,0.9nm,0.5s,baz=51,slow=1.3,SNR=10
BW06 Boulder Array 81.90 327 P P 02 10 11.3 +0.5
baz=140,SNR=85
BW06 Boulder Array 81.90 327 eP P 02 10 11.2 +0.5
comp=Z,104nm,1.1s
PKM Mcpherson Peak 81.91 316 P P 02 10 12.1 +1.2
baz=132,SNR=20
B30A Myrvik Farm, E 81.91 337 P P 02 10 11.2 +0.9
baz=149,SNR=204
NAIU Northern Antel 81.91 325 eP P 02 10 11.7 +0.9
D27A Center 81.93 335 P P 02 10 11.5 +1.0
baz=146,SNR=27
MDT Midelt 81.93 47 P P 02 10 11.8 +0.7
comp=Z,62nm,1.1s,baz=244,slow=6.2,SNR=57
A31A Linda, St. Vin 81.94 338 P P 02 10 11.2 +0.7
baz=150,SNR=5.3
SNUT Stansbury Nort 81.96 325 eP P 02 10 12.1 +1.0
RSUT Red Spur Mount 81.96 326 eP P 02 10 12.1 +0.9
C28A Hausauer Farms 82.01 336 P P 02 10 11.8 +0.9
baz=147,SNR=12
HWUT Hardware Ranch 82.01 326 eP P 02 10 12.3 +0.9
comp=Z,149nm,0.8s
GZU Grizzly Peak 82.09 325 eP P 02 10 12.8 +1.0
SCHQ Schefferville 82.10 358 P P 02 10 11.7 +0.5
comp=Z,187nm,0.9s,baz=174,slow=5.3,SNR=106
SCHQ PKKPbc PKKPbc 02 28 35.9 -1.9
comp=Z,2.0nm,0.6s,baz=56,slow=3.6,SNR=4.2
SCHQ Schefferville 82.10 358 eP P 02 10 11.5 +0.3
comp=Z,274nm,0.9s
SCHQ PKKPbc PKKPbc 02 28 35.9 -1.9
BMUT Black Mountain 82.11 326 eP P 02 10 12.7 +0.8
HONU Honeyville 82.19 325 eP P 02 10 13.4 +1.2
D26A Manning 82.21 334 P P 02 10 12.9 +0.9
baz=146,SNR=65
WVUT Wellsville 82.21 325 eP P 02 10 13.1 +0.7
SPUT South Promonto 82.24 325 eP P 02 10 13.4 +1.0
comp=Z,169nm,1.1s
BGU Big Grassy Mou 82.26 324 eP P 02 10 13.5 +0.9
comp=Z,113nm,1.1s
HDU Hyde Park 82.26 326 eP P 02 10 13.3 +0.7
B29A Wagenman Farm, 82.28 337 P P 02 10 13.4 +1.1
baz=148,SNR=78
SMMC Simmler 82.30 316 P P 02 10 14.2 +1.5
baz=132,SNR=10
A30A Hoffart Farm, 82.32 338 P P 02 10 13.4 +0.9
baz=149,SNR=55
LTU Little Mountai 82.35 325 eP P 02 10 12.9 0.0
TIN Tinemaha, Big 82.41 319 P P 02 10 14.6 +1.3
baz=133
C27A Sayler Ranch, 82.42 335 P P 02 10 14.3 +1.3
baz=146,SNR=52
MORF Marmelete 82.42 41 eP P 02 10 13.7 +0.4
MORF AMb AMB 02 10 15.5
comp=Z,186nm,1.8s
MORF Marmelete 82.42 41 eP P 02 10 14.0 +0.7
comp=Z,192nm,1.6s
BEI Bear River Ran 82.50 326 eP P 02 10 14.8 +1.1
RCTC Rector, Farmer 82.50 318 P P 02 10 14.4 +0.7
baz=132,SNR=11
MTUT Morton Thiokol 82.54 325 eP P 02 10 14.6 +0.7
PTEO Sao Teotonio 82.54 41 eP P 02 10 14.9 +1.1
comp=Z,360nm,1.5s
MLI Malad Range 82.61 326 eP P 02 10 15.0 +0.7
B28A Dugan Ranch, T 82.62 336 P P 02 10 14.9 +1.0
baz=147,SNR=87
A29A Manning Farm, 82.62 337 P P 02 10 14.6 +0.6
baz=148,SNR=104
AHID Auburn Hatcher 82.65 327 eP P 02 10 15.3 +0.8
comp=Z,164nm,1.0s
D25A Fairfield 82.65 334 P P 02 10 15.4 +1.1
baz=145,SNR=53
ULM Lac du Bonnet 82.67 340 P P 02 10 14.4 +0.3
comp=Z,134nm,0.8s,baz=149,slow=4.8,SNR=112
ULM PKKPbc PKKPbc 02 28 33.9 -2.3
comp=Z,7.0nm,0.7s,baz=324,slow=5.1,SNR=8.2
ULM Lac du Bonnet 82.67 340 eP P 02 10 14.3 +0.2
ULM pmax pmax
comp=Z,250nm,1.0s
ULM Lac du Bonnet 82.67 340 eP P 02 10 14.3 +0.2
comp=Z,249nm,1.0s
ULM PKKPbc PKKPbc 02 28 33.9 -2.3
C26A Wahner Farm, P 82.74 335 P P 02 10 15.7 +1.1
baz=146,SNR=35
HVU Hansel Valley 82.75 325 eP P 02 10 15.8 +0.8
HVU pmax pmax
comp=Z,110nm,1.1s
HVU Hansel Valley 82.75 325 eP P 02 10 15.8 +0.8
comp=Z,111nm,1.1s
PBDV Barranco-do-Ve 82.80 41 eP P 02 10 16.0 +0.8
comp=Z,232nm,1.5s
NPI North Pocatell 82.89 325 eP P 02 10 16.5 +0.8
B27A Peters Farms, 82.91 336 P P 02 10 16.6 +1.1
baz=147,SNR=8.2
A28A Rude Farm, Bot 82.97 336 P P 02 10 16.6 +0.8
baz=148,SNR=41
REDW Red Top Meadow 82.97 327 eP P 02 10 16.9 +0.8
comp=Z,228nm,1.6s
PCVE Castro Verde 83.00 41 eP P 02 10 17.1 +1.0
comp=Z,138nm,1.5s
SNOW Snow King Moun 83.00 327 eP P 02 10 17.3 +1.0
comp=Z,191nm,1.8s
PVAQ Vaqueiros 83.03 41 eP P 02 10 17.3 +1.0
comp=Z,290nm,1.6s
MESJ Messejana 83.03 41 eP P 02 10 16.8 +0.5
MESJ AMb AMB 02 10 19.3
comp=Z,211nm,1.6s
MESJ Messejana 83.03 41 eP P 02 10 17.4 +1.1
comp=Z,207nm,1.3s
PNCL Nicolau / Gran 83.04 40 eP P 02 10 16.9 +0.6
comp=Z,186nm,1.4s
LOHW Long Hollow 83.04 327 eP P 02 10 17.4 +0.9
comp=Z,423nm,1.9s
C25A Freed Ranch, W 83.09 334 P P 02 10 17.9 +1.5
baz=145,SNR=12
PMST Lisbon-Monsan 83.09 40 eP P 02 10 17.6 +1.0
comp=Z,346nm,1.5s
LIS Lisbon 83.10 40 eP P 02 10 17.1 +0.5
LIS AMb AMB 02 10 19.7
comp=Z,235nm,1.8s
MLAC Mammoth, Mammo 83.15 319 P P 02 10 18.3 +1.1
baz=133,SNR=7.7
TAM Tamanrasset 83.18 60 eP P 02 10 17.5 -0.1
TAM pmax pmax
comp=Z,280nm,1.3s
TAM Tamanrasset 83.18 60 eP P 02 10 17.5 -0.1
comp=Z,275nm,1.3s
PMAFR Mafra 83.19 39 eP P 02 10 17.5 +0.4
comp=Z,266nm,1.6s
MOOW Moose Ponds 83.21 327 eP P 02 10 18.0 +0.7
comp=Z,112nm,1.5s
B26A Jensen Ranch, 83.25 335 P P 02 10 18.4 +1.2
baz=146
FXWY Fox Creek 83.27 327 eP P 02 10 18.4 +0.7
comp=Z,64nm,1.4s

ELK	Elko	83.29	323	*e*P		P		02 10 18.8	+0.9
ELK				pmax		pmax			
	comp=Z,120nm,1.2s								
ELK	Elko	83.29	323	*e*P		P		02 10 18.8	+0.9
	comp=Z,125nm,1.2s								
PACT	Alcochete	83.31	40	*e*P		P		02 10 18.6	+1.0
A27A	Ledoux Ranch,	83.36	336	P		P		02 10 19.1	+1.4
	baz=147								
PBEJ	Beja	83.37	41	*e*P		P		02 10 18.7	+0.7
	comp=Z,248nm,1.6s								
NVAR	Mina Array Bea	83.38	320	P		P		02 10 18.7	+0.4
	comp=Z,18nm,0.7s,baz=148,slow=4.3,SNR=3.7								
NVAR				S		S		02 19 46.5	-6.9
	comp=Z,0.3nm,0.6s,baz=153,slow=6.1,SNR=2.0								
NVAR				PKPPKP		P'P'df		02 36 38.3	+1.0
	comp=Z,0.5nm,0.3s,baz=254,slow=3.8,SNR=4.0								
IMW	Indian Meadow	83.42	327	*e*P		P		02 10 19.3	+0.9
	comp=Z,113nm,0.9s								
FLWY	Flagg Ranch	83.44	328	*e*P		P		02 10 19.7	+1.2
	comp=Z,574nm,1.9s								
LAO	LASA Array	83.46	332	P		P		02 10 18.9	+0.6
	baz=142,SNR=35								
LAO	LASA Array	83.46	332	*e*P		P		02 10 18.9	+0.6
	comp=Z,119nm,0.9s								
B25A	Knox Farm, Ray	83.51	334	P		P		02 10 19.8	+1.3
	baz=145,SNR=14								
RLMT	Red Lodge	83.57	329	P		P		02 10 19.8	+0.7
	baz=140,SNR=80								
RLMT	Red Lodge	83.57	329	*e*P		P		02 10 19.7	+0.7
	comp=Z,156nm,1.3s								
A26A	Wade Farm, Ken	83.61	335	P		P		02 10 19.9	+1.0
	baz=146,SNR=43								
H17A	Grant Village	83.62	328	P		P		02 10 20.8	+1.4
	baz=139,SNR=16								
H17A	Grant Village	83.62	328	*e*P		P		02 10 20.7	+1.3
	comp=Z,102nm,1.9s								
EVO	Evora	83.62	40	*e*P		P		02 10 19.9	+0.7
	comp=Z,165nm,1.6s								
LKWY	Lake	83.67	328	*e*P		P		02 10 20.8	+1.2
LKWY				pmax		pmax			
	comp=Z,281nm,1.8s								
LKWY	Lake	83.67	328	*e*P		P		02 10 20.8	+1.2
	comp=Z,281nm,1.8s								
ALMR	Almeirim	83.73	40	*e*P		P		02 10 20.2	+0.5
ALMR				AMb		AMB		02 10 22.1	
	comp=Z,1µm,1.0s								
ALMR	Almeirim	83.73	40	*e*P		P		02 10 20.2	+0.5
	comp=Z,1µm,1.0s								
MCID	Moose Creek	83.75	328	*e*P		P		02 10 21.2	+1.2
YFT	Old Faithful	83.78	328	*e*P		P		02 10 22.4	+2.2
	comp=Z,344nm,2.0s								
PMTG	Montargil	83.87	40	*e*P		P		02 10 20.9	+0.5
	comp=Z,436nm,1.8s								
PBAR	Barrancos	83.95	41	*e*P		P		02 10 21.5	+0.7
	comp=Z,425nm,1.6s								
YPM	Purple Mountai	83.95	328	*e*P		P		02 10 22.6	+1.5
YMR	Madison River	84.01	328	*e*P		P		02 10 22.7	+1.4
	comp=Z,249nm,1.3s								
A25A	Svangstu Ranch	84.04	335	P		P		02 10 22.5	+1.4
	baz=145,SNR=24								
YHH	Holmes Hill	84.05	328	*e*P		P		02 10 22.8	+1.3
DGMT	Dagmar	84.07	334	P		P		02 10 22.5	+1.3
	baz=144,SNR=35								
DGMT	Dagmar	84.07	334	*e*P		P		02 10 22.5	+1.3
	comp=Z,334nm,1.1s								
PESTR	Estremoz	84.09	40	*e*P		P		02 10 22.1	+0.5
	comp=Z,318nm,1.8s								
YMC	Maple Creek	84.10	328	*e*P		P		02 10 22.8	+1.2
PTOM	Tomar	84.14	39	*e*P		P		02 10 22.3	+0.6
	comp=Z,547nm,1.4s								
SAO	San Andreas Ge	84.14	317	*e*P		P		02 10 23.4	+1.6
SAO				pmax		pmax			
	comp=Z,34nm,1.0s								
SAO	San Andreas Ge	84.14	317	*e*P		P		02 10 23.4	+1.6
	comp=Z,34nm,1.0s								
BMN	Battle Mountai	84.15	322	*e*P		P		02 10 22.0	0.0
BMN				pmax		pmax			
	comp=Z,28nm,1.2s								
BMN	Battle Mountai	84.15	322	*e*P		P		02 10 22.0	0.0
	comp=Z,28nm,1.2s								
CMB	Columbia Colle	84.33	318	*e*P		P		02 10 23.4	+0.6
CMB				pmax		pmax			
	comp=Z,305nm,1.3s								
CMB	Columbia Colle	84.33	318	*e*P		P		02 10 23.4	+0.6
	comp=Z,306nm,1.3s								
QLMT	Earthquake Lak	84.35	328	*e*P		P		02 10 24.5	+1.5
LSZ	Lusaka	84.37	104	P		P		02 10 25.0	+1.3
	comp=Z,296nm,1.1s,baz=235,slow=4.6,SNR=298								
LSZ	Lusaka	84.37	104	*e*P		P		02 10 24.8	+1.1
LSZ				pmax		pmax			
	comp=Z,722nm,1.4s								
LSZ	Lusaka	84.37	104	*e*P		P		02 10 24.8	+1.1
	comp=Z,722nm,1.4s								
LSZ	Lusaka	84.37	104	P		P		02 10 25.4	+1.7
	SNR=84								
PCAS	Casmilo, Conde	84.38	39	*e*P		P		02 10 23.5	+0.6
	comp=Z,405nm,1.6s								
MIR	Mirnyy	84.48	171	*i* P		P		02 10 23.0	0.0
MIR				pmax		pmax			
	comp=Z,8.0nm,1.2s								
PMRV	Marv??o	84.59	40	*e*P		P		02 10 24.1	+0.1
	comp=Z,219nm,1.6s								
PCBR	Castelo Branco	84.81	40	*e*P		P		02 10 25.1	+0.1
	comp=Z,245nm,1.2s								
HLID	Hailey	84.88	325	P		P		02 10 26.9	+1.4
	baz=136,SNR=374								
HLID	Hailey	84.88	325	*e*P		P		02 10 27.0	+1.5
	comp=Z,223nm,1.0s								
MCMT	McKenzie Canyo	85.03	327	*e*P		P		02 10 27.5	+1.3
BOZ	Bozeman (W)	85.05	328	P		P		02 10 26.7	+0.4
	baz=138,SNR=40								
BOZ	Bozeman (W)	85.05	328	*e*P		P		02 10 26.7	+0.4
BOZ				pmax		pmax			
	comp=Z,88nm,1.4s								
BOZ	Bozeman (W)	85.05	328	*e*P		P		02 10 26.7	+0.4
	comp=Z,88nm,1.4s								
PTO	Porto	85.07	38	*e*P		P		02 10 27.1	+0.9
	comp=Z,431nm,1.5s								
MTE	Manteigas	85.16	39	*e*P		P		02 10 27.2	+0.4
	comp=Z,375nm,1.3s								
MTE	Manteigas	85.16	39	*e*P		P		02 10 27.2	+0.4
	comp=Z,210nm,1.0s								
PVIS	Viseu	85.17	39	*e*P		P		02 10 26.9	+0.1
	comp=Z,143nm,1.5s								
DLMT	Dillon	85.30	328	*e*P		P		02 10 28.7	+1.2
	comp=Z,168nm,1.0s								
MFID	Camas Ranch	85.49	325	*e*P		P		02 10 29.5	+1.1
	comp=Z,138nm,1.2s								
LRM	Limekiln Ridge	85.57	328	*e*P		P		02 10 29.9	+1.1
PVRL	Vila Real	85.65	39	*e*P		P		02 10 29.6	+0.5
	comp=Z,370nm,1.6s								
POLO	Lamas de Olo	85.67	38	*e*P		P		02 10 29.5	+0.2
	comp=Z,150nm,1.4s								
PCAB	Cabril	85.78	38	*e*P		P		02 10 29.8	+0.1
	comp=Z,224nm,1.8s								
PGAV	Gaveira, Arco	85.82	38	*e*P		P		02 10 29.8	-0.1
	comp=Z,247nm,1.5s								
MVO	Moncorvo	85.96	39	*e*P		P		02 10 31.2	+0.6
	comp=Z,292nm,1.7s								
ORV	Oroville	85.99	319	*e*P		P		02 10 31.7	+1.0
ORV				pmax		pmax			
	comp=Z,220nm,1.4s								
ORV	Oroville	85.99	319	*e*P		P		02 10 31.7	+1.0
	comp=Z,219nm,1.4s								
EGMT	Eagleton	86.01	331	P		P		02 10 30.8	+0.2
	baz=140,SNR=45								
EGMT	Eagleton	86.01	331	*e*P		P		02 10 30.8	+0.2
	comp=Z,182nm,1.2s								
WVOR	Wild Horse Val	86.30	322	*e*P		P		02 10 33.1	+0.8
WVOR				pmax		pmax			
	comp=Z,100nm,1.4s								
WVOR	Wild Horse Val	86.30	322	*e*P		P		02 10 33.1	+0.8
	comp=Z,100nm,1.4s								
CASY	Casey	86.35	178	*e*P		P		02 10 32.8	+0.8
	comp=Z,79nm,0.9s								
PAB	San Pablo	86.43	42	*e*P		P		02 10 33.2	+0.3
PAB				pmax		pmax			
	comp=Z,220nm,1.4s								
PAB	San Pablo	86.43	42	*e*P		P		02 10 33.2	+0.3
	comp=Z,222nm,1.4s								
PBRG	Braganca	86.55	39	*e*P		P		02 10 33.8	+0.5
	comp=Z,168nm,1.6s								
HOPS	Hopland Field	86.56	318	*e*P		P		02 10 35.3	+1.9
	comp=Z,105nm,1.4s								
O03D	Paynes Creek	86.65	319	P		P		02 10 34.3	+0.4
	baz=131,SNR=39								
ESDC	Sonseca Array	86.74	42	P		P		02 10 34.6	+0.3
	comp=Z,7.7nm,0.4s,baz=250,slow=4.7,SNR=88								
ESLA	Sonseca Array	86.74	42	*e*P		P		02 10 34.9	+0.5
	comp=Z,71nm,1.2s								
CHMT	Chamberlain Mo	86.75	328	*e*P		P		02 10 35.1	+0.7
ES19	SONSECA Array	86.80	42	*e*P		P		02 10 34.7	+0.2
MOD	Modoc Plateau	86.85	321	*e*P		P		02 10 36.0	+1.1
	comp=Z,114nm,1.1s								
MSO	Missoula	87.01	328	P		P		02 10 36.4	+1.0
	baz=137,SNR=53								
MSO	Missoula	87.01	328	*e*P		P		02 10 36.4	+1.0
	comp=Z,218nm,1.7s								
BMO	Blue Mountains	87.26	325	*e*P		P		02 10 37.5	+0.8
	comp=Z,43nm,1.0s								
WDC	Whiskeytown Da	87.26	319	*e*P		P		02 10 36.2	-0.4
WDC				pmax		pmax			
	comp=Z,47nm,0.8s								
WDC	Whiskeytown Da	87.26	319	*e*P		P		02 10 36.2	-0.4
	comp=Z,47nm,0.8s								
SWMT	Swartz Lake	87.53	328	*e*P		P		02 10 38.7	+0.8
N02D	Trinity Center	87.61	319	P		P		02 10 38.9	+0.5
	baz=130,SNR=26								
M04C	Macdoel	87.64	320	P		P		02 10 39.5	+1.0
	baz=131,SNR=28								
KMRM	Mail Ridge	87.72	318	*e*P		P		02 10 41.0	+2.2
	comp=Z,233nm,1.2s								
K05A	Summer Lake	87.73	321	*e*P		P		02 10 40.2	+1.2
	comp=Z,256nm,1.2s								
YBMT	Yellow Bay	87.79	329	*e*P		P		02 10 40.0	+0.9
JTMT	Jette	87.83	328	*e*P		P		02 10 40.2	+0.9
M02C	Callahan	87.97	320	P		P		02 10 40.8	+0.8
	baz=130,SNR=26								
F10A	Beach Ranch, E	88.00	326	*e*P		P		02 10 41.2	+1.1
	comp=Z,28nm,0.9s								
BLMT	Blacktail Moun	88.06	328	*e*P		P		02 10 41.3	+0.8
YBH	Yreka Blue Hor	88.10	320	*e*P		P		02 10 40.6	-0.1
YBH				pmax		pmax			
	comp=Z,39nm,0.9s								
YBH	Yreka Blue Hor	88.10	320	*e*P		P		02 10 40.6	-0.1
	comp=Z,39nm,0.9s								
K04D	Chiloquin, OR	88.14	321	P		P		02 10 41.8	+0.9
	baz=131								
KHMM	Horse Mountain	88.14	319	*e*P		P		02 10 42.9	+1.9
	comp=Z,84nm,1.0s								
BSMT	Bassoo Peak	88.15	328	*e*P		P		02 10 41.5	+0.7
JCC	Jacoby Creek,	88.28	319	*e*P		P		02 10 43.3	+1.9
	comp=Z,135nm,1.0s								
J05D	Fort Rock, OR	88.28	322	P		P		02 10 42.8	+1.2
	baz=131								
FFC	Flin Flon	88.43	339	*e*P		P		02 10 42.3	+0.5
FFC				pmax		pmax			
	comp=Z,120nm,1.1s								
FFC	Flin Flon	88.43	339	*e*P		P		02 10 42.3	+0.5
	comp=Z,117nm,1.1s								
WALA	Waterton Lakes	88.62	329	*e*P		P		02 10 43.5	+0.6
HUMO	Hull Mountain	88.80	320	*e*P		P		02 10 44.0	+0.2
	comp=Z,19nm,0.9s								
L02D	Cave Junction,	88.89	320	P		P		02 10 45.4	+1.2
	baz=130,SNR=15								
I05D	Terrebonne, OR	89.03	322	P		P		02 10 46.2	+1.3
	baz=131								
G06A	Carlson Farm,	89.25	323	*e*P		P		02 10 47.5	+1.6
	comp=Z,64nm,1.2s								
I04A	Tendick Farm,	89.26	322	P		P		02 10 46.5	+0.5
	baz=130								
HAWA	Hanford	89.45	325	*e*P		P		02 10 47.9	+1.2
	comp=Z,36nm,0.9s								
NEW	Newport	89.55	327	P		P		02 10 46.8	-0.3
	baz=134,SNR=15								
NEW	Newport	89.55	327	*e*P		P		02 10 46.7	-0.5
NEW				pmax		pmax			
	comp=Z,15nm,0.9s								
NEW	Newport	89.55	327	*e*P		P		02 10 46.7	-0.5
	comp=Z,16nm,0.8s								
NRS	Narsarsuaq	89.58	9	*i* P		P		02 10 47.6	+0.7
	comp=Z,91nm,1.0s								
NRS	Narsarsuaq	89.58	9	*i* P		P		02 10 47.6	+0.7
NRS				pmax		pmax			
	comp=Z,91nm,1.0s								
D08A	Wollman Farm,	89.59	326	*e*P		P		02 10 48.4	+1.0
	comp=Z,59nm,1.4s								
G05D	Wamic, OR	89.62	323	P		P		02 10 48.8	+1.3
	baz=131,SNR=13								
H04A	Detroit Lake	89.72	322	*e*P		P		02 10 48.4	+0.3
	comp=Z,53nm,0.8s								
FCC	Fort Churchill	89.72	345	*e*P		P		02 10 47.8	+0.2
FCC	Fort Churchill	89.72	345	*e*P		P		02 10 47.8	+0.2
I03D	Drain, OR	89.72	321	P		P		02 10 49.0	+1.0
	baz=130								
C09A	Chrisman Ranch	89.78	326	*e*P		P		02 10 48.8	+0.5
	comp=Z,62nm,0.8s								
COR	Corvallis	90.27	322	*e*P		P		02 10 52.2	+1.7
COR				pmax		pmax			
	comp=Z,120nm,0.9s								
COR	Corvallis	90.27	322	*e*P		P		02 10 52.2	+1.7
	comp=Z,117nm,0.9s								
CKHR	Kef el Ahmar	90.53	49	P		P		02 10 53.7	+1.6
SET	Setif	90.56	49	P		P		02 10 54.0	+1.8
OSSF	Osses	90.58	40	*e*P		P		02 10 52.5	+0.5
LARF	Larrau	90.60	40	*e*P		P		02 10 53.2	+1.0
G03D	McMinnville, O	90.64	322	P		P		02 10 53.3	+1.1
	baz=130,SNR=5.2								
F04A	Amboy	90.65	323	*e*P		P		02 10 53.0	+0.7
	comp=Z,70nm,0.7s								
B08A	Colville Reser	90.68	326	*e*P		P		02 10 52.5	+0.1
	comp=Z,66nm,1.8s								
ATE	Arette	90.80	41	*e*P		P		02 10 53.7	+0.7
LON	Longmire	90.86	324	*e*P		P		02 10 53.5	+0.2
LON				pmax		pmax			
	comp=Z,28nm,1.1s								
LON	Longmire	90.86	324	*e*P		P		02 10 53.5	+0.2
	comp=Z,28nm,1.1s								
REYF	Montagne du Re	90.96	41	*e*P		P		02 10 54.9	+1.0
F04D	Rainier, OR	91.07	323	P		P		02 10 55.2	+1.0
	baz=130								
VIEF	Viey	91.09	41	*e*P		P		02 10 55.2	+0.7
CTEI	Djebel Teioual	91.16	49	P		P		02 10 56.0	+1.0
LABF	Labassere	91.22	41	*e*P		P		02 10 55.9	+0.9
D05A	Enumclaw	91.24	324	*e*P		P		02 10 55.6	+0.6
	comp=Z,76nm,1.0s								
F03A	Seaside	91.26	323	*e*P		P		02 10 56.2	+1.1
	comp=Z,192nm,0.3s								
CASM	Ain Smara	91.32	49	P		P		02 10 57.0	+1.3
MELF	Melles	91.52	41	*e*P		P		02 10 57.6	+1.2
CKFL	Kef-Lekhel	91.56	49	P		P		02 10 57.8	+1.0
E03A	Lebam	91.66	323	*e*P		P		02 10 57.8	+1.0
	comp=Z,69nm,0.9s								
SALF	Salau	91.70	42	*e*P		P		02 10 58.5	+1.2
CAEH	'Ain El Ouahch	91.85	49	P		P		02 10 59.6	+1.5
B06A	Marblemount	91.86	326	*e*P		P		02 10 57.6	-0.1
	comp=Z,34nm,0.6s								
VALF	Valcebollere	91.98	42	*e*P		P		02 10 59.6	+0.9
ABSA	Djebel Ababsia	92.00	50	P		P		02 11 00.0	+1.1
B05A	Bryant	92.00	325	P		P		02 10 58.5	+0.1
	baz=131,SNR=12								
CMAH	Djebel Manchou	92.15	49	P		P		02 11 00.2	+0.7
CARF	Carcanieres	92.22	42	*e*P		P		02 11 00.4	+0.7
NLWA	Neilton Lookou	92.36	324	*e*P		P		02 11 01.5	+1.4
	comp=Z,43nm,1.2s								
FILF	Fillols	92.40	42	*e*P		P		02 11 00.7	+0.2
SJAF	Saint Jean de	92.55	43	*e*P		P		02 11 01.5	+0.4
A04D	Lummi Island	92.60	325	P		P		02 11 02.4	+1.3
	baz=130								
LRDF	Laroque-de-Fa	92.61	42	*e*P		P		02 11 01.2	-0.2
PGC	Sidney	92.94	325	*e*P		P		02 11 03.6	+1.0
	comp=Z,44nm,1.2s								
KEST	Kesra	92.99	51	P		P		02 11 03.8	+0.4
	comp=Z,8.1nm,0.7s,baz=214,slow=2.3,SNR=24								
KEST	Kesra	92.99	51	*e*P		P		02 11 04.0	+0.6
	comp=Z,32nm,1.3s								
DYA	Yadsworthy	93.70	33	*e*P		P		02 11 06.2	+0.1
LBL	Lubilhac	94.35	41	*e*P		P		02 11 10.6	+1.2
DSB	Dublin	94.39	30	*e*P		P		02 11 08.7	-0.5
	comp=Z,28nm,0.9s								
PYM	Petit Puy Mans	94.52	40	*e*P		P		02 11 10.9	+0.8
SFJD	Kangerlussuaq	94.74	5	*i* P		P		02 11 10.8	+0.4
	comp=Z,26nm,1.1s								
SFJD	Kangerlussuaq	94.74	5	*i* P		P		02 11 10.8	+0.4
SFJD				pmax		pmax			
	comp=Z,26nm,1.1s								
SFJD	Kangerlussuaq	94.74	5	*e*P		P		02 11 11.3	+0.9
	comp=Z,26nm,1.1s								
AGO	Saint Agoulin	94.76	40	*e*P		P		02 11 11.8	+0.7
LEPF	PUYLOUBIER	94.84	43	*e*P		P		02 11 12.6	+1.1
PLDF	La Plantade	94.99	40	*e*P		P		02 11 13.1	+0.9
SSB	Saint Sauveur	95.13	41	*e*P		P		02 11 13.7	+0.8
SSB	Saint Sauveur	95.13	41	*e*P		P		02 11 13.7	+0.8
SSB	Saint Sauveur	95.13	41	*e*P		P		02 11 13.7	+0.8
CALN	Calern	95.69	43	*e*P		P		02 11 15.7	+0.2
GRN	Grenoble	95.82	42	*e*P		P		02 11 17.2	+1.2
MVIF	Mont Vial	95.92	43	*e*P		P		02 11 17.4	+0.8
REVF	Revere	95.97	43	*e*P		P		02 11 17.2	+0.5
GDM	Grand'Maison	96.01	42	*e*P		P		02 11 17.9	+0.9
LUCF	Luceram	96.04	43	*e*P		P		02 11 18.0	+1.0
CWF	Charnwood Fore	96.42	33	*e*P		P		02 11 18.1	-0.3
CWF				*e*PP		PP		02 15 21.6	-0.7
MENF	Mencas	96.84	36	*e*P		P		02 11 20.0	-0.3
ESK	Eskdalemuir	97.15	30	*e*P		Pdif		02 11 20.8	-0.8
ESK				pmax		pmax			
	comp=Z,12nm,0.6s								
ESK	Eskdalemuir	97.15	30	*e*P		Pdif		02 11 20.8	-0.8
	comp=Z,12nm,0.6s								
SENIN	Lac Senin/Sane	97.34	41	*e*P		P		02 11 23.9	+0.9
LOMF	Lomont	97.60	40	*e*P		P		02 11 24.2	+0.3
SNF	Seneffe	97.93	37	P		P		02 11 25.7	+0.5
MOF	Molkenrain	98.04	40	*e*P		P		02 11 26.1	+0.2
MOF	Molkenrain	98.04	40	P		P		02 11 26.3	+0.4
UCC	Uccle	98.13	36	P		P		02 11 26.9	+0.8
	comp=Z,23nm,1.7s								
ECH	Echery	98.25	40	*e*P		P		02 11 27.1	+0.3
BCLA	Clavier	98.42	37	P		P		02 11 27.6	+0.2
	comp=Z,21nm,1.6s								
WLS	Welschbruch	98.47	39	*e*P		P		02 11 27.9	+0.1
WLF	Walferdange	98.47	38	P		P		02 11 28.1	+0.5
	comp=Z,68nm,1.4s								
WLF	Walferdange	98.47	38	*e*P		P		02 11 28.3	+0.7
WLF	Walferdange	98.47	38	*e*Pdif		P		02 11 28.3	+0.7
TUE	Stuetta	98.60	42	*e*Pdif		Pdif		02 11 28.3	-0.2
YKA	Yellowknife Ar	98.61	339	P		Pdif		02 11 27.9	0.0
	comp=Z,11nm,0.7s,baz=127,slow=4.6,SNR=269								
YKA				pP		pP		02 13 30.8	-0.8
	comp=Z,2.6nm,0.8s,baz=128,slow=4.4,SNR=5.2								
YKA				PP		PP		02 15 37.1	-1.5
	comp=Z,1.6nm,0.9s,baz=130,slow=7.1,SNR=3.1								
YKA				PKiKP		PKiKP		02 15 56.0	+0.3
	comp=Z,1.0nm,0.7s,baz=141,slow=1.6,SNR=9.7								
YKA				PKKPbc		PKKPbc		02 27 53.9	-2.2
	comp=Z,0.9nm,0.4s,baz=318,slow=3.5,SNR=22								
YKA				SKKPbc		SKKPbc		02 30 41.5	-4.7
	comp=Z,0.3nm,0.6s,baz=319,slow=3.2,SNR=4.4								
YKA				PKPPKP		P'P'df		02 35 56.0	-11
	comp=Z,0.4nm,0.9s,baz=313,slow=1.9,SNR=6.2								
YKB5	Yellowknife Ar	98.61	339	*e*Pdif		Pdif		02 11 27.4	-0.5
YKW3	Yellowknife Ar	98.66	339	*e*Pdif		P		02 11 28.4	+0.2
BEBN	Eben Emael	98.83	37	P		P		02 11 29.7	+0.5
KMBO	Kilima Mbogo	98.84	96	P		P		02 11 31.6	+1.0
	comp=Z,0.5nm,0.2s,baz=240,slow=7.8,SNR=4.0								
KMBO	Kilima Mbogo	98.84	96	*e*Pdif		P		02 11 31.7	+1.1
MEM	Membach	98.90	37	P		P		02 11 29.8	+0.3
	comp=Z,16nm,1.3s								
HGN	Heimansgroeve	98.95	37	*e*P		Pdif		02 11 29.7	0.0
	comp=Z,30nm,1.1s								
BFO	Black Forest	98.97	40	*i* P		P		02 11 30.4	+0.4
BFO	Black Forest	98.97	40	*e*Pdif		P		02 11 30.1	0.0
LANF	Langenberg	99.02	39	*e*P		Pdif		02 11 30.7	+0.6
FUORN	Ofenpass-Fuorn	99.22	42	*e*Pdif		Pdif		02 11 32.0	+0.6
FUORN				*e*PP		PP		02 15 41.9	-2.0
DAVA	Damuels	99.33	41	*e*Pdiff		Pdif		02 11 32.1	+0.4
	comp=Z,40nm,1.7s,SNR=12								
STU	Stuttgart	99.69	40	*e*P		Pdif		02 11 33.5	+0.4
STU	Stuttgart	99.69	40	*e*Pdif		Pdif		02 11 33.5	+0.4
FETA	Feichten	99.70	42	*e*Pdiff		Pdif		02 11 34.0	+0.6
	comp=Z,34nm,1.2s,SNR=14								
TIP	Timpagrande	99.81	51	*e*Pdif		Pdif		02 11 34.1	+0.1
RETA	Reutte	99.95	41	*e*Pdiff		Pdif		02 11 34.8	+0.4
	comp=Z,36nm,1.4s,SNR=10.0								
WTSB	Winterswijk	100.05	36	*e*P		Pdif		02 11 34.8	+0.3
	comp=Z,60nm,1.4s								
MOTA	Moosalm	100.08	42	*e*Pdiff		Pdif		02 11 36.4	+1.4
	comp=Z,12nm,0.9s,SNR=12								
WATA	Walderalm	100.36	42	*e*Pdiff		Pdif		02 11 36.6	+0.3
	comp=Z,20nm,1.2s,SNR=8.0								
WTTA	Wattenberg	100.36	42	*e*Pdiff		Pdif		02 11 36.8	+0.5
	comp=Z,15nm,1.3s								
ABTA	Abfaltersbach	100.63	43	*e*Pdi

CLL ePP PP 02 16 08.2 -3.8
CONA Conrad Observa 103.20 43 ePdiff **Pdif 02 11 49.7 +0.9**
comp=Z,11nm,1.7s
CONA ePKiKP **PKiKP 02 16 06.2 +1.6**
comp=Z,30nm,1.6s,SNR=6.9
PRA Prague 103.32 40 ePDIFF **Pdif 02 11 50.7 +1.6**
PRA ex x 02 28 01.4
PRA Prague 103.32 40 eP **Pdif 02 11 50.7 +1.6**
PRU Pruhonice 103.34 40 ePDIFF **Pdif 02 11 50.1 +0.8**
PRU ePP **PP 02 16 09.9 -4.1**
PRU ex x 02 25 32.9
PRU Pruhonice 103.34 40 eP **Pdif 02 11 50.1 +0.8**
PRU e 02 25 32.9
BRG Berggiesshubel 103.40 39 eP **Pdif 02 11 50.9 +1.4**
comp=Z,14nm,1.4s
BRG PP **PKiKP 02 16 08.9 +4.1**
comp=Z,58nm,1.8s
BRG Berggiesshubel 103.40 39 eP **Pdif 02 11 50.9 +1.4**
BRG pmax pmax
comp=Z,14nm,1.4s
BRG pmax pmax
comp=Z,58nm,1.8s
GOPC GO Pecny, Ondr 103.45 41 ePDIFF **Pdif 02 11 51.6 +1.8**
GOPC ePP **PP 02 16 11.0 -3.8**
GOPC GO Pecny, Ondr 103.45 41 eP **Pdif 02 11 51.6 +1.8**
GOPC e 02 16 11.0
SOP Sopron 103.51 43⇓ eS **PP 02 16 10.4 -4.9**
TREC Trest 103.58 41 ePDIFF **Pdif 02 11 51.7 +1.3**
TREC ex x 02 28 09.1
TREC Trest 103.58 41 eP **Pdif 02 11 51.7 +1.3**
PVCC Panska Ves 103.60 40 ePDIFF **Pdif 02 11 51.3 +0.9**
PVCC ex x 02 16 05.5
PVCC Panska Ves 103.60 40 eP **Pdif 02 11 51.3 +0.9**
RES Resolute Bay 104.04 352 PKKPbc PKKPbc 02 27 39.0 -1.6
baz=322,slow=20
PKS9 Tamasi 104.10 45⇓ eS **PP 02 16 16.8 -2.8**
PKSM Moragy 104.16 45⇓ eS **PP 02 16 17.0 -3.1**
PKST T'ts 104.23 44⇓ eS **PP 02 16 17.3 -3.3**
VRAC Vranov 104.24 42⇓ iP **PP 02 16 16.5 -4.1**
PKSG 104.50 44⇓ eS **PP 02 16 18.9 -3.7**
DPC Dobruska-Polom 104.53 41 ePDIFF **Pdif 02 11 55.9 +1.3**
DPC ePP **PP 02 16 18.5 -4.2**
DPC ex x 02 25 37.8
DPC Dobruska-Polom 104.53 41 eP **Pdif 02 11 55.9 +1.3**
DPC e 02 25 37.8
KRLC Kraliky 104.68 41 ePDIFF **Pdif 02 11 57.0 +1.7**
KRLC ePP **PP 02 16 19.6 -4.2**
KRLC Kraliky 104.68 41 eP **Pdif 02 11 57.0 +1.7**
KSP Ksiaz 104.72 40 ePKP **PP 02 16 20.1 -4.0**
VYHS Vyhne 105.24 43 eP **Pdif 02 11 58.5 +0.7**
VYHS Vyhne 105.24 43 ePDIF **Pdif 02 11 58.5 +0.7**
OKC Ostrava-Krasne 105.38 42 ex **PKiKP 02 16 09.3 +0.9**
PSZ Piszkesteto 105.65 44⇑ iP **PP 02 16 28.8 -2.2**
PSZ Piszkesteto 105.65 44 ePKP **PKiKP 02 16 09.9 +0.8**
PSZ ePP **PP 02 16 27.0 -4.0**
BZS Buzias 105.82 47⇓ iP **PKiKP 02 16 09.5 +0.1**
SIRR Siria 106.10 46⇓ iP **PKiKP 02 16 05.8 -4.1**
NIE Niedzica 106.49 43 ePKP **PKiKP 02 16 11.9 +1.3**
DRGR 106.97 46⇑ iP **PKiKP 02 16 12.1 +0.5**
HUMR Humele 107.61 49⇓ iP **PKiKP 02 16 13.7 +0.9**
ARR Arges 107.69 48⇑ iP **PKiKP 02 16 12.9 -0.1**
KWP Kalwaria Pacla 108.02 43 ePKP **PKiKP 02 16 13.9 +0.5**
KWP Kalwaria Pacla 108.02 43⇑ iP **PKiKP 02 16 14.2 +0.8**
INK Inuvik 108.38 338 Pdiff **Pdif 02 12 11.6 +0.4**
comp=Z,4.2nm,1.1s,baz=126,slow=4.8,SNR=11
INK PKiKP **PKiKP 02 16 13.2 -0.2**
comp=Z,1.2nm,0.3s,baz=90,slow=3.8,SNR=13
INK PKKPbc **PKKPbc 02 27 26.0 -1.2**
comp=Z,8.3nm,0.8s,baz=323,slow=4.4,SNR=27
INK SKKPbc SKKPbc 02 30 15.4 -4.2
comp=Z,2.0nm,0.8s,baz=294,slow=3.7,SNR=6.4
INK Inuvik 108.38 338 ePdif **Pdif 02 12 12.2 +0.9**
INK ePKP **PKiKP 02 16 13.4 0.0**
INK PKKPbc **PKKPbc 02 27 26.0 -1.2**
INK SKKPbc SKKPbc 02 30 15.4 -4.2
MLR Muntele Rosu 108.59 48⇓ iP **PKiKP 02 16 15.2 +0.4**
MLR Muntele Rosu 108.59 48 ePKiKP **PKiKP 02 16 13.1 -1.7**
BUR08 Bucovina Ar. S 108.86 46 ePKiKP **PKiKP 02 16 16.0 +0.8**
BURAR Bucovina Array 108.86 46⇓ iP **PKiKP 02 16 16.0 +0.8**
PLOR Plostina 109.18 48⇓ iP **PKiKP 02 16 15.7 0.0**
VRI Vrincioaia 109.24 48⇑ iP **PKiKP 02 16 15.5 -0.3**
TESR Tescani 109.41 47⇓ iP **PKiKP 02 16 16.1 0.0**
EGAK Eagle 109.61 334 ePKiKP **PKiKP 02 16 16.4 +0.5**
EGAK ePP **PP 02 16 57.5 -1.4**
SUW Suwalki 109.83 39 ePKP **PKiKP 02 16 17.1 +0.5**
TIRR Tirgusor 109.89 50⇓ iP **PKiKP 02 16 17.2 +0.2**
TIRR Tirgusor 109.89 50 ePKP **PKiKP 02 16 16.7 -0.4**
TIRR ePP **PP 02 16 57.2 -4.2**
CFR Carcaliu 109.94 49⇓ iP **PKiKP 02 16 17.5 +0.4**
CSS Mathiatis 110.29 60 ePKP **PKiKP 02 16 18.5 +0.3**
DOT Dot Lake 110.37 332 ePdif **Pdif 02 12 21.7 +1.4**
DOT ePKP **PKiKP 02 16 18.1 +0.7**
DOT ePP **PP 02 17 03.9 -0.4**
LEOM Leova 110.44 47⇑ iP **PKiKP 02 16 18.2 +0.2**
LEOM Leova 110.44 47 ⇑PKiKP **PKiKP 02 16 18.2 +0.2**
MILM Milestii Mici 110.95 47⇓ iP **PKiKP 02 16 18.9 -0.1**
SORM Soroca 111.03 46⇑ iP **PKiKP 02 16 18.6 -0.5**
SORM Soroca 111.03 46 ⇑PKiKP **PKiKP 02 16 18.6 -0.5**
MMAI Mount Meron Ar 111.25 63 PKiKP **PKiKP 02 16 20.1 0.0**
comp=Z,1.5nm,0.3s,baz=107,slow=1.1,SNR=8.3
ILAR Eielson Array 111.91 333 Pdiff **Pdif 02 12 26.2 -0.9**
comp=Z,0.3nm,0.8s,baz=111,slow=2.0,SNR=4.2
ILAR PKiKP **PKiKP 02 16 20.4 +0.1**
comp=Z,5.6nm,1.0s,baz=140,slow=0.6,SNR=25
ILAR PP PP 02 17 05.5 -10
comp=Z,2.4nm,0.8s,baz=93,slow=5.0,SNR=5.5
ILAR SKiKP **SKiKP 02 19 03.1 +0.4**
comp=Z,3.2nm,1.2s,baz=159,slow=1.2,SNR=5.0
ILAR PKKPbc **PKKPbc 02 27 13.6 -2.3**
comp=Z,3.4nm,1.0s,baz=295,slow=3.5,SNR=9.3
IIGN Ignalina 111.93 38 eP **PKiKP 02 16 20.9 +0.3**
IIGN IAmb IAmb 02 16 21.6
comp=Z,16nm,1.1s
ISAL Salakas 111.94 38 eP **PKiKP 02 16 20.8 +0.2**
ISAL IAmb IAmb 02 16 21.8
comp=Z,11nm,1.0s
RC01 Rabbit Creek A 112.04 328 ePKP **PKiKP 02 16 21.0 +0.4**
IZAR Zarasai 112.06 38 eP **PKiKP 02 16 21.1 +0.3**
IZAR IAmb IAmb 02 16 23.0
comp=Z,5.2nm,0.7s
BRTR Keskin Array B 112.07 56 PKiKP **PKiKP 02 16 21.4 -0.1**
comp=Z,5.0nm,0.9s,baz=182,slow=2.7,SNR=27
BRTR PP PP 02 17 07.7 -9.4
comp=Z,4.6nm,1.1s,baz=249,slow=6.6,SNR=5.4
BRTR SKiKP **SKiKP 02 19 04.0 0.0**
comp=Z,2.2nm,0.8s,baz=210,slow=2.9,SNR=4.9
NACGM Naroch 112.11 39 e **PKiKP 02 16 20.0 -0.9**
IDID Didziasalis 112.20 38 eP **PKiKP 02 16 21.1 0.0**
IDID IAmb IAmb 02 16 22.9
comp=Z,6.8nm,0.9s
KIEV Kiev 112.32 43 ePKiKP **PKiKP 02 16 20.6 -0.9**
KIEV Kiev 112.32 43 ePKP **PKiKP 02 16 20.6 -0.9**
AKASG Malin Array Be 112.33 43 PKiKP **PKiKP 02 16 20.9 -0.6**
comp=Z,2.6nm,0.4s,baz=267,slow=2.6,SNR=38
AKASG SKiKP **SKiKP 02 19 03.8 -0.1**
comp=Z,3.0nm,0.6s,baz=262,slow=2.8,SNR=11
COLA College 112.33 333 *c iPKiKP* **PKiKP 02 16 20.9 -0.1**
COLA College 112.33 333 ePKP **PKiKP 02 16 20.0 -1.0**
MCK McKinley 112.45 331 ePKiKP **PKiKP 02 16 21.6 +0.2**
MCK McKinley 112.45 331 ePKP **PKiKP 02 16 21.6 +0.2**
KDAK Kodiak Island 112.49 325 *i PKiKP* **PKiKP 02 16 21.8 +0.3**
TRF Thorofare Moun 112.95 331 ePKP **PKiKP 02 16 21.1 -1.4**
TRF ePP **PP 02 17 19.8 -2.9**
VSU Vasula 113.06 35 *d iPKiKP* **PKiKP 02 16 22.5 -0.1**
KTH Kantishna Hill 113.26 331 ePKP 02 16 22.3
BPAW Bear Paw Mtn. 113.42 331 ePKP **PKiKP 02 16 23.2 -0.1**
BPAW ePP **PP 02 17 24.2 -1.6**
BPAW eSKPdf **SKPdf 02 19 05.3 -0.4**
FINES FINESS Array B 113.51 32 Pdiff **Pdif 02 12 35.3 +1.2**
comp=Z,1.1nm,1.0s,baz=224,slow=3.8,SNR=2.1
FINES PKiKP **PKiKP 02 16 23.4 0.0**
comp=Z,2.3nm,0.4s,baz=114,slow=0.5,SNR=25
FINES PKKPbc **PKKPbc 02 27 08.0 -2.5**
comp=Z,2.0nm,0.5s,baz=81,slow=4.6,SNR=19
PPLA Purkeypile 113.64 330 ePKP **PKiKP 02 16 23.6 -0.2**
COLD Coldfoot 113.90 335 ePKP **PKiKP 02 16 24.6 +0.5**
COLD ePP **PP 02 17 25.1 -3.9**
COLD eSKPdf **SKPdf 02 19 07.4 +1.0**
SIM Simferopol' 113.92 50 *i PKiKP* **PKiKP 02 16 24.9 +0.2**
SIM pmax pmax
comp=Z,21nm,1.0s
SPITS Spitsbergen Ar 114.67 13 PKKPbc PKKPbc 02 27 05.0 -1.9
comp=Z,0.9nm,0.3s,baz=98,slow=6.2,SNR=20
SPITS SKKPbc SKKPbc 02 29 55.6 -5.7
comp=Z,18nm,1.2s,baz=87,slow=7.5,SNR=3.6
ARCES ARCESS Array B 115.10 23 PKP **PKPdf 02 16 26.3 0.0**
comp=Z,2.5nm,0.2s,baz=244,slow=4.0,SNR=92
ARCES PKKPbc **PKKPbc 02 27 03.7 -1.6**
comp=Z,3.8nm,0.4s,baz=88,slow=3.6,SNR=50
ARCES SKKPbc SKKPbc 02 29 54.6 -5.0
comp=Z,4.9nm,0.8s,baz=89,slow=3.8,SNR=9.3
TTA Tatalina 115.36 330 ePKiKP **PKPdf 02 16 28.1 +1.0**
TTA Tatalina 115.36 330 ePKPdf **PKPdf 02 16 28.1 +1.0**
ANN Anapa 116.16 51 eP **Pdif 02 12 43.3 -3.1**
ANN *i* 02 16 26.9
ANN pmax pmax
comp=Z,64nm,1.4s
STKA Stephens Creek 116.32 204 PKP **PKPdf 02 16 29.8 -0.1**
comp=Z,4.4nm,1.0s,baz=112,slow=2.7,SNR=8.0
STKA SKiKP **SKiKP 02 19 11.8 -0.7**
comp=Z,5.2nm,0.8s,baz=143,slow=3.5,SNR=7.0
STKA PKKPbc **PKKPbc 02 26 59.7 -1.6**
comp=Z,2.0nm,0.3s,baz=347,slow=3.8,SNR=6.8
RAYN Ar Rayn 116.45 76 ePKPdf **PKPdf 02 16 31.0 +0.7**
SOC Sochi 117.48 53 *d iPKiKP* **PKPdf 02 16 31.5 -0.1**
SOC *e* 02 18 03.9
SOC ePS **PS 02 27 46.7 -1.5**
SOC pmax pmax
comp=Z,57nm,0.9s
OBN Obninsk 117.65 40 PKP **PKPdf 02 16 31.5 -0.1**
comp=Z,28nm,0.3s,baz=230,slow=2.9,SNR=10
OBN Obninsk 117.65 40 *d iPKiKP* **PKPdf 02 16 31.4 -0.1**
OBN *e* 02 17 53.5
OBN PPP PPP 02 20 30.0
OBN *i* 02 22 52.6
OBN *e* 02 27 54.2
OBN eSS SS 02 33 26.9 +2.2
OBN pmax pmax
comp=Z,95nm,1.2s
OBN Obninsk 117.65 40 ePKPdf **PKPdf 02 16 31.6 +0.1**
APA Apatity 117.69 25⇓ iPKiKP **PKPdf 02 16 31.6 +0.3**
APA *i* 02 18 37.0
LVZ Lovozero 118.19 25⇑ iPKiKP **PKPdf 02 16 32.9 +0.6**
MOS Moscow 118.34 39 ePKiKP **PKPdf 02 16 29.0 -3.9**
MOS pmax pmax
comp=Z,180nm,0.9s
VSR Storozhevoye 118.58 44 ePKiKP **PKPdf 02 16 32.9 -0.6**
VSR pmax pmax
comp=Z,60nm,1.1s
LPSR Galich'ya Gora 118.64 43 ePKiKP **PKPdf 02 16 33.3 -0.2**
LPSR pmax pmax
comp=Z,70nm,0.9s
TMCR Tamitsa 119.35 30 ePKiKP **PKPdf 02 16 34.5 0.0**
TMCR pmax pmax
comp=Z,43nm,1.0s
NEY Neytrino 119.55 54 *d iPKiKP* **PKPdf 02 16 36.1 +0.2**
KIV Kislovodsk 119.66 53 *d iPKiKP* **PKPdf 02 16 35.3 -0.7**
KIV *e* 02 18 11.0
KIV *e* 02 22 48.7
KIV pmax pmax
comp=Z,58nm,1.0s
KIV Kislovodsk 119.66 53 ePKPdf **PKPdf 02 16 35.0 -1.0**
KIV ePP PP 02 18 01.1 -8.1
KIV Kislovodsk 119.66 53 PKPdf **PKPdf 02 16 36.0 +0.1**
SNR=19
KIV Kislovodsk 119.66 53 P **PKPdf 02 16 36.0 +0.1**
SNR=19
KVAR Kislovodsk Arr 119.67 53 PKP **PKPdf 02 16 36.1 +0.1**
comp=Z,42nm,0.8s,baz=225,slow=1.8,SNR=8.8
AKH Akhalkalaki 119.75 56⇓ iP **PKiKP 02 16 37.0 +0.6**
KBZ Khabaz 119.77 53 PKP **PKPdf 02 16 36.3 +0.3**
comp=Z,27nm,1.0s,baz=188,slow=1.3,SNR=44
KLMR Klimovskoe 119.85 33 ePKiKP **PKPdf 02 16 34.3 -1.3**
KLMR pmax pmax
comp=Z,111nm,1.0s
NWAO Narrogin (SRO) 119.85 181 PKP **PKPdf 02 16 36.4 -0.3**
comp=Z,13nm,0.7s,baz=105,slow=0.0
ONI Oni 119.95 55 P **PKiKP 02 16 37.0 +0.4**
ONI Oni 119.95 55 ePKiKP **PKiKP 02 16 37.0 +0.4**
GOF Gofitskoye 120.11 52⇑ ePKiKP **PKPdf 02 16 36.9 +0.2**
GOF pmax pmax
comp=Z,118nm,0.9s
VRH Novokhopyorsk 120.16 45 ePKiKP **PKPdf 02 16 36.0 -0.5**
VRH pmax pmax
comp=Z,70nm,1.0s
ZEI Tsey 120.31 55 *i PKiKP* **PKPdf 02 16 37.4 0.0**
ZEI pmax pmax
comp=Z,60nm,0.9s
GNI Garni 120.42 58 PKP **PKPdf 02 16 37.4 -0.2**
comp=Z,24nm,0.9s,baz=220,slow=2.0,SNR=13
GNI Garni 120.42 58 ePKPdf **PKPdf 02 16 38.1 +0.5**
GNI Garni 120.42 58 PKPdf **PKPdf 02 16 38.1 +0.5**
SNR=6.8
GNI Garni 120.42 58 P **PKPdf 02 16 38.1 +0.5**
SNR=6.8
GUDG Gudauri 120.67 55 P **PKiKP 02 16 39.9 +1.6**
TBLG Delisi 120.73 56 P **PKiKP 02 16 38.5 +0.4**
TBLG Delisi 120.73 56 ePKiKP **PKiKP 02 16 38.5 +0.4**
CTA Charters Tower 124.67 214 PKP **PKPdf 02 16 46.1 -0.2**
comp=Z,16nm,0.6s,baz=156,slow=1.9,SNR=9.5
CTA pPKP **pPKPdf 02 18 56.7 -0.5**
comp=Z,4.9nm,0.8s,baz=0.0,slow=1.0,SNR=3.1
CTA SKiKP **SKiKP 02 19 28.4 -1.1**
comp=Z,19nm,0.9s,baz=238,slow=2.6,SNR=7.5
CTA PKKPbc **PKKPbc 02 26 31.4 +0.8**
comp=Z,8.0nm,0.9s,baz=333,slow=7.6,SNR=5.2
CTAO Charters Tower 124.67 214 ePKiKP **PKPdf 02 16 46.4 +0.2**
CTAO Charters Tower 124.67 214 ePKPdf **PKPdf 02 16 46.4 +0.2**
CTAO eSKPdf **SKPdf 02 19 28.9 +0.2**
FAQ Al Faqa, Dubai 125.57 78 PKPdf **PKPdf 02 16 47.8 0.0**
SNR=6.1
FAQ Al Faqa, Dubai 125.57 78 P **PKPdf 02 16 47.8 0.0**
SNR=6.1
ASHO Ashiyiah 125.95 78 PKPdf **PKPdf 02 16 48.2 -0.4**
SNR=5.8
ASHO Ashiyiah 125.95 78 P **PKPdf 02 16 48.2 -0.4**
SNR=5.8
ARQ Araqi 125.95 80 PKPdf **PKPdf 02 16 48.3 -0.2**
SNR=6.8
ARQ Araqi 125.95 80 P **PKPdf 02 16 48.3 -0.2**
SNR=6.8
HATD Hatta, Dubai 126.06 78 PKPdf **PKPdf 02 16 48.3 -0.4**
SNR=7.6
HATD Hatta, Dubai 126.06 78 P **PKPdf 02 16 48.3 -0.4**
SNR=7.6
UOSS Minazif 126.16 78 ePKPdf **PKPdf 02 16 48.0 -0.9**
ASAR Alice Springs 126.44 200 PKP **PKPdf 02 16 49.1 -0.5**
comp=Z,42nm,0.8s,baz=150,slow=2.1,SNR=196
ASAR pPKP **pPKPdf 02 18 59.6 -1.0**
comp=Z,2.3nm,0.7s,baz=142,slow=2.5,SNR=3.8
ASAR SKPab SKPab 02 19 11.7
comp=Z,8.5nm,0.6s,baz=148,slow=3.5,SNR=17
ASAR PKKPbc **PKKPbc 02 26 23.4 -0.4**
comp=Z,1.8nm,0.3s,baz=339,slow=3.7,SNR=25
SMDO Samad 127.21 81 PKPdf **PKPdf 02 16 50.8 -0.3**
SNR=20
SMDO Samad 127.21 81 P **PKPdf 02 16 50.8 -0.3**
SNR=20
BIDO Bidbid 127.42 80 PKPdf **PKPdf 02 16 51.0 -0.3**
SNR=8.1
BIDO Bidbid 127.42 80 P **PKPdf 02 16 51.0 -0.3**
SNR=8.1
WSAR Wadi Sarin 127.77 81 PKP **PKPdf 02 16 52.1 +0.1**
comp=Z,65nm,0.9s,baz=248,slow=2.7,SNR=47
WSAR pPKP **pPKPdf 02 19 00.5 -2.5**
comp=Z,11nm,0.9s,baz=258,slow=3.9,SNR=5.0
SOKR Solikamsk 128.51 34 *d iPKiKP* **PKPdf 02 16 50.9 -1.3**
SOKR pmax pmax
comp=Z,110nm,1.4s
WRA Warramunga Arr 129.79 202 PKP **PKPdf 02 16 55.9 -0.1**
comp=Z,39nm,0.7s,baz=171,slow=1.6,SNR=85
WRA pPKP **pPKPdf 02 19 06.5 -0.6**
comp=Z,5.1nm,0.7s,baz=175,slow=1.7,SNR=9.3
WRA SKPab SKPbc 02 19 24.9 -1.4
comp=Z,198nm,0.9s,baz=159,slow=3.9,SNR=142
WRA PKKPbc PKKPbc 02 26 09.4
comp=Z,1.1nm,0.5s,baz=344,slow=4.0,SNR=4.8
WRAB Tennant Creek 129.80 202 ePKiKP **PKPdf 02 16 55.5 -0.5**
WRAB *e* 02 19 24.9
WRAB Tennant Creek 129.80 202 ePKPdf **PKPdf 02 16 55.5 -0.5**
WRAB eSKPbc SKPbc 02 19 24.9 -1.5
BILL Bilibino 130.00 338 *d iPKiKP* **PKPdf 02 16 55.5 +0.6**
BILL *i* 02 19 23.2
BILL pmax pmax
comp=Z,53nm,1.1s
BILL Bilibino 130.00 338 ePKPdf **PKPdf 02 16 54.8 -0.1**
BILL eSKPbc SKPab 02 19 26.9 +1.1
ARU Arti 130.01 38 PKP **PKPdf 02 16 55.6 +0.4**
comp=Z,18nm,0.4s,baz=277,slow=1.7,SNR=66
ARU SKPbc SKPbc 02 19 26.1 +0.2
comp=Z,54nm,1.0s,baz=274,slow=2.7,SNR=4.6
ARU Arti 130.01 38 *i PKiKP* **PKPdf 02 16 55.6 +0.4**
ARU 02 19 22.5
ARU SS SS 02 35 52.1 -6.3
ARU Arti 130.01 38 ePKPdf **PKPdf 02 16 55.9 +0.7**
ARU SKPbc SKPbc 02 19 26.1 +0.2
ARU eSKPbc SKPab 02 19 26.3 +0.1
GEYT Alibeck 130.37 62 PKHKP PKPpre 02 16 43.1
comp=Z,1.2nm,0.3s,baz=270,slow=1.5,SNR=4.7
GEYT PKP **PKPdf 02 16 53.2 -3.3**
comp=Z,26nm,1.0s,baz=266,slow=4.3,SNR=33
GEYT SKPbc **SKPbc 02 19 27.9 0.0**
comp=Z,14nm,0.8s,baz=260,slow=5.9,SNR=11
GEYT SKKPbc **SKKPbc 02 29 04.5 -2.7**
comp=Z,2.5nm,0.8s,baz=76,slow=6.3,SNR=4.7
AKTO Aktyubinsk 130.46 46 PKP **PKPdf 02 16 56.8 +0.5**
comp=Z,43nm,1.0s,baz=342,slow=1.7,SNR=4.5
AKTO SKPbc **SKPbc 02 19 28.0 +0.2**
comp=Z,47nm,1.0s,baz=282,slow=2.7,SNR=20
AKTO Aktyubinsk 130.46 46 PKIKP **PKPdf 02 16 56.4 +0.1**
AKTO pmax pmax
comp=Z,107nm,1.3s
SVE Sverdlovsk 131.06 37 *ce PKiKP* **PKPdf 02 16 58.2 +1.0**
SVE pmax pmax
comp=Z,98nm,1.5s
COEN Coen 131.40 215 ePKPdf **PKPdf 02 16 59.2 +0.1**
COEN eSKPbc **SKPbc 02 19 31.9 -0.4**
MBWA Marble Bar 131.49 184 ePKPdf **PKPdf 02 16 58.6 -0.6**
MBWA eSKPbc **SKPbc 02 19 31.8 -0.6**
MBWA eSKPab **SKPab 02 19 34.3 +0.7**
AB31 Akbulak array 131.80 47 *i PKiKP* **PKPdf 02 16 59.3 +0.5**
AB31 pmax pmax
comp=Z,68nm,1.0s
ABKAR Akbulak array 131.80 47 ePKPdf **PKPdf 02 16 59.1 +0.3**
ABKAR eSKPbc **SKPbc 02 19 32.0 -0.6**
PMG Port Moresby 132.88 223 SKPbc **SKPbc 02 19 36.9 -0.5**
comp=Z,152nm,1.1s,baz=114,slow=2.0,SNR=24
PMG Port Moresby 132.88 223 ePKiKP **PKPdf 02 17 02.5 +0.6**
PMG *e* 02 19 37.5
PMG Port Moresby 132.88 223 ePKPdf **PKPdf 02 17 02.5 +0.6**
PMG SKPbc **SKPbc 02 19 36.9 -0.5**
PMG eSKPbc **SKPab 02 19 37.5 -2.3**
FITZ Fitzroy Crossi 133.80 192 PKP **PKPdf 02 17 03.6 0.0**
comp=Z,26nm,0.7s,baz=263,slow=2.3,SNR=38
FITZ pPKP **pPKPdf 02 19 15.0 +0.4**
comp=Z,3.2nm,0.6s,baz=117,slow=4.5,SNR=2.1
FITZ SKPbc **SKPbc 02 19 39.7 -0.6**
comp=Z,159nm,1.2s,baz=234,slow=2.7,SNR=28
NRIK Noril'sk 134.86 14 PKHKP PKPpre 02 16 53.1
comp=Z,1.5nm,0.3s,baz=108,slow=2.7,SNR=9.2
NRIK PKP **PKPdf 02 17 04.2 +0.2**
comp=Z,11nm,0.9s,baz=351,slow=0.4,SNR=20
NRIK SKPbc **SKPbc 02 19 41.3 -0.7**
comp=Z,5.9nm,0.6s,baz=85,slow=1.3,SNR=4.6
NRIK SKKPbc **SKKPbc 02 28 48.9 -3.8**
comp=Z,11nm,0.9s,baz=113,slow=4.3,SNR=8.6
TIXI Tiksi 135.34 355 PKHKP PKPpre 02 16 47.8
comp=Z,1.6nm,0.3s,baz=25,slow=3.6,SNR=5.4
TIXI PKP **PKPdf 02 17 02.6 -2.2**
comp=Z,9.3nm,0.3s,baz=97,slow=2.0,SNR=14
TIXI SKPbc **SKPbc 02 19 43.0 -0.4**
comp=Z,35nm,0.9s,baz=35,slow=2.9,SNR=20
TIXI Tiksi 135.34 355 ePKPpre PKPpre 02 16 59.0
TIXI ePKPdf **PKPdf 02 17 04.8 0.0**
TIXI SKPbc **SKPbc 02 19 43.0 -0.4**
ZRNK Zerenda 136.71 41 PKHKP PKPpre 02 16 57.1
ZRNK pmax pmax
comp=Z,142nm,1.2s
CHKZ Chkalovo 137.41 39 PKHKP PKPpre 02 16 59.0
CHKZ pmax pmax
comp=Z,98nm,1.3s
BRVK Borovoye 137.42 40 *d iPKiKP* **PKPdf 02 17 10.3 +1.1**
BRVK Borovoye 137.42 40 ePKPpre PKPpre 02 16 59.5
BRVK ePKPdf **PKPdf 02 17 09.6 +0.4**
BRVK eSKPbc **SKPbc 02 19 51.2 +1.1**
BRVK Borovoye 137.42 40 PKPdf **PKPdf 02 17 10.5 +1.3**
SNR=15
BRVK Borovoye 137.42 40 P **PKPdf 02 17 10.5 +1.3**
SNR=15
BVA0 Borovoye Array 137.49 40 *i PKIKP* **PKPdf 02 17 10.1 +0.8**
BVA0 pmax pmax
comp=Z,43nm,0.8s
BVAR Borovoye Array 137.49 40 PKHKP PKPpre 02 16 59.2
comp=Z,3.2nm,0.4s,baz=293,slow=1.6,SNR=18
BVAR PP **PKPdf 02 17 10.3 +0.9**
comp=Z,20nm,0.5s,baz=277,slow=2.3,SNR=50
BVAR pPKP pPKPdf 02 19 22.0 +1.5
comp=Z,4.7nm,0.7s,baz=300,slow=2.9,SNR=4.6
BVAR SKPbc **SKPbc 02 19 50.2 -0.1**
comp=Z,30nm,0.8s,baz=279,slow=3.9,SNR=22
BVAR SKKPbc **SKKPbc 02 28 38.0 -4.0**
comp=Z,12nm,0.9s,baz=108,slow=3.5,SNR=15
SEY Seymchan 137.65 337 PKHKP PKPpre 02 16 59.0
comp=Z,4.0nm,0.3s,baz=118,slow=4.5,SNR=22
SEY PKP **PKPdf 02 17 09.2 -0.1**
comp=Z,74nm,0.9s,baz=76,slow=1.8,SNR=50
SEY pPKP pPKPdf 02 19 21.7 +1.2
comp=Z,7.4nm,0.8s,baz=70,slow=2.1,SNR=5.5
SEY SKPbc **SKPbc 02 19 50.9 +0.5**
comp=Z,53nm,1.1s,baz=72,slow=2.6,SNR=18
SEY SKKPbc **SKKPbc 02 28 39.4 -2.5**
comp=Z,13nm,1.2s,baz=245,slow=7.1,SNR=8.2
VOSK Vostochnaya 137.93 41 PKHKP PKPpre 02 17 00.5
VOSK pmax pmax
comp=Z,64nm,1.0s
KK31 Karatay Array 139.77 55 *i PKHKP* **PKPpre 02 17 05.2**
KK31 pmax pmax
comp=Z,27nm,1.3s
KKAR Karatay Array 139.77 55 ePKHKP PKPpre 02 17 05.3
KKAR *e* 02 17 13.9
KKAR Karatay Array 139.77 55 ePKPpre PKPpre 02 17 05.3
KKAR ePKPdf **PKPdf 02 17 13.9 +0.1**
KKAR eSKPbc **SKPbc 02 19 57.7 +0.7**
MA2 Magadan 140.38 333 PKHKP PKPpre 02 17 08.2
comp=Z,23nm,0.9s,baz=73,slow=3.1,SNR=10
MA2 SKPbc **SKPbc 02 19 57.1 -0.9**
comp=Z,40nm,1.1s,baz=124,slow=3.6,SNR=6.1
PETK Petropavlovsk- 140.45 322 PKHKP PKPpre 02 17 09.5
comp=Z,8.8nm,0.8s,baz=95,slow=5.7,SNR=38
PETK SKPbc **SKPbc 02 19 57.9 -0.5**
comp=Z,60nm,1.0s,baz=108,slow=4.8,SNR=21
PETK SKKPbc **SKKPbc 02 28 30.0 -0.5**
comp=Z,4.5nm,0.9s,baz=223,slow=7.9,SNR=3.5
URV Uravakonda 141.33 101 ePKPdf PKPpre 02 17 11.7
KLRI Killari 142.00 96 ePKPdf PKPpre 02 17 14.4
JAY Jayapura 142.21 222 PKHKP PKPpre 02 17 15.6
comp=Z,2.4nm,1.0s,baz=107,slow=19,SNR=6.6
JAY SKPbc **SKPbc 02 20 04.3 +0.2**
comp=Z,7.1nm,0.9s,baz=172,slow=23,SNR=19
EKS2 Erkin-Say 142.21 55 ePKHKP PKPpre 02 17 15.0
EKS2 *e* 02 20 30.8
EKS2 Erkin-Say 142.21 55 ePKPpre PKPpre 02 17 15.0
EKS2 eSKPbc **SKPbc 02 20 04.6 +1.2**
EKS2 ePP **PP 02 20 30.8 -1.8**
SKR Severo-Kuril's 142.31 319 ePKHKP PKPpre 02 17 08.6
SKR pmax pmax
comp=Z,270nm,1.0s
AAK Ala-Archa 142.74 55 PKP **PKPdf 02 17 18.0 -1.3**
comp=Z,46nm,0.3s,baz=223,slow=1.7,SNR=259
AAK SKPbc **SKPbc 02 20 04.9 +0.2**
comp=Z,37nm,1.0s,baz=199,slow=3.0,SNR=9.0
AAK SKKPbc **SKKPab 02 28 19.2 -1.7**
comp=Z,31nm,0.8s,baz=126,slow=4.5,SNR=53
AAK Ala-Archa 142.74 55 ePKPdf **PKPdf 02 17 17.6 -1.8**
AAK SKPbc **SKPbc 02 20 04.9 +0.2**
AAK SKKPbc **SKKPab 02 28 19.2 -1.7**
AAK Ala-Archa 142.74 55 PKPdf **PKPdf 02 17 17.4 -1.9**
SNR=159
FRU Bishkek 142.79 55⇓ iPKIKP **PKPdf 02 17 17.0 -2.3**
FRU pmax pmax
comp=Z,600nm,2.0s
SKHT Srikalahasti 142.92 104 ePKPdf **PKPdf 02 17 17.6 -2.6**
RCLA Racherla 143.03 101 ePKPdf PKPab 02 17 17.2 -0.8
KURBB Kurchatov Arra 143.07 41 PKP PKPbc 02 17 18.1 +0.4
KURBB SKPbc **SKPbc 02 20 05.5 +0.5**
comp=Z,298nm,0.9s,baz=297,slow=3.7,SNR=426
KURBB SKKPbc **SKKPab 02 28 15.9 -3.2**
comp=Z,41nm,0.9s,baz=294,slow=3.1,SNR=18
KURK Kurchatov 143.08 41 PKIKP PKPbc 02 17 18.1 +0.4
KURK pmax pmax
comp=Z,4.1nm,0.8s,baz=111,slow=4.2,SNR=10
comp=Z,221nm,1.0s
KURK pmax pmax

	comp=N,41nm,0.9s								
KURK	**Kurchatov**	**143.08**	**41**	*e*PKPdf	PKPbc	02 17 18.3	+0.6		
KURK				SKPbc	**SKPbc**	**02 20 05.5**	**+0.5**		
KURK				*e*SKPbc	**SKiKP**	**02 20 05.9**	**-0.1**		
KURK				SKKPbc	**SKKPab**	**02 28 15.9**	**-3.1**		
KURK	**Kurchatov**	**143.08**	**41**	PKPbc	PKPbc	02 17 18.0	+0.4		
	SNR=234								
KURK	**Kurchatov**	**143.08**	**41**	P	PKPbc	02 17 18.0	+0.4		
	SNR=234								
SRLM	**Srisailam**	**143.24**	**100**	*e*PKPbc	PKPab	02 17 17.4	-1.4		
HYB	**Hyderabad**	**143.47**	**98**	*i* PKP	PKPab	02 17 19.0	-0.7		
HYB				*e*		02 20 06.0			
HYBB	**Hyderabad (bro**	**143.47**	**98**	*e*PKPab	PKPab	02 17 18.4	-1.4		
TKM2	**Tokmak 2**	**143.48**	**54**	PKIKP	PKPbc	02 17 20.1	+0.6		
TKM2				pmax	pmax				
	comp=Z,927nm,1.3s								
TKM2	**Tokmak 2**	**143.48**	**54**	*e*PKPdf	PKPbc	02 17 19.6	+0.2		
TKM2				*e*SKPbc	**SKPbc**	**02 20 07.5**	**+1.0**		
NVS	**Novosibirsk**	**143.49**	**32**	*e*PKIKP	**PKPdf**	**02 17 20.1**	**+0.1**		
NVS				pmax	pmax				
	comp=Z,641nm,1.1s								
NVS				pmax	pmax				
	comp=N,54nm,0.8s								
NVS				pmax	pmax				
	comp=E,33nm,0.4s								
NJS	**Nagarjunasagar**	**143.79**	**100**	*e*PKPbc	PKPbc	02 17 19.3	-1.5		
SRSP	**Sriramsagar**	**143.85**	**95**	*e*PKPbc	PKPbc	02 17 19.4	-1.6		
ADKI	**Addanki**	**144.07**	**101**	*e*PKPdf	PKPbc	02 17 20.9	-0.8		
KSH	**Kashi**	**144.30**	**60**	PKP	PKPbc	02 17 21.8	-0.2		
KSH				*e*pPKP	pPKPdf	02 19 27.5	-5.9		
KSH				*e*sPKP		02 20 21.0			
KSH				*e*PP	**PP**	**02 20 42.8**	**-2.3**		
KSH				PKS	**PKSdf**	**02 20 58.8**	**+1.1**		
KSH				SKS	**SKSdf**	**02 23 39.6**	**+1.0**		
KSH				SKKS	**SKKSac**	**02 26 37.5**	**-3.2**		
THN	**Thein Dam**	**144.33**	**72**	⇓*i* PN	PKPbc	02 17 21.0	-1.1		
YAK	**Yakutsk**	**144.45**	**350**	PKP	**PKPdf**	**02 17 20.9**	**-0.5**		
	comp=E,92nm,0.3s,baz=17,slow=1.2,SNR=72								
YAK				SKPbc	**SKPbc**	**02 20 08.0**	**+0.2**		
	comp=E,36nm,0.6s,baz=263,slow=1.2,SNR=5.5								
YAK	**Yakutsk**	**144.45**	**350**	*d i* PKIKP	PKPbc	02 17 21.7	+0.2		
YAK				*e*		02 20 42.5			
YAK				pmax	pmax				
	comp=Z,509nm,1.1s								
YAK				pmax	pmax				
	comp=E,47nm,1.5s								
YAK				pmax	pmax				
	comp=N,127nm,1.4s								
YAK				pmax	pmax				
	comp=Z,206nm,1.9s								
YAK				pmax	pmax				
	comp=N,207nm,1.9s								
YAK				pmax	pmax				
	comp=E,72nm,2.3s								
YAK	**Yakutsk**	**144.45**	**350**	*e*PKPdf	PKPbc	02 17 21.6	+0.1		
YAK				SKPbc	**SKPbc**	**02 20 08.0**	**+0.2**		
YAK				*e*SKPbc	**SKiKP**	**02 20 08.3**	**-0.1**		
YAK				*e*PP	**PP**	**02 20 44.2**	**-0.2**		
RPR	**Rampur**	**144.66**	**96**	*e*PKPab	**PKPdf**	**02 17 22.9**	**-0.3**		
LEM	**Lembang**	**144.72**	**164**	PKP	**PKPab**	**02 17 29.2**	**+4.6**		
	comp=E,866nm,0.7s,baz=131,slow=1.2,SNR=118								
LEM				SKPbc	**SKiKP**	**02 20 16.1**	**+5.3**		
	comp=E,247nm,1.0s,baz=151,slow=3.7,SNR=10.0								
ZALV	**Zalesovo Beam**	**144.76**	**33**	PKP	PKPbc	02 17 23.1	+0.3		
	comp=E,108nm,0.4s,baz=297,slow=3.8,SNR=637								
ZALV				SKPbc	**SKPbc**	**02 20 08.9**	**+0.1**		
	comp=E,68nm,0.8s,baz=297,slow=3.2,SNR=9.8								
ZALV				SKKPbc	**SKKPab**	**02 28 05.5**	**-6.1**		
	comp=E,6.5nm,0.7s,baz=133,slow=4.1,SNR=9.4								
SDNR	**Sundarnagar**	**145.34**	**74**	*e*P	**PKPab**	**02 17 26.0**	**-0.6**		
PVM	**Polavaram**	**146.10**	**100**	*e*PKPbc	**PKPdf**	**02 17 26.1**	**+0.5**		
MK31	**Makanchi Array**	**146.89**	**45**	*i* PKIKP	**PKPdf**	**02 17 26.7**	**+0.6**		
MK31				pmax	pmax				
	comp=Z,664nm,1.3s								
MKAR	**Makanchi Array**	**146.89**	**45**	PKPbc	**PKPdf**	**02 17 27.3**	**+1.2**		
	comp=Z,128nm,0.6s,baz=290,slow=2.0,SNR=371								
MKAR				pPKPbc	pPKPbc	02 19 38.5	+0.4		
	comp=Z,19nm,0.8s,baz=318,slow=3.3,SNR=5.3								
MKAR				SKPbc	**SKPbc**	**02 20 14.3**	**+0.4**		
	comp=Z,14nm,0.7s,baz=289,slow=1.5,SNR=3.4								
MKAR				SKKPbc	**SKKPab**	**02 27 56.7**	**-5.6**		
	comp=Z,14nm,0.9s,baz=87,slow=5.5,SNR=13								
KAPI	**Kappang**	**147.49**	**186**	PKPbc	**PKPbc**	**02 17 31.2**	**-0.3**		
	comp=Z,135nm,0.8s,baz=256,slow=2.5,SNR=64								
KAPI				pPKPbc	**pPKPbc**	**02 19 40.0**	**-0.7**		
	comp=Z,19nm,0.8s,baz=220,slow=3.7,SNR=3.9								
KAPI	**Kappang**	**147.49**	**186**	*e*PKPdf	**PKPdf**	**02 17 28.6**	**+0.5**		
KAPI				*e*PKPbc	**PKPbc**	**02 17 32.2**	**+0.7**		
KAPI				pPKPbc	**pPKPbc**	**02 19 40.0**	**-0.7**		
KAPI	**Kappang**	**147.49**	**186**	PKPdf	**PKPdf**	**02 17 28.9**	**+0.8**		
	SNR=48								
KAPI	**Kappang**	**147.49**	**186**	P	**PKPdf**	**02 17 28.9**	**+0.8**		
	SNR=48								
CHLP	**Challavanipeta**	**148.72**	**100**	*e*PKPdf	**PKPdf**	**02 17 30.1**	**+0.2**		
CHLP				*e*PKPbc	**PKPbc**	**02 17 33.7**	**-0.8**		
NKL	**Nikolayevsk**	**148.85**	**332**	*e*PKIKP	**PKPdf**	**02 17 28.0**	**-1.0**		
NKL				*e*		02 19 38.0			
NKL				pmax	pmax				
	comp=Z,1μm,2.0s								
NKL				pmax	pmax				
	comp=N,34nm,1.0s								
NKL				pmax	pmax				
	comp=E,17nm,1.0s								
NKL				pmax	pmax				
	comp=Z,370nm,1.0s								
TYV	**Tymovskoe**	**149.52**	**327**	*e*PKHKP	PKPpre	02 17 31.0			
TYV				pmax	pmax				
	comp=Z,167nm,1.0s								
BOD	**Bodaibo**	**149.69**	**3**	*e*PKIKP	**PKPdf**	**02 17 30.3**	**+0.1**		
BOD				pmax	pmax				
	comp=Z,224nm,1.3s								
PSI	**Prapat**	**150.09**	**142**	PKP	**PKPdf**	**02 17 32.3**	**-0.1**		
	comp=Z,32nm,1.1s,baz=216,slow=3.9,SNR=19								
PSI				PKPbc	**PKPbc**	**02 17 37.8**	**-0.3**		
	comp=Z,169nm,0.8s,baz=210,slow=1.4,SNR=63								
PSI				PKPab	**PKPab**	**02 17 46.6**	**+0.2**		
	comp=Z,85nm,0.7s,baz=205,slow=6.1,SNR=16								
PSI				pPKPbc	**pPKPbc**	**02 19 47.8**	**-0.3**		
	comp=Z,18nm,0.8s,baz=233,slow=5.3,SNR=7.0								
CLNS	**Chul'man**	**150.15**	**351**	*e*PKIKP	**PKPdf**	**02 17 32.0**	**+0.9**		
CLNS				pmax	pmax				
	comp=Z,291nm,1.1s								
CLNS				pmax	pmax				
	comp=N,91nm,1.2s								
CLNS				pmax	pmax				
	comp=E,56nm,1.1s								
PYUN	**Piuthan**	**150.24**	**81**	*e*P	**PKPdf**	**02 17 32.7**	**+0.4**		
GUMO	**Guam**	**150.28**	**248**	PKPbc	**PKPbc**	**02 17 37.9**	**-0.4**		
	comp=E,86nm,0.3s,baz=163,slow=2.9,SNR=25								
GUMO	**Guam**	**150.28**	**248**	PKPbc	**PKPbc**	**02 17 37.6**	**-0.6**		
KOLN	**Koldanda**	**150.74**	**82**	*e*P	**PKPdf**	**02 17 33.3**	**+0.2**		
WMQ	**Urumqi**	**151.59**	**48**	PKPbc	**PKPdf**	**02 17 34.3**	**+0.6**		
WMQ				PKPab	**PKPab**	**02 17 53.0**	**+1.1**		
WMQ				pPKP	pPKPdf	02 19 45.4	+0.1		
WMQ				PKS	**PKSdf**	**02 21 07.5**	**-0.7**		
WMQ				PP	**PP**	**02 21 28.8**	**+2.3**		
WMQ				SKS	**SKSdf**	**02 23 44.6**	**-3.6**		
WMQ				SS	**SS**	**02 40 07.3**	**+0.4**		
WMQ				AMB	AMB				
	comp=E,84nm,10.1s								
GKN	**Gorkha**	**151.67**	**82**	*e*P	**PKPdf**	**02 17 34.6**	**+0.2**		
YSS	**Yuzh-Sakhalins**	**151.83**	**320**	*e*PKIKP	**PKPbc**	**02 17 39.2**	**-1.6**		
YSS	**Yuzh-Sakhalins**	**151.83**	**320**	*e*PKPdf	**PKPdf**	**02 17 34.4**	**+0.5**		
YSS				*e*PKPbc	**PKiKP**	**02 17 41.4**	**+0.3**		
YSS				*e*PKPab	**PKPab**	**02 17 53.8**	**+1.1**		
DMN	**Daman**	**152.04**	**82**	*e*P	**PKPdf**	**02 17 35.5**	**+0.4**		
KKN	**Kakani**	**152.21**	**82**	*e*P	**PKPdf**	**02 17 35.6**	**+0.3**		
PKIN	**Phulchoki**	**152.29**	**83**	*e*P	**PKPdf**	**02 17 35.9**	**+0.4**		
IPM	**Ipoh**	**152.62**	**144**	*e*PKPdf	**PKPdf**	**02 17 36.2**	**+0.2**		
IPM				*e*PKPbc	**PKPbc**	**02 17 43.4**	**-0.2**		
IPM				*e*PKPab	**PKPab**	**02 17 56.3**	**-0.6**		
GUN	**Gumba**	**152.75**	**82**	*e*P	**PKPdf**	**02 17 36.6**	**+0.3**		
JIRN	**Jiri**	**153.00**	**83**	*e*P	**PKPdf**	**02 17 36.8**	**+0.1**		
KULM	**Kulim**	**153.11**	**143**	*e*PKPdf	**PKPdf**	**02 17 36.9**	**+0.2**		
KULM				*e*PKPbc	**PKPbc**	**02 17 44.4**	**-0.2**		
KULM				*e*PKPab	**PKPab**	**02 17 58.5**	**-0.4**		
MOY	**Mondy**	**153.16**	**22**	*e*PKIKP	**PKPdf**	**02 17 36.9**	**+1.1**		
MOY				*e*		02 19 47.8			
MOY				pmax	pmax				
	comp=Z,215nm,2.0s								
ASAJ	**Asahikawa**	**153.43**	**315**	PKPbc	**PKPbc**	**02 17 45.2**	**+0.8**		
	comp=Z,45nm,1.0s,baz=85,slow=5.0,SNR=6.8								
ASAJ	**Asahikawa**	**153.43**	**315**	*e*PKPdf	**PKPdf**	**02 17 36.3**	**0.0**		
ASAJ				*e*PKPbc	**PKiKP**	**02 17 44.7**	**+0.2**		
ASAJ				PKPbc	**PKPbc**	**02 17 45.2**	**+0.8**		
IRK	**Irkutsk**	**153.64**	**17**	*e*PKIKP	**PKPdf**	**02 17 36.6**	**+0.3**		
IRK				*e*		02 18 00.7			
IRK				pmax	pmax				
	comp=Z,148nm,2.3s								
PKDT	**Phuket**	**153.84**	**135**	P	**PKPdf**	**02 17 38.5**	**+0.8**		
	comp=Z,86nm,1.1s								
TLY	**Talaya**	**153.97**	**19**	PKPbc	**PKPbc**	**02 17 45.8**	**+0.5**		
	comp=Z,13nm,0.7s,baz=221,slow=2.7,SNR=4.1								
TLY				PKPab	**PKPab**	**02 18 01.5**	**-0.2**		
	comp=Z,82nm,1.1s,baz=324,slow=3.9,SNR=21								
TLY	**Talaya**	**153.97**	**19**	*c i* PKIKP	**PKPdf**	**02 17 37.5**	**+0.7**		
TLY				*e*		02 17 59.5			
TLY				pmax	pmax				
	comp=Z,34nm,1.8s								
TLY	**Talaya**	**153.97**	**19**	PKPdf	**PKPdf**	**02 17 38.1**	**+1.3**		
	SNR=8.4								
TLY	**Talaya**	**153.97**	**19**	P	**PKPdf**	**02 17 38.1**	**+1.3**		
	SNR=8.4								
TRTT	**Trang**	**154.63**	**137**	P	**PKPdf**	**02 17 39.1**	**+0.3**		
SKLT	**Songkhla**	**154.64**	**140**	P	**PKPdf**	**02 17 39.6**	**+0.8**		
	comp=Z,62nm,1.4s								
HABR	**Khabarovsk**	**154.72**	**331**	*de*PKIKP	**PKPdf**	**02 17 36.8**	**-1.1**		
HABR				*e*		02 19 50.2			
HABR				*e*		02 21 43.5			
HABR				*e*		02 23 49.7			
HABR				*e*PPP	PPP	02 25 20.9			
HABR				*e*SS	SS	02 40 41.2	+1.9		
HABR				*e*SSS	SSS	02 46 47.0			
HABR				pmax	pmax				
	comp=E,24nm,1.5s								
HABR				pmax	pmax				
	comp=Z,122nm,1.6s								
HABR				pmax	pmax				
	comp=N,25nm,1.5s								
SURT	**Suratani**	**154.94**	**134**	P	**PKPdf**	**02 17 39.7**	**+0.5**		
	comp=N,25nm,1.4s								
KLR	**Kul'dur**	**155.44**	**336**	PKP	**PKPdf**	**02 17 38.8**	**0.0**		
	comp=N,34nm,1.1s,baz=14,slow=2.5,SNR=35								
KLR				PKPab	**PKPab**	**02 18 08.2**	**+0.2**		
	comp=N,10nm,0.4s,baz=38,slow=4.1,SNR=8.6								
KLR				PP	**PP**	**02 21 44.5**	**-2.6**		
	comp=N,20nm,1.1s,baz=44,slow=5.4,SNR=9.6								
BTM	**Bintulu**	**155.54**	**171**	⇑P	**PKPdf**	**02 17 41.4**	**+1.3**		
LSA	**Lhasa**	**157.49**	**78**	*e*PKIKP	**PKPdf**	**02 17 43.3**	**+0.6**		
LSA	**Lhasa**	**157.49**	**78**	*e*PKPdf	**PKPdf**	**02 17 43.3**	**+0.6**		
LSA				*e*PKPab	**PKPab**	**02 18 19.0**	**+0.7**		
MYLDM	**Lahad Datu**	**157.69**	**185**	⇑P	**PKPdf**	**02 17 44.9**	**+2.1**		
SHL	**Shillong**	**157.73**	**89**	*i* P	**PKPdf**	**02 17 42.5**	**-0.2**		
SHL				*ex*	x	02 27 50.0			
HIA	**Hailar**	**158.19**	**355**	*e*PKIKP	**PKPdf**	**02 17 41.9**	**-0.4**		
HIA				*e*		02 18 20.8			
HIA	**Hailar**	**158.19**	**355**	*e*PKPdf	**PKPdf**	**02 17 41.9**	**-0.4**		
HIA				*e*PKPab	**PKPab**	**02 18 20.8**	**+0.8**		
SDKM	**Sandakan**	**158.21**	**181**	⇑P	**PKPdf**	**02 17 43.3**	**-0.2**		
SONM	**Songino Array**	**158.21**	**19**	PKP	**PKPdf**	**02 17 43.2**	**+0.7**		
	comp=N,46nm,1.0s,baz=276,slow=0.7,SNR=192								
SONM				PKPab	**PKPab**	**02 18 20.5**	**+0.3**		
	comp=N,22nm,0.8s,baz=305,slow=3.2,SNR=14								
SONM				pPKP	**pPKPdf**	**02 19 54.5**	**0.0**		
	comp=N,4.9nm,0.8s,baz=308,slow=3.1,SNR=4.1								
SONM				PP	**PP**	**02 22 00.9**	**-1.2**		
	comp=N,4.8nm,1.1s,baz=298,slow=5.4,SNR=4.9								
ULN	**Ulaanbaatar**	**158.37**	**18**	*e*PKIKP	**PKPdf**	**02 17 43.4**	**+0.6**		
ULN				*e*		02 18 22.0			
ULN				*e*		02 22 02.2			
ULN	**Ulaanbaatar**	**158.37**	**18**	*e*PKPdf	**PKPdf**	**02 17 43.4**	**+0.6**		
ULN				*e*PKPab	**PKPab**	**02 18 22.0**	**+1.1**		
ULN				*e*PP	**PP**	**02 22 02.2**	**-0.8**		
ULN	**Ulaanbaatar**	**158.37**	**18**	PKPdf	**PKPdf**	**02 17 43.8**	**+1.0**		
	SNR=47								
ULN	**Ulaanbaatar**	**158.37**	**18**	P	**PKPdf**	**02 17 43.8**	**+1.0**		
	SNR=47								
PHET	**Kaeng Krachan**	**158.40**	**129**	P	**PKPdf**	**02 17 44.5**	**+0.9**		
	comp=N,16nm,1.1s								
PHET	**Kaeng Krachan**	**158.40**	**129**	P	**PKPdf**	**02 17 44.5**	**+0.9**		
KKM	**Kota Kinabalu**	**158.61**	**179**	*e*PKPdf	**PKPdf**	**02 17 44.0**	**0.0**		
KKM				*e*PKPab	**PKPab**	**02 18 22.7**	**0.0**		
KHLT	**Khaolaem Dam**	**158.92**	**123**	P	**PKPdf**	**02 17 44.9**	**+0.8**		
USRK	**Ussuriysk Ar.**	**159.33**	**327**	PKP	**PKPdf**	**02 17 43.4**	**-0.4**		
	comp=N,7.3nm,1.0s,baz=276,slow=1.7,SNR=14								
USRK				PKPab	**PKPab**	**02 18 25.1**	**0.0**		
	comp=N,7.5nm,0.7s,baz=18,slow=3.9,SNR=9.7								
USRK				PP	**PP**	**02 22 09.8**	**+1.5**		
	comp=N,5.5nm,0.9s,baz=46,slow=5.5,SNR=5.1								
MJAR	**Matsushiro Arr**	**159.71**	**302**	PKP	**PKPdf**	**02 17 44.1**	**-0.4**		
	comp=N,7.0nm,1.0s,baz=67,slow=0.9,SNR=14								
MJAR				PKPab	**PKPab**	**02 18 27.2**	**+0.1**		
	comp=N,23nm,1.1s,baz=83,slow=3.3,SNR=18								
MAJO	**Matsushiro**	**159.71**	**302**	*e*PKIKP	**PKPdf**	**02 17 44.3**	**-0.2**		
MAJO				*e*		02 18 27.8			
MAJO	**Matsushiro**	**159.71**	**302**	*e*PKPdf	**PKPdf**	**02 17 44.2**	**-0.2**		
MAJO				*e*PKPab	**PKPab**	**02 18 27.8**	**+0.6**		
MAT	**Matsushiro**	**159.71**	**302**	PKP	**PKPdf**	**02 17 44.1**	**-0.4**		
MDJ	**Mudanjiang**	**160.08**	**332**	PKP	**PKPdf**	**02 17 44.1**	**-0.5**		
MDJ	**Mudanjiang**	**160.08**	**332**	*e*PKPdf	**PKPdf**	**02 17 44.2**	**-0.4**		
MDJ				*e*PKPab	**PKPab**	**02 18 28.8**	**+0.4**		
MHMT	**Maesarieng**	**160.38**	**114**	P	**PKPdf**	**02 17 46.6**	**+0.9**		
	comp=N,47nm,1.2s								
NAYO	**Nakonayok**	**160.55**	**130**	P	**PKPdf**	**02 17 46.5**	**+0.5**		
	comp=N,54nm,1.2s								
CMAR	**Chiang Mai Arr**	**161.34**	**115**	PKP	**PKPdf**	**02 17 46.9**	**+0.2**		
	comp=N,14nm,1.0s,baz=253,slow=2.4,SNR=88								
CMAR				PKPab	**PKPab**	**02 18 34.2**	**-0.5**		
	comp=N,9.4nm,0.8s,baz=244,slow=4.4,SNR=12								
CMAR				SKP		02 20 26.1			
	comp=N,4.9nm,1.1s,baz=250,slow=2.3,SNR=4.8								
CMAR				PP	**PP**	**02 22 18.2**	**-1.8**		
	comp=N,8.7nm,1.1s,baz=249,slow=5.6,SNR=11								
SUKH	**Sukhothai**	**161.34**	**119**	P	**PKPdf**	**02 17 47.5**	**+0.8**		
	comp=N,13nm,1.1s								
CHTO	**Chiang Mai**	**161.53**	**114**	P	**PKPdf**	**02 17 47.1**	**+0.1**		
	comp=N,198nm,1.6s								
CHTO	**Chiang Mai**	**161.53**	**114**	⇓*e*PKIKP	**PKPdf**	**02 17 47.0**	**+0.1**		
CHTO				*e*		02 18 34.9			
CHTO				*e*		02 22 19.1			
CHTO	**Chiang Mai**	**161.53**	**114**	⇓*e*PKP	**PKPdf**	**02 17 47.0**	**+0.1**		
CHTO				*e*PKPab	**PKPab**	**02 18 34.9**	**-0.6**		
CHTO				*e*PP	**PP**	**02 22 19.1**	**-1.9**		
CHTO	**Chiang Mai**	**161.53**	**114**	PKPdf	**PKPdf**	**02 17 47.7**	**+0.7**		
	SNR=34								
CHTO	**Chiang Mai**	**161.53**	**114**	P	**PKPdf**	**02 17 47.7**	**+0.7**		
	SNR=34								
CMMT	**Chiang Mai**	**161.53**	**114**	P	**PKPdf**	**02 17 47.0**	**+0.1**		
	comp=N,44nm,1.4s								
GTA	**Gaotai**	**161.65**	**46**	⇓PKP	**PKPdf**	**02 17 47.4**	**+0.8**		
GTA				PKPab	**PKPab**	**02 18 36.5**	**+0.8**		
GTA				pPKP	pPKPdf	02 20 01.5	+2.7		
GTA				PP	**PP**	**02 22 25.9**	**+4.7**		
GTA				SKS	**SKSdf**	**02 24 00.0**	**+1.1**		
GTA				SKKS	**SKKSac**	**02 28 18.9**	**+4.9**		
GTA				SS	**SS**	**02 41 59.8**	**+6.5**		
GTA				AMB	AMB				
	comp=N,150nm,5.0s								
PHIT	**Phitsanulok**	**161.77**	**121**	P	**PKPdf**	**02 17 48.8**	**+1.6**		
LAMP	**Lampang**	**161.93**	**116**	P	**PKPdf**	**02 17 48.3**	**+1.0**		
	comp=N,19nm,1.1s								
CHAI	**Chaiyaphum**	**162.10**	**127**	P	**PKPdf**	**02 17 47.9**	**+0.3**		
	comp=N,14nm,1.3s								
CN2	**Changchun**	**162.31**	**339**	*e*P	**PKPab**	**02 18 37.4**	**-0.8**		
CN2				pmax	pmax				
	comp=Z,20nm,1.0s								
CN2	**Changchun**	**162.31**	**339**	*e*PKP	**PKPdf**	**02 17 43.8**	**-3.2**		
KHON	**Khomkaen**	**162.99**	**128**	P	**PKPdf**	**02 17 49.3**	**+0.9**		
	comp=Z,16nm,1.3s								
NONG	**Nongkai**	**164.35**	**124**	P	**PKPdf**	**02 17 49.8**	**+0.2**		
SNY	**Shenyang**	**164.68**	**340**	⇑P	**PKPab**	**02 18 49.4**	**+0.8**		
SNY				pmax	pmax				
	comp=Z,68nm,1.1s								
SNY	**Shenyang**	**164.68**	**340**	PKP	**PKPdf**	**02 17 49.8**	**+0.6**		
PANO	**Nakornpanom**	**164.78**	**130**	P	**PKPdf**	**02 17 50.2**	**+0.2**		
HHC	**Hu-ho-hao-te**	**166.08**	**16**	*e*PKP	**PKPdf**	**02 17 51.9**	**+1.4**		
HHC				pPKP	pPKPdf	02 20 00.1	-2.8		
HHC				sPKP		02 20 54.3			
HHC				PP	**PP**	**02 22 48.0**	**+4.8**		
HHC				SS	SS	02 42 41.8	+5.3		
HHC				AMB	AMB				
	comp=Z,150nm,8.6s								
LZH	**Lanzhou**	**166.16**	**49**	*e*PKP	**PKPdf**	**02 17 52.3**	**+1.5**		
LZH				pPKP	pPKPdf	02 20 04.6	+1.4		
LZH				sPKP		02 20 58.3			
LZH				PP	**PP**	**02 22 46.8**	**+2.1**		
LZH				SS	SS	02 42 37.0	-2.4		
LZH				AMB	AMB				
	comp=Z,440nm,5.4s								
KSRS	**Korea Array**	**166.33**	**319**	PKP	**PKPdf**	**02 17 50.9**	**+0.2**		
	comp=Z,10nm,0.9s,baz=128,slow=0.6,SNR=28								
KSRS				PKPab	**PKPab**	**02 18 56.9**	**+0.8**		
	comp=Z,8.6nm,0.7s,baz=51,slow=4.5,SNR=15								
KSRS				PP	**PP**	**02 22 45.3**	**+0.3**		
	comp=Z,5.4nm,1.1s,baz=16,slow=4.8,SNR=3.2								
KSRS	**Korea Array**	**166.33**	**319**	PKIKP	**PKPdf**	**02 17 50.9**	**+0.2**		
KSRS						02 18 56.9			
KSRS						02 22 45.3			
KSRS				pmax	pmax				
	comp=Z,8.0nm,0.9s								
KSRS				pmax	pmax				
	comp=Z,9.0nm,0.7s								
KSRS				pmax	pmax				
	comp=Z,5.0nm,1.1s								
KSAR	**Wonju Array Be**	**166.36**	**319**	PKIKP	**PKPdf**	**02 17 50.9**	**+0.2**		
KSAR						02 18 56.9			
KSAR						02 22 45.3			
KSAR	**Wonju Array Be**	**166.36**	**319**	PKP	**PKPdf**	**02 17 50.9**	**+0.2**		
KSAR				PKPab	**PKPab**	**02 18 56.9**	**+0.6**		
KSAR				PP	**PP**	**02 22 45.3**	**+0.1**		
KMI	**Kunming**	**167.25**	**98**	PKP	**PKPdf**	**02 17 51.5**	**-0.5**		
BJT	**Baijiatuau**	**167.56**	**2**	*e*PKIKP	**PKPdf**	**02 17 52.2**	**+0.7**		
BJT				*e*		02 19 01.1			
BJT	**Baijiatuau**	**167.56**	**2**	*e*PKPdf	**PKPdf**	**02 17 52.2**	**+0.7**		
BJT				*e*PKPab	**PKPab**	**02 19 01.1**	**-0.2**		
DL2	**Dalian**	**167.95**	**341**	⇓PKP	**PKPdf**	**02 17 52.1**	**+0.3**		
DL2				pPKP	**pPKPdf**	**02 20 06.3**	**+2.1**		
DL2				AMB	AMB				
	comp=Z,290nm,6.3s								
CD2	**Chengdu**	**168.22**	**70**	PKP	**PKPdf**	**02 17 52.6**	**+0.3**		
CD2				pPKP	pPKPdf	02 20 03.8	-0.9		
CD2				PP	**PP**	**02 22 55.8**	**+0.2**		
CD2				SKS	**SKSdf**	**02 24 03.0**	**-0.5**		
CD2				SKKS	**SKKSac**	**02 28 46.4**	**-0.8**		
CD2				SS	**SS**	**02 42 59.3**	**-1.4**		
CD2				AMB	AMB				
	comp=Z,500nm,7.1s								
TIY	**Taiyuan**	**169.25**	**18**	*e*PKPdf	**PKPdf**	**02 17 53.4**	**+0.6**		
TIY				PKPab	**PKPab**	**02 19 10.1**	**+1.0**		
TIY				pPKP	**pPKPdf**	**02 20 02.5**	**-2.7**		
TIY				PP	**PP**	**02 22 58.3**	**-0.8**		
TIY				AMB	AMB				
	comp=Z,570nm,4.8s								
QIZ	**Qiongzhong**	**169.44**	**142**	PKP	**PKPdf**	**02 17 52.8**	**-0.5**		
QIZ				pPKP	**pPKPdf**	**02 20 04.6**	**-1.1**		
QIZ				PP	**PP**	**02 22 59.8**	**-0.6**		
QIZ				SS	SS	02 43 10.3	-0.2		
XAN	**Xi'an**	**170.70**	**44**	PKP	**PKPdf**	**02 17 54.0**	**+0.3**		
GYA	**Guiyang**	**170.99**	**95**	*i* PKP	**PKPdf**	**02 17

MAT				S	Sn	02 20 05.2	+3.2		
CBIJ	**Chichi jima**	**7.97**	**173**	*e*Pn	Pn	02 20 39.1	-1.7		
JCJ	**Chichijima**	**7.97**	**173**	Pn	Pn	02 20 38.8	-2.0		
	12nm,0.3s,baz=338,slow=19,SNR=6.8								
JCJ				Sn	Sn	02 22 05.0	-4.6		
	baz=266,slow=19,SNR=1.9								
ASAJ	**Asahikawa**	**9.14**	**7**	Pn	Pn	02 20 52.2	-4.4		
	1.1nm,0.3s,baz=214,slow=9.6,SNR=3.8								
ASAJ				Sn	Sn	02 22 39.2	+1.1		
	0.3nm,0.3s,baz=177,slow=11,SNR=2.1								
YHNB	**Yeheng**	**19.95**	**244**	*e*P	P	02 23 15.9	+0.3		
	5.8nm,0.6s								
SONM	**Songino Array**	**28.73**	**307**	P	P	02 24 40.1	-0.3		
	1.3nm,0.8s,baz=117,slow=9.2,SNR=2.3								
ZALV	**Zalesovo Beam**	**43.09**	**314**	P	P	02 26 41.7	-0.9		
	1.1nm,0.5s,baz=96,slow=6.4,SNR=3.7								
MKAR	**Makanchi Array**	**44.98**	**304**	P	P	02 26 58.9	+1.0		
	0.8nm,0.6s,baz=87,slow=9.7,SNR=5.3								
KURK	**Kurchatov**	**46.98**	**310**	*e*P	P	02 27 12.8	-0.7		
	10nm,0.6s								
KURBB	**Kurchatov Arra**	**47.05**	**309**	P	P	02 27 13.6	-0.4		
	2.4nm,0.6s,baz=86,slow=7.9,SNR=13								
TKM2	**Tokmak 2**	**50.37**	**300**	*e*P	P	02 27 40.9	+0.9		
	2.4nm,0.5s								
ILAR	**Eielson Array**	**51.32**	**31**	P	P	02 27 47.0	+0.6		
	0.4nm,0.8s,baz=275,slow=5.3,SNR=3.6								
BVAR	**Borovoye Array**	**51.74**	**313**	P	P	02 27 50.2	+0.4		
	0.4nm,0.5s,baz=39,slow=7.6,SNR=3.6								
CTAO	**Charters Tower**	**55.04**	**174**	*e*P	P	02 28 15.7	+1.4		
	23nm,1.0s								
WRAB	**Tennant Creek**	**55.04**	**188**	*e*P	P	02 28 14.5	+0.2		
	4.3nm,0.8s								
WRA	**Warramunga Arr**	**55.05**	**188**	P	P	02 28 14.9	+0.5		
	2.7nm,0.7s,baz=5.0,slow=7.6,SNR=9.3								
ASAR	**Alice Springs**	**58.78**	**188**	P	P	02 28 41.5	+0.8		
	0.8nm,0.8s,baz=358,slow=4.8,SNR=5.0								
ABKAR	**Akbulak array**	**59.04**	**311**	*e*P	P	02 28 42.0	-0.3		
FINES	**FINESS Array B**	**70.46**	**332**	P	P	02 29 56.4	0.0		
	2.5nm,1.0s,baz=29,slow=3.2,SNR=3.9								
PDAR	**Pinedale Array**	**79.25**	**45**	P	P	02 30 48.4	+0.4		
	0.3nm,0.6s,baz=251,slow=4.7,SNR=3.7								
RAYN	**Ar Rayn**	**81.17**	**292**	*e*P	P	02 30 59.1	+0.7		
	1.7nm,0.9s								

NIED ***17*** *02:21:00.0, 38.30N×141.50E, h11km, Mw3.6 Best double couple: M₀3.14000×10¹⁴ NP1:φ₀323.00000°, δ54.00000°, λ137.00000°. NP2:φ₀82.00000°, δ56.00000°, λ45.00000°.*

JMA 17 02:21:26.0±0.1, 38.27N×141.52E, h18km±1km, M3.9, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**0.23**	**324**	P	Pg	02 21 31.4	0.0
JIO				S	Sg	02 21 34.6	-0.4
JOU	**Okura**	**0.68**	**278**	P	Pb	02 21 39.3	0.0
JOU				S	Sg	02 21 48.5	0.0
JMM	**Marumori**	**0.70**	**235**	P	Pb	02 21 39.1	-0.6
JMM				S	Sb	02 21 48.2	-0.8
JMK	**Ichinoseki**	**0.72**	**341**	P	Pb	02 21 39.4	-0.6
JMK				S	Sb	02 21 48.6	-1.0
OFUJ	**Ofunato**	**0.82**	**8**	P	Pb	02 21 41.2	-0.5
OFUJ				*e*S	Sb	02 21 52.2	-0.2
JFK	**Kawauchi**	**1.04**	**210**	P	Pb	02 21 44.9	-0.5
JFK				*e*S	Sb	02 21 58.3	-0.4
JYK	**Kaneyama**	**1.12**	**306**	P	Pn	02 21 46.1	-0.6
JYK				*e*S	Sb	02 22 00.6	-0.4
JYS	**Shirataka**	**1.15**	**268**	P	Pn	02 21 46.9	-0.3
JYS				S	Sb	02 22 01.8	0.0
JFT	**Otama**	**1.20**	**232**	P	Pb	02 21 48.1	-0.1
JFT				*e*S	Sn	02 22 03.9	+0.2
MAT	**Matsushiro**	**3.15**	**238**	P	Pb	02 22 19.2	-2.3
MAT				*e*S	Sb	02 22 59.3	-0.3

GUC ***17*** *02:33:05.3±0.4, 34.07S×72.41W, h22km±7km, ML2.9*

ISC 17 02:33:04.4±2.5, 33.98S±0.06×72.3W±0.1, h9km±15km, n14, σ1§53/24, 1C-2D, Off coast of central Chile

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CHPI	**Pichilemu**	**0.49**	**145**	*e*P	**Pg**	**02 33 14.0**	**0.0**
CHPI				*e*S	**Sg**	**02 33 20.3**	**-0.2**
RCDM	**Rinconada Maip**	**1.37**	**69**	*e*P	**Pn**	**02 33 29.4**	**-0.3**
RCDM				*e*S	**Sb**	**02 33 47.7**	**-0.1**
ANTU	**Antumapu**	**1.48**	**74**	*e*P	**Pn**	**02 33 31.4**	**+0.2**
ANTU				*e*S	**Sb**	**02 33 51.2**	**+0.1**
ROC1	**El Roble**	**1.50**	**48**	‖*e*P	**Pb**	**02 33 32.3**	**-0.2**
	baz=236,slow=28						
ROC1				*e*S	**Sg**	**02 33 53.4**	**+0.8**
ROCH	**El Roble**	**1.50**	**48**	‖*e*P	**Pb**	**02 33 32.2**	**-0.4**
ROCH				*e*S	**Sg**	**02 33 53.1**	**+0.4**
ROCH				IAML		02 34 01.5	
	comp=N,306nm,0.6s						
CLCH	**Cerro Calan**	**1.62**	**69**	*e*P	**Pb**	**02 33 33.6**	**-0.8**
CLCH				*e*S	**Sb**	**02 33 55.2**	**+0.2**
CLCH				IAML		02 34 06.1	
	comp=N,183nm,0.4s						
PEL	**Peldehue**	**1.62**	**59**	‖*e*P	**Pb**	**02 33 33.8**	**-0.7**
PEL				*e*S	**Sb**	**02 33 55.1**	**+0.2**
PEL				IAML		02 34 02.5	
	comp=N,249nm,1.4s						
AUSP	**Uspallata**	**3.04**	**56**	*e*P	**Pb**	**02 33 56.3**	**-2.6**
AUSP				*e*S	**Sb**	**02 34 33.5**	**-2.7**
AAGR	**Agrelo**	**3.07**	**74**	*e*P	**Pb**	**02 33 59.7**	**+0.5**
ARCO	**CERRO ARCO**	**3.07**	**69**	*e*P	**Pb**	**02 33 59.4**	**+0.1**
ARCO				IAML		02 34 04.9	
	comp=Z,35nm,0.5s						
ARCO				*i* S	**Sg**	**02 34 44.3**	**+1.2**
ASAL	**Salagasta**	**3.25**	**66**	*e*P	**Pb**	**02 34 00.9**	**-1.4**
ASAL				*e*S	**Sb**	**02 34 40.2**	**-1.8**
RTLS	**Leoncito**	**3.36**	**50**	*e*P	**Pb**	**02 34 01.2**	**-3.2**
RTLL	**Cerro Villicun**	**4.20**	**52**	*e*P	**Pn**	**02 34 11.4**	**+2.8**
AMOG	**MOGNA**	**4.45**	**48**	*i* P	**Pn**	**02 34 14.6**	**+2.5**

JMA 17 02:35:24.3±0.1, 38.42N×142.10E, h31km±2km, M3.7, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**0.59**	**274**	P	Pb	02 35 35.9	-0.3
JIO				S	Sb	02 35 43.6	-0.8
OFUJ	**Ofunato**	**0.74**	**333**	P	Pn	02 35 39.0	-0.6
OFUJ				S	Sb	02 35 47.6	-1.0
JMK	**Ichinoseki**	**0.87**	**308**	P	Pn	02 35 40.4	0.0
JMK				S	Sn	02 35 51.6	-0.4
JOU	**Okura**	**1.13**	**268**	P	Pb	02 35 44.7	-0.6
JOU				S	Sn	02 35 58.9	+0.4
JMM	**Marumori**	**1.17**	**242**	P	Pn	02 35 44.5	0.0
JMM				S	Sn	02 35 58.7	-0.7
JOM	**Ohasama**	**1.23**	**329**	P	Pn	02 35 45.8	+0.5
JOM				S	Sn	02 36 01.3	+0.5
JFK	**Kawauchi**	**1.43**	**223**	P	Pn	02 35 47.6	-0.6
JFK				S	Sn	02 36 04.3	-1.6

SJA ***17*** *02:37:05.0±0.9, 27.69S×63.39W, h620km±16km, ML5.5, MW4.7*

ISCJB ***17*** *02:37:12.5±0.2, 27.64S±0.02×63.31W±0.03, h565km±2km, mb4.7/185, Error ellipse: s-maj=4.6km s-min=3.7km az=161.2*

BJI ***17*** *02:37:12.7, 27.60S×63.30W, h550km, mB5.2/11*

GUC ***17*** *02:37:12.5±1.6, 27.61S×63.28W, h564km, MW5.7*

IDC ***17*** *02:37:13.6±0.4, 27.59S×63.28W, h564km±4km, mb4.4/32, mb1 4.5/35, mb1mx4.3/52, mbtmp5.2/35, Error ellipse: s-maj=10.0km s-min=6.9km az=48.0*

NEIC ***17*** *02:37:13.2±0.1, 27.68S×63.24W, mb4.7/154, MD5.0(SJA), Error ellipse: s-maj=4.9km s-min=3.3km az=57.0*

MOS ***17*** *02:37:14.1±0.9, 27.425×63.21W, h573km, mb4.8/39, Error ellipse: s-maj=12.9km s-min=7.2km az=107.1*

ISC 17 02:37:13.1±0.3, 27.67S±0.04×63.32W±0.05, h563km±3km, h564km: pP-P, n988, σ0§87/1073, mb4.7/182, 9C-38D, Santiago del Estero Province

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
AHML	**Horco Molle**	**2.00**	**296**	‖*e*P	**P**	**02 38 23.9**	**-0.3**
AHML				IAML		02 38 25.0	
	comp=Z,2μm,0.8s						
CYA	**Choya**	**2.33**	**250**	‖*e*P	**P**	**02 38 24.7**	**-0.9**
CYA				IAML		02 38 25.8	
	comp=Z,547nm,0.6s						
FSA	**Cafayete**	**2.84**	**302**	‖*e*P	**P**	**02 38 28.0**	**-0.6**
FSA				IAML		02 38 29.2	
	comp=Z,778nm,0.7s						
AZAP	**Zapla**	**3.77**	**335**	*e*P	**P**	**02 38 34.3**	**-0.5**
ASTB	**Santa Barbara**	**3.84**	**344**	*e*P	**P**	**02 38 35.9**	**+0.7**
VCA	**Vinchina**	**4.45**	**255**	*e*P	**P**	**02 38 39.6**	**+0.2**
VCA				*e*S	**S**	**02 39 47.9**	**-2.0**
VCA				IAML		02 39 56.3	
	comp=Z,2μm,0.6s						
HJA	**Humahuaca**	**4.83**	**336**	‖*e*P	**P**	**02 38 43.1**	**+0.2**
CPUP	**Villa Florida**	**5.50**	**77**	‖*e*P	**P**	**02 38 48.6**	**+0.6**
CPUP	**Villa Florida**	**5.50**	**77**	P	**P**	**02 38 48.6**	**+0.6**
	comp=Z,122nm,0.3s,baz=249,slow=8.6,SNR=1953						
CPUP				S	**S**	**02 40 06.2**	**+0.6**
	baz=68,slow=19,SNR=1.0						
AMOG	**MOGNA**	**5.57**	**233**	‖*e*P	**P**	**02 38 49.4**	**+0.8**
ACAN	**Cantantal**	**5.69**	**215**	‖*e*P	**P**	**02 38 49.7**	**+0.1**
ACAN				‖*e*S	**S**	**02 40 05.1**	**-3.4**
RTLL	**Cerro Villicun**	**5.79**	**230**	*e*P	**P**	**02 38 50.6**	**+0.1**
RTLL				*e*S	**S**	**02 40 09.1**	**-1.1**
SUCO	**SUCO**	**5.82**	**193**	IAML		02 38 51.5	
	comp=Z,134nm,0.5s						
YJA	**Yavi**	**5.82**	**339**	*e*P	**P**	**02 38 52.0**	**+0.6**
YJA				IAML		02 38 55.3	
	comp=Z,400nm,0.4s						
SJA	**San Juan**	**5.97**	**229**	IAML		02 38 54.1	
	comp=Z,384nm,0.4s						
RTCV	**Cerro Valdivia**	**6.17**	**226**	*e*P	**P**	**02 38 54.3**	**+0.4**
RTCV				*e*S	**S**	**02 40 15.5**	**-0.9**
CPCH	**Copiapo**	**6.26**	**271**	‖*i* P	**P**	**02 38 54.0**	**-0.7**
RTLS	**Leoncito**	**6.63**	**230**	‖*e*P	**P**	**02 38 59.4**	**+1.0**
RTLS				*e*S	**S**	**02 40 26.1**	**+1.4**
LCO	**Las Campanas**	**6.64**	**257**	*e*P	**P**	**02 38 58.4**	**-0.2**
LCO				‖*e*S	**S**	**02 40 23.4**	**-1.4**
LCO				IAML		02 40 35.7	
	comp=E,456nm,0.4s						
LCO	**Las Campanas**	**6.64**	**257**	*e*P	**P**	**02 38 58.6**	**+0.1**
LCO				*e*S	**S**	**02 40 25.3**	**+0.5**
ASAL	**Salagasta**	**6.85**	**223**	*e*P	**P**	**02 39 01.1**	**+0.9**
ASAL				‖*e*S	**S**	**02 40 26.7**	**-1.2**
AUSP	**Uspallata**	**6.95**	**228**	‖*e*P	**P**	**02 39 02.0**	**+0.5**
PB14	**IPOC Station P**	**7.05**	**294**	‖*i* P	**P**	**02 39 02.2**	**-0.4**
PB14				*i* S	**S**	**02 40 29.8**	**-2.3**
ARCO	**CERRO ARCO**	**7.08**	**222**	*e*P	**P**	**02 39 03.0**	**+0.5**
ARCO				IAML		02 39 03.7	
	comp=Z,672nm,0.5s						
ARCO				*e*S	**S**	**02 40 29.0**	**-3.1**
AAGR	**Agrelo**	**7.20**	**220**	*e*P	**P**	**02 39 04.0**	**+0.5**
AAGR				‖*e*S	**S**	**02 40 31.4**	**-2.6**
PB06	**IPOC Station P**	**7.52**	**310**	‖*i* P	**P**	**02 39 06.6**	**-0.2**
ANCH	**Antofagasta**	**7.53**	**300**	‖*i* P	**P**	**02 39 06.3**	**-0.4**
ANCH				*i* S	**S**	**02 40 40.1**	**+0.3**
PB10	**IPOC Station P**	**7.73**	**301**	‖*i* P	**P**	**02 39 08.1**	**-0.6**
PB10	**IPOC Station P**	**7.73**	**301**	*e*P	**P**	**02 39 08.4**	**-0.4**
PB04	**IPOC Station P**	**8.16**	**309**	‖*i* P	**P**	**02 39 12.7**	**-0.5**
PB04				*i* S	**S**	**02 40 48.6**	**-2.8**
PB04	**IPOC Station P**	**8.16**	**309**	*e*P	**P**	**02 39 12.7**	**-0.5**
PEL	**Peldehue**	**8.38**	**228**	‖*i* P	**P**	**02 39 14.8**	**-0.1**
PB07	**IPOC Station P**	**8.40**	**313**	‖*i* P	**P**	**02 39 15.0**	**-0.5**
CLCH	**Cerro Calan**	**8.45**	**226**	‖*i* P	**P**	**02 39 16.0**	**+0.4**
ROCH	**El Roble**	**8.49**	**230**	‖*i* P	**P**	**02 39 15.7**	**-0.5**
ROC1	**El Roble**	**8.50**	**230**	*e*P	**P**	**02 39 15.7**	**-0.6**
ROC1				*e*S	**S**	**02 40 54.7**	**-2.8**
ROC1	**El Roble**	**8.50**	**230**	*e*P	**P**	**02 39 14.9**	**-1.4**
PB01	**IPOC Station P**	**8.67**	**318**	‖*i* P	**P**	**02 39 17.4**	**-0.7**
PB01	**IPOC Station P**	**8.67**	**318**	*e*P	**P**	**02 39 18.2**	**-1.9**
PB08	**IPOC Station P**	**9.20**	**323**	‖*i* P	**P**	**02 39 23.6**	**-0.1**
PATCX	**Punta Patache**	**9.24**	**316**	‖*e*P	**P**	**02 39 23.0**	**-0.7**
HMBC	**Humberstone**	**9.50**	**319**	‖*e*P	**P**	**02 39 25.6**	**-0.8**
PB11	**IPOC Station P**	**9.78**	**322**	‖*i* P	**P**	**02 39 28.6**	**-0.7**
PB11	**IPOC Station P**	**9.78**	**322**	*e*P	**P**	**02 39 28.6**	**-0.7**
PSGC	**Pisagua**	**10.17**	**321**	‖*i* P	**P**	**02 39 32.3**	**-0.9**
MNMC	**Minye Minye**	**10.27**	**325**	‖*i* P	**P**	**02 39 34.0**	**-0.4**
TRQA	**Tornquist**	**10.42**	**174**	*e*P	**P**	**02 39 34.1**	**-1.3**
PB13	**IPOC Station P**	**10.89**	**327**	‖*i* P	**P**	**02 39 41.1**	**0.0**
PB12	**IPOC Station P**	**11.08**	**323**	‖*i* P	**P**	**02 39 41.6**	**-0.8**
SIV	**San Ignacio**	**11.80**	**11**	P	**P**	**02 39 49.3**	**-0.6**
	comp=Z,12nm,0.3s,baz=206,slow=9.9,SNR=86						
SIV				S	**S**	**02 41 57.2**	**-1.7**
	comp=Z,0.6nm,0.3s,baz=270,slow=20,SNR=3.0						
LPAZ	**La Paz**	**12.17**	**338**	*e*P	**P**	**02 39 53.3**	**-1.0**
LPAZ	**La Paz**	**12.17**	**338**	P	**P**	**02 39 53.6**	**-0.7**
	comp=Z,16nm,0.3s,baz=133,slow=6.1,SNR=357						
LPAZ				S	**S**	**02 42 03.2**	**-3.5**
	comp=Z,2.7nm,0.3s,baz=24,slow=20,SNR=6.7						
LPAZ				ScP	**ScP**	**02 47 27.9**	**+0.7**
	comp=Z,0.2nm,0.3s,baz=45,slow=2.5,SNR=4.2						
ARE	**Arequipa**	**13.48**	**324**	*e*P	**P**	**02 40 07.0**	**-0.4**
ARE	**Arequipa**	**13.48**	**324**	*e*P	**P**	**02 40 07.0**	**-0.4**
ARE				*e*S	**S**	**02 42 36.0**	**+5.4**
PLCA	**Paso Flores**	**14.33**	**203**	P	**P**	**02 40 14.0**	**-1.6**
	comp=Z,6.2nm,0.3s,baz=45,slow=11,SNR=302						
PLCA				PcP	**PcP**	**02 44 49.3**	**+0.6**
	comp=Z,0.7nm,0.3s,baz=265,slow=0.7,SNR=6.0						
PLCA				ScP	**ScP**	**02 47 30.2**	**+0.6**
	comp=Z,0.4nm,0.3s,baz=124,slow=1.7,SNR=9.2						
PLCA	**Paso Flores**	**14.33**	**203**	P	**P**	**02 40 14.0**	**-1.6**
PLCA				pmax	pmax		
	comp=Z,6.0nm,0.3s						
PLCA				pmax	pmax		
	comp=Z,1.0nm,0.3s						
SPB	**Sao Paulo**	**14.89**	**78**	*e*P	**P**	**02 40 20.2**	**-1.0**
SAML	**Samuel**	**18.62**	**0**	*e*P	**P**	**02 40 55.8**	**-0.4**
	comp=Z,22nm,0.9s						
NNA	**Nana**	**20.10**	**318**	P	**P**	**02 41 09.5**	**-0.2**
	comp=Z,10nm,0.4s,baz=144,slow=8.1,SNR=7.1						
NNA	**Nana**	**20.10**	**318**	*e*P	**P**	**02 41 09.7**	**0.0**
NNA				pmax	pmax		
	comp=Z,95nm,0.9s						
NNA	**Nana**	**20.10**	**318**	*e*P	**P**	**02 41 09.7**	**0.0**
	comp=Z,95nm,0.9s						
CHRN	**Cochrane**	**20.86**	**198**	*e*P	**P**	**02 41 17.0**	**+1.0**
	comp=Z,13nm,0.9s						
EFI	**East Falkland**	**24.30**	**172**	*i* P	**P**	**02 41 46.0**	**-0.7**
ATAH	**Atahualpa**	**24.93**	**322**	P	**P**	**02 41 54.7**	**+1.5**
	comp=Z,7.7nm,0.7s,baz=204,slow=6.2,SNR=5.0						
PTGA	**Pitinga**	**26.98**	**7**	P	**P**	**02 42 09.7**	**-1.1**
	comp=Z,21nm,0.3s,baz=11,slow=24,SNR=44						
PTGA	**Pitinga**	**26.98**	**7**	*e*P	**P**	**02 42 09.3**	**-1.5**
	comp=Z,20nm,0.9s						
USHA	**Ushuaia**	**27.40**	**186**	P	**P**	**02 42 13.8**	**-0.1**
	comp=Z,54nm,0.5s,baz=10,slow=8.7,SNR=16						
USHA				PcP	**PcP**	**02 45 14.4**	**+0.6**
	comp=Z,28nm,0.7s,baz=0.0,slow=2.0,SNR=3.4						
OTAV	**Otavalo**	**31.32**	**330**	*e*P	**P**	**02 42 50.4**	**+1.5**
	comp=Z,4.1nm,0.9s						
OTAV				*e*PcP	**PcP**	**02 45 27.1**	**+1.6**
OTAV				*e*S	**S**	**02 47 17.2**	**-0.1**
OTAV				*e*ScP	**ScP**	**02 48 15.2**	**-0.3**
OTAV	**Otavalo**	**31.32**	**330**	*e*P	**P**	**02 42 50.4**	**+1.5**
HOPE	**Hope Point**	**33.05**	**151**	*e*P	**P**	**02 43 03.6**	**+1.2**
	comp=Z,480nm,1.0s						
VILC	**Villavicencio,**	**33.14**	**341**	*e*P	**P**	**02 43 03.4**	**-0.6**
RCBR	**Riachuelo**	**33.91**	**55**	P	**P**	**02 43 10.7**	**+0.3**
	comp=Z,23nm,0.4s,baz=231,slow=12,SNR=46						
RCBR				PcP	**PcP**	**02 45 32.8**	**+0.5**
	comp=Z,10nm,0.5s,baz=232,slow=5.5,SNR=5.5						
RCBR	**Riachuelo**	**33.91**	**55**	*e*P	**P**	**02 43 10.9**	**+0.6**
	comp=Z,44nm,1.0s						
RCBR				*e*PcP	**PcP**	**02 45 32.4**	**+0.1**
RCBR				PcP	**PcP**	**02 45 32.8**	**+0.5**
YOPC	**Yopal, Colombi**	**33.99**	**344**	*e*P	**P**	**02 43 10.0**	**-1.0**
MALC	**Bahia Malaga**	**34.28**	**335**	*e*P	**P**	**02 43 14.1**	**+0.8**
GUYC	**Guyana, Colomb**	**34.72**	**339**	*e*P	**P**	**02 43 15.8**	**-1.7**
BARC	**Barichara**	**35.37**	**343**	*e*P	**P**	**02 43 18.6**	**-4.0**
HELC	**Santa Helena**	**35.67**	**339**	*e*P	**P**	**02 43 21.4**	**-3.8**
PAMC	**Pamplona, Colo**	**35.97**	**344**	*e*P	**P**	**02 43 24.9**	**-3.0**
MOTC	**Monteria, Cord**	**38.15**	**340**	*e*P	**P**	**02 43 43.0**	**-2.2**
GRGR	**Grenville**	**39.60**	**3**	*e*P	**P**	**02 43 55.8**	**-1.0**
	comp=Z,64nm,0.5s						
FDF	**Fort de France**	**42.20**	**3**	*e*P	**P**	**02 44 16.1**	**-1.4**
FDF				pmax	pmax		
	comp=Z,71nm,0.4s						
FDF	**Fort de France**	**42.20**	**3**	*e*P	**P**	**02 44 16.1**	**-1.4**
	comp=Z,71nm,0.4s						
JTS	**JuntasAbangare**	**43.17**	**328**	‖*e*P	**P**	**02 44 25.5**	**+0.5**
JTS				pmax	pmax		
	comp=Z,6.0nm,0.8s						
JTS	**JuntasAbangare**	**43.17**	**328**	*e*P	**P**	**02 44 25.9**	**+0.9**
	comp=Z,4.5nm,0.7s						
MTDJ	**Mount Denham**	**47.66**	**342**	*e*P	**P**	**02 44 58.1**	**-1.1**
	comp=Z,29nm,0.8s						
ASCN	**Ascension**	**50.19**	**77**	*e*P	**P**	**02 45 17.9**	**-0.2**
	comp=Z,128nm,0.8s						
VNA1	**Neumayer--Stat**	**52.78**	**160**	P	**P**	**02 45 37.1**	**+1.3**
VNA2	**Neumayer--Watz**	**53.16**	**160**	P	**P**	**02 45 39.6**	**+1.1**
	baz=294,slow=7.9						
TEIG	**Tepich**	**53.39**	**330**	P	**P**	**02 45 40.1**	**-0.8**
	comp=Z,10nm,0.5s,baz=270,slow=24,SNR=30						
TEIG				ScP	**ScP**	**02 49 44.1**	**+1.2**
	comp=Z,3.4nm,0.6s,baz=270,slow=23,SNR=5.1						
CMIG	**Matias Romero**	**54.00**	**322**	P	**P**	**02 45 46.3**	**+1.1**
	comp=Z,2.9nm,0.7s,baz=128,slow=9.1,SNR=4.4						
CMIG				PcP	**PcP**	**02 46 41.5**	**+0.2**
	comp=Z,4.1nm,0.8s,baz=127,slow=4.9,SNR=4.4						
SNAA	**Sanae**	**54.80**	**160**	P	**P**	**02 45 50.7**	**+0.6**
SNAA	**Sanae**	**54.80**	**160**	*i* P	**P**	**02 45 50.0**	**-0.1**
SNAA	**Sanae**	**54.80**	**160**	*e*P	**P**	**02 45 49.8**	**-0.4**
	comp=Z,4μm,1.1s						
BBTS	**Babate**	**61.86**	**53**	P	**P**	**02 46 38.9**	**+0.5**
	comp=Z,34nm,0.9s,baz=226,slow=2.2,SNR=7.8						
QSPA	**South Pole Qui**	**62.55**	**180**	*e*P	**P**	**02 46 43.2**	**+0.8**
	comp=Z,236nm,0.8s						
448A	**Bay Minette**	**62.80**	**336**	P	**P**	**02 46 45.9**	**+1.7**
	baz=156						
447A	**Lucedale**	**62.97**	**336**	P	**P**	**02 46 45.6**	**+0.4**
	baz=155						
446A	**Poplarville**	**63.23**	**335**	P	**P**	**02 46 46.9**	**0.0**
	baz=154						
348A	**Jackson**	**63.26**	**337**	P	**P**	**02 46 47.0**	**-0.1**
	baz=156						
035Z	**Hargill**	**63.35**	**325**	P	**P**	**02 46 48.1**	**+0.3**
	baz=146						
347A	**Saraland**	**63.48**	**336**	P	**P**	**02 46 48.1**	**-0.4**
	baz=155						
GOGA	**Godfrey**	**63.69**	**341**	*e*P	**P**	**02 46 48.9**	**-0.9**
GOGA				pmax	pmax		
	comp=Z,8.0nm,0.6s						
GOGA	**Godfrey**	**63.69**	**341**	*e*P	**P**	**02 46 48.9**	**-0.9**
	comp=Z,8.2nm,0.6s						
035A	**Encino**	**63.76**	**325**	P	**P**	**02 46 51.3**	**+0.9**
	baz=146						
346A	**Big Creek Wild**	**63.80**	**335**	P	**P**	**02 46 50.2**	**-0.4**
	baz=154						
248A	**Dixon Mills**	**63.82**	**337**	P	**P**	**02 46 50.1**	**-0.6**
	baz=156,SNR=5.6						
345A	**Thompson Farm,**	**63.94**	**335**	P	**P**	**02 46 51.4**	**-0.1**
	baz=154						
247A	**Quitman**	**64.09**	**336**	P	**P**	**02 46 52.0**	**-0.4**
	baz=155						
541A	**Lake Charles**	**64.11**	**331**	P	**P**	**02 46 53.0**	**+0.4**
	baz=151						
034A	**Hebbronville**	**64.16**	**325**	P	**P**	**02 46 53.6**	**+0.6**
	baz=145						
246A	**Jackson Lee, B**	**64.24**	**336**	P	**P**	**02 46 53.2**	**-0.1**
	baz=155						
344A	**Westbrook Farm**	**64.34**	**334**	P	**P**	**02 46 54.6**	**+0.7**
	baz=153						
442A	**Mamou**	**64.37**	**332**	P	**P**	**02 46 54.7**	**+0.5**
	baz=152						
LRAL	**Lakeview Retre**	**64.43**	**338**	*e*P	**P**	**02 46 53.8**	**-0.7**
	comp=Z,22nm,0.8s						
737A	**Port Lavaca**	**64.47**	**328**	P	**P**	**02 46 55.6**	**+0.7**
	baz=148						
934A	**Benavides**	**64.52**	**325**	P	**P**	**02 46 55.5**	**+0.3**
	baz=146						
147A	**Livingston**	**64.53**	**337**	P	**P**	**02 46 54.9**	**-0.3**
	baz=156						
245A	**Little AP, Sta**	**64.54**	**335**	P	**P**	**02 46 55.3**	**+0.1**
	baz=154,SNR=5.7						
343A	**Vidalia**	**64.54**	**333**	P	**P**	**02 46 55.1**	**-0.2**
	baz=152						
638A	**Rosharon**	**64.56**	**329**	P	**P**	**02 46 55.7**	**+0.3**
	baz=149						
540A	**Vidor**	**64.58**	**331**	P	**P**	**02 46 56.0**	**+0.5**
	baz=150						
441A	**DeRidder**	**64.72**	**332**	P	**P**	**02 46 57.7**	**+1.3**
	baz=151						
835A	**Beeville**	**64.74**	**326**	P	**P**	**02 46 57.0**	**+0.5**
	baz=146						

Y45A Yeager Farm, C 66.06 336 P P 02 47 04.9 +0.2
baz=155
535A Dale 66.06 328 P P 02 47 04.9 +0.1
baz=147
240A Hunter Patters 66.08 332 P P 02 47 05.7 +0.8
baz=151
SWET Sewanee 66.10 340 eP P 02 47 04.5 -0.4
comp=Z,13nm,0.5s
338A Crockett 66.15 330 P P 02 47 06.6 +1.3
baz=149,SNR=15
NATX Nacogdoches 66.22 331 P P 02 47 06.6 +0.9
baz=150,SNR=8.5
NATX Nacogdoches 66.22 331 eP P 02 47 06.7 +0.9
comp=Z,50nm,0.8s
141A Papa Simpson, 66.22 333 P P 02 47 06.6 +0.9
baz=152,SNR=7.4
436A Wall Ranch, Ga 66.32 329 P P 02 47 07.1 +0.7
baz=148
239A Gary 66.36 331 P P 02 47 07.3 +0.7
baz=150
633A Saathoff Ranch 66.37 326 P P 02 47 07.1 +0.4
baz=146,SNR=12
337A Centerville 66.37 330 P P 02 47 07.8 +1.1
baz=149,SNR=6.7
VWCC Virginia Weste 66.44 346 eP P 02 47 07.5 +0.5
534A Blanco 66.49 327 P P 02 47 07.4 -0.1
baz=146,SNR=6.2
BLA Blacksburg 66.51 345 eP P 02 47 08.2 +0.7
BLA pmax pmax
comp=Z,160nm,1.9s
BLA Blacksburg 66.51 345 eP P 02 47 08.2 +0.7
comp=Z,160nm,1.9s
140A Cam and Jess, 66.52 332 P P 02 47 08.7 +1.1
baz=151
PLAL Pickwick Lake 66.56 338 eP P 02 47 07.1 -0.7
comp=Z,33nm,0.5s
OXF Oxford 66.59 337 eP P 02 47 07.1 -0.9
OXF pmax pmax
comp=Z,33nm,1.0s
OXF Oxford 66.59 337 eP P 02 47 07.1 -0.9
comp=Z,33nm,1.0s
Y43A Makayla and Ka 66.61 335 P P 02 47 08.6 +0.6
baz=153
238A Jacksonville 66.62 331 P P 02 47 09.4 +1.2
baz=149
435B Jarrell 66.70 328 P P 02 47 09.2 +0.4
baz=147
533A Kerrville 66.80 327 P P 02 47 09.8 +0.4
baz=146,SNR=8.7
Y42A Garnett, Star 66.86 334 P P 02 47 10.2 +0.6
baz=153
336A Riesel 66.86 329 P P 02 47 10.2 +0.4
baz=148,SNR=9.0
139A Bunkhouse Ranc 66.89 332 P P 02 47 10.8 +0.9
baz=150
237A Washetta, Mont 66.92 330 P P 02 47 10.9 +0.8
baz=149,SNR=5.4
CCAR Cane Creek 66.93 334 eP P 02 47 10.9 +0.8
comp=Z,28nm,0.8s
Z40A Long Farm, Mag 66.99 333 P P 02 47 11.4 +1.0
baz=151,SNR=7.6
335A Moody 67.04 329 P P 02 47 11.2 +0.3
baz=147,SNR=8.7
434A Burnet 67.05 328 P P 02 47 11.0 +0.1
baz=147,SNR=19
236A Katherine and 67.24 330 P P 02 47 12.5 +0.4
baz=148,SNR=9.9
WLAR White Oak Lake 67.25 333 eP P 02 47 13.3 +1.3
comp=Z,90nm,1.0s
433A Art 67.39 327 P P 02 47 13.2 +0.2
baz=146,SNR=44
137A Heron Place, G 67.41 331 P P 02 47 13.8 +0.8
baz=149,SNR=10
334A Lometa 67.46 328 P P 02 47 13.5 +0.1
baz=147,SNR=23
JCT Junction City 67.51 326 P P 02 47 14.0 +0.3
baz=145,SNR=10
JCT Junction City 67.51 326 eP P 02 47 14.1 +0.3
JCT pmax pmax
comp=Z,21nm,0.7s
JCT Junction City 67.51 326 eP P 02 47 14.1 +0.3
comp=Z,21nm,0.7s
WVT Waverly 67.53 339 eP P 02 47 12.7 -1.0
WVT pmax pmax
comp=Z,38nm,0.6s
WVT Waverly 67.53 339 eP P 02 47 12.7 -1.0
comp=Z,38nm,0.6s
Y40A Okolona 67.60 333 P P 02 47 14.5 +0.3
baz=151,SNR=13
Z38A Mt. Pleasant 67.64 332 P P 02 47 15.0 +0.5
baz=150
136A Ennis 67.64 330 P P 02 47 14.8 +0.3
baz=148
333A Richland Sprin 67.81 327 P P 02 47 15.6 0.0
baz=146,SNR=22
X40A Basin Creek Fa 67.84 334 P P 02 47 15.4 -0.2
baz=152
HPIG 67.85 320 eP P 02 47 16.8 +0.7
comp=Z,12nm,1.1s
Y39A Lockesburg 67.86 333 P P 02 47 16.1 +0.3
baz=151,SNR=14
Z37A Pogue Cattle C 67.86 331 P P 02 47 16.3 +0.5
baz=149
UALR University of 67.91 334 eP P 02 47 16.1 0.0
comp=Z,24nm,0.7s
SDMD Soldier's Deli 67.91 349 eP P 02 47 16.6 +0.6
comp=Z,18nm,0.9s
234A Clairette 67.98 328 P P 02 47 16.6 0.0
baz=147,SNR=26
135A Vickery Place, 68.11 329 P P 02 47 17.5 +0.1
baz=148,SNR=5.9
Y38A Idabel 68.11 332 P P 02 47 17.4 0.0
baz=150,SNR=5.8
MIAR Mount Ida 68.18 333 P P 02 47 17.7 -0.1
baz=151,SNR=9.4
MIAR Mount Ida 68.18 333 eP P 02 47 17.6 -0.1
MIAR pmax pmax
comp=Z,15nm,0.6s
MIAR Mount Ida 68.18 333 eP P 02 47 17.6 -0.1
comp=Z,15nm,0.6s
W41A Tony Mavity, V 68.22 335 P P 02 47 17.9 -0.1
baz=152,SNR=6.2
W41B Gary Mavity, V 68.22 335 P P 02 47 17.9 -0.1
baz=152,SNR=6.3
Z36A Blue Ridge 68.28 330 P P 02 47 18.8 +0.5
baz=149,SNR=11
X301 Greenbrier Sit 68.34 335 eP P 02 47 18.9 +0.3
comp=Z,93nm,1.6s
WHAR Wooly Hollow 68.34 335 eP P 02 47 18.4 -0.3
comp=Z,23nm,1.1s
233A Rising Star 68.34 328 P P 02 47 18.7 -0.1
baz=146,SNR=13
X39A Fountain Ranch 68.37 333 P P 02 47 19.5 +0.7
baz=151,SNR=13
X201 Greenbrier Sit 68.37 335 eP P 02 47 19.1 +0.2
comp=Z,22nm,1.0s
134A White-Moore Ra 68.42 329 P P 02 47 19.3 0.0
baz=147,SNR=9.3
Y37A Hugo 68.53 331 P P 02 47 20.6 +0.8
baz=149,SNR=11
W40A Ferguson Farm, 68.55 334 P P 02 47 20.6 +0.6
baz=152,SNR=12
TXAR Lajitas Array 68.59 323 P P 02 47 20.6 +0.1
comp=Z,4.1nm,0.6s,baz=149,slow=7.4,SNR=65
TXAR PKP2bc 03 15 28.3
comp=Z,1.0nm,1.0s,baz=270,slow=2.4,SNR=4.3
TX31 Lajitas Ar. Si 68.59 323 eP P 02 47 20.5 +0.1
Z35A Perchaven, San 68.69 330 P P 02 47 21.3 +0.5
baz=148,SNR=7.4
MCWV Mont Chateau 68.73 346 eP P 02 47 21.6 +0.7
comp=Z,17nm,0.8s
Y36A Durant 68.75 331 P P 02 47 22.3 +1.2
baz=149
X38A Whitesboro 68.80 332 P P 02 47 22.4 +1.0
baz=150,SNR=7.5
W39A Magazine 68.83 334 P P 02 47 22.2 +0.5
baz=151,SNR=14
133A Hamilton Ranch 68.84 328 P P 02 47 22.0 +0.2
baz=146,SNR=14
SYO Syowa Base 68.93 158 ||| iP P 02 47 21.2 -0.6
SYO Syowa Base 68.93 158 ||| iPcP PcP 02 47 40.2 -1.2
SYO Syowa Base 68.93 158 ||| ipP pP 02 49 16.4 0.0
X37A Clayton 68.95 332 P P 02 47 22.5 +0.2
baz=150,SNR=7.6
PBMO Poplar Bluff 68.99 337 eP P 02 47 22.1 -0.4
comp=Z,51nm,0.7s
WCI Wyandotte Cave 69.00 341 eP P 02 47 21.6 -1.0
WCI pmax pmax
comp=Z,34nm,0.9s
WCI Wyandotte Cave 69.00 341 eP P 02 47 21.6 -1.0
comp=Z,34nm,0.9s
V40A Witts Springs 69.00 335 P P 02 47 22.5 -0.2
baz=152,SNR=30
W38A Poteau 69.02 333 P P 02 47 23.4 +0.7
baz=151,SNR=16
Z34A Collier Ranch, 69.02 329 P P 02 47 23.0 +0.2
baz=147,SNR=10
O56A Blue Knob Stat 69.06 348 P P 02 47 23.7 +0.7
baz=166,SNR=5.8
Y35A Marietta 69.08 330 P P 02 47 23.8 +0.7
baz=148
ABTX Abilene, Hawle 69.20 328 P P 02 47 24.2 +0.3
baz=146,SNR=5.7
ABTX Abilene, Hawle 69.20 328 eP P 02 47 23.5 -0.4
comp=Z,22nm,1.0s
N59A State Game Lan 69.21 350 P P 02 47 24.9 +1.1
baz=168
SSPA Standing Stone 69.29 348 eP P 02 47 24.9 +0.7
comp=Z,22nm,0.9s
Z33A Whitaker Ranch 69.34 329 P P 02 47 25.1 +0.4
baz=147,SNR=26
V39A Pettigrew 69.34 334 P P 02 47 25.0 +0.2
baz=151,SNR=36
X36A Centrahoma 69.35 331 P P 02 47 24.7 -0.1
baz=149,SNR=20
SIUC Southern Illin 69.43 338 eP P 02 47 24.1 -1.1
comp=Z,40nm,0.6s
Y34A Reagan Ranch, 69.44 330 P P 02 47 25.5 +0.2
baz=148,SNR=10
W37B Quinton 69.45 332 P P 02 47 25.8 +0.4
baz=150,SNR=14
X35A Drake 69.47 331 P P 02 47 25.4 0.0
baz=148,SNR=6.7
U40A Yellville 69.50 335 P P 02 47 25.5 -0.1
baz=152
V38A Canehill 69.66 333 P P 02 47 26.5 -0.1
baz=151,SNR=35
U39A Green Forest 69.76 334 P P 02 47 27.1 -0.1
baz=152
W36A Wetumka 69.78 332 P P 02 47 27.0 -0.4
baz=149,SNR=20
KSPA Keystone Colle 69.83 350 eP P 02 47 28.5 +1.0
comp=Z,39nm,1.0s
HHAR Hobbs 69.84 334 eP P 02 47 27.6 -0.1
comp=Z,20nm,0.8s
Y33A Hilltop Ranch, 69.87 329 P P 02 47 28.2 +0.2
baz=147
BLO Bloomington 69.94 341 eP P 02 47 27.4 -0.7
BLO pmax pmax
comp=Z,39nm,0.6s
BLO Bloomington 69.94 341 eP P 02 47 27.4 -0.7
comp=Z,39nm,0.6s
V37A Huntsville 69.97 333 P P 02 47 28.7 +0.2
baz=150,SNR=23
ACSO Alum Creek Sta 69.99 344 eP P 02 47 27.9 -0.5
comp=Z,24nm,0.8s
ACSO epP pP 02 49 24.6 +0.8
OLIL Olney 70.00 340 eP P 02 47 27.6 -1.0
comp=Z,27nm,0.8s
N54A Moraine State 70.01 347 P P 02 47 29.2 +0.6
baz=164,SNR=13
X34A Smith Ranch, M 70.02 330 P P 02 47 29.3 +0.5
baz=148,SNR=7.5
W35A Tecumseh 70.07 331 P P 02 47 28.8 -0.2
baz=149,SNR=5.4
T40A Mansfield 70.07 336 P P 02 47 28.9 -0.1
baz=153
U38A Gravette 70.16 334 P P 02 47 29.4 -0.1
baz=151
V36A Jenks 70.22 332 P P 02 47 30.0 +0.1
baz=150,SNR=5.3
TUL1 Leonard 70.26 332 P P 02 47 30.1 0.0
baz=150
TUL1 Leonard 70.26 332 eP P 02 47 30.2 0.0
comp=Z,20nm,0.6s
X33A Lawton 70.26 330 P P 02 47 30.1 -0.1
baz=147,SNR=6.9
T39A Clever 70.28 335 P P 02 47 30.3 0.0
baz=152
U37A Salina 70.42 333 P P 02 47 31.3 +0.2
baz=150
S40A Lebanon 70.46 336 P P 02 47 31.4 +0.1
baz=153,SNR=27
M54A Oil Creek Stat 70.47 347 P P 02 47 31.7 +0.4
baz=165,SNR=10
BINY Binghamton 70.50 350 eP P 02 47 32.1 +0.7
comp=Z,31nm,0.9s
X32A Elmer 70.52 329 P P 02 47 31.5 -0.2
baz=146
W34A Bridge Creek, 70.53 331 P P 02 47 32.3 +0.5
baz=148
W34A Bridge Creek, 70.53 331 eP P 02 47 32.3 +0.5
comp=Z,22nm,0.6s
WMOK Wichita Mounta 70.55 330 eP P 02 47 31.5 -0.5
WMOK pmax pmax
comp=Z,54nm,1.1s
WMOK Wichita Mounta 70.55 330 eP P 02 47 31.5 -0.5
comp=Z,54nm,1.1s
V35A Meyer Ranch, C 70.57 332 P P 02 47 31.8 -0.2
baz=149,SNR=16
T38A Diamond 70.64 334 P P 02 47 32.4 0.0
baz=151
U36A Oologah 70.66 333 P P 02 47 32.4 -0.1
baz=150
SBA Scott Base 70.68 190 eP P 02 47 34.0 +1.9
SBA pmax pmax
comp=Z,10.0nm,1.1s
SBA Scott Base 70.68 190 eP P 02 47 34.0 +1.9
comp=Z,9.9nm,1.1s
ALLY Alegheny Colle 70.70 347 eP P 02 47 33.0 +0.4
comp=Z,67nm,0.9s
W33A Caddo, Fort Co 70.76 330 P P 02 47 33.9 +0.7
baz=147,SNR=27
S39A Bolivar 70.85 335 P P 02 47 33.4 -0.2
baz=152,SNR=27
V34A Guthrie 70.92 331 P P 02 47 34.0 -0.1
baz=148,SNR=6.1
T37A Cheyville 18 70.96 334 P P 02 47 34.3 0.0
baz=151
R40A Maddies Statio 70.99 336 P P 02 47 33.8 -0.6
baz=153,SNR=15
S38A Stockton 71.01 335 P P 02 47 34.4 -0.2
baz=152,SNR=20
U35A Pawnee 71.05 332 P P 02 47 35.0 +0.2
baz=149
W32A Sentinel 71.09 329 P P 02 47 35.2 +0.1
baz=147,SNR=11
ERPA Erie 71.12 347 eP P 02 47 35.4 +0.3
comp=Z,112nm,0.6s
SUR Sutherland 71.16 117 P P 02 47 36.7 +0.8
comp=Z,3.3nm,0.7s,baz=234,slow=7.3,SNR=50
SUR Sutherland 71.16 117 eP P 02 47 36.3 +0.4
comp=Z,72nm,0.8s
SFIN Lafayette 71.22 341 P P 02 47 34.5 -1.1
baz=158,SNR=8.0
V33A Lossen Ranch, 71.24 331 P P 02 47 36.2 +0.2
baz=148,SNR=6.7
T36A Boggs Farm, Ca 71.29 333 P P 02 47 36.2 0.0
baz=150
R39A Chumby, Stover 71.29 336 P P 02 47 35.8 -0.4
baz=152,SNR=12
MMNY Mt. Morris Dam 71.33 349 eP P 02 47 36.9 +0.6
comp=Z,76nm,0.6s
MNTX Cornudas Mount 71.35 323 P P 02 47 36.0 -0.7
baz=141,SNR=13
MNTX Cornudas Mount 71.35 323 eP P 02 47 36.0 -0.7
comp=Z,7.1nm,0.7s
MNTX epP pP 02 49 31.8 -0.8
T35A Sooner Cattle 71.42 332 P P 02 47 37.1 +0.1
baz=149
U34A Anderson Ranch 71.44 331 P P 02 47 37.3 +0.2
baz=148
U34A Anderson Ranch 71.44 331 eP P 02 47 37.3 +0.2
comp=Z,42nm,0.7s
S37A Fort Scott 71.48 334 P P 02 47 37.0 -0.3
baz=151,SNR=14
V32A Arapaho 71.49 330 P P 02 47 38.0 +0.5
baz=147
R38A Fenwick Farm, 71.50 335 P P 02 47 36.9 -0.5
baz=152,SNR=15
Q40A Laux Farm, Aux 71.55 337 P P 02 47 37.1 -0.6
baz=153,SNR=10
VNDA Vanda 71.65 189 P P 02 47 39.6 +1.9
comp=Z,14nm,0.9s,baz=156,slow=4.8,SNR=46
VNDA Vanda 71.65 189 eP P 02 47 39.6 +1.9
comp=Z,17nm,1.0s
U33A Lingo Farm, Me 71.69 331 P P 02 47 38.6 +0.1
baz=148
S36A Lake Cedric, C 71.75 334 P P 02 47 38.6 -0.2
baz=150,SNR=17
T34A McClaskey Farm 71.79 332 P P 02 47 39.4 +0.3
baz=149
MSTX Muleshoe 71.81 326 P P 02 47 39.5 +0.1
baz=144,SNR=25
MSTX Muleshoe 71.81 326 eP P 02 47 39.3 -0.1
comp=Z,40nm,0.9s
MSTX ePcP PcP 02 47 54.5 +0.2
Q39A Willow Grove F 71.92 336 P P 02 47 39.3 -0.5
baz=152,SNR=21
S35A Otter Creek Ra 72.00 333 P P 02 47 40.4 +0.1
baz=150,SNR=12
AMTX Amarillo 72.02 328 P P 02 47 40.6 0.0
baz=145
AMTX Amarillo 72.02 328 eP P 02 47 40.9 +0.3
comp=Z,19nm,0.8s
P40A Paris 72.02 337 P P 02 47 40.0 -0.3
baz=153,SNR=9.8
U32A Winter Ranch, 72.03 330 P P 02 47 40.1 -0.4
baz=147
HDIL Hopedale 72.04 339 P P 02 47 39.9 -0.6
baz=156,SNR=14
HDIL Hopedale 72.04 339 eP P 02 47 39.8 -0.6
comp=Z,9nm,0.5s
Q38A Cooks Store, C 72.08 336 P P 02 47 40.4 -0.3
baz=152,SNR=11
R36A Gordon, Harris 72.23 334 P P 02 47 41.3 -0.3
baz=150
T33A Patterson Ranc 72.29 331 P P 02 47 42.6 +0.6
baz=148
Q37A Longview Farm, 72.31 335 P P 02 47 41.6 -0.4
baz=151,SNR=8.0
S34A Willow Spring 72.34 332 P P 02 47 42.5 +0.2
baz=149
O40A La Belle 72.49 337 P P 02 47 42.3 -0.8
baz=154,SNR=9.3
R35A Emporia Munici 72.51 333 P P 02 47 43.3 +0.1
baz=150,SNR=9.1
HSIG 72.51 317 eP P 02 47 44.4 +1.0
comp=Z,10nm,0.8s
S33A Kaszmaul Farm, 72.62 332 P P 02 47 44.1 +0.2
baz=148
P38A Dawn 72.63 336 P P 02 47 43.4 -0.4
baz=152,SNR=16
T32A Huddler Ranch, 72.66 331 P P 02 47 45.0 +0.8
baz=147
LONY Lake Ozonia 72.67 352 eP P 02 47 45.0 +1.0
comp=Z,29nm,1.0s
FRNY Flat Rock 72.76 352 eP P 02 47 45.5 +1.0
comp=Z,26nm,0.6s
PKME Peaks-Kenny Pk 72.79 356 eP P 02 47 45.1 +0.5
comp=Z,155nm,1.4s
O39A Kirksville 72.84 337 P P 02 47 44.5 -0.6
baz=153,SNR=5.0
P37A Lathrop 72.90 335 P P 02 47 44.6 -0.8
baz=151,SNR=11
Q35A Mercer Eighty, 72.90 334 P P 02 47 45.0 -0.5
baz=150,SNR=5.9
R34A Isabella, Hill 72.91 333 P P 02 47 45.9 +0.3
baz=149,SNR=7.7
O38A Galt 73.05 336 P P 02 47 45.7 -0.5
baz=152,SNR=6.6
S32A Newby Ranch, P 73.11 331 P P 02 47 45.8 -0.9
baz=147
LMN Caledonia Moun 73.18 359 eP P 02 47 47.6 +0.7
comp=Z,46nm,1.0s
R33A Olander Ranch, 73.22 332 P P 02 47 47.6 +0.3
baz=148,SNR=8.4
P36A Good Intent, A 73.25 335 P P 02 47 46.8 -0.6
baz=151,SNR=5.7
319A Douglas 73.26 320 eP P 02 47 49.2 +1.4
121A Cookes Peak, D 73.30 322 P P 02 47 49.2 +1.1
baz=140,SNR=10
121A Cookes Peak, D 73.30 322 eP P 02 47 48.9 +0.8
comp=Z,10nm,1.0s
121A epP pP 02 49 43.6 -1.2
Q34A Chapman 73.32 333 P P 02 47 47.9 0.0
baz=149,SNR=5.1
O37A Wolven Farm, M 73.33 336 P P 02 47 47.4 -0.5
baz=152
KSU1 Kansas State U 73.34 334 P P 02 47 47.7 -0.3
baz=150,SNR=12
KSU1 Kansas State U 73.34 334 eP P 02 47 47.7 -0.3
comp=Z,43nm,0.9s
N39A Derby Farms, D 73.38 337 P P 02 47 47.6 -0.5
baz=153,SNR=16
P35A Duane Minner, 73.48 334 P P 02 47 48.2 -0.6
baz=150
SADO Sadowa 73.52 348 P P 02 47 48.5 -0.3
comp=Z,21nm,0.7s,baz=189,slow=7.2,SNR=8.4
SADO Sadowa 73.52 348 eP P 02 47 49.0 +0.2
comp=Z,25nm,0.7s
TSUM Tsumeb 73.53 103 P P 02 47 50.1 +0.4
comp=Z,36nm,0.7s,baz=241,slow=6.7,SNR=95
TSUM Tsumeb 73.53 103 eP P 02 47 50.1 +0.4
comp=Z,42nm,0.8s
N38A Joes South For 73.56 337 P P 02 47 48.6 -0.6
baz=153
O36A Bolckow 73.60 335 P P 02 47 48.7 -0.7
baz=151,SNR=7.2
R32A Long Quarter, 73.62 332 P P 02 47 50.1 +0.5
baz=148,SNR=18
Q33A Connelly Farm, 73.74 333 P P 02 47 50.4 +0.2
baz=148,SNR=6.7
P34A Walnut Farm, R 73.81 334 P P 02 47 50.8 +0.2
baz=149,SNR=15
N37A Lee Faris, Mou 73.87 336 P P 02 47 50.6 -0.4
baz=152,SNR=7.7
BNM Barren Site 73.91 324 eP P 02 47 52.9 +1.3
Q32A Meitler Ranch, 74.03 332 P P 02 47 52.3 +0.3
baz=148,SNR=19
LPM Los Pinos Moun 74.04 324 eP P 02 47 53.3 +1.0
P33A Williams Farm, 74.06 333 P P 02 47 52.2 +0.1
baz=149
O35A Humboldt 74.07 335 P P 02 47 51.2 -0.9
baz=150
M38A Pleasantville 74.10 337 P P 02 47 51.4 -0.8
baz=153,SNR=7.1
N36A Muff Farm, Cla 74.20 336 P P 02 47 52.6 -0.2
baz=151
O34A Beatrice 74.30 334 P P 02 47 53.0 -0.4
baz=150,SNR=12
LAZ Ladron 74.38 324 eP P 02 47 55.3 +1.1
CBKS Cedar Bluff 74.38 331 P P 02 47 54.8 +0.9
baz=147,SNR=28
CBKS Cedar Bluff 74.38 331 eP P 02 47 54.8 +0.9
CBKS pmax pmax
comp=Z,90nm,0.8s
CBKS Cedar Bluff 74.38 331 eP P 02 47 54.8 +0.9
comp=Z,90nm,0.8s
M37A Trindle Farm, 74.39 336 P P 02 47 53.6 -0.2
baz=152,SNR=18
ANMO Albuquerque 74.44 324 P P 02 47 55.4 +0.8
comp=Z,13nm,0.8s,baz=144,slow=9.0,SNR=32
ANMO pP pP 02 49 52.5 +0.7
comp=Z,2.4nm,0.9s,baz=158,slow=6.1,SNR=4.4
ANMO Albuquerque 74.44 324 P P 02 47 55.4 +0.8
baz=141
ANMO Albuquerque 74.44 324 eP P 02 47 55.4 +0.8
comp=Z,11nm,0.8s
ANMO epP pP 02 49 53.2 +1.4
JFWS Jewell Farm 74.48 340 eP P 02 47 54.0 -0.3
JFWS pmax pmax
comp=Z,82nm,0.6s
JFWS Jewell Farm 74.48 340 eP P 02 47 54.0 -0.3
comp=Z,82nm,0.6s
N35A Tabor 74.49 335 P P 02 47 53.8 -0.6
baz=151,SNR=6.2
PMAR Madeira 74.51 39 eP P 02 47 56.0 +1.0
O33A Hebron 74.56 333 P P 02 47 54.8 -0.1
baz=149,SNR=15
P32A Huiting Farm, 74.59 332 P P 02 47 55.3 +0.3
baz=148,SNR=16
L38A Oak Wood Farm, 74.66 338 P P 02 47 54.8 -0.5
baz=153
M36A Felix, Anita 74.70 336 P P 02 47 55.4 -0.2
baz=151,SNR=5.1
N34A Lincoln 74.79 335 P P 02 47 55.6 -0.6
baz=150,SNR=13
TUC Tucson 74.81 320 P P 02 47 57.0 +0.5
baz=138
TUC Tucson 74.81 320 eP P 02 47 57.6 +1.1
TUC pmax pmax
comp=Z,7.0nm,1.1s
TUC Tucson 74.81 320 eP P 02 47 57.6 +1.1

TOA0 **Torodi Ar. Sit** 74.89 66 *e*P P 02 47 56.9 -0.4
TORD **Torodi Ar. Bea** 74.89 66 P P 02 47 56.8 -0.5
comp=Z,59nm,0.6s,baz=260,slow=5.4,SNR=1087
TORD pP pP 02 49 55.8 +1.2
comp=Z,9.3nm,0.7s,baz=244,slow=5.9,SNR=6.6
TORD PKiKP PKiKP 02 53 40.9 -0.8
comp=Z,0.4nm,0.5s,baz=246,slow=1.0,SNR=6.4
L37A **Phoenix Point,** 74.92 337 P P 02 47 56.2 -0.6
baz=152
O32A **Brockman Farm,** 75.00 333 P P 02 47 57.5 +0.2
baz=148,SNR=5.6
M35A **Neola** 75.03 335 P P 02 47 57.2 -0.3
baz=151
K38A **Parkersburg** 75.05 338 P P 02 47 56.9 -0.6
baz=153
N33A **J Bar K, Exete** 75.07 334 P P 02 47 57.4 -0.3
baz=149
T25A **Trinidad** 75.14 327 P P 02 47 59.7 +1.3
baz=143
T25A **Trinidad** 75.14 327 *e*P P 02 47 59.5 +1.0
comp=Z,25nm,0.8s
L36A **Harm Buss Farm** 75.22 336 P P 02 47 57.8 -0.6
baz=152
O31A **Woolen Ranch,** 75.33 332 P P 02 47 59.6 +0.4
baz=147,SNR=5.9
K37A **Belmond** 75.45 337 P P 02 47 59.1 -0.7
baz=152
L35A **Bielow Farm, R** 75.54 336 P P 02 47 60.0 -0.3
baz=151,SNR=7.1
K36A **Gilmore City** 75.61 337 P P 02 48 00.3 -0.3
baz=152
M33A **Taylor Creek F** 75.69 334 P P 02 48 00.7 -0.5
baz=149
L34A **Svendsen Farm,** 75.72 335 P P 02 48 00.9 -0.4
baz=150,SNR=10.0
214A **Organ Pipe Nat** 75.74 318 P P 02 48 02.8 +1.1
baz=136,SNR=12
214A **Organ Pipe Nat** 75.74 318 *e*P P 02 48 02.2 +0.6
comp=Z,46nm,0.8s
KSCO **Kaye Shedlock'** 75.81 329 P P 02 48 02.5 +0.5
baz=145
KSCO **Kaye Shedlock'** 75.81 329 *e*P P 02 48 03.1 +1.1
comp=Z,32nm,0.8s
J37A **Redenius Farm,** 75.90 338 P P 02 48 01.7 -0.5
baz=153
BGNE **Belgrade** 75.92 334 P P 02 48 02.5 +0.1
baz=149,SNR=14
BGNE **Belgrade** 75.92 334 *e*P P 02 48 02.5 +0.1
comp=Z,69nm,0.8s
K35A **Storm Lake** 75.96 336 P P 02 48 02.5 -0.1
baz=151
X18A **Snowflake** 75.98 322 *e*P P 02 48 04.3 +1.1
BOSA **Boshof** 76.14 115 P P 02 48 04.2 +0.1
comp=Z,62nm,0.7s,baz=256,slow=3.9,SNR=114
BOSA **Boshof** 76.14 115 *e*P P 02 48 04.3 +0.1
BOSA pmax pmax
comp=Z,73nm,0.9s
BOSA **Boshof** 76.14 115 *e*P P 02 48 04.3 +0.1
comp=Z,73nm,0.9s
SDCO **Great Sand Dun** 76.15 327 P P 02 48 05.1 +1.0
baz=142,SNR=16
SDCO **Great Sand Dun** 76.15 327 *e*P P 02 48 05.2 +1.0
comp=Z,25nm,1.4s
SDCO *e*pP pP 02 50 03.7 +1.6
I38A **Scanlan Farm,** 76.15 339 P P 02 48 03.2 -0.4
baz=154
J36A **Seneca 1, Swea** 76.18 337 P P 02 48 03.5 -0.3
baz=152
M31A **Lambtecht Ranc** 76.19 333 P P 02 48 04.5 +0.5
baz=148,SNR=6.8
L33A **Hoskins** 76.23 335 P P 02 48 04.5 +0.4
baz=149
K34A **Le Mars** 76.24 336 P P 02 48 03.8 -0.3
baz=150
W18A **Petrified Fore** 76.31 322 P P 02 48 05.5 +0.6
baz=139
I37A **Lemond, Waseca** 76.47 338 P P 02 48 05.3 -0.1
baz=153
VLDQ **Val d'Or** 76.49 350 *e*P P 02 48 05.5 +0.2
comp=Z,32nm,1.0s
K33A **Hardington** 76.51 335 P P 02 48 05.5 0.0
baz=150
I36A **Fitzsimmons Fa** 76.68 338 P P 02 48 06.3 -0.2
baz=152
J34A **George** 76.71 336 P P 02 48 06.4 -0.2
baz=151
X16A **Lo Mia Camp, P** 76.73 321 *e*P P 02 48 08.5 +1.3
S22A **4UR Ranch, Cre** 76.80 326 P P 02 48 08.6 +0.9
baz=141,SNR=13
S22A **4UR Ranch, Cre** 76.80 326 *e*P P 02 48 08.6 +0.9
comp=Z,7.6nm,0.8s
L31A **Butterfield Fa** 76.84 334 P P 02 48 07.8 +0.4
baz=148,SNR=10
I35A **Creekview Farm** 76.87 337 P P 02 48 07.4 -0.2
baz=152
K32A **Verdigre** 76.92 334 P P 02 48 07.8 -0.1
baz=149
MAW **Mawson** 76.94 161 P P 02 48 08.4 +0.8
comp=Z,33nm,0.8s,baz=201,slow=6.9,SNR=38
Q24A **Divide** 76.94 328 P P 02 48 09.6 +1.2
baz=143,SNR=17
Q24A **Divide** 76.94 328 *e*P P 02 48 09.4 +1.0
comp=Z,24nm,0.8s
J33A **Davis** 77.11 335 P P 02 48 08.6 -0.3
baz=150
OGNE **Ogallala** 77.13 331 P P 02 48 09.7 +0.5
baz=145
H36A **Jessenland, He** 77.15 338 P P 02 48 09.1 +0.1
baz=152,SNR=9.1
K31A **O'Neill** 77.19 334 P P 02 48 09.6 +0.2
baz=148
MVCO **Mesa Verde** 77.23 325 P P 02 48 11.0 +1.0
baz=140,SNR=12
MVCO **Mesa Verde** 77.23 325 *e*P P 02 48 11.0 +1.0
comp=Z,13nm,0.8s
ECSD **EROS Data Cent** 77.34 336 P P 02 48 09.9 -0.2
baz=150,SNR=29
ECSD **EROS Data Cent** 77.34 336 *e*P P 02 48 09.8 -0.2
comp=Z,29nm,0.8s
ECSD *e*pP pP 02 50 10.1 +1.5
SPMN **Marine on St.** 77.36 339 P P 02 48 09.6 -0.5
baz=153
SPMN **Marine on St.** 77.36 339 *e*P P 02 48 09.8 -0.3
comp=Z,21nm,0.5s
J32A **Parkston** 77.48 335 P P 02 48 10.5 -0.3
baz=149
WUAZ **Wupatki** 77.50 322 P P 02 48 12.3 +0.9
baz=138,SNR=7.1
WUAZ **Wupatki** 77.50 322 *e*pP pP 02 50 10.6 +0.7
comp=Z,5.2nm,1.0s
H35A **Sunnyside Ranc** 77.56 338 P P 02 48 10.9 -0.3
baz=152,SNR=12
K30A **Basset** 77.57 333 P P 02 48 11.2 -0.2
baz=148
G36A **St. Michael** 77.67 339 P P 02 48 12.1 +0.3
baz=153
I33A **Coleman** 77.68 336 P P 02 48 11.9 0.0
baz=150
GLA **Glamis** 77.71 318 P P 02 48 13.4 +1.0
baz=135
J31A **Geddes** 77.75 334 P P 02 48 12.4 +0.1
baz=148
ISCO **Idaho Springs** 77.82 328 P P 02 48 14.1 +1.0
baz=142,SNR=18
ISCO **Idaho Springs** 77.82 328 *e*P P 02 48 14.2 +1.0
ISCO pmax pmax
comp=Z,12nm,0.8s
ISCO **Idaho Springs** 77.82 328 *e*P P 02 48 14.2 +1.0
comp=Z,12nm,0.8s
H34A **Spellman Lake,** 77.86 337 P P 02 48 12.9 +0.1
baz=151
G35A **Watkins** 77.90 338 P P 02 48 13.0 0.0
baz=152
I32A **Karley and Nic** 77.90 336 P P 02 48 13.0 -0.1
baz=149
LBTB **Lobatse** 77.91 112 P P 02 48 14.0 +0.2
comp=Z,84nm,0.7s,baz=259,slow=7.2,SNR=154
LBTB **Lobatse** 77.91 112 *e*P P 02 48 13.9 0.0
comp=Z,92nm,0.8s
PV01 **Paradox Valley** 77.98 325 *e*P P 02 48 15.5 +1.5
SMCO **Snowmass** 77.99 327 *e*P P 02 48 15.6 +1.4
comp=Z,20nm,0.7s
SMCO *e*pP pP 02 50 16.7 +3.8
Y12C **Blythe** 78.02 318 P P 02 48 14.8 +0.8
baz=135,SNR=6.7
Y12C **Blythe** 78.02 318 *e*P P 02 48 15.4 +1.4
comp=Z,10nm,0.8s

J30A **Dallas** 78.07 334 P P 02 48 14.1 0.0
baz=148
F36A **Milaca** 78.16 339 P P 02 48 14.1 -0.3
baz=153,SNR=8.4
PDMCI **Parker Dam,Lak** 78.19 319 P P 02 48 15.7 +0.8
baz=136
PV05 **Paradox Valley** 78.20 325 *e*P P 02 48 16.2 +1.1
H33A **Prehn Over Nor** 78.21 336 P P 02 48 14.9 +0.2
baz=150,SNR=8.9
SWSC **Sam W. Stewart** 78.22 317 P P 02 48 15.6 +0.5
baz=134
H32A **Carlson Farm,** 78.30 336 P P 02 48 15.3 0.0
baz=150
I31A **Royce, Wessing** 78.30 335 P P 02 48 15.1 -0.2
baz=148
G34A **Benson** 78.31 337 P P 02 48 14.8 -0.5
baz=151
PV04 **Paradox Valley** 78.34 325 *e*P P 02 48 16.1 +0.2
PV10 **Paradox Valley** 78.40 325 *e*P P 02 48 17.2 +1.0
E37A **Wrenshall** 78.44 340 P P 02 48 16.0 +0.2
baz=154
J29A **Okreek** 78.47 333 P P 02 48 16.5 +0.3
baz=147
F35A **Swanville** 78.49 338 P P 02 48 16.1 -0.1
baz=152
BC3 **Big Chuckawall** 78.51 318 P P 02 48 17.5 +0.8
baz=134,SNR=7.4
PV09 **Paradox Valley** 78.54 325 *e*P P 02 48 18.4 +1.4
G33A **Ortonville** 78.55 337 P P 02 48 16.3 -0.2
baz=150
I30A **Oacoma** 78.55 334 P P 02 48 16.6 0.0
baz=148
MONP2 **Monument Peak** 78.56 317 P P 02 48 17.9 +0.7
baz=134
E36A **McGregor** 78.66 339 P P 02 48 17.0 0.0
baz=153,SNR=9.8
H31A **Wolsey** 78.67 335 P P 02 48 17.0 -0.2
baz=149
F34A **Alexandria** 78.67 338 P P 02 48 17.1 -0.1
baz=151
IRM **Iron Mountain** 78.67 318 P P 02 48 18.3 +0.8
baz=135,SNR=8.7
SUSD **Miller** 78.81 335 P P 02 48 17.8 -0.2
baz=148
N23A **Red Feather La** 78.84 328 P P 02 48 19.5 +1.0
baz=142,SNR=8.6
N23A **Red Feather La** 78.84 328 *e*P P 02 48 19.6 +1.0
comp=Z,14nm,0.8s
J28A **Allard Ranch,** 78.85 333 P P 02 48 18.8 +0.6
baz=146
C39A **Grand Marais** 78.92 342 P P 02 48 18.1 -0.3
baz=156,SNR=6.0
PHWY **Pilot Hill** 78.94 329 *e*P P 02 48 19.3 +0.2
comp=Z,16nm,0.9s
G32A **Webster** 78.97 336 P P 02 48 18.7 -0.1
baz=150
I29A **Vivian Onida** 78.98 334 P P 02 48 18.7 -0.2
baz=147
D37A **Cotton** 78.98 340 P P 02 48 18.9 +0.1
baz=154,SNR=5.4
J27A **Elkhorn Farm,** 79.02 332 P P 02 48 20.1 +0.9
baz=146
F33A **5 Mile Ranch,** 79.06 337 P P 02 48 18.9 -0.3
baz=151
E35A **Pequot Lakes** 79.06 339 P P 02 48 19.2 0.0
baz=152,SNR=7.9
BELC **Belle Mtn. Jos** 79.07 318 P P 02 48 20.8 +1.0
baz=134
PFO **Pinyon Flats O** 79.08 317 P P 02 48 20.8 +1.1
comp=Z,6.3nm,0.7s,baz=134,slow=5.0,SNR=10
PFO **Pinyon Flats O** 79.08 317 P P 02 48 20.9 +1.1
baz=134,SNR=5.6
PFO **Pinyon Flats O** 79.08 317 *e*P P 02 48 21.0 +1.2
PFO pmax pmax
comp=Z,6.0nm,0.8s
PFO **Pinyon Flats O** 79.08 317 *e*P P 02 48 21.0 +1.2
comp=Z,6.3nm,0.8s
C38A **Sawbill Land.** 79.14 341 P P 02 48 19.3 -0.3
baz=155,SNR=8.9
G31A **Conde** 79.20 336 P P 02 48 20.0 0.0
baz=149
D36A **Goodland** 79.22 340 P P 02 48 20.0 0.0
baz=153
EKU **East Kanab** 79.26 322 *e*P P 02 48 22.2 +1.5
E34A **Wadena** 79.27 338 P P 02 48 20.3 0.0
baz=152
I28A **Midland** 79.30 333 P P 02 48 20.7 +0.1
baz=146
O20A **White River Ci** 79.35 327 P P 02 48 22.2 +1.1
baz=140,SNR=12
O20A **White River Ci** 79.35 327 *e*P P 02 48 21.4 +0.3
comp=Z,23nm,1.0s
F32A **Veblen** 79.37 337 P P 02 48 20.5 -0.3
baz=150
KNB **Kanab** 79.39 322 *e*P P 02 48 22.9 +1.5
KNB *e*PP pP 02 50 23.3 +2.6
KNB pmax pmax
comp=Z,37nm,0.8s
KNB **Kanab** 79.39 322 *e*P P 02 48 22.9 +1.5
comp=Z,37nm,0.8s
KNB *e*pP pP 02 50 23.3 +2.6
D35A **Remer** 79.41 339 P P 02 48 21.5 +0.4
baz=153,SNR=20
EYMN **Ely** 79.42 341 P P 02 48 20.8 -0.2
baz=155
GMRC **Granite Mounta** 79.42 318 P P 02 48 22.6 +1.1
baz=134,SNR=13
C37A **Embarrass** 79.42 341 P P 02 48 21.1 +0.1
baz=154,SNR=7.1
PKCU **Pink Cliffs** 79.42 322 *e*P P 02 48 23.1 +1.3
comp=Z,7.4nm,0.7s
MMU **Miners Mountai** 79.44 323 *e*P P 02 48 22.7 +1.0
H29A **Onida** 79.45 334 P P 02 48 21.2 -0.1
baz=147,SNR=9.2
G30A **Faulkton** 79.47 335 P P 02 48 21.5 +0.1
baz=148
J26A **Sides Ranch, S** 79.52 332 P P 02 48 21.4 -0.4
baz=145
MURC **Murrieta** 79.52 317 P P 02 48 22.5 +0.5
baz=133
E33A **Westby DABS, E** 79.54 338 P P 02 48 21.3 -0.4
baz=151,SNR=5.3
LCMT **Little Creek M** 79.62 321 *e*P P 02 48 23.9 +1.3
comp=Z,7.7nm,0.9s
C36A **Pine Crest Far** 79.64 340 P P 02 48 22.3 +0.1
baz=154,SNR=10
SRU **San Rafael Swe** 79.71 325 *e*P P 02 48 23.8 +0.7
SRU pmax pmax
comp=Z,25nm,1.0s
SRU **San Rafael Swe** 79.71 325 *e*P P 02 48 23.8 +0.7
comp=Z,24nm,1.0s
I27A **Quinn** 79.72 333 P P 02 48 23.0 +0.2
baz=146
F31A **Hecla** 79.76 336 P P 02 48 22.9 0.0
baz=149,SNR=9.8
D34A **Park Rapids** 79.78 338 P P 02 48 23.0 0.0
baz=152
MTPU **Mount Pierson** 79.79 323 *e*P P 02 48 25.0 +1.3
comp=Z,15nm,0.7s
BBRC **Big Bear Solar** 79.80 317 P P 02 48 24.3 +0.5
baz=134
H28A **Mission Ridge** 79.81 334 P P 02 48 23.3 +0.1
baz=147
G29A **Hoven** 79.81 335 P P 02 48 23.1 -0.2
baz=148,SNR=6.0
HEC **Hector,Ludlow** 79.85 318 P P 02 48 24.9 +1.2
baz=134
J25A **Sunshine Ranch** 79.89 331 P P 02 48 24.6 +0.8
baz=144
C35A **Jirik Farms, M** 79.94 340 P P 02 48 23.7 -0.1
baz=153,SNR=19
P18A **Preston Nutter** 79.96 325 *e*P P 02 48 25.7 +1.2
comp=Z,17nm,0.7s
E32A **Braaten, Kindr** 79.98 337 P P 02 48 24.2 +0.1
baz=150
I26A **New Underwood** 80.01 332 P P 02 48 24.7 +0.3
baz=145
F30A **Leola** 80.02 336 P P 02 48 24.2 -0.1
baz=148
TUQ **Turquoise Moun** 80.03 319 P P 02 48 25.0 +0.2
baz=134
D33A **AnnSam, Waubun** 80.04 338 P P 02 48 24.4 0.0
baz=151,SNR=13
P17A **Butcher Ranch,** 80.10 325 *e*P P 02 48 25.9 +0.9
comp=Z,16nm,1.0s
G28A **Parade** 80.10 334 P P 02 48 25.1 +0.4
baz=147,SNR=14
MSU **Marysvale** 80.14 323 *e*P P 02 48 26.6 +1.2

MSU *e*PP pP 02 50 27.1 +2.1
MSU **Marysvale** 80.14 323 *e*P P 02 48 26.6 +1.2
MSU *e*pP pP 02 50 27.1 +2.1
C34A **RKJ Ranch, Bem** 80.19 339 P P 02 48 25.0 -0.1
baz=152,SNR=9.7
H27A **Howes** 80.19 333 P P 02 48 25.3 +0.1
baz=146,SNR=26
TMUT **Trail Mountain** 80.21 324 *e*P P 02 48 27.0 +1.2
comp=Z,9.4nm,0.7s
BFSC **Mount Baldy Ra** 80.23 317 P P 02 48 26.2 +0.3
baz=133
E31A **Nome** 80.23 337 P P 02 48 25.6 +0.2
baz=149,SNR=6.7
FMP **Fort Macarthur** 80.26 316 P P 02 48 25.4 -0.4
baz=133
RRX **Edison Barstow** 80.27 318 P P 02 48 26.8 +0.9
baz=134
F29A **Eureka** 80.32 335 P P 02 48 26.0 +0.1
baz=148,SNR=11
I25A **Rochford** 80.37 332 P P 02 48 26.9 +0.5
baz=144
D32A **Dogwood Acres,** 80.43 337 P P 02 48 26.4 +0.1
baz=150
B35A **Bob, Littlefor** 80.45 340 P P 02 48 26.4 0.0
baz=153,SNR=16
GSC **Goldstone, Bar** 80.45 318 P P 02 48 27.9 +1.0
baz=134
H26A **Fairpoint** 80.46 333 P P 02 48 26.8 +0.1
baz=145
K22A **Casper** 80.50 329 P P 02 48 28.0 +0.9
baz=142
K22A **Casper** 80.50 329 *e*P P 02 48 28.0 +0.9
comp=Z,68nm,1.8s
E30A **Jud** 80.55 336 P P 02 48 27.4 +0.3
baz=148,SNR=7.0
C33A **Trail** 80.56 338 P P 02 48 27.0 0.0
baz=151,SNR=22
RSSD **Black Hills** 80.58 332 P P 02 48 27.5 0.0
baz=144
RSSD **Black Hills** 80.58 332 *e*P P 02 48 27.9 +0.4
RSSD pmax pmax
comp=Z,14nm,0.9s
RSSD **Black Hills** 80.58 332 *e*P P 02 48 27.9 +0.4
comp=Z,14nm,0.9s
D31A **Mcclaflin, Tow** 80.60 337 P P 02 48 27.6 +0.4
baz=150,SNR=6.9
DECC **Green Verdugo** 80.65 317 P P 02 48 27.9 0.0
baz=133
F28A **McLaughlin** 80.70 334 P P 02 48 28.2 +0.3
baz=147,SNR=5.6
SNCC **San Nicolas Is** 80.72 315 P P 02 48 28.3 +0.1
baz=132
G27A **Dupree** 80.75 334 P P 02 48 28.4 +0.2
baz=146,SNR=11
H25A **Fruitdale** 80.80 332 P P 02 48 28.7 +0.2
baz=144,SNR=6.2
B34A **Aery, Baudette** 80.84 339 P P 02 48 28.5 0.0
baz=152,SNR=5.7
C32A **Crookston** 80.86 338 P P 02 48 28.4 -0.2
baz=150
E29A **Napoleon** 80.87 336 P P 02 48 28.7 0.0
baz=148
EDW2 **Edwards Air Fo** 80.87 317 P P 02 48 28.4 -0.6
baz=133
G26A **Maurine** 80.94 333 P P 02 48 29.1 -0.1
baz=145,SNR=11
B33A **Robert and Kas** 80.95 339 P P 02 48 29.2 +0.2
baz=151,SNR=13
MPU **Maple Canyon** 80.96 324 *e*P P 02 48 30.7 +1.2
comp=Z,9.8nm,0.7s
MPU *e*pP pP 02 50 32.6 +3.1
D30A **Buchanan** 81.01 336 P P 02 48 30.0 +0.6
baz=149,SNR=31
AGMN **Agassiz Nation** 81.06 339 P P 02 48 29.7 +0.2
baz=151,SNR=14
AGMN **Agassiz Nation** 81.06 339 *e*P P 02 48 29.8 +0.2
comp=Z,36nm,0.8s
LRMC **Laurel Mtn Rad** 81.09 318 P P 02 48 30.5 +0.3
baz=133
OSI **Osito Audit: C** 81.13 317 P P 02 48 30.6 +0.2
baz=132
NLU **North Lily Min** 81.14 324 *e*P P 02 48 31.8 +1.2
comp=Z,4.9nm,0.7s
F27A **Lemmon** 81.19 334 P P 02 48 30.6 +0.2
baz=146,SNR=17
G25A **Newell** 81.19 333 P P 02 48 30.7 +0.3
baz=145,SNR=14
C31A **Landman Farms,** 81.24 337 P P 02 48 30.6 +0.1
baz=150,SNR=16
E28A **Huff** 81.27 335 P P 02 48 31.3 +0.6
baz=147,SNR=8.2
D29A **Pettibone, Tap** 81.27 336 P P 02 48 31.2 +0.5
baz=148,SNR=7.2
SCZ2 **Santa Cruz Isl** 81.28 316 P P 02 48 31.5 +0.4
baz=132
JLU **Jordanelle** 81.30 325 *e*P P 02 48 32.4 +1.0
comp=Z,13nm,0.6s
B32A **Ashes, Strandq** 81.36 338 P P 02 48 31.3 +0.2
baz=151,SNR=15
MPMC **Manual Prospec** 81.37 318 P P 02 48 31.6 -0.2
baz=133
C30A **Mose, Erskin** 81.42 337 P P 02 48 32.0 +0.6
baz=149,SNR=16
F26A **Lodgepole** 81.43 333 P P 02 48 31.9 +0.2
baz=145
A33A **Warroad** 81.47 339 P P 02 48 31.9 +0.3
baz=152,SNR=15
E27A **Carson** 81.48 334 P P 02 48 32.2 +0.3
baz=146,SNR=7.6
TCUT **Toone Canyon** 81.66 325 *e*P P 02 48 34.3 +1.1
comp=Z,33nm,1.0s
DUG **Dugway, Tooele** 81.70 324 P P 02 48 34.0 +0.8
baz=137,SNR=10
DUG **Dugway, Tooele** 81.70 324 *e*P P 02 48 34.1 +0.8
DUG pmax pmax
comp=Z,8.0nm,0.8s
DUG **Dugway, Tooele** 81.70 324 *e*P P 02 48 34.1 +0.8
comp=Z,7.7nm,0.8s
D28A **Regan** 81.74 335 P P 02 48 33.6 +0.5
baz=147,SNR=6.1
B31A **Greenbush Farm** 81.76 338 P P 02 48 33.1 0.0
baz=150,SNR=17
A32A **Rocking H Ranc** 81.81 339 P P 02 48 33.8 +0.4
baz=151
F25A **Bowman** 81.81 333 P P 02 48 34.0 +0.4
baz=145
E26A **Carlson Angus** 81.86 334 P P 02 48 34.0 +0.2
baz=146,SNR=5.3
R11A **Troy Canyon, C** 81.87 321 P P 02 48 35.2 +1.0
baz=135
R11A **Troy Canyon, C** 81.87 321 *e*P P 02 48 34.7 +0.4
comp=Z,8.0nm,0.8s
R11A *e*pP pP 02 50 36.1 +1.6
MDND **Maddock** 81.94 336 P P 02 48 34.7 +0.6
baz=148,SNR=6.8
MDND **Maddock** 81.94 336 *e*P P 02 48 34.9 +0.7
comp=Z,107nm,0.9s
GRAC **Grapevine Rang** 81.95 319 P P 02 48 34.4 -0.1
baz=134
MCU **Monte Cristo P** 81.97 326 *e*P P 02 48 35.4 +0.6
PKM **Mcpherson Peak** 81.98 316 P P 02 48 35.0 +0.1
baz=132
BW06 **Boulder Array** 82.00 328 P P 02 48 34.9 +0.1
baz=140,SNR=10.0
BW06 **Boulder Array** 82.00 328 *e*P P 02 48 35.1 +0.2
comp=Z,7.6nm,0.7s
PD31 **Pinedale Array** 82.00 328 *e*P P 02 48 35.0 +0.2
PDAR **Pinedale Array** 82.00 328 P P 02 48 34.9 +0.1
comp=Z,7.6nm,0.6s,baz=125,slow=8.1,SNR=72
PDAR pP pP 02 50 35.8 +0.7
comp=Z,0.6nm,0.5s,baz=126,slow=4.6,SNR=3.2
PDAR PKKPbc PKKPbc 03 06 59.1 -2.1
comp=Z,0.5nm,0.6s,baz=222,slow=1.2,SNR=6.1
B30A **Myrvik Farm, E** 82.01 337 P P 02 48 34.9 +0.4
baz=149,SNR=30
D27A **Center** 82.03 335 P P 02 48 34.9 +0.3
baz=146,SNR=6.7
HWUT **Hardware Ranch** 82.11 326 *e*P P 02 48 35.8 +0.5
comp=Z,57nm,1.5s
HWUT *e*pP pP 02 50 36.8 +1.0
C28A **Hausauer Farms** 82.11 336 P P 02 48 35.5 +0.5
baz=147
SCHQ **Schefferville** 82.22 358 P P 02 48 35.2 -0.1
comp=Z,34nm,0.8s,baz=174,slow=3.9,SNR=36
SCHQ **Schefferville** 82.22 358 *e*P P 02 48 35.3 -0.1
comp=Z,35nm,0.8s
E25A **Miller Ranch,** 82.25 333 P P 02 48 36.1 +0.2
baz=145

MATP **Matopo** 82.31 109 P P 02 48 37.4 +0.5
comp=Z,75nm,0.6s,baz=245,slow=5.2,SNR=226
D26A **Manning** 82.31 334 P P 02 48 36.5 +0.4
baz=146,SNR=7.9
SPUT **South Promonto** 82.33 325 *e*P P 02 48 37.5 +1.0
comp=Z,17nm,1.0s
BGU **Big Grassy Mou** 82.35 324 *e*P P 02 48 37.4 +0.9
comp=Z,11nm,0.9s
SMMC **Simmler** 82.38 316 P P 02 48 36.6 -0.1
baz=132
B29A **Wagenman Farm,** 82.38 337 P P 02 48 36.7 +0.4
baz=148,SNR=13
A30A **Hoffart Farm,** 82.42 338 P P 02 48 36.7 +0.1
baz=149,SNR=9.7
TIN **Tinemaha, Big** 82.49 319 P P 02 48 37.4 +0.1
baz=133
C27A **Sayler Ranch,** 82.52 335 P P 02 48 37.6 +0.5
baz=146,SNR=9.6
MLI **Malad Range** 82.70 326 *e*P P 02 48 38.8 +0.4
B28A **Dugan Ranch, T** 82.72 336 P P 02 48 38.6 +0.5
baz=147,SNR=24
A29A **Manning Farm,** 82.73 337 P P 02 48 38.3 +0.3
baz=148,SNR=19
AHID **Auburn Hatcher** 82.74 327 *e*P P 02 48 39.2 +0.7
comp=Z,13nm,0.6s
AHID *e*pP pP 02 50 39.2 +0.1
D25A **Fairfield** 82.75 334 P P 02 48 39.2 +0.9
baz=145,SNR=8.7
ULM **Lac du Bonnet** 82.78 340 P P 02 48 38.0 -0.2
comp=Z,20nm,0.7s,baz=158,slow=6.1,SNR=25
ULM **Lac du Bonnet** 82.78 340 P P 02 48 38.0 -0.2
ULM pmax pmax
comp=Z,20nm,0.7s
ULM **Lac du Bonnet** 82.78 340 *e*P P 02 48 38.0 -0.2
C26A **Wahner Farm, P** 82.84 335 P P 02 48 39.5 +0.8
baz=146,SNR=7.3
HVU **Hansel Valley** 82.84 325 *e*P P 02 48 39.6 +0.6
HVU pmax pmax
comp=Z,8.0nm,0.8s
HVU **Hansel Valley** 82.84 325 *e*P P 02 48 39.6 +0.6
comp=Z,8.0nm,0.8s
PBDV **Barranco-do-Ve** 82.89 41 *e*P P 02 48 40.0 +0.8
B27A **Peters Farms,** 83.01 336 P P 02 48 40.7 +1.2
baz=147
REDW **Red Top Meadow** 83.07 327 *e*P P 02 48 40.6 +0.4
comp=Z,28nm,1.6s
A28A **Rude Farm, Bot** 83.08 336 P P 02 48 40.3 +0.5
baz=148,SNR=7.3
PCVE **Castro Verde** 83.09 41 *e*P P 02 48 40.6 +0.4
PVAQ **Vaqueiros** 83.13 41 *e*P P 02 48 40.8 +0.5
MESJ **Messejana** 83.13 41 *e*P P 02 48 40.7 +0.4
MESJ AMb AMB 02 48 45.1
comp=Z,40nm,1.9s
MESJ **Messejana** 83.13 41 *e*P P 02 48 40.7 +0.4
MESJ **Messejana** 83.13 41 *e*P P 02 48 40.7 +0.4
PNCL **Nicasio / Gran** 83.14 40 *e*P P 02 48 40.6 +0.3
LOHW **Long Hollow** 83.14 327 *e*P P 02 48 40.9 +0.4
comp=Z,8.2nm,0.8s
LOHW *e*pP pP 02 50 44.3 +3.0
C25A **Freed Ranch, W** 83.19 334 P P 02 48 41.0 +0.6
baz=145
MLAC **Mammoth, Mammo** 83.23 319 P P 02 48 42.3 +1.1
baz=133
TAM **Tamanrasset** 83.25 60 *e*P P 02 48 41.0 -0.5
TAM pmax pmax
comp=Z,26nm,0.9s
TAM **Tamanrasset** 83.25 60 *e*P P 02 48 41.0 -0.5
comp=Z,26nm,0.9s
MOOW **Moose Ponds** 83.31 327 *e*P P 02 48 41.7 +0.3
comp=Z,4.7nm,0.8s
B26A **Jensen Ranch,** 83.35 335 P P 02 48 43.1 +1.9
baz=146
PACT **Alcochete** 83.41 40 *e*P P 02 48 43.0 +1.3
PBEJ **Beja** 83.46 41 *e*P P 02 48 42.3 +0.3
A27A **Ledoux Ranch,** 83.46 336 P P 02 48 42.8 +1.0
baz=147
NVAR **Mina Array Bea** 83.47 320 P P 02 48 42.7 +0.4
comp=Z,2.8nm,0.6s,baz=126,slow=4.7,SNR=2.3
IMW **Indian Meadow** 83.51 327 *e*P P 02 48 43.1 +0.6
comp=Z,14nm,0.8s
IMW *e*pP pP 02 50 44.5 +1.2
FLWY **Flagg Ranch** 83.54 328 *e*P P 02 48 43.3 +0.8
comp=Z,9.3nm,0.8s
LAO **LASA Array** 83.56 332 P P 02 48 42.4 +0.1
baz=143,SNR=9.7
LAO **LASA Array** 83.56 332 *e*P P 02 48 42.4 +0.1
comp=Z,16nm,0.8s
LAO *e*pP pP 02 50 45.0 +1.7
B25A **Knox Farm, Ray** 83.61 334 P P 02 48 43.2 +0.7
baz=145
RLMT **Red Lodge** 83.66 329 P P 02 48 43.4 +0.3
baz=140,SNR=9.8
RLMT **Red Lodge** 83.66 329 *e*P P 02 48 43.5 +0.3
comp=Z,26nm,1.3s
A26A **Wade Farm, Ken** 83.71 335 P P 02 48 43.5 +0.5
baz=146,SNR=10
H17A **Grant Village** 83.72 328 P P 02 48 44.0 +0.6
baz=139
EVO **Evora** 83.72 40 *e*P P 02 48 43.7 +0.5
LKWY **Lake** 83.76 328 *e*P P 02 48 45.0 +1.3
LKWY pmax pmax
comp=Z,9.0nm,0.8s
LKWY **Lake** 83.76 328 *e*P P 02 48 45.0 +1.3
comp=Z,9.2nm,0.8s
PMTG **Montargil** 83.96 40 *e*P P 02 48 44.4 0.0
comp=Z,66nm,1.0s
PBAR **Barrancos** 84.04 41 *e*P P 02 48 45.0 +0.2
YMR **Madison River** 84.10 328 *e*P P 02 48 46.4 +1.1
comp=Z,29nm,1.3s
A25A **Svangstu Ranch** 84.14 335 P P 02 48 45.6 +0.5
baz=145
DGMT **Dagmar** 84.17 334 P P 02 48 46.0 +0.7
baz=144,SNR=8.4
DGMT **Dagmar** 84.17 334 *e*pP pP 02 50 46.8 +0.4
comp=Z,20nm,0.9s
PESTR **Estremoz** 84.19 40 *e*P P 02 48 45.8 +0.2
comp=Z,48nm,1.4s
PTOM **Tomar** 84.23 39 *e*P P 02 48 46.0 +0.3
comp=Z,90nm,1.1s
LSZ **Lusaka** 84.35 104 P P 02 48 48.8 +1.7
comp=Z,61nm,0.9s,baz=240,slow=5.2,SNR=76
LSZ **Lusaka** 84.35 104 *e*P P 02 48 48.6 +1.5
LSZ pmax pmax
comp=Z,83nm,0.9s
LSZ **Lusaka** 84.35 104 *e*P P 02 48 48.6 +1.5
comp=Z,83nm,0.9s
GCMT **Greycliff** 84.36 329 *e*P P 02 48 46.8 +0.4
QLMT **Earthquake Lak** 84.44 328 *e*P P 02 48 48.3 +1.4
PCAS **Casmilo, Conde** 84.48 39 *e*P P 02 48 47.2 +0.2
PMRV **Marv??o** 84.68 40 *e*P P 02 48 47.7 -0.3
PCBR **Castelo Branco** 84.91 40 *e*P P 02 48 49.0 0.0
comp=Z,44nm,0.9s
HLID **Hailey** 84.97 325 P P 02 48 50.6 +1.1
baz=136,SNR=37
HLID **Hailey** 84.97 325 *e*P P 02 48 50.6 +1.1
comp=Z,30nm,1.0s
HLID *e*pP pP 02 50 54.6 +3.6
MCMT **McKenzie Canyo** 85.12 327 *e*P P 02 48 51.3 +1.0
MCMT *e*pP pP 02 50 53.7 +1.9
BOZ **Bozeman (W)** 85.15 328 P P 02 48 50.4 +0.1
baz=138
BOZ **Bozeman (W)** 85.15 328 *e*P P 02 48 50.1 -0.2
BOZ pmax pmax
comp=Z,4.0nm,0.9s
BOZ **Bozeman (W)** 85.15 328 *e*P P 02 48 50.1 -0.2
comp=Z,3.6nm,0.9s
PTO **Porto** 85.17 38 *e*P P 02 48 50.6 +0.4
comp=Z,53nm,1.3s
MTE **Manteigas** 85.25 39 *e*P P 02 48 50.6 -0.2
comp=Z,71nm,1.0s
MTE **Manteigas** 85.25 39 *e*P P 02 48 51.0 +0.2
comp=Z,57nm,1.0s
PVIS **Viseu** 85.27 39 *e*P P 02 48 50.5 -0.3
DLMT **Dillon** 85.39 328 *e*P P 02 48 52.3 +0.8
comp=Z,17nm,0.9s
DLMT *e*pP pP 02 50 54.4 +1.3
MFID **Camas Ranch** 85.58 325 *e*P P 02 48 53.0 +0.6
comp=Z,13nm,1.0s
LRM **Limekiln Ridge** 85.66 328 *e*P P 02 48 53.8 +1.0
PVRL **Vila Real** 85.75 39 *e*P P 02 48 53.1 0.0
comp=Z,74nm,1.0s
POLO **Lamas de Olo** 85.77 38 *e*P P 02 48 53.3 0.0
comp=Z,20nm,1.2s
PCAB **Cabril** 85.87 38 *e*P P 02 48 53.5 -0.2
PGAV **Gavieira, Arco** 85.91 38 *e*P P 02 48 53.8 -0.2
MVO **Moncorvo** 86.06 39 *e*P P 02 48 54.8 +0.2
comp=Z,38nm,1.0s
ORV **Oroville** 86.07 319 *e*P P 02 48 56.3 +1.7
ORV *e*PP pP 02 50 57.8 +1.3
ORV pmax pmax
comp=Z,14nm,1.2s
ORV **Oroville** 86.07 319 *e*P P 02 48 56.3 +1.7
comp=Z,14nm,1.2s
ORV *e*pP pP 02 50 57.8 +1.3
EGMT **Eagleton** 86.10 331 P P 02 48 54.8 +0.1
baz=140,SNR=5.1
EGMT **Eagleton** 86.10 331 *e*P P 02 48 54.8 +0.1
comp=Z,16nm,1.1s
EGMT *e*pP pP 02 50 57.8 +1.2
WVOR **Wild Horse Val** 86.38 322 *e*P P 02 48 56.7 +0.5
WVOR pmax pmax
comp=Z,11nm,1.4s
WVOR **Wild Horse Val** 86.38 322 *e*P P 02 48 56.7 +0.5
comp=Z,11nm,1.4s
PAB **San Pablo** 86.52 42 *e*P P 02 48 57.2 +0.3
PAB pmax pmax
comp=Z,20nm,1.3s
PAB **San Pablo** 86.52 42 *e*P P 02 48 57.2 +0.3
comp=Z,20nm,1.3s
PBRG **Braganca** 86.64 39 *e*P P 02 48 57.4 +0.1
O03D **Paynes Creek** 86.73 319 P P 02 48 57.8 -0.1
baz=131
ESDC **Sonseca Array** 86.83 42 P P 02 48 58.5 +0.2
comp=Z,3.4nm,0.5s,baz=246,slow=4.6,SNR=42
ESLA **Sonseca Array** 86.83 42 *e*P P 02 48 58.4 +0.1
comp=Z,8.0nm,0.8s
CHMT **Chamberlain Mo** 86.84 328 *e*P P 02 48 59.1 +0.7
ES19 **SONSECA Array** 86.89 42 *e*P P 02 48 58.4 -0.2
MOD **Modoc Plateau** 86.94 321 *e*P P 02 48 60.0 +1.1
comp=Z,9.3nm,0.8s
MSO **Missoula** 87.10 328 P P 02 48 59.9 +0.5
baz=137,SNR=7.3
MSO **Missoula** 87.10 328 *e*P P 02 49 00.1 +0.6
comp=Z,32nm,1.8s
WDC **Whiskeytown Da** 87.34 319 *e*P P 02 49 00.3 -0.3
WDC pmax pmax
comp=Z,8.0nm,0.6s
WDC **Whiskeytown Da** 87.34 319 *e*P P 02 49 00.3 -0.3
comp=Z,8.3nm,0.6s
BMO **Blue Mountains** 87.35 325 *e*P P 02 49 01.2 +0.6
comp=Z,5.7nm,0.9s
SWMT **Swartz Lake** 87.63 328 *e*P P 02 49 02.3 +0.4
SWMT *e*pP pP 02 51 06.1 +1.7
N02D **Trinity Center** 87.69 319 P P 02 49 02.2 -0.2
baz=130
M04C **Macdoel** 87.72 320 P P 02 49 02.9 +0.4
baz=131,SNR=7.9
K05A **Summer Lake** 87.81 322 *e*P P 02 49 03.9 +0.9
comp=Z,20nm,0.9s
K05A *e*pP pP 02 51 07.5 +2.0
YBMT **Yellow Bay** 87.89 329 *e*P P 02 49 03.6 +0.4
JTMT **Jette** 87.93 328 *e*P P 02 49 03.8 +0.4
M02C **Callahan** 88.05 320 P P 02 49 04.6 +0.6
baz=130
F10A **Beach Ranch, E** 88.09 326 *e*P P 02 49 05.6 +1.5
comp=Z,14nm,1.5s
BLMT **Blacktail Moun** 88.16 329 *e*P P 02 49 05.2 +0.7
YBH **Yreka Blue Hor** 88.19 320 P P 02 49 04.3 -0.3
comp=Z,5.6nm,0.7s,baz=111,slow=7.3,SNR=18
YBH **Yreka Blue Hor** 88.19 320 *e*P P 02 49 04.1 -0.5
comp=Z,4.6nm,0.7s
K04D **Chiloquin, OR** 88.22 321 P P 02 49 04.9 +0.1
baz=131
BSMT **Bassoo Peak** 88.24 328 *e*P P 02 49 05.2 +0.3
J05D **Fort Rock, OR** 88.37 322 P P 02 49 06.0 +0.5
baz=131
FFC **Flin Flon** 88.54 339 *e*P P 02 49 05.8 0.0
FFC pmax pmax
comp=Z,12nm,1.0s
FFC **Flin Flon** 88.54 339 *e*P P 02 49 05.8 0.0
comp=Z,12nm,1.0s
WALA **Waterton Lakes** 88.71 329 *e*P P 02 49 07.2 +0.3
WALA *e*pP pP 02 51 09.6 -0.1
HUMO **Hull Mountain** 88.89 320 *e*P P 02 49 07.5 -0.3
comp=Z,14nm,0.6s
L02D **Cave Junction,** 88.97 320 P P 02 49 09.2 +1.0
baz=130
I05D **Terrebonne, OR** 89.12 322 P P 02 49 09.7 +0.9
baz=131
I04A **Tendick Farm,** 89.35 322 P P 02 49 09.5 -0.5
baz=130
NEW **Newport** 89.64 327 P P 02 49 10.3 -0.9
comp=Z,2.9nm,0.7s,baz=137,slow=7.0,SNR=8.2
NEW **Newport** 89.64 327 P P 02 49 10.5 -0.6
baz=134
G05D **Wamic, OR** 89.70 323 P P 02 49 12.5 +1.0
baz=131
H04A **Detroit Lake** 89.81 322 *e*P P 02 49 12.2 +0.1
comp=Z,7.5nm,0.7s
I03D **Drain, OR** 89.81 321 P P 02 49 12.4 +0.4
baz=130
FCC **Fort Churchill** 89.83 345 *e*P P 02 49 11.5 -0.2
FCC **Fort Churchill** 89.83 345 *e*P P 02 49 11.5 -0.2
C09A **Chrisman Ranch** 89.87 326 *e*P P 02 49 12.2 0.0
comp=Z,13nm,0.6s
C09A *e*pP pP 02 51 16.3 +1.0
G03D **McMinnville, O** 90.73 322 P P 02 49 17.1 +0.9
baz=130
B05A **Bryant** 92.09 325 P P 02 49 21.7 -0.6
baz=131
LFF **La Frestale** 92.84 40 *e*P P 02 49 25.3 -0.6
LFF pmax pmax
comp=Z,16nm,0.6s
OXZ **Oxford** 92.99 217 *e*P P 02 49 25.9 -1.0
KEST **Kesra** 93.07 51 P P 02 49 27.7 +0.4
comp=Z,7.1nm,1.0s,baz=158,slow=2.4,SNR=10
LTZ **Lake Taylor** 93.24 217 *e*P P 02 49 33.5 +5.5
MFF **Saint Martin d** 93.36 38 *e*P P 02 49 27.5 -0.7
MFF pmax pmax
comp=Z,17nm,1.0s
CAF **Calviac** 93.59 40 *e*P P 02 49 28.8 -0.6
CAF pmax pmax
comp=Z,11nm,1.1s
LBL **Lubilhac** 94.45 41 *e*P P 02 49 34.0 +0.6
LDF **La Druitiere** 94.58 36 *e*P P 02 49 32.5 -1.3
LDF pmax pmax
comp=Z,6.0nm,0.8s
PYM **Petit Puy Mans** 94.61 40 *e*P P 02 49 33.8 -0.3
AGO **Saint Agoulin** 94.86 40 *e*P P 02 49 35.2 +0.1
PLDF **La Plantade** 95.09 40 *e*P P 02 49 36.6 +0.4
SSB **Saint Sauveur** 95.23 41‖ *e*P P 02 49 37.1 +0.3
SSB **Saint Sauveur** 95.23 41 *e*P P 02 49 37.4 +0.6
SSB **Saint Sauveur** 95.23 41 *e*P P 02 49 37.4 +0.6
CALN **Calern** 95.78 43 *e*P P 02 49 39.8 +0.3
MVIF **Mont Vial** 96.01 43 *e*P P 02 49 38.1 -2.5
REVF **Revere** 96.06 43 *e*P P 02 49 40.0 -0.6
LUCF **Luceram** 96.13 43 *e*P P 02 49 41.4 +0.4
LPL **La Plagne** 96.64 42 *e*P P 02 49 43.5 +0.1
LPL pmax pmax
comp=Z,9.0nm,0.9s
LPG **La Plagne** 96.64 42 *e*P P 02 49 43.6 +0.1
LPG pmax pmax
comp=Z,10.0nm,0.8s
ESK **Eskdalemuir** 97.26 30 *e*P Pdif 02 49 44.4 -1.2
ESK pmax pmax
comp=Z,4.0nm,0.6s
ESK **Eskdalemuir** 97.26 30 *e*P Pdif 02 49 44.4 -1.2
comp=Z,4.1nm,0.6s
EKA **Eskdalemuir Ar** 97.29 30 P Pdif 02 49 44.8 -1.0
comp=Z,1.3nm,0.4s,baz=228,slow=3.2,SNR=25
EKA PKKPbc **PKKPbc** 03 06 21.4 -1.6
comp=Z,0.5nm,0.6s,baz=15,slow=2.9,SNR=3.5
SENIN **Lac Senin/Sane** 97.43 41 *e*P P 02 49 47.7 +0.7
CDF **Champ du Feu** 98.52 39 *e*P Pdif 02 49 50.7 -0.8
CDF pmax pmax
comp=Z,9.0nm,0.9s
WLF **Walferdange** 98.57 38 *e*P Pdif 02 49 51.7 +0.1
WLF **Walferdange** 98.57 38 *e*Pdif Pdif 02 49 51.7 +0.1
YKA **Yellowknife Ar** 98.72 338 P Pdif 02 49 51.6 -0.3
comp=Z,2.8nm,0.6s,baz=126,slow=4.6,SNR=120
YKA *e*pP pP 02 51 54.1 -1.8
comp=Z,1.8nm,0.8s,baz=127,slow=4.4,SNR=14
YKA PKiKP **PKiKP** 02 54 19.0 -0.4
comp=Z,0.2nm,0.5s,baz=143,slow=1.6,SNR=8.6
YKB5 **Yellowknife Ar** 98.72 338 *e*Pdif Pdif 02 49 51.4 -0.5
YKW3 **Yellowknife Ar** 98.77 339 *e*Pdif Pdif 02 49 51.9 -0.2
BFO **Black Forest** 99.07 40 *i* P **Pdif** **02 49 54.5 +0.6**
BFO **Black Forest** 99.07 40 *e*Pdif **Pdif** **02 49 53.6 -0.3**
DAVOX **Davos/Dischmat** 99.17 42 P **Pdif** **02 49 55.2 +0.6**
comp=Z,4.3nm,0.6s,baz=210,slow=6.9,SNR=12
STU **Stuttgart** 99.79 40 *e*P **Pdif** **02 49 57.1 0.0**
STU **Stuttgart** 99.79 40 *e*Pdif **Pdif** 02 49 57.1 0.0
GERES **GERESS Array B** 102.42 41 P **Pdif** **02 50 09.8 +0.9**
comp=Z,0.3nm,0.6s,baz=236,slow=4.6,SNR=3.3
GERES PKiKP **PKiKP** **02 54 26.3 -0.4**
comp=Z,0.7nm,0.7s,baz=214,slow=1.1,SNR=7.4
CLL **Collm** 103.17 39 *e*Pdif **Pdif** 02 50 16.0 +4.0
CLL **Collm** 103.17 39 *e*P **Pdif** 02 50 16.0 +4.0
INK **Inuvik** 108.49 338 PKiKP **PKiKP** 02 54 37.1 -0.1
comp=Z,1.1nm,0.8s,baz=76,slow=2.2,SNR=5.0
INK PKKPbc **PKKPbc** 03 05 48.3 -2.1
comp=Z,2.0nm,0.8s,baz=315,slow=2.0,SNR=4.1
INK **Inuvik** 108.49 338 *e*PKP **PKiKP** 02 54 36.8 -0.5
INK PKKPbc **PKKPbc** 03 05 48.3 -2.1
CSS **Mathiatis** 110.35 60 *e*PKP **PKiKP** 02 54 42.2 +0.4
DOT **Dot Lake** 110.47 332 *e*PKP **PKiKP** 02 54 41.5 +0.3
SML **Sawmill** 111.71 329 *e*PKiKP **PKiKP** 02 54 43.0 -0.6
SML **Sawmill** 111.71 329 *e*PKP **PKiKP** 02 54 43.0 -0.6
ILAR **Eielson Array** 112.01 333 PKiKP **PKiKP** 02 54 43.7 -0.3
comp=Z,1.0nm,0.8s,baz=129,slow=1.3,SNR=9.4
RC01 **Rabbit Creek A** 112.14 328 *e*PKP **PKiKP** 02 54 44.2 -0.2
BRTR **Keskin Array B** 112.14 56 PKiKP **PKiKP** 02 54 44.9 -0.3
comp=Z,1.7nm,0.8s,baz=194,slow=3.3,SNR=15
BRTR SKP 02 57 28.1
comp=Z,0.7nm,0.9s,baz=211,slow=3.7,SNR=3.7
KIEV **Kiev** 112.41 43 *e*PKiKP **PKiKP** 02 54 43.8 -1.4
KIEV **Kiev** 112.41 43 *e*PKP **PKiKP** 02 54 43.8 -1.4
AKASG **Malin Array Be** 112.42 43 PKiKP **PKiKP** 02 54 44.0 -1.2
comp=Z,2.4nm,0.6s,baz=265,slow=2.5,SNR=18
AKASG SKP 02 57 27.1
comp=Z,0.7nm,0.6s,baz=264,slow=2.8,SNR=5.2
COLA **College** 112.43 333 *e*PKiKP **PKiKP** 02 54 44.4 -0.4
COLA **College** 112.43 333 *e*PKP **PKiKP** 02 54 44.4 -0.4
MCK **McKinley** 112.55 331 *e*PKiKP **PKiKP** 02 54 45.4 +0.3
MCK **McKinley** 112.55 331 *e*PKP **PKiKP** 02 54 45.4 +0.3
TRF **Thorofare Moun** 113.05 331 *e*PKP **PKiKP** 02 54 46.3 0.0
VSU **Vasula** 113.16 35⇑ *i*PKiKP **PKiKP** 02 54 46.0 -0.4
KTH **Kantishna Hill** 113.35 331 *e*PKP **PKiKP** 02 54 46.4 -0.3
BPAW **Bear Paw Mtn.** 113.52 331 *e*PKP **PKiKP** 02 54 46.5 -0.5
FINES **FINESS Array B** 113.61 32 PKiKP **PKiKP** 02 54 46.9 -0.2
comp=Z,1.4nm,0.5s,baz=225,slow=1.2,SNR=15
FINES PKKPbc **PKKPbc** 03 05 32.4 -1.3
comp=Z,1.5nm,0.8s,baz=72,slow=4.5,SNR=10
FINES PKKPab **PKKPab** 03 05 40.6 +0.7
comp=Z,0.6nm,0.5s,baz=84,slow=3.1,SNR=6.6
SPITS **Spitsbergen Ar** 114.79 13 PKKPbc PKKPbc 03 05 28.5 -1.6
comp=Z,5.8nm,0.8s,baz=116,slow=6.6,SNR=14
SPITS PKKPab **PKKPab** 03 05 35.5 +1.0
comp=Z,5.7nm,0.9s,baz=99,slow=8.9,SNR=5.1
ARCES **ARCESS Array B** 115.21 23 PKP **PKPdf** 02 54 49.6 -0.4
comp=Z,3.4nm,0.7s,baz=246,slow=3.8,SNR=14
ARCES PKKPbc **PKKPbc** 03 05 27.3 -1.2
comp=Z,9.0nm,1.1s,baz=86,slow=3.3,SNR=30
ARCES PKKPab **PKKPab** 03 05 34.2 +1.5
comp=Z,1.5nm,0.6s,baz=80,slow=5.6,SNR=6.2
STKA **Stephens Creek** 116.21 204 PKKPbc PKKPbc 03 05 23.6 -1.5
comp=Z,1.1nm,0.5s,baz=270,slow=10,SNR=3.7
RAYN **Ar Rayn** 116.48 76 *e*PKPdf **PKPdf** **02 54 53.8 -0.1**
OBN **Obninsk** 117.74 40 *d* *i*PKiKP **PKPdf** **02 54 54.7 -0.6**
OBN 02 56 20.0
OBN *e* 03 01 19.7
OBN pmax pmax
comp=Z,24nm,1.2s
VSR **Storozhevoye** 118.66 44 *e*PKiKP **PKPdf** **02 54 56.0 -1.2**
VSR pmax pmax
comp=Z,10.0nm,1.1s
LPSR **Galich'ya Gora** 118.73 43 *e*PKiKP **PKPdf** **02 54 56.6 -0.7**
LPSR pmax pmax
comp=Z,20nm,0.7s
NEY **Neytrino** 119.63 54‖ *i*PKiKP **PKPdf** **02 55 00.2 +0.6**
KIV **Kislovodsk** 119.74 53 *d* *i*PKiKP **PKPdf** **02 54 58.6 -1.0**
KIV pmax pmax
comp=Z,11nm,0.9s
KIV **Kislovodsk** 119.74 53 *e*PKPdf **PKPdf** **02 54 59.4 -0.3**
KBZ **Khabaz** 119.85 53 PKP **PKPdf** **02 54 59.6 0.0**
comp=Z,5.4nm,0.8s,baz=231,slow=5.6,SNR=15
GOF **Gofitskoye** 120.19 52‖ *i*PKiKP **PKPdf** **02 55 00.1 -0.2**
VRH **Novokhopyorsk** 120.25 45 *e*PKiKP **PKPdf** **02 54 59.9 -0.3**
VRH pmax pmax
comp=Z,20nm,0.6s
ZEI **Tsey** 120.39 55 *i*PKiKP **PKPdf** **02 55 00.6 -0.5**
ZEI pmax pmax
comp=Z,8.0nm,0.7s
GNI **Garni** 120.49 58 PKP **PKPdf** **02 55 01.8 +0.5**
comp=Z,3.6nm,0.8s,baz=174,slow=6.1,SNR=4.2
GNI **Garni** 120.49 58 PKiKP **PKPdf** **02 55 01.8 +0.5**
GNI pmax pmax
comp=Z,5.0nm,0.6s
GNI **Garni** 120.49 58 *e*PKPdf **PKPdf** **02 55 01.3 0.0**
GNI PKP **PKPdf** **02 55 01.8 +0.5**
CTA **Charters Tower** 124.56 214 PKP **PKPdf** **02 55 09.3 -0.3**
comp=Z,7.1nm,0.5s,baz=84,slow=2.7,SNR=9.5
CTAO **Charters Tower** 124.56 214 *e*PKiKP **PKPdf** **02 55 09.4 -0.2**
CTAO **Charters Tower** 124.56 214 *e*PKPdf **PKPdf** **02 55 09.4 -0.2**
ASAR **Alice Springs** 126.33 200 PKP **PKPdf** **02 55 12.5 -0.5**
comp=Z,12nm,0.6s,baz=140,slow=1.8,SNR=120
ASAR pPKP **pPKPdf** **02 57 23.5 -0.7**
comp=Z,1.3nm,0.8s,baz=158,slow=1.0,SNR=4.7
ASAR PKKPbc **PKKPbc** 03 04 46.5 -1.2
comp=Z,0.9nm,0.6s,baz=341,slow=3.3,SNR=8.7
ASAR PKP **PKPdf** 03 05 27.6 -0.8
comp=Z,0.4nm,0.5s,baz=348,slow=1.8,SNR=7.0
WRA **Warramunga Arr** 129.68 202 PKP **PKPdf** **02 55 19.2 -0.2**
comp=Z,12nm,0.7s,baz=170,slow=1.6,SNR=41
WRA pPKP **pPKPdf** **02 57 30.5 -0.1**
comp=Z,2.5nm,1.0s,baz=159,slow=1.6,SNR=6.9
WRA SKPbc SKPab 02 57 48.1 -1.2
comp=Z,23nm,0.9s,baz=159,slow=3.9,SNR=40
WRA **Warramunga Arr** 129.68 202 PKiKP **PKPdf** **02 55 19.2 -0.2**
WRA 02 57 30.5
WRA 02 57 48.2
WRA pmax pmax
comp=Z,11nm,0.7s
WRA pmax pmax
comp=Z,3.0nm,0.9s
WRA pmax pmax
comp=N,23nm,0.9s
WRAB **Tennant Creek** 129.68 202 *e*PKiKP **PKPdf** **02 55 18.9 -0.5**
WRAB *e* 02 57 48.3
WRAB **Tennant Creek** 129.68 202 *e*PKPdf **PKPdf** **02 55 18.9 -0.5**
WRAB *e*SKPbc SKPab 02 57 48.3 -1.1
BILL **Bilibino** 130.11 338 *d* *i*PKiKP **PKPdf** **02 55 17.5 -1.1**
BILL *e* 02 57 47.2
BILL pmax pmax
comp=Z,9.0nm,1.0s
BILL **Bilibino** 130.11 338 *e*PKPdf **PKPdf** **02 55 19.1 +0.5**
BILL *e*SKPbc **SKPbc** **02 57 50.0 +0.6**
ARU **Arti** 130.11 38 *i* PKiKP **PKPdf** **02 55 19.2 +0.3**
ARU 02 57 40.2
ARU **Arti** 130.11 38 *e*PKPdf **PKPdf** **02 55 19.4 +0.5**
ARU *e*SKPbc **SKPbc** **02 57 49.9 +0.2**
GEYT **Alibeck** 130.43 62 PKP **PKPdf** **02 55 20.9 +0.7**
comp=Z,5.2nm,0.6s,baz=261,slow=5.7,SNR=10
AKTO **Aktyubinsk** 130.54 46 PKP **PKPdf** **02 55 20.8 +0.8**
comp=Z,6.9nm,0.8s,baz=131,slow=1.0,SNR=26
AKTO **Aktyubinsk** 130.54 46 PKiKP **PKPdf** **02 55 19.5 -0.5**
AKTO pmax pmax
comp=Z,17nm,1.1s
SVE **Sverdlovsk** 131.16 37 *e*PKiKP **PKPdf** **02 55 21.8 +0.9**
SVE pmax pmax
comp=Z,17nm,1.6s
COEN **Coen** 131.30 215 *e*PKPdf **PKPdf** **02 55 20.7 -1.8**
COEN *e*SKPbc **SKPbc** **02 57 55.3 0.0**
MBWA **Marble Bar** 131.37 184 *e*PKPdf **PKPdf** **02 55 22.1 -0.4**
AB31 **Akbulak array** 131.88 47 PKiKP **PKPdf** **02 55 21.3 -1.2**
AB31 pmax pmax
comp=Z,11nm,0.7s
ABKAR **Akbulak array** 131.88 47 *e*PKPdf **PKPdf** **02 55 22.7 +0.2**
ABKAR *e*SKP 02 57 57.0
PMG **Port Moresby** 132.79 223 SKPbc **SKPbc** **02 57 59.9 -0.6**
comp=Z,2.1nm,1.0s,baz=297,slow=4.5,SNR=5.1
FITZ **Fitzroy Crossi** 133.68 192 PKP **PKPdf** **02 55 27.1 +0.2**
comp=Z,5.2nm,0.4s,baz=232,slow=2.0,SNR=30
FITZ SKPbc **SKPbc** **02 58 03.4 0.0**
comp=Z,4.4nm,0.7s,baz=227,slow=4.8,SNR=8.8
NRIK **Noril'sk** 134.97 14 PKP **PKPdf** **02 55 27.9 +0.1**
comp=Z,2.8nm,0.5s,baz=263,slow=1.8,SNR=5.1
TIXI **Tiksi** 135.46 355 SKPbc **SKPbc** **02 58 06.6 -0.6**
comp=Z,4.8nm,0.8s,baz=63,slow=3.3,SNR=10
TIXI **Tiksi** 135.46 355 *e*PKiKP **PKPdf** **02 55 28.3 -0.2**
TIXI **Tiksi** 135.46 355 *e*PKPdf **PKPdf** **02 55 28.3 -0.2**
TIXI *e*SKPbc **SKPbc** **02 58 06.4 -0.8**
TIXI SKPbc **SKPbc** **02 58 06.6 -0.6**
ZRNK **Zerenda** 136.81 41 PKiKP **PKPdf** **02 55 32.2 +0.6**
ZRNK pmax pmax
comp=Z,25nm,0.9s

BRVK	**Borovoye**	**137.51**	**40**	*e*PKIKP	**PKPdf**	**02 55 32.7**	**-0.2**
BRVK	**Borovoye**	**137.51**	**40**	*e*PKPdf	**PKPdf**	**02 55 32.6**	**-0.2**
BRVK				*e*SKPbc	**SKPbc**	**02 58 14.6**	**+0.7**
BVA0	**Borovoye Array**	**137.59**	**40**	*i* PKIKP	**PKPdf**	**02 55 32.2**	**-0.9**
BVA0				pmax	pmax		
	comp=Z,13nm,0.7s						
BVAR	**Borovoye Array**	**137.59**	**40**	PKhKP	PKPpre	02 55 23.5	
	comp=Z,1.8nm,0.5s,baz=225,slow=1.8,SNR=8.4						
BVAR				PKP	**PKPdf**	**02 55 33.6**	**+0.6**
	comp=Z,11nm,0.6s,baz=282,slow=2.8,SNR=33						
SEY	**Seymchan**	**137.75**	**337**	PKhKP	PKPpre	02 55 25.7	
	comp=Z,2.3nm,0.7s,baz=126,slow=4.2,SNR=6.4						
SEY				PKP	**PKPdf**	**02 55 34.2**	**+1.2**
	comp=Z,16nm,0.7s,baz=90,slow=1.0,SNR=24						
SEY				SKPbc	**SKPbc**	**02 58 14.8**	**+0.7**
	comp=Z,2.8nm,0.7s,baz=88,slow=5.9,SNR=6.1						
SEY	**Seymchan**	**137.75**	**337**⇓	*e*PKIKP	**PKPdf**	**02 55 33.8**	**+0.8**
VOSK	**Vostochnaya**	**138.02**	**41**	PKIKP	**PKPdf**	**02 55 32.2**	**-1.7**
VOSK				pmax	pmax		
	comp=Z,16nm,0.8s						
KK31	**Karatay Array**	**139.85**	**55**	*i* PKHKP	PKPpre	02 55 28.7	
KK31				pmax	pmax		
	comp=Z,2.0nm,0.6s						
PETK	**Petropavlovsk-**	**140.53**	**322**	PKhKP	PKPpre	02 55 33.1	
	comp=Z,3.3nm,0.8s,baz=105,slow=2.8,SNR=4.4						
PETK				PKP	**PKPdf**	**02 55 39.1**	**+0.7**
	comp=Z,8.3nm,0.8s,baz=109,slow=3.2,SNR=7.4						
MNAS	**Manas**	**141.38**	**56**	PKHKP	PKPpre	02 55 34.6	
MNAS				pmax	pmax		
	comp=Z,7.0nm,0.6s						
EKS2	**Erkin-Say**	**142.29**	**55**	*e*PKIKP	**PKPdf**	**02 55 39.2**	**-2.9**
EKS2	**Erkin-Say**	**142.29**	**55**	*e*PKPdf	**PKPdf**	**02 55 39.2**	**-2.9**
EKS2				*e*SKPbc	**SKPbc**	**02 58 27.0**	**0.0**
SFK	**Sufi-Kurgan**	**142.42**	**60**	PKHKP	PKPpre	02 55 39.1	
SFK				pmax	pmax		
	comp=Z,53nm,0.5s						
AAK	**Ala-Archa**	**142.81**	**55**	SKKPbc	SKKPbc	03 06 43.0	-1.2
	comp=Z,5.4nm,0.8s,baz=136,slow=2.4,SNR=10						
AAK	**Ala-Archa**	**142.81**	**55**	*e*PKIKP	**PKPdf**	**02 55 41.2**	**-1.8**
AAK	**Ala-Archa**	**142.81**	**55**	*e*PKPdf	**PKPdf**	**02 55 41.2**	**-1.8**
AAK				*e*SKPbc	**SKPbc**	**02 58 29.0**	**+0.6**
AAK				SKKPbc	**SKKPab**	**03 06 43.0**	**-1.0**
FRU	**Bishkek**	**142.87**	**55**	*i* PKIKP	**PKPdf**	**02 55 41.0**	**-1.9**
FRU				pmax	pmax		
	comp=Z,130nm,2.0s						
KURBB	**Kurchatov Arra**	**143.16**	**41**	PKP	PKPbc	02 55 41.8	+0.4
	comp=Z,88nm,0.7s,baz=284,slow=3.7,SNR=632						
KURK	**Kurchatov**	**143.18**	**41**	PKIKP	PKPab	02 55 41.4	+0.3
KURK				pmax	pmax		
	comp=Z,183nm,0.8s						
KURK	**Kurchatov**	**143.18**	**41**	*e*PKPdf	PKPbc	02 55 41.8	+0.3
KURK				*e*SKPbc	**SKPbc**	**02 58 28.0**	**-0.6**
HYB	**Hyderabad**	**143.46**	**98**	*i* PKP	PKPab	02 55 43.0	-0.3
TKM2	**Tokmak 2**	**143.56**	**54**	PKIKP	PKPab	02 55 42.7	-0.5
TKM2				pmax	pmax		
	comp=Z,104nm,0.6s						
TKM2	**Tokmak 2**	**143.56**	**54**	*e*PKPdf	PKPbc	02 55 43.5	+0.2
TKM2				*e*SKPbc	**SKPbc**	**02 58 30.4**	**+0.3**
NVS	**Novosibirsk**	**143.59**	**32**	*e*PKIKP	**PKPdf**	**02 55 43.5**	**-0.2**
NVS				pmax	pmax		
	comp=Z,182nm,0.8s						
NVS				pmax	pmax		
	comp=E,22nm,0.6s						
KSH	**Kashi**	**144.37**	**60**	PKP	PKPbc	02 55 45.5	-0.3
KSH				*e*pPKP	pPKPdf	02 57 50.8	-6.5
KSH				*e*PP	**PP**	**02 59 05.9**	**-3.2**
KSH				PKS	**PKSdf**	**02 59 19.1**	**-2.3**
KSH				SKS	**SKSdf**	**03 02 06.8**	**+4.7**
YAK	**Yakutsk**	**144.56**	**349**	PKP	**PKPdf**	**02 55 45.3**	**+0.2**
	comp=E,57nm,0.5s,baz=232,slow=0.3,SNR=18						
YAK	**Yakutsk**	**144.56**	**349**	*d* iPKIKP	**PKPdf**	**02 55 45.4**	**+0.2**
YAK				*e*		02 59 08.1	
YAK				*e*SS	SS	03 17 12.2	+1.5
YAK				pmax	pmax		
	comp=Z,84nm,0.9s						
YAK				pmax	pmax		
	comp=N,21nm,1.5s						
YAK				pmax	pmax		
	comp=E,6.0nm,0.8s						
YAK				pmax	pmax		
	comp=Z,13nm,0.9s						
YAK				pmax	pmax		
	comp=N,6.0nm,0.7s						
YAK				pmax	pmax		
	comp=E,11nm,1.1s						
YAK	**Yakutsk**	**144.56**	**349**	*e*PKPdf	**PKPdf**	**02 55 45.1**	**0.0**
ZALV	**Zalesovo Beam**	**144.87**	**33**	PKP	**PKPdf**	**02 55 46.3**	**+0.3**
	comp=E,69nm,0.6s,baz=309,slow=4.4,SNR=309						
ZALV				pPKP	**pPKPdf**	**02 57 57.6**	**+0.1**
	comp=E,11nm,0.8s,baz=299,slow=3.0,SNR=7.8						
ZALV	**Zalesovo Beam**	**144.87**	**33**	PKIKP	**PKPdf**	**02 55 46.3**	**+0.3**
ZALV						02 57 57.6	
ZALV				pmax	pmax		
	comp=Z,72nm,0.6s						
ZALV				pmax	pmax		
	comp=Z,11nm,0.8s						
NDI	**New Delhi**	**145.30**	**79**	*e*P	**PKPdf**	**02 55 45.0**	**-2.5**
PDGK	**Podgornoye**	**146.24**	**53**	PKIKP	**PKPdf**	**02 55 49.6**	**+1.0**
PDGK				pmax	pmax		
	comp=Z,148nm,1.1s						
MAKZ	**Makanchi**	**146.77**	**46**	PKIKP	**PKPdf**	**02 55 49.7**	**+0.2**
MAKZ				pmax	pmax		
	comp=Z,71nm,0.6s						
KRAR	**Krasnoyarsk**	**146.92**	**25**⇑	*e*PKIKP	**PKPdf**	**02 55 50.2**	**+0.9**
MK31	**Makanchi Array**	**146.98**	**45**	*i* PKIKP	**PKPdf**	**02 55 49.8**	**0.0**
MK31				pmax	pmax		
	comp=Z,50nm,0.6s						
MKAR	**Makanchi Array**	**146.98**	**45**	PKPbc	**PKPdf**	**02 55 50.6**	**+0.8**
	comp=Z,67nm,0.6s,baz=301,slow=1.1,SNR=151						
MKAR				pPKPbc	pPKPbc	02 58 02.4	+0.2
	comp=Z,17nm,0.7s,baz=300,slow=3.2,SNR=15						
KAPI	**Kappang**	**147.38**	**186**	*e*PKPbc	**PKPbc**	**02 55 55.1**	**+0.3**
NKL	**Nikolayevsk**	**148.95**	**332**	*e*PKHKP	PKPpre	02 55 56.0	
NKL				pmax	pmax		
	comp=Z,53nm,0.9s						
TYV	**Tymovskoe**	**149.61**	**327**	*e*PKP2	**PKPbc**	**02 56 00.5**	**+1.3**
TYV				pmax	pmax		
	comp=Z,57nm,1.0s						
TYV				MLR	MLR		
	comp=E,2μm,16.0s						
BOD	**Bodaibo**	**149.81**	**3**	*e*PKIKP	**PKPdf**	**02 55 54.1**	**+0.1**
BOD				pmax	pmax		
	comp=Z,41nm,1.2s						
GUMO	**Guam**	**150.23**	**248**	PKPbc	**PKPbc**	**02 56 01.4**	**-0.3**
CLNS	**Chul'man**	**150.27**	**351**	*e*PKIKP	**PKPbc**	**02 56 01.0**	**+0.4**
CLNS				pmax	pmax		
	comp=Z,54nm,0.9s						
CLNS				pmax	pmax		
	comp=N,15nm,0.9s						
CLNS				pmax	pmax		
	comp=E,4.0nm,1.0s						
PYUN	**Piuthan**	**150.27**	**81**	*e*P	**PKPdf**	**02 55 56.3**	**+0.4**
KOLN	**Koldanda**	**150.76**	**82**	*e*P	**PKPdf**	**02 55 56.7**	**0.0**
WMQ	**Urumqi**	**151.67**	**48**	*e*PKPbc	**PKPdf**	**02 55 56.3**	**-1.1**
GKN	**Gorkha**	**151.70**	**82**	*e*P	**PKPdf**	**02 55 58.1**	**+0.1**
YSS	**Yuzh-Sakhalins**	**151.92**	**320**	*e*PKIKP	**PKPbc**	**02 56 04.6**	**0.0**
YSS				*e*		02 56 16.3	
YSS	**Yuzh-Sakhalins**	**151.92**	**320**	*e*PKPbc	**PKPbc**	**02 56 04.6**	**0.0**
YSS				*e*PKPab	**PKPab**	**02 56 16.3**	**-0.3**
DMN	**Daman**	**152.06**	**83**	*e*P	**PKPdf**	**02 55 58.9**	**+0.2**
KKN	**Kakani**	**152.24**	**82**	*e*P	**PKPdf**	**02 56 00.0**	**+1.1**
PKIN	**Phulchoki**	**152.31**	**83**	*e*P	**PKPdf**	**02 55 59.3**	**+0.2**
IPM	**Ipoh**	**152.53**	**144**	*e*PKPdf	**PKPdf**	**02 55 59.5**	**+0.1**
IPM				*e*PKPbc	**PKPbc**	**02 56 06.7**	**-0.3**
IPM				*e*PKPab	**PKPab**	**02 56 19.7**	**-0.4**
GUN	**Gumba**	**152.78**	**82**	*e*P	**PKPdf**	**02 56 00.0**	**+0.1**
KULM	**Kulim**	**153.02**	**143**	*e*PKPdf	**PKPdf**	**02 56 00.1**	**-0.1**
KULM				*e*PKPbc	**PKPbc**	**02 56 07.6**	**-0.4**
KULM				*e*PKPab	**PKPab**	**02 56 21.7**	**-0.4**
MOY	**Mondy**	**153.28**	**22**	*e*PKIKP	**PKPbc**	**02 56 08.0**	**+0.4**
MOY				*e*		02 58 20.0	
MOY				pmax	pmax		
	comp=Z,26nm,1.5s						
TLY	**Talaya**	**154.08**	**19**	*e*PKP2	**PKPab**	**02 56 26.7**	**+1.0**
TLY				pmax	pmax		
	comp=Z,21nm,1.1s						
TLY	**Talaya**	**154.08**	**19**	*e*PKPab	**PKPab**	**02 56 26.6**	**+0.8**
ZAK	**Zakamensk**	**155.12**	**21**	*e*PKIKP	**PKPdf**	**02 56 02.5**	**+0.4**
ZAK				pmax	pmax		
	comp=Z,5.0nm,1.0s						
KLR	**Kul'dur**	**155.54**	**336**	PKP	**PKPdf**	**02 56 02.8**	**+0.2**
	comp=Z,4.3nm,0.8s,baz=26,slow=2.7,SNR=13						
LSA	**Lhasa**	**157.52**	**79**	*e*PKIKP	**PKPdf**	**02 56 06.2**	**-0.1**
LSA	**Lhasa**	**157.52**	**79**	*e*PKPdf	**PKPdf**	**02 56 06.2**	**-0.1**
LSA				*e*PKPab	**PKPab**	**02 56 42.1**	**+0.1**
SONM	**Songino Array**	**158.32**	**19**	PKP	**PKPdf**	**02 56 07.1**	**+0.9**
	comp=Z,9.4nm,0.9s,baz=333,slow=0.2,SNR=50						
SONM				PKPab	**PKPab**	**02 56 44.3**	**0.0**
	comp=Z,3.9nm,0.6s,baz=314,slow=4.0,SNR=9.0						
SONM				pPKP	**pPKPdf**	**02 58 18.4**	**-0.1**
	comp=Z,1.8nm,0.8s,baz=316,slow=1.9,SNR=5.2						
SONM	**Songino Array**	**158.32**	**19**	PKIKP	**PKPdf**	**02 56 07.1**	**+0.9**
SONM						02 56 44.3	
SONM						02 58 18.4	
SONM				pmax	pmax		
	comp=Z,10.0nm,0.9s						
SONM				pmax	pmax		
	comp=Z,4.0nm,0.6s						
SONM				pmax	pmax		
	comp=Z,2.0nm,0.8s						
ULN	**Ulaanbaatar**	**158.48**	**18**	*e*PKIKP	**PKPdf**	**02 56 06.6**	**+0.1**
ULN				*e*		02 56 44.6	
ULN	**Ulaanbaatar**	**158.48**	**18**	*e*PKPdf	**PKPdf**	**02 56 06.6**	**+0.1**
ULN				*e*PKPab	**PKPab**	**02 56 44.6**	**-0.5**
KKM	**Kota Kinabalu**	**158.49**	**179**	*e*PKPdf	**PKPdf**	**02 56 07.1**	**-0.3**
USRK	**Ussuriysk Ar.**	**159.42**	**327**	PKPab	**PKPab**	**02 56 49.0**	**-0.1**
	comp=Z,2.0nm,0.7s,baz=31,slow=6.5,SNR=4.6						
MJAR	**Matsushiro Arr**	**159.77**	**301**	PKPab	**PKPab**	**02 56 50.5**	**-0.5**
	comp=Z,2.7nm,0.9s,baz=79,slow=3.0,SNR=5.3						
MDJ	**Mudanjiang**	**160.18**	**332**	PKP	**PKPdf**	**02 56 07.6**	**-0.7**
CMAR	**Chiang Mai Arr**	**161.30**	**116**	PKP	**PKPdf**	**02 56 10.6**	**+0.3**
	comp=Z,2.6nm,0.7s,baz=262,slow=2.8,SNR=18						
CMAR				PKPab	**PKPab**	**02 56 57.3**	**-0.8**
	comp=Z,4.3nm,0.9s,baz=243,slow=5.1,SNR=12						
CMAR				PP	**PP**	**03 00 43.0**	**-0.3**
	comp=Z,1.6nm,0.9s,baz=256,slow=6.3,SNR=5.5						
CHTO	**Chiang Mai**	**161.49**	**115**	P	**PKPab**	**02 56 59.0**	**+0.1**
	comp=Z,43nm,1.4s						
CHTO	**Chiang Mai**	**161.49**	**115**	*e*PKIKP	**PKPdf**	**02 56 10.7**	**+0.2**
CHTO				*e*		02 56 57.8	
CHTO				*e*		03 00 44.2	
CHTO	**Chiang Mai**	**161.49**	**115**	*e*PKPdf	**PKPdf**	**02 56 10.7**	**+0.2**
CHTO				*e*PKPab	**PKPab**	**02 56 57.8**	**-1.1**
CHTO				*e*PP	**PP**	**03 00 44.1**	**-0.2**
CMMT	**Chiang Mai**	**161.49**	**115**	P	**PKPab**	**02 56 58.9**	**0.0**
	comp=Z,9.8nm,1.4s						
GTA	**Gaotai**	**161.73**	**46**	⇓PKP	**PKPdf**	**02 56 10.8**	**+0.5**
GTA				PKPab	**PKPab**	**02 57 00.1**	**+0.5**
GTA				pPKP	pPKPdf	02 58 21.8	-0.8
GTA				sPKP		02 59 11.4	
PBKT	**Sadao Pong**	**161.75**	**124**	P	**PKPab**	**02 57 00.0**	**0.0**
	comp=Z,26nm,0.8s						
NONG	**Nongkai**	**164.29**	**125**	P	**PKPab**	**02 57 11.1**	**-0.1**
	comp=Z,47nm,1.1s						
PANO	**Nakornpanom**	**164.71**	**131**	P	**PKPab**	**02 57 13.2**	**+0.2**
HHC	**Hu-ho-hao-te**	**166.19**	**16**	*e*PKP	**PKPdf**	**02 56 15.6**	**+1.4**
HHC				pPKP	pPKPdf	02 58 23.5	-3.2
HHC				sPKP		02 59 16.5	
HHC				SS	SS	03 21 06.6	+5.4
HHC				AMB	AMB		
	comp=Z,75nm,7.4s						
KSRS	**Korea Array**	**166.41**	**319**	PKP	**PKPdf**	**02 56 14.6**	**+0.3**
	comp=Z,2.0nm,0.8s,baz=45,slow=0.3,SNR=6.8						
KSRS				PKPab	**PKPab**	**02 57 20.6**	**+0.6**
	comp=Z,1.9nm,0.7s,baz=53,slow=4.5,SNR=5.4						
KSAR	**Wonju Array Be**	**166.44**	**319**	PKIKP	**PKPdf**	**02 56 14.6**	**+0.3**
KSAR						02 57 20.6	
KSAR	**Wonju Array Be**	**166.44**	**319**	PKP	**PKPdf**	**02 56 14.6**	**+0.3**
KSAR				PKPab	**PKPab**	**02 57 20.6**	**+0.4**
KMI	**Kunming**	**167.25**	**98**	PKP	**PKPdf**	**02 56 14.8**	**-0.8**
CD2	**Chengdu**	**168.26**	**71**	PKP	**PKPdf**	**02 56 14.8**	**-1.1**
XAN	**Xi'an**	**170.79**	**44**	PKP	**PKPdf**	**02 56 17.4**	**+0.1**
ENH	**Enshi**	**173.18**	**66**	*e*PKPdf	**PKPdf**	**02 56 18.2**	**-0.3**
NJ2	**Nanjing**	**175.24**	**337**	*e*PKP	**PKPdf**	**02 56 19.3**	**+0.3**

HEL ***17*** *02:38:57.3±0.5, 67.66N×33.93E, h0km, ML2.4, Explosion*
NAO ***17*** *02:38:58.6±1.2, 67.65N×33.75E, ML2.7*
KOLA ***17*** *02:38:58.8, 67.66N×33.76E, h0km*
CSEM ***17*** *02:38:59.6±0.5, 67.47N×33.25E, h1km, ML2.2, Error ellipse: s-maj=9.1km s-min=6.4km az=105.0, Mining explosion.*

ISC 17 02:38:55.9±1.7, 67.67N±0.04×34.03E±0.08, h0km, n47, σ1962/74, Baltic States-Belarus-Northwestern Russia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
APA	**Apatity**	**0.26**	**248**	P	**Pg**	**02 39 01.8**	**+1.0**
APA				S	**Sg**	**02 39 04.0**	**-0.1**
APZ9	**Apatity**	**0.26**	**248**	Pg	**Pg**	**02 39 01.9**	**+1.1**
APZ9				Lg	Lg	02 39 04.3	
APZ9	**Apatity**	**0.26**	**248**	Pg	**Pg**	**02 39 01.9**	**+1.1**
APZ9				Lg	Lg	02 39 04.3	
APZ9	**Apatity**	**0.26**	**248**	Pg	**Pg**	**02 39 01.9**	**+1.1**
	SNR=92						
APZ9				Lg	Lg	02 39 04.3	
	SNR=98						
APA0	**Apatity Array**	**0.40**	**262**	Pg	**Pg**	**02 39 04.1**	**+0.6**
	baz=92,slow=16						
APA0				Lg	Lg	02 39 08.2	
	baz=81,slow=28						
APA0	**Apatity Array**	**0.40**	**262**	Pg	**Pg**	**02 39 04.1**	**+0.6**
	baz=92,slow=16						
APA0				Lg	Lg	02 39 08.2	
	baz=81,slow=28						
APA0	**Apatity Array**	**0.40**	**262**	P	**Pg**	**02 39 04.2**	**+0.6**
APA0				S	**Sg**	**02 39 08.1**	**-0.6**
APA0	**Apatity Array**	**0.40**	**262**	Pg	**Pg**	**02 39 04.1**	**+0.6**
	SNR=91						
APA0				Lg	Lg	02 39 08.2	
	SNR=94						
VRF	**Varrio**	**1.69**	**275**	PG	**Pn**	**02 39 26.8**	**+0.2**
VRF				MSG		02 39 46.5	
	comp=Z,45nm,0.2s						
VRF				SG	**Sn**	**02 39 47.0**	**-1.9**
VRF	**Varrio**	**1.69**	**275**	Pg	**Pn**	**02 39 26.7**	**+0.2**
VRF				Sg	**Sn**	**02 39 47.0**	**-1.9**
KU6	**Riekki**	**2.32**	**227**	PG	**Pn**	**02 39 37.3**	**+2.0**
	baz=45						
KU6				MSG		02 40 04.9	
	comp=Z,14nm,0.2s						
KU6				SG	**Sb**	**02 40 08.1**	**+0.3**
KU6	**Riekki**	**2.32**	**227**	Pg	**Pn**	**02 39 37.3**	**+2.0**
KU6				Sg	**Sb**	**02 40 08.0**	**+0.3**
MSF	**Maaselka**	**2.65**	**231**	PG	**Pn**	**02 39 42.3**	**+2.5**
	baz=50						
MSF				SG	**Sb**	**02 40 18.1**	**+1.0**
MSF	**Maaselka**	**2.65**	**231**	Pg	**Pn**	**02 39 42.3**	**+2.5**
SGF	**Sodankyl**	**2.89**	**269**	PB	**Pn**	**02 39 45.8**	**+2.8**
SGF				SG	**Sb**	**02 40 24.2**	**+0.2**
SGF	**Sodankyl**	**2.89**	**269**	Pb	**Pn**	**02 39 45.8**	**+2.8**
SGF				Sg	**Sb**	**02 40 24.2**	**+0.2**
RNF	**Rovaniemi**	**3.31**	**255**	PN	**Pn**	**02 39 50.1**	**+1.3**
RNF				SN	**Sn**	**02 40 28.9**	**+0.2**
RNF	**Rovaniemi**	**3.31**	**255**	Pn	**Pn**	**02 39 50.1**	**+1.3**
RNF				Sn	**Sn**	**02 40 28.9**	**+0.2**
KEV	**Kevo**	**3.31**	**313**	*e*P	**Pn**	**02 39 51.1**	**+2.3**
KEV	**Kevo**	**3.31**	**313**	PN	**Pn**	**02 39 51.1**	**+2.2**
KEV				SN	**Sn**	**02 40 29.2**	**+0.4**
KEV	**Kevo**	**3.31**	**313**	*e*P	**Pn**	**02 39 51.2**	**+2.4**
	SNR=50						
KEV				Sn	**Sn**	**02 40 29.2**	**+0.4**
ARA0	**ARCESS Array S**	**3.65**	**305**	Pn	**Pn**	**02 39 54.5**	**+1.1**
	baz=122,slow=16						
ARA0				Sn	**Sn**	**02 40 35.6**	**-1.5**
	baz=133,slow=28						
ARA0				Lg	Lg	02 40 45.6	
	baz=124,slow=37						
ARA0	**ARCESS Array S**	**3.65**	**305**	Pn	**Pn**	**02 39 54.5**	**+1.1**
	baz=122,slow=16						
ARA0				Sn	**Sn**	**02 40 35.6**	**-1.5**
	baz=133,slow=28						
ARA0				Lg	Lg	02 40 45.6	
	baz=124,slow=37						
ARA0	**ARCESS Array S**	**3.65**	**305**	Pn	**Pn**	**02 39 54.5**	**+1.1**
	SNR=50						
ARA0				Sn	**Sn**	**02 40 35.6**	**-1.5**
	SNR=50						
ARA0				Lg	Lg	02 40 45.7	
	SNR=20						
ARE0	**ARCESS Array S**	**3.65**	**305**	*e*P	**Pn**	**02 39 54.6**	**+1.2**
ARE0	**ARCESS Array S**	**3.65**	**305**	PN	**Pn**	**02 39 54.5**	**+1.1**
ARE0				SN	**Sn**	**02 40 35.6**	**-1.5**
ARE0	**ARCESS Array S**	**3.65**	**305**	*e*P	**Pn**	**02 39 54.6**	**+1.1**
	SNR=50						
ARE0				Sn	**Sn**	**02 40 35.6**	**-1.5**
HEF	**Hetta**	**3.97**	**286**	PN	**Pn**	**02 39 58.7**	**+0.8**
	baz=100						
HEF				SN	**Sn**	**02 40 43.6**	**-1.4**
HEF	**Hetta**	**3.97**	**286**	Pn	**Pn**	**02 39 58.6**	**+0.8**
HEF				Sn	**Sn**	**02 40 43.6**	**-1.4**
OUL	**Oulu**	**4.17**	**235**	PB	**Pn**	**02 40 03.6**	**+3.0**
OUL	**Oulu**	**4.17**	**235**	Pb	**Pn**	**02 40 03.6**	**+3.0**
KTK1	**Kautokeino**	**4.22**	**294**	*e*P	**Pn**	**02 40 03.9**	**+2.5**
KTK1				*e*S	**Sn**	**02 40 50.6**	**-0.8**
KTK1				IAML		02 41 06.2	
	comp=Z,11nm,0.6s						
KTK1	**Kautokeino**	**4.22**	**294**	*e*P	**Pn**	**02 40 03.8**	**+2.4**
	SNR=49						
KTK1				*e*S	**Sn**	**02 40 50.6**	**-0.7**
	SNR=49						
LANU	**Lannavaara**	**4.58**	**280**	PN	**Pn**	**02 40 06.1**	**-0.2**
LANU				SN	**Sn**	**02 40 58.4**	**-1.6**
LANU	**Lannavaara**	**4.58**	**280**	Pn	**Pn**	**02 40 06.0**	**-0.2**
LANU				Sn	**Sn**	**02 40 58.4**	**-1.6**
KIF	**Kilpisjarvi**	**5.08**	**291**	*e*P	**Pn**	**02 40 13.9**	**+0.8**
KIF	**Kilpisjarvi**	**5.08**	**291**	*e*P	**Pn**	**02 40 13.9**	**+0.8**
	SNR=49						
TRO	**Tromso**	**5.86**	**297**	*e*P	**Pn**	**02 40 26.0**	**+2.3**
TRO	**Tromso**	**5.86**	**297**	*e*P	**Pn**	**02 40 26.0**	**+2.3**
	SNR=49						
FIA0	**FINESS Array S**	**7.12**	**212**	Pn	**Pn**	**02 40 41.1**	**+0.1**
	baz=26,slow=14						
FIA0				Sn	**Sn**	**02 41 59.5**	**-3.1**
	baz=34,slow=22						
FIA0				Lg	Lg	02 42 34.0	
	baz=15,slow=37						
FIA0	**FINESS Array S**	**7.12**	**212**	Pn	**Pn**	**02 40 41.1**	**+0.1**
	baz=26,slow=14						
FIA0				Sn	**Sn**	**02 41 59.5**	**-3.1**
	baz=34,slow=22						
FIA0				Lg	Lg	02 42 34.0	
	baz=15,slow=37						
FIA0	**FINESS Array S**	**7.12**	**212**	Pn	**Pn**	**02 40 41.2**	**+0.1**
	SNR=50						
FIA0				Sn	**Sn**	**02 41 59.5**	**-3.1**
	SNR=50						
FIA0				Lg	Lg	02 42 34.0	
	SNR=19						
HFS	**Hagfors**	**11.66**	**239**	Pn	**Pn**	**02 41 41.1**	**-2.1**
	baz=43,slow=14						
HFS	**Hagfors**	**11.66**	**239**	P	**Pn**	**02 41 41.1**	**-2.1**
	baz=43,slow=14						
HFS	**Hagfors**	**11.66**	**239**	P	**Pn**	**02 41 41.1**	**-2.1**
	SNR=47						
SPA0	**Spitsbergen Ar**	**11.67**	**342**	Pn	**Pn**	**02 41 42.3**	**-1.1**
	baz=141,slow=16						
SPA0	**Spitsbergen Ar**	**11.67**	**342**	P	**Pn**	**02 41 42.3**	**-1.1**
	baz=141,slow=16						

IDC 17 02:43:03.4±11.0, 18.68S×168.74E, h0km, mb3.8/4, mb1 3.9/5, mb1mx3.6/43, mbtmp3.8/5, ML3.3/1, Error ellipse: s-maj=206.9km s-min=44.8km az=92.0, Vanuatu Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**4.00**	**212**	Pn	Pn	02 44 04.8	-1.3
	1.8nm,0.3s,baz=132,slow=12,SNR=73						
DZM				Sn	Sn	02 44 54.6	+0.8
	4.1nm,0.3s,baz=322,slow=22,SNR=3.5						
STKA	**Stephens Creek**	**27.75**	**236**	P	P	02 48 53.8	-0.1
	0.9nm,0.6s,baz=88,slow=12,SNR=3.8						
WRA	**Warramunga Arr**	**32.46**	**262**	P	P	02 49 35.2	-0.5
	0.3nm,0.4s,baz=88,slow=8.4,SNR=3.4						
ASAR	**Alice Springs**	**32.81**	**255**	P	P	02 49 38.9	+0.1
	1.1nm,0.6s,baz=83,slow=9.1,SNR=12						
FITZ	**Fitzroy Crossi**	**40.83**	**264**	P	P	02 50 47.6	+0.5
	2.3nm,0.8s,baz=90,slow=7.1,SNR=4.4						

JMA 17 02:44:52.6, 36.95N×140.55E, h7km±1km, M2.6, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.25**	**53**	P	Pg	02 44 57.8	+0.2
ONAJ				*e*S	Sg	02 45 01.4	+0.5
JHO	**Hitachi**	**0.34**	**177**	P	Pg	02 44 59.2	0.0
JHO				S	Sg	02 45 03.8	+0.1
JFK	**Kawauchi**	**0.49**	**32**	P	Pg	02 45 02.1	0.0
JFK				S	Sg	02 45 08.9	+0.4
JFT	**Otama**	**0.59**	**343**	P	Pg	02 45 04.2	+0.2
JFT				S	Sg	02 45 12.4	+0.6
MAT	**Matsushiro**	**1.93**	**259**	P	Pn	02 45 26.7	+0.9
MAT				S	Sb	02 45 51.7	-0.6

NEIC ***17*** *02:48:09.6, 46.03

WVZ	**Waitaha Valley**	**4.38**	**50**	AML	AML	02 50 20.9
WVZ				AML	AML	02 50 38.2
LTZ	**Lake Taylor**	**5.43**	**56**	AML	AML	02 50 39.1
LTZ				AML	AML	02 50 39.2
DSZ	**Denniston Nort**	**5.88**	**46**	PN	Pn	02 49 38.4 +1.0
THZ	**Tophouse**	**6.45**	**52**	AML	AML	02 51 10.7
THZ				AML	AML	02 51 18.9

IDC **17** *02:55:54.2±0.6,39.93N×143.60E,h0km,mb4.1/26, mb1 4.3/30,mb1mx4.1/59,mbtmp4.1/30,ML3.5/3,Error ellipse: s-maj=15.6km s-min=13.8km az=135.0*
JMA **17** *02:55:55.4±0.4,39.98N×143.60E,h16km,M4.5*
ISCJB **17** *02:55:55.6±1.0,39.97N±0.03×143.54E±0.04,h16km±6km, mb4.3/70,MS4.4/7,Error ellipse: s-maj=6.0km s-min=4.4km az=35.2*
BJI **17** *02:55:57.4,39.93N×143.24E,h21km,mb4.5/49,mB4.9/28, Ms4.5/32,Ms7 4.4/30*
MOS **17** *02:55:57.3±1.0,40.00N×143.54E,h30km,mb4.6/27,Error ellipse: s-maj=8.4km s-min=5.6km az=103.3*
NEIC **17** *02:55:58.4±1.9,40.02N×143.49E,h21km±13km,mb4.5/26, Error ellipse: s-maj=7.1km s-min=5.8km az=121.0*

ISC 17 02:55:57.9±0.6,39.95N±0.04×143.56E±0.05,h20km±6km, h19km:pP-P,n171,σ1s17/178,mb4.4/70,MS4.6/7,7C-5D, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
JTH	**Tanohata**	**1.30**	**270**	P		**Pn**	**02 56 19.2**	**-1.8**
MIYJ	**Miyakonagasawa**	**1.39**	**255**	P		**Pn**	**02 56 21.1**	**-1.2**
JANG	**Nango**	**1.62**	**286**	P		**Pn**	**02 56 23.9**	**-1.5**
OFUJ	**Ofunato**	**1.70**	**240**	P		**Pn**	**02 56 25.2**	**-1.3**
JOM	**Ohasama**	**1.81**	**255**	P		**Pn**	**02 56 27.6**	**-0.4**
JMK	**Ichinoseki**	**2.07**	**242**	P		**Pn**	**02 56 30.7**	**-0.8**
JMK				*e*S		**Sn**	**02 56 55.3**	**-1.4**
JTM	**Tenmabayashi**	**2.08**	**294**	P		**Pn**	**02 56 31.0**	**-0.7**
ERM	**Erimo**	**2.08**	**352**	*e*Pn		**Pn**	**02 56 31.3**	**-0.4**
JAH	**Hinai**	**2.26**	**277**	P		**Pn**	**02 56 33.9**	**-0.2**
JIO	**Ouri**	**2.28**	**230**	P		**Pn**	**02 56 33.0**	**-1.4**
JOT	**Ohata**	**2.38**	**308**	*e*S		**Sn**	**02 57 05.6**	**+1.1**
JNBK	**Urakawa-nobuka**	**2.40**	**346**	P		**Pn**	**02 56 35.3**	**-0.9**
JNBK				*e*S		**Sn**	**02 57 05.9**	**+0.9**
JYW	**Yuwa**	**2.62**	**262**	P		**Pn**	**02 56 39.4**	**+0.3**
JSI2	**Shiura 2**	**2.64**	**296**	P		**Pn**	**02 56 39.4**	**0.0**
JCH	**Churui**	**2.66**	**357**	P		**Pn**	**02 56 38.4**	**-1.3**
JYK	**Kaneyama**	**2.69**	**248**	P		**Pn**	**02 56 39.9**	**-0.1**
ASAJ	**Asahikawa**	**4.22**	**351**	Pn		**Pn**	**02 57 00.3**	**-0.9**
	4.6nm,0.3s,baz=190,slow=9.8,SNR=20							
ASAJ				Sn		**Sn**	**02 57 50.3**	**+0.5**
	8.2nm,0.3s,baz=323,slow=22,SNR=4.6							
YUK	**Yuzh-Kuril'sk**	**4.42**	**22**	*e*P		**Pn**	**02 57 01.8**	**-2.1**
YUK				*i* S		Sn	02 57 49.3	-5.5
YUK				pmax	pmax			
	comp=Z,206nm,0.2s							
YUK				pmax	pmax			
	comp=N,63nm,0.3s							
YUK				pmax	pmax			
	comp=E,54nm,0.1s							
YUK				MLR	MLR			
	comp=Z,2μm,16.0s							
SHO	**Shikotan**	**4.61**	**31**	*e*P		Pn	02 57 03.0	-3.5
SHO				*i* S		Sn	02 57 51.9	-7.5
SHO				pmax	pmax			
	comp=Z,106nm,0.7s							
SHO				pmax	pmax			
	comp=E,66nm,0.3s							
SHO				pmax	pmax			
	comp=N,33nm,0.4s							
MJAR	**Matsushiro Arr**	**5.42**	**233**	Pn		**Pn**	**02 57 18.0**	**+0.4**
	comp=N,2.2nm,0.3s,baz=38,slow=12,SNR=45							
MAJO	**Matsushiro**	**5.42**	**233**	*c i*P		**Pn**	**02 57 17.8**	**+0.2**
MAJO	**Matsushiro**	**5.42**	**233**	*e*Pn		**Pn**	**02 57 17.3**	**-0.3**
MAT	**Matsushiro**	**5.42**	**233**	P		**Pn**	**02 57 17.8**	**+0.2**
MAT				*e*S		Sn	02 57 53.0	-26
MJB9	**Matsu-Tunnel**	**5.42**	**233**	*e*Pn		**Pn**	**02 57 18.5**	**+0.9**
KUR	**Kuril'sk**	**6.16**	**30**	*e*P		**Pn**	**02 57 26.1**	**-1.6**
KUR				*i* S		Sn	02 58 32.3	-5.3
KUR				pmax	pmax			
	comp=Z,34nm,1.1s							
KUR				smax	smax			
	comp=N,79nm,0.3s							
KUR				smax	smax			
	comp=E,17nm,0.3s							
INU	**Inuyama**	**6.93**	**231**	*e*Pn		**Pn**	**02 57 39.4**	**+1.0**
JHJ	**Hachijo jima 2**	**7.46**	**205**	Sn		Sn	02 59 02.4	-7.4
	comp=E,15nm,0.3s,baz=236,slow=22,SNR=3.0							
VLA	**Vladivostok**	**9.31**	**294**	⇑*e*P		**Pn**	**02 58 09.7**	**-1.2**
USRK	**Ussuriysk Ar.**	**9.59**	**300**	Pn		**Pn**	**02 58 15.9**	**+1.1**
	comp=E,0.7nm,0.3s,baz=102,slow=14,SNR=19							
MDJ	**Mudanjiang**	**11.35**	**299**	P		**Pn**	**02 58 37.4**	**-1.4**
MDJ				S		**Sn**	**03 00 42.8**	**-2.2**
MDJ				pmax	pmax			
	comp=E,5.0nm,0.7s							
MDJ				pmax	pmax			
	comp=E,82nm,5.8s							
MDJ				LR	LR			
	comp=E,740nm,15.2s							
MDJ				LR	LR			
	comp=E,940nm,13.4s							
MDJ				LR	LR			
	comp=E,1μm,15.2s							
MDJ	**Mudanjiang**	**11.35**	**299**	*e*Pn		**Pn**	**02 58 36.3**	**-2.5**
	comp=E,30nm,1.0s							
KSRS	**Korea Array**	**12.47**	**263**	Pn		**Pn**	**02 58 55.8**	**+1.6**
	baz=75,slow=14,SNR=7.8							
KSAR	**Wonju Array Be**	**12.50**	**263**	P		**Pn**	**02 58 55.8**	**+1.1**
KSAR	**Wonju Array Be**	**12.50**	**263**	Pn		**Pn**	**02 58 55.8**	**+1.1**
KLR	**Kul'dur**	**12.51**	**322**	*de*P		**Pn**	**02 58 54.2**	**-0.5**
CBIJ	**Chichi jima**	**12.87**	**186**	*e*Pn		**Pn**	**02 59 00.9**	**+1.1**
CN2	**Changchun**	**14.03**	**292**	*e*P		**Pn**	**02 59 16.5**	**+1.0**
CN2				*es*P		P	02 59 28.8	+5.5
CN2				*e*S		**Sn**	**03 01 49.5**	**-1.1**
CN2				pmax	pmax			
	comp=E,10.0nm,0.6s							
CN2				LR	LR			
	comp=E,900nm,13.0s							
CN2				LR	LR			
	comp=E,600nm,13.0s							
CN2				LR	LR			
	comp=E,500nm,13.0s							
TIA	**Tai'an**	**21.11**	**268**	*e*P		**P**	**03 00 39.5**	**-1.8**
TIA				pmax	pmax			
	comp=E,20nm,1.3s							
NJ2	**Nanjing**	**21.44**	**256**	*e*P		**P**	**03 00 44.5**	**-0.3**
NJ2				pmax	pmax			
	comp=E,10.0nm,0.8s							
SEY	**Seymchan**	**23.62**	**10**	P		**P**	**03 01 06.0**	**-1.4**
	comp=E,7.7nm,0.8s,baz=194,slow=8.1,SNR=16							
SEY	**Seymchan**	**23.62**	**10**	⇑*e*P		**P**	**03 01 06.1**	**-1.2**
YAK	**Yakutsk**	**23.67**	**344**	*e*P		**P**	**03 01 06.0**	**-1.8**
YAK				*e**PP		**pP**	**03 01 13.8**	**+0.1**
YAK				*e*			03 01 31.8	
YAK				*e*			03 04 54.1	
YAK				*e*S		**S**	**03 05 17.8**	**-3.5**
YAK				*e**SS		**sS**	**03 05 34.4**	**+3.2**
YAK				*e*SS		**SnSn**	**03 05 58.5**	**-0.7**
YAK				*e*			03 12 16.9	
YAK				pmax	pmax			
	comp=Z,23nm,0.9s							
YAK				pmax	pmax			
	comp=N,12nm,1.1s							
YAK				pmax	pmax			
	comp=E,4.0nm,1.0s							
YAK				pmax	pmax			
	comp=Z,10.0nm,0.6s							
YAK				pmax	pmax			
	comp=N,7.0nm,0.9s							
YAK				pmax	pmax			
	comp=E,2.0nm,0.3s							
YAK				smax	smax			
	comp=N,78nm,2.3s							
YAK				smax	smax			
	comp=E,39nm,1.9s							
YAK				MLR	MLR			
	comp=Z,250nm,17.0s							
YAK				MLR	MLR			
	comp=E,337nm,15.0s							
YAK				MLR	MLR			
	comp=N,177nm,17.0s							
HHC	**Hu-ho-hao-te**	**24.32**	**283**	*e*P		**P**	**03 01 12.6**	**-1.7**
HHC				pP		sP	03 01 22.0	-0.8
HHC				sP		pP	03 01 25.8	+5.5
HHC				S		S	03 05 24.4	-8.0
HHC				pmax	pmax			
	comp=N,23nm,0.6s							
HHC				pmax	pmax			
	comp=N,90nm,4.1s							
HHC				LR	LR			
	comp=N,1μm,14.8s							
HHC				LR	LR			
	comp=N,1μm,13.6s							
HHC				LR	LR			
	comp=N,1μm,14.8s							
HHC	**Hu-ho-hao-te**	**24.32**	**283**	PP		**P**	**03 01 12.4**	**-1.9**
WHN	**Wuhan**	**25.54**	**258**	P		**P**	**03 01 24.8**	**-0.5**
WHN				pmax	pmax			
	comp=N,70nm,1.0s							
BOD	**Bodaibo**	**26.08**	**323**	*e*P		**P**	**03 01 29.2**	**-0.8**
BOD				pmax	pmax			
	comp=Z,10.0nm,1.1s							
ULN	**Ulaanbaatar**	**27.26**	**299**	*e*P		**P**	**03 01 41.3**	**+0.4**
ULN				pmax	pmax			
	comp=Z,21nm,1.2s							
ULN	**Ulaanbaatar**	**27.26**	**299**	*e*P		**P**	**03 01 41.3**	**+0.4**
	comp=Z,21nm,1.2s							
SONA1	**Songino Array**	**27.70**	**299**	*e*P		**P**	**03 01 44.4**	**-0.5**
SONM	**Songino Array**	**27.70**	**299**	P		**P**	**03 01 44.8**	**0.0**
	comp=Z,2.3nm,0.5s,baz=93,slow=7.2,SNR=24							
H11N2	**WAKE ISLAND Hy**	**28.41**	**128**	T		T	03 31 31.6	
	baz=321,slow=75,SNR=38							
H11N1	**WAKE ISLAND Hy**	**28.42**	**128**	T		T	03 31 32.4	
	baz=321,slow=75,SNR=28							
H11N3	**WAKE ISLAND Hy**	**28.43**	**128**	T		T	03 31 35.6	
	baz=321,slow=75,SNR=35							
H11S1	**WAKE ISLAND Hy**	**29.24**	**130**	T		T	03 32 35.8	
	baz=322,slow=76,SNR=19							
H11S3	**WAKE ISLAND Hy**	**29.25**	**130**	T		T	03 32 49.0	
	baz=322,slow=76,SNR=14							
H11S2	**WAKE ISLAND Hy**	**29.26**	**130**	T		T	03 32 39.2	
	baz=322,slow=76,SNR=9.1							
ENH	**Enshi**	**29.35**	**261**	*e*P		**P**	**03 01 58.4**	**-1.1**
	comp=Z,28nm,1.0s							
TLY	**Talaya**	**29.82**	**307**	*e*P		**P**	**03 02 02.6**	**-0.9**
TLY				pmax	pmax			
	comp=Z,3.0nm,1.3s							
ZAK	**Zakamensk**	**29.91**	**304**	*e*P		**P**	**03 02 03.5**	**-0.9**
ZAK				pmax	pmax			
	comp=Z,4.0nm,1.2s							
BILL	**Bilibino**	**30.75**	**16**	⇓*e*P		**P**	**03 02 11.0**	**-0.5**
BILL				*e*			03 02 17.6	
BILL				*e*			03 03 11.7	
BILL				pmax	pmax			
	comp=Z,2.0nm,0.9s							
BILL	**Bilibino**	**30.75**	**16**	*e*P		**P**	**03 02 10.5**	**-1.0**
	comp=Z,4.7nm,0.9s							
LZH	**Lanzhou**	**31.35**	**276**	*e*P		**P**	**03 02 17.0**	**-0.3**
LZH				pP		pP	03 02 23.4	+0.1
LZH				sP		sP	03 02 26.5	+0.7
LZH				pmax	pmax			
	comp=Z,15nm,1.0s							
TIXI	**Tiksi**	**32.63**	**351**	⇓*e*P		**P**	**03 02 28.4**	**+0.5**
TIXI				pmax	pmax			
	comp=Z,2.0nm,1.1s							
GTA	**Gaotai**	**33.42**	**283**	*e*P		**P**	**03 02 35.8**	**+0.4**
GTA				pP		sP	03 02 42.9	-1.0
GTA				sP		pP	03 02 46.4	+4.9
GTA				S		**S**	**03 07 53.8**	**-1.9**
GTA				sS		sS	03 08 05.8	+0.1
GTA				SS		**SnSn**	**03 09 57.8**	**+0.3**
GTA				pmax	pmax			
	comp=Z,11nm,1.2s							
GTA				pmax	pmax			
	comp=Z,120nm,4.5s							
GTA				LR	LR			
	comp=Z,270nm,17.6s							
GTA				LR	LR			
	comp=Z,470nm,18.1s							
GTA				LR	LR			
	comp=Z,620nm,17.6s							
GYA	**Guiyang**	**33.43**	**258**	*e*P		**P**	**03 02 36.8**	**+1.2**
GYA				pmax	pmax			
	comp=Z,10.0nm,0.8s							
CD2	**Chengdu**	**33.43**	**267**	P		**P**	**03 02 33.8**	**-1.7**
CD2				pmax	pmax			
	comp=Z,1.0nm,0.5s							
KMI	**Kunming**	**37.12**	**259**	P		**P**	**03 03 08.5**	**+1.0**
KMI				pmax	pmax			
	comp=Z,19nm,0.7s							
KMI				pmax	pmax			
	comp=Z,99nm,6.3s							
WMQ	**Urumqi**	**41.10**	**294**	*e*P		**P**	**03 03 40.9**	**+0.5**
WMQ				pP		sP	03 03 48.0	-1.0
WMQ				sP		pP	03 03 52.8	+6.2
WMQ				pmax	pmax			
	comp=Z,4.0nm,0.6s							
WMQ				pmax	pmax			
	comp=Z,19nm,4.2s							
WMQ				LR	LR			
	comp=Z,190nm,17.8s							
WMQ				LR	LR			
	comp=Z,95nm,15.6s							
WMQ				LR	LR			
	comp=Z,79nm,17.8s							
ZAA0	**Zalesovo Array**	**41.26**	**310**	*e*P		**P**	**03 03 41.0**	**-0.5**
ZALV	**Zalesovo Beam**	**41.26**	**310**	P		**P**	**03 03 41.1**	**-0.4**
	comp=Z,1.5nm,0.5s,baz=79,slow=7.7,SNR=12							
ZALV				PcP		**PcP**	**03 05 39.5**	**-0.4**
	comp=Z,1.5nm,0.7s,baz=72,slow=4.7,SNR=3.1							
NVS	**Novosibirsk**	**42.11**	**311**	*e*P		**P**	**03 03 48.0**	**-0.4**
NVS				pmax	pmax			
	comp=Z,29nm,2.4s							
NVS				pmax	pmax			
	comp=E,7.0nm,1.3s							
CMAR	**Chiang Mai Arr**	**43.89**	**254**	P		**P**	**03 04 03.2**	**-0.1**
	comp=E,0.4nm,0.3s,baz=51,slow=7.1,SNR=3.6							
MK01	**Makanchi Array**	**44.06**	**300**	*e*P		**P**	**03 04 03.7**	**-0.7**
MK31	**Makanchi Array**	**44.06**	**300**	*e*P		**P**	**03 04 04.7**	**+0.3**
MK31	**Makanchi Array**	**44.06**	**300**	*e*P		**P**	**03 04 04.7**	**+0.3**
MKAR	**Makanchi Array**	**44.06**	**300**	P		**P**	**03 04 03.9**	**-0.4**
	comp=E,1.9nm,0.8s,baz=80,slow=10,SNR=10							
MKAR	**Makanchi Array**	**44.06**	**300**	*ce*P		**P**	**03 04 04.0**	**-0.4**
MKAR				pmax	pmax			
	comp=Z,2.0nm,0.9s							
MKAR	**Makanchi Array**	**44.06**	**300**	*e*P		**P**	**03 04 04.7**	**+0.3**
MAKZ	**Makanchi**	**44.27**	**300**	*e*P		**P**	**03 04 06.1**	**+0.1**
MAKZ				pmax	pmax			
	comp=Z,9.0nm,1.3s							
MAKZ	**Makanchi**	**44.27**	**300**	*e*P		**P**	**03 04 06.1**	**+0.1**
	comp=Z,8.6nm,1.3s							
KURK	**Kurchatov**	**45.52**	**306**	P		**P**	**03 04 15.9**	**+0.1**
KURK				pmax	pmax			
	comp=Z,20nm,1.3s							
KURK	**Kurchatov**	**45.52**	**306**	*e*P		**P**	**03 04 15.0**	**-0.8**
	comp=Z,19nm,1.0s							
MDM	**Murphy Dome**	**45.55**	**34**	*e*P		**P**	**03 04 18.0**	**+2.0**
	comp=Z,4.9nm,1.0s							
KURBB	**Kurchatov Arra**	**45.59**	**306**	P		**P**	**03 04 15.9**	**-0.5**
	comp=Z,20nm,1.3s,baz=80,slow=8.5,SNR=30							
COLA	**College**	**45.72**	**34**	*e*P		**P**	**03 04 18.1**	**+0.9**
COLA				pmax	pmax			
	comp=Z,6.0nm,0.9s							
COLA	**College**	**45.72**	**34**	*e*P		**P**	**03 04 18.1**	**+0.9**
	comp=Z,5.6nm,0.9s							
ILAR	**Eielson Array**	**46.13**	**34**	P		**P**	**03 04 19.9**	**-0.6**
	comp=Z,0.9nm,0.9s,baz=261,slow=6.8,SNR=9.9							
DOT	**Dot Lake**	**47.45**	**35**	*e*P		**P**	**03 04 29.9**	**-1.0**
	comp=Z,6.2nm,1.1s							
MENT	**Mentasta**	**47.68**	**36**	*e*P		P	03 04 38.0	+5.2
	comp=Z,8.1nm,1.3s							
TKM2	**Tokmak 2**	**49.77**	**297**	*e*P		**P**	**03 04 48.8**	**-0.5**
TKM2				pmax	pmax			
	comp=Z,17nm,0.9s							
TKM2	**Tokmak 2**	**49.77**	**297**	*e*P		**P**	**03 04 48.8**	**-0.5**
	comp=Z,17nm,0.9s							
BRVK	**Borovoye**	**49.95**	**311**	*e*P		**P**	**03 04 50.3**	**+0.1**
BRVK				pmax	pmax			
	comp=Z,6.0nm,0.9s							
BRVK	**Borovoye**	**49.95**	**311**	*e*P		**P**	**03 04 50.3**	**+0.1**
	comp=Z,6.1nm,0.9s							
FRU	**Bishkek**	**50.47**	**297**	*e*P		**P**	**03 04 52.0**	**-2.4**
AAK	**Ala-Archa**	**50.63**	**297**	P		**P**	**03 04 55.4**	**-0.3**
	comp=Z,1.2nm,0.7s,baz=67,slow=7.4,SNR=3.6							
AAK	**Ala-Archa**	**50.63**	**297**	⇑*e*P		**P**	**03 04 55.3**	**-0.4**
AAK				pmax	pmax			
	comp=Z,5.0nm,1.2s							
AAK	**Ala-Archa**	**50.63**	**297**	*e*P		**P**	**03 04 55.7**	**-0.1**
	comp=Z,1.9nm,0.5s							
ZRNK	**Zerenda**	**50.72**	**311**	*e*P		**P**	**03 04 56.3**	**+0.2**
ZRNK				pmax	pmax			
	comp=Z,17nm,1.4s							
ZRNK	**Zerenda**	**50.72**	**311**	*e*P		**P**	**03 04 56.3**	**+0.2**
	comp=Z,17nm,1.4s							
KSH	**Kashi**	**50.80**	**293**	*e*P		P	03 05 00.6	+3.6
KSH				*es*P		sP	03 05 13.8	+8.1
KSH				*e*PP		**PP**	**03 06 58.0**	**+5.0**
KSH				S		**S**	**03 12 13.1**	**+1.2**
KSH				pmax	pmax			
	comp=Z,71nm,4.9s							
KSH				LR	LR			
	comp=Z,180nm,9.0s							
KSH				LR	LR			
	comp=Z,160nm,6.9s							
KSH				LR	LR			
	comp=Z,460nm,12.8s							
INK	**Inuvik**	**51.02**	**28**	P		**P**	**03 04 58.1**	**0.0**
	comp=Z,1.3nm,0.6s,baz=292,slow=6.5,SNR=11							
INK	**Inuvik**	**51.02**	**28**	*e*P		**P**	**03 04 58.4**	**+0.3**
INK				pmax	pmax			
	comp=Z,7.0nm,1.3s							
INK	**Inuvik**	**51.02**	**28**	*e*P		**P**	**03 04 58.4**	**+0.3**
	comp=Z,7.1nm,1.3s							
EKS2	**Erkin-Say**	**51.11**	**297**	*e*P		**P**	**03 04 58.8**	**-0.5**
EKS2				pmax	pmax			
	comp=Z,4.0nm,0.8s							
EKS2	**Erkin-Say**	**51.11**	**297**	*e*P		**P**	**03 04 58.8**	**-0.5**
	comp=Z,3.9nm,0.8s							
KKAR	**Karatay Array**	**53.16**	**299**	*e*P		**P**	**03 05 13.6**	**-0.8**
KKAR				pmax	pmax			
	comp=Z,1.0nm,0.6s							
KKAR	**Karatay Array**	**53.16**	**299**	*e*P		**P**	**03 05 13.6**	**-0.8**
	comp=Z,0.7nm,0.6s							
SVE	**Sverdlovsk**	**54.10**	**318**	*e*P		**P**	**03 05 21.1**	**+0.1**
SOKR	**Solikamsk**	**55.06**	**322**	*e*P		P	03 05 34.6	+6.7
SOKR				pmax	pmax			
	comp=Z,8.0nm,1.0s							
ARU	**Arti**	**55.31**	**318**	P		**P**	**03 05 29.0**	**-0.8**
	comp=Z,1.2nm,0.4s,baz=69,slow=3.6,SNR=6.7							
ARU	**Arti**	**55.31**	**318**	*c i*P		**P**	**03 05 29.9**	**0.0**
ARU				S		**S**	**03 13 14.5**	**+1.9**
ARU				SS		**SS**	**03 17 01.0**	**+4.5**
ARU				pmax	pmax			
	comp=Z,17nm,1.7s							
ARU				MLR	MLR			
	comp=Z,967nm,22.0s							
ARU	**Arti**	**55.31**	**318**	*e*P		**P**	**03 05 29.1**	**-0.8**
	comp=Z,15nm,1.3s							
AKTO	**Aktyubinsk**	**58.00**	**311**	P		**P**	**03 05 48.0**	**-1.0**
	comp=Z,1.5nm,0.9s,baz=54,slow=8.7,SNR=3.2							
WRAB	**Tennant Creek**	**60.19**	**190**	*e*P		**P**	**03 06 03.9**	**-0.5**
WRAB				pmax	pmax			
	comp=Z,7.0nm,0.9s							
WRAB	**Tennant Creek**	**60.19**	**190**	*e*P		**P**	**03 06 03.9**	**-0.5**
	comp=Z,7.0nm,0.9s							
WRA	**Warramunga Arr**	**60.20**	**190**	P		**P**	**03 06 02.8**	**-1.8**
	comp=Z,2.0nm,0.5s,baz=7.9,slow=7.0,SNR=18							
WRA	**Warramunga Arr**	**60.20**	**190**	*i* P		**P**	**03 06 04.0**	**-0.5**
WRA				pmax	pmax			
	comp=Z,2.0nm,0.5s							
YKA	**Yellowknife Ar**	**60.44**	**31**	P		**P**	**03 06 05.0**	**-0.7**
	comp=Z,0.4nm,0.6s,baz=301,slow=6.2,SNR=8.7							
GEYT	**Alibeck**	**63.91**	**299**	P		**P**	**03 06 28.7**	**-0.7**
	comp=Z,1.0nm,0.3s,baz=343,slow=4.5,SNR=3.9							
AS01	**Alice Springs**	**63.92**	**190**	*e*P		**P**	**03 06 32.0**	**+2.6**
ASAR	**Alice Springs**	**63.93**	**190**	P		**P**	**03 06 28.6**	**-0.9**
	comp=Z,1.7nm,0.8s,baz=12,slow=6.2,SNR=13							
OBN	**Obninsk**	**66.77**	**323**	⇓*e*P		**P**	**03 06 47.3**	**-0.3**
OBN				*e**PP		**sP**	**03 06 55.9**	**-0.5**
OBN				*e*			03 07 16.0	
OBN				pmax	pmax			
	comp=Z,25nm,1.7s							
OBN				MLR	MLR			
	comp=Z,388nm,16.0s							
FINES	**FINESS Array B**	**67.02**	**332**	P		**P**	**03 06 48.0**	**-1.1**
	comp=Z,2.5nm,0.9s,baz=36,slow=7.3,SNR=5.6							
FINES	**FINESS Array B**	**67.02**	**332**	P		**P**	**03 06 48.0**	**-1.1**
ZEI	**Tsey**	**70.25**	**310**	*e*P		**P**	**03 07 08.3**	**-1.5**
ZEI				pmax	pmax			
	comp=Z,7.0nm,0.8s							
KVAR	**Kislovodsk Arr**	**70.26**	**311**	P		**P**	**03 07 10.3**	**+0.5**
	comp=Z,6.1nm,0.8s,baz=42,slow=2.2,SNR=6.9							
KIV	**Kislovodsk**	**70.27**	**311**	*e*P		**P**	**03 07 08.6**	**-1.2**
KIV				*e*			03 07 18.6	
KIV				*e*			03 07 31.4	
KIV				pmax	pmax			
	comp=Z,16nm,1.0s							
KIV	**Kislovodsk**	**70.27**	**311**	*e*P		**P**	**03 07 10.6**	**+0.8**
	comp=Z,24nm,1.2s							
KBZ	**Khabaz**	**70.28**	**311**	P		**P**	**03 07 10.2**	**+0.5**
	comp=Z,4.5nm,0.9s,baz=76,slow=2.8,SNR=9.7							
FFC	**Flin Flon**	**70.34**	**34**	*e*P		**P**	**03 07 10.1**	**+0.1**
FFC				pmax	pmax			
	comp=Z,6.0nm,1.2s							
FFC	**Flin Flon**	**70.34**	**34**	*e*P		**P**	**03 07 10.1**	**+0.1**
	comp=Z,5.7nm,1.2s							
LRM	**Limekiln Ridge**	**70.90**	**46**	*e*P		P	03 07 19.2	+5.4
NVAR	**Mina Array Bea**	**71.91**	**55**	P		**P**	**03 07 20.3**	**+0.2**
	comp=Z,1.4nm,0.8s,baz=302,slow=5.2,SNR=4.7							
HFS	**Hagfors**	**72.11**	**336**	P		**P**	**03 07 19.9**	**-0.7**
	comp=Z,2.3nm,0.8s,baz=33,slow=7.1,SNR=13							
NB2	**NORSAR Subarra**	**72.14**	**338**	P		**P**	**03 07 20.5**	**-0.2**
	comp=Z,3.9nm,1.0s,baz=36,slow=6.5							
NOA	**NORSAR Array B**	**72.14**	**338**	P		**P**	**03 07 20.0**	**-0.7**
	comp=Z,2.7nm,0.9s,baz=38,slow=5.9,SNR=5.0							
H17A	**Grant Village**	**72.82**	**46**	*e*P		**P**	**03 07 27.3**	**+1.8**
	comp=Z,1.8nm,0.6s							
AKASG	**Malin Array Be**	**73.01**	**323**	P		**P**	**03 07 25.2**	**-0.9**
	comp=Z,0.4nm,0.4s,baz=44,slow=6.1,SNR=11							
KIEV	**Kiev**	**73.02**	**323**	⇓*i* P		**P**	**03 07 25.4**	**-0.7**
KIEV				pmax	pmax			
	comp=Z,3.0nm,1.0s							
R11A	**Troy Canyon, C**	**73.66**	**54**	*e*P		**P**	**03 07 30.4**	**+0.1**
	comp=Z,2.2nm,1.3s							
TPNV	**Topopah Spring**	**74.11**	**55**	*e*P

TXAR	**Lajitas Array**	**87.02**	**54**	P		**P**	**03 08 43.0**	**+0.7**
	comp=Z,0.7nm,0.8s,baz=302,slow=3.9,SNR=6.8							
TXAR	**Lajitas Array**	**87.02**	**54**	P		**P**	**03 08 43.0**	**+0.7**

JMA ***17*** *02:59:17.7±0.2,39°.41N×144°.02E,h19km,M4.7*
ISCJB ***17*** *02:59:19.8±0.4,39°.35N±0°.04×143°.79E±0°.05,h11km, mb4.3/54,MS4.4/6, Error ellipse: s-maj=6.2km s-min=4.1km az=139.5*
IDC ***17*** *02:59:20.3±0.8,39°.37N×143°.69E,h0km,mb4.1/27, mb1 4.2/33,mb1mx4.1/61,mbtmp4.2/33,ML3.7/6, Error ellipse: s-maj=17.9km s-min=14.4km az=126.0*
NEIC ***17*** *02:59:25.9±0.7,39°.41N×143°.61E,h36km±6km, mb4.5/20, Error ellipse: s-maj=7.7km s-min=4.9km az=123.0*
ISC 17 02:59:22.0±0.5,39°.44N±0°.04×143°.71E±0°.05,h11km,n156, σ1§**30**/156,**mb4.4**/54,**MS4.4**/6,**5C-1D,Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time	Res
								h m s	ISC
MIYJ	**Miyakonagasawa**	**1.47**	**276**	P		**P**	**Pn**	**02 59 47.2**	**-1.1**
MIYJ				eS		**Sg**	**Sg**	**03 00 08.5**	**-0.6**
JTH	**Tanohata**	**1.51**	**290**	P		**P**	**Pn**	**02 59 47.6**	**-1.3**
JTH				eS		**Sg**	**Sg**	**03 00 09.4**	**-1.0**
OFUJ	**Ofunato**	**1.62**	**258**	P		**P**	**Pn**	**02 59 49.3**	**-1.2**
JOM	**Ohasama**	**1.87**	**272**	P		**P**	**Pn**	**02 59 53.3**	**-0.6**
JOM				eS		**Sb**	**Sb**	**03 00 20.0**	**+0.5**
JKZ	**Kuzumaki**	**1.91**	**287**	P		**P**	**Pn**	**02 59 54.0**	**-0.5**
JANG	**Nango**	**1.93**	**300**	P		**P**	**Pn**	**02 59 53.1**	**-1.6**
JMK	**Ichinoseki**	**1.99**	**257**	P		**P**	**Pn**	**02 59 54.7**	**-0.9**
JIO	**Ouri**	**2.09**	**243**	P		**P**	**Pn**	**02 59 55.5**	**-1.3**
JRG	**Rokugo**	**2.38**	**270**	P		**P**	**Pn**	**03 00 00.4**	**-0.5**
JTM	**Tenmabayashi**	**2.43**	**304**	P		**P**	**Pn**	**03 00 01.1**	**-0.5**
JAH	**Hinai**	**2.48**	**288**	P		**P**	**Pn**	**03 00 02.2**	**-0.1**
JOU	**Okura**	**2.61**	**247**	P		**P**	**Pn**	**03 00 03.1**	**-0.9**
JYK	**Kaneyama**	**2.65**	**260**	P		**P**	**Pn**	**03 00 04.3**	**-0.4**
JYW	**Yuwa**	**2.71**	**273**	P		**P**	**Pn**	**03 00 05.5**	**+0.1**
JMM	**Marumori**	**2.77**	**236**	P		**P**	**Pn**	**03 00 04.8**	**-1.5**
JMM				eS		**Sn**	**Sn**	**03 00 37.7**	**-2.0**
JSI2	**Shiura 2**	**2.99**	**304**	P		**P**	**Pn**	**03 00 09.0**	**-0.3**
JFK	**Kawauchi**	**3.04**	**228**	P		**P**	**Pn**	**03 00 08.1**	**-1.9**
JFK				eS		**Sn**	**Sn**	**03 00 44.7**	**-1.7**
JYS	**Shirataka**	**3.09**	**248**	P		**P**	**Pn**	**03 00 10.4**	**-0.3**
JCH	**Churui**	**3.18**	**355**	eS		**Sn**	**Sn**	**03 00 46.5**	**-3.3**
JYA	**Atsumi**	**3.22**	**256**	P		**P**	**Pn**	**03 00 12.4**	**-0.1**
JFT	**Otama**	**3.27**	**235**	P		**P**	**Pn**	**03 00 12.2**	**-0.9**
ASAJ	**Asahikawa**	**4.74**	**350**	Pn		**Pn**	**Pn**	**03 00 33.9**	**+0.5**
	3.0nm,0.3s,baz=207,slow=19,SNR=12								
ASAJ				Sn		**Sn**	**Sn**	**03 01 26.5**	**-1.9**
	5.6nm,0.3s,baz=46,slow=19,SNR=3.7								
ASAJ	**Asahikawa**	**4.74**	**350**	PN		**Pn**	**Pn**	**03 00 33.9**	**+0.5**
ASAJ				pmax	pmax				
	comp=Z,3.0nm,0.3s								
ASAJ	**Asahikawa**	**4.74**	**350**	Pn		**Pn**	**Pn**	**03 00 33.9**	**+0.5**
ASAJ				Sn		**Sn**	**Sn**	**03 01 26.5**	**-1.9**
MJAR	**Matsushiro Arr**	**5.22**	**238**	Pn		**Pn**	**Pn**	**03 00 40.5**	**+0.5**
	comp=Z,6.4nm,0.3s,baz=33,slow=14,SNR=47								
MJAR	**Matsushiro Arr**	**5.22**	**238**	Pn		**Pn**	**Pn**	**03 00 40.5**	**+0.5**
MAJO	**Matsushiro**	**5.22**	**238**	*e*Pn		**Pn**	**Pn**	**03 00 40.3**	**+0.3**
MAT	**Matsushiro**	**5.22**	**238**	P		**Pn**	**Pn**	**03 00 40.5**	**+0.5**
MAT				eS		**Sn**	**Sn**	**03 01 46.0**	**+5.9**
JHJ	**Hachijo jima 2**	**7.06**	**208**	Pn		**Pn**	**Pn**	**03 01 03.0**	**-2.3**
	comp=Z,15nm,0.3s,baz=94,slow=21,SNR=3.3								
JHJ				Sn		**Sn**	**Sn**	**03 02 18.3**	**-7.1**
	comp=Z,16nm,0.3s,baz=232,slow=22,SNR=4.0								
USRK	**Ussuriysk Ar.**	**9.95**	**302**	Pn		**Pn**	**Pn**	**03 01 46.4**	**+1.6**
	comp=Z,1.1nm,0.3s,baz=116,slow=14,SNR=21								
JNU	**Nakatsue**	**12.12**	**243**	Pn		**Pn**	**Pn**	**03 02 15.7**	**+1.2**
	comp=Z,0.4nm,0.3s,baz=84,slow=5.7,SNR=4.4								
JNU	**Nakatsue**	**12.12**	**243**	Pn		**Pn**	**Pn**	**03 02 15.7**	**+1.2**
KSRS	**Korea Array**	**12.53**	**266**	Pn		**Pn**	**Pn**	**03 02 22.0**	**+1.8**
	comp=Z,0.2nm,0.3s,baz=82,slow=12,SNR=10								
KSRS	**Korea Array**	**12.53**	**266**	PN		**Pn**	**Pn**	**03 02 22.0**	**+1.8**
KSAR	**Wonju Array Be**	**12.57**	**266**	PN		**Pn**	**Pn**	**03 02 22.0**	**+1.4**
KSAR	**Wonju Array Be**	**12.57**	**266**	Pn		**Pn**	**Pn**	**03 02 22.0**	**+1.4**
MA2	**Magadan**	**20.64**	**10**	P		**P**	**P**	**03 04 02.4**	**+1.1**
	comp=Z,9.5nm,0.9s,baz=206,slow=10,SNR=4.2								
MA2	**Magadan**	**20.64**	**10**	P		**P**	**P**	**03 04 02.4**	**+1.1**
BJI	**Beijing**	**21.15**	**280**	P		**P**	**P**	**03 04 03.9**	**-3.0**
BJI				S		S	S	03 07 29.8	-32
BJI				pmax	pmax				
	comp=Z,12nm,0.7s								
BJI				pmax	pmax				
	comp=Z,140nm,6.6s								
BJI				LR	LR				
	comp=Z,740nm,13.8s								
BJI				LR	LR				
	comp=Z,750nm,15.8s								
BJI				LR	LR				
	comp=Z,500nm,17.2s								
NJ2	**Nanjing**	**21.43**	**258**	*e*P		P		03 04 25.1	+15
NJ2				pmax	pmax				
	comp=Z,10.0nm,0.8s								
YHNB	**Yeheng**	**23.89**	**239**	*e*Pn		**P**	**P**	**03 04 33.8**	**-2.0**
SEY	**Seymchan**	**24.10**	**10**	P		**P**	**P**	**03 04 38.8**	**+1.5**
	comp=Z,5.8nm,0.8s,baz=198,slow=7.6,SNR=13								
SEY	**Seymchan**	**24.10**	**10**	*i*P		P		03 04 48.5	+11
SEY	**Seymchan**	**24.10**	**10**	P		**P**	**P**	**03 04 38.8**	**+1.5**
YAK	**Yakutsk**	**24.19**	**344**	*e*P		**P**	**P**	**03 04 37.3**	**-0.8**
YAK				pmax	pmax				
	comp=Z,15nm,0.8s								
HHC	**Hu-ho-hao-te**	**24.54**	**284**	*e*P		**P**	**P**	**03 04 43.0**	**+1.3**
HHC				pP		sP		03 04 59.6	+13
HHC				sP		pP		03 05 09.5	+24
HHC				S		S		03 08 30.5	-32
HHC				SS		SnSn		03 09 10.0	-37
HHC				pmax	pmax				
	comp=Z,19nm,0.9s								
HHC				pmax	pmax				
	comp=Z,68nm,5.6s								
HHC				LR	LR				
	comp=Z,240nm,13.6s								
HHC				LR	LR				
	comp=Z,1μm,14.8s								
HHC				LR	LR				
	comp=Z,170nm,13.6s								
WHN	**Wuhan**	**25.55**	**259**	P		**P**	**P**	**03 04 50.1**	**-0.6**
BOD	**Bodaibo**	**26.56**	**324**	*e*P		**P**	**P**	**03 04 59.3**	**-0.3**
BOD				pmax	pmax				
	comp=Z,10.0nm,0.9s								
ULN	**Ulaanbaatar**	**27.61**	**300**	*ce*P		**P**	**P**	**03 05 09.7**	**+0.3**
ULN				pmax	pmax				
	comp=Z,10.0nm,1.2s								
ULN	**Ulaanbaatar**	**27.61**	**300**	*e*P		**P**	**P**	**03 05 08.5**	**-0.9**
	comp=Z,4.3nm,0.5s								
SONA1	**Songino Array**	**28.05**	**300**	*e*P		**P**	**P**	**03 05 13.6**	**+0.4**
SONM	**Songino Array**	**28.05**	**300**	P		**P**	**P**	**03 05 13.6**	**+0.3**
	comp=Z,2.4nm,0.6s,baz=94,slow=8.9,SNR=14								
SONM	**Songino Array**	**28.05**	**300**	P		**P**	**P**	**03 05 13.6**	**+0.3**
SONM	**Songino Array**	**28.05**	**300**	P		**P**	**P**	**03 05 13.6**	**+0.3**
ENH	**Enshi**	**29.39**	**262**	*e*P		**P**	**P**	**03 05 25.1**	**-0.2**
	comp=Z,9.0nm,0.4s								
TLY	**Talaya**	**30.22**	**307**	P		**P**	**P**	**03 05 33.0**	**+0.7**
	comp=Z,2.1nm,0.4s,baz=241,slow=5.5,SNR=4.8								
TLY	**Talaya**	**30.22**	**307**	*e*P		**P**	**P**	**03 05 32.9**	**+0.6**
TLY				pmax	pmax				
	comp=Z,4.0nm,0.8s								
TLY	**Talaya**	**30.22**	**307**	*e*P		**P**	**P**	**03 05 31.6**	**-0.7**
	comp=Z,3.8nm,0.7s								
BILL	**Bilibino**	**31.21**	**16**	*e*P		P		03 05 54.6	+14
BILL				*e*				03 06 06.5	
BILL				*e*				03 06 53.6	
BILL				pmax	pmax				
	comp=Z,1.0nm,0.9s								
BILL	**Bilibino**	**31.21**	**16**	*e*P		**P**	**P**	**03 05 41.7**	**+0.8**
	comp=Z,2.0nm,0.3s								
LZH	**Lanzhou**	**31.51**	**277**	*e*P		**P**	**P**	**03 05 48.3**	**+4.2**
LZH				pP		sP		03 06 07.0	+18
LZH				pmax	pmax				
	comp=Z,22nm,1.0s								
CD2	**Chengdu**	**33.52**	**268**	P		P		03 06 11.8	+10
CD2				pmax	pmax				
	comp=Z,1.0nm,0.5s								
GTA	**Gaotai**	**33.65**	**284**	P		**P**	**P**	**03 06 03.6**	**+0.8**
GTA				pP		sP		03 06 22.5	+15
GTA				sP		pP		03 06 32.3	+26
GTA				S		S		03 10 58.3	-27
GTA				SS		ScP		03 12 43.0	+16
GTA				pmax	pmax				
	comp=Z,12nm,1.1s								
GTA				pmax	pmax				
	comp=Z,78nm,4.5s								
GTA				LR	LR				
	comp=Z,390nm,15.2s								
GTA				LR	LR				
	comp=Z,920nm,15.7s								
GTA				LR	LR				
	comp=Z,880nm,17.6s								
KMI	**Kunming**	**37.14**	**260**	P		P		03 06 49.0	+16
KMI				pmax	pmax				
	comp=Z,14nm,0.6s								
KMI				pmax	pmax				
	comp=Z,160nm,5.2s								
WMQ	**Urumqi**	**41.42**	**295**	*e*P		**P**	**P**	**03 07 11.8**	**+3.4**
WMQ				pP		sP		03 07 29.3	+16
WMQ				sP		pP		03 07 37.3	+25
WMQ				pmax	pmax				
	comp=Z,5.0nm,1.0s								
WMQ				pmax	pmax				
	comp=Z,42nm,6.2s								
WMQ				LR	LR				
	comp=Z,140nm,15.6s								
WMQ				LR	LR				
	comp=Z,170nm,15.0s								
WMQ				LR	LR				
	comp=Z,64nm,16.2s								
ZAA0	**Zalesovo Array**	**41.68**	**310**	*e*P		**P**	**P**	**03 07 10.4**	**+0.2**
ZALV	**Zalesovo Beam**	**41.68**	**310**	P		**P**	**P**	**03 07 10.6**	**+0.3**
	comp=Z,7.8nm,0.5s,baz=94,slow=7.7,SNR=26								
ZALV				PcP		**PcP**		03 09 04.8	-2.0
	comp=Z,1.9nm,0.6s,baz=114,slow=6.5,SNR=2.2								
ZALV	**Zalesovo Beam**	**41.68**	**310**	P		**P**	**P**	**03 07 10.6**	**+0.3**
ZALV								03 09 04.8	
ZALV	**Zalesovo Beam**	**41.68**	**310**	P		**P**	**P**	**03 07 10.6**	**+0.3**
ZALV				PcP		**PcP**		**03 09 04.8**	**-2.0**
CHTO	**Chiang Mai**	**43.64**	**255**	*e*P		**P**	**P**	**03 07 26.1**	**-0.5**
	comp=Z,3.7nm,0.7s								
CMAR	**Chiang Mai Arr**	**43.86**	**255**	P		**P**	**P**	**03 07 27.9**	**-0.5**
	comp=Z,1.1nm,0.3s,baz=40,slow=7.1,SNR=7.2								
CMAR	**Chiang Mai Arr**	**43.86**	**255**	P		**P**	**P**	**03 07 27.9**	**-0.5**
MK01	**Makanchi Array**	**44.41**	**300**	*e*P		**P**	**P**	**03 07 32.5**	**-0.1**
MK31	**Makanchi Array**	**44.41**	**300**	*e*P		**P**	**P**	**03 07 32.9**	**+0.3**
MK31	**Makanchi Array**	**44.41**	**300**	*e*P		**P**	**P**	**03 07 32.9**	**+0.3**
MKAR	**Makanchi Array**	**44.41**	**300**	P		**P**	**P**	**03 07 32.6**	**0.0**
	comp=Z,4.4nm,0.7s,baz=83,slow=9.9,SNR=19								
MKAR	**Makanchi Array**	**44.41**	**300**	P		**P**	**P**	**03 07 32.6**	**0.0**
MKAR				pmax	pmax				
	comp=Z,4.0nm,0.7s								
MKAR	**Makanchi Array**	**44.41**	**300**	*e*P		**P**	**P**	**03 07 32.9**	**+0.3**
MAKZ	**Makanchi**	**44.62**	**301**	*e*P		**P**	**P**	**03 07 34.6**	**+0.4**
MAKZ				pmax	pmax				
	comp=Z,13nm,1.3s								
MAKZ	**Makanchi**	**44.62**	**301**	*e*P		**P**	**P**	**03 07 34.6**	**+0.4**
	comp=Z,13nm,1.3s								
KURK	**Kurchatov**	**45.91**	**307**	*e*P		**P**	**P**	**03 07 43.8**	**-0.6**
KURK				pmax	pmax				
	comp=Z,20nm,0.7s								
KURK	**Kurchatov**	**45.91**	**307**	*e*P		**P**	**P**	**03 07 43.8**	**-0.6**
	comp=Z,20nm,0.7s								
KURBB	**Kurchatov Arra**	**45.98**	**306**	P		**P**	**P**	**03 07 44.7**	**-0.2**
	comp=Z,9.8nm,0.7s,baz=79,slow=8.4,SNR=37								
KKN	**Kakani**	**49.26**	**275**	*e*P		**P**	**P**	**03 08 11.3**	**+0.3**
DMN	**Daman**	**49.48**	**275**	*e*P		**P**	**P**	**03 08 13.3**	**+0.6**
GKN	**Gorkha**	**49.65**	**276**	*e*P		**P**	**P**	**03 08 13.8**	**-0.1**
VOSK	**Vostochnaya**	**50.05**	**311**	*e*P		**P**	**P**	**03 08 16.7**	**+0.3**
VOSK				pmax	pmax				
	comp=Z,18nm,1.2s								
VOSK	**Vostochnaya**	**50.05**	**311**	*e*P		**P**	**P**	**03 08 16.7**	**+0.3**
	comp=Z,18nm,1.2s								
TKM2	**Tokmak 2**	**50.10**	**297**	*e*P		**P**	**P**	**03 08 17.8**	**+0.6**
TKM2				pmax	pmax				
	comp=Z,7.0nm,0.7s								
TKM2	**Tokmak 2**	**50.10**	**297**	*e*P		**P**	**P**	**03 08 17.8**	**+0.6**
	comp=Z,7.3nm,0.7s								
BVAR	**Borovoye Array**	**50.32**	**311**	P		**P**	**P**	**03 08 18.7**	**+0.3**
	comp=Z,3.2nm,0.6s,baz=66,slow=9.1,SNR=14								
BVAR	**Borovoye Array**	**50.32**	**311**	P		**P**	**P**	**03 08 18.7**	**+0.3**
BVAR	**Borovoye Array**	**50.32**	**311**	P		**P**	**P**	**03 08 18.7**	**+0.3**
BRVK	**Borovoye**	**50.37**	**311**	*e*P		**P**	**P**	**03 08 19.2**	**+0.4**
BRVK				pmax	pmax				
	comp=Z,14nm,1.1s								
BRVK	**Borovoye**	**50.37**	**311**	*e*P		**P**	**P**	**03 08 19.1**	**+0.4**
	comp=Z,14nm,1.1s								
KOLN	**Koldanda**	**50.56**	**276**	*e*P		**P**	**P**	**03 08 20.9**	**0.0**
	comp=Z,12nm,0.6s								
PYUN	**Piuthan**	**50.87**	**277**	*e*P		**P**	**P**	**03 08 23.6**	**+0.4**
	comp=Z,76nm,1.0s								
AAK	**Ala-Archa**	**50.96**	**297**	P		**P**	**P**	**03 08 24.2**	**+0.5**
	comp=Z,1.0nm,0.5s,baz=111,slow=8.6,SNR=4.1								
AAK	**Ala-Archa**	**50.96**	**297**	‖*e*P		P		03 08 31.2	+7.5
AAK				pmax	pmax				
	comp=Z,5.0nm,0.9s								
AAK	**Ala-Archa**	**50.96**	**297**	*e*P		**P**	**P**	**03 08 23.0**	**-0.7**
	comp=Z,2.5nm,0.8s								
ZRNK	**Zerenda**	**51.14**	**311**	*e*P		**P**	**P**	**03 08 25.0**	**+0.4**
ZRNK				pmax	pmax				
	comp=Z,29nm,1.4s								
ZRNK	**Zerenda**	**51.14**	**311**	*e*P		**P**	**P**	**03 08 25.0**	**+0.4**
	comp=Z,29nm,1.4s								
INK	**Inuvik**	**51.42**	**28**	P		**P**	**P**	**03 08 27.7**	**+1.3**
	comp=Z,0.8nm,0.6s,baz=310,slow=7.0,SNR=6.6								
INK	**Inuvik**	**51.42**	**28**	*e*P		**P**	**P**	**03 08 27.7**	**+1.3**
	comp=Z,1.5nm,0.6s								
EKS2	**Erkin-Say**	**51.45**	**298**	*e*P		**P**	**P**	**03 08 26.7**	**-0.5**
EKS2				pmax	pmax				
	comp=Z,2.0nm,0.6s								
EKS2	**Erkin-Say**	**51.45**	**298**	*e*P		**P**	**P**	**03 08 26.7**	**-0.5**
	comp=Z,2.3nm,0.6s								
KKAR	**Karatay Array**	**53.50**	**299**	*e*P		**P**	**P**	**03 08 42.0**	**-0.3**
KKAR				pmax	pmax				
	comp=Z,1.0nm,0.6s								
KKAR	**Karatay Array**	**53.50**	**299**	*e*P		**P**	**P**	**03 08 42.0**	**-0.3**
	comp=Z,1.4nm,0.6s								
SVE	**Sverdlovsk**	**54.55**	**318**	*e*P		**P**	**P**	**03 08 50.9**	**+1.1**
ARU	**Arti**	**55.77**	**318**	P		**P**	**P**	**03 08 59.1**	**+0.5**
	comp=Z,4.3nm,0.6s,baz=78,slow=6.0,SNR=9.3								
ARU	**Arti**	**55.77**	**318**	*c i*P		**P**	**P**	**03 08 58.8**	**+0.3**
ARU								03 10 15.0	
ARU								03 10 54.5	
ARU				S		S		03 16 14.9	-30
ARU				pmax	pmax				
	comp=Z,13nm,1.2s								
ARU				MLR	MLR				
	comp=Z,796nm,18.0s								
ARU	**Arti**	**55.77**	**318**	P		**P**	**P**	**03 08 59.1**	**+0.5**
ABKAR	**Akbulak array**	**57.78**	**310**	*e*P		**P**	**P**	**03 09 12.8**	**-0.1**
	comp=Z,3.9nm,0.6s								
AKTO	**Aktyubinsk**	**58.42**	**312**	P		**P**	**P**	**03 09 17.9**	**+0.4**
	comp=Z,1.1nm,0.6s,baz=77,slow=12,SNR=5.3								
AKTO	**Aktyubinsk**	**58.42**	**312**	P		**P**	**P**	**03 09 17.9**	**+0.4**
AKTO	**Aktyubinsk**	**58.42**	**312**	P		**P**	**P**	**03 09 17.9**	**+0.4**
WRA	**Warramunga Arr**	**59.72**	**190**	P		**P**	**P**	**03 09 26.1**	**-0.6**
	comp=Z,0.8nm,0.6s,baz=8.4,slow=7.0,SNR=3.2								
WRA	**Warramunga Arr**	**59.72**	**190**	P		**P**	**P**	**03 09 26.1**	**-0.6**
YKA	**Yellowknife Ar**	**60.82**	**31**	P		**P**	**P**	**03 09 35.1**	**+1.4**
	comp=Z,0.4nm,0.7s,baz=302,slow=6.4,SNR=7.1								
YKA	**Yellowknife Ar**	**60.82**	**31**	P		**P**	**P**	**03 09 35.1**	**+1.4**
ASAR	**Alice Springs**	**63.45**	**190**	P		**P**	**P**	**03 09 52.2**	**+0.5**
	comp=Z,0.3nm,0.7s,baz=14,slow=6.7,SNR=3.2								
ASAR	**Alice Springs**	**63.45**	**190**	P		**P**	**P**	**03 09 52.2**	**+0.5**
GEYT	**Alibeck**	**64.25**	**299**	P		**P**	**P**	**03 09 56.2**	**-0.9**
	comp=Z,0.8nm,0.3s,baz=332,slow=5.0,SNR=3.7								
OBN	**Obninsk**	**67.24**	**323**	‖*e*P		P		03 10 24.6	+8.6
OBN								03 10 58.0	
OBN				S		**S**		**03 19 07.0**	**-3.5**
OBN				pmax	pmax				
	comp=Z,5.0nm,0.9s								
OBN				MLR	MLR				
	comp=Z,439nm,16.0s								
FINES	**FINESS Array B**	**67.52**	**333**	P		**P**	**P**	**03 10 17.7**	**0.0**
	comp=Z,2.6nm,0.7s,baz=49,slow=8.6,SNR=5.8								
FINES	**FINESS Array B**	**67.52**	**333**	P		**P**	**P**	**03 10 17.6**	**0.0**
SUMG	**Summit**	**68.27**	**1**	*e*P		**P**	**P**	**03 10 23.2**	**+0.5**
	comp=Z,2.8nm,0.8s								
KVAR	**Kislovodsk Arr**	**70.68**	**311**	P		**P**	**P**	**03 10 38.8**	**+1.0**
	comp=Z,4.6nm,0.7s,baz=229,slow=13,SNR=4.6								
KVAR	**Kislovodsk Arr**	**70.68**	**311**	P		**P**	**P**	**03 10 38.8**	**+1.0**
KIV	**Kislovodsk**	**70.69**	**311**	‖*e*P		P		03 10 48.7	+11
KIV				pmax	pmax				
	comp=Z,9.0nm,1.0s								
KIV	**Kislovodsk**	**70.69**	**311**	*e*P		**P**	**P**	**03 10 38.5**	**+0.7**
	comp=Z,7.8nm,0.7s								
KBZ	**Khabaz**	**70.70**	**311**	P		**P**	**P**	**03 10 38.5**	**+0.8**
	comp=Z,3.0nm,0.9s,baz=40,slow=6.2,SNR=7.0								
KBZ	**Khabaz**	**70.70**	**311**	P		**P**	**P**	**03 10 38.5**	**+0.8**
HFS	**Hagfors**	**72.62**	**336**	P		**P**	**P**	**03 10 49.7**	**+0.7**
	comp=Z,1.5nm,0.6s,baz=42,slow=6.8,SNR=9.5								
HFS	**Hagfors**	**72.62**	**336**	P		**P**	**P**	**03 10 49.7**	**+0.7**
NB2	**NORSAR Subarra**	**72.65**	**338**	P		**P**	**P**	**03 10 48.8**	**-0.5**
	comp=Z,1.1nm,0.6s,baz=39,slow=6.2								
NOA	**NORSAR Array B**	**72.65**	**338**	P		**P**	**P**	**03 10 49.3**	**0.0**
	comp=Z,1.7nm,0.7s,baz=38,slow=6.0,SNR=5.8								
NOA	**NORSAR Array B**	**72.65**	**338**	P		**P**	**P**	**03 10 49.3**	**0.0**
AKASG	**Malin Array Be**	**73.48**	**323**	P		**P**	**P**	**03 10 53.9**	**-0.4**
	comp=Z,1.0nm,0.5s,baz=44,slow=6.1,SNR=8.9								
AKASG	**Malin Array Be**	**73.48**	**323**	P		**P**	**P**	**03 10 53.9**	**-0.4**
PDAR	**Pinedale Array**	**74.70**	**47**	P		**P**	**P**	**03 11 03.0**	**+1.1**
	comp=Z,0.3nm,0.6s,baz=0.0,slow=0.4,SNR=3.8								
PDAR	**Pinedale Array**	**74.70**	**47**	P		**P**	**P**	**03 11 03.0**	**+1.1**
BRTR	**Keskin Array B**	**78.59**	**312**	P		**P**	**P**	**03 11 24.1**	**+0.3**
	comp=Z,0.5nm,0.7s,baz=76,slow=6.1,SNR=3.7								
BRTR	**Keskin Array B**	**78.59**	**312**	P		**P**	**P**	**03 11 24.1**	**+0.3**
BR231	**Keskin MP Arra**	**79.00**	**313**	*e*P		**P**	**P**	03 11 35.9	+10
CLL	**Collm**	**79.89**	**331**	*e*P		**P**	**P**	**03 11 31.0**	**+0.5**
CLL				*e*				03 11 50.0	
RAYN	**Ar Rayn**	**81.39**	**293**	*e*P		**P**	**P**	**03 11 38.7**	**-0.4**
	comp=Z,2.3nm,0.7s								
EKA	**Eskdalemuir Ar**	**81.44**	**342**	P		**P**	**P**	**03 11 39.4**	**+0.7**
	comp=Z,0.9nm,0.8s,baz=27,slow=6.4,SNR=4.1								
EKA	**Eskdalemuir Ar**	**81.44**	**342**	P		**P**	**P**	**03 11 39.5**	**+0.7**
GERES	**GERESS Array B**	**81.59**	**329**	P		**P**	**P**	**03 11 40.2**	**+0.3**
	comp=Z,0.3nm,0.5s,baz=52,slow=6.4,SNR=4.6								
GERES	**GERESS Array B**	**81.59**	**329**	P		**P**	**P**	**03 11 40.1**	**+0.3**
VTS	**Vitosha**	**82.16**	**320**	*e*P		P		03 11 53.0	+10
VTS				pmax	pmax				
	comp=Z,5.0nm,0.9s								
VTS	**Vitosha**	**82.16**	**320**	*e*P		P		03 11 53.0	+10
	comp=Z,5.0nm,0.9s								
FUORN	**Ofenpass-Fuorn**	**84.75**	**330**	*e*P		P		03 12 08.8	+12
PLCA	**Paso Flores**	**153.85**	**104**	PKPbc		**PKPbc**	**PKPbc**	**03 19 20.3**	**-0.8**
	comp=Z,0.7nm,0.4s,baz=316,slow=11,SNR=4.6								
PLCA	**Paso Flores**	**153.85**	**104**	PKPbc		**PKPbc**	**PKPbc**	**03 19 20.3**	**-0.8**

ISCJB ***17*** *02:59:50.2±0.3,39°.89N±0°.04×143°.58E±0°.06,h6km, mb4.5/60,MS4.2/5, Error ellipse: s-maj=7.2km s-min=5.1km az=41.2*
IDC ***17*** *02:59:50.6±0.6,39°.89N×143°.60E,h0km,mb4.4/32, mb1 4.5/36,mb1mx4.4/58,mbtmp4.4/36,ML3.6/4, MS3.8/4, Ms1 3.8/4,ms1mx3.4/26, Error ellipse: s-maj=15.9km s-min=14.0km az=112.0*
MOS ***17*** *02:59:52.9±1.1,39°.90N×143°.66E,h26km,mb4.9/22, Error ellipse: s-maj=9.2km s-min=5.8km az=98.9*
NEIC ***17*** *02:59:55.6±1.6,39°.86N×143°.54E,h32km±11km,mb4.7/25, Error ellipse: s-maj=6.8km s-min=5.3km az=124.0*
ISC 17 02:59:51.6±0.5,39°.92N±0°.05×143°.74E±0°.06,h6km,n200, σ1§**26**/198,**mb4.6**/60,**MS4.0**/5,**3C-4D,Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time	Res

WHN S S 03 09 25.6 -25
WHN pmax pmax
comp=Z,94nm,1.2s
WHN pmax pmax
comp=Z,130nm,1.0s
WHN LR LR
comp=N,3μm,17.8s
WHN LR LR
comp=E,1μm,12.0s
WHN LR LR
comp=Z,2μm,17.6s
ULN Ulaanbaatar 27.40 299 *e*P **P 03 05 36.8 -1.1**
ULN pmax pmax
comp=Z,26nm,1.1s
ULN Ulaanbaatar 27.40 299 *e*P **P 03 05 36.8 -1.1**
comp=Z,26nm,1.1s
SONM Songino Array 27.84 299 P **P 03 05 41.4 -0.5**
comp=Z,7.5nm,0.8s,baz=97,slow=9.8,SNR=15
SONM Songino Array 27.84 299 P **P 03 05 41.4 -0.5**
SONM Songino Array 27.84 299 P **P 03 05 41.4 -0.5**
H11N2 WAKE ISLAND Hy 28.28 129 T T 03 35 23.9
baz=320,slow=74,SNR=8.3
H11N1 WAKE ISLAND Hy 28.29 129 T T 03 35 33.6
baz=320,slow=74,SNR=8.8
H11N3 WAKE ISLAND Hy 28.30 129 T T 03 35 25.6
baz=320,slow=74,SNR=9.4
H11S1 WAKE ISLAND Hy 29.11 130 T T 03 36 36.5
baz=322,slow=76,SNR=7.9
H11S3 WAKE ISLAND Hy 29.12 131 T T 03 36 31.7
baz=322,slow=76,SNR=8.3
H11S2 WAKE ISLAND Hy 29.13 130 T T 03 36 35.7
baz=322,slow=76,SNR=8.0
ENH Enshi 29.48 262 *e*P **P 03 05 55.3 -1.2**
comp=Z,70nm,1.2s
TLY Talaya 29.95 307 P **P 03 05 59.8 -0.6**
comp=Z,1.8nm,0.2s,baz=106,slow=7.4,SNR=3.9
TLY Talaya 29.95 307 *e*P **P 03 06 00.7 +0.3**
TLY pmax pmax
comp=Z,8.0nm,1.3s
TLY Talaya 29.95 307 P **P 03 05 59.8 -0.6**
ZALV Zalesovo Beam 41.39 310 P **P 03 07 37.5 -0.8**
comp=Z,7.2nm,0.9s,baz=86,slow=7.6,SNR=7.9
ZALV Zalesovo Beam 41.39 310 P **P 03 07 37.6 -0.8**
ZALV Zalesovo Beam 41.39 310 P **P 03 07 37.5 -0.8**
MYLDM Lahad Datu 41.39 220 *e*P **P 03 07 41.7 +3.0**
comp=Z,46nm,1.2s
NRIK Noril'sk 41.46 334 P **P 03 07 37.6 -1.1**
comp=Z,1.2nm,0.3s,baz=108,slow=9.6,SNR=4.2
NRIK Noril'sk 41.46 334 P **P 03 07 37.6 -1.1**
NRIK pmax pmax
comp=Z,1.0nm,0.3s
NVS Novosibirsk 42.23 311 *e*P **P 03 07 45.2 0.0**
NVS pmax pmax
comp=Z,26nm,2.2s
NVS pmax pmax
comp=E,14nm,1.8s
CMAR Chiang Mai Arr 44.01 254 P **P 03 07 59.4 -0.7**
comp=E,0.7nm,0.4s,baz=43,slow=7.4,SNR=4.3
CMAR Chiang Mai Arr 44.01 254 P **P 03 07 59.4 -0.7**
CMAR Chiang Mai Arr 44.01 254 P **P 03 07 59.4 -0.7**
MKAR Makanchi Array 44.20 300 P **P 03 08 00.5 -0.8**
comp=E,4.4nm,0.9s,baz=88,slow=9.9,SNR=5.4
MKAR Makanchi Array 44.20 300 P **P 03 08 00.5 -0.8**
MKAR Makanchi Array 44.20 300 P **P 03 08 00.5 -0.8**
KURK Kurchatov 45.65 306 *e*P **P 03 08 10.9 -1.8**
KURK pmax pmax
comp=Z,55nm,0.9s
KURK Kurchatov 45.65 306 *e*P **P 03 08 10.9 -1.8**
comp=Z,55nm,0.9s
COLA College 45.67 34 *ce*P **P 03 08 12.4 -0.3**
COLA pmax pmax
comp=Z,5.0nm,0.8s
KURBB Kurchatov Arra 45.72 306 P **P 03 08 11.6 -1.8**
comp=Z,12nm,0.9s,baz=80,slow=8.6,SNR=10
ILAR Eielson Array 46.09 34 LR LR 03 29 15.2
comp=Z,47nm,18.5s,baz=314,slow=38
TKM2 Tokmak 2 49.91 297 *e*P **P 03 08 45.8 -0.4**
TKM2 pmax pmax
comp=Z,38nm,1.0s
TKM2 Tokmak 2 49.91 297 *e*P **P 03 08 45.8 -0.4**
comp=Z,38nm,1.0s
BVAR Borovoye Array 50.02 311 P **P 03 08 46.1 -0.5**
comp=Z,2.4nm,0.6s,baz=59,slow=6.9,SNR=5.0
BVAR Borovoye Array 50.02 311 P **P 03 08 46.1 -0.5**
BVAR Borovoye Array 50.02 311 P **P 03 08 46.1 -0.5**
BRVK Borovoye 50.08 311 *e*P **P 03 08 46.2 -0.8**
BRVK pmax pmax
comp=Z,11nm,1.0s
BRVK Borovoye 50.08 311 *e*P **P 03 08 46.2 -0.8**
comp=Z,11nm,1.0s
FRU Bishkek 50.61 297 *e*P **P 03 08 51.0 -0.3**
AAK Ala-Archa 50.77 297 P **P 03 08 51.8 -0.8**
comp=Z,1.8nm,0.7s,baz=72,slow=8.3,SNR=4.5
AAK Ala-Archa 50.77 297 *e*P **P 03 08 51.8 -0.8**
AAK pmax pmax
comp=Z,5.0nm,1.0s
AAK Ala-Archa 50.77 297 *e*P **P 03 08 51.8 -0.8**
comp=Z,5.5nm,1.0s
INK Inuvik 50.99 28 P **P 03 08 54.4 +0.8**
comp=Z,1.6nm,0.5s,baz=312,slow=6.1,SNR=6.6
INK LR LR 03 33 52.4
comp=Z,116nm,18.3s,baz=286,slow=40
INK Inuvik 50.99 28 *e*P **P 03 08 54.5 +0.8**
comp=Z,7.8nm,1.2s
EKS2 Erkin-Say 51.25 297 *e*P **P 03 08 55.5 -0.7**
EKS2 pmax pmax
comp=Z,9.0nm,0.9s
EKS2 Erkin-Say 51.25 297 *e*P **P 03 08 55.5 -0.7**
comp=Z,8.7nm,0.9s
SOKR Solikamsk 55.17 322 *e*P P 03 09 19.6 -5.0
SOKR pmax pmax
comp=Z,5.0nm,0.8s
ARU Arti 55.44 318 P **P 03 09 26.2 -0.3**
comp=Z,5.0nm,0.8s,baz=82,slow=5.8,SNR=6.1
ARU Arti 55.44 318 *e*P **P 03 09 24.8 -1.8**
ARU pmax pmax
comp=Z,25nm,1.3s
ARU Arti 55.44 318 *e*P **P 03 09 24.8 -1.8**
comp=Z,25nm,1.3s
ABKAR Akbulak array 57.50 309 *e*P **P 03 09 40.8 -0.6**
AKTO Aktyubinsk 58.13 311 P **P 03 09 46.9 +1.1**
comp=Z,2.5nm,0.8s,baz=89,slow=9.7,SNR=3.3
AKTO Aktyubinsk 58.13 311 P **P 03 09 46.9 +1.1**
AKTO Aktyubinsk 58.13 311 P **P 03 09 46.9 +1.1**
WRAB Tennant Creek 60.18 190 *e*P **P 03 09 59.5 -0.7**
WRAB pmax pmax
comp=Z,8.0nm,0.8s
WRAB Tennant Creek 60.18 190 *e*P **P 03 09 59.5 -0.7**
comp=Z,8.4nm,0.8s
WRA Warramunga Arr 60.19 190 P **P 03 09 59.3 -1.0**
comp=Z,4.0nm,0.5s,baz=7.6,slow=6.9,SNR=14
WRA Warramunga Arr 60.19 190 P **P 03 09 59.3 -1.0**
WRA Warramunga Arr 60.19 190 P **P 03 09 59.3 -1.0**
YKA Yellowknife Ar 60.40 32 P **P 03 10 01.7 +0.4**
comp=Z,0.5nm,0.6s,baz=301,slow=6.6,SNR=7.2
YKA Yellowknife Ar 60.40 32 P **P 03 10 01.8 +0.4**
ASAR Alice Springs 63.91 190 P **P 03 10 25.2 -0.1**
comp=Z,2.6nm,0.8s,baz=9.1,slow=5.7,SNR=11
ASAR Alice Springs 63.91 190 P **P 03 10 25.2 -0.1**
ASAR Alice Springs 63.91 190 P **P 03 10 25.2 -0.1**
GEYT Alibeck 64.05 299 P **P 03 10 25.2 -1.0**
comp=Z,4.7nm,0.9s,baz=45,slow=4.3,SNR=6.9
FINES FINESS Array B 67.11 332 P **P 03 10 45.3 -0.2**
comp=Z,1.1nm,0.8s,baz=76,slow=5.9,SNR=6.3
FINES FINESS Array B 67.11 332 P **P 03 10 45.3 -0.2**
FINES FINESS Array B 67.11 332 P **P 03 10 45.3 -0.2**
SUMG Summit 67.80 1 *e*P **P 03 10 50.2 0.0**
SUMG pmax pmax
comp=Z,6.0nm,0.8s
SUMG Summit 67.80 1 *e*P **P 03 10 50.2 0.0**
comp=Z,6.1nm,0.8s
BMO Blue Mountains 68.65 49 *e*P **P 03 10 57.0 +1.3**
comp=Z,3.3nm,0.8s
WVOR Wild Horse Val 69.26 52 *e*P **P 03 11 03.1 +3.6**
comp=Z,6.1nm,0.8s
FFC Flin Flon 70.30 34 *e*P **P 03 11 05.8 +0.3**
comp=Z,7.6nm,1.2s
ZEI Tsey 70.38 310 *e*P **P 03 11 04.7 -1.8**
ZEI pmax pmax
comp=Z,25nm,1.2s
KVAR Kislovodsk Arr 70.39 311 P **P 03 11 05.5 -0.9**
comp=Z,39nm,1.2s,baz=59,slow=6.3,SNR=11
KVAR Kislovodsk Arr 70.39 311 P **P 03 11 05.5 -0.9**
KIV Kislovodsk 70.39 311 *e*P **P 03 11 06.7 +0.2**
KIV pmax pmax
comp=Z,32nm,1.0s
KIV Kislovodsk 70.39 311 *e*P **P 03 11 06.7 +0.2**
comp=Z,32nm,1.0s
KBZ Khabaz 70.41 311 P **P 03 11 06.4 0.0**
comp=Z,7.6nm,0.9s,baz=82,slow=6.5,SNR=8.6
KBZ Khabaz 70.41 311 P **P 03 11 06.4 0.0**
KBZ Khabaz 70.41 311 P **P 03 11 06.4 0.0**
LRM Limekiln Ridge 70.82 46 *e*P **P 03 11 10.9 +1.6**
BOZ Bozeman (W) 71.38 46 *e*P **P 03 11 14.3 +1.8**
comp=Z,4.7nm,1.0s
HFS Hagfors 72.20 336 P **P 03 11 16.2 -0.8**
comp=Z,5.4nm,0.9s,baz=33,slow=5.5,SNR=6.5
HFS Hagfors 72.20 336 P **P 03 11 16.2 -0.8**
HFS Hagfors 72.20 336 P **P 03 11 16.2 -0.8**
NB2 NORSAR Subarra 72.22 338 P **P 03 11 16.9 -0.3**
comp=Z,9.0nm,1.1s,baz=35,slow=6.2
NOA NORSAR Array B 72.22 338 P **P 03 11 16.8 -0.4**
comp=Z,4.3nm,0.9s,baz=36,slow=6.0,SNR=6.1
NOA NORSAR Array B 72.22 338 P **P 03 11 16.8 -0.4**
NOA NORSAR Array B 72.22 338 P **P 03 11 16.8 -0.4**
H17A Grant Village 72.75 46 *e*P **P 03 11 22.2 +1.3**
comp=Z,7.4nm,1.0s
AKASG Malin Array Be 73.12 323 P **P 03 11 21.8 -0.8**
comp=Z,2.8nm,0.8s,baz=45,slow=6.5,SNR=11
AKASG Malin Array Be 73.12 323 P **P 03 11 21.8 -0.8**
AKASG Malin Array Be 73.12 323 P **P 03 11 21.8 -0.8**
R11A Troy Canyon, C 73.57 54 *e*P **P 03 11 26.9 +1.1**
comp=Z,2.1nm,1.0s
TPNV Topopah Spring 74.01 55 *e*P P 03 11 35.1 +6.8
comp=Z,5.4nm,1.1s
PDAR Pinedale Array 74.36 47 P **P 03 11 30.9 +0.6**
comp=Z,0.6nm,0.7s,baz=271,slow=1.7,SNR=6.1
PDAR Pinedale Array 74.36 47 P **P 03 11 30.9 +0.6**
KOLS Kolonicke sedl 77.54 325 *e*P **P 03 11 48.5 +0.4**
STHS Stebnicka Huta 77.63 326 *e*P **P 03 11 49.8 +1.2**
STHS Stebnicka Huta 77.63 326 *e*P **P 03 11 49.8 +1.2**
OJC Ojcow 77.64 327 *e*P **P 03 11 48.3 -0.3**
OJC Ojcow 77.64 327 *e*P **P 03 11 48.4 -0.2**
UZH Uzhgorod 77.76 325 *ce*P **P 03 11 49.7 +0.4**
UZH *i* 03 12 02.7
WUAZ Wupatki 77.97 54 *e*P **P 03 11 50.5 -0.4**
comp=Z,3.6nm,0.9s
NIE Niedzica 78.04 326 *e*P **P 03 11 52.2 +1.3**
NIE Niedzica 78.04 326 *e*P **P 03 11 52.2 +1.3**
BRTR Keskin Array B 78.29 312 P **P 03 11 52.6 +0.1**
comp=Z,1.9nm,1.0s,baz=108,slow=4.0,SNR=7.6
BRTR Keskin Array B 78.29 312 P **P 03 11 52.7 +0.1**
BRTR Keskin Array B 78.29 312 P **P 03 11 52.6 +0.1**
LANS Liptovska Anna 78.60 326 *e*P **P 03 11 55.2 +1.2**
OKC Ostrava-Krasne 78.62 328 *e*P **P 03 11 55.0 +0.9**
OKC *e*pP **PcP 03 12 03.9 +0.8**
OKC Ostrava-Krasne 78.62 328 *e*P **P 03 11 55.0 +0.9**
OKC *e* 03 12 03.9
DPC Dobruska-Polom 78.97 329 *i*P **P 03 11 56.9 +0.9**
DPC *e*pP **PcP 03 12 05.4 +0.8**
DPC Dobruska-Polom 78.97 329 *i*P **P 03 11 56.9 +0.9**
DPC *e* 03 12 05.4
KRLC Kraliky 79.00 328 *e*P **P 03 11 56.9 +0.7**
KRLC *e*pP **PcP 03 12 05.4 +0.6**
KRLC Kraliky 79.00 328 *e*P **P 03 11 56.9 +0.7**
KRLC *e* 03 12 05.4
PSZ Piszkesteto 79.35 325 *e*P **P 03 11 57.9 -0.3**
PSZ pmax pmax
comp=Z,7.0nm,1.0s
PSZ Piszkesteto 79.35 325 *e*P **P 03 11 57.9 -0.3**
comp=Z,6.5nm,1.0s
VYHS Vyhne 79.37 326 *e*P **P 03 11 58.1 -0.1**
BRG Berggiesshubel 79.48 330 *e*P **P 03 11 58.5 -0.2**
comp=Z,6.6nm,1.4s
BRG Berggiesshubel 79.48 330 *e*P **P 03 11 58.5 -0.2**
BRG pmax pmax
comp=Z,7.0nm,1.4s
CLL Collm 79.48 331 ⇓ *i*(P) **P 03 11 58.4 -0.3**
comp=Z,11nm,1.1s
CLL *i* 03 12 06.9
CLL LmH 03 45 00.0
comp=N,300nm,18.7s
CLL LmH 03 45 00.0
comp=E,400nm,20.4s
CLL Lm MLR 03 50 00.0
comp=Z,300nm,18.6s
CLL Collm 79.48 331 ⇓ *i*P **P 03 11 58.4 -0.3**
CLL *i* 03 12 06.9
CLL MLR MLR
comp=Z,300nm,18.6s
PVCC Panska Ves 79.52 330 *e*P **P 03 11 59.7 +0.8**
PVCC *e*pP **PcP 03 12 07.2 +0.3**
PVCC Panska Ves 79.52 330 *e*P **P 03 11 59.7 +0.8**
PVCC *e* 03 12 07.2
VRAC Vranov 79.67 328 P **P 03 12 00.2 +0.4**
comp=Z,6.1nm,1.1s,baz=55,slow=3.8,SNR=6.7
VRAC Vranov 79.67 328 P **P 03 12 00.2 +0.4**
VRAC Vranov 79.67 328 P **P 03 12 00.2 +0.4**
GOPC GO Pecny, Ondr 79.92 329 *e*P **P 03 12 01.8 +0.6**
GOPC GO Pecny, Ondr 79.92 329 *e*P **P 03 12 01.8 +0.6**
PRU Pruhonice 79.96 329 *i*P **P 03 12 01.8 +0.5**
PRU *e*pP **PcP 03 12 10.1 +1.2**
PRU Pruhonice 79.96 329 *i*P **P 03 12 01.8 +0.5**
PRU *e* 03 12 10.1
TREC Trest 80.13 329 *e*P **P 03 12 03.0 +0.6**
TREC Trest 80.13 329 *e*P **P 03 12 03.0 +0.6**
EKA Eskdalemuir Ar 81.00 342 P **P 03 12 06.9 0.0**
comp=Z,0.5nm,0.7s,baz=17,slow=5.2,SNR=3.4
EKA Eskdalemuir Ar 81.00 342 P **P 03 12 06.9 0.0**
EKA Eskdalemuir Ar 81.00 342 P **P 03 12 06.9 0.0**
KHC Kasperske Hory 81.02 329 *i*P **P 03 12 07.6 +0.5**
KHC *e*pP **PcP 03 12 15.8 +2.2**
KHC Kasperske Hory 81.02 329 *i*P **P 03 12 07.6 +0.5**
KHC *e* 03 12 15.8
GERES GERESS Array B 81.20 329 P **P 03 12 07.9 -0.3**
comp=Z,1.4nm,0.8s,baz=46,slow=5.8,SNR=8.6
GERES GERESS Array B 81.20 329 P **P 03 12 07.9 -0.3**
GERES GERESS Array B 81.20 329 P **P 03 12 07.8 -0.3**
RAYN Ar Rayn 81.23 293 *e*P **P 03 12 07.5 -1.2**
comp=Z,9.4nm,1.2s
ANMO Albuquerque 81.35 51 *e*P **P 03 12 12.9 +3.6**
comp=Z,4.0nm,1.1s
GRFO Grafenberg 81.46 331 *e*P **P 03 12 10.0 +0.6**
GRFO pmax pmax
comp=Z,13nm,1.1s
GRFO Grafenberg 81.46 331 *e*P **P 03 12 10.0 +0.6**
comp=Z,13nm,1.1s
DAVOX Davos/Dischmat 84.37 330 P **P 03 12 24.9 +0.1**
comp=Z,3.4nm,0.9s,baz=342,slow=6.4,SNR=4.0
DAVOX Davos/Dischmat 84.37 330 P **P 03 12 24.9 +0.1**
DAVOX Davos/Dischmat 84.37 330 P **P 03 12 24.9 +0.1**
TX31 Lajitas Ar. Si 86.93 54 *e*P **P 03 12 39.6 +1.8**
TXAR Lajitas Array 86.93 54 P **P 03 12 39.1 +1.3**
comp=Z,1.3nm,0.9s,baz=292,slow=3.5,SNR=6.7
TXAR Lajitas Array 86.93 54 P **P 03 12 39.1 +1.3**
TXAR Lajitas Array 86.93 54 P **P 03 12 39.0 +1.3**
SAML Samuel 140.92 45 *e*PKPdf **PKPdf 03 19 22.7 -0.3**
LPAZ La Paz 143.65 59 PKP PKPbc 03 19 26.0 0.0
comp=Z,0.4nm,0.4s,baz=342,slow=3.2,SNR=2.8
LPAZ La Paz 143.65 59 PKIKP PKPbc 03 19 26.0 0.0
LPAZ La Paz 143.65 59 PKP PKPbc 03 19 26.0 0.0
SIV San Ignacio 147.82 49 PKPbc **PKPbc 03 19 37.8 -0.1**
SIV San Ignacio 147.82 49 PKPbc **PKPbc 03 19 37.8 -0.1**
LCO Las Campanas 149.76 80 *e*PKPbc **PKPbc 03 19 43.2 +0.4**

IDC ***17*** *03:21:03.8± 5.2,36.˚19N× 71.˚61E,h91km± 40km, mb3.5/8, mb1 3.6/14,mb1mx3.4/51,mbtmp3.9/14,Error ellipse: s-maj=49.9km s-min=25.5km az=152.0*
ISCJB ***17*** *03:21:06.1± 0.4,36.˚52N± 0.˚03× 71.˚61E± 0.˚06,h114km, mb3.6/9,Error ellipse: s-maj=7.3km s-min=3.6km az=160.2*
NNC ***17*** *03:21:11.6± 1.1,36.˚90N× 71.˚23E,h153km± 15km, mb3.4, mpv4.2,Error ellipse: s-maj=9.7km s-min=7.5km az=49.0*
ISC 17 03:21:06.9±0.6,36.48N±0.05×71.56E±0.07,h114km,n42,
σ 2§ 07/49,mb3.8/9,5C-4D,Afghanistan-Tajikistan border region

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
CEP	**Cherat**	**2.66**	**174**	⇓P		**Pn**	**03 21 50.9**	**+2.2**
CHCP	**Chirah Chowk**	**3.14**	**153**	P		Pn	03 21 58.3	+3.4
THW	**Thamme Wali**	**3.68**	**178**	P		**Pn**	**03 22 03.6**	**+1.6**
SARP	**Sargodha**	**4.63**	**168**	P		**Pn**	**03 22 15.7**	**+0.8**
THN	**Thein Dam**	**5.30**	**138**	*e*P		**Pn**	**03 22 25.0**	**+1.3**
DHRM	**DHARAMSHALA**	**5.76**	**136**	*e*P		**Pn**	**03 22 32.3**	**+2.1**
DHRM				*e*S		**Sn**	**03 23 35.0**	**-0.1**
DHRM				IAML			03 23 39.4	
DHRM				IAML			03 23 39.5	
MNAS	**Manas**	**6.05**	**7**	⇑P		**Pn**	**03 22 34.1**	**+0.1**
MNAS				⇑S		**Sn**	**03 23 38.9**	**-3.0**
AAK	**Ala-Archa**	**6.55**	**19**	P		**Pn**	**03 22 42.1**	**+1.3**
AAK				S		**Sn**	**03 23 53.8**	**-0.4**
KK31	**Karatay Array**	**6.67**	**353**	⇓P		**Pn**	**03 22 41.2**	**-1.0**
KK31				S		**Sn**	**03 23 51.9**	**-4.9**
SDNR	**Sundarnagar**	**6.69**	**136**	*e*P		**Pn**	**03 22 44.0**	**+1.3**
SDNR				*e*S		**Sn**	**03 23 55.0**	**-2.5**
SMLA	**Simla**	**7.09**	**137**	*i*P		**Pn**	**03 22 49.5**	**+1.6**
SMLA				*i*S		**Sn**	**03 24 04.4**	**-2.6**
SMLA				*i*S		**Sn**	**03 24 05.4**	**-1.6**
SMLA				IAML			03 24 08.2	
SMLA				IAML			03 24 08.7	
TKM2	**Tokmak 2**	**7.15**	**25**	⇑P		**Pn**	**03 22 50.2**	**+1.2**
TKM2				⇓S		**Sn**	**03 24 08.2**	**-0.5**
DDI	**Dehra Dun**	**8.19**	**137**	*e*P		**Pn**	**03 23 05.3**	**+2.3**
KHET	**Khetri**	**9.11**	**156**	*e*P		**Pn**	**03 23 14.3**	**-1.1**
KHET				*e*S		**Sn**	**03 24 50.5**	**-5.8**
KALG	**Kalgarh**	**9.21**	**137**	*ex*		Pn	03 23 23.2	+6.6
KALG				*ex*		x	03 24 43.2	
AYAN	**Aya Nagar**	**9.25**	**148**	*e*P		**Pn**	**03 23 18.3**	**+1.0**
AYAN				*e*S		**Sn**	**03 24 54.3**	**-5.3**
KUDL	**Kundal**	**9.29**	**152**	*e*P		**Pn**	**03 23 16.6**	**-1.2**
KUDL				*e*S		Sn	03 24 54.1	-6.5
GEYT	**Alibeck**	**10.82**	**282**	P		Pn	03 23 32.4	-6.1
GEYT				S		Sn	03 25 26.2	-11
PYUN	**Piuthan**	**12.77**	**128**	*e*P		**Pn**	**03 24 03.2**	**-1.3**
MKAR	**Makanchi Array**	**13.05**	**35**	P		**Pn**	**03 24 08.0**	**+0.1**
KOLN	**Koldanda**	**13.39**	**127**	*e*P		**Pn**	**03 24 11.3**	**-1.2**
GKN	**Gorkha**	**13.91**	**124**	*e*P		**Pn**	**03 24 18.5**	**-0.8**
BHPL	**Bhopal**	**14.13**	**157**	*ex*		**P**	**03 24 28.4**	**+2.3**
KKN	**Kakani**	**14.48**	**123**	*e*P		**Pn**	**03 24 25.7**	**-1.0**
PKIN	**Phulchoki**	**14.70**	**123**	*e*P		**Pn**	**03 24 29.3**	**-0.1**
GUN	**Gumba**	**14.82**	**121**	*e*P		**Pn**	**03 24 30.6**	**-0.4**
KURBB	**Kurchatov Arra**	**15.01**	**17**	P		**P**	**03 24 35.8**	**+0.3**
AB31	**Akbulak array**	**15.33**	**330**	P		**Pn**	**03 24 33.3**	**-3.6**
AB31				⇓S		Sn	03 27 10.6	-16
BVAR	**Borovoye Array**	**16.57**	**358**	P		**P**	**03 24 53.0**	**+0.3**
AKTO	**Aktyubinsk**	**17.03**	**329**	P		**P**	**03 24 57.2**	**-0.7**
AKTO	**Aktyubinsk**	**17.03**	**329**	⇑P		**P**	**03 24 53.8**	**-4.1**
AKTO				⇓S		Sn	03 27 59.1	-8.2
ZALV	**Zalesovo Beam**	**19.75**	**24**	P		**P**	**03 25 27.9**	**+0.4**
KBZ	**Khabaz**	**23.01**	**297**	P		**P**	**03 26 02.2**	**+0.3**
BRTR	**Keskin Array B**	**29.87**	**288**	P		**P**	**03 27 05.0**	**+1.3**
AKASG	**Malin Array Be**	**33.31**	**309**	P		**P**	**03 27 35.4**	**+1.8**
FINES	**FINESS Array B**	**37.76**	**326**	P		**P**	**03 28 12.4**	**+1.0**
ARCES	**ARCESS Array B**	**41.34**	**337**	P		**P**	**03 28 42.5**	**+1.5**
BRG	**Berggiesshubel**	**42.99**	**308**	*e*P		**P**	**03 28 55.9**	**+1.3**
NB2	**NORSAR Subarra**	**44.67**	**323**	P		**P**	**03 29 08.3**	**+0.3**
NOA	**NORSAR Array B**	**44.67**	**323**	P		**P**	**03 29 08.6**	**+0.6**
TORD	**Torodi Ar. Bea**	**66.17**	**269**	P		**P**	**03 31 41.7**	**-0.9**
YKA	**Yellowknife Ar**	**81.25**	**3**	P		**P**	**03 33 11.4**	**+1.6**

IDC ***17*** *03:25:26.7± 1.0,37.˚56N× 144.˚90E,h0km,mb3.5/7, mb1 3.8/11,mb1mx3.6/45,mbtmp3.6/11,ML3.9/3,MS3.2/1, Ms1 3.2/1,ms1mx2.5/38,Error ellipse: s-maj=26.5km s-min=20.6km az=127.0*
ISCJB ***17*** *03:25:30.3± 0.6,37.˚75N± 0.˚05× 144.˚66E± 0.˚05,h33km, mb3.8/10,Error ellipse: s-maj=7.2km s-min=4.8km az=155.6*
NEIC ***17*** *03:25:31.4± 0.7,37.˚57N× 144.˚83E,h35km,mb4.0/2,Error ellipse: s-maj=13.4km s-min=10.2km az=117.0*
JMA ***17*** *03:25:32.0± 0.3,37.˚74N× 144.˚54E,h54km,M4.4*
ISC 17 03:25:32.0±0.9,37.76N±0.06×144.71E±0.07,h35km,n35,
σ 1§ 95/46,mb3.7/10,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
OFUJ	**Ofunato**	**2.73**	**300**	P		**Pn**	**03 26 13.1**	**-0.2**
JIO	**Ouri**	**2.74**	**286**	P		**Pn**	**03 26 13.1**	**-0.4**
JIO				S		**Sn**	**03 26 42.5**	**-2.8**
JMK	**Ichinoseki**	**2.99**	**295**	P		**Pn**	**03 26 16.8**	**-0.1**
JMK				*e*S		**Sn**	**03 26 51.3**	**-0.2**
JOM	**Ohasama**	**3.18**	**304**	P		**Pn**	**03 26 19.6**	**+0.1**
JOM				*e*S		**Sn**	**03 26 55.9**	**-0.3**
JFT	**Otama**	**3.48**	**267**	P		**Pn**	**03 26 23.7**	**0.0**
JFT				S		**Sn**	**03 27 02.1**	**-1.5**
JYK	**Kaneyama**	**3.61**	**290**	P		**Pn**	**03 26 25.9**	**+0.4**
JYK				*e*S		**Sn**	**03 27 05.4**	**-1.5**
ERM	**Erimo**	**4.42**	**345**	*e*Pn		**Pn**	**03 26 36.7**	**+0.2**
ERM				*e*Sn		**Sn**	**03 27 24.1**	**-2.6**
JOT	**Ohata**	**4.59**	**323**	P		**Pn**	**03 26 39.4**	**+0.4**
JCH	**Churui**	**4.96**	**348**	P		**Pn**	**03 26 43.6**	**-0.4**
JCH				*e*S		**Sn**	**03 27 36.5**	**-3.6**
JRY	**Ryogami san**	**4.97**	**251**	P		**Pn**	**03 26 43.0**	**-1.1**
JRY				*e*S		**Sn**	**03 27 34.4**	**-6.0**
JKB	**Kayabe**	**5.00**	**327**	P		**Pn**	**03 26 45.4**	**+0.8**
JOD2	**Odawara 2**	**5.16**	**243**	*e*S		**Sn**	**03 27 40.1**	**-5.1**
MJAR	**Matsushiro Arr**	**5.33**	**259**	Pn		**Pn**	**03 26 49.6**	**+0.5**
	3.2nm,0.3s,baz=85,slow=14,SNR=34							
MJAR						Sn	**Sn**	**03 27 48.2**	**-1.1**
	1.6nm,0.3s,baz=88,slow=26,SNR=5.6							
MAJO	**Matsushiro**	**5.33**	**259**	*e*Pn		**Pn**	**03 26 49.6**	**+0.4**
	14nm,0.5s							
MAJO				*e*Sn		**Sn**	**03 27 49.1**	**-0.3**
MAT	**Matsushiro**	**5.33**	**259**	P		**Pn**	**03 26 50.0**	**+0.8**
MAT				S		**Sn**	**03 27 49.0**	**-0.3**
NEM2	**Nemuro 2**	**5.66**	**8**	P		**Pn**	**03 26 51.4**	**-2.2**
JHJ	**Hachijo jima 2**	**6.13**	**222**	Sn		Sn	03 28 01.7	-7.2
	16nm,0.3s,baz=140,slow=22,SNR=3.7							
JTKR	**Abashiri--Toko**	**6.24**	**355**	P		**Pn**	**03 27 01.1**	**-0.4**
JTKR				*e*S		**Sn**	**03 28 07.6**	**-4.0**
JHR	**Hokuryu**	**6.39**	**340**	P		**Pn**	**03 27 05.4**	**+1.7**
JHR				*e*S		**Sn**	**03 28 14.4**	**-1.0**
ASAJ	**Asahikawa**	**6.55**	**347**	Pn		**Pn**	**03 27 06.2**	**+0.3**
	4.5nm,0.3s,baz=183,slow=17,SNR=25							
ASAJ						Sn	**Sn**	**03 28 15.6**	**-3.7**
	0.3nm,0.3s,baz=22,slow=19,SNR=2.6							
CBIJ	**Chichi jima**	**10.84**	**192**	*e*Pn		Pn	03 27 59.5	-5.2
USRK	**Ussuriysk Ar.**	**11.56**	**308**	Pn		**Pn**	**03 28 15.4**	**+0.9**
	0.3nm,0.3s,baz=116,slow=15,SNR=5.1							
JNU	**Nakatsue**	**12.19**	**252**	LR		03 33 04.6		
	comp=Z,100nm,18.8s,baz=293,slow=37							
KSRS	**Korea Array**	**13.32**	**274**	Pn		**Pn**	**03 28 41.0**	**+2.5**
	0.2nm,0.3s,baz=84,slow=15,SNR=3.2							
KSAR	**Wonju Array Be**	**13.35**	**274**	Pn		**Pn**	**03 28 41.0**	**+2.1**
ILAR	**Eielson Array**	**47.48**	**33**	P		**P**	**03 34 02.8**	**-0.3**
	0.5nm,0.7s,baz=261,slow=6.9,SNR=6.2							
KURK	**Kurchatov**	**47.55**	**308**	*e*P		**P**	**03 34 05.6**	**+1.7**
	5.4nm,0.7s							
KURBB	**Kurchatov Arra**	**47.63**	**308**	P		**P**	**03 34 05.9**	**+1.5**
	0.4nm,0.5s,baz=82,slow=9.0,SNR=3.8							
TKM2	**Tokmak 2**	**51.59**	**299**	*e*P		**P**	**03 34 35.7**	**+0.7**
	1.0nm,0.5s							
AAK	**Ala-Archa**	**52.45**	**299**	*e*P		**P**	**03 34 42.1**	**+0.8**
	0.9nm,0.6s							
INK	**Inuvik**	**52.54**	**28**	P		**P**	**03 34 42.7**	**+1.3**
	0.5nm,0.6s,baz=306,slow=8.5,SNR=3.9							
WRA	**Warramunga Arr**	**58.21**	**191**	P		**P**	**03 35 21.2**	**-1.6**

0.6nm,0.6s,baz=10,slow=7.1,SNR=3.0
YKA Yellowknife Ar 61.85 31 P **P 03 35 48.3 +1.0**
0.2nm,0.6s,baz=297,slow=6.5,SNR=4.0
ASAR Alice Springs 61.93 191 P **P 03 35 46.9 -1.4**
0.5nm,1.0s,baz=14,slow=9.0,SNR=3.1
PDAR Pinedale Array 75.27 47 P **P 03 37 12.3 +0.7**
0.4nm,0.6s,baz=267,slow=3.0,SNR=3.7

IDC ***17*** *03:38:58.0±1.5,6.14S×146.77E,h0km,mb3.6/4, mb1 3.9/6,mb1mx3.6/34,mbtmp3.7/6,ML3.3/1,MS3.0/1, Ms1 3.0/1,ms1mx2.6/33,Error ellipse: s-maj=40.4km s-min=23.6km az=98.0*
ISCJB ***17*** *03:39:05.9±1.3,6.35S±0.09×146.8E±0.2,h78km,mb3.6/4, Error ellipse: s-maj=26.4km s-min=11.6km az=166.0*
ISC 17 03:39:07.2±1.3,6.4S±0.1×146.8E±0.2,h78km,n7,σ1§05/8, mb3.7/4,Eastern New Guinea region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PMG	**Port Moresby**	**3.04**	**173**	Pn	**Pn**	**03 39 51.9**	**-1.1**
	5.3nm,0.3s,baz=347,slow=3.3,SNR=7.5						
PMG				Sn	**Sn**	**03 40 29.4**	**+1.0**
	9.0nm,0.3s,baz=0.4,slow=22,SNR=2.7						
PMG				LR	LR	03 41 27.8	
	comp=Z,215nm,18.3s,baz=354,slow=46						
WRA	**Warramunga Ar**	**18.13**	**221**	P	**P**	**03 43 12.2**	**-1.0**
	0.1nm,0.3s,baz=43,slow=12,SNR=6.7						
ASAR	**Alice Springs**	**21.20**	**214**	P	**P**	**03 43 48.1**	**+1.5**
	0.9nm,0.8s,baz=40,slow=12,SNR=9.5						
FITZ	**Fitzroy Crossi**	**23.71**	**239**	P	**P**	**03 44 12.1**	**-0.1**
	4.3nm,0.8s,baz=63,slow=9.0,SNR=4.7						
CMAR	**Chiang Mai Arr**	**53.25**	**299**	P	**P**	**03 48 18.3**	**+0.1**
	0.5nm,0.4s,baz=118,slow=5.6,SNR=4.7						
ILAR	**Eielson Array**	**85.90**	**23**	P	**P**	**03 51 38.4**	**+0.2**
	0.3nm,0.6s,baz=252,slow=4.7,SNR=4.9						
TORD	**Torodi Ar. Bea**	**144.99**	**284**	PKP	**PKPdf**	**03 58 36.7**	**+0.2**
	1.1nm,0.7s,baz=77,slow=3.2,SNR=8.1						

NIED ***17*** *03:43:00,36.90N×140.60E,h8km,Mw3.5 Best double couple: M○2.26000×10^14 NP1:φs165.00000°,δ46.00000°, λ-115.00000°. NP2:φs18.00000°,δ49.00000°, λ-67.00000°.*
IDC ***17*** *03:43:57.5±0.9,36.69N×140.67E,h0km,mb3.6/8, mb1 3.9/8,mb1mx3.6/43,mbtmp3.6/8,MS3.3/2,Ms1 3.3/2, ms1mx2.6/47,Error ellipse: s-maj=23.0km s-min=20.8km az=141.0*
ISCJB ***17*** *03:43:58.5±0.8,36.83N±0.04×140.67E±0.05,h15km±6km, mb3.6/8,MS3.2/2,Error ellipse: s-maj=8.1km s-min=5.1km az=31.2*
JMA ***17*** *03:43:59.0,36.86N×140.59E,h9km±1km,M3.7 Broadband fault plane solution: P waves. NP1: φs202.00000°,δ73.00000°,λ-82.00000°. NP2: φs355.00000°,δ19.00000°,λ-116.00000°. Principal axes: T Plg28.0000°, Azm285.0000°; N Plg8.0000°, Azm19.0000°; P Plg61.0000°, Azm124.0000°;*
JMA Felt II J1.
ISC 17 03:43:58.3±1.3,36.88N±0.04×140.62E±0.05,h2km±9km, n27,σ0§83/25,mb3.7/8,8C,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.26**	**34**	↑↑P	**Pb**	**03 44 05.1**	**-0.7**
JHO	**Hitachi**	**0.28**	**188**	↑↑P	**Pg**	**03 44 04.1**	**+0.5**
JHO				S	**Sg**	**03 44 07.5**	**+0.4**
JFK	**Kawauchi**	**0.52**	**23**	↑↑P	**Pb**	**03 44 09.6**	**-0.6**
JFK				S	**Sb**	**03 44 17.3**	**-1.0**
JSB	**Shiboa**	**0.56**	**279**	↑↑P	**Pb**	**03 44 10.1**	**-0.8**
JFT	**Otama**	**0.67**	**341**	↑↑P	**Pb**	**03 44 12.2**	**-0.5**
JFT				S	**Sb**	**03 44 21.5**	**-1.0**
JYT	**Yasato**	**0.74**	**208**	↑↑P	**Pg**	**03 44 12.3**	**-0.1**
JFY	**Yanaizu**	**0.90**	**306**	↑↑P	**Pg**	**03 44 15.7**	**+0.2**
JFY				S	**Sg**	**03 44 27.3**	**+0.2**
JMM	**Marumori**	**0.99**	**8**	↑↑P	**Pb**	**03 44 17.7**	**-0.4**
JMM				S	**Sb**	**03 44 31.1**	**-0.5**
MJAR	**Matsushiro Arr**	**1.96**	**261**	Pn	**Pn**	**03 44 32.3**	**-0.3**
	40nm,0.3s,baz=82,slow=16,SNR=247						
MJAR				Sn	**Sn**	**03 44 57.6**	**-0.2**
	49nm,0.3s,baz=79,slow=27,SNR=19						
MAT	**Matsushiro**	**1.97**	**261**	P	**Pn**	**03 44 32.6**	**0.0**
MAT				S	**Sn**	**03 44 58.1**	**+0.3**
KSRS	**Korea Array**	**10.15**	**277**	Pn	Pn	03 46 29.9	+5.0
	0.2nm,0.3s,baz=94,slow=15,SNR=4.2						
MA2	**Magadan**	**23.64**	**13**	LR	LR	03 59 55.2	
	comp=Z,63nm,18.4s,baz=158,slow=40						
SONM	**Songino Array**	**27.34**	**304**	P	**P**	**03 49 45.4**	**+0.8**
	0.7nm,0.7s,baz=101,slow=7.5,SNR=4.0						
H11N2	**WAKE ISLAND Hy**	**28.62**	**119**	T	T	04 19 42.7	
	baz=313,slow=75,SNR=204						
H11N1	**WAKE ISLAND Hy**	**28.63**	**120**	T	T	04 19 42.8	
	baz=313,slow=75,SNR=237						
H11N3	**WAKE ISLAND Hy**	**28.64**	**119**	T	T	04 19 43.5	
	baz=313,slow=75,SNR=212						
H11S1	**WAKE ISLAND Hy**	**29.32**	**122**	T	T	04 20 32.6	
	baz=314,slow=76,SNR=312						
H11S3	**WAKE ISLAND Hy**	**29.32**	**122**	T	T	04 20 32.7	
	baz=314,slow=76,SNR=173						
H11S2	**WAKE ISLAND Hy**	**29.34**	**122**	T	T	04 20 34.3	
	baz=314,slow=76,SNR=204						
ZALV	**Zalesovo Beam**	**41.55**	**313**	P	**P**	**03 51 48.0**	**+1.1**
	0.5nm,0.5s,baz=104,slow=6.1,SNR=3.3						
ILAR	**Eielson Array**	**49.96**	**32**	P	**P**	**03 52 54.5**	**+1.2**
	0.4nm,0.9s,baz=262,slow=6.2,SNR=3.4						
WRA	**Warramunga Arr**	**56.83**	**187**	P	**P**	**03 53 42.4**	**-1.7**
	1.0nm,0.6s,baz=3.7,slow=7.3,SNR=7.9						
ASAR	**Alice Springs**	**60.56**	**187**	P	**P**	**03 54 08.5**	**-1.6**
	0.4nm,0.5s,baz=54,slow=10,SNR=5.2						
YKA	**Yellowknife A**	**64.26**	**30**	P	**P**	**03 54 34.4**	**0.0**
	0.2nm,0.7s,baz=305,slow=7.0,SNR=4.2						
FINES	**FINESS Array B**	**68.65**	**332**	P	**P**	**03 55 03.4**	**+0.9**
	1.2nm,0.8s,baz=35,slow=7.0,SNR=4.9						
VRAC	**Vranov**	**80.90**	**327**	LR	LR	04 38 20.3	
	comp=Z,14nm,18.4s,baz=21,slow=40						
TXAR	**Lajitas Array**	**90.72**	**52**	P	**P**	**03 57 03.0**	**-0.1**
	0.3nm,0.6s,baz=310,slow=2.4,SNR=6.2						

JMA 17 03:45:04.3,36.83N×140.62E,h5km±1km,M3.5,2C,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JHO	**Hitachi**	**0.22**	**191**	↑↑P	Pg	03 45 08.8	+0.2
ONAJ	**Iwakimizuishiy**	**0.31**	**28**	S	Sg	03 45 15.1	+0.7
JFK	**Kawauchi**	**0.57**	**21**	P	Pg	03 45 15.3	0.0
JFK				S	Sg	03 45 23.2	+0.4
JSB	**Shiboa**	**0.58**	**284**	↑↑P	Pg	03 45 16.1	+0.7
JSB				S	Sg	03 45 24.2	+1.3
JYT	**Yasato**	**0.69**	**210**	P	Pg	03 45 17.9	+0.3
JFT	**Otama**	**0.72**	**342**	P	Pg	03 45 18.4	+0.2
JFT				S	Sg	03 45 28.1	+0.5
JFY	**Yanaizu**	**0.93**	**308**	P	Pg	03 45 22.1	-0.1
JFY				S	Sg	03 45 34.2	-0.1
JMM	**Marumori**	**1.04**	**8**	P	Pg	03 45 24.1	-0.2
JMM				S	Sg	03 45 37.6	-0.3
MAT	**Matsushiro**	**1.96**	**262**	P	Pn	03 45 38.9	+0.7
MAT				S	Sn	03 46 04.2	+1.0

IDC ***17*** *04:11:17.1±0.9,37.35N×142.08E,h0km,mb3.6/11, mb1 3.8/14,mb1mx3.7/49,mbtmp3.7/14,ML3.6/3,Error ellipse: s-maj=24.5km s-min=17.6km az=115.0*
ISC 17 04:11:20.6±0.7,37.37N±0.07×141.87E±0.08,h24km,n15, σ1§55/18,mb3.5/11,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MJAR	**Matsushiro Arr**	**3.04**	**255**	Pn	**Pn**	**04 12 09.9**	**+2.7**
	3.2nm,0.3s,baz=88,slow=15,SNR=25						
MAT	**Matsushiro**	**3.04**	**255**	P	**Pb**	**04 12 11.9**	**-2.2**
MAT				S	**Sb**	**04 12 49.2**	**-1.6**
JHJ	**Hachijo jima 2**	**4.57**	**203**	Pn	**Pn**	**04 12 28.7**	**+0.5**
	50nm,0.3s,baz=277,slow=23,SNR=8.5						
JHJ				Sn	**Sn**	**04 13 19.3**	**-1.1**
	24nm,0.3s,baz=56,slow=18,SNR=4.0						
ASAJ	**Asahikawa**	**6.77**	**4**	Pn	**Pn**	**04 12 59.3**	**+1.0**
	0.8nm,0.3s,baz=160,slow=34,SNR=4.5						
ASAJ				Sn	**Sn**	**04 14 11.7**	**-2.9**
	0.2nm,0.3s,baz=154,slow=28,SNR=2.0						
SEY	**Seymchan**	**26.40**	**11**	P	**P**	**04 16 52.9**	**-1.9**
	1.2nm,0.6s,baz=173,slow=9.2,SNR=4.3						
SONM	**Songino Array**	**27.90**	**303**	P	**P**	**04 17 09.4**	**+0.7**
	0.6nm,0.7s,baz=105,slow=9.7,SNR=5.7						
ZALV	**Zalesovo Beam**	**41.96**	**312**	P	**P**	**04 19 10.7**	**+1.4**
	0.8nm,0.5s,baz=93,slow=12,SNR=4.1						
MKAR	**Makanchi Array**	**44.25**	**302**	P	**P**	**04 19 29.2**	**+1.2**
	0.2nm,0.3s,baz=85,slow=11,SNR=4.3						
ILAR	**Eielson Array**	**49.02**	**33**	P	**P**	**04 20 05.0**	**0.0**
	0.5nm,0.8s,baz=272,slow=6.2,SNR=7.2						
WRA	**Warramunga Arr**	**57.44**	**188**	P	**P**	**04 21 06.6**	**-0.8**
	0.5nm,1.0s,baz=5.5,slow=7.2,SNR=3.6						
ASAR	**Alice Springs**	**61.17**	**188**	P	**P**	**04 21 33.7**	**+0.5**
	0.3nm,0.7s,baz=10,slow=5.8,SNR=3.0						
YKA	**Yellowknife A**	**63.34**	**30**	P	**P**	**04 21 47.6**	**+0.4**
	0.3nm,0.7s,baz=304,slow=6.8,SNR=8.3						
FINES	**FINESS Array B**	**68.69**	**332**	P	**P**	**04 22 22.6**	**+1.0**
	1.6nm,1.0s,baz=341,slow=17.5,SNR=3.6						
PDAR	**Pinedale Array**	**77.17**	**46**	P	**P**	**04 23 12.9**	**+0.3**
	0.2nm,0.5s,baz=316,slow=2.5,SNR=3.1						
GERES	**GERESS Array B**	**82.62**	**328**	P	**P**	**04 23 42.7**	**+1.0**
	0.2nm,0.4s,baz=8.8,slow=9.6,SNR=3.9						

IDC ***17*** *04:13:11.5±0.7,35.20N×141.25E,h0km,mb3.6/9, mb1 3.9/14,mb1mx3.7/56,mbtmp3.7/14,ML3.8/4,MS3.0/3, Ms1 3.0/3,ms1mx2.6/43,Error ellipse: s-maj=22.3km s-min=16.0km az=91.0*
ISCJB ***17*** *04:13:12.9±0.5,35.19N±0.04×141.36E±0.06,h27km, mb3.7/11,Error ellipse: s-maj=6.7km s-min=5.1km az=177.3*
JMA ***17*** *04:13:14.5±0.1,35.24N×141.27E,h27km±2km,M3.3*
NEIC ***17*** *04:13:16.2±0.5,35.23N×141.23E,h35km,mb4.1/2,Error ellipse: s-maj=12.5km s-min=9.5km az=87.0*
ISC 17 04:13:14.6±0.6,35.21N±0.04×141.26E±0.06,h27km,n37, σ1§72/34,mb3.6/11,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CHOJ	**Chosi**	**0.59**	**326**	P	**Pb**	**04 13 25.7**	**-0.7**
CHOJ				eS	**Sb**	**04 13 33.4**	**-1.0**
BSO1	**Boso 1**	**0.61**	**203**	P	**Pb**	**04 13 26.6**	**+0.3**
BSO3	**Boso 3**	**0.74**	**236**	P	**Pb**	**04 13 29.0**	**-0.1**
KTR	**Katsuura**	**0.78**	**265**	eS	**Sn**	**04 13 40.2**	**-0.4**
BSO4	**Boso 4**	**0.79**	**254**	P	**Pn**	**04 13 29.7**	**-0.2**
JCN	**Nagara**	**0.89**	**284**	P	**Pb**	**04 13 31.8**	**+0.4**
JHO	**Hitachi**	**1.50**	**338**	P	**Pn**	**04 13 40.0**	**+0.2**
JIM2	**Oshima 3**	**1.58**	**252**	P	**Pn**	**04 13 40.0**	**-0.9**
JHJ	**Hachijo jima 2**	**2.42**	**211**	Pn	**Pn**	**04 13 53.5**	**+1.1**
	20nm,0.3s,baz=234,slow=18,SNR=4.0						
JHJ				Sn	**Sn**	**04 14 20.1**	**-1.1**
	22nm,0.3s,baz=346,slow=4.2,SNR=2.8						
MJAR	**Matsushiro Arr**	**2.81**	**299**	Pn	**Pn**	**04 13 59.1**	**+1.3**
	3.4nm,0.3s,baz=90,slow=15,SNR=4.9						
MJAR				LR	LR	04 15 24.2	
	comp=Z,229nm,19.0s,baz=125,slow=48						
MAJO	**Matsushiro**	**2.81**	**299**	ePn	**Pn**	**04 13 57.4**	**-0.5**
MAT	**Matsushiro**	**2.81**	**299**	P	**Pb**	**04 14 01.0**	**-3.2**
MAT				S	**Sn**	**04 14 27.4**	**-3.5**
ERM	**Erimo**	**6.95**	**12**	ePn	**Pn**	**04 14 54.0**	**-0.6**
CBIJ	**Chichi jima**	**8.13**	**174**	ePn	**Pn**	**04 15 09.5**	**-1.4**
CBIJ				Sn	**Sn**	**04 16 37.4**	**-4.5**
JCJ	**Chichijima**	**8.13**	**174**	Pn	**Pn**	**04 15 10.5**	**-0.4**
	6.2nm,0.3s,baz=274,slow=22,SNR=4.1						
JCJ				Sn	**Sn**	**04 16 37.4**	**-4.5**
	4.2nm,0.3s,baz=273,slow=19,SNR=2.0						
ASAJ	**Asahikawa**	**8.95**	**6**	Pn	**Pn**	**04 15 20.4**	**-1.7**
	1.6nm,0.3s,baz=208,slow=19,SNR=5.6						
KSRS	**Korea Array**	**10.99**	**286**	LR	LR	04 20 19.3	
	comp=Z,82nm,18.6s,baz=109,slow=39						
USRK	**Ussuriysk Ar.**	**11.46**	**324**	Pn	**Pn**	**04 15 58.0**	**+1.5**
	0.2nm,0.3s,baz=147,slow=12,SNR=5.6						
USRK				LR	LR	04 19 41.4	
	comp=Z,65nm,19.1s,baz=67,slow=34						
YHNB	**Yeheng**	**20.15**	**244**	eP	Pn	04 17 47.9	-1.0
	2.6nm,0.3s						
H11N2	**WAKE ISLAND Hy**	**27.37**	**118**	T	T	04 47 42.5	
	baz=310,slow=75,SNR=12						
H11N1	**WAKE ISLAND Hy**	**27.38**	**118**	T	T	04 48 05.1	
	baz=310,slow=75,SNR=42						
H11N3	**WAKE ISLAND Hy**	**27.39**	**118**	T	T	04 47 52.4	
	baz=310,slow=75,SNR=73						
H11S3	**WAKE ISLAND Hy**	**28.02**	**120**	T	T	04 48 30.0	
	baz=312,slow=76,SNR=93						
H11S1	**WAKE ISLAND Hy**	**28.02**	**120**	T	T	04 48 32.4	
	baz=312,slow=76,SNR=120						
H11S2	**WAKE ISLAND Hy**	**28.04**	**120**	T	T	04 48 42.5	
	baz=312,slow=76,SNR=67						
SONM	**Songino Array**	**28.74**	**307**	P	**P**	**04 19 09.7**	**-0.1**
	0.2nm,0.4s,baz=107,slow=9.8,SNR=2.3						
ZALV	**Zalesovo Beam**	**43.06**	**314**	P	**P**	**04 21 12.6**	**+0.7**
	0.6nm,0.4s,baz=90,slow=5.7,SNR=4.0						
MKAR	**Makanchi Array**	**45.00**	**304**	P	**P**	**04 21 27.9**	**+0.3**
	0.5nm,0.6s,baz=85,slow=7.7,SNR=4.7						
KURK	**Kurchatov**	**46.97**	**309**	eP	**P**	**04 21 43.5**	**+0.4**
	4.7nm,0.8s						
ILAR	**Eielson Array**	**51.10**	**32**	P	**P**	**04 22 15.5**	**+1.0**
	0.4nm,0.9s,baz=288,slow=11,SNR=4.7						
WRAB	**Tennant Creek**	**55.23**	**188**	eP	**P**	**04 22 46.0**	**+0.7**
	1.1nm,0.5s						
WRA	**Warramunga Arr**	**55.24**	**188**	P	**P**	**04 22 45.7**	**+0.3**
	2.5nm,0.7s,baz=5.4,slow=7.5,SNR=13						
ASAR	**Alice Springs**	**58.97**	**188**	P	**P**	**04 23 12.6**	**+0.8**
	0.3nm,0.5s,baz=6.7,slow=8.6,SNR=8.9						
YKA	**Yellowknife A**	**65.44**	**30**	P	**P**	**04 23 56.2**	**+1.6**
	0.2nm,0.9s,baz=299,slow=6.6,SNR=5.1						
PDAR	**Pinedale Array**	**79.03**	**45**	P	**P**	**04 25 17.6**	**+1.0**
	0.4nm,0.6s,baz=318,slow=2.0,SNR=4.8						
TXAR	**Lajitas Array**	**91.33**	**52**	P	**P**	**04 26 20.7**	**+2.4**
	0.2nm,0.7s,baz=146,slow=0.3,SNR=3.2						
LPAZ	**La Paz**	**147.69**	**62**	PKPbc	**PKPab**	**04 32 59.2**	**-1.1**
	0.5nm,0.6s,baz=297,slow=2.3,SNR=3.0						

IDC 17 04:20:08.7±1.9,17.52S×178.22W,h0km,mb3.9/4, mb1 4.2/4,mb1mx3.7/32,mbtmp3.9/4,Error ellipse: s-maj=157.2km s-min=32.5km az=156.0,Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
STKA	**Stephens Creek**	**38.98**	**241**	P	P	04 27 37.7	+0.8
	0.9nm,0.3s,baz=87,slow=11,SNR=5.9						
WRA	**Warramunga Arr**	**44.89**	**259**	P	P	04 28 24.6	-0.8
	0.3nm,0.3s,baz=97,slow=7.7,SNR=8.9						
ASAR	**Alice Springs**	**45.08**	**254**	P	P	04 28 26.6	-0.3
	3.8nm,0.7s,baz=89,slow=8.4,SNR=51						
TXAR	**Lajitas Array**	**85.63**	**58**	P	P	04 32 49.7	0.0
	0.3nm,0.8s,baz=226,slow=4.9,SNR=3.6						

NIED ***17*** *04:23:00,36.30N×140.80E,h11km,Mw3.7 Best double couple: M○4.27000×10^14 NP1:φs159.00000°,δ20.00000°, λ31.00000°. NP2:φs39.00000°,δ80.00000°,λ107.00000°.*
IDC ***17*** *04:23:17.8±0.8,36.10N×140.81E,h0km,mb3.7/13, mb1 3.9/14,mb1mx3.7/54,mbtmp3.7/14,ML3.7/1,Error ellipse: s-maj=20.5km s-min=19.4km az=87.0*
ISCJB ***17*** *04:23:22.2±1.4,36.29N±0.08×140.83E±0.09,h36km±9km, mb3.7/13,Error ellipse: s-maj=16.1km s-min=7.0km az=138.0*
JMA ***17*** *04:23:22.7,36.27N×140.78E,h37km±1km,M4.0*
JMA Felt II J1.
ISC 17 04:23:22.6±1.9,36.35N±0.08×140.81E±0.08,h24km±12km, n21,σ0§69/26,mb3.8/13,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JHO	**Hitachi**	**0.32**	**324**	P	**Pn**	**04 23 31.5**	**-0.3**
JHO				S	**Sn**	**04 23 37.3**	**-0.4**
JYT	**Yasato**	**0.51**	**256**	P	**Pb**	**04 23 33.0**	**+0.1**
JYT				S	**Sb**	**04 23 39.8**	**-0.1**
ONAJ	**Iwakimizuishiy**	**0.75**	**359**	P	**Pn**	**04 23 37.5**	**-0.2**
ONAJ				S	**Sn**	**04 23 47.9**	**-0.4**
JFK	**Kawauchi**	**1.01**	**3**	P	**Pn**	**04 23 41.0**	**-0.3**
JFK				S	**Sn**	**04 23 54.3**	**-0.5**
JAG	**Ashikaga**	**1.09**	**274**	P	**Pn**	**04 23 41.7**	**-0.7**
MJAR	**Matsushiro Arr**	**2.10**	**276**	Pn	**Pn**	**04 23 56.4**	**+0.2**
	22nm,0.3s,baz=116,slow=8.3,SNR=232						
MJAR				Sn	**Sn**	**04 24 22.9**	**+1.2**
	26nm,0.3s,baz=78,slow=12,SNR=10						
MAT	**Matsushiro**	**2.10**	**276**	P	**Pn**	**04 23 56.6**	**+0.3**
MAT				S	**Sn**	**04 24 20.9**	**-0.8**
SONM	**Songino Array**	**27.77**	**305**	P	**P**	**04 29 09.3**	**-0.2**
	0.3nm,0.4s,baz=107,slow=8.9,SNR=2.4						
ZALV	**Zalesovo Beam**	**42.02**	**313**	P	**P**	**04 31 12.2**	**+0.5**
	1.4nm,0.6s,baz=104,slow=6.5,SNR=5.9						
MKAR	**Makanchi Array**	**44.07**	**303**	P	**P**	**04 31 29.0**	**+0.5**
	0.2nm,0.3s,baz=84,slow=11,SNR=4.6						
ILAR	**Eielson Array**	**50.33**	**32**	P	**P**	**04 32 17.9**	**+0.9**
	0.7nm,0.7s,baz=269,slow=6.3,SNR=10						
INK	**Inuvik**	**55.22**	**27**	P	**P**	**04 32 54.5**	**+1.6**
	0.6nm,0.5s,baz=306,slow=6.9,SNR=8.0						
WRA	**Warramunga Arr**	**56.32**	**187**	P	P	04 32 56.8	-4.6
	1.4nm,1.4s,baz=2.0,slow=7.4,SNR=3.2						
ASAR	**Alice Springs**	**60.05**	**187**	P	**P**	**04 33 26.5**	**-0.9**
	0.2nm,0.6s,baz=9.1,slow=8.8,SNR=3.3						
ARCES	**ARCESS Array B**	**64.46**	**339**	P	**P**	**04 33 56.8**	**+0.2**
	4.5nm,1.0s,baz=53,slow=8.4,SNR=3.6						
YKA	**Yellowknife A**	**64.64**	**30**	P	**P**	**04 33 58.5**	**+0.7**
	0.2nm,0.7s,baz=301,slow=7.0,SNR=5.7						
FINES	**FINESS Array B**	**69.19**	**332**	P	**P**	**04 34 26.3**	**-0.4**
	2.7nm,0.9s,baz=45,slow=0.3,SNR=4.7						
AKASG	**Malin Array Be**	**74.54**	**322**	P	**P**	**04 34 58.7**	**-0.3**
	0.5nm,0.5s,baz=45,slow=6.8,SNR=4.3						
NOA	**NORSAR Array B**	**74.62**	**337**	P	**P**	**04 34 59.4**	**0.0**
	1.0nm,0.8s,baz=27,slow=4.0,SNR=2.9						
GERES	**GERESS Array B**	**83.03**	**328**	P	**P**	**04 35 45.6**	**-0.3**
	0.2nm,0.4s,baz=29,slow=6.7,SNR=3.6						
TORD	**Torodi Ar. Bea**	**117.46**	**314**	PKP	**PKPdf**	**04 42 05.6**	**-1.1**
	0.5nm,1.0s,baz=28,slow=1.7,SNR=3.7						

BJI ***17*** *04:23:43.6,39.10N×143.50E,h33km,mb4.5/6,mB4.8/2*
MOS ***17*** *04:23:55.3±1.0,38.47N×142.00E,h58km,mb4.5/9,Error ellipse: s-maj=10.3km s-min=6.7km az=79.1*
ISCJB ***17*** *04:23:55.7±0.5,38.38N±0.03×142.01E±0.05,h63km±4km, mb4.2/42,Error ellipse: s-maj=7.8km s-min=4.5km az=28.7*
IDC ***17*** *04:23:57.7±0.5,38.41N×141.81E,h62km±4km,mb3.9/24, mb1 4.1/29,mb1mx4.0/53,mbtmp4.2/29,MS3.0/9, Ms1 3.0/9,ms1mx2.8/45,Error ellipse: s-maj=13.8km s-min=10.9km az=127.0*
JMA ***17*** *04:23:57.6±0.1,38.40N×141.91E,h59km±1km,M4.3*
JMA Felt III J1.
NEIC ***17*** *04:23:57.3±0.6,38.41N×141.93E,h60km±6km,mb4.4/18, Error ellipse: s-maj=7.6km s-min=5.2km az=130.0*
NEIC Recorded [3 JMA] in Iwate and Miyagi.
ISC 17 04:23:57.0±0.5,38.37N±0.04×142.07E±0.05,h63km±4km, n94,σ1§48/108,mb4.3/42,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**0.57**	**278**	P	**Pn**	**04 24 08.8**	**-1.2**
JIO				S	**Sn**	**04 24 16.7**	**-2.7**
OFUJ	**Ofunato**	**0.77**	**336**	P	**Pn**	**04 24 11.8**	**-0.5**
OFUJ				S	**Sn**	**04 24 22.0**	**-1.5**
JMK	**Ichinoseki**	**0.88**	**311**	P	**Pn**	**04 24 12.9**	**-0.7**
JMK				S	**Sn**	**04 24 23.9**	**-2.0**
JOU	**Okura**	**1.11**	**270**	P	**Pn**	**04 24 15.5**	**-1.1**
JOU				S	**Sn**	**04 24 28.6**	**-2.5**
JMM	**Marumori**	**1.13**	**244**	P	**Pn**	**04 24 15.8**	**-1.0**
JMM				S	**Sn**	**04 24 28.7**	**-2.9**
JOM	**Ohasama**	**1.25**	**331**	P	**Pn**	**04 24 18.1**	**-0.4**
JOM				S	**Sn**	**04 24 33.5**	**-1.1**
JFK	**Kawauchi**	**1.38**	**224**	P	**Pn**	**04 24 19.7**	**-0.5**
JFK				S	**Sn**	**04 24 36.0**	**-1.6**
JYK	**Kaneyama**	**1.45**	**293**	P	**Pn**	**04 24 20.1**	**-0.9**
JYK				eS	**Sn**	**04 24 36.7**	**-2.4**
JRG	**Rokugo**	**1.52**	**313**	P	**Pn**	**04 24 21.4**	**-0.6**
JYS	**Shirataka**	**1.58**	**265**	P	**Pn**	**04 24 22.1**	**-0.8**
JYS				S	**Sn**	**04 24 40.8**	**-1.7**
JFT	**Otama**	**1.62**	**239**	eS	**Sn**	**04 24 41.3**	**-1.9**
MJAR	**Matsushiro Arr**	**3.58**	**240**	P	**Pn**	**04 24 50.2**	**+0.1**
	30nm,0.3s,baz=36,slow=12,SNR=12						
MJAR				LR	LR	04 26 38.4	
	comp=Z,191nm,19.0s,baz=70,slow=47						
MAJO	**Matsushiro**	**3.58**	**240**	eP	**Pn**	**04 24 50.3**	**+0.2**
MAJO	**Matsushiro**	**3.58**	**240**	ePn	**Pn**	**04 24 50.2**	**+0.2**
MAT	**Matsushiro**	**3.58**	**240**	P	**Pn**	**04 24 51.0**	**+0.9**
MAT				S	**Sn**	**04 25 33.9**	**+2.8**
ERM	**Erimo**	**3.73**	**13**	eP	**Pn**	**04 24 51.0**	**-1.1**
ERM	**Erimo**	**3.73**	**13**	ePn	**Pn**	**04 24 51.0**	**-1.1**
JHJ	**Hachijo jima 2**	**5.56**	**200**	P	**Pn**	**04 25 16.9**	**-0.3**
	37nm,0.3s,baz=66,slow=20,SNR=3.8						
JHJ				S	**Sn**	**04 26 15.2**	**-4.7**
	86nm,0.3s,baz=36,slow=23,SNR=10.0						
ASAJ	**Asahikawa**	**5.75**	**4**	P	**Pn**	**04 25 19

H11S3	**WAKE ISLAND Hy**	**29.18**	**126**	T	T	05 01 05.5		
	baz=318,slow=76,SNR=385							
H11S2	**WAKE ISLAND Hy**	**29.20**	**126**	T	T	05 01 06.1		
	baz=318,slow=76,SNR=371							
TLY	**Talaya**	**29.87**	**309**	P	**P**	**04 29 58.1**	**-0.3**	
	comp=Z,4.8nm,0.7s,baz=284,slow=6.8,SNR=4.7							
TLY				LR	LR	04 42 08.5		
	comp=Z,23nm,19.4s,baz=120,slow=37							
BILL	**Bilibino**	**32.60**	**17**	*eP*	**P**	**04 30 22.2**	**+0.1**	
BILL				pmax	pmax			
	comp=Z,2.0nm,0.5s							
BILL	**Bilibino**	**32.60**	**17**	*eP*	**P**	**04 30 22.2**	**+0.1**	
	comp=Z,2.1nm,0.5s							
ZALV	**Zalesovo Beam**	**41.41**	**311**	P	**P**	**04 31 37.0**	**0.0**	
	comp=Z,4.1nm,0.5s,baz=82,slow=7.8,SNR=17							
ZALV				PcP	**PcP**	**04 33 32.9**	**-1.0**	
	comp=Z,0.7nm,0.3s,baz=120,slow=5.8,SNR=4.2							
CMAR	**Chiang Mai Arr**	**42.35**	**254**	P	**P**	**04 31 44.5**	**-0.6**	
	comp=Z,0.5nm,0.4s,baz=41,slow=9.6,SNR=4.3							
MKAR	**Makanchi Array**	**43.86**	**301**	P	**P**	**04 31 56.9**	**-0.2**	
	comp=Z,1.8nm,0.6s,baz=85,slow=10,SNR=14							
KURK	**Kurchatov**	**45.53**	**307**	*eP*	**P**	**04 32 09.6**	**-0.6**	
KURK				pmax	pmax			
	comp=Z,14nm,0.6s							
KURK	**Kurchatov**	**45.53**	**307**	*eP*	**P**	**04 32 09.6**	**-0.6**	
	comp=Z,14nm,0.6s							
ILAR	**Eielson Array**	**48.09**	**33**	P	**P**	**04 32 30.8**	**+0.9**	
	comp=Z,2.7nm,0.7s,baz=269,slow=6.4,SNR=31							
ILAR				pP	**pP**	**04 32 47.9**	**+1.8**	
	comp=Z,0.8nm,0.6s,baz=267,slow=6.0,SNR=3.6							
DIV	**Divide**	**48.90**	**38**	*eP*	**P**	**04 32 37.2**	**+0.9**	
	comp=Z,3.3nm,0.6s							
DOT	**Dot Lake**	**49.40**	**34**	*eP*	**P**	**04 32 40.8**	**+0.7**	
	comp=Z,3.8nm,0.7s							
TKM2	**Tokmak 2**	**49.46**	**298**	*eP*	**P**	**04 32 41.5**	**+0.4**	
TKM2				pmax	pmax			
	comp=Z,4.0nm,0.4s							
TKM2	**Tokmak 2**	**49.46**	**298**	*eP*	**P**	**04 32 41.5**	**+0.4**	
	comp=Z,4.3nm,0.4s							
AAK	**Ala-Archa**	**50.32**	**298**	*eP*	**P**	**04 32 47.6**	**0.0**	
AAK				pmax	pmax			
	comp=Z,2.0nm,0.6s							
AAK	**Ala-Archa**	**50.32**	**298**	*eP*	**P**	**04 32 47.6**	**0.0**	
	comp=Z,1.7nm,0.6s							
INK	**Inuvik**	**52.96**	**28**	P	**P**	**04 33 08.0**	**+1.4**	
	comp=Z,2.8nm,0.8s,baz=304,slow=7.1,SNR=15							
ARU	**Arti**	**55.71**	**318**	*eP*	**P**	**04 33 25.9**	**-0.8**	
ARU				pmax	pmax			
	comp=Z,2.0nm,0.6s							
ARU	**Arti**	**55.71**	**318**	*eP*	**P**	**04 33 25.9**	**-0.8**	
	comp=Z,2.1nm,0.6s							
DLBC	**Dease Lake**	**57.25**	**39**	*eP*	**P**	**04 33 40.3**	**+2.6**	
	comp=Z,2.4nm,0.8s							
ABKAR	**Akbulak array**	**57.48**	**310**	*eP*	**P**	**04 33 38.9**	**-0.5**	
	comp=Z,1.3nm,0.5s							
WRAB	**Tennant Creek**	**58.45**	**189**	*eP*	**P**	**04 33 47.6**	**+1.2**	
WRAB				pmax	pmax			
	comp=Z,2.0nm,0.6s							
WRAB	**Tennant Creek**	**58.45**	**189**	*eP*	**P**	**04 33 47.6**	**+1.2**	
	comp=Z,2.3nm,0.6s							
WRA	**Warramunga Arr**	**58.46**	**189**	P	**P**	**04 33 46.4**	**-0.1**	
	comp=Z,0.7nm,0.6s,baz=5.6,slow=7.1,SNR=3.8							
WRA				pP	**pP**	**04 34 02.9**	**-0.1**	
	comp=Z,2.7nm,0.7s,baz=6.7,slow=7.3,SNR=6.0							
ASAR	**Alice Springs**	**62.19**	**188**	P	**P**	**04 34 13.4**	**+1.4**	
	comp=Z,0.4nm,0.7s,baz=16,slow=6.8,SNR=5.4							
ASAR				pP	**pP**	**04 34 28.2**	**-0.4**	
	comp=Z,0.6nm,0.6s,baz=17,slow=11,SNR=5.2							
YKA	**Yellowknife Ar**	**62.39**	**31**	P	**P**	**04 34 13.8**	**+1.0**	
	comp=Z,1.3nm,0.6s,baz=302,slow=6.5,SNR=30							
YKA				pP	**pP**	**04 34 31.0**	**+1.4**	
	comp=Z,0.3nm,0.6s,baz=299,slow=5.9,SNR=3.1							
ARCES	**ARCESS Array B**	**62.93**	**339**	P	**P**	**04 34 14.9**	**-1.5**	
	comp=Z,5.6nm,1.0s,baz=39,slow=8.1,SNR=5.5							
FINES	**FINESS Array B**	**67.87**	**332**	P	**P**	**04 34 47.6**	**-0.8**	
	comp=Z,3.9nm,0.6s,baz=39,slow=8.7,SNR=15							
FINES				pP	**pP**	**04 35 05.3**	**0.0**	
	comp=Z,1.6nm,0.8s,baz=34,slow=7.0,SNR=1.4							
SUMG	**Summit**	**69.35**	**0**	*eP*	**P**	**04 34 58.3**	**+0.4**	
SUMG				pmax	pmax			
	comp=Z,5.0nm,0.6s							
SUMG	**Summit**	**69.35**	**0**	*eP*	**P**	**04 34 58.2**	**+0.4**	
	comp=Z,4.6nm,0.6s							
KBZ	**Khabaz**	**70.43**	**311**	P	**P**	**04 35 04.9**	**+0.5**	
	comp=Z,0.4nm,0.5s,baz=4.8,slow=7.5,SNR=4.0							
FFC	**Flin Flon**	**72.30**	**33**	*eP*	**P**	**04 35 16.3**	**+0.7**	
FFC				pmax	pmax			
	comp=Z,4.0nm,0.8s							
FFC	**Flin Flon**	**72.30**	**33**	*eP*	**P**	**04 35 16.3**	**+0.7**	
	comp=Z,3.8nm,0.8s							
HFS	**Hagfors**	**73.08**	**336**	P	**P**	**04 35 19.6**	**-0.5**	
	comp=Z,2.6nm,0.4s,baz=39,slow=5.7,SNR=20							
HFS				pP	**PcP**	**04 35 36.5**	**-0.1**	
	comp=Z,1.0nm,0.4s,baz=46,slow=6.4,SNR=2.2							
NB2	**NORSAR Subarra**	**73.15**	**337**	P	**P**	**04 35 20.6**	**0.0**	
	comp=Z,1.8nm,0.6s,baz=36,slow=6.2							
NOA	**NORSAR Array B**	**73.15**	**337**	P	**P**	**04 35 20.1**	**-0.5**	
	comp=Z,2.9nm,0.7s,baz=38,slow=6.1,SNR=11							
AKASG	**Malin Array Be**	**73.56**	**322**	P	**P**	**04 35 22.1**	**-0.9**	
	comp=Z,2.0nm,0.5s,baz=44,slow=6.1,SNR=12							
NVAR	**Mina Array Bea**	**73.77**	**54**	P	**P**	**04 35 27.8**	**+2.9**	
	comp=Z,1.1nm,0.7s,baz=297,slow=6.0,SNR=4.5							
IMW	**Indian Meadow**	**74.86**	**46**	*eP*	**P**	**04 35 32.6**	**+1.4**	
	comp=Z,1.2nm,0.8s							
R11A	**Troy Canyon, C**	**75.53**	**52**	*eP*	**P**	**04 35 36.6**	**+1.6**	
	comp=Z,1.0nm,0.7s							
BW06	**Boulder Array**	**76.36**	**46**	*eP*	**P**	**04 35 40.7**	**+1.0**	
	comp=Z,1.8nm,0.6s							
PDAR	**Pinedale Array**	**76.36**	**46**	P	**P**	**04 35 41.2**	**+1.5**	
	comp=Z,2.1nm,0.6s,baz=265,slow=1.9,SNR=28							
PDAR				pP	**pP**	**04 35 58.5**	**+1.6**	
	comp=Z,0.8nm,0.6s,baz=264,slow=2.8,SNR=4.8							
BRTR	**Keskin Array B**	**78.35**	**312**	P	**P**	**04 35 51.0**	**+0.3**	
	comp=Z,0.3nm,0.5s,baz=116,slow=2.9,SNR=4.1							
KHC	**Kasperske Hory**	**81.67**	**329**	*eP*	**P**	**04 36 09.0**	**+0.6**	
KHC	**Kasperske Hory**	**81.67**	**329**	*eP*	**P**	**04 36 09.0**	**+0.6**	
GERES	**GERESS Array B**	**81.85**	**328**	P	**P**	**04 36 08.8**	**-0.6**	
	comp=Z,0.4nm,0.4s,baz=47,slow=5.9,SNR=8.8							
EKA	**Eskdalemuir Ar**	**82.04**	**341**	P	**P**	**04 36 09.8**	**-0.3**	
	comp=Z,0.5nm,0.5s,baz=33,slow=5.1,SNR=6.8							
TXAR	**Lajitas Array**	**88.89**	**53**	P	**P**	**04 36 46.5**	**+1.7**	
	comp=Z,1.2nm,0.7s,baz=294,slow=3.3,SNR=21							
TXAR				pP	**pP**	**04 37 04.0**	**+1.6**	
	comp=Z,0.4nm,0.6s,baz=293,slow=3.2,SNR=3.5							
LPAZ	**La Paz**	**145.56**	**59**	PKPbc	**PKPdf**	**04 43 29.9**	**+0.7**	
	comp=Z,3.3nm,0.8s,baz=355,slow=5.3,SNR=11							

*ISCJB **17** 04:24:29.6±0.7, 34.°64N±0.°03×24.°91E±0.°03, h7km±5km, mb3.1/3, Error ellipse: s-maj=5.2km s-min=3.9km az=140.6*
*CSEM **17** 04:24:30.6±0.2, 34.°67N×24.°89E, h5km, ML3.7, Error ellipse: s-maj=4.5km s-min=3.3km az=61.0*
*IDC **17** 04:24:30.1±1.3, 34.°70N×24.°88E, h0km, mb3.3/3, mb1 3.5/7, mb1mx3.3/48, mbtmp3.3/7, ML3.5/4, Error ellipse: s-maj=25.5km s-min=10.8km az=97.0*
*HLW **17** 04:24:31.0, 34.°91N×25.°01E, h31km±21km, Md3.4, Ml2.7*
*ATH **17** 04:24:32.0, 34.°79N×24.°86E, h19km±1km, ML3.7/4, Error ellipse: s-maj=3.0km s-min=1.4km az=358.0*
*THE **17** 04:24:32.0, 34.°79N×24.°87E, h0km±1km, ML3.5/8, Error ellipse: s-maj=2.6km s-min=1.0km az=175.0*

ISC 17 04:24:30.8±1.3, 34.°71N±0.°04×24.°86E±0.°02, h8km±9km, n58, σ0°87/81, mb3.3/3, Crete

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
SIVA	**Sivas**	**0.31**	**353**	P		**Pb**	**04 24 37.7**	**-0.8**
SIVA				S		**Sg**	**04 24 41.7**	**+0.7**
SIVA	**Sivas**	**0.31**	**353**	P		**Pb**	**04 24 37.7**	**-0.8**
SIVA				S		**Sg**	**04 24 42.0**	**+1.0**
SIVA	**Sivas**	**0.31**	**353**	P		**Pb**	**04 24 38.0**	**-0.5**
SIVA				S		**Sg**	**04 24 42.0**	**+1.0**
SIVA				AML	AML		04 24 42.2	
SIVA				AML	AML		04 24 42.4	
IDI	**Anoyia**	**0.58**	**3**	Pg		**Pg**	**04 24 41.8**	**-0.1**
	69nm,0.3s,baz=181,slow=18,SNR=539							
IDI				Lg	Lg		04 24 49.0	
	1μm,0.3s,baz=307,slow=18,SNR=132							
IDI				LR	LR		04 25 15.5	
	comp=Z,62nm,18.7s,baz=134,slow=77							
IDI	**Anoyia**	**0.58**	**3**	P		**Pg**	**04 24 41.8**	**-0.1**
IDI				S		**Sg**	**04 24 49.1**	**-0.4**
IDI	**Anoyia**	**0.58**	**3**	P		**Pg**	**04 24 41.6**	**-0.3**
IDI				S		**Sg**	**04 24 48.8**	**-0.7**
IDI				AML	AML		04 24 49.1	
	comp=E,15555μm,0.2s							
IDI				AML	AML		04 24 50.4	
	comp=N,12248μm,0.3s							
IACM	**Heraklion**	**0.62**	**17**	P		**Pb**	**04 24 43.3**	**-0.5**
IACM	**Heraklion**	**0.62**	**17**	P		**Pb**	**04 24 43.3**	**-0.5**
IACM	**Heraklion**	**0.62**	**17**	P		**Pb**	**04 24 43.3**	**-0.5**
GVD	**Gavdhos**	**0.65**	**282**	P		**Pb**	**04 24 44.4**	**+0.1**
GVD				S		**Sn**	**04 24 55.2**	**-1.4**
GVD	**Gavdhos**	**0.65**	**282**	P		**Pb**	**04 24 44.4**	**+0.1**
GVD				S		**Sn**	**04 24 55.2**	**-1.4**
GVD	**Gavdhos**	**0.65**	**282**	P		**Pb**	**04 24 44.4**	**+0.1**
GVD				S		**Sn**	**04 24 55.2**	**-1.4**
GVD				AML	AML		04 24 58.1	
	comp=E,21814μm,0.3s							
GVD				AML	AML		04 24 59.3	
	comp=N,12382μm,0.2s							
LAST	**Lasithi**	**0.68**	**49**	P		**Pb**	**04 24 44.3**	**-0.6**
LAST				S		**Sb**	**04 24 53.9**	**-0.6**
LAST	**Lasithi**	**0.68**	**49**	P		**Pb**	**04 24 44.3**	**-0.6**
LAST				S		**Sb**	**04 24 53.9**	**-0.6**
LAST	**Lasithi**	**0.68**	**49**	P		**Pb**	**04 24 44.6**	**-0.4**
NPS	**Neapolis**	**0.83**	**48**	P		**Pb**	**04 24 46.8**	**-0.6**
NPS				S		**Sb**	**04 24 58.8**	**0.0**
NPS	**Neapolis**	**0.83**	**48**	P		**Pb**	**04 24 47.0**	**-0.4**
NPS				S		**Sb**	**04 24 58.8**	**0.0**
NPS	**Neapolis**	**0.83**	**48**	P		**Pb**	**04 24 47.0**	**-0.4**
VAM	**Vamos**	**0.88**	**322**	P		**Pg**	**04 24 47.3**	**-0.4**
VAM				S		**Sb**	**04 25 00.2**	**+0.1**
VAM	**Vamos**	**0.88**	**322**	P		**Pg**	**04 24 47.3**	**-0.4**
VAM				S		**Sb**	**04 25 00.2**	**+0.1**
IMMV	**Iera Moni Meta**	**1.04**	**316**	P		**Pg**	**04 24 49.7**	**-1.0**
IMMV				S		**Sb**	**04 25 05.3**	**+0.6**
IMMV	**Iera Moni Meta**	**1.04**	**316**	P		**Pg**	**04 24 49.7**	**-1.0**
IMMV				S		**Sb**	**04 25 05.3**	**+0.6**
IMMV	**Iera Moni Meta**	**1.04**	**316**	P		**Pg**	**04 24 48.9**	**-1.8**
IMMV				S		**Sb**	**04 25 05.0**	**+0.3**
IMMV				AML	AML		04 25 05.8	
	comp=E,4709μm,0.4s							
IMMV				AML	AML		04 25 07.0	
	comp=N,4390μm,0.3s							
ZKR	**Zakros**	**1.19**	**70**	P		**Pg**	**04 24 53.9**	**+0.3**
ZKR				S		**Sn**	**04 25 11.1**	**+1.1**
ZKR	**Zakros**	**1.19**	**70**	P		**Pg**	**04 24 53.5**	**-0.1**
ZKR				S		**Sn**	**04 25 11.1**	**+1.1**
ZKR	**Zakros**	**1.19**	**70**	P		**Pg**	**04 24 53.5**	**-0.1**
THR6	**Thira Island,**	**1.70**	**15**	P		**Pb**	**04 25 02.0**	**-0.3**
THR6	**Thira Island,**	**1.70**	**15**	P		**Pb**	**04 25 02.0**	**-0.3**
ANKY	**Antikythira Is**	**1.72**	**313**	P		**Pb**	**04 25 02.8**	**+0.3**
ANKY				S		**Sb**	**04 25 25.0**	**+0.7**
ANKY	**Antikythira Is**	**1.72**	**313**	P		**Pb**	**04 25 02.8**	**+0.3**
ANKY	**Antikythira Is**	**1.72**	**313**	P		**Pg**	**04 25 03.7**	**0.0**
MHLO	**Agia Marina, M**	**2.01**	**350**	P		**Pn**	**04 25 05.7**	**+0.8**
MHLO	**Agia Marina, M**	**2.01**	**350**	P		**Pn**	**04 25 05.7**	**+0.8**
APE	**Apeiranthos**	**2.42**	**13**	P		**Pn**	**04 25 11.8**	**+1.2**
APE	**Apeiranthos**	**2.42**	**13**	P		**Pn**	**04 25 11.8**	**+1.2**
SLUM	**Salum**	**3.23**	**175**	P		**Pn**	**04 25 22.1**	**+0.4**
	baz=177							
SLUM				AMP			04 26 00.0	
	comp=E,30μm,0.6s,logA/T=4.7,baz=177							
SLUM				S		**Sn**	**04 26 00.2**	**-0.1**
	baz=177							
SLUM	**Salum**	**3.23**	**175**	P		**Pn**	**04 25 22.1**	**+0.4**
SLUM				S		**Sn**	**04 26 00.2**	**-0.1**
HMAT	**Matruh**	**4.07**	**152**	P		**Pn**	**04 25 32.9**	**-0.5**
	baz=154							
HMAT				AMP			04 26 00.0	
	comp=E,20μm,0.2s,logA/T=4.9,baz=154							
HMAT				S		**Sn**	**04 26 19.7**	**-1.4**
	baz=154							
HMAT	**Matruh**	**4.07**	**152**	P		**Pn**	**04 25 32.8**	**-0.5**
SWA2		**5.48**	**174**	P		**Pn**	**04 25 53.2**	**+0.6**
	baz=176							
SWA2				AMP			04 27 00.0	
	comp=N,50μm,0.4s,logA/T=5.1,baz=176							
SWA2		**5.48**	**174**	P		**Pn**	**04 25 53.2**	**+0.6**
HNAT	**Natroun**	**7.03**	**134**	P		**Pn**	**04 26 13.1**	**-1.0**
	baz=136							
HNAT	**Natroun**	**7.03**	**134**	P		**Pn**	**04 26 13.1**	**-1.0**
AWBH		**7.25**	**150**	P		**Pn**	**04 26 16.4**	**-0.6**
	baz=152							
AWBH		**7.25**	**150**	P		**Pn**	**04 26 16.4**	**-0.6**
GLL	**Jalalah**	**7.74**	**130**	P		**Pn**	**04 26 22.6**	**-1.2**
	baz=131							
GLL	**Jalalah**	**7.74**	**130**	P		**Pn**	**04 26 22.6**	**-1.2**
SUZ	**Suez**	**8.32**	**124**	P		**Pn**	**04 26 30.5**	**-1.1**
	baz=125							
SUZ	**Suez**	**8.32**	**124**	P		**Pn**	**04 26 30.5**	**-1.1**
BRTR	**Keskin Array B**	**8.61**	**52**	Pn		**Pn**	**04 26 37.8**	**+2.1**
	comp=N,0.1nm,0.3s,baz=231,slow=16,SNR=5.4							
MMAI	**Mount Meron Ar**	**8.93**	**98**	Pn		**Pn**	**04 26 40.2**	**0.0**
	comp=N,0.4nm,0.3s,baz=278,slow=14,SNR=2.9							
HNKL	**Nakhl**	**9.07**	**119**	P		**Pn**	**04 26 40.5**	**-1.5**
	baz=120							
HNKL	**Nakhl**	**9.07**	**119**	P		**Pn**	**04 26 40.5**	**-1.5**
AKASG	**Malin Array Be**	**16.29**	**10**	Pn		**P**	**04 28 21.1**	**-1.7**
	comp=N,0.5nm,0.3s,baz=200,slow=11,SNR=4.2							
GERES	**GERESS Array B**	**16.36**	**333**	Pn		**P**	**04 28 22.2**	**-1.5**
	comp=N,0.1nm,0.3s,baz=144,slow=12,SNR=9.0							
EKA	**Eskdalemuir Ar**	**28.26**	**325**	P		**P**	**04 30 26.3**	**+2.1**
	comp=N,0.2nm,0.4s,baz=120,slow=11,SNR=2.4							
TORD	**Torodi Ar. Bea**	**30.01**	**230**	P		**P**	**04 30 40.2**	**+0.2**
	comp=N,0.2nm,0.3s,baz=35,slow=8.8,SNR=14							
YKA	**Yellowknife Ar**	**77.80**	**342**	P		**P**	**04 36 28.1**	**0.0**
	comp=N,0.1nm,0.7s,baz=35,slow=4.9,SNR=2.8							

*ISCJB **17** 04:34:44.5±0.5, 36.°47N±0.°03×28.°79E±0.°03, h8km±4km, Error ellipse: s-maj=4.6km s-min=3.6km az=10.9*
*CSEM **17** 04:34:44.6±0.1, 36.°47N×28.°79E, h8km, MD2.9, Error ellipse: s-maj=3.4km s-min=2.4km az=11.0*
*DDA **17** 04:34:44.0, 36.°44N×28.°74E, h7km, Ml3.1*
*THE **17** 04:34:44.1, 36.°47N×28.°80E, h2km±3km, ML2.4/3, Error ellipse: s-maj=3.0km s-min=1.1km az=76.0*
*ISK **17** 04:34:44.7, 36.°53N×28.°78E, h10km, MD2.9*

ISC 17 04:34:44.4±1.1, 36.°47N±0.°02×28.°76E±0.°02, h3km±9km, n58, σ0°58/87, Dodecanese Islands

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
FETY	**Fethiye**	**0.31**	**58**	*e*PG		**Pg**	**04 34 50.4**	**0.0**
FETY				*e*SG		**Sg**	**04 34 55.1**	**+0.7**
FETY	**Fethiye**	**0.31**	**58**	P		**Pg**	**04 34 49.7**	**-0.7**
FETY				S		**Sg**	**04 34 54.9**	**+0.4**
FETY	**Fethiye**	**0.31**	**58**	P		**Pg**	**04 34 49.7**	**-0.7**
FETY	**Fethiye**	**0.31**	**58**	*e*Pg		**Pg**	**04 34 50.4**	**0.0**
FETY				S		**Sg**	**04 34 54.9**	**+0.4**
FETY				*e*Sg		**Sg**	**04 34 55.2**	**+0.7**
DALY	**Dalyan (Mu¨la**	**0.36**	**347**	*e*PG		**Pg**	**04 34 51.0**	**-0.3**
DALY				*e*SG		**Sg**	**04 34 56.0**	**0.0**
DALY	**Dalyan (Mu¨la**	**0.36**	**347**	*e*Pg		**Pg**	**04 34 51.0**	**-0.3**
DALY				*e*Sg		**Sg**	**04 34 56.0**	**0.0**
TURN	**Turunc**	**0.42**	**343**	*i* P		**Pb**	**04 34 54.6**	**+0.1**
TURN				*i* S		**Sb**	**04 35 02.5**	**+1.2**
TURN	**Turunc**	**0.42**	**343**	P		**Pb**	**04 34 54.7**	**+0.1**
TURN				S		**Sb**	**04 35 02.5**	**+1.2**
ARG	**Arkhangelos**	**0.57**	**244**	P		**Pg**	**04 34 55.4**	**+0.1**
ARG				S		**Sb**	**04 35 05.3**	**-0.2**
ARG	**Arkhangelos**	**0.57**	**244**	P		**Pg**	**04 34 55.4**	**+0.1**
ARG				S		**Sb**	**04 35 05.3**	**-0.2**
AKAS	**Kas**	**0.72**	**109**	*i* P		**Pg**	**04 34 57.7**	**-0.6**
AKAS				*i* S		**Sb**	**04 35 09.6**	**-0.5**
AKAS	**Kas**	**0.72**	**109**	P		**Pg**	**04 34 57.7**	**-0.6**
AKAS				S		**Sb**	**04 35 09.6**	**-0.5**
KSL	**Kastellorizon**	**0.74**	**115**	P		**Pg**	**04 34 58.3**	**-0.3**
KSL				S		**Sg**	**04 35 09.0**	**+0.8**
YER	**Yerkesik**	**0.77**	**330**	*e*PG		**Pg**	**04 34 59.3**	**+0.2**
YER	**Yerkesik**	**0.77**	**330**	P		**Pg**	**04 34 58.8**	**-0.3**
YER				S		**Sb**	**04 35 12.2**	**-0.1**
YER	**Yerkesik**	**0.77**	**330**	P		**Pg**	**04 34 58.8**	**-0.3**
YER	**Yerkesik**	**0.77**	**330**	*e*Pg		**Pg**	**04 34 59.3**	**+0.2**
YER				S		**Sb**	**04 35 11.2**	**-0.1**
ELL	**Elmali**	**0.97**	**73**	*e*PG		**Pg**	**04 35 03.0**	**0.0**
ELL	**Elmali**	**0.97**	**73**	*e*Pg		**Pg**	**04 35 03.0**	**0.0**
BDRM	**Kayabasi**	**1.21**	**300**	*i* P		**Pb**	**04 35 07.9**	**-0.1**
BDRM				*i* S		**Sb**	**04 35 24.6**	**+0.5**
BDRM	**Kayabasi**	**1.21**	**300**	P		**Pb**	**04 35 07.9**	**-0.1**
BDRM				S		**Sb**	**04 35 24.5**	**+0.5**
NIS1	**Nisyros Isl.**	**1.28**	**276**	*e*PN		**Pn**	**04 35 09.9**	**+0.7**
NIS1	**Nisyros Isl.**	**1.28**	**276**	*e*Pn		**Pn**	**04 35 09.9**	**+0.7**
DENT	**Denizli**	**1.30**	**10**	*e*PN		**Pg**	**04 35 08.5**	**-0.9**
DENT	**Denizli**	**1.30**	**10**	*e*Pn		**Pg**	**04 35 08.5**	**-0.9**
BODT	**Bodrum**	**1.30**	**297**	*e*PN		**Pg**	**04 35 09.1**	**-0.3**
BODT	**Bodrum**	**1.30**	**297**	P		**Pg**	**04 35 09.0**	**-0.3**
BODT				S		**Sb**	**04 35 26.9**	**+0.2**
BODT	**Bodrum**	**1.30**	**297**	*e*Pn		**Pg**	**04 35 09.1**	**-0.3**
BODT				S		**Sb**	**04 35 26.9**	**+0.2**
AYDN	**Tasoluk**	**1.38**	**330**	*i* P		**Pn**	**04 35 10.2**	**-0.5**
AYDN				*i* S		**Sn**	**04 35 29.6**	**+0.1**
AYDN	**Tasoluk**	**1.38**	**330**	P		**Pn**	**04 35 10.2**	**-0.5**
AYDN				S		**Sn**	**04 35 29.6**	**+0.1**
KORT	**Korkueli**	**1.39**	**67**	*i* P		**Pn**	**04 35 10.4**	**-0.4**
KORT				*i* S		**Sn**	**04 35 31.7**	**+2.0**
KORT	**Korkueli**	**1.39**	**67**	P		**Pn**	**04 35 10.4**	**-0.4**
KORT				S		**Sn**	**04 35 31.7**	**+2.0**
KARP	**Karpathos**	**1.59**	**235**	*e*PN		**Pb**	**04 35 14.3**	**-0.1**
KARP	**Karpathos**	**1.59**	**235**	P		**Pn**	**04 35 13.2**	**-0.2**
KARP				S		**Sn**	**04 35 33.8**	**-0.7**
KARP	**Karpathos**	**1.59**	**235**	P		**Pn**	**04 35 13.2**	**-0.2**
KARP	**Karpathos**	**1.59**	**235**	*e*Pn		**Pb**	**04 35 14.3**	**-0.1**
KARP				S		**Sn**	**04 35 33.8**	**-0.7**
AYDB	**Zeytinkoy-Aydi**	**1.63**	**335**	*e*PN		**Pn**	**04 35 13.5**	**-0.6**
AYDB	**Zeytinkoy-Aydi**	**1.63**	**335**	*e*Pn		**Pn**	**04 35 13.5**	**-0.6**
GCAM	**G?zelcaml?**	**1.73**	**316**	*i* P		**Pn**	**04 35 15.5**	**+0.1**
GCAM				*i* S		**Sb**	**04 35 39.2**	**+0.2**
GCAM	**G?zelcaml?**	**1.73**	**316**	P		**Pn**	**04 35 15.5**	**+0.1**
GCAM				S		**Sb**	**04 35 39.2**	**+0.2**
BCK	**Bucak**	**1.77**	**55**	*e*PN		**Pn**	**04 35 15.3**	**-0.7**
BCK	**Bucak**	**1.77**	**55**	*e*Pn		**Pn**	**04 35 15.3**	**-0.7**
SMG	**Samos**	**1.97**	**309**	P		**Pn**	**04 35 18.1**	**-0.6**
SMG	**Samos**	**1.97**	**309**	P		**Pn**	**04 35 18.1**	**-0.6**
KHAL	**Karahalli**	**1.99**	**17**	*i* P		**Pn**	**04 35 18.7**	**-0.3**
KHAL				*i* S		**Sn**	**04 35 43.6**	**-0.9**
KHAL	**Karahalli**	**1.99**	**17**	P		**Pn**	**04 35 18.7**	**-0.3**
KHAL				S		**Sn**	**04 35 43.6**	**-0.9**
KULA	**Kula-Manisa**	**2.04**	**358**	*e*PN		**Pn**	**04 35 18.9**	**-0.9**
KULA	**Kula-Manisa**	**2.04**	**358**	*e*Pn		**Pn**	**04 35 18.9**	**-0.9**
IZM	**Izmir**	**2.26**	**329**	*e*PN		**Pn**	**04 35 22.5**	**-0.3**
IZM	**Izmir**	**2.26**	**329**	*e*Pn		**Pn**	**04 35 22.5**	**-0.3**
BLCB	**Balcova**	**2.35**	**325**	*e*PN		**Pn**	**04 35 23.3**	**-0.6**
BLCB	**Balcova**	**2.35**	**325**	*e*Pn		**Pn**	**04 35 23.3**	**-0.6**
AKS	**Akhisar**	**2.52**	**343**	*e*PN		**Pn**	**04 35 26.2**	**-0.1**
AKS	**Akhisar**	**2.52**	**343**	*e*Pn		**Pn**	**04 35 26.2**	**-0.1**
TVSB	**Tavsanli**	**3.03**	**10**	*e*PN		**Pn**	**04 35 33.3**	**-0.1**
TVSB	**Tavsanli**	**3.03**	**10**	*e*Pn		**Pn**	**04 35 33.3**	**-0.1**
KONT	**Konya--Tatoy**	**3.23**	**62**	*e*PN		**Pn**	**04 35 36.3**	**+0.2**
KONT	**Konya--Tatoy**	**3.23**	**62**	*e*Pn		**Pn**	**04 35 36.3**	**+0.2**

**MEX 17 04:35:43.8±1.0, 14.°22N×92.°23W, h20km±801km, MD3.9,

TYV Tymovskoe 15.11 5 *e*P **Pn 04 42 32.0 +1.1**
TYV pmax pmax
comp=Z,26nm,1.0s
NJ2 Nanjing 18.33 264 *e*P **P 04 43 10.9 -0.8**
NJ2 pmax pmax
comp=Z,10.0nm,0.8s
BJI Beijing 19.61 290 P **P 04 43 24.0 -1.6**
BJI pmax pmax
comp=Z,10.0nm,1.4s
BJI LR LR
comp=Z,170nm,13.8s
BJI LR LR
comp=Z,110nm,12.9s
BJI LR LR
comp=Z,61nm,19.8s
PETK Petropavlovsk- 21.10 30 P **P 04 43 41.2 -0.6**
comp=Z,2.8nm,0.8s,baz=239,slow=13,SNR=2.9
PETK LR LR 04 51 21.3
comp=Z,166nm,21.7s,baz=224,slow=35
WHN Wuhan 22.46 264 P **P 04 43 56.8 +0.2**
WHN pmax pmax
comp=Z,36nm,0.7s
HHC Hu-ho-hao-te 23.17 291 *e*P **P 04 44 03.6 -0.4**
HHC pP sP 04 44 13.3 -1.2
HHC sP pP 04 44 16.6 +5.4
HHC S **S 04 48 09.6 -4.5**
HHC pmax pmax
comp=Z,22nm,0.8s
HHC pmax pmax
comp=Z,90nm,7.5s
HHC LR LR
comp=Z,120nm,13.6s
HHC LR LR
comp=Z,600nm,13.6s
HHC LR LR
comp=Z,120nm,13.6s
MA2 Magadan 24.69 13 P **P 04 44 18.4 +0.4**
comp=Z,7.3nm,0.6s,baz=215,slow=9.1,SNR=7.2
MA2 LR LR 04 53 49.2
comp=Z,151nm,20.6s,baz=186,slow=36
ENH Enshi 26.50 267 *e*P **P 04 44 33.2 -1.5**
comp=Z,24nm,0.8s
YAK Yakutsk 27.09 349 LR LR 04 56 19.4
comp=Z,111nm,19.2s,baz=166,slow=38
YAK Yakutsk 27.09 349 *e*P **P 04 44 41.2 +1.6**
YAK pmax pmax
comp=Z,19nm,1.3s
YAK pmax pmax
comp=N,18nm,1.5s
YAK pmax pmax
comp=E,7.0nm,1.4s
ULN Ulaanbaatar 27.43 306⇑ *e*P **P 04 44 43.8 +0.7**
ULN pmax pmax
comp=Z,7.0nm,1.7s
ULN Ulaanbaatar 27.43 306 *e*P **P 04 44 43.2 +0.1**
comp=Z,5.6nm,1.1s
SONA1 Songino Array 27.85 306 *e*P **P 04 44 46.4 -0.5**
SONM Songino Array 27.86 306 P **P 04 44 46.3 -0.6**
comp=Z,1.3nm,0.6s,baz=105,slow=8.7,SNR=12
SONM LR LR 04 56 12.5
comp=Z,117nm,19.2s,baz=108,slow=37
SEY Seymchan 28.12 12 P **P 04 44 49.5 +0.7**
comp=Z,1.1nm,0.7s,baz=299,slow=1.1,SNR=3.8
SEY Seymchan 28.12 12*de*P **P 04 44 52.2 +3.4**
BOD Bodaibo 28.16 330 *e*P **P 04 44 49.5 +0.2**
BOD pmax pmax
comp=Z,5.0nm,1.5s
H11N2 WAKE ISLAND Hy 28.22 118 T T 05 14 05.0
baz=310,slow=75,SNR=42
H11N1 WAKE ISLAND Hy 28.23 118 T T 05 14 07.4
baz=310,slow=75,SNR=50
H11N3 WAKE ISLAND Hy 28.24 118 T T 05 14 06.3
baz=310,slow=75,SNR=42
H11S1 WAKE ISLAND Hy 28.88 120 T T 05 14 52.4
baz=312,slow=75,SNR=232
H11S3 WAKE ISLAND Hy 28.88 120 T T 05 14 48.1
baz=312,slow=75,SNR=191
H11S2 WAKE ISLAND Hy 28.89 120 T T 05 14 49.8
baz=312,slow=75,SNR=112
LZH Lanzhou 29.55 281 *e*P **P 04 45 03.8 +1.7**
LZH pP sP 04 45 13.3 +0.4
LZH sP pP 04 45 16.5 +6.8
LZH pmax pmax
comp=Z,13nm,1.0s
CD2 Chengdu 30.94 272 P **P 04 45 13.1 -1.2**
CD2 pmax pmax
comp=Z,1.0nm,0.5s
GTA Gaotai 32.22 289 *e*P P 04 45 17.3 -8.2
GTA pP pP 04 45 26.4 -6.8
GTA sP sP 04 45 30.6 -5.8
GTA pmax pmax
comp=Z,3.0nm,0.9s
KMI Kunming 34.04 262 P **P 04 45 43.4 +1.7**
KMI pmax pmax
comp=Z,6.0nm,1.0s
KMI pmax pmax
comp=Z,130nm,7.2s
BILL Bilibino 35.39 16⇓ *e*P **P 04 45 53.3 +0.7**
BILL *i* 04 47 08.8
BILL pmax pmax
comp=Z,4.0nm,1.0s
BILL MLR MLR
comp=Z,111nm,21.0s
BILL Bilibino 35.39 16 *e*P **P 04 45 53.3 +0.7**
comp=Z,8.0nm,1.4s
TIXI Tiksi 36.40 354⇑ *e*P **P 04 46 02.5 +1.3**
TIXI pmax pmax
comp=Z,3.0nm,0.8s
CMAR Chiang Mai Arr 40.47 256 P **P 04 46 34.4 -1.7**
comp=Z,0.6nm,0.6s,baz=54,slow=7.2,SNR=5.6
CMAR PcP **PcP 04 48 39.3 +0.8**
comp=Z,0.8nm,0.9s,baz=51,slow=1.9,SNR=4.9
CMAR LR LR 05 03 23.8
comp=Z,51nm,19.4s,baz=290,slow=36
WMQ Urumqi 40.72 298 *e*P **P 04 46 39.0 +1.0**
WMQ pP sP 04 46 49.3 +0.4
WMQ sP pP 04 46 52.6 +6.8
WMQ pmax pmax
comp=Z,3.0nm,0.6s
WMQ pmax pmax
comp=Z,35nm,3.8s
WMQ LR LR
comp=Z,15nm,22.0s
WMQ LR LR
comp=Z,42nm,21.0s
WMQ LR LR
comp=Z,16nm,22.0s
ZAA0 Zalesovo Array 42.18 313 *e*P **P 04 46 51.2 +1.6**
ZAA0 *e*ScP **ScP 04 52 34.3 +2.0**
ZALV Zalesovo Beam 42.18 313 P **P 04 46 50.0 +0.3**
comp=Z,4.0nm,0.7s,baz=97,slow=7.1,SNR=13
ZALV PcP **PcP 04 48 42.6 -0.9**
comp=Z,0.8nm,0.4s,baz=99,slow=4.5,SNR=2.9
ZALV LR LR 05 03 23.6
comp=Z,48nm,20.1s,baz=72,slow=35
NVS Novosibirsk 43.14 315 *e*P **P 04 46 57.5 +0.1**
NVS pmax pmax
comp=E,9.0nm,1.2s
NVS pmax pmax
comp=Z,11nm,1.2s
NRIK Noril'sk 44.05 336 P **P 04 47 05.3 +0.7**
comp=Z,3.2nm,0.8s,baz=127,slow=9.8,SNR=3.7
NRIK LR LR 05 06 47.5
comp=Z,142nm,18.4s,baz=115,slow=38
NRIK Noril'sk 44.05 336 P **P 04 47 05.3 +0.7**
NRIK pmax pmax
comp=Z,2.0nm,0.5s
NRIK MLR MLR
comp=Z,142nm,18.4s
MK01 Makanchi Array 44.12 303 *e*P **P 04 47 05.3 -0.2**
MK31 Makanchi Array 44.13 303 *e*P **P 04 47 05.8 +0.2**
MK31 Makanchi Array 44.13 303 *e*P **P 04 47 05.8 +0.2**
MKAR Makanchi Array 44.13 303 P **P 04 47 06.0 +0.4**
comp=Z,2.9nm,0.7s,baz=93,slow=9.5,SNR=25
MKAR LR LR 05 06 07.0
comp=Z,81nm,18.6s,baz=94,slow=37
MKAR Makanchi Array 44.13 303*ce*P **P 04 47 06.0 +0.4**
MKAR pmax pmax
comp=Z,3.0nm,0.7s
MKAR Makanchi Array 44.13 303 *e*P **P 04 47 05.8 +0.2**
MAKZ Makanchi 44.34 303 *e*P **P 04 47 07.7 +0.5**
MAKZ pmax pmax
comp=Z,6.0nm,0.9s
MAKZ Makanchi 44.34 303 *e*P **P 04 47 07.7 +0.5**
comp=Z,5.6nm,0.9s
KURK Kurchatov 46.09 309 *e*P **P 04 47 20.4 -0.6**
KURK pmax pmax
comp=Z,21nm,1.2s
KURK Kurchatov 46.09 309 *e*P **P 04 47 20.4 -0.6**
comp=Z,21nm,1.2s
KURBB Kurchatov Arra 46.16 309 P **P 04 47 21.4 -0.1**
comp=Z,9.9nm,1.1s,baz=85,slow=8.0,SNR=49
MLY Manley 49.27 31 *e*P **P 04 47 47.5 +2.0**
comp=Z,3.2nm,0.9s
TKM2 Tokmak 2 49.55 299 *e*P **P 04 47 49.1 +0.9**
TKM2 pmax pmax
comp=Z,25nm,1.6s
TKM2 Tokmak 2 49.55 299 *e*P **P 04 47 49.1 +0.9**
comp=Z,25nm,1.6s
SEW Seward 49.97 38 *e*P **P 04 47 52.0 +1.1**
comp=Z,15nm,1.1s
MDM Murphy Dome 50.33 32 *e*P **P 04 47 55.5 +1.8**
comp=Z,14nm,1.3s
AAK Ala-Archa 50.40 299 P **P 04 47 54.8 +0.1**
comp=Z,0.5nm,0.4s,baz=4,3,slow=18,SNR=3.4
AAK Ala-Archa 50.40 299 *e*P **P 04 47 54.9 +0.2**
AAK pmax pmax
comp=Z,4.0nm,1.1s
AAK Ala-Archa 50.40 299 *e*P **P 04 47 54.9 +0.2**
comp=Z,4.4nm,1.1s
WRH Wood River Hil 50.40 32 *e*P **P 04 47 56.0 +1.9**
comp=Z,12nm,1.6s
COLA College 50.50 32*c i*P **P 04 47 56.3 +1.5**
COLA pmax pmax
comp=Z,3.0nm,0.8s
BVAR Borovoye Array 50.83 313 P **P 04 47 56.9 -0.7**
comp=Z,1.4nm,0.8s,baz=90,slow=7.4,SNR=6.5
BRVK Borovoye 50.89 313⇑ *e*P **P 04 47 59.3 +1.4**
BRVK pmax pmax
comp=Z,5.0nm,1.2s
BRVK Borovoye 50.89 313 *e*P **P 04 47 59.4 +1.4**
comp=Z,3.4nm,0.8s
EKS2 Erkin-Say 50.91 299 *e*P **P 04 47 58.1 -0.3**
EKS2 Erkin-Say 50.91 299 *e*P **P 04 47 58.0 -0.3**
ILAR Eielson Array 50.91 32 P **P 04 47 58.0 0.0**
comp=Z,1.9nm,0.7s,baz=270,slow=6.3,SNR=29
ILAR Eielson Array 50.91 32 P **P 04 47 58.0 0.0**
ILB Eielson Array 50.91 32 *e*P **P 04 47 59.0 +1.0**
IL1 Eielson Array 50.91 32 *e*P **P 04 47 58.3 +0.3**
ZRNK Zerenda 51.67 313 *e*P **P 04 48 03.4 -0.4**
ZRNK pmax pmax
comp=Z,9.0nm,1.2s
ZRNK Zerenda 51.67 313 *e*P **P 04 48 03.4 -0.4**
comp=Z,8.6nm,1.2s
DOT Dot Lake 52.22 33 *e*P **P 04 48 08.7 +0.9**
comp=Z,5.4nm,0.7s
BMRM Bremner River 52.27 37 *e*P **P 04 48 09.4 +1.2**
comp=Z,8.3nm,1.0s
KKAR Karatay Array 53.08 301 *e*P **P 04 48 14.1 -0.4**
KKAR pmax pmax
comp=Z,12nm,1.2s
KKAR Karatay Array 53.08 301 *e*P **P 04 48 14.1 -0.4**
comp=Z,12nm,1.2s
WRAB Tennant Creek 55.76 187 *e*P **P 04 48 34.7 +0.6**
WRAB pmax pmax
comp=Z,9.0nm,0.9s
WRAB Tennant Creek 55.76 187 *e*P **P 04 48 34.7 +0.6**
comp=Z,8.8nm,0.9s
WRA Warramunga Arr 55.77 187 P **P 04 48 32.2 -2.0**
comp=Z,5.4nm,0.8s,baz=2.0,slow=7.6,SNR=22
WRA Warramunga Arr 55.77 187*ce*P **P 04 48 35.0 +0.9**
WRA pmax pmax
comp=Z,6.0nm,0.9s
INK Inuvik 55.80 27 P **P 04 48 34.2 +0.4**
comp=Z,1.5nm,0.7s,baz=284,slow=8.3,SNR=11
INK Inuvik 55.80 27 *e*P **P 04 48 34.9 +1.1**
INK pmax pmax
comp=Z,4.0nm,0.8s
INK Inuvik 55.80 27 *e*P **P 04 48 34.9 +1.1**
comp=Z,3.9nm,0.8s
ARU Arti 56.77 319*c i*P **P 04 48 40.7 -0.1**
ARU 04 49 34.5
ARU S **S 04 56 34.5 +2.5**
ARU SS **SS 05 00 18.5 -1.1**
ARU pmax pmax
comp=Z,8.0nm,1.0s
ARU Arti 56.77 319 *e*P **P 04 48 40.8 -0.1**
comp=Z,20nm,1.4s
AKTO Aktyubinsk 58.92 312 P **P 04 48 56.4 +0.3**
comp=Z,2.4nm,0.7s,baz=74,slow=10,SNR=6.4
AS01 Alice Springs 59.49 187 *e*P **P 04 49 01.5 +1.2**
AS31 Alice Springs 59.50 187 *e*P **P 04 49 03.6 +3.3**
comp=Z,1.3nm,0.9s
ASAR Alice Springs 59.50 187 P **P 04 48 59.8 -0.5**
comp=Z,1.9nm,0.7s,baz=17,slow=10,SNR=18
ASAR LR LR 05 14 40.1
comp=Z,59nm,18.7s,baz=326,slow=36
DLBC Dease Lake 60.04 37 P **P 04 49 04.9 +1.2**
comp=Z,1.8nm,0.8s,baz=287,slow=6.3,SNR=6.3
ARCES ARCESS Array B 64.86 339 P **P 04 49 35.8 +0.1**
comp=Z,8.5nm,1.0s,baz=38,slow=12,SNR=3.1
ARCES LR LR 05 20 33.5
comp=Z,81nm,20.9s,baz=46,slow=38
YKA Yellowknife Ar 65.22 30 P **P 04 49 38.1 0.0**
comp=Z,0.6nm,0.8s,baz=299,slow=6.6,SNR=14
STKA Stephens Creek 67.36 179 P **P 04 49 51.2 -0.9**
comp=Z,3.4nm,0.8s,baz=345,slow=9.8,SNR=9.6
STKA LR LR 05 18 41.1
comp=Z,43nm,19.4s,baz=25,slow=36
STKA Stephens Creek 67.36 179 *e*P **P 04 49 52.4 +0.3**
comp=Z,1.2nm,1.0s
VRH Novokhopyorsk 67.96 318 *e*P **P 04 49 54.0 -1.9**
VRH pmax pmax
comp=Z,7.0nm,0.5s
OBN Obninsk 68.61 323⇓ *e*P **P 04 50 00.1 +0.3**
OBN *e**PP **sP 04 50 11.7 +0.7**
OBN *e* 04 50 25.2
OBN 04 52 41.0
OBN *e*SSS SSS 05 06 33.7
OBN pmax pmax
comp=Z,30nm,2.5s
OBN MLR MLR
comp=Z,94nm,13.0s
LPSR Galich'ya Gora 68.74 320 *e*P P 04 49 50.8 -10
LPSR pmax pmax
comp=Z,8.0nm,0.5s
VSR Storozhevoye 69.34 319 *e*P **P 04 50 02.8 -1.6**
VSR pmax pmax
comp=Z,8.0nm,0.8s
FINES FINESS Array B 69.53 332 P **P 04 50 04.4 -1.0**
comp=Z,3.4nm,0.9s,baz=66,slow=9.2,SNR=7.3
FINES LR LR 05 23 26.6
comp=Z,67nm,18.5s,baz=39,slow=38
FINES FINESS Array B 69.53 332*ce*P **P 04 50 05.5 +0.1**
FINES pmax pmax
comp=Z,5.0nm,1.0s
ZEI Tsey 70.98 309 *e*P **P 04 50 12.5 -2.4**
ZEI pmax pmax
comp=Z,4.0nm,0.7s
VSU Vasula 71.11 329⇑ *e*P **P 04 50 15.2 +0.1**
VSU pmax pmax
comp=Z,33nm,1.0s
KBZ Khabaz 71.11 311 P **P 04 50 15.8 +0.4**
comp=Z,5.8nm,0.9s,baz=63,slow=1.6,SNR=18
KIV Kislovodsk 71.12 311⇓ *e*P **P 04 50 16.5 +0.9**
KIV *e* 04 50 25.5
KIV *i* 04 50 35.2
KIV *e* 04 52 53.9
KIV pmax pmax
comp=Z,13nm,1.0s
KIV MLR MLR
comp=Z,28nm,15.0s
KIV Kislovodsk 71.12 311 *e*P **P 04 50 16.9 +1.2**
comp=Z,17nm,1.1s
NEY Neytrino 71.47 310⇑ *e*P **P 04 50 17.2 -0.7**
NEY pmax pmax
comp=Z,1.0nm,1.0s
NEW Newport 71.52 43 P **P 04 50 17.6 -0.3**
comp=Z,2.7nm,0.9s,baz=318,slow=5.3,SNR=5.3
SUMG Summit 71.88 360 *e*P **P 04 50 21.6 +1.5**
SUMG pmax pmax
comp=Z,9.0nm,1.1s
SUMG Summit 71.88 360 *e*P **P 04 50 21.6 +1.5**
comp=Z,9.2nm,1.1s
BMO Blue Mountains 73.30 47 *e*P **P 04 50 29.7 +1.0**
comp=Z,3.3nm,0.7s
JTMT Jette 73.39 43 *e*P **P 04 50 30.6 +1.5**
SWMT Swartz Lake 73.68 43 *e*P **P 04 50 32.0 +1.2**
AKASG Malin Array Be 74.78 322 P **P 04 50 36.4 -0.7**
comp=Z,5.7nm,1.0s,baz=46,slow=5.9,SNR=16
AKASG LR LR 05 26 09.1
comp=Z,95nm,18.9s,baz=0.0,slow=38
KIEV Kiev 74.80 322⇑ *i*P **P 04 50 36.7 -0.4**
KIEV pmax pmax
comp=Z,5.0nm,1.0s
KIEV Kiev 74.80 322 *e*P **P 04 50 36.4 -0.7**
comp=Z,5.5nm,1.0s
AK11 Malin Array Si 74.83 322 *e*P **P 04 50 37.3 0.0**
NB2 NORSAR Subarra 75.00 337 P **P 04 50 37.7 -0.5**
comp=Z,3.2nm,0.8s,baz=40,slow=5.9
NOA NORSAR Array B 75.00 337 P **P 04 50 37.5 -0.7**
comp=Z,4.1nm,1.0s,baz=40,slow=5.7,SNR=7.1
NOA LR LR 05 27 04.8
comp=Z,58nm,20.1s,baz=20,slow=38
FFC Flin Flon 75.12 32 *e*P **P 04 50 39.1 +0.1**
FFC pmax pmax
comp=Z,3.0nm,0.9s
FFC Flin Flon 75.12 32 *e*P **P 04 50 39.0 +0.1**
comp=Z,3.0nm,0.9s
FCC Fort Churchill 75.41 26 *e*P **P 04 50 40.5 0.0**
FCC pmax pmax
comp=Z,6.0nm,1.2s
FCC Fort Churchill 75.41 26 *e*P **P 04 50 40.5 0.0**
comp=Z,5.6nm,1.2s
LRM Limekiln Ridge 75.53 44 *e*P **P 04 50 43.0 +1.2**
EGMT Eagleton 75.67 41 *e*P **P 04 50 43.1 +0.8**
comp=Z,7.4nm,0.9s
DLMT Dillon 75.73 44 *e*P **P 04 50 44.5 +1.6**
comp=Z,5.8nm,1.0s
BOZ Bozeman (W) 76.10 43 *e*P **P 04 50 45.8 +0.8**
BOZ pmax pmax
comp=Z,3.0nm,0.8s
BOZ Bozeman (W) 76.10 43 *e*P **P 04 50 45.8 +0.8**
comp=Z,3.2nm,0.8s
NVAR Mina Array Bea 76.31 52 P **P 04 50 46.5 +0.1**
comp=Z,3.0nm,0.8s,baz=293,slow=5.9,SNR=5.9
H17A Grant Village 77.46 44 *e*P **P 04 50 55.3 +2.5**
comp=Z,4.3nm,0.8s
HVU Hansel Valley 77.78 47 *e*P **P 04 50 56.2 +1.7**
HVU pmax pmax
comp=Z,3.0nm,0.7s
HVU Hansel Valley 77.78 47 *e*P **P 04 50 56.2 +1.7**
comp=Z,3.3nm,0.7s
MLI Malad Range 78.01 47 *e*P **P 04 50 56.9 +1.1**
R11A Troy Canyon, C 78.10 51 *e*P **P 04 50 57.7 +1.4**
comp=Z,3.7nm,1.2s
BGU Big Grassy Mou 78.14 48 *e*P **P 04 50 58.1 +1.6**
comp=Z,1.6nm,0.7s
TPNV Topopah Spring 78.50 53 *e*P **P 04 50 59.7 +1.1**
TPNV pmax pmax
comp=Z,5.0nm,1.0s
TPNV Topopah Spring 78.50 53 *e*P **P 04 50 59.7 +1.1**
comp=Z,4.7nm,1.0s
HWUT Hardware Ranch 78.60 47 *e*P **P 04 51 00.5 +1.4**
comp=Z,3.8nm,1.0s
DUG Dugway, Tooele 78.71 48 *e*P **P 04 51 01.2 +1.5**
DUG pmax pmax
comp=Z,4.0nm,0.9s
DUG Dugway, Tooele 78.71 48 *e*P **P 04 51 01.2 +1.5**
comp=Z,4.1nm,0.9s
PD31 Pinedale Array 79.05 45 *e*P **P 04 51 02.2 +0.7**
PDAR Pinedale Array 79.05 45 P **P 04 51 02.1 +0.5**
comp=Z,2.0nm,0.7s,baz=260,slow=2.2,SNR=24
BR131 Keskin Array S 79.08 311 *e*P **P 04 51 02.4 +0.7**
BRTR Keskin Array B 79.08 311 P **P 04 51 01.0 -0.7**
comp=Z,2.3nm,0.9s,baz=104,slow=3.1,SNR=11
BRTR LR LR 05 28 13.5
comp=Z,23nm,18.4s,baz=13,slow=37
BRTR Keskin Array B 79.08 311*ce*P **P 04 51 02.2 +0.5**
BRTR pmax pmax
comp=Z,2.0nm,0.9s
NLU North Lily Min 79.31 48 *e*P **P 04 51 04.4 +1.4**
comp=Z,2.4nm,0.8s
KOLS Kolonicke sedl 79.35 324 *e*P **P 04 51 03.3 +0.5**
KOLS Kolonicke sedl 79.35 324 *e*P **P 04 51 03.2 +0.5**
BR231 Keskin MP Arra 79.53 312 *e*P **P 04 51 02.5 -1.6**
MPU Maple Canyon 79.54 48 *e*P **P 04 51 05.7 +1.4**
comp=Z,2.6nm,0.7s
PFO Pinyon Flats O 80.34 56 P **P 04 51 09.4 +0.8**
comp=Z,3.4nm,0.8s,baz=327,slow=9.2,SNR=4.8
LCMT Little Creek M 80.39 51 *e*P **P 04 51 10.4 +1.6**
comp=Z,3.1nm,1.0s
RAYN Ar Rayn 80.41 292 *e*P **P 04 51 09.0 0.0**
comp=Z,4.6nm,0.9s
KNB Kanab 80.65 51 *e*P **P 04 51 12.2 +1.9**
KNB pmax pmax
comp=Z,7.0nm,1.1s
KNB Kanab 80.65 51 *e*P **P 04 51 12.2 +1.9**
comp=Z,6.6nm,1.1s
SRU San Rafael Swe 80.77 48 *e*P **P 04 51 12.1 +1.2**
SRU pmax pmax
comp=Z,5.0nm,0.7s
SRU San Rafael Swe 80.77 48 *e*P **P 04 51 12.1 +1.2**
comp=Z,5.0nm,0.7s
PSZ Piszkesteto 81.19 324 *e*P **P 04 51 12.9 +0.1**
PSZ pmax pmax
comp=Z,6.0nm,1.1s
PSZ Piszkesteto 81.19 324 *e*P **P 04 51 12.9 +0.1**
comp=Z,6.3nm,1.1s
VYHS Vyhne 81.28 325 *e*P **P 04 51 14.0 +0.7**
VYHS Vyhne 81.28 325 *e*P **P 04 51 13.9 +0.7**
BRG Berggiesshubel 81.70 329 *e*P pP 04 51 25.8 +2.1
comp=Z,7.4nm,1.4s
BRG Berggiesshubel 81.70 329 *e*P **pP 04 51 25.8 +2.1**
BRG pmax pmax
comp=Z,7.0nm,1.4s
CLL Collm 81.76 330 *e*P **P 04 51 15.0 -0.6**
comp=Z,7.0nm,1.2s
CLL *e* 04 51 21.0
CLL *i* 04 51 25.8
comp=Z,9.0nm,1.3s
CLL Collm 81.76 330 *e*P **P 04 51 15.0 -0.6**
CLL *e* 04 51 21.0
CLL *i* 04 51 25.8
CLL pmax pmax
comp=Z,7.0nm,1.2s
CLL Collm 81.76 330 *e*P **P 04 51 15.4 -0.2**
CLL *e*pP **sP 04 51 26.1 -0.8**
PV01 Paradox Valley 82.57 48 *e*P **P 04 51 21.3 +0.8**
GERES GERESS Array B 83.33 328 P **P 04 51 23.4 -0.6**
comp=Z,0.6nm,0.8s,baz=35,slow=4.9,SNR=5.5
GERES LR LR 05 30 30.5
comp=Z,46nm,19.8s,baz=44,slow=37
S22A 4UR Ranch, Cre 83.87 47 *e*P **P 04 51 28.9 +1.6**
comp=Z,3.4nm,1.0s
X18A Snowflake 84.03 51 *e*P **P 04 51 29.4 +1.4**
comp=Z,3.0nm,0.8s
SDCO Great Sand Dun 84.66 47 *e*P **P 04 51 32.5 +1.2**
comp=Z,2.3nm,0.9s
TUC Tucson 84.89 54 *e*P **P 04 51 33.5 +1.2**
TUC pmax pmax
comp=Z,3.0nm,0.8s
TUC Tucson 84.89 54 *e*P **P 04 51 33.5 +1.2**
comp=Z,3.0nm,0.8s
T25A Trinidad 85.71 47 *e*P **P 04 51 37.5 +1.1**
comp=Z,6.9nm,0.8s
ANMO Albuquerque 85.94 49 P **P 04 51 38.4 +0.8**
comp=Z,2.8nm,0.9s,baz=163,slow=2.7,SNR=13
ANMO Albuquerque 85.94 49 *e*P **P 04 51 38.9 +1.3**
ANMO pmax pmax
comp=Z,3.0nm,0.9s
ANMO Albuquerque 85.94 49 *e*P **P 04 51 38.9 +1.3**
comp=Z,3.2nm,0.9s
BFO Black Forest 85.98 330*ce*P **P 04 51 37.5 +0.2**
TX31 Lajitas Ar. Si 91.45 52 *e*P **P 04 52 04.2 +0.5**
TXAR Lajitas Array 91.45 52 P **P 04 52 04.4 +0.7**
comp=Z,2.1nm,0.7s,baz=298,slow=3.3,SNR=30
JCT Junction City 93.08 49 *e*P **P 04 52 10.7 -0.4**
JCT Junction City 93.08 49 *e*P **P 04 52 10.7 -0.4**
TORD Torodi Ar. Bea 117.63 314 PKP **PKPdf 04 57 42.0 -1.6**
comp=Z,0.3nm,0.9s,baz=24,slow=1.3,SNR=3.2
SAML Samuel 145.63 45 *e*P **PKPdf 04 58 35.6 -0.4**
LPAZ La Paz 147.95 60 PKPbc **PKPdf 04 58 41.4 +0.8**
comp=Z,3.7nm,0.8s,baz=351,slow=3.9,SNR=13
LCO Las Campanas 152.89 84 *e*PKPbc **PKPbc 04 58 54.6 -0.1**

IDC ***17*** *04:48:29.3±1.2,29.°27N×81.°17E,h0km,mb3.5/7, mb1 3.6/9,mb1mx3.4/38,mbtmp3.5/9,ML3.6/1,Error ellipse: s-maj=32.6km s-min=24.5km az=54.0*
ISCJB ***17*** *04:48:32.4±0.8,29.°3N±0.°1×81.°45E±0.°07,h27km,mb3.4/7, Error ellipse: s-maj=16.2km s-min=9.3km az=4.5*
ISC 17 04:48:33.5±0.9,29.°3N±0.°1×81.°31E±0.°07,h27km,n12,
σ1§47/13,mb3.5/7,Nepal

Code	Station Name	Δ°	AZ°	Phase	ID Op	ID ISC	Time h m s	Res ISC
LGTI	**Lohaghat**	**0.95**	**282**	*e*PN		**Pb**	**04 48 51.5**	**+0.2**

LGTI				*e*SN	**Sn**	04 49 07.1	**+3.4**
NDI	**New Delhi**	**3.63**	**262**	*e*P	Pn	04 49 22.5	-5.5
NDI				*e*S	**Sb**	04 50 18.5	**-2.1**
MKAR	**Makanchi Array**	**17.52**	**2**	P	**P**	04 52 36.5	**-0.3**
	0.2nm,0.3s,baz=188,slow=12,SNR=10						
MKAR	**Makanchi Array**	**17.52**	**2**	*e*ScP	**P**	04 52 36.7	**0.0**
CMAR	**Chiang Mai Arr**	**19.36**	**120**	P	**Pn**	04 52 59.5	**+1.2**
	baz=283,slow=8.0,SNR=3.1						
ZALV	**Zalesovo Beam**	**24.80**	**5**	P	**P**	04 53 52.3	**-0.7**
	0.8nm,0.5s,baz=203,slow=11,SNR=5.4						
BVAR	**Borovoye Array**	**25.07**	**344**	P	**P**	04 53 54.9	**-0.6**
	0.3nm,0.3s,baz=167,slow=6.8,SNR=3.2						
SONM	**Songino Array**	**26.81**	**39**	P	**P**	04 54 12.6	**+1.2**
	0.2nm,0.5s,baz=212,slow=5.1,SNR=2.3						
FINES	**FINESS Array B**	**48.25**	**328**	P	**P**	04 57 11.0	**-0.7**
	0.3nm,0.4s,baz=116,slow=6.3,SNR=3.3						
WRA	**Warramunga Arr**	**70.76**	**127**	P	**P**	04 59 47.4	**-0.2**
	0.2nm,0.5s,baz=324,slow=6.0,SNR=2.2						
TORD	**Torodi Ar. Bea**	**74.73**	**277**	P	**P**	05 00 11.4	**0.0**
	0.3nm,0.8s,baz=42,slow=4.8,SNR=2.5						
YKA	**Yellowknife Ar**	**87.68**	**7**	P	**P**	05 01 18.3	**-0.9**
	0.3nm,0.8s,baz=339,slow=4.9,SNR=4.9						

*IDC **17** 04:51:38.5±1.1,53.65N×165.09W,h0km,mb3.8/16, mb1 4.0/17,mb1mx3.8/39,mbtmp3.8/17,ML3.4/1,Error ellipse: s-maj=29.0km s-min=15.7km az=2.0*
*NEIC **17** 04:51:42.8,53.47N×164.85W,h26km,ML3.8(AEIC),After AEIC.*
*ISCJB **17** 04:51:43.6±0.7,53.57N±0.07×164.89W±0.06,h57km±5km, mb3.8/14,Error ellipse: s-maj=12.0km s-min=4.1km az=160.0*

ISC 17 04:51:45.1±1.3,**53.60N**±0.09×**164.95W**±0.04, **h51**km±11km,**n56**,σ0**94**/57,**mb3.9**/14,**Unimak Island region**

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
AKSA	**Akutan Strait**	**0.70**	**321**		P		**Pn**	04 51 58.0	**-0.9**
AKUT	**Akutan**	**0.73**	**318**		P		**Pn**	04 51 58.6	**-0.7**
AKUT					S		**Sn**	04 52 10.7	**+1.2**
ZRO	**Akutan Zero**	**0.79**	**310**		P		**Pn**	04 51 59.4	**-0.7**
AKRB	**Akutan Reef Bi**	**0.85**	**309**		P		**Pn**	04 52 00.3	**-0.6**
AKRB					S		**Sn**	04 52 13.6	**+1.1**
AKGG	**Akutan Green G**	**0.86**	**315**		P		**Pn**	04 52 00.5	**-0.6**
AKGG					S		**Sn**	04 52 14.6	**+1.8**
WESP	**Westdahl Peak**	**0.91**	**8**		P		**Pn**	04 52 01.1	**-0.6**
WECS	**Westdahl Cape**	**0.94**	**6**		P		**Pn**	04 52 01.8	**-0.3**
UNV	**Unalaska Valle**	**0.96**	**286**		P		**Pn**	04 52 00.8	**-1.5**
UNV					S		**Sn**	04 52 14.8	**-0.1**
WEBT	**Westdahl Beart**	**1.00**	**6**		P		**Pn**	04 52 02.7	**-0.2**
MTBL	**Makushin Table**	**1.09**	**291**		P		**Pn**	04 52 03.4	**-0.8**
MSW	**Makushin Switc**	**1.14**	**287**		P		**Pn**	04 52 03.9	**-0.8**
MSW					S		**Sn**	04 52 19.1	**-0.2**
MGOD	**Makushin Gods**	**1.16**	**281**		P		**Pn**	04 52 04.2	**-0.9**
MSOM	**Makushin Julie**	**1.21**	**281**		P		**Pn**	04 52 04.4	**-1.3**
SSLS	**Shishaldin Sou**	**1.25**	**26**		P		**Pn**	04 52 05.1	**-1.2**
SSLW	**Shishaldin Wes**	**1.27**	**22**		P		**Pn**	04 52 05.6	**-1.0**
FALS	**False Pass**	**1.55**	**35**		P		**Pn**	04 52 08.9	**-1.4**
FALS					S		**Sn**	04 52 30.0	**+0.8**
OKER	**Okmok East Rim**	**1.86**	**267**		P		**Pn**	04 52 14.9	**+0.3**
OKTU	**Okmok Mt. Tuli**	**1.86**	**265**		P		**Pn**	04 52 14.5	**-0.1**
OKAK	**Okmok**	**2.03**	**271**		P		**Pn**	04 52 16.8	**-0.1**
DT1	**Dutton Round H**	**2.17**	**45**		P		**Pn**	04 52 18.1	**-0.7**
DTNA	**Dutton South F**	**2.21**	**44**		P		**Pn**	04 52 19.1	**-0.3**
NIKH	**Nikolski High**	**2.43**	**257**		P		**Pn**	04 52 21.6	**-0.7**
NIKH					S		**Sn**	04 52 51.1	**+0.3**
PS4A	**Pavlof South-4**	**2.52**	**45**		P		**Pn**	04 52 24.0	**+0.5**
SDPT	**Sand Point**	**3.15**	**54**		P		**Pn**	04 52 32.1	**0.0**
VNSS	**Veniaminof 8**	**4.12**	**48**		P		**Pn**	04 52 45.6	**-0.1**
CHGN	**Chignik**	**4.64**	**52**	*e*Pn			**Pn**	04 52 51.9	**-0.7**
CHGN				*e*Sn			**Sn**	04 53 44.5	**-0.6**
KDAK	**Kodiak Island**	**8.14**	**54**	Pn			Pn	04 53 54.5	+14
	0.8nm,0.3s,baz=167,slow=4.3,SNR=11								
KDAK					Sn		Sn	04 55 22.3	+11
	baz=321,slow=13,SNR=3.4								
GAMB	**Gambell**	**10.79**	**344**	*e*Pn			**Pn**	04 54 18.8	**+2.2**
	8.4nm,0.6s								
BPAW	**Bear Paw Mtn.**	**12.73**	**29**	*e*Pn			**Pn**	04 54 44.2	**+1.0**
	0.6nm,0.9s								
PAX	**Paxson**	**13.84**	**40**	*e*Pn			**Pn**	04 54 56.7	**-1.7**
	2.1nm,0.7s								
ILAR	**Eielson Array**	**14.46**	**32**	Pn			**Pn**	04 55 04.3	**-2.2**
	0.1nm,0.3s,baz=225,slow=13,SNR=4.4								
DOT	**Dot Lake**	**14.74**	**39**	*e*Pn			**Pn**	04 55 09.1	**-1.2**
	3.6nm,0.5s								
EGAK	**Eagle**	**16.42**	**38**	*e*Pn			**Pn**	04 55 31.3	**-0.4**
	2.9nm,0.9s								
DLBC	**Dease Lake**	**19.95**	**62**	P			**P**	04 56 13.3	**+0.6**
	1.7nm,0.7s,baz=281,slow=12,SNR=7.3								
INK	**Inuvik**	**20.86**	**33**	P			**P**	04 56 20.9	**-1.4**
	0.7nm,0.5s,baz=259,slow=11,SNR=13								
PETK	**Petropavlovsk-**	**22.17**	**284**	P			**P**	04 56 35.4	**-0.8**
	3.7nm,0.9s,baz=92,slow=13,SNR=4.1								
YKA	**Yellowknife Ar**	**27.41**	**51**	P			**P**	04 57 25.5	**+0.1**
	0.9nm,0.9s,baz=276,slow=9.7,SNR=20								
NVAR	**Mina Array Bea**	**35.07**	**96**	P			**P**	04 58 34.4	**+1.1**
	1.6nm,0.7s,baz=292,slow=7.7,SNR=0.8								
PDAR	**Pinedale Array**	**37.58**	**84**	P			**P**	04 58 54.9	**+0.3**
	0.2nm,0.6s,baz=338,slow=3.5,SNR=4.3								
H11N2	**WAKE ISLAND Hy**	**40.14**	**224**	T			T	05 41 59.5	
	baz=25,slow=76,SNR=77								
H11N3	**WAKE ISLAND Hy**	**40.14**	**224**	T			T	05 42 11.9	
	baz=25,slow=76,SNR=71								
H11N1	**WAKE ISLAND Hy**	**40.16**	**224**	T			T	05 42 04.1	
	baz=25,slow=76,SNR=44								
H11S1	**WAKE ISLAND Hy**	**41.31**	**223**	T			T	05 43 30.6	
	baz=25,slow=76,SNR=87								
H11S2	**WAKE ISLAND Hy**	**41.33**	**223**	T			T	05 43 31.7	
	baz=25,slow=76,SNR=80								
H11S3	**WAKE ISLAND Hy**	**41.33**	**223**	T			T	05 43 41.1	
	baz=25,slow=76,SNR=56								
KSRS	**Korea Array**	**47.89**	**279**	P			**P**	05 00 18.5	**+0.7**
	1.5nm,0.8s,baz=45,slow=9.3,SNR=4.5								
KSAR	**Wonju Array Be**	**47.92**	**279**	P			**P**	05 00 18.6	**+0.5**
TXAR	**Lajitas Array**	**50.10**	**93**	P			**P**	05 00 35.7	**+0.7**
	1.4nm,0.6s,baz=303,slow=5.7,SNR=24								
SONM	**Songino Array**	**52.93**	**302**	P			**P**	05 00 55.9	**0.0**
	0.4nm,0.5s,baz=53,slow=7.6,SNR=4.3								
ARCES	**ARCESS Array B**	**56.94**	**356**	P			**P**	05 01 23.2	**-1.2**
	3.8nm,0.9s,baz=16,slow=6.9,SNR=3.7								
MKAR	**Makanchi Array**	**64.85**	**316**	P			**P**	05 02 17.7	**-0.8**
	0.1nm,0.3s,baz=64,slow=3.4,SNR=3.2								
FINES	**FINESS Array B**	**64.97**	**354**	P			**P**	05 02 18.2	**-0.8**
	3.1nm,0.9s,baz=5.0,slow=8.1,SNR=9.6								
NOA	**NORSAR Array B**	**65.67**	**2**	P			**P**	05 02 24.9	**+1.3**
	0.7nm,0.7s,baz=2.1,slow=2.8,SNR=2.9								
AKASG	**Malin Array Be**	**75.39**	**351**	P			**P**	05 03 22.4	**-0.4**
	0.7nm,0.4s,baz=11,slow=5.9,SNR=5.3								
GERES	**GERESS Array B**	**77.93**	**1**	P			**P**	05 03 37.7	**+0.3**
	0.1nm,0.3s,baz=339,slow=10,SNR=3.0								
BRTR	**Keskin Array B**	**85.68**	**346**	P			**P**	05 04 18.4	**+0.1**
	0.4nm,0.4s,baz=4.8,slow=3.5,SNR=3.7								

*ISCJB **17** 04:59:00.9±1.9,43.42N±0.09×147.0E±0.1,h31km±8km, Error ellipse: s-maj=18.2km s-min=7.0km az=138.5*
*JMA **17** 04:59:00.3±0.5,43.56N×146.95E,h17km,M2.8*
*SKHL **17** 04:59:01.5±0.0,43.41N×147.04E,h27km±1km,mb4.4/2*

ISC 17 04:59:00.1±3.4,**43.47N**±0.10×**147.00E**±0.10,**h15**km±17km, **n8**,σ0**90**/14,**Kuril Islands**

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
SHO	**Shikotan**	**0.42**	**343**	*e*P			**Pn**	04 59 11.2	**-0.4**
SHO				AMB			AMB	04 59 11.4	
	230nm,0.3s								
SHO				*i* S			**Sn**	04 59 18.5	**-0.6**
SHO				A			A	04 59 18.9	
	2μm,0.4s								
NEM2	**Nemuro 2**	**0.92**	**264**	P			**Pb**	04 59 17.2	**-0.5**
NEM2				*e*S			**Sb**	04 59 29.1	**-0.6**
YUK	**Yuzh-Kuril'sk**	**1.00**	**305**	*i* P			**Pn**	04 59 19.3	**-0.2**
YUK				AMB			AMB	04 59 21.3	
	40nm,0.3s								
YUK				AMB			AMB	04 59 21.3	
	70nm,0.3s								
YUK				AMB			AMB	04 59 21.3	
	100nm,0.3s								
YUK				*i* S			**Sg**	04 59 32.7	**+0.1**
YUK				A			A	04 59 37.9	
	210nm,0.2s								
YUK				A			A	04 59 37.9	
	80nm,0.2s								
JRA	**Rausu**	**1.44**	**290**	P			**Pn**	04 59 25.4	**-0.2**
JAK	**Akkeshi**	**1.75**	**255**	P			**Pn**	04 59 29.8	**0.0**
JAK				*e*S			**Sn**	04 59 52.2	**+0.5**
KUR	**Kuril'sk**	**1.88**	**19**	*e*P			**Pn**	04 59 32.2	**+0.7**
KUR				*e*S			**Sn**	04 59 54.2	**-0.7**
KUR				A			A	04 59 59.7	
	60nm,0.2s								
KUR				A			A	04 59 59.7	
	30nm,0.2s								
JAR	**Ashorobuto**	**2.36**	**267**	P			**Pn**	04 59 38.6	**+0.4**
JAR				*e*S			**Sn**	05 00 07.3	**+0.4**
YSS	**Yuzh-Sakhalins**	**4.60**	**321**	*e*P			**Pn**	05 00 11.3	**+2.3**

*CSEM **17** 05:10:29.4,45.60N×14.26E,h0km,ML0.6*
LJU 17 05:10:29.4,45.60N×14.26E,h15km,ML0.6, Northwestern Balkan Peninsula

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
KNDS	**Knezji Dol**	**0.11**	**131**	*i* Pg			Pg	05 10 33.0	+0.1
KNDS				*i* Sg			Sb	05 10 35.5	-0.3
KNDS	**Knezji Dol**	**0.11**	**131**	*i* Pg			Pg	05 10 33.0	+0.1
KNDS				*i* Sg			Sg	05 10 35.5	+0.3
CEY	**Cerknica**	**0.18**	**40**	*i* Pg			Pg	05 10 33.9	+0.1
CEY				*i* Sg			Sg	05 10 37.1	+0.3
	comp=Z,3.0nm,0.1s								
CEY	**Cerknica**	**0.18**	**40**	*i* Pg			Pg	05 10 33.9	+0.1
CEY				*i* Sg			Sg	05 10 37.1	+0.4
	comp=Z,3.0nm,0.1s								
SKDS	**Skadanscina**	**0.18**	**253**	*i* Pg			Pg	05 10 33.9	+0.1
SKDS				*i* Sg			Sg	05 10 37.2	+0.4
	comp=Z,2.0nm,0.0s								
SKDS	**Skadanscina**	**0.18**	**253**	*i* Pg			Pg	05 10 33.9	+0.1
SKDS				*i* Sg			Sg	05 10 37.2	+0.5
	comp=Z,2.0nm,0.0s								
JAVS	**Javornik**	**0.32**	**335**	*i* Pg			Pg	05 10 36.3	+0.1
JAVS				*i* Sg			Sb	05 10 41.5	-0.6
JAVS	**Javornik**	**0.32**	**335**	*i* Pg			Pg	05 10 36.3	+0.1
JAVS				*i* Sg			Sb	05 10 41.5	-0.6

*IDC **17** 05:14:53.7±0.6,52.07N×171.43W,h0km,mb4.2/31, mb1 4.3/33,mb1mx4.3/46,mbtmp4.2/33,ML4.1/2,MS3.6/16, Ms1 3.6/16,ms1mx3.4/44,Error ellipse: s-maj=18.4km s-min=10.1km az=173.0*
*BJI **17** 05:14:56.5,52.40N×171.79W,h15km,mb4.8/20, mB4.9/14,Ms4.7/8,Ms7 4.4/5*
*MOS **17** 05:14:58.7±0.9,52.06N×171.48W,h46km,mb4.7/34, Error ellipse: s-maj=9.6km s-min=6.8km az=83.3*
*ISCJB **17** 05:14:59.1±0.4,52.02N±0.05×171.43W±0.03,h48km±3km, mb4.3/92,MS3.7/18,Error ellipse: s-maj=8.1km s-min=2.9km az=167.7*
*NEIC **17** 05:14:59.6,51.88N×171.34W,h38km,mb4.3/63, ML4.4(AEIC),After AEIC.*

ISC 17 05:14:59.7±0.5,**51.92N**±0.08×**171.32W**±0.03,**h44**km±4km, **h44**km:**pP-P**,**n260**,σ1**31**/275,**mb4.4**/92,**MS3.6**/18,**5C-2D**, **Fox Islands**

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
KOSE	**Korovin Southe**	**1.73**	**285**		P		**Pn**	05 15 27.4	**0.0**
KOFP	**Korovin Flat P**	**1.75**	**283**		P		**Pn**	05 15 27.1	**-0.5**
ATKA	**Atka Island**	**1.80**	**280**		P		**Pn**	05 15 26.5	**-1.7**
ATKA					S		**Sn**	05 15 52.3	**+2.6**
KOKL	**Mount Kliuchef**	**1.82**	**284**		P		**Pn**	05 15 28.2	**-0.3**
NIKH	**Nikolski High**	**1.85**	**54**		P		**Pn**	05 15 27.6	**-1.2**
NIKH					S		**Sn**	05 15 53.8	**+2.8**
KOWE	**Korovin West**	**1.86**	**285**		P		**Pn**	05 15 29.1	**0.0**
OKAK	**Okmok**	**2.45**	**46**		P		**Pn**	05 15 35.8	**-1.4**
OKTU	**Okmok Mt. Tuli**	**2.48**	**52**		P		**Pn**	05 15 37.9	**+0.3**
OKER	**Okmok East Rim**	**2.52**	**51**		P		**Pn**	05 15 38.3	**+0.2**
GSMY	**Great Sitkin M**	**2.93**	**274**		P		**Pn**	05 15 43.3	**-0.4**
GSTD	**Great Sitkin T**	**2.98**	**275**		P		**Pn**	05 15 44.3	**-0.2**
GSTD					S		**Sn**	05 16 21.7	**+2.6**
GSCK	**Great Sitkin C**	**2.99**	**274**		P		**Pn**	05 15 44.4	**-0.3**
ETKA	**Kagalaska Isla**	**3.15**	**271**		P		**Pn**	05 15 46.6	**-0.2**
MSOM	**Makushin Julie**	**3.26**	**53**		P		**Pn**	05 15 48.1	**-0.2**
MSOM	**Makushin Julie**	**3.26**	**53**		P		**Pn**	05 15 48.1	**-0.2**
ADAG	**Mount Adagdak**	**3.27**	**273**		P		**Pn**	05 15 48.6	**+0.2**
MTBL	**Makushin Table**	**3.48**	**52**		P		**Pn**	05 15 50.8	**-0.6**
UNV	**Unalaska Valle**	**3.50**	**55**		S		**Sn**	05 16 34.9	**+3.2**
KIRH	**Kanaga Island**	**3.57**	**272**		P		**Pn**	05 15 52.3	**-0.3**
KIKV	**Kanaga Island**	**3.62**	**272**		P		**Pn**	05 15 53.1	**-0.1**
KICM	**Kanaga Island**	**3.63**	**272**		P		**Pn**	05 15 53.2	**-0.2**
AKRB	**Akutan Reef Bi**	**3.87**	**53**		P		**Pn**	05 15 57.2	**+0.6**
ZRO	**Akutan Zero**	**3.90**	**54**		P		**Pn**	05 15 57.7	**+0.7**
AKUT	**Akutan**	**4.02**	**54**	*e*Pn			**Pn**	05 16 00.7	**+2.0**
TAPA	**Tanaga Point A**	**4.02**	**271**		P		**Pn**	05 15 58.8	**0.0**
TAFL	**Tanaga Flats**	**4.08**	**270**		P		**Pn**	05 16 00.2	**+0.7**
TAFP	**Tanaga Falls P**	**4.12**	**272**		P		**Pn**	05 16 00.5	**+0.4**
SSLW	**Shishaldin Wes**	**5.18**	**54**		P		**Pn**	05 16 15.2	**+0.6**
FALS	**False Pass**	**5.57**	**55**	*e*Pn			**Pn**	05 16 23.1	**+3.2**
DT1	**Dutton Round H**	**6.27**	**56**		P		**Pn**	05 16 29.4	**-0.1**
DTNA	**Dutton South F**	**6.30**	**56**		P		**Pn**	05 16 30.1	**+0.1**
SDPT	**Sand Point**	**7.31**	**58**		P		**Pn**	05 16 44.2	**+0.5**
CHGN	**Chignik**	**8.76**	**55**	*e*Pn			**Pn**	05 17 02.8	**-0.9**
GAMB	**Gambell**	**11.90**	**359**	*e*Pn			**Pn**	05 17 47.4	**+1.0**
KDAK	**Kodiak Island**	**12.27**	**54**	Pn			P	05 18 04.4	+1.6
	1.2nm,0.3s,baz=242,slow=4.3,SNR=20								
KDAK					Sn		Sn	05 20 17.0	+10
	0.2nm,0.3s,baz=302,slow=19,SNR=2.3								
SVW2	**Sparrevohn**	**12.62**	**37**	*e*Pn			Pn	05 18 00.3	+3.9
RSO	**Redoubt South**	**13.38**	**43**	*e*Pn			**Pn**	05 18 08.0	**+1.1**
TT01	**Tatalina**	**13.71**	**31**	*e*Pn			**Pn**	05 18 13.3	**+2.1**
TTA	**Tatalina**	**13.73**	**31**	*e*P			**Pn**	05 18 13.1	**+1.5**
TTA	**Tatalina**	**13.73**	**31**	*e*Pn			**Pn**	05 18 13.1	**+1.5**
SEW	**Seward**	**14.67**	**47**	*e*Pn			**Pn**	05 18 21.5	**-2.5**
SEW				*e*Sn			S	05 21 13.7	-8.7
RC01	**Rabbit Creek A**	**14.98**	**44**	*e*Pn			**Pn**	05 18 27.0	**-1.2**
RC01				*es*P			**P**	05 18 33.8	**+0.9**
CAST	**Castle Rocks**	**15.37**	**34**	*e*Pn			**P**	05 18 35.4	**-1.9**
	6.9nm,0.6s								
KTH	**Kantishna Hill**	**15.86**	**35**	*e*Pn			**Pn**	05 18 40.9	**+1.3**
	12nm,1.0s								
SML	**Sawmill**	**15.91**	**43**	*e*P			**Pn**	05 18 40.6	**+0.3**
SML				pmax			pmax		
	comp=Z,8.0nm,0.8s								
SML	**Sawmill**	**15.91**	**43**	*e*Pn			**Pn**	05 18 40.6	**+0.3**
	comp=Z,7.7nm,0.8s								
TRF	**Thorofare Moun**	**16.03**	**36**	*e*Pn			**P**	05 18 46.6	**+1.9**
	comp=Z,57nm,2.0s								
BPAW	**Bear Paw Mtn.**	**16.18**	**33**	*e*Pn			**P**	05 18 45.5	**-0.8**
	comp=Z,7.1nm,0.7s								
SCM	**Sheep Creek Mo**	**16.35**	**43**	*e*P			**Pn**	05 18 45.2	**-0.6**
SCM				*e*				05 21 52.1	
SCM				pmax			pmax		
	comp=Z,23nm,1.1s								
SCM	**Sheep Creek Mo**	**16.35**	**43**	*e*Pn			**Pn**	05 18 45.2	**-0.6**
	comp=Z,22nm,1.1s								
SCM				*e*Sn			**S**	05 21 52.1	**-4.7**
RND	**Reindeer**	**16.53**	**37**	*e*P			**P**	05 18 51.2	**+1.0**
RND				pmax			pmax		
	comp=Z,8.0nm,1.0s								
RND	**Reindeer**	**16.53**	**37**	*e*Pn			**P**	05 18 51.2	**+1.0**
	comp=Z,7.7nm,1.0s								
MCK	**McKinley**	**16.68**	**36**	*e*P			**Pn**	05 18 50.9	**+0.9**
MCK				pmax			pmax		
	comp=Z,12nm,1.0s								
MCK	**McKinley**	**16.68**	**36**	*e*Pn			**Pn**	05 18 50.9	**+0.9**
	comp=Z,12nm,1.0s								
KLU	**Klutina**	**16.81**	**45**	*e*Pn			**Pn**	05 18 49.3	**-2.4**
	comp=Z,5.5nm,0.7s								
KLU				*e*Sn			**S**	05 22 02.2	**-4.2**
MLY	**Manley**	**16.87**	**31**	*e*Pn			**Pn**	05 18 53.0	**+0.6**
	comp=Z,8.7nm,1.0s								
DHY	**Denali Highway**	**16.92**	**39**	*e*Pn			**Pn**	05 18 53.7	**+0.6**
	comp=Z,10nm,1.3s								
RAGM	**Ragged Mountai**	**16.99**	**50**	*e*Pn			**Pn**	05 18 52.2	**-1.6**
	comp=Z,7.6nm,0.7s								
BMRM	**Bremner River**	**17.21**	**48**	*e*Pn			**Pn**	05 18 54.6	**-2.1**
	comp=Z,7.6nm,0.7s								
WRH	**Wood River Hil**	**17.41**	**35**	*e*Pn			**Pn**	05 18 58.7	**-0.3**
	comp=Z,9.9nm,1.3s								
CCB	**Clear Creek Bu**	**17.61**	**35**	*e*Pn			**Pn**	05 19 00.0	**-1.5**
	comp=Z,14nm,1.5s								
PAX	**Paxson**	**17.63**	**41**	*e*P			**Pn**	05 19 01.9	**0.0**
PAX				pmax			pmax		
	comp=Z,11nm,1.4s								
PAX	**Paxson**	**17.63**	**41**	*e*Pn			**Pn**	05 19 01.9	**0.0**
	comp=Z,11nm,1.4s								
MDM	**Murphy Dome**	**17.65**	**33**	*e*Pn			**P**	05 19 05.4	**+2.9**
	comp=Z,4.3nm,0.7s								
COLA	**College**	**17.73**	**34**	*e*P			**P**	05 19 06.4	**+3.1**
ILAR	**Eielson Array**	**18.01**	**35**	P			**Pn**	05 19 03.2	**-3.2**
	comp=Z,0.4nm,0.3s,baz=224,slow=9.3,SNR=15								
ILB	**Eielson Array**	**18.01**	**35**	*e*Pn			**Pn**	05 19 06.4	**0.0**
IL1	**Eielson Array**	**18.01**	**35**	*e*Pn			**P**	05 19 06.5	**0.0**
PET	**Petropavlovsk**	**18.27**	**285**	*e*P			**Pn**	05 19 13.9	**+4.4**
PET				MLR			MLR		
	comp=Z,100nm,18.0s								
MENT	**Mentasta**	**18.34**	**42**	*e*P			Pn	04 05 19 16.4	+5.9
	comp=Z,5.7nm,0.4s								
COLD	**Coldfoot**	**18.54**	**26**	*e*P			**Pn**	05 19 16.5	**+3.6**
	comp=Z,3.1nm,0.8s								
PETK	**Petropavlovsk-**	**18.82**	**286**	P			**P**	05 19 15.1	**-0.4**
	comp=Z,1.6nm,0.3s,baz=96,slow=14,SNR=13								
PETK				LR			LR	05 25 49.7	
	comp=Z,71nm,21.2s,baz=93,slow=35								
BILL	**Bilibino**	**19.47**	**335**	*e*P			**P**	05 19 21.2	**-1.2**
BILL				pmax			pmax		
	comp=Z,15nm,1.0s								
BILL	**Bilibino**	**19.47**	**335**	*e*P			**Pn**	05 19 23.1	**-0.8**
	comp=Z,16nm,1.0s								
EGAK	**Eagle**	**20.14**	**39**	*e*P			**P**	05 19 28.8	**-1.0**
	comp=Z,5.8nm,0.8s								
SKAG	**Skagway**	**21.42**	**55**	*e*P			**P**	05 19 44.6	**+1.1**
	comp=Z,13nm,0.8s								
SEY	**Seymchan**	**22.10**	**314**	P			**P**	05 19 48.6	**-2.3**
	comp=Z,1.7nm,0.3s,baz=119,slow=9.9,SNR=6.8								
SEY	**Seymchan**	**22.10**	**314**	*e*P			**P**	05 19 50.0	**-0.8**
MA2	**Magadan**	**22.40**	**305**	P			**P**	05 19 53.7	**-0.4**
	comp=Z,2.4nm,0.3s,baz=131,slow=12,SNR=4.2								
DLBC	**Dease Lake**	**24.15**	**58**	P			**P**	05 20 12.2	**+0.8**
	comp=Z,7.2nm,0.6s,baz=234,slow=7.8,SNR=23								
DLBC	**Dease Lake**	**24.15**	**58**	*e*P			**P**	05 20 13.8	**+2.5**
	comp=Z,15nm,0.8s								
INK	**Inuvik**	**24.39**	**33**	P			**P**	05 20 12.2	**-1.2**
	comp=Z,3.9nm,0.5s,baz=238,slow=9.0,SNR=70								
INK				PcP			**PcP**	05 23 51.4	**+0.2**
	comp=Z,0.6nm,0.4s,baz=122,slow=1.2,SNR=4.1								
INK	**Inuvik**	**24.39**	**33**	*e*P			**P**	05 20 12.6	**-0.7**
INK				PcP			**PcP**	05 23 51.4	**+0.2**
ASAJ	**Asahikawa**	**31.34**	**274**	P			**P**	05 21 15.9	**+0.2**
	comp=Z,9.4nm,0.7s,baz=58,slow=13,SNR=11								
YKA	**Yellowknife Ar**	**31.44**	**48**	P			**P**	05 21 16.4	**0.0**
	comp=Z,1.2nm,0.3s,baz=275,slow=9.2,SNR=57								
YKA				PcP			**PcP**	05 24 09.3	**+0.8**
	comp=Z,0.3nm,0.6s,baz=283,slow=2.5,SNR=4.3								
YKB5	**Yellowknife Ar**	**31.44**	**48**	*e*P			**P**	05 21 15.6	**-0.8**
TIXI	**Tiksi**	**32.51**	**329**	P			**P**	05 21 25.2	**-0.4**
	comp

O20A	**White River Ci**	**44.02**	**80**	*e*P		**P**	**05 23 03.8**	**+0.8**
	comp=Z,9.1nm,0.9s								
KSRS	**Korea Array**	**44.26**	**276**	P		**P**	**05 23 04.5**	**0.0**
	comp=Z,4.4nm,0.9s,baz=59,slow=7.1,SNR=7.6								
KS01	**Wonju Array Si**	**44.26**	**276**	*e*P		**P**	**05 23 04.8**	**+0.2**
KSAR	**Wonju Array Be**	**44.29**	**276**	P		**P**	**05 23 04.6**	**-0.3**
KSAR	**Wonju Array Be**	**44.29**	**276**	P		**P**	**05 23 04.5**	**-0.3**
PV10	**Paradox Valley**	**44.62**	**82**	*e*P		**P**	**05 23 09.3**	**+1.5**
WUAZ	**Wupatki**	**45.00**	**87**	*e*P		**P**	**05 23 12.2**	**+1.4**
WUAZ				*e*pP		**pP**	**05 23 24.0**	**+1.1**
PV01	**Paradox Valley**	**45.06**	**82**	*e*P		**P**	**05 23 12.0**	**+0.7**
JNU	**Nakatsue**	**45.25**	**269**	P		**P**	**05 23 12.2**	**-0.4**
	comp=Z,6.8nm,1.0s,baz=347,slow=4.2,SNR=5.7								
JNU				LR		LR	05 40 08.8		
	comp=Z,75nm,21.2s,baz=112,slow=34								
ULM	**Lac du Bonnet**	**45.42**	**61**	P		**P**	**05 23 14.5**	**+0.8**
	comp=Z,2.2nm,0.5s,baz=282,slow=7.3,SNR=3.6								
ULM				LR		LR	05 43 52.6		
	comp=Z,44nm,18.6s,baz=16,slow=38								
X16A	**Lo Mia Camp, P**	**45.68**	**88**	*e*P		**P**	**05 23 16.9**	**+0.7**
	comp=Z,16nm,2.0s								
NRIK	**Noril'sk**	**46.24**	**331**	LR		LR	05 44 16.7		
	comp=Z,58nm,18.8s,baz=107,slow=38								
AGMN	**Agassiz Nation**	**46.51**	**63**	*e*P		**P**	**05 23 24.8**	**+2.5**
	comp=Z,25nm,1.8s								
TUC	**Tucson**	**47.50**	**90**	*e*P		**P**	**05 23 31.0**	**+0.6**
TUC				pmax		pmax			
	comp=Z,2.0nm,0.8s								
TUC	**Tucson**	**47.50**	**90**	*e*P		**P**	**05 23 31.0**	**+0.6**
	comp=Z,2.4nm,0.8s								
T25A	**Trinidad**	**48.24**	**80**	*e*P		**P**	**05 23 38.0**	**+1.8**
	comp=Z,12nm,1.4s								
T25A				*e*pP		**pP**	**05 23 45.4**	**-3.0**
ECSD	**EROS Data Cent**	**48.76**	**68**	*e*P		**P**	**05 23 39.4**	**-0.5**
	comp=Z,4.4nm,0.6s								
EYMN	**Ely**	**49.10**	**61**	*e*P		**P**	**05 23 43.3**	**+0.9**
	comp=Z,61nm,1.8s								
TLY	**Talaya**	**49.63**	**305**	P		**P**	**05 23 45.9**	**-0.5**
	comp=Z,1.3nm,0.4s,baz=22,slow=8.5,SNR=5.2								
TLY	**Talaya**	**49.63**	**305**	*e*P		**P**	**05 23 46.3**	**-0.1**
TLY				pmax		pmax			
	comp=Z,4.0nm,0.8s								
TLY				MLR		MLR			
	comp=Z,64nm,18.0s								
TLY	**Talaya**	**49.63**	**305**	*e*P		**P**	**05 23 46.6**	**+0.2**
	comp=Z,4.4nm,0.9s								
BJI	**Beijing**	**49.76**	**286**	P		**P**	**05 23 45.9**	**-1.5**
BJI				pmax		pmax			
	comp=Z,8.0nm,0.9s								
BJI				pmax		pmax			
	comp=Z,79nm,6.1s								
BJI				LR		LR			
	comp=Z,89nm,7.8s								
BJI				LR		LR			
	comp=Z,130nm,5.7s								
SPITS	**Spitsbergen Ar**	**50.09**	**358**	P		**P**	**05 23 47.6**	**-1.9**
ULN	**Ulaanbaatar**	**50.12**	**300**	*e*P		**P**	**05 23 49.7**	**-0.6**
ULN				pmax		pmax			
	comp=Z,4.0nm,0.9s								
ULN	**Ulaanbaatar**	**50.12**	**300**	*e*P		**P**	**05 23 49.7**	**-0.6**
	comp=Z,3.6nm,0.9s								
SONA1	**Songino Array**	**50.48**	**300**	*e*P		**P**	**05 23 52.9**	**-0.1**
SONM	**Songino Array**	**50.49**	**300**	P		**P**	**05 23 53.0**	**-0.1**
	comp=Z,1.6nm,0.5s,baz=54,slow=7.7,SNR=8.5								
SONM				PcP		**PcP**	**05 25 11.2**	**+0.6**
	comp=Z,0.6nm,0.4s,baz=84,slow=1.5,SNR=4.0								
SONM				ScP		**ScP**	**05 29 04.5**	**+1.8**
	comp=Z,0.4nm,0.5s,baz=36,slow=5.4,SNR=3.4								
SONM				LR		LR	05 45 46.2		
	comp=Z,137nm,19.9s,baz=82,slow=37								
SUMG	**Summit**	**51.56**	**16**	*e*P		**P**	**05 24 00.5**	**-0.6**
SUMG				pmax		pmax			
	comp=Z,11nm,1.1s								
SUMG	**Summit**	**51.56**	**16**	*e*P		**P**	**05 24 00.5**	**-0.6**
	comp=Z,11nm,1.1s								
HHC	**Hu-ho-hao-te**	**51.95**	**290**	*e*P		**P**	**05 24 05.3**	**+1.2**
HHC				pP		pP	05 24 16.1	-0.4
HHC				sP		sP	05 24 19.5	-2.1
HHC				S		**S**	**05 31 23.3**	**-0.7**
HHC				pmax		pmax			
	comp=Z,18nm,0.7s								
HHC				pmax		pmax			
	comp=Z,90nm,8.5s								
HHC				LR		LR			
	comp=Z,380nm,13.6s								
HHC				LR		LR			
	comp=Z,580nm,13.6s								
WMOK	**Wichita Mounta**	**53.25**	**79**	*e*P		**P**	**05 24 15.0**	**+1.3**
WMOK				pmax		pmax			
	comp=Z,6.0nm,0.8s								
WMOK	**Wichita Mounta**	**53.25**	**79**	*e*P		**P**	**05 24 15.0**	**+1.3**
	comp=Z,6.0nm,0.8s								
TX31	**Lajitas Ar. Si**	**53.97**	**87**	*e*P		**P**	**05 24 19.6**	**+0.6**
TXAR	**Lajitas Array**	**53.97**	**87**	P		**P**	**05 24 19.5**	**+0.4**
	comp=Z,1.5nm,0.6s,baz=299,slow=5.4,SNR=21								
TXAR				PcP		**PcP**	**05 25 24.6**	**+0.7**
	comp=Z,0.6nm,0.5s,baz=287,slow=1.9,SNR=4.7								
TXAR				LR		LR	05 45 41.7		
	comp=Z,45nm,18.8s,baz=0.0,slow=34								
SCHQ	**Schefferville**	**56.59**	**42**	P		**P**	**05 24 38.2**	**+0.7**
	comp=Z,6.2nm,1.0s,baz=295,slow=9.0,SNR=4.0								
ZALV	**Zalesovo Beam**	**56.94**	**317**	LR		LR	05 50 20.1		
	comp=Z,75nm,20.1s,baz=70,slow=38								
ARCES	**ARCESS Array B**	**58.23**	**353**	P		**P**	**05 24 47.0**	**-1.8**
	comp=Z,2.3nm,0.6s,baz=12,slow=7.1,SNR=14								
ARCES				LR		LR	05 53 44.5		
	comp=Z,27nm,18.8s,baz=286,slow=40								
GTA	**Gaotai**	**59.60**	**296**	*e*P		**P**	**05 24 58.0**	**-1.0**
GTA				pP		pP	05 25 02.5	-9.1
GTA				sP		sP	05 25 04.9	-12
GTA				pmax		pmax			
	comp=Z,7.0nm,1.3s								
KURK	**Kurchatov**	**61.90**	**317**	*e*P		**P**	**05 25 13.6**	**-0.6**
KURK				pmax		pmax			
	comp=Z,7.0nm,0.9s								
KURK	**Kurchatov**	**61.90**	**317**	*e*P		**P**	**05 25 13.6**	**-0.6**
	comp=Z,7.1nm,0.9s								
BLA	**Blacksburg**	**62.29**	**64**	*e*P		**P**	**05 25 17.3**	**+0.1**
BLA	**Blacksburg**	**62.29**	**64**	*e*P		**P**	**05 25 17.3**	**+0.1**
WMQ	**Urumqi**	**62.85**	**307**	*e*P		**P**	**05 25 23.0**	**+2.2**
WMQ				pmax		pmax			
	comp=Z,4.0nm,0.8s								
WMQ				pmax		pmax			
	comp=Z,30nm,3.8s								
WMQ				LR		LR			
	comp=Z,21nm,19.4s								
WMQ				LR		LR			
	comp=Z,35nm,21.6s								
MK31	**Makanchi Array**	**63.23**	**312**	*e*P		**P**	**05 25 22.3**	**-1.0**
MK31	**Makanchi Array**	**63.23**	**312**	*e*P		**P**	**05 25 22.2**	**-1.0**
MKAR	**Makanchi Array**	**63.23**	**312**	P		**P**	**05 25 21.0**	**-2.2**
	comp=Z,1.6nm,0.4s,baz=54,slow=6.2,SNR=17								
MKAR				LR		LR	05 55 43.8		
	comp=Z,28nm,18.1s,baz=26,slow=39								
MKAR	**Makanchi Array**	**63.23**	**312**	*ce*P		**P**	**05 25 21.8**	**-1.4**
MKAR				pmax		pmax			
	comp=Z,2.0nm,0.4s								
MKAR	**Makanchi Array**	**63.23**	**312**	*e*P		**P**	**05 25 22.2**	**-1.0**
MK01	**Makanchi Array**	**63.24**	**312**	*e*P		**P**	**05 25 21.6**	**-1.7**
CD2	**Chengdu**	**63.35**	**287**	P		**P**	**05 25 22.8**	**-1.5**
MAKZ	**Makanchi**	**63.36**	**313**	*e*P		**P**	**05 25 23.3**	**-0.8**
MAKZ				pmax		pmax			
	comp=Z,3.0nm,0.8s								
MAKZ	**Makanchi**	**63.36**	**313**	*e*P		**P**	**05 25 23.3**	**-0.8**
	comp=Z,2.6nm,0.8s								
BRVK	**Borovoye**	**63.37**	**324**	*e*P		**P**	**05 25 24.1**	**+0.1**
BRVK				pmax		pmax			
	comp=Z,3.0nm,0.6s								
BRVK	**Borovoye**	**63.37**	**324**	*e*P		**P**	**05 25 24.1**	**+0.1**
	comp=Z,2.7nm,0.6s								
ZRNK	**Zerenda**	**63.92**	**324**	*e*P		**P**	**05 25 27.3**	**-0.4**
ZRNK				pmax		pmax			
	comp=Z,10.0nm,0.4s								
ZRNK	**Zerenda**	**63.92**	**324**	*e*P		**P**	**05 25 27.3**	**-0.4**
	comp=Z,9.7nm,0.4s								
ARU	**Arti**	**64.46**	**332**	*d i*P		**P**	**05 25 29.6**	**-1.5**
ARU							05 26 00.9		
ARU							05 27 47.9		
ARU				S		**S**	**05 34 09.1**	**+2.8**
ARU				SS		**SS**	**05 38 18.4**	**+2.4**
ARU				pmax		pmax			
	comp=Z,5.0nm,0.8s								
ARU	**Arti**	**64.46**	**332**	*e*P		**P**	**05 25 30.0**	**-1.1**
	comp=Z,5.2nm,0.9s								
FINES	**FINESS Array B**	**66.14**	**351**	P		**P**	**05 25 40.0**	**-1.8**
	comp=Z,0.8nm,0.3s,baz=6.8,slow=8.5,SNR=21								
FINES				LR		LR	05 55 13.9		
	comp=Z,50nm,20.6s,baz=12,slow=37								
NB2	**NORSAR Subarra**	**67.38**	**359**	P		**P**	**05 25 49.2**	**-0.6**
	comp=Z,2.0nm,0.8s,baz=0.2,slow=6.2								
NOA	**NORSAR Array B**	**67.38**	**359**	P		**P**	**05 25 49.2**	**-0.6**
	comp=Z,0.9nm,0.6s,baz=1.5,slow=6.4,SNR=5.4								
TKM2	**Tokmak 2**	**69.25**	**314**	*e*P		**P**	**05 26 01.8**	**-0.3**
TKM2				pmax		pmax			
	comp=Z,4.0nm,0.9s								
TKM2	**Tokmak 2**	**69.25**	**314**	*e*P		**P**	**05 26 01.8**	**-0.3**
	comp=Z,3.7nm,0.9s								
FRU	**Bishkek**	**69.75**	**314**	*e*P		**P**	**05 26 05.0**	**+0.1**
AAK	**Ala-Archa**	**69.97**	**314**	*e*P		**P**	**05 26 06.3**	**-0.1**
AAK				pmax		pmax			
	comp=Z,7.0nm,1.0s								
AAK	**Ala-Archa**	**69.97**	**314**	*e*P		**P**	**05 26 06.3**	**-0.1**
	comp=Z,6.5nm,1.0s								
ABKAR	**Akbulak array**	**70.17**	**327**	*e*P		**P**	**05 26 07.0**	**-0.4**
	comp=Z,1.3nm,0.3s								
EKS2	**Erkin-Say**	**70.26**	**315**	*e*P		**P**	**05 26 08.2**	**0.0**
EKS2				pmax		pmax			
	comp=Z,3.0nm,0.6s								
EKS2	**Erkin-Say**	**70.26**	**315**	*e*P		**P**	**05 26 08.2**	**0.0**
	comp=Z,2.9nm,0.6s								
PMG	**Port Moresby**	**70.72**	**224**	*ce*P		P	05 26 06.2	-4.8
PMG				pmax		pmax			
	comp=Z,46nm,1.7s								
KKAR	**Karatay Array**	**71.31**	**317**	*e*P		**P**	**05 26 13.7**	**-0.7**
KKAR	**Karatay Array**	**71.31**	**317**	*e*P		**P**	**05 26 13.7**	**-0.7**
LSA	**Lhasa**	**71.55**	**295**	*e*P		**P**	**05 26 17.7**	**+1.1**
LSA				pmax		pmax			
	comp=Z,7.0nm,0.6s								
LSA	**Lhasa**	**71.55**	**295**	*e*P		**P**	**05 26 17.7**	**+1.1**
	comp=Z,6.7nm,0.6s								
CHTO	**Chiang Mai**	**75.26**	**282**	*e*P		**P**	**05 26 38.4**	**+0.4**
CHTO				pmax		pmax			
	comp=Z,3.0nm,0.8s								
CHTO	**Chiang Mai**	**75.26**	**282**	*e*P		**P**	**05 26 38.4**	**+0.4**
	comp=Z,2.5nm,0.8s								
CMAR	**Chiang Mai Arr**	**75.53**	**281**	P		**P**	**05 26 39.6**	**+0.1**
	comp=Z,2.4nm,0.7s,baz=26,slow=6.8,SNR=21								
CMAR				LR		LR	06 02 00.6		
	comp=Z,70nm,18.7s,baz=229,slow=38								
CM01	**Chiang Mai Arr**	**75.55**	**281**	*e*P		**P**	**05 26 39.7**	**0.0**
GUN	**Gumba**	**75.87**	**297**	*e*P		**P**	**05 26 42.0**	**+0.2**
AKASG	**Malin Array Be**	**76.28**	**347**	P		**P**	**05 26 41.3**	**-2.0**
	comp=Z,0.4nm,0.3s,baz=13,slow=5.7,SNR=5.4								
AKASG	**Malin Array Be**	**76.28**	**347**	*ce*P		**P**	**05 26 41.7**	**-1.6**
GKN	**Gorkha**	**76.48**	**298**	*e*P		**P**	**05 26 44.9**	**-0.1**
DMN	**Daman**	**76.53**	**297**	*e*P		**P**	**05 26 45.5**	**0.0**
CLL	**Collm**	**77.09**	**357**	*e*P		**P**	**05 26 47.0**	**-0.8**
CLL	**Collm**	**77.09**	**357**	*e*P		**P**	**05 26 47.0**	**-0.8**
KOLN	**Koldanda**	**77.22**	**299**	*e*P		**P**	**05 26 49.1**	**-0.2**
PYUN	**Piuthan**	**77.30**	**299**	*e*P		**P**	**05 26 49.4**	**-0.3**
MOX	**Moxa**	**77.78**	**358**	P		**P**	**05 26 53.0**	**+1.2**
MOX				pmax		pmax			
	comp=Z,11nm,1.2s								
STHS	**Stebnicka Huta**	**78.48**	**352**	*e*P		**P**	**05 26 56.4**	**+0.7**
STHS				pmax		pmax			
	comp=Z,2.0nm,1.0s								
STHS	**Stebnicka Huta**	**78.48**	**352**	*e*P		**P**	**05 26 56.4**	**+0.7**
CRVS	**Cervenica-Dubn**	**78.97**	**351**	*e*P		**P**	**05 26 59.9**	**+1.5**
CRVS	**Cervenica-Dubn**	**78.97**	**351**	*e*P		**P**	**05 26 59.9**	**+1.5**
GERES	**GERESS Array B**	**79.53**	**357**	P		**P**	**05 27 01.6**	**+0.1**
	comp=Z,1.2nm,0.8s,baz=15,slow=5.5,SNR=12								
GEA0	**GERESS Array S**	**79.53**	**357**	*e*P		**P**	**05 27 01.1**	**-0.4**
LDF	**La Druitiere**	**79.59**	**6**	*e*P		**P**	**05 27 01.1**	**-0.6**
LDF				pmax		pmax			
	comp=Z,3.0nm,0.6s								
VYHS	**Vyhne**	**79.59**	**353**	*e*P		**P**	**05 27 01.9**	**+0.1**
VYHS	**Vyhne**	**79.59**	**353**	*e*P		**P**	**05 27 01.9**	**+0.1**
CDF	**Champ du Feu**	**80.04**	**1**	*e*P		**P**	**05 27 04.6**	**+0.3**
CDF				pmax		pmax			
	comp=Z,14nm,1.8s								
KBZ	**Khabaz**	**80.24**	**336**	P		**P**	**05 27 04.5**	**-0.8**
	comp=Z,1.5nm,1.0s,baz=348,slow=7.6,SNR=4.0								
KBZ				LR		LR	06 06 33.7		
	comp=Z,52nm,19.0s,baz=36,slow=39								
CONA	**Conrad Observa**	**80.34**	**355**	*i* P		**P**	**05 27 06.6**	**+0.6**
	comp=Z,4.7nm,1.2s								
GEYT	**Alibeck**	**80.67**	**322**	P		**P**	**05 27 07.5**	**-0.3**
	comp=Z,0.8nm,0.3s,baz=174,slow=1.3,SNR=2.6								
GEYT				LR		LR	06 07 01.4		
	comp=Z,57nm,18.2s,baz=45,slow=39								
RETA	**Reutte**	**80.96**	**359**	*i* P		**P**	**05 27 09.7**	**+0.5**
	comp=Z,5.3nm,1.3s								
ARSA	**Arzberg**	**81.04**	**355**	*i* P		**P**	**05 27 10.3**	**+0.7**
	comp=Z,4.2nm,1.2s								
WATA	**Walderalm**	**81.09**	**358**	*i* P		**P**	**05 27 10.3**	**+0.2**
	comp=Z,3.3nm,0.9s								
LOR	**Lormes**	**81.11**	**3**	*e*P		**P**	**05 27 09.5**	**-0.5**
LOR				pmax		pmax			
	comp=Z,2.0nm,0.7s								
KBA	**Koelnbreinsper**	**81.30**	**357**	*i* P		**P**	**05 27 12.2**	**+1.0**
	comp=Z,5.2nm,0.7s								
FETA	**Feten**	**81.43**	**359**	*e*P		**P**	**05 27 12.5**	**+0.7**
	comp=Z,4.5nm,1.1s								
MFF	**Saint Martin d**	**81.57**	**6**	*e*P		**P**	**05 27 12.6**	**+0.2**
MFF				pmax		pmax			
	comp=Z,6.0nm,0.8s								
SOKA	**Soboth**	**81.63**	**356**	*i* P		**P**	**05 27 13.2**	**+0.4**
	comp=Z,6.4nm,1.2s								
LPG	**La Plagne**	**82.95**	**1**	*e*P		**P**	**05 27 22.3**	**+2.3**
LPG				pmax		pmax			
	comp=Z,8.0nm,1.5s								
VIVF	**Saint-Julien-l**	**83.55**	**3**	*e*P		**P**	**05 27 24.1**	**+1.4**
VIVF				pmax		pmax			
	comp=Z,3.0nm,1.0s								
WRA	**Warramunga Arr**	**85.78**	**230**	P		**P**	**05 27 33.6**	**-0.6**
	comp=Z,0.6nm,0.5s,baz=35,slow=6.3,SNR=5.5								
BRTR	**Keskin Array B**	**86.17**	**341**	P		**P**	**05 27 35.7**	**-0.5**
	comp=Z,0.3nm,0.3s,baz=38,slow=5.4,SNR=3.2								
BRTR				LR		LR	06 09 40.2		
	comp=Z,19nm,21.9s,baz=24,slow=38								
PSI	**Prapat**	**87.66**	**272**	*e*P		**P**	**05 27 44.6**	**+0.9**
PSI				*e*'PP		**pP**	**05 27 57.6**	**+0.7**
PSI	**Prapat**	**87.66**	**272**	*e*P		**P**	**05 27 44.6**	**+0.9**
PSI				*e*pP		**pP**	**05 27 57.6**	**+0.7**
ES19	**SONSECA Array**	**88.10**	**10**	*e*P		**P**	**05 27 45.1**	**-0.3**
ESDC	**Sonseca Array**	**88.12**	**10**	P		**P**	**05 27 44.2**	**-1.4**
	comp=Z,1.6nm,0.8s,baz=353,slow=4.8,SNR=7.4								
AS01	**Alice Springs**	**89.16**	**228**	*e*P		**P**	**05 27 50.7**	**+0.3**
ASAR	**Alice Springs**	**89.19**	**229**	P		**P**	**05 27 50.5**	**0.0**
	comp=Z,1.9nm,0.6s,baz=25,slow=5.1,SNR=24								
TORD	**Torodi Ar. Bea**	**114.92**	**8**	PKP		PKPdf	05 33 35.1	-0.7
	comp=Z,0.1nm,0.3s,baz=312,slow=0.8,SNR=4.9								
MAW	**Mawson**	**149.77**	**218**	PKPbc		**PKPbc**	**05 34 42.1**	**-1.1**
	comp=Z,1.8nm,0.7s,baz=310,slow=3.7,SNR=3.7								

NIED ***17*** *05:38:00.37°.00N×140°.70E,h5km,Mw4.2 Best double couple: M0 2.01000×10^15 NP1:ϕs47.00000°,δ39.00000°, λ-90.00000°. NP2:ϕs227.00000°,δ51.00000°, λ-90.00000°.*

ISCJB ***17*** *05:38:47.5±0.4,37°.01N±0°.02×140°.70E±0°.03,h19km±2km, mb4.3/69,MS3.5/11,Error ellipse: s-maj=4.6km s-min=3.2km az=30.6*

JMA ***17*** *05:38:47.7,37°.01N×140°.68E,h7km±1km,M4.5 Broadband fault plane solution: P waves. NP1: ϕs66.00000°,δ51.00000°,λ-71.00000°. NP2:ϕs218.00000°, δ43.00000°,λ-111.00000°. Principal axes: T Plg4.0000°, Azm143.0000°; N Plg14.0000°, Azm234.0000°; P Plg75.0000°, Azm37.0000°;*

JMA Felt III J1.

MOS ***17*** *05:38:49.3±1.2,37°.01N×140°.70E,h32km,mb4.7/28 Error ellipse: s-maj=8.8km s-min=6.0km az=102.8*

NEIC ***17*** *05:38:52.8±0.6,37°.00N×140°.57E,h48km±5km,mb4.4/29, Error ellipse: s-maj=5.9km s-min=4.5km az=126.0*

NEIC Recorded [3 JMA] in Ibaraki.

BJI ***17*** *05:38:52.5,36°.89N×139°.92E,h25km,mb4.3/21,mB4.8/10, Ms4.1/11,Ms7 3.8/7*

IDC ***17*** *05:38:53.4±1.6,36°.98N×140°.58E,h56km±14km,mb3.9/27, mb1 4.1/31,mb1mx4.0/51,mbtmp4.2/31,MS3.3/14, Ms1 3.3/14,ms1mx3.1/52,Error ellipse: s-maj=11.0km s-min=9.2km az=80.0*

ISC 17 05:38:47.5±0.9,37°.02N±0°.03×140°.62E±0°.03,h8km±6km, n166,σ0 93/167,mb4.4/69,MS3.4/12,12C-3D,Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.17**	**59**	⇑P		**Pg**	**05 38 50.8**	**-0.2**
ONAJ					S	**Sg**	**05 38 53.0**	**-0.4**
JFK	**Kawauchi**	**0.40**	**30**	⇑P		**Pg**	**05 38 55.3**	**-0.1**
JFK					S	**Sg**	**05 39 00.6**	**-0.1**
JHO	**Hitachi**	**0.41**	**186**	⇑P		**Pg**	**05 38 55.6**	**+0.2**
JHO					S	**Sg**	**05 39 01.2**	**+0.4**
JFT	**Otama**	**0.55**	**336**	⇑P		**Pb**	**05 38 58.9**	**-0.5**
JFT					S	**Sb**	**05 39 06.9**	**-0.5**
JSB	**Shiboa**	**0.56**	**265**	⇑P		**Pb**	**05 39 00.2**	**+0.6**
JSB					S	**Sb**	**05 39 08.5**	**+0.7**
JFY	**Yanaizu**	**0.83**	**298**	⇑P		**Pb**	**05 39 04.4**	**+0.3**
JFY					S	**Sb**	**05 39 15.7**	**+0.3**
JMM	**Marumori**	**0.86**	**9**	⇑P		**Pg**	**05 39 03.7**	**-0.3**
JMM					S	**Sg**	**05 39 15.3**	**+0.1**
JYT	**Yasato**	**0.86**	**204**	P		**Pb**	**05 39 04.1**	**-0.5**
JYT					S	**Sb**	**05 39 15.5**	**-0.7**
MJAR	**Matsushiro Arr**	**1.99**	**257**	P		**Pb**	**05 39 23.1**	**-0.8**
	60nm,0.3s,baz=75,slow=16,SNR=257							
MJAR					S	**Sb**	**05 39 48.0**	**-1.0**
	88nm,0.3s,baz=87,slow=28,SNR=24							
MJAR					LR	LR	05 40 26.4	
	comp=Z,365nm,19.8s,baz=70,slow=48							
MAJO	**Matsushiro**	**2.00**	**257**	*e*P		**Pb**	**05 39 23.5**	**-0.5**
MAJO				*e*			05 39 51.9	
MAJO	**Matsushiro**	**2.00**	**257**	*e*Pn		**Pb**	**05 39 23.5**	**-0.5**
MAJO				*e*Sn		**Sg**	**05 39 51.9**	**+0.3**
MAT	**Matsushiro**	**2.00**	**257**	P		**Pb**	**05 39 23.4**	**-0.6**
MAT				S		**Sg**	**05 39 49.8**	**-1.8**
MJB9	**Matsu-Tunnel**	**2.00**	**257**	*e*Pn		**Pb**	**05 39 23.6**	**-0.5**
MJB9				*e*Sn		**Sg**	**05 39 51.7**	**+0.1**
INU	**Inuyama**	**3.36**	**241**	*e*Pn		Pn	05 39 43.2	+3.0
JHJ	**Hachijo jima 2**	**3.95**	**190**	P		**Pn**	**05 39 49.2**	**+0.9**
	36nm,0.3s,baz=53,slow=19,SNR=4.9							
JHJ					S	**Sn**	**05 40 35.9**	**+1.0**
	40nm,0.3s,baz=233,slow=20,SNR=5.0							
JHJ					LR	LR	05 41 34.8	
	comp=Z,249nm,20.5s,baz=332,slow=41							
JHJ2	**Mitsune**	**3.95**	**190**	*e*Pn		**Pn**	**05 39 50.4**	**+2.1**
ERM	**Erimo**	**5.36**	**21**	*e*P		**Pn**	**05 40 08.2**	**+0.5**
ERM				*e*			05 41 13.3	
ERM	**Erimo**	**5.36**	**21**	*e*Pn		**Pn**	**05 40 08.2**	**+0.5**
ERM				*e*Sn		**Sn**	**05 41 13.3**	**+3.7**
ASAJ	**Asahikawa**	**7.25**	**11**	P		**Pn**	**05 40 33.9**	**+0.3**
	2.6nm,0.3s,baz=231,slow=12,SNR=17							
ASAJ	**Asahikawa**	**7.25**	**11**	*e*Pn		**Pn**	**05 40 35.6**	**+2.0**
SHO	**Shikotan**	**8.32**	**33**	*e*P		**Pn**	**05 40 45.6**	**-2.7**
JNU	**Nakatsue**	**8.88**	**247**	P		**Pn**	**05 40 58.6**	**+2.5**
	0.2nm,0.3s,baz=36,slow=13,SNR=4.1							
JNU	**Nakatsue**	**8.88**	**247**	*e*Pn		Pn	05 40 59.4	+3.3
USRK	**Ussuriysk Ar.**	**9.72**	**320**	P		Pn	05 41 11.4	+4.0
	0.8nm,0.3s,baz=129,slow=12,SNR=43							
USRK					LR	LR	05 44 35.5	
	comp=Z,214nm,20.0s,baz=177,slow=35							
CBIJ	**Chichi jima**	**9.98**	**172**	*e*Pn		Pn	05 41 07.7	-3.4
JCJ	**Chichijima**	**9.98**	**172**	P		Pn	05 41 07.1	-4.1
	7.1nm,0.3s,baz=114,slow=23,SNR=5.8							
JCJ					LR	LR	05 43 57.1	
	comp=Z,40nm,21.9s,baz=328,slow=30							
KSRS	**Korea Array**	**10.14**	**276**	P		Pn	05 41 18.7	+5.5
	0.3nm,0.3s,baz=92,slow=13,SNR=19							
KSAR	**Wonju Array Be**	**10.17**	**276**	P		Pn	05 41 18.7	+5.0
KSAR	**Wonju Array Be**	**10.17**	**276**	P		Pn	05 41 18.7	+5.0
MDJ	**Mudanjiang**	**11.28**	**316**	P		**Pn**	**05 41 28.8**	**-0.1**
MDJ				pmax		pmax		
	comp=Z,6.0nm,0.8s							
MDJ				pmax		pmax		
	comp=Z,93nm,4.2s							
CN2	**Changchun**	**13.39**	**305**	*e*P		**Pn**	**05 41 57.6**	**-0.1**
KLR	**Kul'dur**	**13.80**	**335**	P		Pn	05 42 07.2	+3.9
	0.1nm,0.3s,baz=132,slow=12,SNR=9.0							
KLR					LR	LR	05 47 14.0	
	comp=Z,208nm,18.4s

CMAR	**Chiang Mai Arr**	**40.88**	**255**	P		**P**	**05 46 29.7**	**-0.5**
	comp=Z,0.4nm,0.4s,baz=35,slow=7.2,SNR=4.5							
ZAA0	**Zalesovo Array**	**41.46**	**312**	*e*P		**P**	**05 46 34.3**	**-0.1**
ZALV	**Zalesovo Beam**	**41.46**	**312**	P		**P**	**05 46 34.1**	**-0.3**
	comp=Z,2.3nm,0.6s,baz=94,slow=6.1,SNR=13							
ZALV				PcP		**PcP**	**05 48 31.8**	**-0.3**
	comp=Z,1.4nm,0.4s,baz=121,slow=3.2,SNR=6.0							
ZALV				LR		LR	06 04 20.5	
	comp=Z,60nm,18.6s,baz=68,slow=37							
NRIK	**Noril'sk**	**43.02**	**335**	P		**P**	**05 46 46.6**	**-0.3**
	comp=Z,1.7nm,0.4s,baz=145,slow=2.4,SNR=3.6							
NRIK				LR		LR	06 05 40.0	
	comp=Z,46nm,18.6s,baz=86,slow=37							
MK01	**Makanchi Array**	**43.59**	**302**	*e*P		**P**	**05 46 52.1**	**+0.1**
MK31	**Makanchi Array**	**43.59**	**302**	*e*P		**P**	**05 46 52.1**	**+0.1**
MK31	**Makanchi Array**	**43.59**	**302**	*e*P		**P**	**05 46 52.1**	**+0.1**
MKAR	**Makanchi Array**	**43.59**	**302**	P		**P**	**05 46 52.2**	**+0.3**
	comp=Z,1.5nm,0.6s,baz=88,slow=9.8,SNR=17							
MKAR				PcP		**PcP**	**05 48 39.1**	**-0.3**
	comp=Z,0.8nm,0.7s,baz=72,slow=4.7,SNR=4.0							
MKAR				LR		LR	06 05 22.6	
	comp=Z,48nm,19.5s,baz=24,slow=36							
KURK	**Kurchatov**	**45.44**	**308**	*e*P		**P**	**05 47 06.4**	**-0.3**
KURK				pmax		pmax		
	comp=Z,8.0nm,0.8s							
KURK	**Kurchatov**	**45.44**	**308**	*e*P		**P**	**05 47 06.4**	**-0.3**
	comp=Z,8.1nm,0.8s							
KAPI	**Kappang**	**46.13**	**209**	P		**P**	**05 47 12.5**	**+0.1**
	comp=Z,3.9nm,0.3s,baz=41,slow=3.2,SNR=4.5							
KDAK	**Kodiak Island**	**47.53**	**42**	*i* P		**P**	**05 47 23.2**	**+0.3**
PPLA	**Purkeypile**	**47.55**	**35**	*e*P		**P**	**05 47 23.4**	**+0.3**
	comp=Z,10nm,1.5s							
MLY	**Manley**	**48.20**	**32**	*e*P		**P**	**05 47 29.5**	**+1.4**
	comp=Z,2.6nm,0.8s							
TKM2	**Tokmak 2**	**49.08**	**298**	*e*P		**P**	**05 47 36.1**	**+0.7**
TKM2				pmax		pmax		
	comp=Z,5.0nm,0.9s							
TKM2	**Tokmak 2**	**49.08**	**298**	*e*P		**P**	**05 47 36.1**	**+0.7**
	comp=Z,4.5nm,0.9s							
ILAR	**Eielson Array**	**49.85**	**32**	P		**P**	**05 47 41.1**	**+0.5**
	comp=Z,2.6nm,0.8s,baz=267,slow=6.1,SNR=12							
AAK	**Ala-Archa**	**49.94**	**298**	LR		LR	06 09 51.8	
	comp=Z,116nm,18.5s,baz=87,slow=37							
AAK	**Ala-Archa**	**49.94**	**298**	*e*P		**P**	**05 47 42.2**	**+0.3**
AAK				pmax		pmax		
	comp=Z,8.0nm,1.4s							
AAK	**Ala-Archa**	**49.94**	**298**	*e*P		**P**	**05 47 42.4**	**+0.5**
	comp=Z,1.8nm,0.8s							
BVAR	**Borovoye Array**	**50.11**	**312**	P		**P**	**05 47 42.7**	**-0.2**
	comp=Z,2.0nm,0.8s,baz=64,slow=6.8,SNR=9.0							
BVAR				PcP		**PcP**	**05 49 00.3**	**-2.0**
	comp=Z,1.7nm,0.7s,baz=83,slow=6.0,SNR=5.3							
BRVK	**Borovoye**	**50.17**	**312**	*e*P		**P**	**05 47 43.3**	**0.0**
BRVK				pmax		pmax		
	comp=Z,4.0nm,0.9s							
BRVK	**Borovoye**	**50.17**	**312**	*e*P		**P**	**05 47 43.3**	**0.0**
	comp=Z,3.9nm,0.9s							
ZRNK	**Zerenda**	**50.95**	**312**	*e*P		**P**	**05 47 49.3**	**+0.1**
ZRNK				pmax		pmax		
	comp=Z,6.0nm,0.9s							
ZRNK	**Zerenda**	**50.95**	**312**	*e*P		**P**	**05 47 49.3**	**+0.1**
	comp=Z,5.9nm,0.9s							
KKAR	**Karatay Array**	**52.58**	**300**	*e*P		**P**	**05 48 00.6**	**-0.9**
KKAR	**Karatay Array**	**52.58**	**300**	*e*P		**P**	**05 48 00.6**	**-0.9**
INK	**Inuvik**	**54.69**	**27**	P		**P**	**05 48 16.6**	**0.0**
	comp=Z,1.2nm,0.6s,baz=303,slow=7.0,SNR=12							
INK	**Inuvik**	**54.69**	**27**	*e*P		**P**	**05 48 17.6**	**+1.1**
INK				pmax		pmax		
	comp=Z,5.0nm,1.3s							
INK	**Inuvik**	**54.69**	**27**	*e*P		**P**	**05 48 17.6**	**+1.1**
	comp=Z,5.4nm,1.3s							
ARU	**Arti**	**55.95**	**318**	*d* iP		**P**	**05 48 25.5**	**-0.3**
ARU				S		**S**	**05 56 13.1**	**-0.6**
ARU				SS		**SS**	**05 59 56.8**	**-2.2**
ARU				pmax		pmax		
	comp=Z,6.0nm,0.8s							
ARU	**Arti**	**55.95**	**318**	*e*P		**P**	**05 48 25.1**	**-0.7**
	comp=Z,6.8nm,1.0s							
WRAB	**Tennant Creek**	**56.95**	**187**	*ce*P		**P**	**05 48 32.7**	**-0.6**
WRAB				pmax		pmax		
	comp=Z,75nm,2.5s							
WRAB	**Tennant Creek**	**56.95**	**187**	*e*P		**P**	**05 48 32.6**	**-0.7**
	comp=Z,7.7nm,0.7s							
WB2	**Warramunga Arr**	**56.96**	**187**	*e*P		**P**	**05 48 33.3**	**-0.1**
	comp=Z,12nm,0.7s							
WRA	**Warramunga Arr**	**56.96**	**187**	P		**P**	**05 48 32.4**	**-1.0**
	comp=Z,9.3nm,0.7s,baz=4.8,slow=7.5,SNR=47							
WRA	**Warramunga Arr**	**56.96**	**187**	*i* P		**P**	**05 48 33.2**	**-0.2**
WRA				pmax		pmax		
	comp=Z,9.0nm,0.7s							
ABKAR	**Akbulak array**	**57.46**	**310**	*e*P		**P**	**05 48 36.5**	**-0.2**
	comp=Z,6.9nm,0.9s							
AS01	**Alice Springs**	**60.68**	**187**	*e*P		**P**	**05 48 57.2**	**-2.0**
AS31	**Alice Springs**	**60.69**	**187**	*e*P		**P**	**05 48 59.2**	**0.0**
	comp=Z,1.4nm,0.8s							
ASAR	**Alice Springs**	**60.69**	**187**	P		**P**	**05 48 58.7**	**-0.6**
	comp=Z,4.0nm,0.7s,baz=11,slow=7.2,SNR=32							
GEYT	**Alibeck**	**63.29**	**299**	P		**P**	**05 49 16.4**	**-0.4**
	comp=Z,2.8nm,0.7s,baz=126,slow=2.0,SNR=5.0							
ARCES	**ARCESS Array B**	**63.79**	**339**	P		**P**	**05 49 18.7**	**-0.8**
	comp=Z,3.8nm,0.8s,baz=56,slow=7.4,SNR=7.7							
YKA	**Yellowknife Ar**	**64.14**	**30**	P		**P**	**05 49 22.1**	**+0.2**
	comp=Z,1.0nm,0.8s,baz=303,slow=6.8,SNR=24							
YKA				PcP		**PcP**	**05 49 57.2**	**+0.3**
	comp=Z,0.3nm,0.6s,baz=298,slow=4.2,SNR=5.6							
OBN	**Obninsk**	**67.73**	**323**	*e*P		**P**	**05 49 47.4**	**+2.3**
OBN				*e*			05 50 08.2	
OBN				pmax		pmax		
	comp=Z,9.0nm,0.4s							
FINES	**FINESS Array B**	**68.53**	**332**	P		**P**	**05 49 49.0**	**-1.0**
	comp=Z,4.6nm,0.8s,baz=47,slow=8.4,SNR=12							
FINES	**FINESS Array B**	**68.53**	**332**	*i* P		**P**	**05 49 49.9**	**-0.2**
FINES				pmax		pmax		
	comp=Z,5.0nm,0.8s							
STKA	**Stephens Creek**	**68.54**	**179**	P		**P**	**05 49 48.8**	**-1.6**
	comp=Z,1.5nm,0.6s,baz=342,slow=12,SNR=5.8							
KBZ	**Khabaz**	**70.43**	**310**	P		**P**	**05 50 01.5**	**-0.6**
	comp=Z,2.5nm,0.9s,baz=68,slow=2.5,SNR=6.7							
KIV	**Kislovodsk**	**70.44**	**311**	*ce*P		**P**	**05 50 03.4**	**+1.1**
KIV				pmax		pmax		
	comp=Z,9.0nm,1.0s							
SUMG	**Summit**	**70.70**	**360**	*e*P		**P**	**05 50 04.4**	**+0.6**
SUMG				pmax		pmax		
	comp=Z,9.0nm,1.2s							
SUMG	**Summit**	**70.70**	**360**	*e*P		**P**	**05 50 04.4**	**+0.6**
	comp=Z,9.3nm,1.2s							
NEY	**Neytrino**	**70.80**	**310**	*i* P		**P**	**05 50 03.7**	**-0.9**
NEY				pmax		pmax		
	comp=Z,1.0nm,0.9s							
AKASG	**Malin Array Be**	**73.92**	**322**	P		**P**	**05 50 22.1**	**-0.8**
	comp=Z,0.6nm,0.3s,baz=47,slow=6.2,SNR=10							
AKASG				LR		LR	06 25 06.2	
	comp=Z,38nm,19.5s,baz=315,slow=38							
KIEV	**Kiev**	**73.93**	**322**	*i* P		**P**	**05 50 22.1**	**-0.8**
KIEV				pmax		pmax		
	comp=Z,3.0nm,0.9s							
NB2	**NORSAR Subarra**	**73.95**	**337**	P		P	05 50 18.3	-4.7
	comp=Z,3.0nm,0.8s,baz=40,slow=6.2							
NOA	**NORSAR Array B**	**73.95**	**337**	P		**P**	**05 50 22.8**	**-0.2**
	comp=Z,2.6nm,0.8s,baz=40,slow=5.8,SNR=7.6							
FFC	**Flin Flon**	**74.06**	**32**	*e*P		**P**	**05 50 24.2**	**+0.6**
FFC				pmax		pmax		
	comp=Z,4.0nm,0.9s							
FFC	**Flin Flon**	**74.06**	**32**	*e*P		**P**	**05 50 24.2**	**+0.6**
	comp=Z,4.0nm,0.9s							
FCC	**Fort Churchill**	**74.30**	**26**	*e*P		**P**	**05 50 25.3**	**+0.4**
FCC				pmax		pmax		
	comp=Z,6.0nm,1.1s							
FCC	**Fort Churchill**	**74.30**	**26**	*e*P		**P**	**05 50 25.2**	**+0.4**
	comp=Z,6.1nm,1.1s							
LRM	**Limekiln Ridge**	**74.60**	**44**	*e*P		**P**	**05 50 28.3**	**+1.1**
EGMT	**Eagleton**	**74.70**	**41**	*e*P		**P**	**05 50 28.0**	**+0.4**
	comp=Z,5.8nm,0.8s							
BOZ	**Bozeman (W)**	**75.16**	**44**	*e*P		**P**	**05 50 30.6**	**+0.2**
BOZ				pmax		pmax		
	comp=Z,2.0nm,0.6s							
BOZ	**Bozeman (W)**	**75.16**	**44**	*e*P		**P**	**05 50 30.6**	**+0.2**
	comp=Z,2.4nm,0.6s							
NVAR	**Mina Array Bea**	**75.50**	**53**	P		**P**	**05 50 33.5**	**+0.9**
	comp=Z,1.4nm,0.8s,baz=286,slow=6.3,SNR=8.0							
H17A	**Grant Village**	**76.53**	**44**	*e*P		**P**	**05 50 41.1**	**+2.8**
	comp=Z,2.2nm,0.6s							
R11A	**Troy Canyon, C**	**77.27**	**52**	*e*P		**P**	**05 50 43.1**	**+0.5**
	comp=Z,3.2nm,1.1s							
BORG	**Borgarnes**	**77.58**	**352**	*i* P		**P**	**05 50 45.4**	**+1.9**
TPNV	**Topopah Spring**	**77.69**	**53**	*e*P		**P**	**05 50 44.8**	**-0.1**
TPNV				pmax		pmax		
	comp=Z,12nm,1.8s							
TPNV	**Topopah Spring**	**77.69**	**53**	*e*P		**P**	**05 50 44.8**	**-0.1**
	comp=Z,12nm,1.8s							
DUG	**Dugway, Tooele**	**77.84**	**49**	*e*P		**P**	**05 50 45.8**	**+0.1**
DUG				pmax		pmax		
	comp=Z,2.0nm,0.8s							
DUG	**Dugway, Tooele**	**77.84**	**49**	*e*P		**P**	**05 50 45.8**	**+0.1**
	comp=Z,2.2nm,0.8s							
BUR08	**Bucovina Ar. S**	**77.92**	**321**	*e*P		**P**	**05 50 46.0**	**+0.1**
PD31	**Pinedale Array**	**78.13**	**45**	*e*P		**P**	**05 50 47.5**	**+0.1**
PDAR	**Pinedale Array**	**78.13**	**45**	P		**P**	**05 50 46.6**	**-0.8**
	comp=Z,1.6nm,0.8s,baz=273,slow=1.6,SNR=15							
BRTR	**Keskin Array B**	**78.39**	**311**	P		**P**	**05 50 48.8**	**+0.1**
	comp=Z,1.7nm,0.9s,baz=88,slow=6.4,SNR=7.1							
BRTR	**Keskin Array B**	**78.39**	**311**	*ce*P		**P**	**05 50 49.2**	**+0.5**
BRTR				pmax		pmax		
	comp=Z,1.0nm,0.8s							
NLU	**North Lily Min**	**78.44**	**49**	*e*P		**P**	**05 50 50.0**	**+0.9**
	comp=Z,2.7nm,1.0s							
OJC	**Ojcow**	**78.70**	**326**	*e*P		**P**	**05 50 50.0**	**-0.1**
OJC				pmax		pmax		
	comp=Z,8.0nm,1.1s							
OJC	**Ojcow**	**78.70**	**326**	*e*P		**P**	**05 50 50.0**	**-0.1**
	comp=Z,7.6nm,1.1s							
BR231	**Keskin MP Arra**	**78.83**	**312**	*e*P		**P**	**05 50 49.5**	**-1.6**
LCMT	**Little Creek M**	**79.56**	**51**	*e*P		**P**	**05 50 55.7**	**+0.5**
	comp=Z,2.8nm,1.0s							
SRU	**San Rafael Swe**	**79.90**	**48**	*e*P		**P**	**05 50 58.0**	**+0.9**
SRU				pmax		pmax		
	comp=Z,5.0nm,0.8s							
SRU	**San Rafael Swe**	**79.90**	**48**	*e*P		**P**	**05 50 58.0**	**+0.9**
	comp=Z,4.6nm,0.8s							
DPC	**Dobruska-Polom**	**80.13**	**328**	*e*P		**P**	**05 50 58.7**	**+0.8**
DPC	**Dobruska-Polom**	**80.13**	**328**	*e*P		**P**	**05 50 58.7**	**+0.8**
VYHS	**Vyhne**	**80.38**	**325**	*e*P		**P**	**05 50 59.9**	**+0.7**
VYHS	**Vyhne**	**80.38**	**325**	*e*P		**P**	**05 50 59.9**	**+0.7**
BRG	**Berggiesshubel**	**80.74**	**329**	*e*P		**P**	**05 51 01.4**	**+0.3**
	comp=Z,15nm,1.9s							
BRG	**Berggiesshubel**	**80.74**	**329**	*e*P		**P**	**05 51 01.4**	**+0.3**
BRG				pmax		pmax		
	comp=Z,15nm,1.9s							
CLL	**Collm**	**80.79**	**330**	*e*P		**P**	**05 51 01.0**	**-0.4**
	comp=Z,5.0nm,1.1s							
CLL	**Collm**	**80.79**	**330**	*e*P		**P**	**05 51 01.0**	**-0.4**
CLL				pmax		pmax		
	comp=Z,5.0nm,1.1s							
GOPC	**GO Pecny, Ondr**	**81.12**	**328**	*e*P		**P**	**05 51 03.7**	**+0.5**
GOPC	**GO Pecny, Ondr**	**81.12**	**328**	*e*P		**P**	**05 51 03.7**	**+0.5**
PRU	**Pruhonice**	**81.16**	**328**	*e*P		**P**	**05 51 04.4**	**+1.0**
PRU	**Pruhonice**	**81.16**	**328**	*e*P		**P**	**05 51 04.4**	**+1.0**
PV01	**Paradox Valley**	**81.70**	**48**	*e*P		**P**	**05 51 04.7**	**-2.1**
	comp=Z,208nm,0.9s							
KHC	**Kasperske Hory**	**82.22**	**328**	*e*P		**P**	**05 51 09.3**	**+0.2**
KHC	**Kasperske Hory**	**82.22**	**328**	*e*P		**P**	**05 51 09.3**	**+0.2**
X16A	**Lo Mia Camp, P**	**82.33**	**53**	*e*P		**P**	**05 51 11.3**	**+1.2**
	comp=Z,2.9nm,1.3s							
GERES	**GERESS Array B**	**82.39**	**328**	P		**P**	**05 51 08.9**	**-1.0**
	comp=Z,0.5nm,0.5s,baz=37,slow=5.9,SNR=8.3							
GERES	**GERESS Array B**	**82.39**	**328**	P		**P**	**05 51 09.0**	**-1.0**
BFO	**Black Forest**	**85.01**	**330**	*i* P		**P**	**05 51 23.9**	**+0.6**
TX31	**Lajitas Ar. Si**	**90.63**	**52**	*e*P		**P**	**05 51 51.4**	**+0.5**
TXAR	**Lajitas Array**	**90.63**	**52**	P		**P**	**05 51 51.1**	**+0.2**
	comp=Z,1.1nm,0.8s,baz=295,slow=3.4,SNR=12							
TXAR				LR		LR	06 30 03.8	
	comp=Z,20nm,19.4s,baz=0.0,slow=34							
LPAZ	**La Paz**	**147.25**	**59**	PKPbc		**PKPbc**	**05 58 32.3**	**-0.3**
	comp=Z,5.4nm,0.8s,baz=12,slow=6.5,SNR=25							
SIV	**San Ignacio**	**151.57**	**48**	PKPbc		**PKPbc**	**05 58 42.1**	**-0.6**
	comp=Z,7.9nm,0.7s,baz=283,slow=1.0,SNR=12							

IDC 17 05:39:27.8±3.5, 10°.41S×117°.39E, h0km, mb3.5/3, mb1 3.6/5, mb1mx3.4/42, mbtmp3.5/5, ML3.8/1, Error ellipse: s-maj=242.9km s-min=21.4km az=49.0, South of Sumbawa

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op		ISC	h m s	ISC
FITZ	**Fitzroy Crossi**	**11.06**	**135**	Pn		Pn	05 42 05.8	-1.5
	0.6nm,0.3s,baz=328,slow=9.5,SNR=15							
FITZ				Sn		Sn	05 43 56.8	-15
	0.1nm,0.3s,baz=323,slow=20,SNR=2.9							
WRA	**Warramunga Arr**	**18.89**	**122**	P		P	05 43 49.0	-1.0
	baz=293,slow=13,SNR=3.0							
ASAR	**Alice Springs**	**20.54**	**132**	P		Pn	05 44 09.8	-0.4
	0.5nm,0.5s,baz=304,slow=10,SNR=12							
MKAR	**Makanchi Array**	**65.00**	**334**	P		P	05 50 09.2	-0.5
	0.2nm,0.3s,baz=146,slow=6.4,SNR=3.6							
ZALV	**Zalesovo Beam**	**69.80**	**340**	P		P	05 50 40.2	+0.4
	0.7nm,0.5s,baz=145,slow=5.3,SNR=3.2							

IDC 17 05:41:25.4±2.6, 22°.76N×45°.41W, h0km, mb3.6/7, mb1 3.9/7, mb1mx3.6/35, mbtmp3.6/7, MS3.5/21, Ms1 3.5/21, ms1mx3.3/53, Error ellipse: s-maj=81.7km s-min=24.3km az=14.0, Northern Mid-Atlantic Ridge

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op		ISC	h m s	ISC
SJG	**San Juan**	**19.98**	**260**	LR		LR	05 52 21.8	
	comp=Z,101nm,21.8s,baz=81,slow=33							
PTGA	**Pitinga**	**27.32**	**213**	LR		LR	05 57 22.3	
	comp=Z,55nm,20.9s,baz=22,slow=35							
BBTS	**Batie**	**28.47**	**101**	LR		LR	05 56 07.3	
	comp=Z,122nm,19.5s,baz=269,slow=31							
RCBR	**Riachuelo**	**29.90**	**161**	LR		LR	05 55 00.8	
	comp=Z,21nm,21.8s,baz=348,slow=27							
ROSC	**El Rosal**	**33.14**	**242**	LR		LR	06 01 31.3	
	comp=Z,37nm,20.3s,baz=42,slow=36							
ESDC	**Sonseca Array**	**38.86**	**54**	LR		LR	06 01 26.7	
	comp=Z,52nm,20.7s,baz=290,slow=31							
DBIC	**Dimbokro**	**42.18**	**106**	LR		LR	06 03 45.9	
	comp=Z,106nm,20.3s,baz=280,slow=32							
H10N3	**ASCENSION HYDR**	**42.90**	**132**	T		T	06 35 12.7	
	baz=316,slow=75,SNR=11							
H10N2	**ASCENSION HYDR**	**42.90**	**132**	T		T	06 35 12.9	
	baz=316,slow=75,SNR=19							
H10N1	**ASCENSION HYDR**	**42.92**	**132**	T		T	06 35 27.5	
	baz=316,slow=75,SNR=18							
H10S3	**ASCENSION HYDR**	**43.59**	**133**	T		T	06 36 01.3	
	baz=317,slow=75,SNR=23							
H10S1	**ASCENSION HYDR**	**43.59**	**133**	T		T	06 36 01.3	
	baz=317,slow=75,SNR=33							
H10S2	**ASCENSION HYDR**	**43.60**	**133**	T		T	06 36 02.4	
	baz=317,slow=75,SNR=19							
LPAZ	**La Paz**	**44.73**	**212**	LR		LR	06 08 02.1	
	comp=Z,53nm,19.2s,baz=9.0,slow=36							
TORD	**Torodi Ar. Bea**	**45.65**	**94**	P		P	05 49 48.2	0.0
	1.3nm,0.9s,baz=283,slow=6.3,SNR=5.6							
TORD				LR		LR	06 06 10.0	
	comp=Z,116nm,21.8s,baz=125,slow=32							
KEST	**Kesra**	**48.92**	**62**	LR		LR	06 07 13.5	
	comp=Z,46nm,21.9s,baz=308,slow=32							
CPUP	**Villa Florida**	**50.15**	**194**	LR		LR	06 11 20.3	
	comp=Z,27nm,19.0s,baz=48,slow=36							
TXAR	**Lajitas Array**	**52.30**	**290**	LR		LR	06 12 11.2	
	comp=Z,25nm,21.6s,baz=0.0,slow=35							
GERES	**GERESS Array B**	**52.99**	**45**	P		P	05 50 43.7	-0.4
	0.6nm,0.8s,baz=252,slow=8.1,SNR=5.7							
NOA	**NORSAR Array B**	**54.32**	**30**	LR		LR	06 09 46.9	
	comp=Z,42nm,18.8s,baz=70,slow=31							
PDAR	**Pinedale Array**	**56.18**	**307**	P		P	05 51 06.7	-0.8
	0.2nm,0.4s,baz=110,slow=9.1,SNR=2.6							
PDAR				LR		LR	06 13 20.9	
	comp=Z,72nm,19.5s,baz=122,slow=34							
YKA	**Yellowknife Ar**	**60.47**	**330**	P		P	05 51 36.3	-0.5
	0.3nm,1.1s,baz=90,slow=8.6,SNR=3.4							
FINES	**FINESS Array B**	**61.43**	**31**	LR		LR	06 14 08.8	
	comp=Z,55nm,19.5s,baz=344,slow=32							
PFO	**Pinyon Flats O**	**62.48**	**297**	LR		LR	06 17 34.3	
	comp=Z,24nm,20.7s,baz=131,slow=35							
AKASG	**Malin Array Be**	**63.10**	**43**	P		P	05 51 54.6	-0.2
	0.3nm,0.2s,baz=276,slow=5.1,SNR=5.5							
OBN	**Obninsk**	**67.11**	**38**	LR		LR	06 18 57.4	
	comp=Z,61nm,19.1s,baz=274,slow=34							
BRTR	**Keskin Array B**	**67.66**	**55**	P		P	05 52 24.6	-0.1
	1.0nm,0.9s,baz=266,slow=7.4,SNR=4.6							
EIL	**Elat**	**71.09**	**65**	LR		LR	06 24 14.7	
	comp=Z,59nm,19.0s,baz=254,slow=36							
ILAR	**Eielson Array**	**74.41**	**334**	P		P	05 53 06.3	+1.3
	0.6nm,0.8s,baz=70,slow=4.8,SNR=8.5							
ILAR				LR		LR	06 25 45.0	
	comp=Z,64nm,18.0s,baz=116,slow=36							
KDAK	**Kodiak Island**	**79.70**	**329**	LR		LR	06 30 00.3	
	comp=Z,28nm,18.4s,baz=118,slow=37							
AKTO	**Aktyubinsk**	**80.87**	**39**	LR		LR	06 26 21.6	
	comp=Z,24nm,20.4s,baz=310,slow=33							

NIED ***17*** *05:42:00, 38°.60N×141°.90E, h62km, Mw3.9 Best double couple: M0 7.99000×10^14 NP1:φ0=169.00000°, δ21.00000°, λ50.00000°. NP2:φ0=31.00000°, δ74.00000°, λ104.00000°.*

ISCJB ***17*** *05:42:33.6±0.9, 38°.57N±0°.04×142°.04E±0°.10, h54km±7km, mb3.7/10, Error ellipse: s-maj=13.6km s-min=5.5km az=19.0*

IDC ***17*** *05:42:34.6±2.4, 38°.54N×142°.30E, h57km±19km, mb3.5/10, mb1 3.7/15, mb1mx3.5/50, mbtmp3.8/15, ML3.4/5, Error ellipse: s-maj=25.8km s-min=13.1km az=106.0*

JMA ***17*** *05:42:35.7±0.1, 38°.57N×141°.89E, h49km±1km, M3.8*

JMA Felt I J1.

ISC 17 05:42:34.5±1.5, 38°.54N±0°.05×142°.06E±0°.10, h48km±12km, n25, σ1°47/36, mb3.7/10, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op		ISC	h m s	ISC
JIO	**Ouri**	**0.56**	**261**	P		**Pn**	**05 42 46.2**	**-0.2**
JIO				S		**Sn**	**05 42 53.2**	**-1.7**
OFUJ	**Ofunato**	**0.62**	**331**	P		**Pn**	**05 42 47.3**	**+0.2**
OFUJ				S		**Sn**	**05 42 55.4**	**-0.7**
JMK	**Ichinoseki**	**0.77**	**302**	P		**Pn**	**05 42 49.0**	**-0.1**
JMK				S		**Sn**	**05 42 58.2**	**-1.5**
JOM	**Ohasama**	**1.10**	**328**	P		**Pn**	**05 42 53.8**	**+0.2**
JOM				S		**Sn**	**05 43 07.4**	**-0.3**
JOU	**Okura**	**1.11**	**261**	P		**Pn**	**05 42 53.3**	**-0.3**
JOU				S		**Sn**	**05 43 06.1**	**-1.7**
JMM	**Marumori**	**1.20**	**236**	P		**Pn**	**05 42 54.6**	**-0.3**
JMM				S		**Sn**	**05 43 08.4**	**-1.7**
JYK	**Kaneyama**	**1.38**	**286**	P		**Pn**	**05 42 57.1**	**-0.2**
JYK				S		**Sn**	**05 43 13.3**	**-1.1**
JRG	**Rokugo**	**1.40**	**308**	P		**Pn**	**05 42 57.6**	**0.0**
JFK	**Kawauchi**	**1.50**	**219**	P		**Pn**	**05 42 59.3**	**+0.3**
JFK				*e*S		**Sn**	**05 43 16.1**	**-1.3**
MJAR	**Matsushiro Arr**	**3.65**	**238**	P		**Pn**	**05 43 30.1**	**+1.6**
	5.5nm,0.3s,baz=34,slow=14,SNR=7.1							
MAT	**Matsushiro**	**3.65**	**238**	P		**Pn**	**05 43 30.2**	**+1.7**
MAT				*e*S		**Sn**	**05 44 14.0**	**+3.6**
ASAJ	**Asahikawa**	**5.58**	**4**	P		**Pn**	**05 43 56.4**	**+1.5**
	1.3nm,0.3s,baz=214,slow=8.4,SNR=7.5							
ASAJ				S		**Sn**	**05 44 57.9**	**+0.1**
	0.2nm,0.3s,baz=108,slow=20,SNR=2.4							
USRK	**Ussuriysk Ar.**	**9.44**	**310**	P		**Pn**	**05 44 49.8**	**+2.0**
	0.4nm,0.3s,baz=124,slow=14,SNR=9.9							
JNU	**Nakatsue**	**10.56**	**243**	P		**Pn**	**05 45 05.2**	**+2.0**
	0.3nm,0.3s,baz=122,slow=5.1,SNR=4.3							
KSRS	**Korea Array**	**11.21**	**269**	P		**Pn**	**05 45 14.3**	**+2.4**
	0.3nm,0.3s,baz=71,slow=14,SNR=3.7							
ZALV	**Zalesovo Beam**	**41.29**	**311**	P		**P**	**05 50 14.8**	**-0.1**
	1.5nm,0.5s,baz=83,slow=8.0,SNR=8.2							
ZALV				PcP		**PcP**	**05 52 11.5**	**-1.2**
	0.6nm,0.3s,baz=116,slow=2.4,SNR=3.5							
CMAR	**Chiang Mai Arr**	**42.38**	**254**	P		**P**	**05 50 26.8**	**+2.4**
	0.4nm,0.3s,baz=60,slow=7.4,SNR=2.4							
MKAR	**Makanchi Array**	**43.77**	**301**	P		**P**	**05 50 35.0**	**-0.2**
	1.0nm,0.7s,baz=85,slow=9.9,

TGIG				*i* S	Sn	06 10 27.6	-1.0	
TGIG		**0.98**	**102**	*i* P	**Pn**	**06 10 09.4**	**0.0**	
TGIG				*i* S	**Sn**	**06 10 27.6**	**-1.0**	
TGBT	**Tuxtla Gutierr**	**1.01**	**101**	*eP*	**Pn**	**06 10 09.7**	**+0.1**	
TGBT				*eS*	**Sn**	**06 10 28.1**	**-0.8**	
TUIG	**Tuzandepetl**	**1.09**	**345**	*i* P	**Pn**	**06 10 08.9**	**-1.4**	
TUIG				*i* S	**Sn**	**06 10 26.8**	**-3.4**	
TUIG	**Tuzandepetl**	**1.09**	**345**	*i* P	**Pn**	**06 10 08.9**	**-1.4**	
TUIG				*i* S	**Sn**	**06 10 26.8**	**-3.4**	
PCIG		**1.54**	**145**	*eP*	**Pn**	**06 10 15.7**	**+1.1**	
PCIG				*eS*	**Sn**	**06 10 38.7**	**+0.9**	
PCIG		**1.54**	**145**	*eP*	**Pn**	**06 10 15.7**	**+1.1**	
PCIG				*eS*	**Sn**	**06 10 38.7**	**+0.9**	
CCIG	**Comitan**	**2.03**	**110**	*ePn*	**Pn**	**06 10 21.1**	**+0.8**	
CCIG				*eSn*	**Sn**	**06 10 45.9**	**-1.9**	
CCIG	**Comitan**	**2.03**	**110**	*eP*	**Pn**	**06 10 20.8**	**+0.6**	
CCIG				*eS*	**Sn**	**06 10 48.2**	**+0.4**	
HUIG	**Huatulco**	**2.25**	**238**	*i* P	**Pn**	**06 10 20.6**	**-2.2**	
HUIG				*eS*	**Sn**	**06 10 50.8**	**-1.5**	
HUIG	**Huatulco**	**2.25**	**238**	*i* P	**Pn**	**06 10 20.6**	**-2.2**	
HUIG				*eS*	**Sn**	**06 10 51.8**	**-0.5**	
OXBJ	**Oaxaca**	**2.49**	**272**	*eP*	**Pn**	**06 10 25.9**	**+0.1**	
OXBJ				*eS*	**Sn**	**06 10 56.4**	**-1.2**	
VHO	**Vista Hermosa**	**2.50**	**272**	*i* P	**Pn**	**06 10 25.7**	**-0.1**	
VHO				*eS*	**Sn**	**06 10 56.2**	**-1.7**	
VHO	**Vista Hermosa**	**2.50**	**272**	*i* P	**Pn**	**06 10 25.7**	**-0.1**	
VHO				*eS*	**Sn**	**06 10 56.2**	**-1.7**	
THIG		**2.73**	**139**	*eP*	**Pn**	**06 10 30.3**	**+1.8**	
THIG		**2.73**	**139**	*eP*	**Pn**	**06 10 30.3**	**+1.8**	
TLIG	**Tlapa**	**4.29**	**278**	*ePn*	**Pn**	**06 10 47.6**	**-1.0**	
TLIG				*eSn*	**Sn**	**06 11 36.9**	**-1.7**	
UNM	**Universidad Na**	**5.34**	**297**	*ePn*	**Pn**	**06 11 04.0**	**+1.3**	
TEIG	**Tepich**	**6.42**	**59**	P	Pn	06 11 07.9	-8.7	
	5.1nm,0.3s,baz=89,slow=24,SNR=51							
TEIG				S	Sn	06 12 18.1	-11	
	3.7nm,0.3s,baz=1.1,slow=23,SNR=3.1							
TEIG	**Tepich**	**6.42**	**59**	*ePn*	Pn	06 11 08.0	-8.6	
TGUH	**Tegucigalpa,Un**	**7.21**	**113**	*ePn*	**Pn**	**06 11 29.7**	**+2.4**	
MOIG	**Morelia**	**7.23**	**293**	*ePn*	**Pn**	**06 11 29.0**	**+1.3**	
MGAN	**Managua**	**9.01**	**121**	*ePn*	**Pn**	**06 11 51.1**	**-0.1**	
ZAIG	**Zacatecas**	**9.81**	**307**	*ePn*	**Pn**	**06 12 03.4**	**+1.3**	
JTS	**JuntasAbangare**	**11.12**	**126**	P	**Pn**	**06 12 18.9**	**-0.2**	
	3.3nm,0.3s,baz=300,slow=20,SNR=12							
JTS				S	**Sn**	**06 14 18.5**	**-3.7**	
	0.5nm,0.3s,baz=299,slow=19,SNR=2.2							
JTS	**JuntasAbangare**	**11.12**	**126**	*ePn*	**Pn**	**06 12 18.0**	**-1.1**	
934A	**Benavides**	**11.32**	**340**	P	**P**	**06 12 27.9**	**-1.6**	
	baz=158							
933A	**Laredo**	**11.61**	**337**	P	**P**	**06 12 31.8**	**-0.7**	
	baz=155							
835A	**Beeville**	**11.76**	**344**	P	**P**	**06 12 33.0**	**-1.3**	
	baz=162							
834A	**Tilden**	**11.82**	**341**	P	**P**	**06 12 33.2**	**-1.7**	
	baz=159							
736A	**Circle Diamond**	**12.22**	**348**	P	**P**	**06 12 38.1**	**-1.2**	
	baz=167							
833A	**Chaparral WMA,**	**12.29**	**338**	P	**P**	**06 12 39.8**	**-0.4**	
	baz=156							
832A	**Faith Ranch, C**	**12.48**	**335**	P	**P**	**06 12 41.6**	**-0.6**	
	baz=153							
734A	**La Parita Cree**	**12.50**	**342**	P	**P**	**06 12 42.6**	**+0.2**	
	baz=160							
733A	**Divot King Ran**	**12.62**	**339**	P	**P**	**06 12 43.7**	**-0.1**	
	baz=157							
635A	**Leesville**	**12.80**	**345**	P	**P**	**06 12 45.3**	**-0.5**	
	baz=164							
634A	**China Grove, S**	**12.94**	**343**	P	**P**	**06 12 48.2**	**+0.8**	
	baz=162							
HKT	**Hockley**	**13.01**	**353**	*ePn*	**Pn**	**06 12 44.1**	**+0.7**	
633A	**Saathoff Ranch**	**13.26**	**340**	P	**P**	**06 12 52.4**	**+1.5**	
	baz=158							
535A	**Dale**	**13.37**	**347**	P	**P**	**06 12 52.4**	**+0.3**	
	baz=166							
545A	**Edgard**	**13.42**	**14**	P	**P**	**06 12 53.9**	**+1.2**	
	baz=195							
534A	**Blanco**	**13.59**	**344**	P	**P**	**06 12 55.6**	**+1.0**	
	baz=162							
441A	**DeRidder**	**13.73**	**3**	P	**Pn**	**06 12 53.0**	**+0.3**	
	baz=184							
438A	**Sam Houston St**	**13.76**	**355**	P	**P**	**06 12 57.8**	**+1.3**	
	baz=175							
533A	**Kerrville**	**13.79**	**342**	P	**P**	**06 12 59.1**	**+2.2**	
	baz=160							
435B	**Jarrell**	**14.10**	**348**	P	**P**	**06 13 02.7**	**+2.5**	
	baz=166							
434A	**Burnet**	**14.28**	**345**	P	**P**	**06 13 02.8**	**+0.5**	
	baz=164							
339A	**Huntington**	**14.29**	**358**	P	**P**	**06 13 02.0**	**-0.4**	
	baz=178							
341A	**Kurthwood**	**14.32**	**3**	P	**P**	**06 13 01.3**	**-1.4**	
	baz=184							
338A	**Crockett**	**14.35**	**356**	P	**P**	**06 13 03.7**	**+0.6**	
	baz=176							
340A	**Bronson**	**14.38**	**1**	P	**P**	**06 13 02.3**	**-1.0**	
	baz=181							
JCT	**Junction City**	**14.40**	**340**	*ePn*	**P**	**06 13 02.3**	**-1.4**	
342A	**Flagon Creek P**	**14.42**	**6**	P	**P**	**06 13 03.6**	**-0.3**	
	baz=187							
433A	**Art**	**14.44**	**343**	P	**P**	**06 13 05.9**	**+1.8**	
	baz=161							
335A	**Moody**	**14.55**	**349**	P	**P**	**06 13 06.4**	**+1.1**	
	baz=167							
HPIG		**14.58**	**315**	*ePn*	**Pn**	**06 13 02.8**	**-0.8**	
NATX	**Nacogdoches**	**14.72**	**358**	P	**P**	**06 13 07.4**	**+0.3**	
	baz=178							
NATX	**Nacogdoches**	**14.72**	**358**	*ePn*	**P**	**06 13 07.5**	**+0.3**	
344A	**Westbrook Farm**	**14.73**	**11**	P	**P**	**06 13 07.4**	**+0.1**	
	baz=193							
346A	**Big Creek Wild**	**14.96**	**16**	P	**P**	**06 13 10.6**	**+0.8**	
	baz=198							
238A	**Jacksonville**	**14.99**	**357**	P	**P**	**06 13 11.3**	**+1.3**	
	baz=176							
TXAR	**Lajitas Array**	**15.10**	**326**	P	**Pn**	**06 13 09.7**	**-0.2**	
	0.1nm,0.3s,baz=147,slow=13,SNR=15							
TX31	**Lajitas Ar. Si**	**15.10**	**326**	*ePn*	**P**	**06 13 10.7**	**-0.8**	
242A	**Grayson**	**15.12**	**6**	P	**P**	**06 13 11.2**	**-0.3**	
	baz=187							
WHTX	**Lake Whitney,**	**15.25**	**349**	P	**P**	**06 13 19.2**	**+6.2**	
	baz=168							
WHTX	**Lake Whitney,**	**15.25**	**349**	*ePn*	**Pn**	**06 13 09.6**	**-2.0**	
	39nm,0.7s							
244A	**Avery, Jackson**	**15.32**	**11**	P	**P**	**06 13 13.2**	**-0.5**	
	baz=193							
234A	**Clairette**	**15.39**	**347**	P	**P**	**06 13 21.2**	**+6.5**	
	baz=166							
136A	**Ennis**	**15.58**	**352**	P	**P**	**06 13 21.5**	**+4.8**	
	baz=172							
137A	**Heron Place, G**	**15.62**	**355**	P	**P**	**06 13 22.7**	**+5.6**	
	baz=174							
138A	**Matatall Enter**	**15.64**	**357**	P	**P**	**06 13 20.6**	**+3.3**	
	baz=177							
143A	**Socs Landing,**	**15.85**	**8**	P	**P**	**06 13 22.2**	**+2.7**	
	baz=190							
MTDJ	**Mount Denham**	**15.86**	**83**	*ePn*	**Pn**	**06 13 18.8**	**-0.6**	
	119nm,1.4s							
133A	**Hamilton Ranch**	**16.15**	**345**	P	P	06 13 31.8	+8.7	
	baz=163							
Z37A	**Pogue Cattle C**	**16.21**	**355**	P	**P**	**06 13 29.9**	**+6.4**	
	baz=175							
Z38A	**Mt. Pleasant**	**16.22**	**357**	P	**P**	**06 13 27.6**	**+3.9**	
	baz=177							
Z40A	**Long Farm, Mag**	**16.22**	**2**	P	**P**	**06 13 29.6**	**+5.9**	
	baz=183							
Z36A	**Blue Ridge**	**16.36**	**353**	P	**P**	**06 13 31.5**	**+6.3**	
	baz=172							
ABTX	**Abilene, Hawle**	**16.36**	**343**	P	P	06 13 33.0	+7.7	
	baz=161							
ABTX	**Abilene, Hawle**	**16.36**	**343**	*ePn*	**P**	**06 13 25.6**	**+0.3**	
	35nm,0.6s							
147A	**Livingston**	**16.50**	**18**	P	**Pn**	**06 13 31.2**	**+4.3**	
	baz=200							
Z35A	**Perchaven, San**	**16.52**	**351**	P	Pn	06 13 35.1	+7.8	
	baz=170							
WLAR	**White Oak Lake**	**16.66**	**3**	*eP*	**Pn**	**06 13 29.6**	**+0.8**	
	116nm,0.9s							
Z34A	**Collier Ranch,**	**16.68**	**349**	P	Pn	06 13 37.1	+8.0	
	baz=167							
LPIG	**La Paz**	**16.72**	**298**	LR	LR	06 20 18.8		
	comp=Z,74nm,18.2s,baz=104,slow=38							
Z33A	**Whitaker Ranch**	**16.77**	**346**	P	Pn	06 13 39.9	+10	
	baz=164							
Y38A	**Idabel**	**16.89**	**358**	P	**Pn**	**06 13 38.1**	**+6.5**	
	baz=178							
Y39A	**Lockesburg**	**16.89**	**0**	P	**Pn**	**06 13 38.0**	**+6.4**	
	baz=180							
Y36A	**Durant**	**16.96**	**354**	P	Pn	06 13 41.4	+8.9	
	baz=173							
Y40A	**Okolona**	**16.98**	**2**	P	**Pn**	**06 13 38.3**	**+5.6**	
	baz=183							
Y37A	**Hugo**	**16.98**	**356**	P	**Pn**	**06 13 38.4**	**+5.7**	
	baz=175							
CCAR	**Cane Creek**	**17.00**	**7**	*eP*	**Pn**	**06 13 33.3**	**+0.4**	
	85nm,1.3s							
Y35A	**Marietta**	**17.06**	**352**	P	Pn	06 13 42.8	+9.2	
	baz=170							
Y43A	**Makayla and Ka**	**17.10**	**9**	P	**Pn**	**06 13 41.0**	**+6.8**	
	baz=190							
Y34A	**Reagan Ranch,**	**17.22**	**350**	P	Pn	06 13 44.1	+8.5	
	baz=168							
LRAL	**Lakeview Retre**	**17.23**	**21**	*eP*	**Pn**	**06 13 37.1**	**+1.3**	
	69nm,1.8s							
Y44A	**Strider, Charl**	**17.27**	**11**	P	Pn	06 13 43.6	+7.4	
	baz=193							
TIGA	**Tifton**	**17.29**	**32**	P	**P**	**06 13 35.6**	**+0.1**	
	baz=216							
Y45A	**Yeager Farm, C**	**17.31**	**13**	P	**Pn**	**06 13 36.4**	**-0.3**	
	baz=195							
Y33A	**Hilltop Ranch,**	**17.43**	**347**	P	Pn	06 13 47.5	+9.4	
	baz=166							
X39A	**Fountain Ranch**	**17.46**	**0**	P	**P**	**06 13 37.3**	**0.0**	
	baz=180							
X39A				P	Pn	06 13 46.2	+7.7	
	baz=180							
X40A	**Basin Creek Fa**	**17.47**	**4**	P	**Pn**	**06 13 44.4**	**+5.8**	
	baz=184							
Y46A	**Houston**	**17.48**	**15**	P	**Pn**	**06 13 38.6**	**-0.2**	
	baz=197							
MIAR	**Mount Ida**	**17.50**	**2**	P	**P**	**06 13 36.4**	**-1.4**	
	baz=182							
MIAR	**Mount Ida**	**17.50**	**2**	*eP*	**P**	**06 13 35.9**	**-1.9**	
	17nm,0.8s							
X35A	**Drake**	**17.54**	**352**	P	Pn	06 13 49.2	+10	
	baz=171							
X37A	**Clayton**	**17.57**	**357**	P	Pn	06 13 48.8	+9.0	
	baz=176							
X38A	**Whitesboro**	**17.63**	**358**	P	**P**	**06 13 39.2**	**0.0**	
	baz=178							
X38A				P	Pn	06 13 48.6	+8.2	
	baz=178							
X36A	**Centrahoma**	**17.63**	**354**	P	Pn	06 13 48.6	+8.1	
	baz=173							
Y47A	**UCPARC, Winfie**	**17.77**	**17**	P	**Pn**	**06 13 41.2**	**-0.9**	
	baz=200							
UALR	**University of**	**17.79**	**5**	*eP*	**P**	**06 13 40.9**	**-0.1**	
	26nm,1.0s							
X34A	**Smith Ranch, M**	**17.86**	**350**	P	**P**	**06 13 42.0**	**+0.2**	
	baz=168							
X34A				P	Pn	06 13 52.5	+9.3	
	baz=168							
MNTX	**Cornudas Mount**	**17.87**	**327**	P	**Pn**	**06 13 43.6**	**+0.2**	
	baz=142							
MNTX	**Cornudas Mount**	**17.87**	**327**	*eP*	**Pn**	**06 13 43.5**	**+0.1**	
	14nm,1.5s							
X33A	**Lawton**	**17.92**	**348**	P	Pn	06 13 53.8	+10	
	baz=166							
OXF	**Oxford**	**17.96**	**13**	*eP*	**Pn**	**06 13 44.2**	**-0.2**	
	36nm,1.0s							
X32A	**Elmer**	**17.98**	**346**	P	**P**	**06 13 43.1**	**+0.1**	
	baz=164							
W38A	**Poteau**	**18.02**	**359**	P	**P**	**06 13 43.4**	**-0.1**	
	baz=179							
W38A				P	Pn	06 13 54.1	+9.0	
	baz=179							
W39A	**Magazine**	**18.14**	**1**	P	**P**	**06 13 43.9**	**-1.0**	
	baz=181							
W39A				P	Pn	06 13 54.1	+7.6	
	baz=181							
W40A	**Ferguson Farm,**	**18.16**	**3**	P	Pn	06 13 55.0	+8.2	
	baz=183							
W41B	**Gary Mavity, V**	**18.20**	**5**	P	**P**	**06 13 44.8**	**-0.6**	
	baz=186							
X301	**Greenbrier Sit**	**18.25**	**5**	*eP*	Pn	06 13 56.7	+8.9	
	90nm,1.7s							
W35A	**Tecumseh**	**18.27**	**353**	P	**P**	**06 13 45.5**	**-0.7**	
	baz=172							
W35A				P	Pn	06 13 58.5	+10	
	baz=172							
GTBY	**Guantanamo Bay**	**18.27**	**78**	*eP*	**P**	**06 13 46.0**	**-0.4**	
	111nm,0.9s							
X201	**Greenbrier Sit**	**18.31**	**5**	*ePn*	Pn	06 13 56.1	+7.7	
	29nm,1.0s							
WHAR	**Wooly Hollow**	**18.31**	**5**	*ePn*	Pn	06 13 56.2	+7.7	
	22nm,0.8s							
MSTX	**Muleshoe**	**18.62**	**337**	P	**P**	**06 13 49.7**	**-0.5**	
	baz=153							
MSTX	**Muleshoe**	**18.62**	**337**	*eP*	**P**	**06 13 50.6**	**+0.4**	
MSTX				*epP*	**pP**	**06 14 21.2**	**+4.5**	
V40A	**Witts Springs**	**18.79**	**3**	P	**P**	**06 13 48.2**	**-3.7**	
	baz=184							
V40A				P	Pn	06 14 02.2	+8.1	
	baz=184							
V39A	**Pettigrew**	**18.79**	**1**	P	**P**	**06 13 49.2**	**-2.8**	
	baz=182							
V39A				P	Pn	06 14 03.1	+8.9	
	baz=182							
V37A	**Hulbert**	**18.85**	**357**	P	**P**	**06 13 51.9**	**-0.6**	
	baz=177							
V35A	**Meyer Ranch, C**	**18.86**	**353**	P	**P**	**06 13 51.2**	**-1.5**	
	baz=172							
TUL1	**Leonard**	**18.91**	**356**	*eP*	**P**	**06 13 51.1**	**-2.1**	
	20nm,0.8s							
GOGA	**Godfrey**	**18.97**	**28**	*eP*	**Pn**	**06 13 55.1**	**-1.2**	
	37nm,1.0s							
V34A	**Guthrie**	**19.02**	**352**	P	**P**	**06 13 53.0**	**-1.4**	
	baz=170							
V34A	**Guthrie**	**19.02**	**352**	*eP*	**P**	**06 13 51.4**	**-3.0**	
V34A				*ePn*	**P**	**06 13 53.0**	**-1.4**	
V34A				*epP*	pP	06 14 10.3	-11	
AMTX	**Amarillo**	**19.07**	**341**	P	**P**	**06 13 53.9**	**-1.1**	
	baz=157							
AMTX	**Amarillo**	**19.07**	**341**	*eP*	**P**	**06 13 54.7**	**-0.3**	
	19nm,0.8s							
V33A	**Lossen Ranch,**	**19.13**	**350**	P	**P**	**06 13 51.6**	**-4.0**	
	baz=168							
HHAR	**Hobbs**	**19.23**	**0**	*eP*	**P**	**06 13 55.3**	**-1.3**	
	32nm,1.0s							
U40A	**Yellville**	**19.33**	**3**	P	**P**	**06 13 56.9**	**-0.9**	
	baz=184							
U39A	**Green Forest**	**19.34**	**2**	P	**P**	**06 13 56.5**	**-1.3**	
	baz=182							
U38A	**Gravette**	**19.39**	**359**	P	**P**	**06 13 58.0**	**-0.4**	
	baz=179							
U35A	**Pawnee**	**19.45**	**354**	P	**P**	**06 13 58.2**	**-0.9**	
	baz=173							
HSIG		**19.55**	**311**	*eP*	**Pn**	**06 14 01.7**	**-1.5**	
	19nm,1.5s							
U34A	**Anderson Ranch**	**19.61**	**352**	*eP*	**P**	**06 14 01.5**	**+0.7**	
	21nm,0.8s							
U33A	**Lingo Farm, Me**	**19.70**	**350**	P	**P**	**06 14 00.5**	**-1.2**	
	baz=169							
MOTC	**Monteria, Cord**	**19.74**	**112**	*eP*	**P**	**06 14 03.6**	**+1.2**	
121A	**Cookes Peak, D**	**19.81**	**324**	P	**P**	**06 14 04.2**	**+1.1**	
	baz=138							
121A	**Cookes Peak, D**	**19.81**	**324**	*eP*	**Pn**	**06 14 04.8**	**-1.6**	
	11nm,0.9s							
319A	**Douglas**	**19.88**	**319**	*eP*	**Pn**	**06 14 06.0**	**-1.1**	
	16nm,0.8s							
PBMO	**Poplar Bluff**	**19.99**	**9**	*eP*	**P**	**06 14 05.2**	**+0.4**	
	37nm,1.3s							
PBMO				*eScP*	**ScP**	**06 21 41.0**	**+4.4**	
LPM	**Los Pinos Moun**	**20.58**	**329**	*eP*	**P**	**06 14 13.1**	**+1.7**	
LPM				*epP*	pP	06 14 47.2	+8.7	
S40A	**Lebanon**	**20.59**	**4**	P	**P**	**06 14 09.2**	**-2.1**	
	baz=184							
S39A	**Bolivar**	**20.64**	**2**	P	**P**	**06 14 09.3**	**-2.5**	
	baz=182							
S36A	**Lake Cedric, C**	**20.71**	**357**	P	**P**	**06 14 10.1**	**-2.3**	
	baz=176							
LAZ	**Ladron**	**20.91**	**329**	*eP*	Pn	06 14 16.9	-2.5	
LAZ				*epP*	pP	06 14 47.5	+5.3	
ANMO	**Albuquerque**	**21.02**	**331**	P	**P**	**06 14 15.2**	**-0.9**	
	1.8nm,0.9s,baz=145,slow=11,SNR=6.7							
ANMO	**Albuquerque**	**21.02**	**331**	P	**P**	**06 14 15.5**	**-0.5**	
	baz=145							
ANMO	**Albuquerque**	**21.02**	**331**	*eP*	**P**	**06 14 15.6**	**-0.5**	
ANMO				*epP*	**pP**	**06 14 47.4**	**+4.1**	
TUC	**Tucson**	**21.46**	**318**	P	**P**	**06 14 21.4**	**+0.8**	
	baz=131							
TUC	**Tucson**	**21.46**	**318**	*eP*	**P**	**06 14 21.9**	**+1.2**	
TUC				*epP*	**pP**	**06 14 47.6**	**-0.4**	
T25A	**Trinidad**	**22.04**	**338**	P	**P**	**06 14 27.5**	**+0.7**	
	baz=153							
WCI	**Wyandotte Cave**	**22.26**	**16**	*eP*	**P**	**06 14 29.4**	**+0.7**	
WCI				*epP*	**pP**	**06 14 55.3**	**-1.3**	
X18A	**Snowflake**	**22.50**	**324**	*eP*	**P**	**06 14 33.0**	**+1.7**	
X18A				*epP*	**pP**	**06 14 59.0**	**-0.5**	
OTAV	**Otavalo**	**22.70**	**136**	*eP*	**P**	**06 14 30.9**	**-2.7**	
	10nm,1.2s							
OTAV	**Otavalo**	**22.70**	**136**	*eP*	**P**	**06 14 36.0**	**+2.4**	
X16A	**Lo Mia Camp, P**	**23.29**	**321**	*eP*	**P**	**06 14 40.1**	**+1.6**	
	8.9nm,0.8s							
X16A				*epP*	**pP**	**06 15 12.5**	**+4.6**	
MVCO	**Mesa Verde**	**23.82**	**331**	P	**P**	**06 14 44.2**	**+0.8**	
	baz=144							
MVCO	**Mesa Verde**	**23.82**	**331**	*eP*	**P**	**06 14 44.4**	**+1.0**	
MVCO				*epP*	**pP**	**06 15 09.9**	**-3.7**	
MVCO				*esP*	sP	06 15 22.2	-11	
Q24A	**Divide**	**23.93**	**338**	*eP*	**P**	**06 14 44.5**	**-0.1**	
	6.8nm,0.8s							
WUAZ	**Wupatki**	**24.02**	**324**	P	**P**	**06 14 47.1**	**+1.9**	
	baz=136							
WUAZ	**Wupatki**	**24.02**	**324**	*eP*	**P**	**06 14 45.2**	**0.0**	
WUAZ				*epP*	**pP**	**06 15 19.7**	**+3.9**	
GLA	**Glamis**	**24.59**	**314**	P	**P**	**06 14 52.0**	**+1.7**	
	baz=126							
PV01	**Paradox Valley**	**24.60**	**332**	*eP*	**P**	**06 14 53.9**	**+3.4**	
PV01				*epP*	**pP**	**06 15 17.6**	**-4.4**	
SMCO	**Snowmass**	**24.80**	**336**	*eP*	**P**	**06 14 54.2**	**+1.7**	
SMCO				*epP*	**pP**	**06 15 20.1**	**-4.2**	
SMCO				*esP*	sP	06 15 27.9	-15	
BC3	**Big Chuckawall**	**25.36**	**315**	P	**P**	**06 14 58.5**	**+1.1**	
	baz=126							
PDAR	**Pinedale Array**	**28.88**	**336**	P	**P**	**06 15 28.9**	**+0.1**	
	0.3nm,0.6s,baz=113,slow=9.1,SNR=3.4							
SNOW	**Snow King Moun**	**29.94**	**335**	*eP*	**P**	**06 15 39.0**	**+0.8**	
SNOW				*epP*	**pP**	**06 16 15.3**	**+4.6**	
NVAR	**Mina Array Bea**	**30.08**	**320**	P	**P**	**06 15 41.2**	**+1.7**	
	3.6nm,0.8s,baz=136,slow=9.1,SNR=14							
NVAR				*pP*	**pP**	**06 16 12.8**	**+0.7**	
	3.7nm,0.8s,baz=134,slow=8.8,SNR=4.9							
NVAR				*sP*	**sP**	**06 16 29.0**	**-0.9**	
	5.8nm,0.9s,baz=136,slow=9.7,SNR=8.8							
BMN	**Battle Mountai**	**30.75**	**324**	*eP*	**P**	**06 15 46.4**	**+1.2**	
BMN				*esP*	**sP**	**06 16 35.5**	**-0.2**	
RLMT	**Red Lodge**	**30.80**	**339**	*eP*	**P**	**06 15 46.6**	**+0.9**	
RLMT				*epP*	**pP**	**06 16 23.3**	**+5.0**	
AGMN	**Agassiz Nation**	**31.27**	**358**	P	**P**	**06 15 47.8**	**-1.7**	
	baz=177							
B32A	**Ashes, Strandq**	**31.39**	**357**	P	**P**	**06 15 48.6**	**-1.9**	
	baz=176							
B30A	**Myrvik Farm, E**	**31.57**	**355**	P	**P**	**06 15 50.8**	**-1.4**	
	baz=172							
B29A	**Wagenman Farm,**	**31.69**	**353**	P	**P**	**06 15 52.0**	**-1.2**	
	baz=170							
A30A	**Hoffart Farm,**	**32.06**	**355**	P	**P**	**06 15 54.8**	**-1.6**	
	baz=172							
A29A	**Manning Farm,**	**32.13**	**354**	P	**P**	**06 15 55.7**	**-1.4**	
	baz=171							
F10A	**Beach Ranch, E**	**34.73**	**331**	*eP*	**P**	**06 16 20.0**	**+0.3**	
F10A				*epP*	**pP**	**06 16 56.6**	**+3.9**	
F10A				*esP*	**sP**	**06 17 08.7**	**-1.8**	
YBH	**Yreka Blue Hor**	**34.77**	**321**	P	**P**	**06 16 18.8**	**-1.3**	
	0.9nm,0.7s,baz=135,slow=2.9,SNR=4.7							
LPAZ	**La Paz**	**41.83**	**141**	P	**P**	**06 17 20.3**	**+0.4**	
	1.8nm,0.6s,baz=314,slow=5.3,SNR=8.5							
LPAZ				*pP*	**pP**	**06 17 53.0**	**-0.9**	
	1.2nm,0.7s,baz=328,slow=7.9,SNR=2.7							
LPAZ	**La Paz**	**41.83**	**141**	*eP*	**P**	**06 17 20.9**	**+0.9**	
	2.7nm,0.8s							
SIV	**San Ignacio**	**46.21**	**133**	P	**P**	**06 17 54.3**	**+0.1**	
	3.6nm,0.5s,baz=317,slow=10,SNR=12							
YKA	**Yellowknife Ar**	**47.68**	**347**	P	**P**	**06 18 02.9**	**-2.0**	
	3.4nm,0.7s,baz=151,slow=7.4,SNR=68							
YKA				*pP*	**pP**	**06 18 39.4**	**-0.3**	
	1.4nm,0.6s,baz=150,slow=7.5,SNR=7.7							
INK	**Inuvik**	**57.02**	**344**	P	**P**	**06 19 12.4**	**-1.2**	
	5.0nm,0.8s,baz=120,slow=6.2,SNR=12							
IL1	**Eielson Array**	**59.31**	**337**	*eP*	**P**	**06 19 28.6**	**-1.0**	
ILAR	**Eielson Array**	**59.31**	**337**	P	**P**	**06 19 29.3**	**-0.3**	
	0.3nm,0.5s,baz=154,slow=4.8,SNR=11							
ILAR				*pP*	**pP**	**06 20 05.8**	**-0.1**	
	0.6nm,0.9s,baz=112,slow=7.7,SNR=2.8							
RND	**Reindeer**	**59.48**	**335**	*eP*	**P**	**06 19 31.9**	**+1.0**	
RND				*epP*	**pP**	**06 20 08.6**	**+1.5**	
RSO	**Redoubt South**	**60.07**	**331**	*eP*	**P**	**06 19 36.2**	**+1.1**	
TRF	**Thorofare Moun**	**60.08**	**334**	*eP*	**P**	**06 19 35.8**	**+0.6**	
TRF				*epP*	**pP**	**06 20 11.8**	**+0.4**	
BPAW	**Bear Paw Mtn.**	**60.63**	**335**	*eP*	**P**	**06 19 38.5**	**-0.2**	
	4.9nm,1.1s							
MLY	**Manley**	**60.90**	**336**	*eP*	**P**	**06 19 40.6**	**0.0**	
MLY				*epP*	**pP**	**06 20 18.1**	**+1.2**	
PLCA	**Paso Flores**	**61.45**

JMK				*e*S	**Sn**	06 18 11.3	**+0.3**
JOM	**Ohasama**	**2.44**	**301**	P	**Pn**	06 17 45.5	**-0.7**
JYK	**Kaneyama**	**2.93**	**284**	P	**Pn**	06 17 52.9	**0.0**
JYK				*e*S	**Sn**	06 18 28.2	**+1.4**
JFT	**Otama**	**2.99**	**257**	*e*S	**Sn**	06 18 28.3	**0.0**
ERM	**Erimo**	**3.82**	**351**	*e*Pn	**Pn**	06 18 04.8	**-0.3**
ERM				*e*Sn	**Sn**	06 18 50.7	**+2.0**
JOT	**Ohata**	**3.87**	**325**	*e*S	**Sn**	06 18 47.2	**-2.7**
MJAR	**Matsushiro Arr**	**4.91**	**251**	Pn	**Pn**	06 18 19.1	**-1.1**
	1.8nm,0.3s,baz=66,slow=9.9,SNR=41						
MJAR				Sn	**Sn**	06 19 16.8	**+1.0**
	0.6nm,0.3s,baz=61,slow=13,SNR=8.2						
MJAR				LR	LR	06 20 35.9	
	comp=Z,121nm,19.8s,baz=90,slow=44						
MAJO	**Matsushiro**	**4.91**	**251**	*e*Pn	**Pn**	06 18 20.8	**+0.6**
MAT	**Matsushiro**	**4.91**	**251**	P	**Pn**	06 18 21.0	**+0.8**
MAT				S	**Sn**	06 19 12.2	**-3.7**
ASAJ	**Asahikawa**	**5.96**	**350**	Pn	**Pn**	06 18 33.0	**-1.5**
	2.0nm,0.3s,baz=167,slow=13,SNR=14						
ASAJ				Sn	**Sn**	06 19 39.2	**-2.2**
	baz=53,slow=20,SNR=2.0						
ASAJ				LR	LR	06 21 06.9	
	comp=Z,33nm,18.2s,baz=104,slow=40						
ASAJ	**Asahikawa**	**5.96**	**350**	*e*Pn	**Pn**	06 18 33.8	**-0.7**
ASAJ				Sn	**Sn**	06 19 39.2	**-2.2**
USRK	**Ussuriysk Ar.**	**10.82**	**307**	Pn	**Pn**	06 19 41.3	**+0.2**
	0.2nm,0.3s,baz=125,slow=12,SNR=8.2						
USRK				LR	LR	06 23 48.9	
	comp=Z,78nm,18.8s,baz=175,slow=37						
JNU	**Nakatsue**	**11.83**	**248**	LR	LR	06 24 47.7	
	comp=Z,80nm,21.0s,baz=117,slow=39						
MDJ	**Mudanjiang**	**12.53**	**305**	*e*Pn	**Pn**	06 20 04.0	**-0.6**
KSRS	**Korea Array**	**12.73**	**271**	Pn	**Pn**	06 20 07.2	**-0.2**
	0.5nm,0.3s,baz=156,slow=9.6,SNR=5.9						
KSRS				LR	LR	06 24 58.5	
	comp=Z,69nm,18.3s,baz=28,slow=37						
KSAR	**Wonju Array Be**	**12.76**	**271**	Pn	**Pn**	06 20 07.2	**-0.6**
KLR	**Kul'dur**	**14.08**	**325**	Pn	**Pn**	06 20 25.7	**0.0**
	0.1nm,0.3s,baz=127,slow=10,SNR=3.3						
KLR				LR	LR	06 25 11.8	
	comp=Z,50nm,20.1s,baz=192,slow=34						
PETK	**Petropavlovsk-**	**17.63**	**28**	P	**Pn**	06 21 12.1	**+0.6**
	0.4nm,0.3s,baz=224,slow=4.0,SNR=3.0						
SEY	**Seymchan**	**25.24**	**9**	P	**P**	06 22 31.7	**+0.5**
	1.6nm,0.6s,baz=196,slow=4.9,SNR=5.6						
YAK	**Yakutsk**	**25.39**	**344**	*e*P	**P**	06 22 33.4	**+0.8**
	11nm,0.6s						
SONM	**Songino Array**	**28.85**	**302**	P	**P**	06 23 05.0	**+1.0**
	1.2nm,0.8s,baz=89,slow=7.5,SNR=4.7						
SONM	**Songino Array**	**28.85**	**302**	P	**P**	06 23 05.0	**+1.0**
ENH	**Enshi**	**29.48**	**265**	*e*P	**P**	06 23 09.4	**-0.3**
	5.7nm,0.3s						
TLY	**Talaya**	**31.13**	**309**	LR	LR	06 37 34.6	
	comp=Z,50nm,18.8s,baz=103,slow=39						
ZALV	**Zalesovo Beam**	**42.63**	**311**	P	**P**	06 25 01.7	**+0.1**
	0.4nm,0.3s,baz=95,slow=7.7,SNR=3.7						
ZALV				PcP	**PcP**	06 26 52.7	**-0.4**
	0.7nm,0.6s,baz=114,slow=3.6,SNR=3.5						
MKAR	**Makanchi Array**	**45.22**	**302**	P	**P**	06 25 23.0	**+0.5**
	1.7nm,0.8s,baz=84,slow=9.3,SNR=13						
MKAR				LR	LR	06 44 28.0	
	comp=Z,26nm,22.0s,baz=314,slow=36						
KURK	**Kurchatov**	**46.81**	**308**	P	**P**	06 25 35.6	**+0.8**
KURBB	**Kurchatov Arra**	**46.88**	**307**	P	**P**	06 25 35.6	**+0.2**
	1.2nm,0.7s,baz=78,slow=7.6,SNR=5.8						
ILAR	**Eielson Array**	**47.37**	**33**	P	**P**	06 25 38.7	**-0.4**
	0.2nm,0.7s,baz=252,slow=7.5,SNR=3.0						
BVAR	**Borovoye Array**	**51.28**	**312**	P	**P**	06 26 09.7	**+0.6**
	0.6nm,0.7s,baz=84,slow=7.6,SNR=3.6						
ARU	**Arti**	**56.81**	**319**	P	**P**	06 26 49.6	**+0.3**
	2.0nm,0.5s,baz=15,slow=2.2,SNR=5.0						
WRA	**Warramunga Arr**	**58.59**	**191**	P	**P**	06 27 00.2	**-1.9**
	1.6nm,0.8s,baz=7.4,slow=7.0,SNR=8.1						
ABKAR	**Akbulak array**	**58.72**	**310**	*e*P	**P**	06 27 03.5	**+0.6**
	1.1nm,0.6s						
AKTO	**Aktyubinsk**	**59.38**	**312**	P	**P**	06 27 07.3	**-0.1**
	2.1nm,0.9s,baz=80,slow=10,SNR=7.0						
YKA	**Yellowknife Ar**	**61.72**	**31**	P	**P**	06 27 23.0	**-0.2**
	0.1nm,0.6s,baz=304,slow=6.4,SNR=3.7						
ASAR	**Alice Springs**	**62.31**	**190**	P	**P**	06 27 26.4	**-1.2**
	0.4nm,0.8s,baz=14,slow=7.7,SNR=6.4						
NEW	**Newport**	**67.82**	**45**	P	**P**	06 28 04.3	**+1.0**
	0.5nm,0.3s,baz=110,slow=11,SNR=3.6						
FINES	**FINESS Array B**	**68.68**	**333**	P	**P**	06 28 08.4	**+0.1**
	1.4nm,0.8s,baz=35,slow=10,SNR=4.3						
KBZ	**Khabaz**	**71.65**	**311**	P	**P**	06 28 27.8	**+1.0**
	1.5nm,0.8s,baz=153,slow=11,SNR=4.5						
NVAR	**Mina Array Bea**	**72.62**	**55**	P	**P**	06 28 33.7	**+0.7**
	0.6nm,0.6s,baz=299,slow=6.3,SNR=4.3						
AKASG	**Malin Array Be**	**74.57**	**323**	P	**P**	06 28 43.8	**-0.2**
	0.4nm,0.4s,baz=44,slow=6.1,SNR=5.0						
PDAR	**Pinedale Array**	**75.35**	**47**	P	**P**	06 28 49.0	**+0.1**
	0.4nm,0.6s,baz=251,slow=1.9,SNR=7.2						

IDC ***17*** *06:22:41.4±1.0,36°.83N×143°.35E,h0km,mb3.4/8, mb1 3.6/10,mb1mx3.4/56,mbtmp3.4/10,ML3.9/1,MS2.4/1, Ms1 2.4/1,ms1mx2.1/35,Error ellipse: s-maj=29.8km s-min=20.6km az=114.0*

ISCJB ***17*** *06:22:44.6±0.7,37°.02N±0°.05×143°.27E±0°.05,h33km, mb3.4/8,Error ellipse: s-maj=7.3km s-min=6.1km az=12.4*

JMA ***17*** *06:22:45.9±0.2,37°.05N×143°.20E,h50km,M3.8*

ISC 17 06:22:47.0±1.0,37°.05N±0°.07×143°.27E±0°.07,h35km,n21, σ1§28/23,mb3.4/8,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**1.97**	**272**	S	**Sn**	**06 23 40.2**	**-1.3**
JIO	**Ouri**	**2.07**	**313**	P	**Pn**	**06 23 18.6**	**-0.7**
JIO				*e*S	**Sn**	**06 23 42.9**	**-0.9**
JMM	**Marumori**	**2.13**	**293**	*e*S	**Sn**	**06 23 44.7**	**-0.6**
JFT	**Otama**	**2.38**	**282**	P	**Pn**	**06 23 23.4**	**-0.2**
JFT				*e*S	**Sn**	**06 23 51.0**	**-0.6**
JOU	**Okura**	**2.45**	**303**	S	**Sn**	**06 23 53.3**	**+0.1**
JMK	**Ichinoseki**	**2.50**	**320**	*e*S	**Sn**	**06 23 53.6**	**-0.7**
JKZ	**Kuzumaki**	**3.30**	**333**	S	**Sn**	**06 24 13.7**	**-0.7**
JANG	**Nango**	**3.59**	**338**	S	**Sn**	**06 24 20.3**	**-1.1**
MJAR	**Matsushiro Arr**	**4.09**	**264**	Pn	**Pn**	**06 23 46.4**	**-0.7**
	0.2nm,0.3s,baz=87,slow=14,SNR=3.3						
MAT	**Matsushiro**	**4.09**	**264**	P	**Pn**	**06 23 47.5**	**+0.4**
MAT				S	**Sn**	**06 24 33.1**	**-0.6**
JHJ	**Hachijo jima 2**	**4.85**	**217**	Sn	Sn	06 24 45.3	-7.0
	8.6nm,0.3s,baz=216,slow=23,SNR=2.3						
ASAJ	**Asahikawa**	**7.08**	**356**	Pn	**Pn**	**06 24 27.4**	**-0.7**
	1.8nm,0.3s,baz=206,slow=7.2,SNR=11						
ASAJ				Sn	**Sn**	**06 25 44.8**	**-2.6**
	0.5nm,0.3s,baz=198,slow=20,SNR=2.8						
PETK	**Petropavlovsk-**	**18.96**	**28**	LR	LR	06 37 23.1	
	comp=Z,11nm,18.0s,baz=16,slow=46						
SEY	**Seymchan**	**26.52**	**9**	P	**P**	**06 28 22.0**	**+1.0**
	0.8nm,0.5s,baz=180,slow=20,SNR=3.9						
SONM	**Songino Array**	**29.01**	**304**	P	**P**	**06 28 45.9**	**+2.3**
	0.3nm,0.3s,baz=96,slow=7.7,SNR=2.9						
MKAR	**Makanchi Array**	**45.37**	**302**	P	**P**	**06 31 01.3**	**-0.5**
	0.2nm,0.6s,baz=99,slow=7.6,SNR=2.5						
ILAR	**Eielson Array**	**48.69**	**32**	P	**P**	**06 31 28.3**	**+0.8**
	0.2nm,0.6s,baz=262,slow=6.0,SNR=5.1						
INK	**Inuvik**	**53.70**	**27**	P	**P**	**06 32 06.1**	**+1.2**
	0.3nm,0.4s,baz=301,slow=7.0,SNR=4.9						
WRA	**Warramunga Arr**	**57.30**	**190**	P	**P**	**06 32 29.0**	**-2.4**
	0.5nm,0.8s,baz=6.9,slow=5.9,SNR=2.6						
ASAR	**Alice Springs**	**61.03**	**190**	P	**P**	**06 32 55.4**	**-1.7**
	0.2nm,0.7s,baz=7.6,slow=7.7,SNR=3.1						
YKA	**Yellowknife Ar**	**63.05**	**31**	P	**P**	**06 33 11.2**	**+0.9**
	0.1nm,0.7s,baz=297,slow=6.1,SNR=3.6						

IDC ***17*** *06:36:07.3±0.8,38°.11N×144°.19E,h0km,mb3.8/17, mb1 3.9/22,mb1mx3.8/47,mbtmp3.8/22,ML3.3/4,MS2.9/6, Ms1 2.9/6,ms1mx2.6/55,Error ellipse: s-maj=18.6km s-min=17.0km az=148.0*

ISCJB ***17*** *06:36:08.7±0.5,38°.24N±0°.05×144°.07E±0°.04,h14km, mb3.8/19,Error ellipse: s-maj=7.2km s-min=4.7km az=164.1*

NEIC ***17*** *06:36:09.0±0.5,38°.17N×144°.22E,h10km,mb4.2/2,Error ellipse: s-maj=9.5km s-min=7.2km az=134.0*

JMA ***17*** *06:36:11.4±0.2,38°.20N×144°.00E,h44km,M4.0*

ISC 17 06:36:10.2±0.7,38°.25N±0°.06×144°.10E±0°.07,h14km,n39, σ1§18/50,mb3.9/19,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**2.07**	**294**	P	**Pn**	**06 36 43.9**	**-0.7**
OFUJ				S	**Sn**	**06 37 08.3**	**-1.9**
JIO	**Ouri**	**2.17**	**276**	P	**Pn**	**06 36 45.2**	**-0.7**
JIO				S	**Sn**	**06 37 10.2**	**-2.4**
JMK	**Ichinoseki**	**2.36**	**288**	P	**Pn**	**06 36 48.1**	**-0.4**
JMK				S	**Sn**	**06 37 15.5**	**-1.8**
JTH	**Tanohata**	**2.42**	**315**	P	**Pn**	**06 36 49.9**	**+0.6**
JTH				*e*S	**Sn**	**06 37 17.5**	**-1.2**
JOM	**Ohasama**	**2.51**	**300**	P	**Pn**	**06 36 50.5**	**0.0**
JOM				*e*S	**Sn**	**06 37 19.7**	**-1.2**
JMM	**Marumori**	**2.64**	**263**	P	**Pn**	**06 36 51.5**	**-0.8**
JMM				S	**Sn**	**06 37 21.5**	**-2.6**
JFK	**Kawauchi**	**2.70**	**252**	P	**Pn**	**06 36 51.8**	**-1.5**
JOU	**Okura**	**2.71**	**273**	P	**Pn**	**06 36 53.2**	**-0.1**
JOU				S	**Sn**	**06 37 24.3**	**-1.5**
JKZ	**Kuzumaki**	**2.76**	**310**	P	**Pn**	**06 36 54.0**	**-0.1**
ERM	**Erimo**	**3.83**	**349**	*e*Pn	**Pn**	**06 37 08.8**	**+0.2**
MJAR	**Matsushiro Arr**	**4.99**	**252**	Pn	**Pn**	**06 37 24.9**	**+0.2**
	1.9nm,0.3s,baz=69,slow=10,SNR=38						
MJAR				Sn	**Sn**	**06 38 23.6**	**+1.4**
	1.2nm,0.3s,baz=357,slow=36,SNR=3.6						
MJAR				LR	LR	06 39 39.5	
	comp=Z,131nm,19.8s,baz=80,slow=42						
MAJO	**Matsushiro**	**4.99**	**252**	*e*Pn	**Pn**	**06 37 25.6**	**+0.9**
	26nm,0.9s						
MAJO				*e*Sn	**Sn**	**06 38 22.4**	**+0.2**
ASAJ	**Asahikawa**	**5.96**	**350**	Pn	**Pn**	**06 37 37.4**	**-0.6**
	2.3nm,0.3s,baz=194,slow=10,SNR=16						
ASAJ				Sn	**Sn**	**06 38 44.6**	**-1.5**
	0.7nm,0.3s,baz=229,slow=20,SNR=2.7						
ASAJ				LR	LR	06 40 03.1	
	comp=Z,49nm,19.1s,baz=110,slow=38						
ASAJ	**Asahikawa**	**5.96**	**350**	*e*Pn	**Pn**	**06 37 37.6**	**-0.5**
ASAJ				*e*Sn	**Sn**	**06 38 43.9**	**-2.3**
ASAJ				Sn	**Sn**	**06 38 44.6**	**-1.5**
USRK	**Ussuriysk Ar.**	**10.88**	**307**	Pn	**Pn**	**06 38 47.0**	**+1.6**
	0.4nm,0.3s,baz=107,slow=14,SNR=5.8						
USRK				LR	LR	06 42 46.1	
	comp=Z,97nm,20.0s,baz=131,slow=36						
JNU	**Nakatsue**	**11.90**	**249**	LR	LR	06 44 01.7	
	comp=Z,81nm,18.8s,baz=104,slow=40						
KSRS	**Korea Array**	**12.81**	**271**	Pn	**Pn**	**06 39 13.1**	**+1.2**
	baz=88,slow=14,SNR=4.5						
KSRS				LR	LR	06 43 53.0	
	comp=Z,61nm,19.0s,baz=72,slow=36						
KSAR	**Wonju Array Be**	**12.85**	**271**	Pn	**Pn**	**06 39 13.1**	**+0.8**
KLR	**Kul'dur**	**14.12**	**325**	Pn	**Pn**	**06 39 30.9**	**+1.2**
	0.0nm,0.3s,baz=199,slow=14,SNR=2.9						
KLR				LR	LR	06 45 47.0	
	comp=Z,38nm,18.8s,baz=92,slow=41						
SEY	**Seymchan**	**25.22**	**9**	P	**P**	**06 41 36.3**	**+1.1**
	1.5nm,0.7s,baz=189,slow=7.6,SNR=5.2						
SONM	**Songino Array**	**28.92**	**302**	P	**P**	**06 42 09.6**	**+0.7**
	0.6nm,0.6s,baz=94,slow=9.1,SNR=3.8						
ZALV	**Zalesovo Beam**	**42.69**	**311**	P	**P**	**06 44 06.6**	**+0.3**
	0.5nm,0.4s,baz=86,slow=9.1,SNR=3.6						
MKAR	**Makanchi Array**	**45.29**	**302**	P	**P**	**06 44 27.4**	**+0.1**
	1.3nm,0.7s,baz=82,slow=9.8,SNR=14						
KURK	**Kurchatov**	**46.87**	**308**	P	**P**	**06 44 40.6**	**+0.9**
KURBB	**Kurchatov Arra**	**46.94**	**307**	P	**P**	**06 44 40.6**	**+0.4**
	1.6nm,0.8s,baz=81,slow=8.1,SNR=2.9						
ILAR	**Eielson Array**	**47.32**	**33**	P	**P**	**06 44 42.5**	**-0.5**
	0.3nm,0.7s,baz=192,slow=12,SNR=4.2						
TKM2	**Tokmak 2**	**50.93**	**298**	*e*P	**P**	**06 45 12.3**	**+1.1**
	4.7nm,0.9s						
ARU	**Arti**	**56.86**	**319**	P	**P**	**06 45 54.4**	**+0.4**
	0.8nm,0.3s,baz=28,slow=6.4,SNR=4.1						
WRA	**Warramunga Arr**	**58.61**	**191**	P	**P**	**06 46 04.9**	**-1.8**
	1.3nm,0.7s,baz=13,slow=7.3,SNR=4.7						
ABKAR	**Akbulak array**	**58.78**	**310**	*e*P	**P**	**06 46 07.8**	**+0.1**
	0.7nm,0.6s						
YKA	**Yellowknife Ar**	**61.67**	**31**	P	**P**	**06 46 27.0**	**-0.2**
	0.2nm,0.7s,baz=300,slow=6.2,SNR=5.2						
ASAR	**Alice Springs**	**62.33**	**191**	P	**P**	**06 46 30.1**	**-2.1**
	0.5nm,0.7s,baz=15,slow=11,SNR=6.4						
FINES	**FINESS Array B**	**68.72**	**333**	P	**P**	**06 47 12.6**	**-0.3**
	1.3nm,0.8s,baz=12,slow=9.8,SNR=4.7						
KBZ	**Khabaz**	**71.71**	**312**	P	**P**	**06 47 32.7**	**+1.1**
	1.8nm,0.8s,baz=75,slow=4.1,SNR=4.8						
NVAR	**Mina Array Bea**	**72.55**	**55**	P	**P**	**06 47 38.6**	**+1.6**
	0.5nm,0.4s,baz=20,slow=4.9,SNR=5.9						
NOA	**NORSAR Array B**	**73.87**	**338**	P	**P**	**06 47 44.3**	**+0.1**
	1.9nm,1.1s,baz=114,slow=21,SNR=3.2						
AKASG	**Malin Array Be**	**74.62**	**323**	P	**P**	**06 47 48.7**	**+0.1**
	0.5nm,0.4s,baz=42,slow=5.1,SNR=6.5						
PDAR	**Pinedale Array**	**75.28**	**47**	P	**P**	**06 47 52.0**	**-1.1**
	0.4nm,0.7s,baz=288,slow=1.4,SNR=4.7						
GERES	**GERESS Array B**	**82.77**	**330**	P	**P**	**06 48 33.3**	**-0.5**
	0.2nm,0.4s,baz=60,slow=12,SNR=3.0						

MAN 17 06:39:57,13°.07N×121°.12E,h1km,mb4.3,ML3.1,MS2.9, Mindoro

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PGP	**Puerto Galera**	**0.46**	**339**	*e*P	Pg	06 40 06.0	+0.1
SJMP	**San Jose**	**0.60**	**180**	*e*P	Pg	06 40 09.3	+0.7
SJMP				*e*S	Sg	06 40 15.3	-1.2
BOAC	**Boac**	**0.80**	**61**	*e*P	Pb	06 40 13.3	-0.5
BOAC				*e*S	Sn	06 40 28.6	+0.5
BUSP	**Coron**	**1.39**	**221**	*e*P	Pb	06 40 24.3	+0.5
CUYO	**Cuyo Island**	**2.21**	**183**	*e*P	Pn	06 40 34.5	-0.4
ENPP	**El Nido**	**2.49**	**222**	*e*P	Pn	06 40 39.8	+1.2

JMA 17 06:47:04.3±0.3,36°.18N×142°.98E,h41km,M3.5,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHO	**Hitachi**	**1.99**	**283**	P	Pn	06 47 36.7	+1.2
JHO				S	Sn	06 48 00.8	+1.6
JFK	**Kawauchi**	**2.06**	**306**	P	Pn	06 47 37.5	+1.0
JFK				S	Sn	06 48 01.9	+0.9
BSO1	**Boso 1**	**2.23**	**228**	P	Pn	06 47 38.7	+0.4
JMM	**Marumori**	**2.43**	**315**	P	Pn	06 47 42.9	+1.4
JMM				S	Sn	06 48 12.1	+2.2
BSO3	**Boso 3**	**2.44**	**236**	P	Pn	06 47 43.5	+2.1
BSO3				S	Sn	06 48 13.8	+4.0
BSO4	**Boso 4**	**2.46**	**242**	P	Pn	06 47 44.1	+2.3
JFT	**Otama**	**2.51**	**303**	P	Pn	06 47 45.3	+2.7
JFT				S	Sn	06 48 14.2	+2.3
MAT	**Matsushiro**	**3.87**	**277**	P	Pn	06 48 05.0	+3.7
MAT				*e*S	Sn	06 48 42.5	-3.0

NIED ***17*** *06:49:00,35°.90N×140°.50E,h32km,Mw4.6 Best double couple: M0 8.39000×10^15 NP1:φs=214.00000°,δ48.00000°, λ=14.00000°. NP2:φs=313.00000°,δ80.00000°, λ=137.00000°.*

IDC ***17*** *06:49:18.1±0.5,35°.71N×140°.40E,h0km,mb4.3/31, mb1 4.5/35,mb1mx4.4/54,mbtmp4.4/35,ML4.2/4,MS3.7/34, Ms1 3.7/34,ms1mx3.6/60,Error ellipse: s-maj=13.7km s-min=10.8km az=89.0*

BJI ***17*** *06:49:18.0,35°.67N×140°.73E,h27km,mb4.6/36,mB4.8/22, Ms4.2/18,Ms7 4.1/13*

MOS ***17*** *06:49:21.3±1.1,35°.82N×140°.47E,h30km,mb4.8/40,Error ellipse: s-maj=8.8km s-min=5.3km az=104.6*

ISCJB ***17*** *06:49:22.0±0.5,35°.82N±0°.02×140°.39E±0°.03,h32km±3km, mb4.5/97,MS3.8/33,Error ellipse: s-maj=3.9km s-min=3.9km az=152.3*

JMA ***17*** *06:49:22.8,35°.87N×140°.46E,h35km±1km,M4.6 Broadband fault plane solution: P waves. NP1: φs=92.00000°,δ74.00000°,λ108.00000°. NP2: φs=222.00000°,δ23.00000°,λ43.00000°. Principal axes: T Plg57.0000°, Azm25.0000°; N Plg17.0000°, Azm267.0000°; P Plg27.0000°, Azm168.0000°;*

JMA Felt III J1.

NEIC ***17*** *06:49:24.2±0.5,35°.73N×140°.37E,h39km±4km,mb4.6/46 Error ellipse: s-maj=4.6km s-min=3.9km az=140.0*

NEIC Felt at Tokyo. Recorded [3 JMA] in Chiba and Ibaraki.

ISC 17 06:49:22.3±0.6,35°.84N±0°.03×140°.45E±0°.04,h24km±3km, h24km:pP-P,n233,σ1§52/234,mb4.5/97,MS3.8/34, 13C-11D,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.35**	**112**	||P	**Pn**	**06 49 31.2**	**-0.7**
CHOJ				S	**Sn**	**06 49 37.1**	**-1.1**
JYT	**Yasato**	**0.44**	**332**	||P	**Pb**	**06 49 32.3**	**+0.7**
JYT				S	**Sb**	**06 49 38.8**	**+0.9**
JHO	**Hitachi**	**0.78**	**7**	||P	**Pb**	**06 49 36.5**	**-0.7**
JHO				S	**Sb**	**06 49 46.2**	**-1.2**
BSO4	**Boso 4**	**0.85**	**186**	||P	**Pn**	**06 49 39.3**	**+0.7**
JAG	**Ashikaga**	**1.00**	**306**	||P	**Pn**	**06 49 39.9**	**-0.9**
BSO3	**Boso 3**	**1.03**	**177**	||P	**Pb**	**06 49 41.1**	**-0.2**
MJAR	**Matsushiro Arr**	**1.95**	**292**	Pn	**Pn**	**06 49 54.0**	**+0.2**
	29nm,0.3s,baz=94,slow=9.3,SNR=105						
MAJO	**Matsushiro**	**1.95**	**292**	*e*P	**Pn**	**06 49 54.7**	**+0.8**
MAJO				*e*		06 50 14.7	
MAJO	**Matsushiro**	**1.95**	**292**	*e*Pn	**Pn**	**06 49 54.7**	**+0.8**
MAJO				*e*Sn	**Sn**	**06 50 14.7**	**-2.9**
MAT	**Matsushiro**	**1.95**	**292**	P	**Pn**	**06 49 53.9**	**0.0**
MAT				S	**Sn**	**06 50 17.5**	**-0.1**
MJB9	**Matsu-Tunnel**	**1.95**	**292**	*e*Pn	**Pn**	**06 49 54.8**	**+0.8**
MJB9				*e*Sn	**Sn**	**06 50 14.9**	**-2.7**
JHJ	**Hachijo jima 2**	**2.77**	**192**	Pn	**Pn**	**06 50 03.5**	**-1.6**
	132nm,0.3s,baz=67,slow=22,SNR=12						
JHJ				LR	LR	06 50 31.3	
	comp=Z,369nm,19.8s,baz=68,slow=28						
JHJ				Sn	**Sn**	**06 50 36.9**	**-0.8**
	351nm,0.3s,baz=24,slow=23,SNR=17						
JHJ2	**Mitsune**	**2.77**	**191**	*e*Pn	**Pn**	**06 50 04.8**	**-0.3**
JHJ2				*e*Sn	**Sn**	**06 50 37.6**	**-0.1**
INU	**Inuyama**	**2.84**	**261**	*e*Pn	**Pn**	**06 50 08.7**	**+2.6**
ERM	**Erimo**	**6.52**	**18**	*e*P	**Pn**	**06 50 58.0**	**+1.3**
ERM				*e*		06 52 10.7	
ERM	**Erimo**	**6.52**	**18**	*e*Pn	**Pn**	**06 50 58.0**	**+1.3**
ERM				*e*Sn	**Sn**	**06 52 10.7**	**+0.5**
JNU	**Nakatsue**	**8.36**	**254**	Pn	**Pn**	**06 51 23.4**	**+1.4**
	0.4nm,0.3s,baz=63,slow=5.5,SNR=5.9						
ASAJ	**Asahikawa**	**8.43**	**11**	Pn	**Pn**	**06 51 21.9**	**-1.0**
	3.5nm,0.3s,baz=205,slow=18,SNR=8.4						
ASAJ				LR	LR	06 55 23.9	
	comp=Z,172nm,22.0s,baz=329,slow=43						
ASAJ	**Asahikawa**	**8.43**	**11**	*e*Pn	**Pn**	**06 51 24.7**	**+1.8**
CBIJ	**Chichi jima**	**8.84**	**170**	*e*Pn	**Pn**	**06 51 26.4**	**-2.1**
JCJ	**Chichijima**	**8.84**	**170**	Pn	**Pn**	**06 51 25.9**	**-2.6**
	15nm,0.3s,baz=313,slow=12,SNR=12						
SHO	**Shikotan**	**9.40**	**29**	P	**Pn**	**06 51 36.1**	**0.0**
KSRS	**Korea Array**	**10.20**	**283**	Pn	**Pn**	06 51 53.0	+5.9
	0.2nm,0.3s,baz=102,slow=13,SNR=14						
KSRS				LR	LR	06 55 43.3	
	comp=Z,84nm,20.7s,baz=120,slow=38						
KSRS	**Korea Array**	**10.20**	**283**	P	Pn	06 51 53.0	+5.9
KSRS				MLR	MLR		
	comp=Z,84nm,20.7s						
KSAR	**Wonju Array Be**	**10.23**	**283**	P	Pn	06 51 53.0	+5.5
KSAR	**Wonju Array Be**	**10.23**	**283**	Pn	Pn	06 51 53.0	+5.4
USRK	**Ussuriysk Ar.**	**10.57**	**325**	Pn	**Pn**	**06 51 56.8**	**+4.6**
	comp=Z,0.4nm,0.3s,baz=140,slow=12,SNR=16						
USRK				LR	LR	06 55 43.2	
	comp=Z,344nm,19.4s,baz=125,slow=36						
YSS	**Yuzh-Sakhalins**	**11.24**	**8**	*e*P	**Pn**	**06 52 02.5**	**+1.2**
MDJ	**Mudanjiang**	**12.06**	**320**	P	**Pn**	**06 52 12.3**	**-0.3**
MDJ				S	**Sn**	**06 54 24.9**	**-1.4**
MDJ				pmax	pmax		
	comp=Z,4.0nm,0.8s						
MDJ				pmax	pmax		
	comp=Z,73nm,4.9s						
MDJ				LR	LR		
	comp=Z,410nm,24.4s						
MDJ				LR	LR		
	comp=Z,330nm,23.6s						
MDJ				LR	LR		
	comp=Z,400nm,21.1s						
CN2	**Changchun**	**14.00**	**309**	*e*P	**Pn**	**06 52 42.0**	**+3.0**
KLR	**Kul'dur**	**14.83**	**337**	Pn	**Pn**	**06 52 51.7**	**+1.4**
	comp=Z,0.1nm,0.3s,baz=144,slow=18,SNR=2.4						
KLR				LR	LR	06 58 17.8	
	comp=Z,372nm,19.6s,baz=142,slow=36						
TYV	**Tymovskoe**	**15.11**	**5**	*e*P	**Pn**	**06 52 54.0**	**0.0**
TYV				pmax	pmax		
	comp=Z

H11N3 **WAKE ISLAND Hy** 28.26 118 T T 07 24 25.2
baz=310,slow=75,SNR=89
H11S3 **WAKE ISLAND Hy** 28.90 120 T T 07 25 11.6
baz=312,slow=75,SNR=139
H11S1 **WAKE ISLAND Hy** 28.90 120 T T 07 25 11.6
baz=312,slow=75,SNR=189
H11S2 **WAKE ISLAND Hy** 28.91 120 T T 07 25 12.8
baz=312,slow=75,SNR=130
LZH **Lanzhou** 29.52 281 *e*P P **06 55 25.4 +0.4**
LZH pP pP 06 55 33.1 +0.8
LZH pmax pmax
comp=Z,17nm,1.0s
ZAK **Zakamensk** 30.43 310 *e*P P **06 55 28.0 -4.8**
ZAK pmax pmax
comp=Z,2.0nm,1.3s
TLY **Talaya** 30.55 313 *e*P P **06 55 34.8 +1.1**
TLY pmax pmax
comp=Z,1.0nm,0.7s
TLY MLR MLR
comp=Z,105nm,17.0s
CD2 **Chengdu** 30.91 272 P P **06 55 35.8 -1.4**
CD2 pmax pmax
comp=Z,1.0nm,0.5s
DAV **Davao City (W)** 31.71 209 LR LR 07 06 32.4
comp=Z,182nm,21.9s,baz=39,slow=33
GTA **Gaotai** 32.19 289 *e*P P **06 55 49.0 +0.5**
GTA pP sP 06 55 57.3 -1.5
GTA sP pP 06 56 01.0 +5.2
GTA pmax pmax
comp=Z,4.0nm,1.0s
KMI **Kunming** 34.02 262 P P **06 56 04.5 -0.2**
KMI pmax pmax
comp=Z,20nm,0.5s
KMI pmax pmax
comp=Z,55nm,4.8s
BILL **Bilibino** 35.39 16 *e*P P **06 56 15.0 -0.8**
BILL *e* 06 57 34.3
BILL pmax pmax
comp=Z,6.0nm,1.1s
BILL **Bilibino** 35.39 16 *e*P P **06 56 16.4 +0.7**
comp=Z,4.5nm,0.8s
TIXI **Tiksi** 36.39 354 P P **06 56 24.8 +0.5**
comp=Z,1.6nm,0.4s,baz=138,slow=7.5,SNR=4.9
TIXI LR LR 07 12 29.4
comp=Z,153nm,18.9s,baz=134,slow=38
TIXI **Tiksi** 36.39 354*c*e P P **06 56 23.9 -0.3**
TIXI pmax pmax
comp=Z,6.0nm,1.7s
TIXI **Tiksi** 36.39 354 *e*P P **06 56 24.8 +0.5**
comp=Z,3.8nm,0.9s
CMAR **Chiang Mai Arr** 40.45 256 P P **06 56 56.7 -2.3**
comp=Z,0.6nm,0.6s,baz=56,slow=6.0,SNR=6.6
CMAR PcP **PcP** **06 59 01.6 -0.1**
comp=Z,0.4nm,0.3s,baz=45,slow=1.9,SNR=4.7
CMAR LR LR 07 13 23.9
comp=Z,97nm,18.9s,baz=88,slow=36
CM01 **Chiang Mai Arr** 40.46 256 *e*P P **06 56 57.6 -1.5**
WMQ **Urumqi** 40.70 298 P P **06 57 02.4 +1.5**
WMQ pP pP 06 57 09.4 +1.1
WMQ sP sP 06 57 11.8 +0.5
WMQ pmax pmax
comp=Z,5.0nm,1.6s
WMQ pmax pmax
comp=Z,60nm,4.8s
WMQ LR LR
comp=Z,98nm,22.4s
WMQ LR LR
comp=Z,74nm,21.0s
LSA **Lhasa** 41.55 276 *e*P P **06 57 09.0 +0.4**
LSA pmax pmax
comp=Z,7.0nm,0.6s
LSA **Lhasa** 41.55 276 *e*P P **06 57 09.0 +0.4**
comp=Z,7.4nm,0.6s
ZAA0 **Zalesovo Array** 42.16 313 *e*P P **06 57 12.8 +0.1**
ZALV **Zalesovo Beam** 42.16 313 P P **06 57 12.7 +0.1**
comp=Z,5.1nm,0.8s,baz=91,slow=5.6,SNR=15
ZALV LR LR 07 15 36.4
comp=Z,69nm,18.7s,baz=68,slow=37
NVS **Novosibirsk** 43.12 315 *e*P P **06 57 22.3 +1.9**
NVS pmax pmax
comp=Z,10.0nm,1.0s
NVS pmax pmax
comp=N,3.0nm,0.6s
NVS pmax pmax
comp=E,7.0nm,1.3s
NRIK **Noril'sk** 44.04 336 P P **06 57 28.0 +0.4**
comp=E,4.6nm,1.1s,baz=111,slow=4.7,SNR=6.2
NRIK LR LR 07 17 19.2
comp=E,118nm,18.1s,baz=102,slow=38
MK01 **Makanchi Array** 44.11 303 *e*P P **06 57 28.8 +0.3**
MK31 **Makanchi Array** 44.11 303 *e*P P **06 57 29.1 +0.5**
MK31 **Makanchi Array** 44.11 303 *e*P P **06 57 29.1 +0.5**
MKAR **Makanchi Array** 44.11 303 P P **06 57 28.9 +0.4**
comp=E,2.1nm,0.8s,baz=90,slow=9.3,SNR=19
MKAR LR LR 07 16 38.3
comp=E,143nm,18.0s,baz=94,slow=37
MKAR **Makanchi Array** 44.11 303 *e*P P **06 57 29.1 +0.5**
MAKZ **Makanchi** 44.32 303 *e*P P **06 57 30.5 +0.3**
MAKZ pmax pmax
comp=Z,8.0nm,1.1s
MAKZ **Makanchi** 44.32 303 *e*P P **06 57 30.5 +0.3**
comp=Z,7.7nm,1.1s
KAPI **Kappang** 45.04 210 LR LR 07 19 31.6
comp=Z,75nm,18.1s,baz=17,slow=40
KURK **Kurchatov** 46.07 309 *e*P P **06 57 44.5 +0.5**
KURK pmax pmax
comp=Z,17nm,0.9s
KURK **Kurchatov** 46.07 309 *e*P P **06 57 44.5 +0.5**
comp=Z,17nm,0.9s
GUN **Gumba** 46.51 276 *e*P P **06 57 48.7 +0.5**
comp=Z,28nm,0.9s
PDGK **Podgornoye** 46.66 299 P P **06 57 49.0 +0.3**
PDGK pmax pmax
comp=Z,13nm,0.8s
KKN **Kakani** 47.04 276 *e*P P **06 57 52.3 +0.1**
GKN **Gorkha** 47.47 277 *e*P P **06 57 55.3 -0.2**
comp=Z,50nm,1.0s
KOLN **Koldanda** 48.41 277 *e*P P **06 58 03.7 +0.9**
comp=Z,13nm,0.8s
KDAK **Kodiak Island** 48.51 41 LR LR 07 18 18.9
comp=Z,101nm,21.3s,baz=249,slow=36
KDAK **Kodiak Island** 48.51 41 *i*P P **06 58 03.9 +1.1**
PYUN **Piuthan** 48.76 278 *e*P P **06 58 05.4 -0.1**
comp=Z,48nm,0.9s
KTH **Kantishna Hill** 49.17 33 *e*P P **06 58 09.4 +1.4**
comp=Z,7.6nm,1.0s
MLY **Manley** 49.27 31 *e*P P **06 58 10.1 +1.4**
comp=Z,6.1nm,1.0s
TKM2 **Tokmak 2** 49.53 299 *e*P P **06 58 11.2 0.0**
TKM2 pmax pmax
comp=Z,8.0nm,0.8s
TKM2 **Tokmak 2** 49.53 299 *e*P P **06 58 11.2 0.0**
comp=Z,8.2nm,0.8s
MCK **McKinley** 50.06 33 *e*P P 06 58 22.1 +7.4
MCK pmax pmax
comp=Z,7.0nm,1.0s
MCK **McKinley** 50.06 33 *e*P P 06 58 22.1 +7.4
comp=Z,6.9nm,1.0s
RND **Reindeer** 50.10 34 *e*P P **06 58 16.6 +1.5**
RND pmax pmax
comp=Z,8.0nm,1.2s
RND **Reindeer** 50.10 34 *e*P P **06 58 16.6 +1.5**
comp=Z,7.6nm,1.2s
KSH **Kashi** 50.19 295 *e*P P **06 58 20.3 +4.1**
KSH *es*P sP 06 58 30.9 +4.2
KSH *e*PP **PP** **07 00 17.3 +5.9**
KSH *e*ScP **ScP** **07 03 31.5 +2.0**
KSH S S **07 05 30.6 +3.7**
KSH ScS **ScS** **07 08 05.9 -0.1**
KSH pmax pmax
comp=Z,140nm,5.4s
KSH LR LR
comp=Z,160nm,11.5s
KSH LR LR
comp=Z,100nm,7.6s
KSH LR LR
comp=Z,150nm,5.5s
FRU **Bishkek** 50.24 299 *e*P P **06 58 20.0 +3.6**
FRU *e* 06 58 26.0
MDM **Murphy Dome** 50.34 32 *e*P P **06 58 18.7 +1.9**
comp=Z,11nm,0.8s
AAK **Ala-Archa** 50.38 299 LR LR 07 20 59.7
comp=Z,118nm,18.1s,baz=62,slow=38
AAK **Ala-Archa** 50.38 299‖ *e*P P **06 58 17.6 -0.1**
AAK pmax pmax
comp=Z,13nm,1.7s

WRH **Wood River Hil** 50.41 32 *e*P P **06 58 18.1 +0.8**
comp=Z,2.6nm,0.8s
COLA **College** 50.50 32 *e*P P **06 58 18.1 +0.1**
COLA pmax pmax
comp=Z,14nm,0.3s
COLA **College** 50.50 32 *e*P P **06 58 18.1 +0.1**
comp=Z,14nm,0.3s
OTUK **Ortayu** 50.51 307 P P **06 58 20.5 +2.2**
OTUK pmax pmax
comp=Z,8.0nm,0.8s
PSI **Prapat** 50.52 239 LR LR 07 19 47.7
comp=Z,181nm,18.4s,slow=36
BVAR **Borovoye Array** 50.81 313 P P **06 58 21.4 +0.8**
comp=Z,2.9nm,0.7s,baz=95,slow=6.4,SNR=13
BRVK **Borovoye** 50.87 313*c*e P P **06 58 22.1 +1.2**
BRVK pmax pmax
comp=Z,6.0nm,1.0s
BRVK **Borovoye** 50.87 313 *e*P P **06 58 21.0 +0.1**
comp=Z,6.1nm,1.0s
ILAR **Eielson Array** 50.92 32 P P **06 58 21.6 +0.4**
comp=Z,3.7nm,0.7s,baz=268,slow=5.9,SNR=42
ILAR LR LR 07 23 24.9
comp=Z,33nm,18.1s,baz=276,slow=40
ILB **Eielson Array** 50.92 32 *e*P P **06 58 21.9 +0.7**
IL1 **Eielson Array** 50.92 32 *e*P P **06 58 21.8 +0.6**
FYU **Fort Yukon** 51.53 29 *e*P P **06 58 28.5 +2.8**
comp=Z,19nm,1.3s
KLU **Klutina** 51.59 36 *e*P P **06 58 27.0 +0.7**
comp=Z,17nm,1.5s
ZRNK **Zerenda** 51.65 313 *e*P P **06 58 27.0 +0.2**
ZRNK pmax pmax
comp=Z,8.0nm,0.8s
ZRNK **Zerenda** 51.65 313 *e*P P **06 58 27.0 +0.2**
comp=Z,7.8nm,0.8s
MNAS **Manas** 51.84 299 P P **06 58 31.0 +2.4**
MNAS pmax pmax
comp=Z,7.0nm,1.0s
SFK **Sufi-Kurgan** 51.86 296 P P **06 58 30.4 +1.6**
SFK pmax pmax
comp=Z,10.0nm,1.1s
DOT **Dot Lake** 52.23 33 *e*P P **06 58 31.8 +0.8**
comp=Z,28nm,1.5s
BMRM **Bremner River** 52.28 37 *e*P P **06 58 33.2 +1.8**
comp=Z,14nm,1.1s
MENT **Mentasta** 52.46 34 *e*P P **06 58 34.1 +1.4**
comp=Z,8.9nm,1.1s
KKAR **Karatay Array** 53.06 301 *e*P P **06 58 37.7 +0.3**
KKAR **Karatay Array** 53.06 301 *e*P P **06 58 37.7 +0.3**
EGAK **Eagle** 53.36 32 *e*P P **06 58 40.5 +1.1**
comp=Z,3.6nm,0.8s
WRAB **Tennant Creek** 55.76 187*c*e P P **06 58 57.5 +0.3**
WRAB pmax pmax
comp=Z,53nm,1.7s
WRAB **Tennant Creek** 55.76 187 *e*P P **06 58 56.0 -1.2**
comp=Z,17nm,0.8s
WB2 **Warramunga Arr** 55.77 187 *e*P P **06 58 56.0 -1.3**
comp=Z,12nm,0.8s
WRA **Warramunga Arr** 55.77 187 P P **06 58 55.2 -2.0**
comp=Z,7.8nm,0.7s,baz=32,slow=7.5,SNR=27
WRA **Warramunga Arr** 55.77 187 *i*P P **06 58 58.0 +0.7**
WRA pmax pmax
comp=Z,7.0nm,0.6s
INK **Inuvik** 55.80 27 LR LR 07 23 34.4
comp=Z,68nm,20.9s,baz=282,slow=37
INK **Inuvik** 55.80 27 *e*P P **06 58 56.9 0.0**
INK pmax pmax
comp=Z,4.0nm,0.7s
INK **Inuvik** 55.80 27 *e*P P **06 58 56.9 0.0**
comp=Z,4.0nm,0.7s
ARU **Arti** 56.75 319 P P **06 59 03.8 -0.1**
comp=Z,3.7nm,0.5s,baz=262,slow=1.8,SNR=8.4
ARU **Arti** 56.75 319*c* *i*P P **06 59 03.9 0.0**
ARU 07 01 07.2
ARU S S **07 06 56.1 +1.1**
ARU SS SS **07 10 39.2 -3.3**
ARU pmax pmax
comp=Z,9.0nm,0.7s
ARU **Arti** 56.75 319 *e*P P **06 59 03.7 -0.1**
comp=Z,8.8nm,0.8s
HYB **Hyderabad** 57.40 269 *i*P P **06 59 09.0 -0.1**
ABKAR **Akbulak array** 58.12 310 *e*P P **06 59 13.6 0.0**
comp=Z,2.0nm,0.6s
AKTO **Aktyubinsk** 58.90 312 P P **06 59 18.2 -0.9**
comp=Z,2.2nm,0.8s,baz=79,slow=11,SNR=6.0
AKTO LR LR 07 25 23.8
comp=Z,63nm,18.3s,slow=37
AS01 **Alice Springs** 59.49 187 *e*P P **06 59 22.4 -1.1**
AS31 **Alice Springs** 59.50 187 *e*P P **06 59 23.5 0.0**
comp=Z,2.0nm,0.7s
ASAR **Alice Springs** 59.50 187 P P **06 59 22.4 -1.1**
comp=Z,1.6nm,0.6s,baz=17,slow=8.1,SNR=20
ASAR LR LR 07 24 44.7
comp=Z,45nm,19.9s,baz=337,slow=36
GEYT **Alibeck** 63.74 299 P P **06 59 51.4 -0.7**
comp=Z,1.6nm,0.6s,baz=44,slow=7.0,SNR=4.0
GEYT LR LR 07 29 29.7
comp=Z,71nm,19.3s,baz=340,slow=38
ARCES **ARCESS Array B** 64.84 339 P P **06 59 59.4 +0.6**
comp=Z,3.2nm,1.0s,baz=38,slow=6.1,SNR=4.4
ARCES LR LR 07 31 06.9
comp=Z,85nm,20.2s,baz=46,slow=39
YKA **Yellowknife Ar** 65.23 30 P P **07 00 01.3 0.0**
comp=Z,0.5nm,0.7s,baz=302,slow=6.5,SNR=11
STKA **Stephens Creek** 67.37 179 P P **07 00 13.8 -1.5**
comp=Z,4.6nm,0.8s,baz=344,slow=7.2,SNR=10
STKA LR LR 07 28 42.6
comp=Z,43nm,20.0s,baz=21,slow=35
STKA **Stephens Creek** 67.37 179 *e*P P **07 00 14.7 -0.6**
comp=Z,1.2nm,0.9s
OBN **Obninsk** 68.59 323 LR LR 07 31 05.1
comp=Z,68nm,18.9s,baz=88,slow=36
OBN **Obninsk** 68.59 323‖ *e*P P **07 00 23.4 +0.6**
OBN *e* 07 00 27.6
OBN pmax pmax
comp=Z,46nm,2.4s
OBN MLR MLR
comp=Z,79nm,15.0s
LPSR **Galich'ya Gora** 68.72 320 *e*P P **07 00 23.1 -0.6**
LPSR pmax pmax
comp=Z,7.0nm,0.8s
VSR **Storozhevoye** 69.32 319 *e*P P **07 00 26.4 -1.1**
VSR pmax pmax
comp=Z,8.0nm,0.9s
FINES **FINESS Array B** 69.51 332 P P **07 00 27.9 -0.6**
comp=Z,3.9nm,0.9s,baz=79,slow=9.9,SNR=8.1
FINES LR LR 07 31 32.6
comp=Z,78nm,20.7s,baz=48,slow=36
FINES **FINESS Array B** 69.51 332 *i*P P **07 00 29.2 +0.8**
FINES pmax pmax
comp=Z,4.0nm,0.9s
KBZ **Khabaz** 71.09 311 P P **07 00 38.0 -0.4**
comp=Z,5.1nm,0.8s,baz=57,slow=3.8,SNR=14
KVAR **Kislovodsk Arr** 71.10 311 P P **07 00 39.2 +0.6**
comp=Z,3.9nm,0.5s,baz=218,slow=1.4,SNR=6.3
KIV **Kislovodsk** 71.10 311*c*e P P **07 00 38.6 -0.1**
KIV pmax pmax
comp=Z,14nm,1.0s
KIV **Kislovodsk** 71.10 311 *e*P P **07 00 38.0 -0.7**
comp=Z,14nm,1.0s
YBH **Yreka Blue Hor** 71.69 52 P P **07 00 43.1 +0.9**
comp=Z,2.1nm,0.9s,baz=293,slow=18,SNR=4.7
ANN **Anapa** 73.80 314 *e*P P **07 00 52.9 -1.6**
ANN *e**PP **pP** **07 01 03.1 +0.7**
ANN *e* 07 01 08.1
ANN *e* 07 03 36.6
ANN *e*S **SKiKP** **07 10 21.8 -0.3**
ANN *e*SS **SS** **07 15 04.8 -2.7**
ANN *e*SSS SSS 07 18 25.0
ANN pmax pmax
comp=Z,44nm,1.6s
AKASG **Malin Array Be** 74.77 322 P P **07 00 59.8 -0.3**
comp=Z,4.1nm,0.8s,baz=46,slow=5.9,SNR=15
AKASG LR LR 07 36 12.1
comp=Z,129nm,18.8s,baz=265,slow=38
KIEV **Kiev** 74.78 322 *e*P P **07 00 59.7 -0.5**
KIEV pmax pmax
comp=Z,7.0nm,0.9s
NC204 **NORSAR Array S** 74.95 337 *e*P P **07 01 01.5 +0.4**
NB2 **NORSAR Subarra** 74.99 337 P P **07 01 01.3 0.0**
comp=Z,2.1nm,0.6s,baz=40,slow=5.9
NOA **NORSAR Array B** 74.99 337 P P **07 01 00.8 -0.4**
comp=Z,3.6nm,0.7s,baz=39,slow=5.8,SNR=10
NOA LR LR 07 37 14.7
comp=Z,78nm,19.2s,baz=30,slow=38
NBO02 **NORSAR Array S** 75.09 337 *e*P P **07 01 02.4 +0.5**
LRM **Limekiln Ridge** 75.55 44 *e*P P **07 01 06.0 +1.0**

DLMT **Dillon** 75.74 44 *e*P P **07 01 06.5 +0.5**
comp=Z,4.5nm,0.9s
NVAR **Mina Array Bea** 76.33 52 P P **07 01 10.3 +0.8**
comp=Z,2.0nm,0.8s,baz=291,slow=5.3,SNR=10
NVAR LR LR 07 28 14.1
comp=Z,25nm,21.6s,baz=318,slow=30
H17A **Grant Village** 77.47 44 *e*P P **07 01 19.1 +3.2**
comp=Z,4.5nm,0.8s
HVU **Hansel Valley** 77.79 47 *e*P P **07 01 18.0 +0.3**
HVU pmax pmax
comp=Z,12nm,1.7s
HVU **Hansel Valley** 77.79 47 *e*P P **07 01 18.0 +0.3**
comp=Z,12nm,1.7s
R11A **Troy Canyon, C** 78.11 51 *e*P P **07 01 20.9 +1.4**
comp=Z,1.8nm,0.9s
TPNV **Topopah Spring** 78.51 53 *e*P P **07 01 22.9 +1.1**
TPNV pmax pmax
comp=Z,5.0nm,1.1s
TPNV **Topopah Spring** 78.51 53 *e*P P **07 01 22.9 +1.1**
comp=Z,5.1nm,1.1s
HWUT **Hardware Ranch** 78.61 47 *e*P P **07 01 23.9 +1.6**
comp=Z,5.0nm,1.1s
DUG **Dugway, Tooele** 78.73 48 *e*P P **07 01 23.3 +0.5**
DUG pmax pmax
comp=Z,3.0nm,0.8s
DUG **Dugway, Tooele** 78.73 48 *e*P P **07 01 23.3 +0.5**
comp=Z,2.8nm,0.8s
TESR **Tescani** 78.75 320⇓ *i*P P **07 01 23.2 +0.5**
BUR08 **Bucovina Ar. S** 78.75 321 *e*P P **07 01 23.2 +0.4**
BURAR **Bucovina Array** 78.77 321⇑ *i*P P **07 01 23.3 +0.4**
BURAR **Bucovina Array** 78.77 321 ⇑P P **07 01 23.3 +0.4**
BW06 **Boulder Array** 79.06 45 *e*P P **07 01 25.0 +0.2**
PD31 **Pinedale Array** 79.06 45 *e*P P **07 01 25.0 +0.3**
PDAR **Pinedale Array** 79.06 45 P P **07 01 25.1 +0.3**
comp=Z,1.5nm,0.6s,baz=268,slow=2.2,SNR=26
BR131 **Keskin Array S** 79.06 311 *e*P P **07 01 24.5 -0.2**
BRTR **Keskin Array B** 79.06 311 P P **07 01 25.4 +0.6**
comp=Z,2.2nm,0.9s,baz=105,slow=4.2,SNR=11
BR231 **Keskin MP Arra** 79.52 312 *e*P P **07 01 26.0 -1.1**
PFO **Pinyon Flats O** 80.35 56 LR LR 07 30 22.0
comp=Z,82nm,20.1s,baz=306,slow=31
RAYN **Ar Rayn** 80.39 292 *e*P P **07 01 31.6 -0.4**
comp=Z,4.0nm,0.9s
LCMT **Little Creek M** 80.40 51 *e*P P **07 01 31.8 -0.2**
comp=Z,2.8nm,0.9s
P17A **Butcher Ranch,** 80.43 48 *e*P P **07 01 34.0 +1.8**
comp=Z,3.9nm,0.8s
ARR **Arges** 80.56 320⇓ *i*P P **07 01 34.1 +1.5**
P18A **Preston Nutter** 80.63 48 *e*P P **07 01 35.4 +2.0**
comp=Z,21nm,1.9s
KNB **Kanab** 80.66 51 *e*P P **07 01 35.1 +1.6**
KNB pmax pmax
comp=Z,10.0nm,1.3s
KNB **Kanab** 80.66 51 *e*P P **07 01 35.1 +1.6**
comp=Z,9.7nm,1.3s
SRU **San Rafael Swe** 80.78 48 *e*P P **07 01 34.4 +0.3**
SRU pmax pmax
comp=Z,4.0nm,0.9s
SRU **San Rafael Swe** 80.78 48 *e*P P **07 01 34.4 +0.3**
comp=Z,3.7nm,0.9s
MORC **Moravsky Berou** 80.93 327⇑ *i*P P 07 01 39.8 +5.3
MORC **Moravsky Berou** 80.93 327 ⇑P P 07 01 39.8 +5.3
DPC **Dobruska-Polom** 81.06 328 *e*P P **07 01 35.7 +0.6**
DPC *ep*P **sP** **07 01 46.1 +0.1**
DPC **Dobruska-Polom** 81.06 328 *e*P P **07 01 35.7 +0.6**
DPC *e* 07 01 46.1
KRLC **Kraliky** 81.06 327 *e*P P **07 01 38.5 +3.4**
KRLC **Kraliky** 81.06 327 *e*P P **07 01 38.5 +3.4**
BRG **Berggiesshubel** 81.68 329 *e*P P **07 01 38.5 +0.1**
comp=Z,5.2nm,1.2s
BRG **Berggiesshubel** 81.68 329 *e*P P **07 01 38.5 +0.1**
BRG pmax pmax
comp=Z,5.0nm,1.2s
CLL **Collm** 81.74 330 *i*P P **07 01 38.5 -0.2**
comp=Z,5.0nm,1.0s
CLL **Collm** 81.74 330 *i*P P **07 01 38.5 -0.2**
CLL pmax pmax
comp=Z,5.0nm,1.0s
PV01 **Paradox Valley** 82.59 48 *e*P P **07 01 43.8 +0.1**
comp=Z,307nm,1.1s
KHC **Kasperske Hory** 83.15 328 *e*P P **07 01 45.9 -0.3**
KHC *ep*P **sP** **07 01 56.8 -0.2**
KHC **Kasperske Hory** 83.15 328 *e*P P **07 01 45.9 -0.3**
KHC *e* 07 01 56.8
VTS **Vitosha** 83.20 319⇓ *i*P P 07 01 40.8 -5.9
VTS **Vitosha** 83.20 319 ⇓P P 07 01 40.8 -5.9
GERES **GERESS Array B** 83.31 328 P P **07 01 46.6 -0.5**
comp=Z,0.4nm,0.6s,baz=1.9,slow=4.0,SNR=5.0
S22A **4UR Ranch, Cre** 83.88 47 *e*P P **07 01 51.2 +0.7**
comp=Z,9.2nm,1.4s
T25A **Trinidad** 85.72 47 *e*P P **07 02 00.3 +0.7**
ANMO **Albuquerque** 85.95 49*c*e P P **07 02 03.0 +2.2**
ANMO pmax pmax
comp=Z,5.0nm,2.5s
ANMO **Albuquerque** 85.95 49 *e*P P **07 02 01.3 +0.5**
comp=Z,3.3nm,1.0s
BFO **Black Forest** 85.96 330 *i*P P **07 02 01.1 +0.7**
BFO **Black Forest** 85.96 330 *e*P P **07 02 00.5 +0.1**
SCHQ **Schefferville** 86.70 15 LR LR 07 41 58.3
comp=Z,45nm,21.9s,baz=260,slow=36
LPIG **La Paz** 90.46 60 LR LR 07 33 39.8
comp=Z,32nm,20.0s,baz=234,slow=29
TX31 **Lajitas Ar. Si** 91.47 52 *e*P P **07 02 28.1 +1.2**
TXAR **Lajitas Array** 91.47 52 P P **07 02 27.8 +0.9**
comp=Z,1.1nm,0.7s,baz=309,slow=3.1,SNR=14
TXAR LR LR 07 37 38.1
comp=Z,39nm,22.0s,baz=0.0,slow=32
MOIG **Morelia** 99.71 57 *e*Pdif **Pdif** **07 02 59.9 -4.9**
TORD **Torodi Ar. Bea** 117.61 314 PKP **PKPdf** **07 08 06.0 -0.8**
comp=Z,0.3nm,0.9s,baz=14,slow=3.0,SNR=2.4
SAML **Samuel** 145.64 45 *e*PKPbc **PKPdf** **07 08 59.1 0.0**
LPAZ **La Paz** 147.96 60 PKPbc **PKPbc** **07 09 06.8 0.0**
comp=Z,3.2nm,0.9s,baz=330,slow=2.8,SNR=12

NIED ***17*** *07:06:00.38°.90N×142°.00E,h26km,Mw3.8 Best double couple: M₀5.25000×10¹⁴ NP1:φ₅274.00000°,δ36.00000°, λ-136.00000°. NP2:φ₅145.00000°,δ66.00000°, λ-63.00000°.*
ISCJB ***17*** *07:06:03.6±0.9,38°.88N±0°.04×142°.0E±0°.1,h54km±6km, mb3.9/13,Error ellipse: s-maj=14.5km s-min=5.9km az=18.3*
JMA ***17*** *07:06:04.9±0.1,38°.89N×141°.97E,h50km±1km,M3.9*
JMA Felt II J1.
IDC ***17*** *07:06:06.7±1.1,38°.81N×141°.97E,h69km±7km, mb3.6/13, mb1 3.7/15,mb1mx3.4/58,mbtmp3.8/15,Error ellipse: s-maj=21.4km s-min=16.6km az=91.0*
ISC 17 07:06:04.4±0.8,38°.87N±0°.05×142°.02E±0°.09,h44km±5km, n32,σ0°.94/36,mb3.9/13,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID Op	ID ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**0.34**	**307**	P		**Pn**	**07 06 14.1**	**+0.7**
OFUJ				S		**Sn**	**07 06 20.4**	**+0.6**
JMK	**Ichinoseki**	**0.63**	**277**	P		**Pn**	**07 06 17.3**	**+0.4**
JMK				S		**Sn**	**07 06 26.1**	**+0.2**
JIO	**Ouri**	**0.67**	**232**	P		**Pn**	**07 06 17.8**	**+0.3**
JIO				S		**Sn**	**07 06 26.6**	**-0.3**
JOM	**Ohasama**	**0.82**	**317**	P		**Pn**	**07 06 19.9**	**+0.3**
JOM				S		**Sn**	**07 06 30.6**	**0.0**
JOU	**Okura**	**1.18**	**245**	P		**Pn**	**07 06 24.5**	**+0.1**
JRG	**Rokugo**	**1.20**	**296**	P		**Pn**	**07 06 24.9**	**+0.2**
JYK	**Kaneyama**	**1.29**	**272**	P		**Pn**	**07 06 26.3**	**+0.3**
JMM	**Marumori**	**1.39**	**224**	P		**Pn**	**07 06 27.2**	**-0.1**
JMM				S		**Sn**	**07 06 44.0**	**-0.5**
JYS	**Shirataka**	**1.66**	**248**	P		**Pn**	**07 06 31.7**	**+0.6**
MAT	**Matsushiro**	**3.81**	**234**	P		**Pn**	**07 07 02.7**	**+2.1**
MAT				S		**Sn**	**07 07 45.5**	**+1.3**
MJAR	**Matsushiro Arr**	**3.81**	**234**	P		**Pn**	**07 07 03.0**	**+2.4**
	3.3nm,0.3s,baz=38,slow=12,SNR=62							
ASAJ	**Asahikawa**	**5.26**	**5**	P		**Pn**	**07 07 20.4**	**+0.1**
	0.9nm,0.3s,baz=208,slow=13,SNR=8.5							
ASAJ				S		**Sn**	**07 08 21.1**	**+1.5**
	0.6nm,0.3s,baz=89,slow=7.2,SNR=3.3							
USRK	**Ussuriysk Ar.**	**9.21**	**308**	P		Pn	07 08 18.3	+3.7
	0.4nm,0.3s,baz=118,slow=14,SNR=12							
SEY	**Seymchan**	**24.90**	**11**	P		**P**	**07 11 23.6**	**+0.8**
	0.7nm,0.3s,baz=171,slow=7.6,SNR=3.7							
H11N2	**WAKE ISLAND Hy** 28.74 124			T		T	07 42 21.4	
	baz=317,slow=75,SNR=172							
H11N1	**WAKE ISLAND Hy** 28.75 125			T		T	07 42 25.2	
	baz=317,slow=75,SNR=372							

H11N3 WAKE ISLAND Hy 28.75 124 T T 07 42 24.5
baz=317,slow=75,SNR=274
H11S1 WAKE ISLAND Hy 29.51 126 T T 07 43 20.5
baz=318,slow=76,SNR=71
H11S3 WAKE ISLAND Hy 29.51 126 T T 07 43 21.2
baz=318,slow=76,SNR=185
H11S2 WAKE ISLAND Hy 29.53 126 T T 07 43 21.6
baz=318,slow=76,SNR=83
ZALV Zalesovo Beam 41.05 311 P **P 07 13 43.0 -0.3**
0.9nm,0.5s,baz=85,slow=6.3,SNR=6.2
ZALV pP **sP 07 14 00.5 0.0**
1.7nm,0.5s,baz=88,slow=8.8,SNR=5.6
MKAR Makanchi Array 43.57 301 P **P 07 14 03.6 -0.3**
1.4nm,0.6s,baz=86,slow=9.3,SNR=20
MKAR pP **sP 07 14 20.9 -0.3**
0.7nm,0.8s,baz=75,slow=12,SNR=3.8
KURBB Kurchatov Arra 45.27 307 P **P 07 14 16.8 -0.6**
3.1nm,0.5s,baz=80,slow=8.1,SNR=15
KURBB pP **sP 07 14 34.1 -0.6**
1.9nm,0.6s,baz=82,slow=8.0,SNR=6.7
ILAR Eielson Array 47.69 33 P **P 07 14 37.0 +0.8**
0.2nm,0.5s,baz=262,slow=6.1,SNR=5.2
BVAR Borovoye Array 49.70 311 P **P 07 14 51.3 -0.5**
1.4nm,0.5s,baz=73,slow=7.7,SNR=10
ARU Arti 55.31 318 P **P 07 15 32.6 -0.6**
1.0nm,0.3s,baz=293,slow=21,SNR=3.6
WRA Warramunga Arr 58.95 188 P **P 07 15 57.0 -2.3**
0.4nm,0.7s,baz=6.5,slow=7.3,SNR=3.1
YKA Yellowknife Ar 61.98 31 P **P 07 16 19.8 +0.3**
0.1nm,0.6s,baz=304,slow=5.9,SNR=3.2
ASAR Alice Springs 62.67 188 P **P 07 16 24.9 +0.4**
0.3nm,0.6s,baz=9.0,slow=5.0,SNR=5.8
FINES FINESS Array B 67.41 332 P **P 07 16 53.5 -1.4**
1.3nm,0.8s,baz=38,slow=9.6,SNR=5.0
KVAR Kislovodsk Arr 70.06 311 P **P 07 17 13.1 +1.2**
2.5nm,0.4s,baz=90,slow=5.5,SNR=3.1
KBZ Khabaz 70.07 310 P **P 07 17 11.8 +0.1**
0.9nm,0.7s,baz=299,slow=17,SNR=3.5
KBZ pP **sP 07 17 29.1 -0.4**
0.9nm,0.7s,baz=341,slow=6.1,SNR=2.8

NEIC ***17*** *07:06:30.2, 15.88N×98.87W, h16km, MD4.2(MEX), After MEX.*

MEX 17 07:06:30.2±0.6, 15.88N×98.87W, h16km±999km, MD4.2, Off coast of Guerrero

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PNIG	**Pinotepa**	**0.88**	**55**	*i* P	Pb	07 06 43.9	-3.2
PNIG				*i* S	Sb	07 06 54.8	-3.8
PNIG	**Pinotepa**	**0.88**	**55**	*i* P	Pb	07 06 43.9	-3.2
PNIG				*i* S	Sb	07 06 54.8	-3.8
TLIG	**Tlapa**	**1.70**	**10**	*e*P	Pn	07 06 56.0	-3.3
TLIG				*e*S	Sn	07 07 16.2	-4.6
CAIG	**El Cayaco**	**1.77**	**311**	*e*P	Pn	07 06 56.4	-3.8
CAIG				*e*S	Sn	07 07 17.9	-4.5
CAIG	**El Cayaco**	**1.77**	**311**	*e*P	Pn	07 06 56.4	-3.8
CAIG				*e*S	Sn	07 07 17.9	-4.5
MEIG	**Mezcala**	**2.16**	**341**	*e*P	Pn	07 07 03.0	-2.6
MEIG				*e*S	Sn	07 07 27.8	-4.2
MEIG	**Mezcala**	**2.16**	**341**	*e*P	Pn	07 07 03.0	-2.6
MEIG				*e*S	Sn	07 07 27.8	-4.2
VHO	**Vista Hermosa**	**2.37**	**60**	*i* P	Pn	07 07 06.4	-2.2
VHO				*e*S	Sn	07 07 33.1	-4.4
VHO	**Vista Hermosa**	**2.37**	**60**	*i* P	Pn	07 07 06.4	-2.2
VHO				*e*S	Sn	07 07 33.1	-4.4
HUIG	**Huatulco**	**2.66**	**92**	*i* P	Pn	07 07 10.9	-1.6
HUIG				*e*S	Sn	07 07 38.2	-6.2
HUIG	**Huatulco**	**2.66**	**92**	*i* P	Pn	07 07 10.9	-1.6
HUIG				*e*S	Sn	07 07 38.2	-6.2
ARIG	**Puente Sto Nin**	**2.77**	**330**	*e*P	Pn	07 07 12.3	-1.7
ARIG				*e*S	Sn	07 07 42.8	-4.4

IDC ***17*** *07:08:44.0±2.1, 36.75N×141.80E, h0km, mb3.6/3, mb1 3.6/4, mb1mx3.3/60, mbtmp3.5/4, ML3.3/1, Error ellipse: s-maj=48.5km s-min=29.3km az=51.0*

JMA ***17*** *07:08:43.6±0.2, 36.28N×141.95E, h58km, M3.3*

ISC 17 07:08:42.4±3.4, 36.30N±0.06×141.8E±0.1, h6km±18km, n13, σ0s74/17, mb3.5/3, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.98**	**233**	P	**Pn**	**07 09 02.6**	**-0.2**
CHOJ				*e*S	**Sn**	**07 09 17.3**	**+0.3**
JHO	**Hitachi**	**1.05**	**287**	P	**Pn**	**07 09 03.9**	**+0.1**
ONAJ	**Iwakimizuishiy**	**1.15**	**315**	P	**Pn**	**07 09 05.0**	**-0.1**
JFK	**Kawauchi**	**1.31**	**325**	P	**Pb**	**07 09 07.3**	**-0.1**
JFK				*e*S	**Sn**	**07 09 25.1**	**0.0**
JSB	**Shiboa**	**1.67**	**294**	P	**Pb**	**07 09 13.3**	**-0.3**
JSB				*e*S	**Sg**	**07 09 36.4**	**+0.4**
JFT	**Otama**	**1.70**	**316**	P	**Pb**	**07 09 13.8**	**-0.3**
BSO1	**Boso 1**	**1.78**	**203**	*e*S	**Sn**	**07 09 35.9**	**-0.1**
JAG	**Ashikaga**	**1.91**	**274**	P	**Pn**	**07 09 16.4**	**+0.8**
MJAR	**Matsushiro Arr**	**2.92**	**276**	Pn	**Pn**	**07 09 30.3**	**+0.8**
MJAR	4.4nm,0.3s,baz=105,slow=9.0,SNR=13			Sn	**Sb**	**07 10 09.1**	**-1.8**
MAT	**Matsushiro**	**2.92**	**276**	P	**Pn**	**07 09 30.7**	**+1.2**
MAT	1.6nm,0.3s,baz=37,slow=29,SNR=4.6			S	**Sn**	**07 10 05.7**	**+0.7**
SONM	**Songino Array**	**28.47**	**305**	P	**P**	**07 14 38.6**	**+0.2**
KURBB	0.5nm,0.6s,baz=112,slow=8.6,SNR=4.2 **Kurchatov Arra**	**46.71**	**309**	P	**P**	**07 17 11.9**	**-0.1**
WRA	0.6nm,0.6s,baz=87,slow=7.5,SNR=2.4 **Warramunga Arr**	**56.38**	**188**	P	P	07 18 30.2	+5.5
	0.3nm,0.7s,baz=2.7,slow=7.1,SNR=3.2						

NIED ***17*** *07:12:00, 37.40N×141.40E, h50km, Mw4.4 Best double couple: M₀4.31000×10¹⁵ NP1:φ₀195.00000°, δ15.00000°, λ81.00000°. NP2:φ₀24.00000°, δ75.00000°, λ92.00000°.*

MOS ***17*** *07:12:48.2±1.1, 37.51N×141.28E, h33km, mb4.7/28, Error ellipse: s-maj=7.9km s-min=5.5km az=110.0*

ISCJB ***17*** *07:12:49.9±0.4, 37.41N±0.02×141.36E±0.04, h56km±2km, mb4.5/86, MS3.5/15, Error ellipse: s-maj=6.0km s-min=3.5km az=26.4*

BJI ***17*** *07:12:49.2, 37.47N×141.37E, h56km, mb4.7/37, mB4.7/22, Ms4.2/12, Ms7 4.0/11*

JMA ***17*** *07:12:50.4±0.1, 37.41N×141.41E, h47km±1km, M4.3*

JMA Felt II J1.

IDC ***17*** *07:12:51.2±0.6, 37.38N×141.33E, h53km±5km, mb4.1/31, mb1 4.2/38, mb1mx4.0/72, mbtmp4.3/38, MS3.4/19, Ms1 3.4/19, ms1mx3.2/49, Error ellipse: s-maj=11.6km s-min=8.7km az=114.0*

NEIC ***17*** *07:12:52.2±0.5, 37.44N×141.29E, h60km±4km, mb4.6/22, Error ellipse: s-maj=5.8km s-min=3.9km az=142.0*

ISC 17 07:12:50.8±0.6, 37.40N±0.04×141.38E±0.05, h50km±4km, h49km:pP-P,n201, σ1s17/212, mb4.6/86, MS3.5/15, 15C-2D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**0.40**	**266**	P	**Pn**	**07 13 00.6**	**-0.3**
JFK				S	**Sn**	**07 13 07.7**	**-0.5**
ONAJ	**Iwakimizuishiy**	**0.55**	**237**	P	**Pn**	**07 13 02.5**	**-0.2**
ONAJ				S	**Sn**	**07 13 10.7**	**-0.5**
JMM	**Marumori**	**0.66**	**315**	P	**Pn**	**07 13 03.6**	**-0.4**
JMM				S	**Sn**	**07 13 12.9**	**-0.6**
JFT	**Otama**	**0.83**	**279**	P	**Pn**	**07 13 06.9**	**+0.6**
JFT				S	**Sn**	**07 13 18.2**	**+0.5**
JHO	**Hitachi**	**1.02**	**220**	P	**Pn**	**07 13 08.2**	**-0.5**
JHO				S	**Sn**	**07 13 20.7**	**-1.2**
JIO	**Ouri**	**1.05**	**359**	P	**Pn**	**07 13 08.6**	**-0.6**
JIO				S	**Sn**	**07 13 21.2**	**-1.7**
JOU	**Okura**	**1.12**	**330**	P	**Pn**	**07 13 09.7**	**-0.4**
JYS	**Shirataka**	**1.32**	**309**	P	**Pn**	**07 13 13.2**	**+0.3**
JYS				S	**Sn**	**07 13 30.5**	**+1.1**
JFY	**Yanaizu**	**1.33**	**271**	P	**Pn**	**07 13 13.4**	**+0.4**
JMK	**Ichinoseki**	**1.56**	**356**	P	**Pn**	**07 13 15.5**	**-0.5**
JMK				S	**Sn**	**07 13 34.4**	**-0.7**
MJAR	**Matsushiro Arr**	**2.68**	**252**	P	**Pn**	**07 13 32.5**	**+1.1**
MJAR	16nm,0.3s,baz=81,slow=16,SNR=68			LR	LR	07 14 52.7	
	comp=Z,827nm,19.3s,baz=70,slow=47						
MAJO	**Matsushiro**	**2.68**	**252**	*e*P	**Pn**	**07 13 32.9**	**+1.5**
MAJO	**Matsushiro**	**2.68**	**252**	*e*Pn	**Pn**	**07 13 32.9**	**+1.5**
MAT	**Matsushiro**	**2.68**	**252**	P	**Pn**	**07 13 32.8**	**+1.4**
MAT				*e*S	**Sn**	**07 14 07.3**	**+4.7**
MJB9	**Matsu-Tunnel**	**2.68**	**252**	*e*Pn	**Pn**	**07 13 33.0**	**+1.5**
INU	**Inuyama**	**4.07**	**241**	*e*Pn	**Pn**	**07 13 52.9**	**+2.4**
JHJ	**Hachijo jima 2**	**4.46**	**197**	P	**Pn**	**07 13 55.7**	**-0.2**
	53nm,0.3s,baz=26,slow=6.1,SNR=6.3						
JHJ				S	**Sn**	**07 14 46.3**	**-0.3**
	74nm,0.3s,baz=90,slow=23,SNR=6.7						
JHJ2	**Mitsune**	**4.46**	**197**	*e*Pn	**Pn**	**07 13 55.9**	**0.0**
JHJ2				*e*Sn	**Sn**	**07 14 48.8**	**+2.3**
ERM	**Erimo**	**4.81**	**16**	*e*P	**Pn**	**07 14 01.7**	**+1.0**
ERM				*e*		07 14 53.6	
ERM	**Erimo**	**4.81**	**16**	*e*Pn	**Pn**	**07 14 01.6**	**+1.0**
ERM				*e*Sn	**Sn**	**07 14 53.6**	**-1.4**
ASAJ	**Asahikawa**	**6.78**	**7**	P	**Pn**	**07 14 27.5**	**-0.1**
	2.9nm,0.3s,baz=229,slow=12,SNR=16						
ASAJ				S	**Sn**	**07 15 46.4**	**+3.1**
	0.9nm,0.3s,baz=248,slow=22,SNR=3.8						
ASAJ				LR	LR	07 17 36.8	
	comp=Z,116nm,20.1s,baz=241,slow=42						
ASAJ	**Asahikawa**	**6.78**	**7**	*e*Pn	**Pn**	**07 14 26.4**	**-1.2**
ASAJ				*e*Sn	**Sn**	**07 15 40.5**	**-2.9**
ASAJ				S	**Sn**	**07 15 46.4**	**+3.1**
YUK	**Yuzh-Kuril'sk**	**7.45**	**26**	*e*P	**Pn**	**07 14 36.1**	**-0.7**
YUK				pmax	pmax		
	comp=Z,182nm,0.5s						
YUK				pmax	pmax		
	comp=N,42nm,0.1s						
YUK				pmax	pmax		
	comp=E,60nm,0.1s						
SHO	**Shikotan**	**7.68**	**31**	*e*P	**Pn**	**07 14 42.2**	**+2.3**
SHO				*e*S	Sn	07 15 55.9	-10
SHO				pmax	pmax		
	comp=Z,130nm,1.0s						
SHO				pmax	pmax		
	comp=N,97nm,1.1s						
SHO				pmax	pmax		
	comp=E,41nm,0.5s						
KUR	**Kuril'sk**	**9.22**	**30**	*e*P	**Pn**	**07 15 01.2**	**+0.1**
KUR				pmax	pmax		
	comp=Z,22nm,0.3s						
KUR				pmax	pmax		
	comp=N,11nm,0.1s						
KUR				pmax	pmax		
	comp=E,16nm,0.1s						
JNU	**Nakatsue**	**9.58**	**247**	P	**Pn**	**07 15 07.5**	**+1.4**
	comp=E,0.3nm,0.3s,baz=0.0,slow=20,SNR=2.9						
JNU				LR	LR	07 19 15.4	
	comp=E,215nm,21.1s,baz=115,slow=40						
JNU	**Nakatsue**	**9.58**	**247**	*e*Pn	**Pn**	**07 15 06.0**	**-0.2**
USRK	**Ussuriysk Ar.**	**9.83**	**317**	P	**Pn**	**07 15 11.3**	**+1.9**
	comp=E,1.1nm,0.3s,baz=131,slow=13,SNR=37						
USRK				LR	LR	07 18 44.2	
	comp=E,295nm,19.2s,baz=144,slow=36						
KSRS	**Korea Array**	**10.70**	**274**	P	**Pn**	**07 15 23.2**	**+1.9**
	comp=E,0.7nm,0.3s,baz=91,slow=14,SNR=17						
KSRS				LR	LR	07 19 23.6	
	comp=E,152nm,18.8s,baz=63,slow=37						
KS15	**Wonju Array Si**	**10.73**	**274**	*e*Pn	**Pn**	**07 15 22.2**	**+0.4**
KSAR	**Wonju Array Be**	**10.73**	**274**	P	**Pn**	**07 15 23.3**	**+1.5**
KSAR	**Wonju Array Be**	**10.73**	**274**	P	**Pn**	**07 15 23.2**	**+1.5**
MDJ	**Mudanjiang**	**11.45**	**313**	P	**Pn**	**07 15 28.8**	**-2.7**
MDJ				pmax	pmax		
	comp=E,5.0nm,1.1s						
MDJ	**Mudanjiang**	**11.45**	**313**	*e*Pn	Pn	07 15 37.0	+5.4
INCN	**Inchon**	**11.72**	**275**	*e*Pn	**Pn**	**07 15 34.9**	**-0.4**
INCN				*e*Sn	Sn	07 17 35.3	-9.4
KLR	**Kul'dur**	**13.73**	**332**	P	**Pn**	**07 16 03.4**	**+0.8**
	comp=E,0.1nm,0.3s,baz=40,slow=16,SNR=3.1						
KLR				LR	LR	07 21 09.6	
	comp=E,133nm,20.0s,baz=150,slow=36						
NJ2	**Nanjing**	**19.25**	**261**	*e*P	**P**	**07 17 08.9**	**-2.1**
NJ2				pmax	pmax		
	comp=E,10.0nm,0.7s						
TIA	**Tai'an**	**19.45**	**274**	⇓P	**P**	**07 17 12.0**	**-1.2**
TIA				pmax	pmax		
	comp=E,30nm,0.9s						
BJI	**Beijing**	**19.82**	**285**	P	**Pn**	**07 17 19.9**	**+0.8**
BJI				pmax	pmax		
	comp=E,17nm,0.8s						
BJI				pmax	pmax		
	comp=E,160nm,4.3s						
BJI				LR	LR		
	comp=E,140nm,11.2s						
BJI				LR	LR		
	comp=E,120nm,6.4s						
MA2	**Magadan**	**23.00**	**12**	LR	LR	07 26 30.0	
	comp=E,25nm,20.8s,baz=176,slow=36						
HHC	**Hu-ho-hao-te**	**23.33**	**288**	*e*P	**P**	**07 17 53.6**	**-1.0**
HHC				pP	pP	07 18 08.3	+1.7
HHC				sP	sP	07 18 14.4	+1.6
HHC				S	**S**	**07 21 57.6**	**-6.0**
HHC				pmax	pmax		
	comp=E,16nm,0.6s						
HHC				pmax	pmax		
	comp=E,83nm,7.4s						
HHC				LR	LR		
	comp=E,330nm,14.8s						
HHC				LR	LR		
	comp=E,680nm,14.8s						
HHC				LR	LR		
	comp=E,390nm,14.8s						
GUMO	**Guam**	**23.91**	**172**	LR	LR	07 26 41.3	
	comp=E,22nm,20.8s,baz=96,slow=35						
YAK	**Yakutsk**	**25.71**	**347**	P	**P**	**07 18 16.1**	**+0.2**
	comp=E,9.5nm,0.4s,baz=332,slow=3.7,SNR=5.7						
YAK				LR	LR	07 28 38.8	
	comp=E,68nm,19.8s,baz=160,slow=37						
YAK	**Yakutsk**	**25.71**	**347**	*e*P	**P**	**07 18 14.5**	**-1.5**
YAK				pmax	pmax		
	comp=Z,33nm,1.1s						
YAK				pmax	pmax		
	comp=E,5.0nm,1.4s						
YAK				pmax	pmax		
	comp=N,9.0nm,1.0s						
SEY	**Seymchan**	**26.44**	**11**	P	**P**	**07 18 23.1**	**+0.5**
	comp=N,5.4nm,0.8s,baz=209,slow=7.2,SNR=15						
ULN	**Ulaanbaatar**	**27.13**	**304**	*e*P	**P**	**07 18 28.3**	**-0.9**
ULN				pmax	pmax		
	comp=Z,9.0nm,1.2s						
ULN	**Ulaanbaatar**	**27.13**	**304**	*e*P	**P**	**07 18 27.9**	**-1.2**
	comp=Z,5.0nm,0.7s						
BOD	**Bodaibo**	**27.21**	**327**	⇑*i*P	**P**	**07 18 28.7**	**-0.9**
BOD				*e*S	**PcP**	**07 21 43.7**	**-4.8**
BOD				pmax	pmax		
	comp=E,8.0nm,0.8s						
ENH	**Enshi**	**27.34**	**264**	*e*P	**P**	**07 18 30.7**	**-0.3**
	comp=Z,33nm,0.8s						
SONA1	**Songino Array**	**27.55**	**303**	*e*P	**P**	**07 18 31.1**	**-1.8**
SONM	**Songino Array**	**27.56**	**303**	P	**P**	**07 18 32.1**	**-0.9**
	comp=Z,5.7nm,0.8s,baz=102,slow=8.2,SNR=34						
SONM				LR	LR	07 28 59.4	
	comp=Z,88nm,20.0s,baz=91,slow=35						
H11N2	**WAKE ISLAND Hy 28.36 121**			T	T	07 48 54.5	
	baz=314,slow=75,SNR=150						
H11N1	**WAKE ISLAND Hy 28.37 121**			T	T	07 48 50.4	
	baz=314,slow=75,SNR=159						
H11N3	**WAKE ISLAND Hy 28.38 121**			T	T	07 48 51.2	
	baz=314,slow=75,SNR=166						
H11S1	**WAKE ISLAND Hy 29.08 123**			T	T	07 49 44.8	
	baz=316,slow=76,SNR=120						
H11S3	**WAKE ISLAND Hy 29.09 123**			T	T	07 49 47.2	
	baz=316,slow=76,SNR=54						
H11S2	**WAKE ISLAND Hy 29.10 123**			T	T	07 49 48.5	
	baz=316,slow=76,SNR=54						
LZH	**Lanzhou**	**29.98**	**279**	*e*P	P	07 19 00.3	+5.6
LZH				pP	sP	07 19 13.8	+0.3
LZH				sP	pP	07 19 19.8	+12
LZH				pmax	pmax		
	comp=Z,14nm,1.0s						
ZAK	**Zakamensk**	**30.02**	**308**	*e*P	**P**	**07 18 53.1**	**-1.7**
ZAK				pmax	pmax		
	comp=Z,3.0nm,0.9s						
TLY	**Talaya**	**30.07**	**310**	P	**P**	**07 18 55.3**	**+0.2**
	comp=Z,3.5nm,0.7s,baz=112,slow=0.5,SNR=7.3						
TLY	**Talaya**	**30.07**	**310**	*e*P	**P**	**07 18 55.8**	**+0.7**
TLY				pmax	pmax		
	comp=Z,3.0nm,0.7s						
TLY				MLR	MLR		
	comp=Z,55nm,15.0s						
TLY	**Talaya**	**30.07**	**310**	*e*P	**P**	**07 18 54.5**	**-0.6**
	comp=Z,3.7nm,0.8s						
CD2	**Chengdu**	**31.64**	**269**	P	**P**	**07 19 08.1**	**-1.2**
CD2				pmax	pmax		
	comp=Z,1.0nm,0.5s						
GTA	**Gaotai**	**32.43**	**287**	*e*P	**P**	**07 19 16.4**	**+0.2**
GTA				pP	pP	07 19 30.8	+1.7
GTA				sP	sP	07 19 38.4	+3.4
GTA				pmax	pmax		
	comp=Z,5.0nm,1.1s						
BILL	**Bilibino**	**33.69**	**17**	⇑*e*P	**P**	**07 19 27.9**	**+1.3**
BILL				*e*		07 19 38.6	
BILL				pmax	pmax		
	comp=E,8.0nm,2.6s						
TIXI	**Tiksi**	**34.92**	**353**	*i* P	**P**	**07 19 37.9**	**+0.6**
KMI	**Kunming**	**34.99**	**261**	P	**P**	**07 19 39.1**	**+0.5**
KMI				pmax	pmax		
	comp=Z,24nm,1.0s						
KMI				pmax	pmax		
	comp=Z,110nm,8.4s						
NONG	**Nongkai**	**38.60**	**251**	P	**P**	**07 20 09.7**	**+0.6**
	comp=Z,43nm,0.8s						
SKNT	**Sakolnakorn**	**38.65**	**249**	P	**P**	**07 20 10.2**	**+0.6**
	comp=Z,14nm,1.0s						
CRAI	**Chiangrai**	**39.44**	**256**	P	**P**	**07 20 17.5**	**+1.3**
	comp=Z,10nm,0.8s						
LOEI	**Loei**	**40.35**	**252**	P	**P**	**07 20 20.9**	**-2.9**
	comp=Z,9.3nm,0.8s,comp=Z,41μm						
CMAI	**Chiengmai2**	**40.63**	**257**	P	**P**	**07 20 26.9**	**+0.6**
	comp=Z,18nm,0.8s,comp=Z,1μm						
WMQ	**Urumqi**	**40.65**	**296**	P	**P**	**07 20 26.3**	**+0.3**
WMQ				pP	pP	07 20 38.9	-0.3
WMQ				sP	sP	07 20 46.0	+0.9
WMQ				pmax	pmax		
	comp=Z,6.0nm,0.6s						
WMQ				pmax	pmax		
	comp=Z,20nm,4.2s						
CHAI	**Chaiyaphum**	**40.81**	**249**	P	**P**	**07 20 27.9**	**+0.4**
	comp=Z,4.0nm,0.9s						
PBKT	**Sadao Pong**	**41.15**	**251**	P	**P**	**07 20 30.7**	**+0.4**
	comp=Z,7.8nm,0.9s,comp=Z,705nm						
CHTO	**Chiang Mai**	**41.35**	**255**	*e*P	**P**	**07 20 31.9**	**-0.1**
CHTO				pmax	pmax		
	comp=Z,2.0nm,0.7s						
CHTO	**Chiang Mai**	**41.35**	**255**	*e*P	**P**	**07 20 31.9**	**-0.1**
	comp=Z,2.5nm,0.7s						
CMAR	**Chiang Mai Arr**	**41.56**	**255**	P	**P**	**07 20 34.0**	**+0.4**
	comp=Z,1.0nm,0.3s,baz=52,slow=4.4,SNR=8.7						
CMAR				LR	LR	07 37 22.4	
	comp=Z,78nm,19.4s,baz=220,slow=35						
CM01	**Chiang Mai Arr**	**41.57**	**255**	*e*P	**P**	**07 20 33.7**	**-0.1**
SUKH	**Sukhothai**	**41.61**	**253**	P	**P**	**07 20 35.2**	**+1.1**
	comp=Z,3.3nm,0.8s						
ZAA0	**Zalesovo Array**	**41.65**	**312**	*e*P	**P**	**07 20 33.5**	**-0.5**
ZALV	**Zalesovo Beam**	**41.65**	**312**	P	**P**	**07 20 33.9**	**-0.1**
	comp=Z,16nm,0.8s,baz=89,slow=7.1,SNR=57						
ZALV				LR	LR	07 38 25.4	
	comp=Z,73nm,18.1s,baz=84,slow=37						
SRAK	**Srakaew**	**41.98**	**247**	P	**P**	**07 20 34.6**	**-2.5**
	comp=Z,20nm,0.9s						
NVS	**Novosibirsk**	**42.57**	**313**	*e*P	**P**	**07 20 41.3**	**-0.1**
NVS				pmax	pmax		
	comp=Z,14nm,1.2s						
NVS				pmax	pmax		
	comp=E,9.0nm,1.0s						
NRIK	**Noril'sk**	**42.92**	**335**	LR	LR	07 38 19.3	
	comp=E,38nm,18.1s,baz=90,slow=36						
MK01	**Makanchi Array**	**43.90**	**302**	*e*P	**P**	**07 20 52.0**	**-0.3**
MK31	**Makanchi Array**	**43.90**	**302**	*e*P	**P**	**07 20 52.1**	**-0.3**
MK31				pmax	pmax		
	comp=Z,4.0nm,0.7s						
MK31	**Makanchi Array**	**43.90**	**302**	*e*P	**P**	**07 20 52.5**	**+0.1**
MKAR	**Makanchi Array**	**43.90**	**302**	P	**P**	**07 20 52.5**	**+0.1**
	comp=Z,7.6nm,0.7s,baz=87,slow=10,SNR=66						
MKAR				LR	LR	07 38 57.7	
	comp=Z,48nm,20.2s,baz=82,slow=36						
MAKZ	**Makanchi**	**44.11**	**302**	*e*P	**P**	**07 20 54.1**	**0.0**
MAKZ				pmax	pmax		
	comp=Z,7.0nm,0.7s						
MAKZ	**Makanchi**	**44.11**	**302**	*e*P	**P**	**07 20 54.1**	**0.0**
	comp=Z,7.1nm,0.7s						
PHET	**Kaeng Krachan**	**44.47**	**248**	P	**P**	**07 20 58.5**	**+1.3**
	comp=Z,6.6nm,0.8s						
KURK	**Kurchatov**	**45.68**	**308**	*e*P	**P**	**07 21 05.9**	**-0.5**
KURK				pmax	pmax		
	comp=Z,22nm,0.7s						
KURK	**Kurchatov**	**45.68**	**308**	*e*P	**P**	**07 21 05.9**	**-0.5**
	comp=Z,22nm,0.7s						
KURBB	**Kurchatov Arra**	**45.75**	**308**	P	**P**	**07 21 06.6**	**-0.4**
	comp=Z,14nm,0.6s,baz=83,slow=8.3,SNR=70						
GUN	**Gumba**	**47.09**	**275**	*e*P	**P**	**07 21 18.4**	**+0.2**
	comp=Z,15nm,0.4s						
KTH	**Kantishna Hill**	**47.46**	**34**	*e*P	**P**	**07 21 22.1**	**+1.7**
	comp=Z,22nm,1.8s						
MLY	**Manley**	**47.56**	**32**	*e*P	**P**	**07 21 21.9**	**+0.9**
	comp=Z,5.6nm,1.4s						
KKN	**Kakani**	**47.62**	**275**	*e*P	**P**	**07 21 22.2**	**0.0**
	comp=Z,13nm,0.4s						
KRAB	**Krabi**	**47.92**	**244**	P	P	07 21 27.9	+3.5
	comp=Z,15nm,0.8s						
GKN	**Gorkha**	**48.03**	**276**	*e*P	**P**	**07 21 25.3**	**0.0**
	comp=Z,42nm,0.9s						
MDM	**Murphy Dome**	**48.62**	**32**	*e*P	**P**	**07 21 30.3**	**+1.1**
	comp=Z,4.9nm,1.0s						
COLA	**College**	**48.79**	**32**	*i* P	**P**	**07 21 31.6**	**+1.2**
COLA				pmax	pmax		
	comp=Z,8.0nm,2.2s						
KOLN	**Koldanda**	**48.96**	**276**	*e*P	**P**	**07 21 32.6**	**+0.1**
	comp=Z,9.2nm,0.6s						
IL1	**Eielson Array**	**49.20**	**33**	*e*P	**P**	**07 21 33.9**	**+0.3**
ILAR	**Eielson Array**	**49.20**	**33**	P	**P**	**07 21 34.0**	**+0.4**
	comp=Z,2.3nm,0.8s,baz=271,slow=6.2,SNR=33						
ILAR				ScP	**ScP**	**07 26 46.7**	**-0.3**
	comp=Z,0.3nm,0.7s,baz=72,slow=4.8,SNR=5.4						
ILB	**Eielson Array**	**49.20**	**33**	*e*P	**P**	**07 21 33.5**	**-0.1**
PYUN	**Piuthan**	**49.29**	**277**	*e*P	**P**	**07 21 35.3**	**+0.2**
	comp=Z,58nm,0.9s						
TKM2	**Tokmak 2**	**49.43**	**298**	*e*P	**P**	**07 21 36.3**	**+0.4**
TKM2				pmax	pmax		
	comp=Z,8.0nm,0.7s						
TKM2	**Tokmak 2**	**49.43**	**298**	*e*P	**P**	**07 21 36.3**	**+0.4**
	comp=Z,8.2nm,0.7s						
OTUK	**Ortayu**	**50.19**	**306**	P	**P**	**07 21 40.7**	**-0.7**
OTUK				pmax	pmax		
	comp=Z,6.0nm,0.6s						
KSH	**Kashi**	**50.23**	**294**	P	P	07 21 46.1	+4.2
KSH				*e*sP	sP	07 22 09.8	+8.

INK				pP	**pP**	**07 22 24.1**	**+0.6**
	comp=Z,0.8nm,0.5s,baz=322,slow=2.2,SNR=3.3						
SVE	**Sverdlovsk**	**54.85**	**318**⇑	*e*P	**P**	**07 22 16.3**	**+0.6**
SVE				pmax	pmax		
	comp=Z,22nm,0.9s						
SOKR	**Solikamsk**	**56.02**	**322**	*e*P	**P**	**07 22 22.4**	**-1.6**
SOKR				pmax	pmax		
	comp=Z,12nm,0.8s						
ARU	**Arti**	**56.07**	**318**	P	**P**	**07 22 24.2**	**-0.2**
	comp=Z,11nm,0.4s,baz=76,slow=4.1,SNR=20						
ARU	**Arti**	**56.07**	**318**	*c i*P	**P**	**07 22 24.0**	**-0.4**
ARU						07 23 21.2	
ARU						07 24 29.2	
ARU				S	**S**	**07 30 08.0**	**-1.2**
ARU				pmax	pmax		
	comp=Z,22nm,1.0s						
ARU	**Arti**	**56.07**	**318**	*e*P	**P**	**07 22 24.1**	**-0.2**
	comp=Z,22nm,1.0s						
WRA	**Warramunga Arr**	**57.42**	**188**	P	**P**	**07 22 33.2**	**-1.2**
	comp=Z,1.8nm,0.7s,baz=6.1,slow=7.3,SNR=8.5						
AB31	**Akbulak array**	**57.68**	**310**	P	**P**	**07 22 34.9**	**-1.1**
AB31				pmax	pmax		
	comp=Z,7.0nm,0.7s						
ABKAR	**Akbulak array**	**57.68**	**310**	*e*P	**P**	**07 22 35.5**	**-0.5**
AKTO	**Aktyubinsk**	**58.41**	**312**	P	**P**	**07 22 40.7**	**-0.3**
	comp=Z,7.2nm,0.8s,baz=74,slow=12,SNR=19						
SPITS	**Spitsbergen Ar**	**60.16**	**349**	P	**P**	**07 22 53.8**	**+1.0**
	comp=Z,4.0nm,0.8s,baz=72,slow=5.6,SNR=6.1						
ASAR	**Alice Springs**	**61.14**	**188**	P	**P**	**07 23 00.2**	**+0.2**
	comp=Z,1.1nm,0.7s,baz=11,slow=5.8,SNR=15						
YKA	**Yellowknife Ar**	**63.51**	**30**	P	**P**	**07 23 15.5**	**+0.1**
	comp=Z,0.9nm,0.8s,baz=304,slow=6.9,SNR=22						
GEYT	**Alibeck**	**63.63**	**299**	P	**P**	**07 23 16.6**	**-0.1**
	comp=Z,4.5nm,0.8s,baz=62,slow=3.5,SNR=11						
ARCES	**ARCESS Array B**	**63.65**	**339**	P	**P**	**07 23 15.9**	**-0.3**
	comp=Z,3.2nm,0.9s,baz=60,slow=8.5,SNR=7.4						
ARCES				LR	LR	07 53 40.0	
	comp=Z,35nm,19.1s,baz=46,slow=38						
OBN	**Obninsk**	**67.79**	**323**‖	*e*P	**P**	**07 23 43.1**	**0.0**
OBN				*e*'PP	**pP**	**07 23 54.8**	**-2.3**
OBN				*e*		07 26 14.3	
OBN				pmax	pmax		
	comp=Z,9.0nm,0.4s						
FIA1	**FINESS Array S**	**68.48**	**332**	*e*P	**P**	**07 23 47.2**	**-0.1**
FINES	**FINESS Array B**	**68.48**	**332**	P	**P**	**07 23 47.1**	**-0.2**
	comp=Z,8.3nm,0.8s,baz=46,slow=8.2,SNR=19						
VSU	**Vasula**	**70.12**	**329**	*c e*P	**P**	**07 23 57.7**	**+0.2**
VSU				pmax	pmax		
	comp=Z,44nm,2.5s						
KVAR	**Kislovodsk Arr**	**70.64**	**311**	P	**P**	**07 24 01.4**	**+0.3**
	comp=Z,4.2nm,0.5s,baz=58,slow=10,SNR=7.6						
KBZ	**Khabaz**	**70.64**	**311**	P	**P**	**07 24 01.4**	**+0.5**
	comp=Z,3.1nm,0.8s,baz=49,slow=2.1,SNR=9.3						
KIV	**Kislovodsk**	**70.64**	**311**	*e*P	**P**	**07 24 01.8**	**+0.7**
KIV				*e*		07 24 19.6	
KIV				pmax	pmax		
	comp=Z,15nm,1.2s						
NEY	**Neytrino**	**71.01**	**310**	*i* P	**P**	**07 24 04.6**	**+1.1**
NEY				pmax	pmax		
	comp=Z,1.0nm,0.9s						
NB2	**NORSAR Subarra**	**73.84**	**337**	P	**P**	**07 24 19.5**	**-0.3**
	comp=Z,1.0nm,0.5s,baz=39,slow=6.2						
NOA	**NORSAR Array B**	**73.84**	**337**	P	**P**	**07 24 19.5**	**-0.3**
	comp=Z,2.6nm,0.7s,baz=39,slow=5.8,SNR=8.6						
NOA				LR	LR	08 00 43.5	
	comp=Z,32nm,18.1s,baz=10.0,slow=39						
LRM	**Limekiln Ridge**	**73.91**	**44**	*e*P	**P**	**07 24 22.1**	**+1.3**
AKASG	**Malin Array Be**	**73.99**	**322**	P	**P**	**07 24 20.2**	**-0.6**
	comp=Z,2.7nm,0.5s,baz=46,slow=6.2,SNR=18						
AKASG				LR	LR	07 58 18.0	
	comp=Z,48nm,19.1s,baz=245,slow=37						
KIEV	**Kiev**	**74.00**	**322**	*i* P	**P**	**07 24 19.8**	**-1.1**
NVAR	**Mina Array Bea**	**74.80**	**53**	P	**P**	**07 24 26.8**	**+0.8**
	comp=Z,0.4nm,0.6s,baz=286,slow=4.4,SNR=4.6						
NVAR				pP	**pP**	**07 24 41.2**	**+0.9**
	comp=Z,0.8nm,0.7s,baz=280,slow=6.2,SNR=2.9						
RAO	**Raoul Island**	**76.49**	**144**	LR	LR	07 55 21.9	
	comp=Z,114nm,18.8s,baz=12,slow=33						
PDAR	**Pinedale Array**	**77.43**	**45**	P	**P**	**07 24 41.4**	**+0.4**
	comp=Z,0.6nm,0.8s,baz=243,slow=1.3,SNR=5.7						
PDAR				pP	**pP**	**07 24 56.2**	**+0.9**
	comp=Z,0.4nm,0.6s,baz=166,slow=1.8,SNR=4.1						
BUR08	**Bucovina Ar. S**	**78.00**	**322**	*e*P	**P**	**07 24 43.9**	**+0.1**
BURAR	**Bucovina Array**	**78.01**	**322**⇑	*i*P	**P**	**07 24 44.6**	**+0.7**
BURAR	**Bucovina Array**	**78.01**	**322**⇑	P	**P**	**07 24 44.6**	**+0.7**
VRI	**Vrincioaia**	**78.43**	**320**⇑	*i*P	**P**	**07 24 46.1**	**-0.1**
VRI	**Vrincioaia**	**78.43**	**320**⇑	P	**P**	**07 24 46.1**	**-0.1**
BRTR	**Keskin Array B**	**78.59**	**311**	P	**P**	**07 24 47.3**	**0.0**
	comp=Z,1.0nm,0.6s,baz=106,slow=4.5,SNR=6.8						
BRTR				LR	LR	08 02 11.1	
	comp=Z,23nm,18.5s,baz=40,slow=38						
STHS	**Stebnicka Huta**	**78.64**	**325**	*e*P	**P**	**07 24 47.4**	**+0.1**
STHS	**Stebnicka Huta**	**78.64**	**325**	*e*P	**P**	**07 24 47.4**	**+0.1**
BR231	**Keskin MP Arra**	**79.03**	**312**	*e*P	**P**	**07 24 48.3**	**-1.4**
ARR	**Arges**	**79.84**	**320**⇑	*i*P	**P**	**07 24 54.9**	**+0.9**
MORC	**Moravsky Berou**	**80.04**	**327**⇑	*i*P	**P**	**07 24 54.9**	**0.0**
MORC	**Moravsky Berou**	**80.04**	**327**⇑	P	**P**	**07 24 54.9**	**0.0**
DPC	**Dobruska-Polom**	**80.13**	**328**	*e*P	**P**	**07 24 56.2**	**+0.8**
DPC	**Dobruska-Polom**	**80.13**	**328**	*e*P	**P**	**07 24 56.2**	**+0.8**
KRLC	**Kraliky**	**80.14**	**327**	*e*P	**P**	**07 24 56.3**	**+0.8**
KRLC	**Kraliky**	**80.14**	**327**	*e*P	**P**	**07 24 56.3**	**+0.8**
BRG	**Berggiesshubel**	**80.72**	**329**	*e*(P)	**P**	**07 24 58.5**	**0.0**
	comp=Z,1.7nm,0.7s						
BRG	**Berggiesshubel**	**80.72**	**329**	*e*P	**P**	**07 24 58.5**	**0.0**
BRG				pmax	pmax		
	comp=Z,2.0nm,0.7s						
GZR	**Gura Zlata**	**80.76**	**321**⇑	*i*P	**P**	**07 24 58.3**	**-0.6**
CLL	**Collm**	**80.77**	**330**⇑	*i*P	**P**	**07 24 58.3**	**-0.4**
	comp=Z,7.0nm,0.9s						
CLL	**Collm**	**80.77**	**330**	*e*P	**P**	**07 24 58.4**	**-0.3**
CLL				pmax	pmax		
	comp=Z,7.0nm,0.9s						
CLL	**Collm**	**80.77**	**330**	*e*P	**P**	**07 24 58.4**	**-0.3**
	comp=Z,6.9nm,0.9s						
GOPC	**GO Pecny, Ondr**	**81.11**	**328**	*e*P	**P**	**07 25 01.2**	**+0.6**
GOPC	**GO Pecny, Ondr**	**81.11**	**328**	*e*P	**P**	**07 25 01.2**	**+0.6**
PRU	**Pruhonice**	**81.16**	**328**	*e*P	**P**	**07 25 01.4**	**+0.6**
PRU	**Pruhonice**	**81.16**	**328**	*e*P	**P**	**07 25 01.4**	**+0.6**
KHC	**Kasperske Hory**	**82.22**	**328**	*e*P	**P**	**07 25 06.5**	**0.0**
KHC	**Kasperske Hory**	**82.22**	**328**	*e*P	**P**	**07 25 06.1**	**-0.4**
KHC				pmax	pmax		
	comp=Z,1.0nm,0.8s						
KHC	**Kasperske Hory**	**82.22**	**328**	*e*P	**P**	**07 25 06.0**	**-0.4**
	comp=Z,1.2nm,0.8s						
GERES	**GERESS Array B**	**82.39**	**328**	P	**P**	**07 25 07.3**	**-0.1**
	comp=Z,1.1nm,0.7s,baz=38,slow=6.8,SNR=11						
ANMO	**Albuquerque**	**84.38**	**50**	P	**P**	**07 25 19.1**	**+1.0**
	comp=Z,0.5nm,0.5s,baz=326,slow=6.1,SNR=4.9						
BFO	**Black Forest**	**84.97**	**331**	*e*P	**P**	**07 25 20.5**	**-0.1**
BFO				pmax	pmax		
	comp=Z,6.0nm,0.9s						
BFO	**Black Forest**	**84.97**	**331**	*e*P	**P**	**07 25 20.5**	**-0.1**
	comp=Z,5.8nm,0.9s						
FUORN	**Ofenpass-Fuorn**	**85.57**	**329**	*e*P	**P**	**07 25 23.6**	**-0.3**
	comp=Z,5.2nm,0.9s						
WMOK	**Wichita Mounta**	**89.05**	**46**	*e*P	**P**	**07 25 41.5**	**+0.9**
WMOK				pmax	pmax		
	comp=Z,8.0nm,0.7s						
WMOK	**Wichita Mounta**	**89.05**	**46**	*e*P	**P**	**07 25 41.5**	**+0.9**
	comp=Z,8.0nm,0.7s						
TXAR	**Lajitas Array**	**89.92**	**52**	P	**P**	**07 25 45.5**	**+0.6**
	comp=Z,0.6nm,0.8s,baz=294,slow=3.1,SNR=7.5						
TXAR				pP	**pP**	**07 26 00.3**	**+0.8**
	comp=Z,0.3nm,0.6s,baz=292,slow=2.4,SNR=4.0						
TORD	**Torodi Ar. Bea**	**117.05**	**315**	PP	PP	07 32 38.5	-1.4
	comp=Z,0.6nm,0.9s,baz=19,slow=6.9,SNR=3.9						
DBIC	**Dimbokro**	**126.00**	**317**	PKP	**PKPdf**	**07 31 49.1**	**+1.3**
	comp=Z,6.7nm,1.0s,baz=283,slow=4.6,SNR=3.7						
LPAZ	**La Paz**	**146.53**	**59**	PKPbc	**PKPbc**	**07 32 27.8**	**0.0**
	comp=Z,0.7nm,0.5s,baz=48,slow=2.3,SNR=6.1						

JMA 17 07:18:47.4±0.1, 39.14N×142.37E, h34km±1km, M3.5, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**0.55**	**264**	P	Pn	07 18 58.6	-0.1
OFUJ				S	Sb	07 19 06.2	-0.5
MIYJ	**Miyakonagasawa**	**0.61**	**316**	P	Pn	07 18 59.2	-0.4
MIYJ				S	Sn	07 19 07.3	-1.0
JOM	**Ohasama**	**0.90**	**292**	P	Pn	07 19 03.9	+0.3
JOM				S	Sb	07 19 16.0	-0.3
JMK	**Ichinoseki**	**0.92**	**259**	P	Pn	07 19 04.1	+0.3
JMK				S	Sn	07 19 16.1	+0.3
JIO	**Ouri**	**1.05**	**230**	P	Pn	07 19 05.3	-0.4
JIO				S	Sn	07 19 18.2	-1.0
JKZ	**Kuzumaki**	**1.17**	**317**	P	Pn	07 19 08.2	+0.9
JKZ				S	Sn	07 19 23.0	+0.9
JRG	**Rokugo**	**1.37**	**281**	P	Pb	07 19 11.7	-0.8
JRG				S	Sb	07 19 29.9	+0.2
JANG	**Nango**	**1.40**	**332**	P	Pn	07 19 11.2	+0.7
JANG				S	Sb	07 19 29.3	-1.2
JOU	**Okura**	**1.54**	**240**	P	Pn	07 19 13.9	+1.4
JOU				*e*S	Sb	07 19 33.4	-1.2
JYK	**Kaneyama**	**1.58**	**263**	P	Pn	07 19 14.1	+1.1
JYK				S	Sb	07 19 35.7	0.0

JMA 17 07:23:39.2±0.2, 39.37N×143.22E, h16km±3km, M3.8
ISCJB 17 07:23:40.5±1.2, 39.36N±0.06×143.29E±0.09, h40km±12km, mb3.4/6, MS3.7/1, Error ellipse: s-maj=12.1km s-min=9.5km az=168.7
IDC 17 07:23:45.7±3.0, 39.51N×142.91E, h70km±28km, mb2.9/6, mb1 3.2/8, mb1mx3.0/49, mbtmp3.2/8, MS3.8/1, Ms1 3.8/1, ms1mx2.4/14, Error ellipse: s-maj=30.7km s-min=17.0km az=107.0
ISC 17 07:23:43.2±2.2, 39.40N±0.07×143.1E±0.1, h47km±21km, n22, σ1s57/26, mb3.2/6, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MIYJ	**Miyakonagasawa**	**1.01**	**280**	P	**Pn**	**07 23 59.3**	**-1.8**
MIYJ				S	**Sn**	**07 24 13.8**	**-0.4**
JTH	**Tanohata**	**1.10**	**300**	P	**Pn**	**07 24 00.8**	**-1.5**
JTH				S	**Sn**	**07 24 16.2**	**-0.2**
OFUJ	**Ofunato**	**1.17**	**255**	P	**Pn**	**07 24 01.4**	**-1.7**
JOM	**Ohasama**	**1.41**	**274**	P	**Pn**	**07 24 05.8**	**-0.7**
JOM				S	**Sn**	**07 24 24.8**	**+0.9**
JKZ	**Kuzumaki**	**1.49**	**294**	P	**Pn**	**07 24 07.2**	**-0.4**
JKZ				S	**Sn**	**07 24 27.2**	**+1.2**
JMK	**Ichinoseki**	**1.54**	**254**	P	**Pn**	**07 24 07.2**	**-1.0**
JANG	**Nango**	**1.57**	**309**	P	**Pn**	**07 24 07.7**	**-0.9**
JIO	**Ouri**	**1.67**	**236**	P	**Pn**	**07 24 08.8**	**-1.2**
JRG	**Rokugo**	**1.92**	**271**	*e*S	**Sn**	**07 24 40.2**	**+3.8**
JAH	**Hinai**	**2.06**	**293**	P	**Pn**	**07 24 17.3**	**+1.9**
JAH				S	Sn	07 24 43.8	+3.9
JTM	**Tenmabayashi**	**2.09**	**312**	P	**Pn**	**07 24 16.1**	**+0.3**
JTM				*e*S	**Sn**	**07 24 43.0**	**+2.4**
JYK	**Kaneyama**	**2.19**	**258**	P	**Pn**	**07 24 17.8**	**+0.6**
ASAJ	**Asahikawa**	**4.73**	**356**	P	**Pn**	**07 24 53.0**	**+1.1**
	1.0nm,0.3s,baz=219,slow=12,SNR=7.0						
MAT	**Matsushiro**	**4.81**	**235**	P	**Pn**	**07 24 54.8**	**+1.7**
MAT				S	Sn	07 25 38.2	-9.4
MJAR	**Matsushiro Arr**	**4.81**	**235**	P	**Pn**	**07 24 54.7**	**+1.6**
	0.9nm,0.3s,baz=36,slow=13,SNR=25						
TLY	**Talaya**	**29.88**	**307**	LR	LR	07 43 53.8	
	comp=Z,183nm,19.7s,baz=123,slow=41						
MKAR	**Makanchi Array**	**44.04**	**300**	P	**P**	**07 31 43.7**	**-2.4**
	0.3nm,0.8s,baz=84,slow=13,SNR=2.3						
ILAR	**Eielson Array**	**46.78**	**34**	P	**P**	**07 32 06.7**	**-0.9**
	0.2nm,0.6s,baz=257,slow=6.5,SNR=4.2						
BVAR	**Borovoye Array**	**50.00**	**311**	P	**P**	**07 32 32.3**	**-0.2**
	0.5nm,0.5s,baz=57,slow=8.2,SNR=3.8						
WRA	**Warramunga Arr**	**59.60**	**190**	P	**P**	**07 33 42.3**	**+0.1**
	0.2nm,0.4s,baz=6.6,slow=6.9,SNR=11						
YKA	**Yellowknife Ar**	**61.09**	**31**	P	**P**	**07 33 52.5**	**+0.6**
	0.1nm,0.5s,baz=306,slow=6.5,SNR=3.7						
ASAR	**Alice Springs**	**63.33**	**189**	P	**P**	**07 34 08.5**	**+1.2**
	0.2nm,0.8s,baz=353,slow=4.7,SNR=3.1						

IDC 17 07:48:02.1±25.0, 23.38S×172.33W, h0km, mb3.9/4, mb1 4.1/4, mb1mx3.7/41, mbtmp3.9/4, Error ellipse: s-maj=462.8km s-min=147.3km az=78.0, Tonga Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CTA	**Charters Tower**	**38.52**	**267**	P	P	07 55 26.9	+0.4
	3.5nm,0.9s,baz=90,slow=13,SNR=3.4						
STKA	**Stephens Creek**	**41.44**	**248**	P	P	07 55 48.8	-1.8
	0.8nm,0.5s,baz=85,slow=12,SNR=6.6						
ASAR	**Alice Springs**	**49.04**	**258**	P	P	07 56 51.1	-0.1
	0.5nm,0.3s,baz=94,slow=7.3,SNR=26						
WRA	**Warramunga Arr**	**49.45**	**263**	P	P	07 56 55.2	+0.8
	0.5nm,0.3s,baz=100,slow=7.5,SNR=12						

MOS 17 07:51:50.3±1.1, 55.71N×161.60W, h15km, mb4.6/36, Error ellipse: s-maj=10.6km s-min=5.6km az=78.9
ISCJB 17 07:51:51.5±0.4, 55.66N±0.02×161.51W±0.03, h23km±3km, mb4.5/86, MS3.5/20, Error ellipse: s-maj=3.7km s-min=2.4km az=158.5
NEIC 17 07:51:52.6, 55.53N×161.48W, h10km, mb4.5/40, ML4.3(AEIC), After AEIC.
BJI 17 07:51:52.8, 55.40N×162.35W, h15km, mb4.7/11, mB5.1/6, Ms4.5/4, Ms7 4.2/2
IDC 17 07:51:54.4±3.7, 55.61N×161.59W, h35km±28km, mb4.1/28, mb1 4.2/31, mb1mx4.1/52, mbtmp4.2/31, ML3.6/3, MS3.4/20, Ms1 3.4/20, ms1mx3.3/44, Error ellipse: s-maj=19.6km s-min=10.6km az=12.0
ISC 17 07:51:52.1±0.6, 55.60N±0.05×161.52W±0.03, h16km±3km, h16km:pP-P,n551, σ1s08/558, mb4.6/86, MS3.5/21, 2C-4D, Alaska Peninsula

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PS4A	**Pavlof South-4**	**0.32**	**217**	P	**Pg**	**07 51 58.6**	**-0.2**
HAG	**Hague Volcano**	**0.36**	**217**	P	**Pg**	**07 51 59.5**	**0.0**
HAG	**Hague Volcano**	**0.36**	**217**	P	**Pg**	**07 51 59.5**	**0.0**
DTNA	**Dutton South F**	**0.61**	**223**	P	**Pg**	**07 52 03.8**	**-0.4**
SDPT	**Sand Point**	**0.65**	**113**	P	**Pg**	**07 52 04.0**	**-0.8**
SDPT				S	**Sg**	**07 52 13.4**	**+0.1**
DT1	**Dutton Round H**	**0.66**	**221**	P	**Pg**	**07 52 04.2**	**-0.7**
VNWF	**Veniaminof 8**	**1.23**	**63**	P	**Pn**	**07 52 14.0**	**-0.7**
FALS	**False Pass**	**1.32**	**236**	P	**Pn**	**07 52 14.7**	**-1.0**
FALS				S	**Sg**	**07 52 34.2**	**-0.4**
VNNF	**Veniaminof 3**	**1.42**	**60**	P	**Pn**	**07 52 16.9**	**-0.4**
VNNG	**Veniaminof 1**	**1.47**	**64**	P	**Pn**	**07 52 18.0**	**+0.1**
ISLZ	**Isanotski Laza**	**1.53**	**236**	P	**Pn**	**07 52 17.9**	**-0.8**
SSLS	**Shishaldin Sou**	**1.68**	**239**	P	**Pn**	**07 52 20.3**	**-0.4**
SSLS				S	**Sb**	**07 52 43.6**	**+0.2**
SSLW	**Shishaldin Wes**	**1.71**	**242**	P	**Pn**	**07 52 20.2**	**-0.9**
CHGN	**Chignik**	**1.88**	**67**	P	**Pn**	**07 52 22.6**	**-0.9**
CHGN				S	**Sb**	**07 52 48.7**	**-0.6**
WEBT	**Westdahl Beart**	**2.12**	**243**	P	**Pn**	**07 52 26.4**	**-0.3**
WESP	**Westdahl Peak**	**2.15**	**240**	P	**Pn**	**07 52 27.2**	**-0.1**
WESP				S	**Sb**	**07 52 55.8**	**-1.2**
WECS	**Westdahl Cape**	**2.16**	**242**	P	**Pn**	**07 52 27.4**	**0.0**
ANPK	**Aniakchak Peak**	**2.27**	**55**	P	**Pn**	**07 52 28.8**	**-0.1**
AKUT	**Akutan**	**2.86**	**241**	*e*Pn	**Pb**	**07 52 40.1**	**-2.5**
ZRO	**Akutan Zero**	**2.99**	**241**	P	**Pn**	**07 52 39.2**	**+0.5**
UNV	**Unalaska Valle**	**3.38**	**241**	P	**Pn**	**07 52 45.0**	**+1.0**
MTBL	**Makushin Table**	**3.40**	**243**	P	**Pn**	**07 52 45.6**	**+1.1**
MSW	**Makushin Switc**	**3.48**	**243**	P	**Pn**	**07 52 46.0**	**+0.5**
PLK1	**Peulik 1**	**3.49**	**49**	P	**Pn**	**07 52 45.2**	**-0.4**
MGOD	**Makushin Gods**	**3.59**	**242**	P	**Pn**	**07 52 47.9**	**+0.9**
MSOM	**Makushin Julie**	**3.62**	**243**	P	**Pn**	**07 52 48.6**	**+1.3**
MSOM	**Makushin Julie**	**3.62**	**243**	P	**Pn**	**07 52 48.6**	**+1.3**
KELA	**Mount Kelaz**	**4.25**	**46**	P	**Pn**	**07 52 55.8**	**-0.4**
OKFG	**Magazine Ridge**	**4.32**	**242**	P	**Pn**	**07 52 57.9**	**+0.9**
KABR	**Katmai Barrier**	**4.40**	**52**	P	**Pn**	**07 52 59.2**	**+1.1**
KVTA	**Katmai Vly 10**	**4.40**	**48**	P	**Pn**	**07 52 58.1**	**0.0**
OKTU	**Okmok Mt. Tuli**	**4.40**	**242**	P	**Pn**	**07 52 58.9**	**+0.7**
KAKN	**Katmai Knife C**	**4.45**	**50**	P	**Pn**	**07 52 58.8**	**-0.1**
KAHC	**Katmai Hardscr**	**4.68**	**47**	P	**Pn**	**07 53 01.4**	**-0.7**
OHAK	**Old Harbor**	**4.85**	**67**	*e*P	**Pn**	**07 53 04.5**	**+0.2**
MCNL	**McNeil River**	**5.29**	**44**	P	**Pn**	**07 53 09.9**	**-0.4**
FOSS	**Fourpeaked Sta**	**5.33**	**50**	P	**Pn**	**07 53 11.9**	**+1.1**
KDAK	**Kodiak Island**	**5.39**	**62**	Pn	Pb	07 53 26.6	+0.9
	9.7nm,0.3s,baz=243,slow=6.4,SNR=36						
KDAK	**Kodiak Island**	**5.39**	**62**	P	**Pn**	**07 53 11.7**	**+0.1**
KDAK	**Kodiak Island**	**5.39**	**62**	P	**Pn**	**07 53 11.7**	**+0.1**
FOPK	**Fourpeaked Vol**	**5.40**	**51**	P	**Pn**	**07 53 12.1**	**+0.2**
CDD	**Cape Douglas**	**5.42**	**49**	P	**Pn**	**07 53 12.6**	**+0.5**
SVW2	**Sparrevohn**	**6.33**	**27**	P	**Pn**	**07 53 23.6**	**-1.0**
HOM	**Homer**	**6.68**	**48**	*e*Pn	**Pn**	**07 53 31.7**	**+2.3**
RSO	**Redoubt South**	**6.74**	**40**	*e*Pn	**Pn**	**07 53 31.0**	**+0.7**
NCT	**North Crescent**	**6.74**	**39**	P	**Pn**	**07 53 30.9**	**+0.5**
BRLK	**Bradley Lake**	**7.06**	**49**	P	**Pn**	**07 53 35.5**	**+0.8**
CKL	**Chakachamna La**	**7.39**	**37**	P	**Pn**	**07 53 40.3**	**+1.0**
SPU	**Mount Spurr**	**7.48**	**38**	*e*Pn	**Pn**	**07 53 43.4**	**+3.0**
STLK	**Strandline Lak**	**7.78**	**37**	P	**Pn**	**07 53 46.1**	**+1.5**
TT01	**Tatalina**	**7.85**	**19**	*e*Pn	**Pn**	**07 53 43.7**	**-1.6**
TTA	**Tatalina**	**7.87**	**19**	*e*P	**Pn**	**07 53 44.3**	**-1.5**
TTA	**Tatalina**	**7.87**	**19**	*e*Pn	**Pn**	**07 53 44.2**	**-1.5**
ATKA	**Atka Island**	**8.22**	**251**	*e*Pn	**Pn**	**07 53 52.9**	**+2.4**
RC01	**Rabbit Creek A**	**8.28**	**44**	*e*Pn	**Pn**	**07 53 50.1**	**-1.2**
PPLA	**Purkeypile**	**8.73**	**29**	*e*Pn	Pn	07 54 01.7	+4.0
PMR	**Palmer**	**8.82**	**42**	*e*P	**Pn**	**07 53 59.8**	**+1.2**
PMR	**Palmer**	**8.82**	**42**	*e*Pn	**Pn**	**07 53 59.8**	**+1.2**
CAST	**Castle Rocks**	**9.18**	**28**	*e*Pn	**Pn**	**07 54 05.7**	**+2.0**
SML	**Sawmill**	**9.25**	**42**	*e*P	**Pn**	**07 54 06.6**	**+2.0**
SML				pmax	pmax		
	comp=Z,4.0nm,0.9s						
SML	**Sawmill**	**9.25**	**42**	*e*Pn	**Pn**	**07 54 06.6**	**+2.0**
	comp=Z,4.5nm,0.9s						
KTH	**Kantishna Hill**	**9.60**	**30**	*e*Pn	Pn	07 54 13.5	+4.0
SCM	**Sheep Creek Mo**	**9.66**	**44**	*e*P	**Pn**	**07 54 12.5**	**+2.3**
SCM	**Sheep Creek Mo**	**9.66**	**44**	*e*Pn	**Pn**	**07 54 12.5**	**+2.3**
GAMB	**Gambell**	**9.66**	**332**	*e*Pn	**Pn**	**07 54 12.5**	**+2.2**
EYAK	**Cordova Ski Ar**	**9.71**	**53**	*e*Pn	**Pn**	**07 54 10.8**	**0.0**
DIV	**Divide**	**9.94**	**50**	*e*Pn	**Pn**	**07 54 14.1**	**-0.1**
BPAW	**Bear Paw Mtn.**	**10.02**	**27**	*e*Pn	Pn	07 54 18.7	+3.5
KLU	**Klutina**	**10.05**	**48**	*e*Pn	**Pn**	**07 54 15.6**	**0.0**
RND	**Reindeer**	**10.12**	**34**	*e*P	**Pn**	**07 54 17.9**	**+1.4**
RND	**Reindeer**	**10.12**	**34**	*e*Pn	**Pn**	**07 54 17.9**	**+1.4**
RAGM	**Ragged Mountai**	**10.13**	**55**	*e*Pn	**Pn**	**07 54 15.9**	**-0.9**
MCK	**McKinley**	**10.32**	**33**	*e*P	**Pn**	**07 54 21.3**	**+2.0**
MCK	**McKinley**	**10.32**	**33**	*e*Pn	**Pn**	**07 54 21.3**	**+2.0**
BMRM	**Bremner River**	**10.39**	**52**	*e*Pn	**Pn**	**07 54 20.1**	**-0.2**
MLY	**Manley**	**10.84**	**25**	*e*Pn	**Pn**	**07 54 29.4**	**+2.9**
PAX	**Paxson**	**11.02**	**41**	*e*P	**Pn**	**07 54 30.0**	**+1.2**
PAX	**Paxson**	**11.02**	**41**	*e*Pn	**Pn**	**07 54 30.0**	**+1.2**
WRH	**Wood River Hil**	**11.12**	**31**	*e*Pn	**Pn**	**07 54 31.8**	**+1.6**
CCB	**Clear Creek Bu**	**11.33**	**31**	*e*Pn	**Pn**	**07 54 32.5**	**-0.5**
HDA	**Harding Lake**	**11.42**	**34**	*e*Pn	**Pn**	**07 54 35.2**	**+0.9**
HDA				*e*Lg	Lg	07 57 53.6	
MDM	**Murphy Dome**	**11.44**	**30**	*e*Pn	**Pn**	**07 54 36.5**	**+2.0**
COLA	**College**	**11.48**	**30**	*i* P	**Pn**	**07 54 36.2**	**+1.1**
COLA	**College**	**11.48**	**30**	*e*Pn	**Pn**	**07 54 35.4**	**+0.3**
MENT	**Mentasta**	**11.67**	**44**	*e*Pn	**Pn**	**07 54 38.9**	**+1.2**
IL1	**Eielson Array**	**11.70**	**32**	*e*Pn	**Pn**	**07 54 38.5**	**+0.5**
ILAR	**Eielson Array**	**11.70**	**32**	Pn	**Pn**	**07 54 36.2**	**-1.8**
	comp=Z,0.1nm,0.3s,baz=224,slow=13,SNR=22						
ILAR				Lg	Lg	07 58 09.1	
	comp=Z,0.1nm,0.3s,baz=234,slow=31,SNR=6.9						
ILB	**Eielson Array**	**11.70**	**32**	*e*Pn	**Pn**	**07 54 38.5**	**+0.5**
DOT	**Dot Lake**	**11.93**	**40**	*e*Pn	**Pn**	**07 54 43.4**	**+2.2**
**COLD

CMB pmax pmax
comp=Z,11nm,1.5s
CMB Columbia Colle 32.57 105 *e*P **P 07 58 24.2 +1.8**
comp=Z,11nm,1.5s
NVAR Mina Array Bea 33.44 103 P **P 07 58 31.2 +1.0**
comp=Z,1.4nm,0.6s,baz=309,slow=8.5,SNR=10
NVAR LR LR 08 10 14.7
comp=Z,61nm,19.3s,baz=332,slow=33
YMR Madison River 33.48 87 *e*P **P 07 58 29.5 -0.9**
comp=Z,11nm,0.8s
YFT Old Faithful 33.68 88 *e*P **P 07 58 35.2 +2.9**
comp=Z,10nm,1.0s
LKWY Lake 33.86 87 *e*P P 07 58 37.1 +3.3
LKWY pmax pmax
comp=Z,8.0nm,0.9s
LKWY Lake 33.86 87 *e*P P 07 58 37.1 +3.3
comp=Z,7.9nm,0.9s
H17A Grant Village 33.86 88 P **P 07 58 36.2 +2.4**
baz=308,SNR=9.4
H17A Grant Village 33.86 88 *e*P **P 07 58 35.8 +1.9**
comp=Z,12nm,1.1s
IMW Indian Meadow 33.96 89 *e*P **P 07 58 36.7 +1.9**
comp=Z,4.3nm,1.0s
IMW *e*PcP **PcP 08 01 14.2 +1.6**
FLWY Flagg Ranch 33.98 88 *e*P **P 07 58 34.4 -0.5**
comp=Z,7.4nm,0.9s
RLMT Red Lodge 34.16 86 P **P 07 58 38.3 +1.9**
baz=307,SNR=6.5
RLMT Red Lodge 34.16 86 *e*P **P 07 58 35.6 -0.8**
comp=Z,6.3nm,0.9s
YAK Yakutsk 34.62 309 P **P 07 58 40.0 +0.1**
comp=Z,50nm,0.8s,baz=242,slow=3.9,SNR=14
YAK LR LR 08 14 15.3
comp=Z,115nm,18.4s,baz=82,slow=39
YAK Yakutsk 34.62 309 *e*P **P 07 58 39.6 -0.3**
YAK pmax pmax
comp=Z,68nm,0.9s
YAK pmax pmax
comp=N,12nm,1.3s
YAK pmax pmax
comp=E,33nm,1.1s
YAK Yakutsk 34.62 309 *e*P **P 07 58 39.3 -0.6**
comp=E,66nm,0.9s
LAO LASA Array 34.95 81 P **P 07 58 42.1 -0.9**
baz=305
R11A Troy Canyon, C 35.01 100 P **P 07 58 45.2 +1.5**
baz=315,SNR=7.6
R11A Troy Canyon, C 35.01 100 *e*P **P 07 58 45.4 +1.6**
comp=E,9.3nm,1.5s
DGMT Dagmar 35.07 77 P **P 07 58 44.2 +0.2**
baz=304
FCC Fort Churchill 35.29 56 *e*P **P 07 58 45.9 +0.2**
FCC pmax pmax
comp=Z,11nm,0.9s
FCC Fort Churchill 35.29 56 *e*P **P 07 58 45.9 +0.2**
comp=Z,11nm,0.9s
DUG Dugway, Tooele 35.30 95 P **P 07 58 45.9 -0.2**
baz=312
ISA Isabella, Lake 35.35 106 P **P 07 58 47.0 +0.4**
baz=318
A25A Svangstu Ranch 35.41 76 P **P 07 58 46.9 +0.1**
baz=303
BW06 Boulder Array 35.46 89 P **P 07 58 47.8 +0.1**
baz=310
BW06 Boulder Array 35.46 89 *e*P **P 07 58 48.8 +1.2**
comp=Z,2.5nm,0.9s
PD31 Pinedale Array 35.46 89 *e*P **P 07 58 48.7 +1.1**
PDAR Pinedale Array 35.46 89 P **P 07 58 48.4 +0.8**
comp=Z,1.8nm,0.6s,baz=310,slow=4.6,SNR=15
ARVC Arvin 35.56 107 P **P 07 58 48.0 -0.3**
baz=319
SBC Santa Barbara 35.60 109 P **P 07 58 48.8 +0.2**
baz=320
MPMC Manual Prospec 35.60 105 P **P 07 58 48.3 -0.6**
baz=317
TPNV Topopah Spring 35.63 102 P **P 07 58 49.2 +0.1**
baz=316
TPNV Topopah Spring 35.63 102 *e*P **P 07 58 51.7 +2.6**
TPNV pmax pmax
comp=Z,19nm,1.4s
TPNV Topopah Spring 35.63 102 *e*P **P 07 58 51.6 +2.6**
comp=Z,18nm,1.4s
FURC Furnace Creek, 35.65 104 P **P 07 58 49.4 +0.5**
baz=317
B25A Knox Farm, Ray 35.75 77 P **P 07 58 50.5 +0.7**
baz=304
LRMC Laurel Mtn Rad 35.92 105 P **P 07 58 53.0 +1.5**
baz=318
SCZ2 Santa Cruz Isl 35.98 109 P **P 07 58 51.4 -0.5**
baz=320
OSI Osito Audit: C 36.00 108 P **P 07 58 51.7 -0.4**
baz=319
C25A Freed Ranch, W 36.02 78 P **P 07 58 52.7 +0.6**
baz=305
A26A Wade Farm, Ken 36.02 75 P **P 07 58 52.8 +0.6**
baz=304
D25A Fairfield 36.31 78 P **P 07 58 54.0 -0.6**
baz=305
SHOC Shoshone, Teco 36.38 104 P **P 07 58 55.0 -0.4**
baz=317
A27A Ledoux Ranch, 36.43 75 P **P 07 58 54.9 -0.7**
baz=304
GSC Goldstone, Bar 36.53 105 P **P 07 58 56.7 0.0**
baz=318
C26A Wahner Farm, P 36.60 77 P **P 07 58 57.4 +0.3**
baz=305
BFSC Mount Baldy Ra 36.86 107 P **P 07 58 59.2 -0.4**
baz=319
A28A Rude Farm, Bot 36.98 74 P **P 07 59 00.9 +0.6**
baz=304
C27A Sayler Ranch, 36.99 76 P **P 07 59 00.4 +0.1**
baz=305
E26A Carlson Angus 37.18 79 P **P 07 59 02.3 +0.2**
baz=306
B28A Dugan Ranch, T 37.19 75 P **P 07 59 02.6 +0.5**
baz=305,SNR=6.1
K22A Casper 37.25 87 P **P 07 59 04.0 +1.2**
baz=310
K22A Casper 37.25 87 *e*P **P 07 59 03.8 +1.0**
comp=Z,10nm,0.9s
SRU San Rafael Swe 37.33 94 *e*P **P 07 59 04.6 +1.0**
SRU pmax pmax
comp=Z,11nm,1.1s
SRU San Rafael Swe 37.33 94 *e*P **P 07 59 04.6 +1.0**
comp=Z,11nm,1.1s
F26A Lodgepole 37.44 80 P **P 07 59 05.0 +0.8**
baz=307
A29A Manning Farm, 37.54 73 P **P 07 59 05.8 +0.8**
baz=304,SNR=5.8
GMRC Granite Mounta 37.54 104 P **P 07 59 07.1 +1.8**
baz=318
H25A Fruitdale 37.67 82 P **P 07 59 07.9 +1.6**
baz=308
E27A Carson 37.71 78 P **P 07 59 07.7 +1.1**
baz=306
RSSD Black Hills 37.73 83 P **P 07 59 08.1 +1.2**
baz=308
RSSD Black Hills 37.73 83 *e*P **P 07 59 07.6 +0.6**
RSSD pmax pmax
comp=Z,12nm,1.3s
RSSD Black Hills 37.73 83 *e*P **P 07 59 07.6 +0.6**
comp=Z,12nm,1.3s
B29A Wagenman Farm, 37.74 74 P **P 07 59 07.5 +0.8**
baz=305,SNR=5.7
F27A Lemmon 37.79 79 P **P 07 59 08.4 +1.2**
baz=307
D28A Regan 37.81 77 P **P 07 59 08.5 +1.2**
baz=306
G26A Maurine 37.81 80 P **P 07 59 08.5 +1.1**
baz=308,SNR=6.6
O20A White River Ci 37.93 91 P **P 07 59 09.5 +0.8**
baz=312,SNR=11
O20A White River Ci 37.93 91 *e*P **P 07 59 07.8 -0.8**
comp=Z,12nm,0.8s
BELC Belle Mtn. Jos 37.94 105 P **P 07 59 09.1 +0.4**
baz=319
MDND Maddock 37.95 75 P **P 07 59 09.8 +1.2**
baz=306
I25A Rochford 37.96 83 P **P 07 59 08.7 -0.2**
baz=309
PFO Pinyon Flats O 37.98 106 P **P 07 59 09.7 +0.6**
baz=319
A30A Hoffart Farm, 38.04 73 P **P 07 59 10.1 +0.9**
baz=305
E28A Huff 38.10 77 P **P 07 59 10.8 +1.0**
baz=307
H26A Fairpoint 38.13 81 P **P 07 59 10.6 +0.5**
baz=308
G27A Dupree 38.14 80 P **P 07 59 11.0 +0.9**
baz=308,SNR=6.3
IRM Iron Mountain 38.29 104 P **P 07 59 13.0 +1.4**
baz=318
B30A Myrvik Farm, E 38.30 73 P **P 07 59 12.5 +1.0**
baz=305,SNR=5.8
J25A Sunshine Ranch 38.32 84 P **P 07 59 12.6 +0.8**
baz=309
D29A Pettibone, Tap 38.42 76 P **P 07 59 12.3 -0.2**
baz=306
I26A New Underwood 38.45 82 P **P 07 59 13.9 +1.0**
baz=309
F28A McLaughlin 38.48 78 P **P 07 59 14.2 +1.2**
baz=307,SNR=5.0
H27A Howes 38.51 81 P **P 07 59 14.5 +1.2**
baz=308
ULM Lac du Bonnet 38.60 70 P **P 07 59 14.3 +0.4**
comp=Z,7.4nm,1.0s,baz=314,slow=4.8,SNR=5.2
ULM LR LR 08 14 34.2
comp=Z,60nm,18.1s,baz=40,slow=35
C30A Mose, Pekin 38.66 75 P **P 07 59 14.8 +0.3**
baz=306
B31A Greenbush Farm 38.69 73 P **P 07 59 15.1 +0.4**
baz=305
E29A Napoleon 38.69 77 P **P 07 59 15.0 +0.2**
baz=307
N23A Red Feather La 38.73 88 P **P 07 59 16.3 +0.8**
baz=312
D30A Buchanan 38.85 75 P **P 07 59 16.8 +0.7**
baz=306
I27A Quinn 38.88 82 P **P 07 59 17.1 +0.7**
baz=309
G28A Parade 38.89 80 P **P 07 59 16.8 +0.3**
baz=308
Y12C Blythe 38.94 104 P **P 07 59 18.4 +1.5**
baz=319
C31A Landman Farms, 39.01 74 P **P 07 59 18.1 +0.6**
baz=306
A32A Rocking H Ranc 39.03 72 P **P 07 59 17.6 +0.1**
baz=305
F29A Eureka 39.03 78 P **P 07 59 18.1 +0.5**
baz=308
PV01 Paradox Valley 39.11 94 *e*P **P 07 59 19.8 +1.2**
comp=Z,317nm,0.8s
E30A Jud 39.13 76 P **P 07 59 18.9 +0.4**
baz=307
B32A Ashes, Strandq 39.31 72 P **P 07 59 20.0 +0.2**
baz=306
G29A Hoven 39.37 79 P **P 07 59 20.3 -0.2**
baz=308
I28A Midland 39.42 81 P **P 07 59 20.8 -0.1**
baz=309
J27A Elkhorn Farm, 39.42 83 P **P 07 59 21.3 +0.3**
baz=310
D31A Mcclaflin, Tow 39.46 75 P **P 07 59 21.2 +0.1**
baz=307
H29A Onida 39.56 80 P **P 07 59 22.1 +0.1**
baz=309
A33A Warroad 39.61 71 P **P 07 59 22.2 -0.1**
baz=306
ISCO Idaho Springs 39.65 89 P **P 07 59 23.1 -0.1**
baz=313
C32A Crookston 39.65 73 P **P 07 59 22.8 +0.1**
baz=306
E31A Nome 39.66 76 P **P 07 59 22.8 -0.1**
baz=307
AGMN Agassiz Nation 39.73 72 P **P 07 59 23.6 +0.2**
baz=306
AGMN Agassiz Nation 39.73 72 *e*P **P 07 59 22.8 -0.6**
comp=Z,19nm,1.3s
J28A Allard Ranch, 39.74 82 P **P 07 59 23.7 +0.1**
baz=310
KLR Kul'dur 39.76 290 P **P 07 59 24.7 +1.1**
comp=Z,0.8nm,0.6s,baz=27,slow=11,SNR=3.6
KLR LR LR 08 17 22.7
comp=Z,64nm,18.3s,baz=71,slow=38
MVCO Mesa Verde 39.80 95 P **P 07 59 25.0 +0.6**
baz=315
G30A Faulkton 39.84 78 P **P 07 59 24.8 +0.4**
baz=308,SNR=6.7
F31A Hecla 39.89 77 P **P 07 59 25.1 +0.4**
baz=308
I29A Vivian Onida 39.89 80 P **P 07 59 25.3 +0.5**
baz=309
B33A Robert and Kas 39.89 72 P **P 07 59 25.4 +0.6**
baz=306
C33A Trail 40.10 73 P **P 07 59 27.0 +0.6**
baz=306
J29A Okreek 40.27 81 P **P 07 59 29.1 +1.1**
baz=310
B34A Aery, Baudette 40.27 71 P **P 07 59 28.1 +0.2**
baz=306
S22A 4UR Ranch, Cre 40.37 93 P **P 07 59 29.5 +0.4**
baz=314
S22A 4UR Ranch, Cre 40.37 93 *e*P **P 07 59 30.2 +1.1**
comp=Z,6.5nm,1.3s
SUSD Miller 40.38 79 P **P 07 59 29.6 +0.8**
baz=309
D33A AnnSam, Waubun 40.43 74 P **P 07 59 29.2 0.0**
baz=307
I30A Pocoma 40.45 80 P **P 07 59 30.1 +0.6**
baz=309
Q24A Divide 40.48 90 P **P 07 59 30.6 +0.5**
baz=313
W18A Petrified Fore 40.60 98 P **P 07 59 31.9 +1.0**
baz=317
C34A RKJ Ranch, Bem 40.63 72 P **P 07 59 31.3 +0.4**
baz=307
G32A Webster 40.67 77 P **P 07 59 32.0 +0.7**
baz=308
E33A Westby DABS, E 40.73 74 P **P 07 59 31.4 -0.3**
baz=308
J30A Dallas 40.78 81 P **P 07 59 32.6 +0.3**
baz=310
D34A Park Rapids 40.81 73 P **P 07 59 32.5 +0.1**
baz=307
B35A Bob, Littlefor 40.84 71 P **P 07 59 32.5 -0.1**
baz=306
I31A Royce, Wessing 40.87 79 P **P 07 59 33.1 +0.2**
baz=309
F33A 5 Mile Ranch, 40.98 75 P **P 07 59 34.1 +0.3**
baz=308
C35A Jirik Farms, M 41.10 72 P **P 07 59 34.7 -0.1**
baz=307
SDCO Great Sand Dun 41.12 92 P **P 07 59 36.1 +0.7**
baz=314
SDCO Great Sand Dun 41.12 92 *e*P **P 07 59 34.8 -0.6**
comp=Z,5.5nm,1.1s
K30A Basset 41.14 81 P **P 07 59 35.7 +0.5**
baz=310
H32A Carlson Farm, 41.18 78 P **P 07 59 35.7 +0.2**
baz=309
214A Organ Pipe Nat 41.24 104 P **P 07 59 36.2 +0.1**
baz=320
G33A Ortonville 41.30 76 P **P 07 59 36.9 +0.5**
baz=309
D35A Remer 41.44 73 P **P 07 59 37.5 -0.1**
baz=308
H33A Prehn Over Nor 41.45 77 P **P 07 59 37.7 0.0**
baz=309
E35A Pequot Lakes 41.57 73 P **P 07 59 38.5 -0.1**
baz=308
F34A Alexandria 41.57 75 P **P 07 59 38.7 +0.1**
baz=308
K31A O'Neill 41.65 81 P **P 07 59 40.1 +0.7**
baz=311
J32A Parkston 41.67 79 P **P 07 59 39.7 +0.2**
baz=310
C36A Pine Crest Far 41.68 71 P **P 07 59 39.8 +0.3**
baz=307
G34A Benson 41.71 76 P **P 07 59 39.9 +0.2**
baz=309
L31A Butterfield Fa 41.90 81 P **P 07 59 41.5 +0.2**
baz=311
F35A Swanville 41.91 74 P **P 07 59 41.7 +0.3**
baz=309
C37A Embarrass 42.05 71 P **P 07 59 42.3 -0.2**
baz=308
K32A Verdigre 42.07 80 P **P 07 59 43.0 +0.3**
baz=311
ECSD EROS Data Cent 42.13 78 P **P 07 59 43.3 +0.1**
baz=310
ECSD EROS Data Cent 42.13 78 *e*P **P 07 59 43.4 +0.1**
comp=Z,29nm,1.9s
T25A Trinidad 42.16 91 P **P 07 59 44.7 +0.9**
baz=315
T25A Trinidad 42.16 91 *e*P **P 07 59 44.3 +0.4**
comp=Z,7.5nm,0.9s
E36A McGregor 42.22 73 P **P 07 59 44.8 +0.9**
baz=308
EYMN Ely 42.28 70 P **P 07 59 44.7 +0.3**
baz=308
G35A Watkins 42.36 75 P **P 07 59 45.1 0.0**
baz=309
M31A Lambtecht Ranc 42.37 83 P **P 07 59 45.6 +0.4**
baz=312
L32A Elgin 42.48 81 P **P 07 59 46.8 +0.7**
baz=311
F36A Milaca 42.48 74 P **P 07 59 46.3 +0.3**
baz=309
H35A Sunnyside Ranc 42.50 76 P **P 07 59 46.5 +0.3**
baz=310
ANMO Albuquerque 42.57 95 P **P 07 59 46.9 -0.2**
baz=317
K33A Hardington 42.64 80 P **P 07 59 48.4 +1.0**
baz=311
G36A St. Michael 42.75 74 P **P 07 59 49.0 +0.8**
baz=309
L33A Hoskins 42.78 80 P **P 07 59 48.7 +0.1**
baz=311
BGNE Belgrade 42.79 82 P **P 07 59 49.8 +1.1**
baz=312
H36A Jessenland, He 43.07 75 P **P 07 59 51.4 +0.5**
baz=310
K34A Le Mars 43.10 79 P **P 07 59 51.6 +0.5**
baz=311
M33A Taylor Creek F 43.22 81 P **P 07 59 53.2 +1.1**
baz=312
SPMN Marine on St. 43.27 74 P **P 07 59 52.9 +0.4**
baz=310
I36A Fitzsimmons Fa 43.38 76 P **P 07 59 54.3 +0.9**
baz=310
L34A Svendsen Farm, 43.41 80 P **P 07 59 54.1 +0.5**
baz=312
BOD Bodaibo 43.55 309 *e*P **P 07 59 52.6 -1.9**
BOD pmax pmax
comp=Z,6.0nm,1.2s
K35A Storm Lake 43.55 78 P **P 07 59 54.8 0.0**
baz=311
121A Cookes Peak, D 43.60 99 P **P 07 59 55.7 +0.2**
baz=318
M34A Aspy Farms, Fr 43.61 81 P **P 07 59 56.1 +0.9**
baz=312
CBKS Cedar Bluff 43.65 86 P **P 07 59 55.6 0.0**
baz=314
J36A Seneca 1, Swea 43.65 77 P **P 07 59 56.1 +0.6**
baz=311
I37A Lemond, Waseca 43.72 76 P **P 07 59 56.4 +0.3**
baz=310
P32A Huiting Farm, 43.74 84 P **P 07 59 56.6 +0.3**
baz=313
L35A Bielow Farm, R 43.78 79 P **P 07 59 56.5 -0.1**
baz=312
O33A Hebron 44.00 83 P **P 07 59 59.0 +0.6**
baz=313
K36A Gilmore City 44.04 78 P **P 07 59 59.0 +0.3**
baz=311
N34A Lincoln 44.10 81 P **P 07 59 59.2 +0.1**
baz=312
J37A Redenius Farm, 44.10 76 P **P 07 59 59.5 +0.4**
baz=311
M35A Neola 44.13 80 P **P 07 59 59.4 0.0**
baz=312
Q32A Meitler Ranch, 44.19 85 P **P 08 00 00.5 +0.5**
baz=314
L36A Harm Buss Farm 44.28 79 P **P 07 59 59.8 -0.8**
baz=312
MJAR Matsushiro Arr 44.38 271 LR LR 08 18 57.9
comp=Z,20nm,20.6s,baz=100,slow=37
K37A Belmond 44.41 77 P **P 08 00 01.7 0.0**
baz=311
O34A Beatrice 44.43 82 P **P 08 00 02.8 +1.0**
baz=313
R32A Long Quarter, 44.50 85 P **P 08 00 02.9 +0.4**
baz=314
N35A Tabor 44.56 81 P **P 08 00 03.4 +0.5**
baz=312
Q33A Connelly Farm, 44.60 84 P **P 08 00 04.0 +0.8**
baz=314
J38A Wedel Dairy, R 44.69 76 P **P 08 00 04.1 +0.3**
baz=311
P34A Walnut Farm, R 44.79 83 P **P 08 00 04.9 +0.2**
baz=313
N36A Muff Farm, Cla 44.98 80 P **P 08 00 07.4 +1.2**
baz=313
M37A Trindle Farm, 45.08 79 P **P 08 00 07.4 +0.4**
baz=312
Q34A Chapman 45.16 84 P **P 08 00 07.5 -0.1**
baz=314
L38A Oak Wood Farm, 45.20 77 P **P 08 00 07.5 -0.4**
baz=312
KSU1 Kansas State U 45.22 83 P **P 08 00 08.5 +0.4**
baz=314
T32A Huddler Ranch, 45.25 87 P **P 08 00 08.4 -0.1**
baz=315
P35A Duane Minner, 45.26 82 P **P 08 00 09.0 +0.6**
baz=313
AMTX Amarillo 45.32 91 P **P 08 00 09.6 +0.5**
baz=316
MSTX Muleshoe 45.36 93 P **P 08 00 10.1 +0.7**
baz=317
R34A Isabella, Hill 45.41 84 P **P 08 00 10.0 +0.3**
baz=314
N37A Lee Faris, Mou 45.43 80 P **P 08 00 10.3 +0.5**
baz=313,SNR=8.9
O36A Bolckow 45.44 81 P **P 08 00 10.5 +0.7**
baz=313
MNTX Cornudas Mount 45.57 98 P **P 08 00 12.2 +1.2**
baz=319
MNTX Cornudas Mount 45.57 98 *e*P **P 08 00 11.8 +0.8**
comp=Z,2.6nm,0.9s
P36A Good Intent, A 45.65 82 P **P 08 00 11.7 +0.1**
baz=313
Q35A Mercer Eighty, 45.71 83 P **P 08 00 12.1 0.0**
baz=314
NRIK Noril'sk 45.75 332 P **P 08 00 12.6 +0.7**
comp=Z,17nm,1.0s,baz=74,slow=5.7,SNR=12
NRIK LR LR 08 21 56.1
comp=Z,92nm,18.6s,baz=103,slow=39
U32A Winter Ranch, 45.77 88 P **P 08 00 12.5 0.0**
baz=315
O37A Wolven Farm, M 45.87 80 P **P 08 00 13.6 +0.3**
baz=313
S34A Willow Spring 45.91 85 P **P 08 00 12.8 -0.9**
baz=315
N38A Joes South For 45.95 79 P **P 08 00 13.1 -0.8**
baz=313
P37A Lathrop 46.15 81 P **P 08 00 15.0 -0.5**
baz=314
U33A Lingo Farm, Me 46.23 87 P **P 08 00 16.4 +0.2**
baz=315
N39A Derby Farms, D 46.30 78 P **P 08 00 16.2 -0.4**
baz=313
T34A McClaskey Farm 46.34 86 P **P 08 00 17.8 +0.7**
baz=315
S35A Otter Creek Ra 46.37 84 P **P 08 00 17.5 +0.2**
baz=315
R36A Gordon, Harris 46.38 83 P **P 08 00 16.3 -1.1**
baz=314
W32A Sentinel 46.53 89 P **P 08 00 19.5 +1.0**
baz=316
U34A Anderson Ranch 46.56 86 P **P 08 00 18.9 +0.2**
baz=315
P38A Dawn 46.59 80 P **P 08 00 19.0 +0.1**
baz=314
Q37A Longview Farm, 46.59 82 P **P 08 00 18.5 -0.4**
baz=314
O39A Kirksville 46.70 79 P **P 08 00 19.8 -0.1**
baz=313
S36A Lake Cedric, C 46.75 84 P **P 08 00 20.7 +0.5**
baz=315
Q38A Cooks Store, C 47.00 81 P **P 08 00 21.5 -0.6**
baz=314
V34A Guthrie 47.00 87 P **P 08 00 22.7 +0.5**
baz=316
X32A Elmer 47.01 90 P **P 08 00 23.0 +0.7**
baz=317
T36A Boggs Farm, Ca 47.05 85 P **P 08 00 22.7 +0.1**
baz=315
U35A Pawnee 47.06 86 P **P 08 00 23.1 +0.5**
baz=316
WMOK Wichita Mounta 47.07 89 *e*P **P 08 00 22.8 0.0**
WMOK pmax pmax
comp=Z,10.0nm,0.6s
WMOK Wichita Mounta 47.07 89 *e*P **P 08 00 22.8 0.0**
comp=Z,10.0nm,0.6s

S37A	Fort Scott	47.16	83	P	P	08 00 23.0	-0.4
	baz=315						
O40A	La Belle	47.17	79	P	P	08 00 22.9	-0.5
	baz=314						
W34A	Bridge Creek,	47.28	88	P	P	08 00 23.9	-0.5
	baz=316						
Q39A	Willow Grove F	47.30	80	P	P	08 00 23.8	-0.7
	baz=314						
X33A	Lawton	47.37	89	P	P	08 00 24.4	-0.7
	baz=317						
R38A	Fenwick Farm,	47.38	82	P	P	08 00 24.0	-1.1
	baz=314						
V35A	Meyer Ranch, C	47.44	87	P	P	08 00 24.8	-0.8
	baz=316						
P40A	Paris	47.48	79	P	P	08 00 24.8	-1.0
	baz=314						
T37A	Cheneyville 18	47.55	84	P	P	08 00 25.9	-0.5
	baz=315						
Y33A	Hilltop Ranch,	47.69	90	P	P	08 00 27.9	+0.3
	baz=317						
X34A	Smith Ranch, M	47.71	88	P	P	08 00 28.2	+0.5
	baz=317						
S38A	Stockton	47.76	83	P	P	08 00 27.3	-0.8
	baz=315						
R39A	Chumby, Stover	47.77	81	P	P	08 00 28.4	+0.2
	baz=314						
Q40A	Laux Farm, Aux	47.84	80	P	P	08 00 28.6	-0.1
	baz=314						
W35A	Tecumseh	47.85	87	P	P	08 00 29.1	+0.2
	baz=316						
TUL1	Leonard	47.92	86	P	P	08 00 29.4	+0.1
	baz=316						
V36A	Jenks	47.92	86	P	P	08 00 29.3	-0.1
	baz=316						
U37A	Salina	47.95	85	P	P	08 00 29.7	+0.1
	baz=316						
T38A	Diamond	47.97	83	P	P	08 00 29.7	0.0
	baz=315						
ABTX	Abilene, Hawle	48.13	92	P	P	08 00 31.3	+0.2
	baz=318						
Z33A	Whitaker Ranch	48.14	90	P	P	08 00 31.1	0.0
	baz=317						
Y34A	Reagan Ranch,	48.22	89	P	P	08 00 30.9	-0.8
	baz=317						
R40A	Maddies Statio	48.22	81	P	P	08 00 31.0	-0.6
	baz=315						
W36A	Wetumka	48.23	87	P	P	08 00 32.2	+0.4
	baz=316						
HDIL	Hopedale	48.30	76	P	P	08 00 32.0	-0.2
	baz=314,SNR=7.4						
HDIL	Hopedale	48.30	76	*e*P	P	08 00 31.8	-0.4
	comp=Z,27nm,0.7s						
V37A	Hulbert	48.31	85	P	P	08 00 32.8	+0.5
	baz=316						
TX31	Lajitas Ar. Si	48.32	98	*e*P	P	08 00 33.9	+1.2
TXAR	Lajitas Array	48.32	98	P	P	08 00 33.8	+1.1
	comp=Z,1.2nm,0.7s,baz=304,slow=6.3,SNR=29						
TXAR				LR	LR	08 19 40.5	
	comp=Z,43nm,18.4s,baz=0.0,slow=34						
U38A	Gravette	48.34	84	P	P	08 00 31.4	-1.2
	baz=316						
X35A	Drake	48.34	88	P	P	08 00 31.7	-0.9
	baz=317						
T39A	Clever	48.49	83	P	P	08 00 32.6	-1.1
	baz=315						
133A	Hamilton Ranch	48.55	91	P	P	08 00 33.3	-0.9
	baz=318						
Z34A	Collier Ranch,	48.56	90	P	P	08 00 33.9	-0.4
	baz=317						
X36A	Centrahoma	48.57	87	P	P	08 00 33.2	-1.1
	baz=317						
S40A	Lebanon	48.58	82	P	P	08 00 33.5	-0.9
	baz=315						
Y35A	Marietta	48.66	88	P	P	08 00 34.7	-0.4
	baz=317						
W37B	Quinton	48.68	86	P	P	08 00 34.6	-0.6
	baz=316						
V38A	Canehill	48.74	85	P	P	08 00 35.1	-0.6
	baz=316						
T40A	Mansfield	48.88	82	P	P	08 00 35.7	-1.1
	baz=315						
U39A	Green Forest	48.89	83	P	P	08 00 36.1	-0.8
	baz=316						
Z35A	Perchaven, San	48.96	89	P	P	08 00 37.6	+0.3
	baz=317						
233A	Rising Star	49.00	92	P	P	08 00 38.2	+0.5
	baz=318,SNR=7.3						
134A	White-Moore Ra	49.05	91	P	P	08 00 37.5	-0.6
	baz=318						
Y36A	Durant	49.09	88	P	P	08 00 37.7	-0.7
	baz=317						
X37A	Clayton	49.11	87	P	P	08 00 37.8	-0.7
	baz=317						
V39A	Pettigrew	49.19	84	P	P	08 00 38.3	-0.9
	baz=316						
W38A	Poteau	49.25	85	P	P	08 00 38.4	-1.1
	baz=316						
U40A	Yellville	49.26	83	P	P	08 00 37.7	-2.0
	baz=316						
Y37A	Hugo	49.41	87	P	P	08 00 40.9	+0.1
	baz=317						
234A	Clairette	49.44	91	P	P	08 00 40.9	-0.2
	baz=318,SNR=5.5						
333A	Richland Sprin	49.46	92	P	P	08 00 41.0	-0.3
	baz=319						
Z36A	Blue Ridge	49.47	89	P	P	08 00 41.1	-0.2
	baz=317						
W39A	Magazine	49.57	85	P	P	08 00 41.8	-0.2
	baz=316						
SFIN	Lafayette	49.63	75	P	P	08 00 41.5	-0.9
	baz=314						
JCT	Junction City	49.63	94	P	P	08 00 43.0	+0.4
	baz=319						
V40A	Witts Springs	49.67	83	P	P	08 00 42.3	-0.6
	baz=316						
433A	Art	49.83	93	P	P	08 00 43.8	-0.3
	baz=319,SNR=5.7						
WHTX	Lake Whitney,	49.84	91	P	P	08 00 43.6	-0.5
	baz=318						
SCHQ	Schefferville	49.86	49	P	P	08 00 43.5	-0.5
	comp=Z,5.8nm,0.8s,baz=313,slow=5.5,SNR=9.2						
X39A	Fountain Ranch	49.88	86	P	P	08 00 44.7	+0.2
	baz=317						
334A	Lometa	49.88	92	P	P	08 00 44.8	+0.4
	baz=318						
W40A	Ferguson Farm,	49.98	84	P	P	08 00 44.9	-0.2
	baz=316						
136A	Ennis	50.00	89	P	P	08 00 45.1	-0.2
	baz=318						
MIAR	Mount Ida	50.16	85	P	P	08 00 46.8	+0.3
	baz=317						
434A	Burnet	50.25	92	P	P	08 00 47.6	+0.4
	baz=319,SNR=7.5						
Y39A	Lockesburg	50.31	86	P	P	08 00 47.6	-0.1
	baz=317						
236A	Katherine and	50.35	90	P	P	08 00 47.3	-0.6
	baz=318						
533A	Kerrville	50.38	93	P	P	08 00 48.6	+0.3
	baz=319						
335A	Moody	50.38	91	P	P	08 00 47.3	-0.9
	baz=318						
336A	Riesel	50.63	91	P	P	08 00 51.0	+0.9
	baz=318						
534A	Blanco	50.73	93	P	P	08 00 50.5	-0.4
	baz=319						
633A	Saathoff Ranch	50.76	94	P	P	08 00 50.7	-0.4
	baz=320						
237A	Washetta, Mont	50.76	89	P	P	08 00 50.7	-0.4
	baz=318						
139A	Bunkhouse Ranc	51.06	87	P	P	08 00 53.0	-0.3
	baz=318						
Z40A	Long Farm, Mag	51.20	86	P	P	08 00 54.7	+0.4
	baz=318						
832A	Faith Ranch, C	51.20	96	P	P	08 00 54.5	0.0
	baz=320						
535A	Dale	51.24	92	P	P	08 00 55.0	+0.3
	baz=319						
733A	Divot King Ran	51.26	95	P	P	08 00 54.9	+0.1
	baz=320						
833A	Chaparral WMA,	51.50	95	P	P	08 00 58.1	+1.5
	baz=320						
140A	Cam and Jess,	51.56	87	P	P	08 00 57.8	+0.8
	baz=318						
734A	La Parita Cree	51.57	94	P	P	08 00 57.5	+0.3
	baz=320						
635A	Leesville	51.61	93	P	P	08 00 57.0	-0.4
	baz=320						
Y42A	Garnett, Star	51.69	84	P	P	08 00 57.9	-0.1
	baz=317						
438A	Sam Houston St	51.89	90	P	P	08 00 59.0	-0.6
	baz=319						
636A	Smothers Creek	51.94	92	P	P	08 01 01.2	+1.2
	baz=320						
TLY	Talaya	52.08	308	*e*P	P	08 01 00.5	-0.3
TLY				pmax	pmax		
	comp=Z,2.0nm,0.8s						
933A	Laredo	52.11	96	P	P	08 01 02.1	+0.9
	baz=320						
834A	Tilden	52.13	95	P	P	08 01 02.8	+1.4
	baz=320						
WVT	Waverly	52.24	79	*e*P	P	08 01 02.5	+0.4
WVT				pmax	pmax		
	comp=Z,54nm,2.0s						
WVT	Waverly	52.24	79	*e*P	P	08 01 02.5	+0.4
	comp=Z,54nm,2.0s						
HKT	Hockley	52.28	91	*e*P	P	08 01 05.2	+2.8
HKT				pmax	pmax		
	comp=Z,41nm,2.0s						
HKT	Hockley	52.28	91	*e*P	P	08 01 05.2	+2.8
	comp=Z,41nm,2.0s						
736A	Circle Diamond	52.34	93	P	P	08 01 03.3	+0.4
	baz=320						
241A	Mo Tay, Goldon	52.39	87	P	P	08 01 03.7	+0.5
	baz=318						
Y44A	Strider, Charl	52.48	83	P	P	08 01 04.7	+0.8
	baz=317						
OXF	Oxford	52.53	82	*e*P	P	08 01 04.7	+0.4
OXF				pmax	pmax		
	comp=Z,47nm,1.1s						
OXF	Oxford	52.53	82	*e*P	P	08 01 04.7	+0.4
	comp=Z,47nm,1.1s						
143A	Socs Landing,	52.74	85	P	P	08 01 06.7	+0.9
	baz=318						
341A	Kurthwood	52.76	88	P	P	08 01 06.1	+0.1
	baz=319						
242A	Grayson	52.79	86	P	P	08 01 05.3	-0.9
	baz=318						
342A	Flagon Creek P	53.20	87	P	P	08 01 08.4	-0.8
	baz=319						
Y46A	Houston	53.30	82	P	P	08 01 09.9	0.0
	baz=318						
SONA1	Songino Array	53.51	303	*e*P	P	08 01 14.4	+2.9
SONM	Songino Array	53.52	303	P	P	08 01 11.5	-0.1
	comp=Z,1.3nm,1.1s,baz=46,slow=6.2,SNR=4.9						
SONM				LR	LR	08 26 26.3	
	comp=Z,78nm,19.2s,baz=92,slow=39						
244A	Avery, Jackson	53.63	85	P	P	08 01 11.4	-1.0
	baz=318						
145A	Houston Renfro	53.65	84	P	P	08 01 11.6	-0.9
	baz=318						
Y47A	UCPARC, Winfie	53.86	81	P	P	08 01 13.4	-0.6
	baz=318						
146A	Union	54.11	83	P	P	08 01 14.5	-1.4
	baz=318						
BJI	Beijing	54.13	290	P	P	08 01 18.3	+2.4
BJI				S	S	08 08 53.6	+1.9
BJI				pmax	pmax		
	comp=Z,11nm,1.0s						
BJI				pmax	pmax		
	comp=Z,190nm,4.9s						
BJI				LR	LR		
	comp=Z,82nm,9.2s						
BJI				LR	LR		
	comp=Z,100nm,11.0s						
O56A	Blue Knob Stat	54.31	69	P	P	08 01 16.2	-1.1
	baz=316						
ARCES	ARCESS Array B	55.06	357	LR	LR	08 25 33.9	
	comp=Z,38nm,18.8s,baz=238,slow=37						
248A	Dixon Mills	55.26	83	P	P	08 01 23.5	-0.7
	baz=318						
HHC	Hu-ho-hao-te	55.97	294	*e*P	P	08 01 29.5	+0.1
HHC				S	S	08 09 11.3	-5.3
HHC				pmax	pmax		
	comp=Z,24nm,0.7s						
HHC				pmax	pmax		
	comp=Z,100nm,7.8s						
HHC				LR	LR		
	comp=Z,130nm,13.6s						
HHC				LR	LR		
	comp=Z,320nm,14.8s						
HHC				LR	LR		
	comp=Z,71nm,13.6s						
ZALV	Zalesovo Beam	58.03	320	LR	LR	08 28 34.4	
	comp=Z,98nm,19.7s,baz=62,slow=38						
NJ2	Nanjing	58.56	282	*e*P	P	08 01 49.1	+1.5
NJ2				pmax	pmax		
	comp=Z,10.0nm,0.7s						
GTA	Gaotai	62.97	301	*e*P	P	08 02 20.3	+2.5
GTA				pP	sP	08 02 25.1	+0.1
GTA				sP	pP	08 02 27.4	+4.4
GTA				pmax	pmax		
	comp=Z,6.0nm,0.6s						
FINES	FINESS Array B	63.14	356	P	P	08 02 17.3	-1.1
	comp=Z,3.0nm,0.7s,baz=24,slow=8.4,SNR=13						
FINES				LR	LR	08 30 26.6	
	comp=Z,37nm,19.5s,baz=22,slow=37						
NB2	NORSAR Subarra	63.56	4	P	P	08 02 19.6	-1.6
	comp=Z,1.0nm,0.7s,baz=357,slow=6.5						
NOA	NORSAR Array B	63.56	4	P	P	08 02 19.9	-1.3
	comp=Z,2.9nm,0.9s,baz=356,slow=6.5,SNR=5.4						
BVAR	Borovoye Array	63.60	328	P	P	08 02 20.7	-0.8
	comp=Z,1.7nm,0.7s,baz=36,slow=7.7,SNR=11						
BRVK	Borovoye	63.60	328	*e*P	P	08 02 20.8	-0.7
BRVK				pmax	pmax		
	comp=Z,5.0nm,1.2s						
ARU	Arti	63.68	336	*d i*P	P	08 02 23.9	+1.9
ARU						08 04 37.1	
ARU				S	S	08 10 59.6	+4.4
ARU				SS	SS	08 15 04.4	+2.7
ARU				pmax	pmax		
	comp=Z,9.0nm,1.7s						
ZRNK	Zerenda	64.07	329	*e*P	P	08 02 24.3	-0.3
ZRNK	Zerenda	64.07	329	*e*P	P	08 02 24.3	-0.3
MKAR	Makanchi Array	64.78	317	P	P	08 02 29.1	-0.3
	comp=Z,0.5nm,0.6s,baz=44,slow=6.2,SNR=5.7						
MKAR				PP	PP	08 04 52.0	+0.7
	comp=Z,1.1nm,0.9s,baz=60,slow=7.2,SNR=4.8						
WMQ	Urumqi	65.02	312	*e*P	P	08 02 34.3	+3.2
WMQ				pmax	pmax		
	comp=Z,3.0nm,0.5s						
WMQ				LR	LR		
	comp=Z,25nm,19.4s						
WMQ				LR	LR		
	comp=Z,43nm,19.6s						
CD2	Chengdu	67.62	292	P	P	08 02 47.3	-0.6
CD2				pmax	pmax		
	comp=Z,1.0nm,0.5s						
OBN	Obninsk	68.66	349	*e*P	P	08 02 54.9	+1.0
OBN				pmax	pmax		
	comp=Z,8.0nm,1.4s						
AKTO	Aktyubinsk	69.32	334	P	P	08 02 56.7	-1.5
	comp=Z,2.3nm,0.8s,baz=350,slow=5.0,SNR=4.4						
ABKAR	Akbulak array	69.92	332	*e*P	P	08 03 00.7	-1.1
	comp=Z,1.3nm,0.6s						
KMI	Kunming	72.77	289	P	P	08 03 21.8	+2.1
KMI				pmax	pmax		
	comp=Z,15nm,0.6s						
KMI				pmax	pmax		
	comp=Z,62nm,3.9s						
CLL	Collm	73.36	4	*e*P	P	08 03 20.0	-2.5
CLL	Collm	73.36	4	*e*P	P	08 03 20.0	-2.5
AKASG	Malin Array Be	73.69	353	P	P	08 03 22.4	-2.0
	comp=Z,2.4nm,0.4s,baz=7.9,slow=5.9,SNR=16						
AKASG				LR	LR	08 37 45.0	
	comp=Z,18nm,20.2s,baz=330,slow=37						
KIEV	Kiev	73.70	353	*e*P	P	08 03 22.6	-1.9
KIEV				pmax	pmax		
	comp=Z,9.0nm,0.9s						
KIEV	Kiev	73.70	353	*e*P	P	08 03 22.6	-1.9
	comp=Z,9.1nm,0.9s						
BRG	Berggiesshubel	73.83	3	*e*P	P	08 03 23.9	-1.4
	comp=Z,5.5nm,1.3s						
BRG	Berggiesshubel	73.83	3	*e*P	P	08 03 23.9	-1.4
BRG				pmax	pmax		
	comp=Z,6.0nm,1.3s						
MOX	Moxa	73.97	5	P	P	08 03 26.4	+0.3
MOX				pmax	pmax		
	comp=Z,15nm,0.8s						
DPC	Dobruska-Polom	74.40	1	*e*P	P	08 03 28.1	-0.6
DPC				*e*pP	pP	08 03 31.4	-2.7
DPC	Dobruska-Polom	74.40	1	*e*P	P	08 03 28.1	-0.6
DPC				*e*		08 03 31.4	
KRLC	Kraliky	74.68	1	*e*P	P	08 03 29.6	-0.8
KRLC				*e*pP	pP	08 03 32.9	-2.8
KRLC	Kraliky	74.68	1	*e*P	P	08 03 29.6	-0.8
KRLC				*e*		08 03 32.9	
PRU	Pruhonice	74.73	3	*e*P	P	08 03 33.4	+2.8
PRU	Pruhonice	74.73	3	*e*P	P	08 03 33.4	+2.8
STHS	Stebnicka Huta	75.33	358	*e*P	P	08 03 33.8	-0.2
STHS				pmax	pmax		
	comp=Z,4.0nm,0.9s						
STHS	Stebnicka Huta	75.33	358	*e*P	P	08 03 33.8	-0.2
KHC	Kasperske Hory	75.56	3	*e*P	P	08 03 34.7	-0.7
KHC				*e*pP	pP	08 03 38.1	-2.6
KHC	Kasperske Hory	75.56	3	*e*P	P	08 03 34.3	-1.1
KHC				pmax	pmax		
	comp=Z,1.0nm,0.9s						
KHC	Kasperske Hory	75.56	3	*e*P	P	08 03 34.3	-1.1
	comp=Z,1.4nm,0.9s						
GERES	GERESS Array B	75.85	3	P	P	08 03 35.6	-1.5
	comp=Z,1.2nm,0.8s,baz=3.8,slow=4.0,SNR=6.7						
VYHS	Vyhne	76.27	360	*e*P	P	08 03 39.2	-0.3
VYHS	Vyhne	76.27	360	*e*P	P	08 03 39.2	-0.3
CONA	Conrad Observa	76.82	2	*i* P	P	08 03 42.2	-0.5
	comp=Z,5.9nm,1.0s						
MOTA	Moosalm	77.24	5	*e*P	P	08 03 45.1	0.0
	comp=Z,3.3nm,0.8s						
KBA	Koelnbreinsper	77.60	4	*e*P	P	08 03 47.3	+0.1
	comp=Z,7.4nm,1.0s						
OBKA	Obir	78.21	3	*e*P	P	08 03 49.9	-0.6
	comp=Z,8.0nm,0.8s						
ANN	Anapa	78.69	346	*e*P	P	08 03 51.2	-1.8
ANN				*e*S	S	08 13 46.5	-2.7
ANN				*e*SS	SS	08 18 48.6	-3.3
ANN				pmax	pmax		
	comp=Z,19nm,1.0s						
KIV	Kislovodsk	78.72	342	*ce*P	P	08 03 52.8	-0.5
KIV				*e*		08 04 00.4	
KIV				*e*		08 06 51.0	
KIV				pmax	pmax		
	comp=Z,10.0nm,1.7s						
KIV				MLR	MLR		
	comp=Z,31nm,16.0s						
KBZ	Khabaz	78.90	342	P	P	08 03 53.5	-0.6
	comp=Z,4.7nm,1.0s,baz=69,slow=2.8,SNR=5.5						
CMAR	Chiang Mai Arr	80.22	288	P	P	08 04 00.9	-0.8
	comp=Z,1.7nm,0.9s,baz=12,slow=5.6,SNR=8.6						
CMAR	Chiang Mai Arr	80.22	288	P	P	08 04 01.0	-0.8
CMAR				pmax	pmax		
	comp=Z,2.0nm,1.0s						
ESDC	Sonseca Array	83.18	17	P	P	08 04 15.8	-1.3
	comp=Z,1.3nm,0.8s,baz=350,slow=4.5,SNR=5.6						
BRTR	Keskin Array B	84.17	348	P	P	08 04 21.1	-1.3
	comp=Z,1.7nm,1.0s,baz=13,slow=9.3,SNR=4.3						
BRTR				LR	LR	08 47 57.1	
	comp=Z,28nm,18.5s,baz=68,slow=40						
CTA	Charters Tower	87.38	228	P	P	08 04 37.5	-0.7
	comp=Z,3.3nm,0.7s,baz=152,slow=21,SNR=3.5						
WRA	Warramunga Arr	92.65	238	P	P	08 05 01.8	-1.1
	comp=Z,1.3nm,0.9s,baz=36,slow=5.3,SNR=5.7						
ASAR	Alice Springs	96.04	236	P	P	08 05 17.6	-0.8
	comp=Z,0.9nm,1.0s,baz=32,slow=4.4,SNR=6.8						
BOSA	Boshof	152.59	347	PKPbc	PKPbc	08 11 46.0	-1.4
	comp=Z,2.8nm,0.7s,baz=357,slow=3.9,SNR=5.3						

ISK ***17*** *07:51:59.7,38.07N×39.20E,h18km,MD2.6*
CSEM ***17*** *07:52:01.8±0.3,38.17N×39.50E,h10km, MD2.2, Error ellipse: s-maj=9.8km s-min=4.5km az=35.0*
ISCJB ***17*** *07:52:02.2±0.6,38.16N±0.06×39.48E±0.06,h9km, Error ellipse: s-maj=10.3km s-min=4.2km az=36.3*
DDA ***17*** *07:52:02.8,38.15N×39.39E,h7km, Md2.2*
ISC 17 07:52:02.2±0.9,38.16N±0.06×39.43E±0.06,h9km,n12,
σ1§02/20,Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SVRC	Sivrice-ELAZID	0.23	335	*e*PG	Pg	07 52 07.1	0.0
SVRC				*e*SG	Sg	07 52 12.2	+1.8
SVRC	Sivrice-ELAZID	0.23	335	*e*Pg	Pg	07 52 07.1	0.0
SVRC				*e*Sg	Sg	07 52 12.2	+1.8
ELZG	Elazig	0.48	314	*i* P	Pb	07 52 11.8	-1.2
ELZG				*i* S	Sb	07 52 19.6	-0.7
ELZG	Elazig	0.48	314	P	Pb	07 52 11.8	-1.2
ELZG				S	Sb	07 52 19.6	-0.7
DYBB	Diyarbakir	0.60	110	*e*PG	Pb	07 52 15.0	+0.1
DIY	Diyarbakir	0.68	113	*e*Pg	Pg	07 52 15.0	-0.4
MAZI	Mazidag	1.07	131	*e*PN	Pb	07 52 21.6	-1.4
MAZI				*e*SN	Sb	07 52 37.5	+0.4
MAZI	Mazidag	1.07	131	*e*Pn	Pb	07 52 21.6	-1.4
MAZI				*e*Sn	Sb	07 52 37.5	+0.4
ATAB	Bozova	1.14	233	*i* P	Pn	07 52 24.8	+0.5
ATAB	Bozova	1.14	233	P	Pn	07 52 24.8	+0.5
AKCD	Akcadag	1.20	277	*i* P	Pn	07 52 24.8	-0.5
AKCD				*i* S	Sb	07 52 41.7	+0.9
AKCD	Akcadag	1.20	277	P	Pn	07 52 24.8	-0.5
AKCD				S	Sb	07 52 41.7	+0.9

CSEM ***17*** *07:54:26.1,39.49N×29.73W,h10km,ML2.4*
PDA 17 07:54:26.1±0.8,39.49N×29.73W,h10km,MD3.5,ML2.4,
Error ellipse: s-maj=16.5km s-min=5.5km az=55.0,
Azores Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PCED	Cedros	1.18	137	*e*P	Pb	07 54 43.7	-4.8
PCED				*e*S	Sb	07 54 57.1	-6.7
PCED	Cedros	1.18	137	*e*P	Pb	07 54 43.7	-4.8
PCED				*e*S	Sb	07 54 57.1	-6.7
PCED				A	A	07 55 01.5	
	36nm,0.5s						
CALA	Caldeira	1.21	138	*e*S	Sb	07 54 58.4	-6.5
CALA	Caldeira	1.21	138	*e*S	Sb	07 54 58.4	-6.5
HOR	Horta	1.29	138	*e*P	Pn	07 54 45.5	-4.7
HOR				*e*S	Sb	07 54 59.9	-7.1
HOR	Horta	1.29	138	*e*P	Pn	07 54 45.5	-4.7
HOR				*e*S	Sb	07 54 59.9	-7.1
HOR				A	A	07 55 01.0	
	61nm,0.2s						
ROSA	Rosais	1.39	123	*e*P	Pn	07 54 47.1	-4.5
ROSA				*e*S	Sb	07 55 02.3	-7.7
ROSA	Rosais	1.39	123	*e*P	Pn	07 54 47.1	-4.5
ROSA				*e*S	Sb	07 55 02.3	-7.7
ROSA				A	A	07 55 03.1	
	12nm,0.2s						
PCAN	Candelaria	1.41	136	*e*P	Pn	07 54 47.0	-4.9
PCAN				*e*S	Sn	07 55 03.6	-7.0
PCAN	Candelaria	1.41	136	*e*P	Pn	07 54 47.0	-4.9
PCAN				*e*S	Sn	07 55 03.6	-7.0
PCAN				A	A	07 55 03.8	
	37nm,0.2s						
PICO	Pico	1.42	134	*e*P	Pn	07 54 47.5	-4.5
PICO				*e*S	Sn	07 55 03.2	-7.6
PICO	Pico	1.42	134	*e*P	Pn	07 54 47.5	-4.5
PICO				*e*S	Sn	07 55 03.2	-7.6
PICO				A	A	07 55 06.1	
	35nm,0.3s						

NIED ***17*** *08:03:00,37.10N×140.80E,h5km,Mw4.1 Best double couple: M01.38000×10^15 NP1:φs16.00000°,δ31.00000°, λ-103.00000°. NP2:φs211.00000°,δ60.00000°, λ-82.00000°.*
ISCJB ***17*** *08:03:46.6±0.8,37.07N±0.02×140.80E±0.04,h15km±5km, mb4.2/38,MS3.6/3,Error ellipse: s-maj=5.0km s-min=3.7km az=28.5*
JMA ***17*** *08:03:47.0,37.09N×140.72E,h9km±1km,M4.3 Broadband fault plane solution: P waves. NP1: φs230.00000°,δ71.00000°,λ-86.00000°. NP2:φs39.00000°, δ19.00000°,λ-101.00000°. Principal axes: T Plg26.0000°, Azm317.0000°; N Plg4.0000°, Azm49.0000°; P Plg64.0000°, Azm146.0000°;*
JMA Felt III J1.
NEIC ***17*** *08:03:51.6±0.7,36.99N×140.67E,h42km±7km,mb4.4/15 Error ellipse: s-maj=7.9km s-min=6.0km az=114.0*
NEIC Recorded [3 JMA] in Fukushima.
IDC ***17*** *08:03:51.2±2.6,37.09N×140.65E,h37km±22km,mb3.9/19, mb1 4.1/24,mb1mx4.0/36,mbtmp4.1/24,ML3.7/4,MS3.2/5, Ms1 3.2/5,ms1mx2.8/41,Error ellipse: s-maj=17.5km s-min=11.8km az=94.0*
ISC 17 08:03:47.0±0.8,37.05N±0.04×140.74E±0.03,h9km±5km,
n80,σ1§61/90,mb4.2/38,MS3.5/3,7C,Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.07**	**46**	⇑P	**Pg**	**08 03 49.0**	**-0.1**
ONAJ				S	**Sg**	**08 03 50.6**	**0.0**
JFK	**Kawauchi**	**0.33**	**19**	⇑P	**Pg**	**08 03 53.2**	**-0.4**
JFK				S	**Sg**	**08 03 57.8**	**-0.2**
JHO	**Hitachi**	**0.46**	**197**	⇑P	**Pb**	**08 03 56.4**	**-0.9**
JHO				S	**Sb**	**08 04 03.4**	**-0.9**
JFT	**Otama**	**0.56**	**326**	⇑P	**Pg**	**08 03 57.4**	**-0.5**
JFT				S	**Sg**	**08 04 04.8**	**-0.5**
JSB	**Shiboa**	**0.66**	**263**	⇑P	**Pb**	**08 04 00.2**	**-0.5**
JSB				S	**Sb**	**08 04 09.0**	**-1.0**
JMM	**Marumori**	**0.81**	**3**	⇑P	**Pg**	**08 04 01.7**	**-0.9**
JMM				S	**Sg**	**08 04 12.5**	**-0.7**
JFY	**Yanaizu**	**0.90**	**293**	⇑P	**Pg**	**08 04 03.7**	**-0.5**
JFY				S	**Sg**	**08 04 15.0**	**-0.9**
MJAR	**Matsushiro Arr**	**2.09**	**257**	Pn	**Pn**	**08 04 23.2**	**+0.9**
	27nm,0.3s,baz=79,slow=15,SNR=170						
MJAR				Sn	**Sb**	**08 04 51.7**	**+0.4**
	43nm,0.3s,baz=332,slow=20,SNR=17						
MJAR				LR	LR	08 05 27.0	
	comp=Z,396nm,19.3s,baz=75,slow=48						
MAJO	**Matsushiro**	**2.09**	**257**	*e*Pn	**Pb**	**08 04 23.6**	**-1.6**
MAJO				*e*Sn	**Sb**	**08 04 51.7**	**+0.4**
MAT	**Matsushiro**	**2.09**	**257**	P	**Pb**	**08 04 23.3**	**-1.9**
MAT				*e*S	**Sb**	**08 04 50.8**	**-0.5**
MJB9	**Matsu-Tunnel**	**2.10**	**257**	*e*Pn	**Pb**	**08 04 23.9**	**-1.3**
MJB9				*e*Sn	**Sb**	**08 04 51.8**	**+0.4**
INU	**Inuyama**	**3.46**	**242**	*e*Pn	**Pn**	**08 04 43.0**	**+2.0**
JHJ	**Hachijo jima 2**	**4.00**	**192**	Pn	**Pn**	**08 04 49.1**	**+0.5**
	14nm,0.3s,baz=72,slow=20,SNR=2.1						
JHJ				Sn	**Sn**	**08 05 38.1**	**+2.5**
	30nm,0.3s,baz=253,slow=19,SNR=3.3						
JHJ2	**Mitsune**	**4.00**	**191**	*e*Pn	**Pn**	**08 04 49.6**	**+1.0**
ERM	**Erimo**	**5.30**	**20**	*e*Pn	**Pn**	**08 05 08.3**	**+2.0**
ASAJ	**Asahikawa**	**7.20**	**11**	Pn	**Pn**	**08 05 32.3**	**-0.1**
	1.9nm,0.3s,baz=224,slow=12,SNR=18						
ASAJ	**Asahikawa**	**7.20**	**11**	*e*Pn	**Pn**	**08 05 34.4**	**+2.0**
JNU	**Nakatsue**	**8.98**	**247**	LR	LR	08 10 02.0	
	comp=Z,94nm,19.0s,baz=71,slow=42						
USRK	**Ussuriysk Ar.**	**9.75**	**320**	Pn	**Pn**	**08 06 09.2**	**+1.8**
	0.4nm,0.3s,baz=138,slow=13,SNR=14						
USRK				LR	LR	08 09 34.8	
	comp=Z,125nm,19.3s,baz=107,slow=36						
CBIJ	**Chichi jima**	**10.00**	**173**	*e*Pn	**Pn**	**08 06 09.1**	**-1.9**
JCJ	**Chichijima**	**10.01**	**173**	Pn	**Pn**	**08 06 09.3**	**-1.7**
	4.1nm,0.3s,baz=265,slow=18,SNR=4.4						
KSRS	**Korea Array**	**10.22**	**276**		**Pn**	**08 06 16.8**	**+2.8**
	0.3nm,0.3s,baz=95,slow=13,SNR=8.1						
KSRS				LR	LR	08 09 52.3	
	comp=Z,131nm,20.5s,baz=52,slow=36						
KSAR	**Wonju Array Be**	**10.26**	**276**	Pn	**Pn**	**08 06 16.8**	**+2.4**
MDJ	**Mudanjiang**	**11.32**	**315**	P	**Pn**	**08 06 30.3**	**+1.4**
MDJ				pmax	pmax		
	comp=Z,7.0nm,1.2s						
MDJ				pmax	pmax		
	comp=Z,25nm,2.8s						
KLR	**Kul'dur**	**13.81**	**335**	Pn	**Pn**	**08 07 07.1**	**+4.2**
	comp=Z,0.2nm,0.3s,baz=138,slow=16,SNR=3.7						
BJI	**Beijing**	**19.43**	**286**	P	**Pn**	**08 08 14.0**	**-0.7**
BJI				S	**S**	**08 11 53.8**	**+0.5**
BJI				LR	LR		
	comp=N,130nm,14.2s						
BJI				LR	LR		
	comp=E,81nm,13.0s						
BJI				LR	LR		
	comp=Z,57nm,16.8s						
HHC	**Hu-ho-hao-te**	**22.95**	**289**	*e*P	**P**	**08 08 51.6**	**-0.1**
HHC				sP	sP	08 08 59.3	+4.0
HHC				S	**S**	**08 12 56.8**	**-5.3**
HHC				SS	**SnSn**	**08 13 40.8**	**+7.4**
HHC				pmax	pmax		
	comp=Z,21nm,1.1s						
HHC				pmax	pmax		
	comp=Z,66nm,6.8s						
HHC				LR	LR		
	comp=N,380nm,13.6s						
HHC				LR	LR		
	comp=E,390nm,14.8s						
HHC				LR	LR		
	comp=Z,380nm,13.6s						
MA2	**Magadan**	**23.45**	**13**	P	**P**	**08 08 55.9**	**-0.5**
	comp=Z,2.7nm,0.5s,baz=200,slow=18,SNR=3.1						
SEY	**Seymchan**	**26.88**	**12**	P	**P**	**08 09 28.3**	**+0.4**
	comp=Z,2.1nm,0.8s,baz=200,slow=8.4,SNR=12						
SONA1	**Songino Array**	**27.32**	**304**	*e*P	**P**	**08 09 32.0**	**-0.2**
SONM	**Songino Array**	**27.32**	**304**	P	**P**	**08 09 31.4**	**-0.9**
	comp=Z,1.7nm,0.7s,baz=104,slow=8.0,SNR=11						
H11N2	**WAKE ISLAND Hy**	**28.62**	**120**	T	T	08 39 30.7	
	baz=313,slow=75,SNR=9.2						
H11N1	**WAKE ISLAND Hy**	**28.63**	**120**	T	T	08 39 31.4	
	baz=313,slow=75,SNR=20						
H11N3	**WAKE ISLAND Hy**	**28.64**	**120**	T	T	08 39 32.1	
	baz=313,slow=75,SNR=51						
H11S1	**WAKE ISLAND Hy**	**29.33**	**122**	T	T	08 40 21.9	
	baz=315,slow=75,SNR=466						
H11S3	**WAKE ISLAND Hy**	**29.33**	**122**	T	T	08 40 21.2	
	baz=315,slow=75,SNR=11						
H11S2	**WAKE ISLAND Hy**	**29.34**	**122**	T	T	08 40 23.5	
	baz=315,slow=75,SNR=201						
CD2	**Chengdu**	**31.13**	**270**	P	**P**	**08 10 04.8**	**-1.3**
CD2				pmax	pmax		
	comp=Z,1.0nm,0.5s						
KMI	**Kunming**	**34.43**	**261**	P	**P**	**08 10 36.5**	**+1.3**
KMI				pmax	pmax		
	comp=Z,14nm,0.8s						
TIXI	**Tiksi**	**35.21**	**354**	*e*P	**P**	**08 10 40.0**	**-1.2**
	comp=Z,1.6nm,0.8s						
WMQ	**Urumqi**	**40.35**	**297**	*e*P	**P**	**08 11 26.4**	**+1.4**
WMQ				pmax	pmax		
	comp=Z,3.0nm,0.6s						
WMQ				pmax	pmax		
	comp=Z,41nm,4.0s						
WMQ				LR	LR		
	comp=N,23nm,24.2s						
WMQ				LR	LR		
	comp=E,43nm,26.4s						
WMQ				LR	LR		
	comp=Z,29nm,22.0s						
ZALV	**Zalesovo Beam**	**41.50**	**312**	P	**P**	**08 11 33.0**	**-1.3**
	comp=Z,0.9nm,0.4s,baz=88,slow=8.9,SNR=4.6						
NRIK	**Noril'sk**	**43.02**	**335**	P	**P**	**08 11 46.3**	**-0.2**
	comp=Z,1.3nm,0.5s,baz=75,slow=7.3,SNR=4.1						
MK01	**Makanchi Array**	**43.65**	**302**	*e*P	**P**	**08 11 51.8**	**-0.1**
MK31	**Makanchi Array**	**43.65**	**302**	*e*P	**P**	**08 11 52.2**	**+0.3**
MKAR	**Makanchi Array**	**43.65**	**302**	P	**P**	**08 11 51.1**	**-0.8**
	comp=Z,1.0nm,0.6s,baz=89,slow=9.9,SNR=15						
MKAR	**Makanchi Array**	**43.65**	**302**	*e*P	**P**	**08 11 52.2**	**+0.3**
MAKZ	**Makanchi**	**43.86**	**302**	*e*P	**P**	**08 11 54.0**	**+0.4**
	comp=Z,1.4nm,0.6s						
TTA	**Tatalina**	**45.71**	**35**	*e*P	**P**	**08 12 09.9**	**+1.7**
SVW2	**Sparrevohn**	**45.83**	**37**	*e*P	**P**	**08 12 10.9**	**+1.8**
	comp=Z,4.9nm,1.0s						
CAST	**Castle Rocks**	**47.51**	**34**	*e*P	**P**	**08 12 25.7**	**+3.4**
	comp=Z,14nm,2.0s						
KTH	**Kantishna Hill**	**48.03**	**34**	*e*P	**P**	**08 12 28.4**	**+2.0**
	comp=Z,5.5nm,1.1s						
MLY	**Manley**	**48.12**	**32**	*e*P	**P**	**08 12 28.7**	**+1.7**
	comp=Z,2.4nm,0.8s						
MCK	**McKinley**	**48.92**	**34**	*e*P	**P**	**08 12 35.8**	**+2.7**
	comp=Z,3.2nm,0.8s						
TKM2	**Tokmak 2**	**49.14**	**298**	*e*P	**P**	**08 12 35.8**	**+0.5**
	comp=Z,4.8nm,1.3s						
MDM	**Murphy Dome**	**49.19**	**32**	*e*P	**P**	**08 12 36.6**	**+1.5**
	comp=Z,4.6nm,0.9s						
IL1	**Eielson Array**	**49.77**	**32**	*e*P	**P**	**08 12 39.4**	**-0.1**
ILAR	**Eielson Array**	**49.77**	**32**	P	**P**	**08 12 39.3**	**-0.2**
	comp=Z,1.7nm,0.7s,baz=265,slow=6.3,SNR=23						
ILB	**Eielson Array**	**49.77**	**32**	*e*P	**P**	**08 12 40.0**	**+0.5**
BRVK	**Borovoye**	**50.21**	**312**	*e*P	**P**	**08 12 42.1**	**-1.0**
	comp=Z,3.6nm,0.9s						
ZRNK	**Zerenda**	**50.99**	**312**	*e*P	**P**	**08 12 48.7**	**-0.3**
	comp=Z,2.9nm,0.8s						
MENT	**Mentasta**	**51.33**	**35**	*e*P	**P**	**08 12 52.8**	**+1.4**
	comp=Z,5.7nm,1.1s						
INK	**Inuvik**	**54.62**	**27**	*e*P	**P**	**08 13 16.5**	**+1.0**
	comp=Z,7.5nm,1.5s						
WB2	**Warramunga Arr**	**57.01**	**187**	*e*P	**P**	**08 13 33.2**	**+0.1**
	comp=Z,12nm,0.8s						
WRA	**Warramunga Arr**	**57.01**	**187**	P	**P**	**08 13 32.8**	**-0.4**
	comp=Z,9.6nm,0.6s,baz=3.7,slow=7.3,SNR=127						
WRA				PcP	**PcP**	**08 14 28.8**	**+0.5**
	comp=Z,1.8nm,0.7s,baz=0.6,slow=4.5,SNR=7.0						
AS01	**Alice Springs**	**60.73**	**187**	*e*P	**P**	**08 13 58.7**	**-0.3**
AS31	**Alice Springs**	**60.73**	**187**	*e*P	**P**	**08 13 59.2**	**+0.2**
	comp=Z,1.2nm,0.6s						
ASAR	**Alice Springs**	**60.74**	**187**	P	**P**	**08 13 59.3**	**+0.2**
	comp=Z,3.0nm,0.7s,baz=21,slow=6.6,SNR=47						
YKA	**Yellowknife Ar**	**64.06**	**30**	P	**P**	**08 14 20.8**	**0.0**
	comp=Z,0.9nm,0.7s,baz=301,slow=6.5,SNR=15						
YKA				PcP	**PcP**	**08 14 56.7**	**+0.7**
	comp=Z,0.2nm,0.6s,baz=303,slow=3.9,SNR=7.2						
FINES	**FINESS Array B**	**68.54**	**332**	P	**P**	**08 14 49.0**	**-0.7**
	comp=Z,2.7nm,0.7s,baz=43,slow=8.8,SNR=9.3						
STKA	**Stephens Creek**	**68.58**	**179**	P	**P**	**08 14 49.6**	**-0.5**
	comp=Z,1.7nm,0.8s,baz=283,slow=9.8,SNR=4.9						
KBZ	**Khabaz**	**70.48**	**310**	P	**P**	**08 15 02.6**	**+0.8**
	comp=Z,0.6nm,0.5s,baz=132,slow=6.9,SNR=3.8						
AKASG	**Malin Array Be**	**73.95**	**322**	P	**P**	**08 15 21.4**	**-1.1**
	comp=Z,0.6nm,0.5s,baz=47,slow=6.2,SNR=5.5						
NB2	**NORSAR Subarra**	**73.96**	**337**	P	**P**	**08 15 20.8**	**-1.7**
	comp=Z,0.9nm,0.8s,baz=38,slow=6.2						
NOA	**NORSAR Array B**	**73.96**	**337**	P	**P**	**08 15 21.5**	**-1.0**
	comp=Z,1.7nm,0.9s,baz=40,slow=5.9,SNR=4.1						
PDAR	**Pinedale Array**	**78.04**	**45**	P	**P**	**08 15 46.1**	**-0.2**
	comp=Z,1.0nm,0.6s,baz=274,slow=2.1,SNR=12						
BRTR	**Keskin Array B**	**78.43**	**311**	P	**P**	**08 15 47.6**	**-0.8**
	comp=Z,0.7nm,0.8s,baz=11,slow=2.5,SNR=3.6						
GERES	**GERESS Array B**	**82.41**	**328**	P	**P**	**08 16 08.8**	**-0.7**
	comp=Z,0.3nm,0.4s,baz=38,slow=6.8,SNR=4.5						
GERES				LR	LR	08 57 16.9	
	comp=Z,22nm,20.8s,baz=34,slow=39						
TXAR	**Lajitas Array**	**90.54**	**52**	P	**P**	**08 16 50.8**	**+0.9**
	comp=Z,0.9nm,0.7s,baz=299,slow=3.0,SNR=14						
LPAZ	**La Paz**	**147.15**	**59**	PKPbc	**PKPbc**	**08 23 31.1**	**-0.6**
	comp=Z,4.1nm,0.8s,baz=291,slow=3.3,SNR=16						

DJA ***17*** *08:16:26.6±0.8,9˚S±6˚×10˚4E±˚, h10km, M4.6/16, mb4.6/3, MLv4.5/16*

IDC ***17*** *08:16:28.5±1.2,8˚91S×104˚26E, h0km, mb3.8/9, mb1 3.9/10, mb1mx3.8/37, mbtmp3.8/10, ML4.0/1, MS3.3/3, Ms1 3.3/3, ms1mx2.8/45, Error ellipse: s-maj=43.8km s-min=17.8km az=46.0*

ISCJB ***17*** *08:16:32.4±0.8,8˚57S±0˚08×104˚66E±0˚06, h33km, mb3.7/9, MS3.4/2, Error ellipse: s-maj=12.2km s-min=8.2km az=26.5*

ISC 17 08:16:34.9±1.0, 8˚5S±0˚1×104˚7E±0˚1, h35km, n27, σ1§18/24, mb3.7/9, Southwest of Sumatera

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CGJI	**Cibinong**	**2.16**	**29**	P	**Pn**	**08 17 07.4**	**-1.0**
SKJI	**Sukabumi**	**2.42**	**52**	P	**Pn**	**08 17 13.0**	**+1.0**
CNJI	**Cibinong**	**2.74**	**64**	P	**Pn**	**08 17 15.8**	**-0.5**
DBJI	**Dramaga**	**2.86**	**47**	P	**Pn**	**08 17 18.0**	**0.0**
KASI	**Kota Agung**	**2.98**	**357**	P	**Pn**	**08 17 19.0**	**-0.7**
CBJI	**Citeko**	**3.02**	**46**	P	**Pn**	**08 17 18.6**	**-1.6**
CISI	**Cisompet, Garu**	**3.28**	**73**	P	**Pn**	**08 17 22.4**	**-1.5**
LEM	**Lembang**	**3.39**	**60**	Pn	Pn	08 17 32.3	+6.8
	11nm,0.3s,baz=194,slow=20,SNR=7.0						
LEM				Sn	Sn	08 18 13.2	+8.7
	23nm,0.3s,baz=18,slow=23,SNR=12						
LEM	**Lembang**	**3.39**	**60**	P	**Pn**	**08 17 22.9**	**-2.6**
CMJI	**Cimerak**	**3.83**	**79**	P	**Pn**	**08 17 29.9**	**-1.5**
MDSI	**Maura Dua**	**4.04**	**353**	P	**Pn**	**08 17 32.4**	**-1.8**
KPJI	**Karang Pucung**	**4.40**	**75**	P	**Pn**	**08 17 39.1**	**-0.2**
MNAI	**Manna**	**4.46**	**338**	P	Pn	08 17 35.2	+4.9
UGM	**Wanagama**	**5.85**	**84**	P	**Pn**	**08 17 59.3**	**+0.2**
	91nm,1.3s,0.4nm						
PCJI	**Pacitan**	**6.47**	**88**	P	**Pn**	**08 18 06.5**	**-1.1**
	64nm,1.0s,0.3nm						
PWJI	**Pagerwojo**	**7.10**	**86**	P	**Pn**	**08 18 16.3**	**0.0**
KAPI	**Kappang**	**15.39**	**78**	LR	LR	08 27 44.9	
	comp=Z,64nm,19.0s,baz=280,slow=43						
CMAR	**Chiang Mai Arr**	**27.39**	**348**	P	**P**	**08 22 18.1**	**+0.8**
	0.3nm,0.3s,baz=182,slow=8.2,SNR=5.7						
WRA	**Warramunga Arr**	**30.88**	**115**	P	**P**	**08 22 47.6**	**-0.6**
	0.7nm,0.7s,baz=287,slow=11,SNR=4.1						
ASAR	**Alice Springs**	**31.79**	**122**	P	**P**	**08 22 54.8**	**-1.6**
	0.8nm,0.9s,baz=300,slow=8.1,SNR=5.8						
STKA	**Stephens Creek**	**41.42**	**129**	P	**P**	**08 24 18.5**	**+0.3**
	1.1nm,0.8s,baz=319,slow=14,SNR=3.4						
SONM	**Songino Array**	**56.13**	**1**	P	**P**	**08 26 12.7**	**+1.8**
	0.4nm,0.3s,baz=177,slow=7.2,SNR=5.7						
SONM				LR	LR	08 54 40.5	
	comp=Z,33nm,19.0s,baz=130,slow=40						
MKAR	**Makanchi Array**	**58.57**	**342**	P	**P**	**08 26 28.2**	**+0.1**
	0.4nm,0.7s,baz=138,slow=8.2,SNR=5.8						
ZALV	**Zalesovo Beam**	**64.45**	**347**	P	**P**	**08 27 07.5**	**-0.1**
	1.2nm,0.3s,baz=163,slow=6.0,SNR=8.7						
ZALV				LR	LR	08 55 57.8	
	comp=Z,27nm,19.9s,baz=78,slow=37						
KBZ	**Khabaz**	**76.23**	**319**	P	**P**	**08 28 20.4**	**+0.5**
	0.8nm,0.8s,baz=73,slow=7.6,SNR=4.0						
BRTR	**Keskin Array B**	**81.11**	**312**	P	**P**	**08 28 46.4**	**-0.6**
	0.8nm,0.8s,baz=145,slow=4.5,SNR=4.3						
TXAR	**Lajitas Array**	**146.31**	**48**	PKPbc	**PKPab**	**08 36 14.2**	**+0.7**
	0.8nm,0.8s,baz=304,slow=1.7,SNR=8.8						

MAN 17 08:27:25, 17˚56N×120˚46E, h34km, mb3.9, ML2.7, MS2.4, 1C-1D, Luzon

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ABRA	**Dolores**	**0.25**	**69**	*e*P	Pb	08 27 32.9	+0.6
ABRA				*e*S	Sb	08 27 37.1	-0.2
SIPP	**Brgy, Tapao**	**0.36**	**359**	i/P	Pn	08 27 33.9	0.0
SIPP				*e*S	Sb	08 27 40.0	+0.4
PIP	**Pasuquin**	**0.78**	**11**	i/P	Pb	08 27 41.4	+1.2
PIP				*e*S	Sb	08 27 51.5	+1.1
APYP	**Conner**	**0.80**	**68**	*e*P	Pb	08 27 41.5	+0.9
APYP				*e*S	Sb	08 27 51.8	+0.7

JMA ***17*** *08:35:27.8±0.1,23˚45N×122˚23E, h26km, M2.6*

TAP ***17*** *08:35:29.2,23˚45N×122˚24E, h28km, ML3.5, C*

ISC 17 08:35:25.7±1.2, 23˚43N±0˚03×122˚28E±0˚03, h8km±10km, n55, σ0§83/99, 5C-3D, Taiwan region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TEGC	**Jichi Village**	**0.73**	**293**	*e*P	**Pn**	**08 35 43.0**	**+0.6**
	baz=292						
HWA	**Hwalien**	**0.82**	**312**	*e*P	**Pb**	**08 35 42.5**	**+0.2**
	baz=313						
ESF	**Shoufeng Towns**	**0.83**	**302**	*e*P	**Pn**	**08 35 44.6**	**+0.8**
	baz=302						
ESL	**Shilin**	**0.87**	**297**	⇑P	**Pb**	**08 35 43.3**	**+0.3**
	baz=286						
ESL				*e*S	**Sg**	**08 35 53.5**	**-0.1**
	baz=286						
EHY	**Hungye**	**0.88**	**275**	P	**Pb**	**08 35 44.0**	**+0.8**
	baz=274						
EHY				*e*S	**Sb**	**08 35 55.2**	**0.0**
	baz=274						
CHKT	**Chengkung**	**0.90**	**249**	⇓P	**Pb**	**08 35 44.1**	**+0.5**
	baz=236						
CHKT				S	**Sg**	**08 35 54.8**	**+0.1**
	baz=236						
TWD	**Chiawan**	**0.90**	**316**	⇑*i*P	**Pb**	**08 35 44.2**	**+0.6**
	baz=317						
TWD				S	**Sg**	**08 35 55.0**	**+0.2**
	baz=317						
TWF1	**Yuli**	**0.91**	**265**	⇓*i*P	**Pb**	**08 35 44.5**	**+0.9**
	baz=263						
TWF1				S	**Sb**	**08 35 56.4**	**+0.5**
	baz=263						
ENA	**Nanau**	**1.11**	**334**	⇑P	**Pn**	**08 35 47.9**	**+0.3**
	baz=324						
ENA				*e*S	**Sb**	**08 36 01.9**	**0.0**
	baz=324						
WHF	**Hehuan Shan**	**1.17**	**308**	P	**Pb**	**08 35 48.7**	**+0.2**
	baz=308						
WHF				*e*S	**Sg**	**08 36 02.8**	**-0.7**
	baz=308						
ELDTW	**Lidau**	**1.18**	**259**	⇓*i*P	**Pg**	**08 35 48.5**	**0.0**
	baz=244						
ELDTW				*e*S	**Sg**	**08 36 01.9**	**-1.9**
	baz=244						
JYNG	**Yonagunijimaku**	**1.19**	**31**	P	**Pn**	**08 35 49.4**	**+0.7**
YUS	**Yu-Shan**	**1.22**	**273**	P	**Pn**	**08 35 50.1**	**+0.6**
	baz=272						
YUS				S	**Sg**	**08 36 04.5**	**-0.5**
	baz=272						
YOJ	**Yonaguni jima**	**1.23**	**33**	P	**Pb**	**08 35 50.0**	**+0.8**
TWC	**Suao**	**1.24**	**342**	*e*P	**Pn**	**08 35 50.0**	**+0.6**
	baz=356						
TWC				*e*S	**Sg**	**08 36 04.5**	**-1.1**
	baz=356						
TWG	**Pinlang**	**1.26**	**242**	P	**Pb**	**08 35 49.7**	**-0.1**
	baz=230						
TWG				*e*S	**Sg**	**08 36 04.6**	**-1.8**
	baz=230						
TWT	**Tachien**	**1.30**	**309**	⇑P	**Pb**	**08 35 51.1**	**+0.5**
	baz=309						
TWT				*e*S	**Sg**	**08 36 06.6**	**-1.0**
	baz=309						
NNS	**Nan Shan**	**1.30**	**321**	*e*P	**Pn**	**08 35 50.5**	**+0.2**
	baz=321						
NNS				*e*S	**Sg**	**08 36 06.3**	**-1.4**
	baz=321						
SMLT	**Sun Moon Lake**	**1.34**	**290**	*e*P	**Pg**	**08 35 51.6**	**+0.1**
	baz=290						
SMLT				*e*S	**Sb**	**08 36 07.4**	**-1.2**
	baz=290						
ALS	**Alishan**	**1.35**	**274**	*e*P	**Pg**	**08 35 52.3**	**+0.6**
	baz=273						
ALS				*e*S	**Sg**	**08 36 08.5**	**-0.9**
	baz=273						
ENTT	**Nioudou**	**1.37**	**332**	P	**Pg**	**08 35 52.1**	**+0.1**
	baz=333						
TYC	**Yuchr**	**1.39**	**290**	*e*P	**Pg**	**08 35 52.2**	**0.0**
	baz=290						
TYC				*e*S	**Sb**	**08 36 09.2**	**-0.6**
	baz=290						
TWE	**Neicheng**	**1.40**	**337**	P	**Pg**	**08 35 52.8**	**+0.1**
	baz=338						
TWE				*e*S	**Sb**	**08 36 09.7**	**-0.6**
	baz=338						
STYT	**Tauyuan**	**1.42**	**260**	P	**Pb**	**08 35 52.7**	**+0.1**
	baz=249						
STYT				*e*S	**Sb**	**08 36 09.1**	**-1.8**
	baz=249						
EGS		**1.45**	**347**	*e*P	**Pg**	**08 35 54.3**	**+0.8**
	baz=349						
EGS				*e*S	**Sb**	**08 36 09.4**	**-2.1**
	baz=349						
CHN5	**Tsauling**	**1.48**	**277**	*e*P	**Pg**	**08 35 54.5**	**+0.5**
	baz=276						
CHN5				*e*S	**Sg**	**08 36 12.8**	**-0.5**
	baz=276						
NSK	**Sanguang**	**1.50**	**326**	P	**Pb**	**08 35 53.9**	**+0.1**
	baz=315						
NSK				S	**Sn**	**08 36 11.5**	**-1.4**
	baz=315						
HATJ	**Hateruma jima**	**1.53**	**66**	P	**Pn**	**08 35 54.5**	**+1.1**
HATJ				S	**Sn**	**08 36 13.0**	**-0.5**
WTP	**Ta-pu**	**1.54**	**264**	P	**Pg**	**08 35 55.3**	**+0.1**
	baz=271						
WTP				*e*S	**Sb**	**08 36 14.4**	**+0.1**
	baz=271						
CHN4	**Tsaushan**	**1.55**	**268**	*e*P	**Pg**	**08 35 55.7**	**+0.3**
	baz=267						
CHN4				*e*S	**Sg**	**08 36 14.9**	**-0.7**
	baz=267						
TWB1	**Santiao Chiao**	**1.60**	**351**	*e*P	**Pn**	**08 35 54.9**	**+0.6**
	baz=351						
TWB1				*e*S	**Sn**	**08 36 13.3**	**-1.8**
	baz=351						
WGK	**Gukeng**	**1.60**	**280**	*e*P	**Pb**	**08 35 55.5**	**0.0**
	baz=279						
WGK				*e*S	**Sb**	**08 36 15.9**	**+0.1**
	baz=279						
IRIF	**Iriomote-Funau**	**1.61**	**56**	P	**Pn**	**08 35 55.4**	**+1.0**
IRIF				S	**Sn**	**08 36 15.2**	**-0.2**
CHN1	**Nanshi**	**1.63**	**262**	P	**Pg**	**08 35 57.1**	**+0.2**
	baz=261						
CHN1				S	**Sg**	**08 36 17.6**	**-0.4**
	baz=261						
TCU	**Taichung**	**1.63**	**296**	*e*P	**Pg**	**08 35 57.0**	**0.0**
	baz=297						
TCU				*e*S	**Sg**	**08 36 18.4**	**+0.2**
	baz=297						
TWK	**Hsinying**	**1.65**	**265**	⇑P	**Pg**	**08 35 57.5**	**+0.1**
	baz=264						
TWK				*e*S	**Sb**	**08 36 17.8**	**+0.3**
	baz=264						
TWQ1	**Liyutan**	**1.66**	**304**	*e*P	**Pg**	**08 35 57.5**	**+0.1**
	baz=304						
TWQ1				*e*S	**Sb**	**08 36 17.3**	**-0.2**
	baz=304						
CHN2	**Minshiung**	**1.66**	**274**	*e*P	**Pb**	**08 35 56.9**	**+0.3**
	baz=274						
CHN2				*e*S	**Sg**	**08 36 18.2**	**-0.8**
	baz=274						
NSTT	**Nanjuang**	**1.67**	**316**	*e*P	**Pb**	**08 35 57.1**	**+0.3**
	baz=316						
NSTT				*e*S	**Sn**	**08 36 16.9**	**-0.1**
	baz=316						
EAST	**Anshuo**	**1.68**	**232**	*e*P	**Pn**	**08 35 55.3**	**-0.1**
	baz=240						
NWF	**Wu-fen Shan**	**1.70**	**345**	*e*P	**Pb**	**08 35 57.6**	**+0.3**
	baz=345						
NWF				*e*S	**Sn**	**08 36 17.1**	**-0.6**
	baz=345						
NSY	**Sanyi**	**1.70**	**306**	*e*P	**Pb**	**08 35 57.8**	**+0.5**
	baz=306						
CHY	**Chiayi**	**1.70**	**273**	*e*P	**Pg**	**08 35 58.8**	**+0.4**
	baz=272						
CHY				*e*S	**Sg**	**08 36 19.6**	**-0.9**
	baz=272						
JKRS	**Kuro-shima**	**1.78**	**63**	P	**Pn**	**08 35 58.2**	**+1.4**
JKRS				S	**Sn**

ISC 17 08:40:27.0±0.7, 33°15N×140°1E±0°1, h100km, n25, σ2°9 04/22, mb3.8/11, Southeast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JHJ	**Hachijo jima 2**	**0.24**	**263**	P	**Pn**	**08 40 42.0**	**+0.7**
	1μm,0.3s,baz=74,slow=23,SNR=232						
JHJ				S	**Sn**	**08 40 52.7**	**+0.7**
	2μm,0.3s,baz=246,slow=23,SNR=56						
MJAR	**Matsushiro Arr**	**3.71**	**336**	P	**Pn**	**08 41 23.8**	**+1.5**
	16nm,0.3s,baz=142,slow=16,SNR=29						
MAT	**Matsushiro**	**3.71**	**336**	P	**Pn**	**08 41 23.8**	**+1.5**
MAT				*e*S	**Sn**	**08 41 59.8**	**-5.3**
JCJ	**Chichijima**	**6.31**	**163**	P	**Pn**	**08 41 58.6**	**+1.2**
	baz=287,slow=19						
JCJ				S	**Sn**	**08 43 03.0**	**-5.1**
	9.6nm,0.3s,baz=287,slow=19,SNR=3.2						
JNU	**Nakatsue**	**7.71**	**272**	P	**Pn**	**08 42 17.2**	**+0.8**
	0.4nm,0.3s,baz=210,slow=8.1,SNR=3.6						
KLR	**Kul'dur**	**17.22**	**341**	P	**Pn**	**08 44 18.2**	**-2.9**
	0.3nm,0.3s,baz=159,slow=11,SNR=6.1						
H11N2	**WAKE ISLAND Hy 27.40**	**112**		T	T	09 15 07.8	
	baz=306,slow=75,SNR=28						
H11N1	**WAKE ISLAND Hy 27.40**	**113**		T	T	09 14 58.1	
	baz=306,slow=75,SNR=32						
H11N3	**WAKE ISLAND Hy 27.42**	**112**		T	T	09 14 58.6	
	baz=306,slow=75,SNR=22						
H11S3	**WAKE ISLAND Hy 27.95**	**115**		T	T	09 15 49.2	
	baz=307,slow=75,SNR=14						
H11S1	**WAKE ISLAND Hy 27.96**	**115**		T	T	09 15 32.8	
	baz=307,slow=75,SNR=7.1						
H11S2	**WAKE ISLAND Hy 27.97**	**115**		T	T	09 15 37.2	
	baz=307,slow=75,SNR=8.2						
ZALV	**Zalesovo Beam**	**43.81**	**315**	P	**P**	**08 48 22.0**	**-0.6**
	0.6nm,0.4s,baz=116,slow=9.1,SNR=3.7						
MKAR	**Makanchi Array**	**45.35**	**305**	P	**P**	**08 48 35.5**	**+0.5**
	0.3nm,0.4s,baz=85,slow=9.2,SNR=5.9						
KURBB	**Kurchatov Arra**	**47.60**	**311**	P	**P**	**08 48 52.0**	**-0.5**
	1.1nm,0.4s,baz=87,slow=7.3,SNR=19						
WRA	**Warramunga Arr**	**53.08**	**187**	P	**P**	**08 49 34.3**	**+0.2**
	2.4nm,0.5s,baz=3.9,slow=7.9,SNR=62						
ILAR	**Eielson Array**	**53.38**	**31**	P	**P**	**08 49 36.0**	**+0.1**
	0.3nm,0.6s,baz=262,slow=6.2,SNR=5.4						
ASAR	**Alice Springs**	**56.80**	**187**	P	**P**	**08 50 01.2**	**+0.3**
	1.4nm,0.4s,baz=1.4,slow=6.6,SNR=58						
INK	**Inuvik**	**58.35**	**26**	P	**P**	**08 50 13.0**	**+1.8**
	0.3nm,0.4s,baz=270,slow=3.0,SNR=4.7						
FINES	**FINESS Array B**	**71.73**	**332**	P	**P**	**08 51 38.0**	**+0.1**
	0.7nm,0.4s,baz=58,slow=5.8,SNR=19						
KBZ	**Khabaz**	**72.60**	**311**	P	**P**	**08 51 45.2**	**+1.9**
	1.7nm,0.8s,baz=326,slow=1.9,SNR=5.1						
NB2	**NORSAR Subarra**	**77.33**	**337**	P	**P**	**08 52 10.6**	**+0.2**
	comp=Z,0.6nm,0.5s,baz=42,slow=5.9						
NOA	**NORSAR Array B**	**77.33**	**337**	P	**P**	**08 52 09.8**	**-0.6**
	comp=Z,1.1nm,1.0s,baz=62,slow=8.6,SNR=5.1						
TXAR	**Lajitas Array**	**93.38**	**52**	P	**P**	**08 53 31.9**	**+0.6**
	comp=Z,0.4nm,0.8s,baz=306,slow=5.2,SNR=4.0						
LPAZ	**La Paz**	**149.52**	**63**	PKPbc	**PKPbc**	**09 00 07.0**	**+1.1**
	comp=Z,0.7nm,0.5s,baz=356,slow=2.2,SNR=3.9						

IDC 17 08:44:44.1±0.9, 37°71N×144°47E, h0km, mb3.4/6, mb1 3.7/9, mb1mx3.5/49, mbtmp3.6/9, ML3.4/3, MS2.8/3, Ms1 2.8/3, ms1mx2.4/47, Error ellipse: s-maj=32.4km s-min=18.4km az=112.0

ISCJB 17 08:44:46.8±0.8, 37°7N±0°1×144°5E±0°1, h33km, mb3.4/6, MS3.5/1, Error ellipse: s-maj=21.1km s-min=11.3km az=139.2

ISC 17 08:44:49.4±1.0, 37°8N±0°1×144°4E±0°2, h35km, n12, σ1°9 08/10, mb3.5/6, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MJAR	**Matsushiro Arr**	**5.13**	**257**	Pn	**Pn**	**08 46 02.6**	**-1.1**
	2.2nm,0.3s,baz=70,slow=10.0,SNR=15						
MJAR				LR	LR	08 47 59.3	
	comp=Z,27nm,20.2s,baz=95,slow=38						
MAT	**Matsushiro**	**5.13**	**257**	P	**Pn**	**08 46 04.4**	**+0.7**
ASAJ	**Asahikawa**	**6.43**	**348**	Pn	**Pn**	**08 46 20.2**	**-1.3**
	1.1nm,0.3s,baz=194,slow=11,SNR=8.7						
JNU	**Nakatsue**	**12.00**	**251**	LR	LR	08 52 07.4	
	comp=Z,43nm,19.0s,baz=123,slow=37						
PETK	**Petropavlovsk-**	**17.84**	**27**	P	**P**	**08 48 55.9**	**+0.7**
	0.2nm,0.3s,baz=294,slow=7.3,SNR=4.3						
KURBB	**Kurchatov Arra**	**47.40**	**308**	P	**P**	**08 53 20.7**	**+0.6**
	0.3nm,0.6s,baz=82,slow=8.0,SNR=6.2						
ILAR	**Eielson Array**	**47.53**	**33**	P	**P**	**08 53 20.6**	**-0.4**
	0.2nm,0.8s,baz=258,slow=6.5,SNR=5.5						
INK	**Inuvik**	**52.58**	**28**	P	**P**	**08 54 00.1**	**+1.0**
	0.4nm,0.6s,baz=300,slow=7.1,SNR=4.6						
WRA	**Warramunga Arr**	**58.24**	**191**	P	**P**	**08 54 39.8**	**-0.6**
	0.5nm,0.7s,baz=10,slow=7.0,SNR=4.6						
YKA	**Yellowknife Ar**	**61.90**	**31**	P	**P**	**08 55 05.7**	**+0.7**
	0.2nm,0.7s,baz=301,slow=6.2,SNR=5.2						
ASAR	**Alice Springs**	**61.97**	**191**	P	**P**	**08 55 04.6**	**-1.3**
	0.3nm,0.8s,baz=37,slow=11,SNR=3.7						
YBH	**Yreka Blue Hor**	**67.95**	**4**	LR	LR	09 21 54.8	
	comp=Z,27nm,18.2s,baz=228,slow=33						

IDC 17 08:47:07.0±1.4, 37°60N×142°05E, h0km, mb3.3/4, mb1 3.5/4, mb1mx3.2/47, mbtmp3.3/4, MS2.8/1, Ms1 2.8/1, ms1mx2.1/28, Error ellipse: s-maj=34.3km s-min=28.9km az=127.0

ISCJB 17 08:47:08.7±1.0, 37°51N±0°06×142°05E±0°08, h24km, mb3.2/4, MS2.7/1, Error ellipse: s-maj=10.8km s-min=7.9km az=40.8

JMA 17 08:47:09.3±0.2, 37°51N×141°99E, h23km±3km, M3.3

ISC 17 08:47:10.8±1.3, 37°61N±0°08×141°90E±0°10, h24km, n13, σ0°7 1/13, mb3.3/4, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JFK	**Kawauchi**	**0.85**	**254**	*e*S	**Sn**	**08 47 38.5**	**-0.5**
JMM	**Marumori**	**0.91**	**286**	P	**Pb**	**08 47 28.0**	**+0.1**
JIO	**Ouri**	**0.95**	**333**	P	**Pn**	**08 47 28.7**	**+0.2**
JIO				*e*S	**Sn**	**08 47 41.9**	**+0.6**
ONAJ	**Iwakimizuishiy**	**1.01**	**240**	*e*S	**Sb**	**08 47 41.5**	**-1.1**
JOU	**Okura**	**1.23**	**308**	P	**Pb**	**08 47 33.4**	**0.0**
JFT	**Otama**	**1.25**	**266**	P	**Pn**	**08 47 33.1**	**+0.4**
JYK	**Kaneyama**	**1.78**	**318**	P	**Pb**	**08 47 42.1**	**-0.6**
MJAR	**Matsushiro Arr**	**3.14**	**251**	Pn	**Pn**	**08 48 00.1**	**+1.3**
	baz=81,slow=16,SNR=2.3						
YAK	**Yakutsk**	**25.59**	**347**	LR	LR	09 04 26.9	
	comp=Z,22nm,18.3s,baz=82,slow=41						
MKAR	**Makanchi Array**	**44.14**	**302**	P	**P**	**08 55 18.1**	**+0.8**
	0.1nm,0.4s,baz=82,slow=11,SNR=2.3						
KURBB	**Kurchatov Arra**	**45.95**	**308**	P	**P**	**08 55 31.3**	**-0.3**
	0.2nm,0.4s,baz=85,slow=7.9,SNR=4.2						
ILAR	**Eielson Array**	**48.80**	**33**	P	**P**	**08 55 53.3**	**-0.2**
	0.2nm,0.7s,baz=261,slow=6.0,SNR=3.2						
WRA	**Warramunga Arr**	**57.69**	**188**	P	**P**	**08 56 59.1**	**-0.3**
	0.2nm,0.5s,baz=7.8,slow=7.6,SNR=5.1						

IDC 17 08:53:29.6±1.4, 0°81N×125°98E, h0km, mb3.8/5, mb1 4.0/5, mb1mx3.6/44, mbtmp3.8/5, Error ellipse: s-maj=164.8km s-min=19.0km az=65.0, Northern Molucca Sea

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
WRA	**Warramunga Arr**	**22.19**	**159**	P	P	08 58 27.3	-0.4
	6.1nm,0.8s,baz=337,slow=11,SNR=17						
ASAR	**Alice Springs**	**25.52**	**163**	P	P	08 59 00.1	+0.1
	0.8nm,0.4s,baz=346,slow=11,SNR=22						
STKA	**Stephens Creek**	**35.71**	**157**	P	P	09 00 30.1	+0.1
	0.9nm,0.5s,baz=336,slow=11,SNR=6.3						
MKAR	**Makanchi Array**	**59.54**	**327**	P	P	09 03 35.2	+0.2
	0.4nm,0.6s,baz=124,slow=8.1,SNR=6.4						
KURBB	**Kurchatov Arra**	**63.80**	**328**	P	P	09 04 03.4	-0.3
	0.9nm,0.8s,baz=126,slow=5.9,SNR=7.1						

GUC 17 08:55:56.4±0.4, 36°08S×71°44W, h115km±3km, ML3.6, 1C-1D, Central Chile

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
TALC	**Talca**	**0.70**	**347**	*e*P	Pn	08 56 16.2	+1.0
TALC				*e*S	Sn	08 56 30.5	+1.1
CCHI	**Chillan**	**0.73**	**225**	*e*P	Pn	08 56 15.6	+0.1
CCHI				*e*S	Sn	08 56 30.2	+0.3
CCHI				IAML		08 56 31.2	
	comp=N,3μm,0.5s						
COCH	**Cobquecura**	**1.09**	**267**	*e*P	Pn	08 56 19.0	+0.1
COCH				*e*S	Sn	08 56 36.4	+0.5
CCSP	**San Pedro de C**	**1.54**	**240**	*e*S	Sn	08 56 45.2	+0.2
CCSP				IAML		08 56 46.8	
	comp=N,781nm,0.2s						
CHPI	**Pichilemu**	**1.75**	**345**	*e*P	Pn	08 56 26.9	+0.4
CHPI				*e*S	Sn	08 56 49.9	+0.5
ANTU	**Antumapu**	**2.59**	**15**	*e*P	Pn	08 56 38.0	+0.7
ANTU				*e*S	Sn	08 57 09.2	+0.6
CLCH	**Cerro Calan**	**2.78**	**16**	*e*P	Pn	08 56 40.5	+0.7
CLCH				*e*S	Sn	08 57 13.5	+0.4
CLCH				IAML		08 57 18.3	
	comp=E,163nm,0.2s						
PEL	**Peldehue**	**3.00**	**12**	⇓*e*P	Pn	08 56 43.1	+0.5
PEL				*e*S	Sn	08 57 18.4	+0.3
PEL				IAML		08 57 23.2	
	comp=N,117nm,0.7s						
ROCH	**El Roble**	**3.12**	**7**	*e*P	Pn	08 56 45.2	+0.8
ROCH				*e*S	Sn	08 57 22.1	+0.8
ROCH				IAML		08 57 25.5	
	comp=E,163nm,0.2s						

IDC 17 09:04:42.1±1.5, 4°70N×126°51E, h0km, mb3.9/5, mb1 4.1/5, mb1mx3.6/48, mbtmp3.9/5, MS3.5/3, Ms1 3.5/3, ms1mx2.6/45, Error ellipse: s-maj=148.1km s-min=19.0km az=65.0, Talaud Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
BATI	**Baumata**	**15.08**	**191**	LR	LR	09 16 17.2	
	comp=Z,371nm,18.6s,baz=250,slow=46						
PMG	**Port Moresby**	**24.90**	**124**	LR	LR	09 20 39.1	
	comp=Z,38nm,18.2s,baz=200,slow=38						
WRA	**Warramunga Arr**	**25.67**	**163**	P	P	09 10 13.9	-0.1
	3.4nm,0.6s,baz=342,slow=10,SNR=36						
ASAR	**Alice Springs**	**29.11**	**166**	P	P	09 10 45.4	+0.6
	0.4nm,0.4s,baz=345,slow=7.1,SNR=25						
STKA	**Stephens Creek**	**39.11**	**159**	P	P	09 12 10.8	-0.6
	2.0nm,0.5s,baz=336,slow=7.8,SNR=21						
MKAR	**Makanchi Array**	**56.64**	**325**	P	P	09 14 27.8	+0.7
	0.3nm,0.4s,baz=109,slow=7.8,SNR=3.8						
KURBB	**Kurchatov Arra**	**60.81**	**327**	P	P	09 14 55.5	-0.5
	0.5nm,0.5s,baz=129,slow=6.2,SNR=11						
ATD	**Arta Tunnel**	**82.88**	**281**	LR	LR	09 54 51.2	
	comp=Z,21nm,18.0s,baz=32,slow=36						

IDC 17 09:17:13.9±15.0, 39°56N×144°84E, h0km, mb3.4/2, mb1 3.7/3, mb1mx3.2/47, mbtmp3.4/3, ML3.7/1, Error ellipse: s-maj=346.4km s-min=61.5km az=2.0

JMA 17 09:17:24.8±0.2, 38°73N×144°38E, h28km, M3.5

ISC 17 09:17:22.0±1.9, 38°93N±0°10×144°5E±0°1, h19km, n17, σ2°9 07/25, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
OFUJ	**Ofunato**	**2.18**	**275**	P	**Pb**	**09 17 59.9**	**-0.9**
OFUJ				S	**Sn**	**09 18 26.0**	**+2.3**
JTH	**Tanohata**	**2.25**	**297**	P	**Pb**	**09 18 01.6**	**-0.4**
JTH				*e*S	**Sb**	**09 18 29.7**	**+0.3**
JIO	**Ouri**	**2.48**	**260**	P	**Pn**	**09 18 03.2**	**+1.9**
JIO				*e*S	**Sn**	**09 18 31.4**	**+0.3**
JOM	**Ohasama**	**2.52**	**283**	P	**Pb**	**09 18 05.5**	**-1.1**
JOM				*e*S	**Sb**	**09 18 35.1**	**-2.1**
JMK	**Ichinoseki**	**2.53**	**271**	P	**Pb**	**09 18 05.0**	**-1.7**
JANG	**Nango**	**2.69**	**303**	*e*S	**Sb**	**09 18 40.9**	**-1.2**
JRG	**Rokugo**	**3.01**	**280**	P	**Pb**	**09 18 12.6**	**-2.4**
JRG				*e*S	**Sn**	**09 18 47.9**	**+3.7**
JOU	**Okura**	**3.02**	**260**	P	**Pn**	**09 18 11.5**	**+2.6**
JOU				S	**Sn**	**09 18 46.3**	**+1.7**
JMM	**Marumori**	**3.07**	**251**	P	**Pn**	**09 18 11.4**	**+1.9**
JMM				S	**Sn**	**09 18 45.1**	**-0.6**
JYK	**Kaneyama**	**3.20**	**271**	P	**Pn**	**09 18 14.4**	**+3.2**
JTM	**Tenmabayashi**	**3.20**	**306**	S	**Sb**	**09 18 52.7**	**-4.1**
JFK	**Kawauchi**	**3.23**	**242**	S	**Sn**	**09 18 47.6**	**-2.1**
JFT	**Otama**	**3.54**	**248**	P	**Pn**	**09 18 18.1**	**+2.1**
JFT				S	**Sn**	**09 18 57.4**	**+0.1**
MJAR	**Matsushiro Arr**	**5.50**	**246**	Pn	**Pn**	**09 18 44.3**	**+1.4**
	1.8nm,0.3s,baz=58,slow=11,SNR=15						
MAT	**Matsushiro**	**5.50**	**246**	P	**Pn**	**09 18 45.0**	**+2.1**
MAT				*e*S	**Sn**	**09 19 48.2**	**+2.6**
WRA	**Warramunga Arr**	**59.33**	**191**	P	**P**	**09 27 21.3**	**-1.4**
	0.5nm,0.8s,baz=8.6,slow=6.9,SNR=4.9						
ASAR	**Alice Springs**	**63.05**	**191**	P	**P**	**09 27 48.1**	**+0.2**
	0.2nm,0.7s,baz=10,slow=5.7,SNR=3.2						

IDC 17 09:26:58.1±2.4, 35°19N×74°90E, h0km, mb3.5/4, mb1 3.5/5, mb1mx3.3/47, mbtmp3.4/5, ML2.9/1, Error ellipse: s-maj=63.7km s-min=27.2km az=148.0

ISCJB 17 09:27:01.7±0.7, 35°12N±0°06×75°0E±0°2, h35km, mb3.4/3, Error ellipse: s-maj=20.8km s-min=6.1km az=162.0

NNC 17 09:27:06.3±3.3, 35°15N×73°26E, h0km, mb3.7, mpv3.4, Error ellipse: s-maj=61.8km s-min=24.8km az=90.0

ISC 17 09:27:03.7±0.8, 35°12N±0°07×75°1E±0°2, h35km, n10, σ3°9 08/15, mb3.4/3, 2C-2D, Eastern Kashmir

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
THN	**Thein Dam**	**2.73**	**169**	*e*PN	**Pn**	**09 27 45.0**	**0.0**
THN				*e*SN	**Sn**	**09 28 23.2**	**+6.4**
SDNR	**Sundarnagar**	**3.94**	**156**	*e*PN	**Pn**	**09 28 03.6**	**+1.9**
SDNR				*e*SN	**Sn**	**09 28 47.0**	**+0.3**
SFK	**Sufi-Kurgan**	**5.04**	**346**	⇓P	**Pn**	**09 28 21.4**	**+4.3**
	1.9nm,0.4s						
SFK				⇑S	**Sn**	**09 29 19.3**	**+5.1**
	7.8nm,0.4s						
MNAS	**Manas**	**7.63**	**345**	⇑P	**Pn**	**09 28 53.8**	**+1.4**
	1.1nm,0.5s						
MNAS				⇓S	**Sn**	**09 30 19.7**	**+2.1**
	3.3nm,0.9s						
KK31	**Karatay Array**	**8.73**	**337**	P	**Pn**	**09 29 07.2**	**-0.2**
	0.9nm,0.4s,baz=148,slow=12,SNR=25						
KK31				S	**Sn**	**09 30 42.1**	**-2.4**
	3.0nm,0.5s,baz=159,slow=22,SNR=15						
MKAR	**Makanchi Array**	**12.86**	**23**	Pn	**Pn**	**09 30 04.0**	**+0.1**
	0.1nm,0.3s,baz=202,slow=13,SNR=2.5						
ZALV	**Zalesovo Beam**	**20.02**	**17**	P	**P**	**09 31 30.3**	**-3.0**
	1.7nm,0.3s,baz=205,slow=9.5,SNR=5.6						
SONM	**Songino Array**	**26.47**	**52**	P	**P**	**09 32 38.4**	**+0.8**
	0.8nm,0.9s,baz=240,slow=10,SNR=5.0						
FINES	**FINESS Array B**	**40.48**	**326**	P	**P**	**09 34 38.0**	**-0.8**
	0.5nm,0.7s,baz=103,slow=10,SNR=3.4						
TORD	**Tordi Ar. Bea**	**69.05**	**272**	P	**P**	**09 38 04.7**	**-1.5**
	0.2nm,0.4s,baz=56,slow=5.3,SNR=4.0						

ISCJB 17 09:32:37.4±0.7, 7°25S×129°08E, h156km, mb3.5/5, Error ellipse: s-maj=11.0km s-min=8.1km az=178.9

IDC 17 09:32:39.3±2.1, 7°14S×129°08E, h148km±21km, mb3.4/5, mb1 3.7/9, mb1mx3.4/32, mbtmp4.1/9, Error ellipse: s-maj=21.9km s-min=15.8km az=82.0

ISC 17 09:32:39.1±0.9, 7°21S±0°09×129°2E±0°1, h156km, n10, σ1°9 60/11, mb3.5/5, Banda Sea

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
BATI	**Baumata**	**6.23**	**241**	P	**Pn**	**09 34 10.1**	**+1.1**
	8.0nm,0.3s,baz=235,slow=24,SNR=13						
BATI				S	**Sn**	**09 35 18.0**	**-1.5**
	31nm,0.3s,baz=90,slow=24,SNR=12						
SIJI	**Sorong**	**6.63**	**18**	P	**Pn**	**09 34 13.3**	**-1.0**
	18nm,0.3s,baz=174,slow=19,SNR=2.4						
FITZ	**Fitzroy Crossi**	**11.37**	**197**	P	**Pn**	**09 35 16.3**	**-0.8**
	1.8nm,0.3s,baz=18,slow=9.6,SNR=30						
FITZ				S	Sn	09 37 15.5	-7.4
	3.3nm,0.3s,baz=80,slow=22,SNR=4.0						
WRA	**Warramunga Arr**	**13.60**	**159**	P	**Pn**	**09 35 43.5**	**-2.2**
	2.2nm,0.3s,baz=334,slow=14,SNR=76						
WRA				S	Sn	09 38 05.7	-11
	3.4nm,0.3s,baz=339,slow=22,SNR=7.4						
ASAR	**Alice Springs**	**16.97**	**165**	P	**Pn**	**09 36 27.9**	**+0.5**
	1.4nm,0.3s,baz=343,slow=8.8,SNR=173						
ASAR				S	S	09 39 26.6	-9.1
	0.5nm,0.3s,baz=346,slow=20,SNR=4.8						
STKA	**Stephens Creek**	**27.12**	**156**	P	**P**	**09 38 10.1**	**+2.5**
	1.1nm,0.5s,baz=327,slow=11,SNR=9.8						
CMAR	**Chiang Mai Arr**	**39.27**	**311**	P	**P**	**09 39 52.0**	**-0.8**
	0.6nm,0.3s,baz=137,slow=8.5,SNR=5.4						
SONM	**Songino Array**	**58.40**	**342**	P	**P**	**09 42 20.0**	**+1.7**
	0.3nm,0.4s,baz=134,slow=7.5,SNR=3.1						
MKAR	**Makanchi Array**	**67.97**	**327**	P	**P**	**09 43 21.6**	**+0.3**
	0.3nm,0.4s,baz=112,slow=8.2,SNR=6.4						
KURBB	**Kurchatov Arra**	**72.28**	**329**	P	**P**	**09 43 46.7**	**-0.7**
	0.3nm,0.5s,baz=126,slow=4.9,SNR=6.5						

JMA 17 09:53:38.5±0.1, 35°88N×140°49E, h34km±2km, M2.6, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CHOJ	**Chosi**	**0.35**	**120**	P	Pb	09 53 46.6	-0.4
CHOJ				S	Sn	09 53 52.4	-0.1
JCN	**Nagara**	**0.52**	**207**	P	Pn	09 53 49.9	+0.5
JCN				*e*S	Sn	09 53 58.5	+1.4
JHO	**Hitachi**	**0.73**	**5**	P	Pn	09 53 52.2	-0.2
JHO				S	Sn	09 54 01.9	-0.5
BSO4	**Boso 4**	**0.90**	**188**	P	Pn	09 53 54.8	+0.2
MAT	**Matsushiro**	**1.96**	**290**	P	Pn	09 54 08.7	-0.7
MAT				*e*S	Sn	09 54 32.8	0.0

IDC 17 09:55:52.4±2.3, 32°98S×178°10W, h0km, mb3.9/2, mb1 4.1/3, mb1mx3.7/28, mbtmp3.8/3, ML3.4/1, Error ellipse: s-maj=62.7km s-min=34.0km az=127.0, South of Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
URZ	**Urewera**	**6.55**	**215**	Pn	Pn	09 57 30.1	+0.1
	0.8nm,0.3s,baz=88,slow=18,SNR=9.4						
URZ				Sn	Sn	09 58 45.0	-0.5
	3.2nm,0.3s,baz=163,slow=19,SNR=12						
ASAR	**Alice Springs**	**42.95**	**270**	P	P	10 03 53.5	+0.1
	1.2nm,0.9s,baz=109,slow=7.3,SNR=12						
WRA	**Warramunga Arr**	**44.17**	**275**	P	P	10 04 03.0	-0.2
	1.2nm,0.6s,baz=115,slow=7.9,SNR=18						
KURBB	**Kurchatov Arra**	**122.78**	**313**	PKP	PKPdf	10 14 49.5	-0.3
	0.1nm,0.5s,baz=105,slow=2.1,SNR=4.1						
FINES	**FINESS Array B**	**147.52**	**339**	PKPbc	PKPbc	10 15 36.9	-0.8
	0.7nm,0.5s,baz=31,slow=1.1,SNR=7.5						

ISCJB 17 09:56:42.9±0.5, 47°36N±0°03×7°26E±0°03, h12km±3km, Error ellipse: s-maj=4.6km s-min=3.6km az=162.6

STR 17 09:56:42.9±1.0, 47°32N×7°33E, h10km, Ml1.7, Error ellipse: s-maj=0.0km s-min=0.0km az=0.0

ZUR 17 09:56:43.6, 47°36N×7°34E, h7km±1km, ML1.4/4

CSEM 17 09:56:43.4±0.2, 47°36N×7°30E, h10km, ML1.8/10, Error ellipse: s-maj=3.2km s-min=2.4km az=154.0

LDG 17 09:56:43.8±0.1, 47°36N×7°34E, h7km, Md1.8/3, Ml1.9/10, Error ellipse: s-maj=1.2km s-min=1.0km az=154.0

ISC 17 09:56:42.7±0.9, 47°34N±0°03×7°34E±0°03, h12km±5km, n39, σ0°9 51/67, 7C-2D, Switzerland

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
BOURR	**Bourrignon**	**0.09**	**305**	⇓*i*Pg	**Pg**	**09 56 46.0**	**+0.4**
	210nm,0.6s						
BOURR				*i* Sg	**Sg**	**09 56 47.4**	**-0.3**
	210nm,0.6s						
BOURR	**Bourrignon**	**0.09**	**305**	⇓*i*Pg	**Pg**	**09 56 46.0**	**+0.4**
	210nm,0.6s						
BOURR				*i* Sg	**Sg**	**09 56 47.4**	**-0.3**
	210nm,0.6s						
BBS	**Basel-Blauen**	**0.17**	**43**	Pg	**Pg**	**09 56 47.1**	**+0.5**
BALST	**Balsthal**	**0.24**	**91**	⇑*i*Pg	**Pb**	**09 56 49.0**	**0.0**
	129nm,0.3s						
BALST				*i* Sg	**Sb**	**09 56 52.6**	**+1.3**
	129nm,0.3s						
MATTE	**Schuetzenmatte**	**0.26**	**36**	⇑*i*Pg	**Pb**	**09 56 49.1**	**-0.2**
MATTE				*e*Sg	**Sb**	**09 56 52.8**	**-1.0**
MATTE	**Schuetzenmatte**	**0.26**	**36**	⇑*i*Pg	**Pb**	**09 56 49.1**	**-0.2**
MATTE				*e*Sg	**Sb**	**09 56 52.8**	**-1.0**
MOF	**Molkenrain**	**0.53**	**345**	Pg	**Pb**	**09 56 53.7**	**-0.3**
MOF	**Molkenrain**	**0.53**	**345**	Pg	**Pb**	**09 56 53.7**	**-0.3**
HINF	**Hinteralfeld**	**0.58**	**325**	*e*Pg	**Pb**	**09 56 54.7**	**-0.1**
HINF	**Hinteralfeld**	**0.58**	**325**	*e*Pn	**Pn**	**09 56 56.8**	**0.0**
HINF				*e*Sg	**Sb**	**09 57 02.3**	**-0.7**
HINF				*e*Sn	**Sn**	**09 57 05.9**	**-0.3**
	3.3nm,0.2s						
HINF	**Hinteralfeld**	**0.58**	**325**	*e*Pg	**Pb**	**09 56 54.7**	**-0.1**
HINF	**Hinteralfeld**	**0.58**	**325**	*e*Pn	**Pn**	**09 56 56.8**	**0.0**
HINF				*e*Sg	**Sb**	**09 57 02.3**	**-0.7**
HINF				*e*Sn	**Sn**	**09 57 05.9**	**-0.3**
	1.6nm,0.2s						
FELD	**Feldberg im Sc**	**0.70**	**40**	Pg	**Pg**	**09 56 56.3**	**0.0**
FELD				Sg	**Sb**	**09 57 07.3**	**+0.8**
BRANT	**Les Verrieres**	**0.72**	**236**	⇑*i*Pg	**Pn**	**09 56 58.0**	**-0.7**
BRANT	**Les Verrieres**	**0.72**	**236**	⇑*i*Pg	**Pn**	**09 56 58.0**	**-0.7**
KIZ	**Kirchzarten**	**0.73**	**32**	⇑*i*Pn	**Pb**	**09 56 57.5**	**+0.2**
	11nm,0.7s						
KIZ	**

σ1ᵍ25/30, **mb4.2**/12, **Near coast of Peru**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LPAZ	**La Paz**	**4.38**	**87**	P	**Pn**	**09 58 36.9**	**+2.6**
	5.1nm,0.3s,baz=293,slow=11,SNR=80						
LPAZ				LR	LR	10 00 19.5	
	comp=Z,49nm,18.7s,baz=258,slow=38						
NNA	**Nana**	**6.09**	**318**	P	**Pn**	**09 58 58.6**	**+1.6**
	1.9nm,0.3s,baz=185,slow=12,SNR=3.2						
NNA				S	**Sn**	**10 00 04.3**	**-1.0**
	5.7nm,0.3s,baz=251,slow=18,SNR=4.2						
NNA	**Nana**	**6.09**	**318**	*e*Pn	**Pn**	**09 58 59.8**	**+2.8**
	50nm,0.6s						
NNA				S	**Sn**	**10 00 04.3**	**-1.0**
ATAH	**Atahualpa**	**10.92**	**329**	LR	LR	10 04 47.3	
	comp=Z,83nm,18.5s,baz=218,slow=40						
SIV	**San Ignacio**	**11.16**	**89**	P	**Pn**	**10 00 03.8**	**-2.2**
	0.5nm,0.3s,baz=300,slow=2.7,SNR=3.4						
SAML	**Samuel**	**11.97**	**52**	*e*Pn	**Pn**	**10 00 18.0**	**+1.2**
	5.9nm,0.8s						
PTGA	**Pitinga**	**20.12**	**40**	P	**P**	**10 01 54.9**	**-0.7**
	4.9nm,0.6s,baz=217,slow=12,SNR=9.5						
PLCA	**Paso Flores**	**24.14**	**176**	P	**P**	**10 02 36.5**	**+0.3**
	4.6nm,0.7s,baz=19,slow=10,SNR=17						
TXAR	**Lajitas Array**	**54.57**	**327**	P	**P**	**10 06 46.4**	**-1.3**
	0.7nm,0.8s,baz=154,slow=8.0,SNR=8.5						
ANMO	**Albuquerque**	**60.45**	**328**	*e*P	**P**	**10 07 28.2**	**-0.7**
	1.5nm,0.8s						
SDCO	**Great Sand Dun**	**62.22**	**331**	*e*P	**P**	**10 07 40.5**	**-0.4**
	1.8nm,0.7s						
ULM	**Lac du Bonnet**	**69.60**	**344**	P	**P**	**10 08 25.7**	**-1.9**
	2.1nm,0.5s,baz=140,slow=5.7,SNR=4.6						
DBIC	**Dimbokro**	**70.92**	**77**	P	**P**	**10 08 36.3**	**-0.2**
	5.8nm,0.6s,baz=233,slow=6.6,SNR=13						
SCHQ	**Schefferville**	**71.29**	**4**	P	**P**	**10 08 37.3**	**-0.6**
	2.7nm,0.6s,baz=270,slow=20,SNR=5.2						
MFID	**Camas Ranch**	**71.60**	**328**	*e*P	**P**	**10 08 40.6**	**+0.5**
	1.2nm,0.7s						
QSPA	**South Pole Qui**	**73.59**	**180**	*e*P	**P**	**10 08 52.4**	**+0.8**
	76nm,1.9s						
TORD	**Torodi Ar. Bea**	**79.19**	**73**	P	**P**	**10 09 23.9**	**-0.1**
	8.5nm,0.7s,baz=262,slow=5.3,SNR=60						
ESDC	**Sonseca Array**	**84.93**	**46**	P	**P**	**10 09 53.8**	**+0.2**
	1.9nm,0.6s,baz=257,slow=4.7,SNR=13						
YKA	**Yellowknife Ar**	**85.40**	**342**	P	**P**	**10 09 54.4**	**-0.9**
	1.5nm,0.7s,baz=136,slow=5.1,SNR=38						
YKA				pP	**pP**	**10 10 23.3**	**+1.9**
	0.4nm,0.6s,baz=140,slow=5.6,SNR=4.1						
H11N3	**WAKE ISLAND Hy**	**23.53**	**283**	T	T	12 31 47.1	
	baz=98,slow=74,SNR=14						
H11N2	**WAKE ISLAND Hy**	**23.54**	**283**	T	T	12 31 53.4	
	baz=98,slow=74,SNR=15						
H11N1	**WAKE ISLAND Hy**	**23.55**	**283**	T	T	12 31 55.6	
	baz=98,slow=74,SNR=14						
H11S2	**WAKE ISLAND Hy**	**23.56**	**281**	T	T	12 31 51.9	
	baz=99,slow=75,SNR=14						
H11S1	**WAKE ISLAND Hy**	**23.57**	**281**	T	T	12 31 47.9	
	baz=99,slow=75,SNR=13						
H11S3	**WAKE ISLAND Hy**	**23.58**	**281**	T	T	12 31 53.5	
	baz=99,slow=75,SNR=14						
ABKAR	**Akbulak array**	**129.77**	**39**	*e*PKPdf	**PKPdf**	**10 16 28.3**	**+1.3**
ASAR	**Alice Springs**	**132.31**	**214**	PKP	**PKPdf**	**10 16 31.5**	**-1.2**
	0.2nm,0.9s,baz=134,slow=2.7,SNR=3.6						
BVAR	**Borovoye Array**	**133.55**	**30**	PKP	**PKPdf**	**10 16 34.4**	**+0.3**
	0.4nm,0.5s,baz=288,slow=1.4,SNR=3.1						
WRAB	**Tennant Creek**	**135.04**	**217**	*e*PKPdf	**PKPdf**	**10 16 37.5**	**-0.4**
ZALV	**Zalesovo Beam**	**138.80**	**20**	PKP	**PKPdf**	**10 16 43.2**	**-0.5**
	1.2nm,0.6s,baz=285,slow=2.9,SNR=6.2						
KURK	**Kurchatov**	**138.90**	**28**	PKP	**PKPdf**	**10 16 44.2**	**+0.2**
KURBB	**Kurchatov Arra**	**138.93**	**28**	PKP	**PKPdf**	**10 16 44.2**	**+0.2**
	0.3nm,0.6s,baz=313,slow=2.8,SNR=4.7						
MKAR	**Makanchi Array**	**143.42**	**29**	PKP	PKPab	10 16 49.9	+1.2
	0.5nm,0.7s,baz=337,slow=5.7,SNR=5.1						
MJAR	**Matsushiro Arr**	**146.18**	**312**	PKPbc	**PKPdf**	**10 16 57.4**	**0.0**
	1.4nm,0.8s,baz=94,slow=1.3,SNR=5.9						
SONM	**Songino Array**	**148.82**	**1**	PKPbc	**PKPbc**	**10 17 05.1**	**-0.4**
	1.6nm,0.7s,baz=334,slow=1.8,SNR=10						

IDC 17 10:01:31.4±3.3, **32°.94S**×**178°.58W**, **h0**km, **mb3.4**/2, **mb1 3.7**/3, **mb1mx3.5**/35, **mbtmp3.4**/3, **ML3.1**/1, **Error ellipse: s-maj=73.2km s-min=37.0km az=113.0, South of Kermadec Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
URZ	**Urewera**	**6.36**	**212**	Pn	Pn	10 03 06.1	-0.3
	0.4nm,0.3s,baz=117,slow=19,SNR=5.7						
URZ				Sn	Sn	10 04 19.2	-0.4
	1.6nm,0.3s,baz=80,slow=19,SNR=11						
ASAR	**Alice Springs**	**42.55**	**270**	P	P	10 09 29.5	+0.4
	0.3nm,0.7s,baz=110,slow=7.0,SNR=3.8						
WRA	**Warramunga Arr**	**43.77**	**275**	P	P	10 09 38.5	-0.4
	0.2nm,0.3s,baz=113,slow=7.9,SNR=9.8						
FINES	**FINESS Array B**	**147.34**	**338**	PKPbc	PKPbc	10 21 15.3	-0.9
	0.9nm,0.8s,baz=66,slow=3.8,SNR=3.9						

IDC ***17*** *10:07:12.4*±*1.8, 37°.04N*×*140°.87E, h0*km*, mb3.4/4, mb1 3.5/5, mb1mx3.2/55, mbtmp3.3/5, ML2.9/1, Error ellipse: s-maj=39.0km s-min=22.9km az=58.0*

ISCJB ***17*** *10:07:14.1*±*0.7, 37°.08N*±*0°.03*×*140°.82E*±*0°.06, h16*km*±4*km*, mb3.3/4, Error ellipse: s-maj=8.0km s-min=4.7km az=16.1*

JMA ***17*** *10:07:14.9, 37°.09N*×*140°.72E, h8*km*±1*km*, M3.1*

JMA Felt II J1.

ISC 17 10:07:14.3±0.9, **37°.07N**±0°.04×**140°.73E**±0°.04, **h10**km±7km, **n20**, σ0ᵍ**58**/24, **mb3.3**/4, **Eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.06**	**56**	P	**Pg**	**10 07 16.8**	**+0.2**
ONAJ				S	**Sg**	**10 07 18.2**	**0.0**
JFK	**Kawauchi**	**0.32**	**21**	P	**Pg**	**10 07 21.0**	**+0.2**
JFK				S	**Sg**	**10 07 25.2**	**+0.1**
JHO	**Hitachi**	**0.47**	**196**	P	**Pb**	**10 07 24.4**	**-0.3**
JHO				S	**Sb**	**10 07 31.4**	**-0.3**
JFT	**Otama**	**0.55**	**325**	P	**Pg**	**10 07 25.3**	**+0.2**
JFT				S	**Sg**	**10 07 32.6**	**+0.3**
JSB	**Shiboa**	**0.66**	**262**	P	**Pb**	**10 07 28.2**	**+0.3**
JSB				S	**Sb**	**10 07 37.3**	**+0.2**
JMM	**Marumori**	**0.80**	**3**	P	**Pg**	**10 07 29.5**	**-0.3**
JMM				S	**Sg**	**10 07 40.1**	**-0.1**
JFY	**Yanaizu**	**0.89**	**293**	P	**Pg**	**10 07 31.6**	**+0.2**
JFY				S	**Sg**	**10 07 42.8**	**-0.2**
JYT	**Yasato**	**0.94**	**208**	P	**Pb**	**10 07 32.9**	**+0.2**
JYT				S	**Sb**	**10 07 45.3**	**+0.1**
MJAR	**Matsushiro Arr**	**2.09**	**256**	Pn	**Pb**	**10 07 51.3**	**-1.1**
	3.8nm,0.3s,baz=78,slow=15,SNR=43						
MJAR				Sn	**Sn**	**10 08 16.5**	**+1.0**
	1.9nm,0.3s,baz=79,slow=18,SNR=5.1						
MAT	**Matsushiro**	**2.09**	**256**	P	**Pb**	**10 07 51.2**	**-1.2**
MAT				eS	**Sb**	**10 08 17.9**	**-0.5**
SONM	**Songino Array**	**27.32**	**304**	P	**P**	**10 12 59.2**	**-0.1**
	0.2nm,0.4s,baz=94,slow=8.3,SNR=2.6						
H11N2	**WAKE ISLAND Hy**	**28.63**	**120**	T	T	10 42 57.7	
	baz=313,slow=75,SNR=23						
H11N1	**WAKE ISLAND Hy**	**28.64**	**120**	T	T	10 42 58.4	
	baz=313,slow=75,SNR=13						
H11N3	**WAKE ISLAND Hy**	**28.65**	**120**	T	T	10 42 59.1	
	baz=313,slow=75,SNR=15						
H11S1	**WAKE ISLAND Hy**	**29.34**	**122**	T	T	10 43 49.0	
	baz=314,slow=75,SNR=16						
H11S3	**WAKE ISLAND Hy**	**29.34**	**122**	T	T	10 43 49.4	
	baz=314,slow=75,SNR=16						
H11S2	**WAKE ISLAND Hy**	**29.35**	**122**	T	T	10 43 50.3	
	baz=314,slow=75,SNR=15						
KURBB	**Kurchatov Arra**	**45.55**	**308**	P	**P**	**10 15 34.5**	**+0.5**
	0.3nm,0.8s,baz=85,slow=8.6,SNR=3.4						
WRA	**Warramunga Arr**	**57.02**	**187**	P	**P**	**10 16 59.1**	**-1.2**
	0.6nm,0.7s,baz=3.5,slow=7.3,SNR=9.5						
ASAR	**Alice Springs**	**60.75**	**187**	P	**P**	**10 17 26.8**	**+0.6**
	0.2nm,0.8s,baz=2.8,slow=5.7,SNR=4.1						

ISCJB ***17*** *10:21:59.6*±*0.5, 36°.95N*±*0°.05*×*142°.55E*±*0°.05, h9*km*, mb3.6/12, Error ellipse: s-maj=7.4km s-min=5.5km az=12.6*

IDC ***17*** *10:22:00.4*±*0.7, 36°.99N*×*142°.57E, h0*km*, mb3.6/12, mb1 3.8/16, mb1mx3.7/55, mbtmp3.7/16, ML4.0/4, MS2.4/1, Ms1 2.4/1, ms1mx2.0/60, Error ellipse: s-maj=22.2km s-min=15.5km az=111.0*

JMA ***17*** *10:22:00.4*±*0.3, 37°.05N*×*142°.54E, h10*km*, M4.1*

ISC 17 10:22:01.6±0.7, **36°.99N**±0°.06×**142°.43E**±0°.05, **h9**km, **n29**, σ0ᵍ**92**/28, **mb3.5**/12, **Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**1.30**	**287**	P	**Pb**	**10 22 26.1**	**-0.1**
JFK				S	**Sg**	**10 22 43.1**	**-0.3**
ONAJ	**Iwakimizuishiy**	**1.31**	**275**	P	**Pn**	**10 22 25.7**	**-0.4**
ONAJ				S	**Sn**	**10 22 44.0**	**+0.2**
JHO	**Hitachi**	**1.54**	**256**	P	**Pn**	**10 22 29.2**	**0.0**
JMM	**Marumori**	**1.57**	**304**	P	**Pn**	**10 22 28.5**	**-1.1**
JMM				S	**Sb**	**10 22 50.2**	**-0.5**
JIO	**Ouri**	**1.69**	**330**	P	**Pn**	**10 22 31.0**	**-0.3**
JFT	**Otama**	**1.75**	**288**	P	**Pn**	**10 22 32.0**	**-0.1**
JFT				S	**Sg**	**10 22 56.7**	**-1.2**
MJAR	**Matsushiro Arr**	**3.42**	**264**	Pn	**Pn**	**10 22 56.2**	**+1.1**
	5.8nm,0.3s,baz=89,slow=15,SNR=26						
MJAR				LR	LR	10 24 46.2	
	comp=Z,52nm,18.3s,baz=70,slow=47						
MAT	**Matsushiro**	**3.42**	**264**	P	**Pn**	**10 22 53.7**	**-1.4**
JHJ	**Hachijo jima 2**	**4.43**	**210**	Pn	**Pn**	**10 23 10.7**	**+1.7**
	16nm,0.3s,baz=50,slow=17,SNR=4.2						
JHJ				Sn	**Sn**	**10 23 58.2**	**-2.4**
	14nm,0.3s,baz=60,slow=16,SNR=3.4						
ASAJ	**Asahikawa**	**7.12**	**1**	Pn	**Pn**	**10 23 45.2**	**-0.6**
	4.0nm,0.3s,baz=207,slow=14,SNR=32						
JCJ	**Chichijima**	**9.87**	**181**	Pn	**Pn**	**10 24 22.8**	**-0.8**
	2.2nm,0.3s,baz=299,slow=17,SNR=3.3						
H11N2	**WAKE ISLAND Hy**	**27.43**	**122**	T	T	10 56 28.6	
	baz=314,slow=75,SNR=18						
H11N1	**WAKE ISLAND Hy**	**27.44**	**122**	T	T	10 56 29.7	
	baz=314,slow=75,SNR=13						
H11N3	**WAKE ISLAND Hy**	**27.45**	**122**	T	T	10 56 26.9	
	baz=314,slow=75,SNR=8.8						
H11S1	**WAKE ISLAND Hy**	**28.16**	**124**	T	T	10 57 21.5	
	baz=316,slow=76,SNR=13						
H11S3	**WAKE ISLAND Hy**	**28.16**	**124**	T	T	10 57 21.6	
	baz=316,slow=76,SNR=10						
H11S2	**WAKE ISLAND Hy**	**28.17**	**124**	T	T	10 57 22.7	
	baz=316,slow=76,SNR=9.8						
SONM	**Songino Array**	**28.48**	**304**	P	**P**	**10 27 58.6**	**+1.4**
	0.4nm,0.5s,baz=116,slow=9.8,SNR=3.6						
MKAR	**Makanchi Array**	**44.83**	**302**	P	**P**	**10 30 16.6**	**+0.7**
	0.3nm,0.7s,baz=83,slow=9.7,SNR=4.2						
KURBB	**Kurchatov Arra**	**46.67**	**308**	P	**P**	**10 30 30.9**	**+0.6**
	1.0nm,0.6s,baz=83,slow=7.8,SNR=10						
ILAR	**Eielson Array**	**49.09**	**32**	P	**P**	**10 30 48.2**	**-0.7**
	0.6nm,0.7s,baz=262,slow=6.1,SNR=9.2						
INK	**Inuvik**	**54.05**	**27**	P	**P**	**10 31 26.4**	**+0.5**
	0.3nm,0.6s,baz=304,slow=4.0,SNR=4.0						
WRA	**Warramunga Arr**	**57.14**	**189**	P	**P**	**10 31 48.5**	**-0.1**
	0.5nm,0.5s,baz=7.5,slow=7.0,SNR=8.9						
ASAR	**Alice Springs**	**60.86**	**189**	P	**P**	**10 32 15.0**	**+0.6**
	0.3nm,0.7s,baz=12,slow=13,SNR=5.6						
RES	**Resolute Bay**	**62.44**	**15**	P	**P**	**10 32 24.9**	**+0.5**
	0.7nm,0.5s,baz=310,slow=6.5,SNR=8.0						
YKA	**Yellowknife Ar**	**63.44**	**30**	P	**P**	**10 32 31.3**	**+0.1**
	0.2nm,0.9s,baz=297,slow=6.7,SNR=3.7						
FINES	**FINESS Array B**	**69.23**	**333**	P	**P**	**10 33 08.7**	**+0.4**
	1.3nm,0.8s,baz=65,slow=3.7,SNR=3.1						
PDAR	**Pinedale Array**	**77.11**	**46**	P	**P**	**10 33 55.8**	**+0.1**
	0.2nm,0.6s,baz=346,slow=1.9,SNR=3.4						
TXAR	**Lajitas Array**	**89.50**	**53**	P	**P**	**10 34 58.9**	**-0.6**
	0.2nm,0.8s,baz=316,slow=2.5,SNR=2.9						

DJA 17 10:26:08.8±0.4, **7°.S**±5°×**10°.8E**±°, **h13**km±4km, **M3.6**/16, **MLv3.6**/16, **Jawa**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CISI	**Cisompet, Garu**	**0.20**	**137**	P	Pb	10 26 13.9	-0.4
CNJI	**Cibinong**	**0.56**	**280**	P	Pg	10 26 18.1	-1.6
LEM	**Lembang**	**0.58**	**354**	P	Pb	10 26 21.3	+0.3
CMJI	**Cimerak**	**0.85**	**116**	P	Pg	10 26 23.9	-1.3
SKJI	**Sukabumi**	**1.19**	**290**	P	Pg	10 26 32.4	+0.8
KPJI	**Karang Pucung**	**1.24**	**87**	P	Pn	10 26 30.0	-1.9
DBJI	**Dramaga**	**1.26**	**313**	P	Pn	10 26 30.9	-1.2
SBJI	**Serang**	**2.00**	**310**	P	Pn	10 26 40.6	-1.8
CGJI	**Cibinong**	**2.12**	**292**	P	Pn	10 26 44.4	+0.4
UGM	**Wanagama**	**2.86**	**100**	P	Pn	10 26 54.1	-0.1
PCJI	**Pacitan**	**3.55**	**103**	P	Pn	10 27 03.8	+0.1
MDSI	**Maura Dua**	**4.54**	**310**	P	Pn	10 27 16.3	-0.9

ISK ***17*** *10:29:00.2, 41°.45N*×*35°.97E, h4*km*, MD2.8*

CSEM ***17*** *10:29:01.7*±*0.3, 41°.42N*×*35°.88E, h5*km*, MD2.6, Error ellipse: s-maj=7.2km s-min=4.9km az=30.0*

DDA ***17*** *10:29:01.5, 41°.39N*×*35°.91E, h7*km*, Md2.6*

ISC 17 10:29:01.7±0.9, **41°.41N**±0°.03×**35°.89E**±0°.02, **h15**km±8km, **n24**, σ0ᵍ**72**/36, **Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SAMS	**Samsun-Alacam**	**0.23**	**101**	*i* P	**Pg**	**10 29 06.8**	**0.0**
SAMS				*i* S	**Sb**	**10 29 11.9**	**+0.3**
SAMS	**Samsun-Alacam**	**0.23**	**101**	P	**Pg**	**10 29 06.8**	**0.0**
SAMS				S	**Sb**	**10 29 11.9**	**+0.3**
KVT	**Kavak**	**0.34**	**160**	*e*PG	**Pg**	**10 29 07.8**	**-1.0**
KVT				*e*SG	**Sg**	**10 29 14.0**	**+0.3**
KVT	**Kavak**	**0.34**	**160**	*e*Pg	**Pg**	**10 29 07.8**	**-1.0**
KVT				*e*Sg	**Sg**	**10 29 14.0**	**+0.3**
HAVZ	**Havza**	**0.35**	**201**	*i* P	**Pg**	**10 29 07.3**	**-1.7**
HAVZ				*i* S	**Sg**	**10 29 13.4**	**-0.5**
HAVZ	**Havza**	**0.35**	**201**	P	**Pg**	**10 29 07.3**	**-1.7**
HAVZ				S	**Sg**	**10 29 13.4**	**-0.5**
DIKM	**Dikmen**	**0.53**	**298**	*e*PG	**Pg**	**10 29 11.9**	**-0.4**
DIKM				*e*SG	**Sb**	**10 29 20.3**	**0.0**
DIKM	**Dikmen**	**0.53**	**298**	*e*Pg	**Pg**	**10 29 11.9**	**-0.4**
DIKM				*e*Sg	**Sb**	**10 29 20.3**	**0.0**
BOYT	**Boyabat**	**0.74**	**272**	*i* P	**Pg**	**10 29 15.9**	**-0.2**
BOYT	**Boyabat**	**0.74**	**272**	P	**Pg**	**10 29 15.9**	**-0.2**
SNOP	**Sinop**	**0.80**	**321**	*e*PG	**Pg**	**10 29 16.4**	**-0.8**
SNOP	**Sinop**	**0.80**	**321**	*e*Pg	**Pg**	**10 29 16.4**	**-0.8**
COAL	**Corum-Alaca**	**1.34**	**211**	*i* P	**Pg**	**10 29 27.8**	**+0.3**
COAL				*i* S	**Sg**	**10 29 46.5**	**+1.6**
COAL	**Corum-Alaca**	**1.34**	**211**	P	**Pg**	**10 29 27.8**	**+0.3**
COAL				S	**Sg**	**10 29 46.5**	**+1.6**
BZK	**Bozkurt**	**1.52**	**292**	*e*PN	**Pb**	**10 29 29.4**	**-0.2**
BZK	**Bozkurt**	**1.52**	**292**	*e*Pn	**Pb**	**10 29 29.4**	**-0.2**
ORDU	**Ordu-Boztepe**	**1.54**	**105**	*i* P	**Pb**	**10 29 29.8**	**-0.3**
ORDU				*i* S	**Sg**	**10 29 51.7**	**+0.3**
ORDU	**Ordu-Boztepe**	**1.54**	**105**	P	**Pb**	**10 29 29.8**	**-0.3**
ORDU				S	**Sg**	**10 29 51.7**	**+0.3**
CORM	**Corum**	**1.55**	**218**	*e*PN	**Pb**	**10 29 30.6**	**+0.3**
CORM	**Corum**	**1.55**	**218**	*e*Pn	**Pb**	**10 29 30.6**	**+0.3**
SUSE	**Susehri**	**2.12**	**123**	*i* P	**Pb**	**10 29 39.7**	**-0.4**
SUSE	**Susehri**	**2.12**	**123**	P	**Pb**	**10 29 39.7**	**-0.4**
ESPY	**Espiye-Giresun**	**2.20**	**102**	*e*PN	**Pn**	**10 29 37.8**	**0.0**
ESPY	**Espiye-Giresun**	**2.20**	**102**	*e*Pn	**Pn**	**10 29 37.8**	**0.0**

IDC ***17*** *10:32:16.9*±*4.2, 35°.91N*×*140°.82E, h0*km*, mb3.2/2, mb1 3.6/4, mb1mx3.3/42, mbtmp3.6/4, ML3.6/2, Error ellipse: s-maj=99.0km s-min=30.5km az=48.0*

ISCJB ***17*** *10:32:26.0*±*0.8, 35°.69N*±*0°.05*×*140°.07E*±*0°.07, h82*km*±5*km*, mb3.3/2, Error ellipse: s-maj=11.2km s-min=6.4km az=147.9*

JMA ***17*** *10:32:26.8*±*0.2, 35°.81N*×*140°.11E, h65*km*±2*km*, M3.0*

ISC 17 10:32:27.1±1.2, **35°.69N**±0°.06×**140°.06E**±0°.07, **h76**km±8km, **n20**, σ1ᵍ**00**/22, **Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TOK	**Tokyo**	**0.25**	**269**	P	**Pn**	**10 32 38.6**	**0.0**
TOK				*e*S	**Sn**	**10 32 48.0**	**+1.0**
JCN	**Nagara**	**0.29**	**157**	P	**Pn**	**10 32 38.8**	**-0.1**
JCN				*e*S	**Sn**	**10 32 48.4**	**+0.9**
JAG	**Ashikaga**	**0.88**	**326**	P	**Pn**	**10 32 43.2**	**-1.4**
JOD2	**Odawara 2**	**0.90**	**242**	P	**Pn**	**10 32 44.5**	**-0.3**
JOD2				S	**Sn**	**10 32 57.3**	**-0.6**
BSO3	**Boso 3**	**0.96**	**157**	P	**Pn**	**10 32 44.7**	**-0.5**
BSO3				S	**Sn**	**10 32 59.3**	**+0.7**
JRY	**Ryogami san**	**1.00**	**289**	P	**Pn**	**10 32 45.9**	**0.0**
JIM2	**Oshima 3**	**1.10**	**208**	P	**Pn**	**10 32 46.4**	**-0.8**
JIM2				S	**Sn**	**10 33 01.3**	**-0.9**
JYN	**Shimob**	**1.25**	**262**	P	**Pn**	**10 32 49.2**	**0.0**
JYN				S	**Sn**	**10 33 06.2**	**+0.5**
JKT	**Katashina**	**1.26**	**329**	P	**Pn**	**10 32 48.0**	**-1.3**
JKT				S	**Sn**	**10 33 05.1**	**-0.8**
MJAR	**Matsushiro Arr**	**1.72**	**300**	Pn	**Pn**	**10 32 55.4**	**+0.1**
	7.3nm,0.3s,baz=102,slow=14,SNR=77						
MAT	**Matsushiro**	**1.73**	**300**	P	**Pn**	**10 32 55.3**	**0.0**
MAT				*e*S	**Sn**	**10 33 16.0**	**-0.6**
JCJ	**Chichijima**	**8.76**	**167**	Pn	**Pn**	**10 34 28.4**	**-2.6**
	1.4nm,0.3s,baz=351,slow=19,SNR=2.9						
H11N2	**WAKE ISLAND Hy**	**28.46**	**117**	T	T	11 07 33.8	
	baz=314						
H11N1	**WAKE ISLAND Hy**	**28.46**	**117**	T	T	11 07 33.2	
	baz=314						
H11N3	**WAKE ISLAND Hy**	**28.48**	**117**	T	T	11 07 32.1	
	baz=314						
H11S3	**WAKE ISLAND Hy**	**29.11**	**119**	T	T	11 08 26.1	
	baz=310						
H11S1	**WAKE ISLAND Hy**	**29.11**	**119**	T	T	11 08 21.0	
	baz=310						
H11S2	**WAKE ISLAND Hy**	**29.12**	**119**	T	T	11 08 19.9	
	baz=310						
WRA	**Warramunga Arr**	**55.59**	**187**	P	**P**	**10 41 55.5**	**+0.5**
	0.1nm,0.3s,baz=0.7,slow=7.6,SNR=9.5						
ASAR	**Alice Springs**	**59.32**	**187**	P	**P**	**10 42 22.5**	**+1.3**
	0.2nm,0.7s,baz=359,slow=9.3,SNR=3.2						

IDC 17 10:39:30.4±12.0, **4°.31S**×**125°.25E**, **h0**km, **mb3.3**/2, **mb1 3.5**/3, **mb1mx3.1**/52, **mbtmp3.3**/3, **ML3.0**/1, **Error ellipse: s-maj=238.3km s-min=179.1km az=63.0, Banda Sea**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**17.89**	**151**	P	P	10 43 41.3	-0.3
	0.1nm,0.3s,baz=327,slow=12,SNR=4.6						
ASAR	**Alice Springs**	**20.98**	**157**	P	P	10 44 15.0	-0.4
	0.2nm,0.3s,baz=335,slow=11,SNR=6.3						
STKA	**Stephens Creek**	**31.42**	**153**	P	P	10 45 53.5	+0.1
	0.3nm,0.4s,baz=341,slow=18,SNR=3.2						

IDC 17 10:43:59.0±3.0, **32°.90S**×**178°.22W**, **h0**km, **mb3.7**/3, **mb1 3.9**/4, **mb1mx3.6**/41, **mbtmp3.8**/4, **ML3.4**/1, **Error ellipse: s-maj=69.6km s-min=35.8km az=120.0, South of Kermadec Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
URZ	**Urewera**	**6.56**	**214**	Pn	Pn	10 45 36.5	-0.3
	0.9nm,0.3s,baz=333,slow=9.0,SNR=6.2						
URZ				Sn	Sn	10 46 51.9	-0.5
	3.5nm,0.3s,baz=17,slow=23,SNR=14						
STKA	**Stephens Creek**	**33.81**	**261**	P	P	10 50 42.2	-0.7
	0.6nm,0.7s,baz=112,slow=19,SNR=3.3						
ASAR	**Alice Springs**	**42.85**	**270**	P	P	10 51 59.9	+0.7
	0.8nm,0.9s,baz=111,slow=7.6,SNR=7.7						
WRA	**Warramunga Arr**	**44.06**	**275**	P	P	10 52 08.8	-0.2
	0.6nm,0.3s,baz=113,slow=7.9,SNR=17						
FINES	**FINESS Array B**	**147.41**	**338**	PKPbc	PKPbc	11 03 43.1	-0.9
	1.2nm,0.6s,baz=38,slow=3.6,SNR=6.6						

JMA 17 10:46:18.9, 36°.90N×**140°.71E**, **h9**km±1km, **M2.6, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.21**	**19**	P	Pg	10 46 23.5	+0.2
ONAJ				S	Sg	10 46 27.0	+0.7
JHO	**Hitachi**	**0.31**	**201**	P	Pg	10 46 25.1	0.0
JHO				S	Sg	10 46 29.4	+0.2
JFK	**Kawauchi**	**0.48**	**16**	P	Pg	10 46 28.2	-0.1
JFK				S	Sg	10 46 34.9	+0.2
JFT	**Otama**	**0.69**	**334**	P	Pg	10 46 32.4	+0.3
JFT				S	Sg	10 46 41.5	+0.4
JMM	**Marumori**	**0.97**	**4**	P	Pg	10 46 37.1	-0.4
JMM				S	Sg	10 46 49.5	-0.6
MAT	**Matsushiro**	**2.04**	**261**	P	Pn	10 46 53.8	+0.3
MAT				S	Sb	10 47 21.1	-0.6

IDC 17 10:53:47.4±1.4, **8°.76S**×**157°.58E**, **h0**km, **mb3.5**/3, **mb1 3.7**/4, **mb1mx3.4**/41, **mbtmp3.5**/4, **ML3

Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.04**	**194**	P	Pb	11 09 13.0	-0.2
CHOJ				S	Sb	11 09 17.3	+0.4
JCN	**Nagara**	**0.63**	**240**	P	Pb	11 09 21.1	+0.7
MAT	**Matsushiro**	**2.30**	**291**	P	Pn	11 09 44.2	+0.9
MAT				*e*S	Sn	11 10 09.1	-1.4

ISK ***17*** *11:11:13.7, 38°.57N×43°.72E, h16km, MD2.5*
ISC 17 11:11:13.0±1.4, 38°.55N±0°.04×43°.74E±0°.06, h13km±12km, n7, σ1§19/13, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TVAN	**Van**	**0.26**	**265**	*i* P	**Pg**	**11 11 19.1**	**+0.5**
TVAN				*i* S	**Sg**	**11 11 23.0**	**+0.6**
VANB	**Van**	**0.28**	**279**	*e*PG	**Pg**	**11 11 19.0**	**+0.1**
VANB				*e*SG	**Sb**	**11 11 24.4**	**-0.2**
VMUR	**Van-Muradiye**	**0.46**	**343**	*i* P	**Pg**	**11 11 20.1**	**-1.9**
VMUR				*i* S	**Sb**	**11 11 29.8**	**-0.1**
GEVA	**Gevas**	**0.59**	**246**	*i* P	**Pg**	**11 11 22.5**	**-2.0**
GEVA				*i* S	**Sb**	**11 11 33.5**	**0.0**
CLDR	**Caldiran**	**0.61**	**13**	*e*PG	**Pb**	**11 11 25.7**	**0.0**
CLDR				*e*SG	**Sb**	**11 11 34.6**	**+0.4**
CUKT	**Cukurca**	**1.30**	**185**	*e*PN	**Pg**	**11 11 38.4**	**+0.3**
EATA	**Eleskirt**	**1.63**	**324**	*i* P	**Pg**	**11 11 46.2**	**+1.9**
EATA				*i* S	**Sg**	**11 12 05.0**	**-0.5**

IDC 17 11:23:24.4±2.2, 32°.98S×178°.37W, h0km, mb3.8/2, mb1 4.0/3, mb1mx3.7/21, mbtmp3.8/3, ML3.4/1, MS3.1/2, Ms1 3.1/2, ms1mx2.7/31, Error ellipse: s-maj=60.9km s-min=32.3km az=128.0, South of Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
URZ	**Urewera**	**6.43**	**214**	Pn	Pn	11 25 01.1	+0.8
	0.9nm,0.3s,baz=24,slow=20,SNR=11						
URZ				Sn	Sn	11 26 13.4	-0.9
	2.2nm,0.3s,baz=120,slow=20,SNR=7.6						
URZ				LR	LR	11 26 58.4	
	comp=Z,64nm,18.3s,baz=340,slow=33						
DZM	**Mont Dzumac**	**17.28**	**305**	LR	LR	11 33 06.5	
	comp=Z,129nm,18.7s,baz=24,slow=34						
ASAR	**Alice Springs**	**42.72**	**270**	P	P	11 31 23.2	-0.3
	0.7nm,0.7s,baz=116,slow=7.4,SNR=7.4						
WRA	**Warramunga Arr**	**43.94**	**275**	P	P	11 31 33.4	+0.1
	1.3nm,0.7s,baz=116,slow=7.8,SNR=17						
FINES	**FINESS Array B**	**147.43**	**338**	PKPbc	PKPbc	11 43 08.5	-0.9
	1.9nm,0.7s,baz=43,slow=3.6,SNR=8.8						
NOA	**NORSAR Array B**	**151.24**	**350**	PKPbc	PKPbc	11 43 18.8	-0.3
	0.8nm,0.9s,baz=28,slow=2.0,SNR=3.5						

MEX ***17*** *11:37:34.3±0.5, 32°.41N×115°.19W, h26km±6km, MD3.6*
ECX ***17*** *11:37:34.3±0.5, 32°.27N×115°.35W, h6km, MD2.2, ML2.4*
ISC 17 11:37:32.4±1.0, 32°.32N±0°.05×115°.32W±0°.06, h25km±9km, n13, σ0§38/23, 3C-6D, California-Baja California border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CPBX	**Cerro Prieto**	**0.10**	**8**	⇓*e*P	**Pb**	**11 37 37.0**	**0.0**
CPBX				⇓*e*P	**Pb**	**11 37 37.2**	**+0.1**
CPBX				*e*S	**Sb**	**11 37 39.7**	**-0.5**
CPBX				⇑*e*		11 37 41.0	
CPBX				AML	AML	11 37 41.0	
	comp=N,6μm,0.1s						
CPBX				AML	AML	11 37 42.6	
	comp=N,3μm,0.2s						
CPBX				*e*		11 37 42.6	
MBIG	**Mexicali**	**0.14**	**49**	⇓*e*P	**Pb**	**11 37 38.1**	**+0.8**
MBIG	**Mexicali**	**0.14**	**49**	*e*P	**Pb**	**11 37 37.7**	**+0.4**
MBIG				*e*S	**Sb**	**11 37 40.2**	**-0.4**
DREC	**Desert Rsrch C**	**0.50**	**348**	⇓*e*P	**Pn**	**11 37 44.1**	**+0.1**
WESC	**Westside Schoo**	**0.56**	**322**	⇑*e*P	**Pn**	**11 37 44.7**	**-0.2**
WESC				*e*S	**Sn**	**11 37 53.1**	**-0.3**
RMX	**La Rumorosa**	**0.70**	**294**	*e*P	**Pb**	**11 37 45.9**	**-0.3**
RMX				*e*S	**Sb**	**11 37 55.3**	**-0.2**
IKP	**In-Ko-Pah, Jac**	**0.74**	**297**	⇑*i*P	**Pn**	**11 37 47.3**	**-0.2**
ECBX	**El Chinero**	**0.87**	**165**	*e*P	**Pn**	**11 37 49.1**	**-0.1**
ECBX				*e*S	**Sb**	**11 38 00.0**	**-0.2**
CBX	**Cerro Bola**	**1.14**	**270**	*e*P	**Pb**	**11 37 53.9**	**+0.3**
CBX				*e*S	**Sb**	**11 38 08.7**	**+0.7**
CBX				⇓*e*		11 38 11.8	
CBX				AML	AML	11 38 11.8	
	comp=N,80nm,0.4s						
CBX	**Cerro Bola**	**1.14**	**270**	*e*P	**Pb**	**11 37 53.8**	**+0.3**
CBX				*i* S	**Sn**	**11 38 07.8**	**0.0**
TJIG	**Tijuana**	**1.15**	**276**	*e*P	**Pb**	**11 37 53.5**	**-0.2**
TJIG				*e*S	**Sn**	**11 38 08.1**	**+0.1**
BAR	**Barrett**	**1.20**	**288**	⇓*e*P	**Pb**	**11 37 55.0**	**+0.5**
SPIG	**San Pedro Mart**	**1.27**	**186**	*e*P	**Pb**	**11 37 55.7**	**-0.3**
SPIG				*e*S	**Sb**	**11 38 12.4**	**+0.4**

SIGU ***17*** *11:41:01.8, 45°.72N×26°.46E, h136km, mb3.3*
ISCJB ***17*** *11:41:02.8±0.2, 45°.68N±0°.01×26°.42E±0°.02, h122km±2km, mb3.6/10, Error ellipse: s-maj=2.5km s-min=2.2km az=159.4*
BUC ***17*** *11:41:03.8±0.5, 45°.63N×26°.44E, h124km±6km, MD4.3/2, Error ellipse: s-maj=4.0km s-min=3.6km az=339.0*
CSEM ***17*** *11:41:04.0±0.2, 45°.62N×26°.42E, h120km±2km, MD4.3, Error ellipse: s-maj=3.3km s-min=2.9km az=158.0*
IDC ***17*** *11:41:05.6±1.1, 45°.81N×26°.36E, h114km±9km, mb3.3/10, mb1 3.4/14, mb1mx3.1/63, mbtmp3.6/14, Error ellipse: s-maj=16.5km s-min=15.6km az=125.0*
ISC 17 11:41:05.0±0.6, 45°.65N±0°.02×26°.44E±0°.02, h124km±4km, n203, σ1§79/292, mb3.6/10, 71C-64D, Romania

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PLOR	**Plostina**	**0.25**	**37**	⇑*i*P	**Pn**	**11 41 20.9**	**-1.4**
PLOR	**Plostina**	**0.25**	**37**	⇑*i*P	**Pn**	**11 41 20.9**	**-1.4**
PLOR				*i* S	**Sn**	**11 41 33.0**	**-2.4**
PLOR	**Plostina**	**0.25**	**37**	⇑*i*P	**Pn**	**11 41 20.9**	**-1.4**
PLOR				*i* S	**Sn**	**11 41 33.0**	**-2.4**
VRI	**Vrincioaia**	**0.29**	**43**	⇑*i*P	**Pn**	**11 41 21.4**	**-1.0**
VRI	**Vrincioaia**	**0.29**	**43**	⇑*i*P	**Pn**	**11 41 21.4**	**-1.0**
VRI				*i* S	**Sn**	**11 41 33.2**	**-2.4**
VRI	**Vrincioaia**	**0.29**	**43**	⇑*i*P	**Pn**	**11 41 21.4**	**-1.0**
VRI				*i* S	**Sn**	**11 41 33.2**	**-2.4**
MLR	**Muntele Rosu**	**0.38**	**245**	⇑*i*P	**Pn**	**11 41 21.7**	**-1.2**
MLR	**Muntele Rosu**	**0.38**	**245**	⇑*i*P	**Pn**	**11 41 21.7**	**-1.2**
MLR				*i* S	**Sn**	**11 41 34.0**	**-2.4**
MLR	**Muntele Rosu**	**0.38**	**245**	⇑*i*P	**Pn**	**11 41 21.7**	**-1.2**
MLR				*i* S	**Sn**	**11 41 34.0**	**-2.4**
ODBI	**Odobesti**	**0.45**	**76**	⇑*i*P	**Pn**	**11 41 22.7**	**-0.3**
ODBI	**Odobesti**	**0.45**	**76**	⇑*i*P	**Pn**	**11 41 22.7**	**-0.3**
ODBI				*i* S	**Sn**	**11 41 35.7**	**-1.0**
ODBI	**Odobesti**	**0.45**	**76**	⇑*i*P	**Pn**	**11 41 22.7**	**-0.3**
ODBI				*i* S	**Sn**	**11 41 35.7**	**-1.0**
GRER		**0.47**	**126**	⇑*i*P	**Pn**	**11 41 23.1**	**-0.1**
GRER		**0.47**	**126**	⇑*i*P	**Pn**	**11 41 23.1**	**-0.1**
GRER				*i* S	**Sn**	**11 41 36.0**	**-0.9**
GRER		**0.47**	**126**	⇑*i*P	**Pn**	**11 41 23.1**	**-0.1**
GRER				*i* S	**Sn**	**11 41 36.0**	**-0.9**
ISR	**Istrita**	**0.54**	**172**	⇑*i*P	**Pn**	**11 41 22.6**	**-1.1**
ISR	**Istrita**	**0.54**	**172**	⇑*i*P	**Pn**	**11 41 22.6**	**-1.1**
ISR				*i* S	**Sn**	**11 41 37.2**	**-0.6**
ISR	**Istrita**	**0.54**	**172**	⇑*i*P	**Pn**	**11 41 22.6**	**-1.1**
ISR				*i* S	**Sn**	**11 41 37.2**	**-0.6**
PETR	**Petresti**	**0.56**	**83**	⇑*i*P	**Pn**	**11 41 23.1**	**-0.6**
PETR	**Petresti**	**0.56**	**83**	⇑*i*P	**Pn**	**11 41 23.1**	**-0.6**
PETR				*i* S	**Sn**	**11 41 36.5**	**-1.3**
PETR	**Petresti**	**0.56**	**83**	⇑*i*P	**Pn**	**11 41 23.1**	**-0.6**
PETR				*i* S	**Sn**	**11 41 36.5**	**-1.3**
SECR		**0.67**	**203**	⇑*i*P	**Pn**	**11 41 23.8**	**-0.8**
SECR		**0.67**	**203**	⇑*i*P	**Pn**	**11 41 23.8**	**-0.8**
SECR				*i* S	**Sn**	**11 41 38.3**	**-1.0**
SECR		**0.67**	**203**	⇑*i*P	**Pn**	**11 41 23.8**	**-0.8**
SECR				*i* S	**Sn**	**11 41 38.3**	**-1.0**
PLAR	**PLOIESTI**	**0.80**	**202**	⇑*i*P	**Pn**	**11 41 24.8**	**-0.7**
PLAR	**PLOIESTI**	**0.80**	**202**	⇑*i*P	**Pn**	**11 41 24.8**	**-0.7**
PLAR				*i* S	**Sn**	**11 41 39.7**	**-1.3**
PLAR	**PLOIESTI**	**0.80**	**202**	⇑*i*P	**Pn**	**11 41 24.8**	**-0.7**
PLAR				*i* S	**Sn**	**11 41 39.7**	**-1.3**
PGOR	**Pogoanele**	**0.84**	**152**	S	**Sn**	**11 41 40.4**	**-1.2**
PGOR	**Pogoanele**	**0.84**	**152**	*i* S	**Sn**	**11 41 40.4**	**-1.2**
PGOR	**Pogoanele**	**0.84**	**152**	*i* S	**Sn**	**11 41 40.4**	**-1.2**
TESR	**Tescani**	**0.87**	**10**	⇓*i*P	**Pn**	**11 41 25.2**	**-1.0**
TESR	**Tescani**	**0.87**	**10**	⇓*i*P	**Pn**	**11 41 25.2**	**-1.0**
TESR				*i* S	**Sn**	**11 41 39.9**	**-2.3**
TESR	**Tescani**	**0.87**	**10**	⇓*i*P	**Pn**	**11 41 25.2**	**-1.0**
TESR				*i* S	**Sn**	**11 41 39.9**	**-2.3**
SULR		**0.98**	**188**	⇑*i*P	**Pn**	**11 41 26.4**	**-0.8**
SULR		**0.98**	**188**	⇑*i*P	**Pn**	**11 41 26.4**	**-0.8**
SULR				*i* S	**Sn**	**11 41 42.2**	**-1.7**
SULR		**0.98**	**188**	⇑*i*P	**Pn**	**11 41 26.4**	**-0.8**
SULR				*i* S	**Sn**	**11 41 42.2**	**-1.7**
AMRR	**Amara**	**1.22**	**148**	⇑*i*P	**Pn**	**11 41 28.6**	**-1.0**
AMRR	**Amara**	**1.22**	**148**	⇑*i*P	**Pn**	**11 41 28.6**	**-1.0**
AMRR				*i* S	**Sn**	**11 41 46.4**	**-1.8**
AMRR	**Amara**	**1.22**	**148**	⇑*i*P	**Pn**	**11 41 28.6**	**-1.0**
AMRR				*i* S	**Sn**	**11 41 46.4**	**-1.8**
JOSR	**Joseni**	**1.23**	**329**	⇓*i*P	**Pn**	**11 41 28.7**	**-1.1**
BTMR	**Bucharest-Geot**	**1.24**	**191**	⇓*i*P	**Pn**	**11 41 27.8**	**-2.0**
BTMR	**Bucharest-Geot**	**1.24**	**191**	⇓*i*P	**Pn**	**11 41 27.8**	**-2.0**
BTMR				*i* S	**Sn**	**11 41 46.5**	**-2.1**
BTMR	**Bucharest-Geot**	**1.24**	**191**	⇓*i*P	**Pn**	**11 41 27.8**	**-2.0**
BTMR				*i* S	**Sn**	**11 41 46.5**	**-2.1**
BVCR	**Bucharest-Old**	**1.25**	**191**	⇓*i*P	**Pn**	**11 41 28.8**	**-1.1**
BVCR	**Bucharest-Old**	**1.25**	**191**	⇓*i*P	**Pn**	**11 41 28.8**	**-1.1**
BVCR				*i* S	**Sn**	**11 41 46.2**	**-2.5**
BVCR	**Bucharest-Old**	**1.25**	**191**	⇓*i*P	**Pn**	**11 41 28.8**	**-1.1**
BVCR				*i* S	**Sn**	**11 41 46.2**	**-2.5**
BAPR	**Bucharest-Chil**	**1.27**	**190**	S	**Sn**	**11 41 47.2**	**-1.9**
BAPR	**Bucharest-Chil**	**1.27**	**190**	*i* S	**Sn**	**11 41 47.2**	**-1.9**
BAPR	**Bucharest-Chil**	**1.27**	**190**	*i* S	**Sn**	**11 41 47.2**	**-1.9**
CFR	**Carcaliu**	**1.29**	**111**	⇓*i*P	**Pn**	**11 41 28.7**	**-1.5**
CFR	**Carcaliu**	**1.29**	**111**	⇓*i*P	**Pn**	**11 41 28.7**	**-1.5**
CFR				*i* S	**Sn**	**11 41 46.1**	**-2.3**
CFR	**Carcaliu**	**1.29**	**111**	⇓*i*P	**Pn**	**11 41 28.7**	**-1.5**
ARR	**Arges**	**1.30**	**258**	⇓*i*P	**Pn**	**11 41 29.8**	**-0.7**
ARR	**Arges**	**1.30**	**258**	⇓*i*P	**Pn**	**11 41 29.8**	**-0.7**
ARR				*i* S	**Sn**	**11 41 47.7**	**-2.2**
ARR	**Arges**	**1.30**	**258**	⇓*i*P	**Pn**	**11 41 29.8**	**-0.7**
ARR				*i* S	**Sn**	**11 41 47.7**	**-2.2**
GOLR		**1.32**	**233**	S	**Sn**	**11 41 48.9**	**-1.3**
GOLR		**1.32**	**233**	*i* S	**Sn**	**11 41 48.9**	**-1.3**
GOLR		**1.32**	**233**	*i* S	**Sn**	**11 41 48.9**	**-1.3**
BUC1	**Bucharest**	**1.34**	**193**	⇓*i*P	**Pn**	**11 41 29.9**	**-0.9**
BUC1	**Bucharest**	**1.34**	**193**	⇓*i*P	**Pn**	**11 41 29.9**	**-0.9**
BUC1				*i* S	**Sn**	**11 41 48.3**	**-2.1**
BUC1	**Bucharest**	**1.34**	**193**	⇓*i*P	**Pn**	**11 41 29.9**	**-0.9**
BUC1				*i* S	**Sn**	**11 41 48.3**	**-2.1**
HARR	**Harsova**	**1.43**	**132**	⇓*i*P	**Pn**	**11 41 30.7**	**-1.1**
HARR	**Harsova**	**1.43**	**132**	⇓*i*P	**Pn**	**11 41 30.7**	**-1.1**
HARR	**Harsova**	**1.43**	**132**	⇓*i*P	**Pn**	**11 41 30.7**	**-1.1**
LEOM	**Leova**	**1.50**	**56**	⇓*i*P	**Pn**	**11 41 32.1**	**-0.5**
LEOM	**Leova**	**1.50**	**56**	⇓*i*P	**Pn**	**11 41 32.1**	**-0.5**
LEOM				*i* S	**Sn**	**11 41 51.7**	**-2.0**
LEOM	**Leova**	**1.50**	**56**	⇓*i*P	**Pn**	**11 41 32.1**	**-0.5**
LEOM				*i* S	**Sn**	**11 41 51.7**	**-2.0**
MDB	**Medias**	**1.52**	**289**	⇑*i*P	**Pn**	**11 41 32.9**	**0.0**
MDB	**Medias**	**1.52**	**289**	⇑*i*P	**Pn**	**11 41 32.9**	**0.0**
MDB	**Medias**	**1.52**	**289**	⇑*i*P	**Pn**	**11 41 32.9**	**0.0**
HUMR	**Humele**	**1.53**	**223**	⇓*i*P	**Pn**	**11 41 31.8**	**-1.2**
HUMR	**Humele**	**1.53**	**223**	⇓*i*P	**Pn**	**11 41 31.8**	**-1.2**
HUMR				*i* S	**Sn**	**11 41 52.0**	**-2.3**
HUMR	**Humele**	**1.53**	**223**	⇓*i*P	**Pn**	**11 41 31.8**	**-1.2**
HUMR				*i* S	**Sn**	**11 41 52.0**	**-2.3**
IAS	**Iasi**	**1.73**	**26**	⇓*i*P	**Pn**	**11 41 34.6**	**-0.7**
IAS	**Iasi**	**1.73**	**26**	⇓*i*P	**Pn**	**11 41 34.6**	**-0.7**
IAS				*i* S	**Sn**	**11 41 56.5**	**-1.9**
IAS	**Iasi**	**1.73**	**26**	⇓*i*P	**Pn**	**11 41 34.6**	**-0.7**
IAS				*i* S	**Sn**	**11 41 56.5**	**-1.9**
TLCR		**1.74**	**105**	⇑*i*P	**Pn**	**11 41 34.3**	**-1.1**
TLCR		**1.74**	**105**	⇑*i*P	**Pn**	**11 41 34.3**	**-1.1**
TLCR				*i* S	**Sn**	**11 41 57.0**	**-1.6**
TLCR		**1.74**	**105**	⇑*i*P	**Pn**	**11 41 34.3**	**-1.1**
TLCR				*i* S	**Sn**	**11 41 57.0**	**-1.6**
CVDA	**Cernavoda**	**1.74**	**139**	⇓*i*P	**Pn**	**11 41 34.6**	**-0.9**
CVDA	**Cernavoda**	**1.74**	**139**	⇓*i*P	**Pn**	**11 41 34.6**	**-0.9**
CVDA				*i* S	**Sn**	**11 41 55.5**	**-3.2**
CVDA	**Cernavoda**	**1.74**	**139**	⇓*i*P	**Pn**	**11 41 34.6**	**-0.9**
CVDA				*i* S	**Sn**	**11 41 55.5**	**-3.2**
TIRR	**Tirgusor**	**1.84**	**130**	⇓*i*P	**Pn**	**11 41 35.4**	**-1.3**
TIRR	**Tirgusor**	**1.84**	**130**	⇓*i*P	**Pn**	**11 41 35.4**	**-1.3**
TIRR				*i* S	**Sn**	**11 41 57.4**	**-3.4**
TIRR	**Tirgusor**	**1.84**	**130**	⇓*i*P	**Pn**	**11 41 35.4**	**-1.3**
MSAB	**Monastry St. A**	**1.85**	**147**	⇑*i*P	**Pn**	**11 41 36.1**	**-0.7**
MSAB	**Monastry St. A**	**1.85**	**147**	⇑*i*P	**Pn**	**11 41 36.1**	**-0.7**
MSAB				*i* S	**Sn**	**11 41 58.4**	**-2.6**
MSAB	**Monastry St. A**	**1.85**	**147**	⇑*i*P	**Pn**	**11 41 36.1**	**-0.7**
MSAB				*i* S	**Sn**	**11 41 58.4**	**-2.6**
LOT	**Lotru**	**1.89**	**265**	*e*PN	**Pn**	**11 41 37.0**	**-0.3**
LOT	**Lotru**	**1.89**	**265**	⇑*i*P	**Pn**	**11 41 37.4**	**0.0**
LOT	**Lotru**	**1.89**	**265**	⇑*i*P	**Pn**	**11 41 37.4**	**0.0**
LOT				*i* S	**Sn**	**11 42 00.6**	**-1.5**
LOT	**Lotru**	**1.89**	**265**	*e*Pn	**Pn**	**11 41 37.0**	**-0.3**
LOT	**Lotru**	**1.89**	**265**	⇑*i*P	**Pn**	**11 41 37.4**	**0.0**
LOT				*i* S	**Sn**	**11 42 00.6**	**-1.5**
MILM	**Milestii Mici**	**2.08**	**52**	⇓*i*P	**Pn**	**11 41 38.9**	**-0.6**
MILM	**Milestii Mici**	**2.08**	**52**	⇓*i*P	**Pn**	**11 41 38.9**	**-0.6**
MILM				*i* S	**Sn**	**11 42 03.5**	**-2.5**
MILM	**Milestii Mici**	**2.08**	**52**	⇓*i*P	**Pn**	**11 41 38.9**	**-0.6**
MILM				*i* S	**Sn**	**11 42 03.5**	**-2.5**
KIS	**Kishinev**	**2.13**	**50**	⇑*i*P	**Pn**	**11 41 40.0**	**-0.2**
	960nm,0.4s						
KIS				*i* S	**Sn**	**11 42 05.0**	**-2.1**
	2μm,0.5s						
KIS	**Kishinev**	**2.13**	**50**	⇑*i*P	**Pn**	**11 41 40.0**	**-0.2**
	960nm,0.4s						
KIS				*i* S	**Sn**	**11 42 05.0**	**-2.1**
	2μm,0.5s						
KIS	**Kishinev**	**2.13**	**50**	⇑*i*P	**Pn**	**11 41 40.0**	**-0.2**
KIS				Pm		11 41 40.5	
KIS				*i* S	**Sn**	**11 42 05.0**	**-2.1**
KIS				Sm		11 42 05.5	
BURAR	**Bucovina Array**	**2.13**	**337**	⇑*i*P	**Pn**	**11 41 41.4**	**+1.0**
BURAR	**Bucovina Array**	**2.13**	**337**	⇑*i*P	**Pn**	**11 41 41.4**	**+1.0**
BURAR	**Bucovina Array**	**2.13**	**337**	⇑*i*P	**Pn**	**11 41 41.4**	**+1.0**
ZIMR		**2.14**	**201**	⇑*i*P	**Pn**	**11 41 39.2**	**-1.1**
ZIMR		**2.14**	**201**	⇑*i*P	**Pn**	**11 41 39.2**	**-1.1**
ZIMR				*i* S	**Sn**	**11 42 04.6**	**-2.8**
EFOR	**EFORIE**	**2.22**	**134**	⇓*i*P	**Pn**	**11 41 40.5**	**-0.8**
EFOR	**EFORIE**	**2.22**	**134**	⇓*i*P	**Pn**	**11 41 40.5**	**-0.8**
EFOR				*i* S	**Sn**	**11 42 06.6**	**-2.5**
EFOR	**EFORIE**	**2.22**	**134**	⇓*i*P	**Pn**	**11 41 40.5**	**-0.8**
EFOR				*i* S	**Sn**	**11 42 06.6**	**-2.5**
MANR	**Mangalia**	**2.39**	**139**	⇑*i*P	**Pn**	**11 41 42.9**	**-0.6**
MANR	**Mangalia**	**2.39**	**139**	⇑*i*P	**Pn**	**11 41 42.9**	**-0.6**
MANR				*i* S	**Sn**	**11 42 09.8**	**-3.3**
MANR	**Mangalia**	**2.39**	**139**	⇑*i*P	**Pn**	**11 41 42.9**	**-0.6**
MANR				*i* S	**Sn**	**11 42 09.8**	**-3.3**
SRE	**Strehaia**	**2.49**	**248**	⇓*i*P	**Pn**	**11 41 43.7**	**-1.1**
SRE	**Strehaia**	**2.49**	**248**	⇓*i*P	**Pn**	**11 41 43.7**	**-1.1**
SRE				*i* S	**Sn**	**11 42 12.7**	**-2.7**
SRE	**Strehaia**	**2.49**	**248**	⇓*i*P	**Pn**	**11 41 43.7**	**-1.1**
SRE				*i* S	**Sn**	**11 42 12.7**	**-2.7**
CHRU	**Chernivtsi**	**2.67**	**353**	*e*P	**Pn**	**11 41 44.2**	**-2.8**
CHRU				*e*S	**Sn**	**11 42 16.6**	**-2.8**
SORM	**Soroca**	**2.81**	**27**	⇓*i*P	**Pn**	**11 41 48.0**	**-0.8**
SORM	**Soroca**	**2.81**	**27**	⇓*i*P	**Pn**	**11 41 48.0**	**-0.8**
SORM				*i* S	**Sn**	**11 42 19.2**	**-3.4**
SORM	**Soroca**	**2.81**	**27**	⇓*i*P	**Pn**	**11 41 48.0**	**-0.8**
KSV	**Kosov**	**2.82**	**341**	*e*P	**Pn**	**11 41 46.8**	**-2.3**
KSV				Pm		11 41 51.6	
KSV				*e*S	**Sn**	**11 42 20.8**	**-2.3**
KSV				Sm		11 42 44.4	
DRGR		**2.83**	**295**	⇓*i*P	**Pn**	**11 41 48.2**	**-1.0**
DRGR		**2.83**	**295**	⇓*i*P	**Pn**	**11 41 48.2**	**-1.0**
DRGR		**2.83**	**295**	⇓*i*P	**Pn**	**11 41 48.2**	**-1.0**
RMGR	**Halanga-Turnu**	**2.83**	**251**	⇓*i*P	**Pn**	**11 41 47.9**	**-1.2**
RMGR	**Halanga-Turnu**	**2.83**	**251**	⇓*i*P	**Pn**	**11 41 47.9**	**-1.2**
RMGR				*i* S	**Sn**	**11 42 19.8**	**-3.3**
RMGR	**Halanga-Turnu**	**2.83**	**251**	⇓*i*P	**Pn**	**11 41 47.9**	**-1.2**
RMGR				*i* S	**Sn**	**11 42 19.8**	**-3.3**
RAKU	**Rahkiv**	**2.84**	**327**	*e*P	**Pn**	**11 41 46.5**	**-2.8**
RAKU				*e*S	**Sn**	**11 42 20.7**	**-2.7**
NSLU	**Nyzhne Selyshc**	**2.88**	**333**	*e*P	Pn	11 41 52.7	+2.9
NSLU				Pm		11 41 59.7	
NSLU				*e*S	Sn	11 42 30.7	+6.3
NSLU				Sm		11 42 39.3	
KMPD	**K-Podol'skiy**	**2.91**	**0**	*i* P	Pn	11 41 44.7	-5.5
KMPD				*i* S	**Sn**	**11 42 22.2**	**-2.8**
NDNU	**Novodnistrovsk**	**3.01**	**12**	*i* P	**Pn**	**11 41 48.7**	**-2.8**
NDNU				Pm		11 41 51.5	
NDNU				*i* S	**Sn**	**11 42 24.9**	**-2.4**
NDNU				Sm		11 42 27.1	
STNU	**Starunia**	**3.33**	**337**	*e*P	**Pn**	**11 41 53.0**	**-2.7**
STNU				*e*S	**Sn**	**11 42 31.6**	**-3.3**
KORU	**Korolevo**	**3.38**	**319**	*e*P	**Pn**	**11 41 55.0**	**-1.3**
KORU				Pm		11 42 00.4	
KORU				*e*S	**Sn**	**11 42 33.4**	**-2.5**
KORU				Sm		11 42 42.6	
BZS	**Buzias**	**3.38**	**271**	⇓*i*P	**Pn**	**11 41 55.3**	**-1.1**
BZS	**Buzias**	**3.38**	**271**	⇓*i*P	**Pn**	**11 41 55.3**	**-1.1**
BZS	**Buzias**	**3.38**	**271**	⇓*i*P	**Pn**	**11 41 55.3**	**-1.1**
TRSU	**Trosnyk**	**3.42**	**317**	*e*P	**Pn**	**11 41 53.8**	**-3.0**
TRSU				Pm		11 41 54.0	
TRSU				*e*S	**Sn**	**11 42 33.0**	**-3.8**
TRSU				Sm		11 42 36.4	
MEZ	**Mezhgor'ye**	**3.49**	**326**	*e*P	**Pn**	**11 41 55.0**	**-2.8**
MEZ				Pm		11 42 00.8	
MEZ				*e*S	**Sn**	**11 42 36.2**	**-2.5**
MEZ				Sm		11 43 00.0	
BRIU	**Brid**	**3.56**	**320**	*e*P	**Pn**	**11 41 57.9**	**-0.8**
BRIU				Pm		11 42 09.1	
BRIU				*e*S	**Sn**	**11 42 39.3**	**-1.0**
BRIU				Sm		11 43 05.1	
HORU	**Horodok**	**3.56**	**360**	*e*P	**Pn**	**11 41 58.0**	**-0.7**
HORU				*e*S	**Sn**	**11 42 39.0**	**-1.3**
ZAPS	**Zavoj**	**3.62**	**230**	⇓*i*Pn	**Pn**	**11 41 58.3**	**-1.2**
BERU	**Beregovo**	**3.66**	**316**	*e*P	**Pn**	**11 41 59.2**	**-0.8**
BERU				*e*S	**Sn**	**11 42 39.6**	**-3.1**
BOLS	**Boljevac**	**3.68**	**242**	⇑*i*Pn	Pn	11 41 57.0	-3.3
MUKU	**Mukachevo**	**3.80**	**319**	*e*P	**Pn**	**11 41 59.7**	**-2.1**
MUKU				Pm		11 42 26.9	
MUKU				*e*S	**Sn**	**11 42 43.7**	**-2.2**
MUKU				Sm		11 42 51.5	
EDRB	**Edirne**	**3.81**	**177**	*e*PN	**Pn**	**11 41 59.9**	**-2.2**
EDRB	**Edirne**	**3.81**	**177**	*e*Pn	**Pn**	**11 41 59.9**	**-2.2**
VTS	**Vitosha**	**3.84**	**218**	⇑*i*P	**Pn**	**11 42 01.0**	**-1.7**
VTS	**Vitosha**	**3.84**	**218**	⇑*i*P	**Pn**	**11 42 01.0**	**-1.7**
VTS	**Vitosha**	**3.84**	**218**	⇑*i*P	**Pn**	**11 42 01.0**	**-1.7**
MORU	**Morshyn**	**3.88**	**334**	*e*P	Pn	11 41 59.1	-3.9
M

σ1^{s}24/32, **mb4.1**/17, **MS3.2**/8, **Irian Jaya region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RKPI	**Ransiki, Papua**	**2.69**	**258**	P	**Pn**	**11 41 56.9**	**-1.8**
RKPI				S	**Sn**	**11 42 31.8**	**+1.4**
GENI	**Genyem**	**3.73**	**116**	P	**Pn**	**11 42 12.6**	**-0.4**
KMPI	**Kaimana, Papua**	**4.11**	**229**	P	**Pn**	**11 42 18.1**	**-0.1**
JAY	**Jayapura**	**4.19**	**112**	Pn	**Pn**	**11 42 19.6**	**+0.2**
	0.2nm,0.3s,baz=253,slow=19,SNR=6.7						
JAY				Sn	**Sn**	**11 43 07.0**	**-0.4**
	0.2nm,0.3s,baz=214,slow=18,SNR=2.6						
JAY	**Jayapura**	**4.19**	**112**	P	**Pn**	**11 42 17.9**	**-1.4**
FAKI	**Fak Fak**	**4.96**	**247**	P	**Pn**	**11 42 28.4**	**-1.6**
SWI	**Sorong**	**5.55**	**271**	P	**Pn**	**11 42 37.0**	**-1.0**
	86nm,0.9s,1μm0.4nm						
BNDI	**Bandanaira**	**7.76**	**243**	P	**Pn**	**11 43 08.0**	**-0.4**
	91nm,1.7s,0.7nm						
MSAI	**Masohi**	**8.23**	**253**	P	**Pn**	**11 43 11.7**	**-3.2**
	11nm,0.8s						
PMG	**Port Moresby**	**13.29**	**130**	LR	LR	11 50 05.6	
	comp=Z,98nm,21.3s,baz=328,slow=40						
PMG	**Port Moresby**	**13.29**	**130**	*e*Pn	**Pn**	**11 44 22.9**	**-1.3**
DAV	**Davao City (W)**	**13.75**	**306**	LR	LR	11 49 21.6	
	comp=Z,82nm,21.4s,baz=357,slow=36						
GUMO	**Guam**	**16.50**	**29**	LR	LR	11 51 56.6	
	comp=Z,66nm,18.5s,baz=120,slow=39						
TTSI	**Tana Toraja**	**17.11**	**263**	P	**P**	**11 45 16.7**	**+0.7**
	24nm,1.3s						
KAPI	**Kappang**	**17.51**	**256**	LR	LR	11 52 56.6	
	comp=Z,96nm,18.7s,baz=99,slow=40						
WRAB	**Tennant Creek**	**19.02**	**187**	*e*P	**P**	**11 45 36.2**	**-0.9**
	8.5nm,0.9s						
WRA	**Warramunga Arr**	**19.03**	**187**	P	**P**	**11 45 36.6**	**-0.6**
	0.7nm,0.3s,baz=7.1,slow=12,SNR=32						
WRA				S	Sn	11 48 54.0	-17
	0.1nm,0.3s,baz=2.3,slow=23,SNR=3.9						
CTA	**Charters Tower**	**21.15**	**155**	P	**P**	**11 46 01.6**	**+1.4**
	6.2nm,0.8s,baz=320,slow=11,SNR=5.2						
CTAO	**Charters Tower**	**21.15**	**155**	*e*P	**P**	**11 46 02.0**	**+1.8**
	7.5nm,0.8s						
TGY	**Tagaytay City**	**21.70**	**314**	LR	LR	11 55 44.8	
	comp=Z,62nm,18.8s,baz=127,slow=40						
BBKI	**Banjar Baru**	**22.09**	**263**	P	P	11 46 15.2	+4.7
ASAR	**Alice Springs**	**22.76**	**187**	P	**P**	**11 46 17.0**	**-0.5**
	5.4nm,0.6s,baz=13,slow=12,SNR=81						
ASAR				LR	LR	11 54 36.4	
	comp=Z,76nm,21.4s,baz=8.5,slow=35						
MBWA	**Marble Bar**	**26.11**	**219**	*e*P	**P**	**11 46 50.0**	**+1.2**
	26nm,1.3s						
EIDS	**Eidsvold**	**27.92**	**152**	*e*P	**P**	**11 47 08.1**	**+3.0**
	9.3nm,1.0s						
LEM	**Lembang**	**29.70**	**258**	LR	LR	12 00 28.8	
	comp=Z,137nm,18.0s,baz=94,slow=39						
STKA	**Stephens Creek**	**31.09**	**172**	P	**P**	**11 47 32.6**	**-0.6**
	1.8nm,0.6s,baz=344,slow=8.2,SNR=12						
H11S3	**WAKE ISLAND Hy**	**35.16**	**55**	T	T	12 25 39.6	
	baz=240,slow=75,SNR=34						
H11S2	**WAKE ISLAND Hy**	**35.17**	**55**	T	T	12 25 40.1	
	baz=240,slow=75,SNR=26						
H11S1	**WAKE ISLAND Hy**	**35.17**	**55**	T	T	12 25 40.6	
	baz=240,slow=75,SNR=30						
H11N1	**WAKE ISLAND Hy**	**35.94**	**54**	T	T	12 26 59.8	
	baz=234,slow=74,SNR=3.6						
H11N2	**WAKE ISLAND Hy**	**35.95**	**54**	T	T	12 27 00.4	
	baz=234,slow=74,SNR=2.9						
H11N3	**WAKE ISLAND Hy**	**35.96**	**54**	T	T	12 26 59.8	
	baz=234						
KSRS	**Korea Array**	**39.09**	**349**	LR	LR	12 04 00.2	
	comp=Z,19nm,19.5s,baz=150,slow=35						
CMAR	**Chiang Mai Arr**	**41.92**	**299**	P	**P**	**11 49 05.4**	**-0.3**
	0.5nm,0.5s,baz=113,slow=7.0,SNR=4.9						
CMAR				LR	LR	12 06 32.3	
	comp=Z,30nm,19.0s,baz=90,slow=36						
KLR	**Kul'dur**	**50.17**	**356**	P	**P**	**11 50 10.6**	**+0.4**
	0.9nm,0.6s,baz=200,slow=12,SNR=4.3						
SONM	**Songino Array**	**55.33**	**335**	LR	LR	12 12 51.2	
	comp=Z,45nm,21.8s,baz=138,slow=34						
YAK	**Yakutsk**	**63.05**	**356**	LR	LR	12 15 51.0	
	comp=Z,42nm,20.2s,baz=92,slow=33						
SEY	**Seymchan**	**64.78**	**8**	P	**P**	**11 51 54.5**	**+1.5**
	1.6nm,0.7s,baz=172,slow=4.4,SNR=7.0						
MKAR	**Makanchi Array**	**67.25**	**323**	P	**P**	**11 52 08.8**	**-0.4**
	0.3nm,0.4s,baz=107,slow=8.9,SNR=6.2						
ZALV	**Zalesovo Beam**	**69.47**	**330**	P	**P**	**11 52 21.8**	**-1.1**
	0.3nm,0.4s,baz=120,slow=8.0,SNR=2.4						
ZALV				LR	LR	12 23 51.7	
	comp=Z,12nm,18.6s,baz=68,slow=37						
KURK	**Kurchatov**	**71.19**	**325**	*e*P	P	11 52 36.2	+2.7
	19nm,1.4s						
KURBB	**Kurchatov Arra**	**71.20**	**325**	P	**P**	**11 52 33.0**	**-0.5**
	0.4nm,0.8s,baz=115,slow=6.3,SNR=5.0						
TIXI	**Tiksi**	**72.66**	**357**	P	**P**	**11 52 42.0**	**+0.1**
	0.7nm,0.3s,baz=270,slow=2.0,SNR=2.6						
BVAR	**Borovoye Array**	**76.79**	**325**	P	**P**	**11 53 06.1**	**-0.1**
	0.6nm,0.5s,baz=112,slow=7.5,SNR=5.3						
BRVK	**Borovoye**	**76.86**	**325**	*e*P	**P**	**11 53 06.5**	**-0.1**
	3.5nm,1.1s						
ILAR	**Eielson Array**	**85.03**	**25**	P	**P**	**11 53 49.8**	**-0.1**
	0.3nm,0.7s,baz=257,slow=5.6,SNR=4.2						
QSPA	**South Pole Qui**	**88.99**	**180**	*e*P	**P**	**11 54 09.4**	**+0.2**
	427nm,2.5s						

ISCJB ***17*** *11:43:14.4±0.5, 37.86N±0.03×27.35E±0.04, h3km±9.9km, Error ellipse: s-maj=5.2km s-min=4.2km az=42.3*
DDA ***17*** *11:43:14.2, 37.85N×27.37E, h7km, Md2.5*
CSEM ***17*** *11:43:14.6±0.1, 37.87N×27.34E, h5km, MD2.5, Error ellipse: s-maj=2.6km s-min=2.0km az=68.0*
ISK ***17*** *11:43:14.2, 37.87N×27.34E, h5km, MD2.7*

ISC 17 11:43:14.5±0.9, 37.85N±0.02×27.33E±0.03, h14km±7km, n27, σ0^{s}27/37, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GCAM	**G?zelcaml?**	**0.17**	**207**	*i* P	**Pg**	**11 43 18.4**	**-0.1**
GCAM				*i* S	**Sg**	**11 43 21.5**	**+0.2**
GCAM	**G?zelcaml?**	**0.17**	**207**	P	**Pg**	**11 43 18.5**	**-0.1**
GCAM				S	**Sg**	**11 43 21.5**	**+0.2**
AYDB	**Zeytinkoy-Aydi**	**0.45**	**78**	*e*PG	**Pg**	**11 43 23.3**	**-0.2**
AYDB				*e*SG	**Sg**	**11 43 29.9**	**+0.2**
AYDB	**Zeytinkoy-Aydi**	**0.45**	**78**	*e*Pg	**Pg**	**11 43 23.3**	**-0.2**
AYDB				*e*Sg	**Sg**	**11 43 29.9**	**+0.2**
AYDN	**Tasoluk**	**0.47**	**114**	*i* P	**Pg**	**11 43 23.9**	**0.0**
AYDN				*i* S	**Sg**	**11 43 30.0**	**-0.3**
AYDN	**Tasoluk**	**0.47**	**114**	P	**Pg**	**11 43 23.9**	**0.0**
AYDN				S	**Sg**	**11 43 30.0**	**-0.3**
IZM	**Izmir**	**0.55**	**354**	*e*PG	**Pg**	**11 43 24.9**	**-0.3**
IZM	**Izmir**	**0.55**	**354**	*e*Pg	**Pg**	**11 43 24.9**	**-0.3**
BLCB	**Balcova**	**0.58**	**337**	*e*PG	**Pg**	**11 43 25.7**	**-0.1**
BLCB	**Balcova**	**0.58**	**337**	*e*Pg	**Pg**	**11 43 25.7**	**-0.1**
ZEY	**˙zmir**	**0.76**	**301**	*i* P	**Pb**	**11 43 29.4**	**-0.1**
ZEY				*i* S	**Sb**	**11 43 39.5**	**-0.1**
URLA	**Izmir**	**0.77**	**311**	*i* P	**Pb**	**11 43 29.6**	**-0.1**
URLA				*i* S	**Sn**	**11 43 42.9**	**+0.5**
URLA	**Izmir**	**0.77**	**311**	P	**Pb**	**11 43 29.6**	**-0.1**
BODT	**Bodrum**	**0.79**	**181**	*e*PG	**Pb**	**11 43 30.1**	**+0.1**
BODT	**Bodrum**	**0.79**	**181**	*e*Pg	**Pb**	**11 43 30.1**	**+0.1**
BDRM	**Kayabasi**	**0.79**	**173**	*i* P	**Pg**	**11 43 29.2**	**-0.6**
BDRM				*i* S	**Sb**	**11 43 41.0**	**+0.4**
BDRM	**Kayabasi**	**0.79**	**173**	P	**Pg**	**11 43 29.2**	**-0.6**
BDRM				S	**Sb**	**11 43 41.0**	**+0.4**
YER	**Yerkesik**	**1.04**	**133**	*e*PG	**Pn**	**11 43 34.7**	**0.0**
YER	**Yerkesik**	**1.04**	**133**	*e*Pg	**Pn**	**11 43 34.7**	**0.0**
AKS	**Akhisar**	**1.09**	**20**	*e*PG	**Pb**	**11 43 35.1**	**-0.1**
AKS	**Akhisar**	**1.09**	**20**	*e*Pg	**Pb**	**11 43 35.1**	**-0.1**
KULA	**Kula-Manisa**	**1.24**	**57**	*e*PN	**Pg**	**11 43 38.2**	**-0.1**
KULA	**Kula-Manisa**	**1.24**	**57**	*e*Pn	**Pg**	**11 43 38.2**	**-0.1**
DALY	**Dalyan (Mu˘la**	**1.48**	**134**	*e*PN	**Pg**	**11 43 42.5**	**-0.3**
DALY	**Dalyan (Mu˘la**	**1.48**	**134**	*e*Pn	**Pg**	**11 43 42.6**	**-0.3**
APE	**Apeiranthos**	**1.63**	**242**	*e*PN	**Pb**	**11 43 44.4**	**0.0**
APE	**Apeiranthos**	**1.63**	**242**	*e*Pn	**Pb**	**11 43 44.4**	**0.0**

IDC ***17*** *11:49:34.8±2.6, 37.41N×142.37E, h0km, mb3.3/3, mb1 3.3/4, mb1mx3.1/45, mbtmp3.1/4, ML2.6/1, Error ellipse: s-maj=66.1km s-min=33.0km az=65.0*
ISCJB ***17*** *11:49:39.2±1.7, 37.37N±0.05×141.91E±0.10, h18km±9km, mb3.2/3, Error ellipse: s-maj=13.7km s-min=6.3km az=21.1*
JMA ***17*** *11:49:40.8±0.2, 37.36N×141.84E, h33km±3km, M3.3*

ISC 17 11:49:38.9±2.3, 37.37N±0.05×141.92E±0.09, h17km±11km, n16, σ1^{s}40/22, mb3.4/3, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**0.83**	**270**	P	**Pg**	**11 49 55.4**	**+0.2**
JFK				S	**Sg**	**11 50 05.3**	**-0.9**
ONAJ	**Iwakimizuishiy**	**0.93**	**254**	P	**Pb**	**11 49 56.6**	**-0.1**
ONAJ				S	**Sb**	**11 50 07.9**	**-0.9**
JMM	**Marumori**	**1.02**	**299**	P	**Pb**	**11 49 58.3**	**+0.1**
JMM				S	**Sb**	**11 50 10.3**	**-1.1**
JIO	**Ouri**	**1.18**	**338**	P	**Pn**	**11 50 00.6**	**0.0**
JIO				S	**Sb**	**11 50 14.2**	**-1.6**
JFT	**Otama**	**1.27**	**277**	P	**Pn**	**11 50 02.6**	**+0.7**
JFT				S	**Sn**	**11 50 17.8**	**-0.8**
JHO	**Hitachi**	**1.32**	**235**	P	**Pn**	**11 50 02.9**	**+0.3**
JHO				S	**Sn**	**11 50 16.9**	**-2.9**
JOU	**Okura**	**1.41**	**315**	P	**Pn**	**11 50 04.7**	**+0.9**
JOU				S	**Sn**	**11 50 22.5**	**+0.5**
JMK	**Ichinoseki**	**1.68**	**341**	P	**Pn**	**11 50 08.6**	**+1.1**
JMK				S	**Sn**	**11 50 28.6**	**0.0**
MJAR	**Matsushiro Arr**	**3.08**	**256**	Pn	**Pn**	**11 50 29.0**	**+2.2**
	0.6nm,0.3s,baz=85,slow=15,SNR=6.6						
MAT	**Matsushiro**	**3.08**	**256**	P	**Pn**	**11 50 29.9**	**+3.0**
MAT				*e*S	**Sn**	**11 51 04.6**	**+1.2**
H11N2	**WAKE ISLAND Hy**	**27.98**	**122**	T	T	12 24 46.5	
	baz=319,slow=74,SNR=3.7						
H11N1	**WAKE ISLAND Hy**	**27.98**	**122**	T	T	12 24 47.6	
	baz=319,slow=74,SNR=4.5						
H11N3	**WAKE ISLAND Hy**	**27.99**	**122**	T	T	12 24 48.1	
	baz=319						
MKAR	**Makanchi Array**	**44.28**	**302**	P	**P**	**11 57 49.2**	**+1.6**
	0.1nm,0.6s,baz=85,slow=7.8,SNR=2.6						
KURBB	**Kurchatov Arra**	**46.12**	**308**	P	**P**	**11 58 01.7**	**-0.4**
	0.2nm,0.4s,baz=83,slow=8.2,SNR=3.3						
WRA	**Warramunga Arr**	**57.45**	**188**	P	**P**	**11 59 26.1**	**-0.8**
	0.3nm,0.5s,baz=7.7,slow=7.0,SNR=4.8						

NIED ***17*** *12:13:00, 39.20N×142.40E, h32km, Mw3.9 Best double couple: M0 7.13000×10^{14} NP1:φs=301.00000°, δ39.00000°, λ-146.00000°. NP2:φs=183.00000°, δ69.00000°, λ-56.00000°.*
ISCJB ***17*** *12:13:05.2±1.0, 39.16N±0.04×142.43E±0.08, h39km±9km, mb3.6/10, MS3.3/2, Error ellipse: s-maj=11.4km s-min=5.5km az=18.6*
JMA ***17*** *12:13:05.3±0.1, 39.17N×142.39E, h26km±1km, M4.1*
JMA Felt I J1.
IDC ***17*** *12:13:08.2±2.2, 39.18N×142.40E, h49km±20km, mb3.4/10, mb1 3.6/14, mb1mx3.4/42, mbtmp3.6/14, ML3.4/3, MS3.0/8, Ms1 3.0/8, ms1mx2.8/36, Error ellipse: s-maj=24.7km s-min=13.4km az=111.0*

ISC 17 12:13:05.4±2.0, 39.17N±0.05×142.39E±0.08, h24km±13km, n35, σ1^{s}03/36, mb3.6/10, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**0.57**	**261**	P	**Pb**	**12 13 16.6**	**-0.2**
OFUJ				S	**Sb**	**12 13 24.5**	**0.0**
MIYJ	**Miyakonagasawa**	**0.60**	**313**	P	**Pb**	**12 13 17.1**	**-0.2**
MIYJ				S	**Sb**	**12 13 25.1**	**-0.4**
JTH	**Tanohata**	**0.87**	**332**	P	**Pb**	**12 13 21.0**	**-0.9**
JTH				*e*S	**Sb**	**12 13 32.8**	**-0.3**
JOM	**Ohasama**	**0.91**	**290**	P	**Pn**	**12 13 22.1**	**-0.6**
JOM				S	**Sb**	**12 13 34.1**	**0.0**
JMK	**Ichinoseki**	**0.94**	**257**	P	**Pn**	**12 13 22.3**	**-0.8**
JMK				S	**Sb**	**12 13 35.1**	**+0.1**
JIO	**Ouri**	**1.08**	**229**	P	**Pn**	**12 13 23.7**	**-1.4**
JKZ	**Kuzumaki**	**1.16**	**315**	P	**Pn**	**12 13 26.1**	**-0.1**
JKZ				S	**Sn**	**12 13 41.0**	**-0.3**
JANG	**Nango**	**1.38**	**331**	P	**Pn**	**12 13 29.1**	**-0.1**
JANG				S	**Sn**	**12 13 46.5**	**-0.2**
JRG	**Rokugo**	**1.39**	**280**	P	**Pb**	**12 13 29.7**	**-0.9**
JRG				S	**Sb**	**12 13 48.5**	**+0.6**
JOU	**Okura**	**1.57**	**240**	P	**Pn**	**12 13 32.1**	**+0.2**
JYK	**Kaneyama**	**1.60**	**262**	P	**Pn**	**12 13 32.7**	**+0.4**
MAT	**Matsushiro**	**4.22**	**233**	P	**Pn**	**12 14 09.6**	**+1.3**
MAT				*e*S	**Sn**	**12 14 57.7**	**+0.8**
MJAR	**Matsushiro Arr**	**4.22**	**233**	P	**Pn**	**12 14 10.2**	**+1.9**
	1.5nm,0.3s,baz=39,slow=11,SNR=46						
MJAR				LR	LR	12 16 10.1	
	comp=Z,104nm,20.9s,baz=80,slow=43						
ASAJ	**Asahikawa**	**4.95**	**2**	P	**Pn**	**12 14 19.1**	**+0.9**
	1.9nm,0.3s,baz=222,slow=12,SNR=13						
ASAJ				S	**Sn**	**12 15 15.6**	**+1.0**
	2.3nm,0.3s,baz=117,slow=9.0,SNR=2.3						
ASAJ				LR	LR	12 16 49.2	
	comp=Z,95nm,18.5s,baz=136,slow=45						
USRK	**Ussuriysk Ar.**	**9.26**	**306**	P	**Pn**	**12 15 20.3**	**+2.9**
	baz=102,slow=18,SNR=3.5						
USRK				LR	LR	12 18 46.6	
	comp=Z,63nm,19.7s,baz=106,slow=36						
JNU	**Nakatsue**	**11.09**	**241**	LR	LR	12 20 17.7	
	comp=Z,85nm,18.0s,baz=131,slow=39						
KSRS	**Korea Array**	**11.50**	**356**	P	**Pn**	**12 15 50.7**	**+2.6**
	0.1nm,0.3s,baz=82,slow=13,SNR=4.8						
KSRS				LR	LR	12 19 43.0	
	comp=Z,84nm,18.3s,baz=99,slow=34						
KLR	**Kul'dur**	**12.61**	**326**	LR	LR	12 20 23.8	
	comp=Z,74nm,18.9s,baz=170,slow=34						
SONM	**Songino Array**	**27.31**	**300**	LR	LR	12 29 36.8	
	comp=Z,73nm,19.3s,baz=126,slow=36						
H11N2	**WAKE ISLAND Hy**	**28.66**	**125**	T	T	12 49 20.9	
	baz=318,slow=75,SNR=293						
H11N1	**WAKE ISLAND Hy**	**28.67**	**126**	T	T	12 49 20.1	
	baz=318,slow=75,SNR=190						
H11N3	**WAKE ISLAND Hy**	**28.68**	**125**	T	T	12 49 23.6	
	baz=318,slow=75,SNR=120						
H11S1	**WAKE ISLAND Hy**	**29.45**	**127**	T	T	12 50 19.7	
	baz=319,slow=76,SNR=28						
H11S3	**WAKE ISLAND Hy**	**29.46**	**127**	T	T	12 50 22.5	
	baz=319,slow=76,SNR=35						
H11S2	**WAKE ISLAND Hy**	**29.47**	**127**	T	T	12 50 21.9	
	baz=319,slow=76,SNR=34						
ZALV	**Zalesovo Beam**	**41.08**	**311**	P	**P**	**12 20 46.3**	**-0.7**
	0.5nm,0.4s,baz=98,slow=7.4,SNR=3.3						
CMAR	**Chiang Mai Arr**	**42.81**	**254**	P	**P**	**12 21 00.9**	**-0.6**
	0.2nm,0.3s,baz=37,slow=9.1,SNR=2.7						
MKAR	**Makanchi Array**	**43.67**	**300**	P	**P**	**12 21 08.4**	**+0.2**
	1.1nm,0.8s,baz=76,slow=10,SNR=7.6						
MKAR				LR	LR	12 39 57.1	
	comp=Z,40nm,18.6s,baz=54,slow=37						
ILAR	**Eielson Array**	**47.28**	**33**	P	**P**	**12 21 35.5**	**-1.0**
	0.6nm,0.8s,baz=264,slow=5.7,SNR=7.4						
INK	**Inuvik**	**52.14**	**28**	P	**P**	**12 22 14.1**	**+0.8**
	0.8nm,0.9s,baz=291,slow=4.9,SNR=3.7						
WRA	**Warramunga Arr**	**59.28**	**189**	P	**P**	**12 23 04.2**	**-0.9**
	0.7nm,0.4s,baz=6.6,slow=7.1,SNR=21						
YKA	**Yellowknife Ar**	**61.58**	**31**	P	**P**	**12 23 21.1**	**+0.7**
	0.1nm,0.6s,baz=302,slow=6.4,SNR=3.4						
ASAR	**Alice Springs**	**63.01**	**189**	P	**P**	**12 23 30.5**	**+0.1**
	0.4nm,0.8s,baz=10,slow=7.8,SNR=5.2						
FINES	**FINESS Array B**	**67.29**	**332**	P	**P**	**12 23 57.6**	**-0.1**
	0.9nm,0.7s,baz=24,slow=7.6,SNR=2.8						
AKASG	**Malin Array Be**	**73.08**	**322**	P	**P**	**12 24 32.2**	**-1.2**
	0.7nm,0.4s,baz=39,slow=5.4,SNR=5.8						

CASC 17 12:35:33.0±1.2, 12.32N×87.81W, h54km±28km, MD3.5, ML3.5, 1C, Near coast of Nicaragua

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CSGN	**Cosiguina Volc**	**0.69**	**20**	*e*P	Pn	12 35 46.6	-0.4
CSGN				*e*S	Sn	12 35 57.3	+0.2
CRIN	**San Cristobal**	**0.83**	**63**	*e*P	Pn	12 35 49.4	+0.7
CRIN				*e*S	Sn	12 36 01.2	+1.2
CRIN				AML	AML	12 36 06.5	
	comp=N,3μm,0.3s						
TEL3	**Telica 3**	**0.97**	**75**	*e*P	Pn	12 35 51.3	+0.9
TELN	**Telica**	**0.99**	**73**	*e*P	Pn	12 35 50.7	-0.1
CNGN	**Cerro Negro**	**1.09**	**81**	*e*P	Pn	12 35 52.4	+0.2
CNGN				*e*S	Sn	12 36 07.5	+1.1
CNGN				AML	AML	12 36 15.2	
	comp=N,402nm,0.2s						
COPN	**Copaltepe**	**1.19**	**97**	*e*P	Pn	12 35 53.4	-0.1
COPN				*e*P	Pn	12 35 53.5	+0.1
COPN				*e*S	Sn	12 36 08.4	-0.3
LCY	**Lacayo**	**1.19**	**336**	*e*P	Pn	12 35 53.6	0.0
LCY				*e*S	Sn	12 36 09.2	+0.3
MOMN	**Momotombo**	**1.24**	**86**	*e*P	Pn	12 35 54.2	+0.1
PACA	**Pacayal**	**1.25**	**336**	*e*P	Pn	12 35 54.3	0.0
PACA				*e*S	Sn	12 36 10.6	+0.5
ESTN	**Estel**	**1.60**	**61**	*e*P	Pn	12 35 58.8	-0.3
LFRS	**El Faro**	**1.78**	**317**	*e*P	Pn	12 36 02.1	+0.5
TGUH	**Tegucigalpa,Un**	**1.80**	**17**	*e*P	Pn	12 36 02.0	+0.3
BOAB	**BOACO BROADBAN**	**2.09**	**86**	*e*P	Pn	12 36 05.5	-0.2

IDC 17 12:36:35.1±2.8, 54.12N×87.25E, h0km, mb1 2.9/2, mb1mx2.8/50, mbtmp2.9/2, ML2.6/2, Error ellipse: s-maj=22.7km s-min=16.3km az=62.0, Southwestern Siberia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
I46RU	**ZALESOVO INFRA**	**1.45**	**264**	*i*		12 46 32.1	
	baz=81,slow=328,SNR=17						
ZALV	**Zalesovo Beam**	**1.45**	**264**	Pg	Pn	12 37 01.1	-1.5
	2.3nm,0.3s,baz=81,slow=16,SNR=25						
ZALV				Lg	Lg	12 37 21.3	
	2.3nm,0.3s,baz=83,slow=22,SNR=10						
KURBB	**Kurchatov Arra**	**6.39**	**240**	Pn	Pn	12 38 11.5	+1.1
	0.1nm,0.3s,baz=56,slow=14,SNR=10.0						
KURBB				Sn	Sn	12 39 22.9	-1.1
	0.0nm,0.3s,baz=60,slow=21,SNR=3.2						
KURBB				Lg	Lg	12 39 58.4	
	0.0nm,0.3s,baz=49,slow=30,SNR=4.9						
MKAR	**Makanchi Array**	**7.99**	**205**	Pn	Pn	12 38 33.6	+1.1
	0.1nm,0.3s,baz=26,slow=14,SNR=5.5						
MKAR				Sn	Sn	12 40 02.8	-0.7
	0.1nm,0.3s,baz=22,slow=25,SNR=3.1						
MKAR				Lg	Lg	12 40 49.0	
	0.0nm,0.3s,baz=20,slow=31,SNR=2.5						

IDC 17 12:44:47.3±2.0, 3.19S×128.39E, h0km, mb3.4/2, mb1 3.8/3, mb1mx3.4/48, mbtmp3.5/3, ML3.5/1, MS4.3/1, Ms1 4.3/1, ms1mx2.7/32, Error ellipse: s-maj=139.9km s-min=26.6km az=68.0, Seram

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**17.64**	**161**	P	Pn	12 48 54.5	-0.2
	0.2nm,0.3s,baz=340,slow=12,SNR=7.3						
ASAR	**Alice Springs**	**21.05**	**166**	P	P	12 49 32.6	-0.4
	2.7nm,0.9s,baz=338,slow=9.4,SNR=11						
DZM	**Mont Dzumac**	**41.41**	**120**	LR	LR	13 08 37.5	
	comp=Z,452nm,20.8s,baz=14,slow=34						
MKAR	**Makanchi Array**	**64.18**	**327**	P	P	12 55 24.1	+0.2
	0.2nm,0.7s,baz=130,slow=7.8,SNR=2.3						

IDC 17 12:46:27.9±4.2, 15.20S×177.96W, h0km, mb3.5/4, mb1 3.8/4, mb1mx3.5/45, mbtmp3.5/4, Error ellipse: s-maj=187.9km s-min=31.4km az=137.0, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
STKA	**Stephens Creek**	**40.36**	**238**	P	P	12 54 07.3	-0.2
	0.4nm,0.5s,baz=90,slow=5.1,SNR=2.4						
WRA	**Warramunga Arr**	**45.60**	**257**	P	P	12 54 49.8	-0.4
	0.2nm,0.5s,baz=88,slow=7.9,SNR=9.3						
ASAR	**Alice Springs**	**45.99**	**252**	P	P	12 54 53.5	+0.2
	0.6nm,0.3s,baz=84,slow=8.5,SNR=23						
ILAR	**Eielson Array**	**83.16**	**13**	P	P	12 58 55.4	0.0
	0.4nm,0.8s,baz=226,slow=7.5,SNR=4.1						

CSEM ***17*** *12:48:55.9, 44.41N×21.97E, h0km, ML1.6, Mining explosion.*

BEO 17 12:48:55.9±0.3, 44.41N×21.97E, h0km, M1.6/5, Mining explosion., Northwestern Balkan Peninsula

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GRUS	**Gruza**	**1.04**	**240**	*e*Pg	Pg	12 49 15.5	-0.4
GRUS				*e*Sg	Sg	12 49 30.2	+0.8
GRUS	**Gruza**	**1.04**	**240**	*e*Pg	Pg	12 49 15.5	-0.4
GRUS				*e*Sg	Sg	12 49 30.2	+0.8
GZR	**Gura Zlata**	**1.14**	**30**	*e*Pg	Pg	12 49 16.7	-1.0
GZR				*e*Sg	Sb	12 49 33.4	-0.5
GZR	**Gura Zlata**	**1.14**	**30**	*e*Pg	Pg	12 49 16.7	-1.0
GZR				*e*Sg	Sb	12 49 33.4	-0.5
TRUS	**Trudelj**	**1.14**	**261**	*e*Pg	Pg	12 49 15.5	-2.2
TRUS				*e*Sg	Sg	12 49 32.8	+0.4
TRUS	**Trudelj**	**1.14**	**261**	*e*Pg	Pg	12 49 15.5	-2.2
TRUS				*e*Sg	Sg	12 49 32.8	+0.4
BZS	**Buzias**	**1.23**	**348**	*e*Pg	Pg	12 49 18.1	-1.4
BZS	

mb1 4.4/31,mb1mx4.3/51,mbtmp4.2/31,ML3.6/6,MS3.5/18, Ms1 3.5/18,ms1mx3.2/66,Error ellipse: s-maj=13.8km s-min=10.8km az=119.0

ISCJB ***17*** *12:51:42.2₀0.4,37.07N₀0.02ₓ140.71E₀0.02,h10km₀2km, mb4.5/144,MS3.7/16,Error ellipse: s-maj=3.5km s-min=2.8km az=139.4*

JMA ***17*** *12:51:42.5,37.07Nₓ140.73E,h8km₀1km,M4.6 Broadband fault plane solution: P waves. NP1: ϕs184.00000°,δ65.00000°,λ-102.00000°. NP2: ϕs30.00000°,δ28.00000°,λ-67.00000°. Principal axes: T Plg19.0000°, Azm283.0000°; N Plg11.0000°, Azm189.0000°; P Plg68.0000°, Azm72.0000°;*

JMA Felt III J1.

BJI ***17*** *12:51:43.0,36.98Nₓ140.62E,h19km,mb4.4/37,mB4.8/24, Ms4.1/22,Ms7 3.8/20*

NEIC ***17*** *12:51:45.9₀1.2,37.09Nₓ140.61E,h24km₀8km,mb4.7/106, Error ellipse: s-maj=4.5km s-min=3.0km az=135.0*

NEIC Recorded [3 JMA] in Fukushima.

MOS ***17*** *12:51:45.3₀1.0,37.37Nₓ140.61E,h23km,mb4.8/45,Error ellipse: s-maj=7.7km s-min=5.5km az=86.4*

ISC 17 12:51:42.1₀0.9, 37.07N₀0.03ₓ140.70E₀0.03, h2km₀5km, n298,σ0s98/306, mb4.6/144, MS3.7/16, 12C-6D, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.09**	**66**	⇑P		**Pg**		**12 51 44.4**	**+0.6**
ONAJ				S		**Sg**		**12 51 45.7**	**+0.7**
JFK	**Kawauchi**	**0.33**	**25**	⇓P		**Pg**		**12 51 48.9**	**+0.5**
JHO	**Hitachi**	**0.47**	**193**	⇓P		**Pg**		**12 51 51.7**	**+0.7**
JHO				S		**Sg**		**12 51 58.3**	**+1.3**
JFT	**Otama**	**0.54**	**327**	⇑P		**Pb**		**12 51 53.4**	**-0.8**
JFT				S		**Sb**		**12 52 01.1**	**-1.3**
JSB	**Shiboa**	**0.63**	**261**	⇑P		**Pb**		**12 51 55.8**	**0.0**
JSB				S		**Sb**		**12 52 05.1**	**0.0**
JMM	**Marumori**	**0.80**	**5**	⇓P		**Pg**		**12 51 57.6**	**+0.2**
JMM				S		**Sg**		**12 52 08.5**	**+0.6**
JFY	**Yanaizu**	**0.86**	**293**	⇑P		**Pb**		**12 51 59.5**	**-0.3**
JFY				S		**Sb**		**12 52 11.3**	**-0.5**
JYT	**Yasato**	**0.93**	**206**	⇑P		**Pg**		**12 52 00.0**	**+0.1**
JYT				S		**Sg**		**12 52 12.8**	**+0.9**
MJAR	**Matsushiro Arr**	**2.07**	**256**	Pn		**Pn**		**12 52 18.9**	**+1.1**
	52nm,0.3s,baz=81,slow=17,SNR=474								
MJAR				Sn		**Sn**		**12 52 45.1**	**+1.0**
	67nm,0.3s,baz=81,slow=27,SNR=12								
MAJO	**Matsushiro**	**2.07**	**256**	*e*P		**Pn**		**12 52 18.9**	**+1.1**
MAJO				*e*				12 52 48.3	
MAJO	**Matsushiro**	**2.07**	**256**	*e*Pn		**Pn**		**12 52 18.9**	**+1.1**
MAJO				*e*Sn		**Sg**		**12 52 48.3**	**-0.2**
MAT	**Matsushiro**	**2.07**	**256**	P		**Pn**		**12 52 18.7**	**+0.9**
MAT				S		**Sg**		**12 52 47.8**	**-0.7**
MJB9	**Matsu-Tunnel**	**2.07**	**256**	*e*Pn		**Pn**		**12 52 19.0**	**+1.2**
MJB9				*e*Sn		**Sg**		**12 52 48.1**	**-0.4**
INU	**Inuyama**	**3.44**	**241**	*e*Pn		**Pn**		**12 52 38.6**	**+2.0**
JHJ	**Hachijo jima 2**	**4.01**	**191**	Pn		**Pn**		**12 52 44.9**	**+0.5**
	36nm,0.3s,baz=270,slow=23,SNR=7.0								
JHJ				Sn		**Sn**		**12 53 31.2**	**-0.8**
	47nm,0.3s,baz=66,slow=21,SNR=5.7								
JHJ2	**Mitsune**	**4.01**	**191**	*e*Pn		**Pn**		**12 52 45.8**	**+1.3**
JHJ2				*e*Sn		**Sn**		**12 53 33.1**	**+1.1**
ERM	**Erimo**	**5.29**	**20**	*e*P		**Pn**		**12 53 03.0**	**+0.9**
ERM				*e*				12 54 05.8	
ERM	**Erimo**	**5.29**	**20**	*e*Pn		**Pn**		**12 53 03.0**	**+0.9**
ERM				*e*Sn		**Sn**		**12 54 05.8**	**+2.2**
ASAJ	**Asahikawa**	**7.19**	**11**	Pn		**Pn**		**12 53 27.7**	**-0.5**
	2.0nm,0.3s,baz=218,slow=9.6,SNR=22								
ASAJ				LR		LR		12 56 03.1	
	comp=Z,68nm,19.5s,baz=352,slow=36								
ASAJ	**Asahikawa**	**7.19**	**11**	*e*Pn		**Pn**		**12 53 28.0**	**-0.2**
SHO	**Shikotan**	**8.24**	**33**	*e*P		Pn		12 53 38.1	-4.5
SHO				*e*S		Sn		12 55 08.6	-7.7
JNU	**Nakatsue**	**8.96**	**247**	Pn		**Pn**		**12 53 53.6**	**+1.1**
	0.3nm,0.3s,baz=92,slow=10,SNR=5.2								
JNU				LR		LR		12 57 38.9	
	comp=Z,405nm,18.0s,baz=66,slow=40								
JNU	**Nakatsue**	**8.96**	**247**	*e*Pn		**Pn**		**12 53 53.9**	**+1.4**
USRK	**Ussuriysk Ar.**	**9.72**	**320**	Pn		Pn		12 54 08.0	+5.1
	0.3nm,0.3s,baz=128,slow=13,SNR=23								
USRK				LR		LR		12 57 30.7	
	comp=Z,258nm,19.8s,baz=131,slow=36								
YSS	**Yuzh-Sakhalins**	**10.00**	**8**	⇑*e*P		**Pn**		**12 54 05.5**	**-1.1**
YSS				pmax		pmax			
	comp=Z,40nm,0.9s								
YSS	**Yuzh-Sakhalins**	**10.00**	**8**	*e*Pn		**Pn**		**12 54 07.0**	**+0.4**
CBIJ	**Chichi jima**	**10.02**	**172**	*e*Pn		**Pn**		**12 54 05.1**	**-2.0**
CBIJ				Sn		Sn		12 55 49.2	-11
JCJ	**Chichijima**	**10.02**	**172**	Pn		**Pn**		**12 54 04.5**	**-2.5**
	baz=0.0,slow=19								
JCJ				Sn		Sn		12 55 49.2	-11
	comp=Z,5.7nm,0.3s,baz=294,slow=21,SNR=5.7								
KSRS	**Korea Array**	**10.19**	**276**	Pn		Pn		12 54 14.1	+4.8
	comp=Z,0.3nm,0.3s,baz=93,slow=12,SNR=20								
KSRS				LR		LR		12 57 48.7	
	comp=Z,327nm,19.6s,baz=91,slow=36								
KS15	**Wonju Array Si**	**10.22**	**276**	*e*Pn		**Pn**		**12 54 11.1**	**+1.3**
KSAR	**Wonju Array Be**	**10.22**	**276**	P		Pn		12 54 14.1	+4.3
KSAR	**Wonju Array Be**	**10.22**	**276**	Pn		Pn		12 54 14.1	+4.3
MDJ	**Mudanjiang**	**11.29**	**315**	P		**Pn**		**12 54 25.5**	**+1.2**
MDJ				S		**Sn**		**12 56 31.8**	**+0.7**
MDJ				pmax		pmax			
	comp=Z,2.0nm,0.7s								
MDJ				LR		LR			
	comp=Z,290nm,17.8s								
MDJ				LR		LR			
	comp=Z,270nm,16.8s								
MDJ				LR		LR			
	comp=Z,320nm,20.7s								
CN2	**Changchun**	**13.41**	**305**	*e*P		Pn		12 54 56.8	+3.4
CN2				*es*P		P		12 55 04.9	+1.9
CN2				*e*S		**Sn**		**12 57 26.3**	**+3.3**
CN2				pmax		pmax			
	comp=Z,10.0nm,0.6s								
CN2				LR		LR			
	comp=Z,300nm,14.0s								
CN2				LR		LR			
	comp=Z,300nm,14.0s								
CN2				LR		LR			
	comp=Z,200nm,17.0s								
KLR	**Kul'dur**	**13.79**	**335**	Pn		**Pn**		**12 54 58.9**	**+0.5**
	comp=Z,0.1nm,0.3s,baz=198,slow=20,SNR=2.6								
KLR				LR		LR		12 59 59.2	
	comp=Z,220nm,19.3s,baz=149,slow=36								
TYV	**Tymovskoe**	**13.86**	**5**	*e*P		**Pn**		**12 54 58.2**	**-1.2**
TYV				pmax		pmax			
	comp=Z,15nm,0.8s								
NJ2	**Nanjing**	**18.66**	**261**	*e*P		**P**		**12 56 01.3**	**+0.1**
NJ2				pmax		pmax			
	comp=Z,10.0nm,0.7s								
BJI	**Beijing**	**19.39**	**286**	P		**Pn**		**12 56 10.9**	**+0.6**
BJI				S		**Sn**		**12 59 45.4**	**-2.8**
BJI				pmax		pmax			
	comp=Z,10.0nm,1.4s								
BJI				pmax		pmax			
	comp=Z,84nm,3.5s								
BJI				LR		LR			
	comp=Z,140nm,13.1s								
BJI				LR		LR			
	comp=Z,190nm,16.2s								
BJI				LR		LR			
	comp=Z,100nm,25.8s								
PEA0	**Petropavlovsk-**	**19.95**	**31**	*e*P		**Pn**		**12 56 16.1**	**-0.7**
PETK	**Petropavlovsk-**	**19.95**	**31**	P		**P**		**12 56 15.4**	**+0.2**
	comp=Z,0.1nm,0.3s,baz=190,slow=15,SNR=3.5								
PETK				LR		LR		13 03 17.4	
	comp=Z,51nm,19.0s,baz=240,slow=35								
HHC	**Hu-ho-hao-te**	**22.92**	**288**	*e*P		**P**		**12 56 47.4**	**0.0**
HHC				sP		sP		12 56 56.4	+8.1
HHC				S		S		13 00 50.3	-7.9
HHC				pmax		pmax			
	comp=Z,29nm,0.7s								
HHC				pmax		pmax			
	comp=Z,150nm,7.4s								
HHC				LR		LR			
	comp=Z,1μm,14.8s								
HHC				LR		LR			
	comp=Z,1μm,13.6s								
HHC				LR		LR			
	comp=Z,1μm,13.6s								
MA2	**Magadan**	**23.45**	**13**	P		**P**		**12 56 51.4**	**-1.0**
	comp=Z,18nm,0.9s,baz=226,slow=9.7,SNR=9.0								
YAK	**Yakutsk**	**25.92**	**348**	*e*P		P		12 57 20.5	+5.3
YAK				pmax		pmax			
	comp=Z,12nm,1.0s								
YAK				pmax		pmax			
	comp=N,4.0nm,0.9s								
ULN	**Ulaanbaatar**	**26.86**	**304**	⇓*i*P		**P**		**12 57 23.8**	**-0.4**
ULN				pmax		pmax			
	comp=Z,5.0nm,1.2s								
SEY	**Seymchan**	**26.87**	**12**	P		**P**		**12 57 24.4**	**+0.5**
	comp=Z,11nm,1.1s,baz=200,slow=7.7,SNR=15								
SEY	**Seymchan**	**26.87**	**12**	*ce*P		**P**		**12 57 24.9**	**+1.0**
BOD	**Bodaibo**	**27.20**	**328**	*e*P		**P**		**12 57 27.3**	**+0.4**
BOD				pmax		pmax			
	comp=Z,3.0nm,1.1s								
SONA1	**Songino Array**	**27.29**	**304**	*e*P		**P**		**12 57 27.9**	**-0.1**
SONM	**Songino Array**	**27.29**	**304**	P		**P**		**12 57 27.8**	**-0.2**
	comp=Z,2.5nm,0.8s,baz=104,slow=8.0,SNR=9.6								
SONM				PcP		**PcP**		**13 00 46.8**	**-0.7**
	comp=Z,0.6nm,0.8s,baz=116,slow=3.4,SNR=3.0								
SONM				LR		LR		13 07 55.3	
	comp=Z,95nm,20.3s,baz=91,slow=36								
H11N2	**WAKE ISLAND Hy**	**28.66**	**120**	T		T		13 27 24.6	
	baz=313,slow=75,SNR=938								
H11N1	**WAKE ISLAND Hy**	**28.66**	**120**	T		T		13 27 24.6	
	baz=313,slow=75,SNR=1036								
H11N3	**WAKE ISLAND Hy**	**28.68**	**120**	T		T		13 27 25.1	
	baz=313,slow=75,SNR=871								
H11S1	**WAKE ISLAND Hy**	**29.36**	**122**	T		T		13 28 22.0	
	baz=314,slow=76,SNR=1481								
H11S3	**WAKE ISLAND Hy**	**29.36**	**122**	T		T		13 28 22.1	
	baz=314,slow=76,SNR=1261								
H11S2	**WAKE ISLAND Hy**	**29.38**	**122**	T		T		13 28 23.3	
	baz=314,slow=76,SNR=1665								
ZAK	**Zakamensk**	**29.80**	**308**	*e*P		**P**		**12 57 48.4**	**-1.9**
ZAK				pmax		pmax			
	comp=Z,2.0nm,1.2s								
CD2	**Chengdu**	**31.10**	**270**	P		**P**		**12 58 01.3**	**-0.6**
CD2				pmax		pmax			
	comp=Z,1.0nm,0.5s								
GTA	**Gaotai**	**32.01**	**287**	*e*P		**P**		**12 58 10.0**	**+0.1**
GTA				pP		sP		12 58 16.3	+5.5
GTA				sP		pP		12 58 19.0	+8.4
GTA				PcP		**PcP**		**13 01 01.6**	**+1.8**
GTA				S		**S**		**13 03 20.1**	**-2.3**
GTA				sS		sS		13 03 30.1	+6.6
GTA				SS		**SnSn**		**13 05 12.3**	**+1.6**
GTA				pmax		pmax			
	comp=Z,2.0nm,1.0s								
GTA				pmax		pmax			
	comp=Z,56nm,5.0s								
GTA				LR		LR			
	comp=Z,180nm,17.6s								
GTA				LR		LR			
	comp=Z,150nm,17.1s								
GTA				LR		LR			
	comp=Z,120nm,14.7s								
BILL	**Bilibino**	**34.16**	**17**	⇑*i*P		**P**		**12 58 27.2**	**-1.0**
BILL				*e*PPP		PPP		12 59 54.5	
BILL				pmax		pmax			
	comp=Z,8.0nm,1.2s								
BILL	**Bilibino**	**34.16**	**17**	*e*P		**P**		**12 58 27.0**	**-1.2**
	comp=Z,6.8nm,1.1s								
KMI	**Kunming**	**34.40**	**261**	P		**P**		**12 58 32.3**	**+1.3**
KMI				pmax		pmax			
	comp=Z,5.0nm,0.8s								
KMI				pmax		pmax			
	comp=Z,97nm,6.0s								
TIXI	**Tiksi**	**35.19**	**354**	⇑*i*P		**P**		**12 58 35.8**	**-1.2**
TIXI				pmax		pmax			
	comp=Z,9.0nm,2.9s								
TIXI	**Tiksi**	**35.19**	**354**	*e*P		**P**		**12 58 35.0**	**-2.1**
	comp=Z,10nm,1.7s								
WMQ	**Urumqi**	**40.31**	**297**	*e*P		**P**		**12 59 22.9**	**+2.1**
WMQ				pP		sP		12 59 27.0	+5.2
WMQ				sP		pP		12 59 30.1	+8.6
WMQ				S		**S**		**13 05 27.5**	**-1.7**
WMQ				pmax		pmax			
	comp=Z,4.0nm,0.6s								
WMQ				pmax		pmax			
	comp=Z,25nm,3.8s								
WMQ				LR		LR			
	comp=Z,14nm,21.4s								
WMQ				LR		LR			
	comp=Z,24nm,21.4s								
WMQ				LR		LR			
	comp=Z,34nm,21.4s								
CMAR	**Chiang Mai Arr**	**40.95**	**255**	P		**P**		**12 59 25.8**	**-0.5**
	comp=Z,0.4nm,0.4s,baz=41,slow=8.4,SNR=2.9								
CMAR				LR		LR		13 19 28.6	
	comp=Z,31nm,18.1s,baz=80,slow=41								
ZAA0	**Zalesovo Array**	**41.47**	**312**	*e*P		**P**		**12 59 30.0**	**-0.1**
ZALV	**Zalesovo Beam**	**41.47**	**312**	P		**P**		**12 59 29.6**	**-0.5**
	comp=Z,1.9nm,0.6s,baz=103,slow=8.0,SNR=12								
ZALV				PcP		**PcP**		**13 01 26.1**	**-1.6**
	comp=Z,2.3nm,0.9s,baz=68,slow=4.0,SNR=4.2								
ZALV				LR		LR		13 17 09.2	
	comp=Z,62nm,18.3s,baz=72,slow=37								
NRIK	**Noril'sk**	**43.00**	**335**	LR		LR		13 18 25.0	
	comp=Z,54nm,19.0s,baz=48,slow=37								
MK01	**Makanchi Array**	**43.61**	**302**	*e*P		**P**		**12 59 47.5**	**-0.2**
MK31	**Makanchi Array**	**43.62**	**302**	*e*P		**P**		**12 59 47.7**	**0.0**
MK31	**Makanchi Array**	**43.62**	**302**	*e*P		**P**		**12 59 47.7**	**0.0**
MKAR	**Makanchi Array**	**43.62**	**302**	P		**P**		**12 59 47.2**	**-0.5**
	comp=Z,1.2nm,0.5s,baz=87,slow=9.3,SNR=20								
MKAR				ScP		**ScP**		**13 05 26.6**	**-1.0**
	comp=Z,0.6nm,1.0s,baz=71,slow=5.3,SNR=3.8								
MKAR				LR		LR		13 18 15.1	
	comp=Z,82nm,18.6s,baz=80,slow=36								
MKAR	**Makanchi Array**	**43.62**	**302**	*i* P		**P**		**12 59 47.5**	**-0.2**
MKAR				pmax		pmax			
	comp=Z,1.0nm,0.5s								
MAKZ	**Makanchi**	**43.83**	**302**	*e*P		**P**		**12 59 49.6**	**+0.2**
MAKZ				pmax		pmax			
	comp=Z,3.0nm,0.8s								
MAKZ	**Makanchi**	**43.83**	**302**	*e*P		**P**		**12 59 49.5**	**+0.2**
	comp=Z,3.1nm,0.8s								
KURK	**Kurchatov**	**45.46**	**308**	*e*P		**P**		**13 00 01.4**	**-1.0**
KURK				pmax		pmax			
	comp=Z,14nm,0.9s								
KURK	**Kurchatov**	**45.46**	**308**	*e*P		**P**		**13 00 01.4**	**-1.0**
	comp=Z,14nm,0.9s								
TT01	**Tatalina**	**45.72**	**35**	*e*P		**P**		**13 00 04.8**	**+0.6**
TTA	**Tatalina**	**45.72**	**35**	*e*P		**P**		**13 00 05.0**	**+0.7**
TTA				pmax		pmax			
	comp=Z,5.0nm,1.1s								
TTA	**Tatalina**	**45.72**	**35**	*e*P		**P**		**13 00 05.0**	**+0.7**
	comp=Z,4.9nm,1.1s								
SVW2	**Sparrevohn**	**45.84**	**37**	*e*P		**P**		**13 00 06.3**	**+1.0**
	comp=Z,9.9nm,0.9s								
PDGK	**Podgornoye**	**46.26**	**298**	P		**P**		**13 00 09.4**	**+0.7**
PDGK				pmax		pmax			
	comp=Z,10.0nm,1.1s								
RSO	**Redoubt South**	**47.23**	**38**	*e*P		**P**		**13 00 17.4**	**+1.0**
KDAK	**Kodiak Island**	**47.46**	**42**	P		P		13 00 32.7	+15
	comp=Z,14nm,1.0s,baz=295,slow=4.0,SNR=7.1								
KDAK	**Kodiak Island**	**47.46**	**42**	*e*P		**P**		**13 00 17.8**	**-0.1**
KDAK				pmax		pmax			
	comp=Z,16nm,0.9s								
KDAK	**Kodiak Island**	**47.46**	**42**	*e*P		**P**		**13 00 17.8**	**-0.1**
	comp=Z,16nm,0.9s								
PPLA	**Purkeypile**	**47.47**	**35**	*e*P		**P**		**13 00 19.5**	**+1.4**
	comp=Z,13nm,1.3s								
CAST	**Castle Rocks**	**47.52**	**34**	*e*P		**P**		**13 00 19.2**	**+0.8**
	comp=Z,6.0nm,1.2s								
SPU	**Mount Spurr**	**47.55**	**37**	*e*P		**P**		**13 00 19.6**	**+0.9**
BPAW	**Bear Paw Mtn.**	**48.01**	**33**	*e*P		**P**		**13 00 23.0**	**+0.9**
	comp=Z,4.1nm,1.0s								
KTH	**Kantishna Hill**	**48.04**	**34**	*e*P		**P**		**13 00 23.5**	**+1.1**
	comp=Z,12nm,1.0s								
MLY	**Manley**	**48.12**	**32**	*e*P		**P**		**13 00 23.9**	**+0.8**
	comp=Z,5.7nm,0.8s								
TRF	**Thorofare Moun**	**48.33**	**34**	*e*P		**P**		**13 00 25.8**	**+1.0**
	comp=Z,4.1nm,0.9s								
COLD	**Coldfoot**	**48.40**	**29**	*e*P		**P**		**13 00 25.9**	**+0.8**
	comp=Z,2.5nm,0.9s								
RC01	**Rabbit Creek A**	**48.68**	**37**	*e*P		**P**		**13 00 27.9**	**+0.5**
	comp=Z,13nm,1.2s								
SEW	**Seward**	**48.89**	**39**	*e*P		**P**		**13 00 28.9**	**-0.1**
	comp=Z,43nm,1.9s								
MCK	**McKinley**	**48.92**	**34**	*e*P		**P**		**13 00 29.5**	**+0.3**
MCK				pmax		pmax			
	comp=Z,9.0nm,1.2s								
MCK	**McKinley**	**48.92**	**34**	*e*P		**P**		**13 00 29.4**	**+0.3**
	comp=Z,9.2nm,1.2s								
PMR	**Palmer**	**48.94**	**37**	*e*P		**P**		**13 00 29.2**	**-0.1**
PMR				pmax		pmax			
	comp=Z,14nm,1.2s								
PMR	**Palmer**	**48.94**	**37**	*e*P		**P**		**13 00 29.2**	**-0.1**
	comp=Z,14nm,1.2s								
RND	**Reindeer**	**48.97**	**34**	*e*P		**P**		**13 00 29.6**	**-0.1**
RND				pmax		pmax			
	comp=Z,10.0nm,1.2s								
RND	**Reindeer**	**48.97**	**34**	*e*P		**P**		**13 00 29.6**	**-0.1**
	comp=Z,10nm,1.2s								
TKM2	**Tokmak 2**	**49.11**	**298**	*e*P		**P**		**13 00 31.7**	**+0.5**
TKM2				pmax		pmax			
	comp=Z,10.0nm,1.1s								
TKM2	**Tokmak 2**	**49.11**	**298**	*e*P		**P**		**13 00 31.7**	**+0.5**
	comp=Z,10nm,1.1s								
MDM	**Murphy Dome**	**49.19**	**32**	*e*P		**P**		**13 00 32.1**	**+0.9**
	comp=Z,12nm,1.0s								
WRH	**Wood River Hil**	**49.27**	**33**	*e*P		**P**		**13 00 32.1**	**+0.3**
	comp=Z,4.9nm,0.9s								
SML	**Sawmill**	**49.30**	**36**	*e*P		**P**		**13 00 32.4**	**+0.2**
SML				pmax		pmax			
	comp=Z,7.0nm,0.8s								
SML	**Sawmill**	**49.30**	**36**	*e*P		**P**		**13 00 32.4**	**+0.2**
	comp=Z,7.3nm,0.8s								
COLA	**College**	**49.36**	**32**	⇑*e*P		**P**		**13 00 32.6**	**+0.2**
COLA				pmax		pmax			
	comp=Z,4.0nm,0.9s								
CCB	**Clear Creek Bu**	**49.38**	**33**	*e*P		**P**		**13 00 34.1**	**+1.4**
	comp=Z,15nm,2.0s								
HDA	**Harding Lake**	**49.77**	**33**	*e*P		**P**		**13 00 35.8**	**+0.2**
	comp=Z,24nm,1.5s								
ILAR	**Eielson Array**	**49.77**	**32**	P		**P**		**13 00 35.4**	**-0.3**
	comp=Z,3.8nm,0.8s,baz=270,slow=6.3,SNR=39								
ILAR				PcP		**PcP**		**13 01 55.7**	**-0.8**
	comp=Z,1.2nm,1.1s,baz=257,slow=5.3,SNR=3.0								
ILB	**Eielson Array**	**49.77**	**32**	*e*P		**P**		**13 00 35.4**	**-0.3**
IL1	**Eielson Array**	**49.77**	**32**	*e*P		**P**		**13 00 35.0**	**-0.7**
SCM	**Sheep Creek Mo**	**49.78**	**36**	*e*P		**P**		**13 00 36.3**	**+0.5**
SCM				pmax		pmax			
	comp=Z,49nm,2.0s								
SCM	**Sheep Creek Mo**	**49.78**	**36**	*e*P		**P**		**13 00 36.3**	**+0.5**
	comp=Z,49nm,2.0s								
FRU	**Bishkek**	**49.83**	**298**	*e*P		**P**		**13 00 37.0**	**+0.6**
KSH	**Kashi**	**49.87**	**294**	*e*P		P		13 00 41.8	+4.9
KSH				*es*P		sP		13 00 50.8	+13
KSH				*e*ScP		**ScP**		**13 05 54.4**	**+0.4**
KSH				S		**S**		**13 07 51.6**	**+3.9**
KSH				pmax		pmax			
	comp=Z,67nm,4.5s								
KSH				LR		LR			
	comp=Z,92nm,4.4s								
KSH				LR		LR			
	comp=Z,87nm,6.3s								
KSH				LR		LR			
	comp=Z,170nm,6.6s								
OTUK	**Ortayu**	**49.94**	**306**	P		**P**		**13 00 37.6**	**+0.4**
OTUK				pmax		pmax			
	comp=Z,6.0nm,0.9s								
AAK	**Ala-Archa**	**49.97**	**298**	⇓*i*P		**P**		**13 00 38.2**	**+0.5**
AAK				pmax		pmax			
	comp=Z,8.0nm,1.2s								
AAK	**Ala-Archa**	**49.97**	**298**	*e*P		**P**		**13 00 39.5**	**+1.8**
	comp=Z,2.2nm,0.8s								
BRVK	**Borovoye**	**50.18**	**312**	*e*P		**P**		**13 00 39.1**	**+0.2**
BRVK				pmax		pmax			
	comp=Z,7.0nm,1.0s								
BRVK	**Borovoye**	**50.18**	**312**	*e*P		**P**		**13 00 39.1**	**+0.2**
	comp=Z,6.6nm,1.0s								
FYU	**Fort Yukon**	**50.37**	**30**	*e*P		**P**		**13 00 41.6**	**+1.5**
	comp=Z,44nm,2.0s								
KLU	**Klutina**	**50.48**	**37**	*e*P		**P**		**13 00 41.7**	**+0.5**
	comp=Z,13nm,1.3s								
EYAK	**Cordova Ski Ar**	**50.68**	**38**	*e*P		**P**		**13 00 43.5**	**+1.0**
	comp=Z,24nm,1.6s								
ZRNK	**Zerenda**	**50.96**	**312**	*e*P		**P**		**13 00 44.4**	**-0.4**
ZRNK				pmax		pmax			
	comp=Z,8.0nm,0.9s								
ZRNK	**Zerenda**	**50.96**	**312**	*e*P		**P**		**13 00 44.4**	**-0.4**
	comp=Z,7.6nm,0.9s								
DOT	**Dot Lake**	**51.09**	**34**	*e*P		**P**		**13 00 45.6**	**-0.1**
	comp=Z,25nm,1.5s								
RAGM	**Ragged Mountai**	**51.23**	**38**	*e*P		**P**		**13 00 47.8**	**+1.1**
	comp=Z,8.5nm,0.4s								
MENT	**Mentasta**	**51.33**	**35**	*e*P		**P**		**13 00 48.6**	**+1.1**
	comp=Z,8.6nm,1.0s								
SFK	**Sufi-Kurgan**	**51.51**	**295**	P		**P**		**13 00 50.3**	**+0.9**
SFK				pmax		pmax			
	comp=Z,8.0nm,1.1s								
EGAK	**Eagle**	**52.22**	**32**	*e*P		**P**		**13 00 54.0**	**0.0**
	comp=Z,2.6nm,0.8s								
KKAR	**Karatay Array**	**52.61**	**300**	*e*P		**P**		**13 00 57.8**	**+0.5**
KKAR	**Karatay Array**	**52.61**	**300**	*e*P		**P**		**13 00 57.8**	**+0.5**
INK	**Inuvik**	**54.62**	**27**	P		**P**		**13 01 11.6**	**0.0**
	comp=Z,2.1nm,0.5s,baz=293,slow=6.9,SNR=24								
INK	**Inuvik**	**54.62**	**27**	*e*P		**P**		**13 01 12.0**	**+0.4**
INK				pmax		pmax			
	comp=Z,7.0nm,1.

	comp=Z,5.7nm,1.4s								
H04A	**Detroit Lake**	**69.52**	**49**	*e*P		**P**	**13 02 52.4**	**+0.3**
	comp=Z,6.6nm,0.8s								
BBOO	**Buckleboo**	**69.65**	**184**	*e*P		**P**	**13 02 52.8**	**0.0**
	comp=Z,44nm,2.0s								
LHI	**Lord Howe Isla**	**70.36**	**163**	*e*P		**P**	**13 02 57.4**	**+0.3**
	comp=Z,202nm,1.3s								
KBZ	**Khabaz**	**70.45**	**310**	P		**P**	**13 02 57.8**	**0.0**
	comp=Z,2.2nm,0.9s,baz=87,slow=3.8,SNR=5.5								
KIV	**Kislovodsk**	**70.45**	**311**	*e*P		**P**	**13 02 59.2**	**+1.2**
KIV				*e*			13 03 10.2		
KIV				*e*			13 03 21.2		
KIV					pmax	pmax			
	comp=Z,10.0nm,0.9s								
KIV					MLR	MLR			
	comp=Z,47nm,18.0s								
NEW	**Newport**	**70.50**	**44**	*e*P		**P**	**13 02 58.4**	**+0.2**
NEW					pmax	pmax			
	comp=Z,3.0nm,0.7s								
NEW	**Newport**	**70.50**	**44**	*e*P		**P**	**13 02 58.4**	**+0.2**
	comp=Z,3.2nm,0.7s								
SUMG	**Summit**	**70.65**	**360**	*e*P		**P**	**13 02 59.5**	**+0.4**
SUMG					pmax	pmax			
	comp=Z,13nm,1.0s								
SUMG	**Summit**	**70.65**	**360**	*e*P		**P**	**13 02 59.5**	**+0.4**
	comp=Z,13nm,1.0s								
YBH	**Yreka Blue Hor**	**70.77**	**52**	*e*P		**P**	**13 03 01.4**	**+1.4**
YBH					pmax	pmax			
	comp=Z,35nm,2.0s								
YBH	**Yreka Blue Hor**	**70.77**	**52**	*e*P		**P**	**13 03 01.4**	**+1.4**
	comp=Z,35nm,2.0s								
KMRM	**Mail Ridge**	**70.95**	**54**	*e*P		**P**	**13 03 02.4**	**+1.4**
	comp=Z,43nm,1.6s								
K05A	**Summer Lake**	**71.36**	**50**	*e*P		**P**	**13 03 05.0**	**+1.4**
	comp=Z,46nm,1.8s								
WALA	**Waterton Lakes**	**71.80**	**42**	*e*P		**P**	**13 03 06.5**	**+0.4**
	comp=Z,4.3nm,0.8s								
BMO	**Blue Mountains**	**72.33**	**47**	*e*P		**P**	**13 03 09.7**	**+0.4**
	comp=Z,3.3nm,0.8s								
JTMT	**Jette**	**72.36**	**43**	*e*P		**P**	**13 03 09.7**	**+0.2**
YBMT	**Yellow Bay**	**72.44**	**43**	*e*P		**P**	**13 03 10.1**	**+0.1**
NC405	**NORSAR Array S**	**73.72**	**337**	*e*P		**P**	**13 03 17.1**	**0.0**
NC204	**NORSAR Array S**	**73.89**	**337**	*e*P		**P**	**13 03 18.1**	**-0.1**
AKASG	**Malin Array Be**	**73.92**	**322**	P		**P**	**13 03 17.4**	**-1.1**
AKASG					LR	LR	13 37 28.1		
	comp=Z,66nm,20.7s,baz=45,slow=37								
AKASG	**Malin Array Be**	**73.92**	**322**	*i* P		P	13 03 13.1	-5.4	
NB2	**NORSAR Subarra**	**73.93**	**337**	P		**P**	**13 03 17.7**	**-0.7**	
	comp=Z,0.7nm,0.7s,baz=38,slow=5.9								
NOA	**NORSAR Array B**	**73.93**	**337**	P		**P**	**13 03 17.6**	**-0.9**	
	comp=Z,1.9nm,1.0s,baz=43,slow=5.5,SNR=4.1								
NOA					LR	LR	13 39 08.1		
	comp=Z,44nm,18.4s,baz=20,slow=38								
FFC	**Flin Flon**	**73.98**	**32**	*e*P		**P**	**13 03 18.7**	**-0.1**
FFC					pmax	pmax			
	comp=Z,8.0nm,0.9s								
FFC	**Flin Flon**	**73.98**	**32**	*e*P		**P**	**13 03 18.7**	**-0.1**
	comp=Z,7.5nm,0.9s								
NBO02	**NORSAR Array S**	**74.04**	**337**	*e*P		**P**	**13 03 18.3**	**-0.7**
FCC	**Fort Churchill**	**74.23**	**26**	*e*P		**P**	**13 03 19.7**	**-0.4**
FCC					pmax	pmax			
	comp=Z,5.0nm,0.9s								
FCC	**Fort Churchill**	**74.23**	**26**	*e*P		**P**	**13 03 19.7**	**-0.4**
	comp=Z,5.4nm,0.9s								
HRY	**Holter Researc**	**74.32**	**43**	*e*P		**P**	**13 03 22.3**	**+1.3**
LRM	**Limekiln Ridge**	**74.52**	**44**	*e*P		**P**	**13 03 22.7**	**+0.2**
EGMT	**Eagleton**	**74.62**	**41**	*e*P		**P**	**13 03 23.1**	**+0.3**
	comp=Z,8.5nm,0.8s								
DLMT	**Dillon**	**74.72**	**44**	*e*P		**P**	**13 03 24.2**	**+0.8**
	comp=Z,6.6nm,0.8s								
HLID	**Hailey**	**74.77**	**47**	*e*P		**P**	**13 03 24.4**	**+0.6**
	comp=Z,2.1nm,0.9s								
MCMT	**McKenzie Canyo**	**74.90**	**45**	*e*P		**P**	**13 03 25.9**	**+1.3**
BMN	**Battle Mountai**	**74.93**	**51**	*e*P		**P**	**13 03 25.9**	**+1.1**
BMN					pmax	pmax			
	comp=Z,3.0nm,0.8s								
BMN	**Battle Mountai**	**74.93**	**51**	*e*P		**P**	**13 03 25.9**	**+1.1**
	comp=Z,3.0nm,0.8s								
BOZ	**Bozeman (W)**	**75.08**	**44**	*e*P		**P**	**13 03 26.2**	**+0.6**
BOZ					pmax	pmax			
	comp=Z,5.0nm,0.8s								
BOZ	**Bozeman (W)**	**75.08**	**44**	*e*P		**P**	**13 03 26.2**	**+0.6**
	comp=Z,4.9nm,0.8s								
NVAR	**Mina Array Bea**	**75.42**	**53**	P		**P**	**13 03 28.5**	**+0.8**
	comp=Z,1.8nm,0.4s,baz=262,slow=17,SNR=21								
YMR	**Madison River**	**76.06**	**44**	*e*P		**P**	**13 03 32.3**	**+1.0**
	comp=Z,3.7nm,0.7s								
GCMT	**Greycliff**	**76.07**	**43**	*e*P		**P**	**13 03 31.9**	**+0.7**
YFT	**Old Faithful**	**76.27**	**44**	*e*P		**P**	**13 03 33.7**	**+1.2**
	comp=Z,5.2nm,0.7s								
H17A	**Grant Village**	**76.45**	**44**	*e*P		**P**	**13 03 36.0**	**+2.5**
	comp=Z,6.2nm,0.8s								
IMW	**Indian Meadow**	**76.55**	**45**	*e*P		**P**	**13 03 35.5**	**+1.3**
	comp=Z,6.5nm,0.8s								
RLMT	**Red Lodge**	**76.71**	**43**	*e*P		**P**	**13 03 35.7**	**+0.7**
	comp=Z,2.7nm,0.8s								
MOOW	**Moose Ponds**	**76.76**	**45**	*e*P		**P**	**13 03 36.4**	**+1.2**
	comp=Z,1.9nm,0.8s								
HVU	**Hansel Valley**	**76.81**	**47**	*e*P		**P**	**13 03 36.8**	**+1.3**
HVU					pmax	pmax			
	comp=Z,4.0nm,0.7s								
HVU	**Hansel Valley**	**76.81**	**47**	*e*P		**P**	**13 03 36.8**	**+1.3**
	comp=Z,3.7nm,0.7s								
LOHW	**Long Hollow**	**76.92**	**45**	*e*P		**P**	**13 03 37.8**	**+1.6**
	comp=Z,12nm,1.9s								
SNOW	**Snow King Moun**	**76.93**	**45**	*e*P		**P**	**13 03 37.5**	**+1.3**
	comp=Z,17nm,1.8s								
DGMT	**Dagmar**	**77.17**	**38**	*e*P		**P**	**13 03 37.3**	**+0.1**
	comp=Z,8.8nm,0.8s								
BGU	**Big Grassy Mou**	**77.18**	**48**	*e*P		**P**	**13 03 38.5**	**+0.9**
	comp=Z,4.7nm,1.1s								
R11A	**Troy Canyon, C**	**77.19**	**52**	*e*P		**P**	**13 03 38.5**	**+0.8**
	comp=Z,3.0nm,0.9s								
SPUT	**South Promonto**	**77.29**	**48**	*e*P		**P**	**13 03 38.6**	**+0.4**
	comp=Z,21nm,1.0s								
TPNV	**Topopah Spring**	**77.61**	**53**	*e*P		**P**	**13 03 40.4**	**+0.3**
TPNV					pmax	pmax			
	comp=Z,7.0nm,1.0s								
TPNV	**Topopah Spring**	**77.61**	**53**	*e*P		**P**	**13 03 40.4**	**+0.3**
	comp=Z,7.1nm,1.0s								
HWUT	**Hardware Ranch**	**77.63**	**47**	*e*P		**P**	**13 03 40.3**	**+0.2**
	comp=Z,6.5nm,1.1s								
DUG	**Dugway, Tooele**	**77.76**	**49**	*e*P		**P**	**13 03 41.8**	**+1.0**
DUG					pmax	pmax			
	comp=Z,4.0nm,0.8s								
DUG	**Dugway, Tooele**	**77.76**	**49**	*e*P		**P**	**13 03 41.8**	**+1.0**
	comp=Z,4.4nm,0.8s								
TCUT	**Toone Canyon**	**78.02**	**47**	*e*P		**P**	**13 03 43.3**	**+0.9**
	comp=Z,7.1nm,0.7s								
BW06	**Boulder Array**	**78.05**	**45**	*e*P		**P**	**13 03 42.5**	**0.0**
	comp=Z,2.3nm,0.8s								
PD31	**Pinedale Array**	**78.05**	**45**	*e*P		**P**	**13 03 42.5**	**0.0**
PDAR	**Pinedale Array**	**78.05**	**45**	P		**P**	**13 03 42.3**	**-0.2**
	comp=Z,2.2nm,0.7s,baz=260,slow=2.4,SNR=27								
PSUT	**Pine Spring**	**78.15**	**51**	*e*P		**P**	**13 03 43.9**	**+0.8**
	comp=Z,3.8nm,1.0s								
JLU	**Jordanelle**	**78.32**	**48**	*e*P		**P**	**13 03 45.3**	**+1.2**
	comp=Z,10nm,1.7s								
NLU	**North Lily Min**	**78.36**	**49**	*e*P		**P**	**13 03 45.0**	**+0.8**
	comp=Z,2.9nm,0.8s								
BRTR	**Keskin Array B**	**78.40**	**311**	P		**P**	**13 03 44.9**	**+0.5**
	comp=Z,1.5nm,0.9s,baz=117,slow=4.3,SNR=7.4								
BRTR	**Keskin Array B**	**78.40**	**311**	*i* P		**P**	**13 03 45.9**	**+1.5**
BRTR					pmax	pmax			
	comp=Z,1.0nm,0.9s								
MPU	**Maple Canyon**	**78.58**	**48**	*e*P		**P**	**13 03 46.3**	**+0.9**
	comp=Z,3.7nm,0.8s								
STHS	**Stebnicka Huta**	**78.60**	**325**	*e*P		**P**	**13 03 46.3**	**+1.1**
STHS	**Stebnicka Huta**	**78.60**	**325**	*e*P		**P**	**13 03 46.3**	**+1.1**
BR231	**Keskin MP Arra**	**78.85**	**312**	*e*P		**P**	**13 03 45.5**	**-1.3**
MLR	**Muntele Rosu**	**78.99**	**319**	*e*P		**P**	**13 03 48.3**	**+0.8**
MLR					pmax	pmax			
	comp=Z,11nm,1.4s								
MLR	**Muntele Rosu**	**78.99**	**319**	*e*P		**P**	**13 03 48.3**	**+0.8**
	comp=Z,11nm,1.4s								
MSU	**Marysvale**	**79.20**	**50**	*e*P		**P**	**13 03 50.2**	**+1.3**
MSU	**Marysvale**	**79.20**	**50**	*e*P		**P**	**13 03 50.2**	**+1.3**
P17A	**Butcher Ranch,**	**79.46**	**48**	*e*P		**P**	**13 03 51.2**	**+0.9**
	comp=Z,4.7nm,0.6s								
LCMT	**Little Creek M**	**79.48**	**51**	*e*P		**P**	**13 03 51.1**	**+0.7**
	comp=Z,4.1nm,0.9s								
P18A	**Preston Nutter**	**79.66**	**48**	*e*P		**P**	**13 03 53.1**	**+1.6**
	comp=Z,3.8nm,0.8s								
KNB	**Kanab**	**79.74**	**51**	*e*P		**P**	**13 03 53.0**	**+1.2**
KNB					pmax	pmax			
	comp=Z,25nm,2.0s								
KNB	**Kanab**	**79.74**	**51**	*e*P		**P**	**13 03 53.0**	**+1.2**
	comp=Z,25nm,2.0s								
ULM	**Lac du Bonnet**	**79.79**	**33**	P		**P**	**13 03 51.0**	**-0.6**
	comp=Z,2.3nm,0.6s,baz=238,slow=5.2,SNR=3.4								
ULM	**Lac du Bonnet**	**79.79**	**33**	*e*P		**P**	**13 03 52.6**	**+1.0**
ULM					pmax	pmax			
	comp=Z,48nm,2.0s								
ULM	**Lac du Bonnet**	**79.79**	**33**	*e*P		**P**	**13 03 52.6**	**+1.0**
	comp=Z,48nm,2.0s								
SRU	**San Rafael Swe**	**79.82**	**48**	*e*P		**P**	**13 03 52.8**	**+0.6**
SRU					pmax	pmax			
	comp=Z,7.0nm,0.7s								
SRU	**San Rafael Swe**	**79.82**	**48**	*e*P		**P**	**13 03 52.8**	**+0.6**
	comp=Z,6.6nm,0.7s								
DPC	**Dobruska-Polom**	**80.13**	**328**	*e*P		**P**	**13 03 54.2**	**+0.7**
DPC	**Dobruska-Polom**	**80.13**	**328**	*e*P		**P**	**13 03 54.2**	**+0.7**
KRLC	**Kraliky**	**80.13**	**327**	*e*P		P	13 03 57.0	+3.5	
KRLC	**Kraliky**	**80.13**	**327**	*e*P		P	13 03 57.0	+3.5	
RSSD	**Black Hills**	**80.18**	**41**	*e*P		**P**	**13 03 53.9**	**-0.2**
RSSD					pmax	pmax			
	comp=Z,23nm,1.9s								
RSSD	**Black Hills**	**80.18**	**41**	*e*P		**P**	**13 03 53.9**	**-0.2**
	comp=Z,23nm,1.9s								
VYHS	**Vyhne**	**80.37**	**325**	*e*P		**P**	**13 03 56.3**	**+1.5**
VYHS	**Vyhne**	**80.37**	**325**	*e*P		**P**	**13 03 56.3**	**+1.5**
O20A	**White River Ci**	**80.50**	**47**	*e*P		**P**	**13 03 57.4**	**+1.5**
	comp=Z,21nm,1.8s								
BRG	**Berggiesshubel**	**80.73**	**329**	*e*P		**P**	**13 03 58.3**	**+1.6**
	comp=Z,2.7nm,0.9s								
BRG	**Berggiesshubel**	**80.73**	**329**	*e*P		**P**	**13 03 58.3**	**+1.6**
BRG					pmax	pmax			
	comp=Z,3.0nm,0.9s								
CLL	**Collm**	**80.78**	**330**	*e*P		**P**	**13 03 56.0**	**-0.9**
	comp=Z,9.0nm,1.3s								
CLL	**Collm**	**80.78**	**330**	*e*P		**P**	**13 03 56.0**	**-0.9**
CLL					pmax	pmax			
	comp=Z,9.0nm,1.3s								
GLA	**Glamis**	**80.92**	**55**	*e*P		**P**	**13 03 58.6**	**+0.6**
GLA					pmax	pmax			
	comp=Z,4.0nm,1.0s								
GLA	**Glamis**	**80.92**	**55**	*e*P		**P**	**13 03 58.6**	**+0.6**
	comp=Z,3.7nm,1.0s								
PV09	**Paradox Valley**	**81.04**	**48**	*e*P		**P**	**13 03 59.8**	**+0.8**
PRU	**Pruhonice**	**81.16**	**328**	*e*P		**P**	**13 04 00.5**	**+1.6**
PRU	**Pruhonice**	**81.16**	**328**	*e*P		**P**	**13 04 00.5**	**+1.6**
PV10	**Paradox Valley**	**81.18**	**48**	*e*P		**P**	**13 04 00.6**	**+1.0**
PV04	**Paradox Valley**	**81.25**	**48**	*e*P		**P**	**13 04 00.6**	**+0.7**
PV05	**Paradox Valley**	**81.34**	**49**	*e*P		**P**	**13 04 01.0**	**+0.5**
WUAZ	**Wupatki**	**81.59**	**52**	*e*P		**P**	**13 04 03.1**	**+1.4**
	comp=Z,6.0nm,1.0s								
PV01	**Paradox Valley**	**81.62**	**48**	*e*P		**P**	**13 04 03.3**	**+1.4**
KHC	**Kasperske Hory**	**82.22**	**328**	*e*P		**P**	**13 04 04.7**	**+0.1**
KHC					*e*pP	**PcP**	**13 04 10.8**	**+0.8**	
KHC	**Kasperske Hory**	**82.22**	**328**	*e*P		**P**	**13 04 04.7**	**+0.1**
KHC					*e*		13 04 10.8		
ISCO	**Idaho Springs**	**82.24**	**45**	*e*P		**P**	**13 04 05.9**	**+0.6**
ISCO					pmax	pmax			
	comp=Z,17nm,2.0s								
ISCO	**Idaho Springs**	**82.24**	**45**	*e*P		**P**	**13 04 05.9**	**+0.6**
	comp=Z,17nm,2.0s								
X16A	**Lo Mia Camp, P**	**82.25**	**53**	*e*P		**P**	**13 04 05.7**	**+0.4**
	comp=Z,4.7nm,1.2s								
GERES	**GERESS Array B**	**82.38**	**328**	P		**P**	**13 04 03.9**	**-1.7**
	comp=Z,0.5nm,0.6s,baz=70,slow=5.8,SNR=4.2								
S22A	**4UR Ranch, Ore**	**82.91**	**48**	*e*P		**P**	**13 04 09.8**	**+1.0**
	comp=Z,3.0nm,0.9s								
ECSD	**EROS Data Cent**	**84.24**	**38**	*e*P		**P**	**13 04 14.4**	**-0.8**
	comp=Z,5.2nm,0.8s								
T25A	**Trinidad**	**84.73**	**47**	*e*P		**P**	**13 04 18.5**	**+0.4**
	comp=Z,5.4nm,0.8s								
BFO	**Black Forest**	**84.99**	**330**	*e*P		**P**	**13 04 19.7**	**+0.8**
BFO					pmax	pmax			
	comp=Z,5.0nm,1.0s								
BFO	**Black Forest**	**84.99**	**330**	*e*P		**P**	**13 04 19.7**	**+0.8**
	comp=Z,5.2nm,1.0s								
ANMO	**Albuquerque**	**85.00**	**49**	*e*P		**P**	**13 04 20.7**	**+1.3**
ANMO					pmax	pmax			
	comp=Z,4.0nm,1.1s								
ANMO	**Albuquerque**	**85.00**	**49**	*e*P		**P**	**13 04 20.7**	**+1.3**
	comp=Z,4.1nm,1.1s								
121A	**Cookes Peak, D**	**85.79**	**52**	*e*P		**P**	**13 04 23.7**	**+0.3**
	comp=Z,3.8nm,0.9s								
TX31	**Lajitas Ar. Si**	**90.55**	**52**	*e*P		**P**	**13 04 46.2**	**+0.1**
TXAR	**Lajitas Array**	**90.55**	**52**	P		**P**	**13 04 46.2**	**+0.2**
	comp=Z,1.6nm,0.8s,baz=293,slow=3.2,SNR=24								
LPAZ	**La Paz**	**147.17**	**59**	PKPbc		**PKPdf**	**13 11 26.5**	**+0.6**
	comp=Z,4.9nm,0.8s,baz=328,slow=2.4,SNR=18								
LPAZ	**La Paz**	**147.17**	**59**	*e*PKPbc		**PKPbc**	**13 11 27.8**	**-0.2**
SIV	**San Ignacio**	**151.49**	**48**	PKPbc		**PKPbc**	**13 11 37.7**	**-0.5**
	comp=Z,6.6nm,0.8s,baz=293,slow=1.7,SNR=11								

IDC 17 13:00:31.5±1.4, 19.95N×146.20E, h0km, mb3.3/5, mb1 3.5/5, mb1mx3.3/59, mbtmp3.3/5, Error ellipse: s-maj=54.2km s-min=24.0km az=88.0, Mariana Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**41.31**	**197**	P	P	13 08 19.6	+0.4
	0.4nm,0.7s,baz=16,slow=8.3,SNR=4.8						
ASAR	**Alice Springs**	**44.98**	**196**	P	P	13 08 48.0	-0.7
	0.2nm,0.7s,baz=20,slow=8.2,SNR=3.3						
ZALV	**Zalesovo Beam**	**57.32**	**322**	P	P	13 10 20.2	-1.0
	0.4nm,0.4s,baz=130,slow=7.4,SNR=3.3						
MKAR	**Makanchi Array**	**57.95**	**313**	P	P	13 10 26.8	+1.0
	0.1nm,0.4s,baz=32,slow=4.3,SNR=3.1						
YKA	**Yellowknife Ar**	**76.67**	**28**	P	P	13 12 24.1	0.0
	0.2nm,0.7s,baz=287,slow=5.3,SNR=3.9						

*ISCJB **17** 13:02:05.8±0.5, 20.30S±0.04×178.70W±0.02, h592km±6km, mb4.9/267, Error ellipse: s-maj=5.5km s-min=3.1km az=168.2*

*MOS **17** 13:02:06.9±0.9, 20.22S×178.71W, h605km, mb5.0/53, Error ellipse: s-maj=8.1km s-min=7.6km az=67.4*

*BJI **17** 13:02:08.4, 20.00S×178.52W, h622km, mb5.0/46, mB5.0/25*

*GCMT **17** 13:02:08.1±0.3, 20.11S×178.85W, h618km±2km, MW5.4/73, Moment Tensor Solution. s73,c104; Duration: 1s2 Moment tensor: Scale 10^17^Nm; Mrr-0.34±.03; Mθθ 0.19±.05; Mφφ 0.14±.05; Mrθ-0.99±.05; Mθφ-0.07±.04; Mφr-0.98±.05; Best double couple: M0 1.41200×10^17^ NP1:φ346.00000°, δ86.00000°, λ-91.00000°. NP2:φ238.00000°, δ5.00000°, λ-78.00000°. Principal axes: T 1.2930, Plg41.0000°, Azm137.0000°; N 0.2390, Plg1.0000°, Azm46.0000°; P -1.5320, Plg49.0000°, Azm315.0000°; nsta1 refers to body waves, cutoff=40s.*

*IDC **17** 13:02:08.5±0.5, 20.26S×178.74W, h608km±4km, mb4.4/43, mb1 4.4/43, mb1mx4.4/53, mbtmp5.3/43 Error ellipse: s-maj=9.0km s-min=6.3km az=162.0*

*NEIC **17** 13:02:08.1±0.3, 20.24S×178.71W, h608km±3km, mb4.9/166, Error ellipse: s-maj=5.4km s-min=3.5km az=154.0*

ISC 17 13:02:07.9±0.3, 20.32S±0.04×178.66W±0.04, h610km±2km, h611km:pP-P, n922, σ1s45/1103, mb4.9/267, 53C-32D, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MSVF	**Nonsavu**	**4.04**	**309**	*e*P	**P**	**13 03 35.5**	**+0.9**
MSVF	**Nonsavu**	**4.04**	**309**	*e*P	**P**	**13 03 35.5**	**+0.9**
NIUE	**Niue**	**8.32**	**83**	P	**P**	**13 04 09.7**	**-1.0**
	baz=8.3,SNR=18						
RAO	**Raoul Island**	**8.92**	**176**	P	**P**	**13 04 14.7**	**-1.4**
	99nm,0.3s,baz=324,slow=19,SNR=7.9						
RAO				S	**S**	**13 05 56.0**	**-5.5**
	58nm,0.3s,baz=96,slow=22,SNR=2.1						
RAO	**Raoul Island**	**8.92**	**176**	*e*P	**P**	**13 04 14.5**	**-1.7**
RAO				S	**S**	**13 05 56.0**	**-5.5**
RAO				*e*S	S	13 06 02.6	+1.1
RAO	**Raoul Island**	**8.92**	**176**	*e*P	**P**	**13 04 14.5**	**-1.7**
RAO				S	**S**	**13 05 56.0**	**-5.5**
RAO				*e*S	S	13 06 02.6	+1.2
AFI	**Afiamalu**	**9.16**	**47**	P	**P**	**13 04 15.9**	**-3.0**
	27nm,0.3s,baz=194,slow=8.3,SNR=37						
AFI				S	S	13 05 57.0	-9.1
	21nm,0.3s,baz=53,slow=23,SNR=11						
FUNA	**Funafuti**	**11.91**	**350**	*e*P	**P**	**13 04 45.0**	**-0.9**
DZM	**Mont Dzumac**	**14.01**	**260**	P	**P**	**13 05 09.4**	**+2.7**
	20nm,0.3s,baz=136,slow=22,SNR=150						
DZM				S	**S**	**13 07 35.7**	**+2.9**
	baz=197,slow=14,SNR=3.5						
OUZ	**Omahuta**	**16.34**	**203**	*e*P	**P**	**13 05 30.4**	**+2.7**
	191nm,1.2s						
WMGZ	**Waiomatatini S**	**17.62**	**188**	PN	**P**	**13 05 39.9**	**+0.5**
RAR	**Rarotonga**	**17.68**	**96**	P	**P**	**13 05 35.2**	**-5.0**
	4.2nm,0.3s,baz=210,slow=20,SNR=4.2						
URZ	**Urewera**	**18.25**	**191**	P	**P**	**13 05 42.7**	**-2.4**
	5.7nm,0.3s,baz=4.3,slow=10,SNR=91						
URZ				S	**S**	**13 08 33.9**	**-7.4**
	1.0nm,0.3s,baz=183,slow=20,SNR=9.3						
URZ				ScP	**ScP**	**13 12 24.6**	**+1.0**
	0.2nm,0.3s,baz=356,slow=3.3,SNR=3.1						
URZ	**Urewera**	**18.25**	**191**	PN	**P**	**13 05 42.6**	**-2.4**
URZ				SN	**S**	**13 08 33.4**	**-7.9**
URZ	**Urewera**	**18.25**	**191**	*e*P	**P**	**13 05 42.6**	**-2.4**
	44nm,0.6s						
URZ				*e*S	**S**	**13 08 37.5**	**-3.8**
URZ				ScP	**ScP**	**13 12 24.6**	**+1.0**
BKZ	**Black Stump Fm**	**19.24**	**192**	PN	**P**	**13 05 52.1**	**-2.1**
BKZ	**Black Stump Fm**	**19.24**	**192**	*e*P	**P**	**13 05 52.0**	**-2.2**
	105nm,1.7s						
BKZ				*e*S	**S**	**13 08 55.1**	**-2.2**
QRZ	**Quartz Range**	**21.78**	**198**	PN	**P**	**13 06 17.3**	**+0.4**
NNZ	**Nelson**	**21.91**	**196**	PN	**P**	**13 06 16.9**	**-1.0**
NNZ				*e*SN	**S**	**13 09 34.2**	**-4.9**
THZ	**Tophouse**	**22.54**	**197**	PN	**P**	**13 06 23.1**	**-0.6**
THZ				SN	**S**	**13 09 44.5**	**-4.8**
KHZ	**Kahutara**	**22.99**	**195**	*e*P	**P**	**13 06 26.4**	**-1.2**
	101nm,0.9s						
TARA	**Tarawa**	**23.07**	**338**	*e*P	**P**	**13 06 28.7**	**0.0**
	753nm,0.8s						
HNR	**Honiara**	**23.31**	**295**	P	**P**	**13 06 29.9**	**-1.0**
	22nm,0.5s,baz=150,slow=8.1,SNR=2.1						
HNR	**Honiara**	**23.31**	**295**	P	**P**	**13 06 28.9**	**-2.0**
HNR				pmax	pmax		
	comp=Z,138nm,0.9s						
HNR	**Honiara**	**23.31**	**295**	P	**P**	**13 06 28.9**	**-2.0**
	comp=Z,138nm,0.9s						
TBI	**Tubuai**	**27.25**	**102**	*e*P	**P**	**13 07 06.2**	**+0.8**
	comp=Z,223nm,1.0s						
MLZ	**Mavora Lakes**	**27.26**	**201**	*e*P	**P**	**13 07 06.0**	**+0.8**
	comp=Z,52nm,1.0s						
PAE	**Paea**	**27.61**	**89**	*e*P	**P**	**13 07 08.4**	**-0.2**
	comp=Z,23nm,1.0s						
PPT2	**Papeete2**	**27.62**	**89**	*e*P	**P**	**13 07 09.0**	**+0.2**
	comp=Z,179nm,1.2s						
PPT	**Papeete**	**27.63**	**89**	P	**P**	**13 07 09.1**	**+0.4**
	comp=Z,147nm,0.9s,baz=281,slow=10,SNR=6.5						
DCZ	**Deep Cove**	**27.68**	**202**	*e*P	**P**	**13 07 09.6**	**+0.8**
	comp=Z,138nm,1.2s						
WHZ	**Wether Hill Ro**	**27.78**	**200**	*e*P	**P**	**13 07 10.6**	**+0.9**
	comp=Z,98nm,0.9s						
TIAR	**Tiarei**	**27.84**	**89**	*e*P	**P**	**13 07 10.6**	**-0.1**
	comp=Z,32nm,0.9s						
TVO	**Taravao**	**27.89**	**90**	*e*P	**P**	**13 07 11.2**	**+0.1**
	comp=Z,35nm,0.7s						
EIDS	**Eidsvold**	**28.30**	**254**	P	**P**	**13 07 15.1**	**+0.6**
	baz=28,SNR=16						
EIDS	**Eidsvold**	**28.30**	**254**	*e*P	**P**	**13 07 15.1**	**+0.6**
	comp=Z,100nm,1.5s						
ARMA	**Armidale**	**28.59**	**243**	P	**P**	**13 07 18.8**	**+1.7**
	baz=29,SNR=18						
ARMA	**Armidale**	**28.59**	**243**	*e*P	**P**	**13 07 18.6**	**+1.5**
	comp=Z,37nm,0.8s						
MEH	**Mehetia**	**28.99**	**90**	*e*P	**P**	**13 07 21.0**	**+0.4**
	comp=Z,44nm,0.9s						
PMOR	**Pomariorio Ree**	**29.76**	**85**	*e*P	**P**	**13 07 27.1**	**-0.1**
	comp=Z,346nm,1.1s						
MGCD	**Mangrove Creek**	**29.77**	**238**	P	**P**	**13 07 28.8**	**+1.7**
	baz=30,SNR=5.7						
VAH	**Vaihoa**	**29.95**	**85**	*e*P	**P**	**13 07 28.4**	**-0.4**
	comp=Z,211nm,1.0s						
RMQ	**Roma**	**30.47**	**252**	P	**P**	**13 07 34.9**	**+1.7

baz=40,SNR=76
RKT Rikitea 40.57 102 *e*P **P** **13 08 56.7 +0.3**
comp=N,67nm,0.9s
BBOO Buckleboo 42.08 243 P **P** **13 09 08.3 +0.2**
baz=42,SNR=256
BBOO Buckleboo 42.08 243 *e*P **P** **13 09 08.5 +0.3**
comp=N,91nm,0.7s
JAY Jayapura 43.40 289 P **P** **13 09 19.6 +0.9**
comp=N,34nm,0.8s,baz=119,slow=18,SNR=149
JAY S **S** **13 15 05.7 +1.5**
comp=N,0.6nm,0.9s,baz=299,slow=23,SNR=1.6
JAY Jayapura 43.40 289 P **P** **13 09 19.1 +0.4**
comp=N,418nm,1.0s,comp=N,3µm
GENI Genyem 43.84 288 P **P** **13 09 22.6 +0.5**
comp=N,460nm,1.0s,comp=N,4µm
AS01 Alice Springs 43.92 257 *e*P **P** **13 09 22.7 +0.1**
AS31 Alice Springs 43.96 257 *e*P **P** **13 09 23.1 +0.2**
comp=N,34nm,0.8s
ASAR Alice Springs 43.96 257 P **P** **13 09 23.2 +0.3**
comp=N,102nm,0.8s,baz=94,slow=7.6,SNR=1119
ASAR PcP **PcP** **13 10 55.1 +0.3**
comp=N,11nm,0.6s,baz=103,slow=4.0,SNR=7.8
ASAR pP **pP** **13 11 09.5 +0.2**
comp=N,8.8nm,0.9s,baz=84,slow=7.8,SNR=3.6
ASAR ScP **ScP** **13 13 52.3 +2.9**
comp=N,6.4nm,0.9s,baz=102,slow=4.4,SNR=6.5
ASAR S **S** **13 15 11.0 -0.9**
comp=N,6.0nm,0.8s,baz=93,slow=15,SNR=13
ASAR ScS **ScS** **13 18 16.3 +1.9**
comp=N,4.7nm,1.0s,baz=94,slow=6.4,SNR=11
WB2 Warramunga Arr 44.00 262 *e*P **P** **13 09 23.2 -0.1**
comp=N,213nm,1.2s
WRAB Tennant Creek 44.01 262 *d i*P **P** **13 09 23.1 -0.2**
WRAB pmax pmax
comp=Z,293nm,1.0s
WRAB Tennant Creek 44.01 262 *e*P **P** **13 09 23.0 -0.3**
comp=Z,266nm,1.4s
WRA Warramunga Arr 44.01 262 P **P** **13 09 23.0 -0.3**
comp=Z,43nm,0.3s,baz=97,slow=7.7,SNR=1055
WRA PcP **PcP** **13 10 55.4 +0.3**
comp=Z,11nm,1.0s,baz=93,slow=4.1,SNR=5.8
WRA ScP **ScP** **13 13 52.3 +2.7**
comp=Z,6.2nm,1.1s,baz=91,slow=4.3,SNR=5.6
WRA S **S** **13 15 10.5 -2.2**
comp=Z,3.0nm,0.7s,baz=95,slow=12,SNR=8.0
WRA ScS **ScS** **13 18 16.2 +1.4**
comp=Z,9.6nm,1.3s,baz=94,slow=9.1,SNR=7.9
WC1 Warramunga Arr 44.02 262 P **P** **13 09 23.7 +0.3**
baz=44
KDU Kakadu 47.33 271 P **P** **13 09 48.5 +0.1**
baz=47,SNR=26
MTN Manton Dam 48.54 271 P **P** **13 09 57.3 -0.2**
baz=49,SNR=41
MTN Manton Dam 48.54 271 *e*P **P** **13 09 57.0 -0.4**
comp=Z,153nm,0.9s
WRKA Warakurna 48.92 254 P **P** **13 10 00.2 0.0**
baz=49,SNR=405
GUMO Guam 49.21 310 P **P** **13 10 02.9 +0.5**
comp=Z,196nm,0.8s,baz=182,slow=9.1,SNR=7.3
GUMO Guam 49.21 310 *e*P **P** **13 10 02.7 +0.4**
GUMO pmax pmax
comp=Z,389nm,1.0s
GUMO Guam 49.21 310 *e*P **P** **13 10 02.7 +0.4**
comp=Z,389nm,1.0s
SAUI Saumlaki 49.87 277 P **P** **13 10 06.9 -0.3**
comp=Z,368nm,1.0s,comp=Z,4µm
KNRA Kununurra 50.05 266 P **P** **13 10 08.9 +0.4**
baz=50
FAKI Fak Fak 50.86 283 P **P** **13 10 14.9 +0.5**
comp=Z,117nm,1.3s,comp=Z,1µm
BNDI Bandanaira 52.39 280 P **P** **13 10 26.0 +0.6**
comp=Z,353nm,1.3s,comp=Z,4µm
FITZ Fitzroy Crossi 52.44 262 pP pP 13 12 18.9 +0.7
comp=Z,6.6nm,0.8s,baz=122,slow=14,SNR=2.4
FITZ Fitzroy Crossi 52.44 262 P **P** **13 10 26.2 +0.6**
baz=52,SNR=19
FITZ Fitzroy Crossi 52.44 262 *e*P **P** **13 10 26.0 +0.3**
comp=Z,258nm,1.9s
FITZ pP **pP** **13 12 18.9 +0.7**
SWI Sorong 52.60 285 P **P** **13 10 27.6 +0.7**
comp=Z,420nm,0.9s,comp=Z,4µm
PALU Palau 53.66 296 P **P** **13 10 35.2 +0.9**
baz=54,SNR=13
MSAI Masohi 53.74 281 P **P** **13 10 35.1 +0.2**
comp=Z,22nm,1.1s,comp=Z,408nm
KMBL Kambalda 54.07 245 P **P** **13 10 36.9 -0.1**
baz=54,SNR=11
NLAI Namlea 55.46 280 P **P** **13 10 47.6 +0.7**
comp=Z,109nm,1.4s,comp=Z,2µm
SOEI Soe 55.88 272 P **P** **13 10 50.8 +0.9**
comp=Z,454nm,1.0s
LBMI Labuha 56.12 283 P **P** **13 10 51.9 +0.5**
comp=Z,156nm,1.0s,comp=Z,1µm
TNTI Ternate 56.82 285 P **P** **13 10 57.0 +0.8**
comp=Z,328nm,1.1s,comp=Z,3µm
SANI Sanana 56.94 281 P **P** **13 10 58.1 +1.0**
comp=Z,149nm,1.2s,comp=Z,2µm
MBWA Marble Bar 57.29 257 *e*P **P** **13 10 59.1 -0.2**
comp=Z,58nm,0.8s
KLBR Kellerberrin 57.57 245 P **P** **13 11 01.2 +0.1**
baz=58,SNR=23
NWAO Narrogin (SRO) 57.90 243 P **P** **13 11 03.6 +0.3**
comp=Z,28nm,0.9s,baz=21,slow=0.0,SNR=11
NWAO ScP **ScP** **13 14 51.2 +1.9**
comp=Z,8.5nm,1.0s,baz=43,slow=0.1,SNR=3.1
NWAO Narrogin (SRO) 57.90 243 P **P** **13 11 03.6 +0.3**
baz=58,SNR=8.3
NWAO Narrogin (SRO) 57.90 243 *e*P **P** **13 11 03.3 0.0**
NWAO pmax pmax
comp=Z,53nm,1.2s
NWAO Narrogin (SRO) 57.90 243 *e*P **P** **13 11 03.3 0.0**
comp=Z,53nm,1.2s
NWAO ScP **ScP** **13 14 51.2 +1.9**
RKGY Rocky Gully 57.99 241 P **P** **13 11 04.7 +0.9**
baz=58,SNR=9.0
VNDA Vanda 58.03 185 P **P** **13 11 05.2 +1.8**
comp=Z,15nm,1.0s,baz=11,slow=7.6,SNR=60
VNDA ScP **ScP** **13 14 50.8 +1.8**
comp=Z,3.2nm,1.1s,baz=331,slow=11,SNR=3.4
VNDA Vanda 58.03 185 *e*P **P** **13 11 05.0 +1.6**
VNDA pmax pmax
comp=Z,86nm,1.8s
VNDA Vanda 58.03 185 *e*P **P** **13 11 05.0 +1.6**
comp=Z,86nm,1.8s
VNDA ScP **ScP** **13 14 50.8 +1.8**
MMRI Maumere 58.13 272 P **P** **13 11 05.4 +0.3**
comp=Z,125nm,0.8s,comp=Z,2µm
BLDU Ballidu 58.56 246 P **P** **13 11 07.8 0.0**
baz=59,SNR=37
MORW Morawa 59.33 248 P **P** **13 11 13.0 +0.1**
baz=59,SNR=9.9
CBIJ Chichi jima 60.50 320 P **P** **13 11 20.4 -0.2**
JCJ Chichijima 60.50 320 P **P** **13 11 20.4 -0.2**
comp=Z,21nm,0.3s,baz=64,slow=14,SNR=11
BSSI Bau Bau, Buton 60.58 274 P **P** **13 11 22.6 +1.2**
comp=Z,58nm,1.2s
DAV Davao City (W) 61.19 291 P **P** **13 11 26.3 +1.0**
comp=Z,131nm,0.4s,baz=76,slow=3.1,SNR=5.4
DAV Davao City (W) 61.19 291 *e*P **P** **13 11 26.1 +0.8**
APSI Ampana 61.38 280 P **P** **13 11 27.7 +1.1**
comp=Z,150nm,1.1s,comp=Z,2µm
MRSI Marisa 61.65 282 P **P** **13 11 28.3 -0.1**
comp=Z,50nm,1.2s
KAPI Kappang 61.65 275 P **P** **13 11 28.5 +0.1**
comp=Z,21nm,0.9s,baz=186,slow=3.7,SNR=8.3
KAPI Kappang 61.65 275 *e*P **P** **13 11 28.2 -0.2**
comp=Z,23nm,0.9s
GIRL Giralia 62.00 255 P **P** **13 11 31.9 +1.4**
baz=62,SNR=10
PLAI Plampang 62.25 271 P **P** **13 11 32.4 +0.1**
comp=Z,220nm,1.0s,comp=Z,3µm
TWSI Taliwang, Sumb 63.12 270 P **P** **13 11 37.5 -0.3**
comp=Z,128nm,1.1s,comp=Z,2µm
RPN Rapa Nui 63.13 111 *e*P **P** **13 11 38.6 +0.9**
RPN pmax pmax
comp=Z,783nm,1.1s
RPN Rapa Nui 63.13 111 *e*P **P** **13 11 38.6 +0.9**
comp=Z,783nm,1.1s
JAGI Jajag, Banyuwa 65.77 270 P **P** **13 11 54.0 -0.5**
comp=Z,105nm,1.0s
ABJI Asem Bagus 65.90 270 P **P** **13 11 55.2 -0.1**
JHJ Hachijo jima 2 66.32 323 P **P** **13 11 57.4 0.0**
comp=Z,307nm,0.7s,baz=184,slow=6.6,SNR=7.1
MYLDM Lahad Datu 66.69 285 *e*P **P** **13 12 02.2 +2.0**
comp=Z,63nm,0.9s
TGY Tagaytay City 68.52 295 P **P** **13 12 12.3 +1.0**
comp=Z,184nm,0.3s,baz=180,slow=13,SNR=3.7
KKM Kota Kinabalu 69.12 285 *e*P **P** **13 12 15.2 +0.3**
comp=Z,67nm,0.9s
INU Inuyama 69.51 322 *e*P **P** **13 12 16.4 -0.3**
comp=Z,33nm,1.0s
JOW Kunigami 69.58 310 *e*P **P** **13 12 17.9 +0.5**
comp=Z,40nm,0.9s
MJAR Matsushiro Arr 69.70 324 P **P** **13 12 17.6 -0.3**
comp=Z,24nm,0.7s,baz=157,slow=5.8,SNR=61
MJAR pP **pP** **13 14 22.1 +1.5**
comp=Z,5.6nm,1.2s,baz=152,slow=6.7,SNR=4.8
MJAR Matsushiro Arr 69.70 324 P **P** **13 12 17.6 -0.3**
MJAR *PP **pP** **13 14 22.1 +1.5**
MJAR pmax pmax
comp=Z,26nm,0.7s
MJAR pmax pmax
comp=Z,6.0nm,1.2s
MAJO Matsushiro 69.70 324 *d i*P **P** **13 12 17.4 -0.5**
MAJO pmax pmax
comp=Z,149nm,0.6s
MAJO Matsushiro 69.70 324 *e*P **P** **13 12 17.6 -0.2**
comp=Z,32nm,0.7s
MAT Matsushiro 69.70 324 P **P** **13 12 17.8 -0.1**
MAT *e*S **S** **13 20 30.6 -8.8**
MJB9 Matsu-Tunnel 69.71 324 *e*P **P** **13 12 17.7 -0.2**
comp=Z,8.1nm,0.7s
QSPA South Pole Qui 69.75 180 *e*P **P** **13 12 19.1 +1.2**
SBUM Sibu 71.37 280 *e*P **P** **13 12 29.0 +0.8**
comp=Z,39nm,1.2s
JNU Nakatsue 71.72 317 P **P** **13 12 29.9 +0.1**
comp=Z,61nm,0.9s,baz=82,slow=4.5,SNR=24
JNU Nakatsue 71.72 317 *e*P **P** **13 12 29.9 +0.1**
comp=Z,104nm,1.0s
LEM Lembang 72.43 269 P P 13 12 40.5 +6.0
comp=Z,138nm,0.9s,baz=105,slow=6.1,SNR=35
TWG Pinlang 72.77 303 *e*P **P** **13 12 34.2 -1.8**
comp=Z,171nm,0.6s
YULB Yu-li 72.89 304 *e*P **P** **13 12 35.4 -1.3**
comp=Z,25nm,0.8s
NACB Ninganchiao 73.07 304 *e*P **P** **13 12 36.6 -1.1**
comp=Z,137nm,1.2s
ASAJ Asahikawa 73.28 332 P **P** **13 12 40.2 +1.8**
comp=Z,96nm,0.8s,baz=170,slow=12,SNR=35
ASAJ Asahikawa 73.28 332 *e*P **P** **13 12 39.4 +1.0**
comp=Z,155nm,1.0s
SSLB Suanglung 73.36 304 *e*P **P** **13 12 38.3 -1.1**
comp=Z,60nm,1.0s
TPUB Ta-pu 73.36 303 *e*P **P** **13 12 38.4 -1.1**
comp=Z,119nm,0.8s
YHNB Yeheng 73.50 305 *e*P **P** **13 12 40.1 -0.1**
comp=Z,78nm,1.1s
TATO Taipei 73.57 305 *e*P **P** **13 12 40.5 0.0**
UNV Unalaska Valle 74.60 7 *e*P **P** **13 12 44.6 -1.0**
comp=Z,52nm,0.8s
YSS Yuzh-Sakhalins 75.46 334 ⇓ *i*P **P** **13 12 51.8 +1.2**
YSS pmax pmax
comp=Z,100nm,1.0s
YSS Yuzh-Sakhalins 75.46 334 *e*P **P** **13 12 51.6 +1.1**
comp=Z,104nm,0.9s
PEA0 Petropavlovsk- 75.94 346 *e*P **P** **13 12 53.1 0.0**
PEA0B Petropavlovsk- 75.94 346 *e*P **P** **13 12 53.1 0.0**
comp=Z,136nm,1.1s
PETK Petropavlovsk- 75.94 346 P **P** **13 12 53.1 0.0**
comp=Z,74nm,0.9s,baz=141,slow=8.6,SNR=53
KSRS Korea Array 76.35 319 P **P** **13 12 56.6 +1.0**
comp=Z,21nm,0.9s,baz=128,slow=5.8,SNR=39
KS15 Wonju Array Si 76.36 319 *e*P **P** **13 12 56.6 +0.9**
KSAR Wonju Array Be 76.36 319 P **P** **13 12 56.6 +0.8**
KSAR Wonju Array Be 76.36 319 P **P** **13 12 56.6 +0.8**
KS01 Wonju Array Si 76.38 319 *e*P **P** **13 12 55.9 0.0**
SDPT Sand Point 76.94 11 *e*P **P** **13 12 57.7 -0.8**
comp=Z,83nm,0.7s
INCN Inchon 77.17 318 *e*P **P** **13 13 00.6 +0.4**
comp=Z,49nm,0.9s
VLA Vladivostok 77.79 325 *d i*P **P** **13 13 03.7 +0.4**
VLA pmax pmax
comp=Z,39nm,1.0s
MSHR Mys Shultsa 77.81 325 *ce*P **P** **13 13 05.1 +1.6**
CHGN Chignik 78.22 11 *e*P **P** **13 13 04.6 -0.7**
USRK Ussuriysk Ar. 78.47 326 P **P** **13 13 07.8 +0.8**
comp=Z,38nm,0.8s,baz=128,slow=3.4,SNR=77
TYV Tymovskoe 78.63 336 *e*P **P** **13 13 08.8 +1.2**
TYV pmax pmax
comp=Z,44nm,0.8s
MYKOM Kota Tinggi 78.91 276 *e*P **P** **13 13 10.6 +0.6**
comp=Z,59nm,1.0s
KMRM Mail Ridge 79.01 40 *e*P **P** **13 13 11.8 +1.7**
comp=Z,46nm,0.9s
ARVC Arvin 79.11 46 P **P** **13 13 11.6 +1.0**
baz=236
NJ2 Nanjing 79.29 310 *e*P **P** **13 13 10.1 -1.5**
NJ2 pmax pmax
comp=Z,10.0nm,0.7s
MURC Murrieta 79.39 48 P **P** **13 13 13.2 +1.1**
baz=237
BFSC Mount Baldy Ra 79.42 47 P **P** **13 13 13.1 +0.7**
baz=237
RCTC Rector, Farmer 79.50 45 P **P** **13 13 13.6 +1.1**
baz=235
EDW2 Edwards Air Fo 79.54 47 P **P** **13 13 13.9 +0.9**
baz=236,SNR=6.2
MONP2 Monument Peak 79.56 49 P **P** **13 13 14.0 +0.7**
baz=238
ISA Isabella, Lake 79.65 46 P **P** **13 13 14.5 +1.0**
baz=236
ISA Isabella, Lake 79.65 46 *e*P **P** **13 13 14.6 +1.0**
ISA pmax pmax
comp=Z,9.0nm,0.8s
ISA Isabella, Lake 79.65 46 *e*P **P** **13 13 14.6 +1.0**
comp=Z,8.7nm,0.8s
CMB Columbia Colle 79.75 43 *e*P **P** **13 13 14.3 +0.4**
CMB pmax pmax
comp=Z,7.0nm,0.8s
CMB Columbia Colle 79.75 43 *e*P **P** **13 13 14.3 +0.4**
comp=Z,7.4nm,0.8s
SRIG Santa Rosalia 79.84 56 *e*P **P** **13 13 15.4 +0.9**
comp=Z,17nm,0.8s
AFDM Forest Hills D 79.92 42 *e*P **P** **13 13 15.5 +0.7**
comp=Z,9.1nm,0.9s
PFO Pinyon Flats O 79.92 49 P **P** **13 13 16.1 +1.0**
comp=Z,5.3nm,1.2s,baz=290,slow=4.1,SNR=3.0
PFO Pinyon Flats O 79.92 49 P **P** **13 13 15.8 +0.8**
baz=237
WDC Whiskeytown Da 79.93 40 *e*P **P** **13 13 16.3 +1.5**
WDC pmax pmax
comp=Z,18nm,1.1s
WDC Whiskeytown Da 79.93 40 *e*P **P** **13 13 16.2 +1.5**
comp=Z,18nm,1.1s
BBRC Big Bear Solar 79.94 48 P **P** **13 13 15.8 +0.5**
baz=237
ORV Oroville 79.95 41 *e*P **P** **13 13 15.7 +0.8**
ORV pmax pmax
comp=Z,9.0nm,0.8s
ORV Oroville 79.95 41 *e*P **P** **13 13 15.7 +0.8**
comp=Z,8.6nm,0.8s
SLBS Sierra La Lagu 79.95 60 *e*P **P** **13 13 16.5 +1.2**
comp=Z,14nm,0.8s
HABR Khabarovsk 79.99 331 *ce*P **P** **13 13 14.0 -0.8**
HABR *e* 13 13 18.8
HABR *e*PP **pP** **13 15 19.7 -2.7**
HABR *e*SP **sP** **13 16 20.8 -3.3**
HABR 13 16 27.5
HABR *e*PPP PPP 13 18 22.6
HABR *e*S **S** **13 22 30.7 +1.1**
HABR *e* 13 22 48.1
HABR *e*SS **SS** **13 28 00.3 +1.6**
HABR *e*SSS SSS 13 31 33.3
HABR pmax pmax
comp=E,32nm,1.1s
HABR pmax pmax
comp=Z,121nm,1.1s
HABR pmax pmax
comp=N,23nm,1.1s
HABR MLR MLR
comp=Z,83nm,20.0s
MDJ Mudanjiang 80.02 325 P **P** **13 13 16.1 +1.0**
MDJ sP sP 13 16 25.6 +1.2
MDJ S **S** **13 22 31.5 +1.3**
MDJ pmax pmax
comp=Z,64nm,1.0s
MDJ pmax pmax
comp=Z,170nm,3.9s
SWSC Sam W. Stewart 80.03 49 P **P** **13 13 16.2 +0.7**
baz=238
N02D Trinity Center 80.08 40 P **P** **13 13 16.6 +1.0**
baz=232,SNR=5.8
LRMC Laurel Mtn Rad 80.09 46 P **P** **13 13 16.9 +1.0**
baz=236
OHAK Old Harbor 80.12 14 *e*P **P** **13 13 15.2 0.0**
comp=Z,63nm,1.3s
O03D Paynes Creek 80.21 41 P **P** **13 13 17.4 +1.1**
baz=233,SNR=13
QIZ Qiongzhong 80.22 294 P **P** **13 13 18.0 +1.3**
QIZ pP **pP** **13 15 24.0 -0.4**
QIZ S **S** **13 22 34.8 +1.5**
QIZ pmax pmax
comp=Z,15nm,1.4s
RRX Edison Barstow 80.22 47 P **P** **13 13 17.5 +1.0**
baz=237
M02C Callahan 80.24 39 P **P** **13 13 18.1 +1.6**
baz=232,SNR=6.5
L02D Cave Junction, 80.28 38 P **P** **13 13 17.9 +1.3**
baz=231
BELC Belle Mtn. Jos 80.45 48 P **P** **13 13 18.3 +0.5**
baz=238
MLAC Mammoth, Mammo 80.52 44 P **P** **13 13 18.8 +0.6**
baz=235
MPMC Manual Prospec 80.54 46 P **P** **13 13 19.1 +0.8**
baz=236,SNR=7.9
YBH Yreka Blue Hor 80.54 39 P **P** **13 13 19.8 +1.7**
comp=Z,13nm,0.7s,baz=205,slow=1.8,SNR=42
YBH Yreka Blue Hor 80.54 39 *e*P **P** **13 13 19.7 +1.7**
YBH pmax pmax
comp=Z,14nm,0.8s
YBH Yreka Blue Hor 80.54 39 *e*P **P** **13 13 19.6 +1.7**
comp=Z,14nm,0.8s
DAC Darwin (Calif) 80.59 46 *e*P **P** **13 13 19.3 +0.8**
DAC pmax pmax
comp=Z,4.0nm,0.7s
DAC Darwin (Calif) 80.59 46 *e*P **P** **13 13 19.3 +0.8**
comp=Z,3.5nm,0.7s
TIN Tinemaha, Big 80.59 45 P **P** **13 13 19.2 +0.8**
baz=236
WAKR Walker 80.63 43 *e*P **P** **13 13 19.8 +1.0**
BC3 Big Chuckawall 80.65 49 P **P** **13 13 19.5 +0.7**
baz=238
HEC Hector Ludlow 80.66 48 P **P** **13 13 19.6 +0.8**
baz=237
GLA Glamis 80.78 50 P **P** **13 13 21.0 +1.7**
baz=239,SNR=9.4
GLA Glamis 80.78 50 *e*P **P** **13 13 20.2 +0.8**
GLA pmax pmax
comp=Z,14nm,0.8s
GLA Glamis 80.78 50 *e*P **P** **13 13 20.2 +0.8**
comp=Z,14nm,0.8s
KDAK Kodiak Island 80.79 14 P P 13 13 34.1 +15
comp=Z,14nm,0.8s,baz=192,slow=2.1,SNR=8.2
KDAK Kodiak Island 80.79 14 *e*P **P** **13 13 18.9 +0.2**
KDAK pmax pmax
comp=Z,24nm,0.9s
KDAK Kodiak Island 80.79 14 *e*P **P** **13 13 18.9 +0.2**
comp=Z,24nm,0.9s
HUMO Hull Mountain 80.93 38 *e*P **P** **13 13 21.8 +1.9**
comp=Z,24nm,1.2s
M04C Macdoel 81.08 39 P **P** **13 13 22.1 +1.3**
baz=233,SNR=5.4
GMRC Granite Mounta 81.10 48 P **P** **13 13 22.4 +1.2**
baz=238
IRM Iron Mountain 81.13 49 P **P** **13 13 22.6 +1.4**
baz=238,SNR=5.6
GRAC Grapevine Rang 81.14 45 P **P** **13 13 22.7 +1.5**
baz=236,SNR=5.6
FURC Furnace Creek, 81.18 46 P **P** **13 13 22.5 +1.2**
baz=237
NKL Nikolayevsk 81.19 337 *i*P **P** **13 13 21.0 +0.1**
NKL pmax pmax
comp=N,15nm,0.9s
NKL pmax pmax
comp=E,20nm,0.9s
NKL pmax pmax
comp=Z,100nm,1.0s
TUQ Turquoise Moun 81.27 47 P **P** **13 13 23.3 +1.4**
baz=238
SHOC Shoshone, Teco 81.27 47 P **P** **13 13 22.8 +1.0**
baz=237
NVAR Mina Array Bea 81.32 44 P **P** **13 13 23.6 +1.3**
comp=Z,7.5nm,0.7s,baz=222,slow=9.3,SNR=22
NVAR pP **pP** **13 15 32.9 +2.4**
comp=Z,1.1nm,0.8s,baz=224,slow=15,SNR=1.6
Y12C Blythe 81.36 49 P **P** **13 13 23.7 +1.5**
baz=239
Y12C Blythe 81.36 49 *e*P **P** **13 13 23.5 +1.2**
comp=Z,7.8nm,0.8s
I03D Drain, OR 81.39 37 P **P** **13 13 23.7 +1.6**
baz=231
MAW Mawson 81.52 200 P **P** **13 13 23.1 +0.6**
comp=Z,5.5nm,0.9s,baz=100,slow=6.5,SNR=6.9
MAW Mawson 81.52 200 P **P** **13 13 23.1 +0.6**
MAW pmax pmax
comp=Z,7.0nm,1.0s
MAW Mawson 81.52 200 *e*P **P** **13 13 23.0 +0.5**
comp=Z,1.8nm,1.1s
LDFC Landfair 81.64 48 *e*P **P** **13 13 25.2 +1.3**
comp=Z,34nm,0.9s
K04D Chiloquin, OR 81.64 39 P **P** **13 13 25.3 +1.6**
baz=233
HSIG 81.65 55 *e*P **P** **13 13 24.7 +0.8**
comp=Z,10nm,0.7s
214A Organ Pipe Nat 81.69 52 P **P** **13 13 25.4 +1.4**
baz=240
214A Organ Pipe Nat 81.69 52 *e*P **P** **13 13 25.3 +1.2**
comp=Z,66nm,1.5s
CN2 Changchun 81.78 323 *e*P **P** **13 13 24.8 +0.6**
CN2 pmax pmax
comp=Z,20nm,1.0s
NEE2 Needles Airpor 81.82 48 P **P** **13 13 26.0 +1.4**
baz=238
WHN Wuhan 81.84 307 ⇓ P **P** **13 13 25.8 +1.0**
WHN pmax pmax
comp=Z,78nm,0.9s
TPNV Topopah Spring 81.86 46 P **P** **13 13 25.9 +0.9**
baz=237,SNR=17
TPNV Topopah Spring 81.86 46 *e*P **P** **13 13 25.7 +0.7**
TPNV pmax pmax
comp=Z,11nm,0.8s
TPNV Topopah Spring 81.86 46 *e*P **P** **13 13 25.7 +0.7**
comp=Z,11nm,0.8s
PDMCI Parker Dam,Lak 81.92 49 P **P** **13 13 26.6 +1.5**
baz=239
I04A Tendick Farm, 81.98 37 P **P** **13 13 26.4 +1.1**
baz=232
KLR Kul'dur 82.06 330 P **P** **13 13 26.4 +0.9**
comp=Z,19nm,1.0s,baz=112,slow=4.2,SNR=40
MOD Modoc Plateau 82.08 40 *e*P **P** **13 13 26.9 +1.0**
comp=Z,16nm,0.8s
K05A Summer Lake 82.21 39 *e*P **P** **13 13 28.1 +1.5**
comp=Z,31nm,0.9s
J05D Fort Rock, OR 82.35 38 P **P** **13 13 28.8 +1.5**
baz=233
G03D McMinnville, O 82.38 36 P **P** **13 13 28.5 +1.3**
baz=231
H04A Detroit Lake 82.65 37 *e*P **P** **13 13 29.4 +0.8**
comp=Z,70nm,1.7s
TIA Tai'an 82.70 313 ⇓ P **P** **13 13 29.4 +0.4**
TIA pmax pmax
comp=Z,40nm,1.3s
I05D Terrebonne, OR 82.92 37 P **P** **13 13 31.2 +1.2**
baz=233
BRLK Bradley Lake 82.96 14 *e*P **P** **13 13 29.4 -0.4**
comp=Z,55nm,0.9s
R11A Troy Canyon, C 83.06 45 P **P** **13 13 32.0 +1.1**
baz=237,SNR=5.4
R11A Troy Canyon, C 83.06 45 *e*P **P** **13 13 31.1 +0.1**
comp=Z,5.5nm,1.4s
E03A Lebam 83.06 35 *e*P **P** **13 13 31.8 +1.4**
comp=Z,39nm,1.0s
F04D Rainier, OR 83.06 35 P **P** **13 13 32.4 +1.9**
baz=231
BMN Battle Mountai 83.14 42 *e*P **P** **13 13 32.3 +1.0**
BMN pmax pmax
comp=Z,15nm,0.9s
BMN Battle Mountai 83.14 42 *e*P **P** **13 13 32.3 +1.0**
comp=Z,15nm,0.9s
KULM Kulim 83.14 278 *e*P **P** **13 13 32.5 +0.8**
comp=Z,34nm,0.8s
SVW2 Sparrevohn 83.24 11 *e*P **P** **13 13 30.4 -0.7**
comp=Z,12nm,0.8s
F04A Amboy 83.29 36 *e*P **P** **13 13 32.3 +0.6**
comp=Z,60nm,1.6s
TUC Tucson 83.36 52 P **P** **13 13 33.8 +1.3**
baz=241
TUC Tucson 83.36 52 *e*P **P** **13 13 33.8 +1.3**
TUC pmax pmax
comp=Z,11nm,0.8s
TUC Tucson 83.36 52 *e*P **P** **13 13 33.8 +1.3**
comp=Z,11nm,0.8s

WVOR Wild Horse Val 83.39 40 *e*P P 13 13 33.5 +1.0
WVOR pmax pmax
comp=Z,12nm,1.0s
WVOR Wild Horse Val 83.39 40 *e*P P 13 13 33.5 +1.0
comp=Z,12nm,1.0s
MA2 Magadan 83.45 345 P P 13 13 31.6 -0.6
comp=Z,36nm,1.0s,baz=153,slow=4.6,SNR=14
G05D Wamic, OR 83.48 37 P P 13 13 33.9 +1.1
baz=233
SEW Seward 83.59 14 *e*P P 13 13 32.5 -0.3
comp=Z,37nm,0.9s
PSI Prapat 83.86 275 P P 13 13 34.6 -0.9
comp=Z,28nm,0.9s,baz=175,slow=4.6,SNR=20
PSI Prapat 83.86 275 *e*P P 13 13 34.8 -0.6
PSI pmax pmax
comp=Z,45nm,1.0s
PSI Prapat 83.86 275 *e*P P 13 13 34.8 -0.6
comp=Z,45nm,1.0s
G06A Carlson Farm, 83.86 37 *e*P P 13 13 35.2 +0.5
comp=Z,13nm,1.3s
X16A Lo Mia Camp, P 83.90 50 *e*P P 13 13 36.0 +0.7
comp=Z,6.5nm,0.9s
LCMT Little Creek M 83.94 47 *e*P P 13 13 36.1 +0.9
comp=Z,14nm,1.5s
PANO Nakornpanom 83.98 291 P P 13 13 36.7 +1.0
comp=Z,78nm,0.7s
GAMB Gambell 84.00 3 *e*P P 13 13 35.0 +0.3
comp=Z,32nm,0.9s
SPU Mount Spurr 84.00 13 *e*P P 13 13 33.8 -1.1
319A Douglas 84.04 54 *e*P P 13 13 37.1 +1.2
comp=Z,21nm,0.8s
KNB Kanab 84.23 47 *e*P P 13 13 37.5 +0.7
KNB pmax pmax
comp=Z,5.0nm,1.0s
KNB Kanab 84.23 47 *e*P P 13 13 37.5 +0.7
comp=Z,5.4nm,1.0s
U15A North Rim 84.30 48 *e*P P 13 13 38.3 +1.0
comp=Z,12nm,0.6s
D05A Enumclaw 84.30 35 *e*P P 13 13 37.9 +1.3
comp=Z,40nm,1.3s
PSUT Pine Spring 84.31 45 *e*P P 13 13 37.6 +0.4
comp=Z,5.2nm,0.9s
CHBT CHBT 84.33 286 P P 13 13 38.9 +1.4
comp=Z,48nm,1.2s
RC01 Rabbit Creek A 84.41 14 *e*P P 13 13 36.6 -0.2
comp=Z,54nm,1.1s
SKNT Sakonakorn 84.47 290 P P 13 13 39.0 +0.9
comp=Z,92nm,1.1s
WUAZ Wupatki 84.49 49 P P 13 13 38.6 +0.5
baz=240
WUAZ Wupatki 84.49 49 *e*P P 13 13 39.1 +1.0
comp=Z,6.3nm,0.9s
BBB Bella Bella 84.54 29 P P 13 13 37.9 +0.3
comp=Z,3.0nm,0.6s,baz=270,slow=10,SNR=4.7
ELK Elko 84.57 43 *e*P P 13 13 38.8 +0.3
ELK pmax pmax
comp=Z,4.0nm,0.9s
ELK Elko 84.57 43 *e*P P 13 13 38.8 +0.3
comp=Z,3.9nm,0.9s
TT01 Tatalina 84.85 10 *e*P P 13 13 38.9 -0.1
HPIG 84.86 59 *e*P P 13 13 40.2 +0.1
comp=Z,10nm,0.7s
A04D Lummi Island 84.88 33 P P 13 13 40.6 +1.3
baz=231
TTA Tatalina 84.88 10 *e*P P 13 13 39.1 0.0
TTA pmax pmax
comp=Z,35nm,1.2s
TTA Tatalina 84.88 10 *e*P P 13 13 39.1 0.0
comp=Z,35nm,1.2s
EYAK Cordova Ski Ar 84.88 16 *e*P P 13 13 38.4 -0.7
comp=Z,33nm,1.1s
B05A Bryant 84.91 34 P P 13 13 40.6 +1.1
baz=232
TRTT Trang 84.94 280 P P 13 13 42.2 +1.7
comp=Z,85nm,1.2s,comp=Z,1µm
PMR Palmer 84.99 14 *e*P P 13 13 39.2 -0.4
PMR pmax pmax
comp=Z,65nm,1.4s
PMR Palmer 84.99 14 *e*P P 13 13 39.1 -0.4
comp=Z,65nm,1.4s
RAGM Ragged Mountai 85.02 16 *e*P P 13 13 39.9 +0.1
comp=Z,50nm,1.3s
X18A Snowflake 85.03 51 *e*P P 13 13 41.4 +0.6
comp=Z,6.3nm,0.6s
LTY Liberty 85.06 35 *e*P P 13 13 40.8 +0.4
comp=Z,8.6nm,1.0s
SRAK Srakaew 85.06 287 P P 13 13 40.2 -0.8
comp=Z,62nm,1.5s,comp=Z,678nm
HAWA Hanford 85.17 37 *e*P P 13 13 41.1 +0.2
comp=Z,15nm,1.0s
KHON Khomkaen 85.25 289 P P 13 13 43.6 +1.7
comp=Z,22nm,0.8s
BJI Beijing 85.33 316 P P 13 13 42.4 +0.6
BJI pmax pmax
comp=Z,41nm,1.4s
SML Sawmill 85.36 14 *e*P P 13 13 41.0 -0.5
SML pmax pmax
comp=Z,21nm,1.0s
SML Sawmill 85.36 14 *e*P P 13 13 41.0 -0.5
comp=Z,21nm,1.0s
DIV Divide 85.37 15 *e*P P 13 13 41.3 -0.3
comp=Z,54nm,1.0s
MSU Marysvale 85.43 46 *e*P P 13 13 43.5 +0.9
MSU Marysvale 85.43 46 *e*P P 13 13 43.5 +0.9
BMRM Bremner River 85.53 16 *e*P P 13 13 41.5 -0.8
comp=Z,45nm,1.0s
BMO Blue Mountains 85.56 39 *e*P P 13 13 43.5 +0.5
comp=Z,7.3nm,0.8s
SCM Sheep Creek Mo 85.61 14 *e*P P 13 13 42.6 -0.1
SCM pmax pmax
comp=Z,66nm,0.8s
SCM Sheep Creek Mo 85.61 14 *e*P P 13 13 42.6 -0.1
comp=Z,66nm,0.8s
MFID Camas Ranch 85.65 41 *e*P P 13 13 43.9 +0.5
comp=Z,10nm,0.9s
KLU Klutina 85.65 15 *e*P P 13 13 42.3 -0.6
comp=Z,21nm,0.9s
ZAIG Zacatecas 85.68 64 *e*P P 13 13 45.2 +1.0
comp=Z,8.8nm,0.9s
121A Cookes Peak, D 85.70 53 P P 13 13 44.5 +0.6
baz=243
121A Cookes Peak, D 85.70 53 *e*P P 13 13 45.1 +1.2
comp=Z,6.4nm,1.1s
PATY Pattaya 85.72 285 P P 13 13 46.6 +2.4
comp=Z,20nm,0.9s
WRAK Wrangell Islan 85.80 24 *e*P P 13 13 44.3 +0.8
comp=Z,19nm,0.9s
NAYO Nakonayok 85.82 287 P P 13 13 46.4 +1.7
comp=Z,25nm,1.2s
CHAI Chaiyaphum 85.83 289 P P 13 13 45.4 +0.7
comp=Z,11nm,0.8s,comp=Z,101nm
DUG Dugway, Tooele 85.86 44 P P 13 13 45.2 +0.7
baz=239
D08A Wollman Farm, 85.90 36 *e*P P 13 13 45.3 +1.0
comp=Z,21nm,1.2s
GYA Guiyang 86.03 300 *e*P P 13 13 46.3 +0.7
GYA pP pP 13 15 58.6 +2.9
GYA sP sP 13 16 59.4 +2.6
GYA PP **PP** **13 17 20.0 +2.2**
GYA SKS **SKSac** **13 23 11.8 -2.6**
GYA S **S** **13 23 28.3 -1.8**
GYA sS sS 13 27 22.3 +0.3
GYA pmax pmax
comp=Z,10.0nm,1.0s
SEY Seymchan 86.06 347 P P 13 13 44.9 +0.2
comp=Z,46nm,0.8s,baz=151,slow=4.8,SNR=133
SURT Suratani 86.17 281 P P 13 13 48.2 +1.9
comp=Z,27nm,1.1s,comp=Z,275nm
PKDT Phuket 86.21 280 P P 13 13 49.4 +2.9
comp=Z,32nm,1.1s
F10A Beach Ranch, E 86.24 38 *e*P P 13 13 46.7 +0.6
comp=Z,26nm,0.8s
KTH Kantishna Hill 86.37 12 *e*P P 13 13 44.7 -1.6
comp=Z,29nm,1.0s
TRF Thorofare Moun 86.41 12 *e*P P 13 13 45.6 -0.9
comp=Z,45nm,0.8s
B08A Colville Reser 86.44 35 *e*P P 13 13 47.1 +0.3
comp=Z,12nm,0.8s
TMUT Trail Mountain 86.47 46 *e*P P 13 13 48.6 +1.0
comp=Z,10nm,1.1s
HLID Hailey 86.59 41 P P 13 13 49.4 +1.5
baz=238
HLID Hailey 86.59 41 *e*P P 13 13 49.0 +1.0
comp=Z,10nm,0.8s
RND Reindeer 86.66 13 *e*P P 13 13 47.2 -0.4
RND pmax pmax
comp=Z,83nm,0.9s
RND Reindeer 86.66 13 *e*P P 13 13 47.2 -0.4
comp=Z,83nm,0.9s
DHY Denali Highway 86.69 14 *e*P P 13 13 47.4 -0.5
comp=Z,63nm,1.7s
C09A Chrisman Ranch 86.69 36 *e*P P 13 13 48.7 +0.6
comp=Z,56nm,1.8s
C09A *e*pP **pP** **13 16 05.7 +7.1**
SYO Syowa Base 86.76 193 *i*P P 13 13 46.8 -1.3
SYO Syowa Base 86.76 193 *e*PcP **PcP** **13 13 49.2 -0.3**
PHET Kaeng Krachan 86.83 285 P P 13 13 51.7 +2.3
comp=Z,30nm,1.0s,comp=Z,251nm
SRU San Rafael Swe 86.84 46 *e*P P 13 13 49.3 +0.1
SRU pmax pmax
comp=Z,7.0nm,0.9s
SRU San Rafael Swe 86.84 46 *e*P P 13 13 49.3 +0.1
comp=Z,7.4nm,0.9s
BPAW Bear Paw Mtn. 86.85 12 *e*P P 13 13 46.4 -2.1
comp=Z,54nm,2.0s
MCK McKinley 86.93 13 *e*P P 13 13 48.0 -0.8
MCK pmax pmax
comp=Z,45nm,1.1s
MCK McKinley 86.93 13 *e*P P 13 13 48.0 -0.8
comp=Z,45nm,1.1s
SKAG Skagway 87.03 21 *e*P P 13 13 50.5 +1.2
comp=Z,56nm,1.6s
PAX Paxson 87.03 15 *e*P P 13 13 48.6 -0.8
PAX pmax pmax
comp=Z,12nm,1.0s
PAX Paxson 87.03 15 *e*P P 13 13 48.5 -0.8
comp=Z,12nm,1.0s
LOEI Loei 87.07 290 P P 13 13 50.1 -0.4
comp=Z,15nm,1.2s
TLIG Tlapa 87.10 70 *e*P P 13 13 51.4 +0.6
comp=Z,13nm,1.0s
MNTX Cornudas Mount 87.15 55 P P 13 13 51.7 +1.1
baz=244
MNTX Cornudas Mount 87.15 55 *e*P P 13 13 51.1 +0.5
comp=Z,11nm,1.1s
MNTX *e*pP **pP** **13 16 03.8 +2.5**
TCUT Toone Canyon 87.25 44 *e*P P 13 13 51.9 +0.8
comp=Z,42nm,1.6s
MVCO Mesa Verde 87.34 49 P P 13 13 52.2 +0.5
baz=242
LPM Los Pinos Moun 87.36 52 *e*P P 13 13 52.0 +0.3
HWUT Hardware Ranch 87.39 44 *e*P P 13 13 51.8 +0.1
comp=Z,3.3nm,0.8s
MENT Mentasta 87.43 15 *e*P P 13 13 50.9 -0.3
comp=Z,19nm,1.0s
TX31 Lajitas Ar. Si 87.48 58 *e*P P 13 13 53.2 +0.9
TX31 *e*pP **pP** **13 16 07.0 +4.0**
TXAR Lajitas Array 87.48 58 P P 13 13 53.6 +1.2
comp=Z,13nm,0.8s,baz=220,slow=6.1,SNR=138
TXAR pP **pP** **13 16 07.4 +4.3**
comp=Z,3.1nm,1.1s,baz=219,slow=5.8,SNR=8.0
PV09 Paradox Valley 87.50 47 *e*P P 13 13 52.9 +0.4
PV10 Paradox Valley 87.51 48 *e*P P 13 13 52.5 0.0
XAN Xi'an 87.53 308 P P 13 13 53.6 +1.2
XAN pP pP 13 16 03.3 +0.1
XAN SS SS 13 29 47.3 -1.9
XAN pmax pmax
comp=Z,61nm,1.2s
XAN pmax pmax
comp=Z,100nm,6.0s
NEW Newport 87.59 36 P P 13 13 52.6 +0.3
comp=Z,2.0nm,0.6s,baz=279,slow=5.8,SNR=4.9
NEW Newport 87.59 36 P P 13 13 53.2 +0.9
baz=236
PHIT Phitsanulok 87.70 289 P P 13 13 56.0 +2.6
comp=Z,36nm,1.2s
MLY Manley 87.74 11 *e*P P 13 13 51.5 -1.1
comp=Z,21nm,0.9s
WRH Wood River Hil 87.76 13 *e*P P 13 13 52.1 -0.6
comp=Z,55nm,0.9s
ANMO Albuquerque 87.78 52 P P 13 13 54.3 +0.5
comp=Z,4.1nm,0.9s,baz=215,slow=4.4,SNR=14
ANMO Albuquerque 87.78 52 P P 13 13 54.2 +0.5
baz=243
ANMO Albuquerque 87.78 52 *e*P P 13 13 53.8 +0.1
ANMO pmax pmax
comp=Z,10.0nm,1.3s
ANMO Albuquerque 87.78 52 *e*P P 13 13 53.8 +0.1
comp=Z,10nm,1.3s
ANMO *e*pP **pP** **13 16 10.9 +6.4**
UTTA Uttaradit 87.79 290 P P 13 13 55.6 +1.8
comp=Z,8.5nm,1.2s,comp=Z,86nm
SRDT SRDT 87.82 286 P P 13 13 56.1 +2.1
comp=Z,113nm,1.2s,comp=Z,6µm
DOT Dot Lake 87.95 15 *e*P P 13 13 53.1 -0.5
comp=Z,55nm,0.9s
CCB Clear Creek Bu 87.98 13 *e*P P 13 13 52.7 -0.9
comp=Z,43nm,0.8s
NANT Nan 88.05 291 P P 13 13 56.1 +1.0
comp=Z,12nm,1.1s,comp=Z,127nm
DLBC Dease Lake 88.13 23 P P 13 13 55.2 +0.6
comp=Z,7.6nm,0.9s,baz=211,slow=6.8,SNR=20
DLBC Dease Lake 88.13 23 *e*P P 13 13 55.4 +0.8
comp=Z,18nm,1.1s
MDM Murphy Dome 88.16 12 *e*P P 13 13 53.7 -0.9
comp=Z,52nm,0.9s
COLA College 88.17 13 *d i*P P 13 13 53.7 -0.8
COLA pmax pmax
comp=Z,52nm,0.9s
COLA College 88.17 13 *e*P P 13 13 53.6 -0.8
comp=Z,62nm,0.8s
SNAA Sanae 88.20 179 P P 13 13 52.3 -2.6
SNAA Sanae 88.20 179 *e*P P 13 13 53.2 -1.7
MCMT McKenzie Canyo 88.22 40 *e*P P 13 13 56.5 +0.9
AHID Auburn Hatcher 88.26 43 *e*P P 13 13 56.3 +0.5
comp=Z,15nm,1.1s
IL1 Eielson Array 88.28 13 *e*P P 13 13 53.4 -1.7
ILAR Eielson Array 88.28 13 P P 13 13 54.2 -0.9
comp=Z,20nm,0.9s,baz=221,slow=5.4,SNR=130
ILAR pP **pP** **13 16 07.0 +0.8**
comp=Z,5.8nm,1.1s,baz=227,slow=5.1,SNR=10
ILAR PP **PP** **13 17 30.9 -3.7**
comp=Z,1.6nm,1.0s,baz=227,slow=6.3,SNR=3.5
ILAR ScS **S** **13 23 48.0 -1.2**
comp=Z,2.0nm,1.1s,baz=239,slow=10,SNR=8.5
ILB Eielson Array 88.28 13 *e*P P 13 13 54.0 -1.1
VNA3 Neumayer Olymp 88.36 176 P P 13 13 56.0 +0.4
SUKH Sukhothai 88.51 289 P P 13 13 58.9 +1.7
comp=Z,15nm,1.0s,comp=Z,142nm
MSO Missoula 88.61 38 P P 13 13 58.0 +0.8
baz=238
MSO Missoula 88.61 38 *e*P P 13 13 57.1 0.0
comp=Z,16nm,1.7s
DLMT Dillon 88.64 40 *e*P P 13 13 58.6 +1.2
comp=Z,22nm,1.5s
BSMT Bassoo Peak 88.67 37 *e*P P 13 13 57.8 +0.3
REDW Red Top Meadow 88.72 42 *e*P P 13 13 58.5 +0.6
comp=Z,16nm,1.1s
KMI Kunming 88.72 297 P P 13 13 58.8 +0.5
KMI pmax pmax
comp=Z,43nm,1.1s
KMI pmax pmax
comp=Z,150nm,6.2s
S22A 4UR Ranch, Cre 88.76 49 P P 13 13 59.3 +1.0
baz=243
S22A 4UR Ranch, Cre 88.76 49 *e*P P 13 13 58.8 +0.4
comp=Z,7.3nm,1.2s
HHC Hu-ho-hao-te 88.79 315 *e*P P 13 13 59.3 +1.2
HHC pP pP 13 16 09.9 +0.6
HHC sP sP 13 17 09.1 -1.0
HHC S **S** **13 23 56.1 +1.0**
HHC sS sS 13 27 44.8 -4.2
HHC pmax pmax
comp=Z,33nm,1.2s
HHC pmax pmax
comp=Z,200nm,6.3s
VNA2 Neumayer--Watz 88.79 177 P P 13 13 58.1 +0.5
baz=165,slow=3.1
BILL Bilibino 88.80 354 *d i*P P 13 13 57.0 -0.4
BILL *e**PP **pP** **13 16 06.7 -1.9**
BILL *e**SP **sP** **13 17 02.9 -6.4**
BILL *e* 13 17 33.7
BILL pmax pmax
comp=Z,18nm,1.1s
BILL Bilibino 88.80 354 *e*P P 13 13 56.7 -0.7
comp=Z,22nm,1.2s
SNOW Snow King Moun 88.83 42 *e*P P 13 13 59.0 +0.5
comp=Z,15nm,1.0s
O20A White River Ci 88.88 46 P P 13 13 59.3 +0.6
baz=242
O20A White River Ci 88.88 46 *e*P P 13 13 59.3 +0.6
comp=Z,6.9nm,0.8s
LAMP Lampang 88.89 290 P P 13 14 00.6 +1.6
comp=Z,28nm,0.9s,comp=Z,224nm
IMW Indian Meadow 88.93 42 *e*P P 13 14 00.4 +1.5
comp=Z,11nm,0.8s
LRM Limekiln Ridge 88.97 40 *e*P P 13 13 60.0 +0.9
MOOW Moose Ponds 88.98 42 *e*P P 13 14 00.2 +1.1
comp=Z,32nm,1.9s
LOHW Long Hollow 89.00 42 *e*P P 13 13 59.6 +0.4
comp=Z,29nm,1.8s
VNA1 Neumayer--Stat 89.02 177 P P 13 13 58.5 -0.1
CHMT Chamberlain Mo 89.06 39 *e*P P 13 13 59.7 +0.3
QLMT Earthquake Lak 89.09 41 *e*P P 13 14 00.5 +1.0
YBMT Yellow Bay 89.12 37 *e*P P 13 14 02.1 +2.6
FLWY Flagg Ranch 89.17 42 *e*P P 13 14 01.2 +1.2
comp=Z,11nm,0.9s
BW06 Boulder Array 89.25 43 P P 13 14 01.0 +0.6
baz=241
BW06 Boulder Array 89.25 43 *e*P P 13 14 00.5 +0.1
comp=Z,0.4nm,0.8s
PD31 Pinedale Array 89.26 43 *e*P P 13 14 00.6 +0.1
PDAR Pinedale Array 89.26 43 P P 13 14 00.8 +0.4
comp=Z,4.6nm,0.6s,baz=212,slow=3.7,SNR=58
PDAR pP **pP** **13 16 12.2 +0.4**
comp=Z,0.9nm,0.9s,baz=182,slow=6.2,SNR=3.4
YMR Madison River 89.29 41 *e*P P 13 14 02.1 +1.5
comp=Z,24nm,1.6s
SMCO Snowmass 89.31 48 *e*P P 13 14 02.8 +1.8
comp=Z,7.6nm,0.6s
BOZ Bozeman (W) 89.38 40 P P 13 14 01.8 +1.0
baz=240
BOZ Bozeman (W) 89.38 40 *e*P P 13 14 01.9 +1.0
BOZ pmax pmax
comp=Z,7.0nm,1.0s
BOZ Bozeman (W) 89.38 40 *e*P P 13 14 01.9 +1.0
comp=Z,7.2nm,1.0s
H17A Grant Village 89.40 42 P P 13 14 02.3 +1.2
baz=241
H17A Grant Village 89.40 42 *e*P P 13 14 03.5 +2.4
comp=Z,6.6nm,0.9s
CM01 Chiang Mai Arr 89.45 290 *e*P P 13 14 02.9 +1.3
CM01 *e*pP **pP** **13 16 15.4 +2.5**
CM01 *e*PP **PP** **13 17 48.5 +3.8**
CM31 Chiang Mai Arr 89.47 290 *e*P P 13 14 03.4 +1.7
CMAR Chiang Mai Arr 89.47 290 P P 13 14 03.4 +1.7
comp=Z,30nm,0.9s,baz=121,slow=2.9,SNR=153
CMAR pP **pP** **13 16 13.2 +0.2**
comp=Z,0.8nm,0.8s,baz=106,slow=3.2,SNR=3.0
CMAR PP **PP** **13 17 45.5 +0.7**
comp=Z,3.7nm,1.1s,baz=130,slow=6.1,SNR=6.7
CMAR PKKPbc **PKKPbc** **13 31 33.3 +0.7**
comp=Z,1.0nm,0.7s,baz=281,slow=4.4,SNR=6.2
CMAR SKKPbc SKKPbc 13 34 14.4 -0.1
comp=Z,0.6nm,0.9s,baz=284,slow=4.4,SNR=4.1
EGAK Eagle 89.59 15 *e*P P 13 14 00.8 -0.3
comp=Z,29nm,0.9s
CMMT Chiang Mai 89.60 290 P P 13 14 03.4 +1.1
comp=Z,58nm,1.1s,comp=Z,705nm
CHTO Chiang Mai 89.60 290 P P 13 14 03.4 +1.1
comp=Z,260nm,1.1s,comp=Z,3µm
CHTO Chiang Mai 89.60 290 *e*P P 13 14 03.6 +1.3
CHTO *e* 13 17 51.3
CHTO pmax pmax
comp=Z,47nm,1.0s
CHTO Chiang Mai 89.60 290 *e*P P 13 14 03.6 +1.3
comp=Z,46nm,1.0s
CHTO *e*PP **PP** **13 17 51.3 +5.4**
SDCO Great Sand Dun 89.71 49 P P 13 14 03.2 +0.5
baz=244
SDCO Great Sand Dun 89.71 49 *e*P P 13 14 03.5 +0.8
comp=Z,3.0nm,0.9s
WALA Waterton Lakes 89.81 37 *e*P P 13 14 02.8 +0.1
comp=Z,6.5nm,0.9s
COLD Coldfoot 89.81 11 *e*P P 13 14 02.5 +0.3
comp=Z,24nm,1.0s
PLCA Paso Flores 89.84 134 P P 13 14 04.5 +1.3
comp=Z,10nm,0.9s,baz=247,slow=5.9,SNR=13
CMAI Chiengmai2 89.92 291 P P 13 14 05.7 +1.8
comp=Z,70nm,0.8s
832A Faith Ranch, C 90.02 60 P P 13 14 04.7 +0.7
baz=247
MSTX Muleshoe 90.10 54 P P 13 14 04.9 +0.5
baz=246
MSTX Muleshoe 90.10 54 *e*P P 13 14 04.4 0.0
comp=Z,8.9nm,0.9s
CD2 Chengdu 90.17 303 P P 13 14 04.4 -0.3
CD2 pmax pmax
comp=Z,2.0nm,0.6s
FYU Fort Yukon 90.18 13 *e*P P 13 14 03.2 -0.6
comp=Z,18nm,1.4s
CMIG Matias Romero 90.20 72 P P 13 14 05.5 +0.5
comp=Z,14nm,1.1s,baz=276,slow=6.2,SNR=11
T25A Trinidad 90.22 50 P P 13 14 05.4 +0.3
baz=245
MHMT Maesarieng 90.27 289 P P 13 14 07.4 +2.1
comp=Z,15nm,1.1s,comp=Z,264nm
933A Laredo 90.33 61 P P 13 14 06.4 +1.0
baz=247
Q24A Divide 90.49 48 P P 13 14 06.8 +0.5
baz=244
ISCO Idaho Springs 90.53 47 P P 13 14 06.9 +0.4
baz=244
RLMT Red Lodge 90.57 42 P P 13 14 07.6 +1.2
baz=242
034A Hebbronville 90.60 61 P P 13 14 07.7 +1.0
baz=248
733A Divot King Ran 90.74 60 P P 13 14 08.6 +1.3
baz=247
N23A Red Feather La 90.79 46 *e*pP pP 13 16 19.5 +0.3
934A Benavides 90.94 61 P P 13 14 09.2 +1.0
baz=248
035A Encino 91.04 62 P P 13 14 10.1 +1.4
baz=248
633A Saathoff Ranch 91.12 59 P P 13 14 10.0 +1.0
baz=247
K22A Casper 91.18 45 *e*P P 13 14 12.0 +2.8
K22A *e*pP **pP** **13 16 23.3 +2.4**
AMTX Amarillo 91.30 53 P P 13 14 10.4 +0.5
baz=246
734A La Parita Cree 91.38 60 P P 13 14 10.6 +0.4
baz=248
533A Kerrville 91.47 59 P P 13 14 11.2 +0.5
baz=247
EGMT Eagleton 91.67 39 P P 13 14 12.0 +0.8
baz=241
433A Art 91.68 58 P P 13 14 11.9 +0.3
baz=247
YAK Yakutsk 91.72 338 P P 13 14 10.1 -0.8
comp=Z,42nm,0.8s,baz=144,slow=1.2,SNR=24
YAK S **SKSac** **13 23 42.3 -3.0**
comp=Z,3.9nm,0.3s,baz=150,slow=0.7,SNR=0.9
YAK Yakutsk 91.72 338 *e*P P 13 14 08.9 -2.1
YAK *e* 13 18 04.7
YAK *e*SS SS 13 30 51.6 +4.1
YAK pmax pmax
comp=Z,55nm,0.9s
YAK pmax pmax
comp=E,13nm,1.3s
YAK pmax pmax
comp=N,11nm,1.0s
YAK pmax pmax
comp=Z,15nm,1.1s
YAK pmax pmax
comp=N,9.0nm,1.3s
YAK pmax pmax
comp=E,21nm,1.7s
YAK MLR MLR
comp=Z,48nm,8.0s
534A Blanco 91.90 59 P P 13 14 13.3 +0.6
baz=248
ABTX Abilene, Hawle 91.97 56 P P 13 14 13.6 +0.7
baz=247
735A Kenedy 92.00 60 P P 13 14 13.4 +0.3
baz=248
635A Leesville 92.22 60 P P 13 14 14.7 +0.6
baz=248
KSCO Kaye Shedlock' 92.29 49 P P 13 14 15.0 +0.6
baz=246
233A Rising Star 92.31 57 P P 13 14 15.2 +0.6
baz=248
434A Burnet 92.36 58 P P 13 14 14.8 +0.1
baz=248
133A Hamilton Ranch 92.53 56 P P 13 14 15.8 +0.3
baz=248
334A Lometa 92.58 58 P P 13 14 16.0 +0.3
baz=248
535A Dale 92.62 59 P P 13 14 16.4 +0.4
baz=248
736A Circle Diamond 92.64 60 P P 13 14 16.5 +0.5

baz=248
636A Smothers Creek 92.84 60 P P 13 14 17.4 +0.5
baz=248
435B Jarrell 92.89 58 P P 13 14 17.5 +0.3
baz=248
Z33A Whitaker Ranch 92.90 56 P P 13 14 17.5 +0.3
baz=248
234A Clairette 92.91 57 P P 13 14 17.6 +0.4
baz=248
X32A Elmer 92.93 54 P P 13 14 17.7 +0.4
baz=248
536A Bastrop 93.05 59 P P 13 14 17.8 -0.1
baz=248
737A Port Lavaca 93.08 61 P P 13 14 18.3 +0.3
baz=249
134A White-Moore Ra 93.17 57 P P 13 14 18.9 +0.5
baz=248
LAO LASA Array 93.18 41 P P 13 14 19.0 +0.8
baz=244
335A Moody 93.20 58 P P 13 14 18.9 +0.3
baz=248
W32A Sentinel 93.23 54 P P 13 14 19.1 +0.4
baz=248
RSSD Black Hills 93.45 44 P P 13 14 19.9 +0.2
baz=245
RSSD Black Hills 93.45 44 *e*P P 13 14 19.8 +0.1
RSSD pmax pmax
comp=Z,17nm,1.7s
RSSD Black Hills 93.45 44 *e*P P 13 14 19.8 +0.1
comp=Z,17nm,1.7s
OGNE Ogallala 93.49 48 P P 13 14 20.3 +0.5
baz=246
436A Wall Ranch, Ga 93.52 59 P P 13 14 20.3 +0.3
baz=249
I25A Rochford 93.61 44 P P 13 14 20.6 +0.2
baz=245
537A Green Hill Far 93.66 59 P P 13 14 20.9 +0.3
baz=249
336A Riesel 93.70 58 P P 13 14 20.9 +0.1
baz=249
W33A Caddo, Fort Co 93.83 54 P P 13 14 21.8 +0.4
baz=248
U32A Winter Ranch, 93.89 53 P P 13 14 21.8 +0.2
baz=248
H25A Fruitdale 93.95 44 P P 13 14 22.3 +0.5
baz=245
X34A Smith Ranch, M 94.11 55 P P 13 14 23.9 +1.2
baz=248
236A Katherine and 94.18 58 P P 13 14 22.8 -0.2
baz=249
V33A Lossen Ranch, 94.22 53 P P 13 14 23.5 +0.4
baz=248
INK Inuvik 94.26 15 P P 13 14 21.9 -0.6
comp=Z,7.6nm,1.0s,baz=228,slow=4.7,SNR=27
INK PP PP 13 18 16.9 -3.9
comp=Z,2.6nm,1.0s,baz=221,slow=9.6,SNR=3.8
INK Inuvik 94.26 15 *e*P P 13 14 21.6 -0.9
INK 13 18 16.9
INK pmax pmax
comp=Z,14nm,1.1s
INK Inuvik 94.26 15 *e*P P 13 14 21.6 -0.9
comp=Z,14nm,1.1s
INK PP PP 13 18 16.9 -3.9
CBKS Cedar Bluff 94.28 50 P P 13 14 23.7 +0.4
baz=248
136A Ennis 94.35 57 P P 13 14 23.9 +0.1
baz=249
J27A Elkhorn Farm, 94.44 45 P P 13 14 24.7 +0.7
baz=246
I27A Quinn 94.73 45 P P 13 14 25.8 +0.5
baz=246
ULN Ulaanbaatar 94.83 319 *e*P P 13 14 24.5 -1.2
ULN pmax pmax
comp=Z,37nm,1.9s
ULN Ulaanbaatar 94.83 319 *e*P P 13 14 24.5 -1.2
comp=Z,38nm,1.9s
G26A Maurine 94.87 43 P P 13 14 26.4 +0.5
baz=246
R32A Long Quarter, 94.87 51 P P 13 14 26.6 +0.5
baz=248
H27A Howes 94.94 44 P P 13 14 26.6 +0.3
baz=246
U34A Anderson Ranch 95.01 53 P P 13 14 26.9 +0.2
baz=249
Y36A Durant 95.05 56 P P 13 14 27.2 +0.3
baz=249
O31A Woolen Ranch, 95.08 49 P P 13 14 27.3 +0.4
baz=248
DGMT Dagmar 95.18 40 P P 13 14 27.8 +0.6
baz=245
Q32A Meitler Ranch, 95.20 50 P P 13 14 27.9 +0.4
baz=248
SONA1 Songino Array 95.22 319 *e*P P 13 14 26.1 -1.4
SONA1 *e*PP PP 13 18 23.9 -4.8
SONM Songino Array 95.22 319 P P 13 14 27.2 -0.3
comp=Z,2.2nm,0.8s,baz=122,slow=2.0,SNR=13
SONM PP PP 13 18 11.4 -17
comp=Z,1.0nm,0.9s,baz=102,slow=5.4,SNR=3.6
SONM S **SKSac** 13 24 04.0 -1.2
comp=Z,0.5nm,0.7s,baz=189,slow=8.3,SNR=4.2
SONM PKKPab PKKPbc 13 31 55.1 +36
comp=Z,0.7nm,1.0s,baz=298,slow=3.2,SNR=4.4
X36A Centrahoma 95.24 55 P P 13 14 28.4 +0.7
baz=249
I28A Midland 95.29 45 P P 13 14 29.1 +1.3
baz=247
V35A Meyer Ranch, C 95.29 54 P P 13 14 28.9 +0.9
baz=249
238A Jacksonville 95.30 58 P P 13 14 28.7 +0.7
baz=250
Z37A Pogue Cattle C 95.32 57 P P 13 14 28.5 +0.4
baz=249
R33A Olander Ranch, 95.36 51 P P 13 14 29.2 +0.9
baz=248
T34A McClaskey Farm 95.48 53 P P 13 14 29.4 +0.6
baz=249
339A Huntington 95.52 59 P P 13 14 29.3 +0.2
baz=250
W36A Wetumka 95.54 55 P P 13 14 29.4 +0.3
baz=249
138A Matatall Enter 95.55 57 P P 13 14 29.3 +0.1
baz=250
U35A Pawnee 95.59 53 P P 13 14 29.4 +0.1
baz=249
540A Vidor 95.59 60 P P 13 14 29.6 +0.2
baz=250
Y37A Hugo 95.59 56 P P 13 14 29.5 +0.2
baz=249
J29A Okreek 95.63 46 P P 13 14 29.7 +0.4
baz=248
H28A Mission Ridge 95.66 44 P P 13 14 30.1 +0.7
baz=247
D26A Manning 95.68 42 P P 13 14 30.2 +0.7
baz=246
M31A Lambtecht Ranc 95.77 48 P P 13 14 30.7 +0.6
baz=248
O32A Brockman Farm, 95.87 49 P P 13 14 31.0 +0.5
baz=248
I29A Vivian Onida 95.88 45 P P 13 14 31.0 +0.5
baz=248
G28A Parade 95.88 44 P P 13 14 30.9 +0.4
baz=247
R34A Isabella, Hill 95.90 51 P P 13 14 31.0 +0.3
baz=249
T35A Sooner Cattle 95.95 53 P P 13 14 31.8 +0.9
baz=249
V36A Jenks 95.98 54 P P 13 14 31.4 +0.3
baz=249
E27A Carson 95.99 43 P P 13 14 31.5 +0.6
baz=247
X37A Clayton 96.00 55 P P 13 14 31.4 +0.2
baz=250
A25A Svangstu Ranch 96.03 40 P P 13 14 31.6 +0.6
baz=246
139A Bunkhouse Ranc 96.11 58 P P 13 14 32.0 +0.3
baz=250
TUL1 Leonard 96.14 54 P P 13 14 32.2 +0.5
baz=250
W37B Quinton 96.15 55 P P 13 14 32.1 +0.3
baz=250
H29A Onida 96.17 45 P P 13 14 32.2 +0.5
baz=248
D27A Center 96.28 42 P P 13 14 32.8 +0.6
baz=247
GTA Gaotai 96.38 310 *e*P P 13 14 33.3 +0.4
GTA pP pP 13 16 46.5 +1.4
GTA sP sP 13 17 44.4 -1.1
GTA pmax pmax
comp=Z,8.0nm,1.3s
X38A Whitesboro 96.45 56 P P 13 14 33.5 +0.4
baz=250
E28A Huff 96.60 43 P P 13 14 34.8 +1.2
baz=248
YKA Yellowknife Ar 96.61 25 P P 13 14 32.8 -0.4
comp=Z,1.3nm,0.8s,baz=244,slow=4.5,SNR=29
YKA pP **pP** 13 16 45.9 +0.5
comp=Z,0.8nm,1.0s,baz=242,slow=4.4,SNR=4.0
YKA PKKPbc **PKKPbc** 13 31 12.6 -3.2
comp=Z,0.1nm,0.4s,baz=44,slow=2.4,SNR=7.7
YKB5 Yellowknife Ar 96.61 25 *e*P P 13 14 32.1 -1.1
V37A Hulbert 96.63 54 P P 13 14 34.3 +0.3
baz=250
341A Kurthwood 96.63 59 P P 13 14 34.9 +0.9
baz=250
P34A Walnut Farm, R 96.65 50 P P 13 14 34.9 +0.9
baz=249
542A Morse 96.73 61 P P 13 14 35.3 +0.8
baz=250
U37A Salina 96.83 54 P P 13 14 35.7 +0.9
baz=250
B27A Peters Farms, 96.95 41 P P 13 14 36.3 +1.2
baz=247
V38A Canehill 97.18 55 P P 13 14 37.3 +0.9
baz=250
T37A Chenevville 18 97.22 53 P P 13 14 37.6 +1.0
baz=250
342A Flagon Creek P 97.33 59 P P 13 14 38.0 +0.9
baz=251
T38A Diamond 97.66 53 P P 13 14 39.6 +1.0
baz=250
V39A Pettigrew 97.75 55 P P 13 14 40.0 +1.0
baz=251
X40A Basin Creek Fa 97.94 56 P P 13 14 40.6 +0.8
baz=251
D30A Buchanan 98.03 43 P P 13 14 40.7 +0.7
baz=249
U39A Green Forest 98.06 54 P P 13 14 40.6 +0.3
baz=251
ZAK Zakamensk 98.10 321 *e*P Pdif 13 14 39.6 -0.7
ZAK pmax pmax
comp=Z,3.0nm,1.3s
V40A Witts Springs 98.38 55 P P 13 14 42.8 +1.0
baz=251
TIXI Tiksi 98.42 345 P Pdif 13 14 40.3 -0.8
comp=Z,4.2nm,1.1s,baz=122,slow=2.9,SNR=6.4
TIXI PP **PP** 13 18 46.0 -6.1
comp=Z,1.6nm,0.6s,baz=126,slow=7.6,SNR=5.9
TIXI Tiksi 98.42 345 *i* P Pdif 13 14 39.8 -1.2
TIXI pmax pmax
comp=Z,7.0nm,1.3s
H33A Prehn Over Nor 98.50 46 P P 13 14 43.6 +1.5
baz=250
U40A Yellville 98.53 54 P P 13 14 43.7 +1.2
baz=251
S39A Bolivar 98.61 53 P P 13 14 44.1 +1.3
baz=251
W41A Tony Mavity, V 98.62 56 P P 13 14 44.3 +1.5
baz=251
W41B Gary Mavity, V 98.62 56 P P 13 14 44.3 +1.5
baz=251
B30A Myrvik Farm, E 98.78 42 P P 13 14 44.4 +1.1
baz=249
Q38A Cooks Store, C 98.80 52 P P 13 14 45.0 +1.4
baz=251
244A Avery, Jackson 98.86 59 P P 13 14 45.1 +1.1
baz=252
K35A Storm Lake 98.87 48 P P 13 14 45.0 +1.1
baz=251
C31A Landman Farms, 98.92 42 P P 13 14 45.2 +1.3
baz=250
A30A Hoffart Farm, 98.97 41 P P 13 14 44.6 +0.4
baz=250
R39A Chumby, Stover 99.02 53 P **Pdif** 13 14 44.7 +0.2
baz=251
P38A Dawn 99.07 51 P **Pdif** 13 14 45.1 +0.4
baz=251
S40A Lebanon 99.19 53 P **Pdif** 13 14 46.3 +0.9
baz=252
B31A Greenbush Farm 99.19 42 P **Pdif** 13 14 45.7 +0.6
baz=250
Y43A Makanyia and Ka 99.25 57 P **Pdif** 13 14 47.0 +1.3
baz=252
N38A Joes South For 99.66 50 P **Pdif** 13 14 48.6 +1.3
baz=252
J36A Seneca 1, Swea 99.69 47 P **Pdif** 13 14 48.7 +1.3
baz=251
L37A Phoenix Point, 99.71 49 P **Pdif** 13 14 48.4 +0.9
baz=252
B32A Ashes, Strandq 99.88 42 P **Pdif** 13 14 48.8 +0.7
baz=251
M38A Pleasantville 99.88 50 P **Pdif** 13 14 49.3 +1.0
baz=252
D33A AnnSam, Waubun 99.91 43 P **Pdif** 13 14 49.2 +0.9
baz=251
Q40A Laux Farm, Aux 99.95 52 P **Pdif** 13 14 49.8 +1.1
baz=252
N39A Derby Farms, D 100.22 50 P **Pdif** 13 14 51.5 +1.8
baz=252
AGMN Agassiz Nation 100.28 42 P **Pdif** 13 14 50.4 +0.5
baz=251
H36A Jessenland, He 100.36 46 P **Pdif** 13 14 51.3 +1.0
baz=252
Z48A Northport 101.78 59 P **Pdif** 13 14 57.2 +0.3
baz=254
D37A Cotton 102.14 44 P **Pdif** 13 14 58.5 +0.3
baz=253
C37A Embarrass 102.46 44 P **Pdif** 13 15 00.2 +0.6
baz=254
LPAZ La Paz 102.70 113 P **Pdif** 13 15 04.5 +2.3
comp=Z,2.2nm,0.8s,baz=212,slow=3.1,SNR=7.1
LPAZ PP **PP** 13 19 30.6 +5.3
comp=Z,1.2nm,0.9s,baz=222,slow=7.3,SNR=4.3
LPAZ La Paz 102.70 113 *e*Pdif **Pdif** 13 15 06.3 +4.1
LPAZ *e*PP **PP** 13 19 31.1 +5.7
RES Resolute Bay 107.80 16 PKiKP **PKiKP** 13 19 25.4 -0.7
comp=Z,0.2nm,0.3s,baz=182,slow=1.8,SNR=4.4
ZALV Zalesovo Beam 109.97 321 PKiKP **PKiKP** 13 19 29.5 -1.2
comp=Z,2.0nm,0.6s,baz=111,slow=1.8,SNR=12
ZALV PP **PP** 13 20 09.7 -6.9
comp=Z,0.6nm,0.5s,baz=106,slow=5.4,SNR=4.1
ZALV SKP 13 22 09.5
comp=Z,1.2nm,0.7s,baz=148,slow=2.4,SNR=4.1
NRIK Noril'sk 110.17 338 PP PP 13 20 13.3 -4.2
comp=Z,1.6nm,0.7s,baz=90,slow=8.0,SNR=7.2
MKAR Makanchi Array 110.63 314 Pdiff **Pdif** 13 15 37.3 +1.3
comp=Z,1.2nm,0.9s,baz=87,slow=4.4,SNR=9.3
MKAR PKiKP **PKiKP** 13 19 31.1 -1.1
comp=Z,1.5nm,0.4s,baz=145,slow=0.7,SNR=41
MKAR PP **PP** 13 20 19.6 -1.9
comp=Z,0.9nm,0.8s,baz=99,slow=7.7,SNR=3.1
MKAR SKP **SKiKP** 13 22 11.0 +0.4
comp=Z,1.5nm,0.8s,baz=66,slow=3.0,SNR=5.3
MKAR S **SKSac** 13 25 14.8 -1.2
comp=Z,0.8nm,1.0s,baz=74,slow=6.7,SNR=5.7
MKAR PKKPbc **PKKPbc** 13 30 33.3 -0.7
comp=Z,1.4nm,0.8s,baz=260,slow=3.6,SNR=11
MKAR PKKPab **PKKPab** 13 30 45.6 +0.6
comp=Z,0.7nm,0.8s,baz=298,slow=2.6,SNR=5.0
MKAR Makanchi Array 110.63 314 P **Pdif** 13 15 37.3 +1.3
MKAR *i* 13 19 31.2
MKAR 13 20 19.6
MKAR S **SKSac** 13 25 14.8 -1.2
MKAR pmax pmax
comp=Z,1.0nm,0.9s
MKAR pmax pmax
comp=Z,2.0nm,0.4s
MKAR pmax pmax
comp=Z,1.0nm,0.9s
MKAR pmax pmax
comp=N,2.0nm,0.8s
MKAR smax smax
comp=N,1.0nm,1.0s
MKAR pmax pmax
comp=Z,1.0nm,0.8s
MKAR pmax pmax
comp=Z,1.0nm,0.8s
KURK Kurchatov 113.45 317 *e*PKiKP **PKiKP** 13 19 36.2 -1.3
KURK *e* 13 20 37.1
KURK 13 30 22.0
KURK Kurchatov 113.45 317 *e*PKiKP **PKiKP** 13 19 36.2 -1.3
KURK *e*PP **PP** 13 20 37.1 -4.0
KURK SKP **SKiKP** 13 22 16.2 +0.3
KURK PKKPbc **PKKPbc** 13 30 21.9 -2.9
KURBB Kurchatov Arra 113.50 317 SKP **SKPdf** 13 22 16.2 +0.2
comp=Z,2.9nm,0.9s,baz=94,slow=1.7,SNR=7.7
KURBB PKKPbc PKKPbc 13 30 22.0 -2.7
comp=Z,1.4nm,0.9s,baz=273,slow=4.0,SNR=4.6
KSH Kashi 114.28 305 *e*PKP PKPdf 13 19 41.0 +1.4
KSH *e*PP **PP** 13 20 54.3 +6.9
KSH *es*PKP 13 22 58.1
KSH SKS **SKSdf** 13 25 56.4 +1.6
KSH SKKS **SKKSac** 13 26 45.1 -0.4
TKM2 Tokmak 2 114.92 309 *e*PKiKP PKPdf 13 19 39.6 -1.2
TKM2 Tokmak 2 114.92 309 *e*PKPdf PKPdf 13 19 39.6 -1.3
AAK Ala-Archa 115.70 308 SKP **SKiKP** 13 22 21.3 +0.4
comp=Z,1.8nm,0.9s,baz=5.3,slow=2.5,SNR=4.1
AAK S **SKSac** 13 25 35.9 -0.3
comp=Z,0.3nm,0.3s,baz=52,slow=23,SNR=6.9
AAK PKKPab PKKPab 13 30 21.1 -1.7
comp=Z,2.8nm,0.8s,baz=252,slow=2.3,SNR=7.8
AAK Ala-Archa 115.70 308 *e*PKiKP **PKPdf** 13 19 40.9 -1.4
AAK S **SKSac** 13 25 35.9 -0.3
AAK Ala-Archa 115.70 308 *e*PKPdf **PKPdf** 13 19 40.9 -1.4
AAK SKP **SKiKP** 13 22 21.3 +0.4
AAK S **SKSac** 13 25 35.9 -0.3
AAK PKKPab **PKKPab** 13 30 21.1 -1.7
BVAR Borovoye Array 118.55 320 SKP **SKiKP** 13 22 26.4 +0.5
comp=Z,4.1nm,0.9s,baz=64,slow=3.4,SNR=6.8
BVAR PKKPab PKKPab 13 30 11.0 +1.1
comp=Z,0.5nm,0.6s,baz=328,slow=5.3,SNR=3.6
BRVK Borovoye 118.61 320 *i* PKiKP **PKPdf** 13 19 45.7 -1.6
BRVK pmax pmax
comp=Z,12nm,1.0s
BRVK Borovoye 118.61 320 *e*PKPdf **PKPdf** 13 19 46.4 -0.9
KKAR Karatay Array 118.65 309 *e*PKiKP **PKPdf** 13 19 46.8 -1.0
KKAR Karatay Array 118.65 309 *e*PKPdf **PKPdf** 13 19 46.8 -1.0
KBL Kabul 119.26 299 *e*PKiKP **PKPdf** 13 19 49.1 -0.4
KBL Kabul 119.26 299 *e*PKPdf **PKPdf** 13 19 49.1 -0.4
ZRNK Zerenda 119.39 320 *e*PKiKP **PKPdf** 13 19 47.6 -1.3
ZRNK Zerenda 119.39 320 *e*PKPdf **PKPdf** 13 19 47.5 -1.3
DAG Danmarks Havn 122.62 5 *i* P **PKPdf** 13 19 52.6 -1.8
comp=Z,2.9nm,0.8s
DAG **Danmarks Havn** 122.62 5 *i* PKiKP **PKPdf** 13 19 52.6 -1.8
DAG pmax pmax
comp=Z,2.0nm,0.8s
SVE Sverdlovsk 123.49 325 *e*PKiKP **PKPdf** 13 19 56.6 0.0
SVE pmax pmax
comp=Z,18nm,1.2s
SOKR Solikamsk 124.61 329 *e*PKiKP **PKPdf** 13 19 57.1 -1.5
SOKR pmax pmax
comp=Z,39nm,1.2s
ARU Arti 124.70 325 PKP **PKPdf** 13 19 58.7 -0.2
comp=Z,6.2nm,0.3s,baz=74,slow=2.2
ARU PP **PP** 13 21 52.4 -4.4
comp=Z,5.0nm,0.8s,baz=95,slow=7.8,SNR=9.7
ARU SKP **SKiKP** 13 22 39.2 +1.1
comp=Z,2.7nm,0.6s,baz=49,slow=5.3,SNR=4.4
ARU S **SKSac** 13 26 06.3 +0.5
comp=Z,0.8nm,0.3s,baz=260,slow=22,SNR=7.3
ARU PKKPbc **PKKPab** 13 29 41.1 -1.8
comp=Z,0.6nm,0.3s,baz=99,slow=0.4,SNR=4.1
ARU Arti 124.70 325 *i* PKiKP **PKPdf** 13 19 58.5 -0.4
ARU 13 21 53.9
ARU 13 26 13.3
ARU Arti 124.70 325 *e*PKPdf **PKPdf** 13 19 58.1 -0.8
ARU *e*PP **PP** 13 21 52.2 -4.7
ARU SKP **SKiKP** 13 22 39.2 +1.1
ARU S **SKSac** 13 26 06.3 +0.5
ARU PKKPbc **PKKPab** 13 29 41.1 -1.8
ABKAR Akbulak array 125.53 317 *e*PKPdf **PKPdf** 13 19 60.0 -0.7
ABKAR *e*PP **PP** 13 22 01.7 -0.9
AKTO Aktyubinsk 126.52 318 PKP **PKPdf** 13 20 02.2 -0.4
comp=Z,6.4nm,0.8s,baz=52,slow=1.8,SNR=22
AKTO SKPbc SKPbc 13 22 22.9
comp=Z,2.2nm,0.9s,baz=82,slow=5.0,SNR=4.0
AKTO S **SKSac** 13 26 13.3 +1.6
comp=Z,0.5nm,0.5s,baz=217,slow=15,SNR=6.9
GEYT Alibeck 128.17 303 PKP **PKPdf** 13 20 06.2 0.0
comp=Z,3.5nm,0.6s,baz=36,slow=3.8,SNR=14
GEYT PP **PP** 13 22 17.1 -3.1
comp=Z,12nm,1.2s,baz=52,slow=5.8,SNR=11
GEYT SKPbc SKPbc 13 22 31.0
comp=Z,5.3nm,0.9s,baz=116,slow=3.4,SNR=5.5
ARCES ARCESS Array B 128.63 349 PKhKP PKPpre 13 19 52.6
comp=Z,4.9nm,1.0s,baz=342,slow=8.5,SNR=6.4
ARCES PKP **PKPdf** 13 20 05.5 -0.6
comp=Z,6.7nm,0.6s,baz=96,slow=1.2,SNR=22
ARCES SKPbc SKPbc 13 22 31.8
comp=Z,9.7nm,0.9s,baz=20,slow=11,SNR=7.1
LBTB Lobatse 129.14 209 PKP **PKPdf** 13 20 09.4 +0.8
comp=Z,1.3nm,0.5s,baz=154,slow=9.0,SNR=1.6
KLMR Klimovskoe 131.47 336 *e*PKiKP **PKPdf** 13 20 09.9 -1.7
KLMR pmax pmax
comp=Z,20nm,1.3s
FIA1 FINESS Array S 135.43 343 *e*PKPdf **PKPdf** 13 20 19.9 +0.9
FIA1 *e*SKPbc **SKPbc** 13 22 54.6 +0.8
FIA1 *e*SKPbc **SKPab** 13 22 55.2 -4.3
FINES FINESS Array B 135.43 343 PKhKP PKPpre 13 20 05.4
comp=Z,0.7nm,0.4s,baz=54,slow=3.4,SNR=9.3
FINES PKP **PKPdf** 13 20 18.9 -0.2
comp=Z,7.4nm,0.8s,baz=91,slow=3.2,SNR=8.7
FINES SKPbc **SKPbc** 13 22 55.1 +1.3
comp=Z,9.6nm,0.9s,baz=56,slow=7.1,SNR=13
FINES SKPab **SKiKP** 13 23 00.3 +0.6
comp=Z,8.0nm,0.8s,baz=45,slow=5.7,SNR=8.7
LSZ Lusaka 135.87 219 PKP **PKPdf** 13 20 22.1 +0.6
comp=Z,2.2nm,0.5s,baz=149,slow=2.1,SNR=6.7
LSZ SKPbc **SKPbc** 13 22 57.3 +0.5
comp=Z,3.4nm,0.9s,baz=235,slow=3.3,SNR=4.6
LSZ SKPab **SKPab** 13 23 04.9 +1.9
comp=Z,0.7nm,0.3s,baz=166,slow=4.2,SNR=3.5
LSZ Lusaka 135.87 219 PKIKP **PKPdf** 13 20 22.1 +0.6
LSZ 13 23 04.9
LSZ pmax pmax
comp=Z,1.0nm,0.4s
LSZ pmax pmax
comp=N,3.0nm,0.9s
LSZ pmax pmax
comp=N,1.0nm,0.4s
LSZ Lusaka 135.87 219 PKP **PKPdf** 13 20 22.1 +0.6
LSZ *e*SKPbc **SKPbc** 13 22 58.7 +1.9
LSZ *e*PP **PP** 13 23 06.5 -1.5
OBN Obninsk 136.31 331 PKP **PKPdf** 13 20 20.4 -0.4
comp=N,6.3nm,0.4s,baz=128,slow=2.7
OBN SKPbc **SKPbc** 13 22 57.9 +1.3
comp=N,61nm,0.9s,baz=70,slow=1.6,SNR=28
OBN Obninsk 136.31 331 *i* PKIKP **PKPdf** 13 20 20.6 -0.2
OBN SS SS 13 40 21.0 -3.3
OBN pmax pmax
comp=Z,17nm,0.9s
DGRG David-gareji 137.30 310 P **SKPbc** 13 23 01.6 +1.4
TSUM Tsumeb 137.62 203 PKP **PKPdf** 13 20 26.7 +2.1
comp=Z,1.3nm,0.8s,baz=191,slow=5.2,SNR=2.2
TSUM SKPbc **SKPbc** 13 23 03.4 +1.5
comp=Z,6.7nm,1.2s,baz=127,slow=4.5,SNR=5.0
GUDG Gudauri 137.65 311 P **SKPbc** 13 23 03.8 +2.5
VSU Vasula 137.68 340 *i* PKIKP **PKPdf** 13 20 23.5 +0.2
TBLG Delisi 137.68 310 P **SKiKP** 13 23 04.0 -1.1
GNI Garni 138.11 308 SKPbc **SKiKP** 13 23 04.9 -1.3
comp=Z,9.8nm,1.1s,baz=125,slow=4.7,SNR=5.0
KBZ Khabaz 138.32 314 PKP **PKPdf** 13 20 24.1 -0.8
comp=Z,3.1nm,1.0s,baz=57,slow=6.8,SNR=4.6
KBZ SKPbc **SKPbc** 13 23 04.3 +1.5
comp=Z,3.6nm,0.9s,baz=91,slow=3.9,SNR=6.4
ONI Oni 138.33 312 P **SKPbc** 13 23 04.8 +1.8
KVAR Kislovodsk Arr 138.38 314 PKP **PKPdf** 13 20 25.4 +0.2
comp=Z,2.1nm,0.3s,baz=75,slow=20,SNR=4.9
KVAR SKPbc **SKiKP** 13 23 05.2 -1.3
comp=Z,6.4nm,0.8s,baz=11,slow=3.3,SNR=5.5
KIV Kislovodsk 138.39 314 *i* PKIKP **PKPdf** 13 20 24.6 -0.6
KIV *e* 13 23 21.0
KIV *e* 13 23 43.7
KIV pmax pmax
comp=Z,6.0nm,1.0s
KIV Kislovodsk 138.39 314 *e*SKPbc **SKPbc** 13 23 04.5 +1.3
NC405 NORSAR Array S 138.60 352 *e*SKPbc **SKiKP** 13 23 04.8 -1.5
NB201 NORSAR Array S 138.71 353 *e*SKPbc **SKiKP** 13 23 05.0 -1.5
NB2 NORSAR Subarra 138.73 353 PKP PKPpre 13 20 16.2
comp=Z,2.0nm,0.7s,baz=10,slow=3.2
NOA NORSAR Array B 138.73 353 PKhKP PKPpre 13 20 16.1
comp=Z,3.5nm,0.8s,baz=14,slow=2.4,SNR=11
NOA PKP **PKiKP** 13 20 26.8 -0.8
comp=Z,1.4nm,0.5s,baz=14,slow=3.8,SNR=4.6
NOA SKPbc **SKiKP** 13 23 05.1 -1.5
comp=Z,10nm,0.9s,baz=16,slow=4.5,SNR=17
NOA SKPab **SKPab** 13 23 13.9 -0.3
comp=Z,4.9nm,1.1s,baz=12,slow=3.1,SNR=3.3
KMBO Kilima Mbogo 138.87 243 PKhKP PKPpre 13 20 19.7
comp=Z,0.8nm,0.4s,baz=52,slow=3.0,SNR=4.6
KMBO SKPbc **SKiKP** 13 23 08.2 -0.4
comp=Z,0.8nm,0.3s,baz=254,slow=0.8,SNR=6.4

KMBO	**Kilima Mbogo**	**138.87**	**243**		PKHKP	PKPpre	13 20 19.7	
KMBO					pmax	pmax		
	comp=Z,1.0nm,0.4s							
KMBO					pmax	pmax		
	comp=N,1.0nm,0.3s							
RAYN	**Ar Rayn**	**139.03**	**283**	*e*	PKPpre	PKPpre	13 20 19.6	
RAYN					eSKPbc	**SKPbc**	**13 23 06.3**	**+0.7**
HFS	**Hagfors**	**139.26**	**351**		SKPbc	**SKPbc**	**13 23 06.0**	**+1.1**
	comp=N,21nm,0.8s,baz=333,slow=1.6,SNR=12							
NACGM	**Naroch**	**140.47**	**337**	*e*		**PKPdf**	**13 20 24.0**	**-4.5**
ANN	**Anapa**	**141.48**	**318**	*i*	PKHKP	PKPpre	13 20 23.6	
ANN				*e*			13 23 40.2	
ANN					pmax	pmax		
	comp=Z,32nm,1.5s							
SUW	**Suwalki**	**142.45**	**339**	*e*	PKP	**PKPdf**	**13 20 29.3**	**-2.7**
SUW					ePP	**SKiKP**	**13 23 14.9**	**+0.5**
SUW	**Suwalki**	**142.45**	**339**	*e*	PKIKP	**PKPdf**	**13 20 29.4**	**-2.6**
AKASG	**Malin Array Be**	**142.56**	**331**		PKhKP	PKPpre	13 20 28.7	
	comp=Z,32nm,0.5s,baz=42,slow=4.4,SNR=151							
AKASG					SKPbc	**SKiKP**	**13 23 14.2**	**-0.5**
	comp=Z,13nm,0.9s,baz=39,slow=3.0,SNR=22							
AKBB	**Malin Array Si**	**142.56**	**331**		ePKHKP	PKPpre	13 20 28.4	
AKBB	**Malin Array Si**	**142.56**	**331**		ePKPpre	PKPpre	13 20 28.4	
AKBB					eSKPbc	**SKPbc**	**13 23 10.6**	**-3.0**
KIEV	**Kiev**	**142.57**	**331**		ePKHKP	PKPpre	13 20 28.6	
KIEV	**Kiev**	**142.57**	**331**		ePKPpre	PKPpre	13 20 28.6	
KIEV					eSKPbc	**SKiKP**	**13 23 14.4**	**-0.3**
AK11	**Malin Array Si**	**142.60**	**331**		ePKPpre	PKPpre	13 20 28.5	
SHEL	**Horse Pasture**	**143.28**	**169**	*i*	PKIKP	**PKPdf**	**13 20 35.7**	**+1.0**
MUD	**Monsted U'grnd**	**143.45**	**353**	⇓	*i*	PKPab	13 20 32.3	-0.1
	comp=Z,160nm,1.1s							
MUD	**Monsted U'grnd**	**143.45**	**353**	⇓	*i*	PKIKP	PKPab	13 20 32.3	-0.1
MUD					pmax	pmax		
	comp=Z,160nm,1.1s							
SIM	**Simferopol'**	**143.46**	**320**	*d*	*i*	PKIKP	PKPbc	13 20 33.5	+0.5
SIM					pmax	pmax		
	comp=Z,140nm,0.9s							
COP	**Copenhagen**	**143.72**	**349**	⇓	*i*	PKPbc	13 20 33.2	-0.2
	comp=Z,66nm,1.0s							
COP	**Copenhagen**	**143.72**	**349**	⇓	*i*	PKIKP	PKPbc	13 20 33.2	-0.2
COP					pmax	pmax		
	comp=Z,66nm,1.0s							
BSD	**Bornholm Skovb**	**143.78**	**347**	⇓	*i*	PKPbc	13 20 33.0	-0.6
	comp=Z,159nm,0.9s							
BSD	**Bornholm Skovb**	**143.78**	**347**	⇓	*i*	PKIKP	PKPbc	13 20 33.0	-0.6
BSD					pmax	pmax		
	comp=Z,160nm,0.9s							
SLMH	**Al Salmeh**	**144.34**	**304**	*e*		PKPbc	13 20 36.2	+0.1
SORM	**Soroca**	**144.73**	**328**	⇑	*i*	**PKPdf**	**13 20 36.2**	**0.0**
SORM	**Soroca**	**144.73**	**328**	⇑	PKIKP	**PKPdf**	**13 20 36.2**	**0.0**
KUZU	**Kuzuini**	**144.83**	**305**	*i*	P	PKPpre	13 20 27.8	
KUZU				*i*	S	**PKPab**	**13 20 39.9**	**+1.3**
ESK	**Eskdalemuir**	**144.89**	**5**	*e*	PKIKP	**PKPdf**	**13 20 36.5**	**+0.2**
ESK	**Eskdalemuir**	**144.89**	**5**	*e*	PKPdf	**PKPdf**	**13 20 36.5**	**+0.2**
KAMA	**Osmaniye**	**145.01**	**306**	*i*	P	**PKPdf**	**13 20 30.0**	**-7.2**
KAMA				*i*	S	**PKPab**	**13 20 39.3**	**+0.1**
BEL	**Belsk**	**145.07**	**339**	*e*	PKP	**PKPbc**	**13 20 37.9**	**+0.2**
BEL					ePP	**SKPbc**	**13 23 21.9**	**+2.5**
BEL	**Belsk**	**145.07**	**339**	*e*	PKIKP	**PKPbc**	**13 20 37.9**	**+0.2**
ANDN	**Andirin**	**145.13**	**307**	*i*	P	**PKPdf**	**13 20 35.3**	**-2.1**
ANDN				*i*	S	**PKPab**	**13 20 41.5**	**+1.7**
DRWC	**Darouich**	**145.19**	**305**	*e*	P	**PKPbc**	**13 20 39.1**	**+0.4**
ROOS	**tl_alroos**	**145.38**	**301**	*e*	P	**PKPbc**	**13 20 40.0**	**+0.7**
LVV	**L'vov**	**145.47**	**334**	*e*	PKIKP	**PKPbc**	**13 20 38.2**	**-0.7**
ZALF	**Zalf**	**145.63**	**299**	*e*	P	**PKPbc**	**13 20 40.6**	**+0.6**
YAYL	**Yayladag**	**145.80**	**305**	*i*	P	**PKPbc**	**13 20 40.0**	**-0.5**
YAYL				*i*	S	**PKPab**	**13 20 44.8**	**+2.3**
LEOM	**Leova**	**145.89**	**326**	⇑	*i*	**PKPbc**	**13 20 40.6**	**+0.4**
LEOM	**Leova**	**145.89**	**326**	⇑	PKP2	**PKPbc**	**13 20 40.6**	**+0.4**
YURE	**YUREGIR**	**145.91**	**306**	*i*	P	**PKPdf**	**13 20 31.6**	**-7.0**
YURE				*i*	S	**PKPab**	**13 20 42.1**	**-0.7**
ARNB	**Al Arnab**	**145.96**	**304**	*e*	P	**PKPbc**	**13 20 40.9**	**+0.1**
MARH	**Ras Al Marh**	**146.07**	**301**	*e*	P	**PKPbc**	**13 20 41.5**	**0.0**
ASF	**Jabal al Asfar**	**146.15**	**298**		pPKPbc	pPKPbc	13 22 59.0	-0.6
	comp=Z,2.0nm,0.5s,baz=17,slow=4.5,SNR=2.6							
ASF					SKPbc	**SKiKP**	**13 23 23.1**	**+0.2**
	comp=Z,1.7nm,0.5s,baz=135,slow=3.3,SNR=4.0							
ASF					SKKPbc	**SKKPbc**	**13 31 17.2**	**+0.5**
	comp=Z,1.2nm,0.4s,baz=268,slow=2.2,SNR=3.9							
KWP	**Kalwaria Pacla**	**146.16**	**335**	*e*	PKP	**PKPbc**	**13 20 41.2**	**+0.3**
KWP					ePP	**SKPbc**	**13 23 24.0**	**+2.0**
KWP	**Kalwaria Pacla**	**146.16**	**335**	⇑	*i*	**PKPbc**	**13 20 41.4**	**+0.5**
KWP	**Kalwaria Pacla**	**146.16**	**335**	*e*	PKP2	**PKPbc**	**13 20 41.2**	**+0.3**
SALA	**Sala**	**146.17**	**299**	*e*	P	**PKPbc**	**13 20 41.8**	**+0.1**
BR131	**Keskin Array S**	**146.26**	**312**	*e*	PKPdf	**PKPdf**	**13 20 38.2**	**-1.1**
BR131				*e*	PKPbc	**PKPbc**	**13 20 41.2**	**-0.5**
BRTR	**Keskin Array B**	**146.26**	**312**		PKP	**PKPdf**	**13 20 38.4**	**-0.9**
	comp=Z,11nm,0.7s,baz=140,slow=3.3,SNR=58							
BRTR					PKPbc	**PKPbc**	**13 20 41.3**	**-0.3**
	comp=Z,11nm,0.7s,baz=133,slow=2.8,SNR=51							
BRTR					pPKPbc	pPKPbc	13 22 58.6	-1.2
	comp=Z,1.3nm,0.8s,baz=103,slow=6.2,SNR=2.8							
BRTR					SKPbc	**SKiKP**	**13 23 23.6**	**+0.6**
	comp=Z,3.3nm,0.9s,baz=90,slow=1.4,SNR=4.5							
BRTR					SKPab	SKPab	13 23 48.9	
	comp=Z,3.9nm,1.0s,baz=90,slow=3.7,SNR=4.4							
BRTR					SKKPbc	**SKKPab**	**13 31 15.6**	**+0.1**
	comp=Z,1.8nm,0.9s,baz=205,slow=4.9,SNR=9.4							
BRTR	**Keskin Array B**	**146.26**	**312**		PKIKP	**PKPdf**	**13 20 38.4**	**-0.9**
BRTR							13 20 41.3	
BRTR							13 22 58.6	
BRTR					pmax	pmax		
	comp=Z,11nm,0.7s							
BRTR					pmax	pmax		
	comp=Z,11nm,0.7s							
BRTR					pmax	pmax		
	comp=Z,1.0nm,0.8s							
BRTR					pmax	pmax		
	comp=N,3.0nm,0.9s							
BRTR					pmax	pmax		
	comp=N,4.0nm,1.0s							
TOTH	**TOTAH**	**146.27**	**300**	*e*	P	**PKPbc**	**13 20 42.1**	**+0.3**
PRAR	**RASCA**	**146.30**	**329**	⇑	*i*	**PKPbc**	**13 20 41.6**	**+0.3**
TLCR		**146.40**	**324**	⇓	*i*	**PKPbc**	**13 20 41.8**	**+0.2**
TLCR		**146.40**	**324**	⇓	PKP2	**PKPbc**	**13 20 41.8**	**+0.2**
BUR08	**Bucovina Ar. S**	**146.59**	**330**	*e*	PKPdf	**PKPbc**	**13 20 42.6**	**+0.4**
DSB	**Dublin**	**146.60**	**8**	*e*	PKPdf	**PKPbc**	**13 20 41.8**	**-0.1**
BURAR	**Bucovina Array**	**146.60**	**330**	⇓	*i*	**PKPbc**	**13 20 42.8**	**+0.5**
BURAR	**Bucovina Array**	**146.60**	**330**	⇓	PKP2	**PKPbc**	**13 20 42.8**	**+0.5**
BRBR	**Barbar**	**146.65**	**300**	*e*	P	**PKPbc**	**13 20 42.4**	**-0.6**
TESR	**Tescani**	**146.68**	**327**	⇓	*i*	**PKPbc**	**13 20 42.5**	**+0.1**
OJC	**Ojcow**	**146.77**	**338**	*e*	PKP	**PKPbc**	**13 20 42.7**	**+0.2**
OJC					ePP	**SKPbc**	**13 23 25.5**	**+2.2**
OJC	**Ojcow**	**146.77**	**338**	*e*	PKP2	**PKPbc**	**13 20 42.1**	**-0.4**
OJC	**Ojcow**	**146.77**	**338**	*e*	PKPdf	**PKPbc**	**13 20 42.1**	**-0.4**
OJC					eSKPbc	**SKiKP**	**13 23 25.4**	**+1.9**
CFR	**Carcaliu**	**146.78**	**324**	⇓	*i*	**PKPbc**	**13 20 42.7**	**+0.1**
CFR	**Carcaliu**	**146.78**	**324**	⇓	PKP2	**PKPbc**	**13 20 42.7**	**+0.1**
ANTO	**Ankara**	**146.78**	**313**	*e*	PKP2	**PKPbc**	**13 20 42.8**	**-0.1**
ANTO	**Ankara**	**146.78**	**313**	*e*	PKPbc	**PKPbc**	**13 20 42.8**	**-0.1**
TCHB	**Talchebab**	**146.81**	**299**	*e*	P	**PKPbc**	**13 20 42.7**	**-0.5**
BR231	**Keskin MP Arra**	**146.81**	**313**	*e*	PKPdf	**PKPdf**	**13 20 38.9**	**-1.2**
BR231				*e*	PKPbc	**PKPbc**	**13 20 41.9**	**-1.1**
BR231				*e*	PKPbc	**PKiKP**	**13 20 43.1**	**-1.8**
KOLS	**Kolonicke sedl**	**146.89**	**334**	*e*	PKP2	**PKPbc**	**13 20 43.5**	**+0.7**
KOLS	**Kolonicke sedl**	**146.89**	**334**	*e*	PKP	**PKPbc**	**13 20 43.5**	**+0.7**
STHS	**Stebnicka Huta**	**146.90**	**336**	*e*	PKP2	**PKPbc**	**13 20 43.5**	**+0.6**
STHS	**Stebnicka Huta**	**146.90**	**336**	*e*	PKP	**PKPbc**	**13 20 43.5**	**+0.6**
STHS				*e*			13 20 47.3	
TIRR	**Tirgusor**	**147.08**	**323**	⇑	*i*	**PKPbc**	**13 20 43.8**	**+0.4**
TIRR	**Tirgusor**	**147.08**	**323**	⇑	PKP2	**PKPbc**	**13 20 43.8**	**+0.4**
TIRR	**Tirgusor**	**147.08**	**323**	*e*	PKPbc	**PKPbc**	**13 20 43.2**	**-0.2**
UZH	**Uzhgorod**	**147.12**	**334**	*d*	*i*	PKP2	**PKPbc**	**13 20 44.0**	**+0.6**
PLOR	**Plostina**	**147.13**	**327**	⇑	*i*	**PKPbc**	**13 20 43.6**	**0.0**
PLOR	**Plostina**	**147.13**	**327**	⇑	PKP2	**PKPbc**	**13 20 43.6**	**0.0**
MMAI	**Mount Meron Ar**	**147.19**	**300**		pPKPbc	pPKPbc	13 23 02.5	-0.3
	comp=N,5.6nm,0.7s,baz=62,slow=3.9,SNR=2.4							
HARR	**Harsova**	**147.20**	**324**	⇓	*i*	**PKPbc**	**13 20 44.4**	**+0.6**
HARR	**Harsova**	**147.20**	**324**	⇓	PKP2	**PKPbc**	**13 20 44.4**	**+0.6**
CRVS	**Cervenica-Dubn**	**147.24**	**335**	*e*	PKP2	**PKPbc**	**13 20 44.3**	**+0.5**
CRVS	**Cervenica-Dubn**	**147.24**	**335**	*e*	PKP	**PKPbc**	**13 20 44.3**	**+0.5**
CRVS				*e*			13 20 48.3	
NIE	**Niedzica**	**147.26**	**337**	*e*	PKP	**PKPbc**	**13 20 44.6**	**+0.8**
NIE				*e*	PP	**SKPbc**	**13 23 27.0**	**+2.6**
NIE	**Niedzica**	**147.26**	**337**	*e*	PKP2	**PKPbc**	**13 20 44.7**	**+0.9**
GRER		**147.28**	**326**	⇑	*i*	**PKPbc**	**13 20 44.8**	**+0.8**
KSP	**Ksiaz**	**147.34**	**342**	*e*	PKP	**PKPbc**	**13 20 44.5**	**+0.6**
KSP				*e*	PP	SKPbc	13 23 04.8	-20
KSP	**Ksiaz**	**147.34**	**342**	*e*	PKP2	**PKPbc**	**13 20 44.6**	**+0.6**
BMR	**Baia Mare**	**147.34**	**332**	⇓	*i*	**PKPbc**	**13 20 44.5**	**+0.5**
BMR	**Baia Mare**	**147.34**	**332**	⇓	PKP2	**PKPbc**	**13 20 44.5**	**+0.5**
MANR	**Mangalia**	**147.37**	**322**	⇑	*i*	**PKPbc**	**13 20 44.8**	**+0.6**
ARCR	**ARCALIA**	**147.39**	**330**	⇑	*i*	**PKPab**	**13 20 49.6**	**+1.3**
CWF	**Charnwood Fore**	**147.58**	**3**	*e*	PKPbc	**PKPbc**	**13 20 43.9**	**-0.6**
MSAB	**Monastry St. A**	**147.64**	**323**	⇑	*i*	**PKPbc**	**13 20 45.5**	**+0.6**
OKC	**Ostrava-Krasne**	**147.65**	**340**	⇑	*i*	PKP	**PKPbc**	**13 20 45.1**	**+0.3**
OKC					*e*	PKPAB	**PKPab**	**13 20 49.8**	**+0.5**
OKC	**Ostrava-Krasne**	**147.65**	**340**		*i*	PKP2	**PKPbc**	**13 20 45.1**	**+0.3**
ISR	**Istrita**	**147.68**	**326**	⇑	*i*	**PKPbc**	**13 20 45.7**	**+0.6**
ISR	**Istrita**	**147.68**	**326**	⇑	PKP2	**PKPbc**	**13 20 45.7**	**+0.6**
MLR	**Muntele Rosu**	**147.74**	**327**	⇑	*i*	**PKPbc**	**13 20 45.3**	**0.0**
MLR	**Muntele Rosu**	**147.74**	**327**	⇑	PKP2	**PKPbc**	**13 20 45.4**	**+0.1**
MLR	**Muntele Rosu**	**147.74**	**327**	*e*	PKPbc	**PKPbc**	**13 20 45.1**	**-0.2**
CLL	**Collm**	**147.75**	**346**	*e*	PKPdf	**PKPdf**	**13 20 41.0**	**-0.1**
CLL				⇓	*i*	PKPbc	**PKPbc**	**13 20 45.1**	**+0.2**
	comp=Z,81nm,0.9s							
CLL				⇑	*i*	PKPab	**PKPab**	**13 20 49.5**	**-0.1**
	comp=Z,49nm,0.9s							
CLL					*i*	pPKPab	**pPKPab**	**13 23 05.3**	**+0.9**
CLL					*i*	SKPbc	**SKiKP**	**13 23 26.8**	**+1.4**
	comp=Z,17nm,1.3s							
CLL					*e*	PP	**PP**	**13 24 16.0**	**-2.0**
CLL					*e*	SS	**SS**	**13 42 33.0**	**-1.1**
CLL					*e*	SSS	SSS	13 48 20.0	
CLL	**Collm**	**147.75**	**346**	⇓	*e*	PKIKP	**PKPdf**	**13 20 41.0**	**-0.1**
CLL					*i*			13 20 49.5	
CLL					pmax	pmax		
	comp=Z,81nm,0.9s							
CLL					pmax	pmax		
	comp=Z,49nm,0.9s							
CLL	**Collm**	**147.75**	**346**		*e*	PKPbc	**PKPbc**	**13 20 44.8**	**-0.1**
CLL					*e*	SKPbc	**SKiKP**	**13 23 27.2**	**+1.8**
DPC	**Dobruska-Polom**	**147.77**	**342**		*e*	PKPDF	**PKPdf**	**13 20 41.7**	**+0.4**
DPC				⇑	*i*	PKP	**PKPbc**	**13 20 45.7**	**+0.6**
DPC					*e*	PKPAB	**PKPab**	**13 20 50.7**	**+0.9**
DPC					*e*	pPKP	**pPKPdf**	**13 23 05.3**	**+2.9**
DPC	**Dobruska-Polom**	**147.77**	**342**		*e*	PKIKP	**PKPdf**	**13 20 41.7**	**+0.4**
DPC					*e*			13 20 50.7	
LANS	**Liptovska Anna**	**147.78**	**337**		*e*	PKP2	**PKPab**	**13 20 51.1**	**+1.2**
LANS	**Liptovska Anna**	**147.78**	**337**		*e*	PKP	**PKPab**	**13 20 51.1**	**+1.2**
KRLC	**Kraliky**	**147.88**	**341**		*e*	PKPDF	**PKPdf**	**13 20 41.8**	**+0.3**
KRLC				⇑	*i*	PKP	**PKPbc**	**13 20 45.8**	**+0.4**
KRLC					*e*	PKPAB	**PKPab**	**13 20 50.8**	**+0.5**
KRLC	**Kraliky**	**147.88**	**341**		*e*	PKIKP	**PKPdf**	**13 20 41.8**	**+0.3**
KRLC					*e*			13 20 50.8	
MORC	**Moravsky Berou**	**147.90**	**340**	⇑	*i*	PKP	**PKPbc**	**13 20 46.1**	**+0.6**
MORC	**Moravsky Berou**	**147.90**	**340**		*e*	PKIKP	**PKPdf**	**13 20 40.9**	**-0.6**
MORC	**Moravsky Berou**	**147.90**	**340**		*e*	PKPdf	**PKPdf**	**13 20 40.9**	**-0.6**
MORC					*e*	PKPbc	**PKPbc**	**13 20 45.3**	**-0.2**
BRG	**Berggiesshubel**	**147.93**	**345**		*e*	PKP	**PKPdf**	**13 20 41.8**	**+0.3**
	comp=Z,9.6nm,1.4s							
BRG					*i*			13 20 45.7	
	comp=Z,50nm,1.0s							
BRG					*i*			13 20 50.3	
	comp=Z,46nm,0.9s							
BRG					pPKP	**pPKPdf**	**13 23 06.2**	**+3.7**
	comp=Z,17nm,1.4s							
BRG	**Berggiesshubel**	**147.93**	**345**		*e*	PKIKP	**PKPdf**	**13 20 41.8**	**+0.3**
BRG					*i*			13 20 50.3	
BRG					pmax	pmax		
	comp=Z,10.0nm,1.4s							
BRG					pmax	pmax		
	comp=Z,50nm,1.0s							
BRG					pmax	pmax		
	comp=Z,46nm,1.0s							
BRG					pmax	pmax		
	comp=Z,17nm,1.4s							
KECS	**Kecovo**	**147.95**	**336**		*e*	PKP2	**PKPbc**	**13 20 46.0**	**+0.4**
KECS	**Kecovo**	**147.95**	**336**		*e*	PKP	**PKPbc**	**13 20 46.0**	**+0.4**
KECS					*e*			13 20 51.0	
SECR			**147.98**	**326**	⇑	*i*	**PKPbc**	**13 20 46.1**	**+0.3**
CJR	**Cluj-Napoca**	**148.01**	**331**	⇑	*i*	**PKPbc**	**13 20 46.4**	**+0.5**
CJR	**Cluj-Napoca**	**148.01**	**331**	⇑	PKP2	**PKPbc**	**13 20 46.4**	**+0.5**
PVCC	**Panska Ves**	**148.09**	**344**	⇑	*i*	PKP	**PKPbc**	**13 20 46.4**	**+0.6**
PVCC					*e*	pPKP	**pPKPdf**	**13 23 08.0**	**+5.2**
PVCC	**Panska Ves**	**148.09**	**344**		*i*	PKP2	**PKPbc**	**13 20 46.4**	**+0.6**
SULR		**148.12**	**325**	⇑	*i*	**PKPbc**	**13 20 46.1**	**0.0**
WTSB	**Winterswijk**	**148.13**	**354**		*e*	PKPbc	**PKPbc**	**13 20 45.8**	**0.0**
	comp=Z,110nm,0.9s							
WTSB					*e*	PKPab	**PKPab**	**13 20 50.8**	**-0.4**
VOIR		**148.23**	**327**	⇑	*i*	**PKPbc**	**13 20 46.7**	**+0.2**
VOIR		**148.23**	**327**	⇑	PKP2	**PKPbc**	**13 20 46.7**	**+0.2**
EIL	**Elat**	**148.24**	**294**		PKP	**PKPdf**	**13 20 42.0**	**-0.6**
	comp=Z,3.0nm,0.5s,baz=56,slow=11							
EIL					PKPbc	**PKPbc**	**13 20 47.2**	**+0.3**
	comp=Z,4.3nm,0.5s,baz=153,slow=12,SNR=1.5							
EIL					pPKPbc	**pPKPbc**	**13 23 06.5**	**+0.6**
	comp=Z,4.7nm,0.7s,baz=133,slow=6.6,SNR=2.1							
CSS	**Mathiatis**	**148.29**	**304**		*e*	PKPbc	**PKPbc**	**13 20 46.4**	**-0.5**
DRGR		**148.36**	**331**	⇑	*i*	**PKPbc**	**13 20 47.0**	**+0.3**
DRGR		**148.36**	**331**	⇑	PKP2	**PKPbc**	**13 20 47.0**	**+0.3**
ARR	**Arges**	**148.49**	**328**	⇓	*i*	**PKPbc**	**13 20 48.0**	**+0.9**
PRA	**Prague**	**148.54**	**344**	⇑	*i*	PKP	**PKPbc**	**13 20 47.5**	**+0.5**
PRA	**Prague**	**148.54**	**344**		*i*	PKP2	**PKPbc**	**13 20 47.5**	**+0.5**
VYHS	**Vyhne**	**148.56**	**337**		*e*	PKP2	**PKPbc**	**13 20 47.6**	**+0.4**
VYHS	**Vyhne**	**148.56**	**337**		*e*	PKP	**PKPbc**	**13 20 47.5**	**+0.4**
VYHS					*e*			13 20 53.6	
PRU	**Pruhonice**	**148.59**	**344**	⇑	*i*	PKP	**PKPbc**	**13 20 47.3**	**+0.2**
PRU					*e*	PKPAB	**PKPab**	**13 20 53.6**	**+0.5**
GOPC	**GO Pecny, Ondr**	**148.59**	**343**	⇑	*i*	PKP	**PKPbc**	**13 20 47.4**	**+0.3**
GOPC					*e*	PKPAB	**PKPab**	**13 20 53.7**	**+0.5**
GOPC	**GO Pecny, Ondr**	**148.59**	**343**		*i*	PKP2	**PKPbc**	**13 20 47.4**	**+0.3**
VRAC	**Vranov**	**148.61**	**341**		pPKPbc	pPKPbc	13 23 06.3	-0.1
	comp=Z,1.2nm,0.4s,baz=66,slow=2.8,SNR=1.5							
VRAC	**Vranov**	**148.61**	**341**	⇑	*i*	PKP	**PKPbc**	**13 20 47.3**	**+0.1**
PSZ	**Piszkesteto**	**148.64**	**336**	⇑	*i*	PKP	**PKPbc**	**13 20 47.6**	**+0.2**
PSZ	**Piszkesteto**	**148.64**	**336**		*e*	PKPbc	**PKPbc**	**13 20 47.0**	**-0.4**
LOT	**Lotru**	**148.86**	**329**	⇓	*i*	PKP	**PKPbc**	**13 20 47.4**	**-0.7**
NKC	**Novy Kostel**	**148.88**	**346**		*e*	PKPDF	**PKPdf**	**13 20 43.3**	**+0.2**
NKC				⇑	*i*	PKP	**PKPbc**	**13 20 48.2**	**+0.4**
NKC					*e*	PKPAB	**PKPab**	**13 20 54.5**	**+0.2**
HUMR	**Humele**	**148.90**	**326**	⇑	*i*	PKP	**PKPbc**	**13 20 48.0**	**0.0**
TREC	**Trest**	**148.96**	**342**	⇑	*i*	PKP	**PKPbc**	**13 20 48.2**	**+0.1**
SMOL	**Smolenice**	**149.03**	**339**		*e*	PKP2	**PKPbc**	**13 20 49.4**	**+1.2**
SMOL	**Smolenice**	**149.03**	**339**		*e*	PKP	**PKPbc**	**13 20 49.4**	**+1.2**
SMOL					*e*			13 20 56.6	
SIRR	**Siria**	**149.23**	**332**	⇑	*i*	PKP	**PKPbc**	**13 20 49.3**	**+0.5**
BEBN	**Eben Emael**	**149.40**	**355**		PKPbc	PKPbc	**13 20 49.2**	**+0.2**
HGN	**Heimansgroeve**	**149.40**	**354**		*e*	PKPbc	**PKPbc**	**13 20 48.8**	**-0.2**
	comp=Z,48nm,1.1s							
HGN					*e*	PKPab	**PKPab**	**13 20 56.1**	**-0.3**
MEM	**Membach**	**149.55**	**354**		PKPbc	PKPbc	**13 20 49.5**	**+0.2**
KHC	**Kasperske Hory**	**149.63**	**344**		*e*	PKPDF	**PKPdf**	**13 20 44.4**	**+0.1**
KHC				⇑	*i*	PKP	**PKPbc**	**13 20 50.0**	**+0.3**
KHC					*e*	PKPAB	**PKPab**	**13 20 58.1**	**+0.6**
KHC					*e*	pPKP	**pPKPdf**	**13 23 14.2**	**+8.7**
KHC	**Kasperske Hory**	**149.63**	**344**		*e*	PKIKP	**PKPdf**	**13 20 44.4**	**+0.1**
KHC					*e*			13 20 58.1	
KHC	**Kasperske Hory**	**149.63**	**344**		*e*	PKPdf	**PKPdf**	**13 20 43.9**	**-0.4**
KHC					*e*	PKPbc	**PKPbc**	**13 20 49.5**	**-0.1**
GRFO	**Grafenberg**	**149.65**	**347**		*e*	PKPbc	**PKPbc**	**13 20 49.5**	**-0.2**
DYA	**Yadsworthy**	**149.66**	**7**		*e*	PKPbc	**PKPbc**	**13 20 49.1**	**-0.6**
SRE	**Strehaia**	**149.70**	**328**	⇑	*i*	**PKPbc**	**13 20 50.5**	**+0.5**
BZS	**Buzias**	**149.75**	**331**	⇑	*i*	PKP	**PKPbc**	**13 20 50.1**	**+0.1**
SNF	**Seneffe**	**149.79**	**356**		PKPbc	PKPbc	**13 20 50.2**	**+0.3**
SNF					PKPab	PKPab	**13 20 58.0**	**-0.1**
BCLA	**Clavier**	**149.80**	**355**		PKPbc	PKPbc	**13 20 49.9**	**-0.1**
BCLA					PKPab	PKPab	**13 20 57.9**	**-0.2**
GEC2	**GERESS Array S**	**149.86**	**344**		*e*	PKIKP	**PKPdf**	**13 20 43.8**	**-0.9**
GEC2	**GERESS Array S**	**149.86**	**344**		*e*	PKPdf	**PKPdf**	**13 20 43.8**	**-0.9**
GEC2					*e*	PKPbc	**PKPbc**	**13 20 50.1**	**-0.2**
GERES	**GERESS Array B**	**149.86**	**344**		PKP	**PKPdf**	**13 20 44.7**	**0.0**
	comp=Z,1.0nm,0.8s,baz=54,slow=1.7,SNR=5.5							
GERES					PKPbc	**PKPbc**	**13 20 50.1**	**-0.2**
	comp=Z,12nm,0.8s,baz=47,slow=2.0,SNR=16							
GERES					pPKPbc	**pPKPbc**	**13 23 12.0**	**+2.2**
	comp=Z,1.6nm,0.8s,baz=46,slow=5.8,SNR=2.5							
GERES	**GERESS Array B**	**149.86**	**344**		PKIKP	**PKPdf**	**13 20 44.7**	**0.0**
GERES					pmax	pmax		
	comp=Z,1.0nm,0.6s							
GERES					pmax	pmax		
	comp=Z,13nm,0.8s							
GERES					pmax	pmax		
	comp=Z,3.0nm,1.0s							
GEA0	**GERESS Array S**	**149.87**	**344**		*e*	PKPdf	**PKPdf**	**13 20 43.5**	**-1.2**
GEA0					*e*	PKPbc	**PKPbc**	**13 20 50.1**	**-0.2**
CONA	**Conrad Observa**	**150.06**	**340**		*i*	PKiKP	**PKiKP**	**13 20 51.1**	**-0.3**
	comp=Z,50nm,1.4s,SNR=18							
CONA					*i*	PKPab	**PKPab**	**13 21 00.4**	**+1.0**
	comp=Z,34nm,1.6s							
BANR	**Banloc**	**150.14**	**331**	⇑	*i*	PKP	**PKPbc**	**13 20 52.1**	**+1.2**
DOU	**Dourbes**	**150.18**	**356**		PKPbc	PKPbc	**13 20 51.0**	**+0.2**
DOU					PKPab	PKPab	**13 20 59.4**	**-0.3**
WLF	**Walferdange**	**150.47**	**354**		PKPbc	PKPbc	**13 20 52.2**	**+0.6**
WLF					PKPab	**PKPab**	**13 21 01.2**	**+0.3**
WLF	**Walferdange**	**150.47**	**354**	*e*	PKIKP	**PKPdf**	**13 20 45.2**	**-0.3**
WLF				*e*			13 21 01.1	
WLF	**Walferdange**	**150.47**	**354**	*e*	PKPdf	**PKPdf**	**13 20

0.6nm,0.8s,baz=216,slow=6.2,SNR=7.0
ILAR Eielson Array 88.24 13 P **P** 13 20 59.9 -1.0
0.8nm,0.7s,baz=220,slow=5.2,SNR=10
PDAR Pinedale Array 89.17 43 P **P** 13 21 05.7 -0.3
0.5nm,0.6s,baz=235,slow=3.2,SNR=5.3
CMAR Chiang Mai Arr 89.58 290 P **P** 13 21 07.2 -0.9
1.3nm,1.0s,baz=122,slow=2.6,SNR=5.8
BVAR Borovoye Array 118.61 320 PKP **PKPdf** 13 26 52.1 -1.5
0.7nm,0.6s,baz=126,slow=2.0,SNR=4.5
HFS Hagfors 139.27 351 PKhKP PKPpre 13 27 24.0
1.8nm,0.8s,baz=33,slow=3.4,SNR=4.1
AKASG Malin Array Be 142.60 331 PKhKP PKPpre 13 27 34.2
2.6nm,0.6s,baz=43,slow=4.4,SNR=11
BRTR Keskin Array B 146.34 312 PKPbc **PKPbc** 13 27 47.0 -1.0
0.9nm,0.6s,baz=136,slow=4.2,SNR=5.0
MMAI Mount Meron Ar 147.28 300 PKPbc **PKPbc** 13 27 49.7 -1.0
0.4nm,0.4s,baz=35,slow=5.3,SNR=3.8
CLL Collm 147.76 346 ⇓*iP* **PKPbc** 13 27 50.5 -0.6
comp=Z,5.0nm,0.7s
CLL *e* 13 27 58.0
BRG Berggiesshubel 147.95 345 *eP* **PKPbc** 13 27 51.0 -0.6
comp=Z,2.2nm,0.7s
GERES GERESS Array B 149.88 344 PKPbc **PKPbc** 13 27 56.0 -0.6
comp=Z,0.7nm,0.6s,baz=29,slow=3.0,SNR=4.9
DAVOX Davos/Dischmat 152.72 347 PKPbc **PKPbc** 13 28 02.6 -0.5
comp=Z,1.6nm,0.6s,baz=278,slow=7.1,SNR=3.9

MAN 17 13:09:31,19°.16N×121°.34E,h13km,mb4.1,ML2.9,MS2.7, 1C,Philippine Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PIP	**Pasuquin**	**1.08**	**220**	⇑*iP*	Pb	13 09 47.1	-4.4
PIP				*eS*	Sb	13 09 58.7	-6.8
SGCP	**Mt. Cagua**	**1.13**	**144**	*eP*	Pb	13 09 52.1	-0.3
SGCP				*eS*	Sn	13 10 08.5	+0.5
APYP	**Conner**	**1.30**	**184**	*eP*	Pn	13 09 52.5	-2.3
APYP				*eS*	Sg	13 10 13.4	+0.5
ABRA	**Dolores**	**1.62**	**202**	*eP*	Pn	13 09 58.4	-0.9
CAUP	**Cauayan**	**2.25**	**168**	*eP*	Pb	13 10 09.9	-1.6
BALP	**Baler**	**3.41**	**176**	*eP*	Pn	13 10 25.6	+1.6

MEX 17 13:17:58.7±0.4,14°.13N×91°.58W,h25km,MD3.8, Guatemala

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
THIG		**1.02**	**320**	*eP*	Pn	13 18 15.4	-2.0
THIG				*eS*	Sb	13 18 26.9	-3.7
CCIG	**Comitan**	**2.21**	**346**	*eP*	Pn	13 18 32.1	-1.8
CCIG				*i* S	Sn	13 18 56.6	-3.9
PCIG		**2.23**	**315**	*eP*	Pn	13 18 31.8	-2.2
PCIG				*eS*	Sn	13 18 58.0	-2.7

IDC 17 13:22:40.6±597.0,47°.32N×48°.92E,h0km,Error ellipse: s-maj=222.7km s-min=133.6km az=48.0,Western Kazakhstan

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
I31KZ	**AKTYUBINSK INF**	**6.76**	**59**	*i*		14 08 30.0	
	baz=247,slow=319,SNR=0.7						
I43RU	**DUBNA INFRASONI**	**1.84**	**327**	*i*		14 38 00.0	
	baz=139,slow=326,SNR=1.4						
I46RU	**ZALESOVO INFRA**	**23.52**	**60**	*i*		15 44 20.0	
	baz=267,slow=324,SNR=2.6						

IDC ***17*** *13:26:46.8±8.2,31°.21S×179°.77E,h452km±101km, mb3.1/2,mb1 3.4/3,mb1mx2.9/34,mbtmp4.1/3,Error ellipse: s-maj=101.4km s-min=41.5km az=9.0*
ISC 17 13:26:50.6±3.7,31°.3S±0°.2×179°.2E±0°.5,h450km±0km,n10, σ0s99/15,Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
WMGZ	**Waiomatatini S**	**6.51**	**185**	PN	**P**	**13 28 29.9**	**-0.1**
WMGZ				SN	**S**	**13 29 51.4**	**-0.1**
HAZ	**Te Kaha**	**6.53**	**190**	PN	**P**	**13 28 31.1**	**+1.0**
HAZ				SN	**S**	**13 29 51.0**	**-0.6**
PUZ	**Puketiti**	**6.78**	**186**	PN	**P**	**13 28 33.1**	**+0.2**
PUZ				SN	**S**	**13 29 54.4**	**-2.2**
MWZ	**Matawai**	**7.13**	**191**	PN	**P**	**13 28 37.6**	**+1.1**
MWZ				SN	**S**	**13 30 04.2**	**+0.8**
URZ	**Urewera**	**7.13**	**193**	P	**P**	**13 28 35.9**	**-0.6**
	5.0nm,0.3s,baz=272,slow=4.1,SNR=46						
URZ				S	**S**	**13 30 03.7**	**+0.3**
	4.9nm,0.3s,baz=222,slow=23,SNR=19						
URZ	**Urewera**	**7.13**	**193**	PN	**P**	**13 28 35.7**	**-0.8**
URZ				SN	**S**	**13 30 03.2**	**-0.1**
ARHZ	**Aropaoanui**	**8.12**	**192**	PN	**P**	**13 28 48.8**	**+1.6**
ASAR	**Alice Springs**	**40.67**	**269**	P	**P**	**13 33 50.5**	**0.0**
	0.3nm,0.3s,baz=95,slow=6.6,SNR=6.7						
WRA	**Warramunga Arr**	**41.75**	**275**	P	**P**	**13 33 58.7**	**-0.4**
	1.2nm,0.3s,baz=111,slow=8.0,SNR=47						
FINES	**FINESS Array B**	**145.13**	**338**	PKPbc	PKPbc	13 45 31.1	-4.7
	2.2nm,0.9s,baz=60,slow=4.3,SNR=5.9						

IDC ***17*** *13:33:14.4±1.1,37°.95N×144°.00E,h0km,mb3.4/5, mb1 3.7/7,mb1mx3.4/49,mbtmp3.4/7,ML3.8/2,MS3.0/2, Ms1 3.0/2,ms1mx2.4/33,Error ellipse: s-maj=33.2km s-min=21.2km az=107.0*
ISCJB ***17*** *13:33:17.2±0.9,38°.06N±0°.07×143°.9E±0°.1,h33km, mb3.4/5,MS2.8/2,Error ellipse: s-maj=13.2km s-min=8.1km az=33.7*
ISC 17 13:33:19.6±1.1,38°.03N±0°.09×143°.9E±0°.1,h35km,n13, σ0s57/10,mb3.3/5,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MJAR	**Matsushiro Arr**	**4.77**	**254**	Pn	**Pn**	**13 34 29.1**	**+0.1**
	1.3nm,0.3s,baz=77,slow=14,SNR=11						
MAT	**Matsushiro**	**4.77**	**254**	P	**Pn**	**13 34 29.4**	**+0.4**
MAT				*e*S	**Sn**	**13 35 23.0**	**-0.1**
ASAJ	**Asahikawa**	**6.16**	**351**	Pn	**Pn**	**13 34 48.5**	**+0.4**
	3.0nm,0.3s,baz=193,slow=13,SNR=48						
ASAJ				Sn	**Sn**	**13 35 56.6**	**-0.7**
	0.3nm,0.3s,baz=357,slow=20,SNR=1.9						
MA2	**Magadan**	**22.01**	**9**	LR	LR	13 47 57.0	
	comp=Z,24nm,19.1s,baz=181,slow=40						
H11N2	**WAKE ISLAND Hy**	**27.05**	**126**	T	T	14 07 01.1	
	baz=308,SNR=3.7						
H11N1	**WAKE ISLAND Hy**	**27.05**	**126**	T	T	14 07 03.6	
	baz=308						
H11N3	**WAKE ISLAND Hy**	**27.06**	**126**	T	T	14 07 01.9	
	baz=308						
SONM	**Songino Array**	**28.90**	**302**	P	**P**	**13 39 15.2**	**0.0**
	0.2nm,0.3s,baz=145,slow=5.3,SNR=4.4						
TIXI	**Tiksi**	**34.57**	**352**	LR	LR	13 55 30.5	
	comp=Z,28nm,18.1s,baz=138,slow=39						
ILAR	**Eielson Array**	**47.60**	**33**	P	**P**	**13 41 51.6**	**0.0**
	0.3nm,0.6s,baz=258,slow=7.4,SNR=4.7						
WRA	**Warramunga Arr**	**58.35**	**191**	P	**P**	**13 43 11.8**	**+0.4**
	0.6nm,1.0s,baz=9.2,slow=7.1,SNR=5.4						
YKA	**Yellowknife Ar**	**61.95**	**31**	P	**P**	**13 43 35.9**	**+0.3**
	0.1nm,0.7s,baz=307,slow=6.1,SNR=3.8						
ASAR	**Alice Springs**	**62.08**	**190**	P	**P**	**13 43 35.7**	**-1.1**
	0.2nm,0.7s,baz=2.9,slow=7.4,SNR=2.8						

TAP ***17*** *13:34:36.0,24°.43N×120°.94E,h5km,ML3.5,C*
ISCJB ***17*** *13:34:37.5±0.3,24°.44N±0°.02×120°.95E±0°.02,h6km±2km, Error ellipse: s-maj=3.4km s-min=2.0km az=40.9*
JMA ***17*** *13:34:37.0±0.5,24°.45N×120°.99E,h1km*
ISC 17 13:34:37.5±0.9,24°.44N±0°.02×120°.95E±0°.02,h7km±8km, n62,σ0s87/101,5C-17D,Taiwan

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
NSY	**Sanyi**	**0.17**	**261**	⇓*iP*	**Pg**	**13 34 40.7**	**-0.4**
	baz=265						
NSY				S	**Sg**	**13 34 44.1**	**+0.6**
	baz=265						
TWQ1	**Liyutan**	**0.19**	**240**	⇓*iP*	**Pg**	**13 34 40.6**	**-0.7**
	baz=240						
NSTT	**Nanjuang**	**0.19**	**14**	⇓*iP*	**Pg**	**13 34 41.1**	**-0.4**
	baz=18						
NSTT				S	**Sg**	**13 34 44.8**	**+0.7**
	baz=18						
TWT	**Tachien**	**0.28**	**132**	⇑*iP*	**Pg**	**13 34 42.7**	**-0.4**
	baz=131						
TWT				*e*S	**Sg**	**13 34 46.4**	**-0.5**
	baz=131						
HSN	**Hsinchu**	**0.36**	**3**	⇓*iP*	**Pg**	**13 34 45.8**	**+1.2**
	baz=11						
TCU	**Taichung**	**0.39**	**220**	⇓*iP*	**Pg**	**13 34 45.4**	**+0.4**
	baz=219						
NNS	**Nan Shan**	**0.39**	**90**	⇑P	**Pg**	**13 34 45.0**	**-0.1**
	baz=102						
NNS				*e*S	**Sg**	**13 34 50.3**	**+0.1**
	baz=102						
WHF	**Hehuan Shan**	**0.41**	**136**	⇑*iP*	**Pg**	**13 34 45.9**	**+0.2**
	baz=132						
WHF				S	**Sg**	**13 34 52.1**	**+1.0**
	baz=132						
NSK	**Sanguang**	**0.44**	**58**	⇓*iP*	**Pg**	**13 34 45.7**	**-0.4**
	baz=58						
NSK				S	**Sg**	**13 34 51.9**	**+0.1**
	baz=58						
TYC	**Yuchr**	**0.54**	**189**	⇓P	**Pg**	**13 34 47.9**	**-0.1**
	baz=175						
TYC				S	**Sg**	**13 34 55.9**	**+0.8**
	baz=175						
SMLT	**Sun Moon Lake**	**0.56**	**185**	*e*P	**Pg**	**13 34 48.2**	**-0.1**
	baz=171						
NCU	**National Centr**	**0.57**	**22**	*i* P	**Pg**	**13 34 49.4**	**+0.9**
	baz=24						
NCU				*e*S	**Sb**	**13 34 58.4**	**+0.3**
	baz=24						
ENTT	**Nioudou**	**0.59**	**71**	⇓*iP*	**Pg**	**13 34 48.8**	**-0.2**
	baz=70						
ENTT				*e*S	**Sg**	**13 34 56.5**	**-0.4**
	baz=70						
WNT	**Mingjian**	**0.61**	**203**	P	**Pg**	**13 34 50.0**	**+0.7**
	baz=202						
WNT				S	**Sg**	**13 34 59.4**	**+2.1**
	baz=202						
TWD	**Chiawan**	**0.69**	**121**	⇑*iP*	**Pg**	**13 34 50.9**	**+0.1**
	baz=110						
TWD				*e*S	**Sg**	**13 34 59.7**	**-0.1**
	baz=110						
TWE	**Neicheng**	**0.71**	**67**	⇓P	**Pg**	**13 34 51.0**	**-0.2**
	baz=66						
ENA	**Nanau**	**0.72**	**91**	P	**Pg**	**13 34 51.2**	**-0.2**
	baz=90						
ENA				S	**Sg**	**13 35 01.1**	**+0.3**
	baz=90						
TAP	**Taipei**	**0.78**	**40**	*e*P	**Pb**	**13 34 52.9**	**-0.5**
	baz=49						
TAP				*e*S	**Sn**	**13 35 05.4**	**-1.4**
	baz=49						
TWS1	**Kuangyinshan**	**0.78**	**33**	⇓*iP*	**Pg**	**13 34 53.4**	**+0.8**
	baz=34						
TWS1				S	**Sn**	**13 35 05.4**	**-1.4**
	baz=34						
TAP1	**Taipei**	**0.79**	**41**	P	**Pb**	**13 34 53.0**	**-0.6**
	baz=49						
TAP1				*e*S	**Sb**	**13 35 05.1**	**+0.7**
	baz=49						
WGK	**Gukeng**	**0.83**	**205**	⇓*iP*	**Pb**	**13 34 53.7**	**-0.6**
	baz=203						
WGK				S	**Sb**	**13 35 06.0**	**+0.3**
	baz=203						
TWC	**Suao**	**0.84**	**78**	*e*P	**Pb**	**13 34 52.9**	**-1.4**
	baz=77						
TWC				*e*S	**Sb**	**13 35 03.6**	**-2.2**
	baz=77						
WTCT	**Ta-ch'eng**	**0.84**	**227**	*e*P	**Pb**	**13 34 53.2**	**-1.2**
	baz=224						
WTCT				*e*S	**Sb**	**13 35 05.6**	**-0.3**
	baz=224						
CHN5	**Tsauling**	**0.88**	**197**	⇓*iP*	**Pb**	**13 34 54.4**	**-0.7**
	baz=196						
CHN5				S	**Sb**	**13 35 06.8**	**-0.3**
	baz=196						
ALS	**Alishan**	**0.94**	**188**	⇓*iP*	**Pb**	**13 34 55.7**	**-0.5**
	baz=202						
ALS				*e*S	**Sb**	**13 35 09.4**	**+0.5**
	baz=202						
YUS	**Yu-Shan**	**0.95**	**180**	*e*P	**Pb**	**13 34 55.4**	**-1.1**
	baz=168						
EGS		**0.98**	**66**	P	**Pb**	**13 34 56.9**	**+0.1**
	baz=65						
NWF	**Wu-fen Shan**	**0.98**	**50**	*e*P	**Pb**	**13 34 56.6**	**-0.3**
	baz=39						
CHN2	**Minshiung**	**1.00**	**206**	*e*P	**Pb**	**13 34 56.3**	**-0.9**
	baz=204						
CHN2				S	**Sb**	**13 35 11.1**	**+0.4**
	baz=204						
TWY	**Chenhua**	**1.02**	**35**	*e*P	**Pb**	**13 34 57.0**	**-0.5**
	baz=36						
WSF	**Szhu**	**1.04**	**220**	P	**Pb**	**13 34 56.8**	**-1.0**
	baz=217						
WSF				*e*S	**Sb**	**13 35 11.6**	**-0.1**
	baz=217						
CHY	**Chiayi**	**1.06**	**207**	*e*P	**Pb**	**13 34 57.1**	**-1.0**
	baz=205						
CHY				*e*S	**Sb**	**13 35 11.9**	**-0.2**
	baz=205						
TWB1	**Santiao Chiao**	**1.10**	**59**	*e*P	**Pb**	**13 34 58.1**	**-0.8**
	baz=59						
TWB1				*e*S	**Sg**	**13 35 14.0**	**+1.1**
	baz=59						
TWF1	**Yuli**	**1.13**	**164**	⇑*e*P	**Pn**	**13 34 58.1**	**-1.6**
	baz=154						
TWF1				*e*S	**Sb**	**13 35 14.4**	**+0.1**
	baz=154						
CHN4	**Tsaushan**	**1.13**	**197**	*e*P	**Pn**	**13 34 58.4**	**-1.4**
	baz=196						
CHN4				*e*S	**Sn**	**13 35 15.6**	**0.0**
	baz=196						
WTP	**Ta-pu**	**1.23**	**195**	⇓P	**Pn**	**13 34 59.9**	**-1.2**
	baz=193						
WTP				*e*S	**Sb**	**13 35 17.5**	**+0.3**
	baz=193						
TWK	**Hsinying**	**1.24**	**200**	⇓*iP*	**Pn**	**13 35 00.3**	**-1.0**
	baz=198						
TWK				*e*S	**Sb**	**13 35 17.1**	**-0.5**
	baz=198						
ELDTW	**Lidau**	**1.25**	**177**	⇓*e*P	**Pn**	**13 35 00.8**	**-0.7**
	baz=167						
CHN8	**Yiju**	**1.28**	**212**	*e*P	**Pn**	**13 35 00.5**	**-1.3**
	baz=208						
CHN8				*e*S	**Sb**	**13 35 19.0**	**+0.3**
	baz=208						
STYT	**Tauyuan**	**1.29**	**188**	*e*P	**Pn**	**13 35 01.2**	**-0.7**
	baz=186						
STYT				*e*S	**Sn**	**13 35 19.4**	**0.0**
	baz=186						
CHN1	**Nanshi**	**1.31**	**197**	⇓P	**Pn**	**13 35 01.3**	**-0.9**
	baz=196						
CHN1				*e*S	**Sb**	**13 35 20.0**	**+0.5**
	baz=196						
CHKT	**Chengkung**	**1.39**	**164**	*e*P	**Pn**	**13 35 03.3**	**0.0**
	baz=143						
SGST	**Jiashian**	**1.40**	**194**	*e*P	**Pn**	**13 35 02.9**	**-0.5**
	baz=193						
SGST				*e*S	**Sb**	**13 35 23.0**	**+1.1**
	baz=193						
SCLT	**Jiali**	**1.44**	**209**	*e*P	**Pn**	**13 35 03.4**	**-0.5**
	baz=205						
SCLT				*e*S	**Sb**	**13 35 23.7**	**+0.5**
	baz=205						
CHN3	**Shinhua**	**1.46**	**202**	*e*P	**Pn**	**13 35 03.7**	**-0.5**
	baz=201						
CHN3				*e*S	**Sg**	**13 35 26.1**	**+1.6**
	baz=201						
PNG	**Penghu**	**1.54**	**236**	*e*P	**Pn**	**13 35 04.2**	**-1.2**
	baz=234						
PNG				S	**Sn**	**13 35 25.0**	**-0.6**
	baz=234						
TAI1	**Yung-k'ang**	**1.54**	**205**	*e*P	**Pn**	**13 35 05.4**	**0.0**
	baz=207						
PCYT	**Pengchaiyu**	**1.56**	**40**	*e*P	**Pn**	**13 35 04.0**	**-1.6**
	baz=41						
TWG	**Pinlang**	**1.62**	**176**	*e*P	**Pn**	**13 35 06.9**	**+0.5**
	baz=165						
TWG				*e*S	**Sb**	**13 35 29.6**	**+1.3**
	baz=165						
WDGT	**Dungji**	**1.67**	**225**	*e*P	**Pn**	**13 35 05.6**	**-1.5**
	baz=222						
WDGT				*e*S	**Sn**	**13 35 28.5**	**-0.2**
	baz=222						
TWM1	**Shoushan**	**1.68**	**197**	*e*P	**Pn**	**13 35 05.9**	**-1.4**
	baz=194						
SSD	**Sandimen**	**1.71**	**190**	*e*P	**Pn**	**13 35 07.8**	**+0.1**
	baz=204						
SSD				*e*S	**Sn**	**13 35 30.6**	**+0.8**
	baz=204						
ECL	**Taimali**	**1.84**	**180**	*e*P	**Pn**	**13 35 10.1**	**+0.7**
	baz=196						
YOJ	**Yonaguni jima**	**1.88**	**89**	*e*P	**Pb**	**13 35 12.9**	**+0.8**
	baz=72						
EAST	**Anshuo**	**2.05**	**183**	*e*P	**Pn**	**13 35 12.6**	**+0.2**
	baz=204						
TAW	**Tawu**	**2.08**	**181**	*e*P	**Pn**	**13 35 14.3**	**+1.6**
	baz=198						
SCZT	**Fangliau**	**2.08**	**188**	*e*P	**Pn**	**13 35 13.0**	**+0.1**
	baz=185						
KNM	**Kinmen**	**2.29**	**270**	*e*P	**Pn**	**13 35 17.4**	**+1.7**
	baz=272						
LAY	**Lan-yu**	**2.46**	**167**	*e*P	**Pn**	**13 35 17.8**	**-0.2**
	baz=149						
IRIF	**Iriomote-Funau**	**2.54**	**92**	P	**Pn**	**13 35 20.3**	**+1.2**
JIJ	**Ishigaki jima**	**2.91**	**91**	P	**Pn**	**13 35 25.4**	**+1.2**
JIJ				S	**Sn**	**13 36 00.3**	**+0.8**
JISG	**Ishigakijimahi**	**3.06**	**87**	P	**Pn**	**13 35 27.6**	**+1.3**

IDC ***17*** *13:37:14.1±0.9,38°.17N×144°.77E,h0km,mb3.5/8, mb1 3.7/11,mb1mx3.5/60,mbtmp3.5/11,ML3.5/2,MS2.7/1, Ms1 2.7/1,ms1mx2.1/44,Error ellipse: s-maj=24.3km s-min=18.8km az=115.0*
ISCJB ***17*** *13:37:18.8±1.2,38°.27N±0°.05×144°.52E±0°.07, h47km±11km,mb3.5/8,Error ellipse: s-maj=9.9km s-min=8.1km az=37.2*
JMA ***17*** *13:37:18.7±0.2,38°.26N×144°.46E,h35km,M4.3*
ISC 17 13:37:20.9±2.1,38°.35N±0°.07×144°.5E±0°.1,h45km±22km, n31,σ1s20/30,mb3.5/8,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
OFUJ	**Ofunato**	**2.34**	**289**	P	Pn	13 37 56.1	-0.7
OFUJ				S	**Sn**	**13 38 23.9**	**-0.4**
JIO	**Ouri**	**2.48**	**273**	P	Pn	13 37 57.9	-0.9
JIO				S	**Sn**	**13 38 26.6**	**-1.3**
JTH	**Tanohata**	**2.60**	**309**	P	Pn	13 38 00.4	0.0
JTH				*e*S	**Sn**	**13 38 31.1**	**+0.4**
JMK	**Ichinoseki**	**2.64**	**284**	P	Pn	13 38 00.6	-0.4
JMK				S	**Sn**	**13 38 31.8**	**0.0**
JOM	**Ohasama**	**2.75**	**295**	P	Pn	13 38 02.1	-0.4
JOM				S	**Sn**	**13 38 35.3**	**+0.9**
JMM	**Marumori**	**2.97**	**262**	P	Pn	13 38 04.1	-1.4
JMM				S	**Sn**	**13 38 38.0**	**-1.9**
JOU	**Okura**	**3.02**	**272**	P	**Pn**	**13 38 06.1**	**-0.1**
JOU				S	**Sn**	**13 38 41.2**	**0.0**
JFK	**Kawauchi**	**3.04**	**252**	S	Sn	13 38 38.9	-2.7
JANG	**Nango**	**3.08**	**312**	P	**Pn**	**13 38 07.5**	**+0.5**
JANG				*e*S	**Sn**	**13 38 42.0**	**-0.6**
JRG	**Rokugo**	**3.20**	**290**	P	**Pn**	**13 38 09.1**	**+0.4**
JRG				S	**Sn**	**13 38 46.9**	**+1.3**
JYK	**Kaneyama**	**3.30**	**281**	P	**Pn**	**13 38 10.0**	**0.0**
JYK				S	**Sn**	**13 38 48.3**	**+0.3**
JFT	**Otama**	**3.40**	**257**	P	**Pn**	**13 38 10.9**	**-0.5**
JFT				S	**Sn**	**13 38 49.6**	**-0.9**
MJAR	**Matsushiro Arr**	**5.33**	**252**	Pn	**Pn**	**13 38 37.8**	**-0.1**
	1.4nm,0.3s,baz=103,slow=23,SNR=16						
MJAR				Sn	**Sn**	**13 39 41.0**	**+3.0**
	1.1nm,0.3s,baz=85,slow=32,SNR=3.6						
MJAR				LR	LR	13 40 47.8	
	comp=Z,67nm,19.3s,baz=5.0,slow=39						
MAT	**Matsushiro**	**5.33**	**252**	P	**Pn**	**13 38 38.0**	**+0.1**
MAT				*e*S	Sn	13 39 31.1	-6.9
ASAJ	**Asahikawa**	**5.94**	**347**	Pn	**Pn**	**13 38 46.0**	**-0.3**
	1.3nm,0.3s,baz=202,slow=11,SNR=13						
ASAJ				Sn	**Sn**	**13 39 52.4**	**-0.6**
	0.6nm,0.3s,baz=95,slow=18,SNR=1.6						
JHJ	**Hachijo jima 2**	**6.48**	**218**	Sn	Sn	13 39 57.5	-8.8
	12nm,0.3s,baz=99,slow=22,SNR=3.8						
USRK	**Ussuriysk Ar.**	**11.08**	**306**	Pn	**Pn**	**13 39 58.9**	**+2.2**
	0.1nm,0.3s,baz=101,slow=15,SNR=2.8						
SEY	**Seymchan**	**25.08**	**9**	P	**P**	**13 42 42.9**	**+1.9**
	2.0nm,0.6s,baz=180,slow=9.1,SNR=17						
H11N2	**WAKE ISLAND Hy**	**26.85**	**127**	T	T	14 10 21.4	
	baz=317,slow=75,SNR=7.8						
H11N1	**WAKE ISLAND Hy**	**26.86**	**127**	T	T	14 10 21.7	
	baz=317,slow=75,SNR=14						
H11N3	**WAKE ISLAND Hy**	**26.87**	**127**	T	T	14 10 22.9	
	baz=317,slow=75,SNR=10						
H11S1	**WAKE ISLAND Hy**	**27.65**	**129**	T	T	14 11 17.2	
	baz=318,slow=76,SNR=5.8						
H11S3	**WAKE ISLAND Hy**	**27.65**	**129**	T	T	14 11 15.7	
	baz=318,slow=76,SNR=6.8						
H11S2	**WAKE ISLAND Hy**	**27.67**	**129**	T	T	14 11 17.2	
	baz=318,slow=76,SNR=4.5						
ZALV	**Zalesovo Beam**	**42.87**	**311**	P	**P**	**13 45 14.6**	**0.0**
	0.3nm,0.4s,baz=82,slow=11,SNR=2.6						
MKAR	**Makanchi Array**	**45.51**	**302**	P	**P**	**13 45 36.7**	**+0.8**
	0.5nm,0.7s,baz=86,slow=9.3,SNR=6.3						
ILAR	**Eielson Array**	**47.07**	**33**	P	**P**	**13 45 46.2**	**-1.5**
	0.2nm,0.7s,baz=249,slow=7.6,SNR=3.3						
WRA	**Warramunga Arr**	**58.76**	**191**	P	**P**	**13 47 12.2**	**-2.2**
	0.5nm,0.6s,baz=13,slow=7.4,SNR=5.4						
YKA	**Yellowknife Ar**	**61.43**	**31**	P	**P**	**13 47 32.4**	**+0.2**
	0.0nm,0.7s,baz=302,slow=6.6,SNR=4.5						
ASAR	**Alice Springs**	**62.48**	**191**	P	**P**	**13 47 39.5**	**-0.3**
	0.3nm,0.8s,baz=14,slow=8.6,SNR=4.2						
TXAR	**Lajitas Array**	**87.37**	**54**	P	**P**	**13 50 02.5**	**-1.1**
	0.4nm,0.8s,baz=270,slow=1.8,SNR=3.3						

IDC ***17*** *13:41:54.2±10.0,19°.92S×178°.25W,h473km±125km, mb2.8/7,mb1 3.1/8,mb1mx2.9/48,mbtmp3.7/8,Error ellipse: s-maj=43.5km s-min=23.6km az=42.0*
ISCJB ***17*** *13:42:03.3±0.9,20°.2S±0°.2×178°.5W±0°.2,h602km,mb3.1/7, Error ellipse: s-maj=28.1km s-min=18.7km az=17.5*
ISC 17 13:42:04.7±1.0,20°.2S±0°.2×178°.4W±0°.2,h602km,n8, σ1s09/8,mb3.1/7,Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
URZ	**Urewera**	**18.43**	**191**	P	**P**	**13 45 42.5**	**-1.3**
	0.6nm,0.3s,baz=5.7,slow=10,SNR=4.4						
ASAR	**Alice Springs**	**44.21**	**256**	P	**P**	**13 49 21.8**	**-0.3**
	0.3nm,0.7s,baz=86,slow=8.4,SNR=9.1						
WRA	**Warramunga Arr**	**44.25**	**262**	P	**P**	**13 49 22.0**	**-0.5**
	0.1nm,0.3s,baz=97,slow=7.5,SNR=12						
VNDA	**Vanda**	**58.19**	**185**	P	**P**	**13 51 03.2**	**+1.4**
	0.3nm,0.4s,baz=21,slow=8.6,SNR=3.7						
KSRS	**Korea Array**	**76.38**	**319**	P	**P**	**13 52 54.4**	**+1.1**
	0.9nm,0.6s,baz=119,slow=6.6,SNR=3.6						
SEY	**Seymchan**	**85.97**	**347**	P	**P**	**13 53 41.7**	**-0.1**
	0.5nm,0.5s,baz=153,slow=4.5,SNR=5.4						
ILAR	**Eielson Array**	**88.09**	**13**	P	**P**	**13 53 50.8**	**-0.9**
	0.2nm,0.6s,baz=219,slow=5.0,SNR=5.6						
PDAR	**Pinedale Array**	**89.00**	**43**	P	**P**	**13 53 56.7**	**0.0**
	0.2nm,0.6s,baz=251,slow=2.8,SN

ellipse: s-maj=0.9km s-min=0.6km az=262.0
ISCJB ***17*** *13:45:45.4±0.3,38°.09N±0'.01×21°.93E±0'.02, h6km±2km, mb3.4/5, Error ellipse: s-maj=2.3km s-min=2.1km az=140.3*
CSEM ***17*** *13:45:45.3±0.1,38°.08N×21°.92E, h8km, ML3.1, Error ellipse: s-maj=2.2km s-min=1.8km az=41.0*
THE ***17*** *13:45:45.7,38°.08N×21°.93E, h5km±1km, ML3.3/21, Error ellipse: s-maj=1.3km s-min=0.5km az=205.0*
IDC ***17*** *13:45:46.0±1.2,38°.20N×22°.19E, h0km, mb3.5/5, mb1 3.5/6, mb1mx3.3/58, mbtmp3.4/6, ML2.9/1, Error ellipse: s-maj=37.3km s-min=23.7km az=143.0*

ISC 17 13:45:45.5±0.8, 38°.09N±0'.01×21°.93E±0'.01, h9km±5km, n137, σ0.80/223, mb3.5/5, Greece

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LAKA	**Lakka**	**0.16**	**15**	P	**Pg**	**13 45 48.9**	**0.0**
LAKA				S	**Sg**	**13 45 51.4**	**+0.1**
LAKA	**Lakka**	**0.16**	**15**	P	**Pg**	**13 45 49.0**	**0.0**
LAKA				S	**Sg**	**13 45 51.4**	**+0.1**
LAKA	**Lakka**	**0.16**	**15**	P	**Pg**	**13 45 48.6**	**-0.4**
LAKA				S	**Sg**	**13 45 50.2**	**-1.1**
LAKA				AML	AML	13 45 52.3	
	comp=N,19141μm,0.6s						
LAKA				AML	AML	13 45 53.5	
	comp=E,21315μm,0.4s						
KLV	**Kalavryta, Ach**	**0.18**	**104**	P	**Pg**	**13 45 49.4**	**+0.1**
KLV				S	**Sg**	**13 45 52.3**	**+0.4**
KLV	**Kalavryta, Ach**	**0.18**	**104**	P	**Pg**	**13 45 49.2**	**-0.1**
KLV				S	**Sg**	**13 45 52.1**	**+0.2**
KLV	**Kalavryta, Ach**	**0.18**	**104**	P	**Pg**	**13 45 49.2**	**-0.1**
KLV				S	**Sg**	**13 45 50.9**	**-1.1**
KLV				AML	AML	13 45 53.0	
	comp=E,28020μm,0.2s						
KLV				AML	AML	13 45 54.6	
	comp=N,16266μm,0.6s						
DRO	**Drossia**	**0.22**	**232**	P	**Pg**	**13 45 49.9**	**-0.1**
DRO				S	**Sg**	**13 45 53.8**	**+0.9**
DRO	**Drossia**	**0.22**	**232**	P	**Pg**	**13 45 49.8**	**-0.1**
DRO				S	**Sg**	**13 45 53.4**	**+0.5**
DRO	**Drossia**	**0.22**	**232**	P	**Pg**	**13 45 49.9**	**-0.1**
DRO				S	**Sg**	**13 45 53.5**	**+0.6**
DRO				AML	AML	13 45 57.2	
	comp=E,39191μm,0.3s						
DRO				AML	AML	13 45 59.1	
	comp=N,31322μm,0.4s						
UPR	**University Cam**	**0.23**	**331**	P	**Pg**	**13 45 50.4**	**+0.4**
UPR				S	**Sg**	**13 45 54.3**	**+1.1**
UPR	**University Cam**	**0.23**	**331**	P	**Pg**	**13 45 50.2**	**+0.1**
UPR				S	**Sg**	**13 45 53.6**	**+0.4**
UPR	**University Cam**	**0.23**	**331**	P	**Pg**	**13 45 50.5**	**+0.4**
UPR				S	**Sg**	**13 45 53.6**	**+0.4**
RODI	**Rodini**	**0.24**	**354**	P	**Pg**	**13 45 50.6**	**+0.3**
RODI				S	**Sg**	**13 45 53.2**	**-0.4**
RODI	**Rodini**	**0.24**	**354**	P	**Pg**	**13 45 50.6**	**+0.3**
RODI				S	**Sg**	**13 45 53.2**	**-0.4**
RODI				AML	AML	13 45 55.0	
	comp=N,16135μm,0.4s						
RODI				AML	AML	13 45 55.7	
	comp=E,22761μm,0.3s						
TRIZ	**Trizonia**	**0.30**	**22**	P	**Pg**	**13 45 51.4**	**-0.1**
TRIZ				S	**Sg**	**13 45 55.3**	**-0.2**
EFP	**Efpalio**	**0.34**	**357**	P	**Pg**	**13 45 52.4**	**+0.2**
EFP				S	**Sg**	**13 45 57.4**	**+0.7**
EFP	**Efpalio**	**0.34**	**357**	P	**Pg**	**13 45 52.3**	**+0.1**
EFP				S	**Sg**	**13 45 57.1**	**+0.3**
EFP	**Efpalio**	**0.34**	**357**	P	**Pg**	**13 45 52.6**	**+0.4**
EFP				AML	AML	13 45 58.7	
	comp=E,12486μm,0.4s						
EFP				AML	AML	13 45 59.5	
	comp=N,1750μm,0.4s						
SERG	**Sergoula**	**0.34**	**17**	P	**Pg**	**13 45 52.2**	**-0.1**
SERG				S	**Sg**	**13 45 57.4**	**+0.6**
KALE	**Kalithea**	**0.35**	**29**	P	**Pg**	**13 45 52.3**	**-0.1**
KALE				S	**Sb**	**13 45 58.3**	**-1.3**
KALE	**Kalithea**	**0.35**	**29**	P	**Pg**	**13 45 52.5**	**+0.1**
KALE				S	**Sg**	**13 45 57.6**	**+0.6**
KALE	**Kalithea**	**0.35**	**29**	P	**Pg**	**13 45 52.5**	**+0.1**
KALE				S	**Sb**	**13 45 58.9**	**-0.7**
KALE				AML	AML	13 45 59.5	
	comp=N,11667μm,0.3s						
KALE				AML	AML	13 45 59.5	
	comp=E,6430μm,0.3s						
GUR	**Goura**	**0.36**	**115**	P	**Pg**	**13 45 52.3**	**-0.3**
GUR				S	**Sg**	**13 45 58.0**	**+0.6**
GUR	**Goura**	**0.36**	**115**	P	**Pg**	**13 45 52.3**	**-0.3**
GUR				S	**Sg**	**13 45 58.0**	**+0.6**
GUR				AML	AML	13 45 59.8	
	comp=E,33492μm,0.2s						
GUR				AML	AML	13 45 59.9	
	comp=N,40828μm,0.3s						
RLS	**Riolos of Patr**	**0.36**	**266**	P	**Pg**	**13 45 52.2**	**-0.5**
RLS				S	**Sg**	**13 45 58.0**	**+0.5**
RLS	**Riolos of Patr**	**0.36**	**266**	P	**Pg**	**13 45 52.2**	**-0.5**
RLS				S	**Sg**	**13 45 57.6**	**+0.1**
RLS	**Riolos of Patr**	**0.36**	**266**	S	**Sg**	**13 45 58.0**	**+0.5**
RLS				AML	AML	13 45 59.6	
	comp=N,10104μm,0.2s						
RLS				AML	AML	13 45 60.0	
	comp=E,11852μm,0.4s						
AXS	**Araxos**	**0.45**	**284**	P	**Pg**	**13 45 53.9**	**-0.3**
AXS	**Araxos**	**0.45**	**284**	P	**Pg**	**13 45 53.9**	**-0.3**
ANX	**Ano Chora**	**0.51**	**359**	P	**Pg**	**13 45 55.0**	**-0.4**
ANX				S	**Sb**	**13 46 03.7**	**-0.5**
ANX	**Ano Chora**	**0.51**	**359**	P	**Pg**	**13 45 55.5**	**+0.1**
ANX				S	**Sg**	**13 46 02.8**	**+0.8**
ANX	**Ano Chora**	**0.51**	**359**	S	**Sb**	**13 46 05.0**	**+0.8**
ANX				AML	AML	13 46 06.7	
	comp=N,6778μm,0.7s						
ANX				AML	AML	13 46 06.8	
	comp=E,7812μm,0.4s						
DSF	**Desfina**	**0.57**	**55**	P	**Pg**	**13 45 56.0**	**-0.6**
DSF				S	**Sg**	**13 46 03.9**	**-0.2**
DSF	**Desfina**	**0.57**	**55**	P	**Pg**	**13 45 56.0**	**-0.6**
DSF				S	**Sg**	**13 46 04.1**	**-0.1**
DSF	**Desfina**	**0.57**	**55**	P	**Pg**	**13 45 55.5**	**-1.2**
DSF				S	**Sg**	**13 46 04.0**	**-0.1**
DSF				AML	AML	13 46 05.6	
	comp=E,2108μm,0.2s						
DSF				AML	AML	13 46 06.1	
	comp=N,1632μm,0.2s						
AMT	**Artemida-Makis**	**0.58**	**197**	P	**Pg**	**13 45 56.4**	**-0.3**
AMT				S	**Sb**	**13 46 06.0**	**-0.2**
AMT	**Artemida-Makis**	**0.58**	**197**	P	**Pg**	**13 45 56.4**	**-0.3**
AMT				S	**Sb**	**13 46 05.8**	**-0.4**
AMT	**Artemida-Makis**	**0.58**	**197**	P	**Pg**	**13 45 56.6**	**-0.1**
AMT				S	**Sb**	**13 46 07.5**	**+1.2**
AMT				AML	AML	13 46 08.4	
	comp=E,4332μm,0.3s						
AMT				AML	AML	13 46 11.5	
	comp=N,7755μm,0.4s						
THAL	**Thalero**	**0.58**	**95**	P	**Pg**	**13 45 56.5**	**-0.3**
THAL				S	**Sg**	**13 46 04.5**	**+0.1**
THAL	**Thalero**	**0.58**	**95**	P	**Pg**	**13 45 56.5**	**-0.3**
THAL				S	**Sg**	**13 46 03.9**	**-0.5**
THAL	**Thalero**	**0.58**	**95**	P	**Pg**	**13 45 56.4**	**-0.3**
THAL				S	**Sg**	**13 46 03.9**	**-0.5**
THAL				AML	AML	13 46 08.5	
	comp=N,11706μm,0.3s						
THAL				AML	AML	13 46 11.1	
	comp=E,14444μm,0.7s						
PVO	**Paravola**	**0.62**	**329**	P	**Pg**	**13 45 57.2**	**-0.2**
PVO	**Paravola**	**0.62**	**329**	P	**Pg**	**13 45 57.5**	**+0.1**
PVO				S	**Sb**	**13 46 07.3**	**+0.1**
PVO	**Paravola**	**0.62**	**329**	P	**Pg**	**13 45 57.5**	**+0.1**
TRIP	**Tripoli**	**0.62**	**154**	P	**Pg**	**13 45 57.3**	**-0.2**
TRIP	**Tripoli**	**0.62**	**154**	P	**Pg**	**13 45 57.3**	**-0.2**
TRIP				S	**Sb**	**13 46 07.6**	**+0.2**
TRIP				AML	AML	13 46 09.5	
	comp=N,3016μm,0.5s						
TRIP				AML	AML	13 46 10.2	
	comp=E,2227μm,0.5s						
PDO	**Prodromos**	**0.78**	**311**	P	**Pg**	**13 46 00.1**	**-0.4**
PDO				S	**Sg**	**13 46 10.8**	**+0.2**
PDO	**Prodromos**	**0.78**	**311**	P	**Pg**	**13 46 00.5**	**0.0**
PDO				S	**Sg**	**13 46 10.8**	**+0.2**
PDO	**Prodromos**	**0.78**	**311**	P	**Pg**	**13 46 00.5**	**0.0**
PDO				S	**Sn**	**13 46 13.9**	**-0.6**
PDO				AML	AML	13 46 16.3	
	comp=E,4065μm,0.3s						
PDO				AML	AML	13 46 16.4	
	comp=N,7036μm,0.3s						
PROD	**Prodromos**	**0.79**	**77**	P	**Pb**	**13 46 01.3**	**-0.1**
PROD				S	**Sb**	**13 46 12.2**	**+0.1**
PROD	**Prodromos**	**0.79**	**77**	P	**Pb**	**13 46 01.3**	**-0.1**
PROD				S	**Sb**	**13 46 12.2**	**+0.1**
PROD				AML	AML	13 46 12.5	
	comp=N,6289μm,0.3s						
PROD				AML	AML	13 46 14.8	
	comp=E,3458μm,0.3s						
VLX	**Vlachokerasia**	**0.80**	**153**	P	**Pg**	**13 46 00.5**	**-0.4**
VLX				S	**Sb**	**13 46 12.4**	**-0.2**
VLX	**Vlachokerasia**	**0.80**	**153**	P	**Pg**	**13 46 00.5**	**-0.4**
VLX				S	**Sb**	**13 46 12.4**	**-0.2**
VLX	**Vlachokerasia**	**0.80**	**153**	P	**Pg**	**13 46 00.4**	**-0.5**
VLX				S	**Sb**	**13 46 13.1**	**+0.5**
VLX				AML	AML	13 46 15.2	
	comp=E,3639μm,0.3s						
VLX				AML	AML	13 46 15.5	
	comp=N,2098μm,0.3s						
LTK	**Loutraki**	**0.82**	**94**	P	**Pg**	**13 46 01.0**	**-0.4**
LTK				S	**Sb**	**13 46 13.3**	**+0.1**
LTK	**Loutraki**	**0.82**	**94**	P	**Pg**	**13 46 01.0**	**-0.4**
LTK				S	**Sb**	**13 46 13.3**	**+0.1**
LTK	**Loutraki**	**0.82**	**94**	P	**Pg**	**13 46 01.0**	**-0.4**
LTK				AML	AML	13 46 17.2	
	comp=N,1539μm,0.3s						
LTK				AML	AML	13 46 18.9	
	comp=E,1858μm,0.6s						
EVR	**Evrytania**	**0.83**	**354**	P	**Pg**	**13 46 01.0**	**-0.6**
EVR				S	**Sn**	**13 46 14.8**	**-1.3**
EVR	**Evrytania**	**0.83**	**354**	P	**Pb**	**13 46 02.2**	**-0.1**
EVR				S	**Sn**	**13 46 14.7**	**-1.3**
EVR	**Evrytania**	**0.83**	**354**	P	**Pb**	**13 46 02.1**	**-0.1**
EVR				S	**Sn**	**13 46 14.7**	**-1.3**
EVR				AML	AML	13 46 17.9	
	comp=N,1243μm,0.6s						
ITM	**Ithomi**	**0.91**	**180**	P	**Pg**	**13 46 02.2**	**-0.7**
ITM				S	**Sb**	**13 46 15.5**	**-0.1**
ITM	**Ithomi**	**0.91**	**180**	P	**Pg**	**13 46 02.2**	**-0.7**
ITM				S	**Sb**	**13 46 15.5**	**-0.1**
ITM	**Ithomi**	**0.91**	**180**	P	**Pg**	**13 46 02.2**	**-0.7**
ITM				S	**Sn**	**13 46 17.3**	**-0.4**
ITM				AML	AML	13 46 19.4	
	comp=N,1056μm,0.4s						
ITM				AML	AML	13 46 19.9	
	comp=E,2238μm,0.6s						
ZKS	**Zakynthos**	**0.98**	**247**	P	**Pg**	**13 46 04.1**	**-0.3**
ZKS	**Zakynthos**	**0.98**	**247**	P	**Pg**	**13 46 04.1**	**-0.3**
LKR	**Lokris**	**1.01**	**56**	P	**Pg**	**13 46 03.6**	**-1.4**
LKR				S	**Sb**	**13 46 18.8**	**+0.1**
LKR	**Lokris**	**1.01**	**56**	P	**Pg**	**13 46 03.6**	**-1.4**
LKR				S	**Sb**	**13 46 18.8**	**+0.1**
LKR	**Lokris**	**1.01**	**56**	P	**Pg**	**13 46 02.7**	**-2.2**
LKR				S	**Sb**	**13 46 19.1**	**+0.4**
LKR				AML	AML	13 46 22.0	
	comp=E,2174μm,0.5s						
LKR				AML	AML	13 46 22.1	
	comp=N,2692μm,0.6s						
VLS	**Valsamata**	**1.06**	**275**	P	**Pg**	**13 46 04.7**	**-1.1**
VLS				S	**Sn**	**13 46 21.8**	**+0.3**
VLS	**Valsamata**	**1.06**	**275**	P	**Pg**	**13 46 04.7**	**-1.1**
VLS				S	**Sn**	**13 46 21.8**	**+0.3**
VIL2	**Platees**	**1.06**	**83**	P	**Pn**	**13 46 07.6**	**+1.0**
VIL2				S	**Sn**	**13 46 23.8**	**+2.1**
VILL	**Villia**	**1.09**	**86**	P	**Pn**	**13 46 06.8**	**-0.3**
VILL				S	**Sn**	**13 46 23.1**	**+0.7**
VILL	**Villia**	**1.09**	**86**	P	**Pn**	**13 46 06.8**	**-0.3**
VILL				S	**Sn**	**13 46 23.1**	**+0.7**
DID	**Didima**	**1.19**	**119**	P	**Pb**	**13 46 07.2**	**-1.0**
DID				S	**Sn**	**13 46 24.4**	**-0.3**
DID	**Didima**	**1.19**	**119**	P	**Pb**	**13 46 07.3**	**-1.0**
DID				S	**Sn**	**13 46 24.4**	**-0.3**
DID	**Didima**	**1.19**	**119**	P	**Pb**	**13 46 07.3**	**-1.0**
DID				S	**Sn**	**13 46 25.6**	**+0.9**
KRND	**KRANIDI**	**1.20**	**126**	P	**Pb**	**13 46 07.4**	**-1.0**
KRND				S	**Sn**	**13 46 26.3**	**+1.5**
KRND	**KRANIDI**	**1.20**	**126**	P	**Pb**	**13 46 07.4**	**-1.0**
KRND				S	**Sn**	**13 46 26.3**	**+1.5**
KRND	**KRANIDI**	**1.20**	**126**	P	**Pb**	**13 46 07.2**	**-1.1**
PYL	**PYLOS**	**1.20**	**187**	P	**Pb**	**13 46 07.2**	**-1.2**
PYL				S	**Sn**	**13 46 25.4**	**+0.5**
PYL	**PYLOS**	**1.20**	**187**	P	**Pb**	**13 46 07.2**	**-1.2**
PYL				S	**Sn**	**13 46 25.4**	**+0.5**
PYL	**PYLOS**	**1.20**	**187**	P	**Pb**	**13 46 06.9**	**-1.5**
PYL				S	**Sn**	**13 46 26.2**	**+1.3**
PYL				AML	AML	13 46 30.9	
	comp=N,811μm,0.7s						
PYL				AML	AML	13 46 32.3	
	comp=E,1090μm,0.9s						
LKD2	**Lefkada island**	**1.22**	**305**	P	**Pn**	**13 46 07.3**	**-1.5**
LKD2				S	**Sn**	**13 46 25.3**	**-0.1**
LKD2	**Lefkada island**	**1.22**	**305**	P	**Pn**	**13 46 07.3**	**-1.5**
LKD2				S	**Sn**	**13 46 25.3**	**-0.1**
LKD2	**Lefkada island**	**1.22**	**305**	P	**Pn**	**13 46 07.3**	**-1.5**
DSL	**Palaion Diasel**	**1.23**	**328**	P	**Pn**	**13 46 08.4**	**-0.6**
DSL	**Palaion Diasel**	**1.23**	**328**	P	**Pn**	**13 46 08.7**	**-0.3**
DSL	**Palaion Diasel**	**1.23**	**328**	P	**Pn**	**13 46 08.7**	**-0.3**
SMIA	**Simia**	**1.28**	**51**	P	**Pn**	**13 46 09.1**	**-0.5**
SMIA	**Simia**	**1.28**	**51**	P	**Pg**	**13 46 10.2**	**+0.1**
SMIA	**Simia**	**1.28**	**51**	P	**Pg**	**13 46 10.2**	**+0.1**
SMIA				S	**Sn**	**13 46 29.1**	**+2.2**
ATH	**Athens Observa**	**1.42**	**94**	P	**Pb**	**13 46 11.6**	**-0.5**
ATH	**Athens Observa**	**1.42**	**94**	P	**Pb**	**13 46 11.6**	**-0.5**
ATH				S	**Sg**	**13 46 31.4**	**+0.3**
ATHU	**Athens Univers**	**1.47**	**94**	P	**Pn**	**13 46 12.1**	**-0.2**
ATHU	**Athens Univers**	**1.47**	**94**	P	**Pn**	**13 46 12.1**	**-0.2**
THL	**Klokotos Trika**	**1.48**	**3**	P	**Pb**	**13 46 13.1**	**0.0**
THL				S	**Sg**	**13 46 34.2**	**+1.2**
THL	**Klokotos Trika**	**1.48**	**3**	P	**Pb**	**13 46 13.1**	**0.0**
THL				S	**Sg**	**13 46 34.2**	**+1.2**
VLY	**Voula,Athens**	**1.49**	**98**	P	**Pn**	**13 46 12.7**	**+0.2**
VLY				S	**Sb**	**13 46 32.4**	**-0.1**
VLY	**Voula,Athens**	**1.49**	**98**	P	**Pn**	**13 46 12.7**	**+0.2**
VLY				S	**Sb**	**13 46 32.4**	**-0.1**
VLY	**Voula,Athens**	**1.49**	**98**	P	**Pn**	**13 46 12.3**	**-0.2**
VLY				S	**Sn**	**13 46 30.5**	**-1.7**
VLY				AML	AML	13 46 34.3	
	comp=E,1069μm,0.4s						
VLY				AML	AML	13 46 34.6	
	comp=N,1014μm,0.4s						
PTL	**Penteli**	**1.53**	**91**	P	**Pn**	**13 46 12.9**	**-0.2**
PTL	**Penteli**	**1.53**	**91**	P	**Pn**	**13 46 12.9**	**-0.2**
PTL				S	**Sg**	**13 46 34.2**	**-0.5**
PTL	**Penteli**	**1.53**	**91**	P	**Pn**	**13 46 12.8**	**-0.2**
PTL				S	**Sg**	**13 46 34.2**	**-0.5**
PTL				AML	AML	13 46 36.2	
	comp=E,960μm,0.5s						
PTL				AML	AML	13 46 37.1	
	comp=N,704μm,0.3s						
FYTO	**Fytoko, Volos**	**1.54**	**31**	P	**Pn**	**13 46 12.1**	**-1.0**
FYTO	**Fytoko, Volos**	**1.54**	**31**	P	**Pn**	**13 46 12.1**	**-1.0**
NEO	**Neokhori**	**1.58**	**39**	P	**Pn**	**13 46 13.4**	**-0.4**
NEO	**Neokhori**	**1.58**	**39**	P	**Pn**	**13 46 13.4**	**-0.4**
VLI	**Veliai**	**1.59**	**149**	P	**Pn**	**13 46 14.0**	**+0.2**
VLI				S	**Sg**	**13 46 36.8**	**+0.3**
VLI	**Veliai**	**1.59**	**149**	P	**Pn**	**13 46 14.0**	**+0.2**
VLI				S	**Sg**	**13 46 36.8**	**+0.3**
VLI				AML	AML	13 46 39.5	
	comp=E,634μm,0.6s						
VLI				AML	AML	13 46 43.3	
	comp=N,444μm,0.8s						
EREA	**Eretria**	**1.61**	**77**	P	**Pn**	**13 46 14.6**	**+0.4**
EREA	**Eretria**	**1.61**	**77**	P	**Pn**	**13 46 14.4**	**+0.2**
EREA				S	**Sg**	**13 46 36.9**	**-0.4**
EREA	**Eretria**	**1.61**	**77**	P	**Pn**	**13 46 14.4**	**+0.2**
EREA				S	**Sg**	**13 46 36.9**	**-0.4**
SKIA	**Skiathos**	**1.62**	**48**	P	**Pn**	**13 46 13.5**	**-0.7**
SKIA	**Skiathos**	**1.62**	**48**	P	**Pn**	**13 46 13.5**	**-0.7**
AOS	**Alonnisos**	**1.87**	**54**	P	**Pn**	**13 46 16.3**	**-1.5**
AOS	**Alonnisos**	**1.87**	**54**	P	**Pn**	**13 46 16.3**	**-1.5**
LIT	**Litokhoron**	**2.06**	**12**	P	**Pn**	**13 46 20.2**	**-0.1**
LIT	**Litokhoron**	**2.06**	**12**	P	**Pn**	**13 46 20.2**	**-0.1**
SERI	**Serifos**	**2.23**	**114**	P	**Pn**	**13 46 21.6**	**-1.1**
SERI	**Serifos**	**2.23**	**114**	P	**Pn**	**13 46 21.6**	**-1.1**
KEK	**Kerkira**	**2.32**	**315**	P	**Pn**	**13 46 26.1**	**-1.5**
APE	**Apeiranthos**	**3.04**	**108**	P	**Pn**	**13 46 33.3**	**-0.5**
APE	**Apeiranthos**	**3.04**	**108**	P	**Pn**	**13 46 33.3**	**-0.5**
KNT	**Kendrikon**	**3.16**	**13**	P	**Pn**	**13 46 36.3**	**+0.8**
KNT	**Kendrikon**	**3.16**	**13**	P	**Pn**	**13 46 36.4**	**+0.8**
LAST	**Lasithi**	**4.08**	**135**	P	**Pn**	**13 46 49.3**	**+1.0**
LAST	**Lasithi**	**4.08**	**135**	P	**Pn**	**13 46 49.3**	**+1.0**
STON	**Ston**	**5.76**	**327**	*e*Pn	**Pn**	**13 47 10.8**	**-0.4**
STON				Sn	**Sn**	**13 48 13.9**	**-3.5**
STON	**Ston**	**5.76**	**327**	*e*Pn	**Pn**	**13 47 10.8**	**-0.4**
NVLJ	**Novalja**	**8.37**	**323**	*e*Pn	**Pn**	**13 47 46.5**	**-0.5**
NVLJ				Sn	**Sn**	**13 49 18.3**	**-3.2**
NVLJ	**Novalja**	**8.37**	**323**	*e*Pn	**Pn**	**13 47 46.4**	**-0.5**
BRTR	**Keskin Array B**	**9.28**	**76**	Pn	**Pn**	**13 48 01.7**	**+2.2**
	comp=N,0.1nm,0.3s,baz=262,slow=14,SNR=4.4						
HFS	**Hagfors**	**22.68**	**349**	P	**P**	**13 50 47.6**	**+0.6**
	comp=N,1.1nm,0.7s,baz=153,slow=13,SNR=2.5						
TORD	**Torodi Ar. Bea**	**30.58**	**221**	P	P	13 52 04.1	+3.5
	comp=N,0.2nm,0.4s,baz=32,slow=9.1,SNR=3.1						
MKAR	**Makanchi Array**	**44.40**	**59**	P	**P**	**13 53 56.0**	**-0.4**
	comp=N,0.3nm,0.4s,baz=274,slow=6.9,SNR=5.7						
ZALV	**Zalesovo Beam**	**44.93**	**48**	P	**P**	**13 53 59.7**	**-0.7**
	comp=N,0.3nm,0.3s,baz=289,slow=9.0,SNR=2.5						
PDAR	**Pinedale Array**	**88.24**	**327**	P	**P**	**13 58 40.3**	**+2.8**
	comp=N,0.2nm,0.6s,baz=78,slow=5.0,SNR=2.1						

IDC 17 13:48:20.6±1.9, 3°.04S×147°.74E, h0km, mb3.6/3, mb1 3.9/3, mb1mx3.4/47, mbtmp3.6/3, MS2.9/4, Ms1 2.9/4, ms1mx2.8/35, Error ellipse: s-maj=151.7km s-min=32.7km az=122.0, Bismarck Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**6.35**	**185**	LR	LR	13 51 50.0	
	comp=Z,54nm,21.6s,baz=18,slow=33						
HNR	**Honiara**	**13.69**	**118**	LR	LR	13 55 56.6	
	comp=Z,59nm,20.2s,baz=348,slow=33						
GUMO	**Guam**	**16.77**	**350**	LR	LR	13 58 43.3	
	comp=Z,58nm,18.1s,baz=179,slow=37						
WRA	**Warramunga Arr**	**21.29**	**217**	P	P	13 53 08.9	-0.1
	1.4nm,0.7s,baz=42,slow=10,SNR=12						
DAV	**Davao City (W)**	**24.29**	**294**	LR	LR	14 03 01.0	
	comp=Z,47nm,19.1s,baz=332,slow=36						
ASAR	**Alice Springs**	**24.48**	**212**	P	P	13 53 41.6	-0.1
	0.5nm,0.5s,baz=38,slow=6.8,SNR=21						
YKA	**Yellowknife Ar**	**96.23**	**28**	P	P	14 01 50.5	0.0
	0.2nm,0.8s,baz=272,slow=3.9,SNR=5.4						

NIED ***17*** *14:07:00,37°.30N×144°.20E, h8km, Mw4.0 Best double couple: M0 1.28000×10^15 NP1:φs 23.00000°, δ27.00000°, λ -81.00000°. NP2:φs 193.00000°, δ63.00000°, λ -95.00000°.*
IDC ***17*** *14:07:28.4±0.7,37°.11N×144°.54E, h0km, mb3.9/17, mb1 4.1/22, mb1mx4.0/56, mbtmp4.0/22, ML3.4/5, MS2.9/6, Ms1 2.9/6, ms1mx2.6/44, Error ellipse: s-maj=18.4km s-min=14.2km az=131.0*
MOS ***17*** *14:07:31.7±1.9,37°.37N×144°.51E, h35km, mb4.5/4, Error ellipse: s-maj=11.5km s-min=8.1km az=85.5*
NEIC ***17*** *14:07:31.1±5.1,37°.14N×144°.50E, h17km±31km, mb4.4/6, Error ellipse: s-maj=16.0km s-min=9.2km az=141.0*
ISCJB ***17*** *14:07:32.1±0.4,37°.28N±0'.04×144°.22E±0'.04, h33km, mb4.0/22, MS2.8/2, Error ellipse: s-maj=5.6km s-min=4.1km az=155.3*
JMA ***17*** *14:07:32.4±0.3,37°.27N×144°.19E, h57km, M4.3*

ISC 17 14:07:34.2±0.7, 37°.36N±0'.06×144°.33E±0'.07, h35km, n62, σ2.62/72, mb4.1/22, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**2.60**	**296**	P	**Pn**	**14 08 12.5**	**-1.2**
JIO				S	**Sn**	**14 08 41.9**	**-2.2**
OFUJ	**Ofunato**	**2.71**	**310**	P	**Pn**	**14 08 13.9**	**-1.4**
OFUJ				S	**Sn**	**14 08 44.8**	**-2.0**
JFK	**Kawauchi**	**2.75**	**271**	P	**Pn**	**14 08 14.2**	**-1.7**
JFK				S	**Sn**	**14 08 44.6**	**-3.4**
JMK	**Ichinoseki**	**2.92**	**304**	P	**Pn**	**14 08 17.7**	**-0.5**
JMK				S	**Sn**	**14 08 50.3**	**-1.7**
JFT	**Otama**	**3.18**	**274**	P	**Pn**	**14 08 20.9**	**-0.9**
JFT				S	**Sn**	**14 08 56.3**	**-2.2**
JOM	**Ohasama**	**3.19**	**312**	P	**Pn**	**14 08 21.1**	**-0.7**
JOM				S	**Sn**	**14 08 57.0**	**-1.6**
BSO1	**Boso 1**	**3.83**	**226**	P	**Pn**	**14 08 27.4**	**-2.8**
BSO1				*e*S	**Sn**	**14 09 10.4**	**-3.3**
JRY	**Ryogami san**	**4.56**	**255**	P	**Pn**	**14 08 38.6**	**-2.2**
JRY				S	**Sn**	**14 09 27.7**	**-4.9**
JOD2	**Odawara 2**	**4.72**	**245**	P	**Pn**	**14 08 40.6**	**-2.3**
JOD2				S	**Sn**	**14 09 33.0**	**-3.5**
JOT	**Ohata**	**4.75**	**329**	P	**Pn**	**14 08 43.4**	**0.0**
MJAR	**Matsushiro Arr**	**4.97**	**262**	Pn	**Pn**	**14 08 45.6**	**-0.8**
	13nm,0.3s,baz=86,slow=15,SNR=79						
MJAR				Sn	**Sn**	**14 09 41.4**	**-1.2**
	2.9nm,0.3s,baz=92,slow=28,SNR=7.3						
MJAR				LR	LR	14 11 27.3	
	comp=Z,100nm,20.0s,baz=120,slow=47						
MAJO	**Matsushiro**	**4.97**	**262**	*e*P	**Pn**	**14 08 45.8**	**-0.6**
MAJO	**Matsushiro**	**4.97**	**262**	*e*Pn	**Pn**	**14 08 45.8**	**-0.6**
JKB	**Kayabe**	**5.19**	**332**	P	**Pn**	**14 08 49.1**	**-0.2**
JCH	**Churui**	**5.30**	**352**	P	**Pn**	**14 08 49.1**	**-1

comp=Z,0.4nm,0.7s,baz=83,slow=9.1,SNR=4.9
MLY Manley 46.34 32 *e*P **P 14 15 57.7 +1.2**
comp=Z,5.2nm,1.0s
MDM Murphy Dome 47.40 32 *e*P **P 14 16 05.8 +1.1**
comp=Z,5.7nm,1.0s
KURK Kurchatov 47.56 308 *e*P **P 14 16 06.5 +0.4**
KURK pmax pmax
comp=Z,3.0nm,0.6s
KURK Kurchatov 47.56 308 *e*P **P 14 16 06.5 +0.4**
comp=Z,3.2nm,0.6s
ILAR Eielson Array 47.97 33 P **P 14 16 08.9 -0.2**
comp=Z,2.2nm,0.9s,baz=264,slow=6.4,SNR=21
ILB Eielson Array 47.97 33 *e*P **P 14 16 09.3 +0.2**
IL1 Eielson Array 47.97 33 *e*P **P 14 16 09.3 +0.2**
ZRNK Zerenda 52.90 313 *e*P **P 14 16 47.8 +1.3**
ZRNK pmax pmax
comp=Z,2.0nm,0.8s
ZRNK Zerenda 52.90 313 *e*P **P 14 16 47.8 +1.3**
comp=Z,1.6nm,0.8s
INK Inuvik 53.03 27 P **P 14 16 48.2 +1.0**
comp=Z,1.7nm,0.6s,baz=265,slow=11,SNR=3.0
WRA Warramunga Arr 57.77 191 P **P 14 17 19.4 -2.4**
comp=Z,1.9nm,0.5s,baz=9.7,slow=7.0,SNR=30
ABKAR Akbulak array 59.50 311 *e*P **P 14 17 34.4 +0.8**
ASAR Alice Springs 61.49 191 P **P 14 17 45.4 -2.1**
comp=Z,1.1nm,0.8s,baz=18,slow=7.9,SNR=15
YKA Yellowknife Ar 62.34 31 P **P 14 17 52.1 -0.6**
comp=Z,0.6nm,0.8s,baz=299,slow=6.7,SNR=8.7
FINES FINESS Array B 69.59 333 P **P 14 18 39.5 +0.2**
comp=Z,1.6nm,0.8s,baz=54,slow=9.3,SNR=4.2
KBZ Khabaz 72.44 312 P **P 14 18 58.7 +1.8**
comp=Z,2.3nm,1.0s,baz=27,slow=2.3,SNR=4.3
NVAR Mina Array Bea 72.92 55 P **P 14 19 01.2 +1.0**
comp=Z,2.3nm,0.8s,baz=283,slow=5.5,SNR=9.1
NOA NORSAR Array B 74.77 338 P **P 14 19 10.8 +0.5**
comp=Z,1.1nm,1.0s,baz=39,slow=5.7,SNR=3.4
AKASG Malin Array Be 75.44 323 P **P 14 19 14.6 +0.2**
comp=Z,0.7nm,0.5s,baz=43,slow=5.8,SNR=6.0
PDAR Pinedale Array 75.76 47 P **P 14 19 16.6 -0.1**
comp=Z,0.3nm,0.5s,baz=258,slow=1.4,SNR=4.2
BRTR Keskin Array B 80.36 313 P **P 14 19 43.1 +1.0**
comp=Z,1.0nm,0.9s,baz=32,slow=5.8,SNR=5.5

NIED ***17*** *14:10:00,36.70N×140.60E,h5km,Mw3.7 Best double couple: M0 3.82000×10^14 NP1:φs2.00000°,δ42.00000°, λ-62.00000°. NP2:φs146.00000°,δ54.00000°, λ-113.00000°.*

IDC ***17*** *14:10:15.4±0.7,36.78N×140.49E,h0km,mb3.8/16, mb1 4.0/18,mb1mx3.8/57,mbtmp3.8/18,ML3.5/2,Error ellipse: s-maj=16.9km s-min=11.5km az=156.0*

ISCJB ***17*** *14:10:16.7±0.5,36.74N±0.03×140.64E±0.05,h20km±3km, mb3.8/19,Error ellipse: s-maj=6.9km s-min=4.0km az=21.8*

NEIC ***17*** *14:10:16.9±1.9,36.79N×140.42E,h8km±12km,mb4.1/3, Error ellipse: s-maj=11.2km s-min=7.7km az=111.0*

NEIC Recorded [3 JMA] in Ibaraki.

JMA ***17*** *14:10:17.2,36.75N×140.59E,h8km±1km,M4.0 Broadband fault plane solution: P waves. NP1: φs154.00000°,δ47.00000°,λ-101.00000°. NP2: φs349.00000°,δ44.00000°,λ-79.00000°. Principal axes: T Plg2.0000°, Azm251.0000°; N Plg8.0000°, Azm161.0000°; P Plg82.0000°, Azm355.0000°;*

JMA Felt III J1.

ISC 17 14:10:16.9±0.9,36.77N±0.03×140.52E±0.05,h10km±6km, n43,σ0s84/45,mb3.8/19,7C-1D,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHO	**Hitachi**	**0.17**	**166**	↑P	**Pg**	**14 10 20.2**	**-0.3**
JHO				S	**Sg**	**14 10 22.1**	**-0.9**
ONAJ	**Iwakimizuishiy**	**0.40**	**34**	↑P	**Pg**	**14 10 25.0**	**+0.3**
ONAJ				S	**Sg**	**14 10 30.7**	**+0.7**
JSB	**Shiboa**	**0.52**	**292**	↑P	**Pb**	**14 10 28.9**	**+0.8**
JSB				S	**Sb**	**14 10 37.0**	**+1.2**
JYT	**Yasato**	**0.61**	**206**	↑P	**Pg**	**14 10 28.6**	**0.0**
JYT				S	**Sg**	**14 10 37.0**	**+0.4**
JFK	**Kawauchi**	**0.66**	**26**	↑P	**Pg**	**14 10 29.6**	**0.0**
JFK				S	**Sg**	**14 10 38.4**	**+0.2**
JFT	**Otama**	**0.76**	**349**	↓P	**Pb**	**14 10 32.4**	**+0.2**
JFT				S	**Sb**	**14 10 43.0**	**+0.4**
JFY	**Yanaizu**	**0.91**	**314**	↑P	**Pn**	**14 10 35.5**	**-0.3**
JAG	**Ashikaga**	**0.93**	**248**	↑P	**Pg**	**14 10 34.6**	**-0.1**
MJAR	**Matsushiro Arr**	**1.87**	**264**	Pg	**Pn**	**14 10 49.9**	**+0.8**
	54nm,0.3s,baz=79,slow=15,SNR=46						
MJAR				Lg	Lg	14 11 14.1	
	55nm,0.3s,baz=87,slow=27,SNR=14						
MAJO	**Matsushiro**	**1.87**	**264**	*e*P	**Pb**	**14 10 50.8**	**-0.4**
MAT	**Matsushiro**	**1.87**	**264**	P	**Pb**	**14 10 50.5**	**-0.8**
MAT				S	**Sb**	**14 11 15.2**	**+0.4**
INU	**Inuyama**	**3.17**	**244**	*e*Lg	Lg	14 11 12.5	
JHJ	**Hachijo jima 2**	**3.70**	**190**	Pn	**Pn**	**14 11 15.2**	**+1.1**
	10nm,0.3s,baz=72,slow=16,SNR=3.3						
JHJ				Sn	**Sn**	**14 11 59.7**	**+1.9**
	15nm,0.3s,baz=72,slow=20,SNR=2.4						
JHJ2	**Mitsune**	**3.70**	**189**	*e*Pn	**Pn**	**14 11 15.4**	**+1.3**
ERM	**Erimo**	**5.62**	**21**	*e*Pn	**Pn**	**14 11 41.9**	**+1.4**
ASAJ	**Asahikawa**	**7.50**	**12**	Pn	**Pn**	**14 12 07.0**	**+0.6**
	0.7nm,0.3s,baz=245,slow=15,SNR=4.0						
ASAJ				Sn	**Sn**	**14 13 29.6**	**-1.9**
	0.6nm,0.3s,baz=294,slow=20,SNR=2.1						
USRK	**Ussuriysk Ar.**	**9.86**	**321**	Pn	Pn	14 12 43.0	+4.4
	0.1nm,0.3s,baz=124,slow=13,SNR=2.8						
SEY	**Seymchan**	**27.19**	**12**	P	**P**	**14 16 01.0**	**+0.6**
	1.8nm,1.0s,baz=252,slow=20,SNR=4.2						
SONM	**Songino Array**	**27.34**	**305**	P	**P**	**14 16 02.0**	**-0.1**
	1.2nm,0.8s,baz=115,slow=9.1,SNR=6.6						
H11N2	**WAKE ISLAND Hy**	**28.64**	**119**	T	T	14 45 58.3	
	baz=313,slow=75,SNR=199						
H11N1	**WAKE ISLAND Hy**	**28.65**	**119**	T	T	14 45 58.9	
	baz=313,slow=75,SNR=284						
H11N3	**WAKE ISLAND Hy**	**28.66**	**119**	T	T	14 45 59.7	
	baz=313,slow=75,SNR=213						
H11S1	**WAKE ISLAND Hy**	**29.33**	**121**	T	T	14 46 49.4	
	baz=314,slow=76,SNR=1175						
H11S3	**WAKE ISLAND Hy**	**29.33**	**121**	T	T	14 46 51.4	
	baz=314,slow=76,SNR=786						
H11S2	**WAKE ISLAND Hy**	**29.34**	**121**	T	T	14 46 52.5	
	baz=314,slow=76,SNR=1215						
TIXI	**Tiksi**	**35.47**	**354**	P	**P**	**14 17 11.9**	**-1.2**
	0.6nm,0.3s,baz=189,slow=4.5,SNR=3.0						
ZALV	**Zalesovo Beam**	**41.56**	**313**	P	**P**	**14 18 04.0**	**-0.5**
	1.8nm,0.6s,baz=95,slow=6.9,SNR=8.3						
MKAR	**Makanchi Array**	**43.65**	**302**	P	**P**	**14 18 22.1**	**+0.4**
	0.5nm,0.7s,baz=83,slow=11,SNR=4.2						
KURK	**Kurchatov**	**45.53**	**308**	*e*P	**P**	**14 18 36.0**	**-0.6**
	6.4nm,0.8s						
ILAR	**Eielson Array**	**50.10**	**32**	P	**P**	**14 19 11.6**	**-0.2**
	0.6nm,0.8s,baz=269,slow=5.9,SNR=5.0						
BRVK	**Borovoye**	**50.27**	**312**	*e*P	**P**	**14 19 12.8**	**-0.4**
	1.0nm,0.5s						
INK	**Inuvik**	**54.94**	**27**	P	**P**	**14 19 48.1**	**+0.6**
	0.6nm,0.7s,baz=315,slow=9.4,SNR=3.6						
WRAB	**Tennant Creek**	**56.70**	**187**	P	**P**	**14 20 00.9**	**+0.2**
WRA	**Warramunga Arr**	**56.71**	**187**	P	**P**	**14 19 59.8**	**-1.0**
	0.6nm,0.6s,baz=4.3,slow=7.2,SNR=10						
ABKAR	**Akbulak array**	**57.56**	**310**	*e*P	**P**	**14 20 06.1**	**-0.4**
	0.8nm,0.6s						
ASAR	**Alice Springs**	**60.44**	**187**	P	**P**	**14 20 26.6**	**-0.1**
	0.4nm,0.8s,baz=348,slow=5.4,SNR=4.1						
YKA	**Yellowknife Ar**	**64.39**	**30**	P	**P**	**14 20 52.6**	**-0.1**
	0.3nm,0.7s,baz=305,slow=6.9,SNR=7.0						
YKA				PcP	**PcP**	**14 21 27.6**	**+0.5**
	0.3nm,0.6s,baz=305,slow=3.9,SNR=6.2						
AKASG	**Malin Array Be**	**74.06**	**322**	P	**P**	**14 21 51.1**	**-1.7**
	0.3nm,0.3s,baz=43,slow=6.0,SNR=4.9						
NOA	**NORSAR Array B**	**74.15**	**337**	P	**P**	**14 21 52.8**	**-0.4**
	1.0nm,0.9s,baz=39,slow=6.0,SNR=2.7						
NVAR	**Mina Array Bea**	**75.72**	**53**	P	**P**	**14 22 04.2**	**+1.2**
	0.9nm,0.6s,baz=290,slow=5.7,SNR=8.6						
PDAR	**Pinedale Array**	**78.36**	**45**	P	**P**	**14 22 18.4**	**+0.6**
	0.6nm,0.6s,baz=269,slow=1.9,SNR=7.6						
GERES	**GERESS Array B**	**82.55**	**328**	P	**P**	**14 22 39.5**	**-0.6**
	0.4nm,0.4s,baz=45,slow=7.7,SNR=4.5						
TXAR	**Lajitas Array**	**90.84**	**52**	P	**P**	**14 23 21.7**	**+0.7**
	0.4nm,0.6s,baz=293,slow=3.2,SNR=5.7						

IDC ***17*** *14:13:43.9±1.5,36.51N×26.62E,h0km,mb3.4/4, mb1 3.4/5,mb1mx3.2/54,mbtmp3.3/5,ML2.6/1,MS3.4/1, Ms1 3.4/1,ms1mx2.4/28,Error ellipse: s-maj=63.6km s-min=21.4km az=156.0*

DDA ***17*** *14:13:44.4,36.49N×26.64E,h6km,Md3.2*

ISCJB ***17*** *14:13:45.5±0.5,36.53N±0.02×26.62E±0.02,h6km±4km, mb3.2/4,MS3.3/1,Error ellipse: s-maj=3.5km s-min=2.4km az=153.7*

CSEM ***17*** *14:13:45.9±0.1,36.52N×26.62E,h8km,ML3.3,Error ellipse: s-maj=3.4km s-min=2.1km az=154.0*

ATH ***17*** *14:13:45.3,36.53N×26.64E,h26km±1km,ML3.5/5,Error ellipse: s-maj=1.7km s-min=1.0km az=72.0*

ISK ***17*** *14:13:45.9,36.59N×26.63E,h5km,ML3.2*

THE ***17*** *14:13:46.1,36.55N×26.64E,h6km±1km,ML3.4/9,Error ellipse: s-maj=1.4km s-min=0.4km az=8.0*

ISC 17 14:13:45.4±1.0,36.53N±0.02×26.66E±0.01,h10km±8km, n127,σ0s93/172,mb3.3/4,Dodecanese Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
NISR	**Nisiros**	**0.39**	**78**	P	**Pb**	**14 13 53.9**	**-0.5**
NISR				S	**Sb**	**14 14 00.4**	**0.0**
NISR	**Nisiros**	**0.39**	**78**	P	**Pb**	**14 13 53.9**	**-0.5**
NISR				S	**Sg**	**14 13 59.0**	**+0.8**
NISR	**Nisiros**	**0.39**	**78**	P	**Pb**	**14 13 53.8**	**-0.5**
NISR				S	**Sg**	**14 13 59.0**	**+0.8**
NISR				AML	AML	14 14 01.9	
	comp=N,12788μm,0.1s						
NISR				AML	AML	14 14 02.1	
	comp=E,24161μm,0.2s						
NIS1	**Nisyros lsl.**	**0.43**	**80**	*e*PG	**Pb**	**14 13 55.1**	**+0.1**
NIS1	**Nisyros lsl.**	**0.43**	**80**	P	**Pb**	**14 13 54.9**	**-0.1**
NIS1				S	**Sb**	**14 14 01.7**	**+0.1**
NIS1	**Nisyros lsl.**	**0.43**	**80**	P	**Pb**	**14 13 54.9**	**-0.1**
NIS1				S	**Sb**	**14 14 01.7**	**+0.1**
NIS1	**Nisyros lsl.**	**0.43**	**80**	P	**Pb**	**14 13 55.4**	**+0.4**
NIS1				S	**Sb**	**14 14 02.1**	**+0.6**
BODT	**Bodrum**	**0.75**	**45**	*e*PG	**Pb**	**14 14 00.1**	**-0.4**
BODT				*e*SG	**Sb**	**14 14 10.2**	**-0.6**
BODT	**Bodrum**	**0.75**	**45**	P	**Pg**	**14 13 59.9**	**+0.1**
BODT				S	**Sb**	**14 14 10.6**	**-0.1**
BODT	**Bodrum**	**0.75**	**45**	*e*Pg	**Pb**	**14 14 00.1**	**-0.4**
BODT				*e*Sg	**Sb**	**14 14 10.2**	**-0.6**
BDRM	**Kayabasi**	**0.83**	**50**	*i* P	**Pb**	**14 14 01.7**	**-0.2**
BDRM				*i* S	**Sn**	**14 14 14.4**	**-1.0**
BDRM	**Kayabasi**	**0.83**	**50**	P	**Pb**	**14 14 01.7**	**-0.2**
BDRM				S	**Sn**	**14 14 14.4**	**-1.0**
SANT	**Santorini**	**0.98**	**261**	P	**Pg**	**14 14 04.1**	**-0.1**
SANT				S	**Sb**	**14 14 18.3**	**+0.9**
SANT	**Santorini**	**0.98**	**261**	P	**Pg**	**14 14 03.9**	**-0.3**
SANT				S	**Sb**	**14 14 18.3**	**+0.9**
SANT	**Santorini**	**0.98**	**261**	P	**Pg**	**14 14 03.9**	**-0.3**
SANT				S	**Sn**	**14 14 18.9**	**-0.3**
SANT				AML	AML	14 14 20.1	
	comp=E,5193μm,0.6s						
SANT				AML	AML	14 14 25.7	
	comp=N,2016μm,0.5s						
THR2	**Thira island,**	**0.99**	**265**	P	**Pb**	**14 14 04.8**	**+0.2**
THR2	**Thira island,**	**0.99**	**265**	P	**Pb**	**14 14 04.8**	**+0.2**
THR7	**Fira-Santorini**	**0.99**	**264**	P	**Pb**	**14 14 05.0**	**+0.3**
THR7	**Fira-Santorini**	**0.99**	**264**	P	**Pb**	**14 14 05.0**	**+0.3**
THT1	**Athinios (Pele**	**1.00**	**262**	P	**Pg**	**14 14 04.2**	**-0.4**
THT1				S	**Sb**	**14 14 18.8**	**+0.8**
THT1	**Athinios (Pele**	**1.00**	**262**	P	**Pg**	**14 14 04.2**	**-0.4**
THT1				S	**Sb**	**14 14 18.8**	**+0.8**
CMBO	**Columbo, Santo**	**1.01**	**267**	P	**Pn**	**14 14 05.8**	**+0.2**
CMBO	**Columbo, Santo**	**1.01**	**267**	P	**Pn**	**14 14 05.8**	**+0.2**
THR3	**Thira Island,**	**1.02**	**263**	P	**Pg**	**14 14 04.8**	**-0.2**
THR3	**Thira Island,**	**1.02**	**263**	P	**Pg**	**14 14 04.8**	**-0.2**
THR6	**Thira Island,**	**1.03**	**261**	P	**Pb**	**14 14 05.3**	**0.0**
THR6	**Thira Island,**	**1.03**	**261**	P	**Pb**	**14 14 05.3**	**0.0**
APE	**Apeiranthos**	**1.05**	**301**	*e*PG	**Pg**	**14 14 05.6**	**-0.1**
APE				*e*SG	**Sg**	**14 14 19.3**	**+0.1**
APE	**Apeiranthos**	**1.05**	**301**	P	**Pg**	**14 14 05.2**	**-0.4**
APE				S	**Sg**	**14 14 19.3**	**+0.1**
APE	**Apeiranthos**	**1.05**	**301**	P	**Pg**	**14 14 05.2**	**-0.4**
APE	**Apeiranthos**	**1.05**	**301**	*e*Pg	**Pg**	**14 14 05.5**	**-0.1**
APE				S	**Sg**	**14 14 19.3**	**+0.1**
APE	**Apeiranthos**	**1.05**	**301**	P	**Pg**	**14 14 05.2**	**-0.4**
APE				S	**Sg**	**14 14 17.7**	**-1.5**
APE				AML	AML	14 14 22.2	
	comp=N,2576μm,0.2s						
APE				AML	AML	14 14 22.2	
	comp=E,2593μm,0.5s						
THR5	**Thira Island,**	**1.06**	**264**	*e*PG	**Pn**	**14 14 06.6**	**+0.3**
THR5	**Thira Island,**	**1.06**	**264**	P	**Pn**	**14 14 06.3**	**0.0**
THR5	**Thira Island,**	**1.06**	**264**	P	**Pn**	**14 14 06.3**	**0.0**
THR5	**Thira Island,**	**1.06**	**264**	*e*Pg	**Pn**	**14 14 06.6**	**+0.3**
KARP	**Karpathos**	**1.06**	**157**	*e*PN	**Pn**	**14 14 06.9**	**+0.5**
KARP	**Karpathos**	**1.06**	**157**	P	**Pg**	**14 14 05.5**	**-0.3**
KARP				S	**Sn**	**14 14 20.9**	**-0.4**
KARP	**Karpathos**	**1.06**	**157**	P	**Pg**	**14 14 05.6**	**-0.3**
KARP	**Karpathos**	**1.06**	**157**	*e*Pn	**Pn**	**14 14 06.9**	**+0.5**
KARP				S	**Sb**	**14 14 20.4**	**+0.5**
KARP	**Karpathos**	**1.06**	**157**	P	**Pg**	**14 14 05.6**	**-0.3**
KARP				S	**Sb**	**14 14 20.4**	**+0.5**
KARP				AML	AML	14 14 24.0	
	comp=E,3470μm,0.2s						
KARP				AML	AML	14 14 26.9	
	comp=N,3106μm,0.5s						
SMG	**Samos**	**1.18**	**7**	P	**Pb**	**14 14 06.9**	**-1.0**
SMG				S	**Sn**	**14 14 24.4**	**+0.2**
SMG	**Samos**	**1.18**	**7**	P	**Pn**	**14 14 09.3**	**+1.2**
SMG				S	**Sn**	**14 14 24.0**	**-0.2**
SMG	**Samos**	**1.18**	**7**	P	**Pn**	**14 14 09.3**	**+1.2**
SMG				S	**Sn**	**14 14 24.0**	**-0.2**
SMG				AML	AML	14 14 28.4	
	comp=N,3235μm,0.3s						
SMG				AML	AML	14 14 30.9	
	comp=E,3183μm,0.4s						
ARG	**Arkhangelos**	**1.23**	**104**	P	**Pb**	**14 14 08.7**	**0.0**
ARG				S	**Sn**	**14 14 25.6**	**+0.3**
ARG	**Arkhangelos**	**1.23**	**104**	P	**Pg**	**14 14 09.0**	**0.0**
ARG				S	**Sn**	**14 14 25.6**	**+0.3**
GCAM	**G?zelcaml?**	**1.25**	**21**	*i* P	**Pn**	**14 14 08.0**	**-1.0**
GCAM				*i* S	**Sn**	**14 14 27.5**	**+1.6**
GCAM	**G?zelcaml?**	**1.25**	**21**	P	**Pn**	**14 14 08.0**	**-1.0**
GCAM				S	**Sn**	**14 14 27.5**	**+1.6**
YER	**Yerkesik**	**1.44**	**65**	*e*PN	**Pg**	**14 14 13.2**	**+0.2**
YER	**Yerkesik**	**1.44**	**65**	P	**Pn**	**14 14 11.8**	**+0.2**
YER				S	**Sg**	**14 14 31.0**	**-0.7**
YER	**Yerkesik**	**1.44**	**65**	P	**Pn**	**14 14 11.8**	**+0.2**
YER	**Yerkesik**	**1.44**	**65**	*e*Pn	**Pg**	**14 14 13.2**	**+0.2**
YER				S	**Sg**	**14 14 31.0**	**-0.7**
ZKR	**Zakros**	**1.46**	**194**	P	**Pn**	**14 14 12.2**	**+0.4**
ZKR				S	**Sg**	**14 14 32.6**	**+0.3**
ZKR	**Zakros**	**1.46**	**194**	P	**Pn**	**14 14 12.2**	**+0.4**
ZKR				S	**Sg**	**14 14 32.6**	**+0.3**
ZKR	**Zakros**	**1.46**	**194**	P	**Pg**	**14 14 13.1**	**-0.3**
AYDN	**Tasoluk**	**1.49**	**41**	*i* P	**Pn**	**14 14 11.8**	**-0.5**
AYDN				*i* S	**Sg**	**14 14 34.3**	**+0.9**
AYDN	**Tasoluk**	**1.49**	**41**	P	**Pn**	**14 14 11.8**	**-0.5**
AYDN				S	**Sg**	**14 14 34.3**	**+0.9**
NPS	**Neapolis**	**1.52**	**214**	P	**Pn**	**14 14 12.5**	**-0.2**
NPS				S	**Sn**	**14 14 32.8**	**+0.2**
NPS	**Neapolis**	**1.52**	**214**	P	**Pn**	**14 14 12.5**	**-0.2**
NPS				S	**Sn**	**14 14 32.8**	**+0.2**
NPS	**Neapolis**	**1.52**	**214**	P	**Pn**	**14 14 11.1**	**-1.6**
TURN	**Turunc**	**1.60**	**77**	*i* P	Pn	14 14 10.2	-3.5
TURN				*i* S	**Sn**	**14 14 31.6**	**-2.9**
TURN	**Turunc**	**1.60**	**77**	P	Pn	14 14 10.2	-3.5
TURN				S	**Sn**	**14 14 31.6**	**-2.9**
DALY	**Dalyan (Mu¨la**	**1.63**	**79**	*e*PN	**Pg**	**14 14 16.1**	**-0.6**
DALY	**Dalyan (Mu¨la**	**1.63**	**79**	*e*Pn	**Pg**	**14 14 16.1**	**-0.6**
LAST	**Lasithi**	**1.67**	**215**	P	**Pn**	**14 14 14.4**	**-0.4**
LAST				S	**Sn**	**14 14 36.6**	**+0.3**
LAST	**Lasithi**	**1.67**	**215**	P	**Pn**	**14 14 14.9**	**+0.1**
LAST				S	**Sn**	**14 14 36.6**	**+0.3**
LAST	**Lasithi**	**1.67**	**215**	P	**Pn**	**14 14 14.8**	**+0.1**
ZEY	**¨zmir**	**1.71**	**356**	*i* P	**Pn**	**14 14 14.0**	**-1.2**
ZEY				*i* S	**Sg**	**14 14 41.9**	**+1.6**
AYDB	**Zeytinkoy-Aydi**	**1.72**	**35**	*e*PN	**Pb**	**14 14 16.9**	**-0.3**
AYDB	**Zeytinkoy-Aydi**	**1.72**	**35**	*e*Pn	**Pb**	**14 14 16.9**	**-0.3**
MHLO	**Agia Marina, M**	**1.82**	**276**	P	**Pn**	**14 14 16.9**	**+0.1**
MHLO	**Agia Marina, M**	**1.82**	**276**	P	**Pn**	**14 14 16.9**	**+0.1**
MHLO	**Agia Marina, M**	**1.82**	**276**	P	**Pb**	**14 14 17.8**	**-1.0**
URLA	**Izmir**	**1.82**	**359**	*i* P	**Pg**	**14 14 19.8**	**-0.6**
URLA				*i* S	**Sg**	**14 14 47.2**	**+3.1**
URLA	**Izmir**	**1.82**	**359**	P	**Pg**	**14 14 19.8**	**-0.6**
SERI	**Serifos**	**1.85**	**290**	P	**Pn**	**14 14 16.4**	**-0.8**
SERI	**Serifos**	**1.85**	**290**	P	**Pn**	**14 14 16.4**	**-0.8**
BLCB	**Balcova**	**1.88**	**9**	*e*PN	**Pb**	**14 14 19.1**	**-0.6**
BLCB	**Balcova**	**1.88**	**9**	*e*Pn	**Pb**	**14 14 19.1**	**-0.6**
IDI	**Anoyia**	**1.90**	**230**	P	**Pn**	**14 14 17.6**	**-0.3**
IDI				S	**Sn**	**14 14 41.8**	**-0.1**
IDI	**Anoyia**	**1.90**	**230**	P	**Pn**	**14 14 17.6**	**-0.3**
IDI				S	**Sn**	**14 14 41.8**	**-0.1**
IDI	**Anoyia**	**1.90**	**230**	P	**Pn**	**14 14 17.1**	**-0.8**
CHOS	**Chios island**	**1.91**	**346**	P	**Pn**	**14 14 17.1**	**-1.0**
CHOS	**Chios island**	**1.91**	**346**	P	**Pn**	**14 14 17.1**	**-1.0**
CHOS	**Chios island**	**1.91**	**346**	P	**Pn**	**14 14 16.1**	**-2.0**
FETY	**Fethiye**	**1.96**	**86**	*e*PN	**Pb**	**14 14 21.0**	**-0.1**
FETY	**Fethiye**	**1.96**	**86**	*e*Pn	**Pb**	**14 14 21.0**	**-0.1**
SIVA	**Sivas**	**2.13**	**225**	P	**Pn**	**14 14 21.9**	**+0.9**
SIVA	**Sivas**	**2.13**	**225**	P	**Pn**	**14 14 21.9**	**+0.9**
SIVA	**Sivas**	**2.13**	**225**	P	**Pb**	**14 14 22.8**	**-1.3**
DENT	**Denizli**	**2.26**	**57**	*e*PN	**Pb**	**14 14 25.0**	**-1.3**
DENT	**Denizli**	**2.26**	**57**	*e*Pn	**Pb**	**14 14 25.0**	**-1.3**
VAM	**Vamos**	**2.29**	**241**	P	**Pn**	**14 14 23.5**	**+0.3**
VAM	**Vamos**	**2.29**	**241**	P	**Pn**	**14 14 23.5**	**+0.3**
IMMV	**Iera Moni Meta**	**2.42**	**245**	P	**Pn**	**14 14 25.0**	**0.0**
IMMV				S	**Sn**	**14 14 54.7**	**+0.1**
IMMV	**Iera Moni Meta**	**2.42**	**245**	P	**Pn**	**14 14 25.0**	**0.0**
IMMV				S	**Sn**	**14 14 54.7**	**+0.1**
IMMV	**Iera Moni Meta**	**2.42**	**245**	P	**Pn**	**14 14 24.4**	**-0.6**
AKS	**Akhisar**	**2.52**	**21**	*e*PN	**Pb**	**14 14 28.5**	**-2.2**
AKS	**Akhisar**	**2.52**	**21**	*e*Pn	**Pb**	**14 14 28.5**	**-2.2**
KULA	**Kula-Manisa**	**2.54**	**38**	*e*PN	**Pn**	**14 14 28.7**	**+1.9**
KULA	**Kula-Manisa**	**2.54**	**38**	*e*Pn	**Pn**	**14 14 28.7**	**+1.9**
DKL	**Dikili**	**2.54**	**4**	*e*PN	**Pn**	**14 14 28.2**	**+1.5**
DKL	**Dikili**	**2.54**	**4**	*e*Pn	**Pn**	**14 14 28.2**	**+1.5**
ELL	**Elmali**	**2.62**	**84**	*e*PN	**Pb**	**14 14 30.4**	**-2.2**
ELL	**Elmali**	**2.62**	**84**	*e*Pn	**Pb**	**14 14 30.4**	**-2.2**
VLY	**Voula,Athens**	**2.64**	**301**	P	**Pn**	**14 14 28.2**	**+0.2**
VLY	**Voula,Athens**	**2.64**	**301**	P	**Pn**	**14 14 28.2**	**+0.2**
PRK	**Paraskevi**	**2.73**	**354**	P	**Pn**	**14 14 29.3**	**+0.1**
PRK	**Paraskevi**	**2.73**	**354**	P	**Pn**	**14 14 29.3**	**+0.1**
SIGR	**SIGRI**	**2.75**	**347**	*e*PN	**Pn**	**14 14 31.6**	**+2.1**
SIGR	**SIGRI**	**2.75**	**347**	P	**Pn**	**14 14 29.0**	**-0.5**
SIGR	**SIGRI**	**2.75**	**347**	P	**Pn**	**14 14 29.0**	**-0.5**
SIGR	**SIGRI**	**2.75**	**347**	*e*Pn	**Pn**	**14 14 31.6**	**+2.1**
ANKY	**Antikythira Is**	**2.79**	**257**	P	**Pn**	**14 14 30.1**	**0.0**
ANKY	**Antikythira Is**	**2.79**	**257**	P	**Pn**	**14 14 30.1**	**0.0**
KHL	**Karahalli**	**2.90**	**51**	*e*PN	**Pn**	**14 14 33.9**	**+2.2**
KHL	**Karahalli**	**2.90**	**51**	*e*Pn	**Pn**	**14 14 33.9**	**+2.2**
DID	**Didima**	**2.90**	**291**	P	**Pn**	**14 14 31.8**	**+0.1**
DID	**Didima**	**2.90**	**291**	P	**Pn**	**14 14 31.8**	**+0.1**
BALB	**Balikesir**	**3.25**	**17**	*e*PN	**Pn**	**14 14 38.9**	**+2.5**
BALB	**Balikesir**	**3.25**	**17**	*e*Pn	**Pn**	**14 14 38.9**	**+2.5**
BRTR	**Keskin Array B**	**6.36**	**58**	Pn	**Pn**	**14 15 21.1**	**+1.7**
	comp=E,0.1nm,0.3s,baz=236,slow=14,SNR=3.3						
ESDC	**Sonseca Array**	**24.24**	**287**	P	**P**	**14 19 02.2**	**-0.3**
	comp=E,0.5nm,0.5s,baz=79,slow=9.6,SNR=5.4						
TORD	**Torodi Ar. Bea**	**32.30**	**230**	P	**P**	**14 20 14.2**	**-0.4**
	comp=E,0.2nm,0.4s,baz=34,slow=7.9,SNR=4.1						
AAK	**Ala-Archa**	**36.97**	**65**	LR	LR	14 37 46.2	
	comp=E,49nm,18.4s,baz=64,slow=39						
KURBB	**Kurchatov Arra**	**39.32**	**52**	P	**P**	**14 21 14.8**	**+0.4**
	comp=E,0.2nm,0.5s,baz=276,slow=8.7,SNR=4.1						
MKAR	**Makanchi Array**	**42.01**	**58**	P	**P**	**14 21 37.2**	**+0.4**
	comp=E,0.4nm,0.7s,baz=272,slow=8.4,SNR=5.1						

IDC ***17*** *14:14:19.7±3.0,17.60S×167.89E,h0km,mb3.9/6, mb1 4.0/7,mb1mx3.7/48,mbtmp3.9/7

IDC ***17*** *14:28:07.6±2.8, 49.66N×92.04E, h0km, mb1 2.9/3, mb1mx2.8/49, mbtmp2.9/3, ML2.6/3, Error ellipse: s-maj=34.0km s-min=23.0km az=140.0*

NNC ***17*** *14:28:10.1±6.7, 49.50N×92.07E, h8km±26km, mb3.5, mpv3.2, Error ellipse: s-maj=49.8km s-min=41.3km az=174.0*

ISC 17 14:28:12.6±5.7, 49.7N±0.2×91.8E±0.4, h10km, n8, σ2.250/6, 4C-3D, Mongolia

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ZALV	**Zalesovo Beam**	**6.06**	**317**	Pn	**Pn**	**14 29 39.6**	**-2.5**
	0.3nm,0.3s,baz=134,slow=13,SNR=4.6						
ZALV				Pg	**Pb**	**14 30 00.9**	**+2.8**
	0.4nm,0.3s,baz=134,slow=18,SNR=10						
ZALV				Lg	Lg	14 31 20.6	
	0.9nm,0.3s,baz=126,slow=29,SNR=6.0						
MK31	**Makanchi Array**	**6.99**	**249**	↑Pn	**Pn**	**14 29 54.8**	**-0.2**
	baz=73,slow=14,SNR=12						
MK31				↑Pg	Pb	14 30 20.2	+6.1
	0.9nm,0.5s,baz=66,slow=15,SNR=4.4						
MK31				Lg	Lg	14 31 55.5	
	9.1nm,0.8s,baz=68,slow=32,SNR=6.9						
MKAR	**Makanchi Array**	**6.99**	**249**	Pn	**Pn**	**14 29 54.4**	**-0.7**
	0.3nm,0.3s,baz=70,slow=15,SNR=11						
MKAR				Sn	**Sn**	**14 31 13.6**	**-1.0**
	0.3nm,0.3s,baz=54,slow=20,SNR=3.8						
MKAR				Lg	Lg	14 31 52.7	
	0.3nm,0.3s,baz=60,slow=35,SNR=5.6						
MAKZ	**Makanchi**	**7.18**	**250**	↓Pn	Pn	14 29 55.7	-1.9
	1.5nm,1.3s						
MAKZ				↑Pg	Pb	14 30 22.0	+4.8
	1.8nm,0.8s						
MAKZ				↓Lg	Lg	14 32 00.8	
	9.3nm,1.1s						
KURK	**Kurchatov**	**8.52**	**282**	↑Lg	Lg	14 32 46.6	
	26nm,1.2s						
KURBB	**Kurchatov Arra**	**8.57**	**281**	Pn	**Pn**	**14 30 14.9**	**-1.7**
KURBB	0.1nm,0.3s,baz=94,slow=15,SNR=6.0			Lg	Lg	14 32 41.7	
	0.0nm,0.3s,baz=86,slow=31,SNR=4.3						
SONM	**Songino Array**	**9.82**	**95**	Pg	Pg	14 31 02.1	
	0.1nm,0.3s,baz=285,slow=17,SNR=2.9						
SONM				Lg	Lg	14 33 02.9	
	0.2nm,0.3s,baz=284,slow=30,SNR=5.0						
PDGK	**Podgornoye**	**10.62**	**238**	↓Lg	Lg	14 33 48.7	
	4.1nm,1.1s						

MEX 17 14:40:59.9±0.4, 14.07N×91.91W, h13km±220km, MD4.0, Guatemala

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PCIG		**2.06**	**322**	*e*P	Pn	14 41 31.2	-3.1
PCIG				*e*S	Sn	14 41 55.4	-4.5
CCIG	**Comitan**	**2.21**	**354**	*e*P	Pn	14 41 35.8	-0.7
CCIG				*e*S	Sn	14 41 57.5	-6.4

NIED ***17*** *14:42:00, 37.00N×140.70E, h5km, Mw3.7 Best double couple: M0 3.41000×10^14 NP1:φs63.00000°, δ39.00000°, λ-86.00000°. NP2:φs239.00000°, δ52.00000°, λ-93.00000°.*

IDC ***17*** *14:42:24.5±0.6, 37.03N×140.58E, h0km, mb3.7/12, mb1 3.9/14, mb1mx3.7/36, mbtmp3.8/14, ML3.6/2, MS3.4/2, Ms1 3.4/2, ms1mx2.5/49, Error ellipse: s-maj=18.3km s-min=15.2km az=103.0*

ISCJB ***17*** *14:42:25.4±0.6, 37.01N±0.03×140.80E±0.07, h17km±4km, mb3.6/12, MS3.4/2, Error ellipse: s-maj=9.1km s-min=4.8km az=13.6*

JMA ***17*** *14:42:25.9, 37.02N×140.68E, h7km±1km, M3.8 Broadband fault plane solution: P waves. NP1: φs50.00000°, δ50.00000°, λ-105.00000°. NP2: φs252.00000°, δ42.00000°, λ-73.00000°. Principal axes: T Plg4.0000°, Azm150.0000°; N Plg11.0000°, Azm59.0000°; P Plg78.0000°, Azm259.0000°;*

JMA Felt II J1.

ISC 17 14:42:25.6±1.0, 37.05N±0.03×140.59E±0.05, h7km±7km, n32, σ0.888/30, mb3.6/12, 3C-2D, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.18**	**73**	↓P	**Pg**	**14 42 28.9**	**-0.3**
ONAJ				S	**Sg**	**14 42 30.9**	**-0.8**
JFK	**Kawauchi**	**0.39**	**36**	↓P	**Pg**	**14 42 33.4**	**+0.2**
JFK				S	**Sg**	**14 42 38.6**	**+0.2**
JHO	**Hitachi**	**0.44**	**182**	↑P	**Pg**	**14 42 34.1**	**-0.1**
JHO				S	**Sg**	**14 42 40.0**	**+0.1**
JFT	**Otama**	**0.51**	**337**	↑P	**Pb**	**14 42 37.1**	**+0.2**
JFT				S	**Sb**	**14 42 44.8**	**+0.3**
JMM	**Marumori**	**0.83**	**11**	↑P	**Pg**	**14 42 41.8**	**+0.2**
JMM				S	**Sb**	**14 42 53.5**	**-0.2**
MJAR	**Matsushiro Arr**	**1.98**	**256**	Pg	**Pb**	**14 43 01.2**	**-0.7**
	24nm,0.3s,baz=78,slow=15,SNR=126						
MJAR				Lg	Lg	14 43 26.9	
	27nm,0.3s,baz=82,slow=27,SNR=20						
MAT	**Matsushiro**	**1.98**	**256**	P	**Pb**	**14 43 01.7**	**-0.2**
MAT				S	**Sg**	**14 43 28.7**	**-0.5**
JHJ	**Hachijo jima 2**	**3.98**	**190**	Pn	**Pn**	**14 43 27.9**	**+1.0**
	13nm,0.3s,baz=319,slow=18,SNR=3.3						
JHJ				Sn	**Sn**	**14 44 13.6**	**-0.3**
	11nm,0.3s,baz=90,slow=20,SNR=2.1						
ASAJ	**Asahikawa**	**7.22**	**12**	Pn	**Pn**	**14 44 12.7**	**+1.1**
	0.9nm,0.3s,baz=203,slow=12,SNR=7.0						
ASAJ				Sn	**Sn**	**14 45 30.4**	**-3.4**
	0.4nm,0.3s,baz=112,slow=19,SNR=2.1						
USRK	**Ussuriysk Ar.**	**9.68**	**320**	Pn	Pn	14 44 48.6	+3.4
	0.2nm,0.3s,baz=143,slow=12,SNR=16						
KSRS	**Korea Array**	**10.11**	**276**	Pn	Pn	14 44 57.4	+6.3
	0.1nm,0.3s,baz=90,slow=14,SNR=4.9						
SONM	**Songino Array**	**27.23**	**304**	P	**P**	**14 48 10.9**	**+0.7**
	1.0nm,0.6s,baz=99,slow=8.0,SNR=8.1						
H11N2	**WAKE ISLAND Hy**	**28.73**	**120**	T	T	15 18 09.6	
	baz=313,slow=75,SNR=22						
H11N1	**WAKE ISLAND Hy**	**28.73**	**120**	T	T	15 18 10.2	
	baz=313,slow=75,SNR=26						
H11N3	**WAKE ISLAND Hy**	**28.75**	**120**	T	T	15 18 11.0	
	baz=313,slow=75,SNR=23						
H11S1	**WAKE ISLAND Hy**	**29.43**	**122**	T	T	15 19 02.0	
	baz=314,slow=75,SNR=29						
H11S3	**WAKE ISLAND Hy**	**29.43**	**122**	T	T	15 19 02.6	
	baz=314,slow=75,SNR=20						
H11S2	**WAKE ISLAND Hy**	**29.44**	**122**	T	T	15 19 05.2	
	baz=314,slow=75,SNR=21						
ZALV	**Zalesovo Beam**	**41.41**	**312**	P	**P**	**14 50 11.4**	**-1.0**
	0.6nm,0.5s,baz=76,slow=7.6,SNR=4.3						
MKAR	**Makanchi Array**	**43.55**	**302**	P	**P**	**14 50 30.5**	**+0.6**
	0.6nm,0.6s,baz=86,slow=8.5,SNR=12						
ILAR	**Eielson Array**	**49.83**	**32**	P	**P**	**14 51 19.4**	**+0.5**
	0.5nm,0.8s,baz=272,slow=6.5,SNR=7.2						
AAK	**Ala-Archa**	**49.90**	**298**	LR	LR	15 14 24.6	
	comp=Z,38nm,21.4s,baz=65,slow=38						
ARU	**Arti**	**55.91**	**318**	LR	LR	15 17 07.7	
	comp=Z,32nm,18.7s,baz=188,slow=37						
WRA	**Warramunga Arr**	**56.99**	**187**	P	**P**	**14 52 11.1**	**-0.8**
	1.4nm,0.6s,baz=3.0,slow=7.4,SNR=22						
ASAR	**Alice Springs**	**60.72**	**187**	P	**P**	**14 52 37.2**	**-0.6**
	0.7nm,0.8s,baz=10,slow=7.6,SNR=11						
YKA	**Yellowknife Ar**	**64.12**	**30**	P	**P**	**14 53 00.1**	**0.0**
	0.2nm,0.6s,baz=303,slow=7.0,SNR=4.5						
FINES	**FINESS Array B**	**68.49**	**332**	P	**P**	**14 53 27.7**	**-0.3**
	1.1nm,0.8s,baz=68,slow=7.7,SNR=3.3						
STKA	**Stephens Creek**	**68.58**	**179**	P	**P**	**14 53 29.0**	**+0.1**
	0.7nm,0.7s,baz=328,slow=9.5,SNR=3.2						
AKASG	**Malin Array Be**	**73.88**	**322**	P	**P**	**14 54 00.2**	**-0.7**
	0.1nm,0.3s,baz=46,slow=5.6,SNR=3.5						
PDAR	**Pinedale Array**	**78.12**	**45**	P	**P**	**14 54 26.4**	**+0.7**
	0.2nm,0.5s,baz=350,slow=4.6,SNR=3.3						
TXAR	**Lajitas Array**	**90.63**	**52**	P	**P**	**14 55 29.7**	**+0.6**
	0.3nm,0.8s,baz=289,slow=2.8,SNR=3.6						
LPAZ	**La Paz**	**147.25**	**59**	PKPbc	**PKPbc**	**15 02 11.2**	**+0.2**
	1.0nm,0.7s,baz=2.7,slow=6.6,SNR=6.8						

NIED ***17*** *14:46:00, 37.10N×140.80E, h5km, Mw4.1 Best double couple: M0 1.63000×10^15 NP1:φs78.00000°, δ23.00000°, λ-69.00000°. NP2:φs235.00000°, δ69.00000°, λ-99.00000°.*

ISCJB ***17*** *14:46:50.8±0.7, 37.08N±0.03×140.97E±0.04, h12km±4km, mb4.2/55, MS3.4/6, Error ellipse: s-maj=5.6km s-min=3.8km az=26.1*

IDC ***17*** *14:46:50.4±0.6, 37.02N×140.90E, h0km, mb4.1/26, mb1 4.2/30, mb1mx4.1/48, mbtmp4.1/30, ML3.7/3, MS3.1/9, Ms1 3.1/9, ms1mx2.9/50, Error ellipse: s-maj=15.4km s-min=13.4km az=86.0*

BJI ***17*** *14:46:50.7, 36.84N×140.76E, h8km, mb4.5/29, mB4.8/12, Ms4.4/11, Ms7 4.4/9*

JMA ***17*** *14:46:52.0, 37.09N×140.83E, h7km±1km, M4.5 Broadband fault plane solution: P waves. NP1: φs219.00000°, δ60.00000°, λ-106.00000°. NP2: φs70.00000°, δ34.00000°, λ-64.00000°. Principal axes: T Plg14.0000°, Azm321.0000°; N Plg14.0000°, Azm227.0000°; P Plg70.0000°, Azm93.0000°;*

JMA Felt IV J1.

MOS ***17*** *14:46:52.8±1.2, 37.06N×140.91E, h27km, mb4.6/21 Error ellipse: s-maj=9.3km s-min=6.2km az=106.5*

NEIC ***17*** *14:46:53.7±2.2, 37.08N×140.92E, h19km±13km, mb4.6/17, Error ellipse: s-maj=6.7km s-min=5.4km az=106.0*

NEIC Recorded [4 JMA] in Fukushima.

ISC 17 14:46:51.3±1.2, 37.06N±0.03×140.97E±0.05, h4km±7km, n148, σ1.917/155, mb4.3/55, MS3.2/6, 8C-1D, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.14**	**286**	↓P	**Pg**	**14 46 53.2**	**-0.9**
JFK	**Kawauchi**	**0.31**	**347**	↑P	**Pg**	**14 46 57.6**	**+0.2**
JFK				S	**Sg**	**14 47 01.7**	**+0.2**
JHO	**Hitachi**	**0.55**	**215**	↑P	**Pg**	**14 47 02.2**	**+0.3**
JHO				S	**Sg**	**14 47 09.4**	**+0.4**
JFT	**Otama**	**0.68**	**312**	↑P	**Pg**	**14 47 03.5**	**-0.8**
JFT				S	**Sg**	**14 47 11.6**	**-1.5**
JMM	**Marumori**	**0.81**	**350**	↑P	**Pg**	**14 47 06.6**	**-0.3**
JMM				S	**Sg**	**14 47 16.9**	**-0.6**
JSB	**Shiboa**	**0.84**	**264**	↑P	**Pg**	**14 47 07.0**	**-0.4**
JSB				S	**Sg**	**14 47 17.3**	**-1.0**
MJAR	**Matsushiro Arr**	**2.27**	**258**	Pn	**Pn**	**14 47 29.6**	**0.0**
	32nm,0.3s,baz=80,slow=16,SNR=78						
MJAR				Sn	**Sn**	**14 47 57.3**	**-0.7**
	42nm,0.3s,baz=73,slow=30,SNR=8.9						
MJAR				LR	LR	14 48 15.0	
	comp=Z,63nm,20.3s,baz=115,slow=39						
MAJO	**Matsushiro**	**2.27**	**258**	*e*P	**Pn**	**14 47 30.1**	**+0.5**
MAJO	**Matsushiro**	**2.27**	**258**	*e*Pn	**Pn**	**14 47 30.1**	**+0.5**
MAT	**Matsushiro**	**2.27**	**258**	P	**Pn**	**14 47 30.0**	**+0.4**
MAT				S	**Sn**	**14 47 59.2**	**+1.1**
MJB9	**Matsu-Tunnel**	**2.27**	**258**	*e*Pn	**Pn**	**14 47 30.3**	**+0.6**
INU	**Inuyama**	**3.62**	**243**	*e*Pn	**Pn**	**14 47 50.0**	**+1.9**
JHJ	**Hachijo jima 2**	**4.05**	**194**	Pn	**Pn**	**14 47 56.0**	**+1.9**
	16nm,0.3s,baz=11,slow=14,SNR=4.2						
JHJ				Sn	**Sn**	**14 48 40.1**	**-1.9**
	9.5nm,0.3s,baz=72,slow=20,SNR=3.0						
JHJ				LR	LR	14 49 33.0	
	comp=Z,214nm,18.7s,baz=99,slow=41						
JHJ2	**Mitsune**	**4.05**	**194**	Pn	**Pn**	**14 47 56.6**	**+2.6**
ERM	**Erimo**	**5.23**	**18**	*e*P	**Pn**	**14 48 12.8**	**+2.6**
ERM	**Erimo**	**5.23**	**18**	*e*Pn	**Pn**	**14 48 10.5**	**+0.3**
ASAJ	**Asahikawa**	**7.16**	**9**	Pn	**Pn**	**14 48 36.2**	**-0.4**
	2.1nm,0.3s,baz=202,slow=9.0,SNR=23						
ASAJ				Sn	**Sn**	**14 49 56.9**	**-1.5**
	0.5nm,0.3s,baz=168,slow=17,SNR=1.8						
ASAJ				LR	LR	14 51 21.6	
	comp=Z,107nm,21.8s,baz=284,slow=38						
SHO	**Shikotan**	**8.13**	**31**	P	**Pn**	**14 48 49.6**	**-0.5**
SHO				*e*S	Sn	14 50 15.7	-6.8
JNU	**Nakatsue**	**9.15**	**248**	*e*Pn	**Pn**	**14 49 03.5**	**-0.6**
USRK	**Ussuriysk Ar.**	**9.86**	**319**	Pn	Pn	14 49 17.9	+4.1
	0.3nm,0.3s,baz=123,slow=12,SNR=20						
USRK				LR	LR	14 52 50.9	
	comp=Z,142nm,18.1s,baz=148,slow=37						
YSS	**Yuzh-Sakhalins**	**9.97**	**7**	*e*P	**Pn**	**14 49 15.7**	**+0.4**
CBIJ	**Chichi jima**	**9.99**	**174**	*e*Pn	**Pn**	**14 49 14.1**	**-1.5**
JCJ	**Chichijima**	**9.99**	**174**	Pn	**Pn**	**14 49 13.8**	**-1.8**
	baz=0.0,slow=20						
KSRS	**Korea Array**	**10.40**	**276**	Pn	**Pn**	**14 49 22.4**	**+1.2**
	0.2nm,0.3s,baz=92,slow=13,SNR=3.1						
KSAR	**Wonju Array Be**	**10.44**	**276**	P	**Pn**	**14 49 22.4**	**+0.7**
KSAR	**Wonju Array Be**	**10.44**	**276**	Pn	**Pn**	**14 49 22.4**	**+0.7**
MDJ	**Mudanjiang**	**11.44**	**315**	P	**Pn**	**14 49 35.5**	**+0.1**
MDJ				pmax	pmax		
	comp=Z,3.0nm,1.1s						
CN2	**Changchun**	**13.59**	**304**	*e*P	Pn	14 50 08.0	+3.2
CN2				*es*P	P	14 50 14.8	+0.8
CN2				*e*S	**Sn**	**14 52 40.0**	**+3.8**
				pmax	pmax		
	comp=Z,10.0nm,0.6s						
KLR	**Kul'dur**	**13.88**	**334**	LR	LR	14 55 20.1	
	comp=Z,77nm,19.2s,baz=145,slow=37						
NJ2	**Nanjing**	**18.87**	**261**	*e*P	**P**	**14 51 11.3**	**-1.2**
NJ2				pmax	pmax		
	comp=Z,10.0nm,0.7s						
BJI	**Beijing**	**19.60**	**286**	P	**P**	**14 51 20.3**	**-0.1**
BJI				pmax	pmax		
	comp=Z,8.0nm,0.5s						
BJI				LR	LR		
	comp=N,88nm,7.6s						
BJI				LR	LR		
	comp=E,110nm,7.8s						
HHC	**Hu-ho-hao-te**	**23.12**	**288**	*e*P	**P**	**14 51 58.0**	**-0.4**
HHC				S	S	14 56 02.6	-7.9
HHC				SS	**SnSn**	**14 56 48.3**	**+5.6**
HHC				pmax	pmax		
	comp=Z,23nm,1.0s						
HHC				pmax	pmax		
	comp=Z,85nm,7.5s						
HHC				LR	LR		
	comp=N,1μm,12.3s						
HHC				LR	LR		
	comp=E,1μm,12.3s						
HHC				LR	LR		
	comp=Z,1μm,12.7s						
MA2	**Magadan**	**23.40**	**13**	LR	LR	15 01 27.9	
	comp=Z,46nm,19.1s,baz=135,slow=37						
YAK	**Yakutsk**	**25.96**	**348**	P	**P**	**14 52 24.5**	**0.0**
	5.5nm,0.4s,baz=166,slow=2.4,SNR=9.8						
YAK				LR	LR	15 02 36.9	
	comp=Z,66nm,19.3s,baz=156,slow=36						
SEY	**Seymchan**	**26.83**	**12**	P	**P**	**14 52 33.4**	**+1.0**
	2.4nm,0.9s,baz=199,slow=8.2,SNR=7.5						
SEY	**Seymchan**	**26.83**	**12**	*i* P	**P**	**14 52 34.6**	**+2.2**
ULN	**Ulaanbaatar**	**27.04**	**304**	*i* P	**P**	**14 52 33.7**	**-1.0**
ULN				pmax	pmax		
	comp=Z,6.0nm,1.0s						
ULN	**Ulaanbaatar**	**27.04**	**304**	*e*P	**P**	**14 52 34.1**	**-0.6**
	comp=Z,5.4nm,1.0s						
SONA1	**Songino Array**	**27.47**	**304**	*e*P	**P**	**14 52 37.1**	**-1.4**
SONM	**Songino Array**	**27.47**	**304**	P	**P**	**14 52 37.1**	**-1.5**
	comp=Z,2.0nm,0.8s,baz=110,slow=8.8,SNR=12						
SONM				PcP	**PcP**	**14 55 57.0**	**+0.1**
	comp=Z,0.7nm,0.7s,baz=94,slow=3.7,SNR=4.1						
H11N2	**WAKE ISLAND Hy**	**28.47**	**120**	T	T	15 22 32.4	
	baz=313,slow=75,SNR=258						
H11N1	**WAKE ISLAND Hy**	**28.48**	**120**	T	T	15 22 33.0	
	baz=313,slow=75,SNR=229						
H11N3	**WAKE ISLAND Hy**	**28.49**	**120**	T	T	15 22 36.8	
	baz=313,slow=75,SNR=202						
H11S1	**WAKE ISLAND Hy**	**29.18**	**122**	T	T	15 23 24.9	
	baz=314,slow=76,SNR=154						
H11S3	**WAKE ISLAND Hy**	**29.18**	**122**	T	T	15 23 24.6	
	baz=314,slow=76,SNR=131						
H11S2	**WAKE ISLAND Hy**	**29.19**	**122**	T	T	15 23 25.6	
	baz=314,slow=76,SNR=149						
LZH	**Lanzhou**	**29.71**	**279**	*e*P	**P**	**14 52 58.6**	**0.0**
LZH				pP	sP	14 53 04.9	+4.5
LZH				sP	pP	14 53 07.8	+7.9
LZH				pmax	pmax		
	comp=Z,14nm,1.0s						
TLY	**Talaya**	**30.04**	**311**	*e*P	**P**	**14 52 59.3**	**-1.9**
TLY				pmax	pmax		
	comp=Z,1.0nm,1.1s						
GYA	**Guiyang**	**30.87**	**260**	*e*P	**P**	**14 53 08.9**	**0.0**
GYA				pmax	pmax		
	comp=Z,10.0nm,0.8s						
CD2	**Chengdu**	**31.31**	**270**	P	**P**	**14 53 11.3**	**-1.4**
CD2				pmax	pmax		
	comp=Z,1.0nm,0.5s						
GTA	**Gaotai**	**32.21**	**287**	*e*P	**P**	**14 53 20.3**	**-0.3**
GTA				pP	sP	14 53 24.8	+2.4
GTA				sP	pP	14 53 27.4	+5.5
GTA				pmax	pmax		
	comp=Z,3.0nm,1.0s						
BILL	**Bilibino**	**34.10**	**17**	*e*P	**P**	**14 53 37.8**	**+1.2**
BILL				*e*		14 54 52.0	
BILL				pmax	pmax		
	comp=Z,1.0nm,1.0s						
KMI	**Kunming**	**34.61**	**261**	P	**P**	**14 53 43.1**	**+1.3**
KMI				pmax	pmax		
	comp=Z,5.0nm,1.0s						
KMI				pmax	pmax		
	comp=Z,54nm,4.1s						
TIXI	**Tiksi**	**35.22**	**353**	LR	LR	15 09 44.3	
	comp=Z,38nm,18.4s,baz=193,slow=39						
TIXI	**Tiksi**	**35.22**	**353**	*i* P	**P**	**14 53 46.0**	**-0.2**
TIXI				pmax	pmax		
	comp=Z,3.0nm,1.0s						
TIXI	**Tiksi**	**35.22**	**353**	*e*P	**P**	**14 53 45.8**	**-0.4**
	comp=Z,4.7nm,1.1s						
WMQ	**Urumqi**	**40.51**	**297**	*e*P	**P**	**14 54 32.0**	**+0.7**
WMQ				pmax	pmax		
	comp=Z,2.0nm,0.5s						
WMQ				pmax	pmax		
	comp=Z,20nm,4.4s						
WMQ				LR	LR		
	comp=Z,40nm,17.2s						
WMQ				LR	LR		
	comp=Z,21nm,17.2s						
ZAA0	**Zalesovo Array**	**41.63**	**312**	*e*P	**P**	**14 54 39.3**	**-1.0**
ZALV	**Zalesovo Beam**	**41.63**	**312**	P	**P**	**14 54 40.0**	**-0.4**
	comp=Z,1.8nm,0.5s,baz=91,slow=6.7,SNR=9.4						
ZALV				PcP	**PcP**	**14 56 36.3**	**-0.9**
	comp=Z,1.6nm,0.5s,baz=101,slow=3.5,SNR=5.5						
MK01	**Makanchi Array**	**43.80**	**302**	*e*P	**P**	**14 54 57.5**	**-0.6**
MK31	**Makanchi Array**	**43.80**	**302**	*e*P	**P**	**14 54 57.1**	**-1.0**
MK31	**Makanchi Array**	**43.80**	**302**	*e*P	**P**	**14 54 57.1**	**-1.0**
MKAR	**Makanchi Array**	**43.80**	**302**	P	**P**	**14 54 57.6**	**-0.5**
	comp=Z,1.3nm,0.6s,baz=87,slow=9.6,SNR=18						
MKAR				LR	LR	15 13 25.7	
	comp=Z,27nm,19.3s,baz=95,slow=36						
MKAR	**Makanchi Array**	**43.80**	**302**	*e*P	**P**	**14 54 57.5**	**-0.6**
MAKZ	**Makanchi**	**44.01**	**302**	*e*P	**P**	**14 54 59.3**	**-0.5**
MAKZ				pmax	pmax		
	comp=Z,2.0nm,0.9s						
MAKZ	**Makanchi**	**44.01**	**302**	*e*P	**P**	**14 54 59.3**	**-0.5**
	comp=Z,2.1nm,0.9s						
KURK	**Kurchatov**	**45.63**	**308**	*e*P	**P**	**14 55 11.6**	**-1.0**
KURK						14 56 50.0	
KURK				pmax	pmax		
	comp=Z,16nm,1.0s						
KURK	**Kurchatov**	**45.63**	**308**	*e*P	**P**	**14 55 11.6**	**-1.0**
	comp=Z,16nm,1.0s						
KURK				PcP	**PcP**	**14 56 50.0**	**-0.8**
KURBB	**Kurchatov Arra**	**45.70**	**308**	P	**P**	**14 55 12.2**	**-1.0**
	comp=Z,7.2nm,0.7s,baz=84,slow=8.2,SNR=63						
KURBB				PcP	**PcP**	**14 56 50.0**	**-1.0**
	comp=Z,0.5nm,0.6s,baz=80,slow=3.3,SNR=5.1						
KKN	**Kakani**	**47.33**	**276**	*e*P	**P**	**14 55 26.0**	**-0.5**
	comp=Z,4.8nm,0.5s						
GKN	**Gorkha**	**47.74**	**276**	*e*P	**P**	**14 55 29.2**	**-0.5**
	comp=Z,16nm,0.7s						
KOLN	**Koldanda**	**48.67**	**276**	*e*P	**P**	**14 55 37.0**	**+0.1**
	comp=Z,2.9nm,0.4s						
PYUN	**Piuthan**	**49.01**	**277**	*e*P	**P**	**14 55 40.0**	**+0.5**
TKM2	**Tokmak 2**	**49.30**	**298**	*e*P	**P**	**14 55 41.7**	**+0.2**
TKM2				pmax	pmax		
	comp=Z,13nm,1.4s						
TKM2	**Tokmak 2**	**49.30**	**298**	*e*P	**P**	**14 55 41.7**	**+0.2**
	comp=Z,13nm,1.4s						
ILAR	**Eielson Array**	**49.66**	**32**	P	**P**	**14 55 44.5**	**+0.8**
	comp=Z,0.9nm,0.7s,baz=270,slow=6.3,SNR=13						
ILB	**Eielson Array**	**49.66**	**32**	*e*P	**P**	**14 55 44.2**	**+0.5**
AAK	**Ala-Archa**	**50.16**	**298**	P	**P**	**14 55 47.9**	**-0.2**
	comp=Z,0.5nm,0.4s,baz=120,slow=4.3,SNR=5.2						
AAK	**Ala-Archa**	**50.16**	**298**	*e*P	**P**	**14 55 47.2**	**-0.9**
AAK				pmax	pmax		
	comp=Z,3.0nm,0.9s						
BVAR	**Borovoye Array**	**50.29**	**312**	P	**P**	**14 55 48.4**	**-0.2**
	comp=Z,2.6nm,0.7s,baz=80,slow=7.4,SNR=16						
BVAR				PcP	**PcP**	**14 57 06.4**	**-1.0**
	comp=Z,1.6nm,0.6s,baz=95,slow=3.2,SNR=8.2						
BRVK	**Borovoye**	**50.34**	**312**	*i* P	**P**	**14 55 49.1**	**0.0**
BRVK				pmax	pmax		
	comp=Z,6.0nm,1.0s						
BRVK	**Borovoye**	**50.34**	**312**	*e*P	**P**	**14 55 48.5**	**-0.6**
	comp=Z,2.6nm,1.1s						
ZRNK	**Zerenda**	**51.12**	**312**	*e*P	**P**	**14 55 55.2**	**+0.2**
ZRNK				pmax	pmax		
	comp=Z,6.0nm,0.8s						
ZRNK	**Zerenda**	**51.12**	**312**	*e*P	**P**	**14 55 55.2**	**+0.2**
	comp=Z,5.8nm,0.8s						
KKAR	**Karatay Array**	**52.80**	**300**	*e*P	**P**	**14 56 07.6**	**0.0**
KKAR	**Karatay Array**	**52.80**	**300**	*e*P	**P**	**14 56 07.6**	**0.0**
INK	**Inuvik**	**54.52**	**27**	P	**P**	**14 56 19.9**	**+0.1**
	comp=Z,0.5nm,0.5s,baz=287,slow=5.5,SNR=6.0						
ARU	**Arti**	**56.10**	**318**	P	**P**	**14 56 30.8**	**-0.6**
	comp=Z,2.6nm,0.4s,baz=111,slow=9.7,SNR=5.3						
ARU	**Arti**	**56.10**	**318**	*c i*P	**P**	**14 56 30.8**	**-0.6**
ARU						14 57 28.7	
ARU						14 58 32.4	
ARU				S	**S**	**15 04 16.6**	**-4.0**
ARU				pmax	pmax		
	comp=Z,13nm,1.7s						
ARU	**Arti**	**56.10**	**318**	*e*P	**P**	**14 56 31.4**	**+0.1**
	comp=Z,12nm,1.3s						
WRAB	**Tennant Creek**	**57.03**	**187**	*e*P	**P**	**14 56 37.7**	**-0.6**
WRAB				pmax	pmax		
	comp=Z,1.0nm,0.5s						
WRAB	**Tennant Creek**	**57.03**	**187**	*e*P	**P**	**14 56 37.7**	**-0.6**
	comp=Z,1.2nm,0.5s						
WRA	**Warramunga Arr**	**57.04**	**187**	P	**P**	**14 56 37.5**	**-1.0**
	comp=Z,1.6

	comp=Z,9.0nm,1.1s							
CRVS	**Cervenica-Dubn**	**78.99**	**324**	*eP*	**P**	**14 58 55.3**	**-0.9**
CRVS	**Cervenica-Dubn**	**78.99**	**324**	*eP*	**P**	**14 58 55.3**	**-0.9**
MORC	**Moravsky Berou**	**80.14**	**327**	*eP*	**P**	**14 59 02.6**	**+0.1**
MORC				pmax	pmax			
	comp=Z,19nm,1.1s							
MORC	**Moravsky Berou**	**80.14**	**327**	*eP*	**P**	**14 59 02.5**	**+0.1**
	comp=Z,19nm,1.1s							
DPC	**Dobruska-Polom**	**80.24**	**328**	*eP*	**P**	**14 59 03.7**	**+0.7**
DPC	**Dobruska-Polom**	**80.24**	**328**	*eP*	**P**	**14 59 03.7**	**+0.7**
KRLC	**Kraliky**	**80.25**	**327**	*eP*	**P**	**14 59 03.7**	**+0.6**
KRLC				*epP*	**PcP**	**14 59 08.1**	**-2.2**
KRLC	**Kraliky**	**80.25**	**327**	*eP*	**P**	**14 59 03.7**	**+0.6**
KRLC				*e*		14 59 08.1		
VYHS	**Vyhne**	**80.50**	**325**	*eP*	**P**	**14 59 06.1**	**+1.7**
VYHS	**Vyhne**	**80.50**	**325**	*eP*	**P**	**14 59 06.0**	**+1.7**
BRG	**Berggiesshubel**	**80.84**	**329**	*eP*	**P**	**14 59 07.1**	**+0.9**
	comp=Z,3.8nm,0.9s							
BRG	**Berggiesshubel**	**80.84**	**329**	*eP*	**P**	**14 59 07.1**	**+0.9**
BRG				pmax	pmax			
	comp=Z,4.0nm,0.9s							
CLL	**Collm**	**80.89**	**330**	*eP*	**P**	**14 59 06.0**	**-0.4**
	comp=Z,7.0nm,1.0s							
CLL	**Collm**	**80.89**	**330**	*eP*	**P**	**14 59 06.0**	**-0.4**
CLL				pmax	pmax			
	comp=Z,7.0nm,1.0s							
CLL	**Collm**	**80.89**	**330**	*eP*	**P**	**14 59 05.9**	**-0.4**
	comp=Z,8.4nm,1.0s							
PRU	**Pruhonice**	**81.27**	**328**	*eP*	**P**	**14 59 09.0**	**+0.5**
PRU	**Pruhonice**	**81.27**	**328**	*eP*	**P**	**14 59 09.0**	**+0.5**
KHC	**Kasperske Hory**	**82.33**	**328**	*eP*	**P**	**14 59 14.0**	**-0.1**
KHC	**Kasperske Hory**	**82.33**	**328**	*eP*	**P**	**14 59 13.0**	**-1.2**
KHC				pmax	pmax			
	comp=Z,2.0nm,0.9s							
KHC	**Kasperske Hory**	**82.33**	**328**	*eP*	**P**	**14 59 13.0**	**-1.2**
	comp=Z,1.6nm,0.9s							
GERES	**GERESS Array B**	**82.50**	**328**	P	**P**	**14 59 14.3**	**-0.8**
	comp=Z,1.5nm,0.8s,baz=46,slow=5.8,SNR=9.6							
GEA0	**GERESS Array S**	**82.50**	**328**	*eP*	**P**	**14 59 14.2**	**-0.9**
BFO	**Black Forest**	**85.10**	**330**	*eP*	**P**	**14 59 27.6**	**-0.7**
BFO				pmax	pmax			
	comp=Z,4.0nm,0.8s							
BFO	**Black Forest**	**85.10**	**330**	*eP*	**P**	**14 59 27.6**	**-0.7**
	comp=Z,4.4nm,0.8s							
FUORN	**Ofenpass-Fuorn**	**85.69**	**328**	*eP*	**P**	**14 59 31.2**	**-0.4**
	comp=Z,4.5nm,0.8s							
TXAR	**Lajitas Array**	**90.39**	**52**	P	**P**	**14 59 55.3**	**+1.1**
	comp=Z,0.3nm,0.5s,baz=306,slow=2.8,SNR=6.0							
LPAZ	**La Paz**	**146.99**	**59**	PKPbc	**PKPbc**	**15 06 35.9**	**-0.5**
	comp=Z,1.0nm,0.6s,baz=327,slow=1.5,SNR=6.2							

*IDC **17** 14:48:27.9±1.4, 36°.45N×141°.72E, h0km, mb3.6/6, mb1 3.8/9, mb1mx3.5/49, mbtmp3.8/9, ML3.6/2, MS2.7/1, Ms1 2.7/1, ms1mx2.3/44, Error ellipse: s-maj=39.6km s-min=18.3km az=66.0*

ISC 17 14:48:33.4±1.1, 36°.14N±0°.07×141°.17E±0°.10, h26km, n13, σ1s62/16, mb3.6/6, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
MJAR	**Matsushiro Arr**	**2.42**	**280**	Pn		**Pb**		**14 49 13.8**	**-2.4**
	3.5nm,0.3s,baz=98,slow=9.5,SNR=2.6								
MJAR				Sn		**Sb**		**14 49 46.9**	**+1.2**
	7.2nm,0.3s,baz=97,slow=24,SNR=3.8								
MAT	**Matsushiro**	**2.42**	**280**	P		**Pb**		**14 49 14.2**	**-2.1**
MAT				*eS*		**Sb**		**14 49 47.1**	**+1.4**
JHJ	**Hachijo jima 2**	**3.22**	**201**	Pn		**Pb**		**14 49 27.2**	**-2.7**
	baz=72,slow=20,SNR=2.2								
JHJ				Sn		**Sb**		**14 50 10.8**	**+2.0**
	23nm,0.3s,baz=58,slow=19,SNR=3.7								
JCJ	**Chichijima**	**9.06**	**174**	Pn		**Pn**		**14 50 41.9**	**-0.6**
	1.6nm,0.3s,baz=285,slow=20,SNR=2.5								
JCJ				Sn		**Sn**		**14 52 24.7**	**+1.1**
	baz=270,slow=20								
USRK	**Ussuriysk Ar.**	**10.68**	**322**	Pn		**Pn**		**14 51 06.1**	**+1.6**
	0.2nm,0.3s,baz=127,slow=14,SNR=3.8								
GUMO	**Guam**	**22.70**	**171**	LR		LR		15 03 37.7	
	comp=Z,18nm,20.9s,baz=23,slow=40								
SONM	**Songino Array**	**28.13**	**305**	P		**P**		**14 54 23.1**	**-0.2**
	0.6nm,0.7s,baz=107,slow=7.6,SNR=3.4								
ZALV	**Zalesovo Beam**	**42.37**	**313**	P		**P**		**14 56 25.2**	**0.0**
	0.5nm,0.4s,baz=93,slow=8.7,SNR=2.7								
MKAR	**Makanchi Array**	**44.43**	**303**	P		**P**		**14 56 41.2**	**-0.7**
	0.8nm,0.8s,baz=79,slow=7.5,SNR=3.4								
KURBB	**Kurchatov Arra**	**46.40**	**309**	P		**P**		**14 56 57.1**	**-0.3**
	0.7nm,0.5s,baz=82,slow=8.0,SNR=4.3								
WRA	**Warramunga Arr**	**56.15**	**188**	P		**P**		**14 58 12.0**	**+1.2**
	0.3nm,0.4s,baz=6.3,slow=7.4,SNR=2.9								
ASAR	**Alice Springs**	**59.88**	**188**	P		**P**		**14 58 38.3**	**+1.4**
	0.3nm,0.7s,baz=5.9,slow=5.9,SNR=3.1								
LPAZ	**La Paz**	**147.31**	**60**	PKPbc		**PKPdf**		**15 08 12.3**	**-1.1**
	0.3nm,0.4s,baz=32,slow=3.8,SNR=3.6								

*IDC **17** 15:15:25.4±0.5, 3°.07N×126°.80E, h0km, mb4.2/21, mb1 4.3/21, mb1mx4.1/48, mbtmp4.2/21, MS3.1/2, Ms1 3.1/2, ms1mx2.5/51, Error ellipse: s-maj=30.5km s-min=11.7km az=73.0*

*ISCJB **17** 15:15:30.2±0.3, 3°.19N±0°.04×126°.93E±0°.06, h44km, mb4.2/28, MS3.1/2, Error ellipse: s-maj=9.7km s-min=4.7km az=150.7*

*NEIC **17** 15:15:30.4±5.4, 3°.08N×126°.90E, h33km±38km, mb4.4/8, Error ellipse: s-maj=15.9km s-min=6.8km az=68.0*

*DJA **17** 15:15:30.6±0.9, 3°.N±9°×12°.7E±°, h10km, M4.3/10, mb4.4/7, mB4.7/5, MLv4.3/10, Mw(mB)4.0/5*

ISC 17 15:15:32.0±0.5, 3°.15N±0°.07×126°.89E±0°.09, h44km, n50, σ1s01/49, mb4.3/28, Talaud Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
SGSI	**Sangihe**	**1.46**	**291**	P		**Pn**		**15 15 55.9**	**0.0**
TNTI	**Ternate**	**2.41**	**169**	P		**Pn**		**15 16 09.7**	**+0.7**
LBMI	**Labuha**	**3.82**	**171**	P		**Pn**		**15 16 30.0**	**+1.7**
SANI	**Sanana**	**5.25**	**190**	P		**Pn**		**15 16 49.4**	**+1.4**
	17nm,0.9s,766nm0.1nm								
MRSI	**Marisa**	**5.62**	**242**	P		**Pn**		**15 16 55.8**	**+2.8**
	83nm,0.5s,0.4nm								
SWI	**Sorong**	**5.92**	**132**	P		**Pn**		**15 16 59.0**	**+1.8**
	33nm,0.8s,580nm0.1nm								
SIJI	**Sorong**	**5.93**	**132**	Pn		**Pn**		**15 16 58.5**	**+1.2**
	29nm,0.3s,baz=359,slow=6.3,SNR=2.1								
SIJI				Sn		**Sn**		**15 18 04.6**	**+0.6**
	24nm,0.3s,baz=356,slow=19,SNR=2.4								
NLAI	**Namlea**	**6.35**	**178**	P		**Pn**		**15 17 04.1**	**+0.9**
	20nm,0.7s,520nm0.1nm								
APSI	**Ampana**	**6.61**	**232**	P		Pn		15 17 12.6	+5.9
	82nm,0.7s,887nm0.3nm								
FAKI	**Fak Fak**	**8.07**	**138**	P		**Pn**		**15 17 27.7**	**+1.0**
GUMO	**Guam**	**20.57**	**59**	LR		LR		15 26 44.2	
	comp=Z,39nm,20.8s,baz=227,slow=33								
FITZ	**Fitzroy Crossi**	**21.16**	**183**	P		**P**		**15 20 12.2**	**-1.4**
	4.0nm,0.5s,baz=15,slow=8.9,SNR=22								
WRAB	**Tennant Creek**	**24.09**	**163**	*eP*		**P**		**15 20 41.9**	**-1.7**
	8.4nm,0.8s								
WRA	**Warramunga Arr**	**24.09**	**163**	P		**P**		**15 20 41.4**	**-2.2**
	3.6nm,0.4s,baz=339,slow=11,SNR=81								
WRA				PcP		**PcP**		**15 24 23.4**	**-1.0**
	0.3nm,0.5s,baz=328,slow=2.5,SNR=3.7								
MBWA	**Marble Bar**	**25.16**	**196**	*eP*		**P**		**15 20 53.0**	**-0.3**
	7.5nm,0.6s								
ASAR	**Alice Springs**	**27.52**	**166**	P		**P**		**15 21 13.2**	**-1.5**
	0.6nm,0.3s,baz=344,slow=7.4,SNR=30								
ASAR				PcP		**PcP**		**15 24 32.4**	**+0.2**
	0.7nm,0.6s,baz=358,slow=2.1,SNR=5.3								
CMAR	**Chiang Mai Arr**	**31.30**	**301**	P		**P**		**15 21 49.1**	**+0.9**
	1.2nm,0.7s,baz=115,slow=7.3,SNR=11								
CHTO	**Chiang Mai**	**31.45**	**302**	*eP*		**P**		**15 21 49.9**	**+0.3**
	1.4nm,0.8s								
KSAR	**Wonju Array Be**	**34.14**	**1**	P		**P**		**15 22 13.6**	**+0.8**
KSRS	**Korea Array**	**34.15**	**1**	P		**P**		**15 22 13.6**	**+0.7**
	0.7nm,0.4s,baz=180,slow=10,SNR=5.8								
STKA	**Stephens Creek**	**37.54**	**159**	P		**P**		**15 22 40.9**	**-1.2**
	5.4nm,0.7s,baz=341,slow=7.8,SNR=30								
USRK	**Ussuriysk Ar.**	**41.12**	**6**	P		**P**		**15 23 12.2**	**+0.4**
	1.3nm,0.7s,baz=192,slow=7.3,SNR=4.5								
H11S3	**WAKE ISLAND Hy**	**41.82**	**66**	T		T		16 07 51.9	
	baz=253,slow=74								
H11S1	**WAKE ISLAND Hy**	**41.84**	**66**	T		T		16 07 58.4	
	baz=253								
H11S2	**WAKE ISLAND Hy**	**41.84**	**66**	T		T		16 07 52.7	
	baz=253,slow=74								
LSA	**Lhasa**	**42.94**	**312**	*eP*		**P**		**15 23 27.9**	**+0.5**
	3.1nm,0.6s								
KKN	**Kakani**	**46.62**	**306**	*eP*		**P**		**15 23 56.0**	**-0.5**
	3.8nm,0.4s								
GKN	**Gorkha**	**47.23**	**306**	*eP*		**P**		**15 24 00.2**	**-1.0**
	8.4nm,0.7s								
SONM	**Songino Array**	**47.89**	**341**	P		**P**		**15 24 06.1**	**+0.1**
	0.6nm,0.4s,baz=153,slow=8.9,SNR=5.5								
SONM				PcP		**PcP**		**15 25 34.3**	**+0.4**
	0.6nm,0.7s,baz=152,slow=4.3,SNR=3.5								
KOLN	**Koldanda**	**47.98**	**305**	*eP*		**P**		**15 24 06.6**	**-0.5**
	16nm,0.6s								
PYUN	**Piuthan**	**48.61**	**305**	*eP*		**P**		**15 24 11.9**	**0.0**
PETK	**Petropavlovsk-**	**55.90**	**22**	P		**P**		**15 25 06.1**	**+0.8**
	1.9nm,0.6s,baz=152,slow=1.5,SNR=6.4								
MKAR	**Makanchi Array**	**58.12**	**325**	P		**P**		**15 25 20.6**	**-0.5**
	2.0nm,0.5s,baz=117,slow=7.4,SNR=40								
ZALV	**Zalesovo Beam**	**61.17**	**333**	P		**P**		**15 25 40.8**	**-1.2**
	1.1nm,0.5s,baz=127,slow=6.2,SNR=6.7								
KURBB	**Kurchatov Arra**	**62.31**	**327**	P		**P**		**15 25 49.1**	**-0.6**
	2.9nm,0.7s,baz=125,slow=6.5,SNR=34								
KURK	**Kurchatov**	**62.31**	**328**	*eP*		**P**		**15 25 49.3**	**-0.4**
	8.9nm,0.6s								
BVAR	**Borovoye Array**	**67.89**	**327**	P		**P**		**15 26 25.8**	**-0.2**
	1.3nm,0.6s,baz=140,slow=9.2,SNR=9.1								
TIXI	**Tiksi**	**68.41**	**1**	*eP*		**P**		**15 26 28.7**	**-0.1**
	1.8nm,0.3s								
NRIK	**Noril'sk**	**71.02**	**346**	P		**P**		**15 26 45.2**	**+0.2**
	2.6nm,0.7s,baz=133,slow=6.0,SNR=9.5								
ABKAR	**Akbulak array**	**72.69**	**321**	*eP*		**P**		**15 26 54.9**	**-0.5**
	1.5nm,0.4s								
AKTO	**Aktyubinsk**	**74.21**	**322**	P		**P**		**15 27 04.2**	**0.0**
	1.9nm,0.4s,baz=100,slow=9.9,SNR=6.9								
AKTO				LR		LR		16 02 22.6	
	comp=Z,19nm,18.9s,baz=92,slow=38								
ARU	**Arti**	**75.50**	**328**	P		**P**		**15 27 10.3**	**-1.4**
	3.0nm,0.5s,baz=100,slow=11,SNR=7.0								
ARU	**Arti**	**75.50**	**328**	*eP*		**P**		**15 27 11.3**	**-0.3**
	2.8nm,0.5s								
VNDA	**Vanda**	**82.84**	**173**	P		**P**		**15 27 51.3**	**+0.1**
	0.9nm,0.7s,baz=278,slow=4.5,SNR=4.5								
ILAR	**Eielson Array**	**85.55**	**25**	P		**P**		**15 28 06.1**	**+0.8**
	0.2nm,0.5s,baz=266,slow=5.0,SNR=4.1								
BRTR	**Keskin Array B**	**90.51**	**310**	P		**P**		**15 28 29.6**	**-0.2**
	0.6nm,0.8s,baz=94,slow=3.7,SNR=3.9								
ARCES	**ARCESS Array B**	**91.04**	**340**	P		**P**		**15 28 30.4**	**-1.0**
	6.4nm,1.0s,baz=88,slow=4.6,SNR=3.2								
FINES	**FINESS Array B**	**92.41**	**332**	P		**P**		**15 28 37.3**	**-0.6**
	2.9nm,1.0s,baz=96,slow=3.8,SNR=5.2								
TXAR	**Lajitas Array**	**121.82**	**53**	PKP		**PKPdf**		**15 34 23.2**	**+1.0**
	0.2nm,0.6s,baz=205,slow=1.9,SNR=2.9								
TORD	**Torodi Ar. Bea**	**123.25**	**288**	PKP		**PKPdf**		**15 34 25.6**	**+0.4**
	1.5nm,0.7s,baz=66,slow=1.5,SNR=8.6								

IDC 17 15:20:04.0±1.7, 3°.16N×126°.75E, h0km, mb3.4/5, mb1 3.6/5, mb1mx3.3/49, mbtmp3.5/5, Error ellipse: s-maj=109.3km s-min=22.9km az=68.0, Talaud Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**21.16**	**183**	P		P		15 24 51.8	+1.0
	2.3nm,0.7s,baz=14,slow=8.3,SNR=3.1								
WRA	**Warramunga Arr**	**24.14**	**162**	P		P		15 25 21.1	-0.8
	0.8nm,0.7s,baz=340,slow=10,SNR=5.0								
ASAR	**Alice Springs**	**27.56**	**166**	P		P		15 25 52.8	-0.1
	0.2nm,0.8s,baz=342,slow=11,SNR=3.3								
STKA	**Stephens Creek**	**37.59**	**159**	P		P		15 27 20.6	+0.2
	0.9nm,0.7s,baz=312,slow=11,SNR=3.9								
MKAR	**Makanchi Array**	**58.03**	**325**	P		P		15 29 58.6	-0.2
	0.1nm,0.4s,baz=120,slow=6.9,SNR=3.0								

*ISCJB **17** 15:21:15.1±0.8, 39°.69N±0°.03×142°.14E±0°.10, h54km±6km, mb3.2/3, Error ellipse: s-maj=12.3km s-min=5.6km az=5.7*

*JMA **17** 15:21:15.8±0.1, 39°.72N×142°.13E, h47km±1km, M3.0*

*IDC **17** 15:21:18.1±2.6, 39°.69N×142°.12E, h76km±25km, mb2.9/3, mb1 2.9/5, mb1mx2.8/52, mbtmp3.2/5, Error ellipse: s-maj=41.4km s-min=17.4km az=97.0*

ISC 17 15:21:16.1±1.2, 39°.70N±0°.04×142°.08E±0°.08, h45km±8km, n19, σ1s15/26, mb3.1/3, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
MIYJ	**Miyakonagasawa**	**0.23**	**239**	P		**Pn**		**15 21 24.4**	**+0.2**
MIYJ				S		**Sn**		**15 21 30.4**	**+0.6**
JTH	**Tanohata**	**0.29**	**325**	P		**Pn**		**15 21 24.7**	**0.0**
JTH				S		**Sn**		**15 21 31.0**	**+0.2**
JKZ	**Kuzumaki**	**0.65**	**297**	P		**Pn**		**15 21 29.2**	**+0.2**
JKZ				S		**Sn**		**15 21 38.7**	**+0.5**
JOM	**Ohasama**	**0.65**	**250**	P		**Pn**		**15 21 29.4**	**+0.4**
JOM				S		**Sn**		**15 21 39.1**	**+0.9**
OFUJ	**Ofunato**	**0.69**	**208**	P		**Pn**		**15 21 29.7**	**+0.1**
OFUJ				S		**Sn**		**15 21 39.2**	**0.0**
JANG	**Nango**	**0.80**	**327**	P		**Pn**		**15 21 30.7**	**-0.4**
JANG				S		**Sn**		**15 21 41.6**	**-0.3**
JMK	**Ichinoseki**	**1.00**	**222**	P		**Pn**		**15 21 34.2**	**+0.5**
JMK				S		**Sn**		**15 21 47.3**	**+0.7**
JRG	**Rokugo**	**1.16**	**255**	P		**Pn**		**15 21 36.7**	**+0.9**
JAH	**Hinai**	**1.22**	**294**	P		**Pn**		**15 21 37.1**	**+0.5**
JAH				S		**Sn**		**15 21 53.7**	**+1.8**
JTM	**Tenmabayashi**	**1.34**	**325**	P		**Pn**		**15 21 38.2**	**-0.1**
JTM				S		**Sn**		**15 21 55.1**	**+0.2**
JYK	**Kaneyama**	**1.55**	**240**	P		**Pn**		**15 21 41.8**	**+0.7**
MJAR	**Matsushiro Arr**	**4.39**	**225**	P		**Pn**		**15 22 22.6**	**+2.5**
	0.3nm,0.3s,baz=33,slow=14,SNR=6.7								
ASAJ	**Asahikawa**	**4.43**	**5**	P		**Pn**		**15 22 22.4**	**+1.7**
	0.3nm,0.3s,baz=225,slow=11,SNR=4.8								
ASAJ				S		**Sn**		**15 23 14.1**	**+3.0**
	0.3nm,0.3s,baz=106,slow=19,SNR=2.9								
H11N2	**WAKE ISLAND Hy**	**29.17**	**126**	T		T		15 57 44.9	
	baz=318,slow=75,SNR=26								
H11N1	**WAKE ISLAND Hy**	**29.18**	**126**	T		T		15 57 52.9	
	baz=318,slow=75,SNR=28								
H11N3	**WAKE ISLAND Hy**	**29.19**	**126**	T		T		15 57 50.2	
	baz=318,slow=75,SNR=5.9								
MKAR	**Makanchi Array**	**43.20**	**300**	P		**P**		**15 29 11.7**	**-0.8**
	0.2nm,0.5s,baz=81,slow=9.6,SNR=2.8								
KURBB	**Kurchatov Arra**	**44.82**	**306**	P		**P**		**15 29 24.3**	**-1.1**
	0.4nm,0.5s,baz=80,slow=8.8,SNR=3.8								
ASAR	**Alice Springs**	**63.49**	**188**	P		**P**		**15 31 40.1**	**-1.5**
	0.1nm,0.8s,baz=3.4,slow=7.7,SNR=3.1								

*IDC **17** 15:28:29.9±2.1, 40°.88N×71°.85E, h0km, mb3.6/5, mb1 3.6/10, mb1mx3.4/47, mbtmp3.5/10, ML3.0/5, MS4.1/1, Ms1 4.1/1, ms1mx2.4/57, Error ellipse: s-maj=34.0km s-min=15.4km az=169.0*

*NNC **17** 15:28:35.8±0.8, 41°.21N×71°.82E, h3km±4km, mb3.9, mpv3.6, Error ellipse: s-maj=4.0km s-min=1.5km az=62.0*

*SOME **17** 15:28:36.9, 41°.27N×71°.90E, h10km*

*KRNET **17** 15:28:36.2±0.1, 41°.21N×71°.84E, h20km, mb3.4*

ISC 17 15:28:33.9±1.2, 41°.23N±0°.02×71°.93E±0°.02, h1km±8km, n57, σ1s64/99, mb3.6/5, 36C-30D, Kyrgyzstan

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
ARK	**Arkit**	**0.57**	**3**	*eP*		**Pb**		**15 28 48.1**	**+1.3**
	baz=10.0								
ARK				*eS*		**Sb**		**15 28 55.6**	**0.0**
	baz=10.0								
OHH	**Osh**	**0.96**	**137**	*eP*		**Pn**		**15 28 54.8**	**+0.2**
	baz=133								
OHH				*iS*		**Sn**		**15 29 08.7**	**-0.2**
	baz=133								
TOKL	**Toktogul**	**1.00**	**44**	*eP*		**Pn**		**15 28 56.5**	**+1.2**
	baz=46								
TOKL				*iS*		**Sn**		**15 29 10.8**	**+0.7**
	baz=46								
MNAS	**Manas**	**1.33**	**19**	*iP*		**Pn**		**15 29 01.9**	**+2.1**
	baz=21								
MNAS				*iS*		**Sn**		**15 29 20.0**	**+1.7**
	baz=21								
MNAS	**Manas**	**1.33**	**19**	P		**Pn**		**15 29 01.9**	**+2.1**
	49nm,0.3s								
MNAS				S		**Sn**		**15 29 20.1**	**+1.9**
	559nm,0.4s								
BTK	**Batken**	**1.44**	**216**	*iP*		**Pb**		**15 29 02.0**	**+0.4**
	baz=214								
BTK				*iS*		**Sb**		**15 29 20.5**	**+0.1**
	baz=214								
AML	**Almayashu**	**1.60**	**55**	*iP*		**Pg**		**15 29 05.9**	**+1.3**
	baz=56								
AML				*iS*		**Sb**		**15 29 29.0**	**+3.5**
	baz=56								
IUG	**luzhnay**	**1.69**	**304**	*eP*		**Pg**		**15 29 06.6**	**+0.3**
	465nm,0.3s								
IUG				*eS*		**Sg**		**15 29 28.3**	**0.0**
	1μm,0.3s								
SFK	**Sufi-Kurgan**	**1.70**	**135**	*iP*		**Pg**		**15 29 06.9**	**+0.3**
	baz=133								
SFK				*iS*		**Sg**		**15 29 30.5**	**+1.9**
	baz=133								
SFK	**Sufi-Kurgan**	**1.70**	**135**	P		**Pg**		**15 29 06.5**	**0.0**
	19nm,0.2s								
SFK				*iS*		**Sg**		**15 29 31.0**	**+2.3**
	336nm,0.3s								
MRKS	**Merke**	**1.80**	**32**	*eP*		**Pg**		**15 29 10.3**	**+1.9**
	233nm,0.3s								
MRKS				*eS*		**Sg**		**15 29 34.7**	**+2.9**
	792nm,0.3s								
ARLS	**Aral**	**1.91**	**70**	*eP*		**Pg**		**15 29 10.4**	**0.0**
	baz=70								
ARLS				*eS*		**Sg**		**15 29 36.9**	**+1.7**
	baz=70								
EKS2	**Erkin-Say**	**1.99**	**43**	*iP*		**Pg**		**15 29 11.7**	**-0.4**
	baz=44								
EKS2				*iS*		**Sg**		**15 29 40.6**	**+2.7**
	baz=44								
KK31	**Karatay Array**	**2.15**	**331**	Pn		**Pb**		**15 29 12.8**	**-0.9**
	12nm,0.3s,baz=146,slow=9.9,SNR=536								
KK31				Sn		**Sb**		**15 29 40.2**	**-0.7**
	88nm,0.3s,baz=156,slow=26,SNR=15								
UCH	**Uchtor**	**2.18**	**62**	*iP*		**Pb**		**15 29 14.4**	**0.0**
	baz=62								
UCH				*iS*		**Sg**		**15 29 46.9**	**+3.0**
	baz=62								
BRLS	**Borolday**	**2.29**	**314**	*iP*		**Pg**		**15 29 18.2**	**+0.5**
	25nm,0.3s								
BRLS				*eS*		**Sg**		**15 29 47.3**	**0.0**
	45nm,0.4s								
AAK	**Ala-Archa**	**2.38**	**53**	Pn		**Pb**		**15 29 17.0**	**-0.6**
	12nm,0.3s,baz=186,slow=4.2,SNR=43								
AAK				Pg		**Pg**		**15 29 20.2**	**+0.8**
	12nm,0.3s,baz=191,slow=5.0,SNR=52								
AAK				Sn		**Sg**		**15 29 51.8**	**+1.5**
	18nm,0.3s,baz=134,slow=22,SNR=14								
KZA	**Kyzart**	**2.63**	**70**	*iP*		**Pb**		**15 29 21.2**	**-0.9**
	baz=70								
KZA				*iS*		**Sg**		**15 29 58.9**	**+0.5**
	baz=70								
KBK	**Karagaybulak**	**2.67**	**57**	*iP*		**Pb**		**15 29 21.5**	**-1.1**
	baz=57								
KBK				*iS*		**Sg**		**15 29 59.6**	**0.0**
	baz=57								
CHMS	**Chumysh**	**2.75**	**49**	*iP*		**Pb**		**15 29 21.9**	**-2.0**
	baz=49								
CHMS				*iS*		**Sg**		**15 30 00.6**	**-1.6**
	baz=49								
USP	**Ospenovka**	**2.79**	**42**	*iP*		**Pb**		**15 29 22.3**	**-2.3**
	baz=43								
USP				*iS*		**Sg**		**15 30 03.1**	**-0.6**
	baz=43								
NRN	**Naryn**	**3.07**	**85**	*eP*		**Pn**		**15 29 26.2**	**+2.3**
	baz=85								
NRN				*eS*		**Sn**		**15 30 03.9**	**+2.4**
	baz=85								
TKM2	**Tokmak 2**	**3.21**	**57**	P		**Pn**		**15 29 28.1**	**+2.4**
	1.8nm,0.3s								
TKM2				Pg		**Pg**		**15 29 35.5**	**0.0**
	14nm,0.5s								
TKM2				Lg		Lg		15 30 20.6	
	67nm,0.6s								
BOOM	**Boomskoye usch**	**3.25**	**66**	*iP*		**Pb**		**15 29 29.6**	**-2.9**
	baz=66								
BOOM				*eS*		**Sn**		**15 30 09.1**	**+3.4**
	baz=66								
BMNS	**Besmoynak**	**3.36**	**55**	*iP*		**Pg**		**15 29 39.0**	**+0.8**
	78nm,0.3s								
BMNS				*iS*		**Sg**		**15 30 23.6**	**+1.8**
	206nm,0.4s								
DGS	**Degeres**	**3.49**	**54**	*eP*		**Pg**		**15 29 40.6**	**-0.2**
	19nm,0.6s								
DGS				*eS*		**Sg**		**15

AKTO	**Aktyubinsk**	**13.36**	**318**	⇑Pn		**Pn**	**15**	**31**	**44.6 +0.1**
	2.3nm,0.9s								
AKTO				⇑Sn		**Sn**	**15**	**34**	**15.3 +1.7**
	2.2nm,0.9s								
ZALV	**Zalesovo Beam**	**15.38**	**30**	Pn		**Pn**	**15**	**32**	**12.9 +0.9**
	0.2nm,0.3s,baz=226,slow=9.8,SNR=5.2								
ZALV				Lg		Lg	15	36	48.3
	0.0nm,0.3s,baz=211,slow=26,SNR=2.7								
SONM	**Songino Array**	**25.29**	**63**	P		**P**	**15**	**34**	**00.6 -1.3**
	0.3nm,0.7s,baz=262,slow=10.0,SNR=2.9								
FINES	**FINESS Array B**	**34.08**	**322**	P		**P**	**15**	**35**	**18.0 -1.6**
	1.5nm,1.0s,baz=113,slow=11,SNR=2.6								
ARCES	**ARCESS Array B**	**37.11**	**335**	P		**P**	**15**	**35**	**44.1 -1.4**
	4.1nm,1.0s,baz=101,slow=10.0,SNR=7.8								
MA2	**Magadan**	**50.25**	**40**	LR		LR	16	02	05.8
	comp=Z,201nm,21.4s,baz=3.5,slow=40								
ILAR	**Eielson Array**	**70.05**	**17**	P		**P**	**15**	**39**	**44.3 -2.7**
	0.3nm,0.7s,baz=329,slow=4.4,SNR=6.2								
YKA	**Yellowknife Ar**	**76.50**	**3**	P		**P**	**15**	**40**	**23.0 -2.1**
	0.4nm,0.8s,baz=351,slow=6.2,SNR=8.5								

ISCJB ***17*** *15:38:37.0±0.7, 40.56N±0.04×141.7E±0.1, h83km±5km, mb3.4/4, Error ellipse: s-maj=14.8km s-min=5.8km az=2.9*

JMA ***17*** *15:38:38.0±0.1, 40.57N×141.67E, h76km±1km, M3.2 Broadband fault plane solution: P waves. NP1: φs16.00000°, δ73.00000°, λ-115.00000°. NP2: φs254.00000°, δ30.00000°, λ-36.00000°. Principal axes: T Plg24.0000°, Azm125.0000°; N Plg24.0000°, Azm24.0000°; P Plg55.0000°, Azm255.0000°;*

JMA Felt I J1.

IDC ***17*** *15:38:39.2±1.9, 40.57N×141.79E, h98km±21km, mb3.1/4, mb1 3.1/7, mb1mx2.9/37, mbtmp3.4/7 Error ellipse: s-maj=29.3km s-min=15.9km az=95.0*

ISC 17 15:38:38.0±1.0, 40.56N±0.04×141.65E±0.09, h76km±7km, n17, σ1s07/24, mb3.5/4, 4C-1D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time			Res
				Op			h	m	s	ISC
JANG	**Nango**	**0.21**	**209**	⇓P		**Pn**	**15**	**38**	**49.3**	**0.0**
JANG				S		**Sn**	**15**	**38**	**57.3**	**-0.3**
JTM	**Tenmabayashi**	**0.50**	**298**	⇑P		**Pn**	**15**	**38**	**51.1**	**-0.2**
JTM				S		**Sn**	**15**	**39**	**00.8**	**-0.3**
JAH	**Hinai**	**0.85**	**245**	⇑P		**Pn**	**15**	**38**	**55.3**	**+0.3**
JAH				S		**Sn**	**15**	**39**	**08.9**	**+1.2**
JOT	**Ohata**	**0.94**	**331**	P		**Pn**	**15**	**38**	**56.1**	**+0.1**
JOT				S		**Sn**	**15**	**39**	**09.6**	**+0.1**
JOM	**Ohasama**	**1.11**	**194**	P		**Pn**	**15**	**38**	**58.6**	**+0.4**
JOM				S		**Sn**	**15**	**39**	**14.0**	**+0.7**
JIW	**Iwasaki**	**1.25**	**272**	P		**Pn**	**15**	**39**	**00.4**	**+0.5**
JSR	**Shiriuchi**	**1.35**	**317**	P		**Pn**	**15**	**39**	**01.4**	**+0.3**
JRG	**Rokugo**	**1.40**	**214**	P		**Pn**	**15**	**39**	**02.9**	**+1.2**
JKB	**Kayabe**	**1.41**	**341**	⇑P		**Pn**	**15**	**39**	**02.4**	**+0.5**
JKB				S		**Sn**	**15**	**39**	**20.4**	**+0.5**
JMK	**Ichinoseki**	**1.64**	**192**	⇑P		**Pn**	**15**	**39**	**05.2**	**+0.3**
ASAJ	**Asahikawa**	**3.63**	**11**	P		**Pn**	**15**	**39**	**32.3**	**+0.6**
	1.0nm,0.3s,baz=204,slow=17,SNR=13									
ASAJ				S		**Sn**	**15**	**40**	**15.0**	**+1.7**
	2.2nm,0.3s,baz=349,slow=28,SNR=5.9									
MJAR	**Matsushiro Arr**	**4.83**	**215**	P		**Pn**	**15**	**39**	**50.6**	**+2.5**
	0.7nm,0.3s,baz=27,slow=14,SNR=8.5									
USRK	**Ussuriysk Ar.**	**8.02**	**300**	P		**Pn**	**15**	**40**	**34.2**	**+2.5**
	0.3nm,0.3s,baz=113,slow=15,SNR=5.7									
ZALV	**Zalesovo Beam**	**39.75**	**309**	P		**P**	**15**	**46**	**02.5**	**-0.5**
	0.6nm,0.5s,baz=76,slow=8.0,SNR=2.9									
MKAR	**Makanchi Array**	**42.49**	**299**	P		**P**	**15**	**46**	**25.1**	**-0.5**
	0.6nm,0.6s,baz=81,slow=9.3,SNR=8.5									
WRA	**Warramunga Arr**	**60.57**	**188**	P		**P**	**15**	**48**	**39.1**	**-1.4**
	0.2nm,0.7s,baz=5.9,slow=7.7,SNR=3.5									
ASAR	**Alice Springs**	**64.30**	**188**	P		**P**	**15**	**49**	**04.7**	**-0.6**
	0.2nm,0.9s,baz=0.8,slow=7.1,SNR=4.2									

IDC ***17*** *15:43:10.0±1.0, 36.98N×144.08E, h0km, mb3.5/5, mb1 3.8/8, mb1mx3.5/47, mbtmp3.6/8, ML3.2/3, Error ellipse: s-maj=29.4km s-min=19.0km az=103.0*

ISCJB ***17*** *15:43:12.8±0.8, 36.95N±0.08×143.88E±0.08, h33km, mb3.5/5, Error ellipse: s-maj=12.6km s-min=8.5km az=157.4*

ISC 17 15:43:14.6±1.1, 37.11N±0.08×143.9E±0.1, h35km, n13, σ2s18/14, mb3.4/5, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time			Res
				Op			h	m	s	ISC
MJAR	**Matsushiro Arr**	**4.61**	**265**	Pn		**Pn**	**15**	**44**	**22.5**	**+0.7**
	2.3nm,0.3s,baz=88,slow=8.7,SNR=24									
MJAR				Sn		**Sn**	**15**	**45**	**13.8**	**-0.4**
	1.5nm,0.3s,baz=80,slow=27,SNR=6.0									
MAT	**Matsushiro**	**4.61**	**265**	P		**Pn**	**15**	**44**	**23.1**	**+1.3**
MAT				S		**Sn**	**15**	**45**	**14.1**	**-0.1**
JHJ	**Hachijo jima 2**	**5.22**	**222**	Pn		**Pn**	**15**	**44**	**28.7**	**-1.5**
	11nm,0.3s,baz=75,slow=20,SNR=8.1									
JHJ				Sn		**Sn**	**15**	**45**	**25.1**	**-4.1**
	3.5nm,0.3s,baz=90,slow=20,SNR=3.6									
ASAJ	**Asahikawa**	**7.07**	**352**	Pn		**Pn**	**15**	**44**	**53.5**	**-2.1**
	1.3nm,0.3s,baz=205,slow=18,SNR=17									
ASAJ				Sn		**Sn**	**15**	**46**	**10.4**	**-4.3**
	0.1nm,0.3s,baz=41,slow=20,SNR=1.6									
USRK	**Ussuriysk Ar.**	**11.49**	**312**	Pn		**Pn**	**15**	**45**	**57.3**	**+1.2**
	0.2nm,0.3s,baz=121,slow=16,SNR=4.5									
SEY	**Seymchan**	**26.38**	**9**	P		**P**	**15**	**48**	**48.8**	**+1.5**
	0.5nm,0.6s,baz=197,slow=19,SNR=3.7									
H11N2	**WAKE ISLAND Hy**	**26.50**	**124**	T		T	16	15	48.1	
	baz=317,slow=75,SNR=11									
H11N1	**WAKE ISLAND Hy**	**26.51**	**125**	T		T	16	15	48.7	
	baz=317,slow=75,SNR=12									
H11N3	**WAKE ISLAND Hy**	**26.52**	**124**	T		T	16	15	44.9	
	baz=317,slow=75,SNR=7.8									
MKAR	**Makanchi Array**	**45.77**	**302**	P		**P**	**15**	**51**	**34.6**	**+2.0**
	0.1nm,0.6s,baz=81,slow=9.2,SNR=2.2									
ILAR	**Eielson Array**	**48.36**	**32**	P		**P**	**15**	**51**	**53.2**	**+0.7**
	0.2nm,0.5s,baz=272,slow=6.2,SNR=4.0									
WRA	**Warramunga Arr**	**57.45**	**191**	P		**P**	**15**	**52**	**59.9**	**-0.2**
	1.0nm,0.5s,baz=10,slow=7.2,SNR=3.8									
ASAR	**Alice Springs**	**61.18**	**190**	P		**P**	**15**	**53**	**25.9**	**+0.1**
	0.4nm,0.5s,baz=5.0,slow=6.9,SNR=11									

IDC ***17*** *15:46:05.7±3.6, 2.78S×100.21E, h0km, mb3.4/5, mb1 3.6/5, mb1mx3.4/59, mbtmp3.5/5, Error ellipse: s-maj=143.2km s-min=21.5km az=58.0*

ISCJB ***17*** *15:46:06.7±0.8, 2.95S±0.06×100.13E±0.06, h27km, mb3.4/5, Error ellipse: s-maj=10.8km s-min=5.7km az=138.6*

DJA ***17*** *15:46:06.6±0.6, 3˚S±4˝×10˚0E±˚, h15km±7km, M3.6/6, MLv3.6/6*

ISC 17 15:46:08.2±1.0, 2.93S±0.08×100.14E±0.10, h27km, n14, σ1s03/16, mb3.4/5, Southern Sumatera

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time			Res
				Op			h	m	s	ISC
PPSI	**Pulau Pagai**	**0.21**	**323**	P		**Pb**	**15**	**46**	**13.2**	**-1.1**
PPSI				S		**Sb**	**15**	**46**	**17.1**	**-1.2**
PDSI	**Padang**	**2.03**	**9**	P		**Pn**	**15**	**46**	**40.5**	**-0.3**
PDSI				S		**Sn**	**15**	**47**	**06.5**	**+1.2**
MASI	**Maura Aman, Be**	**2.11**	**96**	P		**Pn**	**15**	**46**	**41.0**	**-0.8**
MASI				S		**Sn**	**15**	**47**	**06.6**	**-0.6**
SDSI	**Sungai Dareh**	**2.37**	**33**	P		**Pn**	**15**	**46**	**44.6**	**-0.8**
SDSI				S		**Sn**	**15**	**47**	**13.5**	**-0.1**
MNAI	**Manna**	**3.15**	**117**	P		**Pn**	**15**	**46**	**54.9**	**-1.2**
MNAI				S		**Sn**	**15**	**47**	**32.9**	**+0.1**
CMAR	**Chiang Mai Arr**	**21.29**	**357**	P		**P**	**15**	**50**	**51.9**	**-1.0**
	0.4nm,0.6s,baz=190,slow=8.0,SNR=4.6									
H01W3	**Cape Leeuwin H**	**34.35**	**159**	T		T	16	29	14.7	
	baz=333									
H01W2	**Cape Leeuwin H**	**34.36**	**159**	T		T	16	29	18.3	
	baz=333									
H01W1	**Cape Leeuwin H**	**34.36**	**159**	T		T	16	29	15.5	
	baz=333									
WRA	**Warramunga Arr**	**37.41**	**119**	P		**P**	**15**	**53**	**20.8**	**+1.5**
	0.6nm,1.0s,baz=292,slow=7.9,SNR=3.9									
ASAR	**Alice Springs**	**38.60**	**125**	P		**P**	**15**	**53**	**30.8**	**+1.4**
	0.3nm,0.8s,baz=298,slow=7.3,SNR=4.7									
SONM	**Songino Array**	**50.85**	**5**	P		**P**	**15**	**55**	**07.3**	**+0.5**
	0.5nm,0.5s,baz=192,slow=9.7,SNR=1.7									
MKAR	**Makanchi Array**	**51.96**	**344**	P		**P**	**15**	**55**	**15.2**	**+0.3**
	0.9nm,0.4s,baz=152,slow=8.5,SNR=14									
TXAR	**Lajitas Array**	**145.35**	**38**	PKPbc		**PKPdf**	**16**	**05**	**45.6**	**+1.0**
	0.4nm,0.7s,baz=316,slow=2.5,SNR=4.3									

NIED ***17*** *15:47:00, 37.10N×141.30E, h11km, Mw4.7 Best double couple: Mo1.11000×10^16 NP1:φs48.00000°, δ26.00000°, λ66.00000°. NP2:φs202.00000°, δ67.00000°, λ-101.00000°.*

IDC ***17*** *15:47:25.9±0.4, 37.05N×141.18E, h0km, mb4.5/46, mb1 4.6/51, mb1mx4.6/64, mbtmp4.5/51, ML3.8/5, MS3.8/9, Ms1 3.8/9, ms1mx3.4/47, Error ellipse: s-maj=12.0km s-min=9.8km az=107.0*

BJI ***17*** *15:47:25.9, 36.90N×141.08E, h11km, mb4.7/54, mB4.8/40, Ms4.5/47, Ms7 4.3/41*

ISCJB ***17*** *15:47:28.9±0.5, 37.04N±0.02×141.22E±0.02, h29km±3km, mb4.8/283, MS4.1/17, Error ellipse: s-maj=4.2km s-min=2.7km az=164.1*

JMA ***17*** *15:47:28.6±0.1, 37.00N×141.28E, h29km±1km, M4.8*

JMA Felt III J1.

MOS ***17*** *15:47:29.3±0.9, 37.29N×141.14E, h24km, mb5.1/86, Error ellipse: s-maj=6.1km s-min=4.2km az=99.4*

NEIC ***17*** *15:47:29.4±0.4, 37.02N×141.13E, h21km±2km, mb4.9/160, Error ellipse: s-maj=3.5km s-min=2.3km az=149.0*

NEIC Recorded [3 JMA] in Fukushima and Ibaraki.

ISC 17 15:47:28.7±0.3, 37.00N±0.03×141.31E±0.03, h20km±2km, h20km:pP-P, n892, σ1s15/876, mb4.9/291, MS4.2/18, 20C-22D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time			Res
				Op			h	m	s	ISC
ONAJ	**Iwakimizuishiy**	**0.42**	**284**	P		**Pb**	**15**	**47**	**37.4**	**0.0**
ONAJ				S		**Sb**	**15**	**47**	**43.2**	**-0.1**
JFK	**Kawauchi**	**0.50**	**316**	P		**Pb**	**15**	**47**	**38.5**	**-0.4**
JFK				S		**Sb**	**15**	**47**	**45.2**	**-0.6**
JHO	**Hitachi**	**0.71**	**237**	P		**Pb**	**15**	**47**	**41.5**	**-0.9**
JHO				S		**Sb**	**15**	**47**	**51.1**	**-0.7**
JFT	**Otama**	**0.93**	**304**	P		**Pb**	**15**	**47**	**45.9**	**-0.3**
JFT				S		**Sb**	**15**	**47**	**57.7**	**-0.4**
JMM	**Marumori**	**0.95**	**335**	P		**Pb**	**15**	**47**	**45.4**	**-1.2**
JSB	**Shiboa**	**1.11**	**269**	P		**Pn**	**15**	**47**	**49.0**	**-0.2**
JSB				S		**Sb**	**15**	**48**	**03.3**	**0.0**
MJAR	**Matsushiro Arr**	**2.53**	**260**	Pn		**Pn**	**15**	**48**	**08.5**	**-0.2**
	55nm,0.3s,baz=82,slow=16,SNR=348									
MJAR				Sn		**Sn**	**15**	**48**	**40.0**	**+1.1**
	82nm,0.3s,baz=78,slow=16,SNR=5.7									
MAJO	**Matsushiro**	**2.53**	**260**	*e*P		**Pn**	**15**	**48**	**09.7**	**+1.0**
MAJO	**Matsushiro**	**2.53**	**260**	*e*Pn		**Pn**	**15**	**48**	**09.7**	**+1.0**
MAT	**Matsushiro**	**2.53**	**260**	P		**Pn**	**15**	**48**	**09.6**	**+0.9**
MAT				S		**Sb**	**15**	**48**	**42.8**	**-1.4**
MJB9	**Matsu-Tunnel**	**2.53**	**261**	*e*Pn		**Pn**	**15**	**48**	**09.7**	**+1.0**
INU	**Inuyama**	**3.84**	**246**	*e*Pn		**Pn**	**15**	**48**	**28.3**	**+1.6**
JHJ2	**Mitsune**	**4.07**	**198**	*e*Pn		**Pn**	**15**	**48**	**30.8**	**+1.0**
JHJ	**Hachijo jima 2**	**4.07**	**198**	Pn		**Pn**	**15**	**48**	**30.7**	**+0.8**
	54nm,0.3s,baz=87,slow=20,SNR=18									
JHJ				Sn		**Sn**	**15**	**49**	**14.8**	**-2.1**
	96nm,0.3s,baz=60,slow=20,SNR=3.5									
ERM	**Erimo**	**5.21**	**15**	*e*P		**Pn**	**15**	**48**	**43.6**	**-1.8**
ERM	**Erimo**	**5.21**	**15**	*e*Pn		**Pn**	**15**	**48**	**43.6**	**-1.8**
ASAJ	**Asahikawa**	**7.17**	**7**	Pn		**Pn**	**15**	**49**	**11.9**	**-0.5**
	4.5nm,0.3s,baz=211,slow=12,SNR=33									
ASAJ				Sn		**Sn**	**15**	**50**	**29.5**	**-3.8**
	baz=197,slow=19,SNR=2.0									
ASAJ	**Asahikawa**	**7.17**	**7**	*e*Pn		**Pn**	**15**	**49**	**12.4**	**0.0**
ASAJ				Sn		**Sn**	**15**	**50**	**29.5**	**-3.8**
YUK	**Yuzh-Kuril'sk**	**7.83**	**25**	*e*P		**Pn**	**15**	**49**	**21.3**	**-0.1**
YUK				*e*S		Sn	15	50	42.4	-7.0
YUK					pmax	pmax				
	comp=Z,335nm,0.6s									
YUK					pmax	pmax				
	comp=N,212nm,0.2s									
YUK					pmax	pmax				
	comp=E,159nm,0.2s									
YUK					MLR	MLR				
	comp=Z,1μm,16.0s									
SHO	**Shikotan**	**8.05**	**30**	*e*P		**Pn**	**15**	**49**	**23.4**	**-1.0**
SHO				*e*S		Sn	15	50	46.1	-8.6
SHO					pmax	pmax				
	comp=Z,76nm,0.5s									
SHO					pmax	pmax				
	comp=N,22nm,0.4s									
SHO					pmax	pmax				
	comp=E,53nm,0.4s									
JNU	**Nakatsue**	**9.38**	**249**	Pn		**Pn**	**15**	**49**	**43.1**	**+0.3**
	comp=E,0.2nm,0.3s,baz=49,slow=10.0,SNR=3.4									
JNU				LR		LR	15	53	37.1	
	comp=E,795nm,18.1s,baz=91,slow=40									
VLA	**Vladivostok**	**9.46**	**313**	*d*P		Pn	15	49	47.1	+3.4
MSHR	**Mys Shultsa**	**9.59**	**309**	*e*P		**Pn**	**15**	**49**	**47.5**	**+2.0**
KUR	**Kuril'sk**	**9.59**	**29**	*e*P		**Pn**	**15**	**49**	**45.9**	**+0.4**
KUR				*e*S		Sn	15	51	26.2	-6.4
KUR					pmax	pmax				
	comp=Z,65nm,0.5s									
KUR					pmax	pmax				
	comp=E,18nm,0.3s									
KUR					pmax	pmax				
	comp=N,31nm,0.5s									
CBIJ	**Chichi jima**	**9.91**	**175**	*e*Pn		**Pn**	**15**	**49**	**48.2**	**-1.8**
CBIJ				Sn		Sn	15	51	29.8	-11
JCJ	**Chichijima**	**9.91**	**175**	Pn		**Pn**	**15**	**49**	**47.7**	**-2.2**
	comp=N,13nm,0.3s,baz=85,slow=23,SNR=10.0									
JCJ				Sn		Sn	15	51	29.8	-11
	comp=N,7.8nm,0.3s,baz=0.0,slow=20,SNR=2.2									
YSS	**Yuzh-Sakhalins**	**10.00**	**6**	*e*P		Pn	15	49	59.1	+8.0
YSS				*e*S		**Sn**	**15**	**51**	**43.1**	**+0.4**
YSS					pmax	pmax				
	comp=Z,40nm,0.9s									
YSS					MLR	MLR				
	comp=Z,900nm,11.0s									
YSS					MLR	MLR				
	comp=N,600nm,16.0s									
YSS					MLR	MLR				
	comp=E,1μm,16.0s									
YSS	**Yuzh-Sakhalins**	**10.00**	**6**	*e*Pn		**Pn**	**15**	**49**	**51.5**	**+0.4**
USRK	**Ussuriysk Ar.**	**10.09**	**318**	Pn		**Pn**	**15**	**49**	**53.6**	**+1.2**
	comp=E,0.9nm,0.3s,baz=133,slow=13,SNR=85									
USRK				LR		LR	15	53	33.9	
	comp=E,755nm,20.5s,baz=125,slow=37									
KSRS	**Korea Array**	**10.69**	**276**	Pn		**Pn**	**15**	**50**	**03.5**	**+3.0**
	comp=E,0.5nm,0.3s,baz=87,slow=14,SNR=29									
KSRS				LR		LR	15	53	56.0	
	comp=E,675nm,20.1s,baz=76,slow=37									
KS01	**Wonju Array Si**	**10.71**	**277**	*e*Pn		**Pn**	**15**	**49**	**59.1**	**-1.8**
KS15	**Wonju Array Si**	**10.72**	**276**	*e*Pn		**Pn**	**15**	**50**	**03.5**	**+2.5**
KSAR	**Wonju Array Be**	**10.72**	**276**	P		**Pn**	**15**	**50**	**03.5**	**+2.5**
KSAR	**Wonju Array Be**	**10.72**	**276**	Pn		**Pn**	**15**	**50**	**03.5**	**+2.5**
MDJ	**Mudanjiang**	**11.68**	**314**	P		**Pn**	**15**	**50**	**12.3**	**-1.9**
MDJ				S		**Sn**	**15**	**52**	**21.9**	**-2.0**
MDJ					pmax	pmax				
	comp=E,4.0nm,1.5s									
MDJ					pmax	pmax				
	comp=E,69nm,4.7s									
MDJ	**Mudanjiang**	**11.68**	**314**	*e*Pn		Pn	15	50	18.5	+4.3
HABR	**Khabarovsk**	**12.35**	**340**	*e*P		**Pn**	**15**	**50**	**21.0**	**-2.2**
HABR				*e*S		**Sn**	**15**	**52**	**37.3**	**-2.8**
HABR					pmax	pmax				
	comp=E,58nm,2.0s									
HABR					pmax	pmax				
	comp=Z,41nm,2.0s									
HABR					pmax	pmax				
	comp=N,26nm,2.0s									
HABR					MLR	MLR				
	comp=Z,304nm,11.0s									
CN2	**Changchun**	**13.85**	**304**	*e*P		**Pn**	**15**	**50**	**46.0**	**+2.2**
CN2				*e*sP		P	15	50	54.3	+2.3
CN2				*e*S		**Sn**	**15**	**53**	**19.9**	**+2.9**
CN2					pmax	pmax				
	comp=Z,10.0nm,0.6s									
CN2					LR	LR				
	comp=Z,600nm,13.0s									
CN2					LR	LR				
	comp=Z,600nm,13.0s									
CN2					LR	LR				
	comp=Z,800nm,13.0s									
TYV	**Tymovskoe**	**13.89**	**4**	*e*P		**Pn**	**15**	**50**	**43.8**	**-0.5**
TYV					pmax	pmax				
	comp=Z,9.0nm,0.6s									
KLR	**Kul'dur**	**14.06**	**333**	Pn		**Pn**	**15**	**50**	**47.5**	**+0.9**
	comp=Z,0.1nm,0.3s,baz=180,slow=10,SNR=3.9									
KLR				LR		LR	15	56	11.2	
	comp=Z,347nm,20.0s,baz=155,slow=38									
SNY	**Shenyang**	**14.52**	**295**	⇑P		**P**	**15**	**51**	**00.4**	**+1.0**
SNY				S		**S**	**15**	**53**	**54.8**	**+2.2**
SNY					pmax	pmax				
	comp=Z,21nm,1.7s									
SNY					pmax	pmax				
	comp=Z,220nm,5.3s									
SNY					LR	LR				
	comp=N,960nm,12.4s									
SNY					LR	LR				
	comp=E,1μm,14.7s									
SNY					LR	LR				
	comp=Z,2μm,13.2s									
NKL	**Nikolayevsk**	**16.15**	**359**	*e*P		**Pn**	**15**	**51**	**15.0**	**+0.7**
NKL					pmax	pmax				
	comp=Z,25nm,1.1s									
NKL					MLR	MLR				
	comp=N,600nm,16.0s									
NKL					MLR	MLR				
	comp=E,400nm,16.0s									
NKL					MLR	MLR				
	comp=Z,1μm,16.0s									
NJ2	**Nanjing**	**19.14**	**262**	*e*P		**P**	**15**	**51**	**49.3**	**-1.2**
NJ2					pmax	pmax				
	comp=Z,10.0nm,0.7s									
NJ2					LR	LR				
	comp=Z,770nm,16.3s									
PETK	**Petropavlovsk-**	**19.76**	**30**	P		**P**	**15**	**51**	**57.8**	**+0.6**
	comp=Z,0.2nm,0.3s,baz=219,slow=11,SNR=3.8									
PETK					LR	LR	15	59	50.1	
	comp=Z,126nm,21.2s,baz=217,slow=38									
BJI	**Beijing**	**19.88**	**286**	P		**P**	**15**	**51**	**57.1**	**-1.5**
BJI				S		**S**	**15**	**55**	**36.1**	**-5.3**
BJI					pmax	pmax				
	comp=Z,8.0nm,1.2s									
BJI					pmax	pmax				
	comp=Z,94nm,3.8s									
BJI					LR	LR				
	comp=Z,240nm,12.2s									
BJI					LR	LR				
	comp=Z,210nm,10.6s									
BJT	**Baijiatuau**	**19.89**	**286**	*e*P		Pn	15	52	05.6	+5.2
BJT					pmax	pmax				
	comp=Z,21nm,0.6s									
BJT	**Baijiatuau**	**19.89**	**286**	*e*P		Pn	15	52	05.6	+5.3
	comp=Z,21nm,0.6s									
WHN	**Wuhan**	**23.27**	**262**	⇑P		P	15	52	40.3	+5.3
WHN				S		**S**	**15**	**56**	**42.3**	**-3.9**
WHN					pmax	pmax				
	comp=Z,52nm,0.6s									
WHN					LR	LR				
	comp=N,1μm,12.6s									
WHN					LR	LR				
	comp=E,2μm,12.0s									
WHN					LR	LR				
	comp=Z,2μm,12.6s									
MA2	**Magadan**	**23.40**	**12**	P		**P**	**15**	**52**	**36.0**	**0.0**
	comp=Z,8.5nm,0.6s,baz=202,slow=8.8,SNR=8.9									
MA2	**Magadan**	**23.40**	**12**	P		**P**	**15**	**52**	**36.0**	**0.0**
HHC	**Hu-ho-hao-te**	**23.40**	**289**	*e*P		**P**	**15**	**52**	**34.6**	**-1.7**
HHC				sP		sP	15	52	43.6	-1.3
HHC				S		**S**	**15**	**56**	**43.6**	**-4.9**
HHC				SS		**SnSn**	**15**	**57**	**32.3**	**+8.3**
HHC					pmax	pmax				
	comp=Z,23nm,0.7s									
HHC					pmax	pmax				
	comp=Z,49nm,6.1s									
HHC					LR	LR				
	comp=Z,680nm,12.3s									
HHC					LR	LR				
	comp=Z,660nm,13.6s									
HHC					LR	LR				
	comp=Z,440nm,13.6s									
YAK	**Yakutsk**	**26.08**	**348**	P		**P**	**15**	**53**	**01.3**	**+0.7**
	comp=Z,12nm,0.4s,baz=68,slow=1.7,SNR=11									
YAK				S		**S**	**15**	**57**	**28.0**	**-2.6**
	comp=Z,4.4nm,0.4s,baz=8.1,slow=19,SNR=9.1									
YAK	**Yakutsk**	**26.08**	**348**	*e*P		**P**	**15**	**53**	**00.4**	**-0.2**
YAK				*e**PP		**sP**	**15**	**53**	**09.4**	**+0.1**
YAK				*e*S		**S**	**15**	**57**	**27.2**	**-3.3**
YAK				*e*SS		**SnSn**	**15**	**58**	**36.0**	**+7.1**
YAK				*e*			16	03	56.5	
YAK					pmax	pmax				
	comp=Z,26nm,1.0s									
YAK					pmax	pmax				
	comp=N,5.0nm,1.0s									
YAK					pmax	pmax				
	comp=E,6.0nm,1.4s									
YAK					pmax	pmax				
	comp=Z,33nm,0.9s									
YAK					pmax	pmax				
	comp=N,31nm,1.0s									
YAK					pmax	pmax				
	comp=E,15nm,1.1s									
YAK					smax	smax				
	comp=N,157nm,2.0s									
YAK					smax	smax				
	comp=E,113nm,2.9s									
YAK					MLR	MLR				
	comp=Z,287nm,13.0s									

GYA ScP **ScP** **16 00 22.8 -0.1**
GYA ScS **ScS** **16 04 19.5 -0.8**
GYA pmax pmax
comp=Z,20nm,0.8s
GYA pmax pmax
comp=Z,120nm,4.8s
GYA LR LR
comp=Z,520nm,17.2s
GYA LR LR
comp=Z,480nm,17.4s
GYA LR LR
comp=Z,500nm,17.8s
CD2 Chengdu 31.59 270 P **P** **15 53 48.5 -1.6**
CD2 sP sP 15 53 57.8 -1.0
CD2 S **S** **15 58 56.3 -1.6**
CD2 sS sS 15 59 07.0 -1.2
CD2 pmax pmax
comp=Z,10.0nm,0.5s
CD2 pmax pmax
comp=Z,140nm,9.3s
CD2 LR LR
comp=Z,510nm,13.7s
CD2 LR LR
comp=Z,650nm,14.3s
GTA Gaotai 32.49 287 *e*P **P** **15 53 56.9 -1.1**
GTA pP pP 15 54 01.3 -3.0
GTA sP sP 15 54 04.3 -2.5
GTA PcP **PcP** **15 56 45.8 +1.1**
GTA S **S** **15 59 10.4 -1.6**
GTA sS sS 15 59 20.3 -2.0
GTA SS **SnSn** **16 01 07.4 +1.7**
GTA pmax pmax
comp=Z,4.0nm,0.7s
GTA pmax pmax
comp=Z,56nm,5.2s
GTA LR LR
comp=Z,240nm,15.7s
GTA LR LR
comp=Z,280nm,15.2s
GTA LR LR
comp=Z,220nm,14.7s
BILL Bilibino 34.08 16⇓ *e*P **P** **15 54 09.7 -1.7**
BILL *e* 15 54 17.3
BILL pmax pmax
comp=Z,6.0nm,1.4s
BILL MLR MLR
comp=Z,149nm,16.0s
BILL Bilibino 34.08 16 *e*P **P** **15 54 10.8 -0.5**
comp=Z,3.3nm,1.2s
KMI Kunming 34.87 261 P **P** **15 54 18.3 -0.7**
KMI pmax pmax
comp=Z,9.0nm,1.4s
KMI pmax pmax
comp=Z,64nm,5.2s
TIXI Tiksi 35.31 353 P **P** **15 54 21.5 -0.4**
comp=Z,1.9nm,0.4s,baz=174,slow=3.2,SNR=7.3
TIXI LR LR 16 08 51.9
comp=Z,44nm,21.4s,baz=192,slow=36
TIXI Tiksi 35.31 353⇓ *i*P **P** **15 54 21.6 -0.4**
TIXI pmax pmax
comp=Z,3.0nm,0.7s
TIXI Tiksi 35.31 353 *e*P **P** **15 54 21.4 -0.6**
comp=Z,6.5nm,0.8s
MYLDM Lahad Datu 37.94 219 *e*P **P** **15 54 44.3 -0.6**
comp=Z,29nm,0.9s
TNTI Ternate 38.29 203 P P 15 54 55.3 +7.5
comp=Z,48nm,1.5s
SKNT Sakolnakorn 38.46 249 P **P** **15 54 50.2 +0.9**
comp=Z,14nm,1.0s
SWI Sorong 38.81 196 P P 15 55 00.4 +8.2
comp=Z,32nm,1.2s,comp=Z,370nm
CRAI Chiangrai 39.29 256 P **P** **15 54 57.9 +1.6**
comp=Z,11nm,1.1s
LBMI Labuha 39.58 202 P P 15 55 07.6 +8.9
comp=Z,39nm,0.9s
KHON Khomkaen 39.72 249 P P 15 55 08.2 +8.3
comp=Z,11nm,0.8s,comp=Z,711nm
LOEI Loei 40.18 252 P P 15 55 00.4 -3.3
MRSI Marisa 40.52 211 P P 15 55 14.3 +7.8
comp=Z,34nm,1.1s,comp=Z,1µm
UTTA Uttaradit 40.58 253 P P 15 55 14.5 +7.5
comp=Z,2.5nm,0.9s
FAKI Fak Fak 40.60 194 P P 15 55 15.2 +8.0
comp=Z,32nm,0.7s
CHAI Chaiyaphum 40.62 249 P **P** **15 55 07.3 0.0**
comp=Z,13nm,0.9s,comp=Z,91nm
WMQ Urumqi 40.78 297 P **P** **15 55 09.6 +1.1**
WMQ pP pP 15 55 15.4 +0.6
WMQ sP sP 15 55 18.3 +1.0
WMQ PcP **PcP** **15 57 09.5 +0.1**
WMQ S **S** **16 01 18.8 +0.6**
WMQ pmax pmax
comp=Z,6.0nm,0.8s
WMQ pmax pmax
comp=Z,33nm,3.8s
WMQ LR LR
comp=Z,75nm,20.2s
WMQ LR LR
comp=Z,61nm,22.8s
LAMP Lampang 40.84 255 P P 15 55 17.7 +8.6
comp=Z,3.3nm,0.9s
PBKT Sadao Pong 40.97 251 P **P** **15 55 10.5 +0.3**
comp=Z,18nm,1.0s
CMMT Chiang Mai 41.20 256 P **P** **15 55 13.1 +0.9**
comp=Z,6.7nm,0.8s
CHTO Chiang Mai 41.20 256 P **P** **15 55 13.2 +1.0**
comp=Z,37nm,1.1s
CHTO Chiang Mai 41.20 256 *e*P **P** **15 55 11.2 -1.0**
CHTO pmax pmax
comp=Z,4.0nm,0.8s
CHTO Chiang Mai 41.20 256 *e*P **P** **15 55 11.2 -1.0**
comp=Z,4.4nm,0.8s
SANI Sanana 41.38 204 P P 15 55 23.1 +10
comp=Z,65nm,0.9s,comp=Z,586nm
CMAR Chiang Mai Arr 41.41 255 P **P** **15 55 13.2 -0.6**
comp=Z,0.8nm,0.5s,baz=48,slow=4.7,SNR=6.8
CMAR PcP **PcP** **15 57 12.7 +0.9**
comp=Z,0.4nm,0.4s,baz=15,slow=1.3,SNR=3.3
CMAR LR LR 16 14 26.7
comp=Z,142nm,19.3s,baz=55,slow=39
CMAR Chiang Mai Arr 41.41 255 *i*P **P** **15 55 15.5 +1.6**
CMAR pmax pmax
comp=Z,3.0nm,1.1s
CM01 Chiang Mai Arr 41.42 255 *e*P **P** **15 55 14.0 +0.1**
SUKH Sukhothai 41.45 253 P P 15 55 23.4 +9.3
comp=Z,2.4nm,0.9s
SRAK Srakaew 41.77 247 P **P** **15 55 13.8 -3.0**
ZAA0 Zalesovo Array 41.87 312 *e*P **P** **15 55 16.3 -0.9**
ZAA0 *e*PcP **PcP** **15 57 12.9 +0.2**
ZALV Zalesovo Beam 41.87 312 P **P** **15 55 16.9 -0.4**
comp=Z,17nm,0.8s,baz=90,slow=6.9,SNR=58
ZALV PcP **PcP** **15 57 12.8 +0.1**
comp=Z,2.4nm,0.4s,baz=99,slow=2.9,SNR=5.0
APSI Ampana 41.90 210 P P 15 55 25.5 +7.7
comp=Z,85nm,1.1s,comp=Z,771nm
NAYO Nakonayok 42.12 248 P **P** **15 55 20.6 +1.0**
comp=Z,14nm,0.9s,comp=Z,848nm
LSA Lhasa 42.13 275 *e*P **P** **15 55 20.8 +0.6**
LSA pmax pmax
comp=Z,16nm,1.0s
LSA Lhasa 42.13 275 *e*P **P** **15 55 20.8 +0.6**
comp=Z,16nm,1.0s
NLAI Namlea 42.17 201 P P 15 55 30.0 +10
comp=Z,31nm,1.2s
MHMT Maesarieng 42.35 256 P P 15 55 30.0 +8.4
comp=Z,7.2nm,1.0s
CHBT CHBT 42.39 246 P P 15 55 30.2 +8.4
comp=Z,21nm,1.3s
NVS Novosibirsk 42.80 314⇓ *i*P **P** **15 55 24.7 -0.1**
NVS pmax pmax
comp=Z,10.0nm,0.5s
NVS pmax pmax
comp=N,1.0nm,0.2s
NVS pmax pmax
comp=E,6.0nm,0.5s
NRIK Noril'sk 43.26 335 P **P** **15 55 27.6 -0.7**
comp=E,1.8nm,0.4s,baz=93,slow=11,SNR=6.3
NRIK PcP **PcP** **15 57 16.5 -0.5**
comp=E,7.0nm,1.1s,baz=67,slow=5.4,SNR=2.7
SHL Shillong 43.32 269 *e*P P 15 55 37.0 +7.4
SBUM Sibu 43.58 225 *e*P **P** **15 55 31.2 -0.3**
comp=E,24nm,1.3s
SRDT SRDT 43.74 250 P P 15 55 41.2 +8.4
comp=E,50nm,1.1s
MK01 Makanchi Array 44.06 302 *e*P **P** **15 55 34.3 -0.8**
MK31 Makanchi Array 44.06 302 *i*P **P** **15 55 34.0 -1.1**
MK31 pmax pmax
comp=Z,11nm,0.8s
MK31 Makanchi Array 44.06 302 *e*P **P** **15 55 34.0 -1.1**
MKAR Makanchi Array 44.06 302 P **P** **15 55 34.6 -0.5**
comp=Z,6.6nm,0.7s,baz=87,slow=9.9,SNR=62
MKAR PcP **PcP** **15 57 20.9 +0.6**
comp=Z,0.8nm,0.4s,baz=83,slow=4.8,SNR=3.5
MKAR Makanchi Array 44.06 302 *e*P **P** **15 55 34.3 -0.9**
MKAR PcP **PcP** **15 57 20.9 +0.6**
PHET Kaeng Krachan 44.27 248 P **P** **15 55 38.6 +1.5**
comp=Z,16nm,0.8s,comp=Z,120nm
MAKZ Makanchi 44.27 302 P **P** **15 55 35.9 -0.9**
MAKZ pmax pmax
comp=Z,17nm,1.1s
MAKZ Makanchi 44.27 302 *e*P **P** **15 55 36.2 -0.7**
comp=Z,15nm,0.9s
SPSI Sidrap Palu 45.44 211 P P 15 55 54.7 +8.4
comp=Z,46nm,1.0s
TT01 Tatalina 45.49 35 *e*P **P** **15 55 47.7 +1.5**
TTA Tatalina 45.49 35 *e*P **P** **15 55 47.5 +1.2**
TTA *e**SP **sP** **15 55 55.4 +0.2**
TTA pmax pmax
comp=Z,6.0nm,1.0s
TTA Tatalina 45.49 35 *e*P **P** **15 55 47.5 +1.2**
comp=Z,5.5nm,1.0s
TTA *es*P **sP** **15 55 55.4 +0.2**
SVW2 Sparrevohn 45.60 37 *e*P **P** **15 55 48.9 +1.8**
comp=Z,20nm,1.1s
KURK Kurchatov 45.88 308 *e*P **P** **15 55 48.6 -0.9**
KURK 15 57 26.0
KURK pmax pmax
comp=Z,32nm,0.8s
KURK Kurchatov 45.88 308 *e*P **P** **15 55 48.6 -0.9**
comp=Z,32nm,0.8s
KURK PcP **PcP** **15 57 26.0 -0.4**
KURBB Kurchatov Arra 45.95 308 P **P** **15 55 49.4 -0.6**
comp=Z,12nm,0.7s,baz=83,slow=8.2,SNR=3.9
KURBB PcP **PcP** **15 57 26.0 -0.6**
comp=Z,1.9nm,0.7s,baz=95,slow=3.4,SNR=2.6
STKI Sintang 45.96 224 P P 15 55 58.5 +8.0
comp=Z,42nm,1.1s,comp=Z,5µm
KAPI Kappang 46.39 210 P **P** **15 55 55.1 +1.2**
comp=Z,7.7nm,0.6s,baz=63,slow=9.4,SNR=5.9
KAPI Kappang 46.39 210 *e*P **P** **15 55 54.7 +0.9**
comp=Z,77nm,0.9s
PDGK Podgornoye 46.72 298 P **P** **15 55 55.7 -0.4**
PDGK pmax pmax
comp=Z,36nm,1.0s
OHAK Old Harbor 46.83 43 *e*P **P** **15 55 57.2 +0.4**
comp=Z,14nm,0.8s
RSO Redoubt South 46.98 38 *e*P **P** **15 55 59.3 +1.1**
GUN Gumba 47.08 276 *e*P **P** **15 55 59.5 -0.1**
comp=Z,98nm,1.0s
BSSI Bau Bau, Buton 47.13 209 P P 15 56 06.9 +7.3
comp=Z,49nm,0.8s
KDAK Kodiak Island 47.18 42 *e*P **P** **15 56 00.4 +0.9**
KDAK pmax pmax
comp=Z,34nm,0.8s
KDAK Kodiak Island 47.18 42 *e*P **P** **15 56 00.4 +0.9**
comp=Z,34nm,0.8s
BBKI Banjar Baru 47.20 217 P P 15 56 07.8 +7.6
comp=Z,114nm,1.0s,comp=Z,1µm
PPLA Purkeypile 47.24 35 *e*P **P** **15 56 01.2 +1.1**
comp=Z,14nm,1.0s
CAST Castle Rocks 47.30 34 *e*P **P** **15 56 01.7 +1.3**
comp=Z,6.6nm,0.7s
SPU Mount Spurr 47.31 37 *e*P **P** **15 56 01.5 +0.9**
SURT Suratani 47.49 245 P P 15 56 11.1 +8.6
comp=Z,7.2nm,1.1s
KKN Kakani 47.60 276 *e*P **P** **15 56 03.4 -0.2**
comp=Z,95nm,0.8s
PKIN Phulchoki 47.60 275 *e*P **P** **15 56 03.1 -0.5**
comp=Z,22nm,0.8s
TRTT Trang 47.61 243 P P 15 56 13.4 +10
comp=Z,11nm,0.9s,comp=Z,629nm
BPAW Bear Paw Mtn. 47.80 33 *e*P **P** **15 56 05.0 +0.7**
comp=Z,28nm,1.7s
KTH Kantishna Hill 47.82 34 *e*P **P** **15 56 06.0 +1.5**
comp=Z,19nm,0.9s
MLY Manley 47.92 32 *e*P **P** **15 56 06.8 +1.5**
comp=Z,18nm,1.2s
BRLK Bradley Lake 47.94 39 *e*P **P** **15 56 06.9 +1.4**
comp=Z,16nm,1.0s
GKN Gorkha 48.02 276 *e*P **P** **15 56 06.4 -0.3**
comp=Z,191nm,1.0s
TRF Thorofare Moun 48.10 34 *e*P **P** **15 56 07.5 +0.7**
comp=Z,9.9nm,0.9s
COLD Coldfoot 48.22 29 *e*P **P** **15 56 08.5 +1.0**
comp=Z,8.6nm,1.2s
RC01 Rabbit Creek A 48.44 37 *e*P **P** **15 56 09.7 +0.4**
comp=Z,20nm,1.0s
SEW Seward 48.64 39 *e*P **P** **15 56 11.2 +0.4**
comp=Z,42nm,1.4s
PMR Palmer 48.70 37 *e*P **P** **15 56 11.4 +0.1**
PMR pmax pmax
comp=Z,12nm,0.8s
PMR Palmer 48.70 37 *e*P **P** **15 56 11.3 +0.1**
comp=Z,12nm,0.8s
MCK McKinley 48.70 34 *e*P **P** **15 56 12.3 +0.9**
MCK pmax pmax
comp=Z,10.0nm,1.0s
MCK McKinley 48.70 34 *e*P **P** **15 56 12.2 +0.9**
comp=Z,10nm,1.0s
KULM Kulim 48.73 240 *e*P **P** **15 56 09.8 -2.2**
KULM *es*P **sP** **15 56 20.1 -0.9**
RND Reindeer 48.75 34 *e*P **P** **15 56 12.5 +0.8**
RND pmax pmax
comp=Z,25nm,1.2s
RND Reindeer 48.75 34 *e*P **P** **15 56 12.5 +0.8**
comp=Z,25nm,1.2s
KOLN Koldanda 48.95 277 *e*P **P** **15 56 14.0 +0.1**
comp=Z,58nm,1.0s
MDM Murphy Dome 48.99 32 *e*P **P** **15 56 15.2 +1.7**
comp=Z,34nm,1.2s
WRH Wood River Hil 49.06 33 *e*P **P** **15 56 14.8 +0.8**
comp=Z,8.8nm,0.9s
SML Sawmill 49.07 36 *e*P **P** **15 56 15.0 +0.9**
SML pmax pmax
comp=Z,16nm,0.8s
SML Sawmill 49.07 36 *e*P **P** **15 56 15.0 +0.9**
comp=Z,16nm,0.8s
COLA College 49.15 32⇓ *e*P **P** **15 56 15.2 +0.6**
COLA pmax pmax
comp=Z,11nm,1.0s
COLA College 49.15 32 *e*P **P** **15 56 16.1 +1.5**
comp=Z,10.0nm,0.8s
CCB Clear Creek Bu 49.17 33 *e*P **P** **15 56 16.0 +1.1**
comp=Z,5.7nm,1.0s
PYUN Piuthan 49.29 277 *e*P **P** **15 56 16.7 +0.2**
comp=Z,249nm,1.0s
DHY Denali Highway 49.44 35 *e*P **P** **15 56 17.8 +0.7**
comp=Z,11nm,1.2s
SCM Sheep Creek Mo 49.54 36 *e*P **P** **15 56 19.0 +1.2**
SCM pmax pmax
comp=Z,17nm,0.8s
SCM Sheep Creek Mo 49.54 36 *e*P **P** **15 56 19.0 +1.2**
comp=Z,17nm,0.8s
HDA Harding Lake 49.55 33 *e*P **P** **15 56 18.0 +0.2**
comp=Z,20nm,1.2s
IL1 Eielson Array 49.56 32 *e*P **P** **15 56 17.7 -0.1**
ILAR Eielson Array 49.56 32 P **P** **15 56 18.4 +0.6**
comp=Z,7.4nm,0.8s,baz=268,slow=5.8,SNR=67
ILB Eielson Array 49.56 32 *e*P **P** **15 56 18.2 +0.4**
TKM2 Tokmak 2 49.57 298 P **P** **15 56 18.9 +0.4**
TKM2 pmax pmax
comp=Z,22nm,1.2s
TKM2 Tokmak 2 49.57 298 *e*P **P** **15 56 18.4 -0.1**
comp=Z,22nm,1.0s
FYU Fort Yukon 50.18 30 *e*P **P** **15 56 24.7 +2.2**
comp=Z,32nm,1.3s
VOSK Vostochnaya 50.24 312 P **P** **15 56 22.4 -0.8**
VOSK pmax pmax
comp=Z,13nm,0.9s
KLU Klutina 50.24 37 *e*P **P** **15 56 24.0 +0.9**
comp=Z,18nm,1.2s
CHKZ Chkalovo 50.27 313 P **P** **15 56 21.2 -2.2**
CHKZ pmax pmax
comp=Z,9.0nm,0.9s
FRU Bishkek 50.29 299 *e*P **P** **15 56 24.0 +0.3**
FRU *e* 15 56 29.0
PAX Paxson 50.31 35 *e*P **P** **15 56 25.0 +1.4**
PAX pmax pmax
comp=Z,6.0nm,0.9s
PAX Paxson 50.31 35 *e*P **P** **15 56 25.0 +1.4**
comp=Z,6.0nm,0.9s
KSH Kashi 50.34 294 *e*P P 15 56 28.8 +4.5
KSH *ep*P sP 15 56 35.8 +2.6
KSH S **S** **16 03 40.3 +4.0**
KSH ScS **ScS** **16 06 15.5 +1.1**
KSH SS **SS** **16 07 11.3 +1.6**
KSH pmax pmax
comp=Z,13nm,1.0s
KSH pmax pmax
comp=Z,83nm,6.1s
KSH LR LR
comp=Z,290nm,8.8s
KSH LR LR
comp=Z,140nm,6.6s
KSH LR LR
comp=Z,490nm,15.0s
DIV Divide 50.35 37 *e*P **P** **15 56 25.6 +1.7**
comp=Z,32nm,1.2s
OTUK Ortayu 50.38 306 P **P** **15 56 22.4 -1.9**
OTUK pmax pmax
comp=Z,9.0nm,0.8s
EYAK Cordova Ski Ar 50.43 38 *e*P **P** **15 56 26.2 +1.8**
comp=Z,24nm,1.1s
EYAK *es*P **sP** **15 56 34.2 +0.8**
AAK Ala-Archa 50.43 298 P **P** **15 56 24.4 -0.6**
comp=Z,1.6nm,0.5s,baz=121,slow=5.4
AAK Ala-Archa 50.43 298 *e*P **P** **15 56 25.0 0.0**
AAK pmax pmax
comp=Z,7.0nm,0.8s
AAK Ala-Archa 50.43 298 *e*P **P** **15 56 24.2 -0.8**
comp=Z,6.7nm,0.9s
BVA0 Borovoye Array 50.53 312 *i*P **P** **15 56 28.1 +2.7**
BVA0 pmax pmax
comp=Z,14nm,1.2s
BVAR Borovoye Array 50.53 312 P **P** **15 56 24.8 -0.5**
comp=Z,2.0nm,0.5s,baz=72,slow=7.8,SNR=17
BVAR PcP **PcP** **15 57 43.3 +0.2**
comp=Z,4.9nm,0.6s,baz=84,slow=4.6,SNR=6.1
BRVK Borovoye 50.59 312 *e*P **P** **15 56 25.2 -0.6**
BRVK pmax pmax
comp=Z,12nm,0.9s
BRVK Borovoye 50.59 312 *e*P **P** **15 56 25.1 -0.6**
comp=Z,12nm,0.9s
COEN Coen 50.72 178 *e*P **P** **15 56 27.9 +0.8**
PPBI Pangkal Pinang 50.84 228 P P 15 56 34.9 +6.8
comp=Z,17nm,1.3s,comp=Z,1µm
BASI Baing, Sumba 50.85 207 P P 15 56 35.1 +7.0
comp=Z,254nm,1.3s
DOT Dot Lake 50.88 34 *e*P **P** **15 56 28.6 +0.8**
comp=Z,17nm,0.8s
EKS2 Erkin-Say 50.93 299 *e*P **P** **15 56 28.4 -0.3**
EKS2 Erkin-Say 50.93 299 *e*P **P** **15 56 28.4 -0.3**
BMRM Bremner River 50.94 37 *e*P **P** **15 56 29.9 +1.6**
comp=Z,15nm,1.0s
TWSI Taliwang, Sumb 50.94 212 P P 15 56 36.1 +7.3
comp=Z,38nm,1.1s
RAGM Ragged Mountai 50.98 38 *e*P **P** **15 56 30.7 +2.0**
comp=Z,13nm,0.8s
MENT Mentasta 51.11 35 *e*P **P** **15 56 30.9 +1.3**
comp=Z,17nm,0.9s
ABJI Asem Bagus 51.28 215 P P 15 56 38.2 +6.9
comp=Z,60nm,1.1s
ZRNK Zerenda 51.37 312 P **P** **15 56 30.5 -1.2**
ZRNK pmax pmax
comp=Z,15nm,1.2s
ZRNK Zerenda 51.37 312 *e*P **P** **15 56 30.4 -1.2**
comp=Z,9.5nm,0.6s
PSI Prapat 51.71 239 *e*P **P** **15 56 33.0 -1.8**
PSI *e**SP **sP** **15 56 43.0 -0.7**
PSI Prapat 51.71 239 *e*P **P** **15 56 33.0 -1.8**
PSI *es*P **sP** **15 56 43.0 -0.7**
MNAS Manas 51.88 299 P **P** **15 56 35.2 -0.6**
MNAS pmax pmax
comp=Z,15nm,1.0s
JAGI Jajag, Banyuwa 51.91 215 P P 15 56 43.4 +7.3
comp=Z,33nm,1.2s
SFK Sufi-Kurgan 51.97 295 P **P** **15 56 39.4 +2.7**
SFK pmax pmax
comp=Z,19nm,0.8s
EGAK Eagle 52.01 32 *e*P **P** **15 56 37.0 +0.7**
comp=Z,7.7nm,1.0s
BKNI Bangkinang 52.11 235 P P 15 56 45.4 +7.8
comp=Z,125nm,0.7s
NGJI Ngawi 52.24 219 P P 15 56 47.7 +9.2
comp=Z,36nm,0.9s
PWJI Pagerwojo 52.63 218 P P 15 56 50.7 +9.3
comp=Z,96nm,0.8s
MNSI Mandailing Nat 52.72 237 P P 15 56 49.9 +7.7
comp=Z,21nm,0.8s
KK31 Karatay Array 53.07 300 P **P** **15 56 44.4 -0.1**
KK31 pmax pmax
comp=Z,8.0nm,0.8s
KKAR Karatay Array 53.07 300 *e*P **P** **15 56 44.3 -0.2**
KKAR Karatay Array 53.07 300 *e*P **P** **15 56 44.2 -0.2**
KPJI Karang Pucung 53.51 221 P P 15 56 55.8 +7.9
comp=Z,66nm,0.8s
GSI Gunungsitoli 53.71 239 P P 15 56 55.3 +5.8
comp=Z,120nm,1.0s
LHSI Lahat 53.73 229 P P 15 56 57.5 +7.9
comp=Z,47nm,0.9s
KLI Kotabumi 53.76 227 P P 15 56 57.8 +8.0
comp=Z,76nm,0.9s
LEM Lembang 53.80 223 P P 15 56 57.4 +7.2
comp=Z,752nm,0.9s
MDSI Maura Dua 53.86 228 P P 15 56 57.9 +7.4
comp=Z,28nm,1.2s,comp=Z,509nm
BLSI Bandar Lampung 53.94 226 P P 15 56 58.5 +7.4
comp=Z,190nm,0.4s,comp=Z,3µm
SBJI Serang 54.04 225 P P 15 56 59.2 +7.4
comp=Z,86nm,1.3s,comp=Z,4µm
CMJI Cimerak 54.15 222 P P 15 56 58.5 +5.9
comp=Z,42nm,1.4s
LWLI Liwa 54.35 228 P P 15 57 00.9 +6.6
comp=Z,32nm,0.6s,comp=Z,2µm
KASI Kota Agung 54.50 227 P P 15 57 01.2 +6.0
comp=Z,30nm,1.4s
SVE Sverdlovsk 55.12 319 *e*P **P** **15 56 59.6 +0.5**
SVE pmax pmax
comp=Z,27nm,0.9s
SKAG Skagway 55.77 38 *e*P **P** **15 57 06.2 +2.3**
comp=Z,13nm,1.1s
SOKR Solikamsk 56.30 323 *e*P P 15 57 13.3 +5.8
SOKR pmax pmax
comp=Z,24nm,1.3s
ARU Arti 56.33 319 P **P** **15 57 07.5 -0.3**
comp=Z,4.7nm,0.4s,baz=6.7,slow=1.6,SNR=12
ARU Arti 56.33 319*d i*P **P** **15 57 07.6 -0.3**
ARU 15 58 04.5
ARU 15 59 08.2
ARU S **S** **16 04 57.5 +0.7**
ARU SS **SS** **16 08 45.2 +2.0**
ARU pmax pmax
comp=Z,9.0nm,0.8s
ARU Arti 56.33 319 *e*P **P** **15 57 07.1 -0.8**
comp=Z,24nm,0.8s
FITZ Fitzroy Crossi 56.77 198 P **P** **15 57 11.4 +0.1**
comp=Z,3.1nm,0.5s,baz=360,slow=7.7,SNR=10
FITZ Fitzroy Crossi 56.77 198 *e*P **P** **15 57 09.9 -1.4**
WRAB Tennant Creek 57.01 188*ce*P **P** **15 57 13.1 +0.1**
WRAB pmax pmax
comp=Z,45nm,1.7s
WRAB Tennant Creek 57.01 188 *e*P **P** **15 57 12.3 -0.7**
comp=Z,22nm,0.8s
WB2 Warramunga Arr 57.02 188 *e*P **P** **15 57 12.7 -0.4**
comp=Z,22nm,0.7s
WRA Warramunga Arr 57.02 188 P **P** **15 57 12.8 -0.3**
comp=Z,8.6nm,0.6s,baz=5.1,slow=7.3,SNR=114
WRA PcP **PcP** **15 58 09.1 +1.0**
comp=Z,3.1nm,0.6s,baz=0.9,slow=4.5,SNR=3.2
KBL Kabul 57.35 291 *e*P **P** **15 57 14.5 -1.2**
KBL pmax pmax
comp=Z,17nm,1.0s
KBL Kabul 57.35 291 *e*P **P** **15 57 14.5 -1.2**
comp=Z,17nm,1.0s
AB31 Akbulak array 57.90 310 *i*P **P** **15 57 18.1 -1.0**
AB31 pmax pmax
comp=Z,6.0nm,0.6s
ABKAR Akbulak array 57.90 310 *e*P **P** **15 57 18.2 -0.8**
HYB Hyderabad 58.12 268 *i*P **P** **15 57 20.0 -1.1**
HYB *e*PcP PcP 15 58 20.0 +7.3
WRAK Wrangell Islan 58.22 41 *e*P **P** **15 57 23.3 +2.1**
comp=Z,8.2nm,0.9s
AKTO Aktyubinsk 58.63 312 P **P** **15 57 23.6 -0.7**
comp=Z,3.6nm,0.7s,baz=79,slow=9.7,SNR=9.7
AKTO Aktyubinsk 58.63 312 P **P** **15 57 23.9 -0.3**
AKTO pmax pmax
comp=Z,8.0nm,0.8s
DLBC Dease Lake 58.70 38 *e*P **P** **15 57 27.1 +2.5**
comp=Z,17nm,1.1s

SPITS **Spitsbergen Ar** 60.54 349 P **P** 15 57 37.2 +0.3
comp=Z,5.6nm,0.7s,baz=61,slow=8.7,SNR=6.0
AS01 **Alice Springs** 60.74 188 *e*P **P** 15 57 38.7 -0.2
AS31 **Alice Springs** 60.74 188 *e*P **P** 15 57 38.8 -0.1
comp=Z,2.9nm,0.8s
ASAR **Alice Springs** 60.75 188 P **P** 15 57 39.0 0.0
comp=Z,4.5nm,0.7s,baz=10.0,slow=6.2,SNR=56
ASAR **Alice Springs** 60.75 188 P **P** 15 57 39.0 0.0
MBWA **Marble Bar** 61.33 203 *e*P **P** 15 57 43.0 +0.1
APA **Apatity** 62.68 336 *e*P pP 15 57 59.0 +1.0
TMCR **Tamitsa** 62.73 331 *e*P **pP** 15 57 59.7 +1.3
TMCR pmax pmax
comp=Z,49nm,1.1s
KLMR **Klimovskoe** 63.74 328 *e*P P 15 58 03.8 +5.2
KLMR pmax pmax
comp=Z,22nm,0.9s
GEYT **Alibeck** 63.78 299 P **P** 15 57 59.1 -0.2
comp=Z,6.5nm,1.0s,baz=48,slow=2.2,SNR=11
YKW3 **Yellowknife Ar** 63.84 30 *e*P **P** 15 57 59.6 +0.4
comp=Z,4.7nm,0.9s
YKA **Yellowknife Ar** 63.88 30 P **P** 15 58 00.0 +0.6
comp=Z,6.2nm,1.0s,baz=300,slow=6.6,SNR=60
YKB5 **Yellowknife Ar** 63.88 30 *e*P **P** 15 57 59.2 -0.2
ARCES **ARCESS Array B** 64.00 339 P **P** 15 58 00.2 +0.1
comp=Z,2.0nm,0.5s,baz=59,slow=8.6,SNR=8.3
A04D **Lummi Island** 66.81 46 P **P** 15 58 19.3 +0.6
baz=300
B05A **Bryant** 67.39 46 P **P** 15 58 22.7 +0.3
baz=301
VRH **Novokhopyorsk** 67.55 318 *e*P **P** 15 58 22.9 -0.4
VRH *e**SP **pP** 15 58 30.2 +0.3
VRH pmax pmax
comp=Z,6.0nm,0.4s
F04D **Rainier, OR** 67.97 48 P **P** 15 58 26.3 +0.2
baz=301
OBN **Obninsk** 68.07 323⇑ *e*P **P** 15 58 27.8 +1.3
OBN *i* *PP **pP** 15 58 33.0 -0.2
OBN *e* 15 58 51.6
OBN 16 00 55.0
OBN *e* 16 08 15.1
OBN pmax pmax
comp=Z,41nm,2.4s
OBN MLR MLR
comp=Z,117nm,14.0s
G03D **McMinnville, O** 68.26 49 P **P** 15 58 28.2 +0.2
baz=301
LPSR **Galich'ya Gora** 68.27 320 *e*P **P** 15 58 26.1 -1.8
LPSR *e**SP **pP** 15 58 34.8 +0.3
LPSR pmax pmax
comp=Z,5.0nm,0.9s
F04A **Amboy** 68.40 48 *e*P **P** 15 58 28.4 -0.4
comp=Z,17nm,0.8s
STKA **Stephens Creek** 68.52 180 P **P** 15 58 30.1 +0.5
comp=Z,3.0nm,0.9s,baz=337,slow=11,SNR=6.6
STKA **Stephens Creek** 68.52 180 *e*P **P** 15 58 29.9 +0.3
comp=Z,1.2nm,0.8s
FIA1 **FINESS Array S** 68.80 332 *e*P **P** 15 58 31.1 0.0
FINES **FINESS Array B** 68.80 332 P **P** 15 58 30.6 -0.5
comp=Z,6.6nm,0.9s,baz=36,slow=9.5,SNR=15
FINES **FINESS Array B** 68.80 332 *i* P **P** 15 58 31.0 0.0
FINES pmax pmax
comp=Z,7.0nm,0.9s
VSR **Storozhevoye** 68.90 319 *e*P **P** 15 58 30.6 -1.2
VSR *e**SP **pP** 15 58 38.9 +0.5
VSR pmax pmax
comp=Z,9.0nm,0.8s
B08A **Colville Reser** 68.92 45 *e*P **P** 15 58 33.0 +0.9
comp=Z,9.8nm,1.3s
I03D **Drain, OR** 68.99 51 P **P** 15 58 32.2 -0.3
baz=302
H04A **Detroit Lake** 69.19 49 *e*P **P** 15 58 35.4 +1.6
comp=Z,15nm,0.9s
G05D **Wamic, OR** 69.42 48 P **P** 15 58 36.0 +0.7
baz=302
I04A **Tendick Farm,** 69.52 50 P **P** 15 58 37.3 +1.4
baz=302
BBOO **Buckleboo** 69.63 185 *e*P **P** 15 58 36.7 +0.3
comp=Z,12nm,0.8s
C09A **Chrisman Ranch** 69.82 45 *e*P **P** 15 58 38.5 +0.9
comp=Z,11nm,1.0s
D08A **Wollman Farm,** 69.85 46 *e*P **P** 15 58 39.2 +1.3
comp=Z,8.4nm,1.0s
I05D **Terrebonne, OR** 69.89 49 P **P** 15 58 39.1 +0.9
baz=302
NEW **Newport** 70.21 44 P **P** 15 58 41.3 +1.2
baz=304
NEW **Newport** 70.21 44 *e*P **P** 15 58 41.2 +1.2
NEW pmax pmax
comp=Z,11nm,1.1s
NEW **Newport** 70.21 44 *e*P **P** 15 58 41.2 +1.2
comp=Z,11nm,1.1s
YBH **Yreka Blue Hor** 70.43 52 *e*P **P** 15 58 43.3 +1.7
YBH pmax pmax
comp=Z,12nm,1.1s
YBH **Yreka Blue Hor** 70.43 52 *e*P **P** 15 58 43.3 +1.7
comp=Z,12nm,1.1s
J05D **Fort Rock, OR** 70.52 50 P **P** 15 58 43.0 +0.8
baz=303
M02C **Callahan** 70.52 53 P **P** 15 58 43.1 +1.0
baz=303
DGRG **David-gareji** 70.55 308 P pP 15 58 50.2 +1.3
DGRG **David-gareji** 70.55 308 *e*P pP 15 58 50.2 +1.3
GUDG **Gudauri** 70.57 309 P pP 15 58 50.6 +1.4
SUMG **Summit** 70.72 360 *e*P **P** 15 58 44.0 +0.8
SUMG pmax pmax
comp=Z,21nm,1.1s
SUMG **Summit** 70.72 360 *e*P **P** 15 58 44.0 +0.8
comp=Z,21nm,1.1s
ZEI **Tsey** 70.75 309 *e*P P 15 58 50.2 +6.5
ZEI pmax pmax
comp=Z,18nm,0.9s
TBLG **Delisi** 70.80 308 P sP 15 58 53.2 +0.4
TBLG **Delisi** 70.80 308 *e*P sP 15 58 53.2 +0.4
N02D **Trinity Center** 70.84 53 P **P** 15 58 45.5 +1.4
baz=303
KVAR **Kislovodsk Arr** 70.86 311 P **P** 15 58 45.2 +1.1
comp=Z,6.6nm,0.9s,baz=356,slow=13,SNR=5.7
KBZ **Khabaz** 70.86 311 P **P** 15 58 44.3 +0.3
comp=Z,2.4nm,0.7s,baz=8.7,slow=3.5,SNR=7.3
KIV **Kislovodsk** 70.86 311 *d i*P **P** 15 58 44.8 +0.6
KIV *e* 15 59 02.7
KIV pmax pmax
comp=Z,13nm,1.3s
KIV MLR MLR
comp=Z,68nm,16.0s
KIV **Kislovodsk** 70.86 311 *e*P **P** 15 58 44.6 +0.4
comp=Z,41nm,0.9s
M04C **Macdoel** 70.95 52 P **P** 15 58 46.0 +1.2
baz=303
K05A **Summer Lake** 71.03 51 *e*P **P** 15 58 47.0 +1.6
comp=Z,30nm,1.1s
ONI **Oni** 71.14 309 P sP 15 58 53.7 -1.2
ONI **Oni** 71.14 309 *e*P sP 15 58 53.7 -1.2
NEY **Neytrino** 71.23 310 *i* P **P** 15 58 46.5 0.0
NEY pmax pmax
comp=Z,1.0nm,0.9s
F10A **Beach Ranch, E** 71.43 46 *e*P **P** 15 58 48.4 +0.9
comp=Z,5.8nm,1.0s
WALA **Waterton Lakes** 71.52 42 *e*P **P** 15 58 49.3 +1.2
comp=Z,7.7nm,0.8s
GNI **Garni** 71.66 307⇓ *e*P **P** 15 58 50.8 +1.7
GNI pmax pmax
comp=Z,34nm,1.0s
AKH **Akhalkalaki** 71.76 308⇑ *i*P sP 15 58 58.4 -0.5
O03D **Paynes Creek** 71.78 53 P **P** 15 58 50.9 +1.1
baz=303
MOD **Modoc Plateau** 71.85 51 *e*P **P** 15 58 51.9 +1.6
comp=Z,26nm,1.8s
CHVG **Ch'k'valeri** 71.91 310⇑ *i*P pP 15 58 55.8 -1.3
BMO **Blue Mountains** 72.01 47 *e*P **P** 15 58 52.5 +1.4
comp=Z,8.9nm,0.8s
SWMT **Swartz Lake** 72.37 43 *e*P **P** 15 58 54.4 +1.2
ORV **Oroville** 72.38 54 *e*P **P** 15 58 54.5 +1.2
ORV pmax pmax
comp=Z,10.0nm,1.1s
ORV **Oroville** 72.38 54 *e*P **P** 15 58 54.5 +1.2
comp=Z,9.9nm,1.1s
IZAR **Zarasai** 72.39 327 *e*P **pP** 15 59 00.5 +0.9
IZAR IAmb IAmb 15 59 02.4
comp=Z,13nm,0.6s
IDID **Didziasalis** 72.46 327 *e*P **pP** 15 59 01.1 +1.0
IDID IAmb IAmb 15 59 03.7
comp=Z,13nm,0.8s
ISAL **Salakas** 72.56 327 *e*P **pP** 15 59 01.8 +1.2
ISAL IAmb IAmb 15 59 03.6
comp=Z,18nm,0.7s
WVOR **Wild Horse Val** 72.58 50 *e*P **P** 15 58 55.7 +1.1
WVOR pmax pmax
comp=Z,9.0nm,1.1s
WVOR **Wild Horse Val** 72.58 50 *e*P **P** 15 58 55.7 +1.1
comp=Z,8.8nm,1.1s
IIGN **Ignalina** 72.66 327 *e*P **pP** 15 59 02.3 +1.0
IIGN IAmb IAmb 15 59 05.0
comp=Z,16nm,0.9s
NACGM **Naroch** 72.70 327 *e* pP 15 59 03.0 +1.5
MSO **Missoula** 72.80 44 P **P** 15 58 56.7 +0.9
baz=306
MSO **Missoula** 72.80 44 *e*P **P** 15 58 56.6 +0.8
comp=Z,5.0nm,0.9s
ANN **Anapa** 73.49 314 *e*P **P** 15 58 56.9 -2.8
ANN *e**PP **pP** 15 59 07.1 +0.7
ANN *e* 15 59 12.1
ANN *e* 16 01 39.9
ANN *e*S **S** 16 08 24.3 -3.9
ANN *e*SS **SS** 16 13 06.6 -3.5
ANN pmax pmax
comp=Z,15nm,1.0s
MFID **Camas Ranch** 73.71 48 *e*P **P** 15 59 02.6 +1.3
comp=Z,46nm,1.9s
FFC **Flin Flon** 73.78 33 *e*P **P** 15 59 01.4 +0.2
FFC pmax pmax
comp=Z,14nm,0.9s
FFC **Flin Flon** 73.78 33 *e*P **P** 15 59 01.4 +0.2
comp=Z,14nm,0.9s
CMB **Columbia Colle** 73.95 54 *e*P **P** 15 59 03.5 +0.8
CMB pmax pmax
comp=Z,18nm,1.2s
CMB **Columbia Colle** 73.95 54 *e*P **P** 15 59 03.5 +0.8
comp=Z,18nm,1.2s
NC405 **NORSAR Array S** 73.97 337 *e*P **P** 15 59 02.1 -0.1
FCC **Fort Churchill** 74.07 26 *e*P **P** 15 59 03.4 +0.6
FCC pmax pmax
comp=Z,21nm,1.0s
FCC **Fort Churchill** 74.07 26 *e*P **P** 15 59 03.4 +0.6
comp=Z,21nm,1.0s
HFS **Hagfors** 74.08 336 P **P** 15 59 02.6 -0.4
comp=Z,1.9nm,0.5s,baz=52,slow=5.8,SNR=11
NC204 **NORSAR Array S** 74.14 338 *e*P **P** 15 59 02.7 -0.7
NB201 **NORSAR Array S** 74.15 337 *e*P **P** 15 59 03.4 0.0
NB2 **NORSAR Subarra** 74.18 337 P **P** 15 59 03.5 -0.1
comp=Z,15nm,0.8s,baz=39,slow=6.2
NB2 **NORSAR Subarra** 74.18 337 P **P** 15 59 03.5 -0.1
baz=39,slow=6.2
NOA **NORSAR Array B** 74.18 337 P **P** 15 59 03.4 -0.1
comp=Z,4.1nm,0.8s,baz=39,slow=5.8,SNR=15
LRM **Limekiln Ridge** 74.23 44 *e*P **P** 15 59 05.0 +0.7
AKASG **Malin Array Be** 74.27 322 P **P** 15 59 03.4 -0.8
comp=Z,1.9nm,0.3s,baz=46,slow=6.3,SNR=26
AKASG **Malin Array Be** 74.27 322 *i* P **P** 15 59 03.7 -0.5
AKASG pmax pmax
comp=Z,2.0nm,0.3s
AKBB **Malin Array Si** 74.27 322 *e*P **P** 15 59 04.7 +0.5
AKBB pmax pmax
comp=Z,14nm,0.8s
AKBB **Malin Array Si** 74.27 322 *e*P **P** 15 59 04.7 +0.5
comp=Z,14nm,0.8s
KIEV **Kiev** 74.28 322 *e*P **P** 15 59 03.7 -0.6
KIEV pmax pmax
comp=Z,14nm,0.7s
KIEV **Kiev** 74.28 322 *e*P **P** 15 59 03.7 -0.6
comp=Z,14nm,0.7s
NBO02 **NORSAR Array S** 74.28 337 *e*P **P** 15 59 04.3 +0.2
WAKR **Walker** 74.30 54 *e*P **P** 15 59 06.3 +1.4
AK11 **Malin Array Si** 74.31 322 *e*P **P** 15 59 03.9 -0.6
EGMT **Eagleton** 74.35 41 P **P** 15 59 05.9 +1.1
baz=308
EGMT **Eagleton** 74.35 41 *e*P **P** 15 59 06.0 +1.1
comp=Z,18nm,1.0s
DLMT **Dillon** 74.42 45 *e*P **P** 15 59 07.0 +1.6
comp=Z,15nm,0.8s
HLID **Hailey** 74.45 47 P **P** 15 59 06.8 +1.2
baz=307
HLID **Hailey** 74.45 47 *e*P **P** 15 59 06.6 +0.9
comp=Z,7.3nm,1.2s
BMN **Battle Mountai** 74.59 51 *e*P **P** 15 59 08.0 +1.5
BMN pmax pmax
comp=Z,22nm,1.5s
BMN **Battle Mountai** 74.59 51 *e*P **P** 15 59 08.0 +1.5
comp=Z,22nm,1.5s
MCMT **McKenzie Canyo** 74.60 45 *e*P **P** 15 59 06.9 +0.3
BOZ **Bozeman (W)** 74.79 44 P **P** 15 59 08.7 +1.1
baz=308
BOZ **Bozeman (W)** 74.79 44 *e*P **P** 15 59 08.6 +1.1
BOZ pmax pmax
comp=Z,13nm,0.8s
BOZ **Bozeman (W)** 74.79 44 *e*P **P** 15 59 08.6 +1.1
comp=Z,13nm,0.8s
NVAR **Mina Array Bea** 75.07 53 P **P** 15 59 11.1 +1.7
comp=Z,6.6nm,0.8s,baz=284,slow=6.3,SNR=36
MLAC **Mammoth, Mammo** 75.19 54 P **P** 15 59 11.4 +1.3
baz=306
SIM **Simferopol'** 75.29 315 *e*P **pP** 15 59 17.7 +0.8
SIM pmax pmax
comp=Z,15nm,0.8s
SIM MLR MLR
comp=N,80nm,17.7s
QLMT **Earthquake Lak** 75.40 45 *e*P **P** 15 59 12.7 +1.6
ELK **Elko** 75.63 50 *e*P **P** 15 59 14.2 +1.6
ELK pmax pmax
comp=Z,3.0nm,0.8s
ELK **Elko** 75.63 50 *e*P **P** 15 59 14.2 +1.6
comp=Z,3.4nm,0.8s
YMR **Madison River** 75.76 45 *e*P **P** 15 59 15.0 +1.7
comp=Z,12nm,1.0s
YFT **Old Faithful** 75.97 45 *e*P P 15 59 18.2 +3.7
comp=Z,12nm,0.8s
PKM **Mcpherson Peak** 76.13 57 P **P** 15 59 15.6 +0.1
baz=306
H17A **Grant Village** 76.15 45 *e*P **P** 15 59 18.6 +3.1
comp=Z,18nm,0.9s
FLWY **Flagg Ranch** 76.28 45 *e*P **P** 15 59 17.7 +1.5
comp=Z,13nm,1.1s
RLMT **Red Lodge** 76.42 43 P **P** 15 59 18.2 +1.2
baz=309
RLMT **Red Lodge** 76.42 43 *e*P **P** 15 59 18.4 +1.4
comp=Z,19nm,1.5s
MOOW **Moose Ponds** 76.46 45 *e*P **P** 15 59 18.7 +1.5
comp=Z,6.4nm,1.0s
HVU **Hansel Valley** 76.49 48 *e*P **P** 15 59 18.9 +1.5
HVU pmax pmax
comp=Z,6.0nm,0.9s
HVU **Hansel Valley** 76.49 48 *e*P **P** 15 59 18.9 +1.5
comp=Z,6.4nm,0.9s
GRAC **Grapevine Rang** 76.51 54 P **P** 15 59 19.1 +1.7
baz=306
ISA **Isabella, Lake** 76.57 55 P **P** 15 59 18.1 +0.3
baz=306
LOHW **Long Hollow** 76.62 45 *e*P **P** 15 59 19.8 +1.6
comp=Z,3.6nm,0.9s
SNOW **Snow King Moun** 76.63 45 *e*P **P** 15 59 20.1 +1.9
comp=Z,7.5nm,0.8s
REDW **Red Top Meadow** 76.64 46 *e*P **P** 15 59 20.1 +1.9
comp=Z,8.4nm,1.0s
ARVC **Arvin** 76.65 56 P **P** 15 59 18.9 +0.8
baz=306
DAC **Darwin (Calif)** 76.79 55 *e*P **P** 15 59 20.5 +1.3
DAC pmax pmax
comp=Z,13nm,1.4s
DAC **Darwin (Calif)** 76.79 55 *e*P **P** 15 59 20.5 +1.3
comp=Z,13nm,1.4s
FRB **Frobisher Bay** 76.82 13 P **P** 15 59 18.8 +0.2
comp=Z,9.5nm,0.6s
R11A **Troy Canyon, C** 76.85 52 P **P** 15 59 20.7 +1.2
baz=307
R11A **Troy Canyon, C** 76.85 52 *e*P **P** 15 59 20.6 +1.2
comp=Z,13nm,1.1s
BGU **Big Grassy Mou** 76.86 49 *e*P **P** 15 59 20.9 +1.4
comp=Z,3.5nm,0.9s
DGMT **Dagmar** 76.91 38 P **P** 15 59 20.5 +1.1
baz=312
DGMT **Dagmar** 76.91 38 *e*P **P** 15 59 20.4 +0.9
comp=Z,19nm,0.9s
MPMC **Manual Prospec** 76.99 55 P **P** 15 59 21.0 +0.7
baz=306,SNR=6.7
OSI **Osito Audit: C** 77.02 56 P **P** 15 59 21.0 +0.7
baz=306
LAO **LASA Array** 77.05 41 P **P** 15 59 21.3 +1.0
baz=311
LAO **LASA Array** 77.05 41 *e*P **P** 15 59 21.3 +1.0
comp=Z,15nm,1.0s
A25A **Svangstu Ranch** 77.14 38 P **P** 15 59 20.6 -0.1
baz=312
FURC **Furnace Creek,** 77.15 54 P **P** 15 59 22.1 +1.1
baz=307
LRMC **Laurel Mtn Rad** 77.20 55 P **P** 15 59 21.8 +0.4
baz=306
TPNV **Topopah Spring** 77.26 53 P **P** 15 59 22.7 +0.9
baz=307,SNR=14
TPNV **Topopah Spring** 77.26 53 *e*P **P** 15 59 23.1 +1.3
TPNV pmax pmax
comp=Z,18nm,1.2s
TPNV **Topopah Spring** 77.26 53 *e*P **P** 15 59 23.1 +1.3
comp=Z,18nm,1.2s
HWUT **Hardware Ranch** 77.31 47 *e*P **P** 15 59 23.4 +1.3
comp=Z,12nm,1.1s
EDW2 **Edwards Air Fo** 77.35 56 P **P** 15 59 23.3 +1.1
baz=306
BEL **Belsk** 77.42 327 *e*P sP 15 59 31.4 +0.1
BEL **Belsk** 77.42 327 *e*P sP 15 59 31.5 +0.1
DUG **Dugway, Tooele** 77.44 49 P **P** 15 59 23.4 +0.7
baz=308
DUG **Dugway, Tooele** 77.44 49 *e*P **P** 15 59 24.1 +1.4
DUG pmax pmax
comp=Z,8.0nm,0.8s
DUG **Dugway, Tooele** 77.44 49 *e*P **P** 15 59 24.1 +1.4
comp=Z,7.7nm,0.8s
DECC **Green Verdugo** 77.49 57 P **P** 15 59 24.1 +1.1
baz=306
A26A **Wade Farm, Ken** 77.69 37 P **P** 15 59 24.7 +0.9
baz=313
TCUT **Toone Canyon** 77.71 48 *e*P **P** 15 59 26.0 +1.7
comp=Z,14nm,0.8s
BW06 **Boulder Array** 77.75 45 P **P** 15 59 25.3 +0.8
baz=310
BW06 **Boulder Array** 77.75 45 *e*P **P** 15 59 25.5 +1.0
comp=Z,4.9nm,0.8s
PD31 **Pinedale Array** 77.75 45 *e*P **P** 15 59 25.2 +0.7
PDAR **Pinedale Array** 77.75 45 P **P** 15 59 25.4 +0.9
comp=Z,3.4nm,0.7s,baz=255,slow=2.4,SNR=39
PSUT **Pine Spring** 77.82 51 *e*P **P** 15 59 26.0 +1.1
comp=Z,9.3nm,1.0s
FMP **Fort Macarthur** 77.84 57 P **P** 15 59 25.1 +0.3
baz=307
SHOC **Shoshone, Teco** 77.87 54 P **P** 15 59 25.7 +0.7
baz=307
GSC **Goldstone, Bar** 77.88 55 P **P** 15 59 25.3 +0.1
baz=307
C25A **Freed Ranch, W** 77.89 39 P **P** 15 59 25.2 +0.3
baz=312
CIS **Catalina Islan** 77.94 57 P **P** 15 59 25.8 +0.3
baz=307
B26A **Jensen Ranch,** 77.94 38 P **P** 15 59 25.2 0.0
baz=313
BFSC **Mount Baldy Ra** 77.95 56 P **P** 15 59 26.1 +0.4
baz=307
JLU **Jordanelle** 78.00 48 *e*P **P** 15 59 27.4 +1.4
comp=Z,8.7nm,1.2s
RRX **Edison Barstow** 78.01 55 P **P** 15 59 26.4 +0.5
baz=307
A27A **Ledoux Ranch,** 78.03 37 P **P** 15 59 26.2 +0.5
baz=314
SCI2 **San Clemente I** 78.10 58 P **P** 15 59 26.9 +0.6
baz=307
KWP **Kalwaria Pacla** 78.11 324 *e*P **P** 15 59 27.2 +1.2
KWP *e* 15 59 35.0
KWP **Kalwaria Pacla** 78.11 324 *e*P **P** 15 59 27.3 +1.2
KWP *e* 15 59 35.1
D25A **Fairfield** 78.24 39 P **P** 15 59 27.1 +0.2
baz=313
MPU **Maple Canyon** 78.26 49 *e*P **P** 15 59 28.8 +1.4
comp=Z,8.7nm,1.0s
BUR08 **Bucovina Ar. S** 78.27 322 *e*P **P** 15 59 27.1 -0.1
BURAR **Bucovina Array** 78.28 322 ⇓ *i*P **P** 15 59 27.5 +0.3
BURAR **Bucovina Array** 78.28 322 ⇓P **P** 15 59 27.5 +0.3
TESR **Tescani** 78.30 320 ⇓ *i*P **P** 15 59 27.4 +0.2
TUQ **Turquoise Moun** 78.38 54 P **P** 15 59 29.2 +1.2
baz=307,SNR=5.2
C26A **Wahner Farm, P** 78.39 38 P **P** 15 59 28.7 +1.0
baz=313
B27A **Peters Farms,** 78.40 37 P **P** 15 59 28.7 +1.0
baz=314
CFR **Carcaliu** 78.41 318 ⇑ *i*P **P** 15 59 26.0 -1.8
CFR **Carcaliu** 78.41 318 ⇑P **P** 15 59 26.0 -1.8
BBRC **Big Bear Solar** 78.43 56 P **P** 15 59 28.6 +0.2
baz=307
HEC **Hector,Ludlow** 78.47 55 P **P** 15 59 29.8 +1.4
baz=307
A28A **Rude Farm, Bot** 78.53 36 P **P** 15 59 29.4 +1.0
baz=314
E25A **Miller Ranch,** 78.63 40 P **P** 15 59 30.0 +0.9
baz=313
MURC **Murrieta** 78.64 57 P **P** 15 59 30.7 +1.4
baz=307
VRI **Vrincioaia** 78.69 320 ⇓ *i*P **P** 15 59 31.1 +1.7
VRI **Vrincioaia** 78.69 320 ⇓P **P** 15 59 31.1 +1.7
TIRR **Tirgusor** 78.74 318 ⇓ *i*P pP 15 59 37.4 +1.1
TIRR **Tirgusor** 78.74 318 ⇓P pP 15 59 37.4 +1.1
TIRR **Tirgusor** 78.74 318 *ep*P pP 15 59 37.3 +1.1
PLOR **Plostina** 78.75 320 ⇑ *i*P sP 15 59 38.5 -0.4
PLOR **Plostina** 78.75 320 ⇑P sP 15 59 38.5 -0.4
C27A **Sayler Ranch,** 78.76 38 P **P** 15 59 30.4 +0.7
baz=314
D26A **Manning** 78.76 39 P **P** 15 59 30.5 +0.7
baz=313
KOLS **Kolonicke sedl** 78.80 324 *e*P sP 15 59 38.0 -1.0
KOLS **Kolonicke sedl** 78.80 324 *e* sP 15 59 38.0 -1.0
B28A **Dugan Ranch, T** 78.80 37 P **P** 15 59 30.9 +1.0
baz=314
BR131 **Keskin Array S** 78.81 311 *e*P **P** 15 59 30.8 +0.5
BRTR **Keskin Array B** 78.81 311 P **P** 15 59 31.2 +0.9
comp=Z,2.4nm,0.8s,baz=100,slow=3.8,SNR=15
BRTR LR LR 16 40 10.2
comp=Z,44nm,18.2s,baz=47,slow=40
BRTR **Keskin Array B** 78.81 311 *i* P **P** 15 59 33.2 +2.9
BRTR pmax pmax
comp=Z,3.0nm,0.8s
MSU **Marysvale** 78.87 50 *e*P **P** 15 59 31.7 +1.0
MSU **Marysvale** 78.87 50 *e*P **P** 15 59 31.7 +1.0
STHS **Stebnicka Huta** 78.94 325 *e*P **P** 15 59 31.7 +1.0
STHS *e* 15 59 39.9
STHS pmax pmax
comp=Z,9.0nm,0.9s
STHS **Stebnicka Huta** 78.94 325 *e*P **P** 15 59 31.7 +1.0
STHS *e* 15 59 39.9
GMRC **Granite Mounta** 78.94 55 P **P** 15 59 32.3 +1.1
baz=308
UZH **Uzhgorod** 79.00 324 *e*P P 15 59 34.3 +3.3
UZH *e* 15 59 40.1
A29A **Manning Farm,** 79.00 36 P **P** 15 59 31.9 +0.9
baz=315,SNR=9.8
OJC **Ojcow** 79.02 326 *e*P **P** 15 59 32.0 +0.9
OJC *e* 15 59 39.8
OJC **Ojcow** 79.02 326 *e*P **P** 15 59 31.5 +0.4
OJC pmax pmax
comp=Z,24nm,0.7s
OJC **Ojcow** 79.02 326 *e*P **P** 15 59 31.5 +0.4
comp=Z,24nm,0.7s
PFO **Pinyon Flats O** 79.13 56 P **P** 15 59 33.5 +1.3
comp=Z,6.2nm,1.0s
PFO **Pinyon Flats O** 79.13 56 P **P** 15 59 33.5 +1.3
baz=307
PFO **Pinyon Flats O** 79.13 56 *e*P **P** 15 59 33.3 +1.1
PFO pmax pmax
comp=Z,14nm,1.2s
PFO **Pinyon Flats O** 79.13 56 *e*P **P** 15 59 33.3 +1.1
comp=Z,14nm,1.2s
109C **Camp Elliot, M** 79.13 57 P **P** 15 59 33.4 +1.4
baz=307
E26A **Carlson Angus** 79.13 39 P **P** 15 59 32.8 +0.9
baz=313
LCMT **Little Creek M** 79.13 52 *e*P **P** 15 59 34.1 +1.9
comp=Z,12nm,1.0s
P17A **Butcher Ranch,** 79.14 49 *e*P **P** 15 59 33.9 +1.7
comp=Z,27nm,1.3s
D27A **Center** 79.16 38 P **P** 15 59 32.8 +0.8
baz=314
BELC **Belle Mtn. Jos** 79.20 56 P **P** 15 59 33.2 +0.7
baz=308
CRVS **Cervenica-Dubn** 79.20 324 *e*P pP 15 59 39.2 +0.4
CRVS **Cervenica-Dubn** 79.20 324 *e* pP 15 59 39.2 +0.4
BR231 **Keskin MP Arra** 79.25 312 *e*P **P** 15 59 31.9 -0.8
B29A **Wagenman Farm,** 79.27 36 P **P** 15 59 33.6 +1.1
baz=315
C28A **Hausauer Farms** 79.30 37 P **P** 15 59 33.5 +0.8
baz=314
P18A **Preston Nutter** 79.33 48 *e*P **P** 15 59 35.0 +1.6
comp=Z,9.8nm,1.1s
MLR **Muntele Rosu** 79.35 320 ⇑ *e*P **PcP** 15 59 41.3 0.0
MLR **Muntele Rosu** 79.35 320 *e*PcP **PcP** 15 59 41.3 0.0

NIE	**Niedzica**	**79.37**	**325**		*e*P		**P**		**15 59 33.6**	**+0.6**
NIE					*e*				15 59 42.0		
NIE	**Niedzica**	**79.37**	**325**		*e*P		**P**		**15 59 33.6**	**+0.6**
NIE					*e*				15 59 42.1		
KNB	**Kanab**	**79.39**	**52**		*e*P		**P**		**15 59 35.6**	**+2.0**
KNB	comp=Z,22nm,1.2s				pmax		pmax				
KNB	**Kanab**	**79.39**	**52**		*e*P		**P**		**15 59 35.6**	**+2.0**
	comp=Z,22nm,1.2s										
A30A	**Hoffart Farm,**	**79.42**	**35**		P		**P**		**15 59 34.5**	**+1.2**
	baz=316,SNR=11										
F26A	**Lodgepole**	**79.45**	**40**		P		**P**		**15 59 34.8**	**+1.3**
	baz=313										
SRU	**San Rafael Swe**	**79.50**	**49**		*e*P		**P**		**15 59 35.4**	**+1.2**
SRU	comp=Z,13nm,0.9s				pmax		pmax				
SRU	**San Rafael Swe**	**79.50**	**49**		*e*P		**P**		**15 59 35.4**	**+1.2**
	comp=Z,13nm,0.9s										
G25A	**Newell**	**79.51**	**41**		P		**P**		**15 59 34.9**	**+0.9**
	baz=313										
K22A	**Casper**	**79.53**	**44**		P		**P**		**15 59 35.4**	**+1.2**
	baz=311										
ULM	**Lac du Bonnet**	**79.57**	**33**		P		**P**		**15 59 34.0**	**-0.1**
	comp=Z,6.3nm,0.9s,baz=295,slow=3.8,SNR=5.9										
ULM	**Lac du Bonnet**	**79.57**	**33**		*e*P		**P**		**15 59 34.3**	**+0.2**
ULM					*e*				15 59 43.0		
ULM	comp=Z,19nm,1.1s				pmax		pmax				
ULM	**Lac du Bonnet**	**79.57**	**33**		*e*P		**P**		**15 59 34.3**	**+0.2**
	comp=Z,19nm,1.1s										
ULM					*e*PcP		**sP**		**15 59 43.0**	**-0.2**
D28A	**Regan**	**79.58**	**38**		P		**P**		**15 59 35.0**	**+0.8**
	baz=314										
MDND	**Maddock**	**79.58**	**37**		P		**P**		**15 59 35.2**	**+0.9**
	baz=315										
MONP2	**Monument Peak**	**79.58**	**57**		P		**P**		**15 59 35.5**	**+0.7**
	baz=308										
E27A	**Carson**	**79.61**	**39**		P		**P**		**15 59 35.0**	**+0.5**
	baz=314										
IRM	**Iron Mountain**	**79.66**	**55**		P		**P**		**15 59 36.2**	**+1.2**
	baz=306,SNR=5.5										
B30A	**Myrvik Farm, E**	**79.76**	**36**		P		**P**		**15 59 36.6**	**+1.4**
	baz=316,SNR=10										
F27A	**Lemmon**	**79.76**	**39**		P		**P**		**15 59 35.7**	**+0.4**
	baz=314										
BC3	**Big Chuckawall**	**79.77**	**56**		P		**P**		**15 59 36.4**	**+0.8**
	baz=308,SNR=5.6										
H25A	**Fruitdale**	**79.80**	**41**		P		**P**		**15 59 35.7**	**+0.1**
	baz=313										
VOIR		**79.85**	**320**	⇓	*i*P		P		15 59 32.5	-3.3
VOIR		**79.85**	**320**	⇓	P		P		15 59 32.5	-3.3
G26A	**Maurine**	**79.86**	**40**		P		**P**		**15 59 36.7**	**+0.9**
	baz=313										
RSSD	**Black Hills**	**79.91**	**42**		P		**P**		**15 59 36.6**	**+0.3**
	baz=313										
RSSD	**Black Hills**	**79.91**	**42**		*e*P		**P**		**15 59 36.4**	**+0.1**
RSSD	comp=Z,7.0nm,1.0s				pmax		pmax				
RSSD	**Black Hills**	**79.91**	**42**		*e*P		**P**		**15 59 36.4**	**+0.1**
	comp=Z,6.5nm,1.0s										
LANS	**Liptovska Anna**	**79.94**	**325**		*e*P		sP		15 59 45.4	+0.1
LANS	**Liptovska Anna**	**79.94**	**325**		*e*		sP		15 59 45.4	+0.1
E28A	**Huff**	**79.94**	**38**		P		**P**		**15 59 36.9**	**+0.7**
	baz=314										
KECS	**Kecovo**	**79.95**	**325**		*e*P		sP		15 59 44.4	-0.9
KECS	**Kecovo**	**79.95**	**325**		*e*		sP		15 59 44.4	-0.9
SWSC	**Sam W. Stewart**	**79.97**	**56**		P		**P**		**15 59 37.8**	**+1.2**
	baz=308										
KSP	**Ksiaz**	**80.08**	**328**		*e*P		**P**		**15 59 37.7**	**+0.8**
KSP					*e*				15 59 45.6		
KSP	**Ksiaz**	**80.08**	**328**		*e*P		**P**		**15 59 37.7**	**+0.8**
KSP					*e*				15 59 45.6		
DRGR		**80.09**	**322**	⇑	*i*P		**P**		**15 59 37.3**	**+0.2**
DRGR		**80.09**	**322**	⇑	P		**P**		**15 59 37.3**	**+0.2**
U15A	**North Rim**	**80.09**	**52**		*e*P		**P**		**15 59 39.0**	**+1.4**
	comp=Z,8.1nm,0.9s										
B31A	**Greenbush Farm**	**80.10**	**35**		P		**P**		**15 59 37.9**	**+0.9**
	baz=316										
ARR	**Arges**	**80.11**	**320**	⇑	*i*P		**P**		**15 59 37.9**	**+0.7**
I25A	**Rochford**	**80.14**	**42**		P		**P**		**15 59 38.0**	**+0.5**
	baz=313										
D29A	**Pettibone, Tap**	**80.14**	**37**		P		**P**		**15 59 38.4**	**+1.1**
	baz=315										
G27A	**Dupree**	**80.15**	**40**		P		**P**		**15 59 38.6**	**+1.2**
	baz=314										
O20A	**White River Ci**	**80.19**	**47**		P		**P**		**15 59 38.5**	**+0.6**
	baz=311,SNR=5.7										
O20A	**White River Ci**	**80.19**	**47**		*e*P		**P**		**15 59 38.5**	**+0.6**
	comp=Z,12nm,1.0s										
C30A	**Mose, Pekin**	**80.22**	**36**		P		**P**		**15 59 38.6**	**+0.9**
	baz=316										
PDMCI	**Parker Dam,Lak**	**80.23**	**54**		P		**P**		**15 59 39.1**	**+1.1**
	baz=308,SNR=6.2										
H26A	**Fairpoint**	**80.24**	**41**		P		**P**		**15 59 38.5**	**+0.6**
	baz=313										
A32A	**Rocking H Ranc**	**80.27**	**34**		P		**P**		**15 59 38.5**	**+0.6**
	baz=317										
MORC	**Moravsky Berou**	**80.34**	**327**	⇓	*i*P		sP		15 59 47.0	-0.5
MORC	**Moravsky Berou**	**80.34**	**327**		*e*P		**P**		**15 59 38.7**	**+0.4**
MORC	comp=Z,65nm,1.0s				pmax		pmax				
MORC	**Moravsky Berou**	**80.34**	**327**		*e*P		**P**		**15 59 38.7**	**+0.4**
	comp=Z,64nm,1.0s										
F28A	**McLaughlin**	**80.40**	**39**		P		**P**		**15 59 38.6**	**-0.1**
	baz=314										
DPC	**Dobruska-Polom**	**80.44**	**328**		*e*P		**P**		**15 59 39.8**	**+1.0**
DPC					*ep*P		**sP**		**15 59 47.6**	**-0.4**
DPC	**Dobruska-Polom**	**80.44**	**328**		*e*P		**P**		**15 59 39.8**	**+1.0**
DPC					*e*				15 59 47.6		
KRLC	**Kraliky**	**80.45**	**327**		*e*P		**P**		**15 59 39.7**	**+0.8**
KRLC					*ep*P		**sP**		**15 59 47.4**	**-0.6**
KRLC	**Kraliky**	**80.45**	**327**		*e*P		**P**		**15 59 39.7**	**+0.8**
KRLC					*e*				15 59 47.4		
LOT	**Lotru**	**80.50**	**321**	⇓	*i*P		P		15 59 28.4	-11
C31A	**Landman Farms,**	**80.51**	**36**		P		**P**		**15 59 39.5**	**+0.3**
	baz=316										
D30A	**Buchanan**	**80.51**	**37**		P		**P**		**15 59 39.9**	**+0.7**
	baz=316										
J25A	**Sunshine Ranch**	**80.53**	**42**		P		**P**		**15 59 39.1**	**-0.4**
	baz=313										
GLA	**Glamis**	**80.55**	**56**		P		**P**		**15 59 40.3**	**+0.5**
	baz=308										
GLA	**Glamis**	**80.55**	**56**		*e*P		**P**		**15 59 41.0**	**+1.3**
GLA	comp=Z,15nm,1.1s				pmax		pmax				
GLA	**Glamis**	**80.55**	**56**		*e*P		**P**		**15 59 41.0**	**+1.3**
	comp=Z,15nm,1.1s										
H27A	**Howes**	**80.59**	**40**		P		**P**		**15 59 39.6**	**-0.2**
	baz=314,SNR=5.7										
RAYN	**Ar Rayn**	**80.59**	**292**		*e*P		**P**		**15 59 39.8**	**-0.3**
	comp=Z,13nm,1.3s										
I26A	**New Underwood**	**80.59**	**41**		P		**P**		**15 59 40.8**	**+1.0**
	baz=313										
B32A	**Ashes, Strandq**	**80.63**	**35**		P		**P**		**15 59 40.4**	**+0.6**
	baz=317,SNR=6.2										
PSZ	**Piszkesteto**	**80.63**	**324**		*e*P		**P**		**15 59 40.4**	**+0.4**
PSZ	comp=Z,19nm,1.0s				pmax		pmax				
PSZ	**Piszkesteto**	**80.63**	**324**		*e*P		**P**		**15 59 40.4**	**+0.4**
	comp=Z,20nm,1.0s										
VYHS	**Vyhne**	**80.70**	**325**		*e*P		**P**		**15 59 41.1**	**+0.8**
VYHS					*e*				15 59 48.9		
VYHS	comp=Z,6.0nm,1.1s				pmax		pmax				
VYHS	**Vyhne**	**80.70**	**325**		*e*P		**P**		**15 59 41.1**	**+0.8**
VYHS					*e*				15 59 48.9		
PV09	**Paradox Valley**	**80.72**	**49**		*e*P		**P**		**15 59 42.7**	**+1.8**
A33A	**Warroad**	**80.75**	**34**		P		**P**		**15 59 41.2**	**+0.7**
	baz=318,SNR=6.8										
PV10	**Paradox Valley**	**80.86**	**49**		*e*P		**P**		**15 59 43.3**	**+1.7**
E30A	**Jud**	**80.87**	**37**		P		**P**		**15 59 41.8**	**+0.6**
	baz=316										
G28A	**Parade**	**80.88**	**39**		P		**P**		**15 59 40.4**	**-0.9**
	baz=314										
F29A	**Eureka**	**80.89**	**38**		P		**P**		**15 59 42.0**	**+0.6**
	baz=315										
PV04	**Paradox Valley**	**80.93**	**48**		*e*P		**P**		**15 59 43.7**	**+1.8**
J26A	**Sides Ranch, S**	**80.97**	**42**		P		**P**		**15 59 42.3**	**+0.4**
	baz=313										
I27A	**Quinn**	**80.99**	**41**		P		**P**		**15 59 42.5**	**+0.6**
	baz=314										
AGMN	**Agassiz Nation**	**81.01**	**35**		P		**P**		**15 59 41.2**	**-0.7**
	baz=317										
AGMN	**Agassiz Nation**	**81.01**	**35**		*e*P		**P**		**15 59 41.4**	**-0.5**
AGMN	comp=Z,7.7nm,0.9s				*e*PcP		**sP**		**15 59 50.6**	**-0.4**
PV05	**Paradox Valley**	**81.01**	**49**		*e*P		**P**		**15 59 43.7**	**+1.3**
N23A	**Red Feather La**	**81.02**	**45**		P		**P**		**15 59 43.6**	**+1.2**
	baz=312										
BRG	**Berggiesshubel**	**81.04**	**329**		*e*P		**P**		**15 59 42.5**	**+0.5**
	comp=Z,3.5nm,0.8s										
BRG					*i*				15 59 50.0		
	comp=Z,13nm,1.0s										
BRG	**Berggiesshubel**	**81.04**	**329**		*e*P		**P**		**15 59 42.5**	**+0.5**
BRG					*i*				15 59 50.0		
BRG					pmax		pmax				
	comp=Z,4.0nm,0.8s										
BRG					pmax		pmax				
	comp=Z,13nm,1.0s										
GZR	**Gura Zlata**	**81.04**	**321**	⇑	*i*P		P		15 59 38.7	-3.5
GZR	**Gura Zlata**	**81.04**	**321**	⇑	P		P		15 59 38.7	-3.5
D31A	**Mcclaflin, Tow**	**81.05**	**36**		P		**P**		**15 59 42.7**	**+0.6**
	baz=316										
CLL	**Collm**	**81.08**	**330**		*i* P		**P**		**15 59 42.1**	**-0.1**
	comp=Z,7.0nm,1.0s										
CLL					*i*				15 59 49.9		
	comp=Z,23nm,0.8s										
CLL					*e*				16 02 29.0		
CLL					*e*PP		**PP**		**16 02 46.0**	**-0.5**
CLL	**Collm**	**81.08**	**330**		*i* P		**P**		**15 59 42.1**	**-0.1**
CLL					*i*				15 59 49.9		
CLL					pmax		pmax				
	comp=Z,7.0nm,1.0s										
CLL	**Collm**	**81.08**	**330**		*e*P		**P**		**15 59 42.0**	**-0.1**
	comp=Z,24nm,0.8s										
VRAC	**Vranov**	**81.10**	**327**		P		**P**		**15 59 42.7**	**+0.4**
	comp=Z,2.4nm,0.7s,baz=169,slow=3.2,SNR=4.1										
VRAC	**Vranov**	**81.10**	**327**	⇓	*i*P		sP		15 59 51.5	0.0
B33A	**Robert and Kas**	**81.15**	**34**		P		**P**		**15 59 43.8**	**+1.1**
	baz=318										
WUAZ	**Wupatki**	**81.25**	**52**		P		**P**		**15 59 45.1**	**+1.5**
	baz=310,SNR=7.9										
WUAZ	**Wupatki**	**81.25**	**52**		*e*P		**P**		**15 59 45.3**	**+1.7**
	comp=Z,13nm,1.0s										
F30A	**Leola**	**81.29**	**38**		P		**P**		**15 59 44.0**	**+0.6**
	baz=316										
PV01	**Paradox Valley**	**81.30**	**49**		*e*P		**P**		**15 59 45.2**	**+1.3**
D32A	**Dogwood Acres,**	**81.32**	**36**		P		**P**		**15 59 43.8**	**+0.2**
	baz=317										
SMOL	**Smolenice**	**81.32**	**326**		*e*P		sP		15 59 52.7	0.0
SMOL	**Smolenice**	**81.32**	**326**		*e*		sP		15 59 52.7	0.0
E31A	**Nome**	**81.32**	**37**		P		**P**		**15 59 44.4**	**+0.8**
	baz=316										
B34A	**Aery, Baudette**	**81.42**	**34**		P		**P**		**15 59 43.8**	**-0.2**
	baz=318										
GOPC	**GO Pecny, Ondr**	**81.42**	**328**		*e*P		**P**		**15 59 44.9**	**+0.9**
GOPC					*ep*P		**sP**		**15 59 52.7**	**-0.5**
GOPC	**GO Pecny, Ondr**	**81.42**	**328**		*e*P		**P**		**15 59 44.9**	**+0.9**
GOPC					*e*				15 59 52.7		
113A	**Mohawk Valley,**	**81.42**	**55**		*e*P		**P**		**15 59 45.5**	**+1.1**
	comp=Z,6.6nm,1.0s										
C33A	**Trail**	**81.44**	**35**		P		**P**		**15 59 44.7**	**+0.5**
	baz=317										
ASF	**Jabal al Asfar**	**81.45**	**304**		P		**P**		**15 59 45.3**	**+0.6**
	comp=Z,0.9nm,0.4s,baz=135,slow=4.3,SNR=2.5										
BZS	**Buzias**	**81.46**	**322**	⇓	*i*P		**P**		**15 59 44.2**	**-0.1**
BZS	**Buzias**	**81.46**	**322**	⇓	P		**P**		**15 59 44.2**	**-0.1**
PRU	**Pruhonice**	**81.46**	**328**		*e*P		**P**		**15 59 45.0**	**+0.8**
PRU					*ep*P		**sP**		**15 59 52.8**	**-0.6**
PRU	**Pruhonice**	**81.46**	**328**		*e*P		**P**		**15 59 45.0**	**+0.8**
PRU					*e*				15 59 52.8		
I28A	**Midland**	**81.50**	**40**		P		**P**		**15 59 45.5**	**+0.9**
	baz=314										
H29A	**Onida**	**81.55**	**39**		P		**P**		**15 59 44.9**	**+0.1**
	baz=315										
SMCO	**Snowmass**	**81.56**	**47**		*e*P		**P**		**15 59 46.7**	**+1.2**
	comp=Z,5.1nm,0.9s										
J27A	**Elkhorn Farm,**	**81.58**	**41**		P		**P**		**15 59 46.1**	**+1.0**
	baz=314										
TREC	**Trest**	**81.59**	**328**		*e*P		**P**		**15 59 45.5**	**+0.5**
TREC					*ep*P		**sP**		**15 59 53.5**	**-0.6**
TREC	**Trest**	**81.59**	**328**		*e*P		**P**		**15 59 45.5**	**+0.5**
TREC					*e*				15 59 53.5		
F31A	**Hecla**	**81.65**	**38**		P		**P**		**15 59 45.8**	**+0.5**
	baz=316										
E32A	**Braaten, Kindr**	**81.69**	**36**		P		**P**		**15 59 45.9**	**+0.4**
	baz=317										
G30A	**Faulkton**	**81.73**	**38**		P		**P**		**15 59 46.6**	**+0.9**
	baz=316,SNR=6.7										
J28A	**Allard Ranch,**	**81.86**	**41**		P		**P**		**15 59 47.2**	**+0.6**
	baz=314										
D33A	**AnnSam, Waubun**	**81.86**	**35**		P		**P**		**15 59 47.0**	**+0.5**
	baz=317										
X16A	**Lo Mia Camp, P**	**81.90**	**53**		*e*P		**P**		**15 59 48.9**	**+1.8**
	comp=Z,9.1nm,1.0s										
MMAI	**Mount Meron Ar**	**81.91**	**305**		P		**P**		**15 59 47.3**	**+0.3**
	comp=Z,1.5nm,0.5s,baz=55,slow=10,SNR=6.9										
C34A	**RKJ Ranch, Bem**	**81.92**	**35**		P		**P**		**15 59 46.8**	**+0.1**
	baz=318										
B35A	**Bob, Littlefor**	**81.92**	**34**		P		**P**		**15 59 47.0**	**+0.3**
	baz=319										
I29A	**Vivian Onida**	**81.93**	**40**		P		**P**		**15 59 48.0**	**+1.2**
	baz=315										
ISCO	**Idaho Springs**	**81.93**	**46**		P		**P**		**15 59 48.5**	**+1.2**
	baz=312,SNR=5.3										
ISCO	**Idaho Springs**	**81.93**	**46**		*e*P		**P**		**15 59 48.4**	**+1.0**
ISCO	comp=Z,6.0nm,0.9s				pmax		pmax				
ISCO	**Idaho Springs**	**81.93**	**46**		*e*P		**P**		**15 59 48.4**	**+1.0**
	comp=Z,5.8nm,0.9s										
MVCO	**Mesa Verde**	**81.94**	**49**		P		**P**		**15 59 48.3**	**+1.0**
	baz=311,SNR=6.5										
MVCO	**Mesa Verde**	**81.94**	**49**		*e*P		**P**		**15 59 48.9**	**+1.6**
	comp=Z,10nm,0.9s										
CSS	**Mathiatis**	**82.02**	**308**		*e*P		**P**		**15 59 49.2**	**+1.7**
	comp=Z,3.0nm,0.9s										
CSS					*ep*P		**pP**		**15 59 55.0**	**+0.8**
G31A	**Conde**	**82.12**	**38**		P		**P**		**15 59 48.5**	**+0.7**
	baz=316										
D34A	**Park Rapids**	**82.21**	**35**		P		**P**		**15 59 48.6**	**+0.3**
	baz=318										
E33A	**Westby DABS, E**	**82.26**	**36**		P		**P**		**15 59 48.9**	**+0.4**
	baz=317										
C35A	**Jirik Farms, M**	**82.30**	**34**		P		**P**		**15 59 49.2**	**+0.5**
	baz=319										
SUSD	**Miller**	**82.31**	**39**		P		**P**		**15 59 49.2**	**+0.4**
	baz=316										
J29A	**Okreek**	**82.35**	**40**		P		**P**		**15 59 49.2**	**+0.1**
	baz=315										
G32A	**Webster**	**82.45**	**38**		P		**P**		**15 59 50.5**	**+1.0**
	baz=316										
I30A	**Oacoma**	**82.45**	**39**		P		**P**		**15 59 49.7**	**+0.1**
	baz=315										
CONA	**Conrad Observa**	**82.46**	**326**		*e*P		**P**		**15 59 50.1**	**+0.4**
	comp=Z,3.0nm,0.7s										
CONA					*ep*P		**sP**		**15 59 59.3**	**+0.5**
	comp=Z,12nm,0.8s										
KHC	**Kasperske Hory**	**82.53**	**328**		*e*P		**P**		**15 59 50.4**	**+0.5**
KHC					*ep*P		**sP**		**15 59 58.2**	**-0.9**
KHC	**Kasperske Hory**	**82.53**	**328**		*e*P		**P**		**15 59 50.3**	**+0.4**
KHC	comp=Z,7.0nm,0.8s				pmax		pmax				
KHC	**Kasperske Hory**	**82.53**	**328**		*e*P		**P**		**15 59 50.2**	**+0.4**
	comp=Z,6.6nm,0.8s										
H31A	**Wolsey**	**82.53**	**39**		P		**P**		**15 59 49.0**	**-0.9**
	baz=316										
214A	**Organ Pipe Nat**	**82.56**	**56**		P		**P**		**15 59 50.6**	**+0.2**
	baz=309										
S22A	**4UR Ranch, Cre**	**82.59**	**48**		P		**P**		**15 59 52.4**	**+1.6**
	baz=312,SNR=11										
S22A	**4UR Ranch, Cre**	**82.59**	**48**		*e*P		**P**		**15 59 52.4**	**+1.6**
	comp=Z,10nm,0.9s										
F33A	**5 Mile Ranch,**	**82.61**	**37**		P		**P**		**15 59 51.0**	**+0.6**
	baz=317										
GEC2	**GERESS Array S**	**82.69**	**328**		*e*P		**P**		**15 59 50.8**	**-0.1**
GEC2	comp=Z,8.0nm,0.8s				pmax		pmax				
GEC2	**GERESS Array S**	**82.69**	**328**		*e*P		**P**		**15 59 50.8**	**-0.1**
	comp=Z,8.3nm,0.8s										
GERES	**GERESS Array B**	**82.69**	**328**		P		**P**		**15 59 50.6**	**-0.3**
	comp=Z,1.2nm,0.5s,baz=36,slow=5.5,SNR=17										
GEA0	**GERESS Array S**	**82.70**	**328**		*e*P		**P**		**15 59 50.8**	**-0.1**
D35A	**Remer**	**82.73**	**35**		P		**P**		**15 59 49.8**	**-1.1**
	baz=319										
Q24A	**Divide**	**82.76**	**46**		P		**P**		**15 59 52.1**	**+0.4**
	baz=312										
Q24A	**Divide**	**82.76**	**46**		*e*P		**P**		**15 59 52.5**	**+0.8**
	comp=Z,5.5nm,0.8s										
C36A	**Pine Crest Far**	**82.77**	**33**		P		**P**		**15 59 50.3**	**-0.8**
	baz=319										
X18A	**Snowflake**	**82.77**	**52**		*e*P		**P**		**15 59 53.4**	**+1.7**
	comp=Z,17nm,1.5s										
VTS	**Vitosha**	**82.78**	**319**	⇓	*i*P		**P**		**15 59 52.2**	**+0.8**
VTS	**Vitosha**	**82.78**	**319**		*e*P		**P**		**15 59 52.3**	**+0.8**
VTS					pmax		pmax				
	comp=Z,7.0nm,0.8s										
VTS	**Vitosha**	**82.78**	**319**		*e*P		**P**		**15 59 52.3**	**+0.8**
	comp=Z,6.8nm,0.8s										
J30A	**Dallas**	**82.84**	**40**		P		**P**		**15 59 51.1**	**-0.6**
	baz=315										
E35A	**Pequot Lakes**	**82.96**	**35**		P		**P**		**15 59 51.9**	**-0.3**
	baz=318										
G33A	**Ortonville**	**83.01**	**37**		P		**P**		**15 59 52.3**	**-0.2**
	baz=317										
H32A	**Carlson Farm,**	**83.03**	**38**		P		**P**		**15 59 52.3**	**-0.3**
	baz=317										
GRFO	**Grafenberg**	**83.06**	**330**		*e*P		**P**		**15 59 53.1**	**+0.5**
GRFO	comp=Z,23nm,0.9s				pmax		pmax				
GRFO	**Grafenberg**	**83.06**	**330**		*e*P		**P**		**15 59 53.1**	**+0.5**
	comp=Z,22nm,0.9s										
D36A	**Goodland**	**83.06**	**34**		P		**P**		**15 59 53.3**	**+0.6**
	baz=319										
C37A	**Embarrass**	**83.08**	**33**		P		**P**		**15 59 51.3**	**-1.4**
	baz=320										
F34A	**Alexandria**	**83.13**	**36**		P		**P**		**15 59 53.1**	**0.0**
	baz=318										
EKA	**Eskdalemuir Ar**	**83.13**	**340**		P		**P**		**15 59 53.1**	**+0.2**
	comp=Z,1.7nm,0.7s,baz=36,slow=5.1,SNR=6.3										
OGNE	**Ogallala**	**83.16**	**43**		P		**P**		**15 59 52.5**	**-0.9**
	baz=314										
EYMN	**Ely**	**83.21**	**33**		P		**P**		**15 59 53.3**	**-0.1**
	baz=320										
MOA	**Molln**	**83.22**	**327**		*ep*P		pP		16 00 02.5	+2.2
	comp=Z,5.4nm,0.7s										
K30A	**Basset**	**83.23**	**40**		P		**P**		**15 59 53.5**	**-0.2**
	baz=315										
H33A	**Prehn Over Nor**	**83.24**	**38**		P		**P**		**15 59 54.5**	**+0.9**
	baz=317										
G34A	**Benson**	**83.36**	**37**		P		**P**		**15 59 54.9**	**+0.7**
	baz=318										
SDCO	**Great Sand Dun**	**83.37**	**47**		P		**P**		**15 59 55.9**	**+1.1**
	baz=312,SNR=7.9										
SDCO	**Great Sand Dun**	**83.37**	**47**		*e*P		**P**		**15 59 56.4**	**+1.5**
	comp=Z,8.1nm,1.0s										
F35A	**Swanville**	**83.41**	**36**		P		**P**		**15 59 54.7**	**+0.2**
	baz=318										
C38A	**Sawbill Land.**	**83.48**	**33**		P		**P**		**15 59 54.6**	**-0.3**
	baz=320										
E36A	**McGregor**	**83.52**	**34**		P		**P**		**15 59 55.0**	**-0.1**
	baz=319										
J32A	**Parkston**	**83.64**	**39**		P		**P**		**15 59 56.4**	**+0.6**
	baz=316										
TUC	**Tucson**	**83.66**	**54**		P		**P**		**15 59 56.9**	**+0.7**
	baz=310										
TUC	**Tucson**	**83.66**	**54**		*e*P		**P**		**15 59 57.5**	**+1.3**
TUC	comp=Z,6.0nm,1.0s				pmax		pmax				
TUC	**Tucson**	**83.66**	**54**		*e*P		**P**		**15 59 57.5**	**+1.3**
	comp=Z,6.4nm,1.0s										
I33A	**Coleman**	**83.67**	**38**		P		**P**		**15 59 56.0**	**+0.1**
	baz=317										
K31A	**O'Neill**	**83.72**	**40**		P		**P**		**15 59 56.8**	**+0.6**
	baz=316										
SOKA	**Soboth**	**83.77**	**326**		*i* PcP		**P**		**15 59 56.6**	**+0.2**
	comp=Z,6.9nm,1.0s,SNR=6.9										
SOKA					*ep*P		**sP**		**16 00 04.8**	**-0.8**
	comp=Z,32nm,1.0s										
E37A	**Wrenshall**	**83.86**	**34**		P		**P**		**15 59 56.7**	**-0.1**
	baz=320										
G35A	**Watkins**	**83.92**	**36**		P		**P**		**15 59 57.9**	**+0.8**
	baz=318										
ECSD	**EROS Data Cent**	**83.99**	**38**		P		**P**		**15 59 57.9**	**+0.4**
	baz=317										
ECSD	**EROS Data Cent**	**83.99**	**38**		*e*P		**P**		**15 59 58

	comp=Z,20nm,0.8s							
M34A	**Aspy Farms, Fr**	**85.64**	**40**	P		**P**	**16 00 06.5**	**+0.6**
	baz=317							
J37A	**Redenius Farm,**	**85.80**	**37**	P		**P**	**16 00 07.1**	**+0.5**
	baz=319							
K36A	**Gilmore City**	**85.87**	**38**	P		**P**	**16 00 07.5**	**+0.6**
	baz=319							
FUORN	**Ofenpass-Fuorn**	**85.88**	**329**	*e*P		**P**	**16 00 07.8**	**+0.5**
	comp=Z,23nm,0.9s							
CBKS	**Cedar Bluff**	**85.91**	**43**	P		**P**	**16 00 07.5**	**+0.2**
	baz=316							
DAVOX	**Davos/Dischmat**	**85.91**	**329**	P		**P**	**16 00 07.6**	**+0.2**
	comp=Z,0.6nm,0.3s,baz=19,slow=8.9,SNR=2.2							
P32A	**Huiting Farm,**	**85.95**	**42**	P		**P**	**16 00 07.8**	**+0.4**
	baz=316							
M35A	**Neola**	**86.12**	**39**	P		**P**	**16 00 08.5**	**+0.3**
	baz=318							
L36A	**Harm Buss Farm**	**86.16**	**38**	P		**P**	**16 00 08.6**	**+0.2**
	baz=319							
O33A	**Hebron**	**86.16**	**41**	P		**P**	**16 00 08.3**	**-0.2**
	baz=317							
K37A	**Belmond**	**86.17**	**37**	P		**P**	**16 00 08.1**	**-0.4**
	baz=319							
N34A	**Lincoln**	**86.17**	**40**	P		**P**	**16 00 08.3**	**-0.3**
	baz=318							
J38A	**Wedel Dairy, R**	**86.30**	**36**	P		**P**	**16 00 08.0**	**-1.2**
	baz=320							
TUE	**Stuetta**	**86.38**	**329**	*e*P		**P**	**16 00 11.4**	**+1.8**
	comp=Z,8.8nm,1.0s							
TUE				*e*pP		**pP**	**16 00 17.4**	**+0.9**
Q32A	**Meitler Ranch,**	**86.42**	**42**	P		**P**	**16 00 10.0**	**+0.1**
	baz=316							
O34A	**Beatrice**	**86.55**	**41**	P		**P**	**16 00 09.2**	**-1.2**
	baz=317							
P33A	**Williams Farm,**	**86.57**	**42**	P		**P**	**16 00 10.7**	**+0.2**
	baz=317							
M36A	**Felix, Anita**	**86.58**	**39**	P		**P**	**16 00 10.8**	**+0.3**
	baz=318							
L37A	**Phoenix Point,**	**86.59**	**38**	P		**P**	**16 00 10.5**	**-0.1**
	baz=319							
N35A	**Tabor**	**86.59**	**40**	P		**P**	**16 00 10.6**	**0.0**
	baz=318							
K38A	**Parkersburg**	**86.67**	**37**	P		**P**	**16 00 10.3**	**-0.7**
	baz=320							
R32A	**Long Quarter,**	**86.75**	**43**	P		**P**	**16 00 11.0**	**-0.5**
	baz=316							
Q33A	**Connelly Farm,**	**86.81**	**42**	P		**P**	**16 00 11.3**	**-0.4**
	baz=317							
P34A	**Walnut Farm, R**	**86.95**	**41**	P		**P**	**16 00 11.2**	**-1.2**
	baz=317							
N36A	**Muff Farm, Cla**	**86.97**	**39**	P		**P**	**16 00 11.6**	**-0.9**
	baz=318							
S32A	**Newby Ranch, P**	**87.15**	**44**	P		**P**	**16 00 12.4**	**-0.9**
	baz=316							
R33A	**Olander Ranch,**	**87.23**	**43**	P		**P**	**16 00 12.6**	**-1.2**
	baz=317							
Q34A	**Chapman**	**87.34**	**42**	P		**P**	**16 00 12.8**	**-1.5**
	baz=317							
P35A	**Duane Minner,**	**87.38**	**41**	P		**P**	**16 00 12.9**	**-1.6**
	baz=318							
KSU1	**Kansas State U**	**87.39**	**41**	P		**P**	**16 00 13.6**	**-0.9**
	baz=318							
KSU1	**Kansas State U**	**87.39**	**41**	*e*P		**P**	**16 00 15.2**	**+0.7**
	comp=Z,15nm,0.9s							
N37A	**Lee Faris, Mou**	**87.39**	**39**	P		**P**	**16 00 13.5**	**-1.0**
	baz=319							
M38A	**Pleasantville**	**87.40**	**38**	P		**P**	**16 00 13.0**	**-1.4**
	baz=320							
O36A	**Bolckow**	**87.48**	**40**	P		**P**	**16 00 13.6**	**-1.3**
	baz=318							
MNTX	**Cornudas Mount**	**87.52**	**52**	P		**P**	**16 00 14.5**	**-0.8**
	baz=313							
MNTX	**Cornudas Mount**	**87.52**	**52**	*e*P		**P**	**16 00 16.0**	**+0.8**
	comp=Z,11nm,1.4s							
T32A	**Huddler Ranch,**	**87.53**	**44**	P		**P**	**16 00 14.1**	**-1.2**
	baz=316							
MSTX	**Muleshoe**	**87.56**	**48**	P		**P**	**16 00 14.6**	**-1.0**
	baz=314							
MSTX	**Muleshoe**	**87.56**	**48**	P		**P**	**16 00 16.3**	**+0.7**
AMTX	**Amarillo**	**87.58**	**47**	P		**P**	**16 00 14.7**	**-0.9**
	baz=315							
AMTX	**Amarillo**	**87.58**	**47**	*e*P		**P**	**16 00 16.9**	**+1.3**
	comp=Z,11nm,0.8s							
P36A	**Good Intent, A**	**87.74**	**40**	P		**P**	**16 00 15.0**	**-1.2**
	baz=318							
N38A	**Joes South For**	**87.85**	**38**	P		**P**	**16 00 15.4**	**-1.3**
	baz=320							
Q35A	**Mercer Eighty,**	**87.87**	**41**	P		**P**	**16 00 16.3**	**-0.5**
	baz=318							
O37A	**Wolven Farm, M**	**87.87**	**39**	P		**P**	**16 00 16.7**	**0.0**
	baz=319							
T33A	**Patterson Ranc**	**87.97**	**44**	P		**P**	**16 00 17.5**	**+0.2**
	baz=317							
U32A	**Winter Ranch,**	**88.06**	**45**	P		**P**	**16 00 17.8**	**0.0**
	baz=316							
Q36A	**Arnold C. Orve**	**88.09**	**41**	P		**P**	**16 00 16.9**	**-1.0**
	baz=318							
S34A	**Willow Spring**	**88.14**	**43**	P		**P**	**16 00 17.8**	**-0.3**
	baz=317							
N39A	**Derby Farms, D**	**88.15**	**38**	P		**P**	**16 00 16.9**	**-1.2**
	baz=320							
R35A	**Emporia Munici**	**88.18**	**42**	P		**P**	**16 00 17.8**	**-0.5**
	baz=318							
P37A	**Lathrop**	**88.20**	**40**	P		**P**	**16 00 17.4**	**-1.0**
	baz=319							
V32A	**Arapaho**	**88.50**	**45**	P		**P**	**16 00 20.2**	**+0.3**
	baz=316							
U33A	**Lingo Farm, Me**	**88.51**	**44**	P		**P**	**16 00 19.2**	**-0.7**
	baz=317							
S35A	**Otter Creek Ra**	**88.58**	**42**	P		**P**	**16 00 19.1**	**-1.1**
	baz=318							
P38A	**Dawn**	**88.59**	**39**	P		**P**	**16 00 19.1**	**-1.1**
	baz=319							
W32A	**Sentinel**	**88.82**	**46**	P		**P**	**16 00 20.2**	**-1.2**
	baz=316							
U34A	**Anderson Ranch**	**88.83**	**44**	P		**P**	**16 00 20.9**	**-0.5**
	baz=317							
S36A	**Lake Cedric, C**	**88.94**	**42**	P		**P**	**16 00 20.9**	**-1.0**
	baz=318							
Q38A	**Cooks Store, C**	**89.05**	**40**	P		**P**	**16 00 22.2**	**-0.1**
	baz=319							
T36A	**Boggs Farm, Ca**	**89.28**	**42**	P		**P**	**16 00 22.2**	**-1.2**
	baz=318							
V34A	**Guthrie**	**89.28**	**44**	P		**P**	**16 00 22.5**	**-1.0**
	baz=317							
X32A	**Elmer**	**89.30**	**46**	P		**P**	**16 00 23.0**	**-0.7**
	baz=316							
S37A	**Fort Scott**	**89.32**	**41**	P		**P**	**16 00 22.5**	**-1.1**
	baz=319							
P40A	**Paris**	**89.40**	**38**	P		**P**	**16 00 23.1**	**-0.9**
	baz=320							
R38A	**Fenwick Farm,**	**89.48**	**40**	P		**P**	**16 00 24.2**	**-0.2**
	baz=319							
W34A	**Bridge Creek,**	**89.57**	**45**	P		**P**	**16 00 24.0**	**-0.9**
	baz=317							
V35A	**Meyer Ranch, C**	**89.71**	**44**	P		**P**	**16 00 24.4**	**-1.1**
	baz=317							
T37A	**Cheneyville 18**	**89.75**	**42**	P		**P**	**16 00 24.9**	**-0.8**
	baz=318							
Q40A	**Laux Farm, Aux**	**89.80**	**39**	P		**P**	**16 00 25.0**	**-0.9**
	baz=320							
R39A	**Chumby, Stover**	**89.83**	**40**	P		**P**	**16 00 25.0**	**-1.1**
	baz=320							
U36A	**Oologah**	**89.85**	**43**	P		**P**	**16 00 24.9**	**-1.2**
	baz=318							
S38A	**Stockton**	**89.90**	**41**	P		**P**	**16 00 25.4**	**-1.0**
	baz=319							
HDIL	**Hopedale**	**89.94**	**36**	P		**P**	**16 00 25.2**	**-1.3**
	baz=322							
Y33A	**Hilltop Ranch,**	**89.97**	**46**	P		**P**	**16 00 25.7**	**-1.1**
	baz=316							
X34A	**Smith Ranch, M**	**90.00**	**45**	P		**P**	**16 00 26.3**	**-0.6**
	baz=317							
W35A	**Tecumseh**	**90.14**	**44**	P		**P**	**16 00 27.1**	**-0.5**
	baz=317							
T38A	**Diamond**	**90.14**	**41**	P		**P**	**16 00 26.8**	**-0.8**
	baz=319							
S39A	**Bolivar**	**90.16**	**40**	P		**P**	**16 00 27.0**	**-0.6**
	baz=320							
U37A	**Salina**	**90.17**	**42**	P		**P**	**16 00 27.1**	**-0.6**
	baz=318							
TUL1	**Leonard**	**90.17**	**43**	P		**P**	**16 00 27.1**	**-0.6**
	baz=318							
V36A	**Jenks**	**90.18**	**43**	P		**P**	**16 00 26.8**	**-0.9**
	baz=318							
TX31	**Lajitas Ar. Si**	**90.20**	**52**	*e*P		**P**	**16 00 29.1**	**+1.0**
TXAR	**Lajitas Array**	**90.21**	**52**	P		**P**	**16 00 29.1**	**+1.0**
	comp=Z,3.1nm,0.7s,baz=297,slow=3.2,SNR=41							

ABTX	**Abilene, Hawle**	**90.37**	**48**	P		**P**	**16 00 28.0**	**-0.7**
	baz=316							
Z33A	**Whitaker Ranch**	**90.41**	**47**	P		**P**	**16 00 28.0**	**-0.9**
	baz=316							
Y34A	**Reagan Ranch,**	**90.51**	**45**	P		**P**	**16 00 28.5**	**-0.8**
	baz=317							
U38A	**Gravette**	**90.54**	**42**	P		**P**	**16 00 28.5**	**-0.9**
	baz=319							
V37A	**Hulbert**	**90.55**	**43**	P		**P**	**16 00 28.4**	**-1.0**
	baz=318							
X35A	**Drake**	**90.63**	**45**	P		**P**	**16 00 30.2**	**+0.4**
	baz=317							
Z34A	**Collier Ranch,**	**90.84**	**46**	P		**P**	**16 00 31.2**	**+0.3**
	baz=317							
V38A	**Canehill**	**90.96**	**42**	P		**P**	**16 00 31.4**	**0.0**
	baz=319							
U39A	**Green Forest**	**91.06**	**41**	P		**P**	**16 00 32.5**	**+0.7**
	baz=319							
SFIN	**Lafayette**	**91.10**	**35**	P		**P**	**16 00 32.0**	**+0.1**
	baz=323							
233A	**Rising Star**	**91.24**	**48**	P		**P**	**16 00 33.0**	**+0.2**
	baz=316							
Z35A	**Perchaven, San**	**91.25**	**46**	P		**P**	**16 00 33.1**	**+0.4**
	baz=317							
X37A	**Clayton**	**91.38**	**44**	P		**P**	**16 00 33.5**	**+0.1**
	baz=318							
Y36A	**Durant**	**91.38**	**45**	P		**P**	**16 00 32.6**	**-0.8**
	baz=318							
V39A	**Pettigrew**	**91.39**	**42**	P		**P**	**16 00 33.6**	**+0.2**
	baz=319							
U40A	**Yellville**	**91.41**	**41**	P		**P**	**16 00 34.0**	**+0.5**
	baz=320							
W38A	**Poteau**	**91.49**	**43**	P		**P**	**16 00 34.3**	**+0.5**
	baz=319							
X38A	**Whitesboro**	**91.62**	**43**	P		**P**	**16 00 34.9**	**+0.5**
	baz=316							
333A	**Richland Sprin**	**91.69**	**48**	P		**P**	**16 00 35.2**	**+0.4**
	baz=316							
Y37A	**Hugo**	**91.70**	**44**	P		**P**	**16 00 35.1**	**+0.3**
	baz=318							
234A	**Clairette**	**91.70**	**47**	P		**P**	**16 00 35.4**	**+0.6**
	baz=317							
135A	**Vickery Place,**	**91.72**	**46**	P		**P**	**16 00 35.3**	**+0.3**
	baz=317							
Z36A	**Blue Ridge**	**91.76**	**45**	P		**P**	**16 00 35.0**	**-0.1**
	baz=318							
JCT	**Junction City**	**91.80**	**49**	P		**P**	**16 00 34.5**	**-0.9**
	baz=316							
V40A	**Witts Springs**	**91.85**	**41**	P		**P**	**16 00 34.2**	**-1.3**
	baz=320							
WHTX	**Lake Whitney,**	**92.11**	**47**	P		**P**	**16 00 35.7**	**-1.0**
	baz=317							
334A	**Lometa**	**92.13**	**48**	P		**P**	**16 00 35.9**	**-1.0**
	baz=317							
X39A	**Fountain Ranch**	**92.13**	**43**	P		**P**	**16 00 37.5**	**+0.7**
	baz=319							
Y38A	**Idabel**	**92.23**	**44**	P		**P**	**16 00 36.4**	**-0.9**
	baz=319							
Z37A	**Pogue Cattle C**	**92.27**	**45**	P		**P**	**16 00 36.5**	**-0.9**
	baz=318							
136A	**Ennis**	**92.29**	**46**	P		**P**	**16 00 37.3**	**-0.3**
	baz=318							
MIAR	**Mount Ida**	**92.40**	**43**	P		**P**	**16 00 37.3**	**-0.7**
	baz=319							
MIAR	**Mount Ida**	**92.40**	**43**	*e*P		**P**	**16 00 38.9**	**+0.9**
MIAR					pmax	pmax		
	comp=Z,11nm,0.9s							
MIAR	**Mount Ida**	**92.40**	**43**	*e*P		**P**	**16 00 38.9**	**+0.9**
	comp=Z,11nm,0.9s							
434A	**Burnet**	**92.48**	**48**	P		**P**	**16 00 39.0**	**+0.5**
	baz=316							
533A	**Kerrville**	**92.56**	**49**	P		**P**	**16 00 38.7**	**-0.2**
	baz=316							
Y39A	**Lockesburg**	**92.57**	**43**	P		**P**	**16 00 39.3**	**+0.5**
	baz=319							
Z38A	**Mt. Pleasant**	**92.59**	**44**	P		**P**	**16 00 38.9**	**0.0**
	baz=318							
W41A	**Tony Mavity, V**	**92.63**	**41**	P		**P**	**16 00 38.9**	**-0.2**
	baz=320							
W41B	**Gary Mavity, V**	**92.63**	**41**	P		**P**	**16 00 39.1**	**0.0**
	baz=320							
336A	**Riesel**	**92.90**	**47**	P		**P**	**16 00 39.8**	**-0.6**
	baz=317							
633A	**Saathoff Ranch**	**92.91**	**49**	P		**P**	**16 00 40.8**	**+0.4**
	baz=316							
435B	**Jarrell**	**92.91**	**48**	P		**P**	**16 00 40.4**	**-0.1**
	baz=317							
534A	**Blanco**	**92.92**	**49**	P		**P**	**16 00 40.8**	**+0.2**
	baz=316							
Y40A	**Okolona**	**92.96**	**43**	P		**P**	**16 00 40.3**	**-0.3**
	baz=319							
138A	**Matatall Enter**	**92.97**	**45**	P		**P**	**16 00 40.0**	**-0.7**
	baz=318							
Z39A	**Irene McRaven,**	**93.05**	**44**	P		**P**	**16 00 41.0**	**0.0**
	baz=319							
733A	**Divot King Ran**	**93.36**	**50**	P		**P**	**16 00 42.7**	**+0.1**
	baz=316							
536A	**Bastrop**	**93.73**	**48**	P		**P**	**16 00 44.3**	**+0.1**
	baz=317							
635A	**Leesville**	**93.81**	**49**	P		**P**	**16 00 44.5**	**-0.1**
	baz=316							
636A	**Smothers Creek**	**94.17**	**48**	P		**P**	**16 00 46.7**	**+0.4**
	baz=317							
TORD	**Torodi Ar. Bea**	**117.29**	**315**	PKP		**PKPdf**	**16 06 12.3**	**-0.8**
	comp=Z,0.3nm,0.5s,baz=27,slow=2.4,SNR=3.2							
TORD				PP		PP	16 07 28.5	+5.3
	comp=Z,2.6nm,1.1s,baz=28,slow=5.7,SNR=5.6							
DBIC	**Dimbokro**	**126.25**	**317**	PKP		**PKPdf**	**16 06 30.1**	**-0.3**
	comp=Z,2.1nm,0.7s,baz=46,slow=3.0,SNR=3.7							
BOSA	**Bosh'f**	**126.49**	**259**	PKP		**PKPdf**	**16 06 31.2**	**+0.6**
	comp=Z,2.4nm,0.9s,baz=337,slow=3.1,SNR=3.4							
LPAZ	**La Paz**	**146.78**	**59**	PKPbc		**PKPbc**	**16 07 10.0**	**-0.5**
	comp=Z,7.6nm,0.8s,baz=345,slow=4.4,SNR=29							
LPAZ	**La Paz**	**146.78**	**59**	PKP2		**PKPbc**	**16 07 10.0**	**-0.5**
LPAZ					pmax	pmax		
	comp=Z,8.0nm,0.8s							
LPAZ	**La Paz**	**146.78**	**59**	*e*PKPdf		**PKPdf**	**16 07 09.6**	**+0.9**
PB11	**IPOC Station P**	**147.99**	**66**	*e*PKPbc		**PKPbc**	**16 07 14.2**	**+1.0**

*IDC **17** 15:53:36.8±1.7,35°.87N×140°.62E,h0km,mb3.4/3, mb1 3.5/6,mb1mx3.2/65,mbtmp3.4/6,ML3.0/3,Error ellipse: s-maj=45.9km s-min=21.8km az=74.0*
*ISCJB **17** 15:53:40.5±0.6,35°.91N±0°.05×140°.61E±0°.08,h50km, mb3.4/3,Error ellipse: s-maj=9.7km s-min=6.2km az=151.5*
*JMA **17** 15:53:41.6,35°.86N×140°.47E,h34km±1km,M3.1*
JMA Felt I J1.

ISC 17 15:53:41.9±1.0,35°.90N±0°.06×140°.61E±0°.07,h50km,n11, σ1§50/15,mb3.4/3,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
CHOJ	**Chosi**	**0.29**	**134**	P	**Pn**	**15 53 49.9**	**-1.0**
CHOJ				S	**Sn**	**15 53 55.5**	**-1.8**
JYT	**Yasato**	**0.47**	**314**	P	**Pn**	**15 53 51.2**	**-1.5**
JYT				S	**Sn**	**15 53 57.5**	**-3.0**
JHO	**Hitachi**	**0.71**	**357**	P	**Pn**	**15 53 55.2**	**-0.5**
JHO				*e*S	**Sn**	**15 54 05.0**	**-0.8**
BSO4	**Boso 4**	**0.94**	**194**	P	**Pn**	**15 53 58.1**	**-0.6**
MJAR	**Matsushiro Arr**	**2.04**	**289**	Pn	**Pn**	**15 54 13.3**	**-0.5**
	1.7nm,0.3s,baz=99,slow=9.4,SNR=17						
MAT	**Matsushiro**	**2.04**	**289**	P	**Pn**	**15 54 13.8**	**0.0**
MAT				*e*S	**Sn**	**15 54 37.5**	**-0.7**
JHJ	**Hachijo jima 2**	**2.86**	**194**	Pn	**Pn**	**15 54 23.1**	**-1.9**
	17nm,0.3s,baz=65,slow=21,SNR=5.2						
ASAJ	**Asahikawa**	**8.34**	**10**	Pn	**Pn**	**15 55 40.0**	**-0.1**
	0.2nm,0.3s,baz=243,slow=18,SNR=2.6						
KURBB	**Kurchatov Arra**	**46.19**	**309**	P	**P**	**16 02 02.7**	**+1.1**
	0.4nm,0.8s,baz=82,slow=7.6,SNR=2.6						
WRA	**Warramunga Arr**	**55.86**	**187**	P	**P**	**16 03 16.1**	**+1.7**
	0.2nm,0.6s,baz=1.9,slow=7.6,SNR=4.7						
ASAR	**Alice Springs**	**59.59**	**187**	P	**P**	**16 03 41.9**	**+1.4**
	0.3nm,0.9s,baz=12,slow=9.6,SNR=2.8						

*ISCJB **17** 15:58:05.9±1.2,38°.6N±0°.1×144°.1E±0°.2,h14km,mb3.5/4, MS3.5/2,Error ellipse: s-maj=21.1km s-min=15.2km az=27.0*
*IDC **17** 15:58:06.0±1.3,38°.56N×144°.13E,h0km,mb3.5/4, mb1 3.6/7,mb1mx3.3/66,mbtmp3.5/7,ML3.3/2,MS3.4/2, Ms1 3.4/2,ms1mx2.9/24,Error ellipse: s-maj=32.6km s-min=22.4km az=109.0*

ISC 17 15:58:08.3±1.3,38°.69N±0°.09×144°.1E±0°.1,h14km,n8, σ2§08/8,mb3.5/4,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
MJAR	**Matsushiro Arr**	**5.14**	**247**	Pn	**Pn**	**15 59 24.3**	**-0.5**
	0.6nm,0.3s,baz=58,slow=10,SNR=7.0						
ASAJ	**Asahikawa**	**5.54**	**349**	Pn	**Pn**	**15 59 30.3**	**+0.1**
	1.0nm,0.3s,baz=206,slow=14,SNR=14						
ASAJ				Sn	**Sn**	**16 00 30.4**	**-3.2**
	0.2nm,0.3s,baz=252,slow=19,SNR=2.1						
USRK	**Ussuriysk Ar.**	**10.61**	**305**	Pn	**Pn**	**16 00 41.8**	**+1.9**
	0.1nm,0.3s,baz=93,slow=15,SNR=3.8						
SEY	**Seymchan**	**24.79**	**9**	P	**P**	**16 03 31.9**	**+2.5**
	0.9nm,0.7s,baz=162,slow=19,SNR=6.9						
MKAR	**Makanchi Array**	**45.05**	**301**	P	**P**	**16 06 23.1**	**-0.5**
	0.5nm,0.9s,baz=92,slow=7.6,SNR=3.8						
ILAR	**Eielson Array**	**46.96**	**33**	P	**P**	**16 06 38.1**	**-0.2**
	0.3nm,0.8s,baz=271,slow=5.0,SNR=3.9						
WRA	**Warramunga Arr**	**59.04**	**191**	P	**P**	**16 08 06.8**	**-1.0**
	1.0nm,0.9s,baz=8.6,slow=7.1,SNR=15						
WRA				LR	LR	16 32 55.0	
	comp=Z,55nm,21.6s,baz=310,slow=36						
ASAR	**Alice Springs**	**62.76**	**191**	LR	LR	16 35 24.1	
	comp=Z,22nm,21.8s,baz=26,slow=36						

*IDC **17** 15:58:29.5±0.7,35°.96N×23°.15E,h0km,mb4.0/14, mb1 4.0/21,mb1mx3.8/65,mbtmp3.9/21,ML3.5/7,Error ellipse: s-maj=16.1km s-min=13.3km az=13.0*
*ATH **17** 15:58:30.9,35°.86N×23°.24E,h19km±1km,ML3.7/5,Error ellipse: s-maj=2.2km s-min=0.9km az=229.0*
*ISCJB **17** 15:58:30.6±0.6,35°.77N±0°.03×23°.14E±0°.03,h20km±4km, mb3.8/15,Error ellipse: s-maj=5.6km s-min=3.0km az=140.0*
*THE **17** 15:58:31.3,35°.84N×23°.21E,h0km±1km,ML3.7/11,Error ellipse: s-maj=2.0km s-min=0.7km az=220.0*
*CSEM **17** 15:58:31.5±0.2,35°.83N×23°.26E,h8km,ML3.7,Error ellipse: s-maj=7.3km s-min=3.2km az=46.0*
*HLW **17** 15:58:33.7,36°.02N×23°.68E,h33km±17km,Md3.4,Ml3.0*

ISC 17 15:58:30.5±0.8,35°.83N±0°.03×23°.15E±0°.03,h14km±5km, n171,σ1§17/208,mb3.9/15,2C-3D,Crete

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
ANKY	**Antikythira Is**	**0.13**	**72**	P	**Pg**	**15 58 34.1**	**0.0**
ANKY				S	**Sg**	**15 58 36.5**	**0.0**
ANKY	**Antikythira Is**	**0.13**	**72**	P	**Pg**	**15 58 34.1**	**0.0**
ANKY				S	**Sg**	**15 58 36.1**	**-0.4**
ANKY	**Antikythira Is**	**0.13**	**72**	P	**Pg**	**15 58 34.1**	**0.0**
ANKY				S	**Sg**	**15 58 36.1**	**-0.4**
ANKY				AML	AML	15 58 37.3	
ANKY				AML	AML	15 58 37.6	
KYTH	**Kithira**	**0.46**	**349**	P	**Pg**	**15 58 39.6**	**-0.2**
KYTH				S	**Sg**	**15 58 46.1**	**+0.1**
KYTH	**Kithira**	**0.46**	**349**	P	**Pg**	**15 58 39.6**	**-0.2**
KYTH				S	**Sg**	**15 58 46.1**	**+0.1**
KYTH	**Kithira**	**0.46**	**349**	P	**Pg**	**15 58 39.5**	**-0.2**
IMMV	**Iera Moni Meta**	**0.77**	**118**	P	**Pg**	**15 58 44.8**	**-0.8**
IMMV				S	**Sg**	**15 58 56.1**	**+0.4**
IMMV	**Iera Moni Meta**	**0.77**	**118**	P	**Pg**	**15 58 44.8**	**-0.8**
IMMV				S	**Sg**	**15 58 53.4**	**-2.3**
IMMV	**Iera Moni Meta**	**0.77**	**118**	P	**Pg**	**15 58 44.8**	**-0.8**
IMMV				S	**Sg**	**15 58 53.4**	**-2.3**
IMMV				AML	AML	15 58 56.7	
	comp=N,11828μm,0.3s						
IMMV				AML	AML	15 58 58.4	
	comp=E,15716μm,0.3s						
VLI	**Veliai**	**0.91**	**349**	P	**Pg**	**15 58 47.7**	**-0.4**
VLI				S	**Sn**	**15 59 01.6**	**-0.1**
VLI	**Veliai**	**0.91**	**349**	P	**Pb**	**15 58 48.2**	**+0.2**
VLI				S	**Sb**	**15 59 01.0**	**+1.1**
VLI	**Veliai**	**0.91**	**349**	P	**Pb**	**15 58 48.2**	**+0.2**
VLI				S	**Sb**	**15 59 01.0**	**+1.1**
VLI				AML	AML	15 59 03.4	
	comp=N,6071μm,0.3s						
VLI				AML	AML	15 59 05.0	
	comp=E,5636μm,0.4s						
VAM	**Vamos**	**0.95**	**116**	P	**Pg**	**15 58 48.4**	**-0.6**
VAM				S	**Sg**	**15 59 01.5**	**0.0**
VAM	**Vamos**	**0.95**	**116**	P	**Pg**	**15 58 48.5**	**-0.6**
VAM				S	**Sg**	**15 59 01.0**	**-0.5**
GVD	**Gavdhos**	**1.25**	**142**	P	**Pn**	**15 58 53.7**	**+0.1**
GVD	**Gavdhos**	**1.25**	**142**	P	**Pn**	**15 58 53.7**	**+0.1**
GVD	**Gavdhos**	**1.25**	**142**	P	**Pn**	**15 58 53.1**	**-0.4**
MHLO	**Agia Marina, M**	**1.33**	**49**	P	**Pn**	**15 58 55.0**	**+0.3**
MHLO				S	**Sg**	**15 59 13.8**	**+0.3**
MHLO	**Agia Marina, M**	**1.33**	**49**	P	**Pn**	**15 58 55.0**	**+0.3**
MHLO				S	**Sb**	**15 59 12.6**	**+0.4**
MHLO	**Agia Marina, M**	**1.33**	**49**	P	**Pb**	**15 58 55.8**	**+0.6**
MHLO				S	**Sb**	**15 59 12.6**	**+0.4**
MHLO				AML	AML	15 59 15.0	
	comp=E,10687μm,0.4s						
MHLO				AML	AML	15 59 15.7	
	comp=N,14652μm,0.3s						
IDI	**Anoyia**	**1.52**	**110**	Pn	**Pb**	**15 58 58.9**	**+0.4**
	comp=N,67nm,0.3s,baz=262,slow=10.0,SNR=157						
IDI				Sn	**Sn**	**15 59 17.1**	**+0.2**
	comp=N,105nm,0.3s,baz=266,slow=19,SNR=8.2						
IDI				LR	LR	15 59 44.1	
	comp=N,153nm,21.9s,baz=245,slow=48						
IDI	**Anoyia**	**1.52**	**110**	⇓*i*P	**Pb**	**15 58 59.0**	**+0.5**
IDI	**Anoyia**	**1.52**	**110**	P	**Pn**	**15 58 58.5**	**+1.2**
IDI				S	**Sg**	**15 59 20.2**	**+0.7**
IDI	**Anoyia**	**1.52**	**110**	P	**Pn**	**15 58 58.5**	**+1.2**
IDI				S	**Sg**	**15 59 20.2**	**+0.7**
IDI	**Anoyia**	**1.52**	**110**	P	**Pb**	**15 58 59.2**	**+0.7**
KRND	**KRANIDI**	**1.55**	**0**	P	**Pb**	**15 58 58.8**	**-0.2**
**KR

AMT	Artemida-Makis	2.06	326		P		Pb	15 59 08.5	+0.8
AMT	Artemida-Makis	2.06	326		P		Pb	15 59 08.5	+0.8
AMT	Artemida-Makis	2.06	326		P		Pg	15 59 09.2	-0.8
VLY	Voula,Athens	2.09	14		P		Pn	15 59 05.4	+0.3
VLY	Voula,Athens	2.09	14		P		Pn	15 59 05.4	+0.3
VLY	Voula,Athens	2.09	14		P		Pn	15 59 04.8	-0.3
NPS	Neapolis	2.09	105		P		Pn	15 59 06.0	+0.9
NPS	Neapolis	2.09	105		P		Pn	15 59 06.0	+0.9
NPS	Neapolis	2.09	105		P		Pn	15 59 05.8	+0.7
ATH	Athens Observa	2.19	12		P		Pn	15 59 06.3	-0.2
ATHU	Athens Univers	2.20	13		P		Pn	15 59 07.3	+0.7
ATHU	Athens Univers	2.20	13		P		Pn	15 59 07.3	+0.7
LTK	Loutraki	2.20	356		P		Pn	15 59 08.2	+1.6
LTK	Loutraki	2.20	356		P		Pn	15 59 08.2	+1.6
LTK	Loutraki	2.20	356		P		Pn	15 59 08.0	+1.4
GUR	Goura	2.20	343		P		Pb	15 59 09.1	-1.1
GUR	Goura	2.20	343		P		Pb	15 59 09.1	-1.1
GUR	Goura	2.20	343		P		Pb	15 59 09.8	-0.4
THAL	Thalero	2.24	350		P		Pb	15 59 09.6	-1.2
THAL	Thalero	2.24	350		P		Pb	15 59 09.6	-1.2
APE	Apeiranthos	2.29	56	⇑	*i* P		Pb	15 59 11.8	+0.2
APE	Apeiranthos	2.29	56		P		Pn	15 59 07.8	-0.1
APE	Apeiranthos	2.29	56		P		Pn	15 59 07.8	-0.1
APE	Apeiranthos	2.29	56		P		Pn	15 59 06.8	-1.1
PTL	Penteli	2.29	14		P		Pn	15 59 08.4	+0.5
PTL	Penteli	2.29	14		P		Pn	15 59 08.4	+0.5
PTL	Penteli	2.29	14		P		Pn	15 59 07.6	-0.3
VILL	Villia	2.34	3		P		Pn	15 59 09.8	+1.2
VILL	Villia	2.34	3		P		Pn	15 59 09.8	+1.2
KLV	Kalavryta, Ach	2.35	340		P		Pb	15 59 11.4	-1.3
KLV					S		Sb	15 59 40.6	-1.0
KLV	Kalavryta, Ach	2.35	340		P		Pb	15 59 11.4	-1.3
KLV					S		Sb	15 59 40.6	-1.0
KLV	Kalavryta, Ach	2.35	340		P		Pb	15 59 12.8	0.0
VIL2	Platees	2.38	2		P		Pn	15 59 09.7	+0.5
DRO	Drossia	2.41	332		P		Pb	15 59 13.9	+0.2
DRO	Drossia	2.41	332		P		Pb	15 59 13.9	+0.2
LAKA	Lakka	2.58	339		P		Pb	15 59 15.3	-1.3
LAKA	Lakka	2.58	339		P		Pb	15 59 15.3	-1.3
RLS	Riolos of Patr	2.60	329		P		Pb	15 59 16.4	-0.5
ZKR	Zakros	2.60	105		P		Pn	15 59 14.5	+2.3
ZKR	Zakros	2.60	105		P		Pn	15 59 14.5	+2.3
DSF	Desfina	2.63	349		P		Pn	15 59 14.4	+1.9
DSF	Desfina	2.63	349		P		Pn	15 59 14.4	+1.9
ZKS	Zakynthos	2.66	315		P		Pn	15 59 13.3	+0.4
ZKS	Zakynthos	2.66	315		P		Pn	15 59 13.3	+0.4
TRIZ	Trizonia	2.67	342		P		Pb	15 59 17.0	-1.2
KALE	Kalithea	2.68	343		P		Pn	15 59 15.7	+2.4
KALE	Kalithea	2.68	343		P		Pn	15 59 15.7	+2.4
LKR	Lokris	2.82	358		P		Pn	15 59 16.5	+1.3
LKR	Lokris	2.82	358		P		Pn	15 59 16.5	+1.3
LKR	Lokris	2.82	358		P		Pn	15 59 16.0	+0.8
ANX	Ano Chora	2.93	341		P		Pn	15 59 19.6	+2.9
ANX	Ano Chora	2.93	341		P		Pn	15 59 19.6	+2.9
EVR	Evrytania	3.26	341		P		Pb	15 59 25.5	-2.8
EVR	Evrytania	3.26	341		P		Pb	15 59 25.5	-2.8
KARP	Karpathos	3.28	94		P		Pn	15 59 22.2	+0.7
KARP	Karpathos	3.28	94		P		Pn	15 59 22.2	+0.7
ZEY	¯zmir	3.61	47	*i*	P		Pn	15 59 26.0	0.0
BDRM	Kayabasi	3.68	69	*i*	P		Pn	15 59 27.1	+0.1
BDRM	Kayabasi	3.68	69		P		Pn	15 59 27.1	+0.1
URLA	Izmir	3.74	46	*i*	P		Pn	15 59 28.2	+0.4
URLA	Izmir	3.74	46		P		Pn	15 59 28.2	+0.4
AYDN	Tasoluk	4.22	63	*i*	P		Pn	15 59 35.4	+1.0
AYDN	Tasoluk	4.22	63		P		Pn	15 59 35.4	+1.0
TURN	Turunc	4.53	75	*i*	P		Pn	15 59 37.7	-0.9
TURN	Turunc	4.53	75		P		Pn	15 59 37.7	-0.9
SLUM	Salum	4.65	158		P		Pn	15 59 42.1	+1.7
	baz=163								
SLUM					AMP			16 00 00.0	
	comp=E,30μm,0.8s,logA/T=4.6,baz=163								
SLUM					S		Sn	16 00 34.5	+0.4
	baz=163								
SLUM	Salum	4.65	158		P		Pn	15 59 42.1	+1.7
SLUM					S		Sn	16 00 34.5	+0.4
HMAT	Matruh	5.76	144		P		Pn	15 59 56.4	+0.8
	baz=148								
HMAT					S		Sn	16 00 58.6	-2.8
	baz=148								
HMAT					AMP			16 01 00.0	
	comp=E,20μm,0.8s,logA/T=4.4,baz=148								
HMAT	Matruh	5.76	144		P		Pn	15 59 56.3	+0.8
VAE	Valguarnera	7.21	286		Pn		Pn	16 00 16.9	+1.3
	comp=E,1.1nm,0.3s,baz=113,slow=18,SNR=2.4								
VAE					Sn		Sn	16 01 36.8	-0.5
	comp=E,1.0nm,0.3s,baz=197,slow=19,SNR=2.3								
STON	Ston	8.20	331	*e*	Pn		Pn	16 00 29.1	0.0
STON					Sn		Sn	16 01 56.0	-5.4
STON	Ston	8.20	331	*e*	Pn		Pn	16 00 29.0	0.0
BRTR	Keskin Array B	9.17	62		Pn		Pn	16 00 44.9	+2.4
	comp=E,0.1nm,0.3s,baz=237,slow=14,SNR=3.1								
SUZ	Suez	10.10	124		P		Pn	16 00 54.5	-0.6
	baz=126								
SUZ	Suez	10.10	124		P		Pn	16 00 54.5	-0.6
MMAI	Mount Meron Ar	10.51	102		Pn		Pn	16 01 02.4	+1.6
	comp=E,1.8nm,0.3s,baz=270,slow=12,SNR=6.2								
MMAI					Sn		Sn	16 02 56.1	-2.1
	comp=E,1.3nm,0.3s,baz=297,slow=26,SNR=3.9								
NVLJ	Novalja	10.77	327	*e*	Pn		Pn	16 01 04.8	+0.6
NVLJ					Sn		Sn	16 02 59.1	-5.4
HNKL	Nakhl	10.84	120		P		Pn	16 01 04.5	-0.8
	baz=122								
HNKL	Nakhl	10.84	120		P		Pn	16 01 04.5	-0.8
EIL	Elat	11.68	118		Pn		Pn	16 01 16.5	-0.2
	comp=E,0.6nm,0.3s,baz=279,slow=3.0,SNR=5.8								
EIL					Sn		Sn	16 03 19.8	-7.1
	comp=E,0.5nm,0.3s,baz=332,slow=16,SNR=3.0								
HDHB	Dhahab	12.01	123		P		Pn	16 01 21.3	0.0
	baz=125								
HDHB	Dhahab	12.01	123		P		Pn	16 01 21.3	0.0
GERES	GERESS Array B	14.75	335		Pn		Pn	16 01 59.1	+0.4
	comp=E,0.1nm,0.3s,baz=145,slow=10,SNR=3.4								
AKASG	Malin Array Be	15.50	15		Pn		Pn	16 02 08.2	-0.4
	comp=E,1.0nm,0.3s,baz=203,slow=12,SNR=5.7								
KBZ	Khabaz	17.09	56		Pn		P	16 02 31.4	+0.9
	comp=E,0.1nm,0.3s,baz=261,slow=7.8,SNR=3.1								
ESDC	Sonseca Array	21.74	288		P		P	16 03 20.2	-1.3
	comp=E,0.1nm,0.3s,baz=80,slow=8.7,SNR=2.9								
HFS	Hagfors	25.08	349		P		P	16 03 54.5	+0.2
	comp=E,5.7nm,0.4s,baz=150,slow=12,SNR=43								
FINES	FINESS Array B	25.70	3		P		P	16 03 59.3	-0.6
	comp=E,0.7nm,0.3s,baz=173,slow=9.9,SNR=16								
NB2	NORSAR Subarra	26.36	347		P		P	16 04 06.3	+0.4
	comp=Z,1.4nm,0.6s,baz=158,slow=10								
NB2	NORSAR Subarra	26.36	347		P		P	16 04 06.3	+0.4
	comp=Z,1.4nm,0.6s,SNR=5.4								
NOA	NORSAR Array B	26.36	347		P		P	16 04 05.7	-0.2
	comp=Z,1.6nm,0.7s,baz=159,slow=9.8,SNR=7.3								
EKA	Eskdalemuir Ar	26.55	326		P		P	16 04 08.1	+0.4
	comp=Z,1.4nm,0.5s,baz=123,slow=8.9,SNR=16								
TORD	Torodi Ar. Bea	29.72	226		P		P	16 04 37.2	+0.9
	comp=Z,0.7nm,0.7s,baz=36,slow=7.9,SNR=5.0								
ARCES	ARCESS Array B	33.79	1		P		P	16 05 11.0	-0.6
	comp=Z,3.6nm,0.9s,baz=306,slow=4.3,SNR=3.8								
DBIC	Dimbokro	38.74	228		P		P	16 05 58.1	+3.6
	comp=Z,0.9nm,0.4s,baz=24,slow=7.3,SNR=4.7								
KURBB	Kurchatov Arra	41.99	52		P		P	16 06 20.9	0.0
	comp=Z,1.7nm,0.5s,baz=275,slow=8.7,SNR=12								
SPITS	Spitsbergen Ar	42.55	358		P		P	16 06 25.8	+0.6
	comp=Z,3.2nm,0.8s,baz=144,slow=11,SNR=13								
MKAR	Makanchi Array	44.78	57		P		P	16 06 43.5	-0.1
	comp=Z,1.5nm,0.4s,baz=270,slow=7.8,SNR=41								
ZALV	Zalesovo Beam	45.73	47		P		P	16 06 50.5	-0.5
	comp=Z,1.4nm,0.3s,baz=262,slow=8.2,SNR=7.6								
SONM	Songino Array	60.33	50		P		P	16 08 40.0	+1.1
	comp=Z,0.4nm,0.5s,baz=309,slow=9.1,SNR=2.9								
YKA	Yellowknife Ar	76.30	341		P		P	16 10 18.8	+0.4
	comp=Z,0.2nm,0.5s,baz=34,slow=5.2,SNR=6.2								
KSRS	Korea Array	79.17	52		P		P	16 10 35.6	+0.7
	comp=Z,1.0nm,0.9s,baz=306,slow=3.8,SNR=2.6								
ASAR	Alice Springs	119.78	99		PKP		PKPdf	16 17 22.6	+2.0
	comp=Z,0.3nm,0.9s,baz=323,slow=1.5,SNR=3.3								

IDC ***17*** *15:59:58.8±0.4, 36.60N×141.60E, h0km, mb4.4/37, mb1 4.5/42, mb1mx4.4/64, mbtmp4.4/42, ML4.0/3, MS3.8/11, Ms1 3.8/11, ms1mx3.5/35, Error ellipse: s-maj=12.7km s-min=10.5km az=91.0*

BJI ***17*** *15:59:59.7, 36.62N×141.32E, h5km, mb4.7/59, mB4.9/39, Ms4.4/49, Ms7 4.2/46*

NIED ***17*** *16:00:00, 36.70N×141.70E, h17km, Mw4.6 Best double couple: M07.53000×10^15 NP1:φs291.00000°, δ31.00000°, λ-165.00000°. NP2:φs188.00000°, δ82.00000°, λ-60.00000°.*

ISCJB ***17*** *16:00:01.9±0.8, 36.66N±0.03×141.63E±0.03, h29km±5km, mb4.7/153, MS4.1/15, Error ellipse: s-maj=4.8km s-min=3.7km az=43.8*

JMA ***17*** *16:00:01.6±0.3, 36.67N×141.70E, h32km±4km, M4.6*

JMA Felt I J1.

NEIC ***17*** *16:00:02.4±0.3, 36.61N×141.61E, h22km±1km, mb4.7/53, Error ellipse: s-maj=4.8km s-min=3.4km az=146.0*

MOS ***17*** *16:00:02.8±1.1, 36.67N×141.64E, h36km, mb4.9/56, MS4.0/8, Error ellipse: s-maj=7.2km s-min=4.5km az=112.9*

ISC 17 16:00:02.8±0.5, 36.67N±0.04×141.60E±0.04, h23km±2km, h23km:pP-P,n323,σ1§11/331,mb4.7/153,MS4.2/16, 11C-4D,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
ONAJ	Iwakimizuishiy	0.77	304	P		P	Pb	16 00 17.3	-0.2
JHO	Hitachi	0.83	266	P		P	Pb	16 00 18.1	-0.4
JFK	Kawauchi	0.90	320	P		P	Pb	16 00 18.9	-0.9
JFT	Otama	1.31	310	P		P	Pn	16 00 26.1	+0.4
JMM	Marumori	1.35	332	P		P	Pn	16 00 25.2	-1.0
JFY	Yanaizu	1.68	296	P		P	Pb	16 00 32.1	-0.9
MJAR	Matsushiro Arr	2.73	268	Pn		Pn	Pn	16 00 46.3	+1.2
	118nm,0.3s,baz=92,slow=9.1,SNR=438								
MJAR						LR	LR	16 02 01.3	
	comp=Z,2μm,19.9s,baz=115,slow=45								
MAJO	Matsushiro	2.73	268	*i*	P		Pn	16 00 46.5	+1.3
MAJO	Matsushiro	2.73	268	*e*	Pn		Pn	16 00 47.0	+1.8
MAT	Matsushiro	2.73	268		P		Pn	16 00 46.9	+1.7
MAT					S		Sb	16 01 24.0	+0.1
MJB9	Matsu-Tunnel	2.73	268	*e*	Pn		Pn	16 00 46.8	+1.6
JHJ2	Mitsune	3.84	203	*e*	Pn		Pn	16 00 60.0	-0.5
JHJ	Hachijo jima 2	3.85	203		Pn		Pn	16 01 00.3	-0.2
	152nm,0.3s,baz=78,slow=24,SNR=55								
JHJ						Sn	Sn	16 01 42.7	-2.3
	330nm,0.3s,baz=77,slow=23,SNR=12								
JHJ						LR	LR	16 02 31.5	
	comp=Z,346nm,18.6s,baz=121,slow=40								
INU	Inuyama	3.94	252	*e*	Pn		Pn	16 01 04.0	+2.2
ERM	Erimo	5.47	12	*e*	P		Pn	16 01 22.1	-0.6
ERM	Erimo	5.47	12	*e*	Pn		Pn	16 01 22.1	-0.6
ASAJ	Asahikawa	7.47	6		Pn		Pn	16 01 49.9	-0.4
	2.4nm,0.3s,baz=218,slow=16,SNR=13								
ASAJ						LR	LR	16 05 19.9	
	comp=Z,640nm,18.4s,baz=190,slow=42								
ASAJ	Asahikawa	7.47	6	*e*	Pn		Pn	16 01 49.5	-0.7
YUK	Yuzh-Kuril'sk	8.04	23		P		Pn	16 02 00.7	+2.7
YUK				*e*	S		Sn	16 03 20.4	-7.8
YUK						pmax	pmax		
	comp=Z,145nm,0.3s								
YUK						pmax	pmax		
	comp=N,42nm,0.2s								
YUK						pmax	pmax		
	comp=E,54nm,0.1s								
SHO	Shikotan	8.22	27	*e*	P		Pn	16 02 02.1	+1.5
SHO						pmax	pmax		
	comp=Z,57nm,0.5s								
SHO						pmax	pmax		
	comp=N,41nm,0.4s								
JNU	Nakatsue	9.49	251		Pn		Pn	16 02 20.4	+2.3
	comp=N,0.9nm,0.3s,baz=60,slow=7.7,SNR=11								
CBIJ	Chichi jima	9.56	177	*e*	Pn		Pn	16 02 15.5	-3.5
CBIJ					Sn		Sn	16 03 55.0	-11
JCJ	Chichijima	9.56	177		Pn		Pn	16 02 15.3	-3.7
JCJ					Sn		Sn	16 03 55.0	-11
	comp=N,20nm,0.3s,baz=301,slow=22,SNR=5.7								
KUR	Kuril'sk	9.77	27		P		Pn	16 02 27.2	+5.4
KUR						pmax	pmax		
	comp=Z,26nm,1.0s								
VLA	Vladivostok	9.85	314	*i*	P		Pn	16 02 26.6	+3.8
YSS	Yuzh-Sakhalins	10.31	4	*i*	P		Pn	16 02 29.9	+0.8
USRK	Ussuriysk Ar.	10.49	319		Pn		Pn	16 02 35.2	+3.6
	comp=Z,0.3nm,0.3s,baz=134,slow=13,SNR=16								
USRK						LR	LR	16 06 22.1	
	comp=Z,936nm,18.6s,baz=123,slow=36								
KSRS	Korea Array	10.96	278		Pn		Pn	16 02 43.2	+5.2
	comp=Z,0.5nm,0.3s,baz=93,slow=13,SNR=21								
KSRS						LR	LR	16 06 50.7	
	comp=Z,832nm,18.7s,baz=88,slow=38								
KS01	Wonju Array Si	10.98	278	*e*	Pn		Pn	16 02 36.9	-1.5
KSAR	Wonju Array Be	10.99	278		P		Pn	16 02 43.2	+4.8
KSAR	Wonju Array Be	10.99	278		Pn		Pn	16 02 43.2	+4.8
MDJ	Mudanjiang	12.08	315		P		Pn	16 02 53.0	-0.3
MDJ					S		Sn	16 05 00.8	-6.4
MDJ						pmax	pmax		
	comp=Z,6.0nm,1.2s								
MDJ						pmax	pmax		
	comp=Z,150nm,4.2s								
MDJ	Mudanjiang	12.08	315	*e*	Pn		P	16 03 00.3	-5.6
TYV	Tymovskoe	14.21	3	*e*	P		P	16 03 29.2	-0.3
TYV						pmax	pmax		
	comp=Z,6.0nm,0.6s								
CN2	Changchun	14.23	305	*e*	P		Pn	16 03 24.3	+1.6
CN2				*es*	P		P	16 03 32.5	+2.6
CN2				*e*	S		Sn	16 06 02.3	+2.6
CN2						pmax	pmax		
	comp=Z,10.0nm,0.6s								
CN2						LR	LR		
	comp=Z,500nm,15.0s								
CN2						LR	LR		
	comp=Z,700nm,15.0s								
CN2						LR	LR		
	comp=Z,800nm,15.0s								
KLR	Kul'dur	14.46	333		Pn		Pn	16 03 27.6	+1.8
	comp=Z,0.1nm,0.3s,baz=162,slow=13,SNR=3.1								
KLR						LR	LR	16 08 49.2	
	comp=Z,423nm,20.9s,baz=144,slow=36								
NKL	Nikolayevsk	16.49	358	*e*	P		P	16 04 00.5	+5.7
NKL						pmax	pmax		
	comp=Z,10.0nm,0.9s								
NKL						MLR	MLR		
	comp=E,400nm,15.0s								
NKL						MLR	MLR		
	comp=Z,500nm,15.0s								
NJ2	Nanjing	19.32	263	*e*	P		P	16 04 24.5	-1.7
NJ2						pmax	pmax		
	comp=Z,10.0nm,0.7s								
TIA	Tai'an	19.68	276	*e*	P		P	16 04 29.1	-1.1
TIA					S		S	16 08 07.6	-3.4
TIA						pmax	pmax		
	comp=Z,20nm,1.2s								
TIA						LR	LR		
	comp=Z,410nm,13.5s								
TIA						LR	LR		
	comp=Z,790nm,17.7s								
TIA						LR	LR		
	comp=Z,610nm,15.2s								
PETK	Petropavlovsk-	19.93	29		P		Pn	16 04 33.7	-0.8
	comp=Z,0.1nm,0.3s,baz=199,slow=7.0,SNR=3.0								
PETK						LR	LR	16 12 26.8	
	comp=Z,92nm,20.5s,baz=219,slow=37								
BJI	Beijing	20.20	287		P		P	16 04 33.3	-2.4
BJI					S		S	16 08 19.1	-2.2
BJI						pmax	pmax		
	comp=Z,15nm,0.9s								
BJI						pmax	pmax		
	comp=Z,270nm,9.2s								
BJI						LR	LR		
	comp=Z,200nm,10.8s								
BJI						LR	LR		
	comp=Z,280nm,13.8s								
BJI						LR	LR		
	comp=Z,170nm,22.3s								
YULB	Yu-li	21.94	239	*e*	P		P	16 04 52.1	-2.6
	comp=Z,14nm,1.0s								
YULB						*e*S	Sn	16 09 03.5	-3.1
TPUB	Ta-pu	22.46	239	*e*	P		P	16 04 57.6	-2.7
	comp=Z,30nm,1.1s								
TPUB						*e*S	S	16 09 08.9	+3.2
TWG	Pinlang	22.48	238	*e*	P		P	16 04 58.5	-2.0
	comp=Z,97nm,1.0s								
WHN	Wuhan	23.46	263		P		P	16 05 10.8	+0.3
WHN						pmax	pmax		
	comp=Z,70nm,1.0s								
WHN						LR	LR		
	comp=Z,410nm,14.4s								
WHN						LR	LR		
	comp=Z,2μm,16.6s								
WHN						LR	LR		
	comp=Z,1μm,16.2s								
MA2	Magadan	23.68	12		P		P	16 05 15.1	+2.8
	comp=Z,7.3nm,0.7s,baz=153,slow=9.0,SNR=2.6								
MA2						LR	LR	16 14 34.3	
	comp=Z,106nm,19.6s,baz=224,slow=37								
HHC	Hu-ho-hao-te	23.73	289	*e*	P		P	16 05 13.0	-0.2
HHC					sP		sP	16 05 22.0	-1.0
HHC					S		S	16 09 21.9	-5.2
HHC						pmax	pmax		
	comp=Z,20nm,0.9s								
HHC						pmax	pmax		
	comp=Z,180nm,8.9s								
HHC						LR	LR		
	comp=Z,850nm,13.6s								
HHC						LR	LR		
	comp=Z,850nm,14.8s								
HHC						LR	LR		
	comp=Z,290nm,12.7s								
YAK	Yakutsk	26.45	347		P		P	16 05 37.1	-0.5
	comp=Z,17nm,0.6s,baz=343,slow=5.5,SNR=17								
YAK	Yakutsk	26.45	347	*e*	P		P	16 05 36.9	-0.7
YAK				*e*	PP		pP	16 05 45.0	+0.4
YAK				*e*	PPP		PPP	16 06 31.6	
YAK				*e*	SS			16 11 22.6	
YAK						pmax	pmax		
	comp=Z,43nm,1.0s								
YAK						pmax	pmax		
	comp=N,19nm,1.2s								
YAK						pmax	pmax		
	comp=E,4.0nm,1.1s								
YAK						pmax	pmax		
	comp=Z,52nm,1.8s								
YAK						pmax	pmax		
	comp=E,18nm,1.5s								
YAK						pmax	pmax		
	comp=N,39nm,1.8s								
YAK						MLR	MLR		
	comp=Z,450nm,16.0s								
YAK						MLR	MLR		
	comp=N,326nm,16.0s								
YAK						MLR	MLR		
	comp=E,186nm,17.0s								
SEY	Seymchan	27.11	11		P		P	16 05 44.6	+1.0
	comp=E,4.6nm,0.7s,baz=197,slow=7.1,SNR=20								
SEY	Seymchan	27.11	11	⇓	*e*P		P	16 05 45.3	+1.7
ENH	Enshi	27.45	266		*e*P		P	16 05 46.1	-0.9
	comp=E,36nm,0.6s								
ULN	Ulaanbaatar	27.68	305	⇑	*i* P		P	16 05 49.6	+0.6
ULN						pmax	pmax		
	comp=Z,25nm,1.1s								
ULN	Ulaanbaatar	27.68	305		*e*P		P	16 05 48.9	-0.1
	comp=Z,24nm,1.1s								
H11N2	WAKE ISLAND Hy	27.84	120		T		T	16 35 04.4	
	baz=313,slow=75,SNR=182								
H11N1	WAKE ISLAND Hy	27.85	120		T		T	16 34 54.8	
	baz=313,slow=75,SNR=155								
H11N3	WAKE ISLAND Hy	27.86	120		T		T	16 35 03.2	
	baz=313,slow=75,SNR=145								
BOD	Bodaibo	27.91	328		*e*P		P	16 05 50.6	-0.2
BOD						pmax	pmax		
	comp=Z,10.0nm,1.2s								
SONA1	Songino Array	28.11	305		*e*P		P	16 05 52.2	-0.7
SONM	Songino Array	28.11	304		P		P	16 05 52.8	-0.1
	comp=Z,18nm,0.9s,baz=105,slow=6.3,SNR=88								
H11S1	WAKE ISLAND Hy	28.54	123		T		T	16 35 57.8	
	baz=315,slow=76,SNR=77								
H11S3	WAKE ISLAND Hy	28.54	123		T		T	16 35 51.7	
	baz=315,slow=76,SNR=72								
H11S2	WAKE ISLAND Hy	28.56	123		T		T	16 35 51.5	
	baz=315,slow=76,SNR=48								
LZH	Lanzhou	30.27	280		*e*P		P	16 06 13.0	+0.8
LZH					pP		pP	16 06 19.6	+0.4
LZH					sP		sP	16 06 22.9	+0.8
LZH						pmax	pmax		
	comp=Z,19nm,1.0s								
ZAK	Zakamensk	30.61	309		*e*P		P	16 06 14.3	-0.6
ZAK						pmax	pmax		
	comp=Z,9.0nm,1.1s								
TLY	Talaya	30.68	311		P		P	16 06 15.7	+0.3
	comp=Z,5.2nm,0.8s,baz=99,slow=3.9,SNR=7.3								
TLY	Talaya	30.68	311		*e*P		P	16 06 16.2	+0.8
TLY						pmax	pmax		
	comp=Z,9.0nm,1.0s								
TLY						MLR	MLR		
	comp=Z,552nm,19.0s								
TLY	Talaya	30.68	311		*e*P		P	16 06 15.5	+0.1
	comp=Z,7.6nm,0.9s								
GYA	Guiyang	31.31	261	⇑	*i* P		P	16 06 20.4	-1.0
GYA					pP		pP	16 06 27.8	-0.6
GYA					PP		PnPn	16 07 25.0	+1.1
GYA					PcP		PcP	16 09 15.6	+0.4
GYA					S		S	16 11 26.4	-0.7
GYA					ScP		ScP	16 12 57.8	+1.1
GYA					ScS		ScS	16 16 52.0	-2.4
GYA						pmax	pmax		
	comp=Z,40nm,0.9s								
GYA						pmax	pmax		
	comp=Z,120nm,4.8s								
GYA						LR	LR		
	comp=Z,520nm,17.0s								
GYA						LR	LR		
	comp=Z,480nm,17.2s								
GYA						LR	LR		
	comp=Z,500n

WMQ sP sP 16 07 54.4 -0.7
WMQ PcP **PcP** **16 09 46.4 +2.2**
WMQ pmax pmax
comp=Z,11nm,1.0s
WMQ pmax pmax
comp=Z,31nm,3.6s
WMQ LR LR
comp=Z,100nm,20.4s
WMQ LR LR
comp=Z,99nm,26.0s
WMQ LR LR
comp=Z,71nm,26.0s
SANI Sanana 41.17 204 P **P** **16 07 45.9 +0.4**
comp=Z,30nm,0.7s,comp=Z,361nm
CMMT Chiang Mai 41.34 256 P **P** **16 07 47.7 +0.7**
comp=Z,8.4nm,1.6s,comp=Z,477nm
CHTO Chiang Mai 41.35 256 P **P** **16 07 47.8 +0.8**
comp=Z,37nm,1.6s
CHTO Chiang Mai 41.35 256 *e*P **P** **16 07 47.0 0.0**
CHTO pmax pmax
comp=Z,8.0nm,1.0s
CHTO Chiang Mai 41.35 256 *e*P **P** **16 07 47.0 0.0**
comp=Z,8.3nm,1.0s
CM31 Chiang Mai Arr 41.55 256 *e*P **P** **16 07 49.5 +0.9**
CMAR Chiang Mai Arr 41.55 256 P **P** **16 07 48.6 0.0**
comp=Z,4.1nm,0.8s,baz=48,slow=6.2,SNR=36
CM01 Chiang Mai Arr 41.56 256 *e*P **P** **16 07 48.8 +0.1**
SUKH Sukhothai 41.58 254 P **P** **16 07 50.2 +1.4**
comp=Z,4.6nm,0.9s,comp=Z,46nm
APSI Ampana 41.73 211 P **P** **16 07 50.3 +0.2**
comp=Z,38nm,1.2s
SRAK Srakaew 41.86 248 P **P** **16 07 48.8 -2.4**
comp=Z,56nm,0.9s,comp=Z,489nm
NAYO Nakonayok 42.21 249 P **P** **16 07 55.3 +1.3**
comp=Z,20nm,1.0s,comp=Z,809nm
ZAA0 Zalesovo Array 42.27 313 *e*P **P** **16 07 53.8 -0.3**
ZALV Zalesovo Beam 42.27 313 P **P** **16 07 54.5 +0.4**
comp=Z,9.0nm,0.7s,baz=92,slow=6.6,SNR=40
ZALV PcP **PcP** **16 09 47.2 -0.4**
comp=Z,1.9nm,0.6s,baz=130,slow=3.6,SNR=3.6
LSA Lhasa 42.39 276 *e*P **P** **16 07 55.8 -0.2**
LSA pmax pmax
comp=Z,7.0nm,0.8s
LSA Lhasa 42.39 276 *e*P **P** **16 07 55.8 -0.2**
comp=Z,6.8nm,0.8s
CHBT CHBT 42.46 246 P **P** **16 07 57.4 +1.3**
comp=Z,28nm,1.0s
NVS Novosibirsk 43.19 314 *i*P **P** **16 08 01.8 +0.2**
SBUM Sibu 43.51 225 *e*P **P** **16 08 04.2 -0.4**
comp=Z,6.9nm,1.0s
SHL Shillong 43.55 270 *e*P **P** **16 08 06.0 +0.9**
NRIK Noril'sk 43.65 335 P **P** **16 08 05.0 -0.1**
comp=Z,2.1nm,0.6s,baz=136,slow=6.3,SNR=6.5
NRIK LR LR 16 29 27.1
comp=Z,152nm,19.2s,baz=106,slow=40
NRIK Noril'sk 43.65 335 P **P** **16 08 05.0 -0.1**
NRIK pmax pmax
comp=Z,2.0nm,0.6s
NRIK MLR MLR
comp=Z,152nm,19.2s
SRDT SRDT 43.85 251 P **P** **16 08 09.8 +2.5**
comp=Z,37nm,1.2s,comp=Z,3μm
PHET Kaeng Krachan 44.37 249 P **P** **16 08 13.5 +2.0**
comp=Z,10nm,1.0s
MK01 Makanchi Array 44.43 302 *e*P **P** **16 08 10.2 -1.5**
MK31 Makanchi Array 44.43 302 *e*P **P** **16 08 11.6 -0.2**
MK31 Makanchi Array 44.43 302 *e*P **P** **16 08 11.6 -0.2**
MKAR Makanchi Array 44.43 302 P **P** **16 08 12.1 +0.4**
comp=Z,8.6nm,0.8s,baz=89,slow=9.0,SNR=41
MKAR Makanchi Array 44.43 302 *e*P **P** **16 08 11.6 -0.1**
MAKZ Makanchi 44.64 303 *e*P **P** **16 08 12.6 -0.8**
MAKZ pmax pmax
comp=Z,11nm,0.8s
MAKZ Makanchi 44.64 303 *e*P **P** **16 08 12.6 -0.8**
comp=Z,11nm,0.8s
SAUI Saumlaki 45.46 194 P **P** **16 08 19.4 -0.7**
comp=Z,436nm,1.1s
STKI Sintang 45.89 224 P **P** **16 08 24.6 +1.1**
comp=Z,15nm,1.0s
PMG Port Moresby 46.13 172 P **P** **16 08 25.3 0.0**
comp=Z,7.4nm,0.8s,baz=321,slow=9.8,SNR=3.6
KURK Kurchatov 46.27 308 P **P** **16 08 25.8 -0.4**
KURK pmax pmax
comp=Z,52nm,1.0s
KURK Kurchatov 46.27 308 *e*P **P** **16 08 25.9 -0.2**
comp=Z,24nm,0.9s
KURBB Kurchatov Arra 46.34 308 P **P** **16 08 26.6 0.0**
comp=Z,10nm,0.7s,baz=83,slow=8.1,SNR=84
PDGK Podgornoye 47.08 298 P **P** **16 08 32.4 -0.2**
PDGK pmax pmax
comp=Z,20nm,1.1s
GUN Gumba 47.34 276 *e*P **P** **16 08 36.1 +0.8**
comp=Z,26nm,0.4s
SPU Mount Spurr 47.43 37 *e*P **P** **16 08 34.9 -0.2**
SPU *e*pP **pP** **16 08 41.7 -0.7**
CAST Castle Rocks 47.44 34 *e*pP pP 16 08 42.0 -0.4
PKIN Phulchoki 47.87 276 *e*P **P** **16 08 39.7 +0.4**
comp=Z,13nm,0.7s
KKN Kakani 47.87 276 *e*P **P** **16 08 39.6 +0.4**
comp=Z,24nm,0.7s
BPAW Bear Paw Mtn. 47.95 33 *e*sP sP 16 08 49.4 +0.2
KTH Kantishna Hill 47.96 34 *e*P **P** **16 08 39.3 0.0**
comp=Z,6.8nm,1.1s
MLY Manley 48.08 32 *e*P **P** **16 08 41.1 +0.9**
comp=Z,8.9nm,1.2s
GKN Gorkha 48.29 277 *e*P **P** **16 08 42.7 +0.3**
comp=Z,76nm,1.0s
PKDT Phuket 48.62 245 P **P** **16 08 47.6 +2.8**
comp=Z,28nm,0.9s
MCK McKinley 48.85 34 *e*P P 16 08 51.3 +5.2
MCK McKinley 48.85 34 *e*pP pP 16 08 51.3 -2.0
RND Reindeer 48.89 34 *e*P **P** **16 08 45.6 -0.9**
RND *e**PP **pP** **16 08 52.0 -1.7**
RND Reindeer 48.89 34 *e*P **P** **16 08 45.6 -0.9**
RND *e*pP **pP** **16 08 52.0 -1.7**
MDM Murphy Dome 49.14 32 *e*P **P** **16 08 48.5 +0.2**
comp=Z,13nm,1.2s
KOLN Koldanda 49.22 277 *e*P **P** **16 08 50.4 +0.8**
comp=Z,18nm,0.8s
PYUN Piuthan 49.56 278 *e*P **P** **16 08 53.0 +0.8**
comp=Z,99nm,1.0s
IL1 Eielson Array 49.72 32 *e*P **P** **16 08 52.1 -0.6**
ILAR Eielson Array 49.72 32 P **P** **16 08 51.8 -0.9**
comp=Z,1.0nm,0.8s,baz=269,slow=6.4,SNR=12
ILB Eielson Array 49.72 32 *e*P **P** **16 08 52.2 -0.4**
TKM2 Tokmak 2 49.93 299 *e*P **P** **16 08 55.4 +0.6**
TKM2 pmax pmax
comp=Z,19nm,1.2s
TKM2 Tokmak 2 49.93 299 *e*P **P** **16 08 55.4 +0.6**
comp=Z,19nm,1.2s
FRU Bishkek 50.65 299 *e*P **P** **16 09 01.0 +0.9**
FRU *e* 16 09 20.0
CHKZ Chkalovo 50.66 313 P **P** **16 08 59.6 -0.3**
CHKZ pmax pmax
comp=Z,14nm,1.2s
KSH Kashi 50.69 294 P P 16 09 05.4 +4.9
KSH *e*pP sP 16 09 11.9 +1.2
KSH PcS **PcS** **16 14 17.0 +1.9**
KSH S S 16 16 22.1 +7.7
KSH ScS **ScS** **16 18 51.9 +1.8**
KSH pmax pmax
comp=Z,150nm,5.0s
KSH LR LR
comp=Z,260nm,11.1s
KSH LR LR
comp=Z,180nm,13.2s
KSH LR LR
comp=Z,170nm,7.3s
OTUK Ortayu 50.76 306 P **P** **16 09 00.8 0.0**
OTUK pmax pmax
comp=Z,14nm,0.9s
AAK Ala-Archa 50.79 299 P **P** **16 09 00.8 -0.5**
comp=Z,2.4nm,0.5s,baz=86,slow=6.3,SNR=9.4
AAK Ala-Archa 50.79 299 *ce*P **P** **16 09 01.6 +0.3**
AAK pmax pmax
comp=Z,7.0nm,0.7s
AAK Ala-Archa 50.79 299 *e*P **P** **16 09 01.5 +0.2**
comp=Z,3.9nm,0.8s
BVA0 Borovoye Array 50.92 313 *i*P **P** **16 09 01.7 -0.2**
BVA0 pmax pmax
comp=Z,7.0nm,1.0s
BVAR Borovoye Array 50.92 313 P **P** **16 09 01.7 -0.2**
comp=Z,3.3nm,0.6s,baz=69,slow=8.1,SNR=17
BRVK Borovoye 50.98 313 *e*P **P** **16 09 02.4 +0.1**
BRVK pmax pmax
comp=Z,11nm,1.1s
BRVK Borovoye 50.98 313 *e*P **P** **16 09 02.3 -0.1**
comp=Z,11nm,0.9s
BMRM Bremner River 51.06 37 P **P** **16 09 04.0 +1.0**
comp=Z,6.7nm,1.0s
MENT Mentasta 51.25 34 *e*pP pP 16 09 10.9 -0.6
EKS2 Erkin-Say 51.29 299 *e*P **P** **16 09 05.5 +0.5**
EKS2 pmax pmax
comp=Z,4.0nm,1.0s
EKS2 Erkin-Say 51.29 299 *e*P **P** **16 09 05.5 +0.5**
comp=Z,4.0nm,1.0s
ZRNK Zerenda 51.76 313 *e*P **P** **16 09 08.4 +0.2**
ZRNK pmax pmax
comp=Z,19nm,1.3s
ZRNK Zerenda 51.76 313 *e*P **P** **16 09 08.4 +0.2**
comp=Z,19nm,1.3s
MNAS Manas 52.24 299 P **P** **16 09 12.3 +0.2**
MNAS pmax pmax
comp=Z,15nm,1.0s
SFK Sufi-Kurgan 52.32 296 P **P** **16 09 13.6 +0.7**
SFK pmax pmax
comp=Z,9.0nm,0.9s
PWJI Pagerwojo 52.52 218 P **P** **16 09 16.3 +2.1**
comp=Z,32nm,1.0s
PCJI Pacitan 52.98 219 P **P** **16 09 18.7 +1.1**
comp=Z,62nm,1.3s
KPJI Karang Pucung 53.42 222 P **P** **16 09 21.6 +0.7**
comp=Z,20nm,0.9s
KK31 Karatay Array 53.43 300 P **P** **16 09 20.8 0.0**
KK31 pmax pmax
comp=Z,3.0nm,0.8s
KKAR Karatay Array 53.43 300 *e*P **P** **16 09 20.9 +0.1**
KKAR Karatay Array 53.43 300 *e*P **P** **16 09 20.9 +0.1**
LHSI Lahat 53.70 230 P **P** **16 09 24.4 +1.5**
comp=Z,23nm,0.8s
LEM Lembang 53.72 224 P **P** **16 09 24.5 +1.3**
comp=Z,232nm,0.8s
TNG Tangerang 53.72 225 P P 16 09 27.5 +4.4
comp=Z,563nm,0.5s
GSI Gunungsitoli 53.74 239 P **P** **16 09 25.0 +1.7**
INK Inuvik 54.64 27 P **P** **16 09 29.9 +0.8**
comp=Z,1.0nm,0.6s,baz=305,slow=4.7,SNR=7.3
INK Inuvik 54.64 27 *e*P **P** **16 09 30.4 +1.3**
INK pmax pmax
comp=Z,11nm,1.4s
INK Inuvik 54.64 27 *e*P **P** **16 09 30.4 +1.3**
comp=Z,11nm,1.4s
SVE Sverdlovsk 55.51 319 *e*P **P** **16 09 36.5 +0.9**
SVE pmax pmax
comp=Z,21nm,1.3s
WRAB Tennant Creek 56.72 188 ⇑ *i*P **P** **16 09 44.2 -0.4**
WRAB pmax pmax
comp=Z,45nm,1.2s
WRAB Tennant Creek 56.72 188 *e*P **P** **16 09 43.5 -1.0**
comp=Z,26nm,1.2s
WB2 Warramunga Arr 56.72 188 *e*P **P** **16 09 43.5 -1.1**
comp=Z,21nm,1.1s
WRA Warramunga Arr 56.73 188 P **P** **16 09 43.7 -0.9**
comp=Z,6.9nm,0.8s,baz=4.4,slow=7.5,SNR=32
ARU Arti 56.73 319 *c i*P **P** **16 09 44.3 0.0**
ARU 16 11 50.1
ARU S **S** **16 17 35.9 +0.5**
ARU SS **SS** **16 21 20.5 -2.3**
ARU pmax pmax
comp=Z,26nm,1.7s
ARU Arti 56.73 319 *e*P **P** **16 09 43.5 -0.8**
comp=Z,17nm,1.1s
KBL Kabul 57.68 291 *e*P **P** **16 09 50.8 -0.9**
KBL pmax pmax
comp=Z,16nm,1.2s
KBL Kabul 57.68 291 *e*P **P** **16 09 50.8 -0.9**
comp=Z,16nm,1.2s
AB31 Akbulak array 58.28 310 *i*P **P** **16 09 54.9 -0.5**
AB31 pmax pmax
comp=Z,4.0nm,0.7s
ABKAR Akbulak array 58.28 310 *e*P **P** **16 09 54.9 -0.5**
HYB Hyderabad 58.34 269 *i*P **P** **16 09 57.0 +0.7**
AKTO Aktyubinsk 59.02 312 P **P** **16 09 59.8 -0.7**
comp=Z,4.6nm,0.7s,baz=63,slow=4.9,SNR=9.6
AKTO Aktyubinsk 59.02 312 P **P** **16 09 59.7 -0.8**
AKTO pmax pmax
comp=Z,9.0nm,1.1s
AS01 Alice Springs 60.45 188 *e*P **P** **16 10 09.5 -1.0**
AS31 Alice Springs 60.45 188 *e*P **P** **16 10 09.6 -1.0**
comp=Z,2.5nm,0.8s
ASAR Alice Springs 60.45 188 P **P** **16 10 09.8 -0.7**
comp=Z,4.5nm,0.7s,baz=12,slow=6.1,SNR=77
POO Poona 61.53 273 ⇑ *i*P **P** **16 10 16.0 -2.2**
comp=Z,40nm,1.0s
RES Resolute Bay 62.91 14 P **P** **16 10 26.5 -0.1**
comp=Z,1.3nm,0.7s,baz=325,slow=11,SNR=6.0
RES Resolute Bay 62.91 14 *e*P **P** **16 10 27.3 +0.8**
RES *e*pP **pP** **16 10 31.9 -2.1**
YKA Yellowknife Ar 64.05 30 P **P** **16 10 34.5 +0.3**
comp=Z,0.6nm,0.7s,baz=302,slow=6.7,SNR=10.0
YKB5 Yellowknife Ar 64.05 30 *e*P **P** **16 10 33.1 -1.1**
YKB5 *e*pP **sP** **16 10 43.5 -1.0**
GEYT Alibeck 64.14 299 P **P** **16 10 34.7 -0.6**
comp=Z,4.7nm,0.9s,baz=350,slow=1.8,SNR=8.7
KLMR Klimovskoe 64.14 328 *e*P **P** **16 10 32.6 -2.2**
KLMR pmax pmax
comp=Z,11nm,1.3s
ARCES ARCESS Array B 64.38 339 P **P** **16 10 36.5 +0.1**
comp=Z,3.9nm,0.9s,baz=61,slow=9.4,SNR=3.1
VRH Novokhopyorsk 67.94 318 *e*P **P** **16 10 59.1 -0.3**
VRH pmax pmax
comp=Z,7.0nm,0.5s
STKA Stephens Creek 68.19 180 P **P** **16 10 59.4 -1.7**
comp=Z,2.2nm,0.7s,baz=340,slow=8.4,SNR=8.4
STKA Stephens Creek 68.19 180 *e*P **P** **16 11 00.6 -0.5**
comp=Z,1.1nm,0.9s
OBN Obninsk 68.47 323 ⇓ *e*P **P** **16 11 02.0 -0.7**
OBN *e* 16 11 10.7
OBN *e**PP **sP** **16 11 15.1 +2.1**
OBN *e* 16 11 24.9
OBN *e* 16 13 39.7
OBN pmax pmax
comp=Z,13nm,0.7s
OBN MLR MLR
comp=Z,149nm,16.0s
LPSR Galich'ya Gora 68.67 320 *e*P **P** **16 11 03.8 -0.2**
LPSR pmax pmax
comp=Z,10.0nm,0.9s
FIA1 FINESS Array S 69.20 332 *e*P **P** **16 11 06.9 -0.2**
FINES FINESS Array B 69.20 332 P **P** **16 11 07.4 +0.3**
comp=Z,4.3nm,0.8s,baz=77,slow=8.6,SNR=12
VSR Storozhevoye 69.30 319 *e*P **P** **16 11 06.5 -1.4**
VSR pmax pmax
comp=Z,10.0nm,0.9s
K05A Summer Lake 71.06 51 *e*P **P** **16 11 20.0 +0.8**
comp=Z,14nm,1.1s
K05A *e*pP **pP** **16 11 26.1 -0.6**
ZEI Tsey 71.14 310 *e*P **P** **16 11 18.5 -1.1**
ZEI pmax pmax
comp=Z,14nm,1.1s
KBZ Khabaz 71.25 311 P **P** **16 11 20.6 +0.7**
comp=Z,6.8nm,0.9s,baz=54,slow=4.0,SNR=17
KBZ LR LR 16 47 14.7
comp=Z,114nm,18.0s,baz=40,slow=40
KVAR Kislovodsk Arr 71.25 311 P **P** **16 11 20.6 +0.5**
comp=Z,10.0nm,1.0s,baz=49,slow=23,SNR=7.4
KIV Kislovodsk 71.25 311 ⇓ *i*P **P** **16 11 20.6 +0.4**
KIV *e* 16 11 38.6
KIV *e* 16 13 55.5
KIV pmax pmax
comp=Z,21nm,1.0s
KIV MLR MLR
comp=Z,138nm,16.0s
KIV Kislovodsk 71.25 311 *e*P **P** **16 11 20.9 +0.7**
comp=Z,20nm,1.0s
NEY Neytrino 71.62 310 *i*P **P** **16 11 24.5 +2.0**
NEY pmax pmax
comp=Z,1.0nm,0.9s
FFC Flin Flon 73.93 33 *e*P **P** **16 11 35.5 -0.3**
FFC pmax pmax
comp=Z,7.0nm,1.0s
FFC Flin Flon 73.93 33 *e*P **P** **16 11 35.5 -0.3**
comp=Z,6.9nm,1.0s
CMB Columbia Colle 73.96 54 *e*P **P** **16 11 36.7 +0.4**
CMB pmax pmax
comp=Z,5.0nm,1.1s
CMB Columbia Colle 73.96 54 *e*P **P** **16 11 36.7 +0.4**
comp=Z,5.1nm,1.1s
FCC Fort Churchill 74.26 27 *e*P **P** **16 11 37.3 -0.2**
FCC pmax pmax
comp=Z,32nm,1.9s
FCC Fort Churchill 74.26 27 *e*P **P** **16 11 37.3 -0.2**
comp=Z,32nm,1.9s
LRM Limekiln Ridge 74.30 44 *e*P **P** **16 11 36.7 -1.8**
NC204 NORSAR Array S 74.53 338 *e*P **P** **16 11 39.3 0.0**
NB2 NORSAR Subarra 74.57 337 P **P** **16 11 39.6 +0.2**
comp=Z,2.7nm,0.7s,baz=38,slow=5.9
NOA NORSAR Array B 74.57 337 P **P** **16 11 39.6 +0.2**
comp=Z,5.2nm,0.8s,baz=38,slow=5.8,SNR=14
NOA LR LR 16 46 45.2
comp=Z,138nm,21.8s,baz=20,slow=38
AKASG Malin Array Be 74.67 322 P **P** **16 11 40.1 0.0**
comp=Z,5.5nm,0.8s,baz=46,slow=5.9,SNR=31
AKBB Malin Array Si 74.67 322 *e*P **P** **16 11 39.8 -0.3**
AKBB pmax pmax
comp=Z,12nm,1.0s
AKBB Malin Array Si 74.67 322 *e*P **P** **16 11 39.8 -0.3**
comp=Z,12nm,1.0s
KIEV Kiev 74.68 322 *ce*P **P** **16 11 39.4 -0.8**
KIEV pmax pmax
comp=Z,18nm,1.7s
KIEV Kiev 74.68 322 *e*P **P** **16 11 39.7 -0.5**
comp=Z,11nm,1.0s
AK11 Malin Array Si 74.71 322 *e*P **P** **16 11 39.6 -0.8**
BOZ Bozeman (W) 74.87 44 *e*P **P** **16 11 42.2 +0.6**
BOZ pmax pmax
comp=Z,3.0nm,0.8s
BOZ Bozeman (W) 74.87 44 *e*P **P** **16 11 42.2 +0.6**
comp=Z,3.4nm,0.8s
NVAR Mina Array Bea 75.09 53 P **P** **16 11 43.6 +0.6**
comp=Z,3.7nm,0.7s,baz=290,slow=5.9,SNR=28
H17A Grant Village 76.22 45 *e*P **P** **16 11 51.5 +2.0**
comp=Z,9.0nm,1.1s
R11A Troy Canyon, C 76.87 52 *e*P **P** **16 11 53.8 +0.6**
comp=Z,8.2nm,1.4s
FRB Frobisher Bay 77.09 13 P **P** **16 11 53.4 -0.2**
comp=Z,2.1nm,0.6s,baz=352,slow=6.1,SNR=5.9
TPNV Topopah Spring 77.27 53 *e*P **P** **16 11 56.0 +0.5**
TPNV pmax pmax
comp=Z,9.0nm,1.1s
TPNV Topopah Spring 77.27 53 *e*P **P** **16 11 56.0 +0.5**
comp=Z,9.0nm,1.1s
DUG Dugway, Tooele 77.48 49 *e*P **P** **16 11 56.8 +0.2**
DUG pmax pmax
comp=Z,7.0nm,1.0s
DUG Dugway, Tooele 77.48 49 *e*P **P** **16 11 56.8 +0.2**
comp=Z,7.1nm,1.0s
LVV L'vov 77.75 324 *e*P **P** **16 11 58.0 +0.3**
BW06 Boulder Array 77.81 45 *e*P **P** **16 11 58.2 -0.2**
PDAR Pinedale Array 77.81 45 P **P** **16 11 58.5 0.0**
comp=Z,3.8nm,0.7s,baz=262,slow=1.9,SNR=8.8
PSUT Pine Spring 77.84 51 *e*P **P** **16 11 59.1 +0.4**
comp=Z,8.1nm,1.2s
NLU North Lily Min 78.08 49 *e*P **P** **16 12 00.5 +0.6**
NLU *e*pP **pP** **16 12 07.7 +0.2**
MPU Maple Canyon 78.30 49 *e*P **P** **16 12 01.6 +0.4**
comp=Z,9.0nm,1.3s
BUR08 Bucovina Ar. S 78.67 322 *e*P **P** **16 12 03.5 +0.6**
TIRR Tirgusor 79.14 318 *e*P **P** **16 12 06.5 +1.1**
TIRR pmax pmax
comp=Z,4.0nm,1.3s
LCMT Little Creek M 79.16 52 *e*P **P** **16 12 06.8 +0.9**
comp=Z,6.9nm,1.1s
P17A Butcher Ranch, 79.18 49 *e*P **P** **16 12 06.7 +0.7**
comp=Z,6.0nm,0.8s
KOLS Kolonicke sedl 79.20 324 *e*P **P** **16 12 07.0 +1.3**
KOLS pmax pmax
comp=Z,17nm,1.8s
KOLS Kolonicke sedl 79.20 324 *e*P **P** **16 12 07.0 +1.3**
BR131 Keskin Array S 79.20 312 *e*P **P** **16 12 05.6 -0.5**
BRTR Keskin Array B 79.20 312 P **P** **16 12 06.1 0.0**
comp=Z,3.1nm,1.0s,baz=99,slow=3.9,SNR=16
BRTR Keskin Array B 79.20 312 *i*P **P** **16 12 06.6 +0.5**
BRTR pmax pmax
comp=Z,3.0nm,1.0s
STHS Stebnicka Huta 79.34 325 *e*P **P** **16 12 08.2 +1.7**
STHS pmax pmax
comp=Z,5.0nm,1.0s
STHS Stebnicka Huta 79.34 325 *e*P **P** **16 12 08.2 +1.7**
UZH Uzhgorod 79.40 324 *e*P **P** **16 12 07.3 +0.5**
UZH *i* 16 12 16.1
KNB Kanab 79.42 52 *e*P **P** **16 12 08.3 +1.0**
KNB *e**PP **PcP** **16 12 15.5 +0.1**
KNB Kanab 79.42 52 *e*P **P** **16 12 08.3 +1.0**
KNB *e*pP **PcP** **16 12 15.5 +0.1**
OJC Ojcow 79.42 326 *e*P **P** **16 12 07.9 +1.0**
OJC Ojcow 79.42 326 *e*P **P** **16 12 07.6 +0.7**
OJC pmax pmax
comp=Z,10.0nm,1.0s
OJC Ojcow 79.42 326 *e*P **P** **16 12 07.6 +0.7**
comp=Z,10nm,1.0s
SRU San Rafael Swe 79.54 49 *e*P **P** **16 12 08.2 +0.2**
SRU pmax pmax
comp=Z,6.0nm,0.8s
SRU San Rafael Swe 79.54 49 *e*P **P** **16 12 08.2 +0.2**
comp=Z,5.6nm,0.8s
CRVS Cervena-Dubn 79.60 325 *e*P **P** **16 12 08.7 +0.8**
CRVS Cervenica-Dubn 79.60 325 *e*P **P** **16 12 08.7 +0.8**
BR231 Keskin MP Arra 79.64 312 *e*P **P** **16 12 06.8 -1.7**
ULM Lac du Bonnet 79.72 33 P **P** **16 12 08.9 +0.5**
comp=Z,1.8nm,0.6s,baz=353,slow=8.1,SNR=3.0
ULM Lac du Bonnet 79.72 33 P **P** **16 12 09.0 +0.5**
NIE Niedzica 79.77 325 *e*P **P** **16 12 10.3 +1.5**
NIE Niedzica 79.77 325 *e*P **P** **16 12 10.3 +1.5**
LANS Liptovska Anna 80.34 326 *e*P **P** **16 12 13.9 +2.0**
LANS Liptovska Anna 80.34 326 *e*P **P** **16 12 13.9 +2.0**
MORC Moravsky Berou 80.74 327 *e*P **P** **16 12 14.8 +0.7**
MORC pmax pmax
comp=Z,37nm,1.2s
MORC Moravsky Berou 80.74 327 *e*P **P** **16 12 14.8 +0.7**
comp=Z,37nm,1.2s
DPC Dobruska-Polom 80.84 328 *e*P **P** **16 12 15.8 +1.2**
DPC *e*pP **pP** **16 12 23.3 +1.1**
DPC Dobruska-Polom 80.84 328 *e*P **P** **16 12 15.8 +1.2**
DPC *e* 16 12 23.3
KRLC Kraliky 80.85 328 *e*P **P** **16 12 15.6 +1.0**
KRLC *e*pP **pP** **16 12 22.8 +0.5**
KRLC Kraliky 80.85 328 *e*P **P** **16 12 15.6 +1.0**
KRLC *e* 16 12 22.8
RAYN Ar Rayn 80.93 292 *e*P **P** **16 12 15.7 +0.2**
comp=Z,4.3nm,1.0s
PSZ Piszkesteto 81.03 325 *e*P **P** **16 12 16.6 +0.9**
PSZ pmax pmax
comp=Z,10.0nm,1.1s
PSZ Piszkesteto 81.03 325 *e*P **P** **16 12 16.6 +0.9**
comp=Z,10.0nm,1.1s
PV05 Paradox Valley 81.06 49 *e*P **P** **16 12 17.0 +0.8**
VYHS Vyhne 81.10 326 *e*P **P** **16 12 17.1 +1.1**
VYHS pmax pmax
comp=Z,6.0nm,1.5s
VYHS Vyhne 81.10 326 *e*P **P** **16 12 17.1 +1.1**
WUAZ Wupatki 81.27 52 *e*P **P** **16 12 17.8 +0.5**
WUAZ *e*pP **sP** **16 12 28.3 +0.6**
BRG Berggiesshubel 81.44 330 *e*P **P** **16 12 18.1 +0.4**
comp=Z,5.8nm,1.3s
BRG Berggiesshubel 81.44 330 *e*P **P** **16 12 18.0 +0.4**
BRG pmax pmax
comp=Z,6.0nm,1.3s
CLL Collm 81.48 330 ⇑ *i*P **P** **16 12 18.0 +0.1**
comp=Z,7.0nm,0.9s
CLL *i* 16 12 28.2
CLL *e*PP PP 16 15 18.0 -5.4
CLL Collm 81.48 330 ⇑ *i*P **P** **16 12 18.0 +0.1**
CLL *i* 16 12 28.2
CLL pmax pmax
comp=Z,7.0nm,0.9s
CLL Collm 81.48 330 *e*P **P** **16 12 17.8 -0.1**
comp=Z,7.0nm,0.9s
VRAC Vranov 81.50 327 P **P** **16 12 18.6 +0.5**
comp=Z,2.9nm,0.8s,baz=37,slow=6.0,SNR=3.9
PRU Pruhonice 81.86 329 *e*P **P** **16 12 21.0 +1.0**
PRU Pruhonice 81.86 329 *e*P **P** **16 12 21.0 +1.0**
X16A Lo Mia Camp, P 81.91 53 *e*P **P** **16 12 21.5 +0.7**
comp=Z,3.9nm,0.9s
KHC Kasperske Hory 82.92 329 *e*P **P** **16 12 26.2 +0.6**
KHC Kasperske Hory 82.92 329 *e*P **P** **16 12 25.0 -0.6**
KHC pmax pmax
comp=Z,2.0nm,0.9s
KHC Kasperske Hory 82.92 329 *e*P **P** **16 12 25.0 -0.6**
comp=Z,2.1nm,0.9s
GERES GERESS Array B 83.09 328 P **P** **16 12 26.4 -0.1**
comp=Z,1.5nm,0.8s,baz=38,slow=5.0,SNR=14
GEA0 GERESS Array S 83.10 328 *e*P **P** **16 12 26.3 -0.2**
EKA Eskdalemuir Ar 83.52 341 P **P** **16 12 28.9 +0.4**
comp=Z,1.1nm,0.7s,baz=22,slow=4.8,SNR=5.4
ANMO Albuquerque 84.71 50 *ce*P **P** **16 12 35.9 +0.7**
ANMO pmax pmax

comp=Z,5.0nm,2.5s
ANMO Albuquerque 84.71 50 *e*P pP 16 12 42.4 -0.4
319A Douglas 85.25 54 *es*P sP 16 12 49.1 +0.8
BFO Black Forest 85.69 331 *e*P **P 16 12 39.1 -0.5**
BFO pmax pmax
comp=Z,7.0nm,1.0s
BFO Black Forest 85.69 331 *e*P **P 16 12 39.1 -0.5**
comp=Z,6.6nm,1.0s
TX31 Lajitas Ar. Si 90.22 52 *e*P **P 16 13 01.7 0.0**
TXAR Lajitas Array 90.22 52 P **P 16 13 02.0 +0.3**
comp=Z,0.8nm,0.7s,baz=297,slow=3.5,SNR=11
LPAZ La Paz 146.75 60 PKPbc **PKPbc 16 19 43.7 -0.2**
comp=Z,4.3nm,0.6s,baz=342,slow=2.5,SNR=24
PLCA Paso Flores 154.67 109 PKPab **PKPab 16 20 15.8 -0.8**
comp=Z,2.4nm,0.8s,baz=323,slow=2.9,SNR=4.6

MEX 17 16:01:28.3±0.3, 14.13N×91.97W, h5km, MD4.0, Guatemala

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PCIG		**1.97**	**323**	*e*P	Pn	16 01 59.2	-3.2
PCIG				*e*S	Sn	16 02 23.6	-3.9

TAP 17 16:05:18.1, 24.37N×121.73E, h10km, ML1.6, C, Taiwan

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ENA	**Nanau**	**0.06**	**8**	*e*P	Pg	16 05 21.1	+0.8
	baz=16						
ENA				*i* S	Sg	16 05 22.5	+0.7
	baz=16						
TWC	**Suao**	**0.26**	**24**	*e*P	Pb	16 05 24.3	-0.6
	baz=26						
TWC				*e*S	Sb	16 05 28.4	-0.9
	baz=26						
ENTT	**Nioudou**	**0.31**	**330**	P	Pb	16 05 25.2	-0.5
	baz=331						
ENTT				*e*S	Sb	16 05 29.9	-0.8
	baz=331						
TWD	**Chiawan**	**0.32**	**203**	*e*P	Pb	16 05 25.6	-0.3
	baz=201						
NNS	**Nan Shan**	**0.34**	**282**	*e*S	Sb	16 05 30.9	-0.9
	baz=281						
NSK	**Sanguang**	**0.46**	**312**	*e*P	Pb	16 05 28.2	-0.1
	baz=311						
NSK				*e*S	Sb	16 05 34.9	-0.3
	baz=311						

TAP 17 16:08:52.5, 22.91N×121.02E, h14km±1km, ML2.6, A, Taiwan region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
TWG	**Pinlang**	**0.10**	**150**	*e*P	Pb	16 08 56.4	+0.2
	baz=147						
TWG				*e*S	Sb	16 08 58.3	-0.4
	baz=147						
TWG	**Pinlang**	**0.10**	**150**	*e*S	Pb	16 08 56.9	+0.6
TTN	**Taitung**	**0.20**	**142**	*e*P	Pb	16 08 57.7	-0.1
	baz=140						
TTN				*e*S	Sb	16 09 02.3	+0.9
	baz=140						
TTN	**Taitung**	**0.20**	**142**	*e*P	Sb	16 09 02.1	+0.8
	baz=133						
ELDTW	**Lidau**	**0.28**	**360**	*i* P	Pb	16 08 58.9	-0.4
	baz=1.0						
ELDTW				*e*S	Sb	16 09 03.9	0.0
	baz=1.0						
ELDTW	**Lidau**	**0.28**	**360**	*e*P	Sb	16 09 04.0	0.0
	baz=2.0						
ECL	**Taimali**	**0.32**	**191**	P	Pb	16 08 59.6	-0.2
	baz=189						
ECL				*e*S	Sb	16 09 05.1	+0.3
	baz=189						
STYT	**Tauyuan**	**0.35**	**316**	*e*P	Pb	16 09 00.4	-0.1
	baz=317						
STYT				*e*S	Sb	16 09 06.0	+0.1
	baz=317						
CHKT	**Chengkung**	**0.37**	**59**	*e*P	Pb	16 09 01.7	+0.9
	baz=60						
CHKT				*e*S	Sb	16 09 06.9	+0.4
	baz=60						
CHKT	**Chengkung**	**0.37**	**59**	*e*P	Sb	16 09 06.7	+0.2
	baz=56						
SSD	**Sandimen**	**0.39**	**246**	P	Pg	16 09 00.7	+0.3
	baz=244						
SSD				*e*S	Sb	16 09 07.2	+0.2
	baz=244						
SGST	**Jiashian**	**0.44**	**293**	*e*P	Pb	16 09 01.7	-0.2
	baz=293						
SGST				*e*S	Sb	16 09 09.6	+1.2
	baz=293						
WTP	**Ta-pu**	**0.50**	**312**	*e*P	Pb	16 09 03.6	+0.5
	baz=312						
WTP				*e*S	Sb	16 09 10.4	+0.1
	baz=312						
TWF1	**Yuli**	**0.51**	**30**	P	Pb	16 09 03.2	-0.1
	baz=30						
TWF1				*e*S	Sb	16 09 11.2	+0.7
	baz=30						
CHN1	**Nanshi**	**0.53**	**301**	*e*P	Pb	16 09 04.3	+0.7
	baz=301						
CHN1				*e*S	Sb	16 09 11.6	+0.6
	baz=301						
EAST	**Anshuo**	**0.55**	**197**	P	Pb	16 09 04.1	+0.3
	baz=195						
EAST				*e*S	Sb	16 09 11.3	-0.2
	baz=195						
TWM1	**Shoushan**	**0.56**	**261**	*e*P	Pb	16 09 04.6	+0.6
	baz=260						
TWM1				*e*S	Sb	16 09 11.3	-0.5
	baz=260						
TAW	**Tawu**	**0.56**	**192**	*e*P	Pb	16 09 04.3	+0.3
	baz=190						
TAW				*e*S	Sb	16 09 12.2	+0.3
	baz=190						
YUS	**Yu-Shan**	**0.58**	**354**	*e*P	Pg	16 09 04.3	+0.3
	baz=354						
YUS				*e*S	Sb	16 09 12.5	-0.5
	baz=354						
CHN4	**Tsaushan**	**0.59**	**318**	*e*P	Pb	16 09 04.4	-0.1
	baz=318						
CHN4				*e*S	Sb	16 09 13.2	+0.5
	baz=318						
TWK	**Hsinying**	**0.60**	**306**	*e*P	Pb	16 09 05.2	+0.3
	baz=306						
TWK				*e*S	Sb	16 09 13.9	+0.6
	baz=306						
CHN3	**Shinhua**	**0.62**	**286**	*e*S	Sb	16 09 14.7	+1.0
	baz=285						
ALS	**Alishan**	**0.63**	**342**	*e*P	Pb	16 09 05.7	+0.3
	baz=342						
ALS				*e*S	Sg	16 09 13.8	+0.4
	baz=342						
SCZT	**Fangliau**	**0.65**	**215**	*e*P	Pb	16 09 05.8	+0.2
	baz=213						
SCZT				*e*S	Sb	16 09 15.1	+0.7
	baz=213						
EHY	**Hungye**	**0.66**	**25**	P	Pb	16 09 05.9	+0.2
	baz=25						
EHY				*e*S	Sb	16 09 15.4	+0.7
	baz=25						
CHN5	**Tsauling**	**0.75**	**336**	*e*P	Pn	16 09 08.3	-0.5
	baz=335						
CHN5				*e*S	Sb	16 09 17.9	+0.3
	baz=335						
SMLT	**Sun Moon Lake**	**0.98**	**354**	*e*P	Pg	16 09 11.5	+0.1
	baz=354						
SMLT				*e*S	Sn	16 09 25.0	-0.5
	baz=354						
ESL	**Shilin**	**0.98**	**23**	*e*P	Pn	16 09 11.8	0.0
	baz=23						
ESL				*e*S	Sn	16 09 25.1	-0.3
	baz=23						
TYC	**Yuchr**	**1.00**	**352**	*e*P	Pn	16 09 13.0	+1.0
	baz=352						
TYC				*e*S	Sn	16 09 25.7	-0.3
	baz=352						
WHF	**Hehuan Shan**	**1.25**	**10**	*e*P	Pn	16 09 15.6	-0.3
	baz=10.0						
WHF				*e*S	Sb	16 09 32.5	+0.2
	baz=10.0						
TWQ1	**Liyutan**	**1.45**	**351**	*e*P	Pn	16 09 18.1	-0.2
	baz=351						
TWQ1				*e*S	Sb	16 09 37.4	-0.1
	baz=351						
NNS	**Nan Shan**	**1.56**	**12**	*e*P	Pn	16 09 20.0	+0.1
	baz=12						
NNS				*e*S	Sn	16 09 40.1	+0.1
	baz=12						
ENA	**Nanau**	**1.65**	**24**	*e*S	Sn	16 09 41.5	-0.5
	baz=23						
NSTT	**Nanjuang**	**1.71**	**359**	*e*P	Pn	16 09 21.9	0.0
	baz=359						
NSTT				*e*S	Sn	16 09 44.0	+0.4
	baz=359						
NSK	**Sanguang**	**1.79**	**10**	*e*P	Pn	16 09 23.2	+0.2
	baz=10.0						
NSK				*e*S	Sn	16 09 45.8	+0.3
	baz=10.0						
ENTT	**Nioudou**	**1.79**	**16**	*e*P	Pn	16 09 23.3	+0.3
	baz=16						
ENTT				*e*S	Sn	16 09 45.9	+0.3
	baz=16						
TWE	**Neicheng**	**1.90**	**18**	*e*P	Pn	16 09 24.4	0.0
	baz=18						
TWE				*e*S	Sn	16 09 48.6	+0.5
	baz=18						

TAP 17 16:08:59.0, 22.88N×121.01E, h5km±1km, ML2.6, B, Taiwan region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
TWG	**Pinlang**	**0.08**	**135**	*e*P	Pg	16 08 59.8	-1.0
	baz=132						
TWG				*e*S	Sg	16 09 02.3	+0.4
	baz=132						
TTN	**Taitung**	**0.18**	**134**	*e*S	Sg	16 09 06.0	+1.2
	baz=133						
ECL	**Taimali**	**0.28**	**190**	*e*P	Pg	16 09 03.9	-0.6
	baz=189						
ECL				S	Sg	16 09 08.8	+0.5
	baz=189						
ELDTW	**Lidau**	**0.31**	**1**	*e*S	Sg	16 09 09.2	+0.1
	baz=2.0						
STYT	**Tauyuan**	**0.37**	**321**	*e*P	Pg	16 09 05.2	-0.9
	baz=321						
STYT				*e*S	Sg	16 09 10.2	-0.7
	baz=321						
SSD	**Sandimen**	**0.37**	**249**	*e*P	Pg	16 09 05.5	-0.6
	baz=248						
SSD				*e*S	Sg	16 09 10.4	-0.7
	baz=248						
CHKT	**Chengkung**	**0.40**	**56**	*e*S	Sg	16 09 12.7	+1.0
	baz=56						
SGST	**Jiashian**	**0.44**	**297**	*e*P	Pg	16 09 07.5	0.0
	baz=297						
SGST				*e*S	Sg	16 09 13.7	+0.4
	baz=297						
EAST	**Anshuo**	**0.52**	**197**	P	Pg	16 09 09.0	+0.1
	baz=195						
EAST				*e*S	Sg	16 09 16.3	+0.7
	baz=195						
WTP	**Ta-pu**	**0.52**	**315**	*e*P	Pg	16 09 08.5	-0.4
	baz=315						
WTP				*e*S	Sg	16 09 16.3	+0.6
	baz=315						
TAW	**Tawu**	**0.53**	**192**	*e*P	Pg	16 09 09.3	+0.1
	baz=190						
TAW				*e*S	Sg	16 09 17.3	+1.3
	baz=190						
CHN1	**Nanshi**	**0.54**	**305**	*e*P	Pg	16 09 08.7	-0.6
	baz=304						
CHN1				*e*S	Sg	16 09 17.6	+1.2
	baz=304						
TWF1	**Yuli**	**0.54**	**29**	*e*P	Pg	16 09 08.8	-0.6
	baz=29						
TWF1				*e*S	Sg	16 09 17.8	+1.3
	baz=29						
TWM1	**Shoushan**	**0.55**	**264**	*e*S	Sg	16 09 17.7	+1.2
	baz=264						
CHN4	**Tsaushan**	**0.61**	**321**	*e*P	Pg	16 09 10.9	+0.3
	baz=320						
CHN4				*e*S	Sg	16 09 19.8	+1.2
	baz=320						
YUS	**Yu-Shan**	**0.61**	**355**	*e*P	Pg	16 09 09.7	-1.1
	baz=355						
YUS				*e*S	Sg	16 09 19.9	+1.1
	baz=355						
TWK	**Hsinying**	**0.62**	**309**	*e*P	Pg	16 09 09.8	-1.0
	baz=309						
TWK				*e*S	Sg	16 09 19.2	+0.3
	baz=309						
SCZT	**Fangliau**	**0.62**	**216**	*e*P	Pg	16 09 10.6	-0.2
	baz=214						
SCZT				*e*S	Sg	16 09 19.1	+0.2
	baz=214						
CHN3	**Shinhua**	**0.63**	**288**	*e*S	Sb	16 09 21.6	0.0
	baz=288						
ALS	**Alishan**	**0.66**	**343**	*e*P	Pg	16 09 10.9	-0.7
	baz=343						
ALS				*e*S	Sg	16 09 21.1	+0.9
	baz=343						
EHY	**Hungye**	**0.69**	**25**	*e*P	Pg	16 09 11.6	-0.6
	baz=25						
EHY				*e*S	Sb	16 09 22.3	-1.1
	baz=25						
CHN5	**Tsauling**	**0.78**	**337**	*e*P	Pg	16 09 13.1	-0.9
	baz=336						
CHN5				*e*S	Sb	16 09 25.4	-0.7
	baz=336						
SMLT	**Sun Moon Lake**	**1.00**	**354**	*e*P	Pg	16 09 18.1	-0.2
	baz=354						
SMLT				S	Sb	16 09 32.1	-0.5
	baz=354						
ESL	**Shilin**	**1.01**	**23**	*e*P	Pg	16 09 17.4	-1.0
	baz=23						
TYC	**Yuchr**	**1.03**	**352**	*e*P	Pg	16 09 18.7	-0.1
	baz=352						
TYC				*e*S	Sb	16 09 33.7	+0.5
	baz=352						
WHF	**Hehuan Shan**	**1.28**	**10**	*e*P	Pg	16 09 21.9	-1.8
	baz=10.0						
WHF				*e*S	Sg	16 09 40.5	+0.2
	baz=10.0						
TWQ1	**Liyutan**	**1.48**	**352**	*e*P	Pn	16 09 25.4	-0.9
	baz=351						
TWQ1				*e*S	Sn	16 09 45.3	-0.8
	baz=351						
NNS	**Nan Shan**	**1.59**	**12**	*e*P	Pn	16 09 26.9	-1.0
	baz=12						
NNS				*e*S	Sn	16 09 48.1	-0.9
	baz=12						
ENA	**Nanau**	**1.68**	**23**	*e*S	Sn	16 09 50.9	-0.2
	baz=23						
NSTT	**Nanjuang**	**1.75**	**360**	*e*P	Pn	16 09 30.7	+0.7
	baz=359						
NSTT				*e*S	Sn	16 09 51.4	-1.3
	baz=359						
NSK	**Sanguang**	**1.82**	**10**	*e*P	Pn	16 09 29.7	-1.3
	baz=10.0						
NSK				*e*S	Sn	16 09 52.0	-2.6
	baz=10.0						
ENTT	**Nioudou**	**1.83**	**16**	*e*P	Pn	16 09 29.9	-1.2
	baz=16						
ENTT				*e*S	Sn	16 09 55.0	+0.3
	baz=16						
TWE	**Neicheng**	**1.93**	**18**	*e*P	Pn	16 09 31.8	-0.8
	baz=18						
TWE				*e*S	Sn	16 09 57.2	0.0
	baz=18						

IDC ***17*** *16:17:46.6±0.9, 35.48N×141.14E, h0km, mb3.7/9, mb1 3.9/12, mb1mx3.6/38, mbtmp3.8/12, ML3.8/3, Error ellipse: s-maj=32.7km s-min=16.0km az=86.0*
ISCJB ***17*** *16:17:47.9±1.0, 35.41N±0.04×141.37E±0.08, h27km±6km, mb3.6/11, Error ellipse: s-maj=10.4km s-min=5.8km az=172.3*
NEIC ***17*** *16:17:48.9±3.7, 35.43N×141.31E, h18km±24km, mb4.1/2, Error ellipse: s-maj=14.8km s-min=8.6km az=87.0*
JMA ***17*** *16:17:50.7±0.1, 35.42N×141.17E, h25km±2km, M3.1*

ISC 17 16:17:50.2±1.5, 35.41N±0.05×141.19E±0.08, h26km±10km, n35, σ1s15/34, mb3.7/11, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CHOJ	**Chosi**	**0.40**	**317**	P	**Pb**	**16 17 58.9**	**+0.1**
CHOJ				*e*S	**Sb**	**16 18 04.5**	**-0.2**
KTR	**Katsuura**	**0.76**	**250**	P	**Pb**	**16 18 04.8**	**0.0**
KTR				*e*S	**Sb**	**16 18 14.8**	**0.0**
BSO1	**Boso 1**	**0.77**	**193**	P	**Pn**	**16 18 04.8**	**-0.1**
JCN	**Nagara**	**0.81**	**271**	P	**Pn**	**16 18 06.3**	**+0.4**
BSO4	**Boso 4**	**0.81**	**239**	P	**Pn**	**16 18 05.8**	**-0.1**
BSO3	**Boso 3**	**0.82**	**223**	P	**Pn**	**16 18 05.7**	**-0.1**
JYT	**Yasato**	**1.15**	**315**	P	**Pb**	**16 18 11.8**	**+0.4**
JYT				*e*S	**Sn**	**16 18 25.5**	**0.0**
JHJ2	**Mitsune**	**2.56**	**207**	*e*Pn	**Pn**	**16 18 29.6**	**-0.4**
JHJ	**Hachijo jima 2**	**2.56**	**207**	Pn	**Pn**	**16 18 31.2**	**+1.2**
	23nm,0.3s,baz=308,slow=23,SNR=11						
JHJ				Sn	**Sn**	**16 18 59.3**	**-1.1**
	44nm,0.3s,baz=275,slow=21,SNR=7.4						
MJAR	**Matsushiro Arr**	**2.67**	**296**	Pn	**Pn**	**16 18 33.2**	**+1.7**
	4.5nm,0.3s,baz=96,slow=13,SNR=18						
MAJO	**Matsushiro**	**2.67**	**296**	*e*Pn	**Pn**	**16 18 33.2**	**+1.7**
MAT	**Matsushiro**	**2.67**	**296**	P	**Pn**	**16 18 33.3**	**+1.7**
MAT				S	**Sn**	**16 19 00.6**	**-2.5**
ERM	**Erimo**	**6.77**	**13**	*e*Pn	**Pn**	**16 19 27.1**	**-0.7**
CBIJ	**Chichi jima**	**8.33**	**174**	*e*Pn	**Pn**	**16 19 48.2**	**-1.1**
JCJ	**Chichijima**	**8.33**	**174**	Pn	**Pn**	**16 19 47.8**	**-1.5**
	7.2nm,0.3s,baz=270,slow=23,SNR=5.4						
ASAJ	**Asahikawa**	**8.76**	**7**	Pn	**Pn**	**16 19 53.4**	**-1.8**
	0.8nm,0.3s,baz=229,slow=12,SNR=8.9						
USRK	**Ussuriysk Ar.**	**11.27**	**324**	Pn	**Pn**	**16 20 30.5**	**+1.0**
	0.2nm,0.3s,baz=64,slow=13,SNR=2.7						
H11N2	**WAKE ISLAND Hy 27.51 118**			T	T	16 53 10.8	
	baz=310,slow=75,SNR=21						
H11N1	**WAKE ISLAND Hy 27.52 118**			T	T	16 53 16.5	
	baz=310,slow=75,SNR=25						
H11N3	**WAKE ISLAND Hy 27.53 118**			T	T	16 53 17.3	
	baz=310,slow=75,SNR=19						
H11S3	**WAKE ISLAND Hy 28.16 120**			T	T	16 54 05.3	
	baz=312,slow=75,SNR=60						
H11S1	**WAKE ISLAND Hy 28.16 120**			T	T	16 53 57.1	
	baz=312,slow=75,SNR=54						
H11S2	**WAKE ISLAND Hy 28.18 120**			T	T	16 54 02.1	
	baz=312,slow=75,SNR=52						
SONM	**Songino Array**	**28.58**	**306**	P	**P**	**16 23 43.2**	**-0.8**
	0.4nm,0.7s,baz=88,slow=8.1,SNR=4.7						
ZALV	**Zalesovo Beam**	**42.89**	**314**	P	**P**	**16 25 46.4**	**+0.2**
	1.0nm,0.5s,baz=96,slow=6.8,SNR=7.3						
MKAR	**Makanchi Array**	**44.85**	**303**	P	**P**	**16 26 02.6**	**+0.5**
	0.7nm,0.6s,baz=89,slow=10,SNR=11						
KURK	**Kurchatov**	**46.81**	**309**	*e*P	**P**	**16 26 17.6**	**+0.1**
	1.8nm,0.7s						
ILAR	**Eielson Array**	**50.97**	**32**	P	**P**	**16 26 50.3**	**+1.2**
	0.1nm,0.5s,baz=278,slow=6.1,SNR=3.3						
WRAB	**Tennant Creek**	**55.42**	**188**	*e*P	**P**	**16 27 23.2**	**+0.9**
WRA	**Warramunga Arr**	**55.43**	**188**	P	**P**	**16 27 22.1**	**-0.4**
	1.0nm,0.6s,baz=4.6,slow=7.5,SNR=16						
ABKAR	**Akbulak array**	**58.86**	**311**	*e*P	**P**	**16 27 46.5**	**0.0**
	0.6nm,0.6s						
ASAR	**Alice Springs**	**59.16**	**188**	P	**P**	**16 27 51.4**	**+2.6**
	0.1nm,0.6s,baz=355,slow=5.6,SNR=6.4						
FINES	**FINESS Array B**	**70.17**	**332**	P	**P**	**16 28 59.8**	**-0.4**
	1.5nm,0.7s,baz=36,slow=7.1,SNR=4.4						
NOA	**NORSAR Array B**	**75.61**	**337**	P	**P**	**16 29 30.7**	**-1.8**
	0.4nm,0.5s,baz=317,slow=3.0,SNR=3.4						
GERES	**GERESS Array B**	**84.00**	**328**	P	**P**	**16 30 18.4**	**+0.2**
	0.1nm,0.3s,baz=357,slow=11,SNR=4.1						

NIED ***17*** *16:18:00, 35.40N×141.10E, h29km, Mw4.1 Best double couple: M0 1.37000×10^15 NP1:φs307.00000°, δ20.00000°, λ163.00000°. NP2:φs53.00000°, δ84.00000°, λ71.00000°.*
IDC ***17*** *16:18:27.0±0.8, 35.41N×141.26E, h0km, mb4.0/13, mb1 4.1/17, mb1mx4.0/39, mbtmp4.0/17, ML3.9/3, MS2.9/4, Ms1 2.9/4, ms1mx2.6/51, Error ellipse: s-maj=24.7km s-min=17.3km az=77.0*
ISCJB ***17*** *16:18:28.4±0.5, 35.41N±0.04×141.40E±0.06, h25km, mb4.0/19, Error ellipse: s-maj=7.6km s-min=5.7km az=7.2*
JMA ***17*** *16:18:31.6±0.2, 35.44N×141.14E, h27km±2km, M3.5*
NEIC ***17*** *16:18:32.1±0.4, 35.46N×141.27E, h35km, mb4.2/6, Error ellipse: s-maj=10.6km s-min=7.4km az=84.0*

ISC 17 16:18:30.5±0.7, 35.44N±0.06×141.30E±0.08, h25km, n40, σ0s80/38, mb4.1/19, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CHOJ	**Chosi**	**0.45**	**307**	P	**Pn**	**16 18 39.5**	**-1.9**
CHOJ				S	**Sb**	**16 18 45.0**	**-1.2**
KTR	**Katsuura**	**0.85**	**251**	P	**Pn**	**16 18 45.6**	**-1.4**
BSO4	**Boso 4**	**0.90**	**241**	P	**Pn**	**16 18 46.5**	**-1.1**
BSO3	**Boso 3**	**0.91**	**226**	P	**Pn**	**16 18 46.6**	**-0.8**
JYT	**Yasato**	**1.20**	**312**	P	**Pb**	**16 18 52.1**	**-0.4**
JHO	**Hitachi**	**1.31**	**333**	P	**Pb**	**16 18 54.1**	**-0.4**
JHJ	**Hachijo jima 2**	**2.63**	**209**	Sn	**Sn**	**16 19 41.6**	**-0.9**
	29nm,0.3s,baz=249,slow=24,SNR=3.2						
JHJ				LR	LR	16 20 24.5	
	comp=Z,191nm,21.7s,baz=59,slow=46						
MJAR	**Matsushiro Arr**	**2.74**	**295**	Pn	**Pn**	**16 19 13.4**	**+0.5**
	9.6nm,0.3s,baz=96,slow=13,SNR=14						
MJAR				LR	LR	16 20 15.6	
	comp=Z,286nm,18.4s,baz=115,slow=40						
MAJO	**Matsushiro**	**2.74**	**295**	*e*Pn	**Pn**	**16 19 12.8**	**-0.1**
MAT	**Matsushiro**	**2.74**	**295**	P	**Pn**	**16 19 14.2**	**+1.3**
ERM	**Erimo**	**6.73**	**12**	*e*Pn	**Pn**	**16 20 07.5**	**-0.1**
CBIJ	**Chichi jima**	**8.35**	**175**	*e*Pn	**Pn**	**16 20 28.6**	**-1.4**
ASAJ	**Asahikawa**	**8.73**	**6**	Pn	**Pn**	**16 20 33.6**	**-1.5**
	3.2nm,0.3s,baz=238,slow=6.6,SNR=14						
JNU	**Nakatsue**	**8.93**	**258**	LR	LR	16 23 42.7	
	comp=Z,15nm,20.8s,baz=104,slow=36						
KSRS	**Korea Array**	**10.96**	**284**	LR	LR	16 25 30.3	
	comp=Z,211nm,18.4s,baz=106,slow=39						
USRK	**Ussuriysk Ar.**	**11.30**	**324**	Pn	**Pn**	**16 21 11.7**	**+1.4**
	0.1nm,0.3s,baz=132,slow=11,SNR=5.5						
KLR	**Kul'dur**	**15.47**	**336**	Pn	**Pn**	**16 22 06.8**	**-0.1**
	0.2nm,0.3s,baz=144,slow=14,SNR=5.1						
PETK	**Petropavlovsk-**	**21.12**	**28**	P	**P**	**16 23 14.0**	**+0.7**
	5.8nm,0.9s,baz=242,slow=15,SNR=3.6						
SONM	**Songino Array**	**28.63**	**306**	P	**P**	**16 24 24.5**	**-0.6**
	1.1nm,0.7s,baz=103,slow=8.8,SNR=9.3						
TIXI	**Tiksi**	**36.86**	**353**	*e*P	**P**	**16 25 36.9**	**+0.5**
	1.1nm,0.7s						
ZALV	**Zalesovo Beam**	**42.93**	**314**	P	**P**	**16 26 27.2**	**+0.1**
	2.2nm,0.5s,baz=94,slow=7.2,SNR=12						
MKAR	**Makanchi Array**	**44.90**	**303**	P	**P**	**16 26 43.3**	**+0.3**
	2.3nm,0.8s,baz=91,slow=10,SNR=16						
KURK	**Kurchatov**	**46.85**	**309**	*e*P	**P**	**16 26 57.8**	**-0.5**
	5.4nm,0.7s						
ILAR	**Eielson Array**	**50.90**	**32**	P	**P**	**16 27 29.8**	**+0.7**
	0.3nm,0.6s,baz=260,slow=6.0,SNR=5.6						
BRVK	**Borovoye**	**51.64**	**313**	*e*P	**P**	**16 27 35.5**	**+0.6**
	1.1nm,0.6s						
KKAR	**Karatay Array**	**53.85**	**301**	*e*P	**P**	**16 27 51.6**	**+0.2**
	1.4nm,0.8s						
WRAB	**Tennant Creek**	**55.46**	**188**	*e*P	P	16 28 05.6	+2.5
WRA	**Warramunga Arr**	**55.47**	**188**	P	**P**	**16 28 02.9**	**-0.3**
	1.6nm,0.4s,baz=5.5,slow=8.0,SNR=17						
ARU	**Arti**	**57.50**	**319**	*e*P	**P**	**16 28 16.6**	**-0.7**
	3.4nm,0.8s						
ABKAR	**Akbulak array**	**58.90**	**311**	*e*P	**P**	**16 28 26.9**	**-0.3**
	1.8nm,0.5s						
ASAR	**Alice Springs**	**59.20**	**188**	P	**P**	**16 28 29.7**	**+0.2**
	0.3nm,0.6s,baz=359,slow=6.3,SNR=6.4						
FINES	**FINESS Array B**	**70.18**	**332**	P	**P**	**16 29 41.0**	**+0.3**
	3.1nm,0.7s,baz=71,slow=8.3,SNR=10						
FINES	**FINESS Array B**	**70.18**	**332**	P	**P**	**16 29 41.0**	**+0.3**
KBZ	**Khabaz**	**71.87**	**311**	P	**P**	**16 29 51.8**	**+0.5**
	2.3nm,0.9s,baz=46,slow=0.4,SNR=6.0						
AKASG	**Malin Array Be**	**75.50**	**323**	P	**P**	**16 30 12.5**	**0.0**
	1.7nm,0.5s,baz=46,slow=5.9,SNR=9.3						
NB2	**NORSAR Subarra**	**75.62**	**337**	P	**P**	**16 30 13.6**	**+0.6**
	comp=Z,1.0nm,0.6s,baz=41,slow=5.9						
NOA	**NORSAR Array B**	**75.62**	**337**	P	**P**	**16

FETY	**Fethiye**	**0.26**	**57**	*e*PG	**Pb**	**16 26 12.3**	**-0.5**
FETY				*e*SG	**Sb**	**16 26 17.6**	**+0.3**
FETY	**Fethiye**	**0.26**	**57**	*e*Pg	**Pb**	**16 26 12.3**	**-0.5**
FETY				*e*Sg	**Sb**	**16 26 17.6**	**+0.3**
DALY	**Dalyan (Mu¨la**	**0.35**	**339**	*e*PG	**Pg**	**16 26 12.9**	**-0.3**
DALY				*e*SG	**Sg**	**16 26 18.1**	**+0.2**
DALY	**Dalyan (Mu¨la**	**0.35**	**339**	*e*Pg	**Pg**	**16 26 12.9**	**-0.3**
DALY				*e*Sg	**Sg**	**16 26 18.1**	**+0.2**
AKAS	**Kas**	**0.69**	**112**	*i* P	**Pg**	**16 26 19.6**	**0.0**
AKAS				*i* S	**Sn**	**16 26 32.4**	**-0.1**
AKAS	**Kas**	**0.69**	**112**	P	**Pg**	**16 26 19.6**	**0.0**
AKAS				S	**Sn**	**16 26 32.4**	**-0.1**
YER	**Yerkesik**	**0.77**	**327**	*e*PG	**Pg**	**16 26 20.5**	**-0.6**
YER	**Yerkesik**	**0.77**	**327**	*e*Pg	**Pg**	**16 26 20.5**	**-0.6**
BDRM	**Kayabasi**	**1.24**	**298**	*i* P	**Pg**	**16 26 30.1**	**+0.1**
BDRM				*i* S	**Sg**	**16 26 46.5**	**+0.4**
BDRM	**Kayabasi**	**1.24**	**298**	P	**Pg**	**16 26 30.1**	**+0.1**
BDRM				S	**Sg**	**16 26 46.5**	**+0.4**
BODT	**Bodrum**	**1.33**	**296**	*e*PN	**Pb**	**16 26 30.6**	**-0.5**
BODT	**Bodrum**	**1.33**	**296**	*e*Pn	**Pb**	**16 26 30.6**	**-0.5**
AYDN	**Tasoluk**	**1.39**	**328**	*i* P	**Pg**	**16 26 33.0**	**+0.2**
AYDN				*i* S	**Sg**	**16 26 52.3**	**+1.5**
AYDN	**Tasoluk**	**1.39**	**328**	P	**Pg**	**16 26 33.0**	**+0.2**
AYDN				S	**Sg**	**16 26 52.3**	**+1.5**
AYDB	**Zeytinkoy-Aydi**	**1.63**	**333**	*e*PN	**Pb**	**16 26 35.6**	**-0.6**
AYDB	**Zeytinkoy-Aydi**	**1.63**	**333**	*e*Pn	**Pb**	**16 26 35.6**	**-0.6**

IDC 17 16:31:23.0±1.6, 2°.78N×129°.45E, h0km, mb3.8/5, mb1 4.0/5, mb1mx3.6/41, mbtmp3.9/5, MS3.0/1, Ms1 3.0/1, ms1mx2.4/47, Error ellipse: s-maj=92.3km s-min=23.1km az=65.0, Halmahera

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**23.09**	**168**	P	P	16 36 31.3	+0.8
	1.7nm,0.4s,baz=347,slow=12,SNR=59						
ASAR	**Alice Springs**	**26.64**	**171**	P	P	16 37 03.2	-0.4
	0.2nm,0.4s,baz=348,slow=7.5,SNR=13						
CTA	**Charters Tower**	**28.08**	**145**	P	P	16 37 14.6	-2.0
	13nm,1.2s,baz=343,slow=11,SNR=3.1						
STKA	**Stephens Creek**	**36.35**	**162**	P	P	16 38 29.9	+1.0
	0.4nm,0.3s,baz=346,slow=7.9,SNR=6.4						
PETK	**Petropavlovsk-**	**55.33**	**20**	LR	LR	17 06 33.5	
	comp=Z,13nm,18.7s,baz=219,slow=38						
MKAR	**Makanchi Array**	**59.89**	**324**	P	P	16 41 30.7	0.0
	0.4nm,0.5s,baz=118,slow=8.5,SNR=6.5						

IDC 17 16:35:00.7±1.9, 7°.73S×129°.56E, h0km, mb3.5/2, mb1 3.8/5, mb1mx3.5/39, mbtmp3.7/5, ML3.9/3, MS3.8/1, Ms1 3.8/1, ms1mx2.6/35, Error ellipse: s-maj=87.4km s-min=28.0km az=70.0, Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SIJI	**Sorong**	**7.03**	**14**	Pn	Pn	16 36 51.9	+6.9
	8.4nm,0.3s,baz=359,slow=4.4,SNR=1.2						
SIJI				Sn	Sn	16 38 08.8	+3.2
	11nm,0.3s,baz=224,slow=0.6,SNR=1.1						
FITZ	**Fitzroy Crossi**	**10.99**	**200**	Pn	Pn	16 37 39.6	+0.3
	0.7nm,0.3s,baz=27,slow=10.0,SNR=2.4						
FITZ				Sn	Sn	16 39 30.1	-13
	1.3nm,0.3s,baz=188,slow=18,SNR=4.5						
WRA	**Warramunga Arr**	**12.99**	**160**	Pn	Pn	16 38 05.2	-1.6
	0.7nm,0.3s,baz=349,slow=13,SNR=9.4						
WRA				Sn	Sn	16 40 19.3	-13
	1.0nm,0.3s,baz=335,slow=20,SNR=9.3						
ASAR	**Alice Springs**	**16.38**	**166**	Pn	Pn	16 38 51.2	-1.1
	0.4nm,0.3s,baz=342,slow=9.4,SNR=8.1						
ASAR				Sn	Sn	16 41 41.1	-14
	0.2nm,0.3s,baz=329,slow=17,SNR=3.4						
STKA	**Stephens Creek**	**26.51**	**157**	P	P	16 40 41.0	+0.9
	0.9nm,0.7s,baz=346,slow=14,SNR=1.9						
RAO	**Raoul Island**	**53.70**	**121**	LR	LR	17 04 52.4	
	comp=Z,101nm,21.1s,baz=312,slow=33						
MKAR	**Makanchi Array**	**68.60**	**327**	P	P	16 46 05.5	-0.1
	0.1nm,0.3s,baz=123,slow=7.7,SNR=3.0						

IDC 17 16:41:22.3±3.5, 47°.83S×166°.78E, h0km, mb3.7/2, mb1 3.9/3, mb1mx3.6/32, mbtmp3.7/3, ML3.0/1, MS3.2/2, Ms1 3.1/2, ms1mx2.8/32, Error ellipse: s-maj=84.4km s-min=43.2km az=161.0

ISC 17 16:41:23.6±1.7, 47°.8S±0°.1×166°.79E±0°.09, h10km, n21, σ2°.32/19, Off west coast of South Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
APZ	**The Paps**	**1.24**	**42**	PN	**Pg**	**16 41 49.9**	**+2.4**
APZ				SN	Sg	16 42 29.5	+26
PYZ	**Puysegur Point**	**1.60**	**357**	PN	**Pn**	**16 41 50.9**	**-1.0**
SYZ	**Scrubby Hill**	**2.02**	**53**	PN	**Pg**	**16 42 01.0**	**-1.4**
SYZ				SN	Sg	16 42 47.9	+19
WHZ	**Wether Hill Ro**	**2.04**	**24**	PN	**Pb**	**16 42 00.0**	**-0.7**
WHZ				SN	Sg	16 42 48.9	+20
DCZ	**Deep Cove**	**2.31**	**6**	PN	**Pn**	**16 42 01.2**	**-0.6**
MLZ	**Mavora Lakes**	**2.57**	**21**	PN	**Pb**	**16 42 07.9**	**-1.8**
MLZ				SN	Sg	16 43 02.6	+16
TUZ	**Tuapeka**	**2.66**	**48**	PN	**Pb**	**16 42 09.6**	**-1.7**
EAZ	**Earnscleugh**	**3.08**	**35**	PN	**Pb**	**16 42 14.9**	**-3.5**
MSZ	**Milford Sound**	**3.19**	**15**	PN	**Pn**	**16 42 16.4**	**+2.6**
HHSZ	**Highcliff Hill**	**3.22**	**56**	PN	**Pb**	**16 42 18.3**	**-2.6**
WKZ	**Wanaka**	**3.32**	**29**	PN	**Pb**	**16 42 19.1**	**-3.5**
ODZ	**Otahua Downs**	**3.81**	**46**	PN	**Pn**	**16 42 24.6**	**+2.3**
JCZ	**Jackson Bay**	**3.95**	**21**	PN	**Pn**	**16 42 27.8**	**+3.5**
LBZ	**Lake Benmore**	**4.12**	**36**	PN	**Pn**	**16 42 27.8**	**+1.1**
FOZ	**Fox Glacier**	**4.74**	**28**	PN	**Pn**	**16 42 38.5**	**+3.5**
RPZ	**Rata Peaks**	**5.03**	**38**	Pn	**Pn**	**16 42 39.8**	**+0.7**
	0.6nm,0.3s,baz=24,slow=19,SNR=1.2						
RPZ				Sn	Sn	16 43 11.9	-25
	0.5nm,0.3s,baz=24,slow=18,SNR=1.5						
STKA	**Stephens Creek**	**24.86**	**301**	LR	LR	16 54 50.5	
	comp=Z,56nm,18.0s,baz=42,slow=32						
ASAR	**Alice Springs**	**35.50**	**301**	P	**P**	**16 48 20.6**	**0.0**
	0.5nm,0.7s,baz=134,slow=8.0,SNR=3.6						
WRA	**Warramunga Arr**	**38.20**	**305**	P	**P**	**16 48 44.1**	**+0.7**
	0.8nm,0.4s,baz=140,slow=8.9,SNR=5.8						
HNR	**Honiara**	**38.64**	**349**	LR	LR	17 03 37.3	
	comp=Z,24nm,18.9s,baz=54,slow=34						
AKASG	**Malin Array Be**	**152.41**	**292**	PKPbc	**PKPbc**	**17 01 19.2**	**+0.2**
	0.6nm,0.5s,baz=80,slow=2.9,SNR=3.3						

ISCJB 17 16:47:59.1±0.6, 37°.36N±0°.03×141°.62E±0°.06, h45km±5km, mb4.0/22, MS3.2/3, Error ellipse: s-maj=8.1km s-min=4.9km az=4.2
JMA 17 16:48:00.6±0.1, 37°.41N×141°.53E, h40km±2km, M4.4
JMA Felt II J1.
NIED 17 16:48:00, 37°.40N×141°.50E, h50km, Mw4.2 Best double couple: M₀2.00000×10¹⁵ NP1:φs322.00000°, δ30.00000°, λ-114.00000°. NP2:φs170.00000°, δ63.00000°, λ-76.00000°.
NEIC 17 16:48:01.4±0.4, 37°.41N×141°.51E, h46km±4km, mb4.5/5, Error ellipse: s-maj=7.0km s-min=5.1km az=116.0
IDC 17 16:48:01.5±0.6, 37°.41N×141°.46E, h44km±5km, mb3.7/17, mb1 3.9/21, mb1mx3.7/60, mbtmp4.0/21, ML4.1/4, MS3.1/8, Ms1 3.1/8, ms1mx2.8/52, Error ellipse: s-maj=14.6km s-min=12.4km az=122.0

ISC 17 16:47:59.9±0.6, 37°.40N±0°.04×141°.56E±0°.05, h33km±2km, n59, σ0°.75/60, mb4.0/22, MS3.2/3, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**0.55**	**267**	P	**Pn**	**16 48 11.6**	**+0.2**
JFK				S	**Sn**	**16 48 19.3**	**-0.2**
ONAJ	**Iwakimizuishiy**	**0.68**	**244**	P	**Pb**	**16 48 13.5**	**+0.1**
ONAJ				S	**Sb**	**16 48 22.4**	**-0.1**
JMM	**Marumori**	**0.77**	**308**	P	**Pn**	**16 48 14.5**	**+0.1**
JMM				S	**Sn**	**16 48 24.4**	**-0.4**
JFT	**Otama**	**0.98**	**277**	P	**Pb**	**16 48 18.4**	**0.0**
JFT				S	**Sb**	**16 48 30.6**	**-0.5**
JIO	**Ouri**	**1.07**	**351**	P	**Pn**	**16 48 18.7**	**+0.2**
JIO				S	**Sn**	**16 48 31.0**	**-1.2**
JHO	**Hitachi**	**1.12**	**226**	P	**Pn**	**16 48 19.2**	**0.0**
JHO				S	**Sn**	**16 48 32.6**	**-0.9**
JOU	**Okura**	**1.20**	**324**	P	**Pn**	**16 48 21.0**	**+0.6**
JOU				S	**Sb**	**16 48 36.9**	**-0.4**
JYS	**Shirataka**	**1.44**	**305**	P	**Pn**	**16 48 24.7**	**+1.0**
JYS				S	**Sn**	**16 48 42.5**	**+1.0**

MJAR	**Matsushiro Arr**	**2.82**	**253**	P	**Pn**	**16 48 44.3**	**+1.7**
	19nm,0.3s,baz=77,slow=16,SNR=6.9						
MJAR				LR	LR	16 50 11.0	
	comp=Z,421nm,19.8s,baz=70,slow=48						
MAJO	**Matsushiro**	**2.82**	**253**	*e*Pn	**Pn**	**16 48 44.6**	**+1.9**
JHJ2	**Mitsune**	**4.51**	**199**	*e*Pn	**Pn**	**16 49 06.9**	**+1.1**
JHJ	**Hachijo jima 2**	**4.51**	**199**	P	**Pn**	**16 49 06.6**	**+0.7**
	79nm,0.3s,baz=117,slow=22,SNR=28						
JHJ				S	**Sn**	**16 49 55.7**	**-1.5**
	11nm,0.3s,baz=125,slow=23,SNR=3.2						
JHJ				LR	LR	16 50 53.2	
	comp=Z,124nm,20.0s,baz=83,slow=38						
ERM	**Erimo**	**4.77**	**14**	*e*Pn	**Pn**	**16 49 09.9**	**+0.5**
ASAJ	**Asahikawa**	**6.76**	**6**	P	**Pn**	**16 49 37.9**	**+1.2**
	1.4nm,0.3s,baz=221,slow=12,SNR=17						
JNU	**Nakatsue**	**9.72**	**247**	P	Pn	16 50 23.0	+5.6
	0.2nm,0.3s,baz=31,slow=6.6,SNR=3.7						
JNU				LR	LR	16 54 23.4	
	comp=Z,147nm,20.4s,baz=112,slow=40						
USRK	**Ussuriysk Ar.**	**9.94**	**316**	P	Pn	16 50 25.7	+5.4
	0.4nm,0.3s,baz=124,slow=14,SNR=14						
CBIJ	**Chichi jima**	**10.29**	**177**	*e*Pn	**Pn**	**16 50 25.3**	**+0.2**
JCJ	**Chichijima**	**10.29**	**177**	P	**Pn**	**16 50 25.3**	**+0.2**
	6.9nm,0.3s,baz=89,slow=23,SNR=5.6						
KSRS	**Korea Array**	**10.85**	**274**	P	Pn	16 50 38.4	+5.6
	0.3nm,0.3s,baz=89,slow=14,SNR=14						
KSRS				LR	LR	16 54 31.2	
	comp=Z,111nm,18.8s,baz=74,slow=36						
KSAR	**Wonju Array Be**	**10.88**	**274**	P	Pn	16 50 38.4	+5.1
KLR	**Kul'dur**	**13.80**	**332**	P	**P**	**16 51 20.9**	**-0.2**
	0.1nm,0.3s,baz=120,slow=12,SNR=4.6						
KLR				LR	LR	16 56 14.2	
	comp=Z,40nm,18.2s,baz=156,slow=36						
YAK	**Yakutsk**	**25.74**	**347**	P	**P**	**16 53 26.4**	**-0.7**
	5.4nm,0.4s,baz=348,slow=3.1,SNR=6.0						
ULN	**Ulaanbaatar**	**27.25**	**304**	*e*P	**P**	**16 53 40.9**	**-0.2**
ENH	**Enshi**	**27.48**	**265**	*e*P	**P**	**16 53 41.7**	**-1.5**
	16nm,0.7s						
SONM	**Songino Array**	**27.68**	**303**	P	**P**	**16 53 44.5**	**-0.4**
	1.4nm,0.5s,baz=102,slow=8.5,SNR=12						
SONM				LR	LR	17 04 49.0	
	comp=Z,46nm,18.9s,baz=155,slow=36						
H11N2	**WAKE ISLAND Hy**	**28.23**	**122**	T	T	17 24 05.5	
	baz=315,slow=75,SNR=361						
H11N1	**WAKE ISLAND Hy**	**28.24**	**122**	T	T	17 24 12.1	
	baz=315,slow=75,SNR=466						
H11N3	**WAKE ISLAND Hy**	**28.25**	**122**	T	T	17 24 06.8	
	baz=315,slow=75,SNR=268						
H11S1	**WAKE ISLAND Hy**	**28.96**	**124**	T	T	17 24 57.9	
	baz=316,slow=76,SNR=213						
H11S3	**WAKE ISLAND Hy**	**28.96**	**124**	T	T	17 24 27.5	
	baz=316,slow=76,SNR=188						
H11S2	**WAKE ISLAND Hy**	**28.98**	**124**	T	T	17 24 58.2	
	baz=316,slow=76,SNR=134						
CHTO	**Chiang Mai**	**41.50**	**255**	*e*P	**P**	**16 55 44.3**	**+0.2**
CMAR	**Chiang Mai Arr**	**41.70**	**255**	P	**P**	**16 55 45.9**	**+0.1**
	0.6nm,0.6s,baz=40,slow=7.7,SNR=8.1						
CMAR				LR	LR	17 15 44.3	
	comp=Z,26nm,18.0s,baz=280,slow=40						
ZALV	**Zalesovo Beam**	**41.76**	**312**	P	**P**	**16 55 46.0**	**+0.2**
	1.4nm,0.5s,baz=92,slow=7.5,SNR=9.9						
MKAR	**Makanchi Array**	**44.03**	**302**	P	**P**	**16 56 04.3**	**+0.1**
	1.2nm,0.5s,baz=86,slow=9.8,SNR=23						
KURK	**Kurchatov**	**45.80**	**308**	*e*P	**P**	**16 56 17.9**	**-0.4**
	9.8nm,0.7s						
KURBB	**Kurchatov Arra**	**45.87**	**308**	P	**P**	**16 56 18.6**	**-0.2**
	2.7nm,0.6s,baz=83,slow=8.3,SNR=29						
KKN	**Kakani**	**47.77**	**276**	*e*P	**P**	**16 56 35.2**	**+0.9**
	11nm,0.6s						
GKN	**Gorkha**	**48.18**	**276**	*e*P	**P**	**16 56 36.6**	**-0.8**
	8.0nm,0.5s						
KOLN	**Koldanda**	**49.11**	**276**	*e*P	**P**	**16 56 44.5**	**-0.1**
	1.8nm,0.3s						
ILAR	**Eielson Array**	**49.12**	**33**	P	**P**	**16 56 44.2**	**+0.3**
	0.7nm,0.8s,baz=277,slow=6.6,SNR=9.0						
ILAR				pP	**sP**	**16 56 57.5**	**-0.2**
	1.0nm,0.9s,baz=265,slow=5.7,SNR=6.3						
PYUN	**Piuthan**	**49.44**	**277**	*e*P	**P**	**16 56 47.5**	**+0.4**
TKM2	**Tokmak 2**	**49.56**	**298**	*e*P	**P**	**16 56 46.9**	**-0.9**
	3.1nm,0.6s						
AAK	**Ala-Archa**	**50.42**	**298**	P	**P**	**16 56 54.3**	**-0.1**
	0.6nm,0.6s,baz=31,slow=6.4,SNR=3.7						
KKAR	**Karatay Array**	**53.05**	**300**	*e*P	**P**	**16 57 13.7**	**0.0**
	0.6nm,0.4s						
INK	**Inuvik**	**54.01**	**27**	P	**P**	**16 57 20.8**	**+0.5**
	0.6nm,0.5s,baz=296,slow=5.4,SNR=7.0						
FITZ	**Fitzroy Crossi**	**57.20**	**198**	LR	LR	17 22 30.0	
	comp=Z,23nm,18.5s,baz=315,slow=36						
WRA	**Warramunga Arr**	**57.44**	**188**	P	**P**	**16 57 45.5**	**0.0**
	0.6nm,0.4s,baz=6.6,slow=7.4,SNR=17						
ABKAR	**Akbulak array**	**57.80**	**310**	*e*P	**P**	**16 57 46.6**	**-1.2**
	1.2nm,0.5s						
ASAR	**Alice Springs**	**61.16**	**188**	P	**P**	**16 58 11.2**	**0.0**
	0.3nm,0.5s,baz=2.5,slow=5.2,SNR=8.8						
ASAR				pP	**pP**	**16 58 21.5**	**+0.3**
	0.7nm,0.7s,baz=4.3,slow=8.0,SNR=5.6						
YKA	**Yellowknife Ar**	**63.43**	**30**	P	**P**	**16 58 26.4**	**+0.4**
	0.4nm,0.6s,baz=302,slow=6.6,SNR=10						
YKA				pP	**sP**	**16 58 38.7**	**-1.2**
	0.4nm,0.6s,baz=302,slow=6.6,SNR=7.4						
GEYT	**Alibeck**	**63.76**	**299**	pP	pP	16 58 40.2	+1.5
	1.9nm,0.8s,baz=95,slow=3.1,SNR=3.1						
FINES	**FINESS Array B**	**68.55**	**332**	P	**P**	**16 58 58.2**	**-0.6**
	2.6nm,0.9s,baz=33,slow=7.8,SNR=4						
AKASG	**Malin Array Be**	**74.08**	**322**	P	**P**	**16 59 32.1**	**-0.3**
	0.6nm,0.3s,baz=46,slow=5.9,SNR=9.8						
AKASG				pP	**pP**	**16 59 44.3**	**+1.6**
	0.9nm,0.5s,baz=46,slow=6.1,SNR=4.8						
NVAR	**Mina Array Bea**	**74.68**	**53**	P	**P**	**16 59 37.6**	**+1.2**
	0.8nm,0.7s,baz=284,slow=6.9,SNR=5.2						
PDAR	**Pinedale Array**	**77.33**	**46**	P	**P**	**16 59 52.2**	**+0.8**
	0.4nm,0.5s,baz=262,slow=1.7,SNR=6.3						
PDAR				pP	**sP**	**17 00 05.6**	**0.0**
	0.3nm,0.6s,baz=16,slow=0.5,SNR=3.1						
BRTR	**Keskin Array B**	**78.70**	**312**	pP	pP	17 00 12.7	+3.3
	0.7nm,0.8s,baz=88,slow=4.0,SNR=2.8						
TXAR	**Lajitas Array**	**89.81**	**52**	P	**P**	**17 00 56.0**	**+0.5**
	0.5nm,0.5s,baz=292,slow=3.2,SNR=12						
LPAZ	**La Paz**	**146.41**	**59**	PKPbc	**PKPbc**	**17 07 38.8**	**+0.1**
	1.0nm,0.5s,baz=320,slow=2.2,SNR=9.2						
LPAZ				pPKPbc	pPKPbc	17 07 52.3	+3.0
	1.2nm,0.5s,baz=64,slow=4.1,SNR=5.6						

ATH 17 16:49:06.8, 35°.18N×24°.95E, h18km, ML2.9/13, Error ellipse: s-maj=1.2km s-min=0.6km az=177.0
ISCJB 17 16:49:07.6±0.4, 35°.16N±0°.03×24°.96E±0°.02, h10km±3km, mb3.4/3, Error ellipse: s-maj=4.5km s-min=3.1km az=174.6
THE 17 16:49:07.2, 35°.16N×24°.94E, h0km±1km, ML3.1/10, Error ellipse: s-maj=1.1km s-min=0.4km az=169.0
CSEM 17 16:49:07.5±0.2, 35°.16N×24°.97E, h5km, ML2.9, Error ellipse: s-maj=4.5km s-min=2.7km az=1.0
IDC 17 16:49:07.5±1.6, 34°.97N×25°.23E, h0km, mb3.5/3, mb1 3.4/5, mb1mx3.2/56, mbtmp3.3/5, ML3.7/1, Error ellipse: s-maj=43.0km s-min=26.3km az=134.0

ISC 17 16:49:07.9±0.8, 35°.17N±0°.02×24°.96E±0°.01, h9km±5km, n79, σ0°.88/127, mb3.6/3, Crete

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
IDI	**Anoyia**	**0.14**	**333**	P	**Pg**	**16 49 10.1**	**-0.9**
IDI				S	**Sg**	**16 49 13.0**	**-0.1**
IDI	**Anoyia**	**0.14**	**333**	P	**Pg**	**16 49 10.5**	**-0.5**
IDI				S	**Sg**	**16 49 13.0**	**-0.1**
IDI	**Anoyia**	**0.14**	**333**	P	**Pg**	**16 49 10.5**	**-0.5**
IDI				S	**Sg**	**16 49 12.1**	**-1.1**
IDI				AML	AML	16 49 13.2	
	comp=N,20231μm,0.2s						
IDI				AML	AML	16 49 13.3	
	comp=E,22446μm,0.2s						
IACM	**Heraklion**	**0.16**	**32**	P	**Pg**	**16 49 11.4**	**0.0**
IACM				S	**Sg**	**16 49 14.8**	**+1.0**
IACM	**Heraklion**	**0.16**	**32**	P	**Pg**	**16 49 11.4**	**0.0**
IACM				S	**Sg**	**16 49 14.6**	**+0.8**
IACM	**Heraklion**	**0.16**	**32**	P	**Pg**	**16 49 11.6**	**+0.2**
IACM				S	**Sg**	**16 49 14.6**	**+0.8**
IACM				AML	AML	16 49 23.3	
	comp=N,47196μm,0.7s						
IACM				AML	AML	16 49 24.2	
	comp=E,47401μm,0.5s						
SIVA	**Sivas**	**0.20**	**220**	P	**Pg**	**16 49 11.4**	**-0.6**
SIVA				S	**Sg**	**16 49 15.1**	**+0.4**
SIVA	**Sivas**	**0.20**	**220**	P	**Pg**	**16 49 11.4**	**-0.6**
SIVA				S	**Sg**	**16 49 15.1**	**+0.4**

SIVA	**Sivas**	**0.20**	**220**	P	**Pg**	**16 49 11.3**	**-0.6**
SIVA				S	**Sg**	**16 49 13.8**	**-0.9**
SIVA				AML	AML	16 49 18.8	
	comp=E,23345μm,0.5s						
SIVA				AML	AML	16 49 20.7	
	comp=N,11254μm,0.7s						
LAST	**Lasithi**	**0.42**	**91**	P	**Pg**	**16 49 15.6**	**-0.5**
LAST				S	**Sb**	**16 49 22.6**	**-1.4**
LAST	**Lasithi**	**0.42**	**91**	P	**Pg**	**16 49 15.8**	**-0.4**
LAST				S	**Sg**	**16 49 21.2**	**-0.5**
LAST	**Lasithi**	**0.42**	**91**	P	**Pg**	**16 49 15.8**	**-0.4**
NPS	**Neapolis**	**0.54**	**80**	P	**Pg**	**16 49 18.0**	**-0.3**
NPS				S	**Sb**	**16 49 26.6**	**-0.8**
NPS	**Neapolis**	**0.54**	**80**	P	**Pg**	**16 49 18.0**	**-0.3**
NPS				S	**Sg**	**16 49 25.7**	**+0.3**
NPS	**Neapolis**	**0.54**	**80**	P	**Pg**	**16 49 18.4**	**+0.1**
NPS				S	**Sg**	**16 49 25.7**	**+0.3**
NPS				AML	AML	16 49 34.0	
	comp=N,772μm,0.3s						
NPS				AML	AML	16 49 37.0	
	comp=E,1164μm,0.5s						
VAM	**Vamos**	**0.67**	**291**	P	**Pg**	**16 49 19.9**	**-0.9**
VAM				S	**Sg**	**16 49 29.6**	**0.0**
VAM	**Vamos**	**0.67**	**291**	P	**Pg**	**16 49 20.4**	**-0.4**
VAM				S	**Sg**	**16 49 29.6**	**0.0**
GVD	**Gavdhos**	**0.79**	**246**	P	**Pg**	**16 49 22.4**	**-0.7**
GVD				S	**Sg**	**16 49 33.7**	**+0.3**
GVD	**Gavdhos**	**0.79**	**246**	P	**Pg**	**16 49 22.4**	**-0.7**
GVD				S	**Sg**	**16 49 31.9**	**-1.5**
GVD	**Gavdhos**	**0.79**	**246**	P	**Pg**	**16 49 23.0**	**-0.1**
GVD				S	**Sg**	**16 49 31.9**	**-1.5**
GVD				AML	AML	16 49 43.9	
	comp=N,1470μm,0.5s						
GVD				AML	AML	16 49 45.1	
	comp=E,2384μm,0.4s						
IMMV	**Iera Moni Meta**	**0.86**	**290**	P	**Pg**	**16 49 23.4**	**-1.0**
IMMV				S	**Sb**	**16 49 36.5**	**0.0**
IMMV	**Iera Moni Meta**	**0.86**	**290**	P	**Pg**	**16 49 23.7**	**-0.7**
IMMV				S	**Sb**	**16 49 36.5**	**0.0**
IMMV	**Iera Moni Meta**	**0.86**	**290**	P	**Pg**	**16 49 23.7**	**-0.7**
IMMV				S	**Sg**	**16 49 32.9**	**-2.6**
IMMV				AML	AML	16 49 39.2	
	comp=E,2466μm,0.6s						
IMMV				AML	AML	16 49 41.4	
	comp=N,2221μm,0.4s						
ZKR	**Zakros**	**1.03**	**93**	P	**Pg**	**16 49 27.1**	**-0.5**
ZKR				S	**Sn**	**16 49 43.0**	**0.0**
ZKR	**Zakros**	**1.03**	**93**	P	**Pb**	**16 49 27.6**	**-0.2**
ZKR				S	**Sg**	**16 49 39.7**	**-1.3**
ZKR	**Zakros**	**1.03**	**93**	P	**Pb**	**16 49 27.6**	**-0.2**
ZKR				S	**Sg**	**16 49 39.6**	**-1.3**
ZKR				AML	AML	16 49 46.7	
	comp=E,846μm,0.7s						
ZKR				AML	AML	16 49 48.0	
	comp=N,761μm,0.9s						
THR6	**Thira Island,**	**1.24**	**16**	P	**Pg**	**16 49 31.3**	**-0.3**
THR6	**Thira Island,**	**1.24**	**16**	P	**Pg**	**16 49 31.3**	**-0.3**
SANT	**Santorini**	**1.27**	**18**	P	**Pn**	**16 49 31.3**	**-0.5**
SANT				S	**Sn**	**16 49 48.9**	**0.0**
SANT	**Santorini**	**1.27**	**18**	P	**Pn**	**16 49 31.3**	**-0.5**
SANT				S	**Sn**	**16 49 48.9**	**0.0**
SANT	**Santorini**	**1.27**	**18**	P	**Pn**	**16 49 30.8**	**-1.0**
SANT				S	**Sb**	**16 49 46.8**	**-1.6**
SANT				AML	AML	16 49 53.5	
	comp=N,534μm,0.4s						
SANT				AML	AML	16 49 54.0	
	comp=E,1712μm,0.3s						
THR5	**Thira Island,**	**1.29**	**14**	P	**Pn**	**16 49 31.4**	**-0.6**
THR5	**Thira Island,**	**1.29**	**14**	P	**Pn**	**16 49 31.4**	**-0.6**
THR3	**Thira Island,**	**1.29**	**16**	P	**Pg**	**16 49 32.3**	**-0.3**
THR3	**Thira Island,**	**1.29**	**16**	P	**Pg**	**16 49 32.3**	**-0.3**
CMBO	**Columbo, Santo**	**1.35**	**15**	P	**Pg**	**16 49 33.9**	**+0.1**
CMBO	**Columbo, Santo**	**1.35**	**15**	P	**Pg**	**16 49 33.9**	**+0.1**
ANKY	**Antikythira Is**	**1.53**	**298**	P	**Pb**	**16 49 35.8**	**-0.5**
ANKY	**Antikythira Is**	**1.53**	**298**	P	**Pn**	**16 49 34.9**	**-0.4**
ANKY				S	**Sb**	**16 49 55.9**	**+0.2**
ANKY	**Antikythira Is**	**1.53**	**298**

IDC 17 16:49:49.6±9.9, 21.88S×171.58W, h0km, mb4.1/5, mb1 4.3/5, mb1mx3.8/41, mbtmp4.2/5, Error ellipse: s-maj=204.7km s-min=131.8km az=37.0, Tonga Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**20.39**	**265**	P	P	16 54 28.6	+0.3
	7.4nm,0.8s,baz=85,slow=18,SNR=5.2						
CTA	**Charters Tower**	**39.33**	**265**	P	P	16 57 20.9	0.0
	8.0nm,0.4s,baz=95,slow=11,SNR=37						
STKA	**Stephens Creek**	**42.66**	**246**	P	P	16 57 46.8	-1.4
	0.5nm,0.6s,baz=94,slow=13,SNR=2.9						
ASAR	**Alice Springs**	**50.05**	**257**	P	P	16 58 46.4	-0.1
	0.6nm,0.4s,baz=95,slow=6.8,SNR=28						
WRA	**Warramunga Arr**	**50.34**	**262**	P	P	16 58 49.1	+0.3
	1.7nm,0.3s,baz=97,slow=8.4,SNR=54						

IDC 17 16:53:51.9±1.3, 37.7N×144.13E, h0km, mb3.3/5, mb1 3.5/6, mb1mx3.2/59, mbtmp3.2/6, ML3.2/1, Error ellipse: s-maj=33.1km s-min=26.7km az=100.0
ISCJB 17 16:53:55.2±1.0, 37.69N±0.07×143.9E±0.2, h33km, mb3.3/5, Error ellipse: s-maj=22.3km s-min=10.4km az=3.1

ISC 17 16:53:56.8±1.1, 37.7N±0.1×144.0E±0.2, h35km, n7, σ1§43/9, mb3.3/5, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MJAR	**Matsushiro Arr**	**4.73**	**258**	Pn	**Pn**	**16 55 04.4**	**-1.3**
	0.9nm,0.3s,baz=89,slow=15,SNR=7.6						
ASAJ	**Asahikawa**	**6.52**	**351**	Pn	Pn	16 55 33.3	+3.1
	0.3nm,0.3s,baz=211,slow=21,SNR=1.4						
ASAJ				Sn	**Sn**	**16 56 44.1**	**+0.8**
	0.3nm,0.3s,baz=111,slow=20,SNR=1.9						
ZALV	**Zalesovo Beam**	**42.99**	**312**	P	**P**	**17 01 53.3**	**+0.9**
	0.2nm,0.3s,baz=100,slow=9.5,SNR=2.7						
MKAR	**Makanchi Array**	**45.50**	**302**	P	**P**	**17 02 13.4**	**+0.7**
	0.2nm,0.7s,baz=92,slow=10,SNR=2.8						
ILAR	**Eielson Array**	**47.86**	**33**	P	**P**	**17 02 29.2**	**-1.7**
	0.4nm,1.1s,baz=272,slow=8.9,SNR=3.7						
WRA	**Warramunga AR**	**58.02**	**191**	P	**P**	**17 03 47.6**	**+1.4**
	0.5nm,0.8s,baz=7.7,slow=6.9,SNR=2.0						
WRA				pP	**sP**	**17 04 00.1**	**-0.8**
	0.8nm,0.7s,baz=10.0,slow=7.2,SNR=5.1						
ASAR	**Alice Springs**	**61.74**	**190**	P	**P**	**17 04 13.4**	**+1.7**
	0.2nm,0.8s,baz=7.0,slow=8.4,SNR=2.1						
ASAR				pP	**sP**	**17 04 25.9**	**-0.6**
	0.4nm,0.8s,baz=20,slow=6.9,SNR=2.9						

NIED 17 16:56:00, 36.20N×141.00E, h29km, Mw3.8 Best double couple: M0 5.96000×10^14 NP1:φ=249.00000°, δ=56.00000°, λ=-11.00000°. NP2:φ=345.00000°, δ=81.00000°, λ=-145.00000°.
IDC 17 16:56:37.4±0.8, 36.74N×141.46E, h0km, mb3.7/8, mb1 3.8/10, mb1mx3.6/56, mbtmp3.7/10, ML3.5/2, MS3.0/3, Ms1 3.0/3, ms1mx2.5/53, Error ellipse: s-maj=23.7km s-min=17.9km az=93.0
ISCJB 17 16:56:41.8±1.0, 36.27N±0.05×141.32E±0.09, h31km, mb3.6/8, MS3.3/1, Error ellipse: s-maj=10.9km s-min=6.4km az=155.7
JMA 17 16:56:45.7, 36.18N×141.02E, h38km±1km, M4.0
JMA Felt II J1.

ISC 17 16:56:44.4±1.1, 36.25N±0.04×141.1E±0.1, h31km, n27, σ1§35/17, mb3.8/8, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHO	**Hitachi**	**0.58**	**309**	P	**Pn**	**16 56 56.9**	**+0.4**
JHO				S	**Sn**	**16 57 05.3**	**+0.3**
CHOJ	**Chosi**	**0.58**	**202**	P	**Pb**	**16 56 56.1**	**-0.2**
CHOJ				S	**Sb**	**16 57 03.5**	**-0.8**
JYT	**Yasato**	**0.75**	**269**	P	**Pn**	**16 56 58.8**	**-0.1**
ONAJ	**Iwakimizuishiy**	**0.89**	**343**	P	**Pb**	**16 57 02.3**	**+0.8**
JFK	**Kawauchi**	**1.14**	**350**	P	**Pb**	**16 57 05.5**	**0.0**
MJAR	**Matsushiro Arr**	**2.37**	**278**	Pn	**Pn**	**16 57 22.2**	**+1.0**
	7.3nm,0.3s,baz=102,slow=7.9,SNR=65						
MAT	**Matsushiro**	**2.37**	**278**	P	**Pn**	**16 57 23.0**	**+1.8**
MAT				S	**Sn**	**16 57 50.1**	**+0.8**
JHJ	**Hachijo jima 2**	**3.31**	**200**	Pn	**Pn**	**16 57 36.4**	**+2.3**
	11nm,0.3s,baz=322,slow=22,SNR=9.5						
JHJ				Sn	**Sn**	**16 58 12.7**	**+0.4**
	13nm,0.3s,baz=95,slow=23,SNR=3.1						
JNU	**Nakatsue**	**9.00**	**253**	LR	LR	17 02 57.6	
	comp=Z,89nm,18.3s,baz=22,slow=40						
JCJ	**Chichijima**	**9.17**	**174**	Pn	**Pn**	**16 58 54.1**	**-0.4**
	8.2nm,0.3s,baz=296,slow=22,SNR=7.0						
USRK	**Ussuriysk Ar.**	**10.57**	**322**	Pn	Pn	16 59 03.9	-10
	0.3nm,0.3s,baz=127,slow=12,SNR=8.5						
KSRS	**Korea Array**	**10.65**	**280**	LR	LR	17 03 02.8	
	comp=Z,49nm,21.7s,baz=106,slow=36						
H11N2	**WAKE ISLAND Hy**	**27.96**	**119**	T	T	17 33 02.6	
	baz=317,slow=76,SNR=18						
H11N1	**WAKE ISLAND Hy**	**27.96**	**119**	T	T	17 33 06.5	
	baz=317,slow=76,SNR=157						
H11N3	**WAKE ISLAND Hy**	**27.97**	**119**	T	T	17 33 04.5	
	baz=317,slow=76,SNR=11						
SONM	**Songino Array**	**28.04**	**305**	P	**P**	**17 02 31.1**	**-1.8**
	0.2nm,0.5s,baz=87,slow=8.7,SNR=3.4						
H11S1	**WAKE ISLAND Hy**	**28.64**	**121**	T	T	17 32 43.2	
	baz=314,slow=76,SNR=173						
H11S3	**WAKE ISLAND Hy**	**28.64**	**121**	T	T	17 32 47.3	
	baz=314,slow=76,SNR=155						
H11S2	**WAKE ISLAND Hy**	**28.65**	**121**	T	T	17 32 44.4	
	baz=314,slow=76,SNR=116						
ZALV	**Zalesovo Beam**	**42.28**	**313**	P	P	17 04 29.7	-5.1
	1.1nm,0.4s,baz=89,slow=7.6,SNR=8.7						
MKAR	**Makanchi Array**	**44.34**	**303**	P	**P**	**17 04 49.2**	**-2.4**
	0.9nm,0.7s,baz=85,slow=11,SNR=10						
ILAR	**Eielson Array**	**50.28**	**32**	P	P	17 05 31.1	-6.4
	0.8nm,0.7s,baz=270,slow=6.6,SNR=12						
WRA	**Warramunga AR**	**56.25**	**188**	P	**P**	**17 06 23.1**	**+1.2**
	1.5nm,0.8s,baz=5.4,slow=7.5,SNR=17						
DLBC	**Dease Lake**	**59.39**	**38**	LR	LR	17 37 37.0	
	comp=Z,23nm,18.3s,baz=326,slow=42						
ASAR	**Alice Springs**	**59.98**	**188**	P	**P**	**17 06 49.6**	**+1.7**
	0.6nm,0.7s,baz=19,slow=8.8,SNR=12						
YKA	**Yellowknife Ar**	**64.60**	**30**	P	P	17 07 12.9	-5.5
	0.1nm,0.6s,baz=300,slow=5.8,SNR=3.0						
AKASG	**Malin Array Be**	**74.78**	**322**	P	P	17 08 16.1	-5.2
	0.6nm,0.6s,baz=49,slow=5.8,SNR=5.1						

JMA 17 16:56:48.2±0.1, 38.74N×142.23E, h38km±2km, M4.1, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**0.55**	**308**	P	Pn	16 56 59.6	-0.1
OFUJ				S	Sn	16 57 07.5	-0.2
JIO	**Ouri**	**0.75**	**248**	P	Pn	16 57 02.1	-0.1
JIO				S	Sn	16 57 11.6	-0.7
JMK	**Ichinoseki**	**0.82**	**285**	P	Pn	16 57 03.5	+0.3
JMK				S	Sn	16 57 14.5	+0.4
JOM	**Ohasama**	**1.03**	**315**	P	Pn	16 57 06.7	+0.6
JOM				S	Sn	16 57 19.9	+0.5
JTH	**Tanohata**	**1.23**	**347**	P	Pn	16 57 08.9	0.0
JOU	**Okura**	**1.28**	**254**	P	Pn	16 57 10.2	+0.6
JOU				S	Sn	16 57 26.7	+1.2

IDC 17 17:03:14.1±0.7, 7.20S×120.40E, h573km±8km, mb3.2/8, mb1 3.3/11, mb1mx3.0/42, mbtmp4.1/11, Error ellipse: s-maj=49.0km s-min=9.5km az=60.0

ISC 17 17:03:12.8±0.7, 7.6S±0.2×119.8E±0.3, h550km, n15, σ1§50/17, mb3.6/7, Flores Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KAPI	**Kappang**	**2.52**	**358**	P	**P**	**17 04 27.5**	**+2.4**
	9.4nm,0.3s,baz=184,slow=2.3,SNR=84						
KAPI				S	**S**	**17 05 26.7**	**+2.9**
	baz=37,slow=22,SNR=0.8						
FITZ	**Fitzroy Crossi**	**11.92**	**152**	P	**P**	**17 05 51.4**	**+0.9**
	0.5nm,0.3s,baz=345,slow=6.0,SNR=17						
WRA	**Warramunga AR**	**18.70**	**133**	P	**P**	**17 06 55.8**	**-1.4**
	1.1nm,0.3s,baz=314,slow=11,SNR=33						
ASAR	**Alice Springs**	**20.96**	**141**	P	**P**	**17 07 16.9**	**-0.8**
	0.9nm,0.3s,baz=325,slow=8.6,SNR=50						
ASAR				PcP	**PcP**	**17 10 59.9**	**-1.4**
	0.3nm,0.5s,baz=337,slow=1.3,SNR=7.5						
STKA	**Stephens Creek**	**31.58**	**143**	P	**P**	**17 08 50.5**	**-0.3**
	2.3nm,0.4s,baz=326,slow=8.3,SNR=18						
CMAR	**Chiang Mai Arr**	**33.05**	**322**	P	**P**	**17 09 04.3**	**+0.8**
	0.9nm,0.6s,baz=139,slow=7.0,SNR=9.5						
PKIN	**Phulchoki**	**48.26**	**318**	*e*P	**P**	**17 11 04.0**	**-0.6**
	2.5nm,0.4s						
GKN	**Gorkha**	**49.04**	**318**	*e*P	**P**	**17 11 09.3**	**-1.0**
	4.9nm,0.4s						
KOLN	**Koldanda**	**49.59**	**317**	*e*P	**P**	**17 11 13.8**	**-0.6**
	6.4nm,0.6s						
PYUN	**Piuthan**	**50.22**	**316**	*e*P	**P**	**17 11 18.8**	**-0.2**
	13nm,0.5s						
SONM	**Songino Array**	**56.41**	**349**	P	**P**	**17 12 00.8**	**-1.7**
	1.2nm,0.5s,baz=167,slow=8.3,SNR=12						
MKAR	**Makanchi Array**	**63.55**	**332**	P	**P**	**17 12 49.0**	**-0.7**
	2.4nm,0.6s,baz=142,slow=7.4,SNR=40						
ZALV	**Zalesovo Beam**	**67.99**	**339**	P	**P**	**17 13 14.9**	**-2.2**
	2.4nm,0.3s,baz=146,slow=5.2,SNR=14						
GEYT	**Alibeck**	**73.04**	**313**	P	**P**	**17 13 47.8**	**+0.3**
	1.4nm,0.7s,baz=131,slow=7.9,SNR=3.6						
VNDA	**Vanda**	**73.29**	**171**	P	**P**	**17 13 49.0**	**+0.9**
	0.4nm,0.4s,baz=324,slow=9.8,SNR=3.7						

IDC 17 17:18:09.9±4.7, 4.63S×153.46E, h0km, mb3.3/3, mb1 3.5/3, mb1mx3.3/39, mbtmp3.3/3, Error ellipse: s-maj=142.7km s-min=34.7km az=108.0, New Ireland region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**24.05**	**229**	P	P	17 23 28.8	+1.7
	0.7nm,0.9s,baz=58,slow=10,SNR=12						
ASAR	**Alice Springs**	**26.72**	**223**	P	P	17 23 50.6	-0.8
	0.1nm,0.3s,baz=55,slow=9.0,SNR=18						
MKAR	**Makanchi Array**	**80.63**	**319**	P	P	17 30 24.2	-0.5
	0.2nm,0.7s,baz=120,slow=8.5,SNR=2.6						

IDC 17 17:24:57.1±22.0, 51.41N×177.55W, h0km, mb3.2/3, mb1 3.6/3, mb1mx3.2/55, mbtmp3.2/3, Error ellipse: s-maj=404.3km s-min=87.5km az=77.0

NEIC 17 17:24:54.2, 51.16N×179.22W, h22km, ML3.1(AEIC), After AEIC., Andreanof Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GALAA	**Gareloi Lava P**	**0.66**	**25**	P	Pb	17 25 07.5	+0.4
GAEA	**Gareloi East**	**0.69**	**25**	P	Pb	17 25 07.7	+0.2
TASE	**Tanaga Southea**	**1.00**	**47**	P	Pb	17 25 12.1	-0.7
TANO	**Tanaga North**	**1.02**	**42**	P	Pb	17 25 12.3	-0.8
TAFP	**Tanaga Falls P**	**1.07**	**46**	P	Pn	17 25 12.9	-0.9
TAFP				S	Sb	17 25 27.5	0.0
TAPA	**Tanaga Point A**	**1.09**	**53**	P	Pn	17 25 12.9	-1.3
TAPA				S	Sn	17 25 30.5	+1.8
KIKV	**Kanaga Island**	**1.47**	**60**	P	Pn	17 25 19.7	+0.4
KIKV				S	Sb	17 25 38.7	-0.2
KICM	**Kanaga Island**	**1.47**	**58**	P	Pn	17 25 19.7	+0.4
KIRH	**Kanaga Island**	**1.52**	**60**	P	Pn	17 25 20.1	+0.1
ADAG	**Mount Adagdak**	**1.83**	**62**	P	Pn	17 25 24.8	+0.5
ETKA	**Kagalaska Isla**	**1.89**	**67**	P	Pn	17 25 25.0	-0.1
GSMY	**Great Sitkin M**	**2.16**	**65**	P	Pn	17 25 28.9	0.0
ATKA	**Atka Island**	**3.29**	**70**	P	Pn	17 25 44.4	0.0
KOWE	**Korovin West**	**3.31**	**67**	P	Pn	17 25 45.4	+0.7
ILAR	**Eielson Array**	**21.58**	**39**	P	P	17 29 39.2	-2.7
	0.2nm,0.5s,baz=243,slow=9.2,SNR=4.5						
YKA	**Yellowknife Ar**	**35.57**	**46**	P	P	17 31 46.9	-2.5
	0.2nm,0.5s,baz=280,slow=8.3,SNR=5.7						
PDAR	**Pinedale Array**	**46.62**	**72**	P	P	17 33 18.9	-1.9
	0.6nm,0.6s,baz=280,slow=3.3,SNR=7.0						

NIED 17 17:34:00, 38.00N×142.60E, h17km, Mw4.1 Best double couple: M0 1.77000×10^15 NP1:φ=62.00000°, δ=22.00000°, λ=-11.00000°. NP2:φ=162.00000°, δ=86.00000°, λ=-112.00000°.
ISCJB 17 17:34:16.8±1.1, 38.01N±0.03×142.65E±0.03, h10km±7km, mb4.3/53, MS3.5/10, Error ellipse: s-maj=4.9km s-min=3.7km az=149.9
IDC 17 17:34:17.3±0.5, 38.01N×142.59E, h0km, mb4.1/25, mb1 4.3/32, mb1mx4.1/71, mbtmp4.2/32, ML3.9/7, MS3.4/14, Ms1 3.4/14, ms1mx3.2/38, Error ellipse: s-maj=14.8km s-min=11.3km az=118.0
JMA 17 17:34:18.5±0.3, 38.04N×142.62E, h19km, M4.3
JMA Felt I J1.
MOS 17 17:34:19.8±0.9, 38.13N×142.60E, h26km, mb4.5/19, Error ellipse: s-maj=8.9km s-min=6.3km az=90.1
BJI 17 17:34:20.5, 38.04N×142.38E, h26km, mb4.6/50, mB4.7/31, Ms4.1/24, Ms7 3.9/24
NEIC 17 17:34:20.6±2.0, 38.01N×142.61E, h24km±14km, mb4.6/17, Error ellipse: s-maj=8.7km s-min=5.6km az=129.0

ISC 17 17:34:20.3±1.7, 37.99N±0.04×142.65E±0.04, h24km±12km, n137, σ1§78/150, mb4.4/53, MS3.4/11, 5C-2D, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**1.12**	**295**	S	**Sn**	**17 34 53.1**	**-2.1**
OFUJ	**Ofunato**	**1.33**	**325**	P	**Pn**	**17 34 41.2**	**-2.2**
OFUJ				*e*S	**Sn**	**17 34 56.9**	**-3.4**
JMM	**Marumori**	**1.47**	**266**	P	**Pn**	**17 34 45.1**	**-0.2**
JMM				*e*S	**Sn**	**17 35 02.0**	**-1.8**
JMK	**Ichinoseki**	**1.47**	**311**	P	**Pn**	**17 34 44.2**	**-1.2**
JMK				S	**Sn**	**17 35 02.0**	**-1.9**
JFK	**Kawauchi**	**1.54**	**247**	P	**Pn**	**17 34 44.2**	**-2.1**
JFK				*e*S	**Sn**	**17 35 04.1**	**-1.4**
JOU	**Okura**	**1.61**	**284**	P	**Pn**	**17 34 46.1**	**-1.1**
JOU				*e*S	**Sn**	**17 35 07.2**	**0.0**
JOM	**Ohasama**	**1.82**	**325**	P	**Pn**	**17 34 49.8**	**-0.3**
JOM				S	**Sn**	**17 35 11.7**	**-0.7**
JFT	**Otama**	**1.89**	**256**	P	**Pn**	**17 34 50.1**	**-1.0**
JFT				*e*S	**Sb**	**17 35 16.4**	**-0.9**
JYK	**Kaneyama**	**2.02**	**298**	P	**Pn**	**17 34 51.8**	**-1.1**
MJAR	**Matsushiro Arr**	**3.82**	**249**	Pn	**Pn**	**17 35 18.7**	**+1.0**
	8.1nm,0.3s,baz=54,slow=15,SNR=64						
MJAR				LR	LR	17 36 59.3	
	comp=Z,1μm,18.6s,baz=70,slow=43						
MAJO	**Matsushiro**	**3.83**	**249**	*e*P	**Pn**	**17 35 18.0**	**+0.3**
MAJO				*e*		17 36 00.5	
MAJO	**Matsushiro**	**3.83**	**249**	*e*Pn	**Pn**	**17 35 18.0**	**+0.3**
MAJO				*e*Sn	**Sn**	**17 36 00.5**	**-1.5**
MAT	**Matsushiro**	**3.83**	**249**	P	**Pn**	**17 35 19.1**	**+1.4**
MAT				*e*S	**Sn**	**17 35 06.4**	**+4.5**
MJB9	**Matsu-Tunnel**	**3.83**	**249**	*e*Pn	**Pn**	**17 35 19.4**	**+1.6**
ERM	**Erimo**	**4.04**	**5**	*i* P	**Pn**	**17 35 19.5**	**-1.1**
ERM	**Erimo**	**4.04**	**5**	*e*Pn	**Pn**	**17 35 20.9**	**+0.4**
INU	**Inuyama**	**5.24**	**241**	*e*Pn	**Pn**	**17 35 38.8**	**+1.7**
JHJ2	**Mitsune**	**5.39**	**206**	*e*Pn	**Pn**	**17 35 38.2**	**-1.0**
JHJ2				*e*Sn	**Sn**	**17 36 36.5**	**-3.9**
JHJ	**Hachijo jima 2**	**5.39**	**206**	Pn	**Pn**	**17 35 38.9**	**-0.4**
	53nm,0.3s,baz=319,slow=23,SNR=19						
JHJ				Sn	**Sn**	**17 36 36.6**	**-3.9**
	55nm,0.3s,baz=66,slow=23,SNR=7.6						
JHJ				LR	LR	17 38 09.3	
	comp=Z,488nm,19.1s,baz=78,slow=43						
ASAJ	**Asahikawa**	**6.12**	**360**	Pn	**Pn**	**17 35 49.2**	**0.0**
	3.9nm,0.3s,baz=206,slow=11,SNR=46						
ASAJ				Sn	**Sn**	**17 36 59.1**	**+0.7**
	3.7nm,0.3s,baz=333,slow=26,SNR=1.6						
ASAJ				LR	LR	17 38 26.3	
	comp=Z,158nm,20.0s,baz=197,slow=41						
ASAJ	**Asahikawa**	**6.12**	**360**	*e*Pn	**Pn**	**17 35 48.9**	**-0.3**
ASAJ				*e*Sn	**Sn**	**17 36 54.5**	**-3.9**
ASAJ				Sn	**Sn**	**17 36 59.1**	**+0.7**
YUK	**Yuzh-Kuril'sk**	**6.51**	**21**	*e*P	**Pn**	**17 35 52.6**	**-1.9**
YUK				*e*S	**Sn**	**17 37 03.0**	**-4.9**
YUK				pmax	pmax		
	comp=Z,126nm,0.5s						
YUK				pmax	pmax		
	comp=N,89nm,0.2s						
YUK				pmax	pmax		
	comp=E,107nm,0.2s						
SHO	**Shikotan**	**6.67**	**27**	*e*P	**Pn**	**17 35 53.8**	**-3.0**
SHO				*e*S	Sn	17 37 03.0	-9.0
SHO				pmax	pmax		
	comp=Z,62nm,0.7s						
KUR	**Kuril'sk**	**8.22**	**27**	*e*P	**Pn**	**17 36 16.8**	**-1.2**
KUR				S	**Sn**	**17 37 44.8**	**-5.3**
KUR				pmax	pmax		
	comp=Z,23nm,0.5s						
KUR				smax	smax		
	comp=N,28nm,0.6s						
KUR				smax	smax		
	comp=E,10.0nm,0.6s						
USRK	**Ussuriysk Ar.**	**10.15**	**311**	Pn	**Pn**	**17 36 45.9**	**+1.4**
	comp=E,0.7nm,0.3s,baz=124,slow=14,SNR=20						
USRK				LR	LR	17 40 27.1	
	comp=E,112nm,18.2s,baz=132,slow=37						
JNU	**Nakatsue**	**10.74**	**247**	Pn	**Pn**	**17 36 53.1**	**+0.4**
	comp=E,0.4nm,0.3s,baz=141,slow=8.6,SNR=8.2						
JNU				LR	LR	17 41 20.5	
	comp=E,513nm,18.7s,baz=109,slow=40						
JNU	**Nakatsue**	**10.74**	**247**	*e*Pn	**Pn**	**17 36 51.9**	**-0.8**
CBIJ	**Chichi jima**	**10.87**	**182**	*e*Pn	**Pn**	**17 36 52.5**	**-1.9**
JCJ	**Chichijima**	**10.87**	**182**	Pn	**Pn**	**17 36 53.2**	**-1.2**
	comp=E,7.1nm,0.3s,baz=282,slow=20,SNR=4.5						
KSRS	**Korea Array**	**11.68**	**272**	Pn	**Pn**	**17 37 08.2**	**+2.8**
	comp=E,0.4nm,0.3s,baz=82,slow=13,SNR=9.4						
KSRS				LR	LR	17 41 32.0	
	comp=E,181nm,18.7s,baz=54,slow=37						
KSAR	**Wonju Array Be**	**11.71**	**272**	P	**Pn**	**17 37 08.2**	**+2.4**
KSAR	**Wonju Array Be**	**11.71**	**272**	Pn	**Pn**	**17 37 08.2**	**+2.4**
MDJ	**Mudanjiang**	**11.83**	**308**	P	**Pn**	**17 37 06.5**	**-1.0**
MDJ				S	**Sn**	**17 39 16.8**	**-1.9**
MDJ				pmax	pmax		
	comp=E,3.0nm,1.6s						
MDJ				pmax	pmax		
	comp=E,55nm,4.1s						
MDJ				LR	LR		
	comp=E,100nm,22.6s						
MDJ				LR	LR		
	comp=E,87nm,20.7s						
MDJ				LR	LR		
	comp=E,88nm,19.1s						
TYV	**Tymovskoe**	**12.87**	**0**	*e*P	**Pn**	**17 37 21.2**	**-0.4**
KLR	**Kul'dur**	**13.71**	**328**	Pn	**Pn**	**17 37 33.5**	**+0.4**
	comp=E,0.1nm,0.3s,baz=133,slow=13,SNR=3.8						
KLR				LR	LR	17 42 43.2	
	comp=E,114nm,19.3s,baz=146,slow=37						
CN2	**Changchun**	**14.23**	**299**	*e*P	**Pn**	**17 37 40.1**	**-0.2**
PEA0	**Petropavlovsk-**	**18.37**	**30**	*e*P	**P**	**17 38 31.2**	**-2.0**
PEA0B	**Petropavlovsk-**	**18.37**	**30**	*e*P	**P**	**17 38 32.1**	**-1.0**
	comp=E,78nm,1.5s						
PETK	**Petropavlovsk-**	**18.37**	**30**	P	**P**	**17 38 33.0**	**-0.2**
	comp=E,0.4nm,0.3s,baz=187,slow=10,SNR=11						
PETK				LR	LR	17 45 26.3	
	comp=E,51nm,20.4s,baz=226,slow=36						
PETK	**Petropavlovsk-**	**18.37**	**30**	P	**P**	**17 38 33.0**	**-0.2**
NJ2	**Nanjing**	**20.34**	**260**	*e*P	**P**	**17 38 52.4**	**-2.5**
NJ2				pmax	pmax		
	comp=E,10.0nm,0.7s						
NJ2				LR	LR		
	comp=E,300nm,13.0s						
TIA	**Tai'an**	**20.42**	**273**	||P	**P**	**17 38 55.4**	**-0.3**
TIA				pmax	pmax		
	comp=E,20nm,0.6s						
BJI	**Beijing**	**20.65**	**284**	P	**P**	**17 38 56.8**	**-1.3**
BJI				S	**S**	**17 42 43.9**	**-3.8**
BJI				pmax	pmax		
	comp=E,8.0nm,0.7s						
BJI				pmax	pmax		
	comp=E,77nm,5.8s						
BJI				LR	LR		
	comp=E,98nm,8.1s						
BJI				LR	LR		
	comp=E,150nm,12.1s						
BJI				LR	LR		
	comp=E,54nm,19.8s						
MA2	**Magadan**	**22.22**	**11**	P	**P**	**17 39 14.8**	**-0.1**
	comp=E,15nm,0.8s,baz=205,slow=7.2,SNR=12						
MA2				LR	LR	17 48 57.7	
	comp=E,77nm,18.6s,baz=295,slow=40						
HHC	**Hu-ho-hao-te**	**24.12**	**287**	*e*P	**P**	**17 39 31.5**	**-2.8**
HHC				pP	pP	17 39 41.1	-0.3
HHC				sP	sP	17 39 44.8	+0.5
HHC				S	**S**	**17 43 42.3**	**-8.4**
HHC				pmax	pmax		
	comp=E,39nm,0.9s						
HHC				pmax	pmax		
	comp=E,110nm,8.1s						
HHC				LR	LR		
	comp=E,1μm,13.6s						
HHC				LR	LR		
	comp=E,1μm,13.6s						
HHC				LR	LR		
	comp=E,1μm,13.6s						
YAK	**Yakutsk**	**25.37**	**346**	P	**P**	**17 39 44.3**	**-1.0**
	comp=E,8.0nm,0.3s,baz=24,slow=2.2,SNR=4.2						
SEY	**Seymchan**	**25.67**	**10**	P	**P**	**17 39 49.5**	**+1.5**
	comp=E,8.7nm,0.6s,baz=198,slow=9.4,SNR=53						
BOD	**Bodaibo**	**27.26**	**326**	*e*P	**P**	**17 40 02.4**	**-0.1**
BOD				pmax	pmax		
	comp=Z,5.0nm,1.1s						
XAN	**Xi'an**	**27.47**	**272**	P	**P**	**17 40 04.1**	**-0.6**
XAN				pP	pP	17 40 11.6	-0.2
XAN				pmax	pmax		
	comp=Z,10.0nm,0.6s						
XAN				pmax	pmax		
	comp=Z,62nm,10.7s						
ULN	**Ulaanbaatar**	**27.65**	**302**	*c*eP	**P**	**17 40 06.2**	**0.0**
ULN				pmax	pmax		
	comp=Z,4.0nm,1.0s						
H11N2	**WAKE ISLAND Hy**	**27.83**	**124**	T	T	18 09 17.0	
	baz=321,slow=76,SNR=40						
H11N1	**WAKE ISLAND Hy**	**27.84**	**124**	T	T	18 09 17.8	
H11N3	**WAKE ISLAND Hy**	**27.85**	**124**	T	T	18 09 18.3	
	baz=313,slow=76,SNR=87						
SONA1	**Songino Array**	**28.08**	**302**	*e*P	**P**	**17 40 08.4**	**-1.6**
SONM	**Songino Array**	**28.08**	**302**	P	**P**	**17 40 10.6**	**+0.5**
	comp=Z,3.7nm,0.6s,baz=112,slow=8.7,SNR=18						
SONM				LR	LR	17 51 42.7	
	comp=Z,52nm,18.6s,baz=96,slow=37						
ENH	**Enshi**	**28.40**	**264**	*e*P	**P**	**17 40 11.9**	**-1.1**
	comp=Z,30nm,0.7s						
H11S1	**WAKE ISLAND Hy**	**28.59**	**126**	T	T	18 10 15.9	
	baz=318						
H11S3	**W

	comp=Z,49nm,19.2s						
WMQ				LR	LR		
	comp=Z,15nm,19.2s						
ZAA0	**Zalesovo Array**	**42.00**	**312**	*e*P	**P**	**17 42 09.8**	**+0.4**
ZALV	**Zalesovo Beam**	**42.00**	**312**	P	**P**	**17 42 09.7**	**+0.3**
	comp=Z,2.6nm,0.5s,baz=88,slow=8.2,SNR=13						
ZALV				PcP	**PcP**	**17 44 03.4**	**-0.7**
	comp=Z,0.4nm,0.4s,baz=74,slow=4.0,SNR=2.4						
CHTO	**Chiang Mai**	**42.48**	**256**	*e*P	**P**	**17 42 13.7**	**0.0**
CHTO				pmax	pmax		
	comp=Z,3.0nm,0.7s						
CHTO	**Chiang Mai**	**42.48**	**256**	*e*P	**P**	**17 42 13.7**	**0.0**
	comp=Z,3.3nm,0.7s						
CMAR	**Chiang Mai Arr**	**42.69**	**255**	P	**P**	**17 42 15.6**	**+0.2**
	comp=Z,0.9nm,0.6s,baz=41,slow=6.7,SNR=6.8						
CMAR				LR	LR	18 01 49.1	
	comp=Z,43nm,19.2s,baz=215,slow=39						
NRIK	**Noril'sk**	**42.81**	**335**	LR	LR	18 03 21.9	
	comp=Z,48nm,18.5s,baz=114,slow=41						
LSA	**Lhasa**	**43.10**	**275**	*e*P	**P**	**17 42 19.7**	**+0.5**
LSA				pmax	pmax		
	comp=Z,5.0nm,0.6s						
LSA	**Lhasa**	**43.10**	**275**	*e*P	**P**	**17 42 19.7**	**+0.5**
	comp=Z,5.2nm,0.6s						
MK01	**Makanchi Array**	**44.45**	**301**	*e*P	**P**	**17 42 28.7**	**-0.6**
MK31	**Makanchi Array**	**44.45**	**301**	*e*P	**P**	**17 42 29.1**	**-0.2**
MK31	**Makanchi Array**	**44.45**	**301**	*e*P	**P**	**17 42 29.1**	**-0.2**
MKAR	**Makanchi Array**	**44.45**	**301**	P	**P**	**17 42 29.3**	**0.0**
	comp=Z,3.9nm,0.7s,baz=85,slow=9.7,SNR=42						
MKAR				LR	LR	18 01 39.2	
	comp=Z,35nm,18.7s,baz=66,slow=37						
MKAR	**Makanchi Array**	**44.45**	**301**	*e*P	**P**	**17 42 28.8**	**-0.5**
MAKZ	**Makanchi**	**44.66**	**302**	*e*P	**P**	**17 42 30.3**	**-0.6**
MAKZ				pmax	pmax		
	comp=Z,3.0nm,0.6s						
MAKZ	**Makanchi**	**44.66**	**302**	*e*P	**P**	**17 42 30.3**	**-0.6**
	comp=Z,2.9nm,0.6s						
KDAK	**Kodiak Island**	**45.73**	**43**	*i*P	**P**	**17 42 41.0**	**+1.7**
SPU	**Mount Spurr**	**45.88**	**38**	*e*P	**P**	**17 42 41.7**	**+1.3**
KURK	**Kurchatov**	**46.12**	**308**	P	**P**	**17 42 42.9**	**+0.5**
KURK				pmax	pmax		
	comp=Z,7.0nm,0.6s						
KURK	**Kurchatov**	**46.12**	**308**	*e*P	**P**	**17 42 39.5**	**-2.9**
	comp=Z,7.8nm,0.7s						
KURBB	**Kurchatov Arra**	**46.19**	**307**	P	**P**	**17 42 42.9**	**-0.1**
	comp=Z,7.0nm,0.6s,baz=82,slow=8.1,SNR=6.4						
KTH	**Kantishna Hill**	**46.41**	**35**	*e*P	**P**	**17 42 44.3**	**-0.3**
	comp=Z,6.1nm,1.0s						
MLY	**Manley**	**46.52**	**32**	*e*P	**P**	**17 42 47.1**	**+1.6**
	comp=Z,4.5nm,0.9s						
MDM	**Murphy Dome**	**47.58**	**33**	*e*P	**P**	**17 42 55.3**	**+1.5**
	comp=Z,7.2nm,0.9s						
GUN	**Gumba**	**48.04**	**275**	*e*P	**P**	**17 42 58.3**	**+0.1**
	comp=Z,30nm,0.4s						
IL1	**Eielson Array**	**48.16**	**33**	*e*P	**P**	**17 42 56.9**	**-1.3**
ILAR	**Eielson Array**	**48.16**	**33**	P	**P**	**17 42 58.6**	**+0.5**
	comp=Z,2.4nm,0.7s,baz=266,slow=6.4,SNR=33						
ILB	**Eielson Array**	**48.16**	**33**	*e*P	**P**	**17 42 58.0**	**-0.2**
KKN	**Kakani**	**48.56**	**276**	*e*P	**P**	**17 43 02.2**	**+0.1**
	comp=Z,20nm,0.5s						
PKIN	**Phulchoki**	**48.57**	**275**	*e*P	**P**	**17 43 01.6**	**-0.6**
	comp=Z,11nm,0.5s						
GKN	**Gorkha**	**48.97**	**276**	*e*P	**P**	**17 43 05.1**	**0.0**
	comp=Z,19nm,0.5s						
MENT	**Mentasta**	**49.69**	**35**	*e*P	**P**	**17 43 12.1**	**+2.2**
	comp=Z,9.3nm,1.4s						
KOLN	**Koldanda**	**49.89**	**277**	*e*P	**P**	**17 43 12.1**	**-0.1**
	comp=Z,5.1nm,0.3s						
TKM2	**Tokmak 2**	**50.04**	**298**	*e*P	**P**	**17 43 12.4**	**-0.8**
TKM2				pmax	pmax		
	comp=Z,6.0nm,0.5s						
TKM2	**Tokmak 2**	**50.04**	**298**	*e*P	**P**	**17 43 12.4**	**-0.8**
	comp=Z,5.9nm,0.5s						
PYUN	**Piuthan**	**50.22**	**277**	*e*P	**P**	**17 43 14.9**	**+0.2**
	comp=Z,20nm,0.5s						
BVAR	**Borovoye Array**	**50.66**	**312**	P	**P**	**17 43 17.2**	**-0.2**
	comp=Z,0.9nm,0.5s,baz=75,slow=8.5,SNR=11						
BRVK	**Borovoye**	**50.71**	**312**	*ce*P	**P**	**17 43 18.9**	**+1.1**
BRVK				pmax	pmax		
	comp=Z,7.0nm,2.5s						
BRVK	**Borovoye**	**50.71**	**312**	*e*P	**P**	**17 43 14.0**	**-3.8**
	comp=Z,4.3nm,1.2s						
INK	**Inuvik**	**53.09**	**28**	P	**P**	**17 43 36.0**	**+0.8**
	comp=Z,1.5nm,0.5s,baz=312,slow=6.2,SNR=16						
KKAR	**Karatay Array**	**53.49**	**300**	*e*P	**P**	**17 43 38.4**	**-0.3**
KKAR				pmax	pmax		
	comp=Z,1.0nm,0.5s						
KKAR	**Karatay Array**	**53.49**	**300**	*e*P	**P**	**17 43 38.4**	**-0.3**
	comp=Z,1.0nm,0.5s						
ARU	**Arti**	**56.30**	**318**	P	**P**	**17 43 58.7**	**0.0**
	comp=Z,1.6nm,0.4s,baz=89,slow=5.4,SNR=5.2						
ARU	**Arti**	**56.30**	**318**	*d*P	**P**	**17 44 00.0**	**+1.3**
ARU						17 46 01.9	
ARU				S	**S**	**17 51 48.1**	**+1.0**
ARU				pmax	pmax		
	comp=Z,1.0nm,0.3s						
ARU	**Arti**	**56.30**	**318**	*e*P	**P**	**17 43 57.1**	**-1.5**
	comp=Z,27nm,1.9s						
DLBC	**Dease Lake**	**57.27**	**39**	P	**P**	**17 44 08.0**	**+2.3**
	comp=Z,2.5nm,0.8s,baz=266,slow=5.4,SNR=11						
DLBC	**Dease Lake**	**57.27**	**39**	*e*P	**P**	**17 44 08.2**	**+2.6**
	comp=Z,10nm,1.4s						
ABKAR	**Akbulak array**	**58.07**	**310**	*e*P	**P**	**17 44 10.2**	**-1.2**
	comp=Z,2.4nm,0.6s						
WRAB	**Tennant Creek**	**58.14**	**189**	*ce*P	P	17 44 20.5	+8.4
WRAB				pmax	pmax		
	comp=Z,19nm,1.0s						
WRA	**Warramunga Arr**	**58.15**	**189**	P	**P**	**17 44 12.0**	**-0.1**
	comp=Z,2.5nm,0.8s,baz=7,4,slow=7.4,SNR=12						
RES	**Resolute Bay**	**61.43**	**15**	P	**P**	**17 44 34.8**	**+0.7**
	comp=Z,4.2nm,0.8s,baz=304,slow=7.2,SNR=24						
AS01	**Alice Springs**	**61.87**	**189**	*e*P	**P**	**17 44 38.1**	**+0.5**
ASAR	**Alice Springs**	**61.88**	**189**	P	**P**	**17 44 38.1**	**+0.4**
	comp=Z,1.0nm,0.9s,baz=358,slow=6.5,SNR=10						
YKA	**Yellowknife Ar**	**62.49**	**31**	P	**P**	**17 44 41.9**	**+0.5**
	comp=Z,1.4nm,0.6s,baz=302,slow=6.6,SNR=32						
FINES	**FINESS Array B**	**68.42**	**332**	P	**P**	**17 45 20.7**	**+1.0**
	comp=Z,1.4nm,0.7s,baz=46,slow=11,SNR=6.4						
FINES	**FINESS Array B**	**68.42**	**332**	*i*P	**P**	**17 45 23.7**	**+4.0**
FINES				pmax	pmax		
	comp=Z,1.0nm,0.6s						
STKA	**Stephens Creek**	**69.52**	**181**	P	**P**	**17 45 29.2**	**+2.5**
	comp=Z,0.4nm,0.3s,baz=333,slow=11,SNR=2.5						
KIV	**Kislovodsk**	**71.02**	**311**	*e*P	**P**	**17 45 36.7**	**+0.5**
KIV				*e*		17 45 45.5	
KIV				pmax	pmax		
	comp=Z,4.0nm,1.1s						
FFC	**Flin Flon**	**72.37**	**33**	*i*P	**P**	**17 45 45.4**	**+1.4**
NVAR	**Mina Array Bea**	**73.63**	**54**	P	**P**	**17 45 53.5**	**+1.5**
	comp=Z,0.8nm,0.6s,baz=295,slow=8.3,SNR=5.8						
NOA	**NORSAR Array B**	**73.68**	**338**	LR	LR	18 21 35.1	
	comp=Z,22nm,18.4s,baz=155,slow=38						
AKASG	**Malin Array Be**	**74.14**	**323**	P	**P**	**17 45 54.4**	**-0.1**
	comp=Z,0.5nm,0.5s,baz=44,slow=5.6,SNR=4.3						
AKASG	**Malin Array Be**	**74.14**	**323**	*i*P	**P**	**17 45 57.7**	**+3.2**
AKASG				pmax	pmax		
	comp=Z,1.0nm,0.5s						
R11A	**Troy Canyon, C**	**75.40**	**53**	*e*P	**P**	**17 46 04.0**	**+1.7**
	comp=Z,5.7nm,1.5s						
PDAR	**Pinedale Array**	**76.30**	**46**	P	**P**	**17 46 08.2**	**+0.8**
	comp=Z,0.5nm,0.5s,baz=60,slow=0.6,SNR=6.9						
CLL	**Collm**	**80.75**	**331**	*e*(P)	P	17 46 41.0	+10
GERES	**GERESS Array B**	**82.41**	**329**	P	**P**	**17 46 41.1**	**+0.7**
	comp=Z,0.1nm,0.3s,baz=44,slow=7.1,SNR=2.9						
EKA	**Eskdalemuir Ar**	**82.55**	**341**	P	**P**	**17 46 42.2**	**+1.3**
	comp=Z,0.5nm,0.7s,baz=49,slow=4.0,SNR=4.4						
ANMO	**Albuquerque**	**83.22**	**51**	*ce*P	**P**	**17 46 47.9**	**+2.9**
ANMO				pmax	pmax		
	comp=Z,6.0nm,2.5s						
TXAR	**Lajitas Array**	**88.76**	**53**	P	**P**	**17 47 12.2**	**-0.2**
	comp=Z,0.4nm,0.5s,baz=295,slow=2.9,SNR=9.1						
LPAZ	**La Paz**	**145.36**	**60**	PKPbc	**PKPbc**	**17 53 57.1**	**-0.1**
	comp=Z,1.5nm,0.6s,baz=298,slow=1.3,SNR=6.5						

IDC ***17*** *17:38:34.2±0.9, 3.°81N×126.°32E, h0km, mb3.6/8, mb1 3.7/8, mb1mx3.5/54, mbtmp3.6/8, MS3.0/3, Ms1 3.0/3, ms1mx2.6/35, Error ellipse: s-maj=70.9km s-min=15.5km az=78.0*

ISCJB ***17*** *17:38:38.3±0.7, 3.°8N±0.°1×126.°3E±0.°4, h45km, mb3.6/8, MS2.9/2, Error ellipse: s-maj=55.9km s-min=12.3km az=169.5*

ISC 17 17:38:40.3±0.9, 3.°8N±0.°1×126.°3E±0.°5, h45km, n10, σ0s87/8, mb3.7/8, Talaud Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KAPI	**Kappang**	**10.95**	**217**	LR	LR	17 44 55.5	
	comp=Z,50nm,21.3s,baz=65,slow=35						
LEM	**Lembang**	**21.45**	**241**	LR	LR	17 52 33.4	
	comp=Z,46nm,19.4s,baz=15,slow=39						
FITZ	**Fitzroy Crossi**	**21.78**	**182**	P	**P**	**17 43 29.3**	**+0.9**
	2.1nm,0.6s,baz=357,slow=7.4,SNR=6.9						
WRA	**Warramunga Arr**	**24.88**	**162**	P	**P**	**17 43 58.4**	**-0.7**
	0.6nm,0.7s,baz=339,slow=11,SNR=15						
ASAR	**Alice Springs**	**28.29**	**165**	P	**P**	**17 44 28.9**	**-0.8**
	0.3nm,0.6s,baz=338,slow=6.5,SNR=13						
KSRS	**Korea Array**	**33.52**	**2**	P	**P**	**17 45 15.2**	**-0.4**
	0.6nm,0.4s,baz=179,slow=9.7,SNR=4.9						
KSRS				LR	LR	17 58 37.6	
	comp=Z,27nm,19.2s,baz=291,slow=36						
STKA	**Stephens Creek**	**38.35**	**159**	P	**P**	**17 45 57.3**	**+0.3**
	1.7nm,0.8s,baz=341,slow=14,SNR=4.1						
USRK	**Ussuriysk Ar.**	**40.54**	**6**	P	**P**	**17 46 15.4**	**+0.3**
	1.6nm,0.8s,baz=181,slow=9.5,SNR=4.0						
SONM	**Songino Array**	**47.09**	**342**	P	**P**	**17 47 08.8**	**+0.9**
	0.2nm,0.5s,baz=164,slow=8.9,SNR=3.0						
MKAR	**Makanchi Array**	**57.26**	**325**	P	**P**	**17 48 22.4**	**-0.8**
	0.3nm,0.5s,baz=119,slow=7.1,SNR=4.8						

WEL 17 18:03:12.1±0.6, 41.°21S×179.°18W, h33km, ML4.1/10, Error ellipse: s-maj=6.2km s-min=3.8km az=90.0, East of North Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MHGZ	**Mahia Peninsul**	**3.03**	**312**	PN	Pn	18 03 56.4	-1.4
CTZ	**Chatham Island**	**3.16**	**144**	PN	Pn	18 03 53.8	-5.6
CTZ				SN	Sn	18 04 25.7	-10
PXZ	**Pawanui**	**3.23**	**290**	PN	Pn	18 04 00.4	-0.1
PXZ				SN	Sn	18 04 35.2	-2.7
PRHZ	**Porangahau**	**3.31**	**285**	PN	Pn	18 04 01.3	-0.3
PRHZ				SN	Sn	18 04 37.1	-2.8
KAHZ	**Kahuranaki**	**3.32**	**294**	PN	Pn	18 04 01.7	-0.6
KAHZ				SN	Sn	18 04 37.7	-2.4
ANWZ	**Angora Road**	**3.38**	**281**	PN	Pn	18 04 01.8	-0.7
RIGZ	**Rimuhau**	**3.43**	**316**	PN	Pn	18 04 02.7	-0.6
BFZ	**Birch Farm**	**3.50**	**277**	PN	Pn	18 04 03.6	-0.7
DVHZ	**Dannevirke**	**3.65**	**283**	PN	Pn	18 04 05.5	-0.8
TMWZ	**Te Maipa**	**3.72**	**270**	PN	Pn	18 04 06.1	-1.2
NMHZ	**Naumai**	**3.73**	**303**	PN	Pn	18 04 07.2	-0.2
PRWZ	**Pori Road**	**3.73**	**279**	PN	Pn	18 04 06.6	-0.8
KRHZ	**Kereru**	**3.74**	**293**	PN	Pn	18 04 06.9	-0.6
PNHZ	**Pukenui**	**3.75**	**289**	PN	Pn	18 04 06.8	-0.8
MWZ	**Matawai**	**3.83**	**318**	PN	Pn	18 04 07.5	-1.3
WMGZ	**Waiomatatini S**	**3.86**	**330**	PN	Pn	18 04 06.7	-2.5
TSZ	**Takapari Road**	**3.87**	**286**	PN	Pn	18 04 08.5	-0.8
TSZ				AML	AML	18 04 54.8	
TSZ				AML	AML	18 04 55.1	
BKZ	**Black Stump Fm**	**3.89**	**300**	PN	Pn	18 04 09.5	-0.2
BKZ				AML	AML	18 04 55.0	
BKZ				AML	AML	18 04 55.0	
POWZ	**Post Office Ro**	**3.92**	**280**	PN	Pn	18 04 09.4	-0.5
MRZ	**Mangatainoka R**	**4.01**	**276**	PN	Pn	18 04 10.0	-1.1
MTW	**Mount Morrison**	**4.01**	**269**	PN	Pn	18 04 09.1	-2.1
MTW				AML	AML	18 04 56.4	
MTW				AML	AML	18 04 57.6	
BHHZ	**Black Hill Sta**	**4.02**	**294**	PN	Pn	18 04 10.6	-0.8
HOWZ	**Holdsworth Sta**	**4.02**	**273**	PN	Pn	18 04 10.2	-1.1
PAWZ	**Paruwai Farm**	**4.06**	**266**	AML	AML	18 04 57.9	
PAWZ				AML	AML	18 05 03.4	
MRHZ	**Matea Rd**	**4.13**	**304**	PN	Pn	18 04 12.8	-0.1
OGWZ	**Otaki Gorge**	**4.29**	**273**	PN	Pn	18 04 13.9	-1.1
CAW	**Cannon Point**	**4.34**	**269**	PN	Pn	18 04 13.7	-2.1
CAW				AML	AML	18 05 04.5	
CAW				AML	AML	18 05 04.8	
KIW	**Kapiti Island**	**4.48**	**273**	PN	Pn	18 04 16.7	-1.0
KIW				AML	AML	18 05 09.6	
TCW	**Tory Channel**	**4.93**	**268**	PN	Pn	18 04 22.4	-1.5
TCW				AML	AML	18 05 18.4	
TCW				AML	AML	18 05 19.2	
QRZ	**Quartz Range**	**6.28**	**271**	AML	AML	18 04 38.9	
QRZ				PN	Pn	18 04 41.7	-0.7
LTZ	**Lake Taylor**	**6.56**	**253**	PN	Pn	18 04 45.0	-1.3
LTZ				AML	AML	18 07 15.9	
LBZ	**Lake Benmore**	**8.44**	**244**	AML	AML	18 13 09.2	

NIED ***17*** *18:08:00, 35.°80N×140.°10E, h71km, Mw4.7 Best double couple: M0 1.06000×10^16 NP1:ϕs147.00000°, δ33.00000°, λ39.00000°. NP2:ϕs23.00000°, δ70.00000°, λ117.00000°.*

BJI ***17*** *18:08:42.6, 35.°60N×140.°41E, h46km, mb4.5/46, mB4.8/35, Ms4.1/25, Ms7 3.8/20*

MOS ***17*** *18:08:46.1±1.2, 35.°82N×140.°18E, h58km, mb4.9/30, Error ellipse: s-maj=8.5km s-min=4.9km az=113.9*

ISCJB ***17*** *18:08:47.8±0.3, 35.°71N±0.°02×140.°09E±0.°04, h76km±2km, mb4.4/81, Error ellipse: s-maj=5.2km s-min=4.1km az=179.3*

JMA ***17*** *18:08:48.8±0.2, 35.°79N×140.°11E, h65km±2km, M4.4 Broadband fault plane solution: P waves. NP1: ϕs17.00000°, δ65.00000°, λ96.00000°. NP2:ϕs182.00000°, δ25.00000°, λ77.00000°. Principal axes: T Plg69.0000°, Azm299.0000°; N Plg6.0000°, Azm194.0000°; P Plg20.0000°, Azm102.0000°;*

JMA Felt III J1.

IDC ***17*** *18:08:48.3±1.0, 35.°68N×140.°18E, h65km±9km, mb3.9/26, mb1 4.1/33, mb1mx4.1/43, mbtmp4.3/33, MS3.4/17, Ms1 3.4/17, ms1mx3.3/40 Error ellipse: s-maj=11.1km s-min=6.3km az=72.0*

NEIC ***17*** *18:08:48.3±0.6, 35.°70N×140.°07E, h67km±5km, mb4.7/26, Error ellipse: s-maj=6.5km s-min=5.5km az=113.0*

NEIC Felt [II] at Yokohama. Also felt at Akiruno, Atsugi and Tokyo. Recorded [3 JMA] in Kanagawa.

ISC 17 18:08:48.1±0.6, 35.°78N±0.°03×140.°11E±0.°04, h60km±5km, n228, σ1s46/245, mb4.5/81, 29C-11D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TOK	**Tokyo**	**0.30**	**251**	⇓P	**Pn**	**18 09 00.7**	**+2.6**
JCN	**Nagara**	**0.37**	**168**	⇑P	**Pn**	**18 09 00.8**	**+2.0**
JCN				S	**Sn**	**18 09 10.7**	**+4.2**
JYT	**Yasato**	**0.45**	**9**	⇑P	**Pn**	**18 09 00.7**	**+1.2**
JYT				S	**Sn**	**18 09 09.7**	**+1.9**
JAG	**Ashikaga**	**0.83**	**321**	⇓P	**Pn**	**18 09 05.3**	**+1.4**
JAG				S	**Sn**	**18 09 17.8**	**+2.2**
JOD2	**Odawara 2**	**0.98**	**238**	⇓P	**Pn**	**18 09 06.5**	**+0.6**
JOD2				S	**Sn**	**18 09 19.3**	**+0.3**
JRY	**Ryogami san**	**1.00**	**284**	⇓P	**Pn**	**18 09 08.0**	**+1.8**
BSO3	**Boso 3**	**1.03**	**161**	⇑P	**Pn**	**18 09 06.8**	**+0.5**
JIM2	**Oshima 3**	**1.20**	**208**	P	**Pn**	**18 09 08.4**	**-0.4**
JIM2				S	**Sn**	**18 09 23.5**	**-0.7**
JKT	**Katashina**	**1.20**	**325**	⇓P	**Pn**	**18 09 10.1**	**+1.2**
JYN	**Shimob**	**1.30**	**258**	⇓P	**Pn**	**18 09 11.2**	**+1.0**
JYN				S	**Sn**	**18 09 27.7**	**+1.0**
MJAR	**Matsushiro Arr**	**1.71**	**297**	P	**Pn**	**18 09 16.0**	**+0.4**
	137nm,0.3s,baz=97,slow=12,SNR=333						
MJAR				S	**Sn**	**18 09 39.7**	**+3.2**
	102nm,0.3s,baz=149,slow=15,SNR=9.8						
MJAR				LR	LR	18 09 57.0	
	comp=Z,1μm,19.3s,baz=115,slow=39						
MAJO	**Matsushiro**	**1.71**	**297**	*e*P	**Pn**	**18 09 17.5**	**+1.9**
MAJO				*e*		18 09 32.8	
MAJO	**Matsushiro**	**1.71**	**297**	*e*Pn	**Pn**	**18 09 17.5**	**+1.9**
MAJO				*e*Sn	**Sn**	**18 09 32.8**	**-3.7**
MAT	**Matsushiro**	**1.71**	**297**	P	**Pn**	**18 09 17.5**	**+1.8**
MAT				S	**Sn**	**18 09 40.4**	**+3.9**
MJB9	**Matsu-Tunnel**	**1.72**	**297**	*e*Pn	**Pn**	**18 09 17.6**	**+1.9**
INU	**Inuyama**	**2.55**	**261**	*e*Pn	**Pn**	**18 09 28.3**	**+1.2**
JHJ	**Hachijo jima 2**	**2.67**	**186**	P	**Pn**	**18 09 28.9**	**+0.2**
	177nm,0.3s,baz=334,slow=22,SNR=45						
JHJ				S	**Sn**	**18 09 57.9**	**-2.0**
	221nm,0.3s,baz=263,slow=22,SNR=9.9						
JHJ				LR	LR	18 10 40.0	
	comp=Z,389nm,18.1s,baz=226,slow=43						
JHJ2	**Mitsune**	**2.68**	**185**	*e*Pn	**Pn**	**18 09 28.0**	**-0.8**
JHJ2				*e*Sn	**Sn**	**18 09 60.0**	**0.0**
ERM	**Erimo**	**6.66**	**20**	*e*P	**Pn**	**18 10 23.3**	**0.0**
ERM	**Erimo**	**6.66**	**20**	*e*Pn	**Pn**	**18 10 23.2**	**0.0**
JNU	**Nakatsue**	**8.07**	**253**	P	**Pn**	**18 10 43.7**	**+1.1**
	0.8nm,0.3s,baz=93,slow=5.8,SNR=14						
JNU				LR	LR	18 14 13.0	
	comp=Z,462nm,20.3s,baz=114,slow=40						
JNU	**Nakatsue**	**8.07**	**253**	*e*Pn	**Pn**	**18 10 42.3**	**-0.3**
ASAJ	**Asahikawa**	**8.54**	**12**	P	**Pn**	**18 10 48.5**	**-0.5**
	4.3nm,0.3s,baz=214,slow=11,SNR=45						
ASAJ				S	**Sn**	**18 12 21.8**	**-2.0**
	2.1nm,0.3s,baz=131,slow=32,SNR=6.9						
ASAJ				LR	LR	18 14 54.0	
	comp=Z,76nm,19.1s,baz=202,slow=42						
CBIJ	**Chichi jima**	**8.84**	**168**	*e*Pn	Pn	18 10 49.8	-3.3
CBIJ				S	Sn	18 12 22.0	-9.3
JCJ	**Chichijima**	**8.84**	**168**	P	Pn	18 10 50.0	-3.2
	26nm,0.3s,baz=84,slow=23,SNR=18						
JCJ				S	Sn	18 12 22.0	-9.3
	9.3nm,0.3s,baz=280,slow=22,SNR=3.5						
YUK	**Yuzh-Kuril'sk**	**9.35**	**26**	*e*P	**Pn**	**18 10 57.4**	**-2.6**
YUK				*e*S	Sn	18 12 36.4	-7.2
YUK				pmax	pmax		
	comp=N,73nm,0.5s						
YUK				pmax	pmax		
	comp=E,53nm,0.5s						
YUK				pmax	pmax		
	comp=Z,117nm,0.5s						
SHO	**Shikotan**	**9.59**	**31**	*e*P	Pn	18 11 00.2	-3.1
SHO				pmax	pmax		
	comp=Z,71nm,0.9s						
KSRS	**Korea Array**	**9.93**	**283**	P	Pn	18 11 11.5	+3.5
	comp=Z,0.7nm,0.3s,baz=98,slow=14,SNR=15						
KSRS				LR	LR	18 14 54.3	
	comp=Z,364nm,20.6s,baz=92,slow=36						
KS15	**Wonju Array Si**	**9.96**	**283**	*e*Pn	**Pn**	**18 11 09.1**	**+0.6**
KSAR	**Wonju Array Be**	**9.96**	**283**	P	**Pn**	**18 11 11.5**	**+3.0**
KSAR	**Wonju Array Be**	**9.96**	**283**	P	**Pn**	**18 11 11.5**	**+3.0**
USRK	**Ussuriysk Ar.**	**10.45**	**326**	P	**Pn**	**18 11 18.0**	**+2.9**
	comp=Z,0.7nm,0.3s,baz=146,slow=13,SNR=15						
USRK				LR	LR	18 15 07.2	
	comp=Z,118nm,20.9s,baz=137,slow=36						
YSS	**Yuzh-Sakhalins**	**11.34**	**9**	*e*P	**Pn**	**18 11 25.0**	**-2.1**
YSS				*e*S	**Sn**	**18 13 30.8**	**-1.3**
YSS				pmax	pmax		
	comp=Z,10.0nm,0.6s						
MDJ	**Mudanjiang**	**11.93**	**321**	P	**Pn**	**18 11 32.8**	**-2.4**
MDJ				S	**Sn**	**18 13 41.8**	**-4.7**
MDJ				pmax	pmax		
	comp=Z,4.0nm,1.1s						
MDJ				pmax	pmax		
	comp=Z,99nm,5.1s						
MDJ				LR	LR		
	comp=Z,200nm,27.0s						
MDJ				LR	LR		
	comp=Z,85nm,23.2s						
MDJ				LR	LR		
	comp=Z,220nm,33.3s						
MDJ	**Mudanjiang**	**11.93**	**321**	*e*Pn	**Pn**	**18 11 32.2**	**-3.0**
	comp=Z,22nm,1.0s						
CN2	**Changchun**	**13.81**	**310**	*e*P	**Pn**	**18 12 02.0**	**+1.2**
CN2				pmax	pmax		
	comp=Z,10.0nm,0.7s						
KLR	**Kul'dur**	**14.77**	**338**	P	**Pn**	**18 12 13.2**	**-0.2**
	comp=Z,0.6nm,0.3s,baz=152,slow=14,SNR=8.5						
TYV	**Tymovskoe**	**15.19**	**6**	*e*P	**P**	**18 12 24.0**	**+1.4**
TYV				pmax	pmax		
	comp=Z,22nm,1.0s						
NKL	**Nikolayevsk**	**17.37**	**1**	*e*P	**P**	**18 12 50.2**	**+3.5**
NJ2	**Nanjing**	**18.02**	**264**	*e*P	**P**	**18 12 52.3**	**-1.8**
NJ2				pmax	pmax		
	comp=Z,10.0nm,0.7s						
BJI	**Beijing**	**19.34**	**290**	P	**P**	**18 13 06.3**	**-2.1**
BJI				S	**S**	**18 16 44.3**	**+0.3**
BJI				pmax	pmax		
	comp=Z,18nm,1.1s						
BJI				pmax	pmax		
	comp=Z,150nm,3.8s						
BJI				LR	LR		
	comp=Z,140nm,11.6s						
BJI				LR	LR		
	comp=Z,190nm,16.5s						
TPUB	**Ta-pu**	**20.97**	**239**	*e*P	**P**	**18 13 23.9**	**-2.5**
PETK	**Petropavlovsk-**	**21.30**	**30**	P	**P**	**18 13 30.3**	**+0.8**
	comp=Z,3.1nm,0.8s,baz=217,slow=10,SNR=5.8						
PETK				LR	LR	18 22 04.0	
	comp=Z,32nm,20.1s,baz=217,slow=37						
HHC	**Hu-ho-hao-te**	**22.91**	**291**	*e*P	**P**	**18 13 45.9**	**-1.0**
HHC				pP	pP	18 13 57.3	-2.9
HHC				sP	sP	18 14 02.9	-4.8
HHC				S	**S**	**18 17 46.6**	**-5.7**
HHC				pmax	pmax		
	comp=Z,18nm,0.8s						
HHC				pmax	pmax		
	comp=Z,78nm,5.3s						
HHC				LR	LR		
	comp=Z,1μm,13.6s						
HHC				LR	LR		
	comp=Z,1μm,13.7s

GTA				sP	sP	18 15 26.3	-3.9	
GTA				PcP	**PcP**	**18 17 58.3**	**+1.0**	
GTA				S	**S**	**18 20 17.4**	**+2.1**	
GTA				sS	sS	18 20 37.8	-2.8	
GTA				ScP	**ScP**	**18 21 34.5**	**-1.0**	
GTA				SS	**SnSn**	**18 22 13.8**	**+5.0**	
GTA				pmax	pmax			
	comp=Z,4.0nm,1.0s							
GTA				pmax	pmax			
	comp=Z,86nm,6.0s							
GTA				LR	LR			
	comp=Z,79nm,18.5s							
GTA				LR	LR			
	comp=Z,100nm,16.2s							
GTA				LR	LR			
	comp=Z,130nm,16.2s							
KMI	**Kunming**	**33.74**	**262**	P	**P**	**18 15 25.1**	**+0.9**	
KMI				pmax	pmax			
	comp=Z,6.0nm,0.9s							
KMI				pmax	pmax			
	comp=Z,120nm,7.3s							
BILL	**Bilibino**	**35.52**	**17**	*ce*P	**P**	**18 15 39.8**	**+1.0**	
BILL				*e*		18 17 03.7		
BILL				pmax	pmax			
	comp=Z,6.0nm,1.2s							
BILL				MLR	MLR			
	comp=Z,52nm,17.0s							
TIXI	**Tiksi**	**36.41**	**354**	*ce*P	**P**	**18 15 46.5**	**+0.2**	
TIXI				pmax	pmax			
	comp=Z,5.0nm,1.7s							
TIXI	**Tiksi**	**36.41**	**354**	*e*P	**P**	**18 15 46.0**	**-0.3**	
	comp=Z,2.8nm,0.8s							
CMAR	**Chiang Mai Arr**	**40.16**	**256**	P	**P**	**18 16 18.1**	**-0.4**	
	comp=Z,1.4nm,0.9s,baz=45,slow=6.3,SNR=9.6							
CMAR				PcP	**PcP**	**18 18 22.4**	**+0.5**	
	comp=Z,0.1nm,0.3s,baz=33,slow=1.2,SNR=5.2							
CMAR				LR	LR	18 34 54.7		
	comp=Z,42nm,19.3s,baz=35,slow=39							
CM01	**Chiang Mai Arr**	**40.17**	**256**	*e*P	**P**	**18 16 15.8**	**-2.8**	
WMQ	**Urumqi**	**40.48**	**298**	P	**P**	**18 16 21.3**	**+0.4**	
WMQ				pP	pP	18 16 34.8	-1.3	
WMQ				sP	sP	18 16 39.3	-3.8	
WMQ				PcP	**PcP**	**18 18 23.9**	**+1.3**	
WMQ				S	**S**	**18 22 26.8**	**+1.5**	
WMQ				pmax	pmax			
	comp=Z,7.0nm,1.2s							
WMQ				pmax	pmax			
	comp=Z,41nm,3.6s							
WMQ				LR	LR			
	comp=Z,33nm,21.6s							
WMQ				LR	LR			
	comp=Z,45nm,21.6s							
LSA	**Lhasa**	**41.28**	**276**	P	**P**	**18 16 26.6**	**-1.5**	
LSA				pmax	pmax			
	comp=Z,6.0nm,0.9s							
LSA	**Lhasa**	**41.28**	**276**	P	**P**	**18 16 26.6**	**-1.5**	
	comp=Z,6.2nm,0.9s							
ZAA0	**Zalesovo Array**	**41.99**	**313**	*e*P	**P**	**18 16 32.2**	**-0.9**	
ZALV	**Zalesovo Beam**	**41.99**	**313**	P	**P**	**18 16 33.3**	**+0.2**	
	comp=Z,3.6nm,0.3s,baz=96,slow=6.0,SNR=31							
ZALV				PcP	**PcP**	**18 18 26.8**	**-0.4**	
	comp=Z,2.0nm,0.4s,baz=91,slow=3.0,SNR=7.6							
ZALV				LR	LR	18 33 42.1		
	comp=Z,35nm,21.3s,baz=70,slow=36							
NVS	**Novosibirsk**	**42.95**	**315**	*i* P	**P**	**18 16 40.9**	**0.0**	
MK01	**Makanchi Array**	**43.90**	**303**	*e*P	**P**	**18 16 48.7**	**0.0**	
MK31	**Makanchi Array**	**43.90**	**303**	*i* P	**P**	**18 16 48.4**	**-0.3**	
MK31				pmax	pmax			
	comp=Z,9.0nm,0.8s							
MK31	**Makanchi Array**	**43.90**	**303**	*e*P	**P**	**18 16 49.0**	**+0.3**	
MKAR	**Makanchi Array**	**43.90**	**303**	P	**P**	**18 16 48.9**	**+0.2**	
	comp=Z,7.3nm,0.8s,baz=89,slow=10,SNR=76							
MKAR				PcP	**PcP**	**18 18 33.5**	**-0.3**	
	comp=Z,0.5nm,0.4s,baz=84,slow=2.1,SNR=5.3							
MKAR				LR	LR	18 35 38.2		
	comp=Z,93nm,18.3s,baz=88,slow=37							
NRIK	**Noril'sk**	**43.97**	**336**	P	**P**	**18 16 49.0**	**+0.2**	
	comp=Z,5.4nm,0.6s,baz=109,slow=11,SNR=7.1							
NRIK				PcP	**PcP**	**18 18 33.5**	**0.0**	
	comp=Z,2.4nm,0.5s,baz=106,slow=3.5,SNR=4.5							
NRIK				LR	LR	18 35 15.4		
	comp=Z,51nm,18.2s,baz=109,slow=36							
MAKZ	**Makanchi**	**44.11**	**303**	*e*P	**P**	**18 16 50.7**	**+0.3**	
MAKZ				pmax	pmax			
	comp=Z,20nm,1.1s							
MAKZ	**Makanchi**	**44.11**	**303**	*e*P	**P**	**18 16 50.7**	**+0.3**	
	comp=Z,20nm,1.1s							
PMG	**Port Moresby**	**45.44**	**170**	LR	LR	18 34 31.7		
	comp=Z,39nm,21.2s,baz=24,slow=34							
KURK	**Kurchatov**	**45.88**	**309**	P	**P**	**18 17 03.1**	**-1.2**	
KURK				pmax	pmax			
	comp=Z,87nm,1.2s							
KURK	**Kurchatov**	**45.88**	**309**	*e*P	**P**	**18 17 03.6**	**-0.7**	
	comp=Z,30nm,1.0s							
PDGK	**Podgornoye**	**46.44**	**299**	P	**P**	**18 17 07.7**	**-1.1**	
PDGK				pmax	pmax			
	comp=Z,12nm,0.6s							
PKIN	**Phulchoki**	**46.76**	**276**	*e*P	**P**	**18 17 11.4**	**-0.4**	
	comp=Z,6.7nm,0.7s							
KKN	**Kakani**	**46.77**	**276**	*e*P	**P**	**18 17 11.4**	**-0.4**	
	comp=Z,8.4nm,0.5s							
GKN	**Gorkha**	**47.20**	**277**	*e*P	**P**	**18 17 14.9**	**-0.2**	
	comp=Z,10nm,0.4s							
KOLN	**Koldanda**	**48.13**	**277**	*e*P	**P**	**18 17 22.5**	**+0.1**	
	comp=Z,7.6nm,0.6s							
PYUN	**Piuthan**	**48.49**	**278**	*e*P	**P**	**18 17 25.3**	**+0.1**	
	comp=Z,18nm,0.4s							
KDAK	**Kodiak Island**	**48.73**	**41**	*ce*P	**P**	**18 17 27.9**	**+1.6**	
KDAK	**Kodiak Island**	**48.73**	**41**	*e*P	**P**	**18 17 25.2**	**-1.1**	
TKM2	**Tokmak 2**	**49.30**	**299**	P	**P**	**18 17 31.7**	**+0.5**	
TKM2				pmax	pmax			
	comp=Z,17nm,1.1s							
TKM2	**Tokmak 2**	**49.30**	**299**	*e*P	**P**	**18 17 30.7**	**-0.5**	
	comp=Z,18nm,1.1s							
MLY	**Manley**	**49.47**	**31**	*e*P	**P**	**18 17 34.1**	**+2.2**	
	comp=Z,5.9nm,1.2s							
KSH	**Kashi**	**49.96**	**295**	P	P	18 17 40.4	+4.3	
KSH				*es*P	sP	18 17 59.1	+0.4	
KSH				*e*PP	PP	18 19 37.0	+5.7	
KSH				PcS	**PcS**	**18 22 55.5**	**+2.9**	
KSH				S	**S**	**18 24 47.9**	**+5.5**	
KSH				pmax	pmax			
	comp=Z,56nm,4.4s							
KSH				LR	LR			
	comp=Z,610nm,13.3s							
KSH				LR	LR			
	comp=Z,150nm,6.8s							
KSH				LR	LR			
	comp=Z,180nm,6.0s							
FRU	**Bishkek**	**50.02**	**299**	*e*P	**P**	**18 17 37.0**	**+0.5**	
FRU				pmax	pmax			
	comp=Z,30nm,2.0s							
AAK	**Ala-Archa**	**50.16**	**299**	*i* P	**P**	**18 17 38.4**	**+0.7**	
AAK				pmax	pmax			
	comp=Z,22nm,1.2s							
OTUK	**Ortayu**	**50.31**	**306**	P	**P**	**18 17 37.4**	**-1.2**	
OTUK				pmax	pmax			
	comp=Z,18nm,1.5s							
CHKZ	**Chkalovo**	**50.40**	**314**	P	**P**	**18 17 37.9**	**-1.2**	
CHKZ				pmax	pmax			
	comp=Z,15nm,1.2s							
MDM	**Murphy Dome**	**50.53**	**32**	*e*P	**P**	**18 17 42.0**	**+2.0**	
	comp=Z,4.8nm,0.8s							
EKS2	**Erkin-Say**	**50.66**	**299**	*e*P	P	18 17 38.0	-3.4	
EKS2				pmax	pmax			
	comp=Z,4.0nm,1.0s							
EKS2	**Erkin-Say**	**50.66**	**299**	*e*P	P	18 17 38.0	-3.4	
	comp=Z,3.6nm,1.0s							
BRVK	**Borovoye**	**50.70**	**313**	*ce*P	**P**	**18 17 42.3**	**+1.0**	
BRVK				pmax	pmax			
	comp=Z,10.0nm,1.2s							
BRVK	**Borovoye**	**50.70**	**313**	*e*P	P	18 17 37.0	-4.3	
	comp=Z,6.2nm,0.9s							
IL1	**Eielson Array**	**51.11**	**32**	*e*P	**P**	**18 17 43.1**	**-1.2**	
ILAR	**Eielson Array**	**51.11**	**32**	P	**P**	**18 17 45.1**	**+0.8**	
	comp=Z,0.8nm,0.5s,baz=270,slow=5.7,SNR=14							
ILB	**Eielson Array**	**51.11**	**32**	*e*P	**P**	**18 17 44.7**	**+0.4**	
ZRNK	**Zerenda**	**51.48**	**313**	P	**P**	**18 17 46.7**	**-0.5**	
ZRNK				pmax	pmax			
	comp=Z,13nm,1.2s							
ZRNK	**Zerenda**	**51.48**	**313**	*e*P	**P**	**18 17 45.1**	**-2.1**	
	comp=Z,7.2nm,0.9s							
MNAS	**Manas**	**51.62**	**299**	P	**P**	**18 17 48.2**	**-0.4**	
MNAS				pmax	pmax			
	comp=Z,14nm,1.2s							
SFK	**Sufi-Kurgan**	**51.62**	**296**	P	**P**	**18 17 48.2**	**-0.6**	
SFK				pmax	pmax			
	comp=Z,10.0nm,1.3s							
KK31	**Karatay Array**	**52.84**	**301**	P	**P**	**18 17 57.2**	**-0.3**	
KKAR	**Karatay Array**	**52.84**	**301**	*e*P	**P**	**18 17 57.3**	**-0.2**	
KKAR	**Karatay Array**	**52.84**	**301**	*e*P	**P**	**18 17 57.3**	**-0.2**	
FITZ	**Fitzroy Crossi**	**55.32**	**197**	*e*P	**P**	**18 18 13.8**	**-1.8**	
WRA	**Warramunga Arr**	**55.69**	**187**	P	**P**	**18 18 17.6**	**-0.7**	
	comp=Z,1.7nm,0.3s,baz=0.5,slow=7.6,SNR=50							
INK	**Inuvik**	**55.98**	**27**	P	**P**	**18 18 20.6**	**+0.9**	
	comp=Z,0.8nm,0.4s,baz=322,slow=5.7,SNR=15							
INK				LR	LR	18 43 32.8		
	comp=Z,55nm,18.6s,baz=138,slow=37							
ARU	**Arti**	**56.60**	**319**	*c i*P	**P**	**18 18 24.2**	**-0.2**	
ARU						18 19 14.4		
ARU						18 20 29.9		
ARU				S	S	18 26 17.9	+6.2	
ARU				SS	**SS**	**18 30 01.5**	**+2.1**	
ARU				pmax	pmax			
	comp=Z,20nm,1.7s							
ARU	**Arti**	**56.60**	**319**	*e*P	P	18 18 20.9	-3.5	
	comp=Z,15nm,1.1s							
HYB	**Hyderabad**	**57.11**	**268**	*i* P	**P**	**18 18 28.0**	**-0.7**	
AB31	**Akbulak array**	**57.94**	**310**	P	**P**	**18 18 32.8**	**-1.2**	
AB31				pmax	pmax			
	comp=Z,2.0nm,0.5s							
ABKAR	**Akbulak array**	**57.94**	**310**	P	**P**	**18 18 32.4**	**-1.6**	
AS01	**Alice Springs**	**59.41**	**187**	*e*P	**P**	**18 18 43.8**	**-0.6**	
AS31	**Alice Springs**	**59.42**	**187**	*e*P	**P**	**18 18 45.0**	**+0.5**	
	comp=Z,1.0nm,0.6s							
ASAR	**Alice Springs**	**59.42**	**187**	P	**P**	**18 18 43.5**	**-1.0**	
	comp=Z,0.7nm,0.5s,baz=23,slow=11,SNR=25							
GEYT	**Alibeck**	**63.52**	**299**	P	**P**	**18 19 12.5**	**+0.3**	
	comp=Z,2.7nm,0.9s,baz=58,slow=5.6,SNR=6.1							
GEYT				LR	LR	18 48 47.0		
	comp=Z,47nm,20.7s,baz=190,slow=38							
RES	**Resolute Bay**	**64.07**	**14**	*e*P	**P**	**18 19 15.9**	**+0.8**	
RES				pmax	pmax			
	comp=Z,14nm,1.6s							
RES	**Resolute Bay**	**64.07**	**14**	*e*P	**P**	**18 19 15.8**	**+0.8**	
	comp=Z,14nm,1.6s							
KLMR	**Klimovskoe**	**64.25**	**328**	*e*P	**P**	**18 19 14.4**	**-2.1**	
KLMR				pmax	pmax			
	comp=Z,8.0nm,0.7s							
ARCES	**ARCESS Array B**	**64.79**	**339**	P	**P**	**18 19 20.4**	**+0.4**	
	comp=Z,6.8nm,0.8s,baz=57,slow=7.6,SNR=15							
ARCES				LR	LR	18 53 14.1		
	comp=Z,25nm,19.2s,baz=40,slow=41							
YKA	**Yellowknife Ar**	**65.42**	**30**	P	**P**	**18 19 24.4**	**+0.4**	
	comp=Z,0.6nm,0.8s,baz=296,slow=6.6,SNR=8.1							
STKA	**Stephens Creek**	**67.32**	**179**	P	**P**	**18 19 36.5**	**0.0**	
	comp=Z,0.6nm,0.5s,baz=360,slow=5.9,SNR=3.8							
VRH	**Novokhopyorsk**	**67.80**	**318**	*e*P	**P**	**18 19 37.8**	**-1.6**	
VRH				pmax	pmax			
	comp=Z,7.0nm,0.5s							
OBN	**Obninsk**	**68.46**	**323**	‖*e*P	**P**	**18 19 43.7**	**+0.2**	
OBN				*e*		18 19 57.4		
OBN				*e*		18 20 03.2		
OBN				*e*		18 22 22.7		
OBN				pmax	pmax			
	comp=Z,31nm,1.8s							
OBN				MLR	MLR			
	comp=Z,60nm,15.0s							
LPSR	**Galich'ya Gora**	**68.58**	**320**	*e*P	**P**	**18 19 43.6**	**-0.7**	
LPSR				pmax	pmax			
	comp=Z,10.0nm,1.0s							
VSR	**Storozhevoye**	**69.17**	**319**	*e*P	**P**	**18 19 46.0**	**-2.0**	
VSR				pmax	pmax			
	comp=Z,10.0nm,1.1s							
FIA1	**FINESS Array S**	**69.42**	**332**	*e*P	**P**	**18 19 49.2**	**-0.1**	
FINES	**FINESS Array B**	**69.42**	**332**	P	**P**	**18 19 49.1**	**-0.2**	
	comp=Z,4.1nm,0.5s,baz=50,slow=6.4,SNR=29							
ZEI	**Tsey**	**70.77**	**309**	*e*P	**P**	**18 19 57.0**	**-1.3**	
ZEI				pmax	pmax			
	comp=Z,8.0nm,1.0s							
KBZ	**Khabaz**	**70.91**	**310**	P	**P**	**18 19 59.4**	**+0.6**	
	comp=Z,6.0nm,0.8s,baz=69,slow=4.5,SNR=16							
KIV	**Kislovodsk**	**70.92**	**311**	*d i*P	**P**	**18 19 59.8**	**+0.8**	
KIV				*i*		18 20 14.1		
KIV				pmax	pmax			
	comp=Z,19nm,1.0s							
KIV				MLR	MLR			
	comp=Z,24nm,14.0s							
KIV	**Kislovodsk**	**70.92**	**311**	*e*P	**P**	**18 19 58.3**	**-0.7**	
	comp=Z,21nm,1.1s							
VSU	**Vasula**	**70.99**	**329**	*ce*P	**P**	**18 19 59.8**	**+0.8**	
VSU				pmax	pmax			
	comp=Z,67nm,1.7s							
ANN	**Anapa**	**73.63**	**314**	*e*P	**P**	**18 20 13.2**	**-1.8**	
ANN				*e*		18 22 58.1		
ANN				*e*S	**S**	**18 29 41.8**	**+1.1**	
ANN				pmax	pmax			
	comp=Z,19nm,1.2s							
AKASG	**Malin Array Be**	**74.63**	**322**	P	**P**	**18 20 20.4**	**-0.3**	
	comp=Z,3.9nm,0.3s,baz=49,slow=5.9,SNR=67							
AKASG				LR	LR	18 55 22.9		
	comp=Z,52nm,18.2s,baz=85,slow=37							
AKASG	**Malin Array Be**	**74.63**	**322**	*ce*P	**P**	**18 20 20.3**	**-0.4**	
AKASG				pmax	pmax			
	comp=Z,4.0nm,0.3s							
KIEV	**Kiev**	**74.65**	**322**	*e*P	**P**	**18 20 19.7**	**-1.1**	
KIEV				pmax	pmax			
	comp=Z,8.0nm,0.6s							
KIEV	**Kiev**	**74.65**	**322**	*e*P	**P**	**18 20 19.7**	**-1.1**	
	comp=Z,8.1nm,0.6s							
AK11	**Malin Array Si**	**74.68**	**322**	*e*P	**P**	**18 20 20.8**	**-0.2**	
NB2	**NORSAR Subarra**	**74.92**	**337**	P	**P**	**18 20 22.2**	**-0.1**	
	comp=Z,8.8nm,1.0s,baz=41,slow=5.9							
NOA	**NORSAR Array B**	**74.92**	**337**	P	**P**	**18 20 22.3**	**-0.1**	
	comp=Z,4.0nm,0.8s,baz=39,slow=5.7,SNR=12							
NOA				LR	LR	18 56 40.0		
	comp=Z,22nm,18.3s,baz=5.0,slow=38							
NVAR	**Mina Array Bea**	**76.58**	**52**	P	**P**	**18 20 34.2**	**+1.7**	
	comp=Z,0.3nm,0.5s,baz=339,slow=3.3,SNR=3.6							
SORM	**Soroca**	**76.68**	**320**	‖*i*P	**P**	**18 20 31.5**	**-1.0**	
SORM	**Soroca**	**76.68**	**320**	‖P	**P**	**18 20 31.5**	**-1.0**	
KWP	**Kalwaria Pacla**	**78.52**	**324**	‖*i*P	**P**	**18 20 43.7**	**+0.9**	
KWP	**Kalwaria Pacla**	**78.52**	**324**	‖P	**P**	**18 20 43.7**	**+0.9**	
TESR	**Tescani**	**78.61**	**320**	‖*i*P	**P**	**18 20 43.3**	**0.0**	
BUR08	**Bucovina Ar. S**	**78.62**	**321**	*e*P	**P**	**18 20 43.8**	**+0.4**	
BURAR	**Bucovina Array**	**78.63**	**321**	‖*i*P	**P**	**18 20 43.4**	**-0.1**	
BURAR	**Bucovina Array**	**78.63**	**321**	‖P	**P**	**18 20 43.4**	**-0.1**	
CFR	**Carcaliu**	**78.67**	**318**	‖*i*P	**P**	**18 20 43.8**	**+0.2**	
CFR	**Carcaliu**	**78.67**	**318**	‖P	**P**	**18 20 43.8**	**+0.2**	
BR131	**Keskin Array S**	**78.88**	**311**	*e*P	**P**	**18 20 45.5**	**+0.4**	
BRTR	**Keskin Array B**	**78.88**	**311**	P	**P**	**18 20 45.0**	**-0.1**	
	comp=Z,1.8nm,0.8s,baz=138,slow=3.7,SNR=12							
BRTR	**Keskin Array B**	**78.88**	**311**	*ce*P	**P**	**18 20 45.7**	**+0.6**	
BRTR				pmax	pmax			
	comp=Z,2.0nm,0.7s							
VRI	**Vrincioaia**	**78.99**	**319**	‖*i*P	**P**	**18 20 47.0**	**+1.6**	
VRI	**Vrincioaia**	**78.99**	**319**	‖P	**P**	**18 20 47.0**	**+1.6**	
KOLS	**Kolonicke sedl**	**79.20**	**324**	*e*P	**P**	**18 20 47.6**	**+1.1**	
KOLS	**Kolonicke sedl**	**79.20**	**324**	*e*P	**P**	**18 20 47.6**	**+1.1**	
KOLS				*e*		18 33 42.3		
BW06	**Boulder Array**	**79.30**	**45**	*e*P	**P**	**18 20 47.9**	**+0.5**	
PDAR	**Pinedale Array**	**79.30**	**45**	P	**P**	**18 20 47.5**	**+0.1**	
	comp=Z,0.6nm,0.5s,baz=1.9,slow=0.5,SNR=15							
BR231	**Keskin MP Arra**	**79.34**	**312**	*e*P	**P**	**18 20 46.1**	**-1.4**	
STHS	**Stebnicka Huta**	**79.36**	**324**	*e*P	**P**	**18 20 48.9**	**+1.5**	
STHS				pmax	pmax			
	comp=Z,4.0nm,1.1s							
STHS	**Stebnicka Huta**	**79.36**	**324**	*e*P	**P**	**18 20 48.9**	**+1.5**	
OJC	**Ojcow**	**79.48**	**326**	*e*P	**P**	**18 20 48.6**	**+0.6**	
OJC	**Ojcow**	**79.48**	**326**	*e*P	**P**	**18 20 48.5**	**+0.6**	
OJC				pmax	pmax			
	comp=Z,15nm,1.0s							
OJC	**Ojcow**	**79.48**	**326**	*e*P	**P**	**18 20 48.5**	**+0.6**	
	comp=Z,15nm,1.0s							
MSAB	**Monastry St. A**	**79.54**	**317**	‖*i*P	**P**	**18 20 48.8**	**+0.4**	
CRVS	**Cervenica-Dubn**	**79.62**	**324**	*e*P	**P**	**18 20 49.3**	**+0.5**	
CRVS	**Cervenica-Dubn**	**79.62**	**324**	*e*P	**P**	**18 20 49.3**	**+0.5**	
RAYN	**Ar Rayn**	**80.14**	**292**	*e*P	**P**	**18 20 49.8**	**-2.3**	
	comp=Z,4.1nm,0.9s							
LANS	**Liptovska Anna**	**80.39**	**325**	*e*P	**P**	**18 20 54.8**	**+1.9**	
LANS	**Liptovska Anna**	**80.39**	**325**	*e*P	**P**	**18 20 54.8**	**+1.9**	
ARR	**Arges**	**80.42**	**320**	‖*i*P	**P**	**18 20 54.2**	**+1.0**	
MORC	**Moravsky Berou**	**80.82**	**326**	‖*i*P	**P**	**18 20 58.0**	**+2.7**	
MORC	**Moravsky Berou**	**80.82**	**326**	*e*P	**P**	**18 20 56.0**	**+0.7**	
MORC				pmax	pmax			
	comp=Z,22nm,1.0s							
MORC	**Moravsky Berou**	**80.82**	**326**	*e*P	**P**	**18 20 56.0**	**+0.7**	
	comp=Z,22nm,1.0s							
DPC	**Dobruska-Polom**	**80.95**	**327**	*e*P	**P**	**18 20 56.9**	**+1.0**	
DPC	**Dobruska-Polom**	**80.95**	**327**	*e*P	**P**	**18 20 56.9**	**+1.0**	
PSZ	**Piszkesteto**	**81.05**	**324**	*e*P	**P**	**18 20 57.5**	**+1.0**	
PSZ				pmax	pmax			
	comp=Z,14nm,1.3s							
PSZ	**Piszkesteto**	**81.05**	**324**	*e*P	**P**	**18 20 57.5**	**+1.0**	
	comp=Z,14nm,1.3s							
VYHS	**Vyhne**	**81.14**	**325**	*e*P	**P**	**18 20 57.5**	**+0.5**	
VYHS				pmax	pmax			
	comp=Z,4.0nm,1.2s							
VYHS	**Vyhne**	**81.14**	**325**	*e*P	**P**	**18 20 57.5**	**+0.5**	
SIRR	**Siria**	**81.34**	**322**	‖*i*P	P	18 20 47.0	-11	
PVCC	**Panska Ves**	**81.57**	**328**	*e*P	**P**	**18 21 00.2**	**+1.0**	
PVCC	**Panska Ves**	**81.57**	**328**	*e*P	**P**	**18 21 00.2**	**+1.0**	
BRG	**Berggiesshubel**	**81.58**	**329**	*e*P	**P**	**18 20 59.2**	**+0.1**	
	comp=Z,5.9nm,1.1s							
BRG	**Berggiesshubel**	**81.58**	**329**	*e*P	**P**	**18 20 59.3**	**+0.1**	
	comp=Z,5.9nm,1.1s							
BRG	**Berggiesshubel**	**81.58**	**329**	*e*P	**P**	**18 20 59.3**	**+0.1**	
BRG				pmax	pmax			
	comp=Z,6.0nm,1.1s							
VRAC	**Vranov**	**81.59**	**327**	‖*i*P	**P**	**18 21 00.1**	**+0.8**	
VRAC	**Vranov**	**81.59**	**327**	‖P	**P**	**18 21 00.1**	**+0.8**	
CLL	**Collm**	**81.64**	**330**	*i* P	**P**	**18 20 59.4**	**-0.1**	
	comp=Z,12nm,1.0s							
CLL	**Collm**	**81.64**	**330**	*i* P	**P**	**18 20 59.4**	**-0.1**	
CLL				pmax	pmax			
	comp=Z,12nm,1.0s							
CLL	**Collm**	**81.64**	**330**	*e*P	**P**	**18 20 59.4**	**-0.1**	
	comp=Z,10.0nm,0.9s							
PRU	**Pruhonice**	**81.99**	**328**	*e*P	**P**	**18 21 02.1**	**+0.7**	
PRU				*ex*	x	18 21 12.2		
PRU	**Pruhonice**	**81.99**	**328**	*e*P	**P**	**18 21 02.1**	**+0.7**	
NKC	**Novy Kostel**	**82.69**	**329**	*e*P	**P**	**18 21 05.5**	**+0.4**	
NKC	**Novy Kostel**	**82.69**	**329**	*e*P	**P**	**18 21 05.5**	**+0.4**	
PKSM	**Moragy**	**82.87**	**323**	‖*i*P	P	18 20 55.1	-11	
KHC	**Kasperske Hory**	**83.05**	**328**	*e*P	**P**	**18 21 07.5**	**+0.6**	
KHC	**Kasperske Hory**	**83.05**	**328**	*e*P	**P**	**18 21 07.6**	**+0.6**	
KHC				pmax	pmax			
	comp=Z,2.0nm,1.1s							
KHC	**Kasperske Hory**	**83.05**	**328**	*e*P	**P**	**18 21 07.6**	**+0.7**	
	comp=Z,2.0nm,1.1s							
VTS	**Vitosha**	**83.06**	**318**	‖*i*P	**P**	**18 21 08.5**	**+1.2**	
VTS	**Vitosha**	**83.06**	**318**	‖P	**P**	**18 21 08.5**	**+1.2**	
GERES	**GERESS Array B**	**83.21**	**328**	P	**P**	**18 21 07.6**	**-0.2**	
	comp=Z,0.9nm,0.7s,baz=37,slow=6.9,SNR=11							
GEA0	**GERESS Array S**	**83.21**	**328**	*e*P	**P**	**18 21 07.5**	**-0.4**	
ESK	**Eskdalemuir**	**83.97**	**340**	*i* P	**P**	**18 21 09.6**	**-1.9**	
BFO	**Black Forest**	**85.87**	**330**	*e*P	**P**	**18 21 19.7**	**-1.5**	
BFO				pmax	pmax			
	comp=Z,11nm,1.3s							
BFO	**Black Forest**	**85.87**	**330**	*e*P	**P**	**18 21 19.7**	**-1.5**	
	comp=Z,10nm,1.3s							
FUORN	**Ofenpass-Fuorn**	**86.40**	**328**	*e*P	**P**	**18 21 24.6**	**+0.4**	
	comp=Z,6.1nm,1.0s							
TXAR	**Lajitas Array**	**91.72**	**52**	P	**P**	**18 21 49.9**	**+0.4**	
	comp=Z,0.3nm,0.5s,baz=281,slow=1.0,SNR=4.5							
TORD	**Torodi Ar. Bea**	**117.44**	**313**	PKP	**PKPdf**	**18 27 26.8**	**-0.8**	
	comp=Z,0.4nm,0.5s,baz=33,slow=1.9,SNR=6.2							
LPAZ	**La Paz**	**148.24**	**60**	PKPbc	**PKPbc**	**18 28 28.7**	**+0.1**	
	comp=Z,0.7nm,0.4s,baz=19,slow=4.9,SNR=4.4							

DDA ***17*** *18:27:23.9,36.44N×28.72E,h6km,Md2.9*
ISCJB ***17*** *18:27:24.9±0.8,36.50N±0.05×28.79E±0.04,h10km±5km, Error ellipse: s-maj=8.2km s-min=4.3km az=21.9*
ISK ***17*** *18:27:24.6,36.52N×28.79E,h10km,MD3.1*
CSEM ***17*** *18:27:25.0±0.3,36.50N×28.78E,h10km,MD3.1, Error ellipse: s-maj=7.3km s-min=3.8km az=16.0*

ISC 17 18:27:24.3±1.2, 36.47N±0.04×28.75E±0.02, h6km±10km, n45, σ0.995/62, Dodecanese Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
FETY	**Fethiye**	**0.32**	**58**	*e*Pg	**Pg**	**18 27 30.1**	**-0.4**
FETY				*e*SG	**Sg**	**18 27 34.7**	**0.0**
FETY	**Fethiye**	**0.32**	**58**	*e*Pg	**Pg**	**18 27 30.1**	**-0.4**
FETY				*e*Sg	**Sg**	**18 27 34.7**	**0.0**
TURN	**Turunc**	**0.42**	**344**	*i* P	**Pb**	**18 27 34.1**	**0.0**
TURN				*i* S	**Sb**	**18 27 42.3**	**+1.6**
TURN	**Turunc**	**0.42**	**344**	P	**Pb

GCIS	**Gornji Cirnik**	**0.68**	**301**	*i* Sg	**Sb**	**18 30 57.0**	**-0.4**
	comp=Z,376nm,0.3s							
GOLS	**Golise**	**0.76**	**311**	*i* Pg	**Pg**	**18 30 48.9**	**0.0**
GOLS				*e*Sg	**Sn**	**18 31 02.1**	**-0.3**
	comp=Z,262nm,0.1s							
CRES	**Cresnjev**	**0.77**	**294**	*i* Pg	**Pg**	**18 30 48.7**	**-0.2**
CRES				*e*Sg	**Sb**	**18 30 59.5**	**-0.4**
	comp=Z,317nm,0.2s							
CRES	**Cresnjev**	**0.77**	**294**	⇑*i* Pg	**Pg**	**18 30 48.3**	**-0.6**
CRES				*e*Sg	**Sb**	**18 30 59.8**	**-0.1**
CESS	**Cesta pri Krsk**	**0.83**	**304**	*e*Pg	**Pg**	**18 30 50.2**	**0.0**
	comp=Z,348nm,0.2s							
BOJS	**Bojanci**	**0.85**	**270**	*i* Pg	**Pg**	**18 30 49.7**	**-0.7**
	comp=Z,194nm,0.2s							
LEGS	**Legarje**	**0.91**	**299**	*e*Pg	**Pg**	**18 30 51.3**	**-0.3**
LEGS				*e*Sg	**Sb**	**18 31 04.2**	**+0.2**
BLY	**Banja Luka**	**0.93**	**146**	*e*Pg	**Pg**	**18 30 50.4**	**-1.5**
BLY	**Banja Luka**	**0.93**	**146**	*e*Pg	**Pg**	**18 30 50.4**	**-1.5**
BLY				*e*Sg	**Sg**	**18 31 03.2**	**-0.8**
DOBS	**Dobrina**	**0.94**	**313**	*i* Pg	**Pb**	**18 30 52.2**	**-0.1**
	comp=Z,230nm,0.1s							
KOGS	**Kog**	**0.94**	**351**	*i* Pg	**Pb**	**18 30 52.6**	**+0.1**
KOGS				*e*Sg	**Sn**	**18 31 06.2**	**-0.5**
	comp=Z,440nm,0.2s							
KOGS	**Kog**	**0.94**	**351**	*i* Pg	**Pb**	**18 30 52.6**	**+0.1**
KOGS				*e*Sg	**Sn**	**18 31 06.2**	**-0.5**
	comp=Z,440nm,0.2s							
BEHE	**Becsehely**	**0.98**	**13**⇓	*e*Pg	**Pn**	**18 30 53.7**	**-0.1**
BEHE	**Becsehely**	**0.98**	**13**⇓	*e*Pn	**Pn**	**18 30 53.7**	**-0.1**
UDBI	**Udbina**	**1.10**	**207**	*i* Pg	**Pb**	**18 30 53.7**	**-1.6**
UDBI				Sg	**Sg**	**18 31 09.0**	**-0.8**
UDBI	**Udbina**	**1.10**	**207**	*i* Pg	**Pb**	**18 30 53.6**	**-1.6**
UDBI				Sg	**Sg**	**18 31 08.9**	**-0.8**
GROS	**Grobnik**	**1.16**	**325**	*i* Pg	**Pg**	**18 30 55.5**	**-0.8**
	comp=Z,114nm,0.1s							
PDKS	**Podkum**	**1.16**	**299**	*i* Pg	**Pb**	**18 30 55.8**	**-0.4**
	comp=Z,137nm,0.2s							
GBRS	**Gornja Briga**	**1.16**	**271**	*e*Pg	**Pb**	**18 30 56.0**	**-0.1**
GBRS				*e*Sg	**Sg**	**18 31 12.2**	**+0.8**
	comp=Z,66nm,0.2s							
VISS	**Visnje**	**1.17**	**285**	*i* Pg	**Pb**	**18 30 56.0**	**-0.3**
	comp=Z,117nm,0.2s							
DOB	**Doboj**	**1.40**	**123**	*e*Pg	**Pn**	**18 30 58.5**	**-1.1**
DOB				*e*Sg	**Sn**	**18 31 17.7**	**-0.3**
CEY	**Cerknica**	**1.44**	**280**⇑	*i* Pg	**Pn**	**18 31 00.7**	**+0.5**
CEY				*e*Sg	**Sb**	**18 31 19.9**	**+0.6**
LJU	**Ljubljana**	**1.45**	**292**	*e*Pg	**Pg**	**18 31 02.5**	**+0.6**
LJU				*e*Sg	**Sg**	**18 31 21.0**	**+0.3**
LJU	**Ljubljana**	**1.45**	**292**⇑	*i* Pg	**Pn**	**18 31 00.9**	**+0.6**
LJU				*e*Sg	**Sg**	**18 31 21.3**	**+0.6**
NVLJ	**Novalja**	**1.48**	**230**	*e*Pn	**Pn**	**18 31 00.8**	**+0.3**
NVLJ				Sn	**Sn**	**18 31 19.7**	**-0.2**
NVLJ	**Novalja**	**1.48**	**230**	*e*Pn	**Pn**	**18 31 00.8**	**+0.3**
NVLJ				Sn	**Sn**	**18 31 19.6**	**-0.2**
SOKA	**Soboth**	**1.53**	**320**	*e*Pn	**Pn**	**18 31 00.9**	**-0.5**
	comp=Z,1.4nm,0.1s,SNR=162							
SOKA				*i* Pg	**Pg**	**18 31 03.4**	**0.0**
	comp=Z,46nm,0.3s							
SOKA				*e*Sg	**Sg**	**18 31 23.2**	**0.0**
	comp=Z,136nm,0.4s							
SOKA	**Soboth**	**1.53**	**320**	Pn	**Pn**	**18 31 00.9**	**-0.5**
	comp=Z,1.4nm,0.1s,SNR=162							
OBKA	**Obir**	**1.66**	**307**	*e*Pn	**Pn**	**18 31 03.9**	**+0.7**
	comp=Z,1.3nm,0.2s,SNR=39							
OBKA				*i* Pg	**Pg**	**18 31 06.0**	**+0.1**
	comp=Z,37nm,0.3s							
OBKA				*e*Sg	**Sg**	**18 31 27.4**	**-0.1**
	comp=Z,265nm,0.5s							
OBKA	**Obir**	**1.66**	**307**	Pn	**Pn**	**18 31 03.9**	**+0.7**
	comp=Z,1.3nm,0.2s,SNR=39							
PKS9	**Tamasi**	**1.66**	**49**⇑	*e*Pn	**Pn**	**18 31 01.8**	**-1.3**
PKS9	**Tamasi**	**1.66**	**49**	*e*Pg	**Pg**	**18 31 06.3**	**+0.4**
PKSM	**Moragy**	**1.68**	**65**	*e*Pn	**Pn**	**18 31 02.2**	**-1.2**
PKSM				*e*Sn	**Sg**	**18 31 28.8**	**+0.8**
PKSM	**Moragy**	**1.68**	**65**⇑	*e*Pn	**Pn**	**18 31 01.9**	**-1.5**
PKSM				*e*Sn	**Sg**	**18 31 28.2**	**+0.2**
PKSM	**Moragy**	**1.68**	**65**	*e*Pn	**Pb**	**18 31 05.2**	**+0.2**
PKSM				*e*Sn	**Sg**	**18 31 27.6**	**-0.4**
ARSA	**Arzberg**	**1.85**	**340**	*e*Pn	**Pn**	**18 31 05.6**	**-0.2**
	comp=Z,6.1nm,0.2s,SNR=21							
ARSA				*e*Sg	**Sg**	**18 31 32.7**	**-0.9**
	comp=Z,27nm,0.3s							
ARSA	**Arzberg**	**1.85**	**340**	Pn	**Pn**	**18 31 05.6**	**-0.2**
	comp=Z,6.1nm,0.2s,SNR=21							
ARSA				Sg	**Sg**	**18 31 32.7**	**-0.9**
	comp=Z,27nm,0.3s							
PKST	**T"'s**	**2.06**	**32**⇓	*e*Pn	**Pn**	**18 31 07.9**	**-0.7**
PKST				*e*Sn	**Sg**	**18 31 40.9**	**+0.7**
PKST	**T"'s**	**2.06**	**32**⇓	*e*Pn	**Pn**	**18 31 07.9**	**-0.7**
BLJ	**Bijeljina**	**2.12**	**109**	*e*Sn	**Sn**	**18 31 37.0**	**+1.3**
SOP	**Sopron**	**2.17**	**2**⇑	*e*Pn	**Pn**	**18 31 10.1**	**0.0**
SOP	**Sopron**	**2.17**	**2**⇑	*e*Pn	**Pn**	**18 31 10.1**	**0.0**
SOP	**Sopron**	**2.17**	**2**	*e*Pg	**Pb**	**18 31 10.6**	**+0.3**
SOP				*e*Sn	**Sn**	**18 31 35.3**	**-1.7**
CSKK	**Cs^‡kako**	**2.23**	**33**	*e*Pn	**Pn**	**18 31 10.3**	**-0.7**
CSKK				*e*Sn	**Sg**	**18 31 47.8**	**+2.1**
CSKK	**Cs^‡kako**	**2.23**	**33**	*e*Pn	**Pn**	**18 31 10.3**	**-0.7**
MYKA	**Terra Mystica**	**2.25**	**301**	*e*Pn	**Pn**	**18 31 13.1**	**+1.7**
	comp=Z,2.2nm,0.3s							
MYKA				Sg	**Sg**	**18 31 45.5**	**-1.0**
	comp=Z,22nm,0.5s							
MYKA	**Terra Mystica**	**2.25**	**301**	Pn	**Pn**	**18 31 13.1**	**+1.7**
	comp=Z,2.2nm,0.3s							
MYKA				Sg	**Sg**	**18 31 45.5**	**-1.0**
	comp=Z,22nm,0.5s							
HAPS	**Han Pijesak,BI**	**2.28**	**128**	*e*Pn	**Pn**	**18 31 13.0**	**+1.2**
HAPS				*e*Sn	**Sn**	**18 31 40.1**	**+0.2**
PKSG		**2.30**	**35**⇓	*e*Pn	**Pn**	**18 31 11.2**	**-0.8**
PKSG				*e*Sn	**Sg**	**18 31 49.8**	**+1.7**
PKSG		**2.30**	**35**⇓	*e*Pn	**Pn**	**18 31 11.2**	**-0.8**
TEKS	**Tekeris**	**2.38**	**113**	*e*Pn	**Pn**	**18 31 12.9**	**-0.2**
TEKS				*e*Sn	**Sb**	**18 31 48.1**	**+1.7**
TEKS	**Tekeris**	**2.38**	**113**	*e*Pn	**Pn**	**18 31 14.3**	**+1.2**
TEKS				*e*Sn	**Sn**	**18 31 43.5**	**+1.2**
FGSL	**Fruska Gora**	**2.39**	**97**	*e*Pn	**Pn**	**18 31 13.9**	**+0.7**
FGSL				*e*Sn	**Sb**	**18 31 48.4**	**+1.7**
FRGS	**Fruska Gora**	**2.39**	**97**	*e*Pn	**Pn**	**18 31 13.9**	**+0.7**
FRGS				*e*Sn	**Sb**	**18 31 48.4**	**+1.7**
PKS6	**Bocsa**	**2.42**	**62**⇓	*e*Pn	**Pg**	**18 31 20.2**	**-0.3**
PKS6				*e*Sn	**Sg**	**18 31 53.7**	**+1.9**
PKS7	**Kunszentmiklos**	**2.42**	**50**⇑	*e*Pn	**Pg**	**18 31 20.7**	**+0.2**
PKS7				*e*Sn	**Sg**	**18 31 52.9**	**+1.1**
CONA	**Conrad Observa**	**2.45**	**351**	*e*Pn	**Pn**	**18 31 14.0**	**0.0**
	comp=Z,7.9nm,0.4s,SNR=42							
CONA				Sn	**Sn**	**18 31 43.5**	**-0.5**
	comp=Z,15nm,0.3s							
CONA	**Conrad Observa**	**2.45**	**351**	Pn	**Pn**	**18 31 14.0**	**0.0**
	comp=Z,7.9nm,0.4s,SNR=42							
CONA				Sn	**Sn**	**18 31 43.5**	**-0.5**
	comp=Z,15nm,0.3s							
BBLS	**Lazići**	**2.67**	**127**	*e*Pn	**Pn**	**18 31 17.8**	**+0.7**
BBLS				*e*Sn	**Sb**	**18 31 54.3**	**-0.5**
BBLS	**Lazići**	**2.67**	**127**	*e*Pn	**Pn**	**18 31 17.8**	**+0.7**
BBLS				*e*Sn	**Sn**	**18 31 54.3**	**+0.8**
MOA	**Molln**	**2.78**	**328**	*e*Pn	**Pn**	**18 31 19.5**	**+0.9**
	comp=Z,6.0nm,0.3s,SNR=22							
MOA				*e*Sn	**Sn**	**18 31 52.1**	**+0.1**
	comp=Z,9.1nm,0.2s							
MOA	**Molln**	**2.78**	**328**	Pn	**Pn**	**18 31 19.5**	**+0.9**
	comp=Z,6.0nm,0.3s,SNR=22							
MOA				Sn	**Sn**	**18 31 52.1**	**+0.1**
	comp=Z,9.1nm,0.2s							
STON	**Ston**	**2.79**	**161**	*e*Pn	**Pn**	**18 31 19.5**	**+0.8**
STON				Sn	**Sn**	**18 31 53.6**	**+1.4**
STON	**Ston**	**2.79**	**161**	*e*Pn	**Pn**	**18 31 17.4**	**-1.3**
STON				*e*Sn	**Sn**	**18 31 55.5**	**+3.2**
STON	**Ston**	**2.79**	**161**	*e*Pn	**Pn**	**18 31 19.7**	**+1.0**
STON				*e*Sn	**Sn**	**18 31 55.5**	**+3.2**
DIVS	**Divibare**	**2.89**	**118**	*e*Pn	**Pn**	**18 31 20.0**	**-0.1**
DIVS				*e*Sn	**Sb**	**18 32 00.8**	**-0.2**
DIVS	**Divibare**	**2.89**	**118**	*e*Pn	**Pn**	**18 31 20.0**	**-0.1**
UPM	**Unac-Piva**	**2.90**	**142**⇓	*i* Pn	**Pn**	**18 31 21.6**	**+1.2**
UPM				*e*Sn	**Sn**	**18 31 58.1**	**+2.7**
UPM	**Unac-Piva**	**2.90**	**142**⇓	*i* Pn	**Pn**	**18 31 21.6**	**+1.2**
ABTA	**Abfaltersbach**	**3.01**	**296**	Pn	**Pn**	**18 31 24.6**	**+2.9**
	comp=Z,0.2nm,0.1s							
ABTA				*e*Pg	**Pb**	**18 31 28.9**	**+1.3**
	comp=Z,5.4nm,0.3s							
ABTA				*e*Sg	**Sg**	**18 32 14.5**	**+3.8**
	comp=Z,27nm,0.8s							
ABTA	**Abfaltersbach**	**3.01**	**296**	Pn	**Pn**	**18 31 24.6**	**+2.9**
	comp=Z,0.2nm,0.1s							
BRY	**Bratogost**	**3.01**	**149**⇓	*i* Pn	**Pn**	**18 31 23.1**	**+1.2**
BRY				*e*Sn	**Sn**	**18 32 00.8**	**+2.8**
BRY	**Bratogost**	**3.01**	**149**⇑	*i* Pn	**Pn**	**18 31 23.1**	**+1.2**
PLE	**Pljevlja**	**3.03**	**135**⇑	*i* Pn	**Pn**	**18 31 23.4**	**+1.3**
PLE				*e*Sn	**Sn**	**18 32 00.8**	**+2.4**
PLE	**Pljevlja**	**3.03**	**135**⇑	*i* Pn	**Pn**	**18 31 23.4**	**+1.3**
PLE				*e*Sn	**Sn**	**18 32 00.8**	**+2.4**
SMOL	**Smolenice**	**3.07**	**12**	*e*PN	**Pn**	**18 31 22.5**	**0.0**
SMOL				*e*SN	**Sn**	**18 31 57.6**	**-1.6**
TRUS	**Trudelj**	**3.09**	**113**	*e*Pn	**Pn**	**18 31 23.7**	**+0.9**
TRUS				*e*Sn	**Sb**	**18 32 05.1**	**-1.7**
TRUS	**Trudelj**	**3.09**	**113**	*e*Pn	**Pn**	**18 31 23.7**	**+0.9**
TRUS				*e*Sn	**Sb**	**18 32 05.1**	**-1.7**
TREB	**Trebinje**	**3.11**	**153**	*e*Pn	**Pn**	**18 31 24.2**	**+1.1**
TREB	**Trebinje**	**3.11**	**153**	*e*Pn	**Pn**	**18 31 24.1**	**+1.0**
TREB				*e*Sn	**Sn**	**18 32 01.3**	**+1.0**
IVAS	**Ivanjica**	**3.28**	**125**	*e*Pn	**Pn**	**18 31 26.1**	**+0.7**
IVAS	**Ivanjica**	**3.28**	**125**	*e*Pn	**Pn**	**18 31 26.1**	**+0.7**
NKME	**Niksic**	**3.28**	**146**⇓	*i* Pn	**Pn**	**18 31 26.8**	**+1.3**
NKME				*e*Sn	**Sn**	**18 32 07.7**	**+3.1**
NKME	**Niksic**	**3.28**	**146**⇓	*i* Pn	**Pn**	**18 31 26.8**	**+1.3**
NKME				*e*Sn	**Sn**	**18 32 07.7**	**+3.1**
PSZ	**Piszkesteto**	**3.37**	**43**	*e*Pn	Pn	18 31 21.9	-4.8
PSZ	**Piszkesteto**	**3.37**	**43**	*e*Pn	Pn	18 31 21.9	-4.8
SJES	**Sjenica**	**3.38**	**131**	*e*Pn	**Pn**	**18 31 27.2**	**+0.3**
VYHS	**Vyhne**	**3.39**	**28**	*e*PN	**Pn**	**18 31 26.5**	**-0.5**
VYHS				*e*		18 31 45.1		
VYHS	**Vyhne**	**3.39**	**28**	*e*SN	**Sn**	**18 32 04.1**	**-3.1**
HCY	**Herceg Novi**	**3.40**	**154**⇑	*i* Pn	**Pn**	**18 31 27.8**	**+0.7**
HCY				*e*Sn	**Sn**	**18 32 09.5**	**+2.1**
HCY	**Herceg Novi**	**3.40**	**154**	*e*Pn	**Pn**	**18 31 28.1**	**+1.0**
HCY				*e*Sn	**Sn**	**18 32 09.5**	**+2.1**
GRUS	**Gruza**	**3.44**	**117**	*e*Pn	**Pn**	**18 31 27.3**	**-0.4**
GRUS				*e*Sn	**Sb**	**18 32 14.0**	**-2.9**
GRUS	**Gruza**	**3.44**	**117**	*e*Pn	**Pn**	**18 31 27.3**	**-0.4**
GRUS				*e*Sn	**Sb**	**18 32 14.0**	**-2.9**
CEME	**Cevo**	**3.46**	**148**	*e*Pn	**Pn**	**18 31 28.1**	**+0.2**
CEME				*e*Sn	**Sn**	**18 32 11.4**	**+2.5**
CEME	**Cevo**	**3.46**	**148**	*e*Pn	**Pn**	**18 31 28.1**	**+0.2**
CEME				*e*Sn	**Sn**	**18 32 11.4**	**+2.5**
BEY	**Berane**	**3.62**	**136**⇓	*i* Pn	**Pn**	**18 31 31.1**	**+0.9**
BEY				*e*Sn	**Sn**	**18 32 15.2**	**+2.3**
IVA	**Berane**	**3.62**	**136**⇓	*i* Pn	**Pn**	**18 31 31.1**	**+0.9**
IVA				*e*Sn	**Sn**	**18 32 15.2**	**+2.3**
BZS	**Buzias**	**3.62**	**87**⇓	*i* P	**Pg**	**18 31 43.0**	**-0.5**
BZS				S	**Sg**	**18 32 30.3**	**-0.2**
BZS	**Buzias**	**3.62**	**87**	*e*Pn	**Pn**	**18 31 29.5**	**-0.6**
BZS				*e*Sn	**Sn**	**18 32 16.6**	**+3.7**
BZS	**Buzias**	**3.62**	**87**	*e*Pn	**Pn**	**18 31 29.5**	**-0.6**
BZS				*e*Sn	**Sn**	**18 32 16.6**	**+3.7**
PDG	**Podgorica**	**3.69**	**146**⇓	*i* Pn	**Pn**	**18 31 31.9**	**+0.9**
PDG				*e*Sn	**Sn**	**18 32 16.9**	**+2.5**
TTG	**Podgorica**	**3.69**	**146**⇓	*i* Pn	**Pn**	**18 31 31.9**	**+0.9**
TTG				*e*Sn	**Sn**	**18 32 16.9**	**+2.5**
VRAC	**Vranov**	**3.79**	**1**	*e*Pn	**Pn**	**18 31 32.1**	**-0.4**
VRAC				*e*Sn	**Sn**	**18 32 13.5**	**-3.6**
PVY	**Plav**	**3.86**	**138**⇓	*i* Pn	**Pn**	**18 31 34.5**	**+1.0**
PVY				*e*Sn	**Sn**	**18 32 20.8**	**+1.9**
PVY	**Plav**	**3.86**	**138**⇓	*i* Pn	**Pn**	**18 31 34.5**	**+1.0**
PVY				*e*Sn	**Sn**	**18 32 20.8**	**+1.9**
DRME	**Dracevica, Mon**	**3.87**	**148**	*e*Pn	**Pn**	**18 31 34.2**	**+0.7**
DRME				*e*Sn	**Sn**	**18 32 20.9**	**+2.0**
DRME	**Dracevica, Mon**	**3.87**	**148**	*e*Pn	**Pn**	**18 31 34.4**	**+0.9**
DRME				*e*Sn	**Sn**	**18 32 20.9**	**+2.0**
KECS	**Kecovo**	**4.05**	**41**	*e*PN	**Pn**	**18 31 34.9**	**-1.1**
KECS				*e*		18 31 50.9		
KECS	**Kecovo**	**4.05**	**41**	*e*SN	**Sn**	**18 32 20.6**	**-2.8**
KHC	**Kasperske Hory**	**4.11**	**333**	*e*PN	**Pn**	**18 31 37.6**	**+0.7**
KHC				*ex*		18 31 45.0		
KHC				*e*SN	**Sn**	**18 32 23.6**	**-1.3**
KHC				*e*SG	**Sg**	**18 32 46.5**	**+0.4**
KHC	**Kasperske Hory**	**4.11**	**333**	Pn	**Pn**	**18 31 37.6**	**+0.7**
KHC				Sn	**Sn**	**18 32 23.6**	**-1.3**
LANS	**Liptovska Anna**	**4.17**	**28**	*e*PN	**Pn**	**18 31 37.9**	**+0.2**
FETA	**Feichten**	**4.25**	**293**	*i* Pn	**Pn**	**18 31 41.3**	**+2.4**
	comp=Z,0.4nm,0.2s,SNR=5.2							
FETA	**Feichten**	**4.25**	**293**	Pn	**Pn**	**18 31 41.3**	**+2.4**
	comp=Z,0.4nm,0.2s,SNR=5.2							
MORC	**Moravsky Berou**	**4.33**	**9**	*e*Pn	**Pn**	**18 31 40.3**	**+0.5**
MORC				*e*Sn	**Sn**	**18 32 28.0**	**-2.2**
OKC	**Ostrava-Krasne**	**4.47**	**14**	*e*PN	**Pn**	**18 31 42.0**	**+0.2**
OKC				*e*SN	**Sn**	**18 32 31.4**	**-2.3**
OKC	**Ostrava-Krasne**	**4.47**	**14**	Pn	**Pn**	**18 31 42.0**	**+0.2**
OKC				Sn	**Sn**	**18 32 31.4**	**-2.3**
GOPC	**GO Pecny, Ondr**	**4.54**	**346**	*e*PN	**Pn**	**18 31 43.2**	**+0.4**
GOPC	**GO Pecny, Ondr**	**4.54**	**346**	Pn	**Pn**	**18 31 43.2**	**+0.4**
KRLC	**Kraliky**	**4.57**	**3**	*e*PN	**Pn**	**18 31 43.6**	**+0.5**
KRLC	**Kraliky**	**4.57**	**3**	Pn	**Pn**	**18 31 43.6**	**+0.5**
PRU	**Pruhonice**	**4.66**	**345**	*e*PN	**Pn**	**18 31 45.0**	**+0.7**
PRU				*e*SN	**Sn**	**18 32 35.4**	**-2.9**
PRU	**Pruhonice**	**4.66**	**345**	Pn	**Pn**	**18 31 45.0**	**+0.7**
PRU				Sn	**Sn**	**18 32 35.4**	**-2.9**
BARS	**Barje**	**4.71**	**123**	*e*Pn	**Pn**	**18 31 44.6**	**-0.4**
BARS	**Barje**	**4.71**	**123**	*e*Pn	**Pn**	**18 31 44.6**	**-0.4**
DPC	**Dobruska-Polom**	**4.84**	**359**	*e*PN	**Pn**	**18 31 46.9**	**+0.1**
DPC	**Dobruska-Polom**	**4.84**	**359**	Pn	**Pn**	**18 31 46.9**	**+0.1**
ZAPS	**Zavoj**	**4.96**	**115**	*e*Pn	**Pn**	**18 31 48.6**	**0.0**
STHS	**Stebnicka Huta**	**5.07**	**38**	*e*PN	**Pn**	**18 31 51.0**	**+0.9**
NKC	**Novy Kostel**	**5.43**	**332**	*e*PN	**Pn**	**18 31 55.3**	**+0.3**
NKC				*e*SN	**Sn**	**18 32 53.6**	**-3.9**
NKC	**Novy Kostel**	**5.43**	**332**	Pn	**Pn**	**18 31 55.3**	**+0.3**
BRG	**Berggiesshubel**	**5.62**	**344**	PN	**Pn**	**18 31 58.1**	**+0.6**
BRG				*i*		18 32 01.1		
BRG	**Berggiesshubel**	**5.62**	**344**	SG	**Sb**	**18 33 22.9**	**+3.6**
	comp=Z,4.9nm,0.7s							
PGF	**Pioggiola**	**6.14**	**244**	*e*Pn	**Pn**	**18 32 05.9**	**+1.1**
PGF				*e*Sn	**Sn**	**18 33 13.1**	**-1.9**
	comp=Z,1.5nm,0.4s							
PGF	**Pioggiola**	**6.14**	**244**	*e*Pn	**Pn**	**18 32 05.9**	**+1.1**
CLL	**Collm**	**6.23**	**340**	*e*Pn	**Pn**	**18 32 07.0**	**+1.1**
CLL				*e*Sn	**Sn**	**18 33 12.0**	**-5.1**
CLL				*e*Sb	Sb	18 33 31.0	-6.1
CLL				*e*Sg	Sg	18 33 47.0	-7.1
	comp=Z,21nm,1.4s							
CLL				Lm	MLR	19 45 00.0		
	comp=Z,100nm,20.1s							
SBF	**Sospel**	**6.64**	**259**	*e*Pn	**Pn**	**18 32 12.6**	**+1.0**
SBF				*e*Sn	**Sn**	**18 33 25.1**	**-2.2**
	comp=Z,10.0nm,0.8s							
SBF	**Sospel**	**6.64**	**259**	*e*Pn	**Pn**	**18 32 12.6**	**+1.0**
LPG	**La Plagne**	**6.82**	**273**	*e*Pn	**Pn**	**18 32 15.0**	**+0.7**
LPG	**La Plagne**	**6.82**	**273**	*e*Pn	**Pn**	**18 32 15.0**	**+0.7**
LPL	**La Plagne**	**6.83**	**273**	*e*Pn	**Pn**	**18 32 15.3**	**+0.9**
LPL	**La Plagne**	**6.83**	**273**	*e*Pn	**Pn**	**18 32 15.3**	**+0.9**
MBDF	**Montbardon**	**6.90**	**267**	*e*Pn	**Pn**	**18 32 15.7**	**+0.4**
MBDF				*e*Sn	**Sn**	**18 33 31.0**	**-2.8**
	comp=Z,2.7nm,0.5s							
MBDF	**Montbardon**	**6.90**	**267**	*e*Pn	**Pn**	**18 32 15.7**	**+0.4**
CDF	**Champ du Feu**	**6.92**	**298**	*e*Pn	**Pn**	**18 32 15.7**	**+0.3**
CDF	**Champ du Feu**	**6.92**	**298**	*e*Pn	**Pn**	**18 32 15.7**	**+0.3**
HINF	**Hinteralfeld**	**7.00**	**293**	*e*Pn	**Pn**	**18 32 16.7**	**+0.2**
HINF				*e*Sn	**Sn**	**18 33 32.3**	**-3.7**
	comp=Z,4.8nm,0.5s							
HINF	**Hinteralfeld**	**7.00**	**293**	*e*Pn	**Pn**	**18 32 16.7**	**+0.2**
FRF	**La Foret Royal**	**7.28**	**258**	*e*Pn	**Pn**	**18 32 21.1**	**+0.8**
FRF				*e*Sn	**Sn**	**18 33 40.2**	**-2.7**
	comp=Z,1.1nm,0.3s							
FRF	**La Foret Royal**	**7.28**	**258**	*e*Pn	**Pn**	**18 32 21.1**	**+0.8**
CABF	**La Chapelle**	**7.30**	**282**	*e*Pn	**Pn**	**18 32 21.0**	**+0.3**
CABF	**La Chapelle**	**7.30**	**282**	*e*Pn	**Pn**	**18 32 21.0**	**+0.3**
HAU	**Haudompre**	**7.38**	**293**	*e*Pn	**Pn**	**18 32 22.0**	**+0.3**
HAU	**Haudompre**	**7.38**	**293**	*e*Pn	**Pn**	**18 32 22.0**	**+0.3**
LMR	**La Mourre**	**7.45**	**256**	*e*Pn	**Pn**	**18 32 23.3**	**+0.6**
LMR				*e*Sn	**Sn**	**18 33 44.1**	**-3.0**
	comp=Z,0.7nm,0.3s							
LMR	**La Mourre**	**7.45**	**256**	*e*Pn	**Pn**	**18 32 23.3**	**+0.6**
ORIF	**Oris-en-Rattie**	**7.50**	**269**	*e*Pn	**Pn**	**18 32 24.0**	**+0.6**
ORIF				*e*Sn	**Sn**	**18 33 45.2**	**-3.2**
	comp=Z,1.7nm,0.5s							
ORIF	**Oris-en-Rattie**	**7.50**	**269**	*e*Pn	**Pn**	**18 32 24.0**	**+0.6**
VIVF	**Saint-Julien-l**	**8.35**	**270**	*e*Pn	**Pn**	**18 32 35.7**	**+0.6**
VIVF				*e*Sn	**Sn**	**18 34 05.5**	**-3.9**
	comp=Z,1.8nm,0.5s							
VIVF	**Saint-Julien-l**	**8.35**	**270**	*e*Pn	**Pn**	**18 32 35.7**	**+0.6**

NIED **17** *18:33:00.37˚.00N×140˚.80E,h8km,Mw3.9 Best double couple: M₀7.37000×10¹⁴ NP1:φs98.00000°,δ40.00000°, λ-72.00000°. NP2:φs256.00000°,δ52.00000°, λ-104.00000°.*
IDC **17** *18:33:39.6±0.6,36˚.98N×140˚.72E,h0km,mb3.9/20, mb1 4.1/22,mb1mx4.0/49,mbtmp3.9/22,ML3.9/2,MS2.8/3, Ms1 2.8/3,ms1mx2.5/39,Error ellipse: s-maj=16.6km s-min=14.2km az=118.0*
ISCJB **17** *18:33:40.7±0.6,36˚.98N±0˚.03×140˚.86E±0˚.05,h19km±3km, mb3.9/22,MS2.7/1,Error ellipse: s-maj=7.0km s-min=4.0km az=27.4*
JMA **17** *18:33:41.8,37˚.01N×140˚.70E,h10km±1km,M4.1 Broadband fault plane solution: P waves. NP1: φs103.00000°,δ48.00000°,λ-75.00000°. NP2: φs262.00000°,δ44.00000°,λ-106.00000°. Principal axes: T Plg2.0000°, Azm183.0000°; N Plg11.0000°, Azm273.0000°; P Plg79.0000°, Azm83.0000°;*
JMA Felt III J1.
NEIC **17** *18:33:45.0±1.3,36˚.93N×140˚.73E,h39km±12km,mb4.3/2 Error ellipse: s-maj=13.9km s-min=10.2km az=102.0*
NEIC Recorded [3 JMA] in Fukushima.

ISC 17 18:33:40.8±1.1,36˚.95N±0˚.04×140˚.70E±0˚.04,h9km±7km, n48,σ0s94/50,mb3.9/22,6C,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.17**	**29**	⇑P		**Pg**	**18 33 44.8**	**+0.3**
ONAJ				S		**Sg**	**18 33 46.8**	**-0.2**
JHO	**Hitachi**	**0.35**	**197**	⇑P		**Pb**	**18 33 49.8**	**+0.5**
JHO				S		**Sb**	**18 33 55.8**	**+0.9**
JFK	**Kawauchi**	**0.44**	**19**	⇑P		**Pg**	**18 33 49.3**	**-0.1**
JFK				S		**Sg**	**18 33 54.6**	**-0.6**
JSB	**Shiboa**	**0.62**	**272**	P		**Pb**	**18 33 54.6**	**+0.8**
JSB				S		**Sb**	**18 34 03.3**	**+0.6**
JFT	**Otama**	**0.63**	**333**	⇑P		**Pg**	**18 33 53.2**	**+0.1**
JFT				S		**Sg**	**18 34 01.1**	**-0.3**
JYT	**Yasato**	**0.83**	**209**	⇑P		**Pb**	**18 33 58.0**	**+0.

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HMBC	**Humberstone**	**0.17**	**244**	⇑*iP*	Pn	18 40 53.9	+0.3
HMBC				*i* S	Sn	18 41 02.2	+1.0
HMBC				IAML		18 41 02.8	
	comp=E,10μm,0.1s						
PB11	**IPOC Station P**	**0.45**	**9**	⇓*iP*	Pn	18 40 55.6	+0.1
PB11				*i* S	Sn	18 41 05.5	+1.0
PB08	**IPOC Station P**	**0.54**	**84**	⇑*iP*	Pn	18 40 57.2	+0.5
PB08				*i* S	Sn	18 41 07.5	+1.0
PB08				IAML		18 41 07.9	
	comp=E,7μm,0.2s						
PSGC	**Pisagua**	**0.71**	**328**	⇓*iP*	Pn	18 40 58.2	+0.1
PSGC				*i* S	Sn	18 41 09.5	+0.4
PSGC				IAML		18 41 10.3	
	comp=E,17μm,0.3s						
PATCX	**Punta Patache**	**0.73**	**213**	⇑*iP*	Pn	18 40 58.5	+0.1
PATCX				*i* S	Sn	18 41 10.4	+0.7
PATCX				IAML		18 41 11.6	
	comp=E,4μm,0.3s						
PB01	**IPOC Station P**	**0.87**	**165**	⇓*iP*	Pn	18 41 00.0	0.0
PB01				*i* S	Sn	18 41 13.0	+0.6
PB01				IAML		18 41 13.4	
	comp=N,4μm,0.1s						
MNMC	**Minye Minye**	**1.07**	**7**	⇓*iP*	Pn	18 41 03.1	+0.4
MNMC				IAML		18 41 20.9	
	comp=N,5μm,0.2s						
PB07	**IPOC Station P**	**1.52**	**186**	⇓*iP*	Pn	18 41 08.6	+0.1
PB07				*i* S	Sn	18 41 29.2	+1.5
PB07				IAML		18 41 30.8	
	comp=E,2μm,0.4s						
PB09	**IPOC Station P**	**1.65**	**164**	⇓*iP*	Pn	18 41 11.2	+1.0
PB09				*i* S	Sn	18 41 32.4	+1.8
PB09				IAML		18 41 41.0	
	comp=E,3μm,0.4s						
PB12	**IPOC Station P**	**1.68**	**340**	⇓*iP*	Pn	18 41 10.3	-0.3
PB12				*i* S	Sn	18 41 31.5	+0.3
PB13	**IPOC Station P**	**1.87**	**7**	*eP*	Pn	18 41 14.8	+1.3
PB13				*i* S	Sn	18 41 39.5	+3.0
PB04	**IPOC Station P**	**2.16**	**190**	⇑*iP*	Pn	18 41 16.2	-0.8
PB06	**IPOC Station P**	**2.50**	**177**	⇓*iP*	Pn	18 41 21.1	-0.5

BJI **17** *18:41:13.6,20˙.26S×113˙.96E,h7km,mb5.2/73,mB5.1/48, Ms4.8/52,Ms7 4.4/51*

ISCJB **17** *18:41:16.3±1.1,19˙.89S±0˙.03×113˙.75E±0˙.03,h6km±6km, mb5.2/102,MS4.4/44,Error ellipse: s-maj=6.7km s-min=4.5km az=39.8*

IDC **17** *18:41:17.3±0.6,19˙.89S×113˙.73E,h0km,mb5.0/17, mb1 5.2/22,mb1mx5.2/25,mbtmp5.1/22,ML5.3/5,MS4.3/32, Ms1 4.3/32,ms1mx4.2/44,Error ellipse: s-maj=18.2km s-min=14.7km az=89.0*

MOS **17** *18:41:17.2±1.0,19˙.85S×113˙.74E,h10km,mb5.4/32, MS4.2/8,Error ellipse: s-maj=9.5km s-min=6.5km az=113.9*

GCMT **17** *18:41:18.5±0.1,19˙.85S×113˙.49E,h26km,MW5.3/103, Moment Tensor Solution. s86,c142; s103,c185; Duration: 1ŝ1 Moment tensor: Scale 10¹⁷Nm; Mrr0.06±.02; Mθθ0.44±.01; Mϕϕ-0.50±.02; Mrθ0.47±.03; Mθϕ-0.85±.01; Mϕr-0.20±.03; Best double couple: Mo1.09000×10¹⁷ NP1:ϕs73.00000°,δ76.00000°, λ159.00000°. NP2:ϕs168.00000°,δ70.00000°,λ15.00000°. Principal axes: T 1.1700, Plg25.0000°, Azm30.0000°; N -0.1620, Plg65.0000°, Azm220.0000°; P -1.0090, Plg4.0000°, Azm121.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

NEIC **17** *18:41:18.5±0.2,19˙.92S×113˙.73E,h10km,mb5.3/39 Error ellipse: s-maj=7.4km s-min=5.0km az=225.0*

NEIC Felt [II] at Karratha. Also felt at Roebourne.

ISC 17 18:41:18.6±0.8,**19˙.89S**±0˙.04×**113.72E**±0˙.05,**h10**km±4km, **n424,σ1ŝ55**/447,**mb5.3**/102,**MS4.4**/45,**13C-6D, Northwest of Australia**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MBWA	**Marble Bar**	**5.78**	**104**	*eP*n	**Pn**	**18 42 46.3**	**+1.8**
MBWA				*e*Sn	**Sn**	**18 43 46.8**	**-4.0**
MBWA	**Marble Bar**	**5.78**	**104**	P	**Pn**	**18 42 46.4**	**+2.0**
	SNR=173						
MBWA	**Marble Bar**	**5.78**	**104**	Pn	**Pn**	**18 42 46.4**	**+2.0**
	SNR=173						
DNP	**Denpasar**	**11.24**	**8**	P	**Pn**	**18 43 58.4**	**-1.0**
	2μm,0.7s,29μm						
DNP				S	**Sn**	**18 45 59.0**	**-6.2**
	2μm,0.7s,29μm						
JAGI	**Jajag, Banyuwa**	**11.36**	**2**	P	**Pn**	**18 43 58.8**	**-2.3**
	873nm,0.6s,19μm						
JAGI				S	Sn	18 45 58.3	-10
	873nm,0.6s,19μm						
FITZ	**Fitzroy Crossi**	**11.42**	**83**	Pn	**Pn**	**18 44 00.9**	**-1.0**
	20nm,0.3s,baz=255,slow=10,SNR=150						
FITZ					Sn	18 45 58.4	-11
	79nm,0.3s,baz=15,slow=16,SNR=11						
FITZ	**Fitzroy Crossi**	**11.42**	**83**	*eP*n	**Pn**	**18 44 00.1**	**-1.7**
FITZ					Sn	18 45 58.4	-11
FITZ				*e*Sn	Sn	18 46 00.5	-9.1
TWSI	**Taliwang, Sumb**	**11.50**	**16**	P	**Pn**	**18 44 00.6**	**-2.4**
	732nm,1.0s,10μm						
TWSI				S	Sn	18 45 59.5	-12
	732nm,1.0s,10μm						
GMJI	**Gumukmas**	**11.55**	**359**	P	**Pn**	**18 44 01.9**	**-1.8**
	350nm,0.8s,4μm						
GMJI				S	Sn	18 46 01.5	-11
	350nm,0.8s,4μm						
PLAI	**Plampang**	**11.67**	**20**	P	**Pn**	**18 44 03.0**	**-2.4**
	695nm,0.9s,6μm						
PCJI	**Pacitan**	**11.88**	**348**	P	**Pn**	**18 44 06.0**	**-2.2**
	374nm,0.6s,6μm						
ABJI	**Asem Bagus**	**12.03**	**2**	P	**Pn**	**18 44 09.6**	**-0.7**
	1μm,1.1s,11μm						
XMIS	**Christmas Isla**	**12.16**	**319**	*eP*n	Pn	18 44 05.3	-6.8
XMIS				*e*Sn	Sn	18 46 11.5	-16
WOJI	**Wonogiri, Jawa**	**12.28**	**347**	P	**Pn**	**18 44 11.0**	**-2.7**
	473nm,0.8s,9μm						
UGM	**Wanagama**	**12.30**	**345**	P	**Pn**	**18 44 12.6**	**-1.4**
	622nm,0.8s,7μm						
NGJI	**Ngawi**	**12.63**	**350**	P	**Pn**	**18 44 19.2**	**+0.6**
	477nm,0.8s						
CMJI	**Cimerak**	**13.07**	**336**	P	**Pn**	**18 44 26.2**	**+1.7**
	194nm,0.9s,2μm						
NWAO	**Narrogin (SRO)**	**13.36**	**167**	Pn	**Pn**	**18 44 25.2**	**-3.2**
	78nm,0.3s,baz=97,slow=0.0,SNR=454						
NWAO					Sn	18 46 43.2	-14
	273nm,0.3s,SNR=15						
NWAO	**Narrogin (SRO)**	**13.36**	**167**	*eP*n	**Pn**	**18 44 24.9**	**-3.5**
NWAO				*e*Sn	Sn	18 46 41.0	-16
NWAO					Sn	18 46 43.2	-14
NWAO	**Narrogin (SRO)**	**13.36**	**167**	P	**Pn**	**18 44 25.6**	**-2.9**
	SNR=5.9						
CISI	**Cisompet, Garu**	**13.53**	**334**	P	**Pn**	**18 44 27.1**	**-3.7**
	390nm,0.7s,5μm						
UWJI	**Ujung Watu**	**13.65**	**348**	P	**Pn**	**18 44 31.0**	**-1.5**
	221nm,1.3s,3μm						
MMRI	**Maumere**	**13.89**	**38**	P	**Pn**	**18 44 34.8**	**-1.0**
	528nm,0.9s,4μm						
CNJI	**Cibinong**	**14.04**	**332**	P	**Pn**	**18 44 35.0**	**-2.8**
	228nm,0.9s,2μm						
LEM	**Lembang**	**14.27**	**335**	Pn	**Pn**	**18 44 43.0**	**+1.9**
	9.9nm,0.3s,baz=129,slow=5.3,SNR=69						
LEM					Sn	18 46 59.0	-21
	31nm,0.3s,baz=352,slow=15,SNR=5.0						
LEM					LR	18 50 12.6	
	comp=Z,1μm,20.5s,baz=222,slow=38						
LEM	**Lembang**	**14.27**	**335**	P	**Pn**	**18 44 42.8**	**+1.7**
	3μm,0.9s,20μm						
SOEI	**Soe**	**14.32**	**47**	P	**Pn**	**18 44 42.7**	**+0.9**
	953nm,0.9s,9μm						
SKJI	**Sukabumi**	**14.57**	**331**	P	**Pn**	**18 44 43.3**	**-1.7**
	368nm,0.9s,4μm						
DBJI	**Dramaga**	**14.88**	**332**	P	**Pn**	**18 44 47.2**	**-2.1**
	183nm,1.0s,5μm						
BSSI	**Bau Bau, Buton**	**15.16**	**27**	P	**Pn**	**18 44 52.5**	**-0.6**
	310nm,1.1s,3μm						
CGJI	**Cibinong**	**15.32**	**328**	P	**Pn**	**18 44 51.9**	**-3.2**
	164nm,0.9s,2μm						
SBJI	**Serang**	**15.54**	**331**	P	**Pn**	**18 45 00.1**	**+2.1**
	252nm,1.1s,11μm						
KAPI	**Kappang**	**15.91**	**22**	Pn	**Pn**	**18 45 01.7**	**-1.0**
	2.9nm,0.3s,baz=220,slow=8.3,SNR=29						
KAPI					Sn	18 47 47.7	-12
	1.5nm,0.3s,baz=133,slow=24,SNR=4.3						
KAPI					LR	18 51 23.0	
	comp=Z,1μm,20.6s,baz=232,slow=38						
KAPI	**Kappang**	**15.91**	**22**	*eP*n	**Pn**	**18 45 01.4**	**-1.3**
	143nm,0.9s						
KAPI					Sn	18 47 47.7	-12
KAPI				*e*Sn	S	18 47 54.6	-19
BBKI	**Banjar Baru**	**16.36**	**4**	P	**Pn**	**18 45 09.5**	**+0.9**
	746nm,1.1s,9μm						
BLSI	**Bandar Lampung**	**16.62**	**329**	P	**P**	**18 45 13.9**	**-0.5**
	193nm,1.2s						
KASI	**Kota Agung**	**16.86**	**327**	P	**Pn**	**18 45 12.8**	**-2.1**
	218nm,1.2s,2μm						
SPSI	**Sidrap Palu**	**16.89**	**21**	P	**Pn**	**18 45 14.9**	**-0.4**
	119nm,0.9s,2μm						
PBKI	**Pangkalan Bun**	**17.19**	**353**	P	**P**	**18 45 20.0**	**-0.7**
	396nm,1.2s,4μm						
KLI	**Kotabumi**	**17.25**	**329**	P	**P**	**18 45 21.9**	**+0.6**
	218nm,1.4s,3μm						
LWLI	**Liwa**	**17.52**	**326**	P	**Pn**	**18 45 21.4**	**-1.9**
	388nm,0.8s,5μm						
TTSI	**Tana Toraja**	**17.77**	**20**	P	**P**	**18 45 27.5**	**+0.5**
	251nm,1.1s,4μm						
MDSI	**Maura Dua**	**17.91**	**327**	P	**Pn**	**18 45 26.7**	**-1.3**
	81nm,1.2s,1μm						
COCO	**West Island**	**17.93**	**293**	*i* P	**Pn**	**18 45 26.8**	**-1.4**
COCO	**West Island**	**17.93**	**293**	*e*Pn	**Pn**	**18 45 24.6**	**-3.7**
	407nm,0.5s						
MTN	**Manton Dam**	**18.11**	**70**	*e*Pn	**Pn**	**18 45 29.4**	**-1.1**
	131nm,0.6s						
MNAI	**Manna**	**18.66**	**324**	P	**Pn**	**18 45 39.5**	**+2.3**
	401nm,1.0s,4μm						
BKB	**Balikpapan**	**18.77**	**10**	P	**Pn**	**18 45 41.2**	**+2.7**
	252nm,1.1s,6μm						
LHSI	**Lahat**	**18.80**	**327**	P	**Pn**	**18 45 39.3**	**+0.3**
	195nm,1.5s,3μm						
MTKI	**Muara Teweh, K**	**18.86**	**4**	P	**Pn**	**18 45 40.6**	**+0.9**
	252nm,1.0s,3μm						
PPBI	**Pangkal Pinang**	**19.11**	**336**	P	**Pn**	**18 45 43.7**	**+1.0**
	61nm,1.2s,1μm						
ASAR	**Alice Springs**	**19.12**	**105**	P	**P**	**18 45 40.7**	**-1.3**
	27nm,0.3s,baz=282,slow=12,SNR=1164						
ASAR				S	Sn	18 49 03.0	-14
	14nm,0.3s,baz=275,slow=24,SNR=11						
ASAR				LR	LR	18 53 45.5	
	comp=Z,1μm,19.4s,baz=285,slow=39						
AS31	**Alice Springs**	**19.12**	**105**	*eP*	**P**	**18 45 40.9**	**-1.1**
	71nm,0.6s						
AS01	**Alice Springs**	**19.16**	**105**	*eP*	**P**	**18 45 40.2**	**-2.2**
WRA	**Warramunga Arr**	**19.39**	**94**	P	**P**	**18 45 44.4**	**-0.6**
	11nm,0.3s,baz=269,slow=14,SNR=159						
WRA				S	Sn	18 49 06.4	-17
	18nm,0.3s,baz=268,slow=25,SNR=18						
WRA				LR	LR	18 54 30.6	
	comp=Z,1μm,18.1s,baz=280,slow=41						
WRAB	**Tennant Creek**	**19.40**	**94**	*eP*	**P**	**18 45 44.5**	**-0.6**
WRAB				pmax	pmax		
	comp=Z,98nm,0.6s						
WRAB	**Tennant Creek**	**19.40**	**94**	*eP*	**P**	**18 45 44.5**	**-0.6**
	comp=Z,98nm,0.6s						
WRAB				*e*Sn	Sn	18 49 07.5	-16
WB2	**Warramunga Arr**	**19.40**	**94**	*eP*	**P**	**18 45 44.1**	**-0.9**
	comp=Z,98nm,0.8s						
STKI	**Sintang**	**19.95**	**353**	P	**Pn**	**18 45 52.6**	**-0.1**
	comp=Z,239nm,1.3s,comp=Z,3μm						
MASI	**Maura Aman, Be**	**20.06**	**325**	P	Pn	18 45 54.3	+0.2
	comp=Z,468nm,1.4s,comp=Z,9μm						
APSI	**Ampana**	**20.39**	**23**	P	Pn	18 45 57.2	-0.7
	comp=Z,672nm,1.0s,comp=Z,7μm						
LUWI	**Luwuk**	**20.72**	**26**	*eP*	**P**	**18 45 58.3**	**-1.1**
	comp=Z,1μm,1.4s						
NLAI	**Namlea**	**21.08**	**40**	P	**P**	**18 46 04.5**	**+1.2**
	comp=Z,1μm,1.1s,comp=Z,11μm						
SANI	**Sanana**	**21.40**	**36**	P	**P**	**18 46 08.0**	**+1.2**
	comp=Z,381nm,1.2s,comp=Z,4μm						
PPSI	**Pulau Pagai**	**21.65**	**320**	P	**P**	**18 46 11.5**	**+2.0**
	comp=Z,450nm,1.0s,comp=Z,4μm						
MRSI	**Marisa**	**21.78**	**23**	P	**P**	**18 46 11.8**	**+1.0**
	comp=Z,536nm,0.9s,comp=Z,4μm						
BNDI	**Bandanaira**	**21.95**	**48**	P	**P**	**18 46 13.8**	**+1.1**
	comp=Z,543nm,1.1s,comp=Z,8μm						
MSAI	**Masohi**	**22.15**	**44**	P	**P**	**18 46 19.4**	**+4.6**
	comp=Z,31nm,1.3s,comp=Z,726nm						
SBUM	**Sibu**	**22.25**	**356**	*eP*	**P**	**18 46 17.6**	**+1.8**
	comp=Z,244nm,0.8s						
TPRI	**Tanjung Pinang**	**22.55**	**335**	P	**P**	**18 46 20.3**	**+1.2**
	comp=Z,110nm,1.1s						
PDSI	**Padang**	**22.89**	**324**	P	**P**	**18 46 23.2**	**+0.5**
	comp=Z,60nm,1.2s,comp=Z,8μm						
LBMI	**Labuha**	**23.41**	**37**	P	**P**	**18 46 29.4**	**+1.4**
	comp=Z,378nm,1.1s,comp=Z,4μm						
MYKOM	**Kota Tinggi**	**23.62**	**335**	*eP*	**P**	**18 46 30.8**	**+0.8**
	comp=Z,71nm,1.0s						
BKNI	**Bangkinang**	**23.62**	**327**	P	**P**	**18 46 32.2**	**+2.1**
	comp=Z,94nm,1.1s,comp=Z,2μm						
BBOO	**Buckleboo**	**23.74**	**127**	*eP*	**P**	**18 46 31.4**	**+0.3**
TSM	**Tawau**	**24.37**	**10**	⇓P	**P**	**18 46 38.8**	**+1.7**
TNTI	**Ternate**	**24.51**	**35**	P	**P**	**18 46 38.4**	**0.0**
	comp=Z,172nm,1.6s,comp=Z,3μm						
FAKI	**Fak Fak**	**24.73**	**49**	P	**P**	**18 46 41.0**	**+0.5**
	comp=Z,274nm,1.2s,comp=Z,3μm						
MNSI	**Mandailing Nat**	**24.79**	**324**	P	**P**	**18 46 41.1**	**+0.1**
	comp=Z,75nm,0.7s,comp=Z,1μm						
MYLDM	**Lahad Datu**	**25.35**	**11**	*eP*	**P**	**18 46 48.0**	**+2.1**
	comp=Z,184nm,1.2s						
SWI	**Song**	**25.54**	**44**	P	**P**	**18 46 49.0**	**+1.3**
	comp=Z,143nm,1.7s,comp=Z,3μm						
SDKM	**Sandakan**	**25.60**	**8**	⇑P	**P**	**18 46 49.3**	**+1.0**
FRIM	**Kepong**	**25.87**	**331**	⇓P	**P**	**18 46 50.2**	**-0.5**
KKM	**Kota Kinabalu**	**25.88**	**6**	⇓P	**P**	**18 46 51.4**	**+0.5**
KKM	**Kota Kinabalu**	**25.88**	**6**	*eP*	**P**	**18 46 50.0**	**-1.0**
	comp=Z,47nm,1.0s						
GSI	**Gunungsitoli**	**26.35**	**321**	P	**P**	**18 46 57.1**	**+2.0**
	comp=Z,104nm,1.6s						
PSI	**Prapat**	**26.82**	**326**	P	**P**	**18 46 57.7**	**-1.8**
	comp=Z,13nm,0.9s,baz=121,slow=4.1,SNR=7.0						
PSI				LR	LR	18 58 35.3	
	comp=Z,1μm,18.8s,baz=139,slow=39						
KTGM	**Kuala Trenggan**	**27.13**	**336**	⇑P	**P**	**18 47 02.4**	**+0.3**
STKA	**Stephens Creek**	**27.69**	**121**	P	**P**	**18 47 08.8**	**+1.7**
	comp=Z,64nm,0.7s,baz=294,slow=9.0,SNR=190						
STKA				LR	LR	18 59 24.7	
	comp=Z,4μm,18.4s,baz=270,slow=39						
STKA	**Stephens Creek**	**27.69**	**121**	*eP*	**P**	**18 47 08.5**	**+1.4**
	comp=Z,85nm,1.3s						
KCSI	**Kotacane, Aceh**	**28.05**	**324**	P	**P**	**18 47 09.8**	**-0.6**
	comp=Z,38nm,1.0s						
KULM	**Kulim**	**28.13**	**331**	*eP*	**P**	**18 47 08.8**	**-2.3**
	comp=Z,19nm,0.9s						
TPTI		**28.16**	**323**	P	**P**	**18 47 13.4**	**+2.0**
	comp=Z,72nm,0.7s						
COEN	**Coen**	**28.77**	**83**	*eP*	**P**	**18 47 17.1**	**+0.2**
	comp=Z,46nm,1.0s						
CTA	**Charters Tower**	**30.55**	**96**	P	**P**	**18 47 35.5**	**+2.8**
CTA				pmax	pmax		
	comp=Z,71nm,1.0s						
CTAO	**Charters Tower**	**30.55**	**96**	*eP*	**P**	**18 47 32.7**	**0.0**
CTAO				pmax	pmax		
	comp=Z,46nm,0.8s						
CTAO	**Charters Tower**	**30.55**	**96**	*eP*	**P**	**18 47 32.7**	**0.0**
	comp=Z,46nm,0.8s						
GENI	**Genyem**	**31.03**	**60**	P	**P**	**18 47 38.1**	**+1.3**
	comp=Z,97nm,1.0s,comp=Z,1μm						
TGY	**Tagaytay City**	**34.51**	**12**	P	**P**	**18 48 06.4**	**-0.9**
	comp=Z,72nm,0.4s,baz=211,slow=5.1,SNR=5.0						
CAN	**Canberra**	**34.63**	**124**	P	**P**	**18 48 06.9**	**-1.3**
CAN				pmax	pmax		
	comp=Z,38nm,0.7s						
CAN	**Canberra**	**34.63**	**124**	P	**P**	**18 48 06.9**	**-1.3**
	comp=Z,38nm,0.7s						
ARMA	**Armidale**	**35.73**	**115**	P	**P**	**18 48 17.0**	**-0.9**
SRDT	**SRDT**	**36.93**	**336**	P	**P**	**18 48 28.6**	**+0.6**
	comp=Z,74nm,1.1s,comp=Z,15μm						
MANU	**Manus Island**	**37.35**	**66**	*eP*	**P**	**18 48 34.3**	**+2.6**
	comp=Z,121nm,1.5s						
QIZ	**Qiongzhong**	**38.86**	**354**	P	**P**	**18 48 43.6**	**-0.7**
QIZ				S	**S**	**18 54 42.4**	**0.0**
QIZ				pmax	pmax		
	comp=Z,10.0nm,1.7s						
QIZ				pmax	pmax		
	comp=Z,120nm,4.5s						
QIZ				LR	LR		
	comp=Z,100nm,13.3s						
QIZ				LR	LR		
	comp=Z,160nm,16.6s						
SUKH	**Sukhothai**	**39.63**	**339**	P	**P**	**18 48 51.1**	**+0.4**
	comp=Z,8.0nm,1.0s,comp=Z,76nm						
CM01	**Chiang Mai Arr**	**40.73**	**338**	*eP*	**P**	**18 48 58.4**	**-1.4**
CM31	**Chiang Mai Arr**	**40.77**	**338**	*eP*	**P**	**18 49 00.5**	**+0.3**
CMAR	**Chiang Mai Arr**	**40.77**	**338**	P	**P**	**18 49 00.2**	**+0.1**
	comp=Z,15nm,0.9s,baz=177,slow=8.1,SNR=79						
CMAR				PP	**PP**	**18 50 31.6**	**-2.7**
	comp=Z,6.8nm,0.8s,baz=172,slow=8.7,SNR=5.6						
CMAR				LR	LR	19 07 49.8	
	comp=Z,521nm,19.1s,baz=160,slow=39						
CHTO	**Chiang Mai**	**41.10**	**338**	*eP*	**P**	**18 49 01.9**	**-1.0**
CHTO				pmax	pmax		
	comp=Z,11nm,0.8s						
CHTO	**Chiang Mai**	**41.10**	**338**	*eP*	**P**	**18 49 01.9**	**-1.0**
	comp=Z,11nm,0.8s						
TPUB	**Ta-pu**	**43.45**	**9**	*eP*	**P**	**18 49 22.1**	**+0.1**
	comp=Z,73nm,1.0s						
YULB	**Yu-li**	**43.65**	**10**	*eP*	**P**	**18 49 22.3**	**-1.3**
	comp=Z,22nm,0.9s						
SSLB	**Suanglung**	**43.98**	**10**	*eP*	**P**	**18 49 25.9**	**-0.4**
	comp=Z,35nm,0.9s						
QZH	**Quanzhou**	**44.81**	**6**	⇓*iP*	**P**	**18 49 32.5**	**-0.4**
QZH				S	**S**	**18 56 03.8**	**-6.5**
QZH				LR	LR		
	comp=Z,1μm,22.6s						
YHNB	**Yeheng**	**44.91**	**10**	*eP*	**P**	**18 49 30.1**	**-3.7**
	comp=Z,37nm,1.1s						
TATO	**Taipei**	**45.23**	**10**	*eP*	**P**	**18 49 35.4**	**-0.8**
	comp=Z,56nm,0.8s						
GUMO	**Guam**	**45.23**	**45**	P	**P**	**18 49 36.2**	**-0.2**
	comp=Z,82nm,0.8s,baz=202,slow=12,SNR=3.9						
HNR	**Honiara**	**45.78**	**84**	*eP*	**P**	**18 49 42.3**	**+1.4**
HNR				pmax	pmax		
	comp=Z,54nm,0.8s						
HNR	**Honiara**	**45.78**	**84**	*eP*	**P**	**18 49 42.2**	**+1.4**
	comp=Z,54nm,0.8s						
KMI	**Kunming**	**46.00**	**346**	P	**P**	**18 49 44.5**	**+1.9**
KMI				pP	sP	18 49 49.5	+2.7
KMI				sP	pP	18 49 51.4	+5.8
KMI				PP	**PP**	**18 51 32.4**	**+1.8**
KMI				S	**S**	**18 56 26.3**	**-1.6**
KMI				sS	sS	18 56 41.4	+8.4
KMI				pmax	pmax		
	comp=Z,55nm,1.0s						
KMI				pmax	pmax		
	comp=Z,200nm,4.5s						
KMI				LR	LR		
	comp=Z,230nm,19.1s						
KMI				LR	LR		
	comp=Z,360nm,19.4s						
KMI				LR	LR		
	comp=Z,360nm,23.6s						
GYA	**Guiyang**	**46.57**	**351**	⇑*iP*	**P**	**18 49 47.8**	**+0.8**
GYA				PcP	**PcP**	**18 51 22.4**	**+1.3**
GYA				PP	**PP**	**18 51 39.0**	**+2.3**
GYA				ScP	**ScP**	**18 55 14.8**	**-0.1**
GYA				S	**S**	**18 56 39.3**	**+3.3**
GYA				ScS	**ScS**	**18 59 42.8**	**+0.2**
GYA				pmax	pmax		
	comp=Z,80nm,1.0s						
GYA				pmax	pmax		
	comp=Z,120nm,4.9s						
GYA				LR	LR		
	comp=Z,590nm,17.3s						
GYA				LR	LR		
	comp=Z,560nm,17.2s						
GYA				LR	LR		
	comp=Z,580nm,17.6s						
DZM	**Mont Dzumac**	**49.08**	**102**	LR	LR	19 11 39.9	
	comp=Z,743nm,18.4s,baz=271,slow=37						
SHL	**Shillong**	**49.92**	**334**	*eP*	**P**	**18 50 13.0**	**+0.1**
ENH	**Enshi**	**50.03**	**355**	*eP*	**P**	**18 50 12.3**	**-1.2**
	comp=Z,58nm,0.9s						
WHN	**Wuhan**	**50.14**	**1**	P	**P**	**18 50 15.3**	**+1.0**
WHN				S	**S**	**18 57 21.9**	**-4.1**
WHN				pmax	pmax		
	comp=Z,180nm,1.2s						
WHN				LR	LR		
	comp=Z,4μm,30.4s						
WHN				LR	LR		
	comp=Z,2μm,23.6s						
WHN				LR	LR		
	comp=Z,910nm,20.2s						
HYB	**Hyderabad**	**50.66**	**315**	*i* P	**P**	**18 50 19.0**	**+0.5**
HYB				*e*		18 50 30.5	
CD2	**Chengdu**	**51.40**	**349**	P	**P**	**18 50 25.3**	**+1.4**
CD2				sP	sP	18 50 31.3	+3.1
CD2				PP	**PP**	**18 52 22.8**	**+1.5**
CD2				S	**S**	**18 57 39.3**	**-4.4**
CD2				sS	sS	18 57 58.6	+10
CD2				SS	**SS**	**19 01 24.6**	**+4.7**
CD2				pmax	pmax		
	comp=Z,60nm,0.8s						
CD2				pmax	pmax		
	comp=Z,210nm,7.2s						
CD2				LR	LR		
	comp=Z,600nm,25.0s						
CD2				LR	LR		
	comp=Z,400nm,22.6s						
NJ2	**Nanjing**	**51.88**	**6**	*eP*	**P**	**18 50 28.3**	**+1.0**
NJ2				S	**S**	**18 57 42.8**	**-7.2**
NJ2				pmax	pmax		
	comp=Z,48nm,1.4s						
NJ2				LR	LR		
	comp=Z,490nm,26.0s						
RPZ	**Rata Peaks**	**53.05**	**130**	LR	LR	19 14 13.9	
	comp=Z,982nm,18.6s,baz=282,slow=37						
XAN	**Xi'an**	**53.82**	**355**	P	**P**	**18 50 42.0**	**+0.3**
XAN				sP	sP	18 50 48.4	+2.4
XAN				PP	**PP**	**18 52 43.6**	**+0.5**
XAN				S	**S**	**18 58 12.5**	**-4.1**
XAN				SS	**SKiKP**	**19 01 54.8**	**-1.5**
XAN				pmax	pmax		
	comp=Z,40nm,1.0s						
XAN				pmax	pmax		
	comp=Z,92nm,8.3s						
XAN				LR	LR		
	comp=Z,370nm,23.2s						
XAN				LR	LR		
	comp=Z,270nm,18.6s						
XAN				LR	LR		
	comp=Z,490nm,23.2s						
LSA	**Lhasa**	**53.88**

KSAR Wonju Array Be 58.56 13 P **P** **18 51 16.9 +1.4**
KSRS Korea Array 58.58 13 P **P** **18 51 16.9 +1.3**
comp=Z,14nm,0.7s,baz=195,slow=7.7,SNR=33
KSRS LR LR 19 16 55.1
comp=Z,105nm,21.9s,baz=204,slow=36
KS01 Wonju Array Si 58.60 13 *e*P **P** **18 51 16.9 +1.2**
INU Inuyama 59.21 22 *e*P **P** **18 51 20.0 -0.1**
comp=Z,13nm,0.8s
BJI Beijing 59.66 2 P **P** **18 51 23.9 +0.9**
BJI PP **PP** **18 53 37.9 +2.9**
BJI S **S** **18 59 31.9 -1.6**
BJI SS **SS** **19 03 36.4 +6.7**
BJI pmax pmax
comp=Z,30nm,1.3s
BJI pmax pmax
comp=Z,210nm,4.4s
BJI LR LR
comp=Z,290nm,17.8s
BJI LR LR
comp=Z,180nm,17.3s
BJI LR LR
comp=Z,260nm,21.2s
BTO Baotou 60.28 357 *e*P **P** **18 51 27.8 +0.4**
GTA Gaotai 60.40 348 ⇑P **P** **18 51 30.0 +1.6**
GTA pP sP 18 51 35.3 +2.6
GTA sP pP 18 51 38.0 +6.5
GTA PcP **PcP** **18 52 14.8 +1.6**
GTA S **S** **18 59 45.9 +2.5**
GTA sS sS 18 59 54.0 +5.4
GTA SS **SS** **19 03 47.3 +5.6**
GTA pmax pmax
comp=Z,37nm,1.0s
GTA pmax pmax
comp=Z,170nm,4.4s
GTA LR LR
comp=Z,320nm,22.8s
GTA LR LR
comp=Z,450nm,20.2s
GTA LR LR
comp=Z,420nm,21.9s
HHC Hu-ho-hao-te 60.45 358 *e*P **P** **18 51 29.8 +1.2**
HHC sP sP 18 51 36.8 +3.8
HHC S **S** **18 59 42.1 -1.9**
HHC SS **SS** **19 03 42.4 -0.1**
HHC pmax pmax
comp=Z,25nm,1.2s
HHC pmax pmax
comp=Z,140nm,8.4s
HHC LR LR
comp=Z,3μm,14.8s
HHC LR LR
comp=Z,3μm,14.8s
MSVF Nonsavu 60.60 100 *e*P **P** **18 51 32.3 +2.1**
MSVF pmax pmax
comp=Z,30nm,1.0s
MSVF Nonsavu 60.60 100 *e*P **P** **18 51 32.3 +2.1**
comp=Z,30nm,1.0s
MAJO Matsushiro 60.71 23 *e*P **P** **18 51 30.6 +0.2**
MAJO pmax pmax
comp=Z,130nm,1.4s
MAJO Matsushiro 60.71 23 *e*P **P** **18 51 30.1 -0.2**
comp=Z,52nm,1.5s
MAT Matsushiro 60.71 23 P **P** **18 51 30.4 0.0**
MAT eS **S** **18 59 51.2 +4.0**
MJAR Matsushiro Arr 60.71 23 P **P** **18 51 30.5 +0.1**
comp=Z,19nm,1.1s,baz=196,slow=7.8,SNR=27
MJAR LR LR 19 15 45.8
comp=Z,112nm,21.7s,baz=185,slow=34
MJB9 Matsu-Tunnel 60.71 23 *e*P **P** **18 51 30.1 -0.3**
comp=Z,13nm,1.5s
RAO Raoul Island 62.12 113 LR LR 19 19 32.3
comp=Z,606nm,18.9s,baz=300,slow=37
VNDA Vanda 62.18 169 P **P** **18 51 40.6 +0.8**
comp=Z,6.0nm,0.9s,baz=302,slow=6.7,SNR=20
VNDA LR LR 19 16 44.9
comp=Z,565nm,19.1s,baz=322,slow=34
VNDA Vanda 62.18 169 *e*P **P** **18 51 40.3 +0.5**
VNDA pmax pmax
comp=Z,13nm,0.8s
VNDA Vanda 62.18 169 *e*P **P** **18 51 40.3 +0.5**
comp=Z,13nm,0.8s
SBA Scott Base 63.24 169 *e*P **P** **18 51 48.2 +1.4**
SBA pmax pmax
comp=Z,19nm,1.0s
SBA Scott Base 63.24 169 *e*P **P** **18 51 48.1 +1.4**
comp=Z,19nm,1.0s
MSHR Mys Shultsa 64.20 14 *i*P **P** **18 51 53.1 -0.4**
CN2 Changchun 64.28 9 *e*P **P** **18 51 54.0 -0.1**
CN2 pmax pmax
comp=Z,30nm,1.1s
MDJ Mudanjiang 65.81 12 P **P** **18 52 04.8 +0.8**
MDJ S **S** **19 00 51.3 +0.7**
MDJ ScS **ScS** **19 02 00.8 +0.9**
MDJ pmax pmax
comp=Z,49nm,0.7s
MDJ pmax pmax
comp=Z,130nm,5.4s
MDJ LR LR
comp=Z,100nm,23.3s
MDJ LR LR
comp=Z,260nm,28.2s
MDJ LR LR
comp=Z,180nm,18.4s
MDJ Mudanjiang 65.81 12 *e*P **P** **18 52 01.8 -2.2**
comp=Z,37nm,0.8s
SYO Syowa Base 65.91 202‖ *e*PcP **PcP** **18 52 37.8 +2.6**
USRK Ussuriysk Ar. 65.93 14 P **P** **18 52 05.7 +1.0**
comp=Z,23nm,0.7s,baz=204,slow=5.1,SNR=52
USRK LR LR 19 23 09.0
comp=Z,86nm,19.5s,baz=186,slow=38
ULN Ulaanbaatar 67.70 355*c i*P **P** **18 52 17.3 +1.1**
ULN pmax pmax
comp=Z,27nm,1.0s
ULN Ulaanbaatar 67.70 355 *e*P **P** **18 52 17.2 +1.1**
ULN Ulaanbaatar 67.70 355 P **P** **18 52 17.9 +1.7**
SNR=14
ULN P **P** **18 52 17.9 +1.7**
SNR=14
ULN Ulaanbaatar 67.70 355 P **P** **18 52 17.9 +1.7**
SNR=14
SONM Songino Array 67.73 355 P **P** **18 52 17.7 +1.4**
comp=Z,20nm,0.8s,baz=175,slow=6.5,SNR=190
SONM LR LR 19 25 26.6
comp=Z,171nm,18.4s,baz=161,slow=39
SONA1 Songino Array 67.74 355 *e*P **P** **18 52 17.1 +0.7**
WMQ Urumqi 67.74 340 P **P** **18 52 17.8 +1.4**
WMQ pP sP 18 52 21.0 +0.2
WMQ sP pP 18 52 23.6 +4.0
WMQ PcP **PcP** **18 52 41.1 -2.1**
WMQ PP **PP** **18 54 50.9 +4.8**
WMQ S **S** **19 01 13.6 -0.6**
WMQ pmax pmax
comp=Z,16nm,1.0s
WMQ pmax pmax
comp=Z,66nm,3.6s
WMQ LR LR
comp=Z,190nm,33.0s
WMQ LR LR
comp=Z,180nm,29.4s
WMQ LR LR
comp=Z,110nm,33.0s
KBL Kabul 68.80 322 *e*P **P** **18 52 22.9 -0.6**
KBL Kabul 68.80 322 *e*P **P** **18 52 22.9 -0.6**
KSH Kashi 68.82 329 P **P** **18 52 22.8 -0.6**
KSH *e*pP sP 18 52 27.9 +0.2
KSH S **S** **19 01 22.8 -4.5**
KSH ScS **SKiKP** **19 02 18.3 +2.4**
KSH pmax pmax
comp=Z,11nm,0.6s
KSH pmax pmax
comp=Z,110nm,4.7s
KSH LR LR
comp=Z,1μm,18.7s
KSH LR LR
comp=Z,430nm,14.7s
KSH LR LR
comp=Z,310nm,18.7s
QSPA South Pole Qui 70.17 180 *e*P **P** **18 52 30.8 -0.7**
comp=Z,110nm,0.8s
ZAK Zakamensk 70.56 353 *e*P **P** **18 52 34.3 +0.5**
ZAK pmax pmax
comp=Z,14nm,1.4s
HABR Khabarovsk 70.67 15 *e*P **P** **18 52 32.4 -2.0**
HABR *e**PP **pP** **18 52 35.7 -1.9**
HABR *e* 18 52 53.7
HABR *e* 18 55 08.0
HABR *e*S **S** **19 01 45.9 -2.5**
HABR *e* 19 02 35.1
HABR *e*SS **SS** **19 06 17.8 -3.1**
HABR MLR MLR
comp=Z,120nm,19.0s
AFI Afiamalu 71.04 98 LR LR 19 25 05.6
comp=Z,94nm,18.0s,baz=246,slow=37
YSS Yuzh-Sakhalins 71.50 21⇑ *e*P **P** **18 52 40.6 +1.2**
YSS pmax pmax
comp=Z,40nm,1.3s
CIT Chita 71.60 360 *e*P **P** **18 52 41.8 +1.8**
CIT *e* 18 52 55.0
CIT pmax pmax
comp=Z,49nm,1.8s
TKM2 Tokmak 2 71.67 331 *e*P **P** **18 52 41.5 +0.6**
TKM2 Tokmak 2 71.67 331 *e*P **P** **18 52 41.5 +0.6**
TLY Talaya 71.80 353 *e*P **P** **18 52 42.7 +1.5**
TLY *e*S **S** **19 02 01.1 -0.4**
TLY pmax pmax
comp=Z,17nm,1.3s
TLY MLR MLR
comp=Z,201nm,20.0s
TLY Talaya 71.80 353 *e*P **P** **18 52 43.0 +1.7**
TLY Talaya 71.80 353 P **P** **18 52 42.9 +1.7**
SNR=5.7
TLY P **P** **18 52 42.9 +1.7**
SNR=5.7
TLY Talaya 71.80 353 P **P** **18 52 42.9 +1.7**
SNR=5.7
AAK Ala-Archa 71.95 331*c i*P **P** **18 52 43.5 +1.0**
AAK pmax pmax
comp=Z,51nm,1.2s
AAK Ala-Archa 71.95 331 *e*P **P** **18 52 43.3 +0.8**
AAK Ala-Archa 71.95 331 P **P** **18 52 43.5 +1.0**
SNR=10.0
AAK P **P** **18 52 43.5 +1.0**
SNR=10.0
AAK Ala-Archa 71.95 331 P **P** **18 52 43.5 +1.0**
SNR=10.0
FRU Bishkek 72.05 331⇑ *i*P **P** **18 52 43.0 +0.1**
FRU *e* 18 53 09.0
FRU pmax pmax
comp=Z,52nm,1.8s
MOY Mondy 72.11 352 *e*P **P** **18 52 44.8 +1.6**
MOY pmax pmax
comp=Z,54nm,1.6s
MK01 Makanchi Array 72.15 338 *e*P **P** **18 52 43.8 +0.3**
MK31 Makanchi Array 72.18 338 *e*P **P** **18 52 44.0 +0.4**
MK31 Makanchi Array 72.18 338 *e*P **P** **18 52 44.0 +0.4**
MKAR Makanchi Array 72.18 338 P **P** **18 52 43.8 +0.2**
comp=Z,10.0nm,0.8s,baz=148,slow=5.7,SNR=77
MKAR LR LR 19 28 05.4
comp=Z,73nm,19.7s,baz=149,slow=39
MKAR Makanchi Array 72.18 338 *e*P **P** **18 52 44.0 +0.4**
IRK Irkutsk 72.29 354 *e*P **P** **18 52 44.2 +0.1**
IRK pmax pmax
comp=Z,44nm,2.9s
MAKZ Makanchi 72.30 338 *e*P **P** **18 52 44.1 -0.3**
MAKZ Makanchi 72.30 338 *e*P **P** **18 52 44.1 -0.3**
EKS2 Erkin-Say 72.31 330 *e*P **P** **18 52 45.7 +1.1**
EKS2 Erkin-Say 72.31 330 *e*P **P** **18 52 45.7 +1.1**
KKAR Karatay Array 74.21 329 *e*P **P** **18 52 55.7 0.0**
KKAR Karatay Array 74.21 329 *e*P **P** **18 52 55.7 0.0**
NKL Nikolayevsk 76.39 16 *i*P **P** **18 53 09.2 +1.3**
NKL pmax pmax
comp=Z,30nm,1.1s
KURK Kurchatov 76.79 338 *e*P **P** **18 53 10.7 +0.4**
KURK Kurchatov 76.79 338 *e*P **P** **18 53 10.7 +0.4**
KURK Kurchatov 76.79 338 P **P** **18 53 11.1 +0.9**
SNR=16
KURK Kurchatov 76.79 338 P **P** **18 53 11.1 +0.9**
SNR=16
KMBO Kilima Mbogo 76.89 274 P **P** **18 53 12.4 +0.4**
comp=Z,2.9nm,0.7s,baz=64,slow=5.9,SNR=4.6
KMBO LR LR 19 20 58.4
comp=Z,247nm,20.1s,baz=93,slow=31
KMBO Kilima Mbogo 76.89 274 *e*P **P** **18 53 12.1 0.0**
BOD Bodaibo 77.41 0 *e*P **P** **18 53 14.3 +0.7**
BOD pmax pmax
comp=Z,27nm,1.1s
ZALV Zalesovo Beam 77.63 343 P **P** **18 53 14.6 -0.3**
comp=Z,12nm,0.8s,baz=160,slow=3.9,SNR=47
ZALV LR LR 19 29 57.0
comp=Z,115nm,20.8s,baz=88,slow=38
KRAR Krasnoyarsk 77.63 348 *e*P **P** **18 53 15.0 +0.1**
KRAR pmax pmax
comp=Z,16nm,1.1s
GEYT Alibeck 77.67 318 P **P** **18 53 15.1 -0.5**
comp=Z,4.3nm,0.9s,baz=174,slow=5.2,SNR=11
GEYT LR LR 19 26 04.0
comp=Z,371nm,21.8s,baz=135,slow=35
NVS Novosibirsk 78.85 343⇑ *i*P **P** **18 53 20.6 -1.1**
NVS pmax pmax
comp=Z,26nm,1.1s
NVS pmax pmax
comp=N,7.0nm,0.6s
NVS pmax pmax
comp=E,1.0nm,0.2s
SNAA Sanae 79.19 197 P **P** **18 53 22.3 -1.3**
SNAA Sanae 79.19 197 *e*P P 18 53 18.3 -5.2
RAYN Ar Rayn 79.26 300 *e*P **P** **18 53 24.0 -0.7**
BOSA Boshof 79.44 243 P **P** **18 53 25.6 -0.2**
comp=E,2.5nm,0.7s,baz=126,slow=7.0,SNR=4.2
BOSA LR LR 19 22 45.4
comp=E,158nm,18.4s,baz=113,slow=31
RAR Rarotonga 79.92 109 LR LR 19 28 00.5
comp=E,228nm,20.2s,baz=265,slow=35
VNA2 Neumayer--Watz 80.82 197 P P 18 53 44.2 +12
baz=111,slow=4.2
LSZ Lusaka 80.83 257 *e*P **P** **18 53 35.1 +1.6**
LSZ Lusaka 80.83 257 *e*P **P** **18 53 35.1 +1.6**
VNA1 Neumayer--Stat 81.22 197 P P **18 53 32.5 -1.9**
VNA3 Neumayer Olymp 81.23 196 P P 18 53 46.9 +12
BRVK Borovoye 81.78 335*c i*P **P** **18 53 37.4 -0.1**
BRVK pmax pmax
comp=Z,20nm,1.2s
BRVK Borovoye 81.78 335 *e*P **P** **18 53 37.2 -0.4**
comp=Z,1.6nm,1.3s
BRVK Borovoye 81.78 335 P **P** **18 53 37.6 +0.1**
SNR=7.2
BRVK P **P** **18 53 37.6 +0.1**
SNR=7.2
BRVK Borovoye 81.78 335 P **P** **18 53 37.6 +0.1**
SNR=7.2
PETK Petropavlovsk- 82.04 25 P **P** **18 53 39.5 +0.7**
comp=Z,6.3nm,0.7s,baz=226,slow=4.0,SNR=16
PETK LR LR 19 29 53.0
comp=Z,32nm,22.0s,baz=228,slow=36
ZRNK Zerenda 82.22 335 *e*P **P** **18 53 40.0 +0.2**
ZRNK Zerenda 82.22 335 *e*P **P** **18 53 40.0 +0.2**
YAK Yakutsk 82.62 8 *e*P **P** **18 53 41.8 +0.1**
YAK pmax pmax
comp=Z,49nm,1.0s
YAK pmax pmax
comp=N,16nm,1.1s
YAK pmax pmax
comp=E,10.0nm,1.5s
YAK Yakutsk 82.62 8 *e*P **P** **18 53 40.8 -0.8**
comp=E,50nm,0.8s
ABKAR Akbulak array 83.75 328 *e*P **P** **18 53 47.9 +0.1**
MA2 Magadan 84.77 18 *i*P **P** **18 53 53.4 +0.6**
AKTO Aktyubinsk 85.46 328 LR LR 19 36 53.5
comp=E,57nm,19.7s,slow=39
GNI Garni 87.61 314 *e*P **P** **18 54 06.5 -1.0**
GNI pmax pmax
comp=Z,60nm,1.0s
GNI Garni 87.61 314 *e*P **P** **18 54 06.5 -1.0**
comp=Z,60nm,1.0s
SEY Seymchan 87.97 17 *i*P **P** **18 54 08.4 0.0**
TBI Tubuai 88.25 114 *e*LR LR 19 22 25.2
comp=Z,703nm,24.5s
SVE Sverdlovsk 88.38 334‖ *e*P **P** **18 54 10.8 +0.3**
SVE pmax pmax
comp=Z,43nm,1.1s
ARU Arti 88.99 333 LR LR 19 36 26.2
comp=Z,134nm,21.5s,baz=120,slow=37
ARU Arti 88.99 333*c i*P **P** **18 54 13.4 0.0**
ARU S **SKSac** **19 04 42.2 -0.7**
ARU SS **SS** **19 10 50.6 -4.4**
ARU pmax pmax
comp=Z,34nm,1.2s
ARU Arti 88.99 333 *e*P **P** **18 54 12.7 -0.7**
comp=Z,36nm,1.3s
PPT2 Papeete2 90.19 109 *e*LR LR 19 23 13.8
comp=Z,548nm,24.2s
PPT Papeete 90.19 109 LR LR 19 31 48.6
comp=Z,187nm,21.8s,baz=287,slow=34
KBZ Khabaz 90.50 317 P **P** **18 54 21.1 +0.4**
comp=Z,3.5nm,0.9s,baz=107,slow=3.3,SNR=7.9
KBZ LR LR 19 35 16.0
comp=Z,61nm,20.7s,baz=113,slow=36
KIV Kislovodsk 90.74 317 *e*P **P** **18 54 20.4 -1.6**
KIV *e* 18 58 05.8
KIV pmax pmax
comp=Z,2.0nm,1.1s
NRIK Noril'sk 90.94 351 P **P** **18 54 22.6 +0.4**
comp=Z,13nm,0.6s,baz=149,slow=3.7,SNR=21
NRIK LR LR 19 40 16.7
comp=Z,112nm,18.0s,baz=162,slow=39
TIXI Tiksi 91.89 5 *i*P **P** **18 54 26.2 -0.4**
TIXI pmax pmax
comp=Z,9.0nm,1.3s
TIXI Tiksi 91.89 5 *e*P **P** **18 54 26.0 -0.6**
comp=Z,15nm,1.3s
ANN Anapa 94.51 316 *e*P **P** **18 54 38.5 -0.7**
ANN *e**PP **pP** **18 54 41.9 -0.6**
ANN *e* 18 58 25.9
ANN *e*S **SKSac** **19 05 13.5 -1.1**
ANN *e*SSS SSS 19 15 58.2
ANN pmax pmax
comp=Z,14nm,1.5s
BRTR Keskin Array B 95.17 310 P **P** **18 54 41.7 -1.0**
comp=Z,0.5nm,0.7s,baz=134,slow=33,SNR=4.0
BRTR LR LR 19 38 46.0
comp=Z,136nm,19.4s,baz=113,slow=36
BRTR Keskin Array B 95.17 310*ce*P **P** **18 54 42.2 -0.5**
BILL Bilibino 95.63 17 *e*P **P** **18 54 43.8 -0.1**
BILL *e* 18 58 40.8
BILL pmax pmax
comp=Z,2.0nm,1.0s
OBN Obninsk 99.00 325 LR LR 19 42 50.5
comp=Z,128nm,20.0s,baz=89,slow=37
TAOE Nuku Hiva Isla 101.93 104 *e*LR LR 19 28 44.6
comp=Z,348nm,25.0s
TORD Torodi Ar. Bea 114.85 276 PKP PKPdf 18 59 59.5 -1.1
comp=Z,0.5nm,0.6s,baz=119,slow=1.4,SNR=4.8
YKA Yellowknife Ar 126.16 25 PKP **PKPdf** **19 00 20.6 -0.2**
comp=Z,3.5nm,0.7s,baz=298,slow=1.9,SNR=16
DUG Dugway, Tooele 135.50 52 *e*PKIKP **PKPdf** **19 00 38.0 -1.5**
DUG Dugway, Tooele 135.50 52 *e*PKPdf **PKPdf** **19 00 38.0 -1.5**
REDW Red Top Meadow 136.08 48 *e*PKPdf **PKPdf** **19 00 41.2 +0.6**
PDAR Pinedale Array 137.17 48 PKP **PKPdf** **19 00 40.9 -1.8**
comp=Z,1.3nm,1.0s,baz=188,slow=1.0,SNR=5.0
ANMO Albuquerque 141.58 59 *i*PKIKP **PKPdf** **19 00 45.9 -5.0**
LPAZ La Paz 144.01 177 PKP PKPbc 19 00 54.8 +0.8
comp=Z,3.2nm,0.8s,baz=118,slow=3.1,SNR=5.9
D34A Park Rapids 144.08 34 P PKPbc 19 00 52.7 +0.1
baz=309
E34A Wadena 144.45 35 P PKPbc 19 00 54.0 +0.2
baz=309
K31A O'Neill 144.50 43 P PKPbc 19 00 54.8 +0.6
baz=300
D35A Remer 144.68 33 P **PKPdf** **19 00 55.2 -0.5**
baz=311
MSTX Muleshoe 144.77 59 *e*PKPdf **PKPdf** **19 00 56.3 -0.1**
C36A Pine Crest Far 144.84 32 P PKPbc 19 00 55.0 0.0
baz=313
TXAR Lajitas Array 144.86 67 PKP **PKPdf** **19 00 56.5 -0.1**
comp=Z,6.9nm,1.1s,baz=267,slow=2.3,SNR=40
G34A Benson 144.97 37 P PKPbc 19 00 55.8 +0.3
baz=307
M31A Lambtecht Ranc 144.97 45 P PKPbc 19 00 55.7 0.0
baz=298
I33A Coleman 144.97 40 P **PKPdf** **19 00 56.1 -0.2**
baz=304
K32A Verdigre 144.99 42 P PKPbc 19 00 55.8 +0.1
baz=300
D36A Goodland 145.07 33 P **PKPab** **19 00 55.8 0.0**
baz=312
SCHQ Schefferville 145.11 1 PKPbc **PKPdf** **19 00 56.2 0.0**
comp=Z,20nm,0.6s,baz=18,slow=3.4,SNR=20
C37A Embarrass 145.18 31 P **PKPab** **19 00 56.3 +0.2**
baz=314
F35A Swanville 145.18 35 P **PKPdf** **19 00 56.6 0.0**
baz=309
H34A Spellman Lake, 145.22 38 P **PKPdf** **19 00 56.8 +0.1**
baz=306
N31A Bailey Ranch, 145.22 46 P **PKPdf** **19 00 57.0 +0.1**
baz=297
ECSD EROS Data Cent 145.26 40 P **PKPdf** **19 00 57.1 +0.3**
baz=304
ECSD EROS Data Cent 145.26 40 *e*PKPdf **PKPbc** **19 00 56.4 -0.1**
J33A Davis 145.27 41 P **PKPdf** **19 00 57.2 +0.4**
baz=303
EYMN Ely 145.36 30 P **PKPdf** **19 00 57.4 +0.5**
baz=315
AMTX Amarillo 145.40 57 P **PKPab** **19 00 59.2 +1.6**
baz=286
AMTX Amarillo 145.40 57 *e*PKPbc **PKPab** **19 00 58.6 +1.1**
D37A Cotton 145.46 32 P **PKPab** **19 00 57.3 +0.1**
baz=313
E36A McGregor 145.46 34 P **PKPab** **19 00 57.3 0.0**
baz=311
BGNE Belgrade 145.49 45 P **PKPbc** **19 00 57.4 0.0**
baz=299
BGNE Belgrade 145.49 45 *e*PKPdf **PKPab** **19 00 57.6 0.0**
CBKS Cedar Bluff 145.54 50 P **PKPab** **19 00 58.4 +0.6**
baz=294
CBKS Cedar Bluff 145.54 50 *e*PKIKP **PKPdf** **19 00 57.3 -0.2**
CBKS Cedar Bluff 145.54 50 *e*PKPdf **PKPdf** **19 00 57.3 -0.2**
I34A Hadley 145.54 39 P **PKPab** **19 00 58.2 +0.6**
baz=305
K33A Hardington 145.63 42 P **PKPab** **19 00 58.3 +0.3**
baz=302
N32A Stuiken Farm, 145.69 46 P **PKPab** **19 00 58.8 +0.4**
baz=298
F36A Milaca 145.75 35 P **PKPab** **19 00 58.7 +0.3**
baz=310
H35A Sunnyside Ranc 145.75 37 P **PKPab** **19 00 58.7 +0.3**
baz=307
J34A George 145.91 40 P **PKPab** **19 00 58.8 -0.2**
baz=304
O32A Brockman Farm, 145.94 46 P **PKPbc** **19 00 59.0 +0.2**
baz=297
P32A Huiting Farm, 146.00 48 P **PKPab** **19 00 59.6 0.0**
baz=296
G36A St. Michael 146.02 36 P **PKPab** **19 00 59.8 +0.4**
baz=309
M33A Taylor Creek F 146.03 44 P **PKPbc** **19 00 59.0 -0.1**
baz=300
K34A Le Mars 146.15 41 P **PKPbc** **19 00 59.5 +0.2**
baz=303
I35A Creekview Farm 146.16 39 P **PKPab** **19 00 59.7 -0.3**
baz=306
Q32A Meitler Ranch, 146.30 49 P **PKPab** **19 01 00.7 0.0**
baz=295
J35A Milford 146.31 39 P **PKPbc** **19 00 59.8 0.0**
baz=305
H36A Jessenland, He 146.34 37 P **PKPab** **19 01 00.9 +0.3**
baz=308
R32A Long Quarter, 146.43 50 P **PKPab** **19 01 01.3 +0.1**
baz=294
O33A Hebron 146.50 46 P **PKPbc** **19 01 00.7 +0.3**
baz=298
I36A Fitzsimmons Fa 146.63 38 P **PKPab** **19 01 01.3 -0.4**
baz=307
K35A Storm Lake 146.66 40 P **PKPbc** **19 01 01.1 +0.3**
baz=304
P33A Williams Farm, 146.71 47 P **PKPab** **19 01 01.8 -0.5**
baz=297
Q33A Connelly Farm, 146.81 48 P **PKPab** **19 01 02.4 -0.3**
baz=296
J36A Seneca 1, Swea 146.85 39 P **PKPbc** **19 01 01.7 +0.4**
baz=306
I37A Lemond, Waseca 146.98 37 P **PKPab** **19 01 02.5 -0.7**
baz=308
R33A Olander Ranch, 147.00 49 P **PKPab** **19 01 03.4 0.0**
baz=295
U32A Winter Ranch, 147.00 53 P **PKPab** **19 01 03.5 0.0**
baz=291
O34A Beatrice 147.05 45 P **PKPbc** **19 01 02.3 +0.3**
baz=299
K36A Gilmore City 147.18 40 P **PKPbc** **19 01 03.0 +0.7**
baz=305
V32A Arapaho 147.19 54 P **PKPab** **19 01 04.6 +0.3**
baz=290
P34A Walnut Farm, R 147.26 47 P **PKPbc** **19 01 03.2 +0.6**
baz=298
J37A Redenius Farm, 147.32 38 P **PKPbc** **19 01 03.1 +0.5**
baz=307
L36A Harm Buss Farm 147.35 41 P **PKPbc** **19 01 03.2 +0.4**
baz=304

Q34A	**Chapman** baz=297	**147.47**	**48**	P		**PKPab**	**19 01 04.3 -0.9**
R34A	**Isabella, Hill** baz=296	**147.53**	**49**	P		**PKPbc**	**19 01 04.1 +0.7**
I38A	**Scanlan Farm,** baz=310	**147.56**	**36**	P		**PKPbc**	**19 01 03.3 0.0**
K37A	**Belmond** baz=306	**147.59**	**39**	P		**PKPbc**	**19 01 03.5 0.0**
KSU1	**Kansas State U** baz=298	**147.61**	**47**	P		**PKPbc**	**19 01 04.4 +0.8**
KSU1	**Kansas State U**	**147.61**	**47**	*e*PKPbc		**PKPbc**	**19 01 04.3 +0.6**
ABTX	**Abilene, Hawle** baz=285	**147.64**	**60**	P		**PKPab**	**19 01 05.1 -1.0**
ABTX	**Abilene, Hawle**	**147.64**	**60**	*e*PKPab		**PKPab**	**19 01 05.1 -1.0**
N36A	**Muff Farm, Cla** baz=302	**147.87**	**43**	P		**PKPbc**	**19 01 04.5 +0.3**
L37A	**Phoenix Point,** baz=305	**147.90**	**40**	P		**PKPbc**	**19 01 04.6 +0.3**
JCT	**Junction City** baz=281	**147.99**	**64**	P		**PKPbc**	**19 01 06.0 +1.1**
JCT	**Junction City**	**147.99**	**64**	*e*PKIKP		**PKPdf**	**19 01 01.0 -0.9**
JCT	**Junction City**	**147.99**	**64**	*e*PKPdf		**PKPdf**	**19 01 01.0 -0.9**
U34A	**Anderson Ranch** baz=293	**148.07**	**52**	P		**PKPab**	**19 01 06.4 -1.3**
M37A	**Trindle Farm,** baz=304	**148.12**	**42**	P		**PKPbc**	**19 01 05.5 +0.6**
Q35A	**Mercer Eighty,** baz=298	**148.12**	**47**	P		**PKPbc**	**19 01 05.6 +0.6**
Z33A	**Whitaker Ranch** baz=287	**148.18**	**59**	P		**PKPab**	**19 01 06.9 -1.3**
O36A	**Bolckow** baz=301	**148.22**	**44**	P		**PKPbc**	**19 01 05.5 +0.3**
133A	**Hamilton Ranch** baz=285	**148.24**	**60**	P		**PKPbc**	**19 01 06.6 +1.1**
R35A	**Emporia Munici** baz=297	**148.25**	**48**	P		**PKPbc**	**19 01 06.4 +1.0**
V34A	**Guthrie** baz=292	**148.31**	**53**	P		**PKPbc**	**19 01 06.8 +1.2**
P36A	**Good Intent, A** baz=300	**148.32**	**45**	P		**PKPbc**	**19 01 06.1 +0.6**
L38A	**Oak Wood Farm,** baz=306	**148.37**	**40**	P		**PKPbc**	**19 01 05.8 +0.3**
N37A	**Lee Faris, Mou** baz=303	**148.38**	**43**	P		**PKPbc**	**19 01 05.9 +0.3**
S35A	**Otter Creek Ra** baz=296	**148.45**	**49**	P		**PKPbc**	**19 01 06.6 +0.7**
Q36A	**Arnold C. Orve** baz=299	**148.47**	**47**	P		**PKPbc**	**19 01 06.1 +0.2**
333A	**Richland Sprin** baz=283	**148.50**	**62**	P		**PKPbc**	**19 01 07.0 +0.8**
433A	**Art** baz=282	**148.54**	**63**	P		**PKPbc**	**19 01 07.1 +0.7**
T35A	**Sooner Cattle** baz=294	**148.64**	**51**	P		**PKPbc**	**19 01 07.3 +0.9**
M38A	**Pleasantville** baz=305	**148.65**	**41**	P		**PKPbc**	**19 01 06.5 +0.2**
U35A	**Pawnee** baz=293	**148.70**	**52**	P		**PKPbc**	**19 01 07.6 +1.0**
O37A	**Wolven Farm, M** baz=302	**148.74**	**44**	P		**PKPbc**	**19 01 06.8 +0.3**
R36A	**Gordon, Harris** baz=298	**148.74**	**48**	P		**PKPbc**	**19 01 07.2 +0.6**
Y34A	**Reagan Ranch,** baz=289	**148.78**	**57**	P		**PKPbc**	**19 01 08.3 +1.5**
P37A	**Lathrop** baz=301	**148.91**	**45**	P		**PKPbc**	**19 01 06.9 -0.1**
S36A	**Lake Cedric, C** baz=297	**148.95**	**49**	P		**PKPbc**	**19 01 07.9 +0.8**
234A	**Clairette** baz=285	**149.03**	**61**	P		**PKPbc**	**19 01 08.5 +1.0**
T36A	**Boggs Farm, Ca** baz=295	**149.04**	**50**	P		**PKPbc**	**19 01 08.1 +0.7**
W35A	**Tecumseh** baz=291	**149.05**	**54**	P		**PKPbc**	**19 01 08.6 +1.1**
Q37A	**Longview Farm,** baz=300	**149.20**	**46**	P		**PKPbc**	**19 01 07.2 -0.6**
R37A	**Teagarden Farm** baz=299	**149.21**	**47**	P		**PKPbc**	**19 01 07.8 0.0**
434A	**Burnet** baz=283	**149.21**	**63**	P		**PKPbc**	**19 01 08.4 +0.3**
X35A	**Drake** baz=290	**149.24**	**56**	P		**PKPbc**	**19 01 08.5 +0.5**
Y35A	**Marietta** baz=289	**149.36**	**57**	P		**PKPbc**	**19 01 08.9 +0.6**
N39A	**Derby Farms, D** baz=305	**149.39**	**41**	P		**PKPbc**	**19 01 08.3 +0.2**
P38A	**Dawn** baz=302	**149.43**	**44**	P		**PKPbc**	**19 01 08.7 +0.4**
JFWS	**Jewell Farm**	**149.45**	**36**	*e*PKPdf		**PKPdf**	**19 01 03.6 -0.2**
S37A	**Fort Scott** baz=298	**149.47**	**48**	P		**PKPbc**	**19 01 08.8 +0.3**
V36A	**Jenks** baz=293	**149.52**	**52**	P		**PKPbc**	**19 01 09.6 +1.0**
TUL1	**Leonard** baz=294	**149.58**	**52**	P		**PKPbc**	**19 01 09.6 +0.8**
X36A	**Centrahoma** baz=291	**149.66**	**55**	P		**PKPbc**	**19 01 09.9 +0.9**
Q38A	**Cooks Store, C** baz=301	**149.72**	**45**	P		**PKPbc**	**19 01 08.8 -0.2**
O39A	**Kirksville** baz=304	**149.72**	**42**	P		**PKPbc**	**19 01 09.1 +0.2**
U37A	**Salina** baz=295	**149.87**	**51**	P		**PKPbc**	**19 01 10.4 +1.0**
R38A	**Fenwick Farm,** baz=300	**149.91**	**47**	P		**PKPbc**	**19 01 09.5 0.0**
Y36A	**Durant** baz=290	**149.95**	**56**	P		**PKPbc**	**19 01 10.6 +0.9**
V37A	**Hulbert** baz=294	**150.07**	**52**	P		**PKPbc**	**19 01 10.6 +0.6**
835A	**Beeville** baz=279	**150.08**	**68**	P		**PKPbc**	**19 01 09.8 -0.4**
Q39A	**Willow Grove F** baz=302	**150.10**	**45**	P		**PKPbc**	**19 01 10.1 +0.2**
W37B	**Quinton** baz=293	**150.15**	**53**	P		**PKPbc**	**19 01 11.2 +1.0**
S38A	**Stockton** baz=299	**150.18**	**48**	P		**PKPbc**	**19 01 10.5 +0.3**
T38A	**Diamond** baz=297	**150.19**	**49**	P		**PKPbc**	**19 01 10.7 +0.5**
U38A	**Gravette** baz=296	**150.39**	**50**	P		**PKPbc**	**19 01 11.2 +0.4**
R39A	**Chumby, Stover** baz=301	**150.44**	**46**	P		**PKPbc**	**19 01 10.8 0.0**
P40A	**Paris** baz=304	**150.44**	**43**	P		**PKPbc**	**19 01 11.0 +0.3**
S39A	**Bolivar** baz=300	**150.56**	**47**	P		**PKPbc**	**19 01 11.3 +0.2**
V38A	**Canehill** baz=295	**150.62**	**51**	P		**PKPbc**	**19 01 11.7 +0.4**
Q40A	**Laux Farm, Aux** baz=303	**150.72**	**44**	P		**PKPbc**	**19 01 12.1 +0.7**
X38A	**Whitesboro** baz=293	**150.79**	**54**	P		**PKPbc**	**19 01 13.0 +1.2**
T39A	**Clever** baz=298	**150.84**	**48**	P		**PKPbc**	**19 01 12.2 +0.4**
W38A	**Poteau** baz=294	**150.87**	**53**	P		**PKPbc**	**19 01 12.9 +1.0**
237A	**Washetta, Mont** baz=287	**150.94**	**60**	P		**PKPbc**	**19 01 13.8 +1.7**
R40A	**Maddies Statio** baz=302	**150.97**	**45**	P		**PKPbc**	**19 01 12.2 +0.1**
U39A	**Green Forest** baz=297	**151.06**	**50**	P		**PKPbc**	**19 01 12.5 +0.2**
S40A	**Lebanon** baz=300	**151.17**	**47**	P		**PKPbc**	**19 01 12.8 +0.2**
V39A	**Pettigrew** baz=296	**151.19**	**51**	P		**PKPbc**	**19 01 13.0 +0.3**
138A	**Matatall Enter** baz=289	**151.31**	**58**	P		**PKPbc**	**19 01 15.0 +2.0**
W39A	**Magazine** baz=295	**151.36**	**52**	P		**PKPbc**	**19 01 13.7 +0.7**
T40A	**Mansfield** baz=300	**151.38**	**48**	P		**PKPbc**	**19 01 13.3 +0.2**
X39A	**Fountain Ranch** baz=293	**151.40**	**54**	P		**PKPbc**	**19 01 14.6 +1.4**
HDIL	**Hopedale** baz=310	**151.52**	**39**	P		**PKPbc**	**19 01 13.3 +0.1**
U40A	**Yellville** baz=298	**151.53**	**49**	P		**PKPbc**	**19 01 13.7 +0.3**
Y39A	**Lockesburg** baz=292	**151.63**	**55**	P		**PKPbc**	**19 01 14.6 +0.9**
MIAR	**Mount Ida** baz=294	**151.79**	**53**	P		**PKPbc**	**19 01 15.3 +1.3**
V40A	**Witts Springs** baz=297	**151.80**	**50**	P		**PKPbc**	**19 01 14.4 +0.3**
W40A	**Ferguson Farm,** baz=296	**151.89**	**52**	P		**PKPbc**	**19 01 14.8 +0.5**

GUC 17 18:42:21.9±0.4, 34°92S×71°22W, h110km±6km, ML3.8, 1D, Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CHPI	**Pichilemu**	**0.83**	**309**	*i* P	Pn	18 42 41.0	-0.5
CHPI				*i* S	Sn	18 42 55.5	-0.7
ANTU	**Antumapu**	**1.43**	**20**	*i* P	Pn	18 42 47.9	-0.1
ANTU				*i* S	Sn	18 43 07.5	-0.2
ANTU				IAML		18 43 08.7	
	comp=N,1μm,0.3s						
CLCH	**Cerro Calan**	**1.62**	**21**	*i* P	Pn	18 42 50.1	-0.2
CLCH				*i* S	Sn	18 43 11.8	-0.1
CLCH				IAML		18 43 13.5	
	comp=E,1μm,0.3s						
PEL	**Peldehue**	**1.83**	**14**	⇓*i* P	Pn	18 42 52.9	+0.1
PEL				*i* S	Sn	18 43 15.9	-0.5
PEL				IAML		18 43 22.0	
	comp=E,716nm,0.4s						
ROCH	**El Roble**	**1.95**	**5**	*i* P	Pn	18 42 54.6	+0.1
ROCH				*i* S	Sn	18 43 19.9	+0.6
ROCH				IAML		18 43 23.5	
	comp=N,1μm,0.3s						

*ISCJB **17** 18:45:31.0±1.1, 32°18N±0°05×115°1W±0°1, h24km±8km, Error ellipse: s-maj=19.3km s-min=5.4km az=159.2*
*ECX **17** 18:45:32.5±0.5, 32°12N×115°23W, h7km, MD2.5, ML2.7*
*MEX **17** 18:45:33.7±0.8, 32°21N×115°11W, h11km±125km, MD3.6*

ISC 17 18:45:30.4±1.3, 32°20N±0°04×115°10W±0°08, h28km±10km, n13, σ0°47/21, 3C-3D, California-Baja California border region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MBIG	**Mexicali**	**0.23**	**338**	⇓*e*P	**Pn**	**18 45 37.9**	**0.0**
MBIG	**Mexicali**	**0.23**	**338**	*e*P	**Pn**	**18 45 38.1**	**+0.2**
MBIG				*e*S	**Sb**	**18 45 40.1**	**-0.9**
CPBX	**Cerro Prieto**	**0.28**	**321**	⇓*e*P	**Pb**	**18 45 37.9**	**+0.5**
CPBX				⇑*e*P	**Pn**	**18 45 38.1**	**-0.6**
CPBX				*e*S	**Sb**	**18 45 42.7**	**+0.5**
CPBX				AML	AML	18 45 44.2	
	comp=E,2μm,0.2s						
CPBX				⇑*e*		18 45 44.2	
CPBX				⇑*e*		18 45 46.3	
CPBX				AML	AML	18 45 46.3	
	comp=E,3μm,0.3s						
ECBX	**El Chinero**	**0.72**	**177**	⇓*e*P	**Pb**	**18 45 44.1**	**-0.3**
ECBX				*e*S	**Sb**	**18 45 53.6**	**-0.5**
WESC	**Westside Schoo**	**0.78**	**316**	*e*P	**Pn**	**18 45 46.0**	**+0.5**
RMX	**La Rumorosa**	**0.92**	**296**	*e*P	**Pn**	**18 45 47.4**	**-0.3**
SPIG	**San Pedro Mart**	**1.19**	**195**	*e*P	**Pn**	**18 45 51.5**	**0.0**
SPIG	**San Pedro Mart**	**1.19**	**195**	*e*P	**Pb**	**18 45 53.0**	**+0.5**
SPIG				*e*S	**Sb**	**18 46 07.7**	**0.0**
SPX	**San Pedro Mart**	**1.19**	**195**	*e*P	**Pn**	**18 45 51.6**	**+0.1**
CBX	**Cerro Bola**	**1.33**	**275**	*e*P	**Pn**	**18 45 53.7**	**+0.4**
CBX				*e*S	**Sn**	**18 46 10.5**	**+0.3**
CBX	**Cerro Bola**	**1.33**	**275**	*e*P	**Pn**	**18 45 53.5**	**+0.2**
CBX				*i* S	**Sb**	**18 46 11.4**	**-0.2**
TJIG	**Tijuana**	**1.36**	**280**	*e*P	**Pb**	**18 45 55.1**	**0.0**
TJIG				*e*S	**Sb**	**18 46 11.3**	**-0.8**
BAR	**Barrett**	**1.42**	**290**	*e*P	**Pb**	**18 45 55.9**	**-0.3**

*JMA **17** 19:06:58.9±0.2, 39°51N×143°86E, h8km, M4.3*
*ISCJB **17** 19:07:00.8±0.7, 39°47N±0°07×143°74E±0°08, h11km, mb3.6/10, Error ellipse: s-maj=11.4km s-min=7.5km az=153.2*
*IDC **17** 19:07:01.0±1.0, 39°44N×143°64E, h0km, mb3.6/10, mb1 3.8/13, mb1mx3.6/49, mbtmp3.7/13, ML3.2/3, Error ellipse: s-maj=23.5km s-min=20.1km az=120.0*

ISC 17 19:07:02.8±0.8, 39°49N±0°08×143°62E±0°08, h11km, n27, σ0°68/26, mb3.7/10, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MIYJ	**Miyakonagasawa**	**1.39**	**274**	P	**Pn**	**19 07 27.4**	**-0.8**
MIYJ				*e*S	**Sg**	**19 07 47.7**	**+0.1**
JTH	**Tanohata**	**1.43**	**289**	P	**Pn**	**19 07 27.6**	**-1.0**
OFUJ	**Ofunato**	**1.56**	**256**	P	**Pn**	**19 07 29.9**	**-0.7**
JOM	**Ohasama**	**1.80**	**270**	P	**Pn**	**19 07 33.6**	**-0.2**
JMK	**Ichinoseki**	**1.94**	**255**	P	**Pn**	**19 07 35.3**	**-0.4**
JRG	**Rokugo**	**2.31**	**269**	P	**Pn**	**19 07 41.2**	**+0.4**
JTM	**Tenmabayashi**	**2.34**	**304**	P	**Pn**	**19 07 41.0**	**-0.3**
JAH	**Hinai**	**2.40**	**288**	P	**Pn**	**19 07 42.2**	**+0.2**
JOU	**Okura**	**2.56**	**245**	P	**Pn**	**19 07 44.1**	**-0.2**
JYK	**Kaneyama**	**2.59**	**258**	P	**Pn**	**19 07 44.9**	**+0.2**
ASAJ	**Asahikawa** 1.1nm,0.3s,baz=196,slow=17,SNR=23	**4.69**	**351**	Pn	**Pn**	**19 08 12.5**	**-0.9**
MJAR	**Matsushiro Arr** 3.2nm,0.3s,baz=42,slow=12,SNR=32	**5.18**	**237**	Pn	**Pn**	**19 08 21.0**	**+0.6**
MAT	**Matsushiro**	**5.19**	**237**	P	**Pn**	**19 08 21.6**	**+1.2**
MAT				*e*S	Sb	19 09 29.2	-6.6
USRK	**Ussuriysk Ar.** 0.3nm,0.3s,baz=97,slow=12,SNR=6.5	**9.87**	**302**	Pn	**Pn**	**19 09 26.3**	**+1.8**
SEY	**Seymchan** 1.2nm,0.5s,baz=140,slow=10.0,SNR=3.8	**24.06**	**10**	P	**P**	**19 12 18.3**	**+0.5**
SONM	**Songino Array** 0.5nm,0.5s,baz=106,slow=9.4,SNR=8.0	**27.97**	**300**	P	**P**	**19 12 53.3**	**-0.1**
H11N2	**WAKE ISLAND Hy** baz=318,slow=75,SNR=26	**28.09**	**128**	T	T	19 42 20.5	
H11N1	**WAKE ISLAND Hy** baz=318,slow=75,SNR=16	**28.10**	**128**	T	T	19 42 26.7	
H11N3	**WAKE ISLAND Hy** baz=318,slow=75,SNR=21	**28.11**	**128**	T	T	19 42 17.6	
ZALV	**Zalesovo Beam** 1.7nm,0.5s,baz=93,slow=8.1,SNR=7.5	**41.59**	**310**	P	**P**	**19 14 50.2**	**-0.3**
ZALV				PcP	**PcP**	**19 16 47.1**	**-0.3**
	0.6nm,0.5s,baz=87,slow=3.0,SNR=3.5						
CMAR	**Chiang Mai Arr** 0.2nm,0.6s,baz=40,slow=7.5,SNR=3.6	**43.81**	**255**	P	**P**	**19 15 08.9**	**0.0**
MKAR	**Makanchi Array** 0.7nm,0.5s,baz=82,slow=9.1,SNR=11	**44.33**	**300**	P	**P**	**19 15 12.9**	**+0.2**
BVAR	**Borovoye Array** 1.3nm,0.7s,baz=79,slow=7.7,SNR=11	**50.23**	**311**	P	**P**	**19 15 58.7**	**+0.1**
WRA	**Warramunga Arr** 0.3nm,0.6s,baz=7.5,slow=6.8,SNR=4.4	**59.75**	**190**	P	**P**	**19 17 06.7**	**-1.0**
YKA	**Yellowknife Ar** 0.1nm,0.5s,baz=302,slow=6.7,SNR=4.3	**60.81**	**31**	P	**P**	**19 17 15.3**	**+0.7**
FINES	**FINESS Array B** 2.2nm,1.0s,baz=214,slow=11,SNR=3.9	**67.45**	**333**	P	**P**	**19 17 58.0**	**-0.1**
TXAR	**Lajitas Array** 0.1nm,0.6s,baz=329,slow=3.4,SNR=2.2	**87.26**	**54**	P	**P**	**19 19 50.2**	**+0.4**

IDC 17 19:17:58.2±65.0, 12°83S×166°80W, h0km, mb3.9/3, mb1 4.1/3, mb1mx3.6/29, mbtmp3.9/3, Error ellipse: s-maj=1345.0km s-min=206.0km az=79.0, Samoa Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
STKA	**Stephens Creek** 0.5nm,0.5s,baz=70,slow=12,SNR=6.5	**50.86**	**239**	P	P	19 27 00.8	-0.3
WRA	**Warramunga Arr** 0.3nm,0.6s,baz=84,slow=5.8,SNR=9.2	**56.68**	**254**	P	P	19 27 43.6	-0.4
ASAR	**Alice Springs** 3.2nm,0.4s,baz=88,slow=7.8,SNR=198	**57.00**	**250**	P	P	19 27 46.6	+0.3

*ISCJB **17** 19:48:30.4±0.4, 42°77N±0°05×143°24E±0°06, h113km, mb3.5/7, Error ellipse: s-maj=6.9km s-min=6.3km az=146.8*
*JMA **17** 19:48:31.8±0.1, 42°78N×143°18E, h103km±1km, M3.0*
JMA Felt I J1.
*IDC **17** 19:48:33.0±0.9, 45°38N×142°58E, h0km, mb3.5/7, mb1 3.7/7, mb1mx3.4/44, mbtmp3.5/7, Error ellipse: s-maj=23.5km s-min=17.0km az=94.0*

ISC 17 19:48:31.1±0.8, 42°76N±0°05×143°23E±0°05, h113km, n22, σ0°50/31, mb3.5/7, Hokkaido region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JCH	**Churui**	**0.17**	**146**	P	**Pn**	**19 48 46.4**	**-0.4**
JCH				*e*S	**Sn**	**19 48 57.1**	**-1.5**
JOB	**Onbets**	**0.47**	**72**	P	**Pn**	**19 48 48.3**	**+0.3**
JOB				*e*S	**Sn**	**19 49 00.8**	**0.0**
JNBK	**Urakawa-nobuka**	**0.59**	**217**	P	**Pn**	**19 48 49.3**	**+0.4**
JNBK				*e*S	**Sn**	**19 49 02.4**	**+0.1**
JFR	**Furan**	**0.62**	**311**	P	**Pn**	**19 48 48.4**	**-0.7**
JBT2	**Biratori 2**	**0.64**	**272**	P	**Pn**	**19 48 48.9**	**-0.3**
JBT2				*e*S	**Sn**	**19 49 01.9**	**-1.0**
JAR	**Ashorobuto**	**0.67**	**36**	P	**Pn**	**19 48 49.4**	**-0.1**
JEM	**Erimo**	**0.74**	**184**	P	**Pn**	**19 48 50.5**	**+0.4**
JAB	**Ashibetsu**	**1.05**	**316**	P	**Pn**	**19 48 52.9**	**-0.1**
JAB				*e*S	**Sn**	**19 49 09.4**	**-0.2**
JAK	**Akkeshi**	**1.10**	**77**	P	**Pn**	**19 48 53.5**	**-0.1**
JAK				*e*S	**Sn**	**19 49 09.9**	**-0.7**
JKK2	**Kamakawa 2**	**1.17**	**343**	P	**Pn**	**19 48 54.2**	**-0.1**
JMP	**Maruseppu**	**1.25**	**4**	P	**Pn**	**19 48 55.4**	**+0.1**
JMP				*e*S	**Sn**	**19 49 13.5**	**-0.1**
JTKR	**Abashiri--Toko**	**1.31**	**22**	P	**Pn**	**19 48 55.7**	**-0.1**
JTKR				*e*S	**Sn**	**19 49 13.9**	**-0.7**
JEW	**Eniwo**	**1.31**	**274**	P	**Pn**	**19 48 55.7**	**-0.2**
ASAJ	**Asahikawa** 12nm,0.3s,baz=188,slow=15,SNR=188	**1.43**	**341**	Pn	**Pn**	**19 48 57.8**	**+0.5**
ASAJ				Sn	**Sn**	**19 49 17.1**	**-0.1**
	4.5nm,0.3s,baz=56,slow=32,SNR=8.7						
JHR	**Hokuryu**	**1.48**	**312**	P	**Pn**	**19 48 57.9**	**+0.1**
SONM	**Songino Array** 0.6nm,0.8s,baz=75,slow=7.8,SNR=6.2	**26.23**	**294**	P	**P**	**19 53 56.1**	**+0.6**
ZALV	**Zalesovo Beam** 0.4nm,0.4s,baz=91,slow=11,SNR=3.0	**39.32**	**307**	P	**P**	**19 55 49.1**	**+0.3**
MKAR	**Makanchi Array** 0.2nm,0.5s,baz=81,slow=12,SNR=4.7	**42.50**	**297**	P	**P**	**19 56 15.5**	**+0.4**
ILAR	**Eielson Array** 0.5nm,0.5s,baz=250,slow=5.3,SNR=7.1	**43.97**	**35**	P	**P**	**19 56 26.9**	**+0.3**
INK	**Inuvik** 0.5nm,0.3s,baz=264,slow=5.6,SNR=5.3	**48.69**	**29**	P	**P**	**19 57 03.4**	**0.0**
YKA	**Yellowknife Ar** 0.1nm,0.4s,baz=305,slow=7.0,SNR=3.2	**58.19**	**32**	P	**P**	**19 58 13.1**	**+0.3**
FINES	**FINESS Array B** 0.8nm,0.5s,baz=44,slow=6.4,SNR=12	**64.42**	**332**	P	**P**	**19 58 54.0**	**-0.8**

IDC 17 20:00:36.5±3.1, 32°86S×178°32W, h0km, mb3.6/2, mb1 3.9/3, mb1mx3.6/32, mbtmp3.7/3, ML3.6/1, Error ellipse: s-maj=74.3km s-min=46.4km az=122.0, South of Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
URZ	**Urewera** 1.2nm,0.3s,baz=342,slow=20,SNR=3.1	**6.55**	**213**	Pn	Pn	20 02 13.5	-0.5
URZ				Sn	Sn	20 03 23.8	-5.6
	0.6nm,0.3s,baz=313,slow=18,SNR=4.3						
ASAR	**Alice Springs** 0.5nm,0.8s,baz=114,slow=7.9,SNR=5.2	**42.76**	**270**	P	P	20 08 35.9	0.0
WRA	**Warramunga Arr** 0.4nm,0.3s,baz=114,slow=7.6,SNR=13	**43.97**	**275**	P	P	20 08 45.5	-0.1
FINES	**FINESS Array B** 0.8nm,0.7s,baz=29,slow=3.5,SNR=5.0	**147.34**	**338**	PKPbc	PKPbc	20 20 20.5	-0.7

*PRU **17** 20:03:27.1, 43°97N×18°44E, h16km*
*CSEM **17** 20:03:28.2±0.1, 44°14N×18°12E, h2km, ML2.5, Error ellipse: s-maj=3.0km s-min=2.2km az=53.0*
*BEO **17** 20:03:28.9±0.3, 44°15N×18°02E, h4km±2km, M2.5/1*
*VIE **17** 20:03:32.5±0.9, 44°41N×18°05E, h8km, mb2.6/5, ml2.4/5, Error ellipse: s-maj=13.0km s-min=7.4km az=60.0*

ISC 17 20:03:27.7±1.1, 44°15N±0°02×18°10E±0°02, h4km±10km, n65, σ1°06/112, 7C-1D, Northwestern Balkan Peninsula

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
DOB	**Doboj**	**0.59**	**0**	*e*Pg	**Pg**	**20 03 38.9**	**-0.1**
DOB				*e*Sg	**Sg**	**20 03 47.6**	**+0.9**
HAPS	**Han Pijesak,Bl**	**0.62**	**95**	*e*Pg	**Pg**	**20 03 38.8**	**-0.8**
HAPS				*e*Sg	**Sg**	**20 03 48.0**	**+0.3**
BLY	**Banja Luka**	**0.89**	**313**	*e*Pg	**Pb**	**20 03 45.5**	**-0.3**
BLY	**Banja Luka**	**0.89**	**313**	*e*Pg	**Pb**	**20 03 45.5**	**-0.3**
BLY				*e*Sg	**Sn**	**20 03 58.5**	**-2.0**
BBLS	**Lazići**	**0.99**	**106**	*e*Pg	**Pg**	**20 03 46.8**	**+0.2**
BBLS				*e*Sg	**Sn**	**20 04 02.4**	**-0.5**
BBLS	**Lazići**	**0.99**	**106**	*e*Pg	**Pg**	**20 03 46.8**	**+0.2**
BBLS				*e*Sg	**Sg**	**20 03 58.8**	**-0.6**
BLJ	**Bijeljina**	**1.05**	**52**	*e*Pg	**Pg**	**20 03 46.7**	**-1.3**
BLJ				*e*Sg	**Sg**	**20 04 00.2**	**-1.4**
TEKS	**Tekeris**	**1.10**	**68**	*e*Pg	**Pn**	**20 03 49.3**	**-0.8**
TEKS				*e*Sg	**Sn**	**20 04 06.5**	**+0.7**
TEKS	**Tekeris**	**1.10**	**68**	*e*Pg	**Pn**	**20 03 49.3**	**-0.8**
TEKS				*e*Sg	**Sb**	**20 04 14.1**	**-0.2**
UPM	**Unac-Piva**	**1.11**	**148**	*e*Pg	**Pg**	**20 03 48.0**	**-1.0**
UPM				*e*Sg	**Sg**	**20 04 02.9**	**-0.5**
BRY	**Bratogost**	**1.28**	**165**	*e*Pg	**Pn**	**20 03 51.4**	**-1.2**
BRY				*e*Sg	**Sb**	**20 04 08.5**	**-1.0**
STON	**Ston**	**1.30**	**193**	*e*Pg	**Pb**	**20 03 52.6**	**-0.2**
STON				Sg	**Sg**	**20 04 09.8**	**+0.2**
STON	**Ston**	**1.30**	**193**	*e*Pn	**Pg**	**20 03 52.8**	**+0.1**
STON				*e*Sn	**Sg**	**20 04 12.0**	**+2.4**
STON	**Ston**	**1.30**	**193**	*e*Pg	**Pb**	**20 03 52.4**	**-0.4**
STON	**Ston**	**1.30**	**193**	*e*Pn	**Pg**	**20 03 52.8**	**+0.1**
STON				*e*Sg	**Sg**	**20 04 10.1**	**+0.5**
STON				*e*Sn	**Sg**	**20 04 12.0**	**+2.4**
DIVS	**Divibare**	**1.37**	**91**	*e*Pg	**Pn**	**20 03 53.3**	**-0.4**
DIVS				*e*Sg	**Sg**	**20 04 13.7**	**+2.1**
DIVS	**Divibare**	**1.37**	**91**	*e*Pg	**Pn**	**20 03 53.3**	**-0.4**
DIVS				*e*Sg	**Sg**	**20 04 13.7**	**+2.1**
TREB	**Trebinje**	**1.44**	**172**	*e*Pg	**Pb**	**20 03 54.5**	**-0.6**
TREB				*e*Sg	**Sg**	**20 04 15.8**	**+1.8**
TREB	**Trebinje**	**1.44**	**172**	*e*Pg	**Pb**	**20 03 54.6**	**-0.6**
TREB				*e*Sg	**Sg**	**20 04 14.6**	**+0.6**
FGSL	**Fruska Gora**	**1.59**	**50**	*e*Pn	**Pg**	**20 03 58.1**	**-0.1**
FGSL				*e*Sn	**Sg**	**20 04 19.8**	**+1.0**
FRGS	**Fruska Gora**	**1.59**	**50**	*e*Pn	**Pg**	**20 03 58.1**	**-0.1**
FRGS				*e*Sn	**Sg**	**20 04 19.8**	**+1.0**
IVAS	**Ivanjica**	**1.59**	**110**	*e*Pn	**Pb**	**20 03 57.6**	**-0.2**
IVAS				*e*Sn	**Sg**	**20 04 20.2**	**+1.3**
IVAS	**Ivanjica**	**1.59**	**110**	*e*Pn	**Pb**	**20 03 57.6**	**-0.2**
IVAS				*e*Sn	**Sg**	**20 04 20.2**	**+1.3**
SJES	**Sjenica**	**1.62**	**122**	*e*Pn	**Pg**	**20 03 59.1**	**+0.2**
SJES				*e*Sn	**Sg**	**20 04 21.6**	**+1.7**
TRUS	**Trudelj**	**1.67**	**86**	*e*Pn	**Pb**	**20 03 58.5**	**-0.5**
TRUS				*e*Sn	**Sg**	**20 04 22.0**	**+0.8**
TRUS	**Trudelj**	**1.67**	**86**	*e*Pn	**Pb**	**20 03 58.5**	**-0.5**
TRUS				*e*Sn	**Sg**	**20 04 22.0**	**+0.8**
UDBI	**Udbina**	**1.72**	**284**	*e*Pn	**Pb**	**20 03 59.2**	**-0.7**
UDBI				Sn	**Sg**	**20 04 23.7**	**+0.8**
UDBI	**Udbina**	**1.72**	**284**	*e*Pn	**Pb**	**20 03 59.2**	**-0.7**
UDBI				Sn	**Sg**	**20 04 23.7**	**+0.8**
HCY	**Herceg Novi

ARSA	**Arzberg**	**3.59**	**331**	*i* Pn		**Pn**	**20 04 24.9**	**+0.6**
	19nm,0.4s										
ARSA				*i* Sn		**Sn**	**20 05 06.5**	**-0.7**
ARSA	**Arzberg**	**3.59**	**331**	Pn		**Pn**	**20 04 24.9**	**+0.6**
	19nm,0.4s										
ARSA				Sn		**Sn**	**20 05 06.5**	**-0.7**
CONA	**Conrad Observa**	**4.09**	**338**	*i* Pn		**Pn**	**20 04 32.0**	**+0.8**
	4.7nm,0.4s										
CONA				*e*Sn		**Sn**	**20 05 19.6**	**0.0**
	5.9nm,0.6s										
CONA	**Conrad Observa**	**4.09**	**338**	Pn		**Pn**	**20 04 32.0**	**+0.8**
	4.7nm,0.4s										
CONA				Sn		**Sn**	**20 05 19.6**	**0.0**
	5.9nm,0.6s										
DRGR		**4.19**	**49**⇑	*i* P		**Pb**	**20 04 43.9**	**+1.8**
MOA	**Molln**	**4.56**	**326**	*i* Pn		**Pn**	**20 04 39.3**	**+1.6**
	2.1nm,0.3s										
MOA				*i* Sn		**Sn**	**20 05 31.5**	**+0.4**
	5.3nm,0.5s										
MOA	**Molln**	**4.56**	**326**	Pn		**Pn**	**20 04 39.3**	**+1.6**
	2.1nm,0.3s										
MOA				Sn		**Sn**	**20 05 31.5**	**+0.4**
	5.3nm,0.5s										
VOIR		**5.12**	**73**	S		Sn	20 05 33.1	-12
MLR	**Muntele Rosu**	**5.74**	**74**⇑	*i* P		**Pb**	**20 05 07.1**	**-1.5**
KHC	**Kasperske Hory**	**5.88**	**330**	*e*PN		**Pn**	**20 04 56.6**	**+0.9**
KHC				*e*SN		**Sn**	**20 06 04.6**	**+1.1**
KHC	**Kasperske Hory**	**5.88**	**330**	Pn		**Pn**	**20 04 56.6**	**+0.9**
KHC				Sn		**Sn**	**20 06 04.6**	**+1.1**
BRG	**Berggiesshubel**	**7.29**	**339**	SG		**Sb**	**20 07 02.7**	**+0.5**
	2.5nm,0.9s										

ISCJB ***17*** *20:06:06.5±0.5, 43°.81N±0°.05×105°.41W±0°.06, h0km, Error ellipse: s-maj=6.7km s-min=6.5km az=32.1*
NEIC ***17*** *20:06:08.0±0.5, 43°.82N×105°.37W, h0km, ML3.1, Error ellipse: s-maj=8.3km s-min=6.4km az=157.0, Suspected Mining explosion.*
NEIC 54 km [33 miles] S of Gillette.
IDC ***17*** *20:06:08.9±1.5, 43°.92N×105°.73W, h0km, mb1 3.7/3, mb1mx3.3/46, mbtmp3.5/3, ML3.4/3, Error ellipse: s-maj=41.1km s-min=9.5km az=148.0*

ISC 17 20:06:06.3±0.8, 43°.80N±0°.05×105°.57W±0°.05, h0km, n25, σ1§50/23, Wyoming

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
RSSD	**Black Hills**	**1.16**	**73**	*e*Pg	**Pg**	**20 06 28.5**	**0.0**
RSSD				*e*Sg	**Sn**	**20 06 46.4**	**-0.2**
PHWY	**Pilot Hill**	**2.50**	**178**	*e*Pn	**Pn**	**20 06 50.3**	**+1.9**
LAO	**LASA Array**	**2.93**	**351**	*e*Pn	**Pb**	**20 06 59.4**	**0.0**
BW06	**Boulder Array**	**3.09**	**252**	*e*Pn	**Pn**	**20 06 58.0**	**+1.5**
PDAR	**Pinedale Array**	**3.09**	**252**	Pn	**Pb**	**20 07 02.1**	**-0.1**
	4.4nm,0.3s,baz=74,slow=15,SNR=61						
PDAR				Lg	Lg	20 07 41.9	
	5.4nm,0.3s,baz=72,slow=35,SNR=3.6						
H17A	**Grant Village**	**3.65**	**281**	*e*Pn	**Pb**	**20 07 11.2**	**-0.7**
LOHW	**Long Hollow**	**3.65**	**269**	*e*Pn	**Pb**	**20 07 09.2**	**-2.6**
FLWY	**Flagg Ranch**	**3.71**	**276**	*e*Pn	**Pb**	**20 07 11.9**	**-1.0**
MOOW	**Moose Ponds**	**3.75**	**271**	*e*Pn	**Pn**	**20 07 08.2**	**+2.6**
SNOW	**Snow King Moun**	**3.78**	**267**	*e*Pn	**Pn**	**20 07 07.2**	**+1.2**
REDW	**Red Top Meadow**	**3.86**	**265**	*e*Pn	**Pb**	**20 07 13.3**	**-2.1**
OGNE	**Ogallala**	**3.87**	**136**	*e*Pn	**Pn**	**20 07 07.7**	**+0.6**
ISCO	**Idaho Springs**	**4.00**	**180**	*e*Pn	**Pn**	**20 07 11.2**	**+2.2**
ISCO				Sn	**Sn**	**20 07 57.8**	**+1.0**
AHID	**Auburn Hatcher**	**4.17**	**258**	*e*Pn	Pn	20 07 15.4	+4.1
O20A	**White River Ci**	**4.17**	**209**	*e*Pn	**Pn**	**20 07 12.9**	**+1.6**
BOZ	**Bozeman (W)**	**4.70**	**295**	*e*Pn	Pn	20 07 22.6	+4.0
DGMT	**Dagmar**	**4.77**	**11**	*e*Pn	**Pn**	**20 07 21.8**	**+2.3**
EGMT	**Eagleton**	**5.14**	**327**	*e*Pn	**Pn**	**20 07 25.6**	**+1.1**
	13nm,0.5s						
DUG	**Dugway, Tooele**	**6.48**	**239**	*e*P	**Pn**	**20 07 43.1**	**0.0**
	3.3nm,0.4s						
ECSD	**EROS Data Cent**	**6.49**	**87**	*e*P	**Pn**	**20 07 42.0**	**-1.0**
	5.8nm,0.3s						
AGMN	**Agassiz Nation**	**8.12**	**53**	*e*P	**Pn**	**20 08 04.0**	**-1.3**
	8.0nm,0.4s						
I10CA	**LAC DU BONNET**	**9.14**	**42**	*i*		21 02 10.0	
	baz=222,slow=301,SNR=1.7						
ULM	**Lac du Bonnet**	**9.24**	**42**	Pn	**Pn**	**20 08 20.8**	**+0.1**
	3.4nm,0.3s,baz=227,slow=12,SNR=21						
TXAR	**Lajitas Array**	**14.52**	**173**	Pg	Pg	20 10 36.8	
	0.1nm,0.3s,baz=357,slow=15,SNR=2.9						
YKA	**Yellowknife Ar**	**19.46**	**347**	P	**Pn**	**20 10 35.1**	**-0.3**
	0.0nm,0.3s,baz=167,slow=11,SNR=2.9						

IDC ***17*** *20:16:53.9±2.2, 23°.09S×68°.00W, h0km, mb3.8/2, mb1 4.0/4, mb1mx3.7/26, mbtmp3.8/4, ML4.0/2, Error ellipse: s-maj=57.0km s-min=48.8km az=58.0*
ISCJB ***17*** *20:17:22.3±0.6, 21°.15S±0°.05×67°.61W±0°.05, h187km±7km, mb3.3/1, Error ellipse: s-maj=10.4km s-min=4.8km az=41.7*
GUC ***17*** *20:17:23.5±0.5, 21°.09S×67°.84W, h193km±8km, ML3.2*
SJA ***17*** *20:17:23.0±1.5, 20°.94S×66°.99W, h220km±21km, ML2.9, MW3.1*

ISC 17 20:17:22.3±0.9, 21°.12S±0°.06×67°.55W±0°.05, h183km±9km, n20, σ1§35/33, 2C, Chile-Bolivia border region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
PB08	**IPOC Station P**	**1.79**	**303**⇑	*i* P	**Pn**	**20 17 59.0**	**+1.1**
PB08				*i* S	**Sn**	**20 18 25.6**	**+0.3**
PB08				IAML		20 18 26.9	
	comp=N,129nm,0.4s						
PB01	**IPOC Station P**	**1.81**	**272**	*i* P	**Pn**	**20 17 58.0**	**+0.2**
PB01				*i* S	**Sn**	**20 18 23.9**	**-1.4**
PB01				IAML		20 18 27.4	
	comp=E,88nm,0.3s						
YJA	**Yavi**	**2.16**	**120**⇑	*e*P	**Pn**	**20 18 03.4**	**+1.5**
	baz=318,slow=8.6						
YJA				*e*S	**Sn**	**20 18 32.6**	**0.0**
YJA				IAML		20 18 35.4	
	comp=Z,26nm,0.4s						
PB07	**IPOC Station P**	**2.26**	**254**	*i* P	**Pn**	**20 18 03.4**	**+0.6**
PB07				*i* S	**Sn**	**20 18 33.3**	**-0.8**
PB07				IAML		20 18 33.6	
	comp=N,125nm,0.2s						
HMBC	**Humberstone**	**2.35**	**290**	*i* P	**Pn**	**20 18 03.5**	**-0.1**
HMBC				*i* S	**Sn**	**20 18 34.5**	**-1.2**
HMBC				IAML		20 18 36.7	
	comp=E,192nm,0.3s						
PB11	**IPOC Station P**	**2.39**	**304**	*i* P	**Pn**	**20 18 04.5**	**+0.3**
PB11				*i* S	**Sn**	**20 18 35.6**	**-1.1**
PB06	**IPOC Station P**	**2.46**	**230**	*i* P	**Pn**	**20 18 05.9**	**+1.0**
PB06				*i* S	**Sn**	**20 18 38.3**	**+0.2**
PB06				IAML		20 18 39.1	
	comp=E,82nm,0.2s						
MNMC	**Minye Minye**	**2.76**	**315**	*i* P	**Pn**	**20 18 09.4**	**+0.8**
MNMC				*i* S	**Sn**	**20 18 43.8**	**-0.8**
PSGC	**Pisagua**	**2.85**	**302**	*e*P	**Pn**	**20 18 08.9**	**-0.6**
PSGC				*e*S	**Sn**	**20 18 43.6**	**-2.6**
PSGC				IAML		20 18 45.5	
	comp=N,108nm,0.2s						
HJA	**Humahuaca**	**2.87**	**137**	*i* P	**Pn**	**20 18 11.7**	**+1.7**
HJA				*i* S	**Sn**	**20 18 48.0**	**+0.9**
HJA				IAML		20 18 51.5	
	comp=Z,43nm,0.4s						
PB13	**IPOC Station P**	**3.32**	**326**	*i* P	**Pn**	**20 18 17.4**	**+1.6**
PB13				*i* S	**Sn**	**20 18 58.7**	**+1.3**
AZAP	**Zapla**	**3.85**	**144**	*i* P	**Pn**	**20 18 22.4**	**+0.5**
AZAP				IAML		20 18 22.9	
	comp=Z,16nm,0.3s						
AZAP				*e*S	**Sn**	**20 19 06.6**	**-1.9**
ASTB	**Santa Barbara**	**4.01**	**135**	*i* P	**Pn**	**20 18 24.6**	**+0.7**
ASTB				*e*S	**Sn**	**20 19 08.9**	**-3.2**
LPAZ	**La Paz**	**4.83**	**353**	*i* P	**Pn**	**20 18 36.1**	**+1.2**
LPAZ	**La Paz**	**4.83**	**353**	Pn	**Pn**	**20 18 36.1**	**+1.2**
	comp=Z,3.0nm,0.3s,baz=177,slow=7.1,SNR=56						
SIV	**San Ignacio**	**7.98**	**51**	Pn	**Pn**	**20 19 13.0**	**-2.5**
	comp=Z,0.5nm,0.3s,baz=232,slow=12,SNR=3.6						
TORD	**Torodi Ar. Bea**	**76.03**	**70**	P	**P**	**20 28 49.5**	**-0.4**
	comp=Z,0.3nm,0.4s,baz=253,slow=5.3,SNR=12						
YKA	**Yellowknife Ar**	**91.25**	**340**	P	**P**	**20 30 07.4**	**+1.1**
	comp=Z,0.0nm,0.3s,baz=133,slow=3.8,SNR=5.2						
ZALV	**Zalesovo Beam**	**141.06**	**26**	PKP	**PKPdf**	**20 36 29.2**	**-1.3**
	comp=Z,0.3nm,0.3s,baz=340,slow=8.0,SNR=2.5						
MKAR	**Makanchi Array**	**144.57**	**37**	PKPbc	**PKPdf**	**20 36 37.1**	**+0.2**
	comp=Z,0.3nm,0.4s,baz=310,slow=3.7,SNR=6.2						

JMA 17 20:20:31.7, 37°.80N×140°.00E, h9km±1km, M2.0, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JFT	**Otama**	**0.39**	**136**	P	Pg	20 20 39.4	+0.1
JFT				S	Sg	20 20 44.3	-0.1
JYS	**Shirataka**	**0.42**	**7**	S	Sg	20 20 46.4	+0.8
JFY	**Yanaizu**	**0.46**	**211**	P	Pg	20 20 40.6	0.0
JFY				S	Sg	20 20 46.5	-0.1
JNS	**Sasagawa**	**0.54**	**272**	P	Pg	20 20 42.1	-0.1
JNS				S	Sg	20 20 48.9	-0.4
JMM	**Marumori**	**0.63**	**84**	P	Pg	20 20 43.8	-0.1
JMM				S	Sg	20 20 51.9	-0.3
JYA	**Atsumi**	**0.82**	**344**	P	Pg	20 20 47.5	-0.1
JAW	**Awa shima**	**0.88**	**318**	P	Pb	20 20 49.0	-0.2
JAW				*e*S	Sb	20 21 01.1	0.0
JHK	**Hiroka**	**0.96**	**235**	P	Pg	20 20 49.4	-0.7
JHK				S	Sg	20 21 01.5	-1.0

NIED ***17*** *20:20:00, 36°.60N×141°.30E, h38km, Mw4.2 Best double couple: M0 2.04000×10^15 NP1:φs177.00000°, δ13.00000°, λ172.00000°. NP2:φs275.00000°, δ88.00000°, λ77.00000°.*
IDC ***17*** *20:20:29.8±0.6, 36°.53N×141°.31E, h0km, mb3.9/17, mb1 4.2/21, mb1mx4.0/56, mbtmp4.0/21, ML3.8/3, MS3.1/13, Ms1 3.1/13, ms1mx3.0/54, Error ellipse: s-maj=19.1km s-min=12.9km az=102.0*
ISCJB ***17*** *20:20:31.0±0.9, 36°.53N±0°.03×141°.49E±0°.05, h26km±6km, mb4.0/24, MS3.2/7, Error ellipse: s-maj=6.6km s-min=5.2km az=16.9*
MOS ***17*** *20:20:32.0±1.9, 36°.63N×141°.34E, h29km, mb4.5/5, Error ellipse: s-maj=11.3km s-min=7.9km az=86.7*
JMA ***17*** *20:20:34.3±0.1, 36°.57N×141°.28E, h42km±2km, M4.2*
JMA Felt II J1.
NEIC ***17*** *20:20:34.5±0.6, 36°.54N×141°.20E, h35km, mb4.5/5, Error ellipse: s-maj=14.1km s-min=10.5km az=128.0*

ISC 17 20:20:31.9±1.7, 36°.55N±0°.04×141°.26E±0°.05, h15km±10km, n66, σ1§08/56, mb4.1/24, MS3.1/7, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JHO	**Hitachi**	**0.56**	**276**	P	**Pn**	**20 20 46.1**	**+0.9**
JHO				S	**Sn**	**20 20 54.2**	**0.0**
ONAJ	**Iwakimizuishiy**	**0.66**	**326**	P	**Pn**	**20 20 47.1**	**+0.4**
ONAJ				S	**Sn**	**20 20 56.0**	**-0.9**
JFK	**Kawauchi**	**0.87**	**340**	P	**Pn**	**20 20 49.9**	**+0.3**
JFK				S	**Sb**	**20 21 00.8**	**+0.7**
JYT	**Yasato**	**0.92**	**250**	P	**Pn**	**20 20 51.2**	**+1.0**
JFT	**Otama**	**1.21**	**323**	P	**Pg**	**20 20 55.9**	**+0.6**
JFT				S	**Sg**	**20 21 11.2**	**+0.1**
JMM	**Marumori**	**1.36**	**344**	P	**Pb**	**20 20 57.0**	**-0.1**
JMM				S	**Sn**	**20 21 13.8**	**-0.3**
MJAR	**Matsushiro Arr**	**2.45**	**271**	P	**Pb**	**20 21 14.3**	**-1.4**
	51nm,0.3s,baz=86,slow=9.9,SNR=403						
MJAR				Sn	**Sb**	**20 21 44.5**	**-1.2**
	28nm,0.3s,baz=76,slow=19,SNR=14						
MJAR				LR	LR	20 22 19.8	
	comp=Z,99nm,18.9s,baz=90,slow=45						
MAJO	**Matsushiro**	**2.45**	**271**	*e*P	Pn	20 21 07.4	-4.0
MAJO	**Matsushiro**	**2.45**	**271**	*e*Pn	Pn	20 21 07.4	-3.9
MAT	**Matsushiro**	**2.45**	**271**	P	**Pb**	**20 21 14.3**	**-1.4**
MAT				S	**Sb**	**20 21 45.2**	**-0.5**
JHJ	**Hachijo jima 2**	**3.63**	**200**	Pn	**Pn**	**20 21 29.1**	**+1.5**
	100nm,0.3s,baz=71,slow=22,SNR=20						
JHJ				Sn	**Sn**	**20 22 11.1**	**+0.9**
	37nm,0.3s,baz=59,slow=19,SNR=3.4						
JHJ				LR	LR	20 22 27.4	
	comp=Z,120nm,19.7s,baz=292,slow=32						
ERM	**Erimo**	**5.65**	**15**	*e*P	**Pn**	**20 21 54.4**	**-0.8**
ERM				pmax	pmax		
	comp=Z,25nm,0.4s						
ERM	**Erimo**	**5.65**	**15**	*e*Pn	**Pn**	**20 21 54.4**	**-0.8**
	comp=Z,25nm,0.4s						
ASAJ	**Asahikawa**	**7.62**	**7**	Pn	**Pn**	**20 22 22.3**	**-0.1**
	comp=Z,4.4nm,0.3s,baz=215,slow=8.8,SNR=38						
ASAJ	**Asahikawa**	**7.62**	**7**	*e*Pn	**Pn**	**20 22 21.2**	**-1.1**
	comp=Z,6.3nm,0.4s						
YUK	**Yuzh-Kuril'sk**	**8.26**	**24**	*e*P	**Pn**	**20 22 31.1**	**+0.1**
YUK				*e*S	**Sn**	**20 24 00.4**	**-3.6**
SHO	**Shikotan**	**8.46**	**29**	*e*P	**Pn**	**20 22 30.7**	**-3.1**
SHO				pmax	pmax		
	comp=Z,58nm,0.7s						
JNU	**Nakatsue**	**9.19**	**251**	Pn	**Pn**	**20 22 44.6**	**+0.7**
	comp=Z,0.2nm,0.3s,baz=11,slow=18,SNR=2.2						
JNU				LR	LR	20 26 49.0	
	comp=Z,78nm,19.4s,baz=128,slow=41						
CBIJ	**Chichi jima**	**9.46**	**175**	Pn	**Pn**	**20 22 46.5**	**-1.2**
CBIJ				Sn	Sn	20 24 23.1	-11
JCJ	**Chichijima**	**9.46**	**175**	Pn	**Pn**	**20 22 46.5**	**-1.2**
	comp=Z,24nm,0.3s,baz=283,slow=24,SNR=11						
JCJ				Sn	Sn	20 24 23.1	-11
	comp=Z,8.4nm,0.3s,baz=317,slow=19,SNR=3.0						
KUR	**Kuril'sk**	**10.01**	**28**	P	**Pn**	**20 22 55.7**	**+0.7**
KUR				*e*S	Sn	20 24 39.3	-7.7
KUR				pmax	pmax		
	comp=Z,42nm,0.5s						
KUR				pmax	pmax		
	comp=E,18nm,0.1s						
KUR				pmax	pmax		
	comp=N,15nm,0.2s						
USRK	**Ussuriysk Ar.**	**10.40**	**320**	Pn	Pn	20 23 06.0	+5.5
	comp=N,0.7nm,0.3s,baz=132,slow=13,SNR=23						
USRK				LR	LR	20 26 50.1	
	comp=N,139nm,20.0s,baz=121,slow=36						
KSRS	**Korea Array**	**10.70**	**279**	Pn	Pn	20 23 10.3	+5.7
	comp=N,0.1nm,0.3s,baz=93,slow=13,SNR=3.7						
KSRS				LR	LR	20 26 55.9	
	comp=N,44nm,18.8s,baz=255,slow=36						
KLR	**Kul'dur**	**14.44**	**334**	LR	LR	20 29 17.3	
	comp=N,109nm,18.3s,baz=128,slow=36						
PETK	**Petropavlovsk-**	**20.17**	**30**	LR	LR	20 32 11.7	
	comp=N,55nm,21.6s,baz=192,slow=35						
MA2	**Magadan**	**23.85**	**12**	LR	LR	20 35 07.2	
	comp=N,58nm,18.4s,baz=225,slow=37						
YAK	**Yakutsk**	**26.51**	**348**	LR	LR	20 36 51.4	
	comp=N,87nm,19.2s,baz=152,slow=37						
ENH	**Enshi**	**27.17**	**266**	*e*P	**P**	**20 26 13.6**	**-1.1**
	comp=N,8.8nm,0.6s						
SEY	**Seymchan**	**27.29**	**11**	P	**P**	**20 26 16.0**	**+0.6**
	comp=N,2.5nm,0.6s,baz=197,slow=8.1,SNR=9.2						
SEY	**Seymchan**	**27.29**	**11**	P	**P**	**20 26 16.0**	**+0.6**
BOD	**Bodaibo**	**27.87**	**328**	*e*P	**P**	**20 26 20.3**	**-0.4**
BOD				pmax	pmax		
	comp=Z,3.0nm,0.8s						
SONM	**Songino Array**	**27.95**	**305**	P	**P**	**20 26 22.0**	**+0.3**
	comp=Z,2.3nm,0.8s,baz=100,slow=8.3,SNR=21						
SONM				LR	LR	20 37 02.5	
	comp=Z,49nm,18.6s,baz=106,slow=36						
H11N2	**WAKE ISLAND Hy**	**28.02**	**120**	T	T	20 55 36.9	
	baz=313,slow=75,SNR=242						
H11N1	**WAKE ISLAND Hy**	**28.02**	**120**	T	T	20 55 36.9	
	baz=313,slow=75,SNR=199						
H11N3	**WAKE ISLAND Hy**	**28.03**	**120**	T	T	20 55 37.5	
	baz=313,slow=75,SNR=149						
H11S1	**WAKE ISLAND Hy**	**28.71**	**122**	T	T	20 56 30.3	
	baz=314,slow=75,SNR=89						
H11S3	**WAKE ISLAND Hy**	**28.71**	**122**	T	T	20 56 31.7	
	baz=314,slow=75,SNR=42						
H11S2	**WAKE ISLAND Hy**	**28.73**	**122**	T	T	20 56 30.3	
	baz=314,slow=75,SNR=49						
ZAK	**Zakamensk**	**30.47**	**309**	*e*P	**P**	**20 26 44.6**	**+0.6**
ZAK				pmax	pmax		
	comp=Z,2.0nm,1.2s						
TLY	**Talaya**	**30.55**	**312**	LR	LR	20 38 35.6	
	comp=Z,47nm,19.2s,baz=66,slow=36						
TIXI	**Tiksi**	**35.75**	**353**	P	**P**	**20 27 29.5**	**-0.1**
	comp=Z,1.0nm,0.2s,baz=108,slow=1.5,SNR=4.5						
CMAR	**Chiang Mai Arr**	**41.25**	**256**	LR	LR	20 47 18.3	
	comp=Z,31nm,20.6s,baz=225,slow=39						
ZALV	**Zalesovo Beam**	**42.15**	**313**	P	**P**	**20 28 24.0**	**+0.6**
	comp=Z,2.0nm,0.5s,baz=95,slow=7.1,SNR=14						
MKAR	**Makanchi Array**	**44.27**	**302**	P	**P**	**20 28 41.4**	**+0.6**
	comp=Z,0.6nm,0.5s,baz=80,slow=8.9,SNR=13						
KURK	**Kurchatov**	**46.13**	**308**	*e*P	**P**	**20 28 54.2**	**-1.2**
KURK				pmax	pmax		
	comp=Z,7.0nm,0.6s						
KURK	**Kurchatov**	**46.13**	**308**	*e*P	**P**	**20 28 54.1**	**-1.2**
	comp=Z,6.6nm,0.6s						
TKM2	**Tokmak 2**	**49.75**	**299**	*e*P	**P**	**20 29 22.6**	**-1.2**
TKM2				pmax	pmax		
	comp=Z,2.0nm,0.5s						
TKM2	**Tokmak 2**	**49.75**	**299**	*e*P	**P**	**20 29 22.6**	**-1.2**
	comp=Z,1.9nm,0.5s						
ILAR	**Eielson Array**	**49.97**	**32**	P	**P**	**20 29 25.4**	**+0.5**
	comp=Z,1.5nm,0.8s,baz=270,slow=6.2,SNR=12						
INK	**Inuvik**	**54.87**	**27**	P	**P**	**20 30 02.0**	**+0.9**
	comp=Z,1.0nm,0.5s,baz=282,slow=5.4,SNR=9.7						
WRA	**Warramunga Arr**	**56.57**	**188**	P	**P**	**20 30 13.5**	**-0.4**
	comp=Z,2.5nm,0.4s,baz=6.3,slow=7.4,SNR=60						
ABKAR	**Akbulak array**	**58.15**	**310**	*e*P	**P**	**20 30 24.7**	**-0.2**
	comp=Z,1.5nm,0.6s						
ASAR	**Alice Springs**	**60.30**	**188**	P	**P**	**20 30 39.8**	**-0.1**
	comp=Z,2.0nm,0.7s,baz=16,slow=13,SNR=23						
YKA	**Yellowknife Ar**	**64.29**	**30**	P	**P**	**20 31 06.1**	**0.0**
	comp=Z,0.8nm,0.8s,baz=302,slow=6.8,SNR=12						
ARCES	**ARCESS Array B**	**64.40**	**339**	LR	LR	21 01 34.8	
	comp=Z,39nm,18.6s,baz=247,slow=38						
FINES	**FINESS Array B**	**69.18**	**332**	P	**P**	**20 31 37.5**	**+0.2**
	comp=Z,1.9nm,0.8s,baz=46,slow=8.2,SNR=4.6						
KIV	**Kislovodsk**	**71.12**	**311**	P	P	20 31 46.5	-3.3
KIV				pmax	pmax		
	comp=Z,5.0nm,0.8s						
KIV	**Kislovodsk**	**71.12**	**311**	P	P	20 31 46.5	-3.3
	comp=Z,4.8nm,0.8s						
NB2	**NORSAR Subarra**	**74.58**	**337**	P	**P**	**20 32 09.7**	**-0.2**
	comp=Z,1.0nm,0.7s,baz=41,slow=6.2						
NOA	**NORSAR Array B**	**74.58**	**337**	P	**P**	**20 32 10.2**	**+0.3**
	comp=Z,1.7nm,0.8s,baz=43,slow=5.5,SNR=6.0						
AKASG	**Malin Array Be**	**74.60**	**322**	P	**P**	**20 32 09.9**	**-0.2**
	comp=Z,0.5nm,0.5s,baz=45,slow=6.1,SNR=3.7						
PDAR	**Pinedale Array**	**78.09**	**45**	P	**P**	**20 32 30.2**	**-0.2**
	comp=Z,0.1nm,0.3s,baz=228,slow=1.1,SNR=2.5						
BRTR	**Keskin Array B**	**79.08**	**312**	P	**P**	**20 32 37.4**	**+1.6**
	comp=Z,0.4nm,0.8s,baz=55,slow=4.8,SNR=2.5						
GERES	**GERESS Array B**	**83.05**	**328**	P	**P**	**20 32 57.2**	**+0.4**
	comp=Z,0.3nm,0.7s,baz=29,slow=2.2,SNR=2.9						
TXAR	**Lajitas Array**	**90.52**	**52**	P	**P**	**20 33 34.7**	**+1.2**
	comp=Z,0.1nm,0.4s,baz=286,slow=3.3,SNR=2.8						
KMBO	**Kilima Mbogo**	**101.91**	**278**	P	**Pdif**	**20 34 27.8**	**+2.2**
	comp=Z,0.6nm,0.2s,baz=321,slow=7.6,SNR=4.8						

IDC ***17*** *20:25:04.5±2.2, 6°.12S×153°.91E, h0km, mb4.0/9, mb1 4.0/10, mb1mx3.8/50, mbtmp4.0/10, ML1.8/1, MS3.2/2, Ms1 3.2/2, ms1mx2.6/34, Error ellipse: s-maj=60.6km s-min=36.2km az=128.0*
ISCJB ***17*** *20:25:08.1±2.3, 6°.25S±0°.3×153°.7E±0°.3, h35km, mb3.9/9, MS3.2/1, Error ellipse: s-maj=58.2km s-min=10.4km az=138.7*

ISC 17 20:25:09.8±2.3, 6°.25S±0°.3×153°.8E±0°.3, h35km, n12, σ0§69/12, mb4.0/9, New Britain region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
PMG	**Port Moresby**	**7.31**	**244**	Pn	**Pn**	**20 26 53.7**	**-0.4**
	0.8nm,0.3s,baz=132,slow=10.0,SNR=2.6						
PMG				Sn	**Sn**	**20 28 16.0**	**+0.1**
	1.3nm,0.3s,baz=76,slow=14,SNR=4.3						
PMG				LR	LR	20 30 01.1	
	comp=Z,107nm,18.0s,baz=54,slow=40						
ASAR	**Alice Springs**	**25.85**	**226**	LR	LR	20 41 02.7	
	comp=Z,66nm,18.4s,baz=45,slow=37						
JNU	**Nakatsue**	**44.73**	**332**	P	**P**	**20 33 19.4**	**-0.4**
	3.2nm,0.9s,baz=142,slow=19,SNR=3.4						
USRK	**Ussuriysk Ar.**	**53.86**	**341**	P	**P**	**20 34 30.0**	**+0.6**
	comp=N,0.6s,baz=134,slow=4.2,SNR=3.6						
KLR	**Kul'dur**	**58.44**	**343**	P	**P**	**20 35 02.1**	**+0.2**
	1.3nm,0.6s,baz=206,slow=7.2,SNR=5.8						
SONM	**Songino Array**	**68.01**	**328**	P	**P**	**20 36 05.3**	**-0.4**
	0.5nm,0.7s,baz=129,slow=5.5,SNR=5.5						
MKAR	**Makanchi Array**	**82.00**	**319**	P	**P**	**20 37 27.2**	**+0.9**
	0.9nm,0.7s,baz=104,slow=6.1,SNR=13						
ZALV	**Zalesovo Beam**	**82.84**	**326**	P	**P**	**20 37 30.3**	**-0.1**
	1.2nm,0.4s,baz=112,slow=5.5,SNR=7.1						
ILAR	**Eielson Array**	**83.06**	**22**	P	**P**	**20 37 30.5**	**-0.8**
	0.2nm,0.7s,baz=232,slow=6.7,SNR=3.9						
KURBB	**Kurchatov Arra**	**85.48**	**322**	P	**P**	**20 37 44.2**	**+0.3**
	0.7nm,0.7s,baz=109,slow=3.6,SNR=11						
BVAR	**Borovoye Array**	**90.92**	**323**	P	**P**	**20 38 10.2**	**+0.3**
	1.3nm,0.7s,baz=89,slow=5.9,SNR=9.2						
TORD	**Torodi Ar. Bea**	**151.65**	**286**	PKPbc	**PKPbc**	**20 45 02.9**	**+1.3**
	0.9nm,0.6s,baz=59,slow=2.7,SNR=6.4					

ASUD	**Al Ashush, Dub**	**3.12**	**169**	Pn		Pn	20 37 08.0	+1.4
	SNR=24							
ASUD	**Al Ashush, Dub**	**3.12**	**169**	Pn		Pn	20 37 08.0	+1.4
	SNR=24							
ASUD	**Al Ashush, Dub**	**3.12**	**169**	P		Pn	20 37 08.0	+1.4
	SNR=24							
HATD	**Hatta, Dubai**	**3.15**	**155**	P		**Pn**	**20 37 06.5**	**-0.5**
HATD	**Hatta, Dubai**	**3.15**	**155**	P		**Pn**	**20 37 06.5**	**-0.5**
IKAZ	**Kazeroun**	**3.23**	**310**	*e*Pn		**Pn**	**20 37 06.8**	**-1.5**
IKAZ				*e*AMB		AMB	20 38 23.4	
	comp=Z,3μm,0.3s							
IKAZ	**Kazeroun**	**3.23**	**310**	*e*Pn		**Pn**	**20 37 06.8**	**-1.5**
ASHO	**Ashiyiah**	**3.26**	**157**	*e*P		**Pn**	**20 37 08.4**	**0.0**
	SNR=36							
ASHO				S		**Sn**	**20 37 44.6**	**-1.4**
ASHO	**Ashiyiah**	**3.26**	**157**	P		**Pn**	**20 37 08.7**	**+0.3**
	SNR=36							
ASHO				S		**Sn**	**20 37 47.3**	**+1.3**
ASHO	**Ashiyiah**	**3.26**	**157**	Pn		**Pn**	**20 37 08.7**	**+0.3**
	SNR=36							
ASHO	**Ashiyiah**	**3.26**	**157**	P		**Pn**	**20 37 08.7**	**+0.3**
	SNR=36							
ASHO				S		**Sn**	**20 37 47.3**	**+1.3**
CHMN	**Cheshme madani**	**3.31**	**49**	*e*Pn		**Pn**	**20 37 10.0**	**+0.7**
CHMN	**Cheshme madani**	**3.31**	**49**	*e*Pn		**Pn**	**20 37 10.0**	**+0.7**
IMEH	**Mehriz**	**3.67**	**359**	*e*Pn		**Pn**	**20 37 13.7**	**-0.5**
IMEH				*e*AMB		AMB	20 38 22.0	
	comp=Z,903nm,0.4s							
IMEH	**Mehriz**	**3.67**	**359**	*e*Pn		**Pn**	**20 37 13.7**	**-0.5**
IBAF	**Bafgh**	**3.95**	**11**	*e*Pn		**Pn**	**20 37 17.2**	**-0.7**
IBAF				*e*AMB		AMB	20 37 33.6	
	comp=Z,596nm,0.2s							
IBAF	**Bafgh**	**3.95**	**11**	*e*Pn		**Pn**	**20 37 17.2**	**-0.7**
ISAD	**Sadrabad**	**4.28**	**349**	*e*Pn		**Pn**	**20 37 22.0**	**-0.6**
ISAD				*e*AMB		AMB	20 37 35.2	
	comp=Z,850nm,0.2s							
ISAD	**Sadrabad**	**4.28**	**349**	*e*Pn		**Pn**	**20 37 22.0**	**-0.6**
ICHK	**Chekchek**	**4.53**	**357**	*e*Pn		**Pn**	**20 37 24.7**	**-1.2**
ICHK				*e*AMB		AMB	20 37 51.6	
	comp=Z,747nm,0.3s							
ICHK	**Chekchek**	**4.53**	**357**	*e*Pn		**Pn**	**20 37 24.7**	**-1.2**
IRAM	**Ramesheh**	**4.55**	**335**	*e*Pn		**Pn**	**20 37 24.5**	**-1.7**
IRAM				*e*AMB		AMB	20 37 32.5	
	comp=Z,488nm,0.2s							
IRAM	**Ramesheh**	**4.55**	**335**	*e*Pn		**Pn**	**20 37 24.5**	**-1.7**
IZEF	**Zefreh**	**5.55**	**339**	*e*Pn		Pn	20 37 36.6	-3.4
IZEF				*e*AMB		AMB	20 37 43.4	
	comp=Z,176nm,0.1s							
IZEF	**Zefreh**	**5.55**	**339**	*e*Pn		Pn	20 37 36.6	-3.4
WSAR	**Wadi Sarin**	**5.71**	**140**	Pn		**Pn**	**20 37 41.1**	**-0.8**
WSAR				Sn		**Sn**	**20 38 42.6**	**-3.6**
	comp=Z,1.3nm,0.3s,baz=330,slow=7.5,SNR=27							
WSAR				LR		LR	20 40 29.3	
	comp=Z,2.1nm,0.3s,baz=49,slow=21,SNR=11							
IPIR	**Pirpir**	**5.94**	**328**	*e*Pn		**Pn**	**20 37 43.6**	**-1.8**
IPIR				*e*AMB		AMB	20 38 52.2	
	comp=Z,84nm,19.0s,baz=357,slow=44							
	comp=Z,290nm,0.2s							
IPIR	**Pirpir**	**5.94**	**328**	*e*Pn		**Pn**	**20 37 43.6**	**-1.8**
IKLH	**Kolahrood**	**6.20**	**335**	*e*Pn		**Pn**	**20 37 47.6**	**-1.2**
IKLH				*e*AMB		AMB	20 38 18.9	
	comp=Z,241nm,0.3s							
IKLH	**Kolahrood**	**6.20**	**335**	*e*Pn		**Pn**	**20 37 47.6**	**-1.2**
ASAO	**Ashtian**	**7.90**	**331**	*e*Pn		**Pn**	**20 38 12.5**	**+0.4**
ASAO	**Ashtian**	**7.90**	**331**	*e*P		**Pn**	**20 38 12.7**	**+0.6**
ASF	**Jabal al Asfar**	**16.04**	**290**	Pn		**P**	**20 40 04.7**	**+0.6**
	comp=Z,0.4nm,0.3s,baz=59,slow=12,SNR=5.1							
MMAI	**Mount Meron Ar**	**17.45**	**292**	P		**P**	**20 40 20.5**	**+0.8**
	comp=Z,0.2nm,0.3s,baz=114,slow=14,SNR=6.2							
KBZ	**Khabaz**	**18.59**	**332**	P		**Pn**	**20 40 32.0**	**-0.9**
	comp=Z,0.1nm,0.3s,baz=185,slow=19,SNR=2.3							
BRTR	**Keskin Array B**	**21.15**	**310**	P		**P**	**20 41 00.0**	**-0.1**
	comp=Z,2.8nm,0.8s,baz=130,slow=12,SNR=14							
AAK	**Ala-Archa**	**21.93**	**42**	P		**P**	**20 41 09.1**	**+0.7**
	comp=Z,1.0nm,0.6s,baz=208,slow=9.2,SNR=6.3							
AKTO	**Aktyubinsk**	**22.84**	**6**	P		**P**	**20 41 17.4**	**-0.5**
	comp=Z,1.9nm,0.7s,baz=188,slow=13,SNR=6.4							
BVAR	**Borovoye Array**	**27.86**	**20**	P		**P**	**20 42 04.1**	**+0.4**
	comp=Z,0.5nm,0.6s,baz=188,slow=4.4,SNR=4.9							
MKAR	**Makanchi Array**	**28.86**	**41**	P		**P**	**20 42 13.3**	**+0.6**
	comp=Z,0.4nm,0.4s,baz=232,slow=11,SNR=7.5							
KURBB	**Kurchatov Arra**	**29.19**	**32**	P		**P**	**20 42 16.1**	**+0.6**
	comp=Z,0.6nm,0.6s,baz=234,slow=8.9,SNR=9.5							
ZALV	**Zalesovo Beam**	**34.28**	**32**	P		**P**	**20 43 00.1**	**-0.1**
	comp=Z,1.5nm,0.4s,baz=244,slow=9.6,SNR=12							
FINES	**FINESS Array B**	**38.77**	**338**	P		**P**	**20 43 37.7**	**-0.5**
	comp=Z,1.4nm,0.8s,baz=144,slow=9.6,SNR=6.9							
FINES				LR		LR	21 00 11.2	
	comp=Z,81nm,19.0s,baz=212,slow=37							
KEST	**Kesra**	**39.10**	**293**	LR		LR	21 05 00.2	
	comp=Z,55nm,18.1s,baz=257,slow=44							
NOA	**NORSAR Array B**	**44.17**	**331**	P		**P**	**20 44 21.7**	**-0.8**
	comp=Z,1.6nm,1.1s,baz=94,slow=11,SNR=3.0							
SONM	**Songino Array**	**44.82**	**49**	P		**P**	**20 44 27.8**	**+1.4**
	comp=Z,2.2nm,0.5s,baz=256,slow=5.8,SNR=2.9							
ESDC	**Sonseca Array**	**49.44**	**300**	P		**P**	**20 45 02.5**	**-1.5**
	comp=Z,0.1nm,0.3s,baz=81,slow=6.8,SNR=3.0							
TORD	**Torodi Ar. Bea**	**51.35**	**265**	P		**P**	**20 45 18.3**	**-0.4**
	comp=Z,1.3nm,0.6s,baz=63,slow=7.6,SNR=11							
BOSA	**Boshof**	**62.70**	**209**	P		**P**	**20 46 39.3**	**+0.6**
	comp=Z,1.3nm,0.5s,baz=2.1,slow=8.6,SNR=4.0							
ILAR	**Eielson Array**	**86.30**	**9**	P		**P**	**20 48 55.3**	**+0.3**
	comp=Z,0.2nm,0.6s,baz=330,slow=5.2,SNR=3.8							
YKA	**Yellowknife Ar**	**89.70**	**355**	P		**P**	**20 49 11.9**	**+0.7**
	comp=Z,0.2nm,0.7s,baz=1.7,slow=4.8,SNR=6.2							

IDC 17 20:47:00.5±327.0, 0°.83N×126°.59W, h0km, Error ellipse: s-maj=241.9km s-min=123.4km az=82.0, North Pacific Ocean

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
I21FR	**MARQUESAS ISLA**	**16.60**	**234**	*i*		22 30 10.0	
	baz=55,slow=313,SNR=2.3						

IDC 17 20:47:39.3±4.1, 16°.23S×177°.68W, h0km, mb3.8/3, mb1 3.9/3, mb1mx3.5/36, mbtmp3.8/3, MS3.2/1, Ms1 3.2/1, ms1mx2.6/26, Error ellipse: s-maj=177.7km s-min=45.0km az=138.0, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
DZM	**Mont Dzumac**	**16.08**	**246**	LR	LR	20 57 05.4	
	comp=Z,72nm,18.6s,baz=76,slow=35						
STKA	**Stephens Creek**	**40.06**	**240**	P	P	20 55 16.6	+0.1
	0.7nm,0.6s,baz=92,slow=11,SNR=5.2						
WRA	**Warramunga Arr**	**45.64**	**258**	P	P	20 56 01.6	-0.4
	0.3nm,0.5s,baz=93,slow=7.9,SNR=9.7						
ASAR	**Alice Springs**	**45.93**	**253**	P	P	20 56 04.2	-0.1
	1.9nm,0.6s,baz=88,slow=8.1,SNR=26						
GERES	**GERESS Array B**	**146.16**	**346**	PKPbc	PKPdf	21 07 20.8	+0.1
	0.2nm,0.4s,baz=352,slow=4.0,SNR=2.6						

IDC 17 20:52:49.6±1.7, 9°.01S×125°.30E, h0km, mb3.8/1, mb1 3.7/4, mb1mx3.4/31, mbtmp3.5/4, ML3.3/3, Error ellipse: s-maj=88.2km s-min=24.1km az=70.0, Timor region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
FITZ	**Fitzroy Crossi**	**9.04**	**178**	Pn	Pn	20 55 02.2	+0.6
	0.5nm,0.3s,baz=7.0,slow=13,SNR=11						
FITZ				Sn	Sn	20 56 43.7	-0.4
	0.2nm,0.3s,baz=333,slow=18,SNR=4.5						
WRA	**Warramunga Arr**	**13.95**	**142**	Pn	Pn	20 56 08.2	-0.5
	0.1nm,0.3s,baz=317,slow=12,SNR=4.7						
WRA				Sn	Sn	20 58 36.2	-8.2
	0.1nm,0.3s,baz=320,slow=25,SNR=3.9						
ASAR	**Alice Springs**	**16.74**	**152**	Pn	Pn	20 56 46.1	+0.4
	0.1nm,0.3s,baz=319,slow=11,SNR=3.4						
MKAR	**Makanchi Array**	**67.46**	**330**	P	P	21 03 47.3	0.0
	0.7nm,0.6s,baz=127,slow=7.9,SNR=9.4						

CSEM ***17*** *20:56:18.8, 40°.34N×15°.78E, h9km, ML0.8/1*
ROM 17 20:56:18.8±0.2, 40°.34N×15°.78E, h9km±1km, Ml0.8/1, Error ellipse: s-maj=2.3km s-min=0.9km az=48.0, Southern Italy

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
MCEL	**Monticello**	**0.02**	**141**	Pg	Pg	20 56 20.7	+0.2
MCEL				Sg	Sg	20 56 21.9	+0.2
	163nm,0.2s						
MCEL	**Monticello**	**0.02**	**141**	Pg	Pg	20 56 20.7	+0.2
MCEL				Sg	Sg	20 56 21.9	+0.2
	163nm,0.2s						
MTSN	**Montesano sull**	**0.08**	**198**	Pg	Pg	20 56 21.2	+0.2
MTSN				Sg	Sg	20 56 23.2	+0.6
	21nm,0.4s						
MTSN	**Montesano sull**	**0.08**	**198**	Pg	Pg	20 56 21.2	+0.2
MTSN				Sg	Sg	20 56 23.2	+0.6
	21nm,0.4s						
SLCN	**Sala Consilina**	**0.12**	**293**	Pg	Pg	20 56 21.9	+0.2
SLCN	**Sala Consilina**	**0.12**	**293**	Pg	Pg	20 56 21.9	+0.2
SIRI	**Monte Sirino -**	**0.17**	**158**	Pg	Pg	20 56 23.3	+0.8
SIRI	**Monte Sirino -**	**0.17**	**158**	Pg	Pg	20 56 23.3	+0.8

IDC 17 21:33:49.5±1.9, 2°.99N×126°.51E, h0km, mb3.4/4, mb1 3.6/4, mb1mx3.3/46, mbtmp3.4/4, MS2.6/1, Ms1 2.6/1, ms1mx2.3/27, Error ellipse: s-maj=178.0km s-min=23.5km az=65.0, Northern Molucca Sea

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
TGY	**Tagaytay City**	**12.34**	**334**	LR	LR	21 41 30.0	
	comp=Z,30nm,21.2s,slow=37						
WRA	**Warramunga Arr**	**24.05**	**162**	P	P	21 39 06.8	+0.2
	0.5nm,0.5s,baz=340,slow=11,SNR=12						
ASAR	**Alice Springs**	**27.45**	**165**	P	P	21 39 38.4	+0.9
	0.1nm,0.3s,baz=345,slow=11,SNR=3.1						
STKA	**Stephens Creek**	**37.52**	**159**	P	P	21 41 04.2	-1.1
	0.4nm,0.4s,baz=319,slow=11,SNR=3.2						
MKAR	**Makanchi Array**	**58.04**	**326**	P	P	21 43 44.1	-0.3
	0.2nm,0.5s,baz=130,slow=6.0,SNR=3.4						

IDC 17 21:34:02.5±4.7, 15°.84S×176°.14W, h0km, mb4.3/3, mb1 4.5/3, mb1mx3.7/39, mbtmp4.3/3, Error ellipse: s-maj=158.3km s-min=92.3km az=153.0, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
STKA	**Stephens Creek**	**41.54**	**240**	P	P	21 41 51.8	-0.2
	1.7nm,0.4s,baz=89,slow=6.7,SNR=11						
WRA	**Warramunga Arr**	**47.17**	**257**	P	P	21 42 37.2	-0.1
	0.5nm,0.3s,baz=91,slow=7.1,SNR=31						
ASAR	**Alice Springs**	**47.47**	**252**	P	P	21 42 39.4	-0.2
	10nm,0.5s,baz=89,slow=8.1,SNR=157						
ASAR				PcP	PcP	21 44 09.9	-0.1
	0.4nm,0.5s,baz=92,slow=4.1,SNR=4.3						

NIED ***17*** *21:48:00, 25°.10N×124°.50E, h95km, Mw4.3 Best double couple: M0 3.01000×10^15 NP1:φs345.00000°, δ47.00000°, λ39.00000°. NP2:φs227.00000°, δ63.00000°, λ130.00000°.*
ISCJB ***17*** *21:48:36.1±0.2, 25°.19N±0°.03×124°.50E±0°.02, h104km±2km, mb4.4/60, Error ellipse: s-maj=5.1km s-min=2.7km az=153.7*
MOS ***17*** *21:48:36.7±1.0, 25°.19N×124°.56E, h113km, mb4.5/25, Error ellipse: s-maj=10.8km s-min=6.6km az=117.0*
JMA ***17*** *21:48:37.9±0.1, 25°.12N×124°.47E, h96km±3km, M3.9*
IDC ***17*** *21:48:37.9±0.7, 25°.26N×124°.57E, h106km±5km, mb3.8/22, mb1 3.9/24, mb1mx3.8/50, mbtmp4.1/24, MS3.1/8, Ms1 3.1/8, ms1mx2.8/58, Error ellipse: s-maj=15.4km s-min=10.5km az=68.0*
NEIC ***17*** *21:48:37.9±0.4, 25°.21N×124°.47E, h106km±4km, mb4.6/33, Error ellipse: s-maj=5.7km s-min=4.7km az=101.0*
BJI ***17*** *21:48:37.2, 25°.08N×124°.46E, h108km, mb4.2/15, mB4.2/9*
ISC 17 21:48:37.4±0.4, 25°.16N±0°.04×124°.51E±0°.03, h105km±3km, h105km:pP-P, n164, σ1940/221, mb4.4/60, 7C-2D, Northeast of Taiwan

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JTJ	**Tarama**	**0.55**	**161**	P	**Pn**	**21 48 53.7**	**-0.4**
JTJ				S	**Sn**	**21 49 05.6**	**-1.0**
JISG	**Ishigakijimahi**	**0.60**	**198**	P	**Pn**	**21 48 53.8**	**-0.7**
JISG				S	**Sn**	**21 49 05.7**	**-1.6**
JIRB	**Irabujima**	**0.69**	**119**	P	**Pn**	**21 48 54.8**	**-0.4**
JIRB				S	**Sn**	**21 49 07.4**	**-1.1**
JIKM	**Ikemajima**	**0.71**	**109**	P	**Pn**	**21 48 55.4**	**0.0**
JIKM				S	**Sn**	**21 49 08.5**	**-0.4**
JMJ	**Miyako jima 2**	**0.79**	**116**	P	**Pn**	**21 48 56.1**	**0.0**
JMJ				S	**Sn**	**21 49 09.9**	**-0.3**
JIJ	**Ishigaki jima**	**0.86**	**203**	P	**Pn**	**21 48 55.9**	**-1.0**
JIJ				S	**Sn**	**21 49 09.3**	**-2.1**
JOGS	**Gusukube**	**0.91**	**116**	P	**Pn**	**21 48 57.6**	**+0.3**
JOGS				S	**Sn**	**21 49 12.4**	**+0.2**
JKRS	**Kuro-shima**	**1.03**	**206**	P	**Pn**	**21 48 58.0**	**-0.5**
JKRS				S	**Sn**	**21 49 13.3**	**-1.1**
IRIF	**Iriomote-Funau**	**1.09**	**221**	P	**Pn**	**21 48 58.5**	**-0.7**
HATJ	**Hateruma jima**	**1.27**	**210**	P	**Pn**	**21 49 00.8**	**-0.5**
HATJ				S	**Sn**	**21 49 17.9**	**-1.4**
YOJ	**Yonaguni jima**	**1.53**	**243**	P	**Pn**	**21 49 04.2**	**-0.1**
YOJ				S	**Sn**	**21 49 23.8**	**-0.9**
YOJ	**Yonaguni jima**	**1.53**	**243**	*e*P	**Pn**	**21 49 04.1**	**-0.2**
YOJ				*e*		21 49 23.2	
YOJ	**Yonaguni jima**	**1.53**	**243**	*e*Pn	**Pn**	**21 49 04.1**	**-0.2**
YOJ				*e*Sn	**Sn**	**21 49 23.2**	**-1.5**
JYNG	**Yonagunijimaku**	**1.59**	**244**	P	**Pn**	**21 49 04.9**	**-0.1**
JYNG				*e*S	**Sn**	**21 49 25.3**	**-0.7**
JKE	**Kume jima 2**	**2.36**	**60**	P	**Pn**	**21 49 14.9**	**+0.1**
JKE				*e*S	**Sn**	**21 49 43.4**	**-0.1**
TATO	**Taipei**	**2.75**	**267**	*e*Pn	**Pn**	**21 49 21.3**	**+1.3**
TATO				*e*Sn	**Sn**	**21 49 52.1**	**-0.5**
NACB	**Ninganchiao**	**2.83**	**250**	*e*Pn	**Pn**	**21 49 20.3**	**-0.8**
NACB				*e*Sn	**Sn**	**21 49 52.1**	**-2.5**
JAGN	**Aguni-jima**	**2.84**	**59**	P	**Pn**	**21 49 21.3**	**+0.1**
JAGN				*e*S	**Sn**	**21 49 53.8**	**-1.1**
YHNB	**Yeheng**	**2.89**	**261**	*e*Pn	**Pn**	**21 49 23.3**	**+1.4**
YHNB				*e*Sn	**Sn**	**21 49 56.2**	**+0.1**
JJT2	**Tamagusuku 2**	**3.08**	**71**	P	**Pn**	**21 49 24.4**	**0.0**
YULB	**Yu-li**	**3.42**	**240**	*e*Pn	**Pn**	**21 49 27.2**	**-1.7**
YULB				*e*Sn	**Sn**	**21 50 03.7**	**-5.0**
JNTH	**Nagotoyohara**	**3.44**	**66**	P	**Pn**	**21 49 28.9**	**-0.3**
JNTH				*e*S	**Sn**	**21 50 09.9**	**+0.7**
SSLB	**Suanglung**	**3.52**	**248**	*e*Pn	**Pn**	**21 49 29.8**	**-0.5**
SSLB				*e*Sn	**Sn**	**21 50 07.2**	**-3.9**
JIH	**Iheya**	**3.62**	**58**	P	**Pn**	**21 49 31.4**	**-0.2**
JIH				*e*S	**Sn**	**21 50 12.2**	**-1.4**
JOW	**Kunigami**	**3.77**	**63**	P	**Pn**	**21 49 32.9**	**-0.8**
JOW				*e*S	**Sn**	**21 50 15.1**	**-2.1**
JOW	**Kunigami**	**3.77**	**63**	*e*Pn	**Pn**	**21 49 33.1**	**-0.5**
JOW				*e*Sn	**Sn**	**21 50 13.8**	**-3.4**
TWG	**Pinlang**	**3.91**	**234**	*e*Pn	**Pn**	**21 49 33.0**	**-2.6**
TWG				*e*Sn	**Sn**	**21 50 15.3**	**-5.3**
TPUB	**Ta-pu**	**4.00**	**243**	*e*Pn	**Pn**	**21 49 36.9**	**+0.2**
TPUB				*e*Sn	**Sn**	**21 50 20.9**	**-1.7**
JOKE	**Okinoerabujima**	**4.25**	**58**	P	**Pn**	**21 49 39.0**	**-1.1**
JOKE				S	**Sn**	**21 50 28.3**	**-0.5**
JTK	**Tokunoshima**	**4.76**	**56**	P	**Pn**	**21 49 45.6**	**-1.4**
JTK				*e*S	**Sn**	**21 50 37.7**	**-3.3**
JAMN	**Amaminishikomi**	**5.18**	**53**	P	**Pn**	**21 49 51.1**	**-1.5**
JAMN				*e*S	**Sn**	**21 50 47.0**	**-4.1**
QZH	**Quanzhou**	**5.37**	**269**	*i*P	**Pn**	**21 49 52.9**	**-2.3**
QZH				S	**Sn**	**21 50 51.1**	**-4.7**
QZH				smax	smax		
	comp=N,130nm,0.9s						
QZH				smax	smax		
	comp=E,90nm,0.9s						
JAM	**Amami Oshima**	**5.59**	**53**	P	**Pn**	**21 49 56.3**	**-1.8**
JAM				*e*S	**Sn**	**21 50 56.9**	**-4.1**
JMZ	**Minamidaito 2**	**6.10**	**82**	P	**Pn**	**21 50 02.1**	**-3.0**
JMZ				S	Sn	21 51 04.4	-9.1
JNU	**Nakatsue**	**9.69**	**34**	LR	LR	21 55 21.0	
	comp=Z,31nm,19.2s,baz=358,slow=42						
JNU	**Nakatsue**	**9.69**	**34**	*e*Pn	**Pn**	**21 50 54.3**	**+0.4**
WHN	**Wuhan**	**10.46**	**303**	*i*P	**Pn**	**21 51 06.1**	**+1.7**
WHN				S	Sn	21 52 52.0	-7.6
KS15	**Wonju Array Si**	**12.57**	**12**	*e*PcP	**PcP**	**21 56 59.1**	**-3.3**
KSAR	**Wonju Array Be**	**12.57**	**12**	P	**Pn**	**21 51 33.4**	**+0.9**
KSAR	**Wonju Array Be**	**12.57**	**12**	P	**Pn**	**21 51 33.4**	**+0.9**
KSRS	**Korea Array**	**12.59**	**13**	P	**Pn**	**21 51 33.4**	**+0.6**
	0.1nm,0.3s,baz=197,slow=11,SNR=5.6						
KSRS				LR	LR	21 56 59.1	
	comp=Z,40nm,18.1s,baz=160,slow=40						
ENH	**Enshi**	**14.24**	**294**	*e*P	**P**	**21 51 58.0**	**-0.4**
MAJO	**Matsushiro**	**16.32**	**43**	*i* P	Pn	21 52 10.8	-10
USRK	**Ussuriysk Ar.**	**19.95**	**16**	P	**P**	**21 53 00.8**	**-0.2**
	0.1nm,0.3s,baz=206,slow=9.8,SNR=3.7						
KKM	**Kota Kinabalu**	**20.61**	**204**	*e*P	**P**	**21 53 09.5**	**+1.0**
	44nm,1.0s						
MYLDM	**Lahad Datu**	**20.69**	**197**	*e*P	Pn	21 53 12.1	-0.5
	20nm,0.9s						
GUMO	**Guam**	**22.36**	**117**	LR	LR	22 00 18.6	
	comp=Z,30nm,19.6s,baz=10.0,slow=31						
CHTO	**Chiang Mai**	**24.51**	**260**	*e*P	**P**	**21 53 49.0**	**+1.8**
CHTO				pmax	pmax		
	comp=Z,3.0nm,0.6s						
CHTO	**Chiang Mai**	**24.51**	**260**	*e*P	**P**	**21 53 49.0**	**+1.8**
	comp=Z,2.6nm,0.6s						
CM01	**Chiang Mai Arr**	**24.63**	**259**	*e*P	**P**	**21 53 48.4**	**+0.1**
CM31	**Chiang Mai Arr**	**24.63**	**259**	*e*P	**P**	**21 53 49.8**	**+1.5**
CM31				*e*PcP	**PcP**	**21 57 24.3**	**+0.9**
CM31				*e*ScP	**ScP**	**22 00 50.7**	**-2.0**
CMAR	**Chiang Mai Arr**	**24.63**	**259**	P	**P**	**21 53 49.8**	**+1.5**
	comp=Z,1.7nm,0.7s,baz=63,slow=8.5,SNR=13						
CMAR				PcP	**PcP**	**21 57 24.3**	**+0.9**
	comp=Z,0.2nm,0.5s,baz=7.9,slow=1.4,SNR=4.2						
CMAR				ScP	**ScP**	**22 00 50.7**	**-2.0**
	comp=Z,0.5nm,0.8s,baz=50,slow=1.4,SNR=3.0						
CMAR				LR	LR	22 03 50.1	
	comp=Z,28nm,20.9s,baz=70,slow=37						
KLR	**Kul'dur**	**24.68**	**11**	P	**P**	**21 53 48.3**	**-0.1**
	comp=Z,0.8nm,0.5s,baz=143,slow=7.2,SNR=4.0						
KLR				pP	**pP**	**21 54 10.6**	**-0.7**
	comp=Z,2.7nm,0.8s,baz=206,slow=9.3,SNR=5.0						
GTA	**Gaotai**	**25.15**	**310**	*e*P	**P**	**21 53 53.6**	**+0.6**
GTA				pmax	pmax		
	comp=Z,4.0nm,1.1s						
SBUM	**Sibu**	**25.50**	**210**	*e*P	**P**	**21 53 57.1**	**+0.9**
	comp=Z,16nm,0.7s						
ULN	**Ulaanbaatar**	**26.53**	**333**	*e*P	**P**	**21 54 05.8**	**+0.5**
ULN				pmax	pmax		
	comp=Z,9.0nm,1.5s						
ULN	**Ulaanbaatar**	**26.53**	**333**	*e*P	**P**	**21 54 05.8**	**+0.5**
	comp=Z,8.8nm,1.5s						
SONA0	**Songino Array**	**26.78**	**332**	*e*P	**P**	**21 54 06.9**	**-0.7**
	comp=Z,1.7nm,0.6s						
SONA0				*e*PcP	**PcP**	**21 57 28.1**	**+0.2**
SONM	**Songino Array**	**26.78**	**332**	P	**P**	**21 54 06.9**	**-0.7**
	comp=Z,0.5nm,0.5s,baz=152,slow=9.5,SNR=6.9						
SONM				PcP	**PcP**	**21 57 28.1**	**+0.2**
	comp=Z,0.2nm,0.4s,baz=122,slow=5.2,SNR=2.9						
SONM				LR	LR	22 05 10.0	
	comp=Z,39nm,20.0s,baz=139,slow=37						
SONA1	**Songino Array**	**26.78**	**332**	*e*P	**P**	**21 54 07.5**	**-0.1**
LSA	**Lhasa**	**29.89**	**286**	*e*P	**P**	**21 54 37.1**	**+1.2**
LSA				pmax	pmax		
	comp=Z,3.0nm,0.6s						
LSA	**Lhasa**	**29.89**	**286**	*e*P	**P**	**21 54 37.1**	**+1.2**
	comp=Z,3.0nm,0.6s						
KKN	**Kakani**	**35.11**	**283**	*e*P	**P**	**21 55 20.2**	**-1.0**
	comp=Z,3.5nm,0.4s						
WMQ	**Urumqi**	**35.23**	**311**	P	P	21 55 15.6	-6.2
WMQ				pmax	pmax		
	comp=Z,66nm,0.6s						
GKN	**Gorkha**	**35.66**	**284**	*e*P	**P**	**21 55 26.0**	**+0.2**
	comp=Z,3.8nm,0.4s						
KOLN	**Koldanda**	**36.60**	**283**	*e*P	**P**	**21 55 34.2**	**+0.4**
	comp=Z,1.6nm,0.3s						
PYUN	**Piuthan**	**37.10**	**284**	*e*P	**P**	**21 55 39.0**	**+0.9**
MTN	**Manton Dam**	**38.32**	**170**	*e*P	**P**	**21 55 48.3**	**+0.1**
	comp=Z,159nm,1.8s						
MK01	**Makanchi Array**	**39.78**	**314**	*e*P	**P**	**21 55 59.4**	**-0.7**
MK31	**Makanchi Array**	**39.80**	**314**	*e*P	**P**	**21 56 00.0**	**-0.2**
MK31	**Makanchi Array**	**39.80**	**314**	*e*P	**P**	**21 56 00.0**	**-0.2**
MK32	**Makanchi Array**	**39.80**	**314**	*e*P	**P**	**21 55 59.9**	**-0.3**
MK32				*e*PcP	**PcP**	**21 58 04.4**	**+0.1**
MK32				*e*ScP	**ScP**	**22 01 42.0**	**-1.7**
MKAR	**Makanchi Array**	**39.80**	**314**	P	**P**	**21 55 59.9**	**-0.3**
	comp=Z,3.6nm,0.5s,baz=99,slow=11,SNR=58						
MKAR				PcP	**PcP**	**21 58 04.4**	**+

KBL					pmax	pmax			
	comp=Z,7.0nm,0.8s								
KBL	**Kabul**	**48.49**	**295**	*eP*	**P**		**21 57 11.1**	**+1.1**	
	comp=Z,7.4nm,0.8s								
BVAR	**Borovoye Array**	**48.87**	**319**	P	**P**		**21 57 12.3**	**0.0**	
	comp=Z,2.7nm,0.5s,baz=105,slow=8.7,SNR=41								
BVAR				pP	**pP**		**21 57 36.8**	**-0.4**	
	comp=Z,0.9nm,0.7s,baz=106,slow=9.9,SNR=2.8								
BVAR				PcP	**PcP**		**21 58 35.7**	**+0.4**	
	comp=Z,1.0nm,0.6s,baz=100,slow=4.2,SNR=4.9								
BRVK	**Borovoye**	**48.94**	**319**	*ceP*	**P**		**21 57 12.5**	**-0.3**	
BRVK					pmax	pmax			
	comp=Z,11nm,2.5s								
BRVK	**Borovoye**	**48.94**	**319**	*eP*	**P**		**21 57 12.8**	**0.0**	
	comp=Z,4.2nm,0.5s								
NRIK	**Noril'sk**	**49.28**	**344**	LR	LR		22 19 32.1		
	comp=Z,44nm,18.3s,baz=133,slow=38								
AS31	**Alice Springs**	**49.39**	**169**	*eP*	**P**		**21 57 17.6**	**+1.0**	
	comp=Z,10nm,0.4s								
AS31				*e*PcP	**PcP**		**21 58 38.0**	**+0.4**	
ASAR	**Alice Springs**	**49.39**	**169**	P	**P**		**21 57 17.6**	**+1.0**	
	comp=Z,14nm,0.6s,baz=354,slow=13,SNR=156								
ASAR				PcP	**PcP**		**21 58 38.0**	**+0.4**	
	comp=Z,2.6nm,0.7s,baz=348,slow=2.9,SNR=6.3								
AS01	**Alice Springs**	**49.39**	**169**	*eP*	**P**		**21 57 17.6**	**+1.0**	
ZRNK	**Zerenda**	**49.67**	**319**	*eP*	**P**		**21 57 18.4**	**0.0**	
ZRNK					pmax	pmax			
	comp=Z,5.0nm,0.6s								
ZRNK	**Zerenda**	**49.67**	**319**	*eP*	**P**		**21 57 18.4**	**0.0**	
	comp=Z,5.4nm,0.6s								
BILL	**Bilibino**	**49.76**	**19**	*eP*	**P**		**21 57 16.4**	**-2.4**	
BILL				*e*			21 59 12.6		
BILL					pmax	pmax			
	comp=Z,1.0nm,1.3s								
ATKA	**Atka Island**	**53.05**	**42**	*eP*	**P**		**21 57 41.2**	**-2.4**	
	comp=Z,86nm,1.1s								
ABKAR	**Akbulak array**	**54.94**	**314**	*eP*	**P**		**21 57 57.9**	**+0.5**	
ARU	**Arti**	**56.17**	**322**	*c iP*	**P**		**21 58 05.8**	**-0.3**	
ARU							22 00 10.8		
ARU					S	S	22 05 53.9	+6.8	
ARU					SS	**SS**	**22 09 33.4**	**-1.3**	
ARU					pmax	pmax			
	comp=Z,9.0nm,1.2s								
ARU	**Arti**	**56.17**	**322**	*eP*	**P**		**21 58 05.0**	**-1.1**	
	comp=Z,19nm,1.5s								
GEYT	**Alibeck**	**56.92**	**300**	P	**P**		**21 58 13.0**	**+1.2**	
	comp=Z,4.4nm,0.6s,baz=64,slow=3.4,SNR=11								
NWAO	**Narrogin (SRO)**	**58.18**	**187**	*eP*	**P**		**21 58 20.6**	**+0.2**	
NWAO					pmax	pmax			
	comp=Z,28nm,1.3s								
NWAO	**Narrogin (SRO)**	**58.18**	**187**	*eP*	**P**		**21 58 20.6**	**+0.2**	
	comp=Z,28nm,1.3s								
BBOO	**Buckleboo**	**58.69**	**169**	*eP*	**P**		**21 58 24.7**	**+0.7**	
	comp=Z,12nm,0.6s								
STKA	**Stephens Creek**	**59.02**	**163**	P	**P**		**21 58 26.9**	**+0.6**	
	comp=Z,4.5nm,0.7s,baz=344,slow=5.9,SNR=15								
STKA	**Stephens Creek**	**59.02**	**163**	*eP*	**P**		**21 58 26.9**	**+0.6**	
	comp=Z,1.2nm,0.8s								
RND	**Reindeer**	**66.33**	**29**	*eP*	**P**		**21 59 15.2**	**+0.6**	
RND					pmax	pmax			
	comp=Z,4.0nm,0.9s								
RND	**Reindeer**	**66.33**	**29**	*eP*	**P**		**21 59 15.2**	**+0.6**	
	comp=Z,4.3nm,0.9s								
MDM	**Murphy Dome**	**66.35**	**28**	*eP*	**P**		**21 59 16.8**	**+2.1**	
	comp=Z,3.4nm,0.8s								
ILAR	**Eielson Array**	**66.95**	**28**	P	**P**		**21 59 18.1**	**-0.3**	
	comp=Z,0.5nm,0.5s,baz=254,slow=5.4,SNR=8.4								
ILAR				PcP	**pP**		**21 59 45.0**	**+0.4**	
	comp=Z,0.4nm,1.0s,baz=259,slow=4.4,SNR=4.0								
ILB	**Eielson Array**	**66.95**	**28**	*eP*	**P**		**21 59 18.1**	**-0.3**	
ILB				*ep*P	**pP**		**21 59 45.0**	**+0.4**	
KBZ	**Khabaz**	**67.23**	**309**	P	**P**		**21 59 20.9**	**+0.4**	
	comp=Z,1.9nm,0.7s,baz=118,slow=3.3,SNR=6.0								
KIV	**Kislovodsk**	**67.32**	**309**	*ceP*	**P**		**21 59 22.2**	**+0.9**	
KIV					pmax	pmax			
	comp=Z,6.0nm,0.6s								
KIV	**Kislovodsk**	**67.32**	**309**	*eP*	**P**		**21 59 22.4**	**+1.1**	
	comp=Z,6.2nm,0.7s								
BMRM	**Bremner River**	**68.76**	**32**	*eP*	**P**		**21 59 32.4**	**+2.5**	
	comp=Z,6.8nm,0.4s								
ARA0	**ARCESS Array S**	**69.76**	**338**	*eP*	**P**		**21 59 35.2**	**-0.6**	
ARCES	**ARCESS Array B**	**69.76**	**338**	P	**P**		**21 59 35.2**	**-0.6**	
	comp=Z,3.1nm,0.8s,baz=83,slow=7.4,SNR=3.0								
ANN	**Anapa**	**70.74**	**311**	*eP*	**P**		**21 59 41.0**	**-1.2**	
ANN				*e*S	**S**		**22 08 53.4**	**+5.0**	
ANN					pmax	pmax			
	comp=Z,20nm,1.3s								
INK	**Inuvik**	**71.17**	**23**	P	**P**		**21 59 44.4**	**0.0**	
	comp=Z,0.6nm,0.6s,baz=243,slow=5.6,SNR=4.2								
INK	**Inuvik**	**71.17**	**23**	*eP*	**P**		**21 59 44.4**	**0.0**	
	comp=Z,7.1nm,1.4s								
FIA0	**FINESS Array S**	**72.12**	**330**	*eP*	**P**		**21 59 49.9**	**-0.3**	
FIA0	**FINESS Array S**	**72.12**	**330**	*eP*	**P**		**21 59 49.9**	**-0.3**	
FINES	**FINESS Array B**	**72.12**	**330**	P	**P**		**21 59 49.9**	**-0.3**	
	comp=Z,2.5nm,0.8s,baz=62,slow=3.9,SNR=7.9								
FINES					LR	LR	22 37 33.3		
	comp=Z,42nm,19.0s,baz=345,slow=41								
AKASG	**Malin Array Be**	**74.14**	**319**	*ceP*	**P**		**22 00 01.1**	**-1.2**	
AKBB	**Malin Array Si**	**74.14**	**319**	*eP*	**P**		**22 00 01.2**	**-1.2**	
AKBB					pmax	pmax			
	comp=Z,5.0nm,0.8s								
AKBB	**Malin Array Si**	**74.14**	**319**	*eP*	**P**		**22 00 01.1**	**-1.2**	
	comp=Z,5.4nm,0.8s								
BR101	**Keskin Array S**	**75.02**	**307**	*eP*	**P**		**22 00 08.2**	**+0.4**	
BR101				*ep*P	**pP**		**22 00 35.9**	**+1.4**	
BRTR	**Keskin Array B**	**75.02**	**307**	P	**P**		**22 00 08.2**	**+0.4**	
	comp=Z,1.2nm,0.6s,baz=78,slow=5.0,SNR=9.4								
BRTR				pP	**pP**		**22 00 35.9**	**+1.4**	
	comp=Z,1.1nm,0.8s,baz=84,slow=5.8,SNR=4.1								
BR231	**Keskin MP Arra**	**75.60**	**307**	*eP*	**P**		**22 00 08.8**	**-2.3**	
DLBC	**Dease Lake**	**76.55**	**31**	P	**P**		**22 00 15.9**	**-0.2**	
	comp=Z,1.0nm,0.6s,baz=229,slow=19,SNR=3.1								
DLBC	**Dease Lake**	**76.55**	**31**	*eP*	**P**		**22 00 15.9**	**-0.2**	
	comp=Z,8.9nm,1.5s								
RAO	**Raoul Island**	**77.35**	**131**	LR	LR		22 29 06.5		
	comp=Z,246nm,20.8s,baz=306,slow=31								
NB200	**NORSAR Array S**	**78.76**	**333**	*eP*	**P**		**22 00 27.4**	**-0.9**	
NOA	**NORSAR Array B**	**78.76**	**333**	P	**P**		**22 00 27.4**	**-0.9**	
	comp=Z,0.7nm,0.7s,baz=51,slow=5.9,SNR=3.6								
YKA	**Yellowknife Ar**	**80.88**	**24**	P	**P**		**22 00 40.2**	**+0.6**	
	comp=Z,1.1nm,0.5s,baz=304,slow=5.4,SNR=27								
YKA				pP	**pP**		**22 01 05.5**	**-1.1**	
	comp=Z,0.8nm,0.8s,baz=307,slow=5.0,SNR=4.3								
YKB5	**Yellowknife Ar**	**80.88**	**24**	*eP*	**P**		**22 00 40.2**	**+0.6**	
YKB5				*ep*P	**pP**		**22 01 05.5**	**-1.1**	
CLL	**Collm**	**83.07**	**324**	*e*(P)	pP		22 01 20.0	+1.5	
GERES	**GERESS Array B**	**83.98**	**322**	P	**P**		**22 00 55.8**	**-0.4**	
	comp=Z,0.7nm,0.8s,baz=19,slow=4.5,SNR=4.4								
MSO	**Missoula**	**91.04**	**36**	*ep*P	pP		22 02 00.6	+2.9	
WVOR	**Wild Horse Val**	**91.08**	**41**	*eP*	**P**		**22 01 31.4**	**+0.9**	
WVOR				*e*PP	**pP**		**22 01 58.8**	**+0.8**	
WVOR	**Wild Horse Val**	**91.08**	**41**	*eP*	**P**		**22 01 31.4**	**+0.9**	
WVOR				*ep*P	**pP**		**22 01 58.8**	**+0.8**	
SDCO	**Great Sand Dun**	**101.76**	**38**	*e*Pdif	**Pdif**		**22 02 25.0**	**+5.7**	
WMOK	**Wichita Mounta**	**107.66**	**36**	*eP*	**Pdif**		**22 02 43.7**	**-1.5**	
WMOK	**Wichita Mounta**	**107.66**	**36**	*e*Pdif	**Pdif**		**22 02 43.7**	**-1.5**	

ISCJB ***17*** *21:52:57.7±0.5, 12°.31N±0°.05×87°.57W±0°.05, h67km, mb3.9/10, Error ellipse: s-maj=8.7km s-min=4.2km az=41.7*

CASC ***17*** *21:52:58.7±2.0, 12°.34N×87°.52W, h65km±23km, MD4.5, ML4.2*

IDC ***17*** *21:53:00.2±1.5, 12°.45N×87°.30W, h80km±14km, mb3.7/10, mb1 3.9/13, mb1mx3.6/44, mbtmp4.0/13, MS3.4/3, Ms1 3.4/3, ms1mx2.8/41, Error ellipse: s-maj=33.1km s-min=11.3km az=55.0*

ISC 17 21:52:58.5±0.6, **12°.35N**±0°.07×**87°.55W**±0°.06, **h67**km, **n42,** σ1**9**21/**47**, **mb3.9**/10, **1C**, **Near coast of Nicaragua**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
CRIN	**San Cristobal**	**0.60**	**55**	*eP*	**Pn**	**21 53 12.4**	**+0.2**
CRIN				*e*S	**Sn**	**21 53 23.6**	**+1.3**
CSGN	**Cosiguina Volc**	**0.62**	**359**	*eP*	**Pn**	**21 53 12.3**	**-0.1**
TEL3	**Telica 3**	**0.72**	**72**	*eP*	**Pn**	**21 53 14.1**	**+0.6**
TELN	**Telica**	**0.75**	**70**	*eP*	**Pn**	**21 53 13.3**	**-0.6**
CNGN	**Cerro Negro**	**0.85**	**80**	*eP*	**Pn**	**21 53 14.4**	**-0.6**
CNGN				AML	AML	21 53 34.1	
	comp=E,11μm,0.4s						
COPN	**Copaltepe**	**0.95**	**100**	*eP*	**Pn**	**21 53 15.6**	**-0.7**
MOMN	**Momotombo**	**0.99**	**87**	*eP*	**Pn**	**21 53 16.3**	**-0.5**
APYN	**Apoyeque**	**1.18**	**96**	*eP*	**Pn**	**21 53 18.8**	**-0.4**
XAVN	**Gruta Xavier**	**1.21**	**99**	*eP*	**Pn**	**21 53 19.3**	**-0.4**
TISN	**Laguna Tiscapa**	**1.27**	**99**	*eP*	**Pn**	**21 53 20.0**	**-0.4**
CRUN	**El Crucero**	**1.28**	**107**	*eP*	**Pn**	**21 53 19.9**	**-0.6**
MGAN	**Managua**	**1.29**	**99**	*eP*	**Pn**	**21 53 20.3**	**-0.4**
MGAN				*e*S	**Sn**	**21 53 36.4**	**-0.8**
MGAN				AML	AML	21 53 38.1	
	comp=N,3μm,0.3s						
ESTN	**Estel**	**1.37**	**57**	*eP*	**Pn**	**21 53 22.2**	**+0.3**
MASN	**Masaya**	**1.42**	**105**	*eP*	**Pn**	**21 53 22.3**	**-0.1**
BOAB	**BOACO BROADBAN**	**1.84**	**87**	*eP*	**Pn**	**21 53 27.5**	**-0.6**
BOQS	**Boqueron**	**2.17**	**309**	*eP*	**Pn**	**21 53 33.3**	**+0.6**
VCR	**Vista de Mar**	**2.91**	**139**	*eP*	**Pn**	**21 53 42.1**	**-0.4**
ESPN	**Las Esperanzas**	**3.18**	**92**	*eP*	**Pn**	**21 53 46.8**	**+0.6**
JTS	**JuntasAbangare**	**3.27**	**129**	P	**Pn**	**21 53 47.2**	**-0.3**
	comp=N,9.8nm,0.3s,baz=344,slow=5.1,SNR=33						
JTS				S	**Sn**	**21 54 24.9**	**-0.3**
	comp=N,17nm,0.3s,baz=310,slow=18,SNR=5.4						
JTS	**JuntasAbangare**	**3.27**	**129**	*eP*	**Pn**	**21 53 47.2**	**-0.3**
JCR	**Jicaral**	**3.45**	**136**	*eP*	**Pn**	**21 53 50.1**	**+0.1**
QCR	**Quepos**	**4.42**	**131**	*eP*	**Pn**	**21 54 03.9**	**+0.8**
QCR				*e*S	**Sn**	**21 54 55.1**	**+1.7**
URSC	**Urasca**	**4.47**	**124**	*eP*	**Pn**	**21 54 05.4**	**+1.4**
BUS	**Buena Vista**	**4.65**	**126**	*ieP*	**Pn**	**21 54 08.8**	**+2.1**
BUS				*e*S	**Sn**	**21 55 00.5**	**+0.9**
TEIG	**Tepich**	**7.86**	**355**	P	**Pn**	**21 54 52.4**	**+2.2**
	comp=N,0.5nm,0.3s,baz=90,slow=23,SNR=5.6						
CMIG	**Matias Romero**	**8.51**	**304**	P	**Pn**	**21 55 02.2**	**+3.0**
	comp=N,1.0nm,0.3s,baz=160,slow=12,SNR=9.1						
CMIG				S	**Sn**	**21 56 30.4**	**-3.4**
	comp=N,0.4nm,0.3s,baz=56,slow=18,SNR=3.2						
SJG	**San Juan**	**21.42**	**72**	LR	LR	22 06 03.7	
	comp=N,43nm,20.4s,baz=56,slow=37						
TXAR	**Lajitas Array**	**22.59**	**321**	P	**P**	**21 57 55.4**	**+1.6**
	comp=N,3.1nm,0.6s,baz=136,slow=10.0,SNR=39						
TXAR				ScP	**ScP**	**22 05 16.0**	**-0.9**
	comp=N,0.2nm,0.6s,baz=151,slow=4.5,SNR=3.5						
TKL	**Tuckaleechee C**	**23.45**	**8**	P	**P**	**21 58 03.2**	**+1.1**
	comp=N,6.4nm,0.6s,baz=172,slow=11,SNR=9.2						
PDAR	**Pinedale Array**	**35.81**	**332**	P	**P**	**21 59 53.1**	**+1.3**
	comp=N,0.6nm,0.5s,baz=132,slow=11,SNR=6.0						
ULM	**Lac du Bonnet**	**38.40**	**351**	P	**P**	**22 00 11.8**	**-1.5**
	comp=N,1.2nm,0.3s,baz=169,slow=9.1,SNR=3.4						
SCHQ	**Schefferville**	**45.40**	**17**	P	**P**	**22 01 08.3**	**-2.1**
	comp=N,3.2nm,0.5s,baz=220,slow=7.2,SNR=5.5						
YKA	**Yellowknife Ar**	**53.68**	**345**	P	**P**	**22 02 12.3**	**-0.8**
	comp=N,0.5nm,0.5s,baz=143,slow=6.9,SNR=13						
YKA				ScP	**ScP**	**22 07 09.8**	**-1.0**
	comp=N,0.2nm,0.6s,baz=146,slow=4.5,SNR=6.4						
PLCA	**Paso Flores**	**55.11**	**164**	P	**P**	**22 02 24.6**	**+0.7**
	comp=N,1.9nm,0.6s,baz=354,slow=10,SNR=4.1						
DLBC	**Dease Lake**	**55.95**	**335**	P	**P**	**22 02 31.5**	**+1.7**
	comp=N,1.0nm,0.8s,baz=130,slow=8.4,SNR=4.1						
INK	**Inuvik**	**63.27**	**343**	P	**P**	**22 03 19.1**	**-0.7**
	comp=N,0.9nm,0.8s,baz=139,slow=7.8,SNR=3.5						
ILAR	**Eielson Array**	**66.07**	**336**	P	**P**	**22 03 37.6**	**-0.6**
	comp=N,0.4nm,0.8s,baz=171,slow=4.9,SNR=7.2						
DAVOX	**Davos/Dischmat**	**86.13**	**43**	LR	LR	22 41 35.5	
	comp=N,28nm,19.5s,baz=17,slow=34						
VRAC	**Vranov**	**89.75**	**39**	LR	LR	22 46 45.3	
	comp=N,28nm,18.4s,baz=308,slow=36						
ASAR	**Alice Springs**	**139.14**	**248**	PKP	**PKPdf**	**22 12 19.3**	**+0.7**
	comp=N,0.4nm,0.6s,baz=96,slow=1.9,SNR=3.3						
WRA	**Warramunga Arr**	**139.15**	**254**	PKP	**PKPdf**	**22 12 19.6**	**+0.9**
	comp=N,1.0nm,0.9s,baz=91,slow=3.0,SNR=5.7						
CMAR	**Chiang Mai Arr**	**148.72**	**348**	PKPbc	**PKPbc**	**22 12 38.2**	**-1.0**
	comp=N,0.4nm,0.8s,baz=335,slow=4.0,SNR=4.0						

NIED ***17*** *22:02:00, 36°.80N×141°.00E, h47km, Mw3.4 Best double couple: M0 1.59000×10^14 NP1:φs=271.00000°, δ50.00000°, λ154.00000°. NP2:φs 18.00000°, δ70.00000°, λ43.00000°.*

IDC ***17*** *22:02:43.9±2.0, 36°.99N×141°.66E, h0km, mb3.5/5, mb1 3.7/7, mb1mx3.4/48, mbtmp3.6/7, ML3.5/2, MS2.2/1, Ms1 2.2/1, ms1mx2.0/47, Error ellipse: s-maj=54.0km s-min=20.9km az=66.0*

ISCJB ***17*** *22:02:51.8±0.8, 36°.76N±0°.04×141°.0E±0°.1, h57km±5km, mb3.4/5, Error ellipse: s-maj=14.6km s-min=6.5km az=4.6*

JMA ***17*** *22:02:53.5±0.1, 36°.79N×140°.95E, h51km±1km, M3.6*

JMA Felt I J1.

ISC 17 22:02:53.0±1.2, **36°.78N**±0°.04×**141°.01E**±0°.09, **h49**km±9km, **n22,** σ0**976**/**23**, **mb3.5**/5, **Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.36**	**332**	P	**Pn**	**22 03 02.9**	**+0.1**
ONAJ				S	**Sn**	**22 03 09.5**	**-0.2**
JHO	**Hitachi**	**0.39**	**244**	P	**Pn**	**22 03 03.1**	**+0.1**
JHO				S	**Sn**	**22 03 09.9**	**-0.2**
JFK	**Kawauchi**	**0.59**	**349**	P	**Pn**	**22 03 05.4**	**0.0**
JFK				S	**Sn**	**22 03 13.7**	**-0.6**
JYT	**Yasato**	**0.86**	**230**	P	**Pn**	**22 03 08.8**	**0.0**
JSB	**Shiboa**	**0.89**	**282**	P	**Pn**	**22 03 09.3**	**0.0**
JSB				*e*S	**Sn**	**22 03 20.6**	**-0.7**
JFT	**Otama**	**0.91**	**324**	P	**Pn**	**22 03 10.1**	**+0.5**
JFT				S	**Sn**	**22 03 22.0**	**+0.3**
JMM	**Marumori**	**1.10**	**351**	P	**Pn**	**22 03 12.2**	**+0.2**
JMM				S	**Sn**	**22 03 26.0**	**-0.1**
JFY	**Yanaizu**	**1.22**	**301**	P	**Pn**	**22 03 13.5**	**-0.2**
MJAR	**Matsushiro Arr**	**2.27**	**265**	Pn	**Pn**	**22 03 28.6**	**+0.5**
	6.1nm,0.3s,baz=88,slow=15,SNR=21						
MJAR				LR	LR	22 04 29.2	
	comp=Z,39nm,18.9s,baz=285,slow=38						
JHJ	**Hachijo jima 2**	**3.79**	**196**	Pn	**Pn**	**22 03 50.5**	**+1.6**
	8.1nm,0.3s,baz=264,slow=23,SNR=7.7						
JHJ				Sn	**Sn**	**22 04 31.2**	**-1.0**
	21nm,0.3s,baz=53,slow=20,SNR=3.4						
USRK	**Ussuriysk Ar.**	**10.10**	**320**	Pn	**Pn**	**22 05 16.9**	**+1.6**
	0.1nm,0.3s,baz=140,slow=14,SNR=4.6						
SONM	**Songino Array**	**27.66**	**304**	P	**P**	**22 08 37.4**	**+1.1**
	0.5nm,0.7s,baz=114,slow=9.5,SNR=4.1						
H11N2	**WAKE ISLAND Hy**	**28.30**	**120**	T	T	22 38 28.3	
	baz=313						
H11N1	**WAKE ISLAND Hy**	**28.31**	**120**	T	T	22 38 27.8	
	baz=313						
H11N3	**WAKE ISLAND Hy**	**28.32**	**120**	T	T	22 38 27.8	
	baz=313						
H11S1	**WAKE ISLAND Hy**	**29.00**	**122**	T	T	22 39 12.7	
	baz=311						
H11S3	**WAKE ISLAND Hy**	**29.00**	**122**	T	T	22 39 13.8	
	baz=311						
H11S2	**WAKE ISLAND Hy**	**29.01**	**122**	T	T	22 39 13.8	
	baz=311						
ZALV	**Zalesovo Beam**	**41.85**	**313**	P	**P**	**22 10 37.2**	**-0.7**
	0.5nm,0.5s,baz=99,slow=7.3,SNR=2.9						
MKAR	**Makanchi Array**	**43.98**	**302**	P	**P**	**22 10 54.8**	**-0.6**
	0.3nm,0.8s,baz=80,slow=10.0,SNR=3.2						
WRA	**Warramunga Arr**	**56.77**	**188**	P	**P**	**22 12 31.7**	**-0.4**
	0.7nm,0.5s,baz=5.1,slow=7.4,SNR=16						
ASAR	**Alice Springs**	**60.49**	**187**	P	**P**	**22 12 57.1**	**-0.9**
	0.3nm,0.6s,baz=17,slow=9.7,SNR=3.5						

IDC ***17*** *22:03:04.6±1.2, 0°.51N×126°.45E, h0km, mb3.9/5, mb1 4.0/5, mb1mx3.6/40, mbtmp3.9/5, Error ellipse: s-maj=127.2km s-min=18.8km az=67.0*

ISCJB ***17*** *22:03:14.3±0.6, 0°.57N±0°.05×126°.63E±0°.03, h47km, mb3.9/5, Error ellipse: s-maj=6.9km s-min=4.2km az=5.2*

DJA ***17*** *22:03:14.6±0.5, 1°N±2°×12°7E±°, h20km±6km, M4.2/19, mb4.3/10, mB5.1/3, MLv4.1/19, Mw(mB)4.4/3*

ISC 17 22:03:13.5±0.9, **0°.70N**±0°.07×**126°.65E**±0°.05, **h47**km, **n22,** σ2**9**14/**26**, **mb3.8**/5, **Northern Molucca Sea**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
TNTI	**Ternate**	**0.72**	**84**	P	**Pn**	**22 03 28.4**	**+1.0**
TNTI				S	**Sn**	**22 03 39.7**	**+2.2**
LBMI	**Labuha**	**1.58**	**147**	P	**Pn**	**22 03 38.7**	**-0.4**
LBMI				S	**Sn**	**22 03 58.1**	**-0.2**
SANI	**Sanana**	**2.81**	**194**	P	**Pn**	**22 03 55.0**	**-0.9**
SGSI	**Sangihe**	**3.17**	**339**	P	Pn	22 04 05.9	+5.0
SGSI				S	Sn	22 04 47.0	+10
NLAI	**Namlea**	**3.94**	**173**	P	**Pn**	**22 04 12.0**	**+0.6**
LUWI	**Luwuk**	**4.24**	**246**	P	**Pn**	**22 04 16.8**	**+1.2**
LUWI				S	**Sn**	**22 05 06.8**	**+2.9**
MSAI	**Masohi**	**4.62**	**150**	P	**Pn**	**22 04 21.6**	**+0.8**
MSAI				S	**Sn**	**22 05 14.9**	**+1.7**
AAI	**Ambon**	**4.62**	**160**	P	**Pn**	**22 04 21.8**	**+0.9**
AAI				S	**Sn**	**22 05 14.3**	**+1.0**
MRSI	**Marisa**	**4.71**	**267**	P	**Pn**	**22 04 24.1**	**+2.1**
SWI	**Sorong**	**4.87**	**109**	P	**Pn**	**22 04 26.8**	**+2.6**
SWI				S	**Sn**	**22 05 23.1**	**+3.8**
APSI	**Ampana**	**5.25**	**252**	P	**Pn**	**22 04 31.8**	**+2.4**
	32nm,0.7s,672nm0.2nm						
APSI				S	**Sn**	**22 05 32.6**	**+3.9**
	32nm,0.7s,672nm0.2nm						
BNDI	**Bandanaira**	**6.12**	**148**	P	**Pn**	**22 04 42.6**	**+1.2**
	50nm,1.3s,0.3nm						
FAKI	**Fak Fak**	**6.65**	**123**	P	**Pn**	**22 04 50.7**	**+2.0**
	11nm,1.0s,0.1nm						
TTSI	**Tana Toraja**	**7.77**	**241**	P	**Pn**	**22 05 05.5**	**+1.4**
	15nm,0.6s,880nm0.1nm						
RKPI	**Ransiki, Papua**	**7.84**	**106**	P	**Pn**	**22 05 07.7**	**+2.6**
	118nm,1.0s,3μm0.5nm						
SPSI	**Sidrap Palu**	**8.29**	**236**	P	**Pn**	**22 05 12.4**	**+1.2**
	14nm,0.4s						
BSSI	**Bau Bau, Buton**	**9.16**	**222**	P	**Pn**	**22 05 23.6**	**+0.4**
WRA	**Warramunga Arr**	**21.86**	**160**	P	P	22 07 58.2	-4.1
	2.9nm,0.5s,baz=338,slow=10,SNR=50						
ASAR	**Alice Springs**	**25.23**	**164**	P	**P**	**22 08 31.4**	**-3.8**
	0.7nm,0.4s,baz=353,slow=16,SNR=13						
STKA	**Stephens Creek**	**35.36**	**158**	P	P	22 10 00.5	-4.2
	0.5nm,0.5s,baz=316,slow=9.3,SNR=4.5						
SONM	**Songino Array**	**50.13**	**342**	P	**P**	**22 12 02.9**	**-1.3**
	0.5nm,0.5s,baz=160,slow=8.2,SNR=5.7						
MKAR	**Makanchi Array**	**60.00**	**326**	P	**P**	**22 13 13.2**	**-2.1**
	1.2nm,0.4s,baz=118,slow=7.9,SNR=38						

WEL 17 22:10:34.2±0.4, **37°.60S**×**176°.21E**, **h192**km±3km, **ML3.5**/5, **2C**, **Error ellipse: s-maj=5.3km s-min=4.4km az=90.0, North Island**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
URZ	**Urewera**	**0.97**	**133**	PN	Pn	22 11 02.8	-0.2
URZ				SN	Sn	22 11 25.3	0.0
MRHZ	**Matea Rd**	**1.24**	**172**	PN	Pn	22 11 05.2	+0.2
MRHZ				SN	Sn	22 11 29.8	+0.6
HAZ	**Te Kaha**	**1.26**	**98**	PN	Pn	22 11 05.1	0.0
HAZ				SN	Sn	22 11 28.5	+0.6
MWZ	**Matawai**	**1.28**	**126**	PN	Pn	22 11 05.6	+0.3
RAGZ	**Rawiri**	**1.31**	**134**	PN	Pn	22 11 05.8	+0.1
RAGZ				SN	Sn	22 11 29.9	-0.2
RAHZ	**Arahi**	**1.49**	**152**	PN	Pn	22 11 07.5	+0.3
NMHZ	**Naumai**	**1.57**	**163**	PN	Pn	22 11 08.7	+0.8
BKZ	**Black Stump Fm**	**1.58**	**172**	⇑PN	Pn	22 11 07.7	-0.3
BKZ				SN	Sn	22 11 33.5	-1.0
RIGZ	**Rimuhau**	**1.65**	**132**	PN	Pn	22 11 08.9	+0.3
WHHZ	**Waihua**	**1.68**	**152**	PN	Pn	22 11 09.1	+0.1
TUVZ	**Tukino**	**1.72**	**194**	PN	Pn	22 11 09.8	+0.3
WMGZ	**Waiomatatini S**	**1.77**	**98**	PN	Pn	22 11 09.9	+0.1
ARHZ	**Aropaoanui**	**1.77**	**160**	PN	Pn	22 11 09.9	+0.1
WNVZ	**Wahianoa**	**1.79**	**195**	PN	Pn	22 11 10.2	0.0
KWHZ	**Kaweka Forest**	**1.83**	**175**	PN	Pn	22 11 10.4	-0.1
KNZ	**Kokohu**	**1.83**	**141**	PN	Pn	22 11 10.1	-0.3
**MOV

s-maj=172.2km s-min=19.3km az=52.0
*ISCJB **17** 22:18:55.2±0.8, 7°.28S±0°.08×105°.90E±0°.06, h78km±7km, mb3.5/7, Error ellipse: s-maj=15.2km s-min=4.9km az=33.6*
*DJA **17** 22:18:56.1±0.5, 7°S±3°×10°6E±°, h34km±5km, M3.6/16, MLv3.6/16*
ISC 17 22:18:56.4±1.2**, 7°.23S**±0°.09×**105°.93E**±0°.06**, h68**km±10km**, n22,** σ1**°.15**/33**, mb3.8**/7**, Jawa**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CGJI	**Cibinong**	**0.66**	**339**	P	**Pn**	**22 19 10.4**	**-0.3**
CGJI				S	**Sn**	**22 19 20.5**	**-0.7**
SKJI	**Sukabumi**	**0.66**	**70**	P	**Pn**	**22 19 10.4**	**-0.3**
SKJI				S	**Sn**	**22 19 21.1**	**-0.1**
DBJI	**Dramaga**	**1.05**	**50**	P	**Pn**	**22 19 15.6**	**+0.1**
DBJI				S	**Sn**	**22 19 31.5**	**+1.8**
SBJI	**Serang**	**1.12**	**10**	P	**Pn**	**22 19 16.4**	**0.0**
SBJI				S	**Sn**	**22 19 33.4**	**+2.2**
CNJI	**Cibinong**	**1.19**	**94**	P	**Pn**	**22 19 17.7**	**+0.5**
CNJI				S	**Sn**	**22 19 34.5**	**+1.7**
CBJI	**Citeko**	**1.22**	**49**	P	**Pn**	**22 19 15.7**	**-1.9**
CBJI				S	**Sn**	**22 19 33.2**	**-0.2**
LEM	**Lembang**	**1.72**	**77**	P	**Pn**	**22 19 25.1**	**+0.7**
LEM				S	**Sn**	**22 19 47.6**	**+2.0**
CISI	**Cisompet, Garu**	**1.90**	**100**	P	**Pn**	**22 19 27.5**	**+0.9**
CISI				S	**Sn**	**22 19 51.5**	**+1.9**
KASI	**Kota Agung**	**2.22**	**320**	P	**Pn**	**22 19 31.3**	**+0.3**
KASI				S	**Sn**	**22 19 58.6**	**+1.3**
JCJI	**Jatiwangi**	**2.44**	**73**	P	**Pn**	**22 19 33.8**	**-0.1**
CMJI	**Cimerak**	**2.55**	**103**	P	**Pn**	**22 19 35.7**	**+0.2**
KLI	**Kotabumi**	**2.58**	**335**	P	**Pn**	**22 19 36.7**	**+0.7**
KLI				S	**Sn**	**22 20 08.3**	**+2.0**
KPJI	**Karang Pucung**	**2.98**	**92**	P	**Pn**	**22 19 41.9**	**+0.6**
MDSI	**Maura Dua**	**3.24**	**327**	P	**Pn**	**22 19 45.5**	**+0.6**
MDSI				S	**Sn**	**22 20 23.8**	**+1.5**
CMAR	**Chiang Mai Arr**	**26.44**	**345**	P	**P**	**22 24 26.1**	**-1.0**
	0.1nm,0.4s,baz=182,slow=8.9,SNR=4.3						
WRA	**Warramunga Arr**	**30.30**	**117**	P	**P**	**22 25 00.2**	**-1.4**
	0.5nm,0.8s,baz=288,slow=11,SNR=2.7						
STKA	**Stephens Creek**	**41.28**	**131**	P	**P**	**22 26 34.7**	**-0.6**
	0.6nm,0.4s,baz=306,slow=17,SNR=2.6						
MKAR	**Makanchi Array**	**57.75**	**341**	P	**P**	**22 28 40.1**	**-0.3**
	0.5nm,0.5s,baz=154,slow=9.5,SNR=9.1						
KURBB	**Kurchatov Arra**	**62.31**	**341**	P	**P**	**22 29 11.9**	**+0.5**
	0.5nm,0.5s,baz=152,slow=6.1,SNR=5.8						
ZALV	**Zalesovo Beam**	**63.50**	**346**	P	**P**	**22 29 18.7**	**-0.6**
	0.7nm,0.3s,baz=163,slow=5.6,SNR=4.4						
BVAR	**Borovoye Array**	**67.17**	**338**	P	**P**	**22 29 43.7**	**+0.6**
	0.6nm,0.5s,baz=144,slow=10,SNR=8.2						
TXAR	**Lajitas Array**	**144.51**	**48**	PKP	**PKPdf**	**22 38 26.2**	**+0.2**
	0.1nm,0.5s,baz=241,slow=1.9,SNR=2.3						

IDC 17 22:25:38.1±3.0**, 32°.87S**×**178°.49W, h0**km**, mb3.5**/2**, mb1 3.8**/3**, mb1mx3.6**/34**, mbtmp3.6**/3**, ML3.6**/1**, Error ellipse: s-maj=71.1km s-min=36.2km az=116.0, South of Kermadec Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
URZ	**Urewera**	**6.46**	**212**	Pn	Pn	22 27 14.5	0.0
	1.3nm,0.3s,baz=351,slow=18,SNR=7.4						
URZ				Sn	Sn	22 28 28.1	-0.8
	1.2nm,0.3s,baz=79,slow=19,SNR=4.6						
ASAR	**Alice Springs**	**42.62**	**270**	P	P	22 33 36.2	-0.2
	0.1nm,0.3s,baz=97,slow=7.6,SNR=2.9						
WRA	**Warramunga Arr**	**43.83**	**275**	P	P	22 33 46.3	+0.1
	0.6nm,0.5s,baz=115,slow=8.1,SNR=7.2						
FINES	**FINESS Array B**	**147.30**	**338**	PKPbc	PKPbc	22 45 22.0	-0.8
	0.9nm,0.6s,baz=29,slow=4.4,SNR=6.5						

TRN 17 22:32:21.1, 16°.43N×**60°.84W, h33**km**, MD3.7, 3C-8D, Leeward Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEG	**La Desirade**	**0.24**	**243**	⇓iP	Pb	22 32 30.0	+1.7
SFG	**Saint Francois**	**0.39**	**244**	⇑iP	Pn	22 32 31.6	+1.2
SEG	**Port Louis**	**0.64**	**268**	eP	Pb	22 32 35.1	+1.1
MGG	**Marie-Galante**	**0.68**	**223**	eP	Pb	22 32 35.8	+1.0
MGG				eS	Sb	22 32 46.2	+2.2
DOG	**Dongo Capester**	**0.85**	**243**	⇓eP	Pb	22 32 38.2	+0.7
CRG	**Carmichael**	**0.87**	**245**	⇓iP	Pb	22 32 38.6	+0.6
LKG	**Breislack**	**0.88**	**245**	⇑eP	Pb	22 32 38.4	+0.4
PHG	**Guadaloupe-2**	**0.88**	**242**	⇓eP	Pb	22 32 38.7	+0.7
SSG	**Sans Toucher**	**0.88**	**248**	⇓eP	Pb	22 32 38.4	+0.4
FNG	**Fond-Bernard**	**0.89**	**246**	⇓eP	Pb	22 32 38.6	+0.3
MLG	**Mont-d'or**	**0.91**	**247**	⇓eP	Pb	22 32 39.1	+0.5
LZG	**Guadaloupe-1**	**0.95**	**253**	⇓iP	Pb	22 32 39.3	+0.2
TBG	**Guadaloupe-3**	**0.96**	**234**	eP	Pb	22 32 40.0	+0.6
TBG				eS	Sb	22 32 52.2	+0.3
BBL	**Barber's Block**	**1.08**	**214**	eP	Pb	22 32 41.1	-0.3
BBL				eS	Sb	22 32 56.5	+1.2
DLPL	**La Plaine**	**1.16**	**200**	eP	Pb	22 32 42.1	-0.6
DLPL				eS	Sb	22 32 58.0	+0.6
BPA	**Boggy Peak**	**1.16**	**302**	eP	Pb	22 32 43.3	+0.6
BPA				eS	Sb	22 32 58.4	+1.0
MLYT	**Lee's Yard**	**1.33**	**283**	eP	Pb	22 32 45.1	-0.6
MLYT				eS	Sb	22 33 03.0	+0.6
ANWB	**Willy Bob**	**1.53**	**324**	eP	Pb	22 32 47.6	-1.4
ANWB				eS	Sb	22 33 07.1	-1.0
BAMF	**Morne Balai**	**1.63**	**191**	eP	Pn	22 32 48.9	+1.3
CXM	**Morne La Croix**	**1.64**	**191**	eP	Pn	22 32 49.0	+1.2
CXM				eS	Sn	22 33 09.4	+1.7
PCM	**Pelee Case Pet**	**1.64**	**193**	eP	Pn	22 32 48.7	+1.0
PCM	**Pelee Case Pet**	**1.64**	**193**	eP	Pn	22 32 48.9	+1.3
GBMF	**Grand Be**	**1.65**	**191**	eP	Pn	22 32 48.9	+1.1
PML	**Morne Lenard**	**1.67**	**192**	eP	Pn	22 32 49.2	+1.1
FDF	**Fort de France**	**1.71**	**190**	⇑iP	Pn	22 32 49.8	+1.1
FDF				eS	Sb	22 33 11.5	-1.7
LPMF	**Morne Lapointe**	**1.84**	**184**	eP	Pn	22 32 51.6	+1.2
ZAM	**Aeronautique**	**1.85**	**186**	eP	Pn	22 32 51.7	+1.2
MVM	**Montagne Vaucl**	**1.86**	**182**	eP	Pn	22 32 52.4	+1.7
TRMF	**Trois Ilets**	**1.89**	**186**	eP	Pn	22 32 52.5	+1.5
BIM	**Bigot**	**1.91**	**187**	eP	Pn	22 32 53.0	+1.6
BIM				eS	Sn	22 33 16.5	+2.2
MCLT	**Moule a Chique**	**2.70**	**182**	eP	Pn	22 33 04.2	+1.9
MCLT				eS	Sn	22 33 36.0	+2.1
SVV	**Soufriere Volc**	**3.11**	**187**	eP	Pn	22 33 10.5	+2.6
SVV				eS	Sn	22 33 46.0	+2.0
SVB	**Belmont**	**3.16**	**187**	eP	Pn	22 33 10.6	+2.0
SVB				eS	Sn	22 33 47.1	+2.0
FCV	**Fort Charlotte**	**3.27**	**187**	eP	Pn	22 33 12.6	+2.4
FCV				eS	Sn	22 33 50.2	+2.3

IDC 17 22:35:18.0±6.9**, 6°.76S**×**128°.05E, h388**km±86km**, mb3.2**/4**, mb1 3.4**/7**, mb1mx3.1**/40**, mbtmp4.1**/7**, Error ellipse: s-maj=68.3km s-min=28.3km az=57.0, Banda Sea**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**11.52**	**192**	P	P	22 37 52.3	-0.4
	0.4nm,0.3s,baz=24,slow=7.4,SNR=7.9						
FITZ				S	S	22 39 59.4	-1.1
	0.1nm,0.3s,baz=73,slow=19,SNR=2.4						
WRA	**Warramunga Arr**	**14.46**	**156**	P	P	22 38 24.2	-0.8
	1.3nm,0.3s,baz=330,slow=10,SNR=68						
ASAR	**Alice Springs**	**17.73**	**162**	P	P	22 39 00.8	+0.5
	2.4nm,0.3s,baz=346,slow=12,SNR=164						
STKA	**Stephens Creek**	**28.01**	**155**	P	P	22 40 35.2	0.0
	1.0nm,0.4s,baz=333,slow=9.5,SNR=5.5						
SONM	**Songino Array**	**57.62**	**343**	P	P	22 44 29.1	0.0
	0.7nm,0.6s,baz=162,slow=6.3,SNR=6.8						
MKAR	**Makanchi Array**	**66.98**	**328**	P	P	22 45 31.3	+1.0
	0.6nm,0.4s,baz=119,slow=8.3,SNR=16						
ZALV	**Zalesovo Beam**	**70.53**	**335**	P	P	22 45 50.4	-1.4
	0.5nm,0.4s,baz=117,slow=5.0,SNR=4.2						

MEX 17 22:37:23.9±0.7**, 18°.81N**×**104°.89W, h15**km**, MD3.7, Near coast of Jalisco**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
R15V		**0.93**	**67**	eP	Pb	22 37 37.8	-4.0
R15V				eS	Sb	22 37 48.5	-5.5
EZ5V		**1.39**	**61**	eP	Pn	22 37 46.2	-2.8
EZ5V				eS	Sn	22 38 02.2	-5.1
MMIG	**Aquila**	**1.55**	**109**	eP	Pn	22 37 47.6	-3.4
MMIG				eS	Sn	22 38 06.0	-4.9

*CSEM **17** 22:53:48.9±0.2, 41°.12N×43°.86E, h0km±2km, ML2.2, Error ellipse: s-maj=3.7km s-min=2.1km az=145.0*
*TIF **17** 22:53:48.0, 41°.12N×43°.90E, h13km*
*DDA **17** 22:53:49.5, 41°.10N×43°.78E, h7km, Md3.0*
ISC 17 22:53:48.9±1.1**, 41°.12N**±0°.03×**43°.87E**±0°.02**, h5**km±10km**, n26,** σ0**°.29**/51**, Turkey-Georgia-Armenia border region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AKH	**Akhalkalaki**	**0.41**	**316**	P	**Pg**	**22 53 56.9**	**0.0**
AKH				S	**Sg**	**22 54 02.7**	**+0.4**
AKH	**Akhalkalaki**	**0.41**	**316**	P	**Pg**	**22 53 56.9**	**0.0**
AKH				S	**Sg**	**22 54 02.7**	**+0.4**
EAK	**Akyaka**	**0.47**	**205**	i P	**Pg**	**22 53 58.1**	**0.0**
EAK				i S	**Sg**	**22 54 04.8**	**+0.5**
EAK	**Akyaka**	**0.47**	**205**	P	**Pg**	**22 53 58.1**	**0.0**
EAK				S	**Sg**	**22 54 04.8**	**+0.5**
KZR	**Kazreti**	**0.49**	**57**	P	**Pg**	**22 53 58.1**	**-0.2**
KZR				S	**Sg**	**22 54 04.7**	**0.0**
KZR	**Kazreti**	**0.49**	**57**	P	**Pg**	**22 53 58.1**	**-0.2**
KZR				S	**Sg**	**22 54 04.7**	**0.0**
KARS	**Kars**	**0.78**	**231**	ePG	**Pg**	**22 54 03.7**	**-0.1**
KARS				eSG	**Sb**	**22 54 15.6**	**-0.3**
KARS	**Kars**	**0.78**	**231**	ePg	**Pg**	**22 54 03.7**	**-0.1**
KARS				eSg	**Sb**	**22 54 15.6**	**-0.3**
TBLG	**Delisi**	**0.90**	**47**	ePG	**Pg**	**22 54 06.1**	**0.0**
TBLG				eSG	**Sb**	**22 54 19.2**	**-0.1**
TBLG	**Delisi**	**0.90**	**47**	P	**Pb**	**22 54 07.1**	**+0.1**
TBLG				S	**Sb**	**22 54 19.5**	**+0.2**
TBLG	**Delisi**	**0.90**	**47**	ePg	**Pg**	**22 54 06.1**	**0.0**
TBLG	**Delisi**	**0.90**	**47**	P	**Pb**	**22 54 07.1**	**+0.1**
TBLG				eSg	**Sb**	**22 54 19.2**	**-0.1**
EPOS	**Posof**	**0.94**	**295**	i P	**Pg**	**22 54 06.6**	**-0.4**
EPOS				i S	**Sg**	**22 54 19.3**	**0.0**
EPOS	**Posof**	**0.94**	**295**	P	**Pg**	**22 54 06.6**	**-0.4**
EPOS				S	**Sg**	**22 54 19.3**	**0.0**
DGRG	**David-gareji**	**1.18**	**73**	P	**Pg**	**22 54 11.1**	**-0.5**
DGRG				S	**Sn**	**22 54 28.7**	**0.0**
DGRG	**David-gareji**	**1.18**	**73**	P	**Pg**	**22 54 11.1**	**-0.5**
DGRG				S	**Sn**	**22 54 28.7**	**0.0**
GUDG	**Gudauri**	**1.42**	**18**	P	**Pn**	**22 54 15.7**	**0.0**
GUDG				S	**Sn**	**22 54 35.3**	**+0.4**
GUDG	**Gudauri**	**1.42**	**18**	P	**Pn**	**22 54 15.7**	**0.0**
GUDG				S	**Sn**	**22 54 35.3**	**+0.4**
ARTV	**Artvin**	**1.47**	**273**	i P	**Pn**	**22 54 16.4**	**+0.1**
ARTV				i S	**Sg**	**22 54 36.1**	**0.0**
ARTV	**Artvin**	**1.47**	**273**	P	**Pn**	**22 54 16.4**	**+0.1**
ARTV				S	**Sg**	**22 54 36.1**	**0.0**
DAGI	**Agillar**	**1.48**	**269**	i P	**Pn**	**22 54 16.4**	**0.0**
DAGI				i S	**Sg**	**22 54 37.1**	**+0.7**
ONI	**Oni**	**1.50**	**348**	P	**Pn**	**22 54 16.2**	**-0.4**
ONI				S	**Sb**	**22 54 37.1**	**+0.3**
DDEM	**Demirkent**	**1.62**	**263**	i P	**Pn**	**22 54 18.5**	**+0.2**
DDEM				i S	**Sg**	**22 54 40.9**	**-0.1**
DDEM	**Demirkent**	**1.62**	**263**	P	**Pn**	**22 54 18.5**	**+0.2**
DDEM				S	**Sg**	**22 54 40.9**	**-0.1**
DBAD	**Bademkaya**	**1.65**	**267**	i P	**Pb**	**22 54 19.4**	**-0.5**
DBAD				i S	**Sb**	**22 54 41.2**	**+0.2**
DBAD	**Bademkaya**	**1.65**	**267**	P	**Pb**	**22 54 19.4**	**-0.5**
DBAD				S	**Sb**	**22 54 41.2**	**+0.2**

*NIED **17** 22:59:00, 36°.70N×141°.90E, h35km, Mw3.8 Best double couple: Mo5.56000×10[14] NP1:φs213.00000°, δ22.00000°, λ106.00000°. NP2:φs15.00000°, δ69.00000°, λ84.00000°.*
*IDC **17** 22:59:42.8±5.1, 36°.55N×142°.23E, h0km, mb3.9/5, mb1 3.8/7, mb1mx3.5/58, mbtmp3.8/7, ML2.9/2, MS3.0/3, Ms1 3.0/3, ms1mx2.5/44, Error ellipse: s-maj=98.7km s-min=58.7km az=158.0*
*JMA **17** 22:59:47.5±0.3, 36°.72N×141°.87E, h19km±3km, M3.9*
ISC 17 22:59:48.3±1.7**, 36°.74N**±0°.09×**141°.9E**±0°.1**, h19**km**, n24,** σ1**°.30**/19**, mb3.8**/5**, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.92**	**293**	P	**Pn**	**23 00 05.0**	**-1.3**
JFK	**Kawauchi**	**1.00**	**309**	P	**Pn**	**23 00 06.1**	**-1.3**
JHO	**Hitachi**	**1.04**	**263**	P	**Pb**	**23 00 06.5**	**-1.2**
JMM	**Marumori**	**1.41**	**323**	P	**Pn**	**23 00 12.4**	**-0.5**
JYT	**Yasato**	**1.43**	**250**	P	**Pb**	**23 00 12.6**	**-1.8**
JYT				S	**Sn**	**23 00 30.3**	**-1.3**
JFT	**Otama**	**1.44**	**303**	P	**Pb**	**23 00 13.6**	**-1.0**
JSB	**Shiboa**	**1.57**	**279**	P	**Pb**	**23 00 15.7**	**-1.0**
JFY	**Yanaizu**	**1.84**	**292**	P	**Pb**	**23 00 19.8**	**-1.6**
JFY				S	**Sb**	**23 00 43.9**	**-0.2**
MJAR	**Matsushiro Arr**	**2.94**	**267**	Pn	**Pn**	**23 00 35.0**	**+1.0**
	13nm,0.3s,baz=96,slow=10,SNR=43						
MAT	**Matsushiro**	**2.94**	**267**	P	**Pn**	**23 00 35.1**	**+1.1**
MAT				S	**Sn**	**23 01 11.2**	**+2.4**
JNU	**Nakatsue**	**9.71**	**251**	LR	LR	23 06 37.8	
	comp=Z,99nm,18.6s,baz=296,slow=42						
USRK	**Ussuriysk Ar.**	**10.58**	**318**	Pn	**Pn**	**23 02 20.8**	**+2.0**
	0.1nm,0.3s,baz=122,slow=19,SNR=2.7						
KSRS	**Korea Array**	**11.15**	**278**	LR	LR	23 06 39.7	
	comp=Z,45nm,19.1s,baz=80,slow=36						
H11N2	**WAKE ISLAND Hy**	**27.69**	**121**	T	T	23 34 50.2	
	baz=313,slow=75,SNR=38						
H11N1	**WAKE ISLAND Hy**	**27.70**	**121**	T	T	23 34 51.4	
	baz=313,slow=75,SNR=22						
H11N3	**WAKE ISLAND Hy**	**27.71**	**121**	T	T	23 34 50.8	
	baz=313,slow=75,SNR=26						
SONM	**Songino Array**	**28.24**	**304**	P	**P**	**23 05 40.1**	**-0.1**
	1.0nm,0.6s,baz=100,slow=8.8,SNR=8.0						
SONM				LR	LR	23 17 28.9	
	comp=Z,43nm,19.3s,baz=132,slow=37						
H11S1	**WAKE ISLAND Hy**	**28.40**	**123**	T	T	23 35 48.7	
	baz=312,slow=75,SNR=21						
H11S3	**WAKE ISLAND Hy**	**28.40**	**123**	T	T	23 35 48.7	
	baz=312,slow=75,SNR=18						
H11S2	**WAKE ISLAND Hy**	**28.42**	**123**	T	T	23 35 49.2	
	baz=312,slow=75,SNR=18						
ZALV	**Zalesovo Beam**	**42.37**	**313**	P	**P**	**23 07 41.8**	**+0.7**
	4.2nm,0.6s,baz=91,slow=7.0,SNR=4.5						
MKAR	**Makanchi Array**	**44.57**	**302**	P	**P**	**23 07 59.0**	**0.0**
	0.6nm,0.8s,baz=88,slow=9.2,SNR=7.4						
KURBB	**Kurchatov Arra**	**46.46**	**308**	P	**P**	**23 08 13.7**	**-0.1**
	0.6nm,0.5s,baz=80,slow=7.1,SNR=7.0						
AKASG	**Malin Array Be**	**74.75**	**323**	P	**P**	**23 11 26.7**	**-0.1**
	0.2nm,0.3s,baz=45,slow=7.0,SNR=4.7						

*IDC **17** 23:03:55.8±0.8, 1°.50N×126°.78E, h0km, mb3.9/9, mb1 4.1/11, mb1mx3.8/55, mbtmp3.9/11, ML4.1/2, Error ellipse: s-maj=44.9km s-min=15.6km az=71.0*
*ISCJB **17** 23:04:01.6±0.4, 1°.42N±0°.04×126°.42E±0°.04, h47km, mb3.9/12, Error ellipse: s-maj=6.0km s-min=4.5km az=35.5*
*NEIC **17** 23:04:04.0±1.9, 1°.37N×126°.64E, h64km±19km, mb4.3/3, Error ellipse: s-maj=21.9km s-min=6.8km az=68.0*
*DJA **17** 23:04:06.9±0.3, 1°N±2°×12°6E±°, h48km±18km, M4.2/13, mB5.0/2, mb4.4/7, MLv4.1/13, Mw(mB)4.3/2*
ISC 17 23:04:03.0±0.7**, 1°.37N**±0°.06×**126°.43E**±0°.05**, h47**km**, n30,** σ1**°.75**/36**, mb4.0**/12**, Northern Molucca Sea**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TNTI	**Ternate**	**1.11**	**122**	P	**Pn**	**23 04 24.0**	**+1.9**
TNTI				S	**Sn**	**23 04 38.6**	**+2.4**
LBMI	**Labuha**	**2.26**	**152**	P	**Pn**	**23 04 39.9**	**+2.0**
LBMI				S	**Sn**	**23 05 05.9**	**+1.3**
SGSI	**Sangihe**	**2.47**	**339**	P	Pn	23 04 46.9	+6.1
SGSI				S	Sn	23 05 20.1	+10
SANI	**Sanana**	**3.43**	**187**	P	**Pn**	**23 04 54.8**	**+0.9**
SANI				S	**Sn**	**23 05 32.3**	**-1.0**
LUWI	**Luwuk**	**4.38**	**237**	P	**Pn**	**23 05 09.1**	**+2.2**
LUWI				S	**Sn**	**23 05 57.4**	**+0.7**
LUWI	**Luwuk**	**4.38**	**237**	ePn	Pn	23 05 10.6	+3.6
MRSI	**Marisa**	**4.58**	**259**	P	**Pn**	**23 05 11.9**	**+2.2**
MRSI				S	**Sn**	**23 06 04.4**	**+2.7**
NLAI	**Namlea**	**4.63**	**172**	P	**Pn**	**23 05 11.4**	**+1.0**
NLAI				S	**Sn**	**23 06 02.4**	**-0.5**
APSI	**Ampana**	**5.29**	**245**	P	**Pn**	**23 05 21.7**	**+2.2**
	194nm,1.4s,2μm0.6nm						
MSAI	**Masohi**	**5.31**	**152**	P	**Pn**	**23 05 21.5**	**+1.8**
	8.8nm,0.7s,0.1nm						
MSAI				S	**Sn**	**23 06 21.4**	**+1.8**
	8.8nm,0.7s,0.1nm						
SWI	**Sorong**	**5.31**	**115**	P	Pn	23 05 23.3	+3.5
	9.9nm,0.7s,0.1nm						
SWI				S	**Sn**	**23 06 24.6**	**+4.9**
	9.9nm,0.7s,0.1nm						
TTSI	**Tana Toraja**	**7.93**	**236**	P	**Pn**	**23 05 56.5**	**+0.7**
	36nm,0.7s,0.1nm						
SPSI	**Sidrap Palu**	**8.51**	**231**	P	**Pn**	**23 06 05.0**	**+1.3**
	19nm,0.8s,699nm						
KAPI	**Kappang**	**9.21**	**226**	Pn	**Pn**	**23 06 16.3**	**+3.0**
	1.7nm,0.3s,baz=109,slow=5.5,SNR=4.2						
KAPI	**Kappang**	**9.21**	**226**	ePn	**Pn**	**23 06 16.2**	**+2.9**
KKM	**Kota Kinabalu**	**11.20**	**295**	ePn	Pn	23 06 44.2	+3.6
FITZ	**Fitzroy Crossi**	**19.37**	**182**	P	**P**	**23 08 23.3**	**-1.6**
	0.4nm,0.3s,baz=9.5,slow=9.9,SNR=6.6						
WRAB	**Tennant Creek**	**22.55**	**160**	eP	**P**	**23 08 58.5**	**-0.7**
	6.6nm,0.6s						
WRA	**Warramunga Arr**	**22.56**	**160**	P	**P**	**23 08 58.1**	**-1.3**
	3.8nm,0.6s,baz=340,slow=11,SNR=12						
WRA				PcP	**PcP**	**23 12 52.0**	**+0.2**
	0.2nm,0.6s,baz=342,slow=1.5,SNR=3.5						
ASAR	**Alice Springs**	**25.93**	**164**	P	**P**	**23 09 30.6**	**-0.4**
	1.7nm,0.6s,baz=345,slow=7.9,SNR=22						
ASAR				PcP	**PcP**	**23 12 59.1**	**+0.1**
	0.1nm,0.3s,baz=350,slow=2.1,SNR=5.4						
STKA	**Stephens Creek**	**36.06**	**158**	P	**P**	**23 10 58.6**	**-1.4**
	1.4nm,0.7s,baz=327,slow=9.9,SNR=3.7						
MAJO	**Matsushiro**	**36.66**	**16**	eP	**P**	**23 11 04.1**	**-1.0**
	2.2nm,0.4s						
TLY	**Talaya**	**53.67**	**343**	eP	**P**	**23 13 18.8**	**-1.1**
	1.6nm,0.7s						
MKAR	**Makanchi Array**	**59.33**	**326**	P	**P**	**23 13 59.9**	**-0.3**
	0.6nm,0.3s,baz=120,slow=7.3,SNR=11						
KURBB	**Kurchatov Arra**	**63.56**	**328**	P	**P**	**23 14 28.4**	**-0.3**
	0.9nm,0.5s,baz=129,slow=6.0,SNR=5.3						
KURK	**Kurchatov**	**63.57**	**328**	P	**P**	**23 14 28.4**	**-0.3**
BVAR	**Borovoye Array**	**69.13**	**328**	P	**P**	**23 15 04.4**	**+0.1**
	0.3nm,0.5s,baz=120,slow=8.5,SNR=4.0						
AKTO	**Aktyubinsk**	**75.32**	**322**	P	**P**	**23 15 41.7**	**+0.4**
	0.9nm,0.6s,baz=111,slow=7.8,SNR=3.6						
VNDA	**Vanda**	**81.14**	**173**	P	**P**	**23 16 12.7**	**-0.3**
	0.5nm,0.6s,baz=319,slow=6.6,SNR=3.7						
ILAR	**Eielson Array**	**87.35**	**25**	P	**P**	**23 16 43.5**	**-1.2**
	0.1nm,0.5s,baz=272,slow=4.5,SNR=3.5						

*IDC **17** 23:07:17.2±0.8, 53°.39N×87°.46E, h0km, mb3.6/10, mb1 3.8/15, mb1mx3.7/55, mbtmp3.7/15, ML3.6/5, Error ellipse: s-maj=10.7km s-min=9.1km az=148.0*
*ISCJB **17** 23:07:21.0±0.6, 53°.39N±0°.04×86°.88E±0°.07, h33km, mb3.7/12, Error ellipse: s-maj=5.8km s-min=5.5km az=179.5*
*NNC **17** 23:07:24.1±1.3, 53°.23N×86°.45E, h0km, mb4.4, mpv4.5, Error ellipse: s-maj=10.9km s-min=6.2km az=61.0*
ISC 17 23:07:22.5±0.8**, 53°.41N**±0°.07×**87°.15E**±0°.08**, h35**km**, n32,** σ1**°.32**/40**, mb3.7**/12**, 11C-13D, Southwestern Siberia**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ZALV	**Zalesovo Beam**	**1.48**	**292**	Pg	**Pn**	**23 07 46.8**	**+0.1**
	6.6nm,0.3s,baz=106,slow=16,SNR=41						
ZALV				Lg	Lg	23 08 11.6	
	16nm,0.3s,baz=113,slow=29,SNR=12						
KURK	**Kurchatov**	**5.91**	**246**	⇓Pn	**Pn**	**23 08 48.4**	**+1.0**
	43nm,0.6s						
KURK				⇑Sn	**Sn**	**23 09 51.3**	**-2.5**
	11nm,0.6s						
KURK				⇑Lg	Lg	23 10 19.5	
	61nm,0.7s						
KURBB	**Kurchatov Arra**	**6.01**	**246**	Pn	**Pn**	**23 08 50.6**	**+1.8**
	1.5nm,0.3s,baz=62,slow=14,SNR=184						
KURBB				Sn	**Sn**	**23 09 58.0**	**+1.7**
	0.2nm,0.3s,baz=59,slow=16,SNR=2.9						
KURBB				Lg	Lg	23 10 32.3	
	0.4nm,0.3s,baz=360,slow=23,SNR=5.6						
MK31	**Makanchi Array**	**7.32**	**207**	⇓Pn	**Pn**	**23 09 07.8**	**+1.0**
	14nm,0.6s,baz=28,slow=12,SNR=189						
MK31				⇑Sn	**Sn**	**23 10 27.5**	**-1.2**
	2.8nm,0.6s,baz=30,slow=25,SNR=3.9						
MK31				⇓Lg	Lg	23 11 06.6	
	9.2nm,0.7s,baz=36,slow=33,SNR=5.6						
MKAR	**Makanchi Array**	**7.32**	**207**	Pn	**Pn**	**23 09 08.4**	**+1.5**
	4.7nm,0.3s,baz=26,slow=12,SNR=291						
MKAR				Sn	**Sn**	**23 10 29.1**	**+0.4**
	0.6nm,0.3s,baz=16,slow=12,SNR=3.3						
MKAR				Lg	Lg	23 11 11.1	
	1.0nm,0.3s,baz=31,slow=33,SNR=7.6						
MAKZ	**Makanchi**	**7.39**	**209**	⇓Pn	**Pn**	**23 09 08.6**	**+0.7**
	23nm,0.7s						
MAKZ				⇓Sn	**Sn**	**23 10 30.4**	**-0.1**
	5.3nm,0.6s						
MAKZ				⇑Lg	Lg	23 11 06.3	
	14nm,0.8s						
VOSK	**Vostochnaya**	**9.76**	**272**	⇑Pn	**Pn**	**23 09 40.2**	**0.0**
	2.2nm,0.6s						
VOSK				⇓Sn	**Sn**	**23 11 26.5**	**-2.0**
	5.1nm,0.7s						
CHKZ	**Chkalovo**	**9.85**	**278**	⇓Pn	**Pn**	**23 09 41.4**	**0.0**
	2.8nm,0.8s						
CHKZ				⇑Sn	**Sn**	**23 11 28.6**	**-2.0**
	4.4nm,0.9s						
BVA0	**Borovoye Array**	**10.06**	**275**	⇓Pn	**Pn**	**23 09 43.7**	**-0.7**
	5.9nm,1.0s,baz=78,slow=12,SNR=18						
BVA0				⇑Sn	**Sn**	**23 11 34.1**	**-1.8**
	5.0nm,0.8s,baz=73,slow=25,SNR=6.2						
BVAR	**Borovoye Array**	**10.06**	**275**	Pn	**Pn**	**23 09 44.5**	**+0.1**
	0.8nm,0.3s,baz=71,slow=14,SNR=18						
BVAR				Sn	**Sn**	**23 11 34.4**	**-1.5**
	0.6nm,0.3s,baz=80,slow=26,SNR=6.2						
BRVK	**Borovoye**	**10.12**	**275**	⇑Pn	**Pn**	**23 09 44.9**	**-0.3**
	7.8nm,0.8s						
BRVK				⇓Sn	**Sn**	**23 11 35.2**	**-2.0**
	7.0nm,0.7s						
TLY	**Talaya**	**10.20**	**93**	Lg	Lg	23 12 36.0	
	0.0nm,0.3s,baz=236,slow=23,SNR=3.1						
OTUK	**Ortayu**	**10.69**	**247**	⇓Pn	**Pn**	**23 09 51.9**	**-1.2**
	4.0nm,0.6s						
OTUK				⇓Sn	**Sn**	**23 11 49.1**	**-2.3**
	3.3nm,0.8s						
ZRNK	**Zerenda**	**10.90**	**275**	⇑Pn	**Pn**	**23 09 55.5**	**-0.3**
	2.8nm,0.8s						
ZRNK				⇑Sn	**Sn**	**23 11 56.0**	**-0.4**
	4.0nm,0.8s						
PDGK	**Podgornoye**	**11.29**	**210**	⇓Pn	**Pn**	**23 10 00.7**	**-0.5**
	4.2nm,0.8s						
PDGK				⇓Lg	Lg	23 13 12.4	
	6.0nm,0.8s						
TKM2	**Tokmak 2**	**13.00**	**221**	⇑Lg	Lg	23 14 05.8	
	6.3nm,1.6s						
SONM	**Songino Array**	**13.42**	**107**	Pn	Pn	23 10 26.9	-3.5
	0.2nm,0.3s,baz=293,slow=14,SNR=4.8						
SONM				Lg	Lg	23 14 16.4	
	0.1nm,0.3s,baz=285,slow=30,SNR=4.6						
AAK	**Ala-Archa**	**13.68**	**223**	Pn	**Pn**	**23 10 32.8**	**-1.3**
	0.1nm,0.3s,baz=36,slow=4.4,SNR=3.7						
AAK				Lg	Lg	23 14 37.0	
	0.1nm,0.3s,baz=269,slow=19,SNR=3.7						
NRIK	**Noril'sk**	**15.99**	**1**	Pn	Pn	23 11 00.2	-4.2
	0.3nm,0.3s,baz=159,slow=6.7,SNR=5.3						
GEYT	**Alibeck**	**25.28**	**244**	P	**P**	**23 12 46.4**	**+1.0**
	0.8nm,0.7s,baz=39,slow=9.4,SNR=2.8						
TIXI	**Tiksi**	**25.67**	**29**	P	**P**	**23 12 47.5**	**-1.1**
	3.9nm,0.7s,baz=269,slow=5.7,SNR=13						
FINES	**FINESS Array B**	**32.69**	**309**	P	**P**	**23 13 51.6**	**+0.6**
	1.1nm,0.8s,baz=35,slow=15,SNR=3.0						
AKASG	**Malin Array Be**	**34.88**	**290**	P	**P**	**23 14 11.0**	**+0.8**
	0.5nm,0.5s,baz=56,slow=8.9,SNR=3.8						
CMAR	**Chiang Mai Arr**	**36.07**	**161**	P	**P**	**23 14 19.7**	**-1.0**
	0.3nm,0.3s,baz=350,slow=10,SNR=3.5						
BRTR	**Keskin Array B**	**38.33**	**271**	P	**P**	**23 14 40.6**	**+0.8**
	0.8nm,0.9s,baz=28,slow=6.5,SNR=3.5						
NB2	**NORSAR Subarra**	**39.60**	**312**	P	**P**	**23 14 51.5**	**+1.4**
	comp=Z,1.7nm,0.9s,baz=66,slow=7.9						
NOA	**NORSAR Array B**	**39.60**	**312**	P	**P**	**23 14 51.9**	**+1.9**
	comp=Z,1.0nm,0.7s,baz=64,slow=7.9,SNR=4.8						
BRG	**Berggiesshubel**	**43.17**	**298**	eP	**P**	**23 15 20.5**	**+1.1**
	comp=Z,1.4nm,0.9s						
CLL	**Collm**	**43.43**	**299**	i P	**P**	**23 15 22.6**	**+1.1**
	comp=Z,4.0nm,0.7s						
GERES	**GERESS Array B**	**44.44**	**295**	P	**P**	**23 15 31.6**	**+1.8**
	comp=Z,0.2nm,0.3s,baz=67,slow=11,SNR=3.0						
ILAR	**Eielson Array**	**55.04**	**25**	P	**P**	**23 16 48.8**	**-1.3**
	comp=Z,0.5nm,0.7s,baz=314,slow=3.7,SNR=8.0						
YKA	**Yellowknife Ar**	**63.18**	**11**	P	**P**	**23 17 45.2**	**-1.1**
	comp=Z,0.2nm,0.6s,baz=343,slow=7.0,SNR=4.4						

*ISCJB **17** 23:23:34.8±0.2, 6°.53S±0°.04×153°.54E±0°.04, h29km, mb4.7/69, MS4.0/4, Error ellipse: s-maj=5.9km s-min=5.1km az=44.5*

MOS 17 23:23:35.9±0.8, 6°51'S×153°53'E, h40km, mb4.7/29, Error ellipse: s-maj=10.2km s-min=8.5km az=92.8
BJI 17 23:23:35.7, 6°50'S×153°50'E, h38km, mb4.6/31, mB4.9/19, Ms5.0/8, Ms7 4.7/7
NEIC 17 23:23:38.2±0.7, 6°52'S×153°51'E, h44km±7km, mb4.7/34, Error ellipse: s-maj=5.0km s-min=4.6km az=117.0
IDC 17 23:23:39.1±3.8, 6°56'S×153°50'E, h52km±33km, mb4.0/17, mb1 4.2/18, mb1mx4.1/38, mbtmp4.3/18, ML3.4/2, MS3.4/3, Ms1 3.3/3, ms1mx2.9/28, Error ellipse: s-maj=21.4km s-min=15.7km az=91.0
DJA 17 23:23:44.1±1.9, 6°S±7'×15°3E±°, h46km±16km, M5.1/12, mB5.6/4, mb4.8/12, MLv5.2/1, Mw(mB)5.1/4

ISC 17 23:23:36.6±0.3, **6°53S**±0'05×**153°55E**±0'05, **h29km, n120, σ1§16/134, mb4.7/69, MS4.8/5, 1C, New Britain region**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
RABL	**Rabaul**	**2.71**	**329**	*e*Pn	**Pn**	**23 24 18.4**	**+0.2**
PMG	**Port Moresby**	**6.95**	**245**	P	**Pn**	**23 25 17.5**	**+0.9**
	18nm,0.3s,baz=53,slow=9.4,SNR=81						
PMG				S	**Sn**	**23 26 36.2**	**+1.5**
	6.1nm,0.3s,baz=165,slow=22,SNR=9.1						
PMG				LR	LR	23 28 07.8	
	comp=Z,227nm,18.6s,baz=88,slow=39						
PMG	**Port Moresby**	**6.95**	**245**	*e*Pn	**Pn**	**23 25 16.8**	**+0.2**
PMG				S	**Sn**	**23 26 36.2**	**+1.5**
HNR	**Honiara**	**6.96**	**115**	*e*P	**Pn**	**23 25 17.7**	**+1.0**
HNR	**Honiara**	**6.96**	**115**	*e*Pn	**Pn**	**23 25 17.7**	**+1.0**
CTA	**Charters Tower**	**15.22**	**207**	P	**P**	**23 27 13.6**	**-0.9**
	0.4nm,0.3s,baz=22,slow=13,SNR=8.7						
CTAO	**Charters Tower**	**15.22**	**207**	*e*P	**Pn**	**23 27 10.3**	**+0.5**
CTAO				pmax	pmax		
	comp=Z,14nm,0.8s						
CTAO	**Charters Tower**	**15.22**	**207**	*e*Pn	**Pn**	**23 27 10.3**	**+0.5**
	comp=Z,14nm,0.8s						
EIDS	**Eidsvold**	**18.88**	**187**	*e*P	**Pn**	**23 27 55.2**	**-0.3**
	comp=Z,26nm,1.4s						
DZM	**Mont Dzumac**	**19.84**	**142**	P	**P**	**23 28 06.0**	**+0.5**
	comp=Z,0.5nm,0.3s,baz=33,slow=7.6,SNR=5.0						
RKPI	**Ransiki, Papua**	**19.96**	**284**	P	**P**	**23 28 06.3**	**-0.4**
	comp=Z,126nm,1.1s						
KMPI	**Kaimana, Papua**	**19.97**	**277**	P	**P**	**23 28 07.7**	**+0.8**
	comp=Z,66nm,0.8s,comp=Z,2μm						
WRAB	**Tennant Creek**	**22.92**	**233**	*e*P	**P**	**23 28 37.9**	**-0.6**
WRAB				pmax	pmax		
	comp=Z,25nm,0.9s						
WRAB	**Tennant Creek**	**22.92**	**233**	*e*P	**P**	**23 28 37.9**	**-0.6**
	comp=Z,26nm,0.9s						
WB2	**Warramunga Arr**	**22.92**	**233**	*e*P	**P**	**23 28 38.2**	**-0.3**
	comp=Z,13nm,1.0s						
WRA	**Warramunga Arr**	**22.93**	**233**	P	**P**	**23 28 38.0**	**-0.7**
	comp=Z,6.9nm,0.8s,baz=58,slow=11,SNR=17						
WRA				PcP	**PcP**	**23 32 27.9**	**-0.7**
	comp=Z,0.9nm,0.7s,baz=71,slow=2.0,SNR=4.0						
LHI	**Lord Howe Isla**	**25.39**	**169**	*e*P	**P**	**23 29 02.5**	**+1.0**
	comp=Z,365nm,1.6s						
AS01	**Alice Springs**	**25.40**	**226**	*e*P	**P**	**23 29 01.2**	**-0.6**
AS31	**Alice Springs**	**25.43**	**226**	*e*P	**P**	**23 29 03.0**	**+0.8**
	comp=Z,4.2nm,1.1s						
ASAR	**Alice Springs**	**25.44**	**226**	P	**P**	**23 29 01.1**	**-1.1**
	comp=Z,3.6nm,0.7s,baz=60,slow=9.1,SNR=19						
ASAR				PcP	**PcP**	**23 32 33.3**	**-0.7**
	comp=Z,0.5nm,0.6s,baz=59,slow=2.5,SNR=3.4						
ASAR				LR	LR	23 38 05.0	
	comp=Z,95nm,18.4s,baz=124,slow=34						
ASAR	**Alice Springs**	**25.44**	**226**	P	**P**	**23 29 01.1**	**-1.1**
ASAR						23 32 33.3	
ASAR				pmax	pmax		
	comp=Z,3.0nm,0.7s						
ASAR				pmax	pmax		
	comp=Z,1.0nm,0.6s						
ASAR				MLR	MLR		
	comp=Z,95nm,18.4s						
FUNA	**Funafuti**	**25.50**	**96**	*e*P	**P**	**23 29 02.5**	**-0.3**
	comp=Z,305nm,1.8s						
MSVF	**Nonsavu**	**26.37**	**117**	*e*P	**P**	**23 29 14.2**	**+3.5**
MSVF				pmax	pmax		
	comp=Z,13nm,1.6s						
LBMI	**Labuha**	**26.64**	**282**	P	**P**	**23 29 14.2**	**+1.0**
	comp=Z,44nm,1.1s,comp=Z,2μm						
STKA	**Stephens Creek**	**27.58**	**202**	P	**P**	**23 29 22.3**	**+0.9**
	comp=Z,3.1nm,1.0s,baz=20,slow=16,SNR=4.6						
STKA				LR	LR	23 40 21.0	
	comp=Z,65nm,18.3s,baz=25,slow=36						
STKA	**Stephens Creek**	**27.58**	**202**	*e*P	**P**	**23 29 21.8**	**+0.5**
	comp=Z,5.5nm,1.8s						
CAN	**Canberra**	**28.96**	**188**	*e*P	**P**	**23 29 33.1**	**-0.6**
CAN				pmax	pmax		
	comp=Z,38nm,1.6s						
CAN	**Canberra**	**28.96**	**188**	*e*P	**P**	**23 29 33.1**	**-0.6**
	comp=Z,38nm,1.6s						
FITZ	**Fitzroy Crossi**	**29.55**	**245**	P	**P**	**23 29 37.1**	**-1.9**
	comp=Z,8.3nm,0.9s,baz=44,slow=9.1,SNR=14						
KAPI	**Kappang**	**33.66**	**271**	*e*P	**P**	**23 30 14.6**	**-0.8**
	comp=Z,16nm,1.3s						
TWG	**Pinlang**	**43.13**	**314**	*e*P	**P**	**23 31 33.5**	**-1.3**
	comp=Z,89nm,0.3s						
JOHN	**Johnston Islan**	**43.21**	**57**	*e*P	**P**	**23 31 35.1**	**-0.4**
	comp=Z,128nm,0.9s						
NACB	**Ninganchiao**	**43.62**	**316**	*e*P	**P**	**23 31 38.2**	**-0.6**
	comp=Z,19nm,0.9s						
TPUB	**Ta-pu**	**43.75**	**314**	*e*P	**P**	**23 31 38.8**	**-1.1**
	comp=Z,41nm,1.3s						
SSLB	**Suanglung**	**43.83**	**315**	*e*P	**P**	**23 31 39.8**	**-0.6**
	comp=Z,58nm,1.8s						
MIDW	**Midway**	**44.51**	**38**	*e*P	**P**	**23 31 46.2**	**+0.5**
	comp=Z,244nm,1.7s						
JNU	**Nakatsue**	**44.94**	**333**	P	**P**	**23 31 50.0**	**+0.8**
	comp=Z,7.8nm,0.8s,baz=113,slow=7.7,SNR=2.9						
MJAR	**Matsushiro Arr**	**45.20**	**343**	P	**P**	**23 31 49.7**	**-1.5**
	comp=Z,1.4nm,0.8s,baz=167,slow=7.1,SNR=3.4						
MAJO	**Matsushiro**	**45.20**	**343**	*e*P	**P**	**23 31 51.0**	**-0.2**
MAJO				pmax	pmax		
	comp=Z,13nm,1.3s						
MAJO	**Matsushiro**	**45.20**	**343**	*e*P	**P**	**23 31 51.0**	**-0.2**
	comp=Z,13nm,1.3s						
MJB9	**Matsu-Tunnel**	**45.20**	**343**	*e*P	**P**	**23 31 50.9**	**-0.3**
	comp=Z,3.4nm,1.3s						
XMAS	**Kiritimati**	**49.65**	**82**	*e*P	**P**	**23 32 25.9**	**-0.4**
	comp=Z,107nm,1.0s						
KSRS	**Korea Array**	**49.87**	**333**	P	**P**	**23 32 26.8**	**-0.7**
	comp=Z,2.3nm,0.7s,baz=144,slow=7.2,SNR=4.9						
KSAR	**Wonju Array Be**	**49.88**	**333**	P	**P**	**23 32 26.8**	**-0.7**
KSAR	**Wonju Array Be**	**49.88**	**333**	P	**P**	**23 32 26.8**	**-0.7**
KS01	**Wonju Array Si**	**49.91**	**333**	*e*P	**P**	**23 32 26.4**	**-1.3**
YSS	**Yuzh-Sakhalins**	**54.11**	**351**	*e*P	**P**	**23 32 58.4**	**-0.4**
YSS				pmax	pmax		
	comp=Z,97nm,1.7s						
YSS	**Yuzh-Sakhalins**	**54.11**	**351**	*e*P	**P**	**23 32 58.4**	**-0.4**
	comp=Z,97nm,1.7s						
USRK	**Ussuriysk Ar.**	**54.12**	**341**	P	**P**	**23 32 59.0**	**0.0**
	comp=Z,1.9nm,0.7s,baz=160,slow=4.6,SNR=3.6						
HON	**Honolulu**	**54.99**	**58**	*e*P	**P**	**23 33 05.5**	**-0.3**
HON				pmax	pmax		
	comp=Z,794nm,2.0s						
HON	**Honolulu**	**54.99**	**58**	*e*P	**P**	**23 33 05.5**	**-0.3**
	comp=Z,794nm,2.0s						
MDJ	**Mudanjiang**	**55.30**	**339**	P	**P**	**23 33 09.1**	**+1.6**
MDJ				pmax	pmax		
	comp=Z,10.0nm,0.7s						
GYA	**Guiyang**	**56.04**	**308**	*i*P	**P**	**23 33 15.4**	**+2.0**
GYA				pP	sP	23 33 26.8	+1.1
GYA				PcP	**PcP**	**23 34 13.0**	**+1.5**
GYA				PP	**PP**	**23 35 22.4**	**+3.8**
GYA				ScP	**ScP**	**23 38 07.3**	**-1.5**
GYA				S	**S**	**23 41 00.6**	**+0.2**
GYA				sS	sS	23 41 18.0	+2.9
GYA				ScS	**ScS**	**23 42 58.8**	**-2.3**
GYA				SS	**SS**	**23 44 47.6**	**+0.5**
GYA				pmax	pmax		
	comp=Z,20nm,1.0s						
GYA				pmax	pmax		
	comp=Z,120nm,5.9s						
GYA				LR	LR		
	comp=Z,530nm,17.6s						
GYA				LR	LR		
	comp=Z,500nm,17.8s						
GYA				LR	LR		
	comp=Z,550nm,18.0s						
COCO	**West Island**	**56.16**	**260**	*e*P	**P**	**23 33 11.9**	**-2.4**
COCO				pmax	pmax		
	comp=Z,235nm,0.6s						
COCO	**West Island**	**56.16**	**260**	*e*P	**P**	**23 33 11.9**	**-2.4**
	comp=Z,235nm,0.6s						
POHA	**Pohakuloa**	**56.49**	**61**	*e*P	**P**	**23 33 16.1**	**-0.7**
	comp=Z,215nm,1.8s						
BJI	**Beijing**	**57.74**	**327**	P	**P**	**23 33 27.0**	**+2.0**
BJI				pmax	pmax		
	comp=Z,6.0nm,0.7s						
KMI	**Kunming**	**58.58**	**305**	P	**P**	**23 33 33.0**	**+1.6**
KMI				pmax	pmax		
	comp=Z,6.0nm,0.9s						
KMI				pmax	pmax		
	comp=Z,78nm,4.8s						
KLR	**Kul'dur**	**58.71**	**343**	P	**P**	**23 33 31.4**	**-0.1**
	comp=Z,2.6nm,0.8s,baz=170,slow=3.2,SNR=9.7						
CM01	**Chiang Mai Arr**	**59.27**	**296**	*e*P	**P**	**23 33 36.5**	**+0.5**
CM31	**Chiang Mai Arr**	**59.30**	**296**	*e*P	**P**	**23 33 35.9**	**-0.4**
CMAR	**Chiang Mai Arr**	**59.30**	**296**	P	**P**	**23 33 36.9**	**+0.6**
	comp=Z,4.1nm,0.8s,baz=120,slow=5.3,SNR=27						
CMAR	**Chiang Mai Arr**	**59.30**	**296**	P	**P**	**23 33 36.9**	**+0.6**
CMAR				pmax	pmax		
	comp=Z,5.0nm,0.8s						
CHTO	**Chiang Mai**	**59.41**	**296**	*e*P	**P**	**23 33 36.3**	**-0.8**
CHTO				pmax	pmax		
	comp=Z,6.0nm,1.0s						
CHTO	**Chiang Mai**	**59.41**	**296**	*e*P	**P**	**23 33 36.3**	**-0.8**
	comp=Z,6.4nm,1.0s						
PEA0	**Petropavlovsk-**	**59.52**	**3**	*e*P	**P**	**23 33 37.7**	**+0.6**
HHC	**Hu-ho-hao-te**	**60.88**	**324**	*e*P	**P**	**23 33 49.1**	**+2.2**
HHC				sP	sP	23 34 04.0	+4.7
HHC				S	**S**	**23 42 02.5**	**-0.6**
HHC				SS	**SS**	**23 46 04.4**	**+1.6**
HHC				pmax	pmax		
	comp=Z,27nm,0.6s						
HHC				pmax	pmax		
	comp=Z,99nm,7.8s						
HHC				LR	LR		
	comp=Z,400nm,12.3s						
HHC				LR	LR		
	comp=Z,310nm,12.3s						
HHC				LR	LR		
	comp=Z,370nm,13.6s						
LZH	**Lanzhou**	**62.99**	**316**	*e*P	**P**	**23 34 01.8**	**+0.6**
LZH				pP	pP	23 34 10.9	+0.7
LZH				sP	sP	23 34 13.8	+0.1
LZH				pmax	pmax		
	comp=Z,15nm,1.0s						
GTA	**Gaotai**	**67.43**	**317**	*e*P	**P**	**23 34 30.8**	**+0.9**
GTA				pP	sP	23 34 41.0	-1.4
GTA				sP	pP	23 34 45.0	+6.0
GTA				pmax	pmax		
	comp=Z,4.0nm,1.3s						
SHL	**Shillong**	**67.83**	**301**	*e*P	**P**	**23 34 35.0**	**+2.2**
ULN	**Ulaanbaatar**	**67.85**	**328**	*e*P	**P**	**23 34 31.6**	**-0.8**
ULN				pmax	pmax		
	comp=Z,3.0nm,1.0s						
SONM	**Songino Array**	**68.18**	**328**	P	**P**	**23 34 34.6**	**+0.1**
	comp=Z,1.9nm,0.6s,baz=145,slow=4.7,SNR=16						
SONA1	**Songino Array**	**68.18**	**328**	*e*P	**P**	**23 34 34.9**	**+0.4**
YAK	**Yakutsk**	**70.81**	**348**	*e*P	**P**	**23 34 49.9**	**-0.3**
YAK				pmax	pmax		
	comp=Z,11nm,0.8s						
ZAK	**Zakamensk**	**71.35**	**329**	*e*P	**P**	**23 34 52.8**	**-1.1**
ZAK				pmax	pmax		
	comp=Z,5.0nm,1.4s						
BOD	**Bodaibo**	**71.67**	**339**	*e*P	**P**	**23 34 54.9**	**-0.6**
BOD				pmax	pmax		
	comp=Z,4.0nm,1.0s						
TLY	**Talaya**	**71.94**	**330**	*e*P	**P**	**23 34 55.7**	**-1.6**
TLY				pmax	pmax		
	comp=Z,2.0nm,0.9s						
BILL	**Bilibino**	**74.94**	**5**	*e*P	**P**	**23 35 14.7**	**+0.1**
BILL				*e*		23 35 25.8	
BILL				pmax	pmax		
	comp=Z,3.0nm,0.8s						
RSO	**Redoubt South**	**78.85**	**24**	*e*P	**P**	**23 35 37.5**	**+0.4**
CAST	**Castle Rocks**	**80.82**	**22**	*e*P	**P**	**23 35 47.5**	**0.0**
	comp=Z,3.2nm,0.7s						
TRF	**Thorofare Moun**	**81.51**	**22**	*e*P	**P**	**23 35 50.9**	**-0.4**
	comp=Z,1.6nm,0.6s						
MK01	**Makanchi Array**	**82.10**	**319**	*e*P	**P**	**23 35 54.1**	**-0.5**
MK31	**Makanchi Array**	**82.12**	**319**	*e*P	**P**	**23 35 54.7**	**0.0**
MK31	**Makanchi Array**	**82.12**	**319**	*e*P	**P**	**23 35 54.6**	**0.0**
MKAR	**Makanchi Array**	**82.12**	**319**	P	**P**	**23 35 54.1**	**-0.6**
	comp=Z,1.9nm,0.8s,baz=104,slow=5.7,SNR=10						
MKAR	**Makanchi Array**	**82.12**	**319**	*i* P	**P**	**23 35 54.5**	**-0.2**
MKAR				pmax	pmax		
	comp=Z,2.0nm,0.8s						
MKAR	**Makanchi Array**	**82.12**	**319**	*e*P	**P**	**23 35 54.6**	**0.0**
MCK	**McKinley**	**82.17**	**22**	*e*P	**P**	**23 35 54.8**	**+0.2**
MCK				pmax	pmax		
	comp=Z,8.0nm,0.9s						
MCK	**McKinley**	**82.17**	**22**	*e*P	**P**	**23 35 54.8**	**+0.2**
	comp=Z,7.5nm,0.9s						
KLU	**Klutina**	**82.22**	**25**	*e*P	**P**	**23 35 55.1**	**+0.1**
	comp=Z,9.4nm,1.2s						
MLY	**Manley**	**82.22**	**21**	*e*P	**P**	**23 35 55.1**	**+0.2**
	comp=Z,3.2nm,0.6s						
MAKZ	**Makanchi**	**82.33**	**319**	*e*P	**P**	**23 35 55.4**	**-0.4**
MAKZ				pmax	pmax		
	comp=Z,4.0nm,0.8s						
MAKZ	**Makanchi**	**82.33**	**319**	*e*P	**P**	**23 35 55.4**	**-0.4**
	comp=Z,3.9nm,0.8s						
ZAA0	**Zalesovo Array**	**83.00**	**326**	*e*P	**P**	**23 35 58.0**	**-1.1**
ZALV	**Zalesovo Beam**	**83.00**	**326**	P	**P**	**23 35 57.7**	**-1.3**
	comp=Z,1.7nm,0.5s,baz=114,slow=5.9,SNR=8.5						
COLA	**College**	**83.17**	**22**	*e*P	**P**	**23 35 58.5**	**-1.2**
COLA				pmax	pmax		
	comp=Z,4.0nm,0.8s						
QSPA	**South Pole Qui**	**83.44**	**180**	*e*P	**P**	**23 36 00.6**	**-0.7**
	comp=Z,24nm,0.8s						
IL1	**Eielson Array**	**83.47**	**22**	*e*P	**P**	**23 36 00.6**	**-0.7**
ILAR	**Eielson Array**	**83.47**	**22**	P	**P**	**23 36 00.7**	**-0.7**
	comp=Z,2.0nm,0.7s,baz=244,slow=5.3,SNR=22						
ILB	**Eielson Array**	**83.47**	**22**	*e*P	**P**	**23 36 01.0**	**-0.3**
KSH	**Kashi**	**84.62**	**311**	P	**P**	**23 36 09.8**	**+1.9**
KSH				*e*pP	sP	23 36 20.3	-0.3
KSH				S	**S**	**23 46 33.4**	**-0.2**
KSH				pmax	pmax		
	comp=Z,130nm,6.1s						
KSH				LR	LR		
	comp=Z,550nm,15.6s						
KURK	**Kurchatov**	**85.59**	**322**	*e*P	**P**	**23 36 11.3**	**-0.9**
KURK				pmax	pmax		
	comp=Z,6.0nm,1.0s						
KURK	**Kurchatov**	**85.59**	**322**	*e*P	**P**	**23 36 11.3**	**-0.9**
	comp=Z,5.8nm,1.0s						
EGAK	**Eagle**	**85.65**	**23**	*e*P	**P**	**23 36 13.2**	**+0.9**
	comp=Z,6.4nm,1.1s						
TKM2	**Tokmak 2**	**85.66**	**314**	*e*P	**P**	**23 36 12.8**	**-0.4**
TKM2				pmax	pmax		
	comp=Z,5.0nm,1.0s						
TKM2	**Tokmak 2**	**85.66**	**314**	*e*P	**P**	**23 36 12.8**	**-0.4**
	comp=Z,5.2nm,1.0s						
AAK	**Ala-Archa**	**86.39**	**313**	*e*P	**P**	**23 36 15.1**	**-1.6**
AAK				pmax	pmax		
	comp=Z,7.0nm,1.0s						
AAK	**Ala-Archa**	**86.39**	**313**	*e*P	**P**	**23 36 16.0**	**-0.7**
	comp=Z,4.1nm,1.0s						
EKS2	**Erkin-Say**	**86.92**	**313**	*e*P	**P**	**23 36 20.1**	**+0.9**
EKS2				pmax	pmax		
	comp=Z,10.0nm,1.5s						
EKS2	**Erkin-Say**	**86.92**	**313**	*e*P	**P**	**23 36 20.1**	**+0.9**
	comp=Z,10nm,1.5s						
NRIK	**Noril'sk**	**87.83**	**341**	P	**P**	**23 36 21.3**	**-1.6**
	comp=Z,1.4nm,0.3s,baz=80,slow=3.7,SNR=2.5						
BRVK	**Borovoye**	**91.14**	**323**	*e*P	**P**	**23 36 36.8**	**-1.9**
BRVK				pmax	pmax		
	comp=Z,2.0nm,1.0s						
LTY	**Liberty**	**91.89**	**43**	*e*P	**P**	**23 36 42.3**	**-0.2**
	comp=Z,3.7nm,0.8s						
NVAR	**Mina Array Bea**	**92.56**	**52**	P	**P**	**23 36 46.7**	**+0.8**
	comp=Z,1.0nm,0.7s,baz=253,slow=6.3,SNR=3.8						
YKA	**Yellowknife Ar**	**96.60**	**28**	P	**P**	**23 37 03.3**	**-0.3**
	comp=Z,0.1nm,0.6s,baz=266,slow=4.6,SNR=3.1						
AHID	**Auburn Hatcher**	**98.32**	**48**	*e*P	**P**	**23 37 11.6**	**-0.4**
	comp=Z,14nm,0.9s						
APA	**Apatity**	**107.21**	**340**	*e*P	**Pdif**	**23 37 56.0**	**+5.2**
GERES	**GERESS Array B**	**125.91**	**328**	PKP	**PKPdf**	**23 42 35.3**	**-0.8**
	comp=Z,0.3nm,0.6s,baz=46,slow=3.9,SNR=4.4						
PTGA	**Pitinga**	**145.78**	**101**	PKPbc	**PKPdf**	**23 43 12.8**	**-0.8**
	comp=Z,6.5nm,0.8s,baz=256,slow=3.0,SNR=9.6						
TORD	**Tordi Ar. Bea**	**151.52**	**286**	PKPbc	**PKPbc**	**23 43 27.7**	**-1.4**
	comp=Z,7.5nm,0.7s,baz=69,slow=2.5,SNR=50						
TORD				PKPab	**PKPab**	**23 43 36.4**	**-1.2**
	comp=Z,2.4nm,0.7s,baz=37,slow=2.3,SNR=5.2						

IDC 17 23:24:45.5±1.1, 8°93N×126°83E, h0km, mb3.7/8, mb1 3.7/9, mb1mx3.6/39, mbtmp3.7/9, ML4.1/1, MS2.8/2, Ms1 2.8/2, ms1mx2.5/37, Error ellipse: s-maj=33.2km s-min=18.8km az=94.0
ISCJB 17 23:24:48.4±0.7, 8°90N±0'07×127°09E±0'07, h38km, mb3.9/14, Error ellipse: s-maj=12.2km s-min=7.1km az=41.5
NEIC 17 23:24:51.5±1.9, 8°88N×126°80E, h45km±21km, mb4.3/6, Error ellipse: s-maj=17.6km s-min=13.9km az=77.0

ISC 17 23:24:50.5±0.8, **8°86N**±0'07×**127°02E**±0'10, **h38km, n20, σ1§18/20, mb4.0/14, 2C-1D, Philippine Islands region**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
SCPH	**Surigao**	**1.77**	**302**	*i*P	**Pn**	**23 25 18.1**	**-0.4**
DAV	**Davao City (W)**	**2.27**	**219**	Pn	**Pn**	**23 25 25.3**	**-0.3**
	55nm,0.3s,baz=63,slow=4.6,SNR=5.4						
DAV				Sn	**Sn**	**23 25 53.7**	**+1.3**
	22nm,0.3s,baz=15,slow=19,SNR=3.8						
DAV				LR	LR	23 26 02.5	
	comp=Z,155nm,21.1s,baz=23,slow=35						
DMPH	**Davao City--Mi**	**2.31**	**220**	*e*P	Pn	23 25 33.1	+7.1
DMPH				*e*S	Sn	23 26 05.9	+13
CGP	**Cagayan de Oro**	**2.33**	**260**	*i*P	**Pn**	**23 25 25.8**	**-0.5**
CGP				*i* S	**Sn**	**23 25 56.2**	**+2.5**
RCP	**Roxas**	**4.99**	**303**	*e*P	**Pn**	**23 26 04.4**	**+1.5**
TGY	**Tagaytay City**	**7.92**	**312**	LR	LR	23 30 00.6	
	comp=Z,103nm,20.5s,baz=221,slow=41						
CMAR	**Chiang Mai Arr**	**28.86**	**292**	P	**P**	**23 30 44.1**	**-1.6**
	0.3nm,0.4s,baz=104,slow=7.5,SNR=3.3						
MAJO	**Matsushiro**	**29.38**	**19**	*e*P	**P**	**23 30 49.8**	**-0.4**
	4.3nm,0.4s						
ASAR	**Alice Springs**	**33.02**	**168**	P	**P**	**23 31 22.7**	**+0.4**
	0.3nm,0.5s,baz=345,slow=6.9,SNR=2.8						
KLR	**Kul'dur**	**40.44**	**5**	P	**P**	**23 32 25.3**	**+0.2**
	0.6nm,0.4s,baz=174,slow=6.6,SNR=4.3						
SONM	**Songino Array**	**42.59**	**339**	P	**P**	**23 32 43.0**	**0.0**
	0.3nm,0.6s,baz=153,slow=10,SNR=3.6						
MKAR	**Makanchi Array**	**53.59**	**323**	P	**P**	**23 34 06.9**	**-1.0**
	1.3nm,0.7s,baz=122,slow=7.9,SNR=16						
MA2	**Magadan**	**53.70**	**15**	*e*P	**P**	**23 34 09.5**	**+1.1**
	1.4nm,0.5s						
ZALV	**Zalesovo Beam**	**56.21**	**331**	P	**P**	**23 34 25.8**	**-0.8**
	0.3nm,0.3s,baz=134,slow=6.2,SNR=3.5						
KURK	**Kurchatov**	**57.64**	**326**	*e*P	**P**	**23 34 36.0**	**-0.9**
	1.7nm,0.6s						
BRVK	**Borovoye**	**63.31**	**326**	*e*P	**P**	**23 35 14.9**	**-0.6**
	0.9nm,0.8s						
BILL	**Bilibino**	**64.56**	**15**	*e*P	**P**	**23 35 24.4**	**+1.0**
	1.7nm,0.5s						
GEYT	**Alibeck**	**67.98**	**307**	P	**P**	**23 35 44.6**	**-1.5**
	1.4nm,0.7s,baz=106,slow=3.2,SNR=5.2						
ARU	**Arti**	**70.80**	**327**	*e*P	**P**	**23 36 02.1**	**-0.9**
	1.0nm,0.4s						
YKA	**Yellowknife Ar**	**94.74**	**24**	P	**P**	**23 38 09.4**	**+1.6**
	0.1nm,0.5s,baz=297,slow=4.6,SNR=3.7						

CSEM 17 23:32:39.2±0.3, 67°78N×20°28E, h2km, ML1.1, Error ellipse: s-maj=7.3km s-min=5.6km az=13.0, Mining explosion.

HEL 17 23:32:40.8±0.1, **67°86N×20°15E, h0km, ML1.8, ML1.1**(UPP), **Explosion, Sweden**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
KUA	**Kurravaara**	**0.12**	**39**	*i* P	Pg	23 32 42.7	-0.3
KUA				*i* S	Sg	23 32 44.6	+0.1
KUA	**Kurravaara**	**0.12**	**39**	P	Pg	23 32 42.7	-0.3
KUA				S	Sg	23 32 44.6	+0.1
NIKU	**Nikkaluokta**	**0.42**	**271**	*i* P	Pg	23 32 48.5	-0.4
NIKU	**Nikkaluokta**	**0.42**	**271**	P	Pg	23 32 48.5	-0.3
LANU	**Lannavaara**	**0.72**	**74**	*e*P	Pg	23 32 53.3	-1.3
	baz=257						
LANU				*e*S	Sg	23 33 02.9	-1.0
LANU	**Lannavaara**	**0.72**	**74**	Pg	Pg	23 32 53.2	-1.4
LANU				Sg	Sg	23 33 02.8	-1.1
SALU	**Saltoluokta**	**0.79**	**233**	*i* P	Pg	23 32 54.9	-1.1
SALU	**Saltoluokta**	**0.79**	**233**	P	Pg	23 32 54.8	-1.2
KIF	**Kilpisjarvi**	**1.17**	**12**	*e*PB	Pg	23 33 02.9	-0.3
KIF				*e*SN	Sn	23 33 21.9	+0.8
KIF	**Kilpisjarvi**	**1.17**	**12**	Pn	Pg	23 33 02.9	-0.3
KIF				Sn	Sn	23 33 21.8	+0.8
PAJU	**Pajala**	**1.42**	**125**	*e*P	Pn	23 33 05.4	-2.5
PAJU	**Pajala**	**1.42**	**125**	P	Pn	23 33 05.4	-2.5
HEF	**Hetta**	**1.43**	**66**	*e*P	Pn	23 33 06.0	-1.9
	baz=246						
HEF				MSG		23 33 24.1	
	comp=Z,6.8nm,0.2s						
HEF				*e*SN	Sn	23 33 27.5	+0.2
HEF	**Hetta**	**1.43**	**66**	Pg	Pn	23 33 06.0	-1.9
HEF				Sn	Sn	23 33 27.5	+0.2
ERTU	**Ertsjaerv**	**1.54**	**148**	*e*P	Pn	23 33 07.7	-1.7
ERTU	**Ertsjaerv**	**1.54**	**148**	P	Pn	23 33 07.7	-1.7
TOF	**Tornio**	**2.43**	**136**	*e*P	Pn	23 33

comp=E,101nm,0.3s
HMBC **Humberstone** 2.38 238 *e*P **Pn** 23 34 30.9 -0.1
HMBC *e*S **S** 23 35 04.2 -0.7
PB12 **IPOC Station P** 2.49 279 *e*P **Pn** 23 34 32.2 0.0
PB12 *e*S **S** 23 35 06.1 -0.9
PB01 **IPOC Station P** 2.59 219 *e*P **Pn** 23 34 33.9 +0.6
PB01 *e*S **S** 23 35 08.8 -0.3
LPAZ La Paz 2.76 352 P **Pn** 23 34 36.5 +0.8
comp=E,7.2nm,0.3s,baz=157,slow=3.7,SNR=313
LPAZ S **S** 23 35 13.0 -0.3
comp=E,1.3nm,0.3s,baz=208,slow=22,SNR=13
PATCX Punta Patache 2.89 232 *e*P **Pn** 23 34 36.4 -0.1
PATCX *e*S **S** 23 35 13.5 -1.5
PATCX IAML 23 35 19.6
comp=E,143nm,0.2s
PB07 IPOC Station P 3.35 217 *e*P **Pn** 23 34 42.5 +0.5
PB07 *e*S **S** 23 35 23.1 -1.8
PB07 IAML 23 35 24.3
comp=N,70nm,0.2s
SIV San Ignacio 7.04 66 P **Pn** 23 35 26.1 -2.1
comp=N,0.8nm,0.3s,baz=266,slow=14,SNR=11
NNA Nana 11.23 307 LR LR 23 40 21.7
comp=N,23nm,21.7s,baz=147,slow=35
TORD Torodi Ar. Bea 75.49 70 P **P** 23 45 07.3 -0.8
comp=N,0.6nm,0.6s,baz=251,slow=5.1,SNR=6.2
YKA Yellowknife Ar 89.25 340 P **P** 23 46 19.3 +1.2
comp=N,0.4nm,0.7s,baz=130,slow=4.7,SNR=9.0

IDC 17 23:34:12.1±1.3, 3.18N×126.15E, h0km, mb3.6/5, mb1 3.8/5, mb1mx3.5/33, mbtmp3.6/5, Error ellipse: s-maj=152.0km s-min=20.4km az=67.0, Talaud Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**24.35**	**161**	P	P	23 39 30.6	-1.4
	1.2nm,0.5s,baz=339,slow=10,SNR=4.7						
ASAR	**Alice Springs**	**27.73**	**165**	P	P	23 40 03.2	+0.7
	0.4nm,0.6s,baz=353,slow=8.5,SNR=4.9						
STKA	**Stephens Creek**	**37.83**	**158**	P	P	23 41 31.4	+0.8
	2.0nm,0.9s,baz=358,slow=11,SNR=3.1						
SONM	**Songino Array**	**47.63**	**342**	P	P	23 42 49.5	-0.7
	0.4nm,0.8s,baz=150,slow=8.5,SNR=2.9						
MKAR	**Makanchi Array**	**57.68**	**326**	P	P	23 44 04.5	0.0
	0.3nm,0.4s,baz=121,slow=7.5,SNR=12						

IDC 17 23:37:26.2±3.0, 36.19N×142.29E, h0km, mb3.5/3, mb1 3.5/4, mb1mx3.3/34, mbtmp3.4/4, ML3.3/1, MS3.5/2, Ms1 3.6/2, ms1mx2.7/25, Error ellipse: s-maj=82.8km s-min=29.4km az=59.0
ISCJB 17 23:37:27.3±1.3, 36.16N±0.09×142.3E±0.1, h23km, mb3.4/3, MS3.5/2, Error ellipse: s-maj=14.1km s-min=10.2km az=140.0
JMA 17 23:37:28.7±0.3, 36.17N×142.19E, h72km, M3.2

ISC 17 23:37:29.5±1.6, 36.16N±0.09×142.2E±0.1, h23km, n21, σ1§12/15, mb3.4/3, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**1.20**	**248**	P	**Pn**	**23 37 50.0**	**-0.8**
CHOJ				*e*S	**Sn**	**23 38 05.8**	**-0.6**
JHO	**Hitachi**	**1.41**	**289**	P	**Pn**	**23 37 52.3**	**-1.4**
JFK	**Kawauchi**	**1.61**	**318**	P	**Pn**	**23 37 55.7**	**-1.0**
JYT	**Yasato**	**1.64**	**273**	P	**Pn**	**23 37 55.4**	**-1.5**
JFT	**Otama**	**2.03**	**312**	P	**Pn**	**23 38 01.9**	**-0.4**
JMM	**Marumori**	**2.05**	**326**	P	**Pn**	**23 38 01.0**	**-1.5**
JAG	**Ashikaga**	**2.25**	**277**	P	**Pn**	**23 38 04.3**	**-1.1**
JRY	**Ryogami san**	**2.69**	**268**	P	**Pn**	**23 38 10.3**	**-1.2**
MJAR	**Matsushiro Arr**	**3.26**	**278**	Pn	**Pn**	**23 38 19.0**	**-0.3**
	3.4nm,0.3s,baz=92,slow=14,SNR=12						
MAT	**Matsushiro**	**3.26**	**278**	P	**Pn**	**23 38 19.1**	**-0.2**
MAT				*e*S	**Sn**	**23 38 58.9**	**+1.5**
H11N2	**WAKE ISLAND Hy**	**27.15**	**120**	T	T	00 11 35.9	
	baz=312,slow=75,SNR=8.1						
H11N1	**WAKE ISLAND Hy**	**27.15**	**121**	T	T	00 11 35.4	
	baz=312,slow=75,SNR=6.0						
H11N3	**WAKE ISLAND Hy**	**27.16**	**120**	T	T	00 11 35.9	
	baz=312,slow=75,SNR=5.9						
H11S1	**WAKE ISLAND Hy**	**27.84**	**123**	T	T	00 12 28.2	
	baz=314,slow=75,SNR=5.5						
H11S3	**WAKE ISLAND Hy**	**27.84**	**123**	T	T	00 12 27.0	
	baz=314,slow=75,SNR=7.1						
H11S2	**WAKE ISLAND Hy**	**27.86**	**123**	T	T	00 12 28.2	
	baz=314,slow=75,SNR=6.3						
SONM	**Songino Array**	**28.81**	**305**	P	**P**	**23 43 25.8**	**-0.2**
	0.7nm,0.9s,baz=98,slow=10,SNR=3.5						
MKAR	**Makanchi Array**	**45.13**	**303**	P	**P**	**23 45 45.2**	**+1.0**
	0.5nm,0.7s,baz=85,slow=8.5,SNR=4.5						
ILAR	**Eielson Array**	**49.88**	**32**	LR	LR	00 09 47.6	
	comp=Z,34nm,19.2s,baz=214,slow=39						
PSI	**Prapat**	**51.92**	**240**	LR	LR	00 08 28.7	
	comp=Z,72nm,19.6s,baz=170,slow=36						
WRA	**Warramunga Arr**	**56.30**	**189**	P	**P**	**23 47 08.8**	**+0.3**
	0.3nm,0.8s,baz=5.5,slow=8.6,SNR=4.5						

ISCJB 17 23:56:46.2±0.7, 7.74S±0.04×105.99E±0.04, h35km, mb3.9/9, MS3.0/2, Error ellipse: s-maj=7.0km s-min=3.9km az=33.2
DJA 17 23:56:47.1±0.3, 8°S±2°×10°E±°, h13km, M4.2/24, MLv4.2/24
IDC 17 23:56:54.1±4.4, 7.47S×105.90E, h112km±36km, mb3.5/9, mb1 3.6/9, mb1mx3.4/45, mbtmp3.9/9, MS3.1/2, Ms1 3.1/2, ms1mx2.6/36, Error ellipse: s-maj=50.3km s-min=15.9km az=53.0

ISC 17 23:56:47.0±0.8, 7.58S±0.06×106.04E±0.05, h35km, n39, σ2§54/44, mb3.9/9, Jawa

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SKJI	**Sukabumi**	**0.77**	**42**	P	**Pn**	**23 57 00.7**	**-0.7**
SKJI				S	**Sn**	**23 57 10.5**	**-1.3**
CGJI	**Cibinong**	**1.02**	**340**	P	**Pn**	**23 57 04.8**	**0.0**
CGJI				S	**Sn**	**23 57 20.7**	**+2.8**
CNJI	**Cibinong**	**1.12**	**76**	P	**Pn**	**23 57 05.6**	**-0.6**
CNJI				S	**Sn**	**23 57 22.5**	**+2.2**
DBJI	**Dramaga**	**1.24**	**35**	P	**Pn**	**23 57 08.6**	**+0.7**
DBJI				S	**Sn**	**23 57 26.0**	**+2.5**
CBJI	**Citeko**	**1.41**	**35**	P	**Pn**	**23 57 08.1**	**-2.1**
CBJI				S	**Sn**	**23 57 26.4**	**-1.1**
SBJI	**Serang**	**1.46**	**4**	P	**Pn**	**23 57 12.1**	**+1.3**
SBJI				S	**Sn**	**23 57 32.9**	**+4.2**
TNG	**Tangerang**	**1.53**	**23**	P	**Pn**	**23 57 14.1**	**+2.3**
TNG				P	**Pn**	**23 57 13.8**	**+2.0**
TNG				S	**Sn**	**23 57 34.1**	**+3.7**
TNG				S	**Sn**	**23 57 34.1**	**+3.7**
LEM	**Lembang**	**1.74**	**65**	P	Pn	23 57 23.3	+8.4
	194nm,0.3s,baz=274,slow=2.6,SNR=128						
LEM				S	Sn	23 57 49.5	+14
	108nm,0.3s,baz=270,slow=22,SNR=7.0						
LEM				LR	LR	23 58 27.9	
	comp=Z,302nm,21.1s,baz=228,slow=52						
LEM	**Lembang**	**1.74**	**65**	P	**Pn**	**23 57 17.2**	**+2.3**
LEM				S	**Sn**	**23 57 39.3**	**+3.4**
CISI	**Cisompet, Garu**	**1.76**	**89**	P	**Pn**	**23 57 14.8**	**-0.3**
CISI				S	**Sn**	**23 57 40.3**	**+3.9**
BLSI	**Bandar Lampung**	**2.34**	**340**	P	Pn	23 57 26.7	+3.7
BLSI				S	**Sn**	**23 57 55.4**	**+4.9**
CMJI	**Cimerak**	**2.40**	**95**	P	**Pn**	**23 57 25.9**	**+2.1**
CMJI				S	**Sn**	**23 57 56.2**	**+4.2**
JCJI	**Jatiwangi**	**2.47**	**64**	P	**Pn**	**23 57 26.4**	**+1.7**
JCJI				S	**Sn**	**23 57 54.9**	**+1.2**
KASI	**Kota Agung**	**2.55**	**323**	P	Pn	23 57 29.6	+3.7
KPJI	**Karang Pucung**	**2.88**	**85**	P	**Pn**	**23 57 31.6**	**+1.2**
KPJI				S	**Sn**	**23 58 07.0**	**+3.1**
KLI	**Kotabumi**	**2.94**	**336**	P	Pn	23 57 35.1	+3.8
KLI				S	**Sn**	**23 58 10.7**	**+5.2**
KLSI		**3.15**	**336**	P	**Pn**	**23 57 36.5**	**+2.3**
LWLI	**Liwa**	**3.22**	**322**	P	**Pn**	**23 57 37.4**	**+2.2**
MDSI	**Maura Dua**	**3.59**	**329**	P	**Pn**	**23 57 41.0**	**+0.8**
UGM	**Wanagama**	**4.46**	**95**	P	**Pn**	**23 57 54.4**	**+2.2**
LHSI	**Lahat**	**4.49**	**326**	P	**Pn**	**23 57 54.2**	**+1.6**
KAPI	**Kappang**	**13.87**	**80**	P	**Pn**	**00 00 02.6**	**+1.4**
	0.5nm,0.3s,baz=32,slow=23,SNR=2.4						
FITZ	**Fitzroy Crossi**	**21.76**	**121**	LR	LR	00 09 37.1	
	comp=Z,50nm,19.9s,baz=298,slow=35						
H01W3	**Cape Leeuwin H**	**28.17**	**166**	T	T	00 32 22.2	
	baz=347						
H01W1	**Cape Leeuwin H**	**28.19**	**166**	T	T	00 32 23.5	
	baz=347,slow=74						
H01W2	**Cape Leeuwin H**	**28.19**	**166**	T	T	00 32 20.3	
	baz=347,slow=74						
WRA	**Warramunga Arr**	**30.05**	**117**	P	**P**	**00 02 52.7**	**-0.4**
	0.5nm,0.5s,baz=288,slow=10,SNR=2.7						
ASAR	**Alice Springs**	**31.14**	**124**	P	**P**	**00 03 03.9**	**+1.1**
	0.5nm,0.4s,baz=307,slow=8.1,SNR=12						
H08N1	**Diego Garcia H**	**34.78**	**270**	T	T	00 41 19.2	
	baz=90						
H08N2	**Diego Garcia H**	**34.80**	**270**	T	T	00 41 19.7	
	baz=90						
H08N3	**Diego Garcia H**	**34.80**	**270**	T	T	00 41 17.4	
	baz=90						
STKA	**Stephens Creek**	**40.97**	**131**	P	**P**	**00 04 28.2**	**+1.6**
	0.5nm,0.3s,baz=318,slow=14,SNR=2.7						
SONM	**Songino Array**	**55.17**	**0**	P	**P**	**00 06 13.7**	**-2.6**
	0.3nm,0.3s,baz=180,slow=9.1,SNR=4.9						
MKAR	**Makanchi Array**	**58.11**	**341**	P	**P**	**00 06 34.5**	**-2.5**
	0.6nm,0.5s,baz=150,slow=8.6,SNR=18						
KURBB	**Kurchatov Arra**	**62.67**	**341**	P	**P**	**00 07 05.7**	**-2.4**
	0.6nm,0.6s,baz=152,slow=6.4,SNR=6.6						
GEYT	**Alibeck**	**63.57**	**319**	P	**P**	**00 07 12.2**	**-2.1**
	0.9nm,0.5s,baz=158,slow=12,SNR=4.6						
ZALV	**Zalesovo Beam**	**63.86**	**346**	P	**P**	**00 07 12.9**	**-3.0**
	1.0nm,0.3s,baz=166,slow=5.9,SNR=8.1						
BRTR	**Keskin Array B**	**81.50**	**312**	P	**P**	**00 08 59.5**	**-1.7**
	1.5nm,0.8s,baz=136,slow=7.4,SNR=11						
BRTR				LR	LR	00 46 38.3	
	comp=Z,9.1nm,19.3s,baz=268,slow=37						
TXAR	**Lajitas Array**	**144.66**	**48**	PKP	**PKPab**	**00 16 19.5**	**0.0**
	0.2nm,0.3s,baz=316,slow=0.2,SNR=3.5						

NIED 18 00:03:00, 38.40N×142.20E, h20km, Mw3.9 Best double couple: M₀8.80000×10¹⁴ NP1:φ₉179.00000°, δ32.00000°, λ-28.00000°. NP2:φ₉293.00000°, δ76.00000°, λ-119.00000°.
ISCJB 18 00:03:05.5±1.3, 38.37N±0.05×142.24E±0.07, h25km±8km, mb3.8/9, MS2.7/2, Error ellipse: s-maj=10.2km s-min=6.6km az=29.9
JMA 18 00:03:06.5±0.1, 38.43N×142.23E, h27km±2km, M4.2
JMA Felt I J1.
IDC 18 00:03:09.9±2.9, 38.33N×142.26E, h45km±28km, mb3.7/9, mb1 3.8/11, mb1mx3.5/42, mbtmp3.9/11, ML3.5/2, MS3.0/7, Ms1 3.0/7, ms1mx2.7/39, Error ellipse: s-maj=25.9km s-min=15.2km az=105.0

ISC 18 00:03:05.2±1.9, 38.35N±0.05×142.15E±0.07, h10km±11km, n29, σ0§74/24, mb3.7/9, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**0.64**	**280**	P	**Pn**	**00 03 19.7**	**-0.6**
JIO				S	**Sb**	**00 03 28.4**	**+0.9**
OFUJ	**Ofunato**	**0.82**	**333**	P	**Pg**	**00 03 21.2**	**+0.1**
OFUJ				S	**Sg**	**00 03 31.4**	**-0.5**
JMK	**Ichinoseki**	**0.95**	**310**	P	**Pb**	**00 03 23.8**	**+0.1**
JMK				S	**Sb**	**00 03 36.3**	**0.0**
JOU	**Okura**	**1.17**	**271**	P	**Pg**	**00 03 28.4**	**+0.7**
JOU				S	**Sn**	**00 03 43.8**	**+0.1**
JMM	**Marumori**	**1.18**	**246**	P	**Pg**	**00 03 27.9**	**+0.1**
JMM				S	**Sb**	**00 03 43.0**	**+0.1**
JOM	**Ohasama**	**1.31**	**329**	P	**Pn**	**00 03 29.0**	**-0.6**
JOM				S	**Sb**	**00 03 45.2**	**-1.6**
MAT	**Matsushiro**	**3.62**	**241**	P	**Pn**	**00 04 00.3**	**-1.1**
MJAR	**Matsushiro Arr**	**3.62**	**241**	P	Pb	00 04 05.5	-3.8
	3.4nm,0.3s,baz=56,slow=9.0,SNR=15						
MJAR				LR	LR	00 05 32.1	
	comp=Z,157nm,19.8s,baz=60,slow=39						
ASAJ	**Asahikawa**	**5.77**	**3**	P	**Pn**	**00 04 31.4**	**+0.5**
	1.1nm,0.3s,baz=225,slow=10.0,SNR=3.8						
ASAJ				S	**Sn**	**00 05 37.0**	**-0.2**
	0.7nm,0.3s,baz=274,slow=19,SNR=3.1						
ASAJ				LR	LR	00 07 13.5	
	comp=Z,128nm,21.1s,baz=186,slow=42						
JNU	**Nakatsue**	**10.54**	**244**	LR	LR	00 10 02.3	
	comp=Z,115nm,19.1s,baz=114,slow=39						
KLR	**Kul'dur**	**13.21**	**329**	LR	LR	00 10 52.5	
	comp=Z,70nm,19.9s,baz=134,slow=35						
PETK	**Petropavlovsk-**	**18.26**	**31**	LR	LR	00 13 49.7	
	comp=Z,39nm,20.0s,baz=186,slow=35						
MA2	**Magadan**	**21.95**	**12**	LR	LR	00 18 20.0	
	comp=Z,26nm,18.2s,baz=181,slow=42						
YAK	**Yakutsk**	**24.93**	**346**	LR	LR	00 20 06.6	
	comp=Z,24nm,18.8s,baz=108,slow=41						
SEY	**Seymchan**	**25.39**	**11**	P	**P**	**00 08 33.0**	**+0.6**
	0.9nm,0.6s,baz=212,slow=7.6,SNR=14						
H11N2	**WAKE ISLAND Hy**	**28.35**	**124**	T	T	00 38 41.7	
	baz=319,SNR=411						
H11N1	**WAKE ISLAND Hy**	**28.36**	**124**	T	T	00 39 15.0	
	baz=319,slow=74,SNR=416						
H11N3	**WAKE ISLAND Hy**	**28.37**	**124**	T	T	00 38 44.5	
	baz=319,slow=74,SNR=357						
H11S1	**WAKE ISLAND Hy**	**29.12**	**126**	T	T	00 40 09.2	
	baz=318,slow=76,SNR=131						
H11S3	**WAKE ISLAND Hy**	**29.12**	**126**	T	T	00 40 11.5	
	baz=318,slow=76,SNR=172						
H11S2	**WAKE ISLAND Hy**	**29.13**	**126**	T	T	00 40 16.6	
	baz=318,slow=76,SNR=133						
ZALV	**Zalesovo Beam**	**41.48**	**311**	P	**P**	**00 10 52.8**	**+0.8**
	0.8nm,0.5s,baz=77,slow=9.3,SNR=4.6						
MKAR	**Makanchi Array**	**43.93**	**301**	P	**P**	**00 11 13.8**	**+1.7**
	0.6nm,0.7s,baz=85,slow=9.5,SNR=4.6						
KURBB	**Kurchatov Arra**	**45.67**	**307**	P	**P**	**00 11 25.4**	**-0.5**
	1.3nm,0.6s,baz=81,slow=8.2,SNR=12						
ILAR	**Eielson Array**	**48.07**	**33**	P	**P**	**00 11 44.4**	**-0.1**
	0.2nm,0.6s,baz=263,slow=5.8,SNR=4.5						
FITZ	**Fitzroy Crossi**	**58.25**	**199**	P	**P**	**00 12 59.9**	**+0.1**
	12nm,1.2s,baz=339,slow=8.2,SNR=3.2						
WRA	**Warramunga Arr**	**58.44**	**189**	P	**P**	**00 13 00.4**	**-0.8**
	2.7nm,0.7s,baz=6.9,slow=7.3,SNR=13						
ASAR	**Alice Springs**	**62.17**	**189**	P	**P**	**00 13 26.6**	**-0.1**
	1.5nm,0.7s,baz=11,slow=6.4,SNR=14						
PDAR	**Pinedale Array**	**76.33**	**46**	P	**P**	**00 14 54.6**	**-0.1**
	0.2nm,0.5s,baz=263,slow=1.5,SNR=2.1						

ISCJB 18 00:11:30.0±0.6, 26.8N±0.1×143.98E±0.06, h10km, mb3.9/19, MS3.2/3, Error ellipse: s-maj=14.8km s-min=7.4km az=4.7
IDC 18 00:11:30.1±0.7, 26.84N×144.07E, h0km, mb3.9/15, mb1 4.1/16, mb1mx4.0/36, mbtmp3.9/16, ML4.2/1, MS2.9/6, Ms1 2.9/6, ms1mx2.7/36, Error ellipse: s-maj=18.8km s-min=18.3km az=78.0
NEIC 18 00:11:31.7±0.4, 26.85N×143.98E, h10km, mb4.3/4, Error ellipse: s-maj=11.2km s-min=9.8km az=26.0

ISC 18 00:11:31.7±0.8, 26.8N±0.1×143.96E±0.07, h10km, n29, σ0§91/26, mb4.1/19, MS3.2/3, Bonin Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CBIJ	**Chichi jima**	**1.61**	**280**	*e*Pn	**Pn**	**00 12 00.0**	**-0.1**
CBIJ				Sn	**Sn**	**00 12 19.9**	**-1.1**
JCJ	**Chichijima**	**1.61**	**280**	Pn	**Pb**	**00 12 02.2**	**+0.7**
	baz=319,slow=20						
JCJ				Sn	**Sn**	**00 12 19.9**	**-1.1**
	baz=311,slow=19						
MJAR	**Matsushiro Arr**	**10.85**	**335**	Pn	**Pn**	**00 14 05.6**	**-1.6**
	1.9nm,0.3s,baz=165,slow=12,SNR=17						
MJAR				LR	LR	00 20 40.2	
	comp=Z,20nm,18.5s,baz=140,slow=51						
KSRS	**Korea Array**	**17.20**	**312**	LR	LR	00 21 13.1	
	comp=Z,14nm,19.6s,baz=85,slow=34						
ASAJ	**Asahikawa**	**17.29**	**357**	LR	LR	00 21 33.3	
	comp=Z,40nm,19.8s,baz=175,slow=35						
USRK	**Ussuriysk Ar.**	**19.85**	**334**	P	**Pn**	**00 16 06.3**	**+2.0**
	0.2nm,0.3s,baz=154,slow=10.0,SNR=4.0						
KLR	**Kul'dur**	**24.29**	**340**	P	**P**	**00 16 49.2**	**+0.1**
	0.7nm,0.4s,baz=170,slow=6.1,SNR=3.3						
TGY	**Tagaytay City**	**24.96**	**244**	LR	LR	00 24 04.5	
	comp=Z,81nm,21.0s,baz=167,slow=30						
PETK	**Petropavlovsk-**	**28.18**	**18**	LR	LR	00 30 39.6	
	comp=Z,26nm,18.9s,baz=174,slow=41						
SONM	**Songino Array**	**36.01**	**316**	P	**P**	**00 18 33.9**	**+0.8**
	0.3nm,0.4s,baz=118,slow=7.0,SNR=4.3						
WRA	**Warramunga Arr**	**47.42**	**192**	P	**P**	**00 20 06.7**	**+0.2**
	3.5nm,0.7s,baz=12,slow=8.5,SNR=11						
ZALV	**Zalesovo Beam**	**50.73**	**319**	P	**P**	**00 20 31.2**	**-0.3**
	0.4nm,0.3s,baz=104,slow=0.6,SNR=3.5						
ASAR	**Alice Springs**	**51.13**	**192**	P	**P**	**00 20 33.7**	**-1.2**
	0.4nm,0.5s,baz=17,slow=6.0,SNR=7.4						
MKAR	**Makanchi Array**	**51.87**	**310**	P	**P**	**00 20 40.1**	**-0.1**
	2.0nm,0.7s,baz=90,slow=8.7,SNR=17						
TKM2	**Tokmak 2**	**56.87**	**305**	*e*P	**P**	**00 21 17.5**	**+0.5**
	1.8nm,0.8s						
ILAR	**Eielson Array**	**57.19**	**28**	P	**P**	**00 21 16.9**	**-1.7**
	0.3nm,0.7s,baz=251,slow=5.3,SNR=3.7						
KKAR	**Karatay Array**	**60.52**	**306**	*e*P	**P**	**00 21 42.7**	**+0.5**
	1.8nm,0.6s						
INK	**Inuvik**	**62.62**	**25**	P	**P**	**00 21 55.3**	**-0.5**
	0.6nm,0.4s,baz=310,slow=4.8,SNR=7.1						
ABKAR	**Akbulak array**	**66.41**	**315**	*e*P	**P**	**00 22 21.1**	**0.0**
	1.3nm,0.6s						
YKA	**Yellowknife Ar**	**71.62**	**29**	P	**P**	**00 22 52.6**	**-0.5**
	0.6nm,0.8s,baz=294,slow=5.9,SNR=10						
ARCES	**ARCESS Array B**	**74.31**	**341**	LR	LR	01 06 28.9	
	comp=Z,20nm,18.2s,baz=256,slow=44						
FINES	**FINESS Array B**	**78.88**	**334**	P	**P**	**00 23 36.1**	**+1.2**
	1.2nm,0.8s,baz=73,slow=6.4,SNR=4.8						
KBZ	**Khabaz**	**79.34**	**314**	P	**P**	**00 23 38.4**	**+0.6**
	3.1nm,0.8s,baz=206,slow=1.6,SNR=7.8						
NVAR	**Mina Array Bea**	**79.43**	**52**	P	**P**	**00 23 38.7**	**0.0**
	1.3nm,0.6s,baz=276,slow=5.8,SNR=5.9						
RLMT	**Red Lodge**	**82.27**	**43**	*e*P	**P**	**00 23 54.1**	**+0.3**
	2.1nm,0.5s						
PDAR	**Pinedale Array**	**83.28**	**45**	P	**P**	**00 23 58.5**	**-0.6**
	0.4nm,0.7s,baz=333,slow=1.0,SNR=3.8						
BRTR	**Keskin Array B**	**87.34**	**314**	P	**P**	**00 24 18.7**	**-0.6**
	0.9nm,0.8s,baz=52,slow=2.0,SNR=4.5						
TXAR	**Lajitas Array**	**94.49**	**54**	P	**P**	**00 24 53.4**	**+0.6**
	0.2nm,0.5s,baz=270,slow=3.6,SNR=2.8						
LPAZ	**La Paz**	**148.45**	**77**	PKPbc	**PKPbc**	**00 31 20.6**	**+0.5**
	0.7nm,0.4s,baz=280,slow=0.8,SNR=7.4						

ISCJB 18 00:19:18.0±1.3, 38.78N±0.05×142.22E±0.09, h10km, mb3.5/2, Error ellipse: s-maj=10.0km s-min=7.0km az=15.3
JMA 18 00:19:21.1±0.1, 38.85N×142.05E, h46km±1km, M3.6
JMA Felt I J1.
IDC 18 00:19:28.4±4.2, 39.40N×140.84E, h32km±60km, mb3.5/2, mb1 3.5/4, mb1mx3.1/31, mbtmp3.6/4, ML3.2/2, Error ellipse: s-maj=121.1km s-min=26.4km az=120.0

ISC 18 00:19:19.0±1.8, 38.85N±0.05×142.17E±0.10, h10km, n11, σ1§42/15, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**0.45**	**301**	P	**Pb**	**00 19 30.7**	**+1.7**
OFUJ				S	**Sb**	**00 19 37.3**	**+1.5**
JMK	**Ichinoseki**	**0.75**	**279**	P	**Pb**	**00 19 34.2**	**+0.2**
JMK				S	**Sb**	**00 19 43.2**	**-1.1**
JIO	**Ouri**	**0.75**	**239**	P	**Pg**	**00 19 34.1**	**+0.7**
JIO				S	**Sg**	**00 19 42.8**	**-0.4**
JOM	**Ohasama**	**0.92**	**313**	P	**Pg**	**00 19 37.0**	**+0.2**
JOM				S	**Sb**	**00 19 48.5**	**-0.9**
JTH	**Tanohata**	**1.12**	**348**	P	**Pg**	**00 19 40.3**	**-0.1**
JOU	**Okura**	**1.27**	**248**	P	**Pb**	**00 19 41.5**	**-1.5**
JRG	**Rokugo**	**1.31**	**295**	P	**Pb**	**00 19 42.1**	**-1.6**
MJAR	**Matsushiro Arr**	**3.89**	**235**	Pn	**Pn**	**00 20 20.2**	**+1.4**
	1.5nm,0.3s,baz=31,slow=13,SNR=7.9						
MJAR				Pg	**Pg**	**00 20 33.4**	**-0.1**
	1.6nm,0.3s,baz=25,slow=15,SNR=8.5						
ASAJ	**Asahikawa**	**5.28**	**3**	Pn	**Pn**	**00 20 39.5**	**+1.6**
	1.0nm,0.3s,baz=213,slow=15,SNR=6.1						
ASAJ				Sn	**Sn**	**00 21 36.0**	**-2.7**
	0.2nm,0.3s,baz=252,slow=20,SNR=2.6						
ZALV	**Zalesovo Beam**	**41.16**	**311**	P	P	00 26 59.9	-3.3
	0.5nm,0.4s,baz=95,slow=9.2,SNR=3.5						
MKAR	**Makanchi Array**	**43.69**	**301**	P	P	00 27 20.7	-3.2
	0.5nm,0.4s,baz=81,slow=10,SNR=11						

SKHL 18 00:22:09.1±1.4, 48.83N×131.31E, h6km±4km, mb3.8/4, Priamurye-Northeastern China border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KHBR	**Khabarovsk**	**2.51**	**97**	*e*Sn	Sn	00 23 20.3	-1.0
KHBR				*e*Sg	Sb	00 23 25.3	-0.3
GRNR	**Gornyy**	**3.84**	**58**	*e*Pn	Pn	00 23 09.0	+0.3
GRNR				*e*Pg	Pb	00 23 19.0	+1.8
GRNR				AMB	AMB	00 23 22.0	
	10.0nm,0.3s						
GRNR				*e*Sg	Sg	00 24 10.0	-2.3
GRNR				A	A	00 24 12.5	
	78nm,0.8s						
EKMR	**Ekimchan**	**4.37**	**13**	*e*Pn	Pn	00 23 16.6	+0.6
EKMR				*e*Pg	Pb	00 23 28.5	+2.2
EKMR				AMB	AMB	00 23 35.5	
	7.0nm,0.4s						
EKMR				*e*Sg	Sg	00 24 25.1	-4.3
EKMR				A	A	00 24 35.4	
	32nm,0.6s						
EKMR				A	A	00 24 35.4	
	8.0nm,0.6s						
EKMR				A	A	00 24 35.4	
	16nm,0.6s						
TEY	**Ternei**	**5.25**	**134**	*e*Sg	Sg	00 24 51.2	-6.3
ZEA	**Zeya**	**5.54**	**334**	*e*Sg	Sg	00 25 02.5	-4.2
BMKR	**Bomnak**	**6.08**	**346**	*e*Pn	Pn	00 23 39.9	+0.4
BMKR				*e*Pg	Pb	00 23 59.5	+4.1
BMKR				AMB	AMB	00 24 04.0	
	5.0nm,0.5s						
BMKR				*e*Sg	Sg	00 25 20.0	-4.3
BMKR				A	A	00 25 30.4	
	14nm,0.5s						
KROS	**Kirovskiy**	**6.

baz=83
MURC Murrieta 1.48 293 P Pn 00 26 26.3 +0.1
baz=112
PDMCI Parker Dam,Lak 1.73 43 Sb Sg 00 26 54.7 -1.2
baz=223

*TIF **18** 00:36:07.5, 41.°07N×43.°85E, h12km±1km*
*CSEM **18** 00:36:08.1±0.1, 41.°07N×43.°81E, h2km, MD2.9, Error ellipse: s-maj=3.3km s-min=2.0km az=154.0*
*DDA **18** 00:36:10.2, 41.°05N×43.°63E, h7km, Md2.9*
ISC 18 00:36:07.8±1.1, **41.°06N**±0.°03×**43.°81E**±0.°02, **h6**km±9km, **n26,σ0s36/52, Turkey-Georgia-Armenia border region**

Code	Station Name	Δ°	AZ°	Phase	Op	ID	Time	Res ISC
EAK	**Akyaka**	**0.40**	**203**	*i*	P	**Pg**	**00 36 16.1**	**+0.5**
EAK				*i*	S	**Sb**	**00 36 23.2**	**-0.7**
EAK	**Akyaka**	**0.40**	**203**		P	**Pg**	**00 36 16.1**	**+0.5**
EAK					S	**Sb**	**00 36 23.2**	**-0.7**
AKH	**Akhalkalaki**	**0.43**	**326**		P	**Pg**	**00 36 16.2**	**+0.1**
AKH					S	**Sg**	**00 36 22.1**	**+0.4**
AKH	**Akhalkalaki**	**0.43**	**326**		P	**Pg**	**00 36 16.2**	**+0.1**
AKH					S	**Sg**	**00 36 22.1**	**+0.4**
KZR	**Kazreti**	**0.56**	**54**		P	**Pg**	**00 36 18.4**	**-0.1**
KZR					S	**Sg**	**00 36 25.5**	**-0.3**
KZR	**Kazreti**	**0.56**	**54**		P	**Pg**	**00 36 18.4**	**-0.1**
KZR					S	**Sg**	**00 36 25.5**	**-0.3**
EPOS	**Posof**	**0.93**	**299**	*i*	P	**Pg**	**00 36 25.6**	**0.0**
EPOS				*i*	S	**Sb**	**00 36 38.4**	**-0.7**
EPOS	**Posof**	**0.93**	**299**		P	**Pg**	**00 36 25.6**	**0.0**
EPOS					S	**Sb**	**00 36 38.4**	**-0.7**
TBLG	**Delisi**	**0.97**	**46**		P	**Pb**	**00 36 27.2**	**+0.2**
TBLG					S	**Sb**	**00 36 40.1**	**+0.1**
TBLG	**Delisi**	**0.97**	**46**		P	**Pb**	**00 36 27.2**	**+0.2**
TBLG					S	**Sb**	**00 36 40.1**	**+0.1**
DUS	**Dusheti**	**1.23**	**33**		P	**Pg**	**00 36 31.1**	**-0.2**
DUS					S	**Sn**	**00 36 48.7**	**+0.1**
DUS	**Dusheti**	**1.23**	**33**		P	**Pg**	**00 36 31.1**	**-0.2**
DUS					S	**Sn**	**00 36 48.7**	**+0.1**
DGRG	**David-gareji**	**1.24**	**71**		P	**Pg**	**00 36 31.0**	**-0.5**
DGRG					S	**Sn**	**00 36 49.6**	**+0.8**
DGRG	**David-gareji**	**1.24**	**71**		P	**Pg**	**00 36 31.1**	**-0.5**
DGRG					S	**Sn**	**00 36 49.6**	**+0.8**
ARTV	**Artvin**	**1.43**	**276**	*i*	P	**Pg**	**00 36 35.1**	**-0.1**
ARTV				*i*	S	**Sn**	**00 36 54.2**	**+0.5**
ARTV	**Artvin**	**1.43**	**276**		P	**Pg**	**00 36 35.1**	**-0.1**
ARTV					S	**Sn**	**00 36 54.2**	**+0.5**
DAGI	**Agillar**	**1.44**	**271**	*i*	P	**Pg**	**00 36 35.2**	**-0.1**
DAGI				*i*	S	**Sg**	**00 36 53.8**	**-0.1**
GUDG	**Gudauri**	**1.49**	**19**		P	**Pb**	**00 36 36.0**	**0.0**
GUDG					S	**Sg**	**00 36 55.7**	**0.0**
GUDG	**Gudauri**	**1.49**	**19**		P	**Pb**	**00 36 36.0**	**0.0**
GUDG					S	**Sg**	**00 36 55.7**	**0.0**
ONI	**Oni**	**1.55**	**350**		P	**Pn**	**00 36 36.0**	**-0.1**
ONI					S	**Sb**	**00 36 57.1**	**+0.1**
DDEM	**Demirkent**	**1.57**	**265**	*i*	P	**Pb**	**00 36 37.0**	**-0.3**
DDEM				*i*	S	**Sn**	**00 36 57.3**	**+0.3**
DDEM	**Demirkent**	**1.57**	**265**		P	**Pb**	**00 36 37.0**	**-0.3**
DDEM					S	**Sn**	**00 36 57.3**	**+0.3**
DBAD	**Bademkaya**	**1.60**	**269**	*i*	P	**Pb**	**00 36 37.7**	**-0.1**
DBAD				*i*	S	**Sb**	**00 36 58.4**	**-0.1**
DBAD	**Bademkaya**	**1.60**	**269**		P	**Pb**	**00 36 37.7**	**-0.1**
DBAD					S	**Sb**	**00 36 58.3**	**-0.1**
DBOC	**Borcka**	**1.65**	**281**	*i*	P	**Pb**	**00 36 38.3**	**-0.2**
DBOC				*i*	S	**Sb**	**00 36 59.6**	**0.0**
DBOC	**Borcka**	**1.65**	**281**		P	**Pb**	**00 36 38.3**	**-0.2**
DBOC					S	**Sb**	**00 36 59.6**	**0.0**

JMA 18 00:40:50.8±0.2, **37.°83N×143.°88E, h37km, M3.8, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase	Op	ID	Time	Res ISC
JIO	**Ouri**	**2.09**	**288**		P		00 41 24.6	+1.4
JIO					eS		00 41 49.2	+1.2
OFUJ	**Ofunato**	**2.14**	**306**		P		00 41 25.1	+1.2
JMK	**Ichinoseki**	**2.37**	**299**		P		00 41 28.9	+1.8
JMK					S		00 41 57.3	+2.4
JFK	**Kawauchi**	**2.43**	**260**		P		00 41 29.0	+1.0
JFK					S		00 41 57.1	+0.6
JMM	**Marumori**	**2.44**	**272**		P		00 41 29.5	+1.4
JMM					S		00 41 57.8	+1.1
JOU	**Okura**	**2.59**	**283**		P		00 41 32.3	+2.1
JOU					eS		00 42 03.2	+2.8
JOM	**Ohasama**	**2.61**	**310**		P		00 41 32.4	+2.1
JOM					S		00 42 03.1	+2.4
JTH	**Tanohata**	**2.63**	**324**		P		00 41 32.3	+1.7
JFT	**Otama**	**2.83**	**265**		S		00 42 08.8	+2.6
JYK	**Kaneyama**	**2.97**	**293**		P		00 41 37.7	+2.3
JYK					eS		00 42 12.7	+2.9
JRG	**Rokugo**	**2.98**	**303**		P		00 41 38.6	+3.1
JRG					eS		00 42 12.9	+2.8
JANG	**Nango**	**3.14**	**325**		P		00 41 40.0	+2.4
JANG					eS		00 42 14.7	+0.9
JTM	**Tenmabayashi**	**3.67**	**324**		P		00 41 47.6	+2.6
JTM					eS		00 42 27.0	0.0

*ISCJB **18** 00:46:53.4±0.2, 17.°64N±0.°02×94.°91W±0.°02, h140km±2km, mb4.4/119, Error ellipse: s-maj=3.7km s-min=2.8km az=1.0*
*IDC **18** 00:46:53.5±0.6, 17.°80N×94.°53W, h117km±11km, mb3.9/14, mb1 4.1/15, mb1mx3.8/36, mbtmp4.3/15, MS3.3/1, Ms1 3.3/1, ms1mx2.6/28, Error ellipse: s-maj=27.9km s-min=14.3km az=55.0*
*BJI **18** 00:46:55.2, 17.°80N×94.°80W, h150km, mB4.9/2*
*MEX **18** 00:46:55.7±0.6, 17.°65N×94.°99W, h136km±7km, MD4.4*
*NEIC **18** 00:46:55.7, 17.°65N×94.°99W, h136km, mb4.4/143, MD4.4(MEX), After MEX.*
NEIC Felt at Oaxaca.
ISC 18 00:46:54.8±0.5, **17.°65N**±0.°03×**94.°98W**±0.°03, **h139**km±4km, **n537,σ1s08/571, mb4.4**/119, **Chiapas**

Code	Station Name	Δ°	AZ°	Phase	Op	ID	Time	Res ISC
CMIG	**Matias Romero**	**0.56**	**171**		P	**Pn**	**00 47 14.2**	**-1.0**
	612nm,0.3s,baz=336,slow=3.4,SNR=6443							
CMIG					S	**Sn**	**00 47 28.8**	**-1.9**
	600nm,0.3s,baz=254,slow=0.6,SNR=76							
TUIG	**Tuzandepetl**	**0.65**	**54**	*eP*		**Pn**	**00 47 14.9**	**-0.8**
TUIG				*eS*		**Sn**	**00 47 30.2**	**-1.5**
TUIG	**Tuzandepetl**	**0.65**	**54**	*eP*		**Pn**	**00 47 14.9**	**-0.8**
TUIG				*eS*		**Sn**	**00 47 30.2**	**-1.5**
OXBJ	**Oaxaca**	**1.76**	**251**	*eS*		**Sn**	**00 47 49.4**	**-1.6**
VHO	**Vista Hermosa**	**1.77**	**251**	*eP*		**Pn**	**00 47 26.4**	**-0.4**
VHO				*eS*		**Sn**	**00 47 49.7**	**-1.4**
VHO	**Vista Hermosa**	**1.77**	**251**	*eP*		**Pn**	**00 47 26.4**	**-0.4**
VHO				*eS*		**Sn**	**00 47 49.7**	**-1.4**
TGIG		**1.98**	**116**	*eP*		**Pn**	**00 47 28.5**	**-0.5**
TGIG				*eS*		**Sn**	**00 47 53.7**	**-1.5**
TGIG		**1.98**	**116**	*eP*		**Pn**	**00 47 28.5**	**-0.5**
TGIG				*eS*		**Sn**	**00 47 53.7**	**-1.5**
TGBT	**Tuxtla Gutierr**	**2.01**	**115**	*i*	P	**Pn**	**00 47 28.9**	**-0.4**
TGBT				*i*	S	**Sn**	**00 47 54.6**	**-1.2**
HUIG	**Huatulco**	**2.16**	**210**	*eP*		**Pn**	**00 47 29.4**	**-1.8**
HUIG				*eS*		**Sn**	**00 47 57.6**	**-1.6**
HUIG	**Huatulco**	**2.16**	**210**	*eP*		**Pn**	**00 47 29.4**	**-1.8**
HUIG				*eS*		**Sn**	**00 47 57.6**	**-1.6**
TPIG	**Tehuac#an**	**2.39**	**289**	*eP*		**Pn**	**00 47 34.4**	**+0.3**
TPIG				*i*	S	**Sn**	**00 48 03.3**	**-1.2**
TPIG	**Tehuac#an**	**2.39**	**289**	*eP*		**Pn**	**00 47 34.4**	**+0.3**
TPIG				*i*	S	**Sn**	**00 48 03.3**	**-1.2**
PANG	**Puerto Angel**	**2.44**	**216**	*eP*		**Pn**	**00 47 33.0**	**-1.6**
PANG				*i*	S	**Sn**	**00 48 03.7**	**-1.5**
LVIG	**Laguna Verde**	**2.47**	**327**	*eP*		**Pn**	**00 47 33.4**	**-1.6**
LVIG				*i*	S	**Sn**	**00 48 02.5**	**-3.5**
LVIG	**Laguna Verde**	**2.47**	**327**	*eP*		**Pn**	**00 47 33.4**	**-1.6**
LVIG				*i*	S	**Sn**	**00 48 02.5**	**-3.5**
PCIG		**2.57**	**139**	*eP*		**Pn**	**00 47 36.0**	**-0.2**
PCIG				*i*	S	**Sn**	**00 48 06.9**	**-1.2**
PCIG		**2.57**	**139**	*eP*		**Pn**	**00 47 36.0**	**-0.2**
PCIG				*i*	S	**Sn**	**00 48 06.9**	**-1.2**
CCIG	**Comitan**	**3.04**	**116**	*ePn*		**Pn**	**00 47 42.0**	**-0.5**
PNIG	**Pinotepa**	**3.26**	**248**	*eP*		**Pn**	**00 47 42.5**	**-2.6**
PNIG				*eS*		**Sn**	**00 48 22.1**	**-1.9**
PNIG	**Pinotepa**	**3.26**	**248**	*eP*		**Pn**	**00 47 42.5**	**-2.6**
PNIG				*eS*		**Sn**	**00 48 22.1**	**-1.9**
HMTT	**Tlapaneco**	**3.41**	**273**	*eP*		**Pn**	**00 47 46.6**	**-0.5**
HMTT				*eS*		**Sn**	**00 48 26.3**	**-1.4**
TLIG	**Tlapa**	**3.42**	**269**	*ePn*		**Pn**	**00 47 47.2**	**-0.1**
TLIG	**Tlapa**	**3.42**	**269**	*eP*		**Pn**	**00 47 46.8**	**-0.5**
TLIG				*i*	S	**Sn**	**00 48 26.7**	**-1.2**
PPM	**Popocatepetl**	**3.74**	**293**	*eP*		**Pn**	**00 47 53.2**	**+1.5**
PPM				*i*	S	**Sn**	**00 48 34.1**	**-1.7**
PPM	**Popocatepetl**	**3.74**	**293**	*eP*		**Pn**	**00 47 53.2**	**+1.5**
PPM				*i*	S	**Sn**	**00 48 34.1**	**-1.7**
THIG		**3.77**	**136**	*eP*		**Pn**	**00 47 52.4**	**+0.6**
THIG		**3.77**	**136**	*i*	P	**Pn**	**00 47 52.1**	**+0.3**
THIG				*eP*		**Pn**	**00 47 52.4**	**+0.6**
SCIG	**Sabancuy**	**3.84**	**69**	*i*	P	**Pn**	**00 47 51.4**	**-1.1**
SCIG				*i*	S	**Sn**	**00 48 35.7**	**-1.7**
SCIG	**Sabancuy**	**3.84**	**69**	*i*	P	**Pn**	**00 47 51.4**	**-1.1**
SCIG				*i*	S	**Sn**	**00 48 35.7**	**-1.7**
IIO	**Organos**	**4.04**	**299**	*eP*		**Pn**	**00 47 56.8**	**+1.3**
IIO	**Organos**	**4.04**	**299**	*eP*		**Pn**	**00 47 56.8**	**+1.3**
YAIG	**Yautepec**	**4.07**	**288**	*eP*		**Pn**	**00 47 56.5**	**+0.8**
YAIG				*i*	S	**Sn**	**00 48 40.9**	**-2.1**
YAIG	**Yautepec**	**4.07**	**288**	*eP*		**Pn**	**00 47 56.5**	**+0.8**
YAIG				*i*	S	**Sn**	**00 48 40.9**	**-2.1**
VTVM	**Tizayuca**	**4.17**	**301**	*eP*		**Pn**	**00 47 58.0**	**+0.7**
PBVM	**Pinon**	**4.28**	**295**	*eP*		**Pn**	**00 47 59.5**	**+1.1**
PBVM	**Pinon**	**4.28**	**295**	*eP*		**Pn**	**00 47 59.5**	**+1.1**
MZVM		**4.31**	**291**	*eP*		**Pn**	**00 48 00.9**	**+2.0**
UNM	**Universidad Na**	**4.32**	**293**	*ePn*		**Pn**	**00 48 01.6**	**+2.4**
PTVM	**Pico Tres Padr**	**4.37**	**297**	*eP*		**Pn**	**00 48 00.6**	**+0.8**
PTVM	**Pico Tres Padr**	**4.37**	**297**	*eP*		**Pn**	**00 48 00.6**	**+0.8**
MEIG	**Mezcala**	**4.43**	**274**	*eP*		**Pn**	**00 48 00.4**	**-0.1**
MEIG				*i*	S	**Sn**	**00 48 46.4**	**-5.2**
MEIG	**Mezcala**	**4.43**	**274**	*eP*		**Pn**	**00 48 00.4**	**-0.1**
MEIG				*i*	S	**Sn**	**00 48 46.4**	**-5.2**
MAVM	**Malinalco, Edo**	**4.48**	**288**	*eP*		**Pn**	**00 48 02.4**	**+1.1**
MAVM				*eS*		**Sn**	**00 48 52.0**	**-0.9**
TOVM	**TOLUCA**	**4.74**	**291**	*eP*		**Pn**	**00 48 06.1**	**+1.2**
CAIG	**El Cayaco**	**5.08**	**264**	*eP*		**Pn**	**00 48 07.3**	**-1.8**
CAIG				*i*	S	Sn	00 48 52.3	-15
CAIG	**El Cayaco**	**5.08**	**264**	*eP*		**Pn**	**00 48 07.3**	**-1.8**
CAIG				*i*	S	Sn	00 48 52.3	-15
MOIG	**Morelia**	**6.22**	**290**	*ePn*		**Pn**	**00 48 26.9**	**+2.4**
TEIG	**Tepich**	**6.84**	**67**	P		**Pn**	**00 48 30.1**	**-2.5**
	4.0nm,0.3s,baz=270,slow=23,SNR=61							
TEIG					S	**Sn**	**00 49 47.5**	**-1.8**
	baz=180,slow=20,SNR=3.2							
TGUH	**Tegucigalpa,Un**	**8.23**	**115**	*ePn*		**Pn**	**00 48 52.8**	**+1.5**
ZAIG	**Zacatecas**	**8.75**	**307**	*ePn*		**Pn**	**00 49 00.4**	**+1.8**
MGAN	**Managua**	**10.06**	**122**	*ePn*		**Pn**	**00 49 18.2**	**+2.4**
KVTX	**Kingsville**	**10.21**	**345**	*ePn*		**Pn**	**00 49 18.2**	**+0.5**
JTS	**JuntasAbangare**	**12.17**	**126**	P		**Pn**	**00 49 43.3**	**-0.5**
	1.5nm,0.3s,baz=113,slow=22,SNR=18							
JTS	**JuntasAbangare**	**12.17**	**126**	*ePn*		**Pn**	**00 49 44.0**	**+0.2**
534A	**Blanco**	**12.73**	**346**	P		**Pn**	**00 49 53.1**	**+2.3**
	baz=165,SNR=14							
HDC	**Heredia**	**13.00**	**124**	*ePn*		**Pn**	**00 49 56.9**	**+2.3**
434A	**Burnet**	**13.44**	**348**	P		**Pn**	**00 50 00.9**	**+0.8**
	baz=166,SNR=7.0							
JCT	**Junction City**	**13.51**	**342**	*ePn*		**Pn**	**00 50 02.1**	**+1.3**
HPIG		**13.53**	**315**	*ePn*		**P**	**00 50 04.0**	**-1.6**
433A	**Art**	**13.57**	**345**	P		**Pn**	**00 50 01.7**	**+0.1**
	baz=163,SNR=5.8							
338A	**Crockett**	**13.65**	**359**	P		**Pn**	**00 50 03.1**	**+0.5**
	baz=179							
340A	**Bronson**	**13.74**	**4**	P		**Pn**	**00 50 04.6**	**+0.8**
	baz=184							
335A	**Moody**	**13.75**	**351**	P		**Pn**	**00 50 04.8**	**+0.9**
	baz=170,SNR=5.6							
336A	**Riesel**	**13.78**	**353**	P		**Pn**	**00 50 05.2**	**+0.9**
	baz=173							
342A	**Flagon Creek P**	**13.87**	**10**	P		**Pn**	**00 50 06.5**	**+1.0**
	baz=191							
334A	**Lometa**	**13.94**	**348**	P		**Pn**	**00 50 06.4**	**0.0**
	baz=167,SNR=5.1							
446A	**Poplarville**	**14.04**	**20**	P		**Pn**	**00 50 07.1**	**-0.6**
	baz=202							
NATX	**Nacogdoches**	**14.05**	**1**	*ePn*		**Pn**	**00 50 08.8**	**+1.0**
TX31	**Lajitas Ar. Si**	**14.09**	**327**	*ePn*		**Pn**	**00 50 09.9**	**+1.5**
TXAR	**Lajitas Array**	**14.09**	**327**	P		**P**	**00 50 10.4**	**-1.4**
	0.2nm,0.3s,baz=149,slow=12,SNR=13							
333A	**Richland Sprin**	**14.09**	**346**	P		**Pn**	**00 50 09.3**	**+1.0**
	baz=164,SNR=7.3							
344A	**Westbrook Farm**	**14.27**	**15**	P		**Pn**	**00 50 10.1**	**-0.5**
	baz=197							
238A	**Jacksonville**	**14.29**	**360**	P		**Pn**	**00 50 12.1**	**+1.3**
	baz=180							
237A	**Washetta, Mont**	**14.31**	**357**	P		**Pn**	**00 50 11.7**	**+0.7**
	baz=177							
239A	**Gary**	**14.31**	**2**	P		**Pn**	**00 50 11.6**	**+0.6**
	baz=182							
345A	**Thompson Farm,**	**14.32**	**17**	P		**Pn**	**00 50 11.8**	**+0.7**
	baz=199							
240A	**Hunter Patters**	**14.37**	**4**	P		**Pn**	**00 50 12.3**	**+0.5**
	baz=185							
WHTX	**Lake Whitney,**	**14.45**	**352**	P		**Pn**	**00 50 12.9**	**+0.1**
	baz=171							
WHTX	**Lake Whitney,**	**14.45**	**352**	*ePn*		**Pn**	**00 50 12.3**	**-0.5**
	20nm,0.5s							
346A	**Big Creek Wild**	**14.56**	**19**	P		**Pn**	**00 50 14.0**	**-0.2**
	baz=201							
234A	**Clairette**	**14.57**	**349**	P		**Pn**	**00 50 15.3**	**+0.9**
	baz=168							
242A	**Grayson**	**14.57**	**10**	P		**Pn**	**00 50 14.1**	**-0.2**
	baz=191							
233A	**Rising Star**	**14.74**	**347**	P		**P**	**00 50 17.8**	**-1.1**
	baz=165,SNR=12							
136A	**Ennis**	**14.83**	**355**	P		**Pn**	**00 50 18.2**	**+0.8**
	baz=174							
347A	**Saraland**	**14.88**	**22**	P		**Pn**	**00 50 17.9**	**-0.3**
	baz=204							
137A	**Heron Place, G**	**14.90**	**357**	P		**Pn**	**00 50 19.2**	**+0.8**
	baz=177							
140A	**Cam and Jess,**	**14.98**	**5**	P		**Pn**	**00 50 20.0**	**+0.6**
	baz=185							
135A	**Vickery Place,**	**15.00**	**352**	P		**Pn**	**00 50 20.4**	**+0.7**
	baz=171							
141A	**Papa Simpson,**	**15.01**	**7**	P		**Pn**	**00 50 19.8**	**+0.1**
	baz=188							
134A	**White-Moore Ra**	**15.12**	**350**	P		**Pn**	**00 50 21.7**	**+0.5**
	baz=169							
133A	**Hamilton Ranch**	**15.31**	**347**	P		**P**	**00 50 24.6**	**-0.6**
	baz=166,SNR=14							
ABTX	**Abilene, Hawle**	**15.49**	**345**	P		**P**	**00 50 28.0**	**+0.8**
	baz=163,SNR=8.0							
ABTX	**Abilene, Hawle**	**15.49**	**345**	*ePn*		**P**	**00 50 26.8**	**-0.4**
	31nm,0.8s							
Z38A	**Mt. Pleasant**	**15.53**	**360**	P		**P**	**00 50 28.2**	**+0.6**
	baz=180							
145A	**Houston Renfro**	**15.57**	**16**	P		**P**	**00 50 28.0**	**0.0**
	baz=198							
Z36A	**Blue Ridge**	**15.61**	**355**	P		**Pn**	**00 50 27.7**	**+0.5**
	baz=175							
Z35A	**Perchaven, San**	**15.75**	**353**	P		**P**	**00 50 29.8**	**-0.2**
	baz=172							
248A	**Dixon Mills**	**15.80**	**23**	P		**P**	**00 50 30.5**	**0.0**
	baz=206							
Z34A	**Collier Ranch,**	**15.88**	**351**	P		**P**	**00 50 32.4**	**+1.0**
	baz=170							
Z33A	**Whitaker Ranch**	**15.94**	**348**	P		**P**	**00 50 32.5**	**+0.4**
	baz=167							
WLAR	**White Oak Lake**	**16.06**	**6**	*ePn*		**P**	**00 50 33.8**	**+0.4**
	20nm,0.8s							
147A	**Livingston**	**16.14**	**21**	P		**Pn**	**00 50 33.9**	**+0.2**
	baz=204							
Y38A	**Idabel**	**16.21**	**1**	P		**P**	**00 50 35.4**	**+0.3**
	baz=181							
Y36A	**Durant**	**16.22**	**356**	P		**Pn**	**00 50 34.4**	**-0.4**
	baz=176							
Y39A	**Lockesburg**	**16.24**	**3**	P		**Pn**	**00 50 34.3**	**-0.6**
	baz=183							
Y37A	**Hugo**	**16.27**	**358**	P		**P**	**00 50 35.9**	**+0.1**
	baz=178							
Y35A	**Marietta**	**16.29**	**354**	P		**P**	**00 50 36.8**	**+0.8**
	baz=173							
Y40A	**Okolona**	**16.36**	**5**	P		**P**	**00 50 36.8**	**0.0**
	baz=186							
Y42A	**Garnett, Star**	**16.37**	**9**	P		**P**	**00 50 37.0**	**+0.2**
	baz=191							
Z46A	**Louisville**	**16.40**	**18**	P		**Pn**	**00 50 37.0**	**0.0**
	baz=201							
Y34A	**Reagan Ranch,**	**16.43**	**352**	P		**P**	**00 50 37.6**	**+0.1**
	baz=171,SNR=9.1							
Y33A	**Hilltop Ranch,**	**16.61**	**349**	P		**P**	**00 50 40.0**	**+0.5**
	baz=168							
Z47A	**Carrollton**	**16.68**	**21**	P		**P**	**00 50 39.8**	**-0.5**
	baz=204							
X35A	**Drake**	**16.77**	**354**	P		**Pn**	**00 50 41.8**	**+0.3**
	baz=173,SNR=11							
Y44A	**Strider, Charl**	**16.80**	**14**	P		**P**	**00 50 41.3**	**-0.2**
	baz=196							
X39A	**Fountain Ranch**	**16.81**	**2**	P		**P**	**00 50 41.7**	**0.0**
	baz=183,SNR=5.2							
MNTX	**Cornudas Mount**	**16.86**	**328**	P		**Pn**	**00 50 43.6**	**+1.0**
	baz=144							
MNTX	**Cornudas Mount**	**16.86**	**328**	*eP*		**Pn**	**00 50 43.8**	**+1.2**
	2.8nm,0.8s							
Y45A	**Yeager Farm, C**	**16.87**	**16**	P		**P**	**00 50 42.4**	**+0.1**
	baz=198							
MIAR	**Mount Ida**	**16.87**	**4**	P		**Pn**	**00 50 42.7**	**0.0**
	baz=185,SNR=13							
MIAR	**Mount Ida**	**16.87**	**4**	*eP*		**P**	**00 50 42.4**	**0.0**
	20nm,0.7s							
X37A	**Clayton**	**16.87**	**359**	P		**Pn**	**00 50 43.0**	**+0.3**
	baz=179,SNR=6.3							
X40A	**Basin Creek Fa**	**16.88**	**6**	P		**P**	**00 50 42.3**	**-0.1**
	baz=187							
X36A	**Centrahoma**	**16.89**	**356**	P		**Pn**	**00 50 43.1**	**+0.2**
	baz=176,SNR=6.2							
LRAL	**Lakeview Retre**	**16.92**	**24**	*eP*		**P**	**00 50 43.1**	**+0.2**
	6.5nm,0.5s							
X38A	**Whitesboro**	**16.95**	**0**	P		**Pn**	**00 50 44.3**	**+0.7**
	baz=180,SNR=12							
Z48A	**Northport**	**17.02**	**22**	P		**Pn**	**00 50 45.3**	**+0.8**
	baz=205							
Y46A	**Houston**	**17.07**	**18**	P		**Pn**	**00 50 45.2**	**+0.1**
	baz=200							
X34A	**Smith Ranch, M**	**17.07**	**352**	P		**Pn**	**00 50 45.3**	**+0.2**
	baz=171							
X33A	**Lawton**	**17.11**	**350**	P		**Pn**	**00 50 45.6**	**0.0**
	baz=169							
X32A	**Elmer**	**17.14**	**348**	P		**Pn**	**00 50 46.2**	**+0.3**
	baz=166,SNR=10.0							
UALR	**University of**	**17.22**	**7**	*eP*		**Pn**	**00 50 47.2**	**+0.4**
	29nm,0.9s							
WMOK	**Wichita Mounta**	**17.35**	**349**	*eP*		**Pn**	**00 50 48.1**	**-0.4**
	9.8nm,1.0s							
W38A	**Poteau**	**17.35**	**1**	P		**Pn**	**00 50 48.1**	**-0.3**
	baz=182,SNR=8.3							
Y47A	**UCPARC, Winfie**	**17.40**	**20**	P		**P**	**00 50 47.9**	**-0.3**
	baz=203							
W37B	**Quinton**	**17.42**	**359**	P		**Pn**	**00 50 49.2**	**-0.1**
	baz=179,SNR=11							
W36A	**Wetumka**	**17.45**	**357**	P		**Pn**	**00 50 49.4**	**-0.2**
	baz=176							
W39A	**Magazine**	**17.51**	**3**	P		**P**	**00 50 49.8**	**+0.5**
	baz=184,SNR=10							
W35A	**Tecumseh**	**17.51**	**355**	P		**Pn**	**00 50 50.2**	**-0.2**
	baz=174,SNR=16							
OXF	**Oxford**	**17.52**	**15**	*eP*		**P**	**00 50 49.8**	**+0.4**
	13nm,0.8s							
W40A	**Ferguson Farm,**	**17.55**	**5**	P		**P**	**00 50 49.9**	**0.0**
	baz=186							
W41A	**Tony Mavity, V**	**17.62**	**7**	P		**P**	**00 50 50.4**	**-0.2**
	baz=189							
W41B	**Gary Mavity, V**	**17.62**	**7**	P		**P**	**00 50 50.2**	**-0.4**
	baz=189							
X301	**Greenbrier Sit**	**17.67**	**7**	*eP*		**P**	**00 50 51.7**	**+0.6**
	9.3nm,0.8s							
MSTX	**Muleshoe**	**17.69**	**338**	P		**Pn**	**00 50 52.8**	**+0.2**
	baz=155,SNR=16							
MSTX	**Muleshoe**	**17.69**	**338**	*eP*		**Pn**	**00 50 53.8**	**+1.2**
	31nm,0.8s							
W34A	**Bridge Creek,**	**17.69**	**352**	P		**Pn**	**00 50 52.3**	**-0.2**
	baz=171							
W34A	**Bridge Creek,**	**17.69**	**352**	*eP*		**P**	**00 50 51.7**	**+0.3**
	16nm,0.7s							
W33A	**Caddo, Fort Co**	**17.70**	**351**	P		**Pn**	**00 50 52.2**	**-0.5**
	baz=169,SNR=7.8							
X201	**Greenbrier Sit**	**17.73**	**7**	*eP*		**P**	**00 50 52.1**	**+0.3**
	10nm,0.9s							
WHAR	**Wooly Hollow**	**17.73**	**7**	*eP*		**Pn**	**00 50 53.4**	**+0.4**
	9.5nm,0.7s							
W32A	**Sentinel**	**17.81**	**349**	P		**Pn**	**00 50 53.5**	**-0.4**
	baz=167,SNR=12							
V36A	**Jenks**	**18.08**	**357**	P		**P**	**00 50 55.8**	**+0.1**
	baz=177,SNR=11							
V35A	**Meyer Ranch, C**	**18.11**	**355**	P		**P**	**00 50 56.5**	**+0.5**
	baz=174,SNR=14							
V38A	**Canehill**	**18.15**

	baz=187								
T33A	Patterson Ranc	19.57	352	P	P	00 51 11.8	-0.1		
	baz=171								
LPM	Los Pinos Moun	19.59	330	eP	Pn	00 51 14.2	-0.8		
T32A	Huddler Ranch,	19.76	351	P	P	00 51 14.3	+0.3		
	baz=169								
LAZ	Ladron	19.91	329	eP	P	00 51 16.8	+1.0		
S38A	Stockton	19.93	3	P	P	00 51 16.1	+0.4		
	baz=183,SNR=19								
S35A	Otter Creek Ra	19.99	357	P	P	00 51 16.2	-0.2		
	baz=176,SNR=19								
S40A	Lebanon	19.99	6	P	P	00 51 16.4	0.0		
	baz=187,SNR=16								
S36A	Lake Cedric, C	20.00	359	P	P	00 51 17.0	+0.5		
	baz=178								
S39A	Bolivar	20.02	4	P	P	00 51 16.5	-0.1		
	baz=185,SNR=18								
CPCT	Cooper Cave	20.02	26	eP	P	00 51 16.6	-0.2		
	8.4nm,0.4s								
S37A	Fort Scott	20.03	0	P	P	00 51 16.5	-0.3		
	baz=180,SNR=9.3								
ANMO	Albuquerque	20.03	332	P	Pn	00 51 18.8	-1.4		
	8.3nm,0.7s,baz=146,slow=12,SNR=24								
ANMO	Albuquerque	20.03	332	P	P	00 51 18.2	+1.1		
	baz=146								
ANMO	Albuquerque	20.03	332	eP	Pn	00 51 18.9	-1.3		
	8.0nm,0.6s								
S34A	Willow Spring	20.06	355	P	P	00 51 16.5	-0.6		
	baz=174,SNR=7.3								
RGRS	Roger Stewart	20.20	38	eP	P	00 51 19.0	+0.4		
	142nm,0.6s								
S32A	Newby Ranch, P	20.27	351	P	P	00 51 20.0	+0.6		
	baz=169								
CSU	Charleston Sou	20.33	38	eP	P	00 51 19.8	-0.2		
TUC	Tucson	20.41	319	P	P	00 51 22.5	+1.4		
	baz=132								
TUC	Tucson	20.41	319	eP	Pn	00 51 23.1	-1.5		
	8.1nm,0.9s								
R38A	Fenwick Farm,	20.48	2	P	P	00 51 21.2	-0.4		
	baz=183,SNR=10								
TKL	Tuckaleechee C	20.51	27	P	P	00 51 20.8	-1.2		
	6.4nm,0.4s,baz=196,slow=7.9,SNR=26								
TKL	Tuckaleechee C	20.51	27	eP	P	00 51 21.9	-0.2		
	7.5nm,0.5s								
R37A	Teagarden Farm	20.59	0	P	P	00 51 22.3	-0.5		
	baz=180,SNR=6.9								
R36A	Gordon, Harris	20.60	359	P	P	00 51 22.2	-0.7		
	baz=179,SNR=7.8								
SIUC	Southern Illin	20.62	13	eP	P	00 51 23.1	0.0		
	28nm,0.6s								
R35A	Emporia Munici	20.62	357	P	P	00 51 22.5	-0.7		
	baz=177								
R39A	Chumby, Stover	20.66	4	P	P	00 51 22.9	-0.6		
	baz=185,SNR=18								
R34A	Isabella, Hill	20.67	355	P	P	00 51 23.2	-0.5		
	baz=174,SNR=7.4								
R40A	Maddies Statio	20.70	6	P	P	00 51 23.4	-0.5		
	baz=187,SNR=16								
R33A	Olander Ranch,	20.75	353	P	P	00 51 24.4	-0.2		
	baz=172								
R32A	Long Quarter,	20.95	352	P	P	00 51 26.5	-0.2		
	baz=170								
T25A	Trinidad	21.12	339	P	P	00 51 29.5	+0.8		
	baz=154								
T25A	Trinidad	21.12	339	eP	P	00 51 29.9	+1.2		
	8.0nm,0.8s								
Q35A	Mercer Eighty,	21.15	358	P	P	00 51 28.0	-0.8		
	baz=177								
Q37A	Longview Farm,	21.15	1	P	P	00 51 27.7	-1.2		
	baz=181								
USIN	University of	21.23	16	eP	P	00 51 29.2	-0.5		
	12nm,0.6s								
KMSC	Kings Mountain	21.24	32	P	P	00 51 28.6	-1.2		
	baz=218								
KMSC	Kings Mountain	21.24	32	eP	P	00 51 29.0	-0.8		
	49nm,1.8s								
Q34A	Chapman	21.26	356	P	P	00 51 29.2	-0.8		
	baz=175								
Q38A	Cooks Store, C	21.27	3	P	P	00 51 29.9	-0.1		
	baz=184,SNR=14								
SLM	Saint Louis	21.32	10	eP	P	00 51 30.9	+0.4		
	34nm,0.8s								
TZTN	Tazewell	21.36	26	eP	P	00 51 30.4	-0.7		
	62nm,1.9s								
Q39A	Willow Grove F	21.39	4	P	P	00 51 30.4	-0.9		
	baz=185,SNR=9.3								
Q33A	Connelly Farm,	21.41	354	P	P	00 51 31.9	+0.3		
	baz=173								
Q40A	Laux Farm, Aux	21.42	6	P	P	00 51 30.1	-1.5		
	baz=188,SNR=9.9								
KSU1	Kansas State U	21.42	357	P	P	00 51 30.6	-1.0		
	baz=176								
KSU1	Kansas State U	21.42	357	eP	P	00 51 30.6	-1.0		
	15nm,0.6s								
X18A	Snowflake	21.48	324	eP	P	00 51 33.9	+1.4		
	22nm,1.4s								
CBKS	Cedar Bluff	21.49	350	P	P	00 51 33.0	+0.5		
	baz=168								
CBKS	Cedar Bluff	21.49	350	eP	P	00 51 33.1	+0.6		
	25nm,0.8s								
Q32A	Meitler Ranch,	21.49	352	P	P	00 51 32.6	+0.1		
	baz=171,SNR=13								
214A	Organ Pipe Nat	21.51	315	P	P	00 51 34.5	+1.6		
	baz=127								
PAPH	Port-au-Prince	21.58	84	eP	P	00 51 33.5	-0.1		
	105nm,1.3s								
W18A	Petrified Fore	21.80	326	P	P	00 51 36.5	+0.5		
	baz=139								
W18A	Petrified Fore	21.80	326	eP	P	00 51 37.3	+1.3		
	10nm,1.0s								
P35A	Duane Minner,	21.82	358	P	P	00 51 35.2	-0.7		
	baz=177								
P33A	Williams Farm,	21.84	354	P	P	00 51 36.1	0.0		
	baz=173								
OLIL	Olney	21.85	15	eP	P	00 51 35.9	-0.3		
	23nm,0.8s								
P37A	Lathrop	21.87	1	P	P	00 51 35.2	-1.2		
	baz=182								
WCI	Wyandotte Cave	21.87	19	eP	P	00 51 34.8	-1.6		
	20nm,0.8s								
P34A	Walnut Farm, R	21.88	356	P	P	00 51 35.9	-0.6		
	baz=175,SNR=6.0								
P36A	Good Intent, A	21.89	360	P	P	00 51 35.5	-1.1		
	baz=179								
P38A	Dawn	21.93	3	P	P	00 51 35.7	-1.4		
	baz=184								
P40A	Paris	21.95	6	P	P	00 51 35.7	-1.6		
	baz=188,SNR=16								
SDCO	Great Sand Dun	22.05	337	P	P	00 51 39.2	+0.6		
	baz=152,SNR=9.1								
SDCO	Great Sand Dun	22.05	337	eP	P	00 51 40.2	+1.5		
	4.0nm,0.6s								
P32A	Huiting Farm,	22.12	353	P	P	00 51 39.7	+0.7		
	baz=171,SNR=5.6								
X16A	Lo Mia Camp, P	22.25	322	eP	P	00 51 43.1	+2.5		
	11nm,0.9s								
KSCO	Kaye Shedlock'	22.30	344	P	P	00 51 41.1	+0.2		
	baz=161								
O37A	Wolven Farm, M	22.45	2	P	P	00 51 42.4	+0.2		
	baz=182								
O33A	Hebron	22.46	355	P	P	00 51 42.3	0.0		
	baz=174,SNR=15								
O34A	Beatrice	22.50	357	P	P	00 51 41.9	-0.8		
	baz=176								
O35A	Humboldt	22.55	358	P	P	00 51 42.1	-1.1		
	baz=178								
O40A	La Belle	22.55	6	P	P	00 51 41.8	-1.4		
	baz=188,SNR=6.1								
S22A	4UR Ranch, Cre	22.56	335	P	P	00 51 44.6	+0.9		
	baz=149,SNR=12								
S22A	4UR Ranch, Cre	22.56	335	eP	P	00 51 45.0	+1.3		
	11nm,1.0s								
O39A	Kirksville	22.62	5	P	P	00 51 42.9	-1.0		
	baz=186								
113A	Mohawk Valley,	22.65	315	eP	P	00 51 46.1	+1.9		
	5.8nm,0.9s								
BLO	Bloomington	22.67	17	eP	P	00 51 43.7	-0.7		
	28nm,0.6s								
O32A	Brockman Farm,	22.71	353	P	P	00 51 44.8	0.0		
	baz=172								
O31A	Woolen Ranch,	22.73	351	P	P	00 51 45.4	+0.4		
	baz=169,SNR=9.5								
MVCO	Mesa Verde	22.83	331	P	P	00 51 47.4	+1.1		
	baz=145,SNR=14								
MVCO	Mesa Verde	22.83	331	eP	P	00 51 47.9	+1.7		
	46nm,1.4s								
WUAZ	Wupatki	23.00	324	P	P	00 51 49.7	+2.0		
	baz=137,SNR=8.8								
WUAZ	Wupatki	23.00	324	eP	P	00 51 49.4	+1.7		
	26nm,1.0s								
Q24A	Divide	23.01	339	P	P	00 51 49.2	+1.3		
	baz=155								
Q24A	Divide	23.01	339	eP	P	00 51 49.2	+1.3		
	11nm,1.2s								
N37A	Lee Faris, Mou	23.04	1	P	P	00 51 48.2	+0.4		
	baz=182								
N33A	J Bar K, Exete	23.11	355	P	P	00 51 48.7	+0.3		
	baz=174								
N38A	Joes South For	23.11	3	P	P	00 51 48.4	-0.1		
	baz=184,SNR=10								
N35A	Tabor	23.14	359	P	P	00 51 48.5	-0.2		
	baz=178								
N34A	Lincoln	23.14	357	P	P	00 51 48.6	-0.2		
	baz=176								
CNNC	Cliffs of the	23.20	38	eP	P	00 51 48.5	-0.8		
N39A	Derby Farms, D	23.25	5	P	P	00 51 49.3	-0.4		
	baz=186								
BLA	Blacksburg	23.32	30	eP	P	00 51 49.8	-0.7		
	11nm,0.6s								
N31A	Bailey Ranch,	23.34	352	P	P	00 51 50.9	+0.2		
	baz=170								
HDIL	Hopedale	23.35	11	P	P	00 51 49.9	-0.7		
	baz=194,SNR=5.4								
HDIL	Hopedale	23.35	11	eP	P	00 51 49.9	-0.7		
	28nm,0.9s								
GLA	Glamis	23.53	314	eP	P	00 51 51.1	-1.4		
	13nm,0.3s								
VWCC	Virginia Weste	23.57	31	eP	P	00 51 51.5	-1.3		
PV01	Paradox Valley	23.62	332	eP	P	00 51 56.0	+2.5		
SFIN	Lafayette	23.65	15	P	P	00 51 52.7	-0.7		
	baz=199								
SFIN	Lafayette	23.65	15	eP	P	00 51 52.6	-0.8		
	38nm,1.5s								
M37A	Trindle Farm,	23.68	2	P	P	00 51 53.8	+0.1		
	baz=182								
M38A	Pleasantville	23.74	3	P	P	00 51 53.4	-0.7		
	baz=184,SNR=7.9								
Y12C	Blythe	23.75	316	eP	P	00 51 56.0	+1.7		
	21nm,1.8s								
OTAV	Otavalo	23.75	135	eP	P	00 51 57.2	+2.1		
	19nm,1.4s								
M34A	Aspy Farms, Fr	23.81	357	P	P	00 51 55.1	+0.3		
	baz=176								
PV05	Paradox Valley	23.82	332	eP	P	00 51 57.1	+1.9		
BGNE	Belgrade	23.83	354	P	P	00 51 55.4	+0.3		
	baz=172								
BGNE	Belgrade	23.83	354	eP	P	00 51 55.8	+0.7		
	42nm,1.0s								
PDMCI	Parker Dam,Lak	23.84	318	P	P	00 51 56.6	+1.4		
	baz=129								
SMCO	Snowmass	23.86	336	eP	P	00 51 58.0	+2.2		
	28nm,0.9s								
M31A	Lambtecht Ranc	23.86	353	P	P	00 51 56.2	+0.8		
	baz=171,SNR=8.8								
ROSC	El Rosal	23.89	120	eP	P	00 51 57.4	+1.1		
	3.0nm,0.9s								
M33A	Taylor Creek F	23.92	356	P	P	00 51 56.5	+0.7		
	baz=175								
ISCO	Idaho Springs	23.92	339	P	P	00 51 57.0	+0.8		
	baz=154,SNR=15								
ISCO	Idaho Springs	23.92	339	eP	P	00 51 57.7	+1.5		
	8.9nm,0.8s								
PV04	Paradox Valley	23.99	332	eP	P	00 51 57.7	+1.0		
OGNE	Ogallala	24.00	347	P	P	00 51 57.5	+0.9		
	baz=163,SNR=7.4								
OGNE	Ogallala	24.00	347	eP	P	00 51 58.1	+1.4		
	59nm,0.6s								
PV10	Paradox Valley	24.03	332	eP	P	00 51 58.7	+1.5		
U15A	North Rim	24.17	324	eP	P	00 51 59.6	+1.1		
	4.7nm,0.8s								
PV09	Paradox Valley	24.18	332	eP	P	00 51 59.6	+1.0		
SCIA	State Center	24.22	3	eP	P	00 51 58.3	-0.3		
	44nm,0.5s								
L34A	Svendsen Farm,	24.26	357	P	P	00 51 59.6	+0.6		
	baz=177								
BC3	Big Chuckawall	24.31	315	P	P	00 52 00.6	+1.0		
	baz=126								
L36A	Harm Buss Farm	24.37	1	P	P	00 52 00.1	+0.2		
	baz=181								
IRM	Iron Mountain	24.40	316	P	P	00 52 01.7	+1.3		
	baz=127								
L32A	Elgin	24.41	355	P	P	00 52 01.0	+0.7		
	baz=173								
L37A	Phoenix Point,	24.41	2	P	P	00 51 59.8	-0.5		
	baz=183								
L38A	Oak Wood Farm,	24.47	4	P	P	00 52 00.2	-0.6		
	baz=185,SNR=8.6								
L33A	Hoskins	24.51	356	P	P	00 52 02.0	+0.8		
	baz=175								
BAR	Barrett	24.61	312	eP	P	00 52 03.9	+1.6		
	20nm,1.5s								
L31A	Butterfield Fa	24.66	353	P	P	00 52 03.5	+0.8		
	baz=171,SNR=12								
ACSO	Alum Creek Sta	24.78	22	eP	P	00 52 02.3	-1.4		
	26nm,1.2s								
KNB	Kanab	24.89	324	eP	P	00 52 07.5	+2.6		
	4.7nm,0.8s								
K36A	Gilmore City	24.91	1	P	P	00 52 04.4	-0.4		
	baz=181								
PKCU	Pink Cliffs	24.92	326	eP	P	00 52 06.1	+0.8		
	37nm,1.6s								
K34A	Le Mars	24.97	358	P	P	00 52 05.3	0.0		
	baz=178								
K38A	Parkersburg	24.99	4	P	P	00 52 04.7	-0.7		
	baz=185								
N23A	Red Feather La	25.02	340	P	P	00 52 06.5	+0.4		
	baz=155								
N23A	Red Feather La	25.02	340	eP	P	00 52 07.0	+0.8		
	6.3nm,1.0s								
K32A	Verdigre	25.06	355	P	P	00 52 06.5	+0.4		
	baz=173								
K37A	Belmond	25.06	2	P	P	00 52 05.5	-0.7		
	baz=183								
K31A	O'Neill	25.10	353	P	P	00 52 07.3	+0.7		
	baz=172								
LCMT	Little Creek M	25.12	324	eP	P	00 52 08.8	+1.8		
	2.7nm,0.9s								
GMRC	Granite Mounta	25.12	317	P	P	00 52 08.1	+1.1		
	baz=128								
O20A	White River Ci	25.17	336	P	P	00 52 08.2	+0.7		
	baz=149								
O20A	White River Ci	25.17	336	eP	P	00 52 08.5	+1.0		
	6.5nm,0.8s								
SDV	Santo Domingo	25.22	107	P	P	00 52 03.8	-4.3		
	16nm,0.5s,baz=322,slow=10,SNR=3.2								
K30A	Basset	25.25	352	P	P	00 52 08.6	+0.6		
	baz=170								
MTPU	Mount Pierson	25.30	327	eP	P	00 52 09.7	+0.9		
	5.5nm,0.8s								
JFWS	Jewell Farm	25.50	8	eP	P	00 52 09.3	-0.8		
	37nm,0.6s								
MCWV	Mont Chateau	25.56	28	eP	P	00 52 10.5	-0.2		
	32nm,1.6s								
J34A	George	25.57	358	P	P	00 52 10.7	0.0		
	baz=178								
P18A	Preston Nutter	25.59	332	eP	P	00 52 12.7	+1.2		
	4.6nm,1.0s								
J36A	Senca 1, Swea	25.60	1	P	P	00 52 10.4	-0.7		
	baz=181								
J37A	Redenius Farm,	25.61	2	P	P	00 52 10.3	-0.8		
	baz=183								
CBN	Corbin Frederi	25.63	33	eP	P	00 52 11.1	-0.2		
	34nm,1.3s								
J35A	Milford	25.63	360	P	P	00 52 10.3	-1.0		
	baz=180								
MSU	Marysvale	25.65	328	eP	P	00 52 13.5	+1.7		
J38A	Wedel Dairy, R	25.68	4	P	P	00 52 10.6	-1.1		
	baz=186								
P17A	Butcher Ranch,	25.70	331	eP	P	00 52 14.7	+2.5		
	12nm,1.1s								
TMUT	Trail Mountain	25.77	330	eP	P	00 52 15.2	+2.2		
	24nm,1.9s								
J30A	Dallas	25.88	352	P	P	00 52 14.0	+0.4		
	baz=170								
ECSD	EROS Data Cent	26.04	357	P	P	00 52 14.6	-0.4		
	baz=176,SNR=6.2								
ECSD	EROS Data Cent	26.04	357	eP	P	00 52 14.5	-0.5		
	10nm,1.0s								
J29A	Okreek	26.07	351	P	P	00 52 15.8	+0.5		
	baz=168								
I35A	Creekview Farm	26.12	360	P	P	00 52 15.2	-0.5		
	baz=180								
I37A	Lemond, Waseca	26.32	3	P	P	00 52 16.6	-0.9		
	baz=183								
I34A	Hadley	26.32	359	P	P	00 52 17.5	-0.1		
	baz=178								
I38A	Scanlan Farm,	26.40	4	P	P	00 52 17.5	-0.8		
	baz=186								
I30A	Oacoma	26.45	353	P	P	00 52 19.4	+0.7		
	baz=170								
MPU	Maple Canyon	26.54	330	eP	P	00 52 20.4	+0.5		
	11nm,1.5s								
PSUT	Pine Spring	26.55	325	eP	P	00 52 20.2	+0.3		
	3.4nm,0.9s								
N54A	Morains State	26.58	26	P	P	00 52 18.6	-1.3		
	baz=213								
O56A	Blue Knob Stat	26.63	29	P	P	00 52 19.7	-0.7		
	baz=217								
I29A	Vivian Onida	26.67	351	P	P	00 52 21.1	+0.4		
	baz=169								
NLU	North Lily Min	26.70	330	eP	P	00 52 22.4	+1.1		
	4.1nm,1.3s								
I28A	Midland	26.78	350	P	P	00 52 22.2	+0.5		
	baz=167								
K22A	Casper	26.79	341	P	P	00 52 22.5	+0.6		
	baz=155								
K22A	Casper	26.79	341	eP	P	00 52 22.2	+0.3		
	5.4nm,0.9s								
TPNV	Topopah Spring	26.85	320	P	P	00 52 23.5	+0.9		
	baz=130								
TPNV	Topopah Spring	26.85	320	eP	P	00 52 22.5	-0.1		
	2.6nm,0.9s								
H32A	Carlson Farm,	26.85	356	P	P	00 52 22.0	-0.3		
	baz=175,SNR=5.6								
SUSD	Miller	26.92	354	P	P	00 52 23.0	+0.1		
	baz=172								
FURC	Furnace Creek,	26.93	318	P	P	00 52 23.4	+0.4		
	baz=128								
JLU	Jordanelle	26.93	332	eP	P	00 52 23.9	+0.6		
	15nm,1.9s								
H34A	Spellman Lake,	26.94	359	P	P	00 52 22.9	-0.2		
	baz=178								
H35A	Sunnyside Ranc	26.97	0	P	P	00 52 22.8	-0.5		
	baz=180								
H33A	Prehn Over Nor	26.99	357	P	P	00 52 23.2	-0.4		
	baz=176								
CTU	Camp Tracy	27.14	331	eP	P	00 52 25.2	+0.2		
CTU				esP	sP	00 53 11.4	+0.8		
CTU				ePP	PP	00 53 33.9	+4.9		
M54A	Oil Creek Stat	27.17	26	P	P	00 52 23.9	-1.3		
	baz=213								
TCUT	Toone Canyon	27.32	332	eP	P	00 52 27.1	+0.2		
	23nm,1.5s								
R11A	Troy Canyon, C	27.38	323	P	P	00 52 28.3	+1.0		
	baz=133								
RSSD	Black Hills	27.47	346	eP	P	00 52 28.9	+0.9		
	8.5nm,1.6s								
G34A	Benson	27.51	359	P	P	00 52 28.0	-0.2		
	baz=179								
SPMN	Marine on St.	27.55	3	P	P	00 52 28.0	-0.5		
	baz=184,SNR=8.1								
SPMN	Marine on St.	27.55	3	eP	P	00 52 27.9	-0.6		
	25nm,0.4s								
H27A	Howes	27.55	349	P	P	00 52 29.4	+0.8		
	baz=165								
G30A	Faulkton	27.62	354	P	P	00 52 29.2	+0.1		
	baz=171,SNR=7.0								
HWUT	Hardware Ranch	27.79	333	eP	P	00 52 32.2	+1.3		
	3.0nm,1.0s								
H25A	Fruitdale	27.85	347	P	P	00 52 32.0	+0.8		
	baz=162								
PDAR	Pinedale Array	27.94	337	P	P	00 52 33.5	+1.2		
	0.5nm,0.5s,baz=151,slow=9.7,SNR=5.8								
F36A	Milaca	28.16	2	P	P	00 52 32.8	-1.1		
	baz=183								
HVU	Hansel Valley	28.47	331	eP	P	00 52 38.2	+1.3		
	3.4nm,0.8s								
STVI	Saint Thomas	28.55	84	eP	P	00 52 35.5	-2.2		
	47nm,1.3s								
COWI	Conover	28.78	8	eP	P	00 52 38.9	-0.5		
	82nm,1.8s								
E34A	Wadena	28.78	360	P	P	00 52 39.3	-0.1		
	baz=180								
E33A	Westby DABS, E	28.78	359	P	P	00 52 39.3	-0.2		
	baz=178								
E36A	McGregor	28.82	2	P	P	00 52 39.2	-0.6		
	baz=183								
E35A	Pequot Lakes	28.83	1	P	P	00 52 39.8	-0.1		
	baz=181								
REDW	Red Top Meadow	28.94	336	eP	P	00 52 42.9	+1.7		
	12nm,1.3s								
SNOW	Snow King Moun	28.99	336	eP	P	00 52 43.3	+1.7		
	10.0nm,0.8s								
NVAR	Mina Array Bea	29.04	320	P	P	00 52 45.0	+2.8		
	5.8nm,0.7s,baz=135,slow=9.2,SNR=6.1								
LOHW	Long Hollow	29.06	336	eP	P	00 52 42.8	+0.6		
	19nm,2.0s								
E28A	Huff	29.23	352	P	P	00 52 44.0	+0.6		
	baz=169								
MOOW	Moose Ponds	29.23	336	eP	P	00 52 44.0	+0.4		
	5.7nm,1.2s								
CPNY	Central Park	29.32	34	eP	P	00 52 43.8	-0.5		
	137nm,1.7s								
D34A	Park Rapids	29.35	360	P	P	00 52 44.0	-0.4		
	baz=180								
D35A	Remer	29.36	1	P	P	00 52 43.9	-0.7		
	baz=182,SNR=7.9								
E26A	Carlson Angus	29.40	349	P	P	00 52 46.5	+1.5		
	baz=165								
D31A	Mcclaflin, Tow	29.40	356	P	P	00 52 44.8	-0.1		
	baz=175								
D33A	AnnSam, Waubun	29.42	359	P	P	00 52 44.7	-0.4		
	baz=178,SNR=8.0								
D36A	Goodland	29.48	3	P	P	00 52 45.3	-0.4		
	baz=184								
D37A	Cotton	29.50	4	P	P	00 52 45.1	-0.7		
	baz=185,SNR=14								
D30A	Buchanan	29.54	355	P	P	00 52 46.2	0.0		
	baz=173								
BMN	Battle Mountai	29.73	324	eP	P	00 52 49.0	+1.0		
	3.8nm,1.0s								
YLT	Little Thumb C	29.75	337	eP	P	00 52 53.9	+5.5		
WAKR	Walker	29.79	319	eP	P	00 52 49.8	+1.1		
D28A	Regan	29.82	352	P	P	00 52 48.9	+0.3		
	baz=169,SNR=7.5								
D27A	Center	29.87	351	P	P	00 52 49.5	+0.4		
	baz=167								
RLMT	Red Lodge	29.89	339	P	P	00 52 50.0	+0.5		
	baz=152,SNR=6.9								
RLMT	Red Lodge	29.89	339	eP	P	00 52 50.0	+0.5		
	8.0nm,1.3s								
C34A	RKJ Ranch, Bem	29.92	0	P	P	00 52 48.5	-0.9		
	baz=180								
D26A	Manning	29.94	350	P	P	00 52 50.4	+0.7		
	baz=166,SNR=7.6								
C35A	Jirik Farms, M	29.98	1	P	P	00 52 49.1	-0.9		
	baz=182,SNR=7.6								
C33A	Trail	30.03	359	P	P	00 52 50.0	-0.5		
	baz=178								
C36A	Pine Crest Far	30.08	3	P	P	00 52 50.4	-0.5		
	baz=184								
C37A	Embarrass	30.08	4	P	P

	baz=142								
HLID	**Hailey**	**30.61**	**332**	*e*P		**P**		**00 52 57.2**	**+1.3**
	2.6nm,0.8s								
B35A	**Bob, Littlefor**	**30.65**	**2**	P		**P**		**00 52 55.2**	**-0.7**
	baz=182								
C26A	**Wahner Farm, P**	**30.65**	**351**	P		**P**		**00 52 56.8**	**+0.8**
	baz=167,SNR=8.1								
B32A	**Ashes, Strandq**	**30.69**	**358**	P		**P**		**00 52 56.1**	**-0.1**
	baz=177,SNR=11								
B34A	**Aery, Baudette**	**30.76**	**0**	P		**P**		**00 52 56.1**	**-0.7**
	baz=181								
B31A	**Greenbush Farm**	**30.77**	**357**	P		**P**		**00 52 56.5**	**-0.4**
	baz=175,SNR=5.3								
B30A	**Myrvik Farm, E**	**30.84**	**356**	P		**P**		**00 52 57.5**	**-0.1**
	baz=174,SNR=11								
B29A	**Wagenman Farm,**	**30.94**	**354**	P		**P**		**00 52 58.8**	**+0.4**
	baz=172,SNR=12								
MCMT	**McKenzie Canyo**	**30.96**	**335**	*e*P		**P**		**00 52 59.8**	**+0.8**
B28A	**Dugan Ranch, T**	**31.03**	**353**	P		**P**		**00 52 59.6**	**+0.4**
	baz=170,SNR=6.2								
BOZ	**Bozeman (W)**	**31.17**	**337**	P		**P**		**00 53 01.6**	**+0.9**
	baz=148								
A33A	**Warroad**	**31.21**	**359**	P		**P**		**00 53 00.4**	**-0.4**
	baz=179,SNR=5.1								
A32A	**Rocking H Ranc**	**31.21**	**358**	P		**P**		**00 53 00.0**	**-0.8**
	baz=177,SNR=5.6								
A30A	**Hoffart Farm,**	**31.32**	**356**	P		**P**		**00 53 02.0**	**+0.2**
	baz=174,SNR=29								
A29A	**Manning Farm,**	**31.38**	**355**	P		**P**		**00 53 02.7**	**+0.3**
	baz=172,SNR=12								
A28A	**Rude Farm, Bot**	**31.47**	**353**	P		**P**		**00 53 03.6**	**+0.4**
	baz=170,SNR=9.9								
NCB	**Newcomb**	**31.54**	**29**	*e*P		**P**		**00 53 02.8**	**-1.0**
	64nm,0.6s								
LRM	**Limekiln Ridge**	**31.63**	**336**	*e*P		**P**		**00 53 06.0**	**+1.1**
DGMT	**Dagmar**	**31.64**	**348**	P		**P**		**00 53 05.5**	**+0.8**
	baz=163								
DGMT	**Dagmar**	**31.64**	**348**	*e*P		**P**		**00 53 04.4**	**-0.3**
	7.8nm,1.0s								
A26A	**Wade Farm, Ken**	**31.69**	**351**	P		**P**		**00 53 05.8**	**+0.8**
	baz=167,SNR=14								
ORV	**Oroville**	**31.70**	**319**	*e*P		**P**		**00 53 07.0**	**+1.7**
	13nm,1.9s								
WVOR	**Wild Horse Val**	**31.88**	**326**	*e*P		**P**		**00 53 09.0**	**+2.0**
	6.1nm,1.0s								
A25A	**Svangstu Ranch**	**31.90**	**350**	P		**P**		**00 53 07.2**	**+0.3**
	baz=185								
O03D	**Paynes Creek**	**32.33**	**320**	P		**P**		**00 53 11.5**	**+0.7**
	baz=126								
MOD	**Modoc Plateau**	**32.44**	**323**	*e*P		**P**		**00 53 12.9**	**+1.0**
	9.6nm,1.6s								
ULM	**Lac du Bonnet**	**32.53**	**359**	P		**P**		**00 53 11.3**	**-1.0**
	9.9nm,0.6s,baz=173,slow=11,SNR=12								
EGMT	**Eagleton**	**32.62**	**341**	P		**P**		**00 53 14.1**	**+0.9**
	baz=153								
EGMT	**Eagleton**	**32.62**	**341**	*e*P		**P**		**00 53 14.6**	**+1.4**
	12nm,1.3s								
CHMT	**Chamberlain Mo**	**32.85**	**337**	*e*P		**P**		**00 53 16.0**	**+0.6**
BMO	**Blue Mountains**	**32.94**	**330**	*e*P		**P**		**00 53 17.2**	**+1.1**
	5.8nm,1.6s								
MSO	**Missoula**	**33.04**	**336**	P		**P**		**00 53 17.8**	**+0.8**
	baz=146								
MSO	**Missoula**	**33.04**	**336**	*e*P		**P**		**00 53 17.7**	**+0.8**
	3.0nm,0.9s								
M04C	**Macdoel**	**33.25**	**322**	P		**P**		**00 53 20.0**	**+1.1**
	baz=128								
F10A	**Beach Ranch, E**	**33.75**	**332**	*e*P		**P**		**00 53 24.4**	**+1.2**
	6.8nm,0.8s								
KHMM	**Horse Mountain**	**33.86**	**319**	*e*P		**P**		**00 53 25.8**	**+1.5**
	42nm,1.7s								
JTMT	**Jette**	**33.93**	**336**	*e*P		**P**		**00 53 25.0**	**+0.3**
JTMT				*e*PcP		**PcP**		**00 55 57.2**	**-2.8**
BLMT	**Blacktail Moun**	**34.18**	**337**	*e*P		**P**		**00 53 27.9**	**+1.0**
H04A	**Detroit Lake**	**35.30**	**326**	*e*P		**P**		**00 53 37.0**	**+0.5**
	3.3nm,0.8s								
D08A	**Wollman Farm,**	**35.34**	**331**	*e*P		**P**		**00 53 37.5**	**+0.8**
	3.4nm,0.8s								
NEW	**Newport**	**35.48**	**334**	P		**P**		**00 53 38.7**	**+0.9**
	baz=142								
NEW	**Newport**	**35.48**	**334**	*e*P		**P**		**00 53 38.8**	**+0.9**
	9.9nm,1.7s								
C09A	**Chrisman Ranch**	**35.61**	**333**	*e*P		**P**		**00 53 39.8**	**+0.8**
	4.5nm,0.6s								
FFC	**Flin Flon**	**37.39**	**353**	*e*P		**P**		**00 53 54.4**	**+0.5**
	36nm,1.6s								
PTGA	**Pitinga**	**39.01**	**114**	*e*P		**P**		**00 54 09.4**	**+1.3**
	7.4nm,1.5s								
FCC	**Fort Churchill**	**41.05**	**1**	*e*P		**P**		**00 54 24.1**	**-0.2**
	17nm,1.6s								
SAML	**Samuel**	**41.05**	**128**	*e*P		**P**		**00 54 25.7**	**+0.8**
	1.9nm,1.0s								
LPAZ	**La Paz**	**42.86**	**140**	P		**P**		**00 54 41.0**	**+0.8**
	2.3nm,0.9s,baz=329,slow=4.8,SNR=8.6								
LPAZ	**La Paz**	**42.86**	**140**	*e*P		**P**		**00 54 41.0**	**+0.8**
	13nm,1.9s								
SCHQ	**Schefferville**	**42.93**	**24**	P		**P**		**00 54 37.7**	**-1.9**
	3.5nm,0.6s,baz=234,slow=7.9,SNR=8.8								
SCHQ					LR	LR		01 13 25.8	
	comp=Z,38nm,18.4s,baz=34,slow=37								
YKA	**Yellowknife Ar**	**46.85**	**348**	P		**P**		**00 55 10.2**	**-0.2**
	1.8nm,0.5s,baz=153,slow=7.4,SNR=65								
YKA					pP	**pP**		**00 55 43.4**	**+1.4**
	0.5nm,0.7s,baz=151,slow=7.4,SNR=4.6								
YKA					PcP	**PcP**		**00 56 41.2**	**+0.1**
	0.2nm,0.7s,baz=155,slow=2.9,SNR=4.2								
YKA					PP	**PP**		**00 57 03.0**	**+0.9**
	1.0nm,0.9s,baz=150,slow=9.7,SNR=7.6								
YKB5	**Yellowknife Ar**	**46.85**	**348**	*e*P		**P**		**00 55 09.8**	**-0.6**
DLBC	**Dease Lake**	**48.17**	**336**	*e*P		**P**		**00 55 22.0**	**+1.2**
	7.6nm,0.8s								
INK	**Inuvik**	**56.15**	**344**	*e*P		**P**		**00 56 20.0**	**+0.5**
	6.9nm,0.8s								
DIV	**Divide**	**56.22**	**333**	*e*P		**P**		**00 56 21.0**	**+0.8**
	11nm,1.2s								
MENT	**Mentasta**	**56.25**	**336**	*e*P		**P**		**00 56 20.9**	**+0.6**
	13nm,1.5s								
EGAK	**Eagle**	**56.27**	**338**	*e*P		**P**		**00 56 21.3**	**+0.8**
KLU	**Klutina**	**56.45**	**333**	*e*P		**P**		**00 56 24.2**	**+2.3**
	4.3nm,0.7s								
PAX	**Paxson**	**56.96**	**335**	*e*P		**P**		**00 56 25.4**	**-0.1**
	3.7nm,0.8s								
RES	**Resolute Bay**	**57.05**	**0**	*e*P		**P**		**00 56 26.1**	**+0.3**
	17nm,1.9s								
IL1	**Eielson Array**	**58.37**	**337**	*e*P		**P**		**00 56 35.6**	**+0.4**
ILAR	**Eielson Array**	**58.37**	**337**	P		**P**		**00 56 36.1**	**+1.0**
	2.6nm,0.9s,baz=115,slow=6.5,SNR=27								
ILB	**Eielson Array**	**58.37**	**337**	*e*P		**P**		**00 56 36.2**	**+1.0**
RND	**Reindeer**	**58.52**	**335**	*e*P		**P**		**00 56 38.1**	**+1.8**
	12nm,1.1s								
MCK	**McKinley**	**58.70**	**335**	*e*P		**P**		**00 56 38.9**	**+1.4**
	7.9nm,1.3s								
TRF	**Thorofare Moun**	**59.13**	**335**	*e*P		**P**		**00 56 42.1**	**+1.4**
	9.3nm,0.8s								
BPAW	**Bear Paw Mtn.**	**59.67**	**335**	*e*P		**P**		**00 56 43.3**	**-1.0**
	11nm,1.3s								
CAST	**Castle Rocks**	**59.86**	**334**	*e*P		**P**		**00 56 46.2**	**+0.7**
	8.1nm,1.2s								
MLY	**Manley**	**59.96**	**336**	*e*P		**P**		**00 56 47.4**	**+1.3**
	9.3nm,1.2s								
COLD	**Coldfoot**	**60.70**	**338**	*e*P		**P**		**00 56 53.1**	**+1.9**
	5.2nm,1.1s								
TTA	**Tatalina**	**61.36**	**333**	*e*P		**P**		**00 56 56.3**	**+0.5**
	4.7nm,1.0s								
NB2	**NORSAR Subarra**	**82.31**	**28**	P		**P**		**00 59 01.8**	**+1.1**
	comp=Z,0.7nm,0.7s,baz=293,slow=5.3								
NOA	**NORSAR Array B**	**82.31**	**28**	P		**P**		**00 59 00.7**	**0.0**
	comp=Z,1.1nm,0.8s,baz=294,slow=5.3,SNR=4.4								
ARCES	**ARCESS Array B**	**83.57**	**18**	P		**P**		**00 59 07.5**	**+0.4**
	comp=Z,7.2nm,1.2s,baz=286,slow=4.9,SNR=5.4								
TORD	**Torodi Ar. Bea**	**92.28**	**76**	P		**P**		**00 59 48.1**	**-1.7**
	comp=Z,0.1nm,0.7s,baz=306,slow=4.8,SNR=2.3								
HHC	**Hu-ho-hao-te**	**116.79**	**338**	*e*PKP		**PKPdf**		**01 05 21.8**	**-1.4**
HHC				AMB		AMB			
	comp=Z,78nm,5.1s								
WMQ	**Urumqi**	**118.78**	**358**	*e*PKP		**PKPdf**		**01 05 27.1**	**+0.2**
NJ2	**Nanjing**	**120.89**	**327**	*e*PKP		**PKPdf**		**01 05 31.8**	**+0.6**
CD2	**Chengdu**	**128.47**	**339**	PKP		**PKPdf**		**01 05 45.0**	**-0.8**

ISCJB ***18*** *01:03:53.3±1.2, 15°.1N±0°.1×145°.9E±0°.2, h96km, mb3.9/7, Error ellipse: s-maj=36.2km s-min=10.3km az=21.9*
IDC ***18*** *01:03:57.1±2.4, 14°.53N×145°.81E, h143km±60km, mb3.6/7, mb1 3.7/7, mb1mx3.3/42, mbtmp4.0/7, Error ellipse: s-maj=122.7km s-min=29.1km az=1.0*
ISC 18 01:03:54.7±1.4**, 15°.0N**±0°.2×**145°.9E**±0°.3**, h96km, n14,**
σ1§**29**/9**, mb3.9/7, Mariana Islands**

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
GUMO	**Guam**	**1.74**	**216**	P		**Pn**	**01 04 24.8**	**+1.0**
	108nm,0.3s,baz=127,slow=2.5,SNR=15							
GUMO				S		**Sn**	**01 04 44.7**	**-1.1**
	241nm,0.3s,baz=22,slow=20,SNR=24							
GUMO				LR		LR	01 04 52.1	
	comp=Z,31nm,18.3s,baz=132,slow=42							
H11S3	**WAKE ISLAND Hy**	**20.18**	**77**	T		T	01 29 59.5	
	baz=263,slow=74,SNR=6.7							
H11S1	**WAKE ISLAND Hy**	**20.19**	**77**	T		T	01 29 57.9	
	baz=263,slow=74,SNR=5.7							
H11S2	**WAKE ISLAND Hy**	**20.20**	**77**	T		T	01 29 46.3	
	baz=263,slow=74,SNR=4.4							
H11N1	**WAKE ISLAND Hy**	**20.55**	**74**	T		T	01 30 16.5	
	baz=273,slow=75,SNR=3.3							
H11N2	**WAKE ISLAND Hy**	**20.55**	**74**	T		T	01 30 08.6	
	baz=273							
H11N3	**WAKE ISLAND Hy**	**20.57**	**74**	T		T	01 30 15.8	
	baz=273,slow=75,SNR=3.5							
SONM	**Songino Array**	**46.19**	**324**	P		**P**	**01 12 11.2**	**+1.2**
	0.4nm,0.3s,baz=128,slow=6.3,SNR=4.5							
ZALV	**Zalesovo Beam**	**61.09**	**324**	P		**P**	**01 13 58.0**	**-0.5**
	0.5nm,0.3s,baz=105,slow=7.2,SNR=4.3							
MKAR	**Makanchi Array**	**61.20**	**315**	P		**P**	**01 13 59.7**	**+0.3**
	1.2nm,0.3s,baz=89,slow=8.7,SNR=5.4							
KURBB	**Kurchatov Arra**	**64.22**	**319**	P		**P**	**01 14 17.2**	**-2.2**
	3.7nm,0.6s,baz=99,slow=6.8,SNR=30							
ILAR	**Eielson Array**	**66.86**	**25**	P		**P**	**01 14 35.3**	**-0.8**
	0.3nm,0.5s,baz=246,slow=5.9,SNR=8.6							
BVAR	**Borovoye Array**	**69.46**	**321**	P		**P**	**01 14 52.2**	**-0.4**
	0.8nm,0.5s,baz=111,slow=7.9,SNR=5.3							
YKA	**Yellowknife Ar**	**81.14**	**28**	P		**P**	**01 15 59.9**	**+0.6**
	0.7nm,0.4s,baz=285,slow=5.2,SNR=29							

ISCJB ***18*** *01:06:51.7±0.4, 13°.11N±0°.05×93°.28E±0°.05, h58km, mb4.0/20, MS3.4/4, Error ellipse: s-maj=8.4km s-min=5.3km az=36.7*
IDC ***18*** *01:06:52.7±4.9, 12°.98N×93°.35E, h55km±42km, mb3.7/15, mb1 3.9/16, mb1mx3.6/48, mbtmp4.0/16, ML4.2/1, MS3.3/6, Ms1 3.3/6, ms1mx3.0/48, Error ellipse: s-maj=27.2km s-min=16.4km az=45.0*
NEIC ***18*** *01:06:52.6±1.9, 12°.97N×93°.31E, h55km±15km, mb4.4/5, Error ellipse: s-maj=16.1km s-min=8.8km az=51.0*
ISC 18 01:06:52.9±0.8**, 13°.0N**±0°.1×**93°.21E**±0°.07**, h58km, n36,**
σ1§**14**/34**, mb4.1**/20**, MS3.2**/4**, Andaman Islands region**

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
DGPR	**DIGLIPUR**	**0.32**	**302**	*e*P		**Pn**	**01 07 00.6**	**-2.4**
DGPR				*e*S		**Sn**	**01 07 08.0**	**-2.2**
PBA	**Port Blair**	**1.42**	**199**	*e*P		Pn	01 07 18.0	+1.6
PBA				*e*S		Sn	01 07 36.7	+2.6
CMBY	**CAMPBELL BAY**	**6.00**	**173**	*e*P		Pn	01 08 22.5	+3.3
CMAR	**Chiang Mai Arr**	**7.74**	**45**	P		**Pn**	**01 08 42.8**	**-0.1**
	1.0nm,0.3s,baz=237,slow=15,SNR=33							
CMAR				S		**Sn**	**01 10 07.0**	**-2.2**
	0.5nm,0.3s,baz=238,slow=27,SNR=3.3							
CMAR				LR		LR	01 12 23.6	
	comp=Z,93nm,19.4s,baz=190,slow=43							
CHTO	**Chiang Mai**	**7.99**	**43**	*e*Pn		**Pn**	**01 08 45.6**	**-0.8**
	5.5nm,0.8s							
CHTO				*e*S		**Sn**	**01 10 14.8**	**-0.5**
VIS	**Vishakhapatnam**	**10.62**	**297**	*e*P		**Pn**	**01 09 21.1**	**-1.3**
VIS				*e*S		Sn	01 11 08.9	-11
VIS				IAML			01 11 12.7	
	comp=N,79nm,2.0s							
VIS				IAML			01 11 12.9	
	comp=E,78nm,0.6s							
PSI	**Prapat**	**11.61**	**150**	LR		LR	01 14 41.7	
	comp=E,145nm,18.1s,baz=45,slow=40							
ENH	**Enshi**	**22.84**	**39**	*e*P		**P**	**01 11 49.8**	**-1.6**
	comp=E,16nm,0.7s							
AAK	**Ala-Archa**	**33.67**	**335**	LR		LR	01 28 43.4	
	comp=E,47nm,20.1s,baz=204,slow=39							
WSAR	**Wadi Sarin**	**34.32**	**292**	LR		LR	01 26 35.6	
	comp=E,42nm,20.8s,baz=106,slow=34							
MKAR	**Makanchi Array**	**34.91**	**347**	P		**P**	**01 13 39.7**	**+0.7**
	comp=E,1.5nm,0.7s,baz=159,slow=8.4,SNR=16							
SONM	**Songino Array**	**36.42**	**15**	P		**P**	**01 13 52.0**	**-0.1**
	comp=E,1.4nm,1.0s,baz=199,slow=8.9,SNR=8.2							
SONM				PcP		**PcP**	**01 16 15.7**	**+0.5**
	comp=E,0.3nm,0.5s,baz=207,slow=3.0,SNR=3.7							
KSAR	**Wonju Array Be**	**39.34**	**46**	P		**P**	**01 14 16.1**	**-0.6**
KSRS	**Korea Array**	**39.38**	**46**	P		**P**	**01 14 16.1**	**-0.9**
	comp=E,2.9nm,0.6s,baz=244,slow=9.4,SNR=5.8							
KURK	**Kurchatov**	**39.44**	**345**	*e*P		**P**	**01 14 17.1**	**-0.1**
	comp=E,5.2nm,0.6s							
GEYT	**Alibeck**	**39.86**	**315**	P		**P**	**01 14 23.3**	**+2.3**
	comp=E,1.7nm,0.5s,baz=134,slow=8.5,SNR=4.6							
ZALV	**Zalesovo Beam**	**41.38**	**353**	P		**P**	**01 14 33.3**	**+0.1**
	comp=E,1.4nm,0.4s,baz=182,slow=8.1,SNR=10							
ABKAR	**Akbulak array**	**45.34**	**330**	*e*P		**P**	**01 15 06.2**	**+1.0**
	comp=E,1.4nm,0.6s							
JCJ	**Chichijima**	**47.81**	**65**	LR		LR	01 37 12.3	
	comp=E,142nm,18.2s,baz=34,slow=38							
WRA	**Warramunga Arr**	**52.06**	**128**	P		**P**	**01 15 56.0**	**-1.3**
	comp=E,0.5nm,0.5s,baz=306,slow=8.3,SNR=2.7							
WRAB	**Tennant Creek**	**52.07**	**128**	*e*P		**P**	**01 15 56.6**	**-0.6**
	comp=E,5.2nm,1.1s							
ASAR	**Alice Springs**	**53.97**	**132**	P		**P**	**01 16 10.2**	**-1.1**
	comp=E,0.5nm,0.5s,baz=307,slow=6.7,SNR=4.7							
BRTR	**Keskin Array B**	**58.46**	**309**	P		**P**	**01 16 43.1**	**-0.1**
	comp=E,0.6nm,0.8s,baz=129,slow=7.7,SNR=3.6							
BRTR				LR		LR	01 45 46.8	
	comp=E,16nm,18.6s,baz=128,slow=40							
FINES	**FINESS Array B**	**67.78**	**331**	P		**P**	**01 17 44.9**	**+0.5**
	comp=E,2.4nm,0.6s,baz=115,slow=6.7,SNR=14							
ARCES	**ARCESS Array B**	**70.16**	**340**	P		**P**	**01 17 59.6**	**+0.6**
	comp=E,3.3nm,0.8s,baz=79,slow=6.3,SNR=8.0							
GERES	**GERESS Array B**	**73.43**	**317**	P		**P**	**01 18 20.2**	**+1.0**
	comp=E,1.7nm,0.6s,baz=85,slow=5.3,SNR=19							
NB2	**NORSAR Subarra**	**74.84**	**330**	P		**P**	**01 18 26.8**	**-0.3**
	comp=Z,0.8nm,0.6s,baz=90,slow=5.9							
NOA	**NORSAR Array B**	**74.84**	**330**	P		**P**	**01 18 27.1**	**0.0**
	comp=Z,1.1nm,0.7s,baz=90,slow=5.8,SNR=4.2							
ESDC	**Sonseca Array**	**87.23**	**310**	P		**P**	**01 19 33.9**	**+0.5**
	comp=Z,0.2nm,0.4s,baz=69,slow=3.5,SNR=3.1							
TORD	**Torodi Ar. Bea**	**88.54**	**283**	P		**P**	**01 19 40.5**	**+0.5**
	comp=Z,0.3nm,0.7s,baz=92,slow=5.2,SNR=7.9							
BPAW	**Bear Paw Mtn.**	**89.16**	**23**	*e*P		**P**	**01 19 43.3**	**+1.2**
	comp=Z,3.1nm,1.7s							
ILAR	**Eielson Array**	**90.35**	**22**	P		**P**	**01 19 47.0**	**-0.5**
	comp=Z,0.8nm,0.7s,baz=289,slow=4.4,SNR=9.1							
INK	**Inuvik**	**92.34**	**16**	P		**P**	**01 19 57.2**	**+0.6**
	baz=323,slow=2.6							
PDAR	**Pinedale Array**	**120.70**	**19**	PKP		**PKPdf**	**01 25 39.0**	**0.0**
	comp=Z,0.3nm,0.6s,baz=165,slow=2.9,SNR=3.7							
TXAR	**Lajitas Array**	**134.86**	**21**	PKP		**PKPdf**	**01 26 08.0**	**+1.8**
	comp=Z,0.2nm,0.5s,baz=40,slow=0.1,SNR=4.6							
PLCA	**Paso Flores**	**148.93**	**204**	PKPbc		**PKPbc**	**01 26 34.9**	**+0.2**
	comp=Z,1.6nm,0.8s,baz=200,slow=1.4,SNR=4.0							

ISCJB ***18*** *01:08:15.6±0.8, 7°.88S±0°.05×105°.87E±0°.04, h10km, mb3.9/4, Error ellipse: s-maj=7.7km s-min=4.9km az=35.4*
DJA ***18*** *01:08:17.1±0.6, 8°.S±2°.×10°.6E±°, h12km±5km, M3.9/19, MLv3.9/19*
IDC ***18*** *01:08:23.4±1.1, 5°.12S×108°.43E, h0km, mb3.9/4, mb1 4.2/4, mb1mx3.5/50, mbtmp3.9/4, Error ellipse: s-maj=30.1km s-min=20.9km az=77.0*
ISC 18 01:08:17.0±1.1**, 7°.79S**±0°.06×**105°.89E**±0°.05**, h10km, n20,**
σ1§**45**/32**, mb3.8**/4**, Jawa**

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
SKJI	**Sukabumi**	**1.03**	**40**	P		**Pg**	**01 08 35.0**	**-1.8**
SKJI				S		**Sb**	**01 08 51.1**	**+0.7**
CGJI	**Cibinong**	**1.19**	**351**	P		**Pn**	**01 08 39.0**	**-0.7**
CGJI				S		**Sg**	**01 08 57.1**	**+1.7**
CNJI	**Cibinong**	**1.32**	**69**	P		**Pn**	**01 08 40.3**	**-1.3**
DBJI	**Dramaga**	**1.50**	**35**	P		**Pn**	**01 08 43.1**	**-0.9**
DBJI				S		**Sb**	**01 09 04.9**	**+0.8**
SBJI	**Serang**	**1.68**	**8**	P		**Pn**	**01 08 46.4**	**-0.1**
TNG	**Tangerang**	**1.78**	**25**	S		**Sb**	**01 09 12.1**	**0.0**
TNG				P		**Pn**	**01 08 47.8**	**0.0**
TNG				S		**Sn**	**01 09 09.5**	**-1.0**
CISI	**Cisompet, Garu**	**1.93**	**83**	P		**Pn**	**01 08 49.2**	**-0.7**
CISI				S		**Sn**	**01 09 14.5**	**+0.3**
LEM	**Lembang**	**1.97**	**61**	Pn		**Pg**	**01 08 57.3**	**+2.5**
	91nm,0.3s,baz=324,slow=12,SNR=52							
LEM				Sn		**Sg**	**01 09 22.4**	**+2.0**
	46nm,0.3s,baz=274,slow=22,SNR=9.0							
LEM	**Lembang**	**1.97**	**61**	P		**Pn**	**01 08 50.6**	**0.0**
LEM				S		**Sn**	**01 09 16.0**	**+0.6**
BLSI	**Bandar Lampung**	**2.49**	**345**	P		**Pn**	**01 08 58.3**	**+0.6**
BLSI				S		**Sn**	**01 09 29.6**	**+1.4**
CMJI	**Cimerak**	**2.54**	**90**	P		**Pn**	**01 08 57.6**	**-0.7**
CMJI				S		**Sn**	**01 09 29.8**	**+0.5**
KASI	**Kota Agung**	**2.65**	**328**	P		**Pn**	**01 09 00.1**	**+0.3**
JCJI	**Jatiwangi**	**2.69**	**61**	P		**Pn**	**01 08 58.5**	**-2.0**
JCJI				S		**Sn**	**01 09 30.5**	**-2.7**
KPJI	**Karang Pucung**	**3.05**	**82**	P		**Pn**	**01 09 05.1**	**-0.3**
KPJI				S		**Sn**	**01 09 43.7**	**+1.7**
KLI	**Kotabumi**	**3.09**	**341**	P		**Pn**	**01 09 06.7**	**+0.8**
MDSI	**Maura Dua**	**3.70**	**333**	P		**Pn**	**01 09 14.9**	**+0.6**
WRA	**Warramunga Arr**	**30.09**	**117**	P		**P**	**01 14 28.1**	**+1.2**
	0.5nm,0.3s,baz=286,slow=9.5,SNR=4.6							
ASAR	**Alice Springs**	**31.15**	**124**	P		**P**	**01 14 38.9**	**+2.6**
	4.9nm,0.3s,baz=304,slow=7.3,SNR=3.6							
MKAR	**Makanchi Array**	**58.27**	**341**	P		**P**	**01 18 09.2**	**-2.7**
	0.2nm,0.4s,baz=148,slow=8.8,SNR=4.8							
BVAR	**Borovoye Array**	**67.67**	**338**	P		**P**	**01 19 12.1**	**-2.1**
	0.2nm,0.3s,baz=128,slow=7.8,SNR=4.7							

CSEM ***18*** *01:10:57.9, 38°.54N×31°.54E, h7km, MD2.9*
DDA 18 01:10:57.9, 38°.54N×31°.54E, h7km, Md2.9, Turkey

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
KDHN	**Kadinhani**	**0.45**	**92**	*i* P		Pg	01 11 06.0	-0.7
KDHN				*i* S		Sg	01 11 13.6	+1.0
KDHN	**Kadinhani**	**0.45**	**92**	P		Pg	01 11 06.0	-0.7
KDHN				S		Sg	01 11 13.6	+1.0
BOLV	**Bolvadin**	**0.50**	**291**	*i* P		Pg	01 11 07.5	0.0
BOLV				*i* S		Sg	01 11 14.9	+0.9
BOLV	**Bolvadin**	**0.50**	**291**	P		Pg	01 11 07.5	0.0
BOLV				S		Sg	01 11 14.9	+0.9
BAGO	**Egridir - ISPA**	**0.81**	**227**	*i* P		Pb	01 11 14.1	-0.2
BAGO				*i* S		Sn	01 11 29.2	+1.1
KMER	**Konya-Meram**	**1.01**	**140**	*i* P		Pg	01 11 17.5	+0.2
KMER				*i* S		Sb	01 11 31.7	+0.4
KMER	**Konya-Meram**	**1.01**	**140**	P		Pg	01 11 17.5	+0.2
KMER				S		Sb	01 11 31.7	+0.4
ESKT	**Eskisehir**	**1.12**	**331**	*i* P		Pn	01 11 20.6	+0.5
ESKT				*i* S		Sb	01 11 34.9	+0.5
SEYT	**Eskypehyr**	**1.12**	**331**	P		Pn	01 11 20.6	+0.5
SEYT				S		Sb	01 11 34.9	+0.5
KKUL	**Konya-Kulu**	**1.25**	**59**	*i* P		Pg	01 11 21.4	-0.4
KKUL				*i* S		Sn	01 11 39.9	+1.0
KKUL	**Konya-Kulu**	**1.25**	**59**	P		Pg	01 11 21.4	-0.4
KKUL				S		Sn	01 11 39.9	+1.0
KHAL	**Karahalli**	**1.62**	**265**	*i* P		Pg	01 11 28.7	-0.3
KHAL				*i* S		Sg	01 11 51.0	+1.1
KHAL	**Karahalli**	**1.62**	**265**	P		Pg	01 11 28.7	-0.2
KHAL				S		Sg	01 11 51.0	+1.1
ERMK	**Ermenek**	**2.19**	**150**	*i* P		Pg	01 11 41.0	+1.1
ERMK	**Ermenek**	**2.19**	**150**	P		Pg	01 11 41.0	+1.2

NIED ***18***

FRU pmax pmax
comp=Z,80nm,2.0s
FRU smax smax
comp=N,200nm,1.2s
SMLA Simla 7.07 135 *i* P **Pn 01 21 44.2 +0.8**
SMLA *i* S **Sn 01 23 00.0 -2.3**
SMLA IAML 01 23 05.2
comp=E,184nm,0.3s
SMLA IAML 01 23 06.0
comp=N,217nm,0.1s
TKM2 Tokmak 2 7.42 25 ⇓P **Pn 01 21 47.5 -0.8**
comp=N,13nm,0.3s
TKM2 ⇓S **Sn 01 23 09.5 -1.5**
comp=N,37nm,0.9s
TKM2 Tokmak 2 7.42 25 PN **Pn 01 21 47.4 -0.8**
TKM2 pmax pmax
comp=Z,22nm,0.6s
TKM2 Tokmak 2 7.42 25 *e*Pn **Pn 01 21 47.1 -1.1**
comp=Z,29nm,0.4s
TKM2 *e*S **Sn 01 23 11.2 +0.2**
RTK Rohtak 8.39 148 *ex* **Sn 01 23 32.1 -2.3**
KHET Khetri 9.01 154 *e*P **Pn 01 22 07.4 -2.3**
KHET *e*S **Sn 01 23 40.9 -8.5**
KHET IAML 01 23 46.7
comp=N,90nm,0.3s
KHET IAML 01 23 47.6
comp=E,89nm,0.3s
NDI New Delhi 9.05 145 *e*P **Pn 01 22 12.0 +1.7**
NDI *e*S **Sn 01 23 43.5 -6.9**
AYAN Aya Nagar 9.18 146 *e*S **Sn 01 23 47.5 -6.0**
KUDL Kundal 9.21 150 *e*P **Pn 01 22 11.9 -0.4**
KUDL *e*S **Sn 01 23 48.2 -5.9**
BISR Bishrakh 9.25 144 *e*S **Sn 01 23 47.5 -7.7**
PDGK Podgornoye 9.44 39 ⇓P **Pn 01 22 13.8 -1.6**
comp=E,13nm,0.9s
PDGK ⇓S **Sn 01 23 59.1 -0.6**
comp=E,13nm,0.9s
PDGK Podgornoye 9.44 39 P **Pn 01 22 13.7 -1.6**
PDGK S **Sn 01 23 59.0 -0.6**
PDGK pmax pmax
comp=Z,13nm,0.9s
PDGK smax smax
comp=N,24nm,1.2s
GEYT Alibeck 10.68 283 P Pn 01 22 25.5 -6.6
comp=N,2.4nm,0.3s,baz=120,slow=10,SNR=18
GEYT S Sn 01 24 17.1 -13
comp=N,8.1nm,0.3s,baz=127,slow=17,SNR=11
OTUK Ortayu 11.99 3 ⇓P **Pn 01 22 45.6 -3.9**
comp=N,16nm,0.8s
OTUK Ortayu 11.99 3 P Pn 01 22 45.4 -4.2
OTUK pmax pmax
comp=Z,16nm,0.8s
PYUN Piuthan 12.80 126 *e*P **Pn 01 22 59.4 -1.0**
PYUN *e*S **Sn 01 25 13.5 -8.0**
MKAR Makanchi Array 13.33 35 P **Pn 01 23 06.3 -0.7**
comp=Z,0.3nm,0.3s,baz=220,slow=15,SNR=22
MK31 Makanchi Array 13.33 35 ⇑P **Pn 01 23 05.6 -1.4**
comp=Z,1.5nm,0.6s,baz=213,slow=9.4,SNR=18
KOLN Koldanda 13.42 126 *e*P **Pn 01 23 08.7 +0.3**
KOLN *e*S **Sn 01 25 29.7 -6.8**
GKN Gorkha 13.96 122 *e*P **Pn 01 23 14.6 -0.8**
GKN *e*S **Sn 01 25 41.5 -8.0**
BHPL Bhopal 14.02 156 *ex* **Pn 01 23 14.7 -1.3**
BHPL *ex* x 01 25 41.3
DMN Daman 14.53 123 *e*P **Pn 01 23 23.5 +0.7**
KKN Kakani 14.54 122 *e*P **Pn 01 23 24.4 +0.6**
PKIN Phulchoki 14.75 122 *e*P **Pn 01 23 25.6 +0.1**
GUN Gumba 14.88 120 *e*P **Pn 01 23 27.8 +0.6**
KURBB Kurchatov Arra 15.26 18 P **Pn 01 23 26.8 -4.7**
comp=Z,0.2nm,0.3s,baz=210,slow=11,SNR=12
KURK Kurchatov 15.37 18 *e*P **Pn 01 23 28.5 -4.3**
KURK pmax pmax
comp=Z,19nm,1.1s
KURK Kurchatov 15.37 18 *e*Pn **Pn 01 23 28.5 -4.3**
comp=Z,19nm,1.1s
KURK *e*S **S 01 26 37.4 +7.0**
AB31 Akbulak array 15.41 331 P **Pn 01 23 29.1 -4.4**
comp=Z,2.3nm,0.3s,baz=144,slow=12,SNR=238
AB31 ⇑S Sn 01 26 04.9 -19
comp=Z,4.9nm,0.6s,baz=148,slow=24,SNR=12
AB31 Akbulak array 15.41 331 *e*P **Pn 01 23 29.0 -4.4**
AB31 pmax pmax
comp=Z,2.0nm,0.3s
ABKAR Akbulak array 15.41 331 *e*Pn **Pn 01 23 28.3 -5.0**
comp=Z,7.4nm,0.3s
ABKAR *e*S Sn 01 26 05.0 -19
VOSK Vostochnaya 16.46 359 ⇑P **Pn 01 23 42.4 -3.8**
comp=Z,8.3nm,1.2s
ZRNK Zerenda 16.76 355 ⇑P **Pn 01 23 45.9 -4.1**
comp=Z,1.5nm,0.5s
ZRNK Zerenda 16.76 355 P **Pn 01 23 45.9 -4.1**
ZRNK pmax pmax
comp=Z,2.0nm,0.5s
BVA0 Borovoye Array 16.77 358 ⇑P **Pn 01 23 47.6 -2.5**
comp=Z,12nm,1.4s,baz=169,slow=12,SNR=36
BVA0 Borovoye Array 16.77 358 *i* P **Pn 01 23 47.6 -2.5**
BVA0 pmax pmax
comp=Z,5.0nm,0.9s
BVAR Borovoye Array 16.77 358 P **Pn 01 23 48.0 -2.1**
comp=Z,1.2nm,0.3s,baz=167,slow=12,SNR=31
BVAR S Sn 01 26 46.2 -10
comp=Z,0.3nm,0.3s,baz=172,slow=21,SNR=5.8
BRVK Borovoye 16.81 358 *e*P **Pn 01 23 47.4 -3.1**
BRVK *e*S **Sn 01 26 48.3 -9.0**
BRVK pmax pmax
comp=Z,7.0nm,0.8s
BRVK Borovoye 16.81 358 *e*Pn **Pn 01 23 47.4 -3.1**
comp=Z,7.1nm,0.8s
BRVK *e*S **Sn 01 26 48.3 -9.0**
AKTO Aktyubinsk 17.11 330 P **P 01 23 51.9 -2.2**
comp=Z,2.3nm,0.3s,baz=147,slow=8.3,SNR=31
AKTO S Sn 01 26 48.2 -17
comp=Z,0.3nm,0.3s,baz=54,slow=17,SNR=4.9
AKTO Aktyubinsk 17.11 330 ⇑P **P 01 23 51.5 -2.6**
comp=Z,15nm,0.8s
AKTO ⇓S Sn 01 26 48.2 -17
comp=Z,23nm,1.2s
AKTO Aktyubinsk 17.11 330 P **P 01 23 51.3 -2.8**
AKTO S Sn 01 26 48.2 -17
AKTO pmax pmax
comp=Z,15nm,0.8s
AKTO smax smax
comp=N,23nm,1.2s
CHKZ Chkalovo 17.42 359 ⇑P **P 01 23 53.1 -4.3**
comp=N,1.3nm,0.4s
ZALV Zalesovo Beam 20.02 24 P **P 01 24 25.7 -0.1**
comp=N,7.1nm,0.4s,baz=227,slow=10,SNR=43
NVS Novosibirsk 20.31 20 ⇑*i*P **P 01 24 28.7 -0.1**
NVS pmax pmax
comp=N,4.0nm,0.3s
NVS pmax pmax
comp=E,1.0nm,0.3s
NVS pmax pmax
comp=Z,4.0nm,0.3s
DGRG David-gareji 20.82 292 P Pn 01 24 36.9 -1.3
DGRG David-gareji 20.82 292 *e*P Pn 01 24 36.9 -1.3
GNI Garni 21.21 289 P **P 01 24 40.9 +2.1**
comp=Z,7.5nm,0.8s,baz=12,slow=12,SNR=7.8
GNI Garni 21.21 289 *e*P **P 01 24 37.9 -1.0**
GNI pmax pmax
comp=Z,204nm,1.3s
GNI Garni 21.21 289 *e*P **P 01 24 37.9 -1.0**
comp=Z,204nm,1.3s
TBLG Delisi 21.32 293 P **P 01 24 44.0 +4.1**
TBLG Delisi 21.32 293 *e*P **P 01 24 44.0 +4.1**
GUDG Gudauri 21.61 295 P **P 01 24 47.3 +4.2**
ARU Arti 21.94 341 P **P 01 24 45.7 -0.5**
comp=Z,1.6nm,0.3s,baz=284,slow=7.6,SNR=8.4
ARU Arti 21.94 341 *c i*P **P 01 24 46.3 +0.1**
ARU S **S 01 28 43.9 +3.3**
ARU pmax pmax
comp=Z,21nm,1.7s
ARU Arti 21.94 341 *e*P **P 01 24 47.1 +0.9**
comp=Z,15nm,1.1s
ZEI Tsey 22.07 296 *e*P **P 01 24 54.5 +6.5**
ZEI pmax pmax
comp=Z,7.0nm,0.8s
ONI Oni 22.37 295 P **P 01 24 54.5 +3.5**
ONI Oni 22.37 295 *e*P **P 01 24 54.4 +3.5**
KBZ Khabaz 22.94 298 P **P 01 24 56.2 -0.2**
comp=Z,1.5nm,0.8s,baz=135,slow=5.7,SNR=4.3
KBZ LR LR 01 35 53.7
comp=Z,27nm,19.0s,baz=150,slow=42
KIV Kislovodsk 23.12 298 *e*P **P 01 24 58.4 +0.1**
KIV pmax pmax
comp=Z,4.0nm,1.0s
RAYN Ar Rayn 25.64 247 *e*P **P 01 25 20.4 -0.9**
comp=Z,1.4nm,0.5s
SONM Songino Array 28.26 55 P **P 01 25 47.0 +2.5**
comp=Z,0.5nm,0.5s,baz=269,slow=8.0,SNR=5.9
SONM Songino Array 28.26 55 P **P 01 25 47.0 +2.5**
BRTR Keskin Array B 29.75 288 P **P 01 25 59.0 +1.1**
comp=Z,0.7nm,0.7s,baz=82,slow=8.9,SNR=4.5
BRTR Keskin Array B 29.75 288 P **P 01 25 59.0 +1.1**
OBN Obninsk 30.28 320 *e*P **P 01 26 01.7 -0.4**
OBN pmax pmax
comp=Z,7.0nm,1.0s
AKASG Malin Array Be 33.29 309 P **P 01 26 29.3 +0.8**
comp=Z,0.4nm,0.4s,baz=80,slow=7.6,SNR=4.5
NRIK Noril'sk 34.31 10 P **P 01 26 39.4 +2.3**
comp=Z,3.3nm,0.5s,baz=213,slow=7.0,SNR=7.5
FINES FINESS Array B 37.82 326 P **P 01 27 08.3 +1.2**
comp=Z,2.0nm,0.5s,baz=120,slow=9.3,SNR=15
ARCES ARCESS Array B 41.46 338 P **P 01 27 38.9 +1.8**
comp=Z,1.4nm,0.5s,baz=113,slow=8.8,SNR=9.7
NB2 NORSAR Subarra 44.72 323 P **P 01 28 04.1 +0.6**
comp=Z,2.1nm,0.6s,baz=94,slow=7.9
NOA NORSAR Array B 44.72 323 P **P 01 28 04.4 +0.8**
comp=Z,2.2nm,0.7s,baz=97,slow=7.8,SNR=11
TIXI Tiksi 45.89 22 *e*P **P 01 28 15.5 +2.9**
TIXI pmax pmax
comp=Z,4.0nm,0.4s
TIXI Tiksi 45.89 22 *e*P **P 01 28 15.4 +2.9**
comp=Z,3.9nm,0.4s
BILL Bilibino 58.70 26 *e*P **P 01 29 49.5 +2.3**
BILL pmax pmax
comp=Z,3.0nm,0.9s
TORD Torodi Ar. Bea 65.97 269 P **P 01 30 34.6 -1.7**
comp=Z,1.3nm,0.6s,baz=50,slow=6.0,SNR=23
GUMO Guam 68.90 88 LR LR 02 02 38.7
comp=Z,38nm,21.9s,baz=64,slow=37
INK Inuvik 74.09 9 P **P 01 31 28.1 +3.0**
comp=Z,1.7nm,0.5s,baz=359,slow=8.7,SNR=10
BOSA Boshof 77.73 220 P **P 01 31 47.8 +1.3**
comp=Z,1.1nm,0.5s,baz=26,slow=5.7,SNR=5.3
YKA Yellowknife Ar 81.47 3 P **P 01 32 08.5 +2.4**
comp=Z,7.7nm,1.0s,baz=348,slow=5.3,SNR=69
WRA Warramunga Arr 81.65 122 P **P 01 32 08.9 +1.2**
comp=Z,1.0nm,0.9s,baz=326,slow=4.8,SNR=3.7
ASAR Alice Springs 83.91 125 P **P 01 32 20.8 +1.5**
comp=Z,0.6nm,0.6s,baz=312,slow=4.5,SNR=3.6

*IDC **18** 01:21:36.2±0.8, 35°.38N×142°.97E, h0km, mb3.7/11, mb1 3.9/13, mb1mx3.7/40, mbtmp3.7/13, ML3.4/2, MS3.1/3, Ms1 3.1/3, ms1mx2.5/50, Error ellipse: s-maj=22.0km s-min=18.2km az=114.0*
*JMA **18** 01:21:39.8±0.2, 35°.54N×142°.81E, h95km, M3.4*
*ISCJB **18** 01:21:41.8±0.6, 35°.48N±0°.04×142°.71E±0°.05, h59km, mb3.7/11, MS3.5/1, Error ellipse: s-maj=6.1km s-min=5.2km az=162.6*
ISC 18 01:21:43.8±0.7, 35°.52N±0°.05×142°.79E±0°.07, h59km, n31, σ2s43/40, mb3.7/11, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**1.58**	**277**	P	**Pn**		**Pn**	**01 22 07.7**	**-1.8**
CHOJ					*e*S		**Sn**	**01 22 28.3**	**-0.6**
BSO1	**Boso 1**	**1.72**	**240**		*e*S		**Sn**	**01 22 30.3**	**-1.2**
BSO3	**Boso 3**	**2.00**	**250**	P			**Pn**	**01 22 12.9**	**-2.1**
JHO	**Hitachi**	**2.10**	**302**	P			**Pn**	**01 22 13.6**	**-3.0**
JYT	**Yasato**	**2.22**	**289**	P			**Pn**	**01 22 16.0**	**-2.2**
JYT					*e*S		**Sn**	**01 22 42.3**	**-2.2**
JFT	**Otama**	**2.80**	**316**	P			**Pn**	**01 22 29.9**	**-2.3**
JFT					*e*S		**Sn**	**01 22 57.1**	**-1.7**
JAG	**Ashikaga**	**2.85**	**289**	P			**Pn**	**01 22 24.6**	**-2.2**
JAG					S		**Sn**	**01 22 57.5**	**-2.4**
JOD2	**Odawara 2**	**3.03**	**266**	P			**Pn**	**01 22 27.0**	**-2.3**
JOD2					*e*S		**Sn**	**01 23 02.7**	**-1.7**
JRY	**Ryogami san**	**3.20**	**280**	P			**Pn**	**01 22 30.4**	**-1.2**
JRY					*e*S		**Sn**	**01 23 08.7**	**+0.2**
JHJ2	**Mitsune**	**3.44**	**226**	P			**Pn**	**01 22 31.6**	**-3.3**
JHJ2					*e*S		**Sn**	**01 23 10.8**	**-3.6**
JHJ	**Hachijo jima 2**	**3.45**	**227**	Pn			**Pn**	**01 22 31.6**	**-3.5**
	7.9nm,0.3s,baz=17,slow=8.9,SNR=1.9								
JHJ					Sn		**Sn**	**01 23 09.9**	**-4.8**
	74nm,0.3s,baz=78,slow=19,SNR=8.6								
JYN	**Shimob**	**3.46**	**271**	P			**Pn**	**01 22 33.8**	**-1.4**
JYN					*e*S		**Sn**	**01 23 14.1**	**-0.9**
JMK	**Ichinoseki**	**3.65**	**340**	P			**Pn**	**01 22 33.9**	**-3.8**
JMK					*e*S		**Sn**	**01 23 14.6**	**-4.8**
MJAR	**Matsushiro Arr**	**3.85**	**287**	Pn			**Pn**	**01 22 40.1**	**-0.4**
	2.8nm,0.3s,baz=90,slow=11,SNR=12								
MAT	**Matsushiro**	**3.85**	**287**	P			**Pn**	**01 22 40.0**	**-0.5**
MAT					S		**Sn**	**01 23 20.7**	**-3.8**
JYK	**Kaneyama**	**3.90**	**331**	P			**Pn**	**01 22 38.1**	**-3.2**
JOM	**Ohasama**	**4.12**	**344**	P			**Pn**	**01 22 41.6**	**-2.6**
JOM					S		**Sn**	**01 23 27.2**	**-3.9**
JNU	**Nakatsue**	**10.13**	**260**	LR			LR	01 28 42.3	
	comp=Z,90nm,19.3s,baz=114,slow=42								
KSRS	**Korea Array**	**12.12**	**284**	LR			LR	01 29 13.6	
	comp=Z,56nm,18.7s,baz=245,slow=37								
SONM	**Songino Array**	**29.56**	**306**	P			**P**	**01 27 45.1**	**+2.1**
	0.6nm,0.7s,baz=115,slow=9.7,SNR=3.3								
NRIK	**Noril'sk**	**45.10**	**336**	P			**P**	**01 29 55.8**	**+2.1**
	1.1nm,0.5s,baz=81,slow=7.6,SNR=3.5								
MKAR	**Makanchi Array**	**45.87**	**304**	P			**P**	**01 30 01.6**	**+1.5**
	0.4nm,0.6s,baz=94,slow=8.9,SNR=3.6								
ILAR	**Eielson Array**	**50.19**	**32**	P			**P**	**01 30 33.6**	**+0.4**
	1.2nm,0.8s,baz=265,slow=6.2,SNR=14								
INK	**Inuvik**	**55.23**	**27**	P			**P**	**01 31 11.4**	**+1.1**
	1.1nm,0.6s,baz=300,slow=5.2,SNR=8.7								
WRA	**Warramunga Arr**	**55.74**	**190**	P			**P**	**01 31 13.4**	**-1.1**
	0.4nm,0.3s,baz=7.8,slow=7.5,SNR=3.0								
ASAR	**Alice Springs**	**59.46**	**189**	P			**P**	**01 31 40.6**	**0.0**
	0.3nm,0.6s,baz=8.0,slow=9.4,SNR=3.0								
SPITS	**Spitsbergen Ar**	**62.22**	**349**	LR			LR	02 01 19.4	
	comp=Z,31nm,18.2s,baz=20,slow=38								
NOA	**NORSAR Array B**	**76.00**	**338**	P			**P**	**01 33 24.9**	**+0.6**
	1.0nm,0.8s,baz=26,slow=8.1,SNR=3.6								
AKASG	**Malin Array Be**	**76.17**	**323**	P			**P**	**01 33 26.0**	**+0.6**
	0.5nm,0.5s,baz=48,slow=6.2,SNR=3.3								
PDAR	**Pinedale Array**	**77.93**	**46**	P			**P**	**01 33 36.3**	**+0.5**
	0.2nm,0.5s,baz=335,slow=4.0,SNR=2.8								
TXAR	**Lajitas Array**	**90.15**	**53**	P			**P**	**01 34 38.8**	**+0.8**
	0.2nm,0.8s,baz=291,slow=2.8,SNR=3.1								

*BJI **18** 01:30:33.5, 26°.58N×144°.00E, h10km, mb4.6/29, mB4.9/22, Ms4.8/5, Ms7 4.5/4*
*ISCJB **18** 01:30:35.9±0.2, 26°.81N±0°.04×143°.79E±0°.04, h10km, mb4.5/107, MS3.4/11, Error ellipse: s-maj=6.4km s-min=4.7km az=1.0*
*IDC **18** 01:30:35.3±0.5, 26°.79N×143°.97E, h0km, mb4.3/24, mb1 4.4/27, mb1mx4.4/40, mbtmp4.3/27, ML3.5/3, MS3.2/13, Ms1 3.2/13, ms1mx3.0/47, Error ellipse: s-maj=15.9km s-min=11.8km az=89.0*
*NEIC **18** 01:30:37.3±0.2, 26°.81N×143°.79E, h10km, mb4.7/60, Error ellipse: s-maj=5.5km s-min=5.0km az=169.0*
*MOS **18** 01:30:37.5±1.2, 26°.77N×143°.87E, h23km, mb4.8/45, Error ellipse: s-maj=10.4km s-min=6.1km az=113.8*
ISC 18 01:30:37.2±0.4, 26.81N±0°.07×143.76E±0°.05, h10km, n201, σ1s47/201, mb4.6/107, MS3.4/12, 2C, Bonin Islands region

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
JCJ	**Chichijima**	**1.44**	**282**	Pn			**Pg**	**01 31 05.5**	**+0.6**
	64nm,0.3s,baz=274,slow=21,SNR=25								
JCJ					Sn		**Sg**	**01 31 24.0**	**+0.4**
	106nm,0.3s,baz=282,slow=23,SNR=7.9								
CBIJ	**Chichi jima**	**1.44**	**282**	*e*Pn			**Pb**	**01 31 04.3**	**+0.1**
CBIJ					*e*Sn		**Sn**	**01 31 15.3**	**-7.1**
MJAR	**Matsushiro Arr**	**10.79**	**335**	Pn			**Pn**	**01 33 10.8**	**-1.1**
	1.1nm,0.3s,baz=153,slow=10,SNR=19								
MJAR					LR		LR	01 37 13.3	
	comp=Z,30nm,20.4s,baz=180,slow=37								
MAJO	**Matsushiro**	**10.80**	**335**	*e*P			**Pn**	**01 33 10.9**	**-1.0**
MAJO	**Matsushiro**	**10.80**	**335**	*e*Pn			**Pn**	**01 33 10.9**	**-1.0**
MAT	**Matsushiro**	**10.80**	**335**	P			**Pn**	**01 33 10.9**	**-1.0**
MJB9	**Matsu-Tunnel**	**10.80**	**335**	*e*Pn			**Pn**	**01 33 10.8**	**-1.1**
JNU	**Nakatsue**	**12.82**	**302**	LR			LR	01 37 30.6	
	comp=Z,51nm,21.2s,baz=198,slow=32								
GUMO	**Guam**	**13.19**	**175**	LR			LR	01 37 37.2	
	comp=Z,83nm,21.6s,baz=73,slow=32								
KSRS	**Korea Array**	**17.08**	**312**	P			**P**	**01 34 39.1**	**+1.2**
	0.3nm,0.3s,baz=119,slow=13,SNR=6.4								
KSAR	**Wonju Array Be**	**17.10**	**312**	P			**P**	**01 34 39.1**	**+1.0**
KSAR	**Wonju Array Be**	**17.10**	**312**	P			**P**	**01 34 39.1**	**+1.0**
ASAJ	**Asahikawa**	**17.30**	**357**	LR			LR	01 41 37.2	
	comp=Z,50nm,19.7s,baz=172,slow=38								
USRK	**Ussuriysk Ar.**	**19.79**	**334**	P			**Pn**	**01 35 09.1**	**0.0**
	0.2nm,0.3s,baz=142,slow=11,SNR=6.9								
SSLB	**Suanglung**	**20.84**	**267**	*e*P			**P**	**01 35 18.7**	**-0.5**
	22nm,0.8s								
NJ2	**Nanjing**	**22.30**	**289**	*e*P			**P**	**01 35 34.4**	**-0.4**
NJ2					pmax	pmax			
	comp=Z,24nm,0.8s								
H11N2	**WAKE ISLAND Hy**	**22.37**	**103**	T			T	01 58 42.0	
	baz=291,SNR=5.0								
H11N1	**WAKE ISLAND Hy**	**22.37**	**104**	T			T	01 58 44.6	
	baz=291,SNR=3.8								
H11N3	**WAKE ISLAND Hy**	**22.38**	**103**	T			T	01 58 36.0	
	baz=291,SNR=3.8								
H11S3	**WAKE ISLAND Hy**	**22.69**	**107**	T			T	01 58 58.8	
	baz=293,SNR=5.1								
H11S1	**WAKE ISLAND Hy**	**22.70**	**107**	T			T	01 59 14.3	
	baz=293								
H11S2	**WAKE ISLAND Hy**	**22.71**	**107**	T			T	01 59 14.1	
	baz=293								
KLR	**Kul'dur**	**24.25**	**341**	P			**P**	**01 35 54.5**	**+0.2**
	5.4nm,0.9s,baz=142,slow=7.1,SNR=16								
KLR					LR		LR	01 45 15.9	
	comp=Z,13nm,21.7s,baz=54,slow=36								
TIA	**Tai'an**	**24.51**	**299**	*e*P			**P**	**01 35 52.0**	**-4.8**
TIA					pmax	pmax			
	comp=Z,10.0nm,0.5s								
TGY	**Tagaytay City**	**24.79**	**244**	LR			LR	01 44 10.6	
	comp=Z,115nm,19.4s,baz=36,slow=33								
DAV	**Davao City (W)**	**26.16**	**225**	LR			LR	01 45 09.9	
	comp=Z,108nm,21.6s,baz=75,slow=33								
NKL	**Nikolayevsk**	**26.41**	**356**	*e*P			**P**	**01 36 14.9**	**+1.1**
NKL					pmax	pmax			
	comp=Z,20nm,1.0s								
PETK	**Petropavlovsk-**	**28.25**	**18**	LR			LR	01 48 07.7	
	comp=Z,37nm,20.4s,baz=191,slow=37								
HHC	**Hu-ho-hao-te**	**30.00**	**306**	*e*P			**P**	**01 36 46.6**	**+0.4**
HHC					sP		sP	01 36 56.9	+6.3
HHC					S		**S**	**01 41 41.3**	**-3.0**
HHC					pmax	pmax			
	comp=Z,13nm,1.0s								
HHC					pmax	pmax			
	comp=Z,63nm,4.9s								
HHC					LR	LR			
	comp=Z,500nm,15.2s								
HHC					LR	LR			
	comp=Z,610nm,14.3s								
HHC					LR	LR			
	comp=Z,690nm,14.6s								
ENH	**Enshi**	**30.24**	**285**	*e*P			P	01 36 39.6	-8.8
	comp=Z,13nm,0.7s								
GYA	**Guiyang**	**33.09**	**278**	*e*P			**P**	**01 37 12.8**	**-0.8**
GYA					pmax	pmax			
	comp=Z,10.0nm,0.8s								
LZH	**Lanzhou**	**35.09**	**295**	*e*P			**P**	**01 37 34.4**	**+3.5**
LZH					pP		sP	01 37 39.3	+4.1
LZH					sP		pP	01 37 42.8	+8.8
LZH					pmax	pmax			
	comp=Z,18nm,1.0s								
CD2	**Chengdu**	**35.15**	**286**	P			**P**	**01 37 30.1**	**-1.2**
ULN	**Ulaanbaatar**	**35.50**	**316**	*e*P			**P**	**01 37 34.7**	**+0.4**
ULN					pmax	pmax			
	comp=Z,12nm,1.5s								
ULN	**Ulaanbaatar**	**35.50**	**316**	*e*P			**P**	**01 37 34.7**	**+0.4**
	comp=Z,12nm,1.5s								
SONA1	**Songino Array**	**35.90**	**316**	*e*P			**P**	**01 37 37.1**	**-0.6**
SONM	**Songino Array**	**35.90**	**316**	P			**P**	**01 37 39.0**	**+1.3**
	comp=Z,2.0nm,0.9s,baz=123,slow=5.8,SNR=12								
SONM	**Songino Array**	**35.90**	**316**	P			**P**	**01 37 39.0**	**+1.3**
PMG	**Port Moresby**	**36.15**	**174**	P			**P**	**01 37 38.8**	**-1.0**
	comp=Z,9.0nm,0.8s,baz=82,slow=1.6,SNR=4.4								
PMG	**Port Moresby**	**36.15**	**174**	*i*P			**P**	**01 37 38.8**	**-1.0**
PMG					pmax	pmax			
	comp=Z,49nm,1.2s								
YAK	**Yakutsk**	**36.46**	**349**	*e*P			**P**	**01 37 41.5**	**-0.5**
YAK					pmax	pmax			
	comp=Z,9.0nm,0.8s								
SEY	**Seymchan**	**36.57**	**7**	P			**P**	**01 37 41.6**	**-1.4**
	comp=Z,0.7nm,0.3s,baz=186,slow=7.6,SNR=7.2								
SEY	**Seymchan**	**36.57**	**7**	*i*P			**P**	**01 37 42.3**	**-0.7**
KMI	**Kunming**	**36.81**	**277**	P			**P**	**01 37 46.3**	**+0.5**
KMI					pmax	pmax			
	comp=Z,9.0nm,0.7s								
KMI					pmax	pmax			
	comp=Z,52nm,5.7s								
BOD	**Bodaibo**	**37.42**	**334**	*e*P			**P**	**01 37 50.6**	**+0.3**
BOD					pmax	pmax			
	comp=Z,3.0nm,1.5s								
GTA	**Gaotai**	**38.54**	**300**	*e*P			**P**	**01 38 00.6**	**+0.4**
GTA					pP		sP	01 38 04.9	+0.3
GTA					sP		pP	01 38 07.6	+4.3
GTA					S		**S**	**01 43 57.1**	**+0.9**
GTA					sS		sS	01 44 05.1	+3.8
GTA					SS		**SnSn**	**01 46 39.1**	**-3.9**
GTA					pmax	pmax			
	comp=Z,4.0nm,1.1s								
GTA					pmax	pmax			
	comp=Z,100nm,4.3s								
GTA					LR	LR			
	comp=Z,95nm,16.6s								
GTA					LR	LR			
	comp=Z,94nm,16.2s								
ZAK	**Zakamensk**	**38.76**	**318**	*e*P			**P**	**01 38 01.9**	**+0.1**
ZAK					pmax	pmax			
	comp=Z,8.0nm,1.3s								
TLY	**Talaya**	**39.05**	**320**	*e*P			**P**	**01 38 06.0**	**+1.8**
TLY					pmax	pmax			
	comp=Z,7.0nm,1.1s								
KAPI	**Kappang**	**39.25**	**220**	P			**P**	**01 38 06.0**	**-0.2**
	comp=Z,4.6nm,0.5s,baz=56,slow=1.7,SNR=5.8								
KAPI	**Kappang**	**39.25**	**220**	*e*P			**P**	**01 38 06.1**	**0.0**
	comp=Z,27nm,1.4s								
CHTO	**Chiang Mai**	**41.90**	**269**	P			**P**	**01 38 32.1**	**+3.9**
CHTO					pmax	pmax			
	comp=Z,5.0nm,1.0s								
CMAR	**Chiang Mai Arr**	**42.02**	**268**	P			**P**	**01 38 28.5**	**-0.6**
	comp=Z,1.0nm,0.3s,baz=56,slow=8.8,SNR=14								
CMAR					LR		LR	01 55 53.1	
	comp=Z,31nm,18.4s,baz=100,slow=36								
BILL	**Bilibino**	**43.43**	**12**	*e*P			**P**	**01 38 38.3**	**-1.6**
BILL					pmax	pmax			
	comp=Z,7.0nm,1.7s								
TIXI	**Tiksi**	**45.65**	**353**	P			**P**	**01 38 56.9**	**-0.7**
	comp=Z,3.5nm,0.6s,baz=129,slow=6.1,SNR=9.6								
TIXI	**Tiksi**	**45.65**	**353**	*i*P			**P**	**01 38 56.5**	**-1.1**
TIXI					pmax	pmax			
	comp=Z,4.0nm,0.6s								
WRAB	**Tennant Creek**	**47.35**	**192**	*i*P			**P**	**01 39 11.9**	**+0.4**
WRAB					pmax	pmax			
	comp=Z,76nm,0.8s								
WRAB	**Tennant Creek**	**47.35**	**192**	*e*P			**P**	**01 39 11.4**	**-0.1**
	comp=Z,35nm,1.0s								
WB2	**Warramunga Arr**	**47.36**	**192**	*e*P			**P**	**01 39 11.8**	**+0.2**
	comp=Z,33nm,0.9s								
WRA	**Warramunga Arr**	**47.36**	**192**	P			**P**	**01 39 11.7**	**+0.1**
	comp=Z,20nm,0.9s,baz=12,slow=8.3,SNR=55								
WMQ	**Urumqi**	**47.88**	**306**	*e*P			**P**	**01 39 16.0**	**+0.4**
WMQ					pP		sP	01 39 20.4	+0.4
WMQ					pmax	pmax			
	comp=Z,16nm,4.0s					

MK31	**Makanchi Array**	**51.74**	**310**	*e*P		**P**		**01 39 45.4**	**+0.5**
MK31	**Makanchi Array**	**51.74**	**310**	*e*P		**P**		**01 39 45.4**	**+0.5**
MKAR	**Makanchi Array**	**51.74**	**310**	P		**P**		**01 39 46.3**	**+1.4**
	comp=Z,3.8nm,0.8s,baz=93,slow=9.7,SNR=27								
MKAR	**Makanchi Array**	**51.74**	**310**	*e*P		**P**		**01 39 45.4**	**+0.5**
MAKZ	**Makanchi**	**51.96**	**310**	*e*P		**P**		**01 39 47.4**	**+0.9**
MAKZ				pmax	pmax				
	comp=Z,8.0nm,1.1s								
MAKZ	**Makanchi**	**51.96**	**310**	*e*P		**P**		**01 39 47.4**	**+0.9**
	comp=Z,7.7nm,1.1s								
NRIK	**Noril'sk**	**53.43**	**338**	P		**P**		**01 39 57.7**	**+0.8**
	comp=Z,3.5nm,0.6s,baz=107,slow=10,SNR=7.1								
PDGK	**Podgornoye**	**53.86**	**306**	P		**P**		**01 40 01.8**	**+1.3**
PDGK				pmax	pmax				
	comp=Z,9.0nm,0.9s								
KURK	**Kurchatov**	**54.19**	**315**	*e*P		**P**		**01 40 03.0**	**+0.2**
KURK				pmax	pmax				
	comp=Z,10.0nm,1.1s								
KURK	**Kurchatov**	**54.19**	**315**	*e*P		**P**		**01 40 03.0**	**+0.2**
	comp=Z,10nm,1.1s								
CAST	**Castle Rocks**	**54.84**	**30**	*e*P		**P**		**01 40 07.2**	**-0.2**
	comp=Z,3.8nm,1.0s								
TRF	**Thorofare Moun**	**55.64**	**30**	*e*P		**P**		**01 40 11.8**	**-1.5**
	comp=Z,5.2nm,1.0s								
RND	**Reindeer**	**56.27**	**30**	*e*P		**P**		**01 40 16.2**	**-1.5**
RND				pmax	pmax				
	comp=Z,8.0nm,1.2s								
RND	**Reindeer**	**56.27**	**30**	*e*P		**P**		**01 40 16.2**	**-1.5**
	comp=Z,8.3nm,1.2s								
MCK	**McKinley**	**56.28**	**30**	*e*P		**P**		**01 40 17.6**	**-0.1**
MCK				pmax	pmax				
	comp=Z,24nm,1.8s								
MCK	**McKinley**	**56.28**	**30**	*e*P		**P**		**01 40 17.6**	**-0.1**
	comp=Z,24nm,1.8s								
COLD	**Coldfoot**	**56.32**	**25**	*e*P		**P**		**01 40 18.1**	**+0.1**
	comp=Z,4.7nm,0.9s								
TKM2	**Tokmak 2**	**56.73**	**305**	*e*P		**P**		**01 40 22.1**	**+0.6**
TKM2				pmax	pmax				
	comp=Z,6.0nm,0.9s								
TKM2	**Tokmak 2**	**56.73**	**305**	*e*P		**P**		**01 40 22.1**	**+0.6**
	comp=Z,5.7nm,0.9s								
SCM	**Sheep Creek Mo**	**56.81**	**32**	*e*P		**P**		**01 40 21.2**	**-0.4**
SCM				pmax	pmax				
	comp=Z,8.0nm,1.0s								
SCM	**Sheep Creek Mo**	**56.81**	**32**	*e*P		**P**		**01 40 21.2**	**-0.4**
	comp=Z,7.9nm,1.0s								
KSH	**Kashi**	**56.93**	**301**	P		P		01 40 27.8	+4.9
KSH				*es*P		sP		01 40 34.3	+7.0
KSH				S		**S**		**01 48 22.5**	**+5.4**
KSH				ScS		**ScS**		**01 50 13.1**	**+0.4**
KSH				pmax	pmax				
	comp=Z,7.0nm,0.8s								
KSH				pmax	pmax				
	comp=Z,86nm,4.5s								
KSH				LR		LR			
	comp=Z,380nm,13.0s								
KSH				LR		LR			
	comp=Z,170nm,6.3s								
KSH				LR		LR			
	comp=Z,110nm,5.6s								
IL1	**Eielson Array**	**57.29**	**28**	*e*P		**P**		**01 40 23.0**	**-1.9**
ILAR	**Eielson Array**	**57.29**	**28**	P		**P**		**01 40 23.1**	**-1.8**
	comp=Z,2.5nm,0.9s,baz=263,slow=5.7,SNR=16								
ILAR				LR		LR		02 05 42.8	
	comp=Z,26nm,18.6s,baz=234,slow=37								
ILB	**Eielson Array**	**57.29**	**28**	*e*P		**P**		**01 40 23.5**	**-1.4**
FRU	**Bishkek**	**57.46**	**305**	*e*P		**P**		**01 40 28.0**	**+1.5**
AAK	**Ala-Archa**	**57.58**	**305**	*e*P		**P**		**01 40 27.8**	**+0.3**
AAK				pmax	pmax				
	comp=Z,8.0nm,0.9s								
AAK	**Ala-Archa**	**57.58**	**305**	*e*P		**P**		**01 40 27.5**	**0.0**
	comp=Z,5.0nm,1.0s								
PAX	**Paxson**	**57.76**	**31**	*e*P		**P**		**01 40 28.6**	**+0.3**
PAX				pmax	pmax				
	comp=Z,25nm,1.8s								
PAX	**Paxson**	**57.76**	**31**	*e*P		**P**		**01 40 28.6**	**+0.3**
	comp=Z,25nm,1.8s								
EKS2	**Erkin-Say**	**58.10**	**305**	*e*P		**P**		**01 40 31.3**	**+0.2**
EKS2				pmax	pmax				
	comp=Z,4.0nm,0.9s								
EKS2	**Erkin-Say**	**58.10**	**305**	*e*P		**P**		**01 40 31.3**	**+0.2**
	comp=Z,4.0nm,0.9s								
FYU	**Fort Yukon**	**58.16**	**26**	*e*P		**P**		**01 40 30.7**	**-0.2**
	comp=Z,14nm,1.4s								
STKA	**Stephens Creek**	**58.39**	**182**	P		**P**		**01 40 32.3**	**-0.6**
	comp=Z,2.4nm,0.7s,baz=344,slow=13,SNR=4.7								
OTUK	**Ortayu**	**58.40**	**312**	P		**P**		**01 40 34.9**	**+1.9**
OTUK				pmax	pmax				
	comp=Z,6.0nm,1.0s								
MENT	**Mentasta**	**58.55**	**31**	*e*P		**P**		**01 40 34.6**	**+0.8**
	comp=Z,34nm,0.2s								
SFK	**Sufi-Kurgan**	**58.73**	**302**	P		**P**		**01 40 37.2**	**+1.5**
SFK				pmax	pmax				
	comp=Z,8.0nm,1.0s								
MNAS	**Manas**	**59.05**	**305**	P		**P**		**01 40 40.3**	**+2.5**
MNAS				pmax	pmax				
	comp=Z,3.0nm,1.1s								
BRVK	**Borovoye**	**59.27**	**318**	*i* P		**P**		**01 40 39.6**	**+0.7**
BRVK				pmax	pmax				
	comp=Z,10.0nm,1.2s								
BRVK	**Borovoye**	**59.27**	**318**	*e*P		**P**		**01 40 39.4**	**+0.6**
	comp=Z,8.1nm,1.1s								
ZRNK	**Zerenda**	**60.05**	**318**	*e*P		**P**		**01 40 45.0**	**+0.7**
ZRNK				pmax	pmax				
	comp=Z,5.0nm,0.8s								
ZRNK	**Zerenda**	**60.05**	**318**	*e*P		**P**		**01 40 45.0**	**+0.7**
	comp=Z,4.7nm,0.8s								
KKAR	**Karatay Array**	**60.39**	**306**	*e*P		**P**		**01 40 47.6**	**+0.8**
KKAR	**Karatay Array**	**60.39**	**306**	*e*P		**P**		**01 40 47.6**	**+0.8**
INK	**Inuvik**	**62.71**	**25**	P		**P**		**01 41 00.9**	**-1.1**
	comp=Z,3.1nm,0.6s,baz=297,slow=4.5,SNR=21								
INK	**Inuvik**	**62.71**	**25**	*e*P		**P**		**01 41 01.3**	**-0.7**
INK				pmax	pmax				
	comp=Z,4.0nm,0.6s								
INK	**Inuvik**	**62.71**	**25**	*e*P		**P**		**01 41 01.3**	**-0.7**
	comp=Z,4.3nm,0.6s								
ARU	**Arti**	**65.51**	**323**	*c i*P		**P**		**01 41 21.1**	**+0.5**
ARU								01 43 44.5	
ARU				S		**S**		**01 50 06.2**	**+0.8**
ARU				SS		**SS**		**01 54 22.5**	**+4.1**
ARU				pmax	pmax				
	comp=Z,11nm,1.2s								
ARU	**Arti**	**65.51**	**323**	*e*P		**P**		**01 41 20.4**	**-0.2**
	comp=Z,34nm,1.8s								
DLBC	**Dease Lake**	**65.63**	**35**	*e*P		**P**		**01 41 21.2**	**-0.3**
	comp=Z,9.7nm,1.3s								
ABKAR	**Akbulak array**	**66.30**	**315**	*e*P		**P**		**01 41 26.5**	**+0.7**
GEYT	**Alibeck**	**70.84**	**303**	P		**P**		**01 41 54.7**	**+0.2**
	comp=Z,0.7nm,0.4s,baz=40,slow=7.6,SNR=4.1								
YKA	**Yellowknife Ar**	**71.72**	**29**	P		**P**		**01 41 58.2**	**-1.0**
	comp=Z,1.9nm,0.7s,baz=292,slow=6.0,SNR=26								
YKB5	**Yellowknife Ar**	**71.72**	**29**	*e*P		**P**		**01 41 57.3**	**-1.9**
ARCES	**ARCESS Array B**	**74.27**	**341**	P		**P**		**01 42 16.7**	**+2.4**
	comp=Z,8.1nm,1.0s,baz=52,slow=6.3,SNR=3.7								
B08A	**Colville Reser**	**74.78**	**43**	*e*P		**P**		**01 42 17.8**	**+0.1**
	comp=Z,5.8nm,0.9s								
YBH	**Yreka Blue Hor**	**75.15**	**51**	*e*P		**P**		**01 42 22.2**	**+2.2**
YBH				pmax	pmax				
	comp=Z,5.0nm,0.9s								
YBH	**Yreka Blue Hor**	**75.15**	**51**	*e*P		**P**		**01 42 22.2**	**+2.2**
	comp=Z,4.8nm,0.9s								
K05A	**Summer Lake**	**76.00**	**49**	*e*P		**P**		**01 42 25.4**	**+0.4**
	comp=Z,16nm,1.0s								
NEW	**Newport**	**76.16**	**43**	*e*P		**P**		**01 42 24.6**	**-1.0**
NEW				pmax	pmax				
	comp=Z,7.0nm,0.8s								
NEW	**Newport**	**76.16**	**43**	*e*P		**P**		**01 42 24.6**	**-1.0**
	comp=Z,6.6nm,0.8s								
MOD	**Modoc Plateau**	**76.73**	**50**	*e*P		**P**		**01 42 28.6**	**-0.5**
	comp=Z,6.5nm,1.0s								
BMO	**Blue Mountains**	**77.49**	**46**	*e*P		**P**		**01 42 33.6**	**+0.4**
	comp=Z,5.0nm,0.9s								
OBN	**Obninsk**	**77.56**	**326**	*e*P		**P**		**01 42 35.0**	**+1.8**
OBN				pmax	pmax				
	comp=Z,4.0nm,0.9s								
WVOR	**Wild Horse Val**	**77.64**	**49**	*e*P		**P**		**01 42 33.5**	**-0.6**
WVOR				pmax	pmax				
	comp=Z,6.0nm,1.2s								
WVOR	**Wild Horse Val**	**77.64**	**49**	*e*P		**P**		**01 42 33.5**	**-0.6**
	comp=Z,5.8nm,1.2s								
JTMT	**Jette**	**78.11**	**42**	*e*P		**P**		**01 42 36.8**	**+0.1**
SWMT	**Swartz Lake**	**78.39**	**43**	*e*P		**P**		**01 42 38.0**	**-0.2**
FINES	**FINESS Array B**	**78.82**	**334**	P		**P**		**01 42 41.3**	**+1.2**
	comp=Z,1.4nm,0.7s,baz=104,slow=5.9,SNR=3.5								
ZEI	**Tsey**	**78.99**	**312**	*e*P		**P**		**01 42 40.0**	**-1.7**
ZEI				pmax	pmax				
	comp=Z,7.0nm,0.9s								
MFID	**Camas Ranch**	**79.07**	**47**	*e*P		**P**		**01 42 41.8**	**-0.2**
	comp=Z,6.1nm,0.9s								
KBZ	**Khabaz**	**79.23**	**314**	P		**P**		**01 42 44.2**	**+1.5**
	comp=Z,9.9nm,0.8s,baz=110,slow=1.4,SNR=20								
KIV	**Kislovodsk**	**79.27**	**314**	*e*P		**P**		**01 42 45.1**	**+2.0**
KIV				pmax	pmax				
	comp=Z,10.0nm,1.0s								
KIV	**Kislovodsk**	**79.27**	**314**	*e*P		**P**		**01 42 44.4**	**+1.4**
	comp=Z,7.6nm,0.8s								
ONI	**Oni**	**79.38**	**312**	P		**P**		**01 42 45.7**	**+2.1**
ONI	**Oni**	**79.38**	**312**	*e*P		**P**		**01 42 45.7**	**+2.1**
NEY	**Neytrino**	**79.56**	**313**	*e*P		**P**		**01 42 45.5**	**+0.7**
NEY				pmax	pmax				
	comp=Z,1.0nm,0.9s								
GNI	**Garni**	**79.59**	**310**	*e*P		**P**		**01 42 46.5**	**+1.5**
GNI				pmax	pmax				
	comp=Z,12nm,1.3s								
HLID	**Hailey**	**79.93**	**46**	*e*P		**P**		**01 42 45.9**	**-0.9**
	comp=Z,2.4nm,1.0s								
LRM	**Limekiln Ridge**	**80.11**	**44**	*e*P		**P**		**01 42 47.6**	**-0.2**
ELK	**Elko**	**80.67**	**49**	*e*P		**P**		**01 42 51.7**	**+0.8**
ELK				pmax	pmax				
	comp=Z,5.0nm,1.1s								
ELK	**Elko**	**80.67**	**49**	*e*P		**P**		**01 42 51.7**	**+0.8**
	comp=Z,4.9nm,1.1s								
BOZ	**Bozeman (W)**	**80.70**	**43**	*e*P		**P**		**01 42 50.4**	**-0.5**
BOZ				pmax	pmax				
	comp=Z,3.0nm,0.8s								
BOZ	**Bozeman (W)**	**80.70**	**43**	*e*P		**P**		**01 42 50.4**	**-0.5**
	comp=Z,3.4nm,0.8s								
QLMT	**Earthquake Lak**	**81.22**	**44**	*e*P		**P**		**01 42 54.0**	**+0.2**
FFC	**Flin Flon**	**81.23**	**32**	*e*P		**P**		**01 42 52.8**	**-0.5**
FFC				pmax	pmax				
	comp=Z,9.0nm,0.8s								
FFC	**Flin Flon**	**81.23**	**32**	*e*P		**P**		**01 42 52.8**	**-0.5**
	comp=Z,8.6nm,0.8s								
YMR	**Madison River**	**81.59**	**44**	*e*P		**P**		**01 42 56.1**	**+0.4**
	comp=Z,6.7nm,0.8s								
HVU	**Hansel Valley**	**81.83**	**47**	*e*P		**P**		**01 42 57.8**	**+0.9**
HVU				pmax	pmax				
	comp=Z,4.0nm,1.0s								
HVU	**Hansel Valley**	**81.83**	**47**	*e*P		**P**		**01 42 57.8**	**+0.9**
	comp=Z,3.7nm,1.0s								
H17A	**Grant Village**	**81.96**	**44**	*e*P		**P**		**01 43 00.3**	**+2.5**
	comp=Z,20nm,1.4s								
IMW	**Indian Meadow**	**81.98**	**45**	*e*P		**P**		**01 42 59.0**	**+1.1**
	comp=Z,8.0nm,0.9s								
FLWY	**Flagg Ranch**	**82.04**	**45**	*e*P		**P**		**01 42 58.7**	**+0.6**
	comp=Z,7.8nm,0.8s								
ANN	**Anapa**	**82.18**	**316**	*e*P		P		01 42 53.7	-4.8
ANN				*e*				01 43 00.6	
ANN				*e**PP		**PcP**		**01 43 05.3**	**+1.5**
ANN				*e*				01 46 04.7	
ANN				*e*S		**S**		**01 53 05.0**	**-8.6**
ANN				*e*SSS		SSS		02 01 58.5	
ANN				pmax	pmax				
	comp=Z,32nm,1.0s								
MOOW	**Moose Ponds**	**82.18**	**45**	*e*P		**P**		**01 42 59.6**	**+0.8**
	comp=Z,2.9nm,0.9s								
SPUT	**South Promonto**	**82.27**	**48**	*e*P		**P**		**01 43 00.7**	**+1.4**
	comp=Z,4.1nm,0.9s								
LOHW	**Long Hollow**	**82.33**	**45**	*e*P		**P**		**01 43 00.6**	**+1.0**
	comp=Z,4.4nm,1.0s								
RLMT	**Red Lodge**	**82.41**	**43**	*e*P		**P**		**01 43 00.3**	**+0.3**
	comp=Z,6.2nm,0.6s								
DUG	**Dugway, Tooele**	**82.56**	**49**	*e*P		**P**		**01 43 00.7**	**-0.1**
DUG				pmax	pmax				
	comp=Z,6.0nm,0.8s								
DUG	**Dugway, Tooele**	**82.56**	**49**	*e*P		**P**		**01 43 00.7**	**-0.1**
	comp=Z,6.1nm,0.8s								
PSUT	**Pine Spring**	**82.65**	**51**	*e*P		**P**		**01 43 02.3**	**+0.9**
	comp=Z,7.4nm,1.0s								
HWUT	**Hardware Ranch**	**82.70**	**47**	*e*P		**P**		**01 43 01.2**	**-0.4**
	comp=Z,6.7nm,0.9s								
TCUT	**Toone Canyon**	**83.05**	**47**	*e*P		**P**		**01 43 03.8**	**+0.3**
	comp=Z,4.9nm,0.7s								
JLU	**Jordanelle**	**83.27**	**48**	*e*P		**P**		**01 43 05.7**	**+1.1**
	comp=Z,9.8nm,1.2s								
BW06	**Boulder Array**	**83.42**	**45**	*e*P		**P**		**01 43 04.3**	**-1.0**
PDAR	**Pinedale Array**	**83.42**	**45**	P		**P**		**01 43 04.6**	**-0.7**
	comp=Z,1.5nm,0.7s,baz=252,slow=1.4,SNR=12								
PDAR				LR		LR		02 13 35.7	
	comp=Z,43nm,21.9s,baz=284,slow=31								
MPU	**Maple Canyon**	**83.44**	**48**	*e*P		**P**		**01 43 05.6**	**+0.2**
	comp=Z,6.5nm,1.2s								
AKASG	**Malin Array Be**	**83.68**	**324**	P		**P**		**01 43 04.9**	**-1.3**
	comp=Z,0.2nm,0.3s,baz=49,slow=5.5,SNR=7.6								
AKASG	**Malin Array Be**	**83.68**	**324**	*ce*P		**P**		**01 43 08.1**	**+2.0**
KIEV	**Kiev**	**83.69**	**324**	*e*P		**P**		**01 43 07.1**	**+0.9**
KIEV				pmax	pmax				
	comp=Z,3.0nm,1.0s								
KNB	**Kanab**	**84.09**	**52**	*e*P		**P**		**01 43 09.7**	**+0.9**
KNB				pmax	pmax				
	comp=Z,8.0nm,1.0s								
KNB	**Kanab**	**84.09**	**52**	*e*P		**P**		**01 43 09.7**	**+0.9**
	comp=Z,7.7nm,1.0s								
NB2	**NORSAR Subarra**	**84.39**	**339**	P		**P**		**01 43 11.2**	**+1.5**
	comp=Z,15nm,1.7s,baz=42,slow=4.6								
NB2	**NORSAR Subarra**	**84.39**	**339**	P		**P**		**01 43 11.2**	**+1.5**
	baz=42,slow=4.6								
NOA	**NORSAR Array B**	**84.39**	**339**	P		**P**		**01 43 10.0**	**+0.3**
	comp=Z,3.6nm,1.1s,baz=39,slow=5.1,SNR=4.6								
P18A	**Preston Nutter**	**84.56**	**48**	*e*P		**P**		**01 43 12.1**	**+0.8**
	comp=Z,3.0nm,0.8s								
RAYN	**Ar Rayn**	**86.55**	**294**	*e*P		**P**		**01 43 20.7**	**-0.5**
	comp=Z,4.9nm,0.9s								
N23A	**Red Feather La**	**86.70**	**45**	*e*P		**P**		**01 43 22.7**	**+0.8**
	comp=Z,16nm,1.5s								
ULM	**Lac du Bonnet**	**86.91**	**34**	LR		LR		02 26 36.1	
	comp=Z,23nm,18.0s,baz=11,slow=39								
SMCO	**Snowmass**	**86.96**	**47**	*e*P		**P**		**01 43 24.4**	**+1.0**
	comp=Z,5.4nm,1.3s								
BRTR	**Keskin Array B**	**87.23**	**314**	P		**P**		**01 43 24.1**	**-0.1**
	comp=Z,1.4nm,0.8s,baz=130,slow=3.9,SNR=8.8								
BR231	**Keskin MP Arra**	**87.72**	**314**	*e*P		**P**		**01 43 25.1**	**-1.5**
MNTX	**Cornudas Mount**	**92.10**	**53**	*e*P		**P**		**01 43 47.2**	**0.0**
	comp=Z,2.2nm,0.9s								
TXAR	**Lajitas Array**	**94.64**	**54**	P		**P**		**01 43 59.7**	**+0.7**
	comp=Z,0.7nm,0.9s,baz=298,slow=2.2,SNR=6.2								
TORD	**Torodi Ar. Bea**	**125.83**	**312**	PKP		**PKPdf**		**01 49 39.4**	**-0.7**
	comp=Z,0.5nm,0.9s,baz=35,slow=5.3,SNR=3.7								
PTGA	**Pitinga**	**145.47**	**45**	*e*PKPdf		**PKPbc**		**01 50 16.1**	**-0.3**
PLCA	**Paso Flores**	**148.49**	**125**	PKPbc		**PKPbc**		**01 50 23.5**	**-0.9**
	comp=Z,1.8nm,0.9s,baz=217,slow=8.0,SNR=3.0								
LPAZ	**La Paz**	**148.62**	**77**	PKPbc		**PKPbc**		**01 50 25.1**	**-1.0**
	comp=Z,8.2nm,1.0s,baz=14,slow=3.9,SNR=19								
LPAZ	**La Paz**	**148.62**	**77**	*e*PKIKP		**PKPdf**		**01 50 22.2**	**-0.2**
LPAZ								01 50 25.1	
LPAZ				*e*				01 50 26.8	
LPAZ	**La Paz**	**148.62**	**77**	*e*PKPdf		**PKPdf**		**01 50 22.2**	**-0.2**
LPAZ				PKPbc		**PKPbc**		**01 50 25.1**	**-1.0**
LPAZ				*e*PKPbc		**PKiKP**		**01 50 26.8**	**-0.8**
SAML	**Samuel**	**148.92**	**60**	*e*PKPdf		**PKPdf**		**01 50 21.7**	**-0.5**
SAML				*e*PKPbc		**PKPbc**		**01 50 26.6**	**+0.5**

NIED ***18*** *02:04:00,27.00N×144.00E,h5km,Mw3.7 Best double couple: M₀4.27000×10¹⁴ NP1:φ₀221.00000°,δ38.00000°, λ-57.00000°. NP2:φ₀2.00000°,δ59.00000°,λ-113.00000°.*
IDC ***18*** *02:04:14.2±0.6,26.85N×143.99E,h0km,mb4.2/23, mb1 4.3/26,mb1mx4.2/51,mbtmp4.2/26,ML3.8/3, Error ellipse: s-maj=16.3km s-min=14.2km az=98.0*
NEIC ***18*** *02:04:15.8±0.3,26.87N×143.96E,h10km,mb4.6/9, Error ellipse: s-maj=8.8km s-min=7.4km az=72.0*
JMA ***18*** *02:04:16.6±0.1,27.02N×143.99E,h62km,M4.3*
ISCJB ***18*** *02:04:17.8±0.5,26.96N±0.06×143.93E±0.05,h33km, mb4.2/32, Error ellipse: s-maj=8.6km s-min=5.7km az=165.8*

ISC 18 02:04:20.0±0.6,27.00N±0.08×143.85E±0.07,h35km,n48, σ1§17/54,mb4.2/32,Bonin Islands region

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
CBIJ	**Chichi jima**	**1.49**	**274**	P		**Pn**	**02 04 43.5**	**-0.9**
CBIJ				*e*S		**Sn**	**02 05 03.6**	**+1.0**
CBIJ	**Chichi jima**	**1.49**	**274**	*e*Pn		**Pn**	**02 04 43.5**	**-0.9**
CBIJ				*e*S		**Sn**	**02 05 01.2**	**-1.4**
JCJ	**Chichijima**	**1.49**	**274**	Pn		**Pn**	**02 04 43.6**	**-0.7**
	54nm,0.3s,baz=275,slow=23,SNR=23							
JCJ					Sn	**Sn**	**02 05 03.5**	**+1.0**
	231nm,0.3s,baz=103,slow=23,SNR=21							
JHHJ	**Haha-jima-NKT**	**1.54**	**256**	P		**Pn**	**02 04 44.1**	**-0.9**
JHHJ				*e*S		**Sn**	**02 05 04.8**	**+1.0**
JOD2	**Odawara 2**	**9.19**	**335**	P		**Pn**	**02 06 29.7**	**-0.4**
JHU	**Hanno**	**9.65**	**337**	P		**Pn**	**02 06 35.0**	**-1.4**
JHU				*e*S		**Sn**	**02 08 19.2**	**-4.3**
JRY	**Ryogami san**	**9.93**	**336**	P		**Pn**	**02 06 39.0**	**-1.3**
MJAR	**Matsushiro Arr**	**10.65**	**335**	Pn		**Pn**	**02 06 49.0**	**-1.1**
	3.5nm,0.3s,baz=156,slow=11,SNR=22							
MAJO	**Matsushiro**	**10.65**	**335**	*e*Pn		**Pn**	**02 06 49.5**	**-0.6**
	21nm,0.6s							
MAT	**Matsushiro**	**10.65**	**335**	P		**Pn**	**02 06 49.5**	**-0.6**
MAT	**Matsushiro**	**10.65**	**335**	P		**Pn**	**02 06 49.6**	**-0.6**
KSRS	**Korea Array**	**17.01**	**312**	P		**P**	**02 08 17.9**	**+1.2**
	0.4nm,0.3s,baz=121,slow=11,SNR=8.4							
KSAR	**Wonju Array Be**	**17.03**	**312**	P		**P**	**02 08 17.9**	**+0.9**
USRK	**Ussuriysk Ar.**	**19.65**	**334**	P		**Pn**	**02 08 46.7**	**-0.6**
	0.5nm,0.3s,baz=146,slow=9.3,SNR=7.2							
KLR	**Kul'dur**	**24.09**	**340**	P		**P**	**02 09 33.6**	**+1.4**
	3.4nm,0.7s,baz=158,slow=9.3,SNR=13							
SONM	**Songino Array**	**35.82**	**316**	P		**P**	**02 11 18.2**	**+1.9**
	1.6nm,0.5s,baz=119,slow=7.7,SNR=8.3							
SEY	**Seymchan**	**36.37**	**7**	P		**P**	**02 11 21.3**	**+0.8**
	1.4nm,0.6s,baz=178,slow=8.2,SNR=7.2							
CMAR	**Chiang Mai Arr**	**42.11**	**268**	P		**P**	**02 12 08.2**	**-0.8**
	0.8nm,0.4s,baz=59,slow=9.7,SNR=5.0							
TIXI	**Tiksi**	**45.47**	**353**	P		**P**	**02 12 35.6**	**+0.3**
	2.5nm,0.5s,baz=151,slow=5.7,SNR=7.0							
WRAB	**Tennant Creek**	**47.56**	**192**	*e*P		**P**	**02 12 50.7**	**-1.6**
	3.2nm,0.8s							
WRA	**Warramunga Arr**	**47.57**	**192**	P		**P**	**02 12 50.7**	**-1.7**
	2.7nm,0.6s,baz=11,slow=8.4,SNR=11							
FITZ	**Fitzroy Crossi**	**48.19**	**204**	P		**P**	**02 12 56.6**	**-0.6**
	5.5nm,0.7s,baz=16,slow=7.4,SNR=6.1							
ZALV	**Zalesovo Beam**	**50.53**	**319**	P		**P**	**02 13 15.4**	**+0.6**
	1.5nm,0.6s,baz=105,slow=6.4,SNR=6.6							
ZALV					PcP	**PcP**	**02 14 31.9**	**-0.3**
	1.0nm,0.5s,baz=120,slow=3.8,SNR=3.9							
ASAR	**Alice Springs**	**51.28**	**192**	P		**P**	**02 13 18.7**	**-2.0**
	0.7nm,0.7s,baz=11,slow=7.1,SNR=10							
MKAR	**Makanchi Array**	**51.68**	**310**	P		**P**	**02 13 24.9**	**+1.3**
	comp=Z,0.7s,baz=92,slow=8.4,SNR=32							
NRIK	**Noril'sk**	**53.28**	**338**	P		**P**	**02 13 35.3**	**+0.3**
	4.7nm,0.8s,baz=95,slow=7.9,SNR=4.3							
KURK	**Kurchatov**	**54.11**	**315**	*e*P		**P**	**02 13 42.1**	**+0.7**
	14nm,1.0s							
KURBB	**Kurchatov Arra**	**54.17**	**314**	P		**P**	**02 13 42.6**	**+0.9**
	4.9nm,0.5s,baz=90,slow=8.0,SNR=63							
TKM2	**Tokmak 2**	**56.69**	**305**	*e*P		**P**	**02 14 01.8**	**+1.5**
	4.5nm,1.0s							
ILAR	**Eielson Array**	**57.08**	**29**	P		**P**	**02 14 01.6**	**-0.9**
	1.2nm,0.9s,baz=263,slow=5.7,SNR=8.8							
AAK	**Ala-Archa**	**57.53**	**305**	*e*P		**P**	**02 14 07.0**	**+0.7**
	2.2nm,0.9s							
BRVK	**Borovoye**	**59.18**	**318**	*e*P		**P**	**02 14 18.2**	**+0.9**
	9.2nm,1.4s							
KKAR	**Karatay Array**	**60.34**	**306**	*e*P		**P**	**02 14 26.5**	**+1.0**
	4.3nm,0.8s							
INK	**Inuvik**	**62.50**	**25**	P		**P**	**02 14 39.8**	**+0.2**
	1.9nm,0.5s,baz=298,slow=6.1,SNR=18							
ARU	**Arti**	**65.41**	**322**	*e*P		**P**	**02 14 59.6**	**+0.7**
	4.

KUR	**Kuril'sk**	**9.80**	**32**	*eP*		**Pn**	**02 10 33.0**	**-1.1**
KUR				*eS*		**Sn**	**02 12 18.8**	**-5.2**
KUR				pmax	pmax			
	comp=Z,13nm,0.3s							
KUR				smax	smax			
	comp=N,28nm,0.6s							
KUR				smax	smax			
	comp=E,19nm,0.6s							
YSS	**Yuzh-Sakhalins**	**9.98**	**9**	*eP*		**Pn**	**02 10 35.1**	**-1.4**
YSS				pmax	pmax			
	comp=Z,30nm,0.6s							
YSS	**Yuzh-Sakhalins**	**9.98**	**9**	*e*Pn		**Pn**	**02 10 38.0**	**+1.5**
KSRS	**Korea Array**	**10.09**	**276**	Pn		Pn	02 10 46.3	+8.1
	comp=Z,0.5nm,0.3s,baz=97,slow=12,SNR=11							
KSAR	**Wonju Array Be**	**10.12**	**276**	P		Pn	02 10 46.3	+7.7
KSAR	**Wonju Array Be**	**10.12**	**276**	Pn		Pn	02 10 46.3	+7.7
KLR	**Kul'dur**	**13.71**	**335**	Pn		**P**	**02 11 35.2**	**-1.1**
	comp=Z,0.1nm,0.3s,baz=132,slow=11,SNR=3.7							
TYV	**Tymovskoe**	**13.84**	**6**	*eP*		**Pn**	**02 11 28.5**	**-0.8**
TYV				pmax	pmax			
	comp=Z,11nm,0.5s							
NKL	**Nikolayevsk**	**16.05**	**0**	*eP*		**P**	**02 12 05.5**	**+3.4**
NJ2	**Nanjing**	**18.57**	**261**	*eP*		**Pn**	**02 12 32.0**	**+1.5**
NJ2				pmax	pmax			
	comp=Z,17nm,0.7s							
HHC	**Hu-ho-hao-te**	**22.82**	**288**	*eP*		**P**	**02 13 16.3**	**0.0**
HHC				pmax	pmax			
	comp=Z,18nm,1.0s							
HHC				pmax	pmax			
	comp=Z,82nm,5.7s							
MA2	**Magadan**	**23.43**	**13**	P		**P**	**02 13 22.9**	**+0.7**
	comp=Z,6.0nm,0.5s,baz=203,slow=9.2,SNR=5.8							
YAK	**Yakutsk**	**25.86**	**348**	*eP*		**P**	**02 13 44.3**	**-0.3**
YAK				pmax	pmax			
	comp=Z,8.0nm,0.9s							
ULN	**Ulaanbaatar**	**26.76**	**304**	*i* P		**P**	**02 13 53.9**	**+0.8**
ULN				pmax	pmax			
	comp=Z,3.0nm,0.7s							
ULN	**Ulaanbaatar**	**26.76**	**304**	*eP*		**P**	**02 13 53.8**	**+0.6**
	comp=Z,6.6nm,0.8s							
SEY	**Seymchan**	**26.86**	**12**	P		**P**	**02 13 55.1**	**+1.5**
	comp=Z,5.1nm,0.9s,baz=199,slow=9.4,SNR=10							
SONA1	**Songino Array**	**27.19**	**304**	*eP*		**P**	**02 13 56.6**	**-0.4**
SONM	**Songino Array**	**27.19**	**304**	P		**P**	**02 13 57.3**	**+0.3**
	comp=Z,2.2nm,0.6s,baz=107,slow=8.7,SNR=12							
SONM				PcP		**PcP**	**02 17 17.8**	**+0.9**
	comp=Z,0.5nm,0.5s,baz=121,slow=3.3,SNR=4.1							
H11N2	**WAKE ISLAND Hy**	**28.76**	**120**	T		T	02 44 08.8	
	baz=313,slow=75,SNR=332							
H11N1	**WAKE ISLAND Hy**	**28.77**	**120**	T		T	02 43 59.2	
	baz=313,slow=75,SNR=387							
H11N3	**WAKE ISLAND Hy**	**28.78**	**120**	T		T	02 44 10.1	
	baz=313,slow=75,SNR=304							
LZH	**Lanzhou**	**29.40**	**279**	*eP*		P	02 14 22.8	+6.0
LZH				pP		sP	02 14 38.0	+16
LZH				sP		pP	02 14 45.3	+25
LZH				pmax	pmax			
	comp=Z,15nm,1.2s							
H11S1	**WAKE ISLAND Hy**	**29.46**	**122**	T		T	02 44 56.6	
	baz=314,slow=75,SNR=190							
H11S3	**WAKE ISLAND Hy**	**29.46**	**122**	T		T	02 44 56.8	
	baz=314,slow=75,SNR=182							
H11S2	**WAKE ISLAND Hy**	**29.48**	**122**	T		T	02 45 02.9	
	baz=314,slow=75,SNR=117							
CD2	**Chengdu**	**31.01**	**269**	P		**P**	**02 14 29.6**	**-1.3**
CD2				pmax	pmax			
	comp=Z,1.0nm,0.5s							
GTA	**Gaotai**	**31.90**	**287**	*eP*		**P**	**02 14 40.1**	**+1.3**
GTA				pP		sP	02 14 54.8	+11
GTA				sP		pP	02 15 02.6	+20
GTA				pmax	pmax			
	comp=Z,4.0nm,0.9s							
BILL	**Bilibino**	**34.15**	**17**	*i* P		**P**	**02 14 57.6**	**-0.4**
BILL				pmax	pmax			
	comp=Z,8.0nm,1.7s							
KMI	**Kunming**	**34.31**	**261**	P		**P**	**02 15 00.1**	**0.0**
KMI				pmax	pmax			
	comp=Z,12nm,0.5s							
TIXI	**Tiksi**	**35.14**	**354**	P		**P**	**02 15 05.6**	**-0.9**
	comp=Z,1.2nm,0.3s,baz=183,slow=4.8,SNR=5.3							
TIXI	**Tiksi**	**35.14**	**354**	*i* P		**P**	**02 15 06.2**	**-0.3**
TIXI				pmax	pmax			
	comp=Z,4.0nm,1.7s							
WMQ	**Urumqi**	**40.21**	**297**	*eP*		**P**	**02 15 51.0**	**+1.2**
WMQ				pP		sP	02 16 08.3	+13
WMQ				pmax	pmax			
	comp=Z,6.0nm,0.8s							
WMQ				pmax	pmax			
	comp=Z,18nm,6.0s							
CMAR	**Chiang Mai Arr**	**40.87**	**255**	LR		LR	02 32 46.9	
	comp=Z,31nm,21.9s,baz=210,slow=36							
ZAA0	**Zalesovo Array**	**41.38**	**312**	*eP*		**P**	**02 15 57.9**	**-1.3**
ZALV	**Zalesovo Beam**	**41.38**	**312**	P		**P**	**02 15 59.3**	**+0.2**
	comp=Z,1.8nm,0.5s,baz=92,slow=6.4,SNR=8.5							
ZALV				PcP		**PcP**	**02 17 57.2**	**+0.1**
	comp=Z,1.2nm,0.6s,baz=98,slow=4.3,SNR=3.7							
NRIK	**Noril'sk**	**42.93**	**335**	LR		LR	02 34 33.4	
	comp=Z,29nm,21.8s,baz=102,slow=37							
MK01	**Makanchi Array**	**43.51**	**302**	*eP*		**P**	**02 16 17.0**	**+0.3**
MK31	**Makanchi Array**	**43.52**	**302**	*eP*		**P**	**02 16 16.3**	**-0.4**
MK31	**Makanchi Array**	**43.52**	**302**	*eP*		**P**	**02 16 16.3**	**-0.4**
MKAR	**Makanchi Array**	**43.52**	**302**	P		**P**	**02 16 17.4**	**+0.6**
	comp=Z,1.4nm,0.6s,baz=87,slow=10,SNR=13							
MKAR	**Makanchi Array**	**43.52**	**302**	*ce*P		**P**	**02 16 17.7**	**+1.0**
MKAR				pmax	pmax			
	comp=Z,1.0nm,0.6s							
MKAR	**Makanchi Array**	**43.52**	**302**	*eP*		**P**	**02 16 16.1**	**-0.7**
MAKZ	**Makanchi**	**43.73**	**302**	*eP*		**P**	**02 16 18.8**	**+0.4**
MAKZ				pmax	pmax			
	comp=Z,7.0nm,1.6s							
MAKZ	**Makanchi**	**43.73**	**302**	*eP*		**P**	**02 16 18.8**	**+0.4**
	comp=Z,7.2nm,1.6s							
KURK	**Kurchatov**	**45.36**	**308**	*eP*		**P**	**02 16 30.2**	**-1.2**
KURK				pmax	pmax			
	comp=Z,6.0nm,1.0s							
KURK	**Kurchatov**	**45.36**	**308**	*eP*		**P**	**02 16 30.2**	**-1.2**
	comp=Z,5.8nm,1.0s							
SVW2	**Sparrevohn**	**45.87**	**37**	*eP*		**P**	**02 16 36.8**	**+1.5**
	comp=Z,5.1nm,0.9s							
KDAK	**Kodiak Island**	**47.49**	**42**	*i* P		**P**	**02 16 49.0**	**+1.0**
CAST	**Castle Rocks**	**47.54**	**34**	*eP*		**P**	**02 16 49.4**	**+1.0**
	comp=Z,23nm,2.0s							
SPU	**Mount Spurr**	**47.58**	**37**	*eP*		**P**	**02 16 49.1**	**+0.4**
KTH	**Kantishna Hill**	**48.06**	**34**	*eP*		**P**	**02 16 53.8**	**+1.3**
	comp=Z,8.2nm,1.0s							
MLY	**Manley**	**48.15**	**32**	*eP*		**P**	**02 16 55.2**	**+2.1**
	comp=Z,3.4nm,0.8s							
MCK	**McKinley**	**48.95**	**34**	*eP*		**P**	**02 16 59.8**	**+0.6**
MCK				pmax	pmax			
	comp=Z,11nm,1.5s							
MCK	**McKinley**	**48.95**	**34**	*eP*		**P**	**02 16 59.8**	**+0.6**
	comp=Z,11nm,1.5s							
RND	**Reindeer**	**49.00**	**34**	*eP*		**P**	**02 17 00.2**	**+0.5**
RND				pmax	pmax			
	comp=Z,4.0nm,1.0s							
RND	**Reindeer**	**49.00**	**34**	*eP*		**P**	**02 17 00.2**	**+0.5**
	comp=Z,4.4nm,1.0s							
TKM2	**Tokmak 2**	**49.01**	**298**	*eP*		**P**	**02 17 01.1**	**+0.9**
TKM2				pmax	pmax			
	comp=Z,6.0nm,1.2s							
TKM2	**Tokmak 2**	**49.01**	**298**	*eP*		**P**	**02 17 01.1**	**+0.9**
	comp=Z,6.0nm,1.2s							
MDM	**Murphy Dome**	**49.21**	**32**	*eP*		**P**	**02 17 02.2**	**+1.0**
	comp=Z,5.5nm,1.0s							
IL1	**Eielson Array**	**49.79**	**32**	*eP*		**P**	**02 17 05.9**	**+0.3**
IL1				*e*PcP		**PcP**	**02 18 25.8**	**-0.4**
ILAR	**Eielson Array**	**49.79**	**32**	P		**P**	**02 17 06.2**	**+0.6**
	comp=Z,2.0nm,0.7s,baz=272,slow=6.7,SNR=24							
ILB	**Eielson Array**	**49.79**	**32**	*eP*		**P**	**02 17 06.4**	**+0.8**
AAK	**Ala-Archa**	**49.87**	**298**	*i* P		**P**	**02 17 06.2**	**-0.5**
AAK				pmax	pmax			
	comp=Z,3.0nm,1.0s							
BRVK	**Borovoye**	**50.09**	**312**	*i* P		**P**	**02 17 07.8**	**-0.2**
BRVK				pmax	pmax			
	comp=Z,4.0nm,1.2s							
BRVK	**Borovoye**	**50.09**	**312**	*eP*		**P**	**02 17 07.7**	**-0.4**
	comp=Z,4.1nm,1.1s							
ZRNK	**Zerenda**	**50.87**	**312**	*eP*		**P**	**02 17 13.6**	**-0.3**
ZRNK				pmax	pmax			
	comp=Z,5.0nm,0.8s							
ZRNK	**Zerenda**	**50.87**	**312**	*eP*		**P**	**02 17 13.6**	**-0.3**
	comp=Z,5.2nm,0.8s							
MENT	**Mentasta**	**51.36**	**35**	*eP*		**P**	**02 17 19.3**	**+1.8**
	comp=Z,4.7nm,1.0s							
KKAR	**Karatay Array**	**52.51**	**300**	*eP*		**P**	**02 17 27.0**	**+0.6**
KKAR	**Karatay Array**	**52.51**	**300**	*eP*		**P**	**02 17 27.0**	**+0.6**
INK	**Inuvik**	**54.63**	**27**	P		**P**	**02 17 42.1**	**+0.7**
	comp=Z,1.6nm,0.7s,baz=315,slow=7.6,SNR=6.2							
ARU	**Arti**	**55.87**	**318**	*c iP*		**P**	**02 17 49.7**	**-0.9**
ARU							02 19 52.6	
ARU				S		**S**	**02 25 34.8**	**-2.7**
ARU				SS		**SS**	**02 29 18.5**	**-4.2**
ARU				pmax	pmax			
	comp=Z,7.0nm,1.2s							
WRAB	**Tennant Creek**	**57.03**	**187**	*i* P		**P**	**02 17 59.2**	**0.0**
WRAB				pmax	pmax			
	comp=Z,65nm,2.5s							
WRAB	**Tennant Creek**	**57.03**	**187**	*eP*		**P**	**02 17 58.7**	**-0.5**
	comp=Z,3.3nm,0.6s							
WRA	**Warramunga Arr**	**57.04**	**187**	P		**P**	**02 17 59.3**	**0.0**
	comp=Z,9.0nm,0.6s,baz=3.9,slow=7.3,SNR=34							
ABKAR	**Akbulak array**	**57.38**	**310**	*eP*		**P**	**02 18 01.1**	**-0.4**
AS01	**Alice Springs**	**60.76**	**187**	*eP*		**P**	**02 18 25.1**	**0.0**
ASAR	**Alice Springs**	**60.77**	**187**	P		**P**	**02 18 25.6**	**+0.4**
	comp=Z,2.6nm,0.7s,baz=20,slow=7.1,SNR=14							
RES	**Resolute Bay**	**62.70**	**14**	*eP*		**P**	**02 18 36.5**	**-1.0**
RES				pmax	pmax			
	comp=Z,6.0nm,1.2s							
RES	**Resolute Bay**	**62.70**	**14**	*eP*		**P**	**02 18 36.5**	**-1.0**
	comp=Z,6.3nm,1.2s							
GEYT	**Alibeck**	**63.22**	**299**	P		**P**	**02 18 42.4**	**+0.8**
	comp=Z,2.7nm,0.7s,baz=32,slow=4.1,SNR=5.2							
ARCES	**ARCESS Array B**	**63.70**	**339**	P		**P**	**02 18 44.6**	**+0.4**
	comp=Z,3.3nm,0.9s,baz=38,slow=8.0,SNR=4.5							
YKA	**Yellowknife Ar**	**64.08**	**30**	P		**P**	**02 18 47.4**	**+0.5**
	comp=Z,0.4nm,0.7s,baz=306,slow=7.1,SNR=7.9							
FINES	**FINESS Array B**	**68.44**	**332**	P		**P**	**02 19 15.1**	**+0.2**
	comp=Z,3.5nm,0.7s,baz=58,slow=7.2,SNR=10.0							
STKA	**Stephens Creek**	**68.63**	**179**	P		**P**	**02 19 16.4**	**+0.2**
	comp=Z,2.6nm,0.8s,baz=19,slow=7.1,SNR=4.8							
KBZ	**Khabaz**	**70.35**	**310**	P		**P**	**02 19 27.4**	**+0.4**
	comp=Z,1.9nm,0.9s,baz=8.3,slow=4.1,SNR=3.6							
KIV	**Kislovodsk**	**70.36**	**311**	*eP*		**P**	**02 19 26.7**	**-0.4**
KIV				pmax	pmax			
	comp=Z,6.0nm,1.0s							
AKASG	**Malin Array Be**	**73.83**	**322**	P		**P**	**02 19 47.3**	**-0.4**
	comp=Z,1.8nm,0.6s,baz=46,slow=5.9,SNR=13							
KIEV	**Kiev**	**73.84**	**322**	*eP*		**P**	**02 19 47.3**	**-0.5**
KIEV				pmax	pmax			
	comp=Z,3.0nm,0.8s							
KIEV	**Kiev**	**73.84**	**322**	*eP*		**P**	**02 19 45.6**	**-2.1**
	comp=Z,4.6nm,0.9s							
NB2	**NORSAR Subarra**	**73.86**	**337**	P		**P**	**02 19 48.5**	**+0.7**
	comp=Z,1.1nm,0.8s,baz=40,slow=5.9							
NOA	**NORSAR Array B**	**73.86**	**337**	P		**P**	**02 19 48.1**	**+0.4**
	comp=Z,1.5nm,0.7s,baz=39,slow=5.8,SNR=5.3							
DLMT	**Dillon**	**74.76**	**44**	*eP*		**P**	**02 19 53.7**	**+0.3**
	comp=Z,8.6nm,0.7s							
MCMT	**McKenzie Canyo**	**74.94**	**45**	*eP*		**P**	**02 19 54.0**	**-0.6**
NVAR	**Mina Array Bea**	**75.48**	**53**	P		**P**	**02 19 59.1**	**+1.3**
	comp=Z,1.7nm,0.6s,baz=283,slow=5.3,SNR=3.7							
H17A	**Grant Village**	**76.49**	**44**	*eP*		**P**	**02 20 05.5**	**+2.1**
	comp=Z,2.7nm,0.8s							
R11A	**Troy Canyon, C**	**77.24**	**52**	*eP*		**P**	**02 20 08.5**	**+0.8**
	comp=Z,2.9nm,1.0s							
BW06	**Boulder Array**	**78.09**	**45**	*eP*		**P**	**02 20 12.6**	**+0.1**
PDAR	**Pinedale Array**	**78.09**	**45**	P		**P**	**02 20 13.3**	**+0.9**
	comp=Z,0.9nm,0.7s,baz=275,slow=2.5,SNR=9.3							
PSUT	**Pine Spring**	**78.21**	**51**	*eP*		**P**	**02 20 12.6**	**-0.6**
	comp=Z,7.4nm,0.8s							
BRTR	**Keskin Array B**	**78.31**	**311**	P		**P**	**02 20 15.0**	**+1.4**
	comp=Z,0.7nm,0.6s,baz=76,slow=7.6,SNR=4.5							
KNB	**Kanab**	**79.79**	**51**	*eP*		**P**	**02 20 22.6**	**+0.8**
KNB				pmax	pmax			
	comp=Z,11nm,1.4s							
KNB	**Kanab**	**79.79**	**51**	*eP*		**P**	**02 20 22.6**	**+0.8**
	comp=Z,11nm,1.4s							
RAYN	**Ar Rayn**	**80.01**	**292**	*eP*		**P**	**02 20 22.5**	**-0.6**
	comp=Z,14nm,1.8s							
DPC	**Dobruska-Polom**	**80.04**	**327**	*eP*		**P**	**02 20 25.1**	**+2.3**
DPC	**Dobruska-Polom**	**80.04**	**327**	*i*e*P*		**P**	**02 20 25.1**	**+2.3**
CLL	**Collm**	**80.70**	**330**	*i* P		**P**	**02 20 27.0**	**+0.8**
	comp=Z,13nm,1.9s							
CLL	**Collm**	**80.70**	**330**	*i* P		**P**	**02 20 27.0**	**+0.8**
CLL				pmax	pmax			
	comp=Z,13nm,1.9s							
KHC	**Kasperske Hory**	**82.13**	**328**	*eP*		**P**	**02 20 33.9**	**0.0**
KHC	**Kasperske Hory**	**82.13**	**328**	*eP*		**P**	**02 20 33.9**	**0.0**
GERES	**GERESS Array B**	**82.30**	**328**	P		**P**	**02 20 34.9**	**0.0**
	comp=Z,0.5nm,0.4s,baz=34,slow=5.3,SNR=4.2							
X16A	**Lo Mia Camp, P**	**82.30**	**53**	*eP*		P	02 20 31.7	-3.6
	comp=Z,3.3nm,0.9s							
ANMO	**Albuquerque**	**85.05**	**49**	*eP*		**P**	**02 20 49.8**	**+0.4**
ANMO				pmax	pmax			
	comp=Z,3.0nm,1.1s							
ANMO	**Albuquerque**	**85.05**	**49**	*eP*		**P**	**02 20 49.8**	**+0.4**
	comp=Z,3.2nm,1.1s							
TX31	**Lajitas Ar. Si**	**90.61**	**52**	*eP*		**P**	**02 21 17.1**	**+1.1**
TXAR	**Lajitas Array**	**90.61**	**52**	P		**P**	**02 21 16.6**	**+0.6**
	comp=Z,0.7nm,0.7s,baz=273,slow=3.2,SNR=7.0							
LPAZ	**La Paz**	**147.23**	**58**	PKPbc		**PKPbc**	**02 27 58.4**	**+0.5**
	comp=Z,2.5nm,0.8s,baz=354,slow=2.5,SNR=8.1							

*ISCJB **18** 02:08:58.0±0.7, 19.8S±0.2×177.6W±0.1, h500km, mb4.0/12, Error ellipse: s-maj=27.9km s-min=9.0km az=146.1*
*IDC **18** 02:09:00.6±2.1, 19.66S×177.64W, h520km±23km, mb3.6/12, mb1 3.8/13, mb1mx3.5/41, mbtmp4.5/13, Error ellipse: s-maj=25.7km s-min=12.8km az=152.0*
ISC 18 02:08:59.1±0.8, **19.7S**±0.2×**177.6W**±0.1, **h500**km, **n18,**
σ1**s29/18, mb4.1**/12, **Fiji Islands region**

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
AFI	**Afiamalu**	**7.99**	**45**	P		P	**02 10 57.4**	**+1.8**
	8.7nm,0.3s,baz=5.0,slow=6.3,SNR=12							
AFI				S		**S**	**02 12 29.5**	**-1.5**
	9.1nm,0.3s,baz=254,slow=22,SNR=6.3							
CTA	**Charters Tower**	**33.94**	**263**	P		**P**	**02 15 00.7**	**+0.4**
	14nm,0.5s,baz=91,slow=11,SNR=23							
PMG	**Port Moresby**	**35.51**	**282**	P		**P**	**02 15 14.0**	**+0.5**
	10nm,0.8s,baz=96,slow=9.2,SNR=4.0							
STKA	**Stephens Creek**	**38.49**	**243**	P		**P**	**02 15 37.8**	**-0.1**
	13nm,0.9s,baz=95,slow=10,SNR=19							
ASAR	**Alice Springs**	**45.07**	**256**	P		**P**	**02 16 29.6**	**-0.5**
	21nm,0.8s,baz=87,slow=8.6,SNR=144							
WRA	**Warramunga Arr**	**45.08**	**261**	P		**P**	**02 16 29.3**	**-1.0**
	7.1nm,0.6s,baz=95,slow=7.5,SNR=36							
FITZ	**Fitzroy Crossi**	**53.50**	**262**	P		**P**	**02 17 32.2**	**-0.4**
	4.1nm,0.5s,baz=72,slow=4.4,SNR=18							
VNDA	**Vanda**	**58.79**	**185**	P		**P**	**02 18 08.0**	**-0.2**
	0.8nm,0.7s,baz=341,slow=6.3,SNR=6.7							
TXAR	**Lajitas Array**	**86.30**	**57**	P		**P**	**02 20 48.6**	**+0.6**
	1.4nm,0.7s,baz=217,slow=6.8,SNR=24							
ILAR	**Eielson Array**	**87.41**	**13**	P		**P**	**02 20 51.4**	**-0.8**
	0.5nm,0.8s,baz=227,slow=5.4,SNR=4.8							
PDAR	**Pinedale Array**	**88.10**	**43**	P		**P**	**02 20 56.3**	**0.0**
	0.9nm,0.6s,baz=193,slow=3.7,SNR=6.9							
CMAR	**Chiang Mai Arr**	**90.17**	**289**	P		**P**	**02 21 07.2**	**+1.0**
	1.1nm,0.3s,baz=104,slow=2.3,SNR=5.5							
YKA	**Yellowknife Ar**	**95.59**	**25**	P		**P**	**02 21 29.1**	**-0.8**
	0.4nm,1.0s,baz=247,slow=4.6,SNR=3.9							
MKAR	**Makanchi Array**	**110.87**	**314**	PKiKP		**PKiKP**	**02 26 32.9**	**-2.1**
	0.2nm,0.5s,baz=96,slow=2.9,SNR=2.4							
EKA	**Eskdalemuir Ar**	**144.13**	**5**	PKP		PKPbc	02 27 35.5	-1.1
	0.7nm,0.8s,baz=323,slow=2.9,SNR=3.6							
BRTR	**Keskin Array B**	**146.53**	**313**	PKPbc		**PKPdf**	**02 27 42.9**	**+0.9**
	0.9nm,0.5s,baz=140,slow=5.1,SNR=6.6							
MMAI	**Mount Meron Ar**	**147.69**	**301**	PKPbc		**PKPdf**	**02 27 46.9**	**+2.8**
	3.1nm,0.7s,baz=35,slow=5.3,SNR=4.2							
GERES	**GERESS Array B**	**149.48**	**345**	PKPbc		**PKPbc**	**02 27 50.3**	**-1.3**
	0.2nm,0.3s,baz=351,slow=2.5,SNR=3.3							

*IDC **18** 02:14:27.1±6.8, 20.02S×178.78W, h564km±75km, mb3.1/7, mb1 3.4/7, mb1mx3.0/38, mbtmp3.9/7, Error ellipse: s-maj=105.3km s-min=31.7km az=155.0*
*ISCJB **18** 02:14:33.3±1.9, 20.3S±0.7×179.0W±0.3, h665km, mb3.5/7, Error ellipse: s-maj=104.4km s-min=17.1km az=155.8*
ISC 18 02:14:35.1±2.0, **20.1S**±0.6×**179.0W**±0.3, **h665**km, **n14,**
σ0**s87/12, mb3.5/7, Fiji Islands region**

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
CTA	**Charters Tower**	**32.56**	**264**	P		**P**	**02 20 15.4**	**-0.1**
	2.4nm,0.4s,baz=87,slow=11,SNR=6.9							
ASAR	**Alice Springs**	**43.66**	**256**	P		**P**	**02 21 44.5**	**0.0**
	1.8nm,0.6s,baz=98,slow=7.6,SNR=18							
WRA	**Warramunga Arr**	**43.69**	**262**	P		**P**	**02 21 44.4**	**-0.4**
	0.8nm,0.3s,baz=95,slow=7.6,SNR=12							
TXAR	**Lajitas Array**	**87.67**	**58**	P		**P**	**02 26 15.2**	**-0.6**
	0.4nm,0.8s,baz=224,slow=5.2,SNR=4.5							
ILAR	**Eielson Array**	**88.16**	**13**	P		**P**	**02 26 17.1**	**0.0**
	0.9nm,0.9s,baz=223,slow=5.7,SNR=7.7							
PDAR	**Pinedale Array**	**89.35**	**44**	P		**P**	**02 26 22.9**	**-0.5**
	0.3nm,0.5s,baz=118,slow=2.5,SNR=4.3							
YKA	**Yellowknife Ar**	**96.57**	**25**	P		**P**	**02 26 55.3**	**-0.2**
	0.1nm,0.6s,baz=242,slow=4.7,SNR=2.7							
FINES	**FINESS Array B**	**135.12**	**343**	PKP		**PKPdf**	**02 32 41.9**	**+1.5**
	1.5nm,0.8s,baz=225,slow=0.6,SNR=3.0							
HFS	**Hagfors**	**139.00**	**350**	PKhKP	PKPpre		02 32 42.0	
	1.0nm,0.8s,baz=116,slow=3.4,SNR=4.2							
AKASG	**Malin Array Be**	**142.20**	**331**	PKhKP	PKPpre		02 32 51.5	
	1.9nm,0.4s,baz=41,slow=4.3,SNR=20							
EKA	**Eskdalemuir Ar**	**144.69**	**4**	PKP		**PKPab**	**02 33 00.3**	**+0.7**
	0.5nm,0.7s,baz=336,slow=3.1,SNR=3.1							
BRTR	**Keskin Array B**	**145.86**	**312**	PKPbc		**PKPab**	**02 33 03.9**	**-1.1**
	0.7nm,0.6s,baz=115,slow=1.8,SNR=4.5							
GERES	**GERESS Array B**	**149.56**	**343**	PKPbc		**PKPbc**	**02 33 12.9**	**+1.2**
	0.2nm,0.3s,baz=1.9,slow=2.9,SNR=4.7							
DAVOX	**Davos/Dischmat**	**152.42**	**347**	PKPbc		**PKPbc**	**02 33 19.1**	**+0.8**
	1.2nm,0.6s,baz=151,slow=22,SNR=4.2							

*ISCJB **18** 02:23:58.3±0.3, 43.76N±0.06×143.57E±0.07, h177km±3km, mb3.4/12, Error ellipse: s-maj=9.3km s-min=7.9km az=154.5*
*JMA **18** 02:23:59.1±0.2, 43.80N×143.52E, h176km±2km, M3.4*
*IDC **18** 02:23:59.7±0.8, 43.86N×143.43E, h174km±7km, mb3.1/12, mb1 3.4/14, mb1mx3.2/59, mbtmp3.6/14, Error ellipse: s-maj=19.5km s-min=13.5km az=115.0*
ISC 18 02:23:59.3±0.7, **43.78N**±0.07×**143.55E**±0.05, **h173**km±6km,
n31, σ0**s67/38, mb3.4**/12, **Hokkaido region**

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
JMP	**Maruseppu**	**0.27**	**329**	P		**Pn**	**02 24 22.5**	**0.0**
JTKR	**Abashiri--Toko**	**0.32**	**54**	P		**Pn**	**02 24 22.9**	**+0.3**
JTKR				*e*S		**Sn**	**02 24 40.4**	**-0.1**
JAR	**Ashorobuto**	**0.51**	**162**	P		**Pn**	**02 24 23.8**	**+0.5**
JAR				*e*S		**Sn**	**02 24 42.1**	**+0.4**
JKK2	**Kamakawa 2**	**0.59**	**279**	P		**Pn**	**02 24 23.8**	**+0.1**
ASAJ	**Asahikawa**	**0.77**	**296**	P		**Pn**	**02 24 24.9**	**+0.3**
	81nm,0.3s,baz=72,slow=9.6,SNR=287							
ASAJ	**Asahikawa**	**0.77**	**296**	P		**Pn**	**02 24 24.7**	**+0.1**
JNK	**Nakash**	**0.87**	**103**	P		**Pn**	**02 24 25.8**	**+0.5**
JFR	**Furan**	**0.93**	**229**	P		**Pn**	**02 24 26.2**	**+0.4**
JFR				*e*S		**Sn**	**02 24 46.9**	**+0.8**
JAK	**Akkeshi**	**1.15**	**133**	P		**Pn**	**02 24 27.3**	**-0.1**
JAK				*e*S		**Sn**	**02 24 48.6**	**-0.4**
JRA	**Rausu**	**1.15**	**82**	P		**Pn**	**02 24 28.2**	**+0.8**
JCH	**Churui**	**1.17**	**187**	P		**Pn**	**02 24 27.4**	**-0.3**
JCH				*e*S		**Sn**	**02 24 48.3**	**-1.2**
JHR	**Hokuryu**	**1.32**	**269**	P		**Pn**	**02 24 29.1**	**+0.1**
JSE	**Soyaes**	**1.37**	**330**	P		**Pn**	**02 24 29.0**	**-0.3**
JNBK	**Urakawa-nobuka**	**1.61**	**202**	P		**Pn**	**02 24 31.5**	**-0.3**
JNBK				*e*S		**Sn**	**02 24 55.7**	**-1.1**
NEM2	**Nemuro 2**	**1.65**	**104**	P		**Pn**	**02 24 31.9**	**-0

GERES	**GERESS Array B**	**17.03 332**	P	**P**	**02 29 42.0**	**+0.5**
	comp=E,0.1nm,0.3s,baz=150,slow=10,SNR=3.3						
TORD	**Torodi Ar. Bea**	**30.49 232**	P	**P**	**02 31 53.5**	**-1.3**
	comp=E,0.6nm,0.7s,baz=34,slow=8.1,SNR=6.3						
TORD			LR	LR	02 46 29.1		
	comp=E,45nm,18.6s,baz=190,slow=41						
ARU	**Arti**	**31.30 35**	LR	LR	02 46 16.1		
	comp=E,24nm,20.1s,baz=88,slow=39						
MKAR	**Makanchi Array**	**43.68 56**	P	**P**	**02 33 46.7**	**+0.2**
	comp=E,0.6nm,0.6s,baz=276,slow=7.1,SNR=6.8						
ZALV	**Zalesovo Beam**	**45.08 46**	P	**P**	**02 33 57.1**	**-0.4**
	comp=E,0.4nm,0.3s,baz=257,slow=6.7,SNR=2.6						
SONM	**Songino Array**	**59.49 50**	P	**P**	**02 35 44.9**	**+0.1**
	comp=E,0.2nm,0.5s,baz=268,slow=8.7,SNR=2.7						
YKA	**Yellowknife Ar**	**78.34 342**	P	**P**	**02 37 41.1**	**-0.5**
	comp=E,0.3nm,0.8s,baz=30,slow=5.3,SNR=6.2						

NIED ***18*** *02:28:00,37.60N×141.60E,h50km,Mw3.7 Best double couple: M○3.68000×10^14 NP1:φs179.00000°,δ21.00000°, λ57.00000°. NP2:φs34.00000°,δ72.00000°,λ102.00000°.*
ISCJB ***18*** *02:28:37.4±1.0,37.61N±0.06×141.6E±0.1,h61km±7km, mb3.7/12, Error ellipse: s-maj=16.8km s-min=8.1km az=19.3*
JMA ***18*** *02:28:38.1±0.1,37.59N×141.64E,h49km±2km,M3.5*
JMA Felt I J1.
IDC ***18*** *02:28:40.8±3.7,37.58N×141.55E,h76km±34km,mb3.4/12, mb1 3.5/13,mb1mx3.3/60,mbtmp3.6/13,MS2.7/2, Ms1 2.7/2,ms1mx2.3/27, Error ellipse: s-maj=24.7km s-min=23.4km az=106.0*

ISC 18 02:28:37.4±1.8,37.61N±0.06×141.7E±0.1,h44km±15km, n28,σ1ᵗ14/27,mb3.6/12,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**0.73**	**251**	P	**Pn**	**02 28 51.4**	**0.0**
JFK				S	**Sn**	**02 29 00.8**	**-0.7**
JMM	**Marumori**	**0.80**	**289**	P	**Pn**	**02 28 52.2**	**0.0**
JMM				S	**Sn**	**02 29 02.2**	**-0.8**
JIO	**Ouri**	**0.90**	**340**	P	**Pn**	**02 28 54.5**	**+0.9**
JIO				*e*S	**Sn**	**02 29 05.7**	**+0.2**
ONAJ	**Iwakimizuishiy**	**0.91**	**236**	P	**Pn**	**02 28 53.7**	**-0.1**
ONAJ				S	**Sn**	**02 29 04.8**	**-0.9**
JFT	**Otama**	**1.12**	**266**	P	**Pn**	**02 28 57.1**	**+0.4**
JFT				*e*S	**Sn**	**02 29 10.7**	**-0.2**
JOU	**Okura**	**1.14**	**312**	P	**Pn**	**02 28 57.1**	**+0.2**
JHO	**Hitachi**	**1.37**	**224**	P	**Pn**	**02 28 59.9**	**-0.1**
MJAR	**Matsushiro Arr**	**3.02**	**250**	P	**Pn**	**02 29 23.9**	**+1.2**
	1.9nm,0.3s,baz=51,slow=11,SNR=9.6						
MJAR				LR	LR	02 30 55.8	
	comp=Z,41nm,18.6s,baz=75,slow=48						
MAT	**Matsushiro**	**3.02**	**250**	P	**Pn**	**02 29 24.6**	**+1.9**
MAT				S	**Sn**	**02 30 01.7**	**+4.0**
SONM	**Songino Array**	**27.69**	**303**	P	**P**	**02 34 20.9**	**-0.4**
	0.4nm,0.5s,baz=111,slow=9.5,SNR=4.1						
H11N2	**WAKE ISLAND Hy**	**28.22**	**122**	T	T	03 04 49.9	
	baz=316,slow=75,SNR=9.0						
H11N1	**WAKE ISLAND Hy**	**28.23**	**122**	T	T	03 04 50.6	
	baz=316,slow=75,SNR=8.4						
H11N3	**WAKE ISLAND Hy**	**28.24**	**122**	T	T	03 04 51.3	
	baz=316,slow=75,SNR=7.5						
H11S1	**WAKE ISLAND Hy**	**28.96**	**124**	T	T	03 05 45.1	
	baz=318,slow=76,SNR=5.0						
H11S3	**WAKE ISLAND Hy**	**28.96**	**124**	T	T	03 05 47.7	
	baz=318,slow=76,SNR=6.4						
H11S2	**WAKE ISLAND Hy**	**28.97**	**124**	T	T	03 05 47.1	
	baz=318,slow=76,SNR=5.6						
ZALV	**Zalesovo Beam**	**41.72**	**312**	LR	LR	02 52 41.4	
	comp=Z,37nm,21.2s,baz=70,slow=35						
MKAR	**Makanchi Array**	**44.04**	**302**	P	**P**	**02 36 40.0**	**-0.7**
	0.4nm,0.5s,baz=86,slow=10.0,SNR=4.9						
ILAR	**Eielson Array**	**48.87**	**33**	P	**P**	**02 37 18.9**	**+0.6**
	0.4nm,0.7s,baz=274,slow=5.4,SNR=6.6						
INK	**Inuvik**	**53.76**	**27**	P	**P**	**02 37 55.9**	**+1.2**
	0.8nm,0.6s,baz=288,slow=7.3,SNR=4.3						
WRA	**Warramunga Arr**	**57.66**	**188**	P	**P**	**02 38 22.8**	**-0.5**
	0.2nm,0.5s,baz=5.7,slow=7.4,SNR=4.5						
AKTO	**Aktyubinsk**	**58.49**	**312**	P	**P**	**02 38 28.7**	**-0.1**
	1.0nm,0.8s,baz=97,slow=15,SNR=4.0						
YKA	**Yellowknife Ar**	**63.18**	**30**	P	**P**	**02 39 00.7**	**+0.2**
	0.2nm,0.7s,baz=298,slow=6.2,SNR=4.5						
FINES	**FINESS Array B**	**68.43**	**332**	P	**P**	**02 39 33.2**	**-1.1**
	1.0nm,0.7s,baz=45,slow=8.4,SNR=4.2						
HFS	**Hagfors**	**73.67**	**336**	P	**P**	**02 40 05.8**	**-0.2**
	3.2nm,1.0s,baz=61,slow=12,SNR=5.3						
NOA	**NORSAR Array B**	**73.76**	**337**	P	**P**	**02 40 06.3**	**-0.3**
	0.6nm,0.7s,baz=36,slow=6.0,SNR=2.6						
AKASG	**Malin Array Be**	**74.00**	**322**	P	**P**	**02 40 07.0**	**-1.1**
	0.6nm,0.4s,baz=47,slow=6.0,SNR=6.8						
TXAR	**Lajitas Array**	**89.56**	**53**	P	**P**	**02 41 31.2**	**+0.7**
	0.3nm,0.8s,baz=242,slow=1.9,SNR=4.1						

NIED ***18*** *02:31:00,41.70N×143.80E,h26km,Mw3.8 Best double couple: M○6.38000×10^14 NP1:φs248.00000°,δ29.00000°, λ133.00000°. NP2:φs21.00000°,δ69.00000°,λ69.00000°.*
IDC ***18*** *02:31:24.8±3.3,40.82N×143.89E,h0km,mb3.7/7, mb1 3.8/8,mb1mx3.5/51,mbtmp3.7/8,ML3.4/1,MS3.3/4, Ms1 3.3/4,ms1mx2.8/46, Error ellipse: s-maj=76.6km s-min=27.8km az=168.0*
JMA ***18*** *02:31:34.2±0.3,41.67N×143.78E,h50km±4km,M3.5*

ISC 18 02:31:33.7±1.3,41.70N±0.09×143.85E±0.09,h27km,n25, σ0ᵗ77/18,mb3.7/7,2C-1D,Hokkaido region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JEM	**Erimo**	**0.61**	**302**	||P	**Pb**	**02 31 45.9**	**+0.2**
JEM				*e*S	**Sn**	**02 31 55.6**	**+0.2**
JCH	**Churui**	**0.98**	**339**	P	**Pn**	**02 31 51.7**	**0.0**
JCH				*e*S	**Sn**	**02 32 06.3**	**+1.5**
JNBK	**Urakawa-nobuka**	**1.00**	**306**	||P	**Pb**	**02 31 52.8**	**+0.4**
JOB	**Onbets**	**1.21**	**359**	P	**Pb**	**02 31 55.6**	**-0.2**
JAR	**Ashorobuto**	**1.60**	**358**	||P	**Pn**	**02 32 00.4**	**+0.2**
JAR				*e*S	**Sn**	**02 32 19.3**	**-0.6**
JFR	**Furan**	**1.73**	**328**	P	**Pn**	**02 32 02.7**	**+0.7**
ASAJ	**Asahikawa**	**2.59**	**340**	Pn	**Pb**	**02 32 19.8**	**+0.5**
	3.0nm,0.3s,baz=206,slow=13,SNR=6.7						
ASAJ				Sn	**Sb**	**02 32 49.7**	**-1.0**
	3.6nm,0.3s,baz=272,slow=12,SNR=5.5						
USRK	**Ussuriysk Ar.**	**9.05**	**290**	LR	LR	02 37 32.0	
	comp=Z,99nm,18.2s,baz=131,slow=39						
KSRS	**Korea Array**	**13.00**	**256**	LR	LR	02 39 05.7	
	comp=Z,63nm,19.0s,baz=100,slow=36						
SONM	**Songino Array**	**27.10**	**296**	P	**P**	**02 37 14.0**	**-0.2**
	0.6nm,0.7s,baz=78,slow=9.3,SNR=5.4						
TLY	**Talaya**	**28.99**	**304**	LR	LR	02 49 02.0	
	comp=Z,40nm,20.8s,baz=65,slow=36						
H11N2	**WAKE ISLAND Hy**	**29.36**	**131**	T	T	03 08 29.3	
	baz=324,slow=76,SNR=145						
H11N1	**WAKE ISLAND Hy**	**29.37**	**131**	T	T	03 08 30.5	
	baz=324,slow=76,SNR=158						
H11N3	**WAKE ISLAND Hy**	**29.38**	**131**	T	T	03 08 27.3	
	baz=324,slow=76,SNR=106						
H11S1	**WAKE ISLAND Hy**	**30.24**	**133**	T	T	03 09 38.7	
	baz=325,slow=76,SNR=111						
H11S3	**WAKE ISLAND Hy**	**30.24**	**133**	T	T	03 09 33.7	
	baz=325,slow=76,SNR=124						
H11S2	**WAKE ISLAND Hy**	**30.25**	**133**	T	T	03 09 36.4	
	baz=325,slow=76,SNR=120						
ZALV	**Zalesovo Beam**	**40.33**	**308**	P	**P**	**02 39 08.0**	**-0.5**
	0.7nm,0.4s,baz=80,slow=7.4,SNR=6.0						
MKAR	**Makanchi Array**	**43.40**	**298**	P	**P**	**02 39 32.5**	**-1.3**
	0.5nm,0.5s,baz=83,slow=7.3,SNR=4.9						
ILAR	**Eielson Array**	**44.57**	**35**	P	**P**	**02 39 44.2**	**+1.3**
	0.6nm,0.9s,baz=276,slow=9.0,SNR=6.6						
INK	**Inuvik**	**49.39**	**29**	P	**P**	**02 40 20.9**	**+0.5**
	0.3nm,0.4s,baz=292,slow=2.2,SNR=3.3						
FINES	**FINESS Array B**	**65.57**	**332**	P	**P**	**02 42 14.4**	**-0.1**
	1.7nm,0.7s,baz=58,slow=7.2,SNR=10						
AKASG	**Malin Array Be**	**71.76**	**323**	P	**P**	**02 42 52.8**	**-0.4**
	0.3nm,0.4s,baz=46,slow=6.0,SNR=5.2						
RAR	**Rarotonga**	**81.46**	**128**	LR	LR	03 15 06.2	
	comp=Z,136nm,20.4s,baz=274,slow=32						
TXAR	**Lajitas Array**	**85.82**	**54**	pP	pP	02 44 22.3	+2.6
	0.3nm,0.7s,baz=316,slow=2.3,SNR=3.6						

ISCJB ***18*** *02:33:39.5±0.6,6.81N±0.04×73.07W±0.05,h162km±6km, Error ellipse: s-maj=9.0km s-min=4.4km az=33.3*
RSNC ***18*** *02:33:42.5±0.6,6.79N×73.15W,h144km±4km,ML2.8*
FUNV ***18*** *02:33:43.4,6.95N×72.90W,h164km,MW3.2*

ISC 18 02:33:38.6±1.4,6.85N±0.04×73.06W±0.05,h171km±9km, n23,σ1ᵗ57/38,Northern Colombia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BARC	**Barichara**	**0.28**	**205**	*i* P	**Pn**	**02 34 01.9**	**0.0**
BARC				*e*S	**Sn**	**02 34 16.6**	**-3.1**
BARC				*i*		02 34 18.6	
	comp=Z,200nm,0.2s						
PAMC	**Pamplona, Colo**	**0.61**	**36**	*e*P	**Pn**	**02 34 04.7**	**+1.2**
PAMC				*e*S	**Sn**	**02 34 21.6**	**-0.9**
BRRC	**Barranca, Sant**	**0.69**	**292**	*e*P	**Pn**	**02 34 03.6**	**+0.2**
BRRC				*i*		02 34 04.0	
	comp=Z,146nm,0.2s						
BRRC				*e*S	**Sn**	**02 34 20.3**	**-1.9**
CBRI	**Barrientos, No**	**0.90**	**17**	*e*P	**Pn**	**02 34 06.4**	**+1.5**
CBRI				*e*S	**Sn**	**02 34 25.1**	**-0.1**
CBRI				*i*		02 34 30.3	
	comp=Z,50nm,0.5s						
GRMC	**Gramalote, San**	**0.90**	**17**	*i* P	**Pn**	**02 34 07.7**	**+2.9**
GRMC				*e*S	**Sn**	**02 34 27.2**	**+2.1**
CAPV	**Capacho**	**1.25**	**36**	*e*P	**Pn**	**02 34 09.5**	**+1.7**
CAPV				*e*S	**Sn**	**02 34 29.4**	**-0.9**
OCAC	**Ocana**	**1.40**	**350**	*e*P	**Pn**	**02 34 10.2**	**+1.1**
OCAC				*e*S	**Sn**	**02 34 32.9**	**+0.2**
YOPC	**Yopal, Colombi**	**1.62**	**157**	*e*P	**Pn**	**02 34 12.6**	**+1.4**
YOPC				*e*S	**Sn**	**02 34 36.0**	**-0.3**
YOPC				*i*		02 34 37.5	
	comp=Z,35nm,0.3s						
NORC	**Norcasia**	**2.20**	**235**	*e*P	**Pn**	**02 34 17.5**	**+0.1**
NORC				*e*S	**Sn**	**02 34 45.8**	**-1.7**
CHIC	**Chingaza**	**2.30**	**197**	*e*P	**Pn**	**02 34 19.9**	**+1.0**
CHIC				*i*		02 34 20.7	
	comp=Z,31nm,0.3s						
CHIC				*e*S	**Sn**	**02 34 49.0**	**-1.2**
VIGV	**El Vigia**	**2.60**	**40**	*e*P	**Pn**	**02 34 22.9**	**+0.9**
VIGV				*e*S	**Sn**	**02 34 52.3**	**-3.4**
SOCV	**Socops**	**2.61**	**57**	*e*P	**Pn**	**02 34 22.9**	**+0.8**
VILC	**Villavicencio,**	**2.79**	**193**	*e*P	**Pn**	**02 34 25.2**	**+0.7**
VILC				*e*S	**Sn**	**02 34 59.5**	**-0.6**
VILC				*i*		02 35 09.1	
	comp=Z,22nm,0.6s						
GUYC	**Guyana, Colomb**	**2.82**	**235**	*e*P	**Pn**	**02 34 26.7**	**+1.6**
GUYC				*e*S	**Sn**	**02 35 00.4**	**-0.8**
GUYC				*i*		02 35 09.6	
	comp=Z,78nm,0.4s						
DBBC	**Dabeiba**	**3.13**	**273**	*e*P	**Pn**	**02 34 29.3**	**+0.7**
TOLC	**Tolima**	**3.18**	**225**	*e*P	**Pn**	**02 34 31.4**	**+2.0**
ELOV	**Elorza**	**3.56**	**87**	*e*P	**Pn**	**02 34 34.9**	**+1.1**
PRAC	**Prado**	**3.60**	**210**	*e*P	**Pn**	**02 34 35.7**	**+1.2**
PRAC				*e*S	**Sn**	**02 35 17.3**	**-0.8**
VIRV	**Villa del Rosa**	**3.69**	**10**	*e*P	**Pn**	**02 34 36.9**	**+1.4**
VIRV				*e*S	**Sn**	**02 35 16.8**	**-3.1**
SANV	**Sanarito**	**4.37**	**53**	*e*P	**Pn**	**02 34 45.8**	**+1.4**
CURV	**Curarigua**	**4.39**	**44**	*e*P	**Pn**	**02 34 46.0**	**+1.3**
BAUV	**El Baul**	**5.39**	**67**	*e*P	**Pn**	**02 34 57.3**	**-0.3**
MAPV	**Macapo**	**5.43**	**57**	*e*P	**Pn**	**02 34 58.8**	**+0.6**

SKHL 18 02:41:34.5±0.5,48.84N×131.29E,h3km±2km,mb3.5/3, Priamurye-Northeastern China border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KHBR	**Khabarovsk**	**2.52**	**97**	*e*rx	rx	02 42 51.0	
KHBR				*e*Sg	Sb	02 42 53.4	+1.6
GRNR	**Gornyy**	**3.84**	**58**	*e*Pg	Pb	02 42 44.0	+1.1
GRNR				AMB	AMB	02 42 44.9	
	14nm,0.8s						
GRNR				*e*Sg	Sg	02 43 35.1	-2.8
GRNR				A	A	02 43 36.1	
	28nm,0.8s						
EKMR	**Ekimchan**	**4.36**	**13**	*e*Pn	Pn	02 42 43.9	+2.2
EKMR				*e*Pg	Pb	02 42 53.0	+1.2
EKMR				AMB	AMB	02 43 07.0	
	4.0nm,0.5s						
EKMR				*e*Sg	Sg	02 43 50.0	-4.6
EKMR				A	A	02 44 03.1	
	62nm,0.6s						
EKMR				A	A	02 44 03.1	
	16nm,0.6s						
TEY	**Ternei**	**5.26**	**134**	*e*Sg	Sg	02 44 18.0	-5.5
ZEA	**Zeya**	**5.52**	**334**	*e*Sg	Sg	02 44 27.2	-4.5
ZEA				A	A	02 44 29.0	
	33nm,0.9s						
BMKR	**Bomnak**	**6.07**	**346**	*e*Pn	Pn	02 43 07.4	+2.3
BMKR				*e*Sg	Sg	02 44 44.7	-4.7
BMKR				A	A	02 44 50.6	
	15nm,0.5s						
KROS	**Kirovskiy**	**6.21**	**336**	*e*Pn	Pn	02 43 09.0	+2.0
KROS				*e*Sg	Sg	02 44 47.8	-6.0
KROS				A	A	02 44 58.0	
	12nm,0.5s						
NKL	**Nikolayevsk**	**7.33**	**50**	*e*Sg	Sg	02 45 23.2	-6.4
NKL				A	A	02 45 36.5	
	15nm,0.8s						

IDC ***18*** *02:56:32.1±0.7,17.42S×167.98E,h0km,mb4.5/15, mb1 4.7/16,mb1mx4.4/43,mbtmp4.5/16,ML3.9/1,MS4.0/17, Ms1 4.0/17,ms1mx3.7/32, Error ellipse: s-maj=22.2km s-min=16.6km az=107.0*
ISCJB ***18*** *02:56:34.7±0.4,17.42S±0.06×167.88E±0.09,h27km, mb4.7/31,MS4.0/14, Error ellipse: s-maj=11.8km s-min=7.9km az=4.5*
NEIC ***18*** *02:56:37.5±0.3,17.45S×167.93E,h35km,mb4.8/7, Error ellipse: s-maj=8.8km s-min=6.6km az=105.0*
NEIC Felt at Port-Vila.
MOS ***18*** *02:56:39.2±1.1,17.34S×167.68E,h54km,mb4.9/18, Error ellipse: s-maj=11.8km s-min=9.1km az=43.8*
BJI ***18*** *02:56:41.0,17.30S×167.70E,h60km,mb4.8/11,mB4.9/5*

ISC 18 02:56:36.1±0.5,17.49S±0.06×168.0E±0.1,h27km,n136, σ1ᵗ03/117,mb4.7/28,MS4.0/14,2C,Vanuatu Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**4.78**	**197**	Pn	**Pn**	**02 57 46.2**	**-0.2**
	5.2nm,0.3s,baz=22,slow=14,SNR=35						
DZM				Sn	**Sn**	**02 58 37.8**	**-3.1**
	15nm,0.3s,baz=113,slow=23,SNR=9.3						
DZM				LR	LR	02 59 30.4	
	comp=Z,2μm,19.9s,baz=44,slow=37						
MSVF	**Nonsavu**	**9.62**	**93**	*e*P	Pn	02 59 01.3	+8.4
MSVF				pmax	pmax		
	comp=Z,99nm,1.3s						
MSVF	**Nonsavu**	**9.62**	**93**	*e*Pn	Pn	02 59 01.2	+8.3
	comp=Z,99nm,1.3s						
HNR	**Honiara**	**11.18**	**315**	LR	LR	03 03 18.5	
	comp=Z,554nm,19.1s,baz=127,slow=36						
HNR	**Honiara**	**11.18**	**315**	P	**Pn**	**02 59 14.4**	**+0.1**
HNR				pmax	pmax		
	comp=Z,235nm,0.9s						
HNR	**Honiara**	**11.18**	**315**	Pn	**Pn**	**02 59 14.4**	**+0.1**
	comp=Z,235nm,0.9s						
EIDS	**Eidsvold**	**17.55**	**241**	*e*Pn	**Pn**	**03 00 39.0**	**0.0**
AFI	**Afiamalu**	**19.82**	**83**	LR	LR	03 06 53.9	
	comp=Z,464nm,20.0s,baz=279,slow=31						
CTA	**Charters Tower**	**20.72**	**259**	P	**P**	**03 01 15.4**	**+0.8**
	comp=Z,20nm,0.9s,baz=78,slow=14,SNR=12						
CTA				LR	LR	03 08 59.5	
	comp=Z,460nm,18.9s,baz=88,slow=36						
PMG	**Port Moresby**	**21.76**	**289**	*i* P	**P**	**03 01 25.3**	**-0.5**
PMG				pmax	pmax		
	comp=Z,35nm,1.2s						
URZ	**Urewera**	**22.18**	**161**	P	**P**	**03 01 30.9**	**+0.8**
	comp=Z,16nm,1.0s,baz=348,slow=9.3,SNR=3.3						
URZ				LR	LR	03 08 58.9	
	comp=Z,509nm,19.5s,baz=348,slow=34						
URZ	**Urewera**	**22.18**	**161**	*e*P	**P**	**03 01 31.5**	**+1.3**
CAN	**Canberra**	**24.50**	**220**	*e*P	**P**	**03 01 54.3**	**+1.0**
CAN				pmax	pmax		
	comp=Z,33nm,1.4s						
CAN	**Canberra**	**24.50**	**220**	*e*P	**P**	**03 01 54.3**	**+1.0**
	comp=Z,33nm,1.4s						
RPZ	**Rata Peaks**	**26.27**	**175**	LR	LR	03 12 27.6	
	comp=Z,239nm,18.2s,baz=16,slow=36						
STKA	**Stephens Creek**	**27.82**	**234**	P	**P**	**03 02 24.3**	**+1.0**
	comp=Z,8.8nm,0.7s,baz=62,slow=7.6,SNR=30						
STKA				LR	LR	03 13 09.7	
	comp=Z,348nm,18.9s,baz=44,slow=36						
WRAB	**Tennant Creek**	**31.91**	**260**	*e*P	**P**	**03 02 58.3**	**-1.3**
WRAB				pmax	pmax		
	comp=Z,4.0nm,1.0s						
WRAB	**Tennant Creek**	**31.91**	**260**	*e*P	**P**	**03 02 58.2**	**-1.3**
	comp=Z,4.4nm,1.0s						
WRA	**Warramunga Arr**	**31.91**	**260**	P	**P**	**03 02 58.2**	**-1.5**
	comp=Z,2.6nm,0.8s,baz=89,slow=9.0,SNR=9.5						
WRA				LR	LR	03 15 33.4	
	comp=Z,205nm,18.7s,baz=90,slow=36						
WRA	**Warramunga Arr**	**31.91**	**260**	P	**P**	**03 02 58.2**	**-1.5**
WRA				pmax	pmax		
	comp=Z,2.0nm,0.8s						
WRA				MLR	MLR		
	comp=Z,205nm,18.7s						
ASAR	**Alice Springs**	**32.42**	**253**	P	**P**	**03 03 03.4**	**-0.8**
	comp=Z,5.2nm,0.6s,baz=78,slow=8.5,SNR=42						
ASAR				ScP	**ScP**	**03 09 35.3**	**+1.9**
	comp=Z,0.1nm,0.3s,baz=88,slow=4.8,SNR=4.2						
ASAR				LR	LR	03 15 57.6	
	comp=Z,475nm,18.0s,baz=81,slow=36						
BBOO	**Buckleboo**	**32.51**	**236**	*e*P	**P**	**03 03 05.3**	**+0.5**
	comp=Z,16nm,1.0s						
GUMO	**Guam**	**38.39**	**322**	LR	LR	03 18 22.3	
	comp=Z,121nm,18.9s,baz=108,slow=34						
TBI	**Tubuai**	**40.21**	**106**	*e*LQ	LQ	03 13 43.3	
	comp=Z,551nm,30.5s						
TBI				*e*LR	LR	03 15 24.9	
	comp=Z,204nm,24.5s						
FITZ	**Fitzroy Crossi**	**40.24**	**262**	P	**P**	**03 04 11.2**	**+0.3**
	comp=Z,12nm,0.7s,baz=87,slow=8.6,SNR=20						
FITZ				LR	LR	03 20 22.0	
	comp=Z,309nm,19.3s,baz=92,slow=36						
FITZ	**Fitzroy Crossi**	**40.24**	**262**	*e*P	**P**	**03 04 11.1**	**+0.2**
	comp=Z,51nm,0.9s						
PPT2	**Papeete2**	**40.42**	**97**	*e*S	S	03 10 31.6	+12
	comp=Z,118nm,22.8s						
PPT2				*e*LR	LR	03 15 29.4	
	comp=Z,258nm,22.0s						
PPT	**Papeete**	**40.42**	**97**	LR	LR	03 17 02.5	
	comp=Z,350nm,19.5s,baz=276,slow=30						
MBWA	**Marble Bar**	**45.53**	**257**	*e*P	**P**	**03 04 53.6**	**-0.2**
	comp=Z,29nm,1.1s						
TAOE	**Nuku Hiva Isla**	**51.11**	**87**	*e*S	S	03 13 00.9	+7.3
	comp=Z,144nm,23.6s						
TAOE				*e*LR	LR	03 20 23.5	
	comp=Z,223nm,22.6s						
VNDA	**Vanda**	**60.13**	**182**	P	**P**	**03 06 41.4**	**+0.7**
	comp=Z,2.1nm,0.9s,baz=359,slow=7.2,SNR=8.0						
MJA0	**Matsu Arr-Jizo**	**60.64**	**333**	*e*P	**P**	**03 06 44.1**	**-0.7**
MJA0				pmax	pmax		
	comp=Z,10.0nm,0.9s						
MJAR	**Matsushiro Arr**	**60.66**	**333**	P	**P**	**03 06 43.9**	**-1.0**
	comp=Z,9.6nm,0.9s,baz=168,slow=7.6,SNR=16						
MJAR				LR	LR	03 30 54.0	
	comp=Z,25nm,21.8s,baz=240,slow=34						
MJAR	**Matsushiro Arr**	**60.66**	**333**	P	**P**	**03 06 43.9**	**-1.0**
MJAR				pmax	pmax		
	comp=Z,9.0nm,0.9s						
MAJO	**Matsushiro**	**60.66**	**333**	*e*P	**P**	**03 06 42.1**	**-2.8**
MAJO				pmax	pmax		
	comp=Z,65nm,0.9s						
MAJO	**Matsushiro**	**60.66**	**333**	*e*P	**P**	**03 06 43.5**	**-1.4**
	comp=Z,10nm,0.9s						
MAT	**Matsushiro**	**60.66**	**333**	P	**P**	**03 06 43.8**	**-1.1**
USRK	**Ussuriysk Ar.**	**69.64**	**333**	P	**P**	**03 07 43.4**	**+0.3**
	comp=Z,1.0nm,0.3s,baz=151,slow=7.7,SNR=8.9						
PSI	**Prapat**	**70.95**	**279**	P	P	03 07 56.6	+4.7
	comp=Z,5.7nm,0.8s,baz=76,slow=1.9,SNR=4.9						
QSPA	**South Pole Qui**	**72.55**	**180**	*e*P	**P**	**03 08 01.2**	**+0.6**
	comp=Z,98nm,1.2s						
KLR	**Kul'dur**	**73.79**	**336**	*e*P	**P**	**03 08 08.0**	**+0.1**
KMI	**Kunming**	**76.33**	**302**	P	P	03 08 26.9	+3.5
KMI				pmax	pmax		
	comp=Z,9.0nm,1.1s						
CMAR	**Chiang Mai Arr**	**76.69**	**294**	P	**P**	**03 08 26.9**	**+1.6**
	comp=Z,2.0nm,0.9s,baz=138,slow=4.6,SNR=5.3						
CMAR	**Chiang Mai Arr**	**76.69**	**294**	*e*P	**P**	**03 08 27.6**	**+2.3**
CMAR				pmax	pmax		
	comp=Z,1.0nm,0.4s						
MAW	**Mawson**	**79.59**	**202**	LR	LR	03 39 15.3	
	comp=Z,113nm,20.6s,baz=64,slow=32						
SEY	**Seymchan**	**81.09**	**353**	*i* P	**P**	**03 08 47.5**	**-0.9**
ULN	**Ulaanbaatar**	**84.75**	**324**	*c i* P	**P**	**03 09 08.7**	**+0.7**
ULN				pmax	pmax		
	comp=Z,46nm,1.0s						
ULN	**Ulaanbaatar**	**84.75**	**324**	*e*P	**P**	**03 09 08.5**	**+0.5**
	comp=Z,39nm,0.9s						
YAK	**Yakutsk**	**84.86**	**343**	*i* P	**P**	**03 09 07.7**	**-0.2**
YAK				pmax	pmax		
	comp=Z,12nm,0.7s						
GTA	**Gaotai**	**85.06**	**314**	*e*P	**P**	**03 09 11.9**	**+2.2**
GTA				pmax	pmax		
	comp=Z,8.0nm,0.9s						
SONM	**Songino Array**	**85.11**	**324**	P	**P**	**03 09 10.6**	**+0.8**
	comp=Z,16nm,0.8s,baz=146,slow=6.1,SNR=97						
BILL	**Bilibino**	**85.30**	**359**	*i* P	**P**	**03 09 09.1**	**-0.9**
BILL				pmax	pmax		
	comp=Z,4.0nm,1.0s						
BILL	**Bilibino**	**85.30**	**359**	*e*P	**P**	**03 09 09.5**	**-0.6**
	comp=Z,3.9nm,0.9s						
SYO	**Syowa Base**	**86.26**	**196**	||*e*P	**P**	**03 09 14.0**	**-1.0**
BOD	**Bodaibo**	**87.25**	**334**	*e*P	**P**	**03 09 18.6**	**-1.2**
BOD				pmax	pmax		
	comp=Z,5.0nm,1.3s						
ZAK	**Zakamensk**	**88.18**	**325**	*e*P	**P**	**03 09 24.3**	**-0.4**
ZAK				pmax	pmax		
	comp=Z,12nm,1.1s						
NVAR	**Mina Array Bea**	**88.56**	**49**	LR	LR

CLL	**Collm**	**140.84**	**335**	*e*PKPdf	**PKPdf**	**03 16 04.0**	**+0.6**
CLL				LmV		04 19 00.0	
	comp=Z,100nm,18.6s						
CLL	**Collm**	**140.84**	**335**	*e*PKIKP	**PKPdf**	**03 16 04.0**	**+0.6**
KHC	**Kasperske Hory**	**142.24**	**332**	*e*PKP	**PKPdf**	**03 16 03.4**	**-2.7**
KHC	**Kasperske Hory**	**142.24**	**332**	*e*PKIKP	**PKPdf**	**03 16 03.4**	**-2.7**
GERES	**GERESS Array B**	**142.39**	**332**	PKhKP	PKPpre	03 16 01.4	
	comp=Z,0.8nm,0.5s,baz=29,slow=3.8,SNR=8.4						
MOA	**Molln**	**142.85**	**330**	*i* PKPdf	**PKPdf**	**03 16 04.1**	**-3.1**
	comp=Z,4.4nm,0.7s						
SOKA	**Soboth**	**143.30**	**328**	*i* PKPdf	PKPbc	03 16 05.7	+0.5
	comp=Z,3.7nm,0.7s						
KBA	**Koelnbreinsper**	**143.84**	**330**	*i* PKPdf	PKPbc	03 16 06.6	-0.2
	comp=Z,11nm,1.1s						
MEM	**Membach**	**143.94**	**340**	PKP	**PKPdf**	**03 16 07.6**	**-1.4**
MYKA	**Terra Mystica**	**144.02**	**329**	*i* PKPdf	PKPbc	03 16 07.0	-0.3
	comp=Z,8.8nm,0.7s						
BCLA	**Clavier**	**144.33**	**341**	PKP	**PKPdf**	**03 16 08.5**	**-1.1**
WATA	**Walderalm**	**144.47**	**332**	*i* PKPdf	PKPbc	03 16 09.0	+0.2
	comp=Z,6.8nm,0.6s						
ABTA	**Abfaltersbach**	**144.47**	**331**	*i* PKPdf	PKPbc	03 16 08.7	0.0
	comp=Z,27nm,0.7s,SNR=9.9						
WTTA	**Wattenberg**	**144.50**	**332**	*e*PKPdf	PKPbc	03 16 08.5	-0.3
	comp=Z,8.4nm,0.9s						
SNF	**Seneffe**	**144.56**	**342**	PKP	**PKPdf**	**03 16 09.8**	**-0.3**
MOTA	**Moosalm**	**144.67**	**332**	*i* PKPdf	**PKPdf**	**03 16 10.3**	**-0.3**
	comp=Z,21nm,0.8s,SNR=16						
LANF	**Langenberg**	**144.71**	**337**	PKP	**PKPdf**	**03 16 10.1**	**-0.3**
WLF	**Walferdange**	**144.71**	**339**	PKP	**PKPdf**	**03 16 10.4**	**+0.1**
WLF	**Walferdange**	**144.71**	**339**	*e*PKIKP	**PKPdf**	**03 16 10.0**	**-0.3**
WLF	**Walferdange**	**144.71**	**339**	*e*PKPdf	**PKPdf**	**03 16 10.0**	**-0.3**
RETA	**Reutte**	**144.71**	**333**	*i* PKPdf	**PKPdf**	**03 16 10.1**	**-0.4**
	comp=Z,12nm,0.8s,SNR=8.0						
DOU	**Dourbes**	**144.83**	**341**	PKP	**PKPdf**	**03 16 10.3**	**-0.2**
BFO	**Black Forest**	**145.04**	**336**	*e*PKIKP	**PKPdf**	**03 16 10.7**	**-0.3**
BFO	**Black Forest**	**145.04**	**336**	*e*PKPdf	**PKPdf**	**03 16 10.7**	**-0.3**
FETA	**Feichten**	**145.08**	**332**	*i* PKPdf	**PKPdf**	**03 16 11.3**	**0.0**
	comp=Z,54nm,0.9s,SNR=30						
DAVA	**Damuels**	**145.25**	**334**	*i* PKPdf	**PKPdf**	**03 16 11.7**	**+0.2**
	comp=Z,38nm,0.7s,SNR=24						
WLS	**Welschbruch**	**145.34**	**337**	PKP	**PKPdf**	**03 16 12.2**	**+0.6**
ECH	**Echery**	**145.58**	**337**	PKP	**PKPab**	**03 16 12.5**	**+0.1**
MOF	**Molkenrain**	**145.89**	**337**	PKP	**PKPab**	**03 16 13.4**	**-0.2**
TUE	**Stuetta**	**146.11**	**333**	*e*PKPbc	**PKPab**	**03 16 14.3**	**-0.4**
LOMF	**Lomont**	**146.42**	**337**	PKP	**PKPab**	**03 16 15.4**	**-0.3**
AQU	**L'Aquila**	**147.07**	**324**	*e*PKP2	**PKPbc**	**03 16 17.2**	**+0.4**
AQU	**L'Aquila**	**147.07**	**324**	*e*PKPbc	**PKPbc**	**03 16 17.2**	**+0.4**
PLDF	**La Plantade**	**148.76**	**339**	PKP	**PKPbc**	**03 16 22.2**	**+1.0**
AGO	**Saint Agoulin**	**148.86**	**339**	PKP	**PKPbc**	**03 16 21.5**	**+0.1**
LUCF	**Luceram**	**149.01**	**332**	PKP	**PKPbc**	**03 16 22.3**	**+0.3**
SSB	**Saint Sauveur**	**149.02**	**337**	*e*PKIKP	**PKPdf**	**03 16 18.3**	**+0.5**
SSB				*e*		03 16 22.3	
SSB	**Saint Sauveur**	**149.02**	**337**	*e*PKPdf	**PKPdf**	**03 16 18.3**	**+0.5**
SSB				*e*PKPbc	**PKiKP**	**03 16 22.3**	**-0.9**
SSB				*e*PKPab	**PKPab**	**03 16 26.4**	**+0.5**
MVIF	**Mont Vial**	**149.09**	**332**	PKP	**PKPbc**	**03 16 22.3**	**+0.1**
REVF	**Revere**	**149.12**	**332**	PKP	**PKPbc**	**03 16 22.1**	**-0.1**
PYM	**Petit Puy Mans**	**149.16**	**339**	PKP	**PKPbc**	**03 16 22.8**	**+0.6**
CALN	**Calern**	**149.32**	**333**	PKP	**PKPbc**	**03 16 23.0**	**+0.2**
LBL	**Lubilhac**	**149.53**	**338**	PKP	**PKPbc**	**03 16 24.4**	**+1.2**
LEPF	**PUYLOUBIER**	**150.02**	**334**	PKP	**PKPbc**	**03 16 24.7**	**+0.4**
KEST	**Kesra**	**153.73**	**318**	PKPbc	**PKPbc**	**03 16 32.7**	**-0.4**
	comp=Z,4.5nm,0.8s,baz=243,slow=1.6,SNR=4.3						
ESDC	**Sonseca Array**	**156.81**	**344**	PKPab	**PKPab**	**03 16 58.9**	**0.0**
	comp=Z,0.2nm,0.4s,baz=3.3,slow=4.2,SNR=5.3						
TORD	**Torodi Ar. Bea**	**166.07**	**254**	PKP	**PKPdf**	**03 16 39.3**	**-0.3**
	comp=Z,2.5nm,0.9s,baz=90,slow=1.0,SNR=12						
TORD				PKPab	**PKPab**	**03 17 39.9**	**-0.2**
	comp=Z,1.7nm,1.2s,baz=132,slow=2.2,SNR=3.2						

*ISCJB **18** 02:56:54.7±0.5, 17.00N±0.04×100.00W±0.03, h20km±4km, Error ellipse: s-maj=7.0km s-min=4.5km az=32.3*
*MEX **18** 02:56:56.1±0.8, 17.02N×99.99W, h3km, MD4.0(MEX), After MEX.*
*NEIC **18** 02:56:56.1, 17.02N×99.99W, h3km, MD4.0(MEX), After MEX.*

ISC 18 02:56:52.9±1.1, 17.12N±0.02×99.98W±0.02, h5km±10km, n33, σ1s05/59, Guerrero

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
ACP2	**Acapulco**	**0.26**	**161**	*e*P		**Pb**	**02 56 59.2**	**-0.9**
ACP2				*e*S		**Sg**	**02 57 02.4**	**+1.0**
ACX	**Acapulco**	**0.27**	**156**	*e*P		**Pb**	**02 57 00.2**	**-0.2**
ACX				*e*S		**Sg**	**02 57 02.9**	**+1.1**
ACX	**Acapulco**	**0.27**	**156**	*e*P		**Pb**	**02 57 00.2**	**-0.2**
ACX				*e*S		**Sg**	**02 57 02.9**	**+1.1**
CAIG	**El Cayaco**	**0.29**	**256**	*e*P		**Pb**	**02 57 00.7**	**+0.1**
CAIG				*e*S		**Sb**	**02 57 04.9**	**-0.8**
CAIG	**El Cayaco**	**0.29**	**256**	*e*P		**Pb**	**02 57 00.7**	**+0.1**
CAIG				*e*S		**Sb**	**02 57 04.9**	**-0.8**
MEIG	**Mezcala**	**0.87**	**23**	*e*P		**Pn**	**02 57 11.9**	**-0.2**
MEIG				*e*S		**Sn**	**02 57 25.8**	**+0.6**
MEIG	**Mezcala**	**0.87**	**23**	*e*P		**Pn**	**02 57 11.9**	**-0.2**
MEIG				*e*S		**Sn**	**02 57 25.8**	**+0.6**
ARIG	**Puente Sto Nin**	**1.21**	**343**	*e*P		**Pn**	**02 57 17.4**	**+0.8**
ARIG				*e*S		**Sn**	**02 57 34.8**	**+1.3**
TLIG	**Tlapa**	**1.42**	**72**	Pn		**Pg**	**02 57 20.3**	**+0.2**
TLIG				Sn		**Sb**	**02 57 37.7**	**-0.7**
TLIG	**Tlapa**	**1.42**	**72**	*e*P		**Pg**	**02 57 20.4**	**+0.2**
TLIG				*e*S		**Sn**	**02 57 39.0**	**+0.3**
ZIIG	**Zihuatanejo**	**1.50**	**289**	*e*P		**Pn**	**02 57 20.8**	**+0.2**
ZIIG				*e*S		**Sn**	**02 57 40.0**	**-0.7**
ZIIG	**Zihuatanejo**	**1.50**	**289**	*e*P		**Pn**	**02 57 20.8**	**+0.2**
ZIIG				*e*S		**Sn**	**02 57 40.0**	**-0.7**
MAVM	**Malinalco, Edo**	**1.89**	**14**	*e*P		**Pg**	**02 57 28.7**	**-0.4**
MAVM				*e*S		**Sg**	**02 57 52.9**	**-0.7**
PNIG	**Pinotepa**	**1.91**	**112**	*e*P		**Pn**	**02 57 25.4**	**-0.9**
PNIG				*e*S		**Sn**	**02 57 49.5**	**-1.3**
PNIG	**Pinotepa**	**1.91**	**112**	*e*P		**Pn**	**02 57 25.4**	**-0.9**
PNIG				*e*S		**Sn**	**02 57 49.5**	**-1.3**
YAIG	**Yautepec**	**1.94**	**26**	*e*P		**Pb**	**02 57 28.4**	**-0.5**
YAIG				*e*S		**Sb**	**02 57 53.5**	**0.0**
YAIG	**Yautepec**	**1.94**	**26**	*e*P		**Pb**	**02 57 28.4**	**-0.5**
YAIG				*e*S		**Sb**	**02 57 53.5**	**0.0**
TOVM	**TOLUCA**	**2.17**	**7**	*e*P		**Pg**	**02 57 34.2**	**-0.4**
TOVM				*e*S		**Sb**	**02 58 00.6**	**+0.2**
MZVM		**2.18**	**19**	*e*P		**Pb**	**02 57 33.3**	**+0.4**
MZVM				*e*S		**Sg**	**02 58 05.1**	**+2.1**
UNM	**Universidad Na**	**2.33**	**19**	Pn		**Pn**	**02 57 32.0**	**-0.2**
PTVM	**Pico Tres Padr**	**2.59**	**18**	*e*S		**Sg**	**02 58 16.6**	**+0.2**
IIO	**Organos**	**2.73**	**26**	*e*P		**Pb**	**02 57 40.6**	**-2.0**
IIO				*e*S		**Sn**	**02 58 13.1**	**+1.6**
IIO	**Organos**	**2.73**	**26**	*e*P		**Pb**	**02 57 40.6**	**-2.0**
IIO				*e*S		**Sn**	**02 58 13.1**	**+1.6**
MOIG	**Morelia**	**2.79**	**336**	Pn		**Pn**	**02 57 40.7**	**+2.1**
TPIG	**Tehuac#an**	**2.81**	**62**	*e*P		**Pb**	**02 57 42.3**	**-1.4**
TPIG				*i* S		**Sg**	**02 58 21.8**	**-1.4**
TPIG	**Tehuac#an**	**2.81**	**62**	*e*P		**Pb**	**02 57 42.3**	**-1.4**
TPIG				*i* S		**Sg**	**02 58 21.8**	**-1.4**
VTVM	**Tizayuca**	**2.87**	**23**	*e*P		**Pb**	**02 57 45.2**	**+0.2**
VTVM				*e*S		**Sg**	**02 58 25.4**	**+0.1**
VHO	**Vista Hermosa**	**3.10**	**90**	*e*P		**Pb**	**02 57 49.5**	**+0.8**
VHO				*e*S		**Sn**	**02 58 22.8**	**+2.4**
VHO	**Vista Hermosa**	**3.10**	**90**	*e*P		**Pb**	**02 57 49.5**	**+0.8**
VHO				*e*S		**Sn**	**02 58 22.8**	**+2.4**
MMIG	**Aquila**	**3.42**	**290**	*e*P		Pn	02 57 38.2	-8.7
MMIG				*i* S		**Sg**	**02 58 42.1**	**-0.7**
MMIG	**Aquila**	**3.42**	**290**	*e*P		Pn	02 57 38.2	-8.7
MMIG				*i* S		**Sg**	**02 58 42.1**	**-0.7**
HUIG	**Huatulco**	**3.95**	**109**	*e*P		**Pb**	**02 58 03.2**	**+0.1**
HUIG	**Huatulco**	**3.95**	**109**	*e*P		**Pb**	**02 58 03.2**	**+0.1**

JMA 18 03:06:31.5±0.1, 35.91N×140.80E, h44km±1km, M2.6, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.21**	**167**	*e*S		Sn	03 06 44.8	+0.1
JHO	**Hitachi**	**0.72**	**345**	P		Pn	03 06 45.3	-0.1
ONAJ	**Iwakimizuishiy**	**1.19**	**360**	P		Pn	03 06 52.2	+0.4
ONAJ				*e*S		Sn	03 07 07.4	+0.6
MAT	**Matsushiro**	**2.19**	**288**	P		Pn	03 07 07.4	+2.0
MAT				S		Sn	03 07 36.9	+5.6

*NIED **18** 03:13:00, 39.30N×142.20E, h50km, Mw4.1 Best double couple: M0 1.35000×10^15 NP1:φ187.00000°, δ15.00000°, λ75.00000°. NP2:φ22.00000°, δ75.00000°, λ94.00000°.*
*ISCJB **18** 03:13:48.1±0.9, 39.25N±0.04×142.3E±0.1, h51km±6km,*

2011 APR

mb3.6/9, MS3.4/3, Error ellipse: s-maj=13.9km s-min=5.7km az=16.9
*JMA **18** 03:13:48.8±0.1, 39.28N×142.24E, h42km±1km, M3.6*
JMA Felt I J1.
*IDC **18** 03:13:52.7±2.3, 39.24N×142.16E, h80km±20km, mb3.3/9, mb1 3.5/12, mb1mx3.4/37, mbtmp3.7/12, MS3.1/8, Ms1 3.1/8, ms1mx2.9/25, Error ellipse: s-maj=23.0km s-min=13.8km az=105.0*

ISC 18 03:13:48.9±1.4, 39.25N±0.05×142.2E±0.1, h42km±12km, n32, σ1s27/27, mb3.8/9, MS3.3/3, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
MIYJ	**Miyakonagasawa**	**0.45**	**317**	P		**Pn**	**03 13 58.8**	**-0.2**
MIYJ				S		**Sn**	**03 14 05.8**	**-0.3**
OFUJ	**Ofunato**	**0.46**	**248**	P		**Pn**	**03 13 59.4**	**+0.3**
OFUJ				S		**Sn**	**03 14 06.7**	**+0.3**
JTH	**Tanohata**	**0.74**	**339**	P		**Pn**	**03 14 02.4**	**-0.5**
JTH				S		**Sn**	**03 14 12.2**	**-0.8**
JOM	**Ohasama**	**0.75**	**287**	P		**Pn**	**03 14 03.2**	**+0.2**
JOM				S		**Sn**	**03 14 13.8**	**+0.6**
JMK	**Ichinoseki**	**0.83**	**249**	P		**Pn**	**03 14 04.5**	**+0.4**
JMK				S		**Sn**	**03 14 15.7**	**+0.5**
JKZ	**Kuzumaki**	**1.00**	**317**	P		**Pn**	**03 14 06.8**	**+0.3**
JKZ				S		**Sn**	**03 14 20.5**	**+1.0**
JIO	**Ouri**	**1.04**	**221**	P		**Pn**	**03 14 07.2**	**+0.2**
JIO				S		**Sn**	**03 14 20.6**	**+0.2**
JRG	**Rokugo**	**1.23**	**277**	P		**Pn**	**03 14 10.6**	**+1.0**
JANG	**Nango**	**1.24**	**335**	P		**Pn**	**03 14 09.5**	**-0.3**
MJAR	**Matsushiro Arr**	**4.17**	**231**	P		Pn	03 14 53.5	+3.5
	2.4nm,0.3s,baz=34,slow=12,SNR=26							
MAT	**Matsushiro**	**4.17**	**231**	P		Pn	03 14 54.0	+4.1
MAT				*e*S		**Sn**	**03 15 40.0**	**+2.6**
ASAJ	**Asahikawa**	**4.87**	**3**	P		Pn	03 15 02.9	+3.3
	1.7nm,0.3s,baz=220,slow=4.8,SNR=5.7							
ASAJ				S		**Sn**	**03 15 59.5**	**+4.9**
	1.3nm,0.3s,baz=30,slow=22,SNR=3.6							
ASAJ				LR		LR	03 17 11.5	
	comp=Z,146nm,21.6s,baz=182,slow=41							
USRK	**Ussuriysk Ar.**	**9.10**	**306**	P		Pn	03 16 01.3	+3.7
	0.2nm,0.3s,baz=110,slow=13,SNR=4.8							
USRK				LR		LR	03 19 22.2	
	comp=Z,143nm,19.2s,baz=145,slow=36							
JNU	**Nakatsue**	**11.01**	**240**	LR		LR	03 20 55.6	
	comp=Z,56nm,20.2s,baz=121,slow=39							
KSRS	**Korea Array**	**11.37**	**265**	LR		LR	03 20 08.7	
	comp=Z,57nm,21.6s,baz=122,slow=33							
KLR	**Kul'dur**	**12.47**	**327**	LR		LR	03 21 32.8	
	comp=Z,56nm,20.1s,baz=140,slow=37							
SONM	**Songino Array**	**27.14**	**300**	P		**P**	**03 19 27.9**	**-0.2**
	0.5nm,0.8s,baz=94,slow=7.7,SNR=3.7							
SONM				LR		LR	03 30 00.2	
	comp=Z,44nm,19.4s,baz=92,slow=36							
H11N2	**WAKE ISLAND Hy**	**28.83**	**125**	T		T	03 50 12.3	
	baz=318,slow=75,SNR=352							
H11N1	**WAKE ISLAND Hy**	**28.84**	**125**	T		T	03 50 07.7	
	baz=318,slow=75,SNR=413							
H11N3	**WAKE ISLAND Hy**	**28.84**	**125**	T		T	03 50 08.4	
	baz=318,slow=75,SNR=371							
H11S1	**WAKE ISLAND Hy**	**29.62**	**127**	T		T	03 51 10.6	
	baz=319,slow=76,SNR=35							
H11S3	**WAKE ISLAND Hy**	**29.62**	**127**	T		T	03 51 04.9	
	baz=319,slow=76,SNR=29							
H11S2	**WAKE ISLAND Hy**	**29.63**	**127**	T		T	03 51 05.5	
	baz=319,slow=76,SNR=25							
ZALV	**Zalesovo Beam**	**40.92**	**311**	P		**P**	**03 21 26.9**	**0.0**
	2.1nm,0.6s,baz=92,slow=8.2,SNR=8.4							
SIJI	**Sorong**	**41.17**	**197**	LR		LR	03 36 54.0	
	comp=Z,145nm,18.9s,baz=350,slow=34							
MKAR	**Makanchi Array**	**43.51**	**300**	P		**P**	**03 21 48.0**	**-0.1**
	1.5nm,0.9s,baz=86,slow=9.4,SNR=10							
MKAR				LR		LR	03 40 42.3	
	comp=Z,34nm,18.2s,baz=94,slow=37							
ILAR	**Eielson Array**	**47.29**	**33**	P		**P**	**03 22 18.3**	**+0.6**
	0.4nm,0.7s,baz=272,slow=6.2,SNR=6.9							
WRA	**Warramunga Arr**	**59.34**	**189**	P		**P**	**03 23 46.0**	**-0.6**
	0.4nm,0.5s,baz=5.7,slow=6.9,SNR=2.8							
YKA	**Yellowknife Ar**	**61.58**	**31**	P		**P**	**03 24 01.4**	**0.0**
	0.1nm,0.7s,baz=305,slow=6.1,SNR=3.2							
ASAR	**Alice Springs**	**63.07**	**189**	P		**P**	**03 24 11.3**	**-0.5**
	0.3nm,0.6s,baz=7.7,slow=7.6,SNR=3.4							
FINES	**FINESS Array B**	**67.15**	**332**	P		**P**	**03 24 36.8**	**-1.1**
	1.7nm,0.7s,baz=23,slow=7.5,SNR=4.5							
AKASG	**Malin Array Be**	**72.93**	**322**	P		**P**	**03 25 13.0**	**-0.5**
	0.8nm,0.4s,baz=46,slow=6.0,SNR=4.6							

*ISN **18** 03:17:45.3±0.3, 38.84N×43.89E, h0km, ML3.7*
*NSSC **18** 03:18:44.0±3.4, 38.84N×44.24E, h0km±412km, MD2.7, ML3.1*
*NSSP **18** 03:18:48.3, 38.52N×43.68E, h10km, Ms3.8*
*IDC **18** 03:18:49.9±1.6, 38.08N×43.43E, h0km, mb3.4/6, mb1 3.5/9, mb1mx3.4/28, mbtmp3.3/9, ML2.9/3, MS3.1/1, Ms1 3.1/1, ms1mx2.3/24, Error ellipse: s-maj=29.2km s-min=18.9km az=162.0*
*DDA **18** 03:18:49.8, 38.61N×43.66E, h19km, Ml3.8*
*ISK **18** 03:18:50.7, 38.58N×43.63E, h2km, ML3.6*
*TEH **18** 03:18:50.7, 38.58N×43.63E, h2km, ML3.6*
*AZER **18** 03:18:50.5±40.0, 38.47N×43.40E, h22km, Error ellipse: s-maj=14.6km s-min=8.6km az=281.0*
*CSEM **18** 03:18:53.2±0.2, 38.65N×43.50E, h2km, ML3.6, Error ellipse: s-maj=5.9km s-min=3.4km az=150.0*

ISC 18 03:18:50.8±0.9, 38.63N±0.02×43.66E±0.02, h9km±7km, n162, σ2s28/188, mb3.3/6, 10C-17D, Turkey

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
VANB	**Van**	**0.21**	**262**	*e*PG		**Pg**	**03 18 55.4**	**+0.2**
VANB	**Van**	**0.21**	**262**	*e*Pg		**Pg**	**03 18 55.4**	**+0.2**
TVAN	**Van**	**0.22**	**244**	*i* P		**Pg**	**03 18 55.4**	**+0.1**
TVAN				*i* S		**Sg**	**03 18 59.2**	**+0.8**
TVAN	**Van**	**0.22**	**244**	P		**Pg**	**03 18 55.4**	**+0.1**
TVAN				S		**Sg**	**03 18 59.2**	**+0.8**
VMUR	**Van-Muradiye**	**0.37**	**350**	*i* P		**Pg**	**03 18 57.9**	**-0.2**
VMUR				*i* S		**Sb**	**03 19 05.3**	**-0.4**
VMUR	**Van-Muradiye**	**0.37**	**350**	P		**Pg**	**03 18 57.9**	**-0.2**
VMUR				S		**Sb**	**03 19 05.3**	**-0.4**
CLDR	**Caldiran**	**0.56**	**21**	*e*PG		**Pn**	**03 19 03.3**	**-1.9**
CLDR				*e*SG		**Sn**	**03 19 12.8**	**-1.9**
CLDR	**Caldiran**	**0.56**	**21**	*e*Pg		**Pn**	**03 19 03.3**	**-1.9**
CLDR				*e*Sg		**Sn**	**03 19 12.8**	**-1.9**
GEVA	**Gevas**	**0.56**	**237**	*i* P		**Pg**	**03 19 00.8**	**-0.9**
GEVA				*i* S		**Sb**	**03 19 09.7**	**-1.5**
GEVA	**Gevas**	**0.56**	**237**	P		**Pg**	**03 19 00.8**	**-0.9**
GEVA				S		**Sb**	**03 19 09.7**	**-1.5**
DYDN	**Diyadin**	**0.92**	**2**	*i* P		**Pg**	**03 19 07.6**	**-0.9**
DYDN				*i* S		**Sb**	**03 19 21.6**	**+0.1**
DYDN	**Diyadin**	**0.92**	**2**	P		**Pg**	**03 19 07.6**	**-0.9**
DYDN				S		**Sb**	**03 19 21.6**	**+0.1**
CUKT	**Cukurca**	**1.38**	**182**	*e*PN		**Pg**	**03 19 17.1**	**-0.1**
SIRN	**S¨¨rnak**	**1.49**	**221**	*i* P		**Pg**	**03 19 19.6**	**+0.2**
SIRN				*i* S		**Sg**	**03 19 41.1**	**+2.3**
SIRN	**S¨¨rnak**	**1.49**	**221**	P		**Pg**	**03 19 19.6**	**+0.2**
SIRN				S		**Sg**	**03 19 41.1**	**+2.3**
EATA	**Eleskirt**	**1.53**	**324**	*i* P		**Pn**	**03 19 18.1**	**-0.6**
EATA				*i* S		**Sg**	**03 19 40.3**	**+0.2**
EATA	**Eleskirt**	**1.53**	**324**	P		**Pn**	**03 19 18.1**	**-0.6**
EATA				S		**Sg**	**03 19 40.3**	**+0.2**
NAX	**Nakhchivan**	**1.54**	**69**	⇑P		**Pg**	**03 19 22.6**	**+2.4**
NAX				⇑S		**Sg**	**03 19 47.4**	**+7.2**
NAX	**Nakhchivan**	**1.54**	**69**	P		**Pg**	**03 19 22.6**	**+2.4**
NAX				S		**Sg**	**03 19 47.4**	**+7.2**
ISHB	**Shabestar**	**1.58**	**102**	*e*P		**Pg**	**03 19 22.4**	**+1.4**
IMRD	**Marand**	**1.60**	**86**	*e*P		**Pg**	**03 19 22.4**	**+0.8**
IMRD	**Marand**	**1.60**	**86**	*e*P		**Pg**	**03 19 22.4**	**+0.8**
GNI	**Garni**	**1.74**	**29**	⇓*i*P		**Pg**	**03 19 23.9**	**-0.3**
GNI				⇓*i*S		**Sg**	**03 19 51.9**	**+5.2**
GNI	**Garni**	**1.74**	**29**	⇓P		**Pg**	**03 19 23.9**	**-0.3**
GNI				S		**Sg**	**03 19 51.9**	**+5.2**
VRTB	**Varto-Mus**	**1.80**	**288**	*e*PN		**Pb**	**03 19 23.4**	**-0.6**
VRTB	**Varto-Mus**	**1.80**	**288**	*e*Pn		**Pb**	**03 19 23.4**	**-0.6**
HOMI	**Horasan**	**1.96**	**317**	*i* P		**Pb**	**03 19 26.0**	**-0.9**
BNGL	**BINGOL**	**1.98**	**280**	*i* P		**Pb**	**03 19 25.1**	**-2.1**
SVAN	**Silvan-Diyarba**	**1.99**	**257**	*e*PN		**Pb**	**03 19 25.8**	**-1.4**
SVAN	**Silvan-Diyarba**	**1.99**	**257**	*e*Pn		**Pb**	**03 19 25.8**	**-1.4**
ITBZ	**Tabriz**	**2.00**	**101**	*e*P		**Pg**	**03 19 29.8**	**+0.8**
ITBZ	**Tabriz**	**2.00**	**101**	*e*P		**Pg**	**03 19 29.8**	**+0.8**
BTMN	**Batman**	**2.02**	**249**	*i* P		**Pb**	**03 19 25.7**	**-2.0**
BTMN				*i* S		**Sg**	**03 19 55.2**	**-0.4**
BTMN	**Batman**	**2.02**	**249**	P		**Pb**	**03 19 25.7**	**-2.0**
BTMN				S		**Sg**	**03 19 55.2**	**-0.4**
KARS	**Kars**	**2.05**	**348**	*e*PN		**Pb**	**03 19 27.8**	**-0.5**
KARS	**Kars**	**2.05**	**348**	*e*Pn		**Pb**	**03 19 27.8**	**-0.5**
EAK	**Akyaka**	**2.06**	**359**	*i* P		**Pb**	**03 19 28.4**	**-0.1**
EAK	**Akyaka**	**2.06**	**359**	P		**Pb**	**03 19 28.4**	**-0.1**
ERZM	**Erzurum**	**2.19**	**306**	*i* P		**Pb**	**03 19 28.9**	**-1.8**
ERZM	**Erzurum**	**2.19**	**306**	P		**Pb**	**03 19 28.9**	**-1.8**
EZM	**Erzurum**	**2.19**	**306**	*e*PN		**Pb**	**03 19 29.6**	**-1.2**
VADZ	**Vardenis**	**2.24**	**46**	*e*P		**Pb**	**03 19 30.0**	**-1.5**
VADZ				*e*S		**Sg**	**03 20 02.0**	**-0.7**
VADZ	**Vardenis**	**2.24**	**46**	P		**Pb**	**03 19 30.0**	**-1.5**
VADZ				S		**Sg**	**03 20 02.0**	**-0.7**
BNGB	**Bing¨¶l**	**2.35**	**280**	*e*PN		**Pb**	**03 19 31.5**	**-2.0**
BGOL	**Bingol**	**2.36**	**280**	*i* P		**Pb**	**03 19 31.1**	**-2.5**
BGOL	**Bingol**	**2.36**	**280**	P		**Pb**	**03 19 31.1**	**-2.5**
STE	**Stepanavan**	**2.44**	**13**	⇓P		**Pn**	**03 19 32.0**	**+1.1**
STEZ	**Stepenevan**	**2.44**	**13**	⇓*e*P		**Pn**	**03 19 32.0**	**+1.0**
STEZ				⇓S		**Sb**	**03 20 05.0**	**-0.2**
BINT	**Bingol**	**2.49**	**277**	*e*Pn		**Pn**	**03 19 31.5**	**-0.1**
MARD	**Mardin**	**2.62**	**241**	*i* P		**Pn**	**03 19 33.7**	**+0.2**
MARD				*i* S		**Sg**	**03 20 12.4**	**-2.6**
GDB	**GEDABAY**	**2.65**	**37**	⇓P		**Pb**	**03 19 37.0**	**-1.5**
GDB				⇑S		**Sb**	**03 20 12.3**	**+1.1**
GDB	**GEDABAY**	**2.65**	**37**	P		**Pb**	**03 19 37.0**	**-1.5**
GDB				S		**Sb**	**03 20 12.3**	**+1.1**
IHRS	**Heris**	**2.68**	**96**	*e*P		**Pb**	**03 19 39.3**	**+0.3**
IHRS	**Heris**	**2.68**	**96**	*e*P		**Pb**	**03 19 39.3**	**+0.3**
STKZ		**2.68**	**63**	⇑*i*P		**Pb**	**03 19 37.3**	**-1.7**
STKZ				⇓*i*S		**Sg**	**03 20 17.8**	**+0.8**
STKZ		**2.68**	**63**	⇑P		**Pb**	**03 19 37.3**	**-1.7**
STKZ				S		**Sg**	**03 20 17.8**	**+0.8**
DDEM	**Demirkent**	**2.70**	**328**	*i* P		**Pb**	**03 19 38.7**	**-0.6**
DDEM	**Demirkent**	**2.70**	**328**	P		**Pb**	**03 19 38.7**	**-0.6**
IBST	**Bostanabad**	**2.71**	**109**	*e*P		**Pg**	**03 19 40.2**	**-2.6**
IBST	**Bostanabad**	**2.71**	**109**	*e*P		**Pg**	**03 19 40.2**	**-2.6**
QZX	**Qazax, Azerbai**	**2.77**	**28**	⇑P		**Pg**	**03 19 41.4**	**-2.4**
QZX				⇓S		**Sg**	**03 20 17.5**	**-2.2**
QZX	**Qazax, Azerbai**

TAHT	**Tahtakopru-Hat**	**6.35**	**252**	*e*Pn		**Pn**	**03 20 28.0**	**+3.4**
ARNB	**Al Arnab**	**6.72**	**248**	*e*P		**Pn**	**03 20 31.7**	**+2.0**
ARNB				*e*S		**Sn**	**03 21 50.6**	**+4.1**
ARNB				AML		AML	03 22 49.1	
	comp=N,18nm,0.7s							
ARNB				AML		AML	03 22 50.0	
	comp=E,26nm,0.6s							
ARNB	**Al Arnab**	**6.72**	**248**	*e*P		**Pn**	**03 20 31.7**	**+2.0**
MARH	**Ras Al Marh**	**7.39**	**234**	*e*P		**Pn**	**03 20 42.1**	**+3.0**
MARH				*e*S		**Sn**	**03 22 07.7**	**+4.5**
MARH				AML		AML	03 23 06.6	
	comp=N,7.4nm,0.5s							
MARH				AML		AML	03 23 31.0	
	comp=E,15nm,0.7s							
MARH	**Ras Al Marh**	**7.39**	**234**	*e*P		**Pn**	**03 20 42.1**	**+3.0**
ZALF	**Zalf**	**7.66**	**224**	*e*P		**Pn**	**03 20 43.7**	**+1.0**
ZALF				*e*S		**Sn**	**03 22 12.5**	**+2.9**
ZALF				AML		AML	03 23 14.3	
	comp=E,12nm,0.7s							
ZALF				AML		AML	03 23 35.8	
	comp=N,5.8nm,0.8s							
ZALF	**Zalf**	**7.66**	**224**	*e*P		**Pn**	**03 20 43.7**	**+1.0**
ZALF				*e*S		**Sn**	**03 22 12.5**	**+2.9**
	comp=N,6.0nm,0.8s							
BRTR	**Keskin Array B**	**7.86**	**281**	Pn		**Pn**	**03 20 47.2**	**+1.8**
	comp=N,0.1nm,0.3s,baz=99,slow=13,SNR=2.7							
AKASG	**Malin Array Be**	**15.81**	**324**	Pn		**P**	**03 22 38.0**	**+0.6**
	comp=N,0.4nm,0.3s,baz=132,slow=12,SNR=6.1							
GERES	**GERESS Array B**	**23.79**	**305**	P		**P**	**03 24 04.2**	**+0.4**
	comp=N,0.1nm,0.3s,baz=116,slow=6.8,SNR=2.5							
MKAR	**Makanchi Array**	**29.30**	**61**	P		P	03 24 57.7	+4.3
	comp=N,0.2nm,0.4s,baz=263,slow=12,SNR=2.9							
ZALV	**Zalesovo Beam**	**31.79**	**48**	P		P	03 25 19.6	+4.3
	comp=N,0.5nm,0.3s,baz=257,slow=10,SNR=3.3							
ESDC	**Sonseca Array**	**36.60**	**287**	P		**P**	**03 25 56.7**	**-0.6**
	comp=N,0.4nm,0.7s,baz=64,slow=8.7,SNR=3.2							
TORD	**Torodi Ar. Bea**	**44.94**	**247**	P		**P**	**03 27 04.3**	**-1.9**
	comp=N,0.8nm,1.0s,baz=61,slow=6.8,SNR=2.8							
DBIC	**Dimbokro**	**54.04**	**247**	LR		LR	03 52 45.0	
	comp=N,19nm,18.6s,baz=105,slow=38							
YKA	**Yellowknife Ar**	**77.72**	**350**	P		P	03 30 51.9	+4.4
	comp=N,0.1nm,0.7s,baz=18,slow=5.2,SNR=4.0							

NIED ***18*** *03:39:00,38.˚90N×142.˚60E,h5km,Mw3.7 Best double couple: M₀3.64000×10¹⁴ NP1:φ₀=276.00000°,δ=21.00000°, λ=-127.00000°. NP2:φ₀=136.00000°,δ=73.00000°, λ=-77.00000°.*

JMA 18 03:39:45.3±0.1,38.˚93N×142.˚60E,h29km±2km,M3.6, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**0.74**	**282**	P			Pb	03 39 59.5	-0.2
OFUJ				S			Sb	03 40 09.4	-0.1
MIYJ	**Miyakonagasawa**	**0.89**	**317**	P			Pn	03 40 01.2	-0.6
MIYJ				S			Sb	03 40 12.4	-1.2
JMK	**Ichinoseki**	**1.08**	**272**	P			Pb	03 40 04.9	-0.4
JMK				S			Sb	03 40 18.8	-0.2
JIO	**Ouri**	**1.09**	**245**	P			Pn	03 40 04.3	-0.3
JIO				S			Sn	03 40 17.7	-0.9
JOM	**Ohasama**	**1.15**	**298**	P			Pn	03 40 05.9	+0.4
JOM				S			Sn	03 40 20.6	+0.3
JKZ	**Kuzumaki**	**1.44**	**317**	P			Pn	03 40 10.4	+0.9
JKZ				*e*S			Sb	03 40 28.6	-0.9
JRG	**Rokugo**	**1.60**	**288**	P			Pb	03 40 13.4	-0.8
JRG				S			Sb	03 40 33.8	-0.1
JOU	**Okura**	**1.62**	**250**	P			Pn	03 40 12.9	+1.0
JOU				S			Sb	03 40 33.4	-1.1
JANG	**Nango**	**1.67**	**330**	P			Pn	03 40 13.9	+1.3
JANG				*e*S			Sn	03 40 34.1	+1.1
JYK	**Kaneyama**	**1.75**	**270**	P			Pb	03 40 15.6	-1.1
JYK				*e*S			Sb	03 40 37.6	-0.6
JMM	**Marumori**	**1.77**	**234**	P			Pn	03 40 15.0	+1.0
JMM				S			Sn	03 40 36.5	+0.9
MAT	**Matsushiro**	**4.22**	**237**	P			Pn	03 40 51.7	+4.0
MAT				S			Sb	03 41 50.6	+1.3

NIED ***18*** *03:53:00,37.˚20N×143.˚50E,h5km,Mw4.4 Best double couple: M₀3.93000×10¹⁵ NP1:φ₀=24.00000°,δ=36.00000°, λ=-97.00000°. NP2:φ₀=212.00000°,δ=54.00000°, λ=-85.00000°.*

ISCJB ***18*** *03:53:39.9±1.1,37.˚16N±0.˚03×143.˚51E±0.˚03,h15km±7km, mb4.5/78,MS3.7/19,Error ellipse: s-maj=5.0km s-min=3.9km az=155.4*

IDC ***18*** *03:53:39.2±0.5,37.˚10N×143.˚63E,h0km,mb4.3/25, mb1 4.5/30,mb1mx4.3/58,mbtmp4.3/30,ML4.3/4,MS3.6/21, Ms1 3.6/21,ms1mx3.3/49,Error ellipse: s-maj=15.0km s-min=12.6km az=114.0*

NEIC ***18*** *03:53:40.8±0.2,37.˚15N×143.˚60E,h10km,mb4.6/32,Error ellipse: s-maj=5.8km s-min=4.3km az=143.0*

BJI ***18*** *03:53:41.7,37.˚45N×143.˚65E,h27km,mb4.6/31,mB4.7/24, Ms4.2/19,Ms7 4.1/12*

JMA ***18*** *03:53:42.4±0.2,37.˚20N×143.˚47E,h49km,M4.6*

MOS ***18*** *03:53:42.3±1.3,37.˚27N×143.˚55E,h30km,mb4.7/40,Error ellipse: s-maj=9.2km s-min=5.3km az=105.0*

ISC 18 03:53:39.4±2.2,37.˚22N±0.˚05×143.˚61E±0.˚05,h2km±13km, n187,σ1$57/200,mb4.6/78,MS3.7/20,4C-3D,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
JIO	**Ouri**	**2.17**	**305**	P			**Pn**	**03 54 16.2**	**-0.4**
JIO				S			**Sn**	**03 54 40.5**	**-3.6**
JFK	**Kawauchi**	**2.19**	**275**	P			**Pn**	**03 54 16.1**	**-0.7**
JFK				*e*S			**Sn**	**03 54 40.8**	**-3.7**
ONAJ	**Iwakimizuishiy**	**2.25**	**268**	P			**Pn**	**03 54 17.0**	**-0.7**
JMM	**Marumori**	**2.33**	**287**	P			**Pn**	**03 54 17.7**	**-1.0**
JMM				*e*S			**Sn**	**03 54 44.3**	**-3.6**
JMK	**Ichinoseki**	**2.56**	**313**	P			**Pn**	**03 54 21.6**	**-0.3**
JMK				S			**Sn**	**03 54 50.5**	**-3.1**
JFT	**Otama**	**2.63**	**278**	P			**Pn**	**03 54 23.4**	**+0.6**
JFT				S			**Sn**	**03 54 53.0**	**-2.2**
JOM	**Ohasama**	**2.90**	**322**	P			**Pn**	**03 54 26.8**	**+0.3**
JOM				S			**Sn**	**03 54 58.9**	**-3.0**
JYK	**Kaneyama**	**3.08**	**304**	P			**Pn**	**03 54 29.2**	**+0.2**
JYK				S			**Sn**	**03 55 04.0**	**-2.4**
BSO1	**Boso 1**	**3.33**	**221**	P			**Pn**	**03 54 30.8**	**-1.2**
BSO1				*e*S			**Sn**	**03 55 07.9**	**-4.0**
JAG	**Ashikaga**	**3.43**	**258**	P			**Pn**	**03 54 33.4**	**-0.4**
JANG	**Nango**	**3.55**	**333**	P			**Pn**	**03 54 36.5**	**+1.0**
JRY	**Ryogami san**	**3.97**	**254**	P			**Pn**	**03 54 40.6**	**-0.8**
JRY				S			**Sn**	**03 55 24.1**	**-4.4**
JOD2	**Odawara 2**	**4.14**	**243**	P			**Pn**	**03 54 42.4**	**-1.3**
JOD2				*e*S			**Sn**	**03 55 27.6**	**-5.1**
MJAR	**Matsushiro Arr**	**4.38**	**263**	Pn			**Pn**	**03 54 47.8**	**+0.8**
	10nm,0.3s,baz=77,slow=14,SNR=49								
MJAR				LR			LR	03 56 29.4	
	comp=Z,535nm,21.5s,baz=90,slow=39								
MAJO	**Matsushiro**	**4.38**	**263**	*e*P			**Pn**	**03 54 47.7**	**+0.7**
MAJO				*e*S			**Sn**	**03 55 37.3**	**-1.4**
MAJO	**Matsushiro**	**4.38**	**263**	*e*Pn			**Pn**	**03 54 47.7**	**+0.7**
MAJO				*e*S			**Sn**	**03 55 37.3**	**-1.4**
MAT	**Matsushiro**	**4.38**	**263**	P			**Pn**	**03 54 47.7**	**+0.7**
MAT				S			**Sn**	**03 55 37.3**	**-1.3**
MJB9	**Matsu-Tunnel**	**4.39**	**263**	*e*Pn			**Pn**	**03 54 47.7**	**+0.6**
MJB9				*e*Sn			**Sn**	**03 55 36.6**	**-2.1**
JOT	**Ohata**	**4.61**	**335**	P			**Pn**	**03 54 51.0**	**+1.0**
JOT				*e*S			**Sn**	**03 55 39.5**	**-4.6**
ERM	**Erimo**	**4.80**	**356**	*e*P			**Pn**	**03 54 52.2**	**-0.5**
ERM	**Erimo**	**4.80**	**356**	*e*Pn			**Pn**	**03 54 52.2**	**-0.5**
ERM				*e*S			**Sn**	**03 55 44.9**	**-4.0**
JKB	**Kayabe**	**5.07**	**338**	P			**Pn**	**03 54 57.2**	**+0.8**
JKB				S			Sn	03 55 49.9	-5.6
JHJ2	**Mitsune**	**5.14**	**218**	P			**Pn**	**03 54 56.9**	**-0.5**
JHJ2	**Mitsune**	**5.14**	**218**	*e*Pn			**Pn**	**03 54 55.4**	**-2.0**
JHJ2				*e*S			Sn	03 55 50.0	-7.3
JHJ	**Hachijo jima 2**	**5.15**	**219**	Pn			**Pn**	**03 54 56.5**	**-1.1**
	36nm,0.3s,baz=63,slow=21,SNR=7.8								
JHJ				Sn			Sn	03 55 49.0	-8.5
	74nm,0.3s,baz=73,slow=19,SNR=4.2								
JHJ				LR			LR	03 56 54.5	
	comp=Z,182nm,22.0s,baz=341,slow=39								
JCH	**Churui**	**5.39**	**358**	P			**Pn**	**03 54 59.7**	**-1.1**
JCH				S			Sn	03 55 57.2	-6.2
INU	**Inuyama**	**5.64**	**253**	*e*Pn			**Pn**	**03 55 04.6**	**+0.3**
ASAJ	**Asahikawa**	**6.94**	**354**	Pn			**Pn**	**03 55 22.9**	**+0.9**
	12nm,0.3s,baz=213,slow=7.2,SNR=53								
ASAJ				Sn			**Sn**	**03 56 36.9**	**-4.5**
	3.1nm,0.3s,baz=240,slow=20,SNR=9.0								
ASAJ	**Asahikawa**	**6.94**	**354**	*e*Pn			**Pn**	**03 55 21.9**	**-0.1**
ASAJ				*e*S			**Sn**	**03 56 37.1**	**-4.3**
YUK	**Yuzh-Kuril'sk**	**7.02**	**13**	*e*P			**Pn**	**03 55 21.5**	**-1.7**
YUK				*e*S			Sn	03 56 36.1	-7.4
YUK				pmax			pmax		
	comp=Z,149nm,0.3s								
YUK				pmax			pmax		
	comp=N,93nm,0.2s								
YUK				pmax			pmax		
	comp=E,39nm,0.2s								
SHO	**Shikotan**	**7.08**	**19**	*e*P			**Pn**	**03 55 22.9**	**-1.1**
SHO				pmax			pmax		
	comp=E,53nm,0.5s								
SHO				pmax			pmax		
	comp=Z,117nm,0.5s								
SHO				pmax			pmax		
	comp=N,11nm,0.3s								
KUR	**Kuril'sk**	**8.62**	**20**	P			**Pn**	**03 55 42.4**	**-2.8**
KUR				*e*S			Sn	03 57 14.6	-8.3
KUR				pmax			pmax		
	comp=Z,59nm,0.7s								
KUR				pmax			pmax		
	comp=N,33nm,0.6s								
KUR				pmax			pmax		
	comp=E,40nm,0.5s								
YSS	**Yuzh-Sakhalins**	**9.75**	**357**	P			**Pn**	**03 56 03.7**	**+3.1**
USRK	**Ussuriysk Ar.**	**11.24**	**312**	Pn			**Pn**	**03 56 24.1**	**+3.1**
	comp=E,0.4nm,0.3s,baz=114,slow=14,SNR=10.0								
USRK				LR			LR	04 00 34.6	
	comp=E,445nm,18.5s,baz=130,slow=37								
KSRS	**Korea Array**	**12.49**	**276**	Pn			Pn	03 56 46.8	+8.6
	comp=E,0.2nm,0.3s,baz=85,slow=15,SNR=4.1								
KSRS				LR			LR	04 01 14.4	
	comp=E,244nm,18.3s,baz=76,slow=36								
KSAR	**Wonju Array Be**	**12.52**	**276**	P			Pn	03 56 46.8	+8.2
KSAR	**Wonju Array Be**	**12.52**	**276**	Pn			Pn	03 56 46.8	+8.2
KLR	**Kul'dur**	**14.77**	**328**	Pn			**Pn**	**03 57 08.8**	**-0.4**
	comp=E,0.4nm,0.3s,baz=134,slow=13,SNR=16								
KLR				LR			LR	04 02 41.4	
	comp=E,210nm,19.2s,baz=139,slow=36								
NKL	**Nikolayevsk**	**16.06**	**354**	*e*P			**Pn**	**03 57 24.0**	**-2.2**
NKL				pmax			pmax		
	comp=Z,10.0nm,1.0s								
NJ2	**Nanjing**	**20.99**	**263**	*e*P			Pn	03 58 25.8	-0.7
NJ2				pmax			pmax		
	comp=Z,16nm,0.5s								
MA2	**Magadan**	**22.85**	**9**	LR			LR	04 08 15.7	
	comp=Z,43nm,21.4s,baz=244,slow=38								
HHC	**Hu-ho-hao-te**	**25.08**	**288**	*e*P			**P**	**03 59 06.9**	**+1.5**
HHC				sP			sP	03 59 20.5	+14
HHC				S			**S**	**04 03 26.8**	**-3.8**
HHC				SS			**SnSn**	**04 04 26.0**	**+6.9**
HHC				pmax			pmax		
	comp=Z,14nm,0.9s								
HHC				pmax			pmax		
	comp=Z,75nm,7.8s								
HHC				LR			LR		
	comp=Z,520nm,14.8s								
HHC				LR			LR		
	comp=Z,840nm,14.8s								
HHC				LR			LR		
	comp=Z,650nm,15.5s								
SEY	**Seymchan**	**26.30**	**9**	P			**P**	**03 59 17.8**	**+1.7**
	comp=Z,12nm,0.7s,baz=189,slow=5.9,SNR=41								
YAK	**Yakutsk**	**26.31**	**345**	LR			LR	04 11 31.1	
	comp=Z,66nm,18.1s,baz=191,slow=41								
YAK	**Yakutsk**	**26.31**	**345**	*e*P			**P**	**03 59 16.1**	**0.0**
YAK				*e*				04 00 00.2	
YAK				*e*S			**S**	**04 03 53.8**	**+4.5**
YAK				*e*SS			SnSn	04 05 05.4	+17
YAK				*e*				04 10 03.9	
YAK				pmax			pmax		
	comp=Z,15nm,0.8s								
YAK				pmax			pmax		
	comp=N,6.0nm,0.9s								
YAK				pmax			pmax		
	comp=E,6.0nm,1.1s								
YAK				pmax			pmax		
	comp=Z,27nm,1.1s								
YAK				pmax			pmax		
	comp=N,15nm,1.3s								
YAK				pmax			pmax		
	comp=E,9.0nm,1.1s								
YAK				smax			smax		
	comp=N,94nm,2.3s								
YAK				smax			smax		
	comp=E,85nm,3.3s								
YAK				MLR			MLR		
	comp=Z,110nm,18.0s								
YAK				MLR			MLR		
	comp=N,84nm,19.0s								
H11N2	**WAKE ISLAND Hy**	**26.77**	**124**	T			T	04 27 17.5	
	baz=316,slow=75,SNR=5.0								
H11N1	**WAKE ISLAND Hy**	**26.77**	**124**	T			T	04 27 21.7	
	baz=316,slow=75,SNR=3.6								
H11N3	**WAKE ISLAND Hy**	**26.78**	**124**	T			T	04 27 18.8	
	baz=316,slow=75,SNR=15								
H11S1	**WAKE ISLAND Hy**	**27.52**	**126**	T			T	04 28 19.1	
	baz=317								
H11S3	**WAKE ISLAND Hy**	**27.52**	**126**	T			T	04 28 17.8	
	baz=317								
H11S2	**WAKE ISLAND Hy**	**27.53**	**126**	T			T	04 28 21.2	
	baz=317								
BOD	**Bodaibo**	**28.33**	**326**	*e*P			**P**	**03 59 34.3**	**0.0**
BOD				pmax			pmax		
	comp=Z,7.0nm,1.3s								
ULN	**Ulaanbaatar**	**28.71**	**303**	*ce*P			**P**	**03 59 38.5**	**+0.5**
ULN				pmax			pmax		
	comp=Z,10.0nm,1.0s								
ULN	**Ulaanbaatar**	**28.71**	**303**	*e*P			**P**	**03 59 39.4**	**+1.4**
	comp=Z,8.5nm,0.9s								
ENH	**Enshi**	**29.10**	**266**	*e*P			**P**	**03 59 43.8**	**+2.3**
	comp=Z,18nm,1.0s								
SONA1	**Songino Array**	**29.14**	**303**	*e*P			**P**	**03 59 43.1**	**+1.2**
SONM	**Songino Array**	**29.15**	**303**	P			**P**	**03 59 43.2**	**+1.4**
	comp=Z,4.1nm,0.8s,baz=102,slow=8.1,SNR=21								
SONM				LR			LR	04 11 41.2	
	comp=Z,102nm,19.9s,baz=120,slow=37								
ZAK	**Zakamensk**	**31.54**	**308**	*e*P			**P**	**04 00 03.0**	**0.0**
ZAK				pmax			pmax		
	comp=Z,4.0nm,1.4s								
TLY	**Talaya**	**31.55**	**310**	LR			LR	04 13 29.6	
	comp=Z,210nm,18.1s,baz=90,slow=38								
TLY	**Talaya**	**31.55**	**310**	*i* P			**P**	**04 00 04.1**	**+1.2**
TLY				pmax			pmax		
	comp=Z,3.0nm,0.7s								
LZH	**Lanzhou**	**31.77**	**280**	*e*P			**P**	**04 00 03.1**	**-2.1**
LZH				pP			sP	04 00 12.1	+5.9
LZH				sP			pP	04 00 17.6	+12
LZH				pmax			pmax		
	comp=Z,14nm,1.5s								
LZH				pmax			pmax		
	comp=Z,68nm,4.3s								
LZH				LR			LR		
	comp=Z,230nm,14.8s								
LZH				LR			LR		
	comp=Z,160nm,13.7s								
LZH				LR			LR		
	comp=Z,260nm,15.7s								
BILL	**Bilibino**	**33.37**	**15**	*ce*P			**P**	**04 00 18.9**	**+0.2**
BILL				pmax			pmax		
	comp=Z,8.0nm,1.7s								
BILL	**Bilibino**	**33.37**	**15**	*e*P			**P**	**04 00 18.7**	**+0.1**
	comp=Z,8.0nm,1.1s								
CD2	**Chengdu**	**33.43**	**271**	P			**P**	**04 00 18.9**	**-0.8**
GTA	**Gaotai**	**34.19**	**287**	*e*P			**P**	**04 00 27.8**	**+1.5**
GTA				pP			sP	04 00 37.8	+10
GTA				sP			pP	04 00 41.5	+14
GTA				PcP			**PcP**	**04 03 04.3**	**+1.1**
GTA				S			**S**	**04 05 52.8**	**-0.7**
GTA				sS			sS	04 06 08.9	+14
GTA				SS			**SnSn**	**04 08 03.6**	**+2.7**
GTA				pmax			pmax		
	comp=Z,5.0nm,0.9s								
GTA				pmax			pmax		
	comp=Z,59nm,5.1s								
GTA				LR			LR		
	comp=Z,130nm,16.8s								
GTA				LR			LR		
	comp=Z,140nm,16.1s								
KMI	**Kunming**	**36.73**	**263**	P			**P**	**04 00 48.1**	**-0.3**
KMI				pP			sP	04 00 55.1	+5.7
KMI				sP			pP	04 00 57.8	+8.7
KMI				pmax			pmax		
	comp=Z,5.0nm,0.8s								
KMI				pmax			pmax		
	comp=Z,110nm,5.2s								
KMI				LR			LR		
	comp=Z,160nm,12.8s								
KMI				LR			LR		
	comp=Z,130nm,21.0s								
WMQ	**Urumqi**	**42.32**	**297**	*e*P			**P**	**04 01 35.8**	**+1.1**
WMQ				pP			sP	04 01 45.3	+10
WMQ				sP			pP	04 01 50.6	+15
WMQ				pmax			pmax		
	comp=Z,5.0nm,0.5s								
WMQ				pmax			pmax		
	comp=Z,77nm,4.0s								
ZAA0	**Zalesovo Array**	**43.09**	**312**	*e*P			**P**	**04 01 40.7**	**+0.1**
ZALV	**Zalesovo Beam**	**43.09**	**312**	P			**P**	**04 01 41.3**	**+0.7**
	comp=Z,4.5nm,0.8s,baz=89,slow=6.2,SNR=18								
ZALV				PcP			**PcP**	**04 03 30.6**	**+0.1**
	comp=Z,4.4nm,0.7s,baz=97,slow=3.2,SNR=7.3								
ZALV				LR			LR	04 20 25.1	
	comp=Z,134nm,18.4s,baz=68,slow=37								
CMAR	**Chiang Mai Arr**	**43.24**	**257**	P			**P**	**04 01 43.3**	**+1.0**
	comp=Z,0.8nm,0.3s,baz=46,slow=5.6,SNR=5.5								
CMAR				LR			LR	04 22 39.3	
	comp=Z,82nm,18.6s,baz=55,slow=40								
NRIK	**Noril'sk**	**43.84**	**335**	P			**P**	**04 01 47.3**	**+0.8**
	comp=Z,2.1nm,0.7s,baz=104,slow=8.0,SNR=4.3								
NRIK				LR			LR	04 22 04.2	
	comp=Z,95nm,19.0s,baz=124,slow=39								
NVS	**Novosibirsk**	**43.98**	**314**	*e*P			**P**	**04 01 48.3**	**+0.5**
MK31	**Makanchi Array**	**45.51**	**302**	*i* P			**P**	**04 01 59.7**	**-0.5**
MK31				pmax			pmax		
	comp=Z,4.0nm,0.8s								
MKAR	**Makanchi Array**	**45.51**	**302**	P			**P**	**04 02 00.6**	**+0.5**
	comp=Z,3.0nm,0.8s,baz=86,slow=9.8,SNR=26								
MKAR				LR			LR	04 22 21.5	
	comp=Z,47nm,20.0s,baz=82,slow=38								
MKAR	**Makanchi Array**	**45.51**	**302**	*e*P			**P**	**04 01 59.5**	**-0.6**
MAKZ	**Makanchi**	**45.72**	**302**	P			**P**	**04 02 01.9**	**+0.1**
MAKZ				pmax			pmax		
	comp=Z,9.0nm,1.4s								
MAKZ	**Makanchi**	**45.72**	**302**	*e*P			**P**	**04 02 02.7**	**+0.9**
	comp=Z,7.7nm,1.2s								
CAST	**Castle Rocks**	**46.09**	**34**	*e*P			**P**	**04 02 06.2**	**+1.7**
	comp=Z,11nm,1.7s								
MLY	**Manley**	**46.76**	**32**	*e*P			**P**	**04 02 10.9**	**+1.1**
	comp=Z,4.1nm,0.9s								
KURK	**Kurchatov**	**47.20**	**308**	P			**P**	**04 02 12.8**	**-0.5**
KURK				pmax			pmax		
	comp=Z,28nm,0.8s								
KURK	**Kurchatov**	**47.20**	**308**	*e*P			**P**	**04 02 13.7**	**+0.4**
	comp=Z,14nm,0.8s								
RND	**Reindeer**	**47.54**	**34**	*e*P			**P**	**04 02 16.2**	**+0.3**
RND				pmax			pmax		
	comp=Z,27nm,1.9s								
RND	**Reindeer**	**47.54**	**34**	*e*P			**P**	**04 02 16.2**	**+0.3**
	comp=Z,27nm,1.9s								
MDM	**Murphy Dome**	**47.83**	**32**	*e*P			**P**	**04 02 19.2**	**+1.1**
	comp=Z,6.6nm,0.8s								
PDGK	**Podgornoye**	**48.24**	**298**	P			**P**	**04 02 21.5**	**0.0**
PDGK				pmax			pmax		
	comp=Z,11nm,1.0s								
IL1	**Eielson Array**	**48.40**	**32**	*e*P			**P**	**04 02 22.7**	**+0.2**
ILAR	**Eielson Array**	**48.40**	**32**	P			**P**	**04 02 23.3**	**+0.8**
	comp=Z,2.3nm,0.7s,baz=264,slow=6.5,SNR=31								
ILB	**Eielson Array**	**48.40**	**32**	*e*P			**P**	**04 02 23.3**	**+0.8**
HNR	**Honiara**	**48.87**	**158**	LR			LR	04 20 24.7	
	comp=Z,36nm,19.9s,baz=352,slow=33								
TKM2	**Tokmak 2**	**51.08**	**299**	P			**P**	**04 02 44.3**	**+0.8**
TKM2				pmax			pmax		
	comp=Z,7.0nm,0.9s								
TKM2	**Tokmak 2**	**51.08**	**299**	*e*P			**P**	**04 02 44.2**	**+0.8**
	comp=Z,34nm,1.8s								
VOSK	**Vostochnaya**	**51.46**	**312**	P			**P**	**04 02 45.5**	**-0.5**
VOSK				pmax			pmax		
	comp=Z,8.0nm,0.9s								
VOSK	**Vostochnaya**	**51.46**	**312**	*e*P			**P**	**04 02 46.5**	**+0.5**
BVA0	**Borovoye Array**	**51.74**	**313**	*i* P			**P**	**04 02 47.8**	**-0.2**
BVA0				pmax			pmax		
	comp=Z,6.0nm,1.2s								
BRVK	**Borovoye**	**51.80**	**313**	*ce*P			**P**	**04 02 47.5**	**-0.9**
BRVK				pmax			pmax		
	comp=Z,17nm,2.5s								
BRVK	**Borovoye**	**51.80**	**313**	*e*P			**P**	**04 02 47.9**	**-0.6**
	comp=Z,5.5nm,0.9s								
AAK	**Ala-Archa**	**51.94**	**299**	*i* P			**P**	**04 02 48.6**	**-1.3**
AAK				pmax			pmax		
	comp=Z,9.0nm,1.5s								
AAK	**Ala-Archa**	**51.94**	**299**	*e*P			**P**	**04 02 51.0**	**+1.1**
	comp=Z,4.9nm,1.1s								
ZRNK	**Zerenda**	**52.58**	**313**	*e*P			**P**	**04 02 54.8**	**+0.6**
ZRNK				pmax			pmax		
	comp=Z,8.0nm,1.0s								
ZRNK	**Zerenda**	**52.58**	**313**	*e*P			**P**	**04 02 54.8**	**+0.6**
	comp=Z,8.3nm,1.0s								
MNAS	**Manas**	**53.38**	**299**	P			**P**	**04 03 00.0**	**-0.5**
MNAS				pmax			pmax		
	comp=Z,9.0nm,0.9s								
INK	**Inuvik**	**53.42**	**27**	P			**P**	**04 03 01.4**	**+1.2**
	comp=Z,1.8nm,0.6s,baz=295,slow=5.9,SNR=12								
INK	**Inuvik**	**53.42**	**27**	*e*P			**P**	**04 03 00.6**	**+0.4**
INK				pmax			pmax		
	comp=Z,5.0nm,

FIA1	**FINESS Array S**	**69.46**	**333**	*eP*	**P**	**04 04 48.6**	**-0.1**
FINES	**FINESS Array B**	**69.46**	**333**	P	**P**	**04 04 49.1**	**+0.4**
	comp=Z,8.6nm,0.7s,baz=51,slow=7.6,SNR=24						
FINES				LR	LR	04 38 29.1	
	comp=Z,92nm,18.4s,baz=67,slow=39						
FINES	**FINESS Array B**	**69.46**	**333**	*i* P	**P**	**04 04 49.4**	**+0.7**
FINES				pmax	pmax		
	comp=Z,9.0nm,0.7s						
VSR	**Storozhevoye**	**69.94**	**320**	*eP*	**P**	**04 04 51.1**	**-0.8**
VSR				pmax	pmax		
	comp=Z,10.0nm,1.4s						
SUMG	**Summit**	**70.49**	**1**	*eP*	**P**	**04 04 56.3**	**+0.9**
SUMG				pmax	pmax		
	comp=Z,6.0nm,0.6s						
SUMG	**Summit**	**70.49**	**1**	*eP*	**P**	**04 04 56.3**	**+0.9**
	comp=Z,5.8nm,0.6s						
ZEI	**Tsey**	**72.03**	**310**	*eP*	**P**	**04 05 04.1**	**-0.9**
ZEI				pmax	pmax		
	comp=Z,5.0nm,0.8s						
KIV	**Kislovodsk**	**72.10**	**312**	*c iP*	**P**	**04 05 07.1**	**+1.8**
KIV				pmax	pmax		
	comp=Z,16nm,0.8s						
KIV	**Kislovodsk**	**72.10**	**312**	*eP*	**P**	**04 05 07.1**	**+1.8**
	comp=Z,15nm,0.8s						
KBZ	**Khabaz**	**72.11**	**312**	P	**P**	**04 05 06.2**	**+1.1**
	comp=Z,7.0nm,0.9s,baz=37,slow=3.4,SNR=15						
KBZ				LR	LR	04 38 35.4	
	comp=Z,37nm,18.6s,baz=61,slow=37						
FFC	**Flin Flon**	**72.59**	**34**	*i* P	**P**	**04 05 09.3**	**+1.4**
BOZ	**Bozeman (W)**	**73.35**	**45**	*eP*	**P**	**04 05 13.9**	**+1.1**
BOZ				pmax	pmax		
	comp=Z,3.0nm,0.8s						
BOZ	**Bozeman (W)**	**73.35**	**45**	*eP*	**P**	**04 05 13.9**	**+1.1**
	comp=Z,2.6nm,0.8s						
NVAR	**Mina Array Bea**	**73.46**	**54**	P	**P**	**04 05 15.2**	**+1.6**
	comp=Z,0.7nm,0.4s,baz=280,slow=5.9,SNR=4.7						
NC204	**NORSAR Array S**	**74.63**	**338**	*eP*	**P**	**04 05 19.6**	**-0.2**
NB2	**NORSAR Subarra**	**74.68**	**338**	P	**P**	**04 05 20.2**	**+0.1**
	comp=Z,4.7nm,0.7s,baz=38,slow=6.2						
NOA	**NORSAR Array B**	**74.68**	**338**	P	**P**	**04 05 20.5**	**+0.4**
	comp=Z,4.4nm,0.8s,baz=38,slow=5.9,SNR=18						
NOA				LR	LR	04 44 39.0	
	comp=Z,39nm,19.2s,baz=30,slow=41						
H17A	**Grant Village**	**74.69**	**46**	*eP*	**P**	**04 05 23.1**	**+2.3**
	comp=Z,4.1nm,0.8s						
IMW	**Indian Meadow**	**74.79**	**46**	*eP*	**P**	**04 05 23.2**	**+1.8**
	comp=Z,5.9nm,1.3s						
AKASG	**Malin Array Be**	**75.21**	**323**	P	**P**	**04 05 23.1**	**-0.2**
	comp=Z,0.3nm,0.3s,baz=42,slow=5.9,SNR=8.1						
AKASG				LR	LR	04 43 09.1	
	comp=Z,43nm,18.8s,baz=220,slow=39						
AKASG	**Malin Array Be**	**75.21**	**323**	*i* P	**P**	**04 05 24.2**	**+0.9**
AKASG				pmax	pmax		
	comp=Z,1.0nm,0.4s						
DUG	**Dugway, Tooele**	**75.90**	**50**	*eP*	**P**	**04 05 28.0**	**+0.4**
DUG				pmax	pmax		
	comp=Z,10.0nm,1.8s						
DUG	**Dugway, Tooele**	**75.90**	**50**	*eP*	**P**	**04 05 28.0**	**+0.4**
	comp=Z,10.0nm,1.8s						
FRB	**Frobisher Bay**	**76.18**	**14**	P	**P**	**04 05 28.6**	**0.0**
	comp=Z,3.0nm,0.6s,baz=320,slow=7.1,SNR=8.6						
BW06	**Boulder Array**	**76.28**	**47**	*eP*	**P**	**04 05 29.9**	**0.0**
PDAR	**Pinedale Array**	**76.28**	**47**	P	**P**	**04 05 30.4**	**+0.6**
	comp=Z,1.1nm,0.7s,baz=276,slow=1.6,SNR=9.9						
LCMT	**Little Creek M**	**77.55**	**53**	*eP*	**P**	**04 05 38.1**	**+1.1**
	comp=Z,2.5nm,0.9s						
SRU	**San Rafael Swe**	**77.96**	**50**	*eP*	**P**	**04 05 39.8**	**+0.5**
SRU				pmax	pmax		
	comp=Z,5.0nm,0.9s						
SRU	**San Rafael Swe**	**77.96**	**50**	*eP*	**P**	**04 05 39.8**	**+0.5**
	comp=Z,4.9nm,0.9s						
STHS	**Stebnicka Huta**	**79.81**	**326**	*eP*	**P**	**04 05 49.6**	**+0.5**
STHS	**Stebnicka Huta**	**79.81**	**326**	*eP*	**P**	**04 05 49.6**	**+0.5**
BRTR	**Keskin Array B**	**80.03**	**313**	P	**P**	**04 05 51.7**	**+1.0**
	comp=Z,1.0nm,0.9s,baz=62,slow=4.0,SNR=6.3						
BRTR				LR	LR	04 44 38.2	
	comp=Z,24nm,18.5s,baz=41,slow=38						
BRTR	**Keskin Array B**	**80.03**	**313**	*i* P	**P**	**04 05 52.5**	**+1.8**
BRTR				pmax	pmax		
	comp=Z,1.0nm,0.9s						
BR231	**Keskin MP Arra**	**80.46**	**313**	*eP*	**P**	**04 05 51.6**	**-1.3**
S22A	**4UR Ranch, Cre**	**81.07**	**49**	*eP*	**P**	**04 05 56.9**	**+0.5**
	comp=Z,17nm,1.9s						
DPC	**Dobruska-Polom**	**81.22**	**329**	*eP*	**P**	**04 05 58.0**	**+1.3**
DPC	**Dobruska-Polom**	**81.22**	**329**	*eP*	**P**	**04 05 58.0**	**+1.3**
VYHS	**Vyhne**	**81.56**	**326**	*eP*	**P**	**04 05 59.7**	**+1.2**
VYHS	**Vyhne**	**81.56**	**326**	*eP*	**P**	**04 05 59.6**	**+1.1**
BRG	**Berggiesshubel**	**81.77**	**330**	*eP*	**P**	**04 06 00.3**	**+0.8**
	comp=Z,7.8nm,1.4s						
BRG	**Berggiesshubel**	**81.77**	**330**	*eP*	**P**	**04 06 00.3**	**+0.8**
BRG				pmax	pmax		
	comp=Z,8.0nm,1.4s						
CLL	**Collm**	**81.80**	**331**	*i* P	**P**	**04 06 00.0**	**+0.4**
	comp=Z,8.0nm,0.8s						
CLL				*i*		04 06 23.1	
CLL	**Collm**	**81.80**	**331**	⇓ *i* P	**P**	**04 06 00.0**	**+0.4**
CLL				pmax	pmax		
	comp=Z,8.0nm,0.8s						
CLL	**Collm**	**81.80**	**331**	*eP*	**P**	**04 05 59.6**	**-0.1**
	comp=Z,8.4nm,0.8s						
ANMO	**Albuquerque**	**83.12**	**51**	*eP*	**P**	**04 06 08.4**	**+1.3**
ANMO				pmax	pmax		
	comp=Z,6.0nm,1.4s						
ANMO	**Albuquerque**	**83.12**	**51**	*eP*	**P**	**04 06 08.4**	**+1.3**
	comp=Z,5.5nm,1.4s						
KHC	**Kasperske Hory**	**83.29**	**330**	*eP*	**P**	**04 06 08.2**	**+0.6**
KHC				*ex*	x	04 06 31.0	
KHC	**Kasperske Hory**	**83.29**	**330**	*eP*	**P**	**04 06 07.9**	**+0.4**
KHC				pmax	pmax		
	comp=Z,2.0nm,0.8s						
KHC	**Kasperske Hory**	**83.29**	**330**	*eP*	**P**	**04 06 07.9**	**+0.4**
	comp=Z,1.6nm,0.8s						
GERES	**GERESS Array B**	**83.47**	**329**	P	**P**	**04 06 08.8**	**+0.2**
	comp=Z,1.2nm,0.7s,baz=35,slow=4.9,SNR=11						
GERES				LR	LR	04 45 20.8	
	comp=Z,39nm,20.2s,baz=33,slow=37						
GEA0	**GERESS Array S**	**83.47**	**329**	*eP*	**P**	**04 06 07.9**	**-0.7**
BFO	**Black Forest**	**85.98**	**332**	*eP*	**P**	**04 06 21.8**	**+0.6**
BFO				pmax	pmax		
	comp=Z,6.0nm,0.9s						
BFO	**Black Forest**	**85.98**	**332**	*eP*	**P**	**04 06 21.8**	**+0.6**
	comp=Z,6.3nm,0.9s						
TX31	**Lajitas Ar. Si**	**88.61**	**54**	*eP*	**P**	**04 06 34.3**	**0.0**
TXAR	**Lajitas Array**	**88.61**	**54**	P	**P**	**04 06 35.0**	**+0.7**
	comp=Z,1.6nm,0.6s,baz=305,slow=3.2,SNR=32						
TXAR	**Lajitas Array**	**88.61**	**54**	P	**P**	**04 06 35.0**	**+0.7**
TORD	**Torodi Ar. Bea**	**118.42**	**317**	PKP	**PKPdf**	**04 12 28.0**	**-1.1**
	comp=Z,0.4nm,0.6s,baz=17,slow=1.1,SNR=7.2						
LPAZ	**La Paz**	**145.07**	**62**	PKPbc	**PKPdf**	**04 13 19.8**	**+0.1**
	comp=Z,1.4nm,0.5s,baz=342,slow=3.5,SNR=8.1						

JMA 18 03:55:27.7±0.3, 37.22N×143.44E, h47km, M3.8, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JFK	**Kawauchi**	**2.05**	**275**	*eS*	Sn	03 56 25.0	+0.9
JIO	**Ouri**	**2.06**	**307**	P	Pn	03 56 01.2	+1.3
JIO				*eS*	Sn	03 56 25.2	+0.8
ONAJ	**Iwakimizuishiy**	**2.11**	**268**	*eS*	Sn	03 56 26.8	+1.1
JMM	**Marumori**	**2.20**	**288**	*eS*	Sn	03 56 29.2	+1.5
OFUJ	**Ofunato**	**2.32**	**324**	*eS*	Sn	03 56 30.7	-0.1
JHO	**Hitachi**	**2.38**	**256**	*eS*	Sn	03 56 32.6	+0.4
JMK	**Ichinoseki**	**2.46**	**315**	*eS*	Sn	03 56 35.3	+1.1
JOU	**Okura**	**2.48**	**298**	*eS*	Sn	03 56 36.8	+2.2
JFT	**Otama**	**2.49**	**278**	*eS*	Sn	03 56 37.5	+2.6
JOM	**Ohasama**	**2.81**	**324**	*eS*	Sn	03 56 43.5	+0.7
JAG	**Ashikaga**	**3.30**	**257**	P	Pn	03 56 18.6	+1.8
JAG				*eS*	Sn	03 56 55.5	+0.8

JMA 18 03:57:51.0±0.1, 38.35N×143.98E, h16km, M3.6, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
OFUJ	**Ofunato**	**1.95**	**293**	P	Pn	03 58 24.1	+0.7
JIO	**Ouri**	**2.07**	**274**	P	Pn	03 58 26.0	+0.9
JIO				*eS*	Sn	03 58 51.6	+1.1
JMK	**Ichinoseki**	**2.24**	**286**	P	Pn	03 58 28.6	+1.1
JTH	**Tanohata**	**2.29**	**315**	P	Pn	03 58 28.8	+0.7
JTH				*eS*	Sn	03 58 57.1	+1.2
JOM	**Ohasama**	**2.38**	**299**	P	Pn	03 58 30.6	+1.3
JOM				*eS*	Sn	03 58 59.8	+1.7
JMM	**Marumori**	**2.56**	**260**	*eS*	Sn	03 59 03.3	+0.7
JRG	**Rokugo**	**2.81**	**293**	P	Pn	03 58 37.3	+2.0
JFT	**Otama**	**3.00**	**255**	*eS*	Sn	03 59 15.1	+1.6

NIED ***18*** *03:58:00.38˚60N×143˚60E, h5km, Mw3.8 Best double couple: M₀6.34000×10¹⁴ NP1:φ₅70.00000°, δ32.00000°, λ-25.00000°. NP2:φ₅182.00000°, δ77.00000°, λ-119.00000°.*

IDC ***18*** *03:58:42.2±1.3, 38˚40N×144˚14E, h0km, mb3.7/4, mb1 3.8/6, mb1mx3.5/55, mbtmp3.7/6, ML3.7/2, Error ellipse: s-maj=37.3km s-min=24.1km az=104.0*

ISCJB ***18*** *03:58:44.2±0.9, 38˚65N±0˚04×143˚76E±0˚07, h14km, mb3.7/4, Error ellipse: s-maj=7.7km s-min=5.3km az=26.6*

JMA ***18*** *03:58:45.9±0.1, 38˚58N×143˚59E, h10km, M3.7*

ISC 18 03:58:44.8±1.1, 38˚62N±0˚06×143˚83E±0˚08, h14km, n19, σ1§37/26, mb3.7/4, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
OFUJ	**Ofunato**	**1.75**	**286**	P	**Pn**	**03 59 14.2**	**-0.5**
JIO	**Ouri**	**1.95**	**266**	P	**Pn**	**03 59 16.8**	**-0.6**
JIO				*eS*	**Sn**	**03 59 39.0**	**-2.7**
JTH	**Tanohata**	**2.02**	**311**	*eS*	**Sn**	**03 59 43.3**	**-0.1**
JOM	**Ohasama**	**2.15**	**294**	P	**Pn**	**03 59 20.5**	**+0.3**
JOM				S	**Sn**	**03 59 46.1**	**-0.6**
JOU	**Okura**	**2.50**	**265**	P	**Pn**	**03 59 25.1**	**+0.1**
JOU				*eS*	**Sn**	**03 59 54.1**	**-1.1**
JMM	**Marumori**	**2.50**	**254**	P	**Pn**	**03 59 24.8**	**-0.3**
JMM				*eS*	**Sn**	**03 59 53.5**	**-1.9**
JANG	**Nango**	**2.51**	**315**	*eS*	**Sn**	**03 59 54.5**	**-0.9**
JRG	**Rokugo**	**2.61**	**288**	*eS*	**Sn**	**03 59 58.7**	**+0.7**
JFT	**Otama**	**2.97**	**249**	P	**Pn**	**03 59 31.6**	**+0.2**
JFT				*eS*	**Sn**	**04 00 05.8**	**-1.0**
JTM	**Tenmabayashi**	**3.04**	**316**	*eS*	**Sn**	**04 00 07.8**	**-0.7**
JOT	**Ohata**	**3.49**	**323**	*eS*	**Sn**	**04 00 17.9**	**-1.8**
JNBK	**Urakawa-nobuka**	**3.75**	**348**	*eS*	**Sn**	**04 00 24.8**	**-1.3**
MJAR	**Matsushiro Arr**	**4.92**	**247**	Pn	**Pn**	**03 59 59.2**	**+0.8**
	1.8nm,0.3s,baz=62,slow=12,SNR=5.4						
MAT	**Matsushiro**	**4.92**	**247**	P	**Pn**	**03 59 59.2**	**+0.9**
MAT				S	**Sn**	**04 00 56.0**	**+0.9**
ASAJ	**Asahikawa**	**5.57**	**351**	Pn	**Pn**	**04 00 07.8**	**+0.6**
	2.0nm,0.3s,baz=196,slow=8.1,SNR=5.0						
ASAJ				Sn	**Sn**	**04 01 08.4**	**-2.6**
	1.3nm,0.3s,baz=143,slow=20,SNR=4.1						
SEY	**Seymchan**	**24.89**	**9**	P	**P**	**04 04 08.2**	**+1.3**
	2.5nm,0.6s,baz=193,slow=6.6,SNR=9.7						
MKAR	**Makanchi Array**	**44.92**	**301**	P	**P**	**04 07 01.6**	**+2.6**
	0.5nm,0.5s,baz=83,slow=9.0,SNR=4.2						
WRA	**Warramunga Arr**	**59.33**	**190**	P	**P**	**04 08 41.6**	**-1.9**
	0.4nm,0.6s,baz=8.7,slow=7.3,SNR=2.5						
TXAR	**Lajitas Array**	**87.64**	**54**	P	**P**	**04 11 32.7**	**-0.3**
	0.2nm,0.7s,baz=316,slow=3.8,SNR=3.6						

IDC ***18*** *04:03:59.3±1.3, 37˚01N×143˚62E, h0km, mb3.6/5, mb1 3.9/6, mb1mx3.5/46, mbtmp3.6/6, ML3.8/1, MS3.6/1, Ms1 3.6/1, ms1mx2.5/42, Error ellipse: s-maj=33.2km s-min=24.9km az=46.0*

ISCJB ***18*** *04:04:02.3±0.8, 37˚19N±0˚04×143˚44E±0˚06, h33km, mb3.6/5, MS3.5/1, Error ellipse: s-maj=6.4km s-min=5.1km az=0.6*

JMA ***18*** *04:04:02.3±0.3, 37˚23N×143˚44E, h43km, M4.0*

ISC 18 04:04:04.3±1.1, 37˚21N±0˚05×143˚46E±0˚08, h35km, n29, σ1§42/35, mb3.5/5, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JFK	**Kawauchi**	**2.07**	**275**	P	**Pn**	**04 04 35.5**	**-1.1**
JFK				*eS*	**Sn**	**04 05 00.1**	**-1.1**
JIO	**Ouri**	**2.08**	**307**	P	**Pn**	**04 04 35.6**	**-1.2**
JIO				*eS*	**Sn**	**04 04 59.8**	**-1.7**
ONAJ	**Iwakimizuishiy**	**2.13**	**268**	P	**Pn**	**04 04 36.2**	**-1.3**
ONAJ				*eS*	**Sn**	**04 05 01.3**	**-1.4**
JMM	**Marumori**	**2.22**	**288**	P	**Pn**	**04 04 37.7**	**-0.9**
JMM				*eS*	**Sn**	**04 05 03.8**	**-1.0**
OFUJ	**Ofunato**	**2.34**	**323**	P	**Pn**	**04 04 38.6**	**-1.7**
OFUJ				S	**Sn**	**04 05 05.4**	**-2.5**
JHO	**Hitachi**	**2.39**	**256**	*eS*	**Sn**	**04 05 07.7**	**-1.4**
JMK	**Ichinoseki**	**2.48**	**315**	*eS*	**Sn**	**04 05 09.5**	**-1.8**
JOU	**Okura**	**2.50**	**298**	P	**Pn**	**04 04 41.8**	**-0.7**
JOU				*eS*	**Sn**	**04 05 11.2**	**-0.6**
JFT	**Otama**	**2.51**	**278**	P	**Pn**	**04 04 42.9**	**+0.3**
JFT				*eS*	**Sn**	**04 05 11.8**	**-0.2**
JOM	**Ohasama**	**2.83**	**324**	P	**Pn**	**04 04 46.9**	**-0.2**
JOM				S	**Sn**	**04 05 18.3**	**-1.6**
JYK	**Kaneyama**	**2.98**	**306**	P	**Pn**	**04 04 48.8**	**-0.3**
BSO1	**Boso 1**	**3.25**	**219**	P	**Pn**	**04 04 50.7**	**-1.6**
BSO1				*eS*	**Sn**	**04 05 29.3**	**-0.2**
JAG	**Ashikaga**	**3.31**	**258**	P	**Pn**	**04 04 53.0**	**-0.6**
JRY	**Ryogami san**	**3.86**	**253**	P	**Pn**	**04 05 00.3**	**-0.9**
JRY				*eS*	**Sn**	**04 05 42.7**	**-2.6**
JOD2	**Odawara 2**	**4.03**	**243**	P	**Pn**	**04 05 02.4**	**-1.2**
JOD2				*eS*	**Sn**	**04 05 47.5**	**-2.1**
MJAR	**Matsushiro Arr**	**4.26**	**263**	Pn	**Pn**	**04 05 07.5**	**+0.7**
	4.7nm,0.3s,baz=79,slow=17,SNR=17						
MJAR				Sn	**Sn**	**04 05 57.5**	**+2.2**
	2.4nm,0.3s,baz=95,slow=28,SNR=5.8						
MAT	**Matsushiro**	**4.26**	**263**	P	**Pn**	**04 05 07.6**	**+0.8**
MAT				S	**Sn**	**04 05 55.2**	**-0.1**
H11N2	**WAKE ISLAND Hy**	**26.86**	**124**	T	T	04 36 52.9	
	baz=315,slow=75,SNR=11						
H11N1	**WAKE ISLAND Hy**	**26.87**	**124**	T	T	04 36 55.5	
	baz=315,slow=75,SNR=11						
H11N3	**WAKE ISLAND Hy**	**26.88**	**124**	T	T	04 36 54.5	
	baz=315,slow=75,SNR=9.3						
H11S1	**WAKE ISLAND Hy**	**27.61**	**126**	T	T	04 37 47.5	
	baz=316,slow=76,SNR=8.7						
H11S3	**WAKE ISLAND Hy**	**27.61**	**126**	T	T	04 37 47.8	
	baz=316,slow=76,SNR=5.0						
H11S2	**WAKE ISLAND Hy**	**27.62**	**126**	T	T	04 37 49.9	
	baz=316,slow=76,SNR=5.1						
SONM	**Songino Array**	**29.05**	**303**	P	**P**	**04 10 04.4**	**+3.1**
	0.3nm,0.6s,baz=107,slow=7.7,SNR=2.2						
DAV	**Davao City (W)**	**34.13**	**213**	LR	LR	04 23 54.3	
	comp=Z,95nm,19.6s,baz=354,slow=35						
MKAR	**Makanchi Array**	**45.41**	**302**	P	**P**	**04 12 20.0**	**+0.6**
	0.2nm,0.5s,baz=72,slow=9.3,SNR=3.0						
WRA	**Warramunga Arr**	**57.49**	**190**	P	**P**	**04 13 48.8**	**-1.2**
	1.6nm,0.7s,baz=11,slow=7.2,SNR=5.5						
ASAR	**Alice Springs**	**61.22**	**190**	P	**P**	**04 14 15.1**	**-0.6**
	0.4nm,0.5s,baz=8.8,slow=6.7,SNR=7.0						
TXAR	**Lajitas Array**	**88.71**	**54**	P	**P**	**04 16 55.1**	**+0.6**
	0.1nm,0.4s,baz=293,slow=4.6,SNR=4.4						

IDC ***18*** *04:05:28.4±0.7, 37˚11N×143˚68E, h0km, mb4.0/15, mb1 4.1/18, mb1mx4.0/49, mbtmp4.0/18, ML4.1/2, MS3.4/4, Ms1 3.4/4, ms1mx2.8/42, Error ellipse: s-maj=19.3km s-min=15.4km az=108.0*

ISCJB ***18*** *04:05:31.6±0.6, 37˚13N±0˚08×143˚53E±0˚07, h33km, mb3.9/15, Error ellipse: s-maj=12.3km s-min=7.0km az=164.2*

ISC 18 04:05:34.0±0.7, 37˚25N±0˚08×143˚58E±0˚08, h35km, n29, σ1§34/24, mb4.0/15, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MJAR	**Matsushiro Arr**	**4.36**	**262**	Pn	**Pn**	**04 06 37.0**	**-0.7**
	9.2nm,0.3s,baz=84,slow=16,SNR=20						
MJAR				Sn	**Sn**	**04 07 26.4**	**-1.0**
	6.0nm,0.3s,baz=195,slow=22,SNR=4.8						
MAT	**Matsushiro**	**4.36**	**262**	P	Pn	04 06 33.2	-4.6
MAT				S	**Sn**	**04 07 25.7**	**-1.7**
ASAJ	**Asahikawa**	**6.90**	**354**	Pn	**Pn**	**04 07 10.9**	**-1.6**
	3.7nm,0.3s,baz=194,slow=14,SNR=5.2						
ASAJ				Sn	**Sn**	**04 08 27.2**	**-2.5**
	1.1nm,0.3s,baz=16,slow=18,SNR=3.1						
JNU	**Nakatsue**	**11.18**	**252**	LR	LR	04 12 27.4	
	comp=Z,92nm,19.8s,baz=113,slow=37						
USRK	**Ussuriysk Ar.**	**11.20**	**312**	Pn	**Pn**	**04 08 12.8**	**+1.4**
	0.2nm,0.3s,baz=115,slow=11,SNR=3.0						
USRK				LR	LR	04 12 14.1	
	comp=Z,192nm,19.1s,baz=132,slow=36						
KSRS	**Korea Array**	**12.46**	**276**	Pn	**Pn**	**04 08 31.2**	**+2.5**
	0.2nm,0.3s,baz=92,slow=13,SNR=7.1						
KSRS				LR	LR	04 12 43.9	
	comp=Z,208nm,20.9s,baz=108,slow=35						
KLR	**Kul'dur**	**14.73**	**328**	Pn	**Pn**	**04 08 57.8**	**-1.8**
	0.2nm,0.3s,baz=133,slow=12,SNR=5.0						
KLR				LR	LR	04 15 13.3	
	comp=Z,149nm,18.1s,baz=188,slow=39						
SEY	**Seymchan**	**26.27**	**9**	P	**P**	**04 11 06.8**	**+1.2**
	3.4nm,0.8s,baz=190,slow=6.1,SNR=8.2						
H11N2	**WAKE ISLAND Hy**	**26.80**	**124**	T	T	04 39 08.1	
	baz=316						
H11N1	**WAKE ISLAND Hy**	**26.81**	**124**	T	T	04 39 10.2	
	baz=316						
H11N3	**WAKE ISLAND Hy**	**26.82**	**124**	T	T	04 39 09.0	
	baz=316						
H11S1	**WAKE ISLAND Hy**	**27.56**	**126**	T	T	04 40 01.2	
	baz=313						
H11S3	**WAKE ISLAND Hy**	**27.56**	**126**	T	T	04 40 03.8	
	baz=313						
H11S2	**WAKE ISLAND Hy**	**27.57**	**126**	T	T	04 40 08.8	
	baz=313						
SONM	**Songino Array**	**29.11**	**303**	P	**P**	**04 11 32.3**	**+0.9**
	3.1nm,0.8s,baz=109,slow=9.0,SNR=14						
ZALV	**Zalesovo Beam**	**43.05**	**312**	P	**P**	**04 13 30.2**	**+0.2**
	1.2nm,0.7s,baz=81,slow=9.2,SNR=4.8						
CMAR	**Chiang Mai Arr**	**43.23**	**257**	P	**P**	**04 13 33.2**	**+1.3**
	0.8nm,0.3s,baz=51,slow=5.9,SNR=3.2						
MKAR	**Makanchi Array**	**45.47**	**302**	P	**P**	**04 13 49.9**	**+0.3**
	0.9nm,0.7s,baz=85,slow=7.4,SNR=6.9						
ILAR	**Eielson Array**	**48.38**	**32**	P	**P**	**04 14 12.9**	**+0.9**
	1.5nm,0.8s,baz=268,slow=6.1,SNR=11						
WRA	**Warramunga Arr**	**57.55**	**190**	P	**P**	**04 15 18.4**	**-1.6**
	1.2nm,0.5s,baz=7.7,slow=7.2,SNR=4.5						
ASAR	**Alice Springs**	**61.27**	**190**	P	**P**	**04 15 44.6**	**-1.1**
	1.0nm,0.5s,baz=9.3,slow=8.2,SNR=13						
RES	**Resolute Bay**	**61.95**	**15**	P	**P**	**04 15 50.8**	**+1.1**
	0.8nm,0.7s,baz=309,slow=8.0,SNR=4.7						
YKA	**Yellowknife Ar**	**62.74**	**31**	P	**P**	**04 15 55.9**	**+0.8**
	0.3nm,0.7s,baz=296,slow=6.3,SNR=5.2						
STKA	**Stephens Creek**	**68.80**	**182**	P	**P**	**04 16 33.1**	**-1.3**
	0.7nm,0.6s,baz=0.1,slow=7.5,SNR=3.3						
FINES	**FINESS Array B**	**69.42**	**333**	P	**P**	**04 16 38.4**	**+0.4**
	2.4nm,0.8s,baz=12,slow=7.1,SNR=3.6						
NOA	**NORSAR Array B**	**74.64**	**338**	P	**P**	**04 17 09.2**	**-0.1**
	1.5nm,1.0s,baz=37,slow=5.7,SNR=3.2						
PDAR	**Pinedale Array**	**76.27**	**47**	P	**P**	**04 17 19.2**	**0.0**
	0.4nm,0.8s,baz=262,slow=4.0,SNR=3.5						
TXAR	**Lajitas Array**	**88.61**	**54**	P	**P**	**04 18 23.9**	**+0.3**
	0.9nm,0.8s,baz=291,slow=2.8,SNR=11						
TORD	**Torodi Ar. Bea**	**118.38**	**317**	PKP	**PKPdf**	**04 24 17.2**	**-1.0**
	0.5nm,1.0s,baz=356,slow=0.9,SNR=2.4						

JMA 18 04:05:56.3, 36.07N×140.91E, h30km±1km, M3.1, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CHOJ	**Chosi**	**0.37**	**186**	P	Pb	04 06 04.4	-0.3
CHOJ				S	Sb	04 06 10.0	-0.4
JHO	**Hitachi**	**0.61**	**333**	P	Pb	04 06 08.2	-0.3
JHO				S	Sb	04 06 16.8	0.0

JMA 18 04:07:28.7, 32.77N×131.32E, h13km±1km, M3.6, 3C-3D Broadband fault plane solution: P waves. NP1: φ₅41.00000°, δ73.00000°, λ-160.00000°. **NP2:** φ₅305.00000°, δ70.00000°, λ-18.00000°. **Principal axes:** T Plg2.0000°, Azm173.0000°; N Plg64.0000°, Azm79.0000°; P Plg26.0000°, Azm264.0000°; **Kyushu**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JKIT	**Kitakata**	**0.18**	**142**	⇑P	Pg	04 07 32.9	0.0
JKIT				S	Sg	04 07 35.8	0.0
JUS	**Usuki**	**0.47**	**51**	⇓P	Pg	04 07 37.8	-0.1
JIU2	**Izumi 2**	**0.48**	**242**	⇑P	Pg	04 07 37.9	-0.3
JTSN	**Tsuno**	**0.55**	**163**	⇑P	Pg	04 07 39.6	+0.2
JTSN				S	Sg	04 07 46.8	+0.1
JTA	**Tamana**	**0.69**	**286**	⇓P	Pg	04 07 42.0	-0.1
JTZ	**Takazaki**	**0.89**	**193**	⇑P	Pg	04 07 45.9	0.0
JTZ				S	Sg	04 07 57.5	0.0

TRN 18 04:07:40.4, 14.04N×60.77W, h24km, MD3.6, Windward Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MCLT	**Moule a Chique**	**0.37**	**207

ABKAR	**Akbulak array**	**66.41**	**315**	*e*P		**P**	**04 22 40.3**	**-0.2**
YKA	**Yellowknife Ar**	**71.66**	**29**	P		**P**	**04 23 11.6**	**-1.3**
	0.5nm,0.7s,baz=294,slow=6.4,SNR=7.8							
FINES	**FINESS Array B**	**78.89**	**334**	P		**P**	**04 23 56.1**	**+1.6**
	2.1nm,0.9s,baz=51,slow=6.1,SNR=4.0							
KBZ	**Khabaz**	**79.34**	**314**	P		**P**	**04 23 57.6**	**+0.3**
	3.4nm,0.8s,baz=69,slow=4.6,SNR=9.1							
NVAR	**Mina Array Bea**	**79.47**	**52**	P		**P**	**04 23 58.2**	**-0.3**
	1.2nm,0.7s,baz=283,slow=5.6,SNR=5.0							
PDAR	**Pinedale Array**	**83.32**	**45**	P		**P**	**04 24 17.8**	**-1.1**
	0.4nm,0.5s,baz=270,slow=1.5,SNR=5.5							
BRTR	**Keskin Array B**	**87.33**	**314**	P		**P**	**04 24 39.0**	**+0.2**
	0.8nm,0.8s,baz=88,slow=3.0,SNR=4.4							
TXAR	**Lajitas Array**	**94.52**	**54**	P		**P**	**04 25 13.1**	**+0.6**
	0.2nm,0.5s,baz=319,slow=2.1,SNR=4.1							
LPAZ	**La Paz**	**148.48**	**77**	PKPbc		**PKPbc**	**04 31 39.4**	**-0.4**
	1.6nm,0.7s,baz=312,slow=2.7,SNR=6.7							

IDC ***18*** *04:19:52.5±0.7,3°.11N×126°.90E,h0km,mb4.0/12, mb1 4.1/12,mb1mx3.9/48,mbtmp4.0/12,Error ellipse: s-maj=38.3km s-min=14.2km az=73.0*

ISCJB ***18*** *04:19:56.5±0.5,3°.08N±0°.09×126°.9E±0°.2,h44km, mb4.0/15,Error ellipse: s-maj=30.2km s-min=8.7km az=162.5*

NEIC ***18*** *04:19:57.5±0.4,3°.07N×126°.93E,h35km,mb4.0/2,Error ellipse: s-maj=22.0km s-min=6.6km az=73.0*

ISC 18 04:19:58.4±0.7,3°.0N±0°.1×127°.0E±0°.2,h44km,n17, σ0s78/17,mb4.0/15,Talaud Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
TNTI	**Ternate**	**2.29**	**170**	*e*Pn	**Pn**	**04 20 32.3**	**-1.4**
TNTI				*e*S	Sn	04 21 08.7	+8.1
FITZ	**Fitzroy Crossi**	**21.04**	**183**	P	**P**	**04 24 39.7**	**+0.9**
	3.0nm,0.6s,baz=4.1,slow=6.7,SNR=8.2						
WRAB	**Tennant Creek**	**23.95**	**163**	*e*P	**P**	**04 25 08.8**	**0.0**
	2.0nm,0.4s						
WRA	**Warramunga Arr**	**23.96**	**163**	P	**P**	**04 25 08.9**	**+0.1**
	2.0nm,0.5s,baz=340,slow=10,SNR=26						
ASAR	**Alice Springs**	**27.39**	**166**	P	**P**	**04 25 40.4**	**+0.5**
	0.4nm,0.5s,baz=352,slow=7.7,SNR=6.3						
CMAR	**Chiang Mai Arr**	**31.42**	**301**	P	**P**	**04 26 16.3**	**+0.6**
	0.7nm,0.3s,baz=116,slow=7.3,SNR=5.3						
STKA	**Stephens Creek**	**37.41**	**159**	P	**P**	**04 27 08.2**	**+0.9**
	1.7nm,0.4s,baz=333,slow=8.9,SNR=7.6						
KLR	**Kul'dur**	**46.21**	**4**	P	**P**	**04 28 18.9**	**0.0**
	1.1nm,0.6s,baz=311,slow=7.3,SNR=4.2						
SONM	**Songino Array**	**48.02**	**341**	P	**P**	**04 28 33.4**	**0.0**
	0.5nm,0.4s,baz=148,slow=9.0,SNR=3.6						
PETK	**Petropavlovsk-**	**55.99**	**22**	P	**P**	**04 29 32.9**	**+0.6**
	2.9nm,0.6s,baz=230,slow=5.1,SNR=3.7						
MKAR	**Makanchi Array**	**58.25**	**325**	P	**P**	**04 29 47.9**	**-0.7**
	0.9nm,0.5s,baz=118,slow=8.1,SNR=9.7						
ZALV	**Zalesovo Beam**	**61.30**	**333**	P	**P**	**04 30 07.8**	**-1.5**
	0.9nm,0.5s,baz=134,slow=4.2,SNR=5.4						
KURBB	**Kurchatov Arra**	**62.44**	**327**	P	**P**	**04 30 16.5**	**-0.5**
	2.1nm,0.7s,baz=124,slow=6.4,SNR=28						
KURK	**Kurchatov**	**62.44**	**328**	*e*P	**P**	**04 30 16.4**	**-0.7**
	6.9nm,0.7s						
ABKAR	**Akbulak array**	**72.83**	**321**	*e*P	**P**	**04 31 22.1**	**-0.5**
	1.2nm,0.6s						
BRTR	**Keskin Array B**	**90.63**	**310**	P	**P**	**04 32 56.9**	**+0.1**
	0.6nm,0.8s,baz=66,slow=3.6,SNR=3.4						
TORD	**Torodi Ar. Bea**	**123.34**	**288**	PKP	**PKPdf**	**04 38 52.5**	**+0.7**
	0.4nm,0.5s,baz=69,slow=1.8,SNR=5.8						

NIED ***18*** *04:20:00.38°.30N×141°.80E,h11km,Mw3.8 Best double couple: M0 5.25000×10^14 NP1:φs220.00000°,δ59.00000°, λ-164.00000°. NP2:φs121.00000°,δ76.00000°, λ-32.00000°.*

IDC ***18*** *04:20:40.2±2.7,38°.56N×142°.82E,h0km,mb3.6/3, mb1 3.7/4,mb1mx3.3/45,mbtmp3.5/4,ML3.2/1,MS3.8/1, Ms1 3.8/1,ms1mx2.5/41,Error ellipse: s-maj=68.4km s-min=31.9km az=69.0*

ISCJB ***18*** *04:20:50.8±1.0,38°.30N±0°.04×141°.82E±0°.10,h63km±7km, mb3.5/3,Error ellipse: s-maj=13.5km s-min=6.0km az=18.4*

JMA ***18*** *04:20:51.7±0.1,38°.30N×141°.79E,h58km±1km,M3.6*

JMA Felt I J1.

ISC 18 04:20:50.9±1.5,38°.31N±0°.05×141°.9E±0°.1,h52km±12km, n22,σ1s53/26,mb3.6/3,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**0.47**	**288**	P	**Pn**	**04 21 02.4**	**+0.5**
JIO				S	**Sn**	**04 21 09.7**	**-0.1**
OFUJ	**Ofunato**	**0.80**	**346**	P	**Pn**	**04 21 06.8**	**+0.8**
OFUJ				S	**Sn**	**04 21 17.6**	**+0.6**
JMK	**Ichinoseki**	**0.84**	**320**	P	**Pn**	**04 21 07.2**	**+0.6**
JMK				S	**Sn**	**04 21 18.1**	**0.0**
JOU	**Okura**	**0.99**	**274**	P	**Pn**	**04 21 08.4**	**-0.1**
JOU				S	**Sn**	**04 21 20.7**	**-0.8**
JMM	**Marumori**	**0.99**	**244**	P	**Pn**	**04 21 08.1**	**-0.4**
JMM				S	**Sn**	**04 21 20.2**	**-1.3**
JFK	**Kawauchi**	**1.25**	**222**	P	**Pn**	**04 21 11.9**	**-0.2**
JFK				S	**Sn**	**04 21 27.2**	**-0.6**
JOM	**Ohasama**	**1.26**	**338**	P	**Pn**	**04 21 13.0**	**+0.8**
JOM				S	**Sn**	**04 21 28.7**	**+0.6**
JYK	**Kaneyama**	**1.36**	**297**	P	**Pn**	**04 21 13.6**	**0.0**
JYK				S	**Sn**	**04 21 30.0**	**-0.5**
JYS	**Shirataka**	**1.46**	**267**	P	**Pn**	**04 21 14.9**	**0.0**
JYS				S	**Sn**	**04 21 32.2**	**-0.7**
JFT	**Otama**	**1.48**	**238**	P	**Pn**	**04 21 15.5**	**+0.4**
JFT				S	**Sn**	**04 21 32.6**	**-0.7**
MJAR	**Matsushiro Arr**	**3.44**	**240**	Pn	**Pn**	**04 21 45.0**	**+3.0**
	1.4nm,0.3s,baz=53,slow=11,SNR=7.2						
MAT	**Matsushiro**	**3.44**	**240**	P	**Pn**	**04 21 43.7**	**+1.7**
MAT				S	**Sn**	**04 22 26.9**	**+5.4**
H11N2	**WAKE ISLAND Hy**	**28.49**	**123**	T	T	04 57 03.1	
	baz=316,slow=75,SNR=9.5						
H11N1	**WAKE ISLAND Hy**	**28.50**	**124**	T	T	04 57 04.3	
	baz=316,slow=75,SNR=12						
H11N3	**WAKE ISLAND Hy**	**28.50**	**123**	T	T	04 57 01.1	
	baz=316,slow=75,SNR=12						
H11S1	**WAKE ISLAND Hy**	**29.24**	**125**	T	T	04 57 59.3	
	baz=318,slow=76,SNR=6.3						
H11S3	**WAKE ISLAND Hy**	**29.25**	**126**	T	T	04 58 02.0	
	baz=318,slow=76,SNR=10						
H11S2	**WAKE ISLAND Hy**	**29.26**	**126**	T	T	04 58 05.6	
	baz=318,slow=76,SNR=4.4						
MKAR	**Makanchi Array**	**43.79**	**301**	P	**P**	**04 28 51.7**	**+0.2**
	0.3nm,0.6s,baz=90,slow=8.6,SNR=3.3						
KURBB	**Kurchatov Arra**	**45.54**	**307**	P	**P**	**04 29 04.2**	**-1.0**
	0.5nm,0.6s,baz=82,slow=8.2,SNR=5.5						
BVAR	**Borovoye Array**	**50.02**	**312**	LR	LR	04 52 17.4	
	comp=Z,106nm,20.5s,baz=253,slow=38						
WRA	**Warramunga Arr**	**58.38**	**188**	P	**P**	**04 30 39.7**	**-1.3**
	0.5nm,0.6s,baz=6.3,slow=7.0,SNR=5.8						

ISCJB ***18*** *04:27:32.8±0.4,26°.38S±0°.03×27°.56E±0°.03,h15km±4km, Error ellipse: s-maj=5.3km s-min=3.4km az=147.2*

PRE ***18*** *04:27:32.8±2.9,26°.44S×27°.55E,h2km,ML3.6*

ISC 18 04:27:33.1±0.8,26°.39S±0°.03×27°.54E±0°.03,h11km±5km, n20,σ1s60/39,1D,South Africa

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
KLOF	**Kloof**	**0.07**	**55**	*e*P	**Pg**	**04 27 35.5**	**-0.2**
KLOF				*e*S	**Sg**	**04 27 36.0**	**-1.7**
KLOF				AML	AML	04 27 36.3	
	comp=Z,117μm,0.2s						
WDLM	**Western Deep L**	**0.11**	**254**	*e*P	**Pg**	**04 27 36.5**	**+0.3**
WDLM				*e*S	**Sg**	**04 27 38.5**	**+0.1**
WDLM				AML	AML	04 27 40.1	
	comp=Z,9μm,0.5s						
OBSV	**Observatory**	**0.52**	**67**	*e*P	**Pg**	**04 27 43.5**	**+0.2**
OBSV				*e*S	**Sg**	**04 27 49.0**	**-1.3**
OBSV				AML	AML	04 27 49.6	
	comp=Z,7μm,0.4s						
PRYS	**Parys**	**0.56**	**197**	*e*P	**Pg**	**04 27 44.4**	**+0.4**
PRYS				*e*S	**Sg**	**04 27 51.0**	**-0.4**
PRYS				AML	AML	04 27 56.9	
	comp=Z,725nm,0.8s						
ERPM	**east rand prop**	**0.63**	**86**	*e*P	**Pb**	**04 27 46.1**	**-0.1**
ERPM				*e*S	**Sg**	**04 27 52.1**	**-1.6**
ERPM				AML	AML	04 27 53.6	
	comp=Z,642nm,0.1s						
KSR	**Koster**	**0.79**	**313**	*e*P	**Pb**	**04 27 49.3**	**+0.3**
KSR				*e*S	**Sg**	**04 27 59.1**	**+0.3**
KSR				AML	AML	04 28 07.3	
	comp=Z,327nm,0.7s						
BFSD	**Buffelsfontein**	**0.82**	**235**	*e*P	**Pb**	**04 27 50.0**	**+0.4**
BFSD				*e*S	**Sg**	**04 27 59.1**	**-0.7**
BFSD				AML	AML	04 28 00.0	
	comp=Z,346nm,0.2s						
MOAB	**Moab Khotsong**	**0.89**	**228**	*e*P	**Pb**	**04 27 51.1**	**+0.5**
MOAB				*e*S	**Sg**	**04 28 01.1**	**-0.9**
MOAB				AML	AML	04 28 12.9	
	comp=Z,891nm,0.8s						
TLEK	**Tau Lekoa**	**0.96**	**234**	*e*P	**Pg**	**04 27 51.9**	**+0.1**
TLEK				*e*S	**Sg**	**04 28 02.9**	**-1.4**
SWZ	**Schweizer**	**2.13**	**248**	*e*P	**Pn**	**04 28 08.7**	**0.0**
SWZ				*e*S	**Sn**	**04 28 36.5**	**+1.4**
SWZ				AML	AML	04 28 40.1	
	comp=Z,500nm,0.2s						
BOSA	**Boshof**	**3.00**	**222**	*i* P	Pn	04 28 24.0	+3.3
BOSA				*i*		04 28 24.0	
	baz=44,slow=18						
BOSA				*i* S	**Sb**	**04 29 04.6**	**+1.2**
POGA	**Pongola**	**3.76**	**106**	*e*P	**Pn**	**04 28 33.3**	**+2.3**
POGA				*e*S	**Sn**	**04 29 16.6**	**+1.2**
POGA				AML	AML	04 29 38.9	
	comp=Z,118nm,0.7s						
KSD	**Kokstad**	**4.45**	**159**	*e*P	**Pn**	**04 28 42.9**	**+2.3**
KSD				*e*S	**Sn**	**04 29 32.9**	**+0.4**
KSD				AML	AML	04 29 58.2	
	comp=Z,29nm,0.5s						
MSNA	**Messina**	**4.62**	**30**	*e*P	**Pn**	**04 28 44.6**	**+1.7**
MSNA				*e*S	**Sn**	**04 29 36.9**	**+0.3**
MSNA				AML	AML	04 30 06.3	
	comp=Z,66nm,0.4s						
UPI	**Upington**	**5.92**	**249**	*e*P	**Pn**	**04 29 01.8**	**+0.9**
UPI				*e*S	**Sn**	**04 30 06.5**	**-2.3**
UPI				AML	AML	04 30 38.7	
	comp=Z,38nm,0.5s						
MATP	**Matopo**	**6.00**	**9**	⇓*i* P	**Pn**	**04 29 02.7**	**+0.7**
MATP				*i*		04 29 02.8	
	baz=153,slow=28						
MATP				*i* S	**Sn**	**04 30 10.0**	**-0.8**
KEIM	**Keimoes**	**6.27**	**247**	*e*P	**Pn**	**04 29 06.3**	**+0.7**
KEIM				*e*S	**Sn**	**04 30 14.6**	**-2.7**
KEIM				AML	AML	04 30 48.7	
	comp=Z,48nm,0.6s						
GRM	**Grahamstown**	**6.96**	**187**	*e*P	**Pn**	**04 29 14.8**	**-0.1**
GRM				*e*S	**Sn**	**04 30 31.3**	**-2.8**
GRM				AML	AML	04 31 17.4	
	comp=Z,26nm,0.5s						
BUFB	**Buffelsbos**	**8.10**	**197**	*e*P	**Pn**	**04 29 31.1**	**+0.5**
BUFB				*e*S	**Sn**	**04 30 57.7**	**-4.5**
BUFB				AML	AML	04 32 02.1	
	comp=Z,20nm,0.6s						
CVNA	**Calvinia**	**8.49**	**232**	*e*P	**Pn**	**04 29 36.5**	**+0.4**
CVNA				*e*S	**Sn**	**04 31 08.2**	**-3.9**
CVNA				AML	AML	04 32 02.3	
	comp=Z,45nm,0.4s						

ISCJB ***18*** *04:43:02.4±0.5,38°.47N±0°.03×118°.80W±0°.04,h10km, Error ellipse: s-maj=4.9km s-min=4.1km az=0.2*

NEIC ***18*** *04:43:02.0,38°.42N×118°.76W,h3km,ML3.3(REN),After REN.*

ISC 18 04:43:02.1±0.7,38°.45N±0°.02×118°.78W±0°.03,h10km,n18, σ1s83/30,California-Nevada border region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MLAC	**Mammoth, Mammo**	**0.82**	**183**	P	**Pg**	**04 43 17.1**	**-0.8**
	baz=4.6						
MLAC				S	**Sg**	**04 43 28.2**	**-0.4**
	baz=4.6						
CMB	**Columbia Colle**	**1.33**	**252**	*e*Pn	**Pn**	**04 43 26.8**	**0.0**
CMB				*e*S	**Sn**	**04 43 44.7**	**+0.1**
TIN	**Tinemaha, Big**	**1.46**	**162**	S	**Sg**	**04 43 48.8**	**-0.2**
	baz=343						
GRAC	**Grapevine Rang**	**1.83**	**142**	Pb	**Pb**	**04 43 35.4**	**-0.3**
	baz=323						
BMN	**Battle Mountai**	**2.32**	**31**	*e*Pn	**Pn**	**04 43 40.1**	**-0.3**
BMN				*e*S	**Sn**	**04 44 06.3**	**-2.8**
DAC	**Darwin (Calif)**	**2.37**	**156**	*e*Pn	**Pn**	**04 43 41.7**	**+0.5**
DAC				*e*S	**Sb**	**04 44 15.0**	**+0.8**
TPNV	**Topopah Spring**	**2.50**	**126**	Pb	**Pb**	**04 43 47.7**	**+0.5**
	baz=307						
R11A	**Troy Canyon, C**	**2.51**	**91**	Pb	**Pb**	**04 43 47.1**	**-0.3**
	baz=273						
R11A				Sb	**Sb**	**04 44 19.9**	**+1.5**
	baz=273						
R11A	**Troy Canyon, C**	**2.51**	**91**	*e*Pn	**Pn**	**04 43 44.6**	**+1.5**
R11A				*e*S	**Sg**	**04 44 20.4**	**-2.4**
MPMC	**Manual Prospec**	**2.60**	**156**	Pb	**Pb**	**04 43 49.4**	**+0.5**
	baz=337						
MPMC				Sb	**Sg**	**04 44 22.5**	**-3.2**
	baz=337						
SAO	**San Andreas Ge**	**2.71**	**232**	*e*Pn	**Pn**	**04 43 45.0**	**-0.6**
SAO				*e*S	**Sg**	**04 44 26.6**	**-2.4**
ISA	**Isabella, Lake**	**2.79**	**175**	Pb	**Pb**	**04 43 52.5**	**+0.4**
	baz=355						
ISA				Sb	**Sb**	**04 44 27.9**	**+1.5**
	baz=355						
ELK	**Elko**	**3.57**	**49**	*e*Pn	**Pn**	**04 43 57.5**	**-0.3**
ELK				*e*S	**Sg**	**04 44 53.3**	**-3.3**
WDC	**Whiskeytown Da**	**3.60**	**307**	*e*Pn	**Pn**	**04 43 59.0**	**+1.1**
WDC				*e*S	**Sb**	**04 44 46.6**	**-3.0**
MOD	**Modoc Plateau**	**3.64**	**342**	*e*Pn	Pn	04 44 01.4	+2.8
MOD				*e*S	**Sg**	**04 44 57.2**	**-1.8**
WVOR	**Wild Horse Val**	**3.98**	**2**	*e*Pn	Pn	04 44 06.4	+3.1
WVOR				*e*S	**Sb**	**04 45 03.0**	**+2.4**
DUG	**Dugway, Tooele**	**4.94**	**68**	Pn	**Pn**	**04 44 17.6**	**+1.1**
DUG				*e*Pg	Pb	04 44 32.6	+3.8
DUG				*e*S	**Sg**	**04 45 36.9**	**-3.9**
HLID	**Hailey**	**6.08**	**31**	*e*Pn	**Pn**	**04 44 34.3**	**+2.1**
	3.3nm,0.9s						
HLID				*e*S	Sb	04 46 09.6	+8.5

ISCJB ***18*** *04:47:30.7±0.5,7°.39S±0°.05×125°.60E±0°.06,h350km, mb3.5/4,Error ellipse: s-maj=9.1km s-min=6.7km az=157.6*

IDC ***18*** *04:47:33.2±2.2,7°.59S×125°.40E,h379km±25km,mb3.3/4, mb1 3.2/7,mb1mx3.0/32,mbtmp3.9/7,Error ellipse: s-maj=45.7km s-min=10.4km az=62.0*

DJA ***18*** *04:47:33.1±0.5,8°.S±.5°×.12°.6E±°,h332km±12km,M4.3/11, mb4.3/9,mB4.6/5,MLv4.5/11,Mw(mB)3.9/5*

ISC 18 04:47:31.4±0.7,7°.53S±0°.06×125°.58E±0°.09,h350km,n21, σ1s26/21,mb3.6/4,Banda Sea

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SOEI	**Soe**	**2.57**	**210**	P	**Pn**	**04 48 28.3**	**+1.1**
MMRI	**Maumere**	**3.49**	**251**	P	**Pn**	**04 48 35.2**	**-0.2**
EDFI	**Ende, Flores**	**4.04**	**252**	P	**Pn**	**04 48 40.2**	**-0.8**
NLAI	**Namlea**	**4.52**	**20**	P	Pn	04 48 49.6	+3.7
BSSI	**Bau Bau, Buton**	**5.24**	**285**	P	Pn	04 48 45.7	-8.0
SANI	**Sanana**	**5.46**	**4**	P	Pn	04 48 59.6	+3.4
	47nm,0.6s,493nm0.2nm						
BASI	**Baing, Sumba**	**5.62**	**241**	P	**Pn**	**04 48 59.7**	**+1.7**
	236nm,1.0s,1.9nm						
KAPI	**Kappang**	**6.31**	**293**	P	**Pn**	**04 49 06.4**	**+0.6**
	0.9nm,0.3s,baz=122,slow=9.5,SNR=4.4						
LBMI	**Labuha**	**7.11**	**16**	P	**Pn**	**04 49 17.9**	**+2.8**
	24nm,0.8s,691nm0.2nm						
FAKI	**Fak Fak**	**8.06**	**56**	P	**Pn**	**04 49 25.8**	**-0.6**
	47nm,0.9s,577nm						
TWSI	**Taliwang, Sumb**	**8.70**	**261**	P	**P**	**04 49 36.2**	**-0.2**
	18nm,1.3s,1μm						
SWI	**Sorong**	**8.71**	**41**	P	**Pn**	**04 49 34.0**	**-0.1**
	46nm,0.7s,0.2nm						
MRSI	**Marisa**	**8.74**	**335**	P	**P**	**04 49 39.1**	**+2.2**
	18nm,0.8s,2μm0.1nm						
FITZ	**Fitzroy Crossi**	**10.51**	**180**	P	**Pn**	**04 49 55.7**	**+0.2**
	8.7nm,0.3s,baz=15,slow=10.0,SNR=111						
FITZ				S	**S**	**04 51 54.3**	**+0.5**
	0.2nm,0.3s,baz=156,slow=20,SNR=4.4						
WRA	**Warramunga Arr**	**14.98**	**146**	P	**Pn**	**04 50 48.4**	**+0.2**
	0.4nm,0.3s,baz=319,slow=12,SNR=5.9						
WRA				S	**S**	**04 53 27.5**	**+0.2**
	0.2nm,0.3s,baz=322,slow=19,SNR=7.0						
ASAR	**Alice Springs**	**17.93**	**154**	P	**P**	**04 51 18.9**	**+1.2**
	0.2nm,0.3s,baz=322,slow=8.1,SNR=7.5						
ASAR				S	**S**	**04 54 24.7**	**-0.6**
	0.2nm,0.3s,baz=339,slow=21,SNR=20						
CMAR	**Chiang Mai Arr**	**36.84**	**315**	P	**P**	**04 54 06.7**	**-1.1**
	0.8nm,0.3s,baz=145,slow=6.6,SNR=6.0						
KSRS	**Korea Array**	**44.80**	**3**	P	**P**	**04 55 11.3**	**-0.4**
	1.1nm,0.5s,baz=178,slow=9.3,SNR=3.4						
MKAR	**Makanchi Array**	**66.34**	**329**	P	**P**	**04 57 42.4**	**-1.0**
	1.3nm,0.6s,baz=120,slow=7.2,SNR=11						
ZALV	**Zalesovo Beam**	**70.19**	**336**	P	**P**	**04 58 04.7**	**-2.2**
	0.7nm,0.4s,baz=98,slow=5.1,SNR=3.9						
TORD	**Torodi Ar. Bea**	**124.60**	**281**	PKP	**PKPdf**	**05 05 49.5**	**-1.2**
	0.4nm,0.8s,baz=50,slow=4.5,SNR=2.8						

NNC 18 05:06:32.0±4.8,38°.38N×72°.04E,h0km,mb3.6,mpv3.2, 5C-1D,Error ellipse: s-maj=36.7km s-min=23.1km az=168.0,Tajikistan

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SFK	**Sufi-Kurgan**	**1.99**	**34**	⇑P	Pn	05 07 07.1	0.0
	4.4nm,0.3s						
SFK				⇑S	Sn	05 07 33.6	+0.8
	16nm,0.2s						
MNAS	**Manas**	**4.12**	**5**	⇑P	Pn	05 07 36.9	+0.6
	1.3nm,0.3s						
MNAS				⇓S	Sn	05 08 26.0	+0.7
	7.2nm,0.7s						
KK31	**Karatay Array**	**4.86**	**347**	⇑P	Pn	05 07 47.9	+1.5
	2.0nm,0.3s,baz=174,slow=15						
KK31				⇑S	Sn	05 08 45.6	+2.2
	6.9nm,0.4s,baz=172,slow=24						
AB31	**Akbulak array**	**13.93**	**325**	P	Pn	05 09 48.1	-2.4
	0.5nm,0.5s,baz=131,slow=13,SNR=14						

NIED ***18*** *05:11:00.36°.70N×140°.60E,h5km,Mw3.7 Best double couple: M0 4.21000×10^14 NP1:φs347.00000°,δ37.00000°, λ-108.00000°. NP2:φs189.00000°,δ56.00000°, λ-77.00000°.*

IDC ***18*** *05:11:41.0±0.9,36°.70N×140°.59E,h0km,mb3.5/8, mb1 3.7/8,mb1mx3.6/57,mbtmp3.5/8,MS2.7/1,Ms1 2.7/1, ms1mx2.2/30,Error ellipse: s-maj=21.8km s-min=14.2km az=169.0*

ISCJB ***18*** *05:11:41.9±0.8,36°.67N±0°.04×140°.72E±0°.08,h18km±4km, mb3.5/8,Error ellipse: s-maj=11.2km s-min=5.0km az=27.6*

JMA ***18*** *05:11:43.2,36°.73N×140°.61E,h7km±1km,M3.8 Broadband fault plane solution: P waves. NP1: φs182.00000°,δ51.00000°,λ-89.00000°. NP2:φs0.00000°, δ39.00000°,λ-91.00000°. Principal axes: T Plg6.0000°, Azm271.0000°; N Plg1.0000°, Azm1.0000°; P Plg84.0000°, Azm100.0000°;*

JMA Felt II J1.

ISC 18 05:11:42.7±0.9,36°.72N±0°.04×140°.57E±0°.07,h11km±6km, n23,σ0s51/22,mb3.4/8,6C,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JHO	**Hitachi**	**0.11**	**182**	⇑P	**Pg**	**05 11 45.8**	**+0.2**
JHO				S	**Sg**	**05 11 47.4**	**-0.2**
ONAJ	**Iwakimizuishiy**	**0.42**	**25**	⇑P	**Pg**	**05 11 51.1**	**0.0**
ONAJ				S	**Sg**	**05 11 56.8**	**0.0**
JYT	**Yasato**	**0.58**	**212**	⇑P	**Pb**	**05 11 54.5**	**-0.3**
JYT				S	**Sb**	**05 12 02.8**	**-0.2**
JSB	**Shiboa**	**0.58**	**296**	⇑P	**Pb**	**05 11 55.3**	**+0.4**
JFK	**Kawauchi**	**0.69**	**20**	⇑P	**Pg**	**05 11 55.8**	**-0.3**
JFK				S	**Sg**	**05 12 05.0**	**-0.2**
JFT	**Otama**	**0.82**	**347**	⇑P	**Pb**	**05 11 58.9**	**-0.1**
JFT				S	**Sb**	**05 12 10.0**	**-0.1**
MJAR	**Matsushiro Arr**	**1.91**	**265**	Pn	**Pn**	**05 12 15.9**	**+0.7**
	35nm,0.3s,baz=82,slow=11,SNR=112						
MJAR				Lg	Lg	05 12 42.0	
	61nm,0.3s,baz=83,slow=31,SNR=20						
MJAR				LR	LR	05 13 18.0	
	comp=Z,126nm,20.9s,baz=90,slow=51						
MAT	**Matsushiro**	**1.91**	**265**	P	**Pb**	**05 12 16.9**	**-0.7**
MAT				S	**Sb**	**05 12 41.8**	**+0.4**
KSRS	**Korea Array**	**10.13**	**278**	LR	LR	05 17 47.1	
	comp=Z,42nm,20.6s,baz=70,slow=36						
SONM	**Songino Array**	**27.41**	**305**	P	**P**	**05 17 27.9**	**-0.4**
	0.5nm,0.5s,baz=115,slow=9.2,SNR=4.5						
H11N2	**WAKE ISLAND Hy**	**28.57**	**119**	T	T	05 47 22.8	
	baz=313,slow=75,SNR=98						
H11N1	**WAKE ISLAND Hy**	**28.58**	**119**	T	T	05 47 23.4	
	baz=313,slow=75,SNR=94						
H11N3	**WAKE ISLAND Hy**	**28.59**	**119**	T	T	05 47 24.2	
	baz=313,slow=75,SNR=93						
H11S1	**WAKE ISLAND Hy**	**29.26**	**121**	T	T	05 48 15.7	
	baz=314,slow=75,SNR=662						
H11S3	**WAKE ISLAND Hy**	**29.26**	**121**	T	T	05 48 15.8	
	baz=314,slow=75,SNR=476						
H11S2	**WAKE ISLAND Hy**	**29.28**	**121**	T	T	05 48 16.6	
	baz=314,slow=75,SNR=422						
ZALV	**Zalesovo Beam**	**41.63**	**313**	P	**P**	**05 19 29.4**	**-1.2**
	1.1nm,0.5s,baz=104,slow=6.9,SNR=4.8						
MKAR	**Makanchi Array**	**43.72**	**302**	P	**P**	**05 19 47.3**	**-0.5**
	0.2nm,0.3s,baz=83,slow=9.9,SNR=3.9						
ILAR	**Eielson Array**	**50.12**	**32**	P	**P**	**05 20 38.0**	**+0.5**
	0.3nm,0.7s,baz=263,slow=7.2,SNR=3.6						
WRA	**Warramunga Arr**	**56.66**	**187**	P	**P**	**05 21 25.6**	**-0.4**
	0.7nm,0.7s,baz=6.4,slow=7.5,SNR=3.6						
ASAR	**Alice Springs**	**60.39**	**187**	P	**P**	**05 21 51.8**	**-0.2**
	0.7nm,1.0s,

	10nm,1.1s,baz=165,slow=6.6,SNR=6.7							
DBIC				LR	LR	05 54 14.0		
	comp=Z,77nm,20.7s,baz=149,slow=30							
MATP	**Matopo**	**41.35**	**84**	P	**P**	**05 41 38.0**	**+0.2**	
	8.8nm,1.1s,baz=240,slow=5.9,SNR=7.2							
LSZ	**Lusaka**	**43.63**	**77**	P	**P**	**05 41 56.8**	**+0.5**	
	3.8nm,1.1s,baz=351,slow=11,SNR=5.0							
PLCA	**Paso Flores**	**43.73**	**244**	P	**P**	**05 41 57.2**	**+0.3**	
	2.7nm,1.1s,baz=86,slow=12,SNR=2.9							
SIV	**San Ignacio**	**44.08**	**282**	P	**P**	**05 42 01.1**	**+1.2**	
	4.0nm,1.1s,baz=131,slow=9.8,SNR=5.3							
TORD	**Torodi Ar. Bea**	**48.96**	**23**	P	**P**	**05 42 38.2**	**+0.2**	
	10nm,1.0s,baz=200,slow=8.5,SNR=32							
TORD				LR	LR	05 59 21.5		
	comp=Z,71nm,18.2s,baz=190,slow=31							
LPAZ	**La Paz**	**49.78**	**276**	P	**P**	**05 42 44.0**	**-1.1**	
	1.2nm,0.8s,baz=135,slow=4.2,SNR=4.3							
LPAZ				LR	LR	06 02 49.4		
	comp=Z,59nm,19.2s,baz=135,slow=35							
MAW	**Mawson**	**55.65**	**153**	P	**P**	**05 43 27.1**	**-0.1**	
	5.1nm,1.0s,baz=216,slow=4.0,SNR=4.2							
MAW				LR	LR	06 02 02.8		
	comp=Z,109nm,20.5s,baz=239,slow=30							
ROSC	**El Rosal**	**66.85**	**293**	LR	LR	06 13 23.6		
	comp=Z,44nm,18.2s,baz=154,slow=36							
VNDA	**Vanda**	**69.65**	**179**	P	**P**	**05 45 00.1**	**-0.3**	
	2.0nm,1.0s,baz=214,slow=5.8,SNR=4.8							
VNDA				LR	LR	06 12 48.8		
	comp=Z,33nm,20.1s,baz=180,slow=34							
KEST	**Kesra**	**72.44**	**21**	P	**P**	**05 45 17.9**	**0.0**	
	5.1nm,0.9s,baz=315,slow=2.9,SNR=3.1							
KEST				LR	LR	06 13 20.1		
	comp=Z,64nm,20.9s,baz=248,slow=33							
ESDC	**Sonseca Array**	**73.24**	**10**	LR	LR	06 15 12.1		
	comp=Z,34nm,19.2s,baz=275,slow=34							
GERES	**GERESS Array B**	**85.74**	**19**	P	**P**	**05 46 29.9**	**-0.5**	
	0.2nm,0.2s,baz=169,slow=11,SNR=4.6							
GERES				LR	LR	06 23 36.3		
	comp=Z,34nm,18.1s,baz=62,slow=35							
AKASG	**Malin Array Be**	**92.45**	**27**	P	**P**	**05 47 02.7**	**+0.7**	
	0.2nm,0.2s,baz=216,slow=4.9,SNR=5.9							
NOA	**NORSAR Array B**	**96.37**	**13**	LR	LR	06 30 14.7		
	comp=Z,13nm,18.0s,baz=150,slow=35							
SCHQ	**Schefferville**	**97.86**	**333**	LR	LR	06 30 36.1		
	comp=Z,40nm,18.0s,baz=40,slow=35							
YKA	**Yellowknife Ar**	**122.67**	**327**	PKP	**PKPdf**	**05 52 46.6**	**+0.2**	
	0.7nm,1.0s,baz=93,slow=1.5,SNR=7.3							
SONM	**Songino Array**	**134.75**	**53**	PKP	**PKPdf**	**05 53 11.1**	**+0.9**	
	0.2nm,0.4s,baz=302,slow=3.2,SNR=3.3							
ILAR	**Eielson Array**	**136.61**	**332**	PKP	**PKPdf**	**05 53 12.1**	**-0.8**	
	0.9nm,0.9s,baz=328,slow=0.3,SNR=7.4							
KLR	**Kul'dur**	**151.09**	**46**	PKPbc	**PKPbc**	**05 53 43.6**	**-0.7**	
	5.4nm,0.9s,baz=284,slow=2.1,SNR=14							

*NEIC **18** 05:42:27.4, 38˚.41N×118˚.75W, h0km, ML3.0(REN), After REN.*

ISC 18 05:42:26.8±1.3, 38˚.46N±0˚.03×118˚.77W±0˚.03, h3km±12km, n16, σ1s27/29, California-Nevada border region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
MLAC	**Mammoth, Mammo**	**0.83**	**184**	P		**Pg**		**05 42 42.7**	**+0.1**
	baz=2.8								
MLAC				S		**Sg**		**05 42 53.7**	**+0.3**
	baz=2.8								
CMB	**Columbia Colle**	**1.34**	**252**	*e*Pg		**Pg**		**05 42 52.2**	**-0.3**
CMB				*e*Sg		**Sg**		**05 43 10.2**	**+0.3**
GRAC	**Grapevine Rang**	**1.83**	**142**	P		**Pn**		**05 43 00.3**	**+1.0**
	baz=321								
GRAC				Sb		**Sg**		**05 43 25.8**	**+0.1**
	baz=321								
BMN	**Battle Mountai**	**2.31**	**31**	*e*Pn		**Pn**		**05 43 05.6**	**-0.3**
BMN				*e*Sg		**Sg**		**05 43 41.7**	**+0.7**
DAC	**Darwin (Calif)**	**2.37**	**156**	*e*Pn		**Pn**		**05 43 10.6**	**+0.3**
DAC				*e*Sg		**Sb**		**05 43 40.7**	**+0.8**
TPNV	**Topopah Spring**	**2.50**	**126**	Pb		**Pb**		**05 43 12.8**	**+0.3**
	baz=306								
R11A	**Troy Canyon, C**	**2.50**	**91**	Sb		**Sb**		**05 43 45.3**	**+1.5**
	baz=272								
R11A	**Troy Canyon, C**	**2.50**	**91**	*e*Pn		**Pn**		**05 43 08.3**	**-0.3**
R11A				*e*Sg		**Sg**		**05 43 46.4**	**-0.9**
MPMC	**Manual Prospec**	**2.60**	**157**	Pb		**Pb**		**05 43 14.9**	**+0.7**
	baz=336								
SAO	**San Andreas Ge**	**2.72**	**232**	*e*Pn		**Pb**		**05 43 15.2**	**-0.8**
SAO				*e*Sn		**Sn**		**05 43 41.3**	**-3.4**
ISA	**Isabella, Lake**	**2.80**	**175**	Pb		**Pb**		**05 43 17.5**	**0.0**
	baz=355								
ISA				Sb		**Sb**		**05 43 53.1**	**+0.9**
	baz=355								
ELK	**Elko**	**3.56**	**49**	*e*Pn		**Pn**		**05 43 22.9**	**-0.3**
ELK				*e*Sg		**Sg**		**05 44 19.5**	**-1.7**
WDC	**Whiskeytown Da**	**3.61**	**307**	*e*Pn		**Pn**		**05 43 25.4**	**+1.9**
WDC				*e*Sn		**Sn**		**05 44 04.9**	**-1.8**
MOD	**Modoc Plateau**	**3.64**	**342**	*e*Pn		**Pn**		**05 43 23.7**	**-0.5**
MOD				*e*Sg		**Sg**		**05 44 23.9**	**+0.3**
WVOR	**Wild Horse Val**	**3.98**	**1**	*e*Pn		**Pn**		**05 43 30.4**	**+1.6**
WVOR				*e*Sn		**Sn**		**05 44 17.8**	**+1.9**
DUG	**Dugway, Tooele**	**4.93**	**68**	*e*Pn		**Pn**		**05 43 42.0**	**0.0**
DUG				*e*Sg		**Sg**		**05 45 03.1**	**-2.2**

*IDC **18** 05:42:47.3±1.0, 32˚.22N×105˚.64E, h0km, mb3.3/5, mb1 3.5/7, mb1mx3.4/35, mbtmp3.3/7, ML3.7/2, Error ellipse: s-maj=47.0km s-min=20.4km az=64.0*

*ISCJB **18** 05:42:50.4±0.8, 32˚.20N±0˚.10×105˚.7E±0˚.2, h33km, mb3.4/5, Error ellipse: s-maj=27.7km s-min=13.8km az=174.4*

ISC 18 05:42:52.6±1.0, 32˚.2N±0˚.1×105˚.6E±0˚.2, h35km, n7, σ0s97/7, mb3.4/5, Sichuan

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
CMAR	**Chiang Mai Arr**	**14.97**	**205**	Pn		**Pn**		**05 46 22.0**	**+0.3**
	0.3nm,0.3s,baz=11,slow=10,SNR=3.2								
SONM	**Songino Array**	**15.60**	**2**	Pn		**Pn**		**05 46 30.0**	**+0.1**
	0.1nm,0.3s,baz=195,slow=10,SNR=2.1								
MKAR	**Makanchi Array**	**23.03**	**316**	P		**P**		**05 47 54.5**	**0.0**
	0.6nm,0.8s,baz=124,slow=12,SNR=4.4								
KURBB	**Kurchatov Arra**	**27.16**	**321**	P		**P**		**05 48 31.8**	**-0.7**
	0.4nm,0.6s,baz=117,slow=8.2,SNR=4.2								
WRA	**Warramunga Arr**	**58.71**	**148**	P		**P**		**05 52 47.7**	**+0.8**
	0.2nm,0.4s,baz=341,slow=7.2,SNR=4.1								
ASAR	**Alice Springs**	**61.80**	**150**	P		**P**		**05 53 06.5**	**-1.5**
	0.3nm,0.4s,baz=342,slow=7.1,SNR=4.1								
YKA	**Yellowknife Ar**	**80.24**	**18**	P		**P**		**05 54 59.6**	**+0.4**
	0.2nm,0.5s,baz=328,slow=5.1,SNR=9.0								

*ISCJB **18** 05:51:22.3±0.5, 39˚.47N±0˚.03×26˚.99E±0˚.03, h0km, Error ellipse: s-maj=4.7km s-min=3.3km az=161.8*

*CSEM **18** 05:51:22.6±0.2, 39˚.46N×26˚.97E, h1km, MD2.8, Error ellipse: s-maj=3.9km s-min=3.5km az=160.0, Suspected Mining explosion.*

*ISK **18** 05:51:22.3, 39˚.46N×26˚.97E, h8km, MD2.6*

*DDA **18** 05:51:22.7, 39˚.43N×27˚.01E, h8km, Md2.8, Suspected Mining explosion.*

ISC 18 05:51:22.2±0.8, 39˚.49N±0˚.03×26˚.99E±0˚.02, h0km, n28, σ0s39/44, Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
AYVA	**Ayvalik**	**0.29**	**233**	*i* P		**Pg**		**05 51 28.1**	**+0.3**
AYVA				*i* S		**Sg**		**05 51 32.3**	**+0.7**
AYVA	**Ayvalik**	**0.29**	**233**	P		**Pg**		**05 51 28.1**	**+0.3**
AYVA				S		**Sg**		**05 51 32.3**	**+0.7**
DKL	**Dikili**	**0.42**	**189**	*e*PG		**Pg**		**05 51 30.4**	**+0.2**
DKL				*e*SG		**Sg**		**05 51 36.2**	**+0.5**
DKL	**Dikili**	**0.42**	**189**	*e*Pg		**Pg**		**05 51 30.4**	**+0.2**
DKL				*e*Sg		**Sg**		**05 51 36.2**	**+0.5**
BALB	**Balikesir**	**0.70**	**77**	*e*PG		**Pb**		**05 51 37.4**	**0.0**
BALB				*e*SG		**Sb**		**05 51 47.1**	**-0.5**
BALB	**Balikesir**	**0.70**	**77**	*e*Pg		**Pb**		**05 51 37.4**	**0.0**
BALB				*e*Sg		**Sb**		**05 51 47.1**	**-0.5**
AKHS	**Akhisar**	**0.88**	**133**	*i* P		**Pg**		**05 51 39.5**	**+0.4**
AKHS				*i* S		**Sg**		**05 51 50.2**	**-0.4**
AKHS	**Akhisar**	**0.88**	**133**	P		**Pg**		**05 51 39.5**	**+0.4**
AKHS				S		**Sg**		**05 51 50.2**	**-0.4**
SIGR	**SIGRI**	**0.92**	**253**	*e*PG		**Pg**		**05 51 39.7**	**-0.2**
SIGR				*e*SG		**Sb**		**05 51 53.3**	**-0.6**
SIGR	**SIGRI**	**0.92**	**253**	*e*Pg		**Pg**		**05 51 39.7**	**-0.2**
SIGR				*e*Sg		**Sb**		**05 51 53.3**	**-0.6**
GELI	**Tayfur-Gelibol**	**0.99**	**337**	*e*PG		**Pb**		**05 51 42.3**	**0.0**
GELI	**Tayfur-Gelibol**	**0.99**	**337**	*e*Pg		**Pb**		**05 51 42.3**	**0.0**
BLCB	**Balcova**	**1.10**	**178**	*e*PG		**Pg**		**05 51 43.1**	**-0.2**
BLCB	**Balcova**	**1.10**	**178**	*e*Pg		**Pg**		**05 51 43.1**	**-0.2**
IZM	**Izmir**	**1.11**	**169**	*e*PN		**Pg**		**05 51 43.4**	**0.0**
IZM	**Izmir**	**1.11**	**169**	*e*Pn		**Pg**		**05 51 43.4**	**0.0**
DURS	**Dursunbey**	**1.15**	**84**	*i* P		**Pb**		**05 51 45.3**	**+0.2**
DURS				*i* S		**Sg**		**05 51 59.6**	**+0.3**
DURS	**Dursunbey**	**1.15**	**84**	P		**Pb**		**05 51 45.3**	**+0.2**
DURS				S		**Sg**		**05 51 59.6**	**+0.3**
URLA	**Izmir**	**1.17**	**195**	*i* P		**Pg**		**05 51 43.5**	**-1.0**
URLA				*i* S		**Sb**		**05 52 01.1**	**+0.2**
URLA	**Izmir**	**1.17**	**195**	P		**Pg**		**05 51 43.5**	**-1.0**
URLA				S		**Sb**		**05 52 01.1**	**+0.2**
ERIK	**Erikli-Kesan**	**1.24**	**343**	*e*PN		**Pb**		**05 51 46.5**	**0.0**
ERIK	**Erikli-Kesan**	**1.24**	**343**	*e*Pn		**Pb**		**05 51 46.5**	**0.0**
DEMI	**Demirci**	**1.41**	**108**	*i* P		**Pb**		**05 51 49.5**	**0.0**
DEMI				*i* S		**Sb**		**05 52 08.0**	**-0.1**
DEMI	**Demirci**	**1.41**	**108**	P		**Pb**		**05 51 49.5**	**0.0**
DEMI				S		**Sb**		**05 52 08.0**	**-0.1**
ALN	**Alexandroupoli**	**1.58**	**333**	*e*PN		**Pn**		**05 51 51.6**	**+0.1**
ALN	**Alexandroupoli**	**1.58**	**333**	*e*Pn		**Pn**		**05 51 51.7**	**+0.1**
KULA	**Kula-Manisa**	**1.62**	**126**	*e*PN		**Pn**		**05 51 52.1**	**-0.1**
KULA	**Kula-Manisa**	**1.62**	**126**	*e*Pn		**Pn**		**05 51 52.1**	**-0.1**

JMA 18 05:54:25.3, 37˚.02N×140˚.69E, h10km±1km, M3.6,6C, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.12**	**47**	⇑P			Pg	05 54 28.4	+0.2
ONAJ				S			Sg	05 54 30.6	+0.3
JFK	**Kawauchi**	**0.38**	**23**	⇑P			Pg	05 54 32.8	0.0
JFK				S			Sg	05 54 38.1	+0.3
JHO	**Hitachi**	**0.42**	**193**	⇑P			Pg	05 54 33.4	-0.1
JHO				S			Sg	05 54 39.5	+0.4
JFT	**Otama**	**0.57**	**331**	⇑P			Pg	05 54 36.6	+0.2
JFT				S			Sg	05 54 44.4	+0.4
JSB	**Shiboa**	**0.62**	**265**	P			Pb	05 54 37.9	-0.3
JSB				S			Sb	05 54 46.5	-0.5
JMM	**Marumori**	**0.85**	**6**	⇑P			Pg	05 54 41.1	-0.6
JFY	**Yanaizu**	**0.88**	**296**	P			Pg	05 54 42.1	-0.1
JFY				S			Sg	05 54 53.2	-0.4
JYT	**Yasato**	**0.89**	**207**	⇑P			Pg	05 54 41.6	-0.8
MAT	**Matsushiro**	**2.05**	**257**	P			Pn	05 55 01.0	+1.1
MAT				S			Sb	05 55 27.7	-0.5

*OBM **18** 05:54:56.9±0.1, 49˚.95N×103˚.07E, h2km, MI3.6/1, Error ellipse: s-maj=2.6km s-min=1.0km az=17.0*

*MOS **18** 05:54:57.5±2.2, 49˚.89N×103˚.03E, h7km, mb4.3/1, Error ellipse: s-maj=34.3km s-min=11.0km az=85.0*

BYKL 18 05:54:57.6±0.5, 49.89N×103.02E, 3C-2D, Mongolia

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
ZAK	**Zakamensk**	**0.52**	**19**	⇓*i* Pg			Pg	05 55 07.7	+0.1
ZAK				*e*Sg			Sg	05 55 14.9	+0.6
ZAK				Pmax					
	169nm,0.2s								
ZAK				Smax					
	1µm,0.2s								
ZAK	**Zakamensk**	**0.52**	**19**	*e*PG			Pg	05 55 07.7	+0.1
ZAK				*e*				05 55 14.9	
ZAK				pmax	pmax				
	comp=Z,167nm,0.2s								
ZAK				smax	smax				
	comp=E,2µm,0.2s								
BLGM	**Bulgan**	**1.21**	**157**	*e*Pg			Pb	05 55 19.2	-0.4
BLGM				*e*Sg			Sg	05 55 35.0	+0.4
	comp=E,476nm,0.2s								
HTG	**Hatgal**	**1.80**	**289**	*e*Pn			Pg	05 55 31.3	+0.9
HTG				*e*Sg			Sg	05 55 58.2	+4.5
	comp=E,430nm,0.4s								
TLY	**Talaya**	**1.84**	**12**	*e*Pn			Pn	05 55 30.5	+0.1
TLY				*i* Pg			Pb	05 55 31.2	-0.9
TLY				*e*				05 55 32.7	
TLY				*e*Sg			Sb	05 55 55.1	-0.5
TLY				Pmax					
	comp=E,80nm,0.1s								
TLY				Smax					
	comp=E,899nm,0.4s								
TLY	**Talaya**	**1.84**	**12**	⇑*e*PN			Pn	05 55 30.5	+0.1
TLY				*i*				05 55 31.2	
TLY				*e*				05 55 55.1	
TLY				pmax	pmax				
	comp=Z,85nm,0.3s								
TLY				smax	smax				
	comp=N,986nm,0.5s								
ARS	**Arshan**	**2.07**	**350**	*e*Pg			Pn	05 55 34.7	+1.1
ARS				*e*				05 55 38.8	
ARS				*e*Sg			Sb	05 56 02.7	+0.4
ARS				max					
	comp=N,57nm,0.4s								
ARS				Smax					
	comp=N,438nm,0.5s								
ARS	**Arshan**	**2.07**	**350**	*e*PN			Pn	05 55 34.7	+1.1
ARS				*e*				05 56 02.8	
ARS				pmax	pmax				
	comp=Z,56nm,0.4s								
ARS				smax	smax				
	comp=E,435nm,0.5s								
MOY	**Mondy**	**2.19**	**325**	⇑*i* Pg			Pb	05 55 37.1	-1.1
MOY				*e*Sg			Sb	05 56 06.5	+0.5
MOY				Pmax					
	comp=E,122nm,0.2s								
MOY				Smax					
	comp=E,345nm,0.5s								
MOY	**Mondy**	**2.19**	**325**	⇑*i* PN			Pn	05 55 36.8	+1.4
MOY				*e*				05 56 06.4	
MOY				pmax	pmax				
	comp=Z,121nm,0.3s								
MOY				smax	smax				
	comp=E,345nm,1.0s								
LSTR	**Listvyanka**	**2.29**	**29**	*e*Pn			Pn	05 55 36.0	-0.6
LSTR				⇓*i* Pg			Pb	05 55 39.2	-0.6
LSTR				*e*Sn			Sn	05 56 03.5	-2.0
LSTR				*e*Sg			Sb	05 56 09.8	+1.2
LSTR				Pmax					
	comp=E,17nm,0.1s								
LSTR				Smax					
	comp=E,150nm,1.0s								
IRK	**Irkutsk**	**2.48**	**18**	*e*Pg			Pb	05 55 42.6	-0.5
IRK				*e*Sg			Sb	05 56 15.0	+0.8
IRK				Pmax					
	comp=E,215nm,0.2s								
IRK				Smax					
	comp=E,2µm,0.5s								
IRK	**Irkutsk**	**2.48**	**18**	*e*PN			Pb	05 55 41.9	-1.2
IRK				*e*				05 56 14.2	
IRK				pmax	pmax				
	comp=Z,218nm,0.1s								
IRK				smax	smax				
	comp=E,2µm,0.4s								
TTS	**Tsetserleg**	**2.59**	**201**	*e*Pn			Pb	05 55 42.5	-0.8
TTS	**Tsetserleg**	**2.59**	**201**	*e*Pg			Pg	05 55 46.1	+0.5
TTS				*e*Sg			Sg	05 56 21.1	+1.9
	comp=E,281nm,0.3s								
UB0M		**2.82**	**132**	*e*Pg			Pb	05 55 46.9	-0.3
UB0M				*e*Sg			Sb	05 56 23.2	+0.9
	comp=E,194nm,0.3s								
HRMR	**Khuramsha**	**3.04**	**54**	*e*Pn			Pn	05 55 45.1	-1.9
HRMR				*e*Pg			Pb	05 55 52.2	-0.5
HRMR				*e*PgPg			PbPb	05 55 55.3	-0.5
HRMR				*e*Sg			Sg	05 56 33.1	-2.3
HRMR				Pmax					
	comp=E,143nm,0.2s								
HRMR				Smax					
	comp=E,1µm,0.6s								
SONB5	**Songino Array**	**3.11**	**130**	*e*Pg			Pb	05 55 51.6	-0.4
SONB5				*e*Sg			Sb	05 56 31.3	+0.8
	comp=E,118nm,0.3s								
SONA0	**Songino Array**	**3.13**	**130**	*e*Sg			Sb	05 56 32.6	+1.4
	comp=E,157nm,0.3s								
KAB	**Kabansk**	**3.15**	**45**	*e*Sg			Sb	05 56 35.2	+1.7
KAB				Smax					
	comp=E,512nm,0.7s								
UB1M		**3.17**	**127**	*e*Pg			Pb	05 55 52.3	-0.8
UB1M				*e*Sg			Sb	05 56 33.3	+1.0
	comp=E,263nm,0.3s								
TSC	**Tosontsengel**	**3.20**	**251**	*e*Pn			Pb	05 55 52.2	-1.4
TSC	**Tosontsengel**	**3.20**	**251**	*e*Pg			Pg	05 55 58.6	+1.3
TSC				*e*Sg			Sg	05 56 44.7	+5.9
TSC				*e*Sg			Sb	05 56 44.9	+12
	comp=E,167nm,0.4s								
ALFM		**3.23**	**125**	*e*Pn			Pn	05 55 47.3	-0.6
ALFM		**3.23**	**125**	*e*Pg			Pb	05 55 54.2	+0.1
ALFM				*e*Sg			Sb	05 56 34.1	+0.1
	comp=E,348nm,0.5s								
ORL	**Orlik**	**3.33**	**324**	*e*Pn			Pn	05 55 50.1	-1.0
ORL				*e*Pg			Pb	05 55 57.2	-0.4
ORL				*e*Sn			Sn	05 56 28.1	-3.3
ORL				*e*Sg			Sb	05 56 40.1	+1.4
ORL				Pmax					
	comp=E,24nm,0.5s								
ORL				Smax					
	comp=E,85nm,0.4s								
ORL	**Orlik**	**3.33**	**324**	*e*PN			Pb	05 55 57.1	-0.5
ORL				*e*				05 56 40.1	
ORL				pmax	pmax				
	comp=Z,25nm,0.5s								
ORL				smax	smax				
	comp=E,85nm,0.5s								
UB5M		**3.34**	**127**	*e*Pg			Pb	05 55 55.8	-0.2
ULN	**Ulaanbaatar**	**3.34**	**126**	*e*Pn			Pn	05 55 50.9	-0.4
ULN				*e*Pg			Pb	05 55 58.4	+0.5
ULN				*e*Sg			Sb	05 56 41.7	+2.6
ARTM		**3.53**	**122**	*e*Pn			Pn	05 55 51.5	-0.5
ARTM		**3.53**	**122**	*e*Pg			Pb	05 55 59.8	+0.5
ARTM				*e*Sg			Sb	05 56 43.9	+1.2
	comp=E,108nm,0.3s								
UUDB	**Ulan-Yde**	**3.54**	**54**	*e*Pn			Pn	05 55 53.8	-0.1
UUDB				*e*Pg			Pb	05 56 00.6	-0.6
UUDB				*e*Sg			Sg	05 56 48.1	-3.3
UUDB				*e*SgSg			SgSg	05 56 53.8	+2.4
UUDB				Pmax					
	comp=E,51nm,0.3s								
UUDB				max					
	comp=E,377nm,0.9s								
TRG	**Tyrgan**	**3.55**	**35**	*e*Pn			Pn	05 55 53.7	-0.3
TRG				*e*Pg			Pb	05 56 01.0	-0.3
TRG				*e*PgPg			PbPb	05 56 03.8	-0.6
TRG				*e*Sg			Sb	05 56 46.5	+1.5
TRG				max					
	comp=E,18nm,0.2s								
TRG				Smax					
	comp=E,103nm,0.2s								
ZRHB	**Zarechye**	**3.72**	**43**	*e*Pn			Pn	05 55 54.6	-1.7
ZRHB				*e*Pg			Pb	05 56 04.1	-0.1
ZRHB				*e*Sg			Sg	05 56 53.9	-3.2
ZRHB				Pmax					
	comp=E,59nm,0.4s								
ZRHB				Smax					
	comp=E,420nm,0.6s								
UGDM		**3.78**	**125**	*e*Pn			Pn	05 55 55.1	-0.3
UGDM		**3.78**	**125**	*e*Pg			Pb	05 56 04.8	+1.4
UGDM				*e*Sg			Sb	05 56 52.6	+2.9
	comp=E,77nm,0.3s								
OGRR	**Ongureny**	**4.71**	**35**	*e*Pn			Pn	05 56 09.9	0.0
OGRR				*e*				05 56 14.8	
OGRR				*e*Pg			Pb	05 56 22.6	+1.6
OGRR				*e*Sn			Sn	05 57 01.5	-3.7
OGRR				*e*Sg			Sb	05 57 22.5	+4.2
OGRR				Pmax					
	comp=E,8.0nm,0.3s								
OGRR				Smax					
	comp=E,81nm,0.8s								
OGRR	**Ongureny**	**4.71**	**35**	*e*PN			Pn	05 56 09.7	-0.2
OGRR				*e*				05 56 22.6	
OGRR				*e*				05 57 23.0	
OGRR				pmax	pmax				
	comp=Z,7.0nm,0.3s								
OGRR				smax	smax				
	comp=E,80nm,0.8s								
SYVR	**Suvo**	**5.74**	**46**	*e*Pn			Pn	05 56 23.3	-0.8
SYVR				*e*Pg			Pb	05 56 40.0	+1.4
SYVR				*e*Sn			Sn	05 57 27.2	-3.4
SYVR				*e*Sg			Sg	05 57 55.2	-6.8
SYVR				Pmax					
	comp=E,9.0nm,0.3s								
SYVR				Smax					
	comp=E,40nm,1.2s								
SYVR	**Suvo**	**5.74**	**46**	*e*PN			Pn	05 56 23.2	-0.9
SYVR				*e*				05 56 40.3	
SYVR				*e*				05 57 54.7	
SYVR				pmax	pmax				
	comp=Z,15nm,1.3s								
SYVR				smax	smax				
	comp=N,40nm,1.2s								
KPC	**Khapcheranga**	**6.06**	**88**	*e*Pn			Pn	05 56 26.3	-2.2
KPC				*e*Pg			Pb	05 56 46.0	+1.9
KPC				*e*Sg			Sg	05 58 05.2	-7.1
KPC				Pmax					
	comp=N,5.0nm,0.6s								
KPC				Smax					
	comp=N,80nm,1.0s								
DZBM		**6.20**	**169**	*e*Pg			Pb	05 56 48.1	+3.4
DZBM				*e*Sg			Sg	05 58 10.3	-4.6
	comp=N,80nm,0.8s								
ULG	**Ulaangom**	**6.96**	**275**	*e*Pg			Pg	05 57 06.0	-3.1
ULG				*e*Sg			Sg	05 58 38.8	-0.3
	comp=N,82nm,0.7s								
YLYR	**Ulyunkhan**	**7.05**	**42**	*e*Pn			Pn	05 56 40.8	-1.2
YLYR				*e*Pg			Pb	05 57 03.7	+2.8
YLYR				*e*Sn			Sn	05 57 58.5	-4.3
YLYR				*e*Sg			Sg	05 58 35.1	-8.8
YLYR				Pmax					
	comp=N,4.0nm,0.7s							

KPJI	**Karang Pucung**	**3.00**	**89**	P		Pn	06 04 02.3	-0.3
MNAI	**Manna**	**4.19**	**315**	P		Pn	06 04 18.1	-0.6
LHSI	**Lahat**	**4.25**	**326**	P		Pn	06 04 18.9	-0.5
SMRI	**Semarang**	**4.51**	**86**	P		Pn	06 04 22.9	0.0
PMBI	**Palembang**	**4.56**	**346**	P		Pn	06 04 23.8	+0.2
UGM	**Wanagama**	**4.60**	**97**	P		Pn	06 04 23.5	-0.7
KSI	**Kapahiang**	**4.95**	**318**	P		Pn	06 04 28.8	-0.2
WOJI	**Wonogiri, Jawa**	**4.99**	**96**	P		Pn	06 04 29.4	0.0
PPBI	**Pangkal Pinang** 20nm,0.9s,19µm1.1nm	**5.18**	**3**	P		Pn	06 04 31.5	-0.5
PCJI	**Pacitan** 36nm,1.1s,0.2nm	**5.28**	**99**	P		Pn	06 04 32.6	-0.8
MASI	**Maura Aman, Be** 49nm,0.9s,6µm0.6nm	**5.57**	**319**	P		Pn	06 04 36.7	-0.6
PWJI	**Pagerwojo**	**5.88**	**97**	P		Pn	06 04 41.6	+0.2

ISCJB ***18*** *06:11:57.4±1.0,26.9N±0.2×144.03E±0.10,h10km, mb3.6/6, Error ellipse: s-maj=25.4km s-min=12.3km az=179.1*

IDC ***18*** *06:11:57.5±1.2,26.87N×144.11E, h0km,mb3.6/6, mb1 3.9/6, mb1mx3.5/39, mbtmp3.6/6, Error ellipse: s-maj=31.6km s-min=26.1km az=148.0*

ISC 18 06:11:59.3±1.1, 26.9N±0.2×144.0E±0.1, h10km, n7, σ0.6 76/8, mb3.8/6, Bonin Islands region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JCJ	**Chichijima**	**1.59**	**278**	Pn	**Pb**	**06 12 29.0**	**+0.2**
	11nm,0.3s,baz=50,slow=16,SNR=4.0						
JCJ				Sn	**Sn**	**06 12 47.1**	**-1.0**
	46nm,0.3s,baz=278,slow=22,SNR=12						
WRA	**Warramunga Arr**	**47.47**	**192**	P	**P**	**06 20 34.4**	**-0.1**
	0.8nm,0.6s,baz=14,slow=8.6,SNR=5.8						
MKAR	**Makanchi Array**	**51.83**	**310**	P	**P**	**06 21 08.7**	**+1.2**
	0.5nm,0.5s,baz=87,slow=7.9,SNR=3.2						
BVAR	**Borovoye Array**	**59.27**	**318**	P	**P**	**06 22 01.0**	**+0.1**
	0.6nm,0.5s,baz=68,slow=8.2,SNR=3.5						
INK	**Inuvik**	**62.58**	**25**	P	**P**	**06 22 22.8**	**-0.4**
	0.2nm,0.4s,baz=302,slow=3.3,SNR=3.6						
YKA	**Yellowknife Ar**	**71.58**	**29**	P	**P**	**06 23 19.9**	**-0.6**
	0.1nm,0.4s,baz=292,slow=6.2,SNR=3.7						
KBZ	**Khabaz**	**79.30**	**314**	P	**P**	**06 24 05.3**	**+0.1**
	0.8nm,0.6s,baz=51,slow=5.7,SNR=4.0						

SOME ***18*** *06:18:53.6,44.73N×82.32E, h10km*

ISCJB ***18*** *06:18:56.8±1.2,44.70N±0.05×82.3E±0.1,h10km, Error ellipse: s-maj=13.8km s-min=4.7km az=26.7*

NNC ***18*** *06:18:57.1±1.8,44.77N×82.04E, h0km,mb2.9,mpv2.4, Error ellipse: s-maj=25.5km s-min=7.2km az=117.0*

ISC 18 06:18:53.2±1.6, 44.71N±0.05×82.23E±0.09, h10km, n8, σ0.9 94/16, 3C-4D, Northern Xinjiang

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
DJR	**Jarkent**	**1.79**	**259**	*e*P	**Pb**	**06 19 27.0**	**+0.8**
	3.7nm,0.1s						
DJR				*e*S	**Sg**	**06 19 50.4**	**-0.4**
	4.0nm,0.2s						
KTMS	**Ketmen**	**1.85**	**228**	*e*P	**Pg**	**06 19 28.5**	**-0.3**
	1.4nm,0.1s						
KTMS				*e*S	**Sg**	**06 19 53.2**	**+0.4**
	13nm,0.4s						
MK09	**Makanchi Array**	**2.06**	**1**	⇓Pn	**Pg**	**06 19 32.3**	**-0.5**
	1.7nm,0.3s,baz=186,slow=16						
MK09				⇑Sn	**Sg**	**06 19 59.4**	**-0.2**
	1.5nm,0.3s,baz=187,slow=26						
MAKZ	**Makanchi**	**2.11**	**355**	⇑Pn	**Pb**	**06 19 32.1**	**+0.6**
	0.6nm,0.3s						
MAKZ				⇑Sn	**Sg**	**06 20 00.2**	**-0.7**
	1.8nm,0.3s						
KAPS	**Kapalarasan**	**2.12**	**287**	*e*P	**Pb**	**06 19 32.4**	**+0.6**
	1.0nm,0.2s						
KAPS				⇓*i*S	**Sg**	**06 20 00.2**	**-1.2**
	5.1nm,0.3s						
SHLS	**Shalkode**	**2.30**	**228**	*e*P	**Pb**	**06 19 35.8**	**+0.8**
	4.1nm,0.3s						
SHLS				*e*S	**Sg**	**06 20 06.1**	**-1.1**
	8.6nm,0.5s						
PDGK	**Podgornoye**	**2.42**	**236**	⇓Pn	**Pb**	**06 19 35.3**	**-1.5**
	2.6nm,0.9s						
PDGK				⇓Sn	**Sb**	**06 20 08.3**	**+1.7**
	2.8nm,0.4s						
UZB	**Uzynbulak**	**2.80**	**237**	*e*P	**Pb**	**06 19 42.9**	**-0.5**
	1.1nm,0.4s						
UZB				*e*S	**Sb**	**06 20 18.4**	**+0.6**
	1.6nm,0.6s						

JMA 18 06:23:20.1±0.2, 38.53N×144.39E, h45km, M3.5, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
OFUJ	**Ofunato**	**2.20**	**285**	P	Pn	06 23 55.3	+1.2
OFUJ				S	Sn	06 24 21.2	+1.2
JIO	**Ouri**	**2.39**	**269**	P	Pn	06 23 57.7	+1.0
JIO				S	Sn	06 24 25.6	+0.9
JTH	**Tanohata**	**2.41**	**306**	P	Pn	06 23 58.2	+1.1
JTH				*e*S	Sn	06 24 26.1	+0.7
JMK	**Ichinoseki**	**2.52**	**281**	P	Pn	06 24 00.0	+1.6
JMK				*e*S	Sn	06 24 28.7	+0.9
JOM	**Ohasama**	**2.59**	**292**	P	Pn	06 24 01.0	+1.5
JOM				*e*S	Sn	06 24 31.4	+1.7
JANG	**Nango**	**2.89**	**310**	P	Pn	06 24 04.6	+1.0
JANG				S	Sn	06 24 38.2	+1.1
JMM	**Marumori**	**2.91**	**258**	P	Pn	06 24 04.8	+0.9
JMM				S	Sn	06 24 38.2	+0.6
JOU	**Okura**	**2.93**	**268**	P	Pn	06 24 05.8	+1.6
JFK	**Kawauchi**	**3.01**	**248**	*e*S	Sn	06 24 39.8	-0.4
JRG	**Rokugo**	**3.05**	**288**	P	Pn	06 24 08.1	+2.3
JRG				*e*S	Sn	06 24 43.3	+2.2
JYK	**Kaneyama**	**3.18**	**278**	P	Pn	06 24 09.5	+2.0
JYK				S	Sn	06 24 47.0	+2.8
JFT	**Otama**	**3.36**	**254**	S	Sn	06 24 50.2	+1.6
JTM	**Tenmabayashi**	**3.41**	**312**	P	Pn	06 24 12.0	+1.2
JTM				*e*S	Sn	06 24 49.9	-0.1
JOT	**Ohata**	**3.83**	**319**	*e*S	Sn	06 24 59.2	-1.2
JNBK	**Urakawa-nobuka**	**3.95**	**342**	P	Pn	06 24 19.0	+0.9
JNBK				*e*S	Sn	06 25 01.5	-1.7
JCH	**Churui**	**4.15**	**349**	P	Pn	06 24 20.6	-0.3
JKB	**Kayabe**	**4.22**	**324**	P	Pn	06 24 22.2	+0.3
JKB				S	Sn	06 25 09.3	-0.6

NSSC ***18*** *06:24:50.2±1.4,38.24N×38.59E, h38km±36km, ML2.5*

DDA ***18*** *06:25:07.9,37.70N×38.27E, h7km, Md3.2*

ISCJB ***18*** *06:25:08.6±0.5,37.69N±0.02×38.28E±0.03, h4km±4km, Error ellipse: s-maj=4.0km s-min=3.2km az=138.9*

CSEM ***18*** *06:25:08.8±0.1,37.69N×38.29E, h2km, MD3.2, Error ellipse: s-maj=3.7km s-min=2.9km az=145.0*

ISK ***18*** *06:25:09.1,37.69N×38.25E, h10km, MD2.9*

ISC 18 06:25:08.3±1.1, 37.69N±0.02×38.31E±0.02, h2km±11km, n35, σ0.51/59, Turkey

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
ATAB	**Bozova**	**0.22**	**182**	*i* P	**Pg**	**06 25 12.8**	**+0.3**
ATAB				*i* S	**Sg**	**06 25 15.6**	**+0.2**
ATAB	**Bozova**	**0.22**	**182**	P	**Pg**	**06 25 12.9**	**+0.3**
ATAB				S	**Sg**	**06 25 15.6**	**+0.2**
GZT	**Gaziantep**	**0.68**	**241**	*i* P	**Pg**	**06 25 21.0**	**-0.3**
GZT				*i* S	**Sg**	**06 25 30.3**	**+0.2**
AKCD	**Akcadag**	**0.68**	**334**	*i* P	**Pg**	**06 25 20.9**	**-0.5**
AKCD				*i* S	**Sg**	**06 25 30.9**	**+0.7**
AKCD	**Akcadag**	**0.68**	**334**	P	**Pg**	**06 25 20.9**	**-0.5**
AKCD				S	**Sg**	**06 25 30.9**	**+0.7**
SURC	**SANLIURFA_SURC**	**0.84**	**163**	*i* P	**Pg**	**06 25 24.7**	**+0.2**
SURC				*i* S	**Sb**	**06 25 38.0**	**+0.5**
SURC	**SANLIURFA_SURC**	**0.84**	**163**	P	**Pg**	**06 25 24.7**	**+0.2**
SURC				S	**Sb**	**06 25 38.0**	**+0.5**
ELZG	**Elazig**	**0.97**	**33**	*i* P	**Pg**	**06 25 26.7**	**-0.2**
ELZG				*i* S	**Sg**	**06 25 39.8**	**+0.3**
ELZG	**Elazig**	**0.97**	**33**	P	**Pg**	**06 25 26.7**	**-0.2**
ELZG				S	**Sg**	**06 25 39.8**	**+0.3**
GAZ	**Gaziantep**	**1.01**	**240**	*e*PG	**Pb**	**06 25 28.6**	**-0.1**
GAZ				*e*SG	**Sb**	**06 25 42.3**	**-0.1**
GAZ	**Gaziantep**	**1.01**	**240**	*e*Pg	**Pb**	**06 25 28.6**	**-0.1**
GAZ				*e*Sg	**Sb**	**06 25 42.3**	**-0.1**
SVRC	**Sivrice-ELAZID**	**1.05**	**49**	*e*PG	**Pn**	**06 25 30.4**	**+0.2**
SVRC				*e*SG	**Sn**	**06 25 45.3**	**-0.2**
SVRC	**Sivrice-ELAZID**	**1.05**	**49**	*e*Pg	**Pn**	**06 25 30.5**	**+0.2**
SVRC				*e*Sg	**Sn**	**06 25 45.3**	**-0.2**
DARE	**Darende-Malaty**	**1.09**	**324**	*e*PG	**Pb**	**06 25 30.3**	**+0.2**
DARE				*e*SG	**Sb**	**06 25 45.3**	**+0.4**
DARE	**Darende-Malaty**	**1.09**	**324**	*e*Pg	**Pb**	**06 25 30.3**	**+0.2**
DARE				*e*Sg	**Sb**	**06 25 45.3**	**+0.4**
KMRS	**Kahramanmaras**	**1.13**	**261**	*e*PG	**Pg**	**06 25 29.8**	**-0.2**
KMRS				*e*SG	**Sb**	**06 25 45.9**	**+0.1**
KMRS	**Kahramanmaras**	**1.13**	**261**	*e*Pg	**Pg**	**06 25 29.8**	**-0.2**
KMRS				*e*Sg	**Sb**	**06 25 45.9**	**+0.1**
KUZU	**Kuzuini**	**1.34**	**228**	*i* P	**Pg**	**06 25 33.9**	**-0.1**
KUZU				*i* S	**Sg**	**06 25 50.8**	**-0.6**
KUZU	**Kuzuini**	**1.34**	**228**	P	**Pg**	**06 25 33.9**	**-0.1**
KUZU				S	**Sg**	**06 25 50.8**	**-0.6**
KAMA	**Osmaniye**	**1.40**	**249**	*i* P	**Pg**	**06 25 34.3**	**-0.8**
KAMA				*i* S	**Sg**	**06 25 52.0**	**-1.2**
DIYA	**Diyarbakir**	**1.46**	**80**	*i* P	**Pg**	**06 25 36.1**	**-0.1**
DIYA				*i* S	**Sg**	**06 25 53.6**	**-1.5**
DIYA	**Diyarbakir**	**1.46**	**80**	P	**Pg**	**06 25 36.1**	**-0.1**
DIYA				S	**Sg**	**06 25 53.6**	**-1.5**
DYBB	**Diyarbakir**	**1.48**	**79**	*e*PN	**Pb**	**06 25 37.1**	**+0.6**
PTK	**Pertek**	**1.48**	**35**	*e*PN	**Pb**	**06 25 36.9**	**+0.3**
PTK	**Pertek**	**1.48**	**35**	*e*Pn	**Pb**	**06 25 36.9**	**+0.3**
DIY	**Diyarbakir**	**1.54**	**82**	*e*Pn	**Pn**	**06 25 37.1**	**+0.3**
ANDN	**Andirin**	**1.56**	**267**	*i* P	**Pn**	**06 25 36.7**	**-0.5**
ANDN				*i* S	**Sg**	**06 25 59.4**	**+0.9**
ANDN	**Andirin**	**1.56**	**267**	P	**Pn**	**06 25 36.7**	**-0.5**
ANDN				S	**Sg**	**06 25 59.4**	**+0.9**
MAZI	**Mazidag**	**1.71**	**97**	*e*PN	**Pb**	**06 25 40.3**	**-0.4**
MAZI	**Mazidag**	**1.71**	**97**	*e*Pn	**Pb**	**06 25 40.3**	**-0.4**
KSRV	**Kasrt alli**	**1.90**	**163**	*e*P	Pn	06 25 36.7	-5.2
KSRV				*e*S	**Sb**	**06 26 08.2**	**+0.2**
KSRV				AML	AML	06 26 17.4	
	comp=Z,9.0nm,0.2s						
KOZT	**Kozan**	**1.98**	**265**	*e*PN	**Pn**	**06 25 43.0**	**+0.1**
KOZT	**Kozan**	**1.98**	**265**	*e*Pn	**Pn**	**06 25 43.0**	**+0.1**
TAHT	**Tahtakopru-Hat**	**2.14**	**233**	*e*PN	**Pn**	**06 25 45.4**	**+0.3**
TAHT	**Tahtakopru-Hat**	**2.14**	**233**	*e*Pn	**Pn**	**06 25 45.4**	**+0.3**

WEL 18 06:25:40.5±0.4, 39.08S×175.04E, h234km±3km, ML3.5/4, 1C-1D, Error ellipse: s-maj=6.5km s-min=4.3km az=90.0, North Island

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
WNVZ	**Wahianoa**	**0.50**	**120**	PN	Pn	06 26 11.6	-0.2
MOVZ	**Moawhango**	**0.64**	**121**	PN	Pn	06 26 11.7	-0.5
MOVZ				SN	S	06 26 35.0	-2.0
WAZ	**Wanganui**	**0.67**	**184**	⇑PN	Pn	06 26 12.3	+0.1
WAZ				SN	S	06 26 36.8	-0.5
BKZ	**Black Stump Fm**	**1.13**	**95**	PN	Pn	06 26 14.4	-0.3
BKZ				SN	S	06 26 40.2	-1.4
KRHZ	**Kereru**	**1.17**	**119**	PN	Pn	06 26 15.3	+0.3
TSZ	**Takapari Road**	**1.21**	**144**	PN	Pn	06 26 15.4	+0.2
TSZ				SN	S	06 26 41.8	-0.7
PNHZ	**Pukenui**	**1.22**	**133**	PN	Pn	06 26 15.7	+0.4
PNHZ				SN	S	06 26 42.4	-0.2
POWZ	**Post Office Ro**	**1.42**	**157**	PN	Pn	06 26 16.4	-0.3
WPHZ	**Waipukurau**	**1.46**	**133**	SN	S	06 26 45.7	0.0
DVHZ	**Dannevirke**	**1.50**	**145**	PN	Pn	06 26 17.4	+0.1
MRZ	**Mangatainoka R**	**1.63**	**165**	PN	Pn	06 26 18.1	-0.3
MRZ				SN	S	06 26 46.8	-1.3
OGWZ	**Otaki Gorge**	**1.74**	**177**	PN	Pn	06 26 18.8	-0.5
OGWZ				SN	S	06 26 48.2	-1.5
HOWZ	**Holdsworth Sta**	**1.85**	**169**	PN	Pn	06 26 19.4	-0.9
TCW	**Tory Channel**	**2.21**	**195**	PN	Pn	06 26 22.8	-0.8
TCW				SN	S	06 26 54.3	-3.2
TCW				AML	AML	06 26 55.4	
NNZ	**Nelson**	**2.48**	**210**	⇓PN	Pn	06 26 24.6	-1.9
NNZ				SN	S	06 26 58.9	-3.7
TUWZ	**Tuamarina**	**2.49**	**199**	PN	Pn	06 26 25.4	-1.1
TUWZ				AML	AML	06 27 01.3	
QRZ	**Quartz Range**	**2.60**	**227**	PN	Pn	06 26 24.6	-3.1
PKGZ	**Pakihiroa**	**2.66**	**64**	PN	Pn	06 26 30.7	+2.2
THZ	**Tophouse**	**3.14**	**211**	PN	Pn	06 26 31.2	-2.4
LTZ	**Lake Taylor**	**4.25**	**209**	PN	Pn	06 26 43.9	-2.7
INZ	**Inchbonnie**	**4.55**	**216**	PN	Pn	06 26 46.9	-3.2
OXZ	**Oxford**	**4.81**	**207**	PN	Pn	06 26 49.8	-3.6
MQZ	**McQueen's Vall**	**4.96**	**200**	PN	Pn	06 26 51.5	-3.7

ISCJB ***18*** *06:30:38.9±0.8,22.06S±0.07×65.92W±0.0?0,h262km, mb3.2/2, Error ellipse: s-maj=11.9km s-min=9.1km az=20.2*

IDC ***18*** *06:30:41.1±1.8,21.84S×65.85W, h275km±22km, mb3.0/2, mb1 3.1/5, mb1mx2.9/25, mbtmp3.5/5, Error ellipse: s-maj=31.8km s-min=17.3km az=99.0*

ISC 18 06:30:39.1±1.1, 22.06S±0.08×66.0W±0.1, h262km, n18, σ1.9 00/19, 9C-1D, Jujuy Province

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
PB06	**IPOC Station P**	**3.39**	**258**	⇑*e*P	**Pn**	**06 31 37.5**	**+0.8**
PB06				IAML		06 32 25.5	
	comp=N,150nm,0.7s						
PB01	**IPOC Station P**	**3.43**	**287**	⇑*e*P	**Pn**	**06 31 37.9**	**+0.8**
PB01				IAML		06 32 23.1	
	comp=N,225nm,0.2s						
PB08	**IPOC Station P**	**3.53**	**302**	⇑*e*P	**Pn**	**06 31 40.1**	**+1.5**
PB08				IAML		06 32 30.7	
	comp=E,66nm,0.2s						
PB07	**IPOC Station P**	**3.65**	**275**	⇑*e*P	**Pn**	**06 31 40.5**	**+0.8**
PB07				IAML		06 32 29.1	
	comp=N,175nm,0.5s						
PB04	**IPOC Station P**	**3.88**	**265**	⇓*e*P	**Pn**	**06 31 42.9**	**+0.6**
HMBC	**Humberstone**	**4.06**	**295**	*e*P	**Pn**	**06 31 44.8**	**+0.5**
PATCX	**Punta Patache**	**4.09**	**287**	⇑*e*P	**Pn**	**06 31 45.0**	**+0.5**
PB11	**IPOC Station P**	**4.14**	**303**	⇑*e*P	**Pn**	**06 31 45.8**	**+0.6**
PB10	**IPOC Station P**	**4.47**	**250**	⇑*e*P	**Pn**	**06 31 48.9**	**0.0**
MNMC	**Minye Minye**	**4.48**	**310**	*e*P	**Pn**	**06 31 50.0**	**+0.6**
PSGC	**Pisagua**	**4.59**	**302**	*e*P	**Pn**	**06 31 50.4**	**-0.2**
PB14	**IPOC Station P**	**4.81**	**237**	⇑*e*P	**Pn**	**06 31 53.1**	**-0.1**
PB13	**IPOC Station P**	**4.97**	**318**	⇑*e*P	**Pn**	**06 31 56.9**	**+1.3**
LPAZ	**La Paz**	**6.10**	**340**	P	**Pn**	**06 32 10.7**	**+1.3**
	comp=N,0.4nm,0.3s,baz=134,slow=5.0,SNR=9.8						
LPAZ				S	**S**	**06 33 19.4**	**-2.2**
	comp=N,0.2nm,0.3s,baz=318,slow=20,SNR=8.3						
SIV	**San Ignacio**	**7.61**	**38**	P	**Pn**	**06 32 27.9**	**+0.2**
	comp=N,0.7nm,0.3s,baz=238,slow=12,SNR=9.8						
PLCA	**Paso Flores**	**19.01**	**191**	P	**Pn**	**06 34 45.5**	**-0.5**
	comp=N,0.2nm,0.3s,baz=37,slow=11,SNR=7.4						
TORD	**Torodi Ar. Bea**	**74.99**	**69**	P	**P**	**06 41 51.5**	**-0.8**
	comp=N,0.5nm,0.5s,baz=256,slow=5.1,SNR=9.9						
YKA	**Yellowknife Ar**	**92.64**	**340**	P	**P**	**06 43 21.6**	**+1.0**
	comp=N,0.1nm,0.6s,baz=126,slow=4.1,SNR=5.0						

IDC ***18*** *06:36:32.9±2.5,35.35N×141.85E, h0km, mb3.2/2, mb1 3.4/4, mb1mx3.2/45, mbtmp3.3/4, ML3.2/2, Error ellipse: s-maj=50.5km s-min=27.7km az=75.0*

ISCJB ***18*** *06:36:35.0±1.3,35.59N±0.05×141.7E±0.1, h44km±17km, mb3.3/2, Error ellipse: s-maj=13.7km s-min=7.9km az=174.1*

JMA ***18*** *06:36:35.9±0.2,35.64N×141.63E, h48km±4km, M2.9*

ISC 18 06:36:35.1±2.2, 35.58N±0.05×141.7E±0.1, h28km±14km, n12, σ0.97/17, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
CHOJ	**Chosi**	**0.71**	**280**	P	**Pn**	**06 36 48.8**	**-0.4**
CHOJ				S	**Sb**	**06 36 57.9**	**-0.5**
BSO1	**Boso 1**	**1.11**	**214**	P	**Pb**	**06 36 55.6**	**+0.4**
JIM2	**Oshima 3**	**2.06**	**246**	P	**Pn**	**06 37 07.9**	**0.0**
JIM2				*e*S	**Sn**	**06 37 32.4**	**-0.2**
JOD2	**Odawara 2**	**2.17**	**262**	P	**Pn**	**06 37 09.6**	**+0.2**
JOD2				S	**Sn**	**06 37 34.0**	**-1.3**
JFT	**Otama**	**2.23**	**330**	P	**Pn**	**06 37 10.2**	**0.0**
JFT				S	**Sn**	**06 37 35.0**	**-1.8**
JKT	**Katashina**	**2.32**	**301**	S	**Sn**	**06 37 38.8**	**-0.4**
JRY	**Ryogami san**	**2.33**	**282**	P	**Pn**	**06 37 10.5**	**-1.1**
JHJ	**Hachijo jima 2**	**8.23**	**214**	Pn	**Pn**	**06 37 18.9**	**-0.9**
	20nm,0.3s,baz=68,slow=11,SNR=3.8						
JHJ				Sn	**Sn**	**06 37 53.9**	**-0.2**
	18nm,0.3s,baz=57,slow=23,SNR=6.3						
MJAR	**Matsushiro Arr**	**3.00**	**290**	Pn	**Pn**	**06 37 21.9**	**+1.1**
	1.4nm,0.3s,baz=101,slow=8.6,SNR=6.9						
MAT	**Matsushiro**	**3.00**	**290**	P	**Pn**	**06 37 21.7**	**+0.9**
MAT				*e*S	**Sn**	**06 37 57.3**	**+1.4**
MKAR	**Makanchi Array**	**45.11**	**303**	P	P	06 44 53.0	+4.2
	0.1nm,0.4s,baz=87,slow=9.5,SNR=2.0						
WRA	**Warramunga Arr**	**55.66**	**188**	P	**P**	**06 46 09.2**	**+0.6**
	0.6nm,0.8s,baz=19,slow=7.8,SNR=3.3						

JMA ***18*** *06:37:42.2±0.1,37.89N×143.97E, h0km, M4.0*

IDC ***18*** *06:37:46.2±2.0,38.14N×143.28E, h0km, mb3.8/6, mb1 3.9/7, mb1mx3.6/43, mbtmp3.7/7, Error ellipse: s-maj=53.6km s-min=23.8km az=67.0*

NEIC ***18*** *06:37:51.1±1.7,38.23N×143.43E, h38km±13km, mb4.3/4, Error ellipse: s-maj=23.6km s-min=11.9km az=107.0*

ISC 18 06:37:47.2±1.0, 38.10N±0.05×143.72E±0.06, h19km, n27, σ2.6 16/33, mb4.0/10, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
OFUJ	**Ofunato**	**1.88**	**302**	P	**Pn**	**06 38 20.3**	**+1.9**
OFUJ				S	**Sg**	**06 38 48.4**	**+0.5**
JIO	**Ouri**	**1.90**	**281**	P	**Pn**	**06 38 20.3**	**+1.7**
JIO				*e*S	**Sg**	**06 38 47.9**	**-0.6**
JMK	**Ichinoseki**	**2.14**	**294**	S	**Sg**	**06 38 55.0**	**-1.1**
JOM	**Ohasama**	**2.34**	**307**	*e*S	**Sg**	**06 39 00.3**	**-2.2**
JFT	**Otama**	**2.74**	**259**	*e*S	**Sb**	**06 39 06.4**	**-2.6**
JYK	**Kaneyama**	**2.76**	**288**	P	**Pn**	**06 38 33.1**	**+2.6**
JYK				S	**Sb**	**06 39 10.6**	**+1.2**
JANG	**Nango**	**2.84**	**324**	P	**Pb**	**06 38 36.1**	**-1.2**
JANG				S	**Sb**	**06 39 10.3**	**-1.4**
JOT	**Ohata**	**3.87**	**329**	*e*S	**Sn**	**06 39 35.4**	**+4.8**
ERM	**Erimo**	**3.93**	**354**	*e*Pn	**Pn**	**06 38 46.7**	**+0.2**
ERM				*e*Sn	**Sn**	**06 39 32.0**	**-0.1**
JKB	**Kayabe**	**4.31**	**332**	P	**Pn**	**06 38 53.6**	**+1.9**
JKB				*e*S	**Sn**	**06 39 44.2**	**+2.8**
JRY	**Ryogami san**	**4.38**	**243**	P	**Pn**	**06 39 50.7**	**-2.1**
JRY				S	**Sn**	**06 39 40.5**	**-2.8**
JCH	**Churui**	**4.51**	**357**	P	Pn	06 38 52.8	-1.7
JCH				S	**Sn**	**06 39 45.0**	**-1.5**
MJAR	**Matsushiro Arr**	**4.66**	**252**	Pn	Pn	06 38 54.4	-2.3
	baz=88,slow=15,SNR=2.2						
MAJO	**Matsushiro**	**4.66**	**252**	*e*Pn	**Pn**	**06 38 59.0**	**+2.3**
MAJO				*e*Sn	**Sn**	**06 39 46.0**	**-4.3**
MAT	**Matsushiro**	**4.66**	**252**	P	**Pn**	**06 38 58.7**	**+2.1**
MAT				S	**Sn**	**06 39 54.5**	**+4.2**
JOD2	**Odawara 2**	**4.68**	**234**	*e*S	Sn	06 39 44.9	-5.8
ASAJ	**Asahikawa**	**6.07**	**352**	*e*Pn	**Pn**	**06 39 16.1**	**+0.2**
CMAR	**Chiang Mai Arr**	**43.54**	**256**	P	**P**	**06 45 48.3**	**-1.5**
	0.8nm,0.4s,baz=53,slow=9.2,SNR=3.0						
MKAR	**Makanchi Array**	**45.11**	**302**	P	**P**	**06 46 01.9**	**-0.3**
	0.4nm,0.7s,baz=83,slow=9.9,SNR=6.0						
KURK	**Kurchatov**	**46.73**	**308**	*e*P	**P**	**06 46 14.3**	**-0.5**
	1.8nm,0.5s						
KURBB	**Kurchatov Arra**	**46.80**	**308**	P	**P**	**06 46 15.0**	**-0.4**
	0.9nm,0.4s,baz=76,slow=7.5,SNR=3.6						
TKM2	**Tokmak 2**	**50.74**	**298**	*e*P	**P**	**06 46 46.5**	**+0.4**
	1.5nm,0.5s						
BVAR	**Borovoye Array**	**51.22**	**312**	P	**P**	**06 46 48.6**	**-0.6**
	0.3nm,0.4s,baz=106,slow=11,SNR=2.5						
WRAB	**Tennant Creek**	**58.40**	**190**	*e*P	**P**	**06 47 43.6**	**+2.1**
	3.7nm,0.8s						
WRA	**Warramunga Arr**	**58.41**	**190**	P	**P**	**06 47 43.1**	**+1.6**
	1.5nm,0.6s,baz=11,slow=7.1,SNR=9.6						
ABKAR	**Akbulak array**	**58.65**	**310**	*e*P	**P**	**06 47 41.7**	**-1.3**
	0.2nm,0.3s						
ASAR	**Alice Springs**	**62.13**	**190**	P	**P**	**06 48 09.2**	**+2.1**
	0.3nm,0.5s,baz=14,slow=8.4,SNR=4.6						

ISCJB ***18*** *06:39:56.1±0.5,55.6N±0.1×162.4W±0.1, h150km, mb3.2/3, Error ellipse: s-maj=17.0km s-min=4.7km az=150.7*

NEIC ***18*** *06:39:57.9,55.35N×162.30W, h152km, MG3.1(AEIC), After AEIC.*

IDC ***18*** *06:40:00.5±19.0,55.82N×163.06W, h188km±102km, mb2.9/3, mb1 3.0/5, mb1mx2.8/54, mbtmp3.2/5, Error ellipse: s-maj=232.0km s-min=60.7km az=77.0*

ISC 18 06:39:57.0±0.9, 55.7N±0.1×162.52W±0.08, h150km, n27, σ1.9 48/31, mb3.3/3, Alaska Peninsula

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
PS4A	**Pavlof South-4**	**0.52**	**133**	P	**Pn**	**06 40 17.9**	**-0.5**
HAG	**Hague Volcano**	**0.53**	**138**

*IDC **18** 07:03:01.7±0.9,35˚.31S×78˚.62E,h0km,mb4.1/12, mb1 4.2/12,mb1mx4.0/38,mbtmp4.1/12,MS3.8/7, Ms1 3.8/7,ms1mx3.4/33,Error ellipse: s-maj=32.4km s-min=21.5km az=46.0*

*ISCJB **18** 07:03:02.1±0.6,35˚.5S±0˚.1×78˚.6E±0˚.2,h14km,mb4.3/17, MS3.9/7,Error ellipse: s-maj=19.2km s-min=14.7km az=143.3*

*NEIC **18** 07:03:03.1±0.5,35˚.41S×78˚.56E,h10km,mb4.7/5,Error ellipse: s-maj=16.5km s-min=12.8km az=52.0*

ISC 18 07:03:03.8±0.7,35˚.4S±0˚.1×78˚.6E±0˚.2,h14km,n29, σ0§90/19,mb4.2/17,MS3.8/7,1C,Mid-Indian Ridge

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
H08S2	**Diego Garcia H**	**28.20**	**347**	T	T	07 38 22.9	
	baz=170,slow=76,SNR=75						
H08S1	**Diego Garcia H**	**28.20**	**347**	T	T	07 38 23.4	
	baz=170,slow=76,SNR=104						
H08S3	**Diego Garcia H**	**28.22**	**347**	T	T	07 38 24.4	
	baz=170,slow=76,SNR=108						
H01W2	**Cape Leeuwin H**	**28.99**	**99**	T	T	07 39 32.8	
	baz=258,slow=74,SNR=62						
H01W3	**Cape Leeuwin H**	**29.00**	**99**	T	T	07 39 33.1	
	baz=258,slow=74,SNR=51						
H01W1	**Cape Leeuwin H**	**29.01**	**99**	T	T	07 39 36.2	
	baz=258,slow=74,SNR=64						
MAW	**Mawson**	**33.46**	**191**	LR	LR	07 19 55.2	
	comp=Z,40nm,19.2s,baz=52,slow=30						
SYO	**Syowa Base**	**39.91**	**201¶**	*e*pP	pP	07 10 40.0	-1.2
BOSA	**Boshof**	**45.25**	**263**	LR	LR	07 26 04.6	
	comp=Z,165nm,20.5s,baz=136,slow=30						
ASAR	**Alice Springs**	**48.99**	**92**	P	**P**	**07 11 50.2**	**0.0**
	1.5nm,0.8s,baz=246,slow=6.5,SNR=9.6						
ASAR				LR	LR	07 30 10.4	
	comp=Z,101nm,19.5s,baz=242,slow=33						
LSZ	**Lusaka**	**49.17**	**281**	*e*P	**P**	**07 11 50.8**	**-0.9**
	12nm,1.2s						
WRA	**Warramunga Arr**	**51.11**	**88**	P	**P**	**07 12 06.0**	**-0.3**
	2.3nm,0.9s,baz=240,slow=7.3,SNR=6.1						
WRA				LR	LR	07 31 29.8	
	comp=Z,109nm,21.9s,baz=165,slow=34						
STKA	**Stephens Creek**	**51.80**	**105**	P	**P**	**07 12 12.2**	**+0.9**
	3.1nm,1.0s,baz=272,slow=6.4,SNR=5.0						
STKA				LR	LR	07 29 45.8	
	comp=Z,105nm,21.0s,baz=206,slow=31						
VNDA	**Vanda**	**54.27**	**165**	P	**P**	**07 12 28.8**	**0.0**
	1.2nm,1.0s,baz=287,slow=8.8,SNR=3.4						
QSPA	**South Pole Qui**	**54.73**	**180**	*e*P	**P**	**07 12 32.0**	**-0.5**
	100nm,1.8s						
CMAR	**Chiang Mai Arr**	**56.97**	**23**	P	**P**	**07 12 48.2**	**-0.6**
	0.8nm,0.3s,baz=209,slow=6.9,SNR=5.0						
EKS2	**Erkin-Say**	**77.83**	**356**	*e*P	**P**	**07 15 01.7**	**+1.1**
	2.9nm,0.8s						
KKAR	**Karatay Array**	**78.50**	**354**	*e*P	**P**	**07 15 05.0**	**+0.9**
	7.3nm,0.9s						
MKAR	**Makanchi Array**	**81.91**	**3**	P	**P**	**07 15 20.4**	**-2.1**
	1.2nm,0.8s,baz=169,slow=6.8,SNR=8.3						
BRTR	**Keskin Array B**	**85.49**	**327**	P	**P**	**07 15 41.7**	**+0.6**
	1.7nm,0.9s,baz=173,slow=4.7,SNR=7.0						
KURBB	**Kurchatov Arra**	**85.67**	**360**	P	**P**	**07 15 42.0**	**+0.5**
	4.7nm,0.9s,baz=193,slow=4.8,SNR=30						
KURK	**Kurchatov**	**85.77**	**0**	*e*P	**P**	**07 15 42.6**	**+0.6**
SONM	**Songino Array**	**86.55**	**18**	P	**P**	**07 15 45.6**	**-0.6**
	1.2nm,0.9s,baz=206,slow=6.1,SNR=6.6						
TORD	**Torodi Ar. Bea**	**87.11**	**288**	P	**P**	**07 15 50.8**	**+1.3**
	0.8nm,0.9s,baz=154,slow=3.7,SNR=3.1						
TORD				LR	LR	07 52 40.2	
	comp=Z,132nm,19.8s,baz=75,slow=34						
BVAR	**Borovoye Array**	**88.37**	**355**	P	**P**	**07 15 53.8**	**-0.9**
	0.8nm,0.7s,baz=155,slow=4.9,SNR=4.7						
BRVK	**Borovoye**	**88.41**	**355**	*e*P	**P**	**07 15 54.3**	**-0.5**
	1.5nm,0.4s						
DBIC	**Dimbokro**	**88.49**	**279**	LR	LR	07 50 36.6	
	comp=Z,82nm,21.9s,baz=125,slow=32						
ZALV	**Zalesovo Beam**	**89.17**	**4**	P	**P**	**07 15 58.2**	**-0.2**
	0.5nm,0.3s,baz=185,slow=5.5,SNR=4.7						
YKA	**Yellowknife Ar**	**151.68**	**13**	PKPbc	**PKPbc**	**07 22 56.5**	**-0.4**
	0.6nm,0.9s,baz=333,slow=2.8,SNR=11						

*CSEM **18** 07:17:29.0±0.4,39˚.87N×41˚.96E,h10km,MD2.8,Error ellipse: s-maj=9.3km s-min=6.7km az=8.0*

*DDA **18** 07:18:03.0,39˚.89N×42˚.01E,h9km,Md2.8*

ISK 18 07:17:29.0,39˚.89N×42˚.02E,h7km,MD2.7,Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
HOMI	**Horasan**	**0.18**	**331**	*i* P	Pg	07 17 33.2	+0.5
HOMI				*i* S	Sg	07 17 37.0	+1.6
EATA	**Eleskirt**	**0.36**	**94**	*i* P	Pg	07 17 36.9	+0.7
EATA				*i* S	Sb	07 17 44.2	+0.1
EATA	**Eleskirt**	**0.36**	**94**	P	Pg	07 17 36.9	+0.7
EATA				S	Sb	07 17 44.2	+0.1
ERZM	**Erzurum**	**0.50**	**272**	*i* P	Pg	07 17 39.0	+0.2
ERZM				*i* S	Sb	07 17 47.0	-0.9
ERZM	**Erzurum**	**0.50**	**272**	P	Pg	07 17 39.0	+0.3
ERZM				S	Sb	07 17 47.0	-1.0
EZM	**Erzurum**	**0.51**	**272**	*e*PG	Pg	07 17 39.0	+0.2
EZM				*e*SG	Sb	07 17 47.0	-1.0
EKAR	**Karacoban**	**0.63**	**177**	*i* P	Pb	07 17 41.9	-0.6
EKAR				*i* S	Sn	07 17 53.6	-1.4
EKAR	**Karacoban**	**0.63**	**177**	P	Pb	07 17 41.9	-0.6
BNGL	**BINGOL**	**1.15**	**216**	*i* P	Pg	07 17 49.8	-1.3
BNGL				*i* S	Sn	07 18 07.5	-0.3
DBAD	**Bademkaya**	**1.16**	**348**	*i* P	Pg	07 17 50.8	-0.5
DBAD				*i* S	Sg	07 18 06.0	-0.2
DBAD	**Bademkaya**	**1.16**	**348**	P	Pg	07 17 50.8	-0.4
DBAD				S	Sg	07 18 06.0	-0.2
KOPT	**Kop Dagi**	**1.18**	**277**	*i* P	Pg	07 17 50.9	-0.7
KOPT				*i* S	Sn	07 18 09.9	+1.3
KOPT	**Kop Dagi**	**1.18**	**277**	P	Pg	07 17 50.9	-0.7
DAGI	**Agillar**	**1.19**	**356**	*i* P	Pg	07 17 51.2	-0.7
DAGI				*i* S	Sb	07 18 07.7	0.0
BNGB	**Bing˜¶l**	**1.37**	**230**	*e*PN	Pg	07 17 55.5	+0.3
BNGB				*e*SN	Sn	07 18 14.1	+1.0
BAYT	**Ayd¯¬ntepe-Bay**	**1.52**	**290**	*e*PN	Pb	07 17 57.6	-0.1
BAYT	**Ayd¯¬ntepe-Bay**	**1.52**	**290**	*e*Pn	Pb	07 17 57.7	0.0
BINT	**Bingol**	**1.56**	**230**	*e*Pn	Pn	07 17 55.6	-1.6
BINT				*e*Sn	Sn	07 18 14.1	-3.6

*NIED **18** 07:21:00,36˚.40N×141˚.10E,h32km,Mw4.1 Best double couple: Mo1.56000×10¹⁵ NP1:ϕ=102.00000°,δ21.00000°, λ-39.00000°. NP2:ϕ=230.00000°,δ77.00000°, λ-106.00000°.*

*MOS **18** 07:21:05.6±1.3,36˚.38N×141˚.31E,h24km,mb4.6/10,Error ellipse: s-maj=10.2km s-min=7.3km az=106.7*

*ISCJB **18** 07:21:08.2±0.6,36˚.41N±0˚.03×141˚.18E±0˚.05,h40km±5km, mb4.2/39,MS3.4/10,Error ellipse: s-maj=6.5km s-min=4.1km az=12.3*

*JMA **18** 07:21:09.0±0.1,36˚.43N×141˚.10E,h46km±2km,M4.1*

JMA Felt II J1.

*NEIC **18** 07:21:10.5±0.8,36˚.37N×141˚.19E,h45km±7km,mb4.4/14, Error ellipse: s-maj=8.1km s-min=6.9km az=103.0*

*IDC **18** 07:21:11.5±1.7,36˚.39N×141˚.08E,h54km±16km,mb3.8/20, mb1 4.0/25,mb1mx3.9/51,mbtmp4.1/25,ML3.7/6,MS3.3/11, Ms1 3.3/11,ms1mx3.1/44,Error ellipse: s-maj=13.5km s-min=8.8km az=75.0*

ISC 18 07:21:08.7±1.3,36˚.42N±0˚.04×141˚.16E±0˚.05,h28km±9km, n99,σ1§15/100,mb4.3/39,MS3.5/10,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JHO	**Hitachi**	**0.51**	**292**	P	**Pb**	**07 21 19.5**	**+0.2**
JHO				S	**Sb**	**07 21 26.6**	**+0.2**
ONAJ	**Iwakimizuishiy**	**0.74**	**337**	P	**Pb**	**07 21 22.5**	**-0.6**
ONAJ				S	**Sb**	**07 21 32.0**	**-0.9**
JYT	**Yasato**	**0.80**	**256**	P	**Pn**	**07 21 23.5**	**-0.6**
JYT				S	**Sb**	**07 21 33.6**	**-1.0**
JFK	**Kawauchi**	**0.97**	**347**	P	**Pn**	**07 21 25.4**	**-1.1**
JFT	**Otama**	**1.28**	**329**	P	**Pn**	**07 21 31.3**	**+0.6**
JFT				S	**Sn**	**07 21 46.9**	**0.0**
JAG	**Ashikaga**	**1.38**	**271**	P	**Pn**	**07 21 31.8**	**-0.2**
JAG				S	**Sn**	**07 21 47.8**	**-1.5**
MJAR	**Matsushiro Arr**	**2.38**	**274**	P	**Pn**	**07 21 46.7**	**+0.8**
	28nm,0.3s,baz=93,slow=9.1,SNR=158						
MJAR				S	**Sn**	**07 22 15.0**	**+0.9**
	30nm,0.3s,baz=86,slow=17,SNR=12						
MJAR				LR	LR	07 22 53.5	
	comp=Z,405nm,20.1s,baz=125,slow=45						
MAJO	**Matsushiro**	**2.38**	**274**	*e*P	**Pn**	**07 21 47.1**	**+1.2**
MAJO	**Matsushiro**	**2.38**	**274**	*e*Pn	**Pn**	**07 21 47.1**	**+1.2**
MAT	**Matsushiro**	**2.38**	**274**	P	**Pn**	**07 21 47.1**	**+1.2**
MAT				S	**Sn**	**07 22 12.6**	**-1.5**
MJB9	**Matsu-Tunnel**	**2.38**	**274**	*e*Pn	**Pn**	**07 21 47.3**	**+1.4**
JHJ2	**Mitsune**	**3.48**	**199**	*e*Pn	**Pn**	**07 22 02.4**	**+1.4**
JHJ2				*e*Sn	**Sn**	**07 22 42.1**	**+0.9**
JHJ	**Hachijo jima 2**	**3.48**	**199**	P	**Pn**	**07 22 02.0**	**+1.0**
	30nm,0.3s,baz=320,slow=23,SNR=12						
JHJ				S	**Sn**	**07 22 41.8**	**+0.5**
	133nm,0.3s,baz=283,slow=22,SNR=9.0						
INU	**Inuyama**	**3.53**	**254**	*e*Pn	Pn	07 22 06.1	+4.5
ERM	**Erimo**	**5.80**	**15**	*e*Pn	**Pn**	**07 22 32.8**	**0.0**
ERM				*e*		07 23 38.5	
ERM	**Erimo**	**5.80**	**15**	*e*Pn	**Pn**	**07 22 32.8**	**0.0**
ERM				*e*Sn	**Sn**	**07 23 38.5**	**+0.2**
ASAJ	**Asahikawa**	**7.77**	**8**	P	**Pn**	**07 23 00.4**	**+0.6**
	4.1nm,0.3s,baz=222,slow=12,SNR=10						
ASAJ	**Asahikawa**	**7.77**	**8**	*e*Pn	**Pn**	**07 23 00.1**	**+0.3**
ASAJ				*e*Sn	**Sn**	**07 24 29.0**	**+2.3**
SHO	**Shikotan**	**8.61**	**29**	*e*P	Pn	07 23 08.0	-3.4
CBIJ	**Chichi jima**	**9.34**	**174**	*e*Pn	**Pn**	**07 23 19.8**	**-1.6**
CBIJ				*e*Sn	**Sn**	**07 25 06.0**	**+0.5**
USRK	**Ussuriysk Ar.**	**10.45**	**321**	P	**Pn**	**07 23 39.5**	**+2.9**
	0.7nm,0.3s,baz=136,slow=12,SNR=22						
USRK				LR	LR	07 27 35.5	
	comp=Z,186nm,18.1s,baz=163,slow=37						
KSRS	**Korea Array**	**10.64**	**280**	P	**Pn**	**07 23 41.9**	**+2.6**
	0.4nm,0.3s,baz=95,slow=14,SNR=12						
KSRS				LR	LR	07 27 27.7	
	comp=Z,156nm,21.8s,baz=75,slow=35						
KSAR	**Wonju Array Be**	**10.68**	**279**	P	**Pn**	**07 23 41.9**	**+2.2**
KSAR	**Wonju Array Be**	**10.68**	**279**	P	**Pn**	**07 23 41.9**	**+2.2**
KLR	**Kul'dur**	**14.53**	**335**	P	**P**	**07 24 35.6**	**-3.0**
	0.2nm,0.3s,baz=136,slow=13,SNR=10						
JOW	**Kunigami**	**14.54**	**233**	*e*Pn	**P**	**07 24 38.3**	**-0.5**
PETK	**Petropavlovsk-**	**20.32**	**30**	LR	LR	07 33 44.9	
	comp=Z,266nm,21.2s,baz=217,slow=37						
HHC	**Hu-ho-hao-te**	**23.48**	**290**	*e*P	**P**	**07 26 16.8**	**+0.7**
HHC				pmax	pmax		
	comp=Z,16nm,1.1s						
HHC				pmax	pmax		
	comp=Z,62nm,5.1s						
MA2	**Magadan**	**24.00**	**12**	LR	LR	07 36 00.7	
	comp=Z,39nm,18.6s,baz=186,slow=37						
SEY	**Seymchan**	**27.43**	**11**	P	**P**	**07 26 51.9**	**+0.2**
	comp=Z,1.3nm,0.6s,baz=194,slow=5.7,SNR=6.2						
ULN	**Ulaanbaatar**	**27.54**	**305**	*e*P	**P**	**07 26 56.0**	**+3.0**
ULN				pmax	pmax		
	comp=Z,5.0nm,0.7s						
ULN	**Ulaanbaatar**	**27.54**	**305**	*e*P	**P**	**07 26 56.0**	**+3.0**
	comp=Z,4.6nm,0.7s						
BOD	**Bodaibo**	**27.94**	**329**	*e*P	**P**	**07 26 55.3**	**-1.0**
BOD				pmax	pmax		
	comp=Z,2.0nm,1.3s						
SONA1	**Songino Array**	**27.96**	**305**	*e*P	**P**	**07 26 56.0**	**-0.8**
SONM	**Songino Array**	**27.96**	**305**	P	**P**	**07 26 56.0**	**-0.8**
	comp=Z,3.0nm,0.7s,baz=108,slow=9.3,SNR=18						
SONM				LR	LR	07 38 42.1	
	comp=Z,29nm,19.4s,baz=78,slow=38						
H11N2	**WAKE ISLAND Hy**	**28.02**	**119**	T	T	07 56 18.7	
	baz=312,slow=75,SNR=85						
H11N1	**WAKE ISLAND Hy**	**28.03**	**119**	T	T	07 56 21.0	
	baz=312,slow=75,SNR=71						
H11N3	**WAKE ISLAND Hy**	**28.04**	**119**	T	T	07 56 21.3	
	baz=312,slow=75,SNR=99						
H11S1	**WAKE ISLAND Hy**	**28.71**	**122**	T	T	07 57 05.7	
	baz=314,slow=76,SNR=137						
H11S3	**WAKE ISLAND Hy**	**28.71**	**122**	T	T	07 57 06.3	
	baz=314,slow=76,SNR=66						
H11S2	**WAKE ISLAND Hy**	**28.72**	**122**	T	T	07 57 15.2	
	baz=314,slow=76,SNR=153						
TLY	**Talaya**	**30.58**	**312**	LR	LR	07 40 06.1	
	comp=Z,42nm,19.6s,baz=130,slow=37						
CD2	**Chengdu**	**31.47**	**271**	P	**P**	**07 27 28.0**	**0.0**
CD2				pmax	pmax		
	comp=Z,1.0nm,0.5s						
KMI	**Kunming**	**34.67**	**262**	P	**P**	**07 27 56.5**	**+0.3**
KMI				pP	sP	07 28 07.0	-1.0
KMI				sP	pP	07 28 13.1	+8.6
KMI				pmax	pmax		
	comp=Z,11nm,0.7s						
KMI				pmax	pmax		
	comp=Z,51nm,3.3s						
KMI				LR	LR		
	comp=N,79nm,17.2s						
KMI				LR	LR		
	comp=E,120nm,17.0s						
KMI				LR	LR		
	comp=Z,120nm,16.4s						
TIXI	**Tiksi**	**35.87**	**353**	P	**P**	**07 28 05.5**	**-0.2**
	comp=Z,0.7nm,0.3s,baz=133,slow=5.1,SNR=3.1						
WMQ	**Urumqi**	**40.94**	**297**	*e*P	**P**	**07 28 51.0**	**+2.3**
WMQ				pP	sP	07 29 03.8	+3.2
WMQ				sP	pP	07 29 07.5	+10
WMQ				pmax	pmax		
	comp=Z,6.0nm,0.6s						
WMQ				pmax	pmax		
	comp=Z,47nm,4.2s						
WMQ				LR	LR		
	comp=N,29nm,19.0s						
WMQ				LR	LR		
	comp=E,110nm,22.4s						
WMQ				LR	LR		
	comp=Z,14nm,21.4s						
ZAA0	**Zalesovo Array**	**42.18**	**313**	*e*P	**P**	**07 28 58.6**	**-0.1**
ZALV	**Zalesovo Beam**	**42.18**	**313**	P	**P**	**07 28 58.6**	**0.0**
	comp=Z,2.4nm,0.5s,baz=90,slow=7.3,SNR=9.4						
MK01	**Makanchi Array**	**44.27**	**303**	*e*P	**P**	**07 29 16.0**	**+0.3**
MK31	**Makanchi Array**	**44.27**	**303**	*e*P	**P**	**07 29 16.2**	**+0.5**
MK31	**Makanchi Array**	**44.27**	**303**	*e*P	**P**	**07 29 16.2**	**+0.5**
MKAR	**Makanchi Array**	**44.27**	**303**	P	**P**	**07 29 15.1**	**-0.6**
	comp=Z,0.7nm,0.6s,baz=86,slow=10,SNR=10.0						
KURK	**Kurchatov**	**46.15**	**309**	*e*P	**P**	**07 29 30.0**	**-0.5**
KURK				pmax	pmax		
	comp=Z,6.0nm,0.8s						
KURK	**Kurchatov**	**46.15**	**309**	*e*P	**P**	**07 29 30.0**	**-0.5**
	comp=Z,6.4nm,0.8s						
KURBB	**Kurchatov Arra**	**46.22**	**308**	P	**P**	**07 29 30.7**	**-0.4**
	comp=Z,4.1nm,0.6s,baz=84,slow=7.7,SNR=69						
MDM	**Murphy Dome**	**49.54**	**32**	*e*P	**P**	**07 29 58.4**	**+1.8**
	comp=Z,6.3nm,0.9s						
COLA	**College**	**49.71**	**32**	*e*P	**P**	**07 29 57.3**	**-0.5**
COLA				pmax	pmax		
	comp=Z,19nm,0.2s						
COLA	**College**	**49.71**	**32**	*e*P	**P**	**07 29 57.3**	**-0.5**
	comp=Z,19nm,0.2s						
TKM2	**Tokmak 2**	**49.74**	**299**	*e*P	**P**	**07 29 59.7**	**+1.0**
TKM2				pmax	pmax		
	comp=Z,3.0nm,0.7s						
TKM2	**Tokmak 2**	**49.74**	**299**	*e*P	**P**	**07 29 59.7**	**+1.0**
	comp=Z,3.4nm,0.7s						
IL1	**Eielson Array**	**50.12**	**32**	*e*P	**P**	**07 30 01.0**	**0.0**
ILAR	**Eielson Array**	**50.12**	**32**	P	**P**	**07 30 00.5**	**-0.5**
	comp=Z,2.3nm,0.8s,baz=269,slow=6.4,SNR=33						
ILB	**Eielson Array**	**50.12**	**32**	*e*P	**P**	**07 30 01.7**	**+0.7**
BVAR	**Borovoye Array**	**50.83**	**313**	P	**P**	**07 30 06.4**	**-0.2**
	comp=Z,1.2nm,0.7s,baz=93,slow=8.9,SNR=6.9						
BMRM	**Bremner River**	**51.47**	**37**	*e*P	**P**	**07 30 12.9**	**+1.6**
	comp=Z,5.6nm,1.0s						
ZRNK	**Zerenda**	**51.67**	**313**	*e*P	**P**	**07 30 12.7**	**-0.1**
ZRNK				pmax	pmax		
	comp=Z,3.0nm,0.9s						
ZRNK	**Zerenda**	**51.67**	**313**	*e*P	**P**	**07 30 12.7**	**-0.1**
	comp=Z,2.6nm,0.9s						
KKAR	**Karatay Array**	**53.26**	**300**	*e*P	**P**	**07 30 25.2**	**+0.5**
KKAR				pmax	pmax		
	comp=Z,2.0nm,0.3s						
KKAR	**Karatay Array**	**53.26**	**300**	*e*P	**P**	**07 30 25.2**	**+0.5**
	comp=Z,1.6nm,0.3s						
FITZ	**Fitzroy Crossi**	**56.18**	**198**	*e*P	**P**	**07 30 43.5**	**-2.5**
	comp=Z,6.4nm,1.0s						
WRAB	**Tennant Creek**	**56.42**	**188**	*e*P	**P**	**07 30 46.9**	**-0.8**
WRAB				pmax	pmax		
	comp=Z,3.0nm,0.6s						
WRAB	**Tennant Creek**	**56.42**	**188**	*e*P	**P**	**07 30 46.9**	**-0.8**
	comp=Z,2.7nm,0.6s						
WRA	**Warramunga Arr**	**56.43**	**188**	P	**P**	**07 30 47.1**	**-0.6**
	comp=Z,3.0nm,0.6s,baz=5.6,slow=7.3,SNR=40						
ARU	**Arti**	**56.69**	**319**	P	**P**	**07 30 48.7**	**-0.6**
	comp=Z,1.5nm,0.3s,baz=51,slow=1.6,SNR=5.4						
ARU	**Arti**	**56.69**	**319**	*e*P	**P**	**07 30 48.4**	**-0.8**
	comp=Z,4.1nm,0.8s						
ABKAR	**Akbulak array**	**58.18**	**310**	*e*P	**P**	**07 30 59.3**	**-0.6**
	comp=Z,0.9nm,0.5s						
ASAR	**Alice Springs**	**60.15**	**188**	P	**P**	**07 31 13.3**	**-0.5**
	comp=Z,1.8nm,0.7s,baz=11,slow=6.5,SNR=19						
YKA	**Yellowknife Ar**	**64.44**	**30**	P	**P**	**07 31 42.2**	**+0.2**
	comp=Z,0.6nm,0.7s,baz=303,slow=6.8,SNR=15						
STKA	**Stephens Creek**	**67.94**	**180**	P	**P**	**07 32 04.5**	**-0.2**
	comp=Z,2.5nm,0.6s,baz=15,slow=13,SNR=4.4						
FINES	**FINESS Array B**	**69.26**	**332**	P	**P**	**07 32 12.9**	**+0.2**
	comp=Z,1.4nm,0.7s,baz=81,slow=8.6,SNR=3.2						
FINES				LR	LR	08 04 49.6	
	comp=Z,55nm,18.2s,baz=76,slow=38						
FINES	**FINESS Array B**	**69.26**	**332**	P	**P**	**07 32 13.0**	**+0.2**
FFC	**Flin Flon**	**74.33**	**33**	*e*P	**P**	**07 32 43.5**	**+0.2**
FFC				pmax	pmax		
	comp=Z,2.0nm,0.8s						
FFC	**Flin Flon**	**74.33**	**33**	*e*P	**P**	**07 32 43.5**	**+0.2**
	comp=Z,2.2nm,0.8s						
HFS	**Hagfors**	**74.56**	**336**	P	**P**	**07 32 43.0**	**-1.6**
	comp=Z,5.4nm,1.2s,baz=75,slow=17,SNR=3.0						
HFS	**Hagfors**	**74.56**	**336**	P	**P**	**07 32 43.0**	**-1.6**
FCC	**Fort Churchill**	**74.64**	**26**	*e*P	**P**	**07 32 45.2**	**+0.2**
FCC				pmax	pmax		
	comp=Z,4.0nm,1.2s						
FCC	**Fort Churchill**	**74.64**	**26**	*e*P	**P**	**07 32 45.1**	**+0.2**
	comp=Z,4.3nm,1.2s						
AKASG	**Malin Array Be**	**74.66**	**322**	P	**P**	**07 32 43.2**	**-2.1**
	comp=Z,0.4nm,0.4s,baz=70,slow=6.2,SNR=5.0						
AKASG				LR	LR	08 07 44.1	
	comp=Z,43nm,18.4s,baz=135,slow=37						
NB2	**NORSAR Subarra**	**74.67**	**337**	P	**P**	**07 32 45.6**	**+0.3**
	comp=Z,1.5nm,0.8s,baz=40,slow=5.9						
NOA	**NORSAR Array B**	**74.67**	**337**	P	**P**	**07 32 44.8**	**-0.5**
	comp=Z,1.2nm,0.7s,baz=38,slow=5.8,SNR=5.4						
NOA				LR	LR	08 08 48.1	
	comp=Z,38nm,19.6s,baz=30,slow=38						
NVAR	**Mina Array Bea**	**75.52**	**53**	P	**P**	**07 32 52.1**	**+1.3**
	comp=Z,1.4nm,0.7s,baz=288,slow=5.4,SNR=11						
DUG	**Dugway, Tooele**	**77.91**	**49**	*e*P	**P**	**07 33 05.3**	**+1.1**
DUG				pmax	pmax		
	comp=Z,1.0nm,0.6s						
DUG	**Dugway, Tooele**	**77.91**	**49**	*e*P	**P**	**07 33 05.3**	**+1.1**
	comp=Z,1.4nm,0.6s						
PDAR	**Pinedale Array**	**78.24**	**45**	P	**P**	**07 33 06.3**	**+0.3**
	comp=Z,0.8nm,0.6s,baz=267,slow=1.8,SNR=12						
PPT	**Papeete**	**84.55**	**116**	LR	LR	08 02 32.8	
	comp=Z,44nm,21.2s,baz=60,slow=29						
TXAR	**Lajitas Array**	**90.66**	**52**	P	**P**	**07 34 09.4**	**+0.4**
	comp=Z,2.0nm,0.8s,baz=276,slow=3.8,SNR=9.3						
LPAZ	**La Paz**	**147.18**	**60**	PKPbc	**PKPbc**	**07 40 50.0**	**-0.4**
	comp=Z,2.0nm,0.7s,baz=12,slow=9.3,SNR=9.0						
LPAZ	**La Paz**	**147.18**	**60**	PKP2	**PKPbc**	**07 40 50.0**	**-0.4**
LCO	**Las Campanas**	**152.28**	**84**	*e*PKPbc	**PKPbc**	**07 41 02.6**	**+0.4**
LCO				*e*PKPab	**PKPab**	**07 41 11.2**	**-1.1**

*ISCJB **18** 07:23:41.2±0.6,54˚.4S±0˚.2×131˚.5W±0˚.2,h10km,mb4.6/14, MS3.7/9,Error ellipse: s-maj=24.6km s-min=13.1km az=152.7*

*IDC **18** 07:23:41.4±0.6,54˚.40S×131˚.57W,h0km,mb4.4/8, mb1 4.6/8,mb1mx4.4/21,mbtmp4.4/8,MS3.7/9,Ms1 3.7/9, ms1mx3.4/29,Error ellipse: s-maj=36.1km s-min=17.3km az=157.0*

*NEIC **18** 07:23:42.6±0.3,54˚.34S×131˚.56W,h10km,mb4.8/6,Error ellipse: s-maj=18.3km s-min=11.1km az=159.0*

ISC 18 07:23:42.8±0.5,54˚.4S±0˚.2×131˚.5W±0˚.1,h10km,n45, σ0§82/27,mb4.7/14,MS3.7/9,Pacific-Antarctic Ridge

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
RKT	**Rikitea**	**31.31**	**354**	*e*LR	LR	07 38 27.3	
	287nm,29.8s						
RKT	**Rikitea**	**31.31**	**354**	*e*T	T	08 02 51.7	
	6.0nm,0.2s						
VNDA	**Vanda**	**32.66**	**202**	P	**P**	**07 30 15.2**	**+0.9**
	2.2nm,0.8s,baz=83,slow=9.2,SNR=11						
VNDA				PcP	**PcP**	**07 32 59.2**	**-0.6**
	2.2nm,0.9s,baz=136,slow=1.9,SNR=7.9						
VNDA				LR	LR	07 39 55.1	
	comp=Z,130nm,18.6s,baz=94,slow=30						
TBI	**Tubuai**	**33.78**	**329**	*e*LR	LR	07 39 26.1	
	180nm,26.2s						
TBI	**Tubuai**	**33.78**	**329**	*e*T	T	08 05 59.0	
	33nm,0.3s						
QSPA	**South Pole Qui**	**35.81**	**180**	*e*P	**P**	**07 30 42.6**	**+0.6**
	35nm,1.2s						
PPT2	**Papeete2**	**39.27**	**332**	*e*LR	LR	07 41 58.9	
	185nm,23.8s

couple: $M_0$7.01000×10^14 NP1:ϕ_s6.00000°, δ15.00000°, λ-62.00000°. NP2:ϕ_s158.00000°, δ77.00000°, λ-97.00000°.

*IDC **18** 07:39:08.6±1.0, 37.67N×144.60E, h0km, mb3.6/9, mb1 3.9/10, mb1mx3.7/44, mbtmp3.6/10, ML3.8/1, MS2.6/1, Ms1 2.6/1, ms1mx2.1/50, Error ellipse: s-maj=29.2km s-min=20.4km az=146.0*

*ISCJB **18** 07:39:12.4±0.6, 37.89N±0.05×144.33E±0.04, h33km, mb3.6/9, Error ellipse: s-maj=7.5km s-min=5.1km az=0.3*

*JMA **18** 07:39:12.8±0.2, 37.89N×144.26E, h36km, M3.7*

ISC 18 07:39:14.1±0.9, 37.87N±0.07×144.35E±0.07, h35km, n33, σ1Φ03/34, mb3.7/9, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
OFUJ	**Ofunato**	**2.43**	**301**	P	**Pn**	**07 39 50.3**	**-0.9**
OFUJ				*eS*	**Sn**	**07 40 18.9**	**-0.8**
JIO	**Ouri**	**2.44**	**285**	P	**Pn**	**07 39 50.5**	**-0.9**
JIO				*eS*	**Sn**	**07 40 18.3**	**-1.6**
JMK	**Ichinoseki**	**2.69**	**295**	P	**Pn**	**07 39 54.4**	**-0.4**
JFK	**Kawauchi**	**2.81**	**261**	P	**Pn**	**07 39 55.3**	**-1.2**
JMM	**Marumori**	**2.82**	**271**	P	**Pn**	**07 39 55.7**	**-0.9**
JMM				*eS*	**Sn**	**07 40 27.5**	**-1.8**
JTH	**Tanohata**	**2.83**	**318**	*eS*	**Sn**	**07 40 28.5**	**-1.2**
JOM	**Ohasama**	**2.88**	**305**	*eS*	**Sn**	**07 40 29.9**	**-1.0**
JOU	**Okura**	**2.95**	**281**	P	**Pn**	**07 39 58.0**	**-0.5**
JOU				*eS*	**Sn**	**07 40 33.1**	**+0.5**
JFT	**Otama**	**3.20**	**265**	P	**Pn**	**07 40 02.0**	**+0.1**
JFT				*eS*	**Sn**	**07 40 38.9**	**0.0**
JRG	**Rokugo**	**3.29**	**299**	P	**Pn**	**07 40 03.7**	**+0.7**
JRG				*eS*	**Sn**	**07 40 41.1**	**+0.2**
JYK	**Kaneyama**	**3.31**	**290**	P	**Pn**	**07 40 03.1**	**-0.2**
JYK				*eS*	**Sn**	**07 40 41.0**	**-0.4**
JANG	**Nango**	**3.33**	**319**	P	**Pn**	**07 40 03.7**	**0.0**
JANG				*eS*	**Sn**	**07 40 41.3**	**-0.8**
JNBK	**Urakawa-nobuka**	**4.57**	**345**	P	**Pn**	**07 40 20.2**	**-0.5**
JRY	**Ryogami san**	**4.74**	**249**	P	**Pn**	**07 40 22.0**	**-1.1**
JCH	**Churui**	**4.80**	**351**	P	**Pn**	**07 40 22.1**	**-1.7**
MJAR	**Matsushiro Arr**	**5.08**	**257**	Pn	**Pn**	**07 40 28.2**	**+0.5**
	3.0nm,0.3s,baz=84,slow=13,SNR=16						
MAT	**Matsushiro**	**5.08**	**257**	P	**Pn**	**07 40 28.5**	**+0.7**
MAT				S	Sn	07 41 15.5	-10
KSRS	**Korea Array**	**13.03**	**273**	LR	LR	07 46 17.5	
	comp=Z,31nm,22.0s,baz=8.5,slow=32						
SEY	**Seymchan**	**25.57**	**9**	P	**P**	**07 44 40.5**	**+1.0**
	0.4nm,0.5s,baz=179,slow=5.3,SNR=5.6						
H11N2	**WAKE ISLAND Hy**	**26.66**	**126**	T	T	08 12 26.1	
	baz=312,slow=75,SNR=12						
H11N1	**WAKE ISLAND Hy**	**26.67**	**126**	T	T	08 12 02.1	
	baz=312,slow=75,SNR=12						
H11N3	**WAKE ISLAND Hy**	**26.68**	**126**	T	T	08 12 01.5	
	baz=312,slow=75,SNR=12						
H11S1	**WAKE ISLAND Hy**	**27.45**	**128**	T	T	08 13 23.0	
	baz=314,slow=76,SNR=29						
H11S3	**WAKE ISLAND Hy**	**27.45**	**129**	T	T	08 13 20.3	
	baz=314,slow=76,SNR=23						
H11S2	**WAKE ISLAND Hy**	**27.46**	**128**	T	T	08 13 23.6	
	baz=314,slow=76,SNR=18						
MKAR	**Makanchi Array**	**45.66**	**302**	P	**P**	**07 47 33.5**	**+2.3**
	0.3nm,0.6s,baz=78,slow=11,SNR=4.0						
KURBB	**Kurchatov Arra**	**47.33**	**308**	P	**P**	**07 47 45.5**	**+1.3**
	0.8nm,0.6s,baz=82,slow=7.9,SNR=9.6						
ILAR	**Eielson Array**	**47.53**	**33**	P	**P**	**07 47 45.6**	**+0.1**
	1.0nm,0.9s,baz=262,slow=6.0,SNR=10.0						
INK	**Inuvik**	**52.57**	**28**	P	**P**	**07 48 22.8**	**-0.9**
	0.8nm,0.9s,baz=320,slow=4.8,SNR=3.7						
WRA	**Warramunga Arr**	**58.27**	**191**	P	**P**	**07 49 03.5**	**-1.8**
	0.8nm,0.8s,baz=11,slow=7.2,SNR=6.2						
YKA	**Yellowknife Ar**	**61.90**	**31**	P	**P**	**07 49 29.9**	**+0.3**
	0.2nm,0.7s,baz=300,slow=6.6,SNR=4.7						
NVAR	**Mina Array Bea**	**72.61**	**55**	P	**P**	**07 50 39.1**	**+0.9**
	0.7nm,0.8s,baz=280,slow=5.5,SNR=4.9						
PDAR	**Pinedale Array**	**75.40**	**47**	P	**P**	**07 50 54.5**	**+0.1**
	0.4nm,0.9s,baz=272,slow=3.5,SNR=3.6						

*ISCJB **18** 07:54:17.1±0.5, 26.34S±0.03×27.55E±0.03, h9km±3km, Error ellipse: s-maj=5.9km s-min=3.9km az=158.6*

*PRE **18** 07:54:17.3±2.6, 26.34S×27.53E, h2km, ML2.9*

ISC 18 07:54:17.5±0.9, 26.34S±0.04×27.54E±0.03, h7km±6km, n13, σ1Φ30/26, South Africa

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
KLOF	**Kloof**	**0.07**	**99**	*eP*	**Pg**	**07 54 19.6**	**+0.2**
KLOF				*eS*	**Sg**	**07 54 20.3**	**-0.5**
KLOF				AML	AML	07 54 20.5	
	comp=Z,17μm,0.3s						
WDLM	**Western Deep L**	**0.13**	**231**	*eP*	**Pg**	**07 54 21.0**	**+0.6**
WDLM				*eS*	**Sg**	**07 54 22.5**	**+0.1**
WDLM				AML	AML	07 54 24.6	
	comp=Z,2μm,0.8s						
OBSV	**Observatory**	**0.51**	**72**	*eP*	**Pb**	**07 54 27.9**	**-1.0**
OBSV				*eS*	**Sg**	**07 54 33.3**	**-0.7**
OBSV				AML	AML	07 54 34.1	
	comp=Z,3μm,0.1s						
PRYS	**Parys**	**0.60**	**195**	*eP*	**Pg**	**07 54 29.2**	**+0.1**
PRYS				*eS*	**Sg**	**07 54 35.4**	**-1.7**
PRYS				AML	AML	07 54 41.1	
	comp=Z,402nm,0.7s						
ERPM	**east rand prop**	**0.63**	**91**	*eP*	**Pg**	**07 54 29.1**	**-0.6**
ERPM				*eS*	**Sg**	**07 54 37.0**	**-1.0**
ERPM				AML	AML	07 54 37.4	
	comp=Z,362nm,0.2s						
KSR	**Koster**	**0.75**	**310**	*eP*	**Pb**	**07 54 33.0**	**0.0**
KSR				*eS*	**Sg**	**07 54 41.7**	**-0.1**
KSR				AML	AML	07 54 50.7	
	comp=Z,149nm,0.7s						
BFSD	**Buffelsfontein**	**0.85**	**232**	*eP*	**Pg**	**07 54 33.9**	**+0.1**
BFSD				*eS*	**Sg**	**07 54 44.1**	**-0.9**
BFSD				AML	AML	07 54 52.0	
	comp=Z,102nm,0.4s						
SWZ	**Schweizer**	**2.14**	**246**	*eP*	**Pb**	**07 54 55.7**	**-1.1**
SWZ				*eS*	**Sn**	**07 55 21.3**	**+0.5**
SWZ				AML	AML	07 55 24.5	
	comp=Z,146nm,0.6s						
BOSA	**Boshof**	**3.04**	**221**	*i* P	**Pn**	**07 55 08.3**	**+2.1**
BOSA				*i*		07 55 08.3	
	baz=44,slow=22						
BOSA				*i* S	**Sb**	**07 55 48.8**	**-0.6**
POGA	**Pongola**	**3.78**	**107**	*eP*	**Pn**	**07 55 17.8**	**+1.6**
POGA				*eS*	**Sn**	**07 56 02.8**	**+1.8**
POGA				AML	AML	07 56 18.5	
	comp=Z,53nm,0.4s						
KSD	**Kokstad**	**4.50**	**159**	*eP*	**Pn**	**07 55 28.9**	**+2.6**
KSD				*eS*	**Sn**	**07 56 19.1**	**+0.1**
KSD				AML	AML	07 56 38.8	
	comp=Z,17nm,0.5s						
UPI	**Upington**	**5.94**	**249**	*eP*	**Pn**	**07 55 45.6**	**-0.4**
UPI				*eS*	**Sn**	**07 56 51.7**	**-2.7**
UPI				AML	AML	07 57 27.8	
	comp=Z,16nm,0.6s						
MATP	**Matopo**	**5.95**	**9**	*i* P	**Pn**	**07 55 48.1**	**+1.9**
MATP				*i*		07 55 48.1	
	baz=181,slow=18						
MATP				*i* S	**Sn**	**07 56 54.3**	**-0.4**

*IDC **18** 07:59:18.2±2.1, 33.13S×178.41W, h0km, mb4.2/3, mb1 4.4/4, mb1mx3.9/40, mbtmp4.2/4, ML4.3/1, MS3.3/1, Ms1 3.3/1, ms1mx2.7/27, Error ellipse: s-maj=52.2km s-min=32.0km az=130.0*

*ISCJB **18** 07:59:22.8±1.1, 33.27S±0.09×178.7W±0.2, h32km, mb4.2/5, Error ellipse: s-maj=23.5km s-min=9.5km az=21.3*

*NEIC **18** 07:59:24.3±0.8, 33.18S×178.54W, h35km, mb4.5/3, Error ellipse: s-maj=18.7km s-min=16.3km az=122.0*

ISC 18 07:59:23.9±1.1, 33.2S±0.1×178.6W±0.2, h32km, n14, σ1Φ02/16, mb4.4/5, South of Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
URZ	**Urewera**	**6.17**	**214**	Pn	**Pn**	**08 00 52.5**	**-0.2**
	6.6nm,0.3s,baz=215,slow=0.8,SNR=24						
URZ				Sn	**Sn**	**08 02 02.8**	**+0.7**
	8.4nm,0.3s,baz=193,slow=22,SNR=9.1						
URZ	**Urewera**	**6.17**	**214**	PN	**Pn**	**08 00 52.6**	**-0.2**
URZ				SN	**Sn**	**08 02 02.8**	**+0.7**
BKZ	**Black Stump Fm**	**7.18**	**212**	PN	**Pn**	**08 01 05.7**	**-1.0**
BKZ				SN	**Sn**	**08 02 26.2**	**-1.1**
DZM	**Mont Dzumac**	**17.28**	**306**	LR	LR	08 08 57.9	
	comp=Z,103nm,18.6s,baz=272,slow=33						
CTA	**Charters Tower**	**33.89**	**284**	P	**P**	**08 06 04.4**	**+0.5**
	3.2nm,0.7s,baz=118,slow=13,SNR=4.3						
CTAO	**Charters Tower**	**33.89**	**284**	*eP*	**P**	**08 06 05.2**	**+1.3**
	2.8nm,0.5s						
ASAR	**Alice Springs**	**42.57**	**270**	P	**P**	**08 07 16.6**	**-0.4**
	1.8nm,0.7s,baz=112,slow=7.5,SNR=17						
WRAB	**Tennant Creek**	**43.80**	**275**	*eP*	**P**	**08 07 27.0**	**0.0**
WRA	**Warramunga Arr**	**43.81**	**275**	P	**P**	**08 07 26.7**	**-0.3**
	1.1nm,0.4s,baz=114,slow=8.0,SNR=9.1						
QSPA	**South Pole Qui**	**56.93**	**180**	*eP*	**P**	**08 09 06.7**	**+0.9**
	7.7nm,1.0s						
HWUT	**Hardware Ranch**	**96.58**	**44**	*eP*	**P**	**08 12 51.1**	**+0.5**
	0.4nm,0.3s						
COLA	**College**	**100.65**	**13**	*ePdif*	**Pdif**	**08 13 05.7**	**-2.2**
FINES	**FINESS Array B**	**147.57**	**338**	PKPbc	**PKPbc**	**08 19 02.9**	**-1.3**
	1.2nm,0.5s,baz=50,slow=4.1,SNR=8.7						
NOA	**NORSAR Array B**	**151.42**	**350**	PKPbc	**PKPbc**	**08 19 12.9**	**-0.9**
	0.7nm,0.6s,baz=13,slow=4.1,SNR=3.7						

*IDC **18** 07:59:52.6±1.1, 1.71N×126.85E, h0km, mb4.1/6, mb1 4.3/6, mb1mx3.8/50, mbtmp4.1/6, Error ellipse: s-maj=130.7km s-min=16.8km az=67.0*

*NEIC **18** 07:59:57.8±0.6, 1.65N×126.68E, h35km, mb4.3/4, Error ellipse: s-maj=22.1km s-min=10.5km az=71.0*

*ISCJB **18** 08:00:01.7±0.6, 2.32N±0.06×128.31E±0.05, h100km, mb4.1/9, Error ellipse: s-maj=8.6km s-min=6.8km az=27.5*

*DJA **18** 08:00:04.8±0.5, 2.1N±5.5×12.8E±., h58km±10km, M4.4/15, mb4.6/13, mB5.4/4, MLv4.2/15, Mw(mB)4.8/4*

ISC 18 08:00:03.2±0.8, 2.28N±0.08×128.30E±0.09, h100km, n24, σ0Φ97/25, mb4.0/9, Halmahera

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
TNTI	**Ternate**	**1.76**	**212**	P	**Pn**	**08 00 32.4**	**-0.3**
TNTI				S	**Sn**	**08 00 54.5**	**-0.6**
LBMI	**Labuha**	**3.00**	**195**	P	**Pn**	**08 00 49.4**	**+0.4**
SGSI	**Sangihe**	**3.10**	**297**	P	**Pn**	**08 00 51.0**	**+0.7**
SWI	**Sorong**	**4.30**	**136**	P	**Pn**	**08 01 07.1**	**+0.7**
SANI	**Sanana**	**4.88**	**208**	P	**Pn**	**08 01 14.9**	**+0.7**
NLAI	**Namlea**	**5.61**	**192**	P	**Pn**	**08 01 24.9**	**+0.7**
	24nm,1.1s,0.1nm						
LUWI	**Luwuk**	**6.43**	**239**	P	**Pn**	**08 01 36.1**	**+0.7**
	58nm,1.2s,2μm0.3nm						
FAKI	**Fak Fak**	**6.50**	**143**	P	**Pn**	**08 01 37.4**	**+1.1**
	20nm,0.5s,0.1nm						
MRSI	**Marisa**	**6.60**	**254**	P	**Pn**	**08 01 38.3**	**+0.7**
	25nm,0.5s,3μm0.1nm						
RKPI	**Ransiki, Papua**	**6.98**	**123**	P	**Pn**	**08 01 43.1**	**+0.3**
	97nm,1.0s,4μm0.5nm						
APSI	**Ampana**	**7.36**	**245**	P	**Pn**	**08 01 48.5**	**+0.5**
	22nm,0.9s,0.1nm						
KMPI	**Kaimana, Papua**	**8.00**	**137**	P	**Pn**	**08 01 58.1**	**+1.4**
	89nm,0.8s						
SRPI	**Serui, Papua**	**8.95**	**117**	P	**Pn**	**08 02 11.4**	**+1.8**
	306nm,0.4s						
TTSI	**Tana Toraja**	**9.99**	**238**	P	**Pn**	**08 02 25.2**	**+1.4**
	16nm,1.4s,1μm						
SAUI	**Saumlaki**	**10.62**	**164**	P	**Pn**	**08 02 33.9**	**+1.5**
	410nm,1.1s						
WRAB	**Tennant Creek**	**22.86**	**165**	*eP*	**P**	**08 04 57.3**	**-1.0**
	4.2nm,0.4s						
WRA	**Warramunga Arr**	**22.86**	**165**	P	**P**	**08 04 57.0**	**-1.3**
	3.5nm,0.4s,baz=337,slow=11,SNR=66						
ASAR	**Alice Springs**	**26.36**	**168**	P	**P**	**08 05 29.3**	**-0.8**
	1.1nm,0.5s,baz=353,slow=8.1,SNR=23						
BBOO	**Buckleboo**	**35.66**	**169**	*eP*	**P**	**08 06 50.6**	**-1.1**
	2.1nm,0.4s						
STKA	**Stephens Creek**	**36.24**	**161**	P	**P**	**08 06 56.2**	**-0.4**
	2.6nm,0.4s,baz=341,slow=8.6,SNR=11						
SONM	**Songino Array**	**49.17**	**341**	P	**P**	**08 08 41.7**	**+0.5**
	0.8nm,0.6s,baz=148,slow=7.9,SNR=4.7						
MKAR	**Makanchi Array**	**59.63**	**325**	P	**P**	**08 09 57.2**	**+0.4**
	1.9nm,0.5s,baz=117,slow=8.5,SNR=38						
BVAR	**Borovoye Array**	**69.38**	**327**	P	**P**	**08 10 59.9**	**-0.3**
	1.3nm,0.6s,baz=116,slow=6.8,SNR=7.5						
ABKAR	**Akbulak array**	**74.26**	**321**	*eP*	**P**	**08 11 28.5**	**-1.0**
	1.0nm,0.6s						

RSNC 18 08:00:48.8±0.5, 8.31N×73.53W, h170km±10km, ML1.9, Northern Colombia

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
GRMC	**Gramalote, San**	**0.93**	**130**	*eP*	Pn	08 01 14.4	-0.7
GRMC				*eS*	Sn	08 01 33.5	-1.8
GRMC				*i*		08 01 35.6	
	comp=Z,6.6nm,0.3s						
GRMC	**Gramalote, San**	**0.93**	**130**	*eP*	Pn	08 01 13.1	-2.0
GRMC				*eS*	Sn	08 01 33.5	-1.8
GRMC				*i*		08 01 35.6	
	comp=Z,6.6nm,0.3s						
BRRC	**Barranca, Sant**	**1.21**	**189**	*eP*	Pn	08 01 17.7	+0.4
BRRC				*i*		08 01 17.9	
	comp=Z,9.0nm,0.1s						
BRRC				*eS*	Sn	08 01 38.4	-0.8
BRRC	**Barranca, Sant**	**1.21**	**189**	*eP*	Pn	08 01 15.6	-1.6
BRRC				*i*		08 01 17.9	
	comp=Z,9.0nm,0.1s						
BRRC				*eS*	Sn	08 01 38.4	-0.8
PAMC	**Pamplona, Colo**	**1.27**	**140**	*eP*	Pn	08 01 17.7	-0.6
PAMC				*eS*	Sn	08 01 41.5	+0.6
PAMC	**Pamplona, Colo**	**1.27**	**140**	*eP*	Pn	08 01 17.7	-0.6
GIRC	**Giron, Santand**	**1.27**	**165**	*eS*	Sn	08 01 37.9	-2.5
BARC	**Barichara**	**1.74**	**169**	*eP*	Pn	08 01 22.2	-0.5
BARC				*i*		08 01 39.1	
	comp=Z,14nm,0.5s						
BARC	**Barichara**	**1.74**	**169**	*eP*	Pn	08 01 22.2	-0.5
BARC				*i*		08 01 39.1	
	comp=Z,14nm,0.5s						

*NIED **18** 08:01:00, 37.20N×141.20E, h26km, Mw3.9 Best double couple: $M_0$8.72000×10^14 NP1:ϕ_s121.00000°, δ49.00000°, λ-41.00000°. NP2:ϕ_s241.00000°, δ60.00000°, λ-131.00000°.*

*IDC **18** 08:01:56.2±0.7, 37.18N×141.31E, h0km, mb3.9/13, mb1 4.0/18, mb1mx3.9/54, mbtmp3.9/18, ML3.8/4, MS3.0/5, Ms1 3.0/5, ms1mx2.7/41, Error ellipse: s-maj=17.8km s-min=12.5km az=143.0*

*ISCJB **18** 08:01:58.0±0.8, 37.18N±0.03×141.36E±0.05, h24km±5km, mb3.9/16, MS2.8/1, Error ellipse: s-maj=7.3km s-min=4.3km az=16.5*

*NEIC **18** 08:01:60.0±2.0, 37.18N×141.33E, h24km±15km, mb4.3/2, Error ellipse: s-maj=10.2km s-min=6.0km az=121.0*

NEIC Recorded [3 JMA] in Ibaraki.

*JMA **18** 08:01:59.7±0.1, 37.17N×141.24E, h29km±1km, M4.4*

JMA Felt III J1.

ISC 18 08:01:58.7±1.9, 37.19N±0.04×141.32E±0.05, h16km±11km, n47, σ0Φ77/52, mb4.0/16, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JFK	**Kawauchi**	**0.40**	**296**	P	**Pb**	**08 02 07.7**	**+0.3**
JFK				S	**Sg**	**08 02 12.8**	**+0.4**
ONAJ	**Iwakimizuishiy**	**0.43**	**258**	P	**Pb**	**08 02 08.0**	**+0.1**
ONAJ				*i* S	**Sg**	**08 02 13.2**	**0.0**
JMM	**Marumori**	**0.80**	**328**	P	**Pb**	**08 02 13.9**	**-0.2**
JMM				S	**Sb**	**08 02 23.8**	**-0.9**
JHO	**Hitachi**	**0.84**	**226**	P	**Pb**	**08 02 13.5**	**-1.3**
JFT	**Otama**	**0.85**	**293**	P	**Pb**	**08 02 15.1**	**0.0**
JFT				S	**Sb**	**08 02 25.6**	**-0.7**
JSB	**Shiboa**	**1.14**	**259**	P	**Pn**	**08 02 19.8**	**-0.2**
JSB				S	**Sb**	**08 02 34.1**	**-0.6**
JIO	**Ouri**	**1.26**	**1**	P	**Pn**	**08 02 21.1**	**-0.6**
JIO				S	**Sb**	**08 02 36.6**	**-1.5**
JOU	**Okura**	**1.28**	**336**	P	**Pn**	**08 02 22.0**	**0.0**
JOU				S	**Sn**	**08 02 38.6**	**-0.3**
JFY	**Yanaizu**	**1.31**	**280**	P	**Pn**	**08 02 22.0**	**-0.3**
JFY				S	**Sn**	**08 02 38.2**	**-1.3**
MJAR	**Matsushiro Arr**	**2.58**	**256**	Pn	**Pn**	**08 02 40.3**	**+0.5**
	6.3nm,0.3s,baz=79,slow=16,SNR=12						
MJAR				Lg	Lg	08 03 15.9	
	30nm,0.3s,baz=85,slow=27,SNR=11						
MJAR				LR	LR	08 03 49.5	
	comp=Z,229nm,18.3s,baz=60,slow=45						
MAJO	**Matsushiro**	**2.58**	**256**	*ePn*	**Pn**	**08 02 40.4**	**+0.6**
MAJO				*eSn*	**Sn**	**08 03 12.1**	**+1.2**
MAT	**Matsushiro**	**2.58**	**256**	P	**Pn**	**08 02 40.4**	**+0.6**
MAT				S	**Sb**	**08 03 14.8**	**-1.3**
JHJ	**Hachijo jima 2**	**4.25**	**198**	Pn	**Pn**	**08 03 03.0**	**+0.3**
	55nm,0.3s,baz=332,slow=22,SNR=12						
JHJ				Sn	**Sn**	**08 03 51.6**	**-0.4**
	48nm,0.3s,baz=91,slow=22,SNR=6.0						
JHJ2	**Mitsune**	**4.25**	**197**	*ePn*	**Pn**	**08 03 03.0**	**+0.3**
JHJ2				*eSn*	**Sn**	**08 03 53.2**	**+1.2**
ERM	**Erimo**	**5.02**	**16**	*ePn*	**Pn**	**08 03 13.8**	**+0.5**
ASAJ	**Asahikawa**	**6.99**	**8**	Pn	**Pn**	**08 03 39.5**	**-0.8**
	2.1nm,0.3s,baz=206,slow=15,SNR=13						
ASAJ				Sn	**Sn**	**08 05 00.5**	**+1.1**
	1.2nm,0.3s,baz=252,slow=20,SNR=3.3						
ASAJ	**Asahikawa**	**6.99**	**8**	*ePn*	**Pn**	**08 03 39.9**	**-0.4**
ASAJ				*eSn*	**Sn**	**08 04 59.2**	**-0.2**
JNU	**Nakatsue**	**9.46**	**248**	LR	LR	08 08 41.7	
	comp=Z,76nm,18.5s,baz=114,slow=43						
USRK	**Ussuriysk Ar.**	**9.96**	**318**	Pn	**Pn**	**08 04 21.3**	**+0.3**
	0.1nm,0.3s,baz=142,slow=40,SNR=2.3						
KSRS	**Korea Array**	**10.68**	**275**	Pn	**Pn**	**08 04 32.5**	**+1.6**
	0.3nm,0.3s,baz=66,slow=15,SNR=2.7						
KSRS				LR	LR	08 08 24.6	
	comp=Z,96nm,19.5s,baz=60,slow=36						
KSAR	**Wonju Array Be**	**10.71**	**275**	Pn	**Pn**	**08 04 32.5**	**+1.2**
KLR	**Kul'dur**	**13.90**	**333**	LR	LR	08 10 36.4	
	comp=Z,56nm,18.0s,baz=112,slow=37						
MA2	**Magadan**	**23.22**	**12**	P	**P**	**08 07 04.9**	**+0.1**
	3.6nm,0.7s,baz=191,slow=3.2,SNR=3.4						
YAK	**Yakutsk**	**25.90**	**347**	LR	LR	08 17 50.9	
	comp=Z,30nm,19.6s,baz=57,slow=37						
SEY	**Seymchan**	**26.65**	**11**	P	**P**	**08 07 37.8**	**+1.4**
	0.3nm,0.3s,baz=230,slow=12,SNR=3.6						
SONM	**Songino Array**	**27.64**	**304**	P	**P**	**08 07 46.9**	**+1.4**
	1.0nm,0.6s,baz=98,slow=8.3,SNR=6.9						
H11N2	**WAKE ISLAND Hy**	**28.29**	**121**	T	T	08 37 32.1	
	baz=314,slow=76,SNR=348						
H11N1	**WAKE ISLAND Hy**	**28.30**	**121**	T	T	08 37 32.7	
	baz=314,slow=76,SNR=398						
H11N3	**WAKE ISLAND Hy**	**28.31**	**121**	T	T	08 37 33.4	
	baz=314,slow=76,SNR=276						
H11S1	**WAKE ISLAND Hy**	**29.00**	**123**	T	T	08 38 43.8	
	baz=314,slow=75,SNR=388						
H11S3	**WAKE ISLAND Hy**	**29.01**	**123**	T	T	08 38 44.0	
	baz=314,slow=75,SNR=280						
H11S2	**WAKE ISLAND Hy**	**29.02**	**123**	T	T	08 38 45.5	
	baz=314,slow=75,SNR=163						
ZALV	**Zalesovo Beam**	**41.76**	**312**	P	**P**	**08 09 46.4**	**-0.5**
	0.6nm,0.3s,baz=93,slow=8.0,SNR=4.5						
KURK	**Kurchatov**	**45.78**	**308**	*eP*	**P**	**08 10 19.0**	**-0.3**
	6.5nm,0.5s						
KURK	**Kurchatov**	**45.78**	**308**	P	**P**	**08 10 19.1**	**-0.2**
KURBB	**Kurchatov Arra**	**45.85**	**308**	P	**P**	**08 10 19.1**	**-0.8**
	2.1nm,0.7s,baz=83,slow=7.8,SNR=15						
ILAR	**Eielson Array**	**49.40**	**32**	P	**P**	**08 10 46.9**	**-0.3**
	1.3nm,0.7s,baz=267,slow=5.9,SNR=21						
INK	**Inuvik**	**54.28**	**27**	P	**P**	**08 11 23.8**	**+0.3**
	0.4nm,0.5s,baz=286,slow=4.7,SNR=5.2						
WRAB	**Tennant Creek**	**57.19**	**188**	*eP*	**P**	**08 11 44.6**	**-0.4**
	0.9nm,0.4s						
WRA	**Warramunga Arr**	**57.20**	**188**	P	**P**	**08 11 44.4**	**-0.6**
	1.0nm,0.6s,baz=5.1,slow=7.1,SNR=15						
YKA	**Yellowknife Ar**	**63.71**	**30**	P	**P**	**08 12 29.0**	**0.0**
	0.2nm,0.7s,baz=303,slow=6.3,SNR=6.7						
FINES	**FINESS Array B**	**68.64**	**332**	P	**P**	**08 12 59.7**	**-1.0**
	1.4nm,0.7s,baz=34,slow=7.1,SNR=3.4						
AKASG	**Malin Array Be**	**74.13**	**322**	P	**P**	**08 13 33.2**	**-0.8**
	1.2nm,0.4s,baz=47,slow=6.0,SNR=5.0						
PDAR	**Pinedale Array**	**77.61**	**45**	P	**P**	**08 13 55.1**	**+0.7**
	0.4nm,0.6s,baz=280,slow=2.4,SNR=6.5						
SMCO	**Snowmass**	**81.42**	**47**	*eP*	**P**	**08 14 15.9**	**+0.5**
	2.9nm,0.6s						
TXAR	**Lajitas Array**	**90.08**	**52**	P	**P**	**08 14 58.5**	**+0.4**
	0.4nm,0.7s,baz=288,slow=3.7,SNR=6.3						
LPAZ	**La Paz**	**146.68**	**59**	PKPbc	**PKPbc**	**08 21 41.2**	**+0.3**
	2.3nm,0.7s,baz=345,slow=1.8,SNR=13						

*NIED **18** 08:02:00, 36.70N×140.50E, h32km, Mw3.8 Best double couple: $M_0$5.62000×10^14 NP1:ϕ_s129.00000°, δ43.00000°, λ-25.00000°. NP2:ϕ_s237.00000°, δ73.00000°, λ-130.00000°.*

JMA 18 08:02:17.9, 36.68N×140.53E, h7km±1km, M3.8, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JHO	**Hitachi**	**0.08**	**156**	P	Pg	08 02 19.7	-0.1
JHO				S	Sg	08 02 21.2	+0.1
JFT	**Otama**	**0.85**	**350**	S	Sg	08 02 45.0	-0.3

*IDC **18** 08:05:10.7±1.3, 35.27S×78.39E, h0km, mb4.0/8, mb1 4.1/8, mb1mx3.8/47, mbtmp4.0/8, MS3.5/3, Ms1 3.4/3, ms1mx3.1/33, Error ellipse: s-maj=51.2km s-min=23.7km az=5.0*

*ISCJB **18** 08:05:11.4±0.7, 35.3S±0.1×78.5E±0.2, h14km, mb4.2/12, MS3.5/3, Error ellipse

NNC 18 08:14:09.1±3.4, 51°19N×75°29E, h0km, mb3.3, mpv2.9, 2C-3D, Error ellipse: s-maj=123.3km s-min=8.8km az=22.0, Suspected Mining explosion., Eastern Kazakhstan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KURK	**Kurchatov**	**2.16**	**101**	⇑Pn	Pn	08 14 45.1	-1.2
	7.4nm,0.7s						
KURK				⇓Sn	Sb	08 15 15.3	-1.1
	15nm,0.6s						
KURK	**Kurchatov**	**2.16**	**101**	*e*Pdif	Pn	08 14 44.7	-1.7
VOSK	**Vostochnaya**	**3.08**	**302**	⇓Sn	Sn	08 15 36.0	-0.4
	9.8nm,0.8s						
BVA0	**Borovoye Array**	**3.54**	**303**	Pn	Pn	08 15 05.9	+0.7
	1.7nm,0.6s,baz=115,slow=16,SNR=7.9						
BVA0				⇓Sn	Sn	08 15 50.6	+2.8
	3.3nm,0.8s,baz=120,slow=26,SNR=3.8						
MK31	**Makanchi Array**	**6.37**	**131**	⇑Lg	Lg	08 17 37.8	
	1.3nm,0.6s,baz=321,slow=28,SNR=4.8						

NIED ***18*** *08:16:00, 35°40N×136°30E, h32km, Mw3.4 Best double couple: M0 1.58000×10^14 NP1:φs=54.00000°, δ51.00000°, λ-43.00000°. NP2:φs=175.00000°, δ58.00000°, λ-132.00000°.*

JMA 18 08:16:29.3, 35°39N×136°29E, h38km, M3.6, 4C-1D Broadband fault plane solution: P waves. NP1: φs=49.00000°, δ51.00000°, λ-56.00000°. **NP2:** φs=182.00000°, δ50.00000°, λ-125.00000°. **Principal axes:** T Plg1.0000°, Azm116.0000°; N Plg26.0000°, Azm206.0000°; P Plg64.0000°, Azm24.0000°; **Western Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JEG	**Eigenji**	**0.27**	**162**	⇓P	Pn	08 16 36.9	-0.7
JEG				S	Sn	08 16 42.4	-2.4
JFM	**Mihama**	**0.29**	**299**	⇑P	Pn	08 16 37.1	-0.4
JFM				S	Sn	08 16 42.7	-1.8
JGM	**Miyama**	**0.47**	**48**	⇑P	Pn	08 16 39.5	+0.1
JGM				S	Sn	08 16 46.9	+0.3
TSUJ	**Tsu 2**	**0.69**	**171**	⇑P	Pn	08 16 42.4	-0.1
TSUJ				S	Sn	08 16 52.1	+0.1
JWT	**Wachi**	**0.73**	**262**	⇑P	Pn	08 16 43.4	+0.3
JWT				S	Sn	08 16 53.5	+0.4
JKG	**Kaga**	**0.89**	**2**	P	Pn	08 16 45.7	+0.5
JKG				S	Sn	08 16 57.5	+0.6
JHE	**Heguri**	**0.89**	**214**	P	Pn	08 16 45.7	+0.4
JHE				S	Sn	08 16 57.8	+0.9
JKY	**Yasaka**	**1.00**	**284**	P	Pn	08 16 47.1	+0.4
JKY				S	Sn	08 17 00.9	+1.3
JIE	**Ise**	**1.05**	**161**	P	Pn	08 16 47.9	+0.4
JIE				S	Sn	08 17 01.7	+0.8
JKN2	**Miekihoku**	**1.15**	**181**	P	Pn	08 16 48.6	-0.2
JKS	**Kasai**	**1.25**	**251**	P	Pn	08 16 50.7	+0.5
MAT	**Matsushiro**	**1.93**	**53**	P	Pn	08 17 00.2	+0.6

DDA ***18*** *08:33:13.0, 40°37N×26°14E, h7km, Ml3.0*
CSEM ***18*** *08:33:13.6±0.1, 40°38N×26°09E, h10km, ML2.8, Error ellipse: s-maj=2.9km s-min=2.7km az=110.0*
THE ***18*** *08:33:13.8, 40°38N×26°10E, h10km, ML2.6/5, Error ellipse: s-maj=1.0km s-min=0.3km az=300.0*
ISCJB ***18*** *08:33:13.5±0.4, 40°39N±0°02×26°10E±0°03, h10km±3km, Error ellipse: s-maj=3.6km s-min=3.1km az=34.1*
ISK ***18*** *08:33:13.2, 40°37N×26°14E, h9km, ML2.8*
ATH ***18*** *08:33:13.0, 40°41N×26°09E, h34km±3km, ML2.4/3, Error ellipse: s-maj=3.6km s-min=1.2km az=68.0*

ISC 18 08:33:12.8±1.0, 40°41N±0°02×26°07E±0°02, h10km±9km, n84, σθ°70/113, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GELI	**Tayfur-Gelibol**	**0.31**	**92**	*e*PG	**Pg**	**08 33 19.2**	**+0.2**
GELI				*e*SG	**Sg**	**08 33 23.5**	**+0.4**
GELI	**Tayfur-Gelibol**	**0.31**	**92**	*e*Pg	**Pg**	**08 33 19.2**	**+0.2**
GELI				*e*Sg	**Sg**	**08 33 23.5**	**+0.4**
ENEZ	**Enez**	**0.33**	**11**	*e*PG	**Pb**	**08 33 21.3**	**+0.5**
ENEZ				*e*SG	**Sb**	**08 33 26.6**	**+0.4**
ENEZ	**Enez**	**0.33**	**11**	P	**Pb**	**08 33 20.9**	**+0.1**
ENEZ				S	**Sb**	**08 33 26.3**	**+0.1**
ENEZ	**Enez**	**0.33**	**11**	P	**Pb**	**08 33 20.9**	**+0.1**
ENEZ	**Enez**	**0.33**	**11**	*e*Pg	**Pb**	**08 33 21.3**	**+0.5**
ENEZ				S	**Sb**	**08 33 26.3**	**+0.1**
SMTH	**Samothraki Isl**	**0.42**	**278**	P	**Pb**	**08 33 22.5**	**+0.2**
SMTH				S	**Sb**	**08 33 29.2**	**+0.5**
SMTH	**Samothraki Isl**	**0.42**	**278**	P	**Pb**	**08 33 22.5**	**+0.2**
SMTH				S	**Sb**	**08 33 29.2**	**+0.5**
ERIK	**Erikli-Kesan**	**0.42**	**52**	*e*PG	**Pb**	**08 33 21.8**	**-0.6**
ERIK				*e*SG	**Sb**	**08 33 27.8**	**-1.1**
ERIK	**Erikli-Kesan**	**0.42**	**52**	*e*Pg	**Pb**	**08 33 21.8**	**-0.6**
ERIK				*e*Sg	**Sb**	**08 33 27.8**	**-1.1**
ALN	**Alexandroupoli**	**0.49**	**358**	*e*PG	**Pb**	**08 33 24.5**	**+1.0**
ALN	**Alexandroupoli**	**0.49**	**358**	P	**Pb**	**08 33 23.5**	**0.0**
ALN				S	**Sb**	**08 33 31.0**	**+0.3**
ALN	**Alexandroupoli**	**0.49**	**358**	P	**Pb**	**08 33 23.7**	**+0.2**
ALN	**Alexandroupoli**	**0.49**	**358**	*e*Pg	**Pb**	**08 33 24.5**	**+1.0**
ALN				S	**Sb**	**08 33 31.0**	**+0.3**
ALN	**Alexandroupoli**	**0.49**	**358**	P	**Pb**	**08 33 23.7**	**+0.2**
ALN				S	**Sb**	**08 33 30.4**	**-0.2**
ALN				AML	AML	08 33 31.9	
	comp=E,410μm,0.2s						
ALN				AML	AML	08 33 32.4	
	comp=N,440μm,0.1s						
BOZC	**Bozcaada**	**0.57**	**181**	*i* P	**Pg**	**08 33 23.8**	**0.0**
BOZC				*i* S	**Sg**	**08 33 31.9**	**+0.6**
LIA	**Limnos Island**	**0.85**	**233**	P	**Pb**	**08 33 29.8**	**+0.1**
LIA				S	**Sb**	**08 33 42.1**	**+1.0**
LIA	**Limnos Island**	**0.85**	**233**	P	**Pb**	**08 33 29.8**	**+0.1**
LIA				S	**Sb**	**08 33 42.1**	**+1.0**
RKY	**Sarkoy-Tekirda**	**0.89**	**71**	*e*PG	**Pg**	**08 33 29.3**	**-0.6**
RKY	**Sarkoy-Tekirda**	**0.89**	**71**	*e*Pg	**Pg**	**08 33 29.3**	**-0.6**
SART	**Tekirdag**	**0.89**	**71**	*i* P	**Pg**	**08 33 28.9**	**-1.0**
SART				*i* S	**Sg**	**08 33 42.5**	**+0.2**
SART	**Tekirdag**	**0.89**	**71**	P	**Pg**	**08 33 28.9**	**-1.0**
SART				S	**Sg**	**08 33 42.5**	**+0.2**
PRK	**Paraskevi**	**1.17**	**172**	P	**Pg**	**08 33 34.8**	**-0.5**
PRK				S	**Sg**	**08 33 50.9**	**+0.5**
PRK	**Paraskevi**	**1.17**	**172**	P	**Pg**	**08 33 35.0**	**-0.3**
PRK				S	**Sg**	**08 33 50.1**	**-0.4**
PRK	**Paraskevi**	**1.17**	**172**	P	**Pg**	**08 33 35.0**	**-0.3**
PRK				S	**Sg**	**08 33 50.1**	**-0.4**
PRK				AML	AML	08 33 52.0	
	comp=E,772μm,0.4s						
PRK				AML	AML	08 33 52.2	
	comp=N,1227μm,0.5s						
MRMT	**Marmara Adasi**	**1.18**	**80**	*e*PN	**Pg**	**08 33 34.5**	**-1.0**
MRMT	**Marmara Adasi**	**1.18**	**80**	*e*Pn	**Pg**	**08 33 34.5**	**-1.0**
AYVA	**Ayvalik**	**1.20**	**156**	*i* P	**Pb**	**08 33 35.7**	**+0.1**
AYVA				*i* S	**Sg**	**08 33 51.0**	**-0.4**
AYVA	**Ayvalik**	**1.20**	**156**	P	**Pb**	**08 33 35.7**	**+0.1**
AYVA				S	**Sg**	**08 33 51.0**	**-0.4**
SIGR	**SIGRI**	**1.21**	**188**	*e*PN	**Pg**	**08 33 35.7**	**-0.3**
SIGR	**SIGRI**	**1.21**	**188**	P	**Pg**	**08 33 35.3**	**-0.7**
SIGR				S	**Sb**	**08 33 52.0**	**+0.6**
SIGR	**SIGRI**	**1.21**	**188**	*e*Pn	**Pg**	**08 33 35.7**	**-0.3**
SIGR				S	**Sg**	**08 33 50.7**	**-1.0**
SIGR	**SIGRI**	**1.21**	**188**	P	**Pg**	**08 33 35.6**	**-0.4**
SIGR				S	**Sg**	**08 33 50.7**	**-1.0**
SIGR				AML	AML	08 33 53.3	
	comp=N,368μm,0.4s						
SIGR				AML	AML	08 33 53.8	
	comp=E,305μm,0.3s						
TKR	**Tekirdag**	**1.25**	**62**	*e*PN	**Pg**	**08 33 36.4**	**-0.5**
TKR	**Tekirdag**	**1.25**	**62**	*e*Pn	**Pg**	**08 33 36.4**	**-0.5**
GONE	**Gonen-Balikesi**	**1.29**	**106**	*e*PN	**Pg**	**08 33 37.1**	**-0.4**
GONE	**Gonen-Balikesi**	**1.29**	**106**	*e*Pn	**Pg**	**08 33 37.1**	**-0.4**
KAVA	**Kavala**	**1.32**	**297**	P	**Pg**	**08 33 37.6**	**-0.6**
KAVA	**Kavala**	**1.32**	**297**	P	**Pg**	**08 33 37.7**	**-0.5**
KAVA				S	**Sg**	**08 33 54.6**	**-0.7**
KAVA	**Kavala**	**1.32**	**297**	P	**Pg**	**08 33 37.7**	**-0.5**
EDC	**Edincik**	**1.37**	**92**	*e*PN	**Pb**	**08 33 38.7**	**+0.2**
EDC	**Edincik**	**1.37**	**92**	*e*Pn	**Pb**	**08 33 38.7**	**+0.2**
DKL	**Dikili**	**1.48**	**154**	*e*PN	**Pn**	**08 33 39.7**	**+0.2**
DKL	**Dikili**	**1.48**	**154**	*e*Pn	**Pn**	**08 33 39.7**	**+0.2**
EDRB	**Edirne**	**1.52**	**19**	*e*PN	**Pb**	**08 33 41.3**	**+0.2**
EDRB	**Edirne**	**1.52**	**19**	P	**Pn**	**08 33 40.6**	**+0.5**
EDRB				S	**Sb**	**08 34 01.1**	**+0.6**
EDRB	**Edirne**	**1.52**	**19**	P	**Pn**	**08 33 40.6**	**+0.5**
EDRB	**Edirne**	**1.52**	**19**	*e*Pn	**Pb**	**08 33 41.3**	**+0.2**
BALB	**Balikesir**	**1.59**	**118**	*e*PN	**Pn**	**08 33 41.3**	**+0.4**
BALB	**Balikesir**	**1.59**	**118**	*e*Pn	**Pn**	**08 33 41.3**	**+0.4**
OUR	**Ouranopolis**	**1.60**	**268**	*e*PN	**Pg**	**08 33 43.0**	**-0.5**
OUR	**Ouranopolis**	**1.60**	**268**	P	**Pn**	**08 33 40.3**	**-0.8**
OUR	**Ouranopolis**	**1.60**	**268**	*e*Pn	**Pg**	**08 33 43.0**	**-0.5**
OUR	**Ouranopolis**	**1.60**	**268**	P	**Pn**	**08 33 40.3**	**-0.8**
PHSR	**Pinarhisar**	**1.64**	**42**	*e*PN	**Pb**	**08 33 43.1**	**0.0**
PHSR	**Pinarhisar**	**1.64**	**42**	*e*Pn	**Pb**	**08 33 43.1**	**0.0**
KCTX	**Karacabey (Bur**	**1.75**	**94**	*e*PN	**Pn**	**08 33 43.8**	**+0.5**
KCTX	**Karacabey (Bur**	**1.75**	**94**	*e*Pn	**Pn**	**08 33 43.8**	**+0.5**
CTYL	**Yalikoy Yolu**	**1.99**	**57**	*e*PN	**Pn**	**08 33 48.0**	**+1.6**
CTYL	**Yalikoy Yolu**	**1.99**	**57**	*e*Pn	**Pn**	**08 33 48.0**	**+1.6**
DURS	**Dursunbey**	**2.01**	**113**	*i* P	**Pb**	**08 33 48.9**	**-0.7**
DURS				*i* S	**Sn**	**08 34 11.8**	**-0.4**
DURS	**Dursunbey**	**2.01**	**113**	P	**Pb**	**08 33 48.9**	**-0.7**
DURS				S	**Sn**	**08 34 11.8**	**-0.4**
CHOS	**Chios island**	**2.02**	**180**	*e*PN	**Pn**	**08 33 48.1**	**+1.1**
CHOS	**Chios island**	**2.02**	**180**	P	**Pn**	**08 33 46.9**	**-0.1**
CHOS	**Chios island**	**2.02**	**180**	*e*Pn	**Pn**	**08 33 48.1**	**+1.1**
CHOS	**Chios island**	**2.02**	**180**	P	**Pn**	**08 33 46.9**	**-0.1**
CTKS	**Kestanelik-??a**	**2.02**	**65**	*e*PN	**Pb**	**08 33 49.1**	**-0.5**
CTKS	**Kestanelik-??a**	**2.02**	**65**	*e*Pn	**Pb**	**08 33 49.1**	**-0.5**
AKS	**Akhisar**	**2.04**	**138**	*e*PN	**Pn**	**08 33 48.6**	**+1.5**
AKS	**Akhisar**	**2.04**	**138**	*e*Pn	**Pn**	**08 33 48.6**	**+1.5**
ARMT	**Armutlu**	**2.13**	**85**	*e*PN	**Pn**	**08 33 49.5**	**+1.0**
ARMT	**Armutlu**	**2.13**	**85**	*e*Pn	**Pn**	**08 33 49.5**	**+1.0**
MDNY	**Mudanya-Bursa**	**2.15**	**90**	*e*PN	**Pn**	**08 33 49.6**	**+1.0**
MDNY	**Mudanya-Bursa**	**2.15**	**90**	*e*Pn	**Pn**	**08 33 49.7**	**+1.0**
BGKT	**Bogazkoy**	**2.19**	**69**	*e*PN	**Pn**	**08 33 50.6**	**+1.4**
BGKT	**Bogazkoy**	**2.19**	**69**	*e*Pn	**Pn**	**08 33 50.6**	**+1.4**
ISK	**Istanbul-Kandi**	**2.36**	**73**	*e*PN	**Pn**	**08 33 52.9**	**+1.3**
ISK	**Istanbul-Kandi**	**2.36**	**73**	*e*Pn	**Pn**	**08 33 52.9**	**+1.3**
KULA	**Kula-Manisa**	**2.76**	**133**	*e*PN	**Pn**	**08 33 57.8**	**+0.7**
KULA	**Kula-Manisa**	**2.76**	**133**	*e*Pn	**Pn**	**08 33 57.8**	**+0.7**
TVSB	**Tavsanli**	**2.78**	**109**	*e*PN	**Pn**	**08 33 58.4**	**+1.0**
TVSB	**Tavsanli**	**2.78**	**109**	*e*Pn	**Pn**	**08 33 58.4**	**+1.0**
AYDB	**Zeytinkoy-Aydi**	**2.84**	**150**	*e*PN	**Pn**	**08 33 59.1**	**+0.8**
AYDB	**Zeytinkoy-Aydi**	**2.84**	**150**	*e*Pn	**Pn**	**08 33 59.1**	**+0.8**

IDC ***18*** *08:33:37.0±0.8, 4°85S×145°64E, h37km±6km, mb3.9/11, mb1 4.1/14, mb1mx3.9/37, mbtmp4.1/14, ML4.3/2, MS3.4/6, Ms1 3.4/6, ms1mx3.0/38, Error ellipse: s-maj=21.4km s-min=13.6km az=94.0*
ISCJB ***18*** *08:33:39.7±0.4, 4°98S±0°04×145°44E±0°06, h64km, mb4.4/23, Error ellipse: s-maj=8.3km s-min=5.2km az=177.5*
BJI ***18*** *08:33:41.0, 4°57S×145°96E, h71km, mb4.7/11, mB5.0/8, Ms4.6/6, Ms7 4.3/5*
NEIC ***18*** *08:33:41.7±0.9, 4°91S×145°34E, h70km±10km, mb4.6/12, Error ellipse: s-maj=10.1km s-min=8.1km az=117.0*

ISC 18 08:33:41.5±0.5, 4°98S±0°05×145°52E±0°08, h64km, n46, σlθ83/47, mb4.4/23, Near north coast of New Guinea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MANU	**Manus Island**	**3.46**	**32**	*e*Pn	**Pn**	**08 34 34.7**	**+1.8**
PMG	**Port Moresby**	**4.69**	**160**	Pn	**Pn**	**08 34 48.3**	**-1.4**
	21nm,0.3s,baz=22,slow=6.9,SNR=29						
PMG				Sn	**Sn**	**08 35 43.5**	**+0.7**
	28nm,0.3s,baz=7.3,slow=21,SNR=13						
PMG				LR	LR	08 37 19.4	
	comp=Z,604nm,18.8s,baz=334,slow=47						
PMG	**Port Moresby**	**4.69**	**160**	*e*Pn	**Pn**	**08 34 49.2**	**-0.4**
PMG				*e*Sn	**Sn**	**08 35 45.0**	**+2.3**
JAY	**Jayapura**	**5.39**	**297**	Pn	Pn	08 34 56.0	-3.5
	1.2nm,0.3s,baz=125,slow=20,SNR=12						
JAY				LR	LR	08 36 45.4	
	comp=Z,17nm,20.0s,baz=34,slow=35						
RABL	**Rabaul**	**6.67**	**83**	*e*Pn	**Pn**	**08 35 18.5**	**+1.6**
COEN	**Coen**	**9.21**	**194**	*e*Pn	**Pn**	**08 35 52.0**	**+0.3**
COEN				*e*Sn	**Sn**	**08 37 35.3**	**+1.5**
HNR	**Honiara**	**14.98**	**108**	*e*P	**P**	**08 37 14.5**	**+0.9**
	138nm,0.9s						
CTA	**Charters Tower**	**15.03**	**177**	Pn	**Pn**	**08 37 12.1**	**+1.9**
	0.2nm,0.3s,baz=359,slow=15,SNR=4.2						
CTAO	**Charters Tower**	**15.03**	**177**	*e*Pn	**Pn**	**08 37 11.9**	**+1.6**
	6.4nm,0.6s						
WRAB	**Tennant Creek**	**18.41**	**215**	*e*P	**P**	**08 37 51.1**	**-0.6**
	18nm,0.8s						
WB2	**Warramunga Arr**	**18.42**	**215**	*e*P	**P**	**08 37 51.5**	**-0.3**
	17nm,0.7s						
WRA	**Warramunga Arr**	**18.43**	**215**	P	**P**	**08 37 51.0**	**-0.8**
	2.5nm,0.3s,baz=42,slow=10,SNR=76						
GUMO	**Guam**	**18.46**	**358**	LR	LR	08 44 17.5	
	comp=Z,40nm,19.6s,baz=174,slow=35						
EIDS	**Eidsvold**	**20.96**	**166**	*e*P	**P**	**08 38 19.8**	**+0.5**
	15nm,1.1s						
SOEI	**Soe**	**21.60**	**256**	*e*P	**P**	**08 38 26.6**	**+0.2**
	94nm,1.0s						
AS01	**Alice Springs**	**21.66**	**210**	*e*P	**P**	**08 38 25.9**	**-1.0**
ASAR	**Alice Springs**	**21.69**	**210**	P	**P**	**08 38 26.7**	**-0.5**
	3.7nm,0.6s,baz=40,slow=8.1,SNR=32						
BATI	**Baumata**	**22.27**	**255**	P	**P**	**08 38 33.4**	**-0.2**
	26nm,0.7s,baz=287,slow=24,SNR=4.3						
FITZ	**Fitzroy Crossi**	**23.40**	**235**	P	**P**	**08 38 44.4**	**-0.6**
	95nm,0.7s,baz=49,slow=8.4,SNR=139						
FITZ				LR	LR	08 48 34.5	
	comp=Z,68nm,18.3s,baz=46,slow=38						
FITZ	**Fitzroy Crossi**	**23.40**	**235**	*e*P	**P**	**08 38 44.2**	**-0.8**
	71nm,0.6s						
KAPI	**Kappang**	**25.67**	**269**	LR	LR	08 50 03.7	
	comp=Z,63nm,18.9s,baz=235,slow=38						
STKA	**Stephens Creek**	**27.00**	**187**	P	**P**	**08 39 16.1**	**-1.4**
	4.3nm,0.8s,baz=8.0,slow=7.6,SNR=15						
STKA				LR	LR	08 50 52.6	
	comp=Z,86nm,18.6s,baz=19,slow=38						
STKA	**Stephens Creek**	**27.00**	**187**	*e*P	**P**	**08 39 17.3**	**-0.2**
	1.4nm,0.8s						
TARA	**Tarawa**	**28.09**	**78**	*e*P	P	08 39 31.5	+4.1
	2.8nm,0.5s						
BBOO	**Buckleboo**	**29.06**	**197**	*e*P	**P**	**08 39 35.5**	**-0.3**
	6.2nm,0.6s						
H11S3	**WAKE ISLAND Hy**	**31.30**	**41**	T	T	09 12 42.0	
	baz=222,slow=74,SNR=12						
H11S2	**WAKE ISLAND Hy**	**31.31**	**41**	T	T	09 12 37.1	
	baz=222,slow=74,SNR=7.3						
H11S1	**WAKE ISLAND Hy**	**31.32**	**41**	T	T	09 12 40.0	
	baz=222,slow=74,SNR=9.8						
JCJ	**Chichijima**	**32.05**	**354**	LR	LR	08 52 02.4	
	comp=Z,198nm,18.3s,baz=360,slow=35						
NJ2	**Nanjing**	**44.73**	**327**	*e*P	**P**	**08 41 49.8**	**+1.3**
NJ2				pmax	pmax		
	comp=Z,9.0nm,0.5s						
GYA	**Guiyang**	**48.91**	**312**	*e*P	**P**	**08 42 23.3**	**+1.8**
GYA				pP	pP	08 42 41.4	+3.5
GYA				sP	sP	08 42 50.0	+4.8
GYA				PP	**PP**	**08 44 18.6**	**+3.2**
GYA				ScP	**ScP**	**08 47 33.9**	**-0.9**
GYA				S	**S**	**08 49 21.5**	**+0.5**
GYA				sS	sS	08 49 53.0	+4.2
GYA				pmax	pmax		
	comp=Z,10.0nm,1.0s						
USRK	**Ussuriysk Ar.**	**50.45**	**347**	P	**P**	**08 42 30.9**	**-1.8**
	1.6nm,0.6s,baz=170,slow=4.6,SNR=5.8						
CMAR	**Chiang Mai Arr**	**51.47**	**298**	P	**P**	**08 42 40.4**	**-0.5**
	0.6nm,0.3s,baz=143,slow=7.6,SNR=2.6						
CMAR				pP	pP	08 42 50.5	-7.0
	0.5nm,0.3s,baz=122,slow=4.7,SNR=1.2						
CD2	**Chengdu**	**53.52**	**315**	P	**P**	**08 42 55.6**	**-0.2**
CD2				pmax	pmax		
	comp=Z,2.0nm,0.6s						
HHC	**Hu-ho-hao-te**	**55.20**	**329**	*e*P	**P**	**08 43 09.8**	**+1.8**
HHC				pP	pP	08 43 24.8	+0.1
HHC				S	**S**	**08 50 44.5**	**-2.3**
HHC				pmax	pmax		
	comp=Z,19nm,1.0s						
HHC				pmax	pmax		
	comp=Z,110nm,5.3s						
HHC				LR	LR		
	comp=N,92nm,13.9s						
HHC				LR	LR		
	comp=E,220nm,15.7s						
HHC				LR	LR		
	comp=Z,54nm,14.4s						
KLR	**Kul'dur**	**55.31**	**349**	P	**P**	**08 43 07.0**	**-1.4**
	1.0nm,0.6s,baz=138,slow=5.3,SNR=4.0						
LZH	**Lanzhou**	**56.49**	**320**	*e*P	P	08 43 25.8	+8.5
LZH				pP	pP	08 43 36.5	+2.4
LZH				sP	sP	08 43 41.8	+0.5
LZH				pmax	pmax		
	comp=Z,16nm,1.1s						
WMQ	**Urumqi**	**71.07**	**320**	*e*P	**P**	**08 44 54.0**	**+1.0**
WMQ				pP	PcP	08 45 13.0	+0.1
WMQ				sP	sP	08 45 21.1	+3.6
WMQ				PP	PP	08 47 37.3	+5.9
WMQ				S	**S**	**08 54 02.8**	**-1.8**
WMQ				pmax	pmax		
	comp=Z,3.0nm,0.6s						
WMQ				pmax	pmax		
	comp=Z,14nm,3.6s						
WMQ				LR	LR		
	comp=Z,21nm,17.2s						
WMQ				LR	LR		
	comp=Z,72nm,17.8s						
VNDA	**Vanda**	**73.01**	**176**	P	**P**	**08 45 03.0**	**-0.9**
	comp=Z,0.5nm,0.5s,baz=326,slow=10,SNR=4.0						
MKAR	**Makanchi Array**	**75.78**	**321**	P	**P**	**08 45 18.1**	**-2.5**
	comp=Z,0.5nm,0.6s,baz=108,slow=6.5,SNR=5.2						
ZALV	**Zalesovo Beam**	**77.37**	**328**	P	**P**	**08 45 26.6**	**-2.7**
	comp=Z,0.5nm,0.5s,baz=90,slow=8.6,SNR=2.9						
KSH	**Kashi**	**77.61**	**312**	*e*P	P	08 45 35.1	+3.9
KSH				*es*P	sP	08 46 04.1	+8.3
KSH				*e*PP	PP	08 48 36.1	+9.0
KSH				S	**S**	**08 55 20.1**	**+1.9**
KSH				SKS	**SKSac**	**08 55 36.4**	**-3.1**
KSH				SS	**SS**	**09 00 26.0**	**+6.9**
KSH				pmax	pmax		
	comp=Z,45nm,4.5s						
KSH				LR	LR		
	comp=Z,220nm,12.7s						
KSH				LR	LR		
	comp=Z,130nm,9.4s						
KSH				LR	LR		
	comp=Z,110nm,6.6s						
MCK	**McKinley**	**83.90**	**24**	*e*P	**P**	**08 46 02.5**	**-1.6**
	comp=Z,4.4nm,0.9s						
QSPA	**South Pole Qui**	**84.98**	**180**	*e*P	**P**	**08 46 09.5**	**-0.2**
	comp=Z,8.0nm,0.7s						
ILAR	**Eielson Array**	**85.14**	**23**	P	**P**	**08 46 07.8**	**-2.5**
	comp=Z,2.2nm,0.7s,baz=253,slow=5.2,SNR=29						
ILAR				pP	PcP	08 46 19.1	+5.7
	comp=Z,4.5nm,0.8s,baz=253,slow=5.1,SNR=21						
YKA	**Yellowknife Ar**	**98.96**	**28**	P	**P**	**08 47 13.9**	**-0.8**
	comp=Z,0.1nm,0.7s,baz=267,slow=5.0,SNR=3.9						
YKA				pP	pP	08 47 24.6	-8.1
	comp=Z,0.4nm,0.9s,baz=273,slow=5.1,SNR=5.3						

ISCJB ***18*** *08:36:02.7±0.4, 40°39N±0°02×26°11E±0°03, h10km±4km, Error ellipse: s-maj=4.5km s-min=3.5km az=39.8*
ATH ***18*** *08:36:02.3, 40°41N×26°06E, h31km±3km, ML2.4/4, Error ellipse: s-maj=3.9km s-min=1.0km az=344.0*
CSEM ***18*** *08:36:02.8±0.1, 40°37N×26°10E, h10km, ML2.7, Error ellipse: s-maj=2.9km s-min=2.4km az=132.0*
ISK ***18*** *08:36:02.0, 40°37N×26°09E, h10km, ML2.7*
DDA ***18*** *08:36:03.1, 40°35N×26°21E, h7km, Ml3.0.*

ISC 18 08:36:02.3±1.0, 40°40N±0°02×26°15E±0°02, h15km±9km, n61, σθ59/81, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GELI	**Tayfur-Gelibol**	**0.25**	**90**	*e*PG	**Pb**	**08 36 08.4**	**-0.1**
GELI				*e*SG	**Sb**	**08 36 13.1**	**+0.5**
GELI	**Tayfur-Gelibol**	**0.25**	**90**	*e*Pg	**Pb**	**08 36 08.4**	**-0.1**
GELI				*e*Sg	**Sb**	**08 36 13.1**	**+0.5**
ENEZ	**Enez**	**0.34**	**0**	*e*PG	**Pb**	**08 36 10.6**	**+0.5**
ENEZ				*e*SG	**Sb**	**08 36 15.4**	**+0.1**
ENEZ	**Enez**	**0.34**	**0**	*e*Pg	**Pb**	**08 36 10.6**	**+0.5**
ENEZ				*e*Sg	**Sb**	**08 36 15.4**	**+0.1**
ERIK	**Erikli-Kesan**	**0.39**	**45**	*e*PG	**Pb**	**08 36 11.0**	**+0.1**
ERIK	**Erikli-Kesan**	**0.39**	**45**	*e*Pg	**Pb**	**08 36 11.0**	**+0.1**
SMTH	**Samothraki Isl**	**0.48**	**279**	P	**Pg**	**08 36 12.0**	**+0.1**
SMTH				S	**Sg**	**08 36 18.1**	**-0.3**
SMTH	**Samothraki Isl**	**0.48**	**279**	P	**Pg**	**08 36 12.0**	**+0.1**
SMTH				S	**Sg**	**08 36 18.1**	**-0.3**
SMTH				AML	AML	08 36 21.4	
	comp=N,832μm,0.1s						
SMTH				AML	AML	08 36 21.5	
	comp=E,1114μm,0.1s						
ALN	**Alexandroupoli**	**0.51**	**351**	*e*PG	**Pb**	**08 36 12.9**	**0.0**
ALN				*e*SG	**Sb**	**08 36 20.1**	**0.0**
ALN	**Alexandroupoli**	**0.51**	**351**	P	**Pb**	**08 36 13.2**	**+0.3**
ALN				S	**Sb**	**08 36 19.8**	**-0.3**
ALN				*

South Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CRLZ	**Canterbury Las**	**0.19**	**72**	⇓PG	Pg	08 41 39.0	+0.4
CRLZ				SG	Sg	08 41 42.1	+0.7
CRLZ				AML	AML	08 41 42.4	
MQZ	**McQueen's Vall**	**0.22**	**110**	PG	Pg	08 41 39.2	+0.1
MQZ				SG	Sg	08 41 42.0	-0.1
MQZ				AML	AML	08 41 42.9	
OXZ	**Oxford**	**0.39**	**321**	⇑P*	Pg	08 41 42.2	-0.2
OXZ				SG	Sg	08 41 47.5	0.0
LTZ	**Lake Taylor**	**0.85**	**355**	P*	Pg	08 41 50.9	-0.2
LTZ				S*	Sb	08 42 02.8	-0.4
LTZ	**Lake Taylor** 234nm,2.0s	**0.85**	**355**	*e*P	Pb	08 41 51.4	-0.2
RPZ	**Rata Peaks**	**0.96**	**265**	P*	Pg	08 41 52.5	-0.6
RPZ				S*	Sg	08 42 05.6	0.0
RPZ	**Rata Peaks** 34nm,0.8s	**0.96**	**265**	*e*P	Pg	08 41 52.5	-0.6
INZ	**Inchbonnie**	**1.14**	**323**	P*	Pb	08 41 55.8	-0.5
WVZ	**Waitaha Valley**	**1.32**	**295**	*e*PN	Pn	08 41 58.4	-0.7
LBZ	**Lake Benmore**	**1.75**	**244**	*e*PN	Pn	08 42 03.7	-1.4
LBZ				SN	Sn	08 42 27.0	-0.5
ODZ	**Otahua Downs**	**1.88**	**221**	*e*PN	Pn	08 42 06.0	-0.8

NIED ***18*** *08:44:00,36˚.90N×140˚.60E,h5km,Mw3.9 Best double couple: M₀7.87000×10¹⁴ NP1:φs209.00000°,δ25.00000°, λ-105.00000°. NP2:φs45.00000°,δ65.00000°, λ-83.00000°.*

IDC ***18*** *08:44:35.1±0.6,36˚.99N×140˚.56E,h0km,mb3.9/15, mb1 4.1/19,mb1mx4.0/45,mbtmp4.0/19,ML3.4/4,MS3.1/4, Ms1 3.2/4,ms1mx2.7/53,Error ellipse: s-maj=15.3km s-min=11.3km az=134.0*

ISCJB ***18*** *08:44:36.5±0.5,36˚.96N±0˚.03×140˚.69E±0˚.04,h20km±3km, mb4.0/21,MS3.1/3,Error ellipse: s-maj=5.9km s-min=3.9km az=22.5*

JMA ***18*** *08:44:36.6,36˚.95N×140˚.64E,h7km±1km,M4.1 Broadband fault plane solution: P waves. NP1: φs57.00000°,δ75.00000°,λ-82.00000°. NP2:φs209.00000°, δ17.00000°,λ-117.00000°. Principal axes: T Plg30.0000°, Azm141.0000°; N Plg7.0000°, Azm235.0000°; P Plg59.0000°, Azm338.0000°;*

JMA Felt II J1.

NEIC ***18*** *08:44:40.8±0.8,36˚.99N×140˚.52E,h39km±8km,mb4.2/6 Error ellipse: s-maj=9.5km s-min=6.6km az=104.0*

ISC 18 08:44:36.9±1.0,36˚.95N±0˚.03×140˚.64E±0˚.04,h11km±6km, n48,σ0ˢ89/52,mb4.0/21,MS3.1/3,5C-1D,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.20**	**40**	⇑P	**Pg**	**08 44 41.0**	**-0.1**
ONAJ				S	**Sg**	**08 44 44.0**	**0.0**
JHO	**Hitachi**	**0.34**	**190**	⇑P	**Pg**	**08 44 43.2**	**-0.6**
JFK	**Kawauchi**	**0.45**	**24**	⇓P	**Pg**	**08 44 45.6**	**-0.3**
JFK				S	**Sg**	**08 44 52.0**	**+0.1**
JSB	**Shiboa**	**0.58**	**272**	P	**Pg**	**08 44 48.4**	**+0.2**
JSB				S	**Sg**	**08 44 56.3**	**+0.5**
JFT	**Otama**	**0.62**	**337**	⇑P	**Pg**	**08 44 48.9**	**0.0**
JFT				S	**Sg**	**08 44 57.5**	**+0.5**
JYT	**Yasato**	**0.81**	**207**	⇑P	**Pg**	**08 44 51.8**	**-0.7**
JYT				S	**Sg**	**08 45 02.6**	**-0.4**
JFY	**Yanaizu**	**0.88**	**302**	⇑P	**Pg**	**08 44 53.5**	**-0.3**
JFY				S	**Sg**	**08 45 04.9**	**-0.4**
JMM	**Marumori**	**0.92**	**7**	P	**Pg**	**08 44 53.9**	**-0.8**
JMM				S	**Sg**	**08 45 06.6**	**-0.1**
MJAR	**Matsushiro Arr** 41nm,0.3s,baz=81,slow=15,SNR=124	**2.00**	**259**	Pn	**Pn**	**08 45 10.8**	**+0.1**
MJAR	76nm,0.3s,baz=78,slow=40,SNR=19			Lg	Lg	08 45 36.2	
MJAR	comp=Z,142nm,19.2s,baz=5.0,slow=51			LR	LR	08 46 13.0	
MAJO	**Matsushiro**	**2.00**	**259**	*e*Pn	**Pn**	**08 45 11.7**	**+1.0**
MAJO				*e*Sn	**Sb**	**08 45 38.9**	**+0.6**
MAT	**Matsushiro**	**2.00**	**259**	P	**Pn**	**08 45 11.8**	**+1.1**
MAT				S	**Sb**	**08 45 38.0**	**-0.2**
JHJ	**Hachijo jima 2** 12nm,0.3s,baz=73,slow=15,SNR=5.1	**3.89**	**191**	Pn	**Pn**	**08 45 36.8**	**+0.2**
JHJ	23nm,0.3s,baz=53,slow=20,SNR=3.6			Sn	**Sn**	**08 46 24.0**	**+1.7**
JHJ2	**Mitsune**	**3.89**	**190**	*e*Pn	**Pn**	**08 45 37.3**	**+0.6**
JHJ2				*e*Sn	**Sn**	**08 46 22.7**	**+0.4**
ASAJ	**Asahikawa** 1.1nm,0.3s,baz=224,slow=9.0,SNR=7.2	**7.31**	**11**	Pn	**Pn**	**08 46 23.8**	**+0.2**
ASAJ	**Asahikawa**	**7.31**	**11**	*e*Pn	**Pn**	**08 46 25.6**	**+1.9**
USRK	**Ussuriysk Ar.** 0.2nm,0.3s,baz=119,slow=13,SNR=9.6	**9.78**	**320**	Pn	**Pn**	**08 47 00.0**	**+2.5**
KSRS	**Korea Array** 0.2nm,0.3s,baz=137,slow=40,SNR=2.8	**10.16**	**277**	Pn	**Pn**	**08 47 03.6**	**+0.9**
KSAR	**Wonju Array Be**	**10.19**	**277**	Pn	**Pn**	**08 47 03.6**	**+0.5**
KLR	**Kul'dur** 0.1nm,0.3s,baz=158,slow=16,SNR=2.4	**13.87**	**335**	Pn	**Pn**	**08 47 53.8**	**+0.4**
KLR	comp=Z,64nm,18.7s,baz=134,slow=37			LR	LR	08 53 03.1	
MA2	**Magadan** 2.9nm,0.5s,baz=176,slow=12,SNR=3.9	**23.57**	**13**	P	**P**	**08 49 45.5**	**-1.8**
SEY	**Seymchan** 3.4nm,0.9s,baz=196,slow=6.6,SNR=12	**26.99**	**12**	P	**P**	**08 50 17.2**	**-1.3**
SONM	**Songino Array** 1.8nm,0.8s,baz=98,slow=9.8,SNR=7.6	**27.32**	**304**	P	**P**	**08 50 20.1**	**-1.7**
SONM	comp=Z,32nm,19.6s,baz=250,slow=37			LR	LR	09 01 11.2	
H11N2	**WAKE ISLAND Hy** baz=312,slow=75,SNR=7.2	**28.64**	**120**	T	T	09 20 22.8	
H11N1	**WAKE ISLAND Hy** baz=312,slow=75,SNR=110	**28.65**	**120**	T	T	09 20 20.7	
H11N3	**WAKE ISLAND Hy** baz=312,slow=75,SNR=82	**28.66**	**120**	T	T	09 20 21.5	
H11S1	**WAKE ISLAND Hy** baz=314,slow=75,SNR=292	**29.34**	**122**	T	T	09 21 12.3	
H11S3	**WAKE ISLAND Hy** baz=314,slow=75,SNR=216	**29.34**	**122**	T	T	09 21 14.8	
H11S2	**WAKE ISLAND Hy** baz=314,slow=75,SNR=142	**29.35**	**122**	T	T	09 21 15.5	
CMAR	**Chiang Mai Arr** comp=Z,24nm,18.0s,baz=215,slow=36	**40.88**	**255**	LR	LR	09 08 46.3	
MKAR	**Makanchi Array** 0.5nm,0.6s,baz=87,slow=9.9,SNR=5.4	**43.64**	**302**	P	**P**	**08 52 40.4**	**-1.0**
MKAR	comp=Z,28nm,18.4s,baz=18,slow=36			LR	LR	09 11 05.4	
KURK	**Kurchatov** 4.4nm,0.6s	**45.50**	**308**	*e*P	**P**	**08 52 54.8**	**-1.3**
TKM2	**Tokmak 2** 1.7nm,0.7s	**49.13**	**298**	*e*P	**P**	**08 53 25.3**	**+0.5**
ILAR	**Eielson Array** 0.9nm,0.8s,baz=271,slow=6.3,SNR=9.2	**49.89**	**32**	P	**P**	**08 53 30.2**	**+0.2**
INK	**Inuvik** 0.8nm,0.8s,baz=276,slow=7.7,SNR=5.1	**54.74**	**27**	P	**P**	**08 54 06.2**	**+0.2**
WRAB	**Tennant Creek** 9.1nm,1.0s	**56.89**	**187**	*e*P	**P**	**08 54 23.1**	**+1.2**
WRA	**Warramunga Arr** 3.8nm,0.8s,baz=3.0,slow=7.2,SNR=25	**56.90**	**187**	P	**P**	**08 54 21.6**	**-0.4**
ABKAR	**Akbulak array** 1.6nm,0.7s	**57.52**	**310**	*e*P	**P**	**08 54 25.4**	**-0.8**
ASAR	**Alice Springs** 1.7nm,0.8s,baz=17,slow=6.2,SNR=16	**60.63**	**187**	P	**P**	**08 54 47.4**	**-0.5**
YKA	**Yellowknife Ar** 0.5nm,0.7s,baz=302,slow=6.6,SNR=9.1	**64.19**	**30**	P	**P**	**08 55 11.6**	**+0.3**
STKA	**Stephens Creek** 2.6nm,1.2s,baz=336,slow=5.7,SNR=3.6	**68.48**	**179**	P	**P**	**08 55 39.0**	**0.0**
FINES	**FINESS Array B** 3.0nm,0.9s,baz=76,slow=10.0,SNR=4.9	**68.60**	**332**	P	**P**	**08 55 38.5**	**-1.0**
AKASG	**Malin Array Be** 0.3nm,0.3s,baz=39,slow=6.2,SNR=4.2	**73.98**	**322**	P	**P**	**08 56 11.1**	**-1.2**
NOA	**NORSAR Array B** 0.6nm,0.7s,baz=37,slow=6.0,SNR=3.4	**74.02**	**337**	P	**P**	**08 56 12.2**	**-0.3**
FFC	**Flin Flon** 0.6nm,0.3s	**74.11**	**32**	*e*P	**P**	**08 56 13.8**	**+0.9**
HLID	**Hailey** 0.4nm,0.5s	**74.88**	**47**	*e*P	**P**	**08 56 18.1**	**+0.2**
PDAR	**Pinedale Array** 0.3nm,0.7s,baz=270,slow=1.5,SNR=4.0	**78.16**	**45**	P	**P**	**08 56 37.2**	**+0.6**
TXAR	**Lajitas Array** 0.7nm,0.8s,baz=296,slow=1.9,SNR=8.0	**90.66**	**52**	P	**P**	**08 57 41.0**	**+1.0**
LPAZ	**La Paz** 3.6nm,1.0s,baz=31,slow=4.7,SNR=9.3	**147.26**	**59**	PKPbc	**PKPbc**	**09 04 21.6**	**-0.1**

DDA ***18*** *08:54:31.8,38˚.00N×28˚.58E,h7km,Ml3.1*
ISCJB ***18*** *08:54:32.1±0.5,37˚.97N±0˚.02×28˚.59E±0˚.03,h2km±4km,*

Error ellipse: s-maj=3.8km s-min=3.1km az=137.1
CSEM ***18*** *08:54:32.3±0.1,37˚.97N×28˚.59E,h5km,ML3.1,Error ellipse: s-maj=3.6km s-min=2.9km az=120.0*
ISK ***18*** *08:54:32.0,37˚.98N×28˚.59E,h6km,ML3.1*

ISC 18 08:54:31.8±1.1,37˚.96N±0˚.02×28˚.64E±0˚.02,h3km±10km, n58,σ0ˢ70/87,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DENT	**Denizli**	**0.37**	**123**	*e*PG	**Pb**	**08 54 40.8**	**-0.3**
DENT				*e*SG	**Sb**	**08 54 47.0**	**-0.2**
DENT	**Denizli**	**0.37**	**123**	*e*Pg	**Pb**	**08 54 40.8**	**-0.3**
DENT				*e*Sg	**Sb**	**08 54 47.0**	**-0.2**
UZP	**Denizli**	**0.43**	**80**	*i* P	**Pb**	**08 54 41.2**	**-0.9**
UZP				*i* S	**Sb**	**08 54 48.7**	**-0.3**
KULA	**Kula-Manisa**	**0.56**	**1**	*e*PG	**Pg**	**08 54 42.6**	**0.0**
KULA				*e*SG	**Sg**	**08 54 50.7**	**+0.8**
KULA	**Kula-Manisa**	**0.56**	**1**	*e*Pg	**Pg**	**08 54 42.6**	**0.0**
KULA				*e*Sg	**Sg**	**08 54 50.7**	**+0.8**
AYDB	**Zeytinkoy-Aydi**	**0.59**	**269**	*e*PG	**Pg**	**08 54 43.0**	**-0.3**
AYDB				*e*SG	**Sg**	**08 54 51.3**	**+0.3**
AYDB	**Zeytinkoy-Aydi**	**0.59**	**269**	*e*Pg	**Pg**	**08 54 43.0**	**-0.3**
AYDB				*e*Sg	**Sg**	**08 54 51.3**	**+0.3**
AYDN	**Tasoluk**	**0.67**	**244**	*i* P	**Pg**	**08 54 44.5**	**-0.2**
AYDN				*i* S	**Sg**	**08 54 54.2**	**+0.8**
AYDN				*i* S	**Sg**	**08 54 54.2**	**+0.8**
AYDN	**Tasoluk**	**0.67**	**244**	P	**Pg**	**08 54 44.5**	**-0.2**
AYDN				S	**Sg**	**08 54 54.2**	**+0.8**
KHL	**Karahalli**	**0.79**	**62**	*e*PG	**Pb**	**08 54 48.0**	**-0.2**
KHL	**Karahalli**	**0.79**	**62**	*e*Pg	**Pb**	**08 54 48.0**	**-0.2**
KHAL	**Karahalli**	**0.79**	**58**	*i* P	**Pg**	**08 54 46.9**	**0.0**
KHAL				*i* S	**Sn**	**08 55 01.2**	**-1.1**
KHAL	**Karahalli**	**0.79**	**58**	P	**Pg**	**08 54 46.9**	**0.0**
KHAL				S	**Sn**	**08 55 01.2**	**-1.1**
YER	**Yerkesik**	**0.87**	**199**	*e*PG	**Pb**	**08 54 49.1**	**-0.5**
YER	**Yerkesik**	**0.87**	**199**	*e*Pg	**Pb**	**08 54 49.1**	**-0.5**
DEMI	**Demirci**	**1.09**	**3**	*i* P	**Pg**	**08 54 52.0**	**-0.7**
DEMI				*i* S	**Sg**	**08 55 07.4**	**+0.6**
DEMI	**Demirci**	**1.09**	**3**	P	**Pg**	**08 54 52.0**	**-0.7**
DEMI				S	**Sg**	**08 55 07.4**	**+0.6**
AKHS	**Akhisar**	**1.13**	**325**	*i* P	**Pg**	**08 54 53.2**	**-0.3**
AKHS				*i* S	**Sg**	**08 55 08.5**	**+0.3**
AKHS	**Akhisar**	**1.13**	**325**	P	**Pg**	**08 54 53.2**	**-0.3**
AKHS				S	**Sg**	**08 55 08.5**	**+0.3**
AKS	**Akhisar**	**1.13**	**325**	*e*PN	**Pg**	**08 54 53.4**	**-0.1**
AKS	**Akhisar**	**1.13**	**325**	*e*Pn	**Pg**	**08 54 53.4**	**-0.1**
DALY	**Dalyan (Mu˘la**	**1.14**	**180**	*e*PN	**Pn**	**08 54 54.4**	**-0.2**
DALY				*e*SN	**Sn**	**08 55 11.7**	**+1.0**
DALY	**Dalyan (Mu˘la**	**1.14**	**180**	*e*Pn	**Pn**	**08 54 54.4**	**-0.2**
DALY				*e*Sn	**Sn**	**08 55 11.7**	**+1.0**
GCAM	**G?zelcaml?**	**1.15**	**258**	*i* P	**Pg**	**08 54 53.2**	**-0.6**
GCAM				*i* S	**Sb**	**08 55 09.5**	**0.0**
GCAM	**G?zelcaml?**	**1.15**	**258**	P	**Pg**	**08 54 53.2**	**-0.6**
GCAM				S	**Sb**	**08 55 09.5**	**0.0**
IZM	**Izmir**	**1.17**	**293**	*e*PN	**Pb**	**08 54 54.6**	**-0.2**
IZM	**Izmir**	**1.17**	**293**	*e*Pn	**Pb**	**08 54 54.6**	**-0.2**
BDRM	**Kayabasi**	**1.30**	**227**	*i* P	**Pg**	**08 54 56.0**	**-0.8**
BDRM				*i* S	**Sb**	**08 55 14.2**	**+0.1**
BDRM	**Kayabasi**	**1.30**	**227**	P	**Pg**	**08 54 56.0**	**-0.8**
BDRM				S	**Sb**	**08 55 14.2**	**+0.1**
GDZ	**Gediz**	**1.31**	**30**	*i* P	**Pg**	**08 54 56.1**	**-0.8**
GDZ				*i* S	**Sn**	**08 55 16.1**	**+0.9**
GDZ	**Gediz**	**1.31**	**30**	P	**Pg**	**08 54 56.2**	**-0.8**
GDZ				S	**Sn**	**08 55 16.1**	**+0.9**
BLCB	**Balcova**	**1.33**	**289**	*e*PN	**Pg**	**08 54 56.2**	**-1.2**
BLCB	**Balcova**	**1.33**	**289**	*e*Pn	**Pg**	**08 54 56.2**	**-1.2**
FETY	**Fethiye**	**1.36**	**165**	*e*PN	**Pb**	**08 54 58.8**	**+0.8**
FETY	**Fethiye**	**1.36**	**165**	*e*Pn	**Pb**	**08 54 58.8**	**+0.8**
BODT	**Bodrum**	**1.39**	**230**	*e*PN	**Pg**	**08 54 57.6**	**-0.8**
BODT	**Bodrum**	**1.39**	**230**	*e*Pn	**Pg**	**08 54 57.6**	**-0.8**
ELL	**Elmali**	**1.57**	**140**	*e*PN	**Pg**	**08 55 01.4**	**-0.5**
ELL	**Elmali**	**1.57**	**140**	*e*Pn	**Pg**	**08 55 01.4**	**-0.5**
TVSB	**Tavsanli**	**1.62**	**23**	*e*PN	**Pb**	**08 55 02.2**	**-0.3**
TVSB	**Tavsanli**	**1.62**	**23**	*e*Pn	**Pb**	**08 55 02.2**	**-0.3**
DURS	**Dursunbey**	**1.65**	**355**	*i* P	**Pn**	**08 54 60.0**	**-1.8**
DURS				*i* S	**Sg**	**08 55 25.9**	**+1.0**
DURS	**Dursunbey**	**1.65**	**355**	P	**Pn**	**08 55 00.0**	**-1.8**
DURS				S	**Sg**	**08 55 25.9**	**+1.0**
ZEY	**˘zmir**	**1.71**	**280**	*i* P	**Pn**	**08 55 02.2**	**-0.3**
ZEY				*i* S	**Sg**	**08 55 26.6**	**-0.3**
DKL	**Dikili**	**1.76**	**310**	*e*PN	**Pn**	**08 55 03.0**	**-0.2**
DKL				*e*SN	**Sn**	**08 55 25.8**	**-0.3**
DKL	**Dikili**	**1.76**	**310**	*e*Pn	**Pn**	**08 55 03.0**	**-0.2**
DKL				*e*Sn	**Sn**	**08 55 25.8**	**-0.3**
BALB	**Balikesir**	**1.79**	**341**	*e*PN	**Pn**	**08 55 03.8**	**+0.2**
BALB	**Balikesir**	**1.79**	**341**	*e*Pn	**Pn**	**08 55 03.8**	**+0.2**
KCTX	**Karacabey (Bur**	**2.32**	**355**	*e*PN	**Pn**	**08 55 11.5**	**+0.6**
KCTX	**Karacabey (Bur**	**2.32**	**355**	*e*Pn	**Pn**	**08 55 11.5**	**+0.6**
EDC	**Edincik**	**2.46**	**346**	*e*PN	**Pn**	**08 55 13.3**	**+0.4**
EDC	**Edincik**	**2.46**	**346**	*e*Pn	**Pn**	**08 55 13.3**	**+0.4**
IZI	**Iznik**	**2.46**	**15**	*e*PN	**Pn**	**08 55 13.5**	**+0.5**
IZI	**Iznik**	**2.46**	**15**	*e*Pn	**Pn**	**08 55 13.5**	**+0.5**
KRBG	**Karabiga-Canak**	**2.65**	**337**	*e*PN	**Pn**	**08 55 16.7**	**+1.2**
KRBG	**Karabiga-Canak**	**2.65**	**337**	*e*Pn	**Pn**	**08 55 16.7**	**+1.2**
GELI	**Tayfur-Gelibol**	**2.96**	**326**	*e*PN	**Pn**	**08 55 21.1**	**+1.3**
GELI	**Tayfur-Gelibol**	**2.96**	**326**	*e*Pn	**Pn**	**08 55 21.1**	**+1.3**

NSSC ***18*** *09:07:49.7±1.1,34˚.42N×36˚.80E,h0km±4km,ML2.3*
CSEM ***18*** *09:07:50.3±0.3,34˚.41N×36˚.71E,h2km,ML2.3,Error ellipse: s-maj=11.5km s-min=4.4km az=90.0*
DDA ***18*** *09:08:14.7,34˚.55N×36˚.35E,h11km,Ml3.3*

ISC 18 09:07:49.7±1.2,34˚.41N±0˚.02×36˚.76E±0˚.05,h5km±11km, n24,σ0ˢ90/46,Jordan-Syria region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
QASN	**Qassioun**	**0.96**	**205**	*e*P	**Pg**	**09 08 08.7**	**+0.6**
QASN				*e*S	**Sn**	**09 08 23.0**	**-1.1**
QASN				AML	AML	09 08 24.8	
QASN	comp=N,160nm,0.5s			AML	AML	09 08 32.3	
QASN	comp=E,245nm,0.4s			AML	AML	09 08 28.0	
QASN	**Qassioun**	**0.96**	**205**	*e*P	**Pg**	**09 08 08.7**	**+0.6**
QASN				*e*S	**Sn**	**09 08 23.0**	**-1.1**
TOTH	**TOTAH**	**1.08**	**195**	*e*P	**Pb**	**09 08 10.9**	**0.0**
TOTH				*e*S	**Sn**	**09 08 26.4**	**-0.5**
TOTH				AML	AML	09 08 26.8	
TOTH	comp=N,57nm,0.5s			AML	AML	09 08 28.0	
TOTH	comp=E,55nm,0.4s						
TOTH	**TOTAH**	**1.08**	**195**	*e*P	**Pb**	**09 08 10.9**	**0.0**
TOTH				*e*S	**Sn**	**09 08 26.4**	**-0.5**
BRBR	**Barbar**	**1.20**	**214**	*e*P	**Pb**	**09 08 13.0**	**-0.1**
BRBR				*e*S	**Sn**	**09 08 30.6**	**+0.5**
BRBR				AML	AML	09 08 36.8	
BRBR	comp=N,80nm,0.5s			AML	AML	09 08 36.8	
BRBR	comp=E,45nm,0.8s						
BRBR	**Barbar**	**1.20**	**214**	*e*P	**Pb**	**09 08 13.0**	**-0.1**
BRBR				*e*S	**Sn**	**09 08 30.6**	**+0.5**
ZALF	**Zalf**	**1.56**	**162**	*e*P	**Pb**	**09 08 18.5**	**-0.5**
ZALF				*e*S	**Sg**	**09 08 40.0**	**+0.2**
ZALF				AML	AML	09 08 42.8	
ZALF	comp=N,41nm,0.5s			AML	AML	09 08 43.7	
ZALF	comp=E,27nm,0.3s						
ZALF	**Zalf**	**1.56**	**162**	*e*P	**Pb**	**09 08 18.5**	**-0.5**
ZALF				*e*S	**Sg**	**09 08 40.0**	**+0.2**
ARNB	**Al Arnab**	**1.59**	**336**	*e*P	**Pb**	**09 08 18.6**	**-1.0**
ARNB				*e*S	**Sg**	**09 08 40.2**	**-0.5**
ARNB				AML	AML	09 08 41.5	
ARNB	comp=E,76nm,0.4s			AML	AML	09 08 42.9	
ARNB	comp=N,166nm,0.7s						
ARNB	**Al Arnab**	**1.59**	**336**	*e*P	**Pb**	**09 08 18.6**	**-1.0**
ARNB				*e*S	**Sg**	**09 08 40.2**	**-0.5**
BTCH	**Batrach**	**1.64**	**352**	*e*P	**Pb**	**09 08 19.7**	**-0.9**
BTCH				*e*S	**Sg**	**09 08 42.4**	**-0.2**
BTCH				AML	AML	09 08 45.8	
BTCH	comp=E,152nm,0.5s			AML	AML	09 08 50.4	
BTCH	comp=N,143nm,0.5s						
BTCH	**Batrach**	**1.64**	**352**	*e*P	**Pb**	**09 08 19.7**	**-0.9**
BTCH				*e*S	**Sg**	**09 08 42.4**	**-0.2**
SALA	**Sala**	**1.69**	**181**	*e*P	**Pb**	**09 08 20.6**	**-0.9**
SALA				*e*S	**Sb**	**09 08 43.5**	**+0.4**
SALA				AML	AML	09 08 50.0	
SALA	comp=E,6.3nm,0.4s			AML	AML	09 08 50.2	
SALA	comp=N,63nm,0.7s						
SALA	**Sala**	**1.69**	**181**	*e*P	**Pb**	**09 08 20.6**	**-0.9**
SALA				*e*S	**Sb**	**09 08 43.5**	**+0.4**
YAYL	**Yayladag**	**1.71**	**342**	*i* P	**Pn**	**09 08 20.2**	**-0.1**
YAYL				*i* S	**Sg**	**09 08 45.0**	**+0.4**
YAYL	**Yayladag**	**1.71**	**342**	P	**Pn**	**09 08 20.2**	**-0.1**
YAYL				S	**Sg**	**09 08 45.0**	**+0.4**
KUZU	**Kuzuini**	**2.37**	**6**	*i* P	**Pb**	**09 08 32.4**	**-0.6**
KUZU				*i* S	**Sg**	**09 09 05.2**	**-0.8**
KUZU	**Kuzuini**	**2.37**	**6**	P	**Pb**	**09 08 32.4**	**-0.6**
SURC	**SANLIURFA_SURC**	**2.89**	**31**	*i* P	**Pb**	**09 08 41.6**	**-0.1**
SURC				*i* S	**Sg**	**09 09 22.4**	**-0.2**
SURC	**SANLIURFA_SURC**	**2.89**	**31**	P	**Pb**	**09 08 41.7**	**-0.1**
KIZK	**Mersin**	**2.97**	**315**	*i* P	**Pn**	**09 08 35.8**	**-1.8**
KIZK				*i* S	**Sn**	**09 09 13.2**	**-0.4**
KIZK	**Mersin**	**2.97**	**315**	P	**Pn**	**09 08 35.8**	**-1.8**
KIZK				S	**Sn**	**09 09 13.2**	**-0.4**
KERG	**Konya-Eregli**	**3.68**	**325**	*i* P	**Pn**	**09 08 48.8**	**+1.3**
KERG				*i* S	**Sn**	**09 09 33.8**	**+2.4**
KERG	**Konya-Eregli**	**3.68**	**325**	P	**Pn**	**09 08 48.8**	**+1.3**
KERG				S	**Sn**	**09 09 33.8**	**+2.4**

NIED ***18*** *09:10:00,36˚.40N×142˚.90E,h5km,Mw3.8 Best double couple: M₀6.63000×10¹⁴ NP1:φs38.00000°,δ30.00000°, λ-96.00000°. NP2:φs225.00000°,δ60.00000°, λ-86.00000°.*

IDC ***18*** *09:10:42.7±0.6,36˚.21N×143˚.25E,h0km,mb3.8/16, mb1 4.0/19,mb1mx4.0/40,mbtmp3.9/19,ML3.8/3,MS2.9/11, Ms1 2.9/11,ms1mx2.7/54,Error ellipse: s-maj=18.4km s-min=15.1km az=106.0*

ISCJB ***18*** *09:10:45.6±0.4,36˚.35N±0˚.03×143˚.05E±0˚.04,h29km, mb3.8/18,MS3.1/5,Error ellipse: s-maj=5.1km s-min=4.2km az=139.0*

JMA ***18*** *09:10:47.4±0.2,36˚.36N×142˚.95E,h68km,M3.6*

NEIC ***18*** *09:10:48.1±0.4,36˚.31N×143˚.23E,h35km,mb4.2/2,Error ellipse: s-maj=9.8km s-min=7.6km az=116.0*

ISC 18 09:10:47.3±0.6,36˚.33N±0˚.05×143˚.06E±0˚.07,h29km,n56, σ1ˢ69/51,mb3.9/18,MS3.1/5,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**1.89**	**251**	P	**Pn**	**09 11 17.1**	**-0.5**
CHOJ				S	**Sn**	**09 11 39.5**	**-1.0**
JHO	**Hitachi**	**2.03**	**279**	*e*S	**Sn**	**09 11 42.2**	**-1.7**
JFK	**Kawauchi**	**2.04**	**301**	P	**Pn**	**09 11 18.9**	**-0.8**
BSO1	**Boso 1**	**2.38**	**226**	P	**Pn**	**09 11 23.4**	**-0.5**
BSO1				*e*S	**Sn**	**09 11 52.3**	**+0.4**
JFT	**Otama**	**2.49**	**299**	*e*S	**Sn**	**09 11 54.4**	**-0.8**
JAG	**Ashikaga**	**2.92**	**273**	P	**Pn**	**09 11 31.1**	**-0.6**
JAG				S	**Sn**	**09 12 04.3**	**-1.5**
JMK	**Ichinoseki**	**3.00**	**331**	P	**Pn**	**09 11 32.2**	**-0.7**
JMK				*e*S	**Sn**	**09 12 04.8**	**-3.1**
JYK	**Kaneyama**	**3.36**	**321**	P	**Pn**	**09 11 37.6**	**-0.2**
JYK				*e*S	**Sn**	**09 12 16.2**	**-0.6**
JRY	**Ryogami san**	**3.38**	**266**	P	**Pn**	**09 11 37.5**	**-0.6**
JRY				*e*S	**Sn**	**09 12 14.9**	**-2.4**
JOD2	**Odawara 2**	**3.40**	**253**	P	**Pn**	**09 11 38.2**	**-0.2**
JOD2				*e*S	**Sn**	**09 12 16.2**	**-1.6**
JOM	**Ohasama**	**3.44**	**336**	P	**Pn**	**09 11 38.2**	**-0.7**
JOM				S	**Sn**	**09 12 16.7**	**-2.0**
JYN	**Shimob**	**3.76**	**259**	P	**Pn**	**09 11 43.7**	**+0.3**
JYN				S	**Sn**	**09 12 26.9**	**+0.2**
MJAR	**Matsushiro Arr** 2.6nm,0.3s,baz=86,slow=14,SNR=11	**3.92**	**275**	Pn	**Pn**	**09 11 46.3**	**+0.8**
MJAR	2.5nm,0.3s,baz=69,slow=11,SNR=4.4			Sn	**Sn**	**09 12 31.7**	**+1.1**
MJAR	comp=Z,118nm,18.5s,baz=100,slow=42			LR	LR	09 13 31.2	
MAJO	**Matsushiro**	**3.92**	**275**	*e*Pn	Pn	09 11 48.1	+2.5
MAT	**Matsushiro**	**3.92**	**275**	P	Pn	09 11 47.0	+1.4
MAT				*e*S	**Sn**	**09 12 27.3**	**-3.3**
MAT	**Matsushiro**	**3.92**	**275**	P	Pn	09 11 46.9	+1.4
JHJ2	**Mitsune**	**4.17**	**221**	P	**Pn**	**09 11 49.1**	**+0.1**
JHJ2				*e*S	**Sn**	**09 12 32.0**	**-4.8**
JHJ2	**Mitsune**	**4.17**	**221**	*e*Pn	**Pn**	**09 11 50.3**	**+1.3**
JHJ	**Hachijo jima 2** 15nm,0.3s,baz=336,slow=22,SNR=9.6	**4.19**	**221**	Pn	**Pn**	**09 11 47.2**	**-2.0**
JHJ	65nm,0.3s,baz=67,slow=22,SN

ISC 18 09:11:20.4±2.2, 44°31N±0°.08×148°.1E±0°.1, h10km, n12, σ1§58/18, Kuril Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KUR	**Kuril'sk**	**0.93**	**351**	*i* P	**Pg**	**09 11 37.6**	**-0.7**
KUR	2μm,0.1s			AMB	AMB	09 11 38.3	
KUR	20nm,0.1s			AMB	AMB	09 11 38.3	
KUR	90nm,0.1s			AMB	AMB	09 11 38.3	
KUR				*i* S	**Sg**	**09 11 49.2**	**-1.3**
KUR	150nm,0.2s			A	A	09 11 50.2	
KUR	520nm,0.2s			A	A	09 11 50.2	
SHO	**Shikotan**	**1.00**	**244**	*e*P	**Pn**	**09 11 41.4**	**+1.0**
SHO	80nm,0.3s			AMB	AMB	09 11 41.6	
SHO				*i* S	**Sn**	**09 11 55.5**	**+1.0**
SHO	220nm,0.3s			A	A	09 11 57.1	
SHO	580nm,0.3s			A	A	09 11 57.1	
YUK	**Yuzh-Kuril'sk**	**1.61**	**261**	*i* P	**Pg**	**09 11 50.5**	**-0.8**
YUK	50nm,0.3s			AMB	AMB	09 11 52.0	
YUK	60nm,0.3s			AMB	AMB	09 11 52.0	
YUK	170nm,0.3s			AMB	AMB	09 11 52.0	
YUK				*i* S	**Sg**	**09 12 11.6**	**-0.6**
YUK	210nm,0.5s			A	A	09 12 16.5	
YUK	400nm,0.5s			A	A	09 12 16.5	
NEM2	**Nemuro 2**	**1.93**	**241**	P	**Pb**	**09 11 54.2**	**-1.5**
NEM2				*e*S	**Sb**	**09 12 18.2**	**-1.6**
JRA	**Rausu**	**2.15**	**261**	P	**Pb**	**09 11 59.0**	**-0.5**
JRA				*e*S	**Sb**	**09 12 26.8**	**+0.6**
JNK	**Nakash**	**2.52**	**254**	P	**Pb**	**09 12 03.8**	**-2.0**
JAK	**Akkeshi**	**2.78**	**243**	P	**Pn**	**09 12 06.4**	**+1.5**
JAK				*e*S	**Sn**	**09 12 39.3**	**+0.8**
JTKR	**Abashiri--Toko**	**3.01**	**265**	P	**Pb**	**09 12 12.5**	**-1.6**
JAR	**Ashorobuto**	**3.27**	**253**	P	Pb	09 12 14.9	-3.7
YSS	**Yuzh-Sakhalins**	**4.57**	**307**	*e*P	**Pn**	**09 12 31.8**	**+2.3**
JKB	**Kayabe**	**5.69**	**247**	P	**Pn**	**09 12 47.6**	**+2.6**
JKB				*e*S	**Sn**	**09 13 52.1**	**+1.8**
TYV	**Tymovskoe**	**7.50**	**333**	*e*P	**Pn**	**09 13 11.3**	**+1.5**

*ISCJB **18** 09:15:09.3±1.1, 35°.7N±0°.1×140°.8E±0°.2, h45km, mb3.6/4, Error ellipse: s-maj=21.4km s-min=14.2km az=157.1*
*IDC **18** 09:15:11.3±3.9, 35°.69N×140°.70E, h40km±35km, mb3.4/4, mb1 3.5/6, mb1mx3.2/46, mbtmp3.6/6, ML3.0/2, Error ellipse: s-maj=45.0km s-min=21.6km az=72.0*
ISC 18 09:15:11.5±1.2, 35°.7N±0°.1×140°.7E±0°.2, h45km, n10, σ0§93/7, mb3.5/4, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MJAR	**Matsushiro Arr**	**2.19**	**295**	P	**Pn**	**09 15 45.4**	**-0.1**
	2.2nm,0.3s,baz=109,slow=9.4,SNR=12						
MAT	**Matsushiro**	**2.20**	**295**	P	**Pn**	**09 15 45.1**	**-0.4**
MAT				*e*S	Sn	09 16 20.2	+8.7
JHJ	**Hachijo jima 2**	**2.64**	**197**	P	**Pn**	**09 15 50.9**	**-0.6**
	15nm,0.3s,baz=54,slow=16,SNR=7.0						
SONM	**Songino Array**	**28.10**	**306**	P	**P**	**09 20 60.0**	**+1.0**
	0.9nm,0.8s,baz=89,slow=8.9,SNR=5.3						
H11S3	**WAKE ISLAND Hy**	**28.64**	**120**	T	T	09 51 04.0	
	baz=312,slow=76,SNR=5.6						
H11S1	**WAKE ISLAND Hy**	**28.64**	**120**	T	T	09 51 05.7	
	baz=312,slow=76,SNR=4.9						
H11S2	**WAKE ISLAND Hy**	**28.66**	**120**	T	T	09 50 59.6	
	baz=312,slow=76,SNR=5.7						
KURBB	**Kurchatov Arra**	**46.40**	**309**	P	**P**	**09 23 32.2**	**-1.1**
	0.4nm,0.7s,baz=83,slow=7.8,SNR=4.5						
WRA	**Warramunga Arr**	**55.62**	**187**	P	**P**	**09 24 43.7**	**+0.9**
	0.2nm,0.4s,baz=0.6,slow=7.4,SNR=8.5						
INK	**Inuvik**	**55.88**	**27**	P	**P**	**09 24 43.9**	**-0.2**
	1.7nm,1.1s,baz=51,slow=2.2,SNR=3.0						

*IDC **18** 09:18:39.1±1.1, 35°.99N×141°.36E, h0km, mb3.4/5, mb1 3.5/6, mb1mx3.3/55, mbtmp3.4/6, ML2.7/1, MS3.8/1, Ms1 3.8/1, ms1mx2.4/31, Error ellipse: s-maj=32.9km s-min=23.3km az=74.0*
*ISCJB **18** 09:18:43.4±0.9, 35°.90N±0°.06×141°.09E±0°.09, h31km, mb3.6/5, MS3.8/1, Error ellipse: s-maj=10.6km s-min=7.7km az=153.2*
*JMA **18** 09:18:45.5±0.1, 35°.85N×140°.90E, h34km±1km, M2.6*
ISC 18 09:18:44.1±1.0, 35°.92N±0°.05×141°.09E±0°.09, h31km, n19, σ1§07/15, mb3.5/5, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.28**	**221**	P	**Pb**	**09 18 51.5**	**+0.1**
CHOJ				S	**Sb**	**09 18 56.0**	**-0.4**
JYT	**Yasato**	**0.79**	**293**	P	**Pn**	**09 18 58.5**	**-0.5**
JYT				*e*S	**Sb**	**09 19 07.6**	**-2.0**
JHO	**Hitachi**	**0.81**	**329**	P	**Pb**	**09 19 00.3**	**+0.6**
ONAJ	**Iwakimizuishiy**	**1.20**	**349**	P	**Pb**	**09 19 06.6**	**+0.2**
BSO3	**Boso 3**	**1.21**	**203**	P	**Pn**	**09 19 04.7**	**+0.1**
MJAR	**Matsushiro Arr**	**2.41**	**286**	Pn	**Pn**	**09 19 22.9**	**+1.5**
	1.6nm,0.3s,baz=92,slow=8.5,SNR=3.0						
MAT	**Matsushiro**	**2.41**	**286**	P	**Pn**	**09 19 23.0**	**+1.6**
MAT				*e*S	**Sn**	**09 19 49.6**	**-0.3**
H11N2	**WAKE ISLAND Hy**	**27.83**	**119**	T	T	09 53 05.5	
	baz=312,slow=75,SNR=22						
H11N1	**WAKE ISLAND Hy**	**27.83**	**119**	T	T	09 53 06.1	
	baz=312,slow=75,SNR=41						
H11N3	**WAKE ISLAND Hy**	**27.84**	**119**	T	T	09 53 06.8	
	baz=312,slow=75,SNR=23						
H11S1	**WAKE ISLAND Hy**	**28.50**	**121**	T	T	09 53 57.9	
	baz=314,slow=76,SNR=51						
H11S3	**WAKE ISLAND Hy**	**28.50**	**121**	T	T	09 53 57.8	
	baz=314,slow=76,SNR=38						
H11S2	**WAKE ISLAND Hy**	**28.51**	**121**	T	T	09 53 56.7	
	baz=314,slow=76,SNR=54						
MKAR	**Makanchi Array**	**44.49**	**303**	P	**P**	**09 26 53.7**	**+1.2**
	0.4nm,0.5s,baz=85,slow=10,SNR=4.1						
KURBB	**Kurchatov Arra**	**46.49**	**309**	P	**P**	**09 27 07.8**	**-0.4**
	0.7nm,0.6s,baz=81,slow=7.7,SNR=3.0						
PSI	**Prapat**	**51.00**	**240**	LR	LR	09 49 58.0	
	comp=Z,92nm,19.1s,baz=88,slow=37						
INK	**Inuvik**	**55.50**	**27**	P	**P**	**09 28 14.3**	**-1.3**
	0.3nm,0.8s,baz=231,slow=2.8,SNR=2.3						
WRA	**Warramunga Arr**	**55.92**	**188**	P	**P**	**09 28 19.3**	**+0.1**
	0.9nm,1.0s,baz=7.4,slow=7.7,SNR=2.7						
ASAR	**Alice Springs**	**59.65**	**188**	P	**P**	**09 28 46.1**	**+0.7**
	0.1nm,0.2s,baz=15,slow=7.7,SNR=3.4						

*ISCJB **18** 09:20:48.3±0.5, 26°.32S±0°.04×27°.54E±0°.03, h17km±6km, Error ellipse: s-maj=6.3km s-min=4.2km az=157.8*
*PRE **18** 09:20:48.3±2.9, 26°.36S×27°.52E, h2km, ML2.7*
ISC 18 09:20:48.0±0.9, 26°.33S±0°.04×27°.52E±0°.03, h13km±6km, n14, σ1§73/28, South Africa

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KLOF	**Kloof**	**0.09**	**106**	*e*P	**Pg**	**09 20 50.7**	**-0.4**
KLOF				*e*P	**Pg**	**09 20 51.5**	**+0.4**
KLOF	comp=Z,9μm,0.2s			AML	AML	09 20 51.6	
WDLM	**Western Deep L**	**0.13**	**222**	*e*P	**Pg**	**09 20 52.2**	**+0.6**
WDLM				*e*P	**Pg**	**09 20 53.8**	**+2.2**
WDLM	comp=Z,2μm,0.2s			AML	AML	09 20 54.1	
OBSV	**Observatory**	**0.52**	**74**	*e*P	**Pg**	**09 20 58.7**	**+0.4**
OBSV				*e*S	**Sg**	**09 21 04.5**	**-0.7**
OBSV	comp=Z,2μm,0.2s			AML	AML	09 21 05.3	
ERPM	**east rand prop**	**0.65**	**92**	*e*P	**Pb**	**09 21 01.4**	**0.0**
ERPM				*e*S	**Sg**	**09 21 08.3**	**-1.1**
ERPM	comp=Z,127nm,1.0s			AML	AML	09 21 14.8	
KSR	**Koster**	**0.73**	**310**	*e*P	**Pn**	**09 21 04.5**	**+0.3**
KSR				*e*S	**Sg**	**09 21 12.7**	**+0.8**
KSR	comp=Z,61nm,1.2s			AML	AML	09 21 21.8	
BFSD	**Buffelsfontein**	**0.85**	**231**	*e*P	**Pb**	**09 21 05.1**	**+0.4**
BFSD				*e*S	**Sg**	**09 21 14.9**	**-0.7**
BFSD	comp=Z,73nm,0.3s			AML	AML	09 21 23.2	
MOAB	**Moab Khotsong**	**0.92**	**224**	*e*P	**Pb**	**09 21 06.5**	**+0.5**
MOAB				*e*S	**Sg**	**09 21 16.6**	**-1.3**
MOAB	comp=Z,124nm,0.1s			AML	AML	09 21 17.7	
TLEK	**Tau Lekoa**	**0.99**	**230**	*e*P	**Pn**	**09 21 07.8**	**+0.1**
TLEK				*e*S	**Sg**	**09 21 19.1**	**-1.0**
TLEK	comp=Z,146nm,0.2s			AML	AML	09 21 25.2	
BOSA	**Boshof**	**3.04**	**221**	*i* P	**Pb**	**09 21 40.0**	**-2.1**
BOSA	baz=50,slow=16			*i*		09 21 40.0	
BOSA				*i* S	**Sg**	**09 22 23.2**	**-2.5**
POGA	**Pongola**	**3.80**	**107**	*e*P	**Pn**	**09 21 48.8**	**+2.4**
POGA				*e*S	**Sn**	**09 22 35.3**	**+4.4**
POGA	comp=Z,27nm,0.5s			AML	AML	09 22 52.0	
CNG	**Changalane**	**4.19**	**91**	*e*P	**Pn**	**09 21 53.0**	**+1.3**
CNG				*e*S	**Sn**	**09 22 36.9**	**-3.6**
CNG	comp=Z,48nm,0.6s			AML	AML	09 22 58.9	
KSD	**Kokstad**	**4.52**	**159**	*e*P	**Pn**	**09 21 56.5**	**+0.2**
KSD				*e*S	**Sn**	**09 22 50.7**	**+1.8**
KSD	comp=Z,5.9nm,0.4s			AML	AML	09 23 10.0	
UPI	**Upington**	**5.93**	**249**	*e*P	**Pn**	**09 22 17.3**	**+1.6**
UPI				*e*S	**Sn**	**09 23 21.8**	**-1.8**
UPI	comp=Z,9.6nm,0.6s			AML	AML	09 23 53.1	
MATP	**Matopo**	**5.94**	**9**	*i* P	**Pn**	**09 22 15.0**	**-0.9**
MATP	baz=201,slow=16			*i*		09 22 15.0	
MATP				*i* S	**Sn**	**09 23 24.4**	**+0.5**

*ISCJB **18** 09:29:31.3±0.4, 23°.61N±0°.02×122°.15E±0°.02, h18km±4km, Error ellipse: s-maj=3.9km s-min=2.3km az=144.7*
*JMA **18** 09:29:31.7±0.1, 23°.62N×122°.08E, h32km±5km, M2.6*
*TAP **18** 09:29:32.4, 23°.66N×122°.07E, h17km±1km, ML3.1, D*
ISC 18 09:29:30.6±1.1, 23°.62N±0°.02×122°.11E±0°.02, h14km±9km, n46, σ0§60/84, 4C, Taiwan region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HWA	**Hwalien**	**0.58**	**308**	*e*P	**Pn**	**09 29 45.9**	**+1.4**
HWA	baz=306			*e*S	**Sn**	**09 29 52.8**	**-1.1**
ESL	**Shilin**	**0.65**	**287**	P	**Pb**	**09 29 44.1**	**+0.3**
ESL	baz=284			S	**Sb**	**09 29 53.3**	**+0.6**
TWD	**Chiawan**	**0.66**	**314**	⇑ *i*P	**Pb**	**09 29 44.4**	**+0.5**
TWD	baz=314			S	**Sg**	**09 29 52.1**	**0.0**
EHY	**Hungye**	**0.73**	**261**	*e*S	**Sb**	**09 29 56.2**	**+1.1**
TWF1	baz=257 **Yuli**	**0.80**	**251**	⇑ *i*P	**Pb**	**09 29 46.7**	**+0.5**
TWF1	baz=246			S	**Sb**	**09 29 57.2**	**+0.4**
CHKT	**Chengkung**	**0.86**	**233**	*e*P	**Pg**	**09 29 47.0**	**-0.2**
CHKT	baz=228			*e*S	**Sg**	**09 29 57.8**	**-0.7**
ENA	**Nanau**	**0.87**	**337**	P	**Pb**	**09 29 48.0**	**+0.5**
ENA	baz=339			*e*S	**Sb**	**09 29 59.7**	**+0.6**
WHF	**Hehuan Shan**	**0.94**	**304**	P	**Pb**	**09 29 48.9**	**0.0**
WHF	baz=303			S	**Sg**	**09 30 00.9**	**-0.2**
TWC	**Suao**	**1.01**	**346**	P	**Pn**	**09 29 50.5**	**+0.1**
TWC	baz=348			S	**Sg**	**09 30 03.5**	**0.0**
NNS	**Nan Shan**	**1.06**	**321**	*e*P	**Pn**	**09 29 52.3**	**+1.1**
NNS	baz=320			S	**Sb**	**09 30 04.2**	**-0.4**
TWT	**Tachien**	**1.06**	**307**	*e*P	**Pb**	**09 29 51.0**	**+0.1**
TWT	baz=305			S	**Sb**	**09 30 04.0**	**-0.7**
YUS	**Yu-Shan**	**1.07**	**263**	⇑ *i*P	**Pn**	**09 29 51.7**	**0.0**
YUS	baz=260			S	**Sg**	**09 30 05.6**	**+0.1**
ELDTW	**Lidau**	**1.09**	**247**	*e*P	**Pb**	**09 29 50.9**	**-0.5**
ELDTW	baz=243			*e*S	**Sb**	**09 30 04.0**	**-1.6**
JYNG	**Yonagunijimaku**	**1.12**	**42**	P	**Pg**	**09 29 52.5**	**+0.2**
JYNG				S	**Sb**	**09 30 06.1**	**-0.2**
ENTT	**Nioudou**	**1.13**	**334**	P	**Pg**	**09 29 52.3**	**-0.1**
ENTT	baz=335			*e*S	**Sn**	**09 30 07.4**	**0.0**
SMLT	**Sun Moon Lake**	**1.14**	**284**	*e*P	**Pb**	**09 29 52.2**	**0.0**
SMLT	baz=281			*e*S	**Sn**	**09 30 08.2**	**+0.4**
TWE	**Neicheng**	**1.17**	**340**	*e*P	**Pg**	**09 29 52.9**	**-0.3**
TWE	baz=341			*e*S	**Sb**	**09 30 07.7**	**+0.1**
YOJ	**Yonaguni jima**	**1.17**	**44**	P	**Pb**	**09 29 52.8**	**+0.2**
YOJ				S	**Sn**	**09 30 08.2**	**-0.2**
TYC	**Yuchr**	**1.19**	**284**	*e*P	**Pn**	**09 29 52.5**	**-0.2**
ALS	baz=282 **Alishan**	**1.21**	**265**	P	**Pg**	**09 29 53.8**	**-0.1**
ALS	baz=262			*e*S	**Sb**	**09 30 09.2**	**+0.3**
EGS		**1.23**	**352**	*e*P	**Pg**	**09 29 54.2**	**-0.1**
EGS	baz=354			*e*S	**Sg**	**09 30 10.6**	**+0.2**
TTN	**Taitung**	**1.24**	**226**	*e*S	**Sb**	**09 30 09.7**	**+0.2**
TWG	baz=222 **Pinlang**	**1.25**	**230**	*e*P	**Pn**	**09 29 52.7**	**-0.9**
NSK	baz=227 **Sanguang**	**1.26**	**327**	*e*P	**Pn**	**09 29 53.7**	**-0.1**
NSK	baz=327			*e*S	**Sb**	**09 30 08.8**	**-1.4**
CHN5	**Tsauling**	**1.32**	**269**	⇑ *i*P	**Pg**	**09 29 55.9**	**-0.1**
CHN5	baz=267			*e*S	**Sg**	**09 30 12.9**	**-0.2**
TWB1	**Santiao Chiao**	**1.39**	**355**	*e*P	**Pn**	**09 29 55.3**	**-0.2**
TWB1	baz=357			*e*S	**Sb**	**09 30 14.2**	**+0.4**
TCU	**Taichung**	**1.42**	**292**	*e*S	**Sg**	**09 30 15.8**	**-0.4**
CHN4	baz=290 **Tsaushan**	**1.42**	**259**	*e*P	**Pg**	**09 29 57.6**	**-0.3**
CHN4	baz=257			*e*S	**Sg**	**09 30 15.8**	**-0.6**
TWQ1	**Liyutan**	**1.42**	**301**	*e*P	**Pg**	**09 29 58.1**	**+0.1**
TWQ1	baz=300			*e*S	**Sb**	**09 30 15.5**	**+0.6**
WTP	**Ta-pu**	**1.43**	**255**	P	**Pb**	**09 29 57.4**	**+0.4**
WTP	baz=252			*e*S	**Sg**	**09 30 16.8**	**+0.3**
NSTT	**Nanjuang**	**1.43**	**315**	*e*P	**Pg**	**09 29 58.0**	**-0.1**
NSTT	baz=314			*e*S	**Sn**	**09 30 14.2**	**-0.5**
TWA	baz=314 **Mucha**	**1.44**	**340**	*e*S	**Sb**	**09 30 15.4**	**0.0**
NSY	baz=341 **Sanyi**	**1.47**	**303**	*e*S	**Sg**	**09 30 17.1**	**-0.8**
NWF	baz=302 **Wu-fen Shan**	**1.48**	**348**	*e*P	**Pb**	**09 29 57.9**	**0.0**
NWF	baz=349			*e*S	**Sn**	**09 30 15.2**	**-0.8**
SGST	baz=349 **Jiashian**	**1.50**	**249**	*e*P	**Pb**	**09 29 58.8**	**+0.5**
SGST	baz=246			*e*S	**Sg**	**09 30 19.2**	**+0.1**
CHN1	**Nanshi**	**1.52**	**254**	*e*P	**Pb**	**09 29 59.0**	**+0.4**
CHN1	baz=251			*e*S	**Sg**	**09 30 19.4**	**-0.1**
TWK	baz=251 **Hsinying**	**1.53**	**257**	*e*P	**Pb**	**09 29 58.9**	**+0.1**
TWK	baz=254			*e*S	**Sb**	**09 30 19.0**	**+0.9**
HATJ	baz=254 **Hateruma jima**	**1.61**	**74**	P	**Pn**	**09 29 58.8**	**+0.2**
HATJ				*e*S	**Sn**	**09 30 18.5**	**-0.7**
SSD	**Sandimen**	**1.62**	**238**	*e*P	**Pb**	**09 30 00.7**	**+0.5**
IRIF	baz=235 **Iriomote-Funau**	**1.64**	**64**	P	**Pn**	**09 29 59.4**	**+0.4**
IRIF				*e*S	**Sn**	**09 30 20.0**	**+0.1**
EAST	**Anshuo**	**1.69**	**224**	*e*P	**Pn**	**09 29 60.0**	**+0.2**
EAST	baz=221			*e*S	**Sn**	**09 30 20.9**	**-0.4**
JKRS	baz=221 **Kuro-shima**	**1.84**	**70**	P	**Pn**	**09 30 02.7**	**+0.9**
JKRS				*e*S	**Sn**	**09 30 25.0**	**+0.1**
SCZT	**Fangliau**	**1.85**	**228**	*e*P	**Pb**	**09 30 04.6**	**+0.4**
SCZT	baz=225			*e*S	**Sn**	**09 30 25.9**	**+0.8**
JIJ	**Ishigaki jima**	**2.00**	**68**	P	**Pn**	**09 30 04.1**	**+0.2**
JIJ				*e*S	**Sn**	**09 30 27.5**	**-1.3**
JISG	**Ishigakijimahi**	**2.23**	**64**	P	**Pn**	**09 30 07.3**	**+0.2**
JISG				*e*S	**Sn**	**09 30 32.3**	**-2.1**
JTJ	**Tarama**	**2.58**	**66**	P	**Pn**	**09 30 12.8**	**+0.9**
JTJ				*e*S	**Sn**	**09 30 43.3**	**+0.3**

*ISCJB **18** 09:33:28.4±0.3, 26°.10N±0°.05×95°.12E±0°.05, h71km, mb4.0/26, Error ellipse: s-maj=7.6km s-min=5.4km az=30.6*
*IDC **18** 09:33:30.4±0.7, 26°.13N×95°.34E, h74km±7km, mb3.8/23, mb1 3.9/24, mb1mx3.7/64, mbtmp4.1/24, MS2.9/3, Ms1 2.9/3, ms1mx2.6/40, Error ellipse: s-maj=16.9km s-min=10.5km az=49.0*
*NEIC **18** 09:33:31.6±0.6, 26°.12N×95°.28E, h85km±7km, mb4.1/3, Error ellipse: s-maj=8.7km s-min=5.3km az=223.0*
ISC 18 09:33:30.1±0.5, 26°.14N±0°.07×95°.06E±0°.06, h71km, n44, σ1§74/53, mb4.1/26, 1D, Myanmar-India border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SHL	**Shillong**	**2.92**	**259**	*i* PN	**Pn**	**09 34 17.0**	**+2.6**
SHL				*e*PG		09 34 29.0	
SHL				*e*SN	**Sn**	**09 34 48.0**	**-0.5**
SHL				*e*SG		09 35 05.0	
LSA	**Lhasa**	**4.96**	**317**	*e*Pn	**Pn**	**09 34 45.0**	**+2.5**
CHTO	16nm,0.6s **Chiang Mai**	**8.12**	**153**	*e*Pn	**Pn**	**09 35 25.5**	**+0.2**
GUN	15nm,1.0s **Gumba**	**8.38**	**284**	*e*Pn	**Pn**	**09 35 29.8**	**+0.7**
CMAR	**Chiang Mai Arr**	**8.44**	**154**	P	**Pn**	**09 35 30.1**	**+0.4**
CMAR	0.7nm,0.3s,baz=331,slow=13,SNR=50			S	**Sn**	**09 37 04.8**	**+1.2**
CMAR	1.4nm,0.3s,baz=20,slow=29,SNR=8.0			LR	LR	09 39 03.5	
PKIN	comp=Z,55nm,20.3s,baz=328,slow=40 **Phulchoki**	**8.75**	**282**	*e*Pn	**Pn**	**09 35 34.7**	**+0.6**
PKIN	175nm,0.6s			*e*Sn	**Sn**	**09 37 07.6**	**-3.8**
KKN	**Kakani**	**8.88**	**283**	*e*Pn	**Pn**	**09 35 36.6**	**+0.7**
KKN	67nm,0.5s			*e*Sn	**Sn**	**09 37 10.1**	**-4.4**
DMN	**Daman**	**9.01**	**282**	*e*Pn	**Pn**	**09 35 38.7**	**+1.0**
DMN	41nm,0.6s			*e*Sn	**Sn**	**09 37 14.2**	**-3.5**
GKN	**Gorkha**	**9.48**	**284**	*e*Pn	**Pn**	**09 35 43.8**	**-0.2**
GKN	79nm,0.6s			*e*Sn	Sn	09 37 22.2	-6.8
KOLN	**Koldanda**	**10.36**	**282**	*e*Pn	**Pn**	**09 35 55.2**	**-0.8**
KOLN	37nm,0.5s			*e*Sn	**Sn**	**09 37 45.0**	**-5.5**
PYUN	**Piuthan**	**10.93**	**283**	*e*Pn	**Pn**	**09 36 03.0**	**-0.9**
PYUN	69nm,0.5s			*e*Sn	Sn	09 37 56.8	-7.8
ENH	**Enshi**	**13.37**	**69**	Pn	**Pn**	**09 36 36.2**	**-0.6**
MKAR	**Makanchi Array**	**22.98**	**337**	P	**P**	**09 38 28.8**	**+0.1**
MKAR	2.6nm,0.5s,baz=149,slow=11,SNR=27			ScP	**ScP**	**09 45 47.4**	**-0.4**
SONM	0.4nm,0.6s,baz=111,slow=5.8,SNR=4.8 **Songino Array**	**23.42**	**19**	P	**P**	**09 38 32.8**	**-0.2**
AAK	2.0nm,0.8s,baz=203,slow=10.0,SNR=13 **Ala-Archa**	**23.55**	**320**	P	**P**	**09 38 36.5**	**+2.3**
EKS2	1.0nm,0.4s,baz=125,slow=9.9,SNR=3.6 **Erkin-Say**	**23.98**	**319**	*e*P	**P**	**09 38 40.2**	**+2.1**
KURBB	5.0nm,1.0s **Kurchatov Arra**	**27.54**	**337**	P	**P**	**09 39 11.3**	**+1.3**
KURBB	1.5nm,0.6s,baz=148,slow=9.3,SNR=20			ScP	**ScP**	**09 46 00.3**	**-0.4**
KURK	1.0nm,1.1s,baz=143,slow=2.6,SNR=4.5 **Kurchatov**	**27.59**	**337**	*e*P	**P**	**09 39 11.2**	**+0.7**
KURK	3.6nm,0.8s			P	**P**	**09 39 11.3**	**+0.9**
ZALV	**Zalesovo Beam**	**28.80**	**347**	LR	LR	09 52 32.9	
KSRS	comp=Z,32nm,19.4s,baz=58,slow=40 **Korea Array**	**29.98**	**60**	LR	LR	09 52 49.1	
BVAR	comp=Z,18nm,19.0s,baz=170,slow=39 **Borovoye Array**	**32.59**	**332**	P	**P**	**09 39 55.9**	**+1.3**
GEYT	1.7nm,0.5s,baz=137,slow=11,SNR=8.7 **Alibeck**	**33.25**	**300**	P	**P**	**09 40 02.6**	**+2.0**
USRK	1.5nm,0.4s,baz=84,slow=7.4,SNR=3.3 **Ussuriysk Ar.**	**34.79**	**49**	P	**P**	**09 40 11.9**	**-1.9**
ABKAR	2.6nm,0.8s,baz=247,slow=9.9,SNR=6.6 **Akbulak array**	**35.64**	**320**	*e*P	**P**	**09 40 22.4**	**+1.4**
KLR	3.6nm,0.8s **Kul'dur**	**36.54**	**41**	P	**P**	**09 40 27.6**	**-1.1**
AKTO	0.8nm,0.4s,baz=238,slow=8.2,SNR=3.5 **Aktyubinsk**	**37.28**	**321**	P	**P**	**09 40 36.8**	**+1.7**
ARU	2.1nm,0.7s,baz=119,slow=7.9,SNR=6.1 **Arti**	**40.03**	**329**	P	**P**	**09 40 59.5**	**+1.6**
ASAJ	4.1nm,0.2s,baz=124,slow=5.5,SNR=4.2 **Asahikawa**	**42.18**	**52**	P	**P**	**09 41 14.3**	**-1.4**
NRIK	4.7nm,0.5s,baz=260,slow=6.1,SNR=8.1 **Noril'sk**	**43.46**	**356**	P	**P**	**09 41 25.8**	**+0.1**
GNI	1.1nm,0.3s,baz=180,slow=10,SNR=2.9 **Garni**	**43.84**	**302**	P	**P**	**09 41 30.7**	**+1.3**
SEY	4.0nm,0.4s,baz=250,slow=11,SNR=2.8 **Seymchan**	**52.29**	**29**	P	**P**	**09 42 33.4**	**-0.7**
BRTR	0.3nm,0.4s,baz=88,slow=3.3,SNR=3.5 **Keskin Array B**	**52.37**	**301**	P	**P**	**09 42 36.8**	**+1.6**
AKASG	1.5nm,0.6s,baz=110,slow=7.9,SNR=9.7 **Malin Array Be**	**55.10**	**315**	P	**P**	**09 42 55.0**	**+0.3**
CFR	1.1nm,0.4s,baz=78,slow=6.3,SNR=3.6 **Carcaliu**	**56.02**	**308**	⇓ *i*P	**P**	**09 42 59.4**	**-2.0**
FINES	1.6nm,0.5s,baz=104,slow=8.0,SNR=9.2 **FINESS Array B**	**57.38**	**328**	P	**P**	**09 43 11.8**	**+1.0**
WRA	1.6nm,0.5s,baz=322,slow=7.4,SNR=3.2 **Warramunga Arr**	**59.60**	**136**	P	**P**	**09 43 25.1**	**-1.7**
WRA	1.4nm,0.5s,baz=322,slow=7.4,SNR=3.2			pP	**pP**	**09 43 43.8**	**-1.4**
ASAR	1.4nm,0.7s,baz=325,slow=7.4,SNR=5.0 **Alice Springs**	**62.16**	**139**	P	**P**	**09 43 42.7**	**-1.4**
ASAR	0.9nm,0.5s,baz=323,slow=6.5,SNR=14			pP	**pP**	**09 44 01.9**	**-0.7**
NB2	0.9nm,0.8s,baz=318,slow=6.6,SNR=4.9 **NORSAR Subarra**	**64.56**	**328**	P	**P**	**09 43 59.8**	**+0.3**
NOA	comp=Z,0.4nm,0.5s,baz=83,slow=6.5 **NORSAR Array B**	**64.56**	**328**	P	**P**	**09 44 00.2**	**+0.7**
GERES	comp=Z,0.6nm,0.5s,baz=81,slow=6.4,SNR=3.5 **GERESS Array B**	**65.28**	**314**	P	**P**	**09 44 06.0**	**+1.5**
BPAW	comp=Z,0.9nm,0.4s,baz=64,slow=6.1,SNR=8.3 **Bear Paw Mtn.**	**76.51**	**24**	*e*P	**P**	**09 45 11.8**	**-0.4**
ILAR	**Eielson Array**	**77.60**	**23**	P	**P**	**09 45 17.1**	**-1.2**
TORD	comp=Z,0.6nm,0.9s,baz=277,slow=5.7,SNR=7.8 **Torodi Ar. Bea**	**87.27**	**283**	pP	pP	09 46 30.0	+1.0
YKA	comp=Z,0.7nm,0.8s,baz=46,slow=3.8,SNR=3.4 **Yellowknife Ar**	**88.55**	**13**	P	**P**	**09 46 14.4**	**-0.3**
YKA	comp=Z,0.2nm,0.8s,baz=320,slow=4.5,SNR=5.2			pP	**pP**	**09 46 34.9**	**+0.8**
	comp=Z,0.3nm,0.9s,baz=324,slow=4.7,SNR=2.8						

IDC 18 09:49:04.6±4.9, 7°.31S×127°.59E, h280km±68km, mb3.0/1, mb1 3.2/5, mb1mx2.9/27, mbtmp3.8/5, Error ellipse: s-maj=66.1km s-min=47.5km az=79.0, Banda Sea

| Code | Station Name |

FITZ	**Fitzroy Crossi**	**10.90**	**190**	P	Pn	09 51 32.3	-1.7
	0.3nm,0.3s,baz=27,slow=9.5,SNR=4.9						
FITZ				S	S	09 53 38.2	+2.1
	0.1nm,0.3s,baz=317,slow=13,SNR=2.0						
WRA	**Warramunga Arr**	**14.17**	**153**	P	P	09 52 11.9	-1.7
	0.3nm,0.3s,baz=332,slow=12,SNR=14						
WRA				S	S	09 54 48.6	-1.5
	0.1nm,0.3s,baz=328,slow=20,SNR=5.9						
ASAR	**Alice Springs**	**17.36**	**160**	P	P	09 52 49.5	+0.9
	0.4nm,0.3s,baz=345,slow=12,SNR=41						
STKA	**Stephens Creek**	**27.72**	**154**	P	P	09 54 27.7	+0.1
	0.5nm,0.5s,baz=340,slow=7.8,SNR=4.3						

*CSEM **18** 10:00:37.5±0.2, 33.38N×35.48E, h2km, ML3.0, Error ellipse: s-maj=4.8km s-min=2.3km az=74.0*
*NSSC **18** 10:00:37.9±1.1, 33.38N×35.52E, h0km±6km, ML2.0*
*GRAL **18** 10:00:39.0±0.4, 33.39N×35.57E, h0km±113km, MD3.0*
ISC 18 10:00:37.7±1.5, 33.37N±0.03×35.52E±0.06, h5km±10km, n19, σ0.29/34, Jordan-Syria region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
RCY	**Rachaya**	**0.29**	**65**	*eP*	**Pg**	**10 00 43.3**	**-0.2**
RCY				*eS*	**Sg**	**10 00 46.6**	**-0.8**
DQRL	**Deir Qamar**	**0.34**	**7**	*eP*	**Pg**	**10 00 44.5**	**+0.2**
DQRL	**Deir Qamar**	**0.34**	**7**	*eP*	**Pg**	**10 00 44.5**	**+0.2**
BRBR	**Barbar**	**0.36**	**84**	*eP*	**Pg**	**10 00 45.1**	**+0.2**
BRBR				*eS*	**Sg**	**10 00 50.1**	**+0.4**
BRBR				AML	AML	10 00 51.6	
	comp=N,294nm,0.3s						
BRBR				AML	AML	10 00 57.0	
	comp=E,182nm,0.7s						
BRBR	**Barbar**	**0.36**	**84**	*eP*	**Pg**	**10 00 45.1**	**+0.2**
BRBR				*eS*	**Sg**	**10 00 50.1**	**+0.4**
BHL	**Bhannes**	**0.54**	**12**	*eP*	**Pg**	**10 00 48.2**	**0.0**
BHL				*eS*	**Sg**	**10 00 55.0**	**-0.3**
BHL	**Bhannes**	**0.54**	**12**	*eP*	**Pg**	**10 00 48.2**	**0.0**
BHL				*eS*	**Sg**	**10 00 55.0**	**-0.3**
TOTH	**TOTAH**	**0.76**	**91**	*eP*	**Pb**	**10 00 53.2**	**-0.2**
TOTH				*eS*	**Sb**	**10 01 04.2**	**+0.1**
TOTH				AML	AML	10 01 14.8	
	comp=E,67nm,0.5s						
TOTH				AML	AML	10 01 15.6	
	comp=N,48nm,0.3s						
TOTH	**TOTAH**	**0.76**	**91**	*eP*	**Pb**	**10 00 53.2**	**-0.2**
TOTH				*eS*	**Sb**	**10 01 04.2**	**+0.1**
TCHB	**Talchebab**	**0.80**	**151**	*eP*	**Pg**	**10 00 53.0**	**0.0**
TCHB				*eS*	**Sb**	**10 01 05.0**	**-0.1**
TCHB				AML	AML	10 01 15.4	
	comp=E,116nm,0.5s						
TCHB				AML	AML	10 01 18.2	
	comp=N,105nm,0.5s						
TCHB	**Talchebab**	**0.80**	**151**	*eP*	**Pg**	**10 00 53.0**	**0.0**
TCHB				*eS*	**Sb**	**10 01 05.0**	**-0.1**
HWQ	**Hawqa**	**0.97**	**21**	*eP*	**Pg**	**10 00 56.1**	**-0.3**
HWQ	**Hawqa**	**0.97**	**21**	*eP*	**Pg**	**10 00 56.1**	**-0.3**
MARH	**Ras Al Marh**	**1.04**	**51**	*eP*	**Pb**	**10 00 58.5**	**+0.2**
MARH				*eS*	**Sb**	**10 01 12.4**	**+0.2**
MARH				AML	AML	10 01 18.1	
	comp=N,111nm,0.4s						
MARH				AML	AML	10 01 28.0	
	comp=E,67nm,0.6s						
MARH	**Ras Al Marh**	**1.04**	**51**	*eP*	**Pb**	**10 00 58.5**	**+0.2**
MARH				*eS*	**Sb**	**10 01 12.4**	**+0.2**
SALA	**Sala**	**1.22**	**122**	*eP*	**Pn**	**10 01 01.8**	**+0.3**
SALA				*eS*	**Sn**	**10 01 18.1**	**-0.2**
SALA				AML	AML	10 01 26.7	
	comp=E,5.6nm,0.4s						
SALA				AML	AML	10 01 29.0	
	comp=N,53nm,0.3s						
SALA	**Sala**	**1.22**	**122**	*eP*	**Pn**	**10 01 01.8**	**+0.3**
SALA				*eS*	**Sn**	**10 01 18.1**	**-0.2**
ZALF	**Zalf**	**1.59**	**106**	*eP*	**Pb**	**10 01 07.4**	**-0.1**
ZALF				*eS*	**Sg**	**10 01 28.4**	**-0.3**
ZALF				AML	AML	10 01 31.6	
	comp=N,31nm,0.3s						
ZALF				AML	AML	10 01 35.0	
	comp=E,14nm,0.5s						
ZALF	**Zalf**	**1.59**	**106**	*eP*	**Pb**	**10 01 07.4**	**-0.1**
ZALF				*eS*	**Sg**	**10 01 28.4**	**-0.3**

*CSEM **18** 10:03:21.0, 38.58N×29.24W, h2km, ML3.7*
PDA 18 10:03:21.0±1.0, 38.58N×29.24W, h2km±6km, MD3.6, ML3.7, Error ellipse: s-maj=6.5km s-min=6.3km az=79.0, Azores Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CALA	**Caldeira**	**0.42**	**89**	*eP*	Pg	10 03 28.7	-0.4
CALA				*eS*	Sg	10 03 34.4	-0.1
CALA	**Caldeira**	**0.42**	**89**	*eP*	Pg	10 03 28.7	-0.4
CALA				*eS*	Sg	10 03 34.4	-0.1
PCED	**Cedros**	**0.42**	**83**	*eP*	Pg	10 03 28.7	-0.4
PCED				*eS*	Sg	10 03 34.1	-0.5
PCED	**Cedros**	**0.42**	**83**	*eP*	Pg	10 03 28.7	-0.4
PCED				*eS*	Sg	10 03 34.1	-0.5
PCED				A	A	10 03 34.9	
	3µm,0.6s						
HOR	**Horta**	**0.48**	**96**	*eP*	Pg	10 03 29.4	-0.8
HOR				*eS*	Sg	10 03 35.7	-0.7
HOR	**Horta**	**0.48**	**96**	*eP*	Pg	10 03 29.4	-0.8
HOR				*eS*	Sg	10 03 35.7	-0.7
HOR				A	A	10 03 43.5	
	4µm,0.3s						
PCAN	**Candelaria**	**0.60**	**100**	*eP*	Pg	10 03 31.2	-1.3
PCAN				*eS*	Sg	10 03 39.1	-1.2
PCAN	**Candelaria**	**0.60**	**100**	*eP*	Pg	10 03 31.2	-1.3
PCAN				*eS*	Sg	10 03 39.1	-1.2
PCAN				A	A	10 03 43.5	
	1µm,0.3s						
PICO	**Pico**	**0.64**	**96**	*eP*	Pg	10 03 32.3	-1.0
PICO				*eS*	Sg	10 03 40.9	-0.7
PICO	**Pico**	**0.64**	**96**	*eP*	Pg	10 03 32.3	-1.0
PICO				*eS*	Sg	10 03 40.9	-0.7
PICO				A	A	10 03 42.3	
	4µm,0.4s						
ROSA	**Rosais**	**0.79**	**79**	*eP*	Pg	10 03 34.3	-1.9
ROSA				*eS*	Sg	10 03 44.1	-2.4
ROSA	**Rosais**	**0.79**	**79**	*eP*	Pg	10 03 34.3	-1.9
ROSA				*eS*	Sg	10 03 44.1	-2.4
ROSA				A	A	10 03 44.5	
	2µm,0.5s						
PMAN	**Manadas**	**0.90**	**86**	*eP*	Pg	10 03 36.3	-2.0
PMAN				*eS*	Sg	10 03 46.9	-3.1
PMAN	**Manadas**	**0.90**	**86**	*eP*	Pg	10 03 36.3	-2.0
PMAN				*eS*	Sg	10 03 46.9	-3.1
PMAN				A	A	10 03 57.5	
	940nm,0.6s						
PGRA	**Graciosa**	**1.08**	**65**	*eP*	Pg	10 03 37.9	-3.8
PGRA				*eS*	Sg	10 03 50.9	-4.8
PGRA	**Graciosa**	**1.08**	**65**	*eP*	Pg	10 03 37.9	-3.8
PGRA				*eS*	Sg	10 03 50.9	-4.8
PGRA				A	A	10 03 51.7	
	367nm,0.6s						
ADH	**Angra Heroismo**	**1.57**	**86**	*eS*	Sn	10 04 03.2	-7.6
ADH	**Angra Heroismo**	**1.57**	**86**	*eS*	Sn	10 04 03.2	-7.6
ADH				A	A	10 04 05.6	
	202nm,0.4s						
PDA	**Ponta Delgada**	**2.94**	**105**	*eP*	Pn	10 04 03.7	-5.0
PDA	**Ponta Delgada**	**2.94**	**105**	*eP*	Pn	10 04 03.7	-5.0
BART	**Pico Bartolome**	**3.30**	**103**	*eP*	Pn	10 04 09.6	-4.2
BART	**Pico Bartolome**	**3.30**	**103**	*eP*	Pn	10 04 09.6	-4.2
PSMA	**Santa Maria**	**3.62**	**115**	*eP*	Pn	10 04 13.1	-5.0
PSMN	**Pico do Norte,**	**3.66**	**114**	*eP*	Pn	10 04 13.7	-4.9
PSMN	**Pico do Norte,**	**3.66**	**114**	*eP*	Pn	10 04 13.7	-4.9

*ISCJB **18** 10:05:54.5±1.1, 34.80N×0.06×141.8E±0.1, h27km, mb3.7/4, Error ellipse: s-maj=11.9km s-min=8.6km az=176.8*
*IDC **18** 10:05:54.3±1.8, 34.81N×141.52E, h0km, mb3.7/4, mb1 3.7/7, mb1mx3.5/51, mbtmp3.7/7, ML3.3/3, Error ellipse: s-maj=40.7km s-min=20.0km az=86.0*
ISC 18 10:05:57.0±1.2, 34.76N±0.07×141.7E±0.1, h27km, n14, σ1.9/15/11, mb3.6/4, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JHJ	**Hachijo jima 2**	**2.30**	**225**	Pn	**Pn**	**10 06 31.8**	**-1.4**
	9.2nm,0.3s,baz=182,slow=23,SNR=2.9						
JHJ				Sn	**Sn**	**10 07 00.6**	**0.0**
	22nm,0.3s,baz=92,slow=23,SNR=5.4						
MJAR	**Matsushiro Arr**	**3.37**	**303**	Pn	**Pn**	**10 06 46.6**	**-1.3**
	4.8nm,0.3s,baz=102,slow=14,SNR=54						
MJAR				Sn	**Sn**	**10 07 28.4**	**+1.4**
	1.3nm,0.3s,baz=99,slow=6.5,SNR=4.3						
MAT	**Matsushiro**	**3.37**	**303**	P	**Pn**	**10 06 46.9**	**-1.0**
MAT				*eS*	**Sn**	**10 07 27.2**	**+0.2**
ASAJ	**Asahikawa**	**9.37**	**4**	Pn	**Pn**	**10 08 09.2**	**-0.9**
	0.5nm,0.3s,baz=196,slow=16,SNR=6.1						
H11N2	**WAKE ISLAND Hy**	**26.82**	**117**	T	T	10 40 05.1	
	baz=314						
H11N1	**WAKE ISLAND Hy**	**26.83**	**117**	T	T	10 40 07.0	
	baz=314						
H11N3	**WAKE ISLAND Hy**	**26.84**	**117**	T	T	10 40 03.0	
	baz=314						
H11S3	**WAKE ISLAND Hy**	**27.46**	**120**	T	T	10 40 59.3	
	baz=333						
H11S1	**WAKE ISLAND Hy**	**27.47**	**120**	T	T	10 40 58.7	
	baz=333						
H11S2	**WAKE ISLAND Hy**	**27.48**	**120**	T	T	10 40 51.7	
	baz=333						
SONM	**Songino Array**	**29.31**	**307**	P	**P**	**10 11 57.5**	**+0.2**
	0.4nm,0.6s,baz=116,slow=10,SNR=2.8						
ZALV	**Zalesovo Beam**	**43.65**	**314**	P	**P**	**10 13 58.7**	**-0.4**
	0.5nm,0.3s,baz=64,slow=6.6,SNR=2.3						
MKAR	**Makanchi Array**	**45.57**	**304**	P	**P**	**10 14 14.6**	**0.0**
	0.5nm,0.7s,baz=91,slow=9.7,SNR=4.1						
WRA	**Warramunga Arr**	**54.85**	**189**	P	**P**	**10 15 26.8**	**+1.8**
	1.2nm,0.5s,baz=5.0,slow=7.5,SNR=21						

*ISCJB **18** 10:08:15.1±0.6, 17.65S×0.2×178.79W±0.08, h547km, mb3.8/15, Error ellipse: s-maj=21.1km s-min=9.5km az=165.4*
*IDC **18** 10:08:15.2±1.6, 17.65S×178.75W, h538km±17km, mb3.3/14, mb1 3.6/16, mb1mx3.3/47, mbtmp4.2/16, Error ellipse: s-maj=22.1km s-min=12.0km az=160.0*
ISC 18 10:08:15.7±0.7, 17.6S±0.2×178.7W±0.1, h547km, n26, σ0.86/28, mb3.7/15, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
AFI	**Afiamalu**	**7.63**	**62**	P	**P**	**10 10 09.5**	**-0.3**
AFI				S	**S**	**10 11 41.6**	**-1.7**
	1.5nm,0.3s,baz=214,slow=15,SNR=2.6						
RAR	**Rarotonga**	**18.20**	**104**	P	**P**	**10 11 56.9**	**+1.3**
	1.7nm,0.3s,baz=312,slow=11,SNR=3.2						
HNR	**Honiara**	**22.28**	**289**	P	**P**	**10 12 32.3**	**-0.3**
	43nm,0.5s,baz=33,slow=3.2,SNR=3.5						
WRA	**Warramunga Arr**	**44.41**	**259**	P	**P**	**10 15 37.9**	**-0.5**
	0.7nm,0.5s,baz=92,slow=6.9,SNR=25						
WRA				PcP	**PcP**	**10 17 09.8**	**-0.5**
	0.3nm,0.4s,baz=93,slow=3.8,SNR=4.7						
ASAR	**Alice Springs**	**44.59**	**254**	P	**P**	**10 15 39.5**	**-0.4**
	8.7nm,0.5s,baz=89,slow=8.2,SNR=223						
ASAR				PcP	**PcP**	**10 17 10.7**	**-0.3**
	0.5nm,0.4s,baz=101,slow=4.0,SNR=5.7						
MJAR	**Matsushiro Arr**	**67.52**	**323**	P	**P**	**10 18 18.1**	**+0.4**
	1.4nm,0.6s,baz=151,slow=6.5,SNR=5.1						
PETK	**Petropavlovsk-**	**73.35**	**345**	P	**P**	**10 18 51.9**	**+0.1**
	2.1nm,0.5s,baz=133,slow=8.5,SNR=4.3						
NVAR	**Mina Array Bea**	**79.42**	**44**	P	**P**	**10 19 26.7**	**+0.9**
	1.0nm,0.7s,baz=224,slow=9.2,SNR=7.2						
SEY	**Seymchan**	**83.45**	**347**	P	**P**	**10 19 45.8**	**+0.3**
	3.2nm,0.5s,baz=148,slow=5.5,SNR=17						
MAW	**Mawson**	**84.02**	**200**	P	**P**	**10 19 47.9**	**-0.5**
	2.0nm,1.0s,baz=117,slow=4.5,SNR=4.3						
ILAR	**Eielson Array**	**85.69**	**13**	P	**P**	**10 19 55.6**	**-0.8**
	0.5nm,0.3s,baz=221,slow=5.2,SNR=6.4						
TXAR	**Lajitas Array**	**86.09**	**58**	P	**P**	**10 20 01.1**	**+1.9**
	1.1nm,0.7s,baz=218,slow=6.0,SNR=16						
ANMO	**Albuquerque**	**86.15**	**52**	P	**P**	**10 19 59.7**	**+0.2**
	0.2nm,0.3s,baz=288,slow=3.2,SNR=2.8						
PDAR	**Pinedale Array**	**87.35**	**44**	P	**P**	**10 20 05.6**	**+0.5**
	0.5nm,0.5s,baz=208,slow=3.3,SNR=7.6						
CMAR	**Chiang Mai Arr**	**88.53**	**290**	P	**P**	**10 20 12.7**	**+1.9**
	0.5nm,0.4s,baz=114,slow=3.2,SNR=4.8						
INK	**Inuvik**	**91.70**	**15**	P	**P**	**10 20 23.9**	**-0.5**
	1.5nm,1.0s,baz=203,slow=7.4,SNR=4.1						
YKA	**Yellowknife Ar**	**94.20**	**25**	P	**P**	**10 20 35.8**	**-0.1**
	0.4nm,0.8s,baz=246,slow=4.4,SNR=6.7						
MKAR	**Makanchi Array**	**108.75**	**314**	PKiKP	**PKiKP**	**10 25 41.7**	**-1.1**
	0.3nm,0.5s,baz=18,slow=0.4,SNR=3.8						
BVAR	**Borovoye Array**	**116.46**	**321**	PKP	**PKPdf**	**10 25 56.3**	**-1.0**
	0.6nm,0.4s,baz=86,slow=2.2,SNR=4.1						
ARCES	**ARCESS Array B**	**126.00**	**350**	PKP	**PKPdf**	**10 26 15.0**	**-0.2**
	9.9nm,1.2s,baz=42,slow=2.8,SNR=3.4						
FINES	**FINESS Array B**	**132.35**	**344**	PKP	**PKPdf**	**10 26 27.8**	**-0.6**
	0.7nm,0.7s,baz=28,slow=3.3,SNR=2.8						
BRTR	**Keskin Array B**	**144.39**	**315**	PKP	PKPbc	10 26 50.4	+0.2
	1.5nm,0.7s,baz=101,slow=2.5,SNR=7.2						
CLL	**Collm**	**145.14**	**347**	*i* P	**PKPbc**	**10 26 52.0**	**+0.2**
	comp=Z,6.0nm,0.6s						
BRG	**Berggiesshubel**	**145.34**	**346**	*eP*	**PKPbc**	**10 26 52.5**	**+0.1**
	comp=Z,2.7nm,0.6s						
GERES	**GERESS Array B**	**147.28**	**345**	PKPbc	**PKPbc**	**10 26 58.0**	**0.0**
	comp=Z,2.2nm,0.5s,baz=33,slow=3.2,SNR=14						
TORD	**Torodi Ar. Bea**	**175.52**	**185**	PKP	**PKPdf**	**10 27 23.0**	**-1.0**
	comp=Z,0.7nm,1.0s,baz=309,slow=0.9,SNR=2.9						

JMA 18 10:12:56.3, 36.90N×140.66E, h7km, M2.6, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.23**	**29**	P	Pg	10 13 01.1	+0.2
ONAJ				S	Sg	10 13 04.4	+0.4
JHO	**Hitachi**	**0.30**	**194**	P	Pg	10 13 02.3	+0.2
JHO				S	Sg	10 13 06.5	+0.4
JFK	**Kawauchi**	**0.50**	**20**	P	Pg	10 13 05.8	-0.1
JFK				S	Sg	10 13 12.6	+0.2
JFT	**Otama**	**0.67**	**337**	P	Pg	10 13 09.5	+0.3
JFT				S	Sg	10 13 18.3	+0.4
JMM	**Marumori**	**0.97**	**6**	P	Pg	10 13 14.2	-0.7
JMM				S	Sg	10 13 27.1	-0.4
JOU	**Okura**	**1.46**	**0**	P	Pb	10 13 23.6	-0.3
JOU				S	Sb	10 13 42.7	0.0
JIO	**Ouri**	**1.65**	**19**	P	Pn	10 13 25.2	-0.4
JIO				S	Sn	10 13 46.3	-0.7
MAT	**Matsushiro**	**2.00**	**260**	P	Pn	10 13 31.6	+1.0
MAT				S	Sb	10 13 58.4	+0.2

IDC 18 10:19:09.3±8.7, 15.52S×167.91E, h136km±65km, mb3.7/3, mb1 3.8/4, mb1mx3.3/43, mbtmp4.1/4, Error ellipse: s-maj=69.6km s-min=42.1km az=22.0, Vanuatu Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
DZM	**Mont Dzumac**	**6.66**	**192**	P	Pn	10 20 44.6	-0.3
	3.7nm,0.3s,baz=22,slow=19,SNR=24						
DZM				S	Sn	10 22 00.4	+0.9
	0.6nm,0.3s,baz=132,slow=19,SNR=2.0						
STKA	**Stephens Creek**	**28.97**	**231**	P	P	10 24 55.5	-0.6
	0.4nm,0.4s,baz=81,slow=13,SNR=2.9						
STKA				PcP	PcP	10 28 00.5	-1.1
	0.6nm,0.6s,baz=138,slow=11,SNR=3.6						
WRA	**Warramunga Arr**	**32.24**	**257**	P	P	10 25 25.1	0.0
	0.8nm,0.8s,baz=90,slow=9.9,SNR=12						
WRA				PcP	PcP	10 28 10.5	+0.1
	0.5nm,1.0s,baz=90,slow=3.3,SNR=4.2						
ASAR	**Alice Springs**	**32.98**	**250**	P	P	10 25 31.5	0.0
	6.1nm,0.6s,baz=77,slow=9.0,SNR=172						
ASAR				PcP	PcP	10 28 12.4	0.0
	0.4nm,0.7s,baz=86,slow=3.2,SNR=5.2						

*IDC **18** 10:19:07.4±1.0, 36.24N×142.66E, h0km, mb3.5/6, mb1 3.8/8, mb1mx3.5/53, mbtmp3.6/8, ML3.3/2, Error ellipse: s-maj=25.7km s-min=22.2km az=174.0*
*ISCJB **18** 10:19:08.1±0.9, 36.14N±0.08×142.65E±0.08, h18km, mb3.5/6, Error ellipse: s-maj=11.3km s-min=9.2km az=164.4*
ISC 18 10:19:10.2±0.9, 36.19N±0.09×142.62E±0.09, h18km, n10, σ1.9/16/13, mb3.4/6, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MJAR	**Matsushiro Arr**	**3.57**	**277**	Pn	**Pn**	**10 20 03.7**	**-1.0**
	2.5nm,0.3s,baz=90,slow=8.9,SNR=19						
MJAR				Sn	**Sn**	**10 20 48.8**	**+2.3**
	1.2nm,0.3s,baz=137,slow=15,SNR=4.5						
MAT	**Matsushiro**	**3.58**	**277**	P	**Pn**	**10 20 04.0**	**-0.8**
MAT				*eS*	**Sn**	**10 20 46.3**	**-0.3**
JHJ	**Hachijo jima 2**	**3.85**	**218**	Pn	**Pn**	**10 20 09.6**	**+1.0**
	7.3nm,0.3s,baz=134,slow=22,SNR=3.3						
JHJ				Sn	**Sn**	**10 20 51.6**	**-1.8**
	17nm,0.3s,baz=131,slow=21,SNR=4.4						
SONM	**Songino Array**	**29.06**	**305**	P	**P**	**10 25 10.2**	**+0.7**
	0.4nm,0.6s,baz=96,slow=8.0,SNR=3.8						
MKAR	**Makanchi Array**	**45.39**	**303**	P	**P**	**10 27 27.5**	**0.0**
	0.2nm,0.4s,baz=90,slow=11,SNR=3.7						
KURBB	**Kurchatov Arra**	**47.28**	**309**	P	**P**	**10 27 41.4**	**-0.9**
	0.3nm,0.3s,baz=87,slow=7.3,SNR=3.5						
WRA	**Warramunga Arr**	**56.38**	**189**	P	**P**	**10 28 50.2**	**-0.1**
	1.8nm,1.3s,baz=7.9,slow=7.5,SNR=4.5						
YKA	**Yellowknife Ar**	**64.05**	**30**	P	**P**	**10 29 41.8**	**-0.6**
	0.2nm,0.8s,baz=301,slow=7.1,SNR=4.4						
TXAR	**Lajitas Array**	**89.86**	**53**	P	**P**	**10 32 08.7**	**+0.4**
	0.2nm,0.7s,baz=309,slow=4.3,SNR=2.7						
LPAZ	**La Paz**	**146.26**	**62**	PKPbc	**PKPdf**	**10 38 50.4**	**+0.7**
	0.5nm,0.6s,baz=90,slow=3.0,SNR=2.8						

IDC 18 10:21:39.9±2.6, 53.75N×87.16E, h0km, mb1 2.9/2, mb1mx2.8/51, mbtmp2.9/2, ML2.4/2, Error ellipse: s-maj=22.5km s-min=14.8km az=73.0, Southwestern Siberia

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
I46RU	**ZALESOVO INFRA**	**1.40**	**279**	*i*		10 30 20.0	
	baz=101,slow=324,SNR=3.8						
ZALV	**Zalesovo Beam**	**1.40**	**279**	Pg	Pn	10 22 04.0	-2.7
	1.0nm,0.3s,baz=101,slow=18,SNR=16						
ZALV				Lg	Lg	10 22 25.4	
	0.8nm,0.3s,baz=101,slow=29,SNR=5.3						
ZALV				Rg	Rg	10 22 31.0	
	1.5nm,0.4s,baz=100,slow=34,SNR=6.0						
KURBB	**Kurchatov Arra**	**6.16**	**243**	Pn	Pn	10 23 12.7	+0.6
	0.1nm,0.3s,baz=58,slow=14,SNR=6.0						
KURBB				Sn	Sn	10 24 22.5	-0.7
	0.0nm,0.3s,baz=64,slow=24,SNR=3.0						
KURBB				Lg	Lg	10 24 56.2	
	0.0nm,0.3s,baz=48,slow=27,SNR=6.3						
MKAR	**Makanchi Array**	**7.63**	**206**	Pn	Pn	10 23 33.9	+1.6
	0.1nm,0.3s,baz=26,slow=12,SNR=5.7						
MKAR				Sn	Sn	10 24 59.3	-0.1
	0.1nm,0.3s,baz=24,slow=22,SNR=2.7						
MKAR				Lg	Lg	10 25 45.6	
	0.1nm,0.3s,baz=32,slow=30,SNR=5.1						

DDA 18 10:49:05.0, 40.54N×29.04E, h7km, Md2.5, Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
IGD	**Bursa**	**0.31**	**156**	*i* P	Pg	10 49 10.4	-0.5
IGD				*i* S	Sg	10 49 16.0	+1.0
DURS	**Dursunbey**	**1.03**	**205**	*i* P	Pb	10 49 25.2	0.0
DURS				*i* S	Sn	10 49 40.2	-0.5

*CSEM **18** 10:53:22.5, 39.41N×29.86W, h10km, ML3.1*
PDA 18 10:53:22.5±0.7, 39.41N×29.86W, h10km, MD3.5, ML3.1, Error ellipse: s-maj=11.9km s-min=5.0km az=48.0, Azores Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PCED	**Cedros**	**1.19**	**130**	*eS*	Sb	10 53 53.6	-7.0
PCED	**Cedros**	**1.19**	**130**	*eS*	Sb	10 53 53.6	-7.0
PCED				A	A	10 53 55.1	
	139nm,0.2s						
CALA	**Caldeira**	**1.22**	**132**	*eS*	Sb	10 53 55.2	-6.4
CALA	**Caldeira**	**1.22**	**132**	*eS*	Sb	10 53 55.2	-6.4
HOR	**Horta**	**1.30**	**132**	*eP*	Pn	10 53 41.9	-4.8
HOR				*eS*	Sb	10 53 56.8	-6.9
HOR	**Horta**	**1.30**	**132**	*eP*	Pn	10 53 41.9	-4.8
HOR				*eS*	Sb	10 53 56.8	-6.9
HOR				A	A	10 53 57.8	
	263nm,0.2s						
PCAN	**Candelaria**	**1.43**	**131**	*eP*	Pn	10 53 43.7	-4.8
PCAN				*eS*	Sn	10 53 59.6	-7.7
PCAN	**Candelaria**	**1.43**	**131**	*eP*	Pn	10 53 43.7	-4.8
PCAN				*eS*	Sn	10 53 59.6	-7.7
PCAN				A	A	10 54 00.1	
	113nm,0.3s						
ROSA	**Rosais**	**1.43**	**118**	*eS*	Sn	10 53 59.8	-7.7
ROSA	**Rosais**	**1.43**	**118**	*eS*	Sn	10 53 59.8	-7.7
ROSA				A	A	10 54 01.1	
	51nm,0.3s						
PICO	**Pico**	**1.44**	**128**	*eP*	Pn	10 53 44.1	-4.6
PICO				*eS*	Sn	10 54 00.2	-7.4
PICO	**Pico**	**1.44**	**128**	*eP*	Pn	10 53 44.1	-4.6
PICO				*eS*	Sn	10 54 00.2	-7.4
PICO				A	A	10 54 03.0	
	332nm,0.2s						
PMAN	**Manadas**	**1.58**	**119**	*eP*	Pn	10 53 46.0	-4.6
PMAN				*eS*	Sn	10 54 03.6	-7.5
PMAN	**Manadas**	**1.58**	**119**	*eP*	Pn	10 53 46.0	-4.6
PMAN				*eS*	Sn	10 54 03.6	-7.5
PMAN				A	A	10 54 05.7	
	62nm,0.1s						

*ISK **18** 10:53:28.9, 38.17N×38.47E, h5km, ML3.3*
*DDA **18** 10:53:29.9, 38.13N×38.45E, h15km, Md3.2*
*CSEM **18** 10:53:30.5±0.1, 38.17N×38.50E, h2km, MD3.2, Error ellipse: s-maj=4.2km s-min=3.4km az=162.0*
*NSSC **18** 10:53:33.8±1.0, 34.62N×36.49E, h7km, 9km,

KAMA				*i* S		**Sn**	**10 54 22.5**	**-1.7**
CUALT	**Altinyayla-SIV**	**1.76**	**310**	*i* P		**Pn**	**10 54 01.9**	**+0.1**
CUALT				*i* S		**Sg**	**10 54 27.2**	**+0.2**
CUALT	**Altinyayla-SIV**	**1.76**	**310**	P		**Pn**	**10 54 01.9**	**+0.1**
CUALT				S		**Sg**	**10 54 27.2**	**+0.2**
KUZU	**Kuzuini**	**1.78**	**220**	*i* P		**Pn**	**10 54 02.8**	**+0.8**
KUZU				*i* S		**Sb**	**10 54 26.8**	**+0.5**
KUZU	**Kuzuini**	**1.78**	**220**	P		**Pn**	**10 54 02.8**	**+0.8**
KUZU				S		**Sb**	**10 54 26.8**	**+0.5**
ANDN	**Andirin**	**1.79**	**252**	*i* P		**Pn**	**10 54 01.3**	**-1.0**
ANDN				*i* S		**Sb**	**10 54 26.9**	**+0.1**
ANDN	**Andirin**	**1.79**	**252**	P		**Pn**	**10 54 01.3**	**-1.0**
ANDN				S		**Sb**	**10 54 26.9**	**+0.1**
CUZAR	**Zara_SIVAS**	**1.82**	**342**	P		**Pb**	**10 54 04.7**	**+0.2**
CUZAR				*i* S		**Sg**	**10 54 30.0**	**+1.0**
CUZAR	**Zara_SIVAS**	**1.82**	**342**	P		**Pb**	**10 54 04.7**	**+0.2**
BNGB	**Bing˜¶ll**	**1.91**	**63**	*e*PN		**Pn**	**10 54 04.3**	**+0.4**
SLMH	**Al Salmeh**	**1.99**	**193**	*e*P		**Pg**	**10 54 08.0**	**-0.5**
SLMH				*e*S		**Sb**	**10 54 32.0**	**-0.3**
SLMH				AML	AML		10 54 35.4	
	comp=E,241nm,0.7s							
SLMH				AML	AML		10 54 42.8	
	comp=N,536nm,0.6s							
SLMH	**Al Salmeh**	**1.99**	**193**	*e*P		**Pg**	**10 54 08.3**	**-0.1**
SLMH				*e*S		**Sb**	**10 54 32.6**	**+0.4**
SLMH				AML	AML		10 54 42.8	
	comp=N,536nm,0.6s							
SLMH				AML	AML		10 55 02.3	
	comp=E,299nm,0.5s							
SLMH	**Al Salmeh**	**1.99**	**193**	*e*P		**Pg**	**10 54 08.3**	**-0.1**
SLMH				*e*S		**Sb**	**10 54 32.6**	**+0.4**
	comp=E,299nm,0.5s							
SUSE	**Susehri**	**2.07**	**354**	*i* P		**Pn**	**10 54 06.5**	**+0.4**
SUSE	**Susehri**	**2.07**	**354**	P		**Pn**	**10 54 06.5**	**+0.4**
KELT	**Kelkit**	**2.08**	**16**	*i* P		**Pn**	**10 54 07.3**	**+1.0**
KELT				*i* S		**Sg**	**10 54 36.4**	**-0.8**
KELT	**Kelkit**	**2.08**	**16**	P		**Pn**	**10 54 07.3**	**+1.0**
DRWC	**Darouich**	**2.11**	**224**	*e*P		**Pb**	**10 54 08.7**	**-0.6**
DRWC				*e*S		**Sn**	**10 54 32.8**	**-0.6**
DRWC				AML	AML		10 54 42.4	
	comp=N,207nm,0.3s							
DRWC				AML	AML		10 54 47.2	
	comp=E,286nm,0.6s							
DRWC	**Darouich**	**2.11**	**224**	*e*P		**Pb**	**10 54 09.9**	**+0.6**
DRWC				*e*S		**Sn**	**10 54 33.0**	**-0.4**
DRWC				AML	AML		10 54 42.5	
	comp=N,207nm,0.3s							
DRWC				AML	AML		10 54 47.2	
	comp=E,286nm,0.6s							
DRWC	**Darouich**	**2.11**	**224**	*e*P		**Pb**	**10 54 09.9**	**+0.6**
DRWC				*e*S		**Sn**	**10 54 33.0**	**-0.4**
	comp=E,286nm,0.6s							
SVSK	**Karacayir**	**2.11**	**327**	*e*PN		**Pn**	**10 54 06.9**	**+0.4**
SVSK	**Karacayir**	**2.11**	**327**	*e*Pn		**Pn**	**10 54 06.9**	**+0.4**
SVAN	**Silvan-Diyarba**	**2.13**	**89**	*e*PN		**Pn**	**10 54 06.7**	**-0.2**
SVAN	**Silvan-Diyarba**	**2.13**	**89**	*e*Pn		**Pn**	**10 54 06.7**	**-0.2**
CUSAR	**Sarkisla-SIVAS**	**2.17**	**306**	*i* P		**Pn**	**10 54 08.0**	**+0.6**
CUSAR				*i* S		**Sg**	**10 54 39.4**	**-0.6**
CUSAR	**Sarkisla-SIVAS**	**2.17**	**306**	P		**Pn**	**10 54 08.0**	**+0.6**
BNN	**Bunyan**	**2.19**	**289**	*e*PN		**Pn**	**10 54 08.2**	**+0.4**
BNN	**Bunyan**	**2.19**	**289**	*e*Pn		**Pn**	**10 54 08.2**	**+0.4**
KOZT	**Kozan**	**2.22**	**253**	*e*PN		**Pn**	**10 54 08.2**	**+0.2**
KOZT	**Kozan**	**2.22**	**253**	*e*Pn		**Pn**	**10 54 08.2**	**+0.2**
KSRV	**Kasrt alli**	**2.32**	**170**	*e*P		**Pn**	**10 54 09.6**	**+0.2**
KSRV				*e*S		**Sn**	**10 54 37.2**	**-1.2**
KSRV				AML	AML		10 54 47.5	
	comp=N,193nm,0.4s							
KSRV				AML	AML		10 54 54.2	
	comp=E,81nm,0.4s							
KSRV	**Kasrt alli**	**2.32**	**170**	*e*P		**Pn**	**10 54 10.0**	**+0.6**
KSRV				*e*S		**Sn**	**10 54 37.4**	**-1.0**
KSRV				AML	AML		10 54 47.5	
	comp=N,193nm,0.4s							
KSRV				AML	AML		10 54 54.2	
	comp=E,81nm,0.4s							
KSRV	**Kasrt alli**	**2.32**	**170**	*e*P		**Pn**	**10 54 10.0**	**+0.6**
KSRV				*e*S		**Sn**	**10 54 37.4**	**-1.0**
	comp=E,81nm,0.4s							
RSDY	**Resadiye-TOKAT**	**2.42**	**338**	*e*PN		**Pn**	**10 54 11.2**	**+0.4**
RSDY	**Resadiye-TOKAT**	**2.42**	**338**	*e*Pn		**Pn**	**10 54 11.2**	**+0.4**
GUMT	**Gumushane**	**2.43**	**18**	*e*PN		**Pn**	**10 54 10.8**	**-0.2**
GUMT	**Gumushane**	**2.43**	**18**	*e*Pn		**Pn**	**10 54 10.8**	**-0.2**
CEYT	**Ceyhan**	**2.46**	**243**	*e*PN		**Pn**	**10 54 11.9**	**+0.6**
CEYT	**Ceyhan**	**2.46**	**243**	*e*Pn		**Pn**	**10 54 12.0**	**+0.6**
VRTB	**Varto-Mus**	**2.53**	**66**	*e*PN		**Pn**	**10 54 12.2**	**-0.2**
VRTB	**Varto-Mus**	**2.53**	**66**	*e*Pn		**Pn**	**10 54 12.2**	**-0.2**
BAYT	**Ayd¨–ntepe-Bay**	**2.58**	**29**	*e*PN		**Pn**	**10 54 13.5**	**+0.4**
BAYT	**Ayd¨–ntepe-Bay**	**2.58**	**29**	*e*Pn		**Pn**	**10 54 13.5**	**+0.4**
ESPY	**Espiye-Giresun**	**2.77**	**4**	*e*PN		**Pn**	**10 54 15.9**	**+0.3**
ESPY	**Espiye-Giresun**	**2.77**	**4**	*e*Pn		**Pn**	**10 54 15.9**	**+0.3**
EZM	**Erzurum**	**2.84**	**51**	*e*PN		**Pn**	**10 54 17.2**	**+0.5**
KARA	**Karaisali**	**2.87**	**253**	*e*PN		**Pn**	**10 54 17.5**	**+0.5**
KARA	**Karaisali**	**2.87**	**253**	*e*Pn		**Pn**	**10 54 17.5**	**+0.5**
YOZ	**Yozgat**	**2.89**	**302**	*e*PN		**Pn**	**10 54 16.9**	**-0.4**
YOZ	**Yozgat**	**2.89**	**302**	*e*Pn		**Pn**	**10 54 16.9**	**-0.4**
NIG	**Nigde**	**3.06**	**270**	*e*PN		**Pn**	**10 54 20.2**	**+0.3**
NIG	**Nigde**	**3.06**	**270**	*e*Pn		**Pn**	**10 54 20.2**	**+0.3**
GULA	**Gulagac**	**3.36**	**275**	*e*PN		**Pn**	**10 54 24.7**	**+0.9**
GULA	**Gulagac**	**3.36**	**275**	*e*Pn		**Pn**	**10 54 24.7**	**+0.9**
MERS	**Mersin**	**3.41**	**249**	*e*PN		**Pn**	**10 54 24.9**	**+0.5**
MERS	**Mersin**	**3.41**	**249**	*e*Pn		**Pn**	**10 54 24.9**	**+0.5**
KVT	**Kavak**	**3.48**	**328**	*e*PN		**Pn**	**10 54 26.0**	**+0.6**
KVT	**Kavak**	**3.48**	**328**	*e*Pn		**Pn**	**10 54 26.0**	**+0.6**
CORM	**Corum**	**3.62**	**305**	*e*PN		**Pn**	**10 54 27.9**	**+0.5**
CORM	**Corum**	**3.62**	**305**	*e*Pn		**Pn**	**10 54 27.9**	**+0.5**
CUKT	**Cukurca**	**4.16**	**101**	*e*PN		**Pn**	**10 54 35.8**	**+1.0**
CUKT	**Cukurca**	**4.16**	**101**	*e*Pn		**Pn**	**10 54 35.8**	**+1.0**

NIED ***18*** *10:56:00,38˚.50N×141˚.80E,h53km,Mw4.2 Best double couple: M₀2.06000×10¹⁵ NP1:φ₈176.00000°,δ23.00000°, λ69.00000°. NP2:φ₈18.00000°,δ69.00000°,λ99.00000°.*

ISCJB ***18*** *10:56:04.0±0.5,38˚.54N±0˚.04×141˚.89E±0˚.06,h55km±3km, mb4.3/42, MS3.2/11, Error ellipse: s-maj=8.9km s-min=4.5km az=31.7*

NEIC ***18*** *10:56:04.0±0.5,38˚.55N×141˚.95E,h35km,mb4.6/7, Error ellipse: s-maj=12.4km s-min=7.1km az=131.0*

MOS ***18*** *10:56:04.1±0.9,38˚.59N×141˚.83E,h53km,mb4.5/20, Error ellipse: s-maj=8.8km s-min=6.1km az=94.8*

JMA ***18*** *10:56:05.3±0.1,38˚.52N×141˚.84E,h48km±1km,M4.1*

JMA Felt II J1.

IDC ***18*** *10:56:05.7±1.6,38˚.51N×141˚.82E,h53km±14km,mb3.9/20, mb1 4.1/27,mb1mx3.9/48,mbtmp4.1/27,ML3.6/7,MS3.1/19, Ms1 3.1/19,ms1mx3.0/55, Error ellipse: s-maj=15.9km s-min=9.1km az=105.0*

BJI ***18*** *10:56:05.0,38˚.50N×141˚.90E,h64km,mb4.6/11,mB4.8/6*

ISC 18 10:56:04.5±0.9, 38˚.51N±0˚.05×141˚.96E±0˚.06, h46km±8km, n101, σ1§02/100, mb4.3/42, MS3.4/11, 2C-9D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**0.48**	**264**	P	**Pn**	**10 56 14.9**	**-0.4**
JIO				*i* S	**Sn**	**10 56 22.0**	**-0.9**
OFUJ	**Ofunato**	**0.62**	**339**	P	**Pn**	**10 56 17.3**	**+0.3**
OFUJ				S	**Sn**	**10 56 25.6**	**-0.4**
JMK	**Ichinoseki**	**0.73**	**308**	P	**Pn**	**10 56 18.4**	**-0.1**
JMK				S	**Sn**	**10 56 27.6**	**-1.0**
JOU	**Okura**	**1.02**	**263**	P	**Pn**	**10 56 22.2**	**-0.3**
JOU				S	**Sn**	**10 56 34.5**	**-1.3**
JOM	**Ohasama**	**1.10**	**332**	P	**Pn**	**10 56 23.6**	**+0.1**
JMM	**Marumori**	**1.12**	**236**	P	**Pn**	**10 56 23.4**	**-0.3**
JMM				S	**Sn**	**10 56 36.6**	**-1.4**
JYK	**Kaneyama**	**1.32**	**289**	P	**Pn**	**10 56 26.3**	**-0.2**
JRG	**Rokugo**	**1.36**	**311**	P	**Pn**	**10 56 26.9**	**-0.2**
JFK	**Kawauchi**	**1.42**	**217**	P	**Pn**	**10 56 28.2**	**+0.2**
JYS	**Shirataka**	**1.51**	**260**	P	**Pn**	**10 56 29.1**	**-0.1**
MJAR	**Matsushiro Arr**	**3.57**	**238**	P	**Pn**	**10 56 59.0**	**+1.6**
	11nm,0.3s,baz=36,slow=13,SNR=63						
MJAR				LR	LR	10 58 32.8	
	comp=Z,194nm,21.2s,baz=25,slow=42						
MJAR	**Matsushiro Arr**	**3.57**	**238**	P	**Pn**	**10 56 59.0**	**+1.6**
MAJO	**Matsushiro**	**3.57**	**238**	*e*P	**Pn**	**10 56 59.1**	**+1.7**
MAJO	**Matsushiro**	**3.57**	**238**	*e*Pn	**Pn**	**10 56 59.1**	**+1.7**
MAT	**Matsushiro**	**3.57**	**238**	P	**Pn**	**10 56 58.9**	**+1.5**
MAT				*e*S	**Sn**	**10 57 38.3**	**0.0**
ERM	**Erimo**	**3.62**	**14**	*de*P	**Pn**	**10 56 59.3**	**+1.2**
ERM	**Erimo**	**3.62**	**14**	Pn	**Pn**	**10 56 58.0**	**0.0**
ASAJ	**Asahikawa**	**5.63**	**5**	P	**Pn**	**10 57 26.2**	**+0.7**
	3.0nm,0.3s,baz=220,slow=13,SNR=25						
ASAJ				S	**Sn**	**10 58 28.9**	**+0.1**
	2.7nm,0.3s,baz=56,slow=32,SNR=2.8						
ASAJ				LR	LR	10 59 58.8	
	comp=Z,93nm,18.1s,baz=324,slow=41						
JHJ	**Hachijo jima 2**	**5.66**	**199**	P	**Pn**	**10 57 27.3**	**+1.3**
	12nm,0.3s,baz=29,slow=22,SNR=4.5						
JHJ				S	**Sn**	**10 58 28.5**	**-1.2**
	20nm,0.3s,baz=99,slow=23,SNR=4.1						
JHJ				LR	LR	10 59 54.7	
	comp=Z,118nm,18.6s,baz=326,slow=41						
YUK	**Yuzh-Kuril'sk**	**6.26**	**27**	*e*P	**Pn**	**10 57 34.8**	**+0.6**
YUK				*e*S	**Sn**	**10 58 40.2**	**-4.1**
YUK				pmax	pmax		
	comp=Z,114nm,0.9s						
YUK				pmax	pmax		
	comp=E,59nm,0.4s						
YUK				pmax	pmax		
	comp=N,51nm,0.5s						
SHO	**Shikotan**	**6.50**	**33**	*e*P	**Pn**	**10 57 37.3**	**-0.2**
SHO				*e*S	Sn	10 58 44.2	-6.0
SHO				pmax	pmax		
	comp=Z,62nm,1.0s						
KUR	**Kuril'sk**	**8.04**	**31**	*e*P	**Pn**	**10 57 59.4**	**+0.8**
KUR				*e*S	**Sn**	**10 59 23.6**	**-4.5**
YSS	**Yuzh-Sakhalins**	**8.46**	**4**	P	Pn	10 58 13.0	+8.6
USRK	**Ussuriysk Ar.**	**9.41**	**310**	P	**Pn**	**10 58 18.2**	**+0.8**
	comp=Z,1.2nm,0.3s,baz=123,slow=13,SNR=11						
USRK				LR	LR	11 02 02.0	
	comp=Z,93nm,18.8s,baz=99,slow=38						
JNU	**Nakatsue**	**10.47**	**243**	P	**Pn**	**10 58 33.8**	**+1.7**
	comp=Z,0.4nm,0.3s,baz=16,slow=2.0,SNR=3.4						
JNU				LR	LR	11 03 03.5	
	comp=Z,123nm,18.7s,baz=112,slow=40						
KSRS	**Korea Array**	**11.13**	**269**	P	**Pn**	**10 58 41.8**	**+0.9**
	comp=Z,0.5nm,0.3s,baz=82,slow=14,SNR=7.7						
KSRS				LR	LR	11 02 36.3	
	comp=Z,83nm,19.9s,baz=70,slow=35						
KSAR	**Wonju Array Be**	**11.16**	**269**	P	**Pn**	**10 58 41.8**	**+0.4**
KSAR	**Wonju Array Be**	**11.16**	**269**	P	**Pn**	**10 58 41.8**	**+0.4**
KLR	**Kul'dur**	**12.99**	**329**	P	**Pn**	**10 59 06.9**	**+0.6**
	comp=Z,0.1nm,0.3s,baz=132,slow=16,SNR=2.9						
KLR				LR	LR	11 04 10.2	
	comp=Z,88nm,18.8s,baz=146,slow=37						
PETK	**Petropavlovsk-**	**18.20**	**32**	LR	LR	11 08 13.0	
	comp=Z,23nm,18.3s,baz=227,slow=40						
MA2	**Magadan**	**21.83**	**12**	P	**P**	**11 00 53.0**	**+0.3**
	comp=Z,6.0nm,0.6s,baz=223,slow=7.0,SNR=13						
MA2				LR	LR	11 09 10.6	
	comp=Z,21nm,18.6s,baz=232,slow=36						
MA2	**Magadan**	**21.83**	**12**	P	**P**	**11 00 53.0**	**+0.3**
YAK	**Yakutsk**	**24.74**	**346**	*e*P	**P**	**11 01 20.6**	**-0.7**
YAK				pmax	pmax		
	comp=Z,13nm,0.9s						
YAK				pmax	pmax		
	comp=E,3.0nm,0.9s						
YAK				pmax	pmax		
	comp=N,5.0nm,0.9s						
SEY	**Seymchan**	**25.27**	**11**	P	**P**	**11 01 28.1**	**+2.0**
	comp=N,8.0nm,0.9s,baz=208,slow=7.2,SNR=30						
BOD	**Bodaibo**	**26.54**	**326**	*i*P	**P**	**11 01 36.5**	**-1.1**
BOD				pmax	pmax		
	comp=Z,6.0nm,0.9s						
ULN	**Ulaanbaatar**	**26.92**	**302**	*i*P	**P**	**11 01 41.2**	**-0.2**
ULN				pmax	pmax		
	comp=Z,4.0nm,1.2s						
SONM	**Songino Array**	**27.35**	**301**	P	**P**	**11 01 45.7**	**+0.4**
	comp=Z,1.2nm,0.7s,baz=100,slow=8.5,SNR=7.0						
SONM				LR	LR	11 12 06.1	
	comp=Z,32nm,19.9s,baz=110,slow=35						
ENH	**Enshi**	**27.92**	**263**	*e*P	**P**	**11 01 50.7**	**+0.3**
	comp=Z,26nm,0.7s						
H11N2	**WAKE ISLAND Hy**	**28.57**	**124**	T	T	11 32 28.3	
	baz=317,slow=75,SNR=1099						
H11N1	**WAKE ISLAND Hy**	**28.58**	**124**	T	T	11 32 28.9	
	baz=317,slow=75,SNR=1328						
H11N3	**WAKE ISLAND Hy**	**28.59**	**124**	T	T	11 32 29.6	
	baz=317,slow=75,SNR=738						
H11S1	**WAKE ISLAND Hy**	**29.33**	**126**	T	T	11 33 11.3	
	baz=318,slow=76,SNR=232						
H11S3	**WAKE ISLAND Hy**	**29.34**	**126**	T	T	11 33 11.5	
	baz=318,slow=76,SNR=344						
H11S2	**WAKE ISLAND Hy**	**29.35**	**126**	T	T	11 33 10.7	
	baz=318,slow=76,SNR=105						
ZAK	**Zakamensk**	**29.72**	**306**	*e*P	**P**	**11 02 05.2**	**-1.1**
ZAK				pmax	pmax		
	comp=Z,2.0nm,1.3s						
BILL	**Bilibino**	**32.49**	**17**	*i*P	**P**	**11 02 31.1**	**+0.7**
BILL				*e*		11 02 46.0	
BILL				pmax	pmax		
	comp=Z,6.0nm,2.5s						
TIXI	**Tiksi**	**33.88**	**353**	*i*P	**P**	**11 02 41.8**	**-0.6**
TIXI				pmax	pmax		
	comp=Z,3.0nm,1.2s						
ZALV	**Zalesovo Beam**	**41.26**	**311**	P	**P**	**11 03 44.6**	**-0.3**
	comp=Z,3.7nm,0.5s,baz=88,slow=6.8,SNR=18						
ZALV				PcP	**PcP**	**11 05 42.7**	**-0.2**
	comp=Z,1.4nm,0.4s,baz=102,slow=3.5,SNR=4.6						
NRIK	**Noril'sk**	**42.12**	**335**	LR	LR	11 22 24.3	
	comp=Z,5nm,18.2s,baz=118,slow=38						
NVS	**Novosibirsk**	**42.15**	**313**	*e*P	**P**	**11 03 51.8**	**-0.4**
CMAR	**Chiang Mai Arr**	**42.30**	**254**	P	**P**	**11 03 53.9**	**0.0**
	comp=Z,1.1nm,0.3s,baz=30,slow=9.3,SNR=3.4						
CMAR				LR	LR	11 24 30.2	
	comp=Z,8.2nm,19.9s,baz=265,slow=40						
MKAR	**Makanchi Array**	**43.72**	**301**	P	**P**	**11 04 04.5**	**-0.5**
	comp=Z,7.1nm,1.0s,baz=83,slow=9.9,SNR=28						
MKAR				LR	LR	11 21 48.2	
	comp=Z,26nm,19.6s,baz=49,slow=35						
KURK	**Kurchatov**	**45.38**	**307**	*e*P	**P**	**11 04 17.3**	**-0.8**
KURK				pmax	pmax		
	comp=Z,33nm,0.7s						
KURK	**Kurchatov**	**45.38**	**307**	*e*P	**P**	**11 04 17.3**	**-0.8**
	comp=Z,34nm,0.7s						
PDGK	**Podgornoye**	**46.48**	**297**	P	**P**	**11 04 26.1**	**-0.9**
PDGK				pmax	pmax		
	comp=Z,5.0nm,1.2s						
ILAR	**Eielson Array**	**48.02**	**33**	P	**P**	**11 04 39.8**	**+1.0**
	comp=Z,0.8nm,0.7s,baz=266,slow=6.3,SNR=9.8						
TKM2	**Tokmak 2**	**49.32**	**297**	*e*P	**P**	**11 04 49.2**	**0.0**
TKM2				pmax	pmax		
	comp=Z,4.0nm,0.8s						
TKM2	**Tokmak 2**	**49.32**	**297**	*e*P	**P**	**11 04 49.2**	**0.0**
	comp=Z,4.1nm,0.8s						
OTUK	**Ortayu**	**49.92**	**305**	P	**P**	**11 04 53.2**	**-0.3**
OTUK				pmax	pmax		
	comp=Z,4.0nm,1.1s						
BRVK	**Borovoye**	**49.97**	**312**	*i*P	**P**	**11 04 52.5**	**-1.2**
BRVK				pmax	pmax		
	comp=Z,6.0nm,1.7s						
BRVK	**Borovoye**	**49.97**	**312**	*e*P	**P**	**11 04 52.9**	**-0.8**
	comp=Z,4.2nm,1.1s						
AAK	**Ala-Archa**	**50.18**	**297**	*i*P	**P**	**11 04 53.9**	**-1.8**
AAK				pmax	pmax		
	comp=Z,4.0nm,1.0s						
MNAS	**Manas**	**51.62**	**298**	P	**P**	**11 05 05.9**	**-0.6**
MNAS				pmax	pmax		
	comp=Z,5.0nm,0.7s						
SFK	**Sufi-Kurgan**	**51.80**	**295**	P	**P**	**11 05 07.2**	**-0.8**
KKAR	**Karatay Array**	**52.77**	**299**	*e*P	**P**	**11 05 14.1**	**-0.8**
KKAR				pmax	pmax		
	comp=Z,2.0nm,0.8s						
KKAR	**Karatay Array**	**52.77**	**299**	*e*P	**P**	**11 05 14.1**	**-0.8**
	comp=Z,2.2nm,0.8s						
INK	**Inuvik**	**52.88**	**28**	P	**P**	**11 05 16.9**	**+1.6**
	comp=Z,1.2nm,0.5s,baz=301,slow=6.1,SNR=9.4						
ARU	**Arti**	**55.55**	**318**	LR	LR	11 31 33.2	
	comp=Z,32nm,19.0s,baz=52,slow=38						
ARU	**Arti**	**55.55**	**318**	*d*P	**P**	**11 05 34.5**	**-0.4**
ARU						11 07 35.7	
ARU				S	**S**	**11 13 16.4**	**-0.4**
ARU				SS	**SS**	**11 17 01.6**	**0.0**
ARU				pmax	pmax		
	comp=Z,8.0nm,1.0s						
ARU	**Arti**	**55.55**	**318**	*e*P	**P**	**11 05 34.2**	**-0.6**
	comp=Z,8.5nm,0.9s						
ABKAR	**Akbulak array**	**57.33**	**310**	*e*P	**P**	**11 05 46.8**	**-0.8**
	comp=Z,2.4nm,0.5s						
AKTO	**Aktyubinsk**	**58.02**	**311**	LR	LR	11 30 36.4	
	comp=Z,14nm,18.6s,baz=41,slow=36						
WRA	**Warramunga Arr**	**58.58**	**188**	P	**P**	**11 05 56.3**	**-0.3**
	comp=Z,2.0nm,0.8s,baz=5.9,slow=7.0,SNR=30						
ASAR	**Alice Springs**	**62.30**	**188**	P	**P**	**11 06 22.3**	**+0.3**
	comp=Z,0.8nm,0.8s,baz=5.8,slow=5.8,SNR=11						
YKA	**Yellowknife Ar**	**62.32**	**31**	P	**P**	**11 06 22.4**	**+0.7**
	comp=Z,0.8nm,0.8s,baz=302,slow=6.7,SNR=15						
ARCES	**ARCESS Array B**	**62.77**	**339**	P	**P**	**11 06 24.3**	**-0.3**
	comp=Z,3.8nm,1.0s,baz=70,slow=7.9,SNR=3.3						
OBN	**Obninsk**	**67.18**	**323**	*e*P	P	11 06 57.6	+4.2
OBN				pmax	pmax		
	comp=Z,6.0nm,1.0s						
FINES	**FINESS Array B**	**67.72**	**332**	P	**P**	**11 06 56.4**	**-0.3**
	comp=Z,1.7nm,0.6s,baz=48,slow=8.5,SNR=5.9						
FINES				LR	LR	11 37 34.9	
	comp=Z,23nm,18.6s,baz=96,slow=37						
AFI	**Afiamalu**	**67.75**	**131**	LR	LR	11 35 13.7	
	comp=Z,23nm,19.1s,baz=90,slow=35						
JMIC	**Jan Mayen**	**68.77**	**350**	LR	LR	11 37 45.3	
	comp=Z,22nm,20.5s,baz=78,slow=36						
VSU	**Vasula**	**69.41**	**329**	*i*P	**P**	**11 07 06.7**	**-0.6**
VSU				pmax	pmax		
	comp=Z,113nm,2.5s						
KIV	**Kislovodsk**	**70.27**	**311**	*de*P	**P**	**11 07 13.5**	**+0.5**
KIV				pmax	pmax		
	comp=Z,8.0nm,0.8s						
KBZ	**Khabaz**	**70.27**	**310**	P	**P**	**11 07 13.2**	**+0.3**
	comp=Z,2.9nm,0.8s,baz=61,slow=3.9,SNR=9.8						
NEY	**Neytrino**	**70.65**	**310**	P	**P**	**11 07 16.0**	**+0.5**
NEY				pmax	pmax		
	comp=Z,1.0nm,0.8s						
HFS	**Hagfors**	**72.93**	**336**	P	**P**	**11 07 28.8**	**+0.2**
	comp=Z,3.6nm,0.7s,baz=57,slow=5.5,SNR=15						
NB2	**NORSAR Subarra**	**73.00**	**337**	P	**P**	**11 07 28.7**	**-0.3**
	comp=Z,1.7nm,0.6s,baz=40,slow=6.2						
NOA	**NORSAR Array B**	**73.00**	**337**	P	**P**	**11 07 28.8**	**-0.3**
	comp=Z,3.6nm,0.8s,baz=38,slow=6.0,SNR=11						
NOA				LR	LR	11 43 17.1	
	comp=Z,23nm,18.2s,baz=350,slow=39						
AKASG	**Malin Array Be**	**73.40**	**322**	P	**P**	**11 07 30.8**	**-0.7**
	comp=Z,1.0nm,0.3s,baz=47,slow=6.0,SNR=13						
AKASG	**Malin Array Be**	**73.40**	**322**	*i* P	**P**	**11 07 30.7**	**-0.8**
AKASG				pmax	pmax		
	comp=Z,1.0nm,0.3s						
KIEV	**Kiev**	**73.41**	**322**	*i*P	**P**	**11 07 31.2**	**-0.4**
KIEV				pmax	pmax		
	comp=Z,6.0nm,1.0s						
PDAR	**Pinedale Array**	**76.33**	**46**	P	**P**	**11 07 50.2**	**+1.2**
	comp=Z,0.8nm,0.8s,baz=250,slow=2.5,SNR=8.7						
DPC	**Dobruska-Polom**	**79.44**	**328**	*e*P	**P**	**11 08 06.2**	**+0.4**
DPC	**Dobruska-Polom**	**79.44**	**328**	*e*P	**P**	**11 08 06.2**	**+0.4**
CLL	**Collm**	**80.03**	**330**	*e*P	**P**	**11 08 09.0**	**0.0**
CLL	**Collm**	**80.03**	**330**	*e*P	**P**	**11 08 09.0**	**0.0**
KHC	**Kasperske Hory**	**81.51**	**329**	*e*P	**P**	**11 08 16.8**	**-0.2**
KHC	**Kasperske Hory**	**81.51**	**329**	*e*P	**P**	**11 08 16.8**	**-0.2**
GERES	**GERESS Array B**	**81.69**	**328**	P	**P**	**11 08 17.3**	**-0.7**
	comp=Z,0.3nm,0.2s,baz=12,slow=6.8,SNR=4.3						
BFO	**Black Forest**	**84.23**	**331**	*i* P	**P**	**11 08 32.1**	**+1.1**
TXAR	**Lajitas Array**	**88.89**	**53**	P	**P**	**11 08 55.4**	**+1.2**
	comp=Z,0.4nm,0.7s,baz=295,slow=3.5,SNR=6.3						
LPAZ	**La Paz**	**145.57**	**58**	PKPbc	**PKPab**	**11 15 39.4**	**0.0**
	comp=Z,1.7nm,0.7s,baz=221,slow=1.2,SNR=4.8						

ISCJB ***18*** *11:04:57.4±0.5,36˚.53N±0˚.02×141˚.10W±0˚.04,h10km, mb3.0/2, Error ellipse: s-maj=4.1km s-min=3.5km az=3.7*

LDG ***18*** *11:05:00.7±0.4, 36˚.48N×141˚.42W, h30km, Ml3.8/10, Error ellipse: s-maj=7.2km s-min=6.6km az=53.0*

MDD ***18*** *11:05:00.5±0.6,36˚.45N×141˚.38W,h65km±28km,mb4.7/36, Error ellipse: s-maj=7.8km s-min=5.6km az=116.0, PRXIMO*

SFS ***18*** *11:05:00.0,36˚.48N×141˚.30W,h47km, ML4.9*

IGIL ***18*** *11:05:01.3,36˚.56N×141˚.17W,h3km,ML3.3*

IDC ***18*** *11:05:01.

PCVE Castro Verde 2.72 66 *e*Pn **Pn 11 05 44.1 +2.4**
PCVE *e*Sn **Sn 11 06 15.7 +1.0**
PCVE A A 11 06 31.0
comp=N,48nm,0.5s
PCVE Castro Verde 2.72 66 P **Pn 11 05 44.1 +2.4**
PCVE S **Sn 11 06 15.7 +1.0**
comp=N,48nm,0.5s
PCVE Castro Verde 2.72 66 P **Pn 11 05 44.1 +2.4**
PCVE S **Sn 11 06 15.7 +1.0**
comp=N,48nm,0.5s
PMAFR Mafra 2.82 32⇑ *i*Pn **Pn 11 05 45.3 +2.3**
PMAFR *e*Sn **Sn 11 06 17.6 +0.6**
PMAFR A A 11 06 19.4
comp=N,356nm,0.3s
PMAFR Mafra 2.82 32 ⇑P **Pn 11 05 45.2 +2.3**
comp=N,29nm,0.2s,SNR=18
PMAFR S **Sn 11 06 17.4 +0.4**
comp=N,370nm,0.2s,SNR=31
PMAFR Mafra 2.82 32 P **Pn 11 05 45.2 +2.3**
comp=N,29nm,0.2s,SNR=18
PMAFR S **Sn 11 06 17.4 +0.4**
comp=N,370nm,0.2s,SNR=31
PACT Alcochete 2.88 39⇑ *i*Pn **Pn 11 05 46.7 +2.9**
PACT *e*Sn **Sn 11 06 20.4 +2.0**
PACT A A 11 06 26.9
comp=N,160nm,0.6s
PACT Alcochete 2.88 39⇑ *i*Pn **Pn 11 05 46.7 +2.9**
PACT *e*Sn **Sn 11 06 20.4 +2.0**
comp=N,160nm,0.6s
PVAQ Vaqueiros 2.89 72⇑ *e*Pn **Pn 11 05 46.4 +2.4**
PVAQ *e*Sn **Sn 11 06 19.8 +1.0**
PVAQ A A 11 06 22.7
comp=N,41nm,0.3s
PVAQ Vaqueiros 2.89 72 P **Pn 11 05 46.4 +2.4**
PVAQ S **Sn 11 06 19.8 +1.0**
comp=N,41nm,0.3s
PVAQ Vaqueiros 2.89 72 P **Pn 11 05 46.4 +2.4**
PVAQ S **Sn 11 06 19.8 +1.0**
comp=N,41nm,0.3s
MOE Montemor 2.98 48 *e*Pn **Pn 11 05 45.8 +0.7**
MOE *e*Sn **Sn 11 06 19.4 -1.5**
MOE Montemor 2.98 48 P **Pn 11 05 45.8 +0.7**
MOE S **Sn 11 06 19.4 -1.5**
MOE Montemor 2.98 48 P **Pn 11 05 45.8 +0.7**
MOE S **Sn 11 06 19.4 -1.5**
PBEJ Beja 3.01 60 *e*Pn **Pn 11 05 47.9 +2.2**
PBEJ *e*Sn **Sn 11 06 22.7 +0.9**
PBEJ A A 11 06 25.7
comp=N,52nm,0.4s
PBEJ Beja 3.01 60 P **Pn 11 05 47.9 +2.2**
PBEJ S **Sn 11 06 22.7 +0.9**
comp=N,26nm,0.4s
PBEJ Beja 3.01 60 P **Pn 11 05 47.9 +2.2**
PBEJ S **Sn 11 06 22.7 +0.9**
comp=N,26nm,0.4s
EGRO El Granado 3.11 71 ⇓P **Pn 11 05 49.2 +2.3**
comp=N,10nm,0.1s,SNR=18
EGRO S **Sn 11 06 24.9 +0.8**
comp=N,35nm,0.2s,SNR=5.1
EGRO El Granado 3.11 71 P **Pn 11 05 49.2 +2.3**
comp=N,10nm,0.1s,SNR=18
EGRO S **Sn 11 06 24.9 +0.8**
comp=N,35nm,0.2s,SNR=5.1
EVO Evora 3.19 51 *e*Pn **Pn 11 05 50.4 +2.3**
EVO *e*Sn **Sn 11 06 25.9 -0.2**
EVO A A 11 06 29.1
comp=N,94nm,0.1s
EVO Evora 3.19 51 P **Pn 11 05 50.4 +2.3**
EVO S **Sn 11 06 25.9 -0.2**
comp=N,94nm,0.1s
EVO Evora 3.19 51 P **Pn 11 05 50.4 +2.3**
EVO *e*Sn **Sn 11 06 25.9 -0.2**
comp=N,94nm,0.1s
ALMR Almeirim 3.30 38 *e*P **Pn 11 05 52.0 +2.3**
ALMR *e*S **Sn 11 06 29.1 +0.2**
ALMR AML AML 11 06 30.4
comp=E,94nm,0.2s
ALMR Almeirim 3.30 38 P **Pn 11 05 52.0 +2.3**
ALMR S **Sn 11 06 29.1 +0.2**
comp=E,47nm,0.2s
ALMR Almeirim 3.30 38 P **Pn 11 05 52.0 +2.3**
ALMR S **Sn 11 06 29.1 +0.2**
comp=E,47nm,0.2s
PMTG Montargil 3.42 42⇑ *i*Pn **Pn 11 05 53.3 +2.1**
PMTG *e*Sn **Sn 11 06 31.6 -0.2**
PMTG A A 11 06 36.0
comp=E,42nm,0.1s
PMTG Montargil 3.42 42⇑ *i*Pn **Pn 11 05 53.3 +2.1**
PMTG *e*Sn **Sn 11 06 31.6 -0.2**
comp=E,42nm,0.1s
PESTR Estremoz 3.65 50 *e*Pn **Pn 11 05 56.9 +2.4**
PESTR *e*Sn **Sn 11 06 37.8 +0.1**
PESTR A A 11 06 43.7
comp=E,39nm,0.4s
PESTR Estremoz 3.65 50 P **Pn 11 05 56.9 +2.4**
PESTR S **Sn 11 06 37.8 +0.1**
comp=E,39nm,0.4s
PESTR Estremoz 3.65 50 P **Pn 11 05 56.9 +2.4**
PESTR S **Sn 11 06 37.8 +0.1**
comp=E,39nm,0.4s
PBAR Barrancos 3.66 63 *e*Pn **Pn 11 05 56.8 +2.2**
PBAR *e*Sn **Sn 11 06 37.8 -0.1**
PBAR A A 11 06 53.7
comp=E,65nm,0.3s
PBAR Barrancos 3.66 63 P **Pn 11 05 56.8 +2.2**
PBAR S **Sn 11 06 37.8 -0.1**
comp=E,65nm,0.3s
PBAR Barrancos 3.66 63 P **Pn 11 05 56.8 +2.2**
PBAR S **Sn 11 06 37.8 -0.1**
comp=E,65nm,0.3s
PTOM Tomar 3.75 35 *e*Sn **Sn 11 06 40.7 +0.8**
PTOM A A 11 06 43.0
comp=E,77nm,0.2s
PTOM Tomar 3.75 35 S **Sn 11 06 40.7 +0.8**
comp=E,39nm,0.2s
PTOM Tomar 3.75 35 S **Sn 11 06 40.7 +0.8**
comp=E,39nm,0.2s
EMIN Mina Concepcio 3.79 70 ⇑P **Pn 11 05 58.2 +1.9**
comp=E,27nm,0.2s,SNR=18
EMIN S **Sn 11 06 40.0 -1.0**
comp=E,23nm,0.2s,SNR=6.5
EMIN Mina Concepcio 3.79 70 P **Pn 11 05 58.2 +1.9**
comp=E,27nm,0.2s,SNR=18
EMIN S **Sn 11 06 40.0 -1.0**
comp=E,23nm,0.2s,SNR=6.5
EBAD Badajoz 3.96 55 P **Pn 11 06 00.5 +1.9**
comp=E,13nm,0.1s,SNR=31
EBAD S **Sn 11 06 45.0 -0.1**
comp=E,143nm,0.2s,SNR=7.6
EBAD Badajoz 3.96 55 P **Pn 11 06 00.5 +1.9**
comp=E,13nm,0.1s,SNR=31
EBAD S **Sn 11 06 45.0 -0.1**
comp=E,143nm,0.2s,SNR=7.6
PCAS Casmilo, Conde 4.07 30⇓ *e*Pn **Pn 11 06 02.5 +2.3**
PCAS *e*Sn **Sn 11 06 48.0 +0.1**
PCAS A A 11 06 52.0
comp=E,54nm,0.3s
PCAS Casmilo, Conde 4.07 30⇓ *e*Pn **Pn 11 06 02.5 +2.3**
PCAS *e*Sn **Sn 11 06 48.0 +0.1**
comp=E,54nm,0.3s
PMRV Marv??o 4.13 45⇑ *e*Pn **Pn 11 06 03.1 +2.0**
PMRV *e*Sn **Sn 11 06 48.8 -0.7**
PMRV A A 11 06 51.5
comp=E,86nm,0.3s
PMRV Marv??o 4.13 45 P **Pn 11 06 03.1 +2.0**
PMRV S **Sn 11 06 48.8 -0.7**
comp=E,86nm,0.3s
PMRV Marv??o 4.13 45 P **Pn 11 06 03.1 +2.0**
PMRV S **Sn 11 06 48.8 -0.7**
comp=E,86nm,0.3s
ESPR Espera 4.28 84 ⇑P **Pn 11 06 05.2 +2.1**
comp=E,120nm,0.2s,SNR=18
ESPR S **Sn 11 06 52.0 -1.1**
comp=E,146nm,0.3s
ESPR Espera 4.28 84 P **Pn 11 06 05.2 +2.1**
comp=E,120nm,0.2s,SNR=18
ESPR S **Sn 11 06 52.0 -1.1**
comp=E,146nm,0.3s
RTC Rabat Centre 4.37 125 P **Pb 11 06 13.0 -1.7**
RTC S Sn 11 06 48.0 -7.2
RTC Rabat Centre 4.37 125 *e*P **Pb 11 06 13.0 -1.7**
RTC *i* S Sn 11 06 48.0 -7.2
PCBR Castelo Branco 4.38 41 *e*Pn **Pn 11 06 06.6 +2.2**
PCBR *e*Sn **Sn 11 06 54.7 -0.8**
PCBR A A 11 06 58.0
comp=E,51nm,0.7s
PCBR Castelo Branco 4.38 41 P **Pn 11 06 06.6 +2.2**
PCBR S **Sn 11 06 54.7 -0.8**
comp=E,25nm,0.7s
PCBR Castelo Branco 4.38 41 P **Pn 11 06 06.6 +2.2**
PCBR S **Sn 11 06 54.7 -0.8**
comp=E,25nm,0.7s
EJIF Jimena Fronter 4.60 90 P **Pn 11 06 10.0 +2.5**
comp=E,14nm,0.2s,SNR=7.9
EJIF S **Sn 11 06 59.8 -1.1**
comp=E,4.2nm,0.2s,SNR=7.9
EJIF Jimena Fronter 4.60 90 P **Pn 11 06 10.0 +2.5**
comp=E,14nm,0.2s,SNR=7.9
EJIF S **Sn 11 06 59.8 -1.1**
comp=E,4.2nm,0.2s,SNR=7.9
LIJA Lijar 4.65 84 P **Pn 11 06 10.0 +1.8**
LIJA S **Sn 11 06 59.2 -3.0**
LIJA Lijar 4.65 84 P **Pn 11 06 10.0 +1.8**
LIJA S **Sn 11 06 59.2 -3.0**
ECEU Ceuta 4.73 96 P **Pn 11 06 12.2 +2.9**
comp=E,4.9nm,0.1s,SNR=5.7
ECEU S **Sn 11 07 03.7 -0.5**
comp=E,20nm,0.2s
ECEU Ceuta 4.73 96 P **Pn 11 06 12.2 +2.9**
comp=E,4.9nm,0.1s,SNR=5.7
ECEU S **Sn 11 07 03.7 -0.5**
comp=E,20nm,0.2s
MTE Manteigas 4.77 36 *e*Pn **Pn 11 06 12.1 +2.2**
MTE *e*Sn **Sn 11 07 04.6 -0.7**
MTE A A 11 07 11.1
comp=E,44nm,0.4s
MTE Manteigas 4.77 36 P **Pn 11 06 12.1 +2.2**
MTE S **Sn 11 07 04.6 -0.7**
comp=E,22nm,0.4s
MTE Manteigas 4.77 36 P **Pn 11 06 12.1 +2.2**
MTE S **Sn 11 07 04.6 -0.7**
comp=E,22nm,0.4s
ECAB El Cabril 4.83 70 ⇑P **Pn 11 06 12.5 +1.9**
comp=E,32nm,0.2s,SNR=18
ECAB S **Sn 11 07 05.4 -1.2**
comp=E,11nm,0.2s
ECAB El Cabril 4.83 70 P **Pn 11 06 12.5 +1.9**
comp=E,32nm,0.2s,SNR=18
ECAB S **Sn 11 07 05.4 -1.2**
comp=E,11nm,0.2s
PVIS Viseu 4.87 31 *e*Pn **Pn 11 06 13.5 +2.2**
PVIS *e*Sn **Sn 11 07 07.1 -0.7**
PVIS A A 11 07 09.7
comp=E,38nm,0.2s
PVIS Viseu 4.87 31 P **Pn 11 06 13.5 +2.2**
PVIS S **Sn 11 07 07.1 -0.7**
comp=E,19nm,0.2s
PVIS Viseu 4.87 31 P **Pn 11 06 13.5 +2.2**
PVIS S **Sn 11 07 07.1 -0.7**
comp=E,19nm,0.2s
PTO Porto 4.99 23 *e*Pn **Pn 11 06 15.0 +2.2**
PTO *e*Sn **Sn 11 07 09.0 -1.5**
PTO Porto 4.99 23 P **Pn 11 06 15.0 +2.2**
PTO S **Sn 11 07 09.0 -1.5**
PTO Porto 4.99 23 P **Pn 11 06 15.0 +2.2**
PTO S **Sn 11 07 09.0 -1.5**
EMIJ Mijas 5.15 88 P **Pn 11 06 16.3 +1.2**
comp=E,11nm,0.3s,SNR=12
EMIJ S **Sn 11 07 13.2 -1.4**
comp=E,6.5nm,0.2s
EMIJ Mijas 5.15 88 P **Pn 11 06 16.3 +1.2**
comp=E,11nm,0.3s,SNR=12
EMIJ S **Sn 11 07 13.2 -1.4**
comp=E,6.5nm,0.2s
EPLA Plasencia 5.31 47 P **Pn 11 06 19.7 +2.4**
comp=E,0.7nm,0.1s,SNR=7.9
EPLA S **Sn 11 07 17.3 -1.3**
comp=E,17nm,0.1s,SNR=61
EPLA Plasencia 5.31 47 P **Pn 11 06 19.7 +2.4**
comp=E,0.7nm,0.1s,SNR=7.9
EPLA S **Sn 11 07 17.3 -1.3**
comp=E,17nm,0.1s,SNR=61
CIA Chichaoua 5.38 157 P **Pn 11 06 17.0 -1.2**
CIA S Sn 11 07 12.0 -8.1
CIA Chichaoua 5.38 157 *i* P **Pn 11 06 17.0 -1.2**
CIA *i* S Sn 11 07 12.0 -8.1
PVRL Vila Real 5.42 29 *e*Pn **Pn 11 06 20.7 +1.9**
PVRL Vila Real 5.42 29 P **Pn 11 06 20.7 +1.9**
PVRL Vila Real 5.42 29 P **Pn 11 06 20.7 +1.9**
POLO Lamas de Olo 5.47 28 *e*Pn **Pn 11 06 21.7 +2.1**
POLO *e*Sn **Sn 11 07 21.2 -1.5**
POLO A A 11 07 22.5
comp=E,18nm,0.3s
POLO Lamas de Olo 5.47 28 *e*Pn **Pn 11 06 21.7 +2.1**
POLO *e*Sn **Sn 11 07 21.2 -1.5**
comp=E,18nm,0.3s
PMPST Porto Santo, M 5.49 232 *e*Pn Pn 11 06 16.5 -3.2
PMPST *e*Sn Sn 11 07 08.7 -14
PMPST A A 11 07 14.7
comp=E,72nm,0.3s
EADA Adamuz 5.49 71 P **Pn 11 06 21.7 +1.9**
comp=E,28nm,0.2s,SNR=92
EADA S **Sn 11 07 21.4 -1.6**
comp=E,13nm,0.2s
EADA Adamuz 5.49 71 P **Pn 11 06 21.7 +1.9**
comp=E,28nm,0.2s,SNR=92
EADA S **Sn 11 07 21.4 -1.6**
comp=E,13nm,0.2s
PMPS Porto Santo 5.50 232 *e*Pn Pn 11 06 16.7 -3.1
PMPS *e*Sn Sn 11 07 09.3 -14
PMPS A A 11 07 17.6
comp=E,32nm,0.4s
PMPS Porto Santo 5.50 232 P Pn 11 06 16.5 -3.3
PMPS S Sn 11 07 08.7 -14
comp=E,36nm,0.3s
MVO Moncorvo 5.62 34 *e*Pn **Pn 11 06 23.2 +1.7**
MVO *e*Sn **Sn 11 07 24.0 -2.1**
MVO A A 11 07 27.8
comp=E,65nm,0.3s
MVO Moncorvo 5.62 34 P **Pn 11 06 23.0 +1.5**
comp=E,3.6nm,0.1s,SNR=14
MVO S **Sn 11 07 23.3 -2.8**
comp=E,32nm,0.1s,SNR=8.5
MVO Moncorvo 5.62 34 *e*Pn **Pn 11 06 23.2 +1.7**
MVO S **Sn 11 07 23.3 -2.8**
comp=E,32nm,0.1s,SNR=8.5
MVO *e*Sn **Sn 11 07 24.0 -2.1**
comp=E,65nm,0.3s
PCAB Cabril 5.69 24 *e*Pn **Pn 11 06 24.5 +2.0**
PCAB *e*Sn **Sn 11 07 26.5 -1.4**
PCAB A A 11 07 30.0
comp=E,17nm,0.3s
PCAB Cabril 5.69 24 P **Pn 11 06 24.5 +2.0**
PCAB S **Sn 11 07 26.5 -1.4**
comp=E,8.4nm,0.3s
PCAB Cabril 5.69 24 P **Pn 11 06 24.5 +2.0**
PCAB S **Sn 11 07 26.5 -1.4**
comp=E,8.4nm,0.3s
EGOR Sierra Gorda, 5.69 82 P **Pn 11 06 25.1 +2.5**
comp=E,6.0nm,0.3s,SNR=7.9
EGOR S **Sn 11 07 26.9 -1.2**
comp=E,16nm,0.4s,SNR=7.9
EGOR Sierra Gorda, 5.69 82 P **Pn 11 06 25.1 +2.5**
comp=E,6.0nm,0.3s,SNR=7.9
EGOR S **Sn 11 07 26.9 -1.2**
comp=E,16nm,0.4s,SNR=7.9
KIB El Ksiba 5.81 132 P **Pn 11 06 24.0 -0.2**
KIB S Sn 11 07 23.0 -8.0
KIB El Ksiba 5.81 132 *i* P **Pn 11 06 24.0 -0.2**
KIB *i* S Sn 11 07 23.0 -8.0
ELOB Lobios 5.82 24 P **Pn 11 06 26.0 +1.7**
comp=E,4.4nm,0.2s,SNR=27
ELOB S **Sn 11 07 28.8 -2.3**
comp=E,19nm,0.2s,SNR=8.5
ELOB Lobios 5.82 24 P **Pn 11 06 26.0 +1.7**
comp=E,4.4nm,0.2s,SNR=27
ELOB S **Sn 11 07 28.8 -2.3**
comp=E,19nm,0.2s,SNR=8.5
PGAV Gavieira, Arco 5.84 22 *e*Pn **Pn 11 06 26.7 +2.0**
PGAV *e*Sn **Sn 11 07 30.3 -1.4**
PGAV A A 11 07 38.4
comp=E,14nm,0.4s
PGAV Gavieira, Arco 5.84 22 *e*Pn **Pn 11 06 26.7 +2.0**
PGAV *e*Sn **Sn 11 07 30.3 -1.4**
comp=E,14nm,0.4s
TZC Tazercounte 5.87 137 P **Pn 11 06 24.0 -1.1**
TZC S Sn 11 07 24.0 -8.5
TZC Tazercounte 5.87 137 *i* P **Pn 11 06 24.0 -1.1**
TZC *i* S Sn 11 07 24.0 -8.5
SELV Sierra Elvira 6.00 81 P **Pn 11 06 28.9 +2.1**
comp=E,5.2nm,0.2s,SNR=7.9
SELV S **Sn 11 07 34.0 -1.7**
comp=E,1.1nm,0.2s,SNR=7.9
SELV Sierra Elvira 6.00 81 P **Pn 11 06 28.9 +2.1**
comp=E,5.2nm,0.2s,SNR=7.9
SELV S **Sn 11 07 34.0 -1.7**
comp=E,1.1nm,0.2s,SNR=7.9
OUK Oukaimeden 6.01 152 P **Pn 11 06 26.0 -1.1**
OUK S Sn 11 07 26.0 -10
OUK Oukaimeden 6.01 152 *i* P **Pn 11 06 26.0 -1.1**
OUK *i* S Sn 11 07 26.0 -10
PMAR Madeira 6.09 233 *e*Pn Pn 11 06 25.4 -2.7
PMAR *e*Sn Sn 11 07 25.7 -12
PMAR A A 11 07 31.5
comp=E,68nm,0.3s
PMAR Madeira 6.09 233 P Pn 11 06 25.4 -2.7
PMAR S Sn 11 07 25.7 -12
comp=E,34nm,0.3s
ECOG Cogollos-Vega 6.14 81 P **Pn 11 06 30.8 +2.1**
comp=E,30nm,0.5s,SNR=18
ECOG S **Sn 11 07 37.3 -1.7**
comp=E,3.1nm,0.2s,SNR=7.9
ECOG Cogollos-Vega 6.14 81 P **Pn 11 06 30.8 +2.1**
comp=E,30nm,0.5s,SNR=18
ECOG S **Sn 11 07 37.3 -1.7**
comp=E,3.1nm,0.2s,SNR=7.9
CZD Col de Zad 6.15 123 P **Pn 11 06 29.0 -0.1**
CZD S Sn 11 07 31.0 -8.6
CZD Col de Zad 6.15 123 *i* P **Pn 11 06 29.0 -0.1**
CZD *i* S Sn 11 07 31.0 -8.6
PMOZ Porto Moniz, M 6.21 235 *e*Pn Pn 11 06 26.4 -3.3
PMOZ *e*Sn Sn 11 07 29.8 -11
PMOZ A A 11 07 39.0
comp=E,64nm,0.4s
PMOZ Porto Moniz, M 6.21 235 P Pn 11 06 26.5 -3.1
comp=E,36nm,0.3s,SNR=7.9
PMOZ S Sn 11 07 27.2 -14
comp=E,5.9nm,0.1s,SNR=7.9
EQUE Quentar 6.23 82 ⇑P **Pn 11 06 32.0 +2.0**
comp=E,6.8nm,0.3s,SNR=18
EQUE S **Sn 11 07 38.2 -3.1**
comp=E,2.0nm,0.2s,SNR=7.9
EQUE Quentar 6.23 82 P **Pn 11 06 32.0 +2.0**
comp=E,6.8nm,0.3s,SNR=18
EQUE S **Sn 11 07 38.2 -3.1**
comp=E,2.0nm,0.2s,SNR=7.9
PBRG Braganca 6.26 32 *e*Sn **Sn 11 07 39.5 -2.5**
PBRG A A 11 07 43.2
comp=E,20nm,0.6s
PBRG Braganca 6.26 32 S **Sn 11 07 39.5 -2.5**
comp=E,9.8nm,0.6s
PBRG Braganca 6.26 32 S **Sn 11 07 39.5 -2.5**
comp=E,9.8nm,0.6s
ECAL Calabor 6.38 31 P **Pn 11 06 33.9 +1.9**
comp=E,7.2nm,0.2s,SNR=25
ECAL S **Sn 11 07 42.6 -2.3**
comp=E,89nm,0.4s,SNR=4.7
ECAL Calabor 6.38 31 P **Pn 11 06 33.9 +1.9**
comp=E,7.2nm,0.2s,SNR=25
ECAL S **Sn 11 07 42.6 -2.3**
comp=E,89nm,0.4s,SNR=4.7
ESDC Sonseca Array 6.48 59 Pn **Pn 11 06 34.8 +1.5**
comp=E,20nm,0.3s,baz=244,slow=13,SNR=62
ESDC Sn **Sn 11 07 45.2 -2.0**
comp=E,12nm,0.3s,baz=245,slow=24,SNR=18
ESDC Sonseca Array 6.48 59 P **Pn 11 06 35.1 +1.8**
comp=E,23nm,0.2s,baz=245,slow=13,SNR=65
ESDC S **Sn 11 07 44.7 -2.6**
comp=E,8.8nm,0.3s,baz=246,slow=23,SNR=16
ESDC Sonseca Array 6.48 59 P **Pn 11 06 35.1 +1.8**
comp=E,23nm,0.2s,SNR=65
ESDC S **Sn 11 07 44.7 -2.6**
comp=E,8.8nm,0.3s,SNR=16
MDT Midelt 6.57 123 Pn **Pn 11 06 35.1 +0.4**
comp=E,2.4nm,0.3s,baz=311,slow=11,SNR=73
EQES Quesada 6.58 77 ⇑P **Pn 11 06 36.6 +1.7**
comp=E,6.5nm,0.2s,SNR=18
EQES S **Sn 11 07 47.7 -2.3**
comp=E,5.6nm,0.2s
EQES Quesada 6.58 77 P **Pn 11 06 36.6 +1.7**
comp=E,6.5nm,0.2s,SNR=18
EQES S **Sn 11 07 47.7 -2.3**
comp=E,5.6nm,0.2s
EMAZ Mazaricos 6.60 14 P **Pn 11 06 35.8 +0.9**
comp=E,1.0nm,0.1s,SNR=7.9
EMAZ S Sn 11 07 44.8 -5.4
comp=E,14nm,0.2s,SNR=7.9
EMAZ Mazaricos 6.60 14 P **Pn 11 06 35.8 +0.9**
comp=E,1.0nm,0.1s,SNR=7.9
EBER Berja 6.66 85 P **Pn 11 06 37.4 +1.4**
comp=E,4.5nm,0.3s,SNR=12
EBER S **Sn 11 07 49.9 -2.1**
comp=E,3.3nm,0.2s,SNR=7.9
EBER Berja 6.66 85 P **Pn 11 06 37.4 +1.4**
comp=E,4.5nm,0.3s,SNR=12
EBER S **Sn 11 07 49.9 -2.1**
comp=E,3.3nm,0.2s,SNR=7.9
EAGO Agolada(Pontev 6.67 20 P **Pn 11 06 38.0 +2.1**
comp=E,3.5nm,0.1s,SNR=7.9
EAGO S **Sn 11 07 48.3 -3.6**
comp=E,3.7nm,0.1s,SNR=7.9
EAGO Agolada(Pontev 6.67 20 P **Pn 11 06 38.0 +2.1**
comp=E,3.5nm,0.1s,SNR=7.9
EAGO S **Sn 11 07 48.3 -3.6**
comp=E,3.7nm,0.1s,SNR=7.9
GUD Guadarrama 6.84 51 P **Pn 11 06 40.4 +2.0**
comp=E,7.7nm,0.2s,SNR=22
GUD S **Sn 11 07 54.0 -2.3**
comp=E,22nm,0.3s,SNR=6.5
GUD Guadarrama 6.84 51 P **Pn 11 06 40.4 +2.0**
comp=E,7.7nm,0.2s,SNR=22
GUD S **Sn 11 07 54.0 -2.3**
comp=E,22nm,0.3s,SNR=6.5
EHUE Huescar 6.96 77 P **Pn 11 06 41.9 +1.9**
comp=E,3.8nm,0.1s,SNR=7.9
EHUE Huescar 6.96 77 P **Pn 11 06 41.9 +1.9**
comp=E,3.8nm,0.1s,SNR=7.9
SESP Santiago Espad 7.05 75 P **Pn 11 06 43.1 +1.9**
comp=E,5.8nm,0.2s,SNR=7.9
SESP S **Sn 11 07 58.7 -2.8**
comp=E,4.0nm,0.1s,SNR=7.9
SESP Santiago Espad 7.05 75 P **Pn 11 06 43.1 +1.9**
comp=E,5.8nm,0.2s,SNR=7.9
SESP S **Sn 11 07 58.7 -2.8**
comp=E,4.0nm,0.1s,SNR=7.9
ENIJ Nijar 7.21 84 P **Pn 11 06 45.2 +1.9**
comp=E,14nm,0.4s,SNR=7.9
ENIJ Nijar 7.21 84 P **Pn 11 06 45.2 +1.9**
comp=E,14nm,0.4s,SNR=7.9
EPON Pontenova 7.43 23 P **Pn 11 06 48.0 +1.7**
comp=E,3.5nm,0.1s,SNR=20
EPON S **Sn 11 08 06.4 -4.2**
comp=E,13nm,0.4s,SNR=7.9
EPON Pontenova 7.43 23 P **Pn 11 06 48.0 +1.7**
comp=E,3.5nm,0.1s,SNR=20
ETOB Tobarra 7.92 72 P **Pn 11 06 54.8 +1.7**
comp=E,4.7nm,0.2s,SNR=11
ETOB S **Sn 11 08 19.2 -3.6**
comp=E,2.6nm,0.2s,SNR=7.9
ETOB Tobarra 7.92 72 P **Pn 11 06 54.8 +1.7**
comp=E,4.7nm,0.2s,SNR=11
ETOB S **Sn 11 08 19.2 -3.6**
comp=E,2.6nm,0.2s,SNR=7.9
EMUR La Murta 8.03 78 P **Pn 11 06 55.3 +0.7**
comp=E,1.7nm,0.3s,SNR=7.9
EMUR S **Sn 11 08 22.5 -3.0**
comp=E,1.9nm,0.4s,SNR=7.9
EMUR La Murta 8.03 78 P **Pn 11 06 55.3 +0.7**
comp=E,1.7nm,0.3s,SNR=7.9
EMUR S **Sn 11 08 22.5 -3.0**
comp=E,1.9nm,0.4s,SNR=7.9
EARI Arriondas 8.14 32 P **Pn 11 06 58.8 +2.8**
comp=E,4.8nm,0.2s,SNR=40
EARI S **Sn 11 08 23.6 -4.5**
comp=E,2.8nm,0.2s,SNR=7.9
EARI Arriondas 8.14 32 P **Pn 11 06 58.8 +2.8**
comp=E,4.8nm,0.2s,SNR=40
EARI S **Sn 11 08 23.6 -4.5**
comp=E,2.8nm,0.2s,SNR=7.9
CFUE Fuerteventura 8.23 197 S Sn 11 08 17.3 -13
comp=E,12nm,0.1s,SNR=7.9
ETOR Torete 8.30 56 P **Pn 11 07 00.3 +2.0**
comp=E,45nm,0.3s,SNR=18
ETOR S **Sn 11 08 28.2 -3.9**
comp=E,23nm,0.3s,SNR=7.9
ETOR Torete 8.30 56 P **Pn 11 07 00.3 +2.0**
comp=E,45nm,0.3s,SNR=18
ETOR S **Sn 11 08 28.2 -3.9**

comp=E,23nm,0.3s,SNR=7.9
CFTV Fuerteventura 8.49 198 P Pn 11 06 57.1 -3.9
comp=E,0.7nm,0.2s,SNR=7.9
CFTV S Sn 11 08 22.6 -14
comp=E,0.8nm,0.2s,SNR=7.9
AFON Font Roja 8.69 73 P **Pn** **11 07 05.9 +2.1**
comp=E,4.6nm,0.4s,SNR=7.9
AFON Font Roja 8.69 73 P **Pn** **11 07 05.9 +2.1**
comp=E,4.6nm,0.4s,SNR=7.9
ELAN Lanestosa 8.92 39 P Pn **11 07 08.4 +1.6**
comp=E,0.2nm,0.1s,SNR=7.9
ELAN S **Sn** **11 08 44.2 -3.3**
comp=E,7.4nm,0.3s,SNR=7.9
ELAN Lanestosa 8.92 39 P Pn **11 07 08.4 +1.6**
comp=E,0.2nm,0.1s,SNR=7.9
ELAN S **Sn** **11 08 44.2 -3.3**
comp=E,7.4nm,0.3s,SNR=7.9
EMOS Mosqueruela 9.21 62 P Pn **11 07 12.7 +1.8**
comp=E,1.0nm,0.2s,SNR=6.9
EMOS S **Sn** **11 08 49.7 -4.9**
comp=E,0.7nm,0.1s,SNR=7.9
EMOS Mosqueruela 9.21 62 P Pn **11 07 12.7 +1.8**
comp=E,1.0nm,0.2s,SNR=6.9
EMOS S **Sn** **11 08 49.7 -4.9**
comp=E,0.7nm,0.1s,SNR=7.9
EOSO Osorio 9.24 205 S Sn 11 08 38.9 -17
comp=E,5.3nm,0.2s,SNR=7.9
ESAC San Caprasio 9.78 55 S Sn 11 09 02.3 -6.1
comp=E,3.0nm,0.2s,SNR=7.9
EGOM La Gomera 9.81 213 S Sn 11 08 49.7 -19
comp=E,2.8nm,0.1s,SNR=7.9
IELO Elcoad 9.89 48 P Pn **11 07 22.4 +2.2**
comp=E,5.5nm,0.2s,SNR=7.9
IELO S **Sn** **11 09 07.7 -3.5**
comp=E,3.6nm,0.3s,SNR=7.9
IELO Elcoad 9.89 48 P Pn **11 07 22.4 +2.2**
comp=E,5.5nm,0.2s,SNR=7.9
IELO S **Sn** **11 09 07.7 -3.5**
comp=E,3.6nm,0.3s,SNR=7.9
EALK Alkurruntz 9.96 45 P Pn **11 07 22.7 +1.6**
comp=E,0.2nm,0.2s,SNR=7.9
EALK S Sn 11 09 07.4 -5.6
comp=E,2.9nm,0.2s,SNR=7.9
EALK Alkurruntz 9.96 45 P Pn **11 07 22.7 +1.6**
comp=E,0.2nm,0.2s,SNR=7.9
SJPF Ste Jean 10.06 46 *e*Pn Pn **11 07 24.6 +2.2**
SJPF *e*Sn **Sn** **11 09 10.7 -4.6**
comp=E,4.9nm,0.4s
SJPF Ste Jean 10.06 46 P Pn **11 07 24.6 +2.2**
SJPF S **Sn** **11 09 10.7 -4.6**
comp=E,2.5nm,0.4s
SJPF Ste Jean 10.06 46 P Pn **11 07 24.6 +2.2**
SJPF S **Sn** **11 09 10.7 -4.6**
comp=E,2.5nm,0.4s
ETSF Etsaut 10.33 49 *e*Pn Pn **11 07 28.3 +2.1**
ETSF *e*Sn Sn 11 09 16.3 -5.7
comp=E,3.2nm,0.3s
ETSF Etsaut 10.33 49 P Pn **11 07 28.3 +2.1**
ETSF S Sn 11 09 16.3 -5.7
comp=E,1.6nm,0.3s
ETSF Etsaut 10.33 49 P Pn **11 07 28.3 +2.1**
ATE Arette 10.35 48 P Pn **11 07 28.7 +2.3**
comp=E,1.6nm,0.2s,SNR=7.9
ATE S Sn 11 09 15.4 -7.1
comp=E,1.6nm,0.2s,SNR=7.9
ATE Arette 10.35 48 P Pn **11 07 28.7 +2.3**
comp=E,1.6nm,0.2s,SNR=7.9
EPF Esparros 10.96 50 *e*P Pn **11 07 37.4 +2.7**
EPF *e*Sn **Sn** **11 09 32.5 -4.8**
comp=E,7.5nm,0.4s
EPF Esparros 10.96 50 P Pn **11 07 37.4 +2.7**
EPF S **Sn** **11 09 32.5 -4.8**
comp=E,3.8nm,0.4s
EPF Esparros 10.96 50 *e*P Pn **11 07 37.4 +2.7**
EPF S **Sn** **11 09 32.5 -4.8**
comp=E,3.8nm,0.4s
CSOR Sort 11.14 55 P Pn **11 07 38.7 +1.4**
comp=E,0.5nm,0.2s,SNR=7.9
CSOR S Sn 11 09 36.0 -5.8
comp=E,2.6nm,0.1s,SNR=7.9
CSOR Sort 11.14 55 P Pn **11 07 38.7 +1.4**
comp=E,0.5nm,0.2s,SNR=7.9
CLLI Llivia 11.74 56 P Pn **11 07 46.1 +0.6**
comp=E,0.1nm,0.1s,SNR=7.9
CLLI S Sn 11 09 49.3 -7.3
comp=E,0.0nm,0.2s,SNR=7.9
CLLI Llivia 11.74 56 P Pn **11 07 46.1 +0.6**
comp=E,0.1nm,0.1s,SNR=7.9
MTLF Montolieu 12.29 53 *e*P Pn **11 07 55.3 +2.3**
MTLF Montolieu 12.29 53 P Pn **11 07 55.3 +2.3**
MTLF Montolieu 12.29 53 *e*P Pn **11 07 55.3 +2.3**
LFF La Frestale 12.30 43 *e*Pn Pn **11 07 54.5 +1.5**
LFF La Frestale 12.30 43 P Pn **11 07 54.5 +1.5**
LFF La Frestale 12.30 43 P Pn **11 07 54.5 +1.5**
QUIF Quistinic 12.79 25 *e*Pn Pn **11 08 00.1 +0.4**
QUIF *e*Sn Sn 11 10 15.6 -6.5
comp=E,0.8nm,0.2s
QUIF Quistinic 12.79 25 P Pn **11 08 00.1 +0.4**
QUIF S Sn 11 10 15.6 -6.5
comp=E,0.4nm,0.2s
QUIF Quistinic 12.79 25 P Pn **11 08 00.1 +0.4**
RJF Les Rejaudoux 12.96 44 *e*Pn Pn **11 08 02.5 +0.5**
RJF *e*Sn Sn 11 10 19.4 -6.8
comp=E,6.4nm,0.6s
RJF Les Rejaudoux 12.96 44 P Pn **11 08 02.5 +0.5**
RJF S Sn 11 10 19.4 -6.8
comp=E,3.2nm,0.6s
RJF Les Rejaudoux 12.96 44 P Pn **11 08 02.5 +0.5**
MFF Saint Martin d 12.97 36 *e*Pn Pn **11 08 01.8 -0.4**
MFF Saint Martin d 12.97 36 P Pn **11 08 01.8 -0.4**
MFF Saint Martin d 12.97 36 P Pn **11 08 01.8 -0.4**
CAF Calviac 13.04 46 *e*Pn Pn **11 08 04.6 +1.4**
CAF *e*Sn Sn 11 10 22.0 -6.4
comp=E,1.5nm,0.3s
CAF Calviac 13.04 46 P Pn **11 08 04.6 +1.4**
CAF S Sn 11 10 22.0 -6.4
comp=E,0.8nm,0.3s
CAF Calviac 13.04 46 P Pn **11 08 04.6 +1.4**
ROSF Rostrenen 13.12 24 *e*Pn Pn **11 08 04.5 +0.3**
ROSF Rostrenen 13.12 24 *e*P Pn **11 08 06.2 +2.0**
ROSF Rostrenen 13.12 24 P Pn **11 08 04.5 +0.3**
ROSF Rostrenen 13.12 24 *e*Pn Pn **11 08 04.5 +0.3**
ROSF Rostrenen 13.12 24 *e*P Pn **11 08 06.2 +2.0**
SGMF Saint Gilles 13.29 26 *e*Pn Pn **11 08 06.7 +0.2**
SGMF Saint Gilles 13.29 26 P Pn **11 08 06.7 +0.2**
SGMF Saint Gilles 13.29 26 *e*Pn Pn **11 08 06.7 +0.2**
TCF Toulx Ste Croi 13.95 42 *e*Pn Pn **11 08 15.7 +0.1**
TCF Toulx Ste Croi 13.95 42 P Pn **11 08 15.7 +0.1**
TCF Toulx Ste Croi 13.95 42 *e*Pn Pn **11 08 15.7 +0.1**
GRR Gorron 14.04 29 *e*Pn Pn **11 08 16.2 -0.5**
GRR Gorron 14.04 29 P Pn **11 08 16.2 -0.5**
GRR Gorron 14.04 29 *e*Pn Pn **11 08 16.2 -0.5**
BGF Bois d'Agland 14.46 42 *e*Pn Pn **11 08 23.3 +0.7**
BGF *e*Sn Sn 11 10 54.4 -8.5
comp=E,9.7nm,0.6s
BGF Bois d'Agland 14.46 42 P Pn **11 08 23.3 +0.7**
BGF S Sn 11 10 54.4 -8.5
comp=E,4.8nm,0.6s
BGF Bois d'Agland 14.46 42 P Pn **11 08 23.3 +0.7**
AVF Avril sur Loir 14.88 42 *e*Pn Pn **11 08 28.8 +0.6**
AVF *e*Sn Sn 11 11 04.3 -8.8
comp=E,1.4nm,0.4s
AVF Avril sur Loir 14.88 42 P Pn **11 08 28.8 +0.6**
AVF S Sn 11 11 04.3 -8.8
comp=E,0.7nm,0.4s
AVF Avril sur Loir 14.88 42 P Pn **11 08 28.8 +0.6**
SMF Signal de Mont 15.06 43 *e*Pn Pn **11 08 31.7 +1.0**
SMF *e*Sn Sn 11 11 09.0 -8.5
comp=E,2.4nm,0.5s
SMF Signal de Mont 15.06 43 P Pn **11 08 31.7 +1.0**
SMF S Sn 11 11 09.0 -8.5
comp=E,1.2nm,0.5s
SMF Signal de Mont 15.06 43 P Pn **11 08 31.7 +1.0**
GERES GERESS Array B 21.91 48 P **P** **11 09 54.7 +3.6**
comp=E,0.3nm,0.2s,baz=232,slow=9.7,SNR=4.3
TORD Torodi Ar. Bea 26.02 150 P **P** **11 10 33.9 +2.7**
comp=E,0.1nm,0.4s,baz=330,slow=11,SNR=2.4

*ISK **18** 11:25:42.9, 38°.20N×38°.45E, h2km, MD2.8*
*CSEM **18** 11:25:43.6±0.2, 38°.16N×38°.47E, h2km, MD2.7, Error ellipse: s-maj=4.7km s-min=3.3km az=160.0*
*DDA **18** 11:25:43.5, 38°.14N×38°.46E, h7km, Md2.7*
ISC 18 11:25:43.9±1.0,**38°.15N**±0°.03×**38°.47E**±0°.02,**h13**km±9km,
n35,σ0$71/53,Turkey

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res
AKCD	**Akcadag**	**0.46**	**288**	*i*	P		**Pg**	**11 25 52.8**	**-0.2**
AKCD				*i*	S		**Sg**	**11 25 59.9**	**+0.7**
AKCD	**Akcadag**	**0.46**	**288**		P		**Pg**	**11 25 52.8**	**-0.2**
AKCD					S		**Sg**	**11 25 59.9**	**+0.7**
ELZG	**Elazig**	**0.53**	**49**	*i*	P		**Pg**	**11 25 53.7**	**-0.7**
ELZG				*i*	S		**Sg**	**11 26 01.8**	**+0.3**
ELZG	**Elazig**	**0.53**	**49**		P		**Pg**	**11 25 53.7**	**-0.7**
ELZG					S		**Sg**	**11 26 01.8**	**+0.3**
SVRC	**Sivrice-ELAZID**	**0.69**	**71**	*e*	PG		**Pg**	**11 25 56.6**	**-0.9**
SVRC				*e*	SG		**Sb**	**11 26 07.4**	**-0.1**
SVRC	**Sivrice-ELAZID**	**0.69**	**71**	*e*	Pg		**Pg**	**11 25 56.6**	**-0.9**
SVRC				*e*	Sg		**Sb**	**11 26 07.4**	**-0.1**
ATAB	**Bozova**	**0.70**	**192**	*i*	P		**Pg**	**11 25 56.8**	**-0.6**
ATAB	**Bozova**	**0.70**	**192**		P		**Pg**	**11 25 56.8**	**-0.6**
DARE	**Darende-Malaty**	**0.89**	**299**	*e*	PG		**Pg**	**11 26 00.1**	**-1.0**
DARE				*e*	SG		**Sg**	**11 26 12.3**	**-0.3**
DARE	**Darende-Malaty**	**0.89**	**299**	*e*	Pg		**Pg**	**11 26 00.1**	**-1.0**
DARE				*e*	Sg		**Sg**	**11 26 12.3**	**-0.3**
PTK	**Pertek**	**1.03**	**44**	*e*	PG		**Pb**	**11 26 03.2**	**-0.5**
PTK				*e*	SG		**Sn**	**11 26 18.1**	**-0.6**
PTK	**Pertek**	**1.03**	**44**	*e*	Pg		**Pb**	**11 26 03.2**	**-0.5**
PTK				*e*	Sg		**Sn**	**11 26 18.1**	**-0.6**
GZT	**Gaziantep**	**1.07**	**223**	*i*	P		**Pn**	**11 26 05.2**	**+0.4**
GZT				*i*	S		**Sn**	**11 26 19.8**	**+0.2**
TNCL	**Tunceli-Merkez**	**1.27**	**41**	*i*	P		**Pg**	**11 26 09.2**	**+0.7**
TNCL				*i*	S		**Sn**	**11 26 24.7**	**+0.2**
TNCL	**Tunceli-Merkez**	**1.27**	**41**		P		**Pg**	**11 26 09.2**	**+0.7**
TNCL					S		**Sn**	**11 26 24.7**	**+0.2**
ILIC	**ilic-Erzincan**	**1.30**	**3**	*e*	PN		**Pn**	**11 26 07.8**	**-0.1**
ILIC	**ilic-Erzincan**	**1.30**	**3**	*e*	Pn		**Pn**	**11 26 07.8**	**-0.1**
DYBB	**Diyarbakir**	**1.33**	**98**	*e*	PN		**Pg**	**11 26 09.4**	**-0.1**
GAZ	**Gaziantep**	**1.40**	**226**	*e*	PN		**Pg**	**11 26 11.3**	**+0.5**
GAZ	**Gaziantep**	**1.40**	**226**	*e*	Pn		**Pg**	**11 26 11.3**	**+0.5**
KMRS	**Kahramanmaras**	**1.40**	**243**	*e*	PN		**Pb**	**11 26 10.5**	**+0.5**
KMRS	**Kahramanmaras**	**1.40**	**243**	*e*	Pn		**Pb**	**11 26 10.5**	**+0.5**
CUKAN	**kangal_SIVAS**	**1.41**	**326**	*i*	P		**Pn**	**11 26 09.4**	**+0.1**
CUKAN				*i*	S		**Sg**	**11 26 30.1**	**+0.9**
CUKAN	**kangal_SIVAS**	**1.41**	**326**		P		**Pn**	**11 26 09.4**	**+0.1**
CUKAN					S		**Sg**	**11 26 30.1**	**+0.9**
DIY	**Diyarbakir**	**1.41**	**100**	*e*	Pn		**Pn**	**11 26 09.4**	**+0.1**
MAZI	**Mazidag**	**1.71**	**113**	*e*	PN		**Pb**	**11 26 15.5**	**+0.3**
MAZI	**Mazidag**	**1.71**	**113**	*e*	Pn		**Pb**	**11 26 15.5**	**+0.3**
KAMA	**Osmaniye**	**1.73**	**237**	*i*	P		**Pn**	**11 26 13.0**	**-0.7**
KAMA				*i*	S		**Sn**	**11 26 33.8**	**-1.8**
ERZN	**Erzincan**	**1.73**	**34**	*e*	PN		**Pn**	**11 26 14.2**	**+0.4**
KUZU	**Kuzuini**	**1.77**	**219**	*i*	P		**Pg**	**11 26 18.2**	**+0.4**
KUZU				*i*	S		**Sb**	**11 26 39.0**	**+0.7**
KUZU	**Kuzuini**	**1.77**	**219**		S		**Sb**	**11 26 39.0**	**+0.7**
ANDN	**Andirin**	**1.78**	**252**	*i*	P		**Pn**	**11 26 11.8**	**-2.7**
ANDN				*i*	S		**Sb**	**11 26 39.0**	**+0.3**
ANDN	**Andirin**	**1.78**	**252**		S		**Sb**	**11 26 39.0**	**+0.3**
SVSK	**Karacayir**	**2.10**	**327**	*e*	PN		**Pn**	**11 26 19.4**	**+0.6**
SVSK	**Karacayir**	**2.10**	**327**	*e*	Pn		**Pn**	**11 26 19.4**	**+0.6**

*NIED **18** 11:32:00, 36°.30N×143°.50E, h5km, Mw4.1 Best double couple: M₀1.56000×10¹⁵ NP1:φ₀24.00000°, δ28.00000°, λ-86.00000°. NP2:φ₀199.00000°, δ62.00000°, λ-92.00000°.*
*IDC **18** 11:32:40.6±0.5, 36°.17N×143°.91E, h0km, mb4.2/24, mb1 4.4/28, mb1mx4.3/52, mbtmp4.2/28, ML3.8/4, MS3.1/10, Ms1 3.1/10, ms1mx2.8/50, Error ellipse: s-maj=15.8km s-min=13.1km az=114.0*
*BJI **18** 11:32:43.1, 36°.56N×144°.01E, h30km, mb4.6/18, mB4.8/14, Ms4.4/4, Ms7 4.2/2*
*MOS **18** 11:32:43.3±1.7, 36°.41N×143°.89E, h27km, mb4.6/21, Error ellipse: s-maj=9.5km s-min=5.9km az=104.6*
*NEIC **18** 11:32:43.0±2.8, 36°.14N×143°.87E, h15km±17km, mb4.4/9, Error ellipse: s-maj=7.4km s-min=5.8km az=136.0*
*ISCJB **18** 11:32:44.2±0.3, 36°.24N±0°.03×143°.66E±0°.03, h33km, mb4.2/47, MS3.0/5, Error ellipse: s-maj=5.2km s-min=3.2km az=155.4*
*JMA **18** 11:32:45.5±0.2, 36°.29N×143°.52E, h94km, M4.3*
ISC 18 11:32:46.1±0.5,**36°.25N**±0°.05×**143°.70E**±0°.06,**h35**km,**n128,** σ1$**40**/125,**mb4.3**/47,**MS3.0**/5,**4C-3D,Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res
CHOJ	**Chosi**	**2.37**	**257**		P		**Pn**	**11 33 21.8**	**-0.7**
CHOJ					*e*S		**Sn**	**11 33 49.4**	**-0.9**
ONAJ	**Iwakimizuishiy**	**2.48**	**291**		*e*S		**Sn**	**11 33 51.2**	**-2.0**
JFK	**Kawauchi**	**2.53**	**297**		*e*S		**Sn**	**11 33 51.3**	**-3.0**
JHO	**Hitachi**	**2.55**	**279**		P		**Pn**	**11 33 23.7**	**-1.3**
JHO					*e*S		**Sn**	**11 33 52.5**	**-2.3**
BSO1	**Boso 1**	**2.73**	**235**		P		**Pn**	**11 33 25.7**	**-1.3**
BSO1					*e*S		**Sn**	**11 33 59.0**	**+0.4**
JFT	**Otama**	**2.98**	**296**		P		**Pn**	**11 33 30.4**	**-0.5**
JFT					*e*S		**Sn**	**11 34 03.6**	**-1.8**
JMK	**Ichinoseki**	**3.34**	**325**		P		**Pn**	**11 33 34.1**	**-1.7**
JAG	**Ashikaga**	**3.43**	**274**		P		**Pn**	**11 33 36.4**	**-0.7**
JAG					*e*S		**Sn**	**11 34 14.0**	**-2.6**
JOD2	**Odawara 2**	**3.88**	**257**		P		**Pn**	**11 33 42.5**	**-0.8**
JOD2					*e*S		**Sn**	**11 34 26.5**	**-1.1**
JRY	**Ryogami san**	**3.89**	**268**		P		**Pn**	**11 33 42.5**	**-0.9**
JRY					*e*S		**Sn**	**11 34 25.9**	**-2.0**
MJAR	**Matsushiro Arr**	**4.44**	**275**		Pn		**Pn**	**11 33 50.7**	**-0.3**
	15nm,0.3s,baz=64,slow=43,SNR=82								
MJAR					*e*S		**Sn**	**11 34 41.8**	**+0.4**
	11nm,0.3s,baz=95,slow=27,SNR=4.6								
MJAR					LR		LR	11 35 45.0	
	comp=Z,190nm,21.6s,baz=145,slow=40								
MAJO	**Matsushiro**	**4.44**	**275**	*c*	*i* P		**Pn**	**11 33 51.6**	**+0.6**
MAJO	**Matsushiro**	**4.44**	**275**		*e*Pn		**Pn**	**11 33 51.6**	**+0.6**
MAT	**Matsushiro**	**4.44**	**275**		P		**Pn**	**11 33 51.0**	**0.0**
MAT					*e*S		**Sn**	**11 34 42.6**	**+1.1**
MJB9	**Matsu-Tunnel**	**4.44**	**275**		*e*Pn		**Pn**	**11 33 51.7**	**+0.6**
JHJ2	**Mitsune**	**4.48**	**227**		P		**Pn**	**11 33 49.3**	**-2.2**
JHJ2	**Mitsune**	**4.48**	**227**		*e*Pn		**Pn**	**11 33 49.7**	**-1.8**
JHJ2					*e*Sn		**Sn**	**11 34 40.8**	**-1.5**
JHJ	**Hachijo jima 2**	**4.49**	**227**		Pn		**Pn**	**11 33 49.4**	**-2.3**
	79nm,0.3s,baz=78,slow=22,SNR=43								
JHJ					*e*S		**Sn**	**11 34 40.9**	**-1.8**
	136nm,0.3s,baz=111,slow=23,SNR=12								
INU	**Inuyama**	**5.50**	**263**		*e*Pn		**Pn**	**11 34 06.3**	**+0.7**
JOT	**Ohata**	**5.53**	**339**		P		**Pn**	**11 34 05.0**	**-0.8**
ERM	**Erimo**	**5.77**	**356**		*e*P		**Pn**	**11 34 07.1**	**-2.1**
ERM	**Erimo**	**5.77**	**356**		*e*Pn		**Pn**	**11 34 07.1**	**-2.1**
JKB	**Kayabe**	**6.00**	**341**		P		**Pn**	**11 34 10.6**	**-1.7**
JCH	**Churui**	**6.36**	**358**		P		**Pn**	**11 34 13.2**	**-4.1**
JCH					*e*S		**Sn**	**11 35 19.5**	**-9.2**
JOSM	**Okushiri--Mats**	**6.68**	**332**		P		**Pn**	**11 34 20.9**	**-0.8**
JWZ	**Kozaga**	**7.10**	**250**		P		**Pn**	**11 34 27.1**	**-0.4**
NEM2	**Nemuro 2**	**7.28**	**12**		P		**Pn**	**11 34 24.5**	**-5.4**
JHR	**Hokuryu**	**7.63**	**349**		P		**Pn**	**11 34 32.5**	**-2.3**
JTKR	**Abashiri--Toko**	**7.71**	**1**		P		**Pn**	**11 34 31.9**	**-3.9**
ASAJ	**Asahikawa**	**7.90**	**354**		Pn		**Pn**	**11 34 35.5**	**-3.0**
	6.7nm,0.3s,baz=199,slow=9.2,SNR=43								
ASAJ					*e*S		**Sn**	**11 34 36.0**	**-2.4**
	0.9nm,0.3s,baz=22,slow=32,SNR=3.5								
ASAJ					LR		LR	11 37 57.7	
	comp=Z,50nm,21.6s,baz=298,slow=40								
ASAJ	**Asahikawa**	**7.90**	**354**		*e*Pn		**Pn**	**11 34 36.0**	**-2.4**
ASAJ					*e*S		**Sn**	**11 34 36.0**	**-5.5**
YUK	**Yuzh-Kuril'sk**	**7.95**	**11**		P		**Pn**	**11 34 34.1**	**-5.0**
YUK					*e*S		**Sn**	**11 35 57.4**	**-10**
YUK					pmax		pmax		
	comp=Z,93nm,0.3s								
YUK					pmax		pmax		
	comp=N,52nm,0.2s								
YUK					pmax		pmax		
	comp=E,53nm,0.4s								
SHO	**Shikotan**	**7.98**	**17**	*e*	P		Pn	11 34 34.8	-4.7
SHO					pmax		pmax		
	comp=Z,51nm,0.8s								
SHO					pmax		pmax		
	comp=N,45nm,0.6s								
SHO					pmax		pmax		
	comp=E,62nm,0.8s								
JCJ	**Chichijima**	**9.22**	**188**		LR		LR	11 37 57.8	
	comp=E,205nm,20.8s,baz=0.0,slow=35								
KUR	**Kuril'sk**	**9.51**	**18**	*e*	P		Pn	11 34 55.4	-5.1
KUR					*e*S		Sn	11 36 34.0	-12
KUR					pmax		pmax		
	comp=N,8.0nm,0.9s								
KUR					pmax		pmax		
	comp=Z,21nm,0.9s								
KUR					smax		smax		
	comp=N,26nm,0.9s								
KUR					smax		smax		
	comp=E,20nm,0.9s								
JNU	**Nakatsue**	**11.01**	**257**		LR		LR	11 40 07.0	
	comp=E,174nm,19.0s,baz=115,slow=40								
USRK	**Ussuriysk Ar.**	**11.96**	**315**		Pn		**Pn**	**11 35 35.6**	**+1.7**
	comp=E,0.5nm,0.3s,baz=119,slow=12,SNR=8.9								
KSRS	**Korea Array**	**12.70**	**280**		Pn		**Pn**	**11 35 47.0**	**+2.9**
	comp=E,0.2nm,0.3s,baz=99,slow=14,SNR=4.2								
KSRS					LR		LR	11 40 05.2	
	comp=E,102nm,21.7s,baz=53,slow=34								
KSRS	**Korea Array**	**12.70**	**280**		P		**Pn**	**11 35 47.0**	**+2.9**
KSRS					MLR		MLR		
	comp=Z,102nm,21.7s								
KSAR	**Wonju Array Be**	**12.73**	**280**		P		**Pn**	**11 35 47.0**	**+2.4**
KSAR	**Wonju Array Be**	**12.73**	**280**		Pn		**Pn**	**11 35 47.0**	**+2.4**
KLR	**Kul'dur**	**15.63**	**330**		Pn		**Pn**	**11 36 19.8**	**-3.9**
	comp=Z,0.2nm,0.3s,baz=138,slow=12,SNR=6.1								
PEA0	**Petropavlovsk-**	**19.51**	**26**	*e*	P		**P**	**11 37 10.9**	**+0.7**
MA2	**Magadan**	**23.79**	**9**		P		**P**	**11 37 54.9**	**-0.4**
	comp=Z,2.4nm,0.6s,baz=218,slow=12,SNR=5.7								
HHC	**Hu-ho-hao-te**	**25.47**	**290**	*e*	P		**P**	**11 38 11.8**	**+0.9**
HHC					pmax		pmax		
	comp=Z,20nm,1.1s								
HHC					pmax		pmax		
	comp=Z,89nm,4.7s								
H11N2	**WAKE ISLAND Hy**	**26.17**	**123**		T		T	12 05 24.3	
	baz=314,slow=75,SNR=186								
H11N1	**WAKE ISLAND Hy**	**26.18**	**123**		T		T	12 05 24.8	
	baz=314,slow=75,SNR=146								
H11N3	**WAKE ISLAND Hy**	**26.19**	**123**		T		T	12 05 22.1	
	baz=314,slow=75,SNR=90								
H11S1	**WAKE ISLAND Hy**	**26.90**	**125**		T		T	12 06 21.0	
	baz=316,slow=76,SNR=62								
H11S3	**WAKE ISLAND Hy**	**26.90**	**125**		T		T	12 06 19.9	
	baz=316,slow=76,SNR=75								
H11S2	**WAKE ISLAND Hy**	**26.91**	**125**		T		T	12 06 23.5	
	baz=316,slow=76,SNR=44								
SEY	**Seymchan**	**27.24**	**9**		P		**P**	**11 38 27.7**	**+1.1**
	comp=Z,1.9nm,0.5s,baz=194,slow=7.5,SNR=15								
YAK	**Yakutsk**	**27.26**	**346**		P		**P**	**11 38 26.6**	**-0.1**
	comp=Z,12nm,0.5s,baz=353,slow=2.1,SNR=4.0								
YAK					LR		LR	11 51 31.5	
	comp=Z,14nm,18.3s,baz=319,slow=41								
YAK	**Yakutsk**	**27.26**	**346**	*e*	P		**P**	**11 38 26.8**	**+0.1**
YAK					pmax		pmax		
	comp=Z,25nm,1.3s								
BOD	**Bodaibo**	**29.18**	**327**	*e*	P		P	11 38 40.8	-3.1
BOD					pmax		pmax		
	comp=Z,3.0nm,1.2s								
ULN	**Ulaanbaatar**	**29.31**	**305**	*i*	*e*P		**P**	**11 38 46.1**	**+0.7**
ULN					pmax		pmax		
	comp=Z,3.0nm,1.2s								
SONA1	**Songino Array**	**29.74**	**305**	*e*	P		**P**	**11 38 51.0**	**+1.8**
SONM	**Songino Array**	**29.74**	**305**		P		**P**	**11 38 51.4**	**+2.1**
	comp=Z,2.2nm,0.8s,baz=94,slow=7.9,SNR=15								
SONM					LR		LR	11 50 52.9	
	comp=Z,27nm,18.9s,baz=130,slow=36								
ZAK	**Zakamensk**	**32.19**	**309**	*e*	P		**P**	**11 39 11.9**	**+1.2**
ZAK					pmax		pmax		
	comp=Z,2.0nm,1.0s								
TLY	**Talaya**	**32.23**	**311**		LR		LR	11 52 20.0	
	comp=Z,33nm,20.1s,baz=116,slow=36								
TLY	**Talaya**	**32.23**	**311**	*e*	P		P	11 39 14.4	+3.5
TLY					pmax		pmax		
	comp=Z,3.0nm,0.9s								
CD2	**Chengdu**	**33.53**	**273**		P		**P**	**11 39 22.0**	**-0.6**
BILL	**Bilibino**	**34.28**	**15**	*i*	*e*P		**P**	**11 39 27.7**	**-0.9**
BILL					pmax		pmax		
	comp=Z,2.0nm,0.8s								
BILL	**Bilibino**	**34.28**	**15**	*e*	P		**P**	**11 39 28.2**	**-0.4**
	comp=Z,3.2nm,0.9s								
GTA	**Gaotai**	**34.55**	**289**	*e*	P		P	11 39 35.1	+3.6
GTA					pP		pP	11 39 41.8	+0.2
GTA					sP		sP	11 39 44.8	-1.0
GTA					pmax		pmax		
	comp=Z,6.0nm,0.9s								
TIXI	**Tiksi**	**36.30**	**352**	*i*	*e*P		**P**	**11 39 45.4**	**-0.5**
TIXI					pmax		pmax		
	comp=Z,1.0nm,0.7s								
KMI	**Kunming**	**36.69**	**264**		P		**P**	**11 39 50.6**	**+0.6**
KMI					pP		pP	11 39 59.3	-0.9
KMI					sP		sP	11 40 02.5	-1.9
KMI					pmax		pmax		
	comp=Z,14nm,0.5s								
WMQ	**Urumqi**	**42.83**	**298**	*e*	P		**P**	**11 40 42.4**	**+1.7**
WMQ					pmax		pmax		
	comp=Z,3.0nm,0.6s								
CMAR	**Chiang Mai Arr**	**43.10**	**258**		LR		LR	11 59 21.1	
	comp=Z,20nm,20.0s,baz=190,slow=37								
ZAA0	**Zalesovo Array**	**43.80**	**313**	*e*	P		**P**	**11 40 49.0**	**+0.8**
ZAA0				*e*	pP		pP	11 40 49.6	-9.0
ZALV	**Zalesovo Beam**	**43.80**	**313**		P		**P**	**11 40 49.5**	**+1.3**
	comp=Z,6.5nm,0.6s,baz=96,slow=7.3,SNR=23								
ZALV					PcP		PcP	**11 42 34.8**	**+0.5**
	comp=Z,1.4nm,0.5s,baz=79,slow=3.0,SNR=4.0								
ZALV	**Zalesovo Beam**	**43.80**	**313**	*i*	P		**P**	**11 40 49.5**	**+1.3**
ZALV					pmax		pmax		
	comp=Z,6.0nm,0.6s								
MK01	**Makanchi Array**	**46.09**	**303**	*e*	P		**P**	**11 41 07.5**	**+0.8**
MK31	**Makanchi Array**	**46.09**	**303**	*e*	P		**P**	**11 41 08.3**	**+1.6**
MK31	**Makanchi Array**	**46.09**	**303**	*e*	P		**P**	**11 41 08.2**	**+1.6**
MKAR	**Makanchi Array**	**46

	comp=Z,0.8nm,0.5s,baz=269,slow=3.9,SNR=6.3						
YKA	**Yellowknife Ar**	**63.55**	**31**	P	**P**	**11 43 11.9**	**-0.8**
	comp=Z,0.3nm,0.7s,baz=298,slow=6.4,SNR=6.5						
YKA				PcP	**PcP**	**11 43 48.4**	**-0.5**
	comp=Z,0.2nm,0.5s,baz=298,slow=4.1,SNR=5.4						
GEYT	**Alibeck**	**65.82**	**300**	P	**P**	**11 43 29.0**	**+1.0**
	comp=Z,4.2nm,0.6s,baz=38,slow=2.6,SNR=3.8						
STKA	**Stephens Creek**	**67.80**	**182**	P	**P**	**11 43 39.6**	**-0.8**
	comp=Z,2.5nm,1.0s,baz=348,slow=8.8,SNR=4.1						
OBN	**Obninsk**	**69.81**	**324**	*eP*	**P**	**11 43 53.3**	**+0.6**
OBN				*e*		11 44 16.9	
OBN				pmax	pmax		
	comp=Z,3.0nm,0.6s						
FINES	**FINESS Array B**	**70.35**	**333**	P	**P**	**11 43 56.7**	**+0.8**
	comp=Z,4.0nm,0.7s,baz=53,slow=7.4,SNR=10						
KBZ	**Khabaz**	**72.80**	**312**	P	**P**	**11 44 12.0**	**+1.0**
	comp=Z,2.3nm,0.8s,baz=109,slow=4.5,SNR=8.3						
KBZ	**Khabaz**	**72.80**	**312**	P	**P**	**11 44 12.0**	**+1.0**
KIV	**Kislovodsk**	**72.80**	**312**	*ceP*	**P**	**11 44 13.1**	**+2.0**
KIV				pmax	pmax		
	comp=Z,4.0nm,0.7s						
NVAR	**Mina Array Bea**	**73.97**	**54**	P	**P**	**11 44 19.0**	**+0.7**
	comp=Z,0.8nm,0.7s,baz=272,slow=6.9,SNR=0.9						
ANN	**Anapa**	**75.39**	**315**	*eP*	**P**	**11 44 24.2**	**-1.9**
ANN				*e**PP	**pP**	**11 44 34.5**	**-2.5**
ANN				*e*		11 47 12.2	
ANN				*e*PPP	PPP	11 48 57.8	
ANN				*eS*	**S**	**11 53 59.4**	**-4.0**
ANN				pmax	pmax		
	comp=Z,27nm,1.2s						
NB2	**NORSAR Subarra**	**75.61**	**338**	P	**P**	**11 44 27.5**	**+0.4**
	comp=Z,1.8nm,0.6s,baz=38,slow=5.9						
NOA	**NORSAR Array B**	**75.61**	**338**	P	**P**	**11 44 27.8**	**+0.7**
	comp=Z,2.5nm,0.7s,baz=38,slow=5.7,SNR=12						
NOA				LR	LR	12 20 36.4	
	comp=Z,16nm,22.0s,baz=275,slow=38						
AKASG	**Malin Array Be**	**76.03**	**323**	P	**P**	**11 44 30.0**	**+0.4**
	comp=Z,1.2nm,0.5s,baz=47,slow=6.1,SNR=4.9						
AKASG	**Malin Array Be**	**76.03**	**323**	*i* P	**P**	**11 44 29.6**	**0.0**
AKASG				pmax	pmax		
	comp=Z,1.0nm,0.5s						
KIEV	**Kiev**	**76.04**	**323**	P	**P**	**11 44 30.0**	**+0.3**
KIEV				pmax	pmax		
	comp=Z,2.0nm,0.6s						
PDAR	**Pinedale Array**	**76.89**	**46**	P	**P**	**11 44 34.5**	**-0.5**
	comp=Z,0.3nm,0.5s,baz=306,slow=1.1,SNR=5.2						
FRB	**Frobisher Bay**	**77.10**	**14**	P	**P**	**11 44 34.5**	**-0.9**
	comp=Z,1.3nm,0.6s,baz=6.5,slow=3.3,SNR=4.8						
BUR08	**Bucovina Ar. S**	**80.04**	**323**	*eP*	**P**	**11 44 53.2**	**+1.1**
BRTR	**Keskin Array B**	**80.74**	**313**	P	**P**	**11 44 57.0**	**+0.9**
	comp=Z,1.6nm,0.8s,baz=110,slow=2.9,SNR=6.0						
BR231	**Keskin MP Arra**	**81.17**	**313**	*eP*	**P**	**11 44 57.4**	**-0.9**
CLL	**Collm**	**82.68**	**331**	*eP*	**P**	**11 45 06.0**	**+0.2**
CLL				*e*		11 45 12.0	
CLL	**Collm**	**82.68**	**331**	*eP*	**P**	**11 45 06.0**	**+0.2**
TXAR	**Lajitas Array**	**89.12**	**54**	P	**P**	**11 45 37.5**	**-0.8**
	comp=Z,0.2nm,0.5s,baz=315,slow=2.7,SNR=5.0						
LPAZ	**La Paz**	**145.45**	**63**	PKPbc	**PKPdf**	**11 52 21.6**	**-0.1**
	comp=Z,1.1nm,0.5s,baz=27,slow=9.7,SNR=4.3						

*IDC **18** 11:37:25.8±2.4,6°.17S×142°.71E,h56km±26km,mb3.7/6, mb1 3.8/9,mb1mx3.6/31,mbtmp3.9/9,ML2.2/2,MS3.2/5, Ms1 3.2/5,ms1mx2.8/35,Error ellipse: s-maj=20.9km s-min=16.1km az=48.0*

ISC 18 11:37:21.9±1.3,6°.45S±0°.08×142°.9E±0°.2,h35km,n11, σ1§66/10,mb3.9/5,MS3.1/3,New Guinea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JAY	**Jayapura**	**4.49**	**330**	P	**Pn**	**11 38 26.5**	**-1.0**
	0.3nm,0.3s,baz=157,slow=23,SNR=7.8						
JAY				S	**Sn**	**11 39 18.7**	**+0.1**
	0.5nm,0.3s,baz=275,slow=23,SNR=5.6						
PMG	**Port Moresby**	**5.12**	**125**	P	Pn	11 38 43.1	+6.9
	3.4nm,0.3s,baz=336,slow=3.1,SNR=10						
PMG				S	Sn	11 39 47.7	+13
	5.1nm,0.3s,baz=38,slow=4.5,SNR=3.5						
PMG				LR	LR	11 41 25.8	
	comp=Z,104nm,20.0s,baz=268,slow=44						
WRA	**Warramunga Arr**	**15.79**	**211**	P	**Pn**	**11 41 01.1**	**-0.7**
	0.3nm,0.3s,baz=29,slow=13,SNR=17						
WRA				S	**Sn**	**11 43 52.7**	**-3.0**
	0.2nm,0.3s,baz=29,slow=22,SNR=4.7						
ASAR	**Alice Springs**	**19.19**	**206**	P	**Pn**	**11 41 46.0**	**+2.2**
	0.3nm,0.3s,baz=32,slow=9.8,SNR=56						
ASAR				LR	LR	11 49 58.9	
	comp=Z,123nm,20.8s,baz=16,slow=39						
FITZ	**Fitzroy Crossi**	**20.45**	**234**	P	**P**	**11 41 57.8**	**+1.2**
	6.4nm,0.8s,baz=50,slow=9.9,SNR=8.5						
FITZ				LR	LR	11 50 18.6	
	comp=Z,94nm,19.4s,baz=50,slow=38						
KAPI	**Kappang**	**23.09**	**272**	P	**P**	**11 42 26.4**	**+1.5**
	9.7nm,0.7s,baz=82,slow=10,SNR=3.4						
KAPI				LR	LR	11 53 10.7	
	comp=Z,48nm,18.3s,baz=135,slow=41						
STKA	**Stephens Creek**	**25.33**	**183**	P	P	11 42 50.4	+4.9
	0.9nm,0.6s,baz=290,slow=2.8,SNR=5.4						
ASAJ	**Asahikawa**	**50.33**	**360**	LR	LR	12 08 56.3	
	comp=Z,16nm,18.4s,baz=298,slow=38						
KLR	**Kul'dur**	**56.30**	**351**	P	**P**	**11 46 58.7**	**-0.4**
	0.5nm,0.3s,baz=153,slow=16,SNR=3.4						
MKAR	**Makanchi Array**	**75.30**	**322**	P	**P**	**11 49 01.7**	**+0.2**
	0.6nm,0.7s,baz=111,slow=6.6,SNR=6.0						
ILAR	**Eielson Array**	**87.51**	**24**	P	**P**	**11 50 05.5**	**-0.3**
	0.6nm,0.7s,baz=250,slow=5.2,SNR=6.6						

JMA 18 11:40:45.4,35°.39N×136°.29E,h38km,M2.7,3C-2D Broadband fault plane solution: P waves. NP1: φ≤54.00000°,δ74.00000°,λ-43.00000°. **NP2:** φ≤158.00000°,δ49.00000°,λ-159.00000°. **Principal axes:** T Plg16.0000°, Azm112.0000°; N Plg44.0000°, Azm218.0000°; P Plg41.0000°, Azm7.0000°; **Western Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JEG	**Eigenji**	**0.27**	**162**	↓P	Pn	11 40 53.0	-0.7
JEG				S	Sn	11 40 58.5	-2.4
JFM	**Mihama**	**0.29**	**299**	↑P	Pn	11 40 53.2	-0.4
JFM				S	Sn	11 40 58.9	-1.7
JGM	**Miyama**	**0.47**	**48**	↑P	Pn	11 40 55.6	+0.1
JGM				S	Sn	11 41 02.9	+0.2
TSUJ	**Tsu 2**	**0.69**	**171**	↓P	Pn	11 40 58.4	-0.2
TSUJ				S	Sn	11 41 08.4	+0.3
JWT	**Wachi**	**0.73**	**262**	↑P	Pn	11 40 59.4	+0.2
JWT				S	Sn	11 41 09.5	+0.3
JKG	**Kaga**	**0.89**	**2**	P	Pn	11 41 01.7	+0.4
JKG				S	Sn	11 41 13.6	+0.6
JHE	**Heguri**	**0.89**	**214**	P	Pn	11 41 01.7	+0.3
JHE				S	Sn	11 41 13.7	+0.7
JKY	**Yasaka**	**1.00**	**284**	P	Pn	11 41 03.5	+0.7
JKY				*eS*	Sn	11 41 16.9	+1.2
JIE	**Ise**	**1.05**	**161**	P	Pn	11 41 04.2	+0.6
JKN2	**Miekihoku**	**1.15**	**181**	P	Pn	11 41 04.8	-0.1
JKN2				*eS*	Sn	11 41 19.4	0.0
JKS	**Kasai**	**1.25**	**251**	P	Pn	11 41 06.6	+0.3
MAT	**Matsushiro**	**1.93**	**53**	P	Pn	11 41 16.5	+0.8

MAN 18 11:53:54,13°.59N×124°.17E,h61km,mb5.3,ML4.3,MS4.5, 1C,Luzon

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PVCP	**Virac**	**0.02**	**305**	*eP*	Pn	11 54 04.0	+0.9
PVCP				*eS*	Sn	11 54 10.5	+1.0
AUQP	**San Andres**	**1.48**	**260**	*eP*	Pn	11 54 20.8	+2.4
AUQP				*eS*	Sn	11 54 39.1	+2.3
GQP	**Guinayangan**	**1.71**	**281**	↑*eP*	Pn	11 54 15.7	-5.8
GQP				*eS*	Sn	11 54 46.9	+4.6
BOAC	**Boac**	**2.27**	**267**	*eP*	Pn	11 54 27.4	-1.7
SJMP	**San Jose**	**3.18**	**250**	*eP*	Pn	11 54 43.9	+2.4

*IDC **18** 12:05:35.2±4.0,0°.09N×98°.40E,h0km,mb3.6/5,mb1 3.7/5, mb1mx3.4/44,mbtmp3.6/5,MS2.7/1,Ms1 2.9/1, ms1mx2.4/53,Error ellipse: s-maj=166.0km s-min=22.1km az=58.0*

*DJA **18** 12:05:42.9±0.5,0°.N±4°×9°.9E±°,h10km,M3.8/12,mb3.9/1, MLv3.7/12*

ISC 18 12:05:43.7±1.0,0°.25N±0°.07×98°.54E±0°.06,h48km,n15, σ2§02/16,mb3.7/5,Northern Sumatera

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MNSI	**Mandailing Nat**	**1.17**	**63**	P	**Pn**	**12 06 02.6**	**-1.2**
MNSI				S	**Sn**	**12 06 21.3**	**+2.7**
SBSI	**Sibolga**	**1.33**	**15**	P	**Pn**	**12 06 09.1**	**+3.1**
GSI	**Gunungsitoli**	**1.42**	**317**	P	**Pn**	**12 06 06.9**	**-0.2**
GSI				S	**Sn**	**12 06 26.8**	**+2.1**
PPI	**Padang Panjang**	**1.99**	**111**	P	**Pn**	**12 06 13.2**	**-1.7**
PPI				S	**Sn**	**12 06 36.2**	**-2.4**
PDSI	**Padang**	**2.25**	**121**	P	**Pn**	**12 06 21.1**	**+2.6**
BKNI	**Bangkinang**	**2.50**	**88**	P	**Pn**	**12 06 24.3**	**+2.3**
TPTI		**3.28**	**336**	P	**Pn**	**12 06 32.9**	**+0.2**
KCSI	**Kotacane, Aceh**	**3.34**	**347**	P	**Pn**	**12 06 33.4**	**0.0**
PPSI	**Pulau Pagai**	**3.34**	**154**	P	**Pn**	**12 06 35.9**	**+2.5**
CMAR	**Chiang Mai Arr**	**18.09**	**1**	LR	LR	12 17 25.3	
	comp=Z,28nm,21.0s,baz=250,slow=39						
WRA	**Warramunga Arr**	**40.40**	**122**	P	**P**	**12 13 17.4**	**-0.1**
	0.8nm,1.1s,baz=311,slow=9.1,SNR=3.9						
ASAR	**Alice Springs**	**41.76**	**127**	P	P	12 13 24.7	-4.0
	0.2nm,0.6s,baz=308,slow=8.0,SNR=5.1						
SONM	**Songino Array**	**47.88**	**7**	P	**P**	**12 14 16.3**	**-0.8**
	0.4nm,0.5s,baz=209,slow=7.9,SNR=2.9						
MKAR	**Makanchi Array**	**48.48**	**345**	P	**P**	**12 14 20.9**	**-0.8**
	1.0nm,0.6s,baz=149,slow=7.7,SNR=5.5						
ZALV	**Zalesovo Beam**	**54.71**	**350**	P	**P**	**12 15 06.6**	**-1.3**
	0.6nm,0.3s,baz=151,slow=3.3,SNR=3.8						

*CSEM **18** 12:08:23.5,37°.31N×24°.71W,h5km,ML3.4*

PDA 18 12:08:23.5±1.1,37°.31N×24°.71W,h5km,MD3.9,ML3.4, Error ellipse: s-maj=7.0km s-min=2.4km az=87.0, Azores Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PSMN	**Pico do Norte,**	**0.42**	**223**	*eP*	Pg	12 08 30.8	-0.7
PSMN				*eS*	Sg	12 08 36.5	-0.4
PSMN	**Pico do Norte,**	**0.42**	**223**	*eP*	Pg	12 08 30.8	-0.7
PSMN				*eS*	Sg	12 08 36.5	-0.4
PSMN				A	A	12 08 37.1	
	956nm,0.3s						
PSMA	**Santa Maria**	**0.46**	**227**	*eP*	Pg	12 08 31.1	-1.2
PSMA				*eS*	Sg	12 08 37.3	-1.0
PSMA				A	A	12 08 41.7	
	962nm,0.1s						
BART	**Pico Bartolome**	**0.59**	**322**	*eP*	Pg	12 08 33.1	-1.9
BART				*eS*	Sg	12 08 41.0	-1.7
BART	**Pico Bartolome**	**0.59**	**322**	*eP*	Pg	12 08 33.1	-1.9
BART				*eS*	Sg	12 08 41.0	-1.7
BART				A	A	12 08 43.2	
	880nm,0.2s						
PCALD	**Caldeiras da R**	**0.79**	**309**	*eP*	Pg	12 08 36.3	-2.3
PCALD				*eS*	Sg	12 08 45.7	-3.2
PCALD				A	A	12 08 46.6	
	354nm,0.1s						
GRON	**Grota Negra**	**0.80**	**305**	*eP*	Pg	12 08 35.3	-3.6
GRON				*eS*	Sg	12 08 44.0	-5.3
GRON				A	A	12 08 45.0	
	283nm,0.2s						
PDA	**Ponta Delgada**	**0.88**	**300**	*eP*	Pg	12 08 37.5	-2.8
PDA				*eS*	Sg	12 08 48.3	-3.4
PDA	**Ponta Delgada**	**0.88**	**300**	*eP*	Pg	12 08 37.5	-2.8
PDA				*eS*	Sg	12 08 48.3	-3.4
PSET	**Sete Cidades**	**0.95**	**303**	*eP*	Pg	12 08 38.9	-2.9
PSET				*eS*	Sg	12 08 50.2	-4.0
PSET	**Sete Cidades**	**0.95**	**303**	*eP*	Pg	12 08 38.9	-2.9
PSET				*eS*	Sg	12 08 50.2	-4.0
PSET				A	A	12 08 53.4	
	325nm,0.2s						
ADH	**Angra Heroismo**	**2.41**	**305**	*eP*	Pn	12 08 58.9	-4.6
ADH				*eS*	Sn	12 09 25.6	-7.8
ADH	**Angra Heroismo**	**2.41**	**305**	*eP*	Pn	12 08 58.9	-4.6
ADH				*eS*	Sn	12 09 25.6	-7.8
ADH				A	A	12 09 28.9	
	111nm,0.2s						
PMAN	**Manadas**	**2.98**	**297**	*eP*	Sn	12 09 39.8	-7.7
PGRA	**Graciosa**	**3.10**	**305**	*eP*	Sn	12 09 44.0	-6.5
ROSA	**Rosais**	**3.12**	**298**	*eP*	Pn	12 09 09.8	-3.6
ROSA				*eS*	Sn	12 09 43.7	-7.4
ROSA	**Rosais**	**3.12**	**298**	*eP*	Pn	12 09 09.8	-3.6
ROSA				*eS*	Sn	12 09 43.7	-7.4
ROSA				A	A	12 09 46.0	
	48nm,0.3s						
PICO	**Pico**	**3.17**	**293**	*eP*	Pn	12 09 10.5	-3.6
PICO				*eS*	Sn	12 09 44.9	-7.5
PICO	**Pico**	**3.17**	**293**	*eP*	Pn	12 09 10.5	-3.6
PICO				*eS*	Sn	12 09 44.9	-7.5
PICO				A	A	12 09 47.3	
	77nm,0.2s						
PCAN	**Candelaria**	**3.20**	**292**	*eP*	Pn	12 09 11.4	-3.1
PCAN				*eS*	Sn	12 09 45.9	-7.2
PCAN	**Candelaria**	**3.20**	**292**	*eP*	Pn	12 09 11.4	-3.1
PCAN				*eS*	Sn	12 09 45.9	-7.2
PCAN				A	A	12 09 50.1	
	40nm,0.2s						
CALA	**Caldeira**	**3.40**	**293**	*eS*	Sn	12 09 51.5	-6.6
CALA	**Caldeira**	**3.40**	**293**	*eS*	Sn	12 09 51.5	-6.6

*IDC **18** 12:12:07.1±1.1,20°.63S×178°.94W,h593km±13km, mb3.6/16,mb1 3.8/19,mb1mx3.6/33,mbtmp4.6/19,Error ellipse: s-maj=15.1km s-min=11.0km az=143.0*

*ISCJB **18** 12:12:09.5±0.5,20°.90S±0°.10×179°.0W±0°.1,h645km, mb4.0/16,Error ellipse: s-maj=14.2km s-min=12.0km az=36.4*

ISC 18 12:12:11.2±0.6,20°.8S±0°.1×179°.1W±0°.1,h645km,n30, σ1§65/27,mb4.1/15,Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**8.48**	**173**	P	P	12 14 12.4	-4.0
	54nm,0.3s,baz=92,slow=21,SNR=3.2						
AFI	**Afiamalu**	**9.76**	**47**	P	P	12 14 21.3	-7.5
	18nm,0.3s,baz=163,slow=1.7,SNR=29						
AFI				S	S	12 16 09.9	-12
	7.0nm,0.3s,baz=46,slow=23,SNR=6.7						
DZM	**Mont Dzumac**	**13.56**	**62**	P	**P**	**12 15 04.3**	**-0.2**
	0.9nm,0.3s,baz=79,slow=18,SNR=11						
URZ	**Urewera**	**17.72**	**190**	P	**P**	**12 15 38.3**	**-3.8**
	8.2nm,0.3s,baz=265,slow=2.4,SNR=45						
RAR	**Rarotonga**	**18.01**	**95**	P	P	12 15 36.1	-9.0
	1.9nm,0.3s,baz=336,slow=0.8,SNR=4.0						
HNR	**Honiara**	**23.17**	**296**	P	**P**	**12 16 29.1**	**-2.2**
	40nm,0.3s,baz=202,slow=13,SNR=4.2						
RPZ	**Rata Peaks**	**24.30**	**198**	P	**P**	**12 16 40.4**	**-0.4**
	9.0nm,0.5s,baz=350,slow=9.1,SNR=6.2						
STKA	**Stephens Creek**	**36.77**	**244**	P	**P**	**12 18 28.1**	**+1.1**
	4.0nm,0.5s,baz=93,slow=10,SNR=33						
JAY	**Jayapura**	**43.20**	**289**	P	**P**	**12 19 18.5**	**+0.3**
	0.8nm,0.4s,baz=113,slow=20,SNR=8.8						
ASAR	**Alice Springs**	**43.49**	**257**	P	**P**	**12 19 20.2**	**-0.1**
	8.3nm,0.5s,baz=94,slow=7.4,SNR=213						
ASAR				ScP	**ScP**	**12 23 50.6**	**+6.0**
	0.8nm,0.6s,baz=102,slow=4.3,SNR=8.8						
WRA	**Warramunga Arr**	**43.58**	**263**	P	**P**	**12 19 20.8**	**-0.2**
	4.2nm,0.5s,baz=98,slow=7.8,SNR=140						
VNDA	**Vanda**	**57.53**	**185**	P	**P**	**12 21 01.6**	**+0.8**
	1.7nm,0.7s,baz=349,slow=7.6,SNR=10.0						
PETK	**Petropavlovsk-**	**76.31**	**346**	P	**P**	**12 22 55.4**	**-0.1**
	1.5nm,0.6s,baz=188,slow=5.2,SNR=2.4						
NVAR	**Mina Array Bea**	**81.92**	**44**	P	**P**	**12 23 25.8**	**+0.2**
	4.6nm,0.7s,baz=223,slow=8.2,SNR=10						
SEY	**Seymchan**	**86.44**	**347**	P	**P**	**12 23 46.9**	**+0.2**
	1.1nm,0.5s,baz=138,slow=6.0,SNR=8.3						
TXAR	**Lajitas Array**	**88.05**	**58**	P	**P**	**12 23 56.0**	**+0.8**
	3.8nm,0.8s,baz=221,slow=6.5,SNR=53						
ILAR	**Eielson Array**	**88.82**	**13**	P	**P**	**12 23 56.6**	**-1.2**
	1.2nm,0.7s,baz=220,slow=5.5,SNR=13						
CMAR	**Chiang Mai Arr**	**89.28**	**290**	P	**P**	**12 24 01.0**	**0.0**
	0.8nm,0.7s,baz=115,slow=3.9,SNR=4.7						
PLCA	**Paso Flores**	**89.79**	**134**	P	**P**	**12 24 03.2**	**+0.1**
	2.4nm,1.1s,baz=276,slow=10,SNR=3.9						
PDAR	**Pinedale Array**	**89.86**	**44**	P	**P**	**12 24 03.2**	**-0.2**
	4.2nm,0.7s,baz=212,slow=4.3,SNR=27						
YKA	**Yellowknife Ar**	**97.19**	**25**	P	Pdif	12 24 35.2	-0.7
	0.3nm,0.7s,baz=243,slow=4.4,SNR=7.9						
ZALV	**Zalesovo Beam**	**110.10**	**321**	PKiKP	**PKiKP**	**12 29 30.6**	**-0.2**
	0.4nm,0.3s,baz=338,slow=0.8,SNR=3.4						
MKAR	**Makanchi Array**	**110.68**	**313**	PKiKP	**PKiKP**	**12 29 31.9**	**-0.3**
	0.3nm,0.4s,baz=39,slow=2.1,SNR=4.2						
BVAR	**Borovoye Array**	**118.66**	**320**	PKP	**PKPdf**	**12 29 47.0**	**-0.3**
	1.7nm,0.4s,baz=138,slow=2.4,SNR=13						
ARU	**Arti**	**124.88**	**325**	PKP	**PKPdf**	**12 29 59.1**	**0.0**
	2.1nm,0.3s,baz=132,slow=22,SNR=3.1						
ARCES	**ARCESS Array B**	**129.03**	**349**	PKP	**PKPdf**	**12 30 07.3**	**+0.6**
	6.2nm,1.0s,baz=116,slow=3.1,SNR=8.3						
FINES	**FINESS Array B**	**135.77**	**343**	PKP	**PKPdf**	**12 30 20.6**	**+1.1**
	0.9nm,0.6s,baz=36,slow=7.4,SNR=3.0						
FINES				SKPbc	**SKiKP**	**12 32 55.4**	**-2.0**
	1.4nm,0.6s,baz=48,slow=2.8,SNR=3.8						
AKASG	**Malin Array Be**	**142.78**	**330**	PKhKP	PKPpre	12 30 29.6	
	1.1nm,0.3s,baz=46,slow=4.1,SNR=9.6						
BRTR	**Keskin Array B**	**146.29**	**311**	PKPbc	**PKPbc**	**12 30 41.9**	**+0.2**
	1.0nm,0.6s,baz=129,slow=4.9,SNR=4.7						
GERES	**GERESS Array B**	**150.20**	**343**	PKPbc	**PKPbc**	**12 30 51.0**	**0.0**
	1.2nm,0.6s,baz=343,slow=2.8,SNR=7.1						

JMA 18 12:16:57.9,37°.08N×140°.67E,h13km±1km,M3.2,3C-1D, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.10**	**78**	↑P	Pg	12 17 01.2	+0.2
ONAJ				S	Sg	12 17 03.3	+0.1
JFK	**Kawauchi**	**0.33**	**30**	↑P	Pg	12 17 04.7	0.0
JFK				S	Sg	12 17 09.5	+0.3
JHO	**Hitachi**	**0.47**	**190**	↑P	Pg	12 17 07.0	-0.3
JHO				S	Sg	12 17 13.0	-0.6
JFT	**Otama**	**0.51**	**329**	↓P	Pg	12 17 08.2	+0.2
JFT				S	Sg	12 17 15.2	+0.4
JFY	**Yanaizu**	**0.84**	**293**	P	Pg	12 17 13.9	-0.2
JFY				S	Sg	12 17 24.6	-0.5
MAT	**Matsushiro**	**2.05**	**256**	P	Pb	12 17 34.1	-0.9
MAT				S	Sb	12 18 00.6	+0.3

*IDC **18** 12:26:19.2±0.6,21°.53S×169°.86E,h0km,mb4.3/17, mb1 4.4/19,mb1mx4.3/37,mbtmp4.3/19,ML4.1/2,MS3.9/9, Ms1 3.9/9,ms1mx3.7/43,Error ellipse: s-maj=22.1km s-min=16.8km az=119.0*

*ISCJB **18** 12:26:22.8±0.4,21°.58S±0°.07×169°.80E±0°.06,h36km, mb4.5/23,MS3.9/5,Error ellipse: s-maj=10.5km s-min=7.6km az=160.3*

*NEIC **18** 12:26:24.5±1.1,21°.60S×169°.83E,h37km±10km,mb4.7/5, Error ellipse: s-maj=11.0km s-min=8.7km az=145.0*

ISC 18 12:26:24.5±0.5,21°.60S±0°.10×169°.79E±0°.08,h36km,n59, σ0§87/54,mb4.4/23,MS3.9/5,Southeast of Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**3.15**	**261**	Pn	**Pn**	**12 27 10.9**	**-0.6**
	33nm,0.3s,baz=99,slow=1.9,SNR=188						
DZM				Sn	**Sn**	**12 27 47.0**	**-0.9**
	56nm,0.3s,baz=41,slow=22,SNR=8.3						
DZM				LR	LR	12 28 03.2	
	comp=Z,856nm,19.6s,baz=64,slow=32						
MSVF	**Nonsavu**	**8.68**	**65**	*eP*n	**Pn**	**12 28 27.5**	**-0.1**
	200nm,1.3s						
RAO	**Raoul Island**	**13.46**	**127**	LR	LR	12 33 36.9	
	comp=Z,698nm,19.6s,baz=314,slow=32						
HNR	**Honiara**	**15.36**	**320**	LR	LR	12 34 51.8	
	comp=Z,247nm,20.9s,baz=157,slow=33						
URZ	**Urewera**	**17.77**	**161**	P	**P**	**12 30 29.4**	**0.0**
	0.4nm,0.3s,baz=353,slow=5.0,SNR=5.8						
URZ				LR	LR	12 35 56.5	
	comp=Z,615nm,18.6s,baz=336,slow=32						
CTA	**Charters Tower**	**22.05**	**270**	P	**P**	**12 31 17.7**	**+1.5**
	5.2nm,0.8s,baz=102,slow=13,SNR=5.3						
CAN	**Canberra**	**22.77**	**229**	*eP*	**P**	**12 31 24.4**	**+0.6**
	16nm,1.1s						
PMG	**Port Moresby**	**24.91**	**296**	LR	LR	12 39 51.1	
	comp=Z,300nm,20.4s,baz=116,slow=33						
STKA	**Stephens Creek**	**27.11**	**242**	P	**P**	**12 32 05.5**	**+1.4**
	2.0nm,0.7s,baz=67,slow=11,SNR=7.6						
STKA				LR	LR	12 41 45.7	
	comp=Z,335nm,20.8s,baz=64,slow=34						
RAR	**Rarotonga**	**28.32**	**95**	LR	LR	12 43 25.8	
	comp=Z,131nm,18.1s,baz=242,slow=36						
ASAR	**Alice Springs**	**33.14**	**259**	P	**P**	**12 32 57.6**	**+0.1**
	1.4nm,0.7s,baz=77,slow=8.8,SNR=29						
ASAR				LR	LR	12 47 03.0	
	comp=Z,313nm,18.0s,baz=90,slow=38						
WRA	**Warramunga Arr**	**33.15**	**266**	P	**P**	**12 32 57.0**	**-0.6**
	0.8nm,0.7s,baz=97,slow=8.1,SNR=7.6						
WRA				LR	LR	12 46 37.4	
	comp=Z,530nm,18.3s,baz=100,slow=37						
TBI	**Tubuai**	**37.61**	**101**	*e*LQ	LQ	12 42 04.9	
	1μm,32.0s						
TBI				*e*LR	LR	12 44 16.5	
	175nm,24.5s						
PPT2	**Papeete2**	**38.41**	**91**	*e*LR	LR	12 44 38.8	
	243nm,24.0s,baz=262						
TAOE	**Nuku Hiva Isla**	**49.73**	**83**	*eS*	S	12 42 33.3	+13
	94nm,27.3s						
TAOE				*e*LR	LR	12

14nm,0.9s
WTTA Wattenberg 148.90 331 *i* PKPbc **PKPbc 12 46 08.2 -0.4**
9.9nm,0.9s
MOTA Moosalm 149.08 331 *i* PKiKP **PKPbc 12 46 09.4 +0.4**
21nm,1.0s,SNR=6.4
RETA Reutte 149.12 332 *e*PKPbc **PKPbc 12 46 08.3 -0.7**
11nm,1.1s
FETA Feichten 149.49 331 *i* PKPbc **PKPbc 12 46 09.8 -0.2**
23nm,1.0s,SNR=11
DAVA Damuels 149.66 332 *i* PKPbc **PKPbc 12 46 10.0 -0.5**
18nm,1.2s,SNR=5.1
TORD Torodi Ar. Bea 165.88 235 PKPab **PKPab 12 47 24.9 -1.2**
0.7nm,1.0s,baz=101,slow=2.9,SNR=2.8

*IDC **18** 12:31:04.3±0.8, 38°.39N×144°.06E, h0km, mb3.7/10, mb1 3.8/15, mb1mx3.7/50, mbtmp3.7/15, ML3.7/4, MS2.9/4, Ms1 2.9/4, ms1mx2.6/56, Error ellipse: s-maj=20.1km s-min=15.4km az=115.0*
*ISCJB **18** 12:31:05.5±0.6, 38°.57N±0°.04×143°.82E±0°.05, h14km, mb3.7/11, MS3.0/1, Error ellipse: s-maj=6.6km s-min=5.0km az=151.5*
*JMA **18** 12:31:07.2±0.2, 38°.58N×143°.80E, h37km, M4.0*
ISC 18 12:31:07.1±0.8, **38°.58N**±0°.06×**143°.83E**±0°.07, **h14**km, **n33, σ1§45/40, mb3.7/11, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
OFUJ	**Ofunato**	**1.76**	**287**	P		**Pn**	**12 31 36.1**	**-1.1**
OFUJ				S		**Sn**	**12 31 57.2**	**-2.2**
JIO	**Ouri**	**1.95**	**267**	P		**Pn**	**12 31 38.7**	**-1.1**
JIO				S		**Sn**	**12 32 01.2**	**-2.9**
JTH	**Tanohata**	**2.04**	**312**	P		**Pn**	**12 31 39.7**	**-1.4**
JTH				S		**Sn**	**12 32 05.0**	**-1.4**
JMK	**Ichinoseki**	**2.08**	**281**	P		**Pn**	**12 31 40.6**	**-0.9**
JOM	**Ohasama**	**2.17**	**295**	P		**Pn**	**12 31 42.0**	**-0.8**
JOM				S		**Sn**	**12 32 08.7**	**-0.8**
JOU	**Okura**	**2.50**	**266**	P		**Pn**	**12 31 46.9**	**-0.5**
JOU				S		**Sn**	**12 32 16.5**	**-1.1**
JMM	**Marumori**	**2.50**	**254**	P		**Pn**	**12 31 46.2**	**-1.1**
JANG	**Nango**	**2.53**	**316**	P		**Pn**	**12 31 46.7**	**-1.1**
JRG	**Rokugo**	**2.62**	**289**	P		**Pn**	**12 31 49.0**	**0.0**
JRG				S		**Sn**	**12 32 19.6**	**-1.1**
JFK	**Kawauchi**	**2.64**	**243**	P		**Pn**	**12 31 47.7**	**-1.6**
JYK	**Kaneyama**	**2.74**	**278**	P		**Pn**	**12 31 50.5**	**-0.1**
JFT	**Otama**	**2.96**	**250**	P		**Pn**	**12 31 53.4**	**-0.3**
JFT				S		**Sn**	**12 32 27.9**	**-1.1**
JTM	**Tenmabayashi**	**3.06**	**317**	S		**Sn**	**12 32 29.7**	**-1.9**
MJAR	**Matsushiro Arr**	**4.91**	**247**	Pn		**Pn**	**12 32 20.9**	**+0.4**
	2.5nm,0.3s,baz=58,slow=11,SNR=21							
MJAR				Sn		**Sn**	**12 33 18.3**	**+1.1**
	0.1nm,0.3s,baz=64,slow=14,SNR=2.9							
MJAR				LR		LR	12 34 42.6	
	comp=Z,116nm,18.1s,baz=60,slow=44							
MAT	**Matsushiro**	**4.91**	**247**	P		**Pn**	**12 32 20.8**	**+0.2**
MAT				eS		**Sn**	**12 33 17.5**	**+0.3**
ASAJ	**Asahikawa**	**5.61**	**351**	Pn		**Pn**	**12 32 30.2**	**+0.2**
	2.2nm,0.3s,baz=215,slow=7.4,SNR=24							
ASAJ				Sn		**Sn**	**12 33 31.4**	**-2.8**
	1.4nm,0.3s,baz=167,slow=33,SNR=4.4							
JHJ	**Hachijo jima 2**	**6.37**	**212**	Pn		**Pn**	**12 32 37.5**	**-3.0**
	7.5nm,0.3s,baz=104,slow=21,SNR=3.4							
JHJ				Sn		Sn	12 33 45.6	-7.4
	10.0nm,0.3s,baz=332,slow=23,SNR=4.6							
USRK	**Ussuriysk Ar.**	**10.52**	**306**	Pn		**Pn**	**12 33 38.1**	**+0.8**
	0.2nm,0.3s,baz=100,slow=13,SNR=3.0							
JNU	**Nakatsue**	**11.84**	**247**	LR		LR	12 38 41.4	
	comp=Z,51nm,19.3s,baz=310,slow=38							
KSRS	**Korea Array**	**12.60**	**270**	LR		LR	12 38 23.2	
	comp=Z,25nm,19.9s,baz=64,slow=34							
KLR	**Kul'dur**	**13.73**	**325**	Pn		**Pn**	**12 34 22.4**	**+1.1**
	0.2nm,0.3s,baz=135,slow=5.9,SNR=4.1							
MA2	**Magadan**	**21.47**	**10**	P		**P**	**12 35 56.0**	**+1.1**
	1.9nm,0.7s,baz=234,slow=6.0,SNR=4.2							
SEY	**Seymchan**	**24.93**	**9**	P		**P**	**12 36 30.4**	**+0.9**
	4.1nm,0.6s,baz=189,slow=7.2,SNR=25							
SONM	**Songino Array**	**28.57**	**301**	P		**P**	**12 37 04.2**	**+1.6**
	0.2nm,0.4s,baz=82,slow=11,SNR=3.4							
TLY	**Talaya**	**30.82**	**308**	LR		LR	12 50 29.1	
	comp=Z,31nm,18.3s,baz=106,slow=38							
ZALV	**Zalesovo Beam**	**42.31**	**311**	P		**P**	**12 39 03.0**	**+2.8**
	0.7nm,0.4s,baz=77,slow=6.2,SNR=2.8							
MKAR	**Makanchi Array**	**44.94**	**301**	P		**P**	**12 39 22.1**	**+0.6**
	1.3nm,0.9s,baz=83,slow=9.9,SNR=6.9							
KURBB	**Kurchatov Arra**	**46.58**	**307**	P		**P**	**12 39 36.3**	**+2.0**
	2.2nm,0.2s,baz=76,slow=7.7,SNR=9.7							
INK	**Inuvik**	**52.13**	**28**	P		**P**	**12 40 16.6**	**+0.1**
	0.8nm,0.6s,baz=306,slow=4.5,SNR=4.6							
WRA	**Warramunga Arr**	**58.90**	**190**	P		**P**	**12 41 03.4**	**-2.2**
	0.7nm,0.7s,baz=8.1,slow=7.0,SNR=9.1							
YKA	**Yellowknife Ar**	**61.50**	**31**	P		**P**	**12 41 22.6**	**-0.4**
	0.2nm,0.7s,baz=307,slow=6.1,SNR=3.9							
ASAR	**Alice Springs**	**62.62**	**190**	P		**P**	**12 41 29.8**	**-1.2**
	0.4nm,0.8s,baz=11,slow=7.3,SNR=4.8							
PDAR	**Pinedale Array**	**75.21**	**47**	P		**P**	**12 42 49.0**	**-0.5**
	0.4nm,0.6s,baz=275,slow=2.7,SNR=6.4							

*IDC **18** 12:31:33.7±1.6, 55°.61N×162°.90E, h0km, mb3.5/4, mb1 3.7/5, mb1mx3.4/53, mbtmp3.5/5, ML2.5/1, MS2.6/3, Ms1 2.6/3, ms1mx2.3/51, Error ellipse: s-maj=55.1km s-min=23.7km az=161.0*
*KRSC **18** 12:31:34.9±0.7, 55°.75N×162°.48E, h54km±17km, ML3.9*
ISC 18 12:31:34.9±1.4, **55°.79N**±0°.03×**162°.43E**±0°.03, **h14**km,gkm, **n41, σ1§04/63, mb3.5/4, Near east coast of Kamchatka Peninsula**

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
KBTR	**Krutoberegovo**	**0.47**	**27**	*e*P		**Pn**	**12 31 46.8**	**-0.4**
KBTR				eS		**Sn**	**12 31 55.3**	**+0.1**
ZLN	**Zelenaya**	**0.94**	**284**	*e*P		**Pg**	**12 31 53.5**	**+0.3**
ZLN				eS		**Sn**	**12 32 06.9**	**-0.2**
SMKR	**Semkarok**	**0.96**	**326**	*e*P		**Pn**	**12 31 54.0**	**0.0**
SMKR				eS		**Sn**	**12 32 07.2**	**-0.2**
CIRR	**Tsirk**	**1.00**	**290**	*e*P		**Pb**	**12 31 54.2**	**+0.1**
CIRR				eS		**Sn**	**12 32 08.1**	**-0.5**
LGNR	**Loginova**	**1.02**	**287**	*e*P		**Pg**	**12 31 54.8**	**+0.1**
LGNR				eS		**Sn**	**12 32 09.1**	**-0.2**
BDR	**Baidarnaya**	**1.04**	**319**	*i* P		**Pn**	**12 31 55.0**	**0.0**
BDR				eS		**Sn**	**12 32 09.9**	**+0.5**
BZMR	**Bezymyannaya**	**1.10**	**278**	*e*P		**Pb**	**12 31 55.6**	**-0.2**
BZMR				eS		**Sb**	**12 32 10.1**	**0.0**
SRKR	**Sorokina**	**1.12**	**321**	*i* P		**Pg**	**12 31 56.3**	**-0.1**
KLY	**Klyuchi**	**1.13**	**298**	*i* P		**Pb**	**12 31 54.5**	**-1.6**
KLY				eS		**Sb**	**12 32 08.8**	**-1.8**
KRSR	**Krestovskiy**	**1.13**	**293**	*e*P		**Pb**	**12 31 55.7**	**-0.6**
KRSR				eS		**Sb**	**12 32 10.6**	**-0.3**
KIRR	**Kirishev**	**1.19**	**279**	*i* P		**Pn**	**12 31 57.3**	**+0.1**
KIRR				eS		**Sg**	**12 32 13.8**	**+0.5**
KMNR	**Kamenistaya**	**1.24**	**269**	*e*P		**Pn**	**12 31 58.2**	**+0.3**
KMNR				eS		**Sg**	**12 32 15.1**	**+0.1**
KPT	**Kopyto**	**1.26**	**279**	*e*P		**Pn**	**12 31 58.4**	**+0.3**
KPT				eS		**Sg**	**12 32 15.2**	**-0.3**
TUMD	**Tumrok D**	**1.30**	**244**	*e*P		**Pn**	**12 31 58.5**	**-0.1**
TUMD				eS		**Sb**	**12 32 15.5**	**-0.1**
MKZ	**Mys Kozlova**	**1.30**	**198**	*e*P		**Pn**	**12 31 57.5**	**-1.1**
MKZ				eS		**Sn**	**12 32 14.1**	**-1.6**
KZV	**Kizimen**	**1.40**	**242**	*e*P		**Pn**	**12 31 59.8**	**-0.2**
KZV				eS		**Sn**	**12 32 18.4**	**+0.1**
TUMR	**Tumrok**	**1.40**	**250**	*i* P		**Pn**	**12 32 00.7**	**+0.7**
TUMR				*i* S		**Sb**	**12 32 19.2**	**+0.7**
KOZ	**Kozyrevsk**	**1.47**	**282**	*e*P		**Pb**	**12 32 02.1**	**+0.2**
KOZ				eS		**Sg**	**12 32 22.0**	**-0.1**
BKI	**Bering**	**2.10**	**105**	*e*P		**Pn**	**12 32 10.2**	**+0.7**
BKI				eS		**Sn**	**12 32 36.0**	**+0.7**
ESO	**Esso**	**2.11**	**275**	*e*P		**Pn**	**12 32 10.6**	**+0.9**
SPN	**Mys Shipunski**	**3.04**	**209**	*e*P		**Pn**	**12 32 21.8**	**-0.7**
SPN				eS		**Sn**	**12 32 57.5**	**-1.2**
NLC	**Nalytchevo**	**3.19**	**216**	*e*P		**Pn**	**12 32 24.5**	**+0.1**
NLC				eS		**Sn**	**12 33 01.0**	**-1.1**
SDLR	**Sedlovina**	**3.26**	**221**	*e*P		**Pn**	**12 32 26.2**	**+0.6**
KRX	**Arik**	**3.29**	**224**	*e*P		**Pn**	**12 32 28.6**	**+2.6**
SMAR	**Somma**	**3.30**	**221**	*e*P		**Pn**	**12 32 27.1**	**+0.8**
SMAR				eS		**Sn**	**12 33 04.7**	**-0.7**
AVH	**Avacha**	**3.32**	**222**	*e*P		**Pn**	**12 32 27.8**	**+1.4**
UGLR	**Uglovaya**	**3.34**	**221**	*e*P		**Pn**	**12 32 27.5**	**+0.9**
GNL	**Ganaly**	**3.35**	**233**	*e*P		**Pn**	**12 32 27.7**	**+0.9**
DALK	**Dalny**	**3.50**	**219**	*e*P		**Pn**	**12 32 29.3**	**+0.5**
DALK				eS		**Sn**	**12 33 10.3**	**+0.3**
PET	**Petropavlovsk**	**3.55**	**220**	*e*P		**Pn**	**12 32 30.2**	**+0.8**
PET				eS		**Sn**	**12 33 10.7**	**-0.3**
PETK	**Petropavlovsk-**	**3.86**	**228**	Pn		**Pn**	**12 32 35.3**	**+1.6**
	1.5nm,0.3s,baz=91,slow=20,SNR=26							
PETK				Sn		**Sb**	**12 33 25.1**	**-4.0**
	1.3nm,0.3s,baz=112,slow=12,SNR=4.3							
PETK				LR		LR	12 34 30.1	
	comp=Z,62nm,18.4s,baz=78,slow=45							
KRMR	**Karymshinskiy**	**3.89**	**222**	*e*P		**Pn**	**12 32 35.4**	**+1.2**
KRMR				eS		**Sn**	**12 33 20.8**	**+1.2**
RUS	**Russkaya**	**4.08**	**216**	eS		**Sn**	**12 33 26.3**	**+2.1**
MTVR	**Mutnovka**	**4.15**	**219**	P		**Pn**	**12 32 39.8**	**+1.9**
ASAK	**Asacha**	**4.33**	**220**	*e*P		**Pn**	**12 32 42.3**	**+2.0**
MA2	**Magadan**	**7.31**	**306**	LR		LR	12 36 59.1	
	comp=Z,19nm,18.8s,baz=163,slow=43							
MJAR	**Matsushiro Arr**	**25.31**	**231**	LR		LR	12 46 56.4	
	comp=Z,28nm,18.5s,baz=50,slow=36							
ILAR	**Eielson Array**	**25.97**	**49**	P		**P**	**12 37 06.3**	**-0.2**
	0.6nm,0.9s,baz=264,slow=8.6,SNR=7.3							
YKA	**Yellowknife Ar**	**40.27**	**45**	P		**P**	**12 39 11.2**	**+0.4**
	0.1nm,0.5s,baz=298,slow=7.6,SNR=3.7							
ZALV	**Zalesovo Beam**	**42.50**	**301**	P		P	12 39 32.8	+3.5
	0.7nm,0.3s,baz=57,slow=10,SNR=4.7							
TXAR	**Lajitas Array**	**68.36**	**70**	P		**P**	**12 42 36.2**	**+0.4**
	0.4nm,0.6s,baz=297,slow=5.0,SNR=6.2							

MEX 18 12:41:11.4±1.8, **16°.48N**×**94°.70W**, **h82**km±101km, **MD3.8, Oaxaca**

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
HUIG	**Huatulco**	**1.53**	**243**	*e*P		Pn	12 41 34.5	-2.7
HUIG				eS		Sn	12 41 55.4	-1.2
TGIG		**1.54**	**79**	*e*P		Pn	12 41 35.4	-1.9
TGIG				eS		Sn	12 41 55.9	-1.1
PCIG		**1.61**	**118**	*e*P		Pn	12 41 37.3	-1.0
PCIG				eS		Sn	12 41 58.3	-0.3
VHO	**Vista Hermosa**	**2.04**	**287**	*i* P		Pn	12 41 43.5	-0.6
VHO				*i* S		Sn	12 42 07.7	-1.3

*GRAL **18** 12:50:38.2±0.7, 34°.92N×34°.29E, h3km±10km, MD3.6*
*NIC **18** 12:50:39.0±0.2, 34°.96N×34°.63E, h11km, mb4.2, ML4.0*
*DDA **18** 12:50:40.5, 35°.16N×34°.68E, h4km, Md3.2*
*GII **18** 12:50:40.9±0.0, 34°.86N×34°.37E, h9km, MD3.3/8*
*ISCJB **18** 12:50:41.3±0.5, 34°.90N±0°.01×34°.48E±0°.02, h31km±4km, mb3.7/10, MS2.9/3, Error ellipse: s-maj=3.4km s-min=2.1km az=165.7*
*CSEM **18** 12:50:41.0±0.1, 34°.90N×34°.50E, h15km, ML4.0, Error ellipse: s-maj=3.4km s-min=2.3km az=77.0*
*IDC **18** 12:50:42.6±3.3, 34°.93N×34°.52E, h33km±29km, mb3.5/10, mb1 3.7/16, mb1mx3.5/48, mbtmp3.7/16, ML3.7/6, MS3.1/7, Ms1 3.1/7, ms1mx2.8/52, Error ellipse: s-maj=18.0km s-min=12.7km az=60.0*
*ISK **18** 12:50:43.5, 35°.05N×34°.44E, h37km, ML3.7*
*NSSC **18** 12:50:43.4±0.8, 34°.98N×34°.66E, h37km±24km, ML3.2*
*HLW **18** 12:50:49.9, 34°.38N×34°.06E, h31km±31km, Md3.9, Ml3.2*
ISC 18 12:50:41.0±1.0, **34°.93N**±0°.02×**34°.52E**±0°.02, **h17**km±7km, **n175, σ1§22/229, mb3.7/10, MS2.9/3, Cyprus region**

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
PHNC	**Paralimni**	**0.41**	**280**	P		**Pg**	**12 50 49.0**	**-0.4**
	baz=95							
PHNC				S		**Sg**	**12 50 54.1**	**-1.0**
PHNC	**Paralimni**	**0.41**	**280**	P		**Pg**	**12 50 49.0**	**-0.4**
PHNC				S		**Sg**	**12 50 54.1**	**-1.0**
EREN	**Erenkoy**	**0.66**	**334**	*e*PG		**Pb**	**12 50 54.8**	**+0.7**
EREN				*e*SG		**Sb**	**12 51 03.1**	**+0.1**
EREN	**Erenkoy**	**0.66**	**334**	*e*Pg		**Pb**	**12 50 54.8**	**+0.7**
EREN				*e*Sg		**Sb**	**12 51 03.1**	**+0.1**
LFK	**Lefkose**	**0.88**	**293**	*e*PG		**Pn**	**12 50 58.5**	**-0.1**
LFK				*e*SG		**Sg**	**12 51 10.2**	**+0.3**
LFK	**Lefkose**	**0.88**	**293**	*e*Pg		**Pn**	**12 50 58.6**	**-0.1**
LFK				*e*Sg		**Sg**	**12 51 10.2**	**+0.3**
CSS	**Mathiatis**	**0.98**	**272**	P		**Pb**	**12 50 58.7**	**-0.8**
	baz=89							
CSS				S		**Sn**	**12 51 13.9**	**+0.5**
CSS	**Mathiatis**	**0.98**	**272**	P		**Pb**	**12 50 58.7**	**-0.8**
CSS				S		**Sn**	**12 51 13.9**	**+0.5**
MAMC	**Mammari**	**1.10**	**283**	P		**Pb**	**12 51 01.0**	**-0.5**
	baz=99							
MAMC	**Mammari**	**1.10**	**283**	P		**Pb**	**12 51 01.0**	**-0.5**
AKDN	**Akdeniz- K¯–br**	**1.33**	**286**	*e*PN		**Pb**	**12 51 05.1**	**-0.3**
AKDN	**Akdeniz- K¯–br**	**1.33**	**286**	*e*Pn		**Pb**	**12 51 05.1**	**-0.3**
HWQ	**Hawqa**	**1.34**	**119**	*e*P		**Pn**	**12 51 04.7**	**-0.4**
HWQ				eS		**Sg**	**12 51 24.3**	**-0.2**
HWQ	**Hawqa**	**1.34**	**119**	*e*P		**Pn**	**12 51 04.7**	**-0.4**
HWQ				eS		**Sg**	**12 51 24.3**	**-0.2**
LEF	**Lefka**	**1.35**	**278**	*e*PN		**Pb**	**12 51 05.9**	**0.0**
LEF	**Lefka**	**1.35**	**278**	*e*Pn		**Pb**	**12 51 05.9**	**0.0**
SZAC	**Souni**	**1.36**	**263**	P		**Pn**	**12 51 05.1**	**-0.1**
	baz=81							
SZAC				S		**Sg**	**12 51 24.5**	**-0.5**
SZAC	**Souni**	**1.36**	**263**	P		**Pn**	**12 51 05.1**	**-0.1**
SZAC				S		**Sg**	**12 51 24.5**	**-0.5**
BHL	**Bhannes**	**1.39**	**137**	*e*P		**Pn**	**12 51 04.4**	**-1.3**
BHL	**Bhannes**	**1.39**	**137**	*e*P		**Pn**	**12 51 04.4**	**-1.3**
IKL	**Isikli**	**1.47**	**333**	*e*PN		**Pn**	**12 51 05.9**	**-0.8**
IKL				*e*SN		**Sn**	**12 51 23.6**	**-2.0**
IKL	**Isikli**	**1.47**	**333**	*e*Pn		**Pn**	**12 51 05.9**	**-0.8**
IKL				*e*Sn		**Sn**	**12 51 23.6**	**-2.0**
DQRL	**Deir Qamar**	**1.50**	**144**	*e*P		**Pn**	**12 51 06.0**	**-1.2**
KIZK	**Mersin**	**1.58**	**349**	*i* P		**Pn**	**12 51 07.0**	**-1.2**
KIZK				*i* S		**Sn**	**12 51 27.0**	**-1.1**
KIZK	**Mersin**	**1.58**	**349**	P		**Pn**	**12 51 07.0**	**-1.2**
KIZK				S		**Sn**	**12 51 27.0**	**-1.1**
ALFC	**Alefka**	**1.59**	**279**	P		**Pn**	**12 51 08.0**	**-0.4**
	baz=96							
ALFC				S		**Sn**	**12 51 28.1**	**-0.5**
ALFC	**Alefka**	**1.59**	**279**	P		**Pn**	**12 51 08.0**	**-0.4**
ALFC				S		**Sn**	**12 51 28.1**	**-0.5**
YAYL	**Yayladag**	**1.70**	**49**	*i* P		**Pn**	**12 51 08.0**	**-2.0**
YAYL				*i* S		**Sn**	**12 51 28.8**	**-2.5**
YAYL	**Yayladag**	**1.70**	**49**	P		**Pn**	**12 51 08.0**	**-2.0**
YAYL				S		**Sn**	**12 51 28.8**	**-2.5**
FKH	**Fakeheh**	**1.70**	**113**	*e*P		**Pn**	**12 51 09.9**	**-0.1**
FKH				eS		**Sb**	**12 51 33.1**	**+0.1**
KRTS	**Karatas**	**1.78**	**23**	*e*PN		**Pn**	**12 51 11.9**	**+1.1**
KRTS	**Karatas**	**1.78**	**23**	*e*Pn		**Pn**	**12 51 12.0**	**+1.1**
PPCY	**Paphos**	**1.79**	**269**	P		**Pn**	**12 51 11.7**	**+0.6**
	baz=87							
PPCY	**Paphos**	**1.79**	**269**	P		**Pn**	**12 51 11.7**	**+0.6**
RCY	**Rachaya**	**1.80**	**142**	*e*P		**Pn**	**12 51 10.9**	**-0.4**
AKMC	**Akamas**	**1.80**	**274**	P		**Pn**	**12 51 11.9**	**+0.6**
	baz=91							
AKMC	**Akamas**	**1.80**	**274**	P		**Pn**	**12 51 11.9**	**+0.6**
MARH	**Ras Al Marh**	**1.85**	**119**	*i* P		**Pn**	**12 51 12.4**	**+0.2**
MARH				eS		**Sn**	**12 51 32.9**	**-2.5**
MARH				AML	AML		12 51 44.0	
	comp=N,656nm,0.4s							
MARH				AML	AML		12 51 48.5	
	comp=E,483nm,0.4s							
HNTI	**Hanita**	**1.92**	**163**	Pn		**Pn**	**12 51 12.7**	**-0.2**
BRBR	**Barbar**	**1.92**	**142**	*i* P		**Pn**	**12 51 13.3**	**+0.2**
BRBR				eS		**Sn**	**12 51 35.0**	**-2.0**
BRBR				AML	AML		12 51 38.7	
	comp=N,347nm,0.4s							
BRBR				AML	AML		12 51 40.9	
	comp=E,252nm,0.3s							
BRBR	**Barbar**	**1.92**	**142**	eS		**Sn**	**12 51 35.0**	**-2.0**
	comp=E,252nm,0.3s							
BTCH	**Batrach**	**1.93**	**55**	*i* P		**Pn**	**12 51 12.2**	**-0.9**
BTCH				eS		**Sn**	**12 51 33.3**	**-3.6**
BTCH				AML	AML		12 51 37.2	
	comp=N,856nm,0.6s							
BTCH				AML	AML		12 51 37.3	
	comp=E,1µm,0.5s							
BTCH	**Batrach**	**1.93**	**55**	*i* P		**Pn**	**12 51 12.2**	**-0.9**
MERS	**Mersin**	**1.93**	**360**	*e*PN		**Pn**	**12 51 12.9**	**-0.2**
MERS	**Mersin**	**1.93**	**360**	*e*Pn		**Pn**	**12 51 12.9**	**-0.2**
TAHT	**Tahtakopru-Hat**	**1.98**	**43**	*e*PN		**Pn**	**12 51 14.9**	**+1.2**
TAHT	**Tahtakopru-Hat**	**1.98**	**43**	*e*Pn		**Pn**	**12 51 14.9**	**+1.2**
QASN	**Qassioun**	**2.02**	**133**	*i* P		**Pn**	**12 51 15.1**	**+0.8**
QASN				eS		**Sn**	**12 51 37.4**	**-1.7**
QASN				AML	AML		12 51 45.6	
	comp=E,702nm,0.7s							
QASN				AML	AML		12 51 46.0	
	comp=N,740nm,0.7s							
DED	**Mersin**	**2.04**	**6**	*i* P		**Pn**	**12 51 14.1**	**-0.5**
DED				*i* S		**Sn**	**12 51 39.4**	**-0.2**
MMA0	**Mount Meron ar**	**2.05**	**159**	Pn		**Pn**	**12 51 14.2**	**-0.5**
MMAI	**Mount Meron Ar**	**2.05**	**159**	Pn		**Pn**	**12 51 14.1**	**-0.6**
	comp=N,73nm,0.3s,baz=347,slow=14,SNR=268							
MMAI				Sn		**Sn**	**12 51 38.8**	**-1.1**
	comp=N,52nm,0.3s,baz=336,slow=10,SNR=4.7							
MMAI				LR		LR	12 52 25.3	
	comp=N,511nm,18.3s,baz=355,slow=50							
YURE	**YUREGIR**	**2.09**	**25**	*i* P		**Pn**	**12 51 15.7**	**+0.3**
YURE				*i* S		**Sg**	**12 51 52.7**	**+4.3**
YURE	**YUREGIR**	**2.09**	**25**	P		**Pn**	**12 51 15.6**	**+0.3**
ERMK	**Ermenek**	**2.15**	**323**	*i* P		**Pn**	**12 51 17.7**	**+1.5**
ERMK				*i* S		**Sb**	**12 51 47.5**	**+1.5**
ERMK	**Ermenek**	**2.15**	**323**	P		**Pn**	**12 51 17.7**	**+1.5**
ERMK				S		**Sb**	**12 51 47.5**	**+1.5**
KSHT	**Keshet**	**2.22**	**151**	Pn		**Pn**	**12 51 18.0**	**+0.9**
BLGI	**Bet Lehem HaGe**	**2.26**	**166**	Pn		**Pn**	**12 51 17.5**	**-0.1**
BLGI	**Bet Lehem HaGe**	**2.26**	**166**	Pn		**Pn**	**12 51 17.5**	**-0.1**
CEYT	**Ceyhan**	**2.30**	**25**	*e*PN		**Pn**	**12 51 19.6**	**+1.5**
CEYT	**Ceyhan**	**2.30**	**25**	*e*Pn		**Pn**	**12 51 19.6**	**+1.5**
OFRI	**'Ofer**	**2.34**	**170**	Pn		**Pn**	**12 51 18.4**	**-0.3**
OFRI	**'Ofer**	**2.34**	**170**	Pn		**Pn**	**12 51 18.4**	**-0.3**
GULE	**Gulek**	**2.36**	**5**	*i* P		**Pn**	**12 51 20.4**	**+1.3**
GULE				*i* S		**Sn**	**12 51 49.2**	**+1.5**
GULE	**Gulek**	**2.36**	**5**	P		**Pn**	**12 51 20.4**	**+1.3**
GULE				S		**Sn**	**12 51 49.2**	**+1.5**
KARA	**Karaisali**	**2.36**	**10**	*e*PN		**Pn**	**12 51 19.5**	**+0.5**
KARA	**Karaisali**	**2.36**	**10**	*e*Pn		**Pn**	**12 51 19.5**	**+0.5**
KERG	**Konya-Eregli**	**2.50**	**353**	*i* P		**Pn**	**12 51 20.6**	**-0.4**
KERG				*i* S		**Sn**	**12 51 52.8**	**+1.7**
KERG	**Konya-Eregli**	**2.50**	**353**	P		**Pn**	**12 51 20.6**	**-0.4**
KERG				S		**Sn**	**12 51 52.8**	**+1.7**
MMLI	**Mount Malkishu**	**2.60**	**163**	Pn		**Pn**	**12 51 22.5**	**+0.3**
MMLI				Sn		**Sn**	**12 51 54.1**	**+0.7**
MMLI	**Mount Malkishu**	**2.60**	**163**	Pn		**Pn**	**12 51 22.5**	**+0.3**
MMLI				Sn		**Sn**	**12 51 54.1**	**+0.7**
AKO	**Adana**	**2.63**	**16**	*i* P		**Pn**	**12 51 22.5**	**-0.2**
AKO				*i* S		**Sn**	**12 51 53.8**	**-0.5**
SLTI	**Sal'it**	**2.72**	**171**	Pn		**Pn**	**12 51 23.6**	**-0.3**
SLTI	**Sal'it**	**2.72**	**171**	Pn		**Pn**	**12 51 23.6**	**-0.3**
KOZT	**Kozan**	**2.75**	**22**	*e*PN		**Pn**	**12 51 26.3**	**+1.9**
KOZT	**Kozan**	**2.75**	**22**	*e*Pn		**Pn**	**12 51 26.3**	**+1.9**
HMDT	**Nahal Hemdat**	**2.80**	**162**	Pn		**Pn**	**12 51 25.6**	**+0.6**
HMDT				Sn		**Sn**	**12 51 59.9**	**+1.6**
HMDT	**Nahal Hemdat**	**2.80**	**162**	Pn		**Pn**	**12 51 25.6**	**+0.6**
HMDT				Sn		**Sn**	**12 51 59.9**	**+1.6**
KAMA	**Osmaniye**	**2.84**	**37**	*i* P		**Pn**	**12 51 25.7**	**0.0**
KAMA				*i* S		**Sn**	**12 51 57.0**	**-2.5**
SALA	**Sala**	**2.88**	**140**	*i* P		**Pn**	**12 51 27.4**	**+1.2**
SALA				eS		**Sn**	**12 51 59.0**	**-1.6**
	comp=N,142nm,0.6s							
SALA				AML	AML		12 52 10.4	
	comp=E,15nm,0.9s							
SALA	**Sala**	**2.88**	**140**	*i* P		**Pn**	**12 51 27.4**	**+1.2**
SALA				eS		**Sn**	**12 51 59.0**	**-1.6**
	comp=E,15nm,0.9s							
BSTP	**Nigde**

GLL	**Jalalah**	**5.85**	**205**	P		**Pn**	**12 52 05.1**	**-1.8**
HSAF	**As Saff**	**5.86**	**206**	P		**Pn**	**12 52 06.0**	**-1.1**
	baz=205							
HSAF	**As Saff**	**5.86**	**206**	P		**Pn**	**12 52 06.1**	**-1.1**
ZAF	**Zafarana**	**5.88**	**197**	P		**Pn**	**12 52 06.4**	**-0.9**
	baz=195							
ZAF	**Zafarana**	**5.88**	**197**	P		**Pn**	**12 52 06.4**	**-0.9**
NUB		**5.89**	**179**	P		**Pn**	**12 52 08.3**	**+0.9**
	baz=174							
HDHB	**Dhahab**	**6.19**	**179**	P		**Pn**	**12 52 11.7**	**+0.1**
	baz=175							
HDHB	**Dhahab**	**6.19**	**179**	P		**Pn**	**12 52 11.7**	**+0.1**
HNAT	**Natroun**	**6.23**	**213**	P		**Pn**	**12 52 10.4**	**-1.8**
	baz=213							
HNAT	**Natroun**	**6.23**	**213**	P		**Pn**	**12 52 10.4**	**-1.8**
TR2	**Tor 2**	**6.56**	**186**	P		**Pn**	**12 52 16.2**	**-0.5**
	baz=183							
TR2	**Tor 2**	**6.56**	**186**	P		**Pn**	**12 52 16.2**	**-0.5**
GRB	**Gharib**	**6.80**	**193**	P		**Pn**	**12 52 18.9**	**-1.2**
	baz=191							
GRB	**Gharib**	**6.80**	**193**	P		**Pn**	**12 52 18.9**	**-1.2**
HMAT	**Matruh**	**7.32**	**241**	P		**Pn**	**12 52 26.3**	**-0.7**
	baz=243							
HMAT				S		Sn	12 53 40.8	-8.9
	baz=243							
HMAT	**Matruh**	**7.32**	**241**	P		**Pn**	**12 52 26.3**	**-0.7**
IDI	**Anoyia**	**7.90**	**275**	Pn		**Pn**	**12 52 33.8**	**-1.3**
	comp=E,2.7nm,0.3s,baz=106,slow=15,SNR=13							
IDI				Sn		**Sn**	**12 54 03.7**	**-0.4**
	comp=E,2.2nm,0.3s,baz=270,slow=18,SNR=5.2							
KBZ	**Khabaz**	**10.91**	**34**	LR		LR	12 58 24.7	
	comp=E,98nm,19.4s,baz=252,slow=42							
KVAR	**Kislovodsk Arr**	**11.00**	**33**	LR		LR	12 58 26.1	
	comp=E,69nm,20.2s,baz=248,slow=42							
AKASG	**Malin Array Be**	**16.23**	**348**	Pn		**Pn**	**12 54 27.6**	**-0.3**
	comp=E,0.4nm,0.3s,baz=157,slow=12,SNR=4.6							
GEYT	**Alibeck**	**19.21**	**74**	P		**Pn**	**12 55 06.5**	**+1.4**
	comp=E,0.8nm,0.3s,baz=270,slow=16,SNR=5.6							
KEST	**Kesra**	**20.55**	**280**	P		Pn	12 55 20.9	0.0
	comp=E,1.8nm,0.8s,baz=235,slow=21,SNR=1.9							
GERES	**GERESS Array B**	**20.73**	**318**	P		**P**	**12 55 19.4**	**-1.2**
	comp=E,0.2nm,0.2s,baz=216,slow=43,SNR=2.5							
DAVOX	**Davos/Dischmat**	**21.98**	**310**	P		**P**	**12 55 34.9**	**+0.7**
	comp=E,1.7nm,0.4s,baz=11,slow=10,SNR=2.1							
DAVOX				LR		LR	13 05 40.0	
	comp=E,33nm,18.5s,baz=259,slow=41							
AKTO	**Aktyubinsk**	**23.06**	**41**	P		**P**	**12 55 48.7**	**+3.3**
	comp=E,2.0nm,0.8s,baz=232,slow=18,SNR=5.6							
ATD	**Arta Tunnel**	**24.50**	**160**	LR		LR	13 04 29.5	
	comp=E,38nm,18.7s,baz=49,slow=34							
ARU	**Arti**	**27.02**	**30**	LR		LR	13 08 07.9	
	comp=E,44nm,19.8s,baz=200,slow=39							
FINES	**FINESS Array B**	**27.07**	**351**	P		**P**	**12 56 20.5**	**-1.9**
	comp=E,1.5nm,0.6s,baz=153,slow=12,SNR=7.8							
ARCES	**ARCESS Array B**	**35.02**	**354**	P		**P**	**12 57 31.2**	**-1.0**
	comp=E,4.2nm,0.8s,baz=169,slow=9.9,SNR=4.4							
TORD	**Torodi Ar. Bea**	**36.74**	**242**	P		**P**	**12 57 47.2**	**-0.3**
	comp=E,0.7nm,1.0s,baz=209,SNR=8.3,SNR=3.2							
MKAR	**Makanchi Array**	**37.48**	**57**	P		**P**	**12 57 53.6**	**0.0**
	comp=E,1.1nm,0.8s,baz=268,slow=5.9,SNR=7.8							
ZALV	**Zalesovo Beam**	**39.64**	**45**	P		**P**	**12 58 10.8**	**-0.8**
	comp=E,0.4nm,0.4s,baz=260,slow=8.6,SNR=2.9							
CMAR	**Chiang Mai Arr**	**58.93**	**88**	P		**P**	**13 00 38.0**	**-1.5**
	comp=E,1.0nm,0.6s,baz=294,slow=9.0,SNR=6.2							
YKA	**Yellowknife Ar**	**79.78**	**346**	P		**P**	**13 02 47.0**	**-0.7**
	comp=E,0.1nm,0.5s,baz=30,slow=4.7,SNR=4.0							
ILAR	**Eielson Array**	**80.62**	**1**	P		**P**	**13 02 52.5**	**+0.2**
	comp=E,0.6nm,1.1s,baz=291,slow=3.1,SNR=2.9							

IDC ***18*** *12:55:38.4±6.8, 30.°65N×137.°20E, h335km±138km, mb2.7/3, mb1 2.9/5, mb1mx2.6/48, mbtmp3.5/5, Error ellipse: s-maj=213.7km s-min=20.2km az=62.0*
ISCJB ***18*** *12:55:40.5±0.8, 31.°39N±0.°09×138.°9E±0.°2, h450km, mb2.9/3, Error ellipse: s-maj=22.3km s-min=10.0km az=16.6*
JMA ***18*** *12:55:42.3±0.4, 31.°42N×138.°46E, h430km, M3.2*
ISC 18 12:55:41.6±1.1, 31.°4N±0.°1×139.°0E±0.°2, h450km, n14, σ0s96/17, mb3.0/3, Southeast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JHCJ	**Hachijojimakas**	**1.78**	**24**	*e*S	**S**	**12 57 28.9**	**-0.1**
JHJ	**Hachijo jima 2**	**1.81**	**23**	P	**P**	**12 56 40.0**	**-1.0**
	19nm,0.3s,baz=65,slow=22,SNR=16						
JHJ				S	**S**	**12 57 29.1**	**-0.3**
	7.4nm,0.3s,baz=59,slow=23,SNR=2.4						
JHJ2	**Mitsune**	**1.82**	**24**	*e*S	**S**	**12 57 28.9**	**-0.5**
BSO3	**Boso 3**	**3.60**	**21**	S	**S**	**12 57 50.3**	**-0.7**
BSO1	**Boso 1**	**3.63**	**28**	*e*S	**S**	**12 57 52.0**	**+1.1**
BSO4	**Boso 4**	**3.72**	**18**	P	**P**	**12 56 54.5**	**+0.4**
BSO4				*e*S	**S**	**12 57 53.6**	**+0.4**
JNY	**Yasuok**	**4.01**	**347**	P	**P**	**12 56 57.0**	**+0.2**
JAO	**Obara**	**4.07**	**340**	P	**P**	**12 56 57.3**	**+0.1**
JHU	**Hanno**	**4.41**	**4**	P	**P**	**12 57 00.6**	**+0.4**
JHU				*e*S	**S**	**12 58 01.6**	**-2.8**
JRY	**Ryogami san**	**4.56**	**360**	P	**P**	**12 57 02.3**	**+0.6**
MJAR	**Matsushiro Arr**	**5.12**	**353**	P	**P**	**12 57 07.5**	**+0.4**
	0.7nm,0.3s,baz=173,slow=11,SNR=6.9						
MKAR	**Makanchi Array**	**45.58**	**307**	P	**P**	**13 03 20.2**	**+0.5**
	0.2nm,0.3s,baz=95,slow=9.6,SNR=3.1						
WRA	**Warramunga Arr**	**51.28**	**186**	P	**P**	**13 04 02.0**	**-0.7**
	0.4nm,0.4s,baz=360,slow=7.7,SNR=11						
ASAR	**Alice Springs**	**55.01**	**186**	P	**P**	**13 04 30.0**	**+0.6**
	0.2nm,0.4s,baz=6.7,slow=10,SNR=9.5						

CSEM ***18*** *12:57:40.6±0.1, 37.°68N×38.°09E, h5km, MD2.9, Error ellipse: s-maj=4.3km s-min=2.8km az=142.0*
ISK ***18*** *12:57:40.3, 37.°68N×38.°06E, h6km, MD2.9*
DDA ***18*** *12:57:40.4, 37.°69N×38.°06E, h7km, Md2.6*
ISC 18 12:57:40.0±1.3, 37.°70N±0.°04×38.°06E±0.°03, h3km±12km, n24, σ0s33/37, Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
GZT	**Gaziantep**	**0.52**	**229**	*i* P	**Pg**	**12 57 50.8**	**+0.8**
GZT				*i* S	Sn	12 58 15.9	+12
GAZ	**Gaziantep**	**0.85**	**232**	*e*PG	**Pb**	**12 57 57.2**	**-0.3**
GAZ				*e*SG	**Sb**	**12 58 09.3**	**-0.1**
GAZ	**Gaziantep**	**0.85**	**232**	*e*Pg	**Pb**	**12 57 57.2**	**-0.3**
GAZ				*e*Sg	**Sb**	**12 58 09.3**	**-0.1**
SURC	**SANLIURFA_SURC**	**0.93**	**151**	*i* P	**Pg**	**12 57 57.7**	**0.0**
SURC				*i* S	**Sb**	**12 58 11.5**	**0.0**
SURC	**SANLIURFA_SURC**	**0.93**	**151**	P	**Pg**	**12 57 57.7**	**0.0**
SURC				S	**Sb**	**12 58 11.5**	**0.0**
KMRS	**Kahramanmaras**	**0.94**	**259**	*e*PG	**Pg**	**12 57 58.2**	**+0.2**
KMRS				*e*SG	**Sb**	**12 58 11.5**	**-0.4**
KMRS	**Kahramanmaras**	**0.94**	**259**	*e*Pg	**Pg**	**12 57 58.2**	**+0.2**
KMRS				*e*Sg	**Sb**	**12 58 11.5**	**-0.4**
DARE	**Darende-Malaty**	**0.98**	**333**	*e*PG	**Pn**	**12 58 00.8**	**0.0**
DARE	**Darende-Malaty**	**0.98**	**333**	*e*Pg	**Pn**	**12 58 00.8**	**0.0**
ELZG	**Elazig**	**1.08**	**42**	*i* P	**Pb**	**12 58 01.6**	**+0.1**
ELZG				*i* S	**Sg**	**12 58 14.5**	**-0.3**
ELZG	**Elazig**	**1.08**	**42**	P	**Pb**	**12 58 01.6**	**+0.1**
ELZG				S	**Sg**	**12 58 14.5**	**-0.3**
SVRC	**Sivrice-ELAZID**	**1.20**	**55**	*e*PN	**Pb**	**12 58 03.4**	**0.0**
SVRC				*e*SN	**Sn**	**12 58 21.0**	**+0.3**
SVRC	**Sivrice-ELAZID**	**1.20**	**55**	*e*Pn	**Pb**	**12 58 03.4**	**0.0**
SVRC				*e*Sn	**Sn**	**12 58 21.0**	**+0.3**
KUZU	**Kuzuini**	**1.21**	**221**	*i* P	**Pn**	**12 58 03.8**	**-0.1**
KUZU				*i* S	**Sn**	**12 58 20.8**	**-0.1**
KUZU	**Kuzuini**	**1.21**	**221**	P	**Pn**	**12 58 03.8**	**-0.1**
KUZU				S	**Sn**	**12 58 20.8**	**-0.1**
KAMA	**Osmaniye**	**1.22**	**246**	*i* P	**Pb**	**12 58 03.7**	**-0.1**
KAMA				*i* S	**Sb**	**12 58 20.3**	**+0.3**
PTK	**Pertek**	**1.59**	**41**	*e*PN	**Pb**	**12 58 09.9**	**-0.2**
PTK	**Pertek**	**1.59**	**41**	*e*Pn	**Pb**	**12 58 09.9**	**-0.2**
KOZT	**Kozan**	**1.79**	**264**	*e*PN	**Pb**	**12 58 12.9**	**-0.5**
KOZT	**Kozan**	**1.79**	**264**	*e*Pn	**Pb**	**12 58 12.9**	**-0.5**
MAZI	**Mazidag**	**1.91**	**96**	*e*PN	**Pn**	**12 58 13.5**	**-0.1**
MAZI	**Mazidag**	**1.91**	**96**	*e*Pn	**Pn**	**12 58 13.5**	**-0.1**
TAHT	**Tahtakopru-Hat**	**2.00**	**229**	*e*PN	**Pn**	**12 58 15.4**	**+0.7**
TAHT	**Tahtakopru-Hat**	**2.00**	**229**	*e*Pn	**Pn**	**12 58 15.4**	**+0.7**

MOS ***18*** *13:02:57.6±1.1, 34.°29S×179.°91E, h46km, mb6.4/71, MS5.9/20, Error ellipse: s-maj=8.7km s-min=6.4km az=79.2*
ISCJB ***18*** *13:03:00.8±0.4, 34.°30S±0.°03×179.°96E±0.°02, h75km±4km, mb6.0/309, Error ellipse: s-maj=4.7km s-min=3.0km az=169.1*

BJI ***18*** *13:03:01.0, 34.°30S×180.°00E, h80km, mb6.0/32, mB6.0/49, Ms6.1/83, Ms7 6.2/69*
NEIC ***18*** *13:03:02.7±0.1, 34.°34S×179.°87E, h86km, mb6.2/224, ME6.3, MW6.6, MW6.6, Error ellipse: s-maj=4.8km s-min=3.4km az=155.0, Moment Tensor Solution. s58 Moment tensor: Scale 10¹⁸Nm; Mrr=5.80; Mθθ=2.73; Mϕϕ=3.06; Mrθ=2.45; Mrϕ=-0.69; Mθϕ=7.65; Best double couple: M₀9.50000×10¹⁸ NP1:ϕs353.00000°,δ15.00000°, λ-110.00000°. NP2:ϕs194.00000°,δ76.00000°, λ-85.00000°. Principal axes: T 7.6000, Plg31.0000°, Azm279.0000°; N 3.1000, Plg5.0000°, Azm12.0000°; P -10.6000, Plg5.0000°, Azm11.0000°; Depth from synthetics of broadband displacement seismograms. Energy computed from CMT mechanism.*
NEIC Felt [II] at Christchurch, Lower Hutt and Wellington, New Zealand. Felt in many parts of the North Island and in a few places on the South Island.
GCMT ***18*** *13:03:02.7±0.1, 34.°40S×179.°83W, h100km, MW6.5/141, Moment Tensor Solution. s141,c368; s139,c568; Duration: 4s5 Moment tensor: Scale 10¹⁸Nm; Mrr=3.04±.04; Mθθ=1.31±.04; Mϕϕ4.35±.04; Mrθ2.05±.03; Mθϕ0.98±.03; Mϕr6.56±.03; Best double couple: M₀7.85500×10¹⁸ NP1:ϕs197.00000°,δ76.00000°, λ-84.00000°. NP2:ϕs355.00000°,δ15.00000°, λ-111.00000°. Principal axes: T 8.5480, Plg31.0000°, Azm283.0000°; N -1.3860, Plg6.0000°, Azm16.0000°; P -7.1620, Plg59.0000°, Azm115.0000°; nsta1 refers to body waves, cutoff=50s. nsta2 refers to surface/mantle waves, cutoff=50s.*
IDC ***18*** *13:03:03.4±0.8, 34.°28S×179.°97E, h90km±6km, mb5.7/33, mb1 5.7/34, mb1mx5.7/38, mbtmp6.0/34, MS5.7/19, Ms1 5.7/19, ms1mx5.5/24 Error ellipse: s-maj=10.7km s-min=9.8km az=16.0*
NEIC ***18*** *13:03:04.0±0.0, 34.°12S×179.°81W, h90km, Moment Tensor Solution. s15 Moment tensor: Scale 10¹⁸Nm; Mrr=4.50; Mθθ0.88; Mϕϕ3.61; Mrθ1.99; Mθϕ1.03; Mϕr7.57; Best double couple: M₀8.90000×10¹⁸ NP1:ϕs195.00000°, δ76.00000°, λ-91.00000°. NP2:ϕs21.00000°, δ14.00000°, λ-84.00000°. Principal axes: T 8.6200, Plg30.0000°, Azm286.0000°; N 0.5500, Plg1.0000°, Azm195.0000°; P -9.1700, Plg59.0000°, Azm103.0000°;*
ISC 18 13:03:04.4±0.3, 34.°29S±0.°03×179.°94E±0.°03, h98km±2km, h97km:pP-P, n2196, σ1s82/2501, mb6.2/281, 59C-39D, South of Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MXZ	**Matakaoa Point**	**3.53**	**202**	PN	**Pn**	**13 03 54.7**	**-2.4**
MXZ				SN	**Sn**	**13 04 38.1**	**+0.1**
MXZ				SN	**Sn**	**13 04 38.3**	**+0.4**
MXZ	**Matakaoa Point**	**3.53**	**202**	*e*Pn	**Pn**	**13 03 55.2**	**-1.9**
WMGZ	**Waiomatatini S**	**3.74**	**199**	PN	**Pn**	**13 03 58.3**	**-1.7**
WMGZ				SN	**Sn**	**13 04 45.1**	**+2.2**
WMGZ				SN	**Sn**	**13 04 45.1**	**+2.2**
HAZ	**Te Kaha**	**3.88**	**206**	PN	**Pn**	**13 04 00.1**	**-1.8**
HAZ				SN	**Sn**	**13 04 48.3**	**+1.9**
PKGZ	**Pakihiroa**	**3.90**	**202**	PN	**Pn**	**13 04 00.2**	**-2.0**
PKGZ				SN	**Sn**	**13 04 46.7**	**-0.3**
WIZ	**White Island**	**3.93**	**214**	PN	**Pn**	**13 04 02.3**	**-0.3**
PUZ	**Puketiti**	**4.02**	**199**	PN	**Pn**	**13 04 01.4**	**-2.4**
PUZ				SN	**Sn**	**13 04 47.5**	**-2.3**
GRZ	**Great Barrier**	**4.16**	**241**	PN	**Pn**	**13 04 08.1**	**+2.5**
TWGZ	**Tauwhareparae**	**4.19**	**202**	PN	**Pn**	**13 04 03.9**	**-2.3**
KUZ	**Kuaotunu**	**4.23**	**233**	PN	**Pn**	**13 04 08.6**	**+2.1**
MYRZ	**Mayor Island**	**4.24**	**224**	*e*PN	**Pn**	**13 04 07.6**	**+0.8**
CNGZ	**Carnagh Statio**	**4.42**	**198**	PN	**Pn**	**13 04 06.5**	**-2.6**
TKGZ	**Te Karaka**	**4.48**	**202**	PN	**Pn**	**13 04 06.9**	**-3.0**
MWZ	**Matawai**	**4.49**	**205**	PN	**Pn**	**13 04 07.6**	**-2.5**
MWZ				*e*SN	**Sn**	**13 04 59.2**	**-2.0**
OPRZ	**Ohinepanea**	**4.49**	**217**	PN	**Pn**	**13 04 09.3**	**-0.8**
TGRZ	**Tauranga**	**4.55**	**220**	PN	**Pn**	**13 04 11.2**	**+0.3**
URZ	**Urewera**	**4.58**	**209**	P	**Pn**	**13 04 09.3**	**-2.0**
	170nm,0.3s,baz=268,slow=5.2,SNR=1187						
URZ				S	**Sn**	**13 05 01.5**	**-1.8**
	3μm,0.3s,baz=357,slow=23,SNR=11						
URZ				ScS	**ScS**	**13 18 14.9**	**-3.3**
	2.0nm,0.3s,baz=164,slow=23,SNR=10						
URZ	**Urewera**	**4.58**	**209**	PN	**Pn**	**13 04 08.7**	**-2.6**
URZ				*e*SN	**Sn**	**13 05 01.0**	**-2.3**
URZ				ScS	**ScS**	**13 18 13.1**	**-5.2**
EDRZ	**Edgecumbe**	**4.61**	**213**	PN	**Pn**	**13 04 11.7**	**-0.1**
WIAZ	**Waiheke Island**	**4.65**	**236**	*e*PN	**Pn**	**13 04 14.8**	**+2.5**
RAGZ	**Rawiri**	**4.67**	**205**	*e*PN	**Pn**	**13 04 10.1**	**-2.5**
LIRZ	**Lichensteins R**	**4.70**	**217**	PN	**Pn**	**13 04 13.7**	**+0.8**
RIGZ	**Rimuhau**	**4.75**	**201**	PN	**Pn**	**13 04 10.8**	**-2.9**
ABAZ	**Army Bay**	**4.77**	**240**	*e*PN	**Pn**	**13 04 16.7**	**+2.8**
KARZ	**Kaharoa**	**4.78**	**218**	PN	**Pn**	**13 04 13.3**	**-0.8**
OMRZ	**Omania**	**4.78**	**216**	PN	**Pn**	**13 04 13.3**	**-0.8**
MKAZ	**Moumakai**	**4.80**	**233**	PN	**Pn**	**13 04 16.1**	**+1.8**
MKAZ				ScS	ScS	13 18 18.4	0.0
MTAZ	**Motutapu**	**4.81**	**237**	*e*PN	**Pn**	**13 04 17.1**	**+2.7**
KMRZ	**Kaimai**	**4.81**	**221**	*e*PN	**Pn**	**13 04 15.2**	**+0.7**
TARZ	**Mount Tarawera**	**4.82**	**214**	PN	**Pn**	**13 04 14.0**	**-0.7**
ETAZ	**East Tamaki Re**	**4.88**	**235**	*e*PN	**Pn**	**13 04 18.0**	**+2.7**
WCZ	**Waipu Caves**	**4.88**	**249**	*e*PN	**Pn**	**13 04 18.4**	**+3.1**
RRRZ	**Republican Roa**	**4.90**	**213**	PN	**Pn**	**13 04 14.3**	**-1.4**
MUGZ	**Murupara**	**4.90**	**211**	PN	**Pn**	**13 04 13.1**	**-2.6**
HLRZ	**Highlands Stat**	**4.91**	**215**	PN	**Pn**	**13 04 14.8**	**-1.0**
PRGZ	**Paritu Road**	**4.92**	**199**	PN	**Pn**	**13 04 12.7**	**-3.2**
UTU	**Utuhina**	**4.92**	**217**	PN	**Pn**	**13 04 16.7**	**+0.7**
SNGZ	**Shannon Statio**	**4.95**	**204**	PN	**Pn**	**13 04 13.4**	**-3.0**
HBAZ	**Herne Bay Bore**	**4.96**	**237**	*e*PN	**Pn**	**13 04 18.6**	**+2.1**
KBAZ	**Karaka Road Bo**	**4.98**	**234**	*e*PN	**Pn**	**13 04 19.3**	**+2.6**
TOZ	**Tahuroa Road**	**4.98**	**225**	PN	**Pn**	**13 04 17.5**	**+0.8**
HSRZ	**Hossack Road**	**5.00**	**216**	*e*PN	**Pn**	**13 04 16.9**	**-0.2**
RVAZ	**Riverhead Bore**	**5.03**	**239**	*e*PN	**Pn**	**13 04 20.6**	**+3.2**
HRRZ	**Handcock Road**	**5.05**	**215**	PN	**Pn**	**13 04 17.3**	**-0.4**
KNZ	**Kokohu**	**5.07**	**200**	PN	**Pn**	**13 04 13.4**	**-4.5**
PRRZ	**Plateau Road**	**5.09**	**213**	PN	**Pn**	**13 04 16.8**	**-1.4**
GRRZ	**Galatos Road**	**5.10**	**216**	PN	**Pn**	**13 04 17.7**	**-0.7**
WTAZ	**Waiatarua**	**5.11**	**237**	*e*PN	**Pn**	**13 04 21.6**	**+3.1**
MHGZ	**Mahia Peninsul**	**5.12**	**198**	PN	**Pn**	**13 04 15.4**	**-3.3**
ALRZ	**Allen Road**	**5.16**	**213**	*e*PN	**Pn**	**13 04 17.2**	**-2.0**
RAHZ	**Arahi**	**5.16**	**206**	PN	**Pn**	**13 04 16.2**	**-3.0**
WPRZ	**Whakapapatarin**	**5.21**	**215**	*e*PN	**Pn**	**13 04 19.7**	**-0.2**
WHHZ	**Waihua**	**5.25**	**204**	PN	**Pn**	**13 04 17.7**	**-2.8**
OUZ	**Omahuta**	**5.31**	**258**	PN	**Pn**	**13 04 23.8**	**+2.6**
OUZ	**Omahuta**	**5.31**	**258**	*e*Pn	**Pn**	**13 04 23.8**	**+2.6**
RAO	**Raoul Island**	**5.34**	**21**	P	**Pn**	**13 04 17.5**	**-4.2**
	1μm,0.3s,baz=187,slow=5.7,SNR=43						
RAO				S	**Sn**	**13 05 17.6**	**-4.3**
	6μm,0.3s,baz=34,slow=19,SNR=8.3						
RAO	**Raoul Island**	**5.34**	**21**	*e*Pn	Pn	13 04 16.9	-4.8
RAO				S	**Sn**	**13 05 17.6**	**-4.3**
KUTZ	**Kaahu Road**	**5.35**	**217**	*e*PN	**Pn**	**13 04 21.5**	**-0.3**
MRHZ	**Matea Rd**	**5.35**	**211**	PN	**Pn**	**13 04 19.0**	**-2.9**
NMHZ	**Naumai**	**5.42**	**207**	PN	**Pn**	**13 04 19.2**	**-3.6**
ARHZ	**Aropaoanui**	**5.50**	**205**	PN	**Pn**	**13 04 20.5**	**-3.4**
BKZ	**Black Stump Fm**	**5.60**	**209**	PN	**Pn**	**13 04 21.4**	**-3.9**
BKZ				ScP	**ScP**	**13 14 47.8**	**+1.3**
BKZ				ScS	**ScS**	**13 18 14.3**	**-5.0**
BKZ	**Black Stump Fm**	**5.60**	**209**	*e*Pn	**Pn**	**13 04 22.4**	**-2.9**
MCHZ	**McNeill Hill**	**5.77**	**206**	*e*PN	**Pn**	**13 04 24.3**	**-3.2**
CKHZ	**Cape Kidnapper**	**5.83**	**202**	*e*PN	**Pn**	**13 04 23.7**	**-4.6**
KWHZ	**Kaweka Forest**	**5.85**	**208**	PN	**Pn**	**13 04 24.8**	**-3.9**
HIZ	**Hauiti**	**5.88**	**223**	*e*PN	**Pn**	**13 04 29.5**	**+0.5**
HIZ	**Hauiti**	**5.88**	**223**	*e*Pn	Pn	**13 04 29.4**	**+0.4**
KRVZ	**Karewarewa**	**5.91**	**215**	*e*PN	**Pn**	**13 04 27.9**	**-1.6**
WTVZ	**West Tongariro**	**5.95**	**215**	PN	**Pn**	**13 04 28.4**	**-1.7**
OTVZ	**Oturere**	**5.96**	**214**	PN	**Pn**	**13 04 27.4**	**-2.7**
TWVZ	**Taurewa**	**5.99**	**216**	PN	**Pn**	**13 04 29.5**	**-1.1**
KAHZ	**Kahuranaki**	**6.02**	**203**	PN	**Pn**	**13 04 26.4**	**-4.5**
BHHZ	**Black Hill Sta**	**6.05**	**210**	*e*PN	**Pn**	**13 04 27.4**	**-4.0**
BHHZ				ScP	**ScP**	**13 14 45.9**	**-0.8**
BHHZ				ScS	**ScS**	**13 18 15.9**	**-3.9**
KRHZ	**Kereru**	**6.06**	**207**	*e*PN	**Pn**	**13 04 26.9**	**-4.5**
WNVZ	**Wahianoa**	**6.12**	**213**	PN	**Pn**	**13 04 29.5**	**-2.9**
PXZ	**Pawanui**	**6.24**	**202**	*e*PN	Pn	13 04 28.2	-5.6
PNHZ	**Pukenui**	**6.36**	**207**	*e*PN	Pn	13 04 30.3	-5.2
PNHZ				ScP	**ScP**	**13 14 47.4**	**+0.5**
VRZ	**Vera Road**	**6.38**	**219**	*e*PN	**Pn**	**13 04 34.6**	**-1.1**
WPHZ	**Waipukurau**	**6.41**	**205**	PN	**Pn**	**13 04 32.2**	**-4.0**
PRHZ	**Porangahau**	**6.53**	**203**	PN	**Pn**	**13 04 33.0**	**-4.8**
TSZ	**Takapari Road**	**6.58**	**208**	*e*PN	Pn	13 04 32.9	-5.6
DVHZ	**Dannevirke**	**6.71**	**206**	*e*PN	Pn	13 04 34.9	-5.4
DREZ	**Durham Road**	**6.72**	**222**	*e*PN	**Pn**	**13 04 42.2**	**+1.8**
WAZ	**Wanganui**	**6.75**	**215**	*e*PN	**Pn**	**13 04 38.1**	**-2.6**
ANWZ	**Angora Road**	**6.75**	**203**	*e*PN	Pn	13 04 35.7	-5.0
LREZ	**Lake Rotokare**	**6.81**	**219**	*e*PN	**Pn**	**13 04 40.3**	**-1.3**
NEZ	**North Egmont**	**6.84**	**222**	*e*PN	**Pn**	**13 04 43.2**	**+1.2**
POWZ	**Post Office Ro**	**6.94**	**207**	PN	Pn	13 04 38.3	-5.1
POWZ				ScP	**ScP**	**13 14 47.3**	**0.0**
POWZ				ScS	**ScS**	**13 18 18.7**	**-1.9**
OHWZ	**Ohakea**	**6.97**	**211**	*e*PN	**Pn**	**13 04 40.0**	**-3.7**
PRWZ	**Pori Road**	**7.01**	**206**	PN	**Pn**	**13 04 39.7**	**-4.6**
BFZ	**Birch Farm**	**7.03**	**204**	*e*PN	Pn	13 04 38.4	-6.1
BFZ	**Birch Farm**	**7.03**	**204**	*e*Pn	Pn	13 04 38.8	-5.8
TIWZ	**Tintock**	**7.24**	**205**	*e*PN	Pn	13 04 42.1	-5.3
MRZ	**Mangatainoka R**	**7.25**	**207**	*e*PN	Pn	13 04 41.3	-6.3
CPWZ	**Castlepoint**	**7.25**	**203**	*e*PN	Pn	13 04 41.6	-5.9
HOWZ	**Holdsworth Sta**	**7.48**	**207**	*e*PN	Pn	13 04 44.2	-6.5
TMWZ	**Te Maipa**	**7.53**	**204**	PN	Pn	13 04 45.1	-6.3
OGWZ	**Otaki Gorge**	**7.54**	**209**	*e*PN	Pn	13 04 45.6	-5.9
KIW	**Kapiti Island**	**7.68**	**210**	*e*PN	Pn	13 04 47.5	-6.0
MTW	**Mount Morrison**	**7.71**	**206**	*e*PN	Pn	13 04 47.3	-6.6
CAW	**Cannon Point**	**7.83**	**208**	PN	Pn	13 04 48.7	-6.7
TRWZ	**Traveller**	**7.86**	**204**	PN	Pn	13 04 49.3	-6.5
PAWZ	**Paruwai Farm**	**7.93**	**205**	*e*PN	Pn	13 04 50.4	-6.5
MSWZ	**Moikau Station**	**8.03**	**206**	*e*PN	Pn	13 04 51.3	-6.8
DUWZ	**D'Urville Isla**	**8.07**	**215**	*e*PN	Pn	13 04 52.6	-6.2
DUWZ				ScP	**ScP**	**13 14 46.0**	**-2.4**
DUWZ				ScS	**ScS**	**13 18 16.0**	**-6.2**
SNZO	**South Karori**	**8.14**	**209**	*e*Pn	Pn	13 04 52.8	-6.9
PLWZ	**Palliser**	**8.16**	**206**	PN	Pn	13 04 52.8	-7.2
TCW	**Tory Channel**	**8.24**	**211**	PN	Pn	13 04 54.1	-6.9
TUWZ	**Tuamarina**	**8.56**	**212**	PN	Pn	13 04 58.0	-7.4
NNZ	**Nelson**	**8.65**	**215**	*e*PN	Pn	13 05 00.3	-6.3
ORZ	**Quartz Range**	**8.79**	**220**	*e*PN	Pn	13 05 02.7	-5.7
BSWZ	**Blackbirch Sta**	**8.82**	**211**	*e*PN	Pn	13 05 02.1	-6.9
THZ	**Tophouse**	**9.30**	**215**	*e*PN	Pn	13 05 08.2	-7.3
THZ				ScP	**ScP**	**13 14 49.7**	**0.0**
THZ				ScS	**ScS**	**13 18 16.7**	**-7.4**
THZ	**Tophouse**	**9.30**	**215**	*e*Pn	Pn	13 05 09.1	-6.4
KHZ	**Kahutara**	**9.54**	**210**	*e*PN	Pn	13 05 10.9	-7.9
KHZ	**Kahutara**	**9.54**	**210**	*e

HNR Honiara 30.80 319 P **P** **13 09 09.6 -1.2**
comp=Z,1μm,0.8s
QLP Quilpie 31.61 274 P **P** **13 09 19.6 +1.6**
baz=32,SNR=159
PAE Paea 31.85 66 *e*P **P** **13 09 20.1 0.0**
comp=Z,187nm,1.2s
PPT2 Papeete2 31.89 66 *e*P **P** **13 09 20.6 0.0**
comp=Z,846nm,1.2s
PPT2 *e*S **S** **13 14 28.3 +3.8**
comp=Z,26μm,24.5s
PPT2 *e*LR LR 13 17 24.0
comp=Z,183μm,33.2s
PPT Papeete 31.91 66 P **P** **13 09 20.0 -0.6**
comp=Z,685nm,1.0s,baz=226,slow=2.4,SNR=18
PPT LR LR 13 19 25.3
comp=Z,18μm,20.9s,baz=238,slow=31
TVO Taravao 32.02 67 *e*P **P** **13 09 21.7 0.0**
comp=Z,249nm,1.1s
TVO Taravao 32.02 67 *e*T T 13 42 16.7
comp=Z,21nm,0.3s
TIAR Tiarei 32.09 67 *e*P **P** **13 09 22.2 0.0**
comp=Z,447nm,0.9s
STKA Stephens Creek 32.10 263 P **P** **13 09 23.2 +1.0**
comp=Z,72nm,0.6s,baz=104,slow=9.9,SNR=81
STKA ScP **ScP** **13 15 42.1 -1.8**
comp=Z,56nm,0.9s,baz=102,slow=3.6,SNR=9.4
STKA ScS **ScS** **13 19 43.2 +0.2**
comp=Z,5.4nm,0.8s,baz=317,slow=20,SNR=3.3
STKA LR LR 13 21 38.1
comp=Z,19μm,19.4s,baz=98,slow=35
STKA P3KPbc 13 40 50.3
comp=Z,8.7nm,1.2s,baz=294,slow=5.6,SNR=7.3
STKA P3KP 13 42 11.0
comp=Z,1.7nm,0.7s,baz=316,slow=1.9,SNR=3.7
STKA Stephens Creek 32.10 263 P **P** **13 09 23.0 +0.8**
baz=32,SNR=62
STKA Stephens Creek 32.10 263 *e*P **P** **13 09 22.5 +0.3**
comp=Z,42nm,1.1s
STKA ScP **ScP** **13 15 42.1 -1.8**
STKA ScS **ScS** **13 19 43.2 +0.2**
STKA *e* 13 40 50.3
STKA PKKKP 13 42 11.0
MEH Mehetia 32.88 68 *e*P **P** **13 09 29.3 +0.2**
comp=Z,298nm,1.2s
CTA Charters Tower 32.97 287 P **P** **13 09 31.7 +1.8**
comp=Z,371nm,0.5s,baz=124,slow=10,SNR=148
CTA S **S** **13 14 43.0 +1.9**
comp=Z,63nm,1.1s,baz=107,slow=19,SNR=8.8
CTA ScP **ScP** **13 15 47.9 +0.8**
comp=Z,60nm,1.0s,baz=131,slow=6.3,SNR=5.1
CTAO Charters Tower 32.97 287 *e*P **P** **13 09 31.5 +1.6**
CTAO pmax pmax
comp=Z,730nm,0.8s
CTAO Charters Tower 32.97 287 *e*P **P** **13 09 31.5 +1.6**
comp=Z,733nm,0.8s
HTT Hallett 33.91 260 P **P** **13 09 39.1 +1.0**
baz=34,SNR=88
PMOR Pomariorio Ree 34.76 64 *e*P **P** **13 09 45.2 -0.2**
VAH Vaihoa 34.81 65 *e*P **P** **13 09 45.3 -0.5**
comp=Z,1μm,1.1s
VAH Vaihoa 34.81 65 *e*T T 13 45 37.5
comp=Z,372nm,0.2s
MTSU Mount Surprise 35.56 288 P **P** **13 09 53.8 +1.4**
baz=36,SNR=434
TARA Tarawa 36.06 348 *e*P **P** **13 09 56.1 -0.4**
comp=Z,827nm,1.1s
BBOO Buckleboo 36.40 260 *e*P **P** **13 09 58.7 -0.6**
comp=Z,298nm,1.0s
QIS Mount Isa 38.08 280 P **P** **13 10 14.6 +0.9**
baz=38,SNR=236
COEN Coen 38.89 292 P **P** **13 10 21.8 +1.3**
baz=39,SNR=107
COEN Coen 38.89 292 *e*P **P** **13 10 21.1 +0.6**
comp=Z,689nm,1.0s
PMG Port Moresby 38.93 302 P **P** **13 10 22.0 +1.2**
comp=Z,254nm,0.9s,baz=94,slow=5.7,SNR=53
PMG ScP **ScP** **13 16 08.1 -0.8**
comp=Z,59nm,1.1s,baz=46,slow=1.3,SNR=3.3
PMG S **S** **13 16 11.8 -0.3**
comp=Z,70nm,1.1s,baz=34,slow=0.5,SNR=3.6
PMG ScS **ScS** **13 20 21.1 +0.6**
comp=Z,12nm,1.0s,baz=215,slow=20,SNR=6.6
PMG LR LR 13 24 55.6
comp=Z,39μm,18.8s,baz=130,slow=34
PMG Port Moresby 38.93 302 *e*P **P** **13 10 21.4 +0.6**
comp=Z,1μm,1.4s
PMG *e*S **S** **13 16 09.3 -2.8**
PMG ScS **ScS** **13 20 21.1 +0.6**
RABL Rabaul 39.53 313 *e*P **P** **13 10 26.4 +0.6**
comp=Z,3μm,1.3s
RKT Rikitea 40.79 86 *e*P **P** **13 10 36.1 0.0**
comp=Z,890nm,1.1s
RKT *e*S **S** **13 16 44.9 +5.1**
comp=Z,12μm,25.0s
RKT *e*LR LR 13 21 37.7
comp=Z,129μm,34.5s
AS01 Alice Springs 41.30 272 *e*P **P** **13 10 39.9 -0.5**
AS31 Alice Springs 41.34 272 *e*P **P** **13 10 40.4 -0.3**
comp=Z,81nm,0.8s
ASAR Alice Springs 41.34 272 P **P** **13 10 40.9 +0.1**
comp=Z,161nm,0.5s,baz=113,slow=6.9,SNR=739
ASAR ScP **ScP** **13 16 19.1 +0.7**
comp=Z,24nm,0.8s,baz=123,slow=3.5,SNR=4.9
ASAR S **S** **13 16 46.6 -1.5**
comp=Z,34nm,1.1s,baz=117,slow=15,SNR=4.2
ASAR ScS **ScS** **13 20 31.9 -3.0**
comp=Z,5.9nm,1.0s,baz=234,slow=30,SNR=4.1
ASAR LR LR 13 26 55.3
comp=Z,22μm,21.5s,baz=128,slow=35
ASAR P3KPbc 13 40 13.7
comp=Z,3.0nm,1.0s,baz=306,slow=4.2,SNR=14
ASAR P3KP 13 41 39.8
comp=Z,2.7nm,1.2s,baz=294,slow=0.9,SNR=4.2
ASAR PKPPKP **P'P'df** **13 42 47.8 -5.0**
comp=Z,6.6nm,1.1s,baz=316,slow=1.7,SNR=5.0
ASAR P4KPbc 13 48 46.1
comp=Z,0.3nm,0.7s,baz=109,slow=3.9,SNR=4.6
XMAS Kiritimati 41.93 35 *e*P **P** **13 10 45.7 +0.3**
comp=Z,212nm,0.9s
WB2 Warramunga Arr 42.68 277 *e*P **P** **13 10 51.4 -0.2**
comp=Z,1μm,1.5s
WRAB Tennant Creek 42.68 278*c i*P **P** **13 10 51.4 -0.2**
WRAB pmax pmax
comp=Z,3μm,2.0s
WRAB MLR MLR
comp=Z,44μm,17.0s
WRAB Tennant Creek 42.68 278 *e*P **P** **13 10 51.1 -0.6**
comp=Z,1μm,1.5s
WRA Warramunga Arr 42.69 277 P **P** **13 10 51.2 -0.5**
comp=Z,272nm,0.9s,baz=118,slow=7.5,SNR=495
WRA PP **PP** **13 12 31.6 -0.8**
comp=Z,37nm,0.5s,baz=119,slow=7.5,SNR=1.9
WRA ScP **ScP** **13 16 23.0 -0.8**
comp=Z,69nm,1.0s,baz=122,slow=4.1,SNR=5.1
WRA S **S** **13 17 07.1 -0.8**
comp=Z,67nm,1.0s,baz=120,slow=15,SNR=9.1
WRA PKiKP **PKiKP** **13 19 45.6 -0.4**
comp=Z,5.5nm,0.8s,baz=95,slow=0.2,SNR=5.2
WRA ScS **ScS** **13 20 41.0 -2.2**
comp=Z,9.6nm,1.1s,baz=153,slow=0.9,SNR=4.7
WRA LR LR 13 28 26.4
comp=Z,21μm,18.9s,baz=120,slow=36
WRA P3KPbc 13 40 07.7
comp=Z,2.0nm,1.1s,baz=327,slow=3.3,SNR=5.7
WRA PKPPKP **P'P'df** **13 42 47.9 -3.1**
comp=Z,3.5nm,1.0s,baz=287,slow=2.4,SNR=5.2
WRA P4KPbc 13 48 51.6
comp=Z,0.7nm,0.8s,baz=116,slow=4.3,SNR=5.3
PTCN Pitcairn Islan 44.00 92 *e*P **P** **13 11 01.6 -0.6**
comp=Z,967nm,0.9s
VNDA Vanda 44.07 186 P **P** **13 11 03.3 +1.3**
comp=Z,64nm,0.7s,baz=6.6,slow=7.3,SNR=136
VNDA ScP **ScP** **13 16 29.0 +0.6**
comp=Z,52nm,1.0s,baz=346,slow=4.1,SNR=6.4
VNDA LR LR 13 26 02.1
comp=Z,5μm,20.5s,baz=20,slow=31
VNDA PKPPKP **P'P'df** **13 42 46.6 -2.3**
comp=Z,3.9nm,1.1s,baz=272,slow=0.8,SNR=3.2
VNDA Vanda 44.07 186 *e*P **P** **13 11 03.6 +1.6**
comp=Z,121nm,1.0s
VNDA ScP **ScP** **13 16 29.0 +0.6**
VNDA P'P' 13 42 46.6
MANU Manus Island 44.18 309 *e*P **P** **13 11 04.8 +1.2**
comp=Z,1μm,1.7s
MMPI Merauke 44.48 296 P **P** **13 11 08.2 +2.1**
TAOE Nuku Hiva Isla 44.49 65 *e*P **P** **13 11 05.3 -0.9**
comp=Z,686nm,1.2s
TAOE *e*S **S** **13 17 37.0 +2.6**
comp=Z,36μm,24.4s
TAOE *e*LQ LQ 13 21 44.2
comp=Z,58μm,26.7s
TAOE *e*LR LR 13 23 16.2
comp=Z,86μm,33.0s
TAOE Nuku Hiva Isla 44.49 65 *e*T T 13 58 01.3
comp=Z,18nm,0.2s
TAOE Nuku Hiva Isla 44.49 65 *e*P **P** **13 11 06.1 -0.1**
comp=Z,370nm,1.1s
KDU Kakadu 48.04 285 P **P** **13 11 33.9 -0.1**
baz=48,SNR=29
JAY Jayapura 48.31 302 S **S** **13 18 31.2 +2.3**
comp=Z,1.0nm,0.9s,baz=270,slow=20,SNR=4.9
JAY Jayapura 48.31 302 P **P** **13 11 37.3 +1.2**
KMBL Kambalda 48.31 256 P **P** **13 11 35.3 -0.6**
baz=48,SNR=119
GENI Genyem 48.63 302 P **P** **13 11 40.0 +1.5**
MTN Manton Dam 49.03 284 P **P** **13 11 41.6 0.0**
baz=49,SNR=29
MTN Manton Dam 49.03 284 *e*P **P** **13 11 41.1 -0.4**
comp=Z,777nm,1.5s
FITZ Fitzroy Crossi 50.75 274 P **P** **13 11 54.5 -0.1**
comp=Z,292nm,0.9s,baz=125,slow=7.3,SNR=72
FITZ S **S** **13 19 02.5 -0.4**
comp=Z,12nm,0.9s,baz=220,slow=23,SNR=14
FITZ Fitzroy Crossi 50.75 274 P **P** **13 11 54.7 +0.2**
baz=51,SNR=242
FITZ Fitzroy Crossi 50.75 274 *e*P **P** **13 11 54.4 -0.1**
comp=Z,433nm,1.0s
FITZ S **S** **13 19 02.5 -0.4**
CASY Casey 50.90 209 *e*P **P** **13 11 54.4 -0.6**
comp=Z,338nm,0.8s
RKGY Rocky Gully 51.14 251 P **P** **13 11 57.7 +0.4**
baz=51,SNR=44
NWAO Narrogin (SRO) 51.49 253 P **P** **13 11 58.9 -1.1**
comp=Z,109nm,0.5s,baz=249,slow=0.0,SNR=101
NWAO LR LR 13 30 51.0
comp=Z,32nm,18.6s,baz=320,slow=32
NWAO Narrogin (SRO) 51.49 253 *e*P **P** **13 11 58.4 -1.5**
comp=Z,611nm,1.3s
SAUI Saumlaki 51.74 289 *e*P **P** **13 11 59.7 -2.3**
comp=Z,861nm,1.0s
KMPI Kaimana, Papua 52.62 295 P **P** **13 12 11.1 +2.6**
BLDU Ballidu 52.73 255 P **P** **13 12 08.0 -1.1**
baz=53,SNR=46
H01W1 Cape Leeuwin H 53.24 249 P **P** **13 12 13.7 +1.1**
baz=116,slow=9.8,SNR=10
H01W2 Cape Leeuwin H 53.26 249 P **P** **13 12 13.7 +1.0**
baz=116,slow=9.8,SNR=12
H01W3 Cape Leeuwin H 53.26 249 P **P** **13 12 14.0 +1.3**
baz=116,slow=9.8,SNR=9.8
RKPI Ransiki, Papua 53.70 297 P **P** **13 12 18.6 +2.2**
MBWA Marble Bar 54.19 267 *e*P **P** **13 12 18.1 -1.9**
comp=Z,861nm,1.6s
FAKI Fak Fak 54.20 294 P **P** **13 12 19.8 -0.3**
comp=Z,252nm,2.0s,comp=Z,7μmcomp=Z,79μm
FAKI Fak Fak 54.20 294 *e*P **P** **13 12 17.8 -2.2**
comp=Z,386nm,1.3s
BNDI Bandanaira 54.97 291 P **P** **13 12 25.2 -0.4**
comp=Z,597nm,1.1s,comp=Z,11μmcomp=Z,72μm
QSPA South Pole Qui 55.83 180 *e*P **P** **13 12 32.6 +1.3**
SWI Sorong 56.29 295 P **P** **13 12 36.2 +1.1**
comp=Z,324nm,0.9s,comp=Z,12μm
SOEI Soe 56.32 282 *e*P **P** **13 12 34.3 -1.1**
comp=Z,960nm,1.2s
MSAI Masohi 56.46 291 P **P** **13 12 35.3 -1.0**
BATI Baumata 56.55 281 P **P** **13 12 38.2 +1.2**
comp=Z,39nm,0.5s,baz=90,slow=20
MIR Mirnyy 57.88 208 *i*P **P** **13 12 46.0 +0.5**
MIR *i* S **S** **13 20 36.0 -1.4**
MIR pmax pmax
comp=Z,2μm,4.0s
MIR smax smax
comp=N,25μm,10.0s
NLAI Namlea 57.94 290 P **P** **13 12 46.6 -0.1**
comp=N,224nm,1.1s,comp=N,8μmcomp=N,44μm
GIRL Giralia 58.04 263 P **P** **13 12 47.9 +0.5**
baz=58,SNR=48
GUMO Guam 58.13 319 P **P** **13 12 47.8 -0.1**
comp=N,449nm,1.1s,baz=171,slow=6.6,SNR=11
GUMO LR LR 13 34 28.5
comp=N,5μm,21.8s,baz=144,slow=32
GUMO Guam 58.13 319 *e*P **P** **13 12 48.2 +0.3**
GUMO pmax pmax
comp=Z,1μm,1.4s
GUMO Guam 58.13 319 *e*P **P** **13 12 48.2 +0.3**
comp=Z,1μm,1.4s
MLOA Mauna Loa Obse 58.38 27 *e*P **P** **13 12 50.1 +0.1**
UWE Uwekahuna 58.38 28 *e*P **P** **13 12 50.0 +0.2**
comp=Z,607nm,1.0s
MMRI Maumere 58.60 282 P **P** **13 12 51.5 +0.2**
comp=Z,778nm,1.2s,comp=Z,12μmcomp=Z,78μm
MMRI Maumere 58.60 282 *e*P **P** **13 12 50.6 -0.7**
comp=Z,766nm,1.0s
MMRI *e*pP **pP** **13 13 14.0 -1.4**
POHA Pohakuloa 58.60 27 *e*P **P** **13 12 51.9 +0.6**
comp=Z,751nm,1.2s
HPAH Hawaii Prepara 58.78 27 *e*P **P** **13 12 52.3 -0.1**
comp=Z,919nm,1.1s
MHA Mahukona 58.85 27 *e*P **P** **13 12 53.9 +1.1**
MHA Mahukona 58.85 27 *e*P **P** **13 12 51.7 -1.1**
MHA Mahukona 58.85 27 *e*P **P** **13 12 51.7 -1.1**
EDFI Ende, Flores 58.98 281 P **P** **13 12 55.7 +1.6**
BASI Baing, Sumba 59.06 279 P **P** **13 12 56.2 +1.7**
HON Honolulu 59.15 24 *e*P **P** **13 12 55.2 +0.3**
HON Honolulu 59.15 24 *e*P **P** **13 12 55.2 +0.3**
KEKH Kekaha 59.21 22 *e*P **P** **13 12 55.1 -0.2**
comp=Z,2μm,1.6s
KIP Kipapa 59.24 24 *e*P **P** **13 12 55.5 0.0**
KIP *e**PP **pP** **13 12 18.3 -1.3**
KIP pmax pmax
comp=Z,550nm,1.2s
KIP Kipapa 59.24 24 *e*P **P** **13 12 55.5 0.0**
comp=Z,550nm,1.2s
KIP *e*pP **pP** **13 13 18.3 -1.3**
HLK Haleakala 59.24 26 *e*P **P** **13 12 56.1 +0.2**
comp=Z,457nm,1.1s
LBMI Labuha 59.28 293 P **P** **13 12 58.8 +2.8**
comp=Z,255nm,1.1s,comp=Z,9μmcomp=Z,49μm
OPA Opana 59.49 24 *e*P **P** **13 12 57.9 +0.7**
OPA pmax pmax
comp=Z,450nm,1.0s
OPA Opana 59.49 24 *e*P **P** **13 12 57.5 +0.4**
comp=Z,452nm,1.1s
SANI Sanana 59.55 290 P **P** **13 12 59.1 +1.2**
comp=Z,385nm,1.0s,comp=Z,12μmcomp=Z,66μm
WSI Waingapu 59.59 279 P **P** **13 12 58.8 +0.6**
PALU Palau 59.68 305 P **P** **13 12 58.9 +0.1**
baz=60,SNR=23
RPN Rapa Nui 60.14 104 *e*P **P** **13 13 02.9 +1.1**
RPN Rapa Nui 60.14 104 *e*P **P** **13 13 01.9 +0.1**
comp=Z,9μm,1.8s
TNTI Ternate 60.29 294 P **P** **13 13 05.1 +2.2**
comp=Z,244nm,1.8s,comp=Z,10μmcomp=Z,72μm
TNTI Ternate 60.29 294 *e*P **P** **13 13 01.4 -1.5**
comp=Z,1μm,1.5s
BSSI Bau Bau, Buton 61.44 283 P **P** **13 13 13.2 +2.4**
PLAI Plampang 62.12 279 P **P** **13 13 15.2 -0.1**
comp=Z,365nm,1.6s,comp=Z,6μmcomp=Z,76μm
LUWI Luwuk 62.68 289 P **P** **13 13 19.8 +0.8**
comp=Z,454nm,1.0s,comp=Z,8μmcomp=Z,65μm
LUWI Luwuk 62.68 289 *e*P **P** **13 13 18.5 -0.6**
comp=Z,521nm,1.1s
KAPI Kappang 62.70 283 *e*P **P** **13 13 18.9 -0.2**
comp=Z,443nm,1.4s
KAPI Kappang 62.70 283 P **P** **13 13 23.0 +3.9**
SNR=11
TWSI Tatiwang, Sumb 62.91 278 P **P** **13 13 20.3 -0.2**
comp=Z,359nm,1.2s,comp=Z,5μm
SPSI Sidrap Palu 63.30 284 P **P** **13 13 22.5 -0.6**
APSI Ampana 63.64 288 P **P** **13 13 26.3 +0.9**
TTSI Tana Toraja 63.80 285 P **P** **13 13 26.8 +0.4**
MRSI Marisa 64.27 290 P **P** **13 13 31.0 +1.5**
DNP Denpasar 64.31 277 P **P** **13 13 32.0 +2.2**
PCI Palu 65.08 287 P **P** **13 13 35.6 +0.8**
comp=Z,593nm,1.4s,comp=Z,13μmcomp=Z,85μm
MATI Mati 65.20 298 *e*P **P** **13 13 36.9 +1.4**
JAGI Jajag, Banyuwa 65.30 277 P **P** **13 13 35.8 -0.4**
JAGI Jajag, Banyuwa 65.30 277 *e*P **P** **13 13 35.2 -1.0**
comp=Z,1μm,1.6s
ABJI Asem Bagus 65.60 277 P **P** **13 13 38.2 +0.1**
comp=Z,283nm,1.4s,comp=Z,6μm
DAV Davao City (W) 65.78 298 P **P** **13 13 38.1 -1.1**
comp=Z,169nm,0.4s,baz=71,slow=4.6,SNR=14
DAV Davao City (W) 65.78 298 *e*P **P** **13 13 37.4 -1.9**
DAV Davao City (W) 65.78 298 P **P** **13 13 41.5 +2.2**
SNR=29
GMJI Gumukmas 65.99 276 P **P** **13 13 40.1 -0.5**
comp=Z,766nm,1.2s,comp=Z,8μmcomp=Z,38μm
BUKP Musuan 66.70 298 *e*P **P** **13 13 45.5 +0.3**
BUKP *e*S **PcP** **13 14 15.8 +2.2**
CTBH Cotabato--PC H 66.86 297 *e*P **P** **13 13 45.6 -0.5**
BKB Balikpapan 67.20 285 P **P** **13 13 53.9 +5.5**
comp=Z,296nm,1.5s,comp=Z,9μmcomp=Z,71μm
CGP Cagayan de Oro 67.36 298 *e*P **P** **13 13 52.4 +3.1**
PWJI Pagerwojo 67.48 276 P **P** **13 13 49.8 -0.3**
BBKI Banjar Baru 67.57 282 P **P** **13 13 50.5 -0.2**
comp=Z,652nm,1.6s,comp=Z,8μm
PCJI Pacitan 67.90 275 P **P** **13 13 53.1 +0.4**
comp=Z,1μm,1.3s,comp=Z,13μm
PAGZ Pagadian 67.92 297 *e*P **P** **13 13 52.1 -0.7**
MAW Mawson 68.07 202 P **P** **13 13 52.8 -0.1**
comp=Z,282nm,0.9s,baz=116,slow=7.8,SNR=102
MAW S **S** **13 22 44.0 -0.3**
comp=Z,10.0nm,1.1s,baz=24,slow=20,SNR=2.1
MAW LR LR 13 41 35.4
comp=Z,4μm,22.0s,baz=122,slow=34
MAW PKP2ab 13 42 05.6
comp=Z,5.3nm,0.9s,baz=294,slow=7.9,SNR=5.2
MAW PKP2bc 13 42 13.3
comp=Z,24nm,1.1s,baz=333,slow=3.2,SNR=9.8
MAW Mawson 68.07 202 P **P** **13 13 52.8 -0.1**
baz=68,SNR=239
MAW Mawson 68.07 202 *e*P **P** **13 13 52.8 -0.1**
MAW pmax pmax
comp=Z,170nm,1.1s
MAW Mawson 68.07 202 *e*P **P** **13 13 52.8 -0.1**
comp=Z,175nm,1.1s
MAW S **S** **13 22 44.0 -0.3**
MAW P'P'ab P'P'ab 13 42 05.6 -11
MAW ⇑*e* 13 42 13.3
NGJI Ngawi 68.12 276 P **P** **13 13 56.1 +2.0**
WOJI Wonogiri, Jawa 68.30 275 P **P** **13 13 55.2 -0.1**
comp=Z,712nm,1.5s,comp=Z,9μm
UGM Wanagama 68.59 275 P **P** **13 13 58.4 +1.3**
UGM Wanagama 68.59 275 *e*P **P** **13 13 56.6 -0.6**
comp=Z,1μm,1.4s
MTKI Muara Teweh, K 69.00 284 P **P** **13 14 02.6 +3.0**
comp=Z,162nm,2.1s,comp=Z,7μm
UWJI Ujung Watu 69.07 277 P **P** **13 14 01.7 +1.7**
SMRI Semarang 69.14 276 P **P** **13 14 02.2 +1.7**
SMRI Semarang 69.14 276 *e*P **P** **13 14 00.4 -0.1**
comp=Z,292nm,1.0s
OCLP Ormoc 69.17 300 *e*P **P** **13 14 00.4 -0.2**
PMSA Palmer Station 69.45 156 *e*P **P** **13 14 01.7 +0.2**
comp=Z,492nm,1.3s
TSM Tawau 69.82 290 ⇑P **P** **13 14 08.2 +3.6**
MYLDM Lahad Datu 69.88 291 ⇑P **P** **13 14 11.8 +6.8**
MYLDM Lahad Datu 69.88 291 *e*P **P** **13 14 06.3 +1.3**
comp=Z,570nm,1.7s
CMJI Cimerak 70.38 274 P **P** **13 14 08.9 +0.8**
PBKI Pangkalan Bun 70.58 280 P **P** **13 14 10.3 +1.0**
CBIJ Chichi jima 70.76 325 *e*P **P** **13 14 08.7 -1.3**
comp=Z,481nm,1.0s
JCJ Chichijima 70.76 325 P **P** **13 14 10.6 +0.5**
comp=Z,245nm,0.7s,baz=268,slow=14
JCJ LR LR 13 41 02.2
comp=Z,5μm,21.9s,baz=144,slow=32
CISI Cisompet, Garu 71.02 274 P **P** **13 14 11.2 -0.9**
CISI Cisompet, Garu 71.02 274 *e*P **P** **13 14 10.6 -1.5**
comp=Z,651nm,0.8s
XMIS Christmas Isla 71.23 270 *e*P **P** **13 14 11.7 -1.6**
comp=Z,424nm,1.1s
JCJI Jatiwangi 71.24 275 P **P** **13 14 14.1 +0.8**
comp=Z,692nm,1.0s,comp=Z,10μmcomp=Z,71μm
LEM Lembang 71.59 274 P **P** **13 14 20.0 +4.4**
comp=Z,401nm,0.9s,baz=44,slow=3.9,SNR=25
LEM S **S** **13 23 32.0 +4.6**
comp=Z,21nm,0.7s,baz=284,slow=21,SNR=7.5
LEM Lembang 71.59 274 P P 13 14 20.7 +5.1
CNJI Cibinong 71.73 274 P **P** **13 14 17.6 +1.4**
comp=Z,915nm,1.1s,comp=Z,9μmcomp=Z,34μm
KKM Kota Kinabalu 72.19 291 ⇑P **P** **13 14 22.7 +3.7**
KKM Kota Kinabalu 72.19 291 *e*P **P** **13 14 17.2 -1.8**
comp=Z,280nm,1.4s
KDM Kudat 72.26 292 ⇑P **P** **13 14 23.1 +3.7**
STKI Sintang 72.34 283 P **P** **13 14 20.0 +0.1**
comp=Z,187nm,1.1s,comp=Z,12μmcomp=Z,35μm
SKJI Sukabumi 72.37 274 P **P** **13 14 21.9 +1.8**
comp=Z,722nm,1.2s,comp=Z,7μmcomp=Z,30μm
BTM Bintulu 72.92 286 ⇑P **P** **13 14 26.5 +3.2**
SYO Syowa Base 72.94 194 ⇓*i*P **P** **13 14 19.0 -3.5**
SBUM Sibu 73.16 285 ⇓P **P** **13 14 28.2 +3.5**
SBUM Sibu 73.16 285 *e*P **P** **13 14 23.3 -1.4**
comp=Z,169nm,1.2s
SBJI Serang 73.21 274 P **P** **13 14 27.1 +2.1**
comp=Z,483nm,1.1s,comp=Z,17μm
CGJI Cibinong 73.30 273 P **P** **13 14 24.5 -1.0**
comp=Z,494nm,1.2s,comp=Z,5μmcomp=Z,38μm
SNAA Sanae 74.32 179 P **P** **13 14 30.7 0.0**
SNAA S **S** **13 23 54.3 -2.2**
SNAA Sanae 74.32 179 *e*P **P** **13 14 30.4 -0.3**
SNAA Sanae 74.32 179 *e*P **P** **13 14 30.2 -0.5**
BLSI Bandar Lampung 74.36 274 P **P** **13 14 32.8 +1.1**
comp=Z,349nm,1.0s,comp=Z,5μmcomp=Z,32μm
VNA3 Neumayer Olymp 74.54 177 P **P** **13 14 31.7 -0.3**
VNA3 S **S** **13 24 01.2 +2.3**
KASI Kota Agung 74.89 274 P **P** **13 14 35.2 +0.4**
comp=Z,344nm,1.1s,comp=Z,4μmcomp=Z,35μm
NVL N'lazarevskaya 74.90 184 *e*P **P** **13 14 34.3 +0.4**
NVL *e*S **S** **13 24 02.1 -0.7**
NVL *e*SS **sS** **13 24 45.3 -0.6**
NVL *e*SS **SS** **13 28 58.1 +6.4**
VNA2 Neumayer--Watz 74.95 178 P **P** **13 14 34.8 +0.6**
baz=170,slow=4.7
VNA2 S **S** **13 24 07.0 +3.5**
KLI Kotabumi 74.96 274 P **P** **13 14 35.8 +0.6**
comp=Z,379nm,1.3s,comp=Z,6μm
VNA1 Neumayer--Stat 75.20 177 P **P** **13 14 36.1 +0.5**
VNA1 S **S** **13 24 09.3 +3.2**
PPBI Pangkal Pinang 75.42 277 P **P** **13 14 37.2 -0.7**
LWLI Liwa 75.53 274 P **P** **13 14 39.5 +0.9**
MDSI Maura Dua 75.73 274 P **P** **13 14 37.3 -2.3**
comp=Z,320nm,1.5s,comp=Z,4μm
PAF Port-aux-Franc 76.03 219 *e*P **P** **13 14 41.6 +0.9**
PAF pmax pmax
comp=Z,408nm,1.1s
PAF Port-aux-Franc 76.03 219 *e*P **P** **13 14 41.6 +0.9**
comp=Z,408nm,1.1s
CHRN Cochrane 76.04 138 *e*P **P** **13 14 41.2 +0.3**
comp=Z,110nm,1.0s
PMBI Palembang 76.11 276 P **P** **13 14 45.1 +3.3**
comp=Z,391nm,1.2s
LHSI Lahat 76.64 275 P **P** **13 14 43.8 -1.0**
comp=Z,349nm,1.6s,comp=Z,5μmcomp=Z,31μm
COCO West Island 77.60 264 *e*P **P** **13 14 51.2 +1.1**
COCO pmax pmax
comp=Z,1μm,1.8s
COCO West Island 77.60 264 *e*P **P** **13 14 51.2 +1.1**
comp=Z,1μm,1.8s
MASI Maura Aman, Be 78.08 274 P **P** **13 14 52.9 0.0**
comp=Z,1μm,1.0s,comp=Z,14μm
TPRI Tanjung Pinang 78.49 279 P **P** **13 14 56.6 +1.5**
MYKOM Kota Tinggi 79.54 279 ⇓P **P** **13 15 02.6 +1.8**
MYKOM Kota Tinggi 79.54 279 *e*P **P** **13 14 58.8 -2.0**
comp=Z,360nm,1.7s
TWG Pinlang 79.71 307 *e*P **P** **13 14 58.0 -3.5**
comp=Z,334nm,0.9s
YULB Yu-li 79.95 307 *e*P **P** **13 15 01.3 -1.5**
comp=Z,81nm,1.2s
SDSI Sungai Dareh 79.98 276 P **P** **13 15 03.3 +0.1**
comp=Z,536nm,1.1s,comp=Z,56μm
INU Inuyama 80.06 326 *e*P **P** **13 15 02.4 -0.6**
comp=Z,165nm,1.2s
KGM Kluang 80.11 279 ⇑P **P** **13 15 05.1 +1.2**
PPSI Pulau Pagai 80.13 273 P **P** **13 15 05.8 +1.8**
NACB Ninganchiao 80.30 308 *e*P **P** **13 15 03.7 -0.9**
comp=Z,211nm,1.3s
TPUB Ta-pu 80.33 307 *e*P **P** **13 15 03.0 -1.8**
comp=Z,126nm,1.1s
SSLB Suanglung 80.45 307 *e*P **P** **13 15 03.0 -2.5**
comp=Z,170nm,1.3s
EFI East Falkland 80.47 148*d i*P **P** **13 15 06.5 +1.3**
EFI pmax pmax
comp=Z,1μm,1.2s
EFI MLR MLR
comp=Z,2μm,16.0s
EFI East Falkland 80.47 148 *e*P **P** **13 15 04.6 -0.6**
comp=Z,1μm,1.1s
MJAR Matsushiro Arr 80.49 327 P **P** **13 15 03.8 -1.6**
comp=Z,67nm,1.1s,baz=163,slow=5.4,SNR=28
MJAR PKPPKP **P'P'df** **13 41 51.6 +3.2**
comp=Z,5.9nm,1.1s,baz=304,slow=2.2,SNR=6.5

MJAR LR LR 13 49 31.5
comp=Z,2μm,19.4s,baz=145,slow=35
MAJO Matsushiro 80.49 327 *e*P **P** **13 15 04.3 -1.1**
MAJO pmax pmax
comp=Z,146nm,1.3s
MAJO Matsushiro 80.49 327 *e*P **P** **13 15 04.3 -1.1**
comp=Z,146nm,1.3s
MAJO *e*pP **pP** **13 15 29.7 -1.1**
MJB9 Matsu-Tunnel 80.50 327 *e*P **P** **13 15 04.3 -1.1**
comp=Z,36nm,1.2s
YHNB Yeheng 80.79 308 *e*P **P** **13 15 09.5 +2.1**
comp=Z,21nm,0.8s
PDSI Padang 80.79 275 P **P** **13 15 07.3 -0.3**
comp=Z,151nm,1.2s
BKNI Bangkinang 81.02 277 P **P** **13 15 09.8 +1.1**
comp=Z,280nm,1.2s,comp=Z,4μmcomp=Z,50μm
BKNI Bangkinang 81.02 277 *e*P **P** **13 15 07.0 -1.7**
comp=Z,244nm,1.0s
PPI Padang Panjang 81.10 276 P **P** **13 15 09.5 +0.3**
comp=Z,91nm,1.6s,comp=Z,2μmcomp=Z,46μm
PLCA Paso Flores 81.12 134 P **P** **13 15 09.5 +0.5**
comp=Z,824nm,1.1s,baz=254,slow=5.6,SNR=103
PLCA PKKPbc **PKKPbc** **13 33 46.1 +2.3**
comp=Z,6.7nm,1.1s,baz=167,slow=4.2,SNR=5.5
PLCA PKPPKP **P'P'df** **13 41 50.8 -0.3**
comp=Z,8.9nm,1.2s,baz=30,slow=2.5,SNR=3.9
PLCA LR LR 13 44 21.3
comp=Z,3μm,20.7s,baz=266,slow=31
PLCA Paso Flores 81.12 134 *e*P **P** **13 15 09.1 +0.1**
PLCA pmax pmax
comp=Z,1μm,1.1s
PLCA Paso Flores 81.12 134 *e*P **P** **13 15 09.1 +0.1**
comp=Z,1μm,1.1s
PLCA PKKPbc **PKKPbc** **13 33 46.1 +2.3**
PLCA P'P' 13 41 50.8
JNU Nakatsue 81.36 320 P **P** **13 15 10.0 -0.1**
comp=Z,113nm,1.2s,baz=346,slow=3.7,SNR=11
JNU Nakatsue 81.36 320 *e*P **P** **13 15 10.5 +0.4**
comp=Z,190nm,1.3s
KTGM Kuala Trenggan 82.16 282 ⇑P **P** **13 15 16.5 +1.8**
FRIM Kepong 82.19 279 ⇑P **P** **13 15 15.7 +0.8**
MNSI Mandailing Nat 82.48 276 P **P** **13 15 16.0 -0.4**
comp=Z,79nm,1.6s,comp=Z,2μm
QZH Quanzhou 82.81 307 ⇑*i*P **P** **13 15 14.3 -3.5**
QZH pP **pP** **13 15 40.6 -2.7**
QZH PP **PP** **13 18 29.0 -0.6**
QZH S **S** **13 25 23.1 -5.0**
QZH pmax pmax
comp=Z,360nm,1.2s
QZH pmax pmax
comp=Z,3μm,7.4s
ERM Erimo 83.09 333 *ce*P **P** **13 15 21.1 +2.3**
ERM pmax pmax
comp=Z,199nm,1.2s
ERM MLR MLR
comp=Z,2μm,19.0s
ERM Erimo 83.09 333 *e*P **P** **13 15 20.5 +1.7**
comp=Z,169nm,1.1s
IPM Ipoh 83.39 280 *e*P **P** **13 15 18.5 -2.6**
comp=Z,163nm,1.2s
YUK Yuzh-Kuril'sk 83.90 336 *e*P **P** **13 15 22.9 0.0**
YUK *i* 13 18 36.7
YUK *e*PPP PPP 13 20 34.4
YUK *e*S **S** **13 25 34.4 -3.9**
YUK SS **SS** **13 31 17.5 +8.4**
YUK SSS SSS 13 34 38.4
YUK pmax pmax
comp=Z,570nm,1.4s
YUK pmax pmax
comp=E,310nm,1.2s
YUK pmax pmax
comp=N,654nm,1.1s
HKC Hong Kong Obse 84.08 302 ⇑*i*P **P** **13 15 26.0 +1.6**
PSI Prapat 84.15 277 P **P** **13 15 22.1 -3.1**
comp=N,67nm,0.9s,baz=183,slow=7.3,SNR=22
PSI PP **PP** **13 18 39.5 -1.3**
comp=N,15nm,1.0s,baz=195,slow=8.5,SNR=3.3
PSI S S 13 25 31.8 -11
comp=N,4.0nm,0.7s,baz=39,slow=24,SNR=8.9
PSI PKKPbc **PKKPbc** **13 33 38.2 +1.3**
comp=N,8.8nm,0.9s,baz=217,slow=6.5,SNR=7.1
PSI Prapat 84.15 277 *e*P **P** **13 15 21.6 -3.6**
PSI 13 18 39.5
PSI pmax pmax
comp=Z,506nm,1.8s
PSI Prapat 84.15 277 *e*P **P** **13 15 21.6 -3.6**
comp=Z,506nm,1.8s
PSI PP **PP** **13 18 39.5 -1.3**
PSI S S 13 25 31.8 -11
PSI PKKPbc **PKKPbc** **13 33 38.2 +1.3**
KULM Kulim 84.16 280 *e*P **P** **13 15 23.0 -2.0**
comp=Z,351nm,1.6s
H06S1 SOCORRO T 84.21 63 P **P** **13 15 25.4 +0.3**
H06E1 SOCORRO T-PHAS 84.26 63 P **P** **13 15 25.8 +0.4**
SNR=27
H06N1 SOCORRO T-PHAS 84.27 63 P **P** **13 15 27.9 +2.5**
SNR=9.9
KUR Kuril'sk 84.32 338 *c i*P P 13 15 44.0 +19
KUR *e* 13 18 49.7
KUR *i* S **S** **13 25 38.9 -3.5**
KUR pmax pmax
comp=Z,2μm,17.9s
KUR MLR MLR
comp=N,6μm,18.0s
KUR MLR MLR
comp=E,2μm,18.0s
KUR MLR MLR
comp=Z,5μm,18.0s
MCO Taipa Grande 84.40 301 P **P** **13 15 28.0 +2.0**
GSI Gunungsitoli 84.42 275 P **P** **13 15 26.2 -0.2**
comp=Z,796nm,1.5s,comp=Z,9μm
GSI Gunungsitoli 84.42 275 *e*P **P** **13 15 25.7 -0.7**
comp=Z,612nm,1.0s
TSI Tuntungan 84.84 278 P **P** **13 15 29.8 +1.3**
ASAJ Asahikawa 85.12 334 P **P** **13 15 30.4 +1.3**
comp=Z,80nm,1.0s,baz=149,slow=4.6,SNR=13
ASAJ Asahikawa 85.12 334 *e*P **P** **13 15 31.7 +2.7**
comp=Z,238nm,1.3s
QIZ Qiongzhong 85.13 297 P **P** **13 15 32.5 +2.7**
QIZ S **S** **13 25 44.6 -7.0**
QIZ LR LR
comp=Z,5μm,36.7s
QIZ LR LR
comp=Z,7μm,41.6s
GZH Guangzhou 85.17 302 P **P** **13 15 30.3 +0.5**
GZH pP **pP** **13 15 54.9 -0.6**
GZH PP **PP** **13 18 50.5 +1.6**
GZH pmax pmax
comp=Z,2μm,8.6s
SKLT Songkhla 85.26 282 P **P** **13 15 30.8 +0.3**
comp=Z,179nm,1.0s,comp=Z,3μm
SSE Sheshan 85.40 313 P **P** **13 15 31.8 +1.0**
SSE S **S** **13 25 44.8 -8.9**
SSE pmax pmax
comp=Z,4μm,12.0s
SSE LR LR
comp=Z,4μm,25.1s
SSE LR LR
comp=Z,3μm,25.1s
SSE LR LR
comp=Z,6μm,30.2s
KCSI Kotacane, Aceh 85.51 277 P **P** **13 15 31.4 -0.4**
comp=Z,98nm,1.8s,comp=Z,2μmcomp=Z,29μm
ROC1 El Roble 85.60 127 *e*P **P** **13 15 32.1 -0.2**
comp=Z,681nm,1.1s
CLCH Cerro Calan 85.66 128 ⇓*i*P **P** **13 15 32.6 +0.2**
PEL Peldehue 85.72 127 ⇓*i*P **P** **13 15 32.4 -0.3**
PEL *i* S **S** **13 25 48.5 -8.9**
TPTI 85.84 277 P **P** **13 15 34.1 +0.6**
comp=Z,318nm,1.1s,comp=Z,4μm
KSRS Korea Array 86.22 321 P **P** **13 15 34.6 0.0**
comp=Z,32nm,0.8s,baz=137,slow=5.3,SNR=31
KSRS PP **PP** **13 18 56.9 -0.3**
comp=Z,35nm,1.2s,baz=146,slow=8.4,SNR=6.3
KSRS LR LR 13 54 01.1
comp=Z,1μm,18.0s,baz=150,slow=36
KSRS Korea Array 86.22 321 P **P** **13 15 34.7 0.0**
KSRS 13 18 56.9
KSRS pmax pmax
comp=Z,33nm,0.9s
KSRS pmax pmax
comp=Z,35nm,1.2s
KSRS MLR MLR
comp=Z,1μm,18.0s
KS15 Wonju Array Si 86.23 321 *e*P **P** **13 15 35.9 +1.1**
KSAR Wonju Array Be 86.23 321 P **P** **13 15 34.7 -0.1**
KSAR 13 18 56.9
KSAR Wonju Array Be 86.23 321 P **P** **13 15 34.6 -0.1**
KSAR PP **PP** **13 18 56.9 -0.4**
KS01 Wonju Array Si 86.25 321 *e*P **P** **13 15 35.4 +0.5**
HOPE Hope Point 86.35 160 *e*P **P** **13 15 35.4 +0.2**
comp=Z,3μm,1.6s
TRTT Trang 86.39 282 P **P** **13 15 36.0 -0.1**
comp=Z,129nm,1.6s,comp=Z,3μm
SMY Shemya 86.80 356 *e*P **P** **13 15 40.2 +3.1**
SMY pmax pmax
comp=Z,590nm,1.2s
SMY Shemya 86.80 356 *e*P **P** **13 15 40.2 +3.1**
comp=Z,588nm,1.2s
INCN Inchon 86.92 320 *e*P **P** **13 15 41.9 +3.8**
INCN *e*pP **pP** **13 16 04.6 +0.7**
CRZF Crozet Islands 87.03 213 *e*P **P** **13 15 39.7 +0.9**
comp=Z,232nm,1.2s
CHBT CHBT 87.12 287 P **P** **13 15 40.8 +1.2**
comp=Z,113nm,1.3s,comp=Z,3μm
LHMI Lhok Sumawe 87.15 278 P **P** **13 15 43.0 +3.2**
LHMI Lhok Sumawe 87.15 278 *e*P **P** **13 15 38.6 -1.2**
comp=Z,303nm,1.3s
SKR Severo-Kuril's 87.18 345 *e*P **P** **13 15 40.0 +1.0**
SKR *e*SS SS 13 32 04.0 +7.0
SKR pmax pmax
comp=N,110nm,1.0s
SKR pmax pmax
comp=E,110nm,1.0s
SKR pmax pmax
comp=Z,230nm,1.0s
SKR pmax pmax
comp=Z,3μm,14.0s
SKR MLR MLR
comp=N,4μm,18.0s
SKR MLR MLR
comp=Z,6μm,18.0s
NIKH Nikolski High 87.44 7 *e*P **P** **13 15 41.3 +1.1**
comp=Z,807nm,1.0s
TLL Tololo Astrono 87.48 125 ⇑*i*P **P** **13 15 41.1 -0.5**
NJ2 Nanjing 87.49 312 *e*P **P** **13 15 40.3 -0.7**
NJ2 pP **pP** **13 16 04.3 -2.5**
NJ2 SKS **SKSac** **13 25 57.6 -2.2**
NJ2 S **S** **13 26 14.8 +0.8**
NJ2 LR LR
comp=Z,4μm,19.0s
NJ2 LR LR
comp=Z,3μm,18.4s
NJ2 LR LR
comp=Z,4μm,19.0s
YSS Yuzh-Sakhalins 87.52 336 ⇑*i*P **P** **13 15 43.5 +2.8**
YSS *e* 13 16 05.3
YSS *e* 13 19 04.3
YSS *i* 13 25 58.4
YSS *i*S **S** **13 26 14.4 +0.9**
YSS *e*PS **PS** **13 27 31.0 +2.6**
YSS *e*SS **SS** **13 32 03.0 +0.9**
YSS pmax pmax
comp=Z,900nm,2.0s
YSS pmax pmax
comp=Z,180nm,1.1s
YSS pmax pmax
comp=N,70nm,1.6s
YSS pmax pmax
comp=E,110nm,1.2s
YSS smax smax
comp=E,6μm,16.0s
YSS Yuzh-Sakhalins 87.52 336 *e*P **P** **13 15 42.3 +1.6**
comp=E,361nm,1.2s
PKDT Phuket 87.52 281 P **P** **13 15 44.8 +3.2**
comp=E,69nm,2.0s,comp=E,3μm
SURT Suratani 87.76 282 P **P** **13 15 43.9 +1.2**
comp=E,31nm,1.3s,comp=E,821nm
TRQA Tornquist 87.90 136 *e*P **P** **13 15 42.6 -0.6**
comp=E,700nm,1.2s
PANO Nakornpanom 87.93 292 P **P** **13 15 45.1 +1.7**
comp=E,111nm,1.3s
SNCC San Nicolas Is 87.97 47 P **P** **13 15 40.3 -3.0**
baz=226
SNCC San Nicolas Is 87.97 47 *e*P **P** **13 15 45.7 +2.4**
comp=E,358nm,1.3s
SLBS Sierra La Lagu 88.04 60 *e*P **P** **13 15 44.4 +0.5**
comp=E,308nm,1.1s
SRAK Srakaw 88.08 288 P **P** **13 15 43.4 -0.8**
comp=E,131nm,1.2s,comp=E,1μm
LCO Las Campanas 88.27 124 *e*P **P** **13 15 45.4 +0.1**
comp=E,841nm,1.4s
SKNT Sakolnakorn 88.31 292 P **P** **13 15 45.5 +0.3**
comp=E,189nm,1.3s,comp=E,3μm
PATY Pattaya 88.38 287 P **P** **13 15 48.1 +2.5**
comp=E,28nm,1.1s
SCI2 San Clemente I 88.39 48 P **P** **13 15 45.8 +0.6**
baz=227
SCZ2 Santa Cruz Isl 88.43 46 P **P** **13 15 45.8 +0.4**
baz=226
UNV Unalaska Valle 88.55 8 *e*P **P** **13 15 46.1 +0.7**
comp=E,397nm,1.1s
MSHR Mys Shultsa 88.57 326 *d i*P **P** **13 15 49.4 +3.6**
VLA Vladivostok 88.66 327 *ce*P **P** **13 15 49.3 +3.0**
VLA pmax pmax
comp=Z,125nm,1.6s
SBC Santa Barbara 88.69 46 P **P** **13 15 47.3 +0.7**
baz=226
SRIG Santa Rosalia 88.73 55 *e*P **P** **13 15 47.4 +0.4**
comp=Z,328nm,1.1s
CIS Catalina Islan 88.75 47 P **P** **13 15 47.2 +0.2**
baz=227,SNR=16
CIS SKSac **SKSac** **13 26 09.2 +1.8**
baz=227
NAYO Nakonayok 88.82 288 P **P** **13 15 48.3 +0.6**
comp=Z,54nm,1.1s,comp=Z,2μm
KHON Khomkaen 88.83 291 P **P** **13 15 49.8 +2.1**
comp=Z,35nm,1.1s
BLG Laguna Peak, P 88.84 47 P **P** **13 15 47.7 +0.3**
baz=226
PET Petropavlovsk 88.90 347 *e*P **P** **13 15 46.9 -0.2**
PET *i*S **S** **13 26 25.5 -0.8**
PET *e*PS **PnS** **13 27 36.4 -7.1**
PET *e*SS **SS** **13 32 25.1 +3.1**
PET pmax pmax
comp=Z,445nm,1.1s
PET pmax pmax
comp=Z,600nm,13.5s
PET smax smax
comp=N,6μm,14.2s
PET smax smax
comp=E,7μm,9.2s
PET smax smax
comp=N,10μm,17.9s
PET Petropavlovsk 88.90 347 *e*P **P** **13 15 47.0 -0.1**
comp=N,459nm,1.1s
PKM Mcpherson Peak 88.94 46 P **P** **13 15 47.5 -0.6**
baz=226
FMP Fort Macarthur 89.04 47 P **P** **13 15 49.1 +0.9**
baz=227,SNR=7.3
SMMC Simmler 89.13 45 P **P** **13 15 48.4 -0.4**
baz=226
PEA0B Petropavlovsk- 89.16 347 *e*P **P** **13 15 48.9 +0.5**
comp=N,2μm,1.3s
PETK Petropavlovsk- 89.16 347 P **P** **13 15 48.5 +0.1**
comp=N,800nm,1.1s,baz=125,slow=7.4,SNR=69
PETK PKiKP **PKiKP** **13 20 46.5 0.0**
comp=N,2.3nm,0.6s,baz=123,slow=3.5,SNR=6.4
PETK PKKPbc **PKKPbc** **13 33 34.6 +7.3**
comp=N,1.1nm,0.4s,baz=146,slow=23,SNR=4.2
PETK LR LR 13 50 58.5
comp=N,3μm,20.8s,baz=163,slow=32
109C Camp Elliot, M 89.21 49 P **P** **13 15 48.7 -0.4**
baz=227,SNR=17
SAO San Andreas Ge 89.30 43 *e*P **P** **13 15 50.2 +0.7**
SAO pmax pmax
comp=Z,200nm,1.1s
SAO San Andreas Ge 89.30 43 *e*P **P** **13 15 49.8 +0.3**
comp=Z,200nm,1.1s
WHN Wuhan 89.33 308 P **P** **13 15 51.0 +1.3**
WHN pP **pP** **13 16 14.9 -0.7**
WHN PP **PP** **13 19 24.8 +2.5**
WHN pmax pmax
comp=Z,210nm,1.2s
WHN pmax pmax
comp=Z,1μm,5.2s
WHN LR LR
comp=Z,69μm,39.5s
BAR Barrett 89.34 49 *e*P **P** **13 15 50.7 +1.0**
comp=Z,334nm,1.3s
PHET Kaeng Krachan 89.35 286 P **P** **13 15 52.2 +2.0**
comp=Z,26nm,1.2s,comp=Z,262nm
DECC Green Verdugo 89.39 47 P **P** **13 15 48.2 -1.7**
baz=227,SNR=5.2
OSI Osito Audit: C 89.40 46 P **P** **13 15 50.9 +0.8**
baz=226,SNR=18
OSI Osito Audit: C 89.40 46 *e*P **P** **13 15 50.4 +0.3**
comp=Z,321nm,1.1s
PASC Pasadena Art C 89.42 47 *e*P **P** **13 15 50.8 +0.7**
comp=Z,311nm,1.4s
PAYG Puerto Ayora 89.44 90 *e*P **P** **13 15 52.3 +1.6**
comp=Z,217nm,1.0s
USRK Ussuriysk Ar. 89.47 328 P **P** **13 15 50.4 +0.4**
comp=Z,31nm,0.9s,baz=146,slow=3.5,SNR=35
USRK LR LR 13 53 42.0
comp=Z,2μm,19.7s,baz=127,slow=34
MCCM Marconi Confer 89.49 41 *e*P **P** **13 15 50.9 +0.7**
comp=Z,226nm,1.1s
MWC Mount Wilson 89.53 47 *e*P **P** **13 15 51.8 +1.0**
MWC pmax pmax
comp=Z,860nm,1.9s
MWC Mount Wilson 89.53 47 *e*P **P** **13 15 51.4 +0.5**
comp=Z,859nm,1.9s
MURC Murrieta 89.64 48 P **P** **13 15 52.3 +1.2**
baz=227,SNR=97
MONP2 Monument Peak 89.64 49 P **P** **13 15 52.5 +1.1**
baz=228,SNR=111
ARVC Arvin 89.69 46 P **P** **13 15 51.9 +0.6**
baz=226,SNR=50
BFSC Mount Baldy Ra 89.78 47 P **P** **13 15 52.6 +0.7**
baz=227,SNR=107
FALS False Pass 89.93 10 *e*P **P** **13 15 56.4 +4.5**
comp=Z,429nm,1.4s
HOPS Hopland Field 89.99 41 *e*P **P** **13 15 51.5 -1.1**
comp=Z,410nm,1.1s
EDW2 Edwards Air Fo 90.02 47 P **P** **13 15 53.5 +0.6**
baz=227,SNR=98
SWSC Sam W. Stewart 90.06 49 P **P** **13 15 54.5 +1.4**
baz=228,SNR=20
PFO Pinyon Flats O 90.10 48 P **P** **13 15 54.6 +1.2**
baz=228,SNR=82
PFO Pinyon Flats O 90.10 48 *e*P **P** **13 15 54.4 +1.0**
PFO pmax pmax
comp=Z,210nm,1.1s
PFO Pinyon Flats O 90.10 48 *e*P **P** **13 15 54.0 +0.6**
comp=Z,207nm,1.1s
BBRC Big Bear Solar 90.25 48 P **P** **13 15 55.4 +1.1**
baz=228,SNR=9.5
RCTC Rector, Farmer 90.25 45 P **P** **13 15 54.1 +0.2**
baz=226
ISA Isabella, Lake 90.26 46 P **P** **13 15 54.8 +0.8**
baz=227,SNR=70
ISA Isabella, Lake 90.26 46 *e*P **P** **13 15 55.1 +1.0**
ISA pmax pmax
comp=Z,220nm,1.0s
ISA Isabella, Lake 90.26 46 *e*P **P** **13 15 54.9 +0.8**
comp=Z,220nm,1.0s
KMRM Mail Ridge 90.54 40 *e*P **P** **13 15 56.4 +1.2**
comp=Z,320nm,1.2s
SRDT SRDT 90.58 287 P **P** **13 15 57.3 +1.4**
comp=Z,253nm,1.4s,comp=Z,11μm
LRMC Laurel Mtn Rad 90.61 46 P **P** **13 15 56.5 +0.7**
baz=227,SNR=38
RRX Edison Barstow 90.62 47 P **P** **13 15 55.3 -0.4**
baz=227,SNR=7.9
CMBY CAMPBELL BAY 90.62 278 *e*P **P** **13 15 56.2 0.0**
CMBY IAmb IAmb 13 15 58.2
comp=Z,468nm,2.3s
BELC Belle Mtn. Jos 90.64 48 P **P** **13 15 54.9 -1.1**
baz=228,SNR=114
DL2 Dalian 90.65 318 P **P** **13 15 55.9 +0.2**
DL2 pP **pP** **13 16 22.6 +1.0**
DL2 PP **PP** **13 19 38.5 +5.9**
DL2 SKS **SKSac** **13 26 13.4 -4.7**
DL2 S **ScS** **13 26 45.0 -1.5**
DL2 pmax pmax
comp=Z,88nm,1.2s
DL2 pmax pmax
comp=Z,600nm,7.0s
DL2 LR LR
comp=Z,2μm,23.8s
DL2 LR LR
comp=Z,3μm,26.3s
DL2 LR LR
comp=Z,12μm,37.8s
HSIG 90.69 55 *e*P **P** **13 15 56.4 +0.3**
comp=Z,449nm,1.1s
LOEI Loei 90.72 291 P **P** **13 15 56.0 -0.5**
comp=Z,34nm,1.6s,comp=Z,1μm
GLA Glamis 90.75 50 P **P** **13 15 58.0 +1.6**
baz=229,SNR=183
GLA Glamis 90.75 50 *e*P **P** **13 15 57.9 +1.6**
GLA pmax pmax
comp=Z,560nm,1.1s
GLA Glamis 90.75 50 *e*P **P** **13 15 57.9 +1.6**
comp=Z,559nm,1.1s
BC3 Big Chuckawall 90.75 49 P **P** **13 15 57.8 +1.3**
baz=228,SNR=137
CMB Columbia Colle 90.80 43 *e*P **P** **13 15 56.7 +0.2**
CMB pmax pmax
comp=Z,270nm,1.1s
CMB Columbia Colle 90.80 43 *e*P **P** **13 15 56.5 0.0**
comp=Z,266nm,1.1s
SDPT Sand Point 90.84 11 *e*P **P** **13 15 57.9 +1.8**
comp=Z,333nm,0.9s
MDJ Mudanjiang 90.87 327 P **P** **13 15 59.3 +2.7**
MDJ pmax pmax
comp=Z,77nm,1.2s
MDJ pmax pmax
comp=Z,2μm,12.7s
MDJ LR LR
comp=Z,5μm,27.9s
MDJ LR LR
comp=Z,5μm,27.9s
MDJ LR LR
comp=Z,9μm,25.1s
MDJ Mudanjiang 90.87 327 *e*P **P** **13 15 58.2 +1.6**
comp=Z,188nm,1.4s
MDJ *e*pP **pP** **13 16 22.2 -0.3**
TYV Tymovskoe 90.93 337 *e*P **P** **13 15 59.0 +2.3**
TYV pmax pmax
comp=E,33nm,0.8s
TYV pmax pmax
comp=Z,92nm,1.0s
HEC Hector,Ludlow 90.99 48 P **P** **13 15 58.4 +0.9**
baz=228,SNR=25
KHMM Horse Mountain 91.00 39 *e*P **P** **13 15 58.3 +0.8**
comp=Z,350nm,1.4s
GSC Goldstone, Bar 91.02 47 P **P** **13 15 58.3 +0.7**
baz=228,SNR=48
GSC Goldstone, Bar 91.02 47 *e*P **P** **13 15 58.4 +0.7**
GSC pmax pmax
comp=Z,190nm,1.2s
GSC Goldstone, Bar 91.02 47 *e*P **P** **13 15 58.4 +0.7**
comp=Z,187nm,1.3s
AFDM Forest Hills D 91.11 42 *e*P **P** **13 15 57.7 -0.1**
comp=Z,189nm,1.3s
MPMC Manual Prospec 91.12 46 P **P** **13 15 58.7 +0.5**
baz=227,SNR=56
PHIT Phitsanulok 91.19 290 P **P** **13 16 00.9 +2.2**
comp=Z,43nm,1.1s,comp=Z,434nm
DAC Darwin (Calif) 91.20 46 *e*P **P** **13 15 59.0 +0.4**
DAC pmax pmax
comp=Z,96nm,1.3s
DAC Darwin (Calif) 91.20 46 *e*P **P** **13 15 58.7 +0.1**
comp=Z,96nm,1.4s
PB14 IPOC Station P 91.21 121 ⇓*i*P **P** **13 15 59.3 +0.1**
PB14 *i* S **SKSac** **13 26 23.6 +0.5**
113A Mohawk Valley, 91.23 50 *e*P **P** **13 15 59.6 +1.1**
comp=Z,319nm,1.1s
ORV Oroville 91.25 41 *e*P **P** **13 15 58.5 +0.1**
ORV pmax pmax
comp=Z,410nm,1.9s
ORV Oroville 91.25 41 *e*P **P** **13 15 58.2 -0.3**
comp=Z,412nm,1.9s
IRM Iron Mountain 91.28 49 P **P** **13 16 00.3 +1.5**
baz=228,SNR=176
214A Organ Pipe Nat 91.32 52 P **P** **13 16 00.4 +1.3**
baz=230
TIN Tinemaha, Big 91.36 45 P **P** **13 15 59.8 +0.6**
baz=227,SNR=8.7
GMRC Granite Mounta 91.37 48 P **P** **13 16 00.5 +1.1**
baz=228,SNR=57
TIA Tai'an 91.37 314 ⇑P **P** **13 15 58.9 -0.2**
Y12C Blythe 91.40 49 P **P** **13 16 00.4 +1.2**
baz=229,SNR=39
Y12C Blythe 91.40 49 *e*P **P** **13 16 00.2 +1.0**
comp=Z,238nm,1.1s
Y12C *e*PKKPdf **PKKPbc** **13 33 23.3 +2.9**
MLAC Mammoth, Mammo 91.40 44 P **P** **13 15 59.6 +0.1**

baz=226,SNR=6.0
UTTA Uttaradit 91.41 290 P **P** **13 16 02.1 +2.4**
comp=Z,6.9nm,0.8s,comp=Z,127nm
WDC Whiskeytown Da 91.41 40 *e*P **P** **13 15 59.7 +0.5**
WDC pmax pmax
comp=Z,330nm,1.4s
WDC Whiskeytown Da 91.41 40 *e*P **P** **13 15 59.5 +0.3**
comp=Z,326nm,1.4s
SPIA Saint Paul Isl 91.49 5 *e*P **P** **13 16 02.7 +3.7**
comp=Z,506nm,1.3s
O03D Paynes Creek 91.61 41 P **P** **13 16 00.1 -0.1**
baz=225,SNR=57
N02D Trinity Center 91.61 40 P **P** **13 16 00.8 +0.6**
baz=224,SNR=39
HABR Khabarovsk 91.62 332 *e*P **P** **13 16 00.9 +1.0**
HABR *e**PP **pP** **13 16 24.3 -1.5**
HABR *e*PPP PPP 13 21 38.5
HABR *e*S **SKSac** **13 26 24.1 +1.0**
HABR *e* 13 26 55.0
HABR *e*SP **SPn** **13 28 02.8 +0.4**
HABR *e*PS **PS** **13 28 14.6 +0.6**
HABR *e*SS **SS** **13 33 02.8 +1.4**
HABR *e*SSS SSS 13 36 42.1
HABR pmax pmax
comp=Z,261nm,1.8s
HABR pmax pmax
comp=Z,447nm,2.0s
HABR MLR MLR
comp=Z,1μm,19.0s
TUQ Turquoise Moun 91.64 47 P **P** **13 16 00.7 +0.1**
baz=228
WAKR Walker 91.66 43 *e*P **P** **13 16 00.6 -0.1**
SNY Shenyang 91.71 321 ⇓P **P** **13 16 03.3 +2.8**
SNY SKS **SKSac** **13 26 21.6 -2.3**
SNY S **ScS** **13 26 54.4 -0.7**
SNY pmax pmax
comp=Z,440nm,12.0s
SNY LR LR
comp=Z,4μm,21.9s
SNY LR LR
comp=Z,3μm,27.2s
SHOC Shoshone, Teco 91.74 47 P **P** **13 16 01.5 +0.6**
baz=228,SNR=5.9
FURC Furnace Creek, 91.77 46 P **P** **13 16 01.5 +0.6**
baz=228,SNR=22
PB10 IPOC Station P 91.79 120 ⇓*i*P **P** **13 16 01.7 +0.1**
PB10 IPOC Station P 91.79 120 *e*P **P** **13 16 01.0 -0.6**
comp=Z,591nm,1.2s
GRAC Grapevine Rang 91.83 45 P **P** **13 16 00.4 -0.8**
baz=227,SNR=33
M02C Callahan 91.83 39 P **P** **13 16 02.1 +0.9**
baz=224,SNR=80
LDFC Landfair 91.91 48 *e*P **P** **13 16 03.3 +1.5**
comp=Z,392nm,1.0s
L02D Cave Junction, 91.99 38 P **P** **13 16 02.8 +1.0**
baz=224,SNR=30
PDMCI Parker Dam,Lak 92.00 49 P **P** **13 16 02.4 +0.4**
baz=229,SNR=54
GYA Guiyang 92.00 301 ⇑*i*P **P** **13 16 02.4 0.0**
GYA pP pP 13 16 27.8 -0.5
GYA sP sP 13 16 38.0 -0.8
GYA PP **PP** **13 19 46.8 +3.1**
GYA SKS **SKSac** **13 26 26.3 -0.4**
GYA S **S** **13 26 55.0 -1.3**
GYA sS sS 13 27 37.3 -3.7
GYA SS **SS** **13 33 10.5 +2.5**
GYA pmax pmax
comp=Z,80nm,1.0s
GYA LR LR
comp=Z,1μm,19.9s
GYA LR LR
comp=Z,2μm,23.7s
NEE2 Needles Airpor 92.00 49 P **P** **13 16 03.0 +0.9**
baz=229,SNR=22
CHGN Chignik 92.09 12 *e*P **P** **13 16 01.0 -0.9**
MOIG Morelia 92.12 68 *e*P **P** **13 16 04.0 +0.7**
comp=Z,328nm,1.2s
YBH Yreka Blue Hor 92.15 39 P **P** **13 16 03.2 +0.5**
comp=Z,67nm,1.1s,baz=218,slow=1.6,SNR=32
YBH PP **PP** **13 19 43.6 -0.9**
comp=Z,11nm,1.1s,baz=181,slow=8.1,SNR=3.2
YBH S **SKSac** **13 26 28.8 +2.1**
comp=Z,1.7nm,0.9s,baz=214,slow=24,SNR=13
YBH Yreka Blue Hor 92.15 39 *e*P **P** **13 16 03.3 +0.6**
comp=Z,157nm,1.3s
YBH PP **PP** **13 19 43.6 -0.9**
YBH S **SKSac** **13 26 28.8 +2.1**
CN2 Changchun 92.21 324 *e*P **P** **13 16 02.3 -0.5**
CN2 *ep*P pP 13 16 27.9 -0.8
CN2 *es*P sP 13 16 36.8 -2.3
CN2 pmax pmax
comp=Z,200nm,3.0s
CN2 LR LR
comp=Z,4μm,21.0s
CN2 LR LR
comp=Z,3μm,21.0s
CN2 LR LR
comp=Z,7μm,23.0s
NVAR Mina Array Bea 92.25 44 P **P** **13 16 03.4 -0.1**
comp=Z,68nm,1.0s,baz=219,slow=8.5,SNR=58
NVAR PKKPbc **PKKPdf** **13 33 15.7 -1.2**
comp=Z,2.8nm,0.8s,baz=80,slow=1.4,SNR=6.2
NVAR LR LR 13 48 26.9
comp=Z,5μm,21.7s,baz=230,slow=30
ENH Enshi 92.39 305 *e*P **P** **13 16 03.8 -0.2**
comp=Z,174nm,1.2s
LPA La Plata 92.43 136 *ce*P **P** **13 16 04.0 -0.3**
LPA PP **PP** **13 19 49.0 +3.2**
LPA SKS **SKSac** **13 26 31.0 +2.1**
LPA S **ScS** **13 27 01.0 -0.9**
LPA PS **PS** **13 28 22.0 -0.9**
TPNV Topopah Spring 92.45 46 P **P** **13 16 04.6 +0.2**
baz=228,SNR=55
TPNV Topopah Spring 92.45 46 *e*P **P** **13 16 05.0 +0.7**
TPNV pmax pmax
comp=Z,110nm,1.1s
TPNV Topopah Spring 92.45 46 *e*P **P** **13 16 04.5 +0.2**
comp=Z,106nm,1.1s
Y14A Wickenburg 92.48 50 *e*P **P** **13 16 04.8 +0.5**
comp=Z,597nm,1.1s
LAMP Lampang 92.57 291 P **P** **13 16 08.1 +3.0**
comp=Z,11nm,1.0s,comp=Z,117nm
M04C Macdoel 92.64 40 P **P** **13 16 03.8 -1.2**
baz=225,SNR=63
HUMO Hull Mountain 92.65 38 *e*P **P** **13 16 05.5 +0.6**
comp=Z,292nm,1.4s
PB04 IPOC Station P 92.82 119 *e*P **P** **13 16 06.9 +0.4**
comp=Z,853nm,1.2s
TUC Tucson 92.87 52 P **P** **13 16 06.4 +0.2**
baz=231
TUC Tucson 92.87 52 *e*P **P** **13 16 07.7 +1.4**
TUC pmax pmax
comp=Z,240nm,1.2s
TUC Tucson 92.87 52 *e*P **P** **13 16 07.4 +1.1**
comp=Z,238nm,1.2s
ZAIG Zacatecas 92.88 64 *e*P **P** **13 16 07.8 +1.0**
comp=Z,97nm,1.1s
TLIG Tlapa 92.94 71 *e*P **P** **13 16 07.4 +0.5**
comp=Z,255nm,1.1s
PB06 IPOC Station P 93.00 120 ⇓*i*P **P** **13 16 07.4 0.0**
CM01 Chiang Mai Arr 93.03 290 *e*P **P** **13 16 06.4 -0.8**
CM01 *e*PKKPdf **PKKPbc** **13 33 14.8 -0.6**
CM31 Chiang Mai Arr 93.07 290 *e*P **P** **13 16 07.5 +0.1**
CMAR Chiang Mai Arr 93.07 290 P **P** **13 16 07.3 -0.1**
comp=Z,28nm,1.0s,baz=142,slow=3.6,SNR=35
CMAR PP **PP** **13 19 50.2 -1.7**
comp=Z,9.5nm,0.9s,baz=143,slow=6.4,SNR=7.4
CMAR S **SKSac** **13 26 31.2 -1.5**
comp=Z,0.7nm,0.8s,baz=104,slow=3.8,SNR=2.8
CMAR PKKPbc **PKKPbc** **13 33 15.0 -0.4**
comp=Z,7.0nm,1.0s,baz=301,slow=5.3,SNR=4.4
CMAR PKPPKP **P'P'df** **13 41 25.1 -2.6**
comp=Z,2.9nm,1.0s,baz=290,slow=3.3,SNR=6.4
CMAR LR LR 14 02 39.6
comp=Z,1μm,18.2s,baz=168,slow=38
HPIG 93.08 59 *e*P **P** **13 16 07.3 -0.2**
comp=Z,308nm,1.8s
I03D Drain, OR 93.23 37 P **P** **13 16 08.1 +0.6**
baz=224
CMMT Chiang Mai 93.27 290 P **P** **13 16 09.2 +0.9**
comp=Z,32nm,1.1s,comp=Z,1μm
CHTO Chiang Mai 93.27 290 P **P** **13 16 09.2 +0.8**
comp=Z,142nm,1.1s,comp=Z,6μm
CHTO Chiang Mai 93.27 290 *e*P **P** **13 16 08.2 -0.1**
CHTO *e* 13 19 53.8
CHTO pmax pmax
comp=Z,36nm,1.1s
CHTO Chiang Mai 93.27 290 *e*P **P** **13 16 08.2 -0.1**
comp=Z,36nm,1.1s
CHTO *e*PP **PP** **13 19 53.8 +0.2**
CHTO Chiang Mai 93.27 290 P **P** **13 16 09.1 +0.8**
SNR=10
K04D Chiloquin, OR 93.28 39 P **P** **13 16 08.1 +0.2**
baz=225
319A Douglas 93.29 54 *e*P **P** **13 16 09.2 +1.0**
comp=Z,165nm,1.2s
319A *e*PKKPdf **PKKPbc** **13 33 16.8 +1.3**
PB07 IPOC Station P 93.39 119 ⇓*i*P **P** **13 16 09.3 +0.2**
NKL Nikolayevsk 93.53 338 *e*P **P** **13 16 07.0 -1.6**
NKL *e* 13 27 10.0
NKL pmax pmax
comp=Z,300nm,4.0s
NKL pmax pmax
comp=N,19nm,1.0s
NKL pmax pmax
comp=Z,56nm,1.0s
NKL MLR MLR
comp=N,4μm,18.0s
NKL MLR MLR
comp=E,2μm,18.0s
NKL MLR MLR
comp=Z,4μm,18.0s
KLR Kul'dur 93.53 331 P **P** **13 16 10.6 +1.8**
comp=Z,13nm,1.1s,baz=133,slow=3.3,SNR=19
KLR S **SKSac** **13 26 32.5 -1.3**
comp=Z,2.4nm,0.9s,baz=234,slow=23,SNR=10.0
KLR PKKPbc **PKKPdf** **13 33 13.3 -1.5**
comp=Z,1.5nm,0.5s,baz=266,slow=0.9,SNR=5.0
KLR SKKP 13 36 40.0
comp=Z,1.0nm,0.8s,baz=286,slow=18,SNR=2.5
KLR PKPPKP **P'P'df** **13 41 26.7 +2.7**
comp=Z,7.9nm,1.3s,baz=288,slow=6.4,SNR=5.6
MOD Modoc Plateau 93.54 40 *e*P **P** **13 16 09.3 +0.1**
comp=Z,135nm,1.0s
MOD *e*PKKPdf **PKKPbc** **13 33 17.0 +1.6**
PATCX Punta Patache 93.76 118 ⇓*i*P **P** **13 16 09.0 -1.8**
I04A Tendick Farm, 93.78 38 P **P** **13 16 10.2 +0.1**
baz=224
R11A Troy Canyon, C 93.78 45 P **P** **13 16 10.8 +0.4**
baz=228,SNR=15
R11A Troy Canyon, C 93.78 45 *e*P **P** **13 16 10.5 +0.1**
comp=Z,42nm,1.3s
X16A Lo Mia Camp, P 93.78 50 *e*P **P** **13 16 11.5 +0.9**
comp=Z,133nm,1.1s
K05A Summer Lake 93.80 39 *e*P **P** **13 16 09.8 -0.7**
comp=Z,224nm,1.0s
PB09 IPOC Station P 93.81 119 ⇓*i*P **P** **13 16 11.0 -0.1**
CMAI Chiengmai2 93.83 291 P **P** **13 16 12.6 +1.5**
comp=Z,15nm,1.1s,comp=Z,1μm
COR Corvallis 93.89 37 *e*P **P** **13 16 11.3 +0.8**
COR pmax pmax
comp=Z,180nm,1.3s
COR Corvallis 93.89 37 *e*P **P** **13 16 11.3 +0.8**
comp=Z,180nm,1.3s
OHAK Old Harbor 93.92 14 *e*P **P** **13 16 11.7 +1.4**
comp=Z,70nm,1.1s
NNA Nana 93.98 107 *e*P **P** **13 16 12.8 +1.0**
NNA pmax pmax
comp=Z,400nm,1.2s
NNA Nana 93.98 107 *e*P **P** **13 16 12.0 +0.1**
comp=Z,404nm,1.2s
J05D Fort Rock, OR 94.02 39 P **P** **13 16 11.8 +0.4**
baz=225
KMI Kunming 94.04 298 P **P** **13 16 12.5 +0.5**
KMI pP pP 13 16 38.8 +0.9
KMI PP **PP** **13 20 02.6 +2.8**
KMI SKS **SKSac** **13 26 35.4 -2.8**
KMI S **ScS** **13 27 15.3 -0.6**
KMI SS **SS** **13 33 33.3 -4.2**
KMI LR LR
comp=Z,2μm,29.4s
KMI LR LR
comp=Z,3μm,27.7s
KMI LR LR
comp=Z,15μm,45.0s
PB01 IPOC Station P 94.10 119 ⇓*i*P **P** **13 16 12.6 +0.2**
PB01 IPOC Station P 94.10 119 *e*P **P** **13 16 12.5 +0.2**
comp=Z,320nm,1.1s
PBA Port Blair 94.18 281 *e*P P 13 16 11.3 -1.3
BMN Battle Mountai 94.23 43 *e*P **P** **13 16 12.4 0.0**
BMN pmax pmax
comp=Z,170nm,1.3s
BMN Battle Mountai 94.23 43 *e*P **P** **13 16 12.4 0.0**
comp=Z,172nm,1.4s
BMN *e*PKKPdf **PKKPbc** **13 33 14.7 +1.2**
LCMT Little Creek M 94.31 48 *e*P **P** **13 16 13.2 +0.4**
comp=Z,76nm,1.2s
G03D McMinnville, O 94.36 36 P P 13 16 07.8 -4.9
baz=224
BJT Baijiatuau 94.48 316 *e*P **P** **13 16 10.0 -3.4**
BJT Baijiatuau 94.48 316 *e*P **P** **13 16 10.0 -3.4**
BJI Beijing 94.49 316 P **P** **13 16 10.0 -3.4**
BJI pP **pP** **13 16 37.3 -2.0**
BJI PP **PP** **13 20 01.4 -1.4**
BJI ScS **S** **13 27 20.8 +3.5**
BJI SS **SS** **13 33 40.9 -2.0**
BJI pmax pmax
comp=Z,1μm,10.0s
BJI LR LR
comp=Z,5μm,18.4s
BJI LR LR
comp=Z,3μm,24.2s
BJI LR LR
comp=Z,12μm,39.2s
WUAZ Wupatki 94.52 50 P **P** **13 16 11.8 -2.1**
baz=231
WUAZ Wupatki 94.52 50 *e*P **P** **13 16 15.0 +1.1**
comp=Z,81nm,1.0s
H04A Detroit Lake 94.52 37 P **P** **13 16 13.2 -0.3**
U15A North Rim 94.52 48 *e*P **P** **13 16 14.9 +0.9**
comp=Z,88nm,1.0s
PSGC Pisagua 94.54 117 ⇓*i*P **P** **13 16 13.7 -0.7**
KNB Kanab 94.57 48 *e*P **P** **13 16 15.4 +1.3**
KNB pmax pmax
comp=Z,100nm,1.0s
KNB Kanab 94.57 48 *e*P **P** **13 16 15.0 +0.9**
comp=Z,101nm,1.0s
KDAK Kodiak Island 94.59 14 *e*P **P** **13 16 15.1 +1.8**
KDAK pmax pmax
comp=Z,75nm,1.4s
KDAK Kodiak Island 94.59 14 *e*P **P** **13 16 15.1 +1.8**
comp=Z,76nm,1.4s
I05D Terrebonne, OR 94.71 38 P **P** **13 16 12.8 -1.5**
baz=225
F03A Seaside 94.74 36 *e*P **P** **13 16 14.5 +0.1**
comp=Z,134nm,1.1s
PB11 IPOC Station P 94.78 118 ⇓*i*P **P** **13 16 15.3 -0.2**
PB11 IPOC Station P 94.78 118 *e*P **P** **13 16 14.8 -0.8**
comp=Z,543nm,1.2s
WVOR Wild Horse Val 94.80 41 *e*P **P** **13 16 15.0 0.0**
comp=Z,138nm,1.3s
X18A Snowflake 94.81 51 *e*P **P** **13 16 15.9 +0.6**
comp=Z,88nm,1.1s
DGPR DIGLIPUR 94.88 283 *e*P **P** **13 16 14.4 -1.3**
PB08 IPOC Station P 94.91 118 ⇑*i*P **P** **13 16 17.1 +0.7**
BHU Blowhard Mount 94.92 47 *e*P **P** **13 16 16.4 +0.4**
PSUT Pine Spring 94.93 46 *e*P **P** **13 16 15.9 +0.2**
comp=Z,40nm,1.1s
121A Cookes Peak, D 95.00 54 P **P** **13 16 15.8 -0.4**
baz=232
XAN Xi'an 95.10 308 P **P** **13 16 17.3 +0.9**
XAN sP sP 13 16 51.8 -0.9
XAN SKS **SKSac** **13 26 39.8 -3.3**
XAN S **S** **13 27 20.6 -2.4**
XAN SS **SS** **13 33 51.6 -0.3**
XAN pmax pmax
comp=Z,42nm,1.5s
XAN LR LR
comp=Z,6μm,47.2s
XAN LR LR
comp=Z,11μm,38.9s
XAN LR LR
comp=Z,14μm,44.4s
F04D Rainier, OR 95.11 36 P **P** **13 16 16.6 +0.5**
baz=224
PKCU Pink Cliffs 95.16 48 *e*P **P** **13 16 16.2 -0.8**
E03A Lebam 95.18 35 *e*P **P** **13 16 17.9 +1.6**
comp=Z,104nm,1.0s
TIY Taiyuan 95.19 313 *e*P **P** **13 16 20.3 +3.6**
TIY PP **PP** **13 20 07.8 -0.5**
TIY SKS **SKSac** **13 26 42.1 -1.3**
TIY S **ScS** **13 27 31.0 +6.5**
TIY LR LR
comp=Z,1μm,15.3s
TIY LR LR
comp=Z,810nm,14.0s
TIY LR LR
comp=Z,3μm,18.6s
MNMC Minye Minye 95.22 117 ⇓*i*P **P** **13 16 17.7 0.0**
F04A Amboy 95.30 36 *e*P **P** **13 16 16.7 -0.2**
comp=Z,76nm,0.9s
W18A Petrified Fore 95.31 51 P **P** **13 16 17.2 -0.3**
baz=231
W18A Petrified Fore 95.31 51 *e*P **P** **13 16 17.9 +0.4**
comp=Z,95nm,1.1s
G05D Wamic, OR 95.35 37 P **P** **13 16 15.8 -1.5**
baz=225
ELK Elko 95.56 44 *e*P **P** **13 16 19.0 +0.4**
ELK pmax pmax
comp=Z,80nm,1.6s
ELK Elko 95.56 44 *e*P **P** **13 16 18.5 -0.1**
comp=Z,80nm,1.6s
MTPU Mount Pierson 95.62 47 *e*P **P** **13 16 20.3 +1.3**
comp=Z,72nm,1.2s
NLWA Neilton Lookou 95.65 35 *e*P **P** **13 16 20.6 +2.1**
comp=Z,38nm,1.0s
PB13 IPOC Station P 95.78 117 ⇓*i*P **P** **13 16 20.9 +0.2**
MSU Marysvale 95.92 47 *e*P **P** **13 16 20.5 +0.2**
MSU Marysvale 95.92 47 *e*P **P** **13 16 20.5 +0.2**
MSU *e*PKKPdf **PKKPdf** **13 33 10.9 +0.7**
TX31 Lajitas Ar. Si 95.92 59 *e*P **P** **13 16 20.5 +0.1**
TXAR Lajitas Array 95.92 59 P **P** **13 16 20.5 +0.1**
comp=Z,14nm,0.8s,baz=213,slow=4.3,SNR=53
TXAR PP **PP** **13 20 13.7 -0.5**
comp=Z,10nm,1.0s,baz=214,slow=8.7,SNR=3.8
TXAR PKKPbc **PKKPbc** **13 33 08.6 +0.2**
comp=Z,2.3nm,0.8s,baz=70,slow=4.5,SNR=9.9
TXAR SKKP 13 36 34.4
comp=Z,0.7nm,0.9s,baz=108,slow=5.8,SNR=2.2
TXAR PKPPKP **P'P'df** **13 41 27.5 +5.9**
comp=Z,0.8nm,1.0s,baz=148,slow=4.1,SNR=4.3
TXAR tx tx 13 59 16.1
comp=Z,1.3nm,1.1s,baz=201,slow=7.3,SNR=5.6
MNTX Cornudas Mount 96.12 56 P **P** **13 16 21.1 +0.1**
baz=233
MNTX Cornudas Mount 96.12 56 *e*P **P** **13 16 21.2 +0.1**
comp=Z,46nm,1.2s
MNTX *e*PKKPdf **PKKPdf** **13 33 09.3 +0.2**
LON Longmire 96.17 36 *e*P **P** **13 16 22.0 +1.0**
LON pmax pmax
comp=Z,36nm,1.2s
LON Longmire 96.17 36 *e*P **P** **13 16 20.6 -0.4**
comp=Z,36nm,1.2s
D05A Enumclaw 96.39 36 *e*P **P** **13 16 21.6 -0.3**
comp=Z,83nm,0.9s
H02S1 DAWSON INLET T 96.43 27 P **P** **13 16 21.6 -0.3**
H02N1 VAN INLET T-PH 96.44 26 P **P** **13 16 22.6 +0.5**
Y22D IRIS PASSCAL I 96.51 53 P **P** **13 16 23.0 +0.1**
baz=233
LAZ Ladron 96.56 53 *e*P **P** **13 16 23.7 +0.5**
MA2 Magadan 96.59 346 P **P** **13 16 21.5 -0.9**
comp=Z,9.3nm,1.0s,baz=186,slow=5.0,SNR=11
MA2 S **SKSac** **13 26 47.3 -2.3**
comp=Z,1.6nm,0.2s,baz=347,slow=21,SNR=11
MA2 PKPPKP **P'P'df** **13 41 20.3 +2.8**
comp=Z,0.8nm,0.3s,baz=349,slow=1.3,SNR=3.3
DUG Dugway, Tooele 96.61 45 P **P** **13 16 20.4 -2.8**
baz=230
DUG Dugway, Tooele 96.61 45 *e*P **P** **13 16 23.8 +0.5**
DUG pmax pmax
comp=Z,26nm,1.2s
DUG Dugway, Tooele 96.61 45 *e*P **P** **13 16 23.1 -0.2**
comp=Z,26nm,1.3s
CD2 Chengdu 96.70 303 P **P** **13 16 25.0 +1.2**
CD2 PP **PP** **13 20 19.8 -0.3**
CD2 SKS **SKSac** **13 26 47.5 -4.2**
CD2 S **ScS** **13 27 38.6 +1.2**
CD2 pmax pmax
comp=Z,30nm,0.5s
CD2 pmax pmax
comp=Z,450nm,8.3s
CD2 LR LR
comp=Z,5μm,22.6s
CD2 LR LR
comp=Z,15μm,44.0s
BNM Barren Site 96.75 53 *e*P **P** **13 16 24.4 +0.3**
BNM *e*PP **PP** **13 20 23.7 +3.1**
PGC Sidney 96.75 34 *e*P **P** **13 16 27.0 +3.6**
BRLK Bradley Lake 96.76 14 *e*P **P** **13 16 22.6 -0.6**
comp=Z,77nm,1.2s
LPM Los Pinos Moun 96.84 53 *e*P **P** **13 16 22.7 -1.8**
NLU North Lily Min 96.90 46 *e*P **P** **13 16 24.2 -0.4**
comp=Z,58nm,1.8s
BGU Big Grassy Mou 96.95 45 *e*P **P** **13 16 24.7 -0.1**
comp=Z,62nm,1.6s
MFID Camas Ranch 96.99 41 *e*P **P** **13 16 24.5 -0.3**
comp=Z,47nm,0.9s
MFID *e*PP **PP** **13 20 22.7 +0.5**
MFID *e*PKKPdf **PKKPdf** **13 33 07.5 -0.8**
TMUT Trail Mountain 97.00 47 *e*P **P** **13 16 24.3 -1.0**
comp=Z,48nm,1.0s
RSO Redoubt South 97.04 13 *e*P Pdif 13 16 25.2 +0.4
HAWA Hanford 97.05 37 *e*P **P** **13 16 24.7 -0.2**
comp=Z,85nm,1.4s
LTY Liberty 97.08 36 *e*P Pdif 13 16 25.2 0.0
comp=Z,32nm,1.1s
B05A Bryant 97.11 35 P **P** **13 16 23.2 -1.8**
baz=225
SVW2 Sparrevohn 97.12 12 *e*P Pdif 13 16 25.5 +0.6
comp=Z,16nm,1.0s
A04D Lummi Island 97.14 34 P Pdif 13 16 25.5 +0.2
baz=225
BMO Blue Mountains 97.15 40 *e*P Pdif 13 16 25.6 -0.1
comp=Z,40nm,1.3s
BMO *e*PKKPbc **PKKPbc** **13 33 06.0 +0.2**
MPU Maple Canyon 97.20 46 *e*P **P** **13 16 24.7 -1.3**
comp=Z,22nm,1.1s
SRU San Rafael Swe 97.30 47 *e*P **P** **13 16 26.3 -0.2**
SRU pmax pmax
comp=Z,36nm,1.0s
SRU San Rafael Swe 97.30 47 *e*P **P** **13 16 26.3 -0.2**
comp=Z,36nm,1.0s
SRU *e*PKKPbc **PKKPbc** **13 33 04.3 -0.8**
ANMO Albuquerque 97.34 53 P **P** **13 16 25.3 -1.4**
baz=233
ANMO Albuquerque 97.34 53 *e*P Pdif 13 16 27.4 +0.6
ANMO *e* 13 20 26.5
ANMO pmax pmax
comp=Z,45nm,1.2s
ANMO Albuquerque 97.34 53 *e*P **P** **13 16 26.6 -0.2**
comp=Z,45nm,1.2s
ANMO *e*PP **PP** **13 20 26.5 +1.4**
SEW Seward 97.37 15 *e*P Pdif 13 16 29.7 +3.7
comp=Z,40nm,1.1s
MVCO Mesa Verde 97.39 50 P **P** **13 16 25.6 -1.4**
baz=232
MVCO Mesa Verde 97.39 50 *e*P **P** **13 16 26.9 0.0**
comp=Z,32nm,1.3s
P17A Butcher Ranch, 97.39 47 *e*P Pdif 13 16 27.2 +0.3
comp=Z,40nm,1.2s
C06D Leavenworth 97.44 36 P **P** **13 16 25.6 -1.1**
baz=226
PV05 Paradox Valley 97.54 49 *e*P Pdif 13 16 28.1 +0.5
B06A Marblemount 97.57 35 *e*P Pdif 13 16 28.0 +0.8
comp=Z,54nm,1.2s
HVU Hansel Valley 97.64 44 *e*P Pdif 13 16 28.4 +0.4
HVU pmax pmax
comp=Z,110nm,1.4s
HVU Hansel Valley 97.64 44 *e*P **P** **13 16 27.6 -0.4**
comp=Z,106nm,1.5s
JLU Jordanelle 97.67 46 *e*P **P** **13 16 28.0 -0.2**
comp=Z,32nm,1.4s
HHC Hu-ho-hao-te 97.70 315 *e*P Pdif 13 16 30.3 +2.2
HHC pP pP 13 16 54.6 +0.5
HHC SKS **SKSac** **13 26 55.3 -1.2**
HHC S **S** **13 27 45.1 -0.1**
HHC pmax pmax
comp=Z,15nm,1.0s
HHC pmax pmax
comp=Z,330nm,6.6s
HHC LR LR
comp=Z,7μm,20.0s
HHC LR LR
comp=Z,7μm,23.7s
HHC LR LR
comp=Z,9μm,24.5s
PV09 Paradox Valley 97.78 48 *e*P **P** **13 16 28.4 -0.4**
P18A Preston Nutter 97.79 47 *e*P Pdif 13 16 30.2 +1.4

comp=Z,39nm,1.3s
D08A Wollman Farm, 97.81 37 *e*P Pdif 13 16 28.5 +0.2
comp=Z,36nm,0.9s
SPU Mount Spurr 97.83 13 *e*P Pdif 13 16 28.9 +0.7
PV04 Paradox Valley 97.85 49 *e*P **P 13 16 28.3 -0.6**
HLID Hailey 97.86 42 Pdiff Pdif 13 16 29.2 +0.3
baz=230
HLID Hailey 97.86 42 *e*P **P 13 16 28.8 -0.1**
comp=Z,40nm,1.1s
PV01 Paradox Valley 97.90 49 *e*P Pdif 13 16 30.0 +0.7
F10A Beach Ranch, E 97.94 39 *e*P **P 13 16 28.6 -0.4**
comp=Z,29nm,1.0s
GAMB Gambell 97.96 4 *e*P Pdif 13 16 29.5 +1.0
comp=Z,56nm,1.2s
GAMB *e*PKKPbc **PKKPbc 13 33 02.6 -1.6**
832A Faith Ranch, C 97.96 61 Pdiff **P 13 16 29.0 -0.5**
baz=235
TCUT Toone Canyon 98.02 45 *e*P Pdif 13 16 29.9 +0.1
comp=Z,54nm,1.0s
LPAZ La Paz 98.08 116 P **P 13 16 31.0 -0.1**
comp=Z,48nm,1.0s,baz=259,slow=1.7,SNR=67
LPAZ PKPPKP **P'P'df 13 41 18.9 -1.6**
comp=Z,1.6nm,0.9s,baz=277,slow=4.3,SNR=3.4
LPAZ LR LR 13 54 17.3
comp=Z,3µm,19.0s,baz=222,slow=31
LPAZ La Paz 98.08 116 *e*P **P 13 16 30.8 -0.3**
LPAZ pmax pmax
comp=Z,99nm,1.1s
LPAZ La Paz 98.08 116 *e*P **P 13 16 30.8 -0.3**
comp=Z,98nm,1.1s
LPAZ P'P' 13 41 18.9
933A Laredo 98.10 62 Pdiff Pdif 13 16 30.1 0.0
baz=236
RC01 Rabbit Creek A 98.21 14 *e*P Pdif 13 16 30.3 +0.6
comp=Z,46nm,1.1s
034A Hebbronville 98.22 63 Pdiff Pdif 13 16 30.8 +0.1
baz=236
HWUT Hardware Ranch 98.24 45 *e*P **P 13 16 30.3 -0.3**
comp=Z,21nm,1.1s
HWUT *e*PKKPbc **PKKPbc 13 33 01.8 -0.9**
035Z Hargill 98.34 64 Pdiff Pdif 13 16 31.3 +0.1
baz=236
833A Chaparral WMA, 98.41 62 Pdiff **P 13 16 31.4 -0.1**
baz=236
B08A Colville Reser 98.50 36 *e*P Pdif 13 16 31.6 +0.2
comp=Z,29nm,1.0s
035A Encino 98.58 63 Pdiff Pdif 13 16 32.6 +0.4
baz=236
EYAK Cordova Ski Ar 98.60 16 *e*P Pdif 13 16 32.6 +1.2
comp=Z,23nm,0.9s
C09A Chrisman Ranch 98.64 37 *e*P **P 13 16 31.5 -0.6**
comp=Z,37nm,1.0s
934A Benavides 98.64 63 Pdiff Pdif 13 16 32.7 +0.1
baz=236
733A Divot King Ran 98.70 61 Pdiff **P 13 16 32.6 -0.1**
baz=236
RAGM Ragged Mountai 98.71 17 *e*P **P 13 16 30.4 -1.6**
comp=Z,24nm,0.7s
TT01 Tatalina 98.76 11 *e*P Pdif 13 16 33.0 +0.8
S22A 4UR Ranch, Cre 98.77 50 Pdiff **P 13 16 33.1 -0.1**
baz=233
S22A 4UR Ranch, Cre 98.77 50 *e*P **P 13 16 32.6 -0.7**
comp=Z,26nm,1.1s
S22A *e*PKKPdf **PKKPdf 13 33 07.5 +2.5**
TTA Tatalina 98.78 11 *e*P Pdif 13 16 33.4 +1.0
TTA pmax pmax
comp=Z,35nm,1.4s
TTA Tatalina 98.78 11 *e*P Pdif 13 16 33.4 +1.0
comp=Z,35nm,1.4s
TTA *e*PKKPbc **PKKPbc 13 33 00.2 -1.7**
PMR Palmer 98.79 14 *e*P Pdif 13 16 32.7 +0.4
PMR pmax pmax
comp=Z,17nm,1.0s
PMR Palmer 98.79 14 *e*P Pdif 13 16 32.7 +0.4
comp=Z,17nm,1.0s
CPUP Villa Florida 98.88 130 P **P 13 16 32.7 -1.1**
comp=Z,84nm,1.1s,baz=248,slow=4.4,SNR=22
CPUP PP **PP 13 20 34.5 -1.4**
comp=Z,30nm,1.2s,baz=242,slow=8.7,SNR=5.3
CPUP PKKP **PKKPbc 13 32 58.9 -0.5**
comp=Z,5.0nm,0.9s,baz=44,slow=4.7,SNR=4.8
CPUP PKPPKP **P'P'df 13 41 17.6 -0.3**
comp=Z,2.4nm,0.8s,baz=349,slow=6.0,SNR=3.1
CPUP LR LR 13 56 01.1
comp=Z,6µm,18.8s,baz=226,slow=32
CPUP Villa Florida 98.88 130 *e*P **P 13 16 32.9 -0.9**
CPUP *e*PP **PP 13 20 35.0 -0.9**
CPUP PKKP **PKKPbc 13 32 58.9 -0.5**
CPUP P'P' 13 41 17.6
834A Tilden 98.91 62 Pdiff **P 13 16 33.2 -0.5**
baz=236
WRAK Wrangell Islan 99.01 25 *e*P **Pdif 13 16 35.1 +1.8**
comp=Z,32nm,1.1s
DIV Divide 99.11 16 *e*P **Pdif 13 16 35.0 +1.1**
comp=Z,49nm,1.2s
SML Sawmill 99.15 15 *e*P **Pdif 13 16 39.6 +5.6**
SML pmax pmax
comp=Z,33nm,1.2s
SML Sawmill 99.15 15 *e*P **Pdif 13 16 39.6 +5.6**
comp=Z,33nm,1.3s
633A Saathoff Ranch 99.20 61 Pdiff **Pdif 13 16 34.8 -0.2**
baz=236
MSTX Muleshoe 99.23 55 Pdiff **Pdif 13 16 34.8 -0.3**
baz=235
AHID Auburn Hatcher 99.23 44 *e*P **Pdif 13 16 35.2 +0.1**
comp=Z,153nm,1.8s
BMRM Bremner River 99.24 17 *e*P **Pdif 13 16 35.5 +1.1**
comp=Z,45nm,1.1s
734A La Parita Cree 99.31 62 Pdiff **Pdif 13 16 35.1 -0.3**
baz=236
O20A White River Ci 99.32 48 Pdiff **Pdif 13 16 35.8 +0.3**
baz=233
O20A White River Ci 99.32 48 *e*P **Pdif 13 16 36.5 +1.0**
comp=Z,22nm,1.2s
O20A *e*PKKPbc **PKKPbc 13 32 59.9 +0.3**
JCT Junction City 99.32 60 Pdiff **Pdif 13 16 35.6 0.0**
baz=236
JCT Junction City 99.32 60 *e*P **Pdif 13 16 37.1 +1.5**
JCT pmax pmax
comp=Z,28nm,1.2s
JCT Junction City 99.32 60 *e*P **Pdif 13 16 35.3 -0.2**
comp=Z,28nm,1.3s
SEY Seymchan 99.37 348 P **Pdif 13 16 34.0 -0.9**
comp=Z,15nm,1.1s,baz=150,slow=5.1,SNR=27
SEY PKKPbc **PKKPbc 13 32 58.5 -1.6**
comp=Z,8.6nm,0.9s,baz=312,slow=1.7,SNR=9.8
SEY SKKPbc SKKPbc 13 36 28.9 -6.3
comp=Z,1.6nm,0.7s,baz=262,slow=1.4,SNR=2.1
SEY PKPPKP **P'P'df 13 41 15.1 +2.9**
comp=Z,2.1nm,1.0s,baz=315,slow=1.1,SNR=6.3
SCM Sheep Creek Mo 99.39 15 *e*P **Pdif 13 16 36.2 +1.1**
SCM pmax pmax
comp=Z,39nm,0.9s
SCM Sheep Creek Mo 99.39 15 *e*Pdif **Pdif 13 16 36.2 +1.1**
comp=Z,39nm,0.9s
KLU Klutina 99.39 16 *e*Pdif **Pdif 13 16 36.3 +1.2**
comp=Z,16nm,0.9s
KLU *e*PP PP 13 20 49.9 +10
PPLA Purkeypile 99.39 13 *e*Pdif **Pdif 13 16 36.8 +1.6**
comp=Z,42nm,1.5s
NEW Newport 99.52 37 P **Pdif 13 16 35.8 -0.2**
comp=Z,9.3nm,1.1s,baz=246,slow=4.3,SNR=7.6
NEW PP **PP 13 20 41.9 +0.5**
comp=Z,22nm,1.1s,baz=227,slow=7.7,SNR=8.4
NEW Newport 99.52 37 Pdiff **Pdif 13 16 35.1 -0.9**
baz=228
NEW Newport 99.52 37 *e*Pdif **Pdif 13 16 37.1 +1.1**
comp=Z,14nm,1.1s
NEW *e*PP **PP 13 20 40.7 -0.7**
SMCO Snowmass 99.53 49 *e*Pdif **Pdif 13 16 37.0 +0.3**
comp=Z,30nm,1.1s
SMCO *e*PKKPbc **PKKPbc 13 32 59.4 +0.2**
835A Beeville 99.53 62 Pdiff **Pdif 13 16 36.6 +0.2**
baz=236
MCMT McKenzie Canyo 99.54 42 *e*Pdif **Pdif 13 16 36.4 0.0**
MCMT *e*PKKPbc **PKKPbc 13 32 59.4 +0.2**
SDCO Great Sand Dun 99.61 51 Pdiff **Pdif 13 16 37.4 +0.4**
baz=234
SDCO Great Sand Dun 99.61 51 *e*Pdif **Pdif 13 16 36.9 -0.1**
comp=Z,18nm,1.3s
SDCO *e*PP **PP 13 20 45.5 +2.9**
SDCO *e*PKKPbc **PKKPbc 13 32 58.3 -0.4**
533A Kerrville 99.65 60 Pdiff **Pdif 13 16 36.6 -0.4**
baz=236
LZH Lanzhou 99.66 307 *e*P **Pdif 13 16 39.0 +2.0**
LZH PP **PP 13 20 43.1 +0.3**
LZH SKS **SKSac 13 27 03.3 -3.3**
LZH *e*S **ScS 13 27 59.6 -2.5**
LZH SS **SS 13 34 54.8 -1.4**
LZH pmax pmax
comp=Z,71nm,1.4s
LZH pmax pmax
comp=Z,300nm,4.9s
LZH LR LR
comp=Z,2µm,18.2s
LZH LR LR
comp=Z,3µm,18.7s
LZH LR LR
comp=Z,6µm,20.9s
OTAV Otavalo 99.72 96 *e*Pdif **Pdif 13 16 38.6 +0.4**
comp=Z,67nm,1.4s
REDW Red Top Meadow 99.74 44 *e*Pdif **Pdif 13 16 37.5 +0.1**
comp=Z,50nm,1.2s
REDW *e*PKKPdf **PKKPdf 13 33 04.9 +1.6**
634A China Grove, S 99.76 61 Pdiff **Pdif 13 16 37.8 +0.3**
baz=236
735A Kenedy 99.86 62 Pdiff **Pdif 13 16 38.9 +1.0**
baz=236
SNOW Snow King Moun 99.86 44 *e*Pdif **Pdif 13 16 39.7 +1.8**
comp=Z,26nm,0.8s
CAST Castle Rocks 99.89 12 *e*Pdif **Pdif 13 16 34.5 -2.8**
comp=Z,12nm,0.9s
JTS JuntasAbangare 99.91 84 *e*P **Pdif 13 16 40.8 +2.3**
JTS *e* 13 20 45.7
JTS pmax pmax
comp=Z,120nm,1.5s
JTS JuntasAbangare 99.91 84 *e*Pdif **Pdif 13 16 40.8 +2.3**
comp=Z,116nm,1.5s
JTS *e*PP **PP 13 20 45.7 +1.0**
T25A Trinidad 99.97 52 Pdiff **Pdif 13 16 38.9 +0.4**
baz=234
T25A Trinidad 99.97 52 *e*Pdif **Pdif 13 16 37.8 -0.7**
comp=Z,38nm,1.2s
433A Art 99.98 60 Pdiff **Pdif 13 16 38.2 -0.3**
baz=236
DLMT Dillon 100.02 41 *e*Pdif **Pdif 13 16 38.2 -0.2**
comp=Z,47nm,1.4s
534A Blanco 100.03 61 Pdiff **Pdif 13 16 38.3 -0.4**
baz=236
LOHW Long Hollow 100.04 44 *e*Pdif **Pdif 13 16 38.6 -0.1**
comp=Z,41nm,1.4s
MOOW Moose Ponds 100.04 44 *e*Pdif **Pdif 13 16 38.4 -0.3**
BW06 Boulder Array 100.13 45 Pdiff **Pdif 13 16 39.4 +0.3**
baz=232
BW06 Boulder Array 100.13 45 *e*Pdif **Pdif 13 16 38.5 -0.6**
comp=Z,13nm,1.0s
PD31 Pinedale Array 100.13 45 *e*Pdif **Pdif 13 16 37.8 -1.2**
PD31 *e*PKKPbc **PKKPbc 13 32 57.1 -0.3**
PDAR Pinedale Array 100.13 45 P **Pdif 13 16 39.2 +0.2**
comp=Z,8.7nm,1.0s,baz=235,slow=5.2,SNR=25
PDAR PP **PP 13 20 41.2 -5.1**
comp=Z,6.2nm,1.0s,baz=227,slow=5.9,SNR=5.0
PDAR PKKPbc **PKKPbc 13 32 56.8 -0.7**
comp=Z,1.2nm,0.5s,baz=74,slow=4.6,SNR=10
PDAR PKKP **PKKPdf 13 33 05.3 +2.7**
comp=Z,1.2nm,0.5s,baz=102,slow=5.7,SNR=4.5
PDAR PKKPab 13 33 21.3
comp=Z,12nm,1.2s,baz=85,slow=3.1,SNR=4.8
PDAR SKKPbc SKKPbc 13 36 26.9 -4.6
comp=Z,1.3nm,0.6s,baz=230,slow=31,SNR=5.9
PDAR PKPPKP **P'P'df 13 41 11.2 -1.7**
comp=Z,2.9nm,1.1s,baz=343,slow=0.9,SNR=6.7
PDAR tx tx 13 59 31.1
comp=Z,0.9nm,0.8s,baz=204,slow=3.3,SNR=9.1
635A Leesville 100.18 61 Pdiff **Pdif 13 16 39.3 0.0**
baz=236
MSO Missoula 100.22 40 Pdiff **Pdif 13 16 39.2 0.0**
baz=230
MSO Missoula 100.22 40 *e*Pdif **Pdif 13 16 42.9 +3.6**
MSO *e*PP **PP 13 20 44.7 -2.1**
KTH Kantishna Hill 100.23 13 *e*Pdif **Pdif 13 16 39.0 +0.2**
comp=Z,29nm,1.2s
TRF Thorofare Moun 100.25 13 *e*Pdif **Pdif 13 16 39.7 +0.7**
FLWY Flagg Ranch 100.28 43 *e*Pdif **Pdif 13 16 39.5 -0.2**
comp=Z,32nm,1.1s
QLMT Earthquake Lak 100.33 42 *e*Pdif **Pdif 13 16 40.1 +0.2**
QLMT *e*PKKPbc **PKKPbc 13 32 59.5 +2.6**
333A Richland Sprin 100.38 59 Pdiff **Pdif 13 16 40.6 +0.4**
baz=236
LRM Limekiln Ridge 100.38 41 *e*Pdif **Pdif 13 16 40.1 0.0**
LRM *e*PP **PP 13 20 48.2 0.0**
LRM *e*PKKPbc **PKKPbc 13 32 58.0 +1.1**
736A Circle Diamond 100.46 62 Pdiff **Pdif 13 16 41.6 +1.0**
baz=236
SKAG Skagway 100.47 21 *e*Pdif **Pdif 13 16 40.3 +0.5**
RND Reindeer 100.49 14 *e*P **Pdif 13 16 41.6 +1.7**
RND Reindeer 100.49 14 *e*Pdif **Pdif 13 16 40.4 +0.5**
AMTX Amarillo 100.49 55 Pdiff **Pdif 13 16 40.8 +0.1**
baz=235
AMTX Amarillo 100.49 55 *e*Pdif **Pdif 13 16 40.8 +0.1**
AMTX *e*PP **PP 13 20 49.3 +0.3**
H17A Grant Village 100.54 43 Pdiff **Pdif 13 16 41.6 +0.7**
baz=232
Q24A Divide 100.55 50 Pdiff **Pdif 13 16 41.5 +0.4**
baz=234
434A Burnet 100.61 60 Pdiff **Pdif 13 16 41.7 +0.5**
baz=236
SWMT Swartz Lake 100.63 39 *e*PP PP 13 20 49.3 -0.5
SWMT *e*PKKPbc **PKKPbc 13 32 57.4 +1.3**
ABTX Abilene, Hawle 100.63 58 Pdiff **Pdif 13 16 41.9 +0.5**
baz=236
ABTX Abilene, Hawle 100.63 58 *e*Pdif **Pdif 13 16 40.8 -0.5**
535A Dale 100.68 61 Pdiff **Pdif 13 16 42.2 +0.7**
baz=236
BPAW Bear Paw Mtn. 100.72 13 *e*Pdif **Pdif 13 16 44.1 +3.2**
BOZ Bozeman (W) 100.72 42 Pdiff **Pdif 13 16 42.1 +0.5**
baz=232
BOZ Bozeman (W) 100.72 42 *e*P **Pdif 13 16 41.5 -0.1**
BOZ pmax pmax
comp=Z,22nm,1.0s
BOZ Bozeman (W) 100.72 42 *e*Pdif **Pdif 13 16 41.5 -0.1**
comp=Z,22nm,1.0s
LKWY Lake 100.74 43 *e*P **Pdif 13 16 42.3 +0.5**
LKWY pmax pmax
comp=Z,27nm,1.2s
LKWY Lake 100.74 43 *e*Pdif **Pdif 13 16 42.2 +0.5**
comp=Z,27nm,1.2s
ISCO Idaho Springs 100.75 49 Pdiff **Pdif 13 16 42.4 +0.4**
baz=234
ISCO Idaho Springs 100.75 49 *e*P **Pdif 13 16 45.7 +3.7**
ISCO *e* 13 20 55.2
ISCO Idaho Springs 100.75 49 *e*Pdif **Pdif 13 16 45.7 +3.7**
ISCO *e*PP **PP 13 20 55.2 +4.0**
636A Smothers Creek 100.75 62 Pdiff **Pdif 13 16 43.2 +1.3**
baz=237
BLMT Blacktail Moun 100.76 39 *e*PP PP 13 20 50.1 -0.9
MCK McKinley 100.77 14 *e*P **Pdif 13 16 44.3 +3.2**
MCK McKinley 100.77 14 *e*Pdif **Pdif 13 16 42.0 +0.9**
PAX Paxson 100.80 15 *e*P **Pdif 13 16 41.0 -0.3**
PAX pmax pmax
comp=Z,21nm,1.3s
PAX Paxson 100.80 15 *e*Pdif **Pdif 13 16 41.0 -0.3**
comp=Z,21nm,1.3s
737A Port Lavaca 100.81 63 Pdiff **Pdif 13 16 42.8 +0.7**
baz=237
233A Rising Star 100.82 59 Pdiff **Pdif 13 16 42.9 +0.7**
baz=236
334A Lometa 100.91 60 Pdiff **Pdif 13 16 43.3 +0.7**
baz=236
536A Bastrop 101.07 61 Pdiff **Pdif 13 16 45.0 +1.7**
baz=237
435B Jarrell 101.08 60 Pdiff **Pdif 13 16 43.7 +0.4**
baz=237
133A Hamilton Ranch 101.13 58 Pdiff **Pdif 13 16 44.6 +1.1**
baz=236
N23A Red Feather La 101.18 48 Pdiff **Pdif 13 16 45.0 +1.2**
baz=234
N23A Red Feather La 101.18 48 *e*Pdif **Pdif 13 16 43.8 0.0**
637A Eagle Lake 101.26 62 Pdiff **Pdif 13 16 44.1 0.0**
baz=237
234A Clairette 101.35 59 Pdiff **Pdif 13 16 45.3 +0.8**
baz=237
DLBC Dease Lake 101.37 24 *e*Pdif **Pdif 13 16 44.8 +0.8**
DLBC *e*PKKPbc **PKKPbc 13 32 54.1 -0.2**
335A Moody 101.47 60 Pdiff **Pdif 13 16 45.4 +0.4**
baz=237
MLY Manley 101.61 12 *e*Pdif **Pdif 13 16 45.3 +0.4**
Z33A Whitaker Ranch 101.61 58 Pdiff **Pdif 13 16 46.4 +0.8**
baz=236
537A Green Hill Far 101.62 62 Pdiff **Pdif 13 16 47.4 +1.7**
baz=237
436A Wall Ranch, Ga 101.64 61 Pdiff **Pdif 13 16 46.5 +0.7**
baz=237
WALA Waterton Lakes 101.66 38 *e*Pdif **Pdif 13 16 46.5 +0.9**
WALA *e*PP **PP 13 20 56.6 -1.0**
PALK Pallekele 101.68 271 PKKP **PKKPbc 13 32 55.4 +4.0**
comp=Z,19nm,1.0s,baz=108,slow=0.7,SNR=4.7
DOT Dot Lake 101.70 16 *e*Pdif **Pdif 13 16 46.6 +1.3**
134A White-Moore Ra 101.70 59 Pdiff **Pdif 13 16 46.8 +0.8**
baz=237
RLMT Red Lodge 101.72 43 Pdiff **Pdif 13 16 46.8 +0.7**
baz=233
RLMT Red Lodge 101.72 43 *e*Pdif **Pdif 13 16 44.6 -1.5**
RLMT *e*PKKPbc **PKKPbc 13 32 53.4 +0.5**
WHTX Lake Whitney, 101.83 59 Pdiff **Pdif 13 16 47.4 +0.8**
baz=237
WHTX Lake Whitney, 101.83 59 *e*PP PP 13 20 59.1 0.0
K22A Casper 101.85 46 Pdiff **Pdif 13 16 46.7 0.0**
baz=234
K22A Casper 101.85 46 Pdiff **Pdif 13 16 45.2 -1.5**
comp=Z,27nm,1.3s
K22A *e*PP **PP 13 20 59.6 +0.4**
X32A Elmer 101.87 56 Pdiff **Pdif 13 16 46.9 +0.2**
baz=236
638A Rosharon 101.90 63 Pdiff **Pdif 13 16 47.6 +0.7**
baz=237
HKT Hockley 101.90 62 *e*P **Pdif 13 16 48.8 +1.9**
HKT Hockley 101.90 62 *e*Pdif **Pdif 13 16 48.8 +1.9**
336A Riesel 101.94 60 Pdiff **Pdif 13 16 46.5 -0.6**
baz=237
COLA College 102.00 13 *d i* P **Pdif 13 16 48.4 +1.9**
COLA pmax pmax
comp=Z,30nm,1.0s
COLA College 102.00 13 *e*Pdif **Pdif 13 16 46.4 -0.1**
comp=Z,27nm,1.0s
ILAR Eielson Array 102.10 14 P **Pdif 13 16 47.6 +0.6**
comp=Z,9.2nm,1.0s,baz=217,slow=5.3,SNR=35
ILAR PP **PP 13 20 58.9 -1.5**
comp=Z,8.0nm,1.1s,baz=217,slow=6.2,SNR=4.7
ILAR PKiKP **PKiKP 13 21 10.7 +2.0**
comp=Z,9.2nm,0.9s,baz=301,slow=3.1,SNR=12
ILAR S **SKSac 13 27 18.2 +1.4**
comp=Z,5.4nm,1.1s,baz=215,slow=7.7,SNR=8.4
ILAR PKKPbc **PKKPbc 13 32 49.3 -2.9**
comp=Z,4.9nm,1.0s,baz=0.9,slow=1.5,SNR=6.6
ILAR PKKP **PKKPdf 13 33 00.7 +1.2**
comp=Z,1.1nm,0.6s,baz=356,slow=2.3,SNR=4.8
ILAR PKKPab 13 33 15.1
comp=Z,9.7nm,0.9s,baz=0.3,slow=5.1,SNR=13
ILAR SKKPbc **SKKPbc 13 36 22.8 -5.1**
comp=Z,0.8nm,0.7s,baz=355,slow=3.2,SNR=5.3
ILAR PKPPKP **P'P'df 13 41 11.4 +4.3**
comp=Z,1.5nm,1.0s,baz=281,slow=2.2,SNR=5.9
ILAR tx tx 13 59 34.7
comp=Z,1.4nm,0.8s,baz=220,slow=5.8,SNR=12
Y33A Hilltop Ranch, 102.11 57 Pdiff **Pdif 13 16 48.6 +0.8**
baz=237
437A Phantom Ranch, 102.15 61 Pdiff **Pdif 13 16 48.8 +0.7**
baz=237
135A Vickery Place, 102.17 59 Pdiff **Pdif 13 16 48.6 +0.4**
baz=237
KSCO Kaye Shedlock' 102.19 51 Pdiff **Pdif 13 16 48.8 +0.6**
baz=236
KSCO Kaye Shedlock' 102.19 51 *e*Pdif **Pdif 13 16 48.0 -0.2**
KSCO *e*PKKPdf **PKKPdf 13 32 55.7 -2.7**
Z34A Collier Ranch, 102.25 58 Pdiff **Pdif 13 16 47.9 -0.6**
baz=237
W32A Sentinel 102.28 56 Pdiff **Pdif 13 16 49.5 +0.9**
baz=237
538A Harpers Horsep 102.30 62 Pdiff **Pdif 13 16 47.1 -1.6**
baz=237
WMOK Wichita Mounta 102.39 56 *e*PP PP 13 21 06.2 +2.8
SHL Shillong 102.44 292 *e*P **Pdif 13 16 49.5 -0.1**
SHL *e*S **SKSac 13 27 20.0 -0.6**
SHL Shillong 102.44 292 *e*P **PKKPbc 13 32 52.0 +2.1**
POPC Popayan, Colom 102.48 95 *e*P **PP 13 21 01.4 -2.9**
X33A Lawton 102.48 57 Pdiff **Pdif 13 16 48.0 -1.4**
baz=237
236A Katherine and 102.50 60 Pdiff **Pdif 13 16 51.0 +1.4**
baz=237
TEIG Tepich 102.53 74 *e*PP PP 13 21 06.0 +1.6
BILL Bilibino 102.53 355 *de*P **Pdif 13 16 52.2 +3.4**
BILL *e* 13 21 04.4
BILL *e* 13 28 09.9
BILL *e*SSS SSS 13 39 27.6
BILL pmax pmax
comp=Z,10.0nm,1.2s
BILL MLR MLR
comp=Z,2µm,20.0s
BILL Bilibino 102.53 355 *e*Pdif **Pdif 13 16 52.3 +3.4**
438A Sam Houston St 102.59 61 Pdiff **Pdif 13 16 49.7 -0.3**
baz=238
337A Centerville 102.59 61 Pdiff **Pdif 13 16 48.9 -1.1**
baz=237
Y34A Reagan Ranch, 102.68 58 Pdiff **Pdif 13 16 49.8 -0.5**
baz=237
Z35A Perchaven, San 102.70 58 Pdiff **Pdif 13 16 50.2 -0.2**
baz=237
V32A Arapaho 102.75 55 Pdiff **Pdif 13 16 51.9 +1.2**
baz=237
136A Ennis 102.75 59 Pdiff **Pdif 13 16 50.4 -0.2**
baz=237
539A Cross D Ranch, 102.80 62 Pdiff **Pdif 13 16 51.9 +1.0**
baz=238
W33A Caddo, Fort Co 102.83 56 Pdiff **Pdif 13 16 50.5 -0.5**
baz=237
X34A Smith Ranch, M 102.98 57 Pdiff **Pdif 13 16 52.2 +0.5**
baz=237
237A Washetta, Mont 103.02 60 Pdiff **Pdif 13 16 51.9 +0.1**
baz=238
338A Crockett 103.03 61 Pdiff **Pdif 13 16 52.0 0.0**
baz=238
439A Center Grove, 103.13 62 Pdiff **Pdif 13 16 52.6 +0.2**
baz=238
U32A Winter Ranch, 103.14 55 Pdiff **Pdif 13 16 51.5 -0.8**
baz=237
Y35A Marietta 103.16 58 Pdiff **Pdif 13 16 53.3 +0.8**
baz=237
EGMT Eagleton 103.19 40 Pdiff **Pdif 13 16 53.7 +1.3**
baz=233
EGMT Eagleton 103.19 40 *e*Pdif **Pdif 13 16 58.1 +5.8**
EGMT *e*PP **PP 13 21 09.5 +0.4**
EGMT *e*PKKPdf **PKKPdf 13 33 00.7 +3.8**
Z36A Blue Ridge 103.25 59 Pdiff **Pdif 13 16 51.8 -1.0**
baz=238
V33A Lossen Ranch, 103.32 56 Pdiff **Pdif 13 16 54.1 +0.9**
baz=237
EGAK Eagle 103.33 16 *e*Pdif **Pdif 13 16 53.8 +1.3**
W34A Bridge Creek, 103.36 56 Pdiff **Pdif 13 16 53.9 +0.5**
baz=237
W34A Bridge Creek, 103.36 56 *e*PP PP 13 21 10.8 +0.2
W34A *e*PKKPbc **PKKPbc 13 32 43.5 -3.8**
137A Heron Place, G 103.37 60 Pdiff **Pdif 13 16 51.5 -1.9**
baz=238
540A Vidor 103.40 63 Pdiff **Pdif 13 16 52.9 -0.7**
baz=238
X35A Drake 103.47 58 Pdiff **Pdif 13 16 55.0 +1.2**
baz=238
238A Jacksonville 103.51 61 Pdiff **Pdif 13 16 53.8 -0.3**
baz=238
339A Huntington 103.57 61 Pdiff **Pdif 13 16 53.3 -1.0**
baz=238
T32A Huddler Ranch, 103.62 54 Pdiff **Pdif 13 16 56.1 +1.6**
baz=237
OGNE Ogallala 103.64 50 Pdiff **Pdif 13 16 55.3 +0.7**
baz=236
Y36A Durant 103.69 58 Pdiff **Pdif 13 16 55.6 +0.8**
baz=238
440A Kirbyville 103.69 62 Pdiff **Pdif 13 16 55.9 +1.0**
baz=238
COLD Coldfoot 103.71 12 *e*Pdif **Pdif 13 16 55.2 +1.1**
COLD *e*PP **PP 13 21 14.5 +2.1**
NATX Nacogdoches 103.72 61 Pdiff **Pdif 13 16 55.7 +0.7**
baz=238
U33A Lingo Farm, Me 103.77 55 Pdiff **Pdif 13 16 55.7 +0.6**
baz=237
Z37A Pogue Cattle C 103.78 59 Pdiff **Pdif 13 16 56.0 +0.8**
baz=238
V34A Guthrie 103.86 56 Pdiff **Pdif 13 16 57.1 +1.6**
baz=238
138A Matatall Enter 103.88 60 Pdiff **Pdif 13 16 56.8 +1.1**
baz=238
S32A Newby Ranch, P 103.89 54 Pdiff **Pdif 13 16 56.3 +0.6**
baz=237
541A Lake Charles 103.90 63 Pdiff **Pdif 13 16 54.8 -1.0**
baz=238
J25A Sunshine Ranch 103.91 47 Pdiff **Pdif 13 16 56.5 +0.8**
baz=236
W35A Tecumseh 103.94 57 Pdiff **Pdif 13 16 55.7 -0.2**
baz=238

CBKS	**Cedar Bluff**	103.96	53	Pdiff	**Pdif**	13 16 54.7	-1.3	
	baz=237							
CBKS	**Cedar Bluff**	103.96	53	*e*PP	PP	13 21 19.2	+4.2	
239A	**Gary**	103.99	61	Pdiff	**Pdif**	13 16 55.9	-0.3	
	baz=238							
X36A	**Centrahoma**	103.99	58	Pdiff	**Pdif**	13 16 55.2	-1.0	
	baz=238							
T33A	**Patterson Ranc**	104.03	55	Pdiff	**Pdif**	13 16 57.2	+0.9	
	baz=238							
340A	**Bronson**	104.10	62	Pdiff	**Pdif**	13 16 56.4	-0.2	
	baz=238							
U34A	**Anderson Ranch**	104.16	56	*e*PP	PP	13 21 16.4	-0.1	
U34A	**Anderson Ranch**	104.16	56	Pdiff	**Pdif**	13 16 57.5	+0.6	
	baz=238							
RSSD	**Black Hills**	104.18	46	Pdiff	**Pdif**	13 16 57.5	+0.5	
	baz=236							
RSSD	**Black Hills**	104.18	46	*e*P	**Pdif**	13 16 58.1	+1.1	
RSSD	**Black Hills**	104.18	46	*e*Pdif	**Pdif**	13 16 58.1	+1.1	
YAK	**Yakutsk**	104.18	338	Pdiff	**Pdif**	13 16 58.3	+2.1	
	comp=Z,5.7nm,0.4s,baz=90,slow=2.0,SNR=3.6							
YAK				PKKPbc	**PKKPbc**	13 32 44.4	-1.4	
	comp=Z,17nm,0.7s,baz=326,slow=1.6,SNR=8.9							
Y37A	**Hugo**	104.19	59	Pdiff	**Pdif**	13 16 56.9	-0.2	
	baz=238							
441A	**DeRidder**	104.26	62	Pdiff	**Pdif**	13 16 58.5	+1.1	
	baz=238							
Z38A	**Mt. Pleasant**	104.27	59	Pdiff	**Pdif**	13 16 58.1	+0.8	
	baz=238							
V35A	**Meyer Ranch, C**	104.28	56	Pdiff	**Pdif**	13 16 56.6	-0.8	
	baz=238							
I25A	**Rochford**	104.31	46	Pdiff	**Pdif**	13 16 57.5	0.0	
	baz=236							
J26A	**Sides Ranch, S**	104.31	47	Pdiff	**Pdif**	13 16 58.6	+1.1	
	baz=236							
LAO	**LASA Array**	104.36	43	Pdiff	**Pdif**	13 16 57.9	+0.3	
	baz=235							
LAO	**LASA Array**	104.36	43	*e*Pdif	**Pdif**	13 17 02.1	+4.5	
LAO				*e*PP	**PKiKP**	13 21 15.0	+1.5	
LAO				*e*PKKPbc	**PKKPbc**	13 32 45.7	+0.9	
W36A	**Wetumka**	104.38	57	Pdiff	**Pdif**	13 16 59.4	+1.5	
	baz=238							
139A	**Bunkhouse Ranc**	104.39	60	Pdiff	**Pdif**	13 16 59.1	+1.1	
	baz=238							
542A	**Morse**	104.41	63	Pdiff	**Pdif**	13 16 57.8	-0.3	
	baz=238							
R32A	**Long Quarter,**	104.43	53	Pdiff	**Pdif**	13 16 58.5	+0.5	
	baz=238							
S33A	**Kaszmaul Farm,**	104.46	54	Pdiff	**Pdif**	13 16 59.1	+0.9	
	baz=238							
ULN	**Ulaanbaatar**	104.51	318	*i* P	**Pdif**	13 17 02.4	+4.1	
ULN	**Ulaanbaatar**	104.51	318	*e*Pdif	**Pdif**	13 17 04.0	+5.7	
ULN				*e*PKKPbc	**PKKPbc**	13 32 45.2	+0.6	
240A	**Hunter Patters**	104.51	61	Pdiff	**Pdif**	13 16 58.9	+0.4	
	baz=238							
341A	**Kurthwood**	104.58	62	Pdiff	**Pdif**	13 16 59.5	+0.6	
	baz=238							
PRAC	**Prado**	104.61	96	*e*P	**PP**	13 21 18.9	-1.0	
U35A	**Pawnee**	104.68	56	Pdiff	**Pdif**	13 16 59.1	0.0	
	baz=238							
X37A	**Clayton**	104.69	58	Pdiff	**Pdif**	13 16 59.6	+0.3	
	baz=238							
T34A	**McClaskey Farm**	104.71	55	Pdiff	**Pdif**	13 17 00.4	+1.1	
	baz=238							
H25A	**Fruitdale**	104.72	46	Pdiff	**Pdif**	13 17 00.4	+1.2	
	baz=236							
442A	**Mamou**	104.80	63	Pdiff	**Pdif**	13 17 00.5	+0.7	
	baz=239							
Y38A	**Idabel**	104.80	59	Pdiff	**Pdif**	13 17 00.8	+1.1	
	baz=238							
Q32A	**Meitler Ranch,**	104.83	53	Pdiff	**Pdif**	13 17 00.0	+0.2	
	baz=238							
Z39A	**Irene McRaven,**	104.83	60	Pdiff	**Pdif**	13 17 00.8	+0.9	
	baz=239							
I26A	**New Underwood**	104.83	47	Pdiff	**Pdif**	13 17 00.5	+0.7	
	baz=237							
R33A	**Olander Ranch,**	104.85	54	Pdiff	**Pdif**	13 17 00.1	+0.2	
	baz=238							
SONM	**Songino Array**	104.86	318	Pdiff	**Pdif**	13 17 01.6	+1.8	
	comp=Z,2.2nm,0.9s,baz=146,slow=3.3,SNR=11							
SONM				PKiKP	**PKiKP**	13 21 15.4	+0.9	
	comp=Z,4.0nm,0.9s,baz=42,slow=0.7,SNR=8.4							
SONM				PP	**PP**	13 21 20.3	-1.2	
	comp=Z,6.0nm,1.0s,baz=132,slow=2.1,SNR=4.8							
SONM				PKKPbc	**PKKPbc**	13 32 43.3	-0.2	
	comp=Z,19nm,1.0s,baz=276,slow=2.6,SNR=23							
SONM				PKKPab	**PKKPab**	13 33 02.9	+4.6	
	comp=Z,30nm,1.1s,baz=290,slow=4.3,SNR=13							
SONM				PKPPKP	**P'P'df**	13 41 02.9	-0.7	
	comp=Z,3.3nm,1.1s,baz=270,slow=2.6,SNR=4.8							
V36A	**Jenks**	104.92	57	Pdiff	**Pdif**	13 17 01.1	+0.9	
	baz=238							
CHLP	**Challavanipeta**	104.92	282	*e*Pdif	**Pdif**	13 16 53.5	-7.2	
CHLP				*e*		13 17 19.9		
CHLP				*e*		13 21 14.4		
CHLP				*e*PP	**PP**	13 21 19.7	-2.5	
CHLP				*e*SKSac	**SKSac**	13 27 26.9	-4.9	
J27A	**Elkhorn Farm,**	104.93	48	Pdiff	**Pdif**	13 17 00.5	+0.3	
	baz=237							
W37B	**Quinton**	104.94	58	Pdiff	**Pdif**	13 17 00.7	+0.4	
	baz=238							
O31A	**Woolen Ranch,**	104.95	52	Pdiff	**Pdif**	13 17 00.8	+0.5	
	baz=238							
140A	**Cam and Jess,**	104.96	61	Pdiff	**Pdif**	13 17 01.2	+0.7	
	baz=239							
TUL1	**Leonard**	105.09	57	Pdiff	**Pdif**	13 17 00.3	-0.6	
	baz=238							
VIS	**Vishakhapatnam**	105.10	281	*ex*	**Pdif**	13 17 03.6	+2.2	
X38A	**Whitesboro**	105.11	58	Pdiff	**Pdif**	13 17 02.4	+1.3	
	baz=239							
T35A	**Sooner Cattle**	105.11	56	Pdiff	**Pdif**	13 17 00.8	-0.3	
	baz=238							
241A	**Mo Tay, Goldon**	105.12	61	Pdiff	**Pdif**	13 17 01.2	0.0	
	baz=239							
S34A	**Willow Spring**	105.12	55	Pdiff	**Pdif**	13 17 01.1	0.0	
	baz=238							
P32A	**Huiting Farm,**	105.14	52	Pdiff	**Pdif**	13 17 00.7	-0.4	
	baz=238							
G25A	**Newell**	105.14	45	Pdiff	**Pdif**	13 17 00.5	-0.6	
	baz=236							
LSA	**Lhasa**	105.14	296	*e*PKiKP	**PKiKP**	13 21 19.4	+3.4	
LSA				*e*PKKPbc	**PKKPbc**	13 32 45.2	+2.9	
MDRS	**Chennai**	105.18	276	*e*P	**Pdif**	13 17 01.0	-0.9	
H26A	**Fairpoint**	105.21	46	Pdiff	**Pdif**	13 17 02.8	+1.4	
	baz=237							
342A	**Flagon Creek P**	105.22	62	Pdiff	**Pdif**	13 17 02.0	+0.4	
	baz=239							
Y39A	**Lockesburg**	105.26	59	Pdiff	**Pdif**	13 17 01.9	+0.1	
	baz=239							
443A	**Delano Plantat**	105.31	63	Pdiff	**Pdif**	13 17 02.4	+0.4	
	baz=239							
Q33A	**Connelly Farm,**	105.32	53	Pdiff	**Pdif**	13 17 03.1	+1.1	
	baz=238							
R34A	**Isabella, Hill**	105.34	54	Pdiff	**Pdif**	13 17 03.2	+1.1	
	baz=238							
I27A	**Quinn**	105.34	47	Pdiff	**Pdif**	13 17 02.0	-0.1	
	baz=237							
U36A	**Oologah**	105.38	56	Pdiff	**Pdif**	13 17 04.0	+1.7	
	baz=239							
Z40A	**Long Farm, Mag**	105.40	60	Pdiff	**Pdif**	13 17 02.1	-0.3	
	baz=239							
141A	**Papa Simpson,**	105.42	61	Pdiff	**Pdif**	13 17 03.3	+0.8	
	baz=239							
TRD	**Trivandrum**	105.45	270	*e*P	**Pdif**	13 17 01.8	-1.3	
J28A	**Allard Ranch,**	105.49	48	Pdiff	**Pdif**	13 17 03.5	+0.9	
	baz=237							
645A	**Chauvin**	105.52	65	Pdiff	**Pdif**	13 17 02.4	-0.6	
	baz=239							
F25A	**Bowman**	105.52	45	Pdiff	**Pdif**	13 17 03.6	+0.8	
	baz=237							
V37A	**Hulbert**	105.52	57	Pdiff	**Pdif**	13 17 02.6	-0.3	
	baz=239							
X39A	**Fountain Ranch**	105.54	59	Pdiff	**Pdif**	13 17 03.4	+0.4	
	baz=239							
W38A	**Poteau**	105.54	58	Pdiff	**Pdif**	13 17 03.7	+0.7	
	baz=239							
N31A	**Bailey Ranch,**	105.54	51	Pdiff	**Pdif**	13 17 03.5	+0.6	
	baz=238							
T36A	**Boggs Farm, Ca**	105.62	56	Pdiff	**Pdif**	13 17 02.8	-0.5	
	baz=239							
H27A	**Howes**	105.63	46	Pdiff	**Pdif**	13 17 03.3	0.0	
	baz=237							
P33A	**Williams Farm,**	105.64	53	Pdiff	**Pdif**	13 17 04.5	+1.1	
	baz=238							
S35A	**Otter Creek Ra**	105.64	55	Pdiff	**Pdif**	13 17 04.5	+1.0	
	baz=239							
G26A	**Maurine**	105.68	46	Pdiff	**Pdif**	13 17 05.1	+1.7	
	baz=237							
O32A	**Brockman Farm,**	105.69	52	Pdiff	**Pdif**	13 17 04.7	+1.1	
	baz=238							
343A	**Vidalia**	105.69	63	Pdiff	**Pdif**	13 17 03.8	+0.1	
	baz=239							
242A	**Grayson**	105.69	62	Pdiff	**Pdif**	13 17 04.8	+1.1	
	baz=239							
ROSC	**El Rosal**	105.71	95	PKKPbc	PKKPbc	13 32 43.2	+3.4	
	comp=Z,5.0nm,0.4s,baz=33,slow=10,SNR=3.6							
M31A	**Lambtecht Ranc**	105.80	51	Pdiff	**Pdif**	13 17 04.8	+0.7	
	baz=238							
U37A	**Salina**	105.81	57	Pdiff	**Pdif**	13 17 04.1	-0.1	
	baz=239							
WLAR	**White Oak Lake**	105.83	60	*e*PP	PP	13 21 24.4	-4.4	
I28A	**Midland**	105.84	47	Pdiff	**Pdif**	13 17 05.0	+0.8	
	baz=238							
E25A	**Miller Ranch,**	105.87	44	Pdiff	**Pdif**	13 17 05.6	+1.3	
	baz=237							
Q34A	**Chapman**	105.87	54	Pdiff	**Pdif**	13 17 05.6	+1.2	
	baz=239							
Y40A	**Okolona**	105.88	60	Pdiff	**Pdif**	13 17 03.9	-0.6	
	baz=239							
545A	**Edgard**	105.90	64	Pdiff	**Pdif**	13 17 04.7	0.0	
	baz=239							
MIAR	**Mount Ida**	105.94	59	Pdiff	**Pdif**	13 17 04.6	-0.2	
	baz=239							
N32A	**Stulken Farm,**	105.94	51	Pdiff	**Pdif**	13 17 05.0	+0.3	
	baz=238							
F26A	**Lodgepole**	105.94	45	Pdiff	**Pdif**	13 17 05.5	+0.9	
	baz=237							
SKHT	**Srikalahasti**	105.98	276	*e*Pdif	**Pdif**	13 17 02.7	-2.7	
SKHT				*e*PP	**PP**	13 21 29.4	-0.7	
SKHT				*e*SKSac	**SKSac**	13 27 31.7	-5.1	
V38A	**Canehill**	106.02	57	Pdiff	**Pdif**	13 17 05.6	+0.4	
	baz=239							
O33A	**Hebron**	106.04	52	Pdiff	**Pdif**	13 17 05.2	0.0	
	baz=239							
J29A	**Okreek**	106.04	48	Pdiff	**Pdif**	13 17 04.9	-0.3	
	baz=238							
444A	**Pine Grove**	106.05	64	Pdiff	**Pdif**	13 17 04.9	-0.5	
	baz=239							
R35A	**Emporia Munici**	106.06	54	Pdiff	**Pdif**	13 17 05.0	-0.3	
	baz=239							
CHIC	**Chingaza**	106.08	95	*e*P	**PP**	13 21 31.4	+0.2	
142A	**Monroe**	106.09	61	Pdiff	**Pdif**	13 17 04.6	-0.9	
	baz=239							
K30A	**Basset**	106.10	49	Pdiff	**Pdif**	13 17 06.0	+0.6	
	baz=238							
W39A	**Magazine**	106.12	58	Pdiff	**Pdif**	13 17 06.7	+1.1	
	baz=239							
G27A	**Dupree**	106.12	46	Pdiff	**Pdif**	13 17 06.1	+0.6	
	baz=237							
S36A	**Lake Cedric, C**	106.16	55	Pdiff	**Pdif**	13 17 06.5	+0.8	
	baz=239							
646A	**Port Sulphur**	106.16	65	Pdiff	**Pdif**	13 17 07.0	+1.1	
	baz=239							
BOK	**Bokaro**	106.18	288	*e*P	**Pdif**	13 17 05.9	-0.2	
KSU1	**Kansas State U**	106.18	54	Pdiff	**Pdif**	13 17 06.7	+0.9	
	baz=239							
PVM	**Polavaram**	106.25	280	*e*Pdif	**Pdif**	13 17 04.5	-2.0	
PVM				*e*		13 21 17.4		
PVM				*e*PP	**PP**	13 21 29.6	-2.4	
PVM				*e*SKSac	**SKSac**	13 27 33.3	-4.5	
P34A	**Walnut Farm, R**	106.27	53	Pdiff	**Pdif**	13 17 07.9	+1.8	
	baz=239							
D25A	**Fairfield**	106.27	44	Pdiff	**Pdif**	13 17 07.0	+1.0	
	baz=237							
H28A	**Mission Ridge**	106.29	47	Pdiff	**Pdif**	13 17 06.9	+0.8	
	baz=238							
T37A	**Cheneyville 18**	106.31	56	Pdiff	**Pdif**	13 17 07.3	+0.9	
	baz=239							
L31A	**Butterfield Fa**	106.33	50	Pdiff	**Pdif**	13 17 07.3	+0.8	
	baz=238							
U38A	**Gravette**	106.33	57	Pdiff	**Pdif**	13 17 07.1	+0.5	
	baz=239							
F27A	**Lemmon**	106.34	45	Pdiff	**Pdif**	13 17 07.0	+0.7	
	baz=238							
445A	**Amite**	106.36	64	Pdiff	**Pdif**	13 17 07.5	+0.7	
	baz=240							
BGNE	**Belgrade**	106.37	51	Pdiff	**Pdif**	13 17 06.8	+0.2	
	baz=239							
BGNE	**Belgrade**	106.37	51	*e*PKiKP	**PKiKP**	13 21 19.3	+2.0	
I29A	**Vivian Onida**	106.38	48	Pdiff	**Pdif**	13 17 07.2	+0.6	
	baz=238							
E26A	**Carlson Angus**	106.40	45	Pdiff	**Pdif**	13 17 06.9	+0.3	
	baz=237							
344A	**Westbrook Farm**	106.43	63	Pdiff	**Pdif**	13 17 07.9	+0.8	
	baz=240							
X40A	**Basin Creek Fa**	106.43	59	Pdiff	**Pdif**	13 17 07.6	+0.6	
	baz=239							
SAML	**Samuel**	106.45	113	*e*Pdif	**Pdif**	13 17 07.9	+0.3	
SAML				*e*PKKPbc	**PKKPbc**	13 32 37.8	+0.7	
N33A	**J Bar K, Exete**	106.47	52	Pdiff	**Pdif**	13 17 07.1	0.0	
	baz=239							
DGMT	**Dagmar**	106.50	42	Pdiff	**Pdif**	13 17 08.7	+1.7	
	baz=237							
J30A	**Dallas**	106.52	49	Pdiff	**Pdif**	13 17 08.2	+0.9	
	baz=238							
R36A	**Gordon, Harris**	106.53	55	Pdiff	**Pdif**	13 17 07.5	+0.1	
	baz=239							
V39A	**Pettigrew**	106.55	58	Pdiff	**Pdif**	13 17 08.4	+0.9	
	baz=239							
HHAR	**Hobbs**	106.56	57	*e*Pdif	**Pdif**	13 17 15.5	+8.0	
HHAR				*e*PKiKP	**PKiKP**	13 21 19.9	+2.1	
HHAR				*e*PP	**PP**	13 21 33.2	-1.0	
143A	**Socs Landing,**	106.57	62	Pdiff	**Pdif**	13 17 08.2	+0.5	
	baz=240							
546A	**Slidell**	106.57	65	Pdiff	**Pdif**	13 17 07.5	-0.2	
	baz=240							
G28A	**Parade**	106.57	47	Pdiff	**Pdif**	13 17 08.3	+0.8	
	baz=238							
C25A	**Freed Ranch, W**	106.61	43	Pdiff	**Pdif**	13 17 08.5	+1.0	
	baz=237							
K31A	**O'Neill**	106.61	50	Pdiff	**Pdif**	13 17 07.3	-0.3	
	baz=239							
W40A	**Ferguson Farm,**	106.62	59	Pdiff	**Pdif**	13 17 07.9	+0.1	
	baz=240							
O34A	**Beatrice**	106.68	53	Pdiff	**Pdif**	13 17 08.3	+0.3	
	baz=239							
S37A	**Fort Scott**	106.70	56	Pdiff	**Pdif**	13 17 08.3	+0.2	
	baz=239							
T38A	**Diamond**	106.70	56	Pdiff	**Pdif**	13 17 08.4	+0.3	
	baz=239							
D26A	**Manning**	106.71	44	Pdiff	**Pdif**	13 17 09.6	+1.6	
	baz=238							
H29A	**Onida**	106.76	47	Pdiff	**Pdif**	13 17 09.6	+1.4	
	baz=238							
244A	**Avery, Jackson**	106.76	62	Pdiff	**Pdif**	13 17 09.2	+0.7	
	baz=240							
L32A	**Elgin**	106.77	50	Pdiff	**Pdif**	13 17 09.3	+0.9	
	baz=239							
P35A	**Duane Minner,**	106.80	53	Pdiff	**Pdif**	13 17 09.8	+1.3	
	baz=239							
Y42A	**Garnett, Star**	106.86	60	Pdiff	**Pdif**	13 17 10.4	+1.5	
	baz=240							
I30A	**Oacoma**	106.87	48	Pdiff	**Pdif**	13 17 09.5	+0.7	
	baz=238							
ADKI	**Addanki**	106.87	278	*e*Pdif	**Pdif**	13 17 04.7	-4.6	
ADKI				*e*		13 17 27.0		
ADKI				*e*		13 21 18.1		
ADKI				*e*PP	**PP**	13 21 34.5	-2.2	
ADKI				*e*SKSac	**SKSac**	13 27 36.6	-4.0	
345A	**Thompson Farm,**	106.87	63	Pdiff	**Pdif**	13 17 10.3	+1.3	
	baz=240							
Q36A	**Arnold C. Orve**	106.88	54	Pdiff	**Pdif**	13 17 10.0	+1.1	
	baz=239							
E27A	**Carson**	106.90	45	Pdiff	**Pdif**	13 17 11.3	+2.4	
	baz=238							
UALR	**University of**	106.93	59	*e*PP	PP	13 21 35.8	-1.1	
U39A	**Green Forest**	106.93	57	Pdiff	**Pdif**	13 17 10.2	+1.0	
	baz=240							
B25A	**Knox Farm, Ray**	106.97	43	Pdiff	**Pdif**	13 17 10.8	+1.7	
	baz=237							
J31A	**Geddes**	106.97	49	Pdiff	**Pdif**	13 17 09.9	+0.7	
	baz=239							
VBMS	**Vicksburg**	106.97	62	Pdiff	**Pdif**	13 17 10.9	+1.5	
	baz=240							
R37A	**Teagarden Farm**	106.98	55	Pdiff	**Pdif**	13 17 10.7	+1.3	
	baz=240							
F28A	**McLaughlin**	107.05	46	Pdiff	**Pdif**	13 17 10.6	+1.1	
	baz=238							
M33A	**Taylor Creek F**	107.07	51	Pdiff	**Pdif**	13 17 10.4	+0.7	
	baz=239							
V40A	**Witts Springs**	107.10	58	Pdiff	**Pdif**	13 17 11.2	+1.2	
	baz=240							
446A	**Poplarville**	107.11	64	Pdiff	**Pdif**	13 17 09.5	-0.5	
	baz=240							
K32A	**Verdigre**	107.13	50	Pdiff	**Pdif**	13 17 11.3	+1.4	
	baz=239							
N34A	**Lincoln**	107.14	52	Pdiff	**Pdif**	13 17 10.9	+0.9	
	baz=239							
W41A	**Tony Mavity, V**	107.20	59	Pdiff	**Pdif**	13 17 11.6	+1.3	
	baz=240							
W41B	**Gary Mavity, V**	107.20	59	Pdiff	**Pdif**	13 17 11.7	+1.4	
	baz=240							
WHAR	**Wooly Hollow**	107.22	59	*e*PKiKP	**PKiKP**	13 21 25.0	+5.9	
WHAR				*e*PP	**PP**	13 21 38.1	-1.0	
G29A	**Hoven**	107.23	47	Pdiff	**Pdif**	13 17 11.5	+1.2	
	baz=239							
O35A	**Humboldt**	107.24	53	Pdiff	**Pdif**	13 17 12.2	+1.7	
	baz=240							
144A	**Alexander Plac**	107.25	62	Pdiff	**Pdif**	13 17 11.4	+0.8	
	baz=240							
S38A	**Stockton**	107.26	56	Pdiff	**Pdif**	13 17 11.8	+1.1	
	baz=240							
D27A	**Center**	107.28	45	Pdiff	**Pdif**	13 17 11.3	+0.8	
	baz=238							
L33A	**Hoskins**	107.32	51	Pdiff	**Pdif**	13 17 11.7	+0.9	
	baz=239							
T39A	**Clever**	107.33	57	Pdiff	**Pdif**	13 17 12.0	+1.0	
	baz=240							
346A	**Big Creek Wild**	107.33	64	Pdiff	**Pdif**	13 17 12.1	+1.0	
	baz=240							
C26A	**Wahner Farm, P**	107.33	44	Pdiff	**Pdif**	13 17 12.4	+1.6	
	baz=238							
245A	**Little AP, Sta**	107.33	63	Pdiff	**Pdif**	13 17 11.9	+0.9	
	baz=240							
A25A	**Svangstu Ranch**	107.35	42	Pdiff	**Pdif**	13 17 12.1	+1.4	
	baz=238							
U40A	**Yellville**	107.36	58	Pdiff	**Pdif**	13 17 11.7	+0.6	
	baz=240							
P36A	**Good Intent, A**	107.38	54	Pdiff	**Pdif**	13 17 12.1	+1.0	
	baz=240							
M34A	**Aspy Farms, Fr**	107.43	51	Pdiff	**Pdif**	13 17 12.5	+1.3	
	baz=240							
SUSD	**Miller**	107.43	48	Pdiff	**Pdif**	13 17 12.4	+1.2	
	baz=239							
BRRC	**Barranca, Sant**	107.47	93	*e*P	**PP**	13 21 40.4	-0.5	
I31A	**Royce, Wessing**	107.48	48	Pdiff	**Pdif**	13 17 13.0	+1.6	
	baz=239							
E28A	**Huff**	107.49	45	Pdiff	**Pdif**	13 17 13.4	+1.9	
	baz=238							
RCLA	**Racherla**	107.50	277	*e*Pdif	**Pdif**	13 17 13.5	+1.4	
RCLA				*e*		13 21 19.3		
RCLA				*e*PP	**PP**	13 21 38.1	-3.2	
RCLA				*e*SKSac	**SKSac**	13 27 37.7	-5.7	
Y43A	**Makayla and Ka**	107.51	61	Pdiff	**Pdif**	13 17 13.3	+1.5	
	baz=240							
Q37A	**Longview Farm,**	107.52	55	Pdiff	**Pdif**	13 17 11.3	-0.4	
	baz=240							
R38A	**Fenwick Farm,**	107.54	56	Pdiff	**Pdif**	13 17 11.9	0.0	
	baz=240							
B26A	**Jensen Ranch,**	107.55	43	Pdiff	**Pdif**	13 17 13.3	+1.6	
	baz=238							
J32A	**Parkston**	107.57	49	Pdiff	**Pdif**	13 17 12.8	+1.0	
	baz=239							
145A	**Houston Renfro**	107.59	62	Pdiff	**Pdif**	13 17 12.5	+0.3	
	baz=240							
C27A	**Sayler Ranch,**	107.61	44	Pdiff	**Pdif**	13 17 12.6	+0.7	
	baz=238							
F29A	**Eureka**	107.62	46	Pdiff	**Pdif**	13 17 12.6	+0.6	
	baz=239							
BARC	**Barichara**	107.62	94	*e*P	**PP**	13 21 43.8	+1.5	
447A	**Lucedale**	107.64	65	Pdiff	**Pdif**	13 17 13.5	+1.1	
	baz=240							
G30A	**Faulkton**	107.67	47	Pdiff	**Pdif**	13 17 13.4	+1.1	
	baz=239							
S39A	**Bolivar**	107.70	56	Pdiff	**Pdif**	13 17 13.0	+0.5	
	baz=240							
K33A	**Hardington**	107.72	50	Pdiff	**Pdif**	13 17 13.6	+1.0	
	baz=240							
N35A	**Tabor**	107.72	52	Pdiff	**Pdif**	13 17 13.4	+0.8	
	baz=240							
H31A	**Wolsey**	107.74	48	Pdiff	**Pdif**	13 17 13.8	+1.2	
	baz=239							
NJS	**Nagarjunasagar**	107.78	278	*e*Pdif	**Pdif**	13 17 14.1	+0.7	
NJS				*e*		13 17 32.3		
NJS				*e*		13 21 21.6		
NJS				*e*PP	**PP**	13 21 40.7	-2.6	
NJS				*e*SKSac	**SKSac**	13 27 39.5	-5.1	
L34A	**Svendsen Farm,**	107.80	51	Pdiff	**Pdif**	13 17 12.9	0.0	
	baz=240							
O36A	**Bolckow**	107.80	53	Pdiff	**Pdif**	13 17 14.2	+1.3	
	baz=240							
JIRN	**Jiri**	107.88	292	*e*P	**PKKPbc**	13 32 36.2	+2.6	
D28A	**Regan**	107.88	45	Pdiff	**Pdif**	13 17 14.8	+1.6	
	baz=239							
SRLM	**Srisailam**	107.89	278	*e*Pdif	**Pdif**	13 17 14.4	+0.

comp=Z,6.2nm,0.7s,baz=171,slow=4.9,SNR=4.3
TLY PKKPbc **PKKPbc** **13 32 34.6 +2.4**
comp=Z,4.0nm,0.6s,baz=270,slow=6.1,SNR=5.7
TLY PKKP **PKKPdf** **13 32 47.3 +0.3**
comp=Z,8.5nm,0.8s,baz=276,slow=6.0,SNR=7.4
TLY Talaya 108.46 320 *i* P **Pdif** **13 17 24.1 +8.5**
P38A Dawn 108.51 54 Pdiff **Pdif** **13 17 17.3 +1.2**
baz=240
348A Jackson 108.51 64 Pdiff **Pdif** **13 17 16.8 +0.6**
baz=241
E30A Jud 108.51 46 Pdiff **Pdif** **13 17 15.6 -0.4**
baz=240
ECSD EROS Data Cent 108.53 49 Pdiff **Pdif** **13 17 16.6 +0.5**
baz=240
ECSD EROS Data Cent 108.53 49 *e*Pdif **Pdif** 13 17 21.2 +5.1
CBRI Barrientos, No 108.56 93 *e*P **PP** 13 21 48.9 -0.2
M36A Felix, Anita 108.56 52 Pdiff **Pdif** **13 17 17.0 +0.7**
baz=240
I33A Coleman 108.57 49 Pdiff **Pdif** **13 17 17.4 +1.1**
baz=240
F31A Hecla 108.58 47 Pdiff **Pdif** **13 17 17.4 +1.2**
baz=240
Q39A Willow Grove F 108.60 55 Pdiff **Pdif** **13 17 16.7 +0.2**
baz=241
N37A Lee Faris, Mou 108.61 53 Pdiff **Pdif** **13 17 17.5 +0.9**
baz=240
URV Uravakonda 108.63 276 *e*Pdif **Pdif** **13 17 16.6 -0.7**
URV *e*PP **PP** **13 21 47.0 -2.5**
URV *e*SKSac **SKSac** **13 27 42.3 -6.1**
KKN Kakani 108.64 291 *e*P **PKKPbc** **13 32 32.9 +1.9**
B28A Dugan Ranch, T 108.65 44 Pdiff **Pdif** **13 17 16.5 0.0**
baz=239
DMN Daman 108.69 291 *e*P **PKKPbc** **13 32 32.8 +1.9**
R40A Maddies Statio 108.72 56 Pdiff **Pdif** **13 17 17.3 +0.2**
baz=241
J34A George 108.72 50 Pdiff **Pdif** **13 17 17.3 +0.4**
baz=240
G32A Webster 108.73 48 Pdiff **Pdif** **13 17 17.7 +0.7**
baz=240
MDND Maddock 108.78 45 Pdiff **Pdif** **13 17 16.8 -0.4**
baz=240
O38A Galt 108.79 54 Pdiff **Pdif** **13 17 14.8 -2.6**
baz=241
HYB Hyderabad 108.84 279 *i* PKP **PKiKP** **13 21 23.5 +0.9**
HYB *e*PP **PP** **13 21 52.0 +0.9**
HYB *e*PPP PPP 13 24 14.0
HYB *e*SKSac **SKSac** **13 27 46.0 -3.2**
HYB *e*SKSdf **SKSdf** **13 28 24.0 -2.0**
HYB *e*SKKS **SKKSac** **13 28 42.0 -3.1**
HYB *e*SP **SP** **13 31 02.0 -4.8**
HYB *e*PKKPbc **PKKPbc** **13 32 32.5 +2.6**
HYB *e*PKKPab **PKKPdf** **13 32 45.0 0.0**
HYB *e*SS **SS** **13 37 00.0 -2.3**
HYB Hyderabad 108.84 279 *e*P **Pdif** **13 17 17.1 -1.0**
HYBB Hyderabad (bro 108.84 279 *e*Pdif **Pdif** **13 17 14.3 -3.8**
HYBB *e*PP **PP** **13 21 47.8 -3.3**
HYBB *e*SKSac **SKSac** **13 27 43.6 -5.6**
147A Livingston 108.85 63 Pdiff **Pdif** **13 17 19.2 +1.4**
baz=241
D30A Buchanan 108.90 46 Pdiff **Pdif** **13 17 19.4 +1.7**
baz=240
K35A Storm Lake 108.91 51 Pdiff **Pdif** **13 17 19.4 +1.6**
baz=241
H33A Prehn Over Nor 108.92 49 Pdiff **Pdif** **13 17 19.4 +1.6**
baz=240
A28A Rude Farm, Bot 108.94 43 Pdiff **Pdif** **13 17 19.1 +1.3**
baz=239
248A Dixon Mills 108.96 64 Pdiff **Pdif** **13 17 18.7 +0.4**
baz=241
L36A Harm Buss Farm 108.97 52 Pdiff **Pdif** **13 17 18.5 +0.4**
baz=241
RPR Rampur 108.97 280 *e*Pdif **Pdif** 13 17 13.6 -5.0
RPR *e* 13 21 22.1
RPR *e*PP **PP** **13 21 49.6 -2.4**
RPR *e*SKSac **SKSac** **13 27 44.1 -5.4**
M37A Trindle Farm, 109.03 53 Pdiff **Pdif** **13 17 17.8 -0.5**
baz=241
E31A Nome 109.15 46 Pdiff **Pdif** **13 17 19.9 +1.1**
baz=240
I34A Hadley 109.15 49 Pdiff **Pdif** **13 17 20.2 +1.3**
baz=241
Q40A Laux Farm, Aux 109.19 56 Pdiff **Pdif** **13 17 16.8 -2.3**
baz=241
J35A Milford 109.23 50 Pdiff **Pdif** **13 17 20.3 +1.1**
baz=241
B29A Wagenman Farm, 109.24 44 Pdiff **Pdif** **13 17 19.7 +0.6**
baz=240
GKN Gorkha 109.25 291 *e*P **PKKPbc** **13 32 30.9 +1.9**
F32A Veblen 109.27 47 Pdiff **Pdif** **13 17 19.0 -0.4**
baz=240
N38A Joes South For 109.27 53 Pdiff **Pdif** **13 17 18.3 -1.2**
baz=241
G33A Ortonville 109.36 48 Pdiff **Pdif** **13 17 19.1 -0.6**
baz=241
C30A Mose, Pekin 109.36 45 Pdiff **Pdif** **13 17 17.9 -1.9**
baz=240
K36A Gilmore City 109.37 51 Pdiff **Pdif** **13 17 18.5 -1.4**
baz=241
P40A Paris 109.46 55 Pdiff **Pdif** **13 17 20.0 -0.4**
baz=241
O39A Kirksville 109.48 54 Pdiff **Pdif** **13 17 18.7 -1.7**
baz=241
D31A Mcclaflin, Tow 109.49 46 Pdiff **Pdif** **13 17 21.2 +0.9**
baz=240
H34A Spellman Lake, 109.51 49 Pdiff **Pdif** **13 17 21.9 +1.5**
baz=241
A29A Manning Farm, 109.53 44 Pdiff **Pdif** **13 17 21.6 +1.2**
baz=240
L37A Phoenix Point, 109.57 52 Pdiff **Pdif** **13 17 22.3 +1.5**
baz=241
M38A Pleasantville 109.60 53 Pdiff **Pdif** **13 17 20.2 -0.7**
baz=241
I35A Creekview Farm 109.62 50 Pdiff **Pdif** **13 17 20.0 -0.9**
baz=241
E32A Braaten, Kindr 109.66 47 Pdiff **Pdif** **13 17 20.8 -0.2**
baz=241
YKA Yellowknife Ar 109.69 27 Pdiff **Pdif** **13 17 21.3 +0.6**
comp=Z,0.7nm,0.8s,baz=242,slow=4.1,SNR=11
YKA PKiKP **PKiKP** **13 21 23.2 +0.4**
comp=Z,4.9nm,0.6s,baz=245,slow=1.5,SNR=28
YKA SKiKP **SKiKP** **13 24 51.1 +1.9**
comp=Z,16nm,1.1s,baz=228,slow=1.9,SNR=9.5
YKA S **SKSac** **13 27 51.3 +0.7**
comp=Z,3.9nm,1.1s,baz=245,slow=4.7,SNR=3.8
YKA PKKPbc **PKKPbc** **13 32 26.6 -2.0**
comp=Z,12nm,0.7s,baz=42,slow=3.3,SNR=37
YKA PKKPab **PKKPab** **13 32 36.2 +0.2**
comp=Z,8.9nm,0.9s,baz=40,slow=3.1,SNR=4.3
YKA SKKPbc **SKKPbc** **13 36 00.5 -5.4**
comp=Z,3.0nm,0.9s,baz=31,slow=2.7,SNR=6.1
YKA PKPPKP **P'P'df** **13 40 57.5 +4.4**
comp=Z,2.2nm,1.0s,baz=41,slow=2.1,SNR=11
YKA tx tx 14 00 10.8
comp=Z,5.2nm,1.1s,baz=236,slow=4.2,SNR=34
YKB5 Yellowknife Ar 109.69 27 *e*Pdif **Pdif** **13 17 22.4 +1.7**
YKB5 *e*PKiKP **PKiKP** **13 21 21.0 -1.8**
YKB5 *e*PKKPbc PKKPbc 13 32 16.9 -12
YKW3 Yellowknife Ar 109.73 27 *e*Pdif **Pdif** **13 17 31.5 +11**
YKW3 *e*PKiKP **PKiKP** **13 21 23.2 +0.3**
YKW3 *e*PKKPbc **PKKPbc** **13 32 25.6 -2.9**
Y47A UCPARC, Winfie 109.75 62 Pdiff **Pdif** **13 17 21.2 -0.5**
baz=241
F33A 5 Mile Ranch, 109.76 48 Pdiff **Pdif** **13 17 19.2 -2.3**
baz=241
J36A Seneca 1, Swea 109.77 51 Pdiff **Pdif** **13 17 21.4 -0.3**
baz=241
SRSP Sriramsagar 109.78 280 *e*Pdif **Pdif** **13 17 20.2 -2.0**
SRSP *e*PP **PP** **13 21 55.2 -2.7**
SRSP *e*SKSac **SKSac** **13 27 46.3 -6.7**
N39A Derby Farms, D 109.80 54 Pdiff **Pdif** **13 17 22.1 +0.2**
baz=241
SCIA State Center 109.82 52 *e*PP PP 13 22 06.1 +8.2
B30A Myrvik Farm, E 109.82 44 Pdiff **Pdif** **13 17 19.4 -2.4**
baz=240
C31A Landman Farms, 109.85 45 Pdiff **Pdif** **13 17 22.9 +1.0**
baz=241
O40A La Belle 109.86 55 Pdiff **Pdif** **13 17 22.9 +0.7**
baz=242
G34A Benson 109.87 48 Pdiff **Pdif** **13 17 22.6 +0.5**
baz=241
KOLN Koldanda 109.94 290 *e*P **PKKPbc** **13 32 28.5 +1.6**
D32A Dogwood Acres, 109.95 46 Pdiff **Pdif** **13 17 23.8 +1.4**
baz=241
K37A Belmond 109.95 51 Pdiff **Pdif** **13 17 22.7 +0.2**
baz=241
LRAL Lakeview Retre 109.96 63 *e*PKiKP **PKiKP** **13 21 26.1 +1.8**
LRAL *e*PKKPdf **PKKPdf** **13 32 40.5 -2.8**
A30A Hoffart Farm, 110.08 44 Pdiff **Pdif** **13 17 23.7 +0.8**
baz=241
L38A Oak Wood Farm, 110.10 52 Pdiff **Pdif** **13 17 23.7 +0.5**
baz=242
H35A Sunnyside Ranc 110.12 49 Pdiff **Pdif** **13 17 21.9 -1.3**
baz=241
B31A Greenbush Farm 110.20 45 Pdiff **Pdif** **13 17 24.6 +1.2**
baz=241
E33A Westby DABS, E 110.25 47 Pdiff **Pdif** **13 17 23.5 -0.3**
baz=241
J37A Redenius Farm, 110.27 51 Pdiff **Pdif** **13 17 24.7 +0.8**
baz=242
I36A Fitzsimmons Fa 110.31 50 Pdiff **Pdif** **13 17 24.4 +0.4**
baz=242
F34A Alexandria 110.37 48 Pdiff **Pdif** **13 17 25.2 +1.0**
baz=242
K38A Parkersburg 110.46 52 Pdiff **Pdif** **13 17 25.0 +0.3**
baz=242
PYUN Piuthan 110.57 291 *e*P **PKKPbc** **13 32 26.7 +1.9**
C32A Crookston 110.57 46 Pdiff **Pdif** **13 17 25.6 +0.5**
baz=241
G35A Watkins 110.58 49 Pdiff **Pdif** **13 17 25.6 +0.4**
baz=242
H36A Jessenland, He 110.63 50 Pdiff **Pdif** **13 17 27.0 +1.6**
baz=242
D33A AnnSam, Waubun 110.66 47 Pdiff **Pdif** **13 17 24.9 -0.6**
baz=242
I37A Lemond, Waseca 110.70 50 Pdiff **Pdif** **13 17 26.3 +0.5**
baz=242
A31A Linda, St. Vin 110.72 44 Pdiff **Pdif** **13 17 27.9 +2.2**
baz=241
E34A Wadena 110.77 47 Pdiff **Pdif** **13 17 24.4 -1.6**
baz=242
KLRI Killari 110.77 278 *e*Pdif **Pdif** **13 17 24.9 -1.9**
KLRI *e* 13 17 49.0
KLRI *e* 13 21 26.9
KLRI *e*PP **PP** **13 22 02.4 -2.6**
KLRI *e*SKSac **SKSac** **13 27 51.0 -6.3**
WVT Waverly 110.81 60 *e*PKIKP **PKiKP** **13 21 29.6 +3.8**
F35A Swanville 110.83 48 Pdiff **Pdif** **13 17 24.5 -1.7**
baz=242
OPO Ambohidratompo 110.83 228 PKiKP **PKiKP** **13 21 26.4 -0.3**
comp=Z,10nm,0.7s,baz=151,slow=2.2,SNR=9.8
OPO SKiKP **SKiKP** **13 24 52.4 -0.8**
comp=Z,4.3nm,0.7s,baz=130,slow=2.2,SNR=3.1
OPO PKKPbc **PKKPbc** **13 32 24.6 +0.9**
comp=Z,16nm,1.2s,baz=331,slow=5.4,SNR=3.8
B32A Ashes, Strandq 110.84 45 Pdiff **Pdif** **13 17 23.9 -2.3**
baz=242
SUR Sutherland 110.84 199 Pdiff **Pdif** **13 17 27.3 +0.2**
comp=Z,0.9nm,0.9s,baz=170,slow=8.0,SNR=6.5
SUR PKiKP **PKiKP** **13 21 25.7 -0.7**
comp=Z,1.8nm,0.7s,baz=252,slow=2.0,SNR=18
SUR PKKPbc **PKKPbc** **13 32 23.5 -0.6**
comp=Z,1.1nm,0.8s,baz=359,slow=8.1,SNR=8.5
SUR PKKPab **PKKPab** **13 32 36.1 -2.1**
comp=Z,2.2nm,0.9s,baz=329,slow=2.3,SNR=6.8
FFC Flin Flon 110.95 37 *e*PKiKP **PKiKP** **13 21 26.2 +0.7**
FFC Flin Flon 110.95 37 *e*PKiKP **PKiKP** **13 21 26.2 +0.7**
FFC *e*PKKPab **PKKPab** **13 32 29.7 -1.2**
J38A Wedel Dairy, R 110.97 51 Pdiff **Pdif** **13 17 24.1 -2.8**
baz=242
C33A Trail 110.99 46 Pdiff **Pdif** **13 17 28.8 +1.8**
baz=242
D34A Park Rapids 111.02 47 Pdiff **Pdif** **13 17 25.6 -1.5**
baz=242
G36A St. Michael 111.05 49 Pdiff **Pdif** **13 17 24.3 -3.0**
baz=242
A32A Rocking H Ranc 111.11 45 Pdiff **Pdif** **13 17 25.8 -1.7**
baz=242
AGMN Agassiz Nation 111.19 45 PKiKP **PKiKP** **13 21 26.6 +0.5**
AGMN *e*PKKPbc **PKKPbc** **13 32 21.8 -1.4**
E35A Pequot Lakes 111.25 48 Pdiff **Pdif** **13 17 24.7 -3.5**
baz=242
H37A Dierke Farm, C 111.27 50 Pdiff **Pdif** **13 17 30.0 +1.7**
baz=242
B33A Robert and Kas 111.34 46 Pdiff **Pdif** **13 17 30.5 +2.0**
baz=242
I38A Scanlan Farm, 111.39 51 Pdiff **Pdif** **13 17 28.9 0.0**
baz=243
C34A RKJ Ranch, Bem 111.45 46 Pdiff **Pdif** **13 17 27.1 -2.0**
baz=242
F36A Milaca 111.48 49 Pdiff **Pdif** **13 17 29.7 +0.5**
baz=243
TIXI Tiksi 111.54 345 Pdiff **Pdif** **13 17 29.4 +0.6**
comp=Z,0.5nm,0.6s,baz=154,slow=9.3,SNR=2.6
TIXI PKiKP **PKiKP** **13 21 25.5 -0.5**
comp=Z,23nm,0.8s,baz=152,slow=2.4,SNR=28
TIXI Tiksi 111.54 345 *i* PKIKP **PKiKP** **13 21 25.6 -0.5**
TIXI MLR MLR
comp=Z,3µm,19.0s
SPMN Marine on St. 111.63 49 Pdiff **Pdif** **13 17 30.0 +0.1**
baz=243
SPMN Marine on St. 111.63 49 *e*PKiKP **PKiKP** **13 21 28.5 +1.5**
D35A Remer 111.71 47 Pdiff **Pdif** **13 17 30.8 +0.6**
baz=243
POGA Pongola 111.73 210 *i* P **PP** **13 22 10.4 0.0**
POGA 13 25 23.1
GOA Goa 111.74 274 *e*P **PKiKP** **13 21 29.2 +1.1**
SWET Sewanee 111.76 62 *e*PKiKP **PKiKP** **13 21 26.8 -0.8**
TIGA Tifton 111.76 66 Pdiff **Pdif** **13 17 30.4 -0.3**
baz=242
A33A Warroad 111.77 45 Pdiff **Pdif** **13 17 30.6 +0.2**
baz=242
USIN University of 111.77 58 *e*PP PP 13 22 11.6 -0.3
OLIL Olney 111.81 57 *e*PP PP 13 22 09.7 -2.4
HDIL Hopedale 111.81 55 Pdiff **Pdif** **13 17 31.6 +0.9**
baz=243
E36A McGregor 111.94 48 Pdiff **Pdif** **13 17 28.0 -3.2**
baz=243
B34A Aery, Baudette 112.00 46 Pdiff **Pdif** **13 17 24.1 -7.3**
baz=243
C35A Jirik Farms, M 112.04 47 Pdiff **Pdif** **13 17 27.5 -4.1**
baz=243
ULM Lac du Bonnet 112.09 44 Pdiff **Pdif** **13 17 31.5 -0.2**
comp=Z,0.9nm,0.4s,baz=322,slow=12,SNR=2.2
ULM PKiKP **PKiKP** **13 21 25.8 -2.0**
comp=Z,20nm,1.1s,baz=281,slow=2.0,SNR=8.9
ULM SKiKP **SKiKP** **13 24 55.1 +0.9**
comp=Z,7.6nm,1.0s,baz=228,slow=3.3,SNR=3.2
ULM PKKPbc **PKKPbc** **13 32 19.6 -0.6**
comp=Z,2.8nm,0.6s,baz=69,slow=3.7,SNR=3.1
ULM PKKPab **PKKPab** **13 32 28.1 +1.9**
comp=Z,7.7nm,0.9s,baz=52,slow=2.2,SNR=4.7
ULM Lac du Bonnet 112.09 44 Pdiff **Pdif** **13 17 31.5 -0.2**
ULM *e*PKiKP **PKiKP** **13 21 27.7 0.0**
ULM *e* 13 24 55.1
ULM PKKPbc **PKKPbc** **13 32 19.6 -0.6**
ULM PKKPab **PKKPab** **13 32 28.1 +1.9**
JFWS Jewell Farm 112.23 53 *e*PKIKP **PKiKP** **13 21 29.0 +0.7**
JFWS Jewell Farm 112.23 53 *e*PKiKP **PKiKP** **13 21 29.0 +0.7**
D36A Goodland 112.30 47 Pdiff **Pdif** **13 17 31.3 -1.5**
baz=243
B35A Bob, Littlefor 112.49 46 Pdiff **Pdif** **13 17 34.3 +0.7**
baz=243
E37A Wrenshall 112.49 48 Pdiff **Pdif** **13 17 29.7 -4.0**
baz=244
BHPL Bhopal 112.65 283 *e*P **PKiKP** **13 21 29.8 +0.1**
D37A Cotton 112.74 48 Pdiff **Pdif** **13 17 32.8 -2.0**
baz=244
C36A Pine Crest Far 112.75 47 Pdiff **Pdif** **13 17 35.5 +0.7**
baz=244
GOGA Godfrey 112.76 64 *e*PKIKP **PKiKP** **13 21 30.8 +1.2**
GOGA Godfrey 112.76 64 *e*PKiKP **PKiKP** **13 21 30.8 +1.2**
WCI Wyandotte Cave 112.85 59 *e*PKIKP **PKiKP** **13 21 30.6 +0.9**
WCI Wyandotte Cave 112.85 59 *e*PKiKP **PKiKP** **13 21 30.6 +0.9**
CPCT Cooper Cave 112.89 62 *e*PKiKP **PKiKP** **13 21 30.2 +0.4**
CPCT *e*PKKPbc **PKKPbc** **13 32 18.8 +1.7**
BOSA Boshof 113.01 204 *i* P **PKiKP** **13 21 30.8 +0.3**
BOSA Boshof 113.01 204 Pdiff **Pdif** **13 17 38.4 +1.6**
comp=Z,2.9nm,0.5s,baz=169,slow=8.9,SNR=4.6
BOSA PKiKP **PKiKP** **13 21 30.5 0.0**
comp=Z,26nm,0.8s,baz=165,slow=3.3,SNR=18
BOSA PP **PP** **13 22 19.2 -0.3**
comp=Z,21nm,1.0s,baz=145,slow=6.9,SNR=4.7
BOSA SKiKP **SKiKP** **13 24 56.6 -0.6**
comp=Z,11nm,0.9s,baz=172,slow=6.9,SNR=3.8
BOSA PKKPbc **PKKPbc** **13 32 17.6 +0.9**
comp=Z,6.7nm,1.0s,baz=315,slow=6.2,SNR=3.7
BOSA PKKPab **PKKPab** **13 32 26.9 -1.4**
comp=Z,27nm,1.0s,baz=331,slow=6.2,SNR=12
BOSA SKKPbc **SKKPbc** **13 35 52.0 +2.6**
comp=Z,7.2nm,1.0s,baz=335,slow=6.9,SNR=3.5
BOSA PKPPKP **P'P'df** **13 40 50.5 -0.2**
comp=Z,12nm,1.2s,baz=16,slow=3.4,SNR=4.7
BOSA Boshof 113.01 204 Pdif **Pdif** **13 17 38.4 +1.6**
BOSA *e*PKiKP **PKiKP** **13 21 30.9 +0.3**
BOSA PP **PP** **13 22 19.2 -0.3**
BOSA *e* 13 24 56.6
BOSA PKKPbc **PKKPbc** **13 32 17.6 +0.9**
BOSA *e*PKKPab **PKKPab** **13 32 26.9 -1.4**
BOSA SKKPbc SKKPbc 13 35 52.0 +2.6
BOSA P'P' 13 40 50.5
C37A Embarrass 113.14 47 Pdiff **Pdif** **13 17 37.5 +1.0**
baz=244
SFIN Lafayette 113.24 56 Pdiff **Pdif** **13 17 35.0 -2.1**
baz=244
SFIN Lafayette 113.24 56 *e*PP PP 13 22 21.3 -1.0
POO Poona 113.26 277 *e*P **PKiKP** **13 21 31.4 +0.4**
TKL Tuckaleechee C 113.53 62 PKKPbc PKKPbc 13 32 15.5 +0.6
comp=Z,3.2nm,0.7s,baz=31,slow=5.9,SNR=2.9
EYMN Ely 113.65 47 Pdiff **Pdif** **13 17 37.8 -1.0**
baz=245
EYMN Ely 113.65 47 *e*PKiKP **PKiKP** **13 21 29.9 -0.9**
C38A Sawbill Land. 113.69 47 Pdiff **Pdif** **13 17 40.0 +1.0**
baz=245
PTGA Pitinga 114.08 109 PKKPbc PKKPbc 13 32 13.5 +1.0
comp=Z,5.1nm,1.1s,baz=323,slow=20,SNR=3.1
PTGA Pitinga 114.08 109 *e*PKiKP PKPdf 13 21 31.2 -1.5
PTGA PKKPbc **PKKPbc** **13 32 13.5 +1.0**
TZTN Tazewell 114.08 61 *e*PKiKP **PKiKP** **13 21 34.1 +2.1**
TZTN *e*PP **PP** **13 22 27.9 -0.5**
WMQ Urumqi 114.23 308 PKP PKPdf 13 21 32.6 +0.5
WMQ PP **PP** **13 22 33.9 +4.5**
WMQ PKS **PKSdf** **13 25 09.3 +0.5**
WMQ SS SS 13 38 19.4 +6.0
WMQ AMB AMB
comp=Z,1µm,11.0s
WMQ LR LR
comp=Z,760nm,24.0s
WMQ LR LR
comp=Z,470nm,20.0s
COWI Conover 114.33 50 *e*PKiKP **PKiKP** **13 21 32.4 +0.2**
C39A Grand Marais 114.43 48 Pdiff **Pdif** **13 17 44.1 +1.9**
baz=245
KMSC Kings Mountain 115.10 63 Pdiff **Pdif** **13 17 46.7 +1.2**
baz=244
KMSC Kings Mountain 115.10 63 *e*PKiKP **PKiKP** **13 21 35.4 +1.4**
NDI New Delhi 115.34 289 *ex* **PKPdf** **13 21 30.0 -4.7**
NDI *ex* x 13 32 07.0
DDI Dehra Dun 115.41 290 *e*P **PKPdf** **13 21 34.1 -0.7**
SDDR Presa de Saban 115.68 84 *e*PKPdf **PKPdf** **13 21 35.4 -0.2**
ACSO Alum Creek Sta 116.03 58 *e*PKPdf **PKPdf** **13 21 35.4 -0.2**
LBTB Lobatse 116.19 206 PKP **PKPdf** **13 21 36.3 -0.4**
comp=Z,17nm,0.8s,baz=149,slow=2.9,SNR=14
LBTB PP **PP** **13 22 41.6 -0.3**
comp=Z,43nm,1.1s,baz=189,slow=12,SNR=4.2
LBTB SKP **SKPdf** **13 25 02.8 -0.4**
comp=Z,6.2nm,0.8s,baz=126,slow=3.8,SNR=3.5
LBTB Lobatse 116.19 206 *e*PKPdf **PKPdf** **13 21 36.3 -0.4**
LBTB PP **PP** **13 22 41.6 -0.3**
LBTB SKP **SKPdf** **13 25 02.8 -0.4**
LBTB *e*PKKPbc **PKKPbc** **13 32 07.3 +1.4**
AAM Ann Arbor 116.39 55 *e*PKIKP **PKPdf** **13 21 38.3 +2.1**
AAM Ann Arbor 116.39 55 *e*PKPdf **PKPdf** **13 21 38.3 +2.1**
SMLA Simla 116.45 291 *e*P **PKPdf** **13 21 36.3 -0.4**
FCC Fort Churchill 116.63 36 *e*PKIKP **PKPdf** **13 21 36.0 -0.1**
FCC Fort Churchill 116.63 36 *e*PKPdf **PKPdf** **13 21 36.0 -0.1**
FCC *e*PKKPbc **PKKPab** **13 32 06.3 +0.6**
BLA Blacksburg 116.64 62 *e*PKIKP **PKPdf** **13 21 37.8 +0.8**
BLA Blacksburg 116.64 62 *e*PKPdf **PKPdf** **13 21 37.8 +0.8**
DHRM DHARAMSHALA 117.60 292 *e*P **PKPdf** **13 21 38.4 -0.8**
DHRM IAmb IAmb 13 21 40.7
comp=Z,120nm,1.7s
MCWV Mont Chateau 118.02 59 *e*PKPdf **PKPdf** **13 21 39.2 -0.3**
THN Thein Dam 118.12 292 *e*P **PKPdf** **13 21 38.0 -1.9**
THN *ex* x 13 28 31.0
N54A Moraine State 118.41 58 Pdiff **Pdif** **13 17 54.1 -6.1**
baz=248
ALLY Alegheny Colle 118.56 57 *e*PKPdf **PKPdf** **13 21 41.8 +1.3**
JSRW J. Sargeant Re 118.68 62 *e*PKPdf **PKPdf** **13 21 41.5 +0.7**
ERPA Erie 118.84 57 *e*PKPdf **PKPdf** **13 21 40.3 -0.7**
M54A Oil Creek Stat 118.84 57 Pdiff **Pdif** **13 17 56.2 -5.8**
baz=248
URVA University of 118.89 62 *e*PKPdf **PKPdf** **13 21 41.6 +0.4**
MK31 Makanchi Array 118.89 309 *i* PKIKP **PKPdf** **13 21 39.3 -1.7**
MK31 pmax pmax
comp=Z,90nm,1.2s
MKAR Makanchi Array 118.89 309 PKP **PKPdf** **13 21 39.1 -1.9**
comp=Z,32nm,0.9s,baz=90,slow=1.8,SNR=54
MKAR SKP **SKPdf** **13 25 08.0 +0.5**
comp=Z,5.5nm,0.7s,baz=139,slow=0.8,SNR=3.9
MKAR PKKPab **PKKPbc** **13 31 51.4 -5.2**
comp=Z,4.0nm,1.0s,baz=306,slow=3.2,SNR=5.8
MKAR PKKPbc **PKKPab** **13 31 56.6 -0.1**
comp=Z,26nm,0.9s,baz=305,slow=4.1,SNR=24
MKAR PKKP **PKKPdf** **13 32 27.6 +0.8**
comp=Z,4.6nm,0.6s,baz=282,slow=6.3,SNR=4.8
MKAR SKKPbc **SKKPbc** **13 35 37.6 +1.3**
comp=Z,3.6nm,0.9s,baz=296,slow=2.7,SNR=3.0
MKAR SKKP **SKKPdf** **13 35 57.1 +3.5**
comp=Z,16nm,1.2s,baz=302,slow=2.7,SNR=4.3
MKAR Makanchi Array 118.89 309 *e*PKPdf **PKPdf** **13 21 39.5 -1.5**
MKAR SKP **SKPdf** **13 25 08.0 +0.5**
MKAR *e*PKKPbc **PKKPbc** **13 31 52.2 -4.3**
MKAR PKKP **PKKPdf** **13 32 27.6 +0.8**
MKAR SKKPbc **SKKPbc** **13 35 37.6 +1.3**
MKAR SKKP **SKKPdf** **13 35 57.1 +3.5**
MAKZ Makanchi 119.10 309 *e*PKIKP **PKPdf** **13 21 39.3 -2.1**
MAKZ Makanchi 119.10 309 *e*PKPdf **PKPdf** **13 21 39.3 -2.1**
MAKZ *e*PKKPbc **PKKPbc** **13 31 51.4 -4.3**
CELP Cerrillos 119.12 87 *e*PKPdf **PKPdf** **13 21 40.5 -1.7**
O56A Blue Knob Stat 119.16 59 Pdiff **Pdif** **13 18 05.7 +2.2**
baz=248
MATP Matopo 119.18 211 *i* P **PKPdf** **13 21 42.0 -0.5**
MATP Matopo 119.18 211 PKP **PKPdf** **13 21 41.2 -1.4**
comp=Z,64nm,0.8s,baz=188,slow=1.8,SNR=42
MATP SKP **SKPdf** **13 25 07.7 -1.5**
comp=Z,44nm,1.1s,baz=196,slow=2.8,SNR=5.2
SJG San Juan 119.50 87 *e*PKIKP **PKPdf** **13 21 41.8 -1.1**
SJG San Juan 119.50 87 *e*PKPdf **PKPdf** **13 21 41.8 -1.1**
ZAA0 Zalesovo Array 119.74 317 *e*PKPdf **PKPdf** **13 21 40.0 -2.3**
ZAA0 *e*PKPdf **PKiKP** **13 21 40.3 -2.1**
ZAA0 *e*PKKPbc **PKKPbc** **13 31 54.2 +0.6**
ZAA0 *e*PKKPbc **PKKPab** **13 31 54.8 +2.2**
ZALV Zalesovo Beam 119.74 317 PKhKP PKPpre 13 21 40.1
comp=Z,11nm,0.3s,baz=147,slow=2.6,SNR=30
ZALV PKP **PKPdf** **13 21 41.8 -0.5**
comp=Z,15nm,0.5s,baz=150,slow=2.2,SNR=31
ZALV SKP **SKPdf** **13 25 08.6 -0.2**
comp=Z,5.5nm,0.8s,baz=143,slow=2.4,SNR=2.8
ZALV PKKPbc **PKKPab** **13 31 52.7 +0.2**
comp=Z,4.3nm,0.7s,baz=297,slow=4.2,SNR=7.1
ZALV PKKP **PKKPdf** **13 32 23.6 -1.8**
comp=Z,2.4nm,0.6s,baz=292,slow=4.5,SNR=3.1
ZALV SKKPbc **SKKPbc** **13 35 32.9 -1.3**
comp=Z,1.8nm,0.8s,baz=281,slow=2.8,SNR=3.7
ZALV SKKP 13 35 48.6
comp=Z,12nm,1.1s,baz=285,slow=6.8,SNR=4.2
HUMP Col San Antoni 119.76 88 *e*PKPdf **PKPdf** **13 21 43.2 -0.3**
SSPA Standing Stone 119.78 59 *e*PKPdf **PKPdf** **13 21 43.0 +0.2**
UZB Uzynbulak 119.80 304 *e*PKP **PKPdf** **13 21 41.2 -1.8**
comp=Z,487nm,1.3s
UZB *i* PP **PP** **13 23 04.5 -3.8**
UZB *i* SKSac **SKSac** **13 28 27.2 -3.4**
UZB *i* SKS **SKSdf** **13 28 42.7 -3.4**
CBYP Canovanas 119.82 87 *e*PKPdf **PKPdf** **13 21 45.1 +1.4**
SDMD Soldier's Deli 120.08 61 *e*PKPdf **PKPdf** **13 21 43.4 -0.1**
GRGR Grenville 120.15 96 *e* PP 13 23 00.4 -10
GRGR Grenville 120.15 96 *e*PKPdf **PKPdf** **13 21 42.7 -1.6**
SADO Sadowa 120.35 54 *e*PKPdf **PKPdf** **13 21 43.9 +0.1**
MMNY Mt. Morris Dam 120.50 57 *e*PKPdf **PKPdf** **13 21 46.1 +1.9**
KSH Kashi 120.66 299 PKP **PKPdf** **13 21 44.1 -0.7**
KSH *e*PP **PP** **13 23 16.4 +2.1**
KSH SKKS 13 30 04.3
KSH SS **SS** **13 39 40.8 +3.5**
KSH AMB AMB
comp=Z,690nm,7.6s
KSH LR LR
comp=Z,3µm,23.3s
KSH LR LR
comp=Z,1µm,15.0s
KSH LR LR
comp=Z,5µm,26.2s
NVS Novosibirsk 120.89 318 *e*PKIKP **PKPdf** **13 21 42.8 -1.7**
NVS *e* 13 28 32.1
NVS pmax pmax

comp=N,29nm,1.2s
NVS pmax pmax
comp=E,57nm,1.2s
NVS pmax pmax
comp=Z,91nm,1.2s
NVS pmax pmax
comp=N,122nm,3.3s
NVS pmax pmax
comp=E,389nm,3.3s
MDOK Medeo 121.16 304 ⇑ *i* PKP **PKPdf 13 21 45.6 0.0**
comp=E,248nm,1.5s
MDOK *i* PP **PP 13 23 17.2 -0.4**
MDOK *i* SKSac **SKSac 13 28 35.5 +0.2**
MDOK *i* PS **PS 13 32 57.8 -13**
MDOK *i* SSS SSS 13 44 10.1
SEM Semipalatinsk 121.34 312 *e*PKP **PKPdf 13 21 43.6 -1.9**
SEM *e*PP **PP 13 23 17.6 -0.8**
N59A State Game Lan 121.38 59 Pdiff **Pdif 13 18 10.2 -3.1**
baz=250
CHKK Chushkaly 121.42 304 *i* PKP **PKPdf 13 21 43.6 -2.4**
comp=E,331nm,1.2s
RES Resolute Bay 121.47 18 PKhKP PKPpre 13 21 43.3
comp=E,58nm,0.9s,baz=280,slow=3.3,SNR=67
RES PKP **PKiKP 13 21 45.4 +0.2**
comp=E,108nm,0.9s,baz=285,slow=1.4,SNR=68
RES Resolute Bay 121.47 18 *e*PKPdf **PKPdf 13 21 43.5 -1.6**
RES *e*PKKPbc **PKKPbc 13 31 48.7 +1.2**
LUPA Lehigh Univers 121.56 60 *e*PKPdf **PKPdf 13 21 47.0 +0.8**
KSPA Keystone Colle 121.60 59 *e*PKPdf **PKPdf 13 21 46.6 +0.3**
BINY Binghamton 121.66 58 *e*PKPdf **PKPdf 13 21 47.4 +1.0**
SABA Saba 121.66 89 *e* **PP 13 23 17.0 -4.2**
SEUS St. Eustatius 121.81 90 *e* **PP 13 23 16.5 -5.7**
FDF Fort de France 121.94 94 *e*PKIKP **PKPdf 13 21 47.8 0.0**
FDF Fort de France 121.94 94 *e*PKPdf **PKPdf 13 21 46.6 -1.2**
CXM Morne La Croix 121.96 93 *e*P **PKPdf 13 21 49.8 +1.9**
SMRT St. Maarten 122.01 89 *e*PKPdf **PKPdf 13 21 47.7 -0.1**
MLYT Lee's Yard 122.09 91 *e* PP 13 23 12.9 -11
TKM2 Tokmak 2 122.09 303 PKIKP **PKPdf 13 21 45.6 -1.9**
TKM2 pmax pmax
comp=Z,59nm,0.9s
TKM2 Tokmak 2 122.09 303 *e*PKPdf **PKPdf 13 21 45.2 -2.3**
TKM2 *e*PKKPbc **PKKPbc 13 31 45.5 +0.8**
DLPL La Plaine 122.16 93 *e* **PP 13 23 24.9 +0.4**
ODNJ Ogdensburg 122.27 60 *e*PKPdf **PKPdf 13 21 47.1 -0.5**
BBGH Gun Hill 122.42 96 *e*P PKPpre 13 21 39.9
KURK Kurchatov 122.42 312 PKIKP **PKPdf 13 21 47.4 -0.2**
KURK pmax pmax
comp=Z,42nm,0.7s
KURK pmax pmax
comp=Z,30nm,1.2s
KURK pmax pmax
comp=Z,5.0nm,1.0s
KURK Kurchatov 122.42 312 *e*PKPdf **PKPdf 13 21 45.4 -2.2**
KURK PKKPbc **PKKPbc 13 31 43.1 -0.2**
KURK PKKP **PKKPdf 13 32 14.4 -5.7**
KURK SKKPbc SKKPbc 13 35 25.2 +0.1
KURK Kurchatov 122.42 312 P **PKPdf 13 21 45.9 -1.7**
SNR=57
KURK Kurchatov 122.42 312 PKPdf **PKPdf 13 21 45.9 -1.7**
SNR=57
NRIK Noril'sk 122.44 335 PKhKP PKPpre 13 21 46.3
comp=Z,54nm,0.8s,baz=89,slow=2.0,SNR=24
NRIK PKP **PKiKP 13 21 47.8 +0.5**
comp=Z,54nm,0.8s,baz=113,slow=2.5,SNR=32
NRIK PKKPbc **PKKPbc 13 31 42.7 -1.0**
comp=Z,12nm,1.1s,baz=276,slow=4.0,SNR=8.6
NRIK SKKPbc SKKPbc 13 35 27.5 +1.3
comp=Z,4.3nm,0.7s,baz=171,slow=8.7,SNR=2.5
NRIK SKKP 13 35 47.0
comp=Z,5.2nm,0.9s,baz=254,slow=7.3,SNR=2.1
KURBB Kurchatov Arra 122.45 312 PKhKP PKPpre 13 21 45.4
comp=Z,20nm,0.4s,baz=114,slow=2.0,SNR=80
KURBB PKP **PKPdf 13 21 47.4 -0.2**
comp=Z,42nm,0.7s,baz=115,slow=2.0,SNR=88
KURBB PKKPbc **PKKPbc 13 31 43.1 -0.1**
comp=Z,30nm,1.2s,baz=289,slow=5.0,SNR=26
KURBB PKKP **PKKPdf 13 32 14.4 -5.6**
comp=Z,4.9nm,1.0s,baz=288,slow=4.8,SNR=5.2
KURBB SKKPbc SKKPbc 13 35 25.2 +0.2
comp=Z,13nm,1.2s,baz=278,slow=4.7,SNR=3.4
VLDQ Val d'Or 122.50 51 *e*PKPdf **PKPdf 13 21 47.3 -0.5**
BPA Boggy Peak 122.52 91 *e* **PP 13 23 27.3 +0.2**
PAL Palisades 122.74 60 *e*PKIKP **PKPdf 13 21 50.0 +1.5**
PAL Palisades 122.74 60 *e*PKPdf **PKPdf 13 21 50.0 +1.5**
FRU Bishkek 122.74 302 *i* PKIKP **PKPdf 13 21 46.0 -2.5**
FRU *i* 13 23 38.0
FRU *e* 13 28 37.0
FRU pmax pmax
comp=Z,126nm,1.5s
AAK Ala-Archa 122.76 302 PKKPbc PKKPbc 13 31 42.3 +0.3
comp=Z,48nm,1.0s,baz=239,slow=3.8,SNR=19
AAK SKKPbc SKKPbc 13 35 19.2 -4.3
comp=Z,8.8nm,1.1s,baz=318,slow=1.0,SNR=3.0
AAK Ala-Archa 122.76 302 *e*PKIKP **PKPdf 13 21 46.7 -2.0**
AAK Ala-Archa 122.76 302 *e*PKPdf **PKPdf 13 21 46.7 -2.0**
AAK *e*PKKPbc **PKKPbc 13 31 43.7 +1.6**
AAK SKKPbc SKKPbc 13 35 19.2 -4.3
AAK Ala-Archa 122.76 302 P **PKPdf 13 21 47.9 -0.9**
SNR=31
AAK Ala-Archa 122.76 302 PKPdf **PKPdf 13 21 47.9 -0.9**
SNR=31
ANWB Willy Bob 122.89 90 *e*P **PKPdf 13 21 48.8 -0.7**
EKS2 Erkin-Say 123.28 302 *e*PKIKP **PKPdf 13 21 48.9 -0.8**
EKS2 Erkin-Say 123.28 302 *e*PKPdf **PKPdf 13 21 48.1 -1.6**
LONY Lake Ozonia 123.39 56 *e*PKPdf **PKPdf 13 21 48.3 -1.4**
ACCN Adirondack Com 123.65 57 *e*PKPdf **PKPdf 13 21 50.3 +0.1**
LSZ Lusaka 123.86 213 PKP **PKPdf 13 21 51.6 0.0**
comp=Z,81nm,0.9s,baz=162,slow=2.6,SNR=49
LSZ SKP 13 25 18.5
comp=Z,30nm,0.9s,baz=150,slow=2.3,SNR=4.4
LSZ PKKPbc **PKKPbc 13 31 38.4 +1.0**
comp=Z,13nm,0.9s,baz=12,slow=4.7,SNR=7.7
LSZ PKKP PKKPdf 13 32 07.0 -8.9
comp=Z,32nm,1.2s,baz=359,slow=4.2,SNR=5.3
LSZ SKKPbc SKKPbc 13 35 11.9 -3.8
comp=Z,4.0nm,0.8s,baz=320,slow=7.9,SNR=2.9
LSZ Lusaka 123.86 213 *e*PKPdf **PKPdf 13 21 51.2 -0.4**
LSZ SKP 13 25 18.5
LSZ *e*PKKPbc **PKKPab 13 31 40.8 +0.2**
LSZ PKKP PKKPdf 13 32 07.0 -8.9
LSZ SKKPbc SKKPbc 13 35 11.9 -3.8
KBL Kabul 124.08 291 *e*PKIKP **PKPdf 13 21 50.8 -0.8**
KBL Kabul 124.08 291 *e*PKPdf **PKPdf 13 21 49.8 -1.8**
MNAS Manas 124.12 302 PKIKP **PKPdf 13 21 48.9 -2.4**
MNAS pmax pmax
comp=Z,117nm,1.3s
FRNY Flat Rock 124.13 56 *e*PKPdf **PKPdf 13 21 49.8 -1.3**
MDV Middlebury 124.17 57 *e*PKPdf **PKPdf 13 21 51.8 +0.7**
TSUM Tsumeb 124.22 200 PKP **PKPdf 13 21 51.9 -0.4**
comp=Z,79nm,1.0s,baz=162,slow=2.5,SNR=34
TSUM PP **PP 13 23 35.4 -1.5**
comp=Z,28nm,0.8s,baz=168,slow=8.7,SNR=5.4
TSUM PKKPbc **PKKPbc 13 31 37.3 +1.2**
comp=Z,10nm,1.1s,baz=6.2,slow=2.3,SNR=6.4
TSUM SKKPbc SKKPbc 13 35 17.8 +3.3
comp=Z,12nm,1.1s,baz=2.9,slow=3.3,SNR=6.1
HRV Adam Dziewonsk 124.87 59 *e*PKIKP **PKPdf 13 21 53.4 +0.9**
HRV Adam Dziewonsk 124.87 59 *e*PKPdf **PKPdf 13 21 53.4 +0.9**
KKAR Karatay Array 125.70 302 *e*PKIKP **PKPdf 13 21 52.7 -1.5**
KKAR Karatay Array 125.70 302 *e*PKPdf **PKPdf 13 21 52.7 -1.5**
IUG Iuzhnay 125.78 300 *i* PKP **PKPdf 13 21 53.8 -0.7**
comp=Z,1μm,1.2s
IUG *i* PP **PP 13 23 45.6 -3.0**
IUG *i* SKSac **SKSac 13 28 49.4 -0.9**
BRZS Berezniki 125.94 310 *e*PKP **PKPdf 13 21 52.5 -1.9**
comp=Z,75nm,1.1s
BRZS *i* PP **PP 13 23 47.2 -2.2**
BBSR BB Station 126.79 73 *e*PKPdf **PKPdf 13 21 57.9 +1.4**
LMQ La Malbaie 127.00 53 *e*PKPdf **PKPdf 13 21 56.6 +0.1**
PKME Peaks-Kenny Pk 127.18 56 *e*PKPdf **PKPdf 13 21 56.2 -0.6**
DODT Dodoma, Tanzan 127.41 227 *i* P **PKPdf 13 21 59.1 +0.6**
DODT 13 25 07.0
WBK Wadi Bani Khal 127.45 274 P **PKPdf 13 21 59.6 +1.5**
SNR=7.3
WBK Wadi Bani Khal 127.45 274 PKPdf **PKPdf 13 21 59.6 +1.5**
SNR=7.3
RCBR Riachuelo 127.68 133 PKP **PKPdf 13 21 59.2 +0.3**
comp=Z,184nm,1.2s,baz=133,slow=2.6,SNR=16
RCBR PKKPbc PKKPbc 13 31 26.5
comp=Z,9.4nm,0.8s,baz=323,slow=2.1,SNR=3.7
RCBR Riachuelo 127.68 133 *e*PKPdf **PKPdf 13 22 00.1 +1.2**
RCBR PKKPbc PKKPbc 13 31 26.5
BVAR Borovoye Array 127.90 314 PKhKP PKPpre 13 21 46.4
comp=Z,1.0nm,0.6s,baz=85,slow=3.7,SNR=3.6
BVAR PKP **PKPdf 13 21 57.5 -0.6**
comp=Z,18nm,0.4s,baz=96,slow=3.0,SNR=59
BRVK Borovoye 127.97 314 *c i*PKIKP **PKPdf 13 21 57.0 -1.1**
BRVK Borovoye 127.97 314 *e*PKPpre PKPpre 13 21 50.5
BRVK *e*PKPdf **PKPdf 13 21 56.8 -1.4**
BRVK Borovoye 127.97 314 P **PKPdf 13 21 57.6 -0.5**
SNR=67
BRVK Borovoye 127.97 314 PKPdf **PKPdf 13 21 57.6 -0.5**
SNR=67
WSAR Wadi Sarin 128.01 274 PKP **PKPdf 13 21 59.3 +0.1**
comp=Z,36nm,1.1s,baz=234,slow=2.2,SNR=8.1
WSAR SKPbc SKPbc 13 25 10.4
comp=Z,8.6nm,0.6s,baz=225,slow=4.6,SNR=5.6
JMDO Jabal Madar 128.06 273 P **PKPdf 13 21 59.6 +0.3**
SNR=15
JMDO Jabal Madar 128.06 273 PKPdf **PKPdf 13 21 59.6 +0.3**
SNR=15
SMDO Samad 128.41 274 P **PKPdf 13 22 01.7 +1.7**
SNR=18
SMDO Samad 128.41 274 PKPdf **PKPdf 13 22 01.7 +1.7**
SNR=18
BIDO Bidbid 128.55 274 P **PKPdf 13 22 02.0 +1.8**
SNR=7.4
BIDO Bidbid 128.55 274 PKPdf **PKPdf 13 22 02.0 +1.8**
SNR=7.4
ZRNK Zerenda 128.72 314 PKIKP **PKPdf 13 21 58.8 -0.8**
ZRNK pmax pmax
comp=Z,178nm,1.3s
ZRNK Zerenda 128.72 314 *e*PKPpre PKPpre 13 21 49.3
ZRNK *e*PKPdf **PKPdf 13 21 58.0 -1.6**
GGN Saint George 128.83 57 *e*PKPdf **PKPdf 13 21 59.9 -0.1**
BSY Bisya 128.98 273 P **PKPdf 13 22 00.2 -0.8**
SNR=14
BSY Bisya 128.98 273 PKPdf **PKPdf 13 22 00.2 -0.8**
SNR=14
HOQ Hoqain 129.25 274 P **PKPdf 13 22 00.3 -1.2**
SNR=12
HOQ Hoqain 129.25 274 PKPdf **PKPdf 13 22 00.3 -1.2**
SNR=12
ABTO Aybut 129.66 264 P **PKPdf 13 22 02.2 -0.3**
SNR=16
ABTO Aybut 129.66 264 PKPdf **PKPdf 13 22 02.2 -0.3**
SNR=16
SHEL Horse Pasture 129.74 173 *e*PKIKP **PKPdf 13 22 05.8 +3.0**
SHEL Horse Pasture 129.74 173 *e*PKPdf **PKPdf 13 22 05.8 +3.0**
ARQ Araqi 129.80 273 P **PKPdf 13 22 01.2 -1.3**
SNR=16
ARQ Araqi 129.80 273 PKPdf **PKPdf 13 22 01.2 -1.3**
SNR=16
ARQ Araqi 129.80 273 P SKPab 13 25 13.1 -2.5
SNR=5.2
SCHQ Schefferville 130.26 44 PKP **PKPdf 13 22 01.4 -1.1**
comp=Z,58nm,1.3s,baz=294,slow=1.3,SNR=8.2
SCHQ SKPbc **SKPbc 13 25 17.8 +1.1**
comp=Z,304nm,1.2s,baz=273,slow=4.0,SNR=26
SCHQ Schefferville 130.26 44 *e*PKPdf **PKPdf 13 21 60.0 -2.5**
SCHQ *e*SKPbc **SKPbc 13 25 17.1 +0.4**
KMBO Kilima Mbogo 130.35 233 PKhKP PKPpre 13 21 55.0
comp=Z,1.3nm,0.4s,baz=145,slow=3.3,SNR=5.2
KMBO PKP **PKPdf 13 22 04.0 -0.3**
comp=Z,37nm,1.1s,baz=35,slow=2.1,SNR=14
KMBO SKPbc **SKPbc 13 25 18.9 +0.2**
comp=Z,107nm,1.0s,baz=99,slow=3.0,SNR=27
KMBO Kilima Mbogo 130.35 233 PKIKP **PKPdf 13 22 04.0 -0.3**
KMBO pmax pmax
comp=Z,37nm,1.1s
KMBO pmax pmax
comp=N,107nm,1.0s
KMBO Kilima Mbogo 130.35 233 *e*PKPpre PKPpre 13 21 55.4
KMBO *e*PKPdf **PKPdf 13 22 03.1 -1.1**
KMBO *e*SKPbc **SKPab 13 25 16.8 -1.8**
KMBO Kilima Mbogo 130.35 233 P **PKPdf 13 22 05.0 +0.8**
SNR=53
KMBO Kilima Mbogo 130.35 233 PKPdf **PKPdf 13 22 05.0 +0.8**
SNR=53
LMN Caledonia Moun 130.38 56 *e*PKPdf **PKPdf 13 22 02.8 -0.2**
LMN *e*SKPbc **SKPbc 13 25 19.4 +2.0**
UOSS Minazif 130.74 275 *e*PKPdf **PKPdf 13 22 03.5 -0.8**
UOSS *e*SKPbc **SKPbc 13 25 13.8 -5.7**
HATD Hatta, Dubai 130.75 275 P **PKPdf 13 22 08.0 +3.6**
SNR=9.1
HATD Hatta, Dubai 130.75 275 PKPdf **PKPdf 13 22 08.0 +3.6**
SNR=9.1
HATD Hatta, Dubai 130.75 275 P **SKPbc 13 25 17.4 -2.1**
SNR=7.6
ASHO Ashiyiah 130.75 275 P **PKPdf 13 22 07.7 +3.3**
SNR=9.0
ASHO Ashiyiah 130.75 275 PKPdf **PKPdf 13 22 07.7 +3.3**
SNR=9.0
ASHO Ashiyiah 130.75 275 P **SKPbc 13 25 17.2 -2.4**
SNR=8.7
BANOM Banah 131.06 276 P **SKPbc 13 25 17.5 -3.1**
SNR=8.3
FAQ Al Faqa, Dubai 131.16 274 P **PKPdf 13 22 06.0 +0.9**
SNR=5.6
FAQ Al Faqa, Dubai 131.16 274 PKPdf **PKPdf 13 22 06.0 +0.9**
SNR=5.6
FAQ Al Faqa, Dubai 131.16 274 P **SKPbc 13 25 17.2 -3.8**
SNR=7.5
NAZ Nazwa, Dubai 131.21 275 P **PKPdf 13 22 04.0 -1.2**
SNR=6.0
NAZ Nazwa, Dubai 131.21 275 PKPdf **PKPdf 13 22 04.0 -1.2**
SNR=6.0
NAZ Nazwa, Dubai 131.21 275 P **SKPbc 13 25 17.6 -3.5**
SNR=11
ASUD Al Ashush, Dub 131.33 274 P **SKPbc 13 25 18.6 -2.9**
SNR=11
KULLO Kullorsuaq 131.33 17 *i* P **PKPdf 13 22 06.5 +2.6**
GEYT Alibeck 133.51 292 PKhKP PKPpre 13 21 59.0
comp=N,2.4nm,0.4s,baz=0.0,slow=1.5,SNR=5.6
GEYT PKP **PKPdf 13 22 09.3 +0.1**
comp=N,29nm,0.9s,baz=240,slow=1.2,SNR=18
GEYT SKPbc **SKPbc 13 25 28.8 -0.1**
comp=N,90nm,0.7s,baz=225,slow=0.6,SNR=9.0
GEYT SKKPbc **SKKPbc 13 34 44.7 -0.5**
comp=N,1.5nm,0.4s,baz=102,slow=14,SNR=2.6
SVE Sverdlovsk 133.73 318 *c i*PKIKP **PKPdf 13 22 09.3 +0.4**
SVE pmax pmax
comp=Z,108nm,1.2s
ABKAR Akbulak array 134.02 308 *e*PKPpre PKPpre 13 21 58.3
ABKAR *e*PKPdf **PKPdf 13 22 08.0 -1.7**
ARU Arti 134.89 318 *i* PKIKP **PKPdf 13 22 11.1 -0.1**
ARU 13 24 43.6
ARU 13 29 12.1
ARU MLR MLR
comp=Z,4μm,23.0s
ARU Arti 134.89 318 *e*PKPpre PKPpre 13 22 03.0
ARU *e*PKPdf **PKPdf 13 22 11.0 -0.1**
ATD Arta Tunnel 134.89 250 PKP **PKPdf 13 22 14.2 +1.7**
comp=Z,49nm,1.1s,baz=190,slow=3.3,SNR=8.2
ATD SKPbc **SKPbc 13 25 35.1 +1.1**
comp=Z,151nm,1.2s,baz=87,slow=2.4,SNR=16
KBS Kingsbay 134.97 357 *e*P **PKPdf 13 22 10.6 -0.1**
KBS Kingsbay 134.97 357 *e*PKIKP **PKPdf 13 22 11.9 +1.2**
KBS Kingsbay 134.97 357 *e*PKPdf **PKPdf 13 22 10.9 +0.2**
KBS *e*SKPbc **SKPbc 13 25 32.6 +0.3**
ILULI Ilulissat 135.20 23 *i* P **PKPdf 13 22 12.5 +1.2**
comp=Z,3μm,26.0s
AKTO Aktyubinsk 135.32 309 PKhKP PKPpre 13 22 00.1
comp=Z,3.6nm,0.7s,baz=88,slow=8.1,SNR=7.6
AKTO PKP **PKPdf 13 22 11.7 -0.4**
comp=Z,35nm,1.1s,baz=118,slow=2.6,SNR=24
SPA0 Spitsbergen Ar 135.44 355 *e*P **PKPdf 13 22 13.7 +2.1**
SPITS Spitsbergen Ar 135.44 355 PKhKP PKPpre 13 21 59.6
comp=Z,14nm,1.0s,baz=84,slow=3.4,SNR=12
SPITS PKP **PKPdf 13 22 12.1 +0.5**
comp=Z,124nm,0.9s,baz=57,slow=5.3,SNR=32
SPITS SKPbc **SKPbc 13 25 34.9 +1.1**
comp=Z,247nm,1.0s,baz=59,slow=6.9,SNR=19
SPITS SKKPbc **SKKPbc 13 34 41.2 +0.8**
comp=Z,17nm,1.0s,baz=169,slow=8.8,SNR=3.0
DAMY Dhamar 135.44 255 *e*PKPdf **PKPdf 13 22 11.9 -1.9**
DAMY *e*PKPdf **PKiKP 13 22 17.4 +2.1**
DAMY *e*SKPbc **SKPbc 13 25 36.4 +0.3**
SOKR Solikamsk 135.49 323 *d i*PKIKP **PKPdf 13 22 11.8 -0.3**
SOKR pmax pmax
comp=Z,117nm,1.0s
SOKR MLR MLR
comp=Z,3μm,20.0s
HOPEN Hopen 136.15 352 *e*P **PKPdf 13 22 14.0 +1.1**
HOPEN *e*PP PP 13 25 15.8 +22
SFJD Kangerlussuaq 136.25 26 SKKPbc SKKPbc 13 34 35.1 -1.8
comp=Z,14nm,1.0s,baz=90,slow=10.0,SNR=4.4
SFJD Kangerlussuaq 136.25 26 *i* P **PKPdf 13 22 10.2 -3.1**
SFJD Kangerlussuaq 136.25 26 *e*PKIKP **PKPdf 13 22 12.3 -1.0**
SFJD Kangerlussuaq 136.25 26 *e*PKPdf **PKPdf 13 22 12.3 -1.0**
SFJD *e*SKPbc **SKPbc 13 25 37.2 +0.8**
SFJD SKKPbc **SKKPbc 13 34 35.1 -1.8**
DAG Danmarks Havn 136.59 6 *i* P PKPpre 13 22 04.2
comp=Z,4μm,30.0s
HSPB Hornsund (broa 136.61 355 *e*P **PKPdf 13 22 13.7 0.0**
HSPB Hornsund (broa 136.61 355 *e*PKIKP **PKPdf 13 22 08.8 -5.0**
HSPB *e*SS SS 13 42 59.4 +7.8
HSPB *e*SSS SSS 13 48 04.6
SUMG Summit 136.90 16 *e*PKHKP PKPpre 13 22 04.6
SUMG Summit 136.90 16 *e*PKPpre PKPpre 13 22 04.5
BJO Bjornoya 138.61 352 *e* PKPdf 13 22 36.9 +19
RAYN Ar Rayn 139.00 267 *e*PKPpre PKPpre 13 22 11.0
NRS Narsarsuaq 140.58 33 *i* P PKPpre 13 22 14.9
LVZ Lovozero 140.95 340 ⇓ *e*PKIKP **PKPdf 13 22 22.5 +0.5**
LVZ Lovozero 140.95 340 *e*PKPpre PKPpre 13 22 18.6
LVZ *e*SKPbc **SKPbc 13 25 49.0 -0.7**
KEV Kevo 141.47 345 *e*PKIKP **PKPdf 13 22 24.0 +1.2**
KEV Kevo 141.47 345 *e*PKPdf **PKPdf 13 22 24.0 +1.2**
APA Apatity 141.53 340 *i* PKIKP **PKPdf 13 22 24.0 +1.0**
APA *i* PPS PPS 13 37 48.0
SCO Scoresbysund 141.84 12 *i* P **PKPdf 13 22 21.4 -2.0**
ARA0 ARCESS Array S 141.96 346 *e*PKPpre PKPpre 13 22 19.8
ARCES ARCESS Array B 141.96 346 PKP **PKPdf 13 22 21.2 -2.5**
comp=Z,12nm,0.5s,baz=23,slow=2.4,SNR=44
ARCES SKPbc **SKiKP 13 25 53.4 -0.4**
comp=Z,196nm,1.1s,baz=29,slow=2.8,SNR=12
ARE0 ARCESS Array S 141.96 346 *e*P **PKPdf 13 22 23.7 -0.1**
ARE0 ARCESS Array S 141.96 346 *e*PKPdf **PKPdf 13 22 21.3 -2.4**
ARE0 *e*SKPbc **SKPbc 13 25 52.6 +0.4**
TMCR Tamitsa 142.15 334 *e*PKIKP **PKPdf 13 22 20.8 -3.3**
TMCR pmax pmax
comp=Z,124nm,1.0s
KTK1 Kautokeino 142.85 346 *e*P **PKPdf 13 22 22.3 -3.0**
JMIC Jan Mayen 142.96 5 *e*P **PKPdf 13 22 24.6 -0.9**
JMIC *e*PP PP 13 25 58.9 +23
JMIC Jan Mayen 142.96 5 PKP **PKPdf 13 22 26.0 +0.6**
comp=Z,29nm,0.8s,baz=180,slow=9.1,SNR=1.5
JMIC SKPbc **SKPbc 13 25 54.3 -0.3**
comp=Z,143nm,1.0s,baz=180,slow=8.4,SNR=3.9
TRO Tromso 143.07 349 *e*P PKPbc 13 22 23.9 +1.1
TRO *e* 13 44 07.1
DGRG David-gareji 143.76 295 P PKPbc 13 22 25.7 0.0
GNI Garni 144.14 293 SKPbc **SKiKP 13 26 01.0 +1.6**
comp=Z,113nm,1.2s,baz=38,slow=12,SNR=3.6
GNI Garni 144.14 293 *e*PKIKP PKPbc 13 22 26.8 -0.3
GNI Garni 144.14 293 *e*PKPdf PKPbc 13 22 26.8 -0.2
GNI SKPbc **SKiKP 13 26 01.0 +1.6**
GNI Garni 144.14 293 P **PKPab 13 22 26.4 -0.2**
SNR=36
GNI Garni 144.14 293 PKPdf **PKPab 13 22 26.4 -0.2**
SNR=36
TBLG Delisi 144.26 295 *e*P **PKPdf 13 22 28.7 +0.1**
TBLG Delisi 144.26 295 P PKPbc 13 22 27.8 +0.7
DUS Dusheti 144.30 296 P **PKPdf 13 22 28.4 -0.4**
GUDG Gudauri 144.48 297 P **PKPdf 13 22 29.1 -0.2**
CLDR Caldiran 144.68 291 *e*P PKPbc 13 22 29.2 +0.3
CUKT Cukurca 144.68 288 *e*P **PKPab 13 22 28.5 -0.2**
ZEI Tsey 144.91 297 *i* PKIKP **PKPdf 13 22 32.6 +2.6**
ZEI pmax pmax
comp=Z,2μm,1.5s
VANB Van 145.03 290 *e*P **PKPbc 13 22 28.8 -1.0**
AKH Akhalkalaki 145.18 295 *e*P **PKPab 13 22 30.4 0.0**
AKH Akhalkalaki 145.18 295 P **PKPbc 13 22 29.9 -0.4**
AKH Akhalkalaki 145.18 295 ⇑ *i*P **PKPbc 13 22 30.0 -0.3**
STEI Steigen 145.18 350 *e*P **PKPbc 13 22 28.0 -1.2**
LOF Lofoten 145.23 351 *e*P **PKPbc 13 22 28.4 -1.0**
ONI Oni 145.24 297 P **PKPbc 13 22 29.6 -0.6**
KARS Kars 145.44 293 *e*P **PKPbc 13 22 31.2 +0.1**
VRH Novokhopyorsk 145.52 312 *e*PKP2 **PKPdf 13 22 30.1 -0.3**
VRH *e* 13 25 54.9
VRH pmax pmax
comp=Z,500nm,0.8s
KBZ Khabaz 145.65 299 PKPbc **PKPdf 13 22 30.6 -0.3**
comp=Z,155nm,1.1s,baz=130,slow=2.4,SNR=99
NEY Neytrino 145.78 298 *c i*PKIKP **PKPdf 13 22 30.9 -0.5**
KVAR Kislovodsk Arr 145.79 299 SKPbc **SKPbc 13 26 00.1 -2.2**
comp=Z,24nm,1.0s,baz=346,slow=11,SNR=4.4
KIV Kislovodsk 145.79 299 *c i*PKIKP **PKPdf 13 22 30.2 -1.1**
KIV *e* 13 25 55.5
KIV *e* 13 29 34.4
KIV *e*SSS SSS 13 50 12.6
KIV pmax pmax
comp=Z,176nm,1.1s
KIV Kislovodsk 145.79 299 *e*PKPdf **PKPdf 13 22 30.6 -0.7**
KIV Kislovodsk 145.79 299 P **PKPdf 13 22 30.8 -0.5**
SNR=84
KIV Kislovodsk 145.79 299 PKPdf **PKPdf 13 22 30.8 -0.5**
SNR=84
EKAR Karacoban 146.12 291 *i* P **PKPab 13 22 35.2 +1.1**
CHVG Ch'k'valeri 146.25 297 *e*P **PKPbc 13 22 33.2 -0.2**
CHVG Ch'k'valeri 146.25 297 *e*P **PKPbc 13 22 33.1 -0.2**
ARTV Artvin 146.34 294 *i* P **PKPab 13 22 35.3 +0.3**
DAGI Agillar 146.35 294 *i* P **PKPab 13 22 35.0 +0.2**
MOS Moscow 146.41 321 *e*PKIKP **PKPdf 13 22 31.2 -0.6**
MOS *e* 13 25 59.0
MOS pmax pmax
comp=Z,926nm,1.7s
MOS pmax pmax
comp=Z,2μm,2.0s
MOS MLR MLR
comp=Z,4μm,22.0s
DBAD Bademkaya 146.51 294 *i* P **PKPab 13 22 36.1 +0.6**
DBOC Borcka 146.55 295 *i* P **PKPab 13 22 35.8 +0.3**
VRTB Varto-Mus 146.59 291 *e*P **PKPab 13 22 36.8 +0.9**
BTMN Batman 146.60 288 *i* P **PKPab 13 22 35.7 -0.2**
EZM Erzurum 146.71 292 *e*P **PKPab 13 22 36.8 +0.3**
LPSR Galich'ya Gora 146.82 315 *e*PKIKP **PKPdf 13 22 32.9 +0.3**
LPSR *e* 13 26 00.7
LPSR pmax pmax
comp=Z,570nm,1.5s
KONS Konsvik 146.82 350 *e*P **PKPdf 13 22 33.1 +0.9**
BORG Borgarnes 146.88 17 SKPbc **SKiKP 13 26 06.7 +2.7**
comp=Z,66nm,1.1s,baz=86,slow=0.5,SNR=4.0
BORG Borgarnes 146.88 17 *e*PKIKP **PKPdf 13 22 33.3 +1.0**
BORG 13 26 06.7
BORG Borgarnes 146.88 17 *e*PKPdf **PKPdf 13 22 33.3 +1.0**
BORG SKPbc **SKiKP 13 26 06.7 +2.7**
MARD Mardin 146.92 287 *i* P **PKPbc 13 22 36.2 +0.6**
MOR8 Moi Rana 146.94 349 *e*P **PKPdf 13 22 32.4 0.0**
MOR8 lAmb lAmb 13 22 38.5
comp=Z,478nm,1.3s
STOK Stokkvaagen 146.99 350 *e*P **PKPbc 13 22 35.3 +0.6**
VSR Storozhevoye 147.07 313 *e*PKP2 **PKPbc 13 22 35.0 -0.3**
VSR *e* 13 25 59.6
VSR pmax pmax
comp=Z,380nm,1.0s
BNGB Bing ¶‖ 147.17 290 *e*P **PKPdf 13 22 34.1 +0.3**
MAZI Mazidag 147.20 287 *e*P **PKPdf 13 22 33.6 -0.3**
OBN Obninsk 147.22 321 *d i*PKIKP **PKPdf 13 22 33.0 -0.2**
OBN *e* 13 26 01.9
OBN *e* 13 29 36.5
OBN pmax pmax
comp=Z,284nm,1.2s
OBN MLR MLR
comp=Z,3μm,20.0s
OBN Obninsk 147.22 321 *e*PKPdf **PKPdf 13 22 32.2 -1.0**
KOPT Kop Dagi 147.38 292 *i* P **PKPab 13 22 39.4 +0.3**
DYBB Diyarbakir 147.50 288 *e*P **PKPdf 13 22 34.1 -0.2**
DIYA Diyarbakir 147.51 288 *i* P **PKPab 13 22 38.5 -0.9**
BAYT Ayd¯–ntepe-Bay 147.67 293 *e*P **PKPdf 13 22 34.5 -0.2**
PUL Pulkovo 147.69 331 ⇑ *e*PKIKP **PKPdf 13 22 34.5 +0.7**
MNKR ALMNKUR 147.93 284 *i* P **PKPbc 13 22 38.7 +0.5**
ERZN Erzincan 147.96 291 *e*P **PKPbc 13 22 37.8 -0.5**
SOC Sochi 147.96 299 *d i*PKIKP **PKPdf 13 22 34.7 -0.1**
SOC *e* 13 26 06.1
SOC *e*PPP PPP 13 29 23.9
SOC *e*SSS SSS 13 50 40.6
SOC pmax pmax
comp=Z,152nm,1.0s
MACK Trabzon 147.97 294 *i* P **PKPab 13 22 39.7 -1.5**
KTUT Trabzon 147.97 294 *e*P **PKPbc 13 22 37.5 -0.7**
TNCL Tunceli-Merkez 148.06 290 *i* P **PKPab 13 22 40.5 -1.2**
FIA1 FINESS Array S 148.10 336 *e*PKPdf **PKPdf 13 22 32.9 -1.5**
FIA1 *e*PKPdf **PKPbc 13 22 34.0 -3.7**
FIA1 *e*PKPbc **PKiKP 13 22 37.5 -1.9**
FINES FINESS Array B 148.10 336 PKPbc **PKPbc 13 22 36.2 -1.6**
comp=Z,73nm,0.6s,baz=56,slow=2.6,SNR=126
FINES SKPbc **SKPbc 13 26 04.8 -1.7**
comp=Z,22nm,0.8s,baz=270,slow=0.1,SNR=2.7
KSRV Kasrt alli 148.14 284 *i* P **PKPbc 13 22 37.9 -0.8**
PTK Pertek 148.17 290 *e*P **PKPdf 13 22 36.2 +0.6**
SVRC Sivrice-ELAZID 148.19 289 *e*P **PKPbc 13 22 40.6 +1.5**

KELT	Kelkit	148.34	292	*i* P		PKPab	13 22 41.2	-1.7	IKL	Isikli	152.46	284	*e*P		PKPdf	13 22 41.1	-1.0	LOT	Lotru	158.66	309	*e*P		PKPdf	13 22 50.2	-0.1
ELZG	Elazig	148.46	289	*i* P		PKPbc	13 22 39.5	-0.2	LFK	Lefkose	152.47	282	*e*P		PKPdf	13 22 41.1	-1.1	LOT	Lotru	158.66	309⇑	*i*P		PKPdf	13 22 50.3	0.0
SURC	SANLIURFA_SURC	148.59	286	*i* P		PKPbc	13 22 40.2	+0.3	FOO	Floro	152.47	355	*e*P		PKPdf	13 22 42.4	+1.2	NIE	Niedzica	158.69	321	*e*PKP		PKPdf	13 22 49.7	-0.3
REFA	Refahiye_ERZ	148.68	291	*i* P		PKPbc	13 22 42.1	+1.9	NC602	NORSAR Array S	152.49	348	*e*P		PKPdf	13 22 44.2	+2.9	NIE				*e*SKP			13 26 13.7	
NSS	Namsos	148.85	350	*e*P		PKPdf	13 22 36.4	+0.8	NC602	NORSAR Array S	152.49	348	*e*PKPdf		PKPdf	13 22 41.5	+0.2	NIE				*e*			13 27 35.1	
ATAB	Bozova	148.91	287	*i* P		PKPbc	13 22 41.4	+0.7	NC602				*e*PKPbc		PKiKP	13 22 48.7	+0.1	NIE				*e*SKKSac	SKKSac		13 33 50.3	+3.9
ZALF	Zalf	148.94	278	*i* P		PKPbc	13 22 41.7	+0.7	NAO01	NORSAR Array S	152.50	348	*e*PKPdf		PKPdf	13 22 41.0	-0.4	NIE	Niedzica	158.69	321	*e*PKIKP		PKPdf	13 22 49.8	-0.3
GRSN	GIRESUNGRSN	149.11	294	*i* P		PKPbc	13 22 41.5	+0.4	NAO01				*e*PKPbc		PKiKP	13 22 51.0	+2.4	SIGR	SIGRI	158.69	291	P		PKPdf	13 22 50.6	+0.3
ASF	Jabal al Asfar	149.12	277	PKP		PKPdf	13 22 36.7	-0.5	ILGA	Ilgaz	152.55	294	*i* P		PKPbc	13 22 50.9	+1.4	DRGR		158.75	313⇑	*i*P		PKPdf	13 22 50.4	+0.1
	comp=Z,22nm,1.1s,baz=68,slow=0.5,SNR=14								CSS	Mathiatis	152.59	281	P		PKPbc	13 22 49.3	-0.1	SMTH	Samothraki Isl	158.79	294	P		PKPdf	13 22 50.0	-0.4
ASF				PKPbc		PKiKP	13 22 42.2	-0.4	CSS	Mathiatis	152.59	281	P		PKPdf	13 22 41.1	-1.3	ESK	Eskdalemuir	158.86	5	*e*P		PKPdf	13 22 49.3	-0.7
	comp=Z,45nm,0.9s,baz=107,slow=1.4,SNR=30								CSS	Mathiatis	152.59	281	*e*PKPdf		PKPdf	13 22 40.6	-1.7	ESK	Eskdalemuir	158.86	5	*e*PKIKP		PKPdf	13 22 50.0	0.0
SUSE	Susehri	149.15	292	*i* P		PKPbc	13 22 43.4	+2.0	CANT	Cankiri	152.64	293	*e*P		PKPdf	13 22 46.8	-2.7	ESK				*e*			13 23 27.0	
AKCD	Akcadag	149.27	289	*i* P		PKPbc	13 22 43.2	+1.5	BR131	Keskin Array S	152.65	291	*e*PKPdf		PKPdf	13 22 40.5	-2.0	ESK	Eskdalemuir	158.86	5	*e*PKPdf		PKPdf	13 22 49.3	-0.7
SALA	Sala	149.38	278	*i* P		PKPbc	13 22 42.6	+0.4	BR131				*e*PKPbc		PKPbc	13 22 49.4	-0.2	ESK				*e*PKPab		PKPab	13 23 26.5	+0.1
ORDU	Ordu-Boztepe	149.42	294	*i* P		PKPbc	13 22 43.0	+1.2	BRTR	Keskin Array B	152.65	291	PKP		PKPdf	13 22 40.5	-2.0	TOA0	Torodi Ar. Sit	158.90	185	*e*PKPdf		PKPdf	13 22 49.9	-1.4
CUZAR	Zara_SIVAS	149.47	292	*i* P		PKPbc	13 22 44.2	+2.0		comp=Z,12nm,1.1s,baz=24,slow=3.4,SNR=23								TOA0				*e*PKPdf		PKPdf	13 22 50.9	-0.4
GZT	Gaziantep	149.47	287	*i* P		PKPbc	13 22 43.0	+0.7	BRTR				PKPbc		PKPbc	13 22 49.5	-0.1	TOA0				*e*PKPab		PKPab	13 23 27.5	-0.1
ANN	Anapa	149.49	301	*i* PKHKP		PKPpre	13 22 41.0			comp=Z,144nm,1.1s,baz=137,slow=2.6,SNR=67								TORD	Torodi Ar. Bea	158.90	185	P5KPbc			13 02 26.8	
ANN				*e*			13 26 11.1		BRTR				PKKP			13 31 16.9			comp=Z,0.8nm,0.5s,baz=198,slow=6.4,SNR=11							
ANN				*e*PPP		PPP	13 29 32.6			comp=Z,13nm,1.3s,baz=174,slow=2.5,SNR=4.2								TORD				PKP		PKPdf	13 22 50.7	-0.6
ANN				*e*SSS		SSS	13 51 00.5		MAMC	Mammari	152.71	281	P		PKPbc	13 22 50.7	+1.0		comp=Z,112nm,1.3s,baz=137,slow=0.4,SNR=82							
ANN				pmax		pmax			SERE	Serefiikochisa	152.71	290	*e*P		PKPdf	13 22 45.1	+2.5	TORD				PKPab		PKPab	13 23 27.4	-0.1
	comp=Z,234nm,1.2s								SULT	Sultanhani-AKS	152.73	288	*e*P		PKPdf	13 22 43.5	+0.9		comp=Z,139nm,0.8s,baz=176,slow=3.8,SNR=21							
DARE	Darende-Malaty	149.63	289	*e*P		PKPdf	13 22 39.1	+1.3	HYA	Hoyanger	152.80	353	*e*P		PKPdf	13 22 43.1	+1.4	TORD				PP		PP	13 27 07.0	-0.2
CUKAN	kangal_SIVAS	149.69	291	*i* P		PKPdf	13 22 40.3	+2.3	HYA				IAmb		IAmb	13 22 53.2			comp=Z,26nm,1.0s,baz=174,slow=4.7,SNR=4.1							
GAZ	Gaziantep	149.73	286	*e*P		PKPbc	13 22 40.8	-2.0		comp=Z,180nm,1.0s								BWH	Wardlaw	158.96	6	*e*P		PKPdf	13 22 48.8	-1.3
KUZU	Kuzuini	149.80	286	*i* P		PKPbc	13 22 44.0	+1.1	SZAC	Souni	152.92	280	P		PKPbc	13 22 48.4	-1.8	PSET	Sete Cidades	158.97	73	*e*PKPdf		PKPdf	13 22 50.3	-0.5
RSDY	Resadiye-TOKAT	149.82	293	*e*P		PKPdf	13 22 39.1	+1.1	LEF	Lefka	152.97	281	*e*P		PKPdf	13 22 43.8	+0.9	LAST	Lasithi	159.01	280⇑	*i*P		PKPdf	13 23 00.3	+9.3
MARH	Ras Al Marh	149.86	280	*i* P		PKPbc	13 22 43.0	-0.6	SUE	Sulen	153.03	355	*e*P		PKPdf	13 22 43.5	+1.4	LAST	Lasithi	159.01	280	P		PKPdf	13 22 47.3	-3.7
QASN	Qassioun	149.94	279	*i* P		PKPbc	13 22 42.5	-0.9	AFSR	Af˙ar-Bala (A	153.09	291	*e*P		PKPdf	13 22 44.5	+1.4	LAST	Lasithi	159.01	280	*e*PKPdf		PKPdf	13 22 47.4	-3.5
VSU	Vasula	149.94	332⇓	*e*PKHKP		PKPpre	13 22 38.4		AKASG	Malin Array Be	153.13	317	PKP		PKPdf	13 22 42.1	-0.5	LAST				*e*PKPab		PKPab	13 23 29.1	+1.1
TCHB	Talchebab	150.00	277	*i* P		PKPbc	13 22 43.7	+0.1		comp=Z,21nm,0.9s,baz=58,slow=1.5,SNR=38								PDA	Ponta Delgada	159.02	73	*e*PKPdf		PKPdf	13 22 50.3	-0.4
KMRS	Kahramanmaras	150.01	287	*e*P		PKPdf	13 22 40.5	+2.1	AKASG				PKPbc		PKPbc	13 22 49.4	-0.7	PDA	Ponta Delgada	159.02	73	*e*PKPab		PKPab	13 23 31.3	+3.5
EIL	Elat	150.04	271	*e*P		PKPbc	13 22 44.5	+0.9		comp=Z,18nm,0.4s,baz=52,slow=2.5,SNR=46								DEV	Deva	159.04	310⇑	*i*P		PKPdf	13 23 02.0	+11
SVSK	Karacayir	150.07	292	*e*P		PKPbc	13 22 44.4	+1.0	AKBB	Malin Array Si	153.13	317	*e*PKIKP		PKPdf	13 22 41.6	-1.0	APE	Apeiranthos	159.05	285⇑	*i*P		PKPdf	13 22 50.9	0.0
HRFI	Mount Harif	150.08	272	*e*P		PKPdf	13 22 39.7	+1.0	AKBB				*e*			13 22 50.5		BHH	Howats Hill	159.08	5	*e*P		PKPdf	13 22 48.7	-1.5
DRWC	Darouich	150.11	285	*i* P		PKPbc	13 22 42.3	-1.4	AKBB	Malin Array Si	153.13	317	*e*PKPdf		PKPdf	13 22 41.6	-1.0	SANT	Santorini	159.09	283⇑	*i*P		PKPdf	13 22 48.5	-2.5
KAMA	Osmaniye	150.17	286	*i* P		PKPbc	13 22 42.9	-1.0	AKBB				*e*PKPbc		PKiKP	13 22 50.5	+0.3	SANT	Santorini	159.09	283	*e*PKPdf		PKPdf	13 22 47.1	-3.8
BRBR	Barbar	150.18	279	*i* P		PKPbc	13 22 43.6	-0.5	KIEV	Kiev	153.14	317	*d*PKIKP		PKPdf	13 22 42.3	-0.3	SANT				*e*PKPab		PKPab	13 23 28.8	+0.5
BTCH	Batrach	150.20	284	*i* P		PKPbc	13 22 43.0	-0.9	KIEV	Kiev	153.14	317	*e*PKPdf		PKPdf	13 22 41.1	-1.5	KECS	Kecovo	159.14	319	*e*PKIKP		PKPdf	13 22 51.4	+0.8
ERBA	Erbaa	150.25	293	*i* P		PKPbc	13 22 45.5	+1.5	KIEV				*e*PKPbc		PKiKP	13 22 50.5	+0.3	KECS	Kecovo	159.14	319	*e*PKP		PKPdf	13 22 51.3	+0.7
TBLU	Trondheim	150.30	351	*e*P		PKPdf	13 22 38.5	+0.5	AK11	Malin Array Si	153.17	317	*e*PKPdf		PKPdf	13 22 40.4	-2.3	KECS				*e*			13 23 30.7	
SLNF	Slenfeh	150.33	283	*i* P		PKPbc	13 22 43.0	-1.4	CHBY	Cihanbeyli	153.23	289	*e*P		PKPdf	13 22 42.6	-0.7	LANS	Liptovska Anna	159.28	322	*e*PKIKP		PKPdf	13 22 51.4	+0.6
HWQ	Hawqa	150.35	280	*e*P		PKPdf	13 22 39.3	+0.1	ANTO	Ankara	153.30	292	*e*PKIKP		PKPdf	13 22 42.2	-1.1	LANS	Liptovska Anna	159.28	322	*e*PKP		PKPdf	13 22 51.4	+0.6
TAHT	Tahtakopru-Hat	150.47	285	*e*P		PKPbc	13 22 44.1	-0.4	ANTO				*e*			13 22 51.8		LANS				*e*			13 23 33.1	
YAYL	Yayladag	150.49	284	*i* P		PKPbc	13 22 45.6	+0.8	ANTO	Ankara	153.30	292	*e*PKPdf		PKPdf	13 22 42.2	-1.1	RAC	Raciborz	159.30	325	*e*PKIKP		PKPdf	13 22 51.4	+0.7
BHL	Bhannes	150.52	279	*e*P		PKPdf	13 22 39.5	+0.2	ANTO				*e*PKPbc		PKiKP	13 22 51.8	+0.7	RAC				*e*			13 27 09.6	
CUSAR	Sarkisla-SIVAS	150.64	291	*i* P		PKPbc	13 22 46.2	+1.2	SAFT	Safranbolu	153.31	295	*e*P		PKPdf	13 22 43.1	-0.1	BART	Pico Bartolome	159.41	73	*e*PKPdf		PKPdf	13 22 54.1	+2.8
SAMS	Samsun-Alacam	150.67	295	*i* P		PKPbc	13 22 46.9	+2.1	BR231	Keskin MP Arra	153.31	292	*e*PKPdf		PKPdf	13 22 41.0	-2.4	BART	Pico Bartolome	159.41	73	*e*PKPab		PKPab	13 23 33.0	+3.3
KVT	Kavak	150.78	294	*e*P		PKPdf	13 22 40.8	+1.3	BR231				*e*PKPdf		PKPdf	13 22 42.2	-1.2	BBO1	Bothel	159.43	5	*e*P		PKPdf	13 22 49.6	-1.1
KOZT	Kozan	150.86	287	*e*P		PKPdf	13 22 39.5	-0.2	BR231				*e*PKPbc		PKPbc	13 22 50.6	-0.4	KAVA	Kavala	159.46	296	P		PKPdf	13 22 51.8	+0.6
CEYT	Ceyhan	150.88	286	*e*P		PKPbc	13 22 43.0	-2.4	LOD	Lodumlu	153.32	292	*e*P		PKPdf	13 22 42.5	-0.9	PSMA	Santa Maria	159.46	75	*e*PKPdf		PKPdf	13 22 52.8	+1.5
BNN	Bunyan	150.93	290	*e*P		PKPdf	13 22 38.8	-1.1	OSL	Oslo	153.38	348	*e*P		PKPdf	13 22 43.5	+0.8	PSMA	Santa Maria	159.46	75	*e*PKPab		PKPab	13 23 31.6	+1.8
YURE	YUREGIR	150.96	285	*i* P		PKPbc	13 22 47.1	+1.4	ASK	Askoy	153.57	354	*e*P		PKPdf	13 22 46.5	+3.6	OKC	Ostrava-Krasne	159.49	325	*e*PKPDF		PKPdf	13 22 49.7	-1.2
KRTS	Karatas	151.14	285	*e*P		PKPbc	13 22 43.1	-2.9	KONT	Konya--Tatoy	153.63	287	*e*P		PKPdf	13 22 46.0	+2.2	OKC				*e*PKPAB		PKPab	13 23 29.9	+0.5
AKO	Adana	151.16	287	*i* P		PKPbc	13 22 46.6	+0.5	LADK	Ladik-KONYA	153.64	288	*e*P		PKPdf	13 22 46.8	+2.8	OKC				*e*pPKP		pPKP	13 23 52.8	
MOL	Molde	151.29	353	*e*P		PKPdf	13 22 40.9	+1.4	BER	Bergen	153.65	354	*e*P		PKPdf	13 22 45.7	+2.7	OKC				*ex*	x		13 24 19.1	
SNOP	Sinop	151.37	296	*e*P		PKPdf	13 22 40.8	+0.5	KONO	Kongsberg	153.84	349	*e*P		PKPdf	13 22 45.2	+1.9	OKC				*ex*	x		13 27 29.6	
BOYT	Boyabat	151.63	295	*i* P		PKPbc	13 22 48.6	+1.4	KONO	Kongsberg	153.84	349	*e*PKIKP		PKPdf	13 22 43.2	-0.1	OKC				*e*SKKS			13 33 52.5	
LIC	Lamto	151.70	170	*e*P		PKPdf	13 22 42.5	+0.8	KONO	Kongsberg	153.84	349	*e*PKPdf		PKPdf	13 22 43.1	-0.1	OKC				AMS	AMS		14 30 30.0	
	comp=Z,1μm,1.0s								ODD1	Odda	153.99	352	*e*P		PKPdf	13 22 43.9	+0.3		comp=Z,5μm,26.0s							
AVNS	Nevsehir-Avano	151.71	289	*i* P		PKPbc	13 22 48.7	+1.2	SVRH	Sivrihisar-ESK	154.29	291	*e*P		PKPdf	13 22 44.5	-0.3	OKC	Ostrava-Krasne	159.49	325	*e*PKIKP		PKPdf	13 22 49.7	-1.2
AKN	Aaknes	151.73	353	*e*P		PKPdf	13 22 41.5	+1.3	SUW	Suwalki	154.38	327	*e*PKP		PKPdf	13 22 43.9	-0.3	OKC				*e*			13 23 29.9	
BYBT	Boyabat	151.73	295	*e*P		PKPdf	13 22 43.1	+2.3	SUW				*e*			13 27 02.7		OKC				MLR	MLR			
SIM	Simferopol'	151.79	302	*c i*PKIKP		PKPbc	13 22 44.4	-2.9	SUW				*e*SKKSac		SKKSac	13 33 22.1	-1.1		comp=Z,5μm,26.0s							
SIM				*i*			13 22 58.0		SUW	Suwalki	154.38	327	*e*PKIKP		PKPdf	13 22 44.0	-0.3	IDI	Anoyia	159.50	280	PKP		PKPdf	13 22 50.8	-0.7
SIM				*e*			13 29 44.0		BLS5	Blasjo	154.49	352	*e*P		PKPdf	13 22 45.2	+0.9		comp=Z,46nm,1.2s,baz=123,slow=3.5,SNR=6.5							
SIM				*e*SS	SS		13 45 45.0	-2.7	MDUB	Mudurnu	154.49	293	*e*P		PKPdf	13 22 45.8	+0.7	IDI				PKPab		PKPab	13 23 29.8	-0.3
SIM				pmax	pmax				SORM	Soroca	154.72	312⇓	*i*P		PKPdf	13 22 44.3	-0.6		comp=Z,29nm,0.7s,baz=76,slow=7.5,SNR=6.8							
	comp=Z,131nm,1.1s								KMY	Karmoy	154.82	354	*e*P		PKPdf	13 22 45.7	+1.0	IDI	Anoyia	159.50	280⇑	*i*P		PKPdf	13 22 53.5	+2.0
SIM				pmax	pmax				KIS	Kishinev	154.83	309	*e*PKP		PKPdf	13 22 47.0	+1.9	IDI	Anoyia	159.50	280	P		PKPdf	13 22 53.0	+1.5
	comp=Z,560nm,11.8s								KIS				*e*SKP		SKPdf	13 26 10.0	+0.9	IDI	Anoyia	159.50	280	*e*PKPdf		PKPdf	13 22 53.3	+1.8
MERS	Mersin	151.85	285	*e*P		PKPdf	13 22 41.5	+0.2	KIS	Kishinev	154.83	309	*e*PP		PP	13 22 58.0	+12	IDI				PKPab		PKPab	13 23 29.8	-0.3
NIG	Nigde	151.86	288	*e*P		PKPbc	13 22 46.4	-1.6	KIS	Kishinev	154.83	309	*e*PKIKP		PKPdf	13 22 47.0	+1.9	PSMN	Pico do Norte,	159.51	75	*e*PKPdf		PKPdf	13 23 53.0	+1.6
KIC	Kosan Boka	151.88	170	*e*P		PKPdf	13 22 41.3	-0.6	KIS				*i*			13 22 57.0		PSMN	Pico do Norte,	159.51	75	*e*PKPab		PKPab	13 23 31.4	+1.4
	comp=Z,918nm,0.8s								KIS				*e*PS			13 39 50.0		KESW	Keswick, Cumbr	159.59	5	*e*P		PKPdf	13 22 50.9	+0.1
CORM	Corum	151.88	292	*e*P		PKPdf	13 22 42.5	+1.2	GULT	Gulveren	155.01	293	*e*P		PKPdf	13 22 46.8	+1.0	KSP	Ksiaz	159.61	329	*e*PKP		PKPdf	13 22 50.0	-1.0
MICGM	Minsk	151.90	325⇓	*e*PKP		PKPdf	13 22 40.0	-0.6	BCK	Bucak	155.02	286	*e*P		PKPdf	13 22 44.1	-1.7	KSP				*e*SKP			13 26 17.0	
MICGM				PKPM			13 22 48.0		STAV	Stavanger	155.05	353	*e*P		PKPdf	13 22 44.9	-0.1	KSP				*e*SKKSac	SKKSac		13 33 52.9	+1.9
	comp=Z,0.6nm,1.2s								ISP	Isparta	155.08	287	P		PKPdf	13 22 54.0	+8.1	KSP	Ksiaz	159.61	329	*e*PKIKP		PKPdf	13 22 50.1	-1.0
MICGM				PKPM			13 22 50.0		KLNR	Kaliningrad	155.23	331	*e*PKIKP		PKPdf	13 22 46.9	+1.5	PSZ	Piszkesteto	159.79	318⇑	*i*P		PKPdf	13 22 53.4	+2.0
	comp=N,0.5nm,1.0s								HOMB	Homborsund	155.33	349	*e*P		PKPdf	13 22 46.5	+1.1	PSZ	Piszkesteto	159.79	318	*e*PKPdf		PKPdf	13 22 51.3	-0.1
MICGM				PKPM			13 22 54.0		LEOM	Leova	155.38	308⇑	*i*P		PKPdf	13 22 55.8	+10	PSZ	Piszkesteto	159.79	318	*e*PKIKP		PKPdf	13 22 50.0	-1.4
	comp=E,0.4nm,1.2s								BBTS	Babate	155.44	139	PKP		PKPdf	13 22 47.8	+0.9	PSZ	Piszkesteto	159.79	318	*e*PKPdf		PKPdf	13 22 49.4	-2.1
MICGM				*e*pPKP		pPKPdf	13 23 09.0	+1.3		comp=Z,513nm,1.2s,baz=278,slow=0.7,SNR=18								MORC	Moravsky Berou	159.82	325⇑	*i*P		PKPdf	13 22 52.0	+0.6
MICGM				*e*sPKP			13 23 28.0		BBTS				PKPab		PKPab	13 23 11.6	-1.1	MORC	Moravsky Berou	159.82	325	*e*PKIKP		PKPdf	13 22 50.2	-1.2
MICGM				*e*PP	SKPdf		13 25 54.0	-11		comp=Z,400nm,1.1s,baz=263,slow=1.5,SNR=6.0								MORC	Moravsky Berou	159.82	325	*e*PKPdf		PKPdf	13 22 49.1	-1.5
MICGM				*e*PPP	PPP		13 29 16.0		BBTS				PP		PP	13 26 47.1	-1.8	MHG	Agia Marina, M	159.95	284	*e*PKPdf		PKPdf	13 22 50.4	+1.5
MICGM				*e*SPP	SPP		13 37 36.0			comp=Z,14nm,0.5s,baz=141,slow=6.5,SNR=2.8								KRLC	Kraliky	159.96	327	*e*PKPDF		PKPdf	13 22 50.9	-0.6
MICGM				*e*PPS	PPS		13 39 08.0		SNART	Snartemo	155.45	351	*e*P		PKPdf	13 22 46.1	+0.6	KRLC				*e*pPKP		pPKPdf	13 23 16.9	-1.8
MICGM				*e*SS	SS		13 44 52.0	-56	ELL	Elmali	155.53	284	*e*P		PKPdf	13 22 45.8	-0.8	KRLC				*e*PKPAB		PKPab	13 23 34.6	+3.1
MICGM				*e*SSS	SSS		13 51 32.0		KSL	Kastellorizon	155.75	283	P		PKPdf	13 22 44.9	-1.8	KRLC	Kraliky	159.96	327	*e*PKIKP		PKPdf	13 22 50.9	-0.6
MICGM				*e*LQ	LQ		14 01 32.0		CFR	Carcaliu	155.86	305⇑	*i*P		PKPdf	13 22 46.4	-0.1	BZS	Buzias	159.96	311⇓	*i*P		PKPdf	13 22 52.1	+0.5
MICGM				*e*LR	LR		14 14 12.0		TIRR	Tirgusor	155.87	303⇑	*i*P		PKPdf	13 22 51.2	+4.6	DPC	Dobruska-Polom	159.96	328	*e*PKPDF		PKPdf	13 22 50.5	-1.0
MICGM				LRM	MLR		14 25 56.0		TIRR	Tirgusor	155.87	303	*e*PKIKP		PKPdf	13 22 45.2	-1.4	DPC				*e*pPKP		pPKPdf	13 23 17.5	-1.1
	comp=Z,13nm,28.0s								TIRR	Tirgusor	155.87	303	*e*PKPdf		PKPdf	13 22 45.2	-1.4	DPC				*e*PKPAB		PKPab	13 23 34.9	+3.4
MICGM				LRM	MLR		14 26 02.0		TVSB	Tavsanli	155.89	291	*e*P		PKPdf	13 22 47.1	+0.1	DPC				*ex*	x		13 27 34.0	
	comp=Z,9.7nm,26.0s								HARR	Harsova	156.14	304⇑	*i*P		PKPdf	13 22 50.6	+3.7	DPC				*e*SKKS			13 33 55.1	
MNK	Minsk	151.90	325⇓	*e*PKIKP		PKPdf	13 22 40.0	-0.6	FETY	Fethiye	156.19	284	*e*P		PKPdf	13 22 47.1	-0.2	DPC				AMS	AMS		14 32 00.0	
MNK				*e*SSS	SSS		13 51 32.0		FETY	Fethiye	156.19	284	P		PKPdf	13 22 48.8	+1.5		comp=Z,6μm,23.9s							
MNK				pmax	pmax				MVH1	Achvaich	156.19	5	*e*P		PKPdf	13 22 46.4	-0.2	DPC	Dobruska-Polom	159.96	328	*e*PKIKP		PKPdf	13 22 50.5	-1.0
	comp=Z,560nm,1.2s								TESR	Tescani	156.40	309⇓	*i*P		PKPdf	13 22 47.6	+0.3	DPC				MLR	MLR			
MNK				pmax	pmax				KAC	Achnashellach	156.51	7	*e*P		PKPdf	13 22 48.2	+1.2		comp=Z,6μm,23.9s							
	comp=N,460nm,1.0s								KULA	Kula-Manisa	156.55	289	*e*P		PKPdf	13 22 51.8	+3.9	UPC	Upice	159.98	329	*e*PKPDF		PKPdf	13 22 51.3	-0.2
MNK				pmax	pmax				KULA	Kula-Manisa	156.55	289	P		PKPdf	13 22 47.6	-0.2	UPC				*ex*	x		13 27 32.0	
	comp=E,420nm,1.2s								VRI	Vrincioaia	156.58	308	*e*P		PKPdf	13 22 46.1	-1.4	UPC				AMS	AMS		14 32 00.0	
IZAR	Zarasai	151.91	328	*e*P		PKPdf	13 22 40.4	-0.2	VRI	Vrincioaia	156.58	308⇑	*i*P		PKPdf	13 22 51.2	+3.7		comp=Z,6μm,25.4s							
IZAR				IAmb	IAmb		13 22 51.8		PCED	Cedros	156.60	71	*e*P		PKPdf	13 22 46.5	-1.3	VYHS	Vyhne	160.02	321	*e*PKIKP		PKPdf	13 22 50.4	-1.2
	comp=Z,313nm,1.2s								MDO	Dochfour	156.66	6	*e*P		PKPdf	13 22 48.2	+1.0	VYHS	Vyhne	160.02	321	*e*PKP		PKPdf	13 22 50.3	-1.3
IDID	Didziasalis	151.96	327	*e*P		PKPdf	13 22 41.4	+0.7	BSD	Bornholm Skovb	156.71	338	*i* P		PKPdf	13 22 47.9	+0.6	VYHS				*e*			13 23 33.9	
IDID				IAmb	IAmb		13 22 51.8			comp=Z,5μm,24.0s								VYHS				*eL*	L		13 39 31.9	
	comp=Z,268nm,1.0s								PCAN	Candelaria	156.78	71	*e*PKPdf		PKPdf	13 22 52.0	+4.0	VAM	Vamos	160.07	280	P		PKPdf	13 22 54.2	+2.1
EREN	Erenkoy	151.98	282	*e*P		PKPdf	13 22 43.8	+2.4	PICO	Pico	156.82	71	*e*PKPdf		PKPdf	13 22 47.3	-0.9	IMMV	Iera Moni Meta	160.25	280	P		PKPdf	13 22 54.6	+2.3
PHNC	Paralimni	152.02	281	P		PKPbc	13 22 47.1	-1.0	BUR08	Bucovina Ar. S	156.85	313	*e*PKPdf		PKPdf	13 22 46.7	-1.2	EREA	Eretria	160.26	289	P		PKPdf	13 22 53.0	+0.8
NC303	NORSAR Array S	152.06	348	*e*PKPdf		PKPdf	13 22 40.1	-0.6	BURAR	Bucovina Array	156.85	313⇑	*i*P		PKPdf	13 22 49.3	+1.4	MDVR	Moldovita	160.26	309⇑	*i*P		PKPdf	13 22 51.7	-0.3
ISAL	Salakas	152.07	328	*e*P		PKPdf	13 22 41.5	+0.7	BEL	Belsk	156.91	326	*e*PKPdf		PKPdf	13 22 48.8	+1.1	SOH	Sokhos	160.35	296	P		PKPdf	13 22 52.4	+0.1
ISAL				IAmb	IAmb		13 22 52.1		BEL				*e*PKPab		PKPab	13 23 14.8	-3.4	DSB	Dublin	160.52	11	*e*PKPdf		PKPdf	13 22 52.1	+0.1
	comp=Z,220nm,1.1s								BEL	Belsk	156.91	326	*e*PKIKP		PKPdf	13 22 48.9	+1.2	BUD	Budapest	160.53	318	*e*PKPdf		PKPdf	13 22 52.4	+0.3
CDAG	Cicekdag	152.09	291	*i* P		PKPbc	13 22 49.5	+1.2	MUD	Monsted U'grnd	156.94	347	*i* P		PKPdf	13 22 47.4	+3.2	CLL	Collm	160.53	335	*e*PKPdf		PKPdf	13 22 51.0	-1.0
NC405	NORSAR Array S	152.10	348	*e*PKPdf		PKPdf	13 22 40.3	-0.5	ROSA	Rosais	156.96	71	*e*PKPdf		PKPdf

BRG				SS	SS	13 47 06.0	-14	
BRG	**Berggiesshubel**	**160.54**	**333**	*i* PKIKP	**PKPdf**	**13 22 51.2**	**-0.9**	
BRG				pmax	pmax			
	comp=Z,150nm,1.5s							
BRG				pmax	pmax			
	comp=Z,181nm,1.5s							
SKIA	**Skiathos**	**160.54**	**291**	P	**PKPdf**	**13 22 54.6**	**+2.1**	
PVCC	**Panska Ves**	**160.56**	**331**	*e*PKPDF	**PKPdf**	**13 22 51.6**	**-0.5**	
PVCC				*e*PKPAB	**PKPab**	**13 23 35.0**	**+0.9**	
PVCC				AMS	AMS	14 32 30.0		
	comp=Z,4µm,23.3s							
PVCC	**Panska Ves**	**160.56**	**331**	*e*PKIKP	**PKPdf**	**13 22 51.6**	**-0.5**	
PVCC				*e*		13 23 35.0		
PVCC				MLR	MLR			
	comp=Z,4µm,23.3s							
VRAC	**Vranov**	**160.59**	**326**	⇑*i*P	**PKPdf**	**13 22 53.0**	**+0.8**	
HORT	**Hortiatis**	**160.59**	**296**	P	**PKPdf**	**13 22 52.5**	**-0.1**	
KNT	**Kendrikon**	**160.62**	**297**	P	**PKPdf**	**13 22 52.7**	**+0.2**	
PKS7	**Kunszentmiklos**	**160.70**	**317**	*e*PKPdf	**PKPdf**	**13 22 52.1**	**-0.2**	
PKS6	**Bocsa**	**160.72**	**315**	*e*PKPdf	**PKPdf**	**13 22 51.3**	**-1.1**	
SMOL	**Smolenice**	**160.72**	**323**	*e*PKP2	**PKPab**	**13 23 38.0**	**+3.1**	
SMOL	**Smolenice**	**160.72**	**323**	*e*PKP	**PKPab**	**13 23 38.0**	**+3.1**	
XOR	**Xorichti**	**160.73**	**292**	P	**PKPdf**	**13 22 51.4**	**-1.3**	
SMIA	**Simia**	**160.78**	**291**	P	**PKPdf**	**13 22 52.6**	**-0.2**	
VAY	**Valandovo**	**160.82**	**298**	P	**PKPdf**	**13 22 53.3**	**+0.6**	
VAY	**Valandovo**	**160.82**	**298**	*e*PKP	**PKPdf**	**13 22 53.5**	**+0.9**	
DID	**Didima**	**160.87**	**286**	P	**PKPdf**	**13 22 52.0**	**-0.9**	
VAL	**Valentia**	**160.89**	**20**	⇓*i*P	**PKPdf**	**13 22 53.9**	**+1.5**	
PKSG		**160.93**	**319**	*e*PKPdf	**PKPdf**	**13 22 51.2**	**-1.4**	
KRND	**KRANIDI**	**160.94**	**286**	P	**PKPdf**	**13 22 52.9**	**0.0**	
GOPC	**GO Pecny, Ondr**	**160.95**	**330**	*e*PKPDF	**PKPdf**	**13 22 52.0**	**-0.6**	
GOPC				*e*pPKP	**pPKPdf**	**13 23 18.6**	**-1.1**	
GOPC				*e*PKPAB	**PKPab**	**13 23 38.2**	**+2.4**	
GOPC				*ex*	x	13 27 40.2		
GOPC				*e*SKKS		13 33 58.7		
GOPC				AMS	AMS	14 31 40.0		
	comp=Z,7µm,25.8s							
LKR	**Lokris**	**160.97**	**290**	P	**PKPdf**	**13 22 52.5**	**-0.4**	
PRA	**Prague**	**160.97**	**330**	*e*PKPDF	**PKPdf**	**13 22 52.3**	**-0.2**	
PRA				*ex*	x	13 27 37.6		
PRA				*e*SKKS		13 34 00.1		
PRA				AMS	AMS	14 32 10.0		
	comp=Z,5µm,21.7s							
PRA	**Prague**	**160.97**	**330**	*e*PKIKP	**PKPdf**	**13 22 52.3**	**-0.2**	
PRA				MLR	MLR			
	comp=Z,5µm,21.7s							
PKS2	**Kecel**	**160.98**	**316**	*e*PKPdf	**PKPdf**	**13 22 51.9**	**-0.8**	
PRU	**Pruhonice**	**160.99**	**330**	*e*PKPDF	**PKPdf**	**13 22 51.8**	**-0.8**	
PRU				*e*pPKP	**pPKPdf**	**13 23 18.8**	**-0.9**	
PRU				*e*PKPAB	**PKPab**	**13 23 38.5**	**+2.5**	
PRU				*ex*	x	13 24 00.7		
PRU				*e*SKKS		13 33 59.0		
PRU				AMS	AMS	14 31 50.0		
	comp=Z,6µm,24.0s							
PRU	**Pruhonice**	**160.99**	**330**	*e*PKIKP	**PKPdf**	**13 22 51.8**	**-0.8**	
PRU				MLR	MLR			
	comp=Z,6µm,24.0s							
CSKK	**Cs˛tkako**	**161.01**	**319**	*e*PKPdf	**PKPdf**	**13 22 51.0**	**-1.7**	
GRG	**Griva**	**161.03**	**297**	P	**PKPdf**	**13 22 53.3**	**+0.3**	
KYTH	**Kithira**	**161.04**	**283**	P	**PKPdf**	**13 22 53.3**	**+0.2**	
TREC	**Trest**	**161.10**	**327**	*e*PKPDF	**PKPdf**	**13 22 52.2**	**-0.6**	
TREC				*e*pPKP	**pPKPdf**	**13 23 18.0**	**-1.9**	
TREC				*ex*	x	13 24 01.6		
TREC				*ex*	x	13 27 40.2		
TREC	**Trest**	**161.10**	**327**	*e*PKIKP	**PKPdf**	**13 22 52.2**	**-0.6**	
PKST	**T˛s**	**161.20**	**319**	*e*PKPdf	**PKPdf**	**13 22 52.2**	**-0.7**	
FOEL	**Foel Wylfa**	**161.27**	**6**	*e*P	**PKPdf**	**13 22 52.3**	**-0.5**	
FOEL				AMS	AMS	14 34 31.2		
	comp=Z,4µm,29.3s							
THAL	**Thalero**	**161.29**	**288**	P	**PKPdf**	**13 22 52.0**	**-1.3**	
DSF	**Desfina**	**161.36**	**289**	P	**PKPdf**	**13 22 52.1**	**-1.3**	
PKS9	**Tamasi**	**161.46**	**317**	*e*PKPdf	**PKPdf**	**13 22 52.2**	**-1.0**	
SKO	**Skopje**	**161.46**	**301**	P	**PKPdf**	**13 22 51.6**	**-1.8**	
SKO	**Skopje**	**161.46**	**301**	*i* PKP	**PKPdf**	**13 22 54.7**	**+1.4**	
PKSM	**Moragy**	**161.46**	**316**	⇑*i*P	**PKPdf**	**13 22 53.0**	**-0.2**	
PKSM	**Moragy**	**161.46**	**316**	*e*PKPdf	**PKPdf**	**13 22 51.1**	**-2.1**	
CWF	**Charnwood Fore**	**161.53**	**2**	*e*P	**PKPdf**	**13 22 52.0**	**-1.0**	
CWF				AMS	AMS	14 34 59.6		
	comp=Z,3µm,28.5s							
CWF	**Charnwood Fore**	**161.53**	**2**	*e*PKPdf	**PKPdf**	**13 22 51.9**	**-1.0**	
CWF				*e*PKPab	**PKPab**	**13 23 36.5**	**-1.7**	
GUR	**Goura**	**161.55**	**288**	P	**PKPdf**	**13 22 52.7**	**-1.0**	
THL	**Klokotos Trika**	**161.60**	**293**	P	**PKPdf**	**13 22 53.6**	**+0.1**	
NKC	**Novy Kostel**	**161.61**	**334**	*e*PKPDF	**PKPdf**	**13 22 52.9**	**-0.4**	
NKC				*e*PKPAB	**PKPab**	**13 23 41.5**	**+2.8**	
NKC				*ex*	x	13 27 41.9		
NKC				*e*SKKS		13 34 04.1		
NKC	**Novy Kostel**	**161.61**	**334**	*e*PKIKP	**PKPdf**	**13 22 52.9**	**-0.4**	
KZN	**Kozani**	**161.64**	**295**	P	**PKPdf**	**13 22 52.4**	**-1.3**	
WTSB	**Winterswijk**	**161.65**	**346**	*e*PKPdf	**PKPdf**	**13 22 51.4**	**-1.7**	
WTSB								
	comp=Z,218nm,1.2s							
WTSB				*e*PKPab	**PKPab**	**13 23 41.2**	**+2.5**	
	comp=Z,84nm,1.0s							
HLM1	**Long Mynd**	**161.66**	**5**	*e*P	**PKPdf**	**13 22 53.0**	**-0.2**	
KALE	**Kalithea**	**161.66**	**289**	P	**PKPdf**	**13 22 54.3**	**+0.5**	
KALE	**Kalithea**	**161.66**	**289**	P	**PKPdf**	**13 22 54.3**	**+0.5**	
KLV	**Kalavryta, Ach**	**161.69**	**288**	P	**PKPdf**	**13 22 52.5**	**-1.3**	
SOP	**Sopron**	**161.71**	**322**	*e*PKPdf	**PKPdf**	**13 22 52.9**	**-0.5**	
LAKA	**Lakka**	**161.81**	**289**	P	**PKPdf**	**13 22 52.8**	**-1.1**	
LAKA	**Lakka**	**161.81**	**289**	P	**PKPdf**	**13 22 52.8**	**-1.1**	
ANX	**Ano Chora**	**161.81**	**290**	P	**PKPdf**	**13 22 52.0**	**-2.0**	
FNA	**Florina**	**161.83**	**297**	*e*P	**PKPdf**	**13 22 52.0**	**-1.9**	
FNA	**Florina**	**161.83**	**297**	P	**PKPdf**	**13 22 53.5**	**-0.4**	
EVR	**Evrytania**	**161.86**	**291**	P	**PKPdf**	**13 22 54.7**	**+0.7**	
EVR	**Evrytania**	**161.86**	**291**	P	**PKPdf**	**13 22 54.7**	**+0.7**	
CONA	**Conrad Observa**	**161.89**	**324**	*i* PKPdf	**PKPdf**	**13 22 51.5**	**-2.2**	
	comp=Z,67nm,1.9s,SNR=18							
ITM	**Ithomi**	**161.92**	**286**	P	**PKPdf**	**13 22 52.0**	**-2.0**	
KPRO	**Kipourio**	**162.02**	**295**	P	**PKPdf**	**13 22 53.6**	**-0.5**	
DRO	**Drossia**	**162.04**	**288**	P	**PKPdf**	**13 22 54.0**	**-0.1**	
KHC	**Kasperske Hory**	**162.05**	**330**	*e*PKPDF	**PKPdf**	**13 22 52.4**	**-1.4**	
KHC				*e*PKPAB	**PKPab**	**13 23 42.7**	**+2.0**	
KHC				*e*SKKS		13 33 59.3		
KHC				AMS	AMS	14 32 20.0		
	comp=Z,7µm,26.4s							
KHC	**Kasperske Hory**	**162.05**	**330**	*e*PKIKP	**PKPdf**	**13 22 52.4**	**-1.4**	
KHC				MLR	MLR			
	comp=Z,7µm,26.4s							
KHC	**Kasperske Hory**	**162.05**	**330**	*e*PKPdf	**PKPdf**	**13 22 52.2**	**-1.6**	
PYL	**PYLOS**	**162.08**	**285**	P	**PKPdf**	**13 22 51.2**	**-3.0**	
PVO	**Paravola**	**162.12**	**290**	P	**PKPdf**	**13 22 55.6**	**+1.5**	
NEST	**Nestorio**	**162.16**	**296**	P	**PKPdf**	**13 22 54.2**	**-0.1**	
OHR	**Ohrid**	**162.17**	**299**	*i* PKP	**PKPdf**	**13 22 55.3**	**+1.1**	
MCH1	**Michaelchurch**	**162.17**	**6**	*e*P	**PKPdf**	**13 22 53.0**	**-0.7**	
MCH1				AMS	AMS	14 33 22.3		
	comp=Z,4µm,34.4s							
GEC2	**GERESS Array S**	**162.22**	**329**	*e*PKIKP	**PKPdf**	**13 22 53.1**	**-0.9**	
GEC2	**GERESS Array S**	**162.22**	**329**	*e*PKPdf	**PKPdf**	**13 22 52.3**	**-1.8**	
GERES	**GERESS Array B**	**162.22**	**329**	PKP	**PKPdf**	**13 22 53.5**	**-0.5**	
	comp=Z,33nm,1.0s,baz=96,slow=1.3,SNR=44							
GERES				PKPab	**PKPab**	**13 23 40.6**	**-0.9**	
	comp=Z,16nm,1.0s,baz=46,slow=3.9,SNR=5.8							
RLS	**Riolos of Patr**	**162.22**	**288**	P	**PKPdf**	**13 22 54.5**	**+0.3**	
RLS	**Riolos of Patr**	**162.22**	**288**	P	**PKPdf**	**13 22 54.5**	**+0.3**	
GEA0	**GERESS Array S**	**162.23**	**329**	*e*PKPdf	**PKPdf**	**13 22 51.7**	**-2.3**	
BEHE	**Becsehely**	**162.37**	**319**	*e*PKPdf	**PKPdf**	**13 22 55.8**	**+1.7**	
DSL	**Palaion Diasel**	**162.37**	**292**	P	**PKPdf**	**13 22 51.6**	**-2.8**	
PDO	**Prodromos**	**162.38**	**290**	P	**PKPdf**	**13 22 51.5**	**-2.9**	
VTN	**Vitineika**	**162.46**	**288**	P	**PKPdf**	**13 22 55.0**	**+0.5**	
JAN	**Janina**	**162.47**	**294**	P	**PKPdf**	**13 22 49.3**	**-5.2**	
GRFO	**Grafenberg**	**162.50**	**335**	*e*PKIKP	**PKPdf**	**13 22 53.7**	**-0.5**	
GRFO	**Grafenberg**	**162.50**	**335**	*e*PKPdf	**PKPdf**	**13 22 53.7**	**-0.5**	
GRFO				*e*PKPab	**PKPab**	**13 23 46.1**	**+3.5**	
ARSA	**Arzberg**	**162.52**	**322**	*e*PKPdf	**PKPdf**	**13 22 52.2**	**-2.1**	
	comp=Z,68nm,1.5s,SNR=23							
MOA	**Molln**	**162.71**	**326**	*e*PKPdf	**PKPdf**	**13 22 52.6**	**-1.8**	
	comp=Z,26nm,1.1s,SNR=11							
SWN1	**Swindon**	**162.74**	**4**	*e*P	**PKPdf**	**13 22 54.4**	**+0.1**	
SWN1				AMS	AMS	14 33 54.4		
	comp=Z,3µm,23.5s							
LKD2	**Lefkada island**	**162.76**	**291**	P	**PKPdf**	**13 22 53.5**	**-1.3**	
BATH	**Bath**	**162.77**	**5**	*e*P	**PKPdf**	**13 22 52.8**	**-1.5**	
PDG	**Podgorica**	**162.83**	**304**	⇑*i*P	**PKPdf**	**13 22 55.4**	**+0.7**	
PDG	**Podgorica**	**162.83**	**304**	P	**PKPdf**	**13 22 53.5**	**-1.2**	
IGT	**Igoumenitsa**	**162.88**	**294**	P	**PKPdf**	**13 22 54.3**	**-0.6**	
IGT	**Igoumenitsa**	**162.88**	**294**	P	**PKPdf**	**13 22 54.3**	**-0.6**	
VLS	**Valsamata**	**162.90**	**289**	P	**PKPdf**	**13 22 53.6**	**-1.3**	
VLS	**Valsamata**	**162.90**	**289**	P	**PKPdf**	**13 22 53.6**	**-1.3**	
SGD	**Sagiada**	**162.94**	**294**	P	**PKPdf**	**13 22 54.2**	**-0.7**	
HGN	**Heimansgroeve**	**162.96**	**347**	*e*PKPdf	**PKPdf**	**13 22 53.3**	**-1.2**	
	comp=Z,121nm,1.3s							
HGN				*e*PKPab	**PKPab**	**13 23 45.4**	**+0.9**	
	comp=Z,260nm,1.3s							
WOL	**Wolverton**	**162.96**	**2**	*e*P	**PKPdf**	**13 22 54.3**	**-0.2**	
BEBN	**Eben Emael**	**162.98**	**347**	PKPdf	**PKPdf**	**13 22 55.8**	**+1.3**	
BEBN				PKPab	**PKPab**	**13 23 47.4**	**+2.9**	
HTL	**Hartland**	**162.99**	**10**	*e*P	**PKPdf**	**13 22 55.6**	**+1.1**	
HTL				AMS	AMS	14 26 20.9		
	comp=Z,1µm,31.2s							
MEM	**Membach**	**163.09**	**347**	PKPdf	**PKPdf**	**13 22 54.5**	**-0.2**	
MEM				PKPab	**PKPab**	**13 23 46.7**	**+1.7**	
BLY	**Banja Luka**	**163.12**	**313**	⇑*i*P	**PKPdf**	**13 22 56.1**	**+1.2**	
PERS	**Pernice**	**163.14**	**322**	*i* PKPdf	**PKPdf**	**13 22 53.2**	**-1.8**	
SOKA	**Soboth**	**163.16**	**322**	*e*PKPdf	**PKPdf**	**13 22 53.1**	**-1.9**	
	comp=Z,86nm,1.4s,SNR=26							
KEK	**Kerkira**	**163.25**	**295**	P	**PKPdf**	**13 22 55.3**	**+0.1**	
BCLA	**Clavier**	**163.41**	**348**	PKPdf	**PKPdf**	**13 22 54.8**	**-0.2**	
BCLA				PKPab	**PKPab**	**13 23 47.5**	**+1.0**	
SNF	**Seneffe**	**163.48**	**350**	PKPdf	**PKPdf**	**13 22 53.8**	**-1.2**	
SNF				PKPab	**PKPab**	**13 23 48.7**	**+2.0**	
DYA	**Yadsworthy**	**163.61**	**9**	*e*PKPdf	**PKPdf**	**13 22 55.7**	**+0.5**	
DYA				*e*PKPab	**PKPab**	**13 23 48.5**	**+1.1**	
MENF	**Mencas**	**163.66**	**355**	PKP	**PKPdf**	**13 22 53.0**	**-2.2**	
KBA	**Koelnbreinsper**	**163.70**	**326**	*e*PKPdf	**PKPdf**	**13 22 53.7**	**-1.9**	
	comp=Z,96nm,1.1s,SNR=43							
BOJS	**Bojanci**	**163.80**	**318**	*i* PKPdf	**PKPdf**	**13 22 53.9**	**-1.6**	
VISS	**Visnje**	**163.83**	**320**	*i* PKPdf	**PKPdf**	**13 22 54.2**	**-1.3**	
DOU	**Dourbes**	**163.84**	**349**	PKPdf	**PKPdf**	**13 22 55.3**	**-0.1**	
DOU				PKPab	**PKPab**	**13 23 51.0**	**+2.7**	
LJU	**Ljubljana**	**163.84**	**321**	*e*PKPdf	**PKPdf**	**13 22 54.0**	**-1.6**	
MYKA	**Terra Mystica**	**163.88**	**324**	*e*PKPdf	**PKPdf**	**13 22 54.0**	**-1.7**	
	comp=Z,69nm,1.3s,SNR=16							
WLF	**Walferdange**	**163.96**	**345**	*e*PKP2	**PKPab**	**13 23 51.1**	**+2.2**	
STU	**Stuttgart**	**163.97**	**337**	*e*PKIKP	**PKPdf**	**13 22 56.5**	**+0.9**	
STU	**Stuttgart**	**163.97**	**337**	*e*PKPdf	**PKPdf**	**13 22 56.5**	**+0.9**	
JAVS	**Javornik**	**164.18**	**321**	*i* PKPdf	**PKPdf**	**13 22 53.9**	**-2.1**	
LANF	**Langenberg**	**164.20**	**341**	PKP	**PKPdf**	**13 22 54.5**	**-1.3**	
WTTA	**Wattenberg**	**164.32**	**329**	*i* PKPdf	**PKPdf**	**13 22 55.0**	**-1.2**	
	comp=Z,90nm,1.6s,SNR=22							
ABTA	**Abfaltersbach**	**164.33**	**326**	*e*PKPdf	**PKPdf**	**13 22 53.8**	**-2.3**	
	comp=Z,81nm,1.3s,SNR=27							
MOTA	**Moosalm**	**164.48**	**331**	*e*PKPdf	**PKPdf**	**13 22 55.3**	**-1.0**	
	comp=Z,43nm,1.1s,SNR=13							
RETA	**Reutte**	**164.50**	**332**	*i* PKPdf	**PKPdf**	**13 22 54.9**	**-1.3**	
	comp=Z,51nm,1.4s,SNR=17							
BFO	**Black Forest**	**164.63**	**338**	*e*PKIKP	**PKPdf**	**13 22 54.3**	**-1.9**	
BFO	**Black Forest**	**164.63**	**338**	*e*PKPdf	**PKPdf**	**13 22 54.3**	**-1.9**	
WLS	**Welschbruch**	**164.84**	**341**	PKP	**PKPdf**	**13 22 52.8**	**-3.6**	
FETA	**Feichten**	**164.89**	**331**	*e*PKPdf	**PKPdf**	**13 22 54.8**	**-1.9**	
	comp=Z,92nm,1.2s,SNR=38							
DAVA	**Damuels**	**165.01**	**333**	*e*PKPdf	**PKPdf**	**13 22 55.2**	**-1.6**	
	comp=Z,61nm,1.2s,SNR=21							
ECH	**Echery**	**165.07**	**341**	PKP	**PKPdf**	**13 22 55.9**	**-0.7**	
MATE	**Matera**	**165.26**	**300**	⇑*i*P	**PKPdf**	**13 22 56.6**	**-0.3**	
FUORN	**Ofenpass-Fuorn**	**165.41**	**331**	*e*PKPdf	**PKPdf**	**13 22 55.3**	**-1.9**	
MOF	**Molkenrain**	**165.41**	**340**	PKP	**PKPdf**	**13 22 55.2**	**-1.8**	
PMOZ	**Porto Moniz, M**	**165.63**	**91**	*e*LR	LR	14 20 23.4		
	comp=Z,3µm,22.0s							
TIP	**Timpagrande**	**165.66**	**295**	⇑*i*P	**PKPdf**	**13 22 57.5**	**0.0**	
TIP	**Timpagrande**	**165.66**	**295**	P	**PKPdf**	**13 22 55.5**	**-2.0**	
TIP	**Timpagrande**	**165.66**	**295**	*e*PKPdf	**PKPdf**	**13 22 55.8**	**-1.6**	
TUE	**Stuetta**	**165.89**	**332**	*e*PKPdf	**PKPdf**	**13 22 55.6**	**-2.0**	
LOMF	**Lomont**	**165.96**	**340**	PKP	**PKPdf**	**13 22 56.4**	**-1.0**	
CUC	**Castrocucco**	**166.12**	**299**	*e*PKPdf	**PKPdf**	**13 22 56.0**	**-1.8**	
CEL	**Celeste**	**166.53**	**292**	*e*PKPdf	**PKPdf**	**13 22 56.0**	**-2.1**	
CEL				*e*PKPdf	PKPdf	13 22 60.0	+1.8	
CEL				*e*PKPab	**PKPab**	**13 24 01.3**	**+0.4**	
SENIN	**Lac Senin/Sane**	**166.70**	**337**	*e*PKPdf	**PKPdf**	**13 22 56.4**	**-1.8**	
AQU	**L'Aquila**	**166.72**	**311**	*e*PKIKP	**PKPdf**	**13 22 59.5**	**+1.3**	
AQU	**L'Aquila**	**166.72**	**311**	*e*PKPdf	**PKPdf**	**13 22 59.5**	**+1.3**	
TAM	**Tamanrasset**	**167.55**	**205**	*e*PKIKP	**PKPdf**	**13 22 59.4**	**-0.1**	
TAM	**Tamanrasset**	**167.55**	**205**	*e*PKPdf	**PKPdf**	**13 22 59.4**	**-0.1**	
PLDF	**La Plantade**	**168.00**	**348**	PKP	**PKPdf**	**13 22 57.6**	**-1.4**	
AGO	**Saint Agoulin**	**168.00**	**349**	PKP	**PKPdf**	**13 22 58.3**	**-0.6**	
GDM	**Grand'Maison**	**168.11**	**338**	PKP	**PKPdf**	**13 22 58.3**	**-0.9**	
GRN	**Grenoble**	**168.19**	**340**	PKP	**PKPdf**	**13 22 58.8**	**-0.4**	
PYM	**Petit Puy Mans**	**168.31**	**349**	PKP	**PKPdf**	**13 22 58.4**	**-0.8**	
VERF	**Verneugheol**	**168.39**	**351**	PKP	**PKPdf**	**13 22 57.9**	**-1.3**	
SSB	**Saint Sauveur**	**168.47**	**344**	PKP	**PKPdf**	**13 22 58.1**	**-1.2**	
SSB	**Saint Sauveur**	**168.47**	**344**	*e*PKIKP	**PKPdf**	**13 22 58.4**	**-0.9**	
SSB	**Saint Sauveur**	**168.47**	**344**	*e*PKPdf	**PKPdf**	**13 22 58.4**	**-0.9**	
SSB				*e*PKPab	**PKPab**	**13 24 11.9**	**+2.9**	
AUTN	**L'Aution**	**168.70**	**331**	PKP	**PKPdf**	**13 22 59.4**	**-0.3**	
FRNF	**Fournols**	**168.73**	**351**	PKP	**PKPdf**	**13 23 00.7**	**+1.2**	
LBL	**Lubilhac**	**168.78**	**348**	PKP	**PKPdf**	**13 22 58.7**	**-0.8**	
LUCF	**Luceram**	**168.82**	**331**	PKP	**PKPdf**	**13 22 57.9**	**-1.7**	
MVIF	**Mont Vial**	**168.89**	**332**	PKP	**PKPdf**	**13 22 58.4**	**-1.4**	
OG26	**St.-Nazaire-De**	**168.92**	**340**	PKP	**PKPdf**	**13 22 58.3**	**-1.3**	
REVF	**Revere**	**168.94**	**331**	PKP	**PKPdf**	**13 22 57.3**	**-2.4**	
CALN	**Calern**	**169.12**	**332**	PKP	**PKPdf**	**13 22 57.9**	**-2.0**	
PGAV	**Gavieira, Arco**	**169.97**	**38**	*e*PKPdf	**PKPdf**	**13 23 01.5**	**+1.1**	
PGAV	**Gavieira, Arco**	**169.97**	**38**	*e*PKPab	**PKPab**	**13 24 16.3**	**+0.4**	
PGAV	**Gavieira, Arco**	**169.97**	**38**	*e*PP	PP	13 28 06.6	+0.7	
PGAV	**Gavieira, Arco**	**169.97**	**38**	*e*SS	SS	13 49 04.4	+7.5	
PGAV	**Gavieira, Arco**	**169.97**	**38**	*e*LR	LR	14 21 57.4		
	comp=Z,2µm,22.0s							
PCAB	**Cabril**	**170.28**	**38**	*e*PKPdf	**PKPdf**	**13 23 01.6**	**+1.1**	
PCAB	**Cabril**	**170.28**	**38**	*e*PKPab	**PKPab**	**13 24 16.9**	**-0.3**	
PCAB	**Cabril**	**170.28**	**38**	*e*PP	PP	13 28 05.9	-1.5	
POLO	**Lamas de Olo**	**170.65**	**39**	*e*PKPdf	**PKPdf**	**13 23 02.4**	**+1.6**	
POLO	**Lamas de Olo**	**170.65**	**39**	*e*PKPab	**PKPab**	**13 24 20.7**	**+1.8**	
POLO	**Lamas de Olo**	**170.65**	**39**	*e*PP	PP	13 28 11.1	+1.8	
POLO	**Lamas de Olo**	**170.65**	**39**	*e*SS	SS	13 49 11.0	+7.4	
PVRL	**Vila Real**	**170.76**	**39**	*e*PKPdf	**PKPdf**	**13 23 02.1**	**+1.3**	
PVRL	**Vila Real**	**170.76**	**39**	*e*PKPab	**PKPab**	**13 24 19.7**	**+0.3**	
PVRL	**Vila Real**	**170.76**	**39**	*e*PP	PP	13 28 10.2	+0.4	
VSL	**Villasalto**	**170.83**	**307**	*e*PKPdf	**PKPdf**	**13 22 59.7**	**-1.1**	
PBRG	**Braganca**	**170.83**	**33**	*e*PKPdf	**PKPdf**	**13 23 00.7**	**-0.1**	
PBRG	**Braganca**	**170.83**	**33**	*e*PKPab	**PKPab**	**13 24 20.9**	**+1.3**	
PBRG	**Braganca**	**170.83**	**33**	*e*PP	PP	13 28 11.8	+1.8	
OSSF	**Osses**	**170.99**	**6**	PKP	**PKPdf**	**13 23 00.6**	**-0.2**	
ORDF	**Ordiarp**	**171.06**	**4**	PKP	**PKPdf**	**13 23 02.3**	**+1.5**	
PVIS	**Viseu**	**171.06**	**42**	*e*PKPdf	**PKPdf**	**13 23 02.1**	**+1.1**	
PVIS	**Viseu**	**171.06**	**42**	*e*PKPab	**PKPab**	**13 24 21.9**	**+1.2**	
PVIS	**Viseu**	**171.06**	**42**	*e*PP	PP	13 28 12.0	+0.6	
LRDF	**Larouse-de-Fa**	**171.13**	**348**	PKP	**PKPdf**	**13 23 00.3**	**-0.6**	
PCAS	**Casmilo, Conde**	**171.14**	**47**	*e*PKPdf	**PKPdf**	**13 23 02.1**	**+1.1**	
PCAS	**Casmilo, Conde**	**171.14**	**47**	*e*PP	PP	13 28 14.2	+2.3	
PCAS	**Casmilo, Conde**	**171.14**	**47**	*e*SS	SS	13 49 12.8	+4.0	
MVO	**Moncorvo**	**171.19**	**37**	*e*PKPdf	**PKPdf**	**13 23 02.7**	**+1.6**	
MVO	**Moncorvo**	**171.19**	**37**	*e*PKPab	**PKPab**	**13 24 23.6**	**+2.3**	
MVO	**Moncorvo**	**171.19**	**37**	*e*PP	PP	13 28 14.1	+2.2	
MVO	**Moncorvo**	**171.19**	**37**	*e*SS	SS	13 49 13.6	+4.8	
MVO	**Moncorvo**	**171.19**	**37**	*e*LR	LR	14 23 01.4		
	comp=Z,2µm,22.0s							
ATE	**Arette**	**171.20**	**3**	PKP	**PKPdf**	**13 23 00.9**	**0.0**	
REYF	**Montagne du Re**	**171.22**	**2**	PKP	**PKPdf**	**13 23 01.4**	**+0.4**	
LARF	**Larrau**	**171.23**	**4**	PKP	**PKPdf**	**13 23 01.5**	**+0.5**	
PMAFR	**Mafra**	**171.24**	**55**	*e*PKPdf	**PKPdf**	**13 23 00.7**	**-0.4**	
PMAFR	**Mafra**	**171.24**	**55**	*e*PKPab	**PKPab**	**13 24 23.6**	**+2.0**	
PMAFR	**Mafra**	**171.24**	**55**	*e*PP	PP	13 28 14.7	+2.0	
PMAFR	**Mafra**	**171.24**	**55**	*e*SS	SS	13 49 16.4	+6.1	
LABF	**Labassere**	**171.25**	**359**	PKP	**PKPdf**	**13 22 59.9**	**-1.1**	
MELF	**Melles**	**171.40**	**356**	PKP	**PKPdf**	**13 23 01.4**	**+0.3**	
CARF	**Carcanieres**	**171.41**	**349**	PKP	**PKPdf**	**13 23 02.0**	**+0.8**	
VIEF	**Viey**	**171.41**	**360**	PKP	**PKPdf**	**13 23 01.0**	**-0.1**	
PMST	**Lisbon--Monsan**	**171.42**	**56**	*e*PKPdf	**PKPdf**	**13 23 02.8**	**+1.7**	
PMST	**Lisbon--Monsan**	**171.42**	**56**	*e*PKPab	**PKPab**	**13 24 22.3**	**-0.1**	
PMST	**Lisbon--Monsan**	**171.42**	**56**	*e*PP	PP	13 28 13.3	-0.3	
LIS	**Lisbon**	**171.45**	**56**	*e*P	**PKPdf**	**13 23 01.7**	**+0.5**	
LIS				*e*PP	**PP**	**13 28 14.3**	**+0.6**	
PTOM	**Tomar**	**171.46**	**49**	*e*PKPdf	**PKPdf**	**13 23 02.7**	**+1.6**	
PTOM	**Tomar**	**171.46**	**49**	*e*PKPab	**PKPab**	**13 24 22.5**	**0.0**	
PTOM	**Tomar**	**171.46**	**49**	*e*PP	PP	13 28 14.6	+1.0	
MTE	**Manteigas**	**171.47**	**42**	*e*PKPdf	**PKPdf**	**13 23 02.2**	**+1.0**	
MTE	**Manteigas**	**171.47**	**42**	*e*PP	PP	13 28 14.9	+1.4	
MTE	**Manteigas**	**171.47**	**42**	*e*SS	SS	13 49 19.6	+7.7	
MTE	**Manteigas**	**171.47**	**42**	*e*LR	LR	14 22 56.5		
	comp=Z,3µm,18.0s							
MTE	**Manteigas**	**171.47**	**42**	*e*PKPdf	**PKPdf**	**13 23 01.1**	**-0.1**	
SALF	**Salau**	**171.48**	**354**	PKP	**PKPdf**	**13 23 02.3**	**+1.2**	
FILF	**Fillols**	**171.49**	**347**	PKP	**PKPdf**	**13 23 00.6**	**-0.6**	
SJAF	**Saint Jean de**	**171.50**	**345**	PKP	**PKPdf**	**13 23 00.4**	**-0.7**	
PACT	**Alcochete**	**171.64**	**55**	*e*PKPdf	**PKPdf**	**13 23 01.4**	**+0.2**	
PACT

MJB9	**Matsu-Tunnel**	**4.93**	**224**	*e*Pn		**Pn**		**13 04 34.7**	**+3.2**
MAJO	**Matsushiro**	**4.93**	**224**	*e*P		**Pn**		**13 04 34.7**	**+3.2**
MAJO	**Matsushiro**	**4.93**	**224**	*e*Pn		**Pn**		**13 04 34.7**	**+3.2**
MAT	**Matsushiro**	**4.93**	**224**	P		**Pn**		**13 04 34.9**	**+3.4**
MAT				*e*S		**Sn**		**13 05 26.0**	**-1.3**
MJAR	**Matsushiro Arr**	**4.93**	**224**	Pn		**Pn**		**13 04 35.3**	**+3.8**
	comp=Z,6.5nm,0.3s,baz=32,slow=13,SNR=184								
MJAR				LR		LR		13 06 42.8	
	comp=Z,806nm,20.2s,baz=50,slow=42								
KUR	**Kuril'sk**	**6.43**	**37**	*e*P		**Pn**		**13 04 52.7**	**+0.6**
KUR				*e*S		**Sn**		**13 06 02.5**	**-1.7**
KUR				pmax	pmax				
	comp=Z,97nm,0.4s								
KUR				pmax	pmax				
	comp=E,44nm,0.2s								
KUR				pmax	pmax				
	comp=N,35nm,0.3s								
INU	**Inuyama**	**6.46**	**223**	*e*Pn		**Pn**		**13 04 54.9**	**+2.4**
YSS	**Yuzh-Sakhalins**	**6.77**	**2**	*i*P		**Pn**		**13 04 59.1**	**+2.4**
YSS				*e*S		**Sn**		**13 06 09.9**	**-2.6**
YSS				pmax	pmax				
	comp=Z,60nm,0.9s								
YSS				pmax	pmax				
	comp=N,50nm,0.8s								
YSS				smax	smax				
	comp=N,40nm,0.9s								
YSS				MLR	MLR				
	comp=Z,600nm,16.0s								
YSS	**Yuzh-Sakhalins**	**6.77**	**2**	*e*Pn		**Pn**		**13 04 58.2**	**+1.5**
JHJ2	**Mitsune**	**7.37**	**197**	*e*P		**Pn**		**13 05 04.2**	**-0.8**
JHJ	**Hachijo jima 2**	**7.37**	**198**	Pn		**Pn**		**13 05 05.5**	**+0.5**
	comp=Z,8.7nm,0.3s,baz=130,slow=23,SNR=7.8								
JHJ				Sn		**Sn**		**13 06 22.6**	**-4.7**
	comp=Z,7.4nm,0.3s,baz=75,slow=20,SNR=2.4								
VLA	**Vladivostok**	**8.43**	**294**	*e*P		**Pn**		**13 05 18.6**	**-0.9**
USRK	**Ussuriysk Ar.**	**8.74**	**301**	Pn		**Pn**		**13 05 27.8**	**+4.1**
	comp=Z,2.0nm,0.3s,baz=106,slow=14,SNR=22								
USRK				LR		LR		13 08 42.4	
	comp=Z,636nm,18.6s,baz=135,slow=38								
MSHR	**Mys Shultsa**	**8.82**	**289**	*e*P		**Pn**		**13 05 26.8**	**+2.0**
HABR	**Khabarovsk**	**9.83**	**330**	*e*P		**Pn**		**13 05 35.9**	**-2.7**
HABR				*e*S		**Sn**		**13 07 23.9**	**-3.7**
HABR				pmax	pmax				
	comp=E,25nm,1.8s								
HABR				pmax	pmax				
	comp=Z,26nm,1.8s								
HABR				pmax	pmax				
	comp=N,27nm,1.8s								
HABR				MLR	MLR				
	comp=Z,282nm,14.0s								
MDJ	**Mudanjiang**	**10.48**	**299**	P		**Pn**		**13 05 51.8**	**+4.2**
MDJ				pmax	pmax				
	comp=Z,24nm,0.9s								
MDJ				pmax	pmax				
	comp=Z,90nm,5.7s								
MDJ	**Mudanjiang**	**10.48**	**299**	*e*P		**Pn**		**13 05 51.9**	**+4.2**
	comp=Z,23nm,0.9s								
TYV	**Tymovskoe**	**10.68**	**1**	*e*P		**Pn**		**13 05 53.2**	**+2.9**
TYV				pmax	pmax				
	comp=Z,22nm,1.0s								
KSRS	**Korea Array**	**11.65**	**261**	Pn		Pn		13 06 08.7	+5.1
	comp=Z,0.5nm,0.3s,baz=79,slow=13,SNR=8.2								
JNU	**Nakatsue**	**11.65**	**236**	Pn		**Pn**		**13 06 04.2**	**+0.5**
	comp=Z,0.2nm,0.3s,baz=79,slow=16,SNR=3.0								
KSAR	**Wonju Array Be**	**11.69**	**261**	P		**Pn**		**13 06 08.7**	**+4.6**
KSAR	**Wonju Array Be**	**11.69**	**261**	Pn		**Pn**		**13 06 08.7**	**+4.6**
KLR	**Kul'dur**	**11.81**	**324**	Pn		**Pn**		**13 06 06.0**	**+0.3**
	comp=Z,0.3nm,0.3s,baz=135,slow=13,SNR=9.9								
KLR				LR		LR		13 10 43.9	
	comp=Z,450nm,19.7s,baz=126,slow=38								
KLR	**Kul'dur**	**11.81**	**324**	P		**Pn**		**13 06 06.0**	**+0.3**
NKL	**Nikolayevsk**	**13.03**	**355**	*e*P		**Pn**		**13 06 21.0**	**-1.3**
NKL				pmax	pmax				
	comp=Z,13nm,1.0s								
CN2	**Changchun**	**13.15**	**292**	*e*P		**P**		**13 06 30.4**	**-3.1**
PETK	**Petropavlovsk-**	**16.59**	**34**	Pn		**P**		**13 07 11.4**	**-0.2**
	comp=Z,0.1nm,0.3s,baz=187,slow=11,SNR=3.8								
BJT	**Baijiatuan**	**20.08**	**278**	*e*P		**P**		**13 07 49.1**	**-1.0**
BJT				pmax	pmax				
	comp=Z,18nm,0.8s								
BJT	**Baijiatuan**	**20.08**	**278**	*e*P		**P**		**13 07 49.1**	**-1.0**
	comp=Z,18nm,0.8s								
MA2	**Magadan**	**20.11**	**12**	P		**P**		**13 07 49.8**	**-0.4**
	comp=Z,5.1nm,0.5s,baz=217,slow=9.8,SNR=17								
CLNS	**Chul'man**	**20.22**	**331**	*e*P		**P**		**13 07 49.2**	**-2.2**
CLNS				pmax	pmax				
	comp=N,8.0nm,0.9s								
CLNS				pmax	pmax				
	comp=Z,19nm,0.9s								
CLNS				pmax	pmax				
	comp=E,5.0nm,0.7s								
TIA	**Tai'an**	**20.27**	**267**	*e*P		**P**		**13 07 51.9**	**-0.2**
TIA				pmax	pmax				
	comp=E,10.0nm,0.6s								
NJ2	**Nanjing**	**20.67**	**254**	*e*P		**P**		**13 07 52.3**	**-4.2**
NJ2				pmax	pmax				
	comp=E,16nm,0.8s								
YOJ	**Yonaguni jima**	**22.63**	**232**	*e*P		**P**		**13 08 15.6**	**-1.9**
YOJ				pmax	pmax				
	comp=Z,76nm,0.9s								
YOJ	**Yonaguni jima**	**22.63**	**232**	*e*P		**P**		**13 08 15.6**	**-1.9**
	comp=Z,76nm,0.9s								
CIT	**Chita**	**23.10**	**310**	*e*P		**P**		**13 08 22.7**	**+0.4**
CIT				*e*				13 08 41.3	
YAK	**Yakutsk**	**23.21**	**345**	P		**P**		**13 08 21.3**	**-1.9**
	comp=Z,31nm,0.5s,baz=341,slow=2.0,SNR=16								
YAK	**Yakutsk**	**23.21**	**345**	*e*P		**P**		**13 08 21.0**	**-2.2**
YAK				*e*				13 08 41.0	
YAK				*e*S		**S**		**13 12 23.9**	**-8.2**
YAK				*e*				13 19 35.1	
YAK				pmax	pmax				
	comp=Z,48nm,0.9s								
YAK				pmax	pmax				
	comp=N,18nm,0.9s								
YAK				pmax	pmax				
	comp=E,5.0nm,1.0s								
YAK				pmax	pmax				
	comp=Z,44nm,1.1s								
YAK				pmax	pmax				
	comp=N,10.0nm,0.9s								
YAK				pmax	pmax				
	comp=E,12nm,1.4s								
YAK				smax	smax				
	comp=E,69nm,2.2s								
YAK				smax	smax				
	comp=N,94nm,2.3s								
YAK				MLR	MLR				
	comp=Z,701nm,20.0s								
YAK				MLR	MLR				
	comp=E,134nm,20.0s								
YAK				MLR	MLR				
	comp=N,192nm,19.0s								
YAK	**Yakutsk**	**23.21**	**345**	*e*P		**P**		**13 08 20.8**	**-2.4**
	comp=N,37nm,0.6s								
HHC	**Hu-ho-hao-te**	**23.43**	**282**	*e*P		**P**		**13 08 21.0**	**-4.7**
HHC				pP		sP		13 08 42.6	+1.9
HHC				PP		**PnPn**		**13 08 53.8**	**+0.9**
HHC				S		S		13 12 16.3	-20
HHC				pmax	pmax				
	comp=N,16nm,0.9s								
HHC				pmax	pmax				
	comp=N,80nm,4.9s								
HHC				LR	LR				
	comp=N,1μm,14.1s								
HHC				LR	LR				
	comp=N,2μm,15.7s								
HHC				LR	LR				
	comp=N,2μm,17.8s								
SEY	**Seymchan**	**23.55**	**11**	P		**P**		**13 08 26.2**	**-0.3**
	comp=N,8.4nm,0.8s,baz=193,slow=8.9,SNR=40								
SEY	**Seymchan**	**23.55**	**11**	*i*P		**P**		**13 08 27.3**	**+0.8**
WHN	**Wuhan**	**24.76**	**256**	P		**P**		**13 08 38.3**	**+0.4**
BOD	**Bodaibo**	**25.39**	**324**	*e*P		**P**		**13 08 42.6**	**-0.8**
BOD				pmax	pmax				
	comp=Z,23nm,0.8s								
ULN	**Ulaanbaatar**	**26.40**	**299**	*i*P		**P**		**13 08 53.0**	**+0.1**
ULN				pmax	pmax				
	comp=Z,6.0nm,0.7s								
ULN	**Ulaanbaatar**	**26.40**	**299**	P		**P**		**13 08 48.7**	**-4.2**
	comp=Z,0.4nm,0.4s								
ULN	**Ulaanbaatar**	**26.40**	**299**	*e*P		**P**		**13 08 52.4**	**-0.5**
	comp=Z,5.4nm,0.7s								
SONA1	**Songino Array**	**26.84**	**299**	*e*P		P		13 08 48.8	-8.0
SONM	**Songino Array**	**26.84**	**299**	P		**P**		**13 08 57.2**	**+0.3**
	comp=Z,5.9nm,0.7s,baz=103,slow=8.4,SNR=40								
ENH	**Enshi**	**28.54**	**260**	P		**P**		**13 09 11.5**	**-0.5**
	comp=Z,14nm,0.7s								
TLY	**Talaya**	**29.00**	**306**	P		**P**		**13 09 16.7**	**+0.9**
	comp=Z,4.2nm,0.7s,baz=150,slow=3.7,SNR=6.5								
TLY	**Talaya**	**29.00**	**306**	*e*P		**P**		**13 09 16.8**	**+0.9**
TLY				*e*S		**S**		**13 14 05.1**	**+0.9**
TLY				pmax	pmax				
	comp=Z,13nm,1.5s								
TLY				MLR	MLR				
	comp=Z,1μm,21.0s								
TLY	**Talaya**	**29.00**	**306**	*e*P		**P**		**13 09 15.1**	**-0.8**
	comp=Z,8.1nm,1.0s								
ZAK	**Zakamensk**	**29.07**	**304**	*e*P		**P**		**13 09 16.0**	**-0.7**
ZAK				pmax	pmax				
	comp=Z,10.0nm,1.2s								
H11N2	**WAKE ISLAND Hy**	**29.23**	**127**	T		T		13 40 00.5	
	baz=319,slow=75,SNR=580								
H11N1	**WAKE ISLAND Hy**	**29.24**	**127**	T		T		13 40 19.0	
	baz=319,slow=75,SNR=713								
H11N3	**WAKE ISLAND Hy**	**29.25**	**127**	T		T		13 40 21.7	
	baz=319,slow=75,SNR=959								
H11S1	**WAKE ISLAND Hy**	**30.05**	**129**	T		T		13 41 20.6	
	baz=321,slow=76,SNR=212								
H11S3	**WAKE ISLAND Hy**	**30.05**	**129**	T		T		13 41 12.0	
	baz=321,slow=76,SNR=165								
H11S2	**WAKE ISLAND Hy**	**30.07**	**129**	T		T		13 41 18.7	
	baz=321,slow=76,SNR=176								
LZH	**Lanzhou**	**30.47**	**275**	*e*P		**P**		**13 09 28.1**	**-1.2**
LZH				pP		sP		13 09 43.8	-0.9
LZH				sP		pP		13 09 54.8	+15
LZH				PP		**PnPn**		**13 10 24.8**	**-4.0**
LZH				*e*S		S		13 14 13.1	-15
LZH				pmax	pmax				
	comp=Z,15nm,1.1s								
LZH				pmax	pmax				
	comp=Z,74nm,5.4s								
LZH				LR	LR				
	comp=Z,990nm,12.6s								
LZH				LR	LR				
	comp=Z,480nm,12.4s								
LZH				LR	LR				
	comp=Z,3μm,13.4s								
MOY	**Mondy**	**30.63**	**306**	*e*P		**P**		**13 09 30.7**	**+0.2**
BILL	**Bilibino**	**30.78**	**17**	*ce*P		**P**		**13 09 32.3**	**+0.8**
BILL				*e*				13 09 44.4	
BILL				*e*				13 10 30.9	
BILL				*e*PPP		PPP		13 10 50.0	
BILL				pmax	pmax				
	comp=Z,5.0nm,1.1s								
TIXI	**Tiksi**	**32.28**	**352**	P		**P**		**13 09 44.3**	**-0.3**
	comp=Z,1.2nm,0.4s,baz=174,slow=5.1,SNR=12								
TIXI	**Tiksi**	**32.28**	**352**	*i*P		**P**		**13 09 44.2**	**-0.3**
TIXI				pmax	pmax				
	comp=Z,3.0nm,0.9s								
TIXI	**Tiksi**	**32.28**	**352**	P		**P**		**13 09 41.9**	**-2.6**
	comp=Z,2.6nm,0.9s								
GTA	**Gaotai**	**32.53**	**283**	*e*P		**P**		**13 09 47.0**	**-0.3**
GTA				pP		sP		13 10 04.3	+1.5
GTA				sP		pP		13 10 12.3	+14
GTA				pmax	pmax				
	comp=Z,5.0nm,1.1s								
CD2	**Chengdu**	**32.59**	**266**	P		**P**		**13 09 43.4**	**-4.5**
CD2				pP		sP		13 10 01.8	-1.5
CD2				sP		pP		13 10 11.3	+13
CD2				PP		**PnPn**		**13 10 54.8**	**-1.4**
CD2				S		S		13 14 43.8	-17
CD2				pmax	pmax				
	comp=Z,20nm,0.5s								
CD2				pmax	pmax				
	comp=Z,150nm,4.5s								
CD2				LR	LR				
	comp=Z,1μm,13.1s								
CD2				LR	LR				
	comp=Z,2μm,13.7s								
GYA	**Guiyang**	**32.65**	**256**	P		**P**		**13 09 45.9**	**-2.6**
GYA				pP		sP		13 10 06.3	+2.4
GYA				sP		pP		13 10 17.0	+18
GYA				PP		**PnPn**		**13 10 52.6**	**-4.4**
GYA				S		S		13 14 45.8	-16
GYA				ScP		**ScP**		**13 16 15.3**	**+0.7**
GYA				ScS		**ScS**		**13 20 11.0**	**-3.5**
GYA				pmax	pmax				
	comp=Z,10.0nm,0.8s								
GYA				pmax	pmax				
	comp=Z,120nm,4.9s								
GYA				LR	LR				
	comp=Z,560nm,17.1s								
GYA				LR	LR				
	comp=Z,510nm,17.0s								
GYA				LR	LR				
	comp=Z,520nm,17.6s								
KMI	**Kunming**	**36.33**	**258**	P		**P**		**13 10 20.5**	**+0.1**
KMI				pP		sP		13 10 41.3	+5.4
KMI				pmax	pmax				
	comp=Z,25nm,0.8s								
KMI				pmax	pmax				
	comp=Z,85nm,4.5s								
WMQ	**Urumqi**	**40.23**	**294**	P		**P**		**13 10 53.8**	**+1.0**
WMQ				pP		sP		13 11 08.8	+0.4
WMQ				sP		pP		13 11 21.8	+18
WMQ				pmax	pmax				
	comp=Z,8.0nm,0.8s								
WMQ				pmax	pmax				
	comp=Z,33nm,4.6s								
WMQ				LR	LR				
	comp=Z,120nm,20.0s								
WMQ				LR	LR				
	comp=Z,300nm,21.4s								
WMQ				LR	LR				
	comp=Z,200nm,18.4s								
ZAA0	**Zalesovo Array**	**40.46**	**310**	*e*P		**P**		**13 10 54.1**	**-0.4**
ZALV	**Zalesovo Beam**	**40.46**	**310**	P		**P**		**13 10 54.9**	**+0.5**
	comp=Z,8.8nm,0.8s,baz=91,slow=7.6,SNR=32								
ZALV				PcP		**PcP**		**13 12 57.0**	**+0.4**
	comp=Z,2.0nm,0.4s,baz=101,slow=4.3,SNR=4.6								
ZALV	**Zalesovo Beam**	**40.46**	**310**	*i*P		**P**		**13 10 55.0**	**+0.5**
ZALV				pmax	pmax				
	comp=Z,9.0nm,0.7s								
NRIK	**Noril'sk**	**40.78**	**334**	P		**P**		**13 10 57.7**	**+0.8**
	comp=Z,2.7nm,0.4s,baz=103,slow=8.7,SNR=4.9								
MYLDM	**Lahad Datu**	**40.97**	**218**	*e*P		**P**		**13 11 01.8**	**+2.7**
	comp=Z,19nm,1.0s								
NVS	**Novosibirsk**	**41.31**	**311**	*e*P		**P**		**13 11 01.8**	**+0.3**
NVS				pmax	pmax				
	comp=E,8.0nm,1.1s								
NVS				pmax	pmax				
	comp=Z,10.0nm,1.1s								
KHON	**Khomkaen**	**41.73**	**247**	P		**P**		**13 11 08.2**	**+2.8**
	comp=Z,10.0nm,0.8s								
LOEI	**Loei**	**42.06**	**250**	P		**P**		**13 11 05.9**	**-2.2**
	comp=Z,12nm,1.0s								
UTTA	**Uttaradit**	**42.42**	**251**	P		**P**		**13 11 12.2**	**+1.2**
	comp=Z,5.0nm,0.9s,comp=Z,107nm								
LAMP	**Lampang**	**42.59**	**252**	P		**P**		**13 11 14.3**	**+1.9**
	comp=Z,4.2nm,1.0s								
LSA	**Lhasa**	**42.81**	**272**	P		**P**		**13 11 16.1**	**+1.5**
LSA	**Lhasa**	**42.81**	**272**	P		**P**		**13 11 15.7**	**+1.1**
LSA				pmax	pmax				
	comp=Z,6.0nm,0.6s								
LSA	**Lhasa**	**42.81**	**272**	P		**P**		**13 11 15.7**	**+1.1**
	comp=Z,6.0nm,0.6s								
CMMT	**Chiang Mai**	**42.91**	**253**	P		**P**		**13 11 15.8**	**+0.8**
	comp=Z,14nm,0.9s,comp=Z,443nm								
CHTO	**Chiang Mai**	**42.91**	**253**	P		**P**		**13 11 15.9**	**+0.9**
	comp=Z,51nm,1.1s								
CHTO	**Chiang Mai**	**42.91**	**253**	*e*P		**P**		**13 11 15.4**	**+0.4**
CHTO				pmax	pmax				
	comp=Z,7.0nm,0.8s								
CHTO	**Chiang Mai**	**42.91**	**253**	*e*P		**P**		**13 11 15.4**	**+0.4**
	comp=Z,7.3nm,0.8s								
CMAR	**Chiang Mai Arr**	**43.14**	**253**	P		**P**		**13 11 17.6**	**+0.8**
	comp=Z,3.4nm,0.9s,baz=52,slow=6.1,SNR=18								
CM01	**Chiang Mai Arr**	**43.15**	**253**	*e*P		**P**		**13 11 16.9**	**0.0**
MK01	**Makanchi Array**	**43.20**	**299**	*e*P		**P**		**13 11 17.1**	**0.0**
MK31	**Makanchi Array**	**43.20**	**299**	*e*P		**P**		**13 11 16.9**	**-0.2**
MK31	**Makanchi Array**	**43.20**	**299**	*e*P		**P**		**13 11 16.9**	**-0.2**
MKAR	**Makanchi Array**	**43.20**	**299**	P		**P**		**13 11 17.4**	**+0.3**
	comp=Z,6.7nm,0.6s,baz=86,slow=9.7,SNR=49								
MKAR	**Makanchi Array**	**43.20**	**299**	*ce*P		**P**		**13 11 17.3**	**+0.2**
MKAR				pmax	pmax				
	comp=Z,7.0nm,0.6s								
MKAR	**Makanchi Array**	**43.20**	**299**	*e*P		**P**		**13 11 17.1**	**0.0**
MAKZ	**Makanchi**	**43.41**	**300**	*e*P		**P**		**13 11 18.9**	**+0.2**
MAKZ				pmax	pmax				
	comp=Z,13nm,0.8s								
MAKZ	**Makanchi**	**43.41**	**300**	*e*P		**P**		**13 11 18.9**	**+0.2**
	comp=Z,13nm,0.8s								
SRAK	**Srakaew**	**43.87**	**245**	P		**P**		**13 11 20.4**	**-2.3**
	comp=Z,50nm,1.0s								
NAYO	**Nakonayok**	**44.17**	**246**	P		**P**		**13 11 26.8**	**+1.7**
	comp=Z,7.9nm,1.1s								
KDAK	**Kodiak Island**	**44.25**	**44**	*i*P		**P**		**13 11 28.3**	**+3.1**
CHBT	**CHBT**	**44.55**	**244**	P		**P**		**13 11 30.1**	**+1.9**
	comp=Z,25nm,1.2s								
KURK	**Kurchatov**	**44.69**	**306**	P		**P**		**13 11 28.9**	**+0.1**
KURK				pmax	pmax				
	comp=Z,66nm,0.8s								
KURK	**Kurchatov**	**44.69**	**306**	*e*P		**P**		**13 11 28.9**	**+0.1**
	comp=Z,36nm,0.8s								
KTH	**Kantishna Hill**	**44.71**	**36**	*e*P		sP		13 11 44.5	-0.1
	comp=Z,7.8nm,1.1s								
COLA	**College**	**46.00**	**34**	*i*P		**P**		**13 11 41.1**	**+2.0**
COLA				pmax	pmax				
	comp=Z,2.0nm,0.8s								
PDGK	**Podgornoye**	**46.09**	**296**	P		**P**		**13 11 40.2**	**+0.2**
PDGK				pmax	pmax				
	comp=Z,8.0nm,0.5s								
PHET	**Kaeng Krachan**	**46.32**	**246**	P		**P**		**13 11 44.5**	**+2.3**
	comp=Z,9.0nm,0.9s								
ILAR	**Eielson Array**	**46.42**	**34**	P		**P**		**13 11 43.9**	**+1.5**
	comp=Z,2.1nm,0.7s,baz=268,slow=6.2,SNR=31								
EYAK	**Cordova Ski Ar**	**47.40**	**40**	*e*P		sP		13 12 04.7	-1.0
	comp=Z,8.8nm,0.9s								
GUN	**Gumba**	**47.71**	**273**	*e*P		**P**		**13 11 53.9**	**+0.5**
	comp=Z,109nm,0.8s								
KKN	**Kakani**	**48.23**	**274**	*e*P		**P**		**13 11 57.8**	**+0.5**
	comp=Z,70nm,0.8s								
PKIN	**Phulchoki**	**48.25**	**273**	*e*P		**P**		**13 11 57.4**	**-0.1**
	comp=Z,19nm,0.6s								
DMN	**Daman**	**48.46**	**273**	*e*P		**P**		**13 11 59.5**	**+0.5**
GKN	**Gorkha**	**48.62**	**274**	*e*P		**P**		**13 12 00.5**	**+0.4**
	comp=Z,50nm,0.9s								
CHKZ	**Chkalovo**	**48.80**	**311**	P		**P**		**13 12 01.2**	**+0.3**
TKM2	**Tokmak 2**	**48.90**	**296**	*e*P		**P**		**13 12 02.7**	**+0.5**
TKM2				pmax	pmax				
	comp=Z,12nm,0.6s								
TKM2	**Tokmak 2**	**48.90**	**296**	*e*P		**P**		**13 12 02.7**	**+0.5**
	comp=Z,12nm,0.6s								
BVA0	**Borovoye Array**	**49.10**	**311**	*i*P		**P**		**13 12 03.7**	**+0.4**
BVA0				pmax	pmax				
	comp=Z,8.0nm,0.6s								
BRVK	**Borovoye**	**49.15**	**311**	*e*P		**P**		**13 12 04.1**	**+0.4**
BRVK				pmax	pmax				
	comp=Z,17nm,1.0s								
BRVK	**Borovoye**	**49.15**	**311**	*e*P		**P**		**13 12 04.0**	**+0.4**
	comp=Z,17nm,1.0s								
KOLN	**Koldanda**	**49.53**	**275**	*e*P		**P**		**13 12 07.7**	**+0.5**
	comp=Z,30nm,0.7s								
FRU	**Bishkek**	**49.60**	**297**	*e*P		**P**		**13 12 12.0**	**+4.6**
SKLT	**Songkhla**	**49.74**	**240**	P		**P**		**13 12 10.7**	**+2.1**
AAK	**Ala-Archa**	**49.76**	**296**	*c i*P		**P**		**13 12 09.0**	**+0.3**
AAK				pmax	pmax				
	comp=Z,7.0nm,0.7s								
AAK	**Ala-Archa**	**49.76**	**296**	*e*P		**P**		**13 12 07.0**	**-1.8**
	comp=Z,3.9nm,0.8s								
PYUN	**Piuthan**	**49.83**	**275**	*e*P		**P**		**13 12 10.1**	**+0.7**
	comp=Z,98nm,1.0s								
KSH	**Kashi**	**49.92**	**292**	P		**P**		**13 12 14.5**	**+4.6**
KSH				*e*pP		sP		13 12 32.4	+6.7
KSH				*e*PP		**PP**		**13 14 08.4**	**+3.6**
KSH				S		**S**		**13 19 11.4**	**-6.1**
KSH				pmax	pmax				
	comp=Z,110nm,4.5s								
ZRNK	**Zerenda**	**49.92**	**311**	P		**P**		**13 12 10.0**	**+0.4**
ZRNK				pmax	pmax				
	comp=Z,19nm,0.8s								
ZRNK	**Zerenda**	**49.92**	**311**	*e*P		**P**		**13 12 09.8**	**+0.2**
	comp=Z,20nm,0.9s								
EKS2	**Erkin-Say**	**50.24**	**297**	*e*P		**P**		**13 12 11.8**	**-0.5**
EKS2				pmax	pmax				
	comp=Z,6.0nm,0.8s								
EKS2	**Erkin-Say**	**50.24**	**297**	*e*P		**P**		**13 12 11.8**	**-0.5**
	comp=Z,5.8nm,0.8s								
KULM	**Kulim**	**51.12**	**238**	P		**P**		13 12 13.3	-5.7
	comp=Z,1.0nm,0.6s								
KULM	**Kulim**	**51.12**	**238**	*e*P		**P**		**13 12 19.9**	**+0.9**
	comp=Z,10nm,0.8s								
MNAS	**Manas**	**51.18**	**297**	P		**P**		**13 12 19.8**	**+0.4**
MNAS				pmax	pmax				
	comp=Z,17nm,1.0s								
INK	**Inuvik**	**51.23**	**28**	P		**P**		**13 12 21.1**	**+2.0**
	comp=Z,3.0nm,0.4s,baz=270,slow=7.1,SNR=36								
SFK	**Sufi-Kurgan**	**51.46**	**294**	P		**P**		**13 12 22.0**	**+0.3**
SFK				pmax	pmax				
	comp=Z,10.0nm,0.7s								
IPM	**Ipoh**	**51.49**	**237**	*e*P		**P**		**13 12 21.6**	**-0.3**
	comp=Z,10nm,1.0s								
KK31	**Karatay Array**	**52.29**	**298**	*i*P		**P**		**13 12 27.2**	**-0.4**
KK31				pmax	pmax				
	comp=Z,9.0nm,0.9s								
SOEI	**Soe**	**52.46**	**203**	P		P		13 12 37.5	+8.4
	comp=Z,624nm,1.1s,comp=Z,9μm								
BATI	**Baumata**	**53.07**	**203**	P		P		13 12 39.0	+5.5
SVE	**Sverdlovsk**	**53.35**	**317**	*ce*P		**P**		**13 12 36.5**	**+1.4**
SVE				pmax	pmax				
	comp=Z,40nm,0.9s								
PSI	**Prapat**	**54.12**	**238**	P		**P**		**13 12 42.0**	**+0.6**
	comp=Z,7.7nm,0.8s,baz=16,slow=4.4,SNR=6.3								
PSI	**Prapat**	**54.12**	**238**	*e*P		**P**		**13 12 41.1**	**-0.3**
PSI				pmax	pmax				
	comp=Z

comp=Z,14nm,1.1s
SUMG Summit 67.54 0 *e*P **P 13 14 13.3 +1.1**
SUMG pmax pmax
comp=Z,8.0nm,0.8s
SUMG Summit 67.54 0 *e*P **P 13 14 13.3 +1.1**
comp=Z,8.4nm,0.8s
J05D Fort Rock, OR 67.82 52 P sP 13 14 30.9 +0.7
baz=306
M04C Macdoel 68.31 53 P sP 13 14 33.7 +0.4
baz=306
WALA Waterton Lakes 68.58 43 *e*P **P 13 14 19.9 +1.2**
comp=Z,1.2nm,0.7s
WALA Waterton Lakes 68.58 43 *e*P sP 13 14 34.3 -0.5
comp=Z,24nm,1.2s
GOF Gofitskoye 68.61 311⇑*e*P **P 13 14 19.1 +0.2**
JTMT Jette 69.17 45 *e*P sP 13 14 38.6 0.0
BMO Blue Mountains 69.22 48 *e*P **sP 13 14 38.1 -0.8**
BMO pmax pmax
comp=Z,40nm,1.3s
BMO Blue Mountains 69.22 48 *e*P sP 13 14 38.1 -0.8
comp=Z,40nm,1.3s
GUDG Gudauri 69.28 308 P **P 13 14 24.7 +1.3**
ZEI Tsey 69.44 309 *e*P **P 13 14 23.6 -0.7**
ZEI pmax pmax
comp=Z,14nm,0.8s
KIV Kislovodsk 69.47 311 *c i*P **P 13 14 25.5 +1.2**
KIV *e* 13 14 40.9
KIV *e* 13 14 48.4
KIV *e* 13 16 57.3
KIV pmax pmax
comp=Z,43nm,1.0s
KIV Kislovodsk 69.47 311 *e*P **P 13 14 25.9 +1.5**
comp=Z,40nm,1.0s
SWMT Swartz Lake 69.47 45 *e*P sP 13 14 39.8 -0.6
KBZ Khabaz 69.48 310 P **P 13 14 25.3 +1.1**
comp=Z,12nm,0.9s,baz=41,slow=4.1,SNR=34
KBZ LR LR 13 47 48.9
comp=Z,2μm,21.2s,baz=342,slow=38
ONI Oni 69.82 309 P **P 13 14 28.0 +1.5**
ONI Oni 69.82 309 *e*P **P 13 14 28.0 +1.5**
NEY Neytrino 69.86 310 *e*P **P 13 14 28.1 +1.2**
NEY pmax pmax
comp=Z,2.0nm,0.8s
WVOR Wild Horse Val 69.87 51 P **P 13 14 28.1 +1.2**
WVOR pmax pmax
comp=Z,1.0nm,0.8s
WVOR Wild Horse Val 69.87 51 P **P 13 14 28.1 +1.2**
comp=Z,1.0nm,0.8s
WVOR Wild Horse Val 69.87 51 *e*P sP 13 14 42.5 -0.4
comp=Z,138nm,1.3s
MSO Missoula 69.91 45 P sP 13 14 43.0 -0.2
baz=309
MSO Missoula 69.91 45 *e*P sP 13 14 39.0 -4.2
comp=Z,18nm,1.1s
CHMT Chamberlain Mo 70.23 45 *e*P sP 13 14 44.0 -1.3
MICGM Minsk 70.35 326 *e* P 13 14 19.0 -10
MNK Minsk 70.35 326 *e*P P 13 14 19.0 -10
GNI Garni 70.48 306 *i*P **P 13 14 31.6 +0.9**
GNI pmax pmax
comp=Z,54nm,1.2s
FFC Flin Flon 70.63 34 *e*P **P 13 14 32.6 +1.5**
FCC Fort Churchill 70.83 27 *e*P **sP 13 14 42.6 -5.8**
FCC pmax pmax
comp=Z,19nm,1.2s
FCC Fort Churchill 70.83 27 *e*P sP 13 14 42.6 -5.8
comp=Z,19nm,1.2s
EGMT Eagleton 71.39 42 P sP 13 14 51.7 -0.4
baz=311
EGMT Eagleton 71.39 42 *e*P **P 13 14 37.3 +1.3**
comp=Z,3.1nm,0.6s
EGMT Eagleton 71.39 42 *e*P sP 13 14 51.5 -0.7
comp=Z,13nm,0.8s
NC204 NORSAR Array S 71.54 338 *e*P **P 13 14 37.7 +1.1**
DLMT Dillon 71.56 46 *e*P sP 13 14 53.0 -0.3
comp=Z,50nm,1.4s
NB2 NORSAR Subarra 71.60 337 P **P 13 14 37.4 +0.4**
comp=Z,11nm,1.0s,baz=37,slow=6.2
NOA NORSAR Array B 71.60 337 P **P 13 14 37.3 +0.4**
comp=Z,7.2nm,0.9s,baz=37,slow=6.0,SNR=15
UOSS Minazif 71.63 287 *e*P **P 13 14 37.3 -0.4**
comp=Z,1.3nm,0.8s
HLID Hailey 71.66 48 P sP 13 14 54.2 +0.3
baz=310
HLID Hailey 71.66 48 *e*P **P 13 14 39.2 +1.4**
comp=Z,0.7nm,0.7s
HLID Hailey 71.66 48 *e*P sP 13 14 53.5 -0.4
comp=Z,40nm,1.1s
NBO02 NORSAR Array S 71.69 337 *e*P **P 13 14 38.0 +0.5**
BOZ Bozeman (W) 71.91 45 P sP 13 14 55.5 +0.1
baz=310
BOZ Bozeman (W) 71.91 45 *e*P sP 13 14 54.9 -0.4
comp=Z,9.0nm,0.8s
BMN Battle Mountai 71.92 52 *e*P **P 13 14 40.2 +0.8**
BMN pmax pmax
comp=Z,2.0nm,0.6s
BMN Battle Mountai 71.92 52 *e*P **P 13 14 40.2 +0.8**
comp=Z,1.9nm,0.6s
BMN Battle Mountai 71.92 52 *e*P sP 13 14 55.5 -0.1
comp=Z,172nm,1.4s
ANN Anapa 71.94 314 *e*P **P 13 14 37.5 -1.7**
ANN *e**PP **pP 13 14 47.9 -3.0**
ANN pmax pmax
comp=Z,19nm,1.1s
AKASG Malin Array Be 72.31 322 P **P 13 14 41.6 +0.2**
comp=Z,6.6nm,0.7s,baz=44,slow=6.3,SNR=41
AKASG PP **PP 13 17 21.4 -0.3**
comp=Z,0.3nm,0.3s,baz=46,slow=8.6,SNR=5.2
AKASG Malin Array Be 72.31 322 *ce*P **P 13 14 41.5 +0.2**
AKASG pmax pmax
comp=Z,8.0nm,0.7s
AKBB Malin Array Si 72.31 322 *e*P **P 13 14 41.4 +0.1**
AKBB pmax pmax
comp=Z,17nm,1.0s
AKBB Malin Array Si 72.31 322 *e*P **P 13 14 41.4 +0.1**
comp=Z,16nm,1.0s
KIEV Kiev 72.32 322 *i*P **P 13 14 41.3 -0.1**
KIEV pmax pmax
comp=Z,17nm,1.0s
KIEV Kiev 72.32 322 *e*P **P 13 14 41.0 -0.3**
comp=Z,16nm,1.0s
AK11 Malin Array Si 72.35 322 *e*P **P 13 14 41.4 -0.1**
GCMT Greycliff 72.87 44 *e*P sP 13 15 00.8 -0.3
YMR Madison River 72.89 46 *e*P sP 13 15 01.7 +0.3
comp=Z,35nm,1.1s
ELK Elko 72.92 51 *e*P sP 13 15 00.9 -0.7
comp=Z,80nm,1.6s
H17A Grant Village 73.28 46 P sP 13 15 05.5 +1.8
baz=311
RLMT Red Lodge 73.52 45 P sP 13 15 05.2 +0.1
baz=312
RLMT Red Lodge 73.52 45 P **P 13 14 51.2 +2.3**
comp=Z,0.7nm,0.5s
RLMT Red Lodge 73.52 45 *e*P sP 13 15 04.4 -0.6
comp=Z,21nm,1.3s
MOOW Moose Ponds 73.60 46 *e*P **P 13 14 51.4 +2.0**
comp=Z,0.5nm,0.7s
MOOW Moose Ponds 73.60 46 *e*P sP 13 15 05.4 -0.2
comp=Z,45nm,1.8s
HVU Hansel Valley 73.71 49 *e*P sP 13 15 06.2 0.0
comp=Z,106nm,1.5s
LOHW Long Hollow 73.77 46 *e*P sP 13 15 05.8 -0.7
comp=Z,30nm,1.2s
REDW Red Top Meadow 73.79 47 *e*P sP 13 15 07.0 +0.3
comp=Z,50nm,1.2s
DGMT Dagmar 73.89 39 P sP 13 15 06.4 -0.5
baz=314
DGMT Dagmar 73.89 39 *e*P sP 13 15 05.8 -1.1
comp=Z,32nm,1.1s
R11A Troy Canyon, C 74.21 53 *e*P sP 13 15 08.9 -0.2
comp=Z,42nm,1.3s
HWUT Hardware Ranch 74.52 48 *e*P sP 13 15 09.3 -1.7
comp=Z,21nm,1.1s
FURC Furnace Creek, 74.59 55 P sP 13 15 11.4 +0.3
baz=310
A26A Wade Farm, Ken 74.63 38 P sP 13 15 08.8 -2.4
baz=316
TPNV Topopah Spring 74.67 55 P sP 13 15 11.3 -0.6
baz=310
DUG Dugway, Tooele 74.70 50 *e*P sP 13 15 11.5 -0.4
comp=Z,26nm,1.3s
BW06 Boulder Array 74.90 47 *e*P sP 13 15 11.7 -1.4
PD31 Pinedale Array 74.90 47 *e*P sP 13 15 12.0 -1.2
PDAR Pinedale Array 74.90 47 P **P 13 14 58.1 +1.1**
comp=Z,0.4nm,0.5s,baz=256,slow=2.6,SNR=6.3
NLU North Lily Min 75.29 50 *e*P sP 13 15 14.9 -0.5
comp=Z,58nm,1.8s
A28A Rude Farm, Bot 75.45 37 P sP 13 15 15.6 -0.3
baz=317
A29A Manning Farm, 75.92 37 P sP 13 15 17.0 -1.7
baz=317
A30A Hoffart Farm, 76.33 36 P sP 13 15 20.0 -1.0
baz=318
BUR08 Bucovina Ar. S 76.33 322 *e*P **P 13 15 05.5 +0.6**
BHU Blowhard Mount 76.35 52 *e*P sP 13 15 20.9 -0.8
LCMT Little Creek M 76.49 53 *e*P sP 13 15 20.3 -2.0
D28A Regan 76.53 39 P sP 13 15 21.4 -0.8
baz=317
P18A Preston Nutter 76.57 49 *e*P sP 13 15 22.4 -0.5
comp=Z,39nm,1.3s
B30A Myrvik Farm, E 76.67 37 P sP 13 15 22.5 -0.4
baz=318
KOLS Kolonicke sedl 76.75 324 *e*P **P 13 15 08.9 +1.8**
KOLS Kolonicke sedl 76.75 324 *e*P **P 13 15 08.9 +1.8**
SRU San Rafael Swe 76.75 50 *e*P sP 13 15 21.6 -2.2
comp=Z,36nm,1.0s
STHS Stebnicka Huta 76.85 325 *e*P **P 13 15 09.3 +1.6**
STHS pmax pmax
comp=Z,4.0nm,0.8s
STHS Stebnicka Huta 76.85 325 *e*P **P 13 15 09.3 +1.6**
G26A Maurine 76.87 41 P sP 13 15 23.4 -0.8
baz=316
OJC Ojcow 76.88 326 *e*P **P 13 15 09.1 +1.3**
OJC Ojcow 76.88 326 *e*P **P 13 15 08.7 +0.9**
OJC pmax pmax
comp=Z,17nm,1.1s
OJC Ojcow 76.88 326 *e*P **P 13 15 08.7 +0.9**
comp=Z,17nm,1.1s
RSSD Black Hills 76.96 43 *e*P sP 13 15 23.6 -1.3
comp=Z,32nm,1.3s
CRVS Cervenica-Dubn 77.13 325 *e*P **P 13 15 10.6 +1.3**
CRVS Cervenica-Dubn 77.13 325 *e*P **P 13 15 10.6 +1.3**
NIE Niedzica 77.26 325 *e*P **P 13 15 12.0 +1.9**
NIE Niedzica 77.26 325 *e*P **P 13 15 12.0 +1.9**
BR131 Keskin Array S 77.37 312 *e*P **P 13 15 11.7 +0.8**
BRTR Keskin Array B 77.37 312 P **P 13 15 11.8 +0.8**
comp=Z,3.4nm,1.0s,baz=90,slow=5.3,SNR=11
B32A Ashes, Strandq 77.53 36 P sP 13 15 25.5 -2.2
baz=319
A33A Warroad 77.63 35 P sP 13 15 26.5 -1.8
baz=320
BR231 Keskin MP Arra 77.78 312 *e*P **P 13 15 12.2 -1.0**
KECS Kecovo 77.88 325 *e*P **P 13 15 13.7 +0.2**
PV10 Paradox Valley 78.10 50 *e*P sP 13 15 28.6 -2.9
MORC Moravsky Berou 78.16 327 *e*P **P 13 15 16.1 +1.0**
MORC pmax pmax
comp=Z,37nm,1.1s
MORC Moravsky Berou 78.16 327 *e*P **P 13 15 16.1 +1.0**
comp=Z,37nm,1.1s
DPC Dobruska-Polom 78.22 328 *e*P **P 13 15 16.7 +1.3**
DPC *e*PCP **sP 13 15 32.5 +0.9**
DPC Dobruska-Polom 78.22 328 *e*P **P 13 15 16.7 +1.3**
DPC *e* 13 15 32.5
I28A Midland 78.51 41 P sP 13 15 31.7 -1.6
baz=317
VYHS Vyhne 78.59 326 *e*P **P 13 15 18.5 +1.1**
F31A Hecla 78.60 38 P sP 13 15 32.2 -1.6
baz=318
Y14A Wickenburg 78.63 55 *e*P sP 13 15 34.2 0.0
comp=Z,597nm,1.1s
G30A Faulkton 78.70 39 P sP 13 15 32.8 -1.6
baz=318
SMCO Snowmass 78.75 48 *e*P **P 13 15 20.0 +1.0**
comp=Z,1.1nm,0.7s
SMCO Snowmass 78.75 48 *e*P sP 13 15 34.7 -0.5
comp=Z,30nm,1.1s
CLL Collm 78.77 330 *i*P **P 13 15 18.9 +0.6**
comp=Z,5.0nm,0.9s
CLL *e*PP **PP 13 18 15.0 -1.2**
CLL Collm 78.77 330 *i*P **P 13 15 18.9 +0.6**
CLL pmax pmax
comp=Z,5.0nm,0.9s
ISCO Idaho Springs 79.09 47 *e*P **P 13 15 20.2 -0.5**
ISCO pmax pmax
comp=Z,1.0nm,0.6s
ISCO Idaho Springs 79.09 47 *e*P **P 13 15 20.2 -0.5**
comp=Z,0.9nm,0.6s
ISCO Idaho Springs 79.09 47 *e*P sP 13 15 36.5 -0.5
comp=Z,6.6nm,1.0s
S22A 4UR Ranch, Cre 79.81 49 *e*P sP 13 15 41.2 +0.3
comp=Z,28nm,1.1s
RAYN Ar Rayn 80.21 292 *e*P **P 13 15 26.0 -0.7**
comp=Z,6.0nm,1.0s
KHC Kasperske Hory 80.28 329 *e*P **P 13 15 27.8 +1.1**
KHC *e*PCP **sP 13 15 40.5 -2.4**
KHC Kasperske Hory 80.28 329 *e*P P 13 15 21.5 -5.2
KHC Kasperske Hory 80.28 329 *e*P P 13 15 21.5 -5.1
comp=Z,0.4nm,0.6s
KHC Kasperske Hory 80.28 329 *e*P **P 13 15 27.5 +0.8**
comp=Z,2.5nm,1.0s
GERES GERESS Array B 80.46 329 P **P 13 15 28.1 +0.4**
comp=Z,1.2nm,0.6s,baz=31,slow=6.2,SNR=9.8
GEA0 GERESS Array S 80.47 328 *e*P **P 13 15 27.4 -0.3**
T25A Trinidad 81.62 48 *e*P sP 13 15 50.2 -0.3
comp=Z,38nm,1.2s
PERS Pernice 81.62 326 *i*P **P 13 15 34.9 +1.0**
KBA Koelnbreinsper 82.01 328 P **P 13 15 39.1 +3.0**
KBA pmax pmax
comp=Z,12nm,0.9s
SCHQ Schefferville 82.09 17 P **P 13 15 36.8 +0.7**
comp=Z,2.2nm,0.8s,baz=16,slow=19,SNR=3.2
VISS Visnje 82.40 326 *i*P **P 13 15 38.1 +0.2**
JAVS Javornik 82.66 326 *i*P **P 13 15 39.2 -0.1**
BFO Black Forest 82.95 331 *ce*P **P 13 15 42.0 +1.3**
FUORN Ofenpass-Fuorn 83.62 329 *e*P **P 13 15 45.2 +0.6**
comp=Z,9.6nm,0.8s
MNTX Cornudas Mount 84.86 52 P **P 13 15 52.0 +1.2**
comp=Z,0.5nm,0.3s
MNTX Cornudas Mount 84.86 52 *e*P sP 13 16 06.7 -0.4
comp=Z,46nm,1.2s
LOR Lormes 85.45 333 P **P 13 15 53.4 0.0**
LOR pmax pmax
comp=Z,11nm,1.0s
R36A Gordon, Harris 85.58 42 P sP 13 16 09.6 -1.0
baz=321
LPL La Plagne 85.90 331 P **P 13 15 56.2 +0.2**
LPL pmax pmax
comp=Z,7.0nm,0.8s
LPG La Plagne 85.91 330 P **P 13 15 56.4 +0.3**
LPG pmax pmax
comp=Z,7.0nm,0.7s
SMF Signal de Mont 85.99 333 P **P 13 15 56.4 +0.3**
SMF pmax pmax
comp=Z,7.0nm,1.0s
Q39A Willow Grove F 86.29 40 P sP 13 16 13.2 -0.9
baz=322
T36A Boggs Farm, Ca 86.34 43 P sP 13 16 13.7 -0.6
baz=320
S37A Fort Scott 86.35 42 P sP 13 16 13.7 -0.7
baz=321
P40A Paris 86.37 39 P sP 13 16 13.1 -1.3
baz=323
WMOK Wichita Mounta 86.51 46 *e*P sP 13 16 13.8 -1.4
comp=Z,11nm,1.4s
R39A Chumby, Stover 86.83 40 P sP 13 16 15.6 -1.1
baz=322
S39A Bolivar 87.17 41 P sP 13 16 16.6 -1.8
baz=322
T38A Diamond 87.18 42 P sP 13 16 17.3 -1.1
baz=321
R40A Maddies Statio 87.23 40 P sP 13 16 16.8 -1.9
baz=323
MFF Saint Martin d 87.37 335 P **P 13 16 03.4 +0.6**
MFF pmax pmax
comp=Z,10.0nm,1.0s
TXAR Lajitas Array 87.57 53 P **P 13 16 05.5 +1.2**
comp=Z,0.2nm,0.6s,baz=242,slow=3.3,SNR=3.9
U39A Green Forest 88.10 42 P sP 13 16 21.0 -1.9
baz=322
CAF Calviac 88.10 333 P **P 13 16 07.3 +0.9**
CAF pmax pmax
comp=Z,8.0nm,1.2s
V39A Pettigrew 88.43 42 P sP 13 16 23.5 -1.1
baz=322
U40A Yellville 88.44 42 P sP 13 16 22.9 -1.6
baz=322
X38A Whitesboro 88.71 44 P sP 13 16 24.8 -1.0
baz=321
DRLN Deer Lake 89.22 13 *e*P pP 13 16 20.4 -3.1
comp=Z,189nm,1.6s
MIAR Mount Ida 89.46 43 *e*P **P 13 16 13.9 +0.9**
MIAR pmax pmax
comp=Z,1.0nm,0.4s
MIAR Mount Ida 89.46 43 *e*P **P 13 16 13.9 +0.9**
comp=Z,1.2nm,0.4s
MIAR Mount Ida 89.46 43 *e*P sP 13 16 26.1 -3.3
X201 Greenbrier Sit 89.52 42 *e*P sP 13 16 29.2 -0.4
comp=Z,10nm,1.1s
WHAR Wooly Hollow 89.56 42 *e*P sP 13 16 28.2 -1.5
comp=Z,11nm,1.0s
ESDC Sonseca Array 94.81 335 P **P 13 16 37.6 -0.1**
comp=Z,0.3nm,0.4s,baz=21,slow=4.4,SNR=3.5
TORD Torodi Ar. Bea 115.64 317 PKP **PKPdf 13 21 58.0 -0.4**
comp=Z,0.2nm,0.4s,baz=346,slow=0.9,SNR=3.8

*ISCJB **18** 13:15:49.3±0.5, 6°.82N±0°.03×73°.08W±0°.05, h163km±5km, Error ellipse: s-maj=8.5km s-min=3.7km az=33.4*
*FUNV **18** 13:15:50.5, 6°.80N×73°.12W, h171km, MW3.4*
*RSNC **18** 13:15:51.8±1.0, 6°.79N×73°.11W, h148km±6km, ML3.3*
ISC 18 13:15:49.1±1.4, 6°.83N±0°.04×73°.09W±0°.05, h167km±8km, n29, σ1°.08/46, 6C-1D, Northern Colombia

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
					Op	ISC	h m s	ISC
BARC	**Barichara**	**0.25**	**201**	*i* P		**Pn**	**13 16 11.7**	**-0.2**
BARC				*e*S		**Sn**	**13 16 26.5**	**-2.7**
BARC				*i*			13 16 29.4	
	comp=Z,390nm,0.3s							
PAMC	**Pamplona, Colo**	**0.64**	**37**	*e*P		**Pn**	**13 16 14.5**	**+0.9**
PAMC				*e*S		**Sn**	**13 16 31.7**	**-0.8**
BRRC	**Barranca, Sant**	**0.68**	**294**	*i* P		**Pn**	**13 16 13.6**	**+0.4**
BRRC				*e*S		**Sn**	**13 16 31.1**	**-0.6**
BRRC				*i*			13 16 32.7	
	comp=Z,440nm,0.2s							
GRMC	**Gramalote, San**	**0.93**	**18**	*i* P		**Pn**	**13 16 17.4**	**+2.3**
GRMC				*e*S		**Sn**	**13 16 36.8**	**+1.6**
GRMC				*i*			13 16 38.3	
	comp=Z,356nm,0.5s							
CBRI	**Barrientos, No**	**0.93**	**18**	*e*P		**Pn**	**13 16 16.2**	**+1.0**
CBRI				*e*S		**Sn**	**13 16 34.2**	**-1.1**
CBRI				*i*			13 16 37.9	
	comp=Z,260nm,0.2s							
GUEC	**Guerrero, Nort**	**1.01**	**9**	*e*P		**Pn**	**13 16 16.8**	**+0.9**
CAPV	**Capacho**	**1.29**	**37**⇑	*i*P		**Pn**	**13 16 19.6**	**+1.4**
CAPV				*e*S		**Sn**	**13 16 41.1**	**+0.5**
OCAC	**Ocana**	**1.42**	**351**	*e*P		**Pn**	**13 16 19.7**	**+0.3**
OCAC				*e*S		**Sn**	**13 16 42.2**	**-0.5**
YOPC	**Yopal, Colombi**	**1.61**	**155**	*e*P		**Pn**	**13 16 21.9**	**+0.7**
YOPC				*e*S		**Sn**	**13 16 44.7**	**-1.3**
YOPC				*i*			13 16 50.9	
	comp=Z,99nm,0.3s							
NORC	**Norcasia**	**2.17**	**235**	*e*P		**Pn**	**13 16 27.3**	**+0.1**
NORC				*e*S		**Sn**	**13 16 55.3**	**-1.4**
CHIC	**Chingaza**	**2.27**	**196**	*e*P		**Pn**	**13 16 29.7**	**+0.9**
CHIC				*e*S		**Sn**	**13 16 59.3**	**-0.2**
CHIC				*i*			13 17 02.6	
	comp=Z,101nm,0.6s							
ROSC	**El Rosal**	**2.32**	**212**	*e*P		**Pn**	**13 16 31.0**	**+1.7**
ROSC				*e*S		**Sn**	**13 17 00.7**	**+0.2**
ROSC				*i*			13 17 05.5	
	comp=Z,186nm,0.5s							
VIGV	**El Vigia**	**2.63**	**40**⇑	*i*P		**Pn**	**13 16 33.8**	**+1.1**
VIGV				*e*S		**Sn**	**13 17 05.8**	**-0.7**
SOCV	**Socops**	**2.65**	**57**⇑	*e*P		**Pn**	**13 16 33.8**	**+1.0**
SOCV				*e*S		**Sn**	**13 17 05.8**	**-1.0**
VILC	**Villavicencio,**	**2.76**	**193**	*e*P		**Pn**	**13 16 34.6**	**+0.3**
VILC				*e*S		**Sn**	**13 17 08.1**	**-1.4**
GUYC	**Guyana, Colomb**	**2.79**	**235**	*e*P		**Pn**	**13 16 36.2**	**+1.3**
GUYC				*e*S		**Sn**	**13 17 09.8**	**-0.7**
DBBC	**Dabeiba**	**3.10**	**274**	*e*P		**Pn**	**13 16 39.0**	**+0.6**
TOLC	**Tolima**	**3.14**	**225**	*e*P		**Pn**	**13 16 40.8**	**+1.6**
PRAC	**Prado**	**3.57**	**210**	*e*P		**Pn**	**13 16 44.7**	**+0.3**
PRAC				*e*S		**Sn**	**13 17 28.7**	**+0.3**
ELOV	**Elorza**	**3.59**	**87**⇓	*e*P		**Pn**	**13 16 45.5**	**+1.0**
VIRV	**Villa del Rosa**	**3.71**	**10**⇑	*e*P		**Pn**	**13 16 46.1**	**-0.1**
VIRV				*e*S		**Sn**	**13 17 28.7**	**-2.0**
QARV	**Quebrada Arrib**	**4.21**	**37**⇑	*i*P		**Pn**	**13 16 53.8**	**+1.2**
SANV	**Sanarito**	**4.41**	**53**	*e*P		**Pn**	**13 16 55.6**	**+0.4**
CURV	**Curarigua**	**4.43**	**44**	*e*P		**Pn**	**13 16 56.0**	**+0.6**
DABV	**Dabajuro**	**4.74**	**31**	*e*P		**Pn**	**13 17 00.3**	**+0.9**
TEPV	**Terepaima**	**4.96**	**51**	*e*P		**Pn**	**13 17 02.9**	**+0.5**
SIQV	**Siquisique**	**5.00**	**40**	*e*P		**Pn**	**13 17 02.6**	**-0.2**
BAUV	**El Baul**	**5.43**	**67**⇑	*e*P		**Pn**	**13 17 08.2**	**-0.2**
MONV	**Montecano**	**5.95**	**31**	*e*P		**Pn**	**13 17 15.6**	**+0.2**

*IDC **18** 13:31:23.9±1.4, 36°.75N×144°.10E, h0km, mb3.6/3, mb1 3.9/6, mb1mx3.5/58, mbtmp3.8/6, ML3.5/3, Error ellipse: s-maj=39.7km s-min=26.4km az=109.0*
*ISCJB **18** 13:31:28.1±0.8, 36°.82N±0°.04×143°.74E±0°.06, h33km, mb3.5/3, Error ellipse: s-maj=7.1km s-min=6.3km az=157.8*
*JMA **18** 13:31:28.5±0.3, 36°.87N×143°.76E, h48km, M3.7*
ISC 18 13:31:29.1±1.1, 36°.81N±0°.05×143°.80E±0°.08, h35km, n18, σ1°.28/29, mb3.5/3, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
					Op	ISC	h m s	ISC
JFK	**Kawauchi**	**2.40**	**284**	P		**Pn**	**13 32 06.3**	**+0.4**
JFK				S		**Sn**	**13 32 33.5**	**-0.6**
ONAJ	**Iwakimizuishiy**	**2.42**	**278**	*e*S		**Sn**	**13 32 34.4**	**-0.2**
JIO	**Ouri**	**2.54**	**311**	P		**Pn**	**13 32 07.4**	**-0.4**
JIO				S		**Sn**	**13 32 35.6**	**-1.9**
JMM	**Marumori**	**2.61**	**295**	P		**Pn**	**13 32 08.7**	**-0.1**
JMM				*e*S		**Sn**	**13 32 39.0**	**-0.3**
JFT	**Otama**	**2.85**	**285**	P		**Pn**	**13 32 13.0**	**+0.9**
JFT				*e*S		**Sn**	**13 32 46.0**	**+0.8**
JMK	**Ichinoseki**	**2.95**	**317**	*e*S		**Sn**	**13 32 46.2**	**-1.5**
BSO1	**Boso 1**	**3.15**	**228**	P		**Pn**	**13 32 16.0**	**+0.3**
JOM	**Ohasama**	**3.31**	**324**	P		**Pn**	**13 32 19.5**	**+1.1**
JOM				S		**Sn**	**13 32 54.0**	**-2.5**
JYK	**Kaneyama**	**3.44**	**309**	P		**Pn**	**13 32 20.7**	**+0.5**
JYK				*e*S		**Sn**	**13 32 59.8**	**+0.2**
JAG	**Ashikaga**	**3.51**	**265**	P		**Pn**	**13 32 22.0**	**+0.8**
JAG				S		**Sn**	**13 33 01.3**	**-0.3**
JRY	**Ryogami san**	**4.03**	**260**	P		**Pn**	**13 32 28.7**	**+0.4**
JRY				*e*S		**Sn**	**13 33 13.0**	**-1.2**
JOD2	**Odawara 2**	**4.12**	**249**	P		**Pn**	**13 32 29.9**	**+0.4**
JOD2				*e*S		**Sn**	**13 33 16.0**	**-0.5**
MJAR	**Matsushiro Arr**	**4.50**	**268**	Pn		**Pn**	**13 32 36.6**	**+1.8**
	1.9nm,0.3s,baz=90,slow=15,SNR=16							
MJAR				Sn		**Sn**	**13 33 23.5**	**-2.4**
	0.2nm,0.3s,baz=247,slow=15,SNR=1.9							
JHJ	**Hachijo jima 2**	**4.94**	**223**	Pn		**Pn**	**13 32 40.6**	**-0.2**
	5.5nm,0.3s,baz=339,slow=23,SNR=6.5							
JHJ				Sn		**Sn**	**13 33 33.7**	**-3.1**
	18nm,0.3s,baz=195,slow=19,SNR=2.3							
ASAJ	**Asahikawa**	**7.35**	**353**	Pn		**Pn**	**13 33 12.3**	**-1.6**
	0.8nm,0.3s,baz=197,slow=14,SNR=9.0							
ASAJ				Sn		Sn	13 34 27.8	-8.3
	baz=0.0,slow=20,SNR=2.0							
WRA	**Warramunga Arr**	**57.15**	**191**	P		**P**	**13 41 12.0**	**-0.3**
	0.2nm,0.4s,baz=9.9,slow=7.0,SNR=4.7							
NOA	**NORSAR Array B**	**75.11**	**338**	P		**P**	**13 43 08.9**	**+1.6**
	0.4nm,0.5s,baz=38,slow=5.7,SNR=2.1							
TXAR	**Lajitas Array**	**88.73**	**54**	P		**P**	**13 44 19.3**	**-0.1**
	0.2nm,0.7s,baz=318,slow=1.2,SNR=1.9							

*JMA **18** 14:14:02.8±0.3, 24°.97N×122°.88E, h19km±5km, M2.3*
*ISCJB **18** 14:14:03.2±0.9, 24°.93N±0°.06×122°.89E±0°.04, h15km±9km, Error ellipse: s-maj=10.6km s-min=4.9km az=15.4*
*TAP **18** 14:14:03.2, 24°.92N×122°.87E, h22km±1km, ML2.7, D*
ISC 18 14:14:02.4±1.6, 24°.95N±0°.08×122°.88E±0°.04, h15km±11km, n15, σ0°.68/23, Taiwan region

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
					Op	ISC	h m s	ISC
JYNG	**Yonagunijimaku**	**0.50**	**173**	P		**Pb**	**14 14 12.8**	**-0.1**
JYNG				S		**Sb**	**14 14 20.1**	**+0.1**
YOJ	**Yonaguni jima**	**0.50**	**166**	P		**Pb**	**14 14 12.9**	**0.0**
YOJ				*e*S		**Sb**	**14 14 19.8**	**-0.3**
TWB1	**Santiao Chiao**	**0.81**	**274**	*e*P		**Pg**	**14 14 18.5**	**+0.4**
	baz=276							
IRIF	**Iriomote-Funau**	**0.99**	**128**	P		**Pb**	**14 14 21.2**	**0.0**
TWC	**Suao**	**1.00**	**250**	*e*P		**Pb**	**14 14 20.6**	**-0.7**
	baz=258							
TWC				S		**Sb**	**14 14 33.5**	**-0.7**
	baz=258							
NWF	**Wu-fen Shan**	**1.00**	**277**	*e*P		**Pn**	**14 14 22.7**	**+0.7**
	baz=279							
TWE	**Neicheng**	**1.12**	**258**	*e*P		**Pb**	**14 14 23.5**	**0.0**
	baz=260							
TWE				*e*S		**Sn**	**14 14 39.9**	**+1.2**
	baz=260							

ENA	**Nanau**	**1.16**	**243**	*eP*	**Pb**	**14 14 23.7**	**-0.5**
	baz=244							
ENA				*eS*	**Sb**	**14 14 37.4**	**-1.6**
	baz=244							
ENTT	**Nioudou**	**1.23**	**256**	*eP*	**Pg**	**14 14 26.1**	**-0.1**
	baz=257							
ENTT				*eS*	**Sg**	**14 14 42.0**	**-0.2**
	baz=257							
JIJ	**Ishigaki jima**	**1.29**	**117**	P	**Pn**	**14 14 25.7**	**-0.2**
JISG	**Ishigakijimahi**	**1.35**	**105**	P	**Pn**	**14 14 26.8**	**+0.1**
NSK	**Sanguang**	**1.41**	**259**	*eP*	**Pg**	**14 14 29.6**	**+0.1**
	baz=270							
NNS	**Nan Shan**	**1.46**	**250**	*eP*	**Pg**	**14 14 30.8**	**+0.2**
	baz=262							
NNS				*eS*	**Sn**	**14 14 46.5**	**-0.8**
	baz=262							
WHF	**Hehuan Shan**	**1.68**	**242**	*eP*	**Pn**	**14 14 32.2**	**+0.7**
	baz=242							
WHF				*eS*	**Sn**	**14 14 52.7**	**-0.2**
	baz=242							
WTP	**Ta-pu**	**2.68**	**231**	*eP*	**Pn**	**14 14 46.3**	**+1.3**
	baz=219							

PDG ***18*** *14:17:59.9±0.6, 41°.23N×22°.83E, h12km, ML3.5/9, Error ellipse: s-maj=0.6km s-min=0.7km az=0.0*
ATH ***18*** *14:17:59.4, 41°.22N×22°.87E, h21km, ML3.5/11, Error ellipse: s-maj=1.4km s-min=0.7km az=176.0*
SKO ***18*** *14:17:59.1, 41°.16N×22°.85E, h21km, M3.0, ML3.0*
CSEM ***18*** *14:17:59.9±0.1, 41°.20N×22°.86E, h5km, ML3.4, Error ellipse: s-maj=2.2km s-min=1.8km az=43.0*
ISCJB ***18*** *14:17:59.6±0.3, 41°.23N±0°.01×22°.87E±0°.02, h10km±2km, mb3.5/5, Error ellipse: s-maj=2.2km s-min=1.8km az=36.8*
IASPEI ***18*** *14:18:00.0±0.8, 41°.21N±0°.02×22°.85E±0°.02, h15km±4km, mb3.5/5, Error ellipse: s-maj=3.0km s-min=2.2km az=13.0, GT5 selection from ISC bulletin GT5 identified by Bond¨ji and McLaughlin (2009) selection criteria Bond¨ji and McLaughlin, A new ground truth data set for seismic studies, Seism. Res. Let., 80, 465-472, 2009*
THE ***18*** *14:18:00.5, 41°.21N×22°.85E, h12km, ML3.4/27, Error ellipse: s-maj=0.8km s-min=0.5km az=11.0*
SOF ***18*** *14:18:00.0, 41°.23N×22°.89E, h4km, MD3.6*
IDC ***18*** *14:18:03.1±4.6, 41°.29N×22°.83E, h29km±36km, mb3.4/6, mb1 3.4/10, mb1mx3.3/47, mbtmp3.4/10, ML3.3/4, Error ellipse: s-maj=21.9km s-min=13.7km az=14.0*

ISC 18 14:18:00.4±0.7, 41°.19N±0°.01×22°.86E±0°.01, h13km±4km, n221, σ0.96/317, mb3.5/5, 32C-20D, Northwestern Balkan Peninsula

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
KNT	**Kendrikon**	**0.04**	**133**	P		**Pg**	**14 18 03.1**	**+0.2**
KNT				S		**Sg**	**14 18 04.7**	**+0.1**
KNT	**Kendrikon**	**0.04**	**133**	P		**Pg**	**14 18 03.0**	**+0.2**
KNT	**Kendrikon**	**0.04**	**133**	P		**Pg**	**14 18 03.0**	**+0.2**
KNT				S		**Sg**	**14 18 03.7**	**-0.9**
KNT				AML		AML	14 18 04.8	
KNT				AML		AML	14 18 04.8	
	comp=N,93125μm,0.1s							
VAY	**Valandovo**	**0.25**	**301**	P		**Pg**	**14 18 05.3**	**-0.4**
VAY				S		**Sg**	**14 18 08.9**	**-0.6**
VAY	**Valandovo**	**0.25**	**301**	⇑*i*	*Pg*	**Pg**	**14 18 05.4**	**-0.4**
VAY				*i*	Sg	**Sg**	**14 18 08.8**	**-0.6**
VAY				*e*Lg	Lg		14 18 08.9	
	comp=N,12μm,0.5s							
VAY				*e*Lg	Lg		14 18 08.9	
	comp=E,5μm,0.5s							
VAY	**Valandovo**	**0.25**	**301**	P		**Pg**	**14 18 05.3**	**-0.4**
VAY				*i*	Sg	**Sg**	**14 18 08.8**	**-0.6**
GRG	**Griva**	**0.42**	**236**	P		**Pg**	**14 18 08.6**	**-0.1**
GRG				S		**Sg**	**14 18 14.6**	**+0.3**
GRG	**Griva**	**0.42**	**236**	P		**Pg**	**14 18 08.8**	**+0.1**
GRG				S		**Sg**	**14 18 14.6**	**+0.3**
GRG	**Griva**	**0.42**	**236**	P		**Pg**	**14 18 08.8**	**+0.1**
GRG				S		**Sg**	**14 18 14.8**	**+0.5**
GRG				AML		AML	14 18 14.9	
	comp=N,26353μm,0.4s							
GRG				AML		AML	14 18 15.9	
	comp=E,24290μm,0.2s							
SOH	**Sokhos**	**0.53**	**134**	P		**Pg**	**14 18 10.7**	**0.0**
SOH				S		**Sb**	**14 18 18.3**	**-0.7**
SOH	**Sokhos**	**0.53**	**134**	P		**Pg**	**14 18 10.7**	**0.0**
SOH				S		**Sg**	**14 18 17.5**	**-0.2**
SOH	**Sokhos**	**0.53**	**134**	P		**Pb**	**14 18 11.2**	**-0.3**
SOH				S		**Sg**	**14 18 17.5**	**-0.2**
SOH				AML		AML	14 18 20.1	
	comp=E,13736μm,0.4s							
SOH				AML		AML	14 18 21.1	
	comp=N,14778μm,0.3s							
SRS	**Serrai**	**0.56**	**97**	P		**Pg**	**14 18 11.1**	**-0.2**
SRS				S		**Sg**	**14 18 19.2**	**+0.4**
SRS	**Serrai**	**0.56**	**97**	P		**Pg**	**14 18 11.1**	**-0.2**
SRS				S		**Sg**	**14 18 18.3**	**-0.5**
SRS	**Serrai**	**0.56**	**97**	P		**Pb**	**14 18 11.8**	**-0.2**
SRS				S		**Sg**	**14 18 18.3**	**-0.5**
SRS				AML		AML	14 18 25.2	
	comp=E,4894μm,0.3s							
SRS				AML		AML	14 18 28.1	
	comp=N,4818μm,0.4s							
THE	**Thessaloniki**	**0.56**	**172**	P		**Pg**	**14 18 11.4**	**0.0**
THE				S		**Sb**	**14 18 20.0**	**0.0**
THE	**Thessaloniki**	**0.56**	**172**	P		**Pg**	**14 18 11.4**	**0.0**
THE				S		**Sb**	**14 18 20.0**	**0.0**
THE	**Thessaloniki**	**0.56**	**172**	P		**Pb**	**14 18 12.0**	**-0.1**
THE				S		**Sb**	**14 18 20.2**	**+0.2**
THE				AML		AML	14 18 20.8	
	comp=E,8548μm,0.4s							
THE				AML		AML	14 18 22.2	
	comp=N,11420μm,0.5s							
HORT	**Hortiatis**	**0.62**	**163**	P		**Pb**	**14 18 12.7**	**-0.4**
HORT				S		**Sb**	**14 18 22.2**	**+0.5**
HORT	**Hortiatis**	**0.62**	**163**	P		**Pb**	**14 18 12.7**	**-0.4**
HORT				S		**Sb**	**14 18 22.2**	**+0.5**
HORT	**Hortiatis**	**0.62**	**163**	P		**Pb**	**14 18 13.2**	**+0.1**
HORT				S		**Sb**	**14 18 23.0**	**+1.3**
HORT				AML		AML	14 18 24.5	
	comp=N,10394μm,0.5s							
HORT				AML		AML	14 18 27.3	
	comp=E,6909μm,0.6s							
KKB	**Krupnik**	**0.70**	**14**	*i*	Pg	**Pg**	**14 18 12.9**	**-1.1**
KKB	**Krupnik**	**0.70**	**14**	P		**Pg**	**14 18 12.9**	**-1.1**
MMB	**Musomiste**	**0.77**	**58**	Pg		**Pg**	**14 18 14.7**	**-0.6**
MMB	**Musomiste**	**0.77**	**58**	P		**Pg**	**14 18 14.7**	**-0.6**
NVR	**Nevrokopi**	**0.77**	**78**	P		**Pg**	**14 18 15.0**	**-0.4**
NVR				S		**Sb**	**14 18 26.0**	**-0.1**
NVR	**Nevrokopi**	**0.77**	**78**	P		**Pg**	**14 18 15.0**	**-0.4**
NVR				S		**Sg**	**14 18 25.7**	**+0.2**
PLG	**Polygyros**	**0.93**	**151**	P		**Pg**	**14 18 17.9**	**-0.4**
PLG				S		**Sn**	**14 18 32.4**	**+0.1**
PLG	**Polygyros**	**0.93**	**151**	P		**Pg**	**14 18 17.9**	**-0.4**
PLG				S		**Sg**	**14 18 30.0**	**-0.5**
PLG	**Polygyros**	**0.93**	**151**	P		**Pg**	**14 18 17.9**	**-0.4**
PLG				S		**Sg**	**14 18 30.0**	**-0.5**
PLG				AML		AML	14 18 34.9	
	comp=E,5935μm,0.7s							
PLG				AML		AML	14 18 37.1	
	comp=N,6557μm,0.7s							
LIT	**Litokhoron**	**1.12**	**195**	P		**Pg**	**14 18 20.9**	**-1.1**
LIT				S		**Sn**	**14 18 37.0**	**-0.1**
LIT	**Litokhoron**	**1.12**	**195**	P		**Pg**	**14 18 20.9**	**-1.1**
LIT				S		**Sn**	**14 18 37.0**	**-0.1**
LIT	**Litokhoron**	**1.12**	**195**	P		**Pg**	**14 18 20.6**	**-1.4**
BIA	**Bitola**	**1.17**	**262**	P		**Pb**	**14 18 21.4**	**-1.1**
BIA				S		**Sb**	**14 18 37.5**	**-0.1**
BIA	**Bitola**	**1.17**	**262**	*i*	Pg	**Pb**	**14 18 22.0**	**-0.5**
BIA	**Bitola**	**1.17**	**262**	P		**Pb**	**14 18 21.4**	**-1.1**
BIA	**Bitola**	**1.17**	**262**	*i*	Pg	**Pb**	**14 18 22.0**	**-0.5**
BIA				S		**Sb**	**14 18 37.5**	**-0.1**
FNA	**Florina**	**1.19**	**251**	P		**Pb**	**14 18 22.6**	**-0.3**
FNA				S		**Sg**	**14 18 38.9**	**0.0**
FNA	**Florina**	**1.19**	**251**	P		**Pb**	**14 18 22.6**	**-0.3**
FNA				S		**Sg**	**14 18 38.9**	**0.0**
FNA	**Florina**	**1.19**	**251**	P		**Pb**	**14 18 22.6**	**-0.3**
FNA				S		**Sn**	**14 18 39.6**	**+0.7**
FNA				AML		AML	14 18 43.5	
	comp=N,4197μm,0.4s							
FNA				AML		AML	14 18 44.2	
	comp=E,3521μm,0.4s							
OUR	**Ouranopolis**	**1.21**	**135**	P		**Pb**	**14 18 22.7**	**-0.4**
OUR				S		**Sn**	**14 18 40.1**	**+1.0**
OUR	**Ouranopolis**	**1.21**	**135**	P		**Pn**	**14 18 23.2**	**+0.3**
OUR				S		**Sn**	**14 18 39.5**	**+0.4**
OUR	**Ouranopolis**	**1.21**	**135**	P		**Pn**	**14 18 23.2**	**+0.3**
OUR				S		**Sn**	**14 18 39.5**	**+0.4**
OUR				AML		AML	14 18 42.8	
	comp=N,6280μm,0.4s							
OUR				AML		AML	14 18 44.6	
	comp=E,6898μm,0.8s							
KZN	**Kozani**	**1.21**	**223**	P		**Pb**	**14 18 21.9**	**-1.2**
KZN				S		**Sb**	**14 18 38.8**	**+0.1**
KZN	**Kozani**	**1.21**	**223**	P		**Pb**	**14 18 21.9**	**-1.2**
KZN				S		**Sb**	**14 18 38.8**	**+0.1**
KAVA	**Kavala**	**1.27**	**98**	P		**Pn**	**14 18 23.7**	**0.0**
KAVA				S		**Sb**	**14 18 40.4**	**+0.2**
KAVA	**Kavala**	**1.27**	**98**	P		**Pn**	**14 18 24.0**	**+0.3**
KAVA				S		**Sb**	**14 18 40.4**	**+0.2**
KAVA	**Kavala**	**1.27**	**98**	P		**Pn**	**14 18 24.0**	**+0.3**
SKO	**Skopje**	**1.32**	**307**	P		**Pn**	**14 18 22.8**	**-1.7**
SKO				S		**Sb**	**14 18 39.6**	**-2.2**
SKO	**Skopje**	**1.32**	**307**	*i*	Pg	**Pn**	**14 18 23.4**	**-1.1**
SKO				*i*	Sg	**Sb**	**14 18 41.6**	**-0.2**
SKO	**Skopje**	**1.32**	**307**	P		**Pn**	**14 18 22.8**	**-1.7**
SKO	**Skopje**	**1.32**	**307**	*i*	Pg	**Pn**	**14 18 23.4**	**-1.1**
SKO				*i*	Sg	**Sb**	**14 18 41.6**	**-0.2**
PAIG	**Paliouri**	**1.41**	**153**	P		**Pn**	**14 18 25.9**	**+0.2**
PAIG				S		**Sn**	**14 18 44.9**	**+0.8**
PAIG	**Paliouri**	**1.41**	**153**	P		**Pn**	**14 18 25.9**	**+0.2**
PAIG				S		**Sn**	**14 18 44.8**	**+0.8**
PAIG	**Paliouri**	**1.41**	**153**	P		**Pn**	**14 18 25.9**	**+0.2**
PAIG				S		**Sn**	**14 18 44.8**	**+0.8**
PAIG				AML		AML	14 18 49.1	
	comp=E,2498μm,0.6s							
PAIG				AML		AML	14 18 50.6	
	comp=N,3240μm,0.6s							
RZN	**Rozhen**	**1.48**	**70**	P		**Pn**	**14 18 27.6**	**+0.7**
RZN	**Rozhen**	**1.48**	**70**	P		**Pb**	**14 18 28.2**	**+0.3**
SOF	**Sofiya**	**1.54**	**13**	P		**Pb**	**14 18 29.3**	**+0.6**
OHR	**Ohrid**	**1.56**	**268**	*e*Pg		**Pn**	**14 18 27.4**	**-0.4**
OHR				*i*	Sg	**Sg**	**14 18 50.8**	**+0.3**
OHR				*e*Lg	Lg		14 18 50.9	
	comp=E,168nm,0.5s							
OHR	**Ohrid**	**1.56**	**268**	*e*Pg		**Pn**	**14 18 27.4**	**-0.4**
OHR				*i*	Sg	**Sg**	**14 18 50.8**	**+0.3**
OHR				*e*Lg	Lg		14 18 50.9	
	comp=E,168nm,0.5s							
NEST	**Nestorio**	**1.58**	**241**	P		**Pn**	**14 18 28.3**	**+0.2**
NEST				S		**Sb**	**14 18 49.6**	**+0.3**
NEST	**Nestorio**	**1.58**	**241**	P		**Pn**	**14 18 28.3**	**+0.2**
NEST				S		**Sb**	**14 18 49.6**	**+0.3**
NEST	**Nestorio**	**1.58**	**241**	P		**Pn**	**14 18 27.9**	**-0.2**
NEST				S		**Sg**	**14 18 51.7**	**+0.6**
NEST				AML		AML	14 18 56.0	
	comp=E,1098μm,0.9s							
NEST				AML		AML	14 19 00.7	
	comp=N,649μm,0.6s							
PLD	**Plovdiv**	**1.66**	**56**	P		**Pb**	**14 18 30.4**	**-0.3**
PLD				*P*g		**Pg**	**14 18 32.6**	**+0.4**
PLD	**Plovdiv**	**1.66**	**56**	P		**Pb**	**14 18 30.6**	**-0.1**
PGB	**Panagyurishte**	**1.67**	**35**	P		**Pn**	**14 18 29.5**	**+0.1**
PGB				*P*g		**Pb**	**14 18 31.5**	**+0.4**
KPRO	**Kipourio**	**1.68**	**223**	P		**Pn**	**14 18 29.8**	**+0.3**
KPRO				S		**Sn**	**14 18 51.4**	**+0.5**
KPRO	**Kipourio**	**1.68**	**223**	P		**Pn**	**14 18 29.8**	**+0.3**
KPRO				S		**Sn**	**14 18 51.4**	**+0.5**
KPRO	**Kipourio**	**1.68**	**223**	P		**Pn**	**14 18 29.4**	**-0.1**
THL	**Klokotos Trika**	**1.75**	**202**	P		**Pn**	**14 18 29.9**	**-0.4**
THL				S		**Sn**	**14 18 52.9**	**+0.5**
THL	**Klokotos Trika**	**1.75**	**202**	P		**Pn**	**14 18 31.0**	**+0.7**
THL				S		**Sn**	**14 18 52.9**	**+0.5**
FYTO	**Fytoko, Volos**	**1.78**	**178**	P		**Pn**	**14 18 30.8**	**0.0**
FYTO				S		**Sn**	**14 18 53.5**	**+0.2**
FYTO	**Fytoko, Volos**	**1.78**	**178**	P		**Pn**	**14 18 30.8**	**0.0**
FYTO				S		**Sn**	**14 18 53.5**	**+0.2**
FYTO	**Fytoko, Volos**	**1.78**	**178**	P		**Pn**	**14 18 30.0**	**-0.8**
XOR	**Xorichti**	**1.84**	**172**	P		**Pn**	**14 18 31.9**	**+0.2**
XOR				S		**Sn**	**14 18 54.6**	**-0.2**
XOR	**Xorichti**	**1.84**	**172**	P		**Pn**	**14 18 31.9**	**+0.2**
XOR				S		**Sn**	**14 18 54.6**	**-0.2**
XOR	**Xorichti**	**1.84**	**172**	P		**Pn**	**14 18 31.4**	**-0.3**
NEO	**Neokhori**	**1.90**	**171**	P		**Pn**	**14 18 32.9**	**+0.4**
NEO				S		**Sn**	**14 18 57.2**	**+0.9**
NEO	**Neokhori**	**1.90**	**171**	P		**Pn**	**14 18 32.9**	**+0.4**
NEO				S		**Sn**	**14 18 57.2**	**+0.9**
NEO	**Neokhori**	**1.90**	**171**	P		**Pn**	**14 18 33.2**	**+0.7**
KDZ	**Kurdzhali**	**1.98**	**76**	P		**Pn**	**14 18 32.9**	**-0.7**
KDZ				*P*g		**Pb**	**14 18 36.0**	**-0.2**
KDZ	**Kurdzhali**	**1.98**	**76**	P		**Pn**	**14 18 34.0**	**+0.7**
SKIA	**Skiathos**	**2.07**	**167**	P		**Pn**	**14 18 34.9**	**0.0**
SKIA				S		**Sn**	**14 19 00.2**	**-0.3**
SKIA	**Skiathos**	**2.07**	**167**	P		**Pn**	**14 18 34.9**	**0.0**
SKIA				S		**Sn**	**14 19 00.2**	**-0.3**
SKIA	**Skiathos**	**2.07**	**167**	P		**Pn**	**14 18 34.9**	**0.0**
SMTH	**Samothraki Isl**	**2.15**	**109**	P		**Pn**	**14 18 36.2**	**+0.3**
SMTH				S		**Sn**	**14 19 03.1**	**+0.6**
SMTH	**Samothraki Isl**	**2.15**	**109**	P		**Pn**	**14 18 36.2**	**+0.3**
SMTH				S		**Sn**	**14 19 03.1**	**+0.6**
SMTH	**Samothraki Isl**	**2.15**	**109**	P		**Pn**	**14 18 36.0**	**+0.1**
AOS	**Alonnisos**	**2.16**	**158**	P		**Pn**	**14 18 36.0**	**-0.1**
AOS				S		**Sn**	**14 19 02.8**	**+0.1**
AOS	**Alonnisos**	**2.16**	**158**	P		**Pn**	**14 18 36.0**	**-0.1**
AOS				S		**Sn**	**14 19 02.8**	**+0.1**
AOS	**Alonnisos**	**2.16**	**158**	P		**Pn**	**14 18 35.1**	**-1.0**
DIM	**Dimitrovgrad**	**2.18**	**66**	P		**Pn**	**14 18 39.5**	**-0.2**
LIA	**Limnos Island**	**2.19**	**125**	P		**Pn**	**14 18 36.7**	**+0.3**
LIA				S		**Sn**	**14 19 04.1**	**+0.7**
LIA	**Limnos Island**	**2.19**	**125**	P		**Pn**	**14 18 36.7**	**+0.3**
LIA				S		**Sn**	**14 19 04.1**	**+0.7**
AGG	**Agios Georgios**	**2.20**	**191**	P		**Pn**	**14 18 36.5**	**-0.2**
AGG	**Agios Georgios**	**2.20**	**191**	P		**Pn**	**14 18 36.5**	**-0.2**
MPEP	**Malo Peshtene**	**2.26**	**17**	P		**Pn**	**14 18 37.6**	**+0.2**
MPEP				*P*g		**Pb**	**14 18 42.3**	**+1.2**
TIR	**Tirane**	**2.26**	**275**	⇑*i*	P	**Pn**	**14 18 39.0**	**+1.6**
TIR	**Tirane**	**2.26**	**275**	⇑*i*	P	**Pn**	**14 18 39.0**	**+1.6**
SMIA	**Simia**	**2.32**	**173**	P		**Pn**	**14 18 38.6**	**+0.3**
SMIA	**Simia**	**2.32**	**173**	P		**Pn**	**14 18 38.6**	**+0.3**
SMIA	**Simia**	**2.32**	**173**	P		**Pb**	**14 18 40.4**	**-1.7**
EVR	**Evrytania**	**2.41**	**200**	P		**Pn**	**14 18 40.2**	**+0.6**
EVR	**Evrytania**	**2.41**	**200**	P		**Pn**	**14 18 40.2**	**+0.6**
EVR	**Evrytania**	**2.41**	**200**	P		**Pn**	**14 18 41.4**	**+1.8**
ALN	**Alexandroupoli**	**2.43**	**96**	P		**Pn**	**14 18 40.2**	**+0.5**
ALN				S		**Sn**	**14 19 09.6**	**+0.3**
ALN	**Alexandroupoli**	**2.43**	**96**	P		**Pn**	**14 18 40.0**	**+0.3**
ALN				S		**Sn**	**14 19 09.6**	**+0.3**
ALN	**Alexandroupoli**	**2.43**	**96**	P		**Pn**	**14 18 40.0**	**+0.3**
DSL	**Palaion Diasel**	**2.46**	**214**	P		**Pn**	**14 18 40.6**	**+0.4**
DSL	**Palaion Diasel**	**2.46**	**214**	P		**Pn**	**14 18 40.6**	**+0.4**
IGT	**Igoumenitsa**	**2.54**	**230**	P		**Pn**	**14 18 43.2**	**+1.9**
IGT	**Igoumenitsa**	**2.54**	**230**	P		**Pn**	**14 18 43.2**	**+1.9**
SGD	**Sagiada**	**2.55**	**233**	P		**Pb**	**14 18 45.0**	**-0.9**
SGD	**Sagiada**	**2.55**	**233**	P		**Pb**	**14 18 45.0**	**-0.9**
PVY	**Plav**	**2.58**	**304**	⇑*i*	*P*n	**Pn**	**14 18 42.6**	**+0.7**
PVY				*e*	Sn	**Sn**	**14 19 15.2**	**+2.0**
ANX	**Ano Chora**	**2.69**	**196**	P		**Pn**	**14 18 44.1**	**+0.7**
ANX				S		**Sn**	**14 19 16.4**	**+0.5**
ANX	**Ano Chora**	**2.69**	**196**	P		**Pn**	**14 18 44.1**	**+0.7**
ANX				S		**Sn**	**14 19 16.4**	**+0.5**
PVL	**Pavlikeni**	**2.73**	**41**	P		**Pn**	**14 18 42.9**	**-1.0**
KEK	**Kerkira**	**2.76**	**239**	P		**Pn**	**14 18 46.6**	**+2.3**
BEY	**Berane**	**2.78**	**308**	⇑*i*	*P*n	**Pn**	**14 18 44.9**	**+0.3**
BEY				*e*	Sn	**Sn**	**14 19 19.9**	**+1.9**
IVA	**Berane**	**2.78**	**308**	⇑*i*	*P*n	**Pn**	**14 18 44.9**	**+0.3**
IVA				*e*	Sn	**Sn**	**14 19 19.9**	**+1.9**
ULC	**Ulcinj**	**2.82**	**287**	*e*	Pn	**Pn**	**14 18 46.0**	**+0.9**
ULC				*e*	Sn	**Sn**	**14 19 20.9**	**+1.9**
ULC	**Ulcinj**	**2.82**	**287**	*e*	Pn	**Pn**	**14 18 46.0**	**+0.9**
ULC				*e*	Sn	**Sn**	**14 19 20.9**	**+1.9**
KALE	**Kalithea**	**2.85**	**191**	P		**Pn**	**14 18 45.3**	**-0.3**
KALE	**Kalithea**	**2.85**	**191**	P		**Pn**	**14 18 45.3**	**-0.3**
EFP	**Efpalio**	**2.86**	**195**	P		**Pn**	**14 18 48.2**	**+2.6**
EFP	**Efpalio**	**2.86**	**195**	P		**Pn**	**14 18 48.2**	**+2.6**
EREA	**Eretria**	**2.89**	**163**	P		**Pn**	**14 18 46.2**	**+0.1**
EREA	**Eretria**	**2.89**	**163**	P		**Pn**	**14 18 46.2**	**+0.1**
PDO	**Prodromos**	**2.89**	**207**	P		**Pn**	**14 18 48.0**	**+1.9**
PDO	**Prodromos**	**2.89**	**207**	P		**Pn**	**14 18 48.0**	**+1.9**
DRME	**Dracevica, Mon**	**2.93**	**291**	⇓*i*	*P*n	**Pn**	**14 18 47.9**	**+1.3**
DRME				*e*	Sn	**Sn**	**14 19 23.6**	**+2.0**
DRME	**Dracevica, Mon**	**2.93**	**291**	⇓*i*	*P*n	**Pn**	**14 18 47.9**	**+1.3**
DRME				*e*	Sn	**Sn**	**14 19 23.6**	**+2.0**
LKD2	**Lefkada island**	**2.93**	**216**	P		**Pn**	**14 18 48.4**	**+1.7**
LKD2	**Lefkada island**	**2.93**	**216**	P		**Pn**	**14 18 48.4**	**+1.7**
PDG	**Podgorica**	**2.96**	**296**	⇑*i*	P	**Pn**	**14 18 47.8**	**+0.7**
PDG	**Podgorica**	**2.96**	**296**	⇓*i*	Pn	**Pn**	**14 18 47.4**	**+0.3**
PDG	**Podgorica**	**2.96**	**296**	⇑*i*	P	**Pn**	**14 18 47.8**	**+0.7**
PDG				*e*	Sn	**Sn**	**14 19 24.2**	**+1.7**
TTG	**Podgorica**	**2.96**	**296**	⇓*i*	Pn	**Pn**	**14 18 47.4**	**+0.3**
TTG				*e*	Sn	**Sn**	**14 19 24.2**	**+1.7**
VIL2	**Platees**	**2.99**	**174**	P		**Pn**	**14 18 49.2**	**+1.7**
LAKA	**Lakka**	**3.02**	**193**	P		**Pn**	**14 18 50.4**	**+2.5**
LAKA	**Lakka**	**3.02**	**193**	P		**Pn**	**14 18 50.4**	**+2.5**
SIGR	**SIGRI**	**3.03**	**130**	P		**Pn**	**14 18 49.1**	**+1.2**
SIGR				S		**Sn**	**14 19 24.5**	**+0.4**
SIGR	**SIGRI**	**3.03**	**130**	P		**Pn**	**14 18 49.1**	**+1.2**
SIGR				S		**Sn**	**14 19 24.5**	**+0.4**
SIGR	**SIGRI**	**3.03**	**130**	P		**Pn**	**14 18 49.2**	**+1.2**
VILL	**Villia**	**3.04**	**173**	P		**Pn**	**14 18 49.2**	**+1.0**
JMB	**Yambol**	**3.06**	**64**	P		**Pn**	**14 18 49.3**	**+0.9**
SZH	**Strazhica**	**3.08**	**47**	P		**Pn**	**14 18 51.4**	**+2.6**
ZIMR		**3.09**	**36**	⇑*i*	P	**Pn**	**14 18 49.6**	**+0.9**
BUM	**Brajici-Budva**	**3.17**	**292**	*e*	Pn	**Pn**	**14 18 51.1**	**+1.1**
BUM				*e*	Sn	**Sn**	**14 19 29.2**	**+1.6**
BUM	**Brajici-Budva**	**3.17**	**292**	*e*	Pn	**Pn**	**14 18 51.1**	**+1.1**
BUM				*e*	Sn	**Sn**	**14 19 29.2**	**+1.6**
KLV	**Kalavryta, Ach**	**3.19**	**190**	P		**Pn**	**14 18 49.8**	**-0.5**
KLV	**Kalavryta, Ach**	**3.19**	**190**	P		**Pn**	**14 18 49.8**	**-0.5**
AXS	**Araxos**	**3.20**	**201**	P		**Pn**	**14 18 52.6**	**+2.2**
AXS	**Araxos**	**3.20**	**201**	P		**Pn**	**14 18 52.6**	**+2.2**
PTL	**Penteli**	**3.23**	**166**	P		**Pn**	**14 18 50.5**	**-0.3**
PTL	**Penteli**	**3.23**	**166**	P		**Pn**	**14 18 50.5**	**-0.3**
CEME	**Cevo**	**3.24**	**296**	*e*	Pn	**Pn**	**14 18 51.5**	**+0.5**
CEME				*e*	Sn	**Sn**	**14 19 31.0**	**+1.6**
CEME	**Cevo**	**3.24**	**296**	*e*	Pn	**Pn**	**14 18 51.5**	**+0.5**
CEME				*e*	Sn	**Sn**	**14 19 31.0**	**+1.6**
PRK	**Paraskevi**	**3.25**	**126**	P		**Pn**	**14 18 52.0**	**+0.9**
PRK	**Paraskevi**	**3.25**	**126**	P		**Pn**	**14 18 52.0**	**+0.9**
PRK	**Paraskevi**	**3.25**	**126**	P		**Pn**	**14 18 53.0**	**+1.9**
GUR	**Goura**	**3.27**	**187**	P		**Pn**	**14 18 53.8**	**+2.3**
GUR	**Goura**	**3.27**	**187**	P		**Pn**	**14 18 53.8**	**+2.3**
NKME	**Niksic**	**3.31**	**300**	⇓*i*	Pn	**Pn**	**14 18 53.4**	**+1.5**
NKME				*e*	Sn	**Sn**	**14 19 32.8**	**+1.7**
NKME	**Niksic**	**3.31**	**300**	⇓*i*	Pn	**Pn**	**14 18 53.4**	**+1.5**
NKME				*e*	Sn	**Sn**	**14 19 32.8**	**+1.7**
VLY	**Voula,Athens**	**3.41**	**167**	P		**Pn**	**14 18 53.8**	**+0.5**
VLY	**Voula,Athens**	**3.41**	**167**	P		**Pn**	**14 18 53.8**	**+0.5**
SRE	**Strehaia**	**3.48**	**4**	⇑*i*	P	**Pn**	**14 18 54.7**	**+0.5**
SRE	**Strehaia**	**3.48**	**4**	⇑*i*	P	**Pn**	**14 18 54.7**	**+0.5**
HCY	**Herceg Novi**	**3.50**	**293**	⇓*i*	Pn	**Pn**	**14 18 55.2**	**+0.8**
HCY				*e*	Sn	**Sn**	**14 19 37.4**	**+1.8**
HCY	**Herceg Novi**	**3.50**	**293**	⇓*i*	Pn	**Pn**	**14 18 55.2**	**+0.8**
HCY				*e*	Sn	**Sn**	**14 19 37.4**	**+1.8**
UPM	**Unac-Piva**	**3.56**	**306**	⇓*i*	Pn	**Pn**	**14 18 56.4**	**+0.9**
UPM				*e*	Sn	**Sn**	**14 19 38.2**	**+0.7**
UPM	**Unac-Piva**	**3.56**	**306**	⇓

13nm,0.3s,baz=73,slow=19,SNR=4.5
ASAJ Asahikawa 5.86 4 P **Pn** **14 20 49.0 -0.1**
1.0nm,0.3s,baz=208,slow=14,SNR=14
ASAJ S **Sn** **14 21 51.8 -3.1**
1.5nm,0.3s,baz=82,slow=23,SNR=4.2
USRK Ussuriysk Ar. 9.57 311 P **Pn** **14 21 41.0 +1.1**
0.7nm,0.3s,baz=122,slow=14,SNR=9.5
SONM Songino Array 27.49 302 P **P** **14 25 06.1 +0.1**
0.3nm,0.5s,baz=98,slow=10,SNR=2.9
H11N2 WAKE ISLAND Hy 28.43 124 T T 14 55 33.5
baz=315,slow=75,SNR=43
H11N1 WAKE ISLAND Hy 28.43 124 T T 14 55 35.6
baz=315,slow=75,SNR=56
H11N3 WAKE ISLAND Hy 28.44 124 T T 14 55 36.2
baz=315,slow=75,SNR=27
H11S1 WAKE ISLAND Hy 29.18 126 T T 14 56 27.9
baz=316,slow=76,SNR=21
H11S3 WAKE ISLAND Hy 29.18 126 T T 14 56 26.5
baz=316,slow=76,SNR=12
H11S2 WAKE ISLAND Hy 29.20 126 T T 14 56 27.8
baz=316,slow=76,SNR=12
ZALV Zalesovo Beam 41.42 311 P **P** **14 27 05.2 -0.6**
1.1nm,0.4s,baz=83,slow=7.5,SNR=4.5
MKAR Makanchi Array 43.85 301 P **P** **14 27 25.3 -0.4**
0.7nm,0.7s,baz=85,slow=10,SNR=7.9
WRA Warramunga Arr 59.35 189 P **P** **14 29 14.1 -0.4**
0.1nm,0.4s,baz=5.8,slow=7.1,SNR=5.0

SKO 18 14:23:46.6,41.22N×22.83E, h15km, M1.0, ML1.2, 2C, Northwestern Balkan Peninsula

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
VAY	**Valandovo**	**0.22**	**297**	↑*i*	*P*g	Pg	14 23 51.5	0.0
VAY				↑*i*	*S*g	Sb	14 23 55.5	-0.6
VAY				*eL*g		Lg	14 23 55.6	
	comp=E,58nm,0.2s							
VAY				*eL*g		Lg	14 23 55.7	
	comp=N,65nm,0.3s							

BUC 18 14:25:50.8±0.5, 46.02N×21.87E, h7km, MD2.4/3, 8C-2D, Error ellipse: s-maj=6.3km s-min=3.6km az=101.0, Romania

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
SIRR	**Siria**	**0.29**	**330**	↑*i*	*P*	Pg	14 25 57.2	+0.7
SIRR	**Siria**	**0.29**	**330**		*S*	Sg	14 26 01.6	+1.3
SIRR	**Siria**	**0.29**	**330**	↑*i*	*P*	Pg	14 25 57.2	+0.7
SIRR					*S*	Sg	14 26 01.6	+1.3
BZS	**Buzias**	**0.44**	**204**	↓*i*	*P*	Pg	14 25 59.6	+0.4
BZS	**Buzias**	**0.44**	**204**		*S*	Sg	14 26 06.2	+1.2
BZS	**Buzias**	**0.44**	**204**	↓*i*	*P*	Pg	14 25 59.6	+0.4
BZS					*S*	Sg	14 26 06.2	+1.2
GZR	**Gura Zlata**	**0.89**	**134**	↑*i*	*P*	Pn	14 26 09.3	-0.6
GZR	**Gura Zlata**	**0.89**	**134**	↑*i*	*P*	Pn	14 26 09.3	-0.6
GZR					*i S*	Sn	14 26 23.0	-0.1
DRGR		**0.97**	**37**	↑*i*	*P*	Pb	14 26 10.0	0.0
DRGR		**0.97**	**37**	↑*i*	*P*	Pb	14 26 10.0	0.0
DRGR					*i S*	Sb	14 26 24.0	+0.9
MDVR	**Moldovita**	**1.24**	**185**	↑*i*	*P*	Pn	14 26 14.9	+0.3
MDVR	**Moldovita**	**1.24**	**185**	↑*i*	*P*	Pn	14 26 14.9	+0.3
MDVR					*i S*	Sn	14 26 31.6	0.0

IDC 18 14:28:33.6±1.9, 7.88S×117.57E, h0km, mb3.0/3, mb1 3.3/4, mb1mx3.2/44, mbtmp3.2/4, ML3.3/1, Error ellipse: s-maj=41.9km s-min=25.5km az=66.0, Bali Sea

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
KAPI	**Kappang**	**3.58**	**37**	*P*n		Pn	14 29 31.1	+0.6
	2.8nm,0.3s,baz=211,slow=4.8,SNR=9.8							
KAPI				*S*n		Sn	14 30 13.2	-0.2
	2.0nm,0.3s,baz=201,slow=18,SNR=5.5							
WRA	**Warramunga Arr**	**20.19**	**128**	P		P	14 33 09.9	-0.2
	0.6nm,0.9s,baz=302,slow=12,SNR=2.8							
ASAR	**Alice Springs**	**22.17**	**137**	P		P	14 33 31.7	+0.1
	0.3nm,0.5s,baz=313,slow=9.6,SNR=6.2							
MKAR	**Makanchi Array**	**62.83**	**334**	P		P	14 39 01.1	-0.1
	0.5nm,0.8s,baz=134,slow=6.9,SNR=4.9							

IDC 18 14:35:32.8±1.9, 5.61S×150.63E, h0km, mb3.8/4, mb1 4.0/5, mb1mx3.5/41, mbtmp3.8/5, ML1.6/1, Error ellipse: s-maj=102.8km s-min=22.9km az=128.0, New Britain region

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
PMG	**Port Moresby**	**5.11**	**222**	*P*n		Pn	14 36 52.8	+2.2
	1.4nm,0.3s,baz=50,slow=8.9,SNR=6.0							
PMG				*S*n		Sn	14 37 51.5	+1.1
	4.4nm,0.3s,baz=176,slow=23,SNR=7.4							
WRA	**Warramunga Arr**	**21.31**	**227**	P		P	14 40 21.6	+0.2
	2.0nm,0.8s,baz=53,slow=11,SNR=20							
ASAR	**Alice Springs**	**24.12**	**220**	P		P	14 40 50.4	-0.2
	2.7nm,0.8s,baz=58,slow=8.7,SNR=51							
FITZ	**Fitzroy Crossi**	**27.38**	**241**	P		P	14 41 18.8	-1.3
	1.4nm,0.7s,baz=70,slow=12,SNR=4.3							
ILAR	**Eielson Array**	**83.72**	**22**	P		P	14 48 03.4	0.0
	0.7nm,0.8s,baz=249,slow=5.4,SNR=6.9							
TORD	**Torodi Ar. Bea**	**148.47**	**286**	PKPbc		PKPbc	14 55 22.9	+0.2
	0.6nm,0.6s,baz=65,slow=3.0,SNR=3.8							

MEX 18 14:43:13.1±0.4, 16.64N×99.72W, h20km±28km, MD3.6, Near coast of Guerrero

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
ACX	**Acapulco**	**0.26**	**331**	*eP*		Pb	14 43 17.4	-1.9
ACX				*eS*		Sb	14 43 21.4	-2.0
ACP2	**Acapulco**	**0.28**	**326**	*eP*		Pb	14 43 18.0	-1.6
ACP2				*eS*		Sb	14 43 22.8	-1.1
CAIG	**El Cayaco**	**0.66**	**308**	*eP*		Pb	14 43 23.9	-2.1
CAIG				*eS*		Sb	14 43 32.1	-2.7
MEIG	**Mezcala**	**1.28**	**4**	*eP*		Pn	14 43 32.9	-3.1
MEIG				*eS*		Sn	14 43 48.4	-4.3

*ISCJB **18** 14:46:05.4±0.3, 6.84N±0.04×73.08W±0.04, h167km±3km, mb3.3/5, Error ellipse: s-maj=8.5km s-min=3.8km az=36.6*
*IDC **18** 14:46:06.4±0.7, 6.75N×72.98W, h168km±7km, mb3.1/5, mb1 3.5/7, mb1mx3.3/35, mbtmp3.7/7, Error ellipse: s-maj=21.2km s-min=7.7km az=133.0*
*FUNV **18** 14:46:07.2, 6.79N×73.09W, h168km, MW3.7*
*RSNC **18** 14:46:08.6±0.8, 6.80N×73.18W, h145km±5km, ML3.4*
ISC 18 14:46:06.0±0.8, 6.83N±0.04×73.09W±0.05, h163km±5km, n40, σ1°03/55, mb3.3/5, 11C-2D, Northern Colombia

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
BARC	**Barichara**	**0.25**	**201**	*i P*		**Pn**	**14 46 28.2**	**-0.1**
BARC				*eS*		**Sn**	**14 46 43.2**	**-2.1**
BARC				*i*			14 46 45.0	
	comp=Z,969nm,0.3s							
GIRC	**Giron, Santand**	**0.27**	**337**	*i P*		**Pn**	**14 46 28.3**	**+0.1**
GIRC				*eS*		**Sn**	**14 46 43.1**	**-2.1**
PAMC	**Pamplona, Colo**	**0.64**	**37**	*i P*		**Pn**	**14 46 31.0**	**+0.9**
PAMC				*eS*		**Sn**	**14 46 48.3**	**-0.2**
PAMC				*i*			14 46 50.4	
	comp=Z,267nm,0.4s							
BRRC	**Barranca, Sant**	**0.68**	**294**	↓*i P*		**Pn**	**14 46 30.1**	**+0.3**
BRRC				*i*			14 46 49.9	
	comp=Z,796nm,0.1s							
GRMC	**Gramalote, San**	**0.93**	**18**	*i P*		**Pn**	**14 46 34.0**	**+2.3**
GRMC				*eS*		**Sn**	**14 46 53.1**	**+1.8**
GRMC				*i*			14 46 55.6	
	comp=Z,472nm,0.3s							
CBRI	**Barrientos, No**	**0.93**	**18**	*i P*		**Pn**	**14 46 32.7**	**+1.0**
CBRI				*eS*		**Sn**	**14 46 50.5**	**-0.9**
CBRI				*i*			14 46 54.4	
	comp=Z,286nm,0.2s							
CAPV	**Capacho**	**1.28**	**37**	↓*eP*		**Pn**	**14 46 36.0**	**+1.3**
CAPV				*eS*		**Sn**	**14 46 56.9**	**+0.1**
OCAC	**Ocana**	**1.42**	**351**	*eP*		**Pn**	**14 46 35.8**	**-0.1**
YOPC	**Yopal, Colombi**	**1.61**	**156**	*i P*		**Pn**	**14 46 38.6**	**+0.8**
YOPC				*eS*		**Sn**	**14 47 02.0**	**-0.4**
YOPC				*i*			14 47 06.7	
	comp=Z,183nm,0.5s							
NORC	**Norcasia**	**2.17**	**235**	*eP*		**Pn**	**14 46 43.8**	**-0.2**
NORC				*eS*		**Sn**	**14 47 10.9**	**-2.4**
NORC				*i*			14 47 19.4	
	comp=Z,75nm,0.4s							
CHIC	**Chingaza**	**2.28**	**196**	*i P*		**Pn**	**14 46 46.0**	**+0.5**
CHIC				*eS*		**Sn**	**14 47 15.5**	**-0.6**
CHIC				*i*			14 47 21.5	
	comp=Z,268nm,0.3s							
ROSC	**El Rosal**	**2.33**	**212**	P		**Pn**	**14 46 47.9**	**+1.8**
	comp=Z,44nm,0.3s,baz=127,slow=24,SNR=76							
ROSC				S		**Sn**	**14 47 18.1**	**+1.0**
	comp=Z,46nm,0.3s,baz=135,slow=19,SNR=10.0							
VIGV	**El Vigia**	**2.63**	**40**	↑*eP*		**Pn**	**14 46 50.5**	**+1.1**
VIGV				*eS*		**Sn**	**14 47 21.7**	**-1.3**
SOCV	**Socops**	**2.64**	**57**	↑*eP*		**Pn**	**14 46 50.2**	**+0.7**
SOCV				*eS*		**Sn**	**14 47 22.2**	**-1.1**
VILC	**Villavicencio,**	**2.77**	**193**	*eP*		**Pn**	**14 46 51.2**	**0.0**
GUYC	**Guyana, Colomb**	**2.79**	**235**	*eP*		**Pn**	**14 46 52.2**	**+0.5**
DBBC	**Dabeiba**	**3.10**	**274**	*eP*		**Pn**	**14 46 55.6**	**+0.4**
TOLC	**Tolima**	**3.15**	**225**	*eP*		**Pn**	**14 46 56.7**	**+0.6**
SDV	**Santo Domingo**	**3.18**	**50**	P		**Pn**	**14 46 57.9**	**+1.6**
	comp=Z,34nm,0.3s,baz=256,slow=3.5,SNR=13							
SDV				S		**Sn**	**14 47 35.4**	**+0.1**
	comp=Z,50nm,0.3s,baz=64,slow=21,SNR=23							
PRAC	**Prado**	**3.58**	**210**	*eP*		**Pn**	**14 47 01.4**	**+0.1**
PRAC				*eS*		**Sn**	**14 47 44.2**	**0.0**
ELOV	**Elorza**	**3.58**	**87**	↑*eP*		**Pn**	**14 47 02.0**	**+0.7**
VIRV	**Villa del Rosa**	**3.71**	**10**	*eP*		**Pn**	**14 47 02.9**	**0.0**
VIRV				*eS*		**Sn**	**14 47 45.6**	**-1.7**
QARV	**Quebrada Arrib**	**4.21**	**37**	↑*iP*		**Pn**	**14 47 10.2**	**+0.8**
SANV	**Sanarito**	**4.41**	**53**	↑*eP*		**Pn**	**14 47 12.2**	**+0.1**
CURV	**Curarigua**	**4.43**	**44**	↑*eP*		**Pn**	**14 47 12.5**	**+0.3**
DABV	**Dabajuro**	**4.73**	**31**	↑*eP*		**Pn**	**14 47 16.5**	**+0.3**
TEPV	**Terepaima**	**4.96**	**51**	↑*eP*		**Pn**	**14 47 19.4**	**+0.3**
SIQV	**Siquisique**	**4.99**	**40**	↑*eP*		**Pn**	**14 47 18.9**	**-0.7**
BAUV	**El Baul**	**5.42**	**67**	↑*eP*		**Pn**	**14 47 24.1**	**-1.2**
MAPV	**Macapo**	**5.47**	**57**	↑*eP*		**Pn**	**14 47 25.8**	**-0.1**
MONV	**Montecano**	**5.95**	**31**	*eP*		**Pn**	**14 47 31.9**	**-0.3**
TURV	**Turiamo**	**6.32**	**55**	*eP*		**Pn**	**14 47 36.8**	**-0.2**
CUPV	**Cepira**	**7.90**	**66**	*eP*		**Pn**	**14 47 56.9**	**-1.3**
TXAR	**Lajitas Array**	**36.48**	**312**	P		**P**	**14 52 57.0**	**+1.2**
	comp=Z,0.4nm,0.5s,baz=126,slow=8.5,SNR=7.7							
PDAR	**Pinedale Array**	**48.09**	**324**	P		**P**	**14 54 30.2**	**+0.6**
	comp=Z,0.3nm,0.5s,baz=124,slow=9.4,SNR=3.8							
NVAR	**Mina Array Bea**	**51.50**	**315**	P		**P**	**14 54 54.6**	**-0.8**
	comp=Z,0.4nm,0.6s,baz=142,slow=7.6,SNR=3.0							
YKA	**Yellowknife Ar**	**63.27**	**340**	P		**P**	**14 56 18.1**	**+1.1**
	comp=Z,0.8nm,0.6s,baz=133,slow=6.6,SNR=28							
TORD	**Torodi Ar. Bea**	**73.71**	**78**	P		**P**	**14 57 21.6**	**-1.1**
	comp=Z,0.1nm,0.3s,baz=286,slow=6.2,SNR=3.6							
ASAR	**Alice Springs**	**149.14**	**234**	PKPbc		**PKPbc**	**15 05 35.5**	**-0.6**
	comp=Z,0.4nm,0.7s,baz=116,slow=3.4,SNR=9.4							
WRA	**Warramunga Arr**	**150.37**	**241**	PKPbc		**PKPbc**	**15 05 38.8**	**-0.3**
	comp=Z,0.3nm,0.4s,baz=108,slow=2.8,SNR=16							

*ISCJB **18** 14:54:03.3±1.0, 37.03N±0.06×71.2E±0.1, h10km, mb3.3/4, Error ellipse: s-maj=17.0km s-min=9.0km az=3.8*
*NNC **18** 14:54:05.8±4.3, 37.13N×71.07E, h0km, mb3.9, mpv3.5, Error ellipse: s-maj=34.6km s-min=24.3km az=163.0*
*IDC **18** 14:54:05.7±1.4, 37.18N×72.19E, h0km, mb3.5/4, mb1 3.6/10, mb1mx3.4/61, mbtmp3.4/10, ML3.0/6, Error ellipse: s-maj=36.9km s-min=18.8km az=83.0*
ISC 18 14:54:04.7±1.2, 37.06N±0.09×71.1E±0.1, h10km, n16, σ2°50/20, mb3.3/4, 8C-1D, Afghanistan-Tajikistan border region

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
SFK	**Sufi-Kurgan**	**3.50**	**32**	↑*P*n		**Pn**	**14 55 01.4**	**+2.0**
	8.8nm,0.4s,baz=172,slow=12							
SFK				↑*S*n		**Sn**	**14 55 45.1**	**+4.1**
	32nm,0.5s,baz=172,slow=12							
MNAS	**Manas**	**5.53**	**11**	↑*P*n		**Pn**	**14 55 27.8**	**+0.5**
	7.4nm,0.9s,baz=172,slow=12							
MNAS				↑*S*n		**Sn**	**14 56 32.9**	**+1.9**
	7.1nm,0.9s,baz=172,slow=12							
KK31	**Karatay Array**	**6.06**	**356**	*P*n		**Pn**	**14 55 36.1**	**+1.8**
	1.3nm,0.4s,baz=172,slow=12,SNR=15							
KK31				↑*S*n		**Sn**	**14 56 47.0**	**+3.3**
	1.4nm,0.4s,baz=173,slow=26							
AAK	**Ala-Archa**	**6.15**	**24**	*P*n		**Pn**	**14 55 35.4**	**-0.4**
	0.5nm,0.3s,baz=148,slow=5.8,SNR=7.0							
AAK				*S*n		**Sn**	**14 56 43.9**	**-2.4**
	0.4nm,0.3s,baz=344,slow=18,SNR=3.2							
TKM2	**Tokmak 2**	**6.80**	**29**	↑*P*n		**Pn**	**14 55 44.7**	**+0.1**
	1.4nm,0.5s,baz=172,slow=12							
TKM2				↑*S*n		**Sn**	**14 57 03.2**	**+0.9**
	2.8nm,0.8s,baz=172,slow=12							
MKAR	**Makanchi Array**	**12.79**	**37**	*P*n		Pn	14 57 03.6	-3.0
	0.0nm,0.3s,baz=220,slow=11,SNR=5.7							
KURBB	**Kurchatov Arra**	**14.57**	**19**	*P*n		Pn	14 57 25.9	-4.9
	0.0nm,0.3s,baz=217,slow=13,SNR=5.0							
AB31	**Akbulak array**	**14.64**	**330**	*P*		**Pn**	**14 57 31.9**	**0.0**
	0.6nm,0.5s,baz=172,slow=12,SNR=23							
AB31				↑*S*		**Sn**	**15 00 09.3**	**-4.8**
	1.1nm,0.7s,baz=172,slow=12,SNR=4.2							
BVAR	**Borovoye Array**	**15.98**	**358**	*P*n		**Pn**	**14 57 46.7**	**-2.7**
	0.1nm,0.3s,baz=144,slow=12,SNR=2.9							
AKTO	**Aktyubinsk**	**16.34**	**329**	*P*n		**P**	**14 57 58.9**	**+1.8**
	0.2nm,0.3s,baz=136,slow=4.7,SNR=5.8							
AKTO	**Aktyubinsk**	**16.34**	**329**	↓*P*		**P**	**14 57 59.5**	**+2.4**
	2.2nm,0.8s,baz=172,slow=12							
ZALV	**Zalesovo Beam**	**19.38**	**25**	*P*		**P**	**14 58 26.4**	**-4.1**
	0.2nm,0.3s,baz=227,slow=9.9,SNR=4.5							
ILAR	**Eielson Array**	**74.22**	**16**	P		**P**	**15 05 42.7**	**+1.3**
	0.3nm,0.9s,baz=333,slow=6.8,SNR=4.6							
YKA	**Yellowknife Ar**	**80.69**	**3**	P		**P**	**15 06 18.1**	**+0.6**
	0.2nm,0.6s,baz=348,slow=5.4,SNR=6.9							
WRA	**Warramunga Arr**	**82.21**	**122**	P		**P**	**15 06 24.6**	**-1.7**
	0.1nm,0.4s,baz=318,slow=5.3,SNR=5.1							
ASAR	**Alice Springs**	**84.50**	**125**	P		**P**	**15 06 38.4**	**+0.4**
	0.4nm,0.9s,baz=300,slow=3.7,SNR=2.9							

*IDC **18** 14:56:49.6±1.3, 38.50N×144.52E, h0km, mb3.6/6, mb1 3.7/8, mb1mx3.4/54, mbtmp3.6/8, ML3.5/2, Error ellipse: s-maj=38.5km s-min=19.9km az=83.0*
*ISCJB **18** 14:56:51.9±1.1, 38.60N±0.07×144.3E±0.2, h29km, mb3.5/6, Error ellipse: s-maj=21.3km s-min=9.6km az=7.9*
ISC 18 14:56:53.9±1.5, 38.59N±0.09×144.4E±0.2, h29km, n9, σ1°46/10, mb3.6/6, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
MJAR	**Matsushiro Arr**	**5.34**	**249**	*P*n		**Pn**	**14 58 09.5**	**-2.2**
	1.3nm,0.3s,baz=59,slow=12,SNR=7.6							
MAT	**Matsushiro**	**5.34**	**249**	P		**Pn**	**14 58 11.7**	**+0.1**
ASAJ	**Asahikawa**	**5.69**	**347**	*P*n		**Pn**	**14 58 14.9**	**-1.4**
	1.2nm,0.3s,baz=174,slow=9.2,SNR=12							
ASAJ				*S*n		**Sn**	**14 59 20.3**	**-0.3**
	0.7nm,0.3s,baz=135,slow=20,SNR=2.5							
SEY	**Seymchan**	**24.85**	**9**	*P*		**P**	**15 02 14.0**	**+0.5**
	1.3nm,0.7s,baz=204,slow=9.4,SNR=6.0							
ZALV	**Zalesovo Beam**	**42.65**	**311**	*P*		**P**	**15 04 48.9**	**+1.4**
	0.3nm,0.3s,baz=86,slow=9.5,SNR=2.4							
MKAR	**Makanchi Array**	**45.32**	**301**	P		**P**	**15 05 11.5**	**+2.4**
	0.3nm,0.8s,baz=70,slow=10,SNR=2.8							
KURBB	**Kurchatov Arra**	**46.93**	**307**	P		**P**	**15 05 21.9**	**+0.2**
	0.2nm,0.5s,baz=82,slow=7.7,SNR=5.1							
WRA	**Warramunga Arr**	**58.99**	**191**	P		**P**	**15 06 50.3**	**-0.5**
	1.4nm,0.7s,baz=12,slow=7.4,SNR=9.8							
ASAR	**Alice Springs**	**62.71**	**191**	P		**P**	**15 07 15.9**	**-0.2**
	0.4nm,0.7s,baz=14,slow=8.5,SNR=5.7							

MEX 18 14:57:03.6±0.3, 15.01N×93.53W, h16km±67km, MD3.8, Near coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
PCIG		**0.76**	**23**	*eP*		Pb	14 57 15.6	-2.8
PCIG				*i S*		Sg	14 57 25.1	-3.3
CCIG	**Comitan**	**1.84**	**46**	*eP*		Pn	14 57 31.6	-3.2
CCIG				*eS*		Sn	14 57 53.3	-4.5

*IDC **18** 14:57:18.2±2.2, 37.88N×144.24E, h0km, mb3.8/5, mb1 3.9/6, mb1mx3.5/51, mbtmp3.8/6, ML3.8/1, Error ellipse: s-maj=66.0km s-min=23.7km az=66.0*
*ISCJB **18** 14:57:20.9±1.1, 37.89N±0.10×144.2E±0.2, h33km, mb4.0/7, Error ellipse: s-maj=20.8km s-min=14.0km az=178.9*
*NEIC **18** 14:57:23.3±0.8, 37.94N×144.14E, h35km, mb4.2/2, Error ellipse: s-maj=16.9km s-min=11.3km az=90.0*

ISC 18 14:57:23.2±1.5, 38.0N±0.1×144.2E±0.2, h35km, n10, σ0°80/10, mb4.0/7, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
ERM	**Erimo**	**4.13**	**349**	*P*n		**Pn**	**14 58 22.9**	**-0.8**
MJAR	**Matsushiro Arr**	**4.96**	**255**	*P*n		**Pn**	**14 58 34.3**	**-0.9**
	3.3nm,0.3s,baz=64,slow=11,SNR=11							
MAJO	**Matsushiro**	**4.96**	**255**	*eP*n		**Pn**	**14 58 34.9**	**-0.3**
ZALV	**Zalesovo Beam**	**42.93**	**312**	P		**P**	**15 05 19.1**	**+0.8**
	1.7nm,0.6s,baz=80,slow=7.7,SNR=7.8							
MKAR	**Makanchi Array**	**45.49**	**302**	P		**P**	**15 05 39.1**	**+0.1**
	0.4nm,0.7s,baz=89,slow=6.6,SNR=3.6							
KURK	**Kurchatov**	**47.09**	**308**	*eP*		**P**	**15 05 52.4**	**+0.9**
	1.9nm,0.5s							
KURBB	**Kurchatov Arra**	**47.17**	**308**	P		**P**	**15 05 53.1**	**+1.1**
	0.8nm,0.4s,baz=80,slow=8.8,SNR=6.3							
WRAB	**Tennant Creek**	**58.31**	**191**	*eP*		**P**	**15 07 14.6**	**0.0**
	1.3nm,0.6s							
WRA	**Warramunga Arr**	**58.33**	**191**	P		**P**	**15 07 14.4**	**-0.3**
	1.5nm,0.7s,baz=12,slow=7.3,SNR=8.5							
ASAR	**Alice Springs**	**62.05**	**191**	P		**P**	**15 07 40.1**	**0.0**
	0.4nm,0.6s,baz=16,slow=9.1,SNR=6.8							

JMA 18 14:58:12.6, 36.88N×140.81E, h8km±1km, M3.5, 1C-2D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.22**	**358**	↓↓*P*		Pg	14 58 17.2	+0.1
ONAJ					*S*	Sg	14 58 20.9	+0.7
JHO	**Hitachi**	**0.33**	**216**	*P*		Pg	14 58 19.2	+0.1
JHO					*S*	Sg	14 58 23.6	+0.1
JFK	**Kawauchi**	**0.49**	**6**	*P*		Pg	14 58 22.0	-0.1
JFK				*eS*		Sg	14 58 28.8	+0.3
JSB	**Shiboa**	**0.72**	**277**	↑↑*P*		Pb	14 58 27.1	-0.3
JSB					*S*	Sb	14 58 37.2	-0.2
JFT	**Otama**	**0.74**	**329**	*P*		Pg	14 58 27.1	+0.2
JFT					*S*	Sb	14 58 37.4	-0.7
JYT	**Yasato**	**0.82**	**217**	*P*		Pg	14 58 28.0	-0.3
JYT					*S*	Sg	14 58 38.9	-0.1
JMM	**Marumori**	**0.98**	**359**	↓↓*P*		Pg	14 58 30.9	-0.6
JMM					*S*	Sg	14 58 44.4	+0.1

JMA 18 15:05:22.7±0.2, 38.66N×144.23E, h41km, M3.7, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
OFUJ	**Ofunato**	**2.04**	**283**	*P*		Pn	15 05 55.9	+1.3
OFUJ				*eS*		Sn	15 06 19.5	+0.7
MIYJ	**Miyakonagasawa**	**2.09**	**297**	*P*		Pn	15 05 56.3	+1.1
MIYJ				*S*		Sn	15 06 20.9	+1.0
JIO	**Ouri**	**2.27**	**266**	*P*		Pn	15 05 58.9	+1.3
JIO				*eS*		Sn	15 06 25.3	+0.9
JMK	**Ichinoseki**	**2.37**	**278**	*P*		Pn	15 06 00.8	+1.8
JMK				*eS*		Sn	15 06 28.3	+1.4
JOM	**Ohasama**	**2.43**	**290**	*P*		Pn	15 06 01.5	+1.7
JOM				*eS*		Sn	15 06 29.6	+1.3
JANG	**Nango**	**2.71**	**310**	*P*		Pn	15 06 04.5	+0.8
JANG				*eS*		Sn	15 06 37.7	+2.4
JYK	**Kaneyama**	**3.04**	**276**	*P*		Pn	15 06 10.5	+2.3
JYK				*eS*		Sn	15 06 46.6	+3.3
JFT	**Otama**	**3.28**	**251**	*P*		Pn	15 06 13.6	+2.1
JFT				*S*		Sn	15 06 51.5	+2.2
JCH	**Churui**	**4.00**	**351**	*P*		Pn	15 06 23.1	+1.6
JCH				*S*		Sn	15 07 05.5	-1.7
JKB	**Kayabe**	**4.05**	**324**	*P*		Pn	15 06 25.9	+3.8
NEM2	**Nemuro 2**	**4.84**	**13**	*P*		Pn	15 06 32.3	-0.6
NEM2				*eS*		Sn	15 07 22.1	-5.5
JOSM	**Okushiri--Mats**	**4.99**	**315**	*P*		Pn	15 06 37.8	+2.8
JRY	**Ryogami san**	**5.00**	**240**	*P*		Pn	15 06 36.4	+1.2
JRY				*eS*		Sn	15 07 31.1	-0.6
MAT	**Matsushiro**	**5.23**	**248**	*P*		Pn	15 06 41.4	+3.0
MAT				*S*		Sn	15 07 43.5	+6.1
JOD2	**Odawara 2**	**5.33**	**232**	*eS*		Sn	15 07 38.1	-1.9

*ISCJB **18** 15:07:54.7±0.7, 37.25N±0.03×141.04E±0.04, h11km±4km, mb4.0/28, Error ellipse: s-maj=6.0km s-min=4.4km az=25.4*
*IDC **18** 15:07:54.9±0.7, 37.31N×140.88E, h0km, mb3.9/18, mb1 4.1/21, mb1mx4.0/52, mbtmp4.0/21, ML3.7/3, Error ellipse: s-maj=18.9km s-min=14.3km az=110.0*
*JMA **18** 15:07:55.9, 37.23N×140.93E, h7km, M4.1 Broadband fault plane solution: P waves. NP1:φ=187.00000°, δ61.00000°, λ-111.00000

baz=315,slow=76,SNR=94
H11S3 WAKE ISLAND Hy 29.40 122 T T 15 44 44.0
baz=315,slow=76,SNR=80
H11S2 WAKE ISLAND Hy 29.41 122 T T 15 44 44.3
baz=315,slow=76,SNR=40
TIXI Tiksi 35.01 353⇓ *e*P **P** **15 14 48.6 0.0**
TIXI pmax pmax
comp=Z,3.0nm,1.7s
ZALV Zalesovo Beam 41.40 312 P **P** **15 15 43.1 +0.6**
comp=Z,1.2nm,0.5s,baz=103,slow=7.6,SNR=8.0
NRIK Noril'sk 42.86 335 P **P** **15 15 54.4 +0.1**
comp=Z,0.8nm,0.4s,baz=102,slow=12,SNR=4.1
MKAR Makanchi Array 43.58 302 P **P** **15 16 00.7 +0.2**
comp=Z,1.2nm,0.5s,baz=85,slow=9.9,SNR=18
MKAR Makanchi Array 43.58 302 *ce*P **P** **15 16 01.2 +0.7**
MKAR pmax pmax
comp=Z,1.0nm,0.5s
KURK Kurchatov 45.41 308 *e*P **P** **15 16 14.9 0.0**
KURK pmax pmax
comp=Z,10.0nm,0.8s
KURK Kurchatov 45.41 308 *e*P **P** **15 16 14.9 0.0**
comp=Z,10nm,0.8s
ILAR Eielson Array 49.57 32 P **P** **15 16 47.2 +0.1**
comp=Z,1.2nm,0.7s,baz=271,slow=6.3,SNR=20
AAK Ala-Archa 49.95 298 P **P** **15 16 51.0 +0.4**
AAK pmax pmax
comp=Z,9.0nm,2.5s
BRVK Borovoye 50.11 312⇓ *i*P **P** **15 16 52.8 +1.4**
BRVK pmax pmax
comp=Z,8.0nm,2.5s
BRVK Borovoye 50.11 312 *e*P **P** **15 16 51.9 +0.5**
comp=Z,3.8nm,0.8s
INK Inuvik 54.41 27 P **P** **15 17 23.4 +0.2**
comp=Z,0.9nm,0.4s,baz=284,slow=5.0,SNR=7.1
ARU Arti 55.87 318 *d i*P **P** **15 17 34.1 +0.3**
ARU 15 19 34.7
ARU S **S** **15 25 20.4 -0.6**
ARU SS **SS** **15 29 03.0 -3.1**
ARU pmax pmax
comp=Z,11nm,2.5s
WRAB Tennant Creek 57.20 187 *e*P **P** **15 17 44.8 +1.1**
WRAB pmax pmax
comp=Z,4.0nm,1.0s
WRAB Tennant Creek 57.20 187 *e*P **P** **15 17 44.8 +1.1**
comp=Z,3.6nm,1.0s
WRA Warramunga Arr 57.22 187 P **P** **15 17 43.3 -0.5**
comp=Z,1.2nm,0.5s,baz=4.2,slow=7.2,SNR=22
WRA Warramunga Arr 57.22 187 *i*P **P** **15 17 44.4 +0.6**
WRA pmax pmax
comp=Z,1.0nm,0.5s
ABKAR Akbulak array 57.42 310 *e*P **P** **15 17 45.1 +0.1**
comp=Z,1.4nm,0.5s
ASAR Alice Springs 60.94 187 P **P** **15 18 11.4 +1.9**
comp=Z,0.2nm,0.5s,baz=17,slow=11,SNR=7.5
YKA Yellowknife Ar 63.86 30 P **P** **15 18 28.3 -0.4**
comp=Z,0.4nm,0.6s,baz=304,slow=6.7,SNR=9.1
FINES FINESS Array B 68.39 332 P **P** **15 18 57.5 -0.2**
comp=Z,3.5nm,0.7s,baz=54,slow=9.7,SNR=8.8
FINES FINESS Array B 68.39 332 *i*P **P** **15 18 58.2 +0.5**
FINES pmax pmax
comp=Z,4.0nm,0.7s
KBZ Khabaz 70.38 310 P **P** **15 19 10.4 0.0**
comp=Z,1.4nm,0.8s,baz=341,slow=6.1,SNR=4.3
KIV Kislovodsk 70.39 311⇓ *e*P **P** **15 19 12.3 +1.7**
KIV pmax pmax
comp=Z,10.0nm,1.2s
NB2 NORSAR Subarra 73.79 337 P **P** **15 19 30.5 -0.1**
comp=Z,1.5nm,0.7s,baz=41,slow=5.9
NOA NORSAR Array B 73.79 337 P **P** **15 19 30.1 -0.5**
comp=Z,1.4nm,0.9s,baz=43,slow=5.5,SNR=4.2
AKASG Malin Array Be 73.82 322 P **P** **15 19 30.7 -0.2**
comp=Z,1.2nm,0.6s,baz=47,slow=5.9,SNR=4.4
AKASG Malin Array Be 73.82 322 *i*P **P** **15 19 28.1 -2.8**
AKASG pmax pmax
comp=Z,2.0nm,0.8s
KIEV Kiev 73.83 322 P **P** **15 19 31.0 +0.1**
KIEV pmax pmax
comp=Z,3.0nm,0.9s
PDAR Pinedale Array 77.86 45 P **P** **15 19 54.2 -0.2**
comp=Z,0.4nm,0.6s,baz=286,slow=2.6,SNR=5.1
GERES GERESS Array B 82.26 328 P **P** **15 20 17.2 -0.7**
comp=Z,0.3nm,0.4s,baz=52,slow=8.8,SNR=3.6
BFO Black Forest 84.87 330 *i*P **P** **15 20 33.1 +1.9**
TXAR Lajitas Array 90.38 52 P **P** **15 20 57.8 -0.4**
comp=Z,0.5nm,0.7s,baz=289,slow=2.5,SNR=5.1
LPAZ La Paz 147.00 59 PKPbc **PKPdf** **15 27 39.3 +0.8**
comp=Z,0.8nm,0.7s,baz=341,slow=9.5,SNR=3.7

*IDC **18** 15:08:48.7±1.2,36.°16S×101.°53W,h0km,mb4.1/5, mb1 4.4/5,mb1mx4.0/33,mbtmp4.0/5,Error ellipse: s-maj=38.9km s-min=29.4km az=29.0*
*ISCJB **18** 15:08:49.7±0.9,36.°1S±0.°1×101.°4W±0.°2,h10km,mb4.4/11, Error ellipse: s-maj=26.2km s-min=17.0km az=140.5*
*NEIC **18** 15:08:50.6±0.6,36.°12S×101.°50W,h10km,mb4.6/5,Error ellipse: s-maj=18.8km s-min=15.1km az=53.0*
ISC 18 15:08:50.8±0.9,**36.°1S**±0.°2×**101.°5W**±0.°2,**h10**km,**n17,**
σ0°**79**/13,**mb4.6**/10,**Southeast of Easter Island**

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
PLCA	**Paso Flores**	**24.60**	**110**	P		**P**	**P**	**15 14 11.6**	**+0.3**
	5.4nm,0.8s,baz=297,slow=9.4,SNR=11								
TRQA	**Tornquist**	**31.42**	**106**	P		**P**	**P**	**15 15 13.0**	**+0.8**
	11nm,1.1s								
LPAZ	**La Paz**	**35.59**	**65**	P		**P**	**P**	**15 15 48.9**	**-0.5**
	17nm,1.2s,baz=235,slow=5.6,SNR=19								
SAML	**Samuel**	**44.06**	**62**	*e*P		**P**	**P**	**15 16 58.2**	**-0.9**
	16nm,1.3s								
QSPA	**South Pole Qui**	**54.11**	**180**	*e*P		**P**	**P**	**15 18 16.2**	**+0.5**
	15nm,0.9s								
TXAR	**Lajitas Array**	**65.12**	**358**	P		**P**	**P**	**15 19 31.8**	**0.0**
	0.3nm,0.8s,baz=181,slow=8.8,SNR=4.2								
WCI	**Wyandotte Cave**	**75.28**	**12**	*e*P		**P**	**P**	**15 20 34.7**	**+0.9**
	84nm,0.6s								
BW06	**Boulder Array**	**78.83**	**354**	*e*P		**P**	**P**	**15 20 54.5**	**+0.5**
	3.9nm,0.9s								
PDAR	**Pinedale Array**	**78.83**	**354**	P		**P**	**P**	**15 20 54.2**	**+0.2**
	1.2nm,0.6s,baz=151,slow=6.4,SNR=12								
HLID	**Hailey**	**80.16**	**350**	*e*P		**P**	**P**	**15 21 01.5**	**+0.4**
	4.8nm,0.9s								
YKA	**Yellowknife Ar**	**98.82**	**354**	P		Pdif	P	15 22 30.2	+0.1
	0.1nm,0.6s,baz=161,slow=4.7,SNR=3.8								
H01W1	**Cape Leeuwin H**	**101.95**	**209**	T		T	T	17 17 23.0	
	baz=150,slow=76,SNR=3.4								
H01W2	**Cape Leeuwin H**	**101.95**	**209**	T		T	T	17 17 29.2	
	baz=150,slow=76,SNR=4.3								
H01W3	**Cape Leeuwin H**	**101.97**	**209**	T		T	T	17 17 29.2	
	baz=150,slow=76,SNR=4.8								
BRTR	**Keskin Array B**	**144.68**	**70**	PKP		**PKPab**		**15 28 25.4**	**-1.1**
	2.6nm,1.0s,baz=210,slow=4.3,SNR=9.3								
KBZ	**Khabaz**	**151.80**	**63**	PKPbc		**PKPbc**		**15 28 44.7**	**-0.7**
	4.7nm,1.0s,baz=199,slow=0.6,SNR=8.3								
CMAR	**Chiang Mai Arr**	**154.82**	**231**	PKPab		**PKPab**		**15 29 06.8**	**-1.1**
	0.4nm,0.5s,baz=155,slow=2.6,SNR=3.7								

*IDC **18** 15:10:03.3±1.3,3.°32S×134.°48E,h0km,mb3.7/4, mb1 4.0/6,mb1mx3.7/31,mbtmp3.8/6,ML3.2/3,Error ellipse: s-maj=36.8km s-min=23.9km az=75.0*
*ISCJB **18** 15:10:04.3±0.8,3.°4S±0.°1×134.°59E±0.°07,h24km,mb3.6/3, Error ellipse: s-maj=14.9km s-min=9.9km az=162.4*
ISC 18 15:10:06.5±1.0,**3.°4S**±0.°1×**134.°55E**±0.°09,**h24**km,**n7,**
σ1°**09**/8,**mb3.9**/3,**Irian Jaya region**

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
JAY	**Jayapura**	**6.21**	**82**	Pn		**Pn**	**Pn**	**15 11 37.1**	**+0.4**
	0.1nm,0.3s,baz=177,slow=22,SNR=4.5								
JAY				Sn			**Sn**	**15 12 46.2**	**-0.8**
	0.0nm,0.3s,baz=352,slow=24,SNR=0.9								
WRA	**Warramunga Arr**	**16.49**	**181**	Pn		**Pn**	**Pn**	**15 13 56.0**	**-0.3**
	0.1nm,0.3s,baz=357,slow=13,SNR=7.1								
FITZ	**Fitzroy Crossi**	**17.06**	**210**	P		**Pn**	**Pn**	**15 14 01.9**	**-1.6**
	0.1nm,0.3s,baz=45,slow=11,SNR=3.2								
ASAR	**Alice Springs**	**20.20**	**182**	P		**P**	**P**	**15 14 41.1**	**+1.4**
	2.4nm,0.7s,baz=5.8,slow=11,SNR=29								
CMAR	**Chiang Mai Arr**	**41.22**	**303**	P		**P**	**P**	**15 17 50.0**	**+0.2**
	0.3nm,0.5s,baz=110,slow=6.8,SNR=3.9								
MKAR	**Makanchi Array**	**67.81**	**324**	P		**P**	**P**	**15 21 03.1**	**+0.5**
	0.8nm,0.5s,baz=118,slow=7.3,SNR=16								
ZALV	**Zalesovo Beam**	**70.45**	**331**	P		**P**	**P**	**15 21 18.2**	**-0.6**
	0.4nm,0.4s,baz=140,slow=7.5,SNR=2.4								

*ISCJB **18** 15:24:15.6±0.8,32.°76N±0.°06×116.°01W±0.°04,h3km±8km, Error ellipse: s-maj=11.2km s-min=4.5km az=165.5*
*ECX **18** 15:24:16.5±0.7,32.°72N×115.°99W,h3km,MD2.4,ML2.7*
*MEX **18** 15:24:17.0±0.4,32.°87N×116.°19W,h4km±5km,MD3.7*
ISC 18 15:24:15.4±1.1,**32.°72N**±0.°06×**115.°99W**±0.°03,**h14**km±7km,
n12,σ0°**25**/19,**8C,California-Baja California border region**

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
IKP	**In-Ko-Pah, Jac**	**0.12**	**235**	⇑ *i*P		**Pg**		**15 24 19.2**	**+0.3**
RMX	**La Rumorosa**	**0.14**	**211**	⇑ *e*P		**Pg**		**15 24 18.9**	**-0.3**
RMX				*e*S		**Sg**		**15 24 21.4**	**-0.3**
RMX					AML	AML		15 24 21.9	
	comp=N,4μm,0.1s								
RMX				⇑ *e*				15 24 21.9	
WESC	**Westside Schoo**	**0.23**	**80**	⇑ *e*P		**Pg**		**15 24 20.3**	**0.0**
WESC				*e*S		**Sg**		**15 24 24.1**	**+0.4**
DREC	**Desert Rsrch C**	**0.47**	**79**	*e*P		**Pb**		**15 24 25.2**	**-0.2**
BAR	**Barrett**	**0.57**	**266**	⇑ *i*P		**Pb**		**15 24 27.1**	**-0.1**
BAR				⇑ *e*P		**Pb**		**15 24 27.1**	**-0.1**
BAR				*e*S		**Sb**		**15 24 34.8**	**-0.4**
TJIG	**Tijuana**	**0.64**	**244**	⇑ *e*P		**Pb**		**15 24 28.3**	**0.0**
TJIG	**Tijuana**	**0.64**	**244**	*e*P		**Pg**		**15 24 28.1**	**+0.2**
TJIG				*e*S		**Sb**		**15 24 37.0**	**-0.2**
CPBX	**Cerro Prieto**	**0.66**	**117**	*e*P		**Pg**		**15 24 28.3**	**+0.1**
CBX	**Cerro Bola**	**0.70**	**235**	⇑ *e*P		**Pb**		**15 24 29.4**	**+0.1**
CBX				*e*S		**Sb**		**15 24 39.0**	**+0.2**
CBX					AML	AML		15 24 41.1	
	comp=E,323nm,0.2s								
CBX	**Cerro Bola**	**0.70**	**235**	*e*P		**Pb**		**15 24 29.2**	**-0.1**
CBX				*e*S		**Sb**		**15 24 39.1**	**+0.3**
ECBX	**El Chinero**	**1.48**	**147**	AML		AML		15 25 02.6	
	comp=N,69nm,0.2s								
ECBX				*e*				15 25 02.6	
SPIG	**San Pedro Mart**	**1.73**	**165**	*e*P		**Pb**		**15 24 47.0**	**-0.1**
SPIG				*e*S		**Sg**		**15 25 11.1**	**0.0**

*IDC **18** 15:33:30.9±0.9,36.°53N×142.°23E,h0km,mb3.5/8, mb1 3.7/11,mb1mx3.6/54,mbtmp3.6/11,ML3.6/3,Error ellipse: s-maj=24.0km s-min=16.1km az=112.0*
*ISCJB **18** 15:33:31.6±0.6,36.°53N±0.°05×142.°22E±0.°06,h19km, mb3.5/8,Error ellipse: s-maj=7.7km s-min=6.2km az=140.9*
*JMA **18** 15:33:32.5±0.3,36.°64N×142.°15E,h20km,M3.8*
ISC 18 15:33:33.8±0.9,**36.°66N**±0.°06×**142.°07E**±0.°07,**h19**km,**n26,**
σ1°**55**/25,**mb3.5/8,Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**1.12**	**294**	P		**P**	**Pb**	**15 33 54.6**	**+0.1**
JFK	**Kawauchi**	**1.19**	**307**	P		**P**	**Pn**	**15 33 54.4**	**-1.1**
JHO	**Hitachi**	**1.21**	**268**	P		**P**	**Pn**	**15 33 54.8**	**-0.9**
JHO				*e*S		**Sb**	**Sb**	**15 34 11.4**	**0.0**
JMM	**Marumori**	**1.58**	**320**	P		**P**	**Pn**	**15 34 00.3**	**-0.5**
JFT	**Otama**	**1.64**	**302**	P		**P**	**Pn**	**15 34 01.9**	**+0.4**
JIO	**Ouri**	**1.89**	**342**	P		**P**	**Pn**	**15 34 05.8**	**+0.8**
JFY	**Yanaizu**	**2.04**	**292**	P		**P**	**Pb**	**15 34 09.1**	**-1.1**
JOU	**Okura**	**2.04**	**327**	P		**P**	**Pn**	**15 34 07.9**	**+0.7**
MJAR	**Matsushiro Arr**	**3.11**	**269**	Pn		**Pn**	**Pn**	**15 34 23.1**	**+1.2**
	14nm,0.3s,baz=91,slow=9.9,SNR=101								
MJAR				Sn			**Sb**	**15 35 03.6**	**-2.4**
	2.3nm,0.3s,baz=105,slow=14,SNR=5.3								
MAT	**Matsushiro**	**3.11**	**269**	P		**P**	**Pn**	**15 34 23.3**	**+1.4**
MAT				S		**Sn**	**Sn**	**15 35 01.0**	**+2.4**
JHJ	**Hachijo jima 2**	**4.00**	**209**	Pn		**Pn**	**Pn**	**15 34 33.2**	**-0.8**
	12nm,0.3s,baz=150,slow=23,SNR=7.1								
JHJ				Sn			**Sn**	**15 35 17.9**	**-2.4**
	24nm,0.3s,baz=49,slow=19,SNR=3.9								
ASAJ	**Asahikawa**	**7.46**	**3**	Pn		**Pn**	**Pn**	**15 35 21.5**	**-0.1**
	0.5nm,0.3s,baz=217,slow=15,SNR=4.3								
ASAJ				Sn			**Sn**	**15 36 41.5**	**-4.2**
	0.4nm,0.3s,baz=324,slow=19,SNR=1.9								
MA2	**Magadan**	**23.62**	**11**	P		**P**	**P**	**15 38 43.9**	**+0.5**
	2.2nm,0.8s,baz=234,slow=6.9,SNR=4.2								
SEY	**Seymchan**	**27.06**	**10**	P		**P**	**P**	**15 39 16.3**	**+1.6**
	0.5nm,0.5s,baz=218,slow=9.0,SNR=3.9								
H11N2	**WAKE ISLAND Hy 27.50 121**			T		T		16 08 16.1	
	baz=313,slow=75,SNR=9.1								
H11N1	**WAKE ISLAND Hy 27.51 121**			T		T		16 08 13.2	
	baz=313,SNR=6.8								
H11N3	**WAKE ISLAND Hy 27.52 121**			T		T		16 08 16.1	
	baz=313,slow=75,SNR=6.3								
H11S1	**WAKE ISLAND Hy 28.21 123**			T		T		16 09 10.5	
	baz=315,slow=76,SNR=4.6								
H11S3	**WAKE ISLAND Hy 28.21 123**			T		T		16 09 10.5	
	baz=315,slow=76,SNR=6.3								
H11S2	**WAKE ISLAND Hy 28.23 123**			T		T		16 09 10.5	
	baz=315,slow=76,SNR=3.0								
SONM	**Songino Array**	**28.44**	**304**	P		**P**	**P**	**15 39 28.9**	**+1.5**
	0.5nm,0.4s,baz=104,slow=10,SNR=3.9								
MKAR	**Makanchi Array**	**44.77**	**303**	P		**P**	**P**	**15 41 46.9**	**+0.8**
	0.3nm,0.7s,baz=79,slow=7.5,SNR=3.2								
ILAR	**Eielson Array**	**49.53**	**32**	P		**P**	**P**	**15 42 23.1**	**+0.2**
	0.3nm,0.7s,baz=285,slow=7.3,SNR=3.4								
WRA	**Warramunga Arr**	**56.76**	**189**	P		**P**	**P**	**15 43 15.9**	**-0.6**
	0.4nm,0.4s,baz=6.2,slow=6.9,SNR=10								
ASAR	**Alice Springs**	**60.49**	**189**	P		**P**	**P**	**15 43 41.4**	**-1.1**
	0.4nm,0.7s,baz=0.0,slow=6.1,SNR=7.4								
YKA	**Yellowknife Ar**	**63.87**	**30**	P		**P**	**P**	**15 44 05.6**	**+0.9**
	0.2nm,0.9s,baz=284,slow=7.1,SNR=3.1								

*BJI **18** 15:38:00.9,32.°40N×65.°66W,h7km*
*ISCJB **18** 15:38:02.2±0.2,32.°54N±0.°03×65.°60W±0.°03,h10km, mb4.3/55,Error ellipse: s-maj=4.5km s-min=3.5km az=23.5*
*IDC **18** 15:38:02.7±0.7,32.°55N×65.°67W,h0km,mb4.1/21, mb1 4.2/22,mb1mx4.1/54,mbtmp4.1/22,ML4.9/3,Error ellipse: s-maj=17.8km s-min=14.4km az=4.0*
*NEIC **18** 15:38:03.9±1.0,32.°46N×65.°60W,h10km±6km,mb4.6/46, Error ellipse: s-maj=4.8km s-min=3.9km az=56.0*
NEIC Felt [II] at Hamilton and Saint George.
ISC 18 15:38:03.7±0.4,**32.°51N**±0.°06×**65.°66W**±0.°04,**h10**km,**n251,**
σ1°**48**/247,**mb4.5**/55,**North Atlantic Ocean**

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
BBSR	**BB Station**	**0.83**	**99**	*e*Pg		**Pg**	**Pg**	**15 38 19.1**	**-0.5**
BBSR				*e*Sg		**Sg**	**Sg**	**15 38 28.0**	**-2.5**
CNNC	**Cliffs of the**	**10.52**	**288**	*e*Pn		**Pn**	**Pn**	**15 40 32.7**	**-1.9**
CPNY	**Central Park**	**10.61**	**323**	*e*Pn		**Pn**	**Pn**	**15 40 34.0**	**-1.8**
CPNY				*e*Sn		Sn	Sn	15 42 26.3	-8.3
PAL	**Palisades**	**10.75**	**324**	*e*Pn		**Pn**	**Pn**	**15 40 36.7**	**-0.9**
PAL				*e*Sn		Sn	Sn	15 42 26.2	-12
BRNJ	**Basking Ridge**	**10.84**	**321**	*e*Pn		**Pn**	**Pn**	**15 40 38.3**	**-0.6**
BRNJ				*e*Sn		Sn	Sn	15 42 29.2	-11
URVA	**University of**	**10.96**	**301**	*e*Pn		**Pn**	**Pn**	**15 40 39.4**	**-1.2**
HRV	**Adam Dziewonsk**	**11.02**	**337**	*e*Pn		**Pn**	**Pn**	**15 40 40.9**	**-0.4**
HRV				*e*Sn		Sn	Sn	15 42 29.5	-15
CBN	**Corbin Frederi**	**11.12**	**304**	*e*Pn		**Pn**	**Pn**	**15 40 42.3**	**-0.4**
CBN				*e*Sn		Sn	Sn	15 42 32.2	-15
ODNJ	**Ogdensburg**	**11.15**	**323**	*e*Pn		**Pn**	**Pn**	**15 40 45.2**	**+2.0**
LUPA	**Lehigh Univers**	**11.22**	**319**	*e*Pn		**Pn**	**Pn**	**15 40 44.6**	**+0.5**
LUPA				*e*Sn		Sn	Sn	15 42 37.8	-12
JSRW	**J. Sargeant Re**	**11.26**	**301**	*e*Pn		**Pn**	**Pn**	**15 40 42.5**	**-2.2**
SDMD	**Soldier's Deli**	**11.37**	**310**	*e*Pn		**Pn**	**Pn**	**15 40 46.1**	**-0.1**
N59A	**State Game Lan**	**11.66**	**319**	P		**Pn**	**Pn**	**15 40 50.5**	**+0.3**
	baz=133,SNR=9.7								
GRTK	**Grand Turk**	**11.99**	**205**	*e*Pn		**Pn**	**Pn**	**15 40 53.6**	**-1.1**
GRTK				*e*Sn		Sn	Sn	15 42 55.5	-13
KSPA	**Keystone Colle**	**12.10**	**321**	*e*Pn		**Pn**	**Pn**	**15 40 56.6**	**+0.4**
CSU	**Charleston Sou**	**12.14**	**276**	*e*Pn		**Pn**	**Pn**	**15 40 55.5**	**-1.2**
CSU				*e*Sn		Sn	Sn	15 42 59.8	-12
NHSC	**New Hope**	**12.23**	**277**	*e*Pn		**Pn**	**Pn**	**15 40 56.1**	**-1.8**
NHSC				*e*Sn		Sn	Sn	15 43 01.5	-13
RGRS	**Roger Stewart**	**12.25**	**276**	*e*Pn		**Pn**	**Pn**	**15 40 55.0**	**-3.2**
RGRS				*e*Sn		Sn	Sn	15 43 06.0	-8.8
ACCN	**Adirondack Com**	**12.55**	**332**	*e*Pn		**Pn**	**Pn**	**15 41 03.2**	**+0.9**
GGN	**Saint George**	**12.62**	**356**	*e*Pn		**Pn**	**Pn**	**15 41 02.2**	**-1.1**
VWCC	**Virginia Weste**	**12.66**	**296**	*e*Pn		**Pn**	**Pn**	**15 41 04.3**	**+0.4**
VWCC				*e*Sn		Sn	Sn	15 43 10.1	-15
BINY	**Binghamton**	**12.68**	**323**	*e*Pn		**Pn**	**Pn**	**15 41 03.1**	**-1.0**
BINY				*e*Sn		Sn	Sn	15 43 12.7	-13
SSPA	**Standing Stone**	**12.73**	**313**	*e*Pn		**Pn**	**Pn**	**15 41 05.4**	**-0.7**
MDV	**Middlebury**	**12.89**	**335**	*e*Pn		**Pn**	**Pn**	**15 41 06.5**	**-0.5**
MDV				*e*Sn		Sn	Sn	15 43 16.8	-14
O56A	**Blue Knob Stat**	**12.95**	**310**	P		**Pn**	**Pn**	**15 41 08.2**	**+0.3**
	baz=123,SNR=28								
BLA	**Blacksburg**	**12.99**	**295**	*e*Pn		**Pn**	**Pn**	**15 41 07.2**	**-1.2**

PKME	**Peaks-Kenny Pk**	**13.04**	**349**	*e*Pn		**Pn**	**Pn**	**15 41 09.7**	**+0.7**
NCB	**Newcomb**	**13.26**	**332**	*e*Pn		**Pn**	**Pn**	**15 41 13.1**	**+1.1**
KMSC	**Kings Mountain**	**13.29**	**286**	P		**Pn**	**Pn**	**15 41 12.8**	**+0.3**
	baz=97								
KMSC	**Kings Mountain**	**13.29**	**286**	*e*Pn		**Pn**	**Pn**	**15 41 11.7**	**-0.8**
LMN	**Caledonia Moun**	**13.34**	**3**	*e*Pn		**Pn**	**Pn**	**15 41 13.3**	**+0.2**
LMN				*e*Sn		Sn	Sn	15 43 24.3	-17
MCWV	**Mont Chateau**	**13.50**	**306**	*e*Pn		**Pn**	**Pn**	**15 41 14.8**	**-0.4**
MCWV				*e*Sn		Sn	Sn	15 43 30.6	-15
FRNY	**Flat Rock**	**13.77**	**336**	*e*Pn		**Pn**	**Pn**	**15 41 18.3**	**-0.5**
FRNY				*e*Sn		Sn	Sn	15 43 42.7	-9.0
LONY	**Lake Ozonia**	**13.95**	**333**	*e*Pn		**Pn**	**Pn**	**15 41 23.2**	**+1.9**
LONY				*e*Sn		Sn	Sn	15 43 49.0	-7.3
MMNY	**Mt. Morris Dam**	**14.06**	**320**	*e*Pn		**Pn**	**Pn**	**15 41 22.2**	**-0.8**
MMNY				*e*Sn		Sn	Sn	15 43 50.6	-8.5
STVI	**Saint Thomas**	**14.11**	**177**	*e*Pn		**Pn**	**Pn**	**15 41 22.6**	**-1.1**
STVI				*e*Sn		Sn	Sn	15 43 44.6	-16
CBYP	**Canovanas**	**14.18**	**181**	*e*Pn		**Pn**	**Pn**	**15 41 23.2**	**-1.5**
CBYP				*e*Sn		Sn	Sn	15 43 47.3	-15
N54A	**Moraine State**	**14.24**	**310**	P		**Pn**	**Pn**	**15 41 26.3**	**+0.9**
	baz=122,SNR=27								
DWPF	**Disney Wildern**	**14.31**	**256**	*e*Pn		**Pn**	Pn	15 41 22.1	-4.2
DWPF				*e*Sn			Sn	15 43 52.3	-13
HUMP	**Col San Antoni**	**14.31**	**181**	*e*Pn		**Pn**	**Pn**	**15 41 24.1**	**-2.3**
HUMP				*e*Sn			Sn	15 43 50.7	-15
M54A	**Oil Creek Stat**	**14.33**	**313**	P		**Pn**	**Pn**	**15 41 26.9**	**+0.3**
	baz=125,SNR=29								
SJG	**San Juan**	**14.35**	**182**	Pn		**Pn**	**Pn**	**15 41 26.6**	**-0.3**
	5.3nm,0.3s,baz=12,slow=6.4,SNR=18								
SJG				Sn			Sn	15 43 47.8	-18
	6.9nm,0.3s,baz=81,slow=13,SNR=9.3								
SJG	**San Juan**	**14.35**	**182**	*e*Pn		**Pn**	**Pn**	**15 41 25.3**	**-1.7**
SJG				*e*Sn			Sn	15 43 49.3	-17
SDDR	**Presa de Saban**	**14.39**	**202**	*e*Pn		**Pn**	**Pn**	**15 41 27.3**	**-0.3**
SDDR				*e*Sn			Sn	15 43 52.2	-15
CELP	**Cerrillos**	**14.40**	**184**	*e*Pn		**Pn**	**Pn**	**15 41 26.3**	**-1.4**
CELP				*e*Sn			Sn	15 43 54.8	-13
ALLY	**Alegheny Colle**	**14.71**	**312**	*e*Pn		**Pn**	**Pn**	**15 41 31.2**	**-0.6**
ALLY				*e*Sn			**Sn**	**15 44 08.8**	**-6.0**
GOGA	**Godfrey**	**14.98**	**278**	*e*Pn		**Pn**	**Pn**	**15 41 33.4**	**-2.1**
GTBY	**Guantanamo Bay**	**15.12**	**216**	*e*Pn		**Pn**	**Pn**	**15 41 35.2**	**-2.2**
	175nm,1.1s								
TIGA	**Tifton**	**15.26**	**271**	P		**Pn**	**Pn**	**15 41 37.9**	**-1.3**
	baz=81								
TIGA	**Tifton**	**15.26**	**271**	*e*Pn		**Pn**	**Pn**	**15 41 37.5**	**-1.7**
	76nm,0.9s								
TIGA				*e*Sn			**Sn**	**15 44 32.0**	**+3.8**
TZTN	**Tazewell**	**15.28**	**290**	*e*Pn		**Pn**	**Pn**	**15 41 38.1**	**-1.4**
	59nm,0.5s								
TZTN				*e*ScP			**ScP**	**15 50 13.8**	**-5.2**
TKL	**Tuckaleechee C**	**15.33**	**287**	Pn		**Pn**	**Pn**	**15 41 40.7**	**+0.5**
	17nm,0.3s,baz=101,slow=14,SNR=205								
TKL				Sn			Sn	15 44 15.5	-15
	4.7nm,0.3s,baz=38,slow=19,SNR=4.4								
TKL	**Tuckaleechee C**	**15.33**	**287**	*e*Pn		**Pn**	**Pn**	**15 41 40.2**	**0.0**
	128nm,0.7s								
TKL				Sn			Sn	15 44 15.5	-15
CPCT	**Cooper Cave**	**15.92**	**286**	*e*Pn		**Pn**	**Pn**	**15 41 47.1**	**-0.7**
	25nm,0.5s								
ACSO	**Alum Creek Sta**	**15.92**	**304**	*e*Pn		**Pn**	**Pn**	**15 41 48.7**	**+0.9**
	20nm,0.5s								
SADO	**Sadowa**	**16.12**	**323**	Pn		**Pn**	**Pn**	**15 41 50.4**	**+0.1**
	1.7nm,0.3s,baz=148,slow=12,SNR=8.3								
SADO				Sn			Sn	15 44 33.2	-16
	1.8nm,0.3s,baz=207,slow=9.0,SNR=3.8								
SADO	**Sadowa**	**16.12**	**323**	*e

	baz=110					
T38A	**Diamond**	23.90 289	P	P	15 43 18.4	+0.8
	baz=92					
U38A	**Gravette**	23.96 287	P	P	15 43 19.2	+1.0
	baz=91					
V38A	**Canehill**	23.98 286	P	P	15 43 19.5	+1.2
	baz=90					
W38A	**Poteau**	24.08 284	P	P	15 43 21.0	+1.7
	baz=88					
K37A	**Belmond**	24.30 303	P	P	15 43 23.2	+1.8
	baz=106					
Y38A	**Idabel**	24.33 281	P	P	15 43 23.4	+1.8
	baz=85					
X38A	**Whitesboro**	24.36 283	P	P	15 43 24.0	+2.1
	baz=87					
S37A	**Fort Scott**	24.37 291	P	P	15 43 23.4	+1.5
	baz=94					
J37A	**Redenius Farm,**	24.40 304	P	P	15 43 23.0	+0.8
	baz=107					
T37A	**Cheneyville 18**	24.41 289	P	P	15 43 23.9	+1.5
	baz=92					
R37A	**Teagarden Farm**	24.41 292	P	P	15 43 24.3	+2.0
	baz=95					
I37A	**Lemond, Waseca**	24.50 306	P	P	15 43 24.3	+1.1
	baz=109					
SPMN	**Marine on St.**	24.52 309	P	P	15 43 24.2	+0.9
	baz=112					
U37A	**Salina**	24.55 287	P	P	15 43 24.7	+1.1
	baz=91					
V37A	**Hulbert**	24.57 286	P	P	15 43 24.5	+0.6
	baz=89					
C38A	**Sawbill Land.**	24.63 316	P	P	15 43 24.1	-0.1
	baz=119					
138A	**Matatall Enter**	24.76 278	P	P	15 43 24.1	-1.5
	baz=82					
X37A	**Clayton**	24.81 283	P	P	15 43 27.4	+1.4
	baz=86					
W37B	**Quinton**	24.83 284	P	P	15 43 28.9	+2.7
	baz=88					
K36A	**Gilmore City**	24.85 302	P	P	15 43 27.3	+1.0
	baz=105					
EYMN	**Ely**	24.87 316	*eP*	P	15 43 27.3	+0.9
	11nm,1.2s					
L36A	**Harm Buss Farm**	24.88 301	P	P	15 43 26.6	+0.1
	baz=103					
J36A	**Seneca 1, Swea**	24.95 304	P	P	15 43 28.3	+1.1
	baz=106					
S36A	**Lake Cedric, C**	24.97 290	P	P	15 43 27.6	+0.2
	baz=93					
H36A	**Jessenland, He**	25.05 307	P	P	15 43 29.3	+1.2
	baz=109					
D37A	**Cotton**	25.07 314	P	P	15 43 29.1	+0.9
	baz=116					
G36A	**St. Michael**	25.15 308	P	P	15 43 28.9	0.0
	baz=111					
T36A	**Boggs Farm, Ca**	25.17 289	P	P	15 43 29.9	+0.7
	baz=92					
C37A	**Embarrass**	25.18 315	P	P	15 43 30.0	+0.8
	baz=118					
F36A	**Milaca**	25.23 310	P	P	15 43 28.6	-1.1
	baz=112					
P35A	**Duane Minner,**	25.45 295	P	P	15 43 34.4	+2.7
	baz=97					
R35A	**Emporia Munici**	25.48 292	P	P	15 43 32.5	+0.4
	baz=94					
M35A	**Neola**	25.50 299	P	P	15 43 34.0	+1.8
	baz=101					
L35A	**Bielow Farm, R**	25.52 301	P	P	15 43 35.1	+2.8
	baz=102					
D36A	**Goodland**	25.53 313	P	P	15 43 33.3	+0.9
	baz=115					
C36A	**Pine Crest Far**	25.59 314	P	P	15 43 33.8	+0.9
	baz=117					
T35A	**Sooner Cattle**	25.68 288	P	P	15 43 35.1	+1.2
	baz=91					
Z36A	**Blue Ridge**	25.81 280	P	P	15 43 33.8	-1.3
	baz=83					
P34A	**Walnut Farm, R**	26.07 294	P	P	15 43 41.1	+3.7
	baz=96					
X35A	**Drake**	26.14 283	P	P	15 43 40.5	+2.4
	baz=85					
C35A	**Jirik Farms, M**	26.25 314	P	P	15 43 39.8	+0.9
	baz=115					
R34A	**Isabella, Hill**	26.30 292	P	P	15 43 41.9	+2.4
	baz=93					
B35A	**Bob, Littlefor**	26.39 315	P	P	15 43 41.6	+1.4
	baz=117					
ECSD	**EROS Data Cent**	26.66 304	P	P	15 43 43.2	+0.6
	baz=105					
L33A	**Hoskins**	26.79 300	P	P	15 43 45.6	+1.7
	baz=101					
Q33A	**Connelly Farm,**	26.80 293	P	P	15 43 44.8	+0.7
	baz=94					
H33A	**Prehn Over Nor**	26.99 306	P	P	15 43 47.2	+1.5
	baz=106					
B34A	**Aery, Baudette**	27.00 315	P	P	15 43 47.1	+1.4
	baz=116					
F33A	**5 Mile Ranch,**	27.04 308	P	P	15 43 46.0	-0.1
	baz=109					
BGNE	**Belgrade**	27.31 298	P	P	15 43 48.4	-0.2
	baz=99					
Q32A	**Meitler Ranch,**	27.37 293	P	P	15 43 55.5	+6.3
	baz=94					
A33A	**Warroad**	27.63 315	P	P	15 43 52.3	+0.9
	baz=116					
ULM	**Lac du Bonnet**	28.50 317	P	P	15 43 58.5	-0.5
	3.5nm,0.7s,baz=117,slow=8.5,SNR=4.7					
C31A	**Landman Farms,**	28.62 312	P	P	15 44 00.2	-0.1
	baz=111					
D30A	**Buchanan**	29.05 310	P	P	15 44 04.0	-0.1
	baz=108					
I29A	**Vivian Onida**	29.32 303	P	P	15 44 07.6	+1.1
	baz=101					
H29A	**Onida**	29.38 304	P	P	15 44 07.1	+0.1
	baz=103					
A30A	**Hoffart Farm,**	29.39 314	P	P	15 44 08.0	+0.9
	baz=112					
I28A	**Midland**	29.93 303	P	P	15 44 12.5	+0.6
	baz=101					
G27A	**Dupree**	30.73 305	P	P	15 44 19.5	+0.5
	baz=102					
F27A	**Lemmon**	30.90 306	P	P	15 44 20.9	+0.5
	baz=103,SNR=6.9					
F26A	**Lodgepole**	31.34 306	P	P	15 44 24.3	-0.1
	baz=102					
C26A	**Wahner Farm, P**	31.43 310	P	P	15 44 26.0	+0.9
	baz=106					
A26A	**Wade Farm, Ken**	31.70 312	P	P	15 44 27.8	+0.4
	baz=108					
G25A	**Newell**	31.72 305	P	P	15 44 27.7	0.0
	baz=100					
J25A	**Sunshine Ranch**	31.73 301	P	P	15 44 26.4	-1.4
	baz=97					
H25A	**Fruitdale**	31.75 303	P	P	15 44 25.0	-3.0
	baz=99					
I25A	**Rochford**	31.76 302	P	P	15 44 25.1	-3.1
	baz=98					
T25A	**Trinidad**	31.99 289	P	P	15 44 30.2	-0.2
	baz=87					
TXAR	**Lajitas Array**	32.64 275	P	P	15 44 36.6	+0.6
	0.7nm,0.8s,baz=104,slow=8.0,SNR=8.0					
DGMT	**Dagmar**	32.95 310	*eP*	P	15 44 40.1	+1.6
	12nm,0.8s					
FFC	**Flin Flon**	33.84 322	*eP*	P	15 44 46.7	+0.7
	7.8nm,0.9s					
PV05	**Paradox Valley**	35.64 291	*eP*	P	15 44 57.2	-4.9
BW06	**Boulder Array**	35.88 299	*eP*	P	15 44 57.6	-6.5
	0.4nm,0.8s					
BW06			*eS*	S	15 50 38.2	-4.0
BW06			*eS*	S	15 50 41.6	-0.6
LOHW	**Long Hollow**	36.67 301	*eP*	P	15 45 07.5	-3.4
	6.3nm,0.8s					
FLWY	**Flagg Ranch**	36.76 302	*eP*	P	15 45 07.0	-4.6
	7.8nm,0.9s					
MOOW	**Moose Ponds**	36.78 301	*eP*	P	15 45 10.3	-1.5
	2.3nm,1.0s					
REDW	**Red Top Meadow**	36.85 300	*eP*	P	15 45 11.6	-0.8
	10nm,1.3s					
HWUT	**Hardware Ranch**	37.37 297	*eP*	P	15 45 17.1	+0.4
	4.3nm,1.0s					
BOZ	**Bozeman (W)**	37.52 304	*eP*	P	15 45 17.7	-0.2
	7.2nm,1.0s					
MTPU	**Mount Pierson**	38.07 292	*eP*	P	15 45 16.8	-6.1
	4.9nm,0.9s					
LRM	**Limekiln Ridge**	38.10 304	*eP*	P	15 45 23.7	+0.7
MCMT	**McKenzie Canyo**	38.33 303	*eP*	P	15 45 26.7	+1.8
DUG	**Dugway, Tooele**	38.37 295	P	P	15 45 24.8	-0.4
	baz=86,SNR=9.0					
DUG	**Dugway, Tooele**	38.37 295	*eP*	P	15 45 27.1	+1.9
	7.1nm,0.8s					
MSO	**Missoula**	39.20 306	*eP*	P	15 45 33.2	+1.2
	18nm,1.6s					
SWMT	**Swartz Lake**	39.29 307	*eP*	P	15 45 32.8	0.0
PSUT	**Pine Spring**	39.32 293	*eP*	P	15 45 35.9	+2.6
	5.3nm,0.8s					
HLID	**Hailey**	39.44 301	P	P	15 45 33.6	-0.5
	baz=90,SNR=7.6					
HLID	**Hailey**	39.44 301	*eP*	P	15 45 35.9	+1.7
	5.1nm,1.0s					
SAML	**Samuel**	41.29 176	*eP*	P	15 45 50.0	+0.5
	7.1nm,0.8s					
NEW	**Newport**	41.44 308	P	P	15 45 50.6	+0.1
	baz=93,SNR=7.9					
NEW	**Newport**	41.44 308	*eP*	P	15 45 51.4	+0.9
	9.8nm,0.9s					
MPMC	**Manual Prospec**	42.56 290	P	P	15 46 00.9	+0.9
	baz=79					
WVOR	**Wild Horse Val**	42.59 299	*eP*	P	15 46 00.5	+0.5
	6.1nm,1.0s					
NVAR	**Mina Array Bea**	42.80 293	P	P	15 46 02.9	+1.0
	0.8nm,0.7s,baz=65,slow=10,SNR=4.1					
YKA	**Yellowknife Ar**	43.00 329	P	P	15 46 02.0	-0.8
	1.6nm,1.0s,baz=104,slow=7.7,SNR=15					
YKA			PcP	PcP	15 47 53.0	0.0
	0.6nm,0.6s,baz=110,slow=3.3,SNR=9.5					
YKB5	**Yellowknife Ar**	43.00 329	*eP*	P	15 46 02.3	-0.6
RES	**Resolute Bay**	44.64 349	P	P	15 46 16.6	+0.7
	0.8nm,0.6s,baz=164,slow=10,SNR=6.6					
H04A	**Detroit Lake**	44.98 303	*eP*	P	15 46 20.5	+1.4
	9.1nm,0.9s					
M04C	**Macdoel**	45.02 299	P	P	15 46 20.0	+0.4
	baz=83					
SIV	**San Ignacio**	48.43 174	P	P	15 46 47.0	+0.8
	2.9nm,0.9s,baz=22,slow=8.8,SNR=4.5					
ESDC	**Sonsela Array**	49.51 63	P	P	15 46 55.7	+1.1
	0.4nm,0.5s,baz=292,slow=8.4,SNR=5.4					
INK	**Inuvik**	52.05 334	P	P	15 47 13.3	+0.1
	7.7nm,0.9s,baz=94,slow=8.9,SNR=30					
NOA	**NORSAR Array B**	55.90 35	P	P	15 47 43.0	+1.5
	0.8nm,0.7s,baz=278,slow=7.3,SNR=3.4					
DOT	**Dot Lake**	56.32 328	*eP*	P	15 47 43.8	-0.7
	12nm,1.0s					
IL1	**Eielson Array**	57.42 330	*eP*	P	15 47 51.2	-1.0
ILAR	**Eielson Array**	57.42 330	P	P	15 47 51.9	-0.3
	4.3nm,0.7s,baz=84,slow=6.4,SNR=72					
ILB	**Eielson Array**	57.42 330	*eP*	P	15 47 51.1	-1.1
KLU	**Klutina**	57.46 326	*eP*	P	15 47 53.6	+1.0
	7.4nm,0.8s					
CCB	**Clear Creek Bu**	57.83 330	*eP*	P	15 47 54.0	-1.0
	2.6nm,0.9s					
MDM	**Murphy Dome**	57.96 330	*eP*	P	15 47 55.5	-0.5
	3.2nm,0.9s					
COLD	**Coldfoot**	58.40 333	*eP*	P	15 47 59.4	+0.3
	6.2nm,0.8s					
MLY	**Manley**	59.00 330	*eP*	P	15 48 02.8	-0.5
	3.7nm,0.9s					
TRF	**Thorofare Moun**	59.11 329	*eP*	P	15 48 04.1	-0.1
	40nm,2.0s					
BPAW	**Bear Paw Mtn.**	59.28 329	*eP*	P	15 48 04.8	-0.5
	5.0nm,1.0s					
GERES	**GERESS Array B**	59.70 49	P	P	15 48 08.8	+0.3
	0.2nm,0.2s,baz=321,slow=7.6,SNR=2.8					
CAST	**Castle Rocks**	59.90 329	*eP*	P	15 48 09.4	-0.2
	7.2nm,0.8s					
PPLA	**Purkeypile**	60.07 328	*eP*	P	15 48 10.4	-0.4
	6.7nm,0.8s					
ARCES	**ARCESS Array B**	60.35 24	P	P	15 48 12.5	0.0
	8.7nm,0.9s,baz=309,slow=7.7,SNR=4.7					
TTA	**Tatalina**	61.75 329	*eP*	P	15 48 21.5	-0.7
	6.9nm,0.8s					
TT01	**Tatalina**	61.76 329	*eP*	P	15 48 21.3	-0.9
FINES	**FINESS Array B**	62.82 33	P	P	15 48 29.8	+0.6
	1.3nm,0.9s,baz=246,slow=7.0,SNR=2.5					
H10N3	**ASCENSION HYDR**	63.10 120	T	T	16 56 14.6	
	baz=312,slow=75,SNR=122					
H10N2	**ASCENSION HYDR**	63.10 120	T	T	16 56 14.8	
	baz=312,slow=75,SNR=124					
H10N1	**ASCENSION HYDR**	63.12 120	T	T	16 56 16.1	
	baz=312,slow=75,SNR=108					
H10S3	**ASCENSION HYDR**	63.73 121	T	T	16 57 02.5	
	baz=313,slow=75,SNR=94					
H10S1	**ASCENSION HYDR**	63.73 121	T	T	16 57 02.7	
	baz=313,slow=75,SNR=77					
H10S2	**ASCENSION HYDR**	63.74 121	T	T	16 57 03.7	
	baz=313,slow=75,SNR=112					
TOA0	**Torodi Ar. Sit**	64.04 91	*eP*	P	15 48 37.3	-0.7
TORD	**Torodi Ar. Bea**	64.04 91	P	P	15 48 38.7	+0.7
	4.1nm,0.8s,baz=297,slow=7.4,SNR=22					
AKASG	**Malin Array Be**	68.47 43	P	P	15 49 06.0	+0.2
	0.3nm,0.4s,baz=293,slow=5.2,SNR=5.2					
BILL	**Bilibino**	72.56 342	*eP*	P	15 49 30.4	-0.2
	33nm,2.1s					
TIXI	**Tiksi**	75.62 355	P	P	15 49 48.4	0.0
	0.5nm,0.4s,baz=106,slow=2.4,SNR=4.0					
BRTR	**Keskin Array B**	76.40 52	P	P	15 49 54.0	+0.4
	1.2nm,0.7s,baz=299,slow=5.1,SNR=4.5					
SEY	**Seymchan**	80.14 343	P	P	15 50 13.6	-0.1
	2.2nm,0.6s,baz=77,slow=2.1,SNR=13					
ZRNK	**Zerenda**	86.19 26	*eP*	P	15 50 46.6	+1.5
	3.2nm,0.9s					
BRVK	**Borovoye**	86.56 25	*eP*	P	15 50 48.2	+1.2
	4.8nm,0.7s					
BVAR	**Borovoye Array**	86.63 25	P	P	15 50 49.2	+1.9
	2.2nm,0.6s,baz=322,slow=4.4,SNR=8.8					
KSH	**Kashi**	99.99 29	*eP*	Pdif	15 51 50.5	+1.1
WMQ	**Urumqi**	100.23 19	*eP*	Pdif	15 51 50.8	+0.5
LZH	**Lanzhou**	111.06 9	*e*PKP	PKiKP	15 56 32.8	-5.1
LZH			sPKP		15 56 41.5	
NJ2	**Nanjing**	115.64 356	*e*PKP	PKPdf	15 56 45.0	-1.5
CD2	**Chengdu**	116.13 10	PKP	PKPdf	15 56 45.8	-1.8
CMAR	**Chiang Mai Arr**	127.22 18	PKP	PKPdf	15 57 08.5	-0.6
	0.5nm,0.7s,baz=325,slow=2.7,SNR=4.7					
ASAR	**Alice Springs**	160.64 292	PKP	PKPdf	15 58 04.0	-0.4
	0.3nm,0.9s,baz=126,slow=2.4,SNR=5.5					
ASAR			PKPab	PKPab	15 58 46.6	+0.6
	1.2nm,0.6s,baz=59,slow=4.5,SNR=23					

*ISCJB **18** 15:43:45.4±0.9,35°42N±0°03×141°07E±0°07,h19km±6km, mb3.5/10,Error ellipse: s-maj=9.4km s-min=5.2km az=4.1*
*JMA **18** 15:43:47.1±0.1,35°48N×140°86E,h24km±1km,M3.8*
JMA Felt II J1.
*IDC **18** 15:43:49.0±5.7,35°29N×141°07E,h33km±43km,mb3.3/9, mb1 3.5/12,mb1mx3.4/51,mbtmp3.5/12,ML3.4/3,MS3.2/2, Ms1 3.2/2,ms1mx2.8/31,Error ellipse: s-maj=25.9km s-min=15.8km az=85.0*

ISC 18 15:43:45.1±1.9,35°42N±0°05×140°84E±0°06,h2km±12km, n29,σ1°34/29,mb3.5/10,3C-2D,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	0.28	4	P		Pb	15 43 52.8	-0.2
CHOJ				S		Sb	15 43 57.1	-1.1
KTR	**Katsuura**	0.50	238	⇑P		Pn	15 43 57.9	-1.4
KTR				S		Sb	15 44 06.0	+1.6
JCN	**Nagara**	0.52	270	⇑P		Pn	15 43 58.5	-1.0
JCN				S		Sn	15 44 07.7	-1.2
BSO4	**Boso 4**	0.59	224	⇓P		Pn	15 44 00.2	-0.2
BSO3	**Boso 3**	0.67	204	⇑P		Pn	15 44 01.3	0.0
BSO3				X			15 44 12.3	
BSO1	**Boso 1**	0.77	171	P		Pn	15 44 01.7	-0.8
JYT	**Yasato**	0.96	327	⇓P		Pg	15 44 03.8	+0.2
JYT				*e*S		Sg	15 44 16.2	+0.1
JHO	**Hitachi**	1.21	350	P		Pg	15 44 08.6	+0.3
JHO				S		Sg	15 44 24.5	+0.5
MJAR	**Matsushiro Arr**	2.41	299	Pn		Pb	15 44 27.5	-1.6
	6.0nm,0.3s,baz=96,slow=13,SNR=51							
MJAR				LR		LR	15 45 42.8	
	comp=Z,306nm,21.9s,baz=100,slow=44							
MAT	**Matsushiro**	2.41	299	P		Pb	15 44 28.5	-0.7
MAT				S		Sb	15 44 59.4	0.0
JHJ	**Hachijo jima 2**	2.45	201	Pn		Pn	15 44 26.0	-0.1
	43nm,0.3s,baz=327,slow=20,SNR=12							
JHJ				Sn		Sn	15 44 56.0	-0.6
	37nm,0.3s,baz=49,slow=22,SNR=6.5							
ASAJ	**Asahikawa**	8.79	8	Pn		Pn	15 45 51.5	-1.7
	0.4nm,0.3s,baz=183,slow=17,SNR=3.9							
KSRS	**Korea Array**	10.60	285	Pn		Pn	15 46 23.0	+5.0
	0.1nm,0.3s,baz=100,slow=14,SNR=3.3							
KSRS				LR		LR	15 50 46.3	
	comp=Z,159nm,18.8s,baz=160,slow=38							
MA2	**Magadan**	25.03	12	P		P	15 49 13.5	+3.2
	0.8nm,0.3s,baz=216,slow=6.8,SNR=3.9							
H11N2	**WAKE ISLAND Hy**	27.77	117	T		T	16 18 31.2	
	baz=310,slow=75,SNR=88							
H11N1	**WAKE ISLAND Hy**	27.78	117	T		T	16 18 36.4	
	baz=310,slow=75,SNR=125							
H11N3	**WAKE ISLAND Hy**	27.79	117	T		T	16 18 34.3	
	baz=310,slow=75,SNR=98							
SONM	**Songino Array**	28.34	307	P		P	15 49 43.8	+3.4
	0.3nm,0.5s,baz=116,slow=9.8,SNR=2.7							
H11S3	**WAKE ISLAND Hy**	28.42	120	T		T	16 19 20.8	
	baz=312,slow=76,SNR=527							
H11S1	**WAKE ISLAND Hy**	28.42	120	T		T	16 19 24.6	
	baz=312,slow=76,SNR=521							
H11S2	**WAKE ISLAND Hy**	28.44	120	T		T	16 19 25.8	
	baz=312,slow=76,SNR=439							
CMAR	**Chiang Mai Arr**	40.65	257	P		P	15 51 26.3	-0.6
	0.5nm,0.3s,baz=55,slow=8.3,SNR=3.1							
ZALV	**Zalesovo Beam**	42.67	314	P		P	15 51 43.9	+0.9
	0.6nm,0.4s,baz=113,slow=6.6,SNR=2.7							
MKAR	**Makanchi Array**	44.60	303	P		P	15 51 59.4	+0.7
	0.3nm,0.6s,baz=88,slow=9.2,SNR=5.5							
ILAR	**Eielson Array**	51.11	32	P		P	15 52 48.6	-0.2
	0.4nm,0.8s,baz=283,slow=7.7,SNR=5.1							
BVAR	**Borovoye Array**	51.32	313	P		P	15 52 51.0	+0.4
	0.2nm,0.5s,baz=116,slow=9.8,SNR=2.7							
WRA	**Warramunga Arr**	55.40	187	P		P	15 53 19.3	-1.5
	0.9nm,0.6s,baz=3.2,slow=7.7,SNR=18							
ASAR	**Alice Springs**	59.13	187	P		P	15 53 45.8	-1.4
	0.2nm,0.5s,baz=0.7,slow=6.7,SNR=4.7							
YKA	**Yellowknife Ar**	65.44	30	P		P	15 54 27.7	-1.3
	0.2nm,0.7s,baz=294,slow=6.0,SNR=3.8							

NNC 18 15:52:17.6±3.4,37°03N×70°97E,h102km±106km,mb2.9, mpv3.6,5C-1D,Error ellipse: s-maj=43.5km s-min=26.1km az=79.0,Afghanistan-Tajikistan border region

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
SFK	**Sufi-Kurgan**	3.58	33	⇑P		Pn	15 53 11.2	-0.2
	12nm,0.3s							
SFK				⇑S		Sn	15 53 53.6	+0.6
	8.5nm,0.2s							
MNAS	**Manas**	5.58	12	⇑P		Pn	15 53 37.8	-0.5
	1.7nm,0.5s							
MNAS				⇑S		Sn	15 54 41.3	+0.2
	7.8nm,0.5s							
KK31	**Karatay Array**	6.08	357	P		Pn	15 53 46.1	+1.2
	1.1nm,0.2s,baz=185,slow=16,SNR=34							
KK31				⇓S		Sn	15 54 54.8	+1.8
	1.0nm,0.3s,baz=186,slow=26,SNR=11							
AB31	**Akbulak array**	14.61	330	P		Pn	15 55 40.0	+0.9
	0.1nm,0.3s,baz=148,slow=12,SNR=6.1							
AB31				S		Sn	15 58 16.3	-3.7
	0.4nm,0.6s,baz=150,slow=23,SNR=4.7							
AKTO	**Aktyubinsk**	16.31	329	⇑P		Pn	15 56 00.4	0.0
	1.0nm,0.6s							

IDC 18 16:14:59.6±1.5,4°50S×138°68E,h172km±19km,mb3.2/4, mb1 3.6/8,mb1mx3.3/33,mbtmp3.9/8,Error ellipse: s-maj=26.2km s-min=13.6km az=97.0,Irian Jaya

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
JAY	**Jayapura**	2.82	46	P		Pn	16 15 46.4	+0.6
	0.8nm,0.3s,baz=186,slow=22,SNR=41							
JAY				S		Sn	16 16 21.8	+0.1
	1.2nm,0.3s,baz=248,slow=24,SNR=9.1							
PMG	**Port Moresby**	9.72	121	P		Pn	16 17 17.1	+1.4
	0.6nm,0.3s,baz=322,slow=12,SNR=3.9							
PMG				S		Sn	16 19 02.9	-1.0
	0.4nm,0.3s,baz=208,slow=14,SNR=2.1							
WRA	**Warramunga Arr**	15.92	195	P		Pn	16 18 33.5	-1.0
	1.6nm,0.3s,baz=14,slow=12,SNR=56							
WRA				S		S	16 21 28.9	-2.6
	0.2nm,0.3s,baz=16,slow=22,SNR=5.1							
FITZ	**Fitzroy Crossi**	18.59	222	P		P	16 19 03.0	-0.9
	0.4nm,0.3s,baz=50,slow=9.9,SNR=9.7							
ASAR	**Alice Springs**	19.61	193	P		P	16 19 15.4	+0.5
	0.4nm,0.3s,baz=10,slow=11,SNR=44							
ASAR				S		S	16 22 45.0	-1.9
	0.1nm,0.3s,baz=18,slow=24,SNR=4.6							
CMAR	**Chiang Mai Arr**	45.32	301	P		P	16 23 00.9	+0.1
	0.5nm,0.6s,baz=127,slow=5.9,SNR=4.4							
SONM	**Songino Array**	59.32	335	P		P	16 24 43.4	-0.2
	0.3nm,0.5s,baz=134,slow=5.4,SNR=2.8							
MKAR	**Makanchi Array**	71.19	323	P		P	16 26 00.1	+0.3
	0.7nm,0.7s,baz=126,slow=7.0,SNR=9.2							
ILAR	**Eielson Array**	87.46	24	P		P	16 27 26.9	-0.5
	0.7nm,0.8s,baz=268,slow=3.9,SNR=5.0							

*ISCJB **18** 16:20:18.9±0.8,37°40N±0°03×141°34E±0°09,h41km±7km, mb3.7/11,MS3.2/1,Error ellipse: s-maj=12.4km s-min=5.2km az=10.4*
*JMA **18** 16:20:20.1±0.1,37°42N×141°29E,h33km±1km,M3.9*
JMA Felt II J1.
*IDC **18** 16:20:22.8±2.4,37°33N×141°23E,h63km±24km,mb3.5/11, mb1 3.6/13,mb1mx3.4/47,mbtmp3.8/13,ML3.2/2,MS3.3/1, Ms1 3.3/1,ms1mx2.5/46,Error ellipse: s-maj=25.6km s-min=14.3km az=92.0*

ISC 18 16:20:19.5±1.4,37°43N±0°04×141°32E±0°08,h31km±8km, n29,σ1°01/32,mb3.8/11,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	0.36	260	P		Pb	16 20 28.2	+0.3
JFK				S		Sb	16 20 33.4	-0.2
ONAJ	**Iwakimizuishiy**	0.53	232	P		Pb	16 20 30.5	0.0
ONAJ				S		Sb	16 20 37.5	-0.5
JMM	**Marumori**	0.60	317	P		Pb	16 20 31.5	-0.2
JMM				S		Sb	16 20 39.5	-0.5
JFT	**Otama**	0.79	277	P		Pb	16 20 34.8	+0.1
JFT				S		Sn	16 20 44.9	-0.3
JHO	**Hitachi**	1.01	216	P		Pn	16 20 37.3	-0.3
JHO				S		Sn	16 20 49.6	-1.2
JIO	**Ouri**	1.02	1	P		Pn	16 20 37.9	+0.1
JIO				S		Sn	16 20 50.4	-0.7
JOU	**Okura**	1.07	331	P		Pb	16 20 39.0	-0.5
JOU				S		Sb	16 20 53.1	0.0
MJAR	**Matsushiro Arr**	2.64	251	P		Pn	16 21 01.7	+1.7
	2.2nm,0.3s,baz=81,slow=16,SNR=13							
MAT	**Matsushiro**	2.64	251	P		Pn	16 21 02.2	+2.1
MAT				S		Sb	16 21 35.9	-2.3
JHJ	**Hachijo jima 2**	4.48	197	P		Pn	16 21 26.1	+0.9
	9.4nm,0.3s,baz=38,slow=17,SNR=7.5							
JHJ				S	

comp=Z,0.4nm,0.5s,baz=39,slow=6.2
NOA NORSAR Array B 73.79 337 P **P 16 31 50.0 -0.6**
comp=Z,0.9nm,0.7s,baz=39,slow=5.9,SNR=5.1
AKASG Malin Array Be 73.94 322 P **P 16 31 50.9 -0.7**
comp=Z,0.8nm,0.5s,baz=44,slow=6.2,SNR=6.1

IDC ***18*** *16:33:46.9±4.4, 46.88N×152.68E, h0km, mb3.7/6, mb1 3.9/6, mb1mx3.5/63, mbtmp3.7/6, Error ellipse: s-maj=111.2km s-min=36.7km az=7.0*
ISCJB ***18*** *16:33:50.0±1.0, 46.6N±0.1×153.5E±0.1, h24km, mb3.7/6, Error ellipse: s-maj=18.4km s-min=6.8km az=145.5*
SKHL ***18*** *16:33:52.8±0.4, 46.53N×153.59E, h78km±6km, mb4.5/3*
MOS ***18*** *16:33:56.9±1.2, 46.86N×152.62E, h99km, mb4.0/3, Error ellipse: s-maj=41.0km s-min=17.1km az=60.7*
ISC 18 16:33:50.6±1.0, 46.5N±0.1×153.6E±0.1, h24km, n22, σ2$18/19, mb3.7/6, Kuril Islands

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
					Op		h m s	ISC
KUR	**Kuril'sk**	**4.19**	**254**	*e*P		**Pn**	**16 34 54.3**	**+1.3**
KUR				AMB		AMB	16 34 57.2	
	30nm,0.3s							
KUR				*e*S		**Sn**	**16 35 40.8**	**-0.4**
KUR				A		A	16 35 44.4	
	30nm,0.3s							
KUR				A		A	16 35 44.4	
	70nm,0.3s							
KUR	**Kuril'sk**	**4.19**	**254**	*e*PN		**Pn**	**16 34 54.3**	**+1.3**
KUR				pmax		pmax		
	comp=Z,31nm,0.3s							
KUR				pmax		pmax		
	comp=E,25nm,0.4s							
KUR				pmax		pmax		
	comp=N,18nm,0.1s							
SKR	**Severo-Kuril's**	**4.48**	**21**	*e*P		**Pn**	**16 34 57.6**	**+0.7**
SKR				AMB		AMB	16 35 02.8	
	comp=N,80nm,1.0s							
SKR				*i* S		**Sn**	**16 35 45.9**	**-2.2**
SKR				A		A	16 35 57.1	
	comp=N,120nm,0.5s							
SKR	**Severo-Kuril's**	**4.48**	**21**	*e*PN		Pb	16 35 03.5	-4.9
SHO	**Shikotan**	**5.46**	**243**	*e*P		**Pn**	**16 35 11.9**	**+1.5**
SHO				AMB		AMB	16 35 13.6	
	comp=N,50nm,1.0s							
SHO				*e*S		**Sn**	**16 36 11.6**	**-0.8**
SHO				A		A	16 36 30.5	
	comp=N,60nm,0.5s							
SHO	**Shikotan**	**5.46**	**243**	*e*PN		**Pn**	**16 35 10.3**	**-0.1**
SHO				*e*S		**Sn**	**16 36 10.2**	**-2.2**
SHO				smax		smax		
	comp=N,12nm,0.5s							
SHO				smax		smax		
	comp=E,27nm,0.5s							
YUK	**Yuzh-Kuril'sk**	**5.99**	**248**	*e*P		**Pn**	**16 35 19.7**	**+2.1**
YSS	**Yuzh-Sakhalins**	**7.44**	**277**	*e*P		**Pn**	**16 35 39.7**	**+2.1**
UGL	**Uglegorsk**	**8.15**	**292**	*e*P		**Pn**	**16 35 49.7**	**+2.4**
TYV	**Tymovskoe**	**8.41**	**305**	*e*P		**Pn**	**16 35 53.2**	**+2.3**
H11N2	**WAKE ISLAND Hy 28.89**	**153**		T		T	17 11 13.7	
	baz=340,slow=76,SNR=85							
H11N1	**WAKE ISLAND Hy 28.90**	**153**		T		T	17 11 16.3	
	baz=340,slow=76,SNR=67							
H11N3	**WAKE ISLAND Hy 28.91**	**153**		T		T	17 11 43.7	
	baz=340,slow=76,SNR=54							
H11S1	**WAKE ISLAND Hy 29.98**	**154**		T		T	17 12 39.3	
	baz=341,slow=76,SNR=61							
H11S3	**WAKE ISLAND Hy 29.99**	**154**		T		T	17 12 38.9	
	baz=341,slow=76,SNR=57							
H11S2	**WAKE ISLAND Hy 30.00**	**154**		T		T	17 12 39.6	
	baz=341,slow=76,SNR=44							
ILAR	**Eielson Array**	**36.52**	**38**	P		**P**	**16 40 54.2**	**+0.5**
	comp=E,0.2nm,0.5s,baz=277,slow=9.0,SNR=3.1							
YKA	**Yellowknife Ar**	**50.90**	**37**	P		**P**	**16 42 50.6**	**+1.4**
	comp=E,0.4nm,0.7s,baz=297,slow=7.4,SNR=5.2							
FINES	**FINESS Array B**	**64.36**	**335**	P		**P**	**16 44 20.9**	**-3.1**
	comp=E,2.1nm,0.8s,baz=28,slow=8.6,SNR=5.0							
NOA	**NORSAR Array B**	**68.53**	**341**	P		**P**	**16 44 47.4**	**-3.2**
	comp=E,0.5nm,0.6s,baz=24,slow=6.3,SNR=3.4							
HFS	**Hagfors**	**68.76**	**340**	P		**P**	**16 44 48.4**	**-3.6**
	comp=E,1.3nm,0.5s,baz=22,slow=4.8,SNR=7.6							
TXAR	**Lajitas Array**	**77.32**	**61**	P		**P**	**16 45 45.5**	**+2.2**
	comp=E,0.2nm,0.5s,baz=317,slow=5.2,SNR=4.8							

IDC ***18*** *16:41:10.9±1.0, 35.68N×141.84E, h0km, mb3.5/7, mb1 3.7/10, mb1mx3.5/68, mbtmp3.5/10, ML3.5/3, Error ellipse: s-maj=25.2km s-min=17.5km az=99.0*
ISCJB ***18*** *16:41:12.2±0.7, 35.71N±0.04×141.91E±0.07, h22km, mb3.5/7, Error ellipse: s-maj=7.6km s-min=6.5km az=179.9*
JMA ***18*** *16:41:13.4±0.2, 35.81N×141.84E, h25km±3km, M3.7*
ISC 18 16:41:14.1±0.9, 35.71N±0.05×141.82E±0.07, h22km, n19, σ0$81/23, mb3.5/7, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
					Op		h m s	ISC
CHOJ	**Chosi**	**0.78**	**270**	P		**Pb**	**16 41 28.3**	**-0.7**
CHOJ				S		Sb	16 41 39.0	-0.2
BSO1	**Boso 1**	**1.26**	**213**	P		**Pb**	**16 41 36.4**	**-0.4**
JHO	**Hitachi**	**1.35**	**312**	P		**Pn**	**16 41 36.3**	**-1.4**
BSO3	**Boso 3**	**1.41**	**230**	P		**Pb**	**16 41 39.0**	**-0.4**
JAG	**Ashikaga**	**2.04**	**291**	P		**Pn**	**16 41 46.4**	**-0.8**
JFT	**Otama**	**2.16**	**327**	P		**Pn**	**16 41 48.9**	**+0.1**
JFT				*e*S		**Sn**	**16 42 14.9**	**0.0**
JOD2	**Odawara 2**	**2.27**	**259**	P		**Pn**	**16 41 50.6**	**+0.3**
JKT	**Katashina**	**2.33**	**298**	P		**Pn**	**16 41 50.7**	**-0.5**
MJAR	**Matsushiro Arr**	**3.04**	**287**	Pn		**Pn**	**16 42 01.2**	**+0.4**
	3.4nm,0.3s,baz=91,slow=9.0,SNR=26							
MAT	**Matsushiro**	**3.04**	**287**	P		**Pn**	**16 42 01.4**	**+0.5**
MAT				*e*S		**Sn**	**16 42 37.8**	**+1.2**
JHJ	**Hachijo jima 2**	**3.09**	**214**	Pn		**Pn**	**16 42 01.2**	**-0.3**
	18nm,0.3s,baz=81,slow=22,SNR=6.8							
JHJ				Sn		**Sn**	**16 42 37.4**	**-0.3**
	28nm,0.3s,baz=98,slow=24,SNR=7.6							
ASAJ	**Asahikawa**	**8.41**	**4**	Pn		**Pn**	**16 43 12.9**	**-1.7**
	0.9nm,0.3s,baz=209,slow=15,SNR=9.9							
SONM	**Songino Array**	**28.81**	**306**	P		**P**	**16 47 09.8**	**-0.8**
	0.2nm,0.4s,baz=100,slow=7.9,SNR=2.7							
ZALV	**Zalesovo Beam**	**43.05**	**313**	P		**P**	**16 49 13.0**	**+1.1**
	0.5nm,0.5s,baz=91,slow=7.6,SNR=3.0							
MKAR	**Makanchi Array**	**45.11**	**303**	P		**P**	**16 49 29.1**	**+0.5**
	0.6nm,0.7s,baz=87,slow=8.0,SNR=7.4							
ILAR	**Eielson Array**	**50.44**	**32**	P		**P**	**16 50 09.8**	**+0.2**
	0.3nm,0.6s,baz=273,slow=6.8,SNR=4.9							
WRA	**Warramunga Arr**	**55.80**	**189**	P		**P**	**16 50 48.8**	**-0.8**
	0.8nm,0.7s,baz=5.9,slow=7.6,SNR=5.2							
ASAR	**Alice Springs**	**59.53**	**188**	P		**P**	**16 51 16.1**	**+0.3**
	0.5nm,0.8s,baz=3.2,slow=7.2,SNR=7.6							
YKA	**Yellowknife Ar**	**64.79**	**30**	P		**P**	**16 51 51.9**	**+1.3**
	0.3nm,0.8s,baz=298,slow=6.4,SNR=4.6							

ISN ***18*** *16:41:44.2±2.1, 30.78N×47.98E, h0km±11km, ML3.4*
ISCJB ***18*** *16:41:50.0±0.6, 31.16N±0.05×47.90E±0.04, h10km, mb4.0/6, Error ellipse: s-maj=7.6km s-min=4.7km az=175.1*
IDC ***18*** *16:41:50.8±2.3, 31.56N×47.84E, h0km, mb3.9/6, mb1 4.0/6, mb1mx3.5/52, mbtmp3.9/6, Error ellipse: s-maj=55.3km s-min=32.1km az=152.0*
TEH ***18*** *16:41:51.6, 31.16N×47.88E, h6km, ML3.4*
CSEM ***18*** *16:41:52.2±0.6, 31.20N×47.98E, h10km, ML3.4, Error ellipse: s-maj=14.7km s-min=7.3km az=40.0*
ISC 18 16:41:51.0±1.0, 31.18N±0.07×47.93E±0.07, h10km, n34, σ1$17/31, mb3.9/6, Iran-Iraq border region

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
					Op		h m s	ISC
SHGR	**Shooshtar-Gavs**	**1.18**	**39**	*e*Pn		**Pn**	**16 42 14.1**	**+0.5**
SHGR				*e*Sg		**Sb**	**16 42 29.6**	**+0.7**
NSR	**Nassriya**	**1.55**	**264**	*e*PG		Pn	16 42 17.0	-1.6
NSR				*e*SG		Sg	16 42 40.6	-0.2
IBDR	**Badra**	**2.56**	**319**	*e*PN		Pn	16 42 32.0	-0.6
IBDR				*e*SN		Sn	16 43 05.0	+1.1
KHMZ	**Khomeyn**	**3.07**	**33**	*e*Pn		**Pn**	**16 42 40.6**	**+0.8**
IGHG	**Ghaleghazi**	**3.34**	**340**	*e*Pn		**Pn**	**16 42 44.2**	**+0.7**
IGHG				*e*Sn		**Sn**	**16 43 23.4**	**0.0**
IGHG				*e*AMB		AMB	16 43 33.9	
	comp=Z,845nm,0.3s							
IGHG	**Ghaleghazi**	**3.34**	**340**	*e*Pn		**Pn**	**16 42 44.2**	**+0.7**
IGHG				*e*Sn		**Sn**	**16 43 23.4**	**0.0**
IKAZ	**Kazeroun**	**3.65**	**112**	*e*Pn		**Pn**	**16 42 49.0**	**+1.1**
IKAZ				*e*AMB		AMB	16 43 41.1	
	comp=Z,1μm,0.3s							
IKAZ	**Kazeroun**	**3.65**	**112**	*e*Pn		**Pn**	**16 42 49.0**	**+1.1**
IGAR	**Gharneh**	**3.70**	**70**	*e*Pn		**Pn**	**16 42 49.7**	**+1.2**
IGAR				*e*AMB		AMB	16 43 59.2	
	comp=Z,457nm,0.3s							
IDHR	**Dehrash**	**3.74**	**340**	*e*AMB		AMB	16 44 00.3	
	comp=Z,794nm,0.2s							
IKLH	**Kolahrood**	**3.75**	**54**	*e*Pn		**Pn**	**16 42 50.5**	**+1.3**
IKLH				*e*AMB		AMB	16 43 49.1	
	comp=Z,659nm,0.2s							
IKLH	**Kolahrood**	**3.75**	**54**	*e*Pn		**Pn**	**16 42 50.5**	**+1.3**
ASAO	**Ashtian**	**3.79**	**27**	*e*Pn		**Pn**	**16 42 50.8**	**+1.1**
ILIN	**Lien**	**3.81**	**348**	*e*Pn		**Pn**	**16 42 50.9**	**+0.9**
ILIN				*e*AMB		AMB	16 43 39.4	
	comp=Z,583nm,0.2s							
ILIN	**Lien**	**3.81**	**348**	*e*Pn		**Pn**	**16 42 50.9**	**+0.9**
IRAM	**Ramesheh**	**3.85**	**80**	*e*Pn		**Pn**	**16 42 51.7**	**+1.1**
IRAM				*e*AMB		AMB	16 43 43.0	
	comp=Z,203nm,0.2s							
IRAM	**Ramesheh**	**3.85**	**80**	*e*Pn		**Pn**	**16 42 51.7**	**+1.1**
QAM	**Ghamsar**	**3.92**	**48**	*e*Pn		**Pn**	**16 42 53.5**	**+2.0**
QAM				*e*AMB		AMB	16 44 03.9	
	comp=Z,930nm,0.3s							
SNGE	**Sanandaj**	**3.93**	**353**	*e*Pn		**Pn**	**16 42 53.7**	**+2.1**
IZEF	**Zefreh**	**4.11**	**64**	*e*Pn		**Pn**	**16 42 54.9**	**+0.8**
IZEF				*e*AMB		AMB	16 44 02.9	
	comp=Z,204nm,0.3s							
IZEF	**Zefreh**	**4.11**	**64**	*e*Pn		**Pn**	**16 42 54.9**	**+0.8**
NASN	**Na'in**	**4.44**	**67**	*e*Pn		**Pn**	**16 42 58.2**	**-0.6**
IRAZ	**Razeghan**	**4.53**	**21**	*e*Pn		**Pn**	**16 43 02.0**	**+2.1**
IRAZ				*e*AMB		AMB	16 44 06.8	
	comp=Z,432nm,0.3s							
IRAZ	**Razeghan**	**4.53**	**21**	*e*Pn		**Pn**	**16 43 02.0**	**+2.1**
IKRK	**Kirkuk**	**5.17**	**325**	*e*PN4		Pn	16 43 08.0	-0.5
IKRK				*e*SN4		Sn	16 44 09.0	+0.8
IDMV	**Damavand**	**5.56**	**37**	*e*Pn		**Pn**	**16 43 14.2**	**0.0**
IDMV				*e*AMB		AMB	16 43 29.1	
	comp=Z,130nm,0.3s							
IDMV	**Damavand**	**5.56**	**37**	*e*Pn		**Pn**	**16 43 14.2**	**0.0**
RTB	**Rutbah**	**6.72**	**288**	*e*PN4		Pn	16 43 29.0	-0.9
RTB				*e*SN4		Sn	16 44 42.9	-3.7
MKAR	**Makanchi Array**	**30.63**	**50**	P		**P**	**16 48 04.8**	**-0.5**
	comp=Z,0.5nm,0.7s,baz=247,slow=8.0,SNR=7.1							
HFS	**Hagfors**	**36.80**	**332**	P		P	16 48 55.7	-3.1
	comp=Z,2.2nm,0.9s,baz=120,slow=8.5,SNR=6.0							
ARCES	**ARCESS Array B**	**40.45**	**348**	P		**P**	**16 49 28.1**	**-1.3**
	comp=Z,6.4nm,1.0s,baz=155,slow=9.0,SNR=4.5							
TORD	**Torodi Ar. Bea**	**46.06**	**258**	P		**P**	**16 50 16.7**	**+1.4**
	comp=Z,1.1nm,1.1s,baz=51,slow=9.9,SNR=3.6							
SPITS	**Spitsbergen Ar**	**49.10**	**352**	P		**P**	**16 50 37.3**	**-0.9**
	comp=Z,8.9nm,1.1s,baz=128,slow=12,SNR=5.4							
YKA	**Yellowknife Ar**	**85.60**	**352**	P		**P**	**16 54 28.4**	**-0.9**
	comp=Z,0.2nm,0.6s,baz=16,slow=6.2,SNR=4.3							

IDC ***18*** *16:46:01.9±3.6, 21.26S×169.66E, h0km, mb3.6/4, mb1 3.8/5, mb1mx3.6/38, mbtmp3.7/5, ML3.7/1, MS3.4/4, Ms1 3.4/4, ms1mx3.0/35, Error ellipse: s-maj=125.9km s-min=35.0km az=143.0*
ISC 18 16:46:05.6±2.0, 21.3S±0.5×169.6E±0.3, h21km, n11, σ0$39/9, mb3.6/4, MS3.5/3, Southeast of Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
					Op		h m s	ISC
DZM	**Mont Dzumac**	**3.02**	**255**	Pn		**Pn**	**16 46 52.3**	**+0.1**
	9.5nm,0.3s,baz=127,slow=7.7,SNR=467							
DZM				Sn		**Sn**	**16 47 27.5**	**-0.3**
	34nm,0.3s,baz=35,slow=21,SNR=12							
HNR	**Honiara**	**15.04**	**320**	LR		LR	16 54 42.5	
	comp=Z,61nm,18.9s,baz=216,slow=35							
RPZ	**Rata Peaks**	**22.35**	**177**	LR		LR	16 58 57.5	
	comp=Z,213nm,20.3s,baz=65,slow=35							
PMG	**Port Moresby**	**24.62**	**295**	LR		LR	16 59 51.4	
	comp=Z,67nm,18.4s,baz=105,slow=34							
STKA	**Stephens Creek**	**27.07**	**241**	P		**P**	**16 51 46.8**	**0.0**
	0.9nm,0.8s,baz=79,slow=10,SNR=2.9							
WRA	**Warramunga Arr**	**32.98**	**266**	P		**P**	**16 52 39.5**	**+0.3**
	0.4nm,0.8s,baz=92,slow=8.1,SNR=2.2							
ASAR	**Alice Springs**	**33.00**	**259**	P		**P**	**16 52 39.5**	**+0.1**
	0.7nm,0.7s,baz=84,slow=8.4,SNR=7.4							
ASAR				LR		LR	17 05 39.2	
	comp=Z,82nm,18.3s,baz=90,slow=36							
SONM	**Songino Array**	**89.08**	**323**	P		**P**	**16 58 59.6**	**+0.3**
	0.4nm,1.0s,baz=141,slow=5.2,SNR=3.7							
BRG	**Berggiesshubel**	**144.88**	**333**	*e*P		**PKPab**	**17 05 39.2**	**-0.7**
	7.2nm,1.4s							
KHC	**Kasperske Hory**	**146.32**	**331**	*e*P		**PKPbc**	**17 05 44.4**	**-0.3**
GERES	**GERESS Array B**	**146.48**	**331**	PKPbc		**PKPdf**	**17 05 44.4**	**+0.1**
	2.2nm,0.9s,baz=64,slow=3.1,SNR=14							

IDC 18 16:54:23.3±3.7, 4.00S×151.95E, h0km, mb2.9/2, mb1 3.2/2, mb1mx3.0/35, mbtmp2.9/2, Error ellipse: s-maj=174.3km s-min=44.9km az=119.0, New Britain region

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
					Op		h m s	ISC
WRA	**Warramunga Arr**	**23.36**	**226**	P		P	16 59 34.4	+0.7
	0.4nm,1.1s,baz=53,slow=10,SNR=3.5							
ASAR	**Alice Springs**	**26.19**	**220**	P		P	16 59 60.0	+0.1
	0.2nm,0.8s,baz=59,slow=8.9,SNR=3.9							
TORD	**Torodi Ar. Bea**	**149.25**	**289**	PKPbc		PKPbc	17 14 13.9	-1.1
	0.3nm,0.5s,baz=92,slow=3.3,SNR=3.4							

MEX 18 17:02:14.7±1.1, 14.77N×93.72W, h16km±999km, MD3.9, Near coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
					Op	ISC	h m s	ISC
PCIG		**1.05**	**27**	*e*P		Pb	17 02 30.7	-3.8
PCIG				*e*S		Sb	17 02 43.6	-4.4
TGIG		**2.08**	**16**	*e*P		Pn	17 02 45.4	-3.6
TGIG				*e*S		Sn	17 03 09.9	-4.7
CCIG	**Comitan**	**2.14**	**45**	*e*P		Pn	17 02 48.2	-1.8
CCIG				*e*S		Sn	17 03 13.8	-2.5

ISCJB ***18*** *17:09:37.8±0.6, 37.91N±0.03×27.62E±0.04, h6km±8km, Error ellipse: s-maj=5.7km s-min=5.2km az=158.2*
CSEM ***18*** *17:09:37.9±0.2, 37.89N×27.61E, h2km, MD2.6, Error ellipse: s-maj=3.6km s-min=3.2km az=112.0*
ISK ***18*** *17:09:37.7, 37.93N×27.61E, h6km, MD2.6*
DDA ***18*** *17:09:37.6, 37.87N×27.61E, h7km, Md2.8*
ISC 18 17:09:36.9±1.3, 37.89N±0.03×27.54E±0.04, h5km±13km, n17, σ0$32/27, Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
					Op		h m s	ISC
AYDB	**Zeytinkoy-Aydi**	**0.28**	**79**	*e*PG		**Pg**	**17 09 42.3**	**-0.1**
AYDB				*e*SG		**Sg**	**17 09 46.2**	**+0.1**
AYDB	**Zeytinkoy-Aydi**	**0.28**	**79**	*e*Pg		**Pg**	**17 09 42.3**	**-0.1**
AYDB				*e*Sg		**Sg**	**17 09 46.2**	**+0.1**
GCAM	**G?zelcami?**	**0.31**	**232**	*i* P		**Pb**	**17 09 44.4**	**-0.6**
GCAM				*i* S		**Sb**	**17 09 50.2**	**-0.2**
GCAM	**G?zelcami?**	**0.31**	**232**	P		**Pb**	**17 09 44.4**	**-0.6**
GCAM				S		**Sb**	**17 09 50.2**	**-0.2**
AYDN	**Tasoluk**	**0.35**	**131**	*i* P		**Pg**	**17 09 43.8**	**0.0**
AYDN	**Tasoluk**	**0.35**	**131**	P		**Pg**	**17 09 43.8**	**0.0**
IZM	**Izmir**	**0.55**	**336**	*e*PG		**Pb**	**17 09 49.2**	**+0.1**
IZM	**Izmir**	**0.55**	**336**	*e*Pg		**Pb**	**17 09 49.2**	**+0.1**
BLCB	**Balcova**	**0.63**	**321**	*e*PG		**Pb**	**17 09 50.6**	**+0.2**
BLCB				*e*SG		**Sb**	**17 09 59.1**	**-0.5**
BLCB	**Balcova**	**0.63**	**321**	*e*Pg		**Pb**	**17 09 50.6**	**+0.2**
BLCB				*e*Sg		**Sb**	**17 09 59.1**	**-0.5**
BDRM	**Kayabasi**	**0.83**	**185**	*i* P		**Pg**	**17 09 53.3**	**+0.5**
BDRM				*i* S		**Sb**	**17 10 05.7**	**+0.4**
BDRM	**Kayabasi**	**0.83**	**185**	P		**Pg**	**17 09 53.3**	**+0.5**
BDRM				S		**Sb**	**17 10 05.7**	**+0.4**
BODT	**Bodrum**	**0.85**	**193**	*e*PG		**Pn**	**17 09 55.3**	**-0.3**
BODT				*e*SG		**Sn**	**17 10 08.5**	**0.0**
BODT	**Bodrum**	**0.85**	**193**	*e*Pg		**Pn**	**17 09 55.3**	**-0.3**
ZEY	**˙zmir**	**0.89**	**293**	*i* P		**Pn**	**17 09 56.0**	**-0.1**
ZEY				*i* S		**Sn**	**17 10 09.9**	**+0.5**
KULA	**Kula-Manisa**	**1.08**	**55**	*e*PG		**Pb**	**17 09 58.1**	**0.0**
KULA	**Kula-Manisa**	**1.08**	**55**	*e*Pg		**Pb**	**17 09 58.1**	**0.0**

ISCJB ***18*** *17:17:08.6±0.4, 37.90N±0.03×27.44E±0.04, h10km, Error ellipse: s-maj=5.1km s-min=3.9km az=4.2*
CSEM ***18*** *17:17:08.5±0.2, 37.91N×27.43E, h2km, MD2.9, Error ellipse: s-maj=4.3km s-min=3.4km az=83.0*
ISK ***18*** *17:17:08.1, 37.92N×27.43E, h2km, ML2.8*
DDA ***18*** *17:17:08.0, 37.89N×27.42E, h7km, Md2.9*
ISC 18 17:17:09.1±0.9, 37.90N±0.02×27.42E±0.03, h10km, n39, σ0$80/45, Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
					Op		h m s	ISC
GCAM	**G?zelcami?**	**0.25**	**217**	*i* P		**Pg**	**17 17 13.1**	**-1.0**
GCAM	**G?zelcami?**	**0.25**	**217**	P		**Pg**	**17 17 13.1**	**-1.0**
AYDB	**Zeytinkoy-Aydi**	**0.38**	**83**	*e*PG		**Pg**	**17 17 15.7**	**-0.9**
AYDB	**Zeytinkoy-Aydi**	**0.38**	**83**	*e*Pg		**Pg**	**17 17 15.7**	**-0.9**
AYDN	**Tasoluk**	**0.43**	**123**	*i* P		**Pg**	**17 17 17.0**	**-0.7**
AYDN	**Tasoluk**	**0.43**	**123**	P		**Pg**	**17 17 17.0**	**-0.7**
IZM	**Izmir**	**0.51**	**346**	*e*PG		**Pg**	**17 17 18.5**	**-0.6**
IZM	**Izmir**	**0.51**	**346**	*e*Pg		**Pg**	**17 17 18.5**	**-0.6**
BLCB	**Balcova**	**0.57**	**329**	*e*PG		**Pg**	**17 17 19.5**	**-0.7**
BLCB	**Balcova**	**0.57**	**329**	*e*Pg		**Pg**	**17 17 19.5**	**-0.7**
URLA	**Izmir**	**0.80**	**306**	*i* P		**Pg**	**17 17 23.7**	**-0.8**
URLA	**Izmir**	**0.80**	**306**	P		**Pg**	**17 17 23.7**	**-0.8**
ZEY	**˙zmir**	**0.80**	**295**	*i* P		**Pg**	**17 17 23.6**	**-0.9**
BDRM	**Kayabasi**	**0.83**	**179**	*i* P		**Pg**	**17 17 23.5**	**-1.6**
BDRM	**Kayabasi**	**0.83**	**179**	P		**Pg**	**17 17 23.5**	**-1.6**
BODT	**Bodrum**	**0.84**	**186**	*e*PG		**Pg**	**17 17 24.9**	**-0.4**
BODT				*e*SG		**Sb**	**17 17 38.2**	**+1.2**
BODT	**Bodrum**	**0.84**	**186**	*e*Pg		**Pg**	**17 17 24.9**	**-0.4**
BODT				*e*Sg		**Sb**	**17 17 38.3**	**+1.2**
YER	**Yerkesik**	**1.03**	**138**	*e*PG		**Pg**	**17 17 28.9**	**0.0**
YER	**Yerkesik**	**1.03**	**138**	*e*Pg		**Pg**	**17 17 28.9**	**0.0**
AKHS	**Akhisar**	**1.03**	**17**	*i* P		**Pg**	**17 17 27.8**	**-1.1**
AKHS	**Akhisar**	**1.03**	**17**	P		**Pg**	**17 17 27.8**	**-1.1**
AKS	**Akhisar**	**1.03**	**17**	*e*PG		**Pg**	**17 17 28.2**	**-0.6**
AKS				*e*SG		**Sb**	**17 17 43.1**	**+0.5**
AKS	**Akhisar**	**1.03**	**17**	*e*Pg		**Pg**	**17 17 28.2**	**-0.6**
AKS				*e*Sg		**Sb**	**17 17 43.1**	**+0.5**
KULA	**Kula-Manisa**	**1.16**	**57**	*e*PN		**Pb**	**17 17 31.3**	**+0.1**
KULA	**Kula-Manisa**	**1.16**	**57**	*e*Pn		**Pb**	**17 17 31.3**	**+0.1**
CHOS	**Chios island**	**1.18**	**295**	*e*PN		**Pg**	**17 17 32.2**	**+0.4**
CHOS				*e*SN		**Sn**	**17 17 48.2**	**+0.3**
CHOS	**Chios island**	**1.18**	**295**	*e*Pn		**Pg**	**17 17 32.2**	**+0.4**
CHOS				*e*Sn		**Sn**	**17 17 48.2**	**+0.3**
DKL	**Dikili**	**1.24**	**341**	*e*PN		**Pn**	**17 17 32.3**	**-0.2**
DKL	**Dikili**	**1.24**	**341**	*e*Pn		**Pn**	**17 17 32.3**	**-0.2**
DEMI	**Demirci**	**1.53**	**41**	*i* P		**Pn**	**17 17 37.0**	**+0.4**
DEMI	**Demirci**	**1.53**	**41**	P		**Pn**	**17 17 37.0**	**+0.4**
KHAL	**Karahalli**	**1.70**	**73**	*i* P		**Pn**	**17 17 38.5**	**-0.5**
KHAL	**Karahalli**	**1.70**	**73**	P		**Pn**	**17 17 38.5**	**-0.5**
APE	**Apeiranthos**	**1.72**	**242**	*e*PN		**Pb**	**17 17 40.6**	**-0.2**
APE	**Apeiranthos**	**1.72**	**242**	*e*Pn		**Pb**	**17 17 40.6**	**-0.2**
DURS	**Dursunbey**	**1.89**	**26**	*i* P		**Pn**	**17 17 40.5**	**-1.0**
DURS	**Dursunbey**	**1.89**	**26**	P		**Pn**	**17 17 40.5**	**-1.0**
TVSB	**Tavsanli**	**2.23**	**45**	*e*PN		**Pn**	**17 17 47.4**	**+1.2**
TVSB	**Tavsanli**	**2.23**	**45**	*e*Pn		**Pn**	**17 17 47.4**	**+1.2**

IDC ***18*** *17:18:37.9±1.2, 37.44N×144.57E, h0km, mb3.3/4, mb1 3.6/6, mb1mx3.3/49, mbtmp3.4/6, ML3.2/2, Error ellipse: s-maj=35.5km s-min=23.8km az=93.0*
ISCJB ***18*** *17:18:42.6±1.1, 37.71N±0.07×144.32E±0.07, h33km, mb3.4/4, Error ellipse: s-maj=10.2km s-min=8.2km az=7.7*
JMA ***18*** *17:18:44.3±0.3, 37.80N×144.19E, h28km, M3.6*
ISC 18 17:18:43.5±1.2, 37.62N±0.08×144.34E±0.08, h35km, n15, σ1$10/20, mb3.4/4, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
					Op		h m s	ISC
JIO	**Ouri**	**2.51**	**290**	P		**Pn**	**17 19 22.1**	**+0.4**
JIO				*e*S		**Sn**	**17 19 49.8**	**-1.2**
OFUJ	**Ofunato**	**2

ISC 18 17:26:06.2±0.8, 41°48'N±0'.04×142°06'E±0'.04, h59km±7km, n100, σ1°31/109, mb4.3/39, MS3.6/8, 4C-15D, Hokkaido region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JOT	**Ohata**	**0.77**	**263**	⇓P	**Pn**	**17 26 21.0**	**-0.1**
JOT				*e*S	**Sn**	**17 26 32.1**	**0.0**
JKB	**Kayabe**	**0.87**	**298**	⇓P	**Pn**	**17 26 22.0**	**-0.5**
JKB				*e*S	**Sn**	**17 26 34.1**	**-0.4**
JNBK	**Urakawa-nobuka**	**0.95**	**33**	P	**Pn**	**17 26 23.5**	**-0.1**
ERM	**Erimo**	**0.98**	**56**	*ce*P	**Pn**	**17 26 24.5**	**+0.6**
ERM	comp=Z,2μm,1.0s			pmax	pmax		
ERM	**Erimo**	**0.98**	**56**	*e*Pn	**Pn**	**17 26 24.3**	**+0.5**
JEM	**Erimo**	**0.98**	**56**	⇑P	**Pn**	**17 26 24.5**	**+0.6**
JEM				*e*S	**Sn**	**17 26 38.2**	**+1.2**
JTM	**Tenmabayashi**	**1.02**	**228**	⇓P	**Pn**	**17 26 24.6**	**+0.2**
JANG	**Nango**	**1.18**	**201**	P	**Pn**	**17 26 26.6**	**+0.1**
JANG				*e*S	**Sn**	**17 26 41.6**	**0.0**
JSR	**Shiriuchi**	**1.23**	**273**	P	**Pn**	**17 26 27.2**	**0.0**
JNB	**Noboribetsu**	**1.25**	**323**	⇓P	**Pn**	**17 26 26.8**	**-0.6**
JNB				*e*S	**Sn**	**17 26 42.1**	**-1.2**
JBT2	**Biratori 2**	**1.32**	**10**	P	**Pn**	**17 26 28.9**	**+0.5**
JYM2	**Yakumo 2**	**1.42**	**297**	⇓P	**Pn**	**17 26 30.0**	**+0.3**
JEW	**Eniwo**	**1.44**	**342**	⇓P	**Pn**	**17 26 30.2**	**+0.3**
JEW				*e*S	**Sn**	**17 26 47.7**	**-0.1**
JCH	**Churui**	**1.50**	**40**	⇓P	**Pn**	**17 26 31.9**	**+1.2**
JFR	**Furan**	**1.73**	**13**	P	**Pn**	**17 26 34.3**	**+0.3**
JOSM	**Okushiri--Mats**	**2.03**	**288**	P	**Pn**	**17 26 37.3**	**-0.6**
JOSM				*e*S	**Sn**	**17 27 01.1**	**-1.0**
ASAJ	**Asahikawa**	**2.67**	**8**	P	**Pn**	**17 26 48.5**	**+1.8**
ASAJ	comp=Z,26nm,0.3s,baz=214,slow=10,SNR=153			S	**Sn**	**17 27 20.8**	**+3.0**
ASAJ	comp=Z,20nm,0.3s,baz=157,slow=31,SNR=9.8 **Asahikawa**	**2.67**	**8**	*e*Pn	**Pn**	**17 26 48.0**	**+1.3**
ASAJ				S	**Sn**	**17 27 20.8**	**+3.0**
YUK	**Yuzh-Kuril'sk**	**3.79**	**46**	*e*P	**Pn**	**17 27 02.2**	**+0.2**
YUK				*e*S	**Sn**	**17 27 43.7**	**-1.6**
YUK	comp=Z,432nm,0.6s			pmax	pmax		
YUK	comp=E,210nm,0.2s			pmax	pmax		
YUK	comp=N,208nm,0.4s			pmax	pmax		
SHO	**Shikotan**	**4.25**	**54**	*e*P	**Pn**	**17 27 06.7**	**-1.6**
SHO				*e*S	**Sn**	**17 27 52.8**	**-3.9**
SHO	comp=N,15nm,0.4s			pmax	pmax		
SHO	comp=E,66nm,0.4s			pmax	pmax		
SHO	comp=Z,96nm,0.4s			pmax	pmax		
YSS	**Yuzh-Sakhalins**	**5.50**	**5**	*e*P	**Pn**	**17 27 28.2**	**+2.8**
YSS	comp=Z,20nm,1.2s			pmax	pmax		
KUR	**Kuril'sk**	**5.66**	**46**	⇓*i*P	**Pn**	**17 27 28.5**	**+0.9**
KUR				*e*S	**Sn**	**17 28 31.0**	**-0.1**
KUR	comp=Z,40nm,1.0s			pmax	pmax		
KUR	comp=N,55nm,0.6s			smax	smax		
KUR	comp=E,37nm,0.6s			smax	smax		
MAJO	**Matsushiro**	**5.77**	**213**	⇓*e*P	**Pn**	**17 27 31.8**	**+2.6**
MAJO	**Matsushiro**	**5.77**	**213**	*e*Pn	**Pn**	**17 27 31.4**	**+2.2**
MAT	comp=E,17nm,0.6s **Matsushiro**	**5.77**	**213**	P	**Pn**	**17 27 31.9**	**+2.7**
MAT				*e*S	Sn	17 28 26.2	-7.8
MJAR	**Matsushiro Arr**	**5.77**	**213**	P	**Pn**	**17 27 31.1**	**+1.9**
MJAR	comp=E,1.8nm,0.3s,baz=26,slow=14,SNR=16			LR	LR	17 29 28.4	
USRK	comp=E,121nm,20.9s,baz=50,slow=35 **Ussuriysk Ar.**	**7.88**	**294**	P	**Pn**	**17 27 58.8**	**+0.7**
JHJ2	comp=E,1.0nm,0.3s,baz=98,slow=14,SNR=16 **Mitsune**	**8.54**	**193**	*e*Pn	**Pn**	**17 28 07.2**	**+0.2**
HABR	**Khabarovsk**	**8.58**	**327**	*e*P	Pn	17 28 01.9	-5.6
HABR				*e*		17 29 35.5	
HABR	comp=E,35nm,2.0s			pmax	pmax		
HABR	comp=Z,28nm,2.0s			pmax	pmax		
HABR	comp=N,44nm,2.0s			pmax	pmax		
HABR	comp=Z,154nm,14.0s			MLR	MLR		
TYV	**Tymovskoe**	**9.40**	**2**	*e*P	**Pn**	**17 28 19.0**	**+0.3**
KLR	**Kul'dur**	**10.61**	**320**	P	**Pn**	**17 28 37.4**	**+2.1**
KLR	comp=Z,0.2nm,0.3s,baz=130,slow=14,SNR=8.3			LR	LR	17 32 44.1	
KSRS	comp=Z,174nm,19.9s,baz=150,slow=37 **Korea Array**	**11.64**	**254**	P	Pn	17 28 52.9	+3.5
KSRS	comp=Z,1.2nm,0.3s,baz=63,slow=14,SNR=21			LR	LR	17 33 02.1	
KSAR	comp=Z,62nm,18.7s,baz=64,slow=36 **Wonju Array Be**	**11.67**	**254**	P	**Pn**	**17 28 52.9**	**+3.0**
KSAR	**Wonju Array Be**	**11.67**	**254**	P	**Pn**	**17 28 52.9**	**+3.0**
NKL	**Nikolayevsk**	**11.72**	**356**	*e*P	**Pn**	**17 28 49.0**	**-1.3**
MAG	**Magadan**	**18.92**	**14**	P	**Pn**	**17 30 18.8**	**-3.0**
YAK	**Yakutsk**	**21.89**	**344**	LR	LR	17 39 07.9	
YAK	comp=Z,75nm,19.9s,baz=172,slow=36 **Yakutsk**	**21.89**	**344**	P	**P**	**17 30 50.9**	**-3.0**
SEY	**Seymchan**	**22.34**	**12**	P	**P**	**17 30 59.6**	**+0.8**
BOD	comp=Z,0.8nm,0.5s,baz=213,slow=11,SNR=5.1 **Bodaibo**	**24.18**	**322**	*e*P	**P**	**17 31 14.4**	**-2.3**
BOD	comp=Z,3.0nm,1.0s			pmax	pmax		
ULN	**Ulaanbaatar**	**25.54**	**296**	⇓*e*P	**P**	**17 31 29.8**	**+0.4**
ULN	comp=Z,3.0nm,1.2s			pmax	pmax		
ULN	**Ulaanbaatar**	**25.54**	**296**	*e*P	**P**	**17 31 28.6**	**-0.8**
SONM	comp=Z,2.4nm,0.8s **Songino Array**	**25.99**	**296**	P	**P**	**17 31 33.0**	**-0.4**
SONM	comp=Z,1.5nm,0.5s,baz=86,slow=8.9,SNR=14			LR	LR	17 42 41.2	
TLY	comp=Z,71nm,19.9s,baz=80,slow=38 **Talaya**	**28.01**	**305**	*e*P	**P**	**17 31 52.4**	**+1.0**
TLY	comp=Z,6.0nm,1.6s			pmax	pmax		
ZAK	**Zakamensk**	**28.13**	**302**	*e*P	**P**	**17 31 50.5**	**-2.0**
ZAK	comp=Z,2.0nm,1.3s			pmax	pmax		
BILL	**Bilibino**	**29.64**	**18**	⇓*e*P	**P**	**17 32 06.1**	**+0.5**
BILL	comp=Z,2.0nm,0.8s			pmax	pmax		
ZALV	**Zalesovo Beam**	**39.42**	**308**	P	**P**	**17 33 29.9**	**-0.1**
ZALV	comp=Z,3.1nm,0.4s,baz=94,slow=8.4,SNR=21 **Zalesovo Beam**	**39.42**	**308**	*i* P	**P**	**17 33 29.8**	**-0.2**
ZALV	comp=Z,3.0nm,0.4s			pmax	pmax		
NRIK	**Noril'sk**	**39.49**	**333**	P	**P**	**17 33 29.8**	**-0.7**
NRIK	comp=Z,1.8nm,0.4s,baz=80,slow=6.6,SNR=3.5			LR	LR	17 50 31.6	
MKAR	comp=Z,101nm,19.5s,baz=122,slow=37 **Makanchi Array**	**42.32**	**298**	P	**P**	**17 33 53.7**	**-0.4**
CMAR	comp=Z,3.4nm,0.6s,baz=83,slow=12,SNR=43 **Chiang Mai Arr**	**43.26**	**251**	P	**P**	**17 34 01.8**	**-0.2**
KURK	comp=Z,0.9nm,0.3s,baz=39,slow=7.6,SNR=3.8 **Kurchatov**	**43.70**	**305**	*e*P	**P**	**17 34 04.4**	**-0.7**
KURK	comp=Z,10.0nm,0.5s			pmax	pmax		
KURK	**Kurchatov**	**43.70**	**305**	*e*P	**P**	**17 34 04.4**	**-0.7**
KURBB	comp=Z,10.0nm,0.5s **Kurchatov Arra**	**43.78**	**305**	P	**P**	**17 34 05.3**	**-0.4**
KTH	comp=Z,6.5nm,0.4s,baz=78,slow=8.9,SNR=92 **Kantishna Hill**	**43.84**	**37**	*e*P	**P**	**17 34 07.3**	**+1.2**
COLA	comp=Z,6.2nm,1.0s **College**	**45.10**	**35**	⇓*e*P	**P**	**17 34 17.7**	**+1.7**
COLA	comp=Z,9.0nm,0.9s			pmax	pmax		
ILAR	**Eielson Array**	**45.52**	**35**	P	**P**	**17 34 19.6**	**+0.2**
GUN	comp=Z,4.5nm,1.0s,baz=274,slow=6.6,SNR=26 **Gumba**	**47.36**	**272**	*e*P	**P**	**17 34 34.9**	**+0.1**
KKN	comp=Z,26nm,0.3s **Kakani**	**47.88**	**272**	*e*P	**P**	**17 34 38.4**	**-0.2**
PKIN	comp=Z,17nm,0.7s **Phulchoki**	**47.90**	**272**	*e*P	**P**	**17 34 38.4**	**-0.5**
TKM2	comp=Z,5.7nm,0.5s **Tokmak 2**	**48.08**	**295**	*e*P	**P**	**17 34 39.9**	**0.0**
TKM2	comp=Z,6.0nm,0.5s			pmax	pmax		
TKM2	**Tokmak 2**	**48.08**	**295**	*e*P	**P**	**17 34 39.9**	**0.0**
BRVK	comp=Z,5.9nm,0.5s **Borovoye**	**48.09**	**310**	*d i*P	**P**	**17 34 40.3**	**+0.6**
BRVK	comp=Z,4.0nm,1.2s			pmax	pmax		
BRVK	**Borovoye**	**48.09**	**310**	*e*P	**P**	**17 34 39.4**	**-0.3**
GKN	comp=Z,1.8nm,0.4s **Gorkha**	**48.25**	**273**	*e*P	**P**	**17 34 41.0**	**-0.4**
AAK	comp=Z,1.0nm,0.5s **Ala-Archa**	**48.94**	**295**	P	**P**	**17 34 46.4**	**-0.1**
AAK	comp=Z,1.7nm,0.3s,baz=98,slow=5.1,SNR=13 **Ala-Archa**	**48.94**	**295**	*e*P	**P**	**17 34 46.2**	**-0.3**
KOLN	comp=Z,1.8nm,0.4s **Koldanda**	**49.15**	**273**	*e*P	**P**	**17 34 48.8**	**+0.4**
PYUN	comp=Z,9.1nm,0.5s **Piuthan**	**49.43**	**274**	*e*P	**P**	**17 34 51.4**	**+0.9**
INK	comp=Z,14nm,0.5s **Inuvik**	**50.23**	**29**	P	**P**	**17 34 56.6**	**+0.9**
KKAR	comp=Z,2.6nm,0.4s,baz=290,slow=6.6,SNR=28 **Karatay Array**	**51.43**	**297**	*e*P	**P**	**17 35 04.5**	**-0.7**
KKAR	comp=Z,2.0nm,0.5s			pmax	pmax		
KKAR	**Karatay Array**	**51.43**	**297**	*e*P	**P**	**17 35 04.5**	**-0.7**
HNR	comp=Z,2.2nm,0.5s **Honiara**	**53.26**	**158**	LR	LR	17 55 23.4	
ARU	comp=Z,47nm,19.4s,baz=319,slow=33 **Arti**	**53.42**	**317**	*d i*P	**P**	**17 35 20.2**	**+0.5**
ARU						17 37 20.3	
ARU				S	**S**	**17 42 50.9**	**+3.5**
ARU				SS	**SKiKP**	**17 46 30.7**	**+0.9**
ARU	comp=Z,1.0nm,0.5s			pmax	pmax		
ABKAR	**Akbulak array**	**55.53**	**308**	*e*P	**P**	**17 35 34.6**	**-0.5**
RES	comp=Z,2.6nm,0.4s **Resolute Bay**	**58.18**	**15**	*e*P	**P**	**17 35 52.6**	**-0.8**
RES	comp=Z,7.0nm,0.9s			pmax	pmax		
RES	**Resolute Bay**	**58.18**	**15**	*e*P	**P**	**17 35 52.6**	**-0.8**
YKA	comp=Z,6.7nm,0.9s **Yellowknife Ar**	**59.74**	**32**	P	**P**	**17 36 04.9**	**+0.5**
ARCES	comp=Z,0.9nm,1.0s,baz=303,slow=6.7,SNR=7.5 **ARCESS Array B**	**60.03**	**339**	P	**P**	**17 36 06.1**	**-0.3**
ARCES	comp=Z,5.4nm,1.0s,baz=24,slow=9.3,SNR=3.9			LR	LR	18 04 10.2	
WRA	comp=Z,29nm,21.1s,baz=24,slow=38 **Warramunga Arr**	**61.52**	**188**	P	**P**	**17 36 16.1**	**-0.9**
GEYT	comp=Z,0.9nm,0.4s,baz=6.4,slow=6.9,SNR=23 **Alibeck**	**62.19**	**297**	P	**P**	**17 36 20.6**	**-0.9**
GEYT	comp=Z,1.4nm,0.5s,baz=52,slow=2.4,SNR=4.3			LR	LR	18 05 29.8	
PUL	comp=Z,55nm,19.1s,baz=125,slow=38 **Pulkovo**	**64.64**	**329**	⇓*e*P	**P**	**17 36 38.3**	**+1.1**
PUL	comp=Z,35nm,0.6s			pmax	pmax		
OBN	**Obninsk**	**64.87**	**322**	*i* P	**P**	**17 36 38.2**	**-0.5**
OBN				*e*		17 39 04.6	
OBN	comp=Z,3.0nm,0.9s			pmax	pmax		
FINES	**FINESS Array B**	**65.14**	**332**	P	**P**	**17 36 40.0**	**-0.4**
FINES	comp=Z,2.7nm,0.4s,baz=55,slow=7.1,SNR=28			LR	LR	18 07 30.5	
FINES	comp=Z,67nm,19.9s,baz=30,slow=38 **FINESS Array B**	**65.14**	**332**	*i* P	**P**	**17 36 40.0**	**-0.4**
FINES	comp=Z,3.0nm,0.4s			pmax	pmax		
ASAR	**Alice Springs**	**65.25**	**188**	P	**P**	**17 36 41.5**	**-0.1**
KIV	comp=Z,0.5nm,0.7s,baz=3.7,slow=7.3,SNR=7.8 **Kislovodsk**	**68.41**	**310**	⇑*e*P	**P**	**17 37 03.3**	**+1.6**
KIV	comp=Z,7.0nm,0.8s			pmax	pmax		
KBZ	**Khabaz**	**68.42**	**310**	P	**P**	**17 37 01.9**	**+0.3**
GNI	comp=Z,1.5nm,0.7s,baz=254,slow=2.1,SNR=6.9 **Garni**	**69.49**	**306**	P	**P**	**17 37 10.0**	**+1.5**
GNI	comp=Z,10.0nm,0.7s			pmax	pmax		
NB2	**NORSAR Subarra**	**70.29**	**337**	P	**P**	**17 37 12.4**	**-0.6**
NOA	comp=Z,0.6nm,0.3s,baz=30,slow=6.2 **NORSAR Array B**	**70.29**	**337**	P	**P**	**17 37 12.2**	**-0.7**
AKASG	comp=Z,1.2nm,0.7s,baz=50,slow=5.5,SNR=6.9 **Malin Array Be**	**71.11**	**322**	P	**P**	**17 37 17.6**	**-0.4**
KIEV	comp=Z,1.7nm,0.4s,baz=44,slow=6.7,SNR=29 **Kiev**	**71.12**	**322**	P	**P**	**17 37 17.0**	**-1.1**
PDAR	**Pinedale Array**	**74.22**	**47**	P	**P**	**17 37 36.7**	**-0.3**
BRTR	comp=Z,0.3nm,0.6s,baz=216,slow=4.8,SNR=4.7 **Keskin Array B**	**76.30**	**311**	P	**P**	**17 37 48.8**	**0.0**
BRTR	comp=Z,0.5nm,0.5s,baz=67,slow=2.9,SNR=5.2 **Keskin Array B**	**76.30**	**311**	*ce*P	**P**	**17 37 51.5**	**+2.7**
BRTR	comp=Z,1.0nm,0.4s			pmax	pmax		
CLL	**Collm**	**77.50**	**330**	*i* P	**P**	**17 37 55.4**	**+0.2**
CLL	**Collm**	**77.50**	**330**	*i* P	**P**	**17 37 55.4**	**+0.2**
GERES	**GERESS Array B**	**79.20**	**328**	P	**P**	**17 38 04.4**	**-0.4**
RPZ	comp=Z,0.4nm,0.4s,baz=39,slow=6.8,SNR=4.3 **Rata Peaks**	**88.73**	**159**	LR	LR	18 15 47.7	
	comp=Z,32nm,22.0s,baz=90,slow=34						

*IDC **18** 17:28:55.8±2.0, 37°.05N×141°.69E, h0km, mb3.7/6, mb1 3.8/9, mb1mx3.5/51, mbtmp3.8/9, ML3.8/2, MS2.9/2, Ms1 2.9/2, ms1mx2.4/45, Error ellipse: s-maj=54.8km s-min=19.7km az=68.0*

*NIED **18** 17:29:00, 36°.90N×141°.20E, h47km, Mw3.8 Best double couple: M0 6.26000×10^14 NP1:φs318.00000°, δ11.00000°, λ-179.00000°. NP2:φs227.00000°, δ90.00000°, λ-79.00000°.*

*JMA **18** 17:29:03.2±0.1, 36°.93N×141°.22E, h45km±1km, M3.8*

JMA Felt I J1.

ISC 18 17:29:01.2±1.8, 36°.94N±0'.04×141°.33E±0'.08, h28km±12km, n20, σ0°71/28, mb3.7/6, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.46**	**291**	P	**Pn**	**17 29 12.7**	**+0.7**
ONAJ				S	**Sn**	**17 29 19.1**	**-0.2**
JFK	**Kawauchi**	**0.56**	**319**	P	**Pn**	**17 29 14.2**	**+0.8**
JFK				S	**Sn**	**17 29 21.7**	**-0.1**
JHO	**Hitachi**	**0.70**	**242**	P	**Pn**	**17 29 15.5**	**+0.2**
JHO				S	**Sb**	**17 29 24.0**	**-0.1**
JFT	**Otama**	**0.98**	**306**	P	**Pn**	**17 29 20.4**	**+1.2**
JFT				S	**Sb**	**17 29 32.4**	**+0.2**
JMM	**Marumori**	**1.02**	**335**	P	**Pn**	**17 29 20.5**	**+0.8**
JMM				S	**Sn**	**17 29 33.0**	**-0.1**
JFY	**Yanaizu**	**1.38**	**290**	P	**Pn**	**17 29 25.3**	**+0.6**
JFY				*e*S	**Sn**	**17 29 41.6**	**-0.5**
JOU	**Okura**	**1.52**	**340**	P	**Pb**	**17 29 28.4**	**-0.3**
JOU				S	**Sb**	**17 29 46.8**	**-0.7**
JAG	**Ashikaga**	**1.60**	**252**	P	**Pn**	**17 29 28.2**	**+0.6**
JAG				S	**Sn**	**17 29 46.3**	**-1.1**
MJAR	**Matsushiro Arr**	**2.54**	**262**	Pn	**Pn**	**17 29 41.3**	**+0.6**
MAT	8.2nm,0.3s,baz=82,slow=15,SNR=13 **Matsushiro**	**2.54**	**262**	P	**Pn**	**17 29 42.2**	**+1.5**
MAT				S	**Sn**	**17 30 11.1**	**+0.4**
JHJ	**Hachijo jima 2**	**4.02**	**199**	Pn	**Pn**	**17 30 02.4**	**+1.4**
JHJ	30nm,0.3s,baz=60,slow=20,SNR=4.9			Sn	**Sn**	**17 30 46.8**	**-0.4**
JCJ	26nm,0.3s,baz=84,slow=16,SNR=3.8 **Chichijima**	**9.85**	**176**	LR	LR	17 34 47.6	
USRK	comp=Z,120nm,20.3s,baz=138,slow=35 **Ussuriysk Ar.**	**10.15**	**318**	Pn	**Pn**	**17 31 25.1**	**+0.1**
GUMO	0.1nm,0.3s,baz=125,slow=12,SNR=2.4 **Guam**	**23.47**	**171**	LR	LR	17 43 14.5	
SONM	comp=Z,18nm,21.9s,baz=36,slow=36 **Songino Array**	**27.78**	**304**	P	**P**	**17 34 48.4**	**+0.6**
ZALV	0.8nm,0.6s,baz=98,slow=8.7,SNR=5.7 **Zalesovo Beam**	**41.93**	**312**	P	**P**	**17 36 49.1**	**-0.1**
MKAR	0.7nm,0.4s,baz=86,slow=7.6,SNR=4.1 **Makanchi Array**	**44.11**	**302**	P	**P**	**17 37 07.0**	**0.0**
KURBB	0.6nm,0.6s,baz=80,slow=9.8,SNR=4.3 **Kurchatov Arra**	**46.01**	**308**	P	**P**	**17 37 21.3**	**-0.7**
WRA	1.1nm,0.4s,baz=81,slow=7.9,SNR=8.3 **Warramunga Arr**	**56.96**	**188**	P	**P**	**17 38 43.5**	**-0.7**
ASAR	0.6nm,0.6s,baz=5.4,slow=7.3,SNR=4.7 **Alice Springs**	**60.69**	**188**	P	**P**	**17 39 09.9**	**-0.2**
	0.3nm,0.8s,baz=5.7,slow=7.0,SNR=3.7						

*IDC **18** 17:34:30.2±1.3, 1°.65N×99°.51E, h165km±6km, mb3.6/8, mb1 3.7/8, mb1mx3.3/52, mbtmp4.1/8, Error ellipse: s-maj=69.1km s-min=13.3km az=54.0*

*DJA **18** 17:34:31.2±0.9, 2°N±5°×10°0E±°, h146km±13km, M3.3/11, MLv3.3/11*

ISC 18 17:34:28.7±0.8, 1°.81N±0°.09×99°.7E±0°.1, h138km, n15, σ2°20/13, mb3.9/8, Northern Sumatera

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MNSI	**Mandailing Nat**	**1.02**	**188**	P	Pn	17 34 55.8	+3.3
PSI	**Prapat**	**1.27**	**321**	P	Pn	17 34 58.7	+3.6
PSI	7.7nm,0.3s,baz=211,slow=4.0,SNR=14			S	**Sn**	**17 35 19.7**	**+4.5**
TSI	5.8nm,0.3s,baz=281,slow=21,SNR=14 **Tuntungan**	**2.04**	**325**	P	**Pn**	**17 35 05.9**	**+2.2**
GSI	**Gunungsitoli**	**2.21**	**257**	P	Pn	17 35 07.0	+1.3
GSI				S	**Sn**	**17 35 34.1**	**+0.1**
KCSI	**Kotacane, Aceh**	**2.59**	**311**	P	Pn	17 35 12.5	+2.0
PDSI	**Padang**	**2.80**	**165**	P	Pn	17 35 16.6	+3.5
PDSI				S	**Sn**	**17 35 50.9**	**+3.6**
TPTI		**2.93**	**300**	P	Pn	17 35 16.1	+1.4
TPTI				S	**Sn**	**17 35 50.5**	**+0.4**
WRA	**Warramunga Arr**	**40.25**	**124**	P	**P**	**17 41 52.2**	**-0.1**
ASAR	4.0nm,0.4s,baz=306,slow=9.0,SNR=68 **Alice Springs**	**41.78**	**129**	P	**P**	**17 42 03.6**	**-1.3**
SONM	0.4nm,0.4s,baz=304,slow=7.8,SNR=10 **Songino Array**	**46.21**	**6**	P	**P**	**17 42 40.0**	**+0.1**
AAK	0.6nm,0.5s,baz=188,slow=9.9,SNR=6.5 **Ala-Archa**	**46.50**	**334**	P	**P**	**17 42 42.6**	**+0.2**
MKAR	0.4nm,0.3s,baz=146,slow=7.3,SNR=3.4 **Makanchi Array**	**47.32**	**344**	P	**P**	**17 42 47.8**	**-0.7**
ZALV	1.8nm,0.4s,baz=157,slow=8.7,SNR=56 **Zalesovo Beam**	**53.40**	**349**	P	**P**	**17 43 33.1**	**-0.9**
FINES	1.8nm,0.5s,baz=180,slow=7.0,SNR=13 **FINESS Array B**	**80.64**	**332**	P	**P**	**17 46 24.1**	**-1.8**
ARCES	0.8nm,0.6s,baz=114,slow=6.8,SNR=2.8 **ARCESS Array B**	**82.82**	**340**	P	**P**	**17 46 35.2**	**-2.0**
	3.1nm,0.9s,baz=11,slow=2.6,SNR=3.9						

JMA 18 17:36:57.9, 35°.77N×138°.03E, h10km, M1.4, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JNT	**Takato**	**0.14**	**40**	P	Pg	17 37 00.9	-0.3
JNT				S	Sg	17 37 03.1	-0.3
JYN	**Shimob**	**0.50**	**123**	P	Pg	17 37 07.8	+0.2
JYN				S	Sg	17 37 14.9	+0.7
SHIZ	**Shizuoka 3**	**0.72**	**168**	P	Pg	17 37 11.4	-0.4
JRY	**Ryogami san**	**0.75**	**71**	P	Pg	17 37 12.0	-0.4
MAT	**Matsushiro**	**0.78**	**10**	P	Pg	17 37 12.3	-0.8
MAT				S	Sg	17 37 22.5	-0.8

*NIED **18** 17:37:00, 35°.50N×139°.60E, h80km, Mw4.2 Best double couple: M0 2.28000×10^15 NP1:φs206.00000°, δ26.00000°, λ-12.00000°. NP2:φs307.00000°, δ85.00000°, λ-116.00000°.*

*MOS **18** 17:37:05.2±1.3, 35°.52N×139°.84E, h77km, mb4.4/10, Error ellipse: s-maj=10.2km s-min=6.3km az=94.3*

*ISCJB **18** 17:37:06.9±0.2, 35°.50N±0°.03×139°.66E±0°.04, h91km±2km, mb4.1/37, Error ellipse: s-maj=5.6km s-min=4.1km az=155.1*

*JMA **18** 17:37:07.7±0.1, 35°.55N×139°.67E, h84km±2km, M4.2 Broadband fault plane solution: P waves. NP1: φs306.00000°, δ83.00000°, λ-109.00000°. NP2: φs195.00000°, δ20.00000°, λ-22.00000°. Principal axes: T Plg35.0000°, Azm52.0000°; N Plg19.0000°, Azm308.0000°; P Plg49.0000°, Azm195.0000°;*

JMA Felt III J1.

*NEIC **18** 17:37:07.5±0.6, 35°.49N×139°.62E, h81km±5km, mb4.4/15 Error ellipse: s-maj=6.4km s-min=4.6km az=101.0*

NEIC Recorded [3 JMA] in Kanagawa.

*IDC **18** 17:37:08.2±0.8, 35°.47N×139°.66E, h89km±7km, mb3.8/21, mb1 3.9/25, mb1mx3.8/44, mbtmp4.1/25, MS2.8/2, Ms1 2.8/2, ms1mx2.5/36, Error ellipse: s-maj=14.1km s-min=5.6km az=72.0*

ISC 18 17:37:07.8±0.6, 35°.55N±0'.04×139°.67E±0'.04, h83km±5km, n94, σ1°01/105, mb4.2/37, 14C-4D, Near south coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TOK	**Tokyo**	**0.15**	**29**	⇓P	**Pn**	**17 37 20.6**	**+0.9**
TOK				S	**Sn**	**17 37 30.5**	**+2.0**
JYO	**Yokosk**	**0.33**	**180**	⇑P	**Pn**	**17 37 20.9**	**+0.3**
JYO				*e*S	**Sn**	**17 37 31.2**	**+1.2**
JOD2	**Odawara 2**	**0.55**	**239**	⇑P	**Pn**	**17 37 21.9**	**-0.4**
JOD2				S	**Sn**	**17 37 32.3**	**-0.8**
JRY	**Ryogami san**	**0.78**	**307**	⇓P	**Pn**	**17 37 25.1**	**+0.6**
JRY				S	**Sn**	**17 37 37.6**	**+0.6**
JIM2	**Oshima 3**	**0.86**	**193**	⇑P	**Pn**	**17 37 24.7**	**-0.7**
JIM2				S	**Sn**	**17 37 36.9**	**-1.6**
JAG	**Ashikaga**	**0.89**	**349**	⇓P	**Pn**	**17 37 25.9**	**+0.2**
JAG				*e*S	**Sn**	**17 37 38.6**	**-0.5**
JYN	**Shimob**	**0.92**	**267**	⇑P	**Pn**	**17 37 26.1**	**0.0**
JYN				*e*S	**Sn**	**17 37 39.9**	**+0.1**
BSO3	**Boso 3**	**1.02**	**137**	⇓P	**Pn**	**17 37 27.0**	**+0.1**
BSO3				S	**Sn**	**17 37 42.4**	**+1.1**
JIZS	**Izushimoda**	**1.05**	**218**	⇑P	**Pn**	**17 37 27.5**	**-0.1**
JIZS				*e*S	**Sn**	**17 37 42.7**	**+0.2**
BSO1	**Boso 1**	**1.40**	**129**	P	**Pn**	**17 37 31.0**	**-0.4**
BSO1				S	**Sn**	**17 37 49.0**	**-0.3**
MJAR	**Matsushiro Arr**	**1.54**	**310**	P	**Pn**	**17 37 34.1**	**+0.4**
MJAR	108nm,0.3s,baz=156,slow=13,SNR=446			LR	**Sn**	**17 37 54.7**	**+1.3**
MAJO	389nm,0.3s,baz=170,slow=17,SNR=26 **Matsushiro**	**1.54**	**310**	*e*P	**Pn**	**17 37 33.9**	**+0.1**
MAJO	**Matsushiro**	**1.54**	**310**	*e*Pn	**Pn**	**17 37 33.9**	**+0.1**
MAT	**Matsushiro**	**1.54**	**310**	P	**Pn**	**17 37 34.3**	**+0.5**
MAT				*e*S	**Sn**	**17 37 53.8**	**+0.4**
JHJ	**Hachijo jima 2**	**2.43**	**178**	P	**Pn**	**17 37 45.9**	**+0.4**
JHJ	328nm,0.3s,baz=327,slow=16,SNR=125			S	**Sn**	**17 38 13.4**	**-0.9**
JHJ2	541nm,0.3s,baz=175,slow=23,SNR=13 **Mitsune**	**2.44**	**177**	*e*Pn	**Pn**	**17 37 45.4**	**-0.2**
JNU	**Nakatsue**	**7.66**	**254**	P	**Pn**	**17 38 57.5**	**+0.8**
JNU	4.9nm,0.3s,baz=52,slow=4.8,SNR=49			LR	LR	17 42 07.3	
ASAJ	comp=Z,90nm,18.9s,baz=315,slow=39 **Asahikawa**	**8.84**	**14**	P	**Pn**	**17 39 11.3**	**-1.4**
ASAJ	3.9nm,0.3s,baz=214,slow=15,SNR=32			S	**Sn**	**17 40 46.7**	**-3.9**
KSRS	1.2nm,0.3s,baz=51,slow=29,SNR=2.6 **Korea Array**	**9.64**	**285**	P	Pn	17 39 27.4	+3.7
KSAR	0.4nm,0.3s,baz=100,slow=14,SNR=9.0 **Wonju Array Be**	**9.67**	**285**	P	Pn	17 39 27.4	+3.4

TIXI				pmax	pmax		
	comp=Z,7.0nm,2.5s						
TIXI	**Tiksi**	**36.60**	**354**	*eP*	**P**	**17 44 05.2**	**-0.2**
	comp=Z,2.4nm,0.6s						
JAY	**Jayapura**	**37.88**	**178**	P	**P**	**17 44 16.1**	**-0.8**
	comp=Z,1.0nm,0.7s,baz=51,slow=23,SNR=5.3						
CMAR	**Chiang Mai Arr**	**39.76**	**256**	P	**P**	**17 44 32.2**	**-0.3**
	comp=Z,0.5nm,0.7s,baz=50,slow=8.1,SNR=4.8						
CMAR	**Chiang Mai Arr**	**39.76**	**256**	*ceP*	**P**	**17 44 33.5**	**+1.0**
CMAR				pmax	pmax		
	comp=Z,1.0nm,0.7s						
ZALV	**Zalesovo Beam**	**41.89**	**314**	P	**P**	**17 44 49.8**	**+0.2**
	comp=Z,1.3nm,0.5s,baz=100,slow=6.5,SNR=5.2						
ZALV				PcP	**PcP**	**17 46 43.0**	**-0.8**
	comp=Z,0.7nm,0.3s,baz=119,slow=2.4,SNR=3.6						
MKAR	**Makanchi Array**	**43.73**	**303**	P	**P**	**17 45 05.1**	**+0.4**
	comp=Z,2.3nm,0.9s,baz=88,slow=10,SNR=22						
MKAR	**Makanchi Array**	**43.73**	**303**	*ceP*	**P**	**17 45 05.5**	**+0.9**
MKAR				pmax	pmax		
	comp=Z,2.0nm,0.9s						
KURK	**Kurchatov**	**45.75**	**309**	*eP*	**P**	**17 45 20.8**	**+0.2**
KURK				pmax	pmax		
	comp=Z,19nm,0.7s						
KURK	**Kurchatov**	**45.75**	**309**	*eP*	**P**	**17 45 20.8**	**+0.2**
	comp=Z,19nm,0.7s						
PKIN	**Phulchoki**	**46.43**	**276**	*eP*	**P**	**17 45 25.6**	**-1.0**
	comp=Z,3.7nm,0.5s						
KKN	**Kakani**	**46.44**	**276**	*eP*	**P**	**17 45 26.2**	**-0.4**
GKN	**Gorkha**	**46.87**	**277**	*eP*	**P**	**17 45 29.6**	**-0.3**
	comp=Z,18nm,0.8s						
KOLN	**Koldanda**	**47.81**	**277**	*eP*	**P**	**17 45 36.2**	**-1.0**
PYUN	**Piuthan**	**48.17**	**278**	*eP*	**P**	**17 45 39.9**	**-0.1**
	comp=Z,31nm,1.0s						
TKM2	**Tokmak 2**	**49.10**	**299**	*eP*	**P**	**17 45 48.2**	**+1.2**
TKM2				pmax	pmax		
	comp=Z,4.0nm,0.7s						
TKM2	**Tokmak 2**	**49.10**	**299**	*eP*	**P**	**17 45 48.2**	**+1.2**
	comp=Z,3.7nm,0.7s						
KDAK	**Kodiak Island**	**49.14**	**41**	*ceP*	**P**	**17 45 48.5**	**+1.8**
BPAW	**Bear Paw Mtn.**	**49.73**	**33**	*eP*	**P**	**17 45 52.9**	**+1.7**
	comp=Z,0.4nm,0.6s						
AAK	**Ala-Archa**	**49.96**	**299**	*eP*	**P**	**17 45 54.0**	**+0.5**
AAK				pmax	pmax		
	comp=Z,2.0nm,0.8s						
AAK	**Ala-Archa**	**49.96**	**299**	*eP*	**P**	**17 45 54.0**	**+0.5**
	comp=Z,1.8nm,0.8s						
BRVK	**Borovoye**	**50.59**	**313**	*eP*	**P**	**17 45 59.2**	**+1.4**
BRVK	**Borovoye**	**50.59**	**313**	*eP*	**P**	**17 45 59.2**	**+1.4**
MCK	**McKinley**	**50.64**	**33**	*eP*	**P**	**17 45 59.6**	**+1.5**
MCK				pmax	pmax		
	comp=Z,6.0nm,1.0s						
MCK	**McKinley**	**50.64**	**33**	*eP*	**P**	**17 45 59.6**	**+1.5**
	comp=Z,6.2nm,1.0s						
ILAR	**Eielson Array**	**51.49**	**32**	P	**P**	**17 46 05.4**	**+1.0**
	comp=Z,3.7nm,0.8s,baz=274,slow=6.2,SNR=38						
KKAR	**Karatay Array**	**52.65**	**301**	*eP*	**P**	**17 46 12.9**	**-0.5**
KKAR				pmax	pmax		
	comp=Z,3.0nm,0.8s						
KKAR	**Karatay Array**	**52.65**	**301**	*eP*	**P**	**17 46 12.9**	**-0.5**
	comp=Z,3.1nm,0.8s						
BMRM	**Bremner River**	**52.89**	**36**	*eP*	**P**	**17 46 16.2**	**+1.4**
	comp=Z,5.3nm,0.8s						
EGAK	**Eagle**	**53.94**	**31**	*eP*	**P**	**17 46 23.1**	**+0.7**
	comp=Z,4.2nm,1.2s						
WRAB	**Tennant Creek**	**55.41**	**186**	*ceP*	**P**	**17 46 33.7**	**+0.2**
WRAB				pmax	pmax		
	comp=Z,57nm,1.7s						
WRAB	**Tennant Creek**	**55.41**	**186**	*eP*	**P**	**17 46 32.6**	**-0.9**
	comp=Z,47nm,1.4s						
WRA	**Warramunga Arr**	**55.42**	**186**	P	**P**	**17 46 32.4**	**-1.2**
	comp=Z,8.0nm,0.4s,baz=0.4,slow=7.6,SNR=73						
WRA	**Warramunga Arr**	**55.42**	**186**	*ceP*	**P**	**17 46 32.9**	**-0.7**
WRA				pmax	pmax		
	comp=Z,8.0nm,0.4s						
INK	**Inuvik**	**56.34**	**26**	*eP*	**P**	**17 46 40.8**	**+1.2**
INK				pmax	pmax		
	comp=Z,2.0nm,0.6s						
INK	**Inuvik**	**56.34**	**26**	*eP*	**P**	**17 46 40.8**	**+1.2**
	comp=Z,2.2nm,0.6s						
ABKAR	**Akbulak array**	**57.82**	**310**	*eP*	**P**	**17 46 50.6**	**+0.2**
	comp=Z,1.4nm,0.5s						
ASAR	**Alice Springs**	**59.15**	**186**	P	**P**	**17 46 59.0**	**-0.8**
	comp=Z,4.0nm,0.5s,baz=18,slow=12,SNR=80						
MBWA	**Marble Bar**	**59.48**	**202**	*eP*	**P**	**17 47 01.3**	**-0.8**
RES	**Resolute Bay**	**64.38**	**14**	*eP*	**P**	**17 47 34.9**	**+0.6**
RES				pmax	pmax		
	comp=Z,5.0nm,0.9s						
RES	**Resolute Bay**	**64.38**	**14**	*eP*	**P**	**17 47 34.9**	**+0.6**
	comp=Z,5.5nm,0.9s						
ARCES	**ARCESS Array B**	**64.88**	**339**	P	**P**	**17 47 38.0**	**+0.3**
	comp=Z,5.8nm,1.0s,baz=52,slow=7.9,SNR=4.2						
ARCES	**ARCESS Array B**	**64.88**	**339**	P	**P**	**17 47 38.0**	**+0.3**
YKA	**Yellowknife Ar**	**65.79**	**29**	P	**P**	**17 47 43.5**	**-0.1**
	comp=Z,0.7nm,0.6s,baz=301,slow=6.6,SNR=14						
STKA	**Stephens Creek**	**67.10**	**178**	P	**P**	**17 47 52.3**	**+0.1**
	comp=Z,2.3nm,0.8s,baz=356,slow=8.3,SNR=7.4						
FINES	**FINESS Array B**	**69.46**	**332**	P	**P**	**17 48 07.0**	**+0.3**
	comp=Z,1.5nm,0.7s,baz=65,slow=6.4,SNR=6.4						
FINES	**FINESS Array B**	**69.46**	**332**	*ceP*	**P**	**17 48 06.8**	**+0.1**
FINES				pmax	pmax		
	comp=Z,2.0nm,0.7s						
NWAO	**Narrogin (SRO)**	**71.29**	**200**	*eP*	**P**	**17 48 17.7**	**-0.4**
NWAO	**Narrogin (SRO)**	**71.29**	**200**	*eP*	**P**	**17 48 17.7**	**-0.4**
AKASG	**Malin Array Be**	**74.59**	**322**	P	**P**	**17 48 37.4**	**-0.2**
	comp=Z,0.8nm,0.5s,baz=46,slow=6.1,SNR=6.1						
AKASG	**Malin Array Be**	**74.59**	**322**	*ceP*	**P**	**17 48 39.4**	**+1.8**
AKASG				pmax	pmax		
	comp=Z,1.0nm,0.5s						
NB2	**NORSAR Subarra**	**75.00**	**337**	P	**P**	**17 48 40.1**	**+0.3**
	comp=Z,0.5nm,0.6s,baz=42,slow=6.2						
NOA	**NORSAR Array B**	**75.00**	**337**	P	**P**	**17 48 39.4**	**-0.3**
	comp=Z,1.1nm,0.7s,baz=41,slow=5.8,SNR=5.0						
NVAR	**Mina Array Bea**	**77.01**	**52**	P	**P**	**17 48 51.8**	**0.0**
	comp=Z,1.0nm,0.7s,baz=277,slow=6.8,SNR=4.8						
BRTR	**Keskin Array B**	**78.76**	**311**	P	**P**	**17 49 01.8**	**+0.3**
	comp=Z,0.9nm,0.7s,baz=72,slow=4.7,SNR=3.7						
PDAR	**Pinedale Array**	**79.71**	**44**	P	**P**	**17 49 06.3**	**-0.3**
	comp=Z,0.3nm,0.5s,baz=257,slow=2.1,SNR=3.8						
TXAR	**Lajitas Array**	**92.14**	**51**	P	**P**	**17 50 08.7**	**+0.4**
	comp=Z,0.2nm,0.5s,baz=320,slow=3.5,SNR=5.2						
QSPA	**South Pole Qui**	**125.30**	**180**	*eP*	**PKPdf**	**17 55 57.4**	**-0.5**

IDC 18 17:40:13.5±2.2, 6°61S×129°86E, h0km, mb3.6/1, mb1 3.7/3, mb1mx3.4/40, mbtmp3.5/3, ML3.6/2, Error ellipse: s-maj=145.2km s-min=31.0km az=69.0, Banda Sea

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
WRA	**Warramunga Arr**	**13.95**	**162**	Pn	Pn	17 43 32.3	-0.2
	0.3nm,0.3s,baz=345,slow=14,SNR=15						
WRA				Sn	Sn	17 45 56.7	-12
	0.5nm,0.3s,baz=338,slow=22,SNR=9.5						
ASAR	**Alice Springs**	**17.40**	**168**	P	Pn	17 44 18.0	+0.1
	0.2nm,0.3s,baz=342,slow=12,SNR=18						
MKAR	**Makanchi Array**	**67.83**	**327**	P	P	17 51 13.6	0.0
	0.3nm,0.4s,baz=122,slow=5.8,SNR=8.0						

IDC 18 17:46:36.9±2.9, 37°64N×143°12E, h0km, mb3.4/3, mb1 3.5/4, mb1mx3.2/43, mbtmp3.3/4, ML2.9/1, MS2.8/1, Ms1 2.8/1, ms1mx2.2/27, Error ellipse: s-maj=73.7km s-min=33.2km az=55.0
ISCJB 18 17:46:39.5±1.0, 37°72N±0°.06×142°75E±0°.09, h24km, mb3.3/3, Error ellipse: s-maj=10.2km s-min=8.2km az=169.9
JMA 18 17:46:39.2±0.4, 37°.74N×142°.72E, h19km±5km, M3.6
ISC 18 17:46:41.4±1.4, 37°78N±0°.07×142°68E±0°.09, h24km, n17, σ1s09/20, mb3.4/3, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**1.25**	**303**	P	**Pn**	**17 47 02.1**	**-1.2**
JIO				S	**Sb**	**17 47 19.8**	**-0.1**
JFK	**Kawauchi**	**1.50**	**255**	P	**Pn**	**17 47 05.9**	**-0.8**
JMM	**Marumori**	**1.50**	**274**	P	**Pn**	**17 47 05.5**	**-1.3**
JMM				*eS*	**Sn**	**17 47 24.1**	**-1.5**
OFUJ	**Ofunato**	**1.52**	**329**	P	**Pn**	**17 47 06.5**	**-0.6**
JMK	**Ichinoseki**	**1.64**	**316**	P	**Pn**	**17 47 08.6**	**-0.1**
JOU	**Okura**	**1.70**	**291**	P	**Pn**	**17 47 09.9**	**+0.4**
JOU				*eS*	**Sn**	**17 47 30.5**	**0.0**
JFT	**Otama**	**1.88**	**263**	P	**Pn**	**17 47 12.3**	**+0.3**
MIYJ	**Miyakonagasawa**	**1.92**	**340**	P	**Pn**	**17 47 12.4**	**-0.1**
MIYJ				*eS*	**Sn**	**17 47 35.7**	**-0.2**
JOM	**Ohasama**	**2.01**	**328**	P	**Pn**	**17 47 13.6**	**-0.2**
JYS	**Shirataka**	**2.12**	**283**	P	**Pn**	**17 47 16.1**	**+0.9**
JYK	**Kaneyama**	**2.15**	**303**	P	**Pn**	**17 47 16.1**	**+0.3**
JKZ	**Kuzumaki**	**2.44**	**335**	P	**Pn**	**17 47 20.8**	**+1.0**
MJAR	**Matsushiro Arr**	**3.78**	**252**	Pn	**Pn**	**17 47 40.4**	**+2.2**
	0.7nm,0.3s,baz=78,slow=14,SNR=6.7						
USRK	**Ussuriysk Ar.**	**10.31**	**312**	LR	LR	17 52 53.8	
	comp=Z,51nm,21.1s,baz=183,slow=35						
MKAR	**Makanchi Array**	**44.59**	**302**	P	**P**	**17 54 53.4**	**+2.0**
	0.3nm,0.7s,baz=61,slow=9.5,SNR=4.5						
WRA	**Warramunga Arr**	**57.95**	**189**	P	**P**	**17 56 30.3**	**-1.5**
	0.3nm,0.8s,baz=7.1,slow=7.0,SNR=4.8						
ASAR	**Alice Springs**	**61.67**	**189**	P	**P**	**17 56 56.3**	**-1.0**
	0.3nm,0.9s,baz=0.0,slow=6.5,SNR=2.8						

ISCJB 18 17:47:38.0±1.0, 9°.61N±0°.05×73°56W±0°.08, h19km, Error ellipse: s-maj=12.4km s-min=6.3km az=25.5
RSNC 18 17:47:38.6±0.9, 9°.53N×73°.52W, h2km±13km, ML2.8
FUNV 18 17:47:39.8, 9°.73N×73°.74W, h36km, MW2.8
ISC 18 17:47:37.0±1.3, 9°61N±0°.06×73°69W±0°.09, h19km, n12, σ1s59/15, Northern Colombia

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
OCAC	**Ocana**	**1.41**	**165**	*eP*	**Pn**	**17 48 01.2**	**-0.6**
OCAC				*eS*	**Sn**	**17 48 20.1**	**+0.2**
OCAC				*i*		17 48 31.3	
	comp=Z,86nm,0.7s						
VIRV	**Villa del Rosa**	**1.55**	**55**	*eP*	**Pn**	**17 48 03.1**	**-0.5**
VIRV				*eS*	**Sn**	**17 48 21.4**	**-1.8**
GRMC	**Gramalote, San**	**2.07**	**155**	*eP*	**Pn**	**17 48 09.7**	**-1.2**
GRMC				*eS*	**Sn**	**17 48 32.8**	**-3.6**
GRMC				*i*		17 48 41.8	
	comp=Z,152nm,0.5s						
CBRI	**Barrientos, No**	**2.08**	**155**	*eP*	**Pn**	**17 48 11.2**	**+0.1**
MOTC	**Monteria, Cord**	**2.11**	**247**	*eP*	**Pn**	**17 48 15.6**	**+0.8**
CAPV	**Capacho**	**2.20**	**142**	*eP*	**Pn**	**17 48 14.4**	**+1.6**
VIGV	**El Vigia**	**2.42**	**108**	*eP*	**Pn**	**17 48 17.1**	**+1.5**
PAMC	**Pamplona, Colo**	**2.46**	**156**	*eP*	**Pn**	**17 48 17.8**	**+1.3**
SOCV	**Socops**	**3.10**	**115**	*eP*	**Pn**	**17 48 26.5**	**+1.6**
CURV	**Curarigua**	**3.70**	**83**	*eP*	**Pn**	**17 48 34.8**	**+1.5**
MONV	**Montecano**	**4.34**	**57**	*eP*	**Pn**	**17 48 42.2**	**+0.2**
BAUV	**El Baul**	**5.62**	**96**	*eP*	**Pn**	**17 49 00.3**	**+0.7**

MEX 18 17:49:46.2±0.3, 30°27N×109°64W, h11km±21km, MD3.8, Sonora

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CGIG		**1.44**	**86**	*eP*	Pn	17 50 08.8	-3.6
CGIG				*eS*	Sn	17 50 26.4	-5.0
HSIG		**1.69**	**223**	*eP*	Pn	17 50 12.2	-3.5
HSIG				*i* S	Sn	17 50 32.6	-4.7

NIED 18 17:54:00, 36°.30N×141°.30E, h26km, Mw4.2 Best double couple: M0 1.91000×10^15 NP1:φs97.00000°, δ22.00000°, λ-43.00000°. NP2:φs228.00000°, δ75.00000°, λ-107.00000°.
IDC 18 17:54:14.2±0.7, 36°.24N×141°.49E, h0km, mb3.8/10, mb1 3.9/14, mb1mx3.8/49, mbtmp3.8/14, ML3.3/4, MS3.2/2, Ms1 3.2/2, ms1mx2.6/42, Error ellipse: s-maj=18.8km s-min=15.8km az=108.0
ISCJB 18 17:54:16.2±0.9, 36°.32N±0°.03×141°.45E±0°.05, h22km±5km, mb3.9/13, MS2.9/1, Error ellipse: s-maj=7.1km s-min=5.1km az=5.1
JMA 18 17:54:18.4±0.1, 36°.31N×141°.29E, h47km±2km, M3.8
JMA Felt I J1.
NEIC 18 17:54:18.6±3.1, 36°.29N×141°.49E, h29km±22km, mb4.7/3, Error ellipse: s-maj=12.4km s-min=9.9km az=107.0
ISC 18 17:54:15.4±1.8, 36°30N±0°.04×141°43E±0°.06, h6km±10km, n38, σ0s90/39, mb3.9/13, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CHOJ	**Chosi**	**0.76**	**218**	P	**Pn**	**17 54 32.1**	**-0.5**
CHOJ				S	**Sb**	**17 54 41.7**	**+0.2**
JHO	**Hitachi**	**0.76**	**294**	P	**Pb**	**17 54 31.2**	**+0.2**
JHO				S	**Sg**	**17 54 40.4**	**+0.5**
ONAJ	**Iwakimizuishiy**	**0.95**	**328**	P	**Pb**	**17 54 34.7**	**+0.5**
ONAJ				*eS*	**Sg**	**17 54 45.2**	**-0.6**
JYT	**Yasato**	**1.00**	**266**	P	**Pg**	**17 54 34.6**	**0.0**
JYT				S	**Sg**	**17 54 46.7**	**-0.9**
JFK	**Kawauchi**	**1.15**	**337**	P	**Pg**	**17 54 37.5**	**0.0**
JFK				*eS*	**Sg**	**17 54 51.0**	**-1.4**
JFT	**Otama**	**1.50**	**324**	P	**Pn**	**17 54 43.2**	**+0.4**
JFT				S	**Sn**	**17 55 00.8**	**-1.8**
JAG	**Ashikaga**	**1.60**	**275**	P	**Pn**	**17 54 43.7**	**-0.5**
JAG				S	**Sn**	**17 55 02.0**	**-3.2**
MJAR	**Matsushiro Arr**	**2.61**	**276**	Pn	**Pn**	**17 54 58.8**	**+0.7**
	8.8nm,0.3s,baz=112,slow=8.6,SNR=77						
MJAR				Sn	**Sn**	**17 55 30.6**	**+0.5**
	14nm,0.3s,baz=125,slow=7.8,SNR=87						
MJAR				LR	LR	17 56 17.7	
	comp=Z,485nm,18.5s,baz=120,slow=47						
MAJO	**Matsushiro**	**2.61**	**276**	*ePn*	**Pn**	**17 54 58.5**	**+0.4**
MAT	**Matsushiro**	**2.61**	**276**	P	**Pn**	**17 54 58.5**	**+0.4**
MAT				S	**Sn**	**17 55 31.6**	**+1.5**
JHJ2	**Mitsune**	**3.45**	**203**	*eP*	**Pn**	**17 55 11.0**	**+1.4**
JHJ	**Hachijo jima 2**	**3.45**	**204**	Pn	**Pn**	**17 55 10.0**	**+0.4**
	13nm,0.3s,baz=128,slow=23,SNR=13						
JHJ				Sn	**Sn**	**17 55 49.6**	**-1.2**
	47nm,0.3s,baz=83,slow=22,SNR=12						
ASAJ	**Asahikawa**	**7.86**	**6**	Pn	**Pn**	**17 56 09.8**	**-0.3**
	0.6nm,0.3s,baz=210,slow=13,SNR=7.6						
USRK	**Ussuriysk Ar.**	**10.68**	**320**	Pn	**Pn**	**17 56 49.3**	**+0.5**
	0.2nm,0.3s,baz=134,slow=12,SNR=2.4						
KSRS	**Korea Array**	**10.88**	**280**	Pn	Pn	17 56 56.2	+4.6
	0.1nm,0.3s,baz=94,slow=13,SNR=3.8						
KSAR	**Wonju Array Be**	**10.91**	**280**	Pn	Pn	17 56 56.2	+4.2
MA2	**Magadan**	**24.07**	**12**	LR	LR	18 08 51.8	
	comp=Z,46nm,20.8s,baz=240,slow=36						
H11N2	**WAKE ISLAND Hy**	**27.77**	**120**	T	T	18 29 25.0	
	baz=311,slow=75,SNR=25						
H11N1	**WAKE ISLAND Hy**	**27.78**	**120**	T	T	18 29 26.8	
	baz=311,slow=75,SNR=29						
H11N3	**WAKE ISLAND Hy**	**27.79**	**120**	T	T	18 29 21.8	
	baz=311,slow=75,SNR=26						
SONM	**Songino Array**	**28.21**	**305**	P	**P**	**18 00 09.6**	**+0.7**
	1.0nm,0.5s,baz=110,slow=9.8,SNR=6.2						
H11S1	**WAKE ISLAND Hy**	**28.46**	**122**	T	T	18 30 11.8	
	baz=314,slow=76,SNR=74						
H11S3	**WAKE ISLAND Hy**	**28.46**	**122**	T	T	18 30 11.9	
	baz=314,slow=76,SNR=47						
H11S2	**WAKE ISLAND Hy**	**28.47**	**122**	T	T	18 30 13.0	
	baz=314,slow=76,SNR=40						
ZALV	**Zalesovo Beam**	**42.42**	**313**	P	**P**	**18 02 10.7**	**+0.1**
	0.6nm,0.5s,baz=87,slow=8.8,SNR=3.9						
MKAR	**Makanchi Array**	**44.52**	**303**	P	**P**	**18 02 27.9**	**+0.2**
	0.6nm,0.8s,baz=88,slow=11,SNR=5.5						
KURK	**Kurchatov**	**46.40**	**309**	*eP*	**P**	**18 02 42.0**	**-0.4**
	4.7nm,0.9s						
TKM2	**Tokmak 2**	**49.99**	**299**	*eP*	**P**	**18 03 10.7**	**+0.1**
ILAR	**Eielson Array**	**50.10**	**32**	P	**P**	**18 03 10.9**	**+0.1**
	1.8nm,0.8s,baz=269,slow=6.2,SNR=18						
WRA	**Warramunga Arr**	**56.34**	**188**	P	**P**	**18 03 55.9**	**-1.3**
	1.8nm,0.9s,baz=5.4,slow=7.5,SNR=9.8						
ASAR	**Alice Springs**	**60.07**	**188**	P	**P**	**18 04 22.7**	**-0.5**
	1.0nm,0.8s,baz=9.7,slow=6.0,SNR=9.3						
YKA	**Yellowknife Ar**	**64.43**	**30**	P	**P**	**18 04 51.9**	**-0.1**
	0.8nm,1.0s,baz=296,slow=6.2,SNR=7.8						
AKASG	**Malin Array Be**	**74.88**	**322**	P	**P**	**18 05 56.6**	**-0.1**
	0.2nm,0.4s,baz=47,slow=5.6,SNR=4.2						
BOZ	**Bozeman (W)**	**75.23**	**44**	*eP*	**P**	**18 05 59.5**	**+0.4**
	30nm,2.4s						
LAO	**LASA Array**	**77.52**	**41**	*eP*	**P**	**18 06 11.9**	**0.0**
	9.4nm,1.1s						
PDAR	**Pinedale Array**	**78.17**	**45**	P	**P**	**18 06 16.2**	**+0.4**
	0.5nm,0.8s,baz=270,slow=1.5,SNR=4.2						
TXAR	**Lajitas Array**	**90.56**	**52**	P	**P**	**18 07 18.8**	**+0.1**
	0.2nm,0.7s,baz=298,slow=2.7,SNR=4.3						
LPAZ	**La Paz**	**147.04**	**61**	PKPbc	**PKPdf**	**18 13 59.0**	**+0.7**
	0.7nm,0.6s,baz=12,slow=7.1,SNR=3.7						

ISCJB 18 17:57:08.2±0.9, 17°.2S±0°.4×178°.7W±0°.2, h547km, mb3.9/6, Error ellipse: s-maj=62.6km s-min=10.0km az=156.3
IDC 18 17:57:08.6±1.5, 17°.60S×178°.44W, h559km±20km, mb3.5/6, mb1 3.7/8, mb1mx3.3/43, mbtmp4.4/8, Error ellipse: s-maj=75.3km s-min=13.8km az=149.0
ISC 18 17:57:08.5±1.0, 17°3S±0°.4×178°6W±0°.2, h547km, n13, σ1s17/15, mb4.1/6, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
AFI	**Afiamalu**	**7.40**	**64**	P	**P**	**17 59 02.0**	**+1.6**
	5.1nm,0.3s,baz=112,slow=11,SNR=5.4						
AFI				S	**S**	**18 00 31.3**	**-0.7**
	1.7nm,0.3s,baz=17,slow=19,SNR=1.9						
DZM	**Mont Dzumac**	**14.85**	**249**	P	**P**	**18 00 18.1**	**+1.5**
	0.9nm,0.3s,baz=92,slow=19,SNR=8.7						
STKA	**Stephens Creek**	**38.75**	**240**	P	**P**	**18 03 45.9**	**-0.4**
	9.0nm,0.6s,baz=92,slow=10,SNR=34						
WRA	**Warramunga Arr**	**44.55**	**259**	P	**P**	**18 04 31.5**	**-0.7**
	5.9nm,0.5s,baz=95,slow=7.1,SNR=126						
WRA				PcP	**PcP**	**18 06 02.2**	**-1.3**
	0.6nm,0.3s,baz=90,slow=3.7,SNR=4.6						
ASAR	**Alice Springs**	**44.77**	**254**	P	**P**	**18 04 33.8**	**-0.1**
	42nm,0.6s,baz=87,slow=8.8,SNR=827						
ASAR				PcP	**PcP**	**18 06 02.8**	**-1.6**
	1.5nm,0.5s,baz=102,slow=3.7,SNR=5.8						
ILAR	**Eielson Array**	**85.33**	**13**	P	**P**	**18 08 47.2**	**-0.3**
	0.2nm,0.4s,baz=218,slow=5.2,SNR=6.0						
PDAR	**Pinedale Array**	**87.04**	**44**	P	**P**	**18 08 56.4**	**-0.1**
	0.2nm,0.6s,baz=237,slow=5.0,SNR=2.9						
CMAR	**Chiang Mai Arr**	**88.48**	**290**	P	**P**	**18 09 05.0**	**+1.6**
	1.2nm,0.8s,baz=98,slow=2.9,SNR=7.4						
MKAR	**Makanchi Array**	**108.55**	**314**	PKiKP	**PKiKP**	**18 14 33.4**	**-1.9**
	0.3nm,0.5s,baz=37,slow=0.7,SNR=4.3						
BRTR	**Keskin Array B**	**144.19**	**315**	PKP	PKPbc	18 15 42.2	-0.1
	2.4nm,0.8s,baz=84,slow=2.4,SNR=5.8						
DPC	**Dobruska-Polom**	**144.89**	**343**	*ePKP*	**PKPab**	**18 15 44.6**	**-0.2**
KHC	**Kasperske Hory**	**146.72**	**345**	*ePKP*	**PKPbc**	**18 15 49.2**	**-0.1**
GERES	**GERESS Array B**	**146.96**	**345**	PKPbc	**PKPbc**	**18 15 49.6**	**-0.4**
	1.3nm,0.4s,baz=32,slow=3.1,SNR=8.7						

NIED 18 18:02:00, 39°.40N×142°.90E, h14km, Mw4.7 Best double couple: M0 1.14000×10^16 NP1:φs198.00000°, δ22.00000°, λ-90.00000°. NP2:φs18.00000°, δ68.00000°, λ-90.00000°.
IDC 18 18:02:33.5±0.5, 39°.42N×142°.74E, h0km, mb4.5/29, mb1 4.7/32, mb1mx4.6/44, mbtmp4.5/32, ML4.1/3, MS4.0/20, Ms1 4.0/20, ms1mx3.8/35, Error ellipse: s-maj=13.9km s-min=11.8km az=108.0
JMA 18 18:02:34.7±0.1, 39°.44N×142°.89E, h23km±2km, M4.8
JMA Felt II J1.
MOS 18 18:02:34.8±1.2, 39°.51N×142°.87E, h19km, mb5.1/52, MS4.1/10, Error ellipse: s-maj=6.9km s-min=4.1km az=103.6
ISCJB 18 18:02:35.2±0.8, 39°.50N±0°.03×142°.85E±0°.04, h19km±4km, mb4.8/127, MS4.3/29, Error ellipse: s-maj=5.8km s-min=3.4km az=36.0
BJI 18 18:02:38.1, 39°.49N×142°.74E, h50km, mb4.8/48, mB5.0/37, Ms4.6/39, Ms7 4.4/35
NEIC 18 18:02:40.1±0.7, 39°.54N×142°.74E, h43km±6km, mb4.8/31, Error ellipse: s-maj=7.5km s-min=4.7km az=132.0
ISC 18 18:02:37.6±0.6, 39°49N±0°.04×142°83E±0°.04, h27km±3km, h26km:pP-P, n295, σ1s58/320, mb4.9/130, MS4.4/30, 10C-26D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MIYJ	**Miyakonagasawa**	**0.79**	**276**	P	**Pb**	**18 02 50.3**	**-2.4**
MIYJ				S	**Sb**	**18 03 01.0**	**-1.9**
JTH	**Tanohata**	**0.87**	**301**	P	**Pb**	**18 02 51.9**	**-2.1**
JTH				S	**Sb**	**18 03 04.5**	**-0.8**
OFUJ	**Ofunato**	**0.99**	**246**	P	**Pn**	**18 02 53.1**	**-2.7**
OFUJ				S	**Sb**	**18 03 06.3**	**-2.5**
JOM	**Ohasama**	**1.19**	**270**	P	**Pn**	**18 02 56.8**	**-1.7**
JOM				S	**Sn**	**18 03 13.0**	**-0.8**
JKZ	**Kuzumaki**	**1.26**	**293**	P	**Pn**	**18 02 58.1**	**-1.4**
JKZ				S	**Sn**	**18 03 14.5**	**-1.0**
JANG	**Nango**	**1.34**	**311**	P	**Pn**	**18 02 59.0**	**-1.6**
JANG				*eS*	**Sn**	**18 03 16.6**	**-0.9**
JMK	**Ichinoseki**	**1.36**	**247**	P	**Pn**	**18 02 59.1**	**-1.8**
JMK				S	**Sn**	**18 03 17.1**	**-0.9**
JIO	**Ouri**	**1.55**	**229**	P	**Pn**	**18 03 01.4**	**-2.1**
JIO				S	**Sn**	**

comp=Z,61nm,1.3s
TYV Tymovskoe 11.37 359 *e*P **Pn 18 05 19.0 +0.9**
TYV *e* 18 07 30.0
TYV pmax pmax
comp=Z,6.0nm,0.6s
TYV MLR MLR
comp=E,2μm,19.0s
JNU Nakatsue 11.54 240 Pn **Pn 18 05 23.5 +2.8**
comp=E,0.6nm,0.3s,baz=19,slow=4.5,SNR=5.2
KSRS Korea Array 11.86 265 Pn **Pn 18 05 28.8 +3.8**
comp=E,0.9nm,0.3s,baz=73,slow=14,SNR=17
KSRS LR LR 18 09 33.0
comp=E,795nm,19.3s,baz=70,slow=36
KSAR Wonju Array Be 11.90 265 P **Pn 18 05 28.8 +3.4**
KSAR Wonju Array Be 11.90 265 Pn **Pn 18 05 28.8 +3.4**
KLR Kul'dur 12.54 325 Pn **Pn 18 05 33.9 -0.3**
comp=E,0.6nm,0.3s,baz=163,slow=14,SNR=7.0
KLR LR LR 18 10 32.2
comp=E,1μm,18.3s,baz=158,slow=38
NKL Nikolayevsk 13.74 355 *e*P **Pn 18 05 49.0 -1.5**
NKL *e* 18 08 20.0
NKL pmax pmax
comp=Z,9.0nm,0.8s
NKL MLR MLR
comp=N,900nm,17.0s
NKL MLR MLR
comp=E,500nm,17.0s
NKL MLR MLR
comp=Z,1μm,17.0s
PETK Petropavlovsk- 17.01 32 P **Pn 18 06 30.6 -2.8**
comp=Z,0.2nm,0.3s,baz=206,slow=9.9,SNR=5.3
PETK LR LR 18 14 07.5
comp=Z,276nm,18.4s,baz=217,slow=41
PET Petropavlovsk 17.35 34 *e*P P 18 06 47.8 +9.0
PET *e*S **S 18 09 57.7 -0.1**
PET pmax pmax
comp=Z,54nm,1.4s
PET MLR MLR
comp=Z,500nm,13.0s
PET MLR MLR
comp=Z,700nm,15.0s
BJT Baijiatuau 20.48 280 *e*P **P 18 07 09.0 -4.3**
BJT Baijiatuau 20.48 280 *e*P **P 18 07 08.9 -4.3**
TIA Tai'an 20.54 269 *e*P **P 18 07 11.0 -3.0**
TIA pmax pmax
comp=Z,20nm,0.9s
TIA LR LR
comp=Z,290nm,10.1s
TIA LR LR
comp=Z,1μm,13.5s
TIA LR LR
comp=Z,2μm,12.6s
MA2 Magadan 20.72 11 P **P 18 07 16.2 +0.5**
comp=Z,19nm,0.7s,baz=218,slow=10.0,SNR=35
CIT Chita 23.78 311 *e*P **P 18 07 47.8 -0.1**
CIT *e* 18 07 55.2
CIT pmax pmax
comp=Z,142nm,1.4s
YAK Yakutsk 23.95 345 P **P 18 07 48.7 -0.6**
comp=Z,47nm,0.6s,baz=118,slow=0.2,SNR=29
YAK Yakutsk 23.95 345 *e*P **P 18 07 47.0 -2.3**
YAK *e* 18 11 31.8
YAK *e*S **S 18 11 59.3 -4.8**
YAK *e* 18 18 52.9
YAK pmax pmax
comp=Z,36nm,1.0s
YAK pmax pmax
comp=N,11nm,0.9s
YAK pmax pmax
comp=Z,34nm,0.9s
YAK pmax pmax
comp=N,14nm,0.8s
YAK pmax pmax
comp=E,8.0nm,0.8s
YAK smax smax
comp=E,79nm,2.3s
YAK smax smax
comp=N,63nm,2.4s
YAK MLR MLR
comp=Z,641nm,14.0s
YAK MLR MLR
comp=N,381nm,13.0s
YAK MLR MLR
comp=E,188nm,13.0s
SEY Seymchan 24.17 11 P **P 18 07 51.4 +0.1**
comp=E,38nm,0.9s,baz=201,slow=7.9,SNR=86
SEY Seymchan 24.17 11⇑ *i*P **P 18 07 51.7 +0.4**
WHN Wuhan 24.89 258 P **P 18 07 57.5 -0.7**
WHN pmax pmax
comp=E,96nm,1.2s
WHN LR LR
comp=E,870nm,10.3s
WHN LR LR
comp=E,1μm,11.7s
WHN LR LR
comp=E,2μm,15.4s
GUMO Guam 25.87 175 LR LR 18 17 44.6
comp=E,94nm,21.3s,baz=7.0,slow=35
BOD Bodaibo 26.12 324 *e*P **P 18 08 08.2 -0.8**
BOD pmax pmax
comp=Z,17nm,0.9s
ULN Ulaanbaatar 27.00 300 *de*P **P 18 08 17.3 0.0**
ULN pmax pmax
comp=Z,15nm,1.2s
ULN Ulaanbaatar 27.00 300 *e*P **P 18 08 16.7 -0.5**
comp=Z,11nm,1.0s
ULN Ulaanbaatar 27.00 300 P **P 18 08 16.8 -0.5**
SNR=6.2
ULN P **P 18 08 16.8 -0.5**
SNR=6.2
SONM Songino Array 27.44 300 P **P 18 08 21.2 0.0**
comp=Z,4.2nm,0.6s,baz=102,slow=8.8,SNR=21
SONM PcP **PcP 18 11 40.3 +1.0**
comp=Z,1.2nm,0.7s,baz=144,slow=2.8,SNR=3.7
SONM LR LR 18 19 42.5
comp=Z,1μm,18.4s,baz=82,slow=38
H11N2 WAKE ISLAND Hy 28.58 127 T T 18 39 05.5
baz=318,slow=75,SNR=4024
H11N1 WAKE ISLAND Hy 28.59 127 T T 18 39 10.0
baz=318,slow=75,SNR=4507
H11N3 WAKE ISLAND Hy 28.60 127 T T 18 39 12.6
baz=318,slow=75,SNR=4066
ENH Enshi 28.73 262 *e*P **P 18 08 31.6 -1.1**
comp=Z,36nm,1.1s
H11S1 WAKE ISLAND Hy 29.39 129 T T 18 40 09.3
baz=319,slow=76,SNR=147
H11S3 WAKE ISLAND Hy 29.39 129 T T 18 40 05.9
baz=319,slow=76,SNR=189
H11S2 WAKE ISLAND Hy 29.40 129 T T 18 40 21.8
baz=319,slow=76,SNR=172
TLY Talaya 29.65 307 P **P 18 08 40.5 -0.2**
comp=Z,3.5nm,0.5s,baz=109,slow=7.3,SNR=12
TLY Talaya 29.65 307 *e*P **P 18 08 41.2 +0.5**
TLY *e* 18 09 50.6
TLY *e*S **S 18 13 38.8 +4.3**
TLY pmax pmax
comp=Z,23nm,1.4s
TLY MLR MLR
comp=Z,667nm,15.0s
TLY Talaya 29.65 307 P **P 18 08 41.2 +0.5**
SNR=13
TLY P **P 18 08 41.2 +0.5**
SNR=13
ZAK Zakamensk 29.70 305 *e*P **P 18 08 41.0 -0.3**
ZAK pmax pmax
comp=Z,21nm,1.6s
MOY Mondy 31.28 307 *e*P **P 18 08 55.0 -0.2**
MOY pmax pmax
comp=Z,35nm,2.1s
BILL Bilibino 31.36 17 *c i*P **P 18 08 56.0 +0.5**
BILL *e* 18 09 02.4
BILL *e* 18 09 55.1
BILL pmax pmax
comp=Z,13nm,1.2s
BILL MLR MLR
comp=Z,169nm,16.0s
BILL Bilibino 31.36 17 *e*P **P 18 08 55.7 +0.2**
comp=Z,421nm,3.0s
GYA Guiyang 32.79 258⇑ *i*P **P 18 09 07.9 -0.8**
GYA pmax pmax
comp=Z,40nm,1.1s
GTA Gaotai 32.98 284 *e*P **P 18 09 10.8 +0.5**
GTA pP pP 18 09 18.5 +0.3
GTA PcP **PcP 18 11 55.0 +1.1**
GTA S **S 18 14 25.1 -2.0**
GTA SS **SnSn 18 16 24.3 -1.3**

GTA pmax pmax
comp=Z,10.0nm,1.5s
GTA pmax pmax
comp=Z,76nm,4.1s
GTA LR LR
comp=Z,380nm,16.2s
GTA LR LR
comp=Z,1μm,16.2s
GTA LR LR
comp=Z,1μm,17.6s
TIXI Tiksi 33.00 352⇓ *e*P **P 18 09 10.1 +0.2**
TIXI pmax pmax
comp=Z,7.0nm,1.7s
TIXI Tiksi 33.00 352 *e*P **P 18 09 09.2 -0.7**
comp=Z,2.2nm,0.6s
KMI Kunming 36.48 259 P **P 18 09 40.8 0.0**
KMI pP pP 18 09 48.6 -0.1
KMI S **S 18 15 24.8 +3.4**
KMI sS sS 18 15 41.3 +6.8
KMI pmax pmax
comp=Z,34nm,1.3s
KMI pmax pmax
comp=Z,170nm,3.9s
KMI LR LR
comp=Z,250nm,15.5s
KMI LR LR
comp=Z,430nm,15.1s
KMI LR LR
comp=Z,380nm,17.3s
SKNT Sakolnakorn 40.49 248 P **P 18 10 14.7 +0.4**
comp=Z,24nm,0.9s
WMQ Urumqi 40.78 295 P **P 18 10 17.3 +0.8**
WMQ pmax pmax
comp=Z,24nm,0.5s
WMQ pmax pmax
comp=Z,10.0nm,3.6s
WMQ LR LR
comp=Z,140nm,7.0s
WMQ LR LR
comp=Z,120nm,8.0s
WMQ LR LR
comp=Z,85nm,7.0s
TNTI Ternate 41.05 204 P **P 18 10 19.5 +0.7**
comp=Z,33nm,1.5s,comp=Z,658nm
TNTI Ternate 41.05 204 *e*P **P 18 10 18.6 -0.2**
comp=Z,63nm,1.3s
CRAI Chiangrai 41.08 255 P **P 18 10 20.4 +1.3**
comp=Z,35nm,0.9s
ZALV Zalesovo Beam 41.13 310 P **P 18 10 19.1 0.0**
comp=Z,14nm,0.4s,baz=94,slow=7.8,SNR=88
ZALV PcP **PcP 18 12 18.5 +0.4**
comp=Z,3.0nm,0.5s,baz=87,slow=2.2,SNR=4.6
ZALV LR LR 18 27 58.9
comp=Z,368nm,19.4s,baz=70,slow=37
NRIK Noril'sk 41.53 334 P **P 18 10 21.6 -0.6**
comp=Z,3.3nm,0.5s,baz=104,slow=5.5,SNR=8.6
NRIK LR LR 18 28 43.3
comp=Z,561nm,18.5s,baz=105,slow=38
SWI Sorong 41.54 198 P **P 18 10 23.2 +0.4**
comp=Z,20nm,0.8s
KHON Khomkaen 41.74 248 P **P 18 10 25.1 +0.5**
comp=Z,11nm,1.0s
NVS Novosibirsk 41.99 312 *e*P **P 18 10 25.8 -0.4**
NVS pmax pmax
comp=N,1.0nm,0.5s
NVS pmax pmax
comp=E,6.0nm,0.5s
NVS pmax pmax
comp=Z,8.0nm,0.5s
LOEI Loei 42.11 251 P **P 18 10 25.0 -2.6**
comp=Z,18nm,0.8s
CMAI Chiengmai2 42.25 256 P **P 18 10 29.3 +0.4**
comp=Z,12nm,1.4s,comp=Z,1μm
UTTA Uttaradit 42.48 252 P **P 18 10 31.1 +0.5**
comp=Z,3.8nm,1.1s,comp=Z,41nm
LAMP Lampang 42.67 253 P **P 18 10 33.8 +1.7**
comp=Z,4.7nm,1.0s
PBKT Sadao Pong 42.93 250 P **P 18 10 34.6 +0.4**
comp=Z,15nm,1.3s
PHIT Phitsanulok 42.94 251 P **P 18 10 36.4 +2.1**
comp=Z,9.8nm,1.1s
CMMT Chiang Mai 43.00 254 P **P 18 10 35.1 +0.3**
comp=Z,12nm,1.3s
CHTO Chiang Mai 43.01 254 P **P 18 10 35.1 +0.3**
comp=Z,52nm,1.4s
CHTO Chiang Mai 43.01 254 *e*P **P 18 10 34.3 -0.6**
CHTO pmax pmax
comp=Z,10.0nm,1.0s
CHTO Chiang Mai 43.01 254 *e*P **P 18 10 34.2 -0.6**
comp=Z,9.6nm,1.0s
CHTO Chiang Mai 43.01 254 P **P 18 10 35.1 +0.3**
SNR=5.4
LSA Lhasa 43.14 273 *e*P **P 18 10 37.0 +0.6**
LSA pmax pmax
comp=Z,5.0nm,0.6s
LSA Lhasa 43.14 273 *e*P **P 18 10 37.0 +0.6**
comp=Z,5.0nm,0.6s
CMAR Chiang Mai Arr 43.23 254 P **P 18 10 36.5 -0.1**
comp=Z,2.4nm,0.8s,baz=48,slow=6.1,SNR=15
CMAR PcP **PcP 18 12 26.7 +1.1**
comp=Z,1.3nm,0.8s,baz=43,slow=1.6,SNR=5.3
CMAR LR LR 18 30 23.9
comp=Z,185nm,19.1s,baz=89,slow=39
MRSI Marisa 43.27 211 P **P 18 10 37.8 +0.9**
comp=Z,36nm,1.2s,comp=Z,3μm
MK31 Makanchi Array 43.80 300 *e*P **P 18 10 40.5 -0.5**
MK31 pmax pmax
comp=Z,7.0nm,0.6s
MKAR Makanchi Array 43.80 300 P **P 18 10 40.8 -0.2**
comp=Z,5.1nm,0.5s,baz=86,slow=10,SNR=121
MKAR LR LR 18 29 40.3
comp=Z,466nm,18.0s,baz=74,slow=37
SRAK Srakaew 43.86 246 P **P 18 10 39.0 -2.7**
comp=Z,53nm,1.2s,comp=Z,515nm
SANI Sanana 44.14 205 P **P 18 10 45.0 +1.1**
comp=Z,34nm,0.9s
NAYO Nakonayok 44.17 247 P **P 18 10 44.9 +0.7**
comp=Z,11nm,1.3s,comp=Z,669nm
CHBT CHBT 44.52 245 P **P 18 10 47.7 +0.7**
comp=Z,30nm,1.5s
KDAK Kodiak Island 44.54 44 *i*P **P 18 10 49.7 +3.0**
BPAW Bear Paw Mtn. 45.06 35 *e*P **P 18 10 52.1 +1.2**
comp=Z,2.5nm,1.3s
KTH Kantishna Hill 45.09 35 *e*P **P 18 10 52.2 +1.0**
comp=Z,22nm,1.1s
KURK Kurchatov 45.33 306 P **P 18 10 53.3 +0.2**
KURK Kurchatov 45.33 306 P **P 18 10 53.2 +0.2**
KURK Kurchatov 45.33 306 P **P 18 10 52.7 -0.4**
SNR=14
KURBB Kurchatov Arra 45.41 306 P **P 18 10 53.2 -0.5**
comp=Z,17nm,0.5s,baz=81,slow=8.5,SNR=201
SRDT SRDT 45.73 249 P **P 18 10 58.1 +1.5**
comp=Z,35nm,1.4s,comp=Z,9μm
PHET Kaeng Krachan 46.32 247 P **P 18 11 03.1 +1.8**
comp=Z,6.2nm,1.0s,comp=Z,94nm
SML Sawmill 46.36 38 *e*P **P 18 11 02.2 +1.1**
SML pmax pmax
comp=Z,3.0nm,1.0s
SML Sawmill 46.36 38 *e*P **P 18 11 02.2 +1.1**
comp=Z,3.1nm,1.0s
PDGK Podgornoye 46.65 296 P **P 18 11 02.6 -1.0**
PDGK pmax pmax
comp=Z,24nm,1.5s
ILAR Eielson Array 46.83 34 P **P 18 11 05.6 +0.9**
comp=Z,4.4nm,0.6s,baz=265,slow=6.2,SNR=46
ILAR LR LR 18 34 11.5
comp=Z,44nm,18.2s,baz=326,slow=40
GUN Gumba 48.06 274 *e*P **P 18 11 15.1 -0.1**
BMRM Bremner River 48.24 39 *e*P **P 18 11 16.9 +1.2**
comp=Z,11nm,1.0s
KKN Kakani 48.58 274 *e*P **P 18 11 18.9 -0.1**
comp=Z,37nm,0.8s
STKI Sintang 48.59 224 P **P 18 11 19.4 +0.5**
comp=Z,24nm,1.4s,comp=Z,5μm
PKIN Phulchoki 48.59 274 *e*P **P 18 11 18.6 -0.6**
DMN Daman 48.80 274 *e*P **P 18 11 20.7 -0.1**
GKN Gorkha 48.97 275 *e*P **P 18 11 21.6 -0.4**
EGAK Eagle 49.27 33 *e*P **P 18 11 23.9 +0.3**
comp=Z,3.3nm,0.7s
TKM2 Tokmak 2 49.48 297 *e*P **P 18 11 26.0 +0.3**
TKM2 pmax pmax
comp=Z,34nm,1.1s
TKM2 Tokmak 2 49.48 297 *e*P **P 18 11 26.0 +0.3**
comp=Z,34nm,1.1s
SKLT Songkhla 49.67 241 P **P 18 11 29.9 +2.7**
comp=Z,13nm,1.1s
BVA0 Borovoye Array 49.77 311 P **P 18 11 27.0 -0.6**

BVA0 pmax pmax
comp=Z,9.0nm,0.8s
BRVK Borovoye 49.83 311 *d i*P **P 18 11 27.9 0.0**
BRVK pmax pmax
comp=Z,23nm,1.7s
BRVK Borovoye 49.83 311 *e*P **P 18 11 27.7 -0.3**
comp=Z,11nm,0.9s
BRVK Borovoye 49.83 311 P **P 18 11 28.0 0.0**
SNR=6.9
BRVK P **P 18 11 28.0 0.0**
SNR=6.9
KOLN Koldanda 49.88 275 *e*P **P 18 11 28.9 -0.1**
comp=Z,16nm,0.5s
BBKI Banjar Baru 49.91 218 P **P 18 11 29.8 +0.8**
comp=Z,28nm,1.5s,comp=Z,1μm
OTUK Ortayu 49.92 305 P **P 18 11 28.0 -0.8**
OTUK pmax pmax
comp=Z,13nm,0.9s
FRU Bishkek 50.18 297⇑ *i*P **P 18 11 30.0 -0.9**
FRU *e* 18 12 51.0
FRU pmax pmax
comp=Z,40nm,1.9s
PYUN Piuthan 50.19 276 *e*P **P 18 11 31.3 -0.1**
comp=Z,75nm,1.0s
AAK Ala-Archa 50.34 297 *d i*P **P 18 11 32.1 -0.1**
AAK pmax pmax
comp=Z,38nm,1.4s
AAK Ala-Archa 50.34 297 *e*P **P 18 11 31.5 -0.8**
comp=Z,9.3nm,0.9s
AAK Ala-Archa 50.34 297 P **P 18 11 32.1 -0.1**
SNR=7.5
AAK P **P 18 11 32.1 -0.1**
SNR=7.5
KSH Kashi 50.45 293 P **P 18 11 37.5 +4.4**
KSH *e*PP **PP 18 13 36.3 +7.6**
KSH S **S 18 18 40.1 -5.1**
KSH pmax pmax
comp=Z,100nm,5.2s
KSH LR LR
comp=Z,400nm,6.6s
KSH LR LR
comp=Z,410nm,12.5s
KSH LR LR
comp=Z,540nm,15.9s
EKS2 Erkin-Say 50.82 297 *e*P **P 18 11 35.5 -0.3**
EKS2 pmax pmax
comp=Z,8.0nm,0.9s
EKS2 Erkin-Say 50.82 297 *e*P **P 18 11 35.5 -0.3**
comp=Z,7.6nm,0.9s
INK Inuvik 51.69 28 P **P 18 11 43.0 +1.2**
comp=Z,3.7nm,0.6s,baz=300,slow=7.2,SNR=25
MNAS Manas 51.76 298 P **P 18 11 42.6 -0.3**
MNAS pmax pmax
comp=Z,22nm,0.8s
SFK Sufi-Kurgan 52.01 294 P **P 18 11 44.5 -0.4**
SFK pmax pmax
comp=Z,24nm,1.3s
KKAR Karatay Array 52.89 299 *e*P **P 18 11 50.5 -0.6**
KKAR pmax pmax
comp=Z,7.0nm,0.7s
KKAR Karatay Array 52.89 299 *e*P **P 18 11 50.5 -0.6**
comp=Z,7.0nm,0.7s
SVE Sverdlovsk 54.06 318 *ce*P **P 18 11 59.9 +0.4**
SVE pmax pmax
comp=Z,37nm,0.9s
SVE MLR MLR
comp=Z,756nm,15.0s
ARU Arti 55.28 318 *d i*P **P 18 12 08.2 -0.1**
ARU 18 13 07.8
ARU 18 14 11.1
ARU S **S 18 19 52.1 +2.0**
ARU SS **SS 18 23 32.9 -1.1**
ARU pmax pmax
comp=Z,71nm,1.7s
ARU MLR MLR
comp=Z,677nm,17.0s
ARU Arti 55.28 318 *e*P **P 18 12 07.5 -0.7**
comp=Z,24nm,0.6s
DLBC Dease Lake 56.01 39 P **P 18 12 15.4 +1.8**
comp=Z,2.3nm,0.9s,baz=298,slow=7.4,SNR=4.8
GSI Gunungsitoli 56.02 239 P **P 18 12 15.6 +1.5**
comp=Z,32nm,1.3s
AB31 Akbulak array 57.23 309 *i*P **P 18 12 21.7 -0.6**
AB31 pmax pmax
comp=Z,11nm,0.7s
ABKAR Akbulak array 57.23 309 *e*P **P 18 12 21.8 -0.5**
comp=Z,12nm,0.5s
WRAB Tennant Creek 59.65 189 P **P 18 12 38.0 -1.4**
WRAB pmax pmax
comp=Z,36nm,1.7s
WRA Warramunga Arr 59.66 189 P **P 18 12 38.0 -1.4**
comp=Z,8.0nm,0.9s,baz=7.0,slow=6.9,SNR=43
RES Resolute Bay 59.94 15 *e*P **P 18 12 40.7 -0.1**
RES pmax pmax
comp=Z,10.0nm,1.0s
RES Resolute Bay 59.94 15 *e*P **P 18 12 40.7 -0.1**
comp=Z,10nm,1.0s
YKA Yellowknife Ar 61.13 31 P **P 18 12 49.5 +0.5**
comp=Z,1.4nm,0.6s,baz=300,slow=6.3,SNR=27
ARCES ARCESS Array B 62.09 339 P **P 18 12 55.5 0.0**
comp=Z,5.8nm,0.9s,baz=41,slow=8.0,SNR=12
ARCES LR LR 18 44 39.4
comp=Z,99nm,18.6s,baz=50,slow=41
ASAR Alice Springs 63.38 189 P **P 18 13 03.5 -1.0**
comp=Z,2.5nm,0.8s,baz=12,slow=5.5,SNR=29
DAG Danmarks Havn 63.42 355 *i*P **P 18 13 04.4 +0.2**
comp=Z,8.7nm,0.9s
DAG Danmarks Havn 63.42 355 *i*P **P 18 13 04.4 +0.2**
DAG pmax pmax
comp=Z,7.0nm,0.9s
GEYT Alibeck 63.63 298 P **P 18 13 06.0 -0.3**
comp=Z,4.7nm,0.6s,baz=37,slow=3.7,SNR=13
MOS Moscow 65.94 323 *e*P **P 18 13 20.4 -0.6**
MOS *e* 18 13 31.7
MOS *e* 18 13 56.5
MOS pmax pmax
comp=Z,60nm,1.1s
VRH Novokhopyorsk 66.51 318 *e*P **P 18 13 22.8 -1.9**
VRH pmax pmax
comp=Z,10.0nm,0.9s
OBN Obninsk 66.80 323⇑ *e*P **P 18 13 25.8 -0.7**
OBN *e* 18 13 30.2
OBN *e* 18 13 53.9
OBN *e* 18 15 50.1
OBN pmax pmax
comp=Z,87nm,2.5s
OBN MLR MLR
comp=Z,408nm,15.0s
OBN Obninsk 66.80 323 *e*P **P 18 13 25.7 -0.7**
comp=Z,61nm,1.2s
LPSR Galich'ya Gora 67.13 320 *e*P **P 18 13 28.5 -0.1**
LPSR pmax pmax
comp=Z,20nm,0.9s
FINES FINESS Array B 67.16 332 P **P 18 13 28.5 -0.1**
comp=Z,9.7nm,0.7s,baz=38,slow=9.6,SNR=30
FINES LR LR 18 48 16.7
comp=Z,254nm,18.9s,baz=35,slow=41
FINES FINESS Array B 67.16 332 *i*P **P 18 13 28.5 -0.1**
FINES pmax pmax
comp=Z,8.0nm,0.7s
VSR Storozhevoye 67.82 319 *e*P **P 18 13 32.3 -0.7**
VSR pmax pmax
comp=Z,20nm,1.1s
SUMG Summit 68.23 0 *i*P **P 18 13 36.8 +1.1**
comp=Z,19nm,1.2s
SUMG Summit 68.23 0 *i*P **P 18 13 36.8 +1.1**
SUMG pmax pmax
comp=Z,19nm,1.2s
SUMG Summit 68.23 0 *e*P **P 18 13 36.6 +0.9**
comp=Z,16nm,1.0s
VSU Vasula 68.90 330⇑ *e*P **P 18 13 40.0 +0.4**
VSU pmax pmax
comp=Z,125nm,2.5s
GOF Gofitskoye 69.29 312⇑ *e*P **P 18 13 43.4 +1.1**
GOF pmax pmax
comp=Z,35nm,0.7s
WVOR Wild Horse Val 70.07 51 *e*P **P 18 13 48.9 +1.6**
WVOR pmax pmax
comp=Z,4.0nm,0.9s
WVOR Wild Horse Val 70.07 51 *e*P **P 18 13 48.9 +1.6**
comp=Z,4.1nm,0.9s
ZEI Tsey 70.10 309 *e*P **P 18 13 45.3 -2.3**
ZEI pmax pmax
comp=Z,15nm,0.8s
KIV Kislovodsk 70.14 311 *i*P **P 18 13 48.3 +0.6**
SNR=19

KIV	**Kislovodsk**	**70.14**	**311**	*d* iP		**P**	**18 13 47.7**	**0.0**
KIV				*e*			18 13 53.9	
KIV				*e*			18 14 09.5	
KIV	comp=Z,68nm,1.2s				pmax	pmax		
KIV	comp=Z,142nm,17.0s				MLR	MLR		
KIV	**Kislovodsk**	**70.14**	**311**	*e*P		**P**	**18 13 48.2**	**+0.6**
KIV	comp=Z,54nm,1.0s **Kislovodsk** SNR=15	**70.14**	**311**	P		**P**	**18 13 49.1**	**+1.4**
KIV	SNR=15				P	**P**	**18 13 49.1**	**+1.4**
KBZ	**Khabaz**	**70.15**	**311**	P		**P**	**18 13 48.0**	**+0.4**
KBZ	comp=Z,10nm,0.8s,baz=62,slow=3.1,SNR=25 **Khabaz**	**70.15**	**311**	P		**P**	**18 13 48.0**	**+0.4**
NEY	**Neytrino**	**70.53**	**310**⇓	*e*P		**P**	**18 13 52.0**	**+1.8**
NEY	comp=Z,3.0nm,1.1s				pmax	pmax		
STKA	**Stephens Creek**	**71.02**	**181**	P		**P**	**18 13 52.5**	**-0.4**
STKA	comp=Z,2.0nm,0.9s,baz=9.8,slow=6.8,SNR=4.4				LR	LR	18 50 42.4	
FFC	**Flin Flon**	**71.04**	**34**	*e*P		**P**	**18 13 53.2**	**+0.3**
FFC	comp=Z,3.0nm,0.8s				pmax	pmax		
FFC	**Flin Flon**	**71.04**	**34**	*e*P		**P**	**18 13 53.1**	**+0.3**
GNI	comp=Z,3.0nm,0.8s **Garni**	**71.13**	**307**	*de*P		**P**	**18 13 55.0**	**+1.1**
GNI	comp=Z,95nm,1.7s				pmax	pmax		
AKH	**Akhalkalaki**	**71.16**	**308**⇓	*i*P		**P**	**18 13 55.7**	**+1.7**
NACGM	**Naroch**	**71.28**	**327**	*e*		**P**	**18 13 55.0**	**+0.7**
BOZ	**Bozeman (W)**	**72.18**	**45**	*e*P		**P**	**18 14 01.0**	**+0.9**
BOZ	comp=Z,3.0nm,0.6s				pmax	pmax		
BOZ	**Bozeman (W)**	**72.18**	**45**	*e*P		**P**	**18 14 01.0**	**+0.9**
HATD	comp=Z,2.8nm,0.6s **Hatta, Dubai**	**72.24**	**288**	*i* P		**P**	**18 14 00.6**	**0.0**
NB2	SNR=9.7 **NORSAR Subarra**	**72.35**	**338**	P		**P**	**18 14 00.5**	**-0.2**
NOA	comp=Z,7.9nm,0.7s,baz=38,slow=6.2 **NORSAR Array B**	**72.35**	**338**	P		**P**	**18 14 00.5**	**-0.2**
ASHO	comp=Z,4.8nm,0.5s,baz=39,slow=6.0,SNR=33 **Ashiyiah**	**72.38**	**288**	*i* P		**P**	**18 14 02.7**	**+1.2**
ASHO	SNR=7.1 **Ashiyiah**	**72.38**	**288**	P		**P**	**18 14 02.1**	**+0.7**
NAZ	**Nazwa, Dubai**	**72.50**	**288**	P		**P**	**18 14 01.8**	**-0.3**
ANN	**Anapa**	**72.63**	**314**	*e*P		**P**	**18 13 59.5**	**-3.0**
ANN				*e**PP		**pP**	**18 14 12.1**	**+1.1**
ANN				*e*			18 14 18.1	
ANN				*e*			18 16 41.0	
ANN				*e*PPP		PPP	18 18 30.2	
ANN				*e*S		**S**	**18 23 21.6**	**-4.1**
ANN				*e*SSS		SSS	18 31 22.7	
ANN	comp=Z,25nm,1.2s				pmax	pmax		
ANN	comp=E,108nm,18.0s				MLR	MLR		
ANN	comp=Z,261nm,18.0s				MLR	MLR		
ANN	comp=N,252nm,18.0s				MLR	MLR		
NVAR	**Mina Array Bea**	**72.64**	**54**	P		**P**	**18 14 04.0**	**+1.0**
FAQ	comp=N,2.2nm,0.8s,baz=287,slow=6.9,SNR=6.4 **Al Faqa, Dubai**	**72.69**	**288**	P		**P**	**18 14 03.7**	**+0.5**
ASUD	**Al Ashush, Dub**	**72.95**	**288**	P		**P**	**18 14 04.9**	**+0.1**
AKASG	**Malin Array Be**	**73.03**	**322**	P		**P**	**18 14 04.8**	**0.0**
KIEV	comp=N,6.1nm,0.6s,baz=43,slow=6.0,SNR=35 **Kiev**	**73.05**	**322**	*e*P		**P**	**18 14 04.8**	**-0.1**
KIEV	comp=Z,15nm,0.9s				pmax	pmax		
KIEV	**Kiev** comp=Z,15nm,0.9s	**73.05**	**322**	*e*P		**P**	**18 14 04.8**	**-0.1**
H17A	**Grant Village** comp=Z,6.0nm,1.0s	**73.55**	**46**	*e*P		**P**	**18 14 11.5**	**+3.2**
MOOW	**Moose Ponds** comp=Z,17nm,1.8s	**73.86**	**46**	*e*P		**P**	**18 14 11.7**	**+1.6**
SIM	**Simferopol'**	**74.35**	**316**	*e*P		P	18 14 17.7	+5.0
SIM	comp=Z,12nm,1.3s				pmax	pmax		
SIM	comp=N,100nm,18.0s				MLR	MLR		
PDAR	**Pinedale Array** comp=N,1.0nm,0.6s,baz=266,slow=1.6,SNR=16	**75.16**	**47**	P		**P**	**18 14 18.5**	**+0.8**
PDAR					LR	LR	18 42 25.1	
SORM	comp=N,17nm,21.7s,baz=318,slow=32 **Soroca**	**75.19**	**321**⇓	*i*P		**P**	**18 14 18.2**	**+0.7**
ULM	**Lac du Bonnet** comp=N,1.5nm,0.5s,baz=349,slow=6.3,SNR=3.0	**76.84**	**34**	P		**P**	**18 14 28.1**	**+1.3**
BURAR	**Bucovina Array**	**77.07**	**322**⇓	*i*P		**P**	**18 14 29.3**	**+0.9**
BURAR	**Bucovina Array**	**77.07**	**322**	P		**P**	**18 14 29.2**	**+0.9**
TESR	**Tescani**	**77.16**	**321**⇓	*i*P		**P**	**18 14 29.9**	**+1.2**
CFR	**Carcaliu**	**77.34**	**319**⇓	*i*P		**P**	**18 14 30.0**	**+0.3**
ODBI	**Odobesti**	**77.48**	**320**⇓	*i*P		**P**	**18 14 32.0**	**+1.5**
KOLS	**Kolonicke sedl**	**77.48**	**324**	*e*P		**P**	**18 14 31.3**	**+0.8**
KOLS	comp=Z,50nm,2.3s				pmax	pmax		
KOLS	**Kolonicke sedl**	**77.48**	**324**	*e*P		**P**	**18 14 31.3**	**+0.8**
VRI	**Vrincioaia**	**77.57**	**320**⇓	*i*P		**P**	**18 14 32.6**	**+1.5**
VRI	**Vrincioaia**	**77.57**	**320**	P		**P**	**18 14 32.5**	**+1.5**
STHS	**Stebnicka Huta**	**77.58**	**325**	*e*P		**P**	**18 14 32.8**	**+1.7**
STHS	comp=Z,5.0nm,1.0s				pmax	pmax		
STHS	**Stebnicka Huta**	**77.58**	**325**	*e*P		**P**	**18 14 32.8**	**+1.7**
OJC	**Ojcow**	**77.61**	**327**	*e*P		**P**	**18 14 31.6**	**+0.4**
OJC	**Ojcow**	**77.61**	**327**	*e*P		**P**	**18 14 31.7**	**+0.5**
UZH	**Uzhgorod**	**77.69**	**324**	*e*P		**P**	**18 14 31.6**	**0.0**
UZH				*e*			18 14 41.0	
CRVS	**Cervenica-Dubn**	**77.87**	**325**	*e*P		**P**	**18 14 33.6**	**+0.9**
CRVS	**Cervenica-Dubn**	**77.87**	**325**	*e*P		**P**	**18 14 33.6**	**+0.9**
BRTR	**Keskin Array B** comp=Z,2.5nm,0.5s,baz=101,slow=3.7,SNR=16	**78.05**	**312**	P		**P**	**18 14 34.4**	**+0.3**
BRTR	comp=Z,63nm,18.7s,baz=34,slow=40				LR	LR	18 54 08.6	
BRTR	**Keskin Array B**	**78.05**	**312**	*i* P		**P**	**18 14 34.7**	**+0.7**
BRTR	comp=Z,3.0nm,0.5s				pmax	pmax		
MSAB	**Monastry St. A**	**78.26**	**318**⇓	*i*P		**P**	**18 14 36.7**	**+1.8**
LANS	**Liptovska Anna**	**78.56**	**326**	*e*P		**P**	**18 14 39.0**	**+2.5**
LANS	**Liptovska Anna**	**78.56**	**326**	*e*P		**P**	**18 14 39.0**	**+2.5**
KSP	**Ksiaz**	**78.59**	**329**	*e*P		**P**	**18 14 37.3**	**+0.7**
KSP	**Ksiaz**	**78.59**	**329**	*e*P		**P**	**18 14 37.3**	**+0.7**
KECS	**Kecovo**	**78.61**	**325**	*e*P		**P**	**18 14 38.5**	**+1.7**
KECS	comp=Z,4.0nm,1.6s				pmax	pmax		
KECS	**Kecovo**	**78.61**	**325**	*e*P		**P**	**18 14 38.5**	**+1.7**
VOIR		**78.70**	**321**⇓	*i*P		**P**	**18 14 39.3**	**+1.9**
MORC	**Moravsky Berou**	**78.90**	**327**⇓	*i*P		**P**	**18 14 39.6**	**+1.2**
MORC	**Moravsky Berou**	**78.90**	**327**	P		**P**	**18 14 39.6**	**+1.2**
ARR	**Arges**	**78.96**	**321**⇓	*i*P		**P**	**18 14 40.4**	**+1.6**
DPC	**Dobruska-Polom**	**78.96**	**328**	*e*P		**P**	**18 14 39.9**	**+1.2**
DPC				*e*pP		**sP**	**18 14 51.2**	**+0.8**
DPC	**Dobruska-Polom**	**78.96**	**328**	*e*P		**P**	**18 14 39.9**	**+1.2**
DPC				*e*			18 14 51.2	
PSZ	**Piszkesteto**	**79.30**	**325**⇓	*i*P		**P**	**18 14 42.5**	**+1.9**
PSZ	**Piszkesteto**	**79.30**	**325**	*e*P		**P**	**18 14 41.4**	**+0.8**
PSZ	comp=Z,42nm,1.8s				pmax	pmax		
PSZ	**Piszkesteto** comp=Z,42nm,1.8s	**79.30**	**325**	*e*P		**P**	**18 14 41.4**	**+0.8**
LOT	**Lotru**	**79.32**	**321**⇓	*i*P		**P**	**18 14 41.5**	**+0.6**
VYHS	**Vyhne**	**79.33**	**326**	*e*P		**P**	**18 14 42.0**	**+1.3**
VYHS	comp=Z,10.0nm,1.5s				pmax	pmax		
VYHS	**Vyhne**	**79.33**	**326**	*e*P		**P**	**18 14 42.0**	**+1.3**
BRG	**Berggiesshubel**	**79.50**	**330**	*e*P		**P**	**18 14 42.5**	**+0.9**
BRG	comp=Z,5.7nm,0.8s				*e*		18 14 53.3	
BRG	comp=Z,14nm,1.5s				*e*		18 14 53.3	
BRG	**Berggiesshubel**	**79.50**	**330**	*e*P		**P**	**18 14 42.5**	**+0.9**
BRG				*e*			18 14 53.3	
BRG	comp=Z,6.0nm,0.8s				pmax	pmax		
BRG	comp=Z,14nm,1.5s				pmax	pmax		
CLL	**Collm**	**79.51**	**331**	*i* P		**P**	**18 14 41.5**	**-0.1**
CLL	comp=Z,7.0nm,0.9s			*e*			18 14 53.0	
CLL					LmH		18 49 00.0	
CLL	comp=N,100nm,20.1s				LmH		18 49 00.0	
CLL	comp=E,200nm,18.9s **Collm**	**79.51**	**331**	*i* P		**P**	**18 14 41.5**	**-0.1**
CLL				*e*			18 14 53.0	
CLL	comp=Z,7.0nm,0.9s				pmax	pmax		
PVCC	**Panska Ves**	**79.52**	**329**	*e*P		**P**	**18 14 43.1**	**+1.4**
PVCC	**Panska Ves**	**79.52**	**329**	*e*P		**P**	**18 14 43.1**	**+1.4**
VRAC	**Vranov**	**79.66**	**328**⇓	*i*P		**P**	**18 14 44.2**	**+1.7**
VRAC	**Vranov**	**79.66**	**328**	P		**P**	**18 14 44.2**	**+1.7**
PRU	**Pruhonice**	**79.96**	**329**	*e*P		**P**	**18 14 45.1**	**+1.0**
PRU				*e*PCP		**pP**	**18 14 53.5**	**+0.9**
PRU				*e*	AMS	AMS	18 56 10.0	
PRU	comp=Z,300nm,17.4s **Pruhonice**	**79.96**	**329**	*e*P		**P**	**18 14 45.1**	**+1.0**
PRU				*e*			18 14 53.5	
PRU					MLR	MLR		
KHC	comp=Z,300nm,17.4s **Kasperske Hory**	**81.02**	**329**	*e*P		**P**	**18 14 50.3**	**+0.4**
KHC	comp=Z,2.0nm,0.8s				pmax	pmax		
KHC	**Kasperske Hory** comp=Z,2.0nm,0.8s	**81.02**	**329**	*e*P		**P**	**18 14 50.3**	**+0.4**
CONA	**Conrad Observa**	**81.03**	**327**	*i* PcP		**P**	**18 14 51.6**	**+1.6**
PKSM	comp=Z,9.1nm,1.3s **Moragy**	**81.15**	**324**⇓	*i*P		**P**	**18 14 50.6**	**+0.1**
GERES	**GERESS Array B**	**81.20**	**329**	P		**P**	**18 14 51.4**	**+0.5**
GERES	comp=Z,1.3nm,0.5s,baz=40,slow=6.2,SNR=15				LR	LR	18 54 12.8	
ANMO	comp=Z,178nm,18.2s,baz=36,slow=38 **Albuquerque**	**82.16**	**51**⇓	*e*P		**P**	**18 14 57.7**	**+1.3**
ANMO	comp=Z,3.0nm,1.2s				pmax	pmax		
SOKA	**Soboth**	**82.37**	**327**	*i* PcP		**P**	**18 14 58.0**	**+0.9**
SCHQ	comp=Z,13nm,1.2s,SNR=5.7 **Schefferville**	**82.67**	**17**	LR		LR	18 53 57.5	
RETA	comp=Z,55nm,19.9s,baz=33,slow=37 **Reutte**	**83.46**	**330**	*i* PcP		**P**	**18 15 03.5**	**+0.8**
BFO	comp=Z,17nm,1.2s,SNR=8.0 **Black Forest**	**83.69**	**331**	*e*P		**P**	**18 15 04.0**	**+0.2**
BFO	comp=Z,24nm,1.4s				pmax	pmax		
BFO	**Black Forest** comp=Z,24nm,1.4s	**83.69**	**331**	*e*P		**P**	**18 15 04.0**	**+0.2**
CDF	**Champ du Feu**	**84.01**	**332**	*e*P		**P**	**18 15 05.4**	**-0.1**
CDF	comp=Z,36nm,1.8s				pmax	pmax		
PMOR	**Pomariorio Ree** comp=Z,13nm,0.2s	**84.16**	**115**	*e*T		T	19 47 42.2	
PPT2	**Papeete2** comp=Z,168nm,23.2s	**84.77**	**118**	*e*LR		LR	18 42 16.7	
TAOE	**Nuku Hiva Isla** comp=Z,118nm,21.0s	**85.71**	**105**	*e*LR		LR	18 42 05.4	
LOR	**Lormes**	**86.20**	**333**	*e*P		**P**	**18 15 16.3**	**-0.1**
LOR	comp=Z,18nm,1.1s				pmax	pmax		
LDF	**La Druitiere**	**86.35**	**336**	*e*P		**P**	**18 15 17.3**	**+0.2**
LDF	comp=Z,29nm,1.6s				pmax	pmax		
LPL	**La Plagne**	**86.65**	**331**	*e*P		**P**	**18 15 20.0**	**+1.1**
LPL	comp=Z,11nm,1.3s				pmax	pmax		
SMF	**Signal de Mont**	**86.74**	**333**	*e*P		**P**	**18 15 19.1**	**0.0**
SMF	comp=Z,18nm,1.3s				pmax	pmax		
TXAR	**Lajitas Array**	**87.75**	**53**	P		**P**	**18 15 25.3**	**+0.9**
MFF	comp=Z,0.9nm,0.5s,baz=305,slow=3.8,SNR=8.8 **Saint Martin d**	**88.12**	**335**	*e*P		**P**	**18 15 26.1**	**+0.4**
MFF	comp=Z,10.0nm,1.0s				pmax	pmax		
CAF	**Calviac**	**88.85**	**333**	*e*P		**P**	**18 15 29.9**	**+0.6**
CAF	comp=Z,5.0nm,0.9s				pmax	pmax		
LFF	**La Frestale**	**89.29**	**334**	*e*P		**P**	**18 15 31.9**	**+0.6**
LFF	comp=Z,11nm,1.0s				pmax	pmax		
TORD	**Torodi Ar. Bea**	**116.34**	**317**	PKP		**PKPdf**	**18 21 18.8**	**-0.3**
SNAA	comp=Z,0.3nm,0.5s,baz=48,slow=1.4,SNR=2.4 **Sanae**	**143.43**	**197**	P		PKPab	18 22 04.9	+0.2
SNAA	**Sanae**	**143.43**	**197**	*e*PKIKP		PKPab	18 22 04.5	-0.2
SNAA	**Sanae**	**143.43**	**197**	*e*PKPpre		PKPab	18 22 04.5	-0.2
LPAZ	**La Paz**	**144.47**	**58**	PKP		PKPbc	18 22 11.3	+0.1
VNA2	comp=Z,1.2nm,0.5s,baz=37,slow=4.0,SNR=5.9 **Neumayer--Watz** baz=79,slow=2.2	**144.99**	**197**	P		**PKPab**	**18 22 10.6**	**+0.1**
VNA3	**Neumayer Olymp**	**145.23**	**195**	P		**PKPbc**	**18 22 11.1**	**-0.2**
VNA1	**Neumayer--Stat**	**145.39**	**196**	P		**PKPbc**	**18 22 11.7**	**0.0**

WEL 18 18:11:26.9±0.5, 38.10S×178.82E, h26km±2km, ML3.7/5, 3C-4D, Error ellipse: s-maj=4.6km s-min=2.3km az=90.0, Off east coast of North Island

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
WMGZ	**Waiomatatini S**	**0.42**	**311**	⇓P*		Pb	18 11 35.8	-0.2
WMGZ				S*		Sn	18 11 44.0	-0.3
PUZ	**Puketiti**	**0.44**	**273**	⇓P*		Pb	18 11 34.9	-1.4
PUZ				S*		Sb	18 11 42.2	-0.5
PUZ				AML		AML	18 11 43.6	
CNGZ	**Carnagh Statio**	**0.62**	**231**	P*		Pn	18 11 39.6	-0.4
CNGZ				S*		Sn	18 11 50.5	+1.4
PKGZ	**Pakihiroa**	**0.62**	**290**	P*		Pb	18 11 38.5	-0.8
TWGZ	**Tauwhareparae**	**0.67**	**263**	⇑P*		Pb	18 11 39.5	-0.5
TWGZ				S*		Sn	18 11 50.3	-0.1
MXZ	**Matakaoa Point**	**0.67**	**323**	P*		Pn	18 11 40.7	0.0
MXZ				AML		AML	18 11 52.5	
MXZ				AML		AML	18 11 52.5	
MXZ				AML		AML	18 11 54.4	
TKGZ	**Te Karaka**	**0.84**	**246**	⇑PN		Pb	18 11 42.4	-0.4
HAZ	**Te Kaha**	**0.89**	**292**	PN		Pb	18 11 43.0	-0.7
RIGZ	**Rimuhau**	**1.03**	**234**	PN		Pn	18 11 45.5	-0.2
MWZ	**Matawai**	**1.04**	**257**	⇑PN		Pn	18 11 45.3	-0.6
MWZ						SN	18 11 59.0	-0.6
MWZ						AML	18 12 00.6	
RAGZ	**Rawiri**	**1.17**	**250**	⇓PN		Pn	18 11 47.5	-0.2
KNZ	**Kokohu**	**1.29**	**224**	PN		Pn	18 11 48.5	-0.7
KNZ						AML	18 11 55.9	
KNZ						AML	18 15 15.6	
SNGZ	**Shannon Statio**	**1.35**	**239**	PN		Pn	18 11 49.9	-0.2
URZ	**Urewera**	**1.36**	**263**	PN		Pn	18 11 50.0	-0.1
URZ						AML	18 12 11.4	
URZ						AML	18 12 12.0	
ARHZ	**Aropaoanui**	**1.84**	**230**	PN		Pn	18 11 56.6	-0.2
NMHZ	**Naumai**	**1.87**	**237**	PN		Pn	18 11 57.4	+0.2
BKZ	**Black Stump Fm**	**2.11**	**239**	⇓PN		Pn	18 12 00.4	-0.2
MCHZ	**McNeill Hill**	**2.13**	**230**	PN		Pn	18 12 00.7	-0.2
BHHZ	**Black Hill Sta**	**2.56**	**236**	PN		Pn	18 12 06.3	-0.5
TSZ	**Takapari Road**	**2.96**	**228**	PN		Pn	18 12 10.4	-1.9
POWZ	**Post Office Ro**	**3.29**	**225**	PN		Pn	18 12 16.2	-0.7

*ISCJB **18** 18:11:47.9±0.5, 6.83N±0.04×73.10W±0.04, h161km±5km, Error ellipse: s-maj=8.5km s-min=3.9km az=39.4*
*FUNV **18** 18:11:48.8, 6.76N×73.14W, h168km, MW3.0*
*RSNC **18** 18:11:50.7±0.7, 6.79N×73.13W, h144km±4km, ML2.9*

ISC 18 18:11:47.9±1.4, 6.82N±0.04×73.10W±0.05, h163km±8km, n29, σ0.97/43, 4C-1D, Northern Colombia

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
BARC	**Barichara**	**0.24**	**199**	*i* P		**Pn**	**18 12 10.1**	**-0.1**
BARC				*e*S		**Sn**	**18 12 24.6**	**-2.7**
BARC				*i*			18 12 27.9	
GIRC	comp=Z,222nm,0.2s **Giron, Santand**	**0.27**	**340**	*e*P		**Pn**	**18 12 10.2**	**0.0**
PAMC	**Pamplona, Colo**	**0.65**	**38**	*e*P		**Pn**	**18 12 12.9**	**+0.7**
PAMC				*i*			18 12 13.4	
PAMC	comp=Z,79nm,0.2s			*e*S		**Sn**	**18 12 29.5**	**-1.1**
BRRC	**Barranca, Sant**	**0.67**	**295**⇓	*i*P		**Pn**	**18 12 11.9**	**+0.2**
BRRC				*e*S		**Sn**	**18 12 28.9**	**-0.9**
BRRC				*i*			18 12 30.9	
GRMC	comp=Z,118nm,0.2s **Gramalote, San**	**0.94**	**18**	*i* P		**Pn**	**18 12 15.9**	**+2.2**
GRMC				*e*S		**Sn**	**18 12 35.4**	**+1.9**
GRMC				*i*			18 12 38.6	
CBRI	comp=Z,96nm,0.4s **Barrientos, No**	**0.94**	**19**	*e*P		**Pn**	**18 12 14.7**	**+0.9**
CBRI				*e*S		**Sn**	**18 12 33.1**	**-0.5**
CBRI				*i*			18 12 38.4	
CAPV	comp=Z,87nm,0.3s **Capacho**	**1.30**	**37**⇑	*i*P		**Pn**	**18 12 18.0**	**+1.2**
CAPV				*e*S		**Sn**	**18 12 39.6**	**+0.6**
YOPC	**Yopal, Colombi**	**1.61**	**155**	*e*P		**Pn**	**18 12 20.8**	**+1.0**
YOPC				*e*S		**Sn**	**18 12 43.5**	**-0.8**
NORC	**Norcasia**	**2.16**	**235**	*e*P		**Pn**	**18 12 26.3**	**+0.5**
NORC				*e*S		**Sn**	**18 12 54.1**	**-0.8**
CHIC	**Chingaza**	**2.27**	**196**	*e*P		**Pn**	**18 12 28.2**	**+0.8**
CHIC				*e*S		**Sn**	**18 12 57.8**	**-0.1**
CHIC				*i*			18 13 01.3	
ROSC	comp=Z,70nm,0.5s **El Rosal**	**2.31**	**212**	*e*P		**Pn**	**18 12 28.9**	**+1.0**
HELC	**Santa Helena**	**2.49**	**256**	*e*P		**Pn**	**18 12 31.0**	**+1.0**
HELC				*e*S		**Sn**	**18 13 02.5**	**+0.1**
HELC				*i*			18 13 08.7	
VIGV	comp=Z,46nm,0.3s **El Vigia**	**2.64**	**41**⇑	*e*P		**Pn**	**18 12 32.5**	**+1.1**
VIGV				*e*S		**Sn**	**18 13 04.4**	**-0.9**
SOCV	**Socops**	**2.66**	**57**⇑	*e*P		**Pn**	**18 12 32.4**	**+0.7**
SOCV				*e*S		**Sn**	**18 13 05.0**	**-0.5**
VILC	**Villavicencio,**	**2.76**	**192**	*e*P		**Pn**	**18 12 33.5**	**+0.5**
GUYC	**Guyana, Colomb**	**2.77**	**235**	*e*P		**Pn**	**18 12 33.6**	**+0.1**
DBBC	**Dabeiba**	**3.09**	**274**	*e*P		**Pn**	**18 12 37.5**	**+0.4**
TOLC	**Tolima**	**3.13**	**225**	*e*P		**Pn**	**18 12 39.1**	**+1.2**
PRAC	**Prado**	**3.56**	**210**	*e*P		**Pn**	**18 12 43.4**	**+0.4**
PRAC				*e*S		**Sn**	**18 13 25.6**	**-0.3**
PRAC	comp=Z,107nm,0.3s			*i*			18 13 32.2	
ELOV	**Elorza**	**3.60**	**87**	*e*P		**Pn**	**18 12 44.3**	**+0.9**
VIRV	**Villa del Rosa**	**3.72**	**11**	*e*P		**Pn**	**18 12 44.9**	**-0.1**
VIRV				*e*S		**Sn**	**18 13 28.1**	**-1.4**
QARV	**Quebrada Arrib**	**4.22**	**37**⇑	*e*P		**Pn**	**18 12 52.3**	**+0.8**
SANV	**Sanarito**	**4.42**	**53**	*e*P		**Pn**	**18 12 54.2**	**+0.1**
CURV	**Curarigua**	**4.44**	**44**	*e*P		**Pn**	**18 12 55.1**	**+0.7**
DABV	**Dabajuro**	**4.75**	**31**	*e*P		**Pn**	**18 12 58.7**	**+0.4**
TEPV	**Terepaima**	**4.97**	**51**	*e*P		**Pn**	**18 13 01.8**	**+0.5**
BAUV	**El Baul**	**5.44**	**67**	*e*P		**Pn**	**18 13 06.4**	**-1.0**
MAPV	**Macapo**	**5.48**	**57**	*e*P		**Pn**	**18 13 08.0**	**0.0**
MONV	**Montecano**	**5.96**	**31**	*e*P		**Pn**	**18 13 14.2**	**-0.1**

MEX 18 18:17:35.4±0.3, 14.69N×93.05W, h16km±403km, MD3.7, Near coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
PCIG		**1.02**	**351**	*e*P		Pb	18 17 51.2	-3.4
PCIG				*e*S		Sb	18 18 03.4	-4.4
CCIG	**Comitan**	**1.81**	**29**	*i* P		Pn	18 18 01.8	-4.3

IDC 18 18:22:23.6±13.0, 29.13N×82.11E, h0km, mb3.6/1, mb1 3.7/3, mb1mx3.3/43, mbtmp3.6/3, ML3.1/2, Error ellipse: s-maj=364.6km s-min=34.5km az=60.0, Nepal

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
MKAR	**Makanchi Array**	**17.64**	**0**	P	P	Pn	18 26 30.2	-0.5
CMAR	0.1nm,0.3s,baz=174,slow=12,SNR=12 **Chiang Mai Arr**	**18.69**	**121**	P	P		18 26 43.3	-0.2
ZALV	0.0nm,0.3s,baz=302,slow=12,SNR=8.0 **Zalesovo Beam**	**24.88**	**4**	P	P		18 27 48.0	+0.2
	0.9nm,0.6s,baz=180,slow=12,SNR=6.1							

*IDC **18** 18:26:29.4±2.1, 37.45N×142.37E, h0km, mb3.7/4, mb1 3.8/7, mb1mx3.5/36, mbtmp3.8/7, ML3.4/3, Error ellipse: s-maj=48.4km s-min=24.6km az=74.0*
*ISCJB **18** 18:26:33.0±0.8, 37.38N±0.04×142.02E±0.06, h24km, mb3.7/4, Error ellipse: s-maj=7.2km s-min=5.3km az=8.5*
*JMA **18** 18:26:35.2±0.2, 37.37N×141.92E, h37km±4km, M4.1*

ISC 18 18:26:34.6±1.3, 37.41N±0.04×141.94E±0.08, h24km, n16, σ1.48/25, mb3.6/4, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**0.85**	**268**	P		**Pb**	**18 26 50.7**	**0.0**
JFK				S		**Sb**	**18 27 01.1**	**-0.7**
ONAJ	**Iwakimizuishiy**	**0.96**	**252**	P		**Pb**	**18 26 52.1**	**-0.5**
ONAJ				S		**Sb**	**18 27 03.8**	**-1.2**
JMM	**Marumori**	**1.02**	**297**	P		**Pn**	**18 26 53.4**	**0.0**
JMM				S		**Sb**	**18 27 04.9**	**-1.7**
JIO	**Ouri**	**1.15**	**336**	P		**Pn**	**18 26 55.4**	**+0.3**
JIO				S		**Sn**	**18 27 08.9**	**-1.2**
JFT	**Otama**	**1.28**	**275**	P		**Pb**	**18 26 57.8**	**-0.3**
JFT				S		**Sn**	**18 27 13.8**	**+0.3**
JHO	**Hitachi**	**1.36**	**235**	P		**Pn**	**18 26 57.3**	**-0.7**
JHO				S		**Sn**	**18 27 12.4**	**-2.9**
JOU	**Okura**	**1.39**	**314**	P		**Pb**	**18 26 59.3**	**-0.7**
JOU				S		**Sn**	**18 27 16.7**	**+0.5**
MJAR	**Matsushiro Arr**	**3.11**	**255**	Pn		**Pn**	**18 27 24.1**	**+2.0**
MAT	3.1nm,0.3s,baz=323,slow=9.0,SNR=26 **Matsushiro**	**3.11**	**255**	P		**Pn**	**18 27 24.9**	**+2.7**
MAT				S		**Sn**	**18 28 02.4**	**+3.7**
JHJ	**Hachijo jima 2**	**4.63**	**203**	Pn		**Pn**	**18 27 43.4**	**+0.4**
JHJ	14nm,0.3s,baz=335,slow=23,SNR=9.4				S	**Sn**	**18 28 36.0**	**0.0**
ASAJ	17nm,0.3s,baz=236,slow=22,SNR=3.8 **Asahikawa**	**6.72**	**4**	Pn		**Pn**	**18 28 12.5**	**+0.8**
KSRS	0.8nm,0.3s,baz=212,slow=16,SNR=8.5 **Korea Array**	**11.15**	**274**	Pn		**Pn**	**18 29 14.6**	**+2.2**
ZALV	0.1nm,0.3s,baz=82,slow=16,SNR=3.1 **Zalesovo Beam**	**41.98**	**312**	P		**P**	**18 34 24.1**	**+0.6**
MKAR	0.5nm,0.3s,baz=92,slow=8.7,SNR=3.6 **Makanchi Array**	**44.28**	**302**	P		**P**	**18 34 42.2**	**-0.1**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MIYJ	**Miyakonagasawa**	**0.81**	**279**	P	Pb	18 45 29.7	-0.3
MIYJ				S	Sb	18 45 40.4	-0.1
JTH	**Tanohata**	**0.90**	**302**	P	Pb	18 45 31.3	-0.3
JTH				S	Sb	18 45 43.3	+0.1
OFUJ	**Ofunato**	**0.99**	**248**	P	Pn	18 45 32.7	-0.4
OFUJ				S	Sb	18 45 46.0	+0.2
JOM	**Ohasama**	**1.21**	**271**	P	Pn	18 45 36.2	+0.1
JOM				S	Sb	18 45 51.9	-0.1
JKZ	**Kuzumaki**	**1.28**	**295**	P	Pb	18 45 37.7	-0.5
JKZ				S	Sn	18 45 53.3	-0.4
JMK	**Ichinoseki**	**1.36**	**249**	P	Pb	18 45 38.9	-0.6
JMK				S	Sb	18 45 56.1	-0.4
JANG	**Nango**	**1.37**	**312**	P	Pn	18 45 38.4	0.0
JRG	**Rokugo**	**1.72**	**269**	P	Pb	18 45 45.7	+0.1
JRG				S	Sb	18 46 07.6	+0.9
JAH	**Hinai**	**1.85**	**294**	P	Pb	18 45 47.0	-0.9
JAH				S	Sb	18 46 09.6	-1.0
JTM	**Tenmabayashi**	**1.90**	**315**	P	Pb	18 45 47.3	-1.4
JTM				S	Sn	18 46 09.9	+1.0

*ISCJB **18** 18:45:30.7±0.5,38°.95N±0°.04×143°.70E±0°.05,h20km, mb3.9/19,MS3.0/2,Error ellipse: s-maj=6.4km s-min=5.6km az=170.8*
*NEIC **18** 18:45:33.8±0.8,38°.99N×143°.64E,h27km±5km,mb4.3/4, Error ellipse: s-maj=10.3km s-min=6.2km az=115.0*
*IDC **18** 18:45:34.0±0.8,38°.97N×143°.59E,h28km±4km,mb3.6/15, mb1 3.8/19,mb1mx3.7/42,mbtmp3.8/19,ML3.8/3,MS3.0/7, Ms1 3.0/7,ms1mx2.7/47,Error ellipse: s-maj=19.6km s-min=13.4km az=118.0*
*JMA **18** 18:45:48.0±0.3,39°.17N×142°.90E,h26km,M3.9*
ISC 18 18:45:33.1±0.6,**39°.05N**±0°.06×**143°.63E**±0°.06,**h20**km,**n45,** σ1§**03/43,mb3.9**/19,**1C,Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MIYJ	**Miyakonagasawa**	**1.50**	**291**	*e*S	**Sn**	**18 46 17.0**	**-0.7**
OFUJ	**Ofunato**	**1.52**	**272**	P	Pb	18 46 05.2	+4.6
OFUJ				S	**Sn**	**18 46 17.9**	**-0.5**
JTH	**Tanohata**	**1.63**	**304**	*e*S	**Sn**	**18 46 26.8**	**+0.1**
JOM	**Ohasama**	**1.86**	**284**	P	Pb	18 46 11.3	+4.9
JOM				*e*S	**Sn**	**18 46 26.8**	**+0.1**
JAH	**Hinai**	**2.57**	**297**	P	Pb	18 46 23.1	+4.6
JAH				*e*S	**Sb**	**18 46 48.4**	**-1.3**
MJAR	**Matsushiro Arr**	**4.97**	**241**	Pn	**Pn**	**18 46 47.3**	**+0.7**
	2.5nm,0.3s,baz=55,slow=12,SNR=6.4						
MJAR				LR	LR	18 48 50.0	
	comp=Z,154nm,19.5s,baz=90,slow=40						
MAJO	**Matsushiro**	**4.97**	**241**	*e*Pn	**Pn**	**18 46 46.9**	**+0.3**
MAT	**Matsushiro**	**4.97**	**241**	P	**Pn**	**18 46 47.7**	**+1.1**
MAT				*e*S	**Sn**	**18 47 44.6**	**+1.1**
ASAJ	**Asahikawa**	**5.12**	**352**	Pn	**Pn**	**18 46 49.7**	**+1.1**
	1.9nm,0.3s,baz=229,slow=6.4,SNR=8.5						
ASAJ				Sn	**Sn**	**18 47 43.9**	**-3.2**
	2.1nm,0.3s,baz=73,slow=30,SNR=2.4						
JHJ2	**Mitsune**	**6.68**	**209**	*e*Pn	**Pn**	**18 47 07.9**	**-2.1**
JHJ	**Hachijo jima 2**	**6.69**	**209**	Pn	**Pn**	**18 47 08.1**	**-2.1**
	34nm,0.3s,baz=95,slow=22,SNR=8.0						
JHJ				Sn	Sn	18 48 18.1	-7.7
	16nm,0.3s,baz=89,slow=22,SNR=2.8						
JHJ				LR	LR	18 49 27.7	
	comp=Z,181nm,18.3s,baz=45,slow=35						
USRK	**Ussuriysk Ar.**	**10.11**	**304**	Pn	Pn	18 48 00.8	+3.7
	0.2nm,0.3s,baz=113,slow=11,SNR=3.0						
JNU	**Nakatsue**	**11.88**	**244**	LR	LR	18 52 46.8	
	comp=Z,91nm,21.8s,baz=114,slow=37						
KLR	**Kul'dur**	**13.26**	**324**	Pn	**Pn**	**18 48 40.2**	**+0.2**
	0.0nm,0.3s,baz=211,slow=5.9,SNR=1.9						
KLR				LR	LR	18 54 01.9	
	comp=Z,53nm,20.7s,baz=129,slow=38						
PETK	**Petropavlovsk-**	**17.07**	**30**	LR	LR	18 55 40.0	
	comp=Z,34nm,21.9s,baz=241,slow=35						
MA2	**Magadan**	**21.04**	**10**	P	**P**	**18 50 16.6**	**+1.2**
	1.8nm,0.3s,baz=79,slow=3.4,SNR=3.9						
MA2				LR	LR	18 58 53.6	
	comp=Z,39nm,21.7s,baz=236,slow=38						
SEY	**Seymchan**	**24.49**	**10**	P	**P**	**18 50 51.0**	**+0.4**
	2.5nm,0.6s,baz=184,slow=7.8,SNR=15						
ULN	**Ulaanbaatar**	**27.75**	**300**	*e*P	**P**	**18 51 20.4**	**0.0**
	3.3nm,0.8s						
H11N2	**WAKE ISLAND Hy**	**27.82**	**127**	T	T	19 20 28.1	
	baz=319,slow=74,SNR=95						
H11N1	**WAKE ISLAND Hy**	**27.83**	**127**	T	T	19 20 27.7	
	baz=319,slow=74,SNR=99						
H11N3	**WAKE ISLAND Hy**	**27.84**	**127**	T	T	19 20 36.4	
	baz=319,slow=74,SNR=81						
SONM	**Songino Array**	**28.19**	**300**	P	**P**	**18 51 24.6**	**+0.3**
	1.2nm,0.6s,baz=106,slow=11,SNR=3.1						
ENH	**Enshi**	**29.28**	**263**	*e*P	**P**	**18 51 36.4**	**+2.4**
ZALV	**Zalesovo Beam**	**41.88**	**311**	P	**P**	**18 53 21.1**	**-0.6**
	0.7nm,0.4s,baz=93,slow=8.3,SNR=4.4						
ZALV				pP	**sP**	**18 53 30.4**	**0.0**
	2.8nm,0.5s,baz=97,slow=7.5,SNR=10						
CMAR	**Chiang Mai Arr**	**43.70**	**255**	P	**P**	**18 53 36.7**	**-0.2**
	0.4nm,0.7s,baz=45,slow=7.8,SNR=3.7						
MKAR	**Makanchi Array**	**44.56**	**301**	P	**P**	**18 53 43.4**	**-0.1**
	0.5nm,0.7s,baz=87,slow=9.2,SNR=6.9						
KURK	**Kurchatov**	**46.09**	**307**	*e*P	**P**	**18 53 54.5**	**-1.0**
	6.7nm,0.6s						
ILAR	**Eielson Array**	**46.85**	**33**	P	**P**	**18 54 01.6**	**+0.3**
	1.2nm,0.8s,baz=268,slow=6.8,SNR=12						
TKM2	**Tokmak 2**	**50.23**	**298**	*e*P	**P**	**18 54 28.0**	**+0.2**
	1.5nm,0.7s						
INK	**Inuvik**	**51.79**	**28**	P	**P**	**18 54 40.2**	**+1.3**
	1.0nm,0.5s,baz=335,slow=7.1,SNR=8.1						
INK				pP	**sP**	**18 54 48.9**	**+1.1**
	0.7nm,0.4s,baz=273,slow=11,SNR=2.5						
ABKAR	**Akbulak array**	**57.98**	**310**	*e*P	**P**	**18 55 23.3**	**-0.7**
	2.8nm,0.6s						
WRAB	**Tennant Creek**	**59.32**	**190**	P	**P**	**18 55 32.7**	**-0.8**
WRA	**Warramunga Arr**	**59.33**	**190**	P	**P**	**18 55 32.4**	**-1.2**
	1.1nm,0.5s,baz=8.2,slow=6.9,SNR=20						
YKA	**Yellowknife Ar**	**61.18**	**31**	P	**P**	**18 55 45.5**	**-0.3**
	0.3nm,0.7s,baz=304,slow=6.6,SNR=6.1						
ARCES	**ARCESS Array B**	**62.72**	**340**	LR	LR	19 25 54.5	
	comp=Z,22nm,19.1s,baz=282,slow=39						
ASAR	**Alice Springs**	**63.05**	**190**	P	**P**	**18 55 58.1**	**-0.7**
	0.5nm,0.7s,baz=18,slow=7.9,SNR=7.5						
FINES	**FINESS Array B**	**67.84**	**333**	pP	pP	18 56 38.0	+2.2
	1.7nm,0.7s,baz=53,slow=7.4,SNR=2.9						
NB2	**NORSAR Subarra**	**72.99**	**338**	P	**P**	**18 57 01.0**	**0.0**
	comp=Z,2.7nm,0.8s,baz=38,slow=6.2						
NOA	**NORSAR Array B**	**72.99**	**338**	P	**P**	**18 57 00.9**	**0.0**
	comp=Z,1.3nm,0.9s,baz=38,slow=5.9,SNR=3.9						
NOA				pP	**sP**	**18 57 09.9**	**+0.1**
	comp=Z,1.6nm,0.7s,baz=38,slow=6.0,SNR=5.9						
AKASG	**Malin Array Be**	**73.76**	**323**	P	**P**	**18 57 05.4**	**-0.2**
	comp=Z,0.3nm,0.4s,baz=44,slow=6.1,SNR=4.3						
AKASG				pP	**sP**	**18 57 13.9**	**-0.6**
	comp=Z,0.8nm,0.5s,baz=43,slow=6.0,SNR=4.4						
PDAR	**Pinedale Array**	**75.01**	**47**	P	**P**	**18 57 13.8**	**+0.4**
	comp=Z,0.3nm,0.6s,baz=221,slow=1.6,SNR=4.2						
GERES	**GERESS Array B**	**81.90**	**329**	P	**P**	**18 57 50.8**	**-0.3**
	comp=Z,0.3nm,0.3s,baz=37,slow=7.3,SNR=4.0						
GERES				pP	**sP**	**18 57 60.0**	**-0.1**
	comp=Z,0.4nm,0.5s,baz=38,slow=6.8,SNR=3.2						
SYO	**Syowa Base**	**130.80**	**208**	⇑eX	PKPpre	19 04 34.0	
VNA2	**Neumayer--Watz**	**144.74**	**196**	P	**PKPab**	**19 05 06.0**	**-0.1**
	baz=97,slow=1.7						
VNA3	**Neumayer Olymp**	**144.96**	**195**	P	**PKPab**	**19 05 06.2**	**-0.7**

*NIED **18** 18:54:00,38°.70N×144°.10E,h5km,Mw3.6 Best double couple: M₀3.32000×10¹⁴ NP1:φs16.00000°,δ24.00000°, λ-84.00000°. NP2:φs190.00000°,δ66.00000°, λ-93.00000°.*
JMA 18 18:54:08.8±0.2,**38°.68N**×**144°.07E,h24**km,**M3.6,Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**1.92**	**283**	P	Pn	18 54 41.0	+1.1
OFUJ				*e*S	Sn	18 55 04.4	+1.1
JTH	**Tanohata**	**2.12**	**307**	P	Pn	18 54 43.4	+0.6
JIO	**Ouri**	**2.15**	**265**	P	Pn	18 54 43.9	+0.8
JIO				S	Sn	18 55 10.6	+1.7
JMK	**Ichinoseki**	**2.24**	**278**	P	Pn	18 54 45.9	+1.5
JMK				S	Sb	18 55 13.8	-2.1
JOM	**Ohasama**	**2.30**	**291**	P	Pn	18 54 46.7	+1.5
JOM				S	Sn	18 55 14.7	+1.9
JOU	**Okura**	**2.69**	**264**	P	Pn	18 54 52.4	+1.8
JOU				S	Sn	18 55 24.7	+2.3
JMM	**Marumori**	**2.70**	**254**	S	Sn	18 55 23.5	+0.8
JYK	**Kaneyama**	**2.91**	**276**	P	Pn	18 54 56.0	+2.4
JYK				*e*S	Sn	18 55 30.5	+2.7

*IDC **18** 19:10:44.4±0.9,38°.27N×144°.65E,h0km,mb3.9/10, mb1 4.0/14,mb1mx3.7/56,mbtmp3.9/14,ML3.6/3,Error ellipse: s-maj=23.8km s-min=16.6km az=102.0*
*NEIC **18** 19:10:46.8±4.9,38°.26N×144°.64E,h16km±30km,mb4.3/4, Error ellipse: s-maj=12.9km s-min=10.0km az=102.0*
*ISCJB **18** 19:10:47.0±0.6,38°.33N±0°.05×144°.51E±0°.05,h29km, mb4.0/14,Error ellipse: s-maj=6.9km s-min=5.4km az=150.0*
*JMA **18** 19:10:48.1±0.2,38°.38N×144°.37E,h24km,M4.1*
ISC 18 19:10:49.4±0.8,**38°.35N**±0°.07×**144°.48E**±0°.08,**h29**km,**n32,** σ0§**98/39,mb4.0**/14,**Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**2.32**	**289**	P	**Pn**	**19 11 24.6**	**-1.0**
JIO	**Ouri**	**2.46**	**273**	P	**Pn**	**19 11 26.7**	**-0.9**
JIO				S	**Sn**	**19 11 55.0**	**-1.7**
JMK	**Ichinoseki**	**2.62**	**284**	P	**Pn**	**19 11 29.2**	**-0.6**
JOM	**Ohasama**	**2.73**	**295**	P	**Pn**	**19 11 30.7**	**-0.6**
JMM	**Marumori**	**2.95**	**262**	P	**Pn**	**19 11 33.5**	**-0.8**
JOU	**Okura**	**3.00**	**271**	P	**Pn**	**19 11 35.1**	**+0.1**
JOU				S	**Sn**	**19 12 09.8**	**-0.2**
JFK	**Kawauchi**	**3.02**	**252**	P	**Pn**	**19 11 33.9**	**-1.4**
JRG	**Rokugo**	**3.18**	**290**	S	**Sn**	**19 12 14.6**	**+0.2**
JYK	**Kaneyama**	**3.28**	**281**	P	**Pn**	**19 11 38.7**	**-0.1**
JYK				S	**Sn**	**19 12 16.5**	**-0.3**
JFT	**Otama**	**3.38**	**257**	P	**Pn**	**19 11 40.6**	**+0.4**
JFT				S	**Sn**	**19 12 19.2**	**-0.2**
JTM	**Tenmabayashi**	**3.59**	**314**	P	**Pn**	**19 11 43.8**	**+0.7**
JTM				S	**Sn**	**19 12 21.9**	**-2.6**
MJAR	**Matsushiro Arr**	**5.30**	**252**	Pn	**Pn**	**19 12 07.6**	**+0.9**
	3.2nm,0.3s,baz=60,slow=9.2,SNR=41						
MAJO	**Matsushiro**	**5.31**	**252**	*e*Pn	**Pn**	**19 12 06.6**	**-0.1**
	34nm,0.6s						
MAT	**Matsushiro**	**5.31**	**252**	P	**Pn**	**19 12 07.6**	**+0.9**
MAT				*e*S	**Sn**	**19 13 08.2**	**+1.3**
ASAJ	**Asahikawa**	**5.93**	**347**	Pn	**Pn**	**19 12 14.0**	**-1.3**
	0.6nm,0.3s,baz=204,slow=12,SNR=10						
ASAJ				Sn	**Sn**	**19 13 22.2**	**0.0**
	1.1nm,0.3s,baz=208,slow=32,SNR=7.8						
JHJ2	**Mitsune**	**6.46**	**217**	*e*Pn	**Pn**	**19 12 20.8**	**-1.7**
JHJ	**Hachijo jima 2**	**6.47**	**218**	Pn	**Pn**	**19 12 20.7**	**-1.9**
	9.8nm,0.3s,baz=115,slow=22,SNR=7.6						
USRK	**Ussuriysk Ar.**	**11.06**	**306**	Pn	**Pn**	**19 13 27.4**	**+1.8**
	0.1nm,0.3s,baz=106,slow=16,SNR=3.8						
SEY	**Seymchan**	**25.08**	**9**	P	**P**	**19 16 10.8**	**-0.3**
	2.4nm,0.7s,baz=179,slow=5.8,SNR=13						
ENH	**Enshi**	**29.87**	**265**	P	**P**	**19 16 55.3**	**+0.9**
	5.1nm,0.7s						
ZALV	**Zalesovo Beam**	**42.85**	**311**	P	**P**	**19 18 44.6**	**-0.1**
	0.7nm,0.4s,baz=82,slow=11,SNR=4.3						
MKAR	**Makanchi Array**	**45.49**	**302**	P	**P**	**19 19 06.7**	**+0.6**
	1.0nm,0.8s,baz=85,slow=9.4,SNR=12						
KURK	**Kurchatov**	**47.05**	**308**	*e*P	**P**	**19 19 18.4**	**+0.2**
	3.4nm,0.6s						
ILAR	**Eielson Array**	**47.08**	**33**	P	**P**	**19 19 17.8**	**-0.4**
	0.4nm,0.8s,baz=248,slow=6.4,SNR=5.3						
KURBB	**Kurchatov Arra**	**47.12**	**307**	P	**P**	**19 19 19.0**	**+0.3**
	2.5nm,0.5s,baz=81,slow=8.0,SNR=24						
TKM2	**Tokmak 2**	**51.15**	**298**	*e*P	**P**	**19 19 50.0**	**+0.1**
	2.9nm,0.9s						
WRA	**Warramunga Arr**	**58.76**	**191**	P	**P**	**19 20 43.6**	**-1.2**
	1.7nm,0.7s,baz=12,slow=7.2,SNR=12						
ABKAR	**Akbulak array**	**58.95**	**310**	*e*P	**P**	**19 20 46.2**	**+0.3**
	0.8nm,0.7s						
YKA	**Yellowknife Ar**	**61.44**	**31**	P	**P**	**19 21 02.6**	**-0.1**
	1.2nm,1.2s,baz=302,slow=6.7,SNR=6.9						
ASAR	**Alice Springs**	**62.48**	**191**	P	**P**	**19 21 09.2**	**-0.9**
	0.5nm,0.8s,baz=14,slow=9.3,SNR=5.5						
FINES	**FINESS Array B**	**68.77**	**333**	P	**P**	**19 21 50.2**	**-0.1**
	2.4nm,1.0s,baz=9.5,slow=10,SNR=2.6						
KBZ	**Khabaz**	**71.87**	**312**	P	**P**	**19 22 10.6**	**+1.0**
	1.6nm,0.9s,baz=277,slow=1.6,SNR=4.4						

*NIED **18** 19:14:00,39°.60N×140°.40E,h5km,Mw4.7 Best double couple: M₀1.27000×10¹⁶ NP1:φs348.00000°,δ49.00000°, λ178.00000°. NP2:φs79.00000°,δ89.00000°,λ41.00000°.*
*BJI **18** 19:14:23.3,39°.45N×140°.65E,h10km,mb4.5/23,mB4.7/16, Ms4.5/19,Ms7 4.3/19*
*IDC **18** 19:14:26.6±0.5,39°.64N×140°.19E,h0km,mb4.4/25, mb1 4.5/29,mb1mx4.4/49,mbtmp4.4/29,ML3.6/4,MS3.9/20, Ms1 3.9/20,ms1mx3.7/47,Error ellipse: s-maj=15.6km s-min=11.9km az=110.0*
*JMA **18** 19:14:27.2,39°.60N×140°.39E,h6km±1km,M4.9 Broadband fault plane solution: P waves. NP1: φs93.00000°,δ78.00000°,λ19.00000°. NP2:φs359.00000°, δ72.00000°,λ167.00000°. Principal axes: T Plg22.0000°, Azm317.0000°; N Plg68.0000°, Azm125.0000°; P Plg4.0000°, Azm225.0000°;*
*ISCJB **18** 19:14:27.2±0.5,39°.60N±0°.02×140°.32E±0°.03,h13km±3km, mb4.5/79,MS4.0/19 Error ellipse: s-maj=3.8km s-min=3.4km az=16.4*
*MOS **18** 19:14:30.7±1.2,39°.68N×140°.18E,h37km,mb4.7/37, MS4.0/11,Error ellipse: s-maj=7.6km s-min=4.8km az=88.1*
*NEIC **18** 19:14:32.6±0.7,39°.67N×140°.25E,h37km±6km,mb4.6/33, Error ellipse: s-maj=7.9km s-min=5.5km az=128.0*
NEIC Recorded [5L JMA] in Akita.
ISC 18 19:14:28.1±0.9,**39°.61N**±0°.03×**140°.37E**±0°.03,**h9**km±5km, **n182,**σ1§**53**/184,**mb4.6**/79,**MS4.0**/19,**11C-11D,Eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JYW	**Yuwa**	**0.14**	**239**	⇓P	**Pg**	**19 14 30.7**	**-0.6**
JYW				S	**Sg**	**19 14 33.9**	**+0.4**
JRG	**Rokugo**	**0.30**	**136**	⇑P	**Pg**	**19 14 32.9**	**-1.2**
JRG				*e*S	**Sg**	**19 14 37.7**	**-0.4**
JAH	**Hinai**	**0.61**	**20**	⇓P	**Pg**	**19 14 38.9**	**-1.1**
JAH				S	**Sg**	**19 14 47.4**	**-0.6**
JYK	**Kaneyama**	**0.69**	**181**	⇓P	**Pg**	**19 14 39.8**	**-1.7**
JYK				S	**Sg**	**19 14 49.0**	**-1.6**
JOM	**Ohasama**	**0.73**	**101**	⇑P	**Pg**	**19 14 40.5**	**-1.7**
JOM				S	**Sg**	**19 14 50.0**	**-1.7**
JMK	**Ichinoseki**	**0.94**	**135**	P	**Pg**	**19 14 44.0**	**-2.1**
JMK				S	**Sg**	**19 14 56.2**	**-2.0**
JIW	**Iwasaki**	**1.02**	**344**	⇑P	**Pg**	**19 14 46.1**	**-1.6**
JIW				*e*S	**Sg**	**19 15 00.3**	**-0.6**
ERM	**Erimo**	**3.20**	**41**	*c i*P	**Pn**	**19 15 20.7**	**+2.2**
ERM				pmax	pmax		
	comp=Z,328nm,1.2s						
ERM	**Erimo**	**3.20**	**41**	*e*Pn	**Pn**	**19 15 20.2**	**+1.7**
MAJO	**Matsushiro**	**3.51**	**210**	*e*P	**Pn**	**19 15 22.9**	**+0.1**
MAJO	**Matsushiro**	**3.51**	**210**	*e*P	**Pn**	**19 15 22.9**	**+0.1**
MAT	**Matsushiro**	**3.51**	**210**	P	**Pn**	**19 15 22.8**	**0.0**
MAT				S	**Sn**	**19 16 05.2**	**+0.8**
MJAR	**Matsushiro Arr**	**3.51**	**210**	Pn	**Pn**	**19 15 23.0**	**+0.2**
	comp=Z,17nm,0.3s,baz=21,slow=13,SNR=73						
MJAR				Sn	**Sn**	**19 16 03.7**	**-0.7**
	comp=Z,8.5nm,0.3s,baz=12,slow=16,SNR=5.1						
MJAR				LR	LR	19 16 41.7	
	comp=Z,2μm,20.1s,baz=35,slow=39						
ASAJ	**Asahikawa**	**4.80**	**20**	Pn	**Pn**	**19 15 42.0**	**+1.5**
	comp=Z,3.7nm,0.3s,baz=229,slow=16,SNR=32						
ASAJ	**Asahikawa**	**4.80**	**20**	P	**Pn**	**19 15 42.0**	**+1.5**
ASAJ				pmax	pmax		
	comp=Z,4.0nm,0.3s						
YUK	**Yuzh-Kuril'sk**	**6.03**	**41**	*e*P	**Pn**	**19 16 00.5**	**+3.1**
JHJ	**Hachijo jima 2**	**6.50**	**184**	LR	LR	19 19 00.6	
	comp=Z,759nm,19.5s,baz=80,slow=42						
JHJ2	**Mitsune**	**6.50**	**184**	*e*Pn	Pn	19 16 08.7	+4.7
VLA	**Vladivostok**	**7.28**	**302**	P	**Pn**	**19 16 14.0**	**-0.5**
YSS	**Yuzh-Sakhalins**	**7.54**	**13**	⇑*i*P	**Pn**	**19 16 21.1**	**+3.0**
YSS				*e*S	**Sn**	**19 17 47.2**	**+3.5**
YSS				pmax	pmax		
	comp=Z,100nm,1.0s						
YSS				pmax	pmax		
	comp=N,80nm,1.1s						
YSS				MLR	MLR		
	comp=Z,1μm,13.0s						
YSS				MLR	MLR		
	comp=N,1μm,12.0s						
YSS	**Yuzh-Sakhalins**	**7.54**	**13**	*e*Pn	**Pn**	**19 16 20.8**	**+2.6**
MSHR	**Mys Shultsa**	**7.56**	**296**	⇑*i*P	**Pn**	**19 16 17.1**	**-1.3**
USRK	**Ussuriysk Ar.**	**7.75**	**309**	Pn	**Pn**	**19 16 20.2**	**-0.8**
	comp=N,3.4nm,0.3s,baz=114,slow=14,SNR=44						
USRK				LR	LR	19 19 05.3	
	comp=N,2μm,19.8s,baz=113,slow=37						
KUR	**Kuril'sk**	**7.89**	**42**	*i* P	**Pn**	**19 16 24.9**	**+2.0**
MDJ	**Mudanjiang**	**9.44**	**305**	*e*Pn	**Pn**	**19 16 42.3**	**-1.8**
	comp=N,21nm,1.0s						
UGL	**Uglegorsk**	**9.54**	**7**	P	Pn	19 16 51.0	+5.5
UGL				pmax	pmax		
	comp=Z,30nm,0.8s						
UGL				MLR	MLR		
	comp=Z,1μm,13.0s						
UGL				MLR	MLR		
	comp=N,1μm,12.0s						
UGL				MLR	MLR		
	comp=E,1μm,12.0s						
HABR	**Khabarovsk**	**9.65**	**338**	*e*P	**Pn**	**19 16 44.8**	**-2.2**
HABR				*e*S	**Sn**	**19 18 31.1**	**-4.3**
HABR				pmax	pmax		
	comp=Z,47nm,2.3s						
HABR				MLR	MLR		
	comp=Z,705nm,14.0s						
KSRS	**Korea Array**	**9.99**	**261**	Pn	**Pn**	**19 16 54.8**	**+3.1**
	comp=Z,1.4nm,0.3s,baz=74,slow=14,SNR=15						
KSRS				LR	LR	19 20 29.8	
	comp=Z,308nm,18.7s,baz=72,slow=37						
KSAR	**Wonju Array Be**	**10.02**	**261**	P	**Pn**	**19 16 54.8**	**+2.6**
KSAR	**Wonju Array Be**	**10.02**	**261**	Pn	**Pn**	**19 16 54.8**	**+2.6**
JNU	**Nakatsue**	**10.02**	**233**	Pn	**Pn**	**19 16 54.8**	**+2.6**
	comp=Z,0.7nm,0.3s,baz=358,slow=4.3,SNR=8.5						
JNU				LR	LR	19 20 51.5	
	comp=Z,820nm,18.6s,baz=22,slow=39						
TYV	**Tymovskoe**	**11.36**	**7**	*e*P	Pn	19 17 13.8	+3.3
TYV				pmax	pmax		
	comp=Z,13nm,0.8s						
TYV				MLR	MLR		
	comp=E,2μm,16.0s						
KLR	**Kul'dur**	**11.41**	**330**	Pn	**Pn**	**19 17 12.9**	**+1.8**
	comp=E,0.2nm,0.3s,baz=134,slow=13,SNR=26						
KLR				LR	LR	19 21 23.1	
	comp=E,906nm,20.0s,baz=144,slow=37						
CBIJ	**Chichi jima**	**12.58**	**173**	*e*P	**Pn**	**19 17 27.7**	**+0.5**
NKL	**Nikolayevsk**	**13.54**	**1**	*e*P	**Pn**	**19 17 40.0**	**-0.2**
NKL				*e*		19 20 14.0	
NKL				pmax	pmax		
	comp=Z,17nm,1.0s						
NKL				MLR	MLR		
	comp=N,1μm,14.0s						
NKL				MLR	MLR		
	comp=E,1μm,14.0s						
NKL				MLR	MLR		
	comp=Z,1μm,14.0s						
PETK	**Petropavlovsk-**	**17.97**	**36**	P	**P**	**19 18 38.3**	**-0.2**
	comp=Z,0.2nm,0.3s,baz=213,slow=6.9,SNR=4.1						
PETK				LR	LR	19 25 51.3	
	comp=Z,375nm,18.1s,baz=228,slow=38						
TIA	**Tai'an**	**18.64**	**267**	⇑P	**Pn**	**19 18 49.3**	**+3.0**
TIA				pmax	pmax		
	comp=Z,20nm,1.9s						
MA2	**Magadan**	**21.04**	**15**	P	**P**	**19 19 10.9**	**-1.1**
	comp=Z,18nm,0.9s,baz=221,slow=9.3,SNR=20						
MA2				LR	LR	19 27 42.2	
	comp=Z,119nm,19.3s,baz=226,slow=38						
WHN	**Wuhan**	**23.07**	**255**	P	**P**	**19 19 31.8**	**-2.1**
WHN				S	S	19 23 32.9	-12
WHN				LR	LR		
	comp=Z,5μm,17.2s						
WHN				LR	LR		
	comp=Z,2μm,12.0s						
WHN				LR	LR		
	comp=Z,1μm,16.0s						
YAK	**Yakutsk**	**23.38**	**347**	P	**P**	**19 19 34.4**	**-2.2**
	comp=Z,5.5nm,0.4s,baz=34,slow=1.8,SNR=8.9						
YAK				LR	LR	19 28 40.3	
	comp=Z,310nm,18.2s,baz=156,slow=37						
YAK	**Yakutsk**	**23.38**	**347**	*e*P	**P**	**19 19 34.2**	**-2.5**
YAK				*e*		19 20 01.7	
YAK				*e*		19 23 18.2	
YAK				*e*S	**S**	**19 23 47.4**	**-2.1**
YAK				*e*SS	**SnSn**	**19 24 31.2**	**+7.0**
YAK				*e*		19 30 39.6	
YAK				pmax	pmax		
	comp=Z,22nm,1.0s						
YAK				pmax	pmax		
	comp=N,11nm,1.0s						
YAK				pmax	pmax		
	comp=E,4.0nm,1.0s						
YAK				pmax	pmax		
	comp=Z,23nm,1.5s						
YAK				pmax	pmax		
	comp=N,28nm,1.8s						
YAK				pmax	pmax		
	comp=E,13nm,1.4s						
YAK				smax	smax		
	comp=N,154nm,2.7s						
YAK				smax	smax		
	comp=E,46nm,1.4s						
YAK				MLR	MLR		
	comp=Z,547nm,12.0s						
YAK				MLR	MLR		
	comp=N,431nm,13.0s						
YAK

PKIN	**Phulchoki**	**46.68**	**273**	*e*P		**P**	**19 22 56.5**	**-1.0**
GKN	**Gorkha**	**47.06**	**273**	*e*P		**P**	**19 22 59.6**	**-0.7**
	comp=Z,21nm,1.1s							
SEW	**Seward**	**47.09**	**40**	*e*P		**P**	**19 23 00.7**	**+0.8**
	comp=Z,16nm,0.9s							
COLA	**College**	**47.36**	**33**	*de*P		**P**	**19 23 03.7**	**+1.8**
COLA					pmax	pmax		
	comp=Z,11nm,1.0s							
SML	**Sawmill**	**47.43**	**38**	*e*P		**P**	**19 23 03.4**	**+0.8**
SML					pmax	pmax		
	comp=Z,3.0nm,0.9s							
SML	**Sawmill**	**47.43**	**38**	*e*P		**P**	**19 23 03.4**	**+0.8**
	comp=Z,2.6nm,0.9s							
TKM2	**Tokmak 2**	**47.72**	**296**	*e*P		**P**	**19 23 05.4**	**0.0**
TKM2	**Tokmak 2**	**47.72**	**296**	*e*P		**P**	**19 23 05.4**	**0.0**
ILAR	**Eielson Array**	**47.78**	**34**	P		**P**	**19 23 06.0**	**+0.8**
	comp=Z,6.2nm,0.9s,baz=267,slow=5.1,SNR=43							
ILAR					LR	LR	19 44 25.7	
	comp=Z,80nm,18.4s,baz=306,slow=38							
KOLN	**Koldanda**	**47.98**	**274**	*e*P		**P**	**19 23 08.1**	**+0.6**
	comp=Z,10.0nm,1.0s							
OTUK	**Ortayu**	**48.28**	**304**	P		**P**	**19 23 08.6**	**-0.8**
OTUK					pmax	pmax		
	comp=Z,7.0nm,1.1s							
PYUN	**Piuthan**	**48.28**	**275**	*e*P		**P**	**19 23 10.1**	**+0.2**
	comp=Z,48nm,1.0s							
BRVK	**Borovoye**	**48.31**	**311**	*d i*P		**P**	**19 23 10.0**	**+0.5**
BRVK					pmax	pmax		
	comp=Z,22nm,2.5s							
BRVK	**Borovoye**	**48.31**	**311**	*e*P		**P**	**19 23 09.6**	**+0.2**
	comp=Z,7.1nm,1.0s							
KAPI	**Kappang**	**48.31**	**208**	LR		LR	19 43 23.1	
	comp=Z,60nm,21.4s,baz=31,slow=36							
FRU	**Bishkek**	**48.43**	**296**	*e*P		**P**	**19 23 11.0**	**+0.4**
AAK	**Ala-Archa**	**48.58**	**296**	||*i*P		**P**	**19 23 11.4**	**-0.6**
AAK					pmax	pmax		
	comp=Z,14nm,1.0s							
AAK	**Ala-Archa**	**48.58**	**296**	*e*P		**P**	**19 23 10.8**	**-1.1**
	comp=Z,6.6nm,1.0s							
DIV	**Divide**	**48.74**	**38**	*e*P		**P**	**19 23 14.5**	**+1.7**
	comp=Z,15nm,0.9s							
EKS2	**Erkin-Say**	**49.07**	**296**	*e*P		**P**	**19 23 15.0**	**-0.7**
EKS2					pmax	pmax		
	comp=Z,5.0nm,0.9s							
EKS2	**Erkin-Say**	**49.07**	**296**	*e*P		**P**	**19 23 14.9**	**-0.7**
	comp=Z,5.1nm,0.9s							
BMRM	**Bremner River**	**49.33**	**38**	*e*P		**P**	**19 23 18.0**	**+0.7**
	comp=Z,17nm,1.0s							
MNAS	**Manas**	**50.01**	**297**	P		**P**	**19 23 22.6**	**-0.3**
MNAS					pmax	pmax		
	comp=Z,17nm,1.0s							
EGAK	**Eagle**	**50.21**	**33**	*e*P		**P**	**19 23 24.0**	**+0.1**
	comp=Z,6.6nm,0.9s							
SFK	**Sufi-Kurgan**	**50.22**	**293**	P		**P**	**19 23 24.5**	**-0.1**
SFK					pmax	pmax		
	comp=Z,20nm,1.0s							
KKAR	**Karatay Array**	**51.16**	**298**	*e*P		**P**	**19 23 29.4**	**-1.9**
KKAR					pmax	pmax		
	comp=Z,6.0nm,0.8s							
KKAR	**Karatay Array**	**51.16**	**298**	*e*P		**P**	**19 23 29.4**	**-1.9**
	comp=Z,5.6nm,0.8s							
INK	**Inuvik**	**52.48**	**28**	P		**P**	**19 23 42.0**	**+1.2**
	comp=Z,13nm,0.9s,baz=283,slow=7.9,SNR=39							
INK	**Inuvik**	**52.48**	**28**	P		**P**	**19 23 42.0**	**+1.2**
SVE	**Sverdlovsk**	**52.69**	**317**	||*e*P		**P**	**19 23 42.5**	**0.0**
SVE					pmax	pmax		
	comp=Z,19nm,0.9s							
SVE					MLR	MLR		
	comp=Z,807nm,17.0s							
ARU	**Arti**	**53.90**	**317**	*d i*P		**P**	**19 23 50.9**	**-0.5**
ARU							19 25 51.3	
ARU					S	**S**	**19 31 24.6**	**-1.9**
ARU					SS	**SKiKP**	**19 35 03.5**	**-1.1**
ARU					pmax	pmax		
	comp=Z,14nm,1.0s							
ARU					MLR	MLR		
	comp=Z,531nm,17.0s							
ARU	**Arti**	**53.90**	**317**	*e*P		**P**	**19 23 50.4**	**-1.0**
	comp=Z,11nm,0.8s							
GSI	**Gunungsitoli**	**54.48**	**237**	*e*P		**P**	**19 23 56.3**	**+0.2**
	comp=Z,22nm,1.0s							
LEM	**Lembang**	**55.24**	**221**	LR		LR	19 47 58.8	
	comp=Z,103nm,21.4s,slow=36							
ABKAR	**Akbulak array**	**55.67**	**309**	*e*P		**P**	**19 24 03.2**	**-1.2**
KBL	**Kabul**	**55.76**	**289**	P		**P**	**19 24 06.1**	**+0.6**
KBL					pmax	pmax		
	comp=Z,9.0nm,1.1s							
DLBC	**Dease Lake**	**57.12**	**39**	P		**P**	**19 24 15.4**	**+0.8**
	comp=Z,4.1nm,0.9s,baz=283,slow=9.4,SNR=8.0							
WRAB	**Tennant Creek**	**59.50**	**187**	||*e*P		**P**	**19 24 32.7**	**+1.1**
WRAB					pmax	pmax		
	comp=Z,68nm,2.5s							
WRA	**Warramunga Arr**	**59.51**	**187**	P		**P**	**19 24 30.4**	**-1.3**
	comp=Z,2.9nm,0.8s,baz=5.1,slow=7.2,SNR=16							
RES	**Resolute Bay**	**60.31**	**15**	P		**P**	**19 24 36.1**	**-0.4**
	comp=Z,5.5nm,1.0s,baz=311,slow=7.7,SNR=15							
GEYT	**Alibeck**	**61.90**	**297**	P		**P**	**19 24 47.7**	**-0.2**
	comp=Z,3.7nm,0.8s,baz=54,slow=3.8,SNR=9.2							
YKA	**Yellowknife Ar**	**62.00**	**31**	P		**P**	**19 24 48.4**	**+0.3**
	comp=Z,2.4nm,0.8s,baz=302,slow=6.8,SNR=30							
DAG	**Danmarks Havn**	**63.13**	**355**	*i* P		**P**	**19 24 54.7**	**-0.8**
	comp=Z,2.2nm,0.7s							
DAG	**Danmarks Havn**	**63.13**	**355**	*i* P		**P**	**19 24 54.7**	**-0.8**
DAG					pmax	pmax		
	comp=Z,4.0nm,0.7s							
ASAR	**Alice Springs**	**63.24**	**187**	P		**P**	**19 24 56.5**	**-0.4**
	comp=Z,2.4nm,0.8s,baz=12,slow=6.4,SNR=24							
ASAR					LR	LR	19 49 51.7	
	comp=Z,51nm,21.3s,baz=10,slow=34							
OBN	**Obninsk**	**65.55**	**322**	*e*P		**P**	**19 25 10.7**	**-0.9**
OBN					pmax	pmax		
	comp=Z,4.0nm,1.0s							
OBN					MLR	MLR		
	comp=Z,160nm,14.0s							
NLWA	**Neilton Lookou**	**65.59**	**48**	*e*P		**P**	**19 25 14.7**	**+2.6**
	comp=Z,11nm,1.0s							
FINES	**FINESS Array B**	**66.16**	**331**	P		**P**	**19 25 14.6**	**-0.8**
	comp=Z,3.5nm,0.8s,baz=38,slow=9.6,SNR=9.5							
SUMG	**Summit**	**68.11**	**360**	*i* P		**P**	**19 25 29.5**	**+1.3**
	comp=Z,15nm,1.3s							
SUMG	**Summit**	**68.11**	**360**	*i* P		**P**	**19 25 29.5**	**+1.3**
SUMG					pmax	pmax		
	comp=Z,15nm,1.3s							
SUMG	**Summit**	**68.11**	**360**	*e*P		**P**	**19 25 28.8**	**+0.7**
	comp=Z,9.1nm,1.0s							
ZEI	**Tsey**	**68.54**	**308**	*e*P		**P**	**19 25 28.6**	**-2.6**
ZEI					pmax	pmax		
	comp=Z,5.0nm,0.9s							
KIV	**Kislovodsk**	**68.61**	**310**	*d i*P		**P**	**19 25 32.2**	**+0.7**
KIV				*e*			19 25 56.6	
KIV					pmax	pmax		
	comp=Z,22nm,1.0s							
KIV					MLR	MLR		
	comp=Z,101nm,16.0s							
KIV	**Kislovodsk**	**68.61**	**310**	*e*P		**P**	**19 25 32.4**	**+0.9**
	comp=Z,22nm,1.0s							
KBZ	**Khabaz**	**68.61**	**309**	P		**P**	**19 25 31.4**	**+0.1**
	comp=Z,3.4nm,0.9s,baz=343,slow=2.4,SNR=7.7							
KBZ					LR	LR	19 57 01.7	
	comp=Z,76nm,20.1s,baz=51,slow=37							
NEY	**Neytrino**	**68.99**	**309**	||*e*P		**P**	**19 25 35.2**	**+1.2**
NEY					pmax	pmax		
	comp=Z,1.0nm,0.8s							
STKA	**Stephens Creek**	**71.14**	**179**	P		**P**	**19 25 48.4**	**+1.6**
	comp=Z,2.4nm,0.8s,baz=344,slow=9.3,SNR=3.8							
STKA					LR	LR	19 56 13.1	
	comp=Z,80nm,20.5s,baz=21,slow=35							
ANN	**Anapa**	**71.16**	**313**	*e*P		P	19 25 42.8	-4.2
ANN				*e*PP		sP	19 25 53.8	+2.6
ANN				*e*			19 26 02.4	
ANN				*e*S		S	19 34 55.3	-8.5
ANN					pmax	pmax		
	comp=Z,18nm,1.0s							
WVOR	**Wild Horse Val**	**71.47**	**50**	*e*P		**P**	**19 25 50.0**	**+0.9**
WVOR					pmax	pmax		
	comp=Z,3.0nm,1.0s							
WVOR	**Wild Horse Val**	**71.47**	**50**	*e*P		**P**	**19 25 50.0**	**+0.9**
	comp=Z,2.9nm,1.0s							
NB2	**NORSAR Subarra**	**71.50**	**337**	P		**P**	**19 25 47.6**	**-1.2**
	comp=Z,3.1nm,0.9s,baz=36,slow=6.5							
NOA	**NORSAR Array B**	**71.50**	**337**	P		**P**	**19 25 47.9**	**-0.9**
	comp=Z,1.3nm,0.6s,baz=38,slow=6.1,SNR=11							
NOA	**NORSAR Array B**	**71.50**	**337**	P		**P**	**19 25 47.9**	**-0.9**
NOA					pmax	pmax		
	comp=Z,2.0nm,0.8s							
AKASG	**Malin Array Be**	**71.76**	**321**	P		**P**	**19 25 49.2**	**-1.3**
	comp=Z,0.8nm,0.4s,baz=46,slow=6.4,SNR=10							
KIEV	**Kiev**	**71.78**	**321**	||*e*P		**P**	**19 25 50.0**	**-0.6**
KIEV					pmax	pmax		
	comp=Z,6.0nm,0.9s							
FFC	**Flin Flon**	**71.98**	**33**	*e*P		**P**	**19 25 52.5**	**+0.8**
FFC					pmax	pmax		
	comp=Z,7.0nm,0.9s							
FFC	**Flin Flon**	**71.98**	**33**	*e*P		**P**	**19 25 52.5**	**+0.8**
	comp=Z,6.6nm,0.9s							
FCC	**Fort Churchill**	**72.06**	**26**	*e*P		**P**	**19 25 52.7**	**+0.6**
FCC					pmax	pmax		
	comp=Z,5.0nm,0.9s							
FCC	**Fort Churchill**	**72.06**	**26**	*e*P		**P**	**19 25 52.7**	**+0.6**
	comp=Z,4.5nm,0.9s							
CMB	**Columbia Colle**	**73.04**	**55**	*e*P		**P**	**19 25 59.9**	**+1.4**
CMB					pmax	pmax		
	comp=Z,37nm,0.6s							
CMB	**Columbia Colle**	**73.04**	**55**	*e*P		**P**	**19 25 59.9**	**+1.4**
	comp=Z,37nm,0.6s							
DLMT	**Dillon**	**73.09**	**45**	*e*P		**P**	**19 26 00.4**	**+1.6**
	comp=Z,15nm,1.1s							
HLID	**Hailey**	**73.22**	**47**	*e*P		**P**	**19 26 00.4**	**+0.8**
	comp=Z,2.2nm,0.8s							
BOZ	**Bozeman (W)**	**73.43**	**44**	*e*P		**P**	**19 25 59.8**	**-1.0**
BOZ					pmax	pmax		
	comp=Z,4.0nm,0.8s							
BOZ	**Bozeman (W)**	**73.43**	**44**	*e*P		**P**	**19 25 59.8**	**-1.0**
	comp=Z,4.4nm,0.8s							
BMN	**Battle Mountai**	**73.53**	**51**	*e*P		**P**	**19 26 03.3**	**+1.9**
BMN					pmax	pmax		
	comp=Z,3.0nm,0.7s							
BMN	**Battle Mountai**	**73.53**	**51**	*e*P		**P**	**19 26 03.3**	**+1.9**
	comp=Z,2.7nm,0.7s							
BSD	**Bornholm Skovb**	**74.79**	**331**	*i* P		**P**	**19 26 05.7**	**-2.6**
BSD	**Bornholm Skovb**	**74.79**	**331**	*i* P		**P**	**19 26 05.7**	**-2.6**
H17A	**Grant Village**	**74.81**	**45**	*e*P		**P**	**19 26 11.1**	**+2.1**
	comp=Z,10nm,0.9s							
RLMT	**Red Lodge**	**75.04**	**43**	*e*P		**P**	**19 26 11.1**	**+0.9**
	comp=Z,2.1nm,0.8s							
MOOW	**Moose Ponds**	**75.14**	**45**	*e*P		**P**	**19 26 12.0**	**+1.2**
	comp=Z,3.7nm,0.9s							
HWUT	**Hardware Ranch**	**76.09**	**47**	*e*P		**P**	**19 26 14.4**	**-1.8**
DUG	**Dugway, Tooele**	**76.29**	**49**	*e*P		**P**	**19 26 18.8**	**+1.4**
DUG					pmax	pmax		
	comp=Z,4.0nm,0.9s							
DUG	**Dugway, Tooele**	**76.29**	**49**	*e*P		**P**	**19 26 18.8**	**+1.4**
	comp=Z,4.5nm,0.9s							
STHS	**Stebnicka Huta**	**76.39**	**324**	*e*P		**P**	**19 26 17.8**	**+0.2**
STHS	**Stebnicka Huta**	**76.39**	**324**	*e*P		**P**	**19 26 17.8**	**+0.2**
BW06	**Boulder Array**	**76.44**	**45**	*e*P		**P**	**19 26 17.6**	**-0.7**
	comp=Z,3.0nm,0.8s							
PDAR	**Pinedale Array**	**76.44**	**45**	P		**P**	**19 26 18.6**	**+0.2**
	comp=Z,3.1nm,0.7s,baz=262,slow=1.4,SNR=30							
ULM	**Lac du Bonnet**	**77.80**	**33**	P		**P**	**19 26 25.6**	**+0.1**
	comp=Z,3.6nm,0.8s,baz=305,slow=6.5,SNR=4.2							
ULM					LR	LR	20 01 46.1	
	comp=Z,70nm,20.8s,baz=359,slow=36							
DPC	**Dobruska-Polom**	**77.84**	**327**	*e*P		**P**	**19 26 28.9**	**+3.1**
DPC	**Dobruska-Polom**	**77.84**	**327**	*e*P		**P**	**19 26 28.9**	**+3.1**
VYHS	**Vyhne**	**78.14**	**325**	*e*P		**P**	**19 26 27.7**	**+0.2**
VYHS	**Vyhne**	**78.14**	**325**	*e*P		**P**	**19 26 27.7**	**+0.2**
CLL	**Collm**	**78.46**	**329**	*e*P		**P**	**19 26 28.0**	**-1.1**
CLL				*e*			19 26 33.0	
CLL				*e*			19 26 38.0	
CLL	**Collm**	**78.46**	**329**	*e*P		**P**	**19 26 28.0**	**-1.1**
CLL				*e*			19 26 38.0	
KHC	**Kasperske Hory**	**79.92**	**328**	*e*P		**P**	**19 26 37.4**	**+0.2**
KHC	**Kasperske Hory**	**79.92**	**328**	*e*P		**P**	**19 26 37.1**	**-0.1**
KHC					pmax	pmax		
	comp=Z,1.0nm,0.9s							
KHC	**Kasperske Hory**	**79.92**	**328**	*e*P		**P**	**19 26 37.1**	**-0.1**
	comp=Z,0.6nm,0.9s							
GERES	**GERESS Array B**	**80.09**	**327**	P		**P**	**19 26 37.6**	**-0.7**
	comp=Z,0.6nm,0.7s,baz=36,slow=5.0,SNR=6.1							
ECSD	**EROS Data Cent**	**82.39**	**38**	*e*P		**P**	**19 26 50.7**	**+0.3**
	comp=Z,3.0nm,0.8s							
SCHQ	**Schefferville**	**83.08**	**15**	P		**P**	**19 26 53.9**	**0.0**
	comp=Z,7.0nm,1.0s,baz=24,slow=7.5,SNR=3.6							
ANMO	**Albuquerque**	**83.55**	**49**	||*e*P		**P**	**19 26 58.7**	**+1.9**
ANMO					pmax	pmax		
	comp=Z,5.0nm,1.2s							
ANMO	**Albuquerque**	**83.55**	**49**	*e*P		**P**	**19 26 58.7**	**+1.9**
	comp=Z,5.1nm,1.0s							
PMOR	**Pomariorio Ree**	**85.95**	**113**	*e*T		T	21 00 37.1	
	comp=Z,4.5nm,0.2s							
PPT	**Papeete**	**86.51**	**116**	LR		LR	19 56 37.1	
	comp=Z,87nm,21.5s,baz=330,slow=29							
PPT2	**Papeete2**	**86.53**	**116**	*e*LR		LR	19 54 33.9	
	comp=Z,165nm,25.2s							
TXAR	**Lajitas Array**	**89.19**	**52**	P		**P**	**19 27 24.8**	**+0.3**
	comp=Z,2.0nm,0.8s,baz=297,slow=3.1,SNR=16							
JCT	**Junction City**	**90.64**	**48**	*e*P		**P**	**19 27 30.7**	**-0.5**
JCT	**Junction City**	**90.64**	**48**	*e*P		**P**	**19 27 30.7**	**-0.5**
TORD	**Toendi Ar. Bea**	**114.93**	**315**	PP		**PP**	**19 34 07.4**	**-0.4**
	comp=Z,0.7nm,0.9s,baz=24,slow=5.7,SNR=3.6							
VNA2	**Neumayer--Watz**	**144.54**	**198**	P		**PKPdf**	**19 34 03.4**	**-0.3**
	baz=90,slow=1.1							
VNA3	**Neumayer Olymp**	**144.83**	**196**	P		PKPbc	19 34 03.5	+0.2
LPAZ	**La Paz**	**145.99**	**55**	PKPbc		**PKPbc**	**19 34 09.5**	**+0.2**
	comp=Z,3.1nm,0.8s,baz=342,slow=3.4,SNR=15							

ellipse: s-maj=2.6km s-min=1.0km az=259.0
*CSEM **18** 19:36:41.8±0.1, 38.68N×26.42E, h10km, MD3.0, Error ellipse: s-maj=2.6km s-min=2.1km az=77.0*
*THE **18** 19:36:41.3, 38.66N×26.41E, h0km±1km, ML2.9/5, Error ellipse: s-maj=1.0km s-min=0.4km az=284.0*
*ISCJB **18** 19:36:41.5±0.4, 38.68N±0.02×26.41E±0.03, h7km±3km, Error ellipse: s-maj=4.0km s-min=2.6km az=167.7*
*ISK **18** 19:36:41.7, 38.67N×26.45E, h10km, ML2.9*
ISC 18 19:36:41.1±1.0, 38.66N±0.01×26.36E±0.02, h13km±8km, n77, σ0 64/125, Aegean Sea

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
URLA	**Izmir**	**0.36**	**148**	*i* P	**Pg**	**19 36 48.5**	**+0.2**
URLA				*i* S	**Sb**	**19 36 54.5**	**-0.4**
URLA	**Izmir**	**0.36**	**148**	P	**Pg**	**19 36 48.5**	**+0.2**
URLA				S	**Sb**	**19 36 54.5**	**-0.4**
CHOS	**Chios island**	**0.36**	**221**	*e*PG	**Pn**	**19 36 51.0**	**-1.2**
CHOS				*e*SG	**Sb**	**19 36 56.8**	**+1.7**
CHOS	**Chios island**	**0.36**	**221**	P	**Pb**	**19 36 49.4**	**-0.1**
CHOS				S	**Sb**	**19 36 55.3**	**+0.2**
CHOS	**Chios island**	**0.36**	**221**	P	**Pb**	**19 36 50.0**	**+0.5**
CHOS	**Chios island**	**0.36**	**221**	*e*Pg	**Pn**	**19 36 51.0**	**-1.2**
CHOS				S	**Sb**	**19 36 55.3**	**+0.2**
CHOS				*e*Sg	**Sb**	**19 36 56.8**	**+1.7**
CHOS	**Chios island**	**0.36**	**221**	P	**Pb**	**19 36 50.0**	**+0.5**
CHOS				S	**Sb**	**19 36 55.0**	**-0.1**
CHOS				AML	AML	19 36 55.9	
	comp=N,2624μm,0.2s						
CHOS				AML	AML	19 36 56.2	
	comp=E,3553μm,0.2s						
ZEY	**˜zmir**	**0.44**	**165**	*i* P	**Pb**	**19 36 50.4**	**-0.3**
PRK	**Paraskevi**	**0.59**	**354**	P	**Pg**	**19 36 52.6**	**0.0**
PRK				S	**Sb**	**19 37 02.1**	**+0.6**
PRK	**Paraskevi**	**0.59**	**354**	P	**Pg**	**19 36 52.4**	**-0.2**
PRK				S	**Sg**	**19 37 00.9**	**+0.5**
PRK	**Paraskevi**	**0.59**	**354**	P	**Pg**	**19 36 52.4**	**-0.2**
PRK				S	**Sg**	**19 37 00.9**	**+0.5**
PRK				AML	AML	19 37 03.9	
	comp=N,1939μm,0.3s						
PRK				AML	AML	19 37 04.0	
	comp=E,2072μm,0.2s						
DKL	**Dikili**	**0.59**	**46**	*e*PG	**Pg**	**19 36 52.5**	**-0.2**
DKL				*e*SG	**Sg**	**19 37 00.5**	**-0.1**
DKL	**Dikili**	**0.59**	**46**	*e*Pg	**Pg**	**19 36 52.5**	**-0.2**
DKL				*e*Sg	**Sg**	**19 37 00.5**	**-0.1**
BLCB	**Balcova**	**0.61**	**117**	*e*PG	**Pg**	**19 36 52.6**	**-0.4**
BLCB	**Balcova**	**0.61**	**117**	*e*Pg	**Pg**	**19 36 52.6**	**-0.4**
SIGR	**SIGRI**	**0.67**	**325**	*e*PG	**Pn**	**19 36 56.0**	**-0.4**
SIGR	**SIGRI**	**0.67**	**325**	P	**Pg**	**19 36 54.4**	**+0.1**
SIGR				S	**Sb**	**19 37 05.7**	**+1.7**
SIGR	**SIGRI**	**0.67**	**325**	P	**Pg**	**19 36 54.4**	**+0.1**
SIGR	**SIGRI**	**0.67**	**325**	*e*Pg	**Pn**	**19 36 56.0**	**-0.4**
SIGR				S	**Sb**	**19 37 04.0**	**0.0**
SIGR	**SIGRI**	**0.67**	**325**	P	**Pg**	**19 36 54.3**	**+0.1**
SIGR				S	**Sb**	**19 37 04.0**	**0.0**
SIGR				AML	AML	19 37 06.8	
	comp=E,1463μm,0.5s						
SIGR				AML	AML	19 37 07.0	
	comp=N,1451μm,0.2s						
AYVA	**Ayvalik**	**0.70**	**22**	*i* P	**Pg**	**19 36 54.0**	**-0.7**
AYVA				*i* S	**Sb**	**19 37 05.6**	**+0.9**
AYVA	**Ayvalik**	**0.70**	**22**	P	**Pg**	**19 36 54.0**	**-0.7**
IZM	**Izmir**	**0.76**	**110**	*e*PG	**Pg**	**19 36 55.6**	**-0.3**
IZM	**Izmir**	**0.76**	**110**	*e*Pg	**Pg**	**19 36 55.6**	**-0.3**
SMG	**Samos**	**1.02**	**158**	P	**Pg**	**19 37 00.6**	**-0.3**
SMG				S	**Sn**	**19 37 15.2**	**-0.3**
SMG	**Samos**	**1.02**	**158**	P	**Pg**	**19 37 00.6**	**-0.3**
SMG				S	**Sn**	**19 37 15.2**	**-0.3**
SMG	**Samos**	**1.02**	**158**	P	**Pg**	**19 37 00.6**	**-0.3**
SMG				S	**Sn**	**19 37 15.2**	**-0.3**
SMG				AML	AML	19 37 17.3	
	comp=E,1502μm,0.5s						
SMG				AML	AML	19 37 18.2	
	comp=N,1558μm,0.3s						
AKS	**Akhisar**	**1.16**	**79**	*e*PN	**Pb**	**19 37 03.0**	**-0.1**
AKS				*e*SN	**Sg**	**19 37 18.5**	**-0.1**
AKS	**Akhisar**	**1.16**	**79**	*e*Pn	**Pb**	**19 37 03.0**	**-0.1**
AKS				*e*Sn	**Sg**	**19 37 18.5**	**-0.1**
AKHS	**Akhisar**	**1.16**	**79**	*i* P	**Pb**	**19 37 02.7**	**-0.4**
AKHS				*i* S	**Sn**	**19 37 19.4**	**+0.5**
AKHS	**Akhisar**	**1.16**	**79**	P	**Pb**	**19 37 02.7**	**-0.4**
AKHS				S	**Sn**	**19 37 19.4**	**+0.5**
GCAM	**G?zelcaml?**	**1.18**	**144**	*i* P	**Pg**	**19 37 03.6**	**-0.3**
GCAM				*i* S	**Sn**	**19 37 19.5**	**+0.1**
GCAM	**G?zelcaml?**	**1.18**	**144**	P	**Pg**	**19 37 03.6**	**-0.3**
GCAM				S	**Sn**	**19 37 19.5**	**+0.1**
BOZC	**Bozcaada**	**1.20**	**349**	*i* P	**Pn**	**19 37 03.9**	**+0.2**
BOZC				*i* S	**Sg**	**19 37 20.1**	**+0.2**
AYDB	**Zeytinkoy-Aydi**	**1.40**	**120**	*e*PN	**Pb**	**19 37 07.4**	**+0.1**
AYDB				*e*SN	**Sg**	**19 37 26.0**	**-0.4**
AYDB	**Zeytinkoy-Aydi**	**1.40**	**120**	*e*Pn	**Pb**	**19 37 07.4**	**+0.1**
AYDB				*e*Sn	**Sg**	**19 37 26.0**	**-0.4**
BALY	**Balya**	**1.46**	**42**	*i* P	**Pn**	**19 37 06.9**	**-0.4**
BALY				*i* S	**Sb**	**19 37 27.2**	**+0.6**
BALY	**Balya**	**1.46**	**42**	P	**Pn**	**19 37 06.9**	**-0.4**
BALY				S	**Sb**	**19 37 27.2**	**+0.6**
LIA	**Limnos Island**	**1.53**	**324**	P	**Pb**	**19 37 09.1**	**-0.3**
LIA	**Limnos Island**	**1.53**	**324**	P	**Pb**	**19 37 09.1**	**-0.3**
BALB	**Balikesir**	**1.54**	**50**	*e*PN	**Pn**	**19 37 08.3**	**0.0**
BALB	**Balikesir**	**1.54**	**50**	*e*Pn	**Pn**	**19 37 08.3**	**0.0**
AYDN	**Tasoluk**	**1.56**	**129**	*i* P	**Pn**	**19 37 08.8**	**+0.2**
AYDN				*i* S	**Sn**	**19 37 28.2**	**-0.7**
AYDN	**Tasoluk**	**1.56**	**129**	P	**Pn**	**19 37 08.9**	**+0.2**
AYDN				S	**Sn**	**19 37 28.2**	**-0.7**
APE	**Apeiranthos**	**1.72**	**203**	*e*PN	**Pb**	**19 37 12.5**	**-0.1**
APE	**Apeiranthos**	**1.72**	**203**	P	**Pn**	**19 37 10.8**	**0.0**
APE				S	**Sg**	**19 37 35.5**	**-1.0**
APE	**Apeiranthos**	**1.72**	**203**	P	**Pn**	**19 37 10.8**	**0.0**
APE	**Apeiranthos**	**1.72**	**203**	*e*Pn	**Pb**	**19 37 12.5**	**-0.1**
APE				S	**Sg**	**19 37 35.5**	**-1.0**
APE	**Apeiranthos**	**1.72**	**203**	P	**Pn**	**19 37 10.1**	**-0.8**
BODT	**Bodrum**	**1.77**	**154**	*e*PN	**Pb**	**19 37 12.9**	**-0.5**
BODT	**Bodrum**	**1.77**	**154**	P	**Pn**	**19 37 11.7**	**+0.2**
BODT				S	**Sb**	**19 37 36.0**	**+0.5**
BODT	**Bodrum**	**1.77**	**154**	P	**Pn**	**19 37 11.7**	**+0.2**
BODT	**Bodrum**	**1.77**	**154**	*e*Pn	**Pb**	**19 37 13.0**	**-0.5**
BODT				S	**Sb**	**19 37 36.0**	**+0.5**
BDRM	**Kayabasi**	**1.81**	**151**	*i* P	**Pb**	**19 37 14.0**	**-0.2**
BDRM				*i* S	**Sg**	**19 37 42.7**	**+3.2**
BDRM	**Kayabasi**	**1.81**	**151**	P	**Pb**	**19 37 14.0**	**-0.2**
KULA	**Kula-Manisa**	**1.81**	**94**	*e*PN	**Pn**	**19 37 12.6**	**+0.5**
KULA	**Kula-Manisa**	**1.81**	**94**	P	**Pn**	**19 37 12.0**	**-0.2**
KULA				S	**Sb**	**19 37 36.4**	**-0.5**
KULA	**Kula-Manisa**	**1.81**	**94**	P	**Pn**	**19 37 12.0**	**-0.2**
KULA	**Kula-Manisa**	**1.81**	**94**	*e*Pn	**Pn**	**19 37 12.6**	**+0.5**
KULA				S	**Sb**	**19 37 36.4**	**-0.5**
DEMI	**Demirci**	**1.88**	**78**	*i* P	**Pn**	**19 37 12.9**	**-0.2**
DEMI				*i

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.20**	**45**	P	Pg	19 38 13.0	+0.3
ONAJ				S	Sg	19 38 16.2	+0.7
JHO	**Hitachi**	**0.35**	**187**	P	Pg	19 38 15.3	-0.2
JHO				S	Sg	19 38 20.3	+0.2
JFK	**Kawauchi**	**0.45**	**27**	P	Pg	19 38 17.5	+0.1
JFK				S	Sg	19 38 23.8	+0.4
JFT	**Otama**	**0.60**	**338**	P	Pg	19 38 20.5	+0.3
JFT				S	Sg	19 38 28.5	+0.4
MAT	**Matsushiro**	**1.98**	**259**	P	Pb	19 38 44.0	-0.9
MAT				S	Sb	19 39 09.6	-0.2

CASC ***18*** *19:38:59.9±3.5, 14.°75N×83.°01W, h23km±985km, MD4.9, mb4.4(NEIC)*

ISCJB ***18*** *19:39:09.5±0.3, 13.°79N±0.°04×83.°08W±0.°06, h10km, mb4.2/34, MS3.6/16, Error ellipse: s-maj=9.4km s-min=4.8km az=162.2*

IDC ***18*** *19:39:09.5±0.6, 13.°73N×83.°21W, h0km, mb4.0/17, mb1 4.3/20, mb1mx4.1/40, mbtmp4.1/20, ML3.9/3, MS3.6/19, Ms1 3.6/19, ms1mx3.5/34, Error ellipse: s-maj=19.6km s-min=12.0km az=63.0*

NEIC ***18*** *19:39:10.0±3.8, 13.°75N×83.°17W, h3km±25km, mb4.4/17, Error ellipse: s-maj=13.9km s-min=5.7km az=53.0*

ISC 18 19:39:11.0±0.5, 13.°73N±0.°04×83.°20W±0.°08, h10km, n61, σ1s32/54, mb4.2/34, MS3.6/16, Nicaragua

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JTS	**JuntasAbangare**	**3.82**	**207**	Pn	**Pn**	**19 40 10.5**	**+0.6**
	23nm,0.3s,baz=79,slow=20,SNR=40						
JTS				Pg	**Pb**	**19 40 18.3**	**-0.3**
	52nm,0.3s,baz=22,slow=14,SNR=38						
JTS				Lg	Lg	19 41 05.4	
	167nm,0.3s,baz=221,slow=17,SNR=13						
JTS				LR	LR	19 41 44.5	
	comp=Z,2μm,18.5s,baz=28,slow=41						
URSC	**Urasca**	**3.91**	**188**	*e*P	**Pn**	**19 40 12.5**	**+1.2**
URSC				*e*S	**Sb**	**19 41 09.8**	**+2.1**
BUS	**Buena Vista**	**4.18**	**188**	*e*P	**Pn**	**19 40 16.1**	**+0.8**
BUS				*e*S	**Sg**	**19 41 21.5**	**-3.9**
JCR	**Jicaral**	**4.29**	**206**	*e*P	**Pn**	**19 40 17.9**	**+1.5**
JCR				*e*S	**Sb**	**19 41 19.2**	**+0.8**
VCR	**Vista de Mar**	**4.30**	**214**	*e*P	Pn	19 40 19.9	+3.3
QCR	**Quepos**	**4.38**	**193**	*e*P	**Pn**	**19 40 19.0**	**+1.4**
QCR				*e*S	**Sb**	**19 41 23.6**	**+2.6**
BCIP	**Isla Barro Col**	**5.60**	**144**	*e*Pn	**Pn**	**19 40 32.9**	**-1.5**
TEIG	**Tepich**	**8.09**	**324**	Pn	**Pn**	**19 41 07.2**	**-1.3**
	1.2nm,0.3s,baz=91,slow=23,SNR=12						
TEIG				Sn	Sn	19 42 32.9	-7.2
	2.3nm,0.3s,baz=107,slow=19,SNR=2.4						
TEIG				LR	LR	19 43 59.2	
	comp=Z,224nm,18.4s,baz=320,slow=36						
TEIG	**Tepich**	**8.09**	**324**	*e*Pn	**Pn**	**19 41 07.0**	**-1.5**
	14nm,0.7s						
TEIG				Sn	Sn	19 42 32.9	-7.2
ROSC	**El Rosal**	**12.43**	**134**	LR	LR	19 47 47.7	
	comp=Z,83nm,18.4s,baz=265,slow=42						
SDV	**Santo Domingo**	**13.22**	**110**	Pn	**Pn**	**19 42 17.6**	**-1.5**
	2.5nm,0.3s,baz=304,slow=8.3,SNR=5.7						
SDV	**Santo Domingo**	**13.22**	**110**	*e*P	**Pn**	**19 42 18.7**	**-0.4**
OTAV	**Otavalo**	**14.20**	**160**	*e*P	**Pn**	**19 42 34.7**	**+1.9**
	7.3nm,1.0s						
SJG	**San Juan**	**16.96**	**73**	LR	LR	19 49 27.6	
	comp=Z,270nm,18.2s,baz=270,slow=36						
HKT	**Hockley**	**19.93**	**326**	*e*P	**Pn**	**19 43 44.6**	**+0.1**
	22nm,1.3s						
ATAH	**Atahualpa**	**21.27**	**167**	P	**P**	**19 43 56.7**	**-1.4**
	2.5nm,0.5s,baz=65,slow=19,SNR=1.9						
ATAH				LR	LR	19 52 03.3	
	comp=Z,114nm,18.0s,baz=357,slow=36						
TKL	**Tuckaleechee C**	**21.84**	**359**	LR	LR	19 52 47.9	
	comp=Z,247nm,18.8s,baz=176,slow=38						
WHTX	**Lake Whitney,**	**22.39**	**327**	*e*P	**P**	**19 44 10.3**	**+0.7**
	39nm,1.4s						
JCT	**Junction City**	**22.64**	**320**	*e*P	**P**	**19 44 11.5**	**-0.8**
	8.2nm,0.8s						
MIAR	**Mount Ida**	**22.76**	**337**	*e*P	**P**	**19 44 14.9**	**+1.4**
	10nm,1.0s						
ABTX	**Abilene, Hawle**	**24.07**	**324**	*e*P	**P**	**19 44 26.9**	**+0.2**
	63nm,1.5s						
TXAR	**Lajitas Array**	**24.51**	**313**	P	**P**	**19 44 31.4**	**+0.6**
	2.1nm,0.9s,baz=139,slow=12,SNR=14						
WMOK	**Wichita Mounta**	**25.22**	**329**	*e*P	**P**	**19 44 36.7**	**-0.4**
	23nm,1.1s						
V34A	**Guthrie**	**25.50**	**332**	*e*P	**P**	**19 44 39.5**	**-0.1**
	27nm,0.9s						
NNA	**Nana**	**26.31**	**166**	LR	LR	19 55 03.4	
	comp=Z,57nm,21.0s,baz=340,slow=36						
MSTX	**Muleshoe**	**26.86**	**322**	*e*P	**P**	**19 44 50.3**	**-1.8**
	10nm,1.0s						
MNTX	**Cornudas Mount**	**27.09**	**315**	*e*P	**P**	**19 44 55.8**	**+1.8**
	16nm,1.2s						
PTGA	**Pitinga**	**27.13**	**120**	P	**P**	**19 44 55.2**	**+0.7**
	1.4nm,0.4s,baz=307,slow=9.7,SNR=5.6						
PTGA				LR	LR	19 56 57.2	
	comp=Z,120nm,18.9s,baz=317,slow=39						
LPIG	**La Paz**	**27.60**	**296**	P	**P**	**19 44 58.3**	**-0.3**
	50nm,0.3s,baz=149,slow=5.9,SNR=4.2						
LPIG				LR	LR	19 56 30.0	
	comp=Z,261nm,20.9s,baz=114,slow=38						
ANMO	**Albuquerque**	**29.79**	**319**	LR	LR	19 57 53.6	
	comp=Z,53nm,21.2s,baz=140,slow=38						
SAML	**Samuel**	**30.04**	**138**	*e*P	**P**	**19 45 19.1**	**-1.2**
LPAZ	**La Paz**	**33.33**	**153**	P	**P**	**19 45 51.3**	**+1.2**
	2.0nm,0.7s,baz=2.0,slow=9.9,SNR=8.1						
LPAZ				LR	LR	20 01 41.4	
	comp=Z,64nm,18.3s,baz=302,slow=40						
BW06	**Boulder Array**	**36.80**	**327**	*e*P	**P**	**19 46 18.9**	**-0.4**
	6.7nm,1.4s						
PDAR	**Pinedale Array**	**36.80**	**327**	P	**P**	**19 46 19.5**	**+0.2**
	1.7nm,0.8s,baz=119,slow=9.8,SNR=15						
DUG	**Dugway, Tooele**	**36.99**	**321**	*e*P	**P**	**19 46 22.2**	**+1.3**
HWUT	**Hardware Ranch**	**37.13**	**324**	*e*P	**P**	**19 46 24.1**	**+1.9**
	4.8nm,0.8s						
ULM	**Lac du Bonnet**	**37.86**	**347**	P	**P**	**19 46 26.6**	**-1.4**
	4.6nm,0.8s,baz=166,slow=8.3,SNR=6.2						
REDW	**Red Top Meadow**	**37.90**	**327**	*e*P	**P**	**19 46 28.3**	**-0.3**
	14nm,1.2s						
LOHW	**Long Hollow**	**37.94**	**327**	*e*P	**P**	**19 46 30.1**	**+1.2**
	3.3nm,1.0s						
MOOW	**Moose Ponds**	**38.10**	**327**	*e*P	**P**	**19 46 28.0**	**-2.4**
	3.3nm,1.0s						
RLMT	**Red Lodge**	**38.32**	**330**	*e*P	**P**	**19 46 32.3**	**+0.1**
	5.9nm,1.2s						
ELK	**Elko**	**38.81**	**320**	*e*P	**P**	**19 46 36.5**	**+0.1**
	2.3nm,0.9s						
NVAR	**Mina Array Bea**	**39.61**	**315**	P	**P**	**19 46 43.9**	**+0.8**
	0.4nm,0.6s,baz=153,slow=5.0,SNR=4.0						
NVAR				LR	LR	20 06 01.8	
	comp=Z,123nm,18.4s,baz=96,slow=41						
BOZ	**Bozeman (W)**	**39.87**	**329**	*e*P	**P**	**19 46 46.0**	**+0.9**
	3.1nm,0.9s						
CPUP	**Villa Florida**	**47.10**	**148**	LR	LR	20 09 44.7	
	comp=Z,34nm,19.8s,baz=322,slow=39						
YKA	**Yellowknife Ar**	**53.56**	**342**	P	**P**	**19 48 31.5**	**-0.3**
	2.7nm,0.7s,baz=134,slow=7.6,SNR=49						
PLCA	**Paso Flores**	**55.44**	**168**	P	**P**	**19 48 45.9**	**+0.1**
	2.3nm,0.7s,baz=17,slow=7.4,SNR=9.6						
DLBC	**Dease Lake**	**56.62**	**333**	P	**P**	**19 48 56.0**	**+1.9**
	4.0nm,1.0s,baz=120,slow=9.3,SNR=5.5						
RES	**Resolute Bay**	**61.30**	**356**	P	**P**	**19 49 25.1**	**-1.1**
	1.6nm,0.8s,baz=194,slow=10,SNR=9.8						
INK	**Inuvik**	**63.28**	**341**	P	**P**	**19 49 40.1**	**+0.6**
	0.4nm,0.6s,baz=162,slow=5.8,SNR=3.1						
ILAR	**Eielson Array**	**66.57**	**335**	P	**P**	**19 50 01.0**	**-0.1**
	1.1nm,1.1s,baz=108,slow=4.4,SNR=7.2						
ILAR				LR	LR	20 20 57.9	
	comp=Z,35nm,20.9s,baz=154,slow=38						
ESDC	**Sonseca Array**	**73.14**	**52**	P	**P**	**19 50 43.3**	**+1.2**
	1.3nm,0.8s,baz=284,slow=6.0,SNR=8.4						
NOA	**NORSAR Array B**	**80.23**	**29**	P	**P**	**19 51 22.2**	**+0.4**
	1.3nm,1.0s,baz=280,slow=5.8,SNR=2.1						
NOA				LR	LR	20 23 05.2	
	comp=Z,17nm,21.5s,baz=230,slow=33						
TORD	**Torodi Ar. Bea**	**82.09**	**78**	P	**P**	**19 51 32.0**	**-0.4**
	0.5nm,0.7s,baz=286,slow=4.0,SNR=4.8						
TORD				LR	LR	20 23 18.5	
	comp=Z,44nm,22.0s,baz=280,slow=32						
GERES	**GERESS Array B**	**84.26**	**41**	P	**P**	**19 51 44.2**	**+1.0**
	0.5nm,0.9s,baz=240,slow=4.5,SNR=4.6						
FINES	**FINESS Array B**	**86.99**	**27**	LR	LR	20 26 48.1	
	comp=Z,47nm,18.2s,baz=272,slow=33						
SEY	**Seymchan**	**92.39**	**338**	LR	LR	20 37 11.2	
	comp=Z,630nm,19.3s,baz=331,slow=38						
AKASG	**Malin Array Be**	**93.08**	**36**	LR	LR	20 32 31.9	
	comp=Z,29nm,19.6s,baz=40,slow=34						
NRIK	**Noril'sk**	**96.89**	**3**	LR	LR	20 39 10.8	
	comp=Z,48nm,18.2s,baz=284,slow=37						
ASAR	**Alice Springs**	**143.59**	**249**	PKP	PKPbc	19 58 44.2	-0.1
	0.7nm,0.6s,baz=115,slow=3.4,SNR=15						
WRA	**Warramunga Arr**	**143.60**	**255**	PKP	**PKPdf**	**19 58 45.6**	**-1.4**
	0.7nm,0.9s,baz=93,slow=3.0,SNR=6.7						

IDC 18 19:39:51.9±1.9, 8.°06S×158.°66E, h0km, mb3.9/4, mb1 4.0/4, mb1mx3.6/44, mbtmp3.9/4, MS4.2/1, Ms1 4.2/1, ms1mx2.7/33, Error ellipse: s-maj=40.4km s-min=29.6km az=35.0, Bougainville-Solomon Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HNR	**Honiara**	**1.87**	**137**	Pn	Pn	19 40 25.0	-0.1
	107nm,0.3s,baz=207,slow=4.4,SNR=79						
HNR				Sn	Sn	19 40 44.0	-5.5
	452nm,0.3s,baz=8.7,slow=21,SNR=62						
HNR	**Honiara**	**1.87**	**137**	*i* P	Pn	19 40 24.0	-1.1
HNR				*i* S	Sn	19 40 44.5	-5.0
WRA	**Warramunga Arr**	**26.34**	**241**	P	P	19 45 30.5	+0.7
	0.3nm,0.5s,baz=65,slow=8.6,SNR=4.9						
H11S3	**WAKE ISLAND Hy**	**27.55**	**17**	T	T	20 14 32.9	
	baz=195,slow=76,SNR=64						
H11S2	**WAKE ISLAND Hy**	**27.55**	**17**	T	T	20 14 41.6	
	baz=195,slow=76,SNR=60						
H11S1	**WAKE ISLAND Hy**	**27.56**	**17**	T	T	20 14 45.3	
	baz=195,slow=76,SNR=45						
ASAR	**Alice Springs**	**28.34**	**234**	P	P	19 45 47.5	-0.4
	0.9nm,0.6s,baz=61,slow=9.8,SNR=12						
STKA	**Stephens Creek**	**28.53**	**212**	P	P	19 45 49.0	-0.4
	2.2nm,0.7s,baz=39,slow=16,SNR=7.9						
H11N1	**WAKE ISLAND Hy**	**28.76**	**16**	T	T	20 16 04.7	
	baz=196,slow=76,SNR=55						
H11N3	**WAKE ISLAND Hy**	**28.77**	**16**	T	T	20 16 02.5	
	baz=196,slow=76,SNR=68						
H11N2	**WAKE ISLAND Hy**	**28.78**	**16**	T	T	20 16 03.4	
	baz=196,slow=76,SNR=61						
RAO	**Raoul Island**	**30.49**	**137**	LR	LR	19 55 58.2	
	comp=Z,512nm,21.4s,baz=158,slow=32						
MKAR	**Makanchi Array**	**86.61**	**318**	P	P	19 52 37.5	+0.2
	0.3nm,0.6s,baz=87,slow=6.0,SNR=5.6						

ISCJB ***18*** *19:59:18.5±0.6, 40.°67N±0.°03×27.°78E±0.°04, h1km±6km, Error ellipse: s-maj=5.5km s-min=5.1km az=30.7*

ISK ***18*** *19:59:18.6, 40.°66N×27.°79E, h7km, ML2.4*

CSEM ***18*** *19:59:19.1±0.1, 40.°66N×27.°79E, h5km, ML2.4, Error ellipse: s-maj=2.5km s-min=2.4km az=156.0*

DDA ***18*** *19:59:19.3, 40.°64N×27.°80E, h5km, Ml2.8*

ISC 18 19:59:18.4±1.3, 40.°61N±0.°03×27.°77E±0.°03, h4km±11km, n35, σ0s40/48, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
EDC	**Edincik**	**0.27**	**165**	*e*PG	**Pb**	**19 59 25.5**	**-0.2**
EDC				*e*SG	**Sb**	**19 59 30.1**	**-0.5**
EDC	**Edincik**	**0.27**	**165**	*e*Pg	**Pb**	**19 59 25.5**	**-0.2**
EDC				*e*Sg	**Sb**	**19 59 30.1**	**-0.5**
CRLT	**Corlu**	**0.52**	**357**	*e*PG	**Pg**	**19 59 28.3**	**-0.1**
CRLT	**Corlu**	**0.52**	**357**	*e*Pg	**Pg**	**19 59 28.3**	**-0.1**
KCTX	**Karacabey (Bur**	**0.56**	**127**	*e*PG	**Pg**	**19 59 29.2**	**+0.1**
KCTX				*e*SG	**Sb**	**19 59 38.2**	**-0.9**
KCTX	**Karacabey (Bur**	**0.56**	**127**	*e*Pg	**Pg**	**19 59 29.3**	**+0.1**
KCTX				*e*Sg	**Sb**	**19 59 38.2**	**-0.9**
GONE	**Gonen-Balikesi**	**0.56**	**187**	*e*PG	**Pb**	**19 59 30.6**	**-0.1**
GONE	**Gonen-Balikesi**	**0.56**	**187**	*e*Pg	**Pb**	**19 59 30.6**	**-0.1**
ARMT	**Armutlu**	**0.83**	**92**	*e*PG	**Pb**	**19 59 35.2**	**-0.2**
ARMT	**Armutlu**	**0.83**	**92**	*e*Pg	**Pb**	**19 59 35.2**	**-0.2**
BALY	**Balya**	**0.87**	**188**	*i* P	**Pn**	**19 59 37.4**	**0.0**
BALY	**Balya**	**0.87**	**188**	P	**Pn**	**19 59 37.4**	**0.0**
MDNY	**Mudanya-Bursa**	**0.88**	**105**	*e*PG	**Pg**	**19 59 35.5**	**+0.2**
MDNY	**Mudanya-Bursa**	**0.88**	**105**	*e*Pg	**Pg**	**19 59 35.5**	**+0.2**
BGKT	**Bogazkoy**	**0.95**	**53**	*e*PG	**Pg**	**19 59 36.5**	**-0.1**
BGKT				*e*SG	**Sb**	**19 59 49.9**	**-0.5**
BGKT	**Bogazkoy**	**0.95**	**53**	*e*Pg	**Pg**	**19 59 36.5**	**-0.1**
BGKT				*e*Sg	**Sb**	**19 59 49.9**	**-0.5**
ERIK	**Erikli-Kesan**	**0.96**	**274**	*e*PG	**Pb**	**19 59 37.4**	**-0.1**
ERIK	**Erikli-Kesan**	**0.96**	**274**	*e*Pg	**Pb**	**19 59 37.4**	**-0.1**
BALB	**Balikesir**	**0.97**	**175**	*e*PG	**Pn**	**19 59 39.2**	**+0.6**
BALB	**Balikesir**	**0.97**	**175**	*e*Pg	**Pn**	**19 59 39.2**	**+0.6**
GELI	**Tayfur-Gelibol**	**1.01**	**259**	*e*PG	**Pn**	**19 59 39.2**	**0.0**
GELI	**Tayfur-Gelibol**	**1.01**	**259**	*e*Pg	**Pn**	**19 59 39.2**	**0.0**
BUY	**Buyukada**	**1.05**	**76**	*i* P	**Pg**	**19 59 38.6**	**+0.1**
BUY	**Buyukada**	**1.05**	**76**	P	**Pg**	**19 59 38.6**	**+0.1**
ISK	**Istanbul-Kandi**	**1.08**	**64**	*e*PG	**Pg**	**19 59 39.0**	**-0.1**
ISK	**Istanbul-Kandi**	**1.08**	**64**	*e*Pg	**Pg**	**19 59 39.0**	**-0.1**
DURS	**Dursunbey**	**1.14**	**151**	*i* P	**Pn**	**19 59 41.3**	**+0.2**
DURS				*i* S	**Sn**	**19 59 57.5**	**+0.3**
DURS	**Dursunbey**	**1.14**	**151**	P	**Pn**	**19 59 41.3**	**+0.2**
DURS				S	**Sn**	**19 59 57.5**	**+0.3**
IGD	**Bursa**	**1.14**	**107**	*i* P	**Pg**	**19 59 39.0**	**-1.3**
IGD				*i* S	**Sn**	**19 59 57.5**	**+0.4**
IZI	**Iznik**	**1.33**	**101**	*e*PN	**Pb**	**19 59 44.3**	**+0.5**
IZI				*e*SN	**Sn**	**20 00 02.3**	**+0.5**
IZI	**Iznik**	**1.33**	**101**	*e*Pn	**Pb**	**19 59 44.3**	**+0.5**
IZI				*e*Sn	**Sn**	**20 00 02.3**	**+0.5**
ALN	**Alexandroupoli**	**1.34**	**283**	*e*PN	**Pg**	**19 59 44.3**	**+0.2**
ALN	**Alexandroupoli**	**1.34**	**283**	*e*Pn	**Pg**	**19 59 44.3**	**+0.2**
TVSB	**Tavsanli**	**1.74**	**131**	*e*PN	**Pb**	**19 59 50.7**	**-0.1**
TVSB				*e*SN	**Sg**	**20 00 14.5**	**+0.3**
TVSB	**Tavsanli**	**1.74**	**131**	*e*Pn	**Pb**	**19 59 50.7**	**-0.1**
TVSB				*e*Sn	**Sg**	**20 00 14.5**	**+0.3**

IDC 18 20:01:43.6±1.2, 56.°26S×26.°04W, h0km, mb4.0/3, mb1 4.1/3, mb1mx3.9/20, mbtmp4.0/3, Error ellipse: s-maj=48.2km s-min=32.3km az=94.0, South Sandwich Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
VNDA	**Vanda**	**46.39**	**182**	P	P	20 10 11.0	0.0
	0.9nm,0.6s,baz=181,slow=8.0,SNR=5.9						
LPAZ	**La Paz**	**51.03**	**304**	P	P	20 10 48.1	+0.1
	1.3nm,0.7s,baz=157,slow=7.7,SNR=5.4						
TORD	**Torodi Ar. Bea**	**72.93**	**28**	P	P	20 13 14.6	+0.1
	1.6nm,0.6s,baz=200,slow=6.6,SNR=15						
ILAR	**Eielson Array**	**150.74**	**311**	PKPbc	PKPbc	20 21 35.4	-0.8
	0.9nm,0.9s,baz=128,slow=1.7,SNR=7.7						

IDC 18 20:01:50.7±1.4, 31.°29N×103.°07E, h0km, mb3.4/4, mb1 3.5/4, mb1mx3.2/56, mbtmp3.4/4, MS2.5/1, Ms1 2.7/1, ms1mx2.2/30, Error ellipse: s-maj=218.1km s-min=23.5km az=56.0, Sichuan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CMAR	**Chiang Mai Arr**	**13.31**	**197**	LR	LR	20 10 43.1	
	comp=Z,20nm,20.5s,baz=290,slow=40						
MKAR	**Makanchi Array**	**22.27**	**320**	P	P	20 06 49.0	-0.3
	0.4nm,0.7s,baz=129,slow=11,SNR=4.4						
ZALV	**Zalesovo Beam**	**26.18**	**335**	P	P	20 07 26.4	-0.3
	0.4nm,0.4s,baz=134,slow=10,SNR=3.7						
KURBB	**Kurchatov Arra**	**26.56**	**324**	P	P	20 07 30.6	+0.4
	1.0nm,0.7s,baz=126,slow=9.5,SNR=9.0						
WRA	**Warramunga Arr**	**59.12**	**145**	P	P	20 11 53.1	-0.1
	0.3nm,1.0s,baz=319,slow=10,SNR=4.0						

NIED ***18*** *20:21:00, 37.°30N×142.°00E, h29km, Mw3.5 Best double couple: M0 2.13000×10^14 NP1:φs113.00000°, δ20.00000°, λ47.00000°. NP2:φs337.00000°, δ75.00000°, λ104.00000°.*

IDC ***18*** *20:21:49.5±1.5, 37.°21N×142.°32E, h0km, mb3.5/3, mb1 3.7/5, mb1mx3.4/48, mbtmp3.6/5, ML3.6/2, MS2.6/1, Ms1 2.6/1, ms1mx2.1/40, Error ellipse: s-maj=37.1km s-min=27.2km az=117.0*

ISCJB ***18*** *20:21:51.2±0.9, 37.°26N±0.°07×142.°15E±0.°07, h19km, mb3.5/3, Error ellipse: s-maj=10.3km s-min=8.0km az=17.0*

JMA ***18*** *20:21:52.7±0.3, 37.°29N×142.°00E, h16km±3km, M3.6*

ISC 18 20:21:52.6±1.1, 37.°22N±0.°06×141.°99E±0.°07, h19km, n19, σ0s85/16, mb3.6/3, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**0.90**	**280**	P	**Pb**	**20 22 09.7**	**+0.1**
JFK				*e*S	**Sg**	**20 22 22.2**	**+0.1**
ONAJ	**Iwakimizuishiy**	**0.96**	**263**	P	**Pb**	**20 22 10.8**	**+0.2**
JMM	**Marumori**	**1.15**	**304**	P	**Pn**	**20 22 13.2**	**-0.4**
JFT	**Otama**	**1.35**	**283**	P	**Pb**	**20 22 17.2**	**-0.1**
JFT				S	**Sb**	**20 22 35.1**	**+0.9**
JOU	**Okura**	**1.55**	**318**	*e*S	**Sn**	**20 22 39.0**	**+0.1**
JFY	**Yanaizu**	**1.83**	**277**	P	**Pb**	**20 22 24.5**	**-1.0**
JFY				*e*S	**Sb**	**20 22 48.0**	**-0.1**
JMK	**Ichinoseki**	**1.83**	**341**	P	**Pn**	**20 22 23.6**	**+0.6**
MJAR	**Matsushiro Arr**	**3.11**	**259**	Pn	Pb	20 22 44.0	-3.2
	3.3nm,0.3s,baz=71,slow=7.3,SNR=13						
MJAR				LR	LR	20 24 12.9	
	comp=Z,85nm,20.0s,baz=130,slow=43						
MAT	**Matsushiro**	**3.11**	**259**	P	Pb	20 22 44.0	-3.2
MAT				S	**Sb**	**20 23 24.6**	**-0.2**
JHJ	**Hachijo jima 2**	**4.47**	**204**	Pn	**Pn**	**20 23 00.9**	**+1.5**
	16nm,0.3s,baz=311,slow=21,SNR=5.3						
JHJ				Sn	**Sn**	**20 23 49.1**	**-1.7**
	50nm,0.3s,baz=79,slow=23,SNR=12						
H11N2	**WAKE ISLAND Hy**	**27.85**	**122**	T	T	20 55 17.5	
	baz=315,slow=75,SNR=12						
H11N1	**WAKE ISLAND Hy**	**27.86**	**122**	T	T	20 55 23.6	
	baz=315,slow=75,SNR=10						
H11N3	**WAKE ISLAND Hy**	**27.87**	**122**	T	T	20 55 21.1	
	baz=315,slow=75,SNR=8.1						
H11S1	**WAKE ISLAND Hy**	**28.58**	**124**	T	T	20 56 18.4	
	baz=316,slow=76,SNR=8.9						
H11S3	**WAKE ISLAND Hy**	**28.58**	**124**	T	T	20 56 17.8	
	baz=316,slow=76,SNR=8.6						
H11S2	**WAKE ISLAND Hy**	**28.59**	**124**	T	T	20 56 17.7	
	baz=316,slow=76,SNR=8.1						
MKAR	**Makanchi Array**	**44.41**	**302**	P	**P**	**20 30 03.0**	**+1.0**
	0.6nm,0.7s,baz=89,slow=9.8,SNR=6.4						
ILAR	**Eielson Array**	**49.09**	**32**	P	**P**	**20 30 37.6**	**-0.6**
	0.4nm,0.8s,baz=265,slow=5.9,SNR=4.2						
WRA	**Warramunga Arr**	**57.31**	**189**	P	**P**	**20 31 38.7**	**-0.5**
	0.6nm,0.7s,baz=6.3,slow=7.1,SNR=5.0						

IDC 18 20:23:47.4±26.0, 20.°73S×173.°43W, h0km, mb4.2/4, mb1 4.3/4, mb1mx3.8/44, mbtmp4.2/4, Error ellipse: s-maj=488.0km s-min=146.4km az=76.0, Tonga Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CTA	**Charters Tower**	**37.73**	**264**	P	P	20 31 05.7	+0.6
	3.1nm,0.4s,baz=91,slow=14,SNR=8.4						
STKA	**Stephens Creek**	**41.56**	**245**	P	P	20 31 35.7	-1.3
	1.7nm,0.6s,baz=98,slow=8.4,SNR=8.6						
ASAR	**Alice Springs**	**48.63**	**256**	P	P	20 32 33.2	-0.2
	1.6nm,0.7s,baz=103,slow=7.0,SNR=18						
WRA	**Warramunga Arr**	**48.81**	**261**	P	P	20 32 35.2	+0.4
	0.5nm,0.3s,baz=91,slow=8.3,SNR=50						

NIED ***18*** *20:36:00, 37.°00N×143.°90E, h14km, Mw3.6 Best double couple: M0 3.18000×10^14 NP1:φs318.00000°, δ47.00000°, λ-165.00000°. NP2:φs217.00000°, δ79.00000°, λ-44.00000°.*

IDC ***18*** *20:36:39.9±2.2, 36.°98N×144.°20E, h0km, mb3.3/2, mb1 3.7/5, mb1mx3.4/50, mbtmp3.6/5, ML3.5/3, Error ellipse: s-maj=48.6km s-min=27.2km az=82.0*

ISCJB ***18*** *20:36:43.9±1.1, 36.°98N±0.°06×144.°04E±0.°09, h33km, mb3.4/2, Error ellipse: s-maj=10.0km s-min=8.9km az=164.9*

JMA ***18*** *20:36:45.6±0.3, 37.°05N×143.°93E, h38km, M3.7*

ISC 18 20:36:45.3±1.6, 37.°03N±0.°08×144.°1E±0.°1, h35km, n16, σ0s91/20, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**2.59**	**304**	P	**Pn**	**20 37 25.2**	**+0.6**
JIO				*e*S	**Sn**	**20 37 54.6**	**-0.2**
ONAJ	**Iwakimizuishiy**	**2.62**	**273**	P	**Pn**	**20 37 25.6**	**+0.4**
ONAJ				*e*S	**Sn**	**20 37 54.7**	**-1.1**
JMM	**Marumori**	**2.74**	**289**	P	**Pn**	**20 37 27.3**	**+0.5**
JMM				*e*S	**Sn**	**20 37 57.1**	**-1.6**
OFUJ	**Ofunato**	**2.79**	**318**	P	**Pn**	**20 37 27.9**	**+0.4**
JMK	**Ichinoseki**	**2.96**	**311**	P	**Pn**	**20 37 30.5**	**+0.7**
JOU	**Okura**	**3.02**	**297**	P	**Pn**	**20 37 31.5**	**+0.9**
JFT	**Otama**	**3.02**	**280**	P	**Pn**	**20 37 31.5**	**+0.9**
**J

*ISCJB **18** 20:48:45.4±0.9,5.7S±0.1×152.6E±0.2,h40km,mb4.1/15, MS3.0/1,Error ellipse: s-maj=27.1km s-min=9.3km az=38.7*

*NEIC **18** 20:48:49.9±3.0,5.7S×152.5E,h65km±24km,mb4.4/5, Error ellipse: s-maj=29.5km s-min=16.8km az=107.0*

ISC 18 20:48:46.9±1.1,5.7S±0.2×152.7E±0.2,h40km,n18, σ0s69/17,mb4.1/15,New Britain region

Code	Station Name	Δ° AZ°	Phase	ID	Time	Res
			Op	ISC	h m s	ISC
PMG	**Port Moresby**	**6.59 236**	Pn	**Pn**	**20 50 21.8**	**+0.4**
	4.8nm,0.3s,baz=32,slow=9.2,SNR=9.1					
PMG			Sn	**Sn**	**20 51 36.0**	**+0.6**
	6.5nm,0.3s,baz=115,slow=14,SNR=3.8					
DZM	**Mont Dzumac**	**21.03 142**	LR	LR	21 01 09.6	
	comp=Z,62nm,19.1s,baz=338,slow=36					
WRA	**Warramunga Arr**	**22.77 230**	P	**P**	**20 53 45.0**	**-1.1**
	1.7nm,0.9s,baz=54,slow=9.9,SNR=11					
ASAR	**Alice Springs**	**25.41 223**	P	**P**	**20 54 11.2**	**+0.2**
	2.3nm,0.7s,baz=60,slow=9.0,SNR=31					
STKA	**Stephens Creek**	**28.03 200**	P	**P**	**20 54 33.9**	**-0.5**
	1.0nm,0.8s,baz=350,slow=12,SNR=2.9					
FITZ	**Fitzroy Crossi**	**29.13 243**	P	**P**	**20 54 44.3**	**-0.1**
	1.9nm,0.5s,baz=50,slow=7.9,SNR=12					
MBWA	**Marble Bar**	**35.42 241**	*eP*	P	20 55 35.8	-3.7
	30nm,1.3s					
CMAR	**Chiang Mai Arr**	**58.15 296**	P	**P**	**20 58 37.3**	**+0.1**
	0.5nm,0.8s,baz=135,slow=7.0,SNR=5.7					
SONM	**Songino Array**	**67.01 328**	P	**P**	**20 59 36.0**	**0.0**
	1.4nm,0.6s,baz=140,slow=7.4,SNR=3.1					
LSA	**Lhasa**	**68.64 305**	*eP*	**P**	**20 59 46.3**	**-0.7**
	1.3nm,0.6s					
MKAR	**Makanchi Array**	**80.92 319**	P	**P**	**21 00 57.6**	**+0.4**
	0.3nm,0.6s,baz=101,slow=6.4,SNR=4.9					
ZALV	**Zalesovo Beam**	**81.83 326**	P	**P**	**21 01 01.2**	**-0.5**
	1.8nm,0.5s,baz=124,slow=5.3,SNR=8.8					
ILAR	**Eielson Array**	**83.03 22**	P	**P**	**21 01 07.6**	**-0.3**
	1.3nm,0.7s,baz=251,slow=5.5,SNR=17					
KURK	**Kurchatov**	**84.39 322**	*eP*	**P**	**21 01 14.6**	**-0.5**
	8.5nm,1.1s					
AAK	**Ala-Archa**	**85.19 314**	*eP*	**P**	**21 01 20.1**	**+0.6**
	1.9nm,0.8s					
BRVK	**Borovoye**	**89.95 323**	*eP*	**P**	**21 01 41.1**	**-0.8**
	1.9nm,0.9s					
YKA	**Yellowknife Ar**	**96.27 28**	P	**P**	**21 02 12.3**	**+1.5**
	0.4nm,0.7s,baz=270,slow=4.9,SNR=8.7					
TORD	**Torodi Ar. Bea**	**150.45 287**	PKPbc	**PKPbc**	**21 08 35.1**	**-0.2**
	0.7nm,0.8s,baz=133,slow=2.4,SNR=4.6					

JMA 18 21:09:36.2,37.05N×140.80E,h8km±1km,M2.6,Eastern Honshu

Code	Station Name	Δ° AZ°	Phase	ID	Time	Res
			Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.05 358**	P	Pg	21 09 38.0	0.0
ONAJ			S	Sg	21 09 39.1	-0.2
JFK	**Kawauchi**	**0.32 11**	P	Pg	21 09 42.6	0.0
JFK			S	Sg	21 09 47.2	+0.3
JHO	**Hitachi**	**0.48 203**	P	Pg	21 09 45.3	-0.1
JHO			S	Sg	21 09 51.8	+0.1
JFT	**Otama**	**0.60 322**	P	Pg	21 09 47.9	+0.2
JFT			S	Sg	21 09 56.2	+0.7
JMM	**Marumori**	**0.81 360**	P	Pg	21 09 51.5	-0.4
JMM			*eS*	Sg	21 10 02.7	+0.2
MAT	**Matsushiro**	**2.14 257**	P	Pn	21 10 13.6	+1.3
MAT			S	Sb	21 10 41.9	-0.1

MEX 18 21:16:14.3±0.4,32.30N×115.17W,h26km±8km,MD3.6, California-Baja California border region

Code	Station Name	Δ° AZ°	Phase	ID	Time	Res
			Op	ISC	h m s	ISC
CBX	**Cerro Bola**	**1.27 271**	*eP*	Pn	21 16 33.4	-3.0
CBX			*eS*	Sn	21 16 38.7	-14
SPIG	**San Pedro Mart**	**1.27 192**	*eP*	Pn	21 16 34.1	-2.7
SPIG			*eS*	Sn	21 16 49.7	-3.5
TJIG	**Tijuana**	**1.28 276**	*eP*	Pn	21 16 34.4	-2.2
TJIG			*eS*	Sn	21 16 49.2	-3.7

*NIED **18** 21:16:00,36.30N×141.70E,h26km,Mw4.1 Best double couple: M₀1.81000×10¹⁵ NP1:φs254.00000°,δ31.00000°, λ-171.00000°. NP2:φs156.00000°,δ85.00000°, λ-59.00000°.*

*IDC **18** 21:16:41.4±0.6,36.11N×141.61E,h0km,mb4.0/21, mb1 4.1/26,mb1mx4.0/57,mbtmp4.0/26,ML4.2/4,MS3.2/8, Ms1 3.2/8,ms1mx2.9/42,Error ellipse: s-maj=15.3km s-min=13.8km az=114.0*

*ISCJB **18** 21:16:43.7±0.3,36.14N±0.03×141.66E±0.04,h26km, mb4.3/41,MS3.0/3,Error ellipse: s-maj=4.9km s-min=4.1km az=142.4*

*JMA **18** 21:16:44.4±0.2,36.27N×141.66E,h49km±5km,M4.0*

*NEIC **18** 21:16:48.4±0.7,36.10N×141.49E,h49km±7km,mb4.6/21, Error ellipse: s-maj=5.6km s-min=5.4km az=93.0*

ISC 18 21:16:45.2±0.5,36.18N±0.04×141.62E±0.05,h26km,n106, σ1s27/98,mb4.2/41,MS2.9/3,Near east coast of eastern Honshu

Code	Station Name	Δ° AZ°	Phase	ID	Time	Res
			Op	ISC	h m s	ISC
CHOJ	**Chosi**	**0.78 233**	P	**Pn**	**21 17 00.4**	**-0.1**
CHOJ			*eS*	**Sn**	**21 17 11.9**	**+0.6**
JHO	**Hitachi**	**0.95 297**	P	**Pn**	**21 17 01.3**	**-1.6**
BSO1	**Boso 1**	**1.61 199**	S	**Sb**	**21 17 33.0**	**-0.5**
BSO3	**Boso 3**	**1.65 214**	P	**Pb**	**21 17 13.4**	**-1.3**
JFT	**Otama**	**1.69 323**	P	**Pn**	**21 17 12.3**	**-0.7**
JAG	**Ashikaga**	**1.77 279**	P	**Pn**	**21 17 13.6**	**-0.5**
JFY	**Yanaizu**	**1.97 309**	P	**Pn**	**21 17 16.9**	**0.0**
JKT	**Katashina**	**2.00 288**	P	**Pn**	**21 17 17.2**	**-0.2**
JRY	**Ryogami san**	**2.21 267**	P	**Pn**	**21 17 19.6**	**-0.6**
JOD2	**Odawara 2**	**2.25 247**	P	**Pn**	**21 17 21.7**	**+0.9**
MJAR	**Matsushiro Arr**	**2.78 279**	Pn	**Pn**	**21 17 28.4**	**+0.4**
	38nm,0.3s,baz=113,slow=7.9,SNR=162					
MJAR			Sn	**Sn**	**21 18 03.1**	**+2.4**
	15nm,0.3s,baz=103,slow=18,SNR=7.7					
MJAR			LR	LR	21 18 40.8	
	comp=Z,405nm,19.8s,baz=125,slow=44					
MAJO	**Matsushiro**	**2.78 279**	*ePn*	**Pn**	**21 17 28.9**	**+0.8**
MAJO			*eSn*	Sn	21 17 51.2	-10
MAT	**Matsushiro**	**2.78 279**	P	**Pn**	**21 17 28.5**	**+0.5**
MAT			S	**Sb**	**21 18 05.0**	**-2.8**
MJB9	**Matsu-Tunnel**	**2.78 279**	*ePn*	**Pn**	**21 17 29.1**	**+1.1**
MJB9			*eSn*	**Sn**	**21 17 58.5**	**-2.3**
JHJ2	**Mitsune**	**3.40 206**	*ePn*	**Pn**	**21 17 38.6**	**+2.0**
JHJ2			*eSn*	**Sn**	**21 18 12.7**	**-3.3**
JHJ	**Hachijo jima 2**	**3.41 207**	Pn	**Pn**	**21 17 37.0**	**+0.3**
	168nm,0.3s,baz=71,slow=19,SNR=37					
JHJ			Sn	**Sn**	**21 18 14.8**	**-1.3**
	98nm,0.3s,baz=50,slow=19,SNR=10					
INU	**Inuyama**	**3.83 259**	*ePn*	**Pn**	**21 17 44.3**	**+1.8**
INU			*eSn*	**Sn**	**21 18 27.1**	**+0.4**
ERM	**Erimo**	**5.95 11**	*ePn*	Pn	21 18 08.1	-3.5
ERM			*eSn*	Sn	21 19 11.1	-7.7
ASAJ	**Asahikawa**	**7.96 5**	Pn	**Pn**	**21 18 37.7**	**-1.5**
	1.1nm,0.3s,baz=208,slow=19,SNR=9.1					
ASAJ			Sn	**Sn**	**21 20 04.2**	**-4.2**
	0.1nm,0.3s,baz=350,slow=17,SNR=1.8					
ASAJ			LR	LR	21 22 25.1	
	comp=Z,142nm,20.9s,baz=334,slow=43					
ASAJ	**Asahikawa**	**7.96 5**	*ePn*	Pn	21 18 35.8	-3.5
ASAJ			*eSn*	Sn	21 20 01.8	-6.6
CBIJ	**Chichi jima**	**9.07 177**	*ePn*	**Pn**	**21 18 51.4**	**-3.0**
CBIJ			*eSn*	Sn	21 20 26.3	-9.4
JCJ	**Chichijima**	**9.07 177**	Pn	**Pn**	**21 18 54.5**	**+0.1**
	11nm,0.3s,baz=292,slow=19,SNR=3.9					
JCJ			Sn	Sn	21 20 27.4	-8.2
	12nm,0.3s,baz=270,slow=20,SNR=4.2					
JNU	**Nakatsue**	**9.36 254**	LR	LR	21 22 54.5	
	comp=Z,225nm,21.3s,baz=14,slow=40					
USRK	**Ussuriysk Ar.**	**10.88 320**	Pn	**Pn**	**21 19 20.2**	**+1.1**
	0.1nm,0.3s,baz=139,slow=13,SNR=2.7					
USRK			LR	LR	21 23 32.4	
	comp=Z,95nm,18.0s,baz=81,slow=38					
KSRS	**Korea Array**	**11.06 281**	Pn	Pn	21 19 27.1	+5.6
	0.3nm,0.3s,baz=92,slow=14,SNR=7.0					
KSRS			LR	LR	21 23 25.5	
	comp=Z,128nm,19.8s,baz=80,slow=36					
KSAR	**Wonju Array Be**	**11.09 281**	Pn	Pn	21 19 27.1	+5.2
PEA0	**Petropavlovsk-**	**20.35 29**	*eP*	**P**	**21 21 16.9**	**-2.6**
PETK	**Petropavlovsk-**	**20.35 29**	LR	LR	21 28 47.3	
	comp=Z,50nm,21.0s,baz=216,slow=36					
HIA	**Hailar**	**20.63 316**	*eP*	**P**	**21 21 19.2**	**-3.3**
	6.1nm,0.8s					
MA2	**Magadan**	**24.16 11**	LR	LR	21 30 48.7	
	comp=Z,41nm,19.1s,baz=288,slow=35					
ENH	**Enshi**	**27.44 267**	*eP*	**P**	**21 22 27.9**	**-1.1**
	8.4nm,0.8s					
H11N2	**WAKE ISLAND Hy**	**27.57 120**	T	T	21 51 54.9	
	baz=311,slow=75,SNR=47					
H11N1	**WAKE ISLAND Hy**	**27.58 120**	T	T	21 51 45.2	
	baz=311,slow=75,SNR=33					
H11N3	**WAKE ISLAND Hy**	**27.59 120**	T	T	21 51 46.6	
	baz=311,slow=75,SNR=38					
SEY	**Seymchan**	**27.60 11**	P	**P**	**21 22 31.1**	**+1.1**
	0.8nm,0.2s,baz=168,slow=8.0,SNR=4.8					
ULN	**Ulaanbaatar**	**27.98 305**	*eP*	**P**	**21 22 34.2**	**+0.4**
	4.7nm,1.2s					
H11S1	**WAKE ISLAND Hy**	**28.26 122**	T	T	21 52 35.2	
	baz=313,slow=75,SNR=84					
H11S3	**WAKE ISLAND Hy**	**28.26 122**	T	T	21 52 40.5	
	baz=313,slow=75,SNR=54					
H11S2	**WAKE ISLAND Hy**	**28.28 122**	T	T	21 52 43.3	
	baz=313,slow=75,SNR=49					
SONA0	**Songino Array**	**28.41 305**	*eP*	**P**	**21 22 37.3**	**-0.3**
	2.2nm,0.8s					
SONM	**Songino Array**	**28.41 305**	P	**P**	**21 22 37.3**	**-0.3**
	1.3nm,0.4s,baz=108,slow=9.2,SNR=3.5					
TLY	**Talaya**	**31.02 312**	LR	LR	21 35 20.9	
	comp=Z,43nm,19.3s,baz=109,slow=36					
PATS	**Pohnpei**	**32.96 148**	*eP*	**P**	**21 23 17.5**	**-0.3**
	304nm,1.5s					
CM31	**Chiang Mai Arr**	**41.45 256**	*eP*	**P**	**21 24 28.6**	**-1.2**
CMAR	**Chiang Mai Arr**	**41.45 256**	P	**P**	**21 24 28.6**	**-1.2**
	1.0nm,0.5s,baz=58,slow=7.6,SNR=7.9					
CM01	**Chiang Mai Arr**	**41.46 256**	*eP*	**P**	**21 24 28.7**	**-1.3**
ZAA0	**Zalesovo Array**	**42.62 313**	*eP*	**P**	**21 24 39.2**	**+0.2**
ZAA1	**Zalesovo Array**	**42.62 313**	*eP*	**P**	**21 24 38.8**	**-0.2**
ZALV	**Zalesovo Beam**	**42.62 313**	P	**P**	**21 24 38.8**	**-0.2**
	1.8nm,0.5s,baz=88,slow=5.1,SNR=7.3					
MK01	**Makanchi Array**	**44.72 303**	*eP*	**P**	**21 24 56.4**	**+0.4**
MK31	**Makanchi Array**	**44.72 303**	*eP*	**P**	**21 24 56.5**	**+0.5**
MK32	**Makanchi Array**	**44.72 303**	*eP*	**P**	**21 24 56.2**	**+0.2**
MKAR	**Makanchi Array**	**44.72 303**	P	**P**	**21 24 56.2**	**+0.2**
	1.5nm,0.7s,baz=89,slow=8.2,SNR=21					
MKAR	**Makanchi Array**	**44.72 303**	*eP*	**P**	**21 24 56.5**	**+0.5**
MAKZ	**Makanchi**	**44.93 303**	*eP*	**P**	**21 24 58.5**	**+0.8**
	1.9nm,0.9s					
KURK	**Kurchatov**	**46.59 309**	*eP*	**P**	**21 25 11.1**	**+0.3**
	0.4nm,0.5s					
KURBB	**Kurchatov Arra**	**46.66 309**	P	**P**	**21 25 11.1**	**-0.2**
	2.7nm,0.8s,baz=85,slow=8.1,SNR=22					
GUN	**Gumba**	**47.41 277**	*eP*	**P**	**21 25 18.2**	**+0.3**
KDAK	**Kodiak Island**	**47.63 41**	*eP*	**P**	**21 25 19.6**	**+0.9**
	43nm,1.4s					
PPLA	**Purkeypile**	**47.78 34**	*eP*	**P**	**21 25 20.8**	**+0.8**
	14nm,1.4s					
PKIN	**Phulchoki**	**47.94 276**	*eP*	**P**	**21 25 21.5**	**-0.4**
	4.6nm,0.7s					
KKN	**Kakani**	**47.94 277**	*eP*	**P**	**21 25 22.5**	**+0.6**
GKN	**Gorkha**	**48.37 277**	*eP*	**P**	**21 25 25.7**	**+0.6**
	24nm,1.0s					
MLY	**Manley**	**48.49 32**	*eP*	**P**	**21 25 27.5**	**+2.1**
	3.6nm,0.9s					
KOLN	**Koldanda**	**49.30 278**	*eP*	**P**	**21 25 33.2**	**+0.9**
MDM	**Murphy Dome**	**49.55 32**	*eP*	**P**	**21 25 35.4**	**+1.9**
	5.4nm,0.8s					
PYUN	**Piuthan**	**49.65 278**	*eP*	**P**	**21 25 36.1**	**+1.1**
SCM	**Sheep Creek Mo**	**50.06 36**	*eP*	**P**	**21 25 38.9**	**+1.4**
	12nm,0.6s					
IL1	**Eielson Array**	**50.13 32**	*eP*	**P**	**21 25 38.1**	**+0.3**
ILAR	**Eielson Array**	**50.13 32**	P	**P**	**21 25 38.5**	**+0.6**
	2.5nm,0.7s,baz=267,slow=6.3,SNR=28					
ILB	**Eielson Array**	**50.13 32**	*eP*	**P**	**21 25 38.5**	**+0.6**
TKM2	**Tokmak 2**	**50.19 299**	*eP*	P	21 25 43.4	+4.5
	7.9nm,1.4s					
VOSK	**Vostochnaya**	**50.98 312**	*eP*	**P**	**21 25 45.0**	**+0.5**
	3.2nm,0.8s					
AAK	**Ala-Archa**	**51.05 299**	P	**P**	**21 25 46.0**	**+0.7**
	0.5nm,0.4s,baz=121,slow=5.9,SNR=4.6					
BVAR	**Borovoye Array**	**51.27 313**	P	**P**	**21 25 48.7**	**+2.1**
	0.7nm,0.6s,baz=86,slow=8.6,SNR=5.7					
PSI	**Prapat**	**51.50 240**	P	**P**	**21 25 48.4**	**-0.5**
	4.7nm,0.8s,baz=140,slow=1.8,SNR=4.4					
PSI	**Prapat**	**51.50 240**	*eP*	**P**	**21 25 48.4**	**-0.5**
	5.8nm,0.9s					
WRAB	**Tennant Creek**	**56.23 188**	*eP*	**P**	**21 26 23.0**	**-0.1**
	8.2nm,0.9s					
WB2	**Warramunga Arr**	**56.24 188**	*eP*	**P**	**21 26 23.7**	**+0.5**
	23nm,1.6s					
WR1	**Warramunga Arr**	**56.24 188**	*eP*	**P**	**21 26 22.0**	**-1.2**
	21nm,1.6s					
WRA	**Warramunga Arr**	**56.24 188**	P	**P**	**21 26 22.0**	**-1.2**
	1.2nm,0.7s,baz=5.4,slow=7.1,SNR=12					
ARU	**Arti**	**57.11 319**	P	**P**	**21 26 29.4**	**+0.3**
	1.1nm,0.4s,baz=90,slow=11,SNR=3.5					
ARU	**Arti**	**57.11 319**	*eP*	**P**	**21 26 29.4**	**+0.3**
	9.5nm,1.3s					
ABKAR	**Akbulak array**	**58.62 311**	*eP*	**P**	**21 26 39.9**	**+0.1**
AKTO	**Aktyubinsk**	**59.37 312**	P	**P**	**21 26 45.6**	**+0.6**
	1.0nm,0.6s,baz=77,slow=10,SNR=4.5					
AS31	**Alice Springs**	**59.96 188**	*eP*	**P**	**21 26 49.4**	**+0.1**
	2.6nm,1.4s					
ASAR	**Alice Springs**	**59.97 188**	P	**P**	**21 26 49.4**	**+0.1**
	0.4nm,0.8s,baz=12,slow=9.6,SNR=5.0					
YKA	**Yellowknife Ar**	**64.46 30**	P	**P**	**21 27 19.4**	**+0.4**
	0.6nm,0.7s,baz=302,slow=6.7,SNR=12					
YKB5	**Yellowknife Ar**	**64.46 30**	*eP*	**P**	**21 27 19.4**	**+0.4**
BMW	**Boistfort Moun**	**68.00 48**	*eP*	**P**	**21 27 43.0**	**+0.9**
KEBM	**Edson Butte**	**69.12 52**	*eP*	**P**	**21 27 50.2**	**+1.1**
	409nm,0.5s					
FIA0	**FINESS Array S**	**69.65 332**	*eP*	**P**	**21 27 53.7**	**+1.8**
FINES	**FINESS Array B**	**69.65 332**	P	**P**	**21 27 53.7**	**+1.8**
	2.0nm,0.9s,baz=31,slow=8.3,SNR=2.9					
NB2	**NORSAR Subarra**	**75.04 337**	P	**P**	**21 28 26.6**	**+2.4**
	comp=Z,4.7nm,1.0s,baz=39,slow=6.2					
NB200	**NORSAR Array S**	**75.04 337**	*eP*	**P**	**21 28 24.3**	**+0.1**
NOA	**NORSAR Array B**	**75.04 337**	P	**P**	**21 28 24.3**	**+0.1**
	comp=Z,0.6nm,0.8s,baz=38,slow=5.8,SNR=2.4					
AKASG	**Malin Array Be**	**75.08 323**	P	**P**	**21 28 24.9**	**+0.4**
	comp=Z,0.3nm,0.4s,baz=44,slow=5.9,SNR=4.0					
AKBB	**Malin Array Si**	**75.08 323**	*eP*	**P**	**21 28 24.9**	**+0.4**
	comp=Z,5.0nm,0.6s					
NV01	**Mina Array Sit**	**75.37 53**	*eP*	**P**	**21 28 28.1**	**+1.3**
NVAR	**Mina Array Bea**	**75.37 53**	P	**P**	**21 28 28.1**	**+1.3**
	comp=Z,1.1nm,0.6s,baz=282,slow=5.9,SNR=6.7					
PD31	**Pinedale Array**	**78.15 45**	*eP*	**P**	**21 28 42.9**	**+0.5**
PDAR	**Pinedale Array**	**78.15 45**	P	**P**	**21 28 42.9**	**+0.5**
	comp=Z,0.7nm,0.6s,baz=280,slow=1.6,SNR=5.8					
SDCO	**Great Sand Dun**	**83.75 47**	*eP*	P	21 29 15.8	+3.4
	comp=Z,20nm,1.4s					
LTX	**Lajitas**	**90.51 52**	*eP*	**P**	**21 29 46.2**	**+1.0**
TXAR	**Lajitas Array**	**90.51 52**	P	**P**	**21 29 46.2**	**+1.0**
	comp=Z,0.5nm,0.7s,baz=328,slow=4.4,SNR=4.7					
LPAZ	**La Paz**	**146.97 61**	PKPbc	**PKPdf**	**21 36 26.0**	**+1.3**
	comp=Z,1.1nm,0.6s,baz=346,slow=5.8,SNR=4.9					

JMA 18 21:22:58.6±0.2,38.40N×144.42E,h36km,M3.7,Off east coast of Honshu

Code	Station Name	Δ° AZ°	Phase	ID	Time	Res
			Op	ISC	h m s	ISC
OFUJ	**Ofunato**	**2.26 288**	P	Pn	21 23 34.8	+1.5
JIO	**Ouri**	**2.41 272**	P	Pn	21 23 36.9	+1.4
JIO			*eS*	Sn	21 24 05.3	+1.6
JMK	**Ichinoseki**	**2.56 283**	P	Pn	21 23 39.3	+1.7
JMK			*eS*	Sn	21 24 09.5	+2.0
JOM	**Ohasama**	**2.66 295**	P	Pn	21 23 40.9	+2.0
JOM			*eS*	Sn	21 24 12.4	+2.4
JMM	**Marumori**	**2.91 261**	P	Pn	21 23 43.9	+1.6
JMM			*eS*	Sn	21 24 18.1	+2.1
JOU	**Okura**	**2.95 270**	P	Pn	21 23 45.5	+2.6
JOU			*eS*	Sn	21 24 19.9	+2.8
JYK	**Kaneyama**	**3.22 280**	P	Pn	21 23 48.9	+2.3
JNBK	**Urakawa-nobuka**	**4.08 342**	*eS*	Sn	21 24 44.1	-0.8
JCH	**Churui**	**4.29 349**	P	Pn	21 24 02.2	+1.0
JCH			*eS*	Sn	21 24 47.7	-2.2

IDC 18 21:33:32.4±2.5,35.77N×142.11E,h0km,mb3.5/3, mb1 3.7/5,mb1mx3.4/47,mbtmp3.5/5,ML3.3/2,Error ellipse: s-maj=61.1km s-min=26.7km az=60.0,Off east coast of Honshu

Code	Station Name	Δ° AZ°	Phase	ID	Time	Res
			Op	ISC	h m s	ISC
MJAR	**Matsushiro Arr**	**3.25 285**	Pn	Pn	21 34 24.7	0.0
	2.2nm,0.3s,baz=107,slow=8.1,SNR=15					
MAT	**Matsushiro**	**3.25 285**	P	Pn	21 34 25.1	+0.4
JHJ	**Hachijo jima 2**	**3.27 217**	Pn	Pn	21 34 24.4	-0.5
	13nm,0.3s,baz=346,slow=21,SNR=12					
MKAR	**Makanchi Array**	**45.28 303**	P	P	21 41 51.4	-0.3
	0.2nm,0.7s,baz=83,slow=8.2,SNR=3.4					
WRA	**Warramunga Arr**	**55.89 189**	P	P	21 43 12.3	+0.2
	0.9nm,0.6s,baz=6.8,slow=7.3,SNR=12					
ASAR	**Alice Springs**	**59.62 189**	P	P	21 43 38.0	-0.3
	0.4nm,0.6s,baz=14,slow=9.8,SNR=5.8					

*NIED **18** 21:33:00,36.70N×141.50E,h32km,Mw4.6 Best double couple: M₀9.22000×10¹⁵ NP1:φs315.00000°,δ10.00000°, λ-149.00000°. NP2:φs194.00000°,δ85.00000°, λ-81.00000°.*

*BJI **18** 21:33:46.2,36.35N×141.51E,h18km,mb4.7/58,mB4.8/38, Ms4.3/50,Ms7 4.2/39*

*MOS **18** 21:33:47.7±1.2,36.74N×141.48E,h18km,mb4.9/63,Error ellipse: s-maj=7.7km s-min=5.1km az=96.3*

*ISCJB **18** 21:33:49.8±0.7,36.60N±0.02×141.45E±0.03,h33km±4km, mb4.7/141,MS4.1/13,Error ellipse: s-maj=3.9km s-min=3.4km az=154.6*

*NEIC **18** 21:33:49.8±0.5,36.64N×141.40E,h22km±3km,mb4.8/96, Error ellipse: s-maj=4.6km s-min=3.1km az=143.0*

NEIC Recorded [3 JMA] in Ibaraki.

*IDC **18** 21:33:51.7±0.7,36.67N×141.45E,h37km±5km,mb4.2/30, mb1 4.3/35,mb1mx4.3/49,mbtmp4.4/35,ML3.9/5,Error ellipse: s-maj=12.1km s-min=10.4km az=125.0*

*JMA **18** 21:33:51.0±0.1,36.71N×141.47E,h37km±3km,M4.8*

JMA Felt III J1.

ISC 18 21:33:50.4±0.4,36.67N±0.03×141.42E±0.03,h26km±2km, h26km:pP-P,n331,σ1s36/357,mb4.7/140,MS4.1/14, 10C-5D,Near east coast of eastern Honshu

Code	Station Name	Δ° AZ°	Phase	ID	Time	Res
			Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.66 311**	P	**Pn**	**21 34 03.9**	**-0.2**
ONAJ			*eS*	**Sn**	**21 34 13.4**	**-0.3**
JHO	**Hitachi**	**0.69 266**	P	**Pn**	**21 34 04.8**	**+0.4**
JHO			S	**Sn**	**21 34 14.5**	**+0.3**
JFK	**Kawauchi**	**0.82 328**	P	**Pb**	**21 34 05.8**	**-0.3**
JFK			S	**Sn**	**21 34 17.6**	**-0.1**
JFT	**Otama**	**1.21 315**	P	**Pb**	**21 34 12.5**	**-0.2**
JFT			S	**Sb**	**21 34 28.8**	**+0.8**
JMM	**Marumori**	**1.30 338**	P	**Pn**	**21 34 12.4**	**-0.4**
JMM			*eS*	**Sb**	**21 34 30.0**	**-0.4**
JFY	**Yanaizu**	**1.56 299**	P	**Pb**	**21 34 18.3**	**-0.3**
JFY			S	**Sb**	**21 34 38.2**	**+0.3**
JAG	**Ashikaga**	**1.60 262**	P	**Pb**	**21 34 18.5**	**-0.8**
JIO	**Ouri**	**1.79 358**	P	**Pn**	**21 34 19.3**	**-0.2**
JIO			S	**Sn**	**21 34 40.7**	**-0.7**
JOU	**Okura**	**1.80 341**	P	**Pn**	**21 34 20.7**	**+1.0**
JOU			S	**Sb**	**21 34 44.0**	**-0.8**
MJAR	**Matsushiro Arr**	**2.59 268**	Pn	**Pn**	**21 34 32.9**	**+2.4**
	92nm,0.3s,baz=92,slow=9.8,SNR=275					
MJAR			Sn	**Sb**	**21 35 04.8**	**-2.6**
	85nm,0.3s,baz=93,slow=20,SNR=9.3					
MJAR	**Matsushiro Arr**	**2.59 268**	P	**Pn**	**21 34 32.9**	**+2.4**
MJAR					21 35 04.8	
MJAR			pmax	pmax		
	comp=Z,92nm,0.3s					
MJAR			smax	smax		
	comp=N,88nm,0.3s					
MAJO	**Matsushiro**	**2.59 268**	*eP*	**Pn**	**21 34 32.5**	**+1.9**
MAJO			*e*		21 34 59.6	
MAJO	**Matsushiro**	**2.59 268**	*ePn*	**Pn**	**21 34 32.5**	**+1.9**
MAJO			*eSn*	**Sn**	**21 34 59.6**	**-1.6**
MJB9	**Matsu-Tunnel**	**2.59 268**	*ePn*	**Pn**	**21 34 31.9**	**+1.3**
MJB9			*eSn*	**Sn**	**21 34 57.6**	**-3.7**
JHJ2	**Mitsune**	**3.78 201**	*ePn*	**Pn**	**21 34 48.1**	**+1.2**
JHJ2			*eSn*	Sn	21 35 23.9	-6.7
JHJ	**Hachijo jima 2**	**3.78 201**	Pn	**Pn**	**21 34 48.1**	**+1.1**
	comp=N,112nm,0.3s,baz=255,slow=23,SNR=17					
JHJ			Sn	**Sn**	**21 35 30.6**	**-0.1**
	comp=N,168nm,0.3s,baz=73,slow=19,SNR=4.3					
INU	**Inuyama**	**3.80 251**	*ePn*	Pn	21 34 51.8	+4.6
INU			*eSn*	**Sn**	**21 35 26.6**	**-4.5**
ERM	**Erimo**	**5.51 14**	*ePn*	**Pn**	**21 35 09.7**	**-1.0**
ERM			*e*		21 36 08.4	
ERM	**Erimo**	**5.51 14**	*ePn*	**Pn**	**21 35 09.7**	**-1.0**
ERM			*eSn*	**Sn**	**21 36 08.4**	**-4.7**
ASAJ	**Asahikawa**	**7.50 7**	Pn	**Pn**	**21 35 35.9**	**-2.1**
	comp=N,5.5nm,0.3s,baz=206,slow=8.9,SNR=20					
ASAJ			Sn	**Sn**	**21 36 58.4**	**-3.7**
	comp=N,2.9nm,0.3s,baz=32,slow=17,SNR=2.9					
ASAJ	**Asahikawa**	**7.50 7**	*ePn*	**Pn**	**21 35 35.6**	**-

NJ2	**Nanjing**	**19.18**	**263**	*e*P		**P**		**21 38 12.4**	**+0.4**
NJ2					pmax	pmax			
	comp=Z,16nm,0.6s								
TIA	**Tai'an**	**19.55**	**276**	⇑P		**P**		**21 38 15.8**	**-0.2**
TIA				S		**S**		**21 41 51.5**	**-3.7**
TIA					pmax	pmax			
	comp=Z,20nm,0.9s								
TIA					LR	LR			
	comp=Z,370nm,13.5s								
TIA					LR	LR			
	comp=Z,720nm,16.8s								
TIA					LR	LR			
	comp=Z,630nm,17.3s								
PEA0	**Petropavlovsk-**	**20.00**	**30**	*e*P		**P**		**21 38 21.1**	**+0.2**
PEA0B	**Petropavlovsk-**	**20.00**	**30**	*e*P		**P**		**21 38 21.1**	**+0.3**
	comp=Z,48nm,1.2s								
PETK	**Petropavlovsk-**	**20.00**	**30**	P		**P**		**21 38 20.1**	**-0.7**
	comp=Z,0.2nm,0.3s,baz=201,slow=7.3,SNR=3.0								
PEA1	**Petropavlovsk-**	**20.01**	**30**	*e*P		**P**		**21 38 20.1**	**-0.8**
BJI	**Beijing**	**20.06**	**287**	P		**P**		**21 38 21.4**	**-0.2**
BJI				S		**S**		**21 42 06.3**	**+0.6**
BJI					pmax	pmax			
	comp=Z,8.0nm,0.6s								
BJI					LR	LR			
	comp=Z,280nm,13.3s								
BJI					LR	LR			
	comp=Z,240nm,15.6s								
BJT	**Baijiatuau**	**20.07**	**287**	*e*P		**P**		**21 38 19.1**	**-2.5**
BJT					pmax	pmax			
	comp=Z,54nm,1.0s								
BJT	**Baijiatuau**	**20.07**	**287**	*e*P		**P**		**21 38 19.1**	**-2.5**
	comp=Z,54nm,1.0s								
TATO	**Taipei**	**20.66**	**241**	*e*P		P		21 38 21.2	-7.0
	comp=Z,146nm,1.3s								
NACB	**Ninganchiao**	**21.10**	**239**	*e*P		**P**		**21 38 30.4**	**-2.6**
	comp=Z,26nm,1.0s								
SSLB	**Suanglung**	**21.79**	**240**	*e*P		**P**		**21 38 38.7**	**-1.8**
	comp=Z,72nm,1.8s								
YULB	**Yu-li**	**21.82**	**238**	*e*P		**P**		**21 38 38.3**	**-2.4**
	comp=Z,28nm,1.3s								
TPUB	**Ta-pu**	**22.34**	**239**	*e*P		**P**		**21 38 45.3**	**-0.9**
	comp=Z,166nm,2.0s								
TWG	**Pinlang**	**22.35**	**238**	*e*P		**P**		**21 38 45.0**	**-1.4**
	comp=Z,92nm,0.9s								
WHN	**Wuhan**	**23.32**	**263**	P		**P**		**21 38 54.6**	**-1.7**
WHN				S		S		21 42 54.8	-13
WHN					pmax	pmax			
	comp=Z,32nm,0.8s								
WHN					LR	LR			
	comp=Z,590nm,13.3s								
WHN					LR	LR			
	comp=Z,890nm,11.7s								
WHN					LR	LR			
	comp=Z,1μm,15.0s								
HHC	**Hu-ho-hao-te**	**23.60**	**289**	*e*P		**P**		**21 38 59.0**	**-0.2**
HHC				sP		sP		21 39 10.6	+0.7
HHC				PP		PnPn		21 39 34.6	+8.2
HHC				S		**S**		**21 43 10.3**	**-1.7**
HHC				sS		sS		21 43 19.5	-5.2
HHC					pmax	pmax			
	comp=Z,28nm,1.0s								
HHC					pmax	pmax			
	comp=Z,74nm,5.7s								
HHC					LR	LR			
	comp=Z,1μm,13.0s								
HHC					LR	LR			
	comp=Z,1μm,14.3s								
HHC					LR	LR			
	comp=Z,1μm,15.1s								
MA2	**Magadan**	**23.71**	**12**	P		**P**		**21 38 59.6**	**-0.3**
	comp=Z,4.3nm,0.5s,baz=229,slow=10,SNR=5.0								
YAK	**Yakutsk**	**26.43**	**348**	P		**P**		**21 39 25.8**	**+1.2**
	comp=Z,12nm,0.5s,baz=129,slow=4.4,SNR=3.1								
YAK	**Yakutsk**	**26.43**	**348**	*e*P		**P**		**21 39 25.2**	**+0.6**
YAK				*e*				21 40 04.0	
YAK				*e*				21 42 46.9	
YAK				*e*S		**S**		**21 43 58.1**	**+1.7**
YAK				*e*SS		**SnSn**		**21 45 04.1**	**+5.8**
YAK				*e*				21 50 17.6	
YAK					pmax	pmax			
	comp=Z,12nm,0.9s								
YAK					pmax	pmax			
	comp=E,4.0nm,1.0s								
YAK					pmax	pmax			
	comp=N,8.0nm,1.4s								
YAK					pmax	pmax			
	comp=Z,32nm,1.2s								
YAK					pmax	pmax			
	comp=N,15nm,1.4s								
YAK					pmax	pmax			
	comp=E,18nm,1.9s								
YAK					smax	smax			
	comp=E,71nm,1.9s								
YAK					smax	smax			
	comp=N,103nm,2.1s								
YAK					MLR	MLR			
	comp=Z,317nm,18.0s								
YAK					MLR	MLR			
	comp=E,190nm,16.0s								
YAK					MLR	MLR			
	comp=N,266nm,17.0s								
YAK	**Yakutsk**	**26.43**	**348**	*e*P		**P**		**21 39 25.8**	**+1.2**
	comp=N,26nm,0.8s								
SEY	**Seymchan**	**27.15**	**11**	P		**P**		**21 39 31.4**	**+0.3**
	comp=N,6.3nm,0.7s,baz=196,slow=6.8,SNR=21								
ENH	**Enshi**	**27.31**	**266**	*e*P		**P**		**21 39 33.0**	**0.0**
	comp=N,28nm,0.6s								
ULN	**Ulaanbaatar**	**27.57**	**305**	*c i*P		**P**		**21 39 35.3**	**0.0**
ULN					pmax	pmax			
	comp=Z,20nm,1.2s								
ULN	**Ulaanbaatar**	**27.57**	**305**	*e*P		**P**		**21 39 35.1**	**-0.2**
	comp=Z,16nm,0.8s								
BOD	**Bodaibo**	**27.84**	**328**	⇑*i*P		**P**		**21 39 37.0**	**-0.4**
BOD					pmax	pmax			
	comp=Z,15nm,1.1s								
H11N2	**WAKE ISLAND Hy**	**27.96**	**120**	T		T		22 08 48.5	
	baz=313,slow=75,SNR=84								
H11N1	**WAKE ISLAND Hy**	**27.96**	**120**	T		T		22 08 59.0	
	baz=313,slow=75,SNR=110								
H11N3	**WAKE ISLAND Hy**	**27.98**	**120**	T		T		22 08 58.3	
	baz=313,slow=75,SNR=101								
SONA1	**Songino Array**	**27.99**	**305**	*e*P		**P**		**21 39 39.3**	**+0.2**
SONA0	**Songino Array**	**28.00**	**305**	*e*P		**P**		**21 39 39.9**	**+0.8**
	comp=Z,12nm,0.8s								
SONM	**Songino Array**	**28.00**	**305**	P		**P**		**21 39 39.9**	**+0.8**
	comp=Z,12nm,0.7s,baz=96,slow=7.7,SNR=9.4								
H11S1	**WAKE ISLAND Hy**	**28.66**	**122**	T		T		22 09 49.3	
	baz=314,slow=76,SNR=163								
H11S3	**WAKE ISLAND Hy**	**28.66**	**122**	T		T		22 09 51.8	
	baz=314,slow=76,SNR=169								
H11S2	**WAKE ISLAND Hy**	**28.67**	**122**	T		T		22 09 50.5	
	baz=314,slow=76,SNR=151								
LZH	**Lanzhou**	**30.14**	**280**	*e*P		**P**		**21 39 57.4**	**-0.8**
LZH				pP		pP		21 40 03.6	-2.4
LZH				sP		sP		21 40 07.4	-1.8
LZH				PcP		**PcP**		**21 42 59.8**	**+0.6**
LZH				*e*S		**S**		**21 44 53.0**	**-2.7**
LZH				SS		**SnSn**		**21 46 31.0**	**+1.6**
LZH					pmax	pmax			
	comp=Z,17nm,1.2s								
LZH					pmax	pmax			
	comp=Z,59nm,4.6s								
LZH					LR	LR			
	comp=Z,250nm,13.0s								
LZH					LR	LR			
	comp=Z,640nm,15.4s								
LZH					LR	LR			
	comp=Z,770nm,16.6s								
ZAK	**Zakamensk**	**30.50**	**309**	*e*P		**P**		**21 40 01.0**	**-0.2**
ZAK					pmax	pmax			
	comp=Z,4.0nm,1.0s								
TLY	**Talaya**	**30.58**	**311**	*e*P		P		21 40 05.6	+3.8
TLY				*e*S		**S**		**21 45 04.8**	**+2.8**
TLY				*e*SSS		SSS		21 47 04.9	
TLY					pmax	pmax			
	comp=Z,9.0nm,0.9s								
TLY					MLR	MLR			
	comp=Z,224nm,12.0s								
TLY	**Talaya**	**30.58**	**311**	*e*sP		P		21 40 11.1	+9.3
GYA	**Guiyang**	**31.16**	**261**	⇑*i*P		**P**		**21 40 06.8**	**-0.6**
GYA				pP		pP		21 40 15.4	+0.3
GYA				PP		**PnPn**		**21 41 12.0**	**+2.6**
GYA				PcP		**PcP**		**21 43 03.8**	**+1.8**
GYA				S		**S**		**21 45 11.3**	**-0.6**
GYA				ScS		**ScS**		**21 50 40.8**	**+0.2**
GYA					pmax	pmax			
	comp=Z,20nm,0.9s								
GYA					pmax	pmax			
	comp=Z,120nm,4.9s								
GYA					LR	LR			
	comp=Z,530nm,17.1s								
GYA					LR	LR			
	comp=Z,490nm,17.0s								
GYA					LR	LR			
	comp=Z,500nm,17.6s								
CD2	**Chengdu**	**31.68**	**271**	P		**P**		**21 40 10.4**	**-1.4**
GTA	**Gaotai**	**32.68**	**288**	*e*P		**P**		**21 40 21.1**	**+0.6**
GTA				pP		pP		21 40 29.5	+1.2
GTA				sP		sP		21 40 33.6	+2.1
GTA				S		**S**		**21 45 35.3**	**0.0**
GTA				sS		sS		21 45 48.3	+0.2
GTA					pmax	pmax			
	comp=Z,4.0nm,0.8s								
GTA					pmax	pmax			
	comp=Z,27nm,4.8s								
GTA					LR	LR			
	comp=Z,160nm,17.6s								
GTA					LR	LR			
	comp=Z,170nm,17.8s								
BILL	**Bilibino**	**34.38**	**16**	⇑*e*P		**P**		**21 40 34.1**	**-0.7**
BILL					pmax	pmax			
	comp=Z,6.0nm,1.7s								
BILL					MLR	MLR			
	comp=Z,142nm,22.0s								
BILL	**Bilibino**	**34.38**	**16**	*e*P		**P**		**21 40 34.3**	**-0.5**
	comp=Z,6.0nm,1.1s								
KMI	**Kunming**	**34.91**	**262**	P		**P**		**21 40 40.5**	**+0.3**
KMI				pP		sP		21 40 50.0	-1.2
KMI				sP		pP		21 40 53.8	+5.8
KMI				S		**S**		**21 46 09.3**	**-1.0**
KMI				SS		**SnSn**		**21 48 24.0**	**-1.8**
KMI					pmax	pmax			
	comp=Z,12nm,1.1s								
KMI					pmax	pmax			
	comp=Z,57nm,6.0s								
KMI					LR	LR			
	comp=Z,240nm,19.1s								
KMI					LR	LR			
	comp=Z,270nm,20.9s								
KMI					LR	LR			
	comp=Z,380nm,20.9s								
TIXI	**Tiksi**	**35.66**	**353**	P		**P**		**21 40 45.2**	**-0.6**
	comp=Z,1.4nm,0.5s,baz=132,slow=5.6,SNR=12								
TIXI	**Tiksi**	**35.66**	**353**	P		**P**		**21 40 46.0**	**+0.2**
TIXI					pmax	pmax			
	comp=Z,2.0nm,0.7s								
TIXI	**Tiksi**	**35.66**	**353**	*e*P		**P**		**21 40 46.7**	**+0.9**
MYLDM	**Lahad Datu**	**37.73**	**219**	*e*P		**P**		**21 41 06.8**	**+2.8**
	comp=Z,16nm,1.1s								
MYLDM				*e*ScP		**ScP**		**21 47 03.0**	**-3.5**
MRSI	**Marisa**	**40.28**	**211**	P		P		21 41 28.6	+3.3
	comp=Z,19nm,1.0s,comp=Z,787nm								
FAKI	**Fak Fak**	**40.30**	**194**	*e*P		**P**		**21 41 25.2**	**-0.3**
	comp=Z,17nm,1.1s								
WMQ	**Urumqi**	**41.01**	**297**	P		**P**		**21 41 33.8**	**+2.5**
WMQ				pP		pP		21 41 39.9	+0.7
WMQ				sP		sP		21 41 42.6	+0.2
WMQ				PcP		**PcP**		**21 43 33.1**	**+2.2**
WMQ				S		**S**		**21 47 40.5**	**-1.5**
WMQ				sS		sS		21 47 53.3	-1.7
WMQ				SS		**SS**		**21 50 38.3**	**-6.0**
WMQ					pmax	pmax			
	comp=Z,9.0nm,1.0s								
WMQ					pmax	pmax			
	comp=Z,46nm,4.0s								
WMQ					LR	LR			
	comp=Z,71nm,23.0s								
WMQ					LR	LR			
	comp=Z,89nm,28.2s								
WMQ					LR	LR			
	comp=Z,120nm,25.6s								
SANI	**Sanana**	**41.11**	**204**	P		**P**		**21 41 34.7**	**+2.5**
	comp=Z,94nm,0.8s,comp=Z,825nm								
CHTO	**Chiang Mai**	**41.21**	**256**	*e*P		**P**		**21 41 34.0**	**+0.9**
CHTO					pmax	pmax			
	comp=Z,7.0nm,0.8s								
CHTO	**Chiang Mai**	**41.21**	**256**	*e*P		**P**		**21 41 34.0**	**+0.9**
	comp=Z,7.3nm,0.8s								
CM31	**Chiang Mai Arr**	**41.41**	**256**	*e*P		**P**		**21 41 35.5**	**+0.8**
CMAR	**Chiang Mai Arr**	**41.41**	**256**	P		**P**		**21 41 35.5**	**+0.8**
	comp=Z,2.0nm,0.5s,baz=47,slow=6.4,SNR=12								
CMAR	**Chiang Mai Arr**	**41.41**	**256**	*ce*P		**P**		**21 41 35.7**	**+1.0**
CMAR					pmax	pmax			
	comp=Z,2.0nm,0.5s								
ZAA1	**Zalesovo Array**	**42.17**	**313**	*e*P		**P**		**21 41 40.2**	**-0.3**
ZAA1				*ep*P		**sP**		**21 41 50.7**	**-0.9**
ZAA1				*e*PcP		**PcP**		**21 43 34.0**	**-0.5**
ZAA0	**Zalesovo Array**	**42.17**	**313**	*e*P		**P**		**21 41 40.7**	**+0.2**
ZALV	**Zalesovo Beam**	**42.17**	**313**	P		**P**		**21 41 40.2**	**-0.3**
	comp=Z,6.4nm,0.6s,baz=93,slow=6.6,SNR=21								
ZALV				pP		**sP**		**21 41 50.7**	**-0.9**
	comp=Z,21nm,0.8s,baz=101,slow=6.7,SNR=21								
ZALV				PcP		**PcP**		**21 43 34.0**	**-0.5**
	comp=Z,1.7nm,0.7s,baz=107,slow=1.5,SNR=2.7								
ZALV	**Zalesovo Beam**	**42.17**	**313**	P		**P**		**21 41 40.2**	**-0.3**
ZALV				*PP		**sP**		**21 41 50.7**	**-0.9**
ZALV								21 43 34.0	
ZALV					pmax	pmax			
	comp=Z,9.0nm,0.8s								
ZALV					pmax	pmax			
	comp=Z,21nm,0.8s								
ZALV					pmax	pmax			
	comp=Z,2.0nm,0.7s								
LSA	**Lhasa**	**42.25**	**276**	*e*P		**P**		**21 41 40.8**	**-1.3**
LSA					pmax	pmax			
	comp=Z,9.0nm,0.8s								
LSA	**Lhasa**	**42.25**	**276**	*e*P		**P**		**21 41 40.8**	**-1.3**
	comp=Z,8.7nm,0.8s								
NVS	**Novosibirsk**	**43.10**	**314**	*e*P		**P**		**21 41 48.2**	**+0.2**
NVS					pmax	pmax			
	comp=N,6.0nm,1.0s								
NVS					pmax	pmax			
	comp=E,15nm,1.0s								
NVS					pmax	pmax			
	comp=Z,22nm,1.0s								
SBUM	**Sibu**	**43.41**	**225**	*e*P		**P**		**21 41 48.4**	**-2.6**
	comp=Z,5.0nm,0.9s								
SBUM				*es*P		**sP**		**21 42 02.2**	**+0.2**
MK01	**Makanchi Array**	**44.32**	**302**	*e*P		**P**		**21 41 58.0**	**0.0**
MK31	**Makanchi Array**	**44.32**	**302**	*e*P		**P**		**21 41 58.1**	**+0.1**
MK31	**Makanchi Array**	**44.32**	**302**	*e*P		**P**		**21 41 58.1**	**+0.1**
MK32	**Makanchi Array**	**44.32**	**302**	*e*P		**P**		**21 41 58.0**	**0.0**
MKAR	**Makanchi Array**	**44.32**	**302**	P		**P**		**21 41 58.0**	**0.0**
	comp=Z,3.5nm,0.7s,baz=88,slow=8.7,SNR=21								
MAKZ	**Makanchi**	**44.53**	**302**	*e*P		**P**		**21 41 59.7**	**0.0**
MAKZ					pmax	pmax			
	comp=Z,10.0nm,0.8s								
MAKZ	**Makanchi**	**44.53**	**302**	*e*P		**P**		**21 41 59.7**	**0.0**
	comp=Z,9.9nm,0.8s								
TT01	**Tatalina**	**45.72**	**35**	*e*P		**P**		**21 42 10.0**	**+1.1**
STKI	**Sintang**	**45.78**	**224**	P		**P**		**21 42 12.9**	**+3.0**
	comp=Z,30nm,0.5s,comp=Z,6μm								
SVW2	**Sparrevohn**	**45.81**	**37**	*e*P		**P**		**21 42 10.9**	**+1.2**
	comp=Z,7.6nm,1.0s								
KURK	**Kurchatov**	**46.16**	**308**	*e*P		**P**		**21 42 12.7**	**+0.2**
KURK					pmax	pmax			
	comp=Z,49nm,1.2s								
KURK	**Kurchatov**	**46.16**	**308**	*e*P		**P**		**21 42 12.7**	**+0.2**
	comp=Z,49nm,1.2s								
PDGK	**Podgornoye**	**46.95**	**298**	P		**P**		**21 42 19.4**	**+0.6**
PDGK					pmax	pmax			
	comp=Z,21nm,0.9s								
GUN	**Gumba**	**47.20**	**276**	*e*P		**P**		**21 42 21.5**	**+0.1**
KDAK	**Kodiak Island**	**47.37**	**42**	*i*P		**P**		**21 42 21.2**	**-0.7**
SPU	**Mount Spurr**	**47.52**	**37**	*e*P		**P**		**21 42 24.0**	**+0.8**
CAST	**Castle Rocks**	**47.53**	**34**	*e*P		**P**		**21 42 24.2**	**+1.1**
	comp=Z,4.6nm,1.0s								
PKIN	**Phulchoki**	**47.73**	**276**	*e*P		**P**		**21 42 24.9**	**-0.5**
KKN	**Kakani**	**47.73**	**276**	*e*P		**P**		**21 42 25.9**	**+0.5**
	comp=Z,34nm,0.7s								
KTH	**Kantishna Hill**	**48.05**	**34**	*e*P		**P**		**21 42 28.1**	**+0.9**
	comp=Z,12nm,1.1s								
GKN	**Gorkha**	**48.15**	**277**	*e*P		**P**		**21 42 28.7**	**+0.1**
	comp=Z,56nm,0.6s								
MLY	**Manley**	**48.16**	**32**	*e*P		**P**		**21 42 28.8**	**+0.8**
	comp=Z,9.8nm,1.1s								
KOLN	**Koldanda**	**49.08**	**277**	*e*P		**P**		**21 42 37.0**	**+1.2**
	comp=Z,43nm,1.0s								
MDM	**Murphy Dome**	**49.23**	**32**	*e*P		**P**		**21 42 37.0**	**+0.9**
	comp=Z,21nm,1.2s								
WRH	**Wood River Hil**	**49.29**	**33**	*e*P		**P**		**21 42 37.1**	**+0.5**
	comp=Z,6.6nm,1.2s								
COLA	**College**	**49.39**	**32**	⇓*i*P		**P**		**21 42 39.2**	**+1.9**
COLA					pmax	pmax			
	comp=Z,8.0nm,1.0s								
PYUN	**Piuthan**	**49.42**	**278**	*e*P		**P**		**21 42 39.7**	**+1.3**
	comp=Z,161nm,1.0s								
IL1	**Eielson Array**	**49.80**	**32**	*e*P		**P**		**21 42 39.2**	**-1.3**
ILAR	**Eielson Array**	**49.80**	**32**	P		**P**		**21 42 40.0**	**-0.6**
	comp=Z,3.2nm,0.8s,baz=268,slow=6.2,SNR=23								
ILAR	**Eielson Array**	**49.80**	**32**	P		**P**		**21 42 40.0**	**-0.6**
ILAR					pmax	pmax			
	comp=Z,3.0nm,0.8s								
ILB	**Eielson Array**	**49.80**	**32**	*e*P		**P**		**21 42 40.0**	**-0.6**
TKM2	**Tokmak 2**	**49.81**	**299**	*e*P		**P**		**21 42 42.5**	**+1.3**
TKM2					pmax	pmax			
	comp=Z,13nm,0.7s								
TKM2	**Tokmak 2**	**49.81**	**299**	*e*P		**P**		**21 42 42.5**	**+1.3**
	comp=Z,13nm,0.7s								
FRU	**Bishkek**	**50.52**	**299**	*e*P		P		21 42 55.0	+8.6
VOSK	**Vostochnaya**	**50.53**	**312**	*e*P		**P**		**21 42 46.3**	**+0.1**
VOSK					pmax	pmax			
	comp=Z,13nm,0.9s								
VOSK	**Vostochnaya**	**50.53**	**312**	*e*P		**P**		**21 42 46.3**	**+0.1**
	comp=Z,13nm,0.9s								
KSH	**Kashi**	**50.56**	**294**	P		P		21 42 51.6	+4.8
KSH				*ep*P		sP		21 42 58.8	+0.8
KSH				*es*P		pP		21 43 02.3	+7.5
KSH				S		**S**		**21 50 04.5**	**+4.9**
KSH					pmax	pmax			
	comp=Z,8.0nm,0.7s								
KSH					pmax	pmax			
	comp=Z,130nm,4.9s								
KSH					LR	LR			
	comp=Z,140nm,5.5s								
KSH					LR	LR			
	comp=Z,140nm,6.2s								
KSH					LR	LR			
	comp=Z,530nm,15.9s								
OTUK	**Ortayu**	**50.65**	**306**	P		**P**		**21 42 47.7**	**+0.5**
OTUK					pmax	pmax			
	comp=Z,15nm,1.1s								
AAK	**Ala-Archa**	**50.67**	**299**	*e*P		**P**		**21 42 48.3**	**+0.6**
AAK					pmax	pmax			
	comp=Z,5.0nm,0.7s								
AAK	**Ala-Archa**	**50.67**	**299**	*e*P		**P**		**21 42 48.3**	**+0.6**
	comp=Z,4.6nm,0.7s								
BRVK	**Borovoye**	**50.88**	**313**	*e*P		**P**		**21 42 49.2**	**+0.4**
BRVK					pmax	pmax			
	comp=Z,12nm,1.2s								
BRVK	**Borovoye**	**50.88**	**313**	*e*P		**P**		**21 42 49.2**	**+0.4**
	comp=Z,12nm,1.2s								
EKS2	**Erkin-Say**	**51.17**	**299**	*e*P		**P**		**21 42 52.0**	**+0.7**
EKS2					pmax	pmax			
	comp=Z,5.0nm,0.9s								
EKS2	**Erkin-Say**	**51.17**	**299**	*e*P		**P**		**21 42 52.0**	**+0.7**
	comp=Z,5.2nm,0.9s								
ZRNK	**Zerenda**	**51.66**	**313**	*e*P		**P**		**21 42 54.6**	**-0.1**
ZRNK					pmax	pmax			
	comp=Z,18nm,1.3s								
ZRNK	**Zerenda**	**51.66**	**313**	*e*P		**P**		**21 42 54.6**	**-0.1**
	comp=Z,18nm,1.3s								
MNAS	**Manas**	**52.12**	**299**	P		**P**		**21 42 59.4**	**+1.0**
MNAS					pmax	pmax			
	comp=Z,10.0nm,0.9s								
SFK	**Sufi-Kurgan**	**52.20**	**296**	P		**P**		**21 43 00.1**	**+0.9**
SFK					pmax	pmax			
	comp=Z,15nm,0.9s								
KKAR	**Karatay Array**	**53.31**	**300**	*e*P		**P**		**21 43 08.0**	**+0.9**
KKAR	**Karatay Array**	**53.31**	**300**	*e*P		**P**		**21 43 08.0**	**+0.9**
GSI	**Gunungsitoli**	**53.62**	**239**	P		**P**		**21 43 10.9**	**+1.3**
	comp=Z,83nm,1.1s								
GSI	**Gunungsitoli**	**53.62**	**239**	*e*P		**P**		**21 43 10.7**	**+1.1**
	comp=Z,51nm,0.8s								
INK	**Inuvik**	**54.71**	**27**	P		**P**		**21 43 17.0**	**+0.1**
	comp=Z,2.5nm,0.7s,baz=295,slow=7.3,SNR=17								
INK	**Inuvik**	**54.71**	**27**	P		**P**		**21 43 17.0**	**+0.1**
INK					pmax	pmax			
	comp=Z,3.0nm,0.7s								
INK	**Inuvik**	**54.71**	**27**	*e*P		**P**		**21 43 17.0**	**+0.1**
	comp=Z,4.3nm,0.9s								
SVE	**Sverdlovsk**	**55.43**	**319**	*e*P		P		21 43 30.8	+8.6
SVE					pmax	pmax			
	comp=Z,27nm,0.9s								
ARU	**Arti**	**56.64**	**319**	*d i*P		**P**		**21 43 31.1**	**+0.1**
ARU								21 44 21.4	
ARU								21 45 35.7	
ARU				S		**S**		**21 51 22.8**	**+1.6**
ARU				SS		**SS**		**21 55 08.1**	**-0.4**
ARU					pmax	pmax			
	comp=Z,4.0nm,1.0s								
ARU	**Arti**	**56.64**	**319**	*e*P		**P**		**21 43 31.0**	**+0.1**
	comp=Z,21nm,0.8s								
WRAB	**Tennant Creek**	**56.69**	**188**	⇑*e*P		**P**		**21 43 31.3**	**-0.3**
WRAB					pmax	pmax			
	comp=Z,48nm,1.0s								
WRAB	**Tennant Creek**	**56.69**	**188**	*e*P		**P**		**21 43 30.8**	**-0.8**
	comp=Z,19nm,1.0s								
WB2	**Warramunga Arr**	**56.70**	**188**	*e*P		**P**		**21 43 31.1**	**-0.5**
	comp=Z,19nm,1.0s								
WR1	**Warramunga Arr**	**56.70**	**188**	*e*P		**P**		**21 43 31.1**	**-0.6**
	comp=Z,15nm,0.9s								
WRA	**Warramunga Arr**	**56.70**	**188**	P		**P**		**21 43 31.1**	**-0.6**
	comp=Z,7.1nm,0.6s,baz=5.8,slow=7.3,SNR=32								
KBL	**Kabul**	**57.55**	**291**	*e*P		**P**		**21 43 38.7**	**+0.7**
KBL					pmax	pmax			
	comp=Z,7.0nm,0.8s								
KBL	**Kabul**	**57.55**	**291**	*e*P		**P**		**21 43 38.7**	**+0.7**
	comp=Z,7.1nm,0.8s								
XMIS	**Christmas Isla**	**57.71**	**223**	*e*P		**P**		**21 43 38.5**	**-0.5**
	comp=Z,119nm,1.4s								
ABKAR	**Akbulak array**	**58.18**	**310**	*e*P		**P**		**21 43 41.9**	**0.0**
HYB	**Hyderabad**	**58.20**	**269**	*i*P		**P**		**21 43 45.0**	**+2.5**
DLBC	**Dease Lake**	**58.91**	**38**	P		**P**		**21 43 47.7**	**+0.7**
	comp=Z,4.5nm,0.8s,baz=280,slow=7.0,SNR=9.6								
DLBC	**Dease Lake**	**58.91**	**38**	*e*P		**P**		**21 43 47.7**	**+0.7**
	comp=Z,6.6nm,0.9s								
AS01	**Alice Springs**	**60.42**

YBH	**Yreka Blue Hor**	**70.57**	**52**	P		**P**	**21 45 03.5**	**+0.3**
	comp=Z,5.4nm,0.8s,baz=360,slow=2.9,SNR=10							
YBH	**Yreka Blue Hor**	**70.57**	**52**	*e*P		**P**	**21 45 03.5**	**+0.3**
	comp=Z,5.7nm,0.8s							
KBZ	**Khabaz**	**71.14**	**311**	P		**P**	**21 45 06.3**	**-0.3**
	comp=Z,1.7nm,0.8s,baz=354,slow=5.1,SNR=5.3							
KIV	**Kislovodsk**	**71.15**	**311**	*e*P		**P**	**21 45 08.7**	**+2.0**
KIV				*e*			21 45 15.0	
KIV				*e*			21 45 28.1	
KIV				*e*			21 47 47.6	
KIV				pmax	pmax			
	comp=Z,6.0nm,0.9s							
KIV				MLR	MLR			
	comp=Z,103nm,17.0s							
KIV	**Kislovodsk**	**71.15**	**311**	*e*P		P	21 45 10.0	+3.3
	comp=Z,10nm,0.8s							
K05A	**Summer Lake**	**71.17**	**50**	*e*P		**P**	**21 45 08.0**	**+1.0**
	comp=Z,23nm,1.0s							
WDC	**Whiskeytown Da**	**71.29**	**53**	*e*P		**P**	**21 45 08.3**	**+0.8**
WDC				pmax	pmax			
	comp=Z,10.0nm,1.0s							
WDC	**Whiskeytown Da**	**71.29**	**53**	*e*P		**P**	**21 45 08.3**	**+0.8**
	comp=Z,9.8nm,1.0s							
WALA	**Waterton Lakes**	**71.71**	**42**	*e*P		**P**	**21 45 10.2**	**+0.1**
	comp=Z,4.3nm,0.8s							
BMO	**Blue Mountains**	**72.18**	**47**	*e*P		**P**	**21 45 13.4**	**+0.5**
	comp=Z,8.9nm,1.0s							
ORV	**Oroville**	**72.51**	**54**	*e*P		**P**	**21 45 15.0**	**+0.1**
ORV				pmax	pmax			
	comp=Z,7.0nm,0.9s							
ORV	**Oroville**	**72.51**	**54**	*e*P		**P**	**21 45 15.0**	**+0.1**
	comp=Z,6.5nm,0.9s							
SWMT	**Swartz Lake**	**72.55**	**43**	*e*P		**P**	**21 45 15.6**	**+0.5**
AFDM	**Forest Hills D**	**73.19**	**54**	*e*P		**P**	**21 45 19.9**	**+1.0**
	comp=Z,11nm,1.5s							
ANN	**Anapa**	**73.79**	**314**	*e*P		**P**	**21 45 20.1**	**-2.2**
ANN				*e**PP		**pP**	**21 45 31.1**	**+0.5**
ANN				*e*			21 48 03.4	
ANN				*e*PPP		PPP	21 49 53.5	
ANN				*e*S		**SKiKP**	**21 54 49.5**	**-0.2**
ANN				*e*SSS		SSS	22 02 54.6	
ANN				pmax	pmax			
	comp=Z,25nm,1.2s							
MFID	**Camas Ranch**	**73.87**	**48**	*e*P		**P**	**21 45 23.7**	**+0.7**
	comp=Z,6.3nm,1.0s							
FFC	**Flin Flon**	**74.01**	**33**	*e*P		**P**	**21 45 23.2**	**-0.2**
FFC				pmax	pmax			
	comp=Z,11nm,0.8s							
FFC	**Flin Flon**	**74.01**	**33**	*e*P		**P**	**21 45 23.2**	**-0.2**
	comp=Z,11nm,0.8s							
CMB	**Columbia Colle**	**74.08**	**54**	*e*P		**P**	**21 45 24.9**	**+0.7**
CMB				pmax	pmax			
	comp=Z,15nm,1.2s							
CMB	**Columbia Colle**	**74.08**	**54**	*e*P		**P**	**21 45 24.9**	**+0.7**
	comp=Z,15nm,1.2s							
FCC	**Fort Churchill**	**74.33**	**26**	*e*P		**P**	**21 45 25.0**	**-0.2**
FCC				pmax	pmax			
	comp=Z,18nm,1.3s							
FCC	**Fort Churchill**	**74.33**	**26**	*e*P		**P**	**21 45 25.0**	**-0.2**
	comp=Z,18nm,1.3s							
LRM	**Limekiln Ridge**	**74.41**	**44**	*e*P		**P**	**21 45 26.5**	**+0.3**
NC204	**NORSAR Array S**	**74.48**	**338**	*e*P		**P**	**21 45 26.0**	**-0.2**
NB2	**NORSAR Subarra**	**74.53**	**337**	P		**P**	**21 45 25.9**	**-0.5**
	comp=Z,7.4nm,1.0s,baz=39,slow=6.2							
NB200	**NORSAR Array S**	**74.53**	**337**	*e*P		**P**	**21 45 26.2**	**-0.2**
NOA	**NORSAR Array B**	**74.53**	**337**	P		**P**	**21 45 26.2**	**-0.2**
	comp=Z,2.0nm,0.8s,baz=42,slow=5.4,SNR=11							
EGMT	**Eagleton**	**74.54**	**41**	*e*P		**P**	**21 45 27.2**	**+0.4**
	comp=Z,8.6nm,0.9s							
AKASG	**Malin Array Be**	**74.59**	**322**	P		**P**	**21 45 26.0**	**-0.9**
	comp=Z,0.8nm,0.4s,baz=45,slow=6.0,SNR=13							
AKASG	**Malin Array Be**	**74.59**	**322**	*c*eP		**P**	**21 45 26.5**	**-0.4**
AKASG				pmax	pmax			
	comp=Z,1.0nm,0.3s							
AKBB	**Malin Array Si**	**74.59**	**322**	*e*P		**P**	**21 45 26.0**	**-0.9**
AKBB				pmax	pmax			
	comp=Z,6.0nm,0.7s							
AKBB	**Malin Array Si**	**74.59**	**322**	*e*P		**P**	**21 45 26.0**	**-0.9**
	comp=Z,6.0nm,0.7s							
DLMT	**Dillon**	**74.60**	**45**	*e*P		**P**	**21 45 27.4**	**+0.1**
	comp=Z,10nm,0.8s							
KIEV	**Kiev**	**74.60**	**322**	P		**P**	**21 45 26.0**	**-0.9**
KIEV				pmax	pmax			
	comp=Z,8.0nm,1.3s							
HLID	**Hailey**	**74.62**	**47**	*e*P		**P**	**21 45 28.4**	**+0.9**
	comp=Z,5.4nm,1.1s							
BMN	**Battle Mountai**	**74.74**	**51**	*e*P		**P**	**21 45 29.2**	**+1.0**
BMN				pmax	pmax			
	comp=Z,7.0nm,0.9s							
BMN	**Battle Mountai**	**74.74**	**51**	*e*P		**P**	**21 45 29.2**	**+1.0**
	comp=Z,6.6nm,0.9s							
BOZ	**Bozeman (W)**	**74.97**	**44**	*e*P		**P**	**21 45 29.9**	**+0.5**
BOZ				pmax	pmax			
	comp=Z,8.0nm,0.8s							
BOZ	**Bozeman (W)**	**74.97**	**44**	*e*P		**P**	**21 45 29.9**	**+0.5**
	comp=Z,7.7nm,0.8s							
NV01	**Mina Array Sit**	**75.20**	**53**	*e*P		**P**	**21 45 31.5**	**+0.6**
NV01				*ep*P		**sP**	**21 45 42.1**	**-0.3**
NVAR	**Mina Array Bea**	**75.20**	**53**	P		**P**	**21 45 31.5**	**+0.6**
	comp=Z,5.7nm,0.8s,baz=282,slow=6.5,SNR=25							
NVAR				pP		**sP**	**21 45 42.1**	**-0.3**
	comp=Z,3.4nm,0.8s,baz=284,slow=5.6,SNR=5.5							
YFT	**Old Faithful**	**76.15**	**45**	*e*P		**P**	**21 45 38.7**	**+2.4**
	comp=Z,6.1nm,0.9s							
H17A	**Grant Village**	**76.33**	**45**	*e*P		**P**	**21 45 39.5**	**+2.2**
	comp=Z,12nm,0.9s							
FLWY	**Flagg Ranch**	**76.45**	**45**	*e*P		**P**	**21 45 39.5**	**+1.6**
	comp=Z,19nm,1.4s							
FXWY	**Fox Creek**	**76.54**	**45**	*e*P		**P**	**21 45 39.7**	**+1.2**
	comp=Z,5.1nm,1.0s							
RLMT	**Red Lodge**	**76.61**	**43**	*e*P		**P**	**21 45 39.7**	**+0.8**
	comp=Z,14nm,1.6s							
MOOW	**Moose Ponds**	**76.63**	**45**	*e*P		**P**	**21 45 40.2**	**+1.2**
	comp=Z,14nm,1.7s							
HVU	**Hansel Valley**	**76.65**	**48**	*e*P		**P**	**21 45 40.1**	**+1.0**
HVU				pmax	pmax			
	comp=Z,8.0nm,1.2s							
HVU	**Hansel Valley**	**76.65**	**48**	*e*P		**P**	**21 45 40.1**	**+1.0**
	comp=Z,7.8nm,1.2s							
LOHW	**Long Hollow**	**76.80**	**45**	*e*P		**P**	**21 45 41.0**	**+1.1**
	comp=Z,2.6nm,0.9s							
REDW	**Red Top Meadow**	**76.81**	**46**	*e*P		**P**	**21 45 41.2**	**+1.2**
	comp=Z,8.7nm,1.3s							
R11A	**Troy Canyon, C**	**76.98**	**52**	*e*P		**P**	**21 45 41.5**	**+0.4**
	comp=Z,9.3nm,1.2s							
R11A				*e*PcP		**sP**	**21 45 56.9**	**+4.4**
BGU	**Big Grassy Mou**	**77.02**	**49**	*e*P		**P**	**21 45 42.0**	**+0.8**
	comp=Z,3.3nm,0.9s							
FRB	**Frobisher Bay**	**77.13**	**13**	P		**P**	**21 45 40.7**	**-0.4**
	comp=Z,3.8nm,0.6s,baz=325,slow=7.6,SNR=8.9							
TPNV	**Topopah Spring**	**77.39**	**53**	*e*P		**P**	**21 45 43.9**	**+0.6**
TPNV				pmax	pmax			
	comp=Z,18nm,1.5s							
TPNV	**Topopah Spring**	**77.39**	**53**	*e*P		**P**	**21 45 43.9**	**+0.6**
	comp=Z,18nm,1.5s							
HWUT	**Hardware Ranch**	**77.47**	**47**	*e*P		**P**	**21 45 44.7**	**+0.9**
	comp=Z,15nm,1.4s							
DUG	**Dugway, Tooele**	**77.59**	**49**	*e*P		**P**	**21 45 45.0**	**+0.6**
DUG				*e*			21 45 58.0	
DUG				pmax	pmax			
	comp=Z,11nm,1.3s							
DUG	**Dugway, Tooele**	**77.59**	**49**	*e*P		**P**	**21 45 45.0**	**+0.6**
	comp=Z,11nm,1.3s							
DUG				*e*PcP		**sP**	**21 45 58.0**	**+2.2**
BW06	**Boulder Array**	**77.92**	**45**	*e*P		**P**	**21 45 46.1**	**-0.2**
PD31	**Pinedale Array**	**77.92**	**45**	*e*P		**P**	**21 45 45.7**	**-0.6**
PDAR	**Pinedale Array**	**77.92**	**45**	P		**P**	**21 45 45.7**	**-0.6**
	comp=Z,1.6nm,0.6s,baz=271,slow=1.7,SNR=12							
BUR08	**Bucovina Ar. S**	**78.59**	**322**	*e*P		**P**	**21 45 50.2**	**+0.4**
BR101	**Keskin Array S**	**79.10**	**312**	*e*P		**P**	**21 45 53.6**	**+0.9**
BRTR	**Keskin Array B**	**79.10**	**312**	P		**P**	**21 45 53.6**	**+0.9**
	comp=Z,1.5nm,0.9s,baz=47,slow=2.6,SNR=5.8							
LCMT	**Little Creek M**	**79.27**	**52**	*e*P		**P**	**21 45 54.8**	**+1.0**
	comp=Z,11nm,1.4s							
P17A	**Butcher Ranch,**	**79.29**	**49**	*e*P		**P**	**21 45 54.8**	**+1.0**
	comp=Z,7.4nm,0.8s							
P18A	**Preston Nutter**	**79.49**	**48**	*e*P		**P**	**21 45 56.7**	**+1.6**
	comp=Z,5.7nm,1.0s							
CRVS	**Cervenica-Dubn**	**79.53**	**324**	*e*P		**P**	**21 45 56.5**	**+1.8**
CRVS	**Cervenica-Dubn**	**79.53**	**324**	*e*P		**P**	**21 45 56.5**	**+1.8**
KNB	**Kanab**	**79.53**	**52**	*e*P		**P**	**21 45 56.6**	**+1.4**
KNB				pmax	pmax			
	comp=Z,32nm,1.6s							
KNB	**Kanab**	**79.53**	**52**	*e*P		**P**	**21 45 56.6**	**+1.4**
	comp=Z,32nm,1.6s							
BR231	**Keskin MP Arra**	**79.54**	**312**	*e*P		**P**	**21 45 54.5**	**-0.6**
SRU	**San Rafael Swe**	**79.65**	**49**	*e*P		**P**	**21 45 56.4**	**+0.6**
SRU				pmax	pmax			
	comp=Z,8.0nm,0.8s							
SRU	**San Rafael Swe**	**79.65**	**49**	*e*P		**P**	**21 45 56.4**	**+0.6**
	comp=Z,7.9nm,0.8s							
ULM	**Lac du Bonnet**	**79.81**	**33**	P		**P**	**21 45 54.7**	**-1.4**
	comp=Z,3.8nm,0.8s,baz=303,slow=9.3,SNR=4.1							
ULM	**Lac du Bonnet**	**79.81**	**33**	*e*P		**P**	**21 45 55.8**	**-0.4**
ULM				pmax	pmax			
	comp=Z,35nm,2.0s							
ULM	**Lac du Bonnet**	**79.81**	**33**	*e*P		**P**	**21 45 55.8**	**-0.4**
	comp=Z,35nm,2.0s							
LANS	**Liptovska Anna**	**80.27**	**326**	*e*P		**P**	**21 46 00.0**	**+1.3**
LANS	**Liptovska Anna**	**80.27**	**326**	*e*P		**P**	**21 46 00.0**	**+1.3**
KECS	**Kecovo**	**80.28**	**325**	*e*P		**P**	**21 45 58.4**	**-0.3**
KECS	**Kecovo**	**80.28**	**325**	*e*P		**P**	**21 45 58.4**	**-0.3**
DPC	**Dobruska-Polom**	**80.77**	**328**	*e*P		**P**	**21 46 02.3**	**+0.9**
DPC				*ep*P		**pP**	**21 46 09.8**	**-0.1**
DPC				*es*P		**sP**	**21 46 13.1**	**+0.2**
DPC	**Dobruska-Polom**	**80.77**	**328**	*e*P		**P**	**21 46 02.3**	**+0.9**
DPC				*e*			21 46 09.8	
PV10	**Paradox Valley**	**81.01**	**49**	*e*P		**P**	**21 46 00.2**	**-3.0**
VYHS	**Vyhne**	**81.03**	**325**	*e*P		**P**	**21 46 03.5**	**+0.7**
VYHS	**Vyhne**	**81.03**	**325**	*e*P		**P**	**21 46 03.5**	**+0.7**
PV05	**Paradox Valley**	**81.17**	**49**	*e*P		**P**	**21 46 05.0**	**+1.0**
N23A	**Red Feather La**	**81.19**	**45**	*e*P		**P**	**21 46 05.1**	**+0.9**
	comp=Z,12nm,1.2s							
AGMN	**Agassiz Nation**	**81.24**	**35**	*e*P		**P**	**21 46 03.1**	**-0.7**
	comp=Z,5.3nm,0.8s							
BRG	**Berggiesshubel**	**81.37**	**329**	*e*P		P	21 46 15.2	+11
	comp=Z,4.5nm,1.0s							
CLL	**Collm**	**81.42**	**330**	*ep*P		**P**	**21 46 04.0**	**-0.8**
CLL				*e*			21 46 14.0	
	comp=Z,12nm,1.1s							
CLL				*i*			21 46 22.6	
CLL				Lm	MLR		22 24 00.0	
	comp=Z,100nm,20.3s							
CLL	**Collm**	**81.42**	**330**	*e*P		**P**	**21 46 04.7**	**-0.1**
CLL				pmax	pmax			
	comp=Z,12nm,1.0s							
CLL	**Collm**	**81.42**	**330**	*e*P		**P**	**21 46 04.7**	**-0.1**
	comp=Z,12nm,1.0s							
SMCO	**Snowmass**	**81.72**	**47**	*e*P		**P**	**21 46 07.8**	**+0.6**
	comp=Z,8.5nm,1.0s							
KHC	**Kasperske Hory**	**82.86**	**328**	*e*P		**P**	**21 46 12.7**	**+0.3**
KHC				*ep*P		**pP**	**21 46 21.3**	**+0.4**
KHC				*es*P		**sP**	**21 46 23.5**	**-0.5**
KHC	**Kasperske Hory**	**82.86**	**328**	*e*P		**P**	**21 46 12.7**	**+0.3**
KHC				*e*			21 46 21.3	
KHC	**Kasperske Hory**	**82.86**	**328**	*e*P		**P**	**21 46 12.3**	**-0.1**
KHC				*ep*P		**sP**	**21 46 23.1**	**-0.9**
GERES	**GERESS Array B**	**83.03**	**328**	P		**P**	**21 46 12.9**	**-0.4**
	comp=Z,1.3nm,0.9s,baz=38,slow=6.8,SNR=7.8							
GERES	**GERESS Array B**	**83.03**	**328**	P		**P**	**21 46 13.0**	**-0.4**
GERES				pmax	pmax			
	comp=Z,1.0nm,0.8s							
GEA0	**GERESS Array S**	**83.03**	**328**	*e*P		**P**	**21 46 13.1**	**-0.4**
EYMN	**Ely**	**83.44**	**33**	*e*P		**P**	**21 46 15.1**	**-0.4**
	comp=Z,36nm,1.9s							
PMOR	**Pomariorio Ree**	**84.03**	**114**	*e*T		T	23 18 13.0	
	comp=Z,4.4nm,0.2s							
ECSD	**EROS Data Cent**	**84.20**	**38**	*e*P		**P**	**21 46 18.8**	**-0.7**
	comp=Z,5.5nm,0.9s							
PPT2	**Papeete2**	**84.48**	**117**	*e*LR		LR	22 12 38.2	
	comp=Z,141nm,21.5s							
ANMO	**Albuquerque**	**84.82**	**50**	*e*P		**P**	**21 46 23.9**	**+0.9**
ANMO				pmax	pmax			
	comp=Z,4.0nm,1.0s							
ANMO	**Albuquerque**	**84.82**	**50**	*e*P		**P**	**21 46 23.9**	**+0.9**
	comp=Z,4.4nm,1.0s							
BFO	**Black Forest**	**85.63**	**331**	*e*P		**P**	**21 46 26.5**	**0.0**
BFO				pmax	pmax			
	comp=Z,10.0nm,1.1s							
BFO	**Black Forest**	**85.63**	**331**	*e*P		**P**	**21 46 26.5**	**0.0**
	comp=Z,10nm,1.1s							
TAOE	**Nuku Hiva Isla**	**86.08**	**104**	*e*LR		LR	22 13 26.8	
	comp=Z,266nm,23.4s							
TX31	**Lajitas Ar. Si**	**90.34**	**52**	*e*P		**P**	**21 46 49.6**	**+0.1**
LTX	**Lajitas**	**90.34**	**52**	*e*P		**P**	**21 46 49.3**	**-0.2**
LTX	**Lajitas**	**90.34**	**52**	*e*P		**P**	**21 46 49.3**	**-0.2**
TXAR	**Lajitas Array**	**90.34**	**52**	P		**P**	**21 46 49.3**	**-0.2**
	comp=Z,1.4nm,0.7s,baz=298,slow=3.2,SNR=19							
HPIG		**90.67**	**55**	*e*P		**P**	**21 46 51.3**	**+0.1**
	comp=Z,15nm,0.7s							
WHAR	**Wooly Hollow**	**92.72**	**41**	*e*P		**P**	**21 47 00.3**	**+0.1**
	comp=Z,28nm,1.8s							
MOIG	**Morelia**	**98.60**	**58**	*e*P		Pdif	21 47 28.9	+1.2
	comp=Z,4µm,0.3s							
DBIC	**Dimbokro**	**126.56**	**317**	PKP		**PKPdf**	**21 52 51.3**	**-0.5**
	comp=Z,4.8nm,0.9s,baz=27,slow=9.2,SNR=3.3							
SAML	**Samuel**	**144.50**	**45**	*e*PKPdf		**PKPab**	**21 53 23.2**	**0.0**
LPAZ	**La Paz**	**146.87**	**60**	PKPbc		**PKPbc**	**21 53 31.1**	**-0.4**
	comp=Z,8.6nm,0.6s,baz=327,slow=3.4,SNR=37							
PB11	**IPOC Station P**	**148.04**	**67**	*e*PKPbc		**PKPbc**	**21 53 34.0**	**-0.1**
PLCA	**Paso Flores**	**154.80**	**109**	PKPab		**PKPab**	**21 54 04.0**	**-0.4**
	comp=Z,1.3nm,0.7s,baz=233,slow=5.1,SNR=4.5							
PLCA	**Paso Flores**	**154.80**	**109**	PKP2		**PKPab**	**21 54 04.0**	**-0.4**
PLCA				pmax	pmax			
	comp=Z,1.0nm,0.7s							

*ISCJB **18** 21:38:39.9±0.5, 26°.28S±0°.05×27°.70E±0°.03, h10km±3km, Error ellipse: s-maj=8.2km s-min=3.7km az=166.0*
*PRE **18** 21:38:39.8±3.1, 26°.27S×27°.68E, h2km, ML2.8*
ISC 18 21:38:38.9±1.1, 26°.21S±0°.06×27°.66E±0°.03, h13km±7km, n16, σ1°79/30, 1C, South Africa

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
					Op	ISC	h m s	ISC
KLOF	**Kloof**	**0.14**	**199**	*e*P		**Pb**	**21 38 43.4**	**-0.3**
KLOF				*e*S		**Sg**	**21 38 44.2**	**-1.2**
KLOF				AML		AML	21 38 47.0	
	comp=Z,2µm,0.8s							
WDLM	**Western Deep L**	**0.30**	**226**	*e*P		**Pb**	**21 38 47.0**	**+0.7**
WDLM				*e*S		**Sg**	**21 38 50.2**	**+0.7**
WDLM				AML		AML	21 38 50.5	
	comp=Z,624nm,0.4s							
OBSV	**Observatory**	**0.37**	**86**	*e*P		**Pg**	**21 38 46.6**	**+0.2**
OBSV				*e*S		**Sg**	**21 38 50.8**	**-0.8**
OBSV				AML		AML	21 38 56.1	
	comp=Z,2µm,0.7s							
ERPM	**east rand prop**	**0.54**	**104**	*e*P		**Pb**	**21 38 50.6**	**+0.3**
ERPM				*e*S		**Sg**	**21 38 56.1**	**-0.6**
ERPM				AML		AML	21 39 01.3	
	comp=Z,440nm,0.6s							
PRYS	**Parys**	**0.76**	**201**	*e*P		**Pb**	**21 38 54.3**	**+0.2**
PRYS				*e*S		**Sg**	**21 39 01.4**	**-2.4**
PRYS				AML		AML	21 39 09.7	
	comp=Z,238nm,0.6s							
KSR	**Koster**	**0.78**	**297**	*e*P		**Pn**	**21 38 56.6**	**+0.9**
KSR				*e*S		**Sb**	**21 39 07.2**	**+2.3**
KSR				AML		AML	21 39 17.5	
	comp=Z,112nm,0.6s							
BFSD	**Buffelsfontein**	**1.02**	**230**	*e*P		**Pn**	**21 38 59.6**	**+0.5**
BFSD				*e*S		**Sn**	**21 39 13.7**	**+0.4**
BFSD				AML		AML	21 39 17.2	
	comp=Z,70nm,0.4s							
TLEK	**Tau Lekoa**	**1.16**	**230**	*e*P		**Pn**	**21 39 01.9**	**+0.9**
TLEK				*e*S		**Sn**	**21 39 17.2**	**+0.5**
TLEK				AML		AML	21 39 20.7	
	comp=Z,140nm,0.3s							
SWZ	**Schweizer**	**2.30**	**245**	*e*P		**Pb**	**21 39 20.2**	**-0.1**
SWZ				*e*S		**Sn**	**21 39 46.1**	**+1.2**
SWZ				AML		AML	21 39 51.1	
	comp=Z,137nm,0.5s							
BOSA	**Boshof**	**3.21**	**221**	*i* P		**Pn**	**21 39 28.9**	**-0.3**
BOSA				*i*			21 39 28.9	
	baz=56,slow=22							
BOSA				↑*i*S		**Sg**	**21 40 19.6**	**-2.4**
POGA	**Pongola**	**3.71**	**109**	*e*P		Pn	21 39 39.6	+3.6
POGA				*e*S		**Sn**	**21 40 22.6**	**+3.0**
POGA				AML		AML	21 40 40.6	
	comp=Z,27nm,0.5s							
CNG	**Changalane**	**4.07**	**92**	*e*P		**Pn**	**21 39 43.7**	**+2.9**
CNG				*e*S		**Sn**	**21 40 25.5**	**-2.7**
CNG				AML		AML	21 40 47.5	
	comp=Z,17nm,0.5s							
MATP	**Matopo**	**5.81**	**8**	*i* P		**Pn**	**21 40 04.7**	**-0.2**
MATP				*i*			21 40 04.8	
	baz=135,slow=12							
MATP				*i* S		Sb	21 41 24.8	-5.1
UPI	**Upington**	**6.09**	**248**	*e*P		**Pn**	**21 40 10.2**	**+1.5**
UPI				*e*S		**Sn**	**21 41 16.6**	**-1.8**
UPI				AML		AML	21 41 29.1	
	comp=Z,5.5nm,0.8s							
KEIM	**Keimoes**	**6.44**	**246**	*e*P		**Pn**	**21 40 15.8**	**+2.2**
KEIM				*e*S		**Sn**	**21 41 25.4**	**-1.7**
KEIM				AML		AML	21 41 39.0	
	comp=Z,9.8nm,0.2s							
KOMG	**Komaggas**	**9.68**	**246**	*e*P		**Pn**	**21 40 59.9**	**+2.0**
KOMG				*e*S		**Sn**	**21 42 42.3**	**-4.2**
KOMG				AML		AML	21 42 46.2	
	comp=Z,1.5nm,0.6s							

*IDC **18** 21:39:50.6±1.3, 7°.99S×67°.95E, h0km, mb3.9/9, mb1 4.1/9, mb1mx3.8/31, mbtmp3.9/9, MS3.8/12, Ms1 3.8/12, ms1mx3.5/35, Error ellipse: s-maj=42.6km s-min=22.4km az=42.0*
*ISCJB **18** 21:39:52.4±1.1, 7°.7S±0°.2×68°.23E±0°.07, h15km, mb4.0/13, MS3.8/12, Error ellipse: s-maj=27.3km s-min=6.6km az=15.5*
*NEIC **18** 21:39:52.3±0.9, 7°.94S×67°.99E, h10km, mb4.1/4, Error ellipse: s-maj=26.4km s-min=15.5km az=220.0*
ISC 18 21:39:53.8±1.4, 7°.8S±0°.2×68°.2E±0°.1, h15km, n35, σ1°22/23, mb4.0/13, MS3.9/12, Chagos Archipelago region

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
					Op	ISC	h m s	ISC
H08N3	**Diego Garcia H**	**3.17**	**62**	T		T	21 44 12.5	
	baz=241,slow=75,SNR=101							
H08N2	**Diego Garcia H**	**3.19**	**62**	T		T	21 44 15.3	
	baz=241,slow=75,SNR=97							
H08N1	**Diego Carcia H**	**3.19**	**63**	T		T	21 44 12.0	
	baz=241,slow=75,SNR=78							
H08S1	**Diego Carcia H**	**4.27**	**88**	Pn		**Pn**	**21 40 59.7**	**+1.5**
	baz=347,slow=75,SNR=7.0							
H08S1						**Sn**	**21 41 46.2**	**-1.6**
H08S1						T	21 46 04.5	
	baz=269,slow=74							
H08S3	**Diego Garcia H**	**4.29**	**88**	Pn		**Pn**	**21 40 59.7**	**+1.4**
	baz=347,slow=75,SNR=7.9							
H08S3						**Sn**	**21 41 46.2**	**-1.8**
H08S3						T	21 45 41.9	
	baz=269,slow=74							
H08S2	**Diego Garcia H**	**4.29**	**88**	Pn		**Pn**	**21 40 59.7**	**+1.3**
	baz=347,slow=75,SNR=5.2							
H08S2						**Sn**	**21 41 46.2**	**-2.0**
H08S2						T	21 45 57.2	
	baz=269,slow=74							
KMBO	**Kilima Mbogo**	**31.51**	**281**	LR		LR	21 56 32.4	
	comp=Z,99nm,19.6s,baz=99,slow=32							
CMAR	**Chiang Mai Arr**	**40.06**	**49**	P		**P**	**21 47 30.9**	**+2.1**
	1.8nm,0.7s,baz=242,slow=9.5,SNR=17							
CHTO	**Chiang Mai**	**40.28**	**49**	*e*P		**P**	**21 47 31.2**	**+0.6**
	4.3nm,1.2s							
BOSA	**Boshof**	**45.37**	**237**	LR		LR	22 04 14.1	
	comp=Z,147nm,18.9s,baz=48,slow=32							
H01W3	**Cape Leeuwin H**	**49.97**	**129**	T		T	22 42 31.3	
	baz=293							
H01W2	**Cape Leeuwin H**	**49.97**	**129**	T		T	22 42 28.7	
	baz=293							
H01W1	**Cape Leeuwin H**	**49.99**	**129**	T		T	22 42 27.4	
	baz=293							
AAK	**Ala-Archa**	**50.55**	**6**	*e*P		**P**	**21 48 51.9**	**-0.1**
	2.6nm,1.0s							
MKAR	**Makanchi Array**	**55.82**	**12**	P		**P**	**21 49 29.5**	**-1.0**
	1.2nm,0.7s,baz=202,slow=7.6,SNR=12							
MKAR				PcP		**PcP**	**21 50 29.6**	**+0.2**
	1.1nm,0.8s,baz=183,slow=2.9,SNR=5.3							
KBZ	**Khabaz**	**56.20**	**338**	P		**P**	**21 49 33.5**	**+0.3**
	1.9nm,1.0s,baz=180,slow=4.0,SNR=2.9							
BRTR	**Keskin Array B**	**57.09**	**329**	P		**P**	**21 49 40.0**	**+0.2**
	1.1nm,0.8s,baz=142,slow=12,SNR=4.3							
ABKAR	**Akbulak array**	**57.30**	**354**	*e*P		**P**	**21 49 40.1**	**-0.8**
	0.6nm,0.3s							
KURK	**Kurchatov**	**59.01**	**8**	*e*P		**P**	**21 49 52.3**	**-0.6**
	13nm,1.0s							
DAV	**Davao City (W)**	**59.13**	**77**	LR		LR	22 15 08.6	
	comp=Z,43nm,18.2s,baz=254,slow=36							
MAW	**Mawson**	**59.80**	**182**	LR		LR	22 09 15.2	
	comp=Z,90nm,18.8s,baz=54,slow=30							
ZALV	**Zalesovo Beam**	**63.13**	**11**

U40A	**Yellville**	**1.17**	**341**	P		**Pg**	**21 52 55.8**	**-0.9**
	baz=160							
V39A	**Pettigrew**	**1.19**	**300**	P		**Pg**	**21 52 56.3**	**-0.8**
V39A	baz=119			S		**Sg**	**21 53 12.1**	**-0.5**
	baz=119							
MIAR	**Mount Ida**	**1.21**	**235**	P		**Pg**	**21 52 56.9**	**-0.7**
MIAR	baz=55			S		**Sg**	**21 53 13.0**	**-0.3**
	baz=55							
MIAR	**Mount Ida**	**1.21**	**235**	*e*Pg		**Pg**	**21 52 56.8**	**-0.7**
U39A	**Green Forest**	**1.44**	**322**	Pb		**Pn**	**21 53 00.5**	**-0.4**
U39A	baz=141			S		**Sb**	**21 53 19.7**	**-0.5**
	baz=141							
Y40A	**Okolona**	**1.44**	**211**	Pb		**Pn**	**21 53 00.9**	**-0.1**
Y40A	baz=32			Sb		**Sb**	**21 53 20.5**	**+0.3**
	baz=32							
X39A	**Fountain Ranch**	**1.61**	**243**	Pb		**Pn**	**21 53 03.7**	**+0.4**
X39A	baz=63			Sb		**Sn**	**21 53 25.0**	**+0.7**
	baz=63							
HHAR	**Hobbs**	**1.63**	**309**	*e*Pn		**Pn**	**21 53 04.4**	**+0.8**
HHAR				*e*Sn		**Sn**	**21 53 25.7**	**+0.8**
HHAR				*e*Sg		**Sb**	**21 53 25.8**	**+0.1**
WLAR	**White Oak Lake**	**1.68**	**201**	*e*Pn		**Pb**	**21 53 05.4**	**-0.1**
WLAR				*e*Sn		**Sn**	**21 53 25.5**	**-0.3**
V38A	**Canehill**	**1.76**	**291**	Pb		**Pn**	**21 53 06.1**	**+0.7**
V38A	baz=110			Sb		**Sn**	**21 53 29.7**	**+1.6**
	baz=110							
T40A	**Mansfield**	**1.90**	**357**	Pb		**Pn**	**21 53 08.0**	**+0.8**
T40A	baz=176			Sb		**Sb**	**21 53 33.3**	**0.0**
	baz=176							
T39A	**Clever**	**1.94**	**336**	Pb		**Pn**	**21 53 08.8**	**+0.9**
	baz=155							
U38A	**Gravette**	**2.01**	**307**	Sb		**Sb**	**21 53 37.0**	**+0.3**
	baz=125							
X38A	**Whitesboro**	**2.09**	**255**	Pb		**Pb**	**21 53 12.1**	**-0.6**
	baz=74							
PBMO	**Poplar Bluff**	**2.19**	**46**	*e*Sn		**Sb**	**21 53 41.1**	**-0.8**

IDC ***18*** *22:00:42.0±1.1, 18°.62N×146°.28E, h0km, mb3.7/8, mb1 3.9/8, mb1mx3.6/33, mbtmp3.7/8, Error ellipse: s-maj=43.8km s-min=26.0km az=108.0*

ISCJB ***18*** *22:00:48.8±1.0, 18°.6N±0°.2×146°.3E±0°.3, h64km, mb3.7/8, Error ellipse: s-maj=36.8km s-min=23.0km az=15.7*

ISC 18 22:00:50.4±1.1, 18°.6N±0°.2×146°.3E±0°.3, h64km, n11, σ0s86/8, mb3.5/8, Mariana Islands

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
H11S3	**WAKE ISLAND Hy 19.37**	**87**		T	T	22 26 13.5	
	baz=274,slow=74,SNR=4.2						
H11S1	**WAKE ISLAND Hy 19.38**	**87**		T	T	22 26 18.7	
	baz=274,slow=74,SNR=5.3						
H11S2	**WAKE ISLAND Hy 19.38**	**87**		T	T	22 26 16.0	
	baz=274,slow=74,SNR=6.3						
WRA	**Warramunga Arr**	**40.01**	**198**	P	**P**	**22 08 19.3**	**0.0**
	0.2nm,0.4s,baz=27,slow=8.8,SNR=9.1						
ZALV	**Zalesovo Beam**	**58.45**	**322**	P	**P**	**22 10 39.8**	**+0.2**
	0.5nm,0.5s,baz=86,slow=8.5,SNR=3.4						
MKAR	**Makanchi Array**	**58.95**	**314**	P	**P**	**22 10 44.2**	**+0.9**
	0.1nm,0.3s,baz=97,slow=9.5,SNR=3.1						
ILAR	**Eielson Array**	**63.53**	**26**	P	**P**	**22 11 13.8**	**-0.1**
	0.5nm,0.9s,baz=259,slow=6.2,SNR=4.5						
INK	**Inuvik**	**69.29**	**23**	P	**P**	**22 11 50.5**	**0.0**
	0.7nm,1.0s,baz=248,slow=2.3,SNR=2.9						
YKA	**Yellowknife Ar**	**77.86**	**28**	P	**P**	**22 12 41.5**	**+0.6**
	0.4nm,0.7s,baz=288,slow=5.3,SNR=5.8						
ARCES	**ARCESS Array B**	**82.79**	**342**	P	**P**	**22 13 06.8**	**-0.5**
	2.0nm,0.8s,baz=74,slow=6.7,SNR=3.6						
FINES	**FINESS Array B**	**87.23**	**335**	P	**P**	**22 13 28.2**	**-1.5**
	1.6nm,0.9s,baz=72,slow=6.2,SNR=5.0						

ISCJB ***18*** *22:06:29.8±0.4, 24°.57N±0°.02×122°.40E±0°.01, h4km±3km, Error ellipse: s-maj=3.9km s-min=2.1km az=0.2*

TAP ***18*** *22:06:30.5, 24°.59N×122°.34E, h8km, ML3.4, C*

JMA ***18*** *22:06:30.8, 24°.49N×122°.34E, h29km±4km, M3.1*

ISC 18 22:06:29.8±1.1, 24°.53N±0°.02×122°.38E±0°.02, h9km±9km, n56, σ0s70/101, 1C, Taiwan region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
TWC	**Suao**	**0.49**	**279**	⇑*i*P	**Pg**	**22 06 39.1**	**-0.2**
TWC	baz=272			*e*S	**Sg**	**22 06 46.0**	**+0.3**
	baz=272						
EGS		**0.51**	**308**	P	**Pg**	**22 06 39.9**	**+0.2**
EGS	baz=305			*e*S	**Sg**	**22 06 45.5**	**-1.0**
	baz=305						
JYNG	**Yonagunijimaku**	**0.52**	**99**	P	**Pb**	**22 06 41.6**	**+0.4**
JYNG				S	**Sb**	**22 06 50.6**	**+1.8**
YOJ	**Yonaguni jima**	**0.58**	**97**	P	**Pb**	**22 06 42.7**	**+0.5**
YOJ				S	**Sn**	**22 06 52.4**	**-1.5**
ENA	**Nanau**	**0.59**	**260**	*e*P	**Pg**	**22 06 41.3**	**+0.1**
ENA	baz=263			S	**Sb**	**22 06 50.3**	**-0.5**
	baz=263						
TWB1	**Santiao Chiao**	**0.59**	**323**	*e*P	**Pg**	**22 06 41.5**	**+0.3**
TWB1	baz=324			*e*S	**Sg**	**22 06 48.5**	**-0.6**
	baz=324						
ILA	**Ilan**	**0.62**	**292**	*e*P	**Pg**	**22 06 41.6**	**-0.2**
ILA	baz=288			*e*S	**Sg**	**22 06 50.2**	**+0.3**
	baz=288						
TWE	**Neicheng**	**0.67**	**286**	P	**Pg**	**22 06 42.9**	**+0.1**
TWE	baz=282			S	**Sg**	**22 06 51.9**	**+0.2**
	baz=282						
ENTT	**Nioudou**	**0.75**	**278**	*e*P	**Pg**	**22 06 44.2**	**0.0**
ENTT	baz=274			*e*S	**Sb**	**22 06 55.2**	**-0.1**
	baz=274						
NWF	**Wu-fen Shan**	**0.76**	**315**	P	**Pb**	**22 06 45.1**	**-0.3**
NWF	baz=305			S	**Sb**	**22 06 55.7**	**-0.1**
	baz=305						
TWD	**Chiawan**	**0.84**	**238**	*e*P	**Pb**	**22 06 46.5**	**-0.1**
TWD	baz=242			*e*S	**Sn**	**22 07 00.2**	**-0.2**
	baz=242						
HWA	**Hwalien**	**0.90**	**232**	*e*P	**Pg**	**22 06 49.9**	**+1.3**
	baz=238						
NNS	**Nan Shan**	**0.92**	**264**	*e*P	**Pg**	**22 06 47.7**	**+0.1**
NNS	baz=260			*e*S	**Sg**	**22 06 59.7**	**+0.2**
	baz=260						
TAP1	**Taipei**	**0.93**	**303**	*e*P	**Pn**	**22 06 48.6**	**-0.4**
TAP1	baz=292			*e*S	**Sg**	**22 06 59.7**	**0.0**
	baz=292						
NSK	**Sanguang**	**0.94**	**279**	*e*P	**Pg**	**22 06 48.0**	**+0.1**
NSK	baz=275			*e*S	**Sg**	**22 06 59.9**	**-0.3**
	baz=275						
TAP	**Taipei**	**0.94**	**303**	*e*P	**Pn**	**22 06 49.2**	**0.0**
	baz=292						
TWY	**Chenhua**	**1.02**	**316**	*e*P	**Pg**	**22 06 49.3**	**-0.2**
TWY	baz=316			*e*S	**Sb**	**22 07 03.4**	**+0.2**
	baz=316						
TWS1	**Kuangyinshan**	**1.04**	**303**	*e*P	**Pn**	**22 06 51.1**	**+0.6**
TWS1	baz=292			*e*S	**Sb**	**22 07 03.7**	**0.0**
	baz=292						
WHF	**Hehuan Shan**	**1.09**	**249**	*e*P	**Pg**	**22 06 50.7**	**0.0**
WHF	baz=256			*e*S	**Sn**	**22 07 06.5**	**-0.5**
	baz=256						
ESL	**Shilin**	**1.12**	**231**	*e*P	**Pn**	**22 06 52.0**	**+0.3**
ESL	baz=226			*e*S	**Sn**	**22 07 07.9**	**+0.6**
	baz=226						
PCYT	**Pengchaiyu**	**1.13**	**346**	*e*P	**Pb**	**22 06 50.8**	**-0.7**
	baz=348						
TWT	**Tachien**	**1.13**	**256**	*e*P	**Pn**	**22 06 52.7**	**+0.7**
TWT	baz=252			*e*S	**Sn**	**22 07 07.8**	**+0.1**
	baz=252						
NCU	**National Centr**	**1.17**	**292**	*e*P	**Pn**	**22 06 53.2**	**+0.9**
	baz=290						
NCU				*e*S	**Sn**	**22 07 08.7**	**+0.3**
	baz=290						
IRIF	**Iriomote-Funau**	**1.25**	**99**	P	**Pn**	**22 06 53.0**	**-0.4**
IRIF				S	**Sn**	**22 07 10.2**	**-0.2**
NSTT	**Nanjuang**	**1.26**	**275**	*e*P	**Pg**	**22 06 54.2**	**+0.3**
NSTT	baz=264			*e*S	**Sg**	**22 07 10.3**	**0.0**
	baz=264						
HATJ	**Hateruma jima**	**1.39**	**110**	P	**Pn**	**22 06 55.5**	**+0.2**
HATJ				*e*S	**Sn**	**22 07 13.8**	**0.0**
EHY	**Hungye**	**1.41**	**224**	*e*P	**Pb**	**22 06 56.5**	**+0.2**
EHY	baz=219			*e*S	**Sg**	**22 07 14.9**	**-0.2**
	baz=219						
TWQ1	**Liyutan**	**1.47**	**263**	*e*P	**Pg**	**22 06 58.4**	**+0.3**
TWQ1	baz=260			*e*S	**Sg**	**22 07 19.5**	**+2.2**
	baz=260						
NSY	**Sanyi**	**1.48**	**266**	*e*P	**Pb**	**22 06 57.6**	**+0.1**
	baz=263						
SMLT	**Sun Moon Lake**	**1.50**	**245**	*e*P	**Pg**	**22 06 58.7**	**+0.2**
SMLT	baz=249			*e*S	**Sg**	**22 07 18.5**	**+0.5**
	baz=249						
JKRS	**Kuro-shima**	**1.52**	**101**	P	**Pn**	**22 06 57.4**	**+0.3**
JKRS				S	**Sn**	**22 07 16.8**	**-0.2**
TYC	**Yuchr**	**1.52**	**246**	*e*P	**Pg**	**22 06 59.1**	**+0.1**
TYC	baz=250			*e*S	**Sg**	**22 07 18.7**	**-0.1**
	baz=250						
TWF1	**Yuli**	**1.54**	**220**	*e*P	**Pn**	**22 06 57.1**	**-0.3**
TWF1	baz=216			*e*S	**Sn**	**22 07 16.8**	**-0.7**
	baz=216						
JIJ	**Ishigaki jima**	**1.62**	**96**	P	**Pn**	**22 06 58.1**	**-0.4**
JIJ				*e*S	**Sn**	**22 07 18.3**	**-1.2**
YUS	**Yu-Shan**	**1.67**	**232**	*e*P	**Pb**	**22 07 00.7**	**-0.3**
YUS	baz=210			*e*S	**Sn**	**22 07 21.8**	**+0.4**
	baz=210						
WNT	**Mingjian**	**1.68**	**248**	*e*P	**Pg**	**22 07 02.6**	**+0.6**
	baz=233						
CHKT	**Chengkung**	**1.70**	**213**	*e*P	**Pn**	**22 06 58.9**	**-0.8**
	baz=195						
JISG	**Ishigakijimahi**	**1.76**	**88**	P	**Pn**	**22 07 00.4**	**-0.1**
JISG				S	**Sn**	**22 07 22.9**	**-0.1**
ALS	**Alishan**	**1.76**	**235**	*e*P	**Pb**	**22 07 02.5**	**0.0**
ALS	baz=215			*e*S	**Sb**	**22 07 24.9**	**+0.1**
	baz=215						
CHN5	**Tsauling**	**1.81**	**239**	*e*P	**Pg**	**22 07 04.0**	**-0.6**
	baz=218						
CHN5	baz=218			*e*S	**Sg**	**22 07 28.3**	**+0.2**
ELDTW	**Lidau**	**1.83**	**223**	*e*P	**Pb**	**22 07 03.5**	**0.0**
	baz=221						
WGK	**Gukeng**	**1.86**	**243**	*e*P	**Pb**	**22 07 04.5**	**+0.5**
	baz=221						
WGK	baz=221			*e*S	**Sg**	**22 07 28.7**	**-1.0**
CHN4	**Tsaushan**	**2.01**	**235**	*e*P	**Pb**	**22 07 06.7**	**+0.1**
	baz=214						
CHN4	baz=214			*e*S	**Sb**	**22 07 33.0**	**+1.3**
STYT	**Tauyuan**	**2.02**	**228**	*e*P	**Pb**	**22 07 05.9**	**-0.7**
	baz=209						
STYT	baz=209			*e*S	**Sb**	**22 07 31.5**	**-0.4**
WTP	**Ta-pu**	**2.06**	**232**	*e*P	**Pb**	**22 07 07.3**	**-0.1**
	baz=211						
WTP	baz=211			*e*S	**Sb**	**22 07 33.2**	**0.0**
TWG	**Pinlang**	**2.08**	**215**	*e*P	**Pn**	**22 07 06.0**	**+1.0**
	baz=212						
TWG	baz=212			*e*S	**Sn**	**22 07 31.2**	**+0.2**
JTJ	**Tarama**	**2.12**	**87**	P	**Pn**	**22 07 06.0**	**+0.6**
JTJ				S	**Sn**	**22 07 31.7**	**-0.2**
TWK	**Hsinying**	**2.14**	**234**	*e*P	**Pb**	**22 07 08.1**	**-0.7**
TWK	baz=214			*e*S	**Sb**	**22 07 34.9**	**-0.6**
CHN1	**Nanshi**	**2.16**	**232**	*e*P	**Pb**	**22 07 09.1**	**-0.1**
	baz=228						
CHN1	baz=228			*e*S	**Sb**	**22 07 36.1**	**+0.1**
SGST	**Jiashian**	**2.19**	**229**	*e*P	**Pb**	**22 07 09.4**	**-0.2**
	baz=210						
SGST	baz=210			*e*S	**Sb**	**22 07 37.1**	**+0.3**
ECL	**Taimali**	**2.33**	**214**	*e*P	**Pn**	**22 07 09.7**	**+1.4**
	baz=213						
SSD	**Sandimen**	**2.39**	**222**	*e*P	**Pb**	**22 07 11.9**	**-1.2**
	baz=219						
SSD	baz=219			*e*S	**Sb**	**22 07 40.9**	**-1.8**
JIRB	**Irabujima**	**2.56**	**83**	P	**Pn**	**22 07 12.5**	**+1.0**
EAST	**Anshuo**	**2.56**	**214**	*e*P	**Pn**	**22 07 12.5**	**+1.0**
	baz=212						
SCZT	**Fangliau**	**2.69**	**217**	*e*P	**Pb**	**22 07 16.4**	**-1.8**
	baz=199						
SCZT	baz=199			*e*S	**Sb**	**22 07 48.8**	**-2.4**
TWK1	**Hengchun**	**2.96**	**210**	*e*P	**Pn**	**22 07 18.2**	**+1.2**
	baz=208						

JMA 18 22:08:44.2±0.1, 36°.71N×141°.47E, h34km±2km, M2.6, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.67**	**306**	P	Pn	22 08 57.0	-0.2
ONAJ				S	Sn	22 09 06.1	-0.4
JHO	**Hitachi**	**0.73**	**262**	P	Pn	22 08 57.9	-0.2
JFK	**Kawauchi**	**0.81**	**324**	P	Pn	22 08 59.1	-0.2
JFK				S	Sn	22 09 10.1	0.0
JFT	**Otama**	**1.21**	**312**	P	Pb	22 09 06.0	-0.7
JFT				*e*S	Sb	22 09 21.3	-0.8
JMM	**Marumori**	**1.27**	**335**	P	Pn	22 09 05.7	+0.1

IDC 18 22:19:54.3±8.2, 29°.90N×84°.30E, h0km, mb3.8/4, mb1 3.8/5, mb1mx3.4/45, mbtmp3.8/5, ML2.9/1, Error ellipse: s-maj=161.6km s-min=76.0km az=130.0, Xizang

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
MKAR	**Makanchi Array**	**16.95**	**355**	Pn	Pn	22 23 52.6	-0.2
	0.0nm,0.3s,baz=172,slow=12,SNR=8.7						
KURBB	**Kurchatov Arra**	**21.16**	**350**	P	P	22 24 40.0	-0.8
	1.3nm,0.7s,baz=173,slow=10,SNR=10.0						
NRIK	**Noril'sk**	**39.53**	**2**	P	P	22 27 26.3	-0.1
	1.0nm,0.3s,baz=160,slow=7.3,SNR=3.6						
FINES	**FINESS Array B**	**49.11**	**327**	P	P	22 28 43.6	+0.3
	1.4nm,0.8s,baz=109,slow=10,SNR=3.7						
NOA	**NORSAR Array B**	**56.21**	**326**	P	P	22 29 35.6	-0.3
	0.8nm,0.8s,baz=88,slow=7.4,SNR=4.0						

IDC 18 22:19:59.5±1.7, 3°.24N×128°.18E, h0km, mb3.6/4, mb1 3.7/4, mb1mx3.4/44, mbtmp3.6/4, Error ellipse: s-maj=146.5km s-min=22.5km az=66.0, North of Halmahera

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
WRA	**Warramunga Arr**	**23.82**	**166**	P	P	22 25 15.4	+1.0
	0.6nm,0.4s,baz=345,slow=11,SNR=14						
STKA	**Stephens Creek**	**37.18**	**161**	P	P	22 27 11.2	-1.3
	0.5nm,0.3s,baz=349,slow=10,SNR=2.7						
MKAR	**Makanchi Array**	**58.78**	**325**	P	P	22 29 59.9	+0.3
	0.2nm,0.3s,baz=112,slow=7.3,SNR=7.5						
KURBB	**Kurchatov Arra**	**62.93**	**327**	P	P	22 30 27.3	-0.4
	0.2nm,0.3s,baz=123,slow=6.8,SNR=3.2						

JMA 18 22:26:24.8, 36°.91N×140°.65E, h6km±1km, M2.9, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.23**	**32**	P	Pg	22 26 29.6	+0.3
ONAJ				S	Sg	22 26 32.7	+0.4
JHO	**Hitachi**	**0.31**	**192**	P	Pg	22 26 30.9	+0.1
JFK	**Kawauchi**	**0.49**	**21**	P	Pg	22 26 34.2	-0.1
JFK				S	Sg	22 26 40.9	+0.2
JFT	**Otama**	**0.66**	**338**	P	Pg	22 26 37.6	+0.2
JFT				S	Sg	22 26 46.4	+0.4
JMM	**Marumori**	**0.96**	**7**	P	Pg	22 26 43.0	-0.3
JMM				S	Sg	22 26 55.5	-0.2
MAT	**Matsushiro**	**2.00**	**260**	P	Pn	22 27 00.0	+0.9
MAT				S	Sb	22 27 26.7	0.0

MAN 18 22:29:11, 13°.73N×121°.43E, h36km, mb4.3, ML3.2, MS3.0, 2C, Mindoro

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
PGP	**Puerto Galera**	**0.52**	**244**	⇑*i*P	Pn	22 29 23.7	+1.8
PGP				*i* S	Sn	22 29 32.0	+2.5
TGY	**Tagaytay City**	**0.60**	**308**	*e*P	Pn	22 29 31.3	+8.0
GQP	**Guinayangan**	**1.00**	**80**	⇑*e*P	Pn	22 29 28.7	+0.2
GQP				*i* S	Sn	22 29 43.1	+1.7
AUQP	**San Andres**	**1.28**	**108**	*e*P	Pn	22 29 32.9	+0.6
SJMP	**San Jose**	**1.30**	**194**	*e*P	Pn	22 29 34.8	+2.2
OTRP	**Odiongan**	**1.48**	**157**	*e*P	Pn	22 29 35.6	+0.5
BUSP	**Coron**	**2.10**	**215**	*e*P	Pn	22 29 39.1	-4.4

BJI ***18*** *22:40:26.8, 0°.52S×98°.92E, h66km, mb4.6/29, mB4.8/16, Ms4.7/4, Ms7 4.3/4*

KLM ***18*** *22:40:33.3, 0°.49N×98°.38E, h50km, mb4.6*

MOS ***18*** *22:40:34.2±1.0, 0°.54N×98°.96E, h63km, mb4.7/28, Error ellipse: s-maj=14.7km s-min=6.6km az=101.5*

ISCJB ***18*** *22:40:36.3±0.4, 0°.52N±0°.03×98°.78E±0°.04, h83km±3km, mb4.4/55, Error ellipse: s-maj=6.9km s-min=3.5km az=141.6*

IDC ***18*** *22:40:36.9±3.0, 0°.50N×98°.90E, h75km±26km, mb4.0/19, mb1 4.1/21, mb1mx3.9/43, mbtmp4.3/21, MS3.0/4, Ms1 3.0/4, ms1mx2.7/46, Error ellipse: s-maj=26.4km s-min=11.4km az=55.0*

NEIC ***18*** *22:40:37.0±0.6, 0°.48N×98°.89E, h76km±5km, mb4.6/26, Error ellipse: s-maj=8.9km s-min=3.9km az=54.0*

DJA ***18*** *22:40:38.0±0.7, 1°.N±2°×9°.9E±°, h39km±8km, M4.8/17, mb4.8/17, mB5.2/7, MLv4.9/11, Mw(mB)4.6/7*

ISC 18 22:40:36.1±0.7, 0°.45N±0°.04×98°.76E±0°.04, h72km±6km, n185, σ1s88/190, mb4.5/57, 2C-2D, Northern Sumatera

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
MNSI	**Mandailing Nat**	**0.89**	**67**	P	**Pn**	**22 40 54.1**	**+0.7**
MNSI				S	**Sn**	**22 41 06.1**	**-0.1**
SBSI	**Sibolga**	**1.10**	**7**	P	**Pn**	**22 40 56.4**	**+0.3**
SBSI				S	**Sn**	**22 41 10.2**	**-0.7**
GSI	**Gunungsitoli**	**1.46**	**306**	P	**Pn**	**22 41 02.7**	**+2.1**
GSI	**Gunungsitoli**	**1.46**	**306**	*e*Pn	**Pn**	**22 41 02.6**	**+2.0**
GSI				*e*Sn	**Sn**	**22 41 17.9**	**-1.2**
PPI	**Padang Panjang**	**1.87**	**119**	P	**Pn**	**22 41 09.5**	**+3.4**
PDSI	**Padang**	**2.17**	**128**	P	**Pn**	**22 41 13.1**	**+2.9**
BKNI	**Bangkinang**	**2.28**	**93**	P	**Pn**	**22 41 13.0**	**+1.4**
BKNI				S	**Sn**	**22 41 41.5**	**+2.7**
BKNI	**Bangkinang**	**2.28**	**93**	*e*Pn	**Pn**	**22 41 13.1**	**+1.4**
BKNI				*e*Sn	**Sn**	**22 41 34.4**	**-4.5**
PSI	**Prapat**	**2.34**	**4**	P	**Pn**	**22 41 11.6**	**-1.0**
	161nm,0.3s,baz=162,slow=11,SNR=259						
PSI				S	Sn	22 41 28.9	-12
	70nm,0.3s,baz=173,slow=14,SNR=18						
PSI				LR	LR	22 42 14.6	
	comp=Z,121nm,20.4s,baz=358,slow=45						
PSI	**Prapat**	**2.34**	**4**	*e*Pn	**Pn**	**22 41 11.6**	**-1.0**
PSI				*e*Sn	Sn	22 41 28.1	-12
SDSI	**Sungai Dareh**	**3.00**	**117**	P	**Pn**	**22 41 24.4**	**+3.0**
TSI	**Tuntungan**	**3.04**	**356**	P	**Pn**	**22 41 23.4**	**+1.5**
TPTI		**3.21**	**331**	P	**Pn**	**22 41 24.3**	**+0.1**
TPTI				S	**Sn**	**22 42 00.7**	**-0.6**
KCSI	**Kotacane, Aceh**	**3.21**	**342**	P	**Pn**	**22 41 24.2**	**-0.1**
PPSI	**Pulau Pagai**	**3.43**	**159**	P	**Pn**	**22 41 29.3**	**+2.1**
RGRI	**Rengat**	**3.66**	**103**	P	**Pn**	**22 41 32.9**	**+2.5**
IPM	**Ipoh**	**4.60**	**29**	*e*Pn	**Pn**	**22 41 44.2**	**+1.0**
IPM				*e*Sn	Sn	22 42 19.4	-16
MASI	**Maura Aman, Be**	**4.98**	**136**	P	**Pn**	**22 41 51.6**	**+3.1**
LHMI	**Lhok Sumawe**	**5.08**	**339**	P	**Pn**	**22 41 50.1**	**+0.3**
LHMI	**Lhok Sumawe**	**5.08**	**339**	*e*Pn	**Pn**	**22 41 49.8**	**0.0**
LHMI				*e*Sn	**Sn**	**22 42 41.1**	**-6.1**
KULM	**Kulim**	**5.17**	**21**	*e*Pn	**Pn**	**22 41 51.4**	**+0.4**
KULM				*e*Sn	**Sn**	**22 42 50.3**	**+1.1**
MYKOM	**Kota Tinggi**	**5.26**	**75**	*e*Pn	**Pn**	**22 41 52.0**	**-0.2**
MYKOM				*e*Sn	**Sn**	**22 42 46.8**	**-4.8**
TPRI	**Tanjung Pinang**	**5.78**	**85**	P	**Pn**	**22 42 00.9**	**+1.5**
	100nm,0.6s,1.7nm						
DSRI	**Dabo**	**5.89**	**99**	P	**Pn**	**22 42 02.8**	**+1.9**
MNAI	**Manna**	**6.36**	**139**	P	**Pn**	**22 42 08.8**	**+1.6**
	382nm,1.4s,2.1nm						
MNAI	**Manna**	**6.36**	**139**	*e*Pn	**Pn**	**22 42 08.9**	**+1.7**
MNAI				*e*Sn	**Sn**	**22 43 16.8**	**-1.7**
LHSI	**Lahat**	**6.38**	**132**	P	**Pn**	**22 42 10.9**	**+3.4**
KTGM	**Kuala Trenggan**	**6.52**	**42**	⇑P	**Pn**	**22 42 10.1**	**+0.6**
SKLT	**Songkhla**	**6.93**	**15**	P	**Pn**	**22 42 15.8**	**+0.7**
	142nm,0.8s,2μm0.6nm						
TRTT	**Trang**	**7.40**	**7**	P	**Pn**	**22 42 22.4**	**+0.9**
	67nm,1.1s,752nm0.3nm						
PKDT	**Phuket**	**7.41**	**357**	P	Pn	22 42 28.0	+6.4
LWLI	**Liwa**	**7.58**	**136**	P	**Pn**	**22 42 27.0**	**+2.9**
PPBI	**Pangkal Pinang**	**7.82**	**109**	P	**Pn**	**22 42 30.3**	**+3.1**
CMBY	**CAMPBELL BAY**	**8.11**	**324**	*e*P	**Pn**	**22 42 28.4**	**-2.8**
CMBY				IAmb	IAmb	22 42 32.0	
	comp=Z,91nm,0.5s						
KASI	**Kota Agung**	**8.25**	**136**	P	**Pn**	**22 42 33.6**	**+0.5**
SURT	**Suratani**	**8.45**	**0**	P	Pn	22 42 41.5	+5.6
	comp=Z,9.5nm,0.7s,comp=Z,181nmcomp=Z,0.0nm						
LEM	**Lembang**	**11.42**	**129**	P	Pn	22 43 22.3	+5.7
	comp=Z,4.7nm,0.3s,baz=342,slow=17,SNR=2.7						
LEM	**Lembang**	**11.42**	**129**	P	Pn	22 43 27.0	+10
CISI	**Cisompet, Garu**	**12.03**	**132**	P	**Pn**	**22 43 25.6**	**+0.8**
	comp=Z,85nm,0.5s,comp=Z,2μm						
CISI	**Cisompet, Garu**	**12.03**	**132**	*e*Pn	**Pn**	**22 43 22.5**	**-2.4**
PBA	**Port Blair**	**12.64**	**332**	*e*P	Pn	22 43 27.4	-5.6
STKI	**Sintang**	**12.72**	**92**	P	P	22 43 48.1	+5.5
XMIS	**Christmas Isla**	**12.84**	**148**	*e*Pn	Pn	22 43 27.8	-8.0
SBUM	**Sibu**	**13.60**	**81**	⇑P	**Pn**	**22 43 48.5**	**+2.5**
SBUM	**Sibu**	**13.60**	**81**	*e*P	**P**	**22 43 51.4**	**-1.0**
DGPR	**DIGLIPUR**	**13.90**	**336**	*e*P	**Pn**	**22 43 45.8**	**-4.1**
DGPR				IAmb	IAmb	22 43 49.4	
	comp=Z,18nm,1.2s						
UGM	**Wanagama**	**14.37**	**126**	*e*Pn	**Pn**	**22 43 54.5**	**-1.6**
NGJI	**Ngawi**	**14.86**	**122**	P	P	22 44 16.8	+10
BBKI	**Banjar Baru**	**16.54**	**104**	P	**P**	**22 44 29.6**	**+4.6**
	comp=Z,33nm,1.0s,comp=Z,8μm						
ABJI	**Asem Bagus**	**17.47**	**118**	P	**P**	**22 44 39.2**	**+3.9**
	comp=Z,38nm,0.9s						
CM31	**Chiang Mai Arr**

baz=73,slow=75,SNR=170
PKIN Phulchoki 29.87 336 *e*P **P** **22 46 39.9 +2.7**
GUN Gumba 29.97 337 *e*P **P** **22 46 39.3 +1.1**
comp=Z,24nm,0.5s
LSA Lhasa 29.98 347 *e*P **P** **22 46 38.7 +0.3**
LSA pmax pmax
comp=Z,7.0nm,0.6s
LSA Lhasa 29.98 347 *e*P **P** **22 46 38.7 +0.3**
comp=Z,6.9nm,0.6s
KKN Kakani 30.10 336 *e*P **P** **22 46 40.0 +0.8**
comp=Z,7.0nm,0.4s
GKN Gorkha 30.56 335 *e*P **P** **22 46 44.1 +0.9**
comp=Z,17nm,0.7s
CD2 Chengdu 30.66 8 P **P** **22 46 45.8 +1.9**
BHPL Bhopal 30.71 319 *e*P **P** **22 46 46.5 +2.1**
BHPL IAmb IAmb 22 46 47.2
comp=Z,6.5nm,0.7s
KOLN Koldanda 30.81 333 *e*P **P** **22 46 46.9 +1.4**
comp=Z,20nm,0.6s
ENH Enshi 31.36 18 *e*P **P** **22 46 49.2 -0.9**
comp=Z,8.9nm,0.6s
PYUN Piuthan 31.37 333 *e*P **P** **22 46 51.6 +1.2**
FAKI Fak Fak 33.64 96 *e*P **P** **22 47 09.6 -0.6**
comp=Z,24nm,1.3s
MTN Manton Dam 34.72 114 *e*P **P** **22 47 19.7 +0.2**
comp=Z,131nm,1.8s
XAN Xi'an 34.75 15 P **P** **22 47 18.1 -1.5**
XAN pmax pmax
comp=Z,12nm,0.8s
LZH Lanzhou 35.77 7 *e*P P 22 47 36.6 +8.1
LZH pP pP 22 47 46.4 +0.5
LZH sP sP 22 47 51.0 -3.4
LZH pmax pmax
comp=Z,11nm,1.0s
NJ2 Nanjing 36.72 29 *e*P **P** **22 47 38.1 +1.7**
NJ2 pmax pmax
comp=Z,14nm,0.6s
SMLA Simla 36.74 328 *e*P **P** **22 47 37.4 +0.8**
NWAO Narrogin (SRO) 37.49 154 P **P** **22 47 42.4 -0.5**
comp=Z,8.1nm,1.1s,baz=267,slow=0.1,SNR=2.0
NWAO Narrogin (SRO) 37.49 154 *e*P **P** **22 47 42.4 -0.5**
comp=Z,135nm,2.0s
DHRM DHARAMSHALA 38.08 328 *e*P **P** **22 47 48.8 +0.6**
DHRM IAmb IAmb 22 47 49.3
comp=Z,22nm,1.1s
GTA Gaotai 38.79 1 *e*P **P** **22 47 54.6 +0.7**
GTA pP pP 22 48 10.0 -1.5
GTA sP sP 22 48 17.0 -2.9
GTA pmax pmax
comp=Z,4.0nm,1.4s
WRA Warramunga Arr 40.32 122 P **P** **22 48 05.5 -1.4**
comp=Z,2.2nm,0.8s,baz=300,slow=9.3,SNR=10
WR1 Warramunga Arr 40.32 122 *e*P **P** **22 48 05.5 -1.4**
comp=Z,23nm,1.6s
WRAB Tennant Creek 40.32 122 *e*P **P** **22 48 05.9 -0.9**
WRAB pmax pmax
comp=Z,15nm,1.0s
WRAB Tennant Creek 40.32 122 *e*P **P** **22 48 05.7 -1.1**
comp=Z,14nm,0.8s
WB2 Warramunga Arr 40.33 122 *e*P **P** **22 48 06.4 -0.5**
comp=Z,12nm,1.3s
ASAR Alice Springs 41.70 128 P **P** **22 48 18.1 -0.1**
comp=Z,1.6nm,0.7s,baz=304,slow=7.7,SNR=16
ASAR S **S** **22 54 23.1 -7.0**
comp=Z,0.2nm,0.3s,baz=280,slow=14,SNR=4.1
AS31 Alice Springs 41.70 127 *e*P **P** **22 48 18.1 -0.1**
comp=Z,1.5nm,0.9s
AS31 *e*S **S** **22 54 23.1 -7.0**
AS01 Alice Springs 41.74 127 *e*P **P** **22 48 18.9 +0.4**
HHC Hu-ho-hao-te 41.86 15 *e*P **P** **22 48 23.8 +4.5**
HHC pmax pmax
comp=Z,21nm,1.0s
HHC pmax pmax
comp=Z,47nm,5.8s
BJT Baijiatuau 42.46 20 *e*P **P** **22 48 23.2 -0.8**
BJT Baijiatuau 42.46 20 *e*P **P** **22 48 23.2 -0.8**
KSH Kashi 44.10 335 P **P** **22 48 37.4 -0.1**
KSH *e*pP pP 22 48 53.0 -2.4
KSH S **S** **22 55 04.3 -0.7**
KSH pmax pmax
comp=Z,100nm,4.8s
WMQ Urumqi 44.30 349 P **P** **22 48 40.5 +1.7**
WMQ pP pP 22 48 57.3 +0.5
WMQ sP sP 22 49 01.9 -3.2
WMQ S **S** **22 55 09.5 +1.9**
WMQ pmax pmax
comp=Z,5.0nm,0.8s
WMQ pmax pmax
comp=Z,36nm,4.8s
KS15 Wonju Array Si 45.57 33 *e*P **P** **22 48 47.5 -1.5**
KSAR Wonju Array Be 45.57 33 P **P** **22 48 47.5 -1.5**
KSAR Wonju Array Be 45.57 33 P **P** **22 48 47.5 -1.5**
KSRS Korea Array 45.60 33 P **P** **22 48 47.5 -1.7**
comp=Z,1.4nm,0.4s,baz=240,slow=8.5,SNR=4.3
KSRS LR LR 23 09 21.3
comp=Z,16nm,18.1s,baz=230,slow=38
TKM2 Tokmak 2 47.11 337 *e*P **P** **22 49 02.8 +1.6**
TKM2 pmax pmax
comp=Z,13nm,1.2s
TKM2 Tokmak 2 47.11 337 *e*P **P** **22 49 02.8 +1.6**
comp=Z,13nm,1.2s
AAK Ala-Archa 47.31 336 *e*P **P** **22 49 05.0 +2.2**
AAK pmax pmax
comp=Z,4.0nm,0.8s
AAK Ala-Archa 47.31 336 *e*P **P** **22 49 05.0 +2.2**
comp=Z,3.6nm,0.8s
EKS2 Erkin-Say 47.63 335 *e*P **P** **22 49 07.2 +2.0**
EKS2 pmax pmax
comp=Z,5.0nm,0.7s
EKS2 Erkin-Say 47.63 335 *e*P **P** **22 49 07.2 +2.0**
comp=Z,4.7nm,0.7s
SONA0 Songino Array 47.66 7 *e*P **P** **22 49 06.7 +1.4**
comp=Z,17nm,0.8s
SONM Songino Array 47.66 7 P **P** **22 49 06.7 +1.4**
comp=Z,16nm,0.7s,baz=188,slow=9.7,SNR=34
SONA1 Songino Array 47.67 7 *e*P **P** **22 49 06.7 +1.3**
ULN Ulaanbaatar 47.77 8 *e*P **P** **22 49 07.5 +1.3**
ULN pmax pmax
comp=Z,15nm,0.6s
ULN Ulaanbaatar 47.77 8 *e*P **P** **22 49 07.5 +1.3**
comp=Z,15nm,0.6s
BBOO Buckleboo 48.27 137 *e*P **P** **22 49 10.4 +0.3**
comp=Z,40nm,1.9s
MK01 Makanchi Array 48.33 345 *e*P **P** **22 49 10.9 +0.6**
MK31 Makanchi Array 48.35 345 *e*P **P** **22 49 10.6 +0.1**
MK31 Makanchi Array 48.35 345 *e*P **P** **22 49 10.6 +0.1**
MK32 Makanchi Array 48.35 345 *e*P **P** **22 49 11.4 +0.8**
MKAR Makanchi Array 48.35 345 P **P** **22 49 11.4 +0.8**
comp=Z,8.5nm,0.5s,baz=158,slow=7.7,SNR=61
MKAR Makanchi Array 48.35 345 *e*P **P** **22 49 11.8 +1.2**
MAKZ Makanchi 48.45 345 *e*P **P** **22 49 12.2 +0.9**
MAKZ pmax pmax
comp=Z,6.0nm,0.6s
MAKZ Makanchi 48.45 345 *e*P **P** **22 49 12.2 +0.9**
comp=Z,6.2nm,0.6s
PMG Port Moresby 49.17 103 LR LR 23 11 47.7
comp=Z,37nm,18.7s,baz=258,slow=38
CN2 Changchun 49.29 25 *e*P **P** **22 49 18.8 +1.1**
KKAR Karatay Array 49.42 333 *e*P **P** **22 49 20.5 +1.7**
KKAR Karatay Array 49.42 333 *e*P **P** **22 49 20.5 +1.7**
ZAK Zakamensk 49.90 4 *e*P **P** **22 49 23.7 +1.3**
ZAK pmax pmax
comp=Z,3.0nm,1.1s
MJAR Matsushiro Arr 51.21 41 P **P** **22 49 31.3 -1.1**
comp=Z,1.0nm,0.7s,baz=240,slow=8.0,SNR=3.5
STKA Stephens Creek 51.70 133 P **P** **22 49 36.8 +0.6**
comp=Z,2.8nm,0.6s,baz=304,slow=8.0,SNR=6.6
STKA Stephens Creek 51.70 133 *e*P **P** **22 49 36.8 +0.6**
comp=Z,1.2nm,0.8s
USRK Ussuriysk Ar. 52.62 30 P **P** **22 49 42.3 -0.4**
comp=Z,1.6nm,0.6s,baz=236,slow=47,SNR=5.3
GEYT Alibeck 52.79 320 P **P** **22 49 45.1 +0.9**
comp=Z,2.2nm,0.8s,baz=141,slow=9.6,SNR=5.5
KURK Kurchatov 52.93 344 *e*P **P** **22 49 44.8 0.0**
KURK pmax pmax
comp=Z,8.0nm,1.2s
KURK Kurchatov 52.93 344 *e*P **P** **22 49 44.8 0.0**
comp=Z,7.6nm,1.2s
ZAA0 Zalesovo Array 54.55 350 *e*P **P** **22 49 56.9 +0.3**
ZALV Zalesovo Beam 54.55 350 P **P** **22 49 57.0 +0.4**
comp=Z,11nm,0.5s,baz=178,slow=7.0,SNR=35
ZALV S **S** **22 57 27.7 -2.8**
comp=Z,1.2nm,0.7s,baz=156,slow=11,SNR=6.3
ZALV LR LR 23 15 26.4
comp=Z,18nm,20.2s,baz=280,slow=38
ZAA1 Zalesovo Array 54.56 350 *e*P **P** **22 49 57.0 +0.3**
ZAA1 *e*S **S** **22 57 27.7 -2.8**
NVS Novosibirsk 55.69 349 *e*P **P** **22 50 06.3 +1.5**
KLR Kul'dur 56.24 25 *e*P **P** **22 50 08.7 -0.2**
BRVK Borovoye 57.54 340 *e*P **P** **22 50 18.4 +0.4**
BRVK pmax pmax
comp=Z,3.0nm,0.6s
BRVK Borovoye 57.54 340 *e*P **P** **22 50 18.4 +0.4**
comp=Z,2.9nm,0.6s
ZRNK Zerenda 57.90 339 *e*P **P** **22 50 20.5 0.0**
ZRNK pmax pmax
comp=Z,3.0nm,0.9s
ZRNK Zerenda 57.90 339 *e*P **P** **22 50 20.5 0.0**
comp=Z,2.5nm,0.9s
BOD Bodaibo 58.47 10 *e*P **P** **22 50 25.2 +0.8**
BOD pmax pmax
comp=Z,10.0nm,1.1s
ABKAR Akbulak array 58.91 331 *e*P **P** **22 50 28.0 +0.4**
ARU Arti 64.48 337 P P 22 51 14.5 +10
KBZ Khabaz 65.66 319 P **P** **22 51 14.1 +1.3**
comp=Z,3.0nm,0.8s,baz=125,slow=4.5,SNR=4.6
YAK Yakutsk 65.71 15 *e*P **P** **22 51 12.9 +0.1**
YAK pmax pmax
comp=Z,13nm,0.4s
KIV Kislovodsk 65.89 319 P **P** **22 51 14.2 -0.3**
KIV pmax pmax
comp=Z,3.0nm,0.7s
NRIK Noril'sk 69.18 356 P **P** **22 51 33.9 -0.7**
comp=Z,2.4nm,0.4s,baz=144,slow=8.7,SNR=5.4
ANN Anapa 69.69 318 *e*P **P** **22 51 36.9 -1.3**
ANN *e**PP **pP** **22 51 55.3 -2.1**
ANN *e* 22 54 11.6
ANN *e*S **S** **23 00 41.8 +0.4**
ANN *e*SS **SS** **23 05 14.3 +3.3**
ANN pmax pmax
comp=Z,19nm,1.5s
BR101 Keskin Array S 70.77 312 *e*P **P** **22 51 45.5 +0.4**
BR131 Keskin Array S 70.77 312 *e*P **P** **22 51 45.9 +0.7**
BRTR Keskin Array B 70.77 312 P **P** **22 51 45.5 +0.4**
comp=Z,2.0nm,0.7s,baz=133,slow=7.0,SNR=14
MA2 Magadan 71.34 25 *i* P **P** **22 51 47.9 -0.1**
BR231 Keskin MP Arra 71.44 312 *e*P **P** **22 51 46.5 -2.7**
MAW Mawson 72.35 194 *e*P **P** **22 51 50.4 -3.4**
MAW pmax pmax
comp=Z,2.0nm,1.0s
MAW Mawson 72.35 194 *e*P **P** **22 51 50.4 -3.4**
comp=Z,1.7nm,1.0s
TIXI Tiksi 73.66 10⇓ *e*P **P** **22 52 01.6 +0.1**
TIXI pmax pmax
comp=Z,4.0nm,0.6s
TIXI Tiksi 73.66 10 *e*P **P** **22 52 01.7 +0.1**
comp=Z,4.9nm,0.5s
SEY Seymchan 73.84 23⇓ *e*P **P** **22 52 03.0 +0.2**
OBN Obninsk 74.08 328 *e*P **P** **22 52 00.0 -4.2**
OBN *e* 22 52 15.9
OBN pmax pmax
comp=Z,2.0nm,0.8s
AKASG Malin Array Be 76.80 322 P **P** **22 52 20.1 +0.2**
comp=Z,0.2nm,0.3s,baz=90,slow=4.7,SNR=5.1
AKASG Malin Array Be 76.80 322 *i* P **P** **22 52 20.3 +0.3**
AKASG pmax pmax
comp=Z,2.0nm,0.8s
AKBB Malin Array Si 76.80 322 *e*P **P** **22 52 20.1 +0.1**
AKBB pmax pmax
comp=Z,9.0nm,1.0s
AKBB Malin Array Si 76.80 322 *e*P **P** **22 52 20.1 +0.1**
comp=Z,8.6nm,1.0s
BUR08 Bucovina Ar. S 78.63 319 *e*P **P** **22 52 32.5 +2.1**
KOLS Kolonicke sedl 80.80 319 *e*P **P** **22 52 43.2 +1.2**
KOLS Kolonicke sedl 80.80 319 *e*P **P** **22 52 43.2 +1.2**
BILL Bilibino 81.31 21 *e*P **P** **22 52 44.9 +0.6**
BILL *e* 22 55 52.8
BILL pmax pmax
comp=Z,1.0nm,1.1s
FIA0 FINESS Array S 81.38 332 *e*P **P** **22 52 45.5 +0.7**
FIA0 FINESS Array S 81.38 332 *e*P **P** **22 52 45.5 +0.7**
FINES FINESS Array B 81.38 332 P **P** **22 52 45.5 +0.7**
comp=Z,0.8nm,0.4s,baz=114,slow=5.7,SNR=12
LANS Liptovska Anna 82.66 319 *e*P **P** **22 52 52.3 +0.5**
LANS Liptovska Anna 82.66 319 *e*P **P** **22 52 52.3 +0.5**
ARA0 ARCESS Array S 83.77 340 *e*P **P** **22 52 58.6 +1.6**
ARCES ARCESS Array B 83.77 340 P **P** **22 52 58.6 +1.6**
comp=Z,4.7nm,0.9s,baz=98,slow=4.8,SNR=10.0
ARCES ARCESS Array B 83.77 340 P **P** **22 52 58.6 +1.6**
ARCES pmax pmax
comp=Z,3.0nm,0.9s
VNDA Vanda 84.79 169 P **P** **22 53 04.2 +2.1**
comp=Z,0.7nm,1.0s,baz=270,slow=2.0,SNR=2.0
LTX Lajitas 143.45 34 *e*PKIKP **PKPdf** **23 00 04.4 +1.1**
LTX Lajitas 143.45 34 *e*PKPdf **PKPdf** **23 00 04.4 +1.1**
TXAR Lajitas Array 143.45 34 PKP **PKPdf** **23 00 04.4 +1.1**
comp=Z,0.3nm,0.5s,baz=311,slow=1.1,SNR=4.3

*ISCJB **18** 22:47:28.7±0.3, 40.41N±0.02×20.73E±0.02, h82km±4km, Error ellipse: s-maj=3.1km s-min=2.3km az=149.1*
*SKO **18** 22:47:29.0, 40.30N×21.04E, h54km*
*ATH **18** 22:47:28.3, 40.43N×20.75E, h80km±2km, ML2.6/5, Error ellipse: s-maj=2.4km s-min=1.2km az=73.0*
*CSEM **18** 22:47:29.6±0.1, 40.40N×20.73E, h74km±2km, ML2.6, Error ellipse: s-maj=2.1km s-min=1.6km az=57.0*
*THE **18** 22:47:29.6, 40.42N×20.71E, h73km±1km, ML2.6/25, Error ellipse: s-maj=1.6km s-min=0.6km az=100.0*
*PDG **18** 22:47:30.1±0.6, 40.43N×20.69E, h60km±1km, ML2.8/9, Error ellipse: s-maj=0.8km s-min=1.2km az=0.0*
ISC 18 22:47:29.1±1.2, 40.41N±0.02×20.72E±0.02, h80km±5km, n126, σ0s99/223, 9C-8D, Greece-Albania border region

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
NEST	**Nestorio**	**0.25**	**88**	P		**Pn**	**22 47 41.0**	**-0.3**
NEST				S		**Sn**	**22 47 49.8**	**-0.5**
NEST	**Nestorio**	**0.25**	**88**	P		**Pn**	**22 47 41.4**	**+0.1**
NEST				S		**Sn**	**22 47 49.6**	**-0.7**
NEST	**Nestorio**	**0.25**	**88**	P		**Pn**	**22 47 41.4**	**+0.1**
NEST				S		**Sn**	**22 47 49.6**	**-0.7**
NEST				AML		AML	22 47 50.0	
NEST	comp=N,1070μm,0.2s			AML		AML	22 47 50.4	
	comp=E,1364μm,0.2s							
FNA	**Florina**	**0.63**	**53**	P		**Pn**	**22 47 43.9**	**-0.2**
FNA				S		**Sn**	**22 47 54.3**	**-1.0**
FNA	**Florina**	**0.63**	**53**	P		**Pn**	**22 47 44.0**	**-0.2**
FNA				S		**Sn**	**22 47 54.3**	**-1.0**
FNA	**Florina**	**0.63**	**53**	P		**Pn**	**22 47 44.0**	**-0.1**
FNA				S		**Sn**	**22 47 53.6**	**-1.6**
FNA				AML		AML	22 47 56.6	
FNA	comp=E,1584μm,0.3s			AML		AML	22 47 56.7	
	comp=N,1633μm,0.2s							
KPRO	**Kipourio**	**0.67**	**132**	P		**Pn**	**22 47 44.7**	**+0.1**
KPRO				S		**Sn**	**22 47 56.0**	**-0.1**
KPRO	**Kipourio**	**0.67**	**132**	P		**Pn**	**22 47 44.7**	**+0.1**
KPRO				S		**Sn**	**22 47 55.9**	**-0.1**
KPRO	**Kipourio**	**0.67**	**132**	P		**Pn**	**22 47 45.1**	**+0.5**
KPRO				S		**Sn**	**22 47 55.9**	**-0.1**
KPRO				AML		AML	22 47 56.8	
KPRO	comp=N,496μm,0.2s			AML		AML	22 47 57.0	
	comp=E,710μm,0.3s							
OHR	**Ohrid**	**0.71**	**5**	*i* Pg		**Pn**	**22 47 45.6**	**+0.6**
OHR				*i* Sg		**Sn**	**22 47 57.7**	**+1.0**
OHR	**Ohrid**	**0.71**	**5**	*i* Pg		**Pn**	**22 47 45.6**	**+0.6**
OHR				*i* Sg		**Sn**	**22 47 57.7**	**+1.0**
JAN	**Janina**	**0.76**	**172**	P		**Pn**	**22 47 46.0**	**+0.5**
JAN				S		**Sn**	**22 47 57.5**	**0.0**
JAN	**Janina**	**0.76**	**172**	P		**Pn**	**22 47 46.0**	**+0.5**
JAN				S		**Sn**	**22 47 57.5**	**0.0**
BIA	**Bitola**	**0.77**	**37**	*i* Pg		**Pn**	**22 47 45.6**	**0.0**
BIA				*i* Sg		**Sn**	**22 47 57.6**	**-0.2**
BIA	**Bitola**	**0.77**	**37**	*i* Pg		**Pn**	**22 47 45.6**	**0.0**
BIA				*i* Sg		**Sn**	**22 47 57.6**	**-0.2**
KZN	**Kozani**	**0.81**	**97**	P		**Pn**	**22 47 46.1**	**0.0**
KZN				S		**Sn**	**22 47 58.4**	**-0.3**
KZN	**Kozani**	**0.81**	**97**	P		**Pn**	**22 47 46.3**	**+0.2**
KZN				S		**Sn**	**22 47 58.3**	**-0.4**
SGD	**Sagiada**	**0.88**	**205**	P		**Pn**	**22 47 46.9**	**+0.2**
SGD				S		**Sn**	**22 48 00.3**	**+0.5**
SGD	**Sagiada**	**0.88**	**205**	P		**Pn**	**22 47 46.9**	**+0.2**
SGD				S		**Sn**	**22 48 00.3**	**+0.5**
IGT	**Igoumenitsa**	**0.92**	**199**	P		**Pn**	**22 47 47.5**	**+0.2**
IGT				S		**Sn**	**22 48 01.1**	**+0.3**
IGT	**Igoumenitsa**	**0.92**	**199**	P		**Pn**	**22 47 47.5**	**+0.2**
KEK	**Kerkira**	**0.99**	**226**	P		**Pn**	**22 47 47.9**	**-0.2**
KEK				S		**Sn**	**22 48 01.3**	**-0.9**
KEK	**Kerkira**	**0.99**	**226**	P		**Pn**	**22 47 47.9**	**-0.2**
KEK				S		**Sn**	**22 48 01.3**	**-0.9**
TIR	**Tirane**	**1.14**	**326**	*i* PG		**Pn**	**22 47 51.8**	**+1.9**
TIR				*i* SG		**Sn**	**22 48 09.6**	**+4.1**
TIR	**Tirane**	**1.14**	**326**	P		**Pn**	**22 47 49.7**	**-0.2**
TIR	**Tirane**	**1.14**	**326**	*i* Pg		**Pn**	**22 47 51.8**	**+1.9**
TIR				*i* Sg		**Sn**	**22 48 09.6**	**+4.1**
TIR	**Tirane**	**1.14**	**326**	P		**Pn**	**22 47 49.7**	**-0.2**
THL	**Klokotos Trika**	**1.30**	**130**	P		**Pn**	**22 47 52.2**	**+0.3**
THL				S		**Sn**	**22 48 09.2**	**+0.2**
THL	**Klokotos Trika**	**1.30**	**130**	P		**Pn**	**22 47 52.2**	**+0.3**
THL				S		**Sn**	**22 48 09.2**	**+0.2**
DSL	**Palaion Diasel**	**1.30**	**167**	P		**Pn**	**22 47 52.9**	**+0.9**
DSL				S		**Sn**	**22 48 08.8**	**-0.3**
DSL	**Palaion Diasel**	**1.30**	**167**	P		**Pn**	**22 47 52.9**	**+0.9**
DSL				S		**Sn**	**22 48 08.8**	**-0.3**
DSL	**Palaion Diasel**	**1.30**	**167**	P		**Pn**	**22 47 53.4**	**+1.4**
LIT	**Litokhoron**	**1.39**	**102**	P		**Pn**	**22 47 53.6**	**+0.6**
LIT				S		**Sn**	**22 48 11.3**	**+0.2**
LIT	**Litokhoron**	**1.39**	**102**	P		**Pn**	**22 47 53.6**	**+0.6**
LIT				S		**Sn**	**22 48 11.3**	**+0.2**
LIT	**Litokhoron**	**1.39**	**102**	P		**Pn**	**22 47 53.8**	**+0.8**
GRG	**Griva**	**1.39**	**66**	P		**Pn**	**22 47 53.2**	**+0.1**
GRG				S		**Sn**	**22 48 10.4**	**-0.8**
GRG	**Griva**	**1.39**	**66**	P		**Pn**	**22 47 53.4**	**+0.3**
GRG				S		**Sn**	**22 48 10.4**	**-0.8**
GRG	**Griva**	**1.39**	**66**	P		**Pn**	**22 47 53.4**	**+0.3**
GRG				S		**Sn**	**22 48 10.3**	**-0.9**
GRG				AML		AML	22 48 11.8	
GRG	comp=E,108μm,0.2s			AML		AML	22 48 12.1	
	comp=N,174μm,0.2s							
LKD2	**Lefkada island**	**1.61**	**182**	P		**Pn**	**22 47 56.0**	**0.0**
LKD2				S		**Sn**	**22 48 16.1**	**-0.2**
LKD2	**Lefkada island**	**1.61**	**182**	P		**Pn**	**22 47 56.0**	**0.0**
LKD2				S		**Sn**	**22 48 16.1**	**-0.2**
LKD2	**Lefkada island**	**1.61**	**182**	P		**Pn**	**22 47 55.4**	**-0.6**
VAY	**Valandovo**	**1.68**	**56**	P		**Pn**	**22 47 57.2**	**+0.5**
VAY				S		**Sn**	**22 48 17.8**	**+0.2**
VAY	**Valandovo**	**1.68**	**56**	*i* Pg		**Pn**	**22 47 57.2**	**+0.5**
VAY				*i* Sg		**Sn**	**22 48 17.9**	**+0.3**
VAY	**Valandovo**	**1.68**	**56**	P		**Pn**	**22 47 57.2**	**+0.5**
VAY				S		**Sn**	**22 48 17.8**	**+0.2**
EVR	**Evrytania**	**1.71**	**150**	P		**Pn**	**22 47 59.1**	**+1.8**
EVR				S		**Sn**	**22 48 20.8**	**+2.2**
EVR	**Evrytania**	**1.71**	**150**	P		**Pn**	**22 47 58.1**	**+0.8**
EVR				S		**Sn**	**22 48 20.8**	**+2.2**
EVR	**Evrytania**	**1.71**	**150**	P		**Pn**	**22 47 58.1**	**+0.8**
THE	**Thessaloniki**	**1.73**	**82**	P		**Pn**	**22 47 57.3**	**-0.1**
THE				S		**Sn**	**22 48 17.5**	**-1.3**
THE	**Thessaloniki**	**1.73**	**82**	P		**Pn**	**22 47 57.3**	**-0.1**
THE				S		**Sn**	**22 48 17.5**	**-1.3**
KNT	**Kendrikon**	**1.82**	**65**	P		**Pn**	**22 47 58.8**	**+0.2**
KNT				S		**Sn**	**22 48 20.3**	**-0.7**
KNT	**Kendrikon**	**1.82**	**65**	P		**Pn**	**22 47 59.0**	**+0.4**
KNT				S		**Sn**	**22 48 20.3**	**-0.7**
KNT	**Kendrikon**	**1.82**	**65**	P		**Pn**	**22 47 59.0**	**+0.4**
HORT	**Hortiatis**	**1.82**	**83**	P		**Pn**	**22 47 58.6**	**-0.2**
HORT				S		**Sn**	**22 48 20.2**	**-1.1**
HORT	**Hortiatis**	**1.82**	**83**	P		**Pn**	**22 47 58.6**	**-0.2**
HORT				S		**Sn**	**22 48 20.2**	**-1.1**
HORT	**Hortiatis**	**1.82**	**83**	P		**Pn**	**22 47 58.6**	**-0.2**
HORT				S		**Sn**	**22 48 20.0**	**-1.3**
HORT				AML		AML	22 48 22.0	
HORT	comp=N,102μm,0.3s			AML		AML	22 48 22.7	
	comp=E,96μm,0.2s							
PDO	**Prodromos**	**1.84**	**169**	P		**Pn**	**22 47 59.1**	**+0.2**
PDO				S		**Sn**	**22 48 21.3**	**-0.2**
PDO	**Prodromos**	**1.84**	**169**	P		**Pn**	**22 47 59.1**	**+0.2**
PDO				S		**Sn**	**22 48 21.3**	**-0.2**
PDO	**Prodromos**	**1.84**	**169**	P		**Pn**	**22 47 58.7**	**-0.2**
AGG	**Agios Georgios**	**1.86**	**138**	P		**Pn**	**22 48 00.3**	**+1.1**
AGG				S		**Sn**	**22 48 22.6**	**+0.6**
AGG	**Agios Georgios**	**1.86**	**138**	P		**Pn**	**22 48 00.3**	**+1.1**
AGG				S		**Sn**	**22 48 22.6**	**+0.6**
PVO	**Paravola**	**1.89**	**160**	S		**Sn**	**22 48 25.0**	**+2.2**
PVO	**Paravola**	**1.89**	**160**	S		**Sn**	**22 48 25.0**	**+2.2**
ULC	**Ulcinj**	**1.91**	**325**⇑	*i* Pn		**Pn**	**22 48 00.8**	**+0.9**
ULC				*e* Sn		**Sn**	**22 48 23.6**	**+0.3**
ULC	**Ulcinj**	**1.91**	**325**⇑	*i* Pn		**Pn**	**22 48 00.8**	**+0.9**
ULC				*e* Sn		**Sn**	**22 48 23.6**	**+0.3**
SOH	**Sokhos**	**2.05**	**77**	P		**Pn**	**22 48 02.4**	**+0.7**
SOH				S		**Sn**	**22 48 26.2**	**-0.3**
SOH	**Sokhos**	**2.05**	**77**	P		**Pn**	**22 48 02.4**	**+0.7**
SOH				S		**Sn**	**22 48 26.2**	**-0.3**
PLG	**Polygyros**	**2.08**	**90**	P		**Pn**	**22 48 03.3**	**+1.1**
PLG				S		**Sn**	**22 48 26.6**	**-0.7**
PLG	**Polygyros**	**2.08**	**90**	P		**Pn**	**22 48 02.9**	**+0.7**
PLG	**Polygyros**	**2.08**	**90**	P		**Pn**	**22 48 02.9**	**+0.7**
DRME	**Dracevica, Mon**	**2.12**	**327**	*e* Pn		**Pn**	**22 48 02.8**	**+0.2**
DRME				*e* Sn		**Sn**	**22 48 29.4**	**+1.2**
DRME	**Dracevica, Mon**	**2.12**	**327**	*e* Pn		**Pn**	**22 48 02.8**	**+0.2**
DRME				*e* Sn		**Sn**	**22 48 29.4**	**+1.2**
VLS	**Valsamata**	**2.23**	**183**	P		**Pn**	**22 48 03.4**	**-0.7**
VLS				S		**Sn**	**22 48 29.4**	**-1.4**
VLS	**Valsamata**	**2.23**	**183**	P		**Pn**	**22 48 03.4**	**-0.7**
VLS				S		**Sn**	**22 48 29.4**	**-1.4**
PVY	**Plav**	**2.26**	**346**⇑	*i* Pn		**Pn**	**22 48 05.8**	**+1.2**
PVY				*e* Sn		**Sn**	**22 48 32.5**	**+0.8**
PVY	**Plav**	**2.26**	**346**⇑	*i* Pn		**Pn**	**22 48 05.8**	**+1.2**
PVY				*e* Sn		**Sn**	**22 48 32.5**	**+0.8**
KALE	**Kalithea**	**2.29**	**151**	P		**Pn**	**22 48 06.7**	**+1.7**
KALE	**Kalithea**	**2.29**	**151**	P		**Pn**	**22 48 06.7**	**+1.7**
KFL	**Anninata**	**2.29**	**179**	P		**Pn**	**22 48 04.7**	**-0.3**
KFL	**Anninata**	**2.29**	**179**	P		**Pn**	**22 48 04.7**	**-0.3**
KFL	**Anninata**	**2.29**	**179**	P		**Pn**	**22 48 03.7**	**-1.2**
SRS	**Serrai**	**2.29**	**71**	P		**Pn**	**22 48 05.3**	**+0.5**
SRS				S		**Sn**	**22 48 31.5**	**-0.9**
SRS	**Serrai**	**2.29**	**71**	P		**Pn**	**22 48 05.3**	**+0.3**
SRS				S		**Sn**	**22 48 31.5**	**-0.9**
SRS	**Serrai**	**2.29**	**71**	P		**Pn**	**22 48 05.3**	**+0.3**
PDG	**Podgorica**	**2.30**	**332**⇓	*i* Pn		**Pn**	**22 48 05.8**	**+0.8**
PDG				*e* Sn		**Sn**	**22 48 33.8**	**+1.3**
TTG	**Podgorica**	**2.30**	**332**⇓	*i* Pn		**Pn**	**22 48 05.8**	**+0.8**
TTG				*e* Sn		**Sn**	**22 48 33.8**	**+1.3**
PAIG	**Paliouri**	**2.32**	**101**	P		**Pn**	**22 48 05.4**	**+0.1**
PAIG				S		**Sn**	**22 48 31.0**	**-1.9**
PAIG	**Paliouri**	**2.32**	**101**	P		**Pn**	**22 48 05.4**	**+0.1**
PAIG				S		**Sn**	**22 48 31.0**	**-1.9**
PAIG	**Paliouri**	**2.32**	**101**	P		**Pn**	**22 48 04.7**	**-0.6**
BUM	**Brajici-Budva**	**2.34**	**325**	*e* Pn		**Pn**	**22 48 06.2**	**+0.6**
BUM				*e* Sn		**Sn**	**22 48 33.5**	**0.0**
BUM	**Brajici-Budva**	**2.34**	**325**	*e* Pn		**Pn**	**22 48 06.2**	**+0.6**
BUM				*e* Sn		**Sn**	**22 48 33.5**	**0.0**
RLS	**Riolos of Patr**	**2.42**	**166**	P		**Pn**	**22 48 06.8**	**+0.2**
OUR	**Ouranopolis**	**2.49**	**91**	P		**Pn**	**22 48 08.4**	**+0.8**
OUR				S		**Sn**	**22 48 37.2**	**+0.1**
OUR	**Ouranopolis**	**2.49**	**91**	P		**Pn**	**22 48 08.4**	**+0.8**
OUR				S		**Sn**	**22 48 37.2**	**+0.1**
OUR	**Ouranopolis**	**2.49**	**91**	P		**Pn**	**22 48 08.6**	**+1.0**
**C

NKME	**Niksic**	**2.71**	**331**	*e*Pn	**Pn**	**22 48 11.9**	**+1.4**
NKME				*e*Sn	**Sn**	**22 48 43.1**	**+0.8**
GUR	**Goura**	**2.77**	**152**	P	**Pn**	**22 48 12.0**	**+0.5**
GUR				S	**Sn**	**22 48 44.8**	**+0.8**
GUR	**Goura**	**2.77**	**152**	P	**Pn**	**22 48 12.0**	**+0.5**
GUR				S	**Sn**	**22 48 44.8**	**+0.8**
BRY	**Bratogost**	**2.98**	**327**	ǁ *i* Pn	**Pn**	**22 48 14.8**	**+0.5**
BRY				*e*Sn	**Sn**	**22 48 49.1**	**0.0**
BRY	**Bratogost**	**2.98**	**327**	ǁ *i* Pn	**Pn**	**22 48 14.8**	**+0.5**
BRY				*e*Sn	**Sn**	**22 48 49.1**	**0.0**
BAI	**Bari**	**3.00**	**285**	*e*Pn	**Pn**	**22 48 14.9**	**+0.5**
SG1	**Sgolgore (BA)**	**3.10**	**279**	*e*Pn	**Pn**	**22 48 16.2**	**+0.3**
SG1				Sn	**Sn**	**22 48 48.3**	**-3.7**
UPM	**Unac-Piva**	**3.11**	**335**	ǁ *i* Pn	**Pn**	**22 48 17.9**	**+1.8**
UPM				*e*Sn	**Sn**	**22 48 52.0**	**-0.2**
UPM	**Unac-Piva**	**3.11**	**335**	ǁ *i* Pn	**Pn**	**22 48 17.9**	**+1.8**
UPM				*e*Sn	**Sn**	**22 48 52.0**	**-0.2**
STON	**Ston**	**3.34**	**318**	*e*Pn	**Pn**	**22 48 19.0**	**-0.2**
STON				Sn	**Sn**	**22 48 54.5**	**-3.2**
STON	**Ston**	**3.34**	**318**	*e*Pn	**Pn**	**22 48 18.9**	**-0.2**
STON				Sn	**Sn**	**22 48 54.5**	**-3.2**
CDT	**Castel del Mon**	**3.44**	**283**	*e*Pn	**Pn**	**22 48 21.0**	**+0.5**
DIVS	**Divibare**	**3.73**	**352**	*e*Pn	**Pn**	**22 48 24.8**	**+0.4**
TEKS	**Tekeris**	**4.23**	**348**	*e*Pn	**Pn**	**22 48 32.1**	**+0.9**
UDBI	**Udbina**	**5.51**	**320**	*e*Pn	**Pn**	**22 48 48.0**	**-0.7**
UDBI				Sn	**Sn**	**22 49 48.5**	**-2.2**
UDBI	**Udbina**	**5.51**	**320**	*e*Pn	**Pn**	**22 48 47.9**	**-0.7**
NVLJ	**Novalja**	**6.00**	**316**	*i* Pn	**Pn**	**22 48 54.7**	**-0.5**
NVLJ				Sn	**Sn**	**22 49 59.6**	**-2.8**
NVLJ	**Novalja**	**6.00**	**316**	*i* Pn	**Pn**	**22 48 54.7**	**-0.5**

*ISCJB **18** 22:51:40.4±0.7, 15°.9S±0°.2×177°.9W±0°.1, h400km, mb3.7/9, Error ellipse: s-maj=29.2km s-min=13.6km az=149.5*
*IDC **18** 22:51:43.1±2.4, 15°.96S×177°.69W, h421km±28km, mb3.4/9, mb1 3.7/10, mb1mx3.4/35, mbtmp4.1/10, Error ellipse: s-maj=32.4km s-min=14.3km az=144.0*

ISC 18 22:51:41.7±0.8, 15°.9S±0°.2×177°.8W±0°.2, h400km, n12, σ0§94/10, mb3.6/9, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
AFI	**Afiamalu**	**6.18**	**72**	P	**Pn**	**22 53 17.4**	**+0.9**
	1.7nm,0.3s,baz=351,slow=4.8,SNR=3.7						
URZ	**Urewera**	**22.73**	**190**	P	**P**	**22 56 09.9**	**-0.9**
	4.9nm,0.3s,baz=330,slow=8.1,SNR=9.8						
WRA	**Warramunga Arr**	**45.56**	**258**	P	**P**	**22 59 24.3**	**+0.2**
	0.4nm,0.4s,baz=91,slow=6.7,SNR=4.9						
ASAR	**Alice Springs**	**45.89**	**252**	P	**P**	**22 59 27.5**	**+0.9**
	4.0nm,0.4s,baz=86,slow=8.2,SNR=45						
FITZ	**Fitzroy Crossi**	**53.92**	**259**	P	**P**	**23 00 26.9**	**+0.7**
	2.2nm,0.6s,baz=82,slow=7.1,SNR=3.2						
NVAR	**Mina Array Bea**	**77.60**	**44**	P	**P**	**23 02 54.6**	**-0.7**
	0.5nm,0.2s,baz=224,slow=10,SNR=4.0						
ILAR	**Eielson Array**	**83.81**	**13**	P	P	23 03 25.2	-1.7
	1.3nm,0.5s,baz=222,slow=5.3,SNR=22						
TXAR	**Lajitas Array**	**84.46**	**58**	P	**P**	**23 03 31.9**	**+0.7**
	0.4nm,0.5s,baz=219,slow=6.9,SNR=3.1						
PDAR	**Pinedale Array**	**85.52**	**43**	P	**P**	**23 03 35.6**	**-0.7**
	0.6nm,0.6s,baz=201,slow=3.7,SNR=8.9						
YKA	**Yellowknife Ar**	**92.28**	**25**	P	**P**	**23 04 05.8**	**-1.3**
	0.5nm,0.8s,baz=245,slow=4.6,SNR=7.4						
BRTR	**Keskin Array B**	**143.71**	**317**	PKP	PKPab	23 10 28.5	-0.1
	1.9nm,0.9s,baz=84,slow=3.8,SNR=8.7						
GERES	**GERESS Array B**	**145.80**	**346**	PKPbc	**PKPdf**	**23 10 33.9**	**+0.3**
	0.4nm,0.5s,baz=42,slow=4.3,SNR=6.0						

*NIED **18** 23:05:00, 27°.30N×143°.80E, h17km, Mw3.7 Best double couple: M0 3.89000×10^14 NP1:φs=36.00000°, δ53.00000°, λ9.00000°. NP2:φs=301.00000°, δ83.00000°, λ143.00000°.*
*ISCJB **18** 23:05:46.3±0.6, 26°.91N±0°.08×143°.94E±0°.07, h10km, mb3.9/17, Error ellipse: s-maj=11.5km s-min=9.1km az=8.6*
*IDC **18** 23:05:46.6±0.9, 26°.92N×143°.99E, h0km, mb3.8/13, mb1 4.0/16, mb1mx3.9/42, mbtmp3.9/16, ML4.0/3, Error ellipse: s-maj=22.1km s-min=19.4km az=90.0*
*NEIC **18** 23:05:48.0±0.5, 26°.89N×143°.97E, h10km, mb4.3/3, Error ellipse: s-maj=11.8km s-min=10.1km az=76.0*

ISC 18 23:05:48.4±0.8, 26°.9N±0°.1×143°.80E±0°.09, h10km, n23, σ1§12/25, mb4.0/17, Bonin Islands region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
CBIJ	**Chichi jima**	**1.45**	**277**	*e*Pn	**Pn**	**23 06 15.5**	**+0.8**
CBIJ				Sn	**Sn**	**23 06 30.6**	**-3.2**
JCJ	**Chichijima**	**1.45**	**277**	Pn	**Pn**	**23 06 15.8**	**+1.1**
	36nm,0.3s,baz=284,slow=21,SNR=9.7						
JCJ				Sn	**Sn**	**23 06 33.3**	**-0.5**
	123nm,0.3s,baz=53,slow=20,SNR=30						
JHJ	**Hachijo jima 2**	**7.08**	**332**	Pn	**Pn**	**23 07 32.6**	**+0.5**
	9.5nm,0.3s,baz=246,slow=20,SNR=2.5						
JHJ				Sn	Sn	23 08 42.3	-10
	19nm,0.3s,baz=233,slow=20,SNR=5.6						
MJAR	**Matsushiro Ar**	**10.70**	**335**	Pn	**Pn**	**23 08 20.3**	**-1.4**
	1.2nm,0.3s,baz=163,slow=12,SNR=12						
KSRS	**Korea Array**	**17.03**	**312**	P	**P**	**23 09 49.1**	**+0.7**
	0.3nm,0.3s,baz=118,slow=9.8,SNR=2.9						
KSAR	**Wonju Array Be**	**17.35**	**312**	P	**P**	**23 09 49.1**	**+0.5**
KLR	**Kul'dur**	**24.14**	**340**	P	**P**	**23 11 05.2**	**+0.7**
	1.3nm,0.6s,baz=152,slow=7.5,SNR=6.7						
WRAB	**Tennant Creek**	**47.48**	**192**	*e*P	**P**	**23 14 23.0**	**-0.6**
	1.7nm,0.6s						
WRA	**Warramunga Arr**	**47.49**	**192**	P	**P**	**23 14 23.4**	**-0.3**
	1.7nm,0.7s,baz=12,slow=8.2,SNR=6.6						
ZALV	**Zalesovo Beam**	**50.56**	**319**	P	**P**	**23 14 46.8**	**-0.1**
	0.4nm,0.3s,baz=82,slow=10,SNR=2.6						
ASAR	**Alice Springs**	**51.20**	**192**	P	**P**	**23 14 52.3**	**+0.2**
	0.3nm,0.6s,baz=10,slow=5.8,SNR=2.8						
MKAR	**Makanchi Array**	**51.69**	**310**	P	**P**	**23 14 56.2**	**+0.6**
	0.8nm,0.4s,baz=86,slow=10,SNR=22						
NRIK	**Noril'sk**	**53.33**	**338**	P	**P**	**23 15 07.5**	**+0.2**
	1.0nm,0.3s,baz=106,slow=7.4,SNR=3.1						
KURK	**Kurchatov**	**54.13**	**315**	*e*P	**P**	**23 15 13.6**	**+0.1**
	7.2nm,1.1s						
ILAR	**Eielson Array**	**57.17**	**28**	P	**P**	**23 15 34.0**	**-1.2**
	0.4nm,0.6s,baz=270,slow=6.4,SNR=4.8						
KKAR	**Karatay Array**	**60.35**	**306**	*e*P	**P**	**23 15 58.3**	**+0.7**
	4.7nm,0.9s						
INK	**Inuvik**	**62.58**	**25**	P	**P**	**23 16 11.9**	**-0.3**
	0.6nm,0.6s,baz=292,slow=6.5,SNR=6.5						
ABKAR	**Akbulak array**	**66.24**	**315**	*e*P	**P**	**23 16 36.3**	**-0.2**
	0.6nm,0.5s						
YKA	**Yellowknife Ar**	**71.60**	**29**	P	**P**	**23 17 09.2**	**-0.4**
	0.5nm,0.8s,baz=292,slow=6.3,SNR=7.7						
FINES	**FINESS Array B**	**78.73**	**334**	P	**P**	**23 17 51.5**	**+0.8**
	2.0nm,1.1s,baz=90,slow=4.2,SNR=4.1						
KBZ	**Khabaz**	**79.17**	**314**	P	**P**	**23 17 54.7**	**+1.2**
	1.7nm,0.9s,baz=41,slow=2.4,SNR=4.4						
PDAR	**Pinedale Array**	**83.31**	**45**	P	**P**	**23 18 13.9**	**-2.0**
	0.3nm,0.8s,baz=274,slow=4.4,SNR=2.4						
GERES	**GERESS Array B**	**92.39**	**330**	P	**P**	**23 19 01.1**	**+1.7**
	0.1nm,0.4s,baz=23,slow=3.5,SNR=2.0						

*ISCJB **18** 23:06:14.2±0.9, 9°.85N±0°.09×126°.03E±0°.06, h10km, mb3.9/6, MS3.4/1, Error ellipse: s-maj=13.3km s-min=7.8km az=172.8*
*MAN **18** 23:06:18, 9°.87N×125°.79E, h18km, mb4.9, ML3.8, MS3.9 MAN INTENSITY II - SURIGAO CITY; INTENSITY I - MALIMONO SURIGAO DEL NORTE.*
*IDC **18** 23:06:25.7±4.5, 9°.80N×126°.05E, h94km±40km, mb3.7/6, mb1 3.8/7, mb1mx3.4/45, mbtmp4.0/7, MS3.2/2, Ms1 3.2/2, ms1mx2.4/44, Error ellipse: s-maj=76.4km s-min=23.9km az=76.0*

ISC 18 23:06:15.6±1.0, 9°.93N±0°.08×125°.87E±0°.07, h10km, n13, σ1§06/15, mb4.1/6, 2C, Mindanao

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
SCPH	**Surigao**	**0.41**	**249**ǁ	*e*P	**Pb**	**23 06 25.5**	**+0.6**
SCPH				*e*S	**Sb**	**23 06 31.9**	**+0.8**
CGP	**Cagayan de Oro**	**1.87**	**219**ǁ	*e*P	**Pn**	**23 06 47.2**	**-0.5**
CGP				*e*S	**Sn**	**23 07 10.2**	**-1.2**
BUKP	**Musuan**	**2.19**	**202**	*e*P	**Pn**	**23 06 52.8**	**+0.7**
BUKP				*e*S	Sn	23 07 03.9	-15
DAV	**Davao City (W)**	**2.86**	**186**	P	**Pb**	**23 07 07.5**	**+0.7**
	32nm,0.3s,baz=318,slow=16,SNR=2.7						
DAV				S	**Sb**	**23 07 41.3**	**-0.4**
	41nm,0.3s,baz=19,slow=17,SNR=3.0						
DAV				LR	LR	23 08 39.1	
	comp=Z,316nm,18.2s,baz=311,slow=48						

MATI	**Mati**	**2.99**	**173**	*e*P	**Pn**	**23 07 05.2**	**+2.1**
PAGZ	**Pagadian**	**3.22**	**230**	*e*P	**Pn**	**23 07 07.4**	**+1.2**
FITZ	**Fitzroy Crossi**	**27.86**	**180**	P	**P**	**23 12 05.8**	**+0.3**
	3.7nm,0.8s,baz=355,slow=11,SNR=2.6						
WRA	**Warramunga Arr**	**30.83**	**164**	P	**P**	**23 12 30.3**	**-1.7**
	0.6nm,0.5s,baz=343,slow=9.1,SNR=3.3						
ASAR	**Alice Springs**	**34.30**	**167**	P	**P**	**23 13 01.6**	**-0.8**
	1.4nm,0.4s,baz=350,slow=7.1,SNR=23						
STKA	**Stephens Creek**	**44.21**	**161**	P	**P**	**23 14 24.8**	**-0.3**
	2.3nm,0.7s,baz=342,slow=11,SNR=6.8						
FINES	**FINESS Array B**	**86.00**	**332**	P	**P**	**23 18 56.4**	**+0.3**
	0.9nm,0.9s,baz=75,slow=7.4,SNR=2.8						
YKA	**Yellowknife Ar**	**94.22**	**24**	P	**P**	**23 19 34.4**	**-0.3**
	0.1nm,0.6s,baz=297,slow=4.2,SNR=3.6						
NEW	**Newport**	**99.87**	**37**	LR	LR	00 04 47.0	
	comp=Z,11nm,18.6s,slow=35						

*IDC **18** 23:14:42.3±1.1, 36°.29N×143°.33E, h0km, mb3.5/6, mb1 3.7/7, mb1mx3.5/48, mbtmp3.5/7, ML3.0/1, MS2.7/2, Ms1 2.7/2, ms1mx2.2/33, Error ellipse: s-maj=32.5km s-min=22.8km az=83.0*
*ISCJB **18** 23:14:45.3±0.9, 36°.2N±0°.1×143°.3E±0°.1, h33km, mb3.5/6, MS3.1/1, Error ellipse: s-maj=20.2km s-min=15.1km az=8.0*
*JMA **18** 23:14:59.9±0.4, 36°.36N×141°.95E, h38km, M2.5*

ISC 18 23:14:47.7±1.2, 36°.3N±0°.2×143°.2E±0°.1, h35km, n12, σ0§54/10, mb3.5/6, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JHO	**Hitachi**	**2.15**	**279**	P	**Pn**	**23 15 20.1**	**-1.0**
JAG	**Ashikaga**	**3.03**	**273**	P	**Pn**	**23 15 33.0**	**-0.2**
MJAR	**Matsushiro Arr**	**4.04**	**275**	Pn	**Pn**	**23 15 47.9**	**+0.9**
	0.9nm,0.3s,baz=89,slow=14,SNR=4.6						
KSRS	**Korea Array**	**12.30**	**280**	LR	LR	23 23 13.5	
	comp=Z,17nm,18.2s,baz=160,slow=41						
ZALV	**Zalesovo Beam**	**43.47**	**313**	P	**P**	**23 22 47.1**	**-0.1**
	0.6nm,0.6s,baz=103,slow=6.2,SNR=3.0						
MKAR	**Makanchi Array**	**45.73**	**303**	P	**P**	**23 23 05.6**	**+0.3**
	0.3nm,0.9s,baz=88,slow=7.4,SNR=3.2						
ILAR	**Eielson Array**	**49.35**	**32**	P	**P**	**23 23 33.1**	**-0.1**
	0.2nm,0.7s,baz=278,slow=6.1,SNR=3.1						
WRA	**Warramunga Arr**	**56.56**	**190**	P	**P**	**23 24 26.5**	**-0.3**
	0.8nm,0.7s,baz=11,slow=8.0,SNR=4.1						
ASAR	**Alice Springs**	**60.29**	**190**	P	**P**	**23 24 52.8**	**+0.1**
	0.2nm,0.6s,baz=28,slow=6.6,SNR=5.6						
GNI	**Garni**	**73.30**	**308**	LR	LR	00 00 19.2	
	comp=Z,10nm,18.8s,baz=38,slow=37						
NB2	**NORSAR Subarra**	**75.41**	**338**	P	**P**	**23 26 28.0**	**+0.4**
	comp=Z,0.4nm,0.6s,baz=40,slow=5.9						
NOA	**NORSAR Array B**	**75.41**	**338**	P	**P**	**23 26 27.6**	**0.0**
	comp=Z,0.7nm,0.7s,baz=40,slow=5.7,SNR=4.3						

JMA 18 23:28:01.5±0.2, 38°.17N×144°.47E, h35km, M3.6, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
OFUJ	**Ofunato**	**2.38**	**293**	P	Pn	23 28 39.5	+1.6
OFUJ				S	Sn	23 29 07.8	+2.0
JIO	**Ouri**	**2.47**	**278**	S	Sn	23 29 09.7	+1.5
JMK	**Ichinoseki**	**2.67**	**288**	P	Pn	23 28 43.7	+1.8
JMK				S	Sn	23 29 14.4	+1.4
JTH	**Tanohata**	**2.69**	**312**	P	Pn	23 28 43.6	+1.3
JTH				*e*S	Sn	23 29 15.1	+1.5
JOM	**Ohasama**	**2.80**	**299**	P	Pn	23 28 46.0	+2.2
JOM				*e*S	Sn	23 29 18.6	+2.2
JMM	**Marumori**	**2.92**	**265**	S	Sn	23 29 20.4	+1.1
JFK	**Kawauchi**	**2.96**	**255**	S	Sn	23 29 21.0	+0.7
JOU	**Okura**	**3.00**	**275**	S	Sn	23 29 24.4	+3.1
JRG	**Rokugo**	**3.24**	**293**	P	Pn	23 28 52.4	+2.6
JRG				*e*S	Sn	23 29 30.3	+3.2
JFT	**Otama**	**3.34**	**260**	S	Sn	23 29 31.8	+2.2

*JMA **18** 23:30:49.2±0.3, 35°.65N×142°.81E, h22km, M3.8*
*ISCJB **18** 23:30:50.6±0.8, 35°.71N±0°.07×142°.92E±0°.07, h33km, mb3.6/6, Error ellipse: s-maj=10.0km s-min=7.6km az=25.2*
*IDC **18** 23:30:50.3±1.0, 36°.06N×142°.83E, h0km, mb3.5/6, mb1 3.7/8, mb1mx3.5/40, mbtmp3.5/8, ML3.4/2, Error ellipse: s-maj=33.0km s-min=21.6km az=114.0*

ISC 18 23:30:54.2±1.1, 35°.85N±0°.10×142°.87E±0°.08, h35km, n15, σ1§32/17, mb3.6/6, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JHO	**Hitachi**	**2.01**	**293**	P	**Pn**	**23 31 23.7**	**-2.0**
JHO				S	**Sn**	**23 31 48.4**	**-1.2**
BSO3	**Boso 3**	**2.20**	**242**	P	Pn	23 31 23.6	-4.4
JFK	**Kawauchi**	**2.21**	**314**	P	**Pn**	**23 31 27.1**	**-1.3**
JFK				*e*S	**Sn**	**23 31 55.5**	**+1.0**
BSO4	**Boso 4**	**2.24**	**248**	P	Pn	23 31 24.8	-3.9
JMM	**Marumori**	**2.61**	**321**	P	**Pn**	**23 31 32.8**	**-1.1**
JMM				*e*S	**Sn**	**23 32 05.6**	**+1.2**
JFT	**Otama**	**2.63**	**310**	P	**Pn**	**23 31 34.2**	**0.0**
JFT				*e*S	**Sn**	**23 32 07.3**	**+2.4**
MJAR	**Matsushiro Arr**	**3.84**	**282**	Pn	**Pn**	**23 31 49.6**	**-1.2**
	1.7nm,0.3s,baz=95,slow=8.9,SNR=9.2						
MAT	**Matsushiro**	**3.84**	**282**	P	**Pn**	**23 31 50.3**	**-0.5**
MAT				S	**Sn**	**23 32 36.6**	**+1.9**
ASAJ	**Asahikawa**	**8.26**	**359**	Pn	**Pn**	**23 32 50.6**	**-0.8**
	0.7nm,0.3s,baz=209,slow=16,SNR=2.2						
MKAR	**Makanchi Array**	**45.75**	**303**	P	**P**	**23 39 11.3**	**-0.8**
	0.2nm,0.5s,baz=88,slow=9.0,SNR=2.7						
ILAR	**Eielson Array**	**49.87**	**32**	P	**P**	**23 39 43.5**	**-0.1**
	0.9nm,0.8s,baz=263,slow=6.2,SNR=9.4						
INK	**Inuvik**	**54.91**	**27**	P	**P**	**23 40 21.2**	**+0.3**
	0.6nm,0.5s,baz=300,slow=5.7,SNR=6.9						
WRA	**Warramunga Arr**	**56.07**	**190**	P	P	23 40 34.4	+4.6
	0.6nm,0.7s,baz=9.9,slow=7.8,SNR=3.5						
ASAR	**Alice Springs**	**59.80**	**190**	P	**P**	**23 40 57.1**	**+1.2**
	0.4nm,0.9s,baz=7.6,slow=7.7,SNR=3.2						
YKA	**Yellowknife Ar**	**64.24**	**30**	P	**P**	**23 41 25.0**	**-0.2**
	0.1nm,0.3s,baz=302,slow=7.1,SNR=3.7						

*CSEM **18** 23:34:16.8±0.1, 67°.82N×20°.23E, h2km, ML1.0, Error ellipse: s-maj=2.9km s-min=2.6km az=144.0, Mining explosion.*
*UPP **18** 23:34:17.1, 67°.83N×20°.19E, h0km, ML1.0, Mining explosion.*

HEL 18 23:34:17.6±0.1, 67°.83N×20°.21E, h0km, ML1.5, ML1.0(UPP), Explosion, Sweden

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
KUA	**Kurravaara**	**0.13**	**21**	*i* P	Pg	23 34 19.9	-0.2
KUA				*i* S	Sg	23 34 21.9	0.0
KUA	**Kurravaara**	**0.13**	**21**	P	Pg	23 34 19.9	-0.2
KUA				S	Sg	23 34 21.9	+0.1
NIKU	**Nikkaluokta**	**0.45**	**275**	*i* P	Pg	23 34 25.5	-0.7
NIKU	**Nikkaluokta**	**0.45**	**275**	P	Pg	23 34 25.5	-0.7
LANU	**Lannavaara**	**0.70**	**71**	*e*P	Pg	23 34 29.8	-1.3
LANU	**Lannavaara**	**0.70**	**71**	P	Pg	23 34 30.5	-0.6
MASU	**Masugnsbyn**	**0.78**	**118**	*i* P	Pg	23 34 31.9	-0.6
MASU	**Masugnsbyn**	**0.78**	**118**	P	Pg	23 34 31.9	-0.6
SALU	**Saltoluokta**	**0.80**	**236**	*i* P	Pg	23 34 31.9	-1.0
SALU	**Saltoluokta**	**0.80**	**236**	P	Pg	23 34 31.9	-0.9
KIF	**Kilpisjarvi**	**1.20**	**10**	*e*P	Pg	23 34 40.1	-0.4
KIF				*e*S	Sg	23 34 55.9	-0.1
KIF	**Kilpisjarvi**	**1.20**	**10**	P	Pg	23 34 40.1	-0.4
KIF				S	Sg	23 34 55.9	-0.2
PAJU	**Pajala**	**1.38**	**125**	*e*P	Pg	23 34 42.3	-1.7
PAJU	**Pajala**	**1.38**	**125**	P	Pg	23 34 42.3	-1.7
HEF	**Hetta**	**1.42**	**64**	*e*P	Pn	23 34 42.7	-1.9
HEF				*e*S	Sg	23 35 01.2	-1.9
HEF	**Hetta**	**1.42**	**64**	P	Pn	23 34 42.7	-1.9
HEF				S	Sg	23 35 01.1	-1.9
ERTU	**Ertsjaerv**	**1.50**	**148**	*e*P	Pn	23 34 44.2	-1.4
ERTU	**Ertsjaerv**	**1.50**	**148**	Pn	Pn	23 34 44.2	-1.5
ERTU	**Ertsjaerv**	**1.50**	**148**	P	Pn	23 34 44.5	-1.2
HARU	**Harads**	**1.70**	**170**	*e*P	Pn	23 34 48.1	-0.3
HARU	**Harads**	**1.70**	**170**	P	Pn	23 34 48.1	-0.4
TOF	**Tornio**	**2.39**	**135**	*e*PB	Pn	23 34 58.8	+0.9
TOF	**Tornio**	**2.39**	**135**	Pg	Pn	23 34 58.8	+0.9
RNF	**Rovaniemi**	**2.57**	**116**	*e*PB	Pn	23 35 01.9	+1.5
RNF	**Rovaniemi**	**2.57**	**116**	Pg	Pn	23 35 01.8	+1.4
ARE0	**ARCESS Array S**	**2.58**	**46**	*e*PB	Pn	23 35 01.5	+0.9
ARE0				*e*SG	Sb	23 35 36.4	-0.6
ARE0	**ARCESS Array S**	**2.58**	**46**	Pb	Pn	23 35 01.5	+0.9
ARE0				Sg	Sb	23 35 36.4	-0.6
KEV	**Kevo**	**3.14**	**49**	*e*SB	Sb	23 35 51.1	-1.7
KEV				MSG		23 35 57.5	
	comp=Z,1.0nm,0.2s						
KEV	**Kevo**	**3.14**	**49**	Sb	Sb	23 35 51.1	-1.7

*CSEM **18** 23:34:19.2±0.7, 67°.74N×21°.18E, h2km, ML1.0, Error ellipse: s-maj=18.8km s-min=14.3km az=53.0, Mining explosion.*

UPP 18 23:34:24.2, 67°.84N×20°.16E, h0km, ML1.0, Mining explosion., Sweden

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
KUA	**Kurravaara**	**0.14**	**29**	P	Pg	23 34 27.0	+0.2

JMA 18 23:48:27.3, 37°.01N×140°.70E, h12km±1km, M2.7, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.12**	**41**	P	Pg	23 48 30.7	+0.2
ONAJ				S	Sg	23 48 33.0	+0.2
JFK	**Kawauchi**	**0.38**	**21**	P	Pg	23 48 35.0	0.0
JFK				*e*S	Sg	23 48 39.3	-0.8
JHO	**Hitachi**	**0.41**	**195**	P	Pg	23 48 35.4	-0.1
JHO				*e*S	Sg	23 48 40.8	-0.2
JFT	**Otama**	**0.58**	**330**	P	Pg	23 48 38.8	+0.1
JFT				*e*S	Sg	23 48 46.4	-0.1

*IDC **18** 23:55:22.4±2.6, 2°.46S×128°.29E, h0km, mb3.4/2, mb1 3.6/3, mb1mx3.4/33, mbtmp3.4/3, ML3.5/1, Error ellipse: s-maj=231.8km s-min=26.0km az=68.0*
*ISCJB **18** 23:55:23.9±1.0, 2°.40S±0°.07×128°.2E±0°.1, h32km, mb3.5/2, Error ellipse: s-maj=19.2km s-min=8.8km az=165.3*
*DJA **18** 23:55:26.0±0.4, 2°.S±3°×12°.8E±°, h10km, M3.3/6, MLv3.3/6*

ISC 18 23:55:26.3±1.0, 2°.37S±0°.07×128°.1E±0°.1, h32km, n8, σ1§48/9, Ceram Sea

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
NLAI	**Namlea**	**1.28**	**228**	P	**Pn**	**23 55 47.6**	**-0.4**
MSAI	**Masohi**	**1.31**	**138**	P	**Pb**	**23 55 51.1**	**+0.8**
LBMI	**Labuha**	**1.80**	**342**	P	**Pn**	**23 55 54.1**	**-1.1**
LBMI				S	**Sn**	**23 56 16.8**	**-0.2**
SANI	**Sanana**	**2.08**	**279**	P	**Pn**	**23 55 59.2**	**+0.2**
WRA	**Warramunga Arr**	**18.52**	**161**	P	**P**	**23 59 38.6**	**-1.6**
	0.2nm,0.3s,baz=344,slow=12,SNR=2.9						
PPBI	**Pangkal Pinang**	**21.90**	**270**	P	**P**	**00 00 15.5**	**-1.4**
ASAR	**Alice Springs**	**21.92**	**165**	P	**P**	**00 00 16.0**	**-1.1**
	1.1nm,0.6s,baz=349,slow=12,SNR=11						
MKAR	**Makanchi Array**	**63.31**	**327**	P	**P**	**00 05 54.5**	**+2.3**
	0.2nm,0.4s,baz=111,slow=7.9,SNR=2.7						

*IDC **19** 00:04:07.5±1.3, 30°.37S×177°.42W, h0km, mb4.4/4, mb1 4.5/6, mb1mx4.1/30, mbtmp4.4/6, ML3.5/2, MS3.4/4, Ms1 3.4/4, ms1mx3.0/25, Error ellipse: s-maj=37.3km s-min=20.7km az=112.0*
*ISCJB **19** 00:04:10.8±3.6, 30°.29S±0°.06×178°.0W±0°.2, h15km±28km, mb4.5/7, Error ellipse: s-maj=29.8km s-min=8.0km az=12.4*
*NEIC **19** 00:04:11.9±3.2, 30°.33S×177°.52W, h28km±21km, mb4.7/3, Error ellipse: s-maj=22.4km s-min=10.5km az=101.0*

ISC 19 00:04:12.8±1.1, 30°.26S±0°.07×177°.6W±0°.2, h33km, n26, σ1§11/19, mb4.5/7, 1D, Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
RAO	**Raoul Island**	**1.04**	**344**	Pn	**Pn**	**00 04 31.8**	**+0.7**
	586nm,0.3s,baz=5.6,slow=23,SNR=41						
RAO				Sn	**Sn**	**00 04 43.3**	**-1.2**
	5µm,0.3s,baz=168,slow=20,SNR=35						
URZ	**Urewera**	**9.10**	**207**	Pn	**Pn**	**00 06 20.6**	**-1.2**
	0.4nm,0.3s,baz=19,slow=12,SNR=6.6						
URZ				Sn	**Sn**	**00 08 02.4**	**-0.7**
	3.0nm,0.3s,baz=215,slow=12,SNR=20						
RPZ	**Rata Peaks**	**16.18**	**211**	Pn	**Pn**	**00 07 57.2**	**-0.4**

JOU				S		Sn	00 07 24.9	-1.1
JFT	**Otama**	**1.06**	**258**	P		**Pn**	**00 07 13.7**	**+0.1**
JFT				S		Sn	00 07 28.0	+0.5
JMK	**Ichinoseki**	**1.26**	**345**	P		**Pn**	**00 07 15.8**	**-0.4**
JMK				S		Sn	00 07 31.2	-1.0
JYS	**Shirataka**	**1.33**	**292**	P		**Pn**	**00 07 17.1**	**-0.2**
JYK	**Kaneyama**	**1.55**	**320**	P		**Pn**	**00 07 20.0**	**-0.2**
JYK				S		Sn	00 07 38.8	-0.5
JFY	**Yanaizu**	**1.57**	**258**	P		**Pn**	**00 07 20.6**	**+0.1**
MJAR	**Matsushiro Arr**	**2.99**	**248**	P		**Pn**	**00 07 40.9**	**+1.1**
	4.5nm,0.3s,baz=50,slow=12,SNR=30							
MJAR				S		Sn	00 08 20.1	+5.6
	7.5nm,0.3s,baz=45,slow=21,SNR=5.9							
MJAR				LR		LR	00 09 12.2	
	comp=Z,99nm,19.2s,baz=105,slow=45							
MAT	**Matsushiro**	**2.99**	**248**	P		**Pn**	**00 07 41.2**	**+1.4**
MAT				S		Sn	00 08 19.7	+5.2
JHJ	**Hachijo jima 2**	**4.85**	**199**	P		**Pn**	**00 08 05.1**	**-0.2**
	14nm,0.3s,baz=216,slow=19,SNR=4.1							
JHJ				S		**Sn**	**00 08 57.4**	**-2.7**
	46nm,0.3s,baz=49,slow=21,SNR=6.9							
USRK	**Ussuriysk Ar.**	**9.74**	**315**	P		**Pn**	**00 09 12.5**	**+0.4**
	0.3nm,0.3s,baz=124,slow=14,SNR=3.9							
JNU	**Nakatsue**	**9.91**	**246**	LR		LR	00 13 35.5	
	comp=Z,66nm,19.7s,baz=119,slow=40							
KSRS	**Korea Array**	**10.89**	**273**	P		Pn	00 09 31.6	+3.8
	0.2nm,0.3s,baz=79,slow=14,SNR=3.2							
SEY	**Seymchan**	**26.07**	**11**	P		**P**	**00 12 23.9**	**+1.5**
	1.4nm,0.3s,baz=203,slow=17,SNR=6.8							
SONM	**Songino Array**	**27.55**	**303**	P		**P**	**00 12 36.3**	**+0.2**
	1.3nm,0.6s,baz=115,slow=6.8,SNR=2.3							
H11N2	**WAKE ISLAND Hy 28.36**	**122**		T		T	00 43 02.5	
	baz=315,slow=75,SNR=260							
H11N1	**WAKE ISLAND Hy 28.37**	**122**		T		T	00 43 05.8	
	baz=315,slow=75,SNR=374							
H11N3	**WAKE ISLAND Hy 28.38**	**122**		T		T	00 43 02.9	
	baz=315,slow=75,SNR=308							
H11S1	**WAKE ISLAND Hy 29.10**	**124**		T		T	00 43 56.3	
	baz=317,slow=76,SNR=241							
H11S3	**WAKE ISLAND Hy 29.10**	**124**		T		T	00 43 56.9	
	baz=317,slow=76,SNR=219							
H11S2	**WAKE ISLAND Hy 29.11**	**124**		T		T	00 44 01.2	
	baz=317,slow=76,SNR=168							
ZALV	**Zalesovo Beam**	**41.58**	**312**	P		**P**	**00 14 35.9**	**-0.6**
	1.3nm,0.7s,baz=96,slow=7.6,SNR=5.8							
MKAR	**Makanchi Array**	**43.90**	**302**	P		**P**	**00 14 55.5**	**0.0**
	0.5nm,0.6s,baz=77,slow=10,SNR=5.5							
ILAR	**Eielson Array**	**48.80**	**33**	P		**P**	**00 15 34.0**	**+0.4**
	0.3nm,0.5s,baz=264,slow=5.7,SNR=5.8							
INK	**Inuvik**	**53.68**	**27**	P		**P**	**00 16 10.9**	**+0.9**
	1.0nm,0.6s,baz=313,slow=6.7,SNR=5.8							
WRA	**Warramunga Arr**	**57.78**	**188**	P		**P**	**00 16 39.9**	**-0.1**
	0.7nm,0.4s,baz=5.0,slow=7.2,SNR=9.5							
WRA				pP		**pP**	**00 16 55.3**	**-0.4**
	1.6nm,0.7s,baz=6.9,slow=7.6,SNR=4.3							
ASAR	**Alice Springs**	**61.51**	**188**	P		**P**	**00 17 05.4**	**-0.1**
	0.4nm,0.5s,baz=10,slow=6.8,SNR=4.3							
ASAR				pP		**pP**	**00 17 21.5**	**+0.1**
	1.0nm,0.7s,baz=5.8,slow=7.2,SNR=5.1							
YKA	**Yellowknife Ar**	**63.11**	**30**	P		**P**	**00 17 16.0**	**+0.2**
	0.3nm,0.6s,baz=302,slow=6.5,SNR=9.6							
YKA				pP		**pP**	**00 17 32.3**	**+0.5**
	0.2nm,0.8s,baz=302,slow=6.8,SNR=3.4							
GEYT	**Alibeck**	**63.65**	**299**	P		**P**	**00 17 19.5**	**-0.4**
	0.8nm,0.5s,baz=151,slow=3.3,SNR=3.9							
FINES	**FINESS Array B**	**68.28**	**332**	P		**P**	**00 17 48.7**	**-0.4**
	1.5nm,0.7s,baz=23,slow=6.2,SNR=6.5							
KBZ	**Khabaz**	**70.58**	**311**	P		**P**	**00 18 04.0**	**+0.4**
	1.2nm,0.8s,baz=142,slow=4.4,SNR=5.2							
NB2	**NORSAR Subarra**	**73.61**	**337**	P		**P**	**00 18 20.8**	**-0.7**
	comp=Z,1.1nm,0.9s,baz=42,slow=6.2							
NOA	**NORSAR Array B**	**73.61**	**337**	P		**P**	**00 18 21.2**	**-0.3**
	comp=Z,1.4nm,0.8s,baz=39,slow=5.8,SNR=6.7							
AKASG	**Malin Array Be**	**73.85**	**322**	P		**P**	**00 18 22.5**	**-0.5**
	comp=Z,1.1nm,0.4s,baz=45,slow=5.8,SNR=6.3							
PDAR	**Pinedale Array**	**77.05**	**46**	P		**P**	**00 18 42.5**	**+0.6**
	comp=Z,0.6nm,0.6s,baz=261,slow=1.8,SNR=8.0							
PDAR				pP		**pP**	**00 18 59.0**	**+0.8**
	comp=Z,0.3nm,0.5s,baz=249,slow=3.2,SNR=3.7							
PDAR				sP		**sP**	**00 19 04.8**	**+0.1**
	comp=Z,0.2nm,0.5s,baz=336,slow=3.3,SNR=1.9							
GERES	**GERESS Array B**	**82.21**	**328**	P		**P**	**00 19 08.7**	**-0.8**
	comp=Z,0.2nm,0.5s,baz=31,slow=6.2,SNR=4.9							
TXAR	**Lajitas Array**	**89.55**	**53**	P		**P**	**00 19 45.8**	**-0.3**
	comp=Z,0.2nm,0.5s,baz=270,slow=2.5,SNR=4.8							
TXAR				pP		**pP**	**00 20 04.3**	**+1.5**
	comp=Z,0.3nm,0.7s,baz=354,slow=2.5,SNR=2.6							
LPAZ	**La Paz**	**146.18**	**59**	PKPbc		**PKPdf**	**00 26 28.5**	**-0.1**
	comp=Z,0.8nm,0.6s,baz=135,slow=1.4,SNR=3.5							

JMA 19 00:09:41.1±0.3, 39°.16N×143°.72E, h27km, M3.5, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
MIYJ	**Miyakonagasawa**	**1.53**	**286**	P		Pn	00 10 07.3	+0.6
OFUJ	**Ofunato**	**1.60**	**268**	P		Pn	00 10 08.4	+0.8
JTH	**Tanohata**	**1.63**	**299**	P		Pn	00 10 09.0	+0.9
JTH				*e*S		Sn	00 10 28.3	+0.1
JOM	**Ohasama**	**1.91**	**280**	P		Pn	00 10 13.2	+1.3
JMK	**Ichinoseki**	**1.96**	**265**	P		Pn	00 10 13.8	+1.3
JAH	**Hinai**	**2.59**	**294**	P		Pn	00 10 22.6	+1.4
JYK	**Kaneyama**	**2.63**	**266**	P		Pn	00 10 23.7	+2.0
JNBK	**Urakawa-nobuka**	**3.20**	**347**	P		Pn	00 10 31.3	+1.7
JNBK				*e*S		Sn	00 11 07.7	+0.8

*ISCJB **19** 00:14:41.0±1.4, 31°.23N±0°.08×73°.53E±0°.09, h33km, Error ellipse: s-maj=13.9km s-min=7.9km az=39.6*
*NDI **19** 00:14:41.7±1.4, 31°.36N×73°.38E, h40km±999km, ML3.4*
*NNC **19** 00:14:59.2±7.9, 32°.73N×74°.29E, h0km, mb3.8, mpv3.6, Error ellipse: s-maj=130.6km s-min=60.2km az=84.0*

ISC 19 00:14:44.6±2.1, 31°.3N±0°.1×73°.6E±0°.1, h35km, n8, σ1°35/10, 5C-1D, Pakistan

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
THN	**Thein Dam**	**2.11**	**57**	*e*P		**Pn**	**00 15 17.0**	**-0.3**
THN				*e*S		**Sn**	**00 15 41.0**	**-1.3**
DHRM	**DHARAMSHALA**	**2.47**	**66**	*e*P		**Pn**	**00 15 21.5**	**-0.9**
DHRM				*e*S		**Sn**	**00 15 52.3**	**+0.8**
DHRM				IAML			00 15 57.0	
	comp=N,181nm,0.6s							
DHRM				IAML			00 15 57.5	
	comp=E,296nm,0.5s							
SMLA	**Simla**	**3.03**	**92**	*e*P		**Pn**	**00 15 30.5**	**+0.5**
SMLA				*e*S		**Sn**	**00 16 05.5**	**+0.4**
SMLA				IAML			00 16 15.1	
	comp=N,150nm,1.4s							
SMLA				IAML			00 16 16.8	
	comp=E,102nm,0.4s							
NDI	**New Delhi**	**4.05**	**129**	*e*S		**Sn**	**00 16 29.0**	**-1.2**
BHPL	**Bhopal**	**8.69**	**156**	*e*S		Sn	00 18 16.8	-7.9
BHPL				IAML			00 19 25.5	
	comp=E,30nm,0.2s							
BHPL				IAML			00 19 26.8	
	comp=N,16nm,0.6s							
SFK	**Sufi-Kurgan**	**8.71**	**359**	⇓P		**Pn**	**00 16 46.2**	**-2.1**
	comp=N,1.4nm,0.4s							
SFK				⇑Sn		Sn	00 18 13.8	-11
	comp=N,3.4nm,0.3s							
MNAS	**Manas**	**11.22**	**356**	⇑P		**Pn**	**00 17 24.3**	**+1.8**
	comp=N,1.4nm,0.6s							
MNAS				⇑Sn		Sn	00 19 14.7	-12
	comp=N,1.0nm,0.6s							
KK31	**Karatay Array**	**12.05**	**349**	⇑P		**Pn**	**00 17 33.7**	**-0.1**
	comp=N,0.4nm,0.4s,baz=160,slow=12,SNR=4.5							
KK31				⇑Sn		Sn	00 19 33.8	-13
	comp=N,0.4nm,0.4s,baz=161,slow=22							

*ISCJB **19** 00:31:18.6±0.9, 18°.80N±0°.09×64°.34W±0°.03, h41km±6km, Error ellipse: s-maj=15.6km s-min=3.8km az=8.3*
*RSPR **19** 00:31:18.9, 18°.87N×64°.31W, h39km±3km, MD3.7/9*
*NEIC **19** 00:31:18.9, 18°.87N×64°.31W, h39km, MD3.7(RSPR), After RSPR.*
*TRN **19** 00:31:18.3, 18°.71N×64°.35W, h35km*

ISC 19 00:31:19.6±1.8, 18°.8N±0°.1×64°.33W±0°.03, h36km±3km, n73, σ0°59/104, 16C-38D, Virgin Islands

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
ABV	**Anegada**	**0.05**	**178**	⇑*e*P		**Pn**	**00 31 25.0**	**-0.5**
ABV	Anegada	0.05	178	*e*S		Sn	00 31 29.8	+0.2
ABVI	**Anegada Island**	**0.05**	**179**	⇑*e*P		**Pn**	**00 31 25.0**	**-0.5**
ABVI				*e*S		Sn	00 31 29.8	+0.2
STVI	**Saint Thomas**	**0.73**	**234**	⇓*e*P		**Pn**	**00 31 32.9**	**-0.5**
STVI	**Saint Thomas**	**0.73**	**234**	⇓*e*P		**Pn**	**00 31 33.0**	**-0.5**
STVI				*e*S		Sn	00 31 43.0	-0.2
STVI	**Saint Thomas**	**0.73**	**234**	⇓*e*P		**Pn**	**00 31 32.9**	**-0.5**
STVI				*e*S		Sn	00 31 43.0	-0.2
STVI	**Saint Thomas**	**0.73**	**234**	⇓*e*P		**Pn**	**00 31 32.9**	**-0.5**
MTP	**Monte Pirata**	**1.34**	**240**	⇓*e*P		**Pn**	**00 31 41.7**	**-0.2**
MTP	**Monte Pirata**	**1.34**	**240**	*e*S		Sn	00 31 58.0	-0.5
MTP	**Monte Pirata**	**1.34**	**240**	⇓*e*P		**Pn**	**00 31 41.7**	**-0.2**
MTP				*e*S		**Sn**	**00 31 58.0**	**-0.5**
MTP	**Monte Pirata**	**1.34**	**240**	⇓*e*P		**Pn**	**00 31 41.7**	**-0.2**
MTP				*e*S		**Sn**	**00 31 58.0**	**-0.5**
SMRT	**St. Maarten**	**1.40**	**121**	⇓*e*P		**Pn**	**00 31 41.9**	**-0.7**
SMRT	**St. Maarten**	**1.40**	**121**	*e*S		**Sn**	**00 31 59.5**	**-0.3**
SMRT	**St. Maarten**	**1.40**	**121**	⇓*e*P		**Pn**	**00 31 41.9**	**-0.7**
SMRT				*e*S		**Sn**	**00 31 59.5**	**-0.3**
SMRT	**St. Maarten**	**1.40**	**121**	⇓*e*P		**Pn**	**00 31 41.9**	**-0.7**
SMRT				*e*S		**Sn**	**00 31 59.5**	**-0.3**
CBYP	**Canovanas**	**1.53**	**251**	⇓*e*P		**Pn**	**00 31 43.7**	**-0.8**
CBYP	**Canovanas**	**1.53**	**251**	⇓*e*P		**Pn**	**00 31 44.0**	**-0.5**
CBYP				*e*S		Sn	00 32 03.2	0.0
CBYP	**Canovanas**	**1.53**	**251**	*e*S		**Sn**	**00 32 02.1**	**-1.1**
CBYP	**Canovanas**	**1.53**	**251**	⇓*e*P		**Pn**	**00 31 43.7**	**-0.8**
CBYP				*e*S		**Sn**	**00 32 02.1**	**-1.1**
CBYP	**Canovanas**	**1.53**	**251**	⇓*e*P		**Pn**	**00 31 44.0**	**-0.5**
SABA	**Saba**	**1.55**	**138**	⇑*e*P		**Pn**	**00 31 43.8**	**-0.9**
SABA	**Saba**	**1.55**	**138**	*e*S		**Sn**	**00 32 04.6**	**+0.9**
SABA	**Saba**	**1.55**	**138**	⇑*e*P		**Pn**	**00 31 43.8**	**-0.9**
SABA				*e*S		**Sn**	**00 32 04.6**	**+0.9**
SABA	**Saba**	**1.55**	**138**	⇑*e*P		**Pn**	**00 31 43.8**	**-0.9**
SABA				*e*S		**Sn**	**00 32 04.6**	**+0.9**
HUMP	**Col San Antoni**	**1.57**	**246**	⇑*e*P		**Pn**	**00 31 44.8**	**-0.2**
HUMP				*e*S		**Sn**	**00 32 04.2**	**0.0**
HUMP	**Col San Antoni**	**1.57**	**246**	⇑*e*P		**Pn**	**00 31 44.5**	**-0.5**
HUMP	**Col San Antoni**	**1.57**	**246**	*e*S		**Sn**	**00 32 03.3**	**-0.8**
HUMP	**Col San Antoni**	**1.57**	**246**	⇑*e*P		**Pn**	**00 31 44.5**	**-0.5**
HUMP				*e*S		**Sn**	**00 32 03.3**	**-0.8**
HUMP	**Col San Antoni**	**1.57**	**246**	⇑*e*P		**Pn**	**00 31 44.8**	**-0.2**
HUMP				*e*S		**Sn**	**00 32 03.3**	**-0.8**
SJG	**San Juan**	**1.85**	**249**	⇓*e*P		**Pn**	**00 31 48.9**	**+0.1**
SJG				*e*S		**Sn**	**00 32 11.6**	**+0.7**
SJG	**San Juan**	**1.85**	**249**	⇓*e*P		**Pn**	**00 31 48.9**	**+0.1**
SJG				*e*S		**Sn**	**00 32 11.6**	**+0.7**
SJG	**San Juan**	**1.85**	**249**	⇓*e*P		**Pn**	**00 31 48.9**	**+0.1**
CELP	**Cerrillos**	**2.25**	**252**	⇓*e*P		**Pn**	**00 31 54.5**	**+0.3**
CELP	**Cerrillos**	**2.25**	**252**	⇓*e*P		**Pn**	**00 31 54.5**	**+0.3**
CELP	**Cerrillos**	**2.25**	**252**	⇓*e*P		**Pn**	**00 31 54.5**	**+0.3**
ICMP	**Isla Caja de M**	**2.27**	**247**	⇓*e*P		**Pn**	**00 31 54.8**	**+0.2**
ICMP	**Isla Caja de M**	**2.27**	**247**	⇓*e*P		**Pn**	**00 31 54.8**	**+0.2**
OBIP	**Obispado Ponce**	**2.28**	**252**	⇓*e*P		**Pn**	**00 31 54.9**	**+0.2**
OBIP	**Obispado Ponce**	**2.28**	**252**	*e*S		**Sn**	**00 32 22.4**	**+0.9**
OBIP	**Obispado Ponce**	**2.28**	**252**	⇓*e*P		**Pn**	**00 31 54.9**	**+0.2**
OBIP				*e*S		**Sn**	**00 32 22.4**	**+0.9**
OBIP	**Obispado Ponce**	**2.28**	**252**	⇓*e*P		**Pn**	**00 31 54.9**	**+0.2**
OBIP				*e*S		**Sn**	**00 32 22.4**	**+0.9**
AOPR	**Arecibo Observ**	**2.34**	**260**	⇓*e*P		**Pn**	**00 31 55.4**	**-0.2**
AOPR	**Arecibo Observ**	**2.34**	**260**	⇓*e*P		**Pn**	**00 31 55.4**	**-0.2**
AOPR	**Arecibo Observ**	**2.34**	**260**	*e*S		**Sn**	**00 32 23.8**	**+0.8**
AOPR	**Arecibo Observ**	**2.34**	**260**	⇓*e*P		**Pn**	**00 31 55.4**	**-0.2**
AOPR				*e*S		**Sn**	**00 32 23.8**	**+0.8**
AOPR	**Arecibo Observ**	**2.34**	**260**	⇓*e*P		**Pn**	**00 31 55.4**	**-0.2**
AOPR				*e*S		**Sn**	**00 32 23.8**	**+0.8**
LRS	**Lares**	**2.43**	**259**	⇓*e*P		**Pn**	**00 31 57.0**	**+0.2**
LRS				*e*S		**Sn**	**00 32 24.4**	**-1.0**
LRS	**Lares**	**2.43**	**259**	⇓*e*P		**Pn**	**00 31 57.0**	**+0.2**
LRS				*e*S		**Sn**	**00 32 24.4**	**-1.0**
LRS	**Lares**	**2.43**	**259**	⇓*e*P		**Pn**	**00 31 57.0**	**+0.2**
GBPR	**Guanica, Bosqu**	**2.55**	**252**	*e*S		**Sn**	**00 32 27.0**	**-1.2**
GBPR	**Guanica, Bosqu**	**2.55**	**252**	*e*S		**Sn**	**00 32 27.0**	**-1.2**
AGPR	**Aguadilla, PR**	**2.65**	**264**	⇓*e*P		**Pn**	**00 32 00.0**	**+0.2**
AGPR	**Aguadilla, PR**	**2.65**	**264**	*e*S		**Sn**	**00 32 30.9**	**+0.1**
AGPR	**Aguadilla, PR**	**2.65**	**264**	⇓*e*P		**Pn**	**00 32 00.0**	**+0.2**
AGPR				*e*S		**Sn**	**00 32 30.9**	**+0.1**
AGPR	**Aguadilla, PR**	**2.65**	**264**	⇓*e*P		**Pn**	**00 32 00.0**	**+0.2**
AGPR				*e*S		**Sn**	**00 32 30.9**	**+0.1**
LSP	**Las Mesas**	**2.68**	**257**	⇓*e*P		**Pn**	**00 32 00.8**	**+0.6**
LSP	**Las Mesas**	**2.68**	**257**	*e*S		**Sn**	**00 32 31.9**	**+0.4**
LSP	**Las Mesas**	**2.68**	**257**	⇓*e*P		**Pn**	**00 32 00.8**	**+0.6**
LSP				*e*S		**Sn**	**00 32 31.9**	**+0.4**
LSP	**Las Mesas**	**2.68**	**257**	⇓*e*P		**Pn**	**00 32 00.8**	**+0.6**
LSP				*e*S		**Sn**	**00 32 31.9**	**+0.4**
CRPR	**Cabo Rojo, PR**	**2.75**	**254**	⇑*e*P		**Pn**	**00 32 01.8**	**+0.6**
CRPR	**Cabo Rojo, PR**	**2.75**	**254**	*e*S		**Sn**	**00 32 34.0**	**+0.9**
CRPR	**Cabo Rojo, PR**	**2.75**	**254**	⇑*e*P		**Pn**	**00 32 01.8**	**+0.6**
CRPR				*e*S		**Sn**	**00 32 34.0**	**+0.9**
CRPR	**Cabo Rojo, PR**	**2.75**	**254**	⇑*e*P		**Pn**	**00 32 01.8**	**+0.6**
CRPR				*e*S		**Sn**	**00 32 34.0**	**+0.9**
IDE	**Isla Desecheo**	**3.00**	**263**	*e*S		**Sn**	**00 32 39.1**	**-0.4**
IDE	**Isla Desecheo**	**3.00**	**263**	⇑*e*P		**Pn**	**00 32 05.0**	**+0.3**
IDE	**Isla Desecheo**	**3.00**	**263**	⇑*e*P		**Pn**	**00 32 05.0**	**+0.3**
IDE				*e*S		**Sn**	**00 32 39.1**	**-0.4**
IDE	**Isla Desecheo**	**3.00**	**263**	⇑*e*P		**Pn**	**00 32 05.0**	**+0.3**
IDE				*e*S		**Sn**	**00 32 39.1**	**-0.4**
LZG	**Guadaloupe-1**	**3.59**	**137**	*e*P		**Pn**	**00 32 12.8**	**+0.1**
MLG	**Mont-d'or**	**3.69**	**137**	*e*P		**Pn**	**00 32 14.4**	**+0.3**
FNG	**Fond-Bernard**	**3.70**	**137**	*e*P		**Pn**	**00 32 14.9**	**+0.5**
PHG	**Guadaloupe-2**	**3.77**	**137**	*e*P		**Pn**	**00 32 16.3**	**+1.0**
BBL	**Barber's Block**	**4.24**	**139**	*e*P		**Pn**	**00 32 22.3**	**+0.5**

IDC 19 00:32:13.3±230.0, 64°.85N×147°.62W, h0km, Error ellipse: s-maj=109.0km s-min=3.1km az=104.0, Central Alaska

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
I53US	**FAIRBANKS INFR**	**0.10**	**284**	*i*			00 32 59.1	
	baz=104,slow=322,SNR=1.0							
I18DK	**QAANAAQ INFRAS**	**25.69**	**30**	*i*			03 06 20.0	
	baz=288,slow=346,SNR=1.6							
I10CA	**LAC DU BONNET**	**30.31**	**94**	*i*			03 39 20.0	
	baz=315,slow=327,SNR=0.9							

JMA 19 00:46:14.7, 36°.96N×138°.57E, h10km±1km, M1.0, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
JHK	**Hiroka**	**0.46**	**51**	P		Pg	00 46 23.6	-0.1
MAT	**Matsushiro**	**0.51**	**215**	P		Pg	00 46 24.5	-0.1
MAT				S		Sg	00 46 31.0	-0.3
MAT	**Matsushiro**	**0.51**	**215**	P		Pg	00 46 24.6	0.0
MAT				S		Sg	00 46 31.0	-0.3
JKT	**Katashina**	**0.58**	**109**	P		Pg	00 46 25.9	0.0

*NIED **19** 00:46:00, 36°.10N×140°.00E, h68km, Mw3.7 Best double couple: M₀4.31000×10¹⁴ NP1:φs182.00000°, δ20.00000°, λ94.00000°. NP2:φs358.00000°, δ70.00000°, λ89.00000°.*
*ISCJB **19** 00:46:54.4±0.5, 36°.08N±0°.03×140°.04E±0°.06, h80km±3km, mb3.8/10, Error ellipse: s-maj=7.6km s-min=5.3km az=4.7*
*JMA **19** 00:46:55.8±0.1, 36°.09N×140°.01E, h67km±1km, M3.6 Broadband fault plane solution: P waves. NP1: φs358.00000°, δ62.00000°, λ83.00000°. NP2: φs192.00000°, δ28.00000°, λ102.00000°. Principal axes: T Plg72.0000°, Azm253.0000°; N Plg6.0000°, Azm1.0000°; P Plg17.0000°, Azm93.0000°;*
JMA Felt II J1.
*IDC **19** 00:46:57.0±1.8, 36°.01N×139°.86E, h88km±14km, mb3.6/10, mb1 3.7/11, mb1mx3.4/43, mbtmp3.9/11, MS2.6/1, Ms1 2.6/1, ms1mx2.1/40 Error ellipse: s-maj=28.0km s-min=7.9km az=65.0*

ISC 19 00:46:55.2±0.8, 36°.08N±0°.04×140°.03E±0°.05, h72km±6km, n33, σ0°60/42, mb3.9/10, 1C-6D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
JYT	**Yasato**	**0.20**	**42**	⇑P		**Pn**	**00 47 06.2**	**+0.1**
JYT				S		**Sn**	**00 47 13.8**	**-0.2**
JAG	**Ashikaga**	**0.58**	**307**	⇓P		**Pn**	**00 47 09.2**	**+0.2**
JAG				S		**Sn**	**00 47 19.0**	**-0.2**
JRY	**Ryogami san**	**0.92**	**266**	⇓P		**Pn**	**00 47 13.2**	**+0.3**
JRY				S		**Sn**	**00 47 26.4**	**+0.5**
JKT	**Katashina**	**0.93**	**318**	⇓P		**Pn**	**00 47 13.2**	**+0.1**
JKT				S		**Sn**	**00 47 26.8**	**+0.4**
JOD2	**Odawara 2**	**1.12**	**224**	⇓P		**Pn**	**00 47 15.5**	**+0.1**
JOD2				S		**Sn**	**00 47 29.7**	**-0.7**
BSO3	**Boso 3**	**1.33**	**163**	P		**Pn**	**00 47 18.0**	**+0.2**
JYN	**Shimob**	**1.34**	**245**	⇓P		**Pn**	**00 47 19.0**	**+0.8**
JYN				S		**Sn**	**00 47 36.1**	**+0.6**
JFY	**Yanaizu**	**1.35**	**349**	P		**Pn**	**00 47 18.9**	**+0.6**
JFY				*e*S		**Sn**	**00 47 35.4**	**-0.3**
JHK	**Hiroka**	**1.42**	**325**	⇓P		**Pn**	**00 47 19.7**	**+0.4**
JHK				*e*S		**Sn**	**00 47 37.8**	**+0.5**
JFT	**Otama**	**1.46**	**10**	P		**Pn**	**00 47 20.6**	**+0.9**
JFT				*e*S		**Sn**	**00 47 38.3**	**+0.1**
MJAR	**Matsushiro Arr**	**1.54**	**288**	P		**Pn**	**00 47 21.0**	**+0.1**
	61nm,0.3s,baz=84,slow=8.8,SNR=283							
MJAR				S		**Sn**	**00 47 40.0**	**-0.1**
	35nm,0.3s,baz=135,slow=26,SNR=13							
MAT	**Matsushiro**	**1.54**	**288**	P		**Pn**	**00 47 21.7**	**+0.8**
MAT				*e*S		**Sn**	**00 47 40.6**	**+0.4**
MAT	**Matsushiro**	**1.54**	**288**	P		**Pn**	**00 47 21.7**	**+0.8**
MAT				S		**Sn**	**00 47 40.4**	**+0.2**
JHJ	**Hachijo jima 2**	**2.96**	**184**	P		**Pn**	**00 47 40.7**	**+0.8**
	42nm,0.3s,baz=326,slow=24,SNR=8.6							
JHJ				S		**Sn**	**00 48 15.6**	**+1.2**
	77nm,0.3s,baz=55,slow=22,SNR=7.4							
JNU	**Nakatsue**	**8.10**	**251**	LR		LR	00 52 18.1	
	comp=Z,44nm,19.2s,baz=138,slow=40							
H11N2	**WAKE ISLAND Hy 28.66**	**117**		T		T	01 23 38.7	
	baz=316							
H11N1	**WAKE ISLAND Hy 28.66**	**117**		T		T	01 23 41.1	
	baz=316							
H11N3	**WAKE ISLAND Hy 28.68**	**117**		T		T	01 23 41.7	
	baz=316							
H11S1	**WAKE ISLAND Hy 29.32**	**120**		T		T	01 24 30.1	
	baz=311							
H11S3	**WAKE ISLAND Hy 29.32**	**120**		T		T	01 24 36.8	
	baz=311							
H11S2	**WAKE ISLAND Hy 29.33**	**120**		T		T	01 24 32.0	
	baz=311							
ZALV	**Zalesovo Beam**	**41.74**	**313**	P		**P**	**00 54 36.6**	**-0.4**
	1.6nm,0.8s,baz=90,slow=7.4,SNR=7.6							
ZALV				PcP		**PcP**	**00 56 30.8**	**-1.3**
	1.0nm,0.5s,baz=108,slow=3.3,SNR=5.7							
MKAR	**Makanchi Array**	**43.69**	**303**	P		**P**	**00 54 53.0**	**+0.1**
	2.0nm,0.7s,baz=88,slow=9.9,SNR=29							
MKAR				PcP		**PcP**	**00 56 38.4**	**-0.5**
	0.6nm,0.8s,baz=93,slow=8.3,SNR=5.1							
KURBB	**Kurchatov Arra**	**45.72**	**309**	P		**P**	**00 55 08.7**	**-0.3**
	1.9nm,0.4s,baz=83,slow=7.6,SNR=20							
KURBB				PcP		**PcP**	**00 56 45.0**	**-0.7**
	0.3nm,0.3s,baz=108,slow=2.1,SNR=4.4							
BVAR	**Borovoye Array**	**50.40**	**313**	PcP		**PcP**	**00 57 02.5**	**0.0**
	0.5nm,0.5s,baz=95,slow=3.6,SNR=4.3							
ILAR	**Eielson Array**	**50.89**	**32**	P		**P**	**00 55

PLCA Lg Lg 01 01 11.8
comp=Z,0.9nm,0.3s,baz=283,slow=23,SNR=1.8
PLCA Paso Flores 7.42 169 *e*Pn **Pn 00 59 16.0 +0.4**
PLCA *e*Sn **Sn 01 00 40.2 +1.2**
TRQA Tornquist 9.62 122 *e*Pn **Pn 00 59 45.5 -0.2**
TRQA *e*Sn **Sn 01 01 39.8 +6.7**
PB10 IPOC Station P 10.02 10 *e*Pn **Pn 00 59 47.1 -4.1**
PB10 *e*Sn **Sn 01 01 46.2 +3.3**
PB04 IPOC Station P 11.24 11 *e*Pn **Pn 01 00 05.1 -3.0**
CHRN Cochrane 13.79 181 *e*Pn **Pn 01 00 42.5 -0.2**
PB11 IPOC Station P 13.84 11 *e*Pn **Pn 01 00 43.8 +0.2**
CPUP Villa Florida 14.84 Pn **Pn 01 00 56.0 -1.2**
comp=Z,0.3nm,0.3s,baz=236,slow=11,SNR=5.9
CPUP Sn **Sn 01 03 43.3 +2.5**
baz=230,slow=16,SNR=2.1
CPUP LR LR 01 07 00.3
comp=Z,3µm,18.1s,baz=244,slow=39
CPUP Villa Florida 14.84 65 *e*Pn **Pn 01 00 56.0 -1.2**
CPUP *e*Sn **Sn 01 03 38.0 -2.8**
LPAZ La Paz 17.50 14 P **Pn 01 01 31.0 -0.8**
comp=Z,0.7nm,0.3s,baz=184,slow=8.6,SNR=39
LPAZ La Paz 17.50 14 *e*Pn **Pn 01 01 31.0 -0.8**
comp=Z,92nm,1.2s
SIV San Ignacio 20.15 33 P **P 01 01 59.5 -1.9**
comp=Z,30nm,0.9s,baz=231,slow=14,SNR=45
SIV LR LR 01 11 27.6
comp=Z,3µm,18.6s,baz=229,slow=42
EFI East Falkland 20.98 155⇑ *e*P **P 01 02 09.9 -0.1**
EFI East Falkland 20.98 155 *e*P **P 01 02 09.3 -0.7**
USHA Ushuaia 21.57 174 P **P 01 02 16.4 +0.1**
comp=Z,76nm,0.9s,baz=336,slow=9.0,SNR=5.8
NNA Nana 21.74 348 P **P 01 02 18.0 -0.5**
comp=Z,39nm,1.2s,baz=192,slow=10,SNR=5.0
NNA Nana 21.74 348 P P **01 02 18.0 -0.5**
NNA pmax pmax
comp=Z,39nm,1.2s
NNA Nana 21.74 348 *e*P **P 01 02 19.8 +1.3**
SPB Sao Paulo 23.96 72 *e*P **P 01 02 39.2 -2.0**
comp=Z,133nm,1.0s
SAML Samuel 25.81 21 *e*P **P 01 02 56.2 -1.8**
comp=Z,54nm,1.3s
ATAH Atahualpa 26.76 347 P **P 01 03 11.7 +4.5**
comp=Z,3.8nm,0.8s,baz=160,slow=15,SNR=2.2
ATAH LR LR 01 12 35.8
comp=Z,517nm,18.6s,baz=185,slow=34
PMSA Palmer Station 31.77 173 P **P 01 03 48.7 -2.0**
comp=Z,16nm,0.9s,baz=328,slow=9.5,SNR=2.7
PMSA LR LR 01 16 48.1
comp=Z,1µm,18.6s,baz=342,slow=37
OTAV Otavalo 33.98 349 *e*P **P 01 04 13.8 +2.7**
comp=Z,35nm,1.7s
PTGA Pitinga 34.56 22 P **P 01 04 14.5 -1.1**
comp=Z,17nm,1.1s,baz=198,slow=9.1,SNR=16
PTGA Pitinga 34.56 22 *e*P **P 01 04 14.5 -1.1**
comp=Z,31nm,1.1s
PRAC Prado 37.03 356 *e*P **P 01 04 38.5 +1.8**
comp=Z,48nm,1.3s
HELC Santa Helena 39.53 355 *e*P **P 01 04 58.7 +0.6**
comp=Z,57nm,1.3s
BCIP Isla Barro Col 42.96 349 *e*P **P 01 05 26.0 +0.1**
comp=Z,255nm,1.9s
RCBR Riachuelo 43.59 59 P **P 01 05 30.5 -0.7**
comp=Z,18nm,1.1s,baz=210,slow=6.1,SNR=4.9
JTS JuntasAbangare 45.11 342 *i* P **P 01 05 43.7 +0.5**
JTS pmax pmax
comp=Z,31nm,1.6s
VNA3 Neumayer Olymp 49.98 158 P **P 01 06 20.6 +0.2**
VNA1 Neumayer--Stat 50.30 157 P **P 01 06 24.3 +1.5**
VNA2 Neumayer--Watz 50.63 157 P **P 01 06 25.6 +0.2**
baz=288,slow=8.8
SABA Saba 51.52 11 *e*P **P 01 06 31.7 -0.8**
comp=Z,82nm,1.0s
CELP Cerrillos 51.52 7 *e*P **P 01 06 32.4 -0.2**
SNAA Sanae 52.21 158 P **P 01 06 37.5 +0.3**
SNAA Sanae 52.21 158 *e*P **P 01 06 37.7 +0.5**
SNAA Sanae 52.21 158 *e*P **P 01 06 37.7 +0.5**
comp=Z,6µm,1.4s
RKT Rikitea 55.36 263 *e*S **S 01 14 45.2 +1.4**
comp=Z,178nm,26.2s
RKT *e*LR LR 01 23 02.2
comp=Z,316nm,29.2s
TEIG Tepich 55.48 342 *e*P **P 01 07 01.6 0.0**
comp=Z,35nm,1.4s
QSPA South Pole Qui 56.79 180 *e*P **P 01 07 12.3 +1.6**
NVL N'lazarevskaya 56.94 157 *e*P **P 01 07 12.1 +0.6**
VNDA Vanda 64.59 191 P **P 01 08 03.5 0.0**
comp=Z,2.3nm,1.2s,baz=151,slow=9.3,SNR=3.0
VNDA Vanda 64.59 191 *e*P **P 01 08 03.5 0.0**
VNDA *es*P **sP 01 08 16.7 +2.1**
834A Tilden 66.07 335 P **P 01 08 15.4 +1.8**
baz=156
736A Circle Diamond 66.32 336 P **P 01 08 17.7 +2.6**
baz=158
735A Kenedy 66.48 336 P **P 01 08 18.5 +2.3**
baz=157
SYO Syowa Base 66.49 159‖ *e*P **P 01 08 12.0 -3.8**
SYO Syowa Base 66.49 159‖ *ep*P pP 01 08 21.8 -2.1
833A Chaparral WMA, 66.56 334 P **P 01 08 17.5 +0.8**
baz=156
TAOE Nuku Hiva Isla 66.64 275 *e*S **S 01 17 07.8 -0.2**
comp=Z,150nm,23.4s
TAOE Nuku Hiva Isla 66.64 275 *e*LR LR 01 28 26.4
comp=Z,242nm,22.5s
832A Faith Ranch, C 66.74 334 P **P 01 08 18.7 +0.8**
baz=155
635A Leesville 66.96 336 P **P 01 08 20.1 +0.9**
baz=157
245A Little AP, Sta 67.19 344 P **P 01 08 21.8 +1.2**
baz=164
GOGA Godfrey 67.31 350 *e*P **P 01 08 20.9 -0.5**
GOGA pmax pmax
comp=Z,6.0nm,0.9s
GOGA Godfrey 67.31 350 *e*P **P 01 08 20.9 -0.5**
comp=Z,6.2nm,0.9s
633A Saathoff Ranch 67.51 335 P **P 01 08 23.2 +0.4**
baz=156
HPIG 67.86 328 *e*P **P 01 08 24.8 -0.5**
comp=Z,16nm,0.4s
Z47A Carrollton 67.91 346 P **P 01 08 24.6 -0.5**
baz=166
533A Kerrville 68.02 335 P **P 01 08 26.6 +0.7**
baz=156
434A Burnet 68.43 336 P **P 01 08 28.9 +0.4**
baz=157
Y47A UCPARC, Winfie 68.55 346 P **P 01 08 28.6 -0.5**
baz=166
433A Art 68.66 335 P **P 01 08 30.1 +0.2**
baz=156
JCT Junction City 68.66 335 P **P 01 08 30.3 +0.3**
baz=156
JCT Junction City 68.66 335 *e*P **P 01 08 30.9 +0.9**
JCT pmax pmax
comp=Z,23nm,1.1s
JCT Junction City 68.66 335 *e*P **P 01 08 30.9 +0.9**
comp=Z,23nm,1.1s
Y46A Houston 68.74 345 P **P 01 08 29.1 -1.2**
baz=165
KMSC Kings Mountain 68.74 352 P **P 01 08 30.0 -0.3**
baz=172
334A Lometa 68.90 336 P **P 01 08 31.6 +0.2**
baz=157
LTX Lajitas 69.11 331 *e*P **P 01 08 33.6 +0.7**
LTX Lajitas 69.11 331 *e*P **P 01 08 33.6 +0.7**
TXAR Lajitas Array 69.11 331 P **P 01 08 33.6 +0.7**
comp=Z,1.9nm,1.0s,baz=148,slow=7.4,SNR=12
TX31 Lajitas Ar. Si 69.11 331 *e*P **P 01 08 33.3 +0.4**
333A Richland Sprin 69.14 336 P **P 01 08 32.9 0.0**
baz=156
CPCT Cooper Cave 69.47 349 *e*P **P 01 08 34.7 -0.1**
comp=Z,14nm,1.5s
SWET Sewanee 69.47 348 *e*P **P 01 08 34.8 -0.1**
comp=Z,13nm,1.6s
234A Clairette 69.48 337 P **P 01 08 34.9 -0.1**
baz=157
PPT2 Papeete2 70.03 262 *e*S **S 01 17 49.8 +1.5**
comp=Z,218nm,22.2s
PPT2 Papeete2 70.03 262 *e*LR LR 01 29 59.6
comp=Z,428nm,29.2s
PPT Papeete 70.05 262 LR LR 01 31 57.5
comp=Z,84nm,19.5s,baz=168,slow=30
Z36A Blue Ridge 70.11 339 P **P 01 08 39.2 +0.3**
baz=159
133A Hamilton Ranch 70.30 336 P **P 01 08 39.7 -0.4**
baz=157
MIAR Mount Ida 70.50 342 *e*P **P 01 08 41.4 +0.2**
MIAR pmax pmax
comp=Z,16nm,1.3s
MIAR Mount Ida 70.50 342 *e*P **P 01 08 41.4 +0.2**
comp=Z,16nm,1.3s
ABTX Abilene, Hawle 70.56 336 P **P 01 08 41.7 +0.1**
baz=156
ABTX Abilene, Hawle 70.56 336 *e*P **P 01 08 42.2 +0.6**
comp=Z,64nm,1.8s
X39A Fountain Ranch 70.61 341 P **P 01 08 42.2 +0.3**
baz=161
WVT Waverly 70.70 347 *e*P **P 01 08 41.9 -0.5**
WVT pmax pmax
comp=Z,37nm,1.3s
WVT Waverly 70.70 347 *e*P **P 01 08 41.9 -0.5**
comp=Z,37nm,1.3s
W41A Tony Mavity, V 70.75 343 P **P 01 08 42.8 +0.1**
baz=163
X301 Greenbrier Sit 70.85 343 *e*P **P 01 08 44.1 +0.8**
comp=Z,20nm,1.2s
WHAR Wooly Hollow 70.87 343 *e*P **P 01 08 44.2 +0.8**
comp=Z,38nm,1.7s
X201 Greenbrier Sit 70.89 343 *e*P **P 01 08 43.9 +0.3**
comp=Z,22nm,1.2s
JSRW J. Sargeant Re 70.96 355 *e*P **P 01 08 44.4 +0.6**
W40A Ferguson Farm, 70.98 342 P **P 01 08 44.5 +0.4**
baz=162
X37A Clayton 71.03 340 P **P 01 08 44.2 -0.2**
baz=160
W39A Magazine 71.17 342 P **P 01 08 45.5 +0.3**
baz=161
X35A Drake 71.33 339 P **P 01 08 46.7 +0.5**
baz=159
Y33A Hilltop Ranch, 71.48 337 P **P 01 08 47.6 +0.4**
baz=157
W37B Quinton 71.56 340 P **P 01 08 47.6 0.0**
baz=160
V39A Pettigrew 71.74 342 P **P 01 08 48.6 -0.1**
baz=162
X34A Smith Ranch, M 71.78 338 P **P 01 08 49.2 +0.2**
baz=158
MNTX Cornudas Mount 71.89 331 P **P 01 08 49.0 -0.7**
baz=152
MNTX Cornudas Mount 71.89 331 *e*P **P 01 08 49.5 -0.1**
comp=Z,6.9nm,1.0s
U40A Yellville 72.03 343 P **P 01 08 50.1 -0.3**
baz=162
WMOK Wichita Mounta 72.20 337 *e*P **P 01 08 52.0 +0.5**
WMOK pmax pmax
comp=Z,8.0nm,1.2s
WMOK Wichita Mounta 72.20 337 *e*P **P 01 08 52.0 +0.5**
comp=Z,8.2nm,1.2s
U39A Green Forest 72.21 342 P **P 01 08 50.9 -0.6**
baz=162
HHAR Hobbs 72.23 342 *e*P **P 01 08 52.8 +1.1**
comp=Z,7.6nm,1.0s
TUL1 Leonard 72.39 340 P **P 01 08 52.2 -0.3**
baz=160
W33A Caddo, Fort Co 72.48 338 P **P 01 08 53.6 +0.4**
baz=157
W32A Sentinel 72.71 337 P **P 01 08 54.5 -0.1**
baz=157
T39A Clever 72.79 343 P **P 01 08 54.7 -0.3**
baz=162
MSTX Muleshoe 72.88 334 P **P 01 08 55.7 0.0**
baz=154
MSTX Muleshoe 72.88 334 *e*P **P 01 08 56.2 +0.5**
comp=Z,20nm,1.0s
T38A Diamond 73.03 342 P **P 01 08 56.2 -0.2**
baz=161
U35A Pawnee 73.09 340 P **P 01 08 56.3 -0.4**
baz=159
T37A Cheneyville 18 73.28 341 P **P 01 08 57.9 +0.1**
baz=161
AMTX Amarillo 73.31 335 *e*P **P 01 09 00.0 +1.9**
comp=Z,17nm,1.0s
S39A Bolivar 73.41 343 P **P 01 08 58.0 -0.6**
baz=162
S38A Stockton 73.50 342 P **P 01 08 58.7 -0.4**
baz=161
R40A Maddies Statio 73.73 344 P **P 01 08 59.9 -0.5**
baz=163
MAW Mawson 73.79 164 P **P 01 08 59.8 -0.8**
comp=Z,11nm,0.9s,baz=290,slow=20,SNR=13
MAW LR LR 01 43 15.5
comp=Z,699nm,18.6s,baz=236,slow=37
MAW Mawson 73.79 164 *e*P **P 01 08 59.8 -0.8**
comp=Z,3.4nm,0.9s
T34A McClaskey Farm 73.83 340 P **P 01 09 01.1 0.0**
baz=159
S37A Fort Scott 73.86 342 P **P 01 09 00.7 -0.5**
baz=161
R39A Chumby, Stover 73.93 343 P **P 01 09 01.3 -0.3**
baz=162
R38A Fenwick Farm, 74.02 342 P **P 01 09 01.2 -1.0**
baz=162
S36A Lake Cedric, C 74.03 341 P **P 01 09 01.5 -0.7**
baz=160
P40A Paris 74.86 344 P **P 01 09 06.6 -0.4**
baz=163
LIC Lamto 74.87 72 *e*PKP1 **P 01 09 07.7 0.0**
comp=Z,119nm,1.9s
LAZ Ladron 74.96 331 *e*P **P 01 09 09.8 +1.9**
TIC Toumodi 75.12 72 *e*PKP1 **P 01 09 07.9 -1.3**
ANMO Albuquerque 75.16 332 *e*P **P 01 09 10.5 +1.4**
ANMO pmax pmax
comp=Z,8.0nm,1.0s
ANMO Albuquerque 75.16 332 *e*P **P 01 09 10.5 +1.4**
comp=Z,8.2nm,1.0s
KIC Kosan Boka 75.18 72 *e*PKP1 **P 01 09 08.6 -0.9**
comp=Z,94nm,1.4s
DBIC Dimbokro 75.27 72 P **P 01 09 09.2 -0.7**
comp=Z,16nm,1.2s,baz=177,slow=4.8,SNR=5.6
DBIC LR LR 01 40 46.7
comp=Z,259nm,18.5s,baz=216,slow=35
DBIC Dimbokro 75.27 72 *e*P **P 01 09 09.2 -0.7**
comp=Z,22nm,1.2s
HDIL Hopedale 75.27 347 *e*P **P 01 09 12.5 +3.2**
comp=Z,677nm,0.8s
P38A Dawn 75.30 343 P **P 01 09 08.8 -0.7**
baz=162
SUR Sutherland 75.35 119 P **P 01 09 11.0 +0.5**
comp=Z,0.6nm,1.0s,baz=259,slow=6.9,SNR=2.5
SUR Sutherland 75.35 119 *e*P **P 01 09 11.0 +0.5**
comp=Z,21nm,1.6s
T25A Trinidad 76.31 334 P **P 01 09 16.2 +0.6**
baz=153
T25A Trinidad 76.31 334 *e*P **P 01 09 16.8 +1.2**
comp=Z,43nm,1.4s
X16A Lo Mia Camp, P 76.81 328 *e*P **P 01 09 20.4 +1.8**
comp=Z,6.9nm,1.0s
M37A Trindle Farm, 77.11 343 P **P 01 09 19.1 -0.7**
baz=162
Y14A Wickenburg 77.13 326 *e*P **P 01 09 22.9 +2.8**
comp=Z,23nm,1.2s
S22A 4UR Ranch, Cre 77.75 333 *e*P **P 01 09 26.9 +3.1**
comp=Z,12nm,1.4s
MVCO Mesa Verde 77.94 331 *e*P **P 01 09 26.8 +1.9**
comp=Z,8.1nm,1.1s
Q24A Divide 78.19 334 *e*P **P 01 09 27.6 +1.3**
comp=Z,12nm,1.2s
PFO Pinyon Flats O 78.52 324 *es*P P 01 09 46.2 +18
J36A Seneca 1, Swea 79.00 344 P **P 01 09 30.0 -0.2**
baz=162
SMCO Snowmass 79.05 333 *e*P **P 01 09 32.8 +1.7**
comp=Z,48nm,1.7s
ISCO Idaho Springs 79.10 335 P **P 01 09 31.4 +0.1**
baz=152
ISCO Idaho Springs 79.10 335 *e*P **P 01 09 33.0 +1.7**
ISCO Idaho Springs 79.10 335 *e*P **P 01 09 33.0 +1.7**
PV09 Paradox Valley 79.30 331 *e*P **P 01 09 36.9 +4.5**
KNB Kanab 79.60 328 *es*P sP 01 09 44.6 -0.6
TSUM Tsumeb 79.64 106 *e*P **P 01 09 35.0 +0.4**
comp=Z,18nm,1.1s
ECSD EROS Data Cent 79.93 342 P **P 01 09 34.8 -0.5**
baz=160
ECSD EROS Data Cent 79.93 342 *e*P **P 01 09 35.4 0.0**
comp=Z,22nm,1.1s
H35A Sunnyside Ranc 80.41 344 P **P 01 09 37.2 -0.6**
baz=161
MSU Marysvale 80.57 329 *e*P **P 01 09 40.7 +1.5**
MSU *e* 01 09 46.1
MSU Marysvale 80.57 329 *e*P **P 01 09 40.7 +1.5**
MSU *e*PcP **PcP 01 09 46.0 +0.1**
BOSA Boshof 80.58 118 P **P 01 09 39.4 -0.2**
comp=Z,13nm,1.1s,baz=205,slow=5.6,SNR=9.2
BOSA LR LR 01 40 47.1
comp=Z,93nm,21.4s,baz=236,slow=32
BOSA Boshof 80.58 118 *e*P **P 01 09 39.4 -0.2**
BOSA *e*PcP **pP 01 09 47.7 -0.2**
H34A Spellman, Spel 80.60 343 P **P 01 09 38.6 -0.3**
baz=160
COWI Conover 80.61 348 *e*P **P 01 09 39.4 +0.5**
comp=Z,23nm,1.6s
J29A Okreek 80.63 340 P **P 01 09 39.1 0.0**
baz=157
TPNV Topopah Spring 81.11 326 *e*P **P 01 09 44.2 +2.2**
TPNV pmax pmax
comp=Z,18nm,1.6s
TPNV Topopah Spring 81.11 326 *e*P **P 01 09 44.2 +2.2**
comp=Z,18nm,1.6s
DAC Darwin (Calif) 81.21 325 *e*P **P 01 09 44.8 +2.2**
DAC pmax pmax
comp=Z,7.0nm,0.9s
DAC Darwin (Calif) 81.21 325 *e*P **P 01 09 44.8 +2.2**
comp=Z,7.5nm,0.9s
F36A Milaca 81.22 345 P **P 01 09 41.1 -1.1**
baz=162
NLU North Lily Min 81.74 330 *e*P **P 01 09 47.5 +2.1**
NLU *e*PcP **PcP 01 09 52.0 +0.9**
E36A McGregor 81.79 346 P **P 01 09 44.4 -0.7**
baz=163
K22A Casper 81.94 335 *e*P **P 01 09 47.8 +1.6**
comp=Z,24nm,1.4s
D37A Cotton 82.23 346 P **P 01 09 46.9 -0.6**
baz=163
DUG Dugway, Tooele 82.25 330 *e*P **P 01 09 49.2 +1.3**
DUG pmax pmax
comp=Z,27nm,1.8s
DUG Dugway, Tooele 82.25 330 *e*P **P 01 09 49.2 +1.3**
comp=Z,27nm,1.8s
D35A Remer 82.50 345 P **P 01 09 48.5 -0.4**
baz=162
C38A Sawbill Land. 82.55 347 P **P 01 09 48.0 -1.1**
baz=164
C37A Embarrass 82.73 347 P **P 01 09 49.7 -0.4**
baz=164
LBTB Lobatse 82.80 115 *e*P **P 01 09 51.4 +0.1**
LBTB pmax pmax
comp=Z,29nm,1.0s
LBTB Lobatse 82.80 115 *e*P **P 01 09 51.4 +0.1**
comp=Z,29nm,1.0s
C36A Pine Crest Far 82.89 346 P **P 01 09 50.3 -0.6**
baz=163
HWUT Hardware Ranch 82.92 331 *e*P **P 01 09 51.7 +0.3**
comp=Z,27nm,1.6s
BGU Big Grassy Mou 82.95 330 *e*P **P 01 09 52.9 +1.3**
comp=Z,15nm,1.5s
SPUT South Promonto 83.03 331 *e*P **P 01 09 53.3 +1.3**
comp=Z,20nm,1.4s
C35A Jirik Farms, M 83.07 345 P **P 01 09 51.3 -0.5**
baz=162
BW06 Boulder Array 83.14 333 *e*P **P 01 09 52.3 -0.3**
PD31 Pinedale Array 83.14 333 *e*P **P 01 09 52.5 -0.1**
PD31 *es*P **sP 01 10 03.5 -0.4**
PDAR Pinedale Array 83.14 333 P **P 01 09 52.5 -0.1**
comp=Z,0.8nm,1.0s,baz=169,slow=1.5,SNR=6.0
NV01 Mina Array Sit 83.27 325 *e*P **P 01 09 54.5 +1.1**
NVAR Mina Array Bea 83.27 325 P **P 01 09 54.5 +1.1**
comp=Z,0.5nm,0.7s,baz=146,slow=5.3,SNR=3.4
HVU Hansel Valley 83.56 331 *e*P **P 01 09 55.4 +0.7**
HVU pmax pmax
comp=Z,7.0nm,1.1s
HVU Hansel Valley 83.56 331 *e*P **P 01 09 55.4 +0.7**
comp=Z,7.2nm,1.1s
D30A Buchanan 83.62 342 P **P 01 09 54.1 -0.6**
baz=158
B35A Bob, Littlefor 83.64 346 P **P 01 09 54.5 -0.3**
baz=162
D29A Pettibone, Tap 83.80 342 P **P 01 09 55.1 -0.5**
baz=158
AGMN Agassiz Nation 84.04 344 *e*P **P 01 09 57.3 +0.5**
AGMN *es*P **pP 01 10 05.5 +0.4**
C30A Mose, Pekin 84.11 343 P **P 01 09 57.1 -0.1**
baz=158
A33A Warroad 84.54 345 P **P 01 09 58.6 -0.7**
baz=161
FLWY Flagg Ranch 84.69 333 *e*P **P 01 10 02.7 +2.2**
comp=Z,16nm,1.4s
B30A Myrvik Farm, E 84.76 343 P **P 01 10 00.1 -0.4**
baz=158
B29A Wagenman Farm, 85.03 342 P **P 01 10 01.9 +0.1**
baz=158
RLMT Red Lodge 85.06 335 P **P 01 10 02.0 -0.3**
baz=150
RLMT Red Lodge 85.06 335 *e*P **P 01 10 03.5 +1.2**
comp=Z,13nm,1.4s
A29A Manning Farm, 85.43 343 P **P 01 10 03.7 -0.1**
baz=158
ORV Oroville 85.69 324 *e*P **P 01 10 07.1 +1.8**
ORV pmax pmax
comp=Z,30nm,1.6s
ORV Oroville 85.69 324 *e*P **P 01 10 07.1 +1.8**
comp=Z,30nm,1.6s
HLID Hailey 85.71 331 *e*P **P 01 10 06.9 +1.4**
comp=Z,14nm,1.5s
ULM Lac du Bonnet 85.89 345 P **P 01 10 05.6 -0.4**
comp=Z,1.9nm,0.7s,baz=170,slow=3.9,SNR=2.4
MCMT McKenzie Canyo 86.14 332 *e*P **P 01 10 09.2 +1.5**
MFID Camas Ranch 86.18 330 *e*P **P 01 10 08.9 +1.1**
comp=Z,21nm,1.8s
DGMT Dagmar 86.36 339 *e*P **P 01 10 09.7 +1.2**
DGMT *es*P **sP 01 10 20.9 +1.1**
LRM Limekiln Ridge 86.83 333 *e*P **P 01 10 12.1 +1.0**
LRM *es*P **pP 01 10 20.6 +1.2**
K05A Summer Lake 87.86 326 *e*P **P 01 10 18.3 +2.2**
K05A *ep*P **pP 01 10 23.3 -1.1**
SCHQ Schefferville 88.05 3 P **P 01 10 16.2 -0.2**
comp=Z,16nm,1.3s,baz=191,slow=5.2,SNR=2.5
SCHQ Schefferville 88.05 3 *e*P **P 01 10 16.2 -0.2**
comp=Z,85nm,1.8s
WALA Waterton Lakes 90.08 334 *e*P **P 01 10 27.3 +1.0**
comp=Z,17nm,1.4s
LSZ Lusaka 90.25 108 *e*P **P 01 10 29.4 +1.4**
LSZ pmax pmax
comp=Z,16nm,1.4s
LSZ Lusaka 90.25 108 *e*P **P 01 10 29.4 +1.4**
comp=Z,16nm,1.4s
FFC Flin Flon 91.44 343 *i* P **P 01 10 32.9 +0.7**
MDT Midelt 91.69 51 P **P 01 10 34.0 -0.1**
comp=Z,2.1nm,0.9s,baz=270,slow=8.1,SNR=2.8
TAM Tamanrasset 92.84 65 *e*P **P 01 10 40.1 +0.3**
TAM pmax pmax
comp=Z,9.0nm,1.3s
TAM Tamanrasset 92.84 65 *e*P **P 01 10 40.1 +0.3**
comp=Z,8.8nm,1.3s
ESDC Sonseca Array 96.39 46 P **P 01 10 55.3 -0.2**
comp=Z,0.1nm,0.3s,baz=238,slow=7.4,SNR=3.6
YKA Yellowknife Ar 101.44 341 P **Pdif 01 11 16.4 -1.0**
comp=Z,3.9nm,0.9s,baz=142,slow=4.6,SNR=4.8
YKB5 Yellowknife Ar 101.44 341 *e*Pdif **Pdif 01 11 16.4 -1.0**
KHC Kasperske Hory 112.01 45 AMS AMS 02 04 20.0
comp=Z,200nm,20.1s
GOPC GO Pecny, Ondr 113.06 45 AMS AMS 02 04 50.0
comp=Z,200nm,15.2s
PVCC Panska Ves 113.19 44 AMS AMS 02 02 40.0
comp=Z,200nm,17.2s
ASAR Alice Springs 117.94 207 PKP **PKPdf 01 16 12.8 -1.0**
comp=Z,0.4nm,0.8s,baz=156,slow=5.5,SNR=4.3
AS31 Alice Springs 117.94 207 *e*PKPdf **PKPdf 01 16 12.8 -1.0**
WR1 Warramunga Arr 121.11 210 *e*PKPdf **PKPdf 01 16 19.8 -0.2**
WRA Warramunga Arr 121.11 210 PKP **PKPdf 01 16 19.8 -0.2**
comp=Z,2.1nm,1.1s,baz=167,slow=1.7,SNR=5.3
KIEV Kiev 122.01 47⇑ *i*PKIKP **PKPdf 01 16 20.1 -0.4**
AKASG Malin Array Be 122.02 47 *i*PKIKP **PKPdf 01 16 19.7 -0.9**
comp=Z,0.2nm,0.3s,baz=268,slow=2.5,SNR=4.1
AKASG Malin Array Be 122.02 47 *c i*PKIKP **PKPdf 01 16 18.7 -1.8**
AKBB Malin Array Si 122.02 47 *e*PKIKP **PKPdf 01 16 19.7 -0.9**
AKBB Malin Array Si 122.02 47 *e*PKPdf **PKPdf 01 16 19.7 -0.9**
H11S2 WAKE ISLAND Hy 125.50 270 T T 03 35 27.4
baz=118,slow=74,SNR=35
H11S1 WAKE ISLAND Hy 125.51 270 T T 03 35 28.3
baz=118,slow=74,SNR=28
H11S3 WAKE ISLAND Hy 125.51 270 T T 03 35 28.7
baz=118,slow=74,SNR=20
OBN Obninsk 127.22 43‖ *i*PKIKP **PKPdf 01 16 28.7 -1.6**
OBN *e* 01 18 34.2
OBN *e* 01 23 36.9
OBN pmax pmax
comp=Z,25nm,2.1s
KIV Kislovodsk 129.43 58‖ *i*PKIKP **PKPdf 01 16 35.0 -0.1**
KIV *e*PPP PPP 01 21 31.5
KIV *e*SS SS 01 36 07.4 +1.3
KIV pmax pmax
comp=Z,10.0nm,1.4s
BILL Bilibino 132.21 334⇑ *i*PKIKP **PKPdf 01 16 40.4 +0.9**

BILL					*e*			01 19 04.9	
BILL					*e*PPP	PPP		01 21 54.1	
BILL					pmax	pmax			
	comp=Z,6.0nm,1.3s								
SEY	**Seymchan**	**139.41**	**330**		PKP	**PKPdf**		**01 16 54.3**	**+1.3**
	comp=Z,2.9nm,0.9s,baz=99,slow=4.8,SNR=6.8								
ARU	**Arti**	**139.50**	**40**	*i*	PKIKP	**PKPdf**		**01 16 54.2**	**+0.8**
ARU								01 19 46.3	
ARU					SS	SS		01 38 05.3	-0.8
ARU					MLR	MLR			
	comp=Z,212nm,22.0s								
TIXI	**Tiksi**	**140.09**	**350**		PKIKP	**PKPdf**		**01 16 55.3**	**+1.3**
ABKAR	**Akbulak array**	**141.56**	**51**	*e*	PKPpre	PKPpre		01 16 51.8	
ABKAR				*e*	PKPdf	**PKPdf**		**01 16 58.0**	**+0.6**
ZRNK	**Zerenda**	**146.30**	**43**	*e*	PKP2	**PKPbc**		**01 17 06.4**	**-0.3**
ZRNK	**Zerenda**	**146.30**	**43**	*e*	PKPdf	**PKPbc**		**01 17 06.4**	**-0.3**
POO	**Poona**	**146.38**	**108**	*e*	P	**PKPdf**		**01 17 06.0**	**-0.8**
GSI	**Gunungsitoli**	**146.67**	**161**	*e*	PKPdf	**PKPab**		**01 17 09.8**	**-0.2**
BRVK	**Borovoye**	**146.99**	**42**	*e*	PKP2	**PKPdf**		**01 17 07.5**	**+0.8**
BRVK	**Borovoye**	**146.99**	**42**	*e*	PKPdf	**PKPdf**		**01 17 07.5**	**+0.8**
BVAR	**Borovoye Array**	**147.06**	**42**		PKPbc	**PKPdf**		**01 17 07.4**	**+0.5**
	comp=Z,2.8nm,0.9s,baz=318,slow=2.0,SNR=11								
VOSK	**Vostochnaya**	**147.50**	**43**	*e*	PKIKP	**PKPdf**		**01 17 08.0**	**+0.4**
VOSK	**Vostochnaya**	**147.50**	**43**	*e*	PKPdf	**PKPdf**		**01 17 08.0**	**+0.4**
YAK	**Yakutsk**	**148.11**	**340**		PKPbc	**PKPbc**		**01 17 11.2**	**-0.2**
	comp=Z,15nm,0.4s,baz=183,slow=0.7,SNR=4.3								
YAK	**Yakutsk**	**148.11**	**340**	*e*	PKP2	**PKPbc**		**01 17 10.9**	**-0.6**
YAK					pmax	pmax			
	comp=Z,24nm,0.8s								
KBL	**Kabul**	**148.12**	**77**	*e*	PKP2	**PKPab**		**01 17 21.8**	**+6.2**
KBL	**Kabul**	**148.12**	**77**	*e*p	PKPab	**PKPab**		**01 17 21.8**	**+6.2**
PSI	**Prapat**	**148.45**	**163**	*e*	PKP2	**PKPbc**		**01 17 13.0**	**-1.0**
PSI	**Prapat**	**148.45**	**163**	*e*	PKPdf	**PKPbc**		**01 17 13.0**	**-1.0**
TYV	**Tymovskoe**	**149.11**	**315**	*e*	PKHKP	PKPpre		01 17 12.2	
NKL	**Nikolayevsk**	**149.31**	**320**	*e*	PKP2	**PKPbc**		**01 17 15.0**	**+0.2**
NKL					pmax	pmax			
	comp=Z,17nm,1.0s								
HYB	**Hyderabad**	**149.42**	**114**	*i*	PKP	**PKPbc**		**01 17 16.0**	**-0.2**
KKAR	**Karatay Array**	**149.52**	**61**	*e*	PKP2	**PKPbc**		**01 17 15.7**	**0.0**
KKAR	**Karatay Array**	**149.52**	**61**	*e*	PKPbc	**PKPbc**		**01 17 15.7**	**0.0**
IPM	**Ipoh**	**150.54**	**167**	*e*	PKPbc	**PKPbc**		**01 17 18.4**	**-0.6**
KULM	**Kulim**	**151.25**	**165**	*e*	PKPbc	**PKPbc**		**01 17 20.7**	**0.0**
KULM				*e*	PKPab	**PKPab**		**01 17 29.6**	**+1.1**
EKS2	**Erkin-Say**	**151.96**	**61**	*e*	PKIKP	**PKPdf**		**01 17 16.2**	**+1.1**
EKS2				*e*				01 17 22.5	
EKS2	**Erkin-Say**	**151.96**	**61**	*e*	PKPdf	**PKPdf**		**01 17 16.2**	**+1.1**
EKS2				*e*	PKPbc	**PKiKP**		**01 17 22.5**	**+0.5**
AAK	**Ala-Archa**	**152.49**	**61**	*e*	PKIKP	**PKPdf**		**01 17 17.5**	**+1.5**
AAK	**Ala-Archa**	**152.49**	**61**	*e*	PKPdf	**PKPdf**		**01 17 17.5**	**+1.5**
FRU	**Bishkek**	**152.54**	**60**	*i*	PKIKP	**PKPbc**		**01 17 23.5**	**+0.7**
FRU				*e*				01 17 32.0	
FRU					pmax	pmax			
	comp=Z,36nm,1.5s								
NVS	**Novosibirsk**	**152.61**	**31**	*e*	PKIKP	**PKPdf**		**01 17 15.9**	**+0.4**
NVS					pmax	pmax			
	comp=E,12nm,1.3s								
NVS					pmax	pmax			
	comp=Z,27nm,1.3s								
KURK	**Kurchatov**	**152.66**	**42**	*e*	PKIKP	**PKPdf**		**01 17 15.6**	**-0.1**
KURK	**Kurchatov**	**152.66**	**42**	*e*	PKPdf	**PKPdf**		**01 17 15.6**	**-0.1**
TKM2	**Tokmak 2**	**153.24**	**60**	*e*	PKIKP	**PKPdf**		**01 17 17.6**	**+0.5**
TKM2				*e*				01 17 24.9	
TKM2	**Tokmak 2**	**153.24**	**60**	*e*	PKPdf	**PKPdf**		**01 17 17.6**	**+0.5**
TKM2				*e*	PKPbc	**PKiKP**		**01 17 24.9**	**+0.2**
ZAA1	**Zalesovo Array**	**153.90**	**31**	*e*	PKPdf	**PKPdf**		**01 17 17.1**	**-0.3**
ZAA1				*e*	PKPbc	**PKPbc**		**01 17 25.4**	**0.0**
ZAA1				*e*	PKPab	**PKPab**		**01 17 37.6**	**-1.0**
ZAA0	**Zalesovo Array**	**153.90**	**31**	*e*	PKPdf	**PKPdf**		**01 17 16.7**	**-0.7**
ZAA0				*e*	PKPdf	PKPbc		01 17 17.3	-8.1
ZALV	**Zalesovo Beam**	**153.90**	**31**		PKP	**PKPdf**		**01 17 17.1**	**-0.3**
	comp=Z,4.8nm,1.1s,baz=282,slow=2.9,SNR=12								
ZALV					PKPbc	**PKPbc**		**01 17 25.4**	**0.0**
	comp=Z,6.8nm,1.0s,baz=298,slow=3.2,SNR=16								
ZALV					PKPab	**PKPab**		**01 17 37.6**	**-1.0**
	comp=Z,6.3nm,1.0s,baz=292,slow=4.3,SNR=6.4								
KSH	**Kashi**	**153.92**	**67**		PKPbc	**PKPdf**		**01 17 19.1**	**+1.0**
KSH					PKS	**PKSdf**		**01 20 52.4**	**0.0**
KSH					SKS	**SKSdf**		**01 24 23.0**	**-0.3**
KSH					AMB	AMB			
	comp=Z,80nm,3.6s								
KSH					LR	LR			
	comp=Z,220nm,5.9s								
KSH					LR	LR			
	comp=Z,170nm,5.8s								
KSH					LR	LR			
	comp=Z,130nm,5.1s								
BOD	**Bodaibo**	**155.24**	**352**	*e*	PKP2	**PKPab**		**01 17 41.4**	**-2.8**
BOD					pmax	pmax			
	comp=Z,10.0nm,1.3s								
MAKZ	**Makanchi**	**156.40**	**48**	*e*	PKIKP	**PKPdf**		**01 17 21.5**	**+0.4**
MAKZ	**Makanchi**	**156.40**	**48**	*e*	PKPdf	**PKPdf**		**01 17 21.5**	**+0.4**
MK31	**Makanchi Array**	**156.60**	**48**	*e*	PKIKP	**PKPdf**		**01 17 21.3**	**-0.1**
MK31	**Makanchi Array**	**156.60**	**48**	*e*	PKPdf	**PKPdf**		**01 17 21.3**	**-0.1**
MK32	**Makanchi Array**	**156.60**	**48**	*e*	PKPdf	**PKPdf**		**01 17 21.1**	**-0.2**
MK32				*e*	PKPdif	PKPdf		01 17 31.1	+10
MK32				*e*	PKPab	**PKPab**		**01 17 50.6**	**+0.1**
MKAR	**Makanchi Array**	**156.60**	**48**		PKP	**PKPdf**		**01 17 21.1**	**-0.2**
	comp=Z,1.5nm,0.9s,baz=270,slow=2.4,SNR=8.6								
MKAR					PKPbc	PKPbc		01 17 31.1	
	comp=Z,3.1nm,1.1s,baz=349,slow=2.5,SNR=7.9								
MKAR					PKPab	**PKPab**		**01 17 50.6**	**+0.1**
	comp=Z,2.8nm,0.9s,baz=292,slow=3.8,SNR=7.8								
MK01	**Makanchi Array**	**156.62**	**48**	*e*	PKPdf	**PKPdf**		**01 17 20.8**	**-0.6**
WMQ	**Urumqi**	**161.34**	**50**	*e*	PKP	**PKPdf**		**01 17 26.9**	**-0.2**
WMQ					pPKP	pPKPdf		01 17 34.8	-0.9
WMQ					sPKP			01 17 40.1	
WMQ					PKPab	**PKPab**		**01 18 10.4**	**-0.8**
WMQ					AMB	AMB			
	comp=Z,20nm,11.0s								
WMQ					LR	LR			
	comp=Z,65nm,19.0s								
WMQ					LR	LR			
	comp=Z,66nm,19.0s								
WMQ					LR	LR			
	comp=Z,49nm,19.0s								
TLY	**Talaya**	**161.54**	**8**	*e*	PKIKP	PKPdf		01 17 36.6	+10
TLY				*e*				01 18 13.2	
TLY					pmax	pmax			
	comp=Z,6.0nm,1.4s								
ZAK	**Zakamensk**	**162.77**	**9**	*e*	PKP2	**PKPab**		**01 18 17.7**	**+0.5**
ZAK					pmax	pmax			
	comp=Z,5.0nm,1.6s								
CM31	**Chiang Mai Arr**	**163.17**	**150**	*e*	PKPdf	**PKPdf**		**01 17 29.4**	**-0.2**
CMAR	**Chiang Mai Arr**	**163.17**	**150**		PKP	**PKPdf**		**01 17 29.4**	**-0.2**
	comp=Z,1.5nm,0.3s,baz=204,slow=2.0,SNR=3.8								
CMAR	**Chiang Mai Arr**	**163.17**	**150**		PKIKP	**PKPdf**		**01 17 29.4**	**-0.2**
CMAR					pmax	pmax			
	comp=Z,1.0nm,0.3s								
SONA1	**Songino Array**	**165.58**	**3**	*e*	PKPab	**PKPab**		**01 18 30.9**	**+1.2**
ULN	**Ulaanbaatar**	**165.58**	**2**	*e*	PKP2	**PKPab**		**01 18 30.5**	**+0.8**
ULN	**Ulaanbaatar**	**165.58**	**2**	*e*	PKPab	**PKPab**		**01 18 30.5**	**+0.8**
SONA0	**Songino Array**	**165.59**	**3**	*e*	PKPab	**PKPab**		**01 18 30.2**	**+0.5**
SONM	**Songino Array**	**165.59**	**3**		PKPab	**PKPab**		**01 18 30.2**	**+0.5**
	comp=Z,2.4nm,0.7s,baz=353,slow=8.7,SNR=4.8								
KMI	**Kunming**	**170.68**	**152**		PKP	**PKPdf**		**01 17 35.6**	**+0.3**
KMI					pPKP	pPKPdf		01 17 39.3	-4.7
KMI					sPKP			01 17 40.8	
KMI					PP	**PP**		**01 22 41.0**	**-1.6**
KMI					SS	SS		01 43 48.0	+4.7
KMI					AMB	AMB			
	comp=Z,67nm,14.1s								
KMI					LR	LR			
	comp=Z,110nm,18.6s								
KMI					LR	LR			
	comp=Z,100nm,16.2s								
KMI					LR	LR			
	comp=Z,140nm,18.6s								
GTA	**Gaotai**	**171.34**	**44**		PKP	**PKPdf**		**01 17 35.9**	**+0.8**
GTA					PKPab	**PKPab**		**01 18 56.0**	**+0.5**
GTA					PP	**PP**		**01 22 46.8**	**+0.6**
GTA					SKS	**SKSdf**		**01 24 34.0**	**-2.9**
GTA					SKKS	**SKKSac**		**01 29 28.3**	**-3.2**
GTA					AMB	AMB			
	comp=Z,61nm,4.8s								
GTA					LR	LR			
	comp=Z,250nm,19.5s								
GTA					LR	LR			
	comp=Z,320nm,20.4s								
GTA					LR	LR			
	comp=Z,130nm,20.4s								
HHC	**Hu-ho-hao-te**	**171.97**	**338**	*e*	PKP	**PKPdf**		**01 17 34.1**	**-1.2**
HHC					PP	**PP**		**01 22 50.3**	**+1.7**
HHC					SKKS			01 29 36.4	
HHC					SS	**SS**		**01 43 55.4**	**-0.1**
HHC					AMB	AMB			
	comp=Z,62nm,10.8s								
HHC					LR	LR			
	comp=Z,170nm,19.0s								
HHC					LR	LR			
	comp=Z,170nm,19.8s								
HHC					LR	LR			
	comp=Z,220nm,19.4s								
GYA	**Guiyang**	**172.99**	**173**		PKP	**PKPdf**		**01 17 36.0**	**-0.2**
GYA					PKPab	**PKPab**		**01 19 05.3**	**+2.4**
GYA					PKS	**PKSdf**		**01 21 06.8**	**-1.9**
GYA					PP	**PP**		**01 22 56.4**	**+2.9**
GYA					AMB	AMB			
	comp=Z,130nm,8.4s								
CD2	**Chengdu**	**175.86**	**127**		PKP	**PKPdf**		**01 17 37.0**	**+0.1**
LZH	**Lanzhou**	**175.92**	**49**	*e*	PKP	**PKPdf**		**01 17 34.6**	**-2.3**
LZH					pPKP	pPKPdf		01 17 46.0	+0.4
LZH					sPKP			01 17 51.6	
LZH					LR	LR			
	comp=Z,110nm,12.2s								
LZH					LR	LR			
	comp=Z,210nm,12.9s								
LZH					LR	LR			
	comp=Z,190nm,14.4s								

*JMA **19** 01:00:00.4±0.2,38.°95N×142.°84E,h13km±2km,M3.6*
*NIED **19** 01:00:00,38.°90N×142.°80E,h5km,Mw3.8 Best double couple: M0 6.66000×10^14 NP1:φs 128.00000°, δ34.00000°, λ-78.00000°. NP2:φs 293.00000°, δ57.00000°, λ-98.00000°.*
*IDC **19** 01:00:08.2±4.4,38.°79N×142.°87E,h74km±41km,mb3.3/6, mb1 3.5/7,mb1mx3.2/44,mbtmp3.6/7,ML3.1/1,MS2.8/3, Ms1 2.8/3,ms1mx2.4/23,Error ellipse: s-maj=34.4km s-min=20.3km az=101.0*
ISC 19 00:59:59.4±2.4,38.°88N±0.°07×142.°79E±0.°08,h3km±14km, n25,σ0.°76/22,mb3.8/6,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
OFUJ	**Ofunato**	**0.90**	**283**	P	**Pb**	**01 00 18.0**	**+0.3**
OFUJ				S	**Sb**	**01 00 30.3**	**+0.2**
MIYJ	**Miyakonagasawa**	**1.03**	**313**	P	**Pg**	**01 00 18.8**	**-0.4**
JIO	**Ouri**	**1.21**	**250**	P	**Pn**	**01 00 23.3**	**+0.1**
JIO				S	**Sb**	**01 00 39.3**	**+0.4**
JMK	**Ichinoseki**	**1.23**	**274**	P	**Pb**	**01 00 23.4**	**+0.1**
JOM	**Ohasama**	**1.31**	**298**	P	**Pn**	**01 00 24.2**	**-0.5**
JOM				*e*S	**Sg**	**01 00 41.8**	**+0.3**
JKZ	**Kuzumaki**	**1.58**	**315**	P	**Pn**	**01 00 28.3**	**-0.2**
JKZ				*e*S	**Sn**	**01 00 48.8**	**-0.8**
JOU	**Okura**	**1.74**	**254**	P	**Pb**	**01 00 32.1**	**0.0**
JOU				S	**Sb**	**01 00 55.1**	**+0.7**
JRG	**Rokugo**	**1.76**	**288**	P	**Pb**	**01 00 32.4**	**+0.1**
JANG	**Nango**	**1.79**	**327**	P	**Pn**	**01 00 31.3**	**0.0**
JANG				*e*S	**Sn**	**01 00 53.7**	**-0.9**
JYK	**Kaneyama**	**1.90**	**272**	P	**Pb**	**01 00 34.3**	**-0.5**
MJAR	**Matsushiro Arr**	**4.32**	**239**	P	Pb	01 01 11.2	-4.8
	1.2nm,0.3s,baz=49,slow=10,SNR=10						
MJAR				LR	LR	01 02 52.7	
	comp=Z,110nm,19.0s,baz=80,slow=38						
ASAJ	**Asahikawa**	**5.24**	**358**	LR	LR	01 04 05.3	
	comp=Z,125nm,18.6s,baz=170,slow=44						
MA2	**Magadan**	**21.33**	**11**	LR	LR	01 14 21.2	
	comp=Z,18nm,19.3s,baz=82,slow=40						
SEY	**Seymchan**	**24.78**	**10**	P	**P**	**01 05 24.2**	**+2.0**
	0.7nm,0.3s,baz=224,slow=15,SNR=3.5						
H11N2	**WAKE ISLAND Hy 28.24**	**126**		T	T	01 35 24.4	
	baz=318,slow=75,SNR=56						
H11N1	**WAKE ISLAND Hy 28.25**	**126**		T	T	01 35 24.1	
	baz=318,slow=75,SNR=67						
H11N3	**WAKE ISLAND Hy 28.26**	**126**		T	T	01 35 24.3	
	baz=318,slow=75,SNR=71						
H11S1	**WAKE ISLAND Hy 29.03**	**128**		T	T	01 36 28.0	
	baz=320,slow=76,SNR=15						
H11S3	**WAKE ISLAND Hy 29.03**	**128**		T	T	01 36 28.2	
	baz=320,slow=76,SNR=15						
H11S2	**WAKE ISLAND Hy 29.05**	**128**		T	T	01 36 29.3	
	baz=320,slow=76,SNR=14						
ZALV	**Zalesovo Beam**	**41.51**	**311**	P	**P**	**01 07 48.3**	**+0.6**
	0.4nm,0.3s,baz=79,slow=7.7,SNR=3.5						
MKAR	**Makanchi Array**	**44.09**	**301**	P	**P**	**01 08 09.5**	**+0.7**
	1.0nm,0.7s,baz=83,slow=10.0,SNR=5.8						
ILAR	**Eielson Array**	**47.36**	**33**	P	**P**	**01 08 34.0**	**-0.4**
	0.4nm,0.9s,baz=260,slow=5.4,SNR=3.4						
WRA	**Warramunga Arr**	**59.04**	**189**	P	**P**	**01 10 00.6**	**-0.2**
	0.6nm,0.5s,baz=6.4,slow=7.1,SNR=4.6						
ASAR	**Alice Springs**	**62.77**	**189**	P	**P**	**01 10 24.6**	**-1.6**
	0.4nm,0.7s,baz=8.8,slow=7.9,SNR=4.3						

*CSEM **19** 01:17:33.9±0.2,39.°73N×38.°90E,h2km,MD2.6,Error ellipse: s-maj=4.0km s-min=3.1km az=102.0*
*ISK **19** 01:17:33.6,39.°73N×38.°89E,h9km,MD2.6*
*ISCJB **19** 01:17:34.1±0.4,39.°72N±0.°02×38.°92E±0.°03,h4km±4km, Error ellipse: s-maj=3.8km s-min=3.4km az=0.2*
*DDA **19** 01:17:34.2,39.°69N×38.°92E,h7km,Md2.6*
ISC 19 01:17:33.7±1.1,39.°73N±0.°02×38.°90E±0.°02,h7km±10km, n33,σ0.°60/58,Turkey

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
REFA	**Refahiye_ERZ¯**	**0.35**	**198**	*i* P	**Pg**	**01 17 39.8**	**-0.8**
REFA				*i* S	**Sg**	**01 17 43.6**	**-1.5**
REFA	**Refahiye_ERZ¯**	**0.35**	**198**	P	**Pg**	**01 17 39.8**	**-0.8**
REFA				S	**Sg**	**01 17 43.6**	**-1.5**
ILIC	**ilic-Erzincan**	**0.38**	**223**	*e*PG	**Pg**	**01 17 41.4**	**+0.3**
ILIC				*e*SG	**Sg**	**01 17 47.0**	**+1.0**
ILIC	**ilic-Erzincan**	**0.38**	**223**	*e*Pg	**Pg**	**01 17 41.4**	**+0.3**
ILIC				*e*Sg	**Sg**	**01 17 47.0**	**+1.0**
KELT	**Kelkit**	**0.50**	**33**	*i* P	**Pb**	**01 17 44.6**	**-0.5**
KELT				*i* S	**Sb**	**01 17 52.2**	**-0.5**
KELT	**Kelkit**	**0.50**	**33**	P	**Pb**	**01 17 44.6**	**-0.5**
KELT				S	**Sb**	**01 17 52.2**	**-0.5**
KEMA	**Kemaliye**	**0.56**	**215**	*i* P	**Pg**	**01 17 44.8**	**+0.3**
KEMA				*i* S	**Sg**	**01 17 52.3**	**+0.6**
KEMA	**Kemaliye**	**0.56**	**215**	P	**Pg**	**01 17 44.8**	**+0.3**
KEMA				S	**Sg**	**01 17 52.3**	**+0.6**
ERZN	**Erzincan**	**0.65**	**102**	*e*PG	**Pg**	**01 17 46.6**	**+0.3**
ERZN				*e*SG	**Sb**	**01 17 56.6**	**-0.2**
SUSE	**Susehri**	**0.72**	**312**	*i* P	**Pb**	**01 17 48.5**	**-0.3**
SUSE				*i* S	**Sb**	**01 17 59.8**	**+0.9**
SUSE	**Susehri**	**0.72**	**312**	P	**Pb**	**01 17 48.5**	**-0.3**
TNCL	**Tunceli-Merkez**	**0.79**	**141**	*i* P	**Pb**	**01 17 50.1**	**+0.3**
TNCL				*i* S	**Sg**	**01 17 59.8**	**+0.7**
TNCL	**Tunceli-Merkez**	**0.79**	**141**	P	**Pb**	**01 17 50.2**	**+0.3**
TNCL				S	**Sg**	**01 17 59.8**	**+0.7**
GUMT	**Gumushane**	**0.86**	**31**	*e*PG	**Pg**	**01 17 50.6**	**+0.4**
GUMT	**Gumushane**	**0.86**	**31**	*e*Pg	**Pg**	**01 17 50.6**	**+0.4**
CUZAR	**Zara_SIVAS**	**0.89**	**281**	*i* P	**Pg**	**01 17 50.7**	**-0.1**
CUZAR				*i* S	**Sn**	**01 18 05.7**	**-0.3**
CUZAR	**Zara_SIVAS**	**0.89**	**281**	P	**Pg**	**01 17 50.7**	**-0.1**
PTK	**Pertek**	**0.92**	**155**	*e*PG	**Pb**	**01 17 52.0**	**0.0**
PTK				*e*SG	**Sb**	**01 18 04.6**	**0.0**
PTK	**Pertek**	**0.92**	**155**	*e*Pg	**Pb**	**01 17 52.1**	**0.0**
PTK				*e*Sg	**Sb**	**01 18 04.6**	**0.0**
BAYT	**Ayd¯–ntepe-Bay**	**1.16**	**55**	*e*PN	**Pb**	**01 17 56.1**	**-0.2**
BAYT	**Ayd¯–ntepe-Bay**	**1.16**	**55**	*e*Pn	**Pb**	**01 17 56.1**	**-0.2**
CUKAN	**kangal_SIVAS**	**1.18**	**250**	*i* P	**Pb**	**01 17 56.3**	**-0.3**
CUKAN				*i* S	**Sn**	**01 18 14.1**	**+0.8**
CUKAN	**kangal_SIVAS**	**1.18**	**250**	P	**Pb**	**01 17 56.3**	**-0.3**
CUKAN				S	**Sn**	**01 18 14.1**	**+0.8**
ESPY	**Espiye-Giresun**	**1.20**	**354**	*e*PN	**Pg**	**01 17 57.0**	**+0.3**
ESPY				*e*SN	**Sn**	**01 18 13.6**	**+0.1**
ESPY	**Espiye-Giresun**	**1.20**	**354**	*e*Pn	**Pg**	**01 17 57.0**	**+0.3**
ESPY				*e*Sn	**Sn**	**01 18 13.6**	**+0.1**
ELZG	**Elazig**	**1.23**	**177**	*i* P	**Pn**	**01 17 56.8**	**-0.7**
ELZG				*i* S	**Sg**	**01 18 13.6**	**+0.3**
ELZG	**Elazig**	**1.23**	**177**	P	**Pn**	**01 17 56.8**	**-0.7**
ELZG				S	**Sg**	**01 18 13.6**	**+0.3**
SVRC	**Sivrice-ELAZID**	**1.38**	**167**	*e*PN	**Pg**	**01 18 00.5**	**+0.2**
SVRC				*e*SN	**Sg**	**01 18 18.8**	**+0.6**
SVRC	**Sivrice-ELAZID**	**1.38**	**167**	*e*Pn	**Pg**	**01 18 00.5**	**+0.2**
SVRC				*e*Sn	**Sg**	**01 18 18.8**	**+0.6**
SVSK	**Karacayir**	**1.48**	**278**	*e*PN	**Pb**	**01 18 01.3**	**-0.2**
SVSK	**Karacayir**	**1.48**	**278**	*e*Pn	**Pb**	**01 18 01.3**	**-0.2**
AKCD	**Akcadag**	**1.62**	**208**	*i* P	**Pg**	**01 18 04.6**	**-0.2**
AKCD				*i* S	**Sg**	**01 18 26.9**	**+1.2**
AKCD	**Akcadag**	**1.62**	**208**	P	**Pg**	**01 18 04.6**	**-0.2**
AKCD				S	**Sg**	**01 18 27.0**	**+1.2**

*IDC **19** 01:26:49.5±1.2,38.°30N×144.°66E,h0km,mb3.5/6, mb1 3.8/7,mb1mx3.6/27,mbtmp3.5/7,ML3.9/1,MS3.5/3, Ms1 3.4/3,ms1mx2.9/25,Error ellipse: s-maj=36.9km s-min=21.4km az=149.0*
*ISCJB **19** 01:26:52.4±0.7,38.°34N±0.°07×144.°53E±0.°05,h29km, mb3.5/6,MS3.9/2,Error ellipse: s-maj=10.8km s-min=5.8km az=173.8*
*JMA **19** 01:26:53.8±0.2,38.°38N×144.°44E,h36km,M4.2*
ISC 19 01:26:54.0±0.9,38.°37N±0.°09×144.°54E±0.°08,h29km,n22, σ0.°78/28,mb3.5/6,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
OFUJ	**Ofunato**	**2.35**	**289**	P	**Pn**	**01 27 30.4**	**-0.3**
JIO	**Ouri**	**2.50**	**273**	P	**Pn**	**01 27 32.4**	**-0.4**
JIO				S	**Sn**	**01 28 00.8**	**-1.5**
JTH	**Tanohata**	**2.60**	**308**	P	**Pn**	**01 27 33.6**	**-0.6**
JMK	**Ichinoseki**	**2.66**	**284**	P	**Pn**	**01 27 34.9**	**0.0**
JMK				S	**Sn**	**01 28 05.2**	**-1.0**
JOM	**Ohasama**	**2.76**	**295**	P	**Pn**	**01 27 36.5**	**+0.2**
JOM				S	**Sn**	**01 28 08.2**	**-0.5**
JMM	**Marumori**	**2.99**	**262**	P	**Pn**	**01 27 39.3**	**-0.2**
JMM				S	**Sn**	**01 28 12.9**	**-1.5**
JOU	**Okura**	**3.04**	**271**	P	**Pn**	**01 27 40.8**	**+0.6**
JOU				S	**Sn**	**01 28 15.9**	**+0.2**
JFK	**Kawauchi**	**3.06**	**252**	P	**Pn**	**01 27 39.7**	**-0.8**
JRG	**Rokugo**	**3.21**	**290**	P	**Pn**	**01 27 43.2**	**+0.7**
JRG				*e*S	**Sn**	**01 28 20.7**	**+0.8**
JYK	**Kaneyama**	**3.32**	**281**	P	**Pn**	**01 27 44.4**	**+0.4**
JYK				*e*S	**Sn**	**01 28 22.2**	**-0.2**
JFT	**Otama**	**3.42**	**257**	P	**Pn**	**01 27 45.3**	**-0.2**
JFT				S	**Sn**	**01 28 25.1**	**0.0**
MJAR	**Matsushiro Arr**	**5.35**	**252**	Pn	**Pn**	**01 28 12.6**	**+0.6**
	4.1nm,0.3s,baz=59,slow=9.0,SNR=24						
MJAR				Sn	**Sn**	**01 29 14.7**	**+2.1**
	1.2nm,0.3s,baz=83,slow=15,SNR=2.8						
MJAR				LR	LR	01 31 01.2	
	comp=Z,76nm,18.4s,baz=80,slow=47						
H11N2	**WAKE ISLAND Hy 26.84**	**127**		T	T	02 00 27.9	
	baz=319,slow=74,SNR=5.7						
H11N1	**WAKE ISLAND Hy 26.85**	**128**		T	T	02 00 30.8	
	baz=319,slow=74,SNR=4.5						
H11N3	**WAKE ISLAND Hy 26.86**	**127**		T	T	02 00 28.9	
	baz=319,slow=74,SNR=4.7						
ZALV	**Zalesovo Beam**	**42.87**	**311**	P	**P**	**01 34 50.4**	**+0.9**
	0.3nm,0.4s,baz=92,slow=8.1,SNR=2.3						
ZALV				PcP	**PcP**	**01 36 40.3**	**+0.3**
	0.3nm,0.4s,baz=92,slow=4.3,SNR=2.1						
MKAR	**Makanchi Array**	**45.52**	**302**	P	**P**	**01 35 10.8**	**0.0**
	0.1nm,0.4s,baz=81,slow=9.1,SNR=3.0						
ILAR	**Eielson Array**	**47.04**	**33**	P	**P**	**01 35 22.7**	**+0.2**
	0.6nm,0.8s,baz=261,slow=7.0,SNR=6.3						
WRA	**Warramunga Arr**	**58.78**	**191**	P	**P**	**01 36 48.9**	**-0.7**
	0.8nm,0.8s,baz=12,slow=7.1,SNR=2.9						
WRA				LR	LR	01 59 27.0	
	comp=Z,95nm,21.5s,baz=180,slow=33						
YKA	**Yellowknife Ar**	**61.40**	**31**	P	**P**	**01 37 06.7**	**-0.3**
	0.5nm,0.7s,baz=303,slow=6.7,SNR=14						
KBZ	**Khabaz**	**71.89**	**312**	LR	LR	02 14 57.1	
	comp=Z,57nm,18.6s,baz=281,slow=40						
PDAR	**Pinedale Array**	**74.96**	**47**	P	**P**

TUZ	**Tuapeka**	**3.29**	**222**	Pn	Pn	01 32 19.4	-1.3		
MLZ	**Mavora Lakes**	**3.80**	**240**	PN	Pn	01 32 26.2	-1.5		
MLZ				AML	AML	01 33 43.0			
MLZ				AML	AML	01 33 43.7			
MLZ	**Mavora Lakes**	**3.80**	**240**	Pn	Pn	01 32 26.2	-1.5		
SYZ	**Scrubby Hill**	**3.96**	**219**	PN	Pn	01 32 28.6	-1.1		
SYZ				AML	AML	01 33 46.1			
SYZ				AML	AML	01 33 56.4			
SYZ	**Scrubby Hill**	**3.96**	**219**	Pn	Pn	01 32 28.6	-1.1		
WHZ	**Wether Hill Ro**	**4.17**	**234**	AML	AML	01 33 54.3			
WHZ	**Wether Hill Ro**	**4.17**	**234**	*e*Pn	Pn	01 32 28.4	-4.3		
WHZ				*e*Pg	Pg	01 32 45.7	-2.9		
WHZ				*e*S	Sg	01 33 38.3	-4.3		
TSZ	**Takapari Road**	**4.21**	**36**	PN	Pn	01 32 31.2	-2.2		
PNHZ	**Pukenui**	**4.43**	**37**	PN	Pn	01 32 33.2	-3.2		
WHVZ	**Whangaehu Hut**	**4.75**	**28**	PN	Pn	01 32 40.0	-0.8		
TUVZ	**Tukino**	**4.78**	**28**	PN	Pn	01 32 39.8	-1.4		
TUVZ	**Tukino**	**4.78**	**28**	Pn	Pn	01 32 39.8	-1.4		
OTVZ	**Oturere**	**4.88**	**28**	*e*PN	Pn	01 32 40.1	-2.5		
OTVZ	**Oturere**	**4.88**	**28**	*e*Pn	Pn	01 32 40.1	-2.5		
HIZ	**Hauiti**	**5.26**	**18**	PN	Pn	01 32 46.2	-1.4		
HIZ	**Hauiti**	**5.26**	**18**	Pn	Pn	01 32 46.2	-1.4		
MWZ	**Matawai**	**6.32**	**36**	*e*PN	Pn	01 32 56.3	-6.0		
MWZ	**Matawai**	**6.32**	**36**	*e*Pn	Pn	01 32 56.3	-6.0		
MKAZ	**Moumakai**	**6.67**	**17**	PN	Pn	01 33 05.0	-2.1		
MKAZ	**Moumakai**	**6.67**	**17**	Pn	Pn	01 33 05.0	-2.1		
HAZ	**Te Kaha**	**6.91**	**35**	PN	Pn	01 33 06.1	-4.3		

WEL 19 01:31:44.6±0.1, 40°13′S×174°89′E, h26km±2km, ML2.5/12, Error ellipse: s-maj=2.1km s-min=0.8km az=90.0, Cook Strait

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
WAZ	**Wanganui**	**0.38**	**11**	*P*	Pb	01 31 52.9	0.0
OGWZ	**Otaki Gorge**	**0.72**	**163**	*P*	Pb	01 31 58.5	-0.1
OGWZ				*S*	Sb	01 32 08.2	0.0
KIW	**Kapiti Island**	**0.73**	**179**	*P*	Pb	01 31 58.3	-0.5
KIW				*S*	Sb	01 32 07.7	-0.8
MRZ	**Mangatainoka R**	**0.75**	**136**	*P*	Pb	01 31 59.2	+0.2
MRZ				*S*	Sb	01 32 09.4	+0.5
TSZ	**Takapari Road**	**0.82**	**86**	PN	Pb	01 32 00.0	-0.3
MTVZ	**Mangateitei**	**0.86**	**31**	PN	Pb	01 31 60.0	-1.1
MTVZ				AML	AML	01 32 14.1	
MTVZ				AML	AML	01 32 15.5	
HOWZ	**Holdsworth Sta**	**0.91**	**149**	PN	Pb	01 32 02.0	+0.3
WNVZ	**Wahianoa**	**0.96**	**34**	PN	Pn	01 32 01.3	-1.4
TRVZ	**Turoa**	**0.97**	**32**	PN	Pn	01 32 01.5	-1.2
MOVZ	**Moawhango**	**0.98**	**43**	PN	Pn	01 32 01.8	-0.9
VRZ	**Vera Road**	**1.00**	**354**	PN	Pn	01 32 03.0	0.0
FWVZ	**Far West T-bar**	**1.01**	**31**	AML	AML	01 32 17.6	
FWVZ				AML	AML	01 32 19.6	
PNHZ	**Pukenui**	**1.03**	**78**	PN	Pn	01 32 03.0	-0.3
TUVZ	**Tukino**	**1.04**	**35**	PN	Pn	01 32 02.8	-0.8
KHEZ	**Kahui Hut**	**1.07**	**321**	PN	Pb	01 32 04.5	-0.1
BHHZ	**Black Hill Sta**	**1.10**	**55**	PN	Pn	01 32 03.9	-0.5
MTW	**Mount Morrison**	**1.13**	**156**	PN	Pb	01 32 05.6	+0.1
OTVZ	**Oturere**	**1.13**	**32**	PN	Pn	01 32 04.5	-0.4
TCW	**Tory Channel**	**1.18**	**203**	PN	Pn	01 32 05.3	-0.1
TCW				AML	AML	01 32 42.3	
TCW				AML	AML	01 33 01.2	
TCW	**Tory Channel**	**1.18**	**203**	PN	Pn	01 32 05.1	-0.3
TCW	**Tory Channel**	**1.18**	**203**	Pn	Pn	01 32 05.3	-0.1
KRHZ	**Kereru**	**1.23**	**67**	PN	Pn	01 32 06.7	+0.5

NSSP ***19*** *01:36:21.9, 38°42N×45°23E, h15km, Ms3.2*
TEH ***19*** *01:36:24.5, 38°43N×45°03E, h20km, ML2.9*
AZER ***19*** *01:36:26.4±25.0, 38°60N×45°02E, h4km, Error ellipse: s-maj=11.5km s-min=7.6km az=250.0*
ISK ***19*** *01:36:27.0, 38°46N×45°01E, h5km, ML3.0*
CSEM ***19*** *01:36:28.6±0.3, 38°48N×44°94E, h2km, ML3.0, Error ellipse: s-maj=7.9km s-min=4.5km az=162.0*
ISC 19 01:36:25.9±1.1, 38°44N±0°03×45°24E±0°02, h14km±10km, n64, σ1°61/99, 18C-15D, Iran-Armenia-Azerbaijan border region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
ISHB	**Shabestar**	**0.34**	**117**	*e*Pg	**Pb**	**01 36 33.9**	**+0.1**
ISHB				*e*AMB	AMB	01 36 40.8	
	comp=Z,18μm,0.1s						
IMRD	**Marand**	**0.46**	**53**	*e*Pg	**Pb**	**01 36 35.7**	**-0.2**
IMRD				*e*AMB	AMB	01 36 44.9	
	comp=Z,26μm,0.1s						
IMRD	**Marand**	**0.46**	**53**	*e*Pg	**Pb**	**01 36 35.7**	**-0.2**
ITBZ	**Tabriz**	**0.74**	**105**	*e*Pg	**Pn**	**01 36 41.5**	**-0.6**
ITBZ				*e*Sg	**Sn**	**01 36 53.2**	**-0.1**
ITBZ				*e*AMB	AMB	01 36 54.5	
	comp=Z,3μm,0.1s						
ITBZ	**Tabriz**	**0.74**	**105**	*e*Pg	**Pn**	**01 36 41.5**	**-0.6**
ITBZ				*e*Sg	**Sn**	**01 36 53.2**	**-0.1**
NAX	**Nakhchivan**	**0.77**	**15**	⇑P	**Pb**	**01 36 40.7**	**-0.3**
	SNR=102						
NAX				⇑S	**Sb**	**01 36 51.7**	**+0.4**
NAX	**Nakhchivan**	**0.77**	**15**	P	**Pb**	**01 36 40.7**	**-0.3**
	SNR=102						
NAX				S	**Sb**	**01 36 51.7**	**+0.4**
CLDR	**Caldiran**	**1.25**	**305**	*e*PN	**Pg**	**01 36 49.0**	**-1.0**
CLDR				*e*SN	**Sb**	**01 37 05.1**	**-0.3**
CLDR	**Caldiran**	**1.25**	**305**	*e*Pn	**Pg**	**01 36 49.0**	**-1.0**
CLDR				*e*Sn	**Sb**	**01 37 05.1**	**-0.3**
VMUR	**Van-Muradiye**	**1.41**	**294**	*i* P	**Pg**	**01 36 52.0**	**-1.1**
VMUR				*i* S	**Sg**	**01 37 12.3**	**+0.7**
VMUR	**Van-Muradiye**	**1.41**	**294**	P	**Pg**	**01 36 52.0**	**-1.1**
TVAN	**Van**	**1.44**	**274**	*i* P	**Pg**	**01 36 52.7**	**-0.9**
TVAN				*i* S	**Sg**	**01 37 15.8**	**+3.5**
TVAN	**Van**	**1.44**	**274**	P	**Pg**	**01 36 52.7**	**-0.9**
VANB	**Van**	**1.46**	**277**	*e*PN	**Pg**	**01 36 52.5**	**-1.4**
VANB				*e*SN	**Sb**	**01 37 11.2**	**-0.1**
VANB	**Van**	**1.46**	**277**	*e*Pn	**Pg**	**01 36 52.5**	**-1.4**
VANB				*e*Sn	**Sb**	**01 37 11.2**	**-0.1**
IBST	**Bostanabad**	**1.50**	**119**	*e*Pg	**Pg**	**01 36 53.9**	**-0.9**
IBST				*e*AMB	AMB	01 37 21.2	
	comp=Z,979nm,0.2s						
IBST	**Bostanabad**	**1.50**	**119**	*e*Pg	**Pg**	**01 36 53.9**	**-0.9**
GEVA	**Gevas**	**1.71**	**267**	*i* P	**Pb**	**01 36 56.5**	**-0.8**
GEVA				*i* S	**Sg**	**01 37 24.2**	**+3.0**
GEVA	**Gevas**	**1.71**	**267**	P	**Pb**	**01 36 56.5**	**-0.8**
CUKT	**Cukurca**	**1.75**	**228**	*e*PN	**Pg**	**01 36 58.0**	**-1.6**
CUKT	**Cukurca**	**1.75**	**228**	*e*Pn	**Pg**	**01 36 58.0**	**-1.6**
GNI	**Garni**	**1.75**	**348**	⇓P	**Pn**	**01 36 56.6**	**+0.6**
GNI				S	**Sg**	**01 37 21.2**	**-1.2**
VADZ	**Vardenis**	**1.78**	**13**	S	**Sg**	**01 37 22.0**	**-1.2**
GDB	**GEDABAY**	**2.32**	**10**	⇑Pn	**Pb**	**01 37 06.1**	**-1.4**
	SNR=47						
GDB				⇑Sn	**Sb**	**01 37 37.9**	**+1.8**
GDB	**GEDABAY**	**2.32**	**10**	Pn	**Pb**	**01 37 06.1**	**-1.4**
	SNR=47						
GDB				Sn	**Sb**	**01 37 37.9**	**+1.8**
GANJ	**Ganja**	**2.36**	**21**	⇓Pn	**Pb**	**01 37 07.9**	**-0.3**
	SNR=39						
GANJ				⇑Sn	**Sg**	**01 37 40.5**	**-1.3**
GANJ	**Ganja**	**2.36**	**21**	Pn	**Pb**	**01 37 07.9**	**-0.3**
	SNR=39						
GANJ				Sn	**Sg**	**01 37 40.5**	**-1.3**
BRDA	**Brd**	**2.37**	**39**	⇓Pn	**Pg**	**01 37 10.1**	**-1.2**
	SNR=6.6						
BRDA				⇓Sn	**Sg**	**01 37 44.3**	**+2.3**
BRDA	**Brd**	**2.37**	**39**	Pn	**Pg**	**01 37 10.1**	**-1.2**
	SNR=6.6						
BRDA				Sn	**Sg**	**01 37 44.3**	**+2.3**
SIRN	**S¨–rnak**	**2.42**	**248**	*i* P	**Pb**	**01 37 07.8**	**-1.4**
SIRN	**S¨–rnak**	**2.42**	**248**	P	**Pb**	**01 37 07.8**	**-1.4**
LRK	**Lerik**	**2.44**	**84**	⇓Pn	**Pg**	**01 37 11.1**	**-1.7**
	SNR=16						
LRK				⇓Sn	**Sg**	**01 37 46.8**	**+2.3**
LRK	**Lerik**	**2.44**	**84**	Pn	**Pg**	**01 37 11.1**	**-1.7**
	SNR=16						
LRK				Sn	**Sg**	**01 37 46.8**	**+2.3**
EAK	**Akyaka**	**2.58**	**331**	*i* P	**Pb**	**01 37 11.0**	**-1.0**
EAK				*i* S	**Sg**	**01 37 51.4**	**+2.7**
EAK	**Akyaka**	**2.58**	**331**	P	**Pb**	**01 37 11.0**	**-1.0**
GLBA	**Clilabad**	**2.59**	**71**	⇑Pn	**Pg**	**01 37 14.7**	**-0.9**
	SNR=3.8						
GLBA				⇑Sn	**Sg**	**01 37 50.4**	**+1.1**
GLBA	**Clilabad**	**2.59**	**71**	Pn	**Pg**	**01 37 14.7**	**-0.9**
	SNR=3.8						
GLBA				Sn	**Sg**	**01 37 50.4**	**+1.1**
EKAR	**Karacoban**	**2.61**	**289**	*i* P	**Pg**	**01 37 17.9**	**+2.0**
QZX	**Qazax, Azerbai**	**2.62**	**2**	⇓Pn	**Pb**	**01 37 12.5**	**-0.1**
	SNR=19						
QZX				⇑Sn	**Sb**	**01 37 45.2**	**+0.5**
QZX	**Qazax, Azerbai**	**2.62**	**2**	Pn	**Pb**	**01 37 12.5**	**-0.1**
	SNR=19						
QZX				Sn	**Sb**	**01 37 45.2**	**+0.5**
LKRN	**Lenkeran, Azer**	**2.79**	**83**	⇑Pn	**Pg**	**01 37 17.4**	**-2.0**
	SNR=5.8						
LKRN				⇑Sn	**Sg**	**01 37 58.7**	**+3.1**
LKRN	**Lenkeran, Azer**	**2.79**	**83**	Pn	**Pg**	**01 37 17.4**	**-2.0**
	SNR=5.8						
LKRN				Sn	**Sg**	**01 37 58.7**	**+3.1**
ASTR	**Astara**	**2.79**	**86**	⇓Pn	**Pg**	**01 37 18.0**	**-1.4**
	SNR=8.9						
ASTR				⇓Sn	**Sg**	**01 37 59.5**	**+3.9**
ASTR	**Astara**	**2.79**	**86**	Pn	**Pg**	**01 37 18.0**	**-1.4**
	SNR=8.9						
ASTR				Sn	**Sg**	**01 37 59.5**	**+3.9**
DGRG	**David-gareji**	**3.01**	**2**	P	**Pb**	**01 37 20.2**	**+0.8**
SEKA	**Sheki**	**3.16**	**28**	⇓Pn	**Pb**	**01 37 22.1**	**+0.3**
	SNR=21						
SEKA				⇓Sn	**Sb**	**01 38 02.3**	**+2.2**
SEKA	**Sheki**	**3.16**	**28**	Pn	**Pb**	**01 37 22.1**	**+0.3**
	SNR=21						
SEKA				Sn	**Sb**	**01 38 02.3**	**+2.2**
IML	**Ismayilli**	**3.27**	**43**	⇑Pn	**Pb**	**01 37 23.4**	**-0.4**
IML				⇑Sn	**Sb**	**01 38 06.0**	**+2.5**
IML	**Ismayilli**	**3.27**	**43**	Pn	**Pb**	**01 37 23.4**	**-0.4**
IML				Sn	**Sb**	**01 38 06.0**	**+2.5**
TBLG	**Delisi**	**3.31**	**354**	P	**Pg**	**01 37 28.8**	**-0.6**
ZKTA	**Zakatala**	**3.37**	**18**	⇑Pn	**Pb**	**01 37 22.5**	**-3.0**
PQL	**Pirkuli**	**3.50**	**47**	⇓Pn	**Pb**	**01 37 25.4**	**-2.3**
PQL	**Pirkuli**	**3.50**	**47**	Pn	**Pb**	**01 37 25.4**	**-2.3**
XNQ	**Khinaliq**	**3.53**	**38**	⇑Pn	**Pb**	**01 37 26.4**	**-1.9**
XNQ				⇑Sn	**Sb**	**01 38 11.9**	**+0.8**
XNQ	**Khinaliq**	**3.53**	**38**	Pn	**Pb**	**01 37 26.4**	**-1.9**
XNQ				Sn	**Sb**	**01 38 11.9**	**+0.8**
GBS	**Qobustan**	**3.55**	**53**	⇓Pn	**Pb**	**01 37 27.0**	**-1.5**
GBS				⇑Sn	**Sb**	**01 38 11.9**	**+0.4**
GBS	**Qobustan**	**3.55**	**53**	Pn	**Pb**	**01 37 27.0**	**-1.5**
GBS				Sn	**Sb**	**01 38 11.9**	**+0.4**
QUBA	**Quba, Azerbaij**	**3.84**	**40**	⇑Pn	Pb	01 37 29.6	-3.9
QUBA	**Quba, Azerbaij**	**3.84**	**40**	Pn	Pb	01 37 29.6	-3.9
QSAR	**Qusar**	**3.86**	**36**	⇓Pn	Pb	01 37 29.3	-4.4
SIZA	**Siyzn**	**3.86**	**46**	⇓Pn	**Pb**	**01 37 31.2**	**-2.7**
SIZA				⇑Sn	**Sb**	**01 38 19.0**	**-1.5**
SIZA	**Siyzn**	**3.86**	**46**	Pn	**Pb**	**01 37 31.2**	**-2.7**
SIZA				Sn	**Sb**	**01 38 19.0**	**-1.5**
GUDG	**Gudauri**	**4.07**	**352**	P	Pg	01 37 40.5	-3.3
ONI	**Oni**	**4.37**	**342**	P	**Pb**	**01 37 43.5**	**+1.1**

IDC 19 01:45:04.2±2.5, 21°19S×68°21W, h164km±23km, mb3.6/1, mb1 3.5/3, mb1mx3.2/16, mbtmp3.8/3, Error ellipse: s-maj=110.4km s-min=20.6km az=92.0, Chile-Bolivia border region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
LPAZ	**La Paz**	**4.88**	**1**	P	Pn	01 46 16.7	-0.2
	5.2nm,0.3s,baz=188,slow=15,SNR=107						
LPAZ				S	Sn	01 47 14.1	+0.5
	baz=172,slow=7.1,SNR=1.4						
PLCA	**Paso Flores**	**19.58**	**185**	P	P	01 49 19.9	+0.2
	0.1nm,0.3s,baz=355,slow=12,SNR=3.6						
YKA	**Yellowknife Ar**	**91.11**	**340**	P	P	01 57 49.8	+0.1
	0.5nm,0.6s,baz=134,slow=4.6,SNR=22						
MKAR	**Makanchi Array**	**145.00**	**36**	PKPbc	PKPbc	02 04 20.6	-1.1
	1.0nm,0.7s,baz=316,slow=3.3,SNR=8.5						

IDC 19 01:53:17.1±63.0, 13°30S×168°59E, h0km, mb3.8/3, mb1 4.0/3, mb1mx3.6/26, mbtmp3.8/3, MS3.7/1, Ms1 3.7/1, ms1mx2.9/32, Error ellipse: s-maj=1078.0km s-min=117.6km az=64.0, Vanuatu Islands

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
STKA	**Stephens Creek**	**30.89**	**229**	P	P	01 59 35.5	0.0
	0.5nm,0.3s,baz=54,slow=8.7,SNR=3.4						
WRA	**Warramunga Arr**	**33.43**	**254**	P	P	01 59 58.2	+0.2
	0.4nm,0.6s,baz=85,slow=8.8,SNR=5.5						
ASAR	**Alice Springs**	**34.39**	**247**	P	P	02 00 06.0	-0.3
	0.8nm,0.3s,baz=75,slow=9.4,SNR=15						
TGY	**Tagaytay City**	**54.49**	**298**	LR	LR	02 23 12.0	
	comp=Z,81nm,21.3s,baz=14,slow=33						

IDC ***19*** *02:00:07.7±3.4, 15°93N×97°47W, h0km, mb3.7/7, mb1 4.1/8, mb1mx3.8/33, mbtmp3.7/8, Error ellipse: s-maj=102.0km s-min=27.9km az=39.0*
NEIC ***19*** *02:00:10.2, 15°70N×99°26W, h19km±24km, MD4.1 MD4.1(MEX), After MEX.*
MEX ***19*** *02:00:10.2±0.5, 15°70N×99°26W, h19km±24km, MD4.1*
ISC 19 02:00:15.5±1.5, 16°3N±0°1×98°96W±0°07, h16km, n18, σ0°84/21, mb3.9/8, Near coast of Guerrero

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
PNIG	**Pinotepa**	**0.80**	**85**	*e*P	**Pb**	**02 00 30.4**	**-0.8**
PNIG				*e*S	**Sn**	**02 00 45.2**	**+1.4**
PNIG	**Pinotepa**	**0.80**	**85**	*e*P	**Pb**	**02 00 30.4**	**-0.8**
PNIG				*e*S	**Sn**	**02 00 45.2**	**+1.4**
TLIG	**Tlapa**	**1.28**	**17**	*e*P	**Pb**	**02 00 39.1**	**-0.3**
TLIG				*e*S	Sg	02 01 03.1	+6.0
VHO	**Vista Hermosa**	**2.26**	**71**	*e*P	**Pn**	**02 00 52.0**	**-0.5**
VHO				*e*S	**Sb**	**02 01 23.5**	**-0.4**
VHO	**Vista Hermosa**	**2.26**	**71**	*e*P	**Pn**	**02 00 52.0**	**-0.5**
VHO				*e*S	**Sb**	**02 01 23.5**	**-0.4**
TEIG	**Tepich**	**10.86**	**67**	*e*Pn	**Pn**	**02 02 52.0**	**+1.6**
TEIG				*e*S	**Sn**	**02 04 51.5**	**-0.3**
TXAR	**Lajitas Array**	**13.65**	**342**	Pn	**P**	**02 03 36.4**	**-0.9**
	baz=157,slow=13,SNR=7.1						
TXAR				Lg	Lg	02 07 37.9	
	0.0nm,0.3s,baz=162,slow=29,SNR=3.2						
NATX	**Nacogdoches**	**15.85**	**14**	*e*Pn	**P**	**02 04 01.3**	**-0.5**
MSTX	**Muleshoe**	**17.90**	**350**	P	**P**	**02 04 24.2**	**-0.3**
	11nm,1.2s						
ANMO	**Albuquerque**	**19.72**	**341**	P	**Pn**	**02 04 46.5**	**+0.4**
	1.1nm,0.9s,baz=148,slow=12,SNR=3.7						
SMCO	**Snowmass**	**23.82**	**344**	*e*P	**P**	**02 05 29.0**	**+0.8**
	7.6nm,1.3s						
NVAR	**Mina Array Bea**	**27.81**	**326**	P	P	02 06 10.0	+5.7
	0.6nm,0.7s,baz=122,slow=8.6,SNR=4.4						
PDAR	**Pinedale Array**	**27.87**	**343**	P	**P**	**02 06 05.3**	**+0.5**
	0.3nm,0.3s,baz=155,slow=12,SNR=6.6						
SDV	**Santo Domingo**	**28.59**	**102**	P	P	02 05 52.4	-19
	10nm,0.4s,baz=303,slow=1.3,SNR=3.1						
ULM	**Lac du Bonnet**	**33.93**	**4**	P	**P**	**02 06 56.5**	**-1.2**
	1.6nm,0.5s,baz=185,slow=8.9,SNR=2.9						
YKA	**Yellowknife Ar**	**47.41**	**350**	P	**P**	**02 08 48.9**	**0.0**
	0.7nm,0.9s,baz=160,slow=7.5,SNR=13						
INK	**Inuvik**	**56.40**	**345**	P	**P**	**02 09 56.3**	**+0.5**
	1.5nm,0.9s,baz=123,slow=5.9,SNR=6.0						
ILAR	**Eielson Array**	**58.12**	**338**	P	**P**	**02 10 08.8**	**+0.7**
	0.9nm,1.0s,baz=142,slow=5.1,SNR=8.0						

MEX 19 02:06:31.2±0.6, 16°52N×92°85W, h12km±999km, MD3.8, Chiapas

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
CCIG	**Comitan**	**0.72**	**109**	*i* P	Pg	02 06 41.0	-4.3
PCIG		**0.89**	**204**	*e*P	Pg	02 06 45.5	-2.9
PCIG				*e*S	Sg	02 06 56.8	-3.1

IDC ***19*** *02:12:13.7±8.2, 35°98N×142°53E, h0km, mb3.5/2, mb1 3.5/3, mb1mx3.2/43, mbtmp3.4/3, ML3.5/1, Error ellipse: s-maj=188.3km s-min=55.9km az=170.0*
JMA ***19*** *02:12:20.8±0.3, 36°64N×142°00E, h16km±4km, M3.6*
ISC 19 02:12:21.9±3.2, 36°79N±0°08×141°9E±0°1, h9km±15km, n15, σ0°74/22, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.94**	**290**	P	**Pn**	**02 12 41.0**	**-0.4**
JFK	**Kawauchi**	**1.00**	**306**	P	**Pg**	**02 12 41.6**	**+0.4**
JHO	**Hitachi**	**1.08**	**261**	P	**Pb**	**02 12 41.4**	**-1.4**
JHO				*e*S	**Sg**	**02 12 57.0**	**+0.2**
JMM	**Marumori**	**1.39**	**321**	P	**Pn**	**02 12 47.8**	**+0.2**
JMM				*e*S	**Sg**	**02 13 07.4**	**+0.7**
JFT	**Otama**	**1.45**	**301**	P	**Pb**	**02 12 49.1**	**0.0**
JIO	**Ouri**	**1.72**	**345**	P	**Pb**	**02 12 53.2**	**-0.5**
JIO				*e*S	**Sb**	**02 13 15.0**	**-0.5**
JOU	**Okura**	**1.86**	**328**	P	**Pb**	**02 12 55.8**	**-0.3**
JOU				*e*S	**Sg**	**02 13 20.6**	**-1.0**
JFY	**Yanaizu**	**1.86**	**290**	P	**Pb**	**02 12 55.7**	**-0.4**
JYS	**Shirataka**	**2.04**	**315**	P	**Pb**	**02 12 58.3**	**-0.9**
JYS				*e*S	**Sb**	**02 13 25.2**	**+0.4**
JKT	**Katashina**	**2.13**	**270**	P	**Pn**	**02 12 58.1**	**+0.3**
JKT				*e*S	**Sb**	**02 13 26.2**	**-1.1**
BSO1	**Boso 1**	**2.26**	**200**	P	Pn	02 12 56.4	-2.5
MJAR	**Matsushiro Arr**	**2.98**	**266**	Pn	**Pn**	**02 13 10.2**	**+0.8**
	3.9nm,0.3s,baz=99,slow=9.4,SNR=36						
MJAR				Sn	**Sb**	**02 13 51.9**	**+0.2**
	1.7nm,0.3s,baz=115,slow=14,SNR=3.7						
MAT	**Matsushiro**	**2.98**	**266**	P	**Pn**	**02 13 10.5**	**+1.1**
MAT				S	**Sb**	**02 13 52.1**	**+0.4**
ZALV	**Zalesovo Beam**	**42.37**	**313**	P	**P**	**02 20 17.0**	**+0.8**
	0.3nm,0.3s,baz=84,slow=13,SNR=2.8						
MKAR	**Makanchi Array**	**44.58**	**302**	P	**P**	**02 20 33.9**	**-0.4**
	0.2nm,0.6s,baz=91,slow=9.7,SNR=4.1						

ISCJB ***19*** *02:16:08.1±0.4, 5°90S±0°04×147°15E±0°06, h78km, mb4.5/26, Error ellipse: s-maj=7.9km s-min=5.7km az=174.1*
DJA ***19*** *02:16:11.3±1.1, 6°S±7°×14°7E±1°2, h110km±7km, M4.8/4, mB5.5/1, mb5.4/4, MLv4.5/1, Mw(mB)5.0/1*
BJI ***19*** *02:16:11.6, 6°38S×146°36E, h100km, mb4.7/14, mB4.8/7*
IDC ***19*** *02:16:11.2±1.8, 5°83S×147°04E, h94km±14km, mb4.0/9, mb1 4.2/13, mb1mx3.8/41, mbtmp4.3/13, MS3.2/3, Ms1 3.2/3, ms1mx2.7/40, Error ellipse: s-maj=17.9km s-min=13.9km az=109.0*
NEIC ***19*** *02:16:12.1±1.0, 5°85S×147°02E, h103km±9km, mb4.6/11, Error ellipse: s-maj=10.1km s-min=7.1km az=94.0*
ISC 19 02:16:09.9±0.5, 5°95S±0°05×147°15E±0°07, h78km, n56, σ2°25/65, mb4.5/25, Eastern New Guinea region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
PMG	**Port Moresby**	**3.44**	**180**	P	**Pn**	**02 17 03.6**	**+2.4**
	22nm,0.3s,baz=37,slow=8.3,SNR=49						
PMG				S	**Sn**	**02 17 43.4**	**+2.5**
	61nm,0.3s,baz=42,slow=23,SNR=12						
PMG	**Port Moresby**	**3.44**	**180**	*e*Pn	**Pn**	**02 17 03.5**	**+2.4**
PMG				*e*Sn	**Sn**	**02 17 39.1**	**-1.7**
JAY	**Jayapura**	**7.27**	**298**	P	**Pn**	**02 17 54.3**	**+0.7**
	0.9nm,0.3s,baz=145,slow=22,SNR=14						
JAY				S	**Sn**	**02 19 15.9**	**+1.2**
	baz=343,slow=19,SNR=1.3						
JAY	**Jayapura**	**7.27**	**298**	P	**Pn**	**02 17 55.4**	**+1.8**
GENI	**Genyem**	**7.71**	**295**	P	**Pn**	**02 18 04.0**	**+4.4**
COEN	**Coen**	**8.87**	**206**	*e*Pn	**Pn**	**02 18 16.7**	**+1.4**
COEN				*e*S	**Sn**	**02 19 49.8**	**-3.9**
HNR	**Honiara**	**13.15**	**106**	LR	LR	02 23 44.4	
	comp=Z,34nm,18.2s,baz=186,slow=34						
CTA	**Charters Tower**	**14.08**	**183**	P	**P**	**02 19 29.8**	**-1.4**
	0.4nm,0.3s,baz=353,slow=13,SNR=3.6						
CTAO	**Charters Tower**	**14.08**	**183**	*e*Pn	**P**	**02 19 30.2**	**-1.0**
SWI	**Sorong**	**16.64**	**287**	P	**Pn**	**02 19 58.7**	**+0.3**
MTN	**Manton Dam**	**17.21**	**245**	*e*P	**Pn**	**02 20 01.1**	**-4.3**
	108nm,1.6s						
WRAB	**Tennant Creek**	**18.66**	**221**	*e*P	**P**	**02 20 21.3**	**-0.5**
	26nm,0.6s						
WB2	**Warramunga Arr**	**18.66**	**221**	*e*P	**P**	**02 20 21.6**	**-0.2**
	23nm,0.7s						
WRA	**Warramunga Arr**	**18.67**	**221**	P	**P**	**02 20 21.6**	**-0.3**
	2.4nm,0.3s,baz=42,slow=12,SNR=80						
WRA				S	**Sn**	**02 23 55.3**	**+3.6**
	0.1nm,0.3s,baz=45,slow=21,SNR=2.7						
WRA				PcP	**PcP**	**02 24 48.0**	**+0.4**
	0.1nm,0.3s,baz=27,slow=1.8,SNR=4.2						
WRA				ScP	**ScP**	**02 28 13.7**	**-2.8**
	0.0nm,0.3s,baz=42,slow=2.2,SNR=3.4						
GUMO	**Guam**	**19.54**	**353**	*e*P	**P**	**02 20 32.0**	**+0.6**

CCB	**Clear Creek Bu**	**84.96**	**23**	*eP*		**P**	**02 28 34.6**	**-1.6**
	2.9nm,0.7s							
COLD	**Coldfoot**	**85.23**	**20**	*eP*		**P**	**02 28 37.7**	**+0.2**
	2.2nm,0.9s							
IL1	**Eielson Array**	**85.38**	**23**	*eP*		**P**	**02 28 35.9**	**-2.4**
ILAR	**Eielson Array**	**85.38**	**23**	P		**P**	**02 28 36.2**	**-2.1**
	3.6nm,0.6s,baz=251,slow=5.1,SNR=45							
ILB	**Eielson Array**	**85.38**	**23**	*eP*		**P**	**02 28 36.2**	**-2.1**
DOT	**Dot Lake**	**86.07**	**25**	*eP*		**P**	**02 28 40.5**	**-1.3**
	6.2nm,0.8s							
JCC	**Jacoby Creek,**	**92.95**	**49**	*eP*		**P**	**02 29 15.4**	**+0.7**
	61nm,0.8s							
KHMM	**Horse Mountain**	**93.18**	**49**	*eP*		P	02 29 11.3	-4.7
YKA	**Yellowknife Ar**	**99.06**	**28**	P		**Pdif**	**02 29 41.1**	**-0.8**
	0.3nm,0.8s,baz=278,slow=4.5,SNR=5.1							
PLCA	**Paso Flores**	**122.09**	**147**	PKP		**PKPdf**	**02 34 56.3**	**+0.2**
	1.7nm,0.7s,baz=299,slow=1.6,SNR=8.7							
LPAZ	**La Paz**	**138.69**	**123**	PKP		**PKPdf**	**02 35 27.7**	**-1.1**
	1.6nm,0.8s,baz=270,slow=3.0,SNR=5.5							

JMA 19 02:19:48.6±0.1, 38°.03N×141°.88E, h49km±1km, M3.7, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**0.59**	**316**	P	Pn	02 20 01.1	+0.1
JIO				S	Sn	02 20 09.9	+0.1
JMM	**Marumori**	**0.88**	**260**	P	Pn	02 20 04.7	+0.1
JMM				S	Sn	02 20 16.7	+0.4
JOU	**Okura**	**1.01**	**290**	P	Pn	02 20 06.8	+0.3
JOU				S	Sn	02 20 20.3	+0.6
JFK	**Kawauchi**	**1.04**	**231**	P	Pn	02 20 06.8	0.0
JFK				S	Sn	02 20 19.8	-0.5
JMK	**Ichinoseki**	**1.06**	**331**	P	Pn	02 20 07.4	+0.4
JMK				S	Sn	02 20 20.8	+0.1
JFT	**Otama**	**1.32**	**248**	P	Pn	02 20 11.6	+0.9
JFT				S	Sn	02 20 28.4	+1.1
JYS	**Shiratake**	**1.44**	**278**	P	Pn	02 20 13.0	+0.7
JYS				*eS*	Sn	02 20 30.9	+0.8
JYK	**Kaneyama**	**1.49**	**307**	P	Pn	02 20 13.4	+0.5
JOM	**Ohasama**	**1.51**	**342**	P	Pn	02 20 14.0	+0.7
JOM				*eS*	Sn	02 20 32.6	+0.8
JRG	**Rokugo**	**1.68**	**325**	P	Pn	02 20 16.4	+0.9
JYA	**Atsumi**	**1.79**	**289**	P	Pn	02 20 17.8	+0.7
JFY	**Yanaizu**	**1.83**	**251**	P	Pn	02 20 18.8	+1.1

JMA 19 02:21:57.3±0.1, 38°.75N×142°.19E, h37km±2km, M3.7, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**0.52**	**309**	P	Pn	02 22 08.2	-0.1
OFUJ				S	Sn	02 22 15.7	-0.3
JIO	**Ouri**	**0.72**	**246**	P	Pn	02 22 10.8	-0.2
JIO				S	Sn	02 22 20.0	-0.7
JMK	**Ichinoseki**	**0.78**	**285**	P	Pn	02 22 12.0	+0.2
JMK				S	Sn	02 22 22.3	0.0
JOM	**Ohasama**	**1.00**	**316**	P	Pn	02 22 15.3	+0.5
JOM				S	Sn	02 22 28.1	+0.4
JOU	**Okura**	**1.26**	**253**	P	Pn	02 22 18.9	+0.6
JOU				S	Sn	02 22 34.8	+0.8
JRG	**Rokugo**	**1.37**	**299**	P	Pn	02 22 20.8	+0.9
JMM	**Marumori**	**1.41**	**232**	P	Pn	02 22 20.6	+0.2
JYK	**Kaneyama**	**1.44**	**277**	P	Pn	02 22 22.0	+1.2

JMA 19 02:22:50.5±0.3, 28°.09N×128°.05E, h15km±3km, M2.9, Ryukyu Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JTK	**Tokunoshima**	**0.85**	**111**	P	Pb	02 23 06.5	-0.5
JTK				*eS*	Sb	02 23 17.9	-0.4
JOKE	**Okinoerabujima**	**0.86**	**147**	P	Pb	02 23 06.9	-0.3
JAMN	**Amaminishikomi**	**1.00**	**81**	P	Pb	02 23 09.3	-0.3
JAMN				*eS*	Sb	02 23 25.4	-0.1
JIH	**Iheya**	**1.05**	**184**	P	Pb	02 23 09.8	-0.6
JIH				*eS*	Sb	02 23 24.1	+0.1
JOW	**Kunigami**	**1.27**	**171**	P	Pn	02 23 13.6	-0.1
JOW				*eS*	Sb	02 23 30.0	-0.3
JOW	**Kunigami**	**1.27**	**171**	*eP*	Pn	02 23 13.4	-0.3
	183nm,0.8s						
JAM	**Amami Oshima**	**1.41**	**77**	P	Pb	02 23 16.2	-0.3

NIED ***19*** *02:26:00.39°.20N×142°.30E, h47km, Mw3.9 Best double couple: M₀9.17000×10¹⁴ NP1:φs330.00000°, δ22.00000°, λ-147.00000°. NP2:φs209.00000°, δ78.00000°, λ-71.00000°.*

ISCJB ***19*** *02:26:51.6±0.9, 39°.15N±0°.04×142°.3E±0°.1, h48km±7km, mb3.5/13, Error ellipse: s-maj=13.6km s-min=6.4km az=14.1*

JMA ***19*** *02:26:51.1±0.1, 39°.16N×142°.34E, h37km±1km, M3.9*

JMA Felt I J1.

IDC ***19*** *02:26:51.8±0.7, 39°.02N×142°.23E, h38km±6km, mb3.4/13, mb1 3.6/15, mb1mx3.5/44, mbtmp3.6/15, ML3.0/2, MS2.8/3, Ms1 2.8/3, ms1mx2.5/36, Error ellipse: s-maj=20.6km s-min=16.2km az=103.0*

ISC 19 02:26:52.0±0.7, 39°.12N±0°.05×142°.2E±0°.1, h38km±3km, n32, σ0°99/34, mb3.6/13, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**0.44**	**265**	P	**Pn**	**02 27 02.0**	**+0.3**
OFUJ				*eS*	**Sn**	**02 27 09.6**	**+1.0**
MIYJ	**Miyakonagasawa**	**0.56**	**325**	P	**Pn**	**02 27 02.6**	**-0.9**
MIYJ				S	**Sn**	**02 27 10.7**	**-0.8**
JMK	**Ichinoseki**	**0.81**	**258**	P	**Pn**	**02 27 07.4**	**+0.6**
JMK				S	**Sn**	**02 27 19.2**	**+1.6**
JOM	**Ohasama**	**0.81**	**296**	P	**Pn**	**02 27 07.2**	**+0.3**
JOM				S	**Sn**	**02 27 18.3**	**+0.6**
JTH	**Tanohata**	**0.86**	**341**	P	**Pn**	**02 27 06.8**	**-0.8**
JTH				S	**Sn**	**02 27 18.4**	**-0.7**
JIO	**Ouri**	**0.96**	**226**	P	**Pn**	**02 27 08.9**	**0.0**
JIO				S	**Sn**	**02 27 21.8**	**+0.5**
JKZ	**Kuzumaki**	**1.11**	**321**	P	**Pn**	**02 27 11.4**	**+0.4**
JKZ				S	**Sn**	**02 27 25.8**	**+0.7**
MJAR	**Matsushiro Arr**	**4.09**	**232**	Pn	Pn	02 27 55.4	+3.4
	2.5nm,0.3s,baz=38,slow=11,SNR=41						
MJAR				LR	LR	02 29 43.8	
	comp=Z,113nm,19.5s,baz=45,slow=43						
MAT	**Matsushiro**	**4.10**	**232**	P	Pn	02 27 56.5	+4.4
MAT				*eS*	Sn	02 28 45.4	+6.7
ASAJ	**Asahikawa**	**5.00**	**3**	Pn	**Pn**	**02 28 07.1**	**+2.7**
	1.2nm,0.3s,baz=204,slow=19,SNR=2.6						
ASAJ				LR	LR	02 30 31.7	
	comp=Z,74nm,19.5s,baz=147,slow=43						
USRK	**Ussuriysk Ar.**	**9.19**	**307**	Pn	**Pn**	**02 29 04.1**	**+2.3**
	0.2nm,0.3s,baz=103,slow=13,SNR=4.5						
PETK	**Petropavlovsk-**	**17.57**	**32**	LR	LR	02 36 35.3	
	comp=Z,44nm,21.9s,baz=324,slow=33						
SEY	**Seymchan**	**24.62**	**11**	P	**P**	**02 32 09.4**	**+1.0**
	0.7nm,0.3s,baz=181,slow=7.2,SNR=3.6						
SONM	**Songino Array**	**27.22**	**300**	P	**P**	**02 32 32.3**	**0.0**
	0.4nm,0.5s,baz=79,slow=7.5,SNR=2.5						
H11N2	**WAKE ISLAND Hy**	**28.74**	**125**	T	T	03 03 17.2	
	baz=318,slow=75,SNR=26						
H11N1	**WAKE ISLAND Hy**	**28.75**	**125**	T	T	03 03 17.2	
	baz=318,slow=75,SNR=30						
H11N3	**WAKE ISLAND Hy**	**28.76**	**125**	T	T	03 03 17.2	
	baz=318,slow=75,SNR=20						
H11S1	**WAKE ISLAND Hy**	**29.53**	**127**	T	T	03 04 16.1	
	baz=319,slow=76,SNR=13						
H11S3	**WAKE ISLAND Hy**	**29.53**	**127**	T	T	03 04 16.1	
	baz=319,slow=76,SNR=15						
H11S2	**WAKE ISLAND Hy**	**29.54**	**127**	T	T	03 04 16.1	
	baz=319,slow=76,SNR=13						
ZALV	**Zalesovo Beam**	**41.02**	**311**	P	**P**	**02 34 31.2**	**+0.1**
	1.3nm,0.6s,baz=86,slow=9.4,SNR=5.9						
MKAR	**Makanchi Array**	**43.59**	**300**	P	**P**	**02 34 52.5**	**+0.3**
	1.5nm,0.8s,baz=83,slow=9.1,SNR=13						
ILAR	**Eielson Array**	**47.39**	**33**	P	**P**	**02 35 22.2**	**+0.1**
	0.4nm,0.8s,baz=293,slow=4.8,SNR=4.1						
ILAR				pP	**pP**	**02 35 33.3**	**+0.1**
	0.6nm,0.9s,baz=267,slow=5.8,SNR=3.7						
BVAR	**Borovoye Array**	**49.66**	**311**	P	**P**	**02 35 39.8**	**+0.1**
	1.0nm,0.5s,baz=75,slow=7.1,SNR=6.7						
INK	**Inuvik**	**52.24**	**28**	pP	pP	02 36 10.1	+0.1
	0.7nm,0.9s,baz=285,slow=4.9,SNR=2.5						
WRA	**Warramunga Arr**	**59.22**	**189**	P	**P**	**02 36 48.5**	**-0.8**
	0.3nm,0.5s,baz=5.1,slow=7.3,SNR=4.6						
WRA				pP	**pP**	**02 36 58.3**	**-2.3**
	0.9nm,0.9s,baz=9.5,slow=7.1,SNR=4.0						
YKA	**Yellowknife Ar**	**61.68**	**31**	P	**P**	**02 37 05.7**	**0.0**
	0.2nm,0.9s,baz=302,slow=6.2,SNR=2.6						
ASAR	**Alice Springs**	**62.94**	**189**	P	**P**	**02 37 14.7**	**+0.1**
	0.1nm,0.3s,baz=4.7,slow=6.0,SNR=3.0						
ASAR				pP	**pP**	**02 37 25.7**	**-0.3**
	0.4nm,0.8s,baz=14,slow=7.1,SNR=3.3						
FINES	**FINESS Array B**	**67.27**	**332**	P	**P**	**02 37 42.0**	**-0.2**
	1.6nm,0.8s,baz=49,slow=15,SNR=3.3						
AKASG	**Malin Array Be**	**73.04**	**322**	P	**P**	**02 38 17.6**	**-0.2**
	0.2nm,0.3s,baz=46,slow=5.7,SNR=5.0						
PDAR	**Pinedale Array**	**75.75**	**46**	P	**P**	**02 38 35.0**	**+1.0**
	0.1nm,0.5s,baz=323,slow=1.4,SNR=2.1						
PDAR				pP	**pP**	**02 38 46.0**	**+0.4**
	0.2nm,0.5s,baz=282,slow=7.1,SNR=3.0						
TXAR	**Lajitas Array**	**88.34**	**53**	P	**P**	**02 39 39.4**	**-0.7**
	0.2nm,1.0s,baz=10,slow=5.6,SNR=2.6						
TXAR				pP	**pP**	**02 39 52.1**	**+0.3**
	0.1nm,0.6s,baz=297,slow=4.0,SNR=1.5						

KRNET ***19*** *02:30:28.7±0.1, 40°.96N×69°.52E, mb2.4*

SOME ***19*** *02:30:29.5, 40°.85N×69°.82E, h10km*

NNC ***19*** *02:30:30.7±2.1, 40°.86N×69°.47E, h0km, mb3.1, mpv2.8, Error ellipse: s-maj=17.3km s-min=8.5km az=58.0*

ISC 19 02:30:30.1±1.9, 40°.96N±0°.05×69°.6E±0°.1, h8km±13km, n11, σ1s91/22, 9C-6D, Tajikistan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
IUG	**Iuzhnay**	**1.23**	**14**	*eP*	**Pg**	**02 30 53.4**	**-0.2**
	213nm,0.3s						
IUG				*eS*	**Sn**	**02 31 10.6**	**+0.2**
	64nm,0.3s						
BTK	**Batken**	**1.27**	**135**	⇑*eP*	**Pg**	**02 30 54.7**	**+0.3**
	baz=132						
BTK				⇑*eS*	**Sg**	**02 31 13.6**	**+2.7**
	baz=132						
BRLS	**Borolday**	**1.83**	**1**	*eP*	**Pg**	**02 31 04.7**	**-0.5**
	3.3nm,0.2s						
BRLS				*eS*	**Sg**	**02 31 29.9**	**+0.9**
	17nm,0.3s						
ARK	**Arkit**	**1.94**	**64**	⇓*eP*	**Pb**	**02 31 06.2**	**+0.5**
	baz=65						
ARK				⇓*eS*	**Sg**	**02 31 33.5**	**+1.1**
	baz=65						
KK31	**Karatay Array**	**2.24**	**17**	⇑Pn	**Pg**	**02 31 11.7**	**-1.4**
	2.0nm,0.2s,baz=198,slow=16,SNR=234						
KK31				Sn	**Sg**	**02 31 42.0**	**-0.1**
	4.8nm,0.3s,baz=202,slow=25,SNR=14						
MNAS	**Manas**	**2.63**	**54**	⇑*eP*	**Pb**	**02 31 16.0**	**-1.5**
	baz=55						
MNAS				⇑*eS*	**Sb**	**02 31 50.4**	**+0.3**
	baz=55						
MNAS	**Manas**	**2.63**	**54**	⇓Pn	**Pb**	**02 31 16.1**	**-1.5**
	1.0nm,0.4s						
MNAS				⇓Sn	**Sb**	**02 31 52.1**	**+2.0**
	2.8nm,0.4s						
SFK	**Sufi-Kurgan**	**3.09**	**106**	⇑*eP*	**Pb**	**02 31 22.2**	**-3.3**
	baz=106						
SFK				⇑*eS*	**Sb**	**02 32 02.0**	**-1.4**
	baz=106						
SFK	**Sufi-Kurgan**	**3.09**	**106**	⇓Pn	**Pb**	**02 31 22.5**	**-3.0**
	1.1nm,0.3s						
SFK				⇓Sn	**Sb**	**02 32 02.6**	**-0.8**
	1.9nm,0.3s						
MRKS	**Merke**	**3.22**	**55**	*eP*	**Pb**	**02 31 26.2**	**-1.3**
	3.8nm,0.2s						
MRKS				*eS*	**Sb**	**02 32 07.2**	**+0.2**
	8.9nm,0.3s						
ARLS	**Aral**	**3.64**	**74**	⇑*eP*	**Pn**	**02 31 29.5**	**+2.7**
	baz=74						
ARLS				⇑*eS*	**Sb**	**02 32 15.3**	**-3.7**
	baz=74						

MEX 19 02:34:21.5±0.8, 16°.35N×94°.43W, h105km±21km, MD3.9, Oaxaca

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TGIG		**1.32**	**71**	*i* P	Pn	02 34 45.1	-0.9
TGIG				*i* S	Sn	02 35 02.6	-1.9
PCIG		**1.33**	**119**	*eP*	Pn	02 34 45.4	-0.6
PCIG				*eS*	Sn	02 35 02.5	-2.0
HUIG	**Huatulco**	**1.72**	**250**	*i* P	Pn	02 34 48.6	-2.1
HUIG				*eS*	Sn	02 35 11.8	-1.2
VHO	**Vista Hermosa**	**2.32**	**288**	*eP*	Pn	02 34 57.8	-0.8
VHO				*i* S	Sn	02 35 25.7	-1.4

ISCJB ***19*** *02:36:59.5±0.7, 52°.34N±0°.10×171°.24E±0°.08, h33km, mb3.5/9, Error ellipse: s-maj=13.9km s-min=7.1km az=7.4*

IDC ***19*** *02:36:59.1±2.2, 52°.95N×171°.23E, h0km, mb3.5/8, mb1 3.8/9, mb1mx3.5/43, mbtmp3.6/9, ML3.1/1, Error ellipse: s-maj=70.5km s-min=18.0km az=175.0*

KRSC ***19*** *02:37:00.9±1.4, 52°.24N×170°.58E, h19km±10km, ML3.6*

ISC 19 02:37:01.1±1.0, 52°.2N±0°.1×171°.15E±0°.07, h35km, n27, σ1s90/24, mb3.5/9, Near Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BKI	**Bering**	**4.32**	**317**	*eP*	**Pn**	**02 38 06.0**	**+1.9**
BKI				*eS*	**Sn**	**02 38 52.9**	**-0.2**
KBTR	**Krutoberegovo**	**6.33**	**313**	*eP*	**Pn**	**02 38 33.3**	**+1.5**
KBTR				*eS*	**Sn**	**02 39 42.5**	**-0.4**
SPN	**Mys Shipunski**	**6.83**	**282**	*eP*	**Pn**	**02 38 39.7**	**+1.0**
SDLR	**Sedlovina**	**7.53**	**283**	*eP*	**Pn**	**02 38 49.5**	**+1.2**
UGLR	**Uglovaya**	**7.56**	**283**	*eP*	**Pn**	**02 38 50.5**	**+1.7**
SMAR	**Somma**	**7.58**	**283**	*eP*	**Pn**	**02 38 49.7**	**+0.6**
AVH	**Avacha**	**7.62**	**283**	*eP*	**Pn**	**02 38 51.2**	**+1.7**
KRX	**Arik**	**7.67**	**284**	*eP*	**Pn**	**02 38 51.6**	**+1.2**
KRMR	**Karymshinskiy**	**7.97**	**280**	*eP*	**Pn**	**02 38 55.3**	**+1.0**
KRMR				*eS*	**Sn**	**02 40 21.4**	**-1.7**
GNL	**Ganaly**	**8.12**	**286**	*eP*	**Pn**	**02 38 59.2**	**+2.7**
ASAK	**Asacha**	**8.13**	**277**	*eP*	**Pn**	**02 38 58.1**	**+1.6**
PETK	**Petropavlovsk-**	**8.23**	**282**	Pn	**Pn**	**02 38 60.0**	**+2.1**
	1.1nm,0.3s,baz=100,slow=19,SNR=12						
PETK				Sn	**Sn**	**02 40 25.5**	**-4.1**
	0.6nm,0.3s,baz=93,slow=28,SNR=4.0						
KDAK	**Kodiak Island**	**21.36**	**60**	P	P	02 41 55.9	+11
	2.4nm,0.3s,baz=258,slow=1.6,SNR=9.4						
ILAR	**Eielson Array**	**24.75**	**43**	P	**P**	**02 42 15.7**	**-3.3**
	0.8nm,0.7s,baz=251,slow=7.9,SNR=13						
INK	**Inuvik**	**30.50**	**37**	P	**P**	**02 43 08.5**	**-1.7**
	1.7nm,1.1s,baz=269,slow=9.5,SNR=4.6						
H11N2	**WAKE ISLAND Hy**	**32.55**	**187**	T	T	03 18 57.1	
	baz=6.3,slow=76,SNR=4.0						
H11N3	**WAKE ISLAND Hy**	**32.57**	**187**	T	T	03 18 59.9	
	baz=6.3,slow=76,SNR=4.5						
H11N1	**WAKE ISLAND Hy**	**32.57**	**187**	T	T	03 18 58.2	
	baz=6.3,slow=76,SNR=4.9						
H11S1	**WAKE ISLAND Hy**	**33.78**	**188**	T	T	03 20 32.5	
	baz=6.1,slow=76,SNR=4.9						
H11S3	**WAKE ISLAND Hy**	**33.80**	**188**	T	T	03 20 35.8	
	baz=6.1,slow=76,SNR=4.8						
H11S2	**WAKE ISLAND Hy**	**33.80**	**188**	T	T	03 20 35.7	
	baz=6.1,slow=76,SNR=3.8						
YKA	**Yellowknife Ar**	**39.15**	**45**	P	**P**	**02 44 23.7**	**-1.1**
	0.2nm,0.4s,baz=289,slow=7.9,SNR=5.4						
SONM	**Songino Array**	**40.60**	**291**	P	**P**	**02 44 39.2**	**+2.0**
	0.5nm,0.6s,baz=60,slow=6.8,SNR=3.7						
PDAR	**Pinedale Array**	**51.88**	**67**	P	**P**	**02 46 06.1**	**+0.1**
	0.3nm,0.8s,baz=302,slow=3.3,SNR=4.3						
MKAR	**Makanchi Array**	**54.48**	**302**	P	**P**	**02 46 23.7**	**-1.2**
	0.2nm,0.4s,baz=43,slow=8.7,SNR=2.9						
BVAR	**Borovoye Array**	**56.05**	**314**	P	**P**	**02 46 36.2**	**+0.2**
	1.2nm,0.6s,baz=64,slow=3.4,SNR=6.5						
TXAR	**Lajitas Array**	**64.59**	**74**	P	**P**	**02 47 36.8**	**+2.0**
	0.3nm,0.8s,baz=302,slow=2.8,SNR=4.0						

MEX 19 02:57:15.0±0.3, 14°.07N×91°.86W, h16km±931km, MD3.5, Guatemala

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PCIG		**2.09**	**321**	*eP*	Pn	02 57 46.3	-3.1
PCIG				*eS*	Sn	02 58 10.4	-4.7

NIED ***19*** *03:02:00.38°.20N×141°.70E, h56km, Mw4.0 Best double couple: M₀1.20000×10¹⁵ NP1:φs141.00000°, δ34.00000°, λ29.00000°. NP2:φs26.00000°, δ74.00000°, λ120.00000°.*

ISCJB ***19*** *03:02:51.2±0.8, 38°.15N±0°.04×141°.73E±0°.09, h53km±6km, mb3.6/14, Error ellipse: s-maj=12.9km s-min=5.1km az=19.7*

JMA ***19*** *03:02:51.9±0.1, 38°.17N×141°.71E, h50km±1km, M3.7*

JMA Felt I J1.

IDC ***19*** *03:02:53.4±2.4, 38°.08N×141°.56E, h59km±23km, mb3.4/14, mb1 3.6/17, mb1mx3.5/37, mbtmp3.7/17, ML2.9/3, MS2.9/4, Ms1 2.9/4, ms1mx2.6/28, Error ellipse: s-maj=21.2km s-min=13.6km az=90.0*

ISC 19 03:02:51.9±0.8, 38°.15N±0°.04×141°.77E±0°.07, h43km±6km, n39, σ1s13/42, mb3.6/14, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**0.45**	**313**	P	**Pn**	**03 03 02.2**	**+0.1**
JIO				S	**Sn**	**03 03 09.1**	**-0.3**
JMM	**Marumori**	**0.82**	**250**	P	**Pn**	**03 03 06.5**	**-0.5**
JMM				S	**Sn**	**03 03 17.3**	**-0.8**
JOU	**Okura**	**0.90**	**284**	P	**Pn**	**03 03 07.9**	**-0.2**
JOU				S	**Sn**	**03 03 19.5**	**-0.4**
JMK	**Ichinoseki**	**0.91**	**332**	P	**Pn**	**03 03 08.2**	**0.0**
JMK				S	**Sn**	**03 03 19.4**	**-0.8**
OFUJ	**Ofunato**	**0.93**	**355**	P	**Pn**	**03 03 08.3**	**-0.3**
OFUJ				S	**Sn**	**03 03 19.8**	**-1.0**
JFK	**Kawauchi**	**1.06**	**222**	P	**Pn**	**03 03 10.2**	**-0.1**
JFK				S	**Sn**	**03 03 22.9**	**-0.9**
JFT	**Otama**	**1.30**	**241**	P	**Pn**	**03 03 13.8**	**+0.2**
JFT				S	**Sn**	**03 03 29.9**	**+0.2**
JYS	**Shiratake**	**1.34**	**274**	P	**Pn**	**03 03 14.1**	**-0.1**
JYK	**Kaneyama**	**1.34**	**305**	P	**Pn**	**03 03 14.1**	**-0.1**
JOM	**Ohasama**	**1.37**	**344**	P	**Pn**	**03 03 14.7**	**+0.1**
JOM				S	**Sn**	**03 03 31.5**	**0.0**
JRG	**Rokugo**	**1.53**	**325**	P	**Pn**	**03 03 17.1**	**+0.4**
MJAR	**Matsushiro Arr**	**3.26**	**242**	P	**Pn**	**03 03 38.6**	**-1.9**
	1.9nm,0.3s,baz=58,slow=11,SNR=20						
MJAR				LR	LR	03 05 11.5	
	comp=Z,136nm,20.9s,baz=355,slow=45						
MAT	**Matsushiro**	**3.26**	**242**	P	**Pn**	**03 03 42.1**	**+1.6**
MAT				*eS*	**Sn**	**03 04 22.4**	**+4.3**
JHJ	**Hachijo jima 2**	**5.27**	**198**	P	**Pn**	**03 04 09.0**	**+0.9**
	4.0nm,0.3s,baz=41,slow=15,SNR=2.4						
JHJ				S	**Sn**	**03 05 05.7**	**-2.0**
	6.6nm,0.3s,baz=90,slow=20,SNR=2.6						
USRK	**Ussuriysk Ar.**	**9.53**	**312**	P	**Pn**	**03 05 08.6**	**+2.2**
	0.4nm,0.3s,baz=128,slow=13,SNR=7.1						
JNU	**Nakatsue**	**10.18**	**244**	LR	LR	03 09 32.2	
	comp=Z,90nm,18.2s,baz=114,slow=40						
KSRS	**Korea Array**	**10.98**	**271**	LR	LR	03 09 06.1	
	comp=Z,46nm,18.4s,baz=75,slow=34						
KLR	**Kul'dur**	**13.22**	**330**	LR	LR	03 10 33.3	
	comp=Z,64nm,19.6s,baz=116,slow=35						
SEY	**Seymchan**	**25.64**	**11**	P	**P**	**03 08 18.6**	**+1.6**
	0.8nm,0.7s,baz=180,slow=6.0,SNR=4.3						
H11N2	**WAKE ISLAND Hy**	**28.50**	**123**	T	T	03 39 01.2	
	baz=316,slow=76,SNR=87						
H11N1	**WAKE ISLAND Hy**	**28.51**	**123**	T	T	03 39 01.7	
	baz=316,slow=76,SNR=82						
H11N3	**WAKE ISLAND Hy**	**28.52**	**123**	T	T	03 39 00.1	
	baz=316,slow=76,SNR=65						
H11S1	**WAKE ISLAND Hy**	**29.25**	**125**	T	T	03 39 56.4	
	baz=318,slow=76,SNR=19						
H11S3	**WAKE ISLAND Hy**	**29.25**	**125**	T	T	03 39 57.5	
	baz=318,slow=76,SNR=53						
H11S2	**WAKE ISLAND Hy**	**29.26**	**125**	T	T	03 39 58.2	
	baz=318,slow=76,SNR=39						
ZALV	**Zalesovo Beam**	**41.38**	**311**	P	**P**	**03 10 32.8**	**-0.8**
	2.8nm,0.6s,baz=83,slow=8.2,SNR=9.5						
ZALV				pP	**sP**	**03 10 50.8**	**+0.2**
	1.7nm,0.5s,baz=96,slow=8.4,SNR=3.2						
MKAR	**Makanchi Array**	**43.77**	**301**	P	**P**	**03 10 52.4**	**-0.8**
	1.5nm,0.7s,baz=85,slow=9.9,SNR=16						
MKAR				pP	**sP**	**03 11 10.5**	**+0.3**
	2.1nm,0.7s,baz=83,slow=9.9,SNR=11						
ILAR	**Eielson Array**	**48.40**	**33**	P	**P**	**03 11 29.6**	**+0.4**
	0.2nm,0.7s,baz=264,slow=6.3,SNR=4.3						
INK	**Inuvik**	**53.27**	**28**	P	**P**	**03 12 06.3**	**+0.6**
	0.3nm,0.5s,baz=285,slow=2.6,SNR=3.5						
WRA	**Warramunga Arr**	**58.20**	**188**	P	**P**	**03 12 40.8**	**-0.8**
	0.8nm,0.6s,baz=5.6,slow=7.1,SNR=7.9						
ASAR	**Alice Springs**	**61.93**	**188**	P	**P**	**03 13 07.2**	**+0.1**
	0.7nm,0.7s,baz=4.8,slow=5.5,SNR=7.1						
YKA	**Yellowknife Ar**	**62.70**	**31**	P	**P**	**03 13 11.9**	**+0.1**
	0.2nm,0.9s,baz=300,slow=6.3,SNR=4.4						
FINES	**FINESS Array B**	**67.96**	**332**	P	**P**	**03 13 44.5**	**-1.4**
	1.6nm,0.7s,baz=77,slow=8.4,SNR=4.8						
NB2	**NORSAR Subarra**	**73.27**	**337**	P	**P**	**03 13 47.4**	**-0.9**
	comp=Z,0.6nm,0.6s,baz=39,slow=6.2						
NOA	**NORSAR Array B**	**73.27**	**337**	P	**P**	**03 14 17.6**	**-0.6**
	comp=Z,1.2nm,0.8s,baz=39,slow=5.8,SNR=5.8						
PDAR	**Pinedale Array**	**76.68**	**46**	P	**P**	**03 14 39.7**	**+1.1**
	comp=Z,0.3nm,0.8s,baz=286,slow=3.6,SNR=2.6			

KMI LR LR
comp=Z,210nm,12.4s
LAMP Lampang 7.67 140 P **Pn** **03 35 55.6 +0.5**
comp=Z,14nm,0.6s
BOK Bokaro 7.84 267 *eP* **Pn** **03 35 55.0 -2.3**
BOK *eS* Sn 03 37 15.9 -8.7
UTTA Uttaradit 8.83 139 P **Pn** **03 36 11.4 +0.6**
comp=Z,11nm,0.9s
PHIT Phitsanulok 9.18 141 P **Pn** **03 36 16.5 +0.8**
PBKT Sadao Pong 9.99 141 P **Pn** **03 36 28.0 +1.3**
CD2 Chengdu 10.43 50 P **Pn** **03 36 32.8 +0.1**
CD2 pmax pmax
comp=Z,10.0nm,0.5s
GYA Guiyang 11.22 77 *eP* **Pn** **03 36 42.8 -0.7**
GYA PP **PnPn** **03 36 55.0 +3.4**
GYA sP 03 37 09.3
GYA S **Sn** **03 38 46.4 -0.8**
GYA pmax pmax
comp=Z,10.0nm,0.7s
DGPR DIGLIPUR 11.36 187 *eP* Pn 03 36 42.6 -2.8
DGPR *eS* Sn 03 38 38.6 -12
VIS Vishakhapatnam 12.37 239 *eP* **Pn** **03 36 57.3 -1.8**
PVM Polavaram 13.98 241 *ePn* **Pn** **03 37 22.5 +1.8**
LZH Lanzhou 14.10 33 *eP* **Pn** **03 37 24.0 +1.7**
LZH pP pP 03 37 39.4
LZH sP sP 03 37 49.8
LZH pmax pmax
comp=Z,16nm,1.2s
ENH Enshi 14.54 63 *ePn* **Pn** **03 37 27.7 -0.3**
RPR Rampur 15.15 251 *ePn* **Pn** **03 37 36.5 +0.6**
QIZ Qiongzhong 15.31 108 P **P** **03 37 41.0 -0.2**
QIZ pP **pP** **03 37 54.6 -1.1**
GTA Gaotai 15.53 16 *eP* **P** **03 37 45.3 +1.6**
GTA pP pP 03 37 55.9 -2.3
GTA sP sP 03 38 04.8 -2.6
BHPL Bhopal 15.61 269 *ex* **Pn** **03 37 38.7 -3.1**
BHPL IAmb IAmb 03 37 45.7
comp=Z,23nm,0.7s
SRSP Sriramsagar 15.95 253 *ePn* **Pn** **03 37 45.1 -0.9**
ADKI Addanki 16.08 240 *ePn* **P** **03 37 50.4 +0.7**
NJS Nagarjunasagar 16.22 244 *ePn* **P** **03 37 51.4 +0.1**
HYBB Hyderabad (bro 16.42 248 *ePn* **P** **03 37 53.8 +0.3**
SMLA Simla 16.63 297 *eP* **P** **03 37 58.2 +2.5**
SMLA IAmb IAmb 03 38 01.1
comp=Z,34nm,0.2s
SMLA *ex* x 03 40 35.0
SRLM Srisailam 16.80 243 *ePn* **P** **03 37 57.8 0.0**
RCLA Racherla 17.10 241 *ePn* **P** **03 38 01.4 +0.3**
SKHT Srikalahasti 17.54 235 *ePn* **P** **03 38 06.9 +1.0**
DHRM DHARAMSHALA 17.71 300 *eP* **Pn** **03 38 09.4 +1.4**
DHRM IAmb IAmb 03 38 24.8
comp=Z,30nm,1.0s
KLRI Killari 17.81 252 *eP* **Pn** **03 38 09.8 +0.7**
URV Uravakonda 18.74 243 *ePn* **Pn** **03 38 20.4 0.0**
WMQ Urumqi 20.04 346 P Pn 03 38 34.8 -0.7
WMQ pP sP 03 38 54.1 -2.9
WMQ PP PnPn 03 39 00.6 +8.2
WMQ S **S** **03 42 12.8 -1.6**
WMQ ScP **ScP** **03 46 14.6 -1.7**
WMQ pmax pmax
comp=Z,5.0nm,0.6s
WMQ pmax pmax
comp=Z,34nm,3.6s
KSH Kashi 21.59 318 P **P** **03 38 52.3 +2.4**
KSH *ep*P sP 03 39 12.0 -2.0
KSH *e*PP PnPn 03 39 21.8 +8.2
KSH *es*P pP 03 39 23.4 +18
KSH S **S** **03 42 42.1 -3.2**
KSH pmax pmax
comp=Z,64nm,5.5s
KSH LR LR
comp=Z,620nm,15.5s
KSH LR LR
comp=Z,430nm,15.4s
HHC Hu-ho-hao-te 21.69 37 *eP* **P** **03 38 50.4 -0.5**
HHC pmax pmax
comp=Z,25nm,1.0s
HHC pmax pmax
comp=Z,76nm,6.7s
PSI Prapat 22.02 168 P **P** **03 38 56.0 +1.4**
comp=Z,3.6nm,0.5s,baz=309,slow=12,SNR=5.3
PSI Prapat 22.02 168 P **P** **03 38 56.0 +1.4**
PSI pmax pmax
comp=Z,2.0nm,0.4s
PSI Prapat 22.02 168 *eP* **P** **03 38 57.0 +2.4**
NJ2 Nanjing 22.75 65 *eP* **P** **03 39 00.0 -2.2**
NJ2 pmax pmax
comp=Z,11nm,0.8s
TKM2 Tokmak 2 24.04 324 *eP* **P** **03 39 16.4 +1.9**
TKM2 pmax pmax
comp=Z,5.0nm,0.8s
TKM2 Tokmak 2 24.04 324 *eP* **P** **03 39 16.4 +1.9**
comp=Z,5.0nm,0.8s
MK01 Makanchi Array 24.24 339 *eP* **P** **03 39 16.4 +0.3**
MK31 Makanchi Array 24.27 339 *eP* **P** **03 39 16.8 +0.6**
MK31 Makanchi Array 24.27 339 *eP* **P** **03 39 16.8 +0.6**
MKAR Makanchi Array 24.27 339 P **P** **03 39 17.7 +1.4**
comp=Z,2.3nm,0.5s,baz=141,slow=9.9,SNR=24
MKAR PcP **PcP** **03 42 55.3 +0.6**
comp=Z,0.7nm,0.7s,baz=136,slow=2.2,SNR=4.7
MKAR ScP **ScP** **03 46 28.3 +1.3**
comp=Z,0.5nm,0.6s,baz=131,slow=4.0,SNR=6.1
MKAR LR LR 03 48 45.2
comp=Z,19nm,20.1s,baz=124,slow=36
MAKZ Makanchi 24.38 339 *eP* **P** **03 39 17.9 +0.6**
MAKZ pmax pmax
comp=Z,7.0nm,1.0s
MAKZ Makanchi 24.38 339 *eP* **P** **03 39 17.9 +0.6**
comp=Z,7.2nm,1.0s
AAK Ala-Archa 24.45 323 P **P** **03 39 20.0 +1.9**
comp=Z,1.1nm,0.3s,baz=118,slow=5.3,SNR=5.0
AAK Ala-Archa 24.45 323 *eP* **P** **03 39 20.2 +2.1**
AAK pmax pmax
comp=Z,14nm,1.6s
AAK Ala-Archa 24.45 323 *eP* **P** **03 39 20.2 +2.1**
comp=Z,14nm,1.6s
EKS2 Erkin-Say 24.86 322 *eP* **P** **03 39 23.5 +1.6**
EKS2 pmax pmax
comp=Z,7.0nm,0.8s
EKS2 Erkin-Say 24.86 322 *eP* **P** **03 39 23.5 +1.6**
comp=Z,7.0nm,0.8s
SONM Songino Array 25.14 19 P **P** **03 39 25.6 +1.3**
comp=Z,6.9nm,0.9s,baz=202,slow=10,SNR=17
SONA1 Songino Array 25.15 19 *eP* **P** **03 39 24.7 +0.2**
ULN Ulaanbaatar 25.37 20 *d iP* **P** **03 39 27.1 +0.7**
ULN pmax pmax
comp=Z,9.0nm,1.0s
ULN Ulaanbaatar 25.37 20 *eP* **P** **03 39 26.9 +0.5**
comp=Z,6.6nm,0.8s
ZAK Zakamensk 26.72 13 *eP* **P** **03 39 38.2 -0.4**
ZAK *e* 03 43 00.0
ZAK pmax pmax
comp=Z,2.0nm,1.1s
ZAK pmax pmax
comp=Z,1.0nm,0.9s
KURBB Kurchatov Arra 28.83 339 P **P** **03 39 58.3 +1.1**
comp=Z,1.0nm,0.2s,baz=147,slow=8.8,SNR=2.8
KURBB PcP **PcP** **03 43 05.7 +0.5**
comp=Z,0.4nm,0.4s,baz=171,slow=2.0,SNR=4.2
KURK Kurchatov 28.88 339 P **P** **03 39 58.3 +0.6**
KURK 03 43 05.7
KURK pmax pmax
comp=Z,1.0nm,0.2s
KURK Kurchatov 28.88 339 P **P** **03 39 58.3 +0.6**
KURK PcP **PcP** **03 43 05.7 +0.4**
ZALV Zalesovo Beam 30.27 349 P **P** **03 40 10.7 +0.7**
comp=Z,1.5nm,0.4s,baz=169,slow=8.6,SNR=11
ZALV LR LR 03 52 10.3
comp=Z,55nm,18.2s,baz=348,slow=36
KSRS Korea Array 31.30 58 LR LR 03 53 16.6
comp=Z,52nm,19.2s,baz=128,slow=37
NVS Novosibirsk 31.41 348 *eP* **P** **03 40 20.1 +0.1**
NVS pmax pmax
comp=N,6.0nm,0.5s
NVS pmax pmax
comp=E,4.0nm,0.5s
NVS pmax pmax
comp=Z,7.0nm,0.5s
CN2 Changchun 31.80 45 *eP* **P** **03 40 24.5 +0.9**
GEYT Alibeck 33.60 302 P **P** **03 40 42.1 +2.7**
comp=Z,1.6nm,0.4s,baz=86,slow=6.2,SNR=3.5
GEYT pP **pP** **03 40 58.2 +1.6**
comp=Z,4.6nm,0.7s,baz=130,slow=6.5,SNR=4.2
BVAR Borovoye Array 33.77 334 P **P** **03 40 41.6 +1.0**
comp=Z,1.0nm,0.5s,baz=138,slow=11,SNR=8.1

BVAR PcP **PcP** **03 43 18.0 -0.4**
comp=Z,0.5nm,0.5s,baz=159,slow=4.5,SNR=3.0
BVAR ScP **ScP** **03 46 57.1 +0.2**
comp=Z,0.7nm,0.5s,baz=145,slow=3.6,SNR=4.8
BOD Bodaibo 36.11 18 *eP* **P** **03 41 00.7 0.0**
BOD pmax pmax
comp=Z,4.0nm,0.8s
ABKAR Akbulak array 36.52 321 *eP* **P** **03 41 05.0 +0.7**
comp=Z,0.7nm,0.4s
AKTO Aktyubinsk 38.19 322 P **P** **03 41 17.5 -0.9**
comp=Z,0.6nm,0.5s,baz=108,slow=6.4,SNR=3.1
AKTO ScP **ScP** **03 47 13.9 +0.7**
comp=Z,1.3nm,0.7s,baz=115,slow=5.6,SNR=6.2
ARU Arti 41.14 330 *d iP* **P** **03 41 42.0 -0.8**
ARU S **S** **03 47 50.9 +0.3**
ARU SS **SS** **03 50 58.3 +2.7**
ARU pmax pmax
comp=Z,11nm,2.5s
FAKI Fak Fak 45.75 121 *eP* **P** **03 42 18.3 -2.1**
comp=Z,16nm,0.7s
KBZ Khabaz 45.98 308 pP pP 03 42 40.5 +0.7
comp=Z,1.7nm,0.8s,baz=76,slow=8.3,SNR=3.5
TIXI Tiksi 51.00 13 P **P** **03 42 59.7 -0.4**
comp=Z,5.6nm,0.3s,baz=210,slow=5.3,SNR=6.1
TIXI Tiksi 51.00 13 *ǁ iP* **P** **03 42 59.8 -0.2**
TIXI pmax pmax
comp=Z,3.0nm,0.5s
BRTR Keskin Array B 52.74 302 P **P** **03 43 14.2 +0.5**
comp=Z,0.6nm,0.5s,baz=130,slow=9.5,SNR=5.0
BRTR pP **pP** **03 43 32.2 +0.2**
comp=Z,0.7nm,0.6s,baz=120,slow=8.8,SNR=2.9
SEY Seymchan 53.98 29 P **P** **03 43 21.8 -0.4**
comp=Z,0.9nm,0.3s,baz=6.7,slow=24,SNR=6.7
SEY PcP **PcP** **03 44 26.7 +0.2**
comp=Z,1.0nm,0.5s,baz=247,slow=8.3,SNR=4.8
AKASG Malin Array Be 55.85 316 P **P** **03 43 35.3 -0.6**
comp=Z,0.4nm,0.4s,baz=79,slow=6.8,SNR=5.1
AKASG pP **pP** **03 43 53.0 -1.4**
comp=Z,2.6nm,0.6s,baz=82,slow=6.4,SNR=6.1
AKASG Malin Array Be 55.85 316 P **P** **03 43 35.3 -0.6**
AKASG *PP **pP** **03 43 53.0 -1.4**
AKASG pmax pmax
comp=Z,1.0nm,0.4s
AKASG pmax pmax
comp=Z,3.0nm,0.6s
PLOR Plostina 57.60 310 *ǁ iP* **P** **03 43 49.7 +1.2**
MLR Muntele Rosu 58.12 310 *ǁ iP* **P** **03 43 53.2 +1.0**
MLR Muntele Rosu 58.12 310 *eP* **P** **03 43 53.2 +1.0**
MLR pmax pmax
comp=Z,17nm,1.0s
MLR Muntele Rosu 58.12 310 *eP* **P** **03 43 53.2 +1.0**
comp=Z,17nm,1.0s
FINES FINESS Array B 58.45 328 P **P** **03 43 54.4 +0.4**
comp=Z,3.3nm,0.6s,baz=84,slow=5.9,SNR=15
FINES pP **pP** **03 44 11.9 -0.6**
comp=Z,3.0nm,0.8s,baz=98,slow=6.6,SNR=4.0
WRA Warramunga Arr 58.84 135 P **P** **03 43 55.9 -1.4**
comp=Z,1.7nm,0.5s,baz=323,slow=7.4,SNR=30
ARCES ARCESS Array B 59.91 338 P **P** **03 44 04.8 +0.8**
comp=Z,3.5nm,0.6s,baz=88,slow=6.3,SNR=8.4
BILL Bilibino 60.72 24 *c iP* **P** **03 44 09.0 -0.5**
BILL *i* *PP **pP** **03 44 32.7 +4.5**
BILL *e* 03 46 23.5
BILL *e*PPP PPP 03 47 59.2
BILL *eS* S 03 52 56.9 +36
BILL *eS*S **SS** **03 56 19.4 -0.4**
BILL pmax pmax
comp=Z,4.0nm,1.2s
BILL MLR MLR
comp=Z,36nm,16.0s
BILL Bilibino 60.72 24 *eP* **P** **03 44 08.8 -0.7**
comp=Z,6.9nm,0.6s
KMBO Kilima Mbogo 60.95 254 *ceP* **P** **03 44 09.8 -2.5**
KMBO pmax pmax
comp=Z,1.0nm,0.2s
ASAR Alice Springs 61.31 138 P **P** **03 44 13.1 -1.1**
comp=Z,1.0nm,0.3s,baz=322,slow=7.0,SNR=17
ASAR Alice Springs 61.31 138 P **P** **03 44 13.1 -1.1**
ASAR pmax pmax
comp=Z,2.0nm,0.5s
AS01 Alice Springs 61.34 138 *eP* **P** **03 44 13.0 -1.3**
NB2 NORSAR Subarra 65.62 328 P **P** **03 44 41.5 -0.7**
comp=Z,1.8nm,0.6s,baz=83,slow=6.5
NOA NORSAR Array B 65.62 328 P **P** **03 44 41.8 -0.3**
comp=Z,2.5nm,0.6s,baz=84,slow=6.5,SNR=17
NOA pP **pP** **03 45 00.0 -1.0**
comp=Z,0.9nm,0.6s,baz=85,slow=6.6,SNR=3.3
GERES GERESS Array B 66.01 314 P **P** **03 44 45.2 +0.2**
comp=Z,0.4nm,0.4s,baz=79,slow=6.9,SNR=7.6
GERES pP **pP** **03 45 03.1 -0.7**
comp=Z,3.0nm,0.6s,baz=75,slow=6.1,SNR=16
GEA0 GERESS Array S 66.01 314 *eP* **P** **03 44 44.8 -0.1**
KHC Kasperske Hory 66.04 315 *ep*P pP 03 45 08.6 +4.7
STKA Stephens Creek 71.93 139 P **P** **03 45 20.0 -1.6**
comp=Z,0.4nm,0.4s,baz=248,slow=3.3,SNR=3.0
KEST Kesra 72.34 302 pP pP 03 45 43.1 -0.4
comp=Z,8.7nm,1.0s,baz=335,slow=10,SNR=6.6
KEST Kesra 72.34 302 *eP* **P** **03 45 25.0 +0.6**
comp=Z,19nm,1.3s
KEST pP **pP** **03 45 43.1 -0.4**
LSZ Lusaka 75.75 246 *eP* **P** **03 45 45.6 +1.1**
LSZ pmax pmax
comp=Z,3.0nm,0.8s
LSZ Lusaka 75.75 246 *eP* **P** **03 45 45.6 +1.1**
comp=Z,3.4nm,0.8s
MLY Manley 77.81 23 *eP* **P** **03 45 55.3 +0.1**
comp=Z,10nm,1.0s
SVW2 Sparrevohn 77.91 28 *eP* **P** **03 45 56.4 +0.6**
comp=Z,5.9nm,0.9s
CAST Castle Rocks 78.16 25 *eP* **P** **03 45 56.6 -0.6**
comp=Z,1.1nm,1.0s
BPAW Bear Paw Mtn. 78.21 24 *eP* **P** **03 45 57.2 -0.3**
comp=Z,5.8nm,0.8s
MDM Murphy Dome 78.74 23 *eP* **P** **03 46 00.3 0.0**
comp=Z,14nm,0.7s
FYU Fort Yukon 78.80 21 *eP* **P** **03 46 00.8 +0.2**
comp=Z,7.8nm,0.8s
COLA College 78.92 23 *eP* **P** **03 46 00.7 -0.5**
COLA College 78.92 23 *eP* **P** **03 46 00.7 -0.5**
CCB Clear Creek Bu 79.06 23 *eP* **P** **03 46 01.3 -0.7**
comp=Z,2.1nm,0.6s
MCK McKinley 79.17 24 *eP* **P** **03 46 02.0 -0.7**
MCK pmax pmax
comp=Z,3.0nm,0.7s
MCK McKinley 79.17 24 *eP* **P** **03 46 02.0 -0.7**
comp=Z,3.4nm,0.7s
IL1 Eielson Array 79.31 22 *eP* **P** **03 46 01.7 -1.7**
ILAR Eielson Array 79.31 22 P **P** **03 46 02.2 -1.2**
comp=Z,2.4nm,0.7s,baz=302,slow=5.0,SNR=27
ILB Eielson Array 79.31 22 *eP* **P** **03 46 02.4 -1.1**
RND Reindeer 79.39 24 *eP* **P** **03 46 03.2 -0.8**
RND pmax pmax
comp=Z,6.0nm,1.1s
RND Reindeer 79.39 24 *eP* **P** **03 46 03.2 -0.8**
comp=Z,6.3nm,1.1s
RC01 Rabbit Creek A 80.34 26 *eP* **P** **03 46 08.1 -1.0**
comp=Z,15nm,0.8s
ESDC Sonseca Array 80.81 309 P **P** **03 46 11.9 -0.1**
comp=Z,0.3nm,0.4s,baz=231,slow=9.4,SNR=5.3
RES Resolute Bay 80.86 3 *eP* **P** **03 46 11.7 +0.2**
RES pmax pmax
comp=Z,3.0nm,0.8s
RES Resolute Bay 80.86 3 *eP* **P** **03 46 11.7 +0.2**
comp=Z,3.0nm,0.8s
SCM Sheep Creek Mo 80.87 25 *eP* **P** **03 46 11.6 -0.4**
SCM pmax pmax
comp=Z,23nm,0.8s
SCM Sheep Creek Mo 80.87 25 *eP* **P** **03 46 11.6 -0.4**
comp=Z,23nm,0.8s
PAX Paxson 80.89 24 *eP* **P** **03 46 12.4 +0.3**
PAX pmax pmax
comp=Z,8.0nm,1.1s
PAX Paxson 80.89 24 *eP* **P** **03 46 12.4 +0.3**
comp=Z,7.7nm,1.1s
KDAK Kodiak Island 80.92 30 P P 03 46 26.4 +14
comp=Z,4.2nm,0.5s,baz=281,slow=2.8,SNR=7.9
KDAK Kodiak Island 80.92 30 *i* P **P** **03 46 11.1 -1.0**
DOT Dot Lake 80.98 23 *eP* **P** **03 46 11.9 -0.5**
comp=Z,7.0nm,0.7s
INK Inuvik 81.01 16 P **P** **03 46 12.6 +0.1**
comp=Z,9.3nm,0.9s,baz=338,slow=4.6,SNR=44
INK Inuvik 81.01 16 *eP* **P** **03 46 12.3 -0.2**
INK pmax pmax
comp=Z,13nm,1.0s
INK Inuvik 81.01 16 *eP* **P** **03 46 12.3 -0.2**
comp=Z,13nm,1.0s

EGAK Eagle 81.24 21 *eP* **P** **03 46 13.3 -0.4**
comp=Z,5.8nm,0.8s
BMRM Bremner River 82.44 25 *eP* **P** **03 46 20.0 -0.2**
comp=Z,10nm,0.8s
BOSA Boshof 84.95 236 P **P** **03 46 33.9 +0.3**
comp=Z,2.1nm,0.7s,baz=64,slow=4.0,SNR=4.6
YKA Yellowknife Ar 90.25 13 P **P** **03 46 57.7 -0.7**
comp=Z,0.4nm,0.8s,baz=329,slow=4.5,SNR=9.4
TXAR Lajitas Array 123.71 19 PKP **PKPdf** **03 52 55.6 -0.4**
comp=Z,0.6nm,0.5s,baz=28,slow=0.8,SNR=14
PTGA Pitinga 145.76 310 PKPbc **PKPdf** **03 53 36.9 -0.2**
comp=Z,1.7nm,0.5s,baz=75,slow=3.5,SNR=4.3
USHA Ushuaia 147.16 198 PKPbc **PKPbc** **03 53 40.7 +0.3**
comp=Z,65nm,1.1s,baz=76,slow=4.2,SNR=3.9
ROSC El Rosal 148.84 338 PKPbc **PKPbc** **03 53 46.6 -0.1**
comp=Z,11nm,0.7s,baz=142,slow=6.1,SNR=7.1
CPUP Villa Florida 154.45 260 PKPbc **PKPbc** **03 53 57.7 -1.0**
comp=Z,2.0nm,0.8s,baz=269,slow=2.3,SNR=3.8

*NEIC **19** 03:45:00.8±2.1, 9.°69N×84.°78W, h35km, MD4.2(HDC), Error ellipse: s-maj=53.0km s-min=15.6km az=210.0*
NEIC Felt at Colon, Herradura, Jaco and Paquera.
*CASC **19** 03:45:01.4±1.8, 9.°68N×84.°69W, h32km±5km, MD4.2*
*IDC **19** 03:45:04.0±1.1, 10.°84N×84.°97W, h0km, mb3.4/4, mb1 3.7/4, mb1mx3.5/35, mbtmp3.4/4, MS3.0/2, Ms1 3.0/2, ms1mx2.6/18, Error ellipse: s-maj=42.9km s-min=8.7km az=84.0*
ISC 19 03:44:58.0±1.8, 9.°67N±0.°06×84.°69W±0.°05, h17km±13km, n23, σ1°98/27, mb3.4/4, 5C-1D, Costa Rica

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
CGA2	**Cerro Gallo 2**	**0.41**	**32**	*ǁ iP*		**Pn**		**03 45 10.6**	**+1.3**
CGA2						*eS*		**Sn**	**03 45 17.6**	**+1.0**
JCR	**Jicaral**	**0.46**	**294**	*ǁ iP*		**Pn**		**03 45 11.0**	**+1.1**
QCR	**Quepos**	**0.57**	**115**	*ǁ iP*		**Pn**		**03 45 12.8**	**+1.5**
QCR						*eS*		**Sn**	**03 45 22.3**	**+2.0**
HDC	**Heredia**	**0.66**	**59**	*i P*		**Pn**		**03 45 14.3**	**+1.6**
HDC						*eS*		**Sn**	**03 45 24.8**	**+2.0**
JTS	**JuntasAbangare** 967nm,0.3s,baz=119,slow=18,SNR=6653	**0.67**	**337**	Pg		**Pn**		**03 45 13.5**	**+0.7**
JTS	baz=197,slow=19			Lg		Lg		03 45 23.3	
JTS	comp=Z,329nm,19.0s,baz=272,slow=49			LR		LR		03 45 30.7	
JTS	**JuntasAbangare**	**0.67**	**337**	*i P*		**Pn**		**03 45 13.8**	**+0.9**
JTS				*eS*		**Sn**		**03 45 23.3**	**+0.3**
URSC	**Urasca**	**0.91**	**79**	*ǁ iP*		**Pn**		**03 45 18.3**	**+2.1**
BUS	**Buena Vista**	**0.92**	**97**	*ǁ iP*		**Pn**		**03 45 18.4**	**+1.8**
VCR	**Vista de Mar**	**1.04**	**296**	*ǁ iP*		**Pg**		**03 45 19.0**	**+0.9**
BRU2	**Volcan**	**2.15**	**114**	*eP*		**Pn**		**03 45 35.3**	**+2.0**
BRU2				*eS*		**Sb**		**03 46 02.9**	**-0.3**
TBS2		**2.18**	**113**	*eS*		**Sn**		**03 46 02.9**	**+2.4**
ESPN	**Las Esperanzas**	**2.54**	**9**	*eP*		**Pn**		**03 45 40.1**	**+1.6**
MGAN	**Managua**	**2.90**	**328**	*eP*		**Pn**		**03 45 46.5**	**+3.0**
XAVN	**Gruta Xavier**	**2.95**	**327**	*eP*		**Pb**		**03 45 48.0**	**-2.1**
COPN	**Copaltepe**	**3.12**	**323**	*eP*		**Pn**		**03 45 49.6**	**+3.2**
AZU	**Azuero**	**4.74**	**113**	*eP*		**Pn**		**03 46 07.3**	**-1.4**
AZU				*eS*		**Sb**		**03 47 15.5**	**-2.1**
BCIP	**Isla Barro Col**	**4.81**	**96**	*ePn*		**Pn**		**03 46 12.3**	**+2.5**
BCIP				*eS*		**Sb**		**03 47 16.1**	**-3.4**
SJG	**San Juan** 2,31nm,21.4s,baz=268,slow=34	**19.84**	**63**	LR		LR		03 56 08.5	
TXAR	**Lajitas Array** 0.6nm,0.6s,baz=135,slow=11,SNR=7.6	**26.43**	**320**	P		**P**		**03 50 34.9**	**+0.7**
PFO	**Pinyon Flats O** comp=Z,40nm,18.2s,baz=279,slow=36	**37.68**	**314**	LR		LR		04 07 08.3	
NVAR	**Mina Array Bea** 0.6nm,0.7s,baz=133,slow=5.3,SNR=3.4	**41.57**	**319**	P		**P**		**03 52 44.8**	**-0.4**
YKA	**Yellowknife Ar** 0.1nm,0.7s,baz=141,slow=6.9,SNR=4.9	**57.01**	**344**	P		**P**		**03 54 40.9**	**-1.7**
TORD	**Torodi Ar. Bea** 0.4nm,0.7s,baz=291,slow=5.2,SNR=5.0	**84.36**	**78**	P		P		03 57 40.2	+10

*ISCJB **19** 03:45:49.9±0.6, 35.°29N±0.°04×141.°44E±0.°06, h10km, mb3.7/10, MS2.8/2, Error ellipse: s-maj=6.9km s-min=5.3km az=160.8*
*JMA **19** 03:45:51.9±0.1, 35.°30N×141.°28E, h17km±2km, M3.4*
*IDC **19** 03:45:56.5±2.7, 35.°30N×140.°93E, h53km±25km, mb3.4/10, mb1 3.7/12, mb1mx3.5/42, mbtmp3.7/12, ML3.5/2, MS3.0/4, Ms1 3.0/4, ms1mx2.6/32, Error ellipse: s-maj=26.3km s-min=16.8km az=93.0*
ISC 19 03:45:50.7±0.6, 35.°27N±0.°05×141.°32E±0.°06, h10km, n34, σ1°41/29, mb3.8/10, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.57**	**319**	P		**Pg**		**03 46 02.3**	**+0.5**
CHOJ				S		**Sg**		**03 46 09.9**	**+0.6**
BSO1	**Boso 1**	**0.67**	**204**	P		**Pb**		**03 46 05.0**	**+0.8**
BSO3	**Boso 3**	**0.81**	**235**	P		**Pb**		**03 46 07.0**	**+0.4**
KTR	**Katsuura**	**0.83**	**262**	P		**Pb**		**03 46 07.2**	**+0.1**
BSO4	**Boso 4**	**0.85**	**251**	P		**Pb**		**03 46 07.8**	**+0.4**
JYT	**Yasato**	**1.32**	**317**	P		**Pn**		**03 46 15.3**	**+0.1**
JYT				S		**Sb**		**03 46 31.4**	**-1.2**
JHO	**Hitachi**	**1.47**	**336**	P		**Pn**		**03 46 17.9**	**+0.6**
JHJ	**Hachijo jima 2** 48nm,0.3s,baz=100,slow=4.0,SNR=11	**2.49**	**211**	P		**Pn**		**03 46 32.4**	**+1.1**
JHJ				S		**Sb**		**03 47 05.0**	**-1.3**
MJAR	**Matsushiro Arr** 38nm,0.3s,baz=73,slow=23,SNR=6.4	**2.82**	**298**	P		**Pn**		**03 46 36.7**	**+0.8**
MAT	**Matsushiro** 5.5nm,0.3s,baz=94,slow=14,SNR=36	**2.83**	**298**	P		**Pn**		**03 46 37.1**	**+1.2**
MAT						*eS*		**Sb**	**03 47 14.9**	**-1.0**
JCJ	**Chichijima** 12nm,0.3s,baz=305,slow=19,SNR=4.4	**8.18**	**175**	P		**Pn**		**03 47 48.0**	**-1.5**
ASAJ	**Asahikawa** 0.9nm,0.3s,baz=221,slow=20,SNR=3.2	**8.89**	**6**	P		**Pn**		**03 47 56.5**	**-2.7**
ASAJ				LR		LR		03 52 18.7	
KSRS	**Korea Array** 0.1nm,0.3s,baz=101,slow=15,SNR=2.4	**11.02**	**285**	P		Pn		03 48 33.6	+5.3
KLR	**Kul'dur** 0.1nm,0.3s,baz=163,slow=9.1,SNR=4.7	**15.63**	**336**	P		**Pn**		**03 49 33.8**	**+2.9**
KLR				LR		LR		03 55 31.9	
PETK	**Petropavlovsk-** comp=Z,24nm,20.1s,baz=222,slow=37	**21.27**	**28**	LR		LR		03 59 15.3	
H11N2	**WAKE ISLAND Hy 27.36 118** baz=310,slow=76,SNR=105			T		T		04 20 14.8	
H11N1	**WAKE ISLAND Hy 27.36 118** baz=310,slow=76,SNR=122			T		T		04 20 14.8	
H11N3	**WAKE ISLAND Hy 27.37 118** baz=310,slow=76,SNR=100			T		T		04 20 14.8	
YAK	**Yakutsk** comp=Z,55nm,21.6s,baz=248,slow=36	**27.78**	**348**	LR		LR		04 02 24.1	
H11S3	**WAKE ISLAND Hy 28.01 120** baz=312,slow=76,SNR=305			T		T		04 21 00.4	
H11S1	**WAKE ISLAND Hy 28.01 120** baz=312,slow=76,SNR=424			T		T		04 21 01.9	
H11S2	**WAKE ISLAND Hy 28.02 120** baz=312,slow=76,SNR=227			T		T		04 21 02.1	
ZALV	**Zalesovo Beam** 0.8nm,0.6s,baz=92,slow=8.9,SNR=2.6	**43.06**	**314**	P		**P**		**03 53 47.5**	**-2.9**
MKAR	**Makanchi Array** 0.8nm,0.6s,baz=95,slow=9.3,SNR=7.7	**45.01**	**304**	P		**P**		**03 54 03.2**	**-3.0**
ILAR	**Eielson Array** 0.5nm,0.6s,baz=265,slow=5.8,SNR=8.0	**51.03**	**32**	P		**P**		**03 54 53.3**	**+0.7**
WRA	**Warramunga Arr** 1.1nm,0.4s,baz=3.4,slow=7.6,SNR=12	**55.30**	**188**	P		**P**		**03 55 23.9**	**-0.6**
INK	**Inuvik** 0.5nm,0.6s,baz=315,slow=8.0,SNR=3.7	**56.00**	**27**	P		**P**		**03 55 28.8**	**-0.1**
ASAR	**Alice Springs** 0.3nm,0.3s,baz=3.0,slow=6.8,SNR=4.6	**59.03**	**188**	P		**P**		**03 55 51.1**	**+0.2**
YKA	**Yellowknife Ar** 0.1nm,0.8s,baz=297,slow=6.7,SNR=2.9	**65.38**	**30**	P		**P**		**03 56 33.4**	**+0.5**
AKASG	**Malin Array Be** 0.3nm,0.4s,baz=45,slow=5.4,SNR=3.5	**75.65**	**323**	P		**P**		**03 57 35.8**	**0.0**
PDAR	**Pinedale Array** 0.3nm,0.5s,baz=246,slow=1.4,SNR=7.2	**78.96**	**45**	P		**P**		**03 57 56.1**	**+1.2**
TXAR	**Lajitas Array** 0.3nm,0.6s,baz=309,slow=3.1,SNR=7.1	**91.26**	**52**	P		**P**		**03 58 57.8**	**+1.1**
MAW	**Mawson** 1.9nm,0.3s,baz=80,slow=3.6,SNR=14	**117.91**	**205**	PKP		**PKPdf**		**04 04 36.3**	**-0.1**
LPAZ	**La Paz** 1.1nm,0.5s,baz=315,slow=2.9,SNR=3.9	**147.62**	**62**	PKPbc		**PKPbc**		**04 05 38.2**	**+1.6**

RSNC 19 03:48:42.9±0.6, 6.°73N×73.°11W, h140km±6km, ML1.8, Northern Colombia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BARC	**Barichara**	**0.15**	**206**	*e*P	Pn	03 49 01.7	-0.5
BARC				*i*		03 49 02.1	
	comp=Z,17nm,0.0s						
BARC				*e*S	Sn	03 49 16.9	0.0
GIRC	**Giron, Santand**	**0.35**	**347**	*e*P	Pn	03 49 01.8	-0.9
BRRC	**Barranca, Sant**	**0.70**	**302**	*e*P	Pn	03 49 03.5	-0.9
BRRC				*e*S	Sn	03 49 20.2	-0.5
BRRC				*i*		03 49 24.3	
	comp=Z,24nm,0.2s						
PAMC	**Pamplona, Colo**	**0.73**	**34**	*e*P	Pn	03 49 04.8	-0.4
PAMC				*e*S	Sn	03 49 21.8	-0.3
PAMC				*i*		03 49 22.9	
	comp=Z,2.7nm,0.4s						
CBRI	**Barrientos, No**	**1.03**	**18**	*e*P	Pn	03 49 07.4	+0.2
GRMC	**Gramalote, San**	**1.03**	**17**	*e*P	Pn	03 49 07.6	+0.4
OCAC	**Ocana**	**1.51**	**352**	*e*P	Pn	03 49 11.8	-0.2
OCAC				*i*		03 49 38.0	
	comp=Z,12nm,0.4s						
NORC	**Norcasia**	**2.10**	**236**	*e*P	Pn	03 49 18.2	-0.4
NORC				*e*S	Sn	03 49 45.1	-1.0
HELC	**Santa Helena**	**2.46**	**258**	*e*P	Pn	03 49 24.0	+0.6
HELC				*e*S	Sn	03 49 55.3	+0.8
HELC				*i*		03 50 01.3	
	comp=Z,5.9nm,0.5s						

IDC ***19*** *03:53:19.9±0.4,56˚.53S×25˚.61W,h0km,mb5.0/18, mb1 4.9/18,mb1mx4.8/25,mbtmp5.0/18,MS4.1/10, Ms1 4.1/10,ms1mx4.0/18,Error ellipse: s-maj=15.7km s-min=12.5km az=18.0*

ISCJB ***19*** *03:53:22.4±0.3,56˚.52S±0˚.05×25˚.66W±0˚.08,h29km, mb5.0/35,MS4.2/11,Error ellipse: s-maj=7.9km s-min=5.3km az=37.2*

MOS ***19*** *03:53:23.6±1.3,56˚.56S×25˚.72W,h33km,mb4.9/20,Error ellipse: s-maj=23.7km s-min=13.2km az=104.9*

BJI ***19*** *03:53:25.7,56˚.50S×25˚.60W,h38km,mB5.5/11,Ms5.6/7, Ms7 5.2/7*

GCMT ***19*** *03:53:25.6±0.3,56˚.70S×25˚.19W,h26km,MW5.0/58, Moment Tensor Solution. s29,c35; s58,c78; Duration: 0 Moment tensor: Scale 10^16Nm; Mrr3.65±.22; Mθθ-1.12±.15; Mφφ-2.53±. 15; Mrθ-0.30±.29; Mθφ1.33±.08; Mφr1.68±.25; Best double couple: M0 3.88000×10^16 NP1:φs142.00000°,δ33.00000°,λ77.00000°. Principal axes: T 4.0770, Plg76.0000°, Azm272.0000°; N -0.3940, Plg7.0000°, Azm153.0000°; P -3.6830, Plg12.0000°, Azm61.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

NEIC ***19*** *03:53:25.6±1.2,56˚.57S×25˚.62W,h39km±10km,mb5.0/21 Error ellipse: s-maj=8.2km s-min=5.7km az=211.0*

ISC 19 03:53:24.3±0.3, 56˚.54S±0˚.07×25˚.65W±0˚.06, h29km, n186, σ1§06/190, mb5.1/35, MS4.2/12, 1C-3D, South Sandwich Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HOPE	**Hope Point**	**6.57**	**286**	*e*Pn	**Pn**	**03 55 01.3**	**+2.5**
HOPE				*e*S	**Sn**	**03 56 12.5**	**-0.2**
VNA1	**Neumayer--Stat**	**16.02**	**159**	P	**Pn**	**03 57 06.8**	**-0.4**
VNA3	**Neumayer Olymp**	**16.25**	**161**	P	**Pn**	**03 57 09.6**	**-0.5**
VNA2	**Neumayer--Watz**	**16.42**	**159**	P	**Pn**	**03 57 11.5**	**-0.7**
	baz=319,slow=15						
SNAA	**Sanae**	**17.95**	**157**	P	**P**	**03 57 31.9**	**+0.2**
SNAA	**Sanae**	**17.95**	**157**	*e*P	**Pn**	**03 57 30.9**	**-0.4**
SNAA				pmax	pmax		
	comp=Z,4μm,1.4s						
SNAA	**Sanae**	**17.95**	**157**	*e*Pn	**Pn**	**03 57 30.9**	**-0.4**
	comp=Z,4μm,1.4s						
SNAA				*e*PcP	**PcP**	**04 02 05.5**	**0.0**
EFI	**East Falkland**	**19.50**	**271**	*e*P	**P**	**03 57 49.3**	**+0.5**
EFI				pmax	pmax		
	comp=Z,35nm,0.5s						
EFI	**East Falkland**	**19.50**	**271**	*e*P	**P**	**03 57 49.3**	**+0.5**
	comp=Z,35nm,0.5s						
PMSA	**Palmer Station**	**20.24**	**230**	P	Pn	03 57 58.0	-0.7
	comp=Z,61nm,0.5s,baz=60,slow=6.6,SNR=26						
PMSA				LR	LR	04 04 51.9	
	comp=Z,1μm,18.6s,baz=82,slow=34						
PMSA	**Palmer Station**	**20.24**	**230**	*e*P	**P**	**03 57 57.8**	**+1.1**
	comp=Z,256nm,1.5s						
NVL	**N'lazarevskaya**	**21.38**	**146**	*e*P	P	03 58 03.5	-5.5
USHA	**Ushuaia**	**23.89**	**256**	P	**P**	**03 58 33.6**	**-1.5**
	comp=Z,83nm,0.7s,baz=79,slow=9.7,SNR=16						
USHA				LR	LR	04 05 42.1	
	comp=Z,3μm,20.9s,baz=100,slow=31						
TRQA	**Tornquist**	**30.30**	**292**	*e*P	**P**	**03 59 31.8**	**-1.1**
	comp=Z,17nm,0.8s						
TRQA				*e*PcP	**PcP**	**04 02 32.0**	**-0.5**
SYO	**Syowa Base**	**30.66**	**140**	*e*P	**P**	**03 59 35.6**	**0.0**
SYO	**Syowa Base**	**30.66**	**140**	*e*pP	pP	03 59 44.0	-0.1
PLCA	**Paso Flores**	**32.93**	**279**	P	**P**	**03 59 54.0**	**-2.0**
PLCA				pmax	pmax		
	comp=Z,5.0nm,0.7s						
QSPA	**South Pole Qui**	**33.71**	**180**	*e*P	**P**	**04 00 02.9**	**+0.3**
	comp=Z,268nm,0.6s						
QSPA				*e*PcP	**PcP**	**04 02 40.6**	**-0.9**
CPUP	**Villa Florida**	**37.78**	**310**	P	**P**	**04 00 37.1**	**-0.5**
	comp=Z,33nm,0.9s,baz=150,slow=7.4,SNR=45						
CPUP				PcP	**PcP**	**04 02 54.0**	**0.0**
	comp=Z,8.5nm,0.9s,baz=183,slow=3.2,SNR=5.3						
CPUP	**Villa Florida**	**37.78**	**310**	*e*P	**P**	**04 00 36.7**	**-1.0**
CPUP				PcP	**PcP**	**04 02 54.0**	**0.0**
ROC1	**El Roble**	**38.91**	**288**	*e*P	**P**	**04 00 46.8**	**-0.7**
	comp=Z,33nm,0.6s						
MAW	**Mawson**	**39.24**	**143**	P	**P**	**04 00 50.2**	**+0.7**
	comp=Z,6.7nm,0.9s,baz=254,slow=8.2,SNR=10						
MAW				LR	LR	04 15 25.1	
	comp=Z,145nm,19.6s,baz=242,slow=34						
MAW	**Mawson**	**39.24**	**143**	*e*P	**P**	**04 00 50.1**	**+0.7**
	comp=Z,3.9nm,1.1s						
SUR	**Sutherland**	**39.95**	**73**	P	**P**	**04 00 56.1**	**+0.1**
	comp=Z,0.6nm,0.8s,baz=219,slow=7.6,SNR=7.0						
SUR	**Sutherland**	**39.95**	**73**	*e*P	**P**	**04 00 56.8**	**+0.7**
	comp=Z,16nm,0.8s						
LCO	**Las Campanas**	**41.88**	**292**	*e*P	**P**	**04 01 11.1**	**-1.0**
	comp=Z,29nm,0.8s						
BOSA	**Boshof**	**45.27**	**74**	P	**P**	**04 01 38.2**	**-0.9**
	comp=Z,6.2nm,0.9s,baz=207,slow=10,SNR=7.3						
BOSA				LR	LR	04 16 26.2	
	comp=Z,474nm,21.6s,baz=212,slow=31						
BOSA	**Boshof**	**45.27**	**74**	*e*P	**P**	**04 01 38.7**	**-0.5**
VNDA	**Vanda**	**46.12**	**182**	P	**P**	**04 01 45.6**	**+0.5**
	comp=Z,28nm,0.7s,baz=186,slow=6.6,SNR=198						
VNDA				ScP	**ScP**	**04 07 13.8**	**+2.3**
	comp=Z,2.5nm,0.7s,baz=204,slow=3.0,SNR=9.4						
VNDA				LR	LR	04 19 56.8	
	comp=Z,146nm,20.6s,baz=161,slow=35						
PB04	**IPOC Station P**	**47.13**	**298**	*e*P	**P**	**04 01 54.0**	**+0.1**
	comp=Z,130nm,1.1s						
PB01	**IPOC Station P**	**47.90**	**299**	*e*P	**P**	**04 01 59.5**	**-0.3**
	comp=Z,142nm,0.9s						
H10S2	**ASCENSION HYDR**	**48.24**	**15**	T	T	04 54 54.8	
	baz=189,slow=75,SNR=46						
H10S3	**ASCENSION HYDR**	**48.24**	**15**	T	T	04 54 55.4	
	baz=189,slow=75,SNR=38						
H10S1	**ASCENSION HYDR**	**48.26**	**15**	T	T	04 54 55.9	
	baz=189,slow=75,SNR=38						
LBTB	**Lobatse**	**48.34**	**71**	P	**P**	**04 02 02.6**	**-0.6**
	comp=Z,9.8nm,0.9s,baz=227,slow=9.1,SNR=13						
LBTB	**Lobatse**	**48.34**	**71**	P	**P**	**04 02 02.6**	**-0.6**
	comp=Z,13nm,0.8s						
PB11	**IPOC Station P**	**49.07**	**300**	*e*P	**P**	**04 02 09.3**	**+0.4**
	comp=Z,142nm,0.9s						
TSUM	**Tsumeb**	**49.19**	**59**	LR	LR	04 18 07.0	
	comp=Z,124nm,21.4s,baz=176,slow=30						
TSUM	**Tsumeb**	**49.19**	**59**	*e*P	**P**	**04 02 08.5**	**-1.3**
	comp=Z,5.1nm,0.9s						
H10N1	**ASCENSION HYDR**	**49.36**	**15**	T	T	04 56 19.0	
	baz=188,slow=75,SNR=2.8						
H10N3	**ASCENSION HYDR**	**49.36**	**15**	T	T	04 56 17.3	
	baz=188,slow=75,SNR=20						
H10N2	**ASCENSION HYDR**	**49.37**	**15**	T	T	04 56 19.0	
	baz=188,slow=75,SNR=15						
LPAZ	**La Paz**	**51.36**	**304**	P	**P**	**04 02 27.6**	**+0.8**
	comp=Z,62nm,0.5s,baz=120,slow=5.3,SNR=473						
LPAZ				LR	LR	04 28 42.8	
	comp=Z,58nm,18.1s,baz=160,slow=41						
LPAZ	**La Paz**	**51.36**	**304**	*e*P	**P**	**04 02 27.5**	**+0.8**
	comp=Z,163nm,1.1s						
SAML	**Samuel**	**55.76**	**313**	*e*P	**P**	**04 02 58.1**	**-0.2**
	comp=Z,35nm,1.3s						
LSZ	**Lusaka**	**57.76**	**67**	*e*P	**P**	**04 03 12.1**	**-0.6**
LSZ				pmax	pmax		
	comp=Z,6.0nm,1.1s						
LSZ	**Lusaka**	**57.76**	**67**	*e*P	**P**	**04 03 12.1**	**-0.6**
	comp=Z,5.8nm,1.1s						
NNA	**Nana**	**59.23**	**297**	P	**P**	**04 03 23.1**	**+0.2**
	comp=Z,18nm,0.7s,baz=137,slow=7.8,SNR=10						
NNA	**Nana**	**59.23**	**297**	*e*P	**P**	**04 03 22.1**	**-0.8**
PTGA	**Pitinga**	**62.09**	**320**	P	**P**	**04 03 42.3**	**+0.1**
	baz=169,slow=9.6						
PTGA	**Pitinga**	**62.09**	**320**	*e*P	**P**	**04 03 42.4**	**+0.2**
	comp=Z,7.6nm,0.8s						
ATAH	**Atahualpa**	**64.18**	**299**	P	**P**	**04 03 58.1**	**+1.5**
	comp=Z,28nm,0.8s,baz=164,slow=7.1,SNR=14						
LIC	**Lamb**	**64.80**	**23**	*e*P	**P**	**04 03 59.8**	**-0.3**
	comp=Z,67nm,1.8s						
KIC	**Kosan Boka**	**65.00**	**23**	*e*P	**P**	**04 04 01.0**	**-0.4**
	comp=Z,66nm,1.4s						
TIC	**Toumodi**	**65.21**	**23**	*e*P	**P**	**04 04 02.2**	**-0.6**
DBIC	**Dimbokro**	**65.27**	**23**	P	**P**	**04 04 02.8**	**-0.3**
	comp=Z,4.7nm,0.7s,baz=155,slow=7.7,SNR=8.9						
DBIC				LR	LR	04 26 10.4	
	comp=Z,194nm,20.0s,baz=160,slow=30						
OTAV	**Otavalo**	**70.64**	**302**	*e*P	**P**	**04 04 38.2**	**+0.7**
	comp=Z,18nm,0.6s						
OTAV	**Otavalo**	**70.64**	**302**	*e*P	**P**	**04 04 38.3**	**+0.7**
CMBC	**Cumbal**	**70.97**	**303**	*e*P	**P**	**04 04 40.5**	**+1.0**
CRUC	**La Cruz**	**71.12**	**304**	*e*P	**P**	**04 04 40.5**	**+0.2**
SJAC	**San Juan de Ar**	**71.30**	**308**	*e*P	**P**	**04 04 39.4**	**-1.7**
POPC	**Popayan, Colom**	**71.85**	**305**	*e*P	**P**	**04 04 43.9**	**-0.7**
VILC	**Villavicencio,**	**71.93**	**309**	*e*P	**P**	**04 04 43.4**	**-1.6**
PRAC	**Prado**	**72.10**	**307**	*e*P	**P**	**04 04 46.2**	**+0.4**
CHIC	**Chingaza**	**72.41**	**309**	*e*P	**P**	**04 04 48.5**	**+0.3**
ROSC	**El Rosal**	**72.86**	**308**	P	**P**	**04 04 52.4**	**+1.7**
	comp=Z,9.7nm,0.5s,baz=175,slow=4.1,SNR=6.2						
ROSC				LR	LR	04 39 48.3	
	comp=Z,47nm,18.6s,baz=208,slow=38						
ROSC	**El Rosal**	**72.86**	**308**	*e*P	**P**	**04 04 50.1**	**-0.6**
GRGC	**Isla de Gorgon**	**72.94**	**304**	*e*P	**P**	**04 04 49.0**	**-1.8**
TORD	**Torodi Ar. Bea**	**73.07**	**28**	P	**P**	**04 04 51.6**	**+0.1**
	comp=Z,7.0nm,0.7s,baz=196,slow=6.7,SNR=70						
MALC	**Bahia Malaga**	**73.46**	**305**	*e*P	**P**	**04 04 55.0**	**+1.2**
GUYC	**Guyana, Colomb**	**73.67**	**308**	*e*P	**P**	**04 04 55.2**	**-0.4**
NORC	**Norcasia**	**73.74**	**308**	*e*P	**P**	**04 04 53.0**	**-2.6**
KMBO	**Kilima Mbogo**	**74.42**	**68**	LR	LR	04 37 24.4	
	comp=Z,84nm,18.1s,baz=62,slow=36						
GRGR	**Grenville**	**74.67**	**323**	*e*P	**P**	**04 05 02.3**	**+1.5**
SDV	**Santo Domingo**	**74.96**	**314**	P	**P**	**04 05 03.3**	**+0.4**
	comp=Z,11nm,0.3s,baz=195,slow=6.6						
SDV	**Santo Domingo**	**74.96**	**314**	*e*P	**P**	**04 05 03.2**	**+0.4**
	comp=Z,21nm,0.6s						
OCAC	**Ocana**	**75.48**	**311**	*e*P	**P**	**04 05 04.3**	**-1.4**
DBBC	**Dabeiba**	**75.62**	**308**	*e*P	**P**	**04 05 06.0**	**-0.5**
FDF	**Fort de France**	**76.94**	**325**	*e*P	**P**	**04 05 15.2**	**+1.4**
FDF	**Fort de France**	**76.94**	**325**	*e*P	**P**	**04 05 15.2**	**+1.4**
MOTC	**Monteria, Cord**	**76.96**	**309**	*e*P	**P**	**04 05 12.2**	**-1.7**
GDHS	**Morne Mazeau,**	**78.58**	**325**	*e*P	**P**	**04 05 24.9**	**+2.0**
RPZ	**Rata Peaks**	**79.13**	**192**	P	**P**	**04 05 25.8**	**0.0**
	comp=Z,20nm,0.7s,baz=168,slow=2.0,SNR=7.5						
SABA	**Saba**	**80.32**	**324**	*e*P	**P**	**04 05 34.2**	**+1.8**
SMRT	**St. Maarten**	**80.67**	**324**	*e*P	**P**	**04 05 34.8**	**+0.6**
THZ	**Tophouse**	**80.82**	**194**	*e*P	**P**	**04 05 35.5**	**+0.5**
STVI	**Saint Thomas**	**81.57**	**323**	*e*P	**P**	**04 05 39.5**	**+0.5**
HUMP	**Mt San Antoni**	**81.68**	**322**	*e*P	**P**	**04 05 40.2**	**+0.6**
SJG	**San Juan**	**81.76**	**321**	*e*P	**P**	**04 05 39.7**	**-0.3**
SJG				pmax	pmax		
	comp=Z,12nm,0.8s						
SJG	**San Juan**	**81.76**	**321**	*e*P	**P**	**04 05 39.7**	**-0.3**
	comp=Z,12nm,0.8s						
SJG	**San Juan**	**81.76**	**321**	*e*P	**P**	**04 05 37.7**	**-2.3**
JTS	**JuntasAbangare**	**82.50**	**301**	P	**P**	**04 05 44.5**	**+0.5**
	comp=Z,5.9nm,0.7s,baz=254,slow=6.4,SNR=6.4						
JTS	**JuntasAbangare**	**82.50**	**301**	*i*P	**P**	**04 05 45.0**	**+1.0**
JTS				pmax	pmax		
	comp=Z,19nm,0.8s						
JTS	**JuntasAbangare**	**82.50**	**301**	*e*P	**P**	**04 05 44.9**	**+0.8**
	comp=Z,12nm,1.2s						
TAM	**Tamanrasset**	**83.30**	**29**	*e*P	**P**	**04 05 48.9**	**+0.8**
TAM				pmax	pmax		
	comp=Z,6.0nm,1.4s						
TAM	**Tamanrasset**	**83.30**	**29**	*e*P	**P**	**04 05 48.9**	**+0.8**
	comp=Z,6.0nm,1.4s						
STKA	**Stephens Creek**	**91.27**	**169**	P	**P**	**04 06 26.8**	**+0.1**
	comp=Z,21nm,0.6s,baz=136,slow=5.3,SNR=5.7						
PPT2	**Papeete2**	**92.57**	**232**	*e*LR	LR	04 36 26.0	
	comp=Z,327nm,28.0s						
TAOE	**Nuku Hiva Isla**	**95.72**	**245**	*e*LR	LR	04 37 45.1	
	comp=Z,175nm,32.0s						
ASAR	**Alice Springs**	**98.26**	**161**	P	**P**	**04 06 58.2**	**-0.7**
	comp=Z,2.6nm,0.7s,baz=195,slow=3.7,SNR=11						
WRA	**Warramunga Arr**	**101.97**	**161**	P	**Pdif**	**04 07 14.9**	**-0.5**
	comp=Z,0.7nm,0.8s,baz=197,slow=5.5,SNR=3.9						
347A	**Saraland**	**102.46**	**309**	P	**Pdif**	**04 07 15.9**	**-1.2**
	baz=144						
TXAR	**Lajitas Array**	**107.78**	**296**	PKiKP	**PKiKP**	**04 11 48.4**	**+0.1**
	comp=Z,0.1nm,0.5s,baz=160,slow=2.9,SNR=2.8						
ECSD	**EROS Data Cent**	**116.27**	**310**	P	**PKPdf**	**04 12 03.7**	**-0.2**
	baz=144						
J30A	**Dallas**	**117.17**	**308**	P	**PKPdf**	**04 12 05.0**	**-0.7**
	baz=143						
D37A	**Cotton**	**117.35**	**315**	P	**PKPdf**	**04 12 05.6**	**-0.2**
	baz=145						
J29A	**Okreek**	**117.60**	**308**	P	**PKPdf**	**04 12 05.8**	**-0.7**
	baz=143						
D36A	**Goodland**	**117.66**	**315**	P	**PKPdf**	**04 12 07.0**	**+0.6**
	baz=145						
O20A	**White River Ci**	**118.67**	**300**	P	**PKPdf**	**04 12 08.9**	**0.0**
	baz=141						
D33A	**AnnSam, Waubun**	**118.70**	**313**	P	**PKPdf**	**04 12 08.1**	**-0.4**
	baz=144						
B34A	**Aery, Baudette**	**119.31**	**315**	P	**PKPdf**	**04 12 08.7**	**-0.9**
	baz=144						
EDW2	**Edwards Air Fo**	**119.51**	**289**	P	**PKPdf**	**04 12 10.7**	**+0.2**
	baz=141						
G27A	**Dupree**	**119.87**	**308**	P	**PKPdf**	**04 12 09.8**	**-0.9**
	baz=142						
A33A	**Warroad**	**119.96**	**314**	P	**PKPdf**	**04 12 10.1**	**-0.7**
	baz=143						
G26A	**Maurine**	**120.09**	**307**	P	**PKPdf**	**04 12 10.8**	**-0.4**
	baz=142						
TPNV	**Topopah Spring**	**120.19**	**292**	P	**PKPdf**	**04 12 12.5**	**+0.6**
	baz=140						
B30A	**Myrvik Farm, E**	**120.76**	**312**	P	**PKPdf**	**04 12 11.3**	**-1.0**
	baz=142						
NOA	**NORSAR Array B**	**120.77**	**20**	PKP	**PKPdf**	**04 12 11.3**	**-0.7**
	comp=Z,0.4nm,0.7s,baz=281,slow=2.3,SNR=3.6						
R11A	**Troy Canyon, C**	**120.92**	**294**	P	**PKPdf**	**04 12 13.2**	**0.0**
	baz=140						
DUG	**Dugway, Tooele**	**120.94**	**297**	P	**PKPdf**	**04 12 13.5**	**+0.4**
	baz=140						
DUG	**Dugway, Tooele**	**120.94**	**297**	*e*PKiKP	**PKPdf**	**04 12 13.2**	**+0.1**
DUG	**Dugway, Tooele**	**120.94**	**297**	*e*PKPdf	**PKPdf**	**04 12 13.2**	**+0.1**
E26A	**Carlson Angus**	**120.95**	**308**	P	**PKPdf**	**04 12 12.8**	**-0.1**
	baz=141						
ULM	**Lac du Bonnet**	**121.20**	**315**	PKP	**PKPdf**	**04 12 11.6**	**-1.5**
	comp=Z,2.0nm,0.6s,baz=170,slow=0.8,SNR=3.7						
PDAR	**Pinedale Array**	**121.33**	**301**	PKP	**PKPdf**	**04 12 12.8**	**-1.1**
	comp=Z,0.6nm,0.5s,baz=133,slow=4.8,SNR=11						
HWUT	**Hardware Ranch**	**121.41**	**299**	*e*PKPdf	**PKPdf**	**04 12 13.6**	**-0.5**
OBN	**Obninsk**	**122.22**	**37**	*e*PKiKP	**PKPdf**	**04 12 14.9**	**+0.1**
OBN				*e*		04 13 50.3	
OBN				pmax	pmax		
	comp=Z,31nm,2.4s						
NVAR	**Mina Array Bea**	**122.38**	**292**	PKP	**PKPdf**	**04 12 17.0**	**+0.9**
	comp=Z,1.1nm,0.5s,baz=98,slow=3.0,SNR=9.2						
LOHW	**Long Hollow**	**122.47**	**301**	*e*PKPdf	**PKPdf**	**04 12 16.2**	**+0.1**
MOOW	**Moose Ponds**	**122.64**	**301**	*e*PKPdf	**PKPdf**	**04 12 16.2**	**-0.2**
LAO	**LASA Array**	**122.78**	**306**	P	**PKPdf**	**04 12 16.4**	**0.0**
	baz=140						
RLMT	**Red Lodge**	**122.98**	**303**	P	**PKPdf**	**04 12 17.0**	**0.0**
	baz=139						
DGMT	**Dagmar**	**123.24**	**309**	P	**PKPdf**	**04 12 17.0**	**-0.2**
	baz=140						
CMAR	**Chiang Mai Arr**	**124.09**	**109**	PKP	**PKPdf**	**04 12 19.6**	**-0.1**
	comp=Z,2.6nm,0.7s,baz=258,slow=3.6,SNR=7.0						
FINES	**FINESS Array B**	**124.42**	**27**	PKP	**PKPdf**	**04 12 19.0**	**+0.2**
	comp=Z,2.5nm,0.7s,baz=118,slow=1.2,SNR=9.0						
BOZ	**Bozeman (W)**	**124.48**	**302**	P	**PKPdf**	**04 12 20.2**	**+0.5**
	baz=138						
EGMT	**Eagleton**	**125.37**	**305**	P	**PKPdf**	**04 12 21.6**	**+0.3**
	baz=138						
O03D	**Paynes Creek**	**125.57**	**291**	P	**PKPdf**	**04 12 21.9**	**0.0**
	baz=138						
MSO	**Missoula**	**126.44**	**301**	P	**PKPdf**	**04 12 23.7**	**+0.3**
	baz=137						
N02D	**Trinity Center**	**126.54**	**291**	P	**PKPdf**	**04 12 24.2**	**+0.4**
	baz=137						
ABKAR	**Akbulak array**	**126.95**	**55**	*e*PKPdf	**PKPdf**	**04 12 24.1**	**0.0**
J05D	**Fort Rock, OR**	**127.45**	**294**	P	**PKPdf**	**04 12 26.8**	**+1.2**
	baz=136						
KSH	**Kashi**	**127.88**	**74**	*e*PKP	**PKPdf**	**04 12 27.1**	**+0.7**
KSH				*e*sPKP		04 12 41.6	
KSH				*e*PP	**PP**	**04 14 34.8**	**+5.1**
KSH				PKS	**PKSdf**	**04 16 02.4**	**-0.6**
KSH				SKS	**SKSdf**	**04 19 34.1**	**-1.7**
KSH				SKKS	**SKKSac**	**04 21 22.8**	**-1.3**
KSH				AMB	AMB		
	comp=Z,120nm,4.8s						
KSH				LR	LR		
	comp=Z,480nm,9.6s						
KSH				LR	LR		
	comp=Z,190nm,10.0s						
AAK	**Ala-Archa**	**129.34**	**70**	PKP	**PKPdf**	**04 12 29.4**	**+0.2**
	comp=Z,2.0nm,1.1s,baz=76,slow=4.9,SNR=3.9						
ARCES	**ARCESS Array B**	**131.08**	**21**	PKP	**PKPdf**	**04 12 31.4**	**0.0**
	comp=Z,2.0nm,0.7s,baz=192,slow=1.7,SNR=4.8						
ARU	**Arti**	**131.39**	**47**	*i* PKIKP	**PKPdf**	**04 12 33.7**	**+1.3**
ARU						04 14 52.0	
ARU				SS	SS	04 32 18.0	-5.3
KMI	**Kunming**	**131.56**	**108**	PKP	**PKPdf**	**04 12 35.4**	**+1.4**
BVAR	**Borovoye Array**	**134.32**	**57**	PKP	**PKPdf**	**04 12 39.8**	**+1.8**
	comp=Z,2.6nm,0.9s,baz=229,slow=5.7,SNR=8.6						
GYA	**Guiyang**	**134.69**	**111**	Pdif	**Pdif**	**04 09 40.6**	**-0.1**
GYA				PKP	**PKPdf**	**04 12 40.3**	**+0.6**
GYA				PP	**PP**	**04 15 17.8**	**+4.3**
GYA				AMB	AMB		
	comp=Z,130nm,8.0s						
MKAR	**Makanchi Array**	**136.23**	**71**	PKhKP	PKPpre	04 12 33.0	
	comp=Z,2.0nm,0.5s,baz=270,slow=1.4,SNR=2.8						
MKAR				PKP	**PKPdf**	**04 12 40.6**	**-1.2**
	comp=Z,2.0nm,0.8s,baz=258,slow=5.6,SNR=6.0						
MKAR				PKKP	**PKKPdf**	**04 22 16.1**	**-3.8**
	comp=Z,1.1nm,0.6s,baz=99,slow=7.9,SNR=8.3						
CD2	**Chengdu**	**136.71**	**104**	PKP	**PKPdf**	**04 12 42.6**	**-0.7**
CD2				PP	**PP**	**04 15 25.8**	**-0.4**
CD2				SKS	**SKSdf**	**04 19 51.6**	**-0.2**
CD2				SKKS	**SKKSac**	**04 22 17.5**	**-0.9**
CD2				SS	**SS**	**04 33 29.3**	**+1.6**
CD2				AMB	AMB		
	comp=Z,90nm,5.3s						
CD2				LR	LR		
	comp=Z,180nm,8.9s						
CD2				LR	LR		
	comp=Z,190nm,16.7s						
KURBB	**Kurchatov Arra**	**136.74**	**64**	PKP	**PKPdf**	**04 12 42.4**	**-0.1**
	comp=Z,0.6nm,0.5s,baz=239,slow=2.7,SNR=12						
KURK	**Kurchatov**	**136.84**	**64**	PKIKP	**PKPdf**	**04 12 42.4**	**-0.3**
KURK				pmax	pmax		
	comp=Z,1.0nm,0.6s						
KURK	**Kurchatov**	**136.84**	**64**	PKP	**PKPdf**	**04 12 42.4**	**-0.3**
YKA	**Yellowknife Ar**	**137.11**	**317**	PKhKP	PKPpre	04 12 31.9	
	comp=Z,0.4nm,0.8s,baz=123,slow=3.4,SNR=8.0						
YKA				PKP	**PKPdf**	**04 12 43.0**	**+0.2**
	comp=Z,4.0nm,0.6s,baz=127,slow=2.1,SNR=44						
WMQ	**Urumqi**	**137.17**	**78**	*e*PKP	**PKPdf**	**04 12 44.1**	**+0.4**
WHN	**Wuhan**	**141.91**	**116**	PKP	**PKPdf**	**04 12 49.3**	**-3.4**
SKAG	**Skagway**	**144.20**	**305**	*e*PKPdf	PKPbc	04 12 54.6	+0.5
NJ2	**Nanjing**	**145.35**	**120**	*e*PKPbc	**PKPab**	**04 12 58.8**	**0.0**
INK	**Inuvik**	**146.73**	**320**	PKPbc	**PKPbc**	**04 13 01.5**	**-0.1**
	comp=Z,24nm,0.8s,baz=84,slow=3.2,SNR=65						
TIA	**Tai'an**	**147.82**	**113**	*e*PKPbc	**PKPbc**	**04 13 06.1**	**+0.4**
HHC	**Hu-ho-hao-te**	**148.31**	**101**	*e*PKPbc	**PKPdf**	**04 13 02.3**	**-1.2**
HHC				AMB	AMB		
	comp=Z,130nm,5.5s						
EGAK	**Eagle**	**148.70**	**312**	*e*PKPbc	**PKPbc**	**04 13 06.7**	**-0.3**
BMRM	**Bremner River**	**149.05**	**304**	*e*

ISCJB ***19*** *04:00:02.9±0.6,39˚.51N×0˚.02×27˚.58E±0˚.03,h2km±4km, Error ellipse: s-maj=4.1km s-min=3.2km az=162.4*
ISK ***19*** *04:00:02.5,39˚.48N×27˚.59E,h5km,MD2.7*
DDA ***19*** *04:00:03.1,39˚.52N×27˚.58E,h7km,Md2.8*
CSEM ***19*** *04:00:03.1±0.1,39˚.49N×27˚.57E,h5km,MD2.7,Error ellipse: s-maj=3.4km s-min=2.8km az=167.0*
ISC 19 04:00:03.3±1.1,39˚.49N±0˚.02×27˚.59E±0˚.02,h7km±9km, n46,σ0s54/74,Turkey

Code	Station Name	Δ°	AZ°	Phase	Op	ID	Time h m s	Res ISC
BALB	**Balikesir**	**0.27**	**56**	*e*PG		**Pg**	**04 00 08.5**	**-0.2**
BALB				*e*SG		**Sg**	**04 00 12.7**	**+0.4**
BALB	**Balikesir**	**0.27**	**56**	*e*Pg		**Pg**	**04 00 08.5**	**-0.2**
BALB				*e*Sg		**Sg**	**04 00 12.7**	**+0.4**
DKL	**Dikili**	**0.67**	**232**	*e*PG		**Pg**	**04 00 15.2**	**-1.1**
DKL	**Dikili**	**0.67**	**232**	*e*Pg		**Pg**	**04 00 15.2**	**-1.1**
DURS	**Dursunbey**	**0.69**	**80**	*i* P		**Pg**	**04 00 17.2**	**+0.5**
DURS	**Dursunbey**	**0.69**	**80**	P		**Pg**	**04 00 17.2**	**+0.5**
AYVA	**Ayvalik**	**0.72**	**256**	*i* P		**Pg**	**04 00 16.9**	**-0.2**
AYVA				*i* S		**Sb**	**04 00 27.5**	**-0.7**
AYVA	**Ayvalik**	**0.72**	**256**	P		**Pg**	**04 00 16.9**	**-0.2**
AYVA				S		**Sb**	**04 00 27.5**	**-0.7**
EDC	**Edincik**	**0.88**	**14**	*e*PG		**Pg**	**04 00 20.2**	**-0.1**
EDC	**Edincik**	**0.88**	**14**	*e*Pg		**Pg**	**04 00 20.2**	**-0.1**
KCTX	**Karacabey (Bur**	**0.98**	**37**	*e*PG		**Pg**	**04 00 21.1**	**-1.0**
KCTX	**Karacabey (Bur**	**0.98**	**37**	*e*Pg		**Pg**	**04 00 21.1**	**-1.0**
DEMI	**Demirci**	**0.98**	**117**	*i* P		**Pg**	**04 00 23.1**	**+0.4**
DEMI				*i* S		**Sn**	**04 00 37.4**	**-0.5**
DEMI	**Demirci**	**0.98**	**117**	P		**Pb**	**04 00 23.1**	**+0.4**
DEMI				S		**Sn**	**04 00 37.4**	**-0.5**
MRMT	**Marmara Adasi**	**1.11**	**0**	*e*PN		**Pg**	**04 00 24.2**	**-0.5**
MRMT				*e*SN		**Sn**	**04 00 40.9**	**-0.2**
MRMT	**Marmara Adasi**	**1.11**	**0**	*e*Pn		**Pg**	**04 00 24.2**	**-0.5**
MRMT				*e*Sn		**Sn**	**04 00 40.9**	**-0.2**
IZM	**Izmir**	**1.12**	**193**	*e*PN		**Pg**	**04 00 24.4**	**-0.3**
IZM	**Izmir**	**1.12**	**193**	*e*Pn		**Pg**	**04 00 24.5**	**-0.3**
ORLT	**Orhaneli**	**1.15**	**61**	*e*PN		**Pg**	**04 00 25.4**	**-0.1**
ORLT	**Orhaneli**	**1.15**	**61**	*e*Pn		**Pg**	**04 00 25.4**	**-0.1**
RKY	**Sarkoy-Tekirda**	**1.24**	**345**	*e*PN		**Pb**	**04 00 26.9**	**-0.2**
RKY				*e*SN		**Sn**	**04 00 44.6**	**+0.5**
RKY	**Sarkoy-Tekirda**	**1.24**	**345**	*e*Pn		**Pb**	**04 00 26.9**	**-0.2**
RKY				*e*Sn		**Sn**	**04 00 44.7**	**+0.5**
GELI	**Tayfur-Gelibol**	**1.25**	**317**	*e*PN		**Pn**	**04 00 27.2**	**0.0**
GELI				*e*SN		**Sn**	**04 00 44.3**	**0.0**
GELI	**Tayfur-Gelibol**	**1.25**	**317**	*e*Pn		**Pn**	**04 00 27.2**	**0.0**
GELI				*e*Sn		**Sn**	**04 00 44.3**	**0.0**
KULA	**Kula-Manisa**	**1.28**	**139**	*e*PN		**Pg**	**04 00 27.0**	**-0.9**
KULA	**Kula-Manisa**	**1.28**	**139**	*e*Pn		**Pg**	**04 00 27.0**	**-0.9**
MDNY	**Mudanya-Bursa**	**1.33**	**48**	*e*PN		**Pg**	**04 00 28.2**	**-0.1**
MDNY	**Mudanya-Bursa**	**1.33**	**48**	*e*Pn		**Pn**	**04 00 28.2**	**-0.1**
ULDT	**Uludag**	**1.36**	**61**	*i* P		**Pn**	**04 00 28.6**	**-0.3**
ULDT				*i* S		**Sb**	**04 00 47.3**	**+0.3**
ULDT	**Uludag**	**1.36**	**61**	P		**Pn**	**04 00 28.6**	**-0.3**
ULDT				S		**Sb**	**04 00 47.3**	**+0.3**
SIGR	**SIGRI**	**1.37**	**259**	*e*PN		**Pn**	**04 00 28.8**	**-0.1**
SIGR				*e*SN		**Sn**	**04 00 48.7**	**+1.4**
SIGR	**SIGRI**	**1.37**	**259**	*e*Pn		**Pn**	**04 00 28.8**	**-0.1**
SIGR				*e*Sn		**Sn**	**04 00 48.7**	**+1.4**
ERIK	**Erikli-Kesan**	**1.44**	**325**	*e*PN		**Pn**	**04 00 30.0**	**+0.1**
ERIK				*e*SN		**Sg**	**04 00 49.9**	**+0.2**
ERIK	**Erikli-Kesan**	**1.44**	**325**	*e*Pn		**Pn**	**04 00 30.0**	**+0.1**
ERIK				*e*Sn		**Sg**	**04 00 49.9**	**+0.2**
TVSB	**Tavsanli**	**1.45**	**91**	*e*PN		**Pn**	**04 00 30.0**	**-0.1**
TVSB				*e*SN		**Sg**	**04 00 50.1**	**+0.2**
TVSB	**Tavsanli**	**1.45**	**91**	*e*Pn		**Pn**	**04 00 30.0**	**-0.1**
TVSB				*e*Sn		**Sg**	**04 00 50.2**	**+0.2**
ARMT	**Armutlu**	**1.46**	**42**	*e*PN		**Pn**	**04 00 30.1**	**0.0**
ARMT				*e*SN		**Sg**	**04 00 50.5**	**+0.4**
ARMT	**Armutlu**	**1.46**	**42**	*e*Pn		**Pn**	**04 00 30.1**	**0.0**
ARMT				*e*Sn		**Sg**	**04 00 50.5**	**+0.4**
IGD	**Bursa**	**1.46**	**58**	*i* P		**Pn**	**04 00 28.7**	**-1.5**
IGD				*i* S		**Sn**	**04 00 48.6**	**-1.1**
ZEY	**¨zmir**	**1.51**	**214**	*i* P		**Pg**	**04 00 32.1**	**-0.1**
ZEY				*i* S		**Sg**	**04 00 52.5**	**+0.8**
GDZ	**Gediz**	**1.52**	**105**	*i* P		**Pg**	**04 00 32.9**	**+0.4**
GDZ				*i* S		**Sg**	**04 00 52.4**	**+0.1**
GDZ	**Gediz**	**1.52**	**105**	P		**Pg**	**04 00 32.9**	**+0.4**
GDZ				S		**Sg**	**04 00 52.4**	**+0.1**
AYDB	**Zeytinkoy-Aydi**	**1.56**	**171**	*e*PN		**Pn**	**04 00 31.6**	**0.0**
AYDB				*e*SN		**Sn**	**04 00 52.3**	**+0.2**
AYDB	**Zeytinkoy-Aydi**	**1.56**	**171**	*e*Pn		**Pn**	**04 00 31.6**	**0.0**
AYDB				*e*Sn		**Sn**	**04 00 52.3**	**+0.2**
ALN	**Alexandroupoli**	**1.84**	**321**	*e*PN		**Pn**	**04 00 36.0**	**+0.7**
ALN	**Alexandroupoli**	**1.84**	**321**	*e*Pn		**Pn**	**04 00 36.0**	**+0.7**

NIED ***19*** *04:04:00,37˚.30N×143˚.50E,h5km,Mw4.9 Best double couple: M0 2.76000×10^16 NP1:φs26.00000°,δ38.00000°, λ-80.00000°. NP2:φs194.00000°,δ53.00000°, λ-97.00000°.*
IDC ***19*** *04:04:27.3±0.4,37˚.14N×143˚.56E,h0km,mb4.8/33, mb1 4.9/40,mb1mx4.9/48,mbtmp4.8/40,ML4.7/5,MS4.3/30, Ms1 4.3/30,ms1mx4.0/52,Error ellipse: s-maj=12.1km s-min=10.8km az=107.0*
ISCJB ***19*** *04:04:29.0±0.8,37˚.27N±0˚.02×143˚.47E±0˚.02,h14km±4km, mb5.0/267,MS4.6/57,Error ellipse: s-maj=3.7km s-min=2.2km az=165.4*
BJI ***19*** *04:04:28.6,37˚.29N×143˚.36E,h10km,mb4.9/81,mB5.2/58, Ms4.8/82,Ms7 4.7/75*
GCMT ***19*** *04:04:30.1±0.2,37˚.28N×143˚.63E,h12km,MW5.0/98, Moment Tensor Solution. s33,c39; s98,c162; Duration: 0 Moment tensor: Scale 10^16Nm; Mrr-3.57±.07; Mθθ0.87±.07; Mφφ2.69±.07; Mrθ0.28±.29; Mθφ1.27±.06; Mφr-0.63±.27; Best double couple: Ms3.52100×10^16 NP1:φs19.00000°,δ49.00000°,λ-100.00000°. NP2: φs215.00000°,δ42.00000°,λ-78.00000°. Principal axes: T 3.3710, Plg4.0000°, Azm117.0000°; N 0.2940, Plg8.0000°, Azm26.0000°; P -3.6710, Plg81.0000°, Azm231.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
NEIC ***19*** *04:04:30.1±1.6,37˚.19N×143˚.49E,h14km±10km, mb5.0/167 Error ellipse: s-maj=4.2km s-min=2.7km az=138.0*
MOS ***19*** *04:04:31.6±0.9,37˚.48N×143˚.47E,h25km,mb5.2/107, MS4.5/23,Error ellipse: s-maj=6.4km s-min=4.0km az=107.8*
JMA ***19*** *04:04:31.7±0.3,37˚.34N×143˚.46E,h41km,M4.7*
JMA Felt I J1.
ISC 19 04:04:31.8±0.5,37˚.29N±0˚.04×143˚.48E±0˚.03,h26km±3km, h26km:pP-P,n769,σ1s22/812,mb5.0/274,MS4.7/59, 16C-26D,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	Op	ID	Time h m s	Res ISC
JIO	**Ouri**	**2.05**	**305**	P		**Pn**	**04 05 03.6**	**-1.0**
JIO				S		**Sn**	**04 05 27.1**	**-2.1**
JFK	**Kawauchi**	**2.08**	**273**	S		**Sn**	**04 05 29.1**	**-1.0**
ONAJ	**Iwakimizuishiy**	**2.15**	**266**	P		**Pn**	**04 05 05.9**	**-0.1**
ONAJ				S		**Sn**	**04 05 30.8**	**-1.1**
JMM	**Marumori**	**2.21**	**286**	P		**Pn**	**04 05 06.9**	**+0.1**
JMM				S		**Sn**	**04 05 32.5**	**-0.8**
JMK	**Ichinoseki**	**2.43**	**314**	P		**Pn**	**04 05 10.2**	**+0.3**
JFT	**Otama**	**2.51**	**276**	P		**Pn**	**04 05 11.5**	**+0.5**
JFT				S		**Sn**	**04 05 40.7**	**-0.1**
JOM	**Ohasama**	**2.77**	**322**	P		**Pn**	**04 05 14.0**	**-0.6**
JOM				S		**Sn**	**04 05 46.6**	**-0.6**
JYK	**Kaneyama**	**2.95**	**304**	P		**Pn**	**04 05 17.5**	**+0.5**
BSO1	**Boso 1**	**3.33**	**218**	P		**Pn**	**04 05 22.1**	**+0.4**
JAG	**Ashikaga**	**3.34**	**256**	P		**Pn**	**04 05 21.6**	**-0.8**
JAG				S		**Sn**	**04 06 01.3**	**0.0**
JANG	**Nango**	**3.44**	**334**	P		**Pn**	**04 05 23.8**	**+0.1**
JANG				*e*S		**Sn**	**04 06 02.5**	**-1.1**
JRY	**Ryogami san**	**3.90**	**252**	P		**Pn**	**04 05 29.1**	**-0.9**
JRY				S		**Sn**	**04 06 13.4**	**-1.5**
JOD2	**Odawara 2**	**4.09**	**242**	P		**Pn**	**04 05 30.6**	**-2.0**
MJAR	**Matsushiro Arr**	**4.29**	**262**	Pn		**Pn**	**04 05 35.3**	**-0.1**
	50nm,0.3s,baz=84,slow=16,SNR=202							
MJAR				Sn		**Sn**	**04 06 25.7**	**+1.1**
	18nm,0.3s,baz=19,slow=8.0,SNR=8.3							
MJAR				LR		LR	04 07 18.3	
	comp=Z,4μm,21.7s,baz=90,slow=40							
MAJO	**Matsushiro**	**4.29**	**262**	*e*P		**Pn**	**04 05 35.8**	**+0.3**
MAJO	**Matsushiro**	**4.29**	**262**	*e*Pn		**Pn**	**04 05 35.8**	**+0.3**
MAT	**Matsushiro**	**4.29**	**262**	P		**Pn**	**04 05 35.9**	**+0.4**
MAT				*e*S		**Sn**	**04 06 25.7**	**+1.0**
MJB9	**Matsu-Tunnel**	**4.29**	**262**	*e*Pn		**Pn**	**04 05 35.8**	**+0.3**
JOT	**Ohata**	**4.50**	**336**	P		**Pn**	**04 05 40.5**	**+2.3**
ERM	**Erimo**	**4.72**	**357**	*e*P		**Pn**	**04 05 39.9**	**-1.4**
ERM				*e*			04 06 29.8	
ERM	**Erimo**	**4.72**	**357**	*e*Pn		**Pn**	**04 05 39.9**	**-1.4**
ERM				*e*Sn		**Sn**	**04 06 29.8**	**-5.4**
JKB	**Kayabe**	**4.96**	**338**	P		**Pn**	**04 05 44.3**	**-0.3**
JHJ2	**Mitsune**	**5.14**	**217**	*e*Pn		**Pn**	04 05 43.9	-3.2
JHJ	**Hachijo jima 2**	**5.15**	**217**	Pn		Pn	04 05 43.7	-3.5
	121nm,0.3s,baz=127,slow=4.7,SNR=9.5							
JHJ				Sn		Sn	04 06 37.9	-7.9
	69nm,0.3s,baz=232,slow=19,SNR=2.7							
JHJ				LR		LR	04 07 40.2	
	comp=Z,897nm,19.3s,baz=82,slow=38							
JCH	**Churui**	**5.32**	**359**	P		**Pn**	**04 05 47.6**	**-1.9**
JCH				S		**Sn**	**04 06 46.5**	**-3.3**
INU	**Inuyama**	**5.57**	**252**	*e*Pn		**Pn**	**04 05 53.4**	**+0.4**
JOSM	**Okushiri--Mats**	**5.69**	**328**	P		**Pn**	**04 05 56.0**	**+1.3**
JOSM				S		**Sn**	**04 06 57.6**	**-1.5**
ASAJ	**Asahikawa**	**6.85**	**355**	Pn		**Pn**	**04 06 10.1**	**-0.4**
	28nm,0.3s,baz=216,slow=5.0,SNR=40							
ASAJ				Sn		**Sn**	**04 07 24.3**	**-3.3**
	6.6nm,0.3s,baz=64,slow=32,SNR=7.7							
YUK	**Yuzh-Kuril'sk**	**6.97**	**14**	*e*P		Pn	04 06 08.8	-3.4
YUK				*i* S		Sn	04 07 22.6	-8.0
YUK				pmax		pmax		
	comp=Z,344nm,0.4s							
YUK				pmax		pmax		
	comp=E,155nm,0.3s							
YUK				pmax		pmax		
	comp=N,111nm,0.2s							
YUK				MLR		MLR		
	comp=Z,2μm,14.0s							
YUK				MLR		MLR		
	comp=N,3μm,12.0s							
SHO	**Shikotan**	**7.05**	**20***c*	*i*P		Pn	04 06 09.2	-4.0
SHO				*i* S		Sn	04 07 23.9	-8.5
SHO				pmax		pmax		
	comp=Z,355nm,0.6s							
SHO				pmax		pmax		
	comp=N,103nm,0.3s							
SHO				pmax		pmax		
	comp=E,210nm,0.3s							
KUR	**Kuril'sk**	**8.59**	**21**	*e*P		**Pn**	**04 06 32.4**	**-2.0**
KUR				*e*S		**Sn**	**04 08 04.5**	**-5.9**
KUR				pmax		pmax		
	comp=E,83nm,0.5s							
KUR				pmax		pmax		
	comp=Z,122nm,0.5s							
KUR				pmax		pmax		
	comp=N,30nm,0.2s							
YSS	**Yuzh-Sakhalins**	**9.67**	**357**	*e*P		**Pn**	**04 06 47.9**	**-1.3**
YSS				*e*S		**Sn**	**04 08 37.7**	**+0.8**
YSS				pmax		pmax		
	comp=Z,80nm,0.9s							
YSS				MLR		MLR		
	comp=Z,2μm,13.0s							
YSS				MLR		MLR		
	comp=N,2μm,11.0s							
YSS				MLR		MLR		
	comp=E,2μm,18.0s							
YSS	**Yuzh-Sakhalins**	**9.67**	**357**	*e*Pn		**Pn**	**04 06 48.8**	**-0.4**
CBIJ	**Chichi jima**	**10.23**	**187**	Pn		Pn	04 06 49.9	-7.0
CBIJ				Sn		Sn	04 08 35.2	-15
JCJ	**Chichijima**	**10.23**	**187**	Pn		Pn	04 06 49.9	-7.0
	comp=E,18nm,0.3s,baz=283,slow=21,SNR=6.3							
JCJ				Sn		Sn	04 08 35.2	-15
	comp=E,15nm,0.3s,baz=270,slow=20,SNR=2.9							
VLA	**Vladivostok**	**10.60**	**307**	⇓*e*P		**Pn**	**04 07 04.4**	**+2.4**
VLA				pmax		pmax		
	comp=Z,163nm,2.3s							
MSHR	**Mys Shultsa**	**10.83**	**303**	⇓**eP**		**Pn**	**04 07 06.8**	**+1.7**
USRK	**Ussuriysk Ar.**	**11.11**	**312**	Pn		**Pn**	**04 07 10.9**	**+2.0**
	comp=Z,2.1nm,0.3s,baz=115,slow=12,SNR=20							
USRK				LR		LR	04 11 22.6	
	comp=Z,3μm,18.1s,baz=122,slow=37							
JNU	**Nakatsue**	**11.12**	**252**	Pn		**Pn**	**04 07 09.3**	**+0.2**
	comp=Z,1.8nm,0.3s,baz=46,slow=12,SNR=33							
JNU	**Nakatsue**	**11.12**	**252**	*e*Pn		**Pn**	**04 07 08.8**	**-0.3**
KSRS	**Korea Array**	**12.38**	**275**	Pn		**Pn**	**04 07 29.1**	**+2.8**
	comp=Z,1.8nm,0.3s,baz=94,slow=14,SNR=23							
KSRS				LR		LR	04 12 02.5	
	comp=Z,2μm,18.3s,baz=80,slow=36							
KS01	**Wonju Array Si**	**12.40**	**276**	*e*Pn		**Pn**	**04 07 27.5**	**+0.9**
KS15	**Wonju Array Si**	**12.41**	**275**	*e*Pn		**Pn**	**04 07 27.4**	**+0.6**
KSAR	**Wonju Array Be**	**12.41**	**275**	P		**Pn**	**04 07 29.1**	**+2.3**
KSAR	**Wonju Array Be**	**12.41**	**275**	Pn		**Pn**	**04 07 29.1**	**+2.3**
HABR	**Khabarovsk**	**12.76**	**334**	*e*P		**Pn**	**04 07 28.6**	**-2.8**
HABR				*e*S		**Sn**	**04 09 48.2**	**-4.3**
HABR				pmax		pmax		
	comp=Z,100nm,1.7s							
HABR				MLR		MLR		
	comp=Z,861nm,13.0s							
MDJ	**Mudanjiang**	**12.79**	**309**	P		**Pn**	**04 07 33.6**	**+1.8**
MDJ				S		Sn	04 10 01.0	+7.8
MDJ				pmax		pmax		
	comp=Z,21nm,0.7s							
MDJ				pmax		pmax		
	comp=Z,230nm,5.8s							
MDJ				LR		LR		
	comp=Z,2μm,19.5s							
MDJ				LR		LR		
	comp=Z,2μm,15.6s							
MDJ				LR		LR		
	comp=Z,3μm,19.5s							
MDJ	**Mudanjiang**	**12.79**	**309**	*e*Pn		**Pn**	**04 07 33.4**	**+1.6**
TYV	**Tymovskoe**	**13.58**	**358**	*e*P		**Pn**	**04 07 41.5**	**-1.1**
TYV				pmax		pmax		
	comp=Z,20nm,0.8s							
TYV				MLR		MLR		
	comp=N,2μm,15.0s							
TYV				MLR		MLR		
	comp=Z,2μm,16.0s							
KLR	**Kul'dur**	**14.65**	**328**	Pn		**Pn**	**04 07 56.0**	**-1.3**
	comp=Z,1.1nm,0.3s,baz=130,slow=12,SNR=27							
KLR				LR		LR	04 13 37.6	
	comp=Z,1μm,18.2s,baz=144,slow=37							
KLR	**Kul'dur**	**14.65**	**328**	P		**Pn**	**04 07 56.0**	**-1.3**
KLR				pmax		pmax		
	comp=Z,1.0nm,0.3s							
KLR				MLR		MLR		
	comp=Z,1μm,18.2s							
CN2	**Changchun**	**15.16**	**301**	*e*P		**Pn**	**04 08 06.5**	**+2.4**
CN2				pmax		pmax		
	comp=Z,20nm,0.8s							
CN2				LR		LR		
	comp=Z,2μm,16.0s							
CN2				LR		LR		
	comp=Z,2μm,16.0s							
CN2				LR		LR		
	comp=Z,2μm,16.0s							
NKL	**Nikolayevsk**	**15.98**	**354**	*e*P		**Pn**	**04 08 13.0**	**-1.6**
NKL				pmax		pmax		
	comp=Z,250nm,4.0s							
NKL				pmax		pmax		
	comp=N,17nm,1.0s							
NKL				pmax		pmax		
	comp=Z,22nm,1.0s							
NKL				MLR		MLR		
	comp=N,1μm,16.0s							
NKL				MLR		MLR		
	comp=Z,2μm,16.0s							
SNY	**Shenyang**	**16.00**	**293**	⇓P		**Pn**	**04 08 13.1**	**-1.9**
SNY				pP		**pP**	**04 08 23.1**	**-2.2**
SNY				S		Sn	04 11 02.8	-8.7
SNY				pmax		pmax		
	comp=Z,23nm,2.2s							
SNY				pmax		pmax		
	comp=Z,460nm,3.5s							
SNY				LR		LR		
	comp=Z,2μm,15.6s							
SNY				LR		LR		
	comp=Z,3μm,17.9s							
SNY				LR		LR		
	comp=Z,6μm,15.7s							
DL2	**Dalian**	**17.27**	**282**	P		**P**	**04 08 32.3**	**-0.1**
DL2				*e*S		**Sn**	**04 11 39.1**	**-3.4**
DL2				pmax		pmax		
	comp=Z,95nm,1.1s							
DL2				pmax		pmax		
	comp=Z,780nm,4.4s							
DL2				LR		LR		
	comp=Z,1μm,16.3s							
DL2				LR		LR		
	comp=Z,2μm,16.2s							
PEA0	**Petropavlovsk-**	**18.66**	**28**	*e*P		**Pn**	**04 08 48.7**	**+0.5**
PETK	**Petropavlovsk-**	**18.66**	**28**	P		**Pn**	**04 08 48.8**	**+0.7**
	comp=Z,0.5nm,0.3s,baz=228,slow=5.6,SNR=6.3							
PETK				LR		LR	04 18 17.9	
	comp=Z,535nm,18.3s,baz=209,slow=44							
PET	**Petropavlovsk**	**18.96**	**29**	*e*P		Pn	04 09 02.3	+11
PET				MLR		MLR		
	comp=Z,1μm,14.0s							
PET				MLR		MLR		
	comp=Z,700nm,15.0s							
SSE	**Sheshan**	**19.43**	**258**	P		**P**	**04 08 57.0**	**+0.8**
SSE				S		**S**	**04 12 33.4**	**-1.0**
SSE				pmax		pmax		
	comp=Z,12nm,0.5s							
SSE				pmax		pmax		
	comp=Z,220nm,3.8s							
SSE				LR		LR		
	comp=Z,390nm,15.6s							
SSE				LR		LR		
	comp=Z,1μm,15.6s							
SSE				LR		LR		
	comp=Z,2μm,15.7s							
NJ2	**Nanjing**	**20.89**	**263**	*e*P		**P**	**04 09 11.8**	**-0.3**
NJ2				S		**S**	**04 13 02.6**	**-1.2**
NJ2				pmax		pmax		
	comp=Z,27nm,0.9s							
NJ2				LR		LR		
	comp=Z,1μm,10.3s							
NJ2				LR		LR		
	comp=Z,2μm,10.3s							
NJ2				LR		LR		
	comp=Z,1μm,9.2s							
HIA	**Hailar**	**20.92**	**312**	*e*P		**P**	**04 09 10.8**	**-1.6**
HIA				pmax		pmax		
	comp=Z,35nm,0.8s							
HIA	**Hailar**	**20.92**	**312**	*e*P		**P**	**04 09 10.8**	**-1.6**
	comp=Z,35nm,0.8s							
TIA	**Tai'an**	**21.13**	**275**	*e*P		**P**	**04 09 13.3**	**-1.3**
TIA				pmax		pmax		
	comp=Z,80nm,1.0s							
TIA				pmax		pmax		
	comp=Z,690nm,5.0s							
TIA				LR		LR		
	comp=Z,2μm,12.6s							
TIA				LR		LR		
	comp=Z,2μm,16.0s							
TIA				LR		LR		
	comp=Z,2μm,16.7s							
BJI	**Beijing**	**21.47**	**286**	P		**P**	**04 09 17.9**	**-0.3**
BJI				pP		**sP**	**04 09 27.9**	**-0.8**
BJI				S		**S**	**04 13 18.3**	**+3.3**
BJI				pmax		pmax		
	comp=Z,34nm,1.0s							
BJI				LR		LR		
	comp=Z,860nm,14.8s							
BJI				LR		LR		
	comp=Z,620nm,15.3s							
BJT	**Baijiatuau**	**21.47**	**286**	*e*P		**P**	**04 09 17.9**	**-0.4**
BJT				pmax		pmax		
	comp=Z,55nm,1.0s							
BJT	**Baijiatuau**	**21.47**	**286**	*e*P		**P**	**04 09 17.9**	**-0.4**
	comp=Z,55nm,1.0s							
YHNB	**Yeheng**	**22.68**	**243**	*e*P		**P**	**04 09 30.9**	**-0.6**
	comp=Z,49nm,1.0s							
MA2	**Magadan**	**22.79**	**10**	P		**P**	**04 09 32.7**	**+0.5**
	comp=Z,24nm,1.0s,baz=200,slow=9.0,SNR=7.0							
MA2				LR		LR	04 19 03.0	
	comp=Z,260nm,20.9s,baz=205,slow=38							
NACB	**Ninganchiao**	**22.84**	**241**	*e*P		**P**	**04 09 29.8**	**-3.3**
CLNS	**Chul'man**	**23.15**	**334**	*e*P		**P**	**04 09 36.3**	**+0.3**
CLNS				*e**PP		**sP**	**04 09 45.9**	**-0.7**
CLNS				*e*			04 09 59.0	
CLNS				*e*			04 13 22.8	
CLNS				*e*S		**S**	**04 13 46.3**	**+0.5**
CLNS				*e*SS		**SnSn**	**04 14 20.9**	**+1.1**
CLNS				pmax		pmax		
	comp=Z,34nm,0.8s							
CLNS				pmax		pmax		
	comp=E,11nm,0.9s							
CLNS				pmax		pmax		
	comp=N,21nm,0.9s							
CLNS				pmax		pmax		
	comp=E,41nm,0.9s							
CLNS				pmax		pmax		
	comp=N,55nm,1.1s							
CLNS				pmax		pmax		
	comp=Z,29nm,0.9s							
CLNS				smax		smax		
	comp=E,22nm,1.1s							
CLNS				smax		smax		
	comp=N,52nm,1.1s							
CLNS				MLR		MLR		
	comp=N,1μm,17.0s							
CLNS				MLR		MLR		
	comp=Z,1μm,16.0s							
CLNS				MLR		MLR		
	comp=E,511nm,12.0s							
SSLB	**Suanglung**	**23.54**	**241**	*e*P		**P**	**04 09 38.2**	**-1.9**
	comp=E,55nm,1.0s							
GUMO	**Guam**	**23.64**	**177**	LR		LR	04 18 26.1	
	comp=E,117nm,19.1s,baz=358,slow=36							
TPUB	**Ta-pu**	**24.08**	**241**	*e*P		**P**	**04 09 43.7**	**-1.5**
	comp=E,142nm,0.9s							
TWG	**Pinlang**	**24.09**	**240**	*e*P		**P**	**04 09 44.5**	**-0.7**
	comp=E,224nm,0.9s							
QZH	**Quanzhou**	**24.53**	**247**	⇑*i*P		**P**	**04 09 46.0**	**-3.3**
QZH				S		**S**	**04 14 02.8**	**-5.5**
QZH				pmax		pmax		
	comp=E,240nm,1.0s							
QZH				LR		LR		
	comp=E,3μm,12.9s							
QZH				LR		LR		
	comp=E,2μm,10.2s							
QZH				LR		LR		
	comp=E,2μm,14.7s							
TIY	**Taiyuan**	**24.58**	**281**	*e*P		**P**	**04 09 51.9**	**+2.1**
TIY				PP		**PnPn**	**04 10 28.3**	**+6.9**
TIY				pmax		pmax		
	comp=E,100nm,1.0s							
TIY				pmax		pmax		
	comp=E,430nm,7.8s							
TIY				LR		LR		
	comp=E,660nm,17.9s							
TIY				LR		LR		
	comp=E,1μm,14.4s							
TIY				LR		LR		

YAK comp=N,20nm,1.0s pmax pmax
YAK comp=Z,120nm,2.1s pmax pmax
YAK comp=N,182nm,3.0s pmax pmax
YAK comp=E,95nm,2.5s smax smax
YAK comp=N,282nm,2.8s smax smax
YAK comp=E,201nm,2.3s MLR MLR
YAK comp=Z,823nm,17.0s MLR MLR
YAK comp=N,386nm,17.0s MLR MLR
YAK comp=E,1µm,17.0s
SEY Seymchan 26.24 9 P **P** **04 10 05.9 +1.4**
comp=E,43nm,0.8s,baz=191,slow=6.3,SNR=112
H11N2 WAKE ISLAND Hy 26.89 124 T T 04 38 06.7
baz=316,slow=75,SNR=15
H11N1 WAKE ISLAND Hy 26.90 124 T T 04 38 12.9
baz=316,slow=75,SNR=13
H11N3 WAKE ISLAND Hy 26.91 124 T T 04 38 07.8
baz=316,slow=75,SNR=17
H11S1 WAKE ISLAND Hy 27.65 126 T T 04 39 07.8
baz=318,slow=76,SNR=16
H11S3 WAKE ISLAND Hy 27.65 126 T T 04 39 07.6
baz=318,slow=76,SNR=14
H11S2 WAKE ISLAND Hy 27.66 126 T T 04 39 14.3
baz=318,slow=76,SNR=14
XAN Xi'an 28.17 274 P **P** **04 10 22.3 +0.1**
XAN pmax pmax
comp=E,55nm,1.0s
XAN pmax pmax
comp=E,250nm,4.9s
XAN LR LR
comp=E,800nm,15.1s
XAN LR LR
comp=E,320nm,17.6s
XAN LR LR
comp=E,970nm,15.1s
BOD Bodaibo 28.21 326 ⇓ *i*P P 04 10 27.1 +4.9
BOD pmax pmax
comp=Z,29nm,1.7s
ULN Ulaanbaatar 28.58 303 *e*P **P** **04 10 27.7 +1.9**
ULN pmax pmax
comp=Z,54nm,1.1s
ULN Ulaanbaatar 28.58 303 *e*P **P** **04 10 27.7 +1.9**
comp=Z,54nm,1.1s
ULN Ulaanbaatar 28.58 303 P **P** **04 10 27.0 +1.2**
SNR=27
ULN Ulaanbaatar 28.58 303 P **P** **04 10 27.0 +1.2**
SNR=27
ULN P **P** **04 10 27.0 +1.2**
SNR=27
ENH Enshi 29.00 266 *e*P **P** **04 10 30.3 +0.8**
comp=Z,76nm,0.9s
SONA1 Songino Array 29.01 303 *e*P **P** **04 10 31.2 +1.6**
SONM Songino Array 29.02 303 P **P** **04 10 31.8 +2.1**
comp=Z,29nm,0.8s,baz=104,slow=8.3,SNR=53
SONM LR LR 04 22 28.8
comp=Z,636nm,18.1s,baz=76,slow=37
IRK Irkutsk 31.16 311 *e*P **P** **04 10 50.3 +1.9**
IRK pmax pmax
comp=Z,56nm,2.6s
ZAK Zakamensk 31.41 308 *e*P **P** **04 10 52.1 +1.4**
ZAK pmax pmax
comp=Z,18nm,1.7s
ZAK pmax pmax
comp=Z,10.0nm,1.1s
TLY Talaya 31.42 310 P **P** **04 10 51.4 +0.7**
comp=Z,4.0nm,0.6s,baz=113,slow=6.9,SNR=8.9
TLY LR LR 04 24 17.6
comp=Z,1µm,18.5s,baz=116,slow=38
TLY Talaya 31.42 310 *e*P **P** **04 10 52.7 +2.0**
TLY *e*S **S** **04 15 59.5 +2.9**
TLY *e*SS **SnSn** **04 17 41.7 +0.2**
TLY pmax pmax
comp=Z,18nm,1.1s
TLY MLR MLR
comp=Z,1µm,15.0s
TLY Talaya 31.42 310 *e*P **P** **04 10 51.8 +1.1**
comp=Z,18nm,1.1s
TLY Talaya 31.42 310 P **P** **04 10 52.4 +1.7**
SNR=13
TLY Talaya 31.42 310 P **P** **04 10 52.4 +1.7**
SNR=13
TLY P **P** **04 10 52.4 +1.7**
SNR=13
LZH Lanzhou 31.65 280 *e*P **P** **04 10 54.5 +1.4**
LZH pP sP 04 11 05.5 +1.5
LZH PcP **PcP** **04 13 44.6 -0.1**
LZH *e*S **S** **04 15 59.1 -1.8**
LZH SS **SnSn** **04 17 51.0 +3.3**
LZH pmax pmax
comp=Z,33nm,1.0s
LZH pmax pmax
comp=Z,140nm,5.5s
LZH LR LR
comp=Z,610nm,14.2s
LZH LR LR
comp=Z,1µm,14.0s
LZH LR LR
comp=Z,2µm,16.0s
GYA Guiyang 32.89 262 ⇑ *i*P **P** **04 11 04.1 +0.1**
GYA PP **PP** **04 12 16.0 -2.5**
GYA PcP **PcP** **04 13 50.5 +2.3**
GYA S **S** **04 16 18.6 -1.7**
GYA ScP **ScP** **04 17 28.4 -2.1**
GYA ScS **ScS** **04 21 27.0 -3.8**
GYA pmax pmax
comp=Z,30nm,0.8s
GYA pmax pmax
comp=Z,130nm,5.2s
GYA LR LR
comp=Z,580nm,17.4s
GYA LR LR
comp=Z,520nm,17.2s
GYA LR LR
comp=Z,560nm,17.6s
MOY Mondy 33.04 310 *e*P **P** **04 11 06.7 +1.7**
MOY pmax pmax
comp=Z,43nm,2.6s
CD2 Chengdu 33.32 271 P **P** **04 11 07.3 -0.3**
CD2 PP **PP** **04 12 23.0 -0.1**
CD2 S **S** **04 16 23.5 -3.3**
CD2 pmax pmax
comp=Z,40nm,0.8s
CD2 pmax pmax
comp=Z,130nm,4.1s
CD2 LR LR
comp=Z,1µm,13.1s
CD2 LR LR
comp=Z,1µm,20.2s
BILL Bilibino 33.33 15 ⇓ *i*P **P** **04 11 07.4 +0.2**
BILL *e* 04 12 17.2
BILL *e*PPP PPP 04 12 30.2
BILL *e*S **S** **04 16 25.1 -0.8**
BILL pmax pmax
comp=Z,36nm,1.7s
BILL MLR MLR
comp=Z,329nm,16.0s
BILL Bilibino 33.33 15 *e*P **P** **04 11 07.1 -0.1**
comp=Z,24nm,1.1s
GTA Gaotai 34.06 287 *e*P **P** **04 11 14.0 -0.1**
GTA pP sP 04 11 26.1 +1.1
GTA PP **PnPn** **04 12 28.8 +1.1**
GTA PcP **PcP** **04 13 52.1 +0.8**
GTA S **S** **04 16 35.3 -3.0**
GTA PcS **PcS** **04 17 38.8 +1.3**
GTA SS **SnSn** **04 18 44.1 -2.1**
GTA pmax pmax
comp=Z,5.0nm,1.2s
GTA pmax pmax
comp=Z,320nm,5.1s
GTA LR LR
comp=Z,730nm,16.2s
GTA LR LR
comp=Z,840nm,17.6s
GTA LR LR
comp=Z,1µm,16.6s
QIZ Qiongzhong 34.55 248 P **P** **04 11 18.4 +0.1**
QIZ S **S** **04 16 45.0 -0.8**
QIZ pmax pmax
comp=Z,9.0nm,1.8s
QIZ LR LR
comp=Z,220nm,17.1s
QIZ LR LR
comp=Z,160nm,18.0s
TIXI Tiksi 35.25 352 P **P** **04 11 23.5 -0.3**
comp=Z,6.0nm,0.8s,baz=140,slow=6.9,SNR=15
TIXI Tiksi 35.25 352 *d* iP **P** **04 11 23.7 0.0**
TIXI pmax pmax
comp=Z,6.0nm,0.7s
TIXI Tiksi 35.25 352 *e*P **P** **04 11 23.2 -0.5**
comp=Z,6.3nm,0.8s
KMI Kunming 36.63 263 P **P** **04 11 37.3 +0.9**
KMI pP sP 04 11 48.4 +1.0
KMI PP **PP** **04 13 03.0 +3.0**
KMI S **S** **04 17 12.6 -5.5**
KMI SS **SnSn** **04 19 45.3 -3.6**
KMI pmax pmax
comp=Z,22nm,1.1s
KMI pmax pmax
comp=Z,100nm,3.9s
KMI LR LR
comp=Z,760nm,16.3s
KMI LR LR
comp=Z,410nm,16.9s
KMI LR LR
comp=Z,600nm,22.6s
TNTI Ternate 39.27 206 P **P** **04 11 59.0 +0.6**
comp=Z,101nm,0.9s,comp=Z,4µm
PANO Nakornpanom 39.60 250 P P 04 12 05.8 +4.5
SWI Sorong 39.62 199 P **P** **04 12 02.5 +1.2**
GENI Genyem 39.80 185 P **P** **04 12 03.7 +0.9**
LBMI Labuha 40.54 205 P **P** **04 12 09.9 +0.9**
CRAI Chiangrai 41.05 258 P **P** **04 12 15.5 +2.3**
comp=Z,12nm,1.6s,comp=Z,716nm
MRSI Marisa 41.69 214 P **P** **04 12 19.0 +0.6**
WMQ Urumqi 42.20 297 P **P** **04 12 24.5 +2.0**
WMQ S **S** **04 18 42.5 +1.5**
WMQ ScS **ScS** **04 22 18.6 -4.3**
WMQ pmax pmax
comp=Z,14nm,0.8s
WMQ pmax pmax
comp=Z,130nm,3.6s
CMAI Chiengmai2 42.25 258 P **P** **04 12 25.1 +1.8**
comp=Z,21nm,0.8s,comp=Z,790nm
SANI Sanana 42.38 206 P **P** **04 12 24.4 +0.3**
MSAI Masohi 42.64 202 P **P** **04 12 27.0 +0.8**
PBKT Sadao Pong 42.71 253 P **P** **04 12 28.4 +1.6**
comp=Z,20nm,0.7s,comp=Z,2µm
CMMT Chiang Mai 42.95 257 P **P** **04 12 29.8 +1.0**
comp=Z,26nm,1.1s,comp=Z,542nm
CHTO Chiang Mai 42.96 257 P **P** **04 12 29.8 +1.0**
comp=Z,117nm,1.1s,comp=Z,1µm
CHTO Chiang Mai 42.96 257 *e*P **P** **04 12 29.4 +0.5**
CHTO pmax pmax
comp=Z,27nm,1.0s
CHTO Chiang Mai 42.96 257 *e*P **P** **04 12 29.4 +0.5**
comp=Z,27nm,1.0s
ZAA0 Zalesovo Array 42.96 312 *e*P **P** **04 12 29.0 +0.6**
ZALV Zalesovo Beam 42.96 312 P **P** **04 12 28.6 +0.2**
comp=Z,29nm,0.9s,baz=87,slow=6.3,SNR=66
ZALV PcP **PcP** **04 14 18.7 +0.2**
comp=Z,11nm,0.7s,baz=94,slow=2.9,SNR=5.3
ZALV LR LR 04 31 13.3
comp=Z,1µm,18.0s,baz=63,slow=37
ZALV Zalesovo Beam 42.96 312 P **P** **04 12 28.6 +0.2**
ZALV 04 14 18.7
ZALV pmax pmax
comp=Z,28nm,0.9s
ZALV pmax pmax
comp=Z,11nm,0.7s
ZALV MLR MLR
comp=Z,1µm,18.0s
NLAI Namlea 43.11 204 P **P** **04 12 31.4 +1.4**
CMAR Chiang Mai Arr 43.16 257 P **P** **04 12 30.9 +0.4**
comp=Z,5.4nm,0.8s,baz=47,slow=6.1,SNR=14
CMAR LR LR 04 33 37.3
comp=Z,550nm,18.3s,baz=54,slow=40
CM01 Chiang Mai Arr 43.17 257 *e*P **P** **04 12 31.2 +0.7**
SRAK Srakaew 43.49 249 P **P** **04 12 30.7 -2.4**
comp=Z,62nm,0.9s,comp=Z,678nm
NRIK Noril'sk 43.73 335 LR LR 04 32 53.0
comp=Z,860nm,18.2s,baz=116,slow=39
LSA Lhasa 43.83 276 *e*P **P** **04 12 37.6 +1.3**
LSA pmax pmax
comp=Z,17nm,0.8s
LSA Lhasa 43.83 276 *e*P **P** **04 12 37.5 +1.3**
comp=Z,17nm,0.8s
NVS Novosibirsk 43.86 314 *e*P **P** **04 12 36.2 +0.6**
NVS pmax pmax
comp=N,6.0nm,1.1s
NVS pmax pmax
comp=E,30nm,1.1s
NVS pmax pmax
comp=Z,41nm,1.1s
CHBT CHBT 44.09 247 P **P** **04 12 39.5 +1.5**
comp=Z,40nm,1.0s
MHMT Maesarieng 44.11 257 P **P** **04 12 39.6 +1.5**
comp=Z,20nm,1.0s
TT01 Tatalina 44.26 35 *e*P **P** **04 12 40.0 +1.2**
TTA Tatalina 44.27 35 *e*P **P** **04 12 40.0 +1.1**
TTA pmax pmax
comp=Z,7.0nm,1.0s
TTA Tatalina 44.27 35 *e*P **P** **04 12 40.0 +1.1**
comp=Z,7.1nm,1.0s
SVW2 Sparrevohn 44.31 37 *e*P **P** **04 12 39.9 +0.6**
comp=Z,8.2nm,0.9s
SHL Shillong 45.06 270 *e*P **P** **04 12 46.0 +0.2**
PATY Pattaya 45.06 249 P P 04 12 50.6 +4.9
MKAR Makanchi Array 45.38 302 P **P** **04 12 48.5 +0.6**
comp=Z,16nm,0.9s,baz=82,slow=9.9,SNR=75
MKAR Makanchi Array 45.38 302 *ce*P **P** **04 12 48.5 +0.6**
MKAR pmax pmax
comp=Z,17nm,0.9s
KDI Kendari 45.40 210 P **P** **04 12 49.5 +1.1**
comp=Z,43nm,1.0s,comp=Z,544nm
SRDT SRDT 45.48 252 P **P** **04 12 50.6 +1.6**
comp=Z,84nm,1.2s,comp=Z,8µm
MAKZ Makanchi 45.59 302 *e*P **P** **04 12 50.3 +0.7**
MAKZ pmax pmax
comp=Z,23nm,1.0s
MAKZ Makanchi 45.59 302 *e*P **P** **04 12 50.3 +0.7**
comp=Z,23nm,1.0s
KDAK Kodiak Island 45.80 42 *i* P **P** **04 12 51.5 +0.5**
PPLA Purkeypile 46.01 35 *e*P **P** **04 12 54.2 +1.4**
comp=Z,55nm,1.4s
SPU Mount Spurr 46.03 37 *e*P **P** **04 12 53.0 +0.1**
CAST Castle Rocks 46.08 34 *e*P **P** **04 12 55.0 +1.7**
comp=Z,14nm,0.8s
BPAW Bear Paw Mtn. 46.60 33 *e*P **P** **04 12 58.5 +1.2**
comp=Z,35nm,0.7s
SPSI Sidrap Palu 46.60 214 P **P** **04 12 57.3 -0.5**
comp=Z,17nm,0.8s
KTH Kantishna Hill 46.61 34 *e*P **P** **04 12 59.1 +1.7**
comp=Z,23nm,0.9s
MLY Manley 46.75 32 *e*P **P** **04 12 60.0 +1.4**
comp=Z,16nm,0.8s
TRF Thorofare Moun 46.89 34 *e*P **P** **04 13 00.1 +0.4**
comp=Z,16nm,0.8s
KSM Kuching 46.94 228 ⇑P **P** **04 13 02.3 +1.8**
KSM Kuching 46.94 228 *e*P **P** **04 13 00.9 +0.4**
comp=Z,24nm,0.7s
KURK Kurchatov 47.07 308 *e*P **P** **04 13 01.4 +0.3**
KURK pmax pmax
comp=Z,60nm,0.9s
KURK Kurchatov 47.07 308 *e*P **P** **04 13 01.4 +0.3**
comp=Z,60nm,0.9s
KURK Kurchatov 47.07 308 P **P** **04 13 02.1 +1.0**
SNR=24
KURK Kurchatov 47.07 308 P **P** **04 13 02.1 +1.0**
SNR=24
KURK P **P** **04 13 02.1 +1.0**
SNR=24
COLD Coldfoot 47.12 29 *e*P **P** **04 13 02.0 +0.6**
comp=Z,11nm,0.9s
KURBB Kurchatov Arra 47.14 308 P **P** **04 13 01.3 -0.4**
comp=Z,48nm,0.9s,baz=83,slow=8.0,SNR=79
RC01 Rabbit Creek A 47.15 38 *e*P **P** **04 13 02.0 +0.3**
comp=Z,28nm,1.0s
STKI Sintang 47.39 226 P **P** **04 13 04.8 +0.8**
comp=Z,74nm,1.1s,comp=Z,24µm
PMR Palmer 47.43 37 *e*P **P** **04 13 04.3 +0.5**
comp=Z,15nm,0.9s
MCK McKinley 47.50 34 *e*P **P** **04 13 05.3 +1.0**
comp=Z,38nm,0.8s
RND Reindeer 47.53 34 *e*P **P** **04 13 05.4 +0.7**
comp=Z,33nm,0.7s
KAPI Kappang 47.55 213 *e*P **P** **04 13 04.2 -1.0**
comp=Z,33nm,1.1s
SML Sawmill 47.80 37 *e*P **P** **04 13 05.7 -1.1**
comp=Z,25nm,0.7s
MDM Murphy Dome 47.82 32 *e*P **P** **04 13 07.3 +0.5**
comp=Z,26nm,0.9s
WRH Wood River Hil 47.87 33 *e*P **P** **04 13 05.0 -2.2**
comp=Z,29nm,1.0s
COLA College 47.98 32 *e*PKIKP **P** **04 13 09.5 +1.5**
COLA pmax pmax
comp=Z,20nm,0.7s
COLA College 47.98 32 *d* iP **P** **04 13 08.8 +0.8**
COLA College 47.98 32 *e*P **P** **04 13 09.5 +1.6**
comp=Z,20nm,0.7s
CCB Clear Creek Bu 48.00 33 *e*P **P** **04 13 09.1 +1.0**
comp=Z,13nm,0.7s
SCM Sheep Creek Mo 48.28 36 *e*P **P** **04 13 10.5 0.0**
comp=Z,33nm,0.8s
HDA Harding Lake 48.37 33 *e*P **P** **04 13 10.6 -0.4**
comp=Z,18nm,0.8s
ILAR Eielson Array 48.39 33 P **P** **04 13 11.3 +0.2**
comp=Z,18nm,0.9s,baz=263,slow=4.5,SNR=120
ILAR LR LR 04 37 46.5
comp=Z,108nm,18.7s,baz=278,slow=41
ILAR Eielson Array 48.39 33 P **P** **04 13 11.4 +0.2**
ILAR pmax pmax
comp=Z,24nm,0.9s
ILAR MLR MLR
comp=Z,108nm,18.7s
ILB Eielson Array 48.39 33 *e*P **P** **04 13 11.4 +0.2**
BBKI Banjar Baru 48.51 220 P **P** **04 13 12.9 +0.2**
comp=Z,54nm,1.2s
KTGM Kuala Trenggan 48.63 239 ⇑P **P** **04 13 15.5 +1.9**
GUN Gumba 48.77 277 *e*Pn **P** **04 13 16.0 +1.0**
SKLT Songkhla 49.09 243 P **P** **04 13 18.3 +1.1**
comp=Z,42nm,1.0s,comp=Z,803nm
SURT Suratani 49.19 247 P **P** **04 13 19.3 +1.4**
comp=Z,18nm,0.8s,comp=Z,288nm
KKN Kakani 49.30 277 *e*Pn **P** **04 13 19.8 +0.9**
comp=Z,104nm,1.0s
TRTT Trang 49.30 245 P **P** **04 13 20.2 +1.4**
comp=Z,35nm,1.1s
PKIN Phulchoki 49.30 276 *e*Pn **P** **04 13 20.0 +1.0**
comp=Z,24nm,0.9s
GKN Gorkha 49.71 277 *e*Pn **P** **04 13 22.6 +0.6**
comp=Z,163nm,1.0s
AAA Alma-Ata 49.91 299 *e*P P 04 13 26.5 +3.3
AAA pmax pmax
comp=Z,400nm,3.0s
AAA MLR MLR
comp=Z,900nm,19.0s
PKDT Phuket 50.24 246 P **P** **04 13 27.4 +1.4**
comp=Z,97nm,1.0s,comp=Z,6µm
KULM Kulim 50.38 242 ⇓P **P** **04 13 28.5 +1.5**
KULM Kulim 50.38 242 *e*P **P** **04 13 27.5 +0.5**
comp=Z,35nm,1.1s
KOLN Koldanda 50.64 278 *e*Pn **P** **04 13 29.9 +0.8**
comp=Z,32nm,0.9s
IPM Ipoh 50.70 240 *e*P **P** **04 13 28.4 -0.9**
comp=Z,36nm,0.9s
TKM2 Tokmak 2 50.95 299 *e*P **P** **04 13 32.6 +1.3**
TKM2 pmax pmax
comp=Z,52nm,1.2s
TKM2 Tokmak 2 50.95 299 *e*P **P** **04 13 32.6 +1.3**
comp=Z,52nm,1.2s
PYUN Piuthan 50.97 278 *e*Pn **P** **04 13 32.7 +1.1**
comp=Z,165nm,1.0s
COEN Coen 50.98 180 *e*P **P** **04 13 30.2 -1.1**
comp=Z,30nm,1.1s
MTN Manton Dam 51.20 196 *e*P **P** **04 13 31.4 -1.6**
comp=Z,64nm,0.8s
BVAR Borovoye Array 51.62 312 P **P** **04 13 36.1 +0.3**
comp=Z,11nm,0.8s,baz=76,slow=9.3,SNR=22
FRU Bishkek 51.67 299 *i* P **P** **04 13 38.0 +1.6**
FRU *e* 04 15 39.0
FRU *e* 04 21 12.0
FRU pmax pmax
comp=Z,85nm,2.2s
FRU MLR MLR
comp=E,700nm,17.0s
BRVK Borovoye 51.67 313 *d* iP **P** **04 13 37.3 +1.1**
BRVK pmax pmax
comp=Z,54nm,2.5s
BRVK Borovoye 51.67 313 *e*P **P** **04 13 36.8 +0.5**
comp=Z,23nm,1.0s
BRVK Borovoye 51.67 313 P **P** **04 13 37.5 +1.3**
SNR=7.7
BRVK Borovoye 51.67 313 P **P** **04 13 37.5 +1.3**
SNR=7.7
BRVK P **P** **04 13 37.5 +1.3**
SNR=7.7
KSH Kashi 51.80 295 P P 04 13 42.6 +5.0
KSH *e*PP PP 04 15 42.3 +7.0
KSH PcS **PcS** **04 18 50.5 +1.9**
KSH S **S** **04 21 00.1 +1.8**
KSH pmax pmax
comp=Z,230nm,3.7s
KSH LR LR
comp=Z,530nm,14.1s
KSH LR LR
comp=Z,790nm,13.5s
KSH LR LR
comp=Z,1µm,16.4s
AAK Ala-Archa 51.82 299 P **P** **04 13 38.7 +1.0**
comp=Z,5.4nm,0.9s,baz=77,slow=4.0,SNR=8.0
AAK Ala-Archa 51.82 299 *d* iP **P** **04 13 38.8 +1.1**
AAK pmax pmax
comp=Z,48nm,2.5s
AAK Ala-Archa 51.82 299 *e*P **P** **04 13 38.8 +1.1**
comp=Z,24nm,1.3s
AAK Ala-Archa 51.82 299 P **P** **04 13 39.1 +1.4**
SNR=6.2
AAK Ala-Archa 51.82 299 P **P** **04 13 39.1 +1.4**
SNR=6.2
AAK P **P** **04 13 39.1 +1.4**
SNR=6.2
EKS2 Erkin-Say 52.31 299 *e*P **P** **04 13 42.1 +0.8**
EKS2 pmax pmax
comp=Z,11nm,1.0s
EKS2 Erkin-Say 52.31 299 *e*P **P** **04 13 42.1 +0.8**
comp=Z,11nm,1.0s
SRBI Singaraja 52.32 216 P **P** **04 13 42.3 +0.9**
comp=Z,84nm,1.1s
ZRNK Zerenda 52.45 313 *e*P **P** **04 13 42.4 +0.4**
ZRNK pmax pmax
comp=Z,47nm,1.3s
ZRNK Zerenda 52.45 313 *e*P **P** **04 13 42.4 +0.4**
comp=Z,47nm,1.3s
PSI Prapat 53.35 241 *e*P **P** **04 13 48.4 -0.9**
PSI pmax pmax
comp=Z,17nm,0.7s
PSI Prapat 53.35 241 *e*P **P** **04 13 48.4 -0.9**
comp=Z,17nm,0.7s
INK Inuvik 53.40 27 P **P** **04 13 48.1 -0.7**
comp=Z,7.8nm,0.8s,baz=275,slow=4.1,SNR=2.4
KKAR Karatay Array 54.42 301 *e*P **P** **04 13 57.3 +0.6**
KKAR Karatay Array 54.42 301 *e*P **P** **04 13 57.2 +0.6**
LEM Lembang 55.21 225 P P 04 14 08.5 +5.7
LHSI Lahat 55.25 231 P **P** **04 14 03.8 +0.9**
comp=Z,89nm,1.0s
SVE Sverdlovsk 56.04 319 *e*P **P** **04 14 09.2 +1.1**
SVE pmax pmax
comp=Z,58nm,1.4s
SOKR Solikamsk 57.12 323 *i* P **P** **04 14 15.0 -0.7**
SOKR pmax pmax
comp=Z,22nm,1.0s
SOKR MLR MLR
comp=Z,477nm,18.0s
CTA Charters Tower 57.13 177 P **P** **04 14 14.6 -1.6**
comp=Z,3.9nm,0.7s,baz=344,slow=7.4,SNR=3.2
ARU Arti 57.26 319 *d* iP **P** **04 14 17.1 +0.4**
ARU 04 16 23.3
ARU S **S** **04 22 11.3 +0.4**
ARU SS **SS** **04 25 58.9 -0.7**
ARU pmax pmax
comp=Z,55nm,1.2s
ARU MLR MLR
comp=Z,2µm,20.0s
ARU Arti 57.26 319 *e*P **P** **04 14 17.1 +0.4**
comp=Z,158nm,1.8s
DLBC Dease Lake 57.40 39 *e*P **P** **04 14 18.9 +1.0**
comp=Z,6.9nm,1.0s
WRAB Tennant Creek 57.57 190 *d* iP **P** **04 14 17.6 -1.7**
WRAB pmax pmax
comp=Z,140nm,1.0s
WRAB Tennant Creek 57.57 190 *e*P **P** **04 14 17.5 -1.7**
comp=Z,48nm,0.9s

WB2	**Warramunga Arr**	**57.58**	**190**	*e*P		**P**	**04 14 17.1**	**-2.2**
	comp=Z,50nm,0.9s								
WRA	**Warramunga Arr**	**57.58**	**190**	P		**P**	**04 14 16.8**	**-2.5**
	comp=Z,30nm,0.8s,baz=9.3,slow=7.4,SNR=145								
WRA	**Warramunga Arr**	**57.58**	**190**	P		**P**	**04 14 16.8**	**-2.5**
WRA				pmax	pmax				
	comp=Z,33nm,0.8s								
FITZ	**Fitzroy Crossi**	**57.61**	**200**	*e*P		**P**	**04 14 18.9**	**-0.6**
	comp=Z,62nm,1.4s								
KBL	**Kabul**	**58.86**	**292**	*e*P		**P**	**04 14 29.3**	**+0.7**
KBL				pmax	pmax				
	comp=Z,21nm,1.1s								
KBL	**Kabul**	**58.86**	**292**	*e*P		**P**	**04 14 29.3**	**+0.7**
	comp=Z,21nm,1.1s								
ABKAR	**Akbulak array**	**59.03**	**311**	*e*P		**P**	**04 14 29.3**	**0.0**
HYB	**Hyderabad**	**59.86**	**270**	*i* P		**P**	**04 14 36.0**	**+0.5**
HYB				*e*			04 14 48.5		
HYB				*e*			04 15 12.0		
AS01	**Alice Springs**	**61.29**	**190**	*e*P		**P**	**04 14 42.7**	**-2.2**
AS31	**Alice Springs**	**61.30**	**190**	*e*P		**P**	**04 14 44.0**	**-1.1**
	comp=Z,4.7nm,0.6s								
ASAR	**Alice Springs**	**61.30**	**190**	P		**P**	**04 14 43.2**	**-1.8**
	comp=Z,13nm,0.9s,baz=12,slow=7.0,SNR=99								
ASAR				PKP2bc			04 44 08.3		
	comp=Z,0.6nm,0.8s,baz=186,slow=1.9,SNR=6.0								
ASAR	**Alice Springs**	**61.30**	**190**	P		**P**	**04 14 43.2**	**-1.8**
ASAR				pmax	pmax				
	comp=Z,11nm,0.8s								
RES	**Resolute Bay**	**61.93**	**15**	*e*P		**P**	**04 14 48.6**	**-0.1**
RES				pmax	pmax				
	comp=Z,18nm,1.0s								
RES	**Resolute Bay**	**61.93**	**15**	*e*P		**P**	**04 14 48.6**	**-0.1**
	comp=Z,18nm,1.0s								
YKW3	**Yellowknife Ar**	**62.71**	**31**	*e*P		**P**	**04 14 53.1**	**-0.9**
	comp=Z,27nm,1.7s								
YKA	**Yellowknife Ar**	**62.75**	**31**	P		**P**	**04 14 54.7**	**+0.4**
	comp=Z,1.4nm,0.7s,baz=303,slow=6.8,SNR=19								
YKA				PKPPKP		P'P'df	04 43 55.0	-8.2	
	comp=Z,0.1nm,0.8s,baz=138,slow=2.2,SNR=2.9								
YKA				PKP2bc			04 44 05.1		
	comp=Z,0.3nm,0.9s,baz=123,slow=2.4,SNR=4.3								
YKB5	**Yellowknife Ar**	**62.75**	**31**	*e*P		**P**	**04 14 55.5**	**+1.2**
POO	**Poona**	**63.00**	**273**	⇓ *i* P		**P**	**04 14 55.0**	**-1.8**
	comp=Z,30nm,1.0s								
ARCES	**ARCESS Array B**	**64.33**	**340**	P		**P**	**04 15 04.9**	**+0.2**
	comp=Z,5.7nm,0.8s,baz=50,slow=6.0,SNR=10								
ARCES				LR		LR	04 48 50.5		
	comp=Z,289nm,18.6s,baz=50,slow=41								
GEYT	**Alibeck**	**65.15**	**300**	P		**P**	**04 15 11.2**	**+0.6**
	comp=Z,20nm,0.9s,baz=40,slow=2.5,SNR=20								
GEYT				PP		**PP**	**04 17 33.5**	**-0.3**	
	comp=Z,1.6nm,0.4s,baz=22,slow=8.0,SNR=2.3								
GEYT				LR		LR	04 45 35.1		
	comp=Z,300nm,19.1s,baz=75,slow=38								
DAG	**Danmarks Havn**	**65.65**	**356**	*i* P		**P**	**04 15 12.5**	**-0.6**
	comp=Z,9.7nm,0.8s								
DAG	**Danmarks Havn**	**65.65**	**356**	*i* P		**P**	**04 15 12.5**	**-0.6**
DAG				pmax	pmax				
	comp=Z,7.0nm,0.8s								
MOS	**Moscow**	**68.02**	**324**	*e*P		**P**	**04 15 29.0**	**+0.5**
MOS				*e*			04 15 53.6		
MOS				pmax	pmax				
	comp=Z,48nm,0.8s								
C09A	**Chrisman Ranch**	**68.38**	**46**	*e*P		**P**	**04 15 31.9**	**+0.9**
	comp=Z,15nm,1.4s								
VRH	**Novokhopyorsk**	**68.49**	**319**	*e*P		**P**	**04 15 31.0**	**-0.5**
VRH				pmax	pmax				
	comp=Z,30nm,1.2s								
VRH				MLR		MLR			
	comp=Z,1μm,16.0s								
NEW	**Newport**	**68.79**	**45**	*e*P		**P**	**04 15 34.6**	**+1.0**
NEW				pmax	pmax				
	comp=Z,8.0nm,1.2s								
NEW	**Newport**	**68.79**	**45**	*e*P		**P**	**04 15 34.6**	**+1.0**
	comp=Z,7.9nm,1.2s								
STKA	**Stephens Creek**	**68.83**	**182**	P		**P**	**04 15 32.4**	**-1.4**
	comp=Z,4.5nm,0.5s,baz=342,slow=7.0,SNR=12								
STKA	**Stephens Creek**	**68.83**	**182**	*e*P		**P**	**04 15 33.0**	**-0.8**
	comp=Z,2.3nm,1.0s								
OBN	**Obninsk**	**68.87**	**324**	*d i* P		**P**	**04 15 34.3**	**+0.5**
OBN				*e*			04 18 03.3		
OBN				*e*	PPP	PPP	04 19 50.4		
OBN				*e*	SSS	SSS	04 32 04.7		
OBN				pmax	pmax				
	comp=Z,34nm,1.7s								
OBN				MLR		MLR			
	comp=Z,479nm,16.0s								
J05D	**Fort Rock, OR**	**68.99**	**51**	P		**P**	**04 15 35.4**	**+0.3**
	baz=302								
LPSR	**Galich'ya Gora**	**69.15**	**321**	*e*P		**P**	**04 15 35.8**	**+0.1**
LPSR				pmax	pmax				
	comp=Z,10.0nm,0.9s								
LPSR				MLR		MLR			
	comp=Z,890nm,16.0s								
FIA1	**FINESS Array S**	**69.34**	**333**	*e*P		**P**	**04 15 36.8**	**+0.1**
FINES	**FINESS Array B**	**69.34**	**333**	P		**P**	**04 15 37.1**	**+0.4**
	comp=Z,29nm,0.7s,baz=53,slow=7.4,SNR=62								
FINES				LR		LR	04 49 27.1		
	comp=Z,427nm,19.5s,baz=27,slow=39								
M04C	**Macdoel**	**69.40**	**53**	P		**P**	**04 15 38.4**	**+0.8**
	baz=302								
K05A	**Summer Lake**	**69.50**	**52**	*e*P		**P**	**04 15 39.6**	**+1.4**
	comp=Z,53nm,1.7s								
VSR	**Storozhevoye**	**69.81**	**320**	*e*P		**P**	**04 15 40.0**	**+0.2**
VSR				pmax	pmax				
	comp=Z,10.0nm,0.7s								
VSR				MLR		MLR			
	comp=Z,1μm,17.0s								
BBOO	**Buckleboo**	**70.09**	**187**	*e*P		**P**	**04 15 40.9**	**-0.6**
	comp=Z,12nm,1.0s								
WALA	**Waterton Lakes**	**70.13**	**43**	*e*P		**P**	**04 15 42.5**	**+0.5**
	comp=Z,13nm,1.6s								
SUMG	**Summit**	**70.42**	**1**	*i* P		**P**	**04 15 44.3**	**+0.7**
	comp=Z,20nm,0.8s								
SUMG	**Summit**	**70.42**	**1**	*i* P		**P**	**04 15 44.3**	**+0.7**
SUMG				pmax	pmax				
	comp=Z,20nm,0.8s								
SUMG	**Summit**	**70.42**	**1**	*e*P		**P**	**04 15 44.1**	**+0.4**
	comp=Z,18nm,0.7s								
JTMT	**Jette**	**70.66**	**44**	*e*P		**P**	**04 15 46.3**	**+1.1**
ORV	**Oroville**	**70.81**	**55**	*e*P		**P**	**04 15 46.8**	**+0.7**
ORV				pmax	pmax				
	comp=Z,6.0nm,1.1s								
ORV	**Oroville**	**70.81**	**55**	*e*P		**P**	**04 15 46.8**	**+0.7**
	comp=Z,6.3nm,1.1s								
SWMT	**Swartz Lake**	**70.96**	**44**	*e*P		**P**	**04 15 48.0**	**+0.9**
VSU	**Vasula**	**71.06**	**330**	*de*P		**P**	**04 15 48.3**	**+1.1**
VSU				pmax	pmax				
	comp=Z,70nm,0.9s								
WVOR	**Wild Horse Val**	**71.06**	**51**	*e*P		**P**	**04 15 49.9**	**+2.2**
WVOR				pmax	pmax				
	comp=Z,16nm,1.3s								
WVOR	**Wild Horse Val**	**71.06**	**51**	*e*P		**P**	**04 15 49.9**	**+2.2**
	comp=Z,16nm,1.3s								
MSO	**Missoula**	**71.38**	**45**	P		**P**	**04 15 50.0**	**+0.4**
	baz=305								
MSO	**Missoula**	**71.38**	**45**	*e*P		**P**	**04 15 50.1**	**+0.6**
	comp=Z,3.7nm,0.9s								
GUDG	**Gudauri**	**71.73**	**310**	P		**P**	**04 15 53.6**	**+1.7**
DGRG	**David-gareji**	**71.74**	**308**	P		P	04 15 56.8	+5.0	
DGRG	**David-gareji**	**71.74**	**308**	*e*P		P	04 15 56.7	+4.9	
ZEI	**Tsey**	**71.90**	**310**	*e*P		**P**	**04 15 52.3**	**-0.6**
ZEI				pmax	pmax				
	comp=Z,28nm,0.9s								
KIV	**Kislovodsk**	**71.97**	**312**	*de*P		**P**	**04 15 54.8**	**+1.7**
KIV				*e*			04 18 34.9		
KIV				*e*	PPP	PPP	04 20 18.4		
KIV				pmax	pmax				
	comp=Z,72nm,1.0s								
KIV				MLR		MLR			
	comp=Z,472nm,18.0s								
KIV	**Kislovodsk**	**71.97**	**312**	*e*P		**P**	**04 15 54.8**	**+1.7**
	comp=Z,57nm,0.9s								
KIV	**Kislovodsk**	**71.97**	**312**	P		**P**	**04 15 54.9**	**+1.7**
	SNR=14								
KIV	**Kislovodsk**	**71.97**	**312**	P		**P**	**04 15 54.9**	**+1.7**
	SNR=14								
KIV				P		**P**	**04 15 54.9**	**+1.7**	
	SNR=14								
KBZ	**Khabaz**	**71.98**	**311**	P		**P**	**04 15 53.4**	**+0.3**
	comp=Z,27nm,0.9s,baz=52,slow=2.1,SNR=44								
KBZ				LR		LR	04 50 33.0		
	comp=Z,213nm,18.5s,baz=49,slow=38								
MFID	**Camas Ranch**	**72.22**	**49**	*e*P		**P**	**04 15 55.0**	**+0.3**
	comp=Z,6.4nm,1.0s								
ONI	**Oni**	**72.29**	**310**	P		**P**	**04 15 57.0**	**+1.9**
ONI	**Oni**	**72.29**	**310**	*e*P		**P**	**04 15 56.9**	**+1.9**
NEY	**Neytrino**	**72.35**	**311**	⇓ *i* P		**P**	**04 15 57.3**	**+1.7**
NEY				pmax	pmax				
	comp=Z,3.0nm,0.8s								
CMB	**Columbia Colle**	**72.37**	**55**	*e*P		**P**	**04 15 56.6**	**+1.0**
CMB				pmax	pmax				
	comp=Z,16nm,1.4s								
CMB	**Columbia Colle**	**72.37**	**55**	*e*P		**P**	**04 15 56.6**	**+1.0**
	comp=Z,16nm,1.4s								
WBK	**Wadi Bani Khal**	**72.47**	**285**	P		**P**	**04 15 57.5**	**+1.1**
	SNR=9.1								
WBK	**Wadi Bani Khal**	**72.47**	**285**	P		**P**	**04 15 57.5**	**+1.1**
	SNR=9.1								
FFC	**Flin Flon**	**72.59**	**34**	*e*P		**P**	**04 15 56.8**	**+0.3**
FFC				pmax	pmax				
	comp=Z,13nm,1.0s								
FFC	**Flin Flon**	**72.59**	**34**	*e*P		**P**	**04 15 56.8**	**+0.3**
	comp=Z,13nm,1.0s								
LRM	**Limekiln Ridge**	**72.80**	**45**	*e*P		**P**	**04 15 58.8**	**+0.5**
GNI	**Garni**	**72.87**	**308**	⇑ *e*P		**P**	**04 16 00.8**	**+2.1**
GNI				pmax	pmax				
	comp=Z,80nm,1.2s								
GNI	**Garni**	**72.87**	**308**	*e*P		**P**	**04 15 59.8**	**+1.2**
	comp=Z,58nm,1.5s								
EGMT	**Eagleton**	**72.98**	**42**	P		**P**	**04 15 59.6**	**+0.5**
	baz=307								
EGMT	**Eagleton**	**72.98**	**42**	*e*P		**P**	**04 15 59.1**	**0.0**
	comp=Z,30nm,0.4s								
HLID	**Hailey**	**72.98**	**48**	P		**P**	**04 16 00.2**	**+0.9**
	baz=305								
HLID	**Hailey**	**72.98**	**48**	*e*P		**P**	**04 15 59.5**	**+0.2**
	comp=Z,9.0nm,1.5s								
DLMT	**Dillon**	**72.99**	**46**	*e*P		**P**	**04 15 59.5**	**+0.3**
	comp=Z,8.4nm,0.8s								
FCC	**Fort Churchill**	**73.02**	**27**	*e*P		**P**	**04 15 59.0**	**0.0**
FCC				pmax	pmax				
	comp=Z,15nm,1.0s								
FCC	**Fort Churchill**	**73.02**	**27**	*e*P		**P**	**04 15 59.0**	**0.0**
	comp=Z,15nm,1.0s								
BMN	**Battle Mountai**	**73.06**	**52**	*e*P		**P**	**04 16 00.5**	**+0.7**
BMN				pmax	pmax				
	comp=Z,27nm,1.9s								
BMN	**Battle Mountai**	**73.06**	**52**	*e*P		**P**	**04 16 00.5**	**+0.7**
	comp=Z,27nm,1.9s								
HOQ	**Hoqain**	**73.21**	**287**	P		**P**	**04 16 00.6**	**-0.2**
	SNR=5.0								
HOQ	**Hoqain**	**73.21**	**287**	P		**P**	**04 16 00.6**	**-0.2**
	SNR=5.0								
JMDO	**Jabal Madar**	**73.27**	**286**	P		**P**	**04 16 01.5**	**+0.4**
	SNR=6.7								
JMDO	**Jabal Madar**	**73.27**	**286**	P		**P**	**04 16 01.5**	**+0.4**
	SNR=6.7								
UOSS	**Minazif**	**73.29**	**289**	*e*P		**P**	**04 16 00.2**	**-1.0**
	comp=Z,2.1nm,1.2s								
BOZ	**Bozeman (W)**	**73.37**	**45**	P		**P**	**04 16 02.0**	**+0.5**
	baz=306								
BOZ	**Bozeman (W)**	**73.37**	**45**	*e*P		**P**	**04 16 02.3**	**+0.8**
BOZ				pmax	pmax				
	comp=Z,10.0nm,0.9s								
BOZ	**Bozeman (W)**	**73.37**	**45**	*e*P		**P**	**04 16 02.3**	**+0.8**
	comp=Z,10nm,0.9s								
NACGM	**Naroch**	**73.41**	**327**	*e*		**P**	**04 16 02.0**	**+0.7**
NACGM				*e*	LR	LR	04 50 18.0		
NVAR	**Mina Array Bea**	**73.50**	**54**	P		**P**	**04 16 03.6**	**+1.0**
	comp=Z,2.6nm,0.8s,baz=285,slow=5.9,SNR=16								
NVAR				LR		LR	04 45 37.4		
	comp=Z,48nm,18.9s,baz=276,slow=34								
BSY	**Bisya**	**73.76**	**286**	P		**P**	**04 16 04.1**	**+0.1**
	SNR=5.5								
BSY	**Bisya**	**73.76**	**286**	P		**P**	**04 16 04.1**	**+0.1**
	SNR=5.5								
ARQ	**Araqi**	**73.95**	**287**	P		**P**	**04 16 06.1**	**+1.0**
	SNR=5.0								
ARQ	**Araqi**	**73.95**	**287**	P		**P**	**04 16 06.1**	**+1.0**
	SNR=5.0								
QLMT	**Earthquake Lak**	**73.97**	**46**	*e*P		**P**	**04 16 06.4**	**+1.2**
NC405	**NORSAR Array S**	**74.37**	**338**	*e*P		**P**	**04 16 07.3**	**+0.5**
GCMT	**Greyclíff**	**74.38**	**44**	*e*P		**P**	**04 16 07.9**	**+0.5**
NC303	**NORSAR Array S**	**74.38**	**338**	*e*P		**P**	**04 16 07.2**	**+0.3**
NC204	**NORSAR Array S**	**74.52**	**338**	*e*P		**P**	**04 16 08.0**	**+0.1**
ANN	**Anapa**	**74.53**	**315**	*e*P		**P**	**04 16 08.3**	**+0.2**
ANN				*e**PP		**sP**	**04 16 17.9**	**-1.6**	
ANN				*e*			04 16 21.4		
ANN				*e*S		**S**	**04 25 40.5**	**-1.1**	
ANN				pmax	pmax				
	comp=Z,30nm,1.4s								
YFT	**Old Faithful**	**74.53**	**46**	*e*P		**P**	**04 16 10.4**	**+1.9**
	comp=Z,11nm,0.9s								
NB201	**NORSAR Array S**	**74.54**	**338**	*e*P		**P**	**04 16 08.4**	**+0.5**
NB2	**NORSAR Subarra**	**74.57**	**338**	P		**P**	**04 16 08.2**	**+0.1**
	comp=Z,17nm,0.8s,baz=39,slow=6.2								
NB2	**NORSAR Subarra**	**74.57**	**338**	P		**P**	**04 16 08.2**	**+0.1**
	baz=39,slow=6.2								
NOA	**NORSAR Array B**	**74.57**	**338**	P		**P**	**04 16 08.3**	**+0.1**
	comp=Z,20nm,0.9s,baz=39,slow=5.8,SNR=65								
NOA				LR		LR	04 53 12.8		
	comp=Z,369nm,18.4s,baz=15,slow=39								
NOA	**NORSAR Array B**	**74.57**	**338**	P		**P**	**04 16 08.3**	**+0.1**
NOA				pmax	pmax				
	comp=Z,21nm,0.9s								
NOA				MLR		MLR			
	comp=Z,369nm,18.4s								
NBO02	**NORSAR Array S**	**74.67**	**338**	*e*P		**P**	**04 16 09.2**	**+0.5**
NBO00	**NORSAR Array S**	**74.71**	**338**	*e*P		**P**	**04 16 09.6**	**+0.7**
H17A	**Grant Village**	**74.72**	**46**	P		**P**	**04 16 12.1**	**+2.6**
	baz=307								
H17A	**Grant Village**	**74.72**	**46**	*e*P		**P**	**04 16 12.0**	**+2.4**
	comp=Z,14nm,0.8s								
NAO01	**NORSAR Array S**	**74.83**	**338**	*e*P		**P**	**04 16 10.0**	**+0.4**
FLWY	**Flagg Ranch**	**74.84**	**46**	*e*P		**P**	**04 16 11.3**	**+1.1**
	comp=Z,14nm,1.2s								
HVU	**Hansel Valley**	**75.00**	**49**	*e*P		**P**	**04 16 12.1**	**+0.9**
HVU				pmax	pmax				
	comp=Z,8.0nm,1.0s								
HVU	**Hansel Valley**	**75.00**	**49**	*e*P		**P**	**04 16 12.1**	**+0.9**
	comp=Z,7.7nm,1.0s								
RLMT	**Red Lodge**	**75.01**	**44**	P		**P**	**04 16 12.5**	**+1.2**
	baz=308								
RLMT	**Red Lodge**	**75.01**	**44**	*e*P		**P**	**04 16 12.4**	**+1.2**
	comp=Z,39nm,2.0s								
MOOW	**Moose Ponds**	**75.01**	**46**	*e*P		**P**	**04 16 12.7**	**+1.4**
	comp=Z,13nm,1.3s								
AKASG	**Malin Array Be**	**75.09**	**323**	P		**P**	**04 16 11.2**	**0.0**
	comp=Z,3.2nm,0.6s,baz=43,slow=6.0,SNR=35								
AKASG				LR		LR	04 52 09.4		
	comp=Z,375nm,19.5s,baz=60,slow=38								
AKBB	**Malin Array Si**	**75.09**	**323**	*e*P		**P**	**04 16 11.4**	**+0.2**
AKBB				pmax	pmax				
	comp=Z,32nm,1.4s								
AKBB	**Malin Array Si**	**75.09**	**323**	*e*P		**P**	**04 16 11.4**	**+0.2**
	comp=Z,32nm,1.4s								
KIEV	**Kiev**	**75.10**	**323**	*e*P		**P**	**04 16 11.7**	**+0.4**
KIEV				pmax	pmax				
	comp=Z,27nm,1.3s								
KIEV	**Kiev**	**75.10**	**323**	*e*P		**P**	**04 16 11.7**	**+0.4**
	comp=Z,27nm,1.3s								
AK11	**Malin Array Si**	**75.13**	**323**	*e*P		**P**	**04 16 11.1**	**-0.4**
LOHW	**Long Hollow**	**75.18**	**46**	*e*P		**P**	**04 16 12.3**	**+0.1**
	comp=Z,7.2nm,1.1s								
SNOW	**Snow King Moun**	**75.18**	**46**	*e*P		**P**	**04 16 14.0**	**+1.7**
	comp=Z,6.9nm,0.8s								
REDW	**Red Top Meadow**	**75.19**	**47**	*e*P		**P**	**04 16 12.5**	**+0.3**
	comp=Z,8.2nm,1.1s								
R11A	**Troy Canyon, C**	**75.30**	**53**	P		**P**	**04 16 13.6**	**+0.7**
	baz=306								
R11A	**Troy Canyon, C**	**75.30**	**53**	*e*P		**P**	**04 16 12.9**	**0.0**
	comp=Z,18nm,1.6s								
BGU	**Big Grassy Mou**	**75.36**	**50**	*e*P		**P**	**04 16 14.4**	**+1.2**
	comp=Z,4.9nm,1.0s								
MPMC	**Manual Prospec**	**75.40**	**56**	P		**P**	**04 16 14.0**	**+0.5**
	baz=306								
AHID	**Auburn Hatcher**	**75.40**	**47**	*e*P		**P**	**04 16 14.5**	**+1.0**
	comp=Z,5.7nm,0.8s								
RAO	**Raoul Island**	**75.44**	**146**	*e*P		**P**	**04 16 15.2**	**+1.8**
RAO				pmax	pmax				
	comp=Z,2μm,0.5s								
RAO	**Raoul Island**	**75.44**	**146**	*e*P		**P**	**04 16 15.2**	**+1.8**
	comp=Z,2μm,0.5s								
SFJD	**Kangerlussuaq**	**75.48**	**6**	*i* P		**P**	**04 16 13.6**	**+0.5**
	comp=Z,13nm,0.8s								
SFJD	**Kangerlussuaq**	**75.48**	**6**	*e*P		**P**	**04 16 12.7**	**-0.4**
SFJD				pmax	pmax				
	comp=Z,16nm,0.9s								
SFJD	**Kangerlussuaq**	**75.48**	**6**	*e*P		**P**	**04 16 12.7**	**-0.4**
	comp=Z,16nm,0.9s								
DGMT	**Dagmar**	**75.60**	**39**	P		**P**	**04 16 14.5**	**+0.3**
	baz=310								
DGMT	**Dagmar**	**75.60**	**39**	*e*P		**P**	**04 16 13.8**	**-0.5**
	comp=Z,10nm,0.9s								
TPNV	**Topopah Spring**	**75.69**	**54**	P		**P**	**04 16 15.9**	**+0.7**
	baz=306								
TPNV	**Topopah Spring**	**75.69**	**54**	*e*P		**P**	**04 16 16.1**	**+0.9**
TPNV				pmax	pmax				
	comp=Z,20nm,1.3s								
TPNV	**Topopah Spring**	**75.69**	**54**	*e*P		**P**	**04 16 16.1**	**+0.9**
	comp=Z,20nm,1.3s								
HWUT	**Hardware Ranch**	**75.83**	**48**	*e*P		**P**	**04 16 16.7**	**+0.8**
	comp=Z,16nm,1.4s								
DUG	**Dugway, Tooele**	**75.93**	**50**	P		**P**	**04 16 16.9**	**+0.5**
	baz=307								
DUG	**Dugway, Tooele**	**75.93**	**50**	*e*P		**P**	**04 16 15.6**	**-0.9**
DUG				pmax	pmax				
	comp=Z,7.0nm,0.8s								
DUG	**Dugway, Tooele**	**75.93**	**50**	*e*P		**P**	**04 16 15.6**	**-0.9**
	comp=Z,6.7nm,0.8s								
KONO	**Kongsberg**	**76.17**	**338**	*e*P		**P**	**04 16 18.6**	**+1.4**
KONO				pmax	pmax				
	comp=Z,14nm,0.9s								
KONO	**Kongsberg**	**76.17**	**338**	*e*P		**P**	**04 16 18.6**	**+1.4**
	comp=Z,14nm,0.9s								
TCUT	**Toone Canyon**	**76.22**	**49**	*e*P		**P**	**04 16 19.5**	**+1.3**
	comp=Z,12nm,0.8s								
CTU	**Camp Tracy**	**76.28**	**49**	*e*P		**P**	**04 16 19.1**	**+0.7**
	comp=Z,5.4nm,0.9s								
PSUT	**Pine Spring**	**76.28**	**52**	*e*P		**P**	**04 16 18.6**	**0.0**
	comp=Z,7.7nm,1.1s								
SIM	**Simferopol'**	**76.29**	**316**	*e*P		**P**	**04 16 19.6**	**+1.4**
SIM				pmax	pmax				
	comp=Z,17nm,0.8s								
SIM				MLR		MLR			
	comp=Z,200nm,17.0s								
BW06	**Boulder Array**	**76.30**	**46**	P		**P**	**04 16 18.7**	**+0.1**
	baz=308								
BW06	**Boulder Array**	**76.30**	**46**	*e*P		**P**	**04 16 19.1**	**+0.5**
	comp=Z,7.1nm,0.8s								
PD31	**Pinedale Array**	**76.30**	**46**	*e*P		**P**	**04 16 19.1**	**+0.5**
PDAR	**Pinedale Array**	**76.30**	**46**	P		**P**	**04 16 18.6**	**-0.1**
	comp=Z,5.2nm,0.8s,baz=278,slow=2.1,SNR=39								
KLNR	**Kaliningrad**	**76.34**	**330**	*e*P		**P**	**04 16 19.5**	**+1.2**
KLNR				pmax	pmax				
	comp=Z,117nm,1.3s								
A26A	**Wade Farm, Ken**	**76.40**	**38**	P		**P**	**04 16 19.4**	**+0.6**
	baz=312								
JLU	**Jordanelle**	**76.51**	**49**	*e*P		**P**	**04 16 21.0**	**+1.1**
	comp=Z,33nm,2.0s								
NLU	**North Lily Min**	**76.53**	**50**	*e*P		**P**	**04 16 20.6**	**+0.6**
	comp=Z,3.6nm,0.8s								
MPU	**Maple Canyon**	**76.76**	**50**	*e*P		**P**	**04 16 22.5**	**+1.2**
	comp=Z,6.3nm,0.8s								
C26A	**Wahner Farm, P**	**77.08**	**39**	P		**P**	**04 16 22.6**	**-0.1**
	baz=312								
A28A	**Rude Farm, Bot**	**77.25**	**37**	P		**P**	**04 16 24.2**	**+0.6**
	baz=313								
E25A	**Miller Ranch,**	**77.29**	**41**	P		**P**	**04 16 24.6**	**+0.7**
	baz=311								
MSU	**Marysvale**	**77.34**	**51**	*e*P		**P**	**04 16 26.2**	**+1.6**
MSU	**Marysvale**	**77.34**	**51**	*e*P		**P**	**04 16 26.2**	**+1.6**
C27A	**Sayler Ranch,**	**77.45**	**39**	P		**P**	**04 16 25.3**	**+0.5**
	baz=312								
B28A	**Dugan Ranch, T**	**77.52**	**38**	P		**P**	**04 16 25.5**	**+0.4**
	baz=313								
LCMT	**Little Creek M**	**77.58**	**53**	*e*P		**P**	**04 16 25.9**	**0.0**
	comp=Z,7.2nm,0.9s								
MTPU	**Mount Pierson**	**77.62**	**52**	*e*P		**P**	**04 16 27.1**	**+0.8**
	comp=Z,6.1nm,0.9s								
P17A	**Butcher Ranch,**	**77.64**	**50**	*e*P		**P**	**04 16 26.4**	**+0.2**
	comp=Z,18nm,1.2s								
SHAO	**Shalim**	**77.65**	**283**	P		**P**	**04 16 24.6**	**-1.6**
A29A	**Manning Farm,**	**77.74**	**37**	P		**P**	**04 16 26.6**	**+0.2**
	baz=314								
E26A	**Carlson Angus**	**77.80**	**40**	P		**P**	**04 16 26.8**	**+0.1**
	baz=312								
P18A	**Preston Nutter**	**77.84**	**49**	*e*P		**P**	**04 16 28.7**	**+1.2**
	comp=Z,18nm,1.4s								
KNB	**Kanab**	**77.85**	**53**	*e*P		**P**	**04 16 29.0**	**+1.6**
KNB				pmax	pmax				
	comp=Z,33nm,1.7s								
KNB	**Kanab**	**77.85**	**53**	*e*P		**P**	**04 16 28.9**	**+1.6**
	comp=Z,33nm,1.7s								
BSD	**Bornholm Skovb**	**77.98**	**333**

CFR	**Carcaliu**	**79.34**	**319**	P		**P**	**04 16 36.2 +1.1**
PV10	**Paradox Valley**	**79.36**	**50**	*e*P		**P**	**04 16 36.7 +1.0**
B32A	**Ashes, Strandq**	**79.39**	**36**	P		**P**	**04 16 35.2 -0.2**
	baz=315						
PV05	**Paradox Valley**	**79.51**	**50**	*e*P		**P**	**04 16 37.5 +0.9**
G28A	**Parade**	**79.54**	**41**	P		**P**	**04 16 36.8 +0.4**
	baz=313						
KOLS	**Kolonicke sedl**	**79.57**	**325**	*e*P		**P**	**04 16 37.1 +0.7**
KOLS				pmax	pmax		
	comp=Z,9.0nm,1.1s						
KOLS	**Kolonicke sedl**	**79.57**	**325**	*e*P		**P**	**04 16 37.1 +0.7**
KOLS				*e*PP		**PP**	**04 19 37.0 +0.5**
N23A	**Red Feather La**	**79.57**	**46**	P		**P**	**04 16 37.4 +0.5**
	baz=311						
N23A	**Red Feather La**	**79.57**	**46**	*e*P		**P**	**04 16 37.8 +0.8**
	comp=Z,12nm,1.0s						
E30A	**Jud**	**79.58**	**38**	P		**P**	**04 16 36.9 +0.4**
	baz=314						
F29A	**Eureka**	**79.58**	**39**	P		**P**	**04 16 36.7 +0.2**
	baz=314						
VRI	**Vrincioaia**	**79.59**	**321**	⇑*i*P		**P**	**04 16 38.6 +2.0**
VRI	**Vrincioaia**	**79.59**	**321**	P		**P**	**04 16 38.6 +2.0**
Y14A	**Wickenburg**	**79.61**	**55**	*e*P		**P**	**04 16 37.8 +0.9**
	comp=Z,34nm,1.1s						
STHS	**Stebnicka Huta**	**79.68**	**326**	*e*P		**P**	**04 16 38.1 +1.1**
STHS				pmax	pmax		
	comp=Z,7.0nm,1.0s						
STHS	**Stebnicka Huta**	**79.68**	**326**	*e*P		**P**	**04 16 38.1 +1.1**
OJC	**Ojcow**	**79.73**	**327**	*e*P		**P**	**04 16 38.6 +1.4**
OJC	**Ojcow**	**79.73**	**327**	*e*P		**P**	**04 16 38.1 +0.9**
OJC				pmax	pmax		
	comp=Z,35nm,1.1s						
OJC	**Ojcow**	**79.73**	**327**	*e*P		**P**	**04 16 38.1 +0.9**
	comp=Z,35nm,1.1s						
AGMN	**Agassiz Nation**	**79.77**	**36**	P		**P**	**04 16 37.4 -0.1**
	baz=316						
AGMN	**Agassiz Nation**	**79.77**	**36**	*e*P		**P**	**04 16 37.3 -0.1**
	comp=Z,8.2nm,0.9s						
PV01	**Paradox Valley**	**79.79**	**50**	*e*P		**P**	**04 16 39.1 +1.0**
ABTO	**Aybut**	**79.84**	**284**	P		**P**	**04 16 38.2 -0.3**
	SNR=6.7						
ABTO	**Aybut**	**79.84**	**284**	P		**P**	**04 16 38.2 -0.3**
	SNR=6.7						
BR131	**Keskin Array S**	**79.90**	**313**	*e*P		**P**	**04 16 39.0 +0.4**
BRTR	**Keskin Array B**	**79.90**	**313**	P		**P**	**04 16 39.5 +0.9**
	comp=Z,4.5nm,0.9s,baz=108,slow=4.9,SNR=20						
BRTR				LR		LR	04 56 51.5
	comp=Z,134nm,18.4s,baz=54,slow=39						
CRVS	**Cervenica-Dubn**	**79.96**	**325**	*e*P		**P**	**04 16 39.6 +1.1**
CRVS	**Cervenica-Dubn**	**79.96**	**325**	*e*P		**P**	**04 16 39.6 +1.1**
E31A	**Nome**	**80.04**	**38**	P		**P**	**04 16 39.4 +0.4**
	baz=315						
SMCO	**Snowmass**	**80.08**	**48**	*e*P		**P**	**04 16 40.6 +0.7**
	comp=Z,5.4nm,0.9s						
NIE	**Niedzica**	**80.10**	**326**	*e*P		**P**	**04 16 41.1 +1.8**
NIE	**Niedzica**	**80.10**	**326**	*e*P		**P**	**04 16 41.1 +1.8**
I28A	**Midland**	**80.14**	**41**	P		**P**	**04 16 40.1 +0.5**
	baz=313						
B34A	**Aery, Baudette**	**80.20**	**35**	P		**P**	**04 16 39.5 -0.3**
	baz=317						
ISR	**Istrita**	**80.20**	**320**	⇑*i*P		**P**	**04 16 41.6 +1.7**
C33A	**Trail**	**80.20**	**36**	P		**P**	**04 16 39.8 -0.1**
	baz=316						
H29A	**Onida**	**80.21**	**41**	P		**P**	**04 16 40.0 0.0**
	baz=314						
X16A	**Lo Mia Camp, P**	**80.33**	**54**	*e*P		**P**	**04 16 42.4 +1.3**
	comp=Z,7.2nm,0.9s						
BR231	**Keskin MP Arra**	**80.33**	**313**	*e*P		**P**	**04 16 40.5 -0.3**
G30A	**Faulkton**	**80.41**	**40**	P		**P**	**04 16 41.1 +0.1**
	baz=314						
MVCO	**Mesa Verde**	**80.43**	**50**	*e*P		**P**	**04 16 40.8 -0.8**
	comp=Z,7.4nm,1.0s						
ISCO	**Idaho Springs**	**80.48**	**47**	P		**P**	**04 16 42.6 +0.7**
	baz=311						
ISCO	**Idaho Springs**	**80.48**	**47**	*e*P		**P**	**04 16 43.1 +1.2**
ISCO				pmax	pmax		
	comp=Z,20nm,1.8s						
ISCO	**Idaho Springs**	**80.48**	**47**	*e*P		**P**	**04 16 43.1 +1.2**
	comp=Z,20nm,1.8s						
J28A	**Allard Ranch,**	**80.50**	**42**	P		**P**	**04 16 41.9 +0.4**
	baz=313						
D33A	**AnnSam, Waubun**	**80.61**	**37**	P		**P**	**04 16 41.5 -0.6**
	baz=316						
LANS	**Liptovska Anna**	**80.67**	**327**	*e*P		**P**	**04 16 44.5 +2.1**
LANS	**Liptovska Anna**	**80.67**	**327**	*e*P		**P**	**04 16 44.5 +2.1**
KECS	**Kecovo**	**80.71**	**326**	*e*P		**P**	**04 16 43.8 +1.3**
KECS				pmax	pmax		
	comp=Z,4.0nm,1.0s						
KECS	**Kecovo**	**80.71**	**326**	*e*P		**P**	**04 16 43.8 +1.3**
OKC	**Ostrava-Krasne**	**80.73**	**328**	AMS		AMS	04 55 40.0
	comp=Z,600nm,17.6s						
KSP	**Ksiaz**	**80.74**	**329**	*e*P		**P**	**04 16 44.5 +1.9**
KSP	**Ksiaz**	**80.74**	**329**	*e*P		**P**	**04 16 44.6 +1.9**
DRGR		**80.91**	**323**	⇑*i*P		**P**	**04 16 45.2 +1.5**
D34A	**Park Rapids**	**80.96**	**36**	P		**P**	**04 16 44.0 +0.1**
	baz=316						
ARR	**Arges**	**80.99**	**321**	⇓*i*P		**P**	**04 16 46.3 +2.1**
SUSD	**Miller**	**80.99**	**40**	P		**P**	**04 16 44.0 -0.2**
	baz=314						
E33A	**Westby DABS, E**	**80.99**	**37**	P		**P**	**04 16 44.0 -0.1**
	baz=316						
J29A	**Okreek**	**80.99**	**41**	P		**P**	**04 16 44.6 +0.4**
	baz=314						
MORC	**Moravsky Berou**	**81.03**	**328**	⇓*i*P		**P**	**04 16 45.7 +1.4**
MORC	**Moravsky Berou**	**81.03**	**328**	*e*P		**P**	**04 16 46.0 +1.7**
MORC				pmax	pmax		
	comp=Z,86nm,1.2s						
MORC	**Moravsky Berou**	**81.03**	**328**	*e*P		**P**	**04 16 46.0 +1.7**
	comp=Z,86nm,1.2s						
C35A	**Jirik Farms, M**	**81.08**	**35**	P		**P**	**04 16 44.2 -0.3**
	baz=317						
S22A	**4UR Ranch, Cre**	**81.10**	**49**	P		**P**	**04 16 46.0 +0.8**
	baz=311						
S22A	**4UR Ranch, Cre**	**81.10**	**49**	*e*P		**P**	**04 16 46.2 +1.0**
	comp=Z,7.8nm,0.9s						
DPC	**Dobruska-Polom**	**81.10**	**329**	*e*P		**P**	**04 16 46.4 +1.7**
DPC				*e*x		x	04 16 59.1
DPC				*e*x		x	04 17 09.8
DPC	**Dobruska-Polom**	**81.10**	**329**	*e*P		**P**	**04 16 46.4 +1.7**
DPC				*e*			04 16 59.1
UPC	**Upice**	**81.11**	**329**	AMS		AMS	04 55 40.0
	comp=Z,500nm,16.9s						
I30A	**Oacoma**	**81.11**	**41**	P		**P**	**04 16 45.4 +0.6**
	baz=314						
KRLC	**Kraliky**	**81.12**	**328**	*e*P		**P**	**04 16 46.1 +1.3**
KRLC	**Kraliky**	**81.12**	**328**	*e*P		**P**	**04 16 46.1 +1.3**
X18A	**Snowflake**	**81.22**	**53**	*e*P		**P**	**04 16 46.9 +1.1**
	comp=Z,6.8nm,1.1s						
F33A	**5 Mile Ranch,**	**81.33**	**38**	P		**P**	**04 16 46.0 +0.1**
	baz=316						
PSZ	**Piszkesteto**	**81.39**	**325**	⇑*i*P		**P**	**04 16 47.0 +0.7**
PSZ	**Piszkesteto**	**81.39**	**325**	*e*P		**P**	**04 16 46.8 +0.5**
PSZ				pmax	pmax		
	comp=Z,16nm,1.0s						
PSZ	**Piszkesteto**	**81.39**	**325**	*e*P		**P**	**04 16 46.8 +0.5**
	comp=Z,16nm,1.0s						
VYHS	**Vyhne**	**81.44**	**326**	*e*P		**P**	**04 16 47.5 +1.1**
VYHS				pmax	pmax		
	comp=Z,6.0nm,1.0s						
VYHS	**Vyhne**	**81.44**	**326**	*e*P		**P**	**04 16 47.5 +1.1**
C36A	**Pine Crest Far**	**81.56**	**35**	P		**P**	**04 16 46.9 -0.1**
	baz=318						
BRG	**Berggiesshubel**	**81.66**	**330**	*i* P		**P**	**04 16 48.6 +1.1**
	comp=Z,14nm,0.9s						
BRG				*e*			04 17 00.8
	comp=Z,10.0nm,1.0s						
BRG				*i*			04 17 11.9
	comp=Z,22nm,1.4s						
	comp=N,454nm,18.3s						
	comp=E,355nm,21.9s						
	comp=Z,791nm,18.0s						
BRG	**Berggiesshubel**	**81.66**	**330**	*i* P		**P**	**04 16 48.6 +1.1**
BRG				*e*			04 17 00.8
BRG				pmax	pmax		
	comp=Z,14nm,0.9s						
BRG				pmax	pmax		
	comp=Z,10.0nm,1.0s						
BRG				pmax	pmax		
	comp=Z,22nm,1.4s						
BRG				MLR	MLR		
	comp=N,454nm,18.3s						
BRG				MLR	MLR		
	comp=E,355nm,21.9s						
BRG				MLR	MLR		
	comp=Z,791nm,18.0s						
PVCC	**Panska Ves**	**81.68**	**330**	*e*P		**P**	**04 16 49.1 +1.5**
PVCC				AMS		AMS	04 56 30.0
	comp=Z,600nm,16.2s						
PVCC	**Panska Ves**	**81.68**	**330**	*e*P		**P**	**04 16 49.1 +1.5**
PVCC				MLR		MLR	
	comp=Z,600nm,16.2s						
CLL	**Collm**	**81.68**	**331**	*i* P		**P**	**04 16 47.1 -0.5**
	comp=Z,33nm,1.0s						
CLL				⇓*i*Pmax			04 16 48.4
	comp=Z,33nm,1.0s						
CLL				*i*			04 17 00.6
CLL				*i*			04 17 11.6
CLL	**Collm**	**81.68**	**331**	*i* P		**P**	**04 16 47.1 -0.5**
CLL				*i*			04 17 00.6
CLL				pmax	pmax		
	comp=Z,33nm,1.0s						
CLL	**Collm**	**81.68**	**331**	*e*P		**P**	**04 16 47.2 -0.4**
	comp=Z,41nm,1.0s						
G33A	**Ortonville**	**81.72**	**38**	P		**P**	**04 16 47.8 -0.2**
	baz=316						
VRAC	**Vranov**	**81.79**	**328**	⇓*i*P		**P**	**04 16 49.7 +1.4**
VRAC	**Vranov**	**81.79**	**328**	P		**P**	**04 16 49.6 +1.3**
K30A	**Basset**	**81.88**	**42**	P		**P**	**04 16 49.4 +0.5**
	baz=314						
GZR	**Gura Zlata**	**81.88**	**322**	⇑*i*P		**P**	**04 16 50.2 +1.3**
SDCO	**Great Sand Dun**	**81.89**	**48**	P		**P**	**04 16 50.2 +0.8**
	baz=311						
SDCO	**Great Sand Dun**	**81.89**	**48**	*e*P		**P**	**04 16 50.1 +0.8**
	comp=Z,3.0nm,0.8s						
H33A	**Prehn Over Nor**	**81.94**	**39**	P		**P**	**04 16 49.2 +0.1**
	baz=316						
EYMN	**Ely**	**82.02**	**34**	P		**P**	**04 16 49.4 -0.1**
	baz=319						
EYMN	**Ely**	**82.02**	**34**	*e*P		**P**	**04 16 49.5 0.0**
	comp=Z,6.5nm,0.9s						
GOPC	**GO Pecny, Ondr**	**82.07**	**329**	AMS		AMS	05 00 20.0
G34A	**Benson**	**82.08**	**38**	P		**P**	**04 16 50.2 +0.3**
	baz=316						
TUC	**Tucson**	**82.08**	**55**	*e*P		**P**	**04 16 50.1 -0.1**
TUC				pmax	pmax		
	comp=Z,18nm,1.8s						
TUC	**Tucson**	**82.08**	**55**	*e*P		**P**	**04 16 50.1 -0.1**
	comp=Z,18nm,1.8s						
PRU	**Pruhonice**	**82.11**	**330**	*e*P		**P**	**04 16 51.3 +1.4**
PRU				*ex*		x	04 17 03.9
PRU				*ex*		x	04 17 14.4
PRU				AMS		AMS	05 00 30.0
	comp=Z,700nm,16.6s						
PRU	**Pruhonice**	**82.11**	**330**	*e*P		**P**	**04 16 51.3 +1.4**
PRU				*e*			04 17 03.9
PRU				MLR		MLR	
	comp=Z,700nm,16.6s						
TREC	**Trest**	**82.26**	**329**	AMS		AMS	04 56 40.0
	comp=Z,500nm,19.3s						
E36A	**McGregor**	**82.28**	**36**	P		**P**	**04 16 50.8 -0.1**
	baz=318						
C38A	**Sawbill Land.**	**82.29**	**34**	P		**P**	**04 16 51.0 0.0**
	baz=319						
I33A	**Coleman**	**82.36**	**39**	P		**P**	**04 16 51.9 +0.4**
	baz=316						
K31A	**O'Neill**	**82.37**	**41**	P		**P**	**04 16 51.9 +0.4**
	baz=315						
H34A	**Spellman Lake,**	**82.43**	**38**	P		**P**	**04 16 51.8 +0.1**
	baz=316						
L31A	**Butterfield Fa**	**82.64**	**42**	P		**P**	**04 16 52.7 -0.2**
	baz=315						
ECSD	**EROS Data Cent**	**82.68**	**39**	P		**P**	**04 16 53.1 0.0**
	baz=316						
ECSD	**EROS Data Cent**	**82.68**	**39**	*e*P		**P**	**04 16 52.4 -0.7**
	comp=Z,9.7nm,0.9s						
C39A	**Grand Marais**	**82.72**	**33**	P		**P**	**04 16 52.8 -0.3**
	baz=320						
NKC	**Novy Kostel**	**82.75**	**331**	*e*P		**P**	**04 16 54.3 +1.0**
NKC				*ex*		x	04 17 06.6
NKC				AMS		AMS	04 57 40.0
	comp=Z,500nm,18.4s						
NKC	**Novy Kostel**	**82.75**	**331**	*e*P		**P**	**04 16 54.3 +1.0**
NKC				*e*			04 17 06.6
NKC				MLR		MLR	
	comp=Z,500nm,18.4s						
J33A	**Davis**	**82.80**	**40**	P		**P**	**04 16 53.5 -0.1**
	baz=316						
MDVR	**Moldovita**	**82.85**	**322**	⇓*i*P		**P**	**04 16 54.7 +0.8**
H35A	**Sunnyside Ranc**	**82.87**	**38**	P		**P**	**04 16 54.1 +0.2**
	baz=317						
T25A	**Trinidad**	**82.94**	**48**	P		**P**	**04 16 55.4 +0.5**
	baz=312						
T25A	**Trinidad**	**82.94**	**48**	*e*P		**P**	**04 16 55.6 +0.8**
	comp=Z,13nm,0.9s						
LAZ	**Ladron**	**83.08**	**52**	*e*P		**P**	**04 16 56.8 +1.2**
ANMO	**Albuquerque**	**83.15**	**51**	P		**P**	**04 16 56.9 +1.1**
	baz=311						
ANMO	**Albuquerque**	**83.15**	**51**	⇑*i*P		**P**	**04 16 57.4 +1.5**
ANMO				pmax	pmax		
	comp=Z,10.0nm,1.2s						
ANMO	**Albuquerque**	**83.15**	**51**	*e*P		**P**	**04 16 57.0 +1.1**
	comp=Z,9.6nm,1.1s						
CONA	**Conrad Observa**	**83.16**	**328**	*i* PcP		**P**	**04 16 57.2 +1.6**
	comp=Z,12nm,0.9s,SNR=7.9						
KHC	**Kasperske Hory**	**83.17**	**330**	*e*P		**P**	**04 16 56.3 +0.8**
KHC				*ex*		x	04 17 01.5
KHC				*ex*		x	04 17 09.1
KHC				*ex*		x	04 17 19.8
KHC				AMS		AMS	04 57 30.0
	comp=Z,600nm,16.0s						
KHC	**Kasperske Hory**	**83.17**	**330**	*e*P		**P**	**04 16 56.3 +0.8**
KHC				*e*			04 17 01.5
KHC				*e*			04 17 09.1
KHC				MLR		MLR	
	comp=Z,600nm,16.0s						
KHC	**Kasperske Hory**	**83.17**	**330**	*e*P		**P**	**04 16 56.1 +0.6**
	comp=Z,7.3nm,1.0s						
PKSM	**Moragy**	**83.24**	**325**	⇓*i*P		**P**	**04 16 56.2 +0.4**
PPT	**Papeete**	**83.28**	**118**	LR		LR	04 47 28.0
	comp=Z,192nm,21.6s,baz=278,slow=31						
GEC2	**GERESS Array S**	**83.35**	**329**	*e*P		**P**	**04 16 57.2 +0.7**
GEC2				pmax	pmax		
	comp=Z,9.0nm,1.0s						
GEC2	**GERESS Array S**	**83.35**	**329**	*e*P		**P**	**04 16 57.2 +0.7**
	comp=Z,8.6nm,1.0s						
GERES	**GERESS Array B**	**83.35**	**329**	P		**P**	**04 16 56.5 0.0**
	comp=Z,6.2nm,0.9s,baz=34,slow=5.7,SNR=35						
GERES				PP		**PP**	**04 20 06.0 -1.7**
	comp=Z,1.0nm,0.8s,baz=44,slow=9.8,SNR=3.4						
GERES				LR		LR	04 58 11.5
	comp=Z,167nm,19.0s,baz=46,slow=39						
GEA0	**GERESS Array S**	**83.35**	**329**	*e*P		**P**	**04 16 56.4 -0.1**
H36A	**Jessenland, He**	**83.40**	**37**	P		**P**	**04 16 57.2 +0.5**
	baz=318						
I35A	**Creekview Farm**	**83.41**	**38**	P		**P**	**04 16 56.9 +0.1**
	baz=317						
LPM	**Los Pinos Moun**	**83.46**	**52**	*e*P		**P**	**04 16 57.5 0.0**
BNM	**Barren Site**	**83.56**	**52**	*e*P		**P**	**04 16 58.6 +0.5**
GRFO	**Grafenberg**	**83.66**	**331**	*e*P		**P**	**04 16 59.0 +1.0**
GRFO				pmax	pmax		
	comp=Z,54nm,1.5s						
GRFO	**Grafenberg**	**83.66**	**331**	*e*P		**P**	**04 16 59.0 +1.0**
	comp=Z,54nm,1.5s						
319A	**Douglas**	**83.66**	**55**	*e*P		**P**	**04 16 58.5 0.0**
	comp=Z,13nm,0.8s						
K34A	**Le Mars**	**83.70**	**40**	P		**P**	**04 16 58.0 -0.3**
	baz=316						
ARSA	**Arzberg**	**83.83**	**327**	*i* PcP		**P**	**04 16 60.0 +1.0**
	comp=Z,7.2nm,1.0s						
H37A	**Dierke Farm, C**	**83.88**	**37**	P		**P**	**04 17 00.0 +0.8**
	baz=318						
121A	**Cookes Peak, D**	**83.89**	**54**	P		**P**	**04 17 00.7 +1.0**
	baz=311						
I37A	**Lemond, Waseca**	**84.07**	**37**	P		**P**	**04 17 00.8 +0.6**
	baz=318						
J36A	**Seneca 1, Swea**	**84.11**	**38**	P		**P**	**04 17 00.1 -0.3**
	baz=317						
PERS	**Pernice**	**84.48**	**327**	*i* P		**P**	**04 17 03.0 +0.7**
SOKA	**Soboth**	**84.49**	**327**	*i* P		**P**	**04 17 02.1 -0.2**
	comp=Z,11nm,1.0s,SNR=8.3						
J37A	**Redenius Farm,**	**84.51**	**38**	P		**P**	**04 17 02.7 +0.2**
	baz=318						
I38A	**Scanlan Farm,**	**84.56**	**37**	P		**P**	**04 17 02.5 -0.2**
	baz=318						
SCHQ	**Schefferville**	**84.62**	**17**	P		**P**	**04 17 03.2 +0.5**
	comp=Z,7.5nm,0.8s,baz=306,slow=2.8,SNR=6.2						
SCHQ				LR		LR	05 01 37.1
	comp=Z,86nm,18.2s,baz=50,slow=40						
SCHQ	**Schefferville**	**84.62**	**17**	*e*P		**P**	**04 17 03.5 +0.7**
	comp=Z,58nm,1.8s						
BEBN	**Eben Emael**	**84.76**	**335**	P		**P**	**04 17 04.8 +1.2**
MEM	**Membach**	**84.81**	**334**	P		**P**	**04 17 04.5 +0.7**
	comp=Z,11nm,1.2s						
K37A	**Belmond**	**84.87**	**38**	P		**P**	**04 17 04.4 +0.1**
	baz=318						
KBA	**Koelnbreinsper**	**84.89**	**328**	*e*PcP		**P**	**04 17 05.0 +0.5**
	comp=Z,7.2nm,0.9s						
LEGS	**Legarje**	**84.93**	**327**	*i* P		**P**	**04 17 04.9 +0.4**
VAY	**Valandovo**	**84.94**	**320**	*i* P		**P**	**04 17 06.0 +1.4**
J38A	**Wedel Dairy, R**	**85.03**	**37**	P		**P**	**04 17 05.3 +0.2**
	baz=318						
STU	**Stuttgart**	**85.18**	**332**	*e*P		**P**	**04 17 05.5 -0.2**
STU				pmax	pmax		
	comp=Z,27nm,0.9s						
STU	**Stuttgart**	**85.18**	**332**	*e*P		**P**	**04 17 05.5 -0.2**
	comp=Z,27nm,0.9s						
O34A	**Beatrice**	**85.19**	**42**	P		**P**	**04 17 05.7 -0.3**
	baz=316						
BCLA	**Clavier**	**85.21**	**335**	P		**P**	**04 17 06.8 +1.1**
	comp=Z,13nm,1.2s						
CWF	**Charnwood Fore**	**85.25**	**339**	*e*P		**P**	**04 17 05.9 0.0**
	comp=Z,25nm,1.1s						
SNF	**Seneffe**	**85.48**	**335**	P		**P**	**04 17 08.3 +1.2**
LANF	**Langenberg**	**85.53**	**332**	*e*P		**P**	**04 17 07.9 +0.5**
WLF	**Walferdange**	**85.55**	**334**	P		**P**	**04 17 09.9 +2.4**
	comp=Z,21nm,2.0s						
P34A	**Walnut Farm, R**	**85.58**	**42**	P		**P**	**04 17 07.6 -0.2**
	baz=316						
MOTA	**Moosalm**	**85.59**	**330**	*i* PcP		**P**	**04 17 09.5 +1.5**
	comp=Z,8.5nm,1.0s						
RETA	**Reutte**	**85.62**	**330**	*e*PcP		**P**	**04 17 08.9 +0.9**
	comp=Z,16nm,1.1s,SNR=5.6						
N36A	**Muff Farm, Cla**	**85.64**	**40**	P		**P**	**04 17 08.7 +0.6**
	baz=317						
DOU	**Dourbes**	**85.72**	**335**	P		**P**	**04 17 09.1 +0.7**
PDG	**Podgorica**	**85.79**	**322**	⇑*i*P		**P**	**04 17 09.6 +0.8**
BFO	**Black Forest**	**85.87**	**332**	*e*P		**P**	**04 17 08.8 -0.4**
BFO				pmax	pmax		
	comp=Z,20nm,0.9s						
BFO	**Black Forest**	**85.87**	**332**	*e*P		**P**	**04 17 08.8 -0.4**
	comp=Z,20nm,0.9s						
MNTX	**Cornudas Mount**	**85.97**	**53**	P		**P**	**04 17 09.6 -0.4**
	baz=312						
MNTX	**Cornudas Mount**	**85.97**	**53**	*e*P		**P**	**04 17 09.1 -0.9**
	comp=Z,5.3nm,0.9s						
OHR	**Ohrid**	**86.00**	**320**	*i* P		**P**	**04 17 10.8 +0.8**
FETA	**Feichten**	**86.01**	**330**	*i* PcP		**P**	**04 17 10.6 +0.5**
	comp=Z,9.4nm,1.0s,SNR=5.4						
KSU1	**Kansas State U**	**86.01**	**43**	P		**P**	**04 17 09.7 -0.3**
	baz=316						
KSU1	**Kansas State U**	**86.01**	**43**	*e*P		**P**	**04 17 09.2 -0.9**
	comp=Z,24nm,0.9s						
P35A	**Duane Minner,**	**86.02**	**42**	P		**P**	**04 17 09.6 -0.5**
	baz=316						
MSTX	**Muleshoe**	**86.06**	**50**	P		**P**	**04 17 10.6 +0.1**
	baz=313						
N37A	**Lee Faris, Mou**	**86.07**	**40**	P		**P**	**04 17 10.1 -0.2**
	baz=318						
M38A	**Pleasantville**	**86.09**	**39**	P		**P**	**04 17 10.9 +0.5**
	baz=318						
AMTX	**Amarillo**	**86.10**	**48**	P		**P**	**04 17 11.3 +0.7**
	baz=314						
AMTX	**Amarillo**	**86.10**	**48**	*e*P		**P**	**04 17 10.7 +0.1**
	comp=Z,14nm,0.6s						
T32A	**Huddler Ranch,**	**86.10**	**45**	P		**P**	**04 17 11.0 +0.4**
	baz=315						
DAVA	**Damuels**	**86.13**	**330**	*i* PcP		**P**	**04 17 11.4 +0.7**
	comp=Z,14nm,0.8s,SNR=7.5						
O36A	**Bolckow**	**86.14**	**41**	P		**P**	**04 17 11.1 +0.4**
	baz=317						
WLS	**Welschbruch**	**86.17**	**332**	*e*P		**P**	**04 17 11.2 +0.5**
CDF	**Champ du Feu**	**86.19**	**332**	*e*P		**P**	**04 17 10.8 -0.1**
CDF				pmax	pmax		
	comp=Z,23nm,1.0s						
P36A	**Good Intent, A**	**86.39**	**41**	P		**P**	**04 17 11.7 -0.1**
	baz=317						
ECH	**Echery**	**86.40**	**332**	*e*P		**P**	**04 17 12.3 +0.5**
FUORN	**Ofenpass-Fuorn**	**86.52**	**330**	*e*P		**P**	**04 17 13.1 +0.4**
	comp=Z,12nm,0.8s						
O37A	**Wolven Farm, M**	**86.54**	**40**	P		**P**	**04 17 12.5 -0.1**
	baz=318						
MOF	**Molkenrain**	**86.72**	**332**	*e*P		**P**	**04 17 13.5 +0.1**
S34A	**Willow Spring**	**86.75**	**44**	P		**P**	**04 17 14.2 +0.6**
	baz=316						
R35A	**Emporia Munici**	**86.80**	**43**	P		**P**	**04 17 14.5 +0.6**
	baz=316						
N39A	**Derby Farms, D**	**86.85**	**39**	P		**P**	**04 17 14.3 +0.2**
	baz=319						
P37A	**Lathrop**	**86.86**	**41**	P		**P**	**04 17 14.3 +0.2**
	baz=318						
R36A	**Gordon, Harris**	**87.17**	**42**	P		**P**	**04 17 15.9 +0.2**
	baz=317						
T34A	**McClaskey Farm**	**87.19**	**44**	P		**P**	**04 17 16.2 +0.4**
	baz=316						
S35A	**Otter Creek Ra**	**87.19**	**43**	P		**P**	**04 17 16.2 +0.3**
	baz=316						
LOMF	**Lomont**	**87.25**	**332**	*e*P		**P**	**04 17 16.5 +0.5**
P38A	**Dawn**	**87.26**	**40**	P		**P**	**04 17 16.4 +0.3**
	baz=318						
W32A	**Sentinel**	**87.36**	**47**	P		**P**	**04 17 17.2 +0.5**
	baz=315						
U34A	**Anderson Ranch**	**87.41**	**45**	P		**P**	**04 17 17.8 +0.9**
	baz=316						
U34A	**Anderson Ranch**	**87.41**	**45**	*e*P		**P**	**04 17 17.0 0.0**
	comp=Z,21nm,0.8s						
VLDQ	**Val d'Or**	**87.48**	**26**	*e*P		**P**	**04 17 16.3 -0.7**
	comp=Z,37nm,1.5s						
Q38A	**Cooks Store, C**	**87.70**	**41**	P		**P**	**04 17 17.9 -0.4**
	baz=318						
V34A	**Guthrie**	**87.85**	**45**	*e*P		**P**	**04 17 19.2 +0.2**
	comp=Z,16nm,0.7s						
T36A	**Boggs Farm, Ca**	**87.89**	**44**	P		**P**	**04 17 19.4

baz=317
U38A Gravette 89.16 43 P **P** 04 17 25.2 0.0
baz=318
T39A Clever 89.27 42 P **P** 04 17 25.6 -0.1
baz=318
S40A Lebanon 89.30 41 P **P** 04 17 25.5 -0.4
baz=319
X36A Centrahoma 89.42 46 P **P** 04 17 26.9 +0.5
baz=316
HHAR Hobbs 89.52 43 eP **P** 04 17 26.9 0.0
comp=Z,8.9nm,0.9s
V38A Canehill 89.57 43 P **P** 04 17 27.2 +0.1
baz=318
PLDF La Plantade 89.59 333 eP **P** 04 17 28.1 +1.0
T40A Mansfield 89.63 41 P **P** 04 17 27.1 -0.3
baz=319
U39A Green Forest 89.69 43 P **P** 04 17 27.4 -0.3
baz=318
AGO Saint Agoulin 89.69 334 eP **P** 04 17 28.9 +1.4
233A Rising Star 89.76 49 P **P** 04 17 28.4 +0.2
baz=315
TCF Toulx Ste Croi 89.81 334 eP **P** 04 17 29.1 +1.0
TCF pmax pmax
comp=Z,6.0nm,1.1s
SFIN Lafayette 89.86 36 eP **P** 04 17 28.9 +0.5
comp=Z,20nm,1.1s
Y36A Durant 89.95 46 P **P** 04 17 28.9 0.0
baz=316
X37A Clayton 89.97 45 P **P** 04 17 29.0 0.0
baz=317
PYM Petit Puy Mans 90.00 334 eP **P** 04 17 30.1 +1.1
V39A Pettigrew 90.00 43 P **P** 04 17 28.9 -0.3
baz=318
U40A Yellville 90.05 42 P **P** 04 17 29.0 -0.4
baz=318
W38A Poteau 90.09 44 P **P** 04 17 29.4 -0.2
baz=318
333A Richland Sprin 90.19 49 P **P** 04 17 30.5 +0.4
baz=315
JCT Junction City 90.29 50 P **P** 04 17 30.7 +0.1
baz=315
JCT Junction City 90.29 50 eP **P** 04 17 30.8 +0.1
JCT pmax pmax
comp=Z,10.0nm,0.8s
JCT Junction City 90.29 50 eP **P** 04 17 30.8 +0.1
comp=Z,10nm,0.8s
MFF Saint Martin d 90.33 336 eP **P** 04 17 31.2 +0.7
MFF pmax pmax
comp=Z,32nm,1.6s
W39A Magazine 90.40 44 P **P** 04 17 30.6 -0.4
baz=318
V40A Witts Springs 90.47 43 P **P** 04 17 31.0 -0.4
baz=318
433A Art 90.53 50 P **P** 04 17 31.4 -0.4
baz=315
WHTX Lake Whitney, 90.64 48 eP **P** 04 17 32.5 +0.3
comp=Z,16nm,0.8s
334A Lometa 90.64 49 P **P** 04 17 32.7 +0.5
baz=315
X39A Fountain Ranch 90.73 44 P **P** 04 17 32.9 +0.3
baz=318
W40A Ferguson Farm, 90.80 43 P **P** 04 17 32.9 +0.1
baz=318
SIUC Southern Illin 90.90 39 eP **P** 04 17 33.2 -0.1
comp=Z,12nm,0.8s
MIAR Mount Ida 91.00 44 P **P** 04 17 34.1 +0.3
baz=318
MIAR Mount Ida 91.00 44 eP **P** 04 17 33.8 0.0
MIAR pmax pmax
comp=Z,18nm,0.9s
MIAR Mount Ida 91.00 44 eP **P** 04 17 33.8 0.0
comp=Z,18nm,0.9s
PBMO Poplar Bluff 91.00 40 eP **P** 04 17 34.2 +0.5
comp=Z,13nm,0.8s
CAF Calviac 91.05 334 eP **P** 04 17 34.5 +0.6
CAF pmax pmax
comp=Z,9.0nm,1.1s
X201 Greenbrier Sit 91.11 43 eP **P** 04 17 34.4 +0.1
comp=Z,12nm,0.9s
X301 Greenbrier Sit 91.12 43 eP **P** 04 17 34.9 +0.6
comp=Z,12nm,1.0s
WHAR Wooly Hollow 91.15 43 eP **P** 04 17 34.6 +0.1
comp=Z,15nm,0.8s
Y39A Lockesburg 91.16 45 P **P** 04 17 34.8 +0.3
baz=318
W41A Tony Mavity, V 91.26 43 P **P** 04 17 35.0 0.0
baz=319
534A Blanco 91.42 50 P **P** 04 17 36.0 +0.1
baz=315
WLAR White Oak Lake 91.89 44 eP **P** 04 17 39.3 +1.4
comp=Z,20nm,0.8s
WVT Waverly 92.83 39 eP **P** 04 17 42.6 +0.3
WVT pmax pmax
comp=Z,6.0nm,1.0s
WVT Waverly 92.83 39 eP **P** 04 17 42.6 +0.3
comp=Z,6.0nm,1.0s
SWET Sewanee 94.50 39 eP **P** 04 17 49.6 -0.4
comp=Z,2.1nm,0.8s
KEST Kesra 95.80 324 LR LR 05 05 57.8
comp=Z,355nm,18.4s,baz=300,slow=38
ESDC Sonseca Array 97.77 335 P Pdif 04 18 04.9 +0.1
comp=Z,0.1nm,0.2s,baz=238,slow=16,SNR=3.6
ESDC PP **PP** **04 22 03.7 +1.8**
comp=Z,0.9nm,0.8s,baz=24,slow=7.9,SNR=4.9
ESDC LR LR 05 07 20.4
comp=Z,130nm,18.7s,baz=45,slow=38
VNDA Vanda 115.10 176 PKP **PKPdf** **04 23 08.4 -0.9**
comp=Z,0.9nm,0.8s,baz=213,slow=4.1,SNR=3.5
TORD Torodi Ar. Bea 118.30 317 PKP **PKPdf** **04 23 16.6 -0.7**
comp=Z,0.9nm,0.6s,baz=21,slow=1.6,SNR=15
TORD PP **PP** **04 24 31.2 -1.2**
comp=Z,2.1nm,0.9s,baz=34,slow=6.0,SNR=6.0
TORD PKKPbc **PKKPbc** **04 33 33.9 -0.3**
comp=Z,0.7nm,0.8s,baz=237,slow=2.7,SNR=4.5
LBTB Lobatse 126.31 264 ePKIKP **PKPdf** **04 23 32.6 +0.1**
LBTB Lobatse 126.31 264 ePKPdf **PKPdf** **04 23 32.6 +0.1**
QSPA South Pole Qui 127.03 180 ePKPdf **PKPdf** **04 23 32.3 -0.3**
DBIC Dimbokro 127.20 319 PKP **PKPdf** **04 23 34.2 -0.2**
comp=Z,1.9nm,0.7s,baz=311,slow=2.1,SNR=4.2
BOSA Boshof 128.25 261 PKP **PKPdf** **04 23 35.4 -0.8**
comp=Z,2.0nm,0.8s,baz=130,slow=7.9,SNR=2.6
SNAA Sanae 141.47 196 PKP PKPpre 04 23 52.3
SAML Samuel 142.88 47 ePKPpre PKPpre 04 24 00.7
VNA2 Neumayer--Watz 143.02 195 PKP PKPab 04 23 56.7 -0.7
baz=118,slow=3.6
VNA3 Neumayer Olymp 143.23 194 PKP PKPab 04 23 58.3 0.0
VNA1 Neumayer--Stat 143.41 195 PKP PKPab 04 23 59.4 +0.5
LPAZ La Paz 145.13 62 PKPbc **PKPbc** **04 24 07.3 -0.3**
comp=Z,5.2nm,0.8s,baz=340,slow=5.0,SNR=18
PB11 IPOC Station P 146.28 68 ePKPdf **PKPbc** **04 24 10.1 -0.5**
PB11 ePKPbc **PKPab** **04 24 12.1 +0.7**
PB01 IPOC Station P 147.18 70 ePKPdf **PKPbc** **04 24 12.2 -0.9**
LCO Las Campanas 150.34 84 ePKPbc **PKPbc** **04 24 19.3 -2.0**
PLCA Paso Flores 153.43 108 PKP **PKPdf** **04 24 21.1 +1.1**
comp=Z,1.2nm,0.8s,baz=316,slow=7.6,SNR=2.9
PLCA PKPbc **PKiKP** **04 24 28.4 +0.7**
comp=Z,3.6nm,1.1s,baz=344,slow=1.9,SNR=4.3

*ISCJB **19** 04:14:34.8±0.6,37.°04N±0.°04×5.°32W±0.°05,h13km±5km, Error ellipse: s-maj=6.9km s-min=5.8km az=148.1*
*CSEM **19** 04:14:35.4±0.3,37.°01N×5.°29W,h15km,ML1.5,Error ellipse: s-maj=6.8km s-min=5.0km az=11.0*
*MDD **19** 04:14:36.7±0.6,36.°99N×5.°26W,h10km±2km,mbLg1.5/6, Error ellipse: s-maj=6.2km s-min=4.3km az=3.0,PRXIMO*
*SFS **19** 04:14:37.0,36.°90N×5.°20W,h26km,ML4.6*
*INMG **19** 04:14:37.4±1.6,37.°02N×5.°15W,h0km,ML1.4,Error ellipse: s-maj=5.2km s-min=2.9km az=88.0*
ISC 19 04:14:35.2±1.0,36.°92N±0.°05×5.°28W±0.°03,h16km±4km, n25,σ0°95/36,Strait of Gibraltar

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
LIJA	**Lijar**	**0.10**	**261**	Pg		**Pb**	**04 14 39.1**		**+0.4**
LIJA				Lg		Lg	04 14 42.2		
LIJA	**Lijar**	**0.10**	**261**	*i* P		**Pb**	**04 14 39.2**		**+0.4**
LIJA				*i* S		**Sb**	**04 14 42.2**		**+1.1**
ESPR	**Espera**	**0.46**	**264**	Pg		**Pn**	**04 14 47.5**		**+0.3**
	0.7nm,0.2s,SNR=7.9								
ESPR				Lg		Lg	04 14 56.4		
	10nm,0.2s,SNR=7.9								
ESPR	**Espera**	**0.46**	**264**	Pg		**Pn**	**04 14 47.5**		**+0.3**
	0.7nm,0.2s,SNR=7.9								
ESPR				Lg		Lg	04 14 56.4		
	10nm,0.2s,SNR=7.9								
EMIJ	**Mijas**	**0.54**	**131**	Pg		**Pb**	**04 14 46.6**		**+0.3**
	0.9nm,0.2s,SNR=6.7								
EMIJ				Lg		Lg	04 14 55.2		
	7.2nm,0.2s,SNR=4.7								
EMIJ	**Mijas**	**0.54**	**131**	Pg		**Pb**	**04 14 46.7**		**+0.3**
	0.9nm,0.2s,SNR=6.7								
EMIJ				Lg		Lg	04 14 55.2		
	7.2nm,0.2s,SNR=4.7								
ECAB	**El Cabril**	**1.16**	**355**	Pg		**Pn**	**04 14 56.8**		**0.0**
	0.1nm,0.2s,SNR=6.7								
ECAB				Lg		Lg	04 15 11.4		
	1.4nm,0.1s								
ECAB	**El Cabril**	**1.16**	**355**	Pg		**Pn**	**04 14 56.8**		**0.0**
	0.1nm,0.2s,SNR=6.7								
ECAB				Lg		Lg	04 15 11.4		
	1.4nm,0.1s								
EADA	**Adamuz**	**1.36**	**24**	Pg		**Pg**	**04 15 00.6**		**-0.9**
	0.3nm,0.1s,SNR=31								
EADA				Lg		Lg	04 15 16.7		
	3.9nm,0.3s								
EADA	**Adamuz**	**1.36**	**24**	Pg		**Pg**	**04 15 00.6**		**-0.9**
	0.3nm,0.1s,SNR=31								
EADA				Lg		Lg	04 15 16.7		
	3.9nm,0.3s								
EMIN	**Mina Concepcio**	**1.39**	**308**	Pg		**Pn**	**04 14 59.7**		**-0.3**
	0.4nm,0.2s,SNR=7.1								
EMIN				Lg		Lg	04 15 19.5		
	1.7nm,0.1s,SNR=5.0								
EMIN	**Mina Concepcio**	**1.39**	**308**	Pg		**Pn**	**04 14 59.7**		**-0.3**
	0.4nm,0.2s,SNR=7.1								
EMIN				Lg		Lg	04 15 19.5		
	1.7nm,0.1s,SNR=5.0								
PBAR	**Barrancos**	**1.88**	**312**	*e*Pg		**Pb**	**04 15 10.1**		**+1.0**
PBAR				*e*Sn		**Sn**	**04 15 29.6**		**-0.3**
PBAR				*e*Sg		**Sb**	**04 15 33.9**		**+1.6**
PBAR	**Barrancos**	**1.88**	**312**	Pg		**Pb**	**04 15 10.1**		**+1.0**
PBAR				Sn		**Sn**	**04 15 29.6**		**-0.3**
PBAR				Lg		Lg	04 15 33.9		
PBAR	**Barrancos**	**1.88**	**312**	Pg		**Pb**	**04 15 10.1**		**+1.0**
PBAR				Sn		**Sn**	**04 15 29.6**		**-0.3**
PBAR				*e*Sg		**Sb**	**04 15 33.9**		**+1.6**
EQES	**Quesada**	**1.97**	**63**	Pg		**Pg**	**04 15 13.2**		**+0.1**
	0.2nm,0.2s,SNR=7.9								
EQES				Lg		Lg	04 15 38.4		
	0.1nm,0.1s,SNR=7.9								
EQES	**Quesada**	**1.97**	**63**	Pg		**Pg**	**04 15 13.2**		**+0.1**
	0.2nm,0.2s,SNR=7.9								
EQES				Lg		Lg	04 15 38.4		
	0.1nm,0.1s,SNR=7.9								
PVAQ	**Vaqueiros**	**2.00**	**285**	*e*Pg		**Pg**	**04 15 13.1**		**-0.6**
PVAQ				*e*Sn		**Sn**	**04 15 32.0**		**-1.1**
PVAQ				*e*Sg		**Sg**	**04 15 39.5**		**-0.2**
PVAQ	**Vaqueiros**	**2.00**	**285**	Pg		**Pg**	**04 15 13.1**		**-0.6**
PVAQ				Sn		**Sn**	**04 15 32.0**		**-1.1**
PVAQ				Lg		Lg	04 15 39.5		
PVAQ	**Vaqueiros**	**2.00**	**285**	Pg		**Pg**	**04 15 13.1**		**-0.6**
PVAQ				Sn		**Sn**	**04 15 32.0**		**-1.1**
PVAQ				*e*Sg		**Sg**	**04 15 39.5**		**-0.2**
PBDV	**Barranco-do-Ve**	**2.14**	**279**	*e*Sn		**Sn**	**04 15 35.6**		**-1.0**
PBDV	**Barranco-do-Ve**	**2.14**	**279**	Sn		**Sn**	**04 15 35.6**		**-1.0**
PBDV	**Barranco-do-Ve**	**2.14**	**279**	Sn		**Sn**	**04 15 35.6**		**-1.0**
EBAD	**Badajoz**	**2.29**	**324**	Sn		**Sn**	**04 15 38.1**		**-2.0**
	1.9nm,0.2s,SNR=7.9								
EBAD				Lg		Lg	04 15 45.4		
	2.5nm,0.2s,SNR=7.9								
EBAD	**Badajoz**	**2.29**	**324**	Sn		**Sn**	**04 15 38.1**		**-2.0**
	1.9nm,0.2s,SNR=7.9								
EBAD				Lg		Lg	04 15 45.4		
	2.5nm,0.2s,SNR=7.9								

*NIED **19** 04:14:00,28.°10N×128.°00E,h5km,Mw4.4 Best double couple: M0=3.96000×10^15 NP1:φs=58.00000°,δ63.00000°, λ=-154.00000°. NP2:φs=315.00000°,δ67.00000°, λ=-29.00000°.*
JMA 19 04:14:36.6±0.3,28.°10N×128.°02E,h10km±3km,M3.8, Ryukyu Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
JTK	**Tokunoshima**	**0.88**	**111**	P		P	Pg	04 14 53.0	-0.6
JTK				S			Sg	04 15 04.5	-0.6
JOKE	**Okinoerabujima**	**0.88**	**146**	P		P	Pg	04 14 53.7	+0.1
JOKE				S			Sg	04 15 05.2	+0.1
JAMN	**Amaminishikomi**	**1.03**	**82**	P		P	Pg	04 14 55.9	-0.5
JAMN				S			Sb	04 15 10.0	-0.1
JIH	**Iheya**	**1.06**	**183**	P		P	Pg	04 14 56.6	-0.4
JIH				S			Sg	04 15 10.8	0.0
JOW	**Kunigami**	**1.28**	**170**	P		P	Pn	04 15 00.2	-0.4
JOW				S			Sb	04 15 17.3	-0.1
JAM	**Amami Oshima**	**1.43**	**77**	P		P	Pn	04 15 02.3	-0.3
JAM				S			Sg	04 15 22.8	+0.1
JTAJ	**Takarajima**	**1.48**	**44**	P		P	Pn	04 15 03.6	+0.3
JNTH	**Nagotoyohara**	**1.57**	**180**	P		P	Pn	04 15 04.8	+0.2
JNTH				S			Sb	04 15 25.6	-0.2
JAGN	**Aguni-jima**	**1.66**	**205**	P		P	Pn	04 15 05.5	-0.2
JJT2	**Tamagusuku 2**	**1.96**	**187**	P		P	Pn	04 15 10.0	0.0
JKE	**Kume jima 2**	**2.08**	**212**	P		P	Pb	04 15 14.7	+0.2

*ISCJB **19** 04:15:50.8±0.7,5.°6S±0.°1×154.°8E±0.°1,h100km,mb3.7/8, Error ellipse: s-maj=20.0km s-min=10.2km az=143.5*
*IDC **19** 04:16:00.4±3.9,5.°90S×154.°63E,h184km±36km,mb3.5/8, mb1 3.7/11,mb1mx3.5/45,mbtmp4.0/11,MS4.4/2, Ms1 4.4/2,ms1mx3.1/29,Error ellipse: s-maj=24.9km s-min=21.3km az=149.0*
ISC 19 04:15:50.8±1.2,5.°7S±0.°2×154.°8E±0.°2,h100km,n14, σ1°18/8,mb3.8/8,Bougainville-Solomon Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**8.41**	**244**	P		P	Pn	04 17 56.7	+6.7
	0.8nm,0.3s,baz=323,slow=20,SNR=2.1								
PMG				S			Sn	04 19 28.0	+4.8
	1.6nm,0.3s,baz=198,slow=20,SNR=1.9								
CTA	**Charters Tower**	**16.54**	**209**	P		**P**		**04 19 39.8**	**+2.1**
	0.2nm,0.3s,baz=41,slow=14,SNR=5.4								
DZM	**Mont Dzumac**	**19.80**	**146**	P		**Pn**		**04 20 16.0**	**-0.1**
	0.9nm,0.3s,baz=243,slow=10,SNR=7.8								
WRA	**Warramunga Arr**	**24.41**	**233**	P		**P**		**04 21 00.1**	**0.0**
	3.8nm,0.4s,baz=57,slow=9.9,SNR=48								
ASAR	**Alice Springs**	**26.89**	**226**	P		**P**		**04 21 21.9**	**-0.7**
	1.6nm,0.5s,baz=58,slow=8.9,SNR=18								
STKA	**Stephens Creek**	**28.83**	**204**	P		**P**		**04 21 38.5**	**-1.1**
	1.0nm,0.3s,baz=19,slow=15,SNR=2.9								
RAO	**Raoul Island**	**34.85**	**135**	LR		LR		04 34 24.6	
	comp=Z,683nm,19.1s,baz=196,slow=32								
RPZ	**Rata Peaks**	**40.49**	**162**	LR		LR		04 39 09.8	
	comp=Z,532nm,20.3s,baz=37,slow=34								
ILAR	**Eielson Array**	**82.25**	**22**	P		P		**04 28 01.1**	**+0.4**
	0.6nm,0.7s,baz=248,slow=5.7,SNR=8.2								
MKAR	**Makanchi Array**	**82.30**	**319**	P		P		04 28 02.2	+0.8
	0.4nm,0.6s,baz=124,slow=6.2,SNR=4.5								
INK	**Inuvik**	**88.58**	**21**	P		**P**		**04 28 32.5**	**+0.4**
	0.7nm,0.8s,baz=266,slow=6.0,SNR=2.0								
NVAR	**Mina Array Bea**	**91.08**	**52**	P		P		04 28 47.6	+2.8
	0.5nm,0.7s,baz=266,slow=7.1,SNR=1.8								
YKA	**Yellowknife Ar**	**95.29**	**28**	P		P		04 29 04.6	+1.4
	0.1nm,0.7s,baz=261,slow=5.3,SNR=2.5								
TORD	**Torodi Ar. Bea**	**152.46**	**288**	PKPbc		**PKPbc**		**04 35 35.7**	**-0.7**
	0.4nm,0.7s,baz=62,slow=2.3,SNR=5.9								

*IDC **19** 04:16:13.3±0.8,37.°07N×143.°48E,h0km,mb3.8/12, mb1 4.0/14,mb1mx3.8/51,mbtmp3.8/14,ML4.0/2,Error ellipse: s-maj=23.8km s-min=19.2km az=94.0*
*ISCJB **19** 04:16:17.6±0.7,37.°30N±0.°06×143.°47E±0.°06,h33km, mb3.8/13,Error ellipse: s-maj=8.5km s-min=6.3km az=167.9*
*JMA **19** 04:16:17.4±0.3,37.°29N×143.°46E,h44km,M3.9*
ISC 19 04:16:19.4±0.9,37.°29N±0.°08×143.°46E±0.°08,h35km,n28, σ0°84/29,mb3.8/13,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**2.04**	**306**	P		**Pn**		**04 16 50.3**	**-0.8**
JFK	**Kawauchi**	**2.06**	**273**	*e*S		**Sn**		**04 17 15.3**	**-0.7**
ONAJ	**Iwakimizuishiy**	**2.13**	**266**	S		**Sn**		**04 17 17.4**	**-0.4**
OFUJ	**Ofunato**	**2.28**	**322**	P		**Pn**		**04 16 53.3**	**-1.2**
OFUJ				*e*S		**Sn**		**04 17 20.2**	**-1.1**
JMK	**Ichinoseki**	**2.42**	**314**	P		**Pn**		**04 16 55.9**	**-0.6**
JMK				*e*S		**Sn**		**04 17 24.3**	**-0.6**
JOU	**Okura**	**2.46**	**297**	P		**Pn**		**04 16 56.8**	**-0.2**
JOM	**Ohasama**	**2.77**	**323**	P		**Pn**		**04 17 01.0**	**-0.2**
JOM				*e*S		**Sn**		**04 17 32.6**	**-0.8**
MJAR	**Matsushiro Arr**	**4.27**	**262**	Pn		**Pn**		**04 17 22.4**	**+0.5**
	3.0nm,0.3s,baz=86,slow=16,SNR=18								
MAT	**Matsushiro**	**4.28**	**262**	P		**Pn**		**04 17 22.7**	**+0.8**
MAT				*e*S		**Sn**		**04 18 11.5**	**+0.9**
ASAJ	**Asahikawa**	**6.85**	**355**	Pn		**Pn**		**04 17 56.6**	**-0.7**
	4.1nm,0.3s,baz=52,slow=32,SNR=5.6								
USRK	**Ussuriysk Ar.**	**11.10**	**312**	Pn		Pn		04 18 59.8	+4.3
	0.2nm,0.3s,baz=95,slow=12,SNR=4.2								
KSRS	**Korea Array**	**12.37**	**275**	Pn		**Pn**		**04 19 12.3**	**-0.5**
	0.3nm,0.3s,baz=94,slow=17,SNR=2.9								
KLR	**Kul'dur**	**14.65**	**328**	Pn		**P**		**04 19 50.1**	**+0.4**
	0.4nm,0.3s,baz=143,slow=13,SNR=6.8								
SEY	**Seymchan**	**26.25**	**9**	P		**P**		**04 21 51.9**	**+1.0**
	3.2nm,0.7s,baz=191,slow=6.3,SNR=8.1								
SONM	**Songino Array**	**29.01**	**303**	P		P		04 22 19.5	+3.6
	1.9nm,0.8s,baz=108,slow=9.5,SNR=3.6								
ZALV	**Zalesovo Beam**	**42.95**	**312**	P		**P**		**04 24 15.2**	**+0.5**
	0.9nm,0.8s,baz=90,slow=5.8,SNR=3.4								
MKAR	**Makanchi Array**	**45.37**	**302**	P		**P**		**04 24 33.6**	**-0.6**
	0.6nm,0.7s,baz=80,slow=10,SNR=2.5								
KURBB	**Kurchatov Arra**	**47.13**	**308**	P		**P**		**04 24 48.4**	**+0.5**
	1.4nm,0.7s,baz=82,slow=8.0,SNR=14								
ILAR	**Eielson Array**	**48.40**	**33**	P		**P**		**04 24 57.8**	**+0.2**
	0.6nm,0.8s,baz=270,slow=6.8,SNR=6.3								
INK	**Inuvik**	**53.41**	**27**	P		**P**		**04 25 35.6**	**+0.5**
	0.9nm,0.8s,baz=334,slow=2.5,SNR=4.6								
WRA	**Warramunga Arr**	**57.57**	**190**	P		P		04 26 02.8	-2.8
	1.4nm,0.9s,baz=8.6,slow=7.1,SNR=6.5								
AKTO	**Aktyubinsk**	**59.72**	**312**	P		**P**		**04 26 21.4**	**+1.2**
	0.9nm,0.5s,baz=82,slow=7.9,SNR=3.9								
ASAR	**Alice Springs**	**61.29**	**190**	P		**P**		**04 26 29.1**	**-2.2**
	0.9nm,0.9s,baz=1.1,slow=4.8,SNR=4.5								
FINES	**FINESS Array B**	**69.34**	**333**	P		**P**		**04 27 21.9**	**-1.0**
	1.5nm,0.7s,baz=46,slow=14,SNR=4.1								
NB2	**NORSAR Subarra**	**74.57**	**338**	P		**P**		**04 27 55.1**	**+0.8**
	comp=Z,0.3nm,0.5s,baz=33,slow=6.5								
NOA	**NORSAR Array B**	**74.57**	**338**	P		**P**		**04 27 55.2**	**+0.8**
	comp=Z,0.6nm,0.7s,baz=39,slow=5.8,SNR=3.8								
TXAR	**Lajitas Array**	**88.66**	**54**	P		**P**		**04 29 09.5**	**+0.2**
	comp=Z,0.2nm,0.6s,baz=316,slow=2.5,SNR=3.2								
LPAZ	**La Paz**	**145.14**	**62**	PKPbc		**PKPbc**		**04 35 53.7**	**-0.2**
	comp=Z,0.6nm,0.8s,baz=34,slow=3.7,SNR=2.5								

*IDC **19** 04:22:09.1±8.9,34.°74N×71.°30E,h0km,mb3.7/2, mb1 3.5/4,mb1mx3.3/38,mbtmp3.5/4,ML2.9/2,Error ellipse: s-maj=279.3km s-min=28.1km az=135.0*
*NNC **19** 04:22:34.3±3.5,36.°71N×70.°46E,h155km±71km,mb2.7, mpv3.6,Error ellipse: s-maj=35.8km s-min=25.7km az=55.0*
ISC 19 04:22:29.7±1.7,36.°4N±0.°1×70.°3E±0.°1,h110km,n9, σ1°81/14,3C-5D,Hindu Kush region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
SFK	**Sufi-Kurgan**	**4.38**	**35**	⇑P		**Pn**		**04 23 35.5**	**+1.2**
	4.0nm,0.3s								
SFK				⇑S		**Sn**		**04 24 24.3**	**-0.2**
	44nm,0.5s								
MNAS	**Manas**	**6.28**	**15**	⇓P		**Pn**		**04 24 01.0**	**+1.2**
	2.6nm,0.4s								
MNAS				⇓S		**Sn**		**04 25 10.2**	**-0.1**
	5.7nm,0.5s								
KK31	**Karatay Array**	**6.65**	**2**	P		**Pn**		**04 24 07.1**	**+2.3**
	1.0nm,0.3s,baz=176,slow=12,SNR=19								
KK31				⇓S		**Sn**		**04 25 18.3**	**-0.8**
	3.9nm,0.5s,baz=183,slow=22,SNR=7.7								
TKM2	**Tokmak 2**	**7.66**	**31**	⇓P		**Pn**		**04 24 18.5**	**-0.2**
	2.3nm,0.5s								
TKM2				⇓S		**Sn**		**04 25 41.5**	**-2.5**
	3.2nm,0.9s								
MKAR	**Makanchi Array**	**13.69**	**37**	Pn		**Pn**		**04 25 38.9**	**-0.1**
	0.1nm,0.3s,baz=225,slow=14,SNR=2.3								
AB31	**Akbulak array**	**14.85**	**333**	P		**Pn**		**04 25 56.1**	**+2.3**
	0.3nm,0.3s,baz=145,slow=14,SNR=21								
AB31				⇑S		**Sn**		**04 28 34.5**	**-3.2**
	0.5nm,0.5s,baz=158,slow=24,SNR=4.5								
KURBB	**Kurchatov Arra**	**15.37**	**20**	Pn		**P**		**04 26 02.9**	**+0.4**
	0.0nm,0.3s,baz=207,slow=10,SNR=3.0								
ZALV	**Zalesovo Beam**	**20.22**	**25**	P		**P**		**04 26 57.4**	**+1.7**
	3.3nm,0.4s,baz=219,slow=12,SNR=15								
TORD	**Torodi Ar. Bea**	**65.12**	**268**	P		**P**		**04 32 57.4**	**-1.6**
	0.2nm,0.3s,baz=52,slow=6.2,SNR=6.6								

*IDC **19** 04:29:27.6±0.8,34.°97S×179.°23W,h0km,mb4.6/6, mb1 4.7/8,mb1mx4.3/29,mbtmp4.6/8,ML4.2/2,MS4.2/5, Ms1 4.2/5,ms1mx3.6/32,Error ellipse: s-maj=30.8km s-min=21.9km az=142.0*
*ISCJB **19** 04:29:29.7±0.8,35.°14S±0.°05×178.°9W±0.°1,h42km, mb4.5/9,MS4.1/4,Error ellipse: s-maj=13.7km s-min=6.9km az=18.9*
*NEIC **19** 04:29:33.1±2.0,35.°06S×179.°25W,h36km±16km,mb4.4/1, Error ellipse: s-maj=18.8km s-min=13.8km az=52.0*
ISC 19 04:29:33.2±0.7,35.°04S±0.°07×179.°1W±0.°1,h42km,n58, σ1°50/60,mb4.4/9,MS4.2/4,East of North Island

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
MXZ	**Matakaoa Point**	**3.26**	**219**	Pn		**Pn**		**04 30 21.3**	**-0.4**
MXZ				SN		**Sn**		**04 30 59.5**	**+0.2**
WMGZ	**Waiomatatini S**	**3.41**	**215**	*e*Pn		**Pn**		**04 30 23.0**	**-0.7**
PKGZ	**Pakihiroa**	**3.62**	**218**	Pn		**Pn**		**04 30 25.4**	**-1.5**
PKGZ				SN		**Sn**		**04 31 08.4**	**0.0**
HAZ	**Te Kaha**	**3.68**	**222**	Pn		**Pn**		**04 30 26.5**	**-1.0**
PUZ	**Puketiti**	**3.68**	**214**	Pn		**Pn**		**04 30 25.8**	**-1.8**
PUZ				SN		**Sn**		**04 31 09.2**	**-0.6**
TWGZ	**Tauwhareparae**	**3.90**	**216**	PN		**Pn**		**04 30 29.7**	**-0.9**
CNGZ	**Carnagh Statio**	**4.05**	**211**	*e*PN		**Pn**		**04 30 32.8**	**+0.2**
MWZ	**Matawai**	**4.25**	**218**	PN		**Pn**		**04 30 33.7**	**-1.6**
URZ	**Urewera**	**4.41**	**222**	Pn		**Pn**		**04 30 36.5**	**-1.0**
	11nm,0.3s,baz=44,slow=7.3,SNR=32								
URZ				Sn		**Sn**		**04 31 28.6**	**+1.0**
	30nm,0.3s,baz=120,slow=18,SNR=6.8								
URZ	**Urewera**	**4.41**	**222**	*e*PN		**Pn

comp=Z,265nm,18.6s,baz=125,slow=37
MBWA Marble Bar 54.92 267 *e*P **P 04 38 59.4 -0.6**
QSPA South Pole Qui 55.08 180 *e*P **P 04 39 03.1 +2.5**
32nm,1.0s
LEM Lembang 72.41 274 LR LR 05 15 22.3
comp=Z,142nm,18.2s,baz=171,slow=38
PETK Petropavlovsk- 90.08 346 P **P 04 42 28.7 +0.7**
11nm,0.8s,baz=147,slow=6.5,SNR=8.6
CMAR Chiang Mai Arr 94.05 290 P **P 04 42 48.0 +0.7**
0.8nm,0.5s,baz=113,slow=3.9,SNR=4.1
TXAR Lajitas Array 95.66 58 P P 04 43 01.3 +6.7
0.2nm,0.7s,baz=197,slow=2.8,SNR=3.0
YKA Yellowknife Ar 110.02 26 PP PP 04 48 33.7 +0.3
0.3nm,1.0s,baz=238,slow=5.8,SNR=3.3
YKA PKKPbc **PKKPbc 04 59 02.6 -0.3**
0.3nm,0.7s,baz=36,slow=3.5,SNR=6.4
MKAR Makanchi Array 119.97 308 PKP **PKPdf 04 48 18.5 -0.2**
0.7nm,0.8s,baz=16,slow=5.9,SNR=5.9
ZALV Zalesovo Beam 120.81 317 PKP **PKPdf 04 48 19.9 -0.1**
0.5nm,0.4s,baz=243,slow=1.0,SNR=4.8
KURK Kurchatov 123.50 312 PKP **PKPdf 04 48 25.5 +0.2**
KURBB Kurchatov Arra 123.53 312 PKP **PKPdf 04 48 25.5 +0.1**
2.1nm,0.7s,baz=112,slow=2.0,SNR=20
BVAR Borovoye Array 128.98 313 PKP **PKPdf 04 48 36.9 +1.2**
1.5nm,0.7s,baz=50,slow=4.5,SNR=6.6
AKTO Aktyubinsk 136.40 309 PKP **PKPdf 04 48 51.0 +1.1**
0.8nm,0.7s,baz=127,slow=5.1,SNR=3.4
KBZ Khabaz 146.68 298 PKPbc **PKPbc 04 49 09.4 -0.6**
6.3nm,0.9s,baz=165,slow=2.4,SNR=13
FINES FINESS Array B 149.10 337 PKPbc **PKPbc 04 49 16.8 +0.8**
11nm,0.7s,baz=101,slow=3.9,SNR=36
DBIC Dimbokro 151.27 168 PKPbc **PKPbc 04 49 23.9 +1.2**
4.5nm,0.8s,baz=19,slow=1.4,SNR=4.5
NB2 NORSAR Subarra 153.15 349 PKP **PKPbc 04 49 26.2 +0.7**
comp=Z,2.6nm,0.9s,baz=17,slow=2.6
NOA NORSAR Array B 153.15 349 PKPbc **PKPbc 04 49 26.5 +0.9**
comp=Z,0.8nm,0.9s,baz=21,slow=4.8,SNR=9.7
NOA PKPab **PKPab 04 49 37.6 +0.3**
comp=Z,2.9nm,0.8s,baz=25,slow=4.3,SNR=11
BRTR Keskin Array B 153.64 290 PKPbc **PKPbc 04 49 27.9 +0.5**
comp=Z,2.9nm,0.9s,baz=150,slow=4.4,SNR=13
BRTR PKPab **PKPab 04 49 39.8 -0.5**
comp=Z,1.9nm,0.9s,baz=122,slow=4.5,SNR=5.7
AKASG Malin Array Be 154.21 316 PKPbc **PKPbc 04 49 28.7 +0.7**
comp=Z,1.9nm,0.6s,baz=63,slow=2.4,SNR=8.2
TORD Torodi Ar. Bea 158.19 182 PKPab **PKPab 04 50 01.4 +1.6**
comp=Z,1.2nm,0.7s,baz=164,slow=3.3,SNR=7.0

*IDC **19** 04:45:45.5±0.7,38.06N×144.81E,h0km,mb3.7/16, mb1 4.0/19,mb1mx3.8/48,mbtmp3.8/19,ML4.0/2,MS3.0/6, Ms1 3.0/6,ms1mx2.8/46,Error ellipse: s-maj=18.6km s-min=16.6km az=148.0*
*JMA **19** 04:45:48.7±0.2,38.25N×144.57E,h31km,M4.2*
*ISCJB **19** 04:45:49.1±0.5,38.21N±0.05×144.61E±0.04,h33km, mb3.7/16,MS3.3/1,Error ellipse: s-maj=7.5km s-min=4.5km az=160.9*
ISC 19 04:45:50.8±0.8,38.22N±0.07×144.60E±0.07,h35km,n42, σ1.9 08/35,mb3.7/16,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**2.46**	**292**	P		**Pn**	**04 46 27.6**	**-0.7**
OFUJ				*e*S		**Sn**	**04 46 56.3**	**-0.8**
JIO	**Ouri**	**2.57**	**276**	P		**Pn**	**04 46 29.2**	**-0.7**
JTH	**Tanohata**	**2.74**	**310**	P		**Pn**	**04 46 31.4**	**-0.8**
JMK	**Ichinoseki**	**2.75**	**287**	P		**Pn**	**04 46 32.0**	**-0.4**
JOM	**Ohasama**	**2.88**	**297**	P		**Pn**	**04 46 33.6**	**-0.5**
JMM	**Marumori**	**3.03**	**265**	P		**Pn**	**04 46 35.6**	**-0.6**
JMM				S		**Sn**	**04 47 10.0**	**-1.2**
JFK	**Kawauchi**	**3.07**	**255**	S		**Sn**	**04 47 10.5**	**-1.9**
JOU	**Okura**	**3.10**	**274**	P		**Pn**	**04 46 37.3**	**+0.1**
JANG	**Nango**	**3.22**	**313**	P		**Pn**	**04 46 38.2**	**-0.7**
JRG	**Rokugo**	**3.32**	**292**	P		**Pn**	**04 46 40.2**	**0.0**
JRG				S		**Sn**	**04 47 19.8**	**+1.4**
JYK	**Kaneyama**	**3.40**	**283**	P		**Pn**	**04 46 41.3**	**0.0**
JYK				*e*S		**Sn**	**04 47 21.3**	**+0.9**
JFT	**Otama**	**3.45**	**260**	P		**Pn**	**04 46 42.3**	**+0.3**
JFT				S		**Sn**	**04 47 21.4**	**-0.2**
MJAR	**Matsushiro Arr**	**5.36**	**254**	Pn		**Pn**	**04 47 08.5**	**+0.3**
	3.6nm,0.3s,baz=65,slow=8.3,SNR=31							
MJAR				Sn		**Sn**	**04 48 11.3**	**+2.5**
	1.7nm,0.3s,baz=95,slow=9.3,SNR=4.1							
MJAR				LR		LR	04 49 44.1	
	comp=Z,92nm,20.8s,baz=205,slow=44							
MAT	**Matsushiro**	**5.36**	**254**	P		**Pn**	**04 47 09.2**	**+0.9**
MAT				*e*S		**Sn**	**04 48 11.5**	**+2.7**
ASAJ	**Asahikawa**	**6.09**	**346**	Pn		**Pn**	**04 47 17.5**	**-0.7**
	3.9nm,0.3s,baz=222,slow=12,SNR=6.9							
ASAJ				Sn		**Sn**	**04 48 28.0**	**+1.4**
	1.5nm,0.3s,baz=288,slow=20,SNR=2.6							
ASAJ				LR		LR	04 49 54.5	
	comp=Z,88nm,18.0s,baz=139,slow=40							
JHJ	**Hachijo jima 2**	**6.42**	**219**	Sn		Sn	04 48 27.1	-7.7
	17nm,0.3s,baz=90,slow=20,SNR=2.0							
USRK	**Ussuriysk Ar.**	**11.22**	**306**	Pn		**Pn**	**04 48 29.0**	**+0.4**
	0.3nm,0.3s,baz=115,slow=14,SNR=10							
USRK				LR		LR	04 52 36.8	
	comp=Z,83nm,20.4s,baz=155,slow=36							
KSRS	**Korea Array**	**13.21**	**272**	LR		LR	04 53 59.1	
	comp=Z,59nm,18.7s,baz=95,slow=37							
KLR	**Kul'dur**	**14.38**	**324**	Pn		**Pn**	**04 49 10.2**	**-1.6**
	0.1nm,0.3s,baz=130,slow=13,SNR=3.4							
KLR				LR		LR	04 54 15.3	
	comp=Z,60nm,21.4s,baz=134,slow=35							
SEY	**Seymchan**	**25.20**	**8**	P		**P**	**04 51 14.1**	**+1.3**
	2.2nm,0.7s,baz=177,slow=4.7,SNR=6.7							
H11N2	**WAKE ISLAND Hy**	**26.71**	**127**	T		T	05 19 10.6	
	baz=319,slow=75,SNR=11							
H11N1	**WAKE ISLAND Hy**	**26.72**	**127**	T		T	05 19 11.9	
	baz=319,slow=75,SNR=6.3							
H11N3	**WAKE ISLAND Hy**	**26.73**	**127**	T		T	05 19 12.9	
	baz=319,slow=75,SNR=13							
H11S1	**WAKE ISLAND Hy**	**27.51**	**129**	T		T	05 20 06.1	
	baz=323							
H11S3	**WAKE ISLAND Hy**	**27.51**	**129**	T		T	05 20 06.1	
	baz=323							
H11S2	**WAKE ISLAND Hy**	**27.52**	**129**	T		T	05 20 06.1	
	baz=323							
SONM	**Songino Array**	**29.28**	**302**	P		P	04 51 51.2	+1.5
	0.7nm,0.5s,baz=107,slow=9.7,SNR=1.8							
ZALV	**Zalesovo Beam**	**43.01**	**312**	P		P	04 53 47.8	+1.3
	1.0nm,0.6s,baz=95,slow=8.0,SNR=4.7							
NRIK	**Noril'sk**	**43.28**	**334**	LR		LR	05 13 13.8	
	comp=Z,39nm,18.5s,baz=158,slow=38							
MKAR	**Makanchi Array**	**45.65**	**302**	P		P	04 54 09.1	+1.3
	1.2nm,0.8s,baz=82,slow=9.9,SNR=10.0							
ILAR	**Eielson Array**	**47.13**	**33**	P		**P**	**04 54 19.3**	**+0.1**
	0.2nm,0.7s,baz=264,slow=7.2,SNR=4.0							
BVAR	**Borovoye Array**	**51.66**	**312**	P		P	04 54 55.8	+1.9
	0.4nm,0.5s,baz=86,slow=6.1,SNR=3.6							
INK	**Inuvik**	**52.17**	**28**	P		**P**	**04 54 58.2**	**+0.8**
	0.3nm,0.4s,baz=309,slow=2.5,SNR=2.3							
WRA	**Warramunga Arr**	**58.65**	**191**	P		**P**	**04 55 43.7**	**-0.8**
	1.0nm,0.5s,baz=9.7,slow=7.1,SNR=13							
YKA	**Yellowknife Ar**	**61.50**	**31**	P		**P**	**04 56 03.1**	**-0.5**
	0.3nm,0.8s,baz=303,slow=6.6,SNR=5.5							
ASAR	**Alice Springs**	**62.37**	**191**	P		**P**	**04 56 08.6**	**-1.3**
	1.2nm,1.1s,baz=10,slow=7.0,SNR=5.1							
GEYT	**Alibeck**	**65.46**	**300**	P		P	04 56 32.2	+1.9
	1.5nm,0.4s,baz=68,slow=9.4,SNR=2.8							
KBZ	**Khabaz**	**72.03**	**312**	P		P	04 57 13.4	+2.5
	1.3nm,0.6s,baz=315,slow=4.3,SNR=3.4							
NVAR	**Mina Array Bea**	**72.25**	**55**	P		**P**	**04 57 13.3**	**+0.6**
	0.4nm,0.7s,baz=274,slow=4.2,SNR=3.6							
PDAR	**Pinedale Array**	**75.02**	**47**	P		**P**	**04 57 28.6**	**-0.3**
	0.4nm,0.7s,baz=243,slow=0.7,SNR=4.2							
BRTR	**Keskin Array B**	**79.93**	**313**	P		**P**	**04 57 57.3**	**+1.0**
	0.4nm,0.5s,baz=203,slow=22,SNR=3.2							
TXAR	**Lajitas Array**	**87.39**	**54**	P		**P**	**04 58 34.5**	**-0.1**
	0.3nm,0.8s,baz=316,slow=2.5,SNR=3.1							

*NIED **19** 04:47:00,37.80N×141.80E,h65km,Mw4.2 Best double couple: M0 2.12000×10 15 NP1:φ=22.00000°,δ=16.00000°, λ=73.00000°. NP2:φ=220.00000°,δ=75.00000°,λ=95.00000°.*
JMA 19 04:47:14.4±0.1,37.81N×141.78E,h28km±3km,M3.6, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
JIO	**Ouri**	**0.73**	**332**	P		Pb	04 47 28.2	-0.3
JIO				S		Sb	04 47 36.9	-1.2
JMM	**Marumori**	**0.78**	**274**	P		Pb	04 47 29.2	-0.2
JMM				S		Sb	04 47 39.1	-0.6
JFK	**Kawauchi**	**0.84**	**239**	P		Pn	04 47 30.1	-0.4
JFK				S		Sb	04 47 40.7	-0.8
JOU	**Okura**	**1.04**	**303**	P		Pb	04 47 33.6	-0.2
JOU				S		Sn	04 47 46.5	-0.3
ONAJ	**Iwakimizuishiy**	**1.05**	**228**	P		Pn	04 47 33.1	-0.3
ONAJ				S		Sn	04 47 46.4	-0.7
JFT	**Otama**	**1.18**	**256**	S		Sb	04 47 50.8	-0.3
JHO	**Hitachi**	**1.54**	**219**	P		Pn	04 47 39.7	-0.3

*NIED **19** 04:51:00,28.10N×140.60E,h340km,Mw4.5 Best double couple: M0 6.14000×10 15 NP1:φ=115.00000°, δ=33.00000°,λ=154.00000°. NP2:φ=227.00000°,δ=76.00000°, λ=60.00000°.*
*BJI **19** 04:51:34.6,27.81N×140.37E,h304km,mb4.8/56, mB4.6/33*
*ISCJB **19** 04:51:35.5±0.3,27.97N±0.02×140.23E±0.03, h292km±2km,mb4.4/117,Error ellipse: s-maj=4.2km s-min=3.7km az=11.9*
*MOS **19** 04:51:36.1±0.9,28.00N×140.09E,h298km,mb4.5/56, Error ellipse: s-maj=9.0km s-min=5.0km az=102.7*
*JMA **19** 04:51:37.5±0.2,28.12N×140.64E,h290km±4km,M4.5*
*IDC **19** 04:51:38.0±1.1,27.98N×140.07E,h305km±9km,mb4.1/41, mb1 4.1/47,mb1mx4.1/53,mbtmp4.7/47,Error ellipse: s-maj=10.1km s-min=7.2km az=86.0*
*NEIC **19** 04:51:40.1±0.6,27.97N×140.11E,h324km±6km,mb4.5/36, Error ellipse: s-maj=5.3km s-min=3.5km az=132.0*
ISC 19 04:51:37.0±0.4,27.99N±0.04×140.27E±0.05,h296km±3km, h297km:pP-P,n309,σ1.938/355,mb4.4/118,15C-17D, Bonin Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
CBIJ	**Chichi jima**	**1.92**	**117**	P		**Pn**	**04 52 21.3**	**-1.6**
CBIJ				S		**S**	**04 52 55.3**	**-4.1**
CBIJ	**Chichi jima**	**1.92**	**117**	*e*Pn		**Pn**	**04 52 21.4**	**-1.6**
CBIJ				*e*S		**S**	**04 52 55.6**	**-3.9**
JCJ	**Chichijima**	**1.92**	**117**	P		**Pn**	**04 52 21.4**	**-1.5**
	375nm,0.3s,baz=274,slow=22,SNR=190							
JCJ				S		**S**	**04 52 55.1**	**-4.3**
	355nm,0.3s,baz=305,slow=22,SNR=9.8							
JHHJ	**Haha-jima-NKT**	**2.18**	**128**	P		**Pn**	**04 52 23.6**	**-1.4**
JHHJ				S		**S**	**04 53 00.2**	**-3.0**
JHJ2	**Mitsune**	**5.12**	**356**	P		**Pn**	**04 52 56.6**	**+0.9**
JHJ2				*e*S		**S**	**04 53 56.9**	**-2.0**
JHJ2	**Mitsune**	**5.12**	**356**	*e*Pn		**Pn**	**04 52 55.5**	**-0.2**
JHJ2				*e*S		**S**	**04 53 56.2**	**-2.7**
JHJ	**Hachijo jima 2**	**5.13**	**355**	P		**Pn**	**04 52 55.9**	**0.0**
	85nm,0.3s,baz=90,slow=22,SNR=12							
JHJ				S		**S**	**04 53 55.7**	**-3.4**
	212nm,0.3s,baz=60,slow=14,SNR=8.7							
BSO1	**Boso 1**	**6.67**	**5**	P		**Pn**	**04 53 14.2**	**+0.5**
BSO1				*e*S		S	04 54 24.4	-7.4
JWZ	**Kozaga**	**6.77**	**326**	P		**Pn**	**04 53 17.2**	**+1.7**
BSO3	**Boso 3**	**6.79**	**2**	P		**Pn**	**04 53 15.1**	**-0.3**
BSO3				*e*S		S	04 54 28.1	-6.9
HMMJ	**Hamamatsu 2**	**7.18**	**343**	P		**Pn**	**04 53 21.2**	**+0.8**
HMMJ				*e*S		**S**	**04 54 40.8**	**-3.2**
JOD2	**Odawara 2**	**7.32**	**352**	P		**Pn**	**04 53 22.3**	**+0.1**
JOD2				*e*S		**S**	**04 54 41.4**	**-5.8**
JNY	**Yasuok**	**7.62**	**345**	P		**Pn**	**04 53 26.1**	**+0.1**
JNY				*e*S		**S**	**04 54 49.9**	**-4.2**
JAO	**Obara**	**7.69**	**341**	P		**Pn**	**04 53 27.6**	**+0.8**
JAO				*e*S		**S**	**04 54 53.7**	**-1.9**
INU	**Inuyama**	**7.84**	**340**	*e*Pn		**Pn**	**04 53 29.9**	**+1.4**
JHU	**Hanno**	**7.88**	**354**	P		**Pn**	**04 53 27.3**	**-1.7**
JHU				*e*S		S	04 54 49.8	-10
JRY	**Ryogami san**	**8.08**	**352**	P		**Pn**	**04 53 30.2**	**-1.4**
JRY				*e*S		S	04 54 56.8	-7.6
JAG	**Ashikaga**	**8.44**	**356**	P		**Pn**	**04 53 34.6**	**-1.2**
JAG				S		S	04 55 01.1	-11
MJAR	**Matsushiro Arr**	**8.70**	**349**	P		**Pn**	**04 53 38.4**	**-0.7**
	2.1nm,0.3s,baz=32,slow=15,SNR=8.0							
MAJO	**Matsushiro**	**8.70**	**349**	P		**P**	**04 53 42.1**	**-2.3**
MAJO	**Matsushiro**	**8.70**	**349**	*e*Pn		**Pn**	**04 53 41.1**	**+1.9**
MJB9	**Matsu-Tunnel**	**8.71**	**349**	*e*Pn		**Pn**	**04 53 41.2**	**+2.0**
MJB9				*e*S		**S**	**04 55 14.2**	**-4.2**
JNU	**Nakatsue**	**9.57**	**305**	P		**Pn**	**04 53 50.3**	**+0.4**
	0.6nm,0.3s,baz=94,slow=13,SNR=3.5							
JNU	**Nakatsue**	**9.57**	**305**	*e*Pn		**P**	**04 53 52.3**	**-1.8**
JSJ	**Shimokoshiki**	**9.87**	**294**	P		**P**	**04 53 59.2**	**+1.7**
JOW	**Kunigami**	**10.72**	**267**	P		**P**	**04 54 09.0**	**+2.0**
KSRS	**Korea Array**	**14.02**	**315**	P		Pn	04 54 47.0	+3.1
	6.8nm,0.3s,baz=135,slow=12,SNR=89							
KSRS	**Korea Array**	**14.02**	**315**	P		Pn	04 54 47.0	+3.1
KSRS				pmax		pmax		
	comp=Z,7.0nm,0.3s							
KS15	**Wonju Array Si**	**14.04**	**315**	*e*P		**Pn**	**04 54 47.1**	**+3.0**
KSAR	**Wonju Array Be**	**14.04**	**315**	P		**Pn**	**04 54 47.0**	**+2.9**
KSAR	**Wonju Array Be**	**14.04**	**315**	P		**Pn**	**04 54 47.0**	**+2.9**
KS01	**Wonju Array Si**	**14.05**	**315**	*e*P		**Pn**	**04 54 46.2**	**+2.0**
ERM	**Erimo**	**14.19**	**9**	⇓*i*P		**Pn**	**04 54 47.2**	**+1.4**
ERM	**Erimo**	**14.19**	**9**	*e*P		**Pn**	**04 54 46.9**	**+1.1**
INCN	**Inchon**	**14.86**	**313**	*e*P		**Pn**	**04 54 56.0**	**+2.1**
	comp=Z,109nm,0.6s							
GUMO	**Guam**	**14.96**	**162**	P		**Pn**	**04 54 55.3**	**0.0**
	comp=Z,18nm,0.3s,baz=189,slow=2.3,SNR=7.6							
YOJ	**Yonaguni jima**	**15.88**	**261**	*e*P		**Pn**	**04 55 04.6**	**-1.3**
YOJ	**Yonaguni jima**	**15.88**	**261**	*e*P		**Pn**	**04 55 04.6**	**-1.3**
ASAJ	**Asahikawa**	**16.20**	**6**	P		**Pn**	**04 55 09.2**	**-0.3**
	comp=Z,4.5nm,0.3s,baz=196,slow=6.5,SNR=12							
ASAJ				S		**S**	**04 57 59.2**	**-2.5**
	comp=Z,1.3nm,0.3s,baz=270,slow=20,SNR=4.3							
ASAJ	**Asahikawa**	**16.20**	**6**	*e*P		**Pn**	**04 55 09.3**	**-0.2**
	comp=Z,39nm,0.9s							
ASAJ				S		**S**	**04 57 59.2**	**-2.5**
TATO	**Taipei**	**17.08**	**264**	*e*P		**P**	**04 55 17.6**	**+0.6**
NACB	**Ninganchiao**	**17.20**	**261**	*e*P		**P**	**04 55 17.6**	**-0.7**
	comp=Z,52nm,1.0s							
YHNB	**Yeheng**	**17.25**	**263**	*e*P		**P**	**04 55 19.0**	**0.0**
	comp=Z,86nm,0.6s							
USRK	**Ussuriysk Ar.**	**17.49**	**340**	P		**P**	**04 55 21.0**	**-0.2**
	comp=Z,1.2nm,0.3s,baz=149,slow=10,SNR=18							
SSLB	**Suanglung**	**17.87**	**261**	*e*P		**P**	**04 55 26.4**	**+0.7**
	comp=Z,76nm,0.9s							
TWG	**Pinlang**	**18.08**	**258**	*e*P		**P**	**04 55 27.6**	**-0.2**
	comp=Z,175nm,0.7s							
TPUB	**Ta-pu**	**18.31**	**260**	*e*P		**P**	**04 55 31.0**	**+0.7**
	comp=Z,18nm,0.4s							
MDJ	**Mudanjiang**	**18.66**	**336**	P		**P**	**04 55 35.5**	**+1.7**
MDJ				pmax		pmax		
	comp=Z,18nm,1.0s							
MDJ				pmax		pmax		
	comp=Z,180nm,5.8s							
NJ2	**Nanjing**	**18.97**	**288**	*e*P		**P**	**04 55 37.0**	**-0.3**
NJ2				S		**S**	**04 58 55.8**	**-0.8**
NJ2				pmax		pmax		
	comp=Z,26nm,0.7s							
NJ2				LR		LR		
	comp=Z,2μm,9.8s							
NJ2				LR		LR		
	comp=Z,2μm,9.2s							
NJ2				LR		LR		
	comp=Z,3μm,11.4s							
YSS	**Yuzh-Sakhalins**	**19.03**	**5**	*e*P		**Pn**	**04 55 46.0**	**+3.8**
YSS				pmax		pmax		
	comp=Z,50nm,0.5s							
YSS	**Yuzh-Sakhalins**	**19.03**	**5**	*e*P		**Pn**	**04 55 40.8**	**-1.4**
	comp=Z,42nm,0.5s							
SNY	**Shenyang**	**19.39**	**320**	⇑P		**P**	**04 55 43.0**	**+1.4**
SNY				sP		**sP**	**04 57 06.6**	**+1.8**
SNY				pmax		pmax		
	comp=Z,65nm,0.6s							
CN2	**Changchun**	**19.77**	**327**	*e*P		**P**	**04 55 47.3**	**+1.7**
CN2				pmax		pmax		
	comp=Z,10.0nm,0.8s							
HABR	**Khabarovsk**	**20.84**	**350**	*e*P		**P**	**04 55 55.5**	**-0.9**
HABR				*e**SP		**sP**	**04 57 20.9**	**+0.1**
HABR				*e*S		**S**	**04 59 29.0**	**-0.2**
HABR				*e*			04 59 50.3	
HABR				*e*			05 06 41.4	
HABR				pmax		pmax		
	comp=N,26nm,1.3s							
HABR				pmax		pmax		
	comp=Z,40nm,1.3s							
HABR				pmax		pmax		
	comp=E,15nm,1.3s							
HABR				MLR		MLR		
	comp=Z,37nm,14.0s							
TIA	**Tai'an**	**21.21**	**299**	⇓P		**P**	**04 55 59.3**	**-0.8**
TIA				pmax		pmax		
	comp=Z,140nm,0.6s							
KLR	**Kul'dur**	**22.20**	**345**	P		**P**	**04 56 09.2**	**+0.3**
	comp=Z,30nm,0.6s,baz=160,slow=9.3,SNR=126							
WHN	**Wuhan**	**22.74**	**283**	P		**P**	**04 56 13.4**	**-0.6**
WHN				pmax		pmax		
	comp=Z,140nm,0.6s							
TYV	**Tymovskoe**	**22.91**	**4**	*e*P		**P**	**04 56 16.0**	**+0.6**
TYV				pmax		pmax		
	comp=Z,12nm,0.6s							
BJT	**Baijiatuau**	**23.22**	**307**	*e*P		**P**	**04 56 18.2**	**-0.1**
BJT				pmax		pmax		
	comp=Z,4.0nm,0.3s							
BJT	**Baijiatuau**	**23.22**	**307**	*e*P		**P**	**04 56 18.2**	**-0.1**
	comp=Z,4.1nm,0.3s							
BJI	**Beijing**	**23.23**	**307**	P		**P**	**04 56 18.5**	**+0.1**
BJI				S		**S**	**05 00 08.1**	**+0.3**
BJI				pmax		pmax		
	comp=Z,19nm,1.2s							
NKL	**Nikolayevsk**	**25.13**	**1**	*e*P		**P**	**04 56 36.0**	**+0.6**
NKL				pmax		pmax		
	comp=N,13nm,1.0s							
NKL				pmax		pmax		
	comp=Z,39nm,1.0s							
HHC	**Hu-ho-hao-te**	**26.80**	**306**	*e*P		**P**	**04 56 52.6**	**+2.0**
HHC				sP		sP	04 58 19.4	-2.3
HHC				S		**S**	**05 01 07.3**	**+3.0**
HHC				pmax		pmax		
	comp=Z,20nm,1.0s							
HHC				pmax		pmax		
	comp=Z,130nm,6.5s							
ENH	**Enshi**	**26.94**	**282**	*e*P		**P**	**04 56 51.5**	**-0.4**
	comp=Z,18nm,0.5s							
XAN	**Xi'an**	**27.46**	**291**	P		**P**	**04 56 56.3**	**-0.2**
XAN				pmax		pmax		
	comp=Z,190nm,0.5s							
PETK	**Petropavlovsk-**	**28.22**	**22**	P		**P**	**04 57 03.2**	**+0.4**
	comp=Z,1.6nm,0.5s,baz=226,slow=5.2,SNR=5.4							
GYA	**Guiyang**	**29.87**	**275**	P		**P**	**04 57 18.3**	**+0.4**
GYA				pP		pP	04 58 15.4	+0.4
GYA				sP		sP	04 58 49.3	-0.1
GYA				PcP		**PcP**		**05 00 14.0 +1.1**
GYA				S		**S**		**05 01 52.8 0.0**
GYA				ScP		**ScP**		**05 03 27.3 +0.9**
GYA				ScS		**ScS**		**05 07 21.6 -0.9**
GYA				pmax		pmax		
	comp=Z,20nm,0.8s							
LZH	**Lanzhou**	**31.77**	**294**	*e*P		**P**	**04 57 34.8**	**+0.4**
LZH				pP		pP	04 58 29.4	-2.5
LZH				*e*S		**S**	**05 02 23.0**	**+0.7**
LZH				SS		**SS**	**05 04 44.6**	**-5.2**
LZH				pmax		pmax		
	comp=Z,33nm,1.0s							
LZH				pmax		pmax		
	comp=Z,120nm,6.6s							
CD2	**Chengdu**	**31.84**	**284**	⇓P		**P**	**04 57 34.8**	**-0.1**
CD2				pP		pP	04 58 31.5	-0.9
CD2				PP		**PP**	**04 58 53.6**	**-0.1**
CD2				sP		sP	04 59 05.8	-0.9
CD2				S		**S**	**05 02 23.4**	**+0.2**
CD2				sS		sS	05 04 06.8	-0.5
CD2				pmax		pmax		
	comp=Z,110nm,4.5s							
MA2	**Magadan**	**32.39**	**10**	P		**P**	**04 57 39.8**	**+0.6**
	comp=Z,7.3nm,0.6s,baz=238,slow=12,SNR=5.1							
MA2	**Magadan**	**32.39**	**10**	P		**P**	**04 57 39.8**	**+0.6**
MA2				pmax		pmax		
	comp=Z,3.0nm,0.4s							
ULN	**Ulaanbaatar**	**32.50**	**317**	*e*P		**P**	**04 57 40.1**	**-0.5**
ULN				pmax		pmax		
	comp=Z,21nm,1.9s							
ULN	**Ulaanbaatar**	**32.50**	**317**	*e*P		**P**	**04 57 40.1**	**-0.5**
	comp=Z,21nm,1.9s							
MRSI	**Marisa**	**32.51**	**216**	P		**P**	**04 57 42.3**	**+1.5**
SONA1	**Songino Array**	**32.89**	**316**	*e*P		**P**	**04 57 43.2**	**-0.7**
SONM	**Songino Array**	**32.89**	**316**	P		**P**	**04 57 43.0**	**-1.0**
	comp=Z,2.9nm,0.6s,baz=127,slow=5.9,SNR=6.3							
SONM	**Songino Array**	**32.89**	**316**	P		**P**	**04 57 43.0**	**-1.0**
SONM				pmax		pmax		
	comp=Z,3.0nm,0.6s							
KMI	**Kunming**	**33.60**	**274**	P		**P**	**04 57 51.1**	**+0.6**
KMI				pP		pP	04 58 48.0	-0.3
KMI				pmax		pmax		
	comp=Z,36nm,1.1s							
KMI				pmax		pmax		
	comp=Z,92nm,3.1s							
PANO	**Nakornpanom**	**34.53**	**259**	P		P	04 58 01.3	+3.1
	comp=Z,15nm,1.0s							
YAK	**Yakutsk**	**34.76**	**351**	P		**P**	**04 57 59.3**	**-0.2**
	comp=Z,17nm,0.3s,baz=180,slow=2.8,SNR=2.8							
BOD	**Bodaibo**	**35.03**	**336**	⇑*i*P		**P**	**04 58 01.3**	**-0.6**
BOD				pmax		pmax		
	comp=Z,16nm,0.9s							
SKNT	**Sakolnakorn**	**35.15**	**260**	P		**P**	**04 58 04.3**	**+0.8**
	comp=Z,36nm,0.9s							
GTA	**Gaotai**	**35.26**	**299**	*e*P		**P**	**04 58 03.3**	**-1.0**
GTA

KULM Kulim 43.85 246 *e*P P 04 59 15.3 +0.4
comp=Z,30nm,0.7s
IPM Ipoh 44.02 245 *e*P P 04 59 15.9 -0.3
comp=Z,21nm,0.7s
TIXI Tiksi 44.16 355 P P 04 59 16.0 -0.5
comp=Z,11nm,0.5s,baz=192,slow=7.2,SNR=48
TIXI PcP PcP 05 00 55.4 -0.1
comp=Z,1.6nm,0.4s,baz=93,slow=3.0,SNR=2.4
TIXI Tiksi 44.16 355*d iP* P 04 59 15.9 -0.5
TIXI pmax pmax
comp=Z,9.0nm,0.6s
TIXI Tiksi 44.16 355 *e*P P 04 59 15.9 -0.5
comp=Z,15nm,0.4s
TIXI PcP PcP 05 00 55.4 -0.1
PKDT Phuket 44.32 251 P P 04 59 19.6 +1.0
comp=Z,99nm,0.7s,comp=Z,5µm
WMQ Urumqi 44.67 305 P P 04 59 21.4 +0.4
WMQ sP sP 05 00 54.3 -1.1
WMQ pmax pmax
comp=Z,71nm,3.8s
WMQ LR LR
comp=Z,22nm,20.2s
WMQ LR LR
comp=Z,93nm,22.2s
PSI Prapat 46.70 245 *e*P P 04 59 37.3 0.0
PSI Prapat 46.70 245 *e*P P 04 59 37.3 0.0
KCSI Kotacane, Aceh 47.21 247 P P 04 59 40.5 -0.5
comp=Z,20nm,0.9s
MNSI Mandailing Nat 47.40 242 P P 04 59 42.4 0.0
comp=Z,64nm,0.6s
MDSI Maura Dua 47.45 233 P P 04 59 42.7 -0.1
comp=Z,78nm,0.9s
JIRN Jiri 47.48 283 *e*P P 04 59 44.0 +0.6
comp=Z,0.5nm,0.3s
PPI Padang Panjang 47.55 240 P P 04 59 45.2 +1.6
comp=Z,20nm,0.8s
GUN Gumba 47.69 283 *e*P P 04 59 45.4 +0.4
comp=Z,215nm,0.7s
ZALV Zalesovo Beam 47.70 319 P P 04 59 42.8 -1.4
comp=Z,1.3nm,0.3s,baz=104,slow=6.6,SNR=9.9
ZALV PcP PcP 05 01 07.6 -0.8
comp=Z,7.1nm,0.5s,baz=116,slow=3.3,SNR=17
ZALV ScP ScP 05 04 31.7 -2.1
comp=Z,2.7nm,0.7s,baz=116,slow=3.4,SNR=6.5
WRAB Tennant Creek 47.99 188*c iP* P 04 59 46.7 -0.1
WRAB pmax pmax
comp=Z,50nm,0.8s
WRAB Tennant Creek 47.99 188 *e*P P 04 59 46.4 -0.4
comp=Z,22nm,0.8s
WB2 Warramunga Arr 48.00 187 *e*P P 04 59 46.8 0.0
WRA Warramunga Arr 48.00 188 P P 04 59 46.7 -0.1
comp=Z,18nm,0.6s,baz=6.8,slow=8.5,SNR=138
WRA pP pP 05 00 46.9 -1.8
comp=Z,5.4nm,0.7s,baz=8.5,slow=8.1,SNR=2.2
WRA ScP ScP 05 04 34.2 -1.2
comp=Z,5.8nm,0.9s,baz=359,slow=4.6,SNR=16
WRA S S 05 06 17.8 -4.0
comp=Z,0.7nm,0.8s,baz=7.3,slow=14,SNR=7.0
WRA Warramunga Arr 48.00 188 *i* P P 04 59 46.7 -0.1
WRA pmax pmax
comp=Z,16nm,0.6s
PKIN Phulchoki 48.19 283 *e*P P 04 59 49.1 +0.4
comp=Z,11nm,0.3s
KKN Kakani 48.24 283 *e*P P 04 59 49.0 0.0
comp=Z,37nm,0.7s
DMN Daman 48.43 283 *e*P P 04 59 50.4 -0.1
comp=Z,27nm,0.5s
MKAR Makanchi Array 48.59 309 P P 04 59 50.1 -1.1
comp=Z,7.1nm,0.5s,baz=96,slow=6.1,SNR=1.3
MKAR PcP PcP 05 01 11.4 -0.4
comp=Z,6.3nm,0.6s,baz=85,slow=5.1,SNR=3.5
MKAR ScP ScP 05 04 35.4 -2.4
comp=Z,3.1nm,0.8s,baz=80,slow=5.8,SNR=7.5
GSI Gunungsitoli 48.67 245 P P 04 59 52.2 0.0
GSI Gunungsitoli 48.67 245 *e*P P 04 59 51.6 -0.6
comp=Z,78nm,0.5s
GKN Gorkha 48.74 284 *e*P P 04 59 52.7 0.0
comp=Z,29nm,0.4s
NVS Novosibirsk 48.76 320 *e*P P 04 59 50.8 -1.4
KOLN Koldanda 49.69 284 *e*P P 05 00 00.0 +0.1
comp=Z,26nm,0.4s
PYUN Piuthan 50.13 284 *e*P P 05 00 03.3 +0.1
comp=Z,59nm,0.5s
KURK Kurchatov 51.14 314 P P 05 00 09.4 -0.7
KURK pmax pmax
comp=Z,16nm,0.4s
KURK pmax pmax
comp=N,1.0nm,0.6s
KURK Kurchatov 51.14 314 *e*P P 05 00 09.2 -1.0
KURK ScP ScP 05 04 46.1 -2.4
KURBB Kurchatov Arra 51.20 314 P P 05 00 09.4 -1.1
comp=N,16nm,0.4s,baz=91,slow=7.8,SNR=26
KURBB ScP ScP 05 04 46.1 -2.7
comp=N,0.6nm,0.6s,baz=93,slow=4.4,SNR=3.3
NRIK Noril'sk 51.20 339 P P 05 00 09.7 -0.5
comp=N,7.6nm,0.5s,baz=117,slow=9.3,SNR=9.7
NRIK Noril'sk 51.20 339 P P 05 00 09.7 -0.5
NRIK pmax pmax
comp=Z,9.0nm,0.5s
AS01 Alice Springs 51.72 187 *e*P P 05 00 14.2 -0.4
AS31 Alice Springs 51.72 187 *e*P P 05 00 14.7 0.0
ASAR Alice Springs 51.72 187 P P 05 00 14.4 -0.3
comp=Z,3.5nm,0.7s,baz=3.6,slow=5.0,SNR=34
ASAR PcP PcP 05 01 24.8 +1.2
comp=Z,0.8nm,0.7s,baz=20,slow=5.0,SNR=4.6
ASAR ScP ScP 05 04 50.3 -1.1
comp=Z,1.0nm,0.7s,baz=4.5,slow=4.7,SNR=6.7
SVW2 Sparrevohn 53.46 33 *e*P P 05 00 29.2 +2.3
TT01 Tatalina 53.53 31 *e*P P 05 00 29.1 +1.8
TTA Tatalina 53.54 31 *e*P P 05 00 29.3 +1.8
TTA Tatalina 53.54 31 *e*P P 05 00 29.3 +1.8
KSH Kashi 53.66 300 P P 05 00 32.0 +3.1
KSH *e*pP pP 05 01 33.3 +1.1
KSH S S 05 07 43.1 +3.9
KSH pmax pmax
comp=Z,110nm,5.6s
KSH LR LR
comp=Z,300nm,7.8s
KSH LR LR
comp=Z,140nm,8.5s
KSH LR LR
comp=Z,97nm,8.1s
AAK Ala-Archa 54.35 304 P P 05 00 33.1 -0.7
comp=Z,1.6nm,0.4s,baz=72,slow=6.4,SNR=2.3
AAK Ala-Archa 54.35 304 P P 05 00 33.6 -0.2
AAK pmax pmax
comp=Z,9.0nm,1.3s
KDAK Kodiak Island 54.67 37 P P 05 00 51.9 +16
comp=Z,4.7nm,0.3s,baz=278,slow=1.6,SNR=37
KDAK Kodiak Island 54.67 37 *i* P P 05 00 36.5 +0.9
RSO Redoubt South 54.77 34 *e*P P 05 00 38.0 +1.5
PPLA Purkeypile 55.27 31 *e*P P 05 00 42.1 +2.1
comp=Z,2.5nm,0.5s
OTUK Ortayu 55.29 311 P P 05 00 39.4 -0.9
OTUK pmax pmax
comp=Z,7.0nm,0.8s
CAST Castle Rocks 55.37 30 *e*P P 05 00 42.8 +2.3
SFK Sufi-Kurgan 55.46 301 P P 05 00 41.8 -0.1
SFK pmax pmax
comp=Z,6.0nm,0.6s
BRLK Bradley Lake 55.65 35 *e*P P 05 00 43.5 +0.9
MNAS Manas 55.82 304 P P 05 00 45.0 +0.7
MNAS pmax pmax
comp=Z,3.0nm,0.8s
BPAW Bear Paw Mtn. 55.93 30 *e*P P 05 00 46.0 +1.5
comp=Z,0.2nm,0.6s
MLY Manley 56.13 29 *e*P P 05 00 47.8 +1.9
TRF Thorofare Moun 56.18 30 *e*P P 05 00 47.8 +1.4
BVAR Borovoye Array 56.23 317 P P 05 00 46.1 -0.7
comp=Z,6.3nm,0.4s,baz=98,slow=9.1,SNR=48
BVAR PcP PcP 05 01 40.3 -0.2
comp=Z,6.7nm,0.7s,baz=90,slow=4.4,SNR=8.2
BVAR Borovoye Array 56.23 317 P P 05 00 46.1 -0.7
BVAR 05 01 40.3
BVAR pmax pmax
comp=Z,7.0nm,0.4s
BVAR pmax pmax
comp=Z,7.0nm,0.7s
RC01 Rabbit Creek A 56.28 33 *e*P P 05 00 47.8 +0.8
comp=Z,4.7nm,0.6s
BRVK Borovoye 56.29 317*d iP* P 05 00 46.5 -0.7
BRVK pmax pmax
comp=Z,18nm,0.9s
BRVK Borovoye 56.29 317 *e*P P 05 00 46.6 -0.5
SEW Seward 56.39 34 *e*P P 05 00 48.5 +0.8
comp=Z,4.1nm,0.5s

PMR Palmer 56.60 33 *e*P P 05 00 50.2 +1.0
PMR Palmer 56.60 33 *e*P P 05 00 50.2 +1.0
COLD Coldfoot 56.60 26 *e*P P 05 00 50.8 +1.7
MCK McKinley 56.80 30 *e*P P 05 00 51.3 +0.7
MCK McKinley 56.80 30 *e*P P 05 00 51.3 +0.7
RND Reindeer 56.82 31 *e*P P 05 00 51.8 +1.0
RND Reindeer 56.82 31 *e*P P 05 00 51.8 +1.0
SML Sawmill 56.99 32 *e*P P 05 00 53.0 +1.0
SML Sawmill 56.99 32 *e*P P 05 00 53.0 +1.0
ZRNK Zerenda 57.07 317 *e*P P 05 00 52.0 -0.6
ZRNK Zerenda 57.07 317 *e*P P 05 00 52.0 -0.6
KKAR Karatay Array 57.18 305 *e*P P 05 00 53.3 -0.3
KKAR pmax pmax
comp=Z,5.0nm,0.3s
KKAR Karatay Array 57.18 305 *e*P P 05 00 53.3 -0.3
comp=Z,4.9nm,0.3s
MDM Murphy Dome 57.19 29 *e*P P 05 00 55.1 +1.8
WRH Wood River Hil 57.22 29 *e*P P 05 00 54.6 +1.1
COLA College 57.34 29*c iP* P 05 00 55.9 +1.6
COLA pmax pmax
comp=Z,4.0nm,0.7s
CCB Clear Creek Bu 57.35 29 *e*P P 05 00 56.2 +1.9
HYB Hyderabad 57.39 274 *i* P P 05 00 56.0 +0.6
SCM Sheep Creek Mo 57.46 32 *e*P P 05 00 56.7 +1.4
SCM Sheep Creek Mo 57.46 32 *e*P P 05 00 56.7 +1.4
IL1 Eielson Array 57.75 29 *e*P P 05 00 57.0 -0.1
ILAR Eielson Array 57.75 29 P P 05 00 57.2 +0.1
comp=Z,3.5nm,0.8s,baz=260,slow=5.5,SNR=35
ILAR PcP PcP 05 01 45.9 -0.4
comp=Z,0.5nm,0.7s,baz=284,slow=3.6,SNR=2.8
ILB Eielson Array 57.75 29 *e*P P 05 00 57.3 +0.1
KLU Klutina 58.13 33 *e*P P 05 01 01.7 +1.7
EYAK Cordova Ski Ar 58.23 34 *e*P P 05 01 02.4 +1.9
PAX Paxson 58.34 31 *e*P P 05 01 02.6 +1.3
PAX pmax pmax
comp=Z,3.0nm,0.5s
PAX Paxson 58.34 31 *e*P P 05 01 02.6 +1.3
comp=Z,2.6nm,0.5s
BMRM Bremner River 58.78 33 *e*P P 05 01 06.2 +1.8
DOT Dot Lake 58.97 30 *e*P P 05 01 06.3 +0.7
comp=Z,15nm,0.5s
MENT Mentasta 59.14 31 *e*P P 05 01 08.5 +1.8
STKA Stephens Creek 59.55 179 P P 05 01 09.5 -0.3
comp=Z,2.9nm,0.6s,baz=336,slow=8.7,SNR=10
STKA Stephens Creek 59.55 179 *e*P P 05 01 09.9 +0.1
EGAK Eagle 60.20 29 *e*P P 05 01 14.2 +0.3
comp=Z,2.8nm,0.8s
ARU Arti 62.67 322 P P 05 01 29.7 -0.7
comp=Z,44nm,0.4s,baz=92,slow=4.3,SNR=70
ARU Arti 62.67 322*d iP* P 05 01 29.7 -0.7
ARU 05 03 48.0
ARU S S 05 09 34.3 -0.2
ARU pmax pmax
comp=Z,64nm,1.0s
INK Inuvik 62.92 25 P P 05 01 32.4 +0.6
comp=Z,4.2nm,0.5s,baz=293,slow=6.2,SNR=65
SOKR Solikamsk 63.06 325 *e*P P 05 01 30.9 -1.9
SOKR pmax pmax
comp=Z,23nm,0.6s
ABKAR Akbulak array 63.25 314 *e*P P 05 01 33.4 -0.9
comp=Z,14nm,0.5s
SKAG Skagway 63.55 35 *e*P P 05 01 38.3 +2.2
AKTO Aktyubinsk 64.20 315 P P 05 01 39.5 -1.0
comp=Z,11nm,0.6s,baz=89,slow=7.4,SNR=28
DLBC Dease Lake 66.45 35 P P 05 01 56.6 +1.7
comp=Z,2.0nm,0.6s,baz=286,slow=4.8,SNR=10.0
GEYT Alibeck 67.58 302 P P 05 02 02.1 -0.1
comp=Z,4.2nm,0.8s,baz=19,slow=5.5,SNR=4.7
SPA0 Spitsbergen Ar 69.20 349 *e*P P 05 02 12.3 +0.8
SPITS Spitsbergen Ar 69.20 349 P P 05 02 11.8 +0.3
comp=Z,5.1nm,0.6s,baz=83,slow=6.8,SNR=23
RES Resolute Bay 71.59 13 *e*P P 05 02 26.4 +0.6
RES pmax pmax
comp=Z,2.0nm,0.6s
RES Resolute Bay 71.59 13 *e*P P 05 02 26.4 +0.6
comp=Z,2.5nm,0.6s
HAMF Hammerfest 72.05 342 *e*P P 05 02 28.6 0.0
ARCES ARCESS Array B 72.13 340 P P 05 02 29.1 -0.1
comp=Z,8.9nm,0.5s,baz=67,slow=8.3,SNR=71
ARE0 ARCESS Array S 72.13 340 *e*P P 05 02 29.6 +0.5
YKA Yellowknife Ar 72.16 28 P P 05 02 29.8 +0.4
comp=Z,8.3nm,1.0s,baz=294,slow=5.9,SNR=88
YKA pP pP 05 03 40.8 +3.9
comp=Z,0.8nm,0.8s,baz=290,slow=5.7,SNR=2.1
KTK1 Kautokeino 73.10 340 *e*P P 05 02 34.9 +0.1
VRH Novokhopyorsk 73.72 320 *e*P P 05 02 37.3 -1.5
VRH pmax pmax
comp=Z,30nm,0.5s
TRO Tromso 73.96 342 *e*P P 05 02 39.6 -0.2
LPSR Galich'ya Gora 74.69 322 *e*P P 05 02 43.5 -0.8
LPSR pmax pmax
comp=Z,10.0nm,0.7s
OBN Obninsk 74.82 325 P P 05 02 44.6 -0.4
comp=Z,18nm,0.3s,baz=60,slow=23,SNR=5.9
OBN Obninsk 74.82 325⇓ *e*P P 05 02 44.1 -0.9
OBN *e* 05 05 36.1
OBN *e*PPP PPP 05 07 21.8
OBN *e*S S 05 11 59.1 +2.5
OBN pmax pmax
comp=Z,26nm,0.6s
VSR Storozhevoye 75.17 320 *e*P P 05 02 46.1 -1.0
VSR pmax pmax
comp=Z,30nm,1.0s
ZEI Tsey 75.89 311 *e*P P 05 02 49.2 -2.4
ZEI pmax pmax
comp=Z,8.0nm,0.6s
STEI Steigen 76.08 341 *e*P P 05 02 51.8 -0.1
KBZ Khabaz 76.15 312 P P 05 02 52.6 -0.1
comp=Z,13nm,0.8s,baz=98,slow=2.4,SNR=31
KVAR Kislovodsk Ar 76.19 313 P P 05 02 53.3 +0.2
comp=Z,5.2nm,0.5s,baz=258,slow=7.6,SNR=7.4
KIV Kislovodsk 76.19 313*c iP* P 05 02 53.9 +0.8
KIV *e**PP pP 05 04 07.3 +5.9
KIV *e* 05 05 46.8
KIV *e*PPP PPP 05 07 39.7
KIV *e*S S 05 12 26.6 +14
KIV *e*SSS SSS 05 20 31.7
KIV pmax pmax
comp=Z,25nm,1.2s
FINES FINESS Array B 76.39 333 P P 05 02 53.1 -0.6
comp=Z,13nm,0.3s,baz=72,slow=4.7,SNR=184
GNI Garni 76.43 308 P P 05 02 54.7 0.0
comp=Z,3.2nm,0.4s,baz=286,slow=1.0,SNR=5.6
GNI Garni 76.43 308*d iP* P 05 02 54.6 0.0
GNI pmax pmax
comp=Z,53nm,1.3s
NEY Neytrino 76.47 312⇑ *e*P P 05 02 54.7 -0.1
NEY pmax pmax
comp=Z,2.0nm,1.0s
NEW Newport 77.39 42 *e*P P 05 03 01.0 +1.4
NEW pmax pmax
comp=Z,5.0nm,0.8s
NEW Newport 77.39 42 *e*P P 05 03 01.0 +1.4
comp=Z,4.9nm,0.8s
MOR8 Moi Rana 77.51 340 *e*P P 05 02 58.4 -1.4
MOR8 lAmb lAmb 05 02 59.1
comp=Z,16nm,0.6s
WALA Waterton Lakes 78.87 40 *e*P P 05 03 09.3 +1.5
comp=Z,5.4nm,0.6s
NSS Namsos 79.40 340 *e*P P 05 03 10.3 +0.1
SUMG Summit 79.70 360 *e*P P 05 03 12.6 +0.5
SUMG pmax pmax
comp=Z,14nm,1.1s
SUMG Summit 79.70 360 *e*P P 05 03 12.6 +0.5
comp=Z,14nm,1.1s
AKASG Malin Array Be 80.89 323 P P 05 03 17.3 -1.0
comp=Z,6.2nm,0.5s,baz=50,slow=5.4,SNR=50
AKASG Malin Array Be 80.89 323 P P 05 03 17.3 -1.0
AKASG pmax pmax
comp=Z,8.0nm,0.6s
KIEV Kiev 80.90 323*d iP* P 05 03 17.2 -1.2
KIEV pmax pmax
comp=Z,13nm,0.8s
KIEV Kiev 80.90 323 *e*P P 05 03 16.9 -1.4
comp=Z,14nm,0.9s
NVAR Mina Array Bea 81.29 51 P P 05 03 22.8 +1.8
comp=Z,3.1nm,0.6s,baz=287,slow=5.5,SNR=5.2
FFC Flin Flon 81.87 31 *e*P P 05 03 24.0 +0.6
FFC pmax pmax
comp=Z,6.0nm,1.0s
FFC Flin Flon 81.87 31 *e*P P 05 03 24.0 +0.6
comp=Z,5.8nm,1.0s
HFS Hagfors 81.92 336 P P 05 03 22.5 -1.0
comp=Z,7.8nm,0.4s,baz=95,slow=3.6,SNR=109
NB2 NORSAR Subarra 82.14 338 P P 05 03 23.6 -1.1
comp=Z,6.0nm,0.6s,baz=44,slow=5.3
NB2 NORSAR Subarra 82.14 338 P P 05 03 23.6 -1.1
baz=44,slow=5.3
NOA NORSAR Array B 82.14 338 P P 05 03 23.8 -1.0
comp=Z,2.1nm,0.6s,baz=56,slow=6.1,SNR=33
NOA PP PP 05 06 35.9 -0.9
comp=Z,1.7nm,0.9s,baz=42,slow=8.7,SNR=4.4
SORM Soroca 82.79 321⇓ *i*P P 05 03 27.3 -0.9
SORM Soroca 82.79 321⇓ P P 05 03 27.3 -0.9
RLMT Red Lodge 83.64 42 *e*P P 05 03 34.4 +1.5
comp=Z,2.2nm,0.7s
DUG Dugway, Tooele 84.09 47 *e*P P 05 03 36.5 +1.3
DUG pmax pmax
comp=Z,2.0nm,0.5s
DUG Dugway, Tooele 84.09 47 *e*P P 05 03 36.5 +1.3
comp=Z,1.1nm,0.5s
HWUT Hardware Ranch 84.14 46 *e*P P 05 03 37.1 +1.6
comp=Z,5.5nm,0.8s
BRTR Keskin Array B 84.14 312 P P 05 03 34.5 -0.9
comp=Z,3.1nm,0.6s,baz=92,slow=3.9,SNR=16
TESR Tescani 84.67 321⇑ *i*P P 05 03 37.3 -0.5
PDAR Pinedale Array 84.76 44 P P 05 03 39.4 +0.7
comp=Z,0.6nm,0.4s,baz=256,slow=1.2,SNR=9.7
BURAR Bucovina Array 84.81 322⇑ *i*P P 05 03 38.0 -0.6
BURAR Bucovina Array 84.81 322⇑ P P 05 03 38.0 -0.6
VRI Vrincioaia 85.00 320⇓ *i*P P 05 03 40.1 +0.7
VRI Vrincioaia 85.00 320⇓ P P 05 03 40.1 +0.7
MLR Muntele Rosu 85.66 320⇑ *i*P P 05 03 43.7 +0.8
MLR Muntele Rosu 85.66 320⇑ P P 05 03 43.7 +0.8
CRVS Cervenica-Dubn 86.00 325 *e*P P 05 03 43.9 -0.4
CRVS Cervenica-Dubn 86.00 325 *e*P P 05 03 43.9 -0.4
DRGR 86.67 322⇓ *i*P P 05 03 46.9 -0.7
DRGR 86.67 322⇓ P P 05 03 46.9 -0.7
LOT Lotru 86.91 321⇓ *i*P P 05 03 48.7 -0.2
DPC Dobruska-Polom 87.58 328 *e*P P 05 03 51.5 -0.4
DPC Dobruska-Polom 87.58 328 *e*P P 05 03 51.5 -0.4
VYHS Vyhne 87.60 325 *e*P P 05 03 51.2 -0.8
VYHS pmax pmax
comp=Z,3.0nm,0.9s
VYHS Vyhne 87.60 325 *e*P P 05 03 51.2 -0.8
ULM Lac du Bonnet 87.61 32 P P 05 03 52.1 +0.2
comp=Z,2.1nm,0.6s,baz=295,slow=3.1,SNR=3.6
BRG Berggiesshubel 88.32 329 *e*P P 05 03 55.6 +0.4
comp=Z,10nm,1.4s
BRG Berggiesshubel 88.32 329 *e*P P 05 03 55.6 +0.4
BRG pmax pmax
comp=Z,10.0nm,1.4s
CLL Collm 88.43 330 *e*P P 05 03 55.0 -0.8
CLL LmH 05 51 00.0
comp=N,1µm,19.7s
CLL LmH 05 51 00.0
comp=E,800nm,20.5s
CLL Collm 88.43 330 *e*P P 05 03 55.0 -0.8
CLL MLR MLR
comp=Z,300nm,19.2s
MDVR Moldovita 88.47 321⇑ *i*P P 05 03 55.4 -0.7
PKSM Moragy 89.20 324⇑ *i*P P 05 03 58.7 -0.8
PKSM Moragy 89.20 324⇑ P P 05 03 58.7 -0.8
KHC Kasperske Hory 89.71 328 *e*P P 05 04 01.0 -0.9
KHC Kasperske Hory 89.71 328 *e*P P 05 04 01.0 -0.9
GERES GERESS Array B 89.86 328 P P 05 04 01.2 -1.4
comp=Z,1.5nm,0.5s,baz=35,slow=4.9,SNR=14
ANMO Albuquerque 91.19 49⇑ *e*P P 05 04 10.3 +1.1
ANMO pmax pmax
comp=Z,2.0nm,0.7s
BFO Black Forest 92.67 330 *i* P P 05 04 15.4 -0.2
TXAR Lajitas Array 96.42 52 P P 05 04 34.5 +1.4
comp=Z,0.4nm,0.5s,baz=292,slow=1.8,SNR=11
TORD Torodi Ar. Bea 122.71 310 PKP **PKPdf** 05 09 57.6 -0.8
comp=Z,1.4nm,0.4s,baz=72,slow=1.0,SNR=52
BOSA Boshof 123.45 253 PKP **PKPdf** 05 10 00.4 +0.8
comp=Z,1.3nm,0.6s,baz=325,slow=8.6,SNR=3.1
SNAA Sanae 131.81 195 PKP **PKPdf** 05 10 14.6 +0.4
DBIC Dimbokro 131.82 310 PKP **PKPdf** 05 10 15.8 0.0
comp=Z,6.6nm,1.2s,baz=29,slow=4.9,SNR=3.7
DBIC SKPbc **SKPbc** 05 13 12.1 -1.3
comp=Z,2.7nm,0.8s,baz=21,slow=4.9,SNR=4.5
DBIC Dimbokro 131.82 310 PKIKP **PKPdf** 05 10 15.9 0.0
DBIC pmax pmax
comp=Z,3.0nm,0.7s
DBIC pmax pmax
comp=N,3.0nm,0.8s
VNA2 Neumayer--Watz 133.36 194 PKP **PKPdf** 05 10 17.9 +0.8
baz=71,slow=1.6
VNA3 Neumayer Olymp 133.58 193 PKP **PKPdf** 05 10 18.0 +0.5
SAML Samuel 150.89 54 *e*PKPdf **PKPdf** 05 10 49.1 -0.4
SAML *e*PKPbc **PKPbc** 05 10 55.3 -0.1
LPAZ La Paz 151.31 72 PKPbc **PKPbc** 05 10 57.7 +0.7
comp=N,3.0nm,0.6s,baz=334,slow=6.1,SNR=12
PLCA Paso Flores 151.72 125 PKPbc **PKPbc** 05 10 57.3 +0.6
comp=N,2.4nm,0.5s,baz=241,slow=2.2,SNR=32

IDC 19 04:52:01.5±3.3, 56.71S×25.34W, h0km, mb3.8/2, mb1 4.0/2, mb1mx3.7/21, mbtmp3.8/2, Error ellipse: s-maj=119.8km s-min=53.0km az=175.0, South Sandwich Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
LPAZ	**La Paz**	**51.60**	**304**	P	P	05 01 10.1	-0.1
	1.1nm,0.4s,baz=120,slow=3.7,SNR=12						
TORD	**Torodi Ar. Bea**	**73.14**	**28**	P	P	05 03 33.7	0.0
	0.4nm,0.8s,baz=186,slow=8.8,SNR=2.7						
YKA	**Yellowknife Ar**	**137.35**	**317**	PKP	PKPdf	05 11 25.1	-0.2
	0.1nm,0.7s,baz=124,slow=2.6,SNR=3.7						
ILAR	**Eielson Array**	**151.32**	**310**	PKPbc	PKPbc	05 11 55.1	-0.3
	0.6nm,0.8s,baz=136,slow=1.7,SNR=6.4						

NNC ***19*** *04:58:13.3±1.2, 45.77N×81.27E, h0km, mb3.8, mpv3.7, Error ellipse: s-maj=22.5km s-min=6.9km az=120.0*
SOME ***19*** *04:58:14.9, 45.85N×80.53E, h30km*

ISC 19 04:58:10.7±1.0, 46.01N±0.03×80.63E±0.05, h10km, n19, σ1s84/38, 5C-4D, Eastern Kazakhstan

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
KAPS	**Kapalarasan**	**1.15**	**231**	*e*P	**Pb**	**04 58 30.9**	**-1.8**
	111nm,0.2s						
KAPS				*e*S	**Sb**	**04 58 42.4**	**-5.3**
	311nm,0.3s						
MAKZ	**Makanchi**	**1.23**	**49**	⇓P	**Pn**	**04 58 34.0**	**+0.1**
	19nm,0.2s						
MAKZ				⇓S	**Sb**	**04 58 50.3**	**+0.4**
	50nm,0.3s						
MK31	**Makanchi Array**	**1.39**	**55**	P	**Pn**	**04 58 36.8**	**+0.6**
	39nm,0.3s,baz=225,slow=17,SNR=1244						
MK31				⇓S	**Sb**	**04 58 54.9**	**+0.3**
	42nm,0.3s,baz=224,slow=24,SNR=22						
TDK	**Taldyqorghan**	**1.86**	**238**	*e*P	**Pb**	**04 58 44.8**	**-0.1**
	173nm,0.3s						
TDK				*e*S	**Sn**	**04 59 05.9**	**-0.4**
	427nm,0.2s						
MNBS	**Baschi**	**2.50**	**220**	*e*P	**Pb**	**04 58 55.6**	**-0.2**
	62nm,0.4s						
MNBS				*e*S	**Sn**	**04 59 25.0**	**+2.9**
	495nm,0.5s						

KTMS **Ketmen** 2.58 184 *e*P **Pb** 04 58 55.8 -1.2
9.1nm,0.4s
KTMS *e*S **Sn** 04 59 25.6 +1.5
136nm,0.2s
ARXS Arharly 2.68 229 *e*P **Pb** 04 58 59.0 +0.2
16nm,0.3s
ARXS *e*S **Sb** 04 59 31.0 -0.8
249nm,0.5s
PDGK Podgornoye 2.81 197 ⇑Pn **Pb** 04 58 59.6 -1.3
9.0nm,0.6s
PDGK ⇑Sn **Sb** 04 59 33.9 -1.4
148nm,0.5s
KPKS Kokpek 2.90 209 *e*P **Pb** 04 59 03.3 +0.7
53nm,0.2s
KPKS *e*S **Sb** 04 59 37.7 -0.4
243nm,0.4s
SHLS Shalkode 2.91 191 *e*P **Pb** 04 59 02.6 -0.1
20nm,0.3s
SHLS *e*S **Sb** 04 59 36.5 -1.9
153nm,0.7s
KURS Kuram 3.07 216 *e*P **Pb** 04 59 06.8 +1.2
23nm,0.3s
KURS *e*S **Sb** 04 59 44.0 +0.9
43nm,0.4s
CHKK Chushkaly 3.35 232 *e*P **Pb** 04 59 11.3 +1.0
29nm,0.3s
CHKK *e*S **Sb** 04 59 51.7 +0.7
78nm,0.3s
KTBS Karatobe 3.63 232 *e*P **Pb** 04 59 15.2 +0.2
KTBS *e*S **Sb** 04 59 58.1 -0.9
KOTS Kotyrbulak 3.75 223 *e*P **Pb** 04 59 15.9 -1.1
KOTS *e*S **Sb** 04 59 59.4 -3.1
TNSS Tian-Shan 3.97 223 *e*P **Pb** 04 59 21.2 +0.2
6.7nm,0.4s
TNSS *e*S **Sb** 05 00 08.5 -0.8
53nm,0.6s
IZV Izvestkoviy 4.14 225 *e*P **Pb** 04 59 24.6 +0.9
6.7nm,0.6s
IZV *e*S **Sb** 05 00 14.5 +0.8
67nm,0.8s
DGS Degeres 4.44 233 *e*P **Pb** 04 59 30.0 +1.2
4.6nm,0.3s
DGS *e*S **Sb** 05 00 23.8 +1.4
58nm,0.5s
KURBB Kurchatov Arra 4.82 344 ⇑Pn **Pb** 04 59 31.2 -4.0
5.8nm,0.6s
KURBB ⇓Sn **Sb** 05 00 36.1 +2.9
52nm,0.5s
KURK Kurchatov 4.89 345 ⇑Pn **Pb** 04 59 33.3 -3.1
5.3nm,0.4s
KURK ⇑Sn **Sb** 05 00 38.3 +3.0
94nm,0.8s

NIED **19** *05:05:00,28.˚10N×128.˚00E,h5km,Mw4.9 Best double couple: M₀2.35000×10¹⁶ NP1:φs305.00000°,δ35.00000°, λ-15.00000°. NP2:φs47.00000°,δ82.00000°, λ-124.00000°.*

BJI **19** *05:05:25.6,27.˚85N×127.˚99E,h20km,mb4.5/55,mB4.8/45, Ms4.8/63,Ms7 4.5/59*

JMA **19** *05:05:25.0±0.2,28.˚11N×128.˚04E,h16km±3km,M4.7*

JMA Felt I J1.

ISCJB **19** *05:05:26.1±0.6,28.˚07N±0.˚03×128.˚05E±0.˚03,h22km±5km, mb4.5/63,MS4.2/30, Error ellipse: s-maj=4.9km s-min=3.8km az=39.1*

MOS **19** *05:05:27.5±1.1,28.˚05N×128.˚01E,h33km,mb4.7/30, MS4.0/11, Error ellipse: s-maj=9.4km s-min=6.0km az=106.6*

NEIC **19** *05:05:28.8±0.3,28.˚11N×128.˚24E,h35km,mb4.8/27, Error ellipse: s-maj=7.2km s-min=4.8km az=100.0*

NEIC Recorded [1 JMA] on Tokuno-shima.

IDC **19** *05:05:33.1±2.5,28.˚12N×128.˚09E,h75km±23km,mb3.8/23, mb1 3.9/26,mb1mx3.8/57,mbtmp4.1/26,MS4.1/28, Ms1 4.2/28,ms1mx3.9/53, Error ellipse: s-maj=18.1km s-min=11.8km az=71.0*

ISC 19 05:05:28.0±0.4, 27.˚98N±0.˚03×128.˚09E±0.˚03, h22km±3km, n163, σ2$48/174, mb4.5/62, MS4.2/30, 3C-1D, Ryukyu Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JOKE	**Okinoerabujima**	**0.74**	**145**	P	**Pb**	**05 05 41.5**	**-0.8**
JOKE				*e*S	**Sn**	**05 05 53.1**	**-0.8**
JTK	**Tokunoshima**	**0.78**	**104**	P	**Pb**	**05 05 41.0**	**-1.9**
JIH	**Iheya**	**0.94**	**187**	P	**Pb**	**05 05 44.6**	**-1.0**
JIH				S	**Sn**	**05 05 59.0**	**+0.3**
JAMN	**Amaminishikomi**	**0.99**	**74**	P	**Pb**	**05 05 43.9**	**-2.6**
JAMN				*e*S	**Sb**	**05 05 57.3**	**-1.8**
JOW	**Kunigami**	**1.15**	**172**	P	**Pn**	**05 05 48.2**	**-0.6**
JOW				S	**Sb**	**05 06 05.3**	**+1.6**
JOW	**Kunigami**	**1.15**	**172**	*e*Pn	**Pn**	**05 05 48.4**	**-0.4**
JAM	**Amami Oshima**	**1.40**	**72**	P	**Pn**	**05 05 50.3**	**-2.0**
JAM				*e*S	**Sn**	**05 06 08.5**	**-1.6**
JNTH	**Nagotoyohara**	**1.45**	**182**	P	**Pn**	**05 05 52.7**	**-0.2**
JNTH				*e*S	**Sb**	**05 06 12.8**	**+0.5**
JTAJ	**Takarajima**	**1.53**	**40**	P	**Pn**	**05 05 50.9**	**-3.1**
JAGN	**Aguni-jima**	**1.57**	**209**	P	**Pn**	**05 05 53.8**	**-0.8**
JZK	**Kikaishima**	**1.69**	**78**	P	**Pb**	**05 05 56.5**	**-1.9**
JJT2	**Tamagusuku 2**	**1.85**	**190**	P	**Pn**	**05 05 59.8**	**+1.3**
JKE	**Kume jima 2**	**2.01**	**216**	P	**Pn**	**05 06 00.0**	**-0.7**
JNU	**Nakatsue**	**5.66**	**24**	P	**Pn**	**05 06 54.5**	**+3.6**
	2.8nm,0.3s,baz=199,slow=8.9,SNR=42						
JNU				LR	LR	05 09 07.7	
	comp=Z,2μm,21.1s,baz=210,slow=39						
JNU	**Nakatsue**	**5.66**	**24**	*e*Pn	**Pn**	**05 06 54.2**	**+3.3**
YOJ	**Yonaguni jima**	**5.75**	**234**	*e*P	**Pn**	**05 06 53.9**	**+1.8**
YOJ	**Yonaguni jima**	**5.75**	**234**	*e*Pn	**Pn**	**05 06 53.9**	**+1.8**
YOJ				*e*Pg	Pb	05 06 59.1	-8.5
TATO	**Taipei**	**6.63**	**245**	*e*Pn	**Pn**	**05 07 06.0**	**+1.9**
SSE	**Sheshan**	**6.77**	**299**	Pn	**Pn**	**05 07 04.3**	**-1.8**
YHNB	**Yeheng**	**6.87**	**243**	*e*Pn	**Pn**	**05 07 09.8**	**+2.4**
NACB	**Ninganchiao**	**6.96**	**239**	*e*Pn	**Pn**	**05 07 12.1**	**+3.4**
SSLB	**Suanglung**	**7.66**	**239**	*e*Pn	**Pn**	**05 07 20.8**	**+2.4**
TWG	**Pinlang**	**8.16**	**233**	*e*Pn	**Pn**	**05 07 26.3**	**+1.1**
TPUB	**Ta-pu**	**8.19**	**237**	*e*Pn	**Pn**	**05 07 28.3**	**+2.7**
QZH	**Quanzhou**	**9.03**	**253**	*e*P	**Pn**	**05 07 37.1**	**0.0**
QZH				S	**Sn**	**05 09 17.0**	**-1.2**
QZH				LR	LR		
	comp=N,8μm,13.6s						
QZH				LR	LR		
	comp=E,2μm,13.4s						
QZH				LR	LR		
	comp=Z,6μm,10.8s						
KSAR	**Wonju Array Be**	**9.44**	**359**	P	**Pn**	**05 07 42.5**	**-0.2**
KSAR	**Wonju Array Be**	**9.44**	**359**	P	**Pn**	**05 07 42.5**	**-0.2**
KSRS	**Korea Array**	**9.45**	**359**	P	**Pn**	**05 07 42.5**	**-0.3**
	0.6nm,0.3s,baz=184,slow=13,SNR=4.3						
KSRS				LR	LR	05 11 21.1	
	comp=Z,2μm,19.0s,baz=160,slow=37						
MAJO	**Matsushiro**	**12.09**	**42**	*e*P	**Pn**	**05 08 22.4**	**+3.5**
MJAR	**Matsushiro Arr**	**12.09**	**43**	P	**Pn**	**05 08 20.2**	**+1.3**
	0.3nm,0.3s,baz=241,slow=12,SNR=4.0						
MJAR				LR	LR	05 13 39.5	
	comp=Z,912nm,19.8s,baz=220,slow=40						
WHN	**Wuhan**	**12.27**	**285**	P	**P**	**05 08 31.3**	**-2.3**
WHN				S	**Sn**	**05 10 44.3**	**+6.8**
WHN				LR	LR		
	comp=N,4μm,10.9s						
WHN				LR	LR		
	comp=E,4μm,12.6s						
WHN				LR	LR		
	comp=Z,4μm,11.2s						
JCJ	**Chichijima**	**12.54**	**91**	LR	LR	05 13 02.3	
	comp=Z,593nm,19.1s,baz=226,slow=36						
MSHR	**Mys Shultsa**	**14.78**	**9**	*e*P	**Pn**	**05 08 55.0**	**-0.7**
TGY	**Tagaytay City**	**15.33**	**207**	LR	LR	05 15 14.2	
	comp=Z,904nm,19.5s,slow=38						
BJT	**Baijiatuau**	**15.54**	**324**	*e*P	**Pn**	**05 09 06.9**	**+1.1**
BJT				pmax	pmax		
	comp=Z,88nm,1.3s						
BJT	**Baijiatuau**	**15.54**	**324**	*e*Pn	**Pn**	**05 09 06.8**	**+1.1**
	comp=Z,88nm,1.3s						
BJI	**Beijing**	**15.55**	**324**	P	**Pn**	**05 09 04.3**	**-1.6**
BJI				pmax	pmax		
	comp=Z,25nm,0.8s						
BJI				pmax	pmax		
	comp=Z,180nm,5.0s						
BJI				LR	LR		
	comp=Z,2μm,18.5s						
BJI				LR	LR		
	comp=Z,2μm,15.4s						
BJI				LR	LR		
	comp=Z,690nm,16.4s						
CN2	**Changchun**	**15.94**	**353**	*e*P	**P**	**05 09 15.1**	**+0.8**
CN2				*e*pP	pP	05 09 20.6	+0.3
CN2				*e*S	**Sn**	**05 12 09.8**	**+3.0**
CN2				pmax	pmax		
	comp=Z,30nm,1.0s						
CN2				LR	LR		
	comp=Z,2μm,13.0s						
CN2				LR	LR		
	comp=Z,2μm,13.0s						
CN2				LR	LR		
	comp=Z,2μm,13.0s						
ENH	**Enshi**	**16.42**	**282**	*e*Pn	**P**	**05 09 19.9**	**+0.1**
	comp=Z,47nm,1.0s						
USRK	**Ussuriysk Ar.**	**16.49**	**10**	P	**P**	**05 09 20.3**	**-0.1**
	comp=Z,0.2nm,0.3s,baz=200,slow=12,SNR=10						
MDJ	**Mudanjiang**	**16.65**	**4**	P	**P**	**05 09 27.0**	**+4.8**
MDJ				pP	sP	05 09 34.6	+3.5
MDJ				sP	pP	05 09 37.3	+9.1
MDJ				S	**S**	**05 12 38.6**	**+3.4**
MDJ	**Mudanjiang**	**16.65**	**4**	ScS	ScS	05 21 24.3	+2.6
MDJ				pmax	pmax		
	comp=Z,23nm,0.9s						
MDJ				pmax	pmax		
	comp=Z,280nm,5.6s						
MDJ				LR	LR		
	comp=N,730nm,15.7s						
MDJ				LR	LR		
	comp=E,1μm,13.1s						
MDJ				LR	LR		
	comp=Z,1μm,17.0s						
XAN	**Xi'an**	**17.50**	**295**	P	**Pn**	**05 09 28.9**	**-1.8**
XAN				S	**Sn**	**05 12 46.6**	**+1.6**
XAN				pmax	pmax		
	comp=Z,23nm,1.3s						
XAN				pmax	pmax		
	comp=Z,100nm,5.9s						
XAN				LR	LR		
	comp=Z,2μm,16.4s						
XAN				LR	LR		
	comp=Z,320nm,17.6s						
XAN				LR	LR		
	comp=Z,970nm,15.1s						
HHC	**Hu-ho-hao-te**	**18.69**	**318**	*e*P	**Pn**	**05 09 44.8**	**-0.5**
HHC				sP	sP	05 09 53.4	-0.4
HHC				PP	**PnPn**	**05 10 01.8**	**+4.3**
HHC				S	**Sn**	**05 13 09.8**	**-4.0**
HHC				sS	S	05 13 18.9	+2.3
HHC				pmax	pmax		
	comp=Z,22nm,1.0s						
HHC				pmax	pmax		
	comp=Z,230nm,5.3s						
HHC				LR	LR		
	comp=Z,2μm,14.3s						
HHC				LR	LR		
	comp=Z,3μm,14.5s						
HHC				LR	LR		
	comp=Z,960nm,12.9s						
QIZ	**Qiongzhong**	**18.94**	**246**	P	**P**	**05 09 46.8**	**-0.8**
QIZ				LR	LR		
	comp=Z,590nm,16.0s						
QIZ				LR	LR		
	comp=Z,380nm,12.3s						
GYA	**Guiyang**	**19.12**	**270**	⇑*i*P	**Pn**	**05 09 51.0**	**+0.4**
GYA				PP	**PnPn**	**05 10 06.8**	**+3.4**
GYA				S	**Sn**	**05 13 14.5**	**-10**
GYA				SS	**SnSn**	**05 13 40.3**	**+1.9**
GYA				pmax	pmax		
	comp=Z,20nm,1.0s						
GYA				pmax	pmax		
	comp=Z,120nm,4.8s						
GYA				LR	LR		
	comp=Z,480nm,11.4s						
GYA				LR	LR		
	comp=Z,440nm,12.0s						
GYA				LR	LR		
	comp=Z,490nm,11.6s						
BTO	**Baotou**	**19.49**	**315**	*e*P	**P**	**05 09 52.3**	**-1.3**
ASAJ	**Asahikawa**	**19.88**	**32**	LR	LR	05 18 49.1	
	comp=Z,515nm,18.6s,baz=146,slow=40						
DAV	**Davao City (W)**	**20.93**	**187**	P	Pn	05 10 11.4	-0.5
	comp=Z,441nm,0.4s,baz=316,slow=15,SNR=2.2						
DAV				LR	LR	05 18 26.0	
	comp=Z,411nm,21.0s,baz=346,slow=37						
CD2	**Chengdu**	**21.38**	**284**	P	**P**	**05 10 12.8**	**-1.4**
CD2				pP	pP	05 10 18.8	-1.5
CD2				PP	**PnPn**	**05 10 38.5**	**+4.2**
CD2				S	**S**	**05 14 13.0**	**+2.3**
CD2				sS	Sn	05 14 16.6	-2.1
CD2				SS	**SnSn**	**05 14 34.8**	**+1.0**
CD2				pmax	pmax		
	comp=Z,90nm,0.9s						
CD2				pmax	pmax		
	comp=Z,150nm,4.3s						
CD2				LR	LR		
	comp=Z,2μm,13.1s						
CD2				LR	LR		
	comp=Z,2μm,10.1s						
KLR	**Kul'dur**	**21.41**	**7**	P	**P**	**05 10 12.6**	**-1.6**
	comp=Z,2.0nm,0.8s,baz=191,slow=7.9,SNR=3.1						
YUK	**Yuzh-Kuril'sk**	**21.45**	**37**	*c i*P	**P**	**05 10 15.1**	**+0.3**
YUK				*e*		05 10 39.6	
YUK				*e*S	**S**	**05 14 09.8**	**-1.9**
YUK				*e*SS	**SnSn**	**05 14 45.8**	**+10**
YUK				pmax	pmax		
	comp=Z,517nm,3.2s						
YUK				pmax	pmax		
	comp=Z,426nm,1.5s						
YUK				pmax	pmax		
	comp=N,239nm,0.7s						
YUK				pmax	pmax		
	comp=E,168nm,1.2s						
YUK				MLR	MLR		
	comp=Z,547nm,15.0s						
LZH	**Lanzhou**	**22.05**	**298**	*e*P	**P**	**05 10 24.6**	**+3.1**
LZH				pP	sP	05 10 30.1	-0.3
LZH				sP	pP	05 10 33.5	+5.9
LZH				PP	**PnPn**	**05 10 44.3**	**+0.8**
LZH				*e*S	**S**	**05 14 18.0**	**-5.8**
LZH				sS	sS	05 14 26.6	-7.1
LZH				SS	**SnSn**	**05 14 54.5**	**+4.2**
LZH				pmax	pmax		
	comp=Z,70nm,1.2s						
LZH				pmax	pmax		
	comp=Z,230nm,5.4s						
LZH				LR	LR		
	comp=Z,2μm,11.7s						
LZH				LR	LR		
	comp=Z,650nm,12.4s						
LZH				LR	LR		
	comp=Z,3μm,12.5s						
YSS	**Yuzh-Sakhalins**	**22.17**	**27**	*e*P	**P**	**05 10 25.1**	**+2.7**
YSS				pmax	pmax		
	comp=Z,9.0nm,1.1s						
KMI	**Kunming**	**22.84**	**269**	P	**P**	**05 10 29.9**	**-0.2**
KMI				pP	pP	05 10 35.3	-0.9
KMI				sP	sP	05 10 37.8	-1.2
KMI				PP	**PnPn**	**05 10 56.6**	**+2.0**
KMI				S	**S**	**05 14 37.9**	**-0.7**
KMI				sS	sS	05 14 46.4	-2.8
KMI				pmax	pmax		
	comp=Z,15nm,1.1s						
KMI				pmax	pmax		
	comp=Z,180nm,5.4s						
KMI				LR	LR		
	comp=Z,870nm,10.8s						
KMI				LR	LR		
	comp=Z,570nm,10.8s						
KMI				LR	LR		
	comp=Z,580nm,9.4s						
MYLDM	**Lahad Datu**	**24.44**	**204**	*e*P	**P**	**05 10 50.8**	**+5.5**
	comp=Z,85nm,1.4s						
ULN	**Ulaanbaatar**	**25.73**	**326**	*e*P	**P**	**05 10 56.1**	**-0.9**
ULN				pmax	pmax		
	comp=Z,67nm,1.6s						
ULN	**Ulaanbaatar**	**25.73**	**326**	*e*P	**P**	**05 10 56.1**	**-0.9**
	comp=Z,67nm,1.6s						
SONM	**Songino Array**	**26.04**	**325**	P	**P**	**05 10 58.1**	**-1.6**
	comp=Z,6.6nm,0.8s,baz=137,slow=11,SNR=18						
SONM				LR	LR	05 21 20.2	
	comp=Z,271nm,20.2s,baz=104,slow=36						
GTA	**Gaotai**	**26.04**	**303**	*e*P	**P**	**05 10 57.5**	**-2.3**
GTA				pP	pP	05 11 04.6	-1.8
GTA				sP	sP	05 11 07.8	-1.3
GTA				S	**S**	**05 15 24.0**	**-5.8**
GTA				sS	sS	05 15 36.4	-4.2
GTA				SS	**SnSn**	**05 16 30.5**	**+2.6**
GTA				pmax	pmax		
	comp=Z,5.0nm,1.1s						
GTA				pmax	pmax		
	comp=Z,71nm,4.7s						
GTA				LR	LR		
	comp=Z,2μm,17.1s						
GTA				LR	LR		
	comp=Z,1μm,14.3s						
GTA				LR	LR		
	comp=Z,1μm,13.8s						
SONA1	**Songino Array**	**26.04**	**325**	*e*P	**P**	**05 10 58.4**	**-1.4**
CMAR	**Chiang Mai Arr**	**28.35**	**257**	P	**P**	**05 11 21.5**	**+0.9**
	comp=Z,0.5nm,0.4s,baz=51,slow=7.6,SNR=4.5						
CMAR				LR	LR	05 23 27.8	
	comp=Z,284nm,20.4s,baz=65,slow=38						
ZAK	**Zakamensk**	**29.26**	**327**	*e*P	**P**	**05 11 26.8**	**-1.7**
ZAK				pmax	pmax		
	comp=Z,3.0nm,1.4s						
TLY	**Talaya**	**29.95**	**329**	P	**P**	**05 11 33.8**	**-0.7**
	comp=Z,1.1nm,0.4s,baz=66,slow=20,SNR=3.0						
TLY				LR	LR	05 24 09.5	
	comp=Z,522nm,18.4s,baz=132,slow=37						
TLY	**Talaya**	**29.95**	**329**	*e*P	**P**	**05 11 33.3**	**-1.2**
TLY				*e*S	**S**	**05 16 36.8**	**+5.9**
TLY				pmax	pmax		
	comp=Z,12nm,1.6s						
TLY				MLR	MLR		
	comp=Z,85nm,7.0s						
TLY	**Talaya**	**29.95**	**329**	*e*P	**P**	**05 11 33.4**	**-1.2**
TLY				*e*pP	**pP**	**05 11 40.0**	**-1.1**
PETK	**Petropavlovsk-**	**33.29**	**33**	LR	LR	05 24 30.1	
	comp=Z,313nm,21.9s,baz=224,slow=34						
BBKI	**Banjar Baru**	**33.76**	**204**	P	**P**	**05 12 05.3**	**-3.0**
KAPI	**Kappang**	**33.77**	**195**	LR	LR	05 26 48.5	
	comp=Z,196nm,19.2s,baz=11,slow=38						
IPM	**Ipoh**	**34.77**	**233**	*e*P	**P**	**05 12 16.9**	**-0.2**
	comp=Z,9.3nm,0.8s						
WMQ	**Urumqi**	**35.95**	**307**	P	**P**	**05 12 25.6**	**-1.5**
WMQ				pP	pP	05 12 33.9	+0.2
WMQ				sP	sP	05 12 38.3	+1.9
WMQ				pmax	pmax		
	comp=Z,6.0nm,1.0s						
WMQ				pmax	pmax		
	comp=Z,37nm,5.0s						
WMQ				LR	LR		
	comp=Z,580nm,18.6s						
WMQ				LR	LR		
	comp=Z,180nm,16.8s						
WMQ				LR	LR		
	comp=Z,160nm,24.2s						
PSI	**Prapat**	**37.44**	**233**	LR	LR	05 28 07.6	
	comp=Z,237nm,18.3s,slow=36						
PSI	**Prapat**	**37.44**	**233**	*e*P	**P**	**05 12 40.9**	**+0.9**
PSI				pmax	pmax		
	comp=Z,7.0nm,1.0s						
PSI	**Prapat**	**37.44**	**233**	*e*P	**P**	**05 12 40.9**	**+0.9**
	comp=Z,6.6nm,1.0s						
SEY	**Seymchan**	**38.40**	**18**	*e*P	**P**	**05 12 49.1**	**+1.7**
PPI	**Padang Panjang**	**38.79**	**228**	P	P	05 12 56.3	+5.0
PDSI	**Padang**	**39.09**	**227**	P	P	05 13 03.6	+10
MDSI	**Maura Dua**	**39.66**	**219**	P	P	05 13 03.3	+4.8
MK01	**Makanchi Array**	**40.29**	**310**	*e*P	**P**	**05 13 01.5**	**-2.0**
MK31	**Makanchi Array**	**40.30**	**310**	*e*P	**P**	**05 13 02.3**	**-1.3**
MK31	**Makanchi Array**	**40.30**	**310**	*e*P	**P**	**05 13 02.2**	**-1.3**
MKAR	**Makanchi Array**	**40.30**	**310**	P	**P**	**05 13 01.9**	**-1.7**
	comp=Z,6.7nm,0.8s,baz=100,slow=9.8,SNR=60						
MKAR				LR	LR	05 30 11.4	
	comp=Z,204nm,18.5s,baz=104,slow=37						
MAKZ	**Makanchi**	**40.51**	**310**	*e*P	**P**	**05 13 04.2**	**-1.2**
MAKZ				pmax	pmax		
	comp=Z,16nm,1.4s						
MAKZ	**Makanchi**	**40.51**	**310**	*e*P	**P**	**05 13 04.2**	**-1.2**
	comp=Z,16nm,1.4s						
ZAA0	**Zalesovo Array**	**40.80**	**322**	*e*P	**P**	**05 13 05.3**	**-2.2**
ZAA0				*e*P	**P**	**05 13 05.9**	**-1.7**
ZALV	**Zalesovo Beam**	**40.80**	**322**	P	**P**	**05 13 05.4**	**-2.1**
	comp=Z,2.4nm,0.5s,baz=123,slow=8.5,SNR=6.1						
ZALV				PcP	**PcP**	**05 15 05.2**	**-3.1**
	comp=Z,1.0nm,0.6s,baz=106,slow=3.1,SNR=3.2						
ZALV				LR	LR	05 31 29.1	
	comp=Z,199nm,18.1s,baz=88,slow=38						
PMG	**Port Moresby**	**41.49**	**151**	LR	LR	05 27 37.8	
	comp=Z,239nm,20.3s,baz=332,slow=32						
PDGK	**Podgornoye**	**41.77**	**305**	P	**P**	**05 13 14.5**	**-1.2**
PDGK				pmax	pmax		
	comp=Z,18nm,0.9s						
KURK	**Kurchatov**	**43.48**	**315**	*e*P	**P**	**05 13 27.2**	**-2.3**
KURK				pmax	pmax		
	comp=Z,38nm,1.5s						
KURK	**Kurchatov**	**43.48**	**315**	*e*P	**P**	**05 13 27.2**	**-2.3**
	comp=Z,38nm,1.5s						
KURBB	**Kurchatov Arra**	**43.52**	**315**	P	**P**	**05 13 28.1**	**-1.7**
	comp=Z,5.3nm,0.7s,baz=103,slow=8.7,SNR=43						
TIXI	**Tiksi**	**43.72**	**0**	P	**P**	**05 13 34.2**	**+3.1**
TIXI				pmax	pmax		
	comp=Z,5.0nm,1.5s						
KSH	**Kashi**	**44.29**	**299**	P	**P**	**05 13 39.3**	**+3.0**
KSH				*e*sP	sP	05 13 48.5	+2.8
KSH				*e*ScP	**ScP**	**05 19 13.9**	**+2.6**
KSH				S	**S**	**05 20 10.8**	**+1.6**
KSH				pmax	pmax		
	comp=Z,90nm,5.1s						
KSH				LR	LR		
	comp=Z,870nm,14.7s						
KSH				LR	LR		
	comp=Z,570nm,16.6s						
KSH				LR	LR		
	comp=Z,320nm,13.6s						
TKM2	**Tokmak 2**	**44.59**	**304**	*e*P	**P**	**05 13 38.2**	**-0.6**
TKM2				pmax	pmax		
	comp=Z,11nm,0.8s						
TKM2	**Tokmak 2**	**44.59**	**304**	*e*P	**P**	**05 13 38.2**	**-0.6**
	comp=Z,11nm,0.8s						
AAK	**Ala-Archa**	**45.39**	**303**	P	**P**	**05 13 43.3**	**-1.8**
	comp=Z,2.5nm,0.7s,baz=93,slow=2.8,SNR=6.3						
AAK	**Ala-Archa**	**45.39**	**303**	⇓*i*P	**P**	**05 13 43.8**	**-1.3**
AAK				pmax	pmax		
	comp=Z,12nm,1.1s						
AAK	**Ala-Archa**	**45.39**	**303**	*e*P	**P**	**05 13 43.9**	**-1.3**
	comp=Z,3.4nm,0.8s						
EKS2	**Erkin-Say**	**45.92**	**303**	*e*P	**P**	**05 13 48.5**	**-0.8**
EKS2				pmax	pmax		
	comp=Z,9.0nm,1.4s						
EKS2	**Erkin-Say**	**45.92**	**303**	*e*P	**P**	**05 13 48.5**	**-0.8**
	comp=Z,9.2nm,1.4s						
BILL	**Bilibino**	**46.06**	**19**	*e*P	**P**	**05 13 53.4**	**+3.6**
BILL				pmax	pmax		
	comp=Z,18nm,3.4s						
SFK	**Sufi-Kurgan**	**46.18**	**300**	P	**P**	**05 13 51.4**	**0.0**
SFK				pmax	pmax		
	comp=Z,5.0nm,1.2s						
MNAS	**Manas**	**46.86**	**303**	P	**P**	**05 13 56.4**	**-0.3**
MNAS				pmax	pmax		
	comp=Z,5.0nm,1.1s						
OTUK	**Ortayu**	**47.17**	**311**	P	**P**	**05 13 57.5**	**-1.4**
OTUK				pmax	pmax		
	comp=Z,9.0nm,1.2s						
NRIK	**Noril'sk**	**47.56**	**342**	P	**P**	**05 14 01.2**	**-0.3**
	comp=Z,1.4nm,0.4s,baz=150,slow=6.3,SNR=3.2						
NRIK				LR	LR	05 36 12.8	
	comp=Z,286nm,18.2s,baz=130,slow=39						
WRA	**Warramunga Arr**	**48.02**	**172**	P	**P**	**05 14 05.5**	**-0.2**
	comp=Z,4.9nm,0.8s,baz=351,slow=8.3,SNR=22						
WB2	**Warramunga Ar**	**48.02**	**172**	*e*P	**P**	**05 14 06.0**	**+0.3**
	comp=Z,12nm,1.0s						
HNR	**Honiara**	**48.30**	**136**	LR	LR	05 33 46.5	
	comp=Z,76nm,18.9s,baz=347,slow=35						
KKAR	**Karatay Array**	**48.32**	**304**	*e*P	**P**	**05 14 07.0**	**-0.8**
KKAR	**Karatay Array**	**48.32**	**304**	*e*P	**P**	**05 14 07.0**	**-0.8**
BVAR	**Borovoye Array**	**48.90**	**317**	P	**P**	**05 14 11.4**	**-0.8**
	comp=Z,3.4nm,0.7s,baz=91,slow=7.4,SNR=14						
BRVK	**Borovoye**	**48.97**	**317**	*e*P	**P**	**05 14 11.7**	**-1.0**
BRVK				pmax	pmax		
	comp=Z,20nm,1.1s						
BRVK	**Borovoye**	**48.97**	**317**	*e*P	**P**	**05 14 11.7**	**-1.0**
	comp=Z,20nm,1.1s						
ZRNK	**Zerenda**	**49.73**	**317**	*e*P	**P**	**05 14 17.3**	**-1.1**
ZRNK				pmax	pmax		
	comp=Z,21nm,1.2s						
ZRNK	**Zerenda**	**49.73**	**317**	*e*P	**P**	**05 14 17.3**	**-1.1**
	comp=Z,21nm,1.2s						
KBL	**Kabul**	**50.29**	**293**	*e*P	**P**	**05 14 23.4**	**+0.1**
KBL				pmax	pmax		
	comp=Z,18nm,1.0s						
KBL	**Kabul**	**50.29**	**293**	*e*P	**P**	**05 14

	comp=Z,18nm,1.0s								
ASAR	**Alice Springs**	**51.65**	**173**		P		**P**	**05 14 33.5**	**+0.4**
	comp=Z,2.5nm,1.0s,baz=354,slow=6.7,SNR=15								
ASAR					LR		LR	05 35 10.4	
	comp=Z,126nm,21.7s,baz=294,slow=34								
ASAR	**Alice Springs**	**51.65**	**173**		P		**P**	**05 14 33.6**	**+0.4**
ASAR					pmax		pmax		
	comp=Z,2.0nm,0.9s								
AS01	**Alice Springs**	**51.65**	**173**	*eP*			**P**	**05 14 33.4**	**+0.2**
ABKAR	**Akbulak array**	**55.38**	**312**	*eP*			**P**	**05 14 58.6**	**-1.7**
ARU	**Arti**	**55.96**	**321**	P			**P**	**05 15 02.3**	**-2.0**
	comp=Z,2.5nm,0.3s,baz=84,slow=12,SNR=5.6								
ARU	**Arti**	**55.96**	**321**	*c iP*			**P**	**05 15 03.0**	**-1.4**
ARU								05 16 01.6	
ARU								05 17 07.0	
ARU					S		**S**	**05 22 50.0**	**-1.0**
ARU					SS		**SS**	**05 26 34.3**	**-2.4**
ARU					pmax		pmax		
	comp=Z,15nm,2.5s								
ARU					MLR		MLR		
	comp=Z,301nm,15.0s								
ARU	**Arti**	**55.96**	**321**	*eP*			**P**	**05 15 02.7**	**-1.7**
	comp=Z,14nm,1.1s								
GEYT	**Alibeck**	**58.32**	**299**	P			**P**	**05 15 20.2**	**-1.3**
	comp=Z,3.1nm,0.3s,baz=57,slow=5.3,SNR=3.1								
RSO	**Redoubt South**	**60.80**	**34**	*eP*			**P**	**05 15 42.2**	**+3.8**
CAST	**Castle Rocks**	**60.85**	**30**	*eP*			**P**	**05 15 40.4**	**+1.9**
	comp=Z,4.3nm,1.0s								
STKA	**Stephens Creek**	**60.89**	**167**	P			**P**	**05 15 38.8**	**-0.3**
	comp=Z,1.5nm,0.6s,baz=339,slow=13,SNR=5.0								
BPAW	**Bear Paw Mtn.**	**61.28**	**30**	*eP*			**P**	**05 15 39.0**	**-2.4**
	comp=Z,0.9nm,1.1s								
MLY	**Manley**	**61.30**	**29**	*eP*			P	05 15 47.4	+5.9
	comp=Z,26nm,2.0s								
MCK	**McKinley**	**62.22**	**30**	*eP*			P	05 15 52.1	+4.4
MCK					pmax		pmax		
	comp=Z,5.0nm,0.9s								
MCK	**McKinley**	**62.22**	**30**	*eP*			P	05 15 52.1	+4.4
	comp=Z,5.2nm,0.9s								
RND	**Reindeer**	**62.30**	**30**	*eP*			**P**	**05 15 50.0**	**+1.7**
RND					pmax		pmax		
	comp=Z,11nm,0.9s								
RND	**Reindeer**	**62.30**	**30**	*eP*			**P**	**05 15 50.0**	**+1.7**
	comp=Z,11nm,0.9s								
MDM	**Murphy Dome**	**62.37**	**29**	*eP*			**P**	**05 15 51.1**	**+2.4**
	comp=Z,12nm,1.0s								
CCB	**Clear Creek Bu**	**62.59**	**29**	*eP*			**P**	**05 15 52.6**	**+2.5**
	comp=Z,5.0nm,1.3s								
ILAR	**Eielson Array**	**62.97**	**29**	P			**P**	**05 15 50.0**	**-2.7**
	comp=Z,0.3nm,0.7s,baz=256,slow=3.6,SNR=3.5								
ILAR					LR		LR	05 45 41.3	
	comp=Z,137nm,18.3s,baz=296,slow=38								
ILAR	**Eielson Array**	**62.97**	**29**	P			**P**	**05 15 50.0**	**-2.7**
ILAR					MLR		MLR		
	comp=Z,137nm,18.3s								
HDA	**Harding Lake**	**62.99**	**29**	*eP*			**P**	**05 15 56.0**	**+3.1**
	comp=Z,42nm,1.4s								
DOT	**Dot Lake**	**64.38**	**30**	*eP*			**P**	**05 16 06.0**	**+4.0**
	comp=Z,8.8nm,0.9s								
MENT	**Mentasta**	**64.67**	**30**	*eP*			P	05 16 09.1	+5.1
	comp=Z,6.5nm,0.9s								
EGAK	**Eagle**	**65.38**	**28**	*eP*			P	05 16 13.8	+5.3
	comp=Z,3.7nm,1.0s								
KBZ	**Khabaz**	**67.97**	**309**	P			**P**	**05 16 23.0**	**-2.3**
	comp=Z,1.3nm,0.7s,baz=129,slow=6.5,SNR=4.0								
KBZ	**Khabaz**	**67.97**	**309**	P			**P**	**05 16 23.0**	**-2.3**
KBZ					pmax		pmax		
	comp=Z,1.0nm,0.7s								
KIV	**Kislovodsk**	**68.04**	**309**	*eP*			**P**	**05 16 26.6**	**+0.6**
KIV					pmax		pmax		
	comp=Z,5.0nm,0.9s								
ARCES	**ARCESS Array B**	**68.34**	**338**	LR			LR	05 52 23.3	
	comp=Z,246nm,18.5s,baz=62,slow=41								
OBN	**Obninsk**	**68.38**	**322**	*eP*			**P**	**05 16 26.9**	**-0.8**
OBN					pmax		pmax		
	comp=Z,4.0nm,0.9s								
FINES	**FINESS Array B**	**71.29**	**330**	LR			LR	05 51 42.8	
	comp=Z,288nm,18.4s,baz=50,slow=39								
AKASG	**Malin Array Be**	**74.13**	**319**	P			**P**	**05 16 59.2**	**-3.4**
	comp=Z,0.3nm,0.4s,baz=59,slow=6.9,SNR=4.0								
AKASG					LR		LR	05 50 49.2	
	comp=Z,188nm,18.4s,baz=50,slow=37								
KIEV	**Kiev**	**74.14**	**319**	*eP*			**P**	**05 17 01.9**	**-0.7**
KIEV					pmax		pmax		
	comp=Z,2.0nm,1.1s								
BRTR	**Keskin Array B**	**75.87**	**308**	P			**P**	**05 17 10.8**	**-2.3**
	comp=Z,0.6nm,0.7s,baz=109,slow=6.6,SNR=2.8								
YKA	**Yellowknife Ar**	**77.00**	**25**	P			**P**	**05 17 17.1**	**-1.7**
	comp=Z,0.5nm,0.7s,baz=300,slow=5.4,SNR=12								
MMAI	**Mount Meron Ar**	**77.40**	**301**	LR			LR	05 56 19.0	
	comp=Z,65nm,18.7s,baz=100,slow=39								
NOA	**NORSAR Array B**	**77.70**	**334**	P			**P**	**05 17 21.8**	**-1.0**
	comp=Z,0.3nm,0.6s,baz=53,slow=6.7,SNR=2.3								
NOA	**NORSAR Array B**	**77.70**	**334**	P			**P**	**05 17 21.8**	**-1.0**
NOA					pmax		pmax		
	comp=Z,1.0nm,1.0s								
VRAC	**Vranov**	**81.91**	**322**	LR			LR	05 56 27.8	
	comp=Z,244nm,18.5s,baz=68,slow=37								
GERES	**GERESS Array B**	**83.74**	**323**	LR			LR	05 58 39.2	
	comp=Z,208nm,18.6s,baz=72,slow=38								
DAVOX	**Davos/Dischmat**	**87.04**	**323**	LR			LR	06 01 49.9	
	comp=Z,261nm,18.3s,baz=56,slow=39								
FFC	**Flin Flon**	**87.09**	**26**	*i* P			**P**	**05 18 11.5**	**-0.4**
NVAR	**Mina Array Bea**	**89.39**	**46**	P			**P**	**05 18 22.2**	**-1.2**
	comp=Z,0.3nm,0.5s,baz=308,slow=4.4,SNR=1.9								
PDAR	**Pinedale Array**	**91.88**	**38**	P			**P**	**05 18 33.3**	**-1.7**
	comp=Z,0.2nm,0.5s,baz=296,slow=33,SNR=3.2								
SCHQ	**Schefferville**	**96.54**	**9**	LR			LR	06 06 33.2	
	comp=Z,79nm,18.5s,baz=14,slow=38								
BNM	**Barren Site**	**99.38**	**43**	*eP*			**Pdif**	**05 19 16.9**	**+7.6**

JMA 19 05:14:58.9±0.1,**38°29'N**×**141°82'E**,**h46**km±1km,**M2.3, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**0.41**	**294**	P	Pn	05 15 08.8	0.0
JIO				S	Sn	05 15 15.7	-0.1
OFUJ	**Ofunato**	**0.80**	**352**	S	Sn	05 15 24.0	-0.6
JMK	**Ichinoseki**	**0.81**	**325**	P	Pn	05 15 14.2	+0.2
JMK				S	Sn	05 15 25.2	+0.3
JOU	**Okura**	**0.91**	**275**	P	Pn	05 15 15.7	+0.3
JOU				S	Sn	05 15 27.8	+0.4
JMM	**Marumori**	**0.91**	**243**	P	Pn	05 15 15.0	-0.4
JMM				S	Sn	05 15 26.3	-1.1
MIYJ	**Miyakonagasawa**	**1.28**	**360**	P	Pn	05 15 20.6	+0.2
MIYJ				S	Sn	05 15 36.0	-0.5

*IDC **19** 05:15:26.8±0.8,37°.15N×143°.73E,h0km,mb3.9/13, mb1 4.1/16,mb1mx3.9/53,mbtmp3.9/16,ML3.7/3,MS3.2/2, Ms1 3.2/2,ms1mx2.8/45, Error ellipse: s-maj=21.8km s-min=17.9km az=108.0*

*ISCJB **19** 05:15:30.4±0.5,37°.25N±0°.04×143°.57E±0°.05,h33km, mb3.9/15,MS3.6/1, Error ellipse: s-maj=6.6km s-min=5.3km az=38.6*

*NEIC **19** 05:15:30.7±2.6,37°.23N×143°.67E,h23km±19km,mb4.1/2, Error ellipse: s-maj=12.0km s-min=7.5km az=96.0*

*JMA **19** 05:15:31.1±0.3,37°.23N×143°.47E,h44km,M4.2*

ISC 19 05:15:32.6±0.7,**37°29N**±0°.06×**143°60E**±0°.07,**h35**km,**n38,** σ1**9**31/37,**mb3.9**/15,**Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**2.13**	**304**	P	**Pn**	**05 16 04.7**	**-0.9**
JIO				*e*S	**Sn**	**05 16 29.2**	**-1.6**
OFUJ	**Ofunato**	**2.35**	**320**	P	**Pn**	**05 16 07.6**	**-1.1**
OFUJ				S	**Sn**	**05 16 33.9**	**-2.4**
JMK	**Ichinoseki**	**2.50**	**312**	*e*S	**Sn**	**05 16 38.7**	**-1.5**
JOU	**Okura**	**2.56**	**296**	S	**Sn**	**05 16 40.3**	**-1.3**
JFT	**Otama**	**2.61**	**276**	P	**Pn**	**05 16 12.0**	**-0.3**
JFT				S	**Sn**	**05 16 41.1**	**-1.7**
CHOJ	**Chosi**	**2.72**	**235**	P	**Pn**	**05 16 11.5**	**-2.3**
JOM	**Ohasama**	**2.83**	**321**	P	**Pn**	**05 16 15.5**	**+0.1**
JOM				S	**Sn**	**05 16 47.0**	**-1.3**
MJAR	**Matsushiro Arr**	**4.38**	**262**	Pn	**Pn**	**05 16 36.1**	**-0.6**
	3.5nm,0.3s,baz=86,slow=16,SNR=41						
MAJO	**Matsushiro**	**4.38**	**262**	*e*Pn	**Pn**	**05 16 36.6**	**-0.1**
MAT	**Matsushiro**	**4.38**	**262**	P	**Pn**	**05 16 36.8**	**+0.1**
MAT				S	**Sn**	**05 17 26.0**	**-0.6**
ASAJ	**Asahikawa**	**6.86**	**354**	Pn	**Pn**	**05 17 09.6**	**-1.1**
	1.9nm,0.3s,baz=216,slow=12,SNR=6.7						
ASAJ				Sn	**Sn**	**05 18 24.6**	**-2.9**
	baz=240,slow=20,SNR=3.4						
CBIJ	**Chichi jima**	**10.23**	**187**	*e*Pn	**Pn**	**05 17 56.8**	**-0.3**
USRK	**Ussuriysk Ar.**	**11.18**	**312**	Pn	**Pn**	**05 18 13.0**	**+3.1**
	0.2nm,0.3s,baz=113,slow=15,SNR=4.4						
KSRS	**Korea Array**	**12.48**	**276**	LR	LR	05 23 00.8	
	comp=Z,57nm,21.7s,baz=260,slow=36						
KLR	**Kul'dur**	**14.71**	**328**	Pn	**Pn**	**05 18 58.5**	**+0.6**
	0.2nm,0.3s,baz=134,slow=13,SNR=7.1						
SEY	**Seymchan**	**26.23**	**9**	P	**P**	**05 21 05.0**	**+1.0**
	1.2nm,0.3s,baz=178,slow=4.4,SNR=7.1						
H11N2	**WAKE ISLAND Hy**	**26.81**	**124**	T	T	05 48 58.9	
	baz=316,slow=75,SNR=4.8						
H11N1	**WAKE ISLAND Hy**	**26.82**	**124**	T	T	05 49 13.6	
	baz=316,slow=75,SNR=3.3						
H11N3	**WAKE ISLAND Hy**	**26.83**	**124**	T	T	05 49 11.4	
	baz=316,slow=75,SNR=3.3						
H11S1	**WAKE ISLAND Hy**	**27.57**	**126**	T	T	05 50 14.3	
	baz=310						
H11S3	**WAKE ISLAND Hy**	**27.57**	**126**	T	T	05 50 26.2	
	baz=310						
H11S2	**WAKE ISLAND Hy**	**27.58**	**126**	T	T	05 50 19.0	
	baz=310						
SONM	**Songino Array**	**29.10**	**303**	P	**P**	**05 21 31.0**	**+1.0**
	2.6nm,0.8s,baz=110,slow=9.4,SNR=7.7						
ZALV	**Zalesovo Beam**	**43.03**	**312**	P	**P**	**05 23 29.1**	**+0.5**
	0.6nm,0.3s,baz=94,slow=5.9,SNR=4.3						
ZALV				PcP	**PcP**	**05 25 18.6**	**+0.3**
	0.5nm,0.4s,baz=56,slow=3.6,SNR=3.8						
MKAR	**Makanchi Array**	**45.46**	**302**	P	**P**	**05 23 48.3**	**+0.1**
	1.0nm,0.7s,baz=87,slow=9.5,SNR=11						
ILAR	**Eielson Array**	**48.34**	**33**	P	**P**	**05 24 09.5**	**-0.9**
	0.5nm,0.7s,baz=269,slow=6.7,SNR=7.0						
INK	**Inuvik**	**53.36**	**27**	P	**P**	**05 24 49.6**	**+1.6**
	1.3nm,1.0s,baz=274,slow=6.3,SNR=3.9						
WRAB	**Tennant Creek**	**57.58**	**190**	P	**P**	**05 25 18.0**	**-0.9**
	4.4nm,1.0s						
WRA	**Warramunga Arr**	**57.59**	**190**	P	**P**	**05 25 17.4**	**-1.6**
	1.3nm,0.8s,baz=11,slow=7.5,SNR=7.7						
ABKAR	**Akbulak array**	**59.10**	**311**	*eP*	**P**	**05 25 29.6**	**+0.3**
	0.5nm,0.6s						
ASAR	**Alice Springs**	**61.31**	**190**	P	**P**	**05 25 43.3**	**-1.4**
	0.6nm,0.7s,baz=14,slow=7.9,SNR=5.3						
YKA	**Yellowknife Ar**	**62.70**	**31**	P	**P**	**05 25 52.9**	**-0.6**
	0.2nm,0.9s,baz=302,slow=6.8,SNR=3.9						
FINES	**FINESS Array B**	**69.39**	**333**	P	**P**	**05 26 36.6**	**+0.1**
	2.6nm,0.7s,baz=31,slow=12,SNR=7.5						
KBZ	**Khabaz**	**72.05**	**312**	P	**P**	**05 26 54.1**	**+1.2**
	2.2nm,0.9s,baz=22,slow=11,SNR=3.8						
NB2	**NORSAR Subarra**	**74.61**	**338**	P	**P**	**05 27 08.6**	**+0.7**
	comp=Z,0.7nm,0.6s,baz=39,slow=6.2						
NOA	**NORSAR Array B**	**74.61**	**338**	P	**P**	**05 27 08.8**	**+0.9**
	comp=Z,1.1nm,0.7s,baz=39,slow=6.0,SNR=6.0						
ULM	**Lac du Bonnet**	**78.32**	**34**	LR	LR	06 09 52.8	
	comp=Z,28nm,18.3s,baz=340,slow=42						
TXAR	**Lajitas Array**	**88.57**	**54**	P	**P**	**05 28 22.1**	**-0.1**
	comp=Z,0.4nm,0.7s,baz=336,slow=2.7,SNR=5.3						

*IDC **19** 05:15:56.5±1.5,8°.90S×118°.14E,h0km,mb3.6/3, mb1 3.8/6,mb1mx3.5/47,mbtmp3.7/6,ML3.5/2,MS4.1/1, Ms1 4.1/1,ms1mx2.7/27, Error ellipse: s-maj=42.7km s-min=22.1km az=56.0*

*ISCJB **19** 05:16:10.8±0.6,8°.83S±0°.06×119°.03E±0°.04,h102km, mb3.8/2, Error ellipse: s-maj=8.2km s-min=6.1km az=169.3*

*DJA **19** 05:16:10.7±0.7,9°S±4°×11°9E±°,h123km±8km, M4.0/3, mb4.2/1,MLv3.9/3*

ISC 19 05:16:10.3±0.9,**8°79S**±0°.06×**119°01E**±0°.04,**h102**km,**n14,** σ2**°54**/17,**Flores region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PLAI	**Plampang**	**1.22**	**268**	P	**Pn**	**05 16 35.6**	**+2.2**
PLAI				S	**Sn**	**05 16 54.9**	**+4.1**
WSI	**Waingapu**	**1.54**	**124**	P	**Pn**	**05 16 39.0**	**+1.8**
WSI				S	**Sn**	**05 17 01.0**	**+3.4**
TWSI	**Taliwang, Sumb**	**2.10**	**271**	P	**Pn**	**05 16 46.5**	**+2.2**
TWSI				S	**Sn**	**05 17 12.8**	**+2.5**
BSSI	**Bau Bau, Buton**	**3.02**	**29**	P	**Pn**	**05 16 58.0**	**+1.6**
BSSI				S	**Sn**	**05 17 35.4**	**+3.5**
MMRI	**Maumere**	**3.20**	**87**	P	**Pn**	**05 17 00.5**	**+1.7**
KAPI	**Kappang**	**3.83**	**11**	Pn	Pn	05 17 02.2	-5.0
	2.2nm,0.3s,baz=194,slow=16,SNR=3.5						
KAPI				Sn	**Sn**	**05 17 52.4**	**+1.1**
	baz=276,slow=23,SNR=7.2						
BATI	**Baumata**	**4.80**	**107**	Pn	**Pn**	**05 17 21.0**	**+0.5**
	baz=107,slow=20						
JAGI	**Jajag, Banyuwa**	**4.81**	**273**	P	**Pn**	**05 17 20.4**	**-0.2**
GMJI	**Gumukmas**	**5.53**	**275**	P	**Pn**	**05 17 29.8**	**-0.5**
FITZ	**Fitzroy Crossi**	**11.27**	**146**	Pn	**Pn**	**05 18 45.9**	**-2.5**
	0.3nm,0.3s,baz=322,slow=17,SNR=1.9						
FITZ				Sn	Sn	05 20 43.6	-8.9
	0.4nm,0.3s,baz=181,slow=18,SNR=1.8						
ASAR	**Alice Springs**	**20.54**	**138**	P	**P**	**05 20 42.0**	**+1.2**
	0.5nm,0.7s,baz=318,slow=12,SNR=4.6						
JCJ	**Chichijima**	**42.16**	**32**	LR	LR	05 41 32.4	
	comp=Z,270nm,21.9s,baz=276,slow=36						
MKAR	**Makanchi Array**	**64.28**	**333**	P	**P**	**05 26 32.5**	**-2.3**
	0.7nm,0.6s,baz=147,slow=7.2,SNR=5.5						
ZALV	**Zalesovo Beam**	**66.85**	**339**	P	**P**	**05 27 00.5**	**-3.2**
	0.7nm,0.4s,baz=133,slow=4.0,SNR=4.0						

*ISCJB **19** 05:17:38.3±0.4,49°.70N±0°.02×17°.15E±0°.03,h7km±4km, Error ellipse: s-maj=4.2km s-min=3.0km az=166.8*

*VIE **19** 05:17:38.5±0.6,49°.72N×17°.19E,h6km,mb2.0/3,ml2.6/4, Error ellipse: s-maj=9.6km s-min=1.8km az=146.0*

*IPEC **19** 05:17:39.2±0.0,49°.69N×17°.29E,h13km,ML2.0/9, Error ellipse: s-maj=0.1km s-min=0.1km az=11.0*

*CSEM **19** 05:17:39.0±0.1,49°.68N×17°.25E,h8km,ML2.8/6, Error ellipse: s-maj=3.9km s-min=2.6km az=123.0*

ISC 19 05:17:39.1±0.8,**49°68N**±0°.03×**17°27E**±0°.02,**h13**km±6km, **n30,** σ0**°90**/53,**6C,Czech and Slovak Republics**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MUTC	**Mutkov**	**0.12**	**4**	Pg	**Pg**	**05 17 42.5**	**0.0**
MUTC				Sg	**Sg**	**05 17 44.7**	**-0.1**
MORC	**Moravsky Berou**	**0.20**	**60**	*e*P	**Pg**	**05 17 43.6**	**-0.1**
MORC				pmax	pmax		
	comp=Z,1μm,0.4s						
MORC	**Moravsky Berou**	**0.20**	**60**	Pg	**Pg**	**05 17 43.6**	**-0.1**
MORC				Sg	**Sg**	**05 17 46.6**	**-0.2**
	comp=Z,227nm,0.1s						
MORC	**Moravsky Berou**	**0.20**	**60**	*e*P	**Pg**	**05 17 43.6**	**-0.1**
	comp=Z,1μm,0.4s						
ANAC	**Anensky vrch**	**0.41**	**10**	Pg	**Pg**	**05 17 46.9**	**-0.3**
ANAC				Sg	**Sg**	**05 17 52.2**	**-0.5**
	comp=Z,49nm,0.1s						
VRAC	**Vranov**	**0.57**	**230**	Pg	**Pg**	**05 17 50.2**	**-0.1**
VRAC				Sg	**Sg**	**05 17 57.7**	**-0.2**
	comp=Z,54nm,0.1s						
OKC	**Ostrava-Krasne**	**0.59**	**74**	*e*PG	**Pg**	**05 17 50.3**	**-0.3**
OKC				*e*SG	**Sg**	**05 17 57.8**	**-0.7**
	comp=Z,21nm,0.2s						
KRUC	**Moravsky**	**0.84**	**223**	Pg	**Pg**	**05 17 54.7**	**-0.6**
KRUC				Sg	**Sg**	**05 18 05.6**	**-0.7**
	comp=Z,44nm,0.2s						
DPC	**Dobruska-Polom**	**0.91**	**318**	*e*PG	**Pg**	**05 17 55.9**	**-0.8**
DPC				*e*SG	**Sg**	**05 18 07.8**	**-0.8**
	comp=Z,14nm,0.2s						
UPC	**Upice**	**1.16**	**316**	*e*PG	**Pb**	**05 18 00.5**	**-0.5**
UPC				*e*SG	**Sg**	**05 18 16.4**	**-0.2**
	comp=Z,20nm,0.3s						
TREC	**Trest**	**1.22**	**253**	*e*PG	**Pn**	**05 18 01.7**	**-0.2**
TREC				*e*SG	**Sb**	**05 18 17.3**	**-0.4**
	comp=Z,20nm,0.1s						
KSP	**Ksiaz**	**1.33**	**332**	*e*Pn	**Pn**	**05 18 03.1**	**-0.2**
KSP				*e*Pg	**Pb**	**05 18 03.8**	**0.0**
KSP				*e*Sg	**Sg**	**05 18 21.6**	**-0.2**
KSP	**Ksiaz**	**1.33**	**332**	*e*Pn	**Pn**	**05 18 03.1**	**-0.2**
KSP	**Ksiaz**	**1.33**	**332**	*e*Pg	**Pb**	**05 18 03.8**	**0.0**
KSP				*e*Sg	**Sg**	**05 18 21.6**	**-0.2**
LANS	**Liptovska Anna**	**1.53**	**109**	*e*Pn	**Pb**	**05 18 07.3**	**0.0**
LANS				*e*Sn	**Sg**	**05 18 28.4**	**+0.1**
LANS	**Liptovska Anna**	**1.53**	**109**	*e*PN	**Pb**	**05 18 07.3**	**0.0**
LANS				*e*SN	**Sg**	**05 18 28.4**	**+0.1**
VYHS	**Vyhne**	**1.57**	**138**	*e*Sn	**Sn**	**05 18 26.0**	**-0.7**
VYHS	**Vyhne**	**1.57**	**138**	*e*SN	**Sn**	**05 18 26.0**	**-0.7**
VYHS				*e*LG	Lg	05 18 31.9	
GOPC	**GO Pecny, Ondr**	**1.63**	**279**	*e*PG	**Pb**	**05 18 09.0**	**+0.1**
GOPC				*e*SG	**Sn**	**05 18 27.6**	**-0.6**
	comp=Z,17nm,0.2s						
PRU	**Pruhonice**	**1.79**	**281**	*e*PG	**Pb**	**05 18 12.0**	**+0.3**
PRU				*e*SG	**Sb**	**05 18 33.6**	**-0.5**
	comp=Z,11nm,0.2s						
PVCC	**Panska Ves**	**1.94**	**297**	*e*PG	**Pb**	**05 18 14.2**	**0.0**
PVCC				*e*SG	**Sb**	**05 18 39.1**	**+0.9**
	comp=Z,20nm,0.2s						
CONA	**Conrad Observa**	**1.98**	**209**	*i* Pn	**Pn**	**05 18 12.4**	**+0.1**
	comp=Z,0.5nm,0.1s						
CONA				*e*Sn	**Sb**	**05 18 39.3**	**-0.3**
	comp=Z,1.8nm,0.2s						
CONA	**Conrad Observa**	**1.98**	**209**	Pn	**Pn**	**05 18 12.4**	**+0.1**
	comp=Z,0.5nm,0.1s						
CONA				Sn	**Sb**	**05 18 39.3**	**-0.3**
	comp=Z,1.8nm,0.2s						
BRG	**Berggiesshubel**	**2.45**	**301**	SG	**Sb**	**05 18 55.1**	**+2.2**
	comp=Z,5.0nm,0.2s						
KHC	**Kasperske Hory**	**2.47**	**259**	*e*PG	**Pg**	**05 18 25.1**	**-1.3**
KHC				*e*SN	**Sn**	**05 18 47.1**	**-2.0**
KHC				*e*SG	**Sb**	**05 18 54.4**	**+0.7**
	comp=Z,7.0nm,0.4s						
STHS	**Stebnicka Huta**	**2.60**	**94**	*e*Sg	**Sg**	**05 19 02.1**	**-0.5**
STHS	**Stebnicka Huta**	**2.60**	**94**	*e*SG	**Sg**	**05 19 02.1**	**-0.5**
STHS				*e*LG	Lg	05 19 04.8	
MOA	**Molln**	**2.70**	**229**	*e*Pn	**Pn**	**05 18 23.0**	**+0.9**
	comp=Z,0.2nm,0.1s						
MOA				*e*Sn	**Sn**	**05 18 57.1**	**+2.4**
	comp=Z,2.3nm,0.1s						
MOA	**Molln**	**2.70**	**229**	Pn	**Pn**	**05 18 23.0**	**+0.9**
	comp=Z,0.2nm,0.1s						
MOA				Sn	**Sn**	**05 18 57.1**	**+2.4**
	comp=Z,2.3nm,0.1s						
NKC	**Novy Kostel**	**3.16**	**282**	*e*SG	**Sb**	**05 19 16.4**	**+2.9**
	comp=Z,4.8nm,0.3s						

*ISCJB **19** 05:19:08.3±0.4,33°.16S±0°.08×78°.09E±0°.09,h10km, mb4.3/27,MS3.9/8, Error ellipse: s-maj=11.6km s-min=10.5km az=150.3*

*IDC **19** 05:19:08.5±0.5,33°.14S×78°.05E,h0km,mb4.1/21, mb1 4.2/21,mb1mx4.2/46,mbtmp4.1/21,MS3.9/8, Ms1 3.9/8,ms1mx3.7/26, Error ellipse: s-maj=18.3km s-min=14.3km az=0.0*

*NEIC **19** 05:19:10.1±0.5,33°.17S×78°.03E,h10km,mb4.7/6, Error ellipse: s-maj=8.5km s-min=7.5km az=163.0*

ISC 19 05:19:10.1±0.5,**33°13S**±0°.10×**78°1E**±0°.1,**h10**km,**n47,** σ0**°80**/42,**mb4.3**/27,**MS3.9**/8,**1D, Mid-Indian Ridge**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
H08S2	**Diego Garcia H**	**25.87**	**347**	T	T	05 51 35.9	
	baz=169,slow=76,SNR=731						
H08S1	**Diego Garcia H**	**25.88**	**347**	T	T	05 51 35.7	
	baz=169,slow=76,SNR=599						
H08S3	**Diego Garcia H**	**25.89**	**347**	T	T	05 51 37.3	
	baz=169,slow=76,SNR=823						
H01W2	**Cape Leeuwin H**	**29.86**	**104**	T	T	05 56 29.7	
	baz=263,slow=74,SNR=43						
H01W3	**Cape Leeuwin H**	**29.86**	**104**	T	T	05 56 30.0	
	baz=263,slow=74,SNR=34						
H01W1	**Cape Leeuwin H**	**29.88**	**104**	T	T	05 56 31.0	
	baz=263,slow=74,SNR=36						
MAW	**Mawson**	**35.64**	**190**	P	**P**	**05 26 07.3**	**-0.5**
	2.5nm,0.6s,baz=21,slow=17,SNR=2.6						
MAW				LR	LR	05 37 45.8	
	comp=Z,268nm,19.0s,baz=47,slow=31						
LEM	**Lembang**	**37.90**	**53**	LR	LR	05 38 07.8	
	comp=Z,163nm,19.0s,baz=193,slow=30						
PSI	**Prapat**	**40.82**	**33**	P	**P**	**05 26 52.2**	**+0.1**
	1.8nm,0.6s,baz=143,slow=20,SNR=2.5						
PSI				LR	LR	05 40 00.1	
	comp=Z,139nm,21.9s,baz=218,slow=31						
SYO	**Syowa Base**	**41.92**	**200**	*e*P	**P**	**05 27 02.9**	**+2.5**
BOSA	**Boshof**	**45.16**	**261**	P	**P**	**05 27 27.4**	**+0.2**
	2.0nm,0.8s,baz=121,slow=17,SNR=2.7						
BOSA				LR	LR	05 42 10.3	
	comp=Z,214nm,21.2s,baz=105,slow=31						
MATP	**Matopo**	**45.64**	**273**	P	**P**	**05 27 31.1**	**0.0**
	0.7nm,0.4s,baz=104,slow=17,SNR=2.1						
LBTB	**Lobatse**	**46.16**	**266**	P	**P**	**05 27 34.5**	**-0.8**
	1.9nm,0.6s,baz=118,slow=9.6,SNR=4.1						
SUR	**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MXZ	**Matakaoa Point**	**3.57**	**218**	PN	**Pn**	**05 22 37.5**	**+1.1**
MXZ				SN	**Sn**	**05 23 16.9**	**-0.4**
WMGZ	**Waiomatatini S**	**3.72**	**215**	PN	**Pn**	**05 22 38.4**	**0.0**
WMGZ				SN	**Sn**	**05 23 21.7**	**+0.7**
PKGZ	**Pakihiroa**	**3.94**	**217**	*e*Pn	**Pn**	**05 22 42.4**	**+0.9**
PKGZ				SN	**Sn**	**05 23 27.0**	**+0.5**
HAZ	**Te Kaha**	**3.99**	**221**	PN	**Pn**	**05 22 43.1**	**+0.9**
TWGZ	**Tauwhareparae**	**4.21**	**216**	PN	**Pn**	**05 22 45.7**	**+0.5**
TWGZ				SN	**Sn**	**05 23 33.0**	**-0.2**
MWZ	**Matawai**	**4.56**	**218**	*e*Pn	**Pn**	**05 22 50.0**	**0.0**
MWZ				*e*SN	**Sn**	**05 23 40.8**	**-0.9**
URZ	**Urewera**	**4.72**	**222**	Pn	**Pn**	**05 22 52.4**	**+0.2**
	3.7nm,0.3s,baz=316,slow=0.8,SNR=16						
URZ				Sn	**Sn**	**05 23 45.1**	**-0.6**
	5.2nm,0.3s,baz=116,slow=23,SNR=7.7						
URZ	**Urewera**	**4.72**	**222**	PN	**Pn**	**05 22 52.2**	**0.0**
URZ				SN	**Sn**	**05 23 44.0**	**-1.7**
RIGZ	**Rimuhau**	**4.74**	**213**	PN	**Pn**	**05 22 52.2**	**-0.3**
RIGZ				SN	**Sn**	**05 23 46.0**	**-0.1**
NMHZ	**Naumai**	**5.50**	**217**	PN	**Pn**	**05 23 03.6**	**+0.7**
NMHZ				SN	**Sn**	**05 24 04.8**	**-0.2**
KAHZ	**Kahuranaki**	**6.02**	**213**	PN	**Pn**	**05 23 10.0**	**-0.1**
ASAR	**Alice Springs**	**42.31**	**272**	P	**P**	**05 29 33.0**	**-0.4**
	0.9nm,0.6s,baz=116,slow=7.9,SNR=9.4						
WRA	**Warramunga Arr**	**43.70**	**277**	P	**P**	**05 29 45.2**	**+0.7**
	1.4nm,0.7s,baz=119,slow=7.5,SNR=11						
FINES	**FINESS Array B**	**148.94**	**337**	PKPbc	**PKPab**	**05 41 29.4**	**-0.7**
	0.5nm,0.5s,baz=41,slow=10,SNR=4.2						

GCMT 19 05:23:20.0±0.4, 54.12S×133.17W, h27km±2km, MW5.0/66, **Moment Tensor Solution. s22,c25; s66,c86; Duration: 0 Moment tensor: Scale** 10^{16}**Nm;** M_{rr}0.14±.22; $M_{\theta\theta}$2.52±.19; $M_{\phi\phi}$-2.38±.18; $M_{r\theta}$1.96±.34; $M_{\theta\phi}$2.06±.13; $M_{r\phi}$2.56±.38; **Best double couple:** M_o4.50000×10^{16} **NP1:**ϕ_s27.00000°,δ90.00000°, λ135.00000°. **NP2:**ϕ_s118.00000°,δ45.00000°,λ1.00000°. **Principal axes:** T 4.8660, Plg30.0000°, Azm333.0000°; N -0.7330, Plg45.0000°, Azm207.0000°; P -4.1340, Plg30.0000°, Azm82.0000°; **nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s. Pacific-Antarctic Ridge**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
RKT	**Rikitea**	**30.99**	**357**	*e*T	T	06 01 50.0	
	7.0nm,0.4s						
TVO	**Taravao**	**38.34**	**335**	*e*T	T	06 10 49.8	
	1.1nm,0.3s						
PPT2	**Papeete2**	**38.61**	**334**	*e*S	S	05 36 14.6	-21
	66nm,24.8s						
PPT2				*e*LR	LR	05 40 51.9	
	500nm,26.0s						
TAOE	**Nuku Hiva Isla**	**45.49**	**350**	*e*LR	LR	05 44 24.3	
	284nm,25.7s						

IDC ***19*** *05:30:31.6±0.4, 18.93N×121.30E, h0km, mb4.4/28, mb1 4.5/30, mb1mx4.4/44, mbtmp4.4/30, ML4.0/2, MS4.0/12, Ms1 4.0/12, ms1mx3.8/27 Error ellipse: s-maj=15.6km s-min=10.6km az=85.0*

MAN ***19*** *05:30:32, 19.41N×121.06E, h19km, mb5.8, ML4.9, MS5.3*

MAN INTENSITY V - CALAYAN CAGAYAN; INTENSITY III - CLAVERIA CAGAYAN; INTENSITY II - PASUQUIN SARRAT BATAC ILOCOS NORTE; LAOAG CITY.

BKK ***19*** *05:30:33.6±0.9, 19.14N±0.6×121.24E±1.0, h10km, M4.4/21, mB5.0/8, mb4.6/21, Mw(mB)4.4/8*

ISCJB ***19*** *05:30:36.3±0.2, 19.14N±0.0×121.24E±0.03, h30km, mb4.6/107, MS4.1/18, Error ellipse: s-maj=4.1km s-min=2.3km az=7.2*

GCMT ***19*** *05:30:37.7±0.3, 19.06N×120.95E, h46km±1km, MW5.0/63, Moment Tensor Solution. s39,c50; s63,c105; Duration: 0 Moment tensor: Scale* 10^{16}*Nm;* M_{rr}*3.06±.23; Mθθ-0.24±.14; Mφφ-2.82±.16; Mrθ-1.54±.10; Mθφ-1.86±.08; Mrφ-0.98±.14; Best double couple: Mo3.91300×*10^{16} *NP1:*ϕ_s*223.00000°,δ60.00000°,λ109.00000°. NP2:* ϕ_s*10.00000°,δ35.00000°,λ62.00000°. Principal axes: T 3.6760, Plg69.0000°, Azm173.0000°; N 0.4700, Plg16.0000°, Azm34.0000°; P -4.1500, Plg13.0000°, Azm300.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

NEIC ***19*** *05:30:37.7±0.6, 18.91N×121.32E, h40km±5km, mb4.8/53 Error ellipse: s-maj=5.7km s-min=3.8km az=106.0*

NEIC Felt [V PIVS] at Calayan, [III PIVS] at Claveria and [II PIVS] at Batac, Laoag, Pasuquin and Sarrat. Also felt at Pagudpud.

MOS ***19*** *05:30:38.1±1.0, 18.95N×121.37E, h62km, mb4.8/46, MS4.1/9, Error ellipse: s-maj=9.3km s-min=5.4km az=96.7*

BJI ***19*** *05:30:40.9, 19.40N×120.89E, h31km, mb4.5/51, mB4.9/39, ML4.7/4, Ms4.4/52, Ms7 4.3/44*

KLM ***19*** *05:30:49.0, 18.72N×121.37E, h156km, mb4.9, MS5.6*

ISC 19 05:30:37.6±0.4, **19.03N**±0.03×**121.19E**±0.04, **h32**km±3km, **h32km:pP-P, n285,** σ1**s89**/317, **mb4.7**/107, **MS4.1**/18, **15C-11D, Philippine Islands region**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PIP	**Pasuquin**	**0.89**	**218**	⇑*i*P	**Pn**	**05 30 53.5**	**-0.3**
PIP				*e*S	**Sn**	**05 31 06.3**	**+0.7**
SGCP	**Mt. Cagua**	**1.13**	**134**	*e*P	**Pb**	**05 30 58.2**	**-0.4**
SGCP				*e*S	**Sb**	**05 31 18.2**	**+5.3**
APYP	**Conner**	**1.17**	**177**	*e*P	**Pb**	**05 30 58.5**	**-0.6**
APYP				*e*S	**Sb**	**05 31 20.0**	**+6.1**
SIPP	**Brgy, Tapao**	**1.30**	**212**	⇑*e*P	**Pn**	**05 30 59.7**	**+0.2**
SIPP				*e*S	**Sb**	**05 31 19.5**	**+1.6**
ABRA	**Dolores**	**1.45**	**198**	*e*P	**Pb**	**05 31 02.5**	**-1.4**
ABRA				*e*S	**Sb**	**05 31 23.7**	**+1.7**
CVP	**Callao Caves**	**1.45**	**155**	⇓*i*P	**Pb**	**05 31 02.8**	**-1.2**
CVP				*i* S	**Sb**	**05 31 22.0**	**-0.1**
CAUP	**Cauayan**	**2.16**	**164**	*e*P	**Pb**	**05 31 15.3**	**-0.7**
CAUP				*e*S	**Sb**	**05 31 46.9**	**+4.4**
BCPH	**Baguio City Da**	**2.70**	**192**	⇑*i*P	**Pb**	**05 31 24.1**	**-1.3**
BCPH				*i* S	**Sb**	**05 31 59.7**	**+1.6**
BOLP	**Bolinao**	**2.90**	**205**	*e*P	**Pn**	**05 31 23.2**	**+1.6**
BALP	**Baler**	**3.29**	**174**	*e*P	**Pn**	**05 31 30.2**	**+3.2**
PCPH	**Palayan**	**3.45**	**181**	⇑*e*P	**Pn**	**05 31 32.1**	**+3.0**
PCPH				*e*S	**Sb**	**05 32 13.8**	**-5.7**
SCZP	**Santa Cruz**	**3.46**	**201**	*e*P	**Pb**	**05 31 33.5**	**-4.7**
TWG	**Pinlang**	**3.77**	**358**	*e*Pn	**Pn**	**05 31 33.3**	**-0.2**
TPUB	**Ta-pu**	**4.28**	**353**	*e*Pn	**Pn**	**05 31 40.5**	**0.0**
SSLB	**Suanglung**	**4.74**	**357**	*e*Pn	**Pn**	**05 31 48.0**	**+1.2**
TGY	**Tagaytay City**	**4.91**	**183**	Pn	**Pn**	**05 31 52.1**	**+2.9**
	53nm,0.3s,baz=332,slow=3.8,SNR=11						
TGY				Lg	Lg	05 33 06.0	
	83nm,0.3s,baz=90,slow=7.1,SNR=3.1						
TGY				LR	LR	05 34 05.6	
	comp=Z,3μm,21.0s,baz=332,slow=44						
NACB	**Ninganchiao**	**5.13**	**4**	*e*Pn	**Pn**	**05 31 53.0**	**+0.9**
GQP	**Guinayangan**	**5.24**	**167**	⇑*e*P	**Pn**	**05 31 56.1**	**+2.5**
GQP				*e*S	**Sn**	**05 32 58.3**	**+5.3**
YHNB	**Yeheng**	**5.61**	**2**	*e*Pn	**Pn**	**05 32 00.9**	**+2.0**
YOJ	**Yonaguni jima**	**5.66**	**17**	*e*P	**Pn**	**05 32 01.6**	**+2.1**
YOJ	**Yonaguni jima**	**5.66**	**17**	*e*Pn	**Pn**	**05 32 01.6**	**+2.1**
AUQP	**San Andres**	**5.85**	**166**	*e*P	**Pn**	**05 32 04.7**	**+2.5**
TATO	**Taipei**	**5.92**	**3**	*e*Pn	**Pn**	**05 32 05.4**	**+2.4**
QZH	**Quanzhou**	**6.36**	**338**	⇓Pn	Pn	05 32 04.0	-5.0
QZH				Sn	Sn	05 33 10.9	-10
QZH				smax	smax		
	comp=N,300nm,0.8s						
QZH				smax	smax		
	comp=E,550nm,0.9s						
MCO	**Taipa Grande**	**7.78**	**295**	P	**Pn**	**05 32 28.0**	**-0.6**
GZH	**Guangzhou**	**8.36**	**300**	P	**Pn**	**05 32 34.3**	**-2.3**
QIZ	**Qiongzhong**	**10.73**	**272**	P	**Pn**	**05 33 07.3**	**-1.8**
QIZ				S	**Sn**	**05 35 04.9**	**-3.3**
WHN	**Wuhan**	**13.03**	**333**	⇑P	**Pn**	**05 33 42.3**	**+1.8**
WHN				LR	LR		
	comp=N,1μm,12.1s						
WHN				LR	LR		
	comp=E,2μm,15.0s						
WHN				LR	LR		
	comp=Z,3μm,19.1s						
NJ2	**Nanjing**	**13.13**	**351**	*e*P	**Pn**	**05 33 43.9**	**+2.0**
NJ2				S	**Sn**	**05 36 12.3**	**+5.4**
NJ2				pmax	pmax		
	comp=Z,15nm,0.5s						
NJ2				LR	LR		
	comp=N,2μm,14.1s						
NJ2				LR	LR		
	comp=E,1μm,15.2s						
NJ2				LR	LR		
	comp=Z,1μm,15.7s						
KKM	**Kota Kinabalu**	**13.79**	**201**	Pn	**Pn**	**05 33 50.1**	**-0.9**
	18nm,0.9s						
SDKM	**Sandakan**	**13.87**	**197**	⇓P	**P**	**05 33 57.1**	**-2.8**
TSM	**Tawau**	**15.00**	**193**	⇑P	**P**	**05 34 10.6**	**-1.9**
GYA	**Guiyang**	**15.29**	**302**	P	**Pn**	**05 34 14.0**	**+2.7**
GYA				pP	pP	05 34 21.0	-3.3
GYA				PP	**sP**	**05 34 25.3**	**-3.1**
GYA				pmax	pmax		
	comp=Z,20nm,1.0s						
GYA				pmax	pmax		
	comp=Z,120nm,4.8s						
GYA				LR	LR		
	comp=N,540nm,11.8s						
GYA				LR	LR		
	comp=E,500nm,12.2s						
GYA				LR	LR		
	comp=Z,550nm,12.4s						
ENH	**Enshi**	**15.43**	**319**	*e*P	**Pn**	**05 34 14.1**	**+1.2**
	148nm,1.5s						
PANO	**Nakornpanom**	**15.87**	**266**	P	**P**	**05 34 24.9**	**+2.8**
	49nm,0.9s						
SKNT	**Sakolnakorn**	**16.50**	**266**	P	**P**	**05 34 30.4**	**+1.3**
	75nm,1.2s						
JNU	**Nakatsue**	**16.50**	**30**	Pn	**Pn**	**05 34 27.0**	**+0.4**
	0.3nm,0.3s,baz=187,slow=15,SNR=4.6						
JNU	**Nakatsue**	**16.50**	**30**	*e*Pn	**P**	**05 34 28.6**	**-0.5**
	65nm,1.0s						
KMI	**Kunming**	**18.13**	**293**	P	**P**	**05 34 48.8**	**+1.4**
KMI				pP	pP	05 34 56.3	+0.4
KMI				sP	sP	05 35 01.9	+1.9
KMI				pmax	pmax		
	comp=Z,25nm,1.8s						
KMI				pmax	pmax		
	comp=Z,350nm,5.4s						
KMI				LR	LR		
	comp=N,650nm,14.2s						
KMI				LR	LR		
	comp=E,900nm,15.1s						
KMI				LR	LR		
	comp=Z,1μm,15.9s						
MRSI	**Marisa**	**18.45**	**178**	P	**Pn**	**05 34 54.9**	**+3.9**
SBUM	**Sibu**	**18.67**	**209**	⇑P	**Pn**	**05 34 54.0**	**+0.4**
SBUM	**Sibu**	**18.67**	**209**	*e*P	**Pn**	**05 34 53.3**	**-0.3**
	44nm,0.8s						
KSAR	**Wonju Array Be**	**19.26**	**16**	P	**P**	**05 34 59.2**	**-0.1**
KSAR	**Wonju Array Be**	**19.26**	**16**	P	**P**	**05 34 59.2**	**-0.1**
KSRS	**Korea Array**	**19.28**	**16**	P	**P**	**05 34 59.2**	**-0.4**
	0.8nm,0.3s,baz=198,slow=11,SNR=11						
KS01	**Wonju Array Si**	**19.29**	**16**	*e*P	**P**	**05 34 59.6**	**-0.1**
KS01				*e*pP	**pP**	**05 35 08.8**	**+0.5**
PBKT	**Sadao Pong**	**19.41**	**266**	P	**Pn**	**05 35 04.4**	**+1.9**
	15nm,1.4s,1μm						
UTTA	**Uttaradit**	**19.62**	**270**	P	**Pn**	**05 35 07.3**	**+2.2**
	4.3nm,1.1s						
CRAI	**Chiangrai**	**19.64**	**277**	P	**Pn**	**05 35 07.5**	**+2.2**
	20nm,1.7s,490nm						
CD2	**Chengdu**	**19.71**	**310**	P	**P**	**05 35 04.8**	**+0.4**
CD2				sP	sP	05 35 17.1	0.0
CD2				PP	**PnPn**	**05 35 26.6**	**+6.5**
CD2				pmax	pmax		
	comp=Z,90nm,1.1s						
CD2				pmax	pmax		
	comp=Z,450nm,5.5s						
CD2				LR	LR		
	comp=N,1μm,14.3s						
CD2				LR	LR		
	comp=Z,950nm,18.4s						
APSI	**Ampana**	**19.82**	**179**	P	**Pn**	**05 35 08.3**	**+0.9**
LUWI	**Luwuk**	**20.01**	**175**	P	**Pn**	**05 35 12.6**	**+3.0**
	93nm,0.9s,2μm						
LUWI	**Luwuk**	**20.01**	**175**	*e*P	**P**	**05 35 06.6**	**-1.1**
	92nm,1.0s						
KSM	**Kuching**	**20.45**	**213**	⇑P	**P**	**05 35 13.5**	**+1.0**
KSM	**Kuching**	**20.45**	**213**	*e*P	**P**	**05 35 12.5**	**0.0**
	37nm,0.7s						
MTKI	**Muara Teweh, K**	**20.79**	**198**	P	Pn	05 35 22.8	+4.0
CMAI	**Chiengmai2**	**20.90**	**276**	P	Pn	05 35 23.6	+3.4
	25nm,1.2s,3μm						
CMMT	**Chiang Mai**	**21.04**	**273**	P	**P**	**05 35 20.5**	**+1.5**
	18nm,1.4s						
CHTO	**Chiang Mai**	**21.05**	**273**	P	**P**	**05 35 20.6**	**+1.6**
	82nm,1.4s						
CHTO	**Chiang Mai**	**21.05**	**273**	*e*P	**P**	**05 35 20.6**	**+1.6**
CHTO				pmax	pmax		
	comp=Z,38nm,1.4s						
CHTO	**Chiang Mai**	**21.05**	**273**	*e*P	**P**	**05 35 20.6**	**+1.6**
	comp=Z,38nm,1.4s						
CM01	**Chiang Mai Arr**	**21.06**	**272**	*e*P	**P**	**05 35 20.3**	**+1.1**
CMAR	**Chiang Mai Arr**	**21.07**	**272**	P	**P**	**05 35 19.9**	**+0.6**
	comp=Z,6.6nm,0.8s,baz=81,slow=8.9,SNR=24						
CMAR				PcP	**PcP**	**05 39 25.8**	**+0.5**
	comp=Z,2.9nm,0.6s,baz=80,slow=0.7,SNR=13						
CMAR				LR	LR	05 44 27.8	
	comp=Z,377nm,19.1s,baz=84,slow=40						
STKI	**Sintang**	**21.12**	**208**	P	**P**	**05 35 26.7**	**+6.9**
	comp=Z,33nm,0.9s,comp=Z,11μm						
BJT	**Baijiatuan**	**21.36**	**349**	*e*P	**P**	**05 35 22.0**	**-0.1**
BJT				pmax	pmax		
	comp=Z,34nm,0.8s						
BJT	**Baijiatuan**	**21.36**	**349**	*e*P	**P**	**05 35 22.0**	**-0.1**
	comp=Z,34nm,0.8s						
BJI	**Beijing**	**21.38**	**349**	P	**P**	**05 35 23.5**	**+1.2**
BJI				pP	**pP**	**05 35 31.5**	**+0.5**
BJI				sP	**sP**	**05 35 35.9**	**+0.8**
BJI				pmax	pmax		
	comp=Z,11nm,1.0s						
BJI				LR	LR		
	comp=Z,460nm,21.0s						
BJI				LR	LR		
	comp=Z,410nm,19.7s						
INU	**Inuyama**	**21.45**	**38**	*e*P	**P**	**05 35 24.9**	**+1.7**
	comp=Z,80nm,1.2s						
SANI	**Sanana**	**21.47**	**167**	P	**P**	**05 35 26.8**	**+3.2**
	comp=Z,37nm,0.8s						
PHET	**Kaeng Krachan**	**21.59**	**257**	P	**P**	**05 35 29.6**	**+4.7**
	comp=Z,7.6nm,1.0s,comp=Z,115nm						
JHJ	**Hachijo jima 2**	**21.76**	**46**	LR	LR	05 42 08.9	
	comp=Z,360nm,21.2s,baz=137,slow=32						
TTSI	**Tana Toraja**	**21.98**	**184**	P	P	05 35 35.7	+6.7
	comp=Z,23nm,1.0s						
MHMT	**Maesarieng**	**22.06**	**272**	P	**P**	**05 35 33.0**	**+3.1**
	comp=Z,14nm,1.2s,comp=Z,464nm						
KTGM	**Kuala Trenggan**	**22.26**	**235**	⇓P	**P**	**05 35 33.2**	**+1.2**
SNY	**Shenyang**	**22.81**	**5**	⇑P	**P**	**05 35 38.6**	**+0.9**
SNY				pmax	pmax		
	comp=Z,19nm,0.9s						
LZH	**Lanzhou**	**22.85**	**322**	*e*P	**P**	**05 35 39.9**	**+1.5**
LZH				pP	pP	05 35 49.1	+2.1
LZH				sP	sP	05 35 53.1	+2.0
LZH				PP	**PnPn**	**05 36 09.5**	**+6.2**
LZH				*e*S	**S**	**05 39 45.6**	**-0.3**
LZH				pmax	pmax		
	comp=Z,46nm,1.1s						
LZH				pmax	pmax		
	comp=Z,190nm,5.6s						
LZH				LR	LR		
	comp=Z,1μm,13.0s						
LZH				LR	LR		
	comp=Z,1μm,13.6s						
LZH				LR	LR		
	comp=Z,2μm,16.9s						
NLAI	**Namlea**	**22.88**	**165**	P	**P**	**05 35 42.5**	**+3.9**
	comp=Z,45nm,0.7s						
SPSI	**Sidrap Palu**	**22.89**	**184**	P	**P**	**05 35 40.1**	**+1.4**
	comp=Z,26nm,0.8s,comp=Z,426nm						
MAJO	**Matsushiro**	**22.98**	**37**	*e*P	**P**	**05 35 38.0**	**-1.5**
MAJO				pmax	pmax		
	comp=Z,47nm,1.2s						
MAT	**Matsushiro**	**22.98**	**37**	P	**P**	**05 35 40.3**	**+0.8**
MAT				S	**S**	**05 39 41.4**	**-6.4**
MJAR	**Matsushiro Arr**	**22.98**	**37**	P	**P**	**05 35 38.6**	**-0.9**
	comp=Z,3.3nm,0.7s,baz=232,slow=9.4,SNR=6.0						
MJAR				LR	LR	05 43 23.4	
	comp=Z,63nm,19.7s,baz=220,slow=34						
BBKI	**Banjar Baru**	**23.21**	**196**	P	**P**	**05 35 42.4**	**+0.5**
	comp=Z,101nm,1.1s,comp=Z,6μm						
SKLT	**Songkhla**	**23.21**	**242**	P	**P**	**05 35 43.4**	**+1.4**
	comp=Z,27nm,1.2s						
HHC	**Hu-ho-hao-te**	**23.26**	**341**	*e*P	**P**	**05 35 44.0**	**+1.6**
HHC				pP	pP	05 35 53.4	+2.2
HHC				S	**S**	**05 39 53.8**	**+1.3**
HHC				sS	sS	05 40 05.5	-2.3
HHC				pmax	pmax		
	comp=Z,24nm,1.1s						
HHC				pmax	pmax		
	comp=Z,160nm,6.0s						
HHC				LR	LR		
	comp=Z,2μm,14.7s						
HHC				LR	LR		
	comp=Z,2μm,14.5s						
HHC				LR	LR		
	comp=Z,2μm,15.2s						
GUMO	**Guam**	**23.35**	**100**	LR	LR	05 42 47.3	
	comp=Z,465nm,22.0s,baz=266,slow=32						
TRTT	**Trang**	**23.65**	**245**	P	**P**	**05 35 47.0**	**+0.7**
	comp=Z,43nm,1.0s						
KAPI	**Kappang**	**23.94**	**184**	P	**P**	**05 35 47.3**	**-1.6**
	comp=Z,8.3nm,0.7s,baz=335,slow=12,SNR=4.6						
MYKOM	**Kota Tinggi**	**24.13**	**227**	⇓P	**P**	**05 35 50.4**	**-0.4**
MYKOM	**Kota Tinggi**	**24.13**	**227**	*e*P	**P**	**05 35 50.3**	**-0.4**
	comp=Z,15nm,0.9s						
KULM	**Kulim**	**24.24**	**238**	⇓P	**P**	**05 35 51.8**	**-0.1**
KULM	**Kulim**	**24.24**	**238**	*e*P	**P**	**05 35 51.7**	**-0.1**
	comp=Z,27nm,1.1s						
IPM	**Ipoh**	**24.43**	**236**	*e*P	**P**	**05 35 51.5**	**-2.0**
	comp=Z,26nm,0.8s						
MSHR	**Mys Shultsa**	**24.95**	**18**	*e*P	**P**	**05 35 59.3**	**+1.4**
CN2	**Changchun**	**24.95**	**7**	*e*P	**P**	**05 36 00.3**	**+2.3**
USRK	**Ussuriysk Ar.**	**26.68**	**17**	P	**P**	**05 36 13.5**	**0.0**
	comp=Z,1.7nm,0.6s,baz=215,slow=5.2,SNR=5.6						
PSI	**Prapat**	**27.11**	**236**	P	**P**	**05 36 16.4**	**-1.5**
	comp=Z,6.2nm,0.7s,baz=305,slow=11,SNR=8.7						
PSI				PcP	**PcP**	**05 39 38.1**	**-0.4**
	comp=Z,1.8nm,0.3s,baz=248,slow=6.5,SNR=4.1						
PSI	**Prapat**	**27.11**	**236**	*e*P	**P**	**05 36 17.5**	**-0.4**
PSI						05 39 38.1	
PSI				pmax	pmax		
	comp=Z,15nm,1.1s						
PSI	**Prapat**	**27.11**	**236**	*e*P	**P**	**05 36 17.5**	**-0.4**
	comp=Z,15nm,1.1s						
PSI				PcP	**PcP**	**05 39 38.1**	**-0.4**
GTA	**Gaotai**	**27.45**	**322**	P	**P**	**05 36 21.3**	**+0.5**
GTA				pP	pP	05 36 30.8	+0.7
GTA				sP	sP	05 36 34.8	+0.8
GTA				S	**S**	**05 41 01.6**	**+2.2**
GTA				pmax	pmax		
	comp=Z,5.0nm,1.5s						
GTA				pmax	pmax		
	comp=Z,130nm,4.7s						
GTA				LR	LR		
	comp=Z,430nm,16.7s						
GTA				LR	LR		
	comp=Z,610nm,17.1s						
GTA				LR	LR		
	comp=Z,380nm,20.4s						
SHL	**Shillong**	**27.84**	**289**	*e*P	**P**	**05 36 25.0**	**+0.5**
MNSI	**Mandailing Nat**	**27.88**	**232**	P	**P**	**05 36 24.2**	**-0.5**
	comp=Z,44nm,0.6s						
PPI	**Padang Panjang**	**28.14**	**229**	P	**P**	**05 36 27.6**	**+0.6**
	comp=Z,23nm,1.0s						
WOJI	**Wonogiri, Jawa**	**28.55**	**202**	P	**P**	**05 36 32.3**	**+1.7**
	comp=Z,78nm,0.9s,comp=Z,6μmcomp=Z,48μm						
MDSI	**Maura Dua**	**28.75**	**217**	P	**P**	**05 36 34.5**	**+2.1**
	comp=Z,28nm,0.9s						
GSI	**Gunungsitoli**	**29.09**	**235**	P	**P**	**05 36 34.9**	**-0.5**
	comp=Z,38nm,0.8s						
GSI	**Gunungsitoli**	**29.09**	**235**	*e*P	**P**	**05 36 34.2**	**-1.2**
	comp=Z,28nm,0.6s						
ERM	**Erimo**	**29.55**	**34**	*e*P	**P**	**05 36 37.4**	**-1.8**
ULN	**Ulaanbaatar**	**30.98**	**341**	*e*P	**P**	**05 36 53.1**	**+1.0**
ULN				pmax	pmax		
	comp=Z,6.0nm,0.9s						
ULN	**Ulaanbaatar**	**30.98**	**341**	*e*P	**P**	**05 36 53.1**	**+1.0**
	comp=Z,6.3nm,0.9s						
SONM	**Songino Array**	**31.16**	**341**	P	**P**	**05 36 54.8**	**+1.3**
	comp=Z,3.8nm,0.7s,baz=161,slow=11,SNR=9.2						
SONM				PcP	**PcP**	**05 39 47.6**	**-0.5**
	comp=Z,1.3nm,0.8s,baz=160,slow=4.6,SNR=3.0						
SONA1	**Songino Array**	**31.16**	**341**	*e*P	**P**	**05 36 54.9**	**+1.2**
KLR	**Kul'dur**	**31.30**	**13**	P	**P**	**05 36 55.0**	**+0.3**
	comp=Z,3.8nm,0.7s,baz=205,slow=9.0,SNR=12						
KLR				PcP	**PcP**	**05 39 47.4**	**-0.9**
	comp=Z,2.0nm,0.6s,baz=160,slow=8.1,SNR=5.5						
YSS	**Yuzh-Sakhalins**	**32.98**	**28**	*e*P	**P**	**05 37 09.8**	**+0.4**
YSS				pmax	pmax		
	comp=Z,9.0nm,0.9s						
GUN	**Gumba**	**33.48**	**292**	*e*P	**P**	**05 37 14.8**	**+0.4**
	comp=Z,50nm,0.8s						
ZAK	**Zakamensk**	**34.38**	**340**	*e*P	**P**	**05 37 22.1**	**+0.4**
ZAK				pmax	pmax		
	comp=Z,2.0nm,1.3s						
GKN	**Gorkha**	**34.58**	**292**	*e*P	**P**	**05 37 23.8**	**0.0**
	comp=Z,8.8nm,0.5s						
TLY	**Talaya**	**35.39**	**341**	P	**P**	**05 37 29.5**	**-0.8**
	comp=Z,3.5nm,0.6s,baz=224,slow=6.5,SNR=6.3						
TLY	**Talaya**	**35.39**	**341**	*e*P	**P**	**05 37 32.1**	**+1.8**
TLY				pmax	pmax		
	comp=Z,7.0nm,0.9s						
TLY				MLR	MLR		
	comp=Z,314nm,17.0s						
TLY	**Talaya**	**35.39**	**341**	*e*P	**P**	**05 37 31.4**	**+1.1**
	comp=Z,6.8nm,0.8s						
KOLN	**Koldanda**	**35.46**	**291**	*e*P	**P**	**05 37 31.8**	**+0.3**
	comp=Z,26nm,0.9s						
TYV	**Tymovskoe**	**36.03**	**23**	*e*P	**P**	**05 37 34.2**	**-1.6**
PYUN	**Piuthan**	**36.03**	**292**	*e*P	**P**	**05 37 37.2**	**+0.8**
	comp=Z,24nm,0.6s						
MOY	**Mondy**	**36.24**	**339**	*e*P	**P**	**05 37 39.0**	**+1.3**
NKL	**Nikolayevsk**	**37.26**	**19**	*e*P	P	05 37 52.0	+5.8
WMQ	**Urumqi**	**37.37**	**319**	*e*P	**P**	**05 37 49.3**	**+1.9**
WMQ				pP	pP	05 37 57.8	+0.9
WMQ				S	**S**	**05 43 36.1**	**+2.7**
WMQ				pmax	pmax		
	comp=Z,3.0nm,0.6s					

KSH pmax pmax
comp=Z,10.0nm,0.9s
KSH pmax pmax
comp=Z,290nm,6.0s
KSH LR LR
comp=Z,380nm,9.6s
KSH LR LR
comp=Z,190nm,8.5s
KSH LR LR
comp=Z,170nm,7.1s
PETK Petropavlovsk- 44.19 31 P **P 05 38 42.4 -1.1**
PETK PcP **PcP 05 40 26.9 -0.9**
comp=Z,2.5nm,0.5s,baz=213,slow=4.9,SNR=10
comp=Z,2.1nm,0.6s,baz=238,slow=2.7,SNR=4.3
AS31 Alice Springs 44.21 163 *e*P **P 05 38 42.8 -1.1**
comp=Z,4.1nm,0.4s
ASAR Alice Springs 44.22 163 P **P 05 38 41.2 -2.7**
comp=Z,5.3nm,0.4s,baz=345,slow=7.0,SNR=46
ASAR PcP **PcP 05 40 27.2 -1.1**
comp=Z,1.7nm,0.6s,baz=345,slow=2.8,SNR=4.6
AS01 Alice Springs 44.23 163 *e*P **P 05 38 41.2 -2.8**
ZAA0 Zalesovo Array 44.63 330 *e*P **P 05 38 47.0 +0.1**
ZAA0 *e*P **P 05 38 47.5 +0.7**
ZALV Zalesovo Beam 44.63 330 P **P 05 38 47.2 +0.4**
comp=Z,3.0nm,0.8s,baz=122,slow=7.3,SNR=12
ZALV PcP **PcP 05 40 27.7 -1.5**
comp=Z,1.1nm,0.5s,baz=101,slow=4.6,SNR=2.5
TKM2 Tokmak 2 45.07 312 *e*P **P 05 38 52.8 +1.9**
TKM2 pmax pmax
comp=Z,6.0nm,0.6s
TKM2 Tokmak 2 45.07 312 *e*P **P 05 38 52.8 +1.9**
comp=Z,5.7nm,0.6s
MA2 Magadan 45.75 21 *e*P **P 05 38 52.2 -3.5**
AAK Ala-Archa 45.77 311 *e*P **P 05 38 57.3 +1.0**
AAK pmax pmax
comp=Z,10.0nm,1.3s
AAK Ala-Archa 45.77 311 *e*P **P 05 38 58.5 +2.1**
comp=Z,3.7nm,0.6s
NVS Novosibirsk 45.90 330 *e*P **P 05 38 56.3 -0.6**
NVS pmax pmax
comp=N,11nm,1.4s
NVS pmax pmax
comp=Z,16nm,1.4s
KURK Kurchatov 46.12 323 *e*P **P 05 38 59.9 +1.1**
KURK pmax pmax
comp=Z,22nm,1.0s
KURK Kurchatov 46.12 323 *e*P **P 05 38 59.9 +1.1**
comp=Z,22nm,1.0s
KURBB Kurchatov Arra 46.13 323 P **P 05 38 59.5 +0.7**
comp=Z,4.4nm,0.7s,baz=119,slow=8.0,SNR=3.8
EKS2 Erkin-Say 46.28 311 *e*P **P 05 39 02.6 +2.3**
EKS2 pmax pmax
comp=Z,8.0nm,1.2s
EKS2 Erkin-Say 46.28 311 *e*P **P 05 39 02.6 +2.3**
comp=Z,7.7nm,1.2s
KBL Kabul 48.53 300 *e*P **P 05 39 19.0 +0.9**
KBL Kabul 48.53 300 *e*P **P 05 39 19.0 +0.9**
KBL *e*pP **pP 05 39 27.9 +0.2**
KKAR Karatay Array 48.72 311 *e*P **P 05 39 20.7 +1.6**
KKAR Karatay Array 48.72 311 *e*P **P 05 39 20.7 +1.6**
SEY Seymchan 48.82 18 P **P 05 39 18.9 -0.7**
comp=Z,4.4nm,0.7s,baz=213,slow=1.6,SNR=6.5
SEY PcP **PcP 05 40 43.5 -0.4**
comp=Z,6.7nm,0.5s,baz=13,slow=19,SNR=8.0
BRVK Borovoye 51.79 323*ce*P **P 05 39 42.7 +0.5**
BRVK pmax pmax
comp=Z,20nm,2.5s
BRVK Borovoye 51.79 323 *e*P **P 05 39 43.7 +1.5**
comp=Z,10.0nm,0.9s
ZRNK Zerenda 52.48 323 *e*P **P 05 39 48.2 +0.9**
ZRNK pmax pmax
comp=Z,10.0nm,1.0s
ZRNK Zerenda 52.48 323 *e*P **P 05 39 48.2 +0.9**
comp=Z,9.7nm,1.0s
TIXI Tiksi 52.81 3 *e*P **P 05 39 48.2 -1.2**
TIXI pmax pmax
comp=Z,25nm,0.8s
TIXI Tiksi 52.81 3 *e*P **P 05 39 48.2 -1.2**
comp=Z,22nm,0.8s
BBOO Buckleboo 53.48 164 *e*P **P 05 39 52.7 -2.1**
comp=Z,13nm,0.7s
STKA Stephens Creek 54.27 159 P **P 05 39 59.0 -1.6**
comp=Z,1.6nm,0.6s,baz=334,slow=8.7,SNR=4.9
STKA LR LR 06 04 49.1
comp=Z,94nm,20.1s,baz=7.2,slow=38
STKA Stephens Creek 54.27 159 P **P 05 39 59.0 -1.6**
STKA pmax pmax
comp=Z,2.0nm,0.6s
STKA MLR MLR
comp=Z,94nm,20.1s
NRIK Noril'sk 54.37 346 P **P 05 40 01.3 +0.4**
comp=Z,21nm,0.6s,baz=132,slow=6.4,SNR=14
BILL Bilibino 56.52 19⇓ *e*P **P 05 40 15.0 -1.4**
BILL *e* 05 42 23.6
BILL pmax pmax
comp=Z,6.0nm,0.7s
BILL MLR MLR
comp=Z,118nm,18.0s
BILL Bilibino 56.52 19 *e*P **P 05 40 16.0 -0.4**
comp=Z,5.7nm,0.6s
ABKAR Akbulak array 57.11 317 *e*P **P 05 40 21.2 +0.3**
GEYT Alibeck 57.51 303 P **P 05 40 24.7 +0.7**
comp=Z,1.4nm,0.4s,baz=100,slow=1.6,SNR=3.1
ARU Arti 59.26 325*c i*P **P 05 40 35.4 -0.4**
ARU 05 42 47.8
ARU S **S 05 48 43.1 +1.5**
ARU SS **SS 05 52 30.3 -5.9**
ARU pmax pmax
comp=Z,10.0nm,1.0s
ARU Arti 59.26 325 *e*P **P 05 40 35.3 -0.5**
comp=Z,8.6nm,0.6s
ZEI Tsey 68.12 309 *e*P **P 05 41 34.2 -0.6**
ZEI pmax pmax
comp=Z,7.0nm,0.6s
KBZ Khabaz 68.75 310 P **P 05 41 38.7 +0.3**
comp=Z,2.5nm,0.9s,baz=168,slow=7.0,SNR=8.3
KBZ LR LR 06 15 00.2
comp=Z,172nm,18.8s,baz=85,slow=39
KBZ Khabaz 68.75 310 P **P 05 41 38.7 +0.3**
KBZ pmax pmax
comp=Z,4.0nm,0.9s
KBZ MLR MLR
comp=Z,172nm,18.8s
VRH Novokhopyorsk 68.85 318 *e*P **P 05 41 37.2 -1.7**
VRH pmax pmax
comp=Z,20nm,1.5s
KIV Kislovodsk 68.88 311⇓ *e*P **P 05 41 37.9 -1.4**
KIV *e* 05 44 11.4
KIV *e*PPP PPP 05 45 54.3
KIV pmax pmax
comp=Z,10.0nm,1.0s
KIV MLR MLR
comp=Z,179nm,22.0s
TT01 Tatalina 69.97 29 *e*P **P 05 41 45.4 -0.2**
TTA Tatalina 69.97 29 *e*P **P 05 41 45.4 -0.3**
TTA pmax pmax
comp=Z,9.0nm,1.2s
TTA Tatalina 69.97 29 *e*P **P 05 41 45.4 -0.3**
comp=Z,8.9nm,1.2s
SVW2 Sparrevohn 70.28 31 *e*P **P 05 41 47.8 +0.2**
comp=Z,4.9nm,0.7s
VSR Storozhevoye 70.45 319 *e*P **P 05 41 47.6 -1.2**
VSR pmax pmax
comp=Z,8.0nm,1.2s
LPSR Galich'ya Gora 70.45 320 *e*P **P 05 41 47.4 -1.3**
LPSR pmax pmax
comp=Z,6.0nm,0.5s
RSO Redoubt South 71.71 31 *e*P **P 05 41 56.2 -0.3**
CAST Castle Rocks 71.71 28 *e*P **P 05 41 56.1 -0.2**
comp=Z,13nm,0.7s
PPLA Purkeypile 71.72 29 *e*P **P 05 41 56.6 +0.2**
comp=Z,24nm,1.5s
COLD Coldfoot 72.09 24 *e*P **P 05 41 59.4 +0.9**
comp=Z,11nm,0.4s
KDAK Kodiak Island 72.12 34 P P 05 42 12.6 +14
comp=Z,8.7nm,0.7s,baz=256,slow=7.5,SNR=10
KDAK Kodiak Island 72.12 34*ce*P **P 05 41 57.7 -1.0**
MLY Manley 72.12 26 *e*P **P 05 41 59.0 +0.3**
comp=Z,9.7nm,0.9s
BPAW Bear Paw Mtn. 72.12 27 *e*P **P 05 41 58.9 +0.2**
comp=Z,14nm,1.1s
KTH Kantishna Hill 72.22 28 *e*P **P 05 41 59.6 +0.3**
comp=Z,17nm,1.5s
TRF Thorofare Moun 72.51 28 *e*P **P 05 42 02.0 +0.8**
comp=Z,39nm,2.0s
BRLK Bradley Lake 72.73 32 *e*P **P 05 42 01.7 -0.7**
comp=Z,8.8nm,0.7s
MCK McKinley 73.07 28 *e*P **P 05 42 03.9 -0.4**
MCK pmax pmax
comp=Z,11nm,0.9s
MCK McKinley 73.07 28 *e*P **P 05 42 03.9 -0.4**
comp=Z,11nm,0.9s
RND Reindeer 73.16 28 *e*P **P 05 42 04.1 -0.8**
RND pmax pmax
comp=Z,16nm,0.9s
RND Reindeer 73.16 28 *e*P **P 05 42 04.1 -0.8**
comp=Z,16nm,0.9s
MDM Murphy Dome 73.19 26 *e*P **P 05 42 05.7 +0.7**
comp=Z,20nm,1.2s
PMR Palmer 73.31 30 *e*P **P 05 42 04.0 -1.7**
PMR pmax pmax
comp=Z,7.0nm,0.6s
PMR Palmer 73.31 30 *e*P **P 05 42 04.0 -1.7**
comp=Z,7.5nm,0.6s
WRH Wood River Hil 73.32 27 *e*P **P 05 42 05.8 0.0**
comp=Z,8.0nm,0.8s
CCB Clear Creek Bu 73.42 27 *e*P **P 05 42 05.3 -1.0**
comp=Z,4.9nm,1.0s
ILAR Eielson Array 73.78 26 P **P 05 42 06.3 -2.2**
comp=Z,2.2nm,0.8s,baz=266,slow=4.5,SNR=23
ILB Eielson Array 73.78 26 *e*P **P 05 42 08.2 -0.3**
IL1 Eielson Array 73.78 26 *e*P **P 05 42 06.3 -2.1**
SCM Sheep Creek Mo 74.11 30 *e*P **P 05 42 10.8 +0.2**
SCM pmax pmax
comp=Z,18nm,0.8s
SCM Sheep Creek Mo 74.11 30 *e*P **P 05 42 10.8 +0.2**
comp=Z,18nm,0.8s
ARCES ARCESS Array B 74.31 339 P **P 05 42 10.7 -0.8**
comp=Z,3.9nm,0.5s,baz=70,slow=7.8,SNR=33
ARCES LR LR 06 18 40.7
comp=Z,161nm,18.9s,baz=71,slow=39
PAX Paxson 74.74 28 *e*P **P 05 42 14.0 -0.2**
PAX pmax pmax
comp=Z,19nm,1.7s
PAX Paxson 74.74 28 *e*P **P 05 42 14.0 -0.2**
comp=Z,19nm,1.7s
DOT Dot Lake 75.22 27 *e*P **P 05 42 15.4 -1.4**
comp=Z,13nm,0.8s
MENT Mentasta 75.53 28 *e*P **P 05 42 18.1 -0.5**
comp=Z,5.3nm,0.6s
BMRM Bremner River 75.58 30 *e*P **P 05 42 17.7 -1.3**
comp=Z,11nm,1.0s
FINES FINESS Array B 75.89 330 P **P 05 42 19.6 -1.1**
comp=Z,2.6nm,0.8s,baz=92,slow=5.9,SNR=5.9
FINES LR LR 06 19 35.9
comp=Z,195nm,18.1s,baz=25,slow=39
EGAK Eagle 76.18 26 *e*P **P 05 42 21.9 -0.4**
comp=Z,6.1nm,0.8s
BRTR Keskin Array B 76.26 308 P **P 05 42 22.7 -0.8**
comp=Z,0.7nm,0.5s,baz=138,slow=3.4,SNR=4.3
BRTR Keskin Array B 76.26 308*ce*P **P 05 42 23.5 +0.1**
BRTR pmax pmax
comp=Z,1.0nm,0.5s
AKASG Malin Array Be 76.73 319 P **P 05 42 24.0 -1.7**
comp=Z,3.3nm,0.8s,baz=63,slow=5.5,SNR=7.5
AKASG LR LR 06 18 01.7
comp=Z,82nm,18.9s,baz=35,slow=37
AKASG Malin Array Be 76.73 319 P **P 05 42 24.0 -1.7**
AKASG pmax pmax
comp=Z,1.0nm,0.6s
AKASG MLR MLR
comp=Z,82nm,18.9s
KIEV Kiev 76.74 319 *e*P **P 05 42 24.3 -1.4**
KIEV pmax pmax
comp=Z,21nm,3.6s
KIEV Kiev 76.74 319 *e*P **P 05 42 24.6 -1.1**
KIEV *e*pP **pP 05 42 33.4 -2.5**
INK Inuvik 77.99 22 *e*P **P 05 42 31.5 -0.8**
INK Inuvik 77.99 22 *e*P **P 05 42 31.5 -0.8**
VRI Vrincioaia 79.60 315⇓ *i*P **P 05 42 42.5 +0.8**
BURAR Bucovina Array 80.09 317⇑ *i*P **P 05 42 44.3 -0.2**
BUR08 Bucovina Ar. S 80.09 317 *e*P **P 05 42 43.9 -0.6**
MLR Muntele Rosu 80.24 315⇓ *i*P **P 05 42 45.7 +0.4**
SKAG Skagway 80.44 30 *e*P **P 05 42 46.6 +0.7**
SKAG *e*pP **pP 05 42 55.3 -0.8**
DRGR 81.97 317⇓ *i*P **P 05 42 54.3 -0.1**
NC405 NORSAR Array S 82.52 333 *e*P **P 05 42 56.0 -0.9**
NB2 NORSAR Subarra 82.77 333 P **P 05 42 56.9 -1.4**
comp=Z,3.3nm,0.9s,baz=64,slow=5.3
NOA NORSAR Array B 82.77 333 P **P 05 42 56.6 -1.6**
comp=Z,1.1nm,0.7s,baz=63,slow=4.9,SNR=9.0
NOA LR LR 06 22 53.6
comp=Z,288nm,19.2s,baz=70,slow=38
RES Resolute Bay 83.72 9 LR LR 06 22 51.8
comp=Z,40nm,21.3s,baz=23,slow=38
RES Resolute Bay 83.72 9 *e*P **P 05 43 02.3 -0.6**
RES Resolute Bay 83.72 9 *e*P **P 05 43 02.3 -0.6**
KMBO Kilima Mbogo 84.63 267 P **P 05 43 09.3 +0.3**
comp=Z,0.9nm,0.3s,baz=41,slow=4.7,SNR=5.5
KMBO Kilima Mbogo 84.63 267 *e*P **P 05 43 09.2 +0.3**
KMBO pmax pmax
comp=Z,7.0nm,1.2s
KMBO Kilima Mbogo 84.63 267 *e*P **P 05 43 09.2 +0.3**
comp=Z,7.1nm,1.2s
BRG Berggiesshubel 85.81 323 *e*P **P 05 43 13.4 -0.4**
comp=Z,3.0nm,0.7s
BRG Berggiesshubel 85.81 323 *e*P **P 05 43 13.4 -0.4**
BRG pmax pmax
comp=Z,3.0nm,0.7s
GERES GERESS Array B 86.81 321 P **P 05 43 17.6 -1.4**
comp=Z,0.6nm,0.5s,baz=45,slow=4.0,SNR=4.6
GEA0 GERESS Array S 86.82 321 *e*P **P 05 43 17.9 -1.1**
GEA0 *e*pP **pP 05 43 28.4 -0.9**
YKW3 Yellowknife Ar 87.65 23 *e*P **P 05 43 21.4 -1.2**
comp=Z,9.1nm,0.8s
YKA Yellowknife Ar 87.70 23 P **P 05 43 22.0 -0.8**
comp=Z,6.0nm,0.7s,baz=307,slow=4.8,SNR=128
YKA PKKPbc **PKKPdf 06 01 07.8 +2.8**
comp=Z,0.2nm,0.5s,baz=133,slow=2.7,SNR=11
YKA Yellowknife Ar 87.70 23 P **P 05 43 22.0 -0.8**
YKA pmax pmax
comp=Z,6.0nm,0.7s
YKB5 Yellowknife Ar 87.70 23 *e*P **P 05 43 21.5 -1.3**
NVAR Mina Array Bea 100.17 43 P **Pdif 05 44 21.1 +0.2**
comp=Z,0.3nm,0.6s,baz=301,slow=7.3,SNR=2.5
TORD Torodi Ar. Bea 112.36 294 PKiKP **PKiKP 05 49 09.3 -1.9**
comp=Z,0.6nm,0.8s,baz=28,slow=1.8,SNR=4.3
TORD PKKPbc **PKKPbc 05 59 59.9 -0.9**
comp=Z,0.5nm,0.6s,baz=258,slow=2.6,SNR=4.3
TORD PKKP **PKKPdf 06 00 19.5 -0.9**
comp=Z,0.2nm,0.6s,baz=256,slow=5.0,SNR=2.4
TXAR Lajitas Array 115.31 43 PKP **PKPdf 05 49 16.0 -0.7**
comp=Z,0.7nm,0.6s,baz=200,slow=1.4,SNR=22
H06S1 SOCORRO T 116.53 57 T T 07 57 31.3
SNR=22
FDF Fort de France 146.37 4 *e*PKP2 **PKPbc 05 50 15.3 -0.8**
FDF Fort de France 146.37 4 *e*PKPdf **PKPbc 05 50 15.3 -0.8**
MOTC Monteria, Cord 147.75 32 *e*P **PKPdf 05 50 17.9 +0.6**
OCAC Ocana 149.36 29 *e*P **PKPbc 05 50 23.5 -0.9**
HELC Santa Helena 150.01 35 *e*P **PKPbc 05 50 25.2 -1.1**
BRRC Barranca, Sant 150.16 31 *e*P **PKPbc 05 50 25.2 -1.0**
PAMC Pamplona, Colo 150.43 29 *e*P **PKPbc 05 50 26.3 -1.1**
BARC Barichara 150.86 30 *e*P **PKPbc 05 50 25.8 -2.4**
GUYC Guyana, Colomb 150.88 36 *e*P **PKPbc 05 50 26.3 -2.2**
NORC Norcasia 150.89 34 *e*P **PKPbc 05 50 25.2 -2.8**
TOLC Tolima 151.45 36 *e*P **PKPbc 05 50 27.4 -2.2**
ROSC El Rosal 151.79 34 *e*PKPdf **PKPdf 05 50 23.4 -0.8**
ROSC *e*PKPbc **PKiKP 05 50 30.6 -0.3**
ROSC El Rosal 151.79 34 *e*P **PKPbc 05 50 28.6 -1.9**
CHIC Chingaza 152.27 33 *e*P **PKPbc 05 50 29.1 -2.5**
POPC Popayan, Colom 152.28 41 *e*P **PKPbc 05 50 29.1 -2.3**
YOPC Yopal, Colombi 152.31 30 *e*P **PKPbc 05 50 34.2 +2.9**
VILC Villavicencio, 152.73 34 *e*P **PKPbc 05 50 31.7 -0.6**
CMBC Cumbal 152.75 45 *e*P **PKPbc 05 50 33.1 +0.3**
FLOC Florencia 153.66 41 *e*P **PKPab 05 50 44.3 -2.4**
PLCA Paso Flores 156.14 158 PKPab **PKPab 05 50 56.3 -0.4**
comp=Z,8.0nm,0.8s,baz=261,slow=6.6,SNR=18
PLCA Paso Flores 156.14 158 *e*PKPab **PKPab 05 50 57.5 +0.8**
TRQA Tornquist 160.84 172 *e*PKPdf **PKPdf 05 50 33.3 -1.5**
TRQA *e*PKPab **PKPab 05 51 17.0 0.0**
SAML Samuel 169.12 24 *e*PKPab **PKPab 05 51 51.9 -2.0**
CPUP Villa Florida 172.61 190 PKPab **PKPab 05 52 09.1 +0.1**
comp=Z,4.5nm,1.0s,baz=180,slow=2.0,SNR=4.3

JMA 19 05:32:36.4±0.2, 28.10N×128.06E, h14km±4km, M2.4, Ryukyu Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
JTK	**Tokunoshima**	**0.85**	**111**	P		P	Pg	05 32 52.2	-0.6
JTK				S		Sg		05 33 03.5	-0.5
JOKE	**Okinoerabujima**	**0.86**	**148**	*e*S		Sg		05 33 04.2	-0.3
JAMN	**Amaminishikomi**	**0.99**	**82**	P		Pb		05 32 55.1	-0.3
JAMN				*e*S		Sb		05 33 08.1	-0.3
JIH	**Iheya**	**1.06**	**184**	P		Pb		05 32 56.1	-0.5
JIH				*e*S		Sb		05 33 10.3	-0.1

GUC 19 05:38:45.4±0.4, 20.23S×69.08W, h98km±2km, ML3.5, Northern Chile

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
PB08	**IPOC Station P**	**0.11**	**320**	*i* P		Pn		05 38 60.0	+0.4
PB08				*i* S		Sn		05 39 11.2	+1.0
PB08				IAML				05 39 12.8	
	comp=N,4μm,0.1s								
PB11	**IPOC Station P**	**0.71**	**310**	*i* P		Pn		05 39 03.3	+0.4
PB11				*i* S		Sn		05 39 16.8	+0.8
HMBC	**Humberstone**	**0.76**	**266**	*i* P		Pn		05 39 03.4	+0.1
HMBC				*i* S		Sn		05 39 17.6	+0.8
HMBC				IAML				05 39 18.4	
	comp=E,2μm,0.3s								
PB01	**IPOC Station P**	**0.90**	**205**	*i* P		Pn		05 39 04.9	+0.2
PB01				*i* S		Sn		05 39 20.0	+0.8
PB01				IAML				05 39 21.0	
	comp=N,2μm,0.1s								
PSGC	**Pisagua**	**1.16**	**302**	*i* P		Pn		05 39 07.8	+0.2
PSGC				*i* S		Sn		05 39 25.2	+0.9
PSGC				IAML				05 39 26.3	
	comp=N,890nm,0.7s								
MNMC	**Minye Minye**	**1.19**	**336**	*i* P		Pn		05 39 08.8	+0.7
MNMC				*i* S		Sn		05 39 25.9	+0.7
MNMC				IAML				05 39 28.2	
	comp=E,3μm,0.3s								

IDC ***19*** *05:50:42.8±0.4, 33.88S×72.27W, h0km, mb5.0/17, mb1 5.1/19, mb1mx5.1/21, mbtmp5.0/19, ML4.9/2, MS4.5/17, Ms1 4.5/17, ms1mx4.4/26, Error ellipse: s-maj=20.5km s-min=11.9km az=81.0*

ISCJB ***19*** *05:50:44.5±1.0, 33.90S±0.02×72.47W±0.03, h19km±6km, mb5.2/201, MS4.7/26, Error ellipse: s-maj=4.6km s-min=4.2km az=6.0*

GUC ***19*** *05:50:44.8±0.5, 33.93S×72.42W, h31km±4km, ML5.0*

BJI ***19*** *05:50:45.0, 33.80S×72.10W, h10km, mB5.1/18, Ms5.3/16, Ms7 4.9/17*

MOS ***19*** *05:50:45.8±1.0, 33.72S×72.17W, h22km, mb5.4/70, MS4.7/5, Error ellipse: s-maj=14.2km s-min=6.8km az=100.4*

GCMT ***19*** *05:50:45.4±0.2, 33.97S×72.65W, h21km, MW5.2/76, Moment Tensor Solution. s40,c48; s76,c109; Duration: 0 Moment tensor: Scale 10^{16}Nm; M_r4.81±.24; $M_{\theta\theta}$-0.36±.14; $M_{\phi\phi}$-4.44±.17; $M_{r\theta}$0.12±.24; $M_{\theta\phi}$-1.08±.10; $M_{\phi r}$-4.58±.30; Best double couple: $M_0$6.60300×10^{16} NP1:ϕ_s184.00000°, δ67.00000°, λ82.00000°. NP2: ϕ_s23.00000°, δ24.00000°, λ108.00000°. Principal axes: T 6.7330, Plg67.0000°, Azm79.0000°; N -0.2530, Plg7.0000°, Azm187.0000°; P -6.4730, Plg22.0000°, Azm280.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

NEIC ***19*** *05:50:45.4±0.6, 33.85S×72.15W, h13km±3km, mb5.3/189, ML5.0(GUC) Error ellipse: s-maj=4.7km s-min=2.9km az=74.0*

NEIC Felt [II] at Santiago. Also felt at Quilpue, San Felipe, Valparaiso and Vina del Mar.

ISC 19 05:50:45.2±0.6, 33.94S±0.03×72.36W±0.04, h15km±3km, n917, o0s97/934, mb5.3/201, MS4.8/26, 18C-18D, Off coast of central Chile

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
CHPI	**Pichilemu**	**0.54**	**147**⇓	*i*P		**Pg**		**05 50 55.8**	**-0.1**
CHPI				*e*S		**Sb**		**05 51 04.5**	**+0.6**
ROC1	**El Roble**	**1.48**	**50**	*i*P		**Pb**		**05 51 12.3**	**-0.2**
ROC1				*i* S		**Sg**		**05 51 36.2**	**+3.2**
ROC1	**El Roble**	**1.48**	**50**	*e*Pn		**Pn**		**05 51 11.4**	**-0.1**
ANTU	**Antumapu**	**1.48**	**76**	*e*P		**Pn**		**05 51 11.6**	**+0.2**
ANTU				*e*S		**Sb**		**05 51 31.5**	**+0.3**
ANTU				IAML				05 51 36.3	
	comp=N,37μm,0.4s								
ROCH	**El Roble**	**1.48**	**50**⇑	*i*P		**Pn**		**05 51 11.3**	**-0.3**
ROCH				*i* S		**Sb**		**05 51 31.6**	**+0.2**
ROCH				IAML				05 51 49.7	
	comp=E,32μm,0.6s								
TALC	**Talca**	**1.57**	**158**	*i* P		**Pn**		**05 51 12.4**	**-0.2**
TALC				*i* S		**Sn**		**05 51 32.9**	**+0.3**
FSR	**Penalolen**	**1.59**	**74**	*e*P		**Pb**		**05 51 14.1**	**-0.3**
PEL	**Peldehue**	**1.61**	**61**	*e*P		**Pn**		**05 51 13.3**	**+0.2**
PEL				*e*S		**Sb**		**05 51 34.5**	**-0.3**
PEL				IAML				05 51 48.4	
	comp=N,31μm,1.5s								
CLCH	**Cerro Calan**	**1.61**	**71**⇑	*e*P		**Pn**		**05 51 13.5**	**+0.3**
CLCH				*e*S		**Sg**		**05 51 37.0**	**-0.2**
CLCH				IAML				05 52 01.1	
	comp=N,38μm,0.8s								
YECH	**El Yeso**	**1.91**	**82**	*e*P		**Pb**		**05 51 19.4**	**-0.6**
YECH				*e*S		**Sb**		**05 51 44.5**	**+0.7**
YECH				IAML				05 51 57.5	
	comp=N,21μm,0.4s								
AUSP	**Uspallata**	**3.03**	**56**	*i* P		**Pn**		**05 51 35.7**	**+2.9**
ARCO	**CERRO ARCO**	**3.07**	**70**	*i* P		**Pb**		**05 51 36.7**	**-2.9**
ARCO				*i* S		**Sb**		**05 52 19.0**	**+2.0**
ARCO				IAML				05 52 30.5	
	comp=Z,3μm,0.7s								
AAGR	**Agrelo**	**3.07**	**75**	*i* P		**Pb**		**05 51 37.2**	**-2.4**
AVIZ	**Vizcacheras**	**3.24**	**83**	*i* P		**Pb**		**05 51 40.3**	**-2.2**
ASAL	**Salagasta**	**3.24**	**66**	*i* P		**Pn**		**05 51 38.9**	**+3.2**
RTLS	**Leoncito**	**3.35**	**51**	*i* P		**Pn**		**05 51 39.4**	**+2.1**
RTCV	**Cerro Valdivia**	**3.82**	**58**	*i* P		**Pn**		**05 51 45.8**	**+2.2**
TLL	**Tololo Astrono**	**3.99**	**20**	*e*P		**Pn**		**05 51 45.0**	**-1.1**
SJA	**San Juan**	**4.00**	**54**	*i* P		**Pn**		**05 51 47.8**	**+1.7**
SJA				IAML				05 53 02.8	
	comp=Z,1μm,0.5s								
RTLL	**Cerro Villicun**	**4.18**	**53**	*i* P		**Pn**		**05 51 49.9**	**+1.3**
ACAN	**Cantantal**	**4.65**	**70**	*i* P		**Pn**		**05 51 58.4**	**+3.5**
LCO	**Las Campanas**	**5.12**	**16**	*e*Pn		**Pn**		**05 51 59.7**	**-1.9**
PLCA	**Paso Flores**	**6.93**	**169**	Pn		**Pn**		**05 52 27.2**	**+0.9**
	comp=Z,5.1nm,0.3s,baz=1.0,slow=11,SNR=71								
PLCA				Lg		Lg		05 54 23.6	
	comp=Z,2.1nm,0.3s,baz=284,slow=19,SNR=3.9								
PLCA				LR		LR		05 55 13.3	
	comp=Z,5μm,18.4s,baz=12,slow=39								
PLCA	**Paso Flores**	**6.93**	**169**	*e*P		**Pn**		**05 52 27.0**	**+0.7**
TRQA	**Tornquist**	**9.36**	**119**	*e*Pn		**Pn**		**05 53 00.6**	**+1.1**
PB04	**IPOC Station P**	**11.73**	**10**	*e*Pn		**Pn**		**05 53 33.1**	**+0.9**
PB01	**IPOC Station P**	**13.10**	**12**	*e*Pn		Pn		05 53 43.7	-7.1
PB01				*e*				05 53 51.0	
CHRN	**Cochrane**	**13.29**	**181**	*e*Pn		**Pn**		**05 53 52.9**	**-0.4**
PB11	**IPOC Station P**	**14.33**	**10**	*e*Pn		**Pn**		**05 54 07.4**	**-0.3**
CPUP	**Villa Florida**	**15.04**	**64**	Pn		**Pn**		**05 54 13.0**	**-4.3**
	comp=Z,0.1nm,0.3s,baz=222,slow=10,SNR=4.7								
CPUP				Sn		**Sn**		**05 57 06.6**	**+3.0**
	comp=Z,0.6nm,0.3s,baz=180,slow=5.1,SNR=2.3								
CPUP				LR		LR		05 59 39.6	
	comp=Z,877nm,21.9s,baz=240,slow=36								
CPUP	**Villa Florida**	**15.04**	**64**	*e*P		**Pn**		**05 54 13.5**	**-3.8**
CPUP								05 57 06.6	
CPUP	**Villa Florida**	**15.04**	**64**	*e*Pn		**Pn**		**05 54 13.5**	**-3.8**
CPUP						**Sn**		**05 57 06.6**	**+3.0**
LPAZ	**La Paz**	**17.99**	**13**	P		**P**		**05 54 55.7**	**-0.2**
	comp=Z,2.1nm,0.3s,baz=186,slow=6.4,SNR=121								
LPAZ	**La Paz**	**17.99**	**13**	*e*P		**Pn**		**05 54 54.5**	**-0.9**
LPAZ				pmax	pmax				
	comp=Z,146nm,1.0s								
LPAZ	**La Paz**	**17.99**	**13**	*e*Pn		**Pn**		**05 54 54.5**	**-0.9**
	comp=Z,146nm,1.0s								
EFI	**East Falkland**	**20.53**	**154**	*d* P		**P**		**05 55 22.4**	**-0.4**
EFI				pmax	pmax				
	comp=Z,87nm,0.7s								
EFI	**East Falkland**	**20.53**	**154**	*e*P		**P**		**05 55 21.5**	**-1.2**
	comp=Z,88nm,0.7s								
SIV	**San Ignacio**	**20.57**	**32**	P		**P**		**05 55 22.4**	**-1.1**
	comp=Z,92nm,0.8s,baz=223,slow=8.7,SNR=150								
SIV				LR		LR		06 04 53.5	
	comp=Z,3μm,19.1s,baz=214,slow=42								
USHA	**Ushuaia**	**21.07**	**174**	P		**P**		**05 55 30.2**	**+1.6**
	comp=Z,201nm,0.9s,baz=340,slow=7.6,SNR=13								
NNA	**Nana**	**22.23**	**348**	P		**P**		**05 55 41.0**	**-0.5**
	comp=Z,43nm,0.8s,baz=186,slow=11,SNR=11								

NNA LR LR 06 02 16.1
comp=Z,638nm,21.5s,baz=146,slow=31
NNA Nana 22.23 348 *e*P **P 05 55 42.2 +0.7**
NNA pmax pmax
comp=Z,198nm,0.9s
NNA Nana 22.23 348 *e*P **P 05 55 42.2 +0.7**
comp=Z,198nm,0.9s
SPB Sao Paulo 24.10 71 *e*P **P 05 55 59.6 -0.7**
comp=Z,239nm,1.0s
SAML Samuel 26.27 21 *e*P **P 05 56 19.6 -0.4**
comp=Z,49nm,0.8s
ATAH Atahualpa 27.25 347 P **P 05 56 29.3 -0.1**
comp=Z,3.2nm,0.7s,baz=49,slow=20,SNR=2.2
BDFB Brasilia 28.52 56 P **P 05 56 39.5 -0.9**
comp=Z,3µm,0.3s,baz=218,slow=0.0,SNR=29
PMSA Palmer Station 31.28 173 *e*P **P 05 57 05.0 +0.9**
comp=Z,66nm,0.7s
OTAV Otavalo 34.48 349 *e*P **P 05 57 33.5 +0.3**
comp=Z,18nm,1.1s
OTAV *e*ScP **ScP 06 03 53.2 +0.3**
OTAV Otavalo 34.48 349 *e*P **P 05 57 34.0 +0.8**
PTGA Pitinga 35.02 22 LR LR 06 14 11.0
comp=Z,1µm,18.6s,baz=192,slow=40
PTGA Pitinga 35.02 22 *e*P **P 05 57 36.6 -0.7**
comp=Z,64nm,1.0s
CMBC Cumbal 35.08 350 *e*P P 05 57 48.7 +10
CRUC La Cruz 35.59 352 *e*P **P 05 57 43.0 +0.5**
POPC Popayan, Colom 36.52 353 *e*P **P 05 57 52.7 +2.3**
SJAC San Juan de Ar 37.05 357 *e*P **P 05 57 54.4 -0.4**
ROSC El Rosal 38.62 357 P **P 05 58 11.0 +2.6**
comp=Z,4.8nm,0.5s,baz=65,slow=17,SNR=4.1
ROSC El Rosal 38.62 357 *e*P **P 05 58 08.5 +0.1**
comp=Z,6.3nm,0.8s
ROSC El Rosal 38.62 357 *e*P **P 05 58 09.1 +0.7**
YOPC Yopal, Colombi 39.08 360 *e*P **P 05 58 10.8 -1.2**
HELC Santa Helena 40.03 355 *e*P **P 05 58 19.8 -0.3**
SOLC Bahia Solano 40.23 352 *e*P **P 05 58 21.5 +0.1**
DBBC Dabeiba 40.90 354 *e*P **P 05 58 28.3 +1.3**
GRMC Gramalote, San 41.43 359 *e*P **P 05 58 31.7 +0.3**
MOTC Monteria, Cord 42.60 355 *e*P **P 05 58 42.5 +1.7**
RCBR Riachuelo 43.84 59 LR LR 06 18 09.0
comp=Z,2µm,20.3s,baz=213,slow=38
RCBR Riachuelo 43.84 59 *e*P **P 05 58 50.5 -0.5**
comp=Z,52nm,1.2s
GRGR Grenville 46.94 14 *e*P **P 05 59 15.1 -0.3**
comp=Z,110nm,0.7s
SVB Belmont 48.13 15 *e*P **P 05 59 23.8 -0.9**
comp=Z,122nm,0.6s
VNA3 Neumayer Olymp 49.51 158 P **P 05 59 35.7 +0.9**
FDF Fort de France 49.57 14 *e*P **P 05 59 34.4 -1.3**
FDF pmax pmax
comp=Z,34nm,0.7s
FDF Fort de France 49.57 14 *e*P **P 05 59 34.4 -1.3**
comp=Z,34nm,0.7s
VNA1 Neumayer--Stat 49.83 157 P **P 05 59 38.3 +1.2**
VNA2 Neumayer--Watz 50.17 157 P **P 05 59 40.4 +0.7**
baz=293,slow=9.0
GDHS Morne Mazeau, 50.94 13 *e*P **P 05 59 42.6 -3.6**
comp=Z,61nm,0.8s
SNAA Sanae 51.74 158 P **P 05 59 52.3 +0.7**
SNAA Sanae 51.74 158 *e*P **P 05 59 52.2 +0.6**
SNAA Sanae 51.74 158 *e*P **P 05 59 52.2 +0.6**
comp=Z,6µm,1.0s
SEUS St. Eustatius 51.92 11 *e*P **P 05 59 52.7 -0.7**
comp=Z,159nm,0.8s
SABA Saba 52.01 11 *e*P **P 05 59 53.6 -0.4**
comp=Z,279nm,0.7s
CELP Cerrillos 52.02 7 *e*P **P 05 59 53.2 -0.9**
SJG San Juan 52.10 7 *e*P **P 05 59 53.5 -1.2**
SJG pmax pmax
comp=Z,48nm,0.8s
SJG San Juan 52.10 7 *e*P **P 05 59 53.5 -1.2**
comp=Z,48nm,0.8s
MPR Mayaguez 52.10 6 *e*P **P 05 59 53.8 -0.9**
comp=Z,64nm,1.3s
SDD Santo Domingo 52.16 3 *e*P **P 05 59 55.1 0.0**
comp=Z,109nm,0.8s
HUMP Col San Antoni 52.16 8 *e*P **P 05 59 53.6 -1.6**
comp=Z,18nm,0.8s
CBYP Canovanas 52.29 8 *e*P **P 05 59 54.9 -1.3**
comp=Z,70nm,0.9s
ANWB Willy Bob 52.30 13 *e*P **P 05 59 54.6 -1.6**
comp=Z,152nm,0.6s
SMRT St. Maarten 52.45 11 *e*P **P 05 59 55.7 -1.7**
comp=Z,53nm,1.0s
RKT Rikitea 55.32 264 *e*S **S 06 08 00.2 -1.9**
comp=Z,265nm,27.2s
RKT *e*LR LR 06 16 22.7
comp=Z,339nm,29.5s
TEIG Tepich 55.96 342 *e*P **P 06 00 22.5 -0.4**
comp=Z,20nm,0.8s
QSPA South Pole Qui 56.29 180 *e*P **P 06 00 26.0 +0.9**
comp=Z,231nm,1.1s
NVL N'lazarevskaya 56.48 157 *e*P **P 06 00 27.2 +1.1**
TLIG Tlapa 56.99 330 *e*P **P 06 00 32.2 +1.8**
comp=Z,20nm,1.1s
ZAIG Zacatecas 63.30 329 *e*P **P 06 01 15.4 +1.5**
VNDA Vanda 64.11 191 P **P 06 01 19.5 +1.4**
comp=Z,4.1nm,0.8s,baz=134,slow=5.5,SNR=20
VNDA Vanda 64.11 191 *e*P **P 06 01 19.7 +1.5**
VNDA pmax pmax
comp=Z,10.0nm,1.1s
VNDA Vanda 64.11 191 *e*P **P 06 01 19.7 +1.5**
comp=Z,9.6nm,1.1s
035A Encino 65.29 335 P **P 06 01 27.3 +0.8**
baz=156,SNR=5.4
034A Hebbronville 65.61 334 P **P 06 01 29.6 +1.1**
baz=156,SNR=5.8
TIGA Tifton 65.89 349 P **P 06 01 29.4 -0.8**
baz=170
TIGA Tifton 65.89 349 *e*P **P 06 01 29.5 -0.8**
comp=Z,49nm,0.8s
SYO Syowa Base 66.02 159 ‖ *j*P **P 06 01 29.2 -1.5**
SYO Syowa Base 66.02 159 ‖ *j*pP pP 06 01 34.9 -0.7
934A Benavides 66.04 335 P **P 06 01 32.8 +1.5**
baz=156
447A Lucedale 66.20 345 P **P 06 01 33.0 +0.8**
baz=165
933A Laredo 66.33 334 P **P 06 01 33.8 +0.7**
baz=156,SNR=11
446A Poplarville 66.36 344 P **P 06 01 34.4 +1.1**
baz=164
737A Port Lavaca 66.40 337 P **P 06 01 34.4 +0.9**
baz=158
835A Beeville 66.43 336 P **P 06 01 35.0 +1.2**
baz=157
445A Amite 66.53 343 P **P 06 01 35.2 +0.9**
baz=164
834A Tilden 66.53 335 P **P 06 01 35.4 +1.0**
baz=156,SNR=19
444A Pine Grove 66.61 343 P **P 06 01 35.9 +1.0**
baz=163
348A Jackson 66.64 346 P **P 06 01 35.3 +0.3**
baz=166
638A Rosharon 66.70 338 P **P 06 01 37.1 +1.6**
baz=159
347A Saraland 66.76 345 P **P 06 01 37.4 +1.6**
baz=165,SNR=5.7
736A Circle Diamond 66.79 337 P **P 06 01 37.6 +1.6**
baz=158,SNR=8.1
735A Kenedy 66.94 336 P **P 06 01 38.0 +1.0**
baz=157,SNR=9.6
346A Big Creek Wild 66.95 344 P **P 06 01 37.5 +0.5**
baz=164,SNR=10
637A Eagle Lake 66.99 337 P **P 06 01 39.1 +1.8**
baz=158
540A Vidor 67.00 340 P **P 06 01 38.7 +1.4**
baz=160
345A Thompson Farm, 67.01 344 P **P 06 01 38.5 +1.1**
baz=164
833A Chaparral WMA, 67.01 334 P **P 06 01 38.4 +0.9**
baz=156,SNR=28
NHSC New Hope 67.10 353 *e*P **P 06 01 38.0 +0.1**
comp=Z,80nm,1.0s
832A Faith Ranch, C 67.19 334 P **P 06 01 39.1 +0.5**
baz=155,SNR=18
734A La Parita Cree 67.19 335 P **P 06 01 39.1 +0.5**
baz=156,SNR=11
248A Dixon Mills 67.26 346 P **P 06 01 39.0 0.0**
baz=166,SNR=6.3
636A Smothers Creek 67.27 337 P **P 06 01 40.2 +1.1**
baz=158
HKT Hockley 67.31 338 *e*P **P 06 01 40.2 +1.0**
HKT pmax pmax
comp=Z,23nm,1.2s
HKT Hockley 67.31 338 *e*P **P 06 01 40.2 +1.0**
comp=Z,23nm,1.2s
344A Westbrook Farm 67.31 343 P **P 06 01 39.5 +0.2**
baz=163,SNR=5.0
733A Divot King Ran 67.34 334 P **P 06 01 40.0 +0.5**
baz=156
247A Quitman 67.41 345 P **P 06 01 40.0 +0.1**
baz=165,SNR=7.3
635A Leesville 67.42 336 P **P 06 01 40.8 +0.8**
baz=157
538A Harpers Horsep 67.46 338 P **P 06 01 42.0 +1.8**
baz=159
246A Jackson Lee, B 67.48 345 P **P 06 01 41.4 +1.0**
baz=165
440A Kirbyville 67.50 340 P **P 06 01 41.9 +1.4**
baz=160
537A Green Hill Far 67.58 338 P **P 06 01 41.8 +0.8**
baz=158,SNR=7.5
634A China Grove, S 67.61 336 P **P 06 01 42.4 +1.1**
baz=157
342A Flagon Creek P 67.64 342 P **P 06 01 42.1 +0.7**
baz=162,SNR=7.9
245A Little AP, Sta 67.67 344 P **P 06 01 42.0 +0.4**
baz=164,SNR=9.3
439A Center Grove, 67.78 339 P **P 06 01 42.9 +0.7**
baz=160
GOGA Godfrey 67.81 350 *e*P **P 06 01 41.6 -0.8**
GOGA pmax pmax
comp=Z,28nm,0.8s
GOGA Godfrey 67.81 350 *e*P **P 06 01 41.6 -0.8**
comp=Z,28nm,0.8s
536A Bastrop 67.82 337 P **P 06 01 43.2 +0.7**
baz=158,SNR=5.6
341A Kurthwood 67.83 341 P **P 06 01 43.1 +0.5**
baz=161,SNR=16
244A Avery, Jackson 67.87 343 P **P 06 01 43.1 +0.3**
baz=164,SNR=14
147A Livingston 67.93 346 P **P 06 01 43.0 -0.2**
baz=166,SNR=5.7
535A Dale 67.94 337 P **P 06 01 43.7 +0.4**
baz=157,SNR=18
438A Sam Houston St 67.94 339 P **P 06 01 44.1 +0.8**
baz=159
633A Saathoff Ranch 67.97 335 P **P 06 01 43.7 +0.1**
baz=156,SNR=11
VBMS Vicksburg 68.00 343 P **P 06 01 44.0 +0.4**
baz=156,SNR=5.6
LRAL Lakeview Retre 68.03 347 *e*P **P 06 01 43.5 -0.4**
comp=Z,19nm,0.9s
146A Union 68.06 345 P **P 06 01 44.3 +0.3**
baz=165,SNR=12
LPIG La Paz 68.08 323 LR LR 06 24 34.4
comp=Z,104nm,19.8s,baz=180,slow=30
340A Bronson 68.11 340 P **P 06 01 44.7 +0.4**
baz=161,SNR=5.6
339A Huntington 68.22 340 P **P 06 01 45.2 +0.2**
baz=160,SNR=5.8
437A Phantom Ranch, 68.22 338 P **P 06 01 45.7 +0.7**
baz=159
145A Houston Renfro 68.23 344 P **P 06 01 45.6 +0.5**
baz=164
534A Blanco 68.25 336 P **P 06 01 45.1 -0.1**
baz=157,SNR=6.9
242A Grayson 68.25 342 P **P 06 01 45.8 +0.6**
baz=162
144A Alexander Plac 68.37 344 P **P 06 01 46.2 +0.3**
baz=164
241A Mo Tay, Goldon 68.41 341 P **P 06 01 46.9 +0.7**
baz=162,SNR=9.6
338A Crockett 68.46 339 P **P 06 01 47.6 +1.0**
baz=160,SNR=7.6
533A Kerrville 68.48 335 P **P 06 01 47.0 +0.2**
baz=156,SNR=15
337A Centerville 68.60 338 P **P 06 01 48.3 +0.9**
baz=159,SNR=12
435B Jarrell 68.64 337 P **P 06 01 48.2 +0.5**
baz=158,SNR=5.3
NATX Nacogdoches 68.65 340 P **P 06 01 48.4 +0.7**
baz=160,SNR=8.6
NATX Nacogdoches 68.65 340 *e*P **P 06 01 48.9 +1.2**
comp=Z,71nm,0.9s
240A Hunter Patters 68.66 341 P **P 06 01 47.9 +0.2**
baz=161,SNR=5.9
142A Monroe 68.66 342 P **P 06 01 47.9 +0.2**
baz=162
143A Socs Landing, 68.67 343 P **P 06 01 48.4 +0.6**
baz=163,SNR=18
239A Gary 68.84 340 P **P 06 01 49.1 +0.2**
baz=160,SNR=8.6
434A Burnet 68.90 336 P **P 06 01 49.5 +0.1**
baz=157,SNR=27
336A Riesel 68.96 338 P **P 06 01 50.2 +0.5**
baz=158,SNR=17
238A Jacksonville 69.01 339 P **P 06 01 50.4 +0.4**
baz=160,SNR=6.6
CNNC Cliffs of the 69.02 355 *e*P **P 06 01 49.9 -0.1**
comp=Z,49nm,0.8s
Y47A UCPARC, Winfie 69.04 346 P **P 06 01 50.0 -0.1**
baz=166,SNR=56
335A Moody 69.05 337 P **P 06 01 50.3 0.0**
baz=158,SNR=11
JCT Junction City 69.12 335 P **P 06 01 50.8 +0.1**
baz=156,SNR=36
JCT Junction City 69.12 335 *e*P **P 06 01 51.1 +0.3**
JCT pmax pmax
comp=Z,48nm,0.9s
JCT Junction City 69.12 335 *e*P **P 06 01 51.1 +0.3**
comp=Z,48nm,0.9s
433A Art 69.12 336 P **P 06 01 50.9 +0.1**
baz=156,SNR=54
237A Washetta, Mont 69.21 339 P **P 06 01 51.7 +0.4**
baz=159,SNR=6.9
KMSC Kings Mountain 69.24 352 P **P 06 01 50.8 -0.5**
baz=172
KMSC Kings Mountain 69.24 352 *e*P **P 06 01 50.9 -0.5**
comp=Z,27nm,0.8s
334A Lometa 69.36 336 P **P 06 01 52.6 +0.4**
baz=157,SNR=40
236A Katherine and 69.43 338 P **P 06 01 52.6 +0.1**
baz=159,SNR=5.8
139A Bunkhouse Ranc 69.44 340 P **P 06 01 52.9 +0.3**
baz=160
TX31 Lajitas Ar. Si 69.56 331 *e*P **P 06 01 53.8 +0.2**
TX31 *e*P **P 06 01 54.0 +0.5**
TXAR Lajitas Array 69.56 331 P **P 06 01 54.2 +0.6**
comp=Z,10nm,0.7s,baz=152,slow=8.4,SNR=176
TXAR LR LR 06 28 11.7
comp=Z,540nm,18.2s,baz=0.0,slow=32
TXAR PKPPKP P'P'df 06 30 04.9 +10
comp=Z,0.7nm,1.0s,baz=15,slow=3.7,SNR=4.6
333A Richland Sprin 69.61 336 P **P 06 01 53.7 0.0**
baz=156,SNR=32
138A Matatall Enter 69.62 340 P **P 06 01 54.1 +0.4**
baz=160,SNR=7.3
Z40A Long Farm, Mag 69.71 341 P **P 06 01 54.7 +0.5**
baz=161
Y43A Makayla and Ka 69.71 344 P **P 06 01 54.6 +0.3**
baz=164
WHTX Lake Whitney, 69.72 337 P **P 06 01 54.3 -0.1**
baz=158,SNR=8.4
WHTX Lake Whitney, 69.72 337 *e*P **P 06 01 54.8 +0.5**
comp=Z,57nm,0.8s
137A Heron Place, G 69.75 339 P **P 06 01 55.0 +0.4**
baz=159,SNR=11
Y42A Garnett, Star 69.85 343 P **P 06 01 55.3 +0.2**
baz=163
136A Ennis 69.87 338 P **P 06 01 55.2 -0.1**
baz=159
Z39A Irene McRaven, 69.91 341 P **P 06 01 56.1 +0.6**
baz=161
234A Clairette 69.95 337 P **P 06 01 55.8 0.0**
baz=157,SNR=27
OXF Oxford 69.95 345 *e*P **P 06 01 55.3 -0.4**
OXF pmax pmax
comp=Z,91nm,0.8s
OXF Oxford 69.95 345 *e*P **P 06 01 55.2 -0.4**
comp=Z,91nm,0.8s
SWET Sewanee 69.96 348 *e*P **P 06 01 55.6 -0.2**
comp=Z,23nm,0.8s
CPCT Cooper Cave 69.96 349 *e*P **P 06 01 55.5 -0.3**
comp=Z,26nm,0.8s
PPT2 Papeete2 69.98 262 *e*S **S 06 11 07.0 +0.4**
comp=Z,320nm,22.8s
PPT2 Papeete2 69.98 262 *e*LR LR 06 23 15.5
comp=Z,543nm,28.2s
PPT Papeete 69.99 262 LR LR 06 25 41.8
comp=Z,332nm,21.4s,baz=141,slow=30
WLAR White Oak Lake 70.04 342 *e*P **P 06 01 56.9 +0.6**
comp=Z,49nm,0.8s
TKL Tuckaleechee C 70.06 350 *e*P **P 06 01 55.7 -0.7**
TKL pmax pmax
comp=Z,31nm,0.9s
TKL Tuckaleechee C 70.06 350 *e*P **P 06 01 55.7 -0.7**
comp=Z,31nm,0.9s
PLAL Pickwick Lake 70.13 346 *e*P **P 06 01 56.5 -0.4**
comp=Z,53nm,0.7s
Z38A Mt. Pleasant 70.14 340 P **P 06 01 57.4 +0.5**
baz=160
233A Rising Star 70.21 336 P **P 06 01 57.3 -0.1**
baz=157,SNR=24
135A Vickery Place, 70.22 338 P **P 06 01 57.3 -0.2**
baz=158
Z37A Pogue Cattle C 70.28 339 P **P 06 01 57.5 -0.3**
baz=160
Y40A Okolona 70.39 342 P **P 06 01 58.5 +0.1**
baz=162,SNR=7.0
134A White-Moore Ra 70.45 337 P **P 06 01 58.7 -0.2**
baz=157
Y39A Lockesburg 70.54 341 P **P 06 01 59.4 +0.1**
baz=161,SNR=6.5
Z36A Blue Ridge 70.58 339 P **P 06 01 60.0 +0.3**
baz=159,SNR=14
Y38A Idabel 70.70 340 P **P 06 02 00.1 -0.3**
baz=160
X40A Basin Creek Fa 70.73 342 P **P 06 02 00.8 +0.3**
baz=162,SNR=5.3
133A Hamilton Ranch 70.76 336 P **P 06 02 00.7 -0.1**
baz=157,SNR=20
UALR University of 70.88 343 *e*P **P 06 02 01.4 0.0**
comp=Z,26nm,1.0s
Z35A Perchaven, San 70.89 338 P **P 06 02 01.5 -0.1**
baz=158,SNR=7.6
TZTN Tazewell 70.90 350 *e*P **P 06 02 00.9 -0.6**
comp=Z,62nm,1.6s
MIAR Mount Ida 70.97 342 P **P 06 02 01.9 0.0**
baz=161,SNR=16
MIAR Mount Ida 70.97 342 *e*P **P 06 02 02.2 +0.2**
MIAR pmax pmax
comp=Z,21nm,0.9s
MIAR Mount Ida 70.97 342 *e*P **P 06 02 02.2 +0.2**
comp=Z,21nm,0.9s
Y37A Hugo 71.00 340 P **P 06 02 02.0 -0.2**
baz=160
ABTX Abilene, Hawle 71.02 336 P **P 06 02 02.2 -0.1**
baz=156,SNR=19
ABTX Abilene, Hawle 71.02 336 *e*P **P 06 02 02.4 +0.1**
comp=Z,52nm,0.8s
X39A Fountain Ranch 71.08 341 P **P 06 02 02.9 +0.2**
baz=161,SNR=15
Y36A Durant 71.12 339 P **P 06 02 02.6 -0.3**
baz=159
Z34A Collier Ranch, 71.14 338 P **P 06 02 02.6 -0.4**
baz=158,SNR=9.5
VWCC Virginia Weste 71.18 354 *e*P **P 06 02 02.1 -1.0**
BLA Blacksburg 71.19 353 *e*P **P 06 02 03.1 -0.2**
BLA pmax pmax
comp=Z,13nm,0.8s
BLA Blacksburg 71.19 353 *e*P **P 06 02 03.1 -0.2**
comp=Z,12nm,0.8s
WVT Waverly 71.19 347 *e*P **P 06 02 02.9 -0.4**
WVT pmax pmax
comp=Z,139nm,0.8s
WVT Waverly 71.19 347 *e*P **P 06 02 02.9 -0.4**
comp=Z,139nm,0.8s
W41A Tony Mavity, V 71.23 343 P **P 06 02 03.3 -0.3**
baz=162,SNR=16
W41B Gary Mavity, V 71.23 343 P **P 06 02 03.3 -0.3**
baz=162,SNR=16
Z33A Whitaker Ranch 71.33 337 P **P 06 02 04.1 -0.1**
baz=157,SNR=18
X301 Greenbrier Sit 71.33 343 *e*P **P 06 02 04.3 +0.1**
comp=Z,60nm,0.8s
WHAR Wooly Hollow 71.36 343 *e*P **P 06 02 04.5 +0.2**
comp=Z,46nm,1.1s
Y35A Marietta 71.36 338 P **P 06 02 04.5 +0.2**
baz=158
X201 Greenbrier Sit 71.38 343 *e*P **P 06 02 04.3 -0.1**
comp=Z,64nm,0.9s
X38A Whitesboro 71.43 341 P **P 06 02 04.9 +0.2**
baz=160,SNR=16
W40A Ferguson Farm, 71.46 342 P **P 06 02 05.0 +0.1**
baz=162,SNR=14
X37A Clayton 71.50 340 P **P 06 02 04.9 -0.3**
baz=160
Y34A Reagan Ranch, 71.63 338 P **P 06 02 05.5 -0.4**
baz=158,SNR=13
W39A Magazine 71.64 342 P **P 06 02 06.2 +0.2**
baz=161,SNR=36
W38A Poteau 71.72 341 P **P 06 02 06.7 +0.2**
baz=161,SNR=8.4
X36A Centrahoma 71.77 339 P **P 06 02 06.3 -0.5**
baz=159,SNR=29
X35A Drake 71.80 339 P **P 06 02 06.3 -0.7**
baz=158
CBN Corbin Frederi 71.93 356 *e*P **P 06 02 08.1 +0.4**
comp=Z,24nm,0.8s
Y33A Hilltop Ranch, 71.95 337 P **P 06 02 07.6 -0.3**
baz=157,SNR=14
V40A Witts Springs 71.98 343 P **P 06 02 07.6 -0.5**
baz=162,SNR=16
W37B Quinton 72.04 340 P **P 06 02 08.1 -0.3**
baz=160,SNR=6.0
V39A Pettigrew 72.22 342 P **P 06 02 08.9 -0.6**
baz=161,SNR=28
X34A Smith Ranch, M 72.25 338 P **P 06 02 09.5 -0.2**
baz=158,SNR=12
W36A Wetumka 72.27 340 P **P 06 02 08.7 -1.0**
baz=159,SNR=7.5
MNTX Cornudas Mount 72.33 331 P **P 06 02 08.9 -1.4**
baz=152,SNR=20
MNTX Cornudas Mount 72.33 331 *e*P **P 06 02 09.7 -0.6**
comp=Z,20nm,0.8s
X33A Lawton 72.40 338 P **P 06 02 09.5 -1.1**
baz=157,SNR=9.0
V38A Canehill 72.44 341 P **P 06 02 10.0 -0.8**
baz=161,SNR=14
W35A Tecumseh 72.47 339 P **P 06 02 10.2 -0.8**
baz=159,SNR=7.9
U40A Yellville 72.51 343 P **P 06 02 10.6 -0.5**
baz=162
X32A Elmer 72.54 337 P **P 06 02 10.6 -0.8**
baz=157,SNR=15
V37A Hulbert 72.66 341 P **P 06 02 11.7 -0.4**
baz=160,SNR=10
WMOK Wichita Mounta 72.67 337 *e*P **P 06 02 11.6 -0.6**
WMOK pmax pmax
comp=Z,24nm,1.1s
WMOK Wichita Mounta 72.67 337 *e*P **P 06 02 11.6 -0.6**
comp=Z,24nm,1.1s
U39A Green Forest 72.69 342 P **P 06 02 11.9 -0.4**
baz=162
HHAR Hobbs 72.71 342 *e*P **P 06 02 12.0 -0.4**
comp=Z,24nm,0.8s
V36A Jenks 72.79 340 P **P 06 02 12.3 -0.5**
baz=160,SNR=11
W34A Bridge Creek, 72.81 338 P **P 06 02 12.9 -0.2**
baz=158,SNR=5.6
W34A Bridge Creek, 72.81 338 *e*P **P 06 02 13.2 +0.1**
comp=Z,25nm,0.9s
TUL1 Leonard 72.86 340 P **P 06 02 12.6 -0.7**
baz=160
TUL1 Leonard 72.86 340 *e*P **P 06 02 13.3 0.0**
comp=Z,35nm,0.8s
USIN University of 72.94 347 *e*P **P 06 02 12.9 -0.9**
comp=Z,73nm,0.9s
W33A Caddo, Fort Co 72.95 338 P **P 06 02 14.2 +0.3**
baz=157,SNR=28
WCI Wyandotte Cave 72.96 349 *e*P **P 06 02 12.7 -1.2**
WCI pmax pmax
comp=Z,19nm,0.8s
WCI Wyandotte Cave 72.96 349 *e*P **P 06 02 12.7 -1.2**
comp=Z,19nm,0.8s
U38A Gravette 72.98 342 P **P 06 02 13.4 -0.5**
baz=161
SIUC Southern Illin 73.00 346 *e*P **P 06 02 13.5 -0.6**
comp=Z,45nm,0.8s
V35A Meyer Ranch, C 73.02 339 P **P 06 02 13.6 -0.7**
baz=159,SNR=10.0
SDMD Soldier's Deli 73.10 356 *e*P **P 06 02 14.8 +0.2**
comp=Z,12nm,0.9s
U37A Salina 73.14 341 P **P 06 02 14.3 -0.6**
baz=160
W32A Sentinel 73.17 337 P **P 06 02 15.0 -0.2**
baz=157,SNR=45
T40A Mansfield 73.18 343 P **P 06 02 14.5 -0.7**
baz=162
T39A Clever 73.27 343 P **P 06 02 15.0 -0.7**
baz=162

V34A **Guthrie** 73.29 339 P P 06 02 15.3 -0.5
baz=158,SNR=11
V34A **Guthrie** 73.29 339 eP P 06 02 15.7 -0.2
comp=Z,40nm,1.0s
U36A **Oologah** 73.30 340 P P 06 02 15.5 -0.4
baz=160
MAW **Mawson** 73.31 164 P P 06 02 16.3 +0.6
comp=Z,36nm,0.8s,baz=205,slow=6.7,SNR=38
MAW LR LR 06 36 25.8
comp=Z,571nm,18.9s,baz=234,slow=37
MAW **Mawson** 73.31 164 eP P 06 02 16.2 +0.6
comp=Z,9.5nm,0.9s
MSTX **Muleshoe** 73.34 334 P P 06 02 16.0 -0.3
baz=154,SNR=18
MSTX **Muleshoe** 73.34 334 eP P 06 02 16.2 -0.1
comp=Z,39nm,0.8s
V33A **Lossen Ranch,** 73.51 338 P P 06 02 17.0 -0.2
baz=158,SNR=10
T38A **Diamond** 73.52 342 P P 06 02 16.5 -0.7
baz=161
U35A **Pawnee** 73.56 340 P P 06 02 17.3 -0.2
baz=159
MCWV **Mont Chateau** 73.56 354 eP P 06 02 15.1 -2.3
comp=Z,11nm,0.9s
S40A **Lebanon** 73.61 343 P P 06 02 17.1 -0.5
baz=162,SNR=22
V32A **Arapaho** 73.66 338 P P 06 02 18.1 0.0
baz=157,SNR=6.5
319A **Douglas** 73.71 328 eP P 06 02 20.1 +1.5
comp=Z,35nm,1.1s
T37A **Cheneyville 18** 73.76 341 P P 06 02 18.1 -0.5
baz=160
OLIL **Olney** 73.77 347 eP P 06 02 17.8 -0.8
comp=Z,38nm,1.3s
OLIL ePcP sP 06 02 25.4 0.0
AMTX **Amarillo** 73.77 335 P P 06 02 18.9 +0.1
baz=155
AMTX **Amarillo** 73.77 335 eP P 06 02 19.3 +0.5
comp=Z,46nm,1.0s
U34A **Anderson Ranch** 73.86 339 P P 06 02 19.0 -0.2
baz=158
U34A **Anderson Ranch** 73.86 339 eP P 06 02 19.4 +0.2
comp=Z,30nm,0.8s
S39A **Bolivar** 73.89 343 P P 06 02 18.8 -0.5
baz=162,SNR=19
BLO **Bloomington** 73.92 349 eP P 06 02 18.8 -0.7
BLO pmax pmax
comp=Z,30nm,0.8s
BLO **Bloomington** 73.92 349 eP P 06 02 18.8 -0.7
comp=Z,30nm,0.8s
T36A **Boggs Farm, Ca** 73.96 341 P P 06 02 19.4 -0.4
baz=160
S38A **Stockton** 73.98 342 P P 06 02 19.1 -0.8
baz=161,SNR=35
T35A **Sooner Cattle** 74.00 340 P P 06 02 19.9 -0.2
baz=159
U33A **Lingo Farm, Me** 74.03 339 P P 06 02 19.9 -0.3
baz=158
121A **Cookes Peak, D** 74.05 329 P P 06 02 21.2 +0.5
baz=150,SNR=16
121A **Cookes Peak, D** 74.05 329 eP P 06 02 21.7 +1.1
comp=Z,33nm,0.9s
O56A **Blue Knob Stat** 74.06 355 P P 06 02 20.4 +0.1
baz=174,SNR=5.5
SLM **Saint Louis** 74.09 346 eP P 06 02 20.4 -0.1
SLM pmax pmax
comp=Z,51nm,0.7s
SLM **Saint Louis** 74.09 346 eP P 06 02 20.4 -0.1
comp=Z,51nm,0.7s
R40A **Maddies Statio** 74.21 344 P P 06 02 20.9 -0.3
baz=163,SNR=31
LUPA **Lehigh Univers** 74.22 358 eP P 06 02 21.3 +0.1
comp=Z,15nm,1.0s
U32A **Winter Ranch,** 74.25 338 P P 06 02 21.3 -0.2
baz=157
BRNJ **Basking Ridge** 74.28 358 eP P 06 02 22.4 +0.9
comp=Z,73nm,1.5s
T34A **McClaskey Farm** 74.30 340 P P 06 02 21.7 0.0
baz=159
S37A **Fort Scott** 74.34 342 P P 06 02 21.0 -0.9
baz=161,SNR=9.0
SSPA **Standing Stone** 74.39 356 eP P 06 02 21.5 -0.6
comp=Z,14nm,0.9s
R39A **Chumby, Storey** 74.41 343 P P 06 02 21.6 -0.8
baz=162,SNR=17
ACSO **Alum Creek Sta** 74.46 352 eP P 06 02 22.0 -0.6
comp=Z,66nm,0.8s
R38A **Fenwick Farm,** 74.50 343 P P 06 02 22.0 -0.9
baz=161,SNR=9.4
S36A **Lake Cedric, C** 74.51 341 P P 06 02 22.3 -0.6
baz=160,SNR=18
N59A **State Game Lan** 74.56 357 P P 06 02 22.6 -0.5
baz=177,SNR=8.4
T33A **Patterson Ranc** 74.67 339 P P 06 02 24.2 +0.3
baz=158
S35A **Otter Creek Ra** 74.67 340 P P 06 02 23.6 -0.3
baz=159,SNR=10
ODNJ **Ogdensburg** 74.69 358 eP P 06 02 24.6 +0.7
comp=Z,67nm,1.9s
Q40A **Laux Farm, Aux** 74.84 344 P P 06 02 24.3 -0.5
baz=163,SNR=21
R37A **Teagarden Farm** 74.86 342 P P 06 02 24.4 -0.5
baz=161,SNR=11
N54A **Moraine State** 74.87 354 P P 06 02 24.7 -0.2
baz=173,SNR=5.9
S34A **Willow Spring** 74.91 340 P P 06 02 24.9 -0.4
baz=159
T32A **Huddler Ranch,** 74.96 338 P P 06 02 25.9 +0.3
baz=157
BNM **Barren Site** 74.98 331 eP P 06 02 26.8 +0.8
LIC **Lamto** 75.01 72 eP P 06 02 26.2 -0.2
comp=Z,51nm,0.8s
R36A **Gordon, Harris** 75.05 341 P P 06 02 25.1 -0.9
baz=160
S33A **Kaszmaul Farm,** 75.07 339 P P 06 02 26.1 0.0
baz=158
SUR **Sutherland** 75.09 119 eP P 06 02 27.7 +0.8
comp=Z,51nm,0.9s
Q39A **Willow Grove F** 75.09 344 P P 06 02 25.7 -0.6
baz=162,SNR=9.3
LPM **Los Pinos Moun** 75.12 331 eP P 06 02 27.6 +0.8
Q38A **Cooks Store, C** 75.17 343 P P 06 02 26.1 -0.6
baz=162,SNR=14
TUC **Tucson** 75.18 327 P P 06 02 27.8 +0.8
baz=148
TUC **Tucson** 75.18 327 eP P 06 02 28.2 +1.2
TUC pmax pmax
comp=Z,11nm,1.0s
TUC **Tucson** 75.18 327 eP P 06 02 28.2 +1.2
comp=Z,11nm,1.0s
KSPA **Keystone Colle** 75.19 357 eP P 06 02 27.7 +0.9
comp=Z,75nm,2.0s
SFIN **Lafayette** 75.19 348 P P 06 02 25.8 -1.0
baz=167
SFIN **Lafayette** 75.19 348 eP P 06 02 25.8 -1.0
comp=Z,18nm,0.9s
R35A **Emporia Munici** 75.23 341 P P 06 02 26.5 -0.6
baz=160
TIC **Toumodi** 75.27 71 eP P 06 02 27.5 -0.4
Q37A **Longview Farm,** 75.30 342 P P 06 02 26.7 -0.8
baz=161
KIC **Kosan Boka** 75.32 72 eP P 06 02 28.1 -0.1
comp=Z,135nm,0.8s
P40A **Paris** 75.34 344 P P 06 02 27.2 -0.5
baz=163,SNR=28
M54A **Oil Creek Stat** 75.38 354 P P 06 02 27.2 -0.7
baz=174,SNR=7.6
LAZ **Ladron** 75.40 331 eP P 06 02 29.9 +1.4
DBIC **Dimbokro** 75.41 71 P P 06 02 28.7 0.0
comp=Z,45nm,0.7s,baz=207,slow=6.1,SNR=78
DBIC LR LR 06 34 36.4
comp=Z,309nm,18.1s,baz=210,slow=35
DBIC **Dimbokro** 75.41 71 eP P 06 02 27.6 -1.1
comp=Z,54nm,0.8s
S32A **Newby Ranch, P** 75.45 338 P P 06 02 28.1 -0.3
baz=157
R34A **Isabella, Hill** 75.50 340 P P 06 02 28.4 -0.3
baz=159,SNR=8.6
ANMO **Albuquerque** 75.61 332 P P 06 02 30.5 +0.9
baz=151
ANMO **Albuquerque** 75.61 332 eP P 06 02 30.4 +0.9
ANMO pmax pmax
comp=Z,17nm,1.0s
ANMO **Albuquerque** 75.61 332 eP P 06 02 30.4 +0.9
comp=Z,15nm,0.9s
Q36A **Arnold C. Orve** 75.63 342 P P 06 02 28.5 -0.9
baz=160
R33A **Olander Ranch,** 75.72 339 P P 06 02 29.7 -0.3
baz=158
HDIL **Hopedale** 75.76 347 eP P 06 02 30.4 +0.3
comp=Z,4µm,2.0s
P38A **Dawn** 75.78 343 P P 06 02 29.6 -0.6
baz=162,SNR=7.0
214A **Organ Pipe Nat** 75.82 325 P P 06 02 31.3 +0.7
baz=146,SNR=5.5
214A **Organ Pipe Nat** 75.82 325 eP P 06 02 31.4 +0.7
comp=Z,46nm,0.9s
BINY **Binghamton** 75.84 357 eP P 06 02 30.9 +0.3
comp=Z,67nm,1.8s
O40A **La Belle** 75.87 345 P P 06 02 30.0 -0.7
baz=163,SNR=10
P37A **Lathrop** 75.94 343 P P 06 02 29.9 -1.2
baz=161,SNR=5.8
Q34A **Chapman** 76.00 340 P P 06 02 31.1 -0.4
baz=159
ERPA **Erie** 76.01 354 eP P 06 02 31.4 -0.1
comp=Z,50nm,1.1s
R32A **Long Quarter,** 76.04 339 P P 06 02 31.6 -0.2
baz=158,SNR=12
KSU1 **Kansas State U** 76.07 341 P P 06 02 30.8 -1.1
baz=159
HRV **Adam Dziewonsk** 76.08 1 eP P
HRV pmax pmax
comp=Z,25nm,1.0s
HRV **Adam Dziewonsk** 76.08 1 eP P 06 02 32.9 +1.0
comp=Z,25nm,1.0s
O39A **Kirksville** 76.15 344 P P 06 02 31.7 -0.6
baz=163,SNR=12
P36A **Good Intent, A** 76.19 342 P P 06 02 31.3 -1.2
baz=160,SNR=6.6
O38A **Galt** 76.23 343 P P 06 02 31.9 -0.9
baz=162,SNR=5.1
P35A **Duane Minner,** 76.31 341 P P 06 02 32.8 -0.5
baz=160
Q33A **Connelly Farm,** 76.32 340 P P 06 02 32.4 -0.9
baz=158
RAR **Rarotonga** 76.41 254 LR LR 06 27 59.8
comp=Z,190nm,18.7s,baz=106,slow=29
O37A **Wolven Farm, M** 76.44 343 P P 06 02 33.0 -1.0
baz=161,SNR=14
MMNY **Mt. Morris Dam** 76.47 356 eP P 06 02 34.3 +0.2
comp=Z,96nm,1.2s
Q32A **Meitler Ranch,** 76.53 339 P P 06 02 34.2 -0.3
baz=158,SNR=6.7
P34A **Walnut Farm, R** 76.55 341 P P 06 02 33.8 -0.8
baz=159,SNR=6.8
AAM **Ann Arbor** 76.58 351 eP P
AAM pmax pmax
comp=Z,83nm,1.7s
AAM **Ann Arbor** 76.58 351 eP P 06 02 34.2 -0.4
comp=Z,82nm,1.7s
O36A **Bolckow** 76.61 342 P P 06 02 33.5 -1.4
baz=161
P33A **Williams Farm,** 76.69 340 P P 06 02 35.0 -0.4
baz=158
X18A **Snowflake** 76.69 329 eP P 06 02 36.9 +1.2
comp=Z,17nm,0.9s
CBKS **Cedar Bluff** 76.72 338 P P 06 02 35.0 -0.6
baz=157
CBKS **Cedar Bluff** 76.72 338 eP P 06 02 36.3 +0.7
CBKS pmax pmax
comp=Z,31nm,0.8s
CBKS **Cedar Bluff** 76.72 338 eP P 06 02 36.3 +0.7
comp=Z,31nm,0.8s
N39A **Derby Farms, D** 76.73 344 P P 06 02 34.8 -0.7
baz=163,SNR=14
T25A **Trinidad** 76.77 334 P P 06 02 36.5 +0.3
baz=153
T25A **Trinidad** 76.77 334 eP P 06 02 37.2 +1.1
comp=Z,37nm,0.9s
N38A **Joes South For** 76.82 344 P P 06 02 35.3 -0.7
baz=162,SNR=12
ACCN **Adirondack Com** 76.97 359 eP P 06 02 36.9 0.0
comp=Z,74nm,1.7s
O35A **Humboldt** 76.98 342 P P 06 02 36.1 -0.9
baz=160
N37A **Lee Faris, Mou** 77.02 343 P P 06 02 36.2 -1.0
baz=161,SNR=5.0
W18A **Petrified Fore** 77.10 329 P P 06 02 38.7 +0.7
baz=149,SNR=14
W18A **Petrified Fore** 77.10 329 eP P 06 02 39.1 +1.1
comp=Z,31nm,1.1s
O34A **Beatrice** 77.11 341 P P 06 02 37.1 -0.6
baz=159
P32A **Huiting Farm,** 77.12 339 P P 06 02 37.6 -0.3
baz=158,SNR=5.3
X16A **Lo Mia Camp, P** 77.25 328 eP P 06 02 40.0 +1.1
comp=Z,20nm,1.0s
O33A **Hebron** 77.25 340 P P 06 02 37.9 -0.7
baz=159,SNR=7.8
N36A **Muff Farm, Cla** 77.25 343 P P 06 02 37.5 -1.0
baz=161
M38A **Pleasantville** 77.40 344 P P 06 02 38.4 -1.0
baz=162,SNR=13
N35A **Tabor** 77.47 342 P P 06 02 39.0 -0.8
baz=160,SNR=9.0
MDV **Middlebury** 77.57 359 eP P 06 02 40.6 +0.4
M37A **Trindle Farm,** 77.59 343 P P 06 02 39.8 -0.6
baz=162,SNR=7.8
O32A **Brockman Farm,** 77.62 340 P P 06 02 40.1 -0.5
baz=158
N34A **Lincoln** 77.67 341 P P 06 02 40.2 -0.6
baz=160,SNR=8.7
SDCO **Great Sand Dun** 77.70 334 P P 06 02 41.8 +0.3
baz=152,SNR=18
SDCO **Great Sand Dun** 77.70 334 eP P 06 02 42.5 +1.0
comp=Z,14nm,0.8s
M36A **Felix, Anita** 77.82 343 P P 06 02 41.0 -0.6
baz=161
KSCO **Kaye Shedlock'** 77.82 336 P P 06 02 42.5 +0.5
baz=154
KSCO **Kaye Shedlock'** 77.82 336 eP P 06 02 43.0 +1.1
comp=Z,27nm,0.9s
O31A **Woolen Ranch,** 77.82 339 P P 06 02 42.3 +0.6
baz=157
SCIA **State Center** 77.87 344 eP P 06 02 42.0 0.0
comp=Z,29nm,1.0s
L38A **Oak Wood Farm,** 78.04 344 P P 06 02 44.1 +1.2
baz=162,SNR=6.0
M35A **Neola** 78.05 342 P P 06 02 42.8 -0.1
baz=160
N32A **Stulken Farm,** 78.09 340 P P 06 02 43.3 +0.1
baz=158
Y12C **Blythe** 78.11 325 P P 06 02 44.8 +1.4
baz=145
Y12C **Blythe** 78.11 325 eP P 06 02 45.1 +1.6
comp=Z,16nm,0.8s
WUAZ **Wupatki** 78.14 328 P P 06 02 44.6 +0.8
baz=148,SNR=8.1
WUAZ **Wupatki** 78.14 328 eP P 06 02 45.5 +1.6
comp=Z,26nm,0.9s
S22A **4UR Ranch, Cre** 78.20 333 P P 06 02 45.0 +0.7
baz=151,SNR=9.6
S22A **4UR Ranch, Cre** 78.20 333 eP P 06 02 45.5 +1.2
comp=Z,12nm,0.9s
L37A **Phoenix Point,** 78.20 344 P P 06 02 43.3 -0.5
baz=162
LONY **Lake Ozonia** 78.22 358 eP P 06 02 43.7 -0.1
comp=Z,29nm,1.1s
JFWS **Jewell Farm** 78.22 347 eP P 06 02 43.8 -0.1
JFWS pmax pmax
comp=Z,27nm,0.9s
JFWS **Jewell Farm** 78.22 347 eP P 06 02 43.8 -0.1
comp=Z,27nm,0.9s
M34A **Aspy Farms, Fr** 78.31 342 P P 06 02 44.0 -0.4
baz=160
N31A **Bailey Ranch,** 78.33 340 P P 06 02 44.7 +0.1
baz=158
MONP2 **Monument Peak** 78.33 323 P P 06 02 44.7 -0.3
baz=144
MVCO **Mesa Verde** 78.39 331 P P 06 02 45.9 +0.6
baz=150,SNR=11
MVCO **Mesa Verde** 78.39 331 eP P 06 02 46.3 +1.1
comp=Z,23nm,1.1s
L36A **Harm Buss Farm** 78.40 343 P P 06 02 44.7 -0.1
baz=161
FRNY **Flat Rock** 78.41 359 eP P 06 02 45.4 +0.5
comp=Z,18nm,0.9s
BC3 **Big Chuckawall** 78.48 324 P P 06 02 46.5 +0.8
baz=144,SNR=11
K38A **Parkersburg** 78.48 345 P P 06 02 44.8 -0.5
baz=163
SADO **Sadowa** 78.58 355 eP P 06 02 45.6 -0.2
comp=Z,25nm,1.1s
BGNE **Belgrade** 78.65 340 eP P 06 02 46.6 +0.3
Q24A **Divide** 78.65 334 P P 06 02 47.3 +0.5
baz=153,SNR=8.4
L34A **Svendsen Farm,** 78.69 342 P P 06 02 45.9 -0.6
baz=160
IRM **Iron Mountain** 78.74 325 P P 06 02 45.9 -1.1
baz=145
K37A **Belmond** 78.79 344 P P 06 02 46.3 -0.8
baz=162
M31A **Lambtecht Ranc** 78.82 340 P P 06 02 47.6 +0.3
baz=158,SNR=6.6
K36A **Gilmore City** 78.85 344 P P 06 02 47.1 -0.3
baz=161
PKME **Peaks-Kenny Pk** 78.89 2 eP P 06 02 48.4 +1.0
comp=Z,212nm,2.0s
PFO **Pinyon Flats O** 78.93 324 P P 06 02 48.7 +0.5
baz=144
PFO **Pinyon Flats O** 78.93 324 eP P 06 02 49.9 +1.7
PFO pmax pmax
comp=Z,16nm,0.9s
PFO **Pinyon Flats O** 78.93 324 eP P 06 02 49.9 +1.7
comp=Z,16nm,0.9s
BELC **Belle Mtn. Jos** 79.02 324 P P 06 02 48.8 +0.1
baz=144
J38A **Wedel Dairy, R** 79.06 345 P P 06 02 47.9 -0.6
baz=163
L33A **Hoskins** 79.11 341 P P 06 02 48.2 -0.7
baz=159
K35A **Storm Lake** 79.12 343 P P 06 02 48.1 -0.8
baz=161
L32A **Elgin** 79.16 341 P P 06 02 48.2 -0.9
baz=158
PV01 **Paradox Valley** 79.21 332 eP P 06 02 50.5 +0.7
J37A **Redenius Farm,** 79.29 344 P P 06 02 49.2 -0.5
baz=162
K34A **Le Mars** 79.30 342 P P 06 02 49.6 -0.3
baz=160
PV05 **Paradox Valley** 79.37 331 eP P 06 02 51.5 +0.9
OGNE **Ogallala** 79.38 338 P P 06 02 50.4 0.0
baz=155
OGNE **Ogallala** 79.38 338 eP P 06 02 51.1 +0.7
comp=Z,15nm,0.9s
K33A **Hardington** 79.45 342 P P 06 02 50.3 -0.4
baz=159
J36A **Seneca 1, Swea** 79.48 344 P P 06 02 50.3 -0.5
baz=161
TSUM **Tsumeb** 79.48 106 eP P 06 02 52.2 +0.5
comp=Z,26nm,1.0s
SMCO **Snowmass** 79.51 333 eP P 06 02 53.0 +1.4
comp=Z,27nm,1.0s
L31A **Butterfield Fa** 79.55 340 P P 06 02 51.7 +0.4
baz=158,SNR=9.8
ISCO **Idaho Springs** 79.56 335 P P 06 02 51.9 +0.2
baz=152,SNR=16
ISCO **Idaho Springs** 79.56 335 eP P 06 02 52.3 +0.6
ISCO pmax pmax
comp=Z,10.0nm,0.9s
ISCO **Idaho Springs** 79.56 335 eP P 06 02 52.3 +0.6
comp=Z,9.9nm,0.9s
PV04 **Paradox Valley** 79.57 332 eP P 06 02 52.0 +0.3
PV10 **Paradox Valley** 79.61 331 eP P 06 02 52.0 0.0
I38A **Scanlan Farm,** 79.72 346 P P 06 02 51.4 -0.6
baz=163
PV09 **Paradox Valley** 79.75 331 eP P 06 02 53.9 +1.1
K32A **Verdigre** 79.76 341 P P 06 02 51.5 -0.9
baz=158
J34A **George** 79.83 343 P P 06 02 52.2 -0.5
baz=160
HEC **Hector,Ludlow** 79.85 325 P P 06 02 52.5 -0.7
baz=144
I37A **Lemond, Waseca** 79.92 345 P P 06 02 52.7 -0.5
baz=162
FMP **Fort Macarthur** 79.93 323 P P 06 02 52.0 -1.4
baz=143
K31A **O'Neill** 79.94 341 P P 06 02 53.5 +0.2
baz=158
BFSC **Mount Baldy Ra** 80.03 323 P P 06 02 53.0 -1.1
baz=143
KNB **Kanab** 80.03 328 eP P 06 02 55.6 +1.4
KNB pmax pmax
comp=Z,23nm,0.9s
KNB **Kanab** 80.03 328 eP P 06 02 55.6 +1.4
comp=Z,23nm,0.9s
I36A **Fitzsimmons Fa** 80.06 344 P P 06 02 53.3 -0.6
baz=162
CASY **Casey** 80.07 181 eP P 06 02 54.9 +1.1
comp=Z,21nm,0.9s
J33A **Davis** 80.11 342 P P 06 02 53.5 -0.8
baz=159
I35A **Creekview Farm** 80.13 344 P P 06 02 53.8 -0.5
baz=161
LCMT **Little Creek M** 80.22 328 eP P 06 02 56.3 +1.1
comp=Z,16nm,1.2s
MWC **Mount Wilson** 80.22 323 eP P 06 02 56.6 +1.4
MWC pmax pmax
comp=Z,12nm,0.9s
MWC **Mount Wilson** 80.22 323 eP P 06 02 56.6 +1.4
comp=Z,12nm,0.9s
K30A **Basset** 80.23 340 P P 06 02 54.9 -0.1
baz=157
PASC **Pasadena Art C** 80.24 323 eP P 06 02 57.3 +2.2
comp=Z,21nm,1.1s
BOSA **Boshof** 80.33 118 P P 06 02 56.1 0.0
comp=Z,25nm,0.8s,baz=235,slow=3.8,SNR=38
BOSA LR LR 06 35 13.5
comp=Z,198nm,18.8s,baz=210,slow=33
BOSA **Boshof** 80.33 118 eP P 06 02 56.3 +0.1
comp=Z,42nm,0.9s
H37A **Dierke Farm, C** 80.36 345 P P 06 02 55.5 0.0
baz=163,SNR=6.7
J32A **Parkston** 80.39 341 P P 06 02 55.0 -0.8
baz=159
ECSD **EROS Data Cent** 80.41 342 P P 06 02 55.6 -0.3
baz=160,SNR=39
ECSD **EROS Data Cent** 80.41 342 eP P 06 02 55.5 -0.4
comp=Z,32nm,0.8s
GSC **Goldstone, Bar** 80.46 324 P P 06 02 56.1 -0.3
baz=144
GSC **Goldstone, Bar** 80.46 324 eP P 06 02 57.3 +0.8
GSC pmax pmax
comp=Z,9.0nm,0.8s
GSC **Goldstone, Bar** 80.46 324 eP P 06 02 57.2 +0.8
comp=Z,9.3nm,0.8s
I34A **Hadley** 80.51 343 P P 06 02 56.5 +0.1
baz=160
MTPU **Mount Pierson** 80.62 329 eP P 06 02 58.6 +1.1
comp=Z,15nm,1.0s
BLG **Laguna Peak, P** 80.63 322 P P 06 02 57.3 0.0
baz=142
N23A **Red Feather La** 80.64 335 P P 06 02 58.1 +0.6
baz=152,SNR=9.6
N23A **Red Feather La** 80.64 335 eP P 06 02 58.5 +1.0
comp=Z,10nm,0.9s
EDW2 **Edwards Air Fo** 80.71 323 P P 06 02 58.3 +0.6
baz=143,SNR=6.3
I33A **Coleman** 80.75 342 P P 06 02 57.1 -0.5
baz=160
J30A **Dallas** 80.80 340 P P 06 02 57.7 -0.2
baz=157
O20A **White River Ci** 80.82 333 P P 06 02 58.4 0.0
baz=150,SNR=7.3
O20A **White River Ci** 80.82 333 eP P 06 02 59.3 +0.9
comp=Z,12nm,0.9s
SRU **San Rafael Swe** 80.83 331 eP P 06 02 59.1 +0.7
SRU pmax pmax
comp=Z,16nm,0.9s
SRU **San Rafael Swe** 80.83 331 eP P 06 02 59.1 +0.7
comp=Z,16nm,0.9s
SCZ2 **Santa Cruz Isl** 80.83 322 P P 06 02 57.7 -0.6
baz=142
PHWY **Pilot Hill** 80.83 335 eP P 06 02 58.9 +0.4
comp=Z,9.8nm,0.9s
OSI **Osito Audit: C** 80.86 323 P P 06 02 58.6 +0.1
baz=142
OSI **Osito Audit: C** 80.86 323 eP P 06 02 59.9 +1.3
comp=Z,20nm,0.8s
H35A **Sunnyside Ranc** 80.89 344 P P 06 02 57.6 -0.8
baz=161,SNR=32
I32A **Karley and Nic** 80.90 342 P P 06 02 57.8 -0.7
baz=159
SPMN **Marine on St.** 80.95 346 P P 06 02 57.7 -1.0
baz=163,SNR=7.8
SPMN **Marine on St.** 80.95 346 eP P 06 02 57.7 -1.0
comp=Z,19nm,0.8s
MSU **Marysvale** 81.01 329 eP P 06 03 00.3 +0.8
MSU **Marysvale** 81.01 329 eP P 06 03 00.3 +0.8
H34A **Spellman Lake,** 81.08 343 P P 06 02 59.0 -0.4
baz=160,SNR=13
COWI **Conover** 81.10 348 eP P 06 02 58.6 -0.9
comp=Z,20nm,1.4s

J29A	**Okreek** baz=157	81.11	340		P		P	06 02 59.4	-0.2
LMQ	**La Malbaie** comp=Z,40nm,1.1s	81.14	1	*e*P			P	06 02 59.9	+0.3
G36A	**St. Michael** baz=162,SNR=5.3	81.16	345		P		P	06 02 59.1	-0.6
P18A	**Preston Nutter** comp=Z,31nm,0.8s	81.16	331	*e*P			P	06 03 01.2	+0.9
P17A	**Butcher Ranch,** comp=Z,15nm,1.0s	81.23	331	*e*P			P	06 03 01.4	+0.8
TMUT	**Trail Mountain** comp=Z,31nm,1.2s	81.27	330	*e*P			P	06 03 01.9	+1.0
G35A	**Watkins** baz=161	81.31	344		P		P	06 03 00.1	-0.5
I30A	**Oacoma** baz=157	81.32	341		P		P	06 03 00.3	-0.4
H33A	**Prehn Over Nor** baz=160,SNR=18	81.33	343		P		P	06 03 00.2	-0.6
H32A	**Carlson Farm,** baz=159	81.34	342		P		P	06 03 00.4	-0.4
J28A	**Allard Ranch,** baz=156	81.39	339		P		P	06 03 01.3	+0.1
MPMC	**Manual Prospec** baz=143,SNR=7.3	81.40	324		P		P	06 03 02.0	+0.4
FURC	**Furnace Creek,** baz=144,SNR=5.7	81.43	325		P		P	06 03 01.9	+0.5
J27A	**Elkhorn Farm,** baz=155	81.47	339		P		P	06 03 02.2	+0.6
TPNV	**Topopah Spring** baz=144,SNR=18	81.53	326		P		P	06 03 02.7	+0.5
TPNV	**Topopah Spring**	81.53	326	*e*P			P	06 03 03.9	+1.7
TPNV	comp=Z,12nm,0.8s			pmax			pmax		
TPNV	**Topopah Spring** comp=Z,12nm,0.8s	81.53	326	*e*P			P	06 03 03.9	+1.7
ISA	**Isabella, Lake** baz=143	81.56	324		P		P	06 03 03.3	+1.1
ISA	**Isabella, Lake**	81.56	324	*e*P			P	06 03 04.0	+1.7
ISA	comp=Z,12nm,0.9s			pmax			pmax		
ISA	**Isabella, Lake** comp=Z,12nm,0.9s	81.56	324	*e*P			P	06 03 04.0	+1.7
H31A	**Wolsey** baz=158	81.59	341		P		P	06 03 01.9	-0.2
G34A	**Benson** baz=160	81.59	344		P		P	06 03 01.3	-0.8
DAC	**Darwin (Calif)**	81.63	325	*e*P			P	06 03 03.5	+0.8
DAC	comp=Z,15nm,0.9s			pmax			pmax		
DAC	**Darwin (Calif)** comp=Z,15nm,0.9s	81.63	325	*e*P			P	06 03 03.5	+0.8
PKM	**Mcpherson Peak** baz=142	81.63	322		P		P	06 03 01.3	-1.5
I29A	**Vivian Onida** baz=157	81.67	340		P		P	06 03 02.1	-0.4
SUSD	**Miller** baz=158	81.68	341		P		P	06 03 01.9	-0.7
F36A	**Milaca** baz=162,SNR=21	81.71	345		P		P	06 03 01.8	-0.9
G33A	**Ortonville** baz=160	81.74	343		P		P	06 03 02.2	-0.6
PSUT	**Pine Spring** comp=Z,15nm,0.9s	81.75	328	*e*P			P	06 03 04.8	+1.4
VLDQ	**Val d'Or** comp=Z,30nm,1.0s	81.81	357	*e*P			P	06 03 03.3	+0.2
J26A	**Sides Ranch, S** baz=154	81.85	338		P		P	06 03 03.4	-0.2
I28A	**Midland** baz=156	81.90	339		P		P	06 03 03.8	0.0
F35A	**Swanville** baz=161,SNR=7.3	81.93	345		P		P	06 03 03.1	-0.8
F34A	**Alexandria** baz=161,SNR=5.4	82.03	344		P		P	06 03 04.5	+0.1
MPU	**Maple Canyon** comp=Z,12nm,1.0s	82.05	331	*e*P			P	06 03 05.8	+0.9
SMMC	**Simmler** baz=142	82.05	322		P		P	06 03 04.5	-0.3
J25A	**Sunshine Ranch** baz=154	82.15	337		P		P	06 03 05.3	+0.1
NLU	**North Lily Min** comp=Z,12nm,1.1s	82.18	330	*e*P			P	06 03 06.7	+1.1
H29A	**Onida** baz=157,SNR=8.7	82.20	340		P		P	06 03 04.9	-0.4
E36A	**McGregor** baz=162,SNR=20	82.28	346		P		P	06 03 04.9	-0.8
F33A	**5 Mile Ranch,** baz=160,SNR=6.3	82.31	343		P		P	06 03 04.8	-1.0
R11A	**Troy Canyon, C** baz=145,SNR=26	82.36	327		P		P	06 03 07.3	+0.7
R11A	**Troy Canyon, C** comp=Z,13nm,0.9s	82.36	327	*e*P			P	06 03 07.6	+1.0
G30A	**Faulkton** baz=158	82.37	341		P		P	06 03 05.5	-0.7
K22A	**Casper** baz=152	82.40	335		P		P	06 03 06.7	+0.1
K22A	**Casper** comp=Z,20nm,1.0s	82.40	335	*e*P			P	06 03 07.0	+0.4
H28A	**Mission Ridge** baz=156	82.47	340		P		P	06 03 06.5	-0.2
JLU	**Jordanelle** comp=Z,10nm,0.8s	82.47	331	*e*P			P	06 03 08.0	+0.8
E35A	**Pequot Lakes** baz=162	82.56	345		P		P	06 03 06.2	-0.9
LBTB	**Lobatse**	82.57	115	*e*P			P	06 03 08.0	0.0
LBTB	comp=Z,59nm,1.0s			pmax			pmax		
LBTB	**Lobatse** comp=Z,59nm,1.0s	82.57	115	*e*P			P	06 03 08.0	0.0
G29A	**Hoven** baz=157	82.64	341		P		P	06 03 07.0	-0.6
CTU	**Camp Tracy** comp=Z,9.9nm,0.9s	82.67	331	*e*P			P	06 03 08.6	+0.5
DUG	**Dugway, Tooele** baz=147,SNR=22	82.69	330		P		P	06 03 08.8	+0.7
DUG	**Dugway, Tooele**	82.69	330	*e*P			P	06 03 09.2	+1.0
DUG	comp=Z,13nm,0.9s			pmax			pmax		
DUG	**Dugway, Tooele** comp=Z,13nm,0.9s	82.69	330	*e*P			P	06 03 09.2	+1.0
I25A	**Rochford** baz=154	82.69	338		P		P	06 03 08.1	-0.1
D37A	**Cotton** baz=163,SNR=6.7	82.72	346		P		P	06 03 07.1	-0.9
G28A	**Parade** baz=156,SNR=14	82.81	340		P		P	06 03 08.2	-0.4
F31A	**Hecla** baz=158,SNR=6.5	82.81	342		P		P	06 03 07.7	-0.8
E33A	**Westby DABS, E** baz=160,SNR=5.8	82.87	344		P		P	06 03 07.7	-1.0
RSSD	**Black Hills** baz=154	82.88	338		P		P	06 03 08.4	-0.7
RSSD	**Black Hills**	82.88	338	*e*P			P	06 03 09.4	+0.3
RSSD	comp=Z,10.0nm,0.9s			pmax			pmax		
RSSD	**Black Hills** comp=Z,9.9nm,0.9s	82.88	338	*e*P			P	06 03 09.4	+0.3
TCUT	**Toone Canyon** comp=Z,26nm,1.1s	82.89	331	*e*P			P	06 03 10.2	+0.8
C39A	**Grand Marais** baz=165,SNR=16	82.94	348		P		P	06 03 08.0	-1.0
D35A	**Remer** baz=162,SNR=14	82.98	345		P		P	06 03 08.3	-1.0
F30A	**Leola** baz=158	82.99	342		P		P	06 03 09.0	-0.5
C38A	**Sawbill Land.** baz=164,SNR=14	83.04	347		P		P	06 03 08.3	-1.3
H25A	**Fruitdale** baz=154	83.19	338		P		P	06 03 10.2	-0.4
F29A	**Eureka** baz=157,SNR=13	83.20	341		P		P	06 03 09.8	-0.7
E32A	**Braaten, Kindr** baz=159	83.20	343		P		P	06 03 09.3	-1.2
C37A	**Embarrass** baz=163,SNR=5.9	83.22	347		P		P	06 03 09.3	-1.3
MCU	**Monte Cristo P**	83.22	331	*e*P			P	06 03 11.4	+0.3
D34A	**Park Rapids** baz=161,SNR=7.6	83.23	345		P		P	06 03 09.3	-1.3
EYMN	**Ely** baz=164,SNR=8.5	83.30	347		P		P	06 03 09.9	-1.1
EYMN	**Ely** comp=Z,18nm,1.0s	83.30	347	*e*P			P	06 03 10.4	-0.5
HWUT	**Hardware Ranch** comp=Z,23nm,1.0s	83.37	331	*e*P			P	06 03 11.8	+0.1
E31A	**Nome** baz=159,SNR=7.7	83.37	343		P		P	06 03 10.7	-0.7
G27A	**Dupree** baz=156,SNR=11	83.38	340		P		P	06 03 11.1	-0.4
C36A	**Pine Crest Far**	83.38	346		P		P	06 03 10.4	-0.9
	baz=163,SNR=7.6								
BGU	**Big Grassy Mou** comp=Z,10nm,1.1s	83.39	330	*e*P			P	06 03 12.3	+0.5
D33A	**AnnSam, Waubun** baz=160,SNR=10	83.43	344		P		P	06 03 10.7	-0.9
SPUT	**South Promonto** comp=Z,18nm,0.9s	83.47	331	*e*P			P	06 03 12.9	+0.7
F28A	**McLaughlin** baz=156	83.48	340		P		P	06 03 11.4	-0.6
G26A	**Maurine** baz=155,SNR=14	83.50	339		P		P	06 03 11.3	-0.8
RPZ	**Rata Peaks** comp=Z,41nm,1.0s	83.52	221	*e*P			P	06 03 14.1	+1.6
C35A	**Jirik Farms, M** baz=162,SNR=14	83.56	345		P		P	06 03 11.3	-0.9
E30A	**Jud** baz=158	83.58	342		P		P	06 03 12.1	-0.3
BW06	**Boulder Array** baz=150,SNR=8.8	83.59	333		P		P	06 03 12.2	-0.6
BW06	**Boulder Array**	83.59	333	*e*P			P	06 03 12.2	-0.6
BW06				*e*P			P	06 03 12.8	-0.1
PD31	**Pinedale Array**	83.59	333	*e*P			P	06 03 12.8	-0.1
PDAR	**Pinedale Array** comp=Z,2.6nm,0.8s,baz=163,slow=3.8,SNR=27	83.59	333	P			P	06 03 12.7	-0.2
PDAR					PKKPbc		**PKKPbc**	06 21 29.4	-2.8
PDAR	comp=Z,0.4nm,0.5s,baz=333,slow=0.4,SNR=6.6				LR		LR	06 36 52.1	
G25A	comp=Z,343nm,18.6s,baz=152,slow=33 **Newell** baz=154,SNR=5.6	83.65	338	P			P	06 03 12.5	-0.4
NVAR	**Mina Array Bea** comp=Z,5.6nm,0.8s,baz=152,slow=6.3,SNR=23	83.69	325	P			P	06 03 14.4	+0.9
NVAR					LR		LR	06 33 28.9	
D32A	comp=Z,129nm,21.9s,baz=86,slow=31 **Dogwood Acres,** baz=159	83.70	343	P			P	06 03 12.5	-0.5
C34A	**RK Ranch, Bem** baz=161,SNR=5.4	83.71	345	P			P	06 03 12.1	-0.9
D31A	**Mcclaflin, Tow** baz=159,SNR=13	83.79	343	P			P	06 03 13.0	-0.4
E29A	**Napoleon** baz=157,SNR=5.2	83.83	341	P			P	06 03 13.0	-0.7
F27A	**Lemmon** baz=155,SNR=14	83.85	340	P			P	06 03 13.5	-0.4
DRLN	**Deer Lake** comp=Z,61nm,0.9s	83.88	10	*e*P			P	06 03 14.4	+0.6
C33A	**Trail** baz=160,SNR=7.3	84.00	344	P			P	06 03 14.0	-0.6
HVU	**Hansel Valley**	84.00	331	*e*P			P	06 03 15.3	+0.4
HVU	comp=Z,15nm,0.8s			pmax			pmax		
HVU	**Hansel Valley** comp=Z,15nm,0.8s	84.00	331	*e*P			P	06 03 15.3	+0.4
F26A	**Lodgepole** baz=155,SNR=5.9	84.02	339	P			P	06 03 14.4	-0.4
D30A	**Buchanan** baz=158,SNR=16	84.10	342	P			P	06 03 14.8	-0.3
E28A	**Huff** baz=156,SNR=5.9	84.12	341	P			P	06 03 14.9	-0.3
B35A	**Bob, Littlefor** baz=162,SNR=16	84.13	346	P			P	06 03 14.3	-0.9
AHID	**Auburn Hatcher** comp=Z,9.8nm,0.9s	84.17	332	*e*P			P	06 03 16.1	+0.3
ELK	**Elko**	84.17	329	*e*P			P	06 03 16.7	+0.8
ELK	comp=Z,14nm,0.9s			pmax			pmax		
ELK	**Elko** comp=Z,14nm,0.9s	84.17	329	*e*P			P	06 03 16.7	+0.8
E27A	**Carson** baz=156,SNR=5.3	84.23	340	P			P	06 03 15.2	-0.6
C32A	**Crookston** baz=160	84.23	344	P			P	06 03 14.7	-1.0
D29A	**Pettibone, Tap** baz=157,SNR=7.3	84.28	342	P			P	06 03 15.5	-0.5
F25A	**Bowman** baz=154	84.33	339	P			P	06 03 15.8	-0.5
CMB	**Columbia Colle**	84.38	324	*e*P			P	06 03 17.7	+1.0
CMB	comp=Z,7.0nm,1.0s			pmax			pmax		
CMB	**Columbia Colle** comp=Z,7.3nm,1.0s	84.38	324	*e*P			P	06 03 17.7	+1.0
TORD	**Torodi Ar. Bea** comp=Z,42nm,0.8s,baz=252,slow=3.9,SNR=252	84.44	70	P			P	06 03 17.3	-0.2
TORD					PP		**PP**	06 06 34.3	+1.3
TORD	comp=Z,2.8nm,0.8s,baz=240,slow=6.7,SNR=3.6				LR		LR	06 40 28.1	
B33A	comp=Z,306nm,18.0s,baz=240,slow=35 **Robert and Kas** baz=161	84.44	345	P			P	06 03 16.1	-0.7
B34A	**Aery, Baudette** baz=161,SNR=10	84.44	345	P			P	06 03 15.6	-1.2
C31A	**Landman Farms,** baz=159,SNR=13	84.49	343	P			P	06 03 16.3	-0.7
E26A	**Carlson Angus** baz=155,SNR=6.3	84.53	340	P			P	06 03 16.9	-0.4
AGMN	**Agassiz Nation** baz=160,SNR=12	84.53	344	P			P	06 03 16.5	-0.7
AGMN	**Agassiz Nation** comp=Z,13nm,0.8s	84.53	344	*e*P			P	06 03 16.7	-0.5
C30A	**Mose, Pekin** baz=158,SNR=29	84.59	343	P			P	06 03 17.2	-0.3
REDW	**Red Top Meadow** comp=Z,12nm,1.1s	84.59	333	*e*P			P	06 03 18.1	+0.1
SNOW	**Snow King Moun** comp=Z,10nm,0.9s	84.64	333	*e*P			P	06 03 18.5	+0.3
D28A	**Regan** baz=157,SNR=10.0	84.66	341	P			P	06 03 17.8	-0.1
LOHW	**Long Hollow** comp=Z,6.1nm,0.9s	84.71	333	*e*P			P	06 03 18.8	+0.3
B32A	**Ashes, Strandq** baz=160,SNR=20	84.77	344	P			P	06 03 17.4	-1.1
BMN	**Battle Mountai**	84.79	327	*e*P			P	06 03 18.7	-0.2
BMN				*e*				06 03 25.9	
BMN	**Battle Mountai**	84.79	327	*e*P			P	06 03 18.7	-0.2
BMN				*e*PcP			**sP**	06 03 25.9	0.0
E25A	**Miller Ranch,** baz=154,SNR=5.2	84.83	339	P			P	06 03 18.4	-0.4
D27A	**Center** baz=156	84.84	340	P			P	06 03 18.2	-0.6
MOOW	**Moose Ponds** comp=Z,4.6nm,0.9s	84.88	333	*e*P			P	06 03 19.4	+0.1
D26A	**Manning** baz=155,SNR=5.7	85.03	340	P			P	06 03 19.6	-0.1
A33A	**Warroad** baz=161,SNR=11	85.03	345	P			P	06 03 19.1	-0.6
B31A	**Greenbush Farm** baz=159,SNR=11	85.06	343	P			P	06 03 19.0	-0.8
FLWY	**Flagg Ranch** comp=Z,22nm,0.9s	85.15	333	*e*P			P	06 03 20.5	-0.2
B30A	**Myrvik Farm, E** baz=158,SNR=61	85.25	343	P			P	06 03 20.3	-0.5
A32A	**Rocking H Ranc** baz=160	85.25	344	P			P	06 03 19.9	-0.9
H17A	**Grant Village** comp=Z,5.6nm,1.0s	85.37	334	*e*P			P	06 03 22.6	+0.8
AFDM	**Forest Hills D** comp=Z,9.8nm,1.0s	85.38	324	*e*P			P	06 03 22.8	+1.1
C27A	**Sayler Ranch,** baz=156,SNR=7.5	85.39	341	P			P	06 03 21.4	-0.1
D25A	**Fairfield** baz=154,SNR=7.6	85.39	339	P			P	06 03 21.8	+0.2
A31A	**Linda, St. Vin** baz=159	85.43	344	P			P	06 03 21.0	-0.7
B29A	**Wagenman Farm,** baz=158,SNR=14	85.51	342	P			P	06 03 21.8	-0.3
YFT	**Old Faithful** comp=Z,14nm,1.0s	85.51	333	*e*P			P	06 03 24.0	+1.4
RLMT	**Red Lodge** baz=150,SNR=14	85.52	335	P			P	06 03 22.1	-0.4
RLMT	**Red Lodge** comp=Z,8.2nm,0.7s	85.52	335	*e*P			P	06 03 22.5	0.0
C26A	**Wahner Farm, P** baz=155	85.65	340	P			P	06 03 22.9	0.0
A30A	**Hoffart Farm,** baz=158,SNR=12	85.69	343	P			P	06 03 22.3	-0.7
YMR	**Madison River** comp=Z,20nm,0.8s	85.75	333	*e*P			P	06 03 24.8	+1.1
B28A	**Dugan Ranch, T** baz=157,SNR=10	85.76	342	P			P	06 03 23.1	-0.2
LAO	**LASA Array** baz=152	85.87	337	P			P	06 03 24.1	+0.1
C25A	**Freed Ranch, W** baz=154	85.88	340	P			P	06 03 23.8	-0.3
A29A	**Manning Farm,** baz=158,SNR=17	85.91	343	P			P	06 03 23.6	-0.5
B27A	**Peters Farms,** baz=156	85.95	341	P			P	06 03 24.4	0.0
QLMT	**Earthquake Lak**	86.06	333	*e*P			P	06 03 26.2	+1.0
ORV	**Oroville**	86.10	324	*e*P			P	06 03 26.7	+1.4
ORV	comp=Z,21nm,1.0s			pmax			pmax		
ORV	**Oroville** comp=Z,21nm,1.0s	86.10	324	*e*P			P	06 03 26.7	+1.4
HLID	**Hailey** baz=146,SNR=16	86.16	331	P			P	06 03 25.7	0.0
HLID	**Hailey** comp=Z,9.1nm,0.9s	86.16	331	*e*P			P	06 03 26.0	+0.4
A28A	**Rude Farm, Bot** baz=157	86.16	342	P			P	06 03 25.0	-0.4
GCMT	**Greycliff**	86.24	335	*e*P			P	06 03 26.0	0.0
B25A	**Knox Farm, Ray** baz=155	86.36	340	P			P	06 03 26.5	+0.1
ULM	**Lac du Bonnet** comp=Z,13nm,1.0s,baz=162,slow=4.6,SNR=12	86.37	345	P			P	06 03 24.9	-1.5
ULM	**Lac du Bonnet**	86.37	345	*e*P			P	06 03 25.1	-1.2
ULM	comp=Z,17nm,1.0s			pmax			pmax		
ULM	**Lac du Bonnet** comp=Z,17nm,1.0s	86.37	345	*e*P			P	06 03 25.1	-1.2
A27A	**Ledoux Ranch,** baz=156	86.45	341	P			P	06 03 26.8	0.0
MCMT	**McKenzie Canyo**	86.59	332	*e*P			P	06 03 29.0	+1.1
A26A	**Wade Farm, Ken** baz=156	86.61	341	P			P	06 03 27.5	-0.1
MFID	**Camas Ranch** comp=Z,7.1nm,0.8s	86.62	330	*e*P			P	06 03 28.4	+0.5
O03D	**Paynes Creek** baz=141,SNR=7.5	86.82	324	P			P	06 03 28.7	-0.3
BOZ	**Bozeman (W)** baz=148,SNR=6.4	86.83	334	P			P	06 03 28.2	-0.7
BOZ	**Bozeman (W)**	86.83	334	*e*P			P	06 03 28.9	0.0
BOZ	comp=Z,5.0nm,0.8s			pmax			pmax		
BOZ	**Bozeman (W)** comp=Z,5.2nm,0.8s	86.83	334	*e*P			P	06 03 28.9	0.0
DGMT	**Dagmar** baz=154,SNR=17	86.84	339	P			P	06 03 28.8	+0.1
DGMT	**Dagmar** comp=Z,49nm,0.9s	86.84	339	*e*P			P	06 03 29.0	+0.2
DLMT	**Dillon** comp=Z,14nm,1.2s	86.95	333	*e*P			P	06 03 30.3	+0.8
A25A	**Svangstu Ranch** baz=155	86.95	340	P			P	06 03 29.3	+0.1
WVOR	**Wild Horse Val**	87.03	328	*e*P			P	06 03 30.2	+0.2
WVOR	comp=Z,9.0nm,1.0s			pmax			pmax		
WVOR	**Wild Horse Val** comp=Z,9.1nm,1.0s	87.03	328	*e*P			P	06 03 30.2	+0.2
LRM	**Limekiln Ridge**	87.28	333	*e*P			P	06 03 31.9	+0.7
MOD	**Modoc Plateau** comp=Z,13nm,0.8s	87.37	326	*e*P			P	06 03 32.7	+1.1
WDC	**Whiskeytown Da**	87.40	324	*e*P			P	06 03 31.3	-0.3
WDC	comp=Z,18nm,0.8s			pmax			pmax		
WDC	**Whiskeytown Da** comp=Z,18nm,0.8s	87.40	324	*e*P			P	06 03 31.3	-0.3
N02D	**Trinity Center** baz=140	87.78	324	P			P	06 03 33.4	-0.2
M04C	**Macdoel** baz=141,SNR=9.9	87.99	325	P			P	06 03 34.7	+0.1
LHEM	**Herd Peak**	88.05	325	P			P	06 03 35.8	+0.7
M02C	**Callahan** baz=140	88.18	324	P			P	06 03 36.1	+0.7
EGMT	**Eagleton** baz=150	88.20	336	P			P	06 03 35.2	-0.2
EGMT	**Eagleton** comp=Z,11nm,1.1s	88.20	336	*e*P			P	06 03 35.1	-0.2
K05A	**Summer Lake** comp=Z,30nm,0.9s	88.29	326	*e*P			P	06 03 37.1	+1.1
YBH	**Yreka Blue Hor** comp=Z,9.9nm,0.9s,baz=163,slow=17,SNR=14	88.37	325	P			P	06 03 36.1	-0.3
YBH	**Yreka Blue Hor**	88.37	325	*e*P			P	06 03 36.5	+0.2
YBH	comp=Z,14nm,0.9s			pmax			pmax		
YBH	**Yreka Blue Hor** comp=Z,14nm,0.9s	88.37	325	*e*P			P	06 03 36.5	+0.2
SCHQ	**Schefferville** comp=Z,8.0nm,0.8s,baz=177,slow=5.9,SNR=11	88.54	3	P			P	06 03 36.1	-0.6
SCHQ	**Schefferville** comp=Z,81nm,1.7s	88.54	3	*e*P			P	06 03 36.4	-0.3
K04D	**Chiloquin, OR** baz=141	88.61	326	P			P	06 03 37.7	+0.3
MSO	**Missoula** baz=146	88.69	333	P			P	06 03 38.1	+0.4
J05D	**Fort Rock, OR** baz=141	88.88	327	P			P	06 03 39.8	+1.0
L02D	**Cave Junction,** baz=140	89.12	325	P			P	06 03 40.9	+1.1
HUMO	**Hull Mountain**	89.16	325	*e*P			P	06 03 40.3	+0.3
SWMT	**Swartz Lake**	89.28	333	*e*P			P	06 03 40.9	+0.5
YBMT	**Yellow Bay**	89.58	333	*e*P			P	06 03 42.3	+0.4
JTMT	**Jette**	89.58	333	*e*P			P	06 03 42.4	+0.4
I05D	**Terrebonne, OR** baz=141	89.75	327	P			P	06 03 43.9	+1.3
BSMT	**Bassoo Peak**	89.86	333	*e*P			P	06 03 43.6	+0.3
LSZ	**Lusaka**	90.08	108	*e*P			P	06 03 46.9	+1.8
LSZ	comp=Z,25nm,1.2s			pmax			pmax		
LSZ	**Lusaka** comp=Z,25nm,1.2s	90.08	108	*e*P			P	06 03 46.9	+1.8
WALA	**Waterton Lakes** comp=Z,14nm,1.1s	90.54	334	*e*P			P	06 03 46.5	+0.1
D08A	**Wollman Farm,** comp=Z,6.3nm,0.9s	90.85	330	*e*P			P	06 03 46.5	-1.2
NEW	**Newport** comp=Z,1.5nm,0.6s,baz=160,slow=6.8,SNR=3.6	91.09	332	P			P	06 03 47.9	-1.0
NEW	**Newport** baz=144	91.09	332	P			P	06 03 48.3	-0.5
NEW	**Newport**	91.09	332	P			P	06 03 47.9	-1.0
NEW				*e*P			P	06 03 48.0	-0.9
C09A	**Chrisman Ranch** comp=Z,7.5nm,0.9s	91.18	331	*e*P			P	06 03 49.6	+0.4
LTY	**Liberty** comp=Z,7.4nm,1.2s	91.74	329	*e*P			P	06 03 52.5	+0.6
FFC	**Flin Flon**	91.92	343	*i* P			P	06 03 52.4	0.0
TAM	**Tamanrasset**	93.04	65	*e*P			P	06 03 59.4	+0.8
TAM	comp=Z,14nm,1.0s			pmax			pmax		
TAM	**Tamanrasset** comp=Z,14nm,1.0s	93.04	65	*e*P			P	06 03 59.4	+0.8
FCC	**Fort Churchill**	94.12	349	*e*P			P	06 04 02.5	0.0
FCC	comp=Z,39nm,1.9s			pmax			pmax		
FCC	**Fort Churchill** comp=Z,39nm,1.9s	94.12	349	*e*P			P	06 04 02.5	0.0
ESDC	**Sonseca Array** comp=Z,1.2nm,0.6s,baz=248,slow=4.2,SNR=7.6	96.73	46	P			P	06 04 14.4	-0.6
ESDC					LR		LR	06 47 30.9	
ES19	comp=Z,360nm,18.9s,baz=240,slow=35 **SONSECA Array**	96.78	46	*e*P			P	06 04 15.1	-0.2
YKA	**Yellowknife Ar** comp=Z,0.7nm,0.7s,baz=144,slow=4.3,SNR=23	101.92	341	P			**Pdif**	06 04 36.4	-1.1
YKA	comp=Z,0.2nm,0.7s,baz=138,slow=7.1,SNR=4.9				PP		**PP**	06 08 46.9	-2.4
YKA	comp=Z,0.2nm,0.7s,baz=144,slow=2.1,SNR=4.6				PKIKP		**PKiKP**	06 09 01.0	+0.8
YKA					PKKPbc		**PKKPbc**	06 20 41.3	-2.8
RES	comp=Z,0.2nm,0.5s,baz=320,slow=4.0,SNR=7.5 **Resolute Bay**	109.37	354		PKKPbc		PKKPbc	06 20 19.4	-1.8
GERES	comp=Z,0.8nm,0.6s,baz=244,slow=7.6,SNR=5.4 **GERESS Array B**	112.30	45		PKiKP		**PKiKP**	06 09 19.7	-0.4
KHC	comp=Z,1.9nm,0.7s,baz=197,slow=1.0,SNR=12 **Kasperske Hory**	112.36	45		AMS		AMS	06 59 20.0	
CLL	comp=Z,300nm,19.3s **Collm**	112.98	43	*e*	PP		PP	06 10 07.0	-3.6
CLL					LmV			06 55 00.0	
PRU	comp=Z,300nm,19.2s **Pruhonice**	113.30	45		AMS		AMS	06 57 30.0	
BRG	comp=Z,300nm,18.0s **Berggiesshubel**	113.33	44	*e*(P)			**PKiKP**	06 09 19.4	-2.5
BRG	comp=Z,2.3nm,0.6s **Berggiesshubel**	113.33	44	*e*PKIKP			**PKiKP**	06 09 19.4	-2.5
GOPC	comp=Z,2.0nm,0.6s **GO Pecny, Ondr**	113.41	45		pmax AMS		pmax AMS	06 57 30.0	
PVCC	comp=Z,300nm,16.5s **Panska Ves**	113.54	44		AMS		AMS	06 56 10.0	
ILAR	comp=Z,300nm,15.1s **Eielson Array**	114.02	333		PKP		PKPdf	06 09 22.1	-0.6
ILAR	comp=Z,0.7nm,0.8s,baz=185,slow=2.0,SNR=7.4				PKKPbc		**PKKPbc**	06 20 02.2	-3.4
PKSM	comp=Z,0.5nm,0.8s,baz=284,slow=4.4,SNR=4.8 **Moragy**	114.20	50	⇑*i*P			PKPdf	06 09 23.5	-0.1
PKSM	**Moragy**	114.20	50	⇑PKIKP			PKPdf	06 09 23.5	-0.1
UPC	**Upice**	114.37	44		AMS		AMS	06 57 40.0	

comp=Z,300nm,17.3s
DPC Dobruska-Polom 114.49 45 AMS AMS 06 58 20.0
comp=Z,300nm,22.2s
CTA Charters Tower 114.89 220 PKKPbc PKKPbc 06 19 59.8 -1.9
comp=Z,1.2nm,0.3s,baz=325,slow=16,SNR=2.4
MORC Moravsky Berou 114.97 46 ⇓*iP* PKPdf 06 09 25.6 +0.5
MORC Moravsky Berou 114.97 46 ⇓PKIKP PKPdf 06 09 25.6 +0.5
OKC Ostrava-Krasne 115.36 46 AMS AMS 07 02 40.0
comp=Z,300nm,19.8s
NOA NORSAR Array B 116.12 33 PKP **PKPdf 06 09 26.8 -0.2**
comp=Z,1.0nm,0.8s,baz=252,slow=2.0,SNR=4.9
DRGR 117.02 50 ⇑*iP* **PKPdf 06 09 28.9 -0.3**
DRGR 117.02 50 ⇑PKIKP **PKPdf 06 09 28.9 -0.3**
ASAR Alice Springs 117.50 207 PKP **PKPdf 06 09 29.6 -1.4**
comp=Z,1.2nm,0.8s,baz=137,slow=2.1,SNR=9.1
ASAR PKKPbc **PKKPbc 06 19 52.3 -0.5**
comp=Z,0.6nm,0.7s,baz=348,slow=4.2,SNR=4.8
ARR Arges 117.74 52 ⇓*iP* **PKPdf 06 09 30.5 -0.1**
KWP Kalwaria Pacla 118.03 47 ⇓*iP* **PKPdf 06 09 31.3 +0.3**
KWP Kalwaria Pacla 118.03 47 ⇓PKIKP **PKPdf 06 09 31.3 +0.3**
MLR Muntele Rosu 118.65 52 ⇓*iP* **PKPdf 06 09 31.9 -0.5**
MLR Muntele Rosu 118.65 52 *e*PKIKP **PKPdf 06 09 32.0 -0.5**
MLR Muntele Rosu 118.65 52 *e*PKPdf **PKPdf 06 09 32.0 -0.5**
BUR08 Bucovina Ar. S 118.91 50 *e*PKPdf **PKPdf 06 09 33.0 +0.2**
BURAR Bucovina Array 118.91 50 ⇓*iP* **PKPdf 06 09 33.3 +0.5**
BURAR Bucovina Array 118.91 50 ⇓PKIKP **PKPdf 06 09 33.3 +0.5**
PLOR Plostina 119.24 52 ⇓*iP* **PKPdf 06 09 32.5 -0.9**
PLOR Plostina 119.24 52 ⇓PKIKP **PKPdf 06 09 32.5 -0.9**
VRI Vrincioaia 119.30 52 ⇑*iP* **PKPdf 06 09 32.6 -0.9**
VRI Vrincioaia 119.30 52 ⇑PKIKP **PKPdf 06 09 32.6 -0.9**
TESR Tescani 119.46 52 ⇑*iP* **PKPdf 06 09 33.0 -0.8**
CFR Carcaliu 120.00 53 ⇑*iP* **PKPdf 06 09 34.6 -0.2**
CFR Carcaliu 120.00 53 ⇑PKIKP **PKPdf 06 09 34.6 -0.2**
TLCR 120.45 54 ⇑*iP* **PKPdf 06 09 35.9 +0.2**
TLCR 120.45 54 ⇑PKIKP **PKPdf 06 09 35.9 +0.2**
WRA Warramunga Arr 120.68 209 PKP **PKPdf 06 09 36.3 -0.8**
comp=Z,2.6nm,0.6s,baz=159,slow=1.7,SNR=54
WRA PKKPbc **PKKPbc 06 19 41.4 +0.3**
comp=Z,0.5nm,0.9s,baz=344,slow=4.5,SNR=5.3
BR231 Keskin MP Arra 121.45 61 *e*PKPdf **PKPdf 06 09 38.7 +0.7**
ANTO Ankara 121.47 61 *e*PKIKP **PKPdf 06 09 38.8 +0.8**
ANTO Ankara 121.47 61 *e*PKPdf **PKPdf 06 09 38.8 +0.8**
BR131 Keskin Array S 122.04 61 *e*PKPdf **PKPdf 06 09 39.0 -0.1**
BRTR Keskin Array B 122.04 61 PKP **PKPdf 06 09 39.0 -0.1**
comp=Z,7.5nm,0.7s,baz=194,slow=3.0,SNR=41
AK11 Malin Array Si 122.31 48 *e*PKPdf **PKPdf 06 09 38.1 -1.0**
KIEV Kiev 122.34 48 *e*PKIKP **PKPdf 06 09 38.2 -0.9**
KIEV Kiev 122.34 48 *e*PKPdf **PKPdf 06 09 38.2 -0.9**
AKASG Malin Array Be 122.35 48 PKP **PKPdf 06 09 37.8 -1.4**
comp=Z,7.6nm,0.7s,baz=262,slow=2.9,SNR=17
AKASG Malin Array Be 122.35 48 PKIKP **PKPdf 06 09 37.8 -1.4**
AKASG pmax pmax
comp=Z,10.0nm,0.8s
AKBB Malin Array Si 122.35 48 *e*PKIKP **PKPdf 06 09 38.3 -0.9**
AKBB Malin Array Si 122.35 48 *e*PKPdf **PKPdf 06 09 38.2 -0.9**
VSU Vasula 122.81 38*c i*PKIKP **PKPdf 06 09 39.7 -0.1**
VSU pmax pmax
comp=Z,156nm,2.5s
FINES FINESS Array B 123.09 35 PKP **PKPdf 06 09 40.0 -0.2**
comp=Z,3.1nm,0.8s,baz=132,slow=2.8,SNR=6.9
ARCES ARCESS Array B 124.07 25 PKP **PKPdf 06 09 41.8 -0.2**
comp=Z,4.0nm,0.8s,baz=46,slow=3.5,SNR=8.7
ARCES ARCESS Array B 124.07 25 PKIKP **PKPdf 06 09 41.8 -0.2**
ARCES pmax pmax
comp=Z,2.0nm,0.7s
H11S2 WAKE ISLAND Hyd 125.51 269 T T 08 28 55.5
baz=118,slow=74,SNR=12
H11S1 WAKE ISLAND Hyd 125.52 269 T T 08 28 50.3
baz=118,slow=74,SNR=5.8
H11S3 WAKE ISLAND Hyd 125.52 269 T T 08 28 56.5
baz=118,slow=74,SNR=6.1
H11N3 WAKE ISLAND Hyd 125.92 271 T T 08 28 57.4
baz=117
H11N1 WAKE ISLAND Hyd 125.93 271 T T 08 28 58.3
baz=117
H11N2 WAKE ISLAND Hyd 125.94 271 T T 08 28 58.6
baz=117
SOC Sochi 127.50 58 *e*PKIKP **PKPdf 06 09 48.4 -0.9**
SOC MLR MLR
comp=Z,178nm,20.0s
OBN Obninsk 127.58 43*d i*PKIKP **PKPdf 06 09 48.9 -0.1**
OBN *e* 06 11 48.7
OBN *e* 06 17 00.8
OBN pmax pmax
comp=Z,13nm,1.0s
VSR Storozhevoye 128.60 48 *e*PKIKP **PKPdf 06 09 49.8 -1.3**
VSR pmax pmax
comp=Z,10.0nm,0.7s
LPSR Galich'ya Gora 128.65 47 *e*PKIKP **PKPdf 06 09 49.8 -1.4**
LPSR pmax pmax
comp=Z,20nm,0.9s
KIV Kislovodsk 129.69 58*c i*PKIKP **PKPdf 06 09 53.3 -0.3**
KIV *e* 06 12 00.2
KIV pmax pmax
comp=Z,18nm,1.0s
KIV MLR MLR
comp=Z,139nm,20.0s
KIV Kislovodsk 129.69 58 *e*PKPdf **PKPdf 06 09 54.5 +0.9**
KBZ Khabaz 129.79 59 PKP **PKPdf 06 09 53.6 0.0**
comp=Z,6.0nm,0.8s,baz=246,slow=3.2,SNR=13
VRH Novokhopyorsk 130.19 49 *e*PKIKP **PKPdf 06 09 53.4 -0.7**
VRH pmax pmax
comp=Z,10.0nm,0.4s
ZEI Tsey 130.31 60 *i*PKIKP **PKPdf 06 09 54.6 -0.4**
ZEI pmax pmax
comp=Z,20nm,0.9s
GNI Garni 130.33 64*d i*PKIKP **PKPdf 06 09 55.9 +0.9**
GNI pmax pmax
comp=Z,128nm,1.7s
GNI Garni 130.33 64 *e*PKPdf **PKPdf 06 09 56.5 +1.4**
BILL Bilibino 132.67 334⇓*e*PKIKP **PKPdf 06 09 58.6 +0.2**
BILL *e* 06 12 25.8
BILL *e*PPP PPP 06 15 16.0
BILL *e* 06 17 07.3
BILL pmax pmax
comp=Z,7.0nm,1.2s
BILL MLR MLR
comp=Z,114nm,17.0s
SOKR Solikamsk 138.20 36 *i*PKIKP **PKPdf 06 10 07.9 -0.9**
SOKR pmax pmax
comp=Z,14nm,0.8s
SEY Seymchan 139.85 330 PKhKP PKPpre 06 10 01.1
comp=Z,1.1nm,0.5s,baz=103,slow=18,SNR=3.7
SEY PKP **PKPdf 06 10 10.5 -1.3**
comp=Z,7.3nm,0.7s,baz=101,slow=2.7,SNR=18
SEY Seymchan 139.85 330 PKIKP **PKPdf 06 10 10.5 -1.3**
SEY pmax pmax
comp=Z,9.0nm,0.8s
ARU Arti 139.87 41 *i*PKIKP **PKPdf 06 10 12.6 +0.5**
ARU 06 13 03.8
ARU MLR MLR
comp=Z,384nm,22.0s
ARU Arti 139.87 41 *e*PKPpre PKPpre 06 10 06.5
PETK Petropavlovsk- 139.92 314 PKP **PKPdf 06 10 13.5 +1.2**
comp=Z,11nm,1.1s,baz=104,slow=6.1,SNR=3.6
PETK Petropavlovsk- 139.92 314 PKIKP **PKPdf 06 10 13.5 +1.2**
PETK pmax pmax
comp=Z,8.0nm,1.1s
GEYT Alibeck 140.08 70 PKhKP PKPpre 06 10 05.1
comp=Z,3.9nm,0.7s,baz=192,slow=5.8,SNR=3.7
GEYT PKP **PKPdf 06 10 11.2 -1.9**
comp=Z,7.6nm,0.7s,baz=255,slow=2.9,SNR=7.6
AKTO Aktyubinsk 140.50 50 PKHKP PKPpre 06 10 06.2
AKTO pmax pmax
comp=Z,11nm,1.0s
TIXI Tiksi 140.59 350 PKhKP PKPpre 06 10 03.8
comp=Z,3.7nm,0.8s,baz=2.2,slow=3.0,SNR=9.7
TIXI PKP **PKPdf 06 10 11.9 -1.1**
comp=Z,1.9nm,0.2s,baz=22,slow=3.4,SNR=5.7
TIXI Tiksi 140.59 350 *e*PKIKP **PKPdf 06 10 10.7 -2.2**
TIXI pmax pmax
comp=Z,3.0nm,0.9s
MDSI Maura Dua 141.64 174 PKP **PKPdf 06 10 19.3 +2.7**
AB31 Akbulak array 141.85 52 *i*PKHKP PKPpre 06 10 09.8
AB31 pmax pmax
comp=Z,8.0nm,0.7s
ABKAR Akbulak array 141.85 52 *e*PKPpre PKPpre 06 10 09.6
MA2 Magadan 141.93 326 PKhKP PKPpre 06 10 09.4
comp=Z,4.0nm,0.5s,baz=77,slow=7.3,SNR=5.0
NRIK Noril'sk 142.81 12 PKhKP PKPpre 06 10 12.0
comp=Z,2.2nm,0.5s,baz=236,slow=1.7,SNR=3.6
STKI Sintang 146.11 187 PKP **PKPab 06 10 26.3 +0.4**
GSI Gunungsitoli 146.19 162 *e*PKPdf **PKPab 06 10 26.4 +0.3**
POO Poona 146.21 108 ⇑*iP* **PKPdf 06 10 23.0 -1.5**
comp=Z,120nm,1.0s

ZRNK Zerenda 146.66 43 *e*PKP2 **PKPdf 06 10 24.4 +0.3**
ZRNK Zerenda 146.66 43 *e*PKPdf **PKPdf 06 10 24.4 +0.3**
BRVK Borovoye 147.35 43*c i*PKIKP **PKPdf 06 10 25.6 +0.3**
BRVK pmax pmax
comp=Z,44nm,0.7s
BRVK Borovoye 147.35 43 *e*PKPdf **PKPdf 06 10 26.1 +0.8**
BVA0 Borovoye Array 147.42 43 *i*PKIKP **PKPdf 06 10 25.8 +0.4**
BVA0 pmax pmax
comp=Z,34nm,0.8s
KSM Kuching 147.60 185 *e*PKPdf **PKPbc 06 10 29.4 -0.1**
MYKOM Kota Tinggi 147.82 173 *e*PKPdf **PKPbc 06 10 29.9 -0.3**
PSI Prapat 147.97 163 *e*PKP2 **PKPbc 06 10 29.9 -0.9**
PSI Prapat 147.97 163 *e*PKPdf **PKPbc 06 10 29.9 -0.9**
KBL Kabul 148.21 78 *e*PKP2 **PKPbc 06 10 30.5 -0.4**
KBL Kabul 148.21 78 *e*PKPbc **PKPbc 06 10 30.5 -0.4**
SBUM Sibu 148.38 189 *e*PKPdf **PKPbc 06 10 31.4 -0.3**
YAK Yakutsk 148.59 340 *e*PKP2 **PKPbc 06 10 30.1 -0.6**
YAK pmax pmax
comp=Z,52nm,0.8s
HYB Hyderabad 149.20 115 *i*PKP **PKPbc 06 10 32.0 -1.7**
TYV Tymovskoe 149.47 314 *e*PKP2 **PKPbc 06 10 33.5 +0.2**
TYV pmax pmax
comp=Z,20nm,0.8s
NKL Nikolayevsk 149.70 319 *i*PKP2 **PKPbc 06 10 33.7 -0.1**
NKL pmax pmax
comp=Z,48nm,0.8s
KK31 Karatay Array 149.75 61 *i*PKHKP PKPpre 06 10 29.7
KK31 pmax pmax
comp=Z,10.0nm,0.6s
KKAR Karatay Array 149.75 61 *e*PKHKP **PKPdf 06 10 30.0 +0.4**
KKAR Karatay Array 149.75 61 *e*PKPdf **PKPdf 06 10 30.0 +0.4**
LHMI Lhok Sumawe 149.75 158 *e*PKPdf **PKPdf 06 10 32.0 +1.6**
IPM Ipoh 150.05 167 *e*PKPdf **PKPdf 06 10 31.1 +0.1**
OTUK Ortayu 150.10 51 PKP2 **PKPbc 06 10 34.9 -0.1**
OTUK pmax pmax
comp=Z,68nm,0.9s
YSS Yuzh-Sakhalins 150.54 307 *e*PKIKP **PKPbc 06 10 34.9 -1.1**
KULM Kulim 150.76 166 *e*pPKPdf pPKPdf 06 10 36.9 -0.4
EKS2 Erkin-Say 152.18 62 *e*PKIKP **PKPdf 06 10 34.5 +1.0**
EKS2 Erkin-Say 152.18 62 *e*PKPdf **PKPdf 06 10 34.5 +1.0**
AAK Ala-Archa 152.71 62 *e*PKIKP **PKPdf 06 10 35.2 +0.9**
AAK Ala-Archa 152.71 62 *e*PKPdf **PKPdf 06 10 35.2 +0.9**
FRU Bishkek 152.77 61 *i*PKIKP **PKPbc 06 10 41.5 +0.1**
FRU *i* 06 10 51.5
FRU pmax pmax
comp=Z,50nm,1.6s
KURK Kurchatov 153.02 43 PKIKP **PKPbc 06 10 40.6 -0.9**
KURK pmax pmax
comp=Z,31nm,0.6s
TKM2 Tokmak 2 153.47 61 *e*PKIKP **PKPdf 06 10 35.9 +0.4**
TKM2 Tokmak 2 153.47 61 *e*PKPdf **PKPdf 06 10 35.9 +0.4**
KSH Kashi 154.10 68 PKPbc **PKPdf 06 10 36.9 +0.6**
KSH *e*PP **PP 06 14 33.6 +0.2**
KSH SKS **SKSdf 06 17 42.4 -0.3**
KSH SKKS **SKKSac 06 21 20.9 -1.8**
KSH LR LR
comp=Z,89nm,5.8s
ZALV Zalesovo Beam 154.32 32 PKP **PKPdf 06 10 35.7 -0.3**
comp=Z,5.2nm,0.8s,baz=266,slow=2.9,SNR=18
ZALV PKPbc **PiKiKP 06 10 44.5 +0.2**
comp=Z,27nm,0.6s,baz=301,slow=3.3,SNR=34
ZALV PKPab **PKPab 06 10 58.0 -0.3**
comp=Z,17nm,0.7s,baz=292,slow=4.1,SNR=7.2
MJAR Matsushiro Arr 154.95 285 PKPbc **PKPbc 06 10 47.9 +1.7**
comp=Z,2.3nm,0.6s,baz=110,slow=4.1,SNR=4.7
BOD Bodaibo 155.73 352 *e*PKIKP **PKPdf 06 10 35.9 -1.9**
BOD *e* 06 11 03.0
BOD pmax pmax
comp=Z,22nm,1.2s
MAKZ Makanchi 156.72 49 *e*PKIKP **PKPdf 06 10 39.0 -0.5**
MAKZ Makanchi 156.72 49 *e*PKPdf **PKPdf 06 10 39.0 -0.5**
MK31 Makanchi Array 156.93 49 *i*PKIKP **PKPdf 06 10 39.1 -0.7**
MK31 pmax pmax
comp=Z,9.0nm,0.6s
MK31 Makanchi Array 156.93 49 *e*PKPdf **PKPdf 06 10 39.7 -0.1**
MKAR Makanchi Array 156.93 49 PKP **PKPdf 06 10 39.6 -0.2**
comp=Z,2.7nm,0.8s,baz=318,slow=0.7,SNR=27
MKAR PKPab **PKPab 06 11 09.2 -0.7**
comp=Z,12nm,0.6s,baz=289,slow=2.8,SNR=6.4
MKAR PP **PP 06 14 46.0 -2.6**
comp=Z,1.4nm,1.0s,baz=260,slow=7.3,SNR=3.6
MK01 Makanchi Array 156.94 49 *e*PKPdf **PKPdf 06 10 39.2 -0.6**
WMQ Urumqi 161.64 52 PKP **PKPdf 06 10 43.8 -1.6**
WMQ PKPab **PKPab 06 11 30.8 +0.3**
WMQ PP **PP 06 15 15.5 +1.2**
WMQ SKS **SKSdf 06 17 46.5 -3.3**
WMQ SS **SS 06 35 32.5 +0.9**
WMQ AMB AMB
comp=Z,26nm,10.4s
WMQ LR LR
comp=Z,40nm,22.6s
WMQ LR LR
comp=Z,54nm,23.0s
WMQ LR LR
comp=Z,70nm,19.4s
CMAR Chiang Mai Arr 162.73 151 PKP **PKPdf 06 10 47.1 0.0**
comp=Z,5.3nm,0.9s,baz=241,slow=2.8,SNR=24
CMAR PKPab **PKPab 06 11 34.2 -1.4**
comp=Z,0.9nm,0.4s,baz=229,slow=5.5,SNR=3.1
CN2 Changchun 163.03 311 *e*PKP **PKPdf 06 10 43.5 -3.2**
CHTO Chiang Mai 163.05 151 *e*PKIKP **PKPdf 06 10 47.5 0.0**
CHTO Chiang Mai 163.05 151 *e*PKPdf **PKPdf 06 10 47.5 0.0**
ZAK Zakamensk 163.26 10 *e*PKIKP **PKPdf 06 10 46.0 -0.8**
ZAK pmax pmax
comp=Z,2.0nm,1.6s
SONM Songino Array 166.09 3 PKP **PKPdf 06 10 48.7 -0.7**
comp=Z,1.0nm,0.7s,baz=358,slow=4.3,SNR=3.4
SONM PKPab **PKPab 06 11 50.4 +0.6**
comp=Z,6.2nm,0.8s,baz=338,slow=4.6,SNR=12
KMI Kunming 170.23 153 PKP **PKPdf 06 10 53.6 +0.5**
KMI pPKP pPKPdf 06 10 57.1 -1.2
KMI PP **PP 06 15 59.0 +0.8**
KMI SS SS 06 36 59.3 +1.4
KMI AMB AMB
comp=Z,110nm,10.7s
KMI LR LR
comp=Z,170nm,15.0s
KMI LR LR
comp=Z,130nm,15.0s
KMI LR LR
comp=Z,160nm,17.9s
NJ2 Nanjing 170.40 262 *e*PKP **PKPdf 06 10 53.4 +0.8**
GTA Gaotai 171.68 47 PKP **PKPdf 06 10 53.5 +0.2**
GTA PKPab **PKPab 06 12 15.3 +0.3**
GTA PP **PP 06 16 07.6 +1.7**
GTA SKS **SKSdf 06 17 56.3 +0.2**
GTA SKKS **SKKSac 06 22 54.0 +1.8**
GTA SS **SS 06 37 11.6 -1.4**
GTA AMB AMB
comp=Z,89nm,6.7s
GTA LR LR
comp=Z,190nm,21.4s
GTA LR LR
comp=Z,200nm,18.8s
GTA LR LR
comp=Z,140nm,22.3s
TIA Tai'an 171.90 289 ⇓PKP **PKPdf 06 10 53.3 0.0**
HHC Hu-ho-hao-te 172.43 337 *e*PKP **PKPdf 06 10 54.4 +0.8**
HHC PP **PP 06 16 13.1 +4.2**
HHC SKS **SKSdf 06 17 56.5 +0.2**
HHC SKKS **SKKSac 06 22 57.8 +2.3**
HHC SS **SS 06 37 23.8 +4.7**
HHC AMB AMB
comp=Z,49nm,9.6s
HHC LR LR
comp=Z,180nm,18.2s
HHC LR LR
comp=Z,360nm,18.0s
HHC LR LR
comp=Z,180nm,20.2s
GYA Guiyang 172.49 173 PKP **PKPdf 06 10 53.0 -1.0**
GYA PKPab **PKPab 06 12 21.8 +3.1**
GYA PKS **PKSdf 06 14 24.6 -1.9**
GYA PP **PP 06 16 13.3 +4.3**
GYA AMB AMB
comp=Z,130nm,8.6s
CD2 Chengdu 175.54 132 PKP **PKPdf 06 10 53.8 -1.1**
CD2 sPKP 06 10 58.5
CD2 PP **PP 06 16 23.6 -1.1**
CD2 SKS **SKSdf 06 17 56.9 -0.6**
CD2 SKKS **SKKSac 06 23 09.6 -1.2**
CD2 SS **SS 06 37 50.1 -0.2**
CD2 AMB AMB
comp=Z,190nm,6.5s
CD2 LR LR
comp=Z,200nm,7.7s
CD2 LR LR
comp=Z,220nm,19.0s
LZH Lanzhou 176.22 54 *e*PKP **PKPdf 06 11 00.8 +5.8**
LZH LR LR
comp=Z,250nm,15.0s
LZH LR LR
comp=Z,280nm,15.0s
LZH LR LR
comp=Z,200nm,16.7s

LJU 19 06:08:02.7, 46.63N×15.12E, h4km, ML0.6, 1C, Northwestern Balkan Peninsula

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PERS	**Pernice**	**0.01**	**330**	⇑*iP*g	Pg	06 08 03.6	0.0
PERS				*i* Sg	Sg	06 08 04.3	0.0
BISS	**Bistriski jare**	**0.02**	**6**	*i* Pg	Pg	06 08 03.7	0.0
BISS				*i* Sg	Sg	06 08 04.3	0.0

comp=Z,60nm,0.0s

ISCJB ***19*** *06:11:25.0±0.9, 23.26S±0.09×69.0W±0.1, h94km, mb3.6/3, Error ellipse: s-maj=18.5km s-min=13.2km az=177.7*
IDC ***19*** *06:11:26.6±1.1, 23.25S×68.96W, h92km±6km, mb3.5/3, mb1 3.6/7, mb1mx3.4/31, mbtmp3.7/7, Error ellipse: s-maj=30.1km s-min=22.0km az=36.0*

ISC 19 06:11:26.6±0.9, 23.38S±0.1×68.9W±0.1, h94km, n14, σ0s38/12, mb3.6/3, Northern Chile

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
LPAZ	**La Paz**	**6.97**	**6**	P	**Pn**	**06 13 06.7**	**0.0**
	0.2nm,0.3s,baz=65,slow=7.1,SNR=6.6						
SIV	**San Ignacio**	**10.35**	**47**	P	**Pn**	**06 13 51.6**	**-0.6**
	0.9nm,0.3s,baz=246,slow=11,SNR=10						
SIV				S	Sn	06 15 38.9	-7.4
	0.6nm,0.3s,baz=315,slow=20,SNR=4.4						
CPUP	**Villa Florida**	**10.99**	**109**	P	**Pn**	**06 14 01.1**	**+0.3**
	0.2nm,0.3s,baz=277,slow=14,SNR=5.2						
PLCA	**Paso Flores**	**17.48**	**184**	P	**P**	**06 15 23.8**	**-0.4**
	0.1nm,0.3s,baz=221,slow=20,SNR=3.5						
TXAR	**Lajitas Array**	**62.05**	**326**	P	**P**	**06 21 37.3**	**-0.1**
	0.2nm,0.8s,baz=155,slow=6.6,SNR=2.5						
TXAR				pP	**pP**	**06 22 00.7**	**-0.2**
	0.1nm,0.6s,baz=139,slow=5.9,SNR=1.6						
TORD	**Torodi Ar. Bea**	**77.98**	**70**	P	**P**	**06 23 15.4**	**+0.4**
	1.6nm,0.5s,baz=253,slow=5.1,SNR=24						
TORD				pP	**pP**	**06 23 39.4**	**0.0**
	0.9nm,0.5s,baz=250,slow=5.0,SNR=3.6						
TORD				sP	**sP**	**06 23 49.5**	**0.0**
	1.0nm,0.5s,baz=255,slow=5.0,SNR=3.6						
YKA	**Yellowknife Ar**	**92.82**	**341**	P	**P**	**06 24 28.2**	**+0.2**
	0.2nm,0.6s,baz=138,slow=4.6,SNR=9.1						
YKA				pP	**pP**	**06 24 52.6**	**-0.4**
	0.2nm,0.5s,baz=140,slow=4.7,SNR=5.0						
H11S2	**WAKE ISLAND Hyd**	**128.04**	**276**	T	T	08 50 39.7	
	baz=111,slow=75,SNR=4.4						
H11S1	**WAKE ISLAND Hyd**	**128.05**	**276**	T	T	08 50 41.5	
	baz=111						
H11S3	**WAKE ISLAND Hyd**	**128.06**	**276**	T	T	08 50 44.1	
	baz=111,slow=75,SNR=4.4						
H11N3	**WAKE ISLAND Hyd**	**128.17**	**277**	T	T	08 50 47.2	
	baz=102						
H11N2	**WAKE ISLAND Hyd**	**128.19**	**277**	T	T	08 50 48.5	
	baz=102						
H11N1	**WAKE ISLAND Hyd**	**128.19**	**277**	T	T	08 50 49.0	
	baz=102						
MKAR	**Makanchi Array**	**147.05**	**37**	PKPbc	**PKPbc**	**06 30 59.0**	**+0.5**
	1.0nm,0.7s,baz=290,slow=4.8,SNR=6.1						

IDC 19 06:14:57.1±3.7, 30.01S×138.83E, h0km, mb1 2.9/3, mb1mx2.9/23, mbtmp2.7/3, ML2.6/3, Error ellipse: s-maj=140.9km s-min=17.7km az=46.0, South Australia

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
STKA	**Stephens Creek**	**3.02**	**129**	Pn	Pn	06 15 45.6	-0.5
	0.3nm,0.3s,baz=303,slow=9.0,SNR=4.9						
STKA				Sn	Sn	06 16 23.0	0.0
	1.8nm,0.3s,baz=335,slow=15,SNR=5.1						
STKA				Lg	Lg	06 16 33.7	
	2.5nm,0.3s,baz=18,slow=20,SNR=7.2						
ASAR	**Alice Springs**	**7.70**	**324**	Pn	Pn	06 16 50.8	+0.2
	0.1nm,0.3s,baz=147,slow=11,SNR=5.3						
ASAR				Sn	Sn	06 18 14.7	-3.9
	0.1nm,0.3s,baz=153,slow=22,SNR=1.6						
WRA	**Warramunga Arr**	**10.82**	**337**	Pn	Pn	06 17 33.3	0.0
	0.1nm,0.3s,baz=154,slow=11,SNR=4.8						
WRA				Sn	Sn	06 19 32.2	-2.9
	0.0nm,0.3s,baz=162,slow=25,SNR=1.5						

CASC 19 06:20:12.9±2.7, 8.73N×78.82W, h0km±9km, MD3.8, 1C-1D, Panama

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
UPD2	**Meteti**	**0.81**	**103**	⇓*iP*	Pg	06 20 26.5	-2.0
UPD2				*e*S	Sg	06 20 39.0	-0.1
ZANG	**Zanguenga, Cho**	**1.06**	**282**	*e*P	Pg	06 20 33.5	+0.2
ZANG				*e*P	Pb	06 20 33.9	-0.3
ZANG				*e*S	Sn	06 20 51.4	+0.8
ZANG				*e*S	Sb	06 20 51.4	+2.8
BCIP	**Isla Barro Col**	**1.10**	**293**	⇑*iP*	Pg	06 20 33.2	-0.8
BCIP				*e*S	Sb	06 20 49.5	-0.2
AZU	**Azuero**	**1.72**	**237**	*e*P	Pg	06 20 46.3	+0.4
AZU				*e*S	Sn	06 21 02.7	-4.0

MEX 19 06:27:26.7±0.6, 16.27N×92.35W, h45km, MD3.7, Chiapas

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PCIG		**1.01**	**236**	*e*P	Pn	06 27 42.9	-1.5
PCIG				*e*S	Sn	06 27 54.6	-2.9

JMA 19 06:42:31.4±0.2, 35.91N×141.11E, h23km±2km, M3.1, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CHOJ	**Chosi**	**0.29**	**225**	P	Pb	06 42 37.8	-0.3
CHOJ				S	Sb	06 42 42.9	+0.2
JHO	**Hitachi**	**0.82**	**328**	P	Pb	06 42 46.9	-0.2
JHO				S	Sb	06 42 57.6	-0.2
JCN	**Nagara**	**0.89**	**237**	P	Pb	06 42 47.5	-0.6

IDC 19 06:47:41.4±8.0, 21.19S×67.40W, h282km±53km, mb2.9/2, mb1 3.1/4, mb1mx2.9/22, mbtmp3.6/4, Error ellipse: s-maj=102.0km s-min=32.8km az=25.0, Chile-Bolivia border region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
LPAZ	**La Paz**	**4.93**	**352**	P	Pn	06 48 58.4	+0.2
	0.9nm,0.3s,baz=196,slow=7.9,SNR=14						
LPAZ				S	S	06 49 59.8	+0.3
	baz=207,slow=9.2,SNR=2.1						
SIV	**San Ignacio**	**7.92**	**50**	P	Pn	06 49 33.8	-0.3
	1.5nm,0.3s,baz=239,slow=9.7,SNR=24						
TORD	**Torodi Ar. Bea**	**75.93**	**70**	P	P	06 58 58.2	+0.3
	0.3nm,0.4s,baz=259,slow=5.3,SNR=6.2						
YKA	**Yellowknife Ar**	**91.37**	**340**	P	P	07 00 15.2	+0.2
	0.1nm,0.5s,baz=131,slow=4.6,SNR=5.0						
MKAR	**Makanchi Array**	**144.55**	**37**	PKP	PKPab	07 06 43.0	-0.8
	0.4nm,0.7s,baz=303,slow=3.0,SNR=3.9						

NIED ***19*** *06:53:00, 37.00N×140.70E, h5km, Mw4.5 Best double couple: M0:5.52000×10^15 NP1:φs43.00000°, δ27.00000°, λ-69.00000°. NP2:φs200.00000°, δ65.00000°, λ-100.00000°.*
BJI ***19*** *06:53:31.5, 36.98N×140.67E, h14km, mb4.6/35, mB4.8/23, Ms4.3/28, Ms7 4.0/22*
JMA ***19*** *06:53:32.7, 37.02N×140.65E, h7km±1km, M4.6 Broadband fault plane solution: P waves. NP1: φs189.00000°, δ63.00000°, λ-97.00000°. NP2:φs24.00000°,*

δ28.00000°,λ-76.00000°. Principal axes: T Plg18.0000°, Azm284.0000°; N Plg6.0000°, Azm192.0000°; P Plg71.0000°, Azm83.0000°;
JMA Felt III J1.
ISCJB ***19*** *06:53:33.2±0.4,37°.07N±0°.02×140°.54E±0°.03,h18km±3km, mb4.6/147,MS4.0/18 Error ellipse: s-maj=4.3km s-min=3.2km az=44.7*
MOS ***19*** *06:53:34.8±1.1,37°.15N×140°.52E,h29km,mb4.8/66,Error ellipse: s-maj=8.1km s-min=5.0km az=87.3*
NEIC ***19*** *06:53:37.8±0.6,37°.07N×140°.45E,h39km±5km,mb4.6/97, Error ellipse: s-maj=5.0km s-min=3.3km az=140.0*
NEIC Recorded [3 JMA] in Fukushima.
IDC ***19*** *06:53:37.4±1.9,37°.05N×140°.56E,h42km±17km,mb4.2/32, mb1 4.4/36,mb1mx4.3/50,mbtmp4.5/36,ML3.9/4,MS3.8/13, Ms1 3.8/13,ms1mx3.5/36,Error ellipse: s-maj=13.5km s-min=9.8km az=99.0*

ISC 19 06:53:33.0±0.8,37°.07N±0°.03×140°.59E±0°.03,h10km±5km, n295,σ1§55/305,mb4.6/147,MS3.9/18,15C-5D,Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.17**	**78**	⇑P	**Pg**	**06 53 36.0**	**-0.8**
ONAJ				S	**Sg**	**06 53 38.6**	**-0.8**
JFK	**Kawauchi**	**0.38**	**37**	⇓P	**Pg**	**06 53 40.4**	**-0.1**
JFK				S	**Sg**	**06 53 45.8**	**+0.3**
JHO	**Hitachi**	**0.45**	**182**	⇑P	**Pg**	**06 53 40.7**	**-1.1**
JHO				S	**Sg**	**06 53 47.1**	**-0.7**
JFT	**Otama**	**0.49**	**336**	⇑P	**Pb**	**06 53 43.6**	**-0.2**
JFT				S	**Sb**	**06 53 51.3**	**+0.3**
JSB	**Shiboa**	**0.54**	**260**	⇑P	**Pb**	**06 53 44.8**	**+0.2**
JSB				S	**Sb**	**06 53 53.2**	**+0.8**
JFY	**Yanaizu**	**0.78**	**296**	⇑P	**Pn**	**06 53 48.9**	**-1.1**
JFY				S	**Sn**	**06 54 00.0**	**-1.8**
JMM	**Marumori**	**0.82**	**12**	⇓P	**Pb**	**06 53 48.6**	**-0.6**
JMM				S	**Sb**	**06 54 00.2**	**-0.1**
JYT	**Yasato**	**0.89**	**201**	⇑P	**Pg**	**06 53 48.9**	**-1.3**
JYT				S	**Sb**	**06 54 01.9**	**-0.5**
MJAR	**Matsushiro Arr**	**1.98**	**255**	P	**Pb**	**06 54 08.0**	**-1.0**
	150nm,0.3s,baz=83,slow=16,SNR=158						
MJAR				S	**Sg**	**06 54 35.3**	**-1.2**
	109nm,0.3s,baz=80,slow=24,SNR=25						
MJAR				LR	LR	06 55 12.6	
	comp=Z,1μm,19.1s,baz=75,slow=50						
MAJO	**Matsushiro**	**1.98**	**255**	*i*P	**Pb**	**06 54 08.7**	**-0.4**
MAJO	**Matsushiro**	**1.98**	**255**	*e*Pn	**Pb**	**06 54 08.2**	**-0.8**
MAT	**Matsushiro**	**1.98**	**255**	P	**Pb**	**06 54 08.1**	**-1.0**
MAT				S	**Sg**	**06 54 35.2**	**-1.4**
MJB9	**Matsu-Tunnel**	**1.98**	**256**	*e*Pn	**Pb**	**06 54 08.2**	**-0.9**
INU	**Inuyama**	**3.36**	**240**	*e*Pn	**Pn**	**06 54 28.1**	**+2.7**
JHJ	**Hachijo jima 2**	**3.99**	**190**	P	**Pn**	**06 54 35.3**	**+1.1**
	45nm,0.3s,baz=253,slow=19,SNR=3.5						
JHJ				S	**Sb**	**06 55 28.1**	**-3.6**
	164nm,0.3s,baz=218,slow=21,SNR=6.0						
ERM	**Erimo**	**5.33**	**21**	*e*P	**Pn**	**06 54 54.0**	**+1.5**
ERM	**Erimo**	**5.33**	**21**	*e*Pn	**Pn**	**06 54 54.0**	**+1.5**
ASAJ	**Asahikawa**	**7.21**	**12**	P	**Pn**	**06 55 20.0**	**+1.7**
	4.9nm,0.3s,baz=193,slow=8.3,SNR=11						
ASAJ				S	**Sn**	**06 56 39.7**	**-0.5**
	1.2nm,0.3s,baz=143,slow=20,SNR=1.9						
ASAJ	**Asahikawa**	**7.21**	**12**	*e*Pn	**Pn**	**06 55 20.7**	**+2.4**
ASAJ				S	**Sn**	**06 56 39.7**	**-0.5**
SHO	**Shikotan**	**8.29**	**33**	*e*P	**Pn**	**06 55 32.6**	**-0.6**
SHO				*e*S	**Sn**	**06 57 00.5**	**-6.4**
SHO				pmax	pmax		
	comp=Z,94nm,0.5s						
SHO				pmax	pmax		
	comp=E,81nm,0.6s						
SHO				pmax	pmax		
	comp=N,16nm,0.2s						
JNU	**Nakatsue**	**8.87**	**247**	P	**Pn**	**06 55 43.7**	**+2.5**
	comp=N,0.6nm,0.3s,baz=117,slow=6.8,SNR=4.3						
JNU	**Nakatsue**	**8.87**	**247**	*e*Pn	Pn	06 55 47.1	+5.9
MSHR	**Mys Shultsa**	**9.11**	**310**	*e*P	**Pn**	**06 55 42.1**	**-2.2**
USRK	**Ussuriysk Ar.**	**9.66**	**320**	P	Pn	06 55 59.1	+7.1
	comp=N,0.7nm,0.3s,baz=131,slow=12,SNR=28						
USRK				LR	LR	06 59 21.2	
	comp=N,486nm,19.8s,baz=130,slow=36						
KUR	**Kuril'sk**	**9.83**	**32**	*e*P	**Pn**	**06 55 54.5**	**+0.3**
KUR				*e*S	**Sn**	**06 57 39.3**	**-5.3**
KUR				pmax	pmax		
	comp=Z,99nm,0.7s						
YSS	**Yuzh-Sakhalins**	**10.01**	**9**	⇑*e*P	**Pn**	**06 55 57.5**	**+0.8**
YSS				*e*S	**Sn**	**06 57 44.0**	**-5.0**
YSS				pmax	pmax		
	comp=Z,70nm,0.7s						
YSS				MLR	MLR		
	comp=N,600nm,15.0s						
YSS				MLR	MLR		
	comp=Z,600nm,15.0s						
YSS				MLR	MLR		
	comp=E,600nm,16.0s						
YSS	**Yuzh-Sakhalins**	**10.01**	**9**	*e*Pn	**Pn**	**06 55 57.8**	**+1.0**
JCJ	**Chichijima**	**10.03**	**172**	LR	LR	07 00 07.8	
	comp=E,425nm,21.7s,baz=358,slow=39						
KSRS	**Korea Array**	**10.10**	**276**	P	Pn	06 56 06.8	+8.7
	comp=E,0.4nm,0.3s,baz=92,slow=13,SNR=40						
KSRS				LR	LR	06 59 37.4	
	comp=E,531nm,20.1s,baz=90,slow=36						
KSAR	**Wonju Array Be**	**10.13**	**276**	P	Pn	06 56 06.8	+8.4
KSAR	**Wonju Array Be**	**10.13**	**276**	P	Pn	06 56 06.8	+8.3
MDJ	**Mudanjiang**	**11.23**	**316**	P	Pn	06 56 21.3	+7.9
MDJ				pmax	pmax		
	comp=E,16nm,1.2s						
MDJ				pmax	pmax		
	comp=E,160nm,6.5s						
MDJ	**Mudanjiang**	**11.23**	**316**	*e*Pn	Pn	06 56 22.4	+9.0
CN2	**Changchun**	**13.34**	**305**	*e*P	**Pn**	**06 56 43.1**	**+0.8**
KLR	**Kul'dur**	**13.75**	**335**	P	**Pn**	**06 56 50.2**	**+2.4**
	comp=E,0.1nm,0.3s,baz=131,slow=11,SNR=7.8						
KLR				LR	LR	07 01 59.4	
	comp=E,372nm,18.1s,baz=147,slow=36						
TYV	**Tymovskoe**	**13.87**	**5**	*e*P	**Pn**	**06 56 49.8**	**+0.3**
TYV				pmax	pmax		
	comp=Z,31nm,0.8s						
NKL	**Nikolayevsk**	**16.09**	**0**	*e*P	**Pn**	**06 57 17.3**	**-1.7**
NKL				MLR	MLR		
	comp=N,400nm,16.0s						
NKL				MLR	MLR		
	comp=Z,500nm,16.0s						
NJ2	**Nanjing**	**18.57**	**261**	*e*P	**P**	**06 57 48.4**	**-1.6**
NJ2				pmax	pmax		
	comp=Z,13nm,0.6s						
BJI	**Beijing**	**19.31**	**286**	P	**Pn**	**06 57 59.9**	**+0.9**
BJI				S	**Sn**	**07 01 35.5**	**0.0**
BJI				pmax	pmax		
	comp=Z,13nm,1.4s						
BJI				pmax	pmax		
	comp=Z,100nm,4.1s						
BJI				LR	LR		
	comp=Z,220nm,14.1s						
BJI				LR	LR		
	comp=Z,200nm,14.8s						
PEA0	**Petropavlovsk-**	**20.00**	**31**	*e*P	Pn	06 58 06.6	-0.6
PETK	**Petropavlovsk-**	**20.00**	**31**	P	**P**	**06 58 06.1**	**+0.6**
	comp=E,10nm,0.8s,baz=210,slow=8.6,SNR=7.4						
PETK	**Petropavlovsk-**	**20.00**	**31**	P	**P**	**06 58 06.1**	**+0.6**
PETK				pmax	pmax		
	comp=Z,10.0nm,1.0s						
HHC	**Hu-ho-hao-te**	**22.84**	**288**	*e*P	**P**	**06 58 35.3**	**-0.9**
HHC				pP	sP	06 58 40.1	-0.4
HHC				S	**S**	**07 02 41.4**	**-4.2**
HHC				pmax	pmax		
	comp=Z,14nm,1.0s						
HHC				pmax	pmax		
	comp=Z,100nm,6.8s						
HHC				LR	LR		
	comp=Z,1μm,12.1s						
HHC				LR	LR		
	comp=Z,1μm,12.8s						
HHC				LR	LR		
	comp=Z,1μm,13.3s						
MA2	**Magadan**	**23.47**	**13**	P	**P**	**06 58 42.3**	**-0.1**
	comp=Z,15nm,0.7s,baz=212,slow=14,SNR=7.1						
YAK	**Yakutsk**	**25.90**	**348**	P	**P**	**06 59 04.0**	**-0.7**
	comp=Z,17nm,0.5s,baz=90,slow=3.4,SNR=2.2						
YAK				LR	LR	07 08 52.7	
	comp=Z,96nm,21.4s,baz=61,slow=35						
YAK	**Yakutsk**	**25.90**	**348**	*e*P	**P**	**06 59 04.3**	**-0.4**
YAK				pmax	pmax		
	comp=Z,11nm,0.8s						
YAK	**Yakutsk**	**25.90**	**348**	P	**P**	**06 59 04.0**	**-0.7**
SEY	**Seymchan**	**26.89**	**12**	P	**P**	**06 59 15.7**	**+2.0**
	comp=Z,8.4nm,1.0s,baz=199,slow=6.8,SNR=21						
BOD	**Bodaibo**	**27.15**	**328**	*e*P	**P**	**06 59 14.2**	**-1.9**
BOD				pmax	pmax		
	comp=Z,6.0nm,1.3s						
SONM	**Songino Array**	**27.22**	**304**	P	**P**	**06 59 16.5**	**-0.5**
	comp=Z,8.2nm,0.8s,baz=112,slow=27,SNR=5.2						
SONM				LR	LR	07 10 27.2	
	comp=Z,167nm,20.7s,baz=74,slow=37						
SONM	**Songino Array**	**27.22**	**304**	P	**P**	**06 59 16.5**	**-0.5**
SONM				pmax	pmax		
	comp=Z,11nm,1.0s						
SONM				MLR	MLR		
	comp=Z,167nm,20.7s						
H11N2	**WAKE ISLAND Hy**	**28.73**	**120**	T	T	07 29 15.2	
	baz=313,slow=75,SNR=2928						
H11N1	**WAKE ISLAND Hy**	**28.74**	**120**	T	T	07 29 15.8	
	baz=313,slow=75,SNR=1657						
H11N3	**WAKE ISLAND Hy**	**28.75**	**120**	T	T	07 29 16.6	
	baz=313,slow=75,SNR=1682						
LZH	**Lanzhou**	**29.41**	**279**	*e*P	**P**	**06 59 36.6**	**-0.1**
LZH				pP	sP	06 59 40.5	-0.6
LZH				sP	pP	06 59 43.8	+4.0
LZH				*e*S	**S**	**07 04 26.4**	**-4.2**
LZH				SS	**SnSn**	**07 05 57.5**	**+0.5**
LZH				pmax	pmax		
	comp=Z,20nm,1.2s						
LZH				pmax	pmax		
	comp=Z,99nm,4.0s						
LZH				LR	LR		
	comp=Z,1μm,13.7s						
LZH				LR	LR		
	comp=Z,1μm,12.4s						
LZH				LR	LR		
	comp=Z,1μm,16.0s						
H11S1	**WAKE ISLAND Hy**	**29.43**	**122**	T	T	07 30 11.0	
	baz=314,slow=76,SNR=868						
H11S3	**WAKE ISLAND Hy**	**29.43**	**122**	T	T	07 30 10.2	
	baz=314,slow=76,SNR=712						
H11S2	**WAKE ISLAND Hy**	**29.45**	**122**	T	T	07 30 11.8	
	baz=314,slow=76,SNR=554						
TLY	**Talaya**	**29.81**	**311**	*e*PP	PP	07 00 46.0	-1.0
GYA	**Guiyang**	**30.57**	**260**	*e*P	**P**	**06 59 48.6**	**+1.6**
GYA				pmax	pmax		
	comp=Z,10.0nm,0.8s						
CD2	**Chengdu**	**31.01**	**270**	P	**P**	**06 59 49.3**	**-1.4**
CD2				pmax	pmax		
	comp=Z,1.0nm,0.5s						
GTA	**Gaotai**	**31.92**	**287**	P	**P**	**06 59 59.0**	**+0.2**
GTA				pP	sP	07 00 06.3	+3.0
GTA				sP	pP	07 00 09.3	+7.3
GTA				PcP	**PcP**	**07 02 49.9**	**+0.9**
GTA				S	**S**	**07 05 09.3**	**-0.6**
GTA				sS	sS	07 05 19.8	+4.7
GTA				SS	**SnSn**	**07 07 01.6**	**+3.6**
GTA				pmax	pmax		
	comp=Z,3.0nm,0.9s						
GTA				pmax	pmax		
	comp=Z,40nm,5.3s						
GTA				LR	LR		
	comp=Z,260nm,18.5s						
GTA				LR	LR		
	comp=Z,220nm,17.6s						
GTA				LR	LR		
	comp=Z,120nm,14.3s						
QIZ	**Qiongzhong**	**32.34**	**245**	P	**P**	**07 00 00.1**	**-2.4**
QIZ				S	**S**	**07 05 22.1**	**+5.7**
BILL	**Bilibino**	**34.19**	**17**	*c i*P	**P**	**07 00 18.1**	**+0.1**
BILL				*e*		07 01 32.3	
BILL				*e*S	S	07 05 32.4	-12
BILL				pmax	pmax		
	comp=Z,12nm,1.2s						
BILL				MLR	MLR		
	comp=Z,104nm,19.0s						
BILL	**Bilibino**	**34.19**	**17**	*e*P	**P**	**07 00 17.5**	**-0.5**
	comp=Z,21nm,1.5s						
KMI	**Kunming**	**34.31**	**261**	P	**P**	**07 00 19.9**	**0.0**
KMI				pmax	pmax		
	comp=Z,15nm,1.0s						
KMI				LR	LR		
	comp=Z,200nm,14.2s						
KMI				LR	LR		
	comp=Z,150nm,14.9s						
KMI				LR	LR		
	comp=Z,140nm,27.6s						
TIXI	**Tiksi**	**35.18**	**354**	*e*P	**P**	**07 00 26.0**	**-0.6**
TIXI				pmax	pmax		
	comp=Z,4.0nm,0.8s						
TIXI	**Tiksi**	**35.18**	**354**	*e*P	**P**	**07 00 25.4**	**-1.1**
	comp=Z,3.8nm,0.9s						
GAMB	**Gambell**	**39.03**	**31**	*e*P	**P**	**07 01 02.1**	**+2.7**
	comp=Z,23nm,1.9s						
WMQ	**Urumqi**	**40.23**	**297**	*e*P	**P**	**07 01 10.5**	**+0.7**
WMQ				pmax	pmax		
	comp=Z,3.0nm,0.6s						
WMQ				pmax	pmax		
	comp=Z,16nm,3.6s						
WMQ				LR	LR		
	comp=Z,30nm,19.4s						
WMQ				LR	LR		
	comp=Z,110nm,23.8s						
CMAR	**Chiang Mai Arr**	**40.87**	**255**	P	**P**	**07 01 15.6**	**+0.4**
	comp=Z,0.9nm,0.3s,baz=51,slow=5.8,SNR=5.0						
CMAR	**Chiang Mai Arr**	**40.87**	**255**	*ce*P	P	07 01 21.0	+5.8
CMAR				pmax	pmax		
	comp=Z,1.0nm,0.7s						
ZAA0	**Zalesovo Array**	**41.41**	**312**	*e*P	**P**	**07 01 18.7**	**-0.5**
ZAA0				*e*P	**P**	**07 01 19.2**	**0.0**
ZALV	**Zalesovo Beam**	**41.41**	**312**	P	**P**	**07 01 18.9**	**-0.3**
	comp=Z,4.2nm,0.7s,baz=103,slow=6.4,SNR=12						
ZALV				PcP	**PcP**	**07 03 16.6**	**-0.4**
	comp=Z,2.6nm,0.6s,baz=108,slow=3.2,SNR=4.5						
ZALV	**Zalesovo Beam**	**41.41**	**312**	P	**P**	**07 01 18.9**	**-0.3**
ZALV						07 03 16.7	
ZALV				pmax	pmax		
	comp=Z,3.0nm,0.5s						
ZALV				pmax	pmax		
	comp=Z,3.0nm,0.6s						
NRIK	**Noril'sk**	**42.96**	**335**	P	**P**	**07 01 31.0**	**-0.7**
	comp=Z,2.4nm,0.5s,baz=102,slow=12,SNR=5.4						
NRIK	**Noril'sk**	**42.96**	**335**	P	**P**	**07 01 31.0**	**-0.7**
NRIK				pmax	pmax		
	comp=Z,2.0nm,0.5s						
MK01	**Makanchi Array**	**43.54**	**302**	*e*P	**P**	**07 01 37.0**	**+0.3**
MK31	**Makanchi Array**	**43.54**	**302**	*e*P	**P**	**07 01 37.5**	**+0.8**
MK31	**Makanchi Array**	**43.54**	**302**	*e*P	**P**	**07 01 37.5**	**+0.8**
MKAR	**Makanchi Array**	**43.54**	**302**	P	**P**	**07 01 37.0**	**+0.3**
	comp=Z,2.6nm,0.6s,baz=87,slow=9.8,SNR=33						
MKAR				LR	LR	07 21 23.7	
	comp=Z,179nm,20.0s,baz=309,slow=38						
MAKZ	**Makanchi**	**43.75**	**302**	*e*P	**P**	**07 01 38.5**	**+0.1**
MAKZ				pmax	pmax		
	comp=Z,4.0nm,0.7s						
MAKZ	**Makanchi**	**43.75**	**302**	*e*P	**P**	**07 01 38.5**	**+0.1**
	comp=Z,3.7nm,0.7s						
KURK	**Kurchatov**	**45.39**	**308**	*e*P	**P**	**07 01 51.3**	**-0.1**
KURK				pmax	pmax		
	comp=Z,36nm,1.3s						
KURK	**Kurchatov**	**45.39**	**308**	*e*P	**P**	**07 01 51.3**	**-0.1**
	comp=Z,36nm,1.3s						
TTA	**Tatalina**	**45.77**	**35**	*e*P	**P**	**07 01 55.7**	**+1.4**
TTA				pmax	pmax		
	comp=Z,6.0nm,1.2s						
TTA	**Tatalina**	**45.77**	**35**	*e*P	**P**	**07 01 55.7**	**+1.4**
	comp=Z,6.0nm,1.2s						
SVW2	**Sparrevohn**	**45.90**	**37**	*e*P	**P**	**07 01 57.3**	**+2.0**
	comp=Z,13nm,1.0s						
KAPI	**Kappang**	**46.16**	**209**	*e*P	**P**	**07 01 59.1**	**+1.3**
	comp=Z,39nm,1.2s						
PDGK	**Podgornoye**	**46.18**	**298**	P	**P**	**07 01 58.6**	**+0.9**
PDGK				pmax	pmax		
	comp=Z,11nm,1.2s						
RSO	**Redoubt South**	**47.29**	**38**	*e*P	**P**	**07 02 08.2**	**+1.8**
KDAK	**Kodiak Island**	**47.52**	**42**	*ce*P	**P**	**07 02 08.8**	**+0.8**
PPLA	**Purkeypile**	**47.52**	**35**	*e*P	**P**	**07 02 10.2**	**+2.1**
	comp=Z,28nm,1.5s						
CAST	**Castle Rocks**	**47.57**	**34**	*e*P	**P**	**07 02 05.5**	**-2.9**
	comp=Z,7.1nm,1.2s						
SPU	**Mount Spurr**	**47.61**	**37**	*e*P	**P**	**07 02 10.4**	**+1.7**
KTH	**Kantishna Hill**	**48.09**	**34**	*e*P	**P**	**07 02 14.2**	**+1.7**
	comp=Z,15nm,1.1s						
MLY	**Manley**	**48.17**	**32**	*e*P	**P**	**07 02 14.9**	**+1.8**
	comp=Z,6.8nm,0.9s						
TRF	**Thorofare Moun**	**48.38**	**34**	*e*P	**P**	**07 02 16.4**	**+1.6**
	comp=Z,5.1nm,0.9s						
COLD	**Coldfoot**	**48.45**	**29**	*e*P	**P**	**07 02 16.5**	**+1.4**
	comp=Z,3.2nm,1.0s						
RC01	**Rabbit Creek A**	**48.74**	**37**	*e*P	**P**	**07 02 18.5**	**+1.2**
	comp=Z,13nm,1.2s						
MCK	**McKinley**	**48.98**	**34**	*e*P	**P**	**07 02 20.2**	**+1.0**
MCK				pmax	pmax		
	comp=Z,7.0nm,1.0s						
MCK	**McKinley**	**48.98**	**34**	*e*P	**P**	**07 02 20.2**	**+1.0**
	comp=Z,6.9nm,1.0s						
PMR	**Palmer**	**48.99**	**37**	*e*P	**P**	**07 02 19.8**	**+0.5**
PMR				pmax	pmax		
	comp=Z,8.0nm,1.1s						
PMR	**Palmer**	**48.99**	**37**	*e*P	**P**	**07 02 19.8**	**+0.5**
	comp=Z,8.0nm,1.1s						
RND	**Reindeer**	**49.02**	**34**	*e*P	**P**	**07 02 20.3**	**+0.7**
RND				pmax	pmax		
	comp=Z,11nm,1.0s						
RND	**Reindeer**	**49.02**	**34**	*e*P	**P**	**07 02 20.3**	**+0.7**
	comp=Z,10nm,1.0s						
TKM2	**Tokmak 2**	**49.03**	**298**	*e*P	**P**	**07 02 21.4**	**+1.2**
TKM2				pmax	pmax		
	comp=Z,18nm,1.3s						
TKM2	**Tokmak 2**	**49.03**	**298**	*e*P	**P**	**07 02 21.4**	**+1.2**
	comp=Z,18nm,1.3s						
MDM	**Murphy Dome**	**49.24**	**32**	*e*P	**P**	**07 02 21.9**	**+0.6**
	comp=Z,15nm,1.1s						
WRH	**Wood River Hil**	**49.32**	**33**	*e*P	**P**	**07 02 22.7**	**+0.9**
	comp=Z,6.0nm,0.9s						
COLA	**College**	**49.41**	**32**	*i*P	**P**	**07 02 22.5**	**+0.1**
COLA				pmax	pmax		
	comp=Z,4.0nm,1.0s						
CCB	**Clear Creek Bu**	**49.43**	**33**	*e*P	**P**	**07 02 23.9**	**+1.3**
	comp=Z,17nm,1.9s						
KSH	**Kashi**	**49.79**	**294**	P	P	07 02 31.9	+6.0
KSH				*es*P	sP	07 02 39.0	+8.5
KSH				*e*PcP	**PcP**	**07 03 51.1**	**+4.4**
KSH				S	**S**	**07 09 43.0**	**+7.6**
KSH				SS	**SS**	**07 13 09.3**	**+1.7**
KSH				pmax	pmax		
	comp=Z,87nm,4.7s						
KSH				LR	LR		
	comp=Z,170nm,7.2s						
KSH				LR	LR		
	comp=Z,110nm,6.4s						
KSH				LR	LR		
	comp=Z,200nm,10.8s						
IL1	**Eielson Array**	**49.82**	**32**	*e*P	**P**	**07 02 24.9**	**-0.7**
ILAR	**Eielson Array**	**49.82**	**32**	P	**P**	**07 02 25.8**	**+0.1**
	comp=Z,4.0nm,0.8s,baz=270,slow=6.1,SNR=40						
ILB	**Eielson Array**	**49.82**	**32**	*e*P	**P**	**07 02 26.1**	**+0.4**
OTUK	**Ortayu**	**49.87**	**306**	P	**P**	**07 02 26.6**	**+0.3**
OTUK				pmax	pmax		
	comp=Z,9.0nm,1.0s						
AAK	**Ala-Archa**	**49.89**	**298**	LR	LR	07 24 46.4	
	comp=Z,307nm,19.1s,baz=54,slow=38						
AAK	**Ala-Archa**	**49.89**	**298**	*i*P	**P**	**07 02 26.8**	**+0.1**
AAK				pmax	pmax		
	comp=Z,6.0nm,0.9s						
AAK	**Ala-Archa**	**49.89**	**298**	*e*P	**P**	**07 02 27.8**	**+1.1**
	comp=Z,3.5nm,0.8s						
BVAR	**Borovoye Array**	**50.06**	**312**	P	**P**	**07 02 27.8**	**+0.1**
	comp=Z,5.6nm,0.8s,baz=79,slow=7.7,SNR=22						
BRVK	**Borovoye**	**50.12**	**312**	*e*P	**P**	**07 02 27.6**	**-0.4**
BRVK				pmax	pmax		
	comp=Z,10.0nm,1.0s						
BRVK	**Borovoye**	**50.12**	**312**	*e*P	**P**	**07 02 27.6**	**-0.4**
	comp=Z,10nm,1.0s						
KLU	**Klutina**	**50.54**	**37**	*e*P	**P**	**07 02 32.5**	**+1.3**
	comp=Z,5.3nm,0.8s						
ZRNK	**Zerenda**	**50.90**	**312**	*e*P	**P**	**07 02 33.9**	**0.0**
ZRNK				pmax	pmax		
	comp=Z,12nm,0.9s						
ZRNK	**Zerenda**	**50.90**	**312**	*e*P	**P**	**07 02 33.9**	**0.0**
	comp=Z,12nm,0.9s						
DOT	**Dot Lake**	**51.15**	**34**	*e*P	**P**	**07 02 36.3**	**+0.6**
	comp=Z,26nm,1.5s						
BMRM	**Bremner River**	**51.23**	**37**	*e*P	**P**	**07 02 38.1**	**+1.7**
	comp=Z,11nm,1.0s						
PSI	**Prapat**	**51.24**	**238**	*e*P	**P**	**07 02 37.7**	**+0.6**
PSI				pmax	pmax		
	comp=Z,5.0nm,0.8s						
PSI	**Prapat**	**51.24**	**238**	*e*P	**P**	**07 02 37.7**	**+0.6**
	comp=Z,4.9nm,0.8s						
MNAS	**Manas**	**51.34**	**298**	P	**P**	**07 02 38.8**	**+1.2**
MNAS				pmax	pmax		
	comp=Z,7.0nm,0.8s						
MENT	**Mentasta**	**51.38**	**35**	*e*P	**P**	**07 02 38.9**	**+1.4**
	comp=Z,17nm,1.3s						
SFK	**Sufi-Kurgan**	**51.42**	**295**	P	**P**	**07 02 39.1**	**+0.7**
SFK				pmax	pmax		
	comp=Z,8.0nm,1.2s						
EGAK	**Eagle**	**52.26**	**32**	*e*P	**P**	**07 02 44.6**	**+0.7**
	comp=Z,4.2nm,1.1s						
KKAR	**Karatay Array**	**52.54**	**300**	*e*P	**P**	**07 02 46.6**	**+0.2**
KKAR	**Karatay Array**	**52.54**	**300**	*e*P	**P**	**07 02 46.6**	**+0.2**
GSI	**Gunungsitoli**	**53.25**	**238**	*e*P	**P**	**07 02 51.5**	**-0.4**
	comp=Z,94nm,1.3s						
ARU	**Arti**	**55.90**	**318**	*d i*P	**P**	**07 03 10.4**	**-0.2**
ARU						07 04 10.9	
ARU						07 05 11.1	
ARU				S	**S**	**07 10 53.9**	**-4.0**
ARU				SS	**SS**	**07 14 38.8**	**-4.4**
ARU				pmax	pmax		
	comp=Z,10.0nm,0.8s						
ARU	**Arti**	**55.90**	**318**	*e*P	**P**	**07 03 10.8**	**+0.1**
	comp=Z,9.5nm,0.8s						
FITZ	**Fitzroy Crossi**	**56.65**	**197**	P	**P**	**07 03 16.5**	**+0.2**
	comp=Z,2.8nm,0.5s,baz=1.9,slow=8.9,SNR=10						
WRAB	**Tennant Creek**	**56.99**	**187**	*e*P	**P**	**07 03 18.2**	**-0.6**
WRAB				pmax	pmax		
	comp=Z,18nm,0.8s						
WRAB	**Tennant Creek**	**56.99**	**187**	*e*P	**P**	**07 03 18.2**	**-0.6**
	comp=Z,18nm,0.8s						
WB2	**Warramunga Arr**	**57.00**	**187**	*e*P	**P**	**07 03 18.2**	**-0.6**
	comp=Z,20nm,0.8s						
WRA	**Warramunga Arr**	**57.01**	**187**	P	**P**	**07 03 17.7**	**-1.1**
	comp=Z,14nm,0.7s,baz=4.1,slow=7.4,SNR=110						
WRA	**Warramunga Arr**	**57.01**	**187**	P	**P**	**07 03 17.7**	**-1.1**
WRA				pmax	pmax		
	comp=Z,15nm,0.7s						
CTA	**Charters Tower**	**57.09**	**174**	P	**P**	**07 03 18.9**	**-0.5**
	comp=Z,1.3nm,0.5s,baz=60,slow=18,SNR=3.4						
ABKAR	**Akbulak array**	**57.41**	**310**	*e*P	**P**	**07 03 21.4**	**0.0**
AKTO	**Aktyubinsk**	**58.16**	**312**	P	**P**	**07 03 26.8**	**+0.1**
	comp=Z,3.

comp=Z,9.2nm,1.4s
H04A Detroit Lake 69.59 49 *e*P **P 07 04 43.5 +1.4**
comp=Z,17nm,1.3s
VSU Vasula 70.09 329 *ce*P **P 07 04 43.7 -1.2**
VSU pmax pmax
comp=Z,62nm,1.2s
KBZ Khabaz 70.38 310 P **P 07 04 47.5 +0.6**
comp=Z,4.7nm,0.9s,baz=128,slow=2.1,SNR=10
KVAR Kislovodsk Arr 70.38 311 LR LR 07 36 52.9
comp=Z,59nm,19.1s,slow=37
KIV Kislovodsk 70.39 311 *de*P **P 07 04 48.4 +1.3**
KIV *e* 07 07 17.7
KIV *e*PPP PPP 07 08 58.2
KIV pmax pmax
comp=Z,19nm,1.0s
KIV MLR MLR
comp=Z,72nm,17.0s
NEW Newport 70.57 44 *e*P **P 07 04 49.1 +1.0**
NEW pmax pmax
comp=Z,5.0nm,0.9s
NEW Newport 70.57 44 *e*P **P 07 04 49.1 +1.0**
comp=Z,4.8nm,0.9s
SUMG Summit 70.65 360 *i* P **P 07 04 48.9 +0.3**
comp=Z,15nm,0.9s
SUMG Summit 70.65 360 *i* P **P 07 04 48.9 +0.3**
SUMG pmax pmax
comp=Z,15nm,0.9s
SUMG Summit 70.65 360 *e*P **P 07 04 49.4 +0.8**
comp=Z,12nm,0.8s
K05A Summer Lake 71.44 50 *e*P **P 07 04 55.6 +1.9**
comp=Z,13nm,1.0s
WALA Waterton Lakes 71.86 42 *e*P **P 07 04 57.1 +1.1**
comp=Z,5.2nm,0.9s
JTMT Jette 72.42 43 *e*P **P 07 05 00.8 +1.4**
SWMT Swartz Lake 72.72 43 *e*P **P 07 05 02.0 +0.8**
NWAO Narrogin (SRO) 72.97 200 P **P 07 05 03.1 +0.7**
comp=Z,8.4nm,1.1s,baz=69,slow=0.1,SNR=2.4
WVOR Wild Horse Val 72.98 50 *e*P **P 07 05 04.3 +1.5**
WVOR pmax pmax
comp=Z,5.0nm,1.0s
WVOR Wild Horse Val 72.98 50 *e*P **P 07 05 04.2 +1.5**
comp=Z,4.8nm,1.0s
CHMT Chamberlain Mo 73.48 43 *e*P **P 07 05 06.2 +0.3**
NC405 NORSAR Array S 73.69 337 *e*P **P 07 05 07.7 +1.2**
NC204 NORSAR Array S 73.86 337 *e*P **P 07 05 09.9 +2.3**
AKASG Malin Array Be 73.87 322 P **P 07 05 07.5 -0.2**
comp=Z,3.8nm,0.7s,baz=48,slow=6.0,SNR=19
KIEV Kiev 73.88 322 *e*P **P 07 05 07.9 +0.1**
KIEV pmax pmax
comp=Z,5.0nm,0.8s
KIEV Kiev 73.88 322 *e*P **P 07 05 07.9 +0.1**
comp=Z,5.4nm,0.8s
NB2 NORSAR Subarra 73.90 337 P **P 07 05 07.5 -0.2**
comp=Z,4.5nm,0.8s,baz=40,slow=6.2
NOA NORSAR Array B 73.90 337 P **P 07 05 07.6 -0.2**
comp=Z,6.0nm,1.0s,baz=38,slow=5.8,SNR=13
NOA LR LR 07 40 50.1
comp=Z,78nm,18.5s,baz=40,slow=38
AK11 Malin Array Si 73.91 322 *e*P **P 07 05 08.0 +0.1**
NBO02 NORSAR Array S 74.00 337 *e*P **P 07 05 08.6 +0.2**
FFC Flin Flon 74.03 32 *e*P **P 07 05 09.2 +0.6**
FFC pmax pmax
comp=Z,8.0nm,1.1s
FFC Flin Flon 74.03 32 *e*P **P 07 05 09.2 +0.6**
comp=Z,8.1nm,1.1s
NBO00 NORSAR Array S 74.04 337 *e*P **P 07 05 09.7 +1.1**
MFID Camas Ranch 74.09 47 *e*P **P 07 05 10.7 +1.3**
comp=Z,6.4nm,1.1s
FCC Fort Churchill 74.27 26 *e*P **P 07 05 09.8 -0.1**
FCC pmax pmax
comp=Z,12nm,1.2s
FCC Fort Churchill 74.27 26 *e*P **P 07 05 09.8 -0.1**
comp=Z,12nm,1.2s
CMB Columbia Colle 74.39 54 *e*P **P 07 05 12.4 +1.3**
CMB pmax pmax
comp=Z,8.0nm,1.1s
CMB Columbia Colle 74.39 54 *e*P **P 07 05 12.4 +1.3**
comp=Z,7.9nm,1.1s
LRM Limekiln Ridge 74.58 44 *e*P **P 07 05 13.6 +1.3**
EGMT Eagleton 74.68 41 *e*P **P 07 05 13.7 +1.0**
comp=Z,11nm,0.9s
DLMT Dillon 74.78 44 *e*P **P 07 05 14.7 +1.3**
comp=Z,7.6nm,0.8s
HLID Hailey 74.83 47 *e*P **P 07 05 15.2 +1.5**
comp=Z,2.5nm,0.9s
BMN Battle Mountai 75.00 51 *e*P **P 07 05 16.6 +1.9**
BMN pmax pmax
comp=Z,7.0nm,1.1s
BMN Battle Mountai 75.00 51 *e*P **P 07 05 16.6 +1.9**
comp=Z,6.9nm,1.1s
BOZ Bozeman (W) 75.15 44 *e*P **P 07 05 16.6 +1.1**
BOZ pmax pmax
comp=Z,6.0nm,0.9s
BOZ Bozeman (W) 75.15 44 *e*P **P 07 05 16.6 +1.1**
comp=Z,5.7nm,0.9s
NVAR Mina Array Bea 75.50 53 P **P 07 05 18.3 +0.6**
comp=Z,5.6nm,1.0s,baz=289,slow=6.0,SNR=9.3
YMR Madison River 76.12 44 *e*P **P 07 05 23.1 +1.9**
comp=Z,4.6nm,1.1s
GCMT Greycliff 76.13 43 *e*P **P 07 05 22.6 +1.5**
H17A Grant Village 76.51 44 *e*P **P 07 05 26.3 +2.9**
comp=Z,10nm,1.0s
RLMT Red Lodge 76.77 43 *e*P **P 07 05 26.3 +1.4**
comp=Z,7.9nm,1.3s
MOOW Moose Ponds 76.82 45 *e*P **P 07 05 27.0 +1.9**
comp=Z,3.3nm,1.0s
HVU Hansel Valley 76.88 47 *e*P **P 07 05 27.1 +1.7**
HVU pmax pmax
comp=Z,4.0nm,0.8s
HVU Hansel Valley 76.88 47 *e*P **P 07 05 27.1 +1.7**
comp=Z,3.9nm,0.8s
SNOW Snow King Moun 77.00 45 *e*P **P 07 05 28.1 +1.9**
comp=Z,3.5nm,0.8s
REDW Red Top Meadow 77.00 45 *e*P **P 07 05 28.4 +2.2**
comp=Z,5.5nm,1.1s
DGMT Dagmar 77.22 38 *e*P **P 07 05 27.8 +0.7**
comp=Z,11nm,1.0s
BGU Big Grassy Mou 77.25 48 *e*P **P 07 05 29.1 +1.5**
comp=Z,3.5nm,1.0s
R11A Troy Canyon, C 77.26 52 *e*P **P 07 05 28.8 +1.1**
comp=Z,7.4nm,1.1s
TPNV Topopah Spring 77.69 53 *e*P **P 07 05 31.4 +1.4**
TPNV pmax pmax
comp=Z,8.0nm,0.9s
TPNV Topopah Spring 77.69 53 *e*P **P 07 05 31.4 +1.4**
comp=Z,8.1nm,0.9s
HWUT Hardware Ranch 77.69 47 *e*P **P 07 05 31.3 +1.3**
comp=Z,6.2nm,1.0s
DUG Dugway, Tooele 77.83 49 *e*P **P 07 05 32.3 +1.5**
DUG pmax pmax
comp=Z,5.0nm,0.9s
DUG Dugway, Tooele 77.83 49 *e*P **P 07 05 32.3 +1.5**
comp=Z,5.5nm,0.9s
BUR08 Bucovina Ar. S 77.86 321 *e*P **P 07 05 32.5 +1.8**
BW06 Boulder Array 78.11 45 *e*P **P 07 05 31.8 -0.6**
BW06 *e*P **P 07 05 33.1 +0.7**
PD31 Pinedale Array 78.11 45 *e*P **P 07 05 33.1 +0.7**
PDAR Pinedale Array 78.11 45 P **P 07 05 32.8 +0.4**
comp=Z,2.3nm,0.9s,baz=267,slow=3.5,SNR=20
PSUT Pine Spring 78.22 51 *e*P **P 07 05 34.6 +1.5**
comp=Z,5.1nm,1.0s
BRTR Keskin Array B 78.33 311 P **P 07 05 33.1 -0.5**
comp=Z,2.1nm,0.9s,baz=94,slow=5.0,SNR=6.1
BRTR Keskin Array B 78.33 311 *ce*P **P 07 05 34.4 +0.8**
BRTR pmax pmax
comp=Z,2.0nm,0.9s
JLU Jordanelle 78.39 48 *e*P **P 07 05 35.5 +1.5**
comp=Z,5.5nm,1.2s
KOLS Kolonicke sedl 78.41 324 *e*P **P 07 05 33.6 0.0**
KOLS Kolonicke sedl 78.41 324 *e*P **P 07 05 33.6 0.0**
NLU North Lily Min 78.43 49 *e*P **P 07 05 35.6 +1.5**
comp=Z,3.1nm,0.8s
STHS Stebnicka Huta 78.55 324 *e*P **P 07 05 35.2 +0.8**
STHS pmax pmax
comp=Z,3.0nm,0.8s
STHS Stebnicka Huta 78.55 324 *e*P **P 07 05 35.1 +0.7**
MPU Maple Canyon 78.65 48 *e*P **P 07 05 36.9 +1.5**
comp=Z,7.7nm,1.1s
BR231 Keskin MP Arra 78.78 312 *e*P **P 07 05 34.9 -1.1**
MSU Marysvale 79.27 50 *e*P **P 07 05 40.4 +1.6**
MSU Marysvale 79.27 50 *e*P **P 07 05 40.4 +1.6**
P17A Butcher Ranch, 79.53 48 *e*P **P 07 05 41.8 +1.6**
comp=Z,8.4nm,0.9s
LCMT Little Creek M 79.55 51 *e*P **P 07 05 42.0 +1.7**
comp=Z,7.8nm,1.0s
MTPU Mount Pierson 79.56 50 *e*P **P 07 05 42.7 +2.1**
comp=Z,6.7nm,0.9s
P18A Preston Nutter 79.72 48 *e*P **P 07 05 43.3 +1.9**
comp=Z,13nm,1.3s
KNB Kanab 79.81 51 *e*P **P 07 05 43.7 +2.0**
KNB pmax pmax
comp=Z,13nm,1.2s
KNB Kanab 79.81 51 *e*P **P 07 05 43.7 +2.0**
comp=Z,13nm,1.2s
ULM Lac du Bonnet 79.84 33 P **P 07 05 41.1 -0.3**
comp=Z,2.8nm,0.6s,baz=319,slow=10,SNR=2.6
K22A Casper 79.89 44 *e*P **P 07 05 44.6 +2.6**
comp=Z,5.8nm,1.1s
SRU San Rafael Swe 79.89 48 *e*P **P 07 05 43.4 +1.3**
SRU pmax pmax
comp=Z,6.0nm,0.8s
SRU San Rafael Swe 79.89 48 *e*P **P 07 05 43.4 +1.3**
comp=Z,6.0nm,0.8s
MORC Moravsky Berou 79.97 327 *e*P **P 07 05 43.5 +1.3**
MORC pmax pmax
comp=Z,15nm,0.8s
MORC Moravsky Berou 79.97 327 *e*P **P 07 05 43.5 +1.3**
comp=Z,15nm,0.8s
O20A White River Ci 80.57 46 *e*P **P 07 05 46.8 +0.9**
comp=Z,4.9nm,0.8s
CLL Collm 80.74 330 *e*P **P 07 05 46.0 -0.2**
comp=Z,8.0nm,1.1s
CLL *e* 07 05 54.0
CLL Collm 80.74 330 *e*P **P 07 05 46.5 +0.3**
CLL pmax pmax
comp=Z,10.0nm,1.0s
CLL Collm 80.74 330 *e*P **P 07 05 46.5 +0.3**
comp=Z,9.6nm,1.0s
PV10 Paradox Valley 81.25 48 *e*P **P 07 05 51.2 +1.7**
AGMN Agassiz Nation 81.28 34 *e*P **P 07 05 49.1 -0.1**
comp=Z,8.5nm,1.4s
N23A Red Feather La 81.38 45 *e*P **P 07 05 51.7 +1.5**
comp=Z,8.3nm,1.1s
PV05 Paradox Valley 81.41 48 *e*P **P 07 05 51.9 +1.5**
Y14A Wickenburg 81.62 54 *e*P **P 07 05 52.6 +1.2**
comp=Z,21nm,0.9s
PV01 Paradox Valley 81.69 48 *e*P **P 07 05 53.2 +1.3**
SMCO Snowmass 81.94 47 *e*P **P 07 05 54.6 +1.2**
comp=Z,2.9nm,1.0s
ISCO Idaho Springs 82.30 45 *e*P **P 07 05 56.0 +0.9**
ISCO pmax pmax
comp=Z,3.0nm,1.1s
ISCO Idaho Springs 82.30 45 *e*P **P 07 05 56.0 +0.9**
comp=Z,3.3nm,1.1s
X16A Lo Mia Camp, P 82.32 53 *e*P **P 07 05 56.9 +1.7**
comp=Z,4.8nm,0.9s
MVCO Mesa Verde 82.33 49 *e*P **P 07 05 56.6 +1.4**
comp=Z,9.2nm,1.1s
GERES GERESS Array B 82.33 328 P **P 07 05 54.4 -0.5**
comp=Z,1.0nm,0.6s,baz=57,slow=9.7,SNR=6.8
GEA0 GERESS Array S 82.34 328 *e*P **P 07 05 54.6 -0.3**
S22A 4UR Ranch, Cre 82.97 48 *e*P **P 07 06 00.4 +1.7**
comp=Z,4.4nm,1.0s
X18A Snowflake 83.19 52 *e*P **P 07 06 01.2 +1.5**
comp=Z,10.0nm,1.4s
EYMN Ely 83.47 32 *e*P **P 07 06 00.7 +0.1**
comp=Z,6.9nm,1.0s
TUC Tucson 84.10 54 *e*P **P 07 06 05.4 +1.2**
TUC pmax pmax
comp=Z,4.0nm,1.0s
TUC Tucson 84.10 54 *e*P **P 07 06 05.4 +1.2**
comp=Z,4.4nm,1.0s
ECSD EROS Data Cent 84.30 38 *e*P **P 07 06 05.7 +0.7**
comp=Z,6.4nm,1.0s
PMOR Pomariorio Ree 84.80 113 *e*T T 08 39 09.8
comp=Z,9.6nm,0.2s
T25A Trinidad 84.80 47 *e*P **P 07 06 08.6 +0.7**
comp=Z,5.5nm,1.0s
BFO Black Forest 84.95 330 *ce*P **P 07 06 09.3 +1.1**
ANMO Albuquerque 85.07 49 *ce*P **P 07 06 11.2 +1.9**
ANMO pmax pmax
comp=Z,7.0nm,1.2s
ANMO Albuquerque 85.07 49 *e*P **P 07 06 10.7 +1.4**
comp=Z,6.4nm,1.1s
PPT2 Papeete2 85.25 116 *e*LR LR 07 32 43.3
comp=Z,153nm,31.8s
SCHQ Schefferville 85.49 16 P **P 07 06 10.2 -0.5**
comp=Z,4.5nm,0.8s,baz=346,slow=8.3,SNR=4.1
319A Douglas 85.67 54 *e*P **P 07 06 14.1 +1.8**
comp=Z,7.6nm,1.0s
MEH Mehetia 86.53 115 *e*T T 08 41 19.0
comp=Z,21nm,0.3s
TAOE Nuku Hiva Isla 86.82 103 *e*LR LR 07 33 39.2
comp=Z,129nm,22.5s
TX31 Lajitas Ar. Si 90.62 52 *e*P **P 07 06 36.4 +0.5**
TX31 *e*P **P 07 06 36.9 +0.9**
TXAR Lajitas Array 90.62 52 P **P 07 06 36.6 +0.7**
comp=Z,2.7nm,0.9s,baz=290,slow=3.2,SNR=21
ESDC Sonseca Array 96.97 333 LR LR 07 54 54.7
comp=Z,60nm,18.8s,baz=330,slow=38
TORD Torodi Ar. Bea 116.84 314 PKP **PKPdf 07 12 17.6 -0.6**
comp=Z,0.4nm,0.7s,baz=98,slow=0.0,SNR=2.7
SAML Samuel 144.69 44 *e*PKPdf **PKPab 07 13 09.1 0.0**
LPAZ La Paz 147.24 59 PKPbc **PKPbc 07 13 17.3 -0.4**
comp=Z,8.8nm,0.8s,baz=0.7,slow=4.3,SNR=30
LPAZ La Paz 147.24 59 *e*PKPdf **PKPdf 07 13 16.6 +1.1**

*ISCJB **19** 06:54:36.6±0.5, 34.°10N±0.°07×141.°58E±0.°09, h24km, mb4.1/25, Error ellipse: s-maj=11.3km s-min=9.5km az=17.6*
*NEIC **19** 06:54:41.0±1.4, 34.°07N×141.°48E, h46km±12km, mb4.3/6, Error ellipse: s-maj=12.7km s-min=9.4km az=90.0*
*IDC **19** 06:54:41.1±2.4, 34.°07N×141.°45E, h47km±21km, mb3.9/19, mb1 4.1/22, mb1mx3.9/50, mbtmp4.1/22, ML3.1/2, Error ellipse: s-maj=21.2km s-min=14.8km az=92.0*
ISC 19 06:54:37.7±0.6, 33.°92N±0.°07×141.°54E±0.°09, h24km, n55, σ1°21/55, mb4.2/25, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
					Op	ISC	h m s	ISC
JHJ2	**Mitsune**	**1.65**	**241**	*e*Pn		**Pb**	**06 55 08.0**	**+0.6**
JHJ	**Hachijo jima 2**	**1.67**	**242**	P		**Pb**	**06 55 07.8**	**+0.1**
	302nm,0.3s,baz=65,slow=21,SNR=8.9							
MJAR	**Matsushiro Arr**	**3.78**	**315**	P		**Pn**	**06 55 35.5**	**+1.1**
	baz=134,slow=12,SNR=1.3							
MJAR	**Matsushiro Arr**	**3.78**	**315**	P		**Pn**	**06 55 35.5**	**+1.1**
JCJ	**Chichijima**	**6.83**	**175**	S		**Sn**	**06 57 30.0**	**-3.3**
	7.6nm,0.3s,baz=270,slow=20,SNR=3.3							
USRK	**Ussuriysk Ar.**	**12.66**	**327**	P		**Pn**	**06 57 34.8**	**-1.4**
	0.2nm,0.3s,baz=146,slow=12,SNR=3.2							
KLR	**Kul'dur**	**16.94**	**338**	P		**Pn**	**06 58 31.4**	**-1.5**
	0.4nm,0.3s,baz=140,slow=7.3,SNR=6.6							
KLR	**Kul'dur**	**16.94**	**338**	P		**Pn**	**06 58 31.4**	**-1.5**
HIA	**Hailar**	**22.26**	**320**	*e*P		**P**	**06 59 31.0**	**-1.9**
	8.7nm,0.9s							
ULN	**Ulaanbaatar**	**29.29**	**309**	*e*P		**P**	**07 00 38.8**	**+0.5**
	4.8nm,0.8s							
SONM	**Songino Array**	**29.71**	**308**	P		**P**	**07 00 42.6**	**+0.7**
	3.8nm,0.8s,baz=101,slow=9.3,SNR=4.9							
SONM	**Songino Array**	**29.71**	**308**	P		**P**	**07 00 42.6**	**+0.7**
CMAR	**Chiang Mai Arr**	**40.90**	**259**	P		**P**	**07 02 17.6**	**-0.7**
	1.7nm,0.7s,baz=49,slow=7.5,SNR=5.7							
CMAR	**Chiang Mai Arr**	**40.90**	**259**	P		**P**	**07 02 17.6**	**-0.7**
ZALV	**Zalesovo Beam**	**44.13**	**315**	P		**P**	**07 02 44.1**	**+0.1**
	5.3nm,0.9s,baz=98,slow=5.2,SNR=2.6							
ZALV	**Zalesovo Beam**	**44.13**	**315**	P		**P**	**07 02 44.1**	**+0.1**
MKAR	**Makanchi Array**	**45.92**	**305**	P		**P**	**07 02 57.0**	**-1.4**
	1.5nm,0.6s,baz=83,slow=10,SNR=6.8							
MKAR	**Makanchi Array**	**45.92**	**305**	P		**P**	**07 02 57.0**	**-1.4**
TKM2	**Tokmak 2**	**51.25**	**301**	*e*P		**P**	**07 03 40.3**	**+0.6**
	1.6nm,0.5s							
ILAR	**Eielson Array**	**52.08**	**31**	P		**P**	**07 03 44.2**	**-1.2**
	1.3nm,0.7s,baz=268,slow=5.9,SNR=3.7							
ILAR	**Eielson Array**	**52.08**	**31**	P		**P**	**07 03 44.2**	**-1.2**
PAX	**Paxson**	**52.76**	**33**	*e*P		**P**	**07 03 50.4**	**0.0**
	2.9nm,0.7s							
BVAR	**Borovoye Array**	**52.77**	**314**	P		**P**	**07 03 48.8**	**-1.8**
	1.8nm,0.7s,baz=64,slow=3.4,SNR=5.0							
BVAR	**Borovoye Array**	**52.77**	**314**	P		**P**	**07 03 48.8**	**-1.8**
FITZ	**Fitzroy Crossi**	**53.91**	**199**	P		**P**	**07 04 01.0**	**+1.8**
	2.1nm,0.5s,baz=40,slow=16,SNR=3.6							
FITZ	**Fitzroy Crossi**	**53.91**	**199**	P		**P**	**07 04 01.0**	**+1.8**
WRA	**Warramunga Arr**	**54.00**	**188**	P		**P**	**07 04 00.9**	**+1.0**
	1.3nm,0.3s,baz=5.4,slow=7.5,SNR=8.1							
WRA	**Warramunga Arr**	**54.00**	**188**	P		**P**	**07 04 00.9**	**+1.0**
KKAR	**Karatay Array**	**54.82**	**302**	*e*P		**P**	**07 04 06.7**	**+0.9**
	4.4nm,0.9s							
ASAR	**Alice Springs**	**57.73**	**188**	P		**P**	**07 04 28.5**	**+1.9**
	1.6nm,0.7s,baz=360,slow=5.8,SNR=4.5							
ASAR	**Alice Springs**	**57.73**	**188**	P		**P**	**07 04 28.5**	**+1.9**
ABKAR	**Akbulak array**	**60.05**	**312**	*e*P		**P**	**07 04 42.3**	**-0.2**
	1.4nm,0.4s							
AKTO	**Aktyubinsk**	**60.86**	**313**	P		**P**	**07 04 47.9**	**-0.1**
	2.7nm,0.7s,baz=78,slow=14,SNR=4.6							
AKTO	**Aktyubinsk**	**60.86**	**313**	P		**P**	**07 04 47.9**	**-0.1**
YKA	**Yellowknife Ar**	**66.45**	**29**	P		**P**	**07 05 24.5**	**-0.2**
	0.3nm,0.7s,baz=302,slow=6.2,SNR=2.5							
YKA	**Yellowknife Ar**	**66.45**	**29**	P		**P**	**07 05 24.4**	**-0.2**
FINES	**FINESS Array B**	**71.62**	**333**	P		**P**	**07 05 56.1**	**-0.7**
	2.6nm,0.8s,baz=46,slow=12,SNR=2.9							
FINES	**FINESS Array B**	**71.62**	**333**	P		**P**	**07 05 56.1**	**-0.7**
KBZ	**Khabaz**	**73.02**	**311**	P		**P**	**07 06 06.8**	**+1.3**
	3.6nm,0.9s,baz=73,slow=3.8,SNR=4.0							
KBZ	**Khabaz**	**73.02**	**311**	P		**P**	**07 06 06.8**	**+1.3**
NVAR	**Mina Array Bea**	**76.78**	**53**	P		**P**	**07 06 28.5**	**+0.8**
	0.7nm,0.7s,baz=290,slow=5.7,SNR=1.7							
NVAR	**Mina Array Bea**	**76.78**	**53**	P		**P**	**07 06 28.5**	**+0.8**
AKASG	**Malin Array Be**	**76.83**	**323**	P		**P**	**07 06 27.0**	**-0.3**
	1.1nm,0.4s,baz=46,slow=5.6,SNR=4.5							
AKASG	**Malin Array Be**	**76.83**	**323**	P		**P**	**07 06 27.0**	**-0.3**
NOA	**NORSAR Array B**	**77.09**	**338**	P		**P**	**07 06 28.7**	**-0.1**
	1.8nm,0.8s,baz=39,slow=5.7,SNR=3.5							
NOA	**NORSAR Array B**	**77.09**	**338**	P		**P**	**07 06 28.7**	**-0.1**
PDAR	**Pinedale Array**	**79.78**	**45**	P		**P**	**07 06 44.5**	**+0.3**
	0.6nm,0.6s,baz=267,slow=1.8,SNR=2.6							
PDAR	**Pinedale Array**	**79.78**	**45**	P		**P**	**07 06 44.5**	**+0.3**
GERES	**GERESS Array B**	**85.41**	**328**	P		**P**	**07 07 13.0**	**-0.2**
	0.6nm,0.5s,baz=46,slow=5.8,SNR=3.6							
GERES	**GERESS Array B**	**85.41**	**328**	P		**P**	**07 07 13.0**	**-0.2**
TXAR	**Lajitas Array**	**91.94**	**52**	P		**P**	**07 07 46.4**	**+1.8**
	0.4nm,0.7s,baz=316,slow=5.0,SNR=2.9							
TXAR	**Lajitas Array**	**91.94**	**52**	P		**P**	**07 07 46.4**	**+1.8**
TORD	**Torodi Ar. Bea**	**119.58**	**314**	PKP		**PKPdf**	**07 13 24.1**	**-2.0**
	0.7nm,0.9s,baz=34,slow=3.1,SNR=3.2							
TORD	**Torodi Ar. Bea**	**119.58**	**314**	PKP		**PKPdf**	**07 13 24.1**	**-2.0**
LCO	**Las Campanas**	**152.13**	**89**	*e*PKPdf		**PKPdf**	**07 14 25.1**	**+0.1**

JMA 19 06:59:41.9, 37.°02N×140.°66E, h5km±1km, M3.0, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
					Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.14**	**54**	P		Pg	06 59 45.0	+0.3
ONAJ				S		Sg	06 59 47.2	+0.6
JFK	**Kawauchi**	**0.39**	**26**	P		Pg	06 59 49.4	0.0
JFK				S		Sg	06 59 54.8	+0.3
JHO	**Hitachi**	**0.41**	**190**	P		Pg	06 59 49.9	0.0
JHO				S		Sg	06 59 55.7	+0.4
JFT	**Otama**	**0.56**	**333**	P		Pg	06 59 52.8	+0.1
JFT				S		Sg	07 00 00.3	+0.3
JMM	**Marumori**	**0.85**	**7**	P		Pg	06 59 57.8	-0.4
JMM				S		Sg	07 00 08.9	-0.4
MAT	**Matsushiro**	**2.03**	**257**	P		Pn	07 00 17.6	+0.9
MAT				S		Sb	07 00 45.1	+0.4

*IDC **19** 07:03:01.2±2.6, 37.°17N×141.°62E, h0km, mb3.3/2, mb1 3.5/3, mb1mx3.2/41, mbtmp3.2/3, ML3.1/1, Error ellipse: s-maj=48.3km s-min=33.4km az=43.0*
*JMA **19** 07:03:04.0±0.1, 37.°34N×141.°44E, h31km±1km, M3.6 JMA Felt I J1.*
ISC 19 07:03:03.2±2.0, 37.°34N±0.°05×141.°47E±0.°10, h26km±13km, n20, σ1°41/24, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
					Op	ISC	h m s	ISC
JFK	**Kawauchi**	**0.48**	**273**	P		**Pb**	**07 03 13.7**	**+0.5**
JFK				S		**Sb**	**07 03 20.0**	**+0.1**
ONAJ	**Iwakimizuishiy**	**0.59**	**246**	P		**Pb**	**07 03 15.3**	**+0.3**
ONAJ				S		**Sb**	**07 03 22.7**	**-0.3**
JMM	**Marumori**	**0.75**	**314**	P		**Pn**	**07 03 17.6**	**-0.5**
JMM				S		**Sb**	**07 03 26.8**	**-0.7**
JFT	**Otama**	**0.92**	**281**	P		**Pb**	**07 03 20.9**	**+0.3**
JFT				S		**Sn**	**07 03 32.5**	**-0.4**
JHO	**Hitachi**	**1.03**	**225**	P		**Pn**	**07 03 21.3**	**-0.6**
JHO				S		**Sn**	**07 03 33.7**	**-1.8**
JIO	**Ouri**	**1.11**	**355**	P		**Pn**	**07 03 23.3**	**+0.2**
JIO				S		**Sn**	**07 03 36.2**	**-1.4**
JOU	**Okura**	**1.20**	**328**	P		**Pn**	**07 03 25.3**	**+0.9**
JOU				S		**Sn**	**07 03 40.3**	**+0.4**
JSB	**Shiboa**	**1.29**	**254**	P		**Pb**	**07 03 27.0**	**+0.1**
JSB				S		**Sb**	**07 03 43.5**	**+0.3**
JFY	**Yanaizu**	**1.41**	**273**	P		**Pn**	**07 03 28.2**	**+1.0**
JFY				S		**Sb**	**07 03 46.4**	**0.0**
JYS	**Shirataka**	**1.42**	**309**	P		**Pb**	**07 03 28.5**	**-0.5**
MJAR	**Matsushiro Arr**	**2.73**	**254**	Pn		**Pn**	**07 03 47.7**	**+2.2**
	3.0nm,0.3s,baz=77,slow=16,SNR=7.4							
MJAR				Sn		**Sb**	**07 04 21.4**	**-3.1**
	3.8nm,0.3s,baz=72,slow=16,SNR=5.1							
MAT	**Matsushiro**	**2.73**	**254**	P		**Pn**	**07 03 47.7**	**+2.3**
MAT				S		**Sb**	**07 04 21.4**	**-3.2**
H11N2	**WAKE ISLAND Hy 28.27**	**121**		T		T	07 38 28.8	
	baz=320,slow=76,SNR=64							
H11N1	**WAKE ISLAND Hy 28.28**	**121**		T		T	07 38 29.0	
	baz=320							
H11N3	**WAKE ISLAND Hy 28.29**	**121**		T		T	07 38 29.7	
	baz=320,slow=76,SNR=62							
H11S1	**WAKE ISLAND Hy 28.99**	**123**		T		T	07 39 23.9	
	baz=316,slow=76,SNR=25							
H11S3	**WAKE ISLAND Hy 28.99**	**123**		T		T	07 39 20.3	
	baz=316,slow=76,SNR=18							
H11S2	**WAKE ISLAND Hy 29.01**	**123**		T		T	07 39 22.7	
	baz=316,slow=76,SNR=20							
MKAR	**Makanchi Array**	**43.99**	**302**	P		P	07 11 11.7	+3.4
	0.1nm,0.5s,baz=96,slow=9.0,SNR=2.8							
WRA	**Warramunga Arr**	**57.37**	**188**	P		**P**	**07 12 50.1**	**+0.8**
	0.5nm,0.8s,baz=6.3,slow=7.5,SNR=6.5							

*IDC **19** 07:03:24.1±1.0, 38.°09N×143.°94E, h0km, mb3.6/8, mb1 3.8/10, mb1mx3.6/42, mbtmp3.6/10, ML3.1/2, Error ellipse: s-maj=27.3km s-min=20.9km az=101.0*
*JMA **19** 07:03:29.3±0.3, 38.°36N×142.°68E, h12km, M3.8*
ISC 19 07:03:25.6±1.1, 38.°1N±0.°1×144.°0E±0.°1, h10km, n15, σ1°01/10, mb3.8/8, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
					Op	ISC	h m s	ISC
OFUJ	**Ofunato**	**2.09**	**299**	*e*S		Sn	07 04 03.9	-23
JIO	**Ouri**	**2.13**	**280**	S		Sn	07 04 03.0	-25
JMK	**Ichinoseki**	**2.36**	**292**	*e*S		Sn	07 04 10.3	-23
JOM	**Ohasama**	**2.54**	**304**	P		Pn	07 03 57.1	-10
JOM				*e*S		Sn	07 04 16.6	-21
JOU	**Okura**	**2.66**	**277**	S		Sn	07 04 18.9	-22
USRK	**Ussuriysk Ar.**	**10.93**	**308**	Pn		**Pn**	**07 06 02.5**	**+0.5**
	0.3nm,0.3s,baz=106,slow=15,SNR=4.4							
KSRS	**Korea Array**	**12.76**	**272**	Pn		**Pn**	**07 06 27.8**	**+0.8**
	0.5nm,0.3s,baz=74,slow=13,SNR=5.0							
SEY	**Seymchan**	**25.38**	**9**	P		**P**	**07 08 52.7**	**0.0**
	1.3nm,0.5s,baz=161,slow=12,SNR=5.8							
ZALV	**Zalesovo Beam**	**42.74**	**312**	P		**P**	**07 11 21.6**	**-1.2**
	0.9nm,0.5s,baz=90,slow=7.2,SNR=2.9							
MKAR	**Makanchi Array**	**45.32**	**302**	P		**P**	**07 11 42.0**	**-1.7**
	0.8nm,0.7s,baz=83,slow=11,SNR=6.0							
ILAR	**Eielson Array**	**47.48**	**33**	P		**P**	**07 11 59.8**	**-0.6**
	0.3nm,0.7s,baz=272,slow=7.3,SNR=4.3							
WRA	**Warramunga Arr**	**58.45**	**191**	P		**P**	**07 13 21.3**	**-0.4**
	0.7nm

JYS				S	Sb	07 19 33.4	0.0	
JFY	**Yanaizu**	**2.19**	**278**	*e*S	Sb	07 19 33.7	-0.5	
JYK	**Kaneyama**	**2.41**	**318**	P	Pn	07 19 08.2	+1.3	
JYK				*e*S	Sb	07 19 38.7	-1.9	

IDC 19 07:40:57.6±2.7, 3°49S×100°32E, h31km±5km, mb3.5/6, mb1 3.6/6, mb1mx3.4/37, mbtmp3.7/6, Error ellipse: s-maj=119.0km s-min=16.5km az=56.0, Southern Sumatera

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
H08S2	**Diego Garcia H**	**28.00**	**260**	T	T	08 16 04.1	
	baz=83,slow=75,SNR=478						
H08S3	**Diego Garcia H**	**28.00**	**260**	T	T	08 16 03.7	
	baz=83,slow=75,SNR=510						
H08S1	**Diego Garcia H**	**28.02**	**260**	T	T	08 16 03.6	
	baz=83,slow=75,SNR=582						
H01W3	**Cape Leeuwin H**	**33.77**	**159**	T	T	08 23 11.4	
	baz=336,slow=76,SNR=5.9						
H01W2	**Cape Leeuwin H**	**33.78**	**159**	T	T	08 23 12.5	
	baz=336,slow=76,SNR=5.3						
H01W1	**Cape Leeuwin H**	**33.79**	**159**	T	T	08 23 12.5	
	baz=336,slow=76,SNR=12						
WRA	**Warramunga Arr**	**36.98**	**119**	P	P	07 48 03.7	-0.8
	0.3nm,0.6s,baz=305,slow=9.3,SNR=4.2						
WRA				pP	pP	07 48 14.5	+0.9
	0.3nm,0.4s,baz=302,slow=8.7,SNR=1.9						
ASAR	**Alice Springs**	**38.13**	**125**	P	P	07 48 13.9	-0.3
	0.4nm,0.6s,baz=297,slow=8.9,SNR=3.4						
STKA	**Stephens Creek**	**47.93**	**131**	P	P	07 49 33.0	-0.4
	0.9nm,0.7s,baz=265,slow=9.6,SNR=3.1						
SONM	**Songino Array**	**51.38**	**5**	P	P	07 49 59.5	-0.1
	2.0nm,0.6s,baz=185,slow=7.3,SNR=4.8						
SONM				pP	pP	07 50 08.6	-0.3
	2.3nm,0.6s,baz=184,slow=8.5,SNR=4.8						
MKAR	**Makanchi Array**	**52.54**	**344**	P	P	07 50 08.2	+0.1
	0.3nm,0.3s,baz=152,slow=8.9,SNR=7.1						
MKAR				pP	pP	07 50 17.1	-0.4
	0.5nm,0.5s,baz=158,slow=8.7,SNR=6.1						
ZALV	**Zalesovo Beam**	**58.68**	**349**	P	P	07 50 51.4	-0.5
	0.7nm,0.4s,baz=151,slow=3.4,SNR=3.9						
ZALV				pP	pP	07 51 01.1	-0.4
	0.6nm,0.4s,baz=151,slow=3.4,SNR=3.0						
TXAR	**Lajitas Array**	**145.66**	**39**	PKPbc	PKPab	08 00 34.3	-0.1
	0.4nm,0.6s,baz=277,slow=0.8,SNR=7.9						
TXAR				pPKPbc	pPKPbc	08 00 43.6	-0.7
	0.7nm,0.6s,baz=284,slow=0.4,SNR=8.1						

JMA 19 07:48:49.3, 34°00N×136°15E, h16km, M1.2, Western Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JKN2	**Miekihoku**	**0.26**	**23**	P	Pg	07 48 55.0	0.0
JKN2				S	Sg	07 48 58.7	-0.2
JWY	**Kouya**	**0.51**	**295**	S	Sg	07 49 06.5	+0.1
JWZ	**Kozaga**	**0.59**	**218**	P	Pg	07 49 00.5	-0.5
JWZ				S	Sg	07 49 08.7	-0.2
JWM	**Minabe**	**0.68**	**257**	P	Pg	07 49 02.2	-0.4
JWM				S	Sg	07 49 11.1	-0.5

ATH ***19*** *07:55:19.4, 40°.74N×27°.55E, h14km±1km, ML3.2/9, Error ellipse: s-maj=2.9km s-min=1.6km az=235.0*
SOF ***19*** *07:55:20.6, 40°.41N×27°.21E, h2km, MD2.9*
ISCJB ***19*** *07:55:22.4±0.4, 40°.77N±0°.02×27°.39E±0°.02, h5km±3km, Error ellipse: s-maj=2.7km s-min=2.1km az=9.9*
ISK ***19*** *07:55:22.4, 40°.77N×27°.40E, h5km, ML3.4*
DDA ***19*** *07:55:22.5, 40°.71N×27°.39E, h5km, Md3.3*
CSEM ***19*** *07:55:22.8±0.1, 40°.76N×27°.39E, h5km, ML3.4, Error ellipse: s-maj=2.6km s-min=2.1km az=7.0*
THE ***19*** *07:55:23.1, 40°.79N×27°.40E, h7km±1km, ML3.5/5, Error ellipse: s-maj=1.6km s-min=0.7km az=304.0*

ISC 19 07:55:22.7±0.9, 40.72N±0°.01×27.39E±0°.01, h10km±7km, n163, σ0s95/217, 6C-6D, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RKY	**Sarkoy-Tekirda**	**0.17**	**258**	*e*PG	**Pg**	**07 55 26.7**	**+0.4**
RKY	**Sarkoy-Tekirda**	**0.17**	**258**	*e*Pg	**Pg**	**07 55 26.7**	**+0.4**
MRMT	**Marmara Adasi**	**0.20**	**128**	*e*PG	**Pg**	**07 55 27.9**	**+1.1**
MRMT	**Marmara Adasi**	**0.20**	**128**	*e*Pg	**Pg**	**07 55 27.9**	**+1.1**
TKR	**Tekirdag**	**0.29**	**22**	*e*PG	**Pg**	**07 55 27.8**	**-0.7**
TKR	**Tekirdag**	**0.29**	**22**	*e*Pg	**Pg**	**07 55 27.8**	**-0.7**
KRBG	**Karabiga-Canak**	**0.34**	**192**	*e*PG	**Pb**	**07 55 30.6**	**-0.2**
KRBG	**Karabiga-Canak**	**0.34**	**192**	*e*Pg	**Pb**	**07 55 30.6**	**-0.2**
CRLT	**Corlu**	**0.48**	**33**	*e*PG	**Pg**	**07 55 31.9**	**-0.2**
CRLT	**Corlu**	**0.48**	**33**	*e*Pg	**Pg**	**07 55 31.9**	**-0.2**
EDC	**Edincik**	**0.52**	**136**	*e*PG	**Pb**	**07 55 33.6**	**-0.3**
EDC				*e*SG	**Sb**	**07 55 41.3**	**-0.2**
EDC	**Edincik**	**0.52**	**136**	*e*Pg	**Pb**	**07 55 33.6**	**-0.3**
EDC				*e*Sg	**Sb**	**07 55 41.3**	**-0.2**
ERIK	**Erikli-Kesan**	**0.67**	**266**	*e*PG	**Pb**	**07 55 36.1**	**-0.4**
ERIK	**Erikli-Kesan**	**0.67**	**266**	*e*Pg	**Pb**	**07 55 36.1**	**-0.4**
GONE	**Gonen-Balikesi**	**0.71**	**162**	*e*PG	**Pb**	**07 55 37.5**	**+0.3**
GONE	**Gonen-Balikesi**	**0.71**	**162**	*e*Pg	**Pb**	**07 55 37.5**	**+0.3**
GELI	**Tayfur-Gelibol**	**0.77**	**245**	*e*PG	**Pb**	**07 55 37.6**	**-0.6**
GELI	**Tayfur-Gelibol**	**0.77**	**245**	*e*Pg	**Pb**	**07 55 37.6**	**-0.6**
KCTX	**Karacabey (Bur**	**0.87**	**122**	*e*PG	**Pg**	**07 55 39.2**	**-0.2**
KCTX	**Karacabey (Bur**	**0.87**	**122**	*e*Pg	**Pg**	**07 55 39.2**	**-0.2**
PHSR	**Pinarhisar**	**0.91**	**6**	*e*PG	**Pg**	**07 55 39.6**	**-0.6**
PHSR	**Pinarhisar**	**0.91**	**6**	*e*Pg	**Pg**	**07 55 39.6**	**-0.6**
ENEZ	**Enez**	**0.94**	**271**	*e*PG	**Pn**	**07 55 41.5**	**-0.4**
ENEZ	**Enez**	**0.94**	**271**	P	**Pb**	**07 55 40.9**	**-0.2**
ENEZ				S	**Sb**	**07 55 54.6**	**+1.0**
ENEZ	**Enez**	**0.94**	**271**	P	**Pb**	**07 55 40.9**	**-0.2**
ENEZ	**Enez**	**0.94**	**271**	*e*Pg	**Pn**	**07 55 41.5**	**-0.4**
ENEZ				S	**Sb**	**07 55 54.6**	**+1.0**
CTKS	**Kestanelik-??a**	**0.99**	**58**	*e*PG	**Pb**	**07 55 41.9**	**+0.1**
CTKS				*e*SG	**Sb**	**07 55 54.8**	**-0.1**
CTKS	**Kestanelik-??a**	**0.99**	**58**	*e*Pg	**Pb**	**07 55 41.9**	**+0.1**
CTKS				*e*Sg	**Sb**	**07 55 54.8**	**-0.1**
BALY	**Balya**	**1.00**	**170**	*i* P	**Pn**	**07 55 42.8**	**0.0**
BALY				*i* S	**Sn**	**07 55 56.8**	**-0.1**
BALY	**Balya**	**1.00**	**170**	P	**Pn**	**07 55 42.8**	**0.0**
BALY				S	**Sn**	**07 55 56.8**	**-0.1**
CTYL	**Yalikoy Yolu**	**1.01**	**42**	*e*PG	**Pb**	**07 55 42.1**	**-0.2**
CTYL	**Yalikoy Yolu**	**1.01**	**42**	*e*Pg	**Pb**	**07 55 42.1**	**-0.2**
ALN	**Alexandroupoli**	**1.04**	**280**	*e*PG	**Pb**	**07 55 42.5**	**-0.2**
ALN				*e*SG	**Sb**	**07 55 56.8**	**+0.4**
ALN	**Alexandroupoli**	**1.04**	**280**	P	**Pb**	**07 55 42.4**	**-0.3**
ALN				S	**Sb**	**07 55 56.6**	**+0.2**
ALN	**Alexandroupoli**	**1.04**	**280**	*e*Pg	**Pb**	**07 55 42.5**	**-0.2**
ALN				S	**Sb**	**07 55 56.0**	**-0.4**
ALN	**Alexandroupoli**	**1.04**	**280**	P	**Pn**	**07 55 43.0**	**-0.3**
ALN				S	**Sb**	**07 55 56.0**	**-0.4**
ALN				AML	AML	07 55 57.9	
	comp=E,3782μm,0.5s						
ALN				AML	AML	07 55 58.0	
	comp=N,2508μm,0.6s						
ARMT	**Armutlu**	**1.13**	**98**	*e*PN	**Pb**	**07 55 44.3**	**0.0**
ARMT	**Armutlu**	**1.13**	**98**	*e*Pn	**Pb**	**07 55 44.3**	**0.0**
BGKT	**Bogazkoy**	**1.14**	**66**	*e*PN	**Pg**	**07 55 44.1**	**-0.5**
BGKT	**Bogazkoy**	**1.14**	**66**	*e*Pn	**Pg**	**07 55 44.1**	**-0.5**
BALB	**Balikesir**	**1.15**	**161**	*e*PN	**Pn**	**07 55 45.2**	**+0.5**
BALB				*e*SN	**Sn**	**07 56 01.6**	**+1.1**
BALB	**Balikesir**	**1.15**	**161**	*e*Pn	**Pn**	**07 55 45.2**	**+0.5**
BALB				*e*Sn	**Sn**	**07 56 01.6**	**+1.1**
MDNY	**Mudanya-Bursa**	**1.19**	**107**	*e*PN	**Pg**	**07 55 44.8**	**-0.7**
MDNY	**Mudanya-Bursa**	**1.19**	**107**	*e*Pn	**Pg**	**07 55 44.8**	**-0.7**
EDRB	**Edirne**	**1.22**	**337**	*e*PN	**Pg**	**07 55 45.6**	**-0.6**
EDRB				*e*SN	**Sb**	**07 56 02.0**	**+0.2**
EDRB	**Edirne**	**1.22**	**337**	P	**Pg**	**07 55 45.3**	**-0.9**
EDRB				S	**Sg**	**07 56 01.1**	**-1.0**
EDRB	**Edirne**	**1.22**	**337**	P	**Pg**	**07 55 45.3**	**-0.9**
EDRB	**Edirne**	**1.22**	**337**	*e*Pn	**Pg**	**07 55 45.6**	**-0.6**
EDRB				S	**Sg**	**07 56 01.1**	**-1.0**
EDRB				*e*Sn	**Sb**	**07 56 02.0**	**+0.2**
ISK	**Istanbul-Kandi**	**1.31**	**74**	*e*PN	**Pn**	**07 55 46.8**	**-0.2**
ISK	**Istanbul-Kandi**	**1.31**	**74**	P	**Pn**	**07 55 46.4**	**-0.6**
ISK				S	**Sg**	**07 56 04.2**	**-0.6**
ISK	**Istanbul-Kandi**	**1.31**	**74**	P	**Pn**	**07 55 46.4**	**-0.6**
ISK	**Istanbul-Kandi**	**1.31**	**74**	*e*Pn	**Pn**	**07 55 46.8**	**-0.2**
ISK				S	**Sg**	**07 56 04.2**	**-0.6**
BUY	**Buyukada**	**1.32**	**84**	*i* P	**Pn**	**07 55 46.2**	**-0.9**
BUY				*i* S	**Sg**	**07 56 04.2**	**-0.8**
BUY	**Buyukada**	**1.32**	**84**	P	**Pn**	**07 55 46.2**	**-0.9**
BUY				S	**Sg**	**07 56 04.2**	**-0.8**
ORLT	**Orhaneli**	**1.33**	**120**	*e*PN	**Pg**	**07 55 48.4**	**+0.1**
ORLT	**Orhaneli**	**1.33**	**120**	*e*Pn	**Pg**	**07 55 48.4**	**+0.1**
BOZC	**Bozcaada**	**1.35**	**230**	*i* P	**Pg**	**07 55 48.0**	**-0.6**
BOZC				*i* S	**Sn**	**07 56 06.1**	**+0.6**
GEMT	**Gemlik**	**1.40**	**101**	*e*PN	**Pg**	**07 55 49.0**	**-0.4**
GEMT	**Gemlik**	**1.40**	**101**	*e*Pn	**Pg**	**07 55 49.1**	**-0.4**
SMTH	**Samothraki Isl**	**1.44**	**261**	P	**Pn**	**07 55 48.4**	**-0.4**
SMTH				S	**Sg**	**07 56 08.4**	**-0.6**
SMTH	**Samothraki Isl**	**1.44**	**261**	P	**Pn**	**07 55 48.4**	**-0.4**
SMTH				S	**Sg**	**07 56 08.4**	**-0.6**
SMTH	**Samothraki Isl**	**1.44**	**261**	P	**Pn**	**07 55 48.2**	**-0.7**
SMTH				S	**Sg**	**07 56 09.3**	**+0.3**
SMTH				AML	AML	07 56 10.4	
	comp=E,2572μm,0.4s						
SMTH				AML	AML	07 56 10.6	
	comp=N,1437μm,0.6s						
ULDT	**Uludag**	**1.45**	**113**	*i* P	**Pg**	**07 55 50.8**	**+0.3**
ULDT				*i* S	**Sg**	**07 56 09.1**	**-0.3**
ULDT	**Uludag**	**1.45**	**113**	P	**Pg**	**07 55 50.8**	**+0.3**
ULDT				S	**Sg**	**07 56 09.1**	**-0.3**
IGD	**Bursa**	**1.45**	**108**	*i* P	**Pn**	**07 55 49.3**	**+0.3**
IGD				*i* S	**Sn**	**07 56 08.6**	**+0.5**
AYVA	**Ayvalik**	**1.51**	**201**	*i* P	**Pg**	**07 55 51.1**	**-0.6**
AYVA				*i* S	**Sg**	**07 56 11.7**	**+0.4**
AYVA	**Ayvalik**	**1.51**	**201**	P	**Pg**	**07 55 51.1**	**-0.6**
AYVA				S	**Sg**	**07 56 11.7**	**+0.4**
IZI	**Iznik**	**1.63**	**103**	*e*PN	**Pb**	**07 55 52.6**	**-0.2**
IZI	**Iznik**	**1.63**	**103**	*e*Pn	**Pb**	**07 55 52.7**	**-0.2**
DKL	**Dikili**	**1.69**	**193**	*e*PN	**Pb**	**07 55 53.9**	**0.0**
DKL	**Dikili**	**1.69**	**193**	*e*Pn	**Pb**	**07 55 53.9**	**0.0**
PRK	**Paraskevi**	**1.71**	**211**	P	**Pn**	**07 55 52.4**	**-0.1**
PRK				S	**Sg**	**07 56 16.6**	**-1.0**
PRK	**Paraskevi**	**1.71**	**211**	P	**Pn**	**07 55 52.9**	**+0.4**
PRK				S	**Sg**	**07 56 16.6**	**-1.0**
PRK	**Paraskevi**	**1.71**	**211**	P	**Pn**	**07 55 52.9**	**+0.4**
PRK				S	**Sg**	**07 56 16.9**	**-0.7**
PRK				AML	AML	07 56 18.9	
	comp=N,1813μm,0.8s						
PRK				AML	AML	07 56 21.9	
	comp=E,1363μm,0.7s						
HRT	**Hereke**	**1.73**	**86**	*e*PN	**Pb**	**07 55 53.8**	**-0.8**
HRT	**Hereke**	**1.73**	**86**	*e*Pn	**Pb**	**07 55 53.8**	**-0.8**
KDZ	**Kurdzhali**	**1.75**	**302**	P	**Pg**	**07 55 55.2**	**-0.2**
SILT	**Sile**	**1.76**	**75**	*e*PN	**Pn**	**07 55 53.4**	**+0.2**
SILT	**Sile**	**1.76**	**75**	*e*Pn	**Pn**	**07 55 53.4**	**+0.2**
ADVT	**Abdulvahap**	**1.81**	**98**	*e*PN	**Pb**	**07 55 55.4**	**-0.5**
ADVT	**Abdulvahap**	**1.81**	**98**	*e*Pn	**Pb**	**07 55 55.4**	**-0.5**
JMB	**Yambol**	**1.84**	**341**	P	**Pg**	**07 55 57.6**	**-0.4**
AKS	**Akhisar**	**1.87**	**170**	*e*PN	**Pb**	**07 55 56.8**	**-0.1**
AKS	**Akhisar**	**1.87**	**170**	*e*Pn	**Pb**	**07 55 56.8**	**-0.1**
AKHS	**Akhisar**	**1.87**	**170**	*i* P	**Pg**	**07 55 57.7**	**-0.8**
AKHS				*i* S	**Sg**	**07 56 22.4**	**-0.4**
AKHS	**Akhisar**	**1.87**	**170**	P	**Pg**	**07 55 57.7**	**-0.8**
AKHS				S	**Sg**	**07 56 22.4**	**-0.4**
SIGR	**SIGRI**	**1.92**	**219**	*e*PN	**Pb**	**07 55 57.4**	**-0.3**
SIGR	**SIGRI**	**1.92**	**219**	P	**Pn**	**07 55 55.1**	**-0.3**
SIGR				S	**Sb**	**07 56 21.8**	**+0.1**
SIGR	**SIGRI**	**1.92**	**219**	P	**Pn**	**07 55 55.1**	**-0.3**
SIGR	**SIGRI**	**1.92**	**219**	*e*Pn	**Pb**	**07 55 57.4**	**-0.3**
SIGR				S	**Sb**	**07 56 21.8**	**+0.1**
SIGR	**SIGRI**	**1.92**	**219**	P	**Pn**	**07 55 57.4**	**-0.3**
SIGR				S	**Sb**	**07 56 22.0**	**+0.3**
SIGR				AML	AML	07 56 26.7	
	comp=E,989μm,0.4s						
SIGR				AML	AML	07 56 27.5	
	comp=N,1132μm,0.4s						
DIM	**Dimitrovgrad**	**1.93**	**314**	P	**Pg**	**07 55 58.6**	**-1.0**
CAVI	**Cavuskoy**	**1.94**	**105**	*e*PN	**Pb**	**07 55 57.4**	**-0.8**
CAVI	**Cavuskoy**	**1.94**	**105**	*e*Pn	**Pb**	**07 55 57.4**	**-0.8**
DEMI	**Demirci**	**1.96**	**148**	*i* P	**Pn**	**07 55 56.8**	**+0.7**
DEMI	**Demirci**	**1.96**	**148**	P	**Pn**	**07 55 56.8**	**+0.7**
TVSB	**Tavsanli**	**2.03**	**128**	*e*PN	**Pn**	**07 55 58.3**	**+1.2**
TVSB	**Tavsanli**	**2.03**	**128**	*e*Pn	**Pn**	**07 55 58.3**	**+1.2**
AUKUT	**KUTAHYA**	**2.15**	**110**	*i* P	**Pg**	**07 56 09.4**	**+5.5**
AUKUT				*i* S	**Sg**	**07 56 41.3**	**+10**
KAND	**Kocaeli-Kandir**	**2.15**	**79**	*i* P	**Pn**	**07 55 59.2**	**+0.6**
KAND				*i* S	**Sn**	**07 56 25.4**	**0.0**
KAND	**Kocaeli-Kandir**	**2.15**	**79**	P	**Pn**	**07 55 59.2**	**+0.6**
KAND				S	**Sn**	**07 56 25.4**	**0.0**
KAVA	**Kavala**	**2.20**	**278**	P	**Pn**	**07 55 59.1**	**-0.2**
KAVA				S	**Sn**	**07 56 26.9**	**+0.4**
KAVA	**Kavala**	**2.20**	**278**	P	**Pn**	**07 55 59.3**	**+0.1**
KAVA				S	**Sn**	**07 56 26.9**	**+0.4**
KAVA	**Kavala**	**2.20**	**278**	P	**Pn**	**07 55 59.3**	**+0.1**
RZN	**Rozhen**	**2.24**	**296**	P	**Pn**	**07 55 59.9**	**-0.1**
GDZ	**Gediz**	**2.29**	**135**	*i* P	**Pn**	**07 56 02.2**	**+1.6**
GDZ	**Gediz**	**2.29**	**135**	P	**Pn**	**07 56 02.2**	**+1.6**
IZM	**Izmir**	**2.33**	**183**	*e*PN	**Pb**	**07 56 02.9**	**-1.8**
IZM	**Izmir**	**2.33**	**183**	*e*Pn	**Pb**	**07 56 02.9**	**-1.8**
BLCB	**Balcova**	**2.35**	**187**	*e*PN	**Pb**	**07 56 03.7**	**-1.4**
BLCB	**Balcova**	**2.35**	**187**	*e*Pn	**Pb**	**07 56 03.7**	**-1.4**
GULT	**Gulveren**	**2.40**	**96**	*e*PN	**Pb**	**07 56 04.2**	**-1.8**
GULT	**Gulveren**	**2.40**	**96**	*e*Pn	**Pb**	**07 56 04.2**	**-1.8**
KULA	**Kula-Manisa**	**2.41**	**156**	*e*PN	**Pn**	**07 56 04.1**	**+1.8**
KULA	**Kula-Manisa**	**2.41**	**156**	P	**Pn**	**07 56 03.0**	**+0.7**
KULA	**Kula-Manisa**	**2.41**	**156**	P	**Pn**	**07 56 03.0**	**+0.7**
KULA	**Kula-Manisa**	**2.41**	**156**	*e*Pn	**Pn**	**07 56 04.1**	**+1.8**
PLD	**Plovdiv**	**2.45**	**305**	P	**Pn**	**07 56 02.5**	**-0.2**
PRD	**Provadia**	**2.48**	**0**	P	**Pb**	**07 56 08.2**	**+1.0**
CHOS	**Chios island**	**2.55**	**204**	P	**Pn**	**07 56 04.5**	**+0.3**
CHOS				S	**Sn**	**07 56 35.8**	**+0.5**
CHOS	**Chios island**	**2.55**	**204**	P	**Pn**	**07 56 04.5**	**+0.3**
CHOS				S	**Sn**	**07 56 35.8**	**+0.5**
CHOS				AML	AML	07 56 48.3	
	comp=E,638μm,0.6s						
CHOS				AML	AML	07 56 55.2	
	comp=N,331μm,0.7s						
OUR	**Ouranopolis**	**2.63**	**263**	P	**Pn**	**07 56 04.0**	**-1.1**
OUR				S	**Sb**	**07 56 40.5**	**-1.7**
OUR	**Ouranopolis**	**2.63**	**263**	P	**Pn**	**07 56 04.0**	**-1.1**
OUR				S	**Sb**	**07 56 40.5**	**-1.7**
OUR				AML	AML	07 56 48.7	
	comp=N,476μm,0.5s						
OUR				AML	AML	07 56 48.7	
	comp=E,494μm,0.5s						
NVR	**Nevrokopi**	**2.74**	**284**	P	**Pn**	**07 56 07.0**	**+0.2**
NVR	**Nevrokopi**	**2.74**	**284**	P	**Pn**	**07 56 07.0**	**+0.2**
NVR				S	**Sn**	**07 56 41.9**	**+1.9**
SZH	**Strazhica**	**2.76**	**337**	P	**Pb**	**07 56 11.4**	**-0.8**
AUKIR	**K¨-rka- Seyitg**	**2.81**	**120**	*i* P	**Pg**	**07 56 15.2**	**-1.4**
AUKIR				*i* S	**Sg**	**07 56 53.1**	**+0.2**
MMB	**Musomiste**	**2.90**	**289**	P	**Pn**	**07 56 08.9**	**0.0**
SRS	**Serrai**	**2.91**	**279**	P	**Pn**	**07 56 09.0**	**0.0**
SRS	**Serrai**	**2.91**	**279**	P	**Pn**	**07 56 09.0**	**0.0**
SRS				S	**Sn**	**07 56 46.9**	**+2.9**
SRS	**Serrai**	**2.91**	**279**	P	**Pn**	**07 56 08.8**	**-0.2**
SRS				S	**Sn**	**07 56 46.9**	**+2.9**
SRS				AML	AML	07 57 00.4	
	comp=N,320μm,0.4s						
SRS				AML	AML	07 57 01.9	
	comp=E,294μm,0.4s						
PAIG	**Paliouri**	**2.95**	**256**	P	**Pn**	**07 56 07.8**	**-1.7**
PAIG	**Paliouri**	**2.95**	**256**	P	**Pn**	**07 56 07.8**	**-1.7**
PLG	**Polygyros**	**3.03**	**265**	P	**Pn**	**07 56 09.7**	**-1.0**
PLG				S	**Sn**	**07 56 50.0**	**+3.0**
PLG	**Polygyros**	**3.03**	**265**	P	**Pn**	**07 56 09.7**	**-1.0**
PLG				S	**Sn**	**07 56 50.0**	**+3.0**
PLG				AML	AML	07 57 01.4	
	comp=N,183μm,0.6s						
PLG				AML	AML	07 57 08.5	
	comp=E,106μm,0.5s						
SOH	**Sokhos**	**3.07**	**273**	P	**Pn**	**07 56 11.0**	**-0.2**
SOH	**Sokhos**	**3.07**	**273**	P	**Pn**	**07 56 11.0**	**-0.2**
AYDN	**Tasoluk**	**3.08**	**173**	*i* P	**Pn**	**07 56 12.1**	**+0.7**
AYDN	**Tasoluk**	**3.08**	**173**	P	**Pn**	**07 56 12.1**	**+0.7**
HORT	**Hortiatis**	**3.27**	**269**	P	**Pn**	**07 56 13.8**	**-0.2**
HORT	**Hortiatis**	**3.27**	**269**	P	**Pn**	**07 56 13.8**	**-0.2**
MSAB	**Monastry St. A**	**3.38**	**5**	⇓*i* P	**Pn**	**07 56 16.9**	**+1.4**
MSAB	**Monastry St. A**	**3.38**	**5**	*i* S	**Sg**	**07 56 08.5**	**-2.7**
MSAB	**Monastry St. A**	**3.38**	**5**	⇓*i* P	**Pn**	**07 56 16.9**	**+1.4**
BOLV	**Bolvadin**	**3.40**	**125**	*i* P	**Pg**	**07 56 25.9**	**-1.8**
KNT	**Kendrikon**	**3.43**	**279**	P	**Pn**	**07 56 16.4**	**+0.2**
KNT				S	**Sn**	**07 56 59.5**	**+2.5**
KNT	**Kendrikon**	**3.43**	**279**	P	**Pn**	**07 56 16.4**	**+0.2**
KNT				S	**Sn**	**07 56 59.5**	**+2.5**
KNT				AML	AML	07 57 14.4	
	comp=E,153μm,0.6s						
KNT				AML	AML	07 57 15.7	
	comp=N,191μm,0.6s						
KKB	**Krupnik**	**3.44**	**291**	P	**Pn**	**07 56 17.2**	**+0.8**
MPEP	**Malo Peshtene**	**3.78**	**315**	P	**Pn**	**07 56 21.6**	**+0.5**
TIRR	**Tirgusor**	**3.81**	**11**	⇑*i* P	**Pn**	**07 56 21.5**	**+0.2**
TIRR	**Tirgusor**	**3.81**	**11**	⇑*i* P	**Sb**	**07 57 18.7**	**+2.6**
TIRR	**Tirgusor**	**3.81**	**11**	⇑*i* P	**Pn**	**07 56 21.5**	**+0.2**
ISR	**Istrita**	**4.44**	**352**	⇓*i* P	**Pn**	**07 56 33.0**	**+2.9**
ISR	**Istrita**	**4.44**	**352**	⇓*i* P	**Pn**	**07 56 33.0**	**+2.9**
CFR	**Carcaliu**	**4.49**	**7**	⇓*i* P	**Pn**	**07 56 31.3**	**+0.6**
CFR	**Carcaliu**	**4.49**	**7**	S	**Sb**	**07 57 36.0**	**+0.4**
CFR	**Carcaliu**	**4.49**	**7**	⇓*i* P	**Pn**	**07 56 31.3**	**+0.6**
BARS	**Barje**	**4.67**	**298**	*e*Pn	**Pn**	**07 56 34.3**	**+1.1**
MLR	**Muntele Rosu**	**4.88**	**348**	⇑*i* P	**Pn**	**07 56 38.1**	**+1.9**
MLR	**Muntele Rosu**	**4.88**	**348**	⇑*i* P	**Pn**	**07 56 38.1**	**+1.9**
KUBS	**Kucevo**	**5.60**	**313**	*e*Pn	**Pn**	**07 56 44.8**	**-1.3**
MDVR	**Moldovita**	**5.82**	**316**	⇑*i* P	**Pn**	**07 56 48.8**	**-0.3**
MDVR	**Moldovita**	**5.82**	**316**	⇑*i* P	**Pn**	**07 56 48.8**	**-0.3**

MEX 19 07:58:51.5±1.3, 14°.28N×92°.38W, h16km±740km, MD3.8, Near coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
THIG		**0.63**	**10**	*e*P	Pg	07 59 01.9	-2.1
PCIG		**1.63**	**330**	*e*P	Pn	07 59 15.8	-3.8
PCIG				*e*S	Sn	07 59 35.8	-4.5
CCIG	**Comitan**	**2.00**	**7**	*e*P	Pn	07 59 22.8	-2.1
CCIG				*e*S	Sn	07 59 45.1	-4.7
TGIG		**2.58**	**344**	*e*P	Pn	07 59 29.7	-3.0
TGIG				*i* S	Sn	07 59 59.8	-4.2

JMA 19 08:00:33.9, 37°.00N×140°.51E, h7km±1km, M2.6, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.25**	**66**	P	Pg	08 00 39.2	+0.3
ONAJ				S	Sg	08 00 43.1	+0.8
JHO	**Hitachi**	**0.39**	**173**	P	Pg	08 00 41.5	0.0
JHO				S	Sg	08 00 47.0	+0.4
JFK	**Kawauchi**	**0.47**	**38**	P	Pg	08 00 43.0	0.0
JFK				S	Sg	08 00 49.3	+0.2
JFT	**Otama**	**0.54**	**345**	P	Pg	08 00 44.5	+0.2
JFT				S	Sg	08 00 51.5	+0.2
JMM	**Marumori**	**0.89**	**15**	P	Pg	08 00 50.6	-0.5
JMM				S	Sg	08 01 02.1	-0.6
MAT	**Matsushiro**	**1.91**	**257**	P	Pn	08 01 07.5	+0.7
MAT				S	Sb	08 01 32.7	-0.3

JMA 19 08:05:09.9, 37°.03N×138°.69E, h11km±1km, M1.3, Near west coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHK	**Hiroka**	**0.34**	**50**	P	Pg	08 05 16.4	-0.3
JHK				S	Sg	08 05 21.3	0.0

OHR				*e*Lg		Lg	08 23 26.9	
	comp=E,606nm,0.5s							
OHR	**Ohrid**	**0.58**	**343**	*i* Pg		**Pb**	**08 23 17.3**	**-0.5**
OHR				*i* Sg		**Sb**	**08 23 26.7**	**+0.8**
OHR				*e*Lg		Lg	08 23 26.8	
	comp=E,339nm,0.7s							
KZN	**Kozani**	**0.62**	**114**	P		**Pg**	**08 23 17.9**	**-0.2**
KZN				S		**Sb**	**08 23 27.8**	**+0.6**
KZN	**Kozani**	**0.62**	**114**	P		**Pg**	**08 23 18.0**	**-0.2**
KZN				S		**Sb**	**08 23 27.3**	**+0.1**
KPRO	**Kipourio**	**0.66**	**157**	P		**Pg**	**08 23 18.2**	**-0.5**
KPRO				S		**Sb**	**08 23 29.3**	**+1.1**
KPRO	**Kipourio**	**0.66**	**157**	P		**Pg**	**08 23 18.2**	**-0.5**
KPRO				S		**Sg**	**08 23 27.6**	**+0.2**
KPRO	**Kipourio**	**0.66**	**157**	P		**Pg**	**08 23 17.4**	**-1.3**
KPRO				S		**Sg**	**08 23 27.6**	**+0.2**
KPRO				AML		AML	08 23 34.0	
	comp=N,734μm,0.4s							
KPRO				AML		AML	08 23 34.6	
	comp=E,936μm,0.4s							
GRG	**Griva**	**1.12**	**69**	P		**Pg**	**08 23 27.6**	**+0.1**
GRG	**Griva**	**1.12**	**69**	P		**Pg**	**08 23 27.6**	**+0.1**
SGD	**Sagiada**	**1.12**	**213**	P		**Pb**	**08 23 26.7**	**-0.4**
SGD				S		**Sn**	**08 23 42.5**	**+0.2**
SGD	**Sagiada**	**1.12**	**213**	P		**Pb**	**08 23 26.7**	**-0.4**
SGD				S		**Sn**	**08 23 42.5**	**+0.2**
TIR	**Tirane**	**1.18**	**312**	*i* PG		**Pn**	**08 23 26.9**	**-1.0**
TIR				*i* SG		**Sb**	**08 23 42.5**	**-0.6**
TIR	**Tirane**	**1.18**	**312**	*i* Pg		**Pn**	**08 23 26.9**	**-1.0**
TIR				*i* Sg		**Sb**	**08 23 42.5**	**-0.6**
LIT	**Litokhoron**	**1.21**	**112**	P		**Pn**	**08 23 27.7**	**-0.7**
LIT				S		**Sg**	**08 23 46.4**	**+1.4**
LIT	**Litokhoron**	**1.21**	**112**	P		**Pn**	**08 23 27.7**	**-0.7**
LIT				S		**Sg**	**08 23 45.3**	**+0.3**
LIT	**Litokhoron**	**1.21**	**112**	P		**Pn**	**08 23 27.4**	**-0.9**
LIT				S		**Sg**	**08 23 45.4**	**+0.3**
LIT				AML		AML	08 23 50.9	
	comp=E,441μm,0.3s							
LIT				AML		AML	08 23 53.8	
	comp=N,437μm,0.6s							
THL	**Klokotos Trika**	**1.25**	**142**	P		**Pn**	**08 23 28.4**	**-0.5**
THL				S		**Sg**	**08 23 47.0**	**+0.8**
THL	**Klokotos Trika**	**1.25**	**142**	P		**Pn**	**08 23 28.4**	**-0.5**
THL				S		**Sg**	**08 23 47.0**	**+0.8**
KEK	**Kerkira**	**1.26**	**228**	P		**Pg**	**08 23 31.3**	**+1.1**
VAY	**Valandovo**	**1.40**	**56**	*i* Pg		**Pb**	**08 23 31.9**	**+0.2**
VAY				*i* Sg		**Sg**	**08 23 50.9**	**-0.1**
VAY				*e*Lg		Lg	08 23 53.0	
	comp=E,65nm,0.8s							
VAY				*e*Lg		Lg	08 23 53.6	
	comp=N,78nm,0.9s							
VAY	**Valandovo**	**1.40**	**56**	*i* Pg		**Pb**	**08 23 31.9**	**+0.2**
VAY				*i* Sg		**Sg**	**08 23 50.8**	**-0.1**
VAY				*e*Lg		Lg	08 23 52.9	
	comp=N,65nm,0.8s							
DSL	**Palaion Diasel**	**1.43**	**178**	P		**Pg**	**08 23 33.0**	**-0.3**
DSL				S		**Sg**	**08 23 51.9**	**+0.1**
DSL	**Palaion Diasel**	**1.43**	**178**	P		**Pg**	**08 23 33.0**	**-0.3**
DSL				S		**Sg**	**08 23 51.9**	**+0.1**
DSL				AML		AML	08 24 03.4	
	comp=N,181μm,0.4s							
DSL				AML		AML	08 24 06.2	
	comp=E,220μm,1.2s							
KNT	**Kendrikon**	**1.54**	**66**	P		**Pn**	**08 23 33.1**	**+0.1**
KNT				S		**Sb**	**08 23 54.2**	**+0.6**
KNT	**Kendrikon**	**1.54**	**66**	P		**Pn**	**08 23 33.1**	**+0.1**
KNT				S		**Sb**	**08 23 53.5**	**-0.1**
KNT	**Kendrikon**	**1.54**	**66**	P		**Pn**	**08 23 32.6**	**-0.4**
KNT				S		**Sb**	**08 23 53.5**	**-0.1**
KNT				AML		AML	08 23 58.1	
	comp=N,118μm,0.3s							
KNT				AML		AML	08 23 59.0	
	comp=E,74μm,0.4s							
HORT	**Hortiatis**	**1.58**	**88**	P		**Pn**	**08 23 33.3**	**-0.2**
HORT				S		**Sn**	**08 23 53.8**	**0.0**
HORT	**Hortiatis**	**1.58**	**88**	P		**Pn**	**08 23 33.3**	**-0.2**
HORT				S		**Sn**	**08 23 53.8**	**0.0**
HORT				AML		AML	08 24 01.8	
	comp=E,52μm,0.1s							
HORT				AML		AML	08 24 02.6	
	comp=N,198μm,0.4s							
EVR	**Evrytania**	**1.75**	**160**	P		**Pb**	**08 23 37.2**	**-0.6**
EVR	**Evrytania**	**1.75**	**160**	P		**Pb**	**08 23 37.2**	**-0.6**
LKD2	**Lefkada island**	**1.79**	**189**	P		**Pb**	**08 23 39.1**	**+0.6**
LKD2	**Lefkada island**	**1.79**	**189**	P		**Pb**	**08 23 39.1**	**+0.6**
SOH	**Sokhos**	**1.79**	**81**	P		**Pb**	**08 23 37.8**	**-0.7**
SOH	**Sokhos**	**1.79**	**81**	P		**Pb**	**08 23 37.8**	**-0.7**
AGG	**Agios Georgios**	**1.84**	**146**	P		**Pb**	**08 23 39.3**	**+0.1**
AGG				S		**Sb**	**08 24 02.7**	**+0.6**
AGG	**Agios Georgios**	**1.84**	**146**	P		**Pb**	**08 23 39.3**	**+0.1**
AGG				S		**Sb**	**08 24 02.7**	**+0.6**
SRS	**Serrai**	**2.03**	**73**	P		**Pn**	**08 23 40.0**	**+0.4**
SRS	**Serrai**	**2.03**	**73**	P		**Pn**	**08 23 40.0**	**+0.4**
XOR	**Xorichti**	**2.05**	**125**	P		**Pn**	**08 23 40.0**	**+0.1**
XOR	**Xorichti**	**2.05**	**125**	P		**Pn**	**08 23 40.0**	**+0.1**
ANX	**Ano Chora**	**2.08**	**160**	P		**Pn**	**08 23 41.2**	**+0.7**
ANX	**Ano Chora**	**2.08**	**160**	P		**Pn**	**08 23 41.2**	**+0.7**
PAIG	**Paliouri**	**2.13**	**106**	P		**Pn**	**08 23 40.7**	**-0.3**
PAIG	**Paliouri**	**2.13**	**106**	P		**Pn**	**08 23 40.7**	**-0.3**
AXS	**Araxos**	**2.38**	**173**	P		**Pb**	**08 23 47.3**	**-1.1**
AXS	**Araxos**	**2.38**	**173**	P		**Pb**	**08 23 47.4**	**-1.1**
STON	**Ston**	**3.40**	**314**	*e*Pn		**Pn**	**08 24 00.1**	**+1.7**
STON					Sn	**Sn**	**08 24 37.5**	**-0.9**

CASC 19 08:26:13.3±3.4, 8°42N×83°85W, h15^{km}±16^{km}, MD3.8, Costa Rica

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
QCR	**Quepos**	**1.04**	**343**	*e*P	Pb	08 26 31.8	-1.3
QCR				*e*S	Sb	08 26 46.2	-0.4
BUS	**Buena Vista**	**1.13**	**4**	*e*P	Pb	08 26 33.6	-1.3
BUS				*e*S	Sg	08 26 50.1	0.0
BRU2	**Volcan**	**1.20**	**72**	*i* P	Pn	08 26 34.5	-1.2
BRU2				*e*S	Sn	08 26 51.8	-0.1
TBS2		**1.23**	**72**	*e*S	Sn	08 26 52.9	+0.2
URSC	**Urasca**	**1.41**	**3**	*e*P	Pn	08 26 38.0	-0.5
URSC				*e*S	Sg	08 26 58.6	-0.2
HDC	**Heredia**	**1.59**	**350**	*e*P	Pg	08 26 44.8	+0.8
HDC				*e*S	Sb	08 27 03.5	+0.9
JCR	**Jicaral**	**1.89**	**319**	*e*P	Pn	08 26 44.8	-0.3
JCR				*e*S	Sb	08 27 10.0	-1.1
JTS	**JuntasAbangare**	**2.15**	**330**	*e*P	Pn	08 26 49.2	+0.5
JTS				*e*S	Sn	08 27 12.7	-2.5
VCR	**Vista de Mar**	**2.44**	**314**	*e*P	Pn	08 26 51.9	-0.9
VCR				*e*S	Sn	08 27 11.0	-12

*ISCJB **19** 08:29:35.8±2.1, 38°21N±0°.05×142°.81E±0°.07, h10^{km}±14^{km}, mb3.6/6, MS2.5/1, Error ellipse: s-maj=9.2km s-min=8.6km az=159.0*
*JMA **19** 08:29:35.6±0.3, 38°.12N×142°.87E, h27^{km}±5^{km}, M3.9*
*IDC **19** 08:29:43.9±3.5, 38°.49N×142°.72E, h53^{km}±32^{km}, mb3.3/6, mb1 3.5/8, mb1mx3.2/44, mbtmp3.5/8, ML3.1/2, MS2.7/1, Ms1 2.7/1, ms1mx2.0/29, Error ellipse: s-maj=30.5km s-min=15.2km az=115.0*

ISC 19 08:29:36.3±3.3, 38°13N±0°.07×142°.73E±0°.09, h12^{km}±18^{km}, n25, σ0^{s}.94/21, mb3.6/6, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**1.13**	**287**	P	**Pb**	**08 29 57.2**	**-0.6**
JIO				S	**Sg**	**08 30 13.6**	**+0.7**
OFUJ	**Ofunato**	**1.26**	**319**	P	**Pn**	**08 29 58.8**	**-0.9**
OFUJ				S	**Sb**	**08 30 16.1**	**0.0**
JMK	**Ichinoseki**	**1.44**	**305**	P	**Pn**	**08 30 01.8**	**-0.3**
JMM	**Marumori**	**1.55**	**261**	P	**Pn**	**08 30 03.6**	**-0.1**
JMM				S	**Sn**	**08 30 24.4**	**+0.7**
MIYJ	**Miyakonagasawa**	**1.61**	**334**	P	**Pn**	**08 30 03.7**	**-0.8**
JOU	**Okura**	**1.64**	**279**	P	**Pn**	**08 30 06.0**	**+1.0**
JOM	**Ohasama**	**1.75**	**320**	P	**Pn**	**08 30 06.4**	**0.0**
JOM				S	**Sn**	**08 30 29.1**	**+0.5**
JFT	**Otama**	**1.99**	**253**	P	**Pn**	**08 30 10.7**	**+1.0**
JFT				S	**Sb**	**08 30 36.6**	**-0.6**
JYK	**Kaneyama**	**2.02**	**294**	P	**Pn**	**08 30 11.0**	**+0.9**
MJAR	**Matsushiro Arr**	**3.94**	**248**	P	Pb	08 30 42.2	-3.4
	0.6nm,0.3s,baz=59,slow=12,SNR=3.7						
MJAR				S	**Sb**	**08 31 30.8**	**-2.4**
	0.6nm,0.3s,baz=75,slow=14,SNR=2.9						
ASAJ	**Asahikawa**	**5.98**	**359**	P	**Pn**	**08 31 05.4**	**+0.9**
	0.6nm,0.3s,baz=199,slow=19,SNR=3.9						
KLR	**Kul'dur**	**13.63**	**328**	P	**P**	**08 32 57.7**	**-0.5**
	0.1nm,0.3s,baz=134,slow=13,SNR=5.1						
YAK	**Yakutsk**	**25.25**	**346**	LR	LR	08 44 15.8	
	comp=Z,17nm,20.5s,baz=285,slow=35						
SEY	**Seymchan**	**25.52**	**10**	P	**P**	**08 35 04.9**	**+0.7**
	1.1nm,0.7s,baz=217,slow=7.2,SNR=5.1						
H11N2	**WAKE ISLAND Hy**	**27.86**	**124**	T	T	09 04 22.2	
	baz=317,slow=75,SNR=35						
H11N1	**WAKE ISLAND Hy**	**27.86**	**124**	T	T	09 04 23.4	
	baz=317,slow=75,SNR=24						
H11N3	**WAKE ISLAND Hy**	**27.87**	**124**	T	T	09 04 24.6	
	baz=317,slow=75,SNR=26						
H11S1	**WAKE ISLAND Hy**	**28.62**	**126**	T	T	09 05 19.5	
	baz=318,slow=76,SNR=17						
H11S3	**WAKE ISLAND Hy**	**28.62**	**126**	T	T	09 05 20.9	
	baz=318,slow=76,SNR=14						
H11S2	**WAKE ISLAND Hy**	**28.64**	**126**	T	T	09 05 20.5	
	baz=318,slow=76,SNR=13						
ZALV	**Zalesovo Beam**	**41.96**	**311**	P	**P**	**08 37 27.1**	**+0.4**
	0.9nm,0.5s,baz=112,slow=6.7,SNR=3.7						
MKAR	**Makanchi Array**	**44.43**	**301**	P	**P**	**08 37 47.8**	**+0.9**
	0.6nm,0.7s,baz=87,slow=9.4,SNR=6.7						
WRA	**Warramunga Arr**	**58.30**	**189**	P	P	08 39 35.8	+4.9
	1.1nm,0.6s,baz=7.9,slow=7.2,SNR=16						
ASAR	**Alice Springs**	**62.03**	**189**	P	P	08 40 01.3	+4.9
	0.4nm,0.8s,baz=9.9,slow=7.5,SNR=4.0						
YKA	**Yellowknife Ar**	**62.33**	**31**	P	**P**	**08 39 57.4**	**-0.7**
	0.1nm,0.6s,baz=303,slow=6.7,SNR=3.7						

*ISCJB **19** 08:32:38.2±0.3, 53°.4N±0°.1×171°.25W±0°.08, h250^{km}, mb3.4/8, Error ellipse: s-maj=15.6km s-min=4.0km az=161.2*
*NEIC **19** 08:32:39.3, 53°.14N×171°.10W, h253^{km}, MG3.5(AEIC), After AEIC.*
*IDC **19** 08:32:41.2±9.3, 53°.59N×171°.47W, h262^{km}±93^{km}, mb3.1/8, mb1 3.4/9, mb1mx3.0/61, mbtmp3.8/9, MS2.9/1, Ms1 2.9/1, ms1mx2.3/15, Error ellipse: s-maj=43.5km s-min=16.7km az=173.0*

ISC 19 08:32:39.2±0.7, 53°.4N±0°.1×171°.25W±0°.07, h250^{km}, n41, σ1^{s}01/46, mb3.3/8, Fox Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
NIKH	**Nikolski High**	**1.50**	**105**	P	**Pn**	**08 33 16.2**	**-1.3**
NIKH				S	**Sb**	**08 33 45.4**	**-2.2**
OKAK	**Okmok**	**1.74**	**83**	P	**Pn**	**08 33 18.9**	**-0.5**
OKWE	**Okmok W'ng Wal**	**1.80**	**86**	P	**Pn**	**08 33 19.7**	**-0.2**
OKTU	**Okmok Mt. Tuli**	**1.92**	**89**	P	**Pn**	**08 33 20.6**	**-0.4**
KOSE	**Korovin Southe**	**1.99**	**239**	P	**Pn**	**08 33 21.2**	**-0.5**
KOFP	**Korovin Flat P**	**2.06**	**238**	P	**Pn**	**08 33 21.9**	**-0.3**
KOWE	**Korovin West**	**2.09**	**242**	P	**Pn**	**08 33 22.1**	**-0.3**
MSOM	**Makushin Julie**	**2.60**	**79**	P	**Pn**	**08 33 26.7**	**-0.6**
MGOD	**Makushin Gods**	**2.64**	**79**	P	**Pn**	**08 33 27.1**	**-0.8**
MSW	**Makushin Switc**	**2.71**	**77**	P	**Pn**	**08 33 28.0**	**-0.6**
MTBL	**Makushin Table**	**2.78**	**76**	P	**Pn**	**08 33 28.6**	**-0.8**
UNV	**Unalaska Valle**	**2.87**	**79**	P	**Pn**	**08 33 29.4**	**-0.7**
UNV				S	**S**	**08 34 08.5**	**-1.9**
AKRB	**Akutan Reef Bi**	**3.17**	**74**	P	**Pn**	**08 33 33.6**	**+0.2**
LVA	**Lava Point**	**3.19**	**74**	P	**Pn**	**08 33 33.8**	**0.0**
GSTR	**Great Sitkin T**	**3.20**	**248**	P	**Pn**	**08 33 34.6**	**+0.8**
ZRO	**Akutan Zero**	**3.21**	**77**	P	**Pn**	**08 33 33.7**	**-0.2**
GSMY	**Great Sitkin M**	**3.22**	**247**	P	**Pn**	**08 33 33.9**	**-0.2**
AKGG	**Akutan Green G**	**3.22**	**73**	P	**Pn**	**08 33 34.2**	**+0.1**
GSTD	**Great Sitkin T**	**3.26**	**248**	P	**Pn**	**08 33 33.5**	**-1.1**
GSTD				S	**S**	**08 34 16.0**	**-2.4**
GSCK	**Great Sitkin C**	**3.29**	**247**	P	**Pn**	**08 33 33.8**	**-1.1**
AHB	**Akutan Harbor**	**3.31**	**75**	P	**Pn**	**08 33 34.7**	**-0.3**
AKUT	**Akutan**	**3.34**	**75**	P	**Pn**	**08 33 34.9**	**-0.4**
AKSA	**Akutan Strait**	**3.38**	**75**	P	**Pn**	**08 33 35.6**	**-0.1**
AKSA				S	**S**	**08 34 19.7**	**-0.9**
ADAG	**Mount Adagdak**	**3.55**	**249**	P	**Pn**	**08 33 37.9**	**+0.2**
WECS	**Westdahl Cape**	**3.99**	**71**	P	**Pn**	**08 33 42.7**	**-0.1**
WESP	**Westdahl Peak**	**4.01**	**71**	P	**Pn**	**08 33 43.4**	**+0.2**
WESP				S	**S**	**08 34 31.5**	**-2.5**
WESE	**West Dahl East**	**4.09**	**72**	P	**Pn**	**08 33 43.4**	**-0.6**
SSLW	**Shishaldin Wes**	**4.42**	**69**	P	**Pn**	**08 33 47.1**	**-0.8**
ISLZ	**Isanotski Laza**	**4.64**	**70**	P	**Pn**	**08 33 50.0**	**-0.6**
FALS	**False Pass**	**4.84**	**69**	P	**Pn**	**08 33 52.4**	**-0.4**
DT1	**Dutton Round H**	**5.54**	**68**	P	**Pn**	**08 34 00.6**	**-0.9**
SDPT	**Sand Point**	**5.60**	**68**	P	**Pn**	**08 34 12.9**	**-1.7**
ILAR	**Eielson Array**	**16.80**	**38**	P	**P**	**08 36 17.5**	**-0.9**
	1.8nm,0.3s,baz=238,slow=9.3,SNR=127						
SEY	**Seymchan**	**21.14**	**311**	P	**P**	**08 37 03.8**	**-1.0**
	0.5nm,0.4s,baz=156,slow=9.3,SNR=4.8						
INK	**Inuvik**	**23.15**	**35**	P	**P**	**08 37 23.6**	**+0.5**
	3.2nm,0.4s,baz=246,slow=6.6,SNR=30						
INK				LR	LR	08 46 11.6	
	comp=Z,32nm,21.6s,baz=264,slow=35						
YKA	**Yellowknife Ar**	**30.41**	**50**	P	**P**	**08 38 28.4**	**+0.2**
	0.2nm,0.3s,baz=275,slow=9.2,SNR=24						
PDAR	**Pinedale Array**	**41.33**	**79**	P	**P**	**08 40 02.4**	**+1.6**
	0.5nm,0.4s,baz=319,slow=2.7,SNR=9.0						
TXAR	**Lajitas Array**	**53.86**	**88**	P	**P**	**08 41 38.5**	**+1.8**
	0.3nm,0.5s,baz=307,slow=6.3,SNR=8.7						
SCHQ	**Schefferville**	**55.47**	**43**	P	**P**	**08 41 47.8**	**+0.1**
	1.9nm,0.9s,baz=290,slow=12,SNR=5.0						
WRA	**Warramunga Arr**	**86.76**	**230**	P	**P**	**08 44 55.2**	**+0.2**
	0.5nm,1.0s,baz=28,slow=5.7,SNR=3.4						
ASAR	**Alice Springs**	**90.19**	**228**	P	**P**	**08 45 12.0**	**+0.9**
	0.3nm,0.6s,baz=18,slow=3.9,SNR=3.3						

IDC 19 08:38:49.7±1.5, 34°.81N×79°.69E, h0^{km}, mb3.5/3, mb1 3.6/5, mb1mx3.3/50, mbtmp3.5/5, ML3.5/2, MS3.4/2, Ms1 3.4/2, ms1mx2.5/40, Error ellipse: s-maj=39.3km s-min=23.7km az=60.0, Kashmir-Xizang border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MKAR	**Makanchi Array**	**12.13**	**9**	Pn	Pn	08 41 43.3	-0.5
	0.1nm,0.3s,baz=188,slow=13,SNR=5.1						
MKAR				Sn	Sn	08 43 56.7	-3.2
	0.1nm,0.3s,baz=186,slow=24,SNR=3.5						
GEYT	**Alibeck**	**17.65**	**286**	LR	LR	08 49 40.7	
	comp=Z,33nm,21.8s,baz=240,slow=37						
BVAR	**Borovoye Array**	**19.38**	**343**	P	Pn	08 43 17.7	-0.2
	0.2nm,0.3s,baz=153,slow=13,SNR=3.3						
AKTO	**Aktyubinsk**	**22.20**	**321**	P	P	08 43 48.5	+1.1
	0.7nm,0.7s,baz=142,slow=12,SNR=2.3						
CMAR	**Chiang Mai Arr**	**23.62**	**129**	P	P	08 44 02.9	+0.4
	0.8nm,0.4s,baz=304,slow=9.7,SNR=3.5						
OPO	**Ambohidratompo**	**61.42**	**215**	LR	LR	09 11 52.6	
	comp=Z,116nm,21.7s,baz=153,slow=32						
TORD	**Torodi Ar. Bea**	**72.84**	**274**	P	P	08 50 19.9	-0.8
	0.5nm,0.6s,baz=41,slow=5.9,SNR=4.2						

DHMR 19 08:45:06.4±1.1, 12°.15N×43°.95E, h14^{km}±12^{km}, ML4.1, Western Arabian Peninsula

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ADEN	**Aden**	**1.19**	**58**	*i* P	Pn	08 45 27.7	-0.9
ADEN				*i* S	Sg	08 45 45.1	+0.4
ADEN				AML	AML	08 45 51.6	
	comp=E,5μm,0.3s						
UDYN	**Al 'Udayn**	**1.80**	**1**	*i* P	Pb	08 45 38.9	-0.4
UDYN				*i* S	Sb	08 46 02.5	+0.6
BDHA	**Al Bayda'**	**2.40**	**41**	*i* P	Pb	08 45 47.7	-1.9
BDHA				*i* S	Sb	08 46 20.2	+1.0
DHBB	**Dhamar BB**	**2.44**	**10**	*i* P	Pn	08 45 48.1	+2.0
DHBB				*i* S	Sb	08 46 21.5	+1.1

DHMR 19 08:57:09.4±1.5, 11°.99N×44°.03E, h15^{km}±14^{km}, ML4.3, Western Gulf of Aden

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ADEN	**Aden**	**1.21**	**50**	*i* P	Pn	08 57 31.2	-0.7
ADEN				*i* S	Sg	08 57 49.1	+0.5
ADEN				AML	AML	08 57 59.4	
	comp=E,7μm,0.5s						
UDYN	**Al 'Udayn**	**1.96**	**358**	*i* P	Pb	08 57 44.3	-0.7
UDYN				*i* S	Sb	08 58 10.2	+0.9
BDHA	**Al Bayda'**	**2.47**	**37**	*i* P	Pn	08 57 51.5	+2.1
BDHA				*i* S	Sb	08 58 25.4	+1.2
DHBB	**Dhamar BB**	**2.58**	**8**	*i* P	Pb	08 57 54.8	-0.9
DHBB				*i* S	Sb	08 58 27.7	+0.2
HAJJ	**Hajjah**	**3.71**	**354**	*i* P	Pn	08 58 08.2	+1.8
HAJJ				*i* S	Sb	08 58 55.8	-3.8

*NNC **19** 08:58:29.8±3.9, 53°.43N×87°.32E, h0^{km}, mb3.8, mpv3.5, Error ellipse: s-maj=29.8km s-min=26.7km az=34.0*

IDC 19 08:58:26.8±2.6, 53°.54N×87°.60E, h0^{km}, mb1 3.4/3, mb1mx3.1/50, mbtmp3.4/3, ML3.1/3, 5C-1D, Error ellipse: s-maj=24.8km s-min=13.0km az=59.0, Southwestern Siberia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
I46RU	**ZALESOVO INFRA**	**1.70**	**285**	*i*		09 10 00.0	
	baz=98,slow=319,SNR=1.4						
ZALV	**Zalesovo Beam**	**1.70**	**285**	Pg	Pn	08 58 56.6	-1.2
	5.6nm,0.3s,baz=101,slow=14,SNR=76						
ZALV				Lg	Lg	08 59 20.5	
	0.9nm,0.3s,baz=102,slow=24,SNR=4.1						
KURK	**Kurchatov**	**6.21**	**247**	⇑Pn	Pn	09 00 00.0	+0.4
	3.8nm,0.6s						
KURK				⇑Lg	Lg	09 01 41.9	
	14nm,0.8s						
KURBB	**Kurchatov Arra**	**6.31**	**246**	Pn	Pn	09 00 01.4	+0.5
	0.2nm,0.3s,baz=62,slow=14,SNR=17						
KURBB				Lg	Lg	09 01 45.1	
	0.1nm,0.3s,baz=60,slow=29,SNR=5.6						
KURBB	**Kurchatov Arra**	**6.31**	**246**	⇑Pn	Pn	09 00 01.2	+0.2
	5.3nm,0.6s						
KURBB				⇓Pg	Pg	09 00 23.8	-3.7
	1.9nm,0.7s						
KURBB				⇑Sn	Sn	09 01 11.6	-2.0
	3.8nm,0.5s						
KURBB				⇑Lg	Lg	09 01 46.3	
	13nm,0.8s						
MK31	**Makanchi Array**	**7.56**	**209**	Pn	Pn	09 00 18.6	+0.4
	0.7nm,0.5s,baz=17,slow=17,SNR=9.4						
MK31				Sn	Sn	09 01 44.7	+0.1
	0.9nm,0.6s,baz=31,slow=27,SNR=4.2						
MK31				Lg	Lg	09 02 26.3	
	3.3nm,0.7s,baz=37,slow=30,SNR=7.3						
MKAR	**Makanchi Array**	**7.56**	**209**	Pn	Pn	09 00 19.1	+0.9
	0.4nm,0.3s,baz=26,slow=13,SNR=17						
MKAR				Sn	Sn	09 01 44.1	-0.4
	0.3nm,0.3s,baz=27,slow=27,SNR=6.7						
MKAR				Lg	Lg	09 02 19.0	
	0.1nm,0.3s,baz=29,slow=19,SNR=2.7						
BVAR	**Borovoye Array**	**10.32**	**274**	Pn	Pn	09 00 56.3	+0.3
	0.3nm,0.3s,baz=96,slow=14,SNR=4.4						
BVAR				Sn	Sn	09 02 47.3	-5.0
	0.3nm,0.3s,baz=92,slow=27,SNR=5.6						

WEL 19 09:01:30.2±0.1, 41°.09S×174°.52E, h48^{km}±1^{km}, ML3.5/13, 8C-3D, Error ellipse: s-maj=1.0km s-min=1.0km az=0.0, Cook Strait

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TCW	**Tory Channel**	**0.22**	**237**	⇓PN	Pn	09 01 37.9	-0.7
TCW				SN	Sn	09 01 43.7	-0.7
TCW				AML	AML	09 01 44.5	
WEL	**Wellington**	**0.27**	**136**	⇑PN	Pn	09 01 38.8	-0.1
WEL				SN	Sn	09 01 45.2	+0.1
KIW	**Kapiti Island**	**0.37**	**52**	⇑PN	Pn	09 01 39.3	-0.7
KIW				AML	AML	09 01 47.3	
KIW				AML	AML	09 01 47.7	
CAW	**Cannon Point**	**0.41**	**93**	⇑PN	Pn	09 01 40.2	-0.2
CAW				SN	Sn	09 01 48.0	+0.5
CAW				AML	AML	09 01 49.6	
BHW	**Baring Head**	**0.41**	**141**	PN	Pn	09 01 40.3	-0.1
BHW				SN	Sn	09 01 48.3	+0.7
BHW				AML	AML	09 01 48.6	
DUWZ	**D'Urville Isla**	**0.54**	**302**	⇓PN	Pn	09 01 40.9	-1.0
TUWZ	**Tuamarina**	**0.55**	**232**	⇑PN	Pn	09 01 41.7	-0.4
TUWZ				AML	AML	09 01 50.9	
TUWZ				AML	AML	09 01 51.0	
OGWZ	**Otaki Gorge**	**0.56**	**61**	⇑PN	Pn	09 01 41.9	-0.3
MSWZ	**Moikau Station**	**0.64**	**121**	PN	Pn	09 01 42.8	-0.3
MSWZ				AML	AML	09 01 55.0	
MSWZ				AML	AML	09 01 55.1	
CMWZ	**Cape Campbell**	**0.70**	**199**	AML	AML	09 02 00.7	
CMWZ				AML	AML	09 02 02.9	
PLWZ	**Palliser**	**0.73**	**131**	PN	Pn	09 01 44.0	-0.3
PAWZ	**Paruwai Farm**	**0.74**	**113**	PN	Pn	09 01 44.3	-0.2
PAWZ				AML	AML	09 01 57.6	
PAWZ				AML	AML	09 02 51.0	
MTW	**Mount Morrison**	**0.74**	**96**	PN	Pn	09 01 44.0	-0.5
MTW			

JOF				eSG	**Sb**	**09 03 11.2 +0.1**			
JOF	**Joensuu**	**1.95**	**170**	Pg	**Pn**	**09 02 43.8 -0.4**			
OUL	**Oulu**	**2.00**	**279**	ePG	**Pb**	**09 02 46.9 -0.2**			
OUL				eSG	**Sb**	**09 03 13.3 +0.7**			
OUL	**Oulu**	**2.00**	**279**	Pg	**Pb**	**09 02 46.9 -0.2**			
OUFX	**Oulainen**	**2.57**	**262**	ePB	**Pn**	**09 02 54.7 +1.9**			
	baz=83								
OUFX				eSG	**Sb**	**09 03 29.1 +0.2**			
OUFX	**Oulainen**	**2.57**	**262**	Pb	**Pn**	**09 02 54.6 +1.9**			
RNF	**Rovaniemi**	**2.59**	**316**	ePB	**Pn**	**09 02 55.3 +2.3**			
RNF				eSB	**Sb**	**09 03 30.0 +0.5**			
RNF	**Rovaniemi**	**2.59**	**316**	Pb	**Pn**	**09 02 55.3 +2.3**			
SUF	**Sumiainen**	**2.89**	**225**	ePB	**Pn**	**09 02 58.8 +1.7**			
SUF				MSG		09 03 34.4			
	comp=Z,8.6nm,0.2s								
SUF				eSG	**Sb**	**09 03 37.6 -0.5**			
SUF	**Sumiainen**	**2.89**	**225**	Pb	**Pn**	**09 02 58.8 +1.7**			
TOF	**Tornio**	**2.89**	**298**	ePB	**Pb**	**09 03 00.9 -1.3**			
TOF				eSB	**Sb**	**09 03 36.7 -1.4**			
TOF	**Tornio**	**2.89**	**298**	Pg	**Pb**	**09 03 00.9 -1.3**			
APA0	**Apatity Array**	**2.95**	**18**	Pn	**Pn**	**09 02 58.5 +0.5**			
	baz=193,slow=16								
APA0				Lg	Lg	09 03 45.4			
	baz=194,slow=28								
APA0	**Apatity Array**	**2.95**	**18**	Pn	**Pn**	**09 02 58.5 +0.5**			
	baz=193,slow=16								
APA0				Lg	Lg	09 03 45.4			
	baz=194,slow=28								
APA0	**Apatity Array**	**2.95**	**18**	P	**Pn**	**09 02 58.5 +0.5**			
APA0				S	**Sn**	**09 03 35.5 +1.4**			
APA0	**Apatity Array**	**2.95**	**18**	Pn	**Pn**	**09 02 58.5 +0.5**			
	SNR=50								
APA0				Lg	Lg	09 03 45.4			
	SNR=7.3								
VRF	**Varrio**	**2.95**	**353**	eP	**Pn**	**09 02 59.0 +1.0**			
VRF				MSG		09 03 38.1			
	comp=Z,2.5nm,0.2s								
VRF				eSG	**Sb**	**09 03 43.0 +3.1**			
VRF	**Varrio**	**2.95**	**353**	Pb	**Pn**	**09 02 59.0 +1.0**			
APA	**Apatity**	**2.98**	**21**	P	**Pn**	**09 02 58.6 +0.3**			
APA				S	**Sn**	**09 03 35.8 +1.1**			
SGF	**Sodankyl**	**3.09**	**330**	eP	**Pn**	**09 03 02.2 +2.4**			
SGF				eSG	**Sb**	**09 03 45.9 +2.0**			
SGF	**Sodankyl**	**3.09**	**330**	Pb	**Pn**	**09 03 02.2 +2.4**			
KAF	**Kangasniemi**	**3.33**	**217**	ePB	**Pn**	**09 03 05.4 +2.1**			
KAF	**Kangasniemi**	**3.33**	**217**	Pb	**Pn**	**09 03 05.3 +2.1**			
KEF	**Keuruu**	**3.70**	**226**	ePB	**Pn**	**09 03 10.9 +2.7**			
	baz=47								
SJUU	**Sjulsmark**	**3.84**	**284**	eP	**Pn**	**09 03 10.8 +0.7**			
SJUU	**Sjulsmark**	**3.84**	**284**	P	**Pn**	**09 03 10.8 +0.7**			
ERTU	**Ertsjaerv**	**3.87**	**300**	eP	**Pn**	**09 03 12.0 +1.4**			
ERTU	**Ertsjaerv**	**3.87**	**300**	P	**Pn**	**09 03 12.0 +1.4**			
VAF	**Ylistaro**	**3.92**	**246**	eP	**Pn**	**09 03 08.7 -2.6**			
BURU	**Burvik**	**3.95**	**271**	eP	**Pn**	**09 03 11.9 +0.2**			
BURU	**Burvik**	**3.95**	**271**	P	**Pn**	**09 03 11.9 +0.2**			
FIA0	**FINESS Array S**	**3.97**	**213**	Pn	**Pn**	**09 03 11.9 +0.1**			
	baz=36,slow=14								
FIA0				Pg	**Pb**	**09 03 20.8 +0.2**			
	baz=25,slow=16								
FIA0				Sn	**Sn**	**09 03 59.3 +0.3**			
	baz=43,slow=28								
FIA0				Lg	Lg	09 04 12.2			
	baz=32,slow=37								
FIA0	**FINESS Array S**	**3.97**	**213**	Pn	**Pn**	**09 03 11.9 +0.1**			
	baz=36,slow=14								
FIA0				Pg	**Pb**	**09 03 20.8 +0.2**			
	baz=25,slow=16								
FIA0				Sn	**Sn**	**09 03 59.3 +0.3**			
	baz=43,slow=28								
FIA0				Lg	Lg	09 04 12.2			
	baz=32,slow=37								
FIA0	**FINESS Array S**	**3.97**	**213**	eP	**Pn**	**09 03 12.0 +0.1**			
	baz=28								
FIA0				eSG	**Sb**	**09 04 12.3 +3.3**			
FIA0	**FINESS Array S**	**3.97**	**213**	Pn	**Pn**	**09 03 11.9 +0.1**			
	SNR=50								
FIA0				Sn	**Sn**	**09 03 59.3 +0.3**			
	SNR=50								
FIA0				Lg	Lg	09 04 12.2			
	SNR=23								
HARU	**Harads**	**4.21**	**293**	eP	**Pn**	**09 03 16.7 +1.5**			
HARU	**Harads**	**4.21**	**293**	P	**Pn**	**09 03 16.7 +1.5**			
MASU	**Masugnsbyn**	**4.36**	**311**	eP	**Pn**	**09 03 19.2 +1.9**			
MASU	**Masugnsbyn**	**4.36**	**311**	P	**Pn**	**09 03 19.2 +1.9**			
UMAU	**Umeaa**	**4.40**	**262**	eP	**Pn**	**09 03 17.9 +0.1**			
UMAU	**Umeaa**	**4.40**	**262**	P	**Pn**	**09 03 17.2 -0.6**			
UMAU	**Umeaa**	**4.40**	**262**	Pn	**Pn**	**09 03 17.9 +0.1**			
UMAU				S	**Sn**	**09 04 08.7 -1.0**			
HEF	**Hetta**	**4.52**	**326**	eP	**Pn**	**09 03 21.7 +2.2**			
HEF				eSG	**Sb**	**09 04 29.9 +4.9**			
HEF	**Hetta**	**4.52**	**326**	Pn	**Pn**	**09 03 21.7 +2.2**			
VJF	**Virojoki**	**4.53**	**199**	eSG	**Sb**	**09 04 28.6 +3.4**			
LILU	**Lilltraesk**	**4.56**	**281**	eP	**Pn**	**09 03 20.7 +0.7**			
LILU	**Lilltraesk**	**4.56**	**281**	P	**Pn**	**09 03 20.7 +0.7**			
LANU	**Lannavaara**	**4.72**	**317**	eP	**Pn**	**09 03 22.9 +0.7**			
LANU	**Lannavaara**	**4.72**	**317**	P	**Pn**	**09 03 22.9 +0.7**			
ARA0	**ARCESS Array S**	**5.12**	**340**	Pn	**Pn**	**09 03 27.8 +0.1**			
	baz=154,slow=14								
ARA0				Sn	**Sn**	**09 04 24.2 -3.1**			
	baz=156,slow=28								
ARA0				Lg	Lg	09 04 48.5			
	baz=153,slow=37								
ARA0	**ARCESS Array S**	**5.12**	**340**	Pn	**Pn**	**09 03 27.8 +0.1**			
	baz=154,slow=14								
ARA0				Sn	**Sn**	**09 04 24.2 -3.1**			
	baz=156,slow=28								
ARA0				Lg	Lg	09 04 48.5			
	baz=153,slow=37								
ARA0	**ARCESS Array S**	**5.12**	**340**	Pn	**Pn**	**09 03 27.8 +0.1**			
	SNR=50								
ARA0				Sn	**Sn**	**09 04 24.2 -3.1**			
	baz=156,slow=24,SNR=50								
KUA	**Kurravaara**	**5.17**	**312**	eP	**Pn**	**09 03 30.7 +2.4**			
KUA	**Kurravaara**	**5.17**	**312**	P	**Pn**	**09 03 30.7 +2.4**			
SALU	**Saltoluokta**	**5.53**	**303**	eP	**Pn**	**09 03 34.5 +1.2**			
SALU	**Saltoluokta**	**5.53**	**303**	P	**Pn**	**09 03 34.5 +1.2**			
NIKU	**Nikkaluokta**	**5.55**	**308**	eP	**Pn**	**09 03 34.7 +1.1**			
NIKU	**Nikkaluokta**	**5.55**	**308**	P	**Pn**	**09 03 34.7 +1.1**			
HEMU	**Hemsoen**	**5.96**	**254**	eP	**Pn**	**09 03 40.0 +0.7**			
HEMU	**Hemsoen**	**5.96**	**254**	P	**Pn**	**09 03 40.0 +0.7**			
HASU	**Hassela**	**6.80**	**253**	eP	**Pn**	**09 03 51.3 +0.6**			
HASU	**Hassela**	**6.80**	**253**	P	**Pn**	**09 03 51.3 +0.6**			
HFS	**Hagfors**	**9.11**	**247**	Pn	**Pn**	**09 04 21.2 -1.1**			
	baz=64,slow=14								
HFS				Sn	Sn	09 05 58.7 -6.7			
HFS				Lg	Lg	09 06 48.8			
	baz=58,slow=28								
HFS	**Hagfors**	**9.11**	**247**	Pn	**Pn**	**09 04 21.2 -1.1**			
	baz=64,slow=14								
HFS				Sn	Sn	09 05 58.7 -6.7			
HFS				Lg	Lg	09 06 48.8			
	baz=58,slow=28								
HFS	**Hagfors**	**9.11**	**247**	Pn	**Pn**	**09 04 21.2 -1.1**			
	SNR=50								
SPA0	**Spitsbergen Ar**	**14.06**	**348**	Pn	**Pn**	**09 05 27.6 -2.4**			
	baz=154,slow=18								
SPA0	**Spitsbergen Ar**	**14.06**	**348**	Pn	**Pn**	**09 05 27.6 -2.4**			
	baz=154,slow=18								
BDRM	**Kayabasi**	**27.87**	**185**	P	**P**	**09 08 01.7 +0.7**			
SHAO	**Shalim**	**49.72**	**148**	P	**P**	**09 11 03.7 +0.2**			

WEL 19 09:02:20.4±0.1, 41°06S×174°52E, h44km±1km, ML3.4/15, **8C-1D, Error ellipse: s-maj=1.0km s-min=0.9km az=0.0, Cook Strait**

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
TCW	**Tory Channel**	**0.24**	**231**	⇓P*		Pn	09 02 28.0	-0.5
TCW				S*		Sn	09 02 33.7	-0.4
TCW				S*			09 02 33.8	
TCW				AML		AML	09 02 34.6	
WEL	**Wellington**	**0.29**	**141**	⇑P*		Pn	09 02 28.9	-0.1
WEL				S*		Sn	09 02 35.8	+0.8
WEL				AML		AML	09 02 37.1	
WEL				AML		AML	09 02 37.3	
KIW	**Kapiti Island**	**0.35**	**56**	⇑P*		Pn	09 02 29.4	-0.2
KIW				S*		Sn	09 02 36.0	-0.1
KIW				AML		AML	09 02 37.8	
CAW	**Cannon Point**	**0.41**	**97**	⇑P*		Pn	09 02 30.2	0.0
CAW				AML		AML	09 02 39.8	
CAW				AML		AML	09 02 39.8	
BHW	**Baring Head**	**0.44**	**143**	P*		Pn	09 02 30.5	0.0
BHW				S*		Sn	09 02 38.4	+0.6
BHW				AML		AML	09 02 38.8	
DUWZ	**D'Urville Isla**	**0.52**	**299**	P*		Pn	09 02 31.0	-0.6
OGWZ	**Otaki Gorge**	**0.55**	**64**	⇑P*		Pn	09 02 32.0	+0.1
TUWZ	**Tuamarina**	**0.57**	**229**	⇑P*		Pn	09 02 31.8	-0.5
TUWZ				AML		AML	09 02 40.9	
TUWZ				AML		AML	09 02 41.0	
MSWZ	**Moikau Station**	**0.65**	**123**	P*		Pn	09 02 33.2	-0.2
MSWZ				AML		AML	09 02 45.2	
MSWZ				AML		AML	09 02 45.2	
CMWZ	**Cape Campbell**	**0.73**	**199**	AML		AML	09 02 50.8	
MTW	**Mount Morrison**	**0.75**	**98**	⇑Pn		Pn	09 02 34.1	-0.5
MTW				AML		AML	09 02 45.4	
MTW				AML		AML	09 02 45.5	
PLWZ	**Palliser**	**0.75**	**133**	PN		Pn	09 02 34.1	-0.6
PAWZ	**Paruwai Farm**	**0.75**	**116**	PN		Pn	09 02 34.4	-0.4
PAWZ				AML		AML	09 02 47.7	
PAWZ				AML		AML	09 02 47.9	
HOWZ	**Holdsworth Sta**	**0.77**	**78**	⇑PN		Pn	09 02 34.6	-0.3
BSWZ	**Blackbirch Sta**	**0.82**	**216**	PN		Pn	09 02 35.4	-0.1
BSWZ				AML		AML	09 02 49.1	
BSWZ				AML		AML	09 02 49.1	
NNZ	**Nelson**	**0.88**	**259**	⇑PN		Pn	09 02 36.1	-0.3
MRZ	**Mangatainoka R**	**0.89**	**64**	PN		Pn	09 02 36.2	-0.4
TRWZ	**Traveller**	**0.94**	**112**	PN		Pn	09 02 36.6	-0.6
TRWZ				S*		Sn	09 02 49.6	0.0
TRWZ				AML		AML	09 02 49.8	
TMWZ	**Te Maipa**	**1.03**	**93**	ePN		Pn	09 02 37.8	-0.7
OHWZ	**Ohakea**	**1.04**	**36**	PN		Pn	09 02 39.4	+0.8
OHWZ				S*		Sn	09 02 54.5	+2.6
TIWZ	**Tintock**	**1.07**	**75**	PN		Pn	09 02 38.3	-0.7
TIWZ				S*		Sn	09 02 52.6	-0.1
TIWZ				AML		AML	09 02 53.6	
PRWZ	**Pori Road**	**1.21**	**66**	PN		Pn	09 02 40.2	-0.6
BFZ	**Birch Farm**	**1.36**	**75**	PN		Pn	09 02 42.0	-0.9
BFZ				SN		Sn	09 02 59.0	-0.8
BFZ				AML		AML	09 02 59.6	
THZ	**Tophouse**	**1.41**	**239**	ePN		Pn	09 02 43.8	+0.2
TSZ	**Takapari Road**	**1.48**	**48**	AML		AML	09 03 10.0	
TSZ				AML		AML	09 03 10.3	
QRZ	**Quartz Range**	**1.53**	**278**	PN		Pn	09 02 45.6	+0.3
QRZ				SN		Sn	09 03 04.4	+0.4
KHZ	**Kahutara**	**1.54**	**208**	PN		Pn	09 02 44.9	-0.6
ANWZ	**Angora Road**	**1.60**	**69**	SN		Sn	09 03 05.3	-0.3
PRHZ	**Porangahau**	**1.79**	**64**	PN		Pn	09 02 47.7	-1.2
MQZ	**McQueen's Vall**	**2.99**	**207**	SN		Sn	09 03 34.0	-5.8

DHMR ***19*** *09:07:56.7±1.6, 11°.90N×43°.99E, h11km±17km, ML4.9*
BJI ***19*** *09:07:57.3, 11°.74N×43°.36E, h8km, mb4.6/28, mB5.1/13, Ms4.7/13, Ms7 4.4/13*
ISCJB ***19*** *09:08:01.7±0.2, 11°.96N±0°.03×44°.02E±0°.03, h10km, mb4.5/66, MS4.1/40, Error ellipse: s-maj=5.0km s-min=2.6km az=139.8*
ARO ***19*** *09:08:01.4, 12°.N±9°×4°.4E±°, h10km±21km, ML4.5*
IDC ***19*** *09:08:01.6±0.9, 11°.91N×44°.10E, h0km, mb4.2/21, mb1 4.2/24, mb1mx4.1/54, mbtmp4.1/24, ML3.4/3, MS4.1/36, Ms1 4.1/36, ms1mx4.0/53, Error ellipse: s-maj=19.4km s-min=16.6km az=11.0*
MOS ***19*** *09:08:02.0±1.1, 11°.92N×43°.98E, h12km, mb4.8/45, MS4.0/10, Error ellipse: s-maj=11.3km s-min=5.3km az=91.2*
CSEM ***19*** *09:08:02.5±0.3, 12°.00N×44°.13E, h2km, mb4.8/24, Error ellipse: s-maj=9.8km s-min=7.8km az=164.0*
NEIC ***19*** *09:08:03.2±0.5, 11°.92N×43°.99E, h10km, mb4.8/16, Error ellipse: s-maj=9.8km s-min=7.9km az=154.0*
OMAN ***19*** *09:08:04.4±0.1, 11°.90N×44°.19E, h14km, Error ellipse: s-maj=48.7km s-min=16.3km az=310.0*
DSN ***19*** *09:08:10.9±1.2, 12°.66N×44°.32E, h14km, mb5.1, Error ellipse: s-maj=18.9km s-min=7.5km az=3.0*

ISC 19 09:08:03.6±0.4, 12°.02N±0°.04×43°.97E±0°.04, h10km, n257, σ1§58/266, **mb4.6**/66, **MS4.1**/41, **6C-20D, Western Arabian Peninsula**

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
OBO	**Obock**	**0.66**	**267**	eP		**Pg**	**09 08 14.6**	**-1.8**
MCAD	**Moucha**	**0.79**	**249**	eP		**Pg**	**09 08 16.4**	**-2.4**
ATA	**Atar**	**0.94**	**233**	eP		**Pg**	**09 08 19.0**	**-2.6**
ATA				eS		**Sg**	**09 08 31.9**	**-1.9**
TDD	**Tadjoura Ara**	**1.06**	**258**	eP		**Pg**	**09 08 21.4**	**-2.5**
ATD	**Arta Tunnel**	**1.20**	**246**	Pn		**Pb**	**09 08 22.6**	**-3.8**
	350nm,0.3s,baz=51,slow=14,SNR=103							
ATD				Sn		**Sb**	**09 08 40.3**	**-1.8**
	578nm,0.3s,baz=250,slow=22,SNR=7.8							
ATD	**Arta Tunnel**	**1.20**	**246**	eP		**Pb**	**09 08 23.6**	**-2.8**
ATD				eS		**Sg**	**09 08 41.7**	**-0.6**
ADEN	**Aden**	**1.24**	**53**	*i* P		Pn	09 08 21.6	-5.5
ADEN				*i* S		**Sb**	**09 08 38.7**	**-4.6**
ADEN				AML		AML	09 08 47.8	
	comp=E,25μm,0.4s							
SGH	**Sud-Ghoubbet**	**1.43**	**246**	eP		**Pn**	**09 08 27.1**	**-2.5**
GBR	**Grand-Bara**	**1.71**	**240**	eP		**Pn**	**09 08 31.8**	**-1.7**
GBR				eS		**Sg**	**09 08 57.7**	**-0.8**
UDYN	**Al 'Udayn**	**1.93**	**0**	⇓*i*P		Pn	09 08 32.8	-3.9
UDYN				*i* S		**Sn**	**09 09 00.7**	**-0.4**
UDYN				AML		AML	09 09 05.0	
	comp=E,11μm,0.6s							
BDHA	**Al Bayda'**	**2.49**	**39**	*i* P		**Pn**	**09 08 40.2**	**-4.2**
BDHA				*i* S		**Sn**	**09 09 16.2**	**+1.2**
BDHA				AML		AML	09 09 24.0	
	comp=E,10μm,0.5s							
DHBB	**Dhamar BB**	**2.57**	**9**	*i* P		**Pn**	**09 08 43.2**	**-2.3**
DHBB				*i* S		**Sn**	**09 09 19.6**	**+2.7**
DAMY	**Dhamar**	**2.57**	**9**	ePn		**Pn**	**09 08 43.4**	**-2.1**
DAMY				eSn		**Sn**	**09 09 18.7**	**+1.7**
DAMY	**Dhamar**	**2.57**	**9**	ePn		**Pn**	**09 08 43.4**	**-2.1**
DAMY				eSn		**Sn**	**09 09 18.7**	**+1.7**
SANA	**San'a**	**3.35**	**4**	*i* S		**Sn**	**09 09 37.9**	**+1.5**
HAJJ	**Hajjah**	**3.67**	**354**	*i* P		**Pn**	**09 08 57.7**	**-3.0**
HAJJ				*i* S		**Sn**	**09 09 45.6**	**+1.5**
HAJJ				AML		AML	09 10 01.5	
	comp=Z,8μm,0.6s							
FURI	**Furi**	**6.06**	**240**	eP		**Pn**	**09 09 35.5**	**+1.9**
	baz=67							
FURI				S		Sb	09 10 51.9	-10
FURI	**Furi**	**6.06**	**240**	P		Pb	09 09 42.4	-7.1
FURI				S		**Sg**	**09 11 17.0**	**-1.2**
KMBO	**Kilima Mbogo**	**14.67**	**207**	Pn		**Pn**	**09 11 30.0**	**-1.5**
	comp=Z,0.1nm,0.3s,baz=18,slow=16,SNR=6.0							
KMBO				Lg		Lg	09 15 45.2	
	comp=Z,0.3nm,0.3s,baz=115,slow=18,SNR=5.3							
KMBO				LR		LR	09 17 01.7	
	comp=Z,3μm,19.0s,baz=68,slow=37							
KMBO	**Kilima Mbogo**	**14.67**	**207**	eP		**Pn**	**09 11 30.6**	**-0.9**
KMBO				*e*			09 14 15.4	
KMBO	**Kilima Mbogo**	**14.67**	**207**	ePn		**Pn**	**09 11 30.6**	**-0.9**
KMBO				eSn		**Sn**	**09 14 15.4**	**+1.0**
KMBO	**Kilima Mbogo**	**14.67**	**207**	ePn		**Pn**	**09 11 30.6**	**-0.9**
KMBO				eSn		**Sn**	**09 14 15.4**	**+1.0**
KMBO	**Kilima Mbogo**	**14.67**	**207**	Pn		**Pn**	**09 11 32.5**	**+0.9**
	SNR=14							
KMBO	**Kilima Mbogo**	**14.67**	**207**	P		**Pn**	**09 11 32.5**	**+0.9**
	SNR=6.3							
ARQ	**Araqi**	**16.41**	**45**	P		**Pn**	**09 11 55.1**	**+1.0**
	SNR=7.6							
ARQ	**Araqi**	**16.41**	**45**	Pn		**Pn**	**09 11 55.1**	**+1.0**
	SNR=7.6							
ARQ	**Araqi**	**16.41**	**45**	P		**Pn**	**09 11 55.1**	**+1.0**
	SNR=7.6							
BSY	**Bisya**	**16.51**	**48**	Pn		**Pn**	**09 11 55.2**	**-0.3**
	SNR=12							
BSY	**Bisya**	**16.51**	**48**	P		**Pn**	**09 11 55.2**	**-0.3**
	SNR=12							
BSYO	**Bisya**	**16.54**	**48**	P		**Pn**	**09 11 55.2**	**-0.5**
	SNR=12							
FAQ	**Al Faqa, Dubai**	**16.77**	**39**	*i* P		**Pn**	**09 11 56.4**	**-2.3**
	SNR=9.6							
JMDO	**Jabal Madar**	**16.96**	**51**	Pn		**Pn**	**09 11 58.7**	**-2.5**
	SNR=6.3							
JMDO	**Jabal Madar**	**16.96**	**51**	Pn		**Pn**	**09 11 58.7**	**-2.5**
	SNR=6.3							
JMDO	**Jabal Madar**	**16.96**	**51**	P		**Pn**	**09 11 58.7**	**-2.5**
	SNR=6.3							
NAZ	**Nazwa, Dubai**	**16.99**	**39**	*i* P		**Pn**	**09 11 59.7**	**-1.8**
	SNR=11							
NAZ	**Nazwa, Dubai**	**16.99**	**39**	P		**Pn**	**09 12 02.5**	**+1.0**
	SNR=10							
NAZ	**Nazwa, Dubai**	**16.99**	**39**	Pn		**Pn**	**09 12 02.5**	**+1.0**
	SNR=10							
NAZ	**Nazwa, Dubai**	**16.99**	**39**	P		**Pn**	**09 12 02.5**	**+1.0**
	SNR=10							
ASHO	**Ashiyiah**	**17.02**	**41**	*i* P		**Pn**	**09 12 00.7**	**-1.2**
	SNR=9.2							
ASHO	**Ashiyiah**	**17.02**	**41**	P		**Pn**	**09 12 00.7**	**-1.2**
	SNR=9.2							
ASHO	**Ashiyiah**	**17.02**	**41**	Pn		**P**	**09 12 06.6**	**+2.9**
	SNR=6.6							
HATD	**Hatta, Dubai**	**17.17**	**40**	*i* P		**Pn**	**09 12 02.3**	**-1.4**
	SNR=10							
HATD	**Hatta, Dubai**	**17.17**	**40**	P		**Pn**	**09 12 02.3**	**-1.4**
	SNR=10							
UOSS	**Minazif**	**17.30**	**40**	ePn		**Pn**	**09 12 06.1**	**+0.8**
	comp=Z,2.8nm,1.1s							
UOSS	**Minazif**	**17.30**	**40**	ePn		**Pn**	**09 12 06.1**	**+0.8**
	comp=Z,2.8nm,1.1s							
SMDO	**Samad**	**17.33**	**49**	P		**Pn**	**09 12 04.8**	**-1.0**
	SNR=13							
SMDO	**Samad**	**17.33**	**49**	Pn		**Pn**	**09 12 04.8**	**-1.0**
	SNR=13							
SMDO	**Samad**	**17.33**	**49**	P		**Pn**	**09 12 04.8**	**-1.0**
	SNR=13							
BIDO	**Bidbid**	**17.66**	**48**	P		**Pn**	**09 12 09.9**	**0.0**
	SNR=8.9							
BIDO	**Bidbid**	**17.66**	**48**	Pn		**Pn**	**09 12 09.9**	**0.0**
	SNR=8.9							
BIDO	**Bidbid**	**17.66**	**48**	P		**Pn**	**09 12 09.9**	**0.0**
	SNR=8.9							
WSAR	**Wadi Sarin**	**17.86**	**49**	P		**Pn**	**09 12 10.9**	**-1.4**
	comp=Z,0.1nm,0.3s,baz=255,slow=15,SNR=7.1							
WSAR				LR		LR	09 19 39.2	
	comp=Z,963nm,20.5s,baz=252,slow=39							
BANOM	**Banah**	**18.07**	**38**	P		**Pn**	**09 12 13.0**	**-1.9**
BANOM	**Banah**	**18.07**	**38**	P		**Pn**	**09 12 13.0**	**-1.9**
EIL	**Elat**	**19.46**	**336**	P		**P**	**09 12 30.7**	**+0.2**
	comp=Z,0.2nm,0.3s,baz=155,slow=10.0,SNR=2.7							
EIL				Lg		Lg	09 18 11.6	
	comp=Z,0.2nm,0.3s,baz=45,slow=18,SNR=2.7							
EIL				LR		LR	09 18 38.6	
	comp=Z,749nm,20.6s,baz=158,slow=32							
ASF	**Jabal al Asfar**	**21.08**	**343**	P		**P**	**09 12 50.5**	**+2.3**
	comp=Z,3.8nm,0.8s,baz=149,slow=6.3,SNR=5.8							
ASF				Lg		Lg	09 19 04.9	
	comp=Z,1.2nm,0.3s,baz=196,slow=23,SNR=3.1							
MMAI	**Mount Meron Ar**	**22.32**	**341**	P		**P**	**09 13 04.2**	**+2.7**
	comp=Z,2.2nm,0.7s,baz=176,slow=5.9,SNR=7.1							
MMAI				LR		LR	09 20 56.8	
	comp=Z,531nm,19.3s,baz=190,slow=34							
GNI	**Garni**	**28.02**	**1**	P		**P**	**09 13 57.5**	**+2.4**
	comp=Z,4.0nm,0.4s,baz=159,slow=7.8,SNR=2.7							
GNI				Lg		Lg	09 23 06.8	
	comp=Z,3.1nm,0.4s,baz=230,slow=16,SNR=1.2							
GNI				LR		LR	09 26 30.6	
	comp=Z,536nm,20.6s,baz=170,slow=39							
GNI	**Garni**	**28.02**	**1**	P		**P**	**09 13 57.2**	**+2.1**
GNI	**Garni**	**28.02**	**1**	P		**P**	**09 13 57.2**	**+2.1**
GEYT	**Ailbeck**	**28.73**	**24**	P		**P**	**09 14 01.7**	**+0.4**
	comp=Z,1.3nm,0.3s,baz=229,slow=13,SNR=3.5							
GEYT				LR		LR	09 27 15.4	
	comp=Z,1μm,18.1s,baz=200,slow=40							
IDI	**Anoyia**	**28.90**	**326**	LR		LR	09 25 46.2	
	comp=Z,106nm,18.5s,baz=107,slow=37							
BR131	**Keskin Array S**	**29.07**	**343**	eP		**P**	**09 14 05.2**	**+0.9**
BR131	**Keskin Array S**	**29.07**	**343**	eP		**P**	**09 14 05.2**	**+0.9**
BRTR	**Keskin Array B**	**29.07**	**343**	P		**P**	**09 14 05.1**	**+0.8**
	comp=Z,4.7nm,1.1s,baz=146,slow=9.0,SNR=15							
BRTR				LR		LR	09 24 58.6	
	comp=Z,385nm,19.6s,baz=142,slow=35							
BRTR	**Keskin Array B**	**29.07**	**343**	P		**P**	**09 14 05.1**	**+0.8**
BRTR				pmax		pmax		
	comp=Z,4.0nm,1.0s							
BRTR				MLR		MLR		
	comp=Z,385nm,19.6s							
BR231	**Keskin MP Arra**	**29.42**	**342**	eP		**P**	**09 14 06.3**	**-1.2**
BR231	**Keskin MP Arra**	**29.42**	**342**	eP		**P**	**09 14 06.3**	**-1.2**
NEY	**Neytrino**	**31.13**	**358**	eP		**P**	**09 14 23.4**	**+0.8**
NEY				pmax		pmax		
	comp=Z,12nm,2.0s							
NEY	**Neytrino**	**31.13**	**358**	eP		**P**	**09 14 23.4**	**

	comp=Z,280nm,9.0s							
KSH					LR	LR		
	comp=Z,380nm,14.7s							
ABKAR	**Akbulak array**	**39.41**	**17**	*e*P		**P**	**09 15 33.8**	**+0.2**
	comp=Z,0.7nm,0.5s							
ABKAR	**Akbulak array**	**39.41**	**17**	*e*P		**P**	**09 15 33.8**	**+0.2**
	comp=Z,0.7nm,0.5s							
AKTO	**Aktyubinsk**	**40.00**	**14**	LR		LR	09 35 27.5	
	comp=Z,713nm,18.0s,baz=197,slow=41							
EKS2	**Erkin-Say**	**40.01**	**35**	*e*P		**P**	**09 15 40.0**	**+1.1**
EKS2					pmax	pmax		
	comp=Z,20nm,1.5s							
EKS2	**Erkin-Say**	**40.01**	**35**	*e*P		**P**	**09 15 40.0**	**+1.1**
	comp=Z,20nm,1.5s							
EKS2	**Erkin-Say**	**40.01**	**35**	*e*P		**P**	**09 15 40.0**	**+1.1**
	comp=Z,20nm,1.5s							
PKSM	**Moragy**	**40.27**	**333**	*j*P		**P**	**09 15 41.3**	**+0.6**
PKSM	**Moragy**	**40.27**	**333**	*j*P		**P**	**09 15 41.3**	**+0.6**
PKSM	**Moragy**	**40.27**	**333**	*j*P		**P**	**09 15 41.3**	**+0.6**
AAK	**Ala-Archa**	**40.40**	**35**	*c i*P		**P**	**09 15 43.3**	**+1.2**
AAK					pmax	pmax		
	comp=Z,47nm,2.4s							
AAK	**Ala-Archa**	**40.40**	**35**	*e*P		**P**	**09 15 43.4**	**+1.3**
	comp=Z,45nm,1.7s							
AAK	**Ala-Archa**	**40.40**	**35**	*e*P		**P**	**09 15 43.4**	**+1.3**
	comp=Z,45nm,1.7s							
AAK	**Ala-Archa**	**40.40**	**35**	P		**P**	**09 15 43.9**	**+1.8**
	SNR=14							
AAK	**Ala-Archa**	**40.40**	**35**	P		**P**	**09 15 43.9**	**+1.8**
	SNR=14							
KIEV	**Kiev**	**40.41**	**346**	*e*P		**P**	**09 15 42.7**	**+0.9**
KIEV					pmax	pmax		
	comp=Z,54nm,2.0s							
KIEV	**Kiev**	**40.41**	**346**	*e*P		**P**	**09 15 42.7**	**+0.9**
	comp=Z,54nm,2.0s							
KIEV	**Kiev**	**40.41**	**346**	*e*P		**P**	**09 15 42.7**	**+0.9**
	comp=Z,54nm,2.0s							
FRU	**Bishkek**	**40.59**	**35**	*e*P		**P**	**09 15 43.5**	**-0.1**
FRU					pmax	pmax		
	comp=Z,100nm,2.3s							
FRU					MLR	MLR		
	comp=E,500nm,14.0s							
LPSR	**Galich'ya Gora**	**40.67**	**355**	*e*P		**P**	**09 15 45.9**	**+1.9**
LPSR					pmax	pmax		
	comp=Z,8.0nm,0.7s							
UZH	**Uzhgorod**	**40.71**	**338**	*e*P		**P**	**09 15 48.4**	**+4.1**
UZH				*e*			09 15 58.0	
KOLS	**Kolonicke sedl**	**40.97**	**338**	*e*P		**P**	**09 15 48.6**	**+2.1**
KOLS					pmax	pmax		
	comp=Z,19nm,1.6s							
KOLS	**Kolonicke sedl**	**40.97**	**338**	*e*P		**P**	**09 15 48.6**	**+2.1**
	comp=Z,19nm,1.6s							
KOLS	**Kolonicke sedl**	**40.97**	**338**	*e*P		**P**	**09 15 48.6**	**+2.1**
PSZ	**Piszkesteto**	**41.06**	**335**	*e*P		**P**	**09 15 48.2**	**+0.9**
PSZ					pmax	pmax		
	comp=Z,28nm,1.5s							
PSZ	**Piszkesteto**	**41.06**	**335**	*e*P		**P**	**09 15 48.2**	**+0.9**
	comp=Z,28nm,1.5s							
PSZ	**Piszkesteto**	**41.06**	**335**	*e*P		**P**	**09 15 48.2**	**+0.9**
	comp=Z,28nm,1.5s							
TKM2	**Tokmak 2**	**41.21**	**36**	*e*P		**P**	**09 15 49.5**	**+0.7**
TKM2					pmax	pmax		
	comp=Z,11nm,0.6s							
TKM2	**Tokmak 2**	**41.21**	**36**	*e*P		**P**	**09 15 49.5**	**+0.7**
	comp=Z,11nm,0.6s							
TKM2	**Tokmak 2**	**41.21**	**36**	*e*P		**P**	**09 15 49.5**	**+0.7**
	comp=Z,11nm,0.6s							
TOA0	**Torodi Ar. Sit**	**41.24**	**276**	*e*P		**P**	**09 15 49.4**	**+0.2**
TOA0	**Torodi Ar. Sit**	**41.24**	**276**	*e*P		**P**	**09 15 49.4**	**+0.2**
TORD	**Torodi Ar. Bea**	**41.24**	**276**	P		**P**	**09 15 49.9**	**+0.7**
	comp=Z,4.3nm,1.1s,baz=98,slow=6.3,SNR=22							
TORD					LR	LR	09 33 36.5	
	comp=Z,148nm,18.4s,baz=95,slow=37							
STHS	**Stebnicka Huta**	**41.75**	**338**	*e*P		**P**	**09 15 54.7**	**+1.8**
STHS					pmax	pmax		
	comp=Z,2.0nm,0.8s							
STHS	**Stebnicka Huta**	**41.75**	**338**	*e*P		**P**	**09 15 54.7**	**+1.8**
	comp=Z,2.2nm,0.8s							
STHS	**Stebnicka Huta**	**41.75**	**338**	*e*P		**P**	**09 15 54.7**	**+1.8**
VYHS	**Vyhne**	**41.95**	**335**	*e*P		**P**	**09 15 55.5**	**+0.9**
VYHS					pmax	pmax		
	comp=Z,86nm,3.2s							
VYHS	**Vyhne**	**41.95**	**335**	*e*P		**P**	**09 15 55.5**	**+0.9**
	comp=Z,86nm,3.2s							
VYHS	**Vyhne**	**41.95**	**335**	*e*P		**P**	**09 15 55.5**	**+0.9**
OTUK	**Ortayu**	**43.17**	**28**	P		**P**	**09 16 05.5**	**+1.0**
OTUK					pmax	pmax		
	comp=Z,9.0nm,2.0s							
OBN	**Obninsk**	**43.38**	**354**	P		**P**	**09 16 06.6**	**+0.6**
	comp=Z,27nm,0.5s,baz=164,slow=11,SNR=5.2							
OBN					LR	LR	09 37 06.4	
	comp=Z,210nm,18.5s,baz=156,slow=40							
OBN	**Obninsk**	**43.38**	**354**	*j*P		**P**	**09 16 06.5**	**+0.5**
OBN				*e*			09 17 50.0	
OBN				*e*	PPP	PPP	09 18 22.2	
OBN				*i*	S	**S**	**09 22 27.8**	**-6.0**
OBN					pmax	pmax		
	comp=Z,11nm,1.2s							
OBN					MLR	MLR		
	comp=Z,187nm,15.0s							
MORC	**Moravsky Berou**	**43.48**	**335**	*e*P		**P**	**09 16 07.6**	**+0.6**
MORC					pmax	pmax		
	comp=Z,128nm,1.9s							
MORC	**Moravsky Berou**	**43.48**	**335**	*e*P		**P**	**09 16 07.6**	**+0.6**
	comp=Z,128nm,1.9s							
MORC	**Moravsky Berou**	**43.48**	**335**	*e*P		**P**	**09 16 07.6**	**+0.6**
	comp=Z,128nm,1.9s							
VRAC	**Vranov**	**43.52**	**334**	P		**P**	**09 16 07.8**	**+0.5**
	comp=Z,2.4nm,0.6s,baz=142,slow=9.8,SNR=5.7							
VRAC	**Vranov**	**43.52**	**334**	P		**P**	**09 16 07.8**	**+0.5**
VRAC					pmax	pmax		
	comp=Z,1.0nm,0.3s							
MOS	**Moscow**	**43.90**	**355**	*e*P		**P**	**09 16 14.7**	**+4.5**
MOS				*e*			09 17 49.3	
MOS					pmax	pmax		
	comp=Z,53nm,0.9s							
BOSA	**Boshof**	**44.27**	**204**	LR		LR	09 35 35.1	
	comp=Z,450nm,21.2s,baz=30,slow=37							
DPC	**Dobruska-Polom**	**44.43**	**335**	*e*P		**P**	**09 16 15.1**	**+0.5**
DPC	**Dobruska-Polom**	**44.43**	**335**	*e*P		**P**	**09 16 15.1**	**+0.5**
GEA0	**GERESS Array S**	**44.47**	**332**	*e*P		**P**	**09 16 14.0**	**-1.0**
GEA0	**GERESS Array S**	**44.47**	**332**	*e*P		**P**	**09 16 14.0**	**-1.0**
GEC2	**GERESS Array S**	**44.47**	**332**	*e*P		**P**	**09 16 15.9**	**+0.8**
GEC2					pmax	pmax		
	comp=Z,32nm,1.7s							
GEC2	**GERESS Array S**	**44.47**	**332**	*e*P		**P**	**09 16 15.9**	**+0.8**
	comp=Z,32nm,1.7s							
GEC2	**GERESS Array S**	**44.47**	**332**	*e*P		**P**	**09 16 15.9**	**+0.8**
	comp=Z,32nm,1.7s							
GERES	**GERESS Array B**	**44.47**	**332**	P		**P**	**09 16 14.8**	**-0.3**
	comp=Z,2.4nm,0.9s,baz=126,slow=6.8,SNR=16							
GERES					LR	LR	09 34 49.1	
	comp=Z,64nm,21.2s,baz=100,slow=36							
KHC	**Kasperske Hory**	**44.73**	**332**	*e*P		**P**	**09 16 17.0**	**-0.1**
KHC	**Kasperske Hory**	**44.73**	**332**	*e*P		**P**	**09 16 17.0**	**-0.1**
KHC					pmax	pmax		
	comp=Z,6.0nm,1.5s							
KHC	**Kasperske Hory**	**44.73**	**332**	*e*P		**P**	**09 16 17.0**	**-0.1**
	comp=Z,6.3nm,1.5s							
KHC	**Kasperske Hory**	**44.73**	**332**	*e*P		**P**	**09 16 17.0**	**-0.1**
	comp=Z,6.3nm,1.5s							
PRU	**Pruhonice**	**44.92**	**333**	*e*P		**P**	**09 16 18.6**	**+0.1**
PRU	**Pruhonice**	**44.92**	**333**	*e*P		**P**	**09 16 18.6**	**+0.1**
ZRNK	**Zerenda**	**45.48**	**21**	*e*P		**P**	**09 16 23.5**	**+0.6**
ZRNK					pmax	pmax		
	comp=Z,31nm,1.8s							
ZRNK	**Zerenda**	**45.48**	**21**	*e*P		**P**	**09 16 23.5**	**+0.6**
	comp=Z,31nm,1.8s							
ZRNK	**Zerenda**	**45.48**	**21**	*e*P		**P**	**09 16 23.5**	**+0.6**
	comp=Z,31nm,1.8s							
ARU	**Arti**	**45.73**	**11**	P		**P**	**09 16 25.2**	**+0.4**
	comp=Z,2.4nm,0.2s,baz=260,slow=6.1,SNR=4.6							
ARU					LR	LR	09 39 06.4	
	comp=Z,271nm,18.9s,baz=210,slow=41							
ARU	**Arti**	**45.73**	**11**	*d i*P		**P**	**09 16 25.2**	**+0.4**
ARU					PP	**PP**	**09 18 07.9**	**-4.0**
ARU					S	**S**	**09 23 07.5**	**-0.5**
ARU					pmax	pmax		
	comp=Z,10.0nm,1.7s							
ARU	**Arti**	**45.73**	**11**	P		**P**	**09 16 25.2**	**+0.4**
ARU					S	**S**	**09 23 07.5**	**-0.5**
BRG	**Berggiesshubel**	**45.83**	**334**	*e*P		**P**	**09 16 26.1**	**+0.4**
	comp=Z,9.7nm,1.3s							
BRG	**Berggiesshubel**	**45.83**	**334**	*e*P		**P**	**09 16 26.1**	**+0.4**
BRG					pmax	pmax		
	comp=Z,10.0nm,1.3s							
BRVK	**Borovoye**	**46.03**	**22**	*e*P		**P**	**09 16 28.0**	**+0.8**
BRVK					pmax	pmax		
	comp=Z,56nm,2.2s							
BRVK	**Borovoye**	**46.03**	**22**	*e*P		**P**	**09 16 28.0**	**+0.8**
	comp=Z,56nm,2.2s							
BRVK	**Borovoye**	**46.03**	**22**	*e*P		**P**	**09 16 28.0**	**+0.8**
	comp=Z,56nm,2.2s							
BRVK	**Borovoye**	**46.03**	**22**	P		**P**	**09 16 28.3**	**+1.1**
	SNR=6.2							
BRVK	**Borovoye**	**46.03**	**22**	P		**P**	**09 16 28.3**	**+1.1**
	SNR=6.2							
CLL	**Collm**	**46.55**	**334**	*e*P		**P**	**09 16 30.0**	**-1.4**
CLL				*e*			09 16 39.0	
CLL				*e*	S	S	09 23 30.0	+10
CLL					LmV		09 40 00.0	
	comp=Z,100nm,18.3s							
CLL	**Collm**	**46.55**	**334**	*e*P		**P**	**09 16 30.0**	**-1.4**
CLL				*e*			09 16 39.0	
CLL				*e*	S	S	09 23 30.0	+10
MK01	**Makanchi Array**	**47.33**	**35**	*e*P		**P**	**09 16 36.8**	**-0.8**
MK01	**Makanchi Array**	**47.33**	**35**	*e*P		**P**	**09 16 36.8**	**-0.8**
MKAR	**Makanchi Array**	**47.33**	**35**	P		**P**	**09 16 36.9**	**-0.8**
	comp=Z,6.4nm,1.0s,baz=231,slow=7.7,SNR=14							
MKAR					LR	LR	09 39 26.5	
	comp=Z,152nm,22.0s,baz=240,slow=40							
KURK	**Kurchatov**	**47.83**	**29**	*e*P		**P**	**09 16 41.9**	**+0.6**
KURK					pmax	pmax		
	comp=Z,34nm,1.6s							
KURK	**Kurchatov**	**47.83**	**29**	*e*P		**P**	**09 16 41.8**	**+0.5**
	comp=Z,34nm,1.6s							
KURK	**Kurchatov**	**47.83**	**29**	*e*P		**P**	**09 16 41.9**	**+0.5**
	comp=Z,34nm,1.6s							
KURK	**Kurchatov**	**47.83**	**29**	P		**P**	**09 16 40.9**	**-0.4**
	SNR=7.3							
KURK	**Kurchatov**	**47.83**	**29**	P		**P**	**09 16 40.9**	**-0.4**
	SNR=7.3							
VSU	**Vasula**	**48.15**	**348**	*e*P		**P**	**09 16 43.2**	**-0.4**
VSU					pmax	pmax		
	comp=Z,15nm,1.0s							
DBIC	**Dimbokro**	**48.42**	**268**	LR		LR	09 35 40.3	
	comp=Z,91nm,19.9s,baz=64,slow=34							
WMQ	**Urumqi**	**49.12**	**41**	*e*P		**P**	**09 16 51.9**	**+0.4**
WMQ					pP	sP	09 16 56.3	+0.4
WMQ					sP	pP	09 16 59.8	+5.1
WMQ					PP	**PP**	**09 18 44.8**	**-0.4**
WMQ					S	**S**	**09 23 57.9**	**+1.1**
WMQ					pmax	pmax		
	comp=Z,4.0nm,0.8s							
WMQ					pmax	pmax		
	comp=Z,52nm,3.6s							
WMQ					LR	LR		
	comp=Z,100nm,29.0s							
WMQ					LR	LR		
	comp=Z,150nm,24.2s							
WMQ					LR	LR		
	comp=Z,120nm,26.6s							
BCLA	**Clavier**	**49.63**	**328**	P		**P**	**09 16 56.2**	**+1.0**
ES19	**SONSECA Array**	**50.35**	**312**	*e*P		**P**	**09 17 02.3**	**+1.3**
ES19	**SONSECA Array**	**50.35**	**312**	*e*P		**P**	**09 17 02.3**	**+1.3**
ESDC	**Sonseca Array**	**50.39**	**312**	P		**P**	**09 17 02.2**	**+1.0**
	comp=Z,0.2nm,0.3s,baz=100,slow=5.9,SNR=8.7							
ESDC					PP	**PP**	**09 18 59.7**	**+2.9**
	comp=Z,0.1nm,0.3s,baz=106,slow=8.3,SNR=4.2							
FINES	**FINESS Array B**	**51.03**	**349**	P		**P**	**09 17 05.6**	**0.0**
	comp=Z,1.0nm,0.6s,baz=163,slow=9.8,SNR=4.9							
FINES					LR	LR	09 39 59.2	
	comp=Z,172nm,21.4s,baz=164,slow=38							
FINES	**FINESS Array B**	**51.03**	**349**	P		**P**	**09 17 05.6**	**0.0**
FINES					pmax	pmax		
	comp=Z,2.0nm,0.9s							
FINES					MLR	MLR		
	comp=Z,172nm,21.4s							
FIA1	**FINESS Array S**	**51.03**	**349**	*e*P		**P**	**09 17 05.7**	**+0.1**
FIA1	**FINESS Array S**	**51.03**	**349**	*e*P		**P**	**09 17 05.7**	**+0.1**
NVS	**Novosibirsk**	**52.63**	**27**	*e*P		**P**	**09 17 17.9**	**+0.2**
NVS					pmax	pmax		
	comp=N,54nm,2.3s							
NVS					pmax	pmax		
	comp=Z,52nm,2.3s							
ZAA0	**Zalesovo Array**	**52.82**	**29**	*e*P		**P**	**09 17 18.3**	**-0.8**
ZAA0	**Zalesovo Array**	**52.82**	**29**	*e*P		**P**	**09 17 18.3**	**-0.8**
ZALV	**Zalesovo Beam**	**52.82**	**29**	P		**P**	**09 17 17.7**	**-1.4**
	comp=Z,3.6nm,0.8s,baz=248,slow=7.8,SNR=10.0							
ZALV					LR	LR	09 43 12.0	
	comp=Z,776nm,19.9s,baz=248,slow=40							
CMAR	**Chiang Mai Arr**	**53.27**	**76**	P		**P**	**09 17 22.1**	**-0.9**
	comp=Z,2.1nm,0.8s,baz=273,slow=9.1,SNR=12							
CMAR					LR	LR	09 37 24.8	
	comp=Z,29nm,21.2s,baz=270,slow=33							
CM01	**Chiang Mai Arr**	**53.28**	**76**	*e*P		**P**	**09 17 22.5**	**-0.6**
CM01	**Chiang Mai Arr**	**53.28**	**76**	*e*P		**P**	**09 17 22.5**	**-0.6**
NOA	**NORSAR Array B**	**54.46**	**341**	P		**P**	**09 17 30.3**	**-0.8**
	comp=Z,2.3nm,1.1s,baz=130,slow=8.2,SNR=2.4							
NOA					LR	LR	09 42 07.6	
	comp=Z,152nm,18.9s,baz=125,slow=38							
PSI	**Prapat**	**55.17**	**95**	LR		LR	09 35 54.5	
	comp=Z,153nm,21.9s,baz=210,slow=30							
GTA	**Gaotai**	**56.20**	**50**	*e*P		**P**	**09 17 43.8**	**-0.3**
GTA					pP	sP	09 17 48.4	-0.1
GTA					sP	pP	09 17 50.9	+3.6
GTA					S	**S**	**09 25 30.8**	**-3.0**
GTA					pmax	pmax		
	comp=Z,4.0nm,1.6s							
GTA					pmax	pmax		
	comp=Z,88nm,4.7s							
GTA					LR	LR		
	comp=Z,160nm,16.2s							
GTA					LR	LR		
	comp=Z,220nm,19.0s							
GTA					LR	LR		
	comp=Z,200nm,21.9s							
KMI	**Kunming**	**56.83**	**68**	P		**P**	**09 17 52.6**	**+3.7**
KMI					pP	sP	09 17 56.3	+2.9
KMI					S	**S**	**09 25 41.4**	**-1.4**
KMI					pmax	pmax		
	comp=Z,17nm,1.1s							
KMI					pmax	pmax		
	comp=Z,57nm,3.1s							
KMI					LR	LR		
	comp=Z,140nm,16.4s							
KMI					LR	LR		
	comp=Z,130nm,18.8s							
KMI					LR	LR		
	comp=Z,120nm,18.0s							
CD2	**Chengdu**	**58.07**	**61**	P		**P**	**09 17 56.3**	**-1.1**
CD2					pmax	pmax		
	comp=Z,2.0nm,0.5s							
ARCES	**ARCESS Array B**	**58.66**	**353**	LR		LR	09 44 02.6	
	comp=Z,100nm,20.2s,baz=162,slow=37							
LZH	**Lanzhou**	**58.73**	**55**	*e*P		**P**	**09 18 05.5**	**+3.4**
LZH					pP	sP	09 18 09.5	+3.0
LZH					sP	pP	09 18 12.1	+6.8
LZH					pmax	pmax		
	comp=Z,13nm,1.0s							
GYA	**Guiyang**	**60.40**	**66**	*e*P		**P**	**09 18 15.3**	**+1.6**
GYA					pmax	pmax		
	comp=Z,10.0nm,1.0s							
SONM	**Songino Array**	**62.74**	**42**	P		**P**	**09 18 29.4**	**+0.3**
	comp=Z,2.7nm,0.8s,baz=274,slow=7.5,SNR=8.6							
SONM					LR	LR	09 49 13.8	
	comp=Z,178nm,20.4s,baz=260,slow=39							
SONM	**Songino Array**	**62.74**	**42**	P		**P**	**09 18 29.4**	**+0.3**
SONM					pmax	pmax		
	comp=Z,4.0nm,1.0s							
SONM					MLR	MLR		
	comp=Z,178nm,20.4s							
SONA1	**Songino Array**	**62.75**	**42**	*e*P		**P**	**09 18 29.1**	**-0.1**
SONA1	**Songino Array**	**62.75**	**42**	*e*P		**P**	**09 18 29.1**	**-0.1**
ULN	**Ulaanbaatar**	**63.18**	**42**	*e*P		**P**	**09 18 33.0**	**+0.9**
ULN					pmax	pmax		
	comp=Z,3.0nm,1.0s							
NRIK	**Noril'sk**	**63.58**	**16**	P		**P**	**09 18 34.5**	**+0.3**
	comp=Z,0.8nm,0.3s,baz=211,slow=5.7,SNR=5.6							
NRIK					LR	LR	09 51 03.4	
	comp=Z,484nm,18.6s,baz=276,slow=41							
HHC	**Hu-ho-hao-te**	**65.31**	**51**	*e*P		**P**	**09 18 47.8**	**+1.6**
HHC					pP	sP	09 18 51.9	+1.3
HHC					S	**S**	**09 27 31.8**	**+1.5**
HHC					sS	sS	09 27 40.6	+5.0
HHC					pmax	pmax		
	comp=Z,17nm,0.9s							
HHC					pmax	pmax		
	comp=Z,170nm,5.0s							
HHC					LR	LR		
	comp=Z,140nm,16.5s							
HHC					LR	LR		
	comp=Z,210nm,15.5s							
HHC					LR	LR		
	comp=Z,110nm,16.5s							
BJI	**Beijing**	**68.77**	**52**	P		**P**	**09 19 08.4**	**+0.4**
BJI					pmax	pmax		
	comp=Z,11nm,1.9s							
NJ2	**Nanjing**	**70.98**	**60**	*e*P		**P**	**09 19 22.9**	**+1.1**
NJ2					pmax	pmax		
	comp=Z,20nm,0.6s							
CN2	**Changchun**	**75.66**	**48**	*e*P		**P**	**09 19 50.3**	**+1.1**
SUMG	**Summit**	**76.34**	**342**	*e*P		**P**	**09 19 55.4**	**+2.4**
SUMG					pmax	pmax		
	comp=Z,6.0nm,0.9s							
SUMG	**Summit**	**76.34**	**342**	*e*P		**P**	**09 19 55.4**	**+2.4**
	comp=Z,5.7nm,0.9s							
SUMG	**Summit**	**76.34**	**342**	*e*P		**P**	**09 19 55.4**	**+2.4**
	comp=Z,5.7nm,0.9s							
TIXI	**Tiksi**	**77.06**	**19**	LR		LR	09 59 41.1	
	comp=Z,394nm,18.2s,baz=260,slow=40							
TIXI	**Tiksi**	**77.06**	**19**	*c e*P		**P**	**09 19 56.1**	**-0.5**
TIXI					pmax	pmax		
	comp=Z,13nm,2.5s							
TIXI	**Tiksi**	**77.06**	**19**	*e*P		**P**	**09 19 56.8**	**+0.2**
	comp=Z,5.0nm,0.6s							
TIXI	**Tiksi**	**77.06**	**19**	*e*P		**P**	**09 19 56.8**	**+0.2**
	comp=Z,5.0nm,0.6s							
YAK	**Yakutsk**	**77.47**	**29**	LR		LR	09 58 41.8	
	comp=Z,352nm,18.8s,baz=274,slow=39							
YAK	**Yakutsk**	**77.47**	**29**	*e*P		**P**	**09 19 58.9**	**-0.1**
YAK					pmax	pmax		
	comp=Z,5.0nm,0.7s							
KLR	**Kul'dur**	**79.57**	**42**	LR		LR	09 58 57.1	
	comp=Z,162nm,21.6s,baz=276,slow=38							
KLR	**Kul'dur**	**79.57**	**42**	*e*P		**P**	**09 20 09.5**	**-1.4**
USRK	**Ussuriysk Ar.**	**80.32**	**47**	LR		LR	10 00 38.7	
	comp=Z,80nm,21.7s,baz=279,slow=39							
MAW	**Mawson**	**80.59**	**173**	LR		LR	09 51 01.7	
	comp=Z,192nm,19.3s,baz=20,slow=32							
JNU	**Nakatsue**	**80.98**	**58**	LR		LR	09 58 23.8	
	comp=Z,30nm,18.3s,baz=290,slow=37							
MJAR	**Matsushiro Arr**	**86.31**	**54**	LR		LR	10 06 42.7	
	comp=Z,26nm,18.1s,baz=345,slow=41							
YSS	**Yuzh-Sakhalins**	**87.23**	**43**	*e*P		**P**	**09 20 48.9**	**-1.5**
YSS					pmax	pmax		
	comp=Z,12nm,1.5s							
BILL	**Bilibino**	**90.28**	**19**	*j e*P		**P**	**09 21 05.6**	**+1.2**
BILL				*e*			09 24 37.0	
BILL				*e*	PPP	PPP	09 26 38.3	
BILL				*i*	S	**SKSac**	**09 31 35.9**	**+0.4**
BILL					pmax	pmax		
	comp=Z,6.0nm,1.7s							
PETK	**Petropavlovsk-**	**94.14**	**34**	LR		LR	10 08 46.8	
	comp=Z,205nm,19.0s,baz=296,slow=39							
WRA	**Warramunga Arr**	**94.37**	**109**	P		**P**	**09 21 22.1**	**-2.2**
	comp=Z,0.8nm,1.0s,baz=291,slow=3.7,SNR=4.7							
WRAB	**Tennant Creek**	**94.38**	**109**	*e*P		**P**	**09 21 25.1**	**+0.8**
WRAB					pmax	pmax		
	comp=Z,3.0nm,0.9s							
WRAB	**Tennant Creek**	**94.38**	**109**	*e*P		**P**	**09 21 25.1**	**+0.8**
	comp=Z,2.6nm,0.9s							
WRAB	**Tennant Creek**	**94.38**	**109**	*e*P		**P**	**09 21 25.1**	**+0.8**
	comp=Z,2.6nm,0.9s							
ASAR	**Alice Springs**	**94.68**	**113**	P		**P**	**09 21 25.7**	**0.0**
	comp=Z,0.7nm,0.9s,baz=274,slow=3.0,SNR=5.1							
ASAR					LR	LR	10 01 25.0	
	comp=Z,51nm,18.1s,baz=252,slow=34							
YKA	**Yellowknife Ar**	**103.86**	**350**	PP		PP	09 26 21.7	-0.4
	comp=Z,0.3nm,0.8s,baz=20,slow=7.8,SNR=4.3							

DHMR 19 09:16:12.9±1.3, 12°13.N×44°04.E, h2km±14km, ML3.8, Western Arabian Peninsula

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
ADEN	**Aden**	**1.12**	**55**	*i* P		Pg	09 16 34.2	-0.3
ADEN				*i* S		Sb	09 16 49.7	-0.4
ADEN				AML		AML	09 16 58.4	
	comp=E,3μm,0.3s							
UDYN	**Al 'Udayn**	**1.83**	**358**	*i* P		Pn	09 16 46.3	+0.8
UDYN				*i* S		Sg	09 17 11.4	-0.3
BDHA	**Al Bayda'**	**2.36**	**39**	*i* P		Pn	09 16 53.8	+0.9
BDHA				*i* S		Sg	09 17 27.7	-1.2
BDHA				AML		AML	09 17 36.0	
	comp=E,747nm,0.5s							
DHBB	**Dhamar BB**	**2.45**	**8**	*i* P		Pb	09 16 56.2	-1.7
DHBB				*i* S		Sb	09 17 30.1	+1.5

DHMR 19 09:17:49.3±1.4, 12°06N×44°15E, h8km±17km, ML4.2, Western Arabian Peninsula

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
ADEN	**Aden**	**1.08**	**49**	*i* P		Pg	09 18 09.2	-0.9
ADEN				*i* S		Sb	09 18 25.2	+0.5
ADEN				AML		AML	09 18 33.9	
	comp=E,8μm,0.4s							
UDYN	**Al 'Udayn**	**1.91**	**355**	*i* P		Pb	09 18 24.1	-0.4
UDYN				*i* S		Sb	09 18 49.0	+0.5
BDHA	**Al Bayda'**	**2.35**	**36**	*i* P		Pn	09 18 29.8	+1.2
BDHA				*i* S		Sb	09 19 02.8	+1.3
BDHA				AML		AML	09 19 13.9	
	comp=E,1μm,0.5s							
DHBB	**Dhamar BB**	**2.51**	**5**	*i* P		Pb	09 18 33.0	-1.9
DHBB				*i* S		Sb	09 19 07.3	+1.3
HAJJ	**Hajjah**	**3.66**	**352**	*i* S		Sb	09 19 35.7	-3.4

DHMR 19 09:20:51.6±1.7, 12°08N×43°94E, h13km±20km, ML3.9, Western Arabian Peninsula

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
ADEN	**Aden**	**1.23**	**56**	*i* P		Pb	09 21 14.7	-0.1
ADEN				*i* S		Sg	09

JMA 19 09:28:02.6±0.2, 37.81N×142.02E, h31km±3km, M3.5, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**0.83**	**321**	P	Pn	09 28 18.2	0.0
JIO				S	Sn	09 28 28.8	-0.6
JMM	**Marumori**	**0.97**	**274**	P	Pn	09 28 20.1	0.0
JMM				S	Sn	09 28 32.9	0.0
JFK	**Kawauchi**	**1.01**	**244**	P	Pn	09 28 20.5	-0.2
JFK				S	Sn	09 28 33.2	-0.7
JOU	**Okura**	**1.21**	**298**	P	Pb	09 28 24.1	-0.8
JOU				*e*S	Sb	09 28 39.5	-0.6
JMK	**Ichinoseki**	**1.30**	**331**	P	Pn	09 28 25.0	+0.4
JMK				*e*S	Sn	09 28 41.1	+0.1
JFT	**Otama**	**1.37**	**258**	*e*S	Sb	09 28 43.8	-0.9
JYS	**Shirataka**	**1.60**	**285**	P	Pb	09 28 30.2	-1.3
JYK	**Kaneyama**	**1.71**	**311**	P	Pn	09 28 31.5	+1.2
JOM	**Ohasama**	**1.76**	**341**	P	Pn	09 28 32.0	+1.1
JFY	**Yanaizu**	**1.88**	**258**	P	Pb	09 28 35.8	-0.5

*ISK **19** 09:29:48.6, 40.27N×29.13E, h9km, ML2.3*
*CSEM **19** 09:29:49.2±0.1, 40.28N×29.12E, h5km, ML2.3, Error ellipse: s-maj=2.5km s-min=2.2km az=143.0*
*DDA **19** 09:29:49.2, 40.28N×29.13E, h7km, Md2.8*
ISC 19 09:29:49.2±0.8, 40.28N±0.02×29.13E±0.02, h10km±5km, n54, σ0°45/68, Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ULDT	**Uludag**	**0.14**	**179**	*i* P	**Pg**	**09 29 52.0**	**-0.5**
ULDT				*i* S	**Sg**	**09 29 55.2**	**+0.3**
ULDT	**Uludag**	**0.14**	**179**	P	**Pg**	**09 29 52.0**	**-0.5**
ULDT				S	**Sg**	**09 29 55.2**	**+0.3**
GEMT	**Gemlik**	**0.16**	**15**	PG	**Pg**	**09 29 52.8**	**0.0**
GEMT				SG	**Sg**	**09 29 55.8**	**+0.5**
GEMT	**Gemlik**	**0.16**	**15**	*i* Pg	**Pg**	**09 29 52.8**	**0.0**
GEMT				*i* Sg	**Sg**	**09 29 55.8**	**+0.5**
MDNY	**Mudanya-Bursa**	**0.21**	**295**	*e*PG	**Pg**	**09 29 53.4**	**-0.2**
MDNY	**Mudanya-Bursa**	**0.21**	**295**	*e*Pg	**Pg**	**09 29 53.4**	**-0.2**
IZI	**Iznik**	**0.27**	**78**	*e*PG	**Pg**	**09 29 54.2**	**-0.5**
IZI	**Iznik**	**0.27**	**78**	*e*Pg	**Pg**	**09 29 54.2**	**-0.5**
ORLT	**Orhaneli**	**0.30**	**218**	*e*PG	**Pg**	**09 29 55.2**	**+0.1**
ORLT	**Orhaneli**	**0.30**	**218**	*e*Pg	**Pg**	**09 29 55.3**	**+0.1**
ARMT	**Armutlu**	**0.35**	**324**	*e*PG	**Pg**	**09 29 56.1**	**-0.1**
ARMT				*e*SG	**Sb**	**09 30 02.1**	**-1.1**
ARMT	**Armutlu**	**0.35**	**324**	*e*Pg	**Pg**	**09 29 56.1**	**-0.1**
ARMT				*e*Sg	**Sb**	**09 30 02.1**	**-1.1**
ADVT	**Abdulvahap**	**0.49**	**72**	*e*PG	**Pg**	**09 29 58.9**	**+0.2**
ADVT	**Abdulvahap**	**0.49**	**72**	*e*Pg	**Pg**	**09 29 58.9**	**+0.2**
CAVI	**Cavuskoy**	**0.55**	**98**	*e*PG	**Pg**	**09 29 58.7**	**-1.1**
CAVI	**Cavuskoy**	**0.55**	**98**	*e*Pg	**Pg**	**09 29 58.7**	**-1.1**
KCTX	**Karacabey (Bur**	**0.59**	**269**	*e*PG	**Pg**	**09 30 00.8**	**0.0**
KCTX	**Karacabey (Bur**	**0.59**	**269**	*e*Pg	**Pg**	**09 30 00.8**	**0.0**
HRT	**Hereke**	**0.68**	**37**	*e*PG	**Pg**	**09 30 01.9**	**-0.4**
HRT	**Hereke**	**0.68**	**37**	*e*Pg	**Pg**	**09 30 01.9**	**-0.4**
ISK	**Istanbul-Kandi**	**0.79**	**356**	*e*PG	**Pg**	**09 30 04.0**	**-0.4**
ISK	**Istanbul-Kandi**	**0.79**	**356**	*e*Pg	**Pg**	**09 30 04.0**	**-0.4**
DURS	**Dursunbey**	**0.85**	**217**	*i* P	**Pg**	**09 30 05.4**	**-0.1**
DURS	**Dursunbey**	**0.85**	**217**	P	**Pg**	**09 30 05.4**	**-0.1**
TVSB	**Tavsanli**	**0.87**	**163**	*e*PG	**Pg**	**09 30 06.0**	**+0.1**
TVSB	**Tavsanli**	**0.87**	**163**	*e*Pg	**Pg**	**09 30 06.0**	**+0.1**
BGKT	**Bogazkoy**	**0.94**	**343**	*e*PG	**Pg**	**09 30 07.0**	**-0.3**
BGKT	**Bogazkoy**	**0.94**	**343**	*e*Pg	**Pg**	**09 30 07.0**	**-0.3**
SILT	**Sile**	**0.95**	**24**	*e*PG	**Pg**	**09 30 07.6**	**0.0**
SILT	**Sile**	**0.95**	**24**	*e*Pg	**Pg**	**09 30 07.6**	**0.0**
EDC	**Edincik**	**0.97**	**274**	*e*PG	**Pg**	**09 30 07.3**	**-0.6**
EDC	**Edincik**	**0.97**	**274**	*e*Pg	**Pg**	**09 30 07.3**	**-0.6**
GULT	**Gulveren**	**1.07**	**81**	*e*PG	**Pg**	**09 30 09.6**	**-0.1**
GULT	**Gulveren**	**1.07**	**81**	*e*Pg	**Pg**	**09 30 09.6**	**-0.1**
CTKS	**Kestanelik-??a**	**1.07**	**334**	*e*PG	**Pg**	**09 30 09.5**	**-0.2**
CTKS	**Kestanelik-??a**	**1.07**	**334**	*e*Pg	**Pg**	**09 30 09.5**	**-0.2**
KAND	**Kocaeli-Kandir**	**1.14**	**44**	*i* P	**Pn**	**09 30 11.3**	**+0.1**
KAND				*i* S	**Sn**	**09 30 27.4**	**+0.5**
KAND	**Kocaeli-Kandir**	**1.14**	**44**	P	**Pn**	**09 30 11.3**	**+0.1**
KAND				S	**Sn**	**09 30 27.4**	**+0.5**
MRMT	**Marmara Adasi**	**1.22**	**286**	*e*PN	**Pg**	**09 30 12.7**	**+0.1**
MRMT	**Marmara Adasi**	**1.22**	**286**	*e*Pn	**Pg**	**09 30 12.7**	**+0.1**
GDZ	**Gediz**	**1.22**	**167**	*i* P	**Pb**	**09 30 12.3**	**-0.1**
GDZ				*i* S	**Sn**	**09 30 30.1**	**+1.1**
GDZ	**Gediz**	**1.22**	**167**	P	**Pb**	**09 30 12.3**	**-0.1**
GDZ				S	**Sn**	**09 30 30.1**	**+1.1**
DEMI	**Demirci**	**1.28**	**195**	*i* P	**Pn**	**09 30 13.1**	**-0.1**
DEMI	**Demirci**	**1.28**	**195**	P	**Pn**	**09 30 13.1**	**-0.1**
BALY	**Balya**	**1.28**	**246**	*i* P	**Pb**	**09 30 13.2**	**-0.2**
BALY				*i* S	**Sn**	**09 30 30.9**	**+0.5**
BALY	**Balya**	**1.28**	**246**	P	**Pb**	**09 30 13.2**	**-0.2**
BALY				S	**Sn**	**09 30 30.9**	**+0.5**
SAHE	**Sakarya_HENDEK**	**1.43**	**66**	*i* P	**Pb**	**09 30 16.0**	**+0.1**
SAHE				*i* S	**Sn**	**09 30 34.0**	**0.0**
SAHE	**Sakarya_HENDEK**	**1.43**	**66**	P	**Pb**	**09 30 16.0**	**+0.1**
SAHE				S	**Sn**	**09 30 34.0**	**0.0**
ESKT	**Eskisehir**	**1.52**	**119**	*i* P	**Pg**	**09 30 18.1**	**-0.4**
SEYT	**Eskypehyr**	**1.52**	**119**	P	**Pg**	**09 30 18.0**	**-0.4**
RKY	**Sarkoy-Tekirda**	**1.55**	**286**	*e*PN	**Pn**	**09 30 16.7**	**-0.1**
RKY	**Sarkoy-Tekirda**	**1.55**	**286**	*e*Pn	**Pn**	**09 30 16.7**	**-0.1**
AUMIH	**MIHALICIK**	**1.85**	**102**	*i* P	**Pb**	**09 30 23.6**	**+0.5**
AUMIH	**MIHALICIK**	**1.85**	**102**	P	**Pb**	**09 30 23.6**	**+0.5**

DHMR 19 09:29:49.8±1.4, 12.02N×44.02E, h2km±6km, ML4.0, Western Arabian Peninsula

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ADEN	**Aden**	**1.20**	**51**	*i* P	Pg	09 30 12.7	-0.3
ADEN				*i* S	Sb	09 30 29.1	-0.3
ADEN				AML	AML	09 30 36.9	
	comp=N,3μm,0.6s						
UDYN	**Al 'Udayn**	**1.93**	**359**	*i* P	Pn	09 30 24.5	+0.7
UDYN				*i* S	Sg	09 30 52.6	+0.6
BDHA	**Al Bayda'**	**2.46**	**38**	*i* P	Pn	09 30 32.7	+1.5
BDHA				*i* S	Sg	09 31 07.3	-1.5
BDHA				AML	AML	09 31 17.9	
	comp=E,1μm,0.5s						
DHBB	**Dhamar BB**	**2.56**	**8**	*i* P	Pb	09 30 35.1	-1.5
DHBB				*i* S	Sb	09 31 09.8	+1.1
HAJJ	**Hajjah**	**3.68**	**354**	*i* P	Pn	09 30 50.2	+2.3
HAJJ				*i* S	Sb	09 31 36.7	-4.1

*IDC **19** 09:31:33.2±2.2, 56.53S×142.81W, h0km, mb4.0/3, mb1 4.2/3, mb1mx3.8/32, mbtmp4.0/3, MS3.9/8, Ms1 3.9/8, ms1mx3.6/24, Error ellipse: s-maj=427.5km s-min=45.4km az=177.0*
*GCMT **19** 09:31:36.0±0.4, 56.78S×141.75W, h27km±2km, MW4.9/61, Moment Tensor Solution. s24,c25; s61,c76; Duration: 0 Moment tensor: Scale 10^16 Nm; Mrr-0.22±.21; Mθθ2.24±.20; Mφφ-2.01±.17; Mrθ0.78±.35; Mrφ2.02±.12; Mθφ0.81±.31; Best double couple: M0 3.12300×10^16 NP1: ϕ1=23.00000°, δ86.00000°, λ161.00000°. NP2: ϕ2=114.00000°, δ71.00000°, λ4.00000°. Principal axes: T 3.3450, Plg16.0000°, Azm337.0000°; N -0.4380, Plg71.0000°, Azm191.0000°; P -2.9010, Plg10.0000°, Azm70.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
ISC 19 09:31:34.7±2.0, 57.1S±0.4×142.7W±0.3, h10km, n26, σ0°74/9, mb4.2/3, MS3.9/8, Pacific-Antarctic Ridge

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
VNDA	**Vanda**	**27.76**	**203**	LR	LR	09 45 16.4	
	comp=Z,150nm,20.4s,baz=76,slow=29						
RPZ	**Rata Peaks**	**31.70**	**275**	LR	LR	09 47 38.4	
	comp=Z,222nm,21.3s,baz=122,slow=30						
URZ	**Urewera**	**32.31**	**288**	LR	LR	09 47 52.4	
	comp=Z,259nm,21.2s,baz=127,slow=30						
RKT	**Rikitea**	**34.36**	**13**	*e*LR	LR	09 46 51.4	
	338nm,29.5s,baz=185						
RKT	**Rikitea**	**34.36**	**13**	*e*T	T	10 13 35.4	
	4.4nm,0.3s						
RAR	**Rarotonga**	**37.94**	**334**	LR	LR	09 49 15.7	
	comp=Z,240nm,20.8s,baz=153,slow=28						
MEH	**Mehetia**	**39.32**	**352**	*e*T	T	10 20 14.6	
	28nm,0.3s						
PPT2	**Papeete2**	**39.73**	**350**	*e*S	S	09 44 49.7	-21
	75nm,25.2s						
PPT2				*e*LR	LR	09 49 31.7	
	535nm,28.0s,baz=184						
PPT	**Papeete**	**39.75**	**350**	LR	LR	09 50 26.9	
	comp=Z,211nm,19.9s,baz=166,slow=29						
VAH	**Vaihoa**	**41.90**	**353**	*e*T	T	10 23 29.1	
	36nm,0.2s						
PMOR	**Pomariorio Ree**	**42.15**	**353**	*e*T	T	10 23 49.1	
	4.1nm,0.4s						
VNA3	**Neumayer Olymp**	**47.79**	**161**	P	**P**	**09 40 11.8**	**+0.3**
TAOE	**Nuku Hiva Isla**	**48.12**	**3**	*e*LR	LR	09 53 20.8	
	311nm,27.7s						
VNA2	**Neumayer--Watz**	**48.46**	**162**	P	**P**	**09 40 16.0**	**-0.6**
	baz=213,slow=8.0						
SNAA	**Sanae**	**48.53**	**164**	P	**P**	**09 40 17.0**	**-0.2**
VNA1	**Neumayer--Stat**	**48.54**	**161**	P	**P**	**09 40 17.7**	**+0.4**
STKA	**Stephens Creek**	**56.29**	**262**	P	**P**	**09 41 14.7**	**-0.5**
	2.1nm,0.8s,baz=138,slow=12,SNR=1.8						
STKA				LR	LR	10 00 47.3	
	comp=Z,98nm,21.0s,baz=205,slow=31						
ASAR	**Alice Springs**	**66.92**	**262**	P	**P**	**09 42 27.8**	**+0.7**
	1.2nm,0.8s,baz=144,slow=6.3,SNR=12						
H01W1	**Cape Leeuwin H**	**67.98**	**240**	T	T	10 57 52.5	
	baz=144,slow=76,SNR=32						
H01W2	**Cape Leeuwin H**	**67.99**	**240**	T	T	10 57 52.9	
	baz=144,slow=76,SNR=41						
H01W3	**Cape Leeuwin H**	**68.00**	**240**	T	T	10 57 53.7	
	baz=144,slow=76,SNR=31						
WRA	**Warramunga Arr**	**69.69**	**265**	P	**P**	**09 42 45.3**	**+0.8**
	1.3nm,0.8s,baz=152,slow=5.2,SNR=5.3						
FITZ	**Fitzroy Crossi**	**75.89**	**259**	LR	LR	10 13 05.3	
	comp=Z,71nm,18.8s,baz=151,slow=33						
NVAR	**Mina Array Bea**	**97.33**	**19**	LR	LR	10 18 40.8	
	comp=Z,72nm,21.8s,baz=62,slow=29						
ESDC	**Sonseca Array**	**148.17**	**105**	PKPbc	**PKPbc**	**09 51 20.5**	**+0.4**
	0.2nm,0.3s,baz=240,slow=2.3,SNR=2.9						
MKAR	**Makanchi Array**	**150.92**	**269**	PKPbc	**PKPbc**	**09 51 25.5**	**-1.1**
	0.7nm,0.9s,baz=137,slow=4.9,SNR=4.3						

IDC 19 09:37:14.5±7.8, 8.17S×127.79E, h54km±80km, mb3.9/1, mb1 3.8/4, mb1mx3.3/64, mbtmp3.7/4, ML3.4/3, Error ellipse: s-maj=58.6km s-min=49.1km az=68.0, Timor region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
FITZ	**Fitzroy Crossi**	**10.10**	**192**	P	Pn	09 39 36.9	+0.1
	0.1nm,0.3s,baz=18,slow=9.6,SNR=1.8						
FITZ				S	Sn	09 41 29.8	+1.1
	0.3nm,0.3s,baz=65,slow=19,SNR=2.5						
WRA	**Warramunga Arr**	**13.32**	**152**	P	Pn	09 40 20.3	-0.6
	0.3nm,0.3s,baz=324,slow=14,SNR=12						
WRA				S	Sn	09 42 47.2	-0.2
	0.2nm,0.3s,baz=330,slow=22,SNR=6.1						
ASAR	**Alice Springs**	**16.49**	**160**	P	Pn	09 41 02.9	+0.5
	0.2nm,0.3s,baz=341,slow=12,SNR=20						
ASAR				S	Sn	09 44 05.6	+1.0
	0.1nm,0.3s,baz=315,slow=17,SNR=3.3						
ILAR	**Eielson Array**	**95.33**	**25**	P	P	09 50 32.3	-0.2
	0.6nm,0.9s,baz=245,slow=2.7,SNR=5.5						

*DHMR **19** 09:37:49.8±1.4, 11.93N×44.05E, h8km±14km, ML4.8*
*BJI **19** 09:37:50.1, 11.61N×43.75E, h8km, mb4.6/20, mB5.0/10, Ms4.6/13, Ms7 4.2/13*
*IDC **19** 09:37:53.0±0.8, 11.78N×43.99E, h0km, mb4.1/27, mb1 4.2/29, mb1mx4.0/65, mbtmp4.1/29, ML3.4/1, MS4.0/36, Ms1 4.0/36, ms1mx3.9/49, Error ellipse: s-maj=18.4km s-min=12.4km az=157.0*
*CSEM **19** 09:37:54.1±0.2, 11.85N×44.10E, h2km, mb4.6/25, Error ellipse: s-maj=9.6km s-min=7.8km az=173.0*
*ARO **19** 09:37:54.5, 12°N×12°×4'4E×1'0, h7km±25km, ML4.5*
*NEIC **19** 09:37:54.8±0.4, 11.82N×44.02E, h10km, mb4.7/13, Error ellipse: s-maj=9.3km s-min=7.1km az=153.0*
*OMAN **19** 09:37:55.7±0.5, 11.90N×44.18E, h11km, Error ellipse: s-maj=27.0km s-min=12.0km az=340.0*
*MOS **19** 09:37:55.1±0.9, 11.83N×44.01E, h22km, mb4.6/41, MS4.0/11, Error ellipse: s-maj=11.3km s-min=5.1km az=88.7*
*DSN **19** 09:37:57.1±1.8, 12.01N×44.07E, h14km, mb4.7, Error ellipse: s-maj=28.0km s-min=16.4km az=178.0*
ISC 19 09:37:53.6±1.2, 11.86N±0.05×44.06E±0.05, h1km±7km, n250, σ1°66/253, mb4.4/69, MS4.0/43, 17C-13D, Western Gulf of Aden

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
OBO	**Obock**	**0.77**	**279**	*e*P	**Pg**	**09 38 07.1**	**-1.2**
MCAD	**Moucha**	**0.84**	**261**	*e*P	**Pg**	**09 38 09.2**	**-0.6**
ATA	**Atar**	**0.93**	**244**	*e*P	**Pg**	**09 38 11.9**	**+0.4**
TDD	**Tadjoura Ara**	**1.13**	**267**	*e*P	**Pb**	**09 38 13.6**	**-2.4**
ATD	**Arta Tunnel**	**1.24**	**255**	Pn	**Pb**	**09 38 14.6**	**-3.1**
	194nm,0.3s,baz=46,slow=16,SNR=94						
ATD				Sn	**Sb**	**09 38 32.9**	**-1.4**
	244nm,0.3s,baz=242,slow=24,SNR=6.5						
ATD	**Arta Tunnel**	**1.24**	**255**	*e*P	**Pb**	**09 38 15.4**	**-2.4**
ATD				*e*S	**Sn**	**09 38 33.5**	**-1.9**
ADEN	**Aden**	**1.28**	**45**	⇑*i*P	Pn	09 38 13.4	-5.1
ADEN				*i* S	**Sb**	**09 38 30.2**	**-5.2**
ADEN				AML	AML	09 38 42.0	
	comp=E,41μm,0.6s						
SGH	**Sud-Ghoubbet**	**1.47**	**253**	*e*P	**Pn**	**09 38 19.4**	**-1.8**
GBR	**Grand-Bara**	**1.72**	**246**	*e*P	**Pn**	**09 38 24.3**	**-0.4**
UDYN	**Al 'Udayn**	**2.09**	**357**	*i* P	Pn	09 38 25.3	-4.6
UDYN				*i* S	**Sn**	**09 38 53.7**	**-3.0**
UDYN				AML	AML	09 38 56.8	
	comp=E,6μm,0.6s						
BDHA	**Al Bayda'**	**2.56**	**35**	*i* P	**Pn**	**09 38 32.7**	**-3.7**
BDHA				*i* S	**Sn**	**09 39 07.2**	**-1.2**
BDHA				AML	AML	09 39 17.8	
	comp=E,9μm,0.7s						
DHBB	**Dhamar BB**	**2.71**	**7**	*i* P	**Pn**	**09 38 35.6**	**-2.9**
DHBB				*i* S	**Sn**	**09 39 11.1**	**-1.1**
DAMY	**Dhamar**	**2.71**	**7**	*e*Pn	**Pn**	**09 38 36.9**	**-1.7**
DAMY				*e*Sn	**Sn**	**09 39 14.1**	**+1.9**
DAMY	**Dhamar**	**2.71**	**7**	*e*Pn	**Pn**	**09 38 36.9**	**-1.7**
DAMY				*e*Sn	**Sn**	**09 39 14.1**	**+1.9**
SANA	**San'a**	**3.50**	**2**	*i* P	**Pn**	**09 38 46.9**	**-2.6**
SANA				*i* S	**Sn**	**09 39 31.7**	**0.0**
HAJJ	**Hajjah**	**3.84**	**353**	*i* P	**Pn**	**09 38 50.5**	**-3.5**
HAJJ				*i* S	**Sn**	**09 39 38.1**	**-1.8**
FURI	**Furi**	**6.06**	**241**	P	Pn	09 39 30.2	+5.5
FURI				S	**Sg**	**09 41 09.9**	**+1.3**
FURI	**Furi**	**6.06**	**241**	*e*Pn	Pn	09 39 29.1	+4.4
FURI	**Furi**	**6.06**	**241**	*e*Pn	Pn	09 39 29.1	+4.4
KMBO	**Kilima Mbogo**	**14.57**	**208**	Pn	**Pn**	**09 41 20.6**	**-0.7**
	baz=24,slow=13,SNR=4.1						
KMBO				Lg	Lg	09 45 35.7	
	comp=E,0.2nm,0.3s,baz=103,slow=20,SNR=6.5						
KMBO				LR	LR	09 46 53.9	
	comp=E,2μm,19.1s,baz=64,slow=37						
KMBO	**Kilima Mbogo**	**14.57**	**208**	*e*P	**Pn**	**09 41 20.8**	**-0.5**
KMBO	**Kilima Mbogo**	**14.57**	**208**	*e*Pn	**Pn**	**09 41 20.8**	**-0.5**
KMBO	**Kilima Mbogo**	**14.57**	**208**	P	**P**	**09 41 24.7**	**-3.4**
	SNR=7.9						
KMBO	**Kilima Mbogo**	**14.57**	**208**	Pn	**P**	**09 41 24.7**	**-3.4**
	SNR=7.9						
ARQ	**Araqi**	**16.45**	**44**	P	**Pn**	**09 41 47.3**	**+1.4**
	SNR=8.8						
ARQ	**Araqi**	**16.45**	**44**	Pn	**Pn**	**09 41 47.3**	**+1.4**
	SNR=8.8						
BSY	**Bisya**	**16.55**	**47**	P	**Pn**	**09 41 48.0**	**+0.9**
	SNR=11						
BSY	**Bisya**	**16.55**	**47**	Pn	**Pn**	**09 41 48.0**	**+0.9**
	SNR=11						
FAQ	**Al Faqa, Dubai**	**16.84**	**39**	*i* P	**Pn**	**09 41 51.8**	**+1.2**
	SNR=8.5						
FAQ	**Al Faqa, Dubai**	**16.84**	**39**	P	**Pn**	**09 41 49.8**	**-0.9**
	SNR=6.2						
FAQ	**Al Faqa, Dubai**	**16.84**	**39**	Pn	**Pn**	**09 41 49.8**	**-0.9**
	SNR=6.2						
JMDO	**Jabal Madar**	**16.99**	**50**	P	**Pn**	**09 41 52.1**	**-0.5**
	SNR=7.3						
JMDO	**Jabal Madar**	**16.99**	**50**	Pn	**Pn**	**09 41 52.1**	**-0.5**
	SNR=7.3						
NAZ	**Nazwa, Dubai**	**17.06**	**38**	*i* P	**Pn**	**09 41 53.4**	**-0.1**
	SNR=13						
NAZ	**Nazwa, Dubai**	**17.06**	**38**	Pn	**P**	**09 41 57.0**	**+1.6**
	SNR=14						
ASHO	**Ashiyiah**	**17.08**	**40**	*i* P	**Pn**	**09 41 55.1**	**+1.3**
	SNR=10						
ASHO	**Ashiyiah**	**17.08**	**40**	P	**Pn**	**09 41 53.7**	**-0.1**
	SNR=9.1						
ASHO	**Ashiyiah**	**17.08**	**40**	Pn	**Pn**	**09 41 53.7**	**-0.1**
	SNR=9.1						
HATD	**Hatta, Dubai**	**17.23**	**40**	*i* P	**P**	**09 41 57.3**	**0.0**
	SNR=13						
HATD	**Hatta, Dubai**	**17.23**	**40**	P	**P**	**09 41 57.7**	**+0.5**
	SNR=13						
HATD	**Hatta, Dubai**	**17.23**	**40**	Pn	**P**	**09 41 57.7**	**+0.5**
	SNR=13						
SMDO	**Samad**	**17.36**	**48**	P	**P**	**09 41 59.2**	**+0.4**
	SNR=17						
SMDO	**Samad**	**17.36**	**48**	P	**P**	**09 41 59.2**	**+0.4**
	SNR=17						
SMDO	**Samad**	**17.36**	**48**	Pn	**P**	**09 41 59.2**	**+0.4**
	SNR=17						
UOSS	**Minazif**	**17.36**	**40**	*e*Pn	**Pn**	**09 41 56.7**	**-0.6**
	comp=E,15nm,1.9s						
UOSS	**Minazif**	**17.36**	**40**	*e*Pn	**Pn**	**09 41 56.7**	**-0.6**
	comp=E,15nm,1.9s						
BIDO	**Bidbid**	**17.70**	**47**	P	**P**	**09 42 03.0**	**+0.5**
	SNR=13						
BIDO	**Bidbid**	**17.70**	**47**	P	**P**	**09 42 03.0**	**+0.5**
	SNR=13						
BIDO	**Bidbid**	**17.70**	**47**	Pn	**P**	**09 42 03.0**	**+0.5**
	SNR=13						
WBK	**Wadi Bani Khal**	**17.79**	**51**	P	**Pn**	**09 42 01.3**	**-1.3**
	SNR=7.6						
WBK	**Wadi Bani Khal**	**17.79**	**51**	P	**Pn**	**09 42 01.3**	**-1.3**
	SNR=7.6						
WBK	**Wadi Bani Khal**	**17.79**	**51**	Pn	**Pn**	**09 42 01.3**	**-1.3**
	SNR=7.6						
WSAR	**Wadi Sarin**	**17.89**	**49**	P	**Pn**	**09 42 04.1**	**+0.2**
	comp=E,0.1nm,0.3s,baz=244,slow=10,SNR=9.5						
WSAR				LR	LR	09 49 31.3	
	comp=E,830nm,20.3s,baz=251,slow=39						
BANOM	**Banah**	**18.14**	**38**	P	**Pn**	**09 42 07.4**	**+0.5**
BANOM	**Banah**	**18.14**	**38**	P	**Pn**	**09 42 07.4**	**+0.5**
BANOM	**Banah**	**18.14**	**38**	Pn	**Pn**	**09 42 05.4**	**-1.5**
EIL	**Eilat**	**19.64**	**336**	Lg	Lg	09 48 11.2	
	comp=E,0.2nm,0.3s,baz=29,slow=19,SNR=4.0						
EIL				LR	LR	09 48 30.7	
	comp=E,614nm,20.5s,baz=227,slow=32						
ASF	**Jabal al Asfar**	**21.26**	**343**	P	**P**	**09 42 43.2**	**+1.8**
	comp=E,4.8nm,0.7s,baz=78,slow=8.4,SNR=6.4						
ASF				Lg	Lg	09 48 58.2	
	comp=E,2.2nm,0.8s,baz=193,slow=19,SNR=5.2						
MMAI	**Mount Meron Ar**	**22.50**	**341**	P	**P**	**09 42 56.8**	**+2.0**
	comp=E,1.9nm,0.7s,baz=146,slow=8.2,SNR=3.9						
MMAI				LR	LR	09 50 48.7	
	comp=E,458nm,18.7s,baz=180,slow=34						
GNI	**Garni**	**28.18**	**1**	P	**P**	**09 43 49.8**	**+2.0**
	comp=E,3.2nm,0.3s,baz=275,slow=12,SNR=3.6						
GNI				LR	LR	09 56 22.9	
	comp=E,431nm,20.5s,baz=172,slow=39						
GNI	**Garni**	**28.18**	**1**	*i* P	**P**	**09 43 48.2**	**+0.4**
GNI				pmax	pmax		
	comp=Z,17nm,1.1s						
GNI	**Garni**	**28.18**	**1**	*i* P	**P**	**09 43 48.2**	**+0.4**
	comp=Z,17nm,1.1s						
GEYT	**Alibeck**	**28.84**	**23**	P	**P**	**09 43 55.1**	**+1.5**
	comp=Z,0.7nm,0.3s,baz=218,slow=9.1,SNR=2.9						
GEYT				LR	LR	09 57 07.5	
	comp=Z,1μm,18.1s,baz=235,slow=40						
IDI	**Anoyia**	**29.09**	**326**	LR	LR	09 55 38.4	
	comp=Z,86nm,18.4s,baz=104,slow=37						
BR131	**Keskin Array S**	**29.25**	**343**	*e*P	**P**	**09 43 58.4**	**+1.1**
BR131	**Keskin Array S**	**29.25**	**343**	*e*P	**P**	**09 43 58.4**	**+1.1**
BRTR	**Keskin Array B**	**29.25**	**343**	P	**P**	**09 43 58.0**	**+0.7**
	comp=Z,5.0nm,1.0s,baz=149,slow=10,SNR=19						
BRTR				LR	LR	09 54 50.7	
	comp=Z,310nm,19.3s,baz=140,slow=35						
AKH	**Akhalkalaki**	**29.44**	**359**	⇑*i*P	**P**	**09 44 02.0**	**+3.0**
AKH	**Akhalkalaki**	**29.44**	**359**	⇑*i*P	**P**	**09 44 02.0**	**+3.0**
BR231	**Keskin MP Arra**	**29.60**	**342**	*e*P	**P**	**09 43 59.2**	**-1.2**
BR231	**Keskin MP Arra**	**29.60**	**342**	*e*P	**P**	**09 43 59.2**	**-1.2**
OPO	**Ambohidratompo**	**30.40**	**174**	LR	LR	09 55 29.3	
	comp=Z,370nm,20.4s,baz=356,slow=35						
LSZ	**Lusaka**	**31.21**	**211**	LR	LR	09 56 26.7	
	comp=Z,454nm,18.4s,baz=14,slow=36						
NEY	**Neytrino**	**31.29**	**358**	*d* iP	**P**	**09 44 17.7**	**+2.3**
NEY				pmax	pmax		
	comp=Z,11nm,2.2s						
NEY	**Neytrino**	**31.29**	**358**	*i* P	**P**

comp=Z,5.0nm,0.4s
KEST Kesra 39.34 313 LR LR 10 03 00.0
comp=Z,178nm,18.6s,baz=351,slow=38
KSH Kashi 39.44 40 *e*P **P** **09 45 22.8 -2.7**
KSH *e*pP pP 09 45 27.1 +1.1
KSH S **S** **09 51 20.1 -8.3**
KSH PcS **PcS** **09 51 24.5 +0.9**
KSH pmax pmax
comp=Z,140nm,4.6s
KSH LR LR
comp=Z,200nm,7.6s
KSH LR LR
comp=Z,100nm,7.1s
KSH LR LR
comp=Z,160nm,12.5s
VSR Storozhevoye 39.45 355 *e*P **P** **09 45 24.7 -0.5**
VSR pmax pmax
comp=Z,10.0nm,1.0s
ABKAR Akbulak array 39.54 16 *e*P **P** **09 45 26.8 +0.9**
comp=Z,0.4nm,0.2s
ABKAR Akbulak array 39.54 16 *e*P **P** **09 45 26.8 +0.9**
comp=Z,0.4nm,0.2s
EKS2 Erkin-Say 40.09 35 *e*P **P** **09 45 31.9 +1.1**
EKS2 pmax pmax
comp=Z,12nm,1.3s
EKS2 Erkin-Say 40.09 35 *e*P **P** **09 45 31.9 +1.1**
comp=Z,12nm,1.3s
EKS2 Erkin-Say 40.09 35 *e*P **P** **09 45 31.9 +1.1**
comp=Z,12nm,1.3s
AKTO Aktyubinsk 40.13 14 P **P** **09 45 30.9 0.0**
comp=Z,0.6nm,0.4s,baz=199,slow=8.4,SNR=7.0
TSUM Tsumeb 40.42 221 LR LR 10 01 19.6
comp=Z,105nm,20.7s,baz=334,slow=35
AAK Ala-Archa 40.47 35 P **P** **09 45 34.6 +0.6**
comp=Z,0.5nm,0.3s,baz=237,slow=8.1,SNR=9.4
AAK LR LR 10 05 34.6
comp=Z,193nm,19.6s,baz=230,slow=41
AAK Ala-Archa 40.47 35 *e*P **P** **09 45 34.4 +0.3**
AAK pmax pmax
comp=Z,35nm,1.6s
AAK Ala-Archa 40.47 35 *e*P **P** **09 45 34.4 +0.3**
comp=Z,35nm,1.6s
AAK Ala-Archa 40.47 35 *e*P **P** **09 45 34.4 +0.3**
comp=Z,35nm,1.6s
AAK Ala-Archa 40.47 35 P **P** **09 45 36.0 +1.9**
SNR=11
AAK P **P** **09 45 36.0 +1.9**
SNR=11
AAK Ala-Archa 40.47 35 P **P** **09 45 36.0 +1.9**
SNR=11
KIEV Kiev 40.59 345 *e*P **P** **09 45 34.2 -0.4**
KIEV pmax pmax
comp=Z,17nm,1.4s
KIEV Kiev 40.59 345 *e*P **P** **09 45 34.2 -0.4**
comp=Z,17nm,1.4s
KIEV Kiev 40.59 345 *e*P **P** **09 45 34.2 -0.4**
comp=Z,17nm,1.4s
AKASG Malin Array Be 40.59 346 P **P** **09 45 33.6 -1.0**
comp=Z,0.3nm,0.3s,baz=161,slow=7.0,SNR=11
FRU Bishkek 40.67 35 *e*P **P** **09 45 36.5 +1.0**
FRU pmax pmax
comp=Z,120nm,2.5s
FRU MLR MLR
comp=E,400nm,14.0s
LPSR Galich'ya Gora 40.84 355 *e*P **P** **09 45 36.4 -0.3**
LPSR pmax pmax
comp=Z,10.0nm,1.1s
LBTB Lobatse 40.84 206 LR LR 10 02 43.2
comp=Z,425nm,18.8s,baz=56,slow=37
KOLS Kolonicke sedl 41.15 338 *e*P **P** **09 45 41.4 +2.0**
KOLS pmax pmax
comp=Z,23nm,1.8s
KOLS Kolonicke sedl 41.15 338 *e*P **P** **09 45 41.4 +2.0**
comp=Z,22nm,1.8s
KOLS Kolonicke sedl 41.15 338 *e*P **P** **09 45 41.4 +2.0**
PSZ Piszkesteto 41.24 335 *e*P **P** **09 45 41.1 +0.9**
PSZ pmax pmax
comp=Z,14nm,1.0s
PSZ Piszkesteto 41.24 335 *e*P **P** **09 45 41.1 +0.9**
comp=Z,14nm,1.0s
PSZ Piszkesteto 41.24 335 *e*P **P** **09 45 41.1 +0.9**
comp=Z,14nm,1.0s
TKM2 Tokmak 2 41.28 36 *e*P **P** **09 45 41.5 +0.7**
TKM2 pmax pmax
comp=Z,26nm,1.9s
TKM2 Tokmak 2 41.28 36 *e*P **P** **09 45 41.5 +0.7**
comp=Z,26nm,1.9s
TKM2 Tokmak 2 41.28 36 *e*P **P** **09 45 41.5 +0.7**
comp=Z,26nm,1.9s
TOA0 Torodi Ar. Sit 41.35 276 *e*P **P** **09 45 41.8 +0.4**
TOA0 Torodi Ar. Sit 41.35 276 *e*P **P** **09 45 41.9 +0.4**
TORD Torodi Ar. Bea 41.35 276 P **P** **09 45 41.4 -0.1**
comp=Z,3.4nm,1.1s,baz=96,slow=7.6,SNR=18
TORD LR LR 10 02 24.5
comp=Z,158nm,18.7s,baz=75,slow=36
CRVS Cervenica-Dubn 41.43 337 *e*P **P** **09 45 43.1 +1.4**
CRVS Cervenica-Dubn 41.43 337 *e*P **P** **09 45 43.1 +1.4**
CRVS Cervenica-Dubn 41.43 337 *e*P **P** **09 45 43.0 +1.4**
CRVS *e* 10 01 55.2
CRVS *e* 10 01 58.2
KECS Kecovo 41.46 336 *e*P **P** **09 45 42.6 +0.7**
KECS pmax pmax
comp=Z,1.0nm,0.8s
KECS Kecovo 41.46 336 *e*P **P** **09 45 42.6 +0.7**
comp=Z,1.4nm,0.8s
KECS Kecovo 41.46 336 *e*P **P** **09 45 42.6 +0.7**
STHS Stebnicka Huta 41.93 338 *e*P **P** **09 45 46.4 +0.6**
STHS pmax pmax
comp=Z,2.0nm,0.8s
STHS Stebnicka Huta 41.93 338 *e*P **P** **09 45 46.4 +0.6**
comp=Z,2.4nm,0.8s
STHS Stebnicka Huta 41.93 338 *e*P **P** **09 45 46.4 +0.6**
VYHS Vyhne 42.13 335 *e*P **P** **09 45 47.3 -0.2**
VYHS pmax pmax
comp=Z,5.0nm,1.2s
VYHS Vyhne 42.13 335 *e*P **P** **09 45 47.3 -0.2**
comp=Z,5.0nm,1.2s
VYHS Vyhne 42.13 335 *e*P **P** **09 45 47.3 -0.2**
OTUK Ortayu 43.26 28 P **P** **09 45 58.3 +1.6**
OTUK pmax pmax
comp=Z,6.0nm,1.7s
OBN Obninsk 43.55 354 P **P** **09 45 58.9 +0.2**
comp=Z,10nm,0.3s,baz=179,slow=14,SNR=4.9
OBN Obninsk 43.55 354‖ *e*P **P** **09 45 59.1 +0.4**
OBN *e* 09 47 39.3
OBN *e*PPP PPP 09 48 14.4
OBN *e*S **S** **09 52 24.0 -4.5**
OBN pmax pmax
comp=Z,9.0nm,1.0s
OBN MLR MLR
comp=Z,178nm,18.0s
PDGK Podgornoye 43.80 38 P **P** **09 46 02.0 +1.0**
MOS Moscow 44.06 355 *e*P **P** **09 46 03.3 +0.4**
MOS *e* 09 47 44.4
MOS pmax pmax
comp=Z,51nm,1.1s
BOSA Boshof 44.16 204 LR LR 10 05 27.4
comp=Z,368nm,21.8s,baz=36,slow=38
GEA0 GERESS Array S 44.65 332 *e*P **P** **09 46 06.8 -1.1**
GEA0 GERESS Array S 44.65 332 *e*P **P** **09 46 06.8 -1.1**
GEC2 GERESS Array S 44.66 332 *e*P **P** **09 46 08.2 +0.3**
GEC2 pmax pmax
comp=Z,24nm,1.5s
GEC2 GERESS Array S 44.66 332 *e*P **P** **09 46 08.2 +0.3**
comp=Z,24nm,1.5s
GEC2 GERESS Array S 44.66 332 *e*P **P** **09 46 08.2 +0.3**
comp=Z,24nm,1.5s
GERES GERESS Array B 44.66 332 P **P** **09 46 07.1 -0.8**
comp=Z,0.6nm,0.3s,baz=132,slow=8.0,SNR=9.9
GERES LR LR 10 04 41.3
comp=Z,58nm,19.9s,baz=96,slow=36
KHC Kasperske Hory 44.92 332 *e*P **P** **09 46 08.5 -1.4**
KHC Kasperske Hory 44.92 332 *e*P **P** **09 46 09.7 -0.2**
KHC pmax pmax
comp=Z,6.0nm,1.6s
KHC Kasperske Hory 44.92 332 *e*P **P** **09 46 09.7 -0.2**
comp=Z,6.0nm,1.6s
KHC Kasperske Hory 44.92 332 *e*P **P** **09 46 09.7 -0.2**
comp=Z,6.0nm,1.6s
DAVOX Davos/Dischmat 45.18 327 P **P** **09 46 12.1 -0.1**
comp=Z,1.5nm,0.6s,baz=160,slow=2.7,SNR=3.6
ZRNK Zerenda 45.60 21 *e*P **P** **09 46 16.2 +1.0**
ZRNK pmax pmax
comp=Z,26nm,1.8s
ZRNK Zerenda 45.60 21 *e*P **P** **09 46 16.2 +1.0**
comp=Z,26nm,1.8s
ZRNK Zerenda 45.60 21 *e*P **P** **09 46 16.2 +1.0**
comp=Z,26nm,1.8s
ARU Arti 45.87 11*c i*P **P** **09 46 18.4 +1.1**
ARU 09 47 51.5
ARU 09 48 09.8
ARU S **S** **09 53 01.1 -1.1**
ARU pmax pmax
comp=Z,14nm,2.5s
ARU MLR MLR
comp=Z,227nm,17.0s
BRG Berggiesshubel 46.01 334 *e*P **P** **09 46 18.7 +0.2**
comp=Z,5.1nm,0.8s
BRG Berggiesshubel 46.01 334 *e*P **P** **09 46 18.7 +0.2**
BRG pmax pmax
comp=Z,5.0nm,0.8s
BRVK Borovoye 46.14 22*c e*P **P** **09 46 18.9 -0.6**
BRVK pmax pmax
comp=Z,21nm,2.5s
BRVK Borovoye 46.14 22 P **P** **09 46 19.4 -0.1**
SNR=5.4
BRVK Borovoye 46.14 22 P **P** **09 46 19.4 -0.1**
SNR=5.4
BVAR Borovoye Array 46.15 22 P **P** **09 46 20.1 +0.5**
comp=Z,1.6nm,0.8s,baz=234,slow=5.1,SNR=7.0
CLL Collm 46.73 334 *e*P **P** **09 46 23.0 -1.2**
CLL Collm 46.73 334 *e*P **P** **09 46 23.0 -1.2**
MAKZ Makanchi 47.24 35 *e*P **P** **09 46 28.1 -0.2**
MAKZ pmax pmax
comp=Z,44nm,1.9s
MAKZ Makanchi 47.24 35 *e*P **P** **09 46 28.1 -0.2**
comp=Z,44nm,1.9s
MAKZ Makanchi 47.24 35 *e*P **P** **09 46 28.1 -0.2**
comp=Z,44nm,1.9s
MK01 Makanchi Array 47.40 35 *e*P **P** **09 46 28.8 -0.7**
MK01 Makanchi Array 47.40 35 *e*P **P** **09 46 28.8 -0.7**
MKAR Makanchi Array 47.41 35 P **P** **09 46 29.3 -0.3**
comp=Z,2.8nm,0.9s,baz=232,slow=5.9,SNR=17
MKAR LR LR 10 09 07.5
comp=Z,150nm,21.1s,baz=234,slow=39
KURBB Kurchatov Arra 47.81 29 P **P** **09 46 32.8 +0.2**
comp=Z,3.6nm,1.0s,baz=230,slow=8.0,SNR=30
KURK Kurchatov 47.92 29 *e*P **P** **09 46 32.6 -0.8**
KURK pmax pmax
comp=Z,34nm,1.6s
KURK Kurchatov 47.92 29 *e*P **P** **09 46 32.6 -0.8**
comp=Z,34nm,1.6s
KURK Kurchatov 47.92 29 *e*P **P** **09 46 32.6 -0.8**
comp=Z,34nm,1.6s
KURK Kurchatov 47.92 29 P **P** **09 46 33.5 +0.1**
SNR=12
KURK Kurchatov 47.92 29 P **P** **09 46 33.5 +0.1**
SNR=12
DBIC Dimbokro 48.51 268 LR LR 10 07 50.2
comp=Z,111nm,18.4s,baz=63,slow=37
WMQ Urumqi 49.17 41 *e*P **P** **09 46 43.6 +0.3**
WMQ pP sP 09 46 47.5 +3.5
WMQ sP pP 09 46 50.5 +6.7
WMQ pmax pmax
comp=Z,4.0nm,0.6s
WMQ pmax pmax
comp=Z,48nm,3.6s
WMQ LR LR
comp=Z,70nm,26.0s
WMQ LR LR
comp=Z,92nm,26.0s
WMQ LR LR
comp=Z,93nm,23.6s
ES19 SONSECA Array 50.53 312 *e*P **P** **09 46 54.4 +0.7**
ES19 SONSECA Array 50.53 312 *e*P **P** **09 46 54.4 +0.7**
ESDC Sonseca Array 50.57 312 P **P** **09 46 53.4 -0.6**
comp=Z,0.2nm,0.3s,baz=118,slow=7.4,SNR=4.0
ESDC LR LR 10 09 16.9
comp=Z,56nm,18.2s,baz=130,slow=37
FINES FINESS Array B 51.21 349 P **P** **09 46 58.4 +0.1**
comp=Z,1.8nm,0.7s,baz=120,slow=8.3,SNR=4.5
FINES LR LR 10 10 37.8
comp=Z,122nm,19.2s,baz=179,slow=38
NVS Novosibirsk 52.73 27 *e*P **P** **09 47 09.4 -0.4**
NVS *e* 09 48 17.4
NVS pmax pmax
comp=N,22nm,2.0s
NVS pmax pmax
comp=E,21nm,2.0s
NVS pmax pmax
comp=Z,34nm,2.0s
ZALV Zalesovo Beam 52.91 29 P **P** **09 47 09.9 -1.3**
comp=Z,1.9nm,0.8s,baz=248,slow=7.6,SNR=7.7
ZALV LR LR 10 13 04.2
comp=Z,609nm,20.0s,baz=248,slow=40
CMAR Chiang Mai Arr 53.21 76 P **P** **09 47 14.3 +0.3**
comp=Z,0.6nm,0.3s,baz=272,slow=9.3,SNR=11
CMAR LR LR 10 08 11.8
comp=Z,25nm,21.1s,baz=280,slow=34
CM01 Chiang Mai Arr 53.23 76 *e*P **P** **09 47 13.9 -0.2**
CM01 Chiang Mai Arr 53.23 76 *e*P **P** **09 47 13.9 -0.2**
NOA NORSAR Array B 54.64 341 P **P** **09 47 23.0 -0.8**
comp=Z,1.5nm,0.9s,baz=140,slow=7.2,SNR=2.6
NOA LR LR 10 12 19.2
comp=Z,101nm,18.1s,baz=125,slow=38
PSI Prapat 55.06 95 LR LR 10 07 34.9
comp=Z,68nm,18.5s,baz=248,slow=32
GTA Gaotai 56.22 50 P **P** **09 47 36.0 +0.3**
GTA pP sP 09 47 40.4 +4.1
GTA sP pP 09 47 42.9 +6.7
GTA S **S** **09 55 26.1 -0.4**
GTA sS sS 09 55 34.3 +7.0
GTA SS **SS** **09 59 13.8 +0.8**
GTA pmax pmax
comp=Z,5.0nm,1.4s
GTA pmax pmax
comp=Z,94nm,4.8s
GTA LR LR
comp=Z,150nm,14.3s
GTA LR LR
comp=Z,200nm,16.6s
GTA LR LR
comp=Z,160nm,18.1s
KMI Kunming 56.80 68 P **P** **09 47 42.4 +2.3**
KMI S **S** **09 55 31.9 -2.9**
KMI pmax pmax
comp=Z,14nm,1.2s
KMI pmax pmax
comp=Z,43nm,4.2s
KMI LR LR
comp=Z,86nm,16.0s
KMI LR LR
comp=Z,100nm,15.0s
KMI LR LR
comp=Z,99nm,27.0s
CD2 Chengdu 58.06 61 P **P** **09 47 48.1 -0.7**
CD2 pmax pmax
comp=Z,1.0nm,0.5s
LZH Lanzhou 58.74 55 *e*P P 09 48 00.3 +6.7
LZH pP sP 09 48 01.6 +7.4
LZH sP pP 09 48 02.8 +8.8
LZH pmax pmax
comp=Z,15nm,1.1s
ARCES ARCESS Array B 58.83 352 LR LR 10 13 54.4
comp=Z,82nm,20.6s,baz=186,slow=37
SONM Songino Array 62.79 42 P **P** **09 48 20.3 -0.7**
comp=Z,0.7nm,0.4s,baz=270,slow=4.3,SNR=5.7
SONM LR LR 10 19 06.0
comp=Z,147nm,20.0s,baz=262,slow=39
SONA1 Songino Array 62.80 42 *e*P **P** **09 48 21.0 0.0**
SONA1 Songino Array 62.80 42 *e*P **P** **09 48 21.1 0.0**
ULN Ulaanbaatar 63.23 42*c e*P **P** **09 48 24.5 +0.6**
ULN pmax pmax
comp=Z,12nm,2.5s
NRIK Noril'sk 63.70 16 P **P** **09 48 26.8 +0.4**
comp=Z,0.9nm,0.3s,baz=216,slow=5.7,SNR=6.6
NRIK LR LR 10 20 55.5
comp=Z,401nm,18.4s,baz=264,slow=40
HHC Hu-ho-hao-te 65.34 50 *e*P **P** **09 48 39.1 +1.3**
HHC pP sP 09 48 44.0 +5.6
HHC PP **PP** **09 51 08.3 +6.9**
HHC S **S** **09 57 22.1 -0.8**
HHC sS sS 09 57 30.4 +6.7
HHC pmax pmax
comp=Z,15nm,1.1s
HHC pmax pmax
comp=Z,140nm,4.7s
HHC LR LR
comp=Z,110nm,15.5s
HHC LR LR
comp=Z,130nm,15.3s
HHC LR LR
comp=Z,79nm,16.1s
LEM Lembang 65.87 103 LR LR 10 12 43.5
comp=Z,80nm,20.6s,baz=76,slow=32
BJI Beijing 68.79 52 P **P** **09 49 00.8 +1.2**
BJI pmax pmax
comp=Z,7.0nm,0.8s
NJ2 Nanjing 70.98 60 *e*P **P** **09 49 12.3 -0.9**
NJ2 pmax pmax
comp=Z,17nm,0.9s
CN2 Changchun 75.70 48 *e*P **P** **09 49 40.8 0.0**
TIXI Tiksi 77.18 19 P **P** **09 49 48.5 -0.2**
comp=Z,0.4nm,0.3s,baz=326,slow=3.6,SNR=6.3
TIXI Tiksi 77.18 19*c e*P **P** **09 49 49.5 +0.8**
TIXI pmax pmax
comp=Z,12nm,2.5s
TIXI Tiksi 77.18 19 *e*P **P** **09 49 49.5 +0.8**
comp=Z,12nm,2.5s
TIXI Tiksi 77.18 19 *e*P **P** **09 49 48.9 +0.2**
KLR Kul'dur 79.62 42 *e*P **P** **09 50 02.6 -0.1**
KLR Kul'dur 79.62 42 *e*P **P** **09 50 02.6 -0.1**
MAW Mawson 80.42 173 LR LR 10 20 44.1
comp=Z,142nm,20.9s,baz=48,slow=32
SEY Seymchan 87.66 26 P **P** **09 50 43.9 +0.3**
comp=Z,0.3nm,0.3s,baz=332,slow=5.3,SNR=4.6
BILL Bilibino 90.40 19‖ *e*P **P** **09 50 59.1 +2.7**
BILL *e* 09 54 37.0
BILL *e*PPP PPP 09 56 33.6
BILL *e*S **SKSac** **10 01 32.0 +3.3**
BILL pmax pmax
comp=Z,1.0nm,1.2s
BILL Bilibino 90.40 19 *e*P **P** **09 50 59.1 +2.7**
comp=Z,1.0nm,1.2s
PETK Petropavlovsk- 94.22 34 LR LR 10 38 38.7
comp=Z,191nm,18.2s,baz=283,slow=39
WRA Warramunga Arr 94.23 109 P **P** **09 51 16.3 +1.2**
comp=Z,0.9nm,0.9s,baz=286,slow=3.7,SNR=3.2
ASAR Alice Springs 94.53 113 P **P** **09 51 17.2 +0.8**
comp=Z,0.6nm,1.0s,baz=280,slow=3.7,SNR=4.4
ASAR LR LR 10 31 47.3
comp=Z,47nm,18.6s,baz=274,slow=34
JAY Jayapura 97.01 91 LR LR 10 35 37.6
comp=Z,66nm,21.6s,slow=36

NIED ***19*** *09:38:00,25.˚40N×143.˚20E,h5km,Mw3.8 Best double couple: M₀5.07000×10¹⁴ NP1:φ₀175.00000°, δ13.00000°, λ54.00000°. NP2:φ₀31.00000°, δ79.00000°, λ98.00000°.*
IDC ***19*** *09:38:27.7±1.0,25.˚51N×142.˚60E,h0km,mb3.7/10, mb1 3.9/10,mb1mx3.7/69,mbtmp3.7/10,MS2.6/1, Ms1 2.6/1,ms1mx2.1/47,Error ellipse: s-maj=35.6km s-min=19.2km az=85.0*
ISCJB ***19*** *09:38:31.0±0.8,25.˚34N±0.˚08×142.˚7E±0.˚2,h38km, mb3.7/9,Error ellipse: s-maj=31.1km s-min=10.8km az=172.7*
ISC 19 09:38:33.0±1.0,25.˚4N±0.˚1×142.˚6E±0.˚2,h38km,n12, σ1ˢ53/12,mb3.6/9,Volcano Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JCJ	**Chichijima**	**1.73**	**347**	Pn	**Pn**	**09 39 00.5**	**-0.1**
	51nm,0.3s,baz=269,slow=23,SNR=19						
JCJ				Sn	**Sn**	**09 39 23.9**	**+2.5**
	97nm,0.3s,baz=268,slow=23,SNR=12						
JNU	**Nakatsue**	**12.81**	**310**	LR	LR	09 45 59.7	
	comp=Z,25nm,20.1s,baz=204,slow=36						
USRK	**Ussuriysk Ar.**	**20.65**	**338**	P	**P**	**09 43 06.1**	**-3.3**
	4.7nm,1.1s,baz=137,slow=17,SNR=4.3						
KLR	**Kul'dur**	**25.25**	**343**	P	**P**	**09 43 55.9**	**+0.4**
	1.2nm,0.7s,baz=155,slow=9.8,SNR=4.4						
WRA	**Warramunga Arr**	**45.79**	**191**	P	**P**	**09 46 52.2**	**+1.1**
	0.6nm,0.3s,baz=9.5,slow=8.5,SNR=8.7						
ASAR	**Alice Springs**	**49.51**	**191**	P	**P**	**09 47 20.5**	**+0.6**
	0.2nm,0.6s,baz=13,slow=8.9,SNR=3.0						
MKAR	**Makanchi Array**	**51.86**	**311**	P	**P**	**09 47 36.5**	**-1.1**
	0.7nm,0.9s,baz=90,slow=7.8,SNR=2.1						
KURBB	**Kurchatov Arra**	**54.51**	**315**	P	**P**	**09 47 56.5**	**-0.5**
	1.2nm,0.6s,baz=92,slow=8.2,SNR=12						
ILAR	**Eielson Array**	**59.01**	**28**	P	**P**	**09 48 28.1**	**-0.5**
	0.4nm,0.8s,baz=257,slow=5.7,SNR=5.0						
BVAR	**Borovoye Array**	**59.56**	**318**	P	**P**	**09 48 32.6**	**-0.1**
	1.2nm,0.5s,baz=106,slow=6.6,SNR=5.7						
YKA	**Yellowknife Ar**	**73.44**	**28**	P	**P**	**09 50 01.0**	**-0.1**
	0.3nm,0.8s,baz=290,slow=6.2,SNR=4.7						
KBZ	**Khabaz**	**79.45**	**313**	P	**P**	**09 50 36.4**	**+0.9**
	1.5nm,0.8s,baz=137,slow=8.4,SNR=3.7						

IDC 19 09:40:34.2±3.3,55.˚60N×85.˚98E,h0km,mb1 2.8/2, mb1mx2.7/70,mbtmp2.8/2,ML2.4/2,Error ellipse: s-maj=26.7km s-min=24.2km az=54.0,Southwestern Siberia

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
I46RU	**ZALESOVO INFRA**	**1.78**	**203**	*i*		09 52 50.0	
	baz=22,slow=328,SNR=1.4						
ZALV	**Zalesovo Beam**	**1.78**	**203**	Pg	Pn	09 41 04.8	-1.4
	1.5nm,0.3s,baz=23,slow=17,SNR=23						
ZALV				Lg	Lg	09 41 31.3	
	2.9nm,0.3s,baz=18,slow=25,SNR=14						
KURBB	**Kurchatov Arra**	**6.70**	**225**	Pn	Pn	09 42 14.0	+0.2
	0.0nm,0.3s,baz=44,slow=15,SNR=7.4						
KURBB				Lg	Lg	09 44 08.0	
	0.0nm,0.3s,baz=51,slow=29,SNR=5.1						
MKAR	**Makanchi Array**	**9.11**	**196**	Pn	Pn	09 42 47.1	+0.1
	0.1nm,0.3s,baz=15,slow=10,SNR=3.7						
MKAR				Lg	Lg	09 45 23.1	
	0.0nm,0.3s,baz=30,slow=26,SNR=3.1						

IDC ***19*** *09:40:44.8±1.1,31.˚09N×103.˚99E,h0km,mb3.6/8, mb1 3.8/8,mb1mx3.5/79,mbtmp3.6/8,Error ellipse: s-maj=49.9km s-min=20.0km az=62.0*
ISCJB ***19*** *09:40:45.9±0.7,31.˚12N±0.˚06×103.˚56E±0.˚08,h16km, mb3.6/9,Error ellipse: s-maj=10.9km s-min=7.3km az=145.8*
BJI ***19*** *09:40:47.1,31.˚05N×103.˚41E,h10km,ML3.4/13*
ISC 19 09:40:47.4±0.7,31.˚09N±0.˚06×103.˚65E±0.˚07,h16km,n13, σ1ˢ43/17,mb3.6/9,Sichuan

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CD2	**Chengdu**	**0.20**	**152**	Pg	**Pg**	**09 40 51.9**	**-0.2**
CD2				Sg	**Sb**	**09 40 57.3**	**+1.1**
CD2				smax	smax		
	comp=N,2μm,0.7s						
CD2				smax	smax		
	comp=E,1μm,0.6s						
XAN	**Xi'an**	**5.34**	**55**	Pn	**Pn**	**09 42 06.9**	**+0.5**
XAN				Pg	**Pg**	**09 42 27.8**	**-1.8**
XAN				Sn	**Sn**	**09 43 10.5**	**+2.9**
XAN				Sg	**Sg**	**09 43 37.6**	**-1.1**
XAN				smax	smax		
	comp=N,98nm,0.9s						
XAN				smax	smax		
	comp=E,120nm,0.8s						
CMAR	**Chiang Mai Arr**	**13.28**	**200**	Pn	**P**	**09 44 03.8**	**-1.2**
	0.1nm,0.3s,baz=6.1,slow=9.3,SNR=5.8						
WMQ	**Urumqi**	**17.91**	**320**	*e*P	**Pn**	**09 44 55.0**	**-0.8**
KSRS	**Korea Array**	**21.01**	**66**	P	**P**	**09 45 31.9**	**+1.7**
	6.0nm,0.3s,baz=261,slow=9.5,SNR=7.0						
MKAR	**Makanchi Array**	**22.74**	**320**	P	**P**	**09 45 50.3**	**+1.6**
	0.4nm,0.7s,baz=125,slow=8.6,SNR=3.7						
ZALV	**Zalesovo Beam**	**26.57**	**335**	P	**P**	**09 46 24.3**	**-0.2**
	1.2nm,0.8s,baz=147,slow=8.8,SNR=3.9						
FINES	**FINESS Array B**	**57.37**	**326**	P	**P**	**09 50 36.2**	**+1.7**
	1.1nm,0.6s,baz=83,slow=5.7,SNR=3.0						
WRA	**Warramunga Arr**	**58.68**	**146**	P	**P**	**09 50 43.4**	**-0.8**
	0.4nm,0.5s,baz=337,slow=7.6,SNR=9.4						
ASAR	**Alice Springs**	**61.68**	**148**	P	**P**	**09 51 03.2**	**-1.6**
	0.2nm,0.7s,baz=349,slow=6.6,SNR=4.3						
ILAR	**Eielson Array**	**70.02**	**25**	P	**P**	**09 51 56.9**	**-1.1**
	0.4nm,1.0s,baz=289,slow=8.2,SNR=3.8						
INK	**Inuvik**	**72.30**	**19**	P	**P**	**09 52 11.8**	**+0.1**
	0.9nm,0.7s,baz=329,slow=5.9,SNR=3.7						
YKA	**Yellowknife Ar**	**81.82**	**17**	P	**P**	**09 53 05.1**	**-0.2**
	0.3nm,0.5s,baz=331,slow=5.6,SNR=10						

JMA 19 09:45:16.4,36.˚78N×140.˚63E,h2km±1km,M2.6,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JHO	**Hitachi**	**0.18**	**196**	P	Pg	09 45 20.0	+0.2

JHO				S	Sg	09 45 22.6	+0.5	
ONAJ	**Iwakimizuishiy**	**0.35**	**23**	P	Pg	09 45 23.7	+0.6	
ONAJ				*e*S	Sg	09 45 28.8	+1.1	
JFK	**Kawauchi**	**0.62**	**18**	P	Pg	09 45 28.4	+0.1	
JFK				S	Sg	09 45 36.9	+0.6	
JFT	**Otama**	**0.77**	**342**	P	Pg	09 45 31.7	+0.5	
JFT				S	Sg	09 45 42.1	+0.8	
MAT	**Matsushiro**	**1.96**	**264**	P	Pn	09 45 51.1	+0.4	
MAT				S	Sb	09 46 16.9	-0.9	

DHMR 19 09:46:30.4±1.7, 12°05'N×43°87'E, h9km±36km, ML3.8, Western Arabian Peninsula

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
ADEN	**Aden**	**1.30**	**56**	*i* P	Pb	09 46 55.2	+0.1
ADEN				*i* S	Sn	09 47 12.3	0.0
ADEN				AML	AML	09 47 19.1	
	comp=E,2μm,0.3s						
UDYN	**Al 'Udayn**	**1.91**	**3**	*i* P	Pn	09 47 04.0	+0.8
UDYN				*i* S	Sb	09 47 30.0	+0.4
BDHA	**Al Bayda'**	**2.53**	**41**	*i* P	Pn	09 47 13.6	+1.7
BDHA				*i* S	Sb	09 47 48.7	+1.2
DHBB	**Dhamar BB**	**2.56**	**11**	*i* P	Pb	09 47 14.9	-1.8
DHBB				*i* S	Sb	09 47 50.3	+2.0

JMA 19 09:50:20.1±0.3, 37°90'N×143°44'E, h7km, M3.6, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**1.74**	**289**	P	Pn	09 50 50.9	+0.2

DHMR 19 09:50:24.7±0.6, 11°98'N×44°01'E, h8km±11km, ML3.7, Western Gulf of Aden

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
ADEN	**Aden**	**1.24**	**50**	*i* P	Pn	09 50 47.2	-1.1
ADEN				*i* S	Sn	09 51 05.4	+0.2
ADEN				AML	AML	09 51 12.5	
	comp=E,2μm,0.4s						
UDYN	**Al 'Udayn**	**1.98**	**359**	*i* P	Pn	09 50 59.7	+1.0
UDYN				*i* S	Sb	09 51 27.1	+1.1
BDHA	**Al Bayda'**	**2.50**	**37**	*i* P	Pb	09 51 08.4	-1.6
BDHA				*i* S	Sb	09 51 41.9	+0.8

DHMR 19 09:51:03.7±1.8, 12°12N×44°09E, h30km±15km, ML4.3, Western Arabian Peninsula

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
ADEN	**Aden**	**1.09**	**53**	*i* P	Pb	09 51 23.6	-0.4
ADEN				*i* S	Sn	09 51 37.2	+0.3
ADEN				AML	AML	09 51 48.5	
	comp=E,10μm,0.5s						
UDYN	**Al 'Udayn**	**1.84**	**356**	*i* S	Sb	09 51 59.4	0.0
BDHA	**Al Bayda'**	**2.34**	**38**	*i* S	Sb	09 52 14.1	+0.1
BDHA				AML	AML	09 52 24.3	
	comp=E,2μm,0.6s						
DHBB	**Dhamar BB**	**2.45**	**7**	*i* P	Pb	09 51 45.4	-1.9
DHBB				*i* S	Sb	09 52 17.7	+0.5
HAJJ	**Hajjah**	**3.59**	**352**	*i* P	Pn	09 51 59.2	+1.7
HAJJ				*i* S	Sn	09 52 43.3	+4.4

*DHMR **19** 09:57:11.2±1.4, 11°.93N×44°.16E, h14km±264km, ML4.0*
*IDC **19** 09:57:12.8±3.8, 11°.68N×44°.13E, h0km, mb3.6/4, mb1 3.6/4, mb1mx3.4/42, mbtmp3.6/4, Error ellipse: s-maj=96.0km s-min=34.1km az=158.0*
ISC 19 09:57:17.2±1.9, 12°2N±0°.1×44°3E±0°.1, h4km, n7, σ0s95/9, mb3.7/4, Western Arabian Peninsula

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
UDYN	**Al 'Udayn**	**1.75**	**350**	*i* P	**Pn**	**09 57 46.8**	**-1.7**
UDYN				*i* S	**Sg**	**09 58 13.7**	**+0.2**
BDHA	**Al Bayda'**	**2.15**	**36**	*i* P	**Pn**	**09 57 52.7**	**-1.3**
BDHA				*i* S	**Sg**	**09 58 26.6**	**+0.4**
BDHA				AML	AML	09 58 36.0	
	comp=N,1μm,0.3s						
DHBB	**Dhamar BB**	**2.33**	**3**	*i* P	**Pn**	**09 57 57.1**	**+0.5**
DHBB				*i* S	**Sg**	**09 58 32.0**	**0.0**
BRTR	**Keskin Array B**	**28.95**	**343**	P	**P**	**10 03 18.4**	**+0.5**
	comp=N,1.0nm,0.8s,baz=141,slow=9.3,SNR=5.2						
TORD	**Torodi Ar. Bea**	**41.51**	**276**	P	P	10 05 01.5	-4.4
	comp=N,0.7nm,1.1s,baz=90,slow=7.6,SNR=3.5						
MKAR	**Makanchi Array**	**46.99**	**35**	P	**P**	**10 05 49.7**	**+0.1**
	comp=N,0.7nm,0.8s,baz=224,slow=8.5,SNR=6.7						
KURBB	**Kurchatov Arra**	**47.40**	**29**	P	**P**	**10 05 53.1**	**+0.5**
	comp=N,0.5nm,0.6s,baz=229,slow=8.1,SNR=4.6						

*ISK **19** 10:00:29.8, 41°.42N×35°.93E, h5km, MD2.4*
*ISCJB **19** 10:00:30.7±0.6, 41°.36N±0°.04×35°.84E±0°.05, h0km, Error ellipse: s-maj=6.6km s-min=3.9km az=38.1*
*CSEM **19** 10:00:30.8±0.2, 41°.35N×35°.83E, h1km, MD2.6, Error ellipse: s-maj=7.4km s-min=3.8km az=40.0, Suspected Mining explosion.*
*DDA **19** 10:00:30.4, 41°.36N×35°.81E, h7km, Md2.6, Suspected Mining explosion.*
ISC 19 10:00:29.2±1.1, 41°36N±0°.04×35°85E±0°.03, h0km, n16, σ0s61/27, Turkey

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
SAMS	**Samsun-Alacam**	**0.26**	**88**	*i* P	**Pb**	**10 00 36.1**	**-0.7**
SAMS				*i* S	**Sb**	**10 00 41.5**	**-0.3**
SAMS	**Samsun-Alacam**	**0.26**	**88**	P	**Pb**	**10 00 36.1**	**-0.7**
SAMS				S	**Sb**	**10 00 41.5**	**-0.3**
HAVZ	**Havza**	**0.30**	**199**	*i* P	**Pg**	**10 00 35.9**	**+1.0**
HAVZ				*i* S	**Sb**	**10 00 41.8**	**-1.1**
HAVZ	**Havza**	**0.30**	**199**	P	**Pg**	**10 00 35.9**	**+1.0**
HAVZ				S	**Sb**	**10 00 41.8**	**-1.1**
KVT	**Kavak**	**0.31**	**151**	*e*PG	**Pb**	**10 00 37.0**	**-0.7**
KVT				*e*SG	**Sb**	**10 00 42.7**	**-0.7**
KVT	**Kavak**	**0.31**	**151**	*e*Pg	**Pb**	**10 00 37.0**	**-0.7**
KVT				*e*Sg	**Sb**	**10 00 42.7**	**-0.7**
DIKM	**Dikmen**	**0.53**	**304**	*e*PG	**Pb**	**10 00 41.3**	**-0.1**
DIKM				*e*SG	**Sb**	**10 00 49.3**	**-0.3**
DIKM	**Dikmen**	**0.53**	**304**	*e*Pg	**Pb**	**10 00 41.3**	**-0.1**
DIKM				*e*Sg	**Sb**	**10 00 49.3**	**-0.3**
BOYT	**Boyabat**	**0.71**	**276**	*i* P	**Pb**	**10 00 44.1**	**-0.5**
BOYT				*i* S	**Sn**	**10 00 58.2**	**0.0**
BOYT	**Boyabat**	**0.71**	**276**	P	**Pb**	**10 00 44.1**	**-0.5**
SNOP	**Sinop**	**0.82**	**324**	*e*PG	**Pb**	**10 00 45.9**	**-0.5**
SNOP	**Sinop**	**0.82**	**324**	*e*Pg	**Pb**	**10 00 45.9**	**-0.5**
ERBA	**Erbaa**	**0.96**	**134**	*i* P	**Pb**	**10 00 48.8**	**0.0**
ERBA				*i* S	**Sb**	**10 01 01.9**	**-0.2**
ERBA	**Erbaa**	**0.96**	**134**	P	**Pb**	**10 00 48.8**	**0.0**
ERBA				S	**Sb**	**10 01 01.9**	**-0.2**
SVSK	**Karacayir**	**1.68**	**148**	*e*PN	**Pb**	**10 01 01.2**	**+0.2**
SVSK	**Karacayir**	**1.68**	**148**	*e*Pn	**Pb**	**10 01 01.2**	**+0.2**

JMA 19 10:00:59.0±0.1, 38°55'N×141°97E, h32km±1km, M3.6, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**0.50**	**259**	P	Pb	10 01 09.2	-0.3
JIO				S	Sb	10 01 16.1	-0.5
OFUJ	**Ofunato**	**0.58**	**336**	P	Pb	10 01 10.5	-0.3
OFUJ				S	Sb	10 01 18.4	-0.5
JMK	**Ichinoseki**	**0.71**	**305**	P	Pn	10 01 12.6	-0.2
JMK				S	Sb	10 01 22.1	-0.4
JOU	**Okura**	**1.04**	**260**	P	Pn	10 01 17.7	+0.3
JOU				S	Sn	10 01 31.2	+0.3
JOM	**Ohasama**	**1.06**	**330**	P	Pn	10 01 17.8	+0.1
JOM				S	Sn	10 01 31.8	+0.4
JMM	**Marumori**	**1.15**	**234**	P	Pn	10 01 18.5	-0.4
JYK	**Kaneyama**	**1.31**	**287**	P	Pn	10 01 21.8	+0.7

MEX 19 10:03:18.1±0.9, 16°24N×98°35W, h5km, MD3.5, Near coast of Guerrero

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
PNIG	**Pinotepa**	**0.26**	**54**	*i* P	Pg	10 03 22.3	-1.0
PNIG				*e*S	Sg	10 03 27.1	+0.4
VHO	**Vista Hermosa**	**1.76**	**62**	*e*P	Pn	10 03 46.8	-2.6
VHO				*e*S	Sn	10 04 07.4	-4.9

JMA 19 10:08:27.3, 37°03N×140°66E, h7km±1km, M2.7, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.13**	**57**	P	Pg	10 08 30.4	+0.3
ONAJ				S	Sg	10 08 32.5	+0.4
JFK	**Kawauchi**	**0.38**	**27**	P	Pg	10 08 34.8	+0.1
JFK				S	Sg	10 08 40.0	+0.3
JHO	**Hitachi**	**0.42**	**190**	P	Pg	10 08 35.5	0.0
JHO				S	Sg	10 08 41.8	+0.7
JFT	**Otama**	**0.55**	**332**	P	Pg	10 08 38.2	+0.2
JFT				S	Sg	10 08 45.6	+0.4
JMM	**Marumori**	**0.84**	**7**	P	Pg	10 08 43.1	-0.4
JMM				S	Sg	10 08 54.3	-0.1
MAT	**Matsushiro**	**2.03**	**257**	P	Pb	10 09 03.4	-1.1
MAT				S	Sb	10 09 29.7	-0.2

DHMR 19 10:09:27.2±1.7, 12°01N×43°96E, h19km±361km, ML3.8, Western Arabian Peninsula

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
UDYN	**Al 'Udayn**	**1.95**	**0**	*i* P	Pn	10 10 00.8	+1.3
UDYN				*i* S	Sb	10 10 26.4	+0.1
BDHA	**Al Bayda'**	**2.50**	**38**	*i* P	Pn	10 10 09.4	+2.2
BDHA				*i* S	Sb	10 10 43.2	+0.9
BDHA				AML	AML	10 10 52.8	
	comp=N,746nm,0.3s						
DHBB	**Dhamar BB**	**2.58**	**9**	*i* P	Pb	10 10 12.0	-1.2
DHBB				*i* S	Sb	10 10 46.3	+1.7

DHMR 19 10:18:54.2±1.0, 12°06N×44°17E, h7km±13km, ML3.8, Western Arabian Peninsula

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
UDYN	**Al 'Udayn**	**1.90**	**354**	*i* P	Pn	10 19 28.2	+0.9
UDYN				*i* S	Sg	10 19 54.5	-1.0
BDHA	**Al Bayda'**	**2.34**	**36**	*i* P	Pb	10 19 35.7	-1.3
BDHA				*i* S	Sb	10 20 07.1	+0.9
BDHA				AML	AML	10 20 18.0	
	comp=E,748nm,0.5s						
DHBB	**Dhamar BB**	**2.50**	**5**	*i* P	Pb	10 19 38.2	-1.6
DHBB				*i* S	Sb	10 20 12.0	+1.1
HAJJ	**Hajjah**	**3.66**	**351**	*i* P	Pn	10 19 53.3	+1.8
HAJJ				*i* S	Sb	10 20 41.0	-3.1

*ISCJB **19** 10:19:38.9±1.1, 36°.88N±0°.05×143°.26E±0°.09, h33km, mb3.7/2, Error ellipse: s-maj=11.0km s-min=7.0km az=163.2*
*IDC **19** 10:19:40.1±8.1, 36°.26N×143°.03E, h0km, mb3.6/2, mb1 3.7/3, mb1mx3.3/44, mbtmp3.4/3, ML2.9/1, Error ellipse: s-maj=174.8km s-min=34.8km az=29.0*
*JMA **19** 10:19:40.3±0.1, 36°.88N×143°.15E, h55km, M3.4*
ISC 19 10:19:40.7±1.6, 36°90N±0°.07×143°3E±0°.1, h35km, n13, σ0s73/14, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JFK	**Kawauchi**	**1.96**	**284**	*e*S	**Sn**	**10 20 33.2**	**-1.6**
JIO	**Ouri**	**2.16**	**316**	P	**Pn**	**10 20 14.4**	**+0.2**
JIO				S	**Sn**	**10 20 39.7**	**-0.1**
JMM	**Marumori**	**2.18**	**297**	S	**Sn**	**10 20 40.3**	**0.0**
CHOJ	**Chosi**	**2.27**	**239**	P	**Pn**	**10 20 15.3**	**-0.5**
OFUJ	**Ofunato**	**2.51**	**331**	P	**Pn**	**10 20 18.8**	**-0.2**
OFUJ				*e*S	**Sn**	**10 20 47.2**	**-1.2**
JMK	**Ichinoseki**	**2.60**	**322**	P	**Pn**	**10 20 20.8**	**+0.5**
JMK				S	**Sn**	**10 20 50.5**	**-0.1**
JOM	**Ohasama**	**3.00**	**330**	S	**Sn**	**10 21 00.9**	**+0.5**
MJAR	**Matsushiro Arr**	**4.07**	**266**	Pn	**Pn**	**10 20 41.2**	**+0.8**
	0.8nm,0.3s,baz=91,slow=12,SNR=7.2						
MJAR				Sn	**Sn**	**10 21 27.5**	**+0.7**
	0.5nm,0.3s,baz=74,slow=20,SNR=4.0						
H11S1	**WAKE ISLAND Hy**	**27.57**	**125**	T	T	10 54 15.5	
	baz=317,slow=76,SNR=4.1						
H11S3	**WAKE ISLAND Hy**	**27.57**	**125**	T	T	10 54 16.1	
	baz=317,slow=76,SNR=4.2						
H11S2	**WAKE ISLAND Hy**	**27.58**	**125**	T	T	10 54 14.8	
	baz=317,slow=76,SNR=4.0						
WRA	**Warramunga Arr**	**57.16**	**190**	P	**P**	**10 29 23.9**	**-0.2**
	0.7nm,0.8s,baz=7.6,slow=7.2,SNR=4.9						
ASAR	**Alice Springs**	**60.88**	**190**	P	**P**	**10 29 50.2**	**+0.3**
	0.4nm,0.8s,baz=13,slow=8.9,SNR=4.4						

JMA 19 10:27:32.4±0.3, 37°04N×142°52E, h8km, M3.5, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JFK	**Kawauchi**	**1.35**	**284**	P	Pn	10 27 57.6	0.0
JFK				*e*S	Sb	10 28 15.3	-0.2
ONAJ	**Iwakimizuishiy**	**1.38**	**273**	P	Pn	10 27 57.8	-0.2
ONAJ				*e*S	Sb	10 28 15.8	-0.4
JMM	**Marumori**	**1.60**	**301**	P	Pn	10 28 01.1	+0.1
JMM				*e*S	Sn	10 28 23.1	-0.6
JHO	**Hitachi**	**1.62**	**255**	P	Pn	10 28 00.7	-0.6
JIO	**Ouri**	**1.69**	**327**	P	Pn	10 28 02.4	+0.2
JFT	**Otama**	**1.81**	**286**	P	Pn	10 28 04.1	+0.3
JFT				S	Sb	10 28 28.4	-0.1
JOU	**Okura**	**1.98**	**313**	P	Pn	10 28 07.4	+1.2
JOU				*e*S	Sn	10 28 32.0	+0.8

*DHMR **19** 10:32:04.7±0.9, 11°.95N×44°.04E, h10km±12km, ML4.1*
*ISCJB **19** 10:32:06.2±0.8, 11°.91N±0°.06×44°.03E±0°.07, h4km, mb3.6/6, MS3.1/4, Error ellipse: s-maj=11.6km s-min=6.0km az=39.4*
*IDC **19** 10:32:07.1±1.6, 11°.79N×43°.99E, h0km, mb3.7/6, mb1 3.9/6, mb1mx3.5/39, mbtmp3.7/6, MS3.1/4, Ms1 3.1/4, ms1mx2.7/45, Error ellipse: s-maj=43.9km s-min=16.5km az=159.0*
ISC 19 10:32:08.5±1.0, 11°97N±0°.09×43°97E±0°.08, h4km, n16, σ1s84/17, mb3.7/6, MS3.0/4, 1D, Ethiopia

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
ATD	**Arta Tunnel**	**1.18**	**249**	Pn	**Pg**	**10 32 29.8**	**-1.4**
	17nm,0.3s,baz=65,slow=10.0,SNR=29						
ATD				Sn	**Sg**	**10 32 47.2**	**+0.7**
	25nm,0.3s,baz=256,slow=21,SNR=6.8						
UDYN	**Al 'Udayn**	**1.99**	**360**	*i* P	**Pn**	**10 32 40.0**	**-3.1**
UDYN				*i* S	**Sn**	**10 33 07.4**	**-1.1**
BDHA	**Al Bayda'**	**2.53**	**38**	*i* P	**Pn**	**10 32 47.5**	**-3.2**
BDHA				*i* S	**Sn**	**10 33 22.2**	**+0.1**
BDHA				AML	AML	10 33 32.5	
	comp=E,2μm,0.7s						
DHBB	**Dhamar BB**	**2.62**	**9**	*i* P	**Pn**	**10 32 50.7**	**-1.3**
DHBB				*i* S	**Sn**	**10 33 25.5**	**+1.1**
HAJJ	**Hajjah**	**3.73**	**355**	*i* P	**Pn**	**10 33 05.5**	**-1.6**
HAJJ				*i* S	**Sn**	**10 33 52.6**	**+1.0**
KMBO	**Kilima Mbogo**	**14.62**	**208**	Lg	Lg	10 39 50.2	
	comp=E,0.1nm,0.3s,baz=278,slow=18,SNR=4.1						
WSAR	**Wadi Sarin**	**17.90**	**49**	P	**P**	**10 36 22.9**	**+3.7**
	comp=E,0.4nm,0.3s,baz=267,slow=9.9,SNR=4.1						
GNI	**Garni**	**28.08**	**1**	LR	LR	10 48 46.2	
	comp=E,20nm,18.3s,baz=142,slow=35						
IDI	**Anoyia**	**28.95**	**326**	LR	LR	10 49 05.0	
	comp=E,15nm,20.6s,baz=113,slow=35						
BRTR	**Keskin Array B**	**29.12**	**343**	P	**P**	**10 38 12.3**	**+1.6**
	comp=E,1.1nm,0.8s,baz=146,slow=9.0,SNR=5.8						
TORD	**Torodi Ar. Bea**	**41.24**	**276**	P	**P**	**10 39 55.8**	**+0.7**
	comp=E,1.1nm,1.1s,baz=103,slow=12,SNR=3.7						
GERES	**GERESS Array B**	**44.52**	**332**	P	**P**	**10 40 21.6**	**+0.2**
	comp=E,0.3nm,0.4s,baz=120,slow=6.0,SNR=5.0						
MKAR	**Makanchi Array**	**47.38**	**35**	P	**P**	**10 40 43.3**	**-0.6**
	comp=E,1.1nm,0.8s,baz=232,slow=7.1,SNR=7.4						
FINES	**FINESS Array B**	**51.09**	**349**	LR	LR	11 03 56.3	
	comp=E,64nm,18.2s,baz=332,slow=37						
ZALV	**Zalesovo Beam**	**52.87**	**29**	P	**P**	**10 41 24.6**	**-0.7**
	comp=E,0.4nm,0.4s,baz=250,slow=8.8,SNR=3.5						
ZALV				LR	LR	11 05 20.6	
	comp=E,24nm,18.0s,baz=82,slow=38						

CMAR	**Chiang Mai Arr**	**53.28**	**76**	P	**P**	**10 41 29.0**	**0.0**
	comp=E,0.3nm,0.3s,baz=272,slow=9.0,SNR=5.8						

*ISCJB **19** 10:33:08.5±0.3, 35°.26N±0°.01×92°.35W±0°.01, h8km±1km, Error ellipse: s-maj=2.5km s-min=1.8km az=7.4*
*IASPEI **19** 10:33:09.1±1.2, 35°.27N±0°.03×92°.38W±0°.03, h6km±6km, Error ellipse: s-maj=5.0km s-min=4.0km az=68.0, GT5 selection from ISC bulletin GT5 identified by Bond¨¡r and McLaughlin (2009) selection criteria Bond¨¡r and McLaughlin, A new ground truth data set for seismic studies, Seism. Res. Let., 80, 465-472, 2009*
*NEIC **19** 10:33:09.3, 35°.25N×92°.36W, h3km, mb3.5/1, MN3.3, After CERI.*
NEIC Felt [III] at Greenbrier. Also felt at Antoine, Beebe, Benton, Cabot, Conway and Vilonia.
ISC 19 10:33:09.3±0.8, 35°26N±0°.02×92°38W±0°.02, h5km±4km, n84, σ0s99/137, Arkansas

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
X301	**Greenbrier Sit**	**0.02**	**217**	*e*Pg	**Pg**	**10 33 10.2**	**-0.1**
X301				*e*Sg	**Sg**	**10 33 11.0**	**0.0**
X201	**Greenbrier Sit**	**0.04**	**26**	*e*Pg	**Pg**	**10 33 10.2**	**-0.3**
X201				*e*Sg	**Sg**	**10 33 11.5**	**+0.2**
WHAR	**Wooly Hollow**	**0.09**	**66**	*e*Pg	**Pg**	**10 33 10.8**	**-0.3**
WHAR				*e*Sg	**Sg**	**10 33 12.1**	**-0.3**
W41B	**Gary Mavity, V**	**0.14**	**126**	P	**Pg**	**10 33 11.7**	**-0.4**
	baz=311,SNR=1000						
W41B				S	**Sg**	**10 33 13.5**	**-0.5**
	baz=311						
UALR	**University of**	**0.48**	**176**	*e*Pg	**Pg**	**10 33 18.3**	**-0.3**
UALR				*e*Sg	**Sb**	**10 33 28.5**	**+0.9**
W40A	**Ferguson Farm,**	**0.56**	**264**	P	**Pg**	**10 33 20.1**	**-0.1**
	baz=84,SNR=48						
W40A				S	**Sg**	**10 33 28.4**	**+0.9**
	baz=84						
V40A	**Witts Springs**	**0.65**	**327**	P	**Pg**	**10 33 21.4**	**-0.5**
	baz=146,SNR=350						
V40A				S	**Sg**	**10 33 30.5**	**+0.1**
	baz=146						
X40A	**Basin Creek Fa**	**0.85**	**206**	P	**Pg**	**10 33 25.2**	**-0.4**
	baz=26,SNR=104						
X40A				S	**Sg**	**10 33 36.9**	**+0.3**
	baz=26						
W39A	**Magazine**	**1.15**	**267**	P	**Pg**	**10 33 30.6**	**-0.7**
	baz=87,SNR=25						
W39A				S	**Sb**	**10 33 46.9**	**+0.1**
	baz=87						
U40A	**Yellville**	**1.16**	**341**	P	**Pg**	**10 33 30.6**	**-1.0**
	baz=160						
V39A	**Pettigrew**	**1.18**	**300**	P	**Pg**	**10 33 31.0**	**-0.9**
	baz=119,SNR=124						
V39A				S	**Sg**	**10 33 46.8**	**-0.5**
	baz=119						
MIAR	**Mount Ida**	**1.21**	**234**	P	**Pg**	**10 33 31.7**	**-0.9**
	baz=54,SNR=250						
MIAR				S	**Sg**	**10 33 48.0**	**-0.2**
	baz=54						
MIAR	**Mount Ida**	**1.21**	**234**	*e*Pg	**Pg**	**10 33 31.6**	**-0.9**
MIAR				*e*Sg	**Sg**	**10 33 48.3**	**+0.1**
CCAR	**Cane Creek**	**1.43**	**159**	*e*Pn	**Pn**	**10 33 35.1**	**-0.7**
U39A	**Green Forest**	**1.43**	**322**	Pb	**Pn**	**10 33 35.2**	**-0.8**
	baz=141						
U39A				S	**Sb**	**10 33 54.4**	**-0.7**
	baz=141						
HBAR	**Harrisburg**	**1.44**	**78**	*e*Pn	**Pn**	**10 33 35.5**	**-0.5**
HBAR				*e*Sn	**Sb**	**10 33 54.4**	**-0.8**
Y40A	**Okolona**	**1.44**	**211**	Pb	**Pn**	**10 33 35.9**	**-0.2**
	baz=31,SNR=83						
Y40A				Sb	**Sg**	**10 33 55.6**	**-0.1**
	baz=31						
Y42A	**Garnett, Star**	**1.50**	**161**	Pb	**Pn**	**10 33 36.5**	**-0.3**
	baz=342,SNR=45						
Y42A				Sg	**Sg**	**10 33 58.0**	**+0.5**
	baz=342						
X39A	**Fountain Ranch**	**1.60**	**243**	Pb	**Pn**	**10 33 38.3**	**0.0**
	baz=62,SNR=220						
HHAR	**Hobbs**	**1.63**	**309**	*e*Pn	**Pn**	**10 33 38.7**	**0.0**
HHAR				*e*Sn	**Sb**	**10 34 00.5**	**-0.2**
V38A	**Canehill**	**1.76**	**291**	Pb	**Pn**	**10 33 41.0**	**+0.6**
	baz=110,SNR=102						
V38A				Sb	**Sb**	**10 34 04.4**	**0.0**
	baz=110						
W38A	**Poteau**	**1.76**	**265**	Pb	**Pn**	**10 33 41.1**	**+0.7**
	baz=83,SNR=101						
W38A				Sb	**Sg**	**10 34 05.2**	**-0.6**
	baz=83						
Y43A	**Makayla and Ka**	**1.80**	**138**	Pb	**Pn**	**10 33 40.8**	**-0.2**
	baz=319,SNR=29						
Y43A				Sb	**Sb**	**10 34 05.3**	**-0.3**
	baz=319						
T40A	**Mansfield**	**1.89**	**357**	Pb	**Pn**	**10 33 42.7**	**+0.4**
	baz=176						
T40A				Sb	**Sb**	**10 34 08.0**	**-0.3**
	baz=176						
Y39A	**Lockesburg**	**1.93**	**227**	P	**Pn**	**10 33 42.7**	**-0.1**
	baz=47,SNR=18						
T39A	**Clever**	**1.94**	**336**	Pb	**Pn**	**10 33 43.7**	**+0.8**
	baz=155						
T39A				Sb	**Sb**	**10 34 09.8**	**+0.2**
	baz=155						
U38A	**Gravette**	**2.01**	**307**	Pb	**Pn**	**10 33 44.5**	**+0.6**
	baz=125						
U38A				Sb	**Sb**	**10 34 11.8**	**+0.2**
	baz=125						
MET	**Memphis--Engin**	**2.01**	**93**	*e*Pn	Pn	10 33 39.4	-4.5
MET				*e*Sn	**Sn**	**10 34 08.0**	**-1.4**
X38A	**Whitesboro**	**2.09**	**254**	Pb	**Pn**	**10 33 46.3**	**+1.3**
	baz=73,SNR=50						
X38A				Sb	**Sg**	**10 34 15.5**	**-1.0**
	baz=73						
Z40A	**Long Farm, Mag**	**2.16**	**203**	P	**Pn**	**10 33 45.9**	**0.0**
	baz=23						
PBMO	**Poplar Bluff**	**2.19**	**46**	*e*Pn	**Pn**	**10 33 47.2**	**+0.8**
PBMO				*e*Sn	**Sb**	**10 34 16.9**	**0.0**
Y44A	**Strider, Charl**	**2.21**	**125**	Sb	**Sb**	**10 34 17.2**	**-0.2**
	baz=307						
V37A	**Hulbert**	**2.33**	**286**	P	**Pn**	**10 33 48.8**	**+0.4**
	baz=105,SNR=50						
S40A	**Lebanon**	**2.34**	**358**	P	**Pn**	**10 33 48.8**	**+0.4**
	baz=177						
Y38A	**Idabel**	**2.35**	**236**	P	**Pn**	**10 33 48.8**	**+0.3**
	baz=55						
EBZ	**Ebenezer Churc**	**2.49**	**92**	*e*Pn	**Pn**	**10 33 50.2**	**-0.2**
EBZ				*e*Sn	**Sn**	**10 34 20.8**	**-0.4**
U37A	**Salina**	**2.50**	**298**	P	**Pn**	**10 33 51.1**	**+0.5**
	baz=116						
S39A	**Bolivar**	**2.54**	**343**	P	**Pn**	**10 33 51.9**	**+0.7**
	baz=162						
OXF	**Oxford**	**2

PLAL				*e*Sn	**Sn**	**10 34 46.2**	**-1.0**
PLAL				*e*Sg	**Sg**	**10 34 60.0**	**-3.1**
S36A	**Lake Cedric, C** baz=133	**3.57**	**315**	P	**Pn**	**10 34 05.8**	**+0.5**
R37A	**Teagarden Farm** baz=146	**3.63**	**328**	P	**Pn**	**10 34 06.4**	**+0.3**
V35A	**Meyer Ranch, C** baz=97	**3.67**	**279**	P	**Pn**	**10 34 07.0**	**+0.3**
T35A	**Sooner Cattle** baz=115	**3.73**	**298**	P	**Pn**	**10 34 07.8**	**+0.2**
WVT	**Waverly**	**3.81**	**75**	*e*Pn	**Pn**	**10 34 08.4**	**-0.2**
WVT				*e*Sn	**Sn**	**10 34 53.9**	**+0.2**
WVT				*e*Sg	**Sb**	**10 35 06.8**	**+3.5**
245A	**Little AP, Sta** baz=328	**3.83**	**146**	P	**Pn**	**10 34 09.0**	**+0.2**
V34A	**Guthrie** baz=96	**4.23**	**279**	P	**Pn**	**10 34 14.5**	**+0.2**
V34A	**Guthrie**	**4.23**	**279**	*e*Pn	**Pn**	**10 34 14.8**	**+0.4**
V34A				*e*Sn	**Sn**	**10 35 04.1**	**0.0**
V34A				*e*Sg	**Sg**	**10 35 21.6**	**-3.4**
T34A	**McClaskey Farm** baz=113	**4.27**	**296**	P	**Pn**	**10 34 15.1**	**+0.2**
U34A	**Anderson Ranch**	**4.35**	**287**	*e*Pn	**Pn**	**10 34 12.9**	**-3.1**
U34A				*e*Sn	**Sn**	**10 35 07.8**	**+0.7**
U34A				*e*Sg	**Sg**	**10 35 28.2**	**-0.7**
345A	**Thompson Farm,** baz=334	**4.40**	**153**	P	**Pn**	**10 34 16.6**	**-0.2**
W34A	**Bridge Creek,**	**4.41**	**271**	*e*Pn	**Pn**	**10 34 17.4**	**+0.5**
W34A				*e*Sn	**Sn**	**10 35 09.9**	**+1.3**
W34A				*e*Sg	**Sg**	**10 35 28.3**	**-2.7**
USIN	**University of**	**4.66**	**53**	*e*Pn	**Pn**	**10 34 20.3**	**0.0**
USIN				*e*Sg	**Sg**	**10 35 35.3**	**-3.7**
LRAL	**Lakeview Retre**	**4.99**	**115**	*e*Pn	**Pn**	**10 34 24.8**	**0.0**
LRAL				*e*Sn	**Sn**	**10 35 21.1**	**-1.7**
KSU1	**Kansas State U**	**5.11**	**320**	*e*Pn	**Pn**	**10 34 30.1**	**+3.9**
KSU1				*e*Sn	**Sn**	**10 35 25.7**	**-0.1**
WMOK	**Wichita Mounta**	**5.28**	**266**	*e*Pn	**Pn**	**10 34 29.0**	**+0.2**
WMOK				*e*Sn	**Sn**	**10 35 31.1**	**+1.0**
SWET	**Sewanee**	**5.28**	**89**	*e*Pn	**Pn**	**10 34 29.1**	**+0.2**
SWET				*e*Sn	**Sn**	**10 35 28.6**	**-1.5**
WHTX	**Lake Whitney,**	**5.34**	**234**	*e*Pn	**Pn**	**10 34 30.1**	**+0.5**
WHTX				*e*Sn	**Sn**	**10 35 32.3**	**+0.8**
W32A	**Sentinel** baz=87,SNR=5.6	**5.62**	**271**	P	**Pn**	**10 34 33.8**	**+0.2**
Z33A	**Whitaker Ranch** baz=68	**5.64**	**251**	P	**Pn**	**10 34 33.9**	**+0.2**
WCI	**Wyandotte Cave**	**5.72**	**57**	*e*Pn	**Pn**	**10 34 34.5**	**-0.4**
WCI				*e*Pg	**Pb**	**10 34 51.2**	**+1.6**
WCI				*e*Sn	**Sn**	**10 35 40.3**	**-0.7**
WCI				*e*Sg	Sb	10 36 05.0	+6.6
BLO	**Bloomington**	**6.09**	**48**	*e*Pn	**Pn**	**10 34 39.5**	**-0.5**
BLO				*e*Sn	**Sn**	**10 35 50.0**	**-0.1**
BLO				*e*Sg	Sb	10 36 17.0	+7.8
CPCT	**Cooper Cave**	**6.43**	**86**	*e*Pn	**Pn**	**10 34 44.9**	**+0.3**
CPCT				*e*Sn	**Sn**	**10 35 56.9**	**-1.5**
ABTX	**Abilene, Hawle**	**6.58**	**249**	*e*Pn	**Pn**	**10 34 46.9**	**+0.2**
ABTX				*e*Sg	**Sg**	**10 36 37.2**	**-3.3**
TKL	**Tuckaleechee C**	**7.04**	**84**	*e*Pn	**Pn**	**10 34 54.0**	**+1.0**
TKL				*e*Sg	Sg	10 36 48.0	-7.3
TZTN	**Tazewell**	**7.29**	**77**	*e*Pn	**Pn**	**10 34 57.2**	**+0.8**
TZTN				*e*Sn	**Sn**	**10 36 20.0**	**+0.5**
TZTN				*e*Sg	**Sg**	**10 37 02.0**	**-1.1**
ECSD	**EROS Data Cent**	**9.07**	**340**	*e*Pn	**Pn**	**10 35 20.4**	**-0.5**
MNTX	**Cornudas Mount**	**11.42**	**256**	*e*Pn	**Pn**	**10 35 52.0**	**-1.0**
JLU	**Jordanelle** 3.2nm,0.7s	**15.95**	**295**	*e*Pn	**P**	**10 36 58.7**	**+0.3**

*ISK **19** 10:39:34.4,37.°34N×28.°15E,h21km,MD2.6,ML2.0*
*ISCJB **19** 10:39:35.2±0.7,37.°32N±0.°04×28.°15E±0.°05,h0km,Error ellipse: s-maj=6.4km s-min=4.1km az=41.9*
*CSEM **19** 10:39:35.7±0.3,37.°32N×28.°12E,h1km,MD2.6,Error ellipse: s-maj=7.8km s-min=5.5km az=51.0,Suspected Mining explosion.*
*DDA **19** 10:39:35.3,37.°29N×28.°11E,h7km,Md2.7,Suspected Mining explosion.*

ISC 19 10:39:32.1±1.2,37.°40N±0.°05×28.°24E±0.°05,h0km,n13, σ0°61/22,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
YER	**Yerkesik**	**0.26**	**173**	*e*PG	**Pb**	**10 39 39.8**	**+0.1**
YER				*e*SG	**Sb**	**10 39 45.0**	**+0.3**
YER	**Yerkesik**	**0.26**	**173**	*e*Pg	**Pb**	**10 39 39.8**	**+0.1**
YER				*e*Sg	**Sb**	**10 39 45.0**	**+0.3**
AYDN	**Tasoluk**	**0.39**	**313**	*i* P	**Pn**	**10 39 44.1**	**-1.0**
AYDN				*i* S	**Sb**	**10 39 49.2**	**+0.6**
AYDN	**Tasoluk**	**0.39**	**313**	P	**Pn**	**10 39 44.1**	**-1.0**
AYDN				S	**Sb**	**10 39 49.2**	**+0.6**
TURN	**Turunc**	**0.59**	**151**	*i* P	**Pb**	**10 39 45.2**	**-0.1**
TURN				*i* S	**Sb**	**10 39 53.9**	**-0.4**
AYDB	**Zeytinkoy-Aydi**	**0.62**	**333**	*e*PG	**Pn**	**10 39 47.8**	**-0.5**
AYDB	**Zeytinkoy-Aydi**	**0.62**	**333**	*e*Pg	**Pn**	**10 39 47.8**	**-0.5**
DALY	**Dalyan (Mu¨la**	**0.66**	**150**	*e*PG	**Pn**	**10 39 48.2**	**-0.5**
DALY	**Dalyan (Mu¨la**	**0.66**	**150**	*e*Pg	**Pn**	**10 39 48.2**	**-0.5**
BDRM	**Kayabasi**	**0.72**	**243**	*i* P	**Pg**	**10 39 46.2**	**+0.4**
BDRM				*i* S	**Sg**	**10 39 55.9**	**+0.8**
BDRM	**Kayabasi**	**0.72**	**243**	P	**Pg**	**10 39 46.2**	**+0.4**
BDRM				S	**Sg**	**10 39 55.9**	**+0.8**
BODT	**Bodrum**	**0.81**	**246**	*e*PG	**Pb**	**10 39 49.0**	**-0.1**
BODT				*e*SG	**Sb**	**10 39 59.8**	**-0.9**
BODT	**Bodrum**	**0.81**	**246**	*e*Pg	**Pb**	**10 39 49.0**	**-0.1**
BODT				*e*Sg	**Sb**	**10 39 59.8**	**-0.9**

*ISK **19** 10:56:37.1,37.°09N×28.°21E,h25km,MD2.7*
*CSEM **19** 10:56:38.9±0.5,37.°18N×28.°23E,h1km,MD2.7,Error ellipse: s-maj=13.1km s-min=9.7km az=45.0,Suspected Mining explosion.*
*DDA **19** 10:56:38.8,37.°25N×28.°26E,h7km,Md2.7,Suspected Mining explosion.*
*ISCJB **19** 10:56:39.5±0.6,37.°20N±0.°04×28.°17E±0.°04,h0km,Error ellipse: s-maj=5.8km s-min=3.7km az=37.9*

ISC 19 10:56:37.2±0.9,37.°02N±0.°05×28.°06E±0.°04,h0km,n15, σ1°61/26,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
YER	**Yerkesik**	**0.21**	**58**	*e*PG	**Pg**	**10 56 41.9**	**+0.7**
YER				*e*SG	**Sg**	**10 56 45.4**	**+1.5**
YER	**Yerkesik**	**0.21**	**58**	*e*Pg	**Pg**	**10 56 41.9**	**+0.7**
YER				*e*Sg	**Sg**	**10 56 45.4**	**+1.5**
TURN	**Turunc**	**0.46**	**109**	*i* P	**Pb**	**10 56 48.0**	**-0.2**
TURN				*i* S	**Sb**	**10 56 55.1**	**-0.3**
BDRM	**Kayabasi**	**0.50**	**275**	*i* P	**Pn**	**10 56 52.5**	**+0.9**
BDRM				*i* S	**Sb**	**10 57 00.7**	**+4.1**
BDRM	**Kayabasi**	**0.50**	**275**	P	**Pn**	**10 56 52.5**	**+0.9**
BDRM				S	**Sb**	**10 57 00.7**	**+4.1**
DALY	**Dalyan (Mu¨la**	**0.52**	**113**	*e*PG	**Pg**	**10 56 47.0**	**0.0**
DALY	**Dalyan (Mu¨la**	**0.52**	**113**	*e*Pg	**Pg**	**10 56 47.1**	**0.0**
BODT	**Bodrum**	**0.60**	**274**	*e*PG	**Pn**	**10 56 51.5**	**-1.5**
BODT				*e*SG	**Sn**	**10 57 02.7**	**-0.8**
BODT	**Bodrum**	**0.60**	**274**	*e*Pg	**Pn**	**10 56 51.6**	**-1.5**
BODT				*e*Sg	**Sn**	**10 57 02.7**	**-0.8**
AYDN	**Tasoluk**	**0.65**	**347**	*i* P	**Pg**	**10 56 48.9**	**-0.8**
AYDN				*i* S	**Sg**	**10 56 56.4**	**-1.8**
AYDN	**Tasoluk**	**0.65**	**347**	P	**Pg**	**10 56 48.9**	**-0.8**
AYDN				S	**Sg**	**10 56 56.4**	**-1.8**
AYDB	**Zeytinkoy-Aydi**	**0.93**	**352**	*e*PG	**Pg**	**10 56 54.7**	**-0.4**
AYDB				*e*SG	**Sg**	**10 57 07.0**	**-0.2**
AYDB	**Zeytinkoy-Aydi**	**0.93**	**352**	*e*Pg	**Pg**	**10 56 54.7**	**-0.4**
AYDB				*e*Sg	**Sg**	**10 57 07.0**	**-0.2**
KARP	**Karpathos**	**1.64**	**207**	*e*PN	**Pn**	**10 57 05.7**	**-1.7**
KARP	**Karpathos**	**1.64**	**207**	*e*Pn	**Pn**	**10 57 05.7**	**-1.7**

IDC 19 11:10:23.3±1.4,54.°38N×86.°36E,h0km,mb1 3.4/4, mb1mx3.1/69,mbtmp3.4/4,ML3.0/4,3C-3D,Error ellipse: s-maj=14.7km s-min=10.9km az=171.0,Southwestern Siberia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
I46RU	**ZALESOVO INFRA** baz=59,slow=318,SNR=2.8	**1.00**	**245**	*i*		11 18 40.0	
ZALV	**Zalesovo Beam** 2.0nm,0.3s,baz=60,slow=18,SNR=7.1	**1.00**	**245**	Pg	Pg	11 10 41.5	-1.0
ZALV				Lg	Lg	11 10 57.3	
KURK	**Kurchatov** 1.8nm,0.3s,baz=54,slow=33,SNR=4.4	**5.98**	**235**	⇓Pg	Pn	11 11 51.5	-1.4
	2.0nm,0.7s						
KURK				⇑Sn	Sn	11 13 05.3	+3.2
	1.9nm,0.6s						
KURK				⇓Lg	Lg	11 13 53.9	
	5.6nm,0.7s						
KURBB	**Kurchatov Arra** 0.2nm,0.3s,baz=49,slow=14,SNR=16	**6.08**	**235**	Pn	Pn	11 11 54.8	+0.4
KURBB				Sn	Sn	11 13 04.5	-0.2
	baz=46,slow=22,SNR=2.5						
KURBB				Lg	Lg	11 13 36.8	
	0.0nm,0.3s,baz=45,slow=32,SNR=3.4						
KURBB	**Kurchatov Arra** 1.1nm,0.3s,baz=54,slow=15	**6.08**	**235**	⇑Pg	Pn	11 11 54.4	0.0
KURBB				⇓Sn	Sn	11 13 04.7	+0.1
	5.0nm,0.6s,baz=47,slow=21						
KURBB				⇑Lg	Lg	11 13 57.8	
	8.7nm,0.9s,baz=49,slow=34						
MKAR	**Makanchi Array** 0.2nm,0.3s,baz=22,slow=14,SNR=5.6	**8.03**	**200**	Pn	Pn	11 12 21.2	+0.1
MKAR				Sn	Sn	11 13 51.4	-1.2
	0.1nm,0.3s,baz=29,slow=28,SNR=7.8						
MKAR				Lg	Lg	11 14 37.5	
	0.0nm,0.3s,baz=16,slow=32,SNR=2.3						
BVAR	**Borovoye Array** 0.1nm,0.3s,baz=74,slow=15,SNR=2.5	**9.57**	**268**	Pn	Pn	11 12 42.6	+0.4
TLY	**Talaya** 0.0nm,0.3s,baz=292,slow=16,SNR=3.8	**10.75**	**98**	Pn	Pn	11 12 59.4	+1.0

IDC 19 11:11:46.8±2.1,6.°38N×126.°06E,h0km,mb3.3/3, mb1 3.7/3,mb1mx3.3/59,mbtmp3.3/3,Error ellipse: s-maj=150.9km s-min=32.1km az=88.0,Mindanao

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr** 0.4nm,0.6s,baz=341,slow=11,SNR=5.9	**27.40**	**163**	P	P	11 17 34.3	0.0
WRA				PcP	PcP	11 20 53.6	+0.1
	0.2nm,0.4s,baz=338,slow=2.6,SNR=3.0						
ASAR	**Alice Springs** 0.1nm,0.3s,baz=337,slow=6.9,SNR=7.1	**30.83**	**166**	P	P	11 18 04.2	-0.6
ASAR				PcP	PcP	11 21 02.5	+0.3
	0.3nm,0.5s,baz=352,slow=2.3,SNR=8.2						
ILAR	**Eielson Array** 0.2nm,0.6s,baz=275,slow=5.5,SNR=5.3	**83.01**	**26**	P	P	11 24 13.3	-0.5

DHMR 19 11:24:38.2±0.5,12.°08N×44.°00E,h7km±11km,ML3.7, Western Arabian Peninsula

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ADEN	**Aden**	**1.19**	**54**	*i* P	Pg	11 25 00.3	-0.7
ADEN				*i* S	Sb	11 25 17.0	+0.4
ADEN				AML	AML	11 25 17.6	
	comp=E,2μm,0.7s						
BDHA	**Al Bayda'**	**2.43**	**39**	*i* P	Pn	11 25 20.4	+1.9
BDHA				*i* S	Sb	11 25 53.8	+1.1
BDHA				AML	AML	11 26 01.4	
	comp=E,493nm,0.3s						
DHBB	**Dhamar BB**	**2.51**	**9**	*i* P	Pb	11 25 21.9	-1.9
DHBB				*i* S	Sb	11 25 56.1	+1.2

MEX 19 11:25:23.3±0.5,18.°08N×101.°59W,h20km±28km,MD3.8, Guerrero

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ZIIG	**Zihuatanejo**	**0.48**	**166**	*i* P	Pb	11 25 31.2	-1.9
ZIIG				*e*S	Sb	11 25 38.1	-1.6
ARIG	**Puente Sto Nin**	**1.19**	**80**	*e*P	Pn	11 25 41.7	-3.2
ARIG				*i* S	Sb	11 25 56.3	-4.0
CAIG	**El Cayaco**	**1.62**	**129**	*e*P	Pn	11 25 47.5	-3.2
MMIG	**Aquila**	**1.69**	**278**	*e*P	Pn	11 25 49.5	-2.1
MMIG				*e*S	Sn	11 26 08.7	-4.0
MEIG	**Mezcala**	**1.88**	**94**	*e*P	Pn	11 25 52.1	-2.3
MEIG				*i* S	Sn	11 26 13.6	-4.0
EZ5V		**2.37**	**306**	*e*P	Pn	11 25 58.8	-2.5
EZ5V				*e*S	Sn	11 26 26.8	-3.1
R15V		**2.52**	**296**	*e*P	Pn	11 26 00.8	-2.4
R15V				*e*S	Sn	11 26 30.1	-3.3
TLIG	**Tlapa**	**2.92**	**100**	*e*P	Pn	11 26 06.6	-2.2
TLIG				*i* S	Sn	11 26 39.7	-3.7

JMA 19 11:29:50.7±0.1,38.°32N×141.°90E,h60km±1km,M3.5, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**0.45**	**287**	P	Pn	11 30 02.3	+0.1
JIO				S	Sn	11 30 10.4	-0.1
OFUJ	**Ofunato**	**0.78**	**347**	P	Pn	11 30 06.0	+0.1
OFUJ				*e*S	Sn	11 30 17.0	-0.1
JMK	**Ichinoseki**	**0.83**	**320**	P	Pn	11 30 06.8	+0.3
JMK				S	Sn	11 30 18.3	+0.2
JOU	**Okura**	**0.97**	**273**	P	Pn	11 30 08.7	+0.3
JOU				S	Sn	11 30 21.5	0.0
JMM	**Marumori**	**0.98**	**243**	S	Sn	11 30 20.8	-0.9
JOM	**Ohasama**	**1.25**	**338**	P	Pn	11 30 12.4	+0.4
JOM				S	Sn	11 30 28.7	+0.8
JYK	**Kaneyama**	**1.35**	**297**	P	Pn	11 30 13.7	+0.4
JYK				S	Sn	11 30 31.1	+0.8
JYS	**Shirataka**	**1.45**	**267**	P	Pn	11 30 15.1	+0.4
JYS				S	Sn	11 30 33.2	+0.5

*DDA **19** 11:32:36.6,37.°69N×34.°73E,h7km,Md2.8*
*ISCJB **19** 11:32:37.5±0.5,37.°64N±0.°03×34.°72E±0.°05,h13km±6km, Error ellipse: s-maj=6.9km s-min=4.3km az=153.5*
*CSEM **19** 11:32:37.6±0.2,37.°62N×34.°70E,h10km,MD2.4,Error ellipse: s-maj=4.8km s-min=3.2km az=68.0*
*ISK **19** 11:32:37.2,37.°62N×34.°69E,h9km,MD2.4,ML2.3*

ISC 19 11:32:37.4±1.0,37.°64N±0.°03×34.°71E±0.°04,h15km±11km, n16,σ0°35/28,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GULE	**Gulek**	**0.36**	**172**	*i* P	**Pg**	**11 32 44.3**	**-0.4**
GULE				*i* S	**Sb**	**11 32 51.0**	**0.0**
GULE	**Gulek**	**0.36**	**172**	P	**Pg**	**11 32 44.3**	**-0.4**
GULE				S	**Sb**	**11 32 51.0**	**0.0**
KARA	**Karaisali**	**0.46**	**144**	*e*PG	**Pg**	**11 32 46.4**	**-0.2**
KARA				*e*SG	**Sg**	**11 32 53.5**	**+0.7**
KARA	**Karaisali**	**0.46**	**144**	*e*Pg	**Pg**	**11 32 46.4**	**-0.2**
KARA				*e*Sg	**Sg**	**11 32 53.5**	**+0.7**
NIG	**Nigde**	**0.48**	**350**	*e*PG	**Pb**	**11 32 47.8**	**+0.1**
NIG				*e*SG	**Sb**	**11 32 54.9**	**+0.2**
NIG	**Nigde**	**0.48**	**350**	*e*Pg	**Pb**	**11 32 47.8**	**+0.1**
NIG				*e*Sg	**Sb**	**11 32 54.9**	**+0.2**
KERG	**Konya-Eregli**	**0.52**	**245**	*i* P	**Pg**	**11 32 47.3**	**-0.4**
KERG				*i* S	**Sb**	**11 32 55.8**	**+0.1**
KERG	**Konya-Eregli**	**0.52**	**245**	P	**Pg**	**11 32 47.3**	**-0.4**
KERG				S	**Sb**	**11 32 55.8**	**+0.1**
AKO	**Adana**	**0.61**	**107**	P	**Pg**	**11 32 48.6**	**-0.7**
AKO				*i* S	**Sg**	**11 32 57.7**	**+0.3**
DED	**Mersin**	**0.68**	**174**	*e*P	**Pg**	**11 32 50.3**	**-0.3**
DED				*i* S	**Sb**	**11 33 00.6**	**+0.4**
MERS	**Mersin**	**0.78**	**191**	*e*PG	**Pb**	**11 32 52.8**	**0.0**
MERS	**Mersin**	**0.78**	**191**	*e*Pg	**Pb**	**11 32 52.8**	**0.0**
GULA	**Gulagac**	**0.80**	**332**	*e*PG	**Pb**	**11 32 52.9**	**-0.2**
GULA				*e*SG	**Sb**	**11 33 04.2**	**+0.4**
GULA	**Gulagac**	**0.80**	**332**	*e*Pg	**Pb**	**11 32 52.9**	**-0.2**
GULA				*e*Sg	**Sb**	**11 33 04.2**	**+0.4**
KOZT	**Kozan**	**0.90**	**100**	*e*PG	**Pn**	**11 32 55.4**	**-0.1**
KOZT	**Kozan**	**0.90**	**100**	*e*Pg	**Pn**	**11 32 55.4**	**-0.1**

*IDC **19** 11:33:14.9±0.7,21.°59S×169.°92E,h0km,mb4.5/17, mb1 4.6/20,mb1mx4.4/39,mbtmp4.5/20,ML4.0/3,MS4.1/30, Ms1 4.1/30,ms1mx4.0/43,Error ellipse: s-maj=20.0km s-min=15.9km az=150.0*
*ISCJB **19** 11:33:19.6±0.3,21.°63S±0.°05×169.°77E±0.°05,h35km, mb4.8/49,MS4.2/32,Error ellipse: s-maj=7.0km s-min=5.8km az=138.3*
*MOS **19** 11:33:19.7±1.2,21.°56S×169.°70E,h33km,mb4.9/27, MS4.2/7,Error ellipse: s-maj=11.6km s-min=10.0km az=164.7*
*GCMT **19** 11:33:23.2±0.2,21.°65S×169.°60E,h30km,MW5.0/67, Moment Tensor Solution. s52,c67; s67,c96; Duration: 0 Moment tensor: Scale 10¹⁶Nm; Mrr3.52±.17;*
Mθθ-0.32±.13; Mϕϕ-3.20±.11; Mrθ-0.51±.20; Mrϕ1.65±.07; Mθϕ-2.66±.15; Best double couple: M=4.62800×10¹⁶ NP1:ϕs175.00000°,δ63.00000°,λ110.00000°. NP2: ϕs316.00000°,δ33.00000°,λ56.00000°. Principal axes: T 4.6660, Plg66.0000°, Azm121.0000°; N -0.0710, Plg18.0000°, Azm346.0000°; P -4.5900, Plg16.0000°, Azm251.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.
*NEIC **19** 11:33:23.2±1.0,21.°61S×169.°74E,h58km±9km,mb4.8/23 Error ellipse: s-maj=8.0km s-min=7.1km az=182.0*
*BJI **19** 11:33:23.0,21.°70S×169.°70E,h61km,mb4.9/27,mB4.9/9, Ms4.8/4,Ms7 4.4/6*

ISC 19 11:33:21.3±0.3,21.°65S±0.°07×169.°71E±0.°05,h35km,n179, σ1°44/166,mb4.8/49,MS4.2/33,3D,Southeast of Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac** 33nm,0.3s,baz=137,slow=9.1,SNR=790	**3.06**	**262**	Pn	**Pn**	**11 34 06.9**	**-0.5**
DZM				Sn	**Sn**	**11 34 42.8**	**0.0**
	169nm,0.3s,baz=30,slow=23,SNR=13			LR	LR	11 34 58.3	
DZM	comp=Z,2μm,19.5s,baz=82,slow=32						
MSVF	**Nonsavu**	**8.77**	**65**	*e*P	**Pn**	**11 35 28.4**	**+2.8**
MSVF	**Nonsavu**	**8.77**	**65**	*e*Pn	**Pn**	**11 35 28.4**	**+2.8**
RAO	**Raoul Island** comp=Z,206nm,20.8s,baz=266,slow=28	**13.49**	**127**	LR	LR	11 39 31.0	
EIDS	**Eidsvold** baz=18	**17.48**	**254**	P	**Pn**	**11 37 22.2**	**-0.2**
URZ	**Urewera** 0.4nm,0.3s,baz=346,slow=6.9,SNR=7.1	**17.74**	**161**	P	**Pn**	**11 37 23.3**	**-2.1**
URZ				LR	LR	11 42 41.9	
	comp=Z,1μm,21.1s,baz=340,slow=32						
URZ	**Urewera** 47nm,1.0s	**17.74**	**161**	*e*Pn	**P**	**11 37 27.8**	**+1.8**
BKZ	**Black Stump Fm** 93nm,1.3s	**18.40**	**163**	*e*P	**Pn**	**11 37 34.9**	**+1.3**
ARMA	**Armidale** baz=19	**18.43**	**238**	P	**Pn**	**11 37 35.9**	**+1.8**
ARMA	**Armidale** 46nm,1.4s	**18.43**	**238**	*e*P	**Pn**	**11 37 34.9**	**+0.8**
ARMA				*e*S	**Sn**	**11 41 00.6**	**+1.5**
AFI	**Afiamalu** 0.3nm,0.3s,baz=225,slow=8.6,SNR=2.3	**19.22**	**69**	P	**P**	**11 37 38.3**	**-4.3**
RMQ	**Roma** baz=20	**19.72**	**252**	P	**Pn**	**11 37 50.5**	**+0.8**
MGCD	**Mangrove Creek** baz=21	**20.10**	**231**	P	Pn	11 37 55.0	+1.1
THZ	**Tophouse** 72nm,1.2s	**20.23**	**173**	*e*P	Pn	11 37 54.6	-0.9
RIV	**Riverview** baz=21	**20.38**	**230**	P	Pn	11 37 58.2	+1.0
OXZ	**Oxford**	**21.70**	**175**	*e*P	**P**	**11 38 07.8**	**-1.4**
CTA	**Charters Tower** 9.1nm,0.9s,baz=96,slow=13,SNR=9.2	**21.97**	**270**	P	**P**	**11 38 12.8**	**+0.5**
CTA				LR	LR	11 46 51.9	
	comp=Z,2μm,18.4s,baz=100,slow=37						
CTA	**Charters Tower** baz=22	**21.97**	**270**	P	**P**	**11 38 13.1**	**+0.8**
CTAO	**Charters Tower**	**21.97**	**270**	*e*P	**P**	**11 38 13.1**	**+0.8**
CTAO				pmax	pmax		
	comp=Z,33nm,1.0s						
CTAO	**Charters Tower** comp=Z,33nm,1.0s	**21.97**	**270**	*e*P	**P**	**11 38 13.1**	**+0.8**
RPZ	**Rata Peaks** comp=Z,1μm,19.8s,baz=355,slow=34	**22.03**	**177**	LR	LR	11 45 53.4	
CNB	**Canberra Magne** baz=23	**22.42**	**228**	P	**P**	**11 38 19.0**	**+1.9**
YNG	**Young** baz=23	**22.60**	**232**	P	**P**	**11 38 20.7**	**+1.8**
CAN	**Canberra** baz=23	**22.68**	**229**	P	**P**	**11 38 21.8**	**+2.1**
CAN	**Canberra**	**22.68**	**229**	*e*P	**P**	**11 38 21.4**	**+1.6**
CAN				pmax	pmax		
	comp=Z,43nm,1.0s						
CAN	**Canberra** comp=Z,43nm,1.0s	**22.68**	**229**	*e*P	**P**	**11 38 21.4**	**+1.6**
MILA	**Mila** baz=24	**23.52**	**225**	P	**P**	**11 38 29.4**	**+1.1**
CMSA	**Cobar Meteorol** baz=24	**23.59**	**240**	P	**P**	**11 38 29.7**	**+0.8**
QLP	**Quilpie** baz=24	**23.75**	**253**	P	**P**	**11 38 31.8**	**+1.3**
MTSU	**Mount Surprise** baz=25	**24.13**	**274**	P	**P**	**11 38 35.2**	**+1.1**
PMG	**Port Moresby** comp=Z,3.6nm,0.4s,baz=122,slow=9.5,SNR=3.1	**24.86**	**296**	P	**P**	**11 38 40.6**	**-0.1**
PMG				LR	LR	11 46 35.9	
	comp=Z,680nm,21.1s,baz=116,slow=32						
PMG	**Port Moresby**	**24.86**	**296**	*e*P	**P**	**11 38 41.6**	**+0.8**
PMG				pmax	pmax		
	comp=Z,30nm,0.9s						
PMG	**Port Moresby** comp=Z,12nm,0.6s	**24.86**	**296**	*e*P	**P**	**11 38 41.3**	**+0.6**
TOO	**Toolangi**	**26.26**	**227**	P	**P**	**11 38 56.4**	**+3.1**
TOO				pmax	pmax		
	comp=Z,20nm,1.3s						
STKA	**Stephens Creek** comp=Z,6.3nm,0.7s,baz=70,slow=11,SNR=18	**27.02**	**242**	P	**P**	**11 39 00.8**	**+0.6**
STKA				LR	LR	11 48 50.8	
	comp=Z,821nm,20.5s,baz=70,slow=34						
STKA	**Stephens Creek** baz=28	**27.02**	**242**	P	**P**	**11 38 59.8**	**-0.4**
STKA	**Stephens Creek** comp=Z,5.7nm,1.3s	**27.02**	**242**	*e*P	**P**	**11 39 01.3**	**+1.1**
MOO	**Moorlands** baz=29	**28.03**	**217**	P	**P**	**11 39 08.9**	**-0.2**
RAR	**Rarotonga** comp=Z,199nm,18.1s,baz=279,slow=36	**28.39**	**95**	LR	LR	11 50 21.8	
ARPS	**Mount Arapiles** baz=29	**28.48**	**232**	P	**P**	**11 39 12.9**	**-0.3**
BBOO	**Buckleboo** baz=32	**31.80**	**242**	P	**P**	**11 39 42.9**	**+0.3**
BBOO	**Buckleboo** comp=Z,20nm,1.1s	**31.80**	**242**	*e*P	**P**	**11 39 43.6**	**+1.0**
AS01	**Alice Springs**	**33.01**	**260**	*e*P	**P**	**11 39 53.7**	**+0.4**
AS31	**Alice Springs** comp=Z,4.5nm,1.0s	**33.05**	**260**	*e*P	**P**	**11 39 53.9**	**+0.1**
ASAR	**Alice Springs** comp=Z,4.3nm,0.7s,baz=86,slow=8.8,SNR=45	**33.05**	**260**	P	**P**	**11 39 53.5**	**-0.3**
ASAR				LR	LR	11 53 40.0	
	comp=Z,467nm,18.1s,baz=93,slow=37						

baz=48
BLDU Ballidu 48.05 248 P **P** **11 41 57.7 +0.3**
baz=49
MORW Morawa 48.72 250 P **P** **11 42 03.0 +0.4**
baz=49
TAOE Nuku Hiva Isla 49.81 83 *e*S **S** **11 49 21.5 +2.7**
comp=Z,206nm,25.2s
TAOE *e*LR LR 11 56 35.9
comp=Z,409nm,23.3s
RKT Rikitea 50.91 103 *e*LR LR 11 57 02.5
comp=Z,248nm,28.8s
KAPI Kappang 51.09 281 P **P** **11 42 21.4 +0.6**
comp=Z,12nm,0.9s,baz=116,slow=8.8,SNR=5.1
KAPI LR LR 12 06 53.6
comp=Z,127nm,18.4s,baz=136,slow=39
KAPI Kappang 51.09 281 *e*P **P** **11 42 20.5 -0.3**
comp=Z,19nm,1.1s
VNDA Vanda 56.05 182 P **P** **11 42 55.6 -0.6**
comp=Z,1.0nm,0.7s,baz=5.0,slow=6.0,SNR=5.5
VNDA LR LR 12 04 01.6
comp=Z,192nm,18.7s,baz=10.0,slow=33
VNDA Vanda 56.05 182 P **P** **11 42 55.6 -0.6**
VNDA pmax pmax
comp=Z,2.0nm,0.8s
KKM Kota Kinabalu 59.20 291 *e*P **P** **11 43 21.1 +1.7**
comp=Z,14nm,1.0s
KSM Kuching 62.36 284 *e*P **P** **11 43 41.0 +0.2**
comp=Z,11nm,0.8s
MJAR Matsushiro Arr 65.08 332 P **P** **11 43 57.0 -1.3**
comp=Z,8.4nm,1.1s,baz=170,slow=6.7,SNR=8.5
MJAR LR LR 12 12 42.6
comp=Z,36nm,18.8s,baz=145,slow=36
QSPA South Pole Qui 68.42 180 *e*P **P** **11 44 18.6 -0.8**
comp=Z,76nm,1.1s
KSRS Korea Array 70.74 326 P **P** **11 44 33.7 -0.1**
comp=Z,7.3nm,0.4s,baz=139,slow=5.9,SNR=4.0
KSRS LR LR 12 13 25.2
comp=Z,63nm,20.3s,baz=140,slow=34
KSAR Wonju Array Be 70.75 326 P **P** **11 44 33.7 -0.2**
KSAR Wonju Array Be 70.75 326 P **P** **11 44 33.7 -0.2**
NJ2 Nanjing 72.24 316 *e*P **P** **11 44 44.4 +1.4**
NJ2 pmax pmax
comp=Z,12nm,0.5s
YSS Yuzh-Sakhalins 72.49 341 *e*P **P** **11 44 45.0 +0.8**
YSS pmax pmax
comp=Z,20nm,1.3s
USRK Ussuriysk Ar. 74.07 333 P **P** **11 44 53.3 -0.3**
comp=Z,12nm,1.1s,baz=149,slow=4.0,SNR=6.9
USRK LR LR 12 16 24.4
comp=Z,60nm,19.4s,baz=165,slow=35
PETK Petropavlovsk- 75.17 353 LR LR 12 15 45.4
comp=Z,131nm,18.6s,baz=153,slow=34
MAW Mawson 76.38 202 P **P** **11 45 06.7 +0.1**
comp=Z,3.7nm,0.8s,baz=112,slow=5.4,SNR=4.3
MAW LR LR 12 14 36.8
comp=Z,130nm,20.1s,baz=64,slow=32
CN2 Changchun 76.74 329 *e*P P 11 45 18.3 +9.4
KLR Kul'dur 78.24 336 *i*P **P** **11 45 17.6 +0.4**
NKL Nikolayevsk 78.63 343 *i*P **P** **11 45 19.2 0.0**
NKL *e* 11 45 29.0
NKL pmax pmax
comp=Z,24nm,1.0s
LAMP Lampang 79.34 295 P **P** **11 45 26.8 +2.9**
comp=Z,4.5nm,0.9s
CMAR Chiang Mai Arr 79.90 294 P **P** **11 45 28.3 +1.4**
comp=Z,2.5nm,0.9s,baz=132,slow=4.1,SNR=19
CMAR Chiang Mai Arr 79.90 294 *i*P **P** **11 45 28.7 +1.7**
CMAR pmax pmax
comp=Z,3.0nm,0.9s
KMI Kunming 79.92 302 P **P** **11 45 28.5 +1.3**
KMI pP sP 11 45 44.8 +2.5
KMI pmax pmax
comp=Z,16nm,0.7s
CMMT Chiang Mai 80.05 295 P **P** **11 45 29.3 +1.5**
comp=Z,8.0nm,1.5s
CHTO Chiang Mai 80.06 295 P **P** **11 45 29.4 +1.6**
comp=Z,31nm,1.1s
CHTO Chiang Mai 80.06 295 *e*P **P** **11 45 28.1 +0.3**
CHTO pmax pmax
comp=Z,4.0nm,0.8s
CHTO Chiang Mai 80.06 295 *e*P **P** **11 45 28.1 +0.3**
comp=Z,4.1nm,0.8s
CMAI Chiengmai2 80.48 296 P **P** **11 45 32.6 +2.3**
comp=Z,16nm,1.4s,comp=Z,5μm
SDPT Sand Point 80.80 17 *e*P **P** **11 45 34.0 +3.1**
comp=Z,75nm,0.6s
CD2 Chengdu 82.05 308 P **P** **11 45 38.5 +0.3**
CD2 pmax pmax
comp=Z,1.0nm,0.5s
HHC Hu-ho-hao-te 82.33 319 *e*P **P** **11 45 41.8 +2.2**
HHC pP sP 11 45 58.3 +3.7
HHC PP **PP** **11 48 53.1 +4.2**
HHC S **S** **11 55 52.5 -0.6**
HHC sS sS 11 56 16.4 +5.1
HHC pmax pmax
comp=Z,28nm,1.1s
HHC pmax pmax
comp=Z,85nm,6.3s
HHC LR LR
comp=Z,190nm,17.8s
HHC LR LR
comp=Z,190nm,16.4s
HHC LR LR
comp=Z,120nm,17.2s
PMSA Palmer Station 84.51 160 LR LR 12 17 05.2
comp=Z,92nm,19.3s,baz=234,slow=31
LZH Lanzhou 84.67 312 *e*P **P** **11 45 54.0 +2.3**
LZH pP sP 11 46 11.3 +4.5
LZH sP pP 11 46 19.8 +17
LZH pmax pmax
comp=Z,14nm,1.0s
SEY Seymchan 85.41 352 *e*P **P** **11 45 54.2 -0.4**
SNAA Sanae 86.78 182 P **P** **11 46 00.1 -1.5**
SNAA Sanae 86.78 182 *e*P **P** **11 46 00.0 -1.6**
SNAA Sanae 86.78 182 *e*P **P** **11 46 00.0 -1.6**
comp=Z,1μm,1.3s
VNA3 Neumayer Olymp 87.36 180 P **P** **11 46 02.7 -1.6**
VNA2 Neumayer--Watz 87.66 181 P **P** **11 46 04.5 -1.3**
baz=159,slow=4.5
VNA1 Neumayer--Stat 87.94 181 P **P** **11 46 06.2 -0.9**
ULN Ulaanbaatar 89.05 323⇓ *e*P **P** **11 46 13.0 +0.2**
ULN pmax pmax
comp=Z,13nm,1.3s
ULN Ulaanbaatar 89.05 323 *e*P **P** **11 46 12.9 +0.1**
comp=Z,6.9nm,1.1s
GTA Gaotai 89.10 313 *e*P **P** **11 46 13.3 +0.1**
GTA pP sP 11 46 28.4 +0.1
GTA sP pP 11 46 34.8 +10
GTA S **S** **11 56 55.3 -4.3**
GTA pmax pmax
comp=Z,4.0nm,1.2s
GTA LR LR
comp=Z,150nm,16.6s
GTA LR LR
comp=Z,150nm,20.4s
GTA LR LR
comp=Z,110nm,14.3s
YAK Yakutsk 89.29 342 *e*P **P** **11 46 12.3 -1.0**
YAK pmax pmax
comp=Z,10.0nm,0.9s
SONM Songino Array 89.40 323 P **P** **11 46 14.4 0.0**
comp=Z,4.7nm,1.0s,baz=132,slow=4.4,SNR=7.3
SONM LR LR 12 27 23.3
comp=Z,33nm,19.2s,baz=242,slow=36
BILL Bilibino 89.46 359⇓ *i*P **P** **11 46 12.8 -1.2**
BILL *e* 11 49 45.2
BILL *e*PPP PPP 11 51 46.7
BILL *e*SS SS 12 02 52.4 -5.6
BILL pmax pmax
comp=Z,7.0nm,1.1s
BILL MLR MLR
comp=Z,49nm,17.0s
BILL Bilibino 89.46 359 *e*P **P** **11 46 12.7 -1.4**
comp=Z,10nm,1.5s
NVAR Mina Array Bea 90.06 48 P **P** **11 46 16.6 -1.3**
comp=Z,1.2nm,0.7s,baz=223,slow=8.6,SNR=7.9
NVAR LR LR 12 18 21.2
comp=Z,109nm,21.0s,baz=261,slow=30
BBB Bella Bella 91.24 33 LR LR 12 18 35.7
comp=Z,75nm,21.0s,baz=244,slow=30
COLA College 92.21 17⇓ *i*P **P** **11 46 25.4 -1.4**
COLA pmax pmax
comp=Z,9.0nm,1.6s
ILAR Eielson Array 92.39 17 P **P** **11 46 25.0 -2.7**
comp=Z,0.5nm,0.7s,baz=227,slow=6.4,SNR=8.7
ILAR LR LR 12 24 00.0
comp=Z,103nm,19.2s,baz=230,slow=33
ZAK Zakamensk 92.50 324 *e*P **P** **11 46 27.6 -1.1**
ZAK pmax pmax
comp=Z,6.0nm,1.3s
TLY Talaya 92.98 325 P **P** **11 46 30.0 -0.8**
comp=Z,2.4nm,0.8s,baz=168,slow=3.9,SNR=4.5
TLY Talaya 92.98 325 *e*P **P** **11 46 30.4 -0.4**
TLY pmax pmax
comp=Z,6.0nm,1.5s
TLY MLR MLR
comp=Z,69nm,20.0s
DLBC Dease Lake 93.97 27 LR LR 12 21 49.4
comp=Z,92nm,19.7s,baz=221,slow=31
EGAK Eagle 94.05 19 *e*P **P** **11 46 33.5 -1.9**
comp=Z,5.7nm,1.0s
NEW Newport 95.33 40 LR LR 12 22 19.0
comp=Z,67nm,19.8s,baz=250,slow=31
PLCA Paso Flores 96.44 138 LR LR 12 20 34.3
comp=Z,94nm,20.1s,baz=256,slow=30
TIXI Tiksi 97.18 348 *e*P **P** **11 46 48.4 -1.1**
TIXI pmax pmax
comp=Z,1.0nm,1.2s
TXAR Lajitas Array 97.52 62 LR LR 12 22 52.6
comp=Z,171nm,20.0s,baz=0.0,slow=31
PDAR Pinedale Array 97.92 47 LR LR 12 23 52.5
comp=Z,54nm,21.4s,baz=274,slow=31
WMQ Urumqi 99.18 313 *e*P **Pdif** **11 47 00.0 +0.8**
WMQ pmax pmax
comp=Z,4.0nm,0.6s
WMQ pmax pmax
comp=Z,12nm,4.0s
WMQ LR LR
comp=Z,32nm,22.6s
WMQ LR LR
comp=Z,29nm,22.6s
YKA Yellowknife Ar 102.59 27 P **Pdif** **11 47 12.7 -1.1**
comp=Z,0.4nm,1.0s,baz=256,slow=4.8,SNR=5.4
KSH Kashi 106.22 306 *e*Pdif **Pdif** **11 47 36.8 +6.1**
KURK Kurchatov 107.12 318 *e*PKPdf **PKiKP** **11 51 42.2 -1.2**
ABKAR Akbulak array 118.90 315 *e*PKPdf **PKPdf** **11 52 04.7 -1.1**
ARU Arti 119.44 323 *i* PKIKP **PKPdf** **11 52 04.5 -2.2**
ARU 11 59 11.1
ARCES ARCESS Array B 127.50 345 PKP **PKPdf** **11 52 20.4 -1.5**
comp=Z,6.6nm,0.9s,baz=60,slow=1.2,SNR=21
FINES FINESS Array B 132.97 337 PKP **PKPdf** **11 52 30.8 -1.6**
comp=Z,3.5nm,1.0s,baz=103,slow=1.9,SNR=6.9
AKASG Malin Array Be 137.69 323 PKP **PKPdf** **11 52 40.0 -1.5**
comp=Z,0.5nm,0.4s,baz=61,slow=2.1,SNR=6.7
NOA NORSAR Array B 137.87 345 PKP **PKPdf** **11 52 40.7 -1.0**
comp=Z,1.2nm,0.9s,baz=36,slow=2.2,SNR=3.0
KOLS Kolonicke sedl 142.45 324 *e*PKIKP **PKPdf** **11 52 50.5 +0.2**
KOLS Kolonicke sedl 142.45 324 *e*PKP **PKPdf** **11 52 50.5 +0.2**
KECS Kecovo 143.67 325 *e*PKIKP PKPbc 11 52 50.0 +0.1
KECS Kecovo 143.67 325 *e*PKP PKPbc 11 52 50.0 +0.1
VYHS Vyhne 144.53 326 *e*PKIKP **PKPab** **11 52 52.3 -0.1**
VYHS Vyhne 144.53 326 *e*PKP **PKPab** **11 52 52.3 -0.1**
PVCC Panska Ves 145.20 332 *e*PKP **PKPbc** **11 52 54.7 +0.1**
PVCC Panska Ves 145.20 332 *e*PKIKP **PKPbc** **11 52 54.7 +0.1**
BRG Berggiesshubel 145.21 333 *i* PKP **PKPbc** **11 52 54.2 -0.5**
comp=Z,35nm,1.1s
BRG Berggiesshubel 145.21 333 *i* PKIKP **PKPbc** **11 52 54.2 -0.5**
BRG pmax pmax
comp=Z,35nm,1.1s
CLL Collm 145.27 334 *i* PKPbc **PKPbc** **11 52 54.1 -0.8**
comp=Z,25nm,1.0s
CLL *e* 11 53 01.0
CLL *e* 11 53 08.0
CLL L L 12 58 00.0
comp=Z,100nm,20.0s
CLL Collm 145.27 334 *i* PKIKP **PKPbc** **11 52 54.1 -0.8**
CLL *e* 11 53 08.0
CLL pmax pmax
comp=Z,25nm,1.0s
PRU Pruhonice 145.60 331 *e*PKP **PKPdf** **11 52 55.6 -0.1**
PRU Pruhonice 145.60 331 *e*PKP2 **PKPdf** **11 52 55.6 -0.1**
ESK Eskdalemuir 145.96 353 *i* PKP2 **PKPdf** **11 52 55.9 -0.2**
NKC Novy Kostel 146.32 333 *e*PKP **PKPbc** **11 52 57.8 -0.4**
NKC Novy Kostel 146.32 333 *e*PKP2 **PKPbc** **11 52 57.8 -0.4**
CONA Conrad Observa 146.41 328 *i* PKPab **PKPbc** **11 52 58.5 -0.2**
comp=Z,22nm,1.2s,SNR=12
KHC Kasperske Hory 146.66 331 *e*PKP **PKPbc** **11 52 59.0 -0.2**
KHC Kasperske Hory 146.66 331 *e*PKP2 **PKPbc** **11 52 59.0 -0.2**
KHC Kasperske Hory 146.66 331 *e*PKPbc **PKPbc** **11 52 58.8 -0.4**
GERES GERESS Array B 146.81 331 PKPbc **PKPdf** **11 52 58.7 +0.7**
comp=Z,13nm,0.8s,baz=42,slow=2.2,SNR=60
PERS Pernice 147.66 326 *i* PKPbc **PKPbc** **11 53 01.3 -0.9**
SOKA Soboth 147.67 327 *e*PKPbc **PKPdf** **11 53 00.9 +1.5**
comp=Z,18nm,1.4s,SNR=6.5
KBA Koelnbreinsper 148.24 329 *e*PKPbc **PKPdf** **11 53 01.8 +1.3**
comp=Z,15nm,1.1s
BEBN Eben Emael 148.33 341 PKPbc **PKPbc** **11 53 04.8 +1.2**
LJU Ljubljana 148.36 326 *i* PKPbc **PKPbc** **11 53 03.6 -0.4**
MEM Membach 148.39 340 PKPbc **PKPbc** **11 53 03.3 -0.6**
CADS Cadrg 148.64 327 *i* PKPbc **PKPbc** **11 53 03.5 -1.2**
BCLA Clavier 148.78 341 PKPbc **PKPbc** **11 53 04.7 -0.2**
ABTA Abfaltersbach 148.88 329 *i* PKPbc **PKPbc** **11 53 03.8 -1.5**
comp=Z,16nm,0.9s
WTTA Wattenberg 148.91 330 *e*PKPbc **PKPbc** **11 53 04.3 -1.3**
comp=Z,29nm,1.5s,SNR=6.3
MOTA Moosalm 149.09 331 *i* PKiKP **PKPbc** **11 53 05.6 -0.4**
comp=Z,14nm,0.7s,SNR=8.2
RETA Reutte 149.13 332 *e*PKPbc **PKPbc** **11 53 04.8 -1.2**
comp=Z,12nm,1.1s
DOU Dourbes 149.28 341 PKPbc **PKPbc** **11 53 05.5 -0.6**
BFO Black Forest 149.49 335 *e*PKP2 **PKPbc** **11 53 05.9 -0.9**
BFO Black Forest 149.49 335 *e*PKPbc **PKPbc** **11 53 05.9 -0.9**
BFO *e*PKPab **PKPab** **11 53 10.2 -1.4**
FETA Feichten 149.50 331 *i* PKiKP **PKPbc** **11 53 06.3 -0.8**
comp=Z,30nm,1.0s,SNR=15
DAVA Damuels 149.67 332 *i* PKPbc **PKPbc** **11 53 06.2 -1.2**
comp=Z,21nm,0.9s,SNR=7.1
TUE Stuetta 150.54 332 *e*PKPbc **PKPbc** **11 53 08.6 -1.0**
TUE *e*PKPab **PKPab** **11 53 15.2 -1.1**
TIP Timpagrande 151.02 313 *e*PKPdf **PKPdf** **11 53 04.3 -0.7**
TIP *e*PKPbc **PKPbc** **11 53 10.3 -0.5**
TORD Torodi Ar. Bea 165.79 235 PKP **PKPdf** **11 53 21.4 -1.8**
comp=Z,1.5nm,1.1s,baz=96,slow=1.4,SNR=3.7

*DDA **19** 11:33:29.2, 36°.88N×34°.68E, h7km, Md2.6*
ISC 19 11:33:28.2±3.4, 36°.8N±0°.2×34°.8E±0°.1, h13km±10km, n4, σ0°42/8, Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
DED	**Mersin**	**0.12**	**358**	*i* P	**Pb**	**11 33 32.3**	**0.0**
DED				*i* S	**Sg**	**11 33 34.0**	**+0.2**
MERS	**Mersin**	**0.23**	**276**	*e*PG	**Pb**	**11 33 34.3**	**+0.1**
MERS				*e*SG	**Sb**	**11 33 38.2**	**-0.1**
GULE	**Gulek**	**0.44**	**357**	*i* P	**Pg**	**11 33 36.7**	**-0.2**
GULE				*i* S	**Sb**	**11 33 44.5**	**-0.1**
KARA	**Karaisali**	**0.46**	**26**	*e*PG	**Pb**	**11 33 37.9**	**-0.3**
KARA				*e*SG	**Sb**	**11 33 45.7**	**+0.7**

KRSC 19 11:39:16.9±0.7, 55°.73N×162°.43E, h60km±18km, ML3.5,
Near east coast of Kamchatka Peninsula

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
KBTR	**Krutoberegovo**	**0.53**	**25**	*e*P	Pn	11 39 29.7	+0.6
KBTR				*e*S	Sn	11 39 39.0	+1.0
ZLN	**Zelenaya**	**0.96**	**288**	*e*P	Pn	11 39 35.6	+1.1
ZLN				*e*S	Sn	11 39 49.1	+1.7
SMKR	**Semkarok**	**1.01**	**328**	*i* P	Pn	11 39 36.3	+1.2
SMKR				*i* S	Sn	11 39 50.3	+1.8
CIRR	**Tsirk**	**1.02**	**293**	*e*P	Pn	11 39 36.2	+0.9
CIRR				*e*S	Sn	11 39 50.0	+1.1
LGNR	**Loginova**	**1.04**	**291**	*e*P	Pn	11 39 36.9	+1.2
LGNR				*e*S	Sn	11 39 51.0	+1.4
BDR	**Baidarnaya**	**1.08**	**321**	*i* P	Pn	11 39 37.8	+1.8
BDR				*e*S	Sn	11 39 52.8	+2.5
BZMR	**Bezymyannaya**	**1.11**	**281**	*e*P	Pn	11 39 37.8	+1.3
BZMR				*e*S	Sn	11 39 52.1	+1.0
KLY	**Klyuchi**	**1.16**	**301**	*e*P	Pn	11 39 36.6	-0.3
KLY				*e*S	Sn	11 39 50.8	-1.0
KRSR	**Krestovskiy**	**1.16**	**296**	*e*P	Pn	11 39 37.7	+0.7
KRSR				*e*S	Sn	11 39 52.1	+0.1
SRKR	**Sorokina**	**1.16**	**323**	*i* P	Pn	11 39 38.7	+1.6
SRKR				*e*S	Sn	11 39 54.4	+2.2
KIRR	**Kirishev**	**1.20**	**282**	*e*P	Pn	11 39 39.3	+1.7
KIRR				*e*S	Sn	11 39 55.5	+2.4
KMNR	**Kamenistaya**	**1.24**	**272**	*e*P	Pn	11 39 39.8	+1.7
KMNR				*e*S	Sn	11 39 56.7	+2.7
KPT	**Kopyto**	**1.27**	**282**	*e*P	Pn	11 39 40.1	+1.6
KPT				*e*S	Sn	11 39 56.7	+2.1
TUMR	**Tumrok**	**1.37**	**252**	*i* P	Pn	11 39 42.0	+2.1
TUMR				*e*S	Sn	11 40 00.2	+3.0
KOZ	**Kozyrevsk**	**1.48**	**284**	*e*P	Pn	11 39 43.8	+2.6
KOZ				*e*S	Sn	11 40 03.7	+4.2
BKI	**Bering**	**2.09**	**103**	*e*P	Pn	11 39 51.9	+2.5
BKI				*e*S	Sn	11 40 17.3	+3.0
ESO	**Esso**	**2.11**	**277**	*e*P	Pn	11 39 51.3	+1.5
ESO				*e*S	Sn	11 40 16.3	+1.3
SPN	**Mys Shipunski**	**2.99**	**209**	*e*P	Pn	11 40 03.7	+1.9
SPN				*e*S	Sn	11 40 38.7	+2.3
NLC	**Nalytchevo**	**3.13**	**216**	*e*P	Pn	11 40 05.8	+2.1
NLC				*e*S	Sn	11 40 41.8	+1.9
KRX	**Arik**	**3.24**	**224**	P	Pn	11 40 08.3	+3.0
SMAR	**Somma**	**3.25**	**222**	*e*P	Pn	11 40 08.9	+3.3
AVH	**Avacha**	**3.28**	**223**	*e*P	Pn	11 40 09.0	+3.2
GNL	**Ganaly**	**3.31**	**234**	*e*P	Pn	11 40 08.9	+2.7
DALK	**Dalny**	**3.45**	**220**	*e*P	Pn	11 40 11.5	+3.4
DALK				*e*S	Sn	11 40 51.9	+4.2
PET	**Petropavlovsk**	**3.50**	**221**	*e*P	Pn	11 40 12.2	+3.5
PET				*e*S	Sn	11 40 51.4	+2.6
KRMR	**Karymshinskiy**	**3.85**	**223**	*e*P	Pn	11 40 18.2	+4.7
KRMR				*e*S	Sn	11 41 02.0	+4.6

IDC 19 11:42:43.9±1.4, 3°.42N×123°.52E, h0km, mb3.6/5,
mb1 3.7/5, mb1mx3.5/53, mbtmp3.6/5, Error ellipse:
s-maj=191.2km s-min=20.0km az=63.0, Celebes Sea

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
WRA	**Warramunga Arr**	**25.53**	**156**	P	P	11 48 14.4	-0.1
	0.4nm,0.4s,baz=333,slow=10,SNR=17						
ASAR	**Alice Springs**	**28.76**	**160**	P	P	11 48 43.9	+0.4
	0.3nm,0.6s,baz=342,slow=7.7,SNR=9.8						
STKA	**Stephens Creek**	**39.08**	**155**	P	P	11 50 12.4	-0.5
	0.5nm,0.3s,baz=319,slow=11,SNR=4.0						
MKAR	**Makanchi Array**	**56.03**	**327**	P	P	11 52 25.1	+0.6
	0.3nm,0.4s,baz=128,slow=7.0,SNR=5.0						
KURBB	**Kurchatov Arra**	**60.31**	**329**	P	P	11 52 53.8	-0.7
	0.3nm,0.4s,baz=122,slow=7.3,SNR=5.1						

JMA 19 11:43:18.9±0.1, 28°.10N×128°.04E, h17km±2km, M2.5,
Ryukyu Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JTK	**Tokunoshima**	**0.86**	**111**	P	Pb	11 43 34.8	-0.7
JTK				S	Sb	11 43 46.1	-0.6
JOKE	**Okinoerabujima**	**0.87**	**147**	P	Pb	11 43 35.2	-0.4
JOKE				S	Sb	11 43 46.8	-0.2
JAMN	**Amaminishikomi**	**1.01**	**82**	P	Pb	11 43 37.6	-0.4
JAMN				S	Sb	11 43 50.8	-0.2
JIH	**Iheya**	**1.06**	**184**	P	Pb	11 43 38.2	-0.6
JIH				S	Sb	11 43 52.5	+0.1
JOW	**Kunigami**	**1.28**	**171**	P	Pn	11 43 41.7	-0.3
JOW				S	Sb	11 43 58.7	0.0
JOW	**Kunigami**	**1.28**	**171**	*e*P	Pn	11 43 42.1	+0.1
	32nm,0.5s						
JAM	**Amami Oshima**	**1.42**	**77**	S	Sb	11 44 02.4	-0.2

*CSEM **19** 11:49:55.8, 42°.58N×13°.38E, h13km, MD1.3/4*
ROM 19 11:49:55.8±0.2, 42°.58N×13°.38E, h13km±1km, Md1.3/4,
Ml0.8/1, Error ellipse: s-maj=2.4km s-min=2.1km
az=42.0, Central Italy

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CAMP	**Campotosto**	**0.05**	**150**	Pg	Pg	11 49 58.7	+0.3
CAMP				Sg	Sg	11 50 00.4	+0.1
	18nm,0.4s						
CAMP	**Campotosto**	**0.05**	**150**	Pg	Pg	11 49 58.7	+0.3
CAMP				Sg	Sg	11 50 00.4	+0.1
	18nm,0.4s						
SMA1	**SAN MARTINO**	**0.06**	**330**	Pg	Pg	11 49 58.8	+0.3
SMA1				Sg	Sg	11 50 00.5	+0.1
	61nm,0.1s						
SMA1	**SAN MARTINO**	**0.06**	**330**	Pg	Pg	11 49 58.8	+0.3
SMA1				Sg	Sg	11 50 00.5	+0.1
	61nm,0.1s						
RM32	**Poggio Cancell**	**0.06**	**261**	Pg	Pg	11 49 58.9	+0.4
RM32				Sg	Sg	11 50 00.9	+0.4
	44nm,0.2s						
RM32	**Poggio Cancell**	**0.06**	**261**	Pg	Pg	11 49 58.9	+0.4
RM32				Sg	Sg	11 50 00.9	+0.4
	44nm,0.2s						
RM33	**Pellescritta (**	**0.14**	**239**	Pg	Pg	11 49 59.6	+0.2
RM33				Sg	Sg	11 50 02.4	+0.5
	20nm,0.3s						
RM33	**Pellescritta (**	**0.14**	**239**	Pg	Pg	11 49 59.6	+0.2
RM33				Sg	Sg	11 50 02.4	+0.5
	20nm,0.3s						

*NIED **19** 11:52:00, 35°.70N×140°.90E, h5km, Mw3.6 Best double couple: M₀2.75000×10¹⁴ NP1:φ₁348.00000°, δ29.00000°, λ-98.00000°. NP2:φ₂176.00000°, δ62.00000°, λ-86.00000°.*
JMA 19 11:52:34.9±0.2, 35°.70N×140°.93E, h10km±1km, M3.7,
2C-1D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CHOJ	**Chosi**	**0.06**	**273**	⇑P	Pg	11 52 36.9	-0.1
CHOJ				S	Sg	11 52 38.7	+0.2
JCN	**Nagara**	**0.66**	**245**	⇑P	Pb	11 52 48.6	+0.2
JYT	**Yasato**	**0.80**	**312**	⇓P	Pg	11 52 50.0	-0.3
JYT				S	Sg	11 53 00.7	0.0
BSO4	**Boso 4**	**0.86**	**215**	P	Pb	11 52 51.8	0.0
BSO3	**Boso 3**	**0.96**	**201**	P	Pg	11 52 53.0	-0.3
MAT	**Matsushiro**	**2.36**	**292**	P	Pn	11 53 13.1	-0.6
MAT				*e*S	Sn	11 53 42.4	-0.3

*IDC **19** 11:52:34.1±1.9, 14°.01S×166°.53E, h0km, mb3.9/4, mb1 4.2/5, mb1mx3.8/40, mbtmp3.9/5, ML3.7/1, Error ellipse: s-maj=50.2km s-min=31.0km az=125.0*
*ISCJB **19** 11:52:38.3±1.5, 14°.28S±0°.09×166°.6E±0°.2, h43km, mb4.0/6, Error ellipse: s-maj=28.3km s-min=12.1km az=168.0*
*NEIC **19** 11:52:39.1±1.2, 14°.16S×166°.61E, h35km, mb4.2/2, Error ellipse: s-maj=24.1km s-min=18.6km az=85.0*
ISC 19 11:52:39.9±1.6, 14°.2S±0°.1×166°.7E±0°.2, h43km, n7,
σ0°93/8, mb3.9/6, Vanuatu Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
DZM	**Mont Dzumac**	**7.82**	**182**	Pn	**Pn**	**11 54 31.0**	**-0.3**
	1.0nm,0.3s,baz=348,slow=19,SNR=15						
DZM				Sn	**Sn**	**11 55 58.7**	**+0.1**
	0.8nm,0.3s,baz=264,slow=18,SNR=3.7						
STKA	**Stephens Creek**	**28.90**	**228**	P	**P**	**11 58 35.9**	**+1.0**
	2.3nm,0.6s,baz=47,slow=7.5,SNR=8.1						
WRAB	**Tennant Creek**	**31.39**	**255**	*e*P	**P**	**11 58 55.9**	**-1.2**
	4.4nm,0.8s						
WRA	**Warramunga Arr**	**31.40**	**255**	P	**P**	**11 58 56.2**	**-1.0**
	1.3nm,0.6s,baz=87,slow=9.2,SNR=15						
ASAR	**Alice Springs**	**32.33**	**248**	P	**P**	**11 59 04.4**	**-0.9**
	1.0nm,0.6s,baz=73,slow=9.5,SNR=40						
FITZ	**Fitzroy Crossi**	**39.55**	**259**	*e*P	**P**	**12 00 07.4**	**+0.3**
	2.4nm,0.7s						
ILAR	**Eielson Array**	**86.21**	**18**	P	**P**	**12 05 16.4**	**0.0**
	0.3nm,0.7s,baz=234,slow=4.9,SNR=4.9						

VIE 19 11:52:47.0±0.2, 47°.55N×14°.98E, h0km, mb1.6/2, ml1.3/3,
Error ellipse: s-maj=2.8km s-min=1.3km az=36.0,
Mining explosion., Austria

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ARSA	**Arzberg**	**0.47**	**129**	*i* P	Pg	11 52 56.0	0.0
	2.2nm,0.1s						
ARSA				*e*Sg	Sg	11 53 02.8	+0.6
	1.2nm,0.1s						
MOA	**Molln**	**0.57**	**302**	*e*P	Pg	11 52 57.7	-0.2
	1.2nm,0.1s						
MOA				*e*Sg	Sg	11 53 06.0	+0.8
	4.2nm,0.3s						

CASC 19 11:57:15.1±6.6, 10°19N×87°08W, h0km±80km, MD3.8, Off coast of Costa Rica

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JCR	**Jicaral**	**1.97**	**100**	*eS*	**Sg**	11 58 21.1	+2.6
COPN	**Copaltepe**	**2.04**	**14**	*eP*	**Pn**	11 57 51.8	+1.1
JTS	**JuntasAbangare**	**2.10**	**87**	*eP*	**Pn**	11 57 46.0	-5.5
TISN	**Laguna Tiscapa**	**2.10**	**22**	*eP*	**Pn**	11 57 49.7	-1.9
MOMN	**Momotombo**	**2.27**	**14**	*eP*	**Pn**	11 57 54.1	+0.1
MOMN				*eS*	Sn	11 58 22.0	-0.7
TEL3	**Telica 3**	**2.38**	**6**	*eP*	**Pb**	11 57 58.5	-0.4
URSC	**Urasca**	**3.27**	**96**	*eP*	**Pn**	11 58 05.9	-1.9
URSC				*eS*	Sn	11 58 37.0	-11
BUS	**Buena Vista**	**3.34**	**101**	*eP*	**Pn**	11 58 09.3	+0.4

BJI 19 11:57:41.2, 40°15N×104°39E, h9km, ML3.6/8, Western Nei Mongol

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GTA	**Gaotai**	**3.60**	**260**	*ePg*	**Pg**	11 58 38.0	+0.7
GTA				Pg	Pb	11 58 45.8	+0.7
GTA				Sn	Sn	11 59 22.0	+2.0
GTA				Sg	Sg	11 59 33.3	-3.6
GTA				smax	smax		
	comp=N,200nm,0.7s						
GTA				smax	smax		
	comp=E,120nm,0.7s						
LZH	**Lanzhou**	**4.08**	**186**	*ePg*	**Pg**	11 59 01.3	+1.9
LZH				Sg	Sg	11 59 47.8	-4.4
LZH				smax	smax		
	comp=N,210nm,0.8s						
LZH				smax	smax		
	comp=E,310nm,1.1s						
BTO	**Baotou**	**4.33**	**82**	*ePg*	**Pg**	11 59 05.5	+1.5
BTO				Sg	Sb	11 59 53.6	+3.8
BTO				smax	smax		
	comp=N,400nm,0.2s						
BTO				smax	smax		
	comp=E,140nm,0.2s						
HHC	**Hu-ho-hao-te**	**5.51**	**80**	*ePg*	**Pn**	11 59 05.6	+2.0
HHC				Sg	Sn	12 00 04.4	-2.7
HHC				smax	smax		
	comp=N,140nm,0.3s						
HHC				smax	smax		
	comp=E,120nm,0.4s						
WMQ	**Urumqi**	**12.95**	**292**	*eP*	**Pn**	12 00 47.3	+1.9

CSEM 19 11:58:01.4±0.7, 35°84N×29°95E, h2km, MD3.0, Error ellipse: s-maj=12.9km s-min=8.1km az=161.0
ISK 19 11:58:04.4, 35°95N×30°01E, h32km, ML2.9
DDA 19 11:58:13.6, 35°98N×29°77E, h3km, Md3.0
ISC 19 11:58:03.5±2.5, 35°9N±0°1×29°90E±0°05, h4km±10km, n36, σ1§16/53, Eastern Mediterranean Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AKAS	**Kas**	**0.38**	**321**	*i P*	**Pg**	**11 58 09.4**	**-1.4**
AKAS				*i S*	**Sg**	**11 58 17.2**	**+1.3**
AKAS	**Kas**	**0.38**	**321**	P	**Pg**	**11 58 09.4**	**-1.4**
AKAS				S	**Sg**	**11 58 17.2**	**+1.3**
ELL	**Elmali**	**0.81**	**0**	*ePG*	**Pg**	**11 58 19.1**	**+0.1**
ELL				*eSG*	**Sg**	**11 58 31.2**	**+1.7**
ELL	**Elmali**	**0.81**	**0**	*ePg*	**Pg**	**11 58 19.1**	**+0.1**
ELL				*eSg*	**Sg**	**11 58 31.2**	**+1.7**
FETY	**Fethiye**	**0.96**	**317**	*ePG*	**Pg**	**11 58 22.1**	**+0.2**
FETY				*eSG*	**Sg**	**11 58 35.8**	**+1.4**
FETY	**Fethiye**	**0.96**	**317**	*ePg*	**Pg**	**11 58 22.1**	**+0.2**
FETY				*eSg*	**Sg**	**11 58 35.8**	**+1.4**
KORT	**Korkueli**	**1.12**	**19**	*i P*	**Pb**	**11 58 24.7**	**-0.8**
KORT				*i S*	**Sn**	**11 58 42.1**	**+0.1**
KORT	**Korkueli**	**1.12**	**19**	P	**Pb**	**11 58 24.7**	**-0.8**
KORT				S	**Sn**	**11 58 42.1**	**+0.1**
DALY	**Dalyan (Mu¨la**	**1.33**	**311**	*ePN*	**Pn**	**11 58 28.3**	**-0.6**
DALY	**Dalyan (Mu¨la**	**1.33**	**311**	*ePn*	**Pn**	**11 58 28.3**	**-0.6**
TURN	**Turunc**	**1.40**	**312**	*i P*	**Pn**	**11 58 29.0**	**-0.8**
TURN				*i S*	**Sb**	**11 58 49.4**	**+0.9**
BCK	**Bucak**	**1.61**	**20**	*ePN*	**Pn**	**11 58 30.4**	**-2.4**
BCK	**Bucak**	**1.61**	**20**	*ePn*	**Pn**	**11 58 30.4**	**-2.4**
YER	**Yerkesik**	**1.77**	**313**	*ePN*	**Pn**	**11 58 34.5**	**-0.5**
YER	**Yerkesik**	**1.77**	**313**	*ePn*	**Pn**	**11 58 34.5**	**-0.5**
DENT	**Denizli**	**1.94**	**339**	*ePN*	**Pn**	**11 58 37.2**	**-0.1**
DENT	**Denizli**	**1.94**	**339**	*ePn*	**Pn**	**11 58 37.2**	**-0.1**
ISP	**Isparta**	**1.94**	**15**	*ePN*	**Pn**	**11 58 35.5**	**-1.9**
ISP	**Isparta**	**1.94**	**15**	*ePn*	**Pn**	**11 58 35.5**	**-1.9**
UZP	**Denizli**	**2.17**	**345**	*i P*	**Pb**	**11 58 42.0**	**-1.4**
UZP				*i S*	**Sb**	**11 59 11.7**	**+1.1**
BDRM	**Kayabasi**	**2.28**	**300**	*i P*	**Pn**	**11 58 41.9**	**0.0**
BDRM				*i S*	**Sb**	**11 59 14.5**	**+0.8**
BDRM	**Kayabasi**	**2.28**	**300**	P	**Pn**	**11 58 41.9**	**0.0**
AYDN	**Tasoluk**	**2.36**	**317**	*i P*	**Pn**	**11 58 42.2**	**-0.9**
AYDN				*i S*	**Sb**	**11 59 15.1**	**-1.1**
AYDN	**Tasoluk**	**2.36**	**317**	P	**Pn**	**11 58 42.2**	**-0.9**
AYDN				S	**Sb**	**11 59 15.1**	**-1.1**
BODT	**Bodrum**	**2.37**	**299**	*ePN*	**Pn**	**11 58 43.7**	**+0.5**
BODT	**Bodrum**	**2.37**	**299**	*ePn*	**Pn**	**11 58 43.7**	**+0.5**
KHL	**Karahalli**	**2.40**	**353**	*ePN*	**Pn**	**11 58 42.5**	**-1.1**
KHL	**Karahalli**	**2.40**	**353**	*ePn*	**Pn**	**11 58 42.5**	**-1.1**
KHAL	**Karahalli**	**2.45**	**352**	*i P*	**Pn**	**11 58 43.1**	**-1.2**
KHAL				*i S*	**Sn**	**11 59 14.5**	**-0.3**
KHAL	**Karahalli**	**2.45**	**352**	P	**Pn**	**11 58 43.2**	**-1.2**
KHAL				S	**Sn**	**11 59 14.5**	**-0.3**
AYDB	**Zeytinkoy-Aydi**	**2.57**	**322**	*ePN*	**Pn**	**11 58 45.5**	**-0.5**
AYDB	**Zeytinkoy-Aydi**	**2.57**	**322**	*ePn*	**Pn**	**11 58 45.6**	**-0.5**
KULA	**Kula-Manisa**	**2.75**	**339**	*ePN*	**Pn**	**11 58 48.2**	**-0.3**
KULA	**Kula-Manisa**	**2.75**	**339**	*ePn*	**Pn**	**11 58 48.2**	**-0.3**
KDHN	**Kadinhani**	**3.12**	**34**	*i P*	**Pn**	**11 58 54.5**	**+0.9**
KDHN				*i S*	**Sn**	**11 59 33.6**	**+2.2**
KDHN	**Kadinhani**	**3.12**	**34**	P	**Pn**	**11 58 54.5**	**+0.9**
KDHN				S	**Sn**	**11 59 33.6**	**+2.2**

IDC 19 12:01:13.0±2.8, 20°81S×169°28E, h0km, mb3.9/3, mb1 4.0/4, mb1mx3.7/35, mbtmp3.8/4, ML3.7/1, MS3.9/11, Ms1 3.9/11, ms1mx3.5/38, Error ellipse: s-maj=119.5km s-min=26.2km az=144.0
NEIC 19 12:01:18.2±0.6, 20°89S×169°22E, h35km, mb4.2/1, Error ellipse: s-maj=33.5km s-min=9.4km az=154.0
ISC 19 12:01:17.5±0.8, 20°8S±0°3×169°1E±0°1, h25km, n23, σ1§32/12, mb3.8/4, MS3.8/9, Vanuatu Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**2.74**	**242**	Pn	**Pn**	**12 02 01.3**	**+1.4**
	11nm,0.3s,baz=69,slow=18,SNR=287						
DZM				Sn	**Sb**	**12 02 36.9**	**-2.1**
	baz=86,slow=19,SNR=4.1						
MSVF	**Nonsavu**	**9.03**	**72**	*e*Pn	**Pn**	**12 03 25.2**	**-1.2**
	51nm,1.3s						
MSVF				*e*Sn	**Sn**	**12 05 07.4**	**+0.1**
RAO	**Raoul Island**	**14.47**	**128**	LR	LR	12 08 48.5	
	comp=Z,548nm,18.6s,baz=286,slow=32						
URZ	**Urewera**	**18.72**	**160**	LR	LR	12 10 38.6	
	comp=Z,494nm,21.0s,baz=3.0,slow=30						
CAN	**Canberra**	**22.79**	**226**	*eP*	**P**	**12 06 17.6**	**-0.8**
	5.4nm,0.6s						
PMG	**Port Moresby**	**23.96**	**295**	LR	LR	12 14 29.8	
	comp=Z,308nm,20.9s,baz=112,slow=33						
STKA	**Stephens Creek**	**26.89**	**240**	P	**P**	**12 06 57.2**	**+0.7**
	3.3nm,0.9s,baz=60,slow=8.4,SNR=3.4						
STKA				LR	LR	12 16 55.0	
	comp=Z,296nm,20.7s,baz=55,slow=35						
RAR	**Rarotonga**	**29.07**	**96**	LR	LR	12 18 00.1	
	comp=Z,73nm,18.6s,baz=290,slow=35						
WRA	**Warramunga Arr**	**32.52**	**265**	P	**P**	**12 07 47.7**	**+1.0**
	0.8nm,0.9s,baz=99,slow=8.2,SNR=5.6						
WRA				LR	LR	12 21 44.6	
	comp=Z,616nm,18.2s,baz=100,slow=38						
ASAR	**Alice Springs**	**32.62**	**258**	P	**P**	**12 07 48.5**	**+1.0**
	0.8nm,0.8s,baz=76,slow=8.3,SNR=16						
ASAR				LR	LR	12 21 52.4	
	comp=Z,234nm,18.1s,baz=95,slow=38						
PPT2	**Papeete2**	**39.12**	**93**	eLQ	LQ	12 17 32.6	
	306nm,27.5s						
PPT2				eLR	LR	12 19 20.3	
	129nm,23.0s						
GUMO	**Guam**	**41.65**	**323**	LR	LR	12 25 27.4	
	comp=Z,91nm,19.1s,baz=128,slow=35						
TAOE	**Nuku Hiva Isla**	**50.32**	**84**	*e*S	**S**	**12 17 26.2**	**+1.7**
	99nm,26.1s						
TAOE				*e*LR	LR	12 24 37.3	
	276nm,25.5s						
VNDA	**Vanda**	**56.86**	**182**	LR	LR	12 32 08.1	
	comp=Z,49nm,18.2s,baz=350,slow=33						
SNAA	**Sanae**	**87.59**	**183**	P	P	12 13 54.3	-8.9
VNA3	**Neumayer Olymp**	**88.18**	**180**	P	P	12 13 57.2	-8.8
VNA2	**Neumayer--Watz**	**88.47**	**181**	P	P	12 13 59.9	-7.4
	baz=178,slow=5.1						
LPIG	**La Paz**	**90.25**	**64**	LR	LR	12 45 33.2	
	comp=Z,73nm,20.1s,baz=208,slow=30						
PLCA	**Paso Flores**	**97.47**	**139**	LR	LR	12 48 40.9	
	comp=Z,42nm,19.5s,baz=178,slow=29						
BRG	**Berggiesshubel**	**144.20**	**333**	*eP*	PKPbc	12 20 49.3	+0.1
	5.1nm,1.0s						
EKA	**Eskdalemuir Ar**	**145.04**	**352**	PKPbc	**PKPbc**	**12 20 50.5**	**-1.2**
	1.8nm,0.5s,baz=1.8,slow=2.7,SNR=8.2						
GERES	**GERESS Array B**	**145.79**	**331**	PKPbc	**PKPdf**	**12 20 53.9**	**-0.1**
	1.6nm,0.7s,baz=72,slow=3.2,SNR=7.4						
DAVOX	**Davos/Dischmat**	**149.05**	**332**	PKPbc	**PKPbc**	**12 21 03.0**	**-0.7**
	6.6nm,0.9s,baz=189,slow=1.9,SNR=3.0						

ISCJB 19 12:09:49.4±0.5, 10°79N±0°03×62°34W±0°03, h101km±6km, Error ellipse: s-maj=6.4km s-min=4.0km az=144.7
FUNV 19 12:09:49.8, 10°88N×62°13W, h71km, MW3.2
TRN 19 12:09:51.2, 10°80N×62°31W, h94km, MD3.2
ISC 19 12:09:50.0±1.3, 10°78N±0°04×62°33W±0°04, h102km±10km, n21, σ0§89/37, 1C, Near coast of Venezuela

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TCE	**Chacachacare**	**0.57**	**98**	*eP*	**Pn**	**12 10 07.4**	**+0.9**
TCE				*eS*	**Sn**	**12 10 18.1**	**-0.9**
GUNV	**Guanoco**	**0.86**	**224**	*i P*	**Pn**	**12 10 09.9**	**+0.8**
GUNV				*eS*	**Sn**	**12 10 23.5**	**+0.1**
CRUV	**Carupano**	**0.90**	**263**	*eP*	**Pn**	**12 10 09.1**	**-0.3**
CRUV				*eS*	**Sn**	**12 10 22.5**	**-1.5**
TRN	**Trinidad (W)**	**0.92**	**98**	*eP*	**Pn**	**12 10 10.8**	**+1.1**
TRN				*eS*	**Sn**	**12 10 23.7**	**-0.8**
TPP	**Pointe-a-Pierr**	**0.98**	**118**	*eP*	**Pn**	**12 10 11.0**	**+0.7**
TPP				*eS*	**Sn**	**12 10 26.3**	**+0.7**
TBH	**Brigand Hill**	**1.28**	**103**	*eP*	**Pn**	**12 10 14.4**	**+0.7**
TBH				*eS*	**Sn**	**12 10 31.8**	**+0.2**
GRGR	**Grenville**	**1.50**	**26**	*eP*	**Pn**	**12 10 16.4**	**+0.1**
GRGR				*eS*	**Sn**	**12 10 35.0**	**-1.4**
BOT	**Bacolet**	**1.63**	**76**	*eP*	**Pn**	**12 10 18.7**	**+0.8**
BOT				*eS*	**Sn**	**12 10 37.8**	**-1.3**
TOSP	**Speyside**	**1.84**	**74**	*eP*	**Pn**	**12 10 20.9**	**+0.3**
TOSP				*eS*	**Sn**	**12 10 43.1**	**-0.7**
FCV	**Fort Charlotte**	**2.59**	**24**	*eP*	**Pn**	**12 10 30.9**	**+0.6**
SVB	**Belmont**	**2.69**	**23**	*eP*	**Pn**	**12 10 32.0**	**+0.3**
SVB				*eS*	**Sn**	**12 11 03.7**	**-0.1**
SVV	**Soufriere Volc**	**2.75**	**23**	*eP*	**Pn**	**12 10 33.5**	**+1.0**
SVV				*eS*	**Sn**	**12 11 05.0**	**-0.1**
GURV	**El Guri**	**3.09**	**194**	*eP*	**Pn**	**12 10 36.7**	**-0.4**
GURV				*eS*	**Sn**	**12 11 12.3**	**-1.0**
MCLT	**Moule a Chique**	**3.21**	**25**	*eP*	**Pn**	**12 10 38.6**	**-0.1**
MCLT				*eS*	**Sn**	**12 11 15.9**	**-0.4**
CUPV	**Cœpira**	**3.48**	**258**	*eP*	**Pn**	**12 10 43.6**	**+1.4**
CUPV				*eS*	**Sn**	**12 11 24.1**	**+1.5**
BIRV	**Birongo**	**3.88**	**266**	*eP*	**Pn**	**12 10 49.0**	**+1.3**
BIRV				*eS*	**Sn**	**12 11 32.9**	**+0.5**
LUEV	**Luepa**	**4.98**	**170**	*eP*	**Pn**	**12 11 02.5**	**-0.1**
TUBV	**Turiamo**	**5.43**	**267**	*eP*	**Pn**	**12 11 09.3**	**+0.8**
BAUV	**El Baul**	**5.92**	**253**	*eP*	**Pn**	**12 11 15.4**	**+0.2**
BAUV				*eS*	**Sn**	**12 12 19.7**	**-1.9**
MAPV	**Macapo**	**6.10**	**262**	*eP*	**Pn**	**12 11 17.6**	**-0.1**
MONV	**Montecano**	**7.58**	**280**	*eP*	**Pn**	**12 11 37.7**	**-0.1**

NIED 19 12:11:00, 28°10N×128°10E, h5km, Mw4.1 Best double couple: M₀1.49000×10¹⁵ NP1:φ₁305.00000°, δ32.00000°, λ-5.00000°. NP2:φ₂39.00000°, δ88.00000°, λ-122.00000°.
JMA 19 12:11:21.5±0.3, 28°09N×128°05E, h10km±3km, M3.5, Ryukyu Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JTK	**Tokunoshima**	**0.85**	**111**	P	Pg	12 11 37.3	-0.6
JTK				S	Sg	12 11 49.2	+0.1
JOKE	**Okinoerabujima**	**0.86**	**147**	P	Pg	12 11 38.0	-0.1
JOKE				S	Sg	12 11 49.6	+0.3
JAMN	**Amaminishikomi**	**1.00**	**81**	P	Pg	12 11 40.6	-0.2
JAMN				S	Sg	12 11 53.7	-0.2
JIH	**Iheya**	**1.05**	**184**	P	Pg	12 11 41.1	-0.7
JIH				S	Sg	12 11 55.3	-0.2
JOW	**Kunigami**	**1.27**	**171**	P	Pn	12 11 44.7	-0.6
JOW				S	Sb	12 12 02.0	+0.1
JAM	**Amami Oshima**	**1.41**	**77**	P	Pn	12 11 47.0	-0.2
JAM				S	Sn	12 12 04.8	-1.0
JNTH	**Nagotoyohara**	**1.57**	**181**	P	Pn	12 11 49.4	0.0
JNTH				S	Sn	12 12 08.9	-0.8
JAGN	**Aguni-jima**	**1.66**	**206**	P	Pn	12 11 51.3	+0.7
JAGN				eS	Sg	12 12 14.0	-0.9
JJT2	**Tamagusuku 2**	**1.96**	**188**	P	Pb	12 11 56.4	-0.9
JJT2				*e*S	Sb	12 12 21.0	-0.8

BJI 19 12:13:14.6, 38°63N×21°42E, h44km, mb4.6/12, mB4.8/9, Ms4.4/3, Ms7 4.2/2
MOS 19 12:13:15.1±1.7, 38°03N×22°00E, h33km, mb4.6/38, Error ellipse: s-maj=5.6km s-min=3.6km az=80.7
TIR 19 12:13:18.3, 38°53N×22°18E, h4km, ML4.0
ISCJB 19 12:13:18.2±0.1, 38°15N±0°01×22°00E±0°01, h67km±1km, mb4.4/69, Error ellipse: s-maj=2.1km s-min=1.6km az=33.8
ATH 19 12:13:18.8, 38°12N×22°08E, h58km±1km, ML4.4/26, Error ellipse: s-maj=1.2km s-min=0.6km az=249.0
PDG 19 12:13:18.3±0.8, 38°11N×21°95E, h62km±2km, ML4.6/13, Error ellipse: s-maj=0.8km s-min=0.6km az=90.0
IDC 19 12:13:18.7±1.3, 38°17N×22°04E, h55km±13km, mb4.1/35, mb1 4.2/46, mb1mx4.1/65, mbtmp4.4/46, MS3.2/18, Ms1 3.2/18, ms1mx3.0/59, Error ellipse: s-maj=9.3km s-min=8.4km az=44.0
NEIC 19 12:13:19.0, 38°10N×22°08E, h55km, mb4.5/27, After ATH.
NEIC Felt at Kalavryta, Nea Filadelfeia, Patrai and Zakharo.
CSEM 19 12:13:19.2±0.1, 38°13N×21°98E, h60km, mb4.5/32, Mw4.0, Error ellipse: s-maj=2.3km s-min=1.7km az=34.0
THE 19 12:13:20.1, 38°11N×22°09E, h52km±1km, ML4.5/29, Error ellipse: s-maj=1.4km s-min=0.6km az=231.0
HLW 19 12:13:20.4, 37°93N×22°57E, h33km±24km, Md4.2, Ml3.9
ISC 19 12:13:18.5±0.4, 38°09N±0°02×22°06E±0°02, h54km±3km, n806, σ1§90/1006, mb4.5/69, MS3.2/10, 48C-37D, Greece

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KLV	**Kalavryta, Ach**	**0.08**	**121**	P	**Pn**	**12 13 27.7**	**+0.9**
KLV				S	**Sn**	**12 13 34.1**	**+1.4**
KLV	**Kalavryta, Ach**	**0.08**	**121**	P	**Pn**	**12 13 27.8**	**+0.9**
KLV				S	**Sn**	**12 13 34.2**	**+1.5**
KLV	**Kalavryta, Ach**	**0.08**	**121**	P	**Pn**	**12 13 27.4**	**+0.6**
KLV				S	**Sn**	**12 13 33.9**	**+1.2**
KLV				AML	AML	12 13 34.7	
KLV				AML	AML	12 13 34.8	
KLV	**Kalavryta, Ach**	**0.08**	**121**	*e*Pn	**Pn**	**12 13 27.7**	**+0.9**
KLV				*e*Sn	**Sn**	**12 13 34.1**	**+1.4**
LAKA	**Lakka**	**0.17**	**337**	P	**Pn**	**12 13 27.9**	**+0.8**
LAKA				S	**Sn**	**12 13 34.2**	**+0.9**
LAKA	**Lakka**	**0.17**	**337**	P	**Pn**	**12 13 28.0**	**+0.8**
LAKA				S	**Sn**	**12 13 34.6**	**+1.3**
LAKA	**Lakka**	**0.17**	**337**	P	**Pn**	**12 13 27.8**	**+0.7**
LAKA	**Lakka**	**0.17**	**337**	*e*Pn	**Pn**	**12 13 27.9**	**+0.8**
LAKA				*e*Sn	**Sn**	**12 13 34.2**	**+0.9**
GUR	**Goura**	**0.27**	**124**	P	**Pn**	**12 13 28.9**	**+1.1**
GUR				S	**Sn**	**12 13 36.0**	**+1.5**
GUR	**Goura**	**0.27**	**124**	*e*Pn	**Pn**	**12 13 28.9**	**+1.1**
GUR				S	**Sn**	**12 13 36.5**	**+2.0**
GUR	**Goura**	**0.27**	**124**	P	**Pn**	**12 13 29.0**	**+1.2**
GUR				S	**Sn**	**12 13 35.9**	**+1.3**
GUR				AML	AML	12 13 39.4	
GUR				AML	AML	12 13 39.6	
GUR	**Goura**	**0.27**	**124**	*e*Pn	**Pn**	**12 13 28.9**	**+1.1**
GUR				*e*Sn	**Sn**	**12 13 36.0**	**+1.5**
RODI	**Rodini**	**0.27**	**331**	P	**Pn**	**12 13 28.6**	**+0.9**
RODI				S	**Sn**	**12 13 35.4**	**+1.1**
RODI	**Rodini**	**0.27**	**331**	P	**Pn**	**12 13 28.6**	**+0.9**
RODI				S	**Sn**	**12 13 35.4**	**+1.1**
RODI				AML	AML	12 13 36.4	
RODI				AML	AML	12 13 37.8	
TRIZ	**Trizonia**	**0.28**	**2**	P	**Pn**	**12 13 29.3**	**+1.5**
TRIZ				S	**Sn**	**12 13 36.7**	**+2.3**
UPR	**University Cam**	**0.29**	**313**	P	**Pn**	**12 13 28.9**	**+1.0**
UPR				S	**Sn**	**12 13 35.1**	**+0.5**
UPR	**University Cam**	**0.29**	**313**	P	**Pn**	**12 13 29.1**	**+1.2**
UPR				S	**Sn**	**12 13 37.1**	**+2.4**
UPR	**University Cam**	**0.29**	**313**	P	**Pn**	**12 13 29.1**	**+1.2**
UPR				S	**Sn**	**12 13 37.1**	**+2.4**
DRO	**Drossia**	**0.31**	**244**	P	**Pn**	**12 13 28.9**	**+0.9**
DRO				S	**Sn**	**12 13 36.2**	**+1.3**
DRO	**Drossia**	**0.31**	**244**	P	**Pn**	**12 13 28.9**	**+0.9**
DRO				S	**Sn**	**12 13 36.5**	**+1.6**
DRO	**Drossia**	**0.31**	**244**	P	**Pn**	**12 13 28.2**	**+0.2**
DRO				S	**Sn**	**12 13 35.6**	**+0.7**
DRO				AML	AML	12 13 37.1	
DRO				AML	AML	12 13 42.5	
KALE	**Kalithea**	**0.31**	**12**	P	**Pn**	**12 13 29.2**	**+1.1**
KALE				S	**Sn**	**12 13 36.5**	**+1.4**
KALE	**Kalithea**	**0.31**	**12**	P	**Pn**	**12 13 29.3**	**+1.1**
KALE				*e*Sn	**Sn**	**12 13 36.5**	**+1.4**
KALE	**Kalithea**	**0.31**	**12**	P	**Pn**	**12 13 29.6**	**+1.5**
KALE				S	**Sn**	**12 13 36.9**	**+1.8**
KALE				AML	AML	12 13 37.5	
KALE				AML	AML	12 13 37.5	
KALE	**Kalithea**	**0.31**	**12**	*e*Pn	**Pn**	**12 13 29.2**	**+1.1**
KALE				*e*Sn	**Sn**	**12 13 36.5**	**+1.4**
EFP	**Efpalio**	**0.36**	**340**	P	**Pn**	**12 13 29.6**	**+1.1**
EFP				S	**Sn**	**12 13 37.5**	**+1.8**
EFP	**Efpalio**	**0.36**	**340**	P	**Pn**	**12 13 29.6**	**+1.1**
EFP				S	**Sn**	**12 13 37.3**	**+1.6**
EFP	**Efpalio**	**0.36**	**340**	P	**Pn**	**12 13 29.6**	**+1.1**
EFP				S	**Sn**	**12 13 37.3**	**+1.6**
RLS	**Riolos of Patr**	**0.47**	**267**	P	**Pn**	**12 13 30.2**	**+0.6**
RLS				S	**Sn**	**12 13 38.9**	**+1.3**
RLS	**Riolos of Patr**	**0.47**	**267**	P	**Pn**	**12 13 30.2**	**+0.6**
RLS				S	**Sn**	**12 13 38.9**	**+1.3**
RLS	**Riolos of Patr**	**0.47**	**267**	AML	AML	12 13 40.2	
	comp=N,98738µm,0.5s						
RLS				AML	AML	12 13 40.9	
	comp=E,91135µm,0.5s						
RLS	**Riolos of Patr**	**0.47**	**267**	P	**Pn**	**12 13 30.2**	**+0.6**
RLS				S	**Sn**	**12 13 38.9**	**+1.3**
THAL	**Thalero**	**0.48**	**96**	P	**Pn**	**12 13 30.8**	**+1.1**
THAL				S	**Sn**	**12 13 39.1**	**+1.3**
THAL	**Thalero**	**0.48**	**96**	P	**Pn**	**12 13 30.9**	**+1.2**
THAL				S	**Sn**	**12 13 39.1**	**+1.3**
THAL	**Thalero**	**0.48**	**96**	P	**Pn**	**12 13 30.9**	**+1.2**
THAL				S	**Sn**	**12 13 38.1**	**+0.3**
THAL				AML	AML	12 13 42.5	
	comp=N,96385µm,0.2s						
THAL				AML	AML	12 13 43.7	
ANX	**Ano Chora**	**0.52**	**348**	P	**Pn**	**12 13 31.6**	**+1.3**
ANX				S	**Sn**	**12 13 41.0**	**+2.1**
ANX	**Ano Chora**	**0.52**	**348**	P	**Pn**	**12 13 31.6**	**+1.3**
ANX				S	**Sn**	**12 13 40.9**	**+2.1**
AXS	**Araxos**	**0.55**	**282**	P	**Pn**	**12 13 31.2**	**+0.7**
AXS	**Araxos**	**0.55**	**282**	P	**Pn**	**12 13 31.2**	**+0.7**
AXS				S	**Sn**	**12 13 40.1**	**+0.9**
AXS	**Araxos**	**0.55**	**282**	P	**Pn**	**12 13 31.2**	**+0.5**
AMT	**Artemida-Makis**	**0.62**	**207**	P	**Pn**	**12 13 32.9**	**+1.5**
AMT				S	**Sn**	**12 13 44.0**	**+3.2**
AMT	**Artemida-Makis**	**0.62**	**207**	P	**Pn**	**12 13 32.9**	**+1.5**
AMT				S	**Sn**	**12 13 44.0**	**+3.2**
AMT	**Artemida-Makis**	**0.62**	**207**	P	**Pn**	**12 13 32.9**	**+1.5**
PVO	**Paravola**	**0.68**	**322**	P	**Pn**	**12 13 33.7**	**+1.6**
PVO	**Paravola**	**0.68**	**322**	P	**Pn**	**12 13 33.7**	**+1.6**
PVO				S	**Sn**	**12 13 43.3**	**+1.4**
PVO	**Paravola**	**0.68**	**322**	P	**Pn**	**12 13 34.6**	**+2.5**
PVO				S	**Sn**	**12 13 43.4**	**+1.4**
PROD	**Prodromos**	**0.69**	**75**	P	**Pn**	**12 13 33.7**	**+1.5**
PROD				S	**Sn**	**12 13 43.5**	**+1.3**
PROD	**Prodromos**	**0.69**	**75**	P	**Pn**	**12 13 33.7**	**+1.5**
PROD				S	**Sn**	**12 13 43.5**	**+1.3**
PROD				AML	AML	12 13 46.2	
	comp=N,28419µm,0.2s						
PROD				AML	AML	12 13 47.6	
	comp=E,52340µm,0.6s						
LTK	**Loutraki**	**0.72**	**95**	P	**Pn**	**12 13 33.7**	**+1.1**
LTK				S	**Sn**	**12 13 43.4**	**+0.4**
LTK	**Loutraki**	**0.72**	**95**	P	**Pn**	**12 13 33.8**	**+1.1**
LTK				S	**Sn**	**12 13 43.4**	**+0.4**
LTK	**Loutraki**	**0.72**	**95**	P	**Pn**	**12 13 33.9**	**+1.2**
LTK	**Loutraki**	**0.72**	**95**	*e*Pn	**Pn**	**12 13 33.7**	**+1.1**
LTK				*e*Sn	**Sn**	**12 13 43.4**	**+0.4**
VLX	**Vlachokerasia**	**0.76**	**160**	P	**Pn**	**12 13 35.2**	**+2.0**
VLX				S	**Sn**	**12 13 46.9**	**+2.9**
VLX	**Vlachokerasia**	**0.76**	**160**	P	**Pn**	**12 13 35.2**	**+2.0**
VLX				S	**Sn**	**12 13 46.9

ZKS			S	Sn	12 13 55.7 +4.3
ZKS	**Zakynthos**	**1.08 249**	P	**Pn**	**12 13 38.2 +0.8**
ZKS			S	**Sn**	**12 13 55.7 +4.3**
ZKS			AML	AML	12 13 59.9
	comp=N,60473µm,0.5s				
ZKS			AML	AML	12 14 01.5
	comp=E,88912µm,0.6s				
DID	**Didima**	**1.10 121**	P	**Pn**	**12 13 38.4 +0.8**
DID			S	**Sn**	**12 13 53.5 +1.7**
DID	**Didima**	**1.10 121**	P	**Pn**	**12 13 38.6 +1.0**
DID			S	**Sn**	**12 13 53.5 +1.7**
DID	**Didima**	**1.10 121**	P	**Pn**	**12 13 38.6 +1.0**
DID			S	**Sn**	**12 13 53.1 +1.3**
DID			AML	AML	12 13 56.0
	comp=E,18180µm,0.4s				
DID			AML	AML	12 13 56.7
	comp=N,20594µm,0.5s				
DID	**Didima**	**1.10 121**	*e*Pn	**Pn**	**12 13 38.4 +0.8**
DID			*e*Sn	**Sn**	**12 13 53.5 +1.7**
KRND	**KRANIDI**	**1.11 129**	P	**Pn**	**12 13 39.0 +1.2**
KRND			S	**Sn**	**12 13 53.2 +1.1**
KRND	**KRANIDI**	**1.11 129**	P	**Pn**	**12 13 39.0 +1.2**
KRND			S	**Sn**	**12 13 53.2 +1.1**
KRND	**KRANIDI**	**1.11 129**	P	**Pn**	**12 13 38.9 +1.1**
VLS	**Valsamata**	**1.16 275**	P	**Pn**	**12 13 39.1 +0.6**
VLS			S	**Sn**	**12 13 55.0 +1.6**
VLS	**Valsamata**	**1.16 275**	P	**Pn**	**12 13 39.1 +0.6**
VLS			S	**Sn**	**12 13 55.0 +1.6**
VLS	**Valsamata**	**1.16 275**	P	**Pn**	**12 13 39.1 +0.6**
VLS			S	**Sn**	**12 13 55.0 +1.6**
VLS	**Valsamata**	**1.16 275**	P	**Pn**	**12 13 39.1 +0.6**
VLS			S	**Sn**	**12 13 55.0 +1.6**
SMIA	**Simia**	**1.20 48**	P	**Pn**	**12 13 40.0 +1.0**
SMIA			S	**Sn**	**12 13 55.9 +1.6**
SMIA	**Simia**	**1.20 48**	P	**Pn**	**12 13 40.0 +1.0**
SMIA			S	**Sn**	**12 13 55.9 +1.6**
SMIA	**Simia**	**1.20 48**	P	**Pn**	**12 13 40.5 +1.5**
PYL	**PYLOS**	**1.22 192**	P	**Pn**	**12 13 41.3 +2.1**
PYL			S	**Sn**	**12 13 58.1 +3.5**
PYL	**PYLOS**	**1.22 192**	P	**Pn**	**12 13 41.3 +2.1**
PYL			S	**Sn**	**12 13 57.2 +2.6**
PYL	**PYLOS**	**1.22 192**	P	**Pn**	**12 13 41.9 +2.7**
PYL			S	**Sn**	**12 13 57.1 +2.6**
PYL			AML	AML	12 14 01.5
	comp=N,16604µm,0.3s				
PYL			AML	AML	12 14 02.1
	comp=E,15884µm,0.4s				
PYL	**PYLOS**	**1.22 192**	*e*Pn	**Pn**	**12 13 41.3 +2.1**
PYL			*e*Sn	**Sn**	**12 13 58.1 +3.5**
DSL	**Palaion Diasel**	**1.29 324**	P	**Pn**	**12 13 42.0 +1.8**
DSL			S	**Sn**	**12 13 57.9 +1.4**
DSL	**Palaion Diasel**	**1.29 324**	P	**Pn**	**12 13 42.0 +1.8**
DSL			S	**Sn**	**12 13 57.9 +1.4**
DSL	**Palaion Diasel**	**1.29 324**	P	**Pn**	**12 13 43.4 +3.2**
DSL			S	**Sn**	**12 13 58.6 +2.1**
DSL			AML	AML	12 14 04.3
	comp=E,38507µm,0.6s				
DSL			AML	AML	12 14 06.3
	comp=N,52856µm,0.7s				
DSL	**Palaion Diasel**	**1.29 324**	*e*Pn	**Pn**	**12 13 42.0 +1.8**
DSL			*e*Sn	**Sn**	**12 13 57.9 +1.4**
LKD2	**Lefkada island**	**1.30 303**	P	**Pn**	**12 13 41.4 +1.0**
LKD2			S	**Sn**	**12 14 00.0 +3.2**
LKD2	**Lefkada island**	**1.30 303**	P	**Pn**	**12 13 41.4 +1.0**
LKD2			S	**Sn**	**12 13 59.5 +2.7**
LKD2	**Lefkada island**	**1.30 303**	P	**Pn**	**12 13 41.5 +1.1**
LKD2			S	**Sn**	**12 13 59.5 +2.7**
LKD2			AML	AML	12 14 04.8
	comp=E,42629µm,0.7s				
LKD2			AML	AML	12 14 05.8
	comp=N,34123µm,0.6s				
LKD2	**Lefkada island**	**1.30 303**	P	**Pn**	**12 13 41.4 +1.0**
ATH	**Athens Observa**	**1.31 94**	P	**Pn**	**12 13 41.8 +1.3**
ATH			S	**Sn**	**12 13 57.8 +0.8**
ATH	**Athens Observa**	**1.31 94**	P	**Pn**	**12 13 41.8 +1.3**
ATH			S	**Sn**	**12 13 57.8 +0.8**
ATH	**Athens Observa**	**1.31 94**	P	**Pn**	**12 13 41.8 +1.3**
ATH			S	**Sn**	**12 13 57.8 +0.8**
ATH	**Athens Observa**	**1.31 94**	P	**Pn**	**12 13 41.8 +1.3**
ATH			S	**Sn**	**12 13 57.8 +0.8**
VLY	**Voula,Athens**	**1.39 99**	P	**Pn**	**12 13 42.7 +1.2**
VLY	**Voula,Athens**	**1.39 99**	P	**Pn**	**12 13 42.7 +1.2**
VLY			S	**Sn**	**12 14 00.0 +1.1**
VLY	**Voula,Athens**	**1.39 99**	P	**Pn**	**12 13 43.0 +1.5**
VLY			S	**Sn**	**12 13 60.0 +1.1**
VLY			AML	AML	12 14 01.5
	comp=N,15120µm,0.7s				
VLY			AML	AML	12 14 02.9
	comp=E,8652µm,0.4s				
VLY	**Voula,Athens**	**1.39 99**	*e*Pn	**Pn**	**12 13 42.7 +1.2**
PTL	**Penteli**	**1.43 91**	P	**Pn**	**12 13 43.3 +1.3**
PTL	**Penteli**	**1.43 91**	P	**Pn**	**12 13 43.3 +1.3**
PTL			S	**Sn**	**12 14 01.5 +1.7**
PTL	**Penteli**	**1.43 91**	P	**Pn**	**12 13 43.7 +1.7**
PTL			S	**Sn**	**12 14 01.5 +1.7**
PTL			AML	AML	12 14 02.1
	comp=E,22806µm,0.5s				
PTL			AML	AML	12 14 02.3
	comp=N,21490µm,0.6s				
PTL	**Penteli**	**1.43 91**	*e*Pn	**Pn**	**12 13 43.3 +1.3**
THL	**Klokotos Trika**	**1.48 359**	P	**Pn**	**12 13 44.0 +1.3**
THL			S	**Sn**	**12 14 02.3 +1.4**
THL	**Klokotos Trika**	**1.48 359**	P	**Pn**	**12 13 44.0 +1.3**
THL			S	**Sn**	**12 14 01.9 +1.0**
FYTO	**Fytoko, Volos**	**1.49 27**	P	**Pn**	**12 13 43.8 +0.9**
FYTO	**Fytoko, Volos**	**1.49 27**	P	**Pn**	**12 13 43.8 +0.9**
FYTO	**Fytoko, Volos**	**1.49 27**	P	**Pn**	**12 13 44.1 +1.2**
FYTO	**Fytoko, Volos**	**1.49 27**	*e*Pn	**Pn**	**12 13 43.8 +0.9**
EREA	**Eretria**	**1.51 77**	P	**Pn**	**12 13 44.7 +1.5**
EREA			S	**Sn**	**12 14 03.5 +1.7**
EREA	**Eretria**	**1.51 77**	P	**Pn**	**12 13 44.7 +1.5**
EREA			S	**Sn**	**12 14 03.5 +1.7**
EREA	**Eretria**	**1.51 77**	P	**Pn**	**12 13 45.2 +2.0**
EREA			S	**Sn**	**12 14 04.0 +2.2**
EREA			AML	AML	12 14 04.6
	comp=E,26910µm,0.6s				
EREA			AML	AML	12 14 04.6
	comp=N,15448µm,0.4s				
NEO	**Neokhori**	**1.52 36**	P	**Pn**	**12 13 44.4 +1.0**
NEO	**Neokhori**	**1.52 36**	P	**Pn**	**12 13 44.4 +1.0**
NEO			S	**Sn**	**12 14 02.7 +0.6**
NEO	**Neokhori**	**1.52 36**	P	**Pn**	**12 13 44.7 +1.3**
NEO			S	**Sn**	**12 14 02.7 +0.6**
NEO	**Neokhori**	**1.52 36**	P	**Pn**	**12 13 44.4 +1.0**
VLI	**Veliai**	**1.53 153**	P	**Pn**	**12 13 44.7 +1.2**
VLI			S	**Sn**	**12 14 05.4 +3.1**
VLI	**Veliai**	**1.53 153**	P	**Pn**	**12 13 44.7 +1.2**
VLI			S	**Sn**	**12 14 05.4 +3.1**
VLI	**Veliai**	**1.53 153**	P	**Pn**	**12 13 44.5 +1.1**
VLI	**Veliai**	**1.53 153**	*e*Pn	**Pn**	**12 13 44.7 +1.2**
SKIA	**Skiathos**	**1.54 45**	P	**Pn**	**12 13 44.6 +1.0**
SKIA			S	**Sn**	**12 14 03.3 +0.8**
SKIA	**Skiathos**	**1.54 45**	P	**Pn**	**12 13 44.6 +1.0**
SKIA			S	**Sn**	**12 14 03.3 +0.8**
SKIA	**Skiathos**	**1.54 45**	P	**Pn**	**12 13 44.9 +1.3**
SKIA			S	**Sn**	**12 14 02.1 -0.4**
SKIA			AML	AML	12 14 04.0
	comp=E,8253µm,0.4s				
SKIA			AML	AML	12 14 04.8
	comp=N,11301µm,0.4s				
XOR	**Xorichti**	**1.56 34**	P	**Pn**	**12 13 44.8 +1.0**
XOR	**Xorichti**	**1.56 34**	P	**Pn**	**12 13 44.8 +1.0**
XOR	**Xorichti**	**1.56 34**	P	**Pn**	**12 13 44.9 +1.1**
XOR	**Xorichti**	**1.56 34**	P	**Pn**	**12 13 44.8 +1.0**
AOS	**Alonnisos**	**1.79 52**	PN	**Pn**	**12 13 48.9 +1.9**
AOS			SN	**Sn**	**12 14 09.4 +0.8**
AOS	**Alonnisos**	**1.79 52**	P	**Pn**	**12 13 47.6 +0.6**
AOS	**Alonnisos**	**1.79 52**	P	**Pn**	**12 13 47.6 +0.6**
AOS	**Alonnisos**	**1.79 52**	*i* Pn	**Pn**	**12 13 48.9 +1.9**
AOS			*i* Sn	**Sn**	**12 14 09.4 +0.8**
AOS			S	**Sn**	**12 14 10.5 +1.9**
AOS	**Alonnisos**	**1.79 52**	P	**Pn**	**12 13 47.2 +0.2**
AOS			AML	AML	12 14 10.3
	comp=N,16143µm,0.5s				
AOS			S	**Sn**	**12 14 10.5 +1.9**
AOS			AML	AML	12 14 10.8
	comp=E,13040µm,0.4s				
AOS	**Alonnisos**	**1.79 52**	*e*Pn	**Pn**	**12 13 47.6 +0.6**
JAN	**Janina**	**1.83 329**	P	**Pn**	**12 13 49.3 +1.7**
JAN	**Janina**	**1.83 329**	P	**Pn**	**12 13 49.3 +1.7**
JAN	**Janina**	**1.83 329**	P	**Pn**	**12 13 49.3 +1.7**
JAN	**Janina**	**1.83 329**	P	**Pn**	**12 13 49.3 +1.7**
KPRO	**Kipourio**	**1.94 344**	P	**Pn**	**12 13 50.9 +1.8**
KPRO			S	**Sn**	**12 14 14.0 +1.6**
KPRO	**Kipourio**	**1.94 344**	P	**Pn**	**12 13 50.9 +1.8**
KPRO			S	**Sn**	**12 14 14.0 +1.6**
KPRO	**Kipourio**	**1.94 344**	P	**Pn**	**12 13 52.5 +3.3**
IGT	**Igoumenitsa**	**1.98 317**	*e*PN	**Pn**	**12 13 52.0 +2.5**
IGT	**Igoumenitsa**	**1.98 317**	P	**Pn**	**12 13 50.2 +0.7**
IGT	**Igoumenitsa**	**1.98 317**	*e*P	**Pn**	**12 13 50.2 +0.7**
IGT	**Igoumenitsa**	**1.98 317**	P	**Pn**	**12 13 50.0 +0.5**
IGT	**Igoumenitsa**	**1.98 317**	*e*Pn	**Pn**	**12 13 52.0 +2.5**
IGT	**Igoumenitsa**	**1.98 317**	P	**Pn**	**12 13 50.0 +0.5**
IGT	**Igoumenitsa**	**1.98 317**	*e*Pn	**Pn**	**12 13 50.2 +0.7**
KYTH	**Kithira**	**1.98 156**	P	**Pn**	**12 13 52.5 +2.9**
KYTH	**Kithira**	**1.98 156**	P	**Pn**	**12 13 52.5 +2.9**
LIT	**Litokhoron**	**2.04 9**	P	**Pn**	**12 13 50.9 +0.5**
LIT			S	**Sn**	**12 14 17.3 +2.6**
LIT	**Litokhoron**	**2.04 9**	*e*P	**Pn**	**12 13 50.9 +0.5**
LIT			*e*		12 14 17.3
LIT	**Litokhoron**	**2.04 9**	P	**Pn**	**12 13 50.5 +0.1**
LIT	**Litokhoron**	**2.04 9**	P	**Pn**	**12 13 50.5 +0.1**
LIT	**Litokhoron**	**2.04 9**	*e*Pn	**Pn**	**12 13 50.9 +0.5**
LIT			*e*Sn	**Sn**	**12 14 17.3 +2.6**
SGD	**Sagiada**	**2.09 317**	P	**Pn**	**12 13 51.8 +0.8**
SGD	**Sagiada**	**2.09 317**	P	**Pn**	**12 13 51.1 +0.1**
SGD	**Sagiada**	**2.09 317**	P	**Pn**	**12 13 51.1 +0.1**
SERI	**Serifos**	**2.14 115**	P	**Pn**	**12 13 53.0 +1.3**
SERI	**Serifos**	**2.14 115**	P	**Pn**	**12 13 53.0 +1.3**
KZN	**Kozani**	**2.23 354**	P	**Pn**	**12 13 55.0 +2.0**
PAIG	**Paliouri**	**2.23 34**	P	**Pn**	**12 13 52.5 -0.5**
PAIG	**Paliouri**	**2.23 34**	P	**Pn**	**12 13 52.5 -0.5**
MHLO	**Agia Marina, M**	**2.33 126**	P	**Pn**	**12 13 55.7 +1.4**
MHLO	**Agia Marina, M**	**2.33 126**	P	**Pn**	**12 13 55.7 +1.4**
KEK	**Kerkira**	**2.40 313**	P	**Pn**	**12 13 54.0 -1.3**
KEK			S	**Sn**	**12 14 21.9 -1.6**
ANKY	**Antikythira Is**	**2.43 155**	P	**Pn**	**12 13 57.5 +1.8**
ANKY	**Antikythira Is**	**2.43 155**	P	**Pn**	**12 13 57.5 +1.8**
NEST	**Nestorio**	**2.45 342**	P	**Pn**	**12 13 59.4 +3.3**
NEST	**Nestorio**	**2.45 342**	P	**Pn**	**12 13 59.4 +3.3**
PLG	**Polygyros**	**2.52 25**	P	**Pn**	**12 13 56.8 -0.2**
PLG			S	**Sn**	**12 14 26.4 -0.2**
PLG	**Polygyros**	**2.52 25**	P	**Pn**	**12 13 56.9 -0.2**
PLG			S	**Sn**	**12 14 26.4 -0.2**
PLG			AML	AML	12 14 30.6
	comp=N,1398µm,0.7s				
PLG			AML	AML	12 14 31.4
	comp=E,2356µm,0.7s				
HORT	**Hortiatis**	**2.63 18**	*e*PN	**Pn**	**12 13 59.4 +0.8**
HORT	**Hortiatis**	**2.63 18**	P	**Pn**	**12 13 59.0 +0.4**
HORT	**Hortiatis**	**2.63 18**	P	**Pn**	**12 13 59.0 +0.4**
HORT	**Hortiatis**	**2.63 18**	*e*Pn	**Pn**	**12 13 59.4 +0.8**
HORT	**Hortiatis**	**2.63 18**	P	**Pn**	**12 13 58.1 -0.5**
HORT	**Hortiatis**	**2.63 18**	P	**Pn**	**12 13 59.0 +0.4**
THE	**Thessaloniki**	**2.64 15**	P	**Pn**	**12 13 57.5 -1.0**
THE	**Thessaloniki**	**2.64 15**	P	**Pn**	**12 13 57.5 -1.0**
OUR	**Ouranopolis**	**2.70 33**	*e*PN	**Pn**	**12 13 59.8 +0.4**
OUR	**Ouranopolis**	**2.70 33**	P	**Pn**	**12 13 59.7 +0.4**
OUR	**Ouranopolis**	**2.70 33**	P	**Pn**	**12 13 59.7 +0.4**
FNA	**Florina**	**2.75 349**	*e*PN	**Pn**	**12 14 02.3 +2.2**
FNA	**Florina**	**2.75 349**	P	**Pn**	**12 14 01.4 +1.3**
FNA	**Florina**	**2.75 349**	*e*Pn	**Pn**	**12 14 02.3 +2.2**
FNA	**Florina**	**2.75 349**	P	**Pn**	**12 14 01.4 +1.3**
GRG	**Griva**	**2.88 5**	*e*PN	**Pn**	**12 14 02.9 +1.0**
GRG	**Griva**	**2.88 5**	*e*Pn	**Pn**	**12 14 02.9 +1.0**
SOH	**Sokhos**	**2.91 20**	P	**Pn**	**12 14 03.5 +1.2**
SOH			S	**Sn**	**12 14 35.7 -0.4**
SOH	**Sokhos**	**2.91 20**	P	**Pn**	**12 14 03.5 +1.2**
SOH			S	**Sn**	**12 14 35.7 -0.4**
SOH			AML	AML	12 14 44.2
	comp=E,2951µm,0.6s				
SOH			AML	AML	12 14 44.4
	comp=N,2882µm,0.5s				
APE	**Apeiranthos**	**2.94 109**	*e*PN	**Pn**	**12 14 04.0 +1.3**
APE	**Apeiranthos**	**2.94 109**	⇓*i*P	**Pn**	**12 14 04.3 +1.6**
APE	**Apeiranthos**	**2.94 109**	S	**Sn**	**12 14 37.3 +0.5**
APE	**Apeiranthos**	**2.94 109**	*d i*P	**Pn**	**12 14 04.1 +1.3**
APE	**Apeiranthos**	**2.94 109**	*e*Pn	**Pn**	**12 14 04.0 +1.3**
APE	**Apeiranthos**	**2.94 109**	P	**Pn**	**12 14 04.1 +1.3**
BIA	**Bitola**	**2.98 349**	*i* Pn	**Pn**	**12 14 04.9 +1.5**
BIA			*i* Sn	**Sn**	**12 14 40.1 +2.1**
BIA	**Bitola**	**2.98 349**	*i* Pn	**Pn**	**12 14 04.9 +1.5**
BIA			*i* Sn	**Sn**	**12 14 40.0 +2.1**
LIA	**Limnos Island**	**3.03 52**	P	**Pn**	**12 14 04.2 +0.3**
LIA			S	**Sn**	**12 14 38.4 -0.6**
IMMV	**Iera Moni Meta**	**3.04 149**	P	**Pn**	**12 14 06.4 +2.3**
IMMV	**Iera Moni Meta**	**3.04 149**	P	**Pn**	**12 14 06.4 +2.3**
THR5	**Thira Island,**	**3.11 121**	*e*PN	**Pn**	**12 14 07.1 +2.1**
THR5	**Thira Island,**	**3.11 121**	*e*Pn	**Pn**	**12 14 07.1 +2.1**
KNT	**Kendrikon**	**3.14 12**	*e*PN	**Pn**	**12 14 07.0 +1.5**
KNT	**Kendrikon**	**3.14 12**	*e*Pn	**Pn**	**12 14 07.0 +1.5**
KNT	**Kendrikon**	**3.14 12**	P	**Pn**	**12 14 07.0 +1.5**
CHOS	**Chios island**	**3.16 83**	*e*PN	**Pn**	**12 14 07.4 +1.6**
CHOS	**Chios island**	**3.16 83**	*e*Pn	**Pn**	**12 14 07.4 +1.6**
CHOS	**Chios island**	**3.16 83**	P	**Pn**	**12 14 07.9 +2.1**
CHOS	**Chios island**	**3.16 83**	P	**Pn**	**12 14 07.9 +2.1**
OHR	**Ohrid**	**3.17 343**	*i* Pn	**Pn**	**12 14 07.2 +1.2**
OHR			*i* Sn	**Sn**	**12 14 44.5 +1.8**
OHR	**Ohrid**	**3.17 343**	*i* Pn	**Pn**	**12 14 07.1 +1.2**
OHR			*i* Sn	**Sn**	**12 14 44.4 +1.8**
SIGR	**SIGRI**	**3.18 68**	*e*PN	**Pn**	**12 14 06.9 +1.0**
SIGR	**SIGRI**	**3.18 68**	*e*Pn	**Pn**	**12 14 06.9 +1.0**
SIGR	**SIGRI**	**3.18 68**	P	**Pn**	**12 14 06.9 +1.0**
VAM	**Vamos**	**3.18 147**	P	**Pn**	**12 14 09.3 +3.3**
SANT	**Santorini**	**3.21 121**	⇓*i*P	**Pn**	**12 14 08.9 +2.5**
SANT	**Santorini**	**3.21 121**	*e*Pn	**Pn**	**12 14 07.0 +0.6**
SANT	**Santorini**	**3.21 121**	⇓*i*P	**Pn**	**12 14 08.9 +2.5**
SANT			*e*Sn	**Sn**	**12 14 38.5 -4.9**
SANT	**Santorini**	**3.21 121**	*e*Pn	**Pn**	**12 14 07.0 +0.6**
SANT			*e*Sn	**Sn**	**12 14 38.5 -4.9**
SRS	**Serrai**	**3.25 21**	P	**Pn**	**12 14 07.5 +0.5**
SRS	**Serrai**	**3.25 21**	P	**Pn**	**12 14 07.5 +0.5**
VAY	**Valandovo**	**3.25 7**	*i* Pn	**Pn**	**12 14 08.2 +1.1**
VAY			*i* Sn	**Sn**	**12 14 46.4 +2.0**
VAY	**Valandovo**	**3.25 7**	*i* Pn	**Pn**	**12 14 08.1 +1.1**
KAVA	**Kavala**	**3.47 32**	P	**Pn**	**12 14 08.8 -1.2**
KAVA	**Kavala**	**3.47 32**	P	**Pn**	**12 14 08.8 -1.2**
PRK	**Paraskevi**	**3.50 69**	P	**Pn**	**12 14 11.0 +0.7**
PRK	**Paraskevi**	**3.50 69**	P	**Pn**	**12 14 11.0 +0.7**
ZEY	**˜zmir**	**3.51 86**	*i* P	**Pn**	**12 14 12.1 +1.7**
NVR	**Nevrokopi**	**3.54 23**	P	**Pn**	**12 14 12.2 +1.2**
BOZC	**Bozcaada**	**3.57 59**	*i* P	**Pn**	**12 14 12.0 +0.6**
BOZC			*i* S	**Sn**	**12 14 51.2 -1.1**
SMTH	**Samothraki Isl**	**3.59 47**	P	**Pn**	**12 14 12.2 +0.5**
SMTH	**Samothraki Isl**	**3.59 47**	P	**Pn**	**12 14 12.2 +0.5**
IDI	**Anoyia**	**3.60 140**	P	**Pn**	**12 14 11.6 -0.3**
	comp=N,3.4nm,0.3s,baz=220,slow=12,SNR=29				
IDI			S	**Sn**	**12 14 56.6 +3.4**
	comp=N,24nm,0.3s,baz=188,slow=12,SNR=4.1				
IDI			LR	LR	12 15 43.9
	comp=N,180nm,19.9s,baz=272,slow=40				
IDI	**Anoyia**	**3.60 140**	⇑*i*P	**Pn**	**12 14 13.9 +2.1**
IDI	**Anoyia**	**3.60 140**	P	**Pn**	**12 14 13.7 +1.8**
IDI	**Anoyia**	**3.60 140**	*e*Pn	**Pn**	**12 14 14.0 +2.1**
IDI			*e*Sn	**Sn**	**12 14 53.9 +0.7**
IDI	**Anoyia**	**3.60 140**	P	**Pn**	**12 14 13.7 +1.8**
IDI	**Anoyia**	**3.60 140**	*e*Pn	**Pn**	**12 14 14.0 +2.1**
IDI			*e*Sn	**Sn**	**12 14 53.9 +0.7**
TIR	**Tirane**	**3.67 333**	⇑*i*P	**Pn**	**12 14 14.5 +1.8**
TIR	**Tirane**	**3.67 333**	*e*P	**Pn**	**12 14 13.4 +0.7**
TIR			*e*		12 14 56.6
TIR	**Tirane**	**3.67 333**	P	**Pn**	**12 14 13.4 +0.7**
TIR			*i* Sn	x	12 14 26.4
TIR			*e*S	**Sn**	**12 14 56.6 +1.9**
TIR	**Tirane**	**3.67 333**	P	**Pn**	**12 14 13.4 +0.7**
TIR	**Tirane**	**3.67 333**	*e*Pn	**Pn**	**12 14 13.4 +0.7**
TIR			*e*Sn	**Sn**	**12 14 56.6 +1.9**
SIVA	**Sivas**	**3.78 143**	⇑*i*P	**Pn**	**12 14 17.1 +2.9**
SIVA	**Sivas**	**3.78 143**	⇑*i*P	**Pn**	**12 14 17.1 +2.9**
SMG	**Samos**	**3.80 94**	P	**Pn**	**12 14 15.8 +1.3**
SMG	**Samos**	**3.80 94**	P	**Pn**	**12 14 15.8 +1.3**
AYVA	**Ayvalik**	**3.82 70**	*i* P	**Pn**	**12 14 16.2 +1.4**
AYVA	**Ayvalik**	**3.82 70**	P	**Pn**	**12 14 16.2 +1.4**
DKL	**Dikili**	**3.92 74**	*e*PN	**Pn**	**12 14 17.3 +1.2**
DKL	**Dikili**	**3.92 74**	*e*Pn	**Pn**	**12 14 17.3 +1.2**
BLCB	**Balcova**	**3.94 84**	*e*PN	**Pn**	**12 14 18.1 +1.8**
BLCB	**Balcova**	**3.94 84**	*e*Pn	**Pn**	**12 14 18.1 +1.8**
LAST	**Lasithi**	**4.01 136**	⇑*i*P	**Pn**	**12 14 20.7 +3.2**
LAST	**Lasithi**	**4.01 136**	P	**Pn**	**12 14 18.9 +1.4**
LAST			*e*Sn	**Sn**	**12 15 01.2 -2.0**
LAST	**Lasithi**	**4.01 136**	P	**Pn**	**12 14 18.9 +1.4**
LAST	**Lasithi**	**4.01 136**	*e*Pn	**Pn**	**12 14 18.8 +1.4**
LAST			*e*Sn	**Sn**	**12 15 01.2 -2.0**
NPS	**Neapolis**	**4.01 134**	P	**Pn**	**12 14 21.0 +3.6**
NPS	**Neapolis**	**4.01 134**	P	**Pn**	**12 14 21.0 +3.6**
IZM	**Izmir**	**4.11 84**	*e*PN	**Pn**	**12 14 20.8 +2.0**
IZM	**Izmir**	**4.11 84**	*e*Pn	**Pn**	**12 14 20.8 +2.0**
GELI	**Tayfur-Gelibol**	**4.13 55**	*e*PN	**Pn**	**12 14 20.3 +1.3**
GELI	**Tayfur-Gelibol**	**4.13 55**	*e*Pn	**Pn**	**12 14 20.3 +1.3**
ALN	**Alexandroupoli**	**4.17 46**	*e*PN	**Pn**	**12 14 20.8 +1.3**
ALN	**Alexandroupoli**	**4.17 46**	P	**Pn**	**12 14 19.6 +0.1**
ALN	**Alexandroupoli**	**4.17 46**	*e*Pn	**Pn**	**12 14 20.8 +1.3**
ALN	**Alexandroupoli**	**4.17 46**	P	**Pn**	**12 14 19.6 +0.1**
TIP	**Timpagrande**	**4.29 286**	⇓*i*P	**Pn**	**12 14 20.5 -0.8**
TIP	**Timpagrande**	**4.29 286**	*e*Pn	**Pn**	**12 14 20.2 -1.1**
TIP	**Timpagrande**	**4.29 286**	⇓*i*P	**Pn**	**12 14 20.5 -0.8**
TIP			*e*Sn	**Sn**	**12 15 04.6 -5.5**
TIP	**Timpagrande**	**4.29 286**	P	**Pn**	**12 14 18.6 -2.7**
TIP	**Timpagrande**	**4.29 286**	*e*Pn	**Pn**	**12 14 20.2 -1.1**
TIP			*e*Sn	**Sn**	**12 15 04.6 -5.5**
BODT	**Bodrum**	**4.29 102**	*e*PN	**Pn**	**12 14 23.2 +1.9**
BODT	**Bodrum**	**4.29 102**	*e*Pn	**Pn**	**12 14 23.2 +1.9**
ERIK	**Erikli-Kesan**	**4.31 52**	*e*PN	**Pn**	**12 14 23.2 +1.8**
ERIK	**Erikli-Kesan**	**4.31 52**	*e*Pn	**Pn**	**12 14 23.2 +1.8**
NIS1	**Nisyros Isl.**	**4.34 108**	*e*PN	**Pn**	**12 14 24.6 +2.7**
NIS1	**Nisyros Isl.**	**4.34 108**	*e*Pn	**Pn**	**12 14 24.6 +2.7**
GJIK	**Gjilan**	**4.40 354**	P	**Pn**	**12 14 24.1 +1.4**
BDRM	**Kayabasi**	**4.40 102**	*i* P	**Pn**	**12 14 25.4 +2.7**
BDRM	**Kayabasi**	**4.40 102**	P	**Pn**	**12 14 25.4 +2.7**
TAR1	**Taranto**	**4.43 305**	*e*Pn	**Pn**	**12 14 22.4 -0.7**
TAR1			Sn	**Sn**	**12 15 08.5 -4.9**
ULC	**Ulcinj**	**4.43 332**	⇓*i*Pn	**Pn**	**12 14 23.1 -0.1**
ULC			*e*Sn	**Sn**	**12 15 11.8 -1.7**
ULC	**Ulcinj**	**4.43 332**	P	**Pn**	**12 14 23.0 -0.1**
ULC			*e*Sn	**Sn**	**12 15 11.8 -1.7**
AKS	**Akhisar**	**4.58 78**	*e*PN	**Pn**	**12 14 27.2 +1.9**
AKS	**Akhisar**	**4.58 78**	*e*Pn	**Pn**	**12 14 27.2 +1.9**
AYDB	**Zeytinkoy-Aydi**	**4.61 90**	*e*PN	**Pn**	**12 14 28.1 +2.4**
AYDB	**Zeytinkoy-Aydi**	**4.61 90**	*e*Pn	**Pn**	**12 14 28.1 +2.4**
DRME	**Dracevica, Mon**	**4.65 333**	⇓*i*Pn	**Pn**	**12 14 26.0 -0.1**
DRME			*e*Sn	**Sn**	**12 15 17.1 -1.7**
DRME	**Dracevica, Mon**	**4.65 333**	⇓*i*Pn	**Pn**	**12 14 26.0 -0.1**
DRME			*e*Sn	**Sn**	**12 15 17.1 -1.7**
KRBG	**Karabiga-Canak**	**4.67 59**	*e*PN	**Pn**	**12 14 28.3 +1.9**
KRBG	**Karabiga-Canak**	**4.67 59**	*e*Pn	**Pn**	**12 14 28.3 +1.9**
NOCI	**Noci**	**4.71 306**	P	**Pn**	**12 14 23.0 -4.0**
NOCI	**Noci**	**4.71 306**	P	**Pn**	**12 14 23.0 -4.0**
BARS	**Barje**	**4.73 358**	*e*Pn	**Pn**	**12 14 27.9 +0.7**
RKY	**Sarkoy-Tekirda**	**4.74 55**	*e*PN	**Pn**	**12 14 29.0 +1.6**
RKY	**Sarkoy-Tekirda**	**4.74 55**	*e*Pn	**Pn**	**12 14 29.0 +1.6**
SART	**Tekirdag**	**4.74 55**	*i* P	**Pn**	**12 14 28.1 +0.7**
SART	**Tekirdag**	**4.74 55**	P	**Pn**	**12 14 28.1 +0.7**
PEJK	**Peje**	**4.75 344**	P	**Pn**	**12 14 28.2 +0.6**
KNL	**Bal˜–kesir**	**4.78 61**	*i* P	**Pn**	**12 14 26.9 -0.9**
PVY	**Plav**	**4.78 341**	⇑*i*Pn	**Pn**	**12 14 28.4 +0.4**
PVY			*e*Sn	**Sn**	**12 15 20.4 -1.8**
PVY	**Plav**	**4.78 341**	⇑*i*Pn	**Pn**	**12 14 28.4 +0.4**
PVY			*e*Sn	**Sn**	**12 15 20.4 -1.8**
GONE	**Gonen-Balikesi**	**4.80 64**	*e*PN	**Pn**	**12 14 30.1 +2.0**
GONE	**Gonen-Balikesi**	**4.80 64**	*e*Pn	**Pn**	**12 14 30.1 +2.0**
BALB	**Balikesir**	**4.80 69**	*e*PN	**Pn**	**12 14 30.1 +1.9**
BALB	**Balikesir**	**4.80 69**	*e*Pn	**Pn**	**12 14 30.1 +1.9**
KARP	**Karpathos**	**4.81 120**	*e*PN	**Pn**	**12 14 31.3 +2.9**
KARP	**Karpathos**	**4.81 120**	*e*Pn	**Pn**	**12 14 31.3 +2.9**
KARP	**Karpathos**	**4.81 120**	*e*Pn	**Pn**	**12 14 31.3 +2.9**
PDG	**Podgorica**	**4.84 335**	⇑*i*P	**Pn**	**12 14 29.1 +0.4**
PDG	**Podgorica**	**4.84 335**	⇓*i*Pn	**Pn**	**12 14 28.6 -0.1**
PDG	**Podgorica**	**4.84 335**	⇑*i*P	**Pn**	**12 14 29.1 +0.4**
PDG			*e*Sn	**Sn**	**12 15 22.0 -1.4**
TTG	**Podgorica**	**4.84 335**	⇓*i*Pn	**Pn**	**12 14 28.6 -0.1**
TTG			*e*Sn	**Sn**	**12 15 22.0 -1.4**
BUM	**Brajici-Budva**	**4.86 331**	⇓*i*Pn	**Pn**	**12 14 28.3 -0.7**
BUM			*e*Sn	**Sn**	**12 15 21.9 -2.1**
BUM	**Brajici-Budva**	**4.86 331**	⇓*i*Pn	**Pn**	**12 14 28.3 -0.7**
BUM			*e*Sn	**Sn**	**12 15 21.9 -2.1**
CEL	**Celeste**	**4.86 274**	*e*Pn	**Pn**	**12 14 28.7 -0.4**
CEL			*e*Sn	**Sn**	**12 15 18.6 -5.5**
CEL	**Celeste**	**4.86 274**	*e*Pn	**Pn**	**12 14 28.7 -0.4**
CEL			*e*Sn	**Sn**	**12 15 18.6 -5.5**
MRMT	**Marmara Adasi**	**4.97 58**	*e*PN	**Pn**	**12 14 32.2 +1.6**
MRMT	**Marmara Adasi**	**4.97 58**	*e*Pn	**Pn**	**12 14 32.2 +1.6**
SG1	**Sgolgore (BA)**	**4.99 305**	*i* Pn	**Pn**	**12 14 30.2 -0.6**
SG1			Sn	**Sn**	**12 15 22.1 -5.1**
BAI	**Bari**	**5.01 309**	*i* Pn	**Pn**	**12 14 30.3 -0.7**
BAI			Sn	**Sn**	**12 15 23.6 -4.0**
YER	**Yerkesik**	**5.03 99**	*e*PN	**Pn**	**12 14 34.1 +2.7**
YER	**Yerkesik**	**5.03 99**	*e*Pn	**Pn**	**12 14 34.1 +2.7**
EDC	**Edincik**	**5.04 62**	*e*PN	**Pn**	**12 14 33.3 +1.8**
EDC	**Edincik**	**5.04 62**	*e*Pn	**Pn**	**12 14 33.3 +1.8**
BEY	**Berane**	**5.06 342**	⇓*i*Pn	**Pn**	**12 14 32.4 +0.6**
BEY			*e*Sn	**Sn**	**12 15 26.9 -2.0**
IVA	**Berane**	**5.06 342**	⇓*i*Pn	**Pn**	**12 14 32.4 +0.6**
IVA			*e*Sn	**Sn**	**12 15 26.9 -2.0**
CEME	**Cevo**	**5.06 333**	⇓*i*Pn	**Pn**	**12 14 31.1 -0.7**
CEME			*e*Sn	**Sn**	**12 15 26.4 -2.6**
CEME	**Cevo**	**5.06 333**	⇓*i*Pn	**Pn**	**12 14 31.1 -0.7**
CEME			*e*Sn	**Sn**	**12 15 26.4 -2.6**
HCY	**Herceg Novi**	**5.14 329**	⇑*i*Pn	**Pn**	**12 14 31.7 -1.1**
HCY			*e*Sn	**Sn**	**12 15 28.8 -2.0**
HCY	**Herceg Novi**	**5.14 329**	⇑*i*Pn	**Pn**	**12 14 31.7 -1.1**
HCY			*e*Sn	**Sn**	**12 15 28.8 -2.0**
EDRB	**Edirne**	**5.20 42**	*e*PN	**Pn**	**12 14 35.9 +2.2**
EDRB	**Edirne**	**5.20 42**	*e*Pn	**Pn**	**12 14 35.9 +2.2**
KULA	**Kula-Manisa**	**5.21 83**	*e*PN	**Pn**	**12 14 36.1 +2.2**
KULA	**Kula-Manisa**	**5.21 83**	*e*Pn	**Pn**	**12 14 36.1 +2.2**
CUC	**Castrocucco**	**5.22 293**	P	**Pn**	**12 14 32.8 -1.2**
CUC	**Castrocucco**	**5.22 293**	*e*Pn	**Pn**	**12 14 34.3 +0.3**
CUC			*e*Sn	**Sn**	**12 15 33.6 +0.7**
CUC	**Castrocucco**	**5.22 293**	P	**Pn**	**12 14 32.8 -1.2**
CUC	**Castrocucco**	**5.22 293**	*e*Pn	**Pn**	**12 14 34.3 +0.3**
CUC			*e*Sn	**Sn**	**12 15 33.6 +0.7**
DURS	**Dursunbey**	**5.23 71**	*i* P	**Pn**	**12 14 36.3 +2.1**
DURS	**Dursunbey**	**5.23 71**	P	**Pn**	**12 14 36.3 +2.1**
NKME	**Niksic**	**5.24 334**	⇑*i*Pn	**Pn**	**12 14 34.1 -0.2**
NKME			*e*Sn	**Sn**	**12 15 30.6 -2.8**
NKME	**Niksic**	**5.24 334**	⇑*i*Pn	**Pn**	**12 14 34.1 -0.2**
NKME			*e*Sn	**Sn**	**12 15 30.6 -2.8**
NKY	**Niksic**	**5.27 335**	⇑*i*Pn	**Pn**	**12 14 34.8 +0.1**
NKY			*e*Sn	**Sn**	**12 15 32.1 -2.0**
NKY	**Niksic**	**5.27 335**	⇑*i*Pn	**Pn**	**12 14 34.8 +0.1**
NKY			*e*Sn	**Sn**	**12 15 32.1 -2.0**
CDT	**Castel del Mon**	**5.38 306**	*i* Pn	**Pn**	**12 14 35.3 -0.8**
DALY	**Dalyan (Mu˜la**	**5.40 102**	*e*PN	**Pn**	**12 14 39.1 +2.8**
TREB	**Trebinje**	**5.42 330**	*e*Pn	**Pn**	**12 14 34.7 -2.0**
PHSR	**Pinarhisar**	**5.50 48**	*e*PN	**Pn**	**12 14 39.9 +2.2**
BRY	**Bratogost**	**5.51 332**	⇑*i*Pn	**Pn**	**12 14 37.1 -0.9**
BRY			*e*Sn	**Sn**	**12 15 37.3 -2.8**
BRY	**Bratogost**	**5.51 332**	⇑*i*Pn	**Pn**	**12 14 37.1 -0.9**
BRY			*e*Sn	**Sn**	**12 15 37.3 -2.8**
PLE	**Pljevlja**	**5.62 340**	⇑*i*Pn	**Pn**	**12 14 39.6 +0.1**
PLE			*e*Sn	**Sn**	**12 15 40.6 -2.1**
PLE	**Pljevlja**	**5.62 340**	⇑*i*Pn	**Pn**	**12 14 39.6 +0.1**
PLE			*e*Sn	**Sn**	**12 15 40.6 -2.1**
UPM	**Unac-Piva**	**5.65 336**	⇑*i*Pn	**Pn**	**12 14 40.4 +0.5**
UPM			*e*Sn	**Sn**	**12 15 41.1 -2.4**
UPM	**Unac-Piva**	**5.65 336**	⇑*i*Pn	**Pn**	**12 14 40.4 +0.5**
UPM			*e*Sn	**Sn**	**12 15 41.1 -2.4**
ORLT	**Orhaneli**	**5.67 68**	*e*PN	**Pn**	**12 14 42.8 +2.7**
FETY	**Fethiye**	**5.78 102**	*e*PN	**Pn**	**12 14 44.7 +3.0**
STON	**Ston**	**5.82 327**	*i* Pn	**Pn**	**12 14 40.8 -1.4**
STON			Sn	**Sn**	**12 15 39.6 -7.9**
STON	**Ston**	**5.82 327**	⇓*i*Pn	**Pn**	**12 14 40.1 -2.0**
ARMT	**Armutlu**	**5.83 63**	*e*PN	**Pn**	**12 14 44.5 +2.2**
CTYL	**Yalikoy Yolu**	**5.87 53**	*e*PN	**Pn**	**12 14 45.0 +2.1**
KHL	**Karahalli**	**5.88 85**	*e*PN	**Pn**	**12 14 46.6 +3.5**
TVSB	**Tavsanli**	**5.94 74**	*e*PN	**Pn**	**12 14 46.3 +2.3**
IGD	**Bursa**	**5.96 66**	*i* P	**Pn**	**12 14 45.6 +1.5**
BBLS	**Lazići**	**6.11 342**	⇑*i*Pn	**Pn**	**12 14 44.9 -1.3**
ISK	**Istanbul-Kandi**	**6.17 59**	*e*PN	**Pn**	**12 14 49.7 +2.8**
IZI	**Iznik**	**6.18 66**	*e*PN	**Pn**	**12 14 49.0 +1.8**
LTBQ	**Tobruq**	**6.21 165**	*i* P	**Pn**	**12 14 49.0 +1.5**
	SNR=23				
ELL	**Elmali**	**6.39 100**	*e*P	**Pn**	**12 14 53.5 +3.4**
CAVI	**Cavuskoy**	**6.41 68**	*e*P	**Pn**	**12 14 52.1 +1.9**
WDD	**Wied Dalam**	**6.43 252**	*e*Pn	**Pn**	**12 14 49.8 -0.7**
WDD			*e*Sn	**Sn**	**12 15 56.8 -5.6**
WDD	**Wied Dalam**	**6.43 252**	*e*Pn	**Pn**	**12 14 49.8 -0.7**
WDD			*e*Sn	**Sn**	**12 15 56.9 -5.6**
HAPS	**Han Pijesak,Bl**	**6.44 340**	*e*Pn	**Pn**	**12 14 48.2 -2.5**
HRT	**Hereke**	**6.49 63**	*e*P	**Pn**	**12 14 53.9 +2.5**

SILT Sile 6.61 60 *e*P Pn 12 14 54.9 +2.0
SRE Strehaia 6.63 7⇑ *i*P Pn 12 14 57.9 +4.7
ISP Isparta 6.69 90 *e*P Pn 12 14 55.4 +1.2
ISP Isparta 6.69 90 *e*P Pn 12 14 55.4 +1.2
MDVR Moldovita 6.70 358⇓ *i*P Pn 12 14 56.3 +2.1
TEKS Tekeris 6.73 344⇓ *i*Pn Pn 12 14 53.4 -1.3
GPA Golpazari 6.78 68 *e*P Pn 12 14 58.4 +3.1
GULT Gulveren 6.97 68 *e*P Pn 12 15 00.6 +2.6
SLUM Salum 7.07 158 P Pn 12 14 58.3 -1.0
baz=160
SLUM AMP 12 16 00.0
comp=N,160µm,0.7s,logA/T=5.4,baz=160
SLUM S **Sn** **12 16 11.8 -6.5**
baz=160
SLUM Salum 7.07 158 P Pn 12 14 58.3 -1.0
SULR 7.30 24⇑ *i*P Pn 12 15 05.6 +3.2
MSAB Monastry St. A 7.41 34⇓ *i*P Pn 12 15 06.9 +3.0
MDUB Mudurnu 7.48 69 *e*P Pn 12 15 07.3 +2.3
SVRH Sivrihisar-ESK 7.52 77 *e*P Pn 12 15 07.6 +2.0
ARR Arges 7.53 14⇑ *i*P Pn 12 15 08.3 +2.7
BZS Buzias 7.53 358⇑ *i*P Pn 12 15 06.0 +0.4
SECR 7.56 22⇓ *i*P Pn 12 15 09.9 +3.8
BLY Banja Luka 7.60 333⇓ *i*P Pn 12 15 06.8 +0.3
BLY Banja Luka 7.60 333 *e*Pn Pn 12 15 05.0 -1.5
ISR Istrita 7.79 24⇓ *i*P Pn 12 15 12.9 +3.8
AQU L'Aquila 7.88 305 *e*P Pn 12 15 11.9 +1.5
AQU L'Aquila 7.88 305 *e*P Pn 12 15 11.9 +1.5
AQU L'Aquila 7.88 305 *e*Pn Pn 12 15 11.9 +1.5
HARR Harsova 7.94 32⇑ *i*P Pn 12 15 14.0 +2.9
MLR Muntele Rosu 7.95 20⇑ *i*P Pn 12 15 14.4 +3.0
MLR Muntele Rosu 7.95 20 *e*P Pn 12 15 14.1 +2.7
MLR Muntele Rosu 7.95 20 *e*Pn Pn 12 15 14.1 +2.7
MLR Muntele Rosu 7.95 20 *e*Pn Pn 12 15 14.1 +2.7
TIRR Tirgusor 7.96 35⇑ *i*P Pn 12 15 13.7 +2.3
TIRR Tirgusor 7.96 35 *e*P Pn 12 15 13.5 +2.1
TIRR Tirgusor 7.96 35 *e*P Pn 12 15 13.5 +2.1
TIRR Tirgusor 7.96 35 *e*Pn Pn 12 15 13.5 +2.1
UDBI Udbina 7.99 326 *e*Pn Pn 12 15 11.4 -0.5
UDBI Sn **Sn** **12 16 34.8 -6.1**
UDBI Udbina 7.99 326 *e*Pn Pn 12 15 11.4 -0.5
HMAT Matruh 8.12 148 P Pn 12 15 11.9 -1.8
baz=150
HMAT AMP 12 16 00.0
comp=E,60µm,0.6s,logA/T=5.0,baz=150
HMAT S **Sn** **12 16 36.8 -7.2**
baz=150
GRER 8.16 25⇓ *i*P Pn 12 15 18.1 +3.9
LSRT Sirt 8.28 214 *i* P Pn 12 15 14.4 -1.6
SNR=22
CFR Carcaliu 8.42 31⇑ *i*P Pn 12 15 20.6 +2.9
CFR Carcaliu 8.42 31 P Pn 12 15 21.4 +3.7
CFR pmax pmax
comp=Z,49nm,1.0s
NVLJ Novalja 8.43 322 *e*Pn Pn 12 15 16.5 -1.4
NVLJ Sn **Sn** **12 16 43.1 -8.4**
NVLJ Novalja 8.43 322 *e*Pn Pn 12 15 16.5 -1.4
PLOR Plostina 8.48 22⇑ *i*P Pn 12 15 22.3 +3.7
PLOR Plostina 8.48 22 P Pn 12 15 21.7 +3.1
PKSM Moragy 8.51 344⇑ *i*P Pn 12 15 16.6 -2.3
PKSM Moragy 8.51 344⇑ *e*PP Pn 12 15 16.6 -2.3
PKSM Moragy 8.51 344 *e*Pn Pn 12 15 16.2 -2.7
VRI Vrincioaia 8.51 23⇑ *i*P Pn 12 15 22.8 +3.7
VRI Vrincioaia 8.51 23 P Pn 12 15 22.7 +3.7
VRI pmax pmax
comp=Z,1µm,0.9s
PKS2 Kecel 8.66 347⇓ *e*pPn Pn 12 15 29.6 +8.6
PKS6 Bocsa 8.71 349⇑ *e*pPn Pn 12 15 29.8 +8.2
DRGR 8.71 3⇑ *i*P Pn **12 15 31.8 +1.8**
PKS9 Tamasi 8.94 343⇓ *e*SKPbc Pn 12 15 32.8 +7.9
BOJS Bojanci 8.98 328 *e*Pn Pn 12 15 23.2 -2.3
BOJS *e*Sn Sn 12 16 52.5 -13
TESR Tescani 9.08 21⇓ *i*P Pn 12 15 32.5 +5.7
CRES Cresnjev 9.16 330 *e*Pn Pn **12 15 26.1 -1.8**
CRES *e*Sn **Sn** **12 17 01.4 -8.1**
CRES Cresnjev 9.16 330 *e*Pn Pn **12 15 25.0 -2.9**
BR101 Keskin Array S 9.18 76 *e*Pn Pn **12 15 31.7 +3.5**
BR101 Keskin Array S 9.18 76 *e*Pn Pn **12 15 31.7 +3.5**
BR131 Keskin Array S 9.18 76 *e*Pn Pn **12 15 32.0 +3.8**
BR131 Keskin Array S 9.18 76 *e*Pn Pn **12 15 32.0 +3.8**
BRTR Keskin Array B 9.18 76 P Pn **12 15 31.7 +3.5**
comp=Z,0.6nm,0.3s,baz=256,slow=12,SNR=23
BRTR LR LR 12 19 37.4
comp=Z,92nm,19.3s,baz=268,slow=41
BRTR Keskin Array B 9.18 76 *i* P Pn **12 15 32.0 +3.7**
BRTR pmax pmax
comp=Z,6.0nm,0.7s
PKS7 Kunszentmiklos 9.21 348⇓ *e*SKPbc Pn 12 15 36.9 +8.4
BEHE Becsehely 9.24 337 *e*Pn Pn **12 15 31.1 +2.1**
BEHE Becsehely 9.24 337 *e*P Pn **12 15 31.1 +2.1**
SWA2 9.26 161 P Pn **12 15 28.6 -0.7**
baz=163
SWA2 AMP 12 17 00.0
comp=N,170µm,0.5s,logA/T=5.5,baz=163
SWA2 9.26 161 P Pn **12 15 28.6 -0.7**
GHAR Gharyan 9.45 234 *i* P Pn **12 15 30.3 -1.7**
SNR=22
CEY Cerknica 9.53 326 *e*Pn Pn **12 15 30.7 -2.2**
PKST T˜'s 9.63 343⇓ *e*SKPbc Pn **12 15 32.9 -1.4**
PKST T˜'s 9.63 343⇓ *e*P Pn **12 15 32.9 -1.4**
BUD Budapest 9.65 348⇑ *e*SKPbc Pn 12 15 42.1 +7.5
CSKK Cs˙‡kako 9.68 344⇑ *e*SKPbc Pn **12 15 34.6 -0.4**
CSKK Cs˙‡kako 9.68 344⇑ *e*P Pn **12 15 34.6 -0.4**
PKSG 9.68 345⇓ *e*SKPbc Pn **12 15 34.3 -0.7**
PKSG 9.68 345⇓ *e*P Pn **12 15 34.3 -0.7**
BURAR Bucovina Array 9.80 13⇑ *i*P Pn **12 15 39.3 +2.6**
BUR08 Bucovina Ar. S 9.83 13 *e*Pn Pn **12 15 37.3 +0.2**
BUR08 Bucovina Ar. S 9.83 13 *e*Pn Pn **12 15 37.3 +0.2**
PSZ Piszkesteto 9.95 352⇑ *i*P Pn 12 15 41.3 +2.5
PSZ Piszkesteto 9.95 352⇑ *e*SKPbc Pn 12 15 45.4 +6.6
PSZ Piszkesteto 9.95 352 *e*P Pn **12 15 37.2 -1.6**
PSZ *e* 12 17 28.1
PSZ Piszkesteto 9.95 352 *e*P Pn **12 15 37.2 -1.6**
PSZ *e*S **Sn** **12 17 28.1 -0.9**
PSZ Piszkesteto 9.95 352 *e*Pn Pn **12 15 37.2 -1.6**
PSZ *e*Sn **Sn** **12 17 28.1 -0.9**
VSL Villasalto 10.00 282 *e*Pn Pn **12 15 38.6 -0.8**
VSL *e*Sn **Sn** **12 17 27.1 -3.0**
VSL Villasalto 10.00 282 *e*Pn Pn **12 15 38.6 -0.8**
VSL *e*Sn **Sn** **12 17 27.1 -3.0**
SOKA Soboth 10.03 331 *i* Pn Pn **12 15 37.8 -2.1**
comp=N,3.8nm,0.8s
SOKA Soboth 10.03 331 P Pn **12 15 37.8 -2.1**
comp=N,3.8nm,0.8s
OBKA Obir 10.08 329 *i* Pn Pn **12 15 40.7 +0.1**
comp=N,3.8nm,0.5s
OBKA Obir 10.08 329 P Pn **12 15 40.7 +0.1**
comp=N,3.8nm,0.5s
ARSA Arzberg 10.34 334 *i* Pn Pn **12 15 43.0 -1.0**
comp=N,2.7nm,0.5s
ARSA Arzberg 10.34 334 P Pn **12 15 43.0 -1.0**
comp=N,2.7nm,0.5s
KEST Kesra 10.45 261 P Pn **12 15 46.0 +0.4**
comp=N,0.3nm,0.3s,baz=34,slow=11,SNR=9.1
KEST LR LR 12 20 27.7
comp=N,125nm,20.3s,baz=138,slow=41
KEST Kesra 10.45 261 *e*Pn Pn **12 15 46.5 +0.9**
KEST Kesra 10.45 261 *e*Pn Pn **12 15 46.5 +0.9**
KECS Kecovo 10.46 354 *e*P Pn **12 15 45.4 -0.2**
KECS Kecovo 10.46 354 *e*P Pn **12 15 45.4 -0.2**
KECS Kecovo 10.46 354 *e*PN Pn **12 15 45.4 -0.2**
KECS *e* 12 15 56.2
UZH Uzhgorod 10.54 1 *e*P Pn **12 15 50.8 +4.1**
VYHS Vyhne 10.66 348 *e*P Pn **12 15 46.9 -1.5**
VYHS Vyhne 10.66 348 *e*P Pn **12 15 46.9 -1.5**
VYHS Vyhne 10.66 348 *e*PN Pn **12 15 46.9 -1.5**
VYHS *e* 12 15 57.3
CRVS Cervenica-Dubn 10.82 358 *e*P Pn 12 15 57.8 +7.2
CRVS Cervenica-Dubn 10.82 358 *e* Pn 12 15 57.8 +7.2
HNAT Natroun 11.03 137 P Pn **12 15 52.3 -1.2**
baz=138
HNAT Natroun 11.03 137 P Pn **12 15 52.3 -1.2**
KBA Koelnbreinsper 11.04 327 *i* Pn Pn **12 15 52.6 -1.1**
comp=N,2.2nm,0.6s
KBA Koelnbreinsper 11.04 327 P Pn **12 15 52.6 -1.1**
comp=N,2.2nm,0.6s
ABTA Abfaltersbach 11.16 324 *i* Pn Pn **12 15 54.3 -1.0**
comp=N,2.6nm,0.4s
ABTA Abfaltersbach 11.16 324 P Pn **12 15 54.3 -1.0**
comp=N,2.6nm,0.4s
LANS Liptovska Anna 11.22 351 *e*P Pn **12 15 54.8 -1.2**
LANS Liptovska Anna 11.22 351 *e*P Pn **12 15 54.8 -1.2**
LANS Liptovska Anna 11.22 351 *e*PN Pn **12 15 54.8 -1.2**

AWBH 11.29 148 P Pn **12 15 55.9 -1.2**
baz=149
MOA Molln 11.30 332 *i* Pn Pn **12 15 57.1 0.0**
comp=N,2.7nm,0.6s
MOA Molln 11.30 332 P Pn **12 15 57.1 0.0**
comp=N,2.7nm,0.6s
SIM Simferopol' 11.34 49 *e*P Pn **12 16 01.0 +3.4**
SIM *e*S **Sn** **12 18 07.0 +4.3**
SIM pmax pmax
comp=Z,34nm,1.0s
SIM smax smax
comp=N,15nm,0.8s
STHS Stebnicka Huta 11.34 357 *e*P Pn 12 16 05.3 +7.6
STHS Stebnicka Huta 11.34 357 *e* Pn 12 16 05.3 +7.6
LVV L'vov 11.81 6 *e*P Pn 12 16 13.2 +9.1
VRAC Vranov 11.89 342 P Pn **12 16 03.1 -2.0**
comp=N,0.7nm,0.3s,baz=165,slow=14,SNR=5.0
VRAC LR LR 12 21 40.7
comp=N,50nm,19.0s,baz=168,slow=42
WTTA Wattenberg 11.95 323 *i* Pn Pn **12 16 05.3 -0.8**
comp=N,2.6nm,0.4s
WTTA Wattenberg 11.95 323 P Pn **12 16 05.3 -0.8**
comp=N,2.6nm,0.4s
MMAI Mount Meron Ar 11.98 111 P Pn **12 16 07.5 +0.9**
comp=N,1.5nm,0.3s,baz=294,slow=15,SNR=4.9
MMAI S **Sn** **12 18 20.2 +1.4**
comp=N,1.2nm,0.3s,baz=300,slow=21,SNR=3.0
WATA Walderalm 12.03 324 *i* Pn Pn **12 16 06.9 -0.3**
comp=N,3.3nm,0.5s
WATA Walderalm 12.03 324 P Pn **12 16 06.9 -0.3**
comp=N,3.3nm,0.5s
SUZ Suez 12.14 129 P Pn **12 16 07.4 -1.3**
baz=130
FUORN Ofenpass-Fuorn 12.19 318 *e*Pn Pn **12 16 07.3 -2.2**
FUORN *e*Sn **Sn** **12 18 16.9 -7.0**
FUORN Ofenpass-Fuorn 12.19 318 *e*Pn Pn **12 16 07.3 -2.2**
FUORN *e*Sn **Sn** **12 18 16.9 -7.0**
FETA Feichten 12.22 321 *i* Pn Pn **12 16 08.4 -1.4**
comp=N,13nm,1.1s
FETA Feichten 12.22 321 P Pn **12 16 08.4 -1.4**
comp=N,13nm,1.1s
MOTA Moosalm 12.26 322 *i* Pn Pn **12 16 10.5 +0.2**
comp=N,2.7nm,0.4s
MOTA Moosalm 12.26 322 P Pn **12 16 10.5 +0.2**
comp=N,2.7nm,0.4s
GEA0 GERESS Array S 12.33 333 *e*Pn Pn **12 16 11.0 -0.2**
GEA0 *e*Sn **Sn** **12 18 20.9 -6.2**
GEA0 GERESS Array S 12.33 333 *e*Pn Pn **12 16 11.0 -0.2**
GEA0 *e*Sn **Sn** **12 18 20.9 -6.2**
GERES GERESS Array B 12.34 333 P Pn **12 16 10.8 -0.5**
comp=N,0.5nm,0.3s,baz=153,slow=12,SNR=8.4
GERES S **Sn** **12 18 20.5 -6.8**
comp=N,1.9nm,0.3s,baz=149,slow=23,SNR=9.4
GERES LR LR 12 21 54.4
comp=N,143nm,20.6s,baz=144,slow=42
DAVOX Davos/Dischmat 12.49 318 P Pn **12 16 13.1 -0.5**
comp=N,0.4nm,0.3s,baz=156,slow=19,SNR=3.4
DAVOX S **Sn** **12 18 25.0 -6.3**
comp=N,1.8nm,0.3s,baz=308,slow=24,SNR=6.9
RETA Reutte 12.52 322 *i* Pn Pn **12 16 14.4 +0.5**
comp=N,1.7nm,0.4s
RETA Reutte 12.52 322 P Pn **12 16 14.4 +0.5**
comp=N,1.7nm,0.4s
TUE Stuetta 12.59 316 *e*Pn Pn **12 16 15.1 +0.2**
TUE *e*Sn Sn 12 18 17.2 -16
TUE Stuetta 12.59 316 *e*Pn Pn **12 16 15.1 +0.2**
TUE *e*Sn Sn 12 18 17.2 -16
KHC Kasperske Hory 12.62 334 *e*P Pn **12 16 15.3 +0.1**
KHC *e*x x 12 16 22.8
KHC *e*S **Sn** **12 18 26.8 -7.4**
KHC *e*x x 12 18 40.2
KHC Kasperske Hory 12.62 334 *e*P Pn **12 16 15.3 +0.1**
KHC *e*S **Sn** **12 18 26.8 -7.4**
KHC Kasperske Hory 12.62 334 *e*Pn Pn **12 16 13.9 -1.3**
KHC Kasperske Hory 12.62 334 *e*P Pn **12 16 15.3 +0.1**
KHC *e*Sn **Sn** **12 18 28.4 -5.8**
KHC Kasperske Hory 12.62 334 *e*Pn Pn **12 16 13.9 -1.3**
KHC *e*Sn **Sn** **12 18 28.4 -5.8**
HNKL Nakhl 12.80 126 P Pn **12 16 16.4 -1.3**
baz=126
HNKL AMP 12 18 00.0
comp=N,10µm,0.7s,logA/T=4.2,baz=126
DAVA Damuels 12.82 320 *i* P P **12 16 24.9 -2.5**
comp=N,2.8nm,0.6s
LGHD Ghdames 13.19 236 *i* P Pn **12 16 22.8 -0.2**
SNR=22
ANN Anapa 13.33 55 *e*P Pn **12 16 22.8 -2.0**
ANN *e*S **Sn** **12 18 50.5 -0.8**
ANN pmax pmax
comp=Z,29nm,1.1s
ASF Jabal al Asfar 13.50 111 P Pn **12 16 29.4 +2.2**
comp=Z,0.3nm,0.3s,baz=226,slow=11,SNR=3.8
KIEV Kiev 13.59 20 *e*P Pn **12 16 27.9 -0.5**
KIEV Kiev 13.59 20 *e*Pn Pn **12 16 27.9 -0.5**
KIEV Kiev 13.59 20 *e*Pn Pn **12 16 27.9 -0.5**
EIL Elat 13.60 124 P Pn **12 16 30.6 +2.0**
comp=Z,0.7nm,0.3s,baz=322,slow=3.2,SNR=6.6
EIL S **Sn** **12 18 50.3 -7.7**
comp=Z,0.8nm,0.3s,baz=317,slow=18,SNR=5.0
AKASG Malin Array Be 13.60 20 P Pn **12 16 27.4 -1.1**
comp=Z,1.0nm,0.3s,baz=210,slow=13,SNR=19
AKASG LR LR 12 22 26.0
comp=Z,118nm,19.0s,baz=195,slow=40
AKASG Malin Array Be 13.60 20 *i* P Pn **12 16 27.7 -0.8**
AKASG pmax pmax
comp=Z,7.0nm,0.8s
AKBB Malin Array Si 13.60 20 *e*P Pn **12 16 28.2 -0.3**
AKBB Malin Array Si 13.60 20 *e*Pn Pn **12 16 28.2 -0.3**
AKBB Malin Array Si 13.60 20 *e*Pn Pn **12 16 28.2 -0.3**
SENIN Lac Senin/Sane 13.70 312 *e*Pn Pn **12 16 31.1 +1.1**
SENIN *e*Sn Sn 12 18 51.0 -10
SENIN Lac Senin/Sane 13.70 312 *e*Pn Pn **12 16 31.1 +1.1**
SENIN *e*Sn Sn 12 18 51.0 -10
BRG Berggiesshubel 14.02 338 *e*P P **12 16 41.4 +0.9**
comp=Z,5.5nm,0.7s
BRG Berggiesshubel 14.02 338 *e*P P **12 16 41.4 +0.9**
BRG pmax pmax
comp=Z,6.0nm,0.7s
BRG Berggiesshubel 14.02 338 *e*P P **12 16 41.4 +0.9**
comp=Z,6.0nm,0.7s
BFO Black Forest 14.30 320 *i* P Pn **12 16 39.0 +1.1**
CLL Collm 14.69 337⇓ *e*P P **12 16 49.0 +1.1**
comp=Z,17nm,0.9s
CLL *i* 12 16 51.7
CLL Collm 14.69 337⇓ *e*P P **12 16 49.0 +1.1**
CLL pmax pmax
comp=Z,17nm,0.9s
CLL Collm 14.69 337 *e*P P **12 16 49.0 +1.1**
comp=Z,17nm,0.9s
CLL Collm 14.69 337 *e*Pn P **12 16 49.2 +1.3**
SMF Signal de Mont 15.92 308 *e*P P **12 17 01.3 -0.4**
SMF pmax pmax
comp=Z,9.0nm,1.0s
SMF Signal de Mont 15.92 308 *e*P P **12 17 01.3 -0.4**
comp=Z,9.0nm,1.0s
LOR Lormes 16.20 310 *e*P P **12 17 05.6 +0.9**
LOR pmax pmax
comp=Z,10.0nm,1.0s
LOR Lormes 16.20 310 *e*P P **12 17 05.6 +0.9**
comp=Z,10.0nm,1.0s
SSF Saint Saulge 16.32 309 *e*P P **12 17 06.9 +0.9**
SSF pmax pmax
comp=Z,18nm,1.0s
SSF Saint Saulge 16.32 309 *e*P P **12 17 06.9 +0.9**
comp=Z,18nm,1.0s
NEY Neytrino 16.49 65 *i* P P **12 17 09.9 +1.7**
NEY Neytrino 16.49 65 *i* P P **12 17 09.9 +1.7**
KLNR Kaliningrad 16.57 356 *e*P P **12 17 07.8 -0.9**
KLNR pmax pmax
comp=Z,67nm,0.9s
KLNR Kaliningrad 16.57 356 *e*P P **12 17 07.8 -0.9**
comp=Z,67nm,0.9s
KIV Kislovodsk 16.62 63⇑ *e*P Pn **12 17 07.8 +0.1**
KIV *e*S **S** **12 20 19.7 -0.6**
KIV pmax pmax
comp=Z,22nm,1.2s
KIV MLR MLR
comp=Z,27nm,15.0s
KIV Kislovodsk 16.62 63 *e*P Pn **12 17 07.8 +0.1**
comp=Z,22nm,1.2s
KVAR Kislovodsk Arr 16.62 63 P Pn **12 17 08.1 +0.2**
baz=169,slow=5.2,SNR=2.9
KVAR LR LR 12 26 03.0
comp=Z,23nm,18.4s,baz=242,slow=46
KBZ Khabaz 16.71 64 P P **12 17 11.7 +1.3**

comp=Z,0.2nm,0.3s,baz=275,slow=7.5,SNR=8.9
GOF Gofitskoye 17.15 59⇑ *e*P P **12 17 16.9 +1.6**
ZEI Tsey 17.27 67 *e*P P **12 17 18.8 +2.0**
ZEI pmax pmax
comp=Z,30nm,1.1s
ZEI Tsey 17.27 67 *e*P P **12 17 18.8 +2.0**
comp=Z,30nm,1.1s
GNI Garni 17.72 76 P P **12 17 24.5 +2.8**
comp=Z,0.5nm,0.3s,baz=232,slow=6.9,SNR=6.8
GNI LR LR 12 25 34.8
comp=Z,78nm,18.8s,baz=278,slow=42
GNI Garni 17.72 76 *e*P P **12 17 22.4 +0.7**
GNI pmax pmax
comp=Z,271nm,1.7s
GNI Garni 17.72 76 *e*P P **12 17 22.4 +0.7**
comp=Z,271nm,1.7s
VSR Storozhevoye 17.84 37 *e*P Pn **12 17 22.2 -0.5**
VSR pmax pmax
comp=Z,30nm,0.9s
VSR Storozhevoye 17.84 37 *e*P Pn **12 17 22.2 -0.5**
comp=Z,30nm,0.9s
MFF Saint Martin d 18.44 305 *e*P Pn **12 17 30.8 +0.7**
MFF pmax pmax
comp=Z,26nm,1.3s
MFF Saint Martin d 18.44 305 *e*P Pn **12 17 30.8 +0.7**
comp=Z,26nm,1.3s
LPSR Galich'ya Gora 18.67 34 *e*P P **12 17 32.1 +0.2**
LPSR pmax pmax
comp=Z,60nm,0.8s
LPSR Galich'ya Gora 18.67 34 *e*P P **12 17 32.1 +0.2**
comp=Z,60nm,0.8s
VRH Novokhopyorsk 19.10 40 *e*P P **12 17 36.5 0.0**
VRH pmax pmax
comp=Z,70nm,1.4s
VRH Novokhopyorsk 19.10 40 *e*P P **12 17 36.5 0.0**
comp=Z,70nm,1.4s
LDF La Druitiere 19.18 310 *e*P Pn **12 17 38.2 -0.7**
LDF pmax pmax
comp=Z,7.0nm,0.7s
LDF La Druitiere 19.18 310 *e*P Pn **12 17 38.2 -0.7**
comp=Z,7.0nm,0.7s
OBN Obninsk 19.66 25 P P **12 17 42.6 -0.1**
comp=Z,5.5nm,0.3s,baz=205,slow=18,SNR=3.5
OBN LR LR 12 24 46.0
comp=Z,78nm,21.5s,baz=251,slow=35
OBN Obninsk 19.66 25 *c e*P P **12 17 43.4 +0.7**
OBN pmax pmax
comp=Z,54nm,1.2s
OBN MLR MLR
comp=Z,44nm,15.0s
OBN Obninsk 19.66 25 *e*P P **12 17 43.4 +0.7**
comp=Z,44nm,15.0s
ES19 SONSECA Array 20.25 283 *e*P P **12 17 49.5 +0.2**
ES19 SONSECA Array 20.25 283 *e*P P **12 17 49.5 +0.2**
ESDC Sonseca Array 20.30 283 P P **12 17 49.6 -0.3**
comp=Z,10nm,0.8s,baz=77,slow=11,SNR=52
ESLA Sonseca Array 20.30 283 *e*P P **12 17 49.6 -0.3**
comp=Z,18nm,0.9s
ESLA Sonseca Array 20.30 283 *e*P P **12 17 49.6 -0.3**
comp=Z,18nm,0.9s
MOS Moscow 20.53 26 *e*P P **12 17 49.8 -2.3**
MOS Moscow 20.53 26 *e*P P **12 17 49.8 -2.3**
PAB San Pablo 20.61 282 *e*P P **12 17 52.8 -0.4**
PAB pmax pmax
comp=Z,17nm,1.0s
PAB San Pablo 20.61 282 *e*P P **12 17 52.8 -0.4**
comp=Z,17nm,1.0s
PAB San Pablo 20.61 282 *e*P P **12 17 52.8 -0.4**
comp=Z,17nm,1.0s
VSU Vasula 20.62 7 *c e*P P **12 17 52.8 -0.2**
VSU pmax pmax
comp=Z,299nm,1.2s
VSU Vasula 20.62 7 *e*P P **12 17 52.8 -0.2**
comp=Z,299nm,1.2s
MDT Midelt 22.32 264 P P **12 18 11.4 -0.3**
comp=Z,7.9nm,1.0s,baz=80,slow=10,SNR=8.3
MVO Moncorvo 22.57 287 *e*P P **12 18 12.9 -1.3**
MVO Moncorvo 22.57 287 *e*P P **12 18 12.9 -1.3**
HFS Hagfors 22.70 349 P P **12 18 13.9 -1.4**
comp=Z,8.5nm,0.5s,baz=150,slow=12,SNR=36
HFS LR LR 12 28 29.0
comp=Z,50nm,18.1s,baz=173,slow=40
PMRV Marv??o 22.96 283 *e*P P **12 18 17.0 -1.3**
PMRV Marv??o 22.96 283 *e*P P **12 18 17.0 -1.3**
KONO Kongsberg 23.01 344 *e*P P **12 18 17.1 -1.4**
KONO pmax pmax
comp=Z,15nm,0.9s
KONO Kongsberg 23.01 344 *e*P P **12 18 17.1 -1.4**
comp=Z,15nm,0.9s
KONO Kongsberg 23.01 344 *e*P P **12 18 17.1 -1.4**
comp=Z,15nm,0.9s
FIA0 FINESS Array S 23.52 5 *e*P P **12 18 21.3 -2.0**
FIA0 FINESS Array S 23.52 5 *e*P P **12 18 21.3 -2.0**
FIA0 FINESS Array S 23.52 5 *e*P P **12 18 21.3 -2.0**
FINES FINESS Array B 23.52 5 P P **12 18 21.3 -2.0**
comp=Z,4.7nm,0.7s,baz=168,slow=9.8,SNR=15
FINES LR LR 12 28 24.8
comp=Z,141nm,18.1s,baz=136,slow=39
FIA1 FINESS Array S 23.52 5 *e*P P **12 18 22.4 -1.0**
FIA1 FINESS Array S 23.52 5 *e*P P **12 18 22.4 -1.0**
NC602 NORSAR Array S 23.62 347 *e*P P **12 18 23.4 -1.0**
NC602 NORSAR Array S 23.62 347 *e*P P **12 18 23.4 -1.0**
NAO01 NORSAR Array S 23.84 346 *e*P P **12 18 25.7 -0.7**
NAO01 NORSAR Array S 23.84 346 *e*P P **12 18 25.7 -0.7**
NC405 NORSAR Array S 23.95 348 *e*P P **12 18 26.3 -1.1**
NC405 NORSAR Array S 23.95 348 *e*P P **12 18 26.3 -1.1**
NB201 NORSAR Array S 23.96 347 *e*P P **12 18 26.8 -0.7**
NB201 NORSAR Array S 23.96 347 *e*P P **12 18 26.8 -0.7**
NB2 NORSAR Subarra 23.96 347 P P **12 18 26.4 -1.2**
comp=Z,17nm,0.9s,baz=159,slow=9.3
NB2 NORSAR Subarra 23.96 347 P P **12 18 26.4 -1.2**
comp=Z,17nm,0.9s,SNR=4.2
NB200 NORSAR Array S 23.96 347 *e*P P **12 18 26.7 -0.9**
NB200 NORSAR Array S 23.96 347 *e*P P **12 18 26.7 -0.9**
NOA NORSAR Array B 23.96 347 P P **12 18 26.7 -0.9**
comp=Z,1.9nm,0.5s,baz=160,slow=9.9,SNR=33
NOA LR LR 12 29 13.3
comp=Z,25nm,18.1s,baz=155,slow=40
NOA NORSAR Array B 23.96 347 P P **12 18 26.7 -0.9**
NOA pmax pmax
comp=Z,6.0nm,0.6s
NOA MLR MLR
comp=Z,25nm,18.1s
PNCL Nicolau / Gran 24.02 280 *e*P P **12 18 29.1 +0.8**
PNCL Nicolau / Gran 24.02 280 *e*P P **12 18 29.1 +0.8**
NBO00 NORSAR Array S 24.03 346 *e*P P **12 18 27.6 -0.6**
NBO00 NORSAR Array S 24.03 346 *e*P P **12 18 27.6 -0.6**
NBO02 NORSAR Array S 24.04 347 *e*P P **12 18 27.1 -1.1**
NBO02 NORSAR Array S 24.04 347 *e*P P **12 18 27.1 -1.1**
NC303 NORSAR Array S 24.11 347 *e*P P **12 18 28.5 -0.3**
NC303 NORSAR Array S 24.11 347 *e*P P **12 18 28.5 -0.3**
EKA Eskdalemuir Ar 24.21 324 P P **12 18 29.6 -0.2**
comp=Z,9.3nm,0.6s,baz=125,slow=9.2,SNR=37
ESK Eskdalemuir 24.23 324 *e*P P **12 18 30.3 +0.4**
ESK pmax pmax
comp=Z,13nm,0.8s
ESK Eskdalemuir 24.23 324 *e*P P **12 18 30.3 +0.4**
comp=Z,14nm,0.8s
ESK Eskdalemuir 24.23 324 *e*P P **12 18 30.3 +0.4**
comp=Z,14nm,0.8s
NC204 NORSAR Array S 24.27 347 *e*P P **12 18 30.9 +0.6**
NC204 NORSAR Array S 24.27 347 *e*P P **12 18 30.9 +0.6**
AKTK Aktyubinsk 28.27 52 P P **12 19 06.2 -0.3**
comp=Z,24nm,21.6s
AKTO Aktyubinsk 28.27 52 P P **12 19 06.2 -0.3**
comp=Z,3.3nm,0.7s,baz=261,slow=7.9,SNR=9.8
AKTO LR LR 12 32 48.1
comp=Z,24nm,21.6s,baz=214,slow=41
ABKAR Akbulak array 29.30 55 *e*P P **12 19 15.8 +0.2**
ABKAR Akbulak array 29.30 55 *e*P P **12 19 15.8 +0.2**
ARU Arti 30.33 41 P P **12 19 24.2 -0.4**
comp=Z,3.6nm,0.5s,baz=247,slow=9.6,SNR=6.8
ARU Arti 30.33 41 *c i*P P **12 19 25.1 +0.5**
ARU *PP **pP** **12 19 40.4 +2.1**
ARU 12 20 23.6
ARU S **S** **12 24 24.2 +3.3**
ARU SS **ScP** **12 26 03.0 +1.7**
ARU pmax pmax
comp=Z,12nm,1.7s
ARU Arti 30.33 41 *e*P P **12 19 24.7 +0.1**
comp=Z,9.9nm,1.2s
ARU Arti 30.33 41 *e*P P **12 19 24.7 +0.1**
comp=Z,9.9nm,1.2s
TOA1 Torodi Ar. Sit 30.74 222 *e*P P **12 19 29.0 +0.4**
comp=Z,16nm,0.7s

TOA1 Torodi Ar. Sit 30.74 222 *e*P **P 12 19 29.0 +0.4**
comp=Z,16nm,0.7s
TOA0 Torodi Ar. Sit 30.74 222 *e*P **P 12 19 28.9 +0.2**
comp=Z,16nm,0.7s
TOA0 Torodi Ar. Sit 30.74 222 *e*P **P 12 19 28.9 +0.2**
comp=Z,16nm,0.7s
TORD Torodi Ar. Bea 30.74 222 P **P 12 19 29.0 +0.3**
comp=Z,17nm,0.6s,baz=32,slow=9.1,SNR=112
TORD LR LR 12 33 03.6
comp=Z,54nm,19.0s,baz=160,slow=38
SVE Sverdlovsk 31.54 41 *e*P **P 12 19 35.2 -0.1**
SVE pmax pmax
comp=Z,20nm,1.0s
SVE Sverdlovsk 31.54 41 *e*P **P 12 19 35.2 -0.1**
comp=Z,20nm,1.0s
ARA0 ARCESS Array S 31.56 2 *e*P **P 12 19 34.8 -0.6**
ARA0 ARCESS Array S 31.56 2 *e*P **P 12 19 34.8 -0.6**
ARCES ARCESS Array B 31.56 2 P **P 12 19 34.8 -0.6**
comp=Z,3.3nm,0.7s,baz=192,slow=9.6,SNR=16
ZRNK Zerenda 35.41 50 *e*P **P 12 20 09.5 +0.5**
ZRNK pmax pmax
comp=Z,14nm,0.9s
ZRNK Zerenda 35.41 50 *e*P **P 12 20 09.5 +0.5**
comp=Z,14nm,0.9s
ZRNK Zerenda 35.41 50 *e*P **P 12 20 09.5 +0.5**
comp=Z,14nm,0.9s
BRVK Borovoye 36.19 50 *ce*P **P 12 20 15.8 +0.1**
BRVK pmax pmax
comp=Z,17nm,0.8s
BRVK Borovoye 36.19 50 *e*P **P 12 20 16.0 +0.3**
comp=Z,17nm,0.9s
BRVK Borovoye 36.19 50 *e*P **P 12 20 16.0 +0.3**
comp=Z,17nm,0.9s
BVAR Borovoye Array 36.25 50 P **P 12 20 16.6 +0.4**
comp=Z,8.4nm,0.7s,baz=262,slow=6.4,SNR=47
KKAR Karatay Array 36.72 66 *e*P **P 12 20 22.0 +1.6**
KKAR Karatay Array 36.72 66 *e*P **P 12 20 22.0 +1.6**
KKAR Karatay Array 36.72 66 *e*P **P 12 20 22.0 +1.6**
OTUK Ortayu 37.44 58 P **P 12 20 27.2 +0.8**
OTUK pmax pmax
comp=Z,7.0nm,1.1s
MNAS Manas 38.27 67 P **P 12 20 33.8 +0.1**
EKS2 Erkin-Say 39.16 66 *e*P **P 12 20 42.6 +1.5**
EKS2 pmax pmax
comp=Z,7.0nm,0.8s
EKS2 Erkin-Say 39.16 66 *e*P **P 12 20 42.6 +1.5**
comp=Z,6.5nm,0.8s
EKS2 Erkin-Say 39.16 66 *e*P **P 12 20 42.6 +1.5**
comp=Z,6.5nm,0.8s
SFK Sufi-Kurgan 39.54 71 P **P 12 20 45.4 +1.0**
SFK pmax pmax
comp=Z,3.0nm,0.8s
DBIC Dimbokro 39.66 225 P **P 12 20 45.3 0.0**
comp=Z,6.9nm,0.5s,baz=25,slow=8.2,SNR=22
DBIC LR LR 12 38 45.3
comp=Z,25nm,18.3s,baz=60,slow=38
DBIC Dimbokro 39.66 225 *e*P **P 12 20 45.3 0.0**
comp=Z,10nm,0.8s
DBIC Dimbokro 39.66 225 *e*P **P 12 20 45.3 0.0**
comp=Z,10nm,0.8s
AAK Ala-Archa 39.69 66 P **P 12 20 45.2 -0.3**
comp=Z,5.1nm,0.9s,baz=213,slow=5.5,SNR=11
AAK Ala-Archa 39.69 66 *e*P **P 12 20 47.0 +1.6**
AAK pmax pmax
comp=Z,13nm,0.9s
AAK Ala-Archa 39.69 66 *e*P **P 12 20 47.1 +1.6**
AAK Ala-Archa 39.69 66 *e*P **P 12 20 47.1 +1.6**
FRU Bishkek 39.73 66 *i*P **P 12 20 46.0 +0.3**
FRU pmax pmax
comp=Z,20nm,1.6s
TIC Toumodi 39.78 225 *e*P **P 12 20 46.2 -0.1**
KIC Kosan Boka 39.86 224 *e*P **P 12 20 47.1 +0.2**
comp=Z,37nm,1.0s
LIC Lamto 40.13 225 *e*P **P 12 20 49.4 +0.2**
comp=Z,236nm,1.9s
SPITS Spitsbergen Ar 40.27 358 P **P 12 20 49.9 +0.2**
comp=Z,1.1nm,0.4s,baz=150,slow=10,SNR=10
BBTS Babate 41.29 246 P **P 12 20 59.0 +0.3**
comp=Z,20nm,0.6s,baz=214,slow=1.0,SNR=3.6
KURBB Kurchatov Arra 41.31 54 P **P 12 20 58.5 0.0**
comp=Z,18nm,0.7s,baz=282,slow=8.7,SNR=40
KURBB PcP **PcP 12 22 56.4 +0.3**
comp=Z,0.8nm,0.7s,baz=288,slow=3.7,SNR=3.2
KURK Kurchatov 41.36 53 P **P 12 20 58.5 -0.4**
KURK 12 22 56.4
KURK pmax pmax
comp=Z,18nm,0.7s
KURK pmax pmax
comp=Z,1.0nm,0.7s
KURK Kurchatov 41.36 53 *e*P **P 12 20 58.9 0.0**
KURK Kurchatov 41.36 53 *e*PcP **PcP 12 22 56.4 +0.1**
KURK Kurchatov 41.36 53 *e*P **P 12 20 58.9 0.0**
KURK *e*PcP **PcP 12 22 56.4 +0.1**
KSH Kashi 41.51 71 *e*P **P 12 20 59.4 -1.1**
KSH *es*P pP 12 21 16.4 +1.9
KSH S **S 12 27 07.8 -4.6**
KSH ScS **ScS 12 30 55.8 -3.4**
KSH pmax pmax
comp=Z,89nm,4.1s
NVS Novosibirsk 43.85 47 ⇓ *i*P **P 12 21 20.1 +1.0**
NVS pmax pmax
comp=Z,5.0nm,0.6s
MAKZ Makanchi 44.10 59 *e*P **P 12 21 21.2 -0.1**
MAKZ pmax pmax
comp=Z,6.0nm,0.9s
MAKZ Makanchi 44.10 59 *e*P **P 12 21 21.2 -0.1**
comp=Z,5.9nm,0.9s
MAKZ Makanchi 44.10 59 *e*P **P 12 21 21.2 -0.1**
comp=Z,5.9nm,0.9s
MK31 Makanchi Array 44.31 59 *e*P **P 12 21 22.9 -0.1**
MK31 Makanchi Array 44.31 59 *e*P **P 12 21 22.9 -0.1**
MK31 Makanchi Array 44.31 59 *e*P **P 12 21 22.9 -0.1**
MK32 Makanchi Array 44.31 59 *e*P **P 12 21 22.8 -0.2**
MK32 Makanchi Array 44.31 59 *e*P **P 12 21 22.8 -0.2**
MK32 *e*PcP **PcP 12 23 05.8 -0.5**
MKAR Makanchi Array 44.31 59 P **P 12 21 22.8 -0.2**
comp=Z,6.7nm,0.5s,baz=276,slow=7.0,SNR=37
MKAR PcP **PcP 12 23 05.8 -0.5**
comp=Z,0.5nm,0.5s,baz=298,slow=3.1,SNR=2.8
MKAR Makanchi Array 44.31 59 *e*P **P 12 21 22.9 -0.1**
MKAR Makanchi Array 44.31 59 *e*P **P 12 21 22.9 -0.1**
MK01 Makanchi Array 44.33 59 *e*P **P 12 21 22.7 -0.4**
MK01 Makanchi Array 44.33 59 *e*P **P 12 21 22.7 -0.4**
ZAA1 Zalesovo Array 44.85 48 *e*P **P 12 21 26.9 -0.2**
ZAA1 Zalesovo Array 44.85 48 *e*P **P 12 21 26.9 -0.2**
ZALV Zalesovo Beam 44.85 48 P **P 12 21 26.9 -0.2**
comp=Z,31nm,0.6s,baz=274,slow=8.8,SNR=93
NRIK Noril'sk 46.34 27 P **P 12 21 38.9 +0.3**
comp=Z,3.5nm,0.4s,baz=259,slow=2.5,SNR=4.4
WMQ Urumqi 48.74 61 *e*P **P 12 21 59.1 +1.4**
WMQ pmax pmax
comp=Z,6.0nm,0.6s
WMQ pmax pmax
comp=Z,53nm,3.6s
TLY Talaya 56.45 48 *e*P **P 12 22 54.4 -0.2**
TLY pmax pmax
comp=Z,3.0nm,1.1s
ZAK Zakamensk 56.70 49 *e*P **P 12 22 56.1 -0.4**
ZAK pmax pmax
comp=Z,2.0nm,1.4s
TIXI Tiksi 59.31 21 *e*P **P 12 23 13.4 -0.8**
TIXI pmax pmax
comp=Z,1.0nm,0.9s
TIXI Tiksi 59.31 21 *e*P **P 12 23 14.0 -0.2**
comp=Z,1.8nm,0.7s
TIXI Tiksi 59.31 21 *e*P **P 12 23 14.0 -0.2**
comp=Z,1.8nm,0.7s
SCHQ Schefferville 59.35 318 P **P 12 23 14.7 -0.1**
comp=Z,3.9nm,0.8s,baz=70,slow=12,SNR=3.8
SCHQ Schefferville 59.35 318 *e*P **P 12 23 14.7 -0.1**
comp=Z,54nm,1.8s
SCHQ Schefferville 59.35 318 *e*P **P 12 23 14.7 -0.1**
comp=Z,54nm,1.8s
SONA0 Songino Array 59.58 51 *e*P **P 12 23 16.2 -0.4**
comp=Z,3.7nm,0.9s
SONA0 Songino Array 59.58 51 *e*P **P 12 23 16.2 -0.4**
comp=Z,3.7nm,0.9s
SONM Songino Array 59.58 51 P **P 12 23 16.2 -0.4**
comp=Z,2.4nm,0.7s,baz=269,slow=8.1,SNR=6.9
SONM LR LR 12 53 43.4
comp=Z,46nm,18.4s,baz=252,slow=41
SONA1 Songino Array 59.58 51 *e*P **P 12 23 16.1 -0.5**
SONA1 Songino Array 59.58 51 *e*P **P 12 23 16.1 -0.5**
ULN Ulaanbaatar 59.97 51 *e*P **P 12 23 18.8 -0.5**
ULN pmax pmax
comp=Z,4.0nm,0.8s
ULN Ulaanbaatar 59.97 51 *e*P **P 12 23 18.8 -0.5**
comp=Z,3.7nm,0.8s
ULN Ulaanbaatar 59.97 51 *e*P **P 12 23 18.8 -0.5**
comp=Z,3.7nm,0.8s
RES Resolute Bay 60.19 344 P **P 12 23 19.9 -0.2**
comp=Z,1.7nm,0.7s,baz=58,slow=12,SNR=11
RES Resolute Bay 60.19 344 *e*P **P 12 23 20.9 +0.7**
RES pmax pmax
comp=Z,11nm,1.8s
RES Resolute Bay 60.19 344 *e*P **P 12 23 20.9 +0.7**
comp=Z,11nm,1.8s
RES Resolute Bay 60.19 344 *e*P **P 12 23 20.9 +0.7**
comp=Z,11nm,1.8s
OPO Ambohidratompo 61.10 153 P **P 12 23 28.5 +1.3**
comp=Z,2.4nm,0.7s,baz=329,slow=5.5,SNR=4.2
YAK Yakutsk 64.59 30 *e*P **P 12 23 48.7 -1.0**
YAK pmax pmax
comp=Z,8.0nm,0.7s
CD2 Chengdu 65.67 69 P **P 12 23 56.3 -1.1**
CD2 pmax pmax
comp=Z,1.0nm,0.5s
HHC Hu-ho-hao-te 66.08 56 *e*P **P 12 24 01.1 +1.1**
HHC pmax pmax
comp=Z,18nm,1.0s
HHC pmax pmax
comp=Z,51nm,7.1s
BOSA Boshof 66.42 177 P **P 12 24 02.7 +0.6**
comp=Z,1.6nm,0.6s,baz=343,slow=8.6,SNR=5.2
KMI Kunming 67.96 75 P P 12 24 04.0 -8.3
KMI pP pP 12 24 12.8 -14
CMAR Chiang Mai Arr 68.70 83 P **P 12 24 15.8 -0.9**
comp=Z,1.8nm,0.8s,baz=303,slow=7.9,SNR=12
CMAR LR LR 13 00 24.0
comp=Z,15nm,19.1s,baz=185,slow=41
BILL Bilibino 70.83 13 ⇓ *e*P **P 12 24 28.8 -0.2**
BILL *e*PPP PPP 12 28 49.1
BILL *e*S **S 12 33 47.7 +8.2**
BILL pmax pmax
comp=Z,5.0nm,1.0s
BILL MLR MLR
comp=Z,29nm,16.0s
BILL Bilibino 70.83 13 *e*P **P 12 24 28.9 0.0**
comp=Z,4.3nm,1.0s
BILL Bilibino 70.83 13 *e*P **P 12 24 28.9 0.0**
comp=Z,4.3nm,1.0s
SEY Seymchan 71.78 22 P **P 12 24 35.0 +0.3**
comp=Z,2.4nm,0.6s,baz=297,slow=6.8,SNR=12
INK Inuvik 72.36 351 P **P 12 24 37.6 -0.5**
comp=Z,1.2nm,0.7s,baz=24,slow=5.6,SNR=3.3
KLR Kul'dur 73.17 40 *e*P **P 12 24 42.1 -1.2**
YKA Yellowknife Ar 73.89 341 P **P 12 24 47.0 -0.2**
comp=Z,0.4nm,0.5s,baz=35,slow=5.4,SNR=16
YKB5 Yellowknife Ar 73.89 341 *e*P **P 12 24 47.0 -0.2**
YKB5 Yellowknife Ar 73.89 341 *e*P **P 12 24 47.0 -0.2**
NKL Nikolayevsk 74.77 33 *e*P **P 12 24 52.0 -0.5**
COLD Coldfoot 74.84 357 *e*P **P 12 24 53.8 +1.0**
comp=Z,3.3nm,1.0s
COLD Coldfoot 74.84 357 *e*P **P 12 24 53.8 +1.0**
comp=Z,3.3nm,1.0s
ULM Lac du Bonnet 76.49 324 P **P 12 25 02.4 0.0**
comp=Z,2.6nm,0.6s,baz=24,slow=7.5,SNR=4.4
ULM LR LR 12 58 30.8
comp=Z,41nm,21.1s,baz=340,slow=36
USRK Ussuriysk Ar. 76.51 44 P **P 12 25 02.5 -0.1**
comp=Z,2.9nm,0.8s,baz=305,slow=5.1,SNR=2.9
MDM Murphy Dome 77.01 356 *e*P **P 12 25 06.1 +1.0**
comp=Z,3.0nm,0.9s
MDM Murphy Dome 77.01 356 *e*P **P 12 25 06.1 +1.0**
comp=Z,3.0nm,0.9s
MLY Manley 77.06 357 *e*P **P 12 25 06.5 +1.0**
comp=Z,15nm,1.9s
MLY Manley 77.06 357 *e*P **P 12 25 06.5 +1.0**
comp=Z,15nm,1.9s
ILAR Eielson Array 77.11 355 P **P 12 25 05.5 -0.2**
comp=Z,1.1nm,0.9s,baz=2.5,slow=4.7,SNR=12
BPAW Bear Paw Mtn. 78.00 357 *e*P **P 12 25 10.7 0.0**
comp=Z,5.3nm,1.2s
BPAW Bear Paw Mtn. 78.00 357 *e*P **P 12 25 10.7 0.0**
comp=Z,5.3nm,1.2s
MCK McKinley 78.27 356 *e*P **P 12 25 13.0 +0.8**
MCK pmax pmax
comp=Z,5.0nm,0.9s
MCK McKinley 78.27 356 *e*P **P 12 25 13.0 +0.8**
comp=Z,5.2nm,0.9s
MCK McKinley 78.27 356 *e*P **P 12 25 13.0 +0.8**
comp=Z,5.2nm,0.9s
KS15 Wonju Array Si 78.43 51 *e*P **P 12 25 12.0 -1.5**
KS15 Wonju Array Si 78.43 51 *e*P **P 12 25 12.0 -1.5**
KSRS Korea Array 78.44 51 P **P 12 25 12.0 -1.6**
comp=Z,1.1nm,0.5s,baz=309,slow=4.6,SNR=3.7
MENT Mentasta 78.67 353 *e*P **P 12 25 14.9 +0.4**
comp=Z,4.2nm,0.7s
MENT Mentasta 78.67 353 *e*P **P 12 25 14.8 +0.4**
comp=Z,4.2nm,0.7s
SCIA State Center 80.95 317 *e*P **P 12 25 27.5 +0.4**
comp=Z,116nm,0.9s
SCIA State Center 80.95 317 *e*P **P 12 25 27.5 +0.4**
comp=Z,116nm,0.9s
SPU Mount Spurr 80.97 357 *e*P **P 12 25 26.8 -0.1**
SPU Mount Spurr 80.97 357 *e*P **P 12 25 26.8 -0.1**
SVW2 Sparrevohn 81.15 359 *e*P **P 12 25 28.5 +0.7**
comp=Z,3.3nm,0.8s
SVW2 Sparrevohn 81.15 359 *e*P **P 12 25 28.5 +0.7**
comp=Z,3.3nm,0.8s
EGMT Eagleton 84.14 330 *e*P **P 12 25 45.2 +1.5**
comp=Z,5.3nm,0.8s
EGMT Eagleton 84.14 330 *e*P **P 12 25 45.2 +1.5**
comp=Z,5.3nm,0.8s
JTMT Jette 86.10 332 *e*P **P 12 25 54.6 +1.0**
JTMT Jette 86.10 332 *e*P **P 12 25 54.6 +1.0**
NEW Newport 86.67 334 P **P 12 25 56.8 +0.5**
comp=Z,3.5nm,0.9s,baz=54,slow=4.1,SNR=4.5
NEW Newport 86.67 334 *e*P **P 12 25 57.2 +0.9**
NEW pmax pmax
comp=Z,4.0nm,1.0s
NEW Newport 86.67 334 *e*P **P 12 25 57.2 +0.9**
comp=Z,4.3nm,1.0s
NEW Newport 86.67 334 *e*P **P 12 25 57.1 +0.9**
comp=Z,4.3nm,1.0s
PD31 Pinedale Array 88.30 327 *e*P **P 12 26 04.2 -0.3**
PD31 Pinedale Array 88.30 327 *e*P **P 12 26 04.2 -0.3**
PDAR Pinedale Array 88.30 327 P **P 12 26 04.2 -0.3**
comp=Z,0.8nm,0.9s,baz=66,slow=5.0,SNR=6.7
LTX Lajitas 95.91 315 *e*P **P 12 26 40.7 +1.0**
LTX Lajitas 95.91 315 *e*P **P 12 26 40.7 +1.0**
LTX Lajitas 95.91 315 *e*P **P 12 26 40.7 +1.0**
TXAR Lajitas Array 95.91 315 P **P 12 26 40.7 +1.0**
comp=Z,0.6nm,1.0s,baz=70,slow=6.0,SNR=4.3
WRA Warramunga Arr 119.32 93 PKP **PKPdf 12 32 01.1 -1.0**
comp=Z,0.4nm,0.8s,baz=311,slow=1.5,SNR=5.6
WR1 Warramunga Arr 119.32 91 *e*PKIKP **PKPdf 12 32 01.1 -0.9**
WR1 Warramunga Arr 119.32 93 *e*PKPdf **PKPdf 12 32 01.1 -0.9**
ASAR Alice Springs 120.96 97 PKP **PKPdf 12 32 04.3 -0.8**
comp=Z,0.3nm,0.6s,baz=310,slow=1.5,SNR=8.5

ISCJB ***19*** *12:28:33.5±0.6,23.18S±0.09×179.78W±0.1,h500km, mb4.1/9,Error ellipse: s-maj=15.0km s-min=8.5km az=38.1*
IDC ***19*** *12:28:36.0±2.3,23.12S×179.82W,h522km±27km,mb3.6/9, mb1 3.8/11,mb1mx3.4/39,mbtmp4.5/11,Error ellipse: s-maj=29.5km s-min=15.5km az=159.0*
ISC 19 12:28:34.0±0.8,23.25S×179.7W±0.1,h500km,n13, σ1°69/14,mb4.0/9,South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
AFI	**Afiamalu**	**11.95**	**40**	P		P		**12 31 13.1**	**+0.9**
AFI	2.8nm,0.3s,baz=288,slow=4.7,SNR=7.7			S		S		**12 33 20.0**	**-2.6**
	1.0nm,0.3s,baz=37,slow=20,SNR=3.2								
URZ	**Urewera**	**15.22**	**190**	P		P		**12 31 48.3**	**+2.0**
URZ	1.3nm,0.3s,baz=39,slow=6.5,SNR=9.4			S		S		**12 34 21.1**	**-3.8**
	0.3nm,0.3s,baz=156,slow=20,SNR=3.1								
CTA	**Charters Tower**	**31.73**	**269**	P		P		**12 34 16.6**	**+0.3**
	21nm,0.4s,baz=95,slow=11,SNR=78								
PMG	**Port Moresby**	**34.52**	**288**	P		P		**12 34 40.1**	**0.0**
	23nm,0.7s,baz=108,slow=3.4,SNR=11								
STKA	**Stephens Creek**	**35.20**	**247**	P		P		**12 34 46.2**	**+0.6**
	3.2nm,0.6s,baz=94,slow=11,SNR=16								
ASAR	**Alice Springs**	**42.39**	**260**	P		P		**12 35 43.9**	**-0.3**
	8.8nm,0.8s,baz=94,slow=7.0,SNR=154								
WRA	**Warramunga Arr**	**42.70**	**265**	P		P		**12 35 45.9**	**-0.7**
	10nm,0.6s,baz=91,slow=8.3,SNR=226								
JAY	**Jayapura**	**43.49**	**292**	P		P		**12 35 52.0**	**-0.8**
	1.6nm,0.6s,baz=197,slow=19,SNR=5.7								
CMAR	**Chiang Mai Arr**	**89.53**	**290**	P		P		**12 40 37.3**	**-0.7**
	0.6nm,0.5s,baz=119,slow=2.3,SNR=6.0								
TXAR	**Lajitas Array**	**89.87**	**58**	P		P		**12 40 40.4**	**+0.9**
	0.9nm,0.8s,baz=212,slow=7.3,SNR=12								
PDAR	**Pinedale Array**	**92.04**	**44**	P		P		**12 40 49.4**	**0.0**
	0.4nm,0.7s,baz=198,slow=4.4,SNR=5.1								
AKASG	**Malin Array Be**	**144.54**	**328**	PKP		PKPbc		12 47 10.8	-2.1
	0.8nm,0.5s,baz=44,slow=4.1,SNR=5.3								
BRTR	**Keskin Array B**	**147.37**	**308**	PKPbc		**PKPdf**		**12 47 19.8**	**+1.5**
	0.5nm,0.5s,baz=90,slow=5.0,SNR=3.2								

NIED ***19*** *12:34:00,37.10N×140.70E,h8km,Mw3.8 Best double couple: M0=4.97000×10^14 NP1:ϕs308.00000°,δ25.00000°, λ-117.00000°. NP2:ϕs157.00000°,δ68.00000°, λ-78.00000°.*
IDC ***19*** *12:34:25.1±0.6,37.08N×140.66E,h0km,mb3.8/16, mb1 4.1/19,mb1mx3.9/53,mbtmp3.9/19,ML3.9/3,MS4.0/1, Ms1 4.0/1,ms1mx2.6/40,Error ellipse: s-maj=17.6km s-min=13.9km az=116.0*
ISCJB ***19*** *12:34:26.3±0.5,37.08N±0.02×140.76E±0.04,h18km±3km, mb3.9/21,MS4.1/1,Error ellipse: s-maj=6.0km s-min=3.5km az=23.8*
JMA ***19*** *12:34:26.7,37.07N×140.67E,h9km±1km,M4.1 Broadband fault plane solution: P waves. NP1: ϕs148.00000°,δ55.00000°,λ-97.00000°. NP2: ϕs341.00000°,δ35.00000°,λ-79.00000°. Principal axes: T Plg10.0000°; Azm243.0000°; N Plg6.0000°, Azm152.0000°; P Plg78.0000°, Azm32.0000°;*
JMA Felt III J1.
NEIC ***19*** *12:34:30.4±0.8,37.10N×140.66E,h35km±7km,mb4.2/4 Error ellipse: s-maj=10.3km s-min=5.9km az=132.0*
NEIC Recorded [3 JMA] in Fukushima.
ISC 19 12:34:26.6±1.0,37.07N±0.03×140.65E±0.03,h9km±6km, n49,σ0.974/51,mb3.9/21,7C-1D,Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.12**	**75**	⇑P			**Pg**	**12 34 29.4**	**0.0**
JFK	**Kawauchi**	**0.34**	**31**	⇑P			**Pg**	**12 34 33.4**	**0.0**
JFK				S			**Sg**	**12 34 38.1**	**+0.1**
JHO	**Hitachi**	**0.47**	**189**	⇑P			**Pg**	**12 34 35.7**	**+0.1**
JHO				S			**Sg**	**12 34 42.3**	**+0.6**
JFT	**Otama**	**0.51**	**330**	⇓P			**Pg**	**12 34 37.0**	**+0.4**
JFT				S			**Sg**	**12 34 43.9**	**+0.6**
JSB	**Shiboa**	**0.60**	**260**	⇑P			**Pb**	**12 34 39.2**	**0.0**
JSB				S			**Sb**	**12 34 47.3**	**-0.4**
JMM	**Marumori**	**0.80**	**8**	⇑P			**Pg**	**12 34 41.6**	**-0.4**
JMM				S			**Sg**	**12 34 52.3**	**-0.2**
JFY	**Yanaizu**	**0.83**	**294**	⇑P			**Pg**	**12 34 42.8**	**+0.3**
JFY				S			**Sg**	**12 34 53.5**	**+0.2**
JYT	**Yasato**	**0.92**	**204**	⇑P			**Pg**	**12 34 43.9**	**-0.3**
JYT				S			**Sb**	**12 34 56.8**	**-0.1**
MJAR	**Matsushiro Arr**	**2.03**	**256**	Pn			**Pn**	**12 35 01.8**	**+0.9**
	60nm,0.3s,baz=70,slow=15,SNR=354								
MJAR				LR		LR		12 35 25.0	
	comp=Z,48nm,18.9s,baz=75,slow=30								
MJAR				Sn			**Sb**	**12 35 28.0**	**-1.0**
	29nm,0.3s,baz=89,slow=28,SNR=5.4								
MAJO	**Matsushiro**	**2.03**	**256**	*e*Pn			**Pb**	**12 35 02.5**	**-1.1**
MAJO				*e*Sn			**Sg**	**12 35 31.7**	**-0.2**
MAT	**Matsushiro**	**2.03**	**256**	P			**Pb**	**12 35 02.4**	**-1.3**
MAT				S			**Sb**	**12 35 30.1**	**+1.0**
JHJ	**Hachijo jima 2**	**4.01**	**191**	Pn			**Pn**	**12 35 28.1**	**0.0**
	8.4nm,0.3s,baz=72,slow=18,SNR=4.5								
JHJ				Sn			**Sn**	**12 36 17.1**	**+1.9**
	17nm,0.3s,baz=73,slow=19,SNR=3.1								
ERM	**Erimo**	**5.30**	**21**	*e*Pn			**Pn**	**12 35 46.9**	**+1.0**
ERM				*e*Sn			**Sn**	**12 36 47.8**	**+0.8**
ASAJ	**Asahikawa**	**7.19**	**11**	Pn			**Pn**	**12 36 11.9**	**+0.1**
	2.8nm,0.3s,baz=246,slow=16,SNR=17								
ASAJ	**Asahikawa**	**7.19**	**11**	*e*Pn			**Pn**	**12 36 12.4**	**+0.6**
ASAJ				*e*Sn			**Sn**	**12 37 34.3**	**+0.8**
USRK	**Ussuriysk Ar.**	**9.70**	**320**	Pn			Pn	12 36 50.9	+4.8
	0.2nm,0.3s,baz=148,slow=13,SNR=7.8								
YSS	**Yuzh-Sakhalins**	**10.00**	**8**	*e*Pn			**Pn**	**12 36 50.9**	**+0.7**
KSRS	**Korea Array**	**10.16**	**276**	Pn			Pn	12 36 59.1	+6.7
	0.3nm,0.3s,baz=89,slow=14,SNR=3.7								
KSAR	**Wonju Array Be**	**10.19**	**276**	Pn			Pn	12 36 59.1	+6.2
SEY	**Seymchan**	**26.88**	**12**	P			**P**	**12 40 07.9**	**+0.6**
	0.4nm,0.4s,baz=173,slow=7.5,SNR=4.7								
SONM	**Songino Array**	**27.26**	**304**	P			**P**	**12 40 11.0**	**-0.1**
	0.9nm,0.6s,baz=99,slow=8.9,SNR=3.1								
H11N2	**WAKE ISLAND Hy**	**28.69**	**120**	T			T	13 10 11.4	
	baz=313,slow=75,SNR=130								
H11N1	**WAKE ISLAND Hy**	**28.70**	**120**	T			T	13 10 09.4	
	baz=313,slow=75,SNR=111								
H11N3	**WAKE ISLAND Hy**	**28.71**	**120**	T			T	13 10 15.2	
	baz=313,slow=75,SNR=96								
H11S1	**WAKE ISLAND Hy**	**29.39**	**122**	T			T	13 11 06.6	
	baz=314,slow=75,SNR=164								
H11S3	**WAKE ISLAND Hy**	**29.39**	**122**	T			T	13 11 01.8	
	baz=314,slow=75,SNR=69								
H11S2	**WAKE ISLAND Hy**	**29.41**	**122**	T			T	13 11 07.3	
	baz=314,slow=75,SNR=52								
ZALV	**Zalesovo Beam**	**41.44**	**312**	P			**P**	**12 42 13.4**	**+0.2**
	0.8nm,0.4s,baz=98,slow=7.3,SNR=3.9								
MKAR	**Makanchi Array**	**43.58**	**302**	P			**P**	**12 42 30.7**	**-0.1**
	0.7nm,0.6s,baz=86,slow=9.6,SNR=7.7								
KURK	**Kurchatov**	**45.43**	**308**	*e*P			**P**	**12 42 45.4**	**0.0**
	2.3nm,0.5s								
KURBB	**Kurchatov Arra**	**45.50**	**308**	P			**P**	**12 42 45.4**	**-0.6**
	0.7nm,0.4s,baz=82,slow=7.9,SNR=8.2								
TKM2	**Tokmak 2**	**49.08**	**298**	*e*P			**P**	**12 43 15.1**	**+0.8**
	0.8nm,0.4s								
ILAR	**Eielson Array**	**49.79**	**32**	P			**P**	**12 43 18.8**	**-0.3**
	0.8nm,0.8s,baz=272,slow=6.6,SNR=12								
INK	**Inuvik**	**54.63**	**27**	P			**P**	**12 43 55.6**	**+0.6**
	0.9nm,0.7s,baz=270,slow=6.1,SNR=2.5								
WRAB	**Tennant Creek**	**57.01**	**187**	*e*P			**P**	**12 44 14.1**	**+1.5**
	2.1nm,0.5s								
WRA	**Warramunga Arr**	**57.02**	**187**	P			**P**	**12 44 12.3**	**-0.4**
	3.6nm,0.6s,baz=2.5,slow=7.3,SNR=43								
ASAR	**Alice Springs**	**60.75**	**187**	P			**P**	**12 44 38.7**	**+0.2**
	1.0nm,0.6s,baz=0.3,slow=6.8,SNR=13								
YKA	**Yellowknife Ar**	**64.08**	**30**	P			**P**	**12 45 00.0**	**-0.4**
	0.1nm,0.5s,baz=297,slow=6.2,SNR=4.5								
FINES	**FINESS Array B**	**68.50**	**332**	P			**P**	**12 45 28.4**	**-0.4**
	1.4nm,0.8s,baz=28,slow=6.5,SNR=3.5								
AKASG	**Malin Array Be**	**73.89**	**322**	P			**P**	**12 46 00.9**	**-0.7**
	0.3nm,0.3s,baz=39,slow=6.0,SNR=6.0								
NOA	**NORSAR Array B**	**73.92**	**337**	P			**P**	**12 46 01.0**	**-0.6**
	0.8nm,0.8s,baz=39,slow=5.9,SNR=3.1								
FCC	**Fort Churchill**	**74.24**	**26**	*e*P			**P**	**12 46 03.3**	**-0.2**
NVAR	**Mina Array Bea**	**75.45**	**53**	P			**P**	**12 46 10.9**	**-0.3**
	0.7nm,0.7s,baz=299,slow=6.1,SNR=3.8								
DUG	**Dugway, Tooele**	**77.79**	**49**	*e*P			**P**	**12 46 21.8**	**-2.4**
	0.5nm,0.4s								
PDAR	**Pinedale Array**	**78.07**	**45**	P			**P**	**12 46 26.2**	**+0.3**
	0.6nm,0.8s,baz=300,slow=2.9,SNR=4.8								
GERES	**GERESS Array B**	**82.36**	**328**	LR		LR		13 25 37.5	
	comp=Z,79nm,19.0s,baz=52,slow=37								
TXAR	**Lajitas Array**	**90.58**	**52**	P			**P**	**12 47 29.6**	**+0.1**
	0.3nm,0.8s,baz=186,slow=1.3,SNR=3.9								
LRAL	**Lakeview Retre**	**97.29**	**39**	*e*P			P	12 47 54.7	-5.4
	6.9nm,0.6s								
LPAZ	**La Paz**	**147.19**	**59**	PKPbc			**PKPbc**	**12 54 11.2**	**-0.2**
	1.0nm,0.6s,baz=30,slow=4.3,SNR=3.9								

IDC 19 12:34:40.4±26.0,19.30S×171.60W,h0km,mb4.2/4, mb1 4.3/4,mb1mx3.7/46,mbtmp4.2/4,Error ellipse: s-maj=497.3km s-min=166.4km az=74.0,Tonga Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
CTA	**Charters Tower**	**39.61**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**2.94**	**190**	Pn	Pn	12 35 53.0	+0.2
	0.3nm,0.3s,baz=343,slow=19,SNR=7.5						
DZM				Sn	Sn	12 36 29.0	0.0
	3.7nm,0.3s,baz=326,slow=22,SNR=13						
STKA	**Stephens Creek**	**26.12**	**236**	P	P	12 40 40.2	-0.3
	0.7nm,0.5s,baz=80,slow=8.8,SNR=3.2						
WRA	**Warramunga Arr**	**30.77**	**263**	P	P	12 41 22.0	-0.2
	0.4nm,0.8s,baz=92,slow=8.4,SNR=6.4						
ASAR	**Alice Springs**	**31.10**	**256**	P	P	12 41 25.3	+0.2
	1.0nm,0.4s,baz=79,slow=8.8,SNR=42						

CSEM ***19*** *12:35:36.5±1.1,38.52N×43.81E,h2km,MD2.8,Error ellipse: s-maj=22.7km s-min=8.8km az=129.0*
DDA ***19*** *12:35:40.0,38.66N×43.51E,h7km,Md2.8*

ISC 19 12:35:34.8±2.1,38.57N±0.07×43.9E±0.1,h6km,n10, σ0.44/18,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TVAN	**Van**	**0.36**	**264**	*i* P	**Pg**	**12 35 42.8**	**+0.9**
TVAN				*i* S	**Sg**	**12 35 46.8**	**+0.1**
TVAN	**Van**	**0.36**	**264**	P	**Pg**	**12 35 42.8**	**+0.9**
TVAN				S	**Sg**	**12 35 46.8**	**+0.1**
VANB	**Van**	**0.38**	**275**	*e*PG	**Pg**	**12 35 42.1**	**0.0**
VANB				*e*SG	**Sb**	**12 35 50.0**	**-0.1**
VANB	**Van**	**0.38**	**275**	*e*Pg	**Pg**	**12 35 42.1**	**0.0**
VANB				*e*Sg	**Sb**	**12 35 50.0**	**-0.1**
VMUR	**Van-Muradiye**	**0.48**	**332**	*i* P	**Pb**	**12 35 45.6**	**-0.2**
VMUR				*i* S	**Sb**	**12 35 53.3**	**+0.1**
VMUR	**Van-Muradiye**	**0.48**	**332**	P	**Pb**	**12 35 45.6**	**-0.2**
VMUR				S	**Sb**	**12 35 53.3**	**+0.1**
CLDR	**Caldiran**	**0.58**	**4**	*e*PG	**Pn**	**12 35 49.7**	**-0.1**
CLDR	**Caldiran**	**0.58**	**4**	*e*Pg	**Pn**	**12 35 49.7**	**-0.1**
GEVA	**Gevas**	**0.68**	**248**	*i* P	**Pb**	**12 35 49.2**	**0.0**
GEVA				*i* S	**Sb**	**12 35 58.2**	**-0.8**
GEVA	**Gevas**	**0.68**	**248**	P	**Pb**	**12 35 49.2**	**0.0**
GEVA				S	**Sb**	**12 35 58.2**	**-0.8**

JMA 19 12:40:25.0±0.3,37.05N×142.43E,h27km,M3.5,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**1.28**	**285**	P	Pb	12 40 48.1	-0.4
JFK				*e*S	Sb	12 41 04.3	-0.3
JMM	**Marumori**	**1.54**	**303**	P	Pn	12 40 51.2	+0.6
JMM				*e*S	Sn	12 41 10.2	+0.5
JHO	**Hitachi**	**1.56**	**254**	S	Sb	12 41 11.4	-1.0
JIO	**Ouri**	**1.64**	**329**	P	Pb	12 40 53.6	-1.0
JFT	**Otama**	**1.73**	**286**	P	Pn	12 40 54.5	+1.1
MAT	**Matsushiro**	**3.43**	**263**	P	Pn	12 41 19.7	+3.0
MAT				*e*S	Sn	12 41 59.7	+3.3

IDC ***19*** *12:42:45.9±3.4,10.55N×84.05W,h0km,mb3.6/4, mb1 4.0/4,mb1mx3.6/34,mbtmp3.6/4,MS3.2/1,Ms1 3.2/1, ms1mx2.4/27,Error ellipse: s-maj=69.7km s-min=12.1km az=149.0*
CASC ***19*** *12:42:46.8±3.0,9.47N×84.42W,h27km±9km,MD4.3*

ISC 19 12:42:44.1±2.0,9.43N±0.07×84.49W±0.05,h16km±12km, n25,σ1.71/27,mb3.6/4,4D,Costa Rica

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
QCR	**Quepos**	**0.32**	**90**	*i* P	**Pn**	**12 42 54.5**	**+0.3**
CGA2	**Cerro Gallo 2**	**0.59**	**3**	*e*P	**Pn**	**12 42 58.2**	**+0.3**
HDC	**Heredia**	**0.68**	**33**	*i* P	**Pn**	**12 42 59.6**	**+0.3**
HDC				*e*S	**Sb**	**12 43 08.6**	**+1.5**
BUS	**Buena Vista**	**0.74**	**80**	*i* P	**Pn**	**12 43 00.7**	**+0.4**
BUS				*e*S	**Sg**	**12 43 08.7**	**+0.3**
JCR	**Jicaral**	**0.74**	**305**	*i* P	**Pn**	**12 43 00.8**	**+0.8**
URSC	**Urasca**	**0.81**	**60**	*i* P	**Pn**	**12 43 01.5**	**+0.4**
URSC				*e*S	**Sg**	**12 43 11.5**	**+0.7**
JTS	**JuntasAbangare**	**0.97**	**332**	Pg	**Pn**	**12 43 04.1**	**+1.0**
	618nm,0.3s,baz=84,slow=10,SNR=1596						
JTS				Lg		12 43 16.3	
	423nm,0.3s,baz=282,slow=20,SNR=42						
JTS	**JuntasAbangare**	**0.97**	**332**	*i* P	**Pn**	**12 43 04.1**	**+1.0**
JTS				*e*S	**Sg**	**12 43 16.2**	**+0.5**
VCR	**Vista de Mar**	**1.32**	**302**	*e*P	**Pb**	**12 43 08.6**	**0.0**
TBS2		**1.92**	**109**	*e*P	**Pb**	**12 43 18.2**	**-0.6**
TBS2				*e*S	**Sn**	**12 43 40.4**	**+0.2**
ESPN	**Las Esperanzas**	**2.76**	**4**	*e*P	**Pn**	**12 43 28.5**	**+0.8**
BOAB	**BOACO BROADBAN**	**3.22**	**339**	*e*P	**Pn**	**12 43 34.8**	**+0.7**
COPN	**Copaltepe**	**3.43**	**323**	*e*P	**Pb**	**12 43 41.7**	**-2.8**
COPN				*e*S	**Sn**	**12 44 18.1**	**+0.8**
TELN	**Telica**	**3.91**	**324**	*e*S	**Sn**	**12 44 32.7**	**+3.5**
AZU	**Azuero**	**4.48**	**111**	*e*P	Pn	12 43 55.6	+4.2
AZU				*e*S	**Sn**	**12 44 47.7**	**+4.5**
BCIP	**Isla Barro Col**	**4.60**	**93**	*e*P	**Pn**	**12 43 56.4**	**+0.9**
CSGN	**Cosiguina Volc**	**4.64**	**320**	*e*P	**Pn**	**12 43 56.5**	**+2.9**
SBLS	**San Blas**	**6.67**	**312**	*e*P	Pn	12 44 25.4	+3.7
ATAH	**Atahualpa**	**17.54**	**160**	LR	LR	12 53 07.8	
	comp=Z,73nm,19.3s,baz=311,slow=34						
TXAR	**Lajitas Array**	**26.74**	**320**	P	**P**	**12 48 23.0**	**-0.2**
	0.8nm,0.5s,baz=140,slow=11,SNR=15						
NVAR	**Mina Array Bea**	**41.88**	**319**	P	**P**	**12 50 34.1**	**0.0**
	0.6nm,0.6s,baz=125,slow=7.9,SNR=5.1						
YKA	**Yellowknife Ar**	**57.29**	**344**	P	**P**	**12 52 28.1**	**-2.8**
	0.4nm,0.7s,baz=142,slow=7.0,SNR=16						
ILAR	**Eielson Array**	**69.94**	**336**	P	**P**	**12 53 53.2**	**-1.2**
	0.3nm,0.7s,baz=146,slow=4.3,SNR=5.1						
ASAR	**Alice Springs**	**140.71**	**244**	PKP	PKPdf	13 02 19.4	+5.4
	0.2nm,0.8s,baz=100,slow=2.3,SNR=3.2						
WRA	**Warramunga Arr**	**141.10**	**250**	PKP	PKPdf	13 02 20.8	+6.0
	0.5nm,0.7s,baz=97,slow=2.5,SNR=17						

WEL 19 12:43:46.2±0.4,38.75S×175.18E,h216km±3km,ML3.9/15, 25C-12D,Error ellipse: s-maj=2.5km s-min=2.0km az=90.0,North Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HIZ	**Hauiti**	**0.34**	**313**	PN	Pn	12 44 14.6	-0.2
HIZ				SN	S	12 44 36.3	-0.7
TWVZ	**Taurewa**	**0.38**	**148**	PN	Pn	12 44 14.7	-0.2
TWVZ				SN	S	12 44 36.0	-1.6
WTVZ	**West Tongariro**	**0.49**	**139**	PN	Pn	12 44 15.3	0.0
WTVZ				SN	S	12 44 36.6	-1.4
VRZ	**Vera Road**	**0.50**	**221**	↑PN	Pn	12 44 14.7	-0.5
NGZ	**Ngauruhoe**	**0.54**	**142**	↑PN	Pn	12 44 15.5	0.0
PKVZ	**Pokaka**	**0.56**	**166**	↑PN	Pn	12 44 15.3	-0.2
FWVZ	**Far West T-bar**	**0.59**	**150**	↑PN	Pn	12 44 15.7	-0.1
FWVZ				SN	S	12 44 36.8	-2.2
TRVZ	**Turoa**	**0.62**	**152**	PN	Pn	12 44 15.8	-0.1
WHVZ	**Whangaehu Hut**	**0.63**	**149**	↑PN	Pn	12 44 15.9	0.0
TUVZ	**Tukino**	**0.64**	**145**	↑PN	Pn	12 44 16.0	+0.1
WNVZ	**Wahianoa**	**0.67**	**151**	PN	Pn	12 44 16.0	-0.1
MTVZ	**Mangateitei**	**0.68**	**160**	↑PN	Pn	12 44 15.9	-0.1
MOVZ	**Moawhango**	**0.80**	**146**	PN	Pn	12 44 16.1	-0.4
DREZ	**Durham Road**	**0.88**	**239**	PN	Pn	12 44 16.6	-0.3
ALRZ	**Allen Road**	**0.93**	**79**	PN	Pn	12 44 17.2	-0.1
MRHZ	**Matea Rd**	**0.97**	**96**	↓PN	Pn	12 44 17.2	-0.3
PRRZ	**Plateau Road**	**0.98**	**76**	PN	Pn	12 44 17.5	-0.1
NEZ	**North Egmont**	**0.99**	**238**	↑PN	Pn	12 44 17.4	-0.2
BHHZ	**Black Hill Sta**	**1.01**	**137**	↑PN	Pn	12 44 17.4	-0.4
WAZ	**Wanganui**	**1.02**	**188**	↑PN	Pn	12 44 17.6	-0.2
KHEZ	**Kahui Hut**	**1.06**	**238**	PN	Pn	12 44 17.8	-0.3
BKZ	**Black Stump Fm**	**1.11**	**113**	↓PN	Pn	12 44 18.2	-0.2
BKZ				AML	AML	12 44 42.3	
BKZ				AML	AML	12 44 43.6	
RRRZ	**Republican Roa**	**1.12**	**69**	↓PN	Pn	12 44 18.5	0.0
KWHZ	**Kaweka Forest**	**1.18**	**125**	PN	Pn	12 44 19.3	+0.3
MUGZ	**Murupara**	**1.28**	**78**	↓PN	Pn	12 44 19.1	-0.5
KRHZ	**Kereru**	**1.29**	**134**	PN	Pn	12 44 19.7	0.0
NMHZ	**Naumai**	**1.32**	**106**	↓PN	Pn	12 44 20.7	+0.8
MCHZ	**McNeill Hill**	**1.37**	**121**	↑PN	Pn	12 44 21.0	+0.8
OPRZ	**Ohinepanea**	**1.41**	**51**	↓PN	Pn	12 44 20.6	0.0
PNHZ	**Pukenui**	**1.41**	**146**	PN	Pn	12 44 20.3	-0.3
TSZ	**Takapari Road**	**1.45**	**155**	PN	Pn	12 44 20.5	-0.4
TSZ				AML	AML	12 44 46.1	
TSZ				AML	AML	12 44 46.4	
OHWZ	**Ohakea**	**1.46**	**176**	PN	Pn	12 44 20.9	-0.1
ARHZ	**Aropaoanui**	**1.51**	**111**	PN	Pn	12 44 21.8	+0.4
URZ	**Urewera**	**1.59**	**73**	PN	Pn	12 44 21.5	-0.7
URZ				AML	AML	12 44 49.2	
URZ				AML	AML	12 44 49.6	

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WPHZ	**Waipukurau**	**1.64**	**144**	↑PN	Pn	12 44 22.3	-0.2
KAHZ	**Kahuranaki**	**1.69**	**129**	↓PN	Pn	12 44 23.3	+0.3
SNGZ	**Shannon Statio**	**1.69**	**92**	↓PN	Pn	12 44 23.1	+0.1
DVHZ	**Dannevirke**	**1.73**	**154**	↑PN	Pn	12 44 22.7	-0.7
CKHZ	**Cape Kidnapper**	**1.74**	**122**	PN	Pn	12 44 23.8	+0.4
CKHZ				SN	S	12 44 50.9	-1.3
RAGZ	**Rawiri**	**1.77**	**83**	PN	Pn	12 44 23.7	-0.2
PXZ	**Pawanui**	**1.83**	**135**	PN	Pn	12 44 24.0	-0.2
PXZ				AML	AML	12 44 52.4	
PXZ				AML	AML	12 44 54.5	
MWZ	**Matawai**	**1.89**	**78**	↓PN	Pn	12 44 24.5	-0.4
MWZ				AML	AML	12 44 53.3	
MWZ				AML	AML	12 44 53.3	
PRHZ	**Porangahau**	**1.89**	**144**	↑PN	Pn	12 44 24.5	-0.4
PRWZ	**Pori Road**	**1.91**	**161**	PN	Pn	12 44 24.3	-0.7
MRZ	**Mangatainoka R**	**1.94**	**171**	PN	Pn	12 44 24.1	-1.2
ANWZ	**Angora Road**	**1.98**	**150**	↑PN	Pn	12 44 25.2	-0.5
RIGZ	**Rimuhau**	**2.02**	**90**	PN	Pn	12 44 26.1	-0.1
OGWZ	**Otaki Gorge**	**2.07**	**180**	↑PN	Pn	12 44 25.5	-1.0
TIWZ	**Tintock**	**2.10**	**165**	PN	Pn	12 44 25.7	-1.2
TIWZ				AML	AML	12 44 57.5	
TIWZ				AML	AML	12 44 57.9	
BFZ	**Birch Farm**	**2.10**	**157**	PN	Pn	12 44 25.8	-1.1
BFZ				AML	AML	12 44 58.3	
BFZ				AML	AML	12 44 58.7	
TKGZ	**Te Karaka**	**2.12**	**83**	PN	Pn	12 44 27.1	0.0
PRGZ	**Paritu Road**	**2.12**	**96**	PN	Pn	12 44 27.2	0.0
KIW	**Kapiti Island**	**2.12**	**185**	PN	Pn	12 44 25.6	-1.5
KIW				AML	AML	12 44 25.9	
KIW				AML	AML	12 44 26.2	
HOWZ	**Holdsworth Sta**	**2.17**	**173**	↑PN	Pn	12 44 26.1	-1.5
MHGZ	**Mahia Peninsul**	**2.17**	**102**	PN	Pn	12 44 27.8	+0.2
TWGZ	**Tauwhareparae**	**2.27**	**76**	PN	Pn	12 44 28.7	-0.1
HAZ	**Te Kaha**	**2.28**	**65**	↓PN	Pn	12 44 27.6	-1.1
CAW	**Cannon Point**	**2.36**	**182**	↑PN	Pn	12 44 28.0	-1.6
CAW				AML	AML	12 44 28.7	
CAW				AML	AML	12 44 29.4	
CNGZ	**Carnagh Statio**	**2.39**	**85**	PN	Pn	12 44 30.1	+0.2
TMWZ	**Te Maipa**	**2.42**	**167**	↑PN	Pn	12 44 28.6	-1.6
MTW	**Mount Morrison**	**2.42**	**174**	PN	Pn	12 44 28.4	-1.9
MTW				AML	AML	12 45 02.8	
MTW				AML	AML	12 45 02.9	
PUZ	**Puketiti**	**2.51**	**75**	↓PN	Pn	12 44 30.6	-0.7
PUZ				AML	AML	12 45 08.2	
WEL	**Wellington**	**2.56**	**187**	PN	Pn	12 44 29.7	-2.0
TCW	**Tory Channel**	**2.56**	**195**	↑PN	Pn	12 44 30.0	-1.7
TCW				AML	AML	12 45 03.7	
TCW				AML	AML	12 45 04.3	
PAWZ	**Paruwai Farm**	**2.64**	**176**	↑PN	Pn	12 44 30.7	-2.0
MSWZ	**Moikau Station**	**2.67**	**179**	↑PN	Pn	12 44 30.8	-2.1
BHW	**Baring Head**	**2.67**	**185**	PN	Pn	12 44 30.8	-2.1
BHW				AML	AML	12 44 31.6	
TRWZ	**Traveller**	**2.68**	**172**	PN	Pn	12 44 31.1	-1.9
TRWZ				AML	AML	12 45 07.7	
WMGZ	**Waiomatatini S**	**2.71**	**71**	PN	Pn	12 44 32.8	-0.7
MXZ	**Matakaoa Point**	**2.74**	**65**	PN	Pn	12 44 33.4	-0.3
PLWZ	**Palliser**	**2.82**	**179**	↑PN	Pn	12 44 32.4	-2.3
NNZ	**Nelson**	**2.83**	**209**	↑PN	Pn	12 44 32.2	-2.5
TUWZ	**Tuamarina**	**2.84**	**199**	↓PN	Pn	12 44 32.7	-2.1
TUWZ				AML	AML	12 44 33.8	
TUWZ				AML	AML	12 44 33.9	
QRZ	**Quartz Range**	**2.91**	**224**	PN	Pn	12 44 32.7	-3.0
CMWZ	**Cape Campbell**	**3.09**	**193**	PN	Pn	12 44 36.0	-1.6
BSWZ	**Blackbirch Sta**	**3.13**	**198**	PN	Pn	12 44 36.1	-2.0
THZ	**Tophouse**	**3.48**	**209**	PN	Pn	12 44 39.2	-3.1
KHZ	**Kahutara**	**3.87**	**198**	PN	Pn	12 44 44.4	-2.5
DSZ	**Denniston Nort**	**3.95**	**220**	↑PN	Pn	12 44 44.6	-3.6
LTZ	**Lake Taylor**	**4.60**	**208**	PN	Pn	12 44 52.5	-3.4
INZ	**Inchbonnie**	**4.88**	**214**	PN	Pn	12 44 56.4	-3.1
OXZ	**Oxford**	**5.15**	**206**	PN	Pn	12 44 58.7	-4.2
CRLZ	**Canterbury Las**	**5.20**	**201**	PN	Pn	12 44 59.1	-4.2
MQZ	**McQueen's Vall**	**5.31**	**200**	PN	Pn	12 45 00.3	-4.5
WVZ	**Waitaha Valley**	**5.48**	**216**	PN	Pn	12 45 02.7	-4.2
RPZ	**Rata Peaks**	**5.86**	**211**	PN	Pn	12 45 07.5	-4.3
FOZ	**Fox Glacier**	**6.26**	**219**	PN	Pn	12 45 12.8	-4.1
LBZ	**Lake Benmore**	**6.76**	**212**	PN	Pn	12 45 18.6	-4.8
ODZ	**Otahua Downs**	**7.14**	**207**	PN	Pn	12 45 24.6	-3.7

IDC 19 12:46:14.0±2.1,30.75N×41.42W,h0km,mb3.6/8, mb1 3.9/8,mb1mx3.6/44,mbtmp3.6/8,MS3.4/7,Ms1 3.4/7, ms1mx3.0/42,Error ellipse: s-maj=62.3km s-min=22.3km az=15.0,Northern Mid-Atlantic Ridge

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SJG	**San Juan**	**25.73**	**246**	LR	LR	12 59 19.3	
	comp=Z,20nm,21.6s,baz=88,slow=30						
BBTS	**Babate**	**27.89**	**119**	LR	LR	13 01 07.4	
	comp=Z,69nm,21.1s,baz=205,slow=32						
DBIC	**Dimbokro**	**41.79**	**117**	LR	LR	13 09 52.3	
	comp=Z,78nm,18.2s,baz=14,slow=34						
TORD	**Torodi Ar. Bea**	**43.35**	**104**	P	P	12 54 18.2	0.0
	1.1nm,0.9s,baz=320,slow=8.5,SNR=4.7						
GERES	**GERESS Array B**	**44.99**	**50**	P	P	12 54 30.5	-0.7
	0.3nm,0.3s,baz=257,slow=7.9,SNR=2.9						
H10N2	**ASCENSION HYDR**	**46.24**	**142**	T	T	13 44 09.4	
	baz=327,slow=75,SNR=8.5						
H10N3	**ASCENSION HYDR**	**46.24**	**142**	T	T	13 44 11.0	
	baz=327,slow=75,SNR=14						
H10N1	**ASCENSION HYDR**	**46.26**	**142**	T	T	13 44 12.8	
	baz=327,slow=75,SNR=9.9						
H10S1	**ASCENSION HYDR**	**47.09**	**143**	T	T	13 45 10.0	
	baz=328,slow=75,SNR=15						
H10S3	**ASCENSION HYDR**	**47.09**	**143**	T	T	13 45 10.2	
	baz=328,slow=75,SNR=14						
H10S2	**ASCENSION HYDR**	**47.11**	**143**	T	T	13 45 11.3	
	baz=328,slow=75,SNR=14						
TXAR	**Lajitas Array**	**53.27**	**285**	LR	LR	13 14 46.7	
	comp=Z,14nm,21.9s,baz=0.0,slow=32						
PDAR	**Pinedale Array**	**54.53**	**303**	P	P	12 55 43.5	-0.6
	1.3nm,0.9s,baz=94,slow=7.3,SNR=7.3						
PDAR				LR	LR	13 18 17.1	
	comp=Z,60nm,18.0s,baz=88,slow=35						
AKASG	**Malin Array Be**	**54.96**	**47**	P	P	12 55 46.7	-0.1
	0.3nm,0.4s,baz=277,slow=7.1,SNR=3.2						
YKA	**Yellowknife Ar**	**55.51**	**327**	P	P	12 55 50.4	-0.1
	0.2nm,0.9s,baz=84,slow=7.5,SNR=3.2						
BRTR	**Keskin Array B**	**60.33**	**59**	P	P	12 56 25.1	+0.2
	0.8nm,0.7s,baz=289,slow=7.7,SNR=3.8						
NVAR	**Mina Array Bea**	**62.07**	**300**	LR	LR	13 22 17.4	
	comp=Z,71nm,20.3s,baz=64,slow=35						
INK	**Inuvik**	**62.57**	**335**	P	P	12 56 39.9	+0.5
	1.1nm,0.6s,baz=66,slow=5.5,SNR=3.5						
ILAR	**Eielson Array**	**68.82**	**334**	P	P	12 57 20.1	+0.3
	0.5nm,0.9s,baz=69,slow=4.9,SNR=4.7						
ILAR				LR	LR	13 27 10.1	
	comp=Z,44nm,18.2s,baz=58,slow=36						

IDC ***19*** *12:50:10.1±2.6,36.35N×142.19E,h0km,mb3.5/3, mb1 3.6/5,mb1mx3.3/50,mbtmp3.6/5,ML3.8/2,Error ellipse: s-maj=61.8km s-min=28.7km az=57.0*
ISCJB ***19*** *12:50:12.9±1.1,36.19N±0.07×142.02E±0.09,h23km, mb3.5/3,Error ellipse: s-maj=10.7km s-min=8.6km az=142.3*
JMA ***19*** *12:50:15.9±0.3,36.24N×141.85E,h59km,M3.3*

ISC 19 12:50:14.5±1.6,36.21N±0.07×142.0E±0.1,h23km,n9, σ0.97/13,mb3.5/3,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**1.03**	**241**	P	**Pb**	**12 50 33.7**	**+0.1**
CHOJ				*e*S	**Sn**	**12 50 47.1**	**-0.1**
JHO	**Hitachi**	**1.19**	**290**	P	**Pn**	**12 50 35.4**	**-0.3**
JHO				*e*S	**Sn**	**12 50 50.0**	**-1.2**
ONAJ	**Iwakimizuishiy**	**1.29**	**314**	P	**Pn**	**12 50 37.3**	**+0.2**
MJAR	**Matsushiro Arr**	**3.04**	**277**	Pn	**Pn**	**12 51 02.2**	**+1.0**
	6.6nm,0.3s,baz=105,slow=8.6,SNR=89						
MAT	**Matsushiro**	**3.05**	**277**	P	**Pn**	**12 51 02.6**	**+1.3**
MAT				*e*S	**Sn**	**12 51 37.1**	**+0.1**
JHJ	**Hachijo jima 2**	**3.57**	**211**	Pn	**Pn**	**12 51 09.0**	**+0.6**
	27nm,0.3s,baz=43,slow=19,SNR=4.6						
JHJ				Sn	**Sn**	**12 51 47.9**	**-2.0**
	23nm,0.3s,baz=108,slow=20,SNR=4.7						
MKAR	**Makanchi Array**	**44.93**	**303**	P	**P**	**12 58 26.9**	**-0.5**
	0.6nm,0.6s,baz=83,slow=9.9,SNR=5.4						
WRA	**Warramunga Arr**	**56.31**	**189**	P	**P**	**12 59 53.8**	**+0.3**
	0.5nm,1.0s,baz=5.1,slow=7.2,SNR=4.7						
ASAR	**Alice Springs**	**60.04**	**189**	P	**P**	**13 00 20.1**	**+0.5**
	0.3nm,0.8s,baz=0.0,slow=7.5,SNR=2.9						

MEX 19 12:53:04.5±0.4,14.12N×92.38W,h25km,MD3.7,Near coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PCIG		**1.77**	**333**	*e*P	Pn	12 53 31.2	-2.3
PCIG				*e*S	Sn	12 53 51.6	-3.7

NIED ***19*** *12:55:00,40.10N×142.10E,h50km,Mw4.3 Best double couple: M0 3.65000×10^15 NP1:φ0=208.00000°,δ20.00000°, λ98.00000°. NP2:φ0=20.00000°,δ70.00000°,λ87.00000°.*
MOS ***19*** *12:55:31.8±0.9,40.15N×142.05E,h50km,mb4.8/57,Error ellipse: s-maj=8.0km s-min=4.7km az=101.2*
ISCJB ***19*** *12:55:32.1±0.4,40.08N±0.03×142.13E±0.04,h54km±2km, mb4.5/97,MS3.5/14,Error ellipse: s-maj=6.0km s-min=3.9km az=26.9*
JMA ***19*** *12:55:33.3±0.1,40.08N×142.11E,h48km±1km,M4.3*
JMA Felt IV J1.
IDC ***19*** *12:55:34.7±1.6,40.06N×142.06E,h66km±13km,mb4.1/33, mb1 4.3/39,mb1mx4.2/55,mbtmp4.4/39,MS3.3/12, Ms1 3.3/12,ms1mx3.1/45,Error ellipse: s-maj=13.1km s-min=9.6km az=114.0*
NEIC ***19*** *12:55:35.1±0.5,40.08N×142.08E,h69km±4km,mb4.5/26, Error ellipse: s-maj=6.7km s-min=4.5km az=127.0*
NEIC Felt [IV] at Misawa. Recorded [4 JMA] in Aomori.
BJI ***19*** *12:55:41.5,41.20N×141.60E,h60km,mb4.7/23,mB4.7/14, Ms4.3/10,Ms7 3.9/9*

ISC 19 12:55:32.5±0.7,40.07N±0.03×142.13E±0.05,h45km±6km, n243,σ1.34/258,mb4.6/98,MS3.6/14,20C-10D,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JTH	**Tanohata**	**0.24**	**238**	P	**Pn**	**12 55 41.8**	**+1.1**
JTH				S	**Sn**	**12 55 47.8**	**+1.4**
MIYJ	**Miyakonagasawa**	**0.54**	**206**	P	**Pn**	**12 55 44.8**	**+0.8**
MIYJ				S	**Sn**	**12 55 52.7**	**+0.5**
JANG	**Nango**	**0.56**	**303**	P	**Pn**	**12 55 44.8**	**+0.5**
JANG				S	**Sn**	**12 55 53.0**	**+0.3**
JKZ	**Kuzumaki**	**0.62**	**263**	P	**Pn**	**12 55 45.9**	**+0.8**
JKZ				S	**Sn**	**12 55 54.7**	**+0.7**
JOM	**Ohasama**	**0.87**	**228**	P	**Pn**	**12 55 49.1**	**+0.7**
JOM				S	**Sn**	**12 56 00.5**	**+0.5**
JTM	**Tenmabayashi**	**1.08**	**312**	P	**Pn**	**12 55 51.9**	**+0.6**
JTM				S	**Sn**	**12 56 05.2**	**+0.1**
JAH	**Hinai**	**1.15**	**277**	P	**Pn**	**12 55 53.1**	**+0.9**
JAH				S	**Sn**	**12 56 07.4**	**+0.7**
JMK	**Ichinoseki**	**1.31**	**213**	P	**Pn**	**12 55 55.3**	**+0.9**
JMK				S	**Sn**	**12 56 11.4**	**+0.6**
ERM	**Erimo**	**2.10**	**21**	*e*P	**Pn**	**12 56 06.9**	**+1.8**
ERM				*e*		12 56 34.0	
ERM	**Erimo**	**2.10**	**21**	*e*Pn	**Pn**	**12 56 06.9**	**+1.8**
ERM				*e*Sn	**Sn**	**12 56 34.0**	**+4.0**
ASAJ	**Asahikawa**	**4.06**	**5**	P	**Pn**	**12 56 33.6**	**+1.5**
	24nm,0.3s,baz=200,slow=14,SNR=166						
ASAJ				S	**Sn**	**12 57 21.7**	**+3.3**
	12nm,0.3s,baz=100,slow=25,SNR=5.0						
ASAJ				LR	LR	12 58 32.0	
	comp=Z,305nm,21.6s,baz=121,slow=43						
MJAR	**Matsushiro Arr**	**4.68**	**222**	P	**Pn**	**12 56 43.3**	**+2.8**
	6.9nm,0.3s,baz=33,slow=13,SNR=112						
MJAR				LR	LR	12 58 48.7	
	comp=Z,188nm,21.6s,baz=35,slow=42						
MAJO	**Matsushiro**	**4.68**	**222**	*e*P	**Pn**	**12 56 43.1**	**+2.5**
MAJO				*e*		12 57 31.8	
MAJO	**Matsushiro**	**4.68**	**222**	*e*Pn	**Pn**	**12 56 43.1**	**+2.5**
MAJO				*e*Sn	**Sn**	**12 57 31.8**	**-1.8**
YUK	**Yuzh-Kuril'sk**	**4.84**	**34**	*e*P	**Pn**	**12 56 42.1**	**-0.7**
YUK				*e*S	**Sn**	**12 57 35.8**	**-1.8**
YUK				pmax	pmax		
	comp=N,74nm,0.3s						
YUK				pmax	pmax		

comp=Z,250nm,11.3s
HHC LR LR
comp=Z,86nm,12.1s
YAK Yakutsk 23.26 345 P **P 13 00 33.6 -2.0**
comp=Z,23nm,0.5s,baz=146,slow=3.8,SNR=15
YAK Yakutsk 23.26 345 *eP* **P 13 00 33.5 -2.2**
YAK *e**PP **pP 13 00 45.1 -1.8**
YAK *e* 13 01 00.7
YAK *e* 13 04 17.6
YAK eSS **S 13 04 41.1 -3.2**
YAK *e**SS Sn 13 04 59.3 -5.6
YAK *e*SS **SnSn 13 05 22.3 +0.8**
YAK *e* 13 11 36.6
YAK pmax pmax
comp=Z,32nm,0.9s
YAK pmax pmax
comp=N,18nm,1.1s
YAK pmax pmax
comp=E,4.0nm,1.1s
YAK pmax pmax
comp=Z,62nm,3.3s
YAK pmax pmax
comp=N,38nm,3.0s
YAK pmax pmax
comp=E,43nm,3.2s
YAK smax smax
comp=N,50nm,2.1s
YAK smax smax
comp=E,55nm,3.7s
YAK Yakutsk 23.26 345 *eP* **P 13 00 33.8 -1.9**
comp=E,34nm,0.7s
SEY Seymchan 23.71 12 P **P 13 00 39.7 -0.3**
comp=E,12nm,1.0s,baz=207,slow=8.4,SNR=19
BOD Bodaibo 25.34 324 *eP* **P 13 00 53.9 -0.9**
BOD pmax pmax
comp=Z,7.0nm,1.0s
ULN Ulaanbaatar 26.24 299*ceP* **P 13 01 01.4 -2.0**
ULN pmax pmax
comp=Z,5.0nm,1.2s
ULN Ulaanbaatar 26.24 299 *eP* **P 13 01 03.4 0.0**
comp=Z,3.0nm,0.5s
SONA1 Songino Array 26.68 299 *eP* **P 13 01 07.1 -0.2**
SONM Songino Array 26.68 299 P **P 13 01 07.3 0.0**
comp=Z,3.0nm,0.5s,baz=86,slow=8.5,SNR=11
SONM LR LR 13 12 06.0
comp=Z,98nm,18.4s,baz=60,slow=37
XAN Xi'an 27.07 268 P **P 13 01 12.4 +1.6**
XAN S S 13 06 02.8 +17
XAN pmax pmax
comp=Z,10.0nm,0.7s
XAN LR LR
comp=N,330nm,15.2s
XAN LR LR
comp=E,200nm,17.0s
XAN LR LR
comp=Z,180nm,14.6s
TLY Talaya 28.87 307 P **P 13 01 26.7 0.0**
comp=Z,2.7nm,0.6s,baz=131,slow=5.2,SNR=4.2
TLY LR LR 13 13 36.6
comp=Z,57nm,18.6s,baz=128,slow=38
TLY Talaya 28.87 307 *eP* **P 13 01 26.4 -0.3**
TLY pmax pmax
comp=Z,4.0nm,0.7s
TLY MLR MLR
comp=Z,42nm,13.0s
TLY Talaya 28.87 307 *eP* **P 13 01 26.9 +0.3**
comp=Z,6.9nm,1.0s
ZAK Zakamensk 28.93 304 *eP* **P 13 01 25.6 -1.8**
ZAK pmax pmax
comp=Z,6.0nm,1.1s
H11N2 WAKE ISLAND Hy 29.36 126 T T 13 32 17.8
baz=318,slow=75,SNR=645
H11N1 WAKE ISLAND Hy 29.37 126 T T 13 32 24.2
baz=318,slow=75,SNR=711
H11N3 WAKE ISLAND Hy 29.38 126 T T 13 32 17.6
baz=318,slow=75,SNR=705
MOY Mondy 30.50 306 *eP* **P 13 01 41.4 +0.2**
BILL Bilibino 30.97 17‖ *eP* **P 13 01 44.5 -0.5**
BILL *e* 13 02 51.7
BILL pmax pmax
comp=Z,1.0nm,1.0s
BILL MLR MLR
comp=Z,33nm,16.0s
GTA Gaotai 32.32 283 P **P 13 01 58.0 +0.6**
GTA pP sP 13 02 13.9 -0.9
GTA sP pP 13 02 23.8 +14
GTA S S 13 07 00.8 -7.3
GTA sS sS 13 07 30.6 +2.3
GTA SS **SnSn 13 08 53.5 -9.4**
GTA pmax pmax
comp=Z,4.0nm,1.0s
GTA pmax pmax
comp=Z,66nm,4.2s
GTA LR LR
comp=Z,130nm,14.7s
GTA LR LR
comp=Z,150nm,16.2s
GTA LR LR
comp=Z,120nm,18.8s
CD2 Chengdu 32.34 266 P P 13 02 01.3 +3.7
CD2 pmax pmax
comp=Z,1.0nm,0.5s
TIXI Tiksi 32.36 352*ceP* **P 13 01 56.4 -0.7**
TIXI pmax pmax
comp=Z,2.0nm,0.7s
TIXI Tiksi 32.36 352 *eP* **P 13 01 56.3 -0.8**
comp=Z,2.2nm,0.6s
KMI Kunming 36.06 258 P P 13 02 36.8 +6.8
KMI pP sP 13 02 50.0 +2.5
KMI sP pP 13 02 57.3 +15
KMI pmax pmax
comp=Z,10.0nm,1.2s
KMI LR LR
comp=Z,250nm,13.3s
KMI LR LR
comp=Z,110nm,13.9s
KMI LR LR
comp=Z,130nm,12.1s
WMQ Urumqi 40.05 294 P **P 13 03 04.3 +1.1**
WMQ pP sP 13 03 22.0 +1.1
WMQ sP pP 13 03 28.0 +12
WMQ PcP **PcP 13 05 10.5 +3.1**
WMQ pmax pmax
comp=Z,12nm,0.6s
WMQ pmax pmax
comp=Z,45nm,4.4s
ZALV Zalesovo Beam 40.35 310 P **P 13 03 05.1 -0.3**
comp=Z,5.6nm,0.4s,baz=86,slow=7.6,SNR=36
ZALV PcP **PcP 13 05 07.9 -0.1**
comp=Z,2.6nm,0.4s,baz=96,slow=3.2,SNR=7.5
ZALV LR LR 13 20 37.7
comp=Z,68nm,18.3s,baz=70,slow=37
CRAI Chiangrai 40.71 253 P **P 13 03 10.1 +1.2**
comp=Z,54nm,0.8s,comp=Z,8μm
NRIK Noril'sk 40.77 334 LR LR 13 20 56.1
comp=Z,92nm,20.2s,baz=121,slow=37
CMAI Chiengmai2 41.87 254 P **P 13 03 20.5 +1.9**
comp=Z,14nm,0.8s,comp=Z,4μm
LAMP Lampang 42.32 252 P **P 13 03 24.9 +2.8**
comp=Z,2.6nm,1.0s
CMMT Chiang Mai 42.64 253 P **P 13 03 24.9 +0.2**
comp=Z,7.4nm,0.9s
CHTO Chiang Mai 42.64 253 P **P 13 03 24.9 +0.2**
comp=Z,34nm,0.9s
CHTO Chiang Mai 42.64 253 *eP* **P 13 03 24.5 -0.2**
CHTO pmax pmax
comp=Z,3.0nm,0.7s
CHTO Chiang Mai 42.64 253 *eP* **P 13 03 24.5 -0.2**
comp=Z,3.4nm,0.7s
CMAR Chiang Mai Arr 42.87 253 P **P 13 03 26.7 +0.2**
comp=Z,1.2nm,0.4s,baz=43,slow=7.8,SNR=15
CMAR LR LR 13 23 02.3
comp=Z,33nm,18.1s,baz=70,slow=38
MK01 Makanchi Array 43.05 299 *eP* **P 13 03 27.3 -0.4**
MKAR Makanchi Array 43.05 300 P **P 13 03 27.4 -0.3**
comp=Z,3.1nm,0.4s,baz=80,slow=9.1,SNR=37
MKAR PcP **PcP 13 05 16.3 -0.8**
comp=Z,1.2nm,0.7s,baz=85,slow=3.2,SNR=3.2
MAKZ Makanchi 43.25 300 *eP* **P 13 03 29.1 -0.3**
MAKZ pmax pmax
comp=Z,10.0nm,1.0s
MAKZ Makanchi 43.25 300 *eP* **P 13 03 29.1 -0.3**
comp=Z,10nm,1.0s
SRAK Srakaew 43.60 245 P **P 13 03 29.4 -3.0**
comp=Z,78nm,0.8s,comp=Z,550nm
CAST Castle Rocks 44.43 36 *eP* **P 13 03 40.9 +2.4**
comp=Z,2.5nm,0.8s
KDAK Kodiak Island 44.50 44*ceP* **P 13 03 40.0 +0.9**
KURK Kurchatov 44.56 306 *eP* **P 13 03 39.3 -0.4**
KURK 13 05 22.0
KURK pmax pmax
comp=Z,12nm,0.6s
KURK Kurchatov 44.56 306 *eP* **P 13 03 39.3 -0.4**
comp=Z,12nm,0.6s
KURK PcP **PcP 13 05 21.9 -0.1**
KURBB Kurchatov Arra 44.63 306 PcP **PcP 13 05 21.9 -0.4**
comp=Z,2.4nm,0.7s,baz=85,slow=3.6,SNR=8.7
KTH Kantishna Hill 44.94 36 *eP* **P 13 03 44.8 +2.1**
comp=Z,13nm,1.4s
COLD Coldfoot 45.25 30 *eP* **P 13 03 47.1 +2.1**
comp=Z,2.2nm,0.7s
PDGK Podgornoye 45.92 296 P **P 13 03 50.5 0.0**
PDGK pmax pmax
comp=Z,10.0nm,0.6s
PHET Kaeng Krachan 46.05 246 P **P 13 03 52.9 +1.0**
comp=Z,17nm,0.7s,comp=Z,152nm
IL1 Eielson Array 46.65 34 *eP* **P 13 03 56.8 +0.7**
ILAR Eielson Array 46.65 34 P **P 13 03 56.7 +0.6**
comp=Z,1.6nm,0.7s,baz=268,slow=6.1,SNR=20
ILB Eielson Array 46.65 34 *eP* **P 13 03 57.1 +1.1**
GUN Gumba 47.48 273 *eP* **P 13 04 03.3 -0.1**
comp=Z,43nm,0.4s
KKN Kakani 48.00 273 *eP* **P 13 04 07.1 -0.2**
comp=Z,51nm,0.7s
PKIN Phulchoki 48.01 273 *eP* **P 13 04 06.6 -0.9**
comp=Z,15nm,0.6s
GKN Gorkha 48.38 274 *eP* **P 13 04 10.0 -0.2**
comp=Z,14nm,0.3s
TKM2 Tokmak 2 48.73 296 *eP* **P 13 04 13.1 +0.3**
TKM2 pmax pmax
comp=Z,11nm,0.6s
TKM2 Tokmak 2 48.73 296 *eP* **P 13 04 13.1 +0.3**
comp=Z,11nm,0.6s
BVAR Borovoye Array 48.99 311 P **P 13 04 14.1 -0.2**
comp=Z,2.8nm,0.4s,baz=70,slow=8.0,SNR=4.4
BVAR PcP **PcP 13 05 37.2 -0.5**
comp=Z,1.4nm,0.6s,baz=98,slow=2.9,SNR=3.5
BRVK Borovoye 49.04 311 *eP* **P 13 04 14.7 0.0**
BRVK pmax pmax
comp=Z,4.0nm,0.7s
BRVK Borovoye 49.04 311 *eP* **P 13 04 14.7 0.0**
comp=Z,4.1nm,0.7s
EGAK Eagle 49.09 33 *eP* **P 13 04 15.6 +0.7**
comp=Z,3.6nm,0.9s
OTUK Ortayu 49.15 304 P **P 13 04 14.3 -1.4**
OTUK pmax pmax
comp=Z,4.0nm,1.2s
KOLN Koldanda 49.29 274 *eP* **P 13 04 17.2 0.0**
comp=Z,16nm,0.5s
PYUN Piuthan 49.59 275 *eP* **P 13 04 19.5 0.0**
comp=Z,13nm,0.4s
AAK Ala-Archa 49.60 296 P **P 13 04 18.7 -0.6**
baz=129,slow=6.1
AAK Ala-Archa 49.60 296 *eP* **P 13 04 19.0 -0.3**
AAK pmax pmax
comp=Z,7.0nm,0.7s
AAK Ala-Archa 49.60 296 *eP* **P 13 04 18.9 -0.4**
comp=Z,5.1nm,0.9s
ZRNK Zerenda 49.81 311 *eP* **P 13 04 20.5 -0.1**
ZRNK Zerenda 49.81 311 *eP* **P 13 04 20.5 -0.1**
EKS2 Erkin-Say 50.08 297 *eP* **P 13 04 22.7 -0.2**
EKS2 pmax pmax
comp=Z,3.0nm,0.4s
EKS2 Erkin-Say 50.08 297 *eP* **P 13 04 22.7 -0.2**
comp=Z,3.1nm,0.4s
MNAS Manas 51.02 297 P **P 13 04 30.0 0.0**
MNAS pmax pmax
comp=Z,11nm,1.0s
SFK Sufi-Kurgan 51.29 294 P **P 13 04 31.0 -1.2**
SFK pmax pmax
comp=Z,10.0nm,0.8s
INK Inuvik 51.45 28 P **P 13 04 33.2 +0.6**
comp=Z,2.5nm,0.6s,baz=287,slow=4.8,SNR=6.9
INK Inuvik 51.45 28 *eP* **P 13 04 34.1 +1.4**
KKAR Karatay Array 52.13 298 *eP* **P 13 04 38.0 -0.2**
KKAR pmax pmax
comp=Z,3.0nm,0.6s
KKAR Karatay Array 52.13 298 *eP* **P 13 04 38.0 -0.2**
comp=Z,2.8nm,0.6s
SVE Sverdlovsk 53.27 317‖ *eP* **P 13 04 47.0 +0.6**
SVE pmax pmax
comp=Z,20nm,0.9s
ARU Arti 54.49 317 P **P 13 04 54.9 -0.4**
comp=Z,7.2nm,0.5s,baz=51,slow=1.8,SNR=14
ARU Arti 54.49 317*c iP* **P 13 04 55.0 -0.2**
ARU 13 05 58.3
ARU 13 06 57.6
ARU S **S 13 12 32.7 +2.0**
ARU SS **SS 13 16 17.2 +4.3**
ARU pmax pmax
comp=Z,13nm,0.8s
ARU Arti 54.49 317 *eP* **P 13 04 55.1 -0.1**
ABKAR Akbulak array 56.45 309 *eP* **P 13 05 08.8 -0.6**
comp=Z,5.3nm,0.6s
KBL Kabul 56.89 289 P **P 13 05 11.5 -1.6**
KBL pmax pmax
comp=Z,18nm,0.9s
AKTO Aktyubinsk 57.09 311 P **P 13 05 13.2 -0.8**
comp=Z,3.3nm,0.7s,baz=84,slow=12,SNR=7.9
RES Resolute Bay 59.53 15 *eP* **P 13 05 30.7 +0.1**
RES pmax pmax
comp=Z,4.0nm,0.9s
RES Resolute Bay 59.53 15 *eP* **P 13 05 30.7 +0.1**
comp=Z,4.2nm,0.9s
WRAB Tennant Creek 60.13 188 *eP* **P 13 05 34.8 -0.5**
WRAB pmax pmax
comp=Z,3.0nm,0.6s
WRAB Tennant Creek 60.13 188 *eP* **P 13 05 34.8 -0.5**
comp=Z,2.6nm,0.6s
WRA Warramunga Arr 60.14 188 P **P 13 05 34.5 -0.9**
comp=Z,2.5nm,0.6s,baz=6.3,slow=6.9,SNR=43
YKA Yellowknife Ar 60.92 31 P **P 13 05 40.3 0.0**
comp=Z,0.7nm,0.6s,baz=303,slow=6.4,SNR=20
ARCES ARCESS Array B 61.37 339 P **P 13 05 43.1 -0.1**
comp=Z,6.4nm,1.0s,baz=44,slow=5.7,SNR=14
GEYT Alibeck 62.88 298 *eP* **P 13 05 53.6 -0.4**
comp=Z,5.6nm,0.7s,baz=24,slow=3.9,SNR=9.1
ASAR Alice Springs 63.86 188 P **P 13 05 60.0 -0.4**
comp=Z,1.7nm,0.7s,baz=3.0,slow=6.8,SNR=24
ASAR Alice Springs 63.86 188 P **P 13 06 00.0 -0.4**
ASAR pmax pmax
comp=Z,2.0nm,0.7s
OBN Obninsk 66.02 323‖ *eP* **P 13 06 12.8 -1.2**
OBN *e* 13 08 43.2
OBN pmax pmax
comp=Z,8.0nm,0.5s
OBN MLR MLR
comp=Z,45nm,18.0s
FINES FINESS Array B 66.40 332 P **P 13 06 16.1 -0.3**
comp=Z,8.5nm,0.7s,baz=47,slow=8.4,SNR=28
SUMG Summit 67.66 0 *eP* **P 13 06 25.6 +0.9**
SUMG pmax pmax
comp=Z,5.0nm,0.6s
SUMG Summit 67.66 0 *eP* **P 13 06 25.6 +0.9**
comp=Z,4.6nm,0.6s
VSU Vasula 68.13 329*ceP* **P 13 06 27.7 +0.3**
VSU pmax pmax
comp=Z,13nm,1.0s
ZEI Tsey 69.32 309 *eP* **P 13 06 34.1 -1.3**
ZEI pmax pmax
comp=Z,15nm,0.8s
KVAR Kislovodsk Arr 69.35 310 P **P 13 06 36.1 +0.7**
comp=Z,12nm,0.7s,baz=149,slow=5.9,SNR=8.2
KIV Kislovodsk 69.36 310*d iP* **P 13 06 36.4 +0.9**
KIV *e* 13 09 06.5
KIV pmax pmax
comp=Z,31nm,1.0s
KIV MLR MLR
comp=Z,32nm,16.0s
KIV Kislovodsk 69.36 310 *eP* **P 13 06 36.5 +1.1**
comp=Z,39nm,1.1s
KBZ Khabaz 69.37 310 P **P 13 06 35.4 +0.1**
comp=Z,6.7nm,0.5s,baz=49,slow=4.4,SNR=17
NEY Neytrino 69.75 310 *eP* **P 13 06 38.1 +0.1**
NEY pmax pmax
comp=Z,2.0nm,0.9s
AKH Akhalkalaki 70.38 308‖ *iP* **P 13 06 43.3 +1.4**
AKH Akhalkalaki 70.38 308 P **P 13 06 43.3 +1.4**
FFC Flin Flon 70.86 34 *eP* **P 13 06 44.8 +0.4**
FFC pmax pmax
comp=Z,2.0nm,0.8s
FFC Flin Flon 70.86 34 *eP* **P 13 06 44.8 +0.4**
comp=Z,2.1nm,0.8s
FCC Fort Churchill 71.05 27 *eP* **P 13 06 45.8 +0.4**
FCC Fort Churchill 71.05 27 *eP* **P 13 06 45.8 +0.4**
comp=Z,0.5nm,0.3s
HFS Hagfors 71.56 336 P **P 13 06 48.3 -0.2**
comp=Z,3.9nm,0.4s,baz=38,slow=5.6,SNR=26
NB2 NORSAR Subarra 71.61 337 P **P 13 06 48.3 -0.5**
comp=Z,4.8nm,0.7s,baz=38,slow=6.2
NOA NORSAR Array B 71.61 337 P **P 13 06 48.7 -0.2**
comp=Z,5.9nm,0.8s,baz=39,slow=6.1,SNR=25
ANN Anapa 71.84 314 *eP* **P 13 06 49.8 -0.6**
ANN pmax pmax
comp=Z,27nm,1.1s
AKASG Malin Array Be 72.25 322 P **P 13 06 52.4 -0.4**
comp=Z,5.8nm,0.5s,baz=44,slow=6.0,SNR=26
KIEV Kiev 72.26 322 *eP* **P 13 06 52.6 -0.2**
KIEV pmax pmax
comp=Z,11nm,0.8s
KIEV Kiev 72.26 322 *eP* **P 13 06 52.2 -0.6**
comp=Z,9.8nm,0.8s
NVAR Mina Array Bea 72.74 54 P **P 13 06 58.0 +1.8**
comp=Z,0.3nm,0.5s,baz=324,slow=4.5,SNR=2.8
PDAR Pinedale Array 75.16 46 P **P 13 07 11.0 +0.7**
comp=Z,0.4nm,0.4s,baz=325,slow=1.1,SNR=7.7
KWP Kalwaria Pacla 76.00 324 *eP* **P 13 07 15.7 +1.0**
KWP Kalwaria Pacla 76.00 324‖ *iP* **P 13 07 15.4 +0.7**
KWP Kalwaria Pacla 76.00 324 *eP* **P 13 07 15.7 +1.0**
BURAR Bucovina Array 76.28 322‖ *iP* **P 13 07 16.8 +0.3**
TESR Tescani 76.37 320‖ *iP* **P 13 07 17.4 +0.6**
CFR Carcaliu 76.55 318‖ *iP* **P 13 07 17.9 +0.1**
CFR Carcaliu 76.55 318 P **P 13 07 17.9 +0.1**
VRI Vrincioaia 76.78 320‖ *iP* **P 13 07 20.3 +1.1**
VRI Vrincioaia 76.78 320 P **P 13 07 20.2 +1.1**
STHS Stebnicka Huta 76.81 325 *eP* **P 13 07 19.7 +0.4**
STHS pmax pmax
comp=Z,4.0nm,0.8s
STHS Stebnicka Huta 76.81 325 *eP* **P 13 07 19.7 +0.4**
PLOR Plostina 76.83 320‖ *iP* **P 13 07 20.1 +0.6**
PLOR Plostina 76.83 320 P **P 13 07 20.1 +0.6**
OJC Ojcow 76.84 326 *eP* **P 13 07 19.9 +0.5**
OJC Ojcow 76.84 326 *eP* **P 13 07 19.9 +0.5**
CRVS Cervenica-Dubn 77.09 324 *eP* **P 13 07 20.8 0.0**
CRVS Cervenica-Dubn 77.09 324 *eP* **P 13 07 20.8 0.0**
NIE Niedzica 77.22 325 *eP* **P 13 07 22.7 +1.1**
NIE Niedzica 77.22 325 *eP* **P 13 07 22.8 +1.1**
BRTR Keskin Array B 77.27 311 P **P 13 07 21.8 -0.4**
comp=Z,2.3nm,0.6s,baz=89,slow=3.1,SNR=7.0
BRTR Keskin Array B 77.27 311 *i* P **P 13 07 22.2 0.0**
BRTR pmax pmax
comp=Z,2.0nm,0.6s
ISR Istrita 77.40 319‖ *iP* **P 13 07 24.1 +1.4**
MLR Muntele Rosu 77.44 320‖ *iP* **P 13 07 24.0 +0.9**
MLR Muntele Rosu 77.44 320 P **P 13 07 23.9 +0.9**
MSAB Monastry St. A 77.47 318‖ *iP* **P 13 07 24.0 +1.0**
KSP Ksiaz 77.82 328 *eP* **P 13 07 25.8 +0.9**
KSP Ksiaz 77.82 328 *eP* **P 13 07 25.8 +0.9**
KECS Kecovo 77.83 325 *eP* **P 13 07 25.1 +0.1**
KECS pmax pmax
comp=Z,2.0nm,0.9s
KECS Kecovo 77.83 325 *eP* **P 13 07 25.1 +0.1**
VOIR 77.92 320‖ *iP* **P 13 07 26.9 +1.3**
DRGR 78.06 322‖ *iP* **P 13 07 27.0 +0.6**
MORC Moravsky Berou 78.13 327‖ *iP* **P 13 07 27.5 +0.8**
MORC Moravsky Berou 78.13 327 P **P 13 07 27.4 +0.8**
ARR Arges 78.17 320‖ *iP* **P 13 07 29.0 +2.0**
DPC Dobruska-Polom 78.19 328 *eP* **P 13 07 27.9 +0.9**
DPC *e*PCP **PcP 13 07 37.1 +0.7**
DPC Dobruska-Polom 78.19 328 *eP* **P 13 07 27.9 +0.9**
DPC *e* 13 07 37.1
PSZ Piszkesteto 78.52 325‖ *iP* **P 13 07 29.8 +0.9**
VYHS Vyhne 78.55 325 *eP* **P 13 07 29.1 +0.1**
VYHS Vyhne 78.55 325 *eP* **P 13 07 29.1 +0.1**
BRG Berggiesshubel 78.73 329 *eP* **P 13 07 29.9 0.0**
comp=Z,3.6nm,0.9s
BRG Berggiesshubel 78.73 329 *eP* **P 13 07 29.9 0.0**
BRG pmax pmax
comp=Z,4.0nm,0.9s
CLL Collm 78.75 330‖ *iP* **P 13 07 30.2 +0.2**
comp=Z,11nm,1.0s
CLL Collm 78.75 330‖ *iP* **P 13 07 30.2 +0.2**
CLL pmax pmax
comp=Z,11nm,1.0s
VRAC Vranov 78.88 327‖ *iP* P 13 07 22.2 -8.6
GOPC GO Pecny, Ondr 79.15 328 *eP* **P 13 07 32.8 +0.5**
PRU Pruhonice 79.19 329 *eP* **P 13 07 33.0 +0.6**
PRU Pruhonice 79.19 329 *eP* **P 13 07 33.0 +0.6**
MDVR Moldovita 80.01 321‖ *iP* **P 13 07 37.2 +0.1**
KHC Kasperske Hory 80.25 329 *eP* **P 13 07 38.8 +0.5**
KHC Kasperske Hory 80.25 329 *eP* **P 13 07 38.4 +0.1**
KHC pmax pmax
comp=Z,4.0nm,0.9s
KHC Kasperske Hory 80.25 329 *eP* **P 13 07 38.4 +0.1**
comp=Z,4.3nm,0.9s
GERES GERESS Array B 80.43 328 P **P 13 07 39.3 0.0**
comp=Z,2.1nm,0.4s,baz=35,slow=5.4,SNR=14
EKA Eskdalemuir Ar 80.46 341 P **P 13 07 37.7 -1.5**
comp=Z,0.5nm,0.3s,baz=25,slow=5.5,SNR=5.4
EKA Eskdalemuir Ar 80.46 341 P **P 13 07 37.7 -1.5**
EKA pmax pmax
comp=Z,2.0nm,0.5s
ESK Eskdalemuir 80.49 341 *eP* **P 13 07 38.6 -0.8**
ESK pmax pmax
comp=Z,6.0nm,0.9s
ESK Eskdalemuir 80.49 341 *eP* **P 13 07 38.5 -0.8**
comp=Z,5.8nm,0.9s
MMAI Mount Meron Ar 80.67 305 P **P 13 07 40.9 0.0**
comp=Z,1.2nm,0.4s,baz=350,slow=3.4,SNR=3.8
PERS Pernice 81.59 326 *i* P **P 13 07 45.7 +0.2**
SOKA Soboth 81.59 326 *i* P **P 13 07 45.9 +0.3**
comp=Z,7.1nm,0.5s
GOLS Golise 81.86 326 *i* P **P 13 07 46.8 -0.1**
OBKA Obir 81.93 326 *i* P **P 13 07 47.5 +0.2**
comp=Z,5.6nm,0.9s
KBA Koelnbreinsper 81.98 327 *i* P **P 13 07 48.4 +0.8**
comp=Z,1.1nm,0.0s
JAVS Javornik 82.62 326 *i* P **P 13 07 50.2 -0.8**
MOTA Moosalm 82.67 329 *i* PcP **P 13 07 52.9 +1.6**
comp=Z,2.9nm,0.2s
BFO Black Forest 82.93 331*ceP* **P 13 07 53.1 +0.7**
PDG Podgorica 82.96 321‖ *iP* **P 13 07 52.9 +0.3**
CDF Champ du Feu 83.25 332 *eP* **P 13 07 53.7 -0.5**
CDF pmax pmax
comp=Z,4.0nm,0.7s
DAVOX Davos/Dischmat 83.62 329 P **P 13 07 56.4 +0.2**
comp=Z,5.0nm,0.6s,baz=342,slow=6.4
IDI Anoyia 85.33 313 P **P 13 08 03.7 -1.2**
comp=Z,4.0nm,0.3s,baz=356,slow=4.1,SNR=10
LOR Lormes 85.44 333 *eP* **P 13 08 04.6 -0.6**
LOR pmax pmax
comp=Z,10.0nm,0.8s
PPT Papeete 85.50 117 LR LR 13 37 47.6
comp=Z,30nm,21.8s,baz=314,slow=30
LDF La Druitiere 85.61 336 *eP* **P 13 08 05.8 -0.1**
LDF pmax pmax
comp=Z,2.0nm,0.4s
SSF Saint Saulge 85.74 333 *eP* **P 13 08 06.2 -0.5**
SSF pmax pmax
comp=Z,6.0nm,0.8s
LPL La Plagne 85.89 330 *eP* **P 13 08 07.3 -0.4**
LPL pmax pmax
comp=Z,6.0nm,0.7s
MFF Saint Martin d 87.37 335 *eP* **P 13 08 14.6 0.0**
MFF pmax pmax
comp=Z,11nm,0.8s
TXAR Lajitas Array 87.84 53 P **P 13 08 16.8 -0.5**
comp=Z,0.4nm,0.8s,baz=303,slow=2.5,SNR=4.5
CAF Calviac 88.10 333 *eP* **P 13 08 19.3 +1.1**
CAF pmax pmax
comp=Z,3.0nm,0.7s
ESDC Sonseca Array 94.81 334 P **P 13 08 49.1 -0.4**
comp=Z,0.8nm,0.6s,baz=18,slow=3.4,SNR=4.2
TORD Torodi Ar. Bea 115.56 317 PKP **PKPdf 13 14 08.3 -1.7**
comp=Z,0.3nm,0.6s,baz=50,slow=2.0,SNR=4.0
SNAA Sanae 143.80 198 P PKPab 13 14 58.4 -0.2
LPAZ La Paz 144.62 57 PKP **PKPab 13 15 04.1 +0.2**
comp=Z,0.9nm,0.7s,baz=18,slow=3.2,SNR=4.3
VNA2 Neumayer--Watz 145.38 197 P **PKPdf 13 15 03.8 -0.3**
baz=129,slow=2.7
VNA3 Neumayer Olymp 145.63 196 P **PKPdf 13 15 04.0 -0.6**
VNA1 Neumayer--Stat 145.78 197 P **PKPab 13 15 09.9 +4.1**
LCO Las Campanas 150.95 78 *ePKPdf* **PKPdf 13 15 11.4 -3.5**
LCO *ePKPbc* **PKPbc 13 15 20.4 -0.3**
LCO *ePKPab* **PKPab 13 15 28.2 0.0**

ISCJB ***19*** *13:01:00.7±0.6,20.16S±0.03×69.00W±0.10,h120km±6km, mb3.6/3,Error ellipse: s-maj=14.2km s-min=5.5km az=3.1*
GUC ***19*** *13:01:01.2±0.6,20.14S×68.97W,h107km±3km,ML3.8*
IDC ***19*** *13:01:03.5±2.5,20.03S×68.51W,h140km±24km,mb3.3/4, mb1 3.4/5,mb1mx3.2/21,mbtmp3.8/5,Error ellipse: s-maj=47.0km s-min=22.2km az=101.0*

ISC 19 13:01:00.9±0.9,20.16S±0.04×68.97W±0.10,h116km±8km, n14,σ1§03/23,mb3.7/3,7C-2D,Chile-Bolivia border region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PB08	**IPOC Station P**	**0.17**	**275**	⇑*i* P	**Pn**	**13 01 17.2**	**-0.3**
PB08				*i* S	**Sn**	**13 01 29.2**	**-0.7**
PB08				AML	AML	13 01 30.0	
	comp=E,5μm,0.6s						
HMBC	**Humberstone**	**0.87**	**262**	⇑*i* P	**Pn**	**13 01 21.4**	**-0.1**
HMBC				*i* S	**Sn**	**13 01 37.2**	**+0.1**
HMBC				AML	AML	13 01 39.8	
	comp=E,1μm,0.3s						
PB01	**IPOC Station P**	**1.01**	**209**	⇑*i* P	**Pn**	**13 01 23.1**	**+0.3**
PB01				*e*S	**Sn**	**13 01 39.7**	**+0.4**
PB01				AML	AML	13 01 41.4	
	comp=E,3μm,0.2s						
MNMC	**Minye Minye**	**1.18**	**330**	⇓*i* P	**Pn**	**13 01 25.0**	**+0.3**
MNMC				*e*S	**Sn**	**13 01 42.7**	**-0.1**
MNMC				AML	AML	13 01 44.0	
	comp=N,4μm,0.4s						
PSGC	**Pisagua**	**1.22**	**297**	⇑*i* P	**Pn**	**13 01 25.0**	**0.0**
PSGC				*i* S	**Sn**	**13 01 42.9**	**-0.4**
PSGC				AML	AML	13 01 44.4	
	comp=E,2μm,0.4s						
PATCX	**Punta Patache**	**1.29**	**239**	⇑*i* P	**Pn**	**13 01 26.1**	**+0.3**
PATCX				*e*S	**Sn**	**13 01 45.1**	**+0.4**
PB09	**IPOC Station P**	**1.65**	**189**	⇑*i* P	**Pn**	**13 01 30.8**	**+0.7**
PB09				*e*S	**Sn**	**13 01 53.4**	**+1.1**
PB09				AML	AML	13 01 57.1	
	comp=N,2μm,0.3s						
PB13	**IPOC Station P**	**1.88**	**344**	⇓*i* P	**Pn**	**13 01 34.1**	**+0.8**
PB13				*i* S	**Sn**	**13 01 59.6**	**+1.7**
PB13				AML	AML	13 02 04.2	
	comp=N,2μm,0.5s						
PB06	**IPOC Station P**	**2.60**	**192**	⇑*i* P	**Pn**	**13 01 42.5**	**+0.5**
PB06				*i* S	**Sn**	**13 02 12.7**	**-0.9**
LPAZ	**La Paz**	**3.93**	**12**	P	**Pn**	**13 02 01.3**	**+1.3**
	comp=N,2.9nm,0.3s,baz=202,slow=5.0,SNR=77						
LPAZ				S	**Sn**	**13 02 45.2**	**-0.5**
	baz=209,slow=11,SNR=1.7						
PLCA	**Paso Flores**	**20.56**	**183**	P	**P**	**13 05 32.6**	**+2.3**
	comp=N,1.3nm,0.7s,baz=23,slow=11,SNR=4.8						
DBIC	**Dimbokro**	**68.41**	**74**	P	P	13 11 47.4	-3.3
	comp=N,1.1nm,0.4s,baz=216,slow=9.5,SNR=4.6						
TORD	**Torodi Ar. Bea**	**76.96**	**71**	P	**P**	**13 12 38.9**	**-2.4**
	comp=N,0.4nm,0.3s,baz=254,slow=5.2,SNR=16						
YKA	**Yellowknife Ar**	**89.91**	**341**	P	**P**	**13 13 46.2**	**-0.2**
	comp=N,0.1nm,0.6s,baz=131,slow=4.6,SNR=5.0						

NIED ***19*** *13:06:00,28.10N×128.10E,h5km,Mw4.3 Best double couple: M03.25000×1015 NP1:ϕs293.00000°,δ29.00000°, λ-18.00000°. NP2:ϕs39.00000°,δ81.00000°, λ-118.00000°.*
JMA ***19*** *13:06:08.7±0.2,28.08N×128.06E,h16km±2km,M4.0*
JMA Felt I J1.
IDC ***19*** *13:06:15.8±3.2,28.04N×127.91E,h69km±31km,mb3.4/9, mb1 3.6/12,mb1mx3.4/52,mbtmp3.8/12,ML3.1/3,MS3.4/7, Ms1 3.4/7,ms1mx3.1/26,Error ellipse: s-maj=27.6km s-min=15.8km az=72.0*

ISC 19 13:06:07.7±1.5,28.02N±0.05×128.03E±0.06,h6km±10km, n30,σ0§82/29,mb3.8/9,MS3.5/4,Ryukyu Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JOKE	**Okinoerabujima**	**0.81**	**143**	P	**Pb**	**13 06 24.7**	**+0.4**
JTK	**Tokunoshima**	**0.85**	**105**	P	**Pg**	**13 06 24.4**	**+0.4**
JTK				*e*S	**Sg**	**13 06 35.5**	**+0.5**
JIH	**Iheya**	**0.98**	**183**	P	**Pn**	**13 06 28.1**	**+0.1**
JIH				*e*S	**Sn**	**13 06 42.1**	**-0.1**
JAMN	**Amaminishikomi**	**1.04**	**77**	P	**Pg**	**13 06 27.2**	**-0.5**
JAMN				*e*S	**Sg**	**13 06 40.3**	**-0.8**
JOW	**Kunigami**	**1.20**	**169**	P	**Pn**	**13 06 31.6**	**+0.5**
JOW				*e*S	**Sn**	**13 06 48.7**	**+1.0**
JAM	**Amami Oshima**	**1.45**	**74**	P	**Pn**	**13 06 33.9**	**-0.6**
JAM				*e*S	**Sb**	**13 06 52.1**	**-1.7**
JNTH	**Nagotoyohara**	**1.49**	**180**	P	**Pg**	**13 06 36.2**	**-0.1**
JNTH				*e*S	**Sg**	**13 06 55.8**	**+0.1**
JAGN	**Aguni-jima**	**1.58**	**206**	P	**Pb**	**13 06 37.5**	**+0.1**
JZK	**Kikaishima**	**1.74**	**80**	P	**Pg**	**13 06 41.2**	**+0.1**
JJT2	**Tamagusuku 2**	**1.88**	**188**	P	**Pb**	**13 06 42.8**	**+0.2**
JKE	**Kume jima 2**	**2.01**	**214**	P	**Pg**	**13 06 46.0**	**-0.3**
JKC	**Kuchinoerabu**	**3.09**	**37**	P	**Pn**	**13 06 59.5**	**+2.4**
JYAK	**Yakushimahirau**	**3.10**	**44**	P	**Pn**	**13 06 57.9**	**+0.6**
JNU	**Nakatsue**	**5.65**	**25**	P	Pn	13 07 37.8	+5.4
	1.4nm,0.3s,baz=215,slow=12,SNR=9.9						
KSRS	**Korea Array**	**9.41**	**359**	P	Pn	13 08 27.4	+3.4
	0.1nm,0.3s,baz=180,slow=14,SNR=2.4						
KSRS				LR	LR	13 12 05.3	
	comp=Z,190nm,21.6s,baz=178,slow=37						
MJAR	**Matsushiro Arr**	**12.10**	**43**	LR	LR	13 14 23.1	
	comp=Z,95nm,19.3s,baz=245,slow=40						
USRK	**Ussuriysk Ar.**	**16.46**	**10**	P	**P**	**13 10 02.5**	**+0.5**
	0.1nm,0.3s,baz=192,slow=10,SNR=7.7						
USRK				LR	LR	13 16 13.0	
	comp=Z,86nm,21.1s,baz=165,slow=36						
SONM	**Songino Array**	**25.97**	**325**	P	**P**	**13 11 41.9**	**+0.6**
	2.0nm,0.9s,baz=133,slow=9.8,SNR=2.7						
TLY	**Talaya**	**29.89**	**329**	LR	LR	13 24 54.7	
	comp=Z,58nm,21.7s,baz=129,slow=38						
YAK	**Yakutsk**	**34.03**	**1**	LR		13 26 40.3	
	comp=Z,61nm,19.6s,baz=190,slow=36						
MKAR	**Makanchi Array**	**40.23**	**310**	P	**P**	**13 13 43.7**	**-1.6**
	0.4nm,0.5s,baz=97,slow=9.7,SNR=5.2						
KURBB	**Kurchatov Arra**	**43.45**	**315**	P	**P**	**13 14 10.7**	**-0.8**
	1.0nm,0.6s,baz=102,slow=8.3,SNR=5.5						
NRIK	**Noril'sk**	**47.51**	**342**	LR	LR	13 36 04.8	
	comp=Z,73nm,19.1s,baz=114,slow=38						
WRA	**Warramunga Arr**	**48.06**	**172**	P	**P**	**13 14 48.7**	**+0.4**
	1.7nm,0.8s,baz=353,slow=8.4,SNR=10						
BVAR	**Borovoye Array**	**48.84**	**317**	P	**P**	**13 14 53.9**	**+0.1**
	0.4nm,0.6s,baz=66,slow=7.1,SNR=3.5						
ASAR	**Alice Springs**	**51.69**	**173**	P	**P**	**13 15 16.1**	**+0.3**
	1.0nm,0.8s,baz=7.0,slow=8.4,SNR=3.8						
STKA	**Stephens Creek**	**60.95**	**167**	P	**P**	**13 16 21.7**	**0.0**
	2.6nm,1.1s,baz=350,slow=8.2,SNR=3.2						
ILAR	**Eielson Array**	**62.96**	**29**	P	**P**	**13 16 34.9**	**0.0**
	0.3nm,0.8s,baz=286,slow=6.5,SNR=3.7						
ARCES	**ARCESS Array B**	**68.29**	**338**	LR	LR	13 51 34.9	
	comp=Z,42nm,18.6s,baz=51,slow=40						
YKA	**Yellowknife Ar**	**76.99**	**25**	P	**P**	**13 18 00.7**	**-0.5**
	0.4nm,0.8s,baz=299,slow=5.6,SNR=10.0						

ISCJB ***19*** *13:15:51.0±0.9,49.82N±0.05×78.67E±0.09,h0km,Error ellipse: s-maj=8.1km s-min=7.1km az=3.2*
NNC ***19*** *13:15:53.7±2.0,49.95N×78.88E,h0km,mb3.5,mpv3.2, Error ellipse: s-maj=29.9km s-min=10.3km az=78.0, Suspected Mining explosion.*
IDC ***19*** *13:15:57.3±0.8,50.09N×78.88E,h0km,mb1 2.8/3, mb1mx2.8/42,mbtmp2.8/3,ML2.6/3,Error ellipse: s-maj=11.0km s-min=6.0km az=56.0*

ISC 19 13:15:57.0±1.0,50.03N±0.06×78.77E±0.06,h0km,n11, σ0§95/10,5C-3D,Eastern Kazakhstan

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
KURBB	**Kurchatov Arra**	**0.61**	**346**	Pg	**Pg**	**13 16 08.2**	**-0.5**
	2.7nm,0.3s,baz=164,slow=19,SNR=48						
KURBB				Lg	Lg	13 16 16.8	
	5.9nm,0.3s,baz=159,slow=36,SNR=39						
KURK	**Kurchatov**	**0.69**	**352**	⇑P	**Pg**	**13 16 09.3**	**-1.0**
	40nm,0.5s						
KURK				⇑S	**Sg**	**13 16 19.8**	**+0.6**
	125nm,0.6s						
MKAR	**Makanchi Array**	**4.00**	**143**	Pn	**Pn**	**13 17 00.1**	**+0.5**
	0.3nm,0.3s,baz=327,slow=11,SNR=25						
MKAR				Pg	**Pb**	**13 17 07.8**	**-0.6**
	0.8nm,0.3s,baz=327,slow=23,SNR=22						
MKAR				Lg	Lg	13 18 01.1	
	4.9nm,0.3s,baz=326,slow=33,SNR=20						
MK09	**Makanchi Array**	**4.01**	**143**	⇓Pg	Pn	13 17 03.9	+4.2
	2.5nm,0.6s						
MK09				⇑Lg	Lg	13 17 56.5	
	8.8nm,0.5s						
OTUK	**Ortayu**	**4.58**	**249**	⇓Pg	**Pb**	**13 17 19.1**	**+0.8**
	0.9nm,0.3s						
OTUK				⇓Lg	Lg	13 18 20.3	
	9.8nm,0.7s						
I46RU	**ZALESOVO INFRA**	**5.42**	**41**	*i*		13 48 20.0	
	baz=224,slow=324,SNR=1.3						
ZALV	**Zalesovo Beam**	**5.42**	**41**	Pn	**Pn**	**13 17 19.6**	**+0.5**
	0.9nm,0.3s,baz=230,slow=13,SNR=9.9						
ZALV				Sn	**Sn**	**13 18 22.8**	**+0.8**
	0.5nm,0.3s,baz=224,slow=24,SNR=3.5						
ZALV				Lg	Lg	13 18 43.1	
	0.3nm,0.3s,baz=221,slow=28,SNR=2.6						
BVA0	**Borovoye Array**	**6.03**	**303**	⇑Lg	Lg	13 19 10.7	
	2.7nm,0.6s,baz=123,slow=25,SNR=5.6						
BVAR	**Borovoye Array**	**6.03**	**303**	Pn	**Pn**	**13 17 27.7**	**+0.4**
	0.2nm,0.3s,baz=112,slow=14,SNR=3.5						
BVAR				Sn	**Sn**	**13 18 35.5**	**-1.5**
	0.6nm,0.3s,baz=113,slow=25,SNR=5.6						
BVAR				Lg	Lg	13 19 07.7	
	0.7nm,0.3s,baz=118,slow=25,SNR=3.9						
BRVK	**Borovoye**	**6.10**	**303**	⇑Lg	Lg	13 19 09.3	
	4.8nm,0.6s						
AAK	**Ala-Archa**	**7.97**	**203**	Lg	Lg	13 20 03.0	
	0.2nm,0.3s,baz=288,slow=20,SNR=2.7						

NIED ***19*** *13:19:00,28.10N×128.00E,h5km,Mw4.1 Best double couple: M01.44000×1015 NP1:ϕs302.00000°,δ53.00000°, λ-28.00000°. NP2:ϕs50.00000°,δ68.00000°, λ-140.00000°.*
JMA ***19*** *13:19:40.4±0.3,28.11N×128.04E,h12km±4km,M3.6*
ISCJB ***19*** *13:19:44.3±0.5,27.96N±0.04×128.17E±0.05,h33km, mb3.5/6,MS2.9/4,Error ellipse: s-maj=6.8km s-min=4.6km az=35.1*
IDC ***19*** *13:19:50.3±4.3,28.04N×128.23E,h82km±44km,mb3.3/6, mb1 3.6/8,mb1mx3.3/39,mbtmp3.7/8,ML3.0/2,MS3.0/7, Ms1 3.0/7,ms1mx2.8/35,Error ellipse: s-maj=37.0km s-min=20.0km az=72.0*

ISC 19 13:19:45.5±0.8,27.88N±0.05×128.27E±0.06,h35km,n24, σ1§58/23,mb3.5/6,MS3.0/4,Ryukyu Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JOKE	**Okinoerabujima**	**0.58**	**153**	P	**Pn**	**13 19 57.2**	**-0.1**
JTK	**Tokunoshima**	**0.61**	**99**	P	**Pn**	**13 19 56.6**	**-1.0**
JTK				*e*S	**Sn**	**13 20 08.3**	**+2.1**
JAMN	**Amaminishikomi**	**0.88**	**65**	P	**Pn**	**13 19 59.4**	**-1.9**
JAMN				*e*S	**Sn**	**13 20 13.2**	**+0.4**
JIH	**Iheya**	**0.88**	**198**	P	**Pn**	**13 20 00.2**	**-1.2**
JIH				*e*S	**Sn**	**13 20 14.6**	**+1.6**
JOW	**Kunigami**	**1.04**	**180**	P	**Pn**	**13 20 03.7**	**+0.1**
JAM	**Amami Oshima**	**1.29**	**65**	P	**Pn**	**13 20 06.2**	**-0.8**
JAM				*e*S	**Sn**	**13 20 24.4**	**+1.3**
JNTH	**Nagotoyohara**	**1.37**	**189**	P	**Pn**	**13 20 08.5**	**+0.3**
JZK	**Kikaishima**	**1.56**	**73**	P	**Pn**	**13 20 13.7**	**+2.9**
JJT2	**Tamagusuku 2**	**1.79**	**195**	P	**Pn**	**13 20 15.3**	**+1.4**
JKE	**Kume jima 2**	**2.04**	**221**	P	**Pn**	**13 20 18.4**	**+1.1**
JNU	**Nakatsue**	**5.69**	**23**	P	**Pn**	**13 21 10.4**	**+2.9**
	0.8nm,0.3s,baz=173,slow=7.1,SNR=7.6						
JNU				S	**Sn**	**13 22 13.6**	**+1.9**
	baz=85,slow=18,SNR=6.0						
JNU				LR	LR	13 23 23.6	
	comp=Z,144nm,18.7s,baz=268,slow=38						
KSRS	**Korea Array**	**9.55**	**358**	LR		13 25 26.7	
	comp=Z,133nm,19.1s,baz=173,slow=36						
MJAR	**Matsushiro Arr**	**12.05**	**42**	LR		13 26 59.8	
	comp=Z,50nm,19.8s,baz=220,slow=36						
USRK	**Ussuriysk Ar.**	**16.56**	**9**	P	**P**	**13 23 35.7**	**-1.5**
	0.2nm,0.3s,baz=185,slow=13,SNR=4.9						
SONM	**Songino Array**	**26.21**	**325**	P	**P**	**13 25 16.1**	**-1.0**
	1.6nm,1.1s,baz=138,slow=9.4,SNR=3.0						
CMAR	**Chiang Mai Arr**	**28.49**	**257**	LR	LR	13 37 46.6	
	comp=Z,19nm,20.1s,baz=85,slow=38						
TLY	**Talaya**	**30.12**	**329**	LR	LR	13 38 15.5	
	comp=Z,45nm,19.3s,baz=124,slow=37						
PETK	**Petropavlovsk-**	**33.28**	**33**	LR	LR	13 42 18.3	
	comp=Z,23nm,19.2s,baz=263,slow=41						
MKAR	**Makanchi Array**	**40.48**	**310**	P	**P**	**13 27 19.2**	**-1.6**
	0.6nm,0.7s,baz=106,slow=9.3,SNR=6.9						
ZALV	**Zalesovo Beam**	**40.97**	**322**	P	**P**	**13 27 24.1**	**-0.6**
	0.3nm,0.4s,baz=114,slow=9.7,SNR=3.0						
AAK	**Ala-Archa**	**45.58**	**304**	LR	LR	13 49 07.5	
	comp=Z,17nm,19.2s,baz=42,slow=39						
WRA	**Warramunga Arr**	**47.90**	**172**	P	**P**	**13 28 21.5**	**+1.1**
	0.7nm,0.6s,baz=354,slow=8.1,SNR=5.9						
ASAR	**Alice Springs**	**51.53**	**173**	P	**P**	**13 28 49.2**	**+1.2**
	1.0nm,0.9s,baz=0.0,slow=5.8,SNR=3.6						
YKA	**Yellowknife Ar**	**77.02**	**25**	P	**P**	**13 31 33.2**	**-1.3**
	0.3nm,0.8s,baz=299,slow=5.7,SNR=4.1						

IDC ***19*** *13:21:07.5±2.2,36.17N×142.07E,h0km,mb3.6/3, mb1 3.8/4,mb1mx3.4/37,mbtmp3.6/4,ML3.6/1,Error ellipse: s-maj=55.6km s-min=28.0km az=53.0*
ISCJB ***19*** *13:21:09.2±1.2,36.16N±0.07×142.02E±0.09,h23km, mb3.6/3,Error ellipse: s-maj=10.4km s-min=9.5km az=167.6*
JMA ***19*** *13:21:10.8±0.2,36.23N×141.96E,h54km,M3.4*

ISC 19 13:21:11.9±1.6,36.17N±0.08×141.8E±0.1,h23km,n12, σ1§16/16,mb3.6/3,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CHOJ	**Chosi**	**0.90**	**239**	P	**Pn**	**13 21 29.4**	**+0.3**
CHOJ				S	**Sn**	**13 21 43.1**	**+1.6**
JHO	**Hitachi**	**1.09**	**294**	P	**Pn**	**13 21 30.9**	**-0.9**
BSO3	**Boso 3**	**1.73**	**218**	P	**Pn**	**13 21 40.8**	**+0.5**
JAG	**Ashikaga**	**1.92**	**278**	P	**Pn**	**13 21 43.7**	**+0.5**
JAG				*e*S	**Sn**	**13 22 07.7**	**+1.1**
JKT	**Katashina**	**2.15**	**287**	P	**Pn**	**13 21 47.1**	**+0.7**
JRY	**Ryogami san**	**2.36**	**267**	P	**Pn**	**13 21 49.5**	**+0.2**
MJAR	**Matsushiro Arr**	**2.93**	**278**	Pn	**Pn**	**13 21 58.4**	**+1.4**
	6.7nm,0.3s,baz=104,slow=8.8,SNR=86						
MJAR				Sn	**Sb**	**13 22 36.4**	**-2.4**
	2.0nm,0.3s,baz=79,slow=16,SNR=4.3						
MAT	**Matsushiro**	**2.93**	**278**	P	**Pn**	**13 21 58.4**	**+1.3**
MAT				*e*S	**Sn**	**13 22 32.2**	**+0.6**
JHJ	**Hachijo jima 2**	**3.47**	**209**	Sn	**Sn**	**13 22 44.3**	**-0.6**
	18nm,0.3s,baz=239,slow=23,SNR=4.0						
ZALV	**Zalesovo Beam**	**42.73**	**313**	P	**P**	**13 29 08.1**	**+1.0**
	0.7nm,0.6s,baz=86,slow=6.1,SNR=3.7						
MKAR	**Makanchi Array**	**44.85**	**303**	P	**P**	**13 29 23.7**	**-0.5**
	0.7nm,0.6s,baz=78,slow=9.4,SNR=7.6						
WRA	**Warramunga Arr**	**56.25**	**188**	P	**P**	**13 30 49.8**	**-0.6**
	0.5nm,0.8s,baz=5.6,slow=7.3,SNR=3.0						

ISCJB ***19*** *13:23:10.2±1.0,4.33N±0.04×73.71W±0.05,h6km±6km, mb3.3/2,Error ellipse: s-maj=8.0km s-min=6.1km az=171.2*
IDC ***19*** *13:23:11.7±6.1,4.26N×73.85W,h19km±37km,mb3.3/2, mb1 3.7/3,mb1mx3.3/27,mbtmp3.7/3,ML3.0/1,Error ellipse: s-maj=33.6km s-min=25.4km az=42.0*
RSNC ***19*** *13:23:11.1±1.1,4.37N×73.67W,h4km±9km,ML3.5*

ISC 19 13:23:10.0±1.7,4.31N±0.04×73.79W±0.06,h0km±12km, n11,σ0§84/18,Colombia

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CHIC	**Chingaza**	**0.32**	**10**	*i* P	**Pg**	**13 23 16.5**	**+0.3**
CHIC				*e*S	**Sg**	**13 23 20.2**	**-0.2**
CHIC				*i*		13 23 22.7	
	comp=Z,7μm,0.2s						
ROSC	**El Rosal**	**0.75**	**315**	Pg	**Pb**	**13 23 26.0**	**-0.1**
	comp=Z,134nm,0.3s,baz=144,slow=19,SNR=240						
ROSC				Lg	Lg	13 23 37.2	
	comp=Z,140nm,0.3s,baz=163,slow=19,SNR=14						
ROSC	**El Rosal**	**0.75**	**315**	*i* P	**Pb**	**13 23 26.0**	**-0.1**
ROSC				*e*S	**Sb**	**13 23 36.7**	**-0.4**
ROSC				*i*		13 23 43.3	
	comp=Z,592nm,0.5s						
SJAC	**San Juan de Ar**	**1.04**	**189**	*e*P	**Pb**	**13 23 30.8**	**-0.3**
SJAC				*e*S	**Sb**	**13 23 45.4**	**+0.1**
SJAC				*i*		13 23 51.3	
	comp=Z,3μm,0.4s						
NORC	**Norcasia**	**1.65**	**319**	*i* P	**Pn**	**13 23 40.5**	**+0.3**
NORC				*e*S	**Sn**	**13 24 01.9**	**-0.2**
NORC				*i*		13 24 04.0	
	comp=Z,71nm,0.6s						
GUYC	**Guyana, Colomb**	**1.84**	**300**	*e*P	**Pn**	**13 23 44.0**	**+0.7**
GUYC				*e*S	**Sb**	**13 24 08.2**	**-0.3**
GUYC				*i*		13 24 13.1	
	comp=Z,590nm,0.4s						
HELC	**Santa Helena**	**2.55**	**317**	*e*P	**Pn**	**13 23 53.8**	**+0.9**
HELC				*e*S	**Sn**	**13 24 25.5**	**+0.7**
SDV	**Santo Domingo**	**5.52**	**34**	Pn	**Pn**	**13 24 33.6**	**-0.1**
	comp=Z,4.8nm,0.3s,baz=212,slow=19,SNR=2.4						
SDV				Sn	**Sn**	**13 25 39.4**	**+1.4**
	comp=Z,6.6nm,0.3s,baz=270,slow=20,SNR=3.4						
YKA	**Yellowknife Ar**	**65.39**	**340**	P	**P**	**13 33 52.3**	**-1.8**
	comp=Z,0.2nm,0.5s,baz=136,slow=6.5,SNR=8.2						
TORD	**Torodi Ar. Bea**	**74.91**	**78**	P	**P**	**13 34 53.3**	**-0.2**
	comp=Z,0.3nm,0.8s,baz=273,slow=6.3,SNR=2.5						
WRA	**Warramunga Arr**	**148.50**	**238**	PKPbc	**PKPdf**	**13 42 57.7**	**+1.5**
	comp=Z,0.6nm,0.7s,baz=112,slow=2.6,SNR=3.2						

ISK ***19*** *13:23:50.7,39.82N×33.54E,h22km, MD2.8*
CSEM ***19*** *13:23:51.9±0.3,39.82N×33.52E,h2km, MD2.7,Error ellipse: s-maj=6.6km s-min=5.1km az=127.0*
DDA ***19*** *13:23:52.5,39.78N×33.44E,h7km,Md2.7*

ISC 19 13:23:52.5±1.4,39.81N±0.03×33.48E±0.03,h5km±13km, n19,σ0§98/32,Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
BBAL	**Bala**	**0.39**	**226**	*i* P	**Pg**	**13 23 59.3**	**-0.6**
BBAL				*i* S	**Sb**	**13 24 07.3**	**-0.8**
BBAL	**Bala**	**0.39**	**226**	P	**Pg**	**13 23 59.3**	**-0.6**
BBAL				S	**Sb**	**13 24 07.3**	**-0.8**
AFSR	**Af˙ar-Bala (A**	**0.48**	**221**	*e*PG	**Pg**	**13 24 01.4**	**-0.4**
AFSR				*e*SG	**Sb**	**13 24 09.9**	**-1.0**
AFSR	**Af˙ar-Bala (A**	**0.48**	**221**	*e*Pg	**Pg**	**13 24 01.4**	**-0.4**
AFSR				*e*Sg	**Sb**	**13 24 09.9**	**-1.0**
LOD	**Lodumlu**	**0.56**	**278**	*e*PG	**Pg**	**13 24 03.0**	**-0.2**
LOD				*e*SG	**Sb**	**13 24 12.4**	**-0.6**
LOD	**Lodumlu**	**0.56**	**278**	*e*Pg	**Pg**	**13 24 03.0**	**-0.2**
LOD				*e*Sg	**Sb**	**13 24 12.5**	**-0.6**
CDAG	**Cicekdag**	**0.71**	**105**	*i* P	**Pg**	**13 24 04.7**	**-1.4**
CDAG				*i* S	**Sb**	**13 24 16.6**	**-0.9**
CDAG	**Cicekdag**	**0.71**	**105**	P	**Pg**	**13 24 04.7**	**-1.4**
KKUL	**Konya-Kulu**	**0.77**	**215**	*i* P	**Pg**	**13 24 07.1**	**-0.2**
KKUL				*i* S	**Sb**	**13 24 18.5**	**-0.8**
KKUL	**Konya-Kulu**	**0.77**	**215**	P	**Pg**	**13 24 07.1**	**-0.2**
KKUL				S	**Sb**	**13 24 18.5**	**-0.8**
CANT	**Cankiri**	**0.80**	**7**	*e*PG	**Pg**	**13 24 06.8**	**-1.0**
SERE	**Sereflikochisa**	**0.86**	**176**	*e*PG	**Pg**	**13 24 08.2**	**-0.9**
SERE	**Sereflikochisa**	**0.86**	**176**	*e*Pg	**Pg**	**13 24 08.2**	**-0.9**
ILGA	**Ilgaz**	**1.25**	**8**	*i* P	**Pn**	**13 24 16.6**	**-0.2**
ILGA				*i* S	**Sn**	**13 24 36.2**	**+2.0**
ILGA	**Ilgaz**	**1.25**	**8**	P	**Pn**	**13 24 16.6**	**-0.2**
AVNS	**Nevsehir-Avano**	**1.46**	**133**	*i* P	**Pg**	**13 24 20.6**	**+0.2**
AVNS				*i* S	**Sg**	**13 24 42.2**	**+2.9**
AVNS	**Nevsehir-Avano**	**1.46**	**133**	P	**Pg**	**13 24 20.6**	**+0.2**
KDHN	**Kadinhani**	**1.67**	**220**	*i* P	**Pn**	**13 24 21.7**	**-0.7**
KDHN				*i* S	**Sb**	**13 24 44.8**	**-0.2**
KDHN	**Kadinhani**	**1.67**	**220**	P	**Pn**	**13 24 21.7**	**-0.7**
KDHN				S	**Sb**	**13 24 44.8**	**-0.2**

IDC ***19*** *13:35:48.4±1.2,3.06N×126.82E,h0km,mb3.8/7, mb1 3.9/7,mb1mx3.6/48,mbtmp3.8/7,MS3.2/2,Ms1 3.2/2, ms1mx2.4/51,Error ellipse: s-maj=101.4km s-min=16.5km az=68.0*
DJA ***19*** *13:35:51.9±0.8,3°N±9°×12°7E±°,h10km,M3.9/6,mB4.7/1, mb4.1/5,MLv3.9/6,Mw(mB)4.0/1*
ISCJB ***19*** *13:35:52.2±0.6,3.25N±0.06×127.07E±0.09,h44km, mb3.9/9,MS3.2/2,Error ellipse: s-maj=13.7km s-min=6.8km az=151.3*
NEIC ***19*** *13:35:53.1±0.7,3.20N×127.10E,h35km,mb4.3/2,Error ellipse: s-maj=24.0km s-min=9.7km az=65.0*

ISC 19 13:35:54.2±0.9,3.22N±0.09×127.0E±0.1,h44km,n24, σ1§41/21,mb4.0/9,Talaud Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SGSI	**Sangihe**	**1.50**	**288**	P	**Pn**	**13 36 19.3**	**+0.6**
SGSI				S	**Sn**	**13 36 34.3**	**-2.9**
TNTI	**Ternate**	**2.47**	**171**	P	**Pn**	**13 36 33.0**	**+1.0**
TNTI				S	**Sn**	**13 36 59.3**	**-1.6**
TNTI	**Ternate**	**2.47**	**171**	*e*P	**Pn**	**13 36 32.5**	**+0.5**
LBMI	**Labuha**	**3.87**	**172**	P	**Pn**	**13 36 53.4**	**+2.1**
SANI	**Sanana**	**5.33**	**191**	P	**Pn**	**13 37 12.6**	**+1.3**
	7.8nm,0.9s,0.0nm						
MRSI	**Marisa**	**5.71**	**242**	P	**Pn**	**13 37 18.5**	**+1.9**
	28nm,0.9s,0.1nm						
SWI	**Sorong**	**5.91

DMN				*e*Sn	**Sn**	13 42 53.6	**-2.1**
	comp=E,81nm,0.8s						
CMAR	**Chiang Mai Arr**	**7.89**	**130**	Pn	**Pn**	13 41 27.5	**-1.9**
	comp=E,0.4nm,0.3s,baz=309,slow=13,SNR=16						
GKN	**Gorkha**	**8.36**	**302**	*e*Pn	**Pn**	13 41 36.7	**+0.8**
GKN				*e*Sn	**Sn**	13 43 07.3	**-1.9**
	comp=E,47nm,0.4s						
KOLN	**Koldanda**	**9.07**	**298**	*e*Pn	**Pn**	13 41 45.9	**+0.1**
KOLN				*e*Sn	**Sn**	13 43 25.1	**-1.8**
	comp=E,72nm,0.7s						
PYUN	**Piuthan**	**9.70**	**299**	*e*Pn	**Pn**	13 41 54.2	**-0.2**
PYUN				*e*Sn	**Sn**	13 43 39.6	**-2.7**
	comp=E,46nm,0.7s						
DGPR	**DIGLIPUR**	**10.49**	**178**	*e*P	**Pn**	13 42 03.9	**-1.2**
DGPR				*ex*	x	13 44 14.9	
DGPR				IAML		13 44 25.3	
	comp=E,26nm,0.1s						
DGPR				IAML		13 44 25.4	
	comp=N,16nm,0.0s						
BHPL	**Bhopal**	**13.96**	**271**	*e*P	**Pn**	13 42 52.4	**-0.1**
BHPL				*e*S	Sn	13 45 19.9	-6.3
TKM2	**Tokmak 2**	**23.77**	**328**	*e*P	**P**	13 44 48.2	**+1.6**
	comp=N,2.8nm,0.6s						
AAK	**Ala-Archa**	**24.11**	**326**	P	**P**	13 44 50.8	**+1.1**
	comp=N,1.4nm,0.7s,baz=119,slow=9.6,SNR=4.5						
MKAR	**Makanchi Array**	**24.47**	**343**	P	**P**	13 44 52.8	**0.0**
	comp=N,0.7nm,0.3s,baz=161,slow=11,SNR=24						
MKAR				LR	LR	13 54 57.8	
	comp=N,23nm,18.6s,baz=318,slow=38						
EKS2	**Erkin-Say**	**24.50**	**325**	*e*P	**P**	13 44 54.5	**+1.3**
	comp=N,3.8nm,0.8s						
SONM	**Songino Array**	**26.45**	**21**	P	**P**	13 45 10.0	**-0.8**
	comp=N,1.0nm,0.7s,baz=204,slow=6.3,SNR=3.0						
KURBB	**Kurchatov Arra**	**29.00**	**341**	P	**P**	13 45 33.2	**-0.2**
	comp=N,1.3nm,0.8s,baz=158,slow=8.7,SNR=6.8						
KURK	**Kurchatov**	**29.06**	**342**	P	**P**	13 45 33.2	**-0.7**
ZALV	**Zalesovo Beam**	**30.75**	**351**	P	**P**	13 45 48.8	**-0.1**
	comp=N,2.3nm,0.6s,baz=168,slow=8.0,SNR=13						
BVAR	**Borovoye Array**	**33.77**	**336**	P	**P**	13 46 15.1	**-0.3**
	comp=N,0.7nm,0.4s,baz=134,slow=8.7,SNR=5.9						
ABKAR	**Akbulak array**	**36.13**	**323**	*e*P	**P**	13 46 36.9	**+1.1**
	comp=N,1.8nm,0.7s						
AKTO	**Aktyubinsk**	**37.82**	**324**	P	**P**	13 46 50.6	**+0.5**
	comp=N,1.6nm,0.7s,baz=129,slow=7.2,SNR=6.0						
FINES	**FINESS Array B**	**58.26**	**329**	P	**P**	13 49 28.0	**+0.2**
	comp=N,1.8nm,0.7s,baz=96,slow=8.5,SNR=4.8						
WRA	**Warramunga Arr**	**59.47**	**133**	P	**P**	13 49 35.5	**-1.3**
	comp=N,1.4nm,0.8s,baz=323,slow=7.4,SNR=18						
WRAB	**Tennant Creek**	**59.48**	**133**	*e*P	**P**	13 49 35.8	**-1.0**
	comp=N,3.5nm,1.0s						
ARCES	**ARCESS Array B**	**60.01**	**338**	P	**P**	13 49 40.2	**+0.3**
	comp=N,4.0nm,0.9s,baz=93,slow=7.5,SNR=3.7						
ASAR	**Alice Springs**	**61.85**	**137**	P	**P**	13 49 52.3	**-0.7**
	comp=N,2.1nm,0.6s,baz=320,slow=6.9,SNR=43						
GERES	**GERESS Array B**	**65.37**	**315**	P	**P**	13 50 16.9	**+0.8**
	comp=N,1.3nm,0.5s,baz=64,slow=6.1,SNR=11						
NB2	**NORSAR Subarra**	**65.41**	**328**	P	**P**	13 50 15.7	**-0.3**
	comp=Z,0.7nm,0.6s,baz=84,slow=6.5						
NOA	**NORSAR Array B**	**65.41**	**328**	P	**P**	13 50 15.9	**-0.1**
	comp=Z,1.2nm,0.7s,baz=86,slow=6.6,SNR=4.9						
BPAW	**Bear Paw Mtn.**	**79.60**	**24**	*e*P	**P**	13 51 40.3	**-0.1**
ILAR	**Eielson Array**	**80.67**	**22**	P	**P**	13 51 44.5	**-1.6**
	comp=Z,0.4nm,0.6s,baz=302,slow=4.2,SNR=5.7						
LBTB	**Lobatse**	**81.00**	**238**	P	**P**	13 51 49.7	**+1.0**
	comp=Z,2.7nm,0.6s,baz=5.0,slow=4.9,SNR=4.9						
INK	**Inuvik**	**82.22**	**16**	P	**P**	13 51 53.9	**-0.4**
	baz=323,slow=3.6						
TORD	**Torodi Ar. Bea**	**85.64**	**282**	P	**P**	13 52 13.9	**+1.2**
	comp=Z,1.1nm,0.9s,baz=56,slow=4.2,SNR=7.0						
YKA	**Yellowknife Ar**	**91.38**	**12**	P	**P**	13 52 39.0	**-0.2**
	comp=Z,0.1nm,0.5s,baz=331,slow=4.9,SNR=3.4						

NIED ***19*** *13:47:00.28˚10N×128˚00E,h5km,Mw3.9 Best double couple: M₀8.67000×10¹⁴ NP1:φ₅127.00000°,δ42.00000°, λ-10.00000°. NP2:φ₅225.00000°,δ84.00000°, λ-132.00000°.*

JMA ***19*** *13:47:14.9±0.2,28˚10N×128˚04E,h11km±2km,M3.6*

ISCJB ***19*** *13:47:15.7±1.2,28˚10N±0˚05×128˚05E±0˚06,h22km±9km, mb3.4/6,MS2.6/2,Error ellipse: s-maj=10.6km s-min=5.7km az=38.4*

IDC ***19*** *13:47:24.0±4.4,28˚09N×128˚15E,h86km±44km,mb3.1/6, mb1 3.3/7,mb1mx3.1/55,mbtmp3.5/7,MS2.8/6,Ms1 2.8/6, ms1mx2.6/27,Error ellipse: s-maj=42.7km s-min=19.5km az=68.0*

ISC 19 13:47:14.3±2.2,28˚08N±0˚05×128˚08E±0˚05,h4km±14km, n22,σ0°63/22,mb3.4/6,Ryukyu Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JTK	**Tokunoshima**	**0.83**	**110**	P	**Pb**	**13 47 31.1**	**-0.1**
JTK				S	**Sb**	**13 47 42.7**	**0.0**
JOKE	**Okinoerabujima**	**0.84**	**148**	S	**Pb**	**13 47 31.4**	**0.0**
JOKE				S	**Sb**	**13 47 43.7**	**+0.7**
JAMN	**Amaminishikomi**	**0.98**	**80**	P	**Pb**	**13 47 34.0**	**+0.1**
JAMN				S	**Sb**	**13 47 47.2**	**0.0**
JIH	**Iheya**	**1.04**	**185**	P	**Pb**	**13 47 34.7**	**-0.2**
JIH				S	**Sb**	**13 47 49.0**	**+0.1**
JOW	**Kunigami**	**1.25**	**172**	P	**Pg**	**13 47 38.0**	**-0.3**
JOW				S	**Sb**	**13 47 55.3**	**+0.3**
JAM	**Amami Oshima**	**1.39**	**76**	P	**Pn**	**13 47 40.6**	**+0.2**
JAM				S	**Sn**	**13 47 59.1**	**-0.1**
JNTH	**Nagotoyohara**	**1.55**	**182**	P	**Pn**	**13 47 43.0**	**+0.3**
JNTH				S	**Sn**	**13 48 02.6**	**-0.7**
JAGN	**Aguni-jima**	**1.66**	**207**	P	**Pb**	**13 47 45.0**	**-0.4**
JJT2	**Tamagusuku 2**	**1.95**	**189**	P	**Pn**	**13 47 49.2**	**+1.0**
JNU	**Nakatsue**	**5.58**	**25**	P	Pn	13 48 44.0	+5.9
	1.0nm,0.3s,baz=196,slow=13,SNR=9.1						
KSRS	**Korea Array**	**9.35**	**359**	LR	LR	13 53 20.5	
	comp=Z,91nm,19.9s,baz=181,slow=38						
MJAR	**Matsushiro Arr**	**12.02**	**43**	LR	LR	13 54 55.6	
	comp=Z,16nm,20.3s,baz=210,slow=38						
JCJ	**Chichijima**	**12.55**	**91**	LR	LR	13 54 32.5	
	comp=Z,38nm,18.8s,baz=322,slow=34						
USRK	**Ussuriysk Ar.**	**16.39**	**10**	LR	LR	13 57 26.9	
	comp=Z,54nm,20.2s,baz=166,slow=37						
KLR	**Kul'dur**	**21.31**	**7**	LR	LR	13 59 43.8	
	comp=Z,27nm,18.8s,baz=190,slow=35						
SONM	**Songino Array**	**25.95**	**325**	P	**P**	**13 52 49.0**	**+1.2**
	0.5nm,0.4s,baz=124,slow=7.8,SNR=2.8						
CMAR	**Chiang Mai Arr**	**28.36**	**257**	LR	LR	14 07 13.2	
	comp=Z,14nm,18.4s,baz=20,slow=42						
MKAR	**Makanchi Array**	**40.22**	**310**	P	**P**	**13 54 52.2**	**+0.2**
	0.3nm,0.7s,baz=108,slow=8.2,SNR=3.4						
KURBB	**Kurchatov Array**	**43.44**	**315**	P	**P**	**13 55 18.0**	**-0.2**
	0.6nm,0.9s,baz=103,slow=8.7,SNR=4.7						
WRA	**Warramunga Arr**	**48.12**	**172**	P	**P**	**13 55 56.4**	**+0.9**
	1.3nm,0.8s,baz=355,slow=8.6,SNR=6.0						
ASAR	**Alice Springs**	**51.75**	**173**	P	**P**	**13 56 21.8**	**-1.3**
	0.4nm,0.8s,baz=14,slow=9.5,SNR=7.6						
YKA	**Yellowknife Ar**	**76.92**	**25**	P	**P**	**13 59 06.7**	**-0.8**
	0.2nm,0.8s,baz=299,slow=6.2,SNR=4.1						

DJA 19 13:59:04.1±0.3,3˚S±3˚×12˚2E±˚,h10km,M3.7/6,MLv3.7/6, Sulawesi

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
KDI	**Kendari**	**1.20**	**119**	P	Pb	13 59 24.8	-2.2
KDI				S	Sn	13 59 43.2	-0.2
TTSI	**Tana Toraja**	**1.77**	**281**	P	Pn	13 59 31.3	-3.5
TTSI				S	Sn	13 59 57.8	+0.4
SPSI	**Sidrap Palu**	**1.88**	**252**	P	Pn	13 59 32.7	-3.6
SPSI				S	Sb	14 00 01.8	-0.3
APSI	**Ampana**	**2.45**	**2**	P	Pn	13 59 43.9	-0.3
APSI				S	Sg	14 00 24.3	+1.3
LUWI	**Luwuk**	**2.62**	**28**	S	Sg	14 00 33.3	+5.0
BSSI	**Bau Bau, Buton**	**2.94**	**201**	P	Pn	13 59 50.0	-1.0
BSSI				S	Sn	14 00 27.0	+0.6
MRSI	**Marisa**	**3.85**	**6**	P	Pn	14 00 02.7	-0.7

JMA 19 14:01:33.8±0.1,36˚64N×141˚06E,h42km±2km,M3.5, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JHO	**Hitachi**	**0.40**	**266**	P	Pn	14 01 43.3	0.0
JHO				S	Sn	14 01 49.8	-0.2
ONAJ	**Iwakimizuishiy**	**0.51**	**336**	P	Pn	14 01 44.5	-0.3
ONAJ				S	Sn	14 01 52.1	-0.4
JFK	**Kawauchi**	**0.74**	**348**	P	Pn	14 01 47.3	-0.6
JYT	**Yasato**	**0.81**	**240**	S	Sn	14 01 58.7	-0.9
JSB	**Shiboa**	**0.97**	**290**	S	Sn	14 02 04.2	+0.6
MAT	**Matsushiro**	**2.30**	**268**	P	Pn	14 02 10.5	+1.3
MAT				S	Sn	14 02 37.5	+1.2

NIED ***19*** *14:10:00,36˚20N×139˚80E,h62km,Mw4.9 Best double couple: M₀2.40000×10¹⁶ NP1:φ₅240.00000°,δ26.00000°, λ101.00000°. NP2:φ₅48.00000°,δ65.00000°,λ85.00000°.*

BJI ***19*** *14:10:13.9,35˚98N×140˚23E,h65km,mb4.9/72,mB4.9/44, Ms4.3/61,Ms7 4.1/59*

MOS ***19*** *14:10:17.6±0.8,36˚26N×139˚68E,h52km,mb5.4/126, Error ellipse: s-maj=5.9km s-min=3.7km az=106.7*

ISCJB ***19*** *14:10:18.7±0.2,36˚14N±0˚02×139˚69E±0˚02,h64km±2km, mb5.1/310,Error ellipse: s-maj=3.2km s-min=2.4km az=151.9*

IDC ***19*** *14:10:19.6±1.2,36˚17N×139˚72E,h58km±10km,mb4.8/52, mb1 4.8/56,mb1mx4.7/73,mbtmp5.0/56,MS4.0/26, Ms1 4.0/26,ms1mx3.8/36,Error ellipse: s-maj=10.7km s-min=6.5km az=81.0*

JMA ***19*** *14:10:20.0±0.1,36˚17N×139˚81E,h53km±1km,M5.0 Broadband fault plane solution: P waves. NP1: φ₅43.00000°,δ57.00000°,λ81.00000°. NP2:φ₅240.00000°, δ34.00000°,λ104.00000°. Principal axes: T Plg76.0000°, Azm286.0000°; N Plg8.0000°, Azm48.0000°; P Plg12.0000°, Azm140.0000°;*

JMA Felt IV J1.

GCMT ***19*** *14:10:20.1±0.2,36˚18N×139˚83E,h64km±1km,MW4.9/71, Moment Tensor Solution. s57,c78; s71,c116; Duration: 0 Moment tensor: Scale 10¹⁶Nm; Mrr2.87±.11; Mθθ-2.12±.10; Mφφ-0.75±.10; Mrθ1.04±.08; Mrφ-1.24±.07; Mθφ1.00±.07; Best double couple: M₀3.20400×10¹⁶ NP1:φ₅54.00000°,δ58.00000°,λ84.00000° NP2: φ₅245.00000°,δ32.00000°,λ100.00000°. Principal axes: T 3.2280, Plg76.0000°, Azm306.0000°; N -0.0500, Plg5.0000°, Azm57.0000°; P -3.1800, Plg13.0000°, Azm148.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

NEIC ***19*** *14:10:20.1±0.3,36˚16N×139˚63E,h64km±2km,mb5.0/186 Error ellipse: s-maj=3.0km s-min=2.2km az=145.0*

NEIC Felt [II] at Tokyo. Also felt at Agui and Oyama. Recorded [4 JMA] in Ibaraki, Saitama and Tochigi.

ISC 19 14:10:18.9±0.4,36˚17N±0˚03×139˚81E±0˚03,h57km±3km, h57km:pP-P,n1002,σ1°27/1073,mb5.1/319,MS4.1/42, 41C-23D,Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JYT	**Yasato**	**0.32**	**79**	⇑P	**Pn**	**14 10 29.6**	**+0.7**
JYT				S	**Sn**	**14 10 36.5**	**+0.5**
JAG	**Ashikaga**	**0.39**	**311**	⇓P	**Pn**	**14 10 30.3**	**+0.8**
JAG				S	**Sn**	**14 10 37.4**	**+0.2**
JKT	**Katashina**	**0.75**	**323**	⇓P	**Pn**	**14 10 34.2**	**+0.5**
JKT				S	**Sn**	**14 10 44.9**	**+0.4**
JRY	**Ryogami san**	**0.75**	**258**	⇓P	**Pn**	**14 10 34.5**	**+0.8**
JRY				S	**Sn**	**14 10 45.0**	**+0.5**
JOD2	**Odawara 2**	**1.08**	**213**	⇓P	**Pn**	**14 10 38.9**	**+1.0**
JOD2				S	**Sn**	**14 10 53.4**	**+1.4**
JYN	**Shimob**	**1.23**	**237**	P	**Pn**	**14 10 41.5**	**+1.5**
JFY	**Yanaizu**	**1.24**	**356**	P	**Pn**	**14 10 41.1**	**+1.1**
JFY				S	**Sn**	**14 10 57.2**	**+1.4**
JHK	**Hiroka**	**1.25**	**330**	P	**Pn**	**14 10 41.1**	**+0.9**
JHK				*e*S	**Sn**	**14 10 56.0**	**-0.1**
MJAR	**Matsushiro Arr**	**1.34**	**286**	P	**Pn**	**14 10 41.3**	**-0.2**
	1μm,0.3s,baz=84,slow=9.5,SNR=9691						
MJAR				LR	LR	14 11 27.0	
	comp=Z,3μm,19.6s,baz=115,slow=54						
MAJO	**Matsushiro**	**1.35**	**286**	*d* iP	**Pn**	**14 10 41.4**	**-0.1**
MAJO	**Matsushiro**	**1.35**	**286**	*e*Pn	**Pn**	**14 10 42.8**	**+1.3**
MAT	**Matsushiro**	**1.35**	**286**	P	**Pn**	**14 10 41.5**	**0.0**
MAT				*e*S	**Sn**	**14 10 55.8**	**-2.6**
MAT	**Matsushiro**	**1.35**	**286**	P	**Pn**	**14 10 41.9**	**+0.4**
MJB9	**Matsu-Tunnel**	**1.35**	**287**	*e*Pn	**Pn**	**14 10 42.7**	**+1.2**
JFT	**Otama**	**1.41**	**17**	P	**Pn**	**14 10 43.9**	**+1.6**
JFT				S	**Sn**	**14 11 00.9**	**+1.0**
INU	**Inuyama**	**2.42**	**251**	*e*Pn	**Pn**	**14 10 58.0**	**+2.1**
JHJ	**Hachijo jima 2**	**3.04**	**180**	P	**Pn**	**14 11 05.2**	**+0.6**
	1μm,0.3s,baz=321,slow=17,SNR=138						
JHJ				S	**Sn**	**14 11 40.7**	**+0.9**
	888nm,0.3s,baz=107,slow=22,SNR=8.2						
JHJ2	**Mitsune**	**3.05**	**180**	*e*Pn	**Pn**	**14 11 05.0**	**+0.3**
ERM	**Erimo**	**6.39**	**23**	*de*P	**Pn**	**14 11 50.4**	**0.0**
ERM				pmax	pmax		
	comp=Z,95nm,0.8s						
ERM	**Erimo**	**6.39**	**23**	*e*Pn	**Pn**	**14 11 50.1**	**-0.3**
JNU	**Nakatsue**	**7.96**	**250**	P	**Pn**	**14 12 13.5**	**+1.4**
	comp=Z,2.8nm,0.3s,baz=68,slow=8.0,SNR=21						
JNU				LR	LR	14 15 28.7	
	comp=Z,866nm,20.7s,baz=86,slow=39						
JNU	**Nakatsue**	**7.96**	**250**	*e*Pn	**Pn**	**14 12 14.8**	**+2.7**
ASAJ	**Asahikawa**	**8.22**	**14**	P	**Pn**	**14 12 16.2**	**+0.8**
	comp=Z,7.5nm,0.3s,baz=213,slow=10.0,SNR=42						
ASAJ				LR	LR	14 15 50.5	
	comp=Z,512nm,21.6s,baz=312,slow=40						
ASAJ	**Asahikawa**	**8.22**	**14**	*e*Pn	**Pn**	**14 12 15.2**	**-0.3**
YUK	**Yuzh-Kuril'sk**	**9.12**	**29**	*e*P	**Pn**	**14 12 27.1**	**-0.6**
YUK				*i* S	**Sn**	**14 14 03.3**	**-5.5**
YUK				pmax	pmax		
	comp=Z,258nm,0.4s						
YUK				pmax	pmax		
	comp=N,101nm,0.3s						
YUK				pmax	pmax		
	comp=E,107nm,0.2s						
YUK				MLR	MLR		
	comp=Z,695nm,11.0s						
MSHR	**Mys Shultsa**	**9.26**	**316**	*e*P	**Pn**	**14 12 28.9**	**-0.8**
CBIJ	**Chichi jima**	**9.27**	**167**	*e*Pn	**Pn**	**14 12 26.7**	**-3.2**
CBIJ				*e*Sn	**Sn**	**14 14 09.1**	**-3.6**
JCJ	**Chichijima**	**9.27**	**167**	P	**Pn**	**14 12 27.4**	**-2.6**
	comp=Z,268nm,0.3s,baz=67,slow=14,SNR=76						
JCJ				S	**Sn**	**14 14 07.3**	**-5.4**
SHO	**Shikotan**	**9.38**	**33**	*e*P	**Pn**	**14 12 29.8**	**-1.5**
SHO				pmax	pmax		
	comp=Z,114nm,0.6s						
SHO				pmax	pmax		
	comp=N,37nm,0.3s						
SHO				pmax	pmax		
	comp=E,41nm,0.3s						
KSRS	**Korea Array**	**9.62**	**281**	P	**Pn**	**14 12 38.8**	**+4.2**
	comp=E,4.9nm,0.3s,baz=93,slow=14,SNR=122						
KSRS				LR	LR	14 16 13.8	
	comp=E,1μm,20.5s,baz=82,slow=37						
KSRS				PcP	**PcP**	**14 18 47.6**	**+1.2**
	comp=E,0.2nm,0.3s,baz=346,slow=0.3,SNR=4.2						
KS01	**Wonju Array Si**	**9.64**	**281**	*e*Pn	**Pn**	**14 12 37.9**	**+2.9**
KS15	**Wonju Array Si**	**9.65**	**281**	*e*Pn	**Pn**	**14 12 38.1**	**+3.0**
KSAR	**Wonju Array Be**	**9.65**	**281**	P	**Pn**	**14 12 38.8**	**+3.8**
KSAR	**Wonju Array Be**	**9.65**	**281**	P	**Pn**	**14 12 38.8**	**+3.8**
KSAR				PcP	**PcP**	**14 18 47.6**	**+1.1**
USRK	**Ussuriysk Ar.**	**10.00**	**326**	P	**Pn**	**14 12 42.2**	**+2.4**
	comp=E,4.8nm,0.3s,baz=139,slow=13,SNR=45						
USRK				LR	LR	14 16 16.9	
	comp=E,1μm,20.0s,baz=141,slow=36						
KUR	**Kuril'sk**	**10.92**	**32**	*e*P	**Pn**	**14 12 52.3**	**0.0**
KUR				*e*S	**Sn**	**14 14 47.4**	**-5.4**
KUR				pmax	pmax		
	comp=Z,84nm,0.4s						
KUR				pmax	pmax		
	comp=N,29nm,0.2s						
KUR				pmax	pmax		
	comp=E,28nm,0.3s						
YSS	**Yuzh-Sakhalins**	**11.00**	**11**	⇑*e*P	**Pn**	**14 12 53.0**	**-0.3**
YSS				*e*S	**Sn**	**14 14 53.0**	**-1.7**
YSS				pmax	pmax		
	comp=Z,80nm,0.6s						
YSS				MLR	MLR		
	comp=N,700nm,18.0s						
YSS				MLR	MLR		
	comp=Z,1μm,18.0s						
YSS				MLR	MLR		
	comp=N,600nm,13.0s						
YSS	**Yuzh-Sakhalins**	**11.00**	**11**	*e*Pn	**Pn**	**14 12 52.1**	**-1.3**
MDJ	**Mudanjiang**	**11.47**	**320**	P	Pn	14 13 05.6	+5.7
MDJ				S	Sn	14 15 16.1	+10
MDJ				pmax	pmax		
	comp=N,78nm,0.9s						
MDJ				pmax	pmax		
	comp=N,470nm,6.9s						
MDJ				LR	LR		
	comp=N,750nm,27.8s						
MDJ				LR	LR		
	comp=N,730nm,26.2s						
MDJ				LR	LR		
	comp=N,1μm,21.6s						
MDJ	**Mudanjiang**	**11.47**	**320**	*e*Pn	Pn	14 13 05.2	+5.3
HABR	**Khabarovsk**	**12.79**	**346**	*e*P	**Pn**	**14 13 14.4**	**-3.3**
HABR				*e*S	**Sn**	**14 15 36.6**	**-1.7**
HABR				pmax	pmax		
	comp=Z,14nm,1.5s						
HABR				MLR	MLR		
	comp=Z,245nm,13.0s						
CN2	**Changchun**	**13.38**	**309**	*e*P	**P**	**14 13 30.8**	**-2.8**
CN2				*e*S	**Sn**	**14 15 56.5**	**+3.6**
CN2				pmax	pmax		
	comp=Z,30nm,1.0s						
CN2				LR	LR		
	comp=Z,500nm,15.0s						
CN2				LR	LR		
	comp=Z,600nm,15.0s						
CN2				LR	LR		
	comp=Z,500nm,16.0s						
SNY	**Shenyang**	**13.82**	**299**	⇑P	**Pn**	**14 13 34.5**	**+2.6**
SNY				sP	sP	14 13 50.6	
SNY				pmax	pmax		
	comp=Z,15nm,0.9s						
SNY				pmax	pmax		
	comp=Z,300nm,3.7s						
SNY				LR	LR		
	comp=Z,930nm,15.0s						
SNY				LR	LR		
	comp=Z,790nm,15.0s						
SNY				LR	LR		
	comp=Z,1μm,15.1s						
KLR	**Kul'dur**	**14.32**	**338**	P	**Pn**	**14 13 39.4**	**+0.9**
	comp=Z,0.6nm,0.3s,baz=141,slow=12,SNR=16						
DL2	**Dalian**	**14.68**	**286**	P	**Pn**	**14 13 45.3**	**+2.0**
DL2				*e*S	**Sn**	**14 16 27.9**	**+3.3**
DL2				pmax	pmax		
	comp=Z,30nm,1.5s						
DL2				pmax	pmax		
	comp=Z,200nm,4.1s						
DL2				LR	LR		
	comp=Z,780nm,11.0s						
DL2				LR	LR		
	comp=Z,830nm,17.3s						
TYV	**Tymovskoe**	**14.83**	**7**	*e*P	**Pn**	**14 13 44.0**	**-1.1**
TYV				pmax	pmax		
	comp=Z,64nm,0.8s						
TYV				MLR	MLR		
	comp=E,1μm,18.0s						
TYV				MLR	MLR		
	comp=Z,1μm,16.0s						
NKL	**Nikolayevsk**	**16.99**	**2**	*e*P	**Pn**	**14 14 08.7**	**-3.7**
NKL				pmax	pmax		
	comp=N,10.0nm,0.9s						
NKL				pmax	pmax		
	comp=Z,15nm,0.9s						
NJ2	**Nanjing**	**17.83**	**263**	*e*P	**P**	**14 14 24.3**	**+1.3**
NJ2				sP	**sP**	**14 14 45.4**	**+2.7**
NJ2				pmax	pmax		
	comp=Z,19nm,0.6s						
TIA	**Tai'an**	**18.31**	**277**	*e*P	**P**	**14 14 27.6**	**-0.7**
TIA				pmax	pmax		
	comp=Z,20nm,1.1s						
TIA				LR	LR		
	comp=Z,370nm,19.4s						
TIA				LR	LR		
	comp=Z,570nm,15.2s						
TIA				LR	LR		
	comp=Z,600nm,21.8s						
BJI	**Beijing**	**18.98**	**289**	P	**P**	**14 14 34.9**	**-0.7**
BJI				S	**S**	**14 18 03.8**	**-4.3**
BJI				sS	**sS**	**14 18 27.3**	**-1.0**
BJI				pmax	pmax		
	comp=Z,15nm,1.1s						
BJI				LR	LR		
	comp=Z,310nm,19.0s						
BJI				LR	LR		
	comp=Z,280nm,30.0s						
BJI				LR	LR		
	comp=Z,530nm,27.4s						
BJT	**Baijiatuan**	**18.99**	**289**	*e*P	**P**	**14 14 35.5**	**-0.2**
BJT				pmax	pmax		
	comp=Z,41nm,0.6s						
BJT	**Baijiatuan**	**18.99**	**289**	*e*P	**P**	**14 14 35.5**	**-0.2**
	comp=Z,41nm,0.6s						
HIA	**Hailar**	**19.64**	**318**	*e*P	**P**	**14 14 41.0**	**-1.7**
HIA				pmax	pmax		
	comp=Z,31nm,1.1s						
HIA	**Hailar**	**19.64**	**318**	*e*P	**P**	**14 14 41.0**	**-1.7**
	comp=Z,31nm,1.1s						
TPUB	**Ta-pu**	**20.97**	**238**	*e*P	**P**	**14 14 55.5**	**-1.9**
	comp=Z,50nm,1.0s						
TWG	**Pinlang**	**21.00**	**236**	*e*P	**P**	**14 14 55.2**	**-2.4**
	comp=Z,273nm,1.2s						
PEA0	**Petropavlovsk-**	**21.09**	**31**	*e*P	**P**	**14 14 58.3**	**0.0**
PETK	**Petropavlovsk-**	**21.09**	**31**	P	**P**	**14 14 59.2**	**+0.9**
	comp=Z,12nm,0.7s,baz=219,slow=7.2,SNR=13						
PETK				PcP	**PcP**	**14 19 02.6**	**0.0**
	comp=Z,3.2nm,0.8s,baz=155,slow=3.7,SNR=4.4						
PETK				LR	LR	14 22 55.1	
	comp=Z,148nm,20.4s,baz=233,slow=36						
PET	**Petropavlovsk**	**21.43**	**32**	*e*P	**P**	**14 15 02.0**	**+0.1**
PET				*e*S	**S**	**14 18 52.7**	**-3.7**
PET				pmax	pmax		
	comp=Z,68nm,1.1s						
PET				MLR	MLR		
	comp=Z,300nm,14.0s						
WHN	**Wuhan**	**21.97**	**263**	P	**P**	**14 15 08.3**	**+0.4**
WHN				S	**S**	**14 19 03.3**	**-3.9**
WHN				pmax	pmax		
	comp=Z,74nm,1.1s						
WHN				LR	LR		
	comp=Z,1μm,12.6s						
HHC	**Hu-ho-hao-te**	**22.55**	**291**	*e*P	**P**	**14 15 15.4**	**+1.2**
HHC				pP	pP	14 15 26.9	0.0
HHC				sP	sP	14 15 40.4	+6.3
HHC				PP	**PnPn**	**14 15 47.3**	**+7.7**
HHC				S	**S**	**14 19 14.1**	**-3.4**
HHC				sS	Sn	14 19 35.6	+1.4
HHC				pmax	pmax		
	comp=Z,28n

YAK pmax pmax
comp=N,16nm,0.9s
YAK pmax pmax
comp=E,5.0nm,1.0s
YAK pmax pmax
comp=Z,103nm,2.3s
YAK pmax pmax
comp=N,114nm,1.6s
YAK pmax pmax
comp=E,51nm,2.3s
YAK smax smax
comp=N,51nm,1.5s
YAK smax smax
comp=E,39nm,1.5s
YAK Yakutsk 26.65 349 *e*P **P 14 15 51.3 -0.7**
comp=E,63nm,0.6s
ULN Ulaanbaatar 26.80 306 *ce*P **P 14 15 52.9 -0.7**
ULN pmax pmax
comp=Z,22nm,1.2s
ULN Ulaanbaatar 26.80 306 *e*P **P 14 15 52.5 -1.2**
comp=Z,12nm,0.6s
ULN Ulaanbaatar 26.80 306 P **P 14 15 54.7 +1.0**
SNR=7.9
ULN Ulaanbaatar 26.80 306 P **P 14 15 54.7 +1.0**
SNR=7.9
SONA1 Songino Array 27.22 306 *e*P **P 14 15 55.1 -2.3**
SONM Songino Array 27.22 306 P **P 14 15 57.3 -0.1**
comp=Z,8.6nm,0.6s,baz=109,slow=9.2,SNR=21
SONM PcP **PcP 14 19 16.7 +0.5**
comp=Z,1.8nm,0.5s,baz=125,slow=2.8,SNR=3.6
SONM LR LR 14 26 55.3
comp=Z,343nm,21.3s,baz=86,slow=37
BOD Bodaibo 27.60 330 *e*P **P 14 15 59.9 -0.6**
BOD pmax pmax
comp=Z,13nm,1.0s
SEY Seymchan 27.90 12 P **P 14 16 04.5 +1.4**
comp=Z,12nm,0.6s,baz=211,slow=6.7,SNR=38
LZH Lanzhou 28.95 281 *e*P **P 14 16 13.9 +0.9**
LZH pP pP 14 16 26.1 -1.2
LZH sP sP 14 16 34.9 +0.9
LZH PP **PnPn 14 17 09.3 +2.3**
LZH *e*S **S 14 20 58.5 -1.3**
LZH pmax pmax
comp=Z,21nm,1.1s
LZH pmax pmax
comp=Z,110nm,4.2s
LZH LR LR
comp=Z,1μm,13.2s
LZH LR LR
comp=Z,1μm,14.9s
LZH LR LR
comp=Z,1μm,16.5s
GYA Guiyang 29.80 260⇑ *i*P **P 14 16 18.9 -1.7**
GYA pP pP 14 16 37.4 +2.5
GYA PP **PnPn 14 17 19.0 +0.6**
GYA PcP **PcP 14 19 23.3 +0.4**
GYA S **S 14 21 10.8 -2.5**
GYA sS sS 14 21 38.6 +1.0
GYA ScP **ScP 14 22 59.0 -1.0**
GYA ScS **ScS 14 26 52.3 -3.2**
GYA pmax pmax
comp=Z,50nm,0.9s
GYA pmax pmax
comp=Z,130nm,5.2s
GYA LR LR
comp=Z,590nm,17.0s
GYA LR LR
comp=Z,540nm,17.4s
GYA LR LR
comp=Z,560nm,17.1s
ZAK Zakamensk 29.81 310 *e*P **P 14 16 18.8 -1.6**
ZAK *e* 14 19 20.3
ZAK pmax pmax
comp=Z,4.0nm,1.0s
ZAK pmax pmax
comp=Z,4.0nm,1.2s
TLY Talaya 29.94 313 P **P 14 16 22.3 +0.9**
comp=Z,5.0nm,0.6s,baz=165,slow=2.7,SNR=4.1
TLY Talaya 29.94 313 *e*P **P 14 16 22.5 +1.0**
TLY *e*S S 14 21 04.2 -11
TLY pmax pmax
comp=Z,9.0nm,0.8s
TLY MLR MLR
comp=Z,277nm,20.0s
TLY Talaya 29.94 313 *e*P **P 14 16 20.3 -1.1**
comp=Z,8.8nm,0.8s
CD2 Chengdu 30.39 271 P **P 14 16 24.8 -0.8**
CD2 pP pP 14 16 39.1 -0.9
CD2 sP sP 14 16 46.1 -0.6
CD2 S **S 14 21 21.4 -0.9**
CD2 sS sS 14 21 46.4 -0.2
CD2 pmax pmax
comp=Z,30nm,0.5s
CD2 pmax pmax
comp=Z,170nm,4.2s
CD2 LR LR
comp=Z,440nm,10.1s
CD2 LR LR
comp=Z,440nm,16.7s
MOY Mondy 31.53 312 *e*P **P 14 16 36.2 +0.6**
GTA Gaotai 31.59 288 *e*P **P 14 16 36.4 +0.1**
GTA pP pP 14 16 52.9 +2.3
GTA sP sP 14 17 02.8 +5.4
GTA PcP **PcP 14 19 28.6 +1.1**
GTA S **S 14 21 40.1 -1.1**
GTA sS sS 14 22 11.6 +6.1
GTA SS **SnSn 14 23 35.3 +4.0**
GTA pmax pmax
comp=Z,8.0nm,0.9s
GTA pmax pmax
comp=Z,65nm,4.0s
GTA LR LR
comp=Z,200nm,18.5s
GTA LR LR
comp=Z,200nm,17.1s
GTA LR LR
comp=Z,180nm,20.0s
KMI Kunming 33.56 261 P **P 14 16 52.5 -1.2**
KMI pP pP 14 17 10.3 +2.2
KMI sP sP 14 17 17.3 +2.5
KMI S **S 14 22 11.8 -0.3**
KMI pmax pmax
comp=Z,38nm,0.9s
KMI pmax pmax
comp=Z,110nm,3.4s
KMI LR LR
comp=Z,95nm,15.2s
KMI LR LR
comp=Z,240nm,16.1s
KMI LR LR
comp=Z,210nm,20.1s
BILL Bilibino 35.22 17 *e*P **P 14 17 07.2 -0.1**
BILL *e* 14 18 26.1
BILL *e*PPP PPP 14 18 41.1
BILL pmax pmax
comp=Z,22nm,1.0s
BILL MLR MLR
comp=Z,119nm,17.0s
BILL Bilibino 35.22 17 *e*P **P 14 17 07.0 -0.3**
comp=Z,17nm,0.9s
TIXI Tiksi 36.00 354 P **P 14 17 13.5 -0.4**
comp=Z,13nm,0.7s,baz=146,slow=7.0,SNR=58
TIXI Tiksi 36.00 354 *ce*P **P 14 17 13.4 -0.5**
TIXI pmax pmax
comp=Z,20nm,1.0s
TIXI Tiksi 36.00 354 *e*P **P 14 17 13.2 -0.7**
comp=Z,14nm,0.7s
PANO Nakornpanom 36.45 248 P **P 14 17 18.7 +0.3**
comp=Z,18nm,1.1s
SKNT Sakolnakorn 37.03 248 P **P 14 17 23.1 -0.2**
comp=Z,26nm,1.4s
TNTI Ternate 37.07 201 P **P 14 17 24.6 +1.0**
SWI Sorong 37.70 194 P **P 14 17 27.2 -1.7**
RKPI Ransiki, Papua 37.85 189 P **P 14 17 33.3 +3.1**
CRAI Chiangrai 37.92 256 P **P 14 17 31.7 +0.8**
comp=Z,22nm,0.8s
KHON Khomkaen 38.30 249 P **P 14 17 37.1 +3.1**
comp=Z,13nm,0.7s,comp=Z,2μm
LBMI Labuha 38.37 200 P **P 14 17 34.6 0.0**
GENI Genyem 38.56 179 P **P 14 17 34.3 -1.9**
CMAI Chiengmai2 39.13 257 P **P 14 17 42.5 +1.3**
comp=Z,46nm,1.0s
MRSI Marisa 39.20 209 P **P 14 17 41.6 +0.1**
LAMP Lampang 39.45 254 P P 14 17 48.8 +5.1
comp=Z,4.1nm,0.7s
FAKI Fak Fak 39.52 192 P **P 14 17 42.1 -2.1**

FAKI Fak Fak 39.52 192 *e*P **P 14 17 43.7 -0.5**
comp=Z,32nm,0.6s
PBKT Sadao Pong 39.56 251 P **P 14 17 44.2 -0.4**
comp=Z,13nm,1.0s
CMMT Chiang Mai 39.83 255 P **P 14 17 46.7 -0.1**
comp=Z,13nm,0.7s,comp=Z,596nm
CHTO Chiang Mai 39.83 255 P **P 14 17 46.7 -0.1**
comp=Z,46nm,1.1s
CHTO Chiang Mai 39.83 255 *e*P **P 14 17 45.6 -1.2**
CHTO pmax pmax
comp=Z,7.0nm,0.6s
CHTO Chiang Mai 39.83 255 *e*P **P 14 17 45.6 -1.2**
comp=Z,6.9nm,0.6s
CMAR Chiang Mai Arr 40.03 255 P **P 14 17 48.2 -0.3**
comp=Z,2.5nm,0.7s,baz=57,slow=6.5,SNR=17
CMAR PcP **PcP 14 19 53.3 +0.7**
comp=Z,3.2nm,0.8s,baz=3.9,slow=1.8,SNR=9.3
CMAR LR LR 14 35 32.5
comp=Z,92nm,18.9s,baz=50,slow=38
CMAR Chiang Mai Arr 40.03 255 *ce*P **P 14 17 48.2 -0.3**
CMAR pmax pmax
comp=Z,2.0nm,0.6s
CM01 Chiang Mai Arr 40.04 255 *e*P **P 14 17 47.1 -1.4**
CM01 *e*PcP **PcP 14 19 53.4 +0.8**
WMQ Urumqi 40.09 297 P **P 14 17 50.3 +1.5**
WMQ pP pP 14 18 04.5 +1.1
WMQ sP sP 14 18 07.8 -2.3
WMQ PcP **PcP 14 19 52.3 -0.2**
WMQ S **S 14 23 51.0 +0.2**
WMQ SS **SS 14 26 49.3 -0.5**
WMQ pmax pmax
comp=Z,18nm,0.8s
WMQ pmax pmax
comp=Z,15nm,4.0s
WMQ LR LR
comp=Z,56nm,19.2s
WMQ LR LR
comp=Z,68nm,24.8s
WMQ LR LR
comp=Z,58nm,27.6s
SANI Sanana 40.15 202 P **P 14 17 50.4 +1.0**
SRAK Srakaew 40.34 247 P **P 14 17 47.2 -3.9**
comp=Z,42nm,0.8s
APSI Ampana 40.58 209 P **P 14 17 52.7 -0.3**
CHBT CHBT 40.94 245 P **P 14 17 57.1 +1.1**
comp=Z,37nm,0.9s
LSA Lhasa 41.00 275 *e*P **P 14 17 57.4 +0.4**
LSA pmax pmax
comp=Z,28nm,0.9s
LSA Lhasa 41.00 275 *e*P **P 14 17 57.4 +0.4**
comp=Z,28nm,0.9s
BNDI Bandanaira 41.53 195 P **P 14 18 01.8 +1.0**
ZAA0 Zalesovo Array 41.55 313 *e*P **P 14 17 60.0 -0.6**
ZALV Zalesovo Beam 41.55 313 P **P 14 18 00.6 0.0**
comp=Z,55nm,0.6s,baz=93,slow=6.2,SNR=248
ZALV PcP **PcP 14 19 56.8 -0.1**
comp=Z,13nm,0.5s,baz=98,slow=3.1,SNR=15
ZALV LR LR 14 35 59.9
comp=Z,159nm,18.1s,baz=70,slow=37
SBUM Sibu 42.15 224 *e*P **P 14 18 04.0 -1.8**
comp=Z,7.4nm,0.8s
NVS Novosibirsk 42.51 314⇓ *i*P **P 14 18 08.9 +0.5**
NVS *e* 14 20 00.3
NVS *e*S **S 14 24 20.4 -5.9**
NVS pmax pmax
comp=N,15nm,0.9s
NVS pmax pmax
comp=E,43nm,0.9s
NVS pmax pmax
comp=Z,58nm,0.9s
NVS smax smax
comp=N,5.0nm,1.2s
NVS smax smax
comp=E,7.0nm,1.5s
PHET Kaeng Krachan 42.84 248 P **P 14 18 11.7 +0.2**
comp=E,11nm,0.8s,comp=E,100nm
TTSI Tana Toraja 43.25 210 P **P 14 18 17.9 +3.1**
MK01 Makanchi Array 43.49 303 *e*P **P 14 18 16.1 -0.3**
MK31 Makanchi Array 43.49 303 *i* P **P 14 18 16.2 -0.2**
MK31 pmax pmax
comp=Z,18nm,0.7s
MK31 Makanchi Array 43.49 303 *e*P **P 14 18 16.3 -0.2**
MKAR Makanchi Array 43.49 303 P **P 14 18 16.6 +0.1**
comp=Z,22nm,0.8s,baz=88,slow=9.3,SNR=177
MKAR PcP **PcP 14 20 03.6 0.0**
comp=Z,1.3nm,0.3s,baz=74,slow=6.8,SNR=5.3
MKAR LR LR 14 37 38.5
comp=Z,145nm,18.0s,baz=88,slow=38
NRIK Noril'sk 43.52 336 P **P 14 18 16.5 +0.1**
comp=Z,34nm,0.9s,baz=108,slow=9.8,SNR=32
NRIK PcP **PcP 14 20 03.0 -0.2**
comp=Z,11nm,0.7s,baz=152,slow=3.0,SNR=4.0
NRIK LR LR 14 37 28.4
comp=Z,297nm,19.7s,baz=119,slow=38
MAKZ Makanchi 43.70 303 *e*P **P 14 18 17.9 -0.3**
MAKZ pmax pmax
comp=Z,26nm,0.8s
MAKZ Makanchi 43.70 303 *e*P **P 14 18 17.9 -0.3**
comp=Z,26nm,0.8s
KSM Kuching 44.03 225 *e*P **P 14 18 19.8 -1.3**
comp=Z,27nm,0.8s
SPSI Sidrap Palu 44.11 209 P **P 14 18 22.0 +0.3**
MMPI Merauke 44.40 179 P **P 14 18 24.0 0.0**
STKI Sintang 44.53 223 P **P 14 18 24.3 -0.8**
SAUI Saumlaki 44.64 192 P **P 14 18 26.0 +0.1**
KAPI Kappang 45.08 209 P **P 14 18 29.9 +0.5**
comp=Z,11nm,0.7s,baz=34,slow=6.2,SNR=7.4
KAPI Kappang 45.08 209 *e*P **P 14 18 30.3 +1.0**
comp=Z,26nm,1.0s
KURK Kurchatov 45.45 309 P **P 14 18 31.6 -0.4**
KURK pmax pmax
comp=Z,139nm,0.7s
KURK Kurchatov 45.45 309 *e*P **P 14 18 31.7 -0.4**
comp=Z,77nm,0.8s
KURK Kurchatov 45.45 309 P **P 14 18 31.8 -0.2**
SNR=38
KURK Kurchatov 45.45 309 P **P 14 18 31.8 -0.2**
SNR=38
KURBB Kurchatov Arra 45.52 308 P **P 14 18 32.4 -0.2**
comp=Z,35nm,0.5s,baz=85,slow=8.0,SNR=361
BSSI Bau Bau, Buton 45.83 207 P **P 14 18 35.7 +0.4**
PMG Port Moresby 45.86 170 P **P 14 18 36.1 +0.6**
comp=Z,7.9nm,0.7s,baz=8.6,slow=1.4,SNR=4.7
PDGK Podgornoye 46.05 298 P **P 14 18 36.6 -0.2**
PDGK pmax pmax
comp=Z,15nm,0.6s
PBKI Pangkalan Bun 46.75 220 P **P 14 18 41.4 -1.2**
TT01 Tatalina 46.86 34 *e*P **P 14 18 44.4 +1.5**
TTA Tatalina 46.86 34 *e*P **P 14 18 44.3 +1.3**
TTA pmax pmax
comp=Z,7.0nm,1.0s
TTA Tatalina 46.86 34 *e*P **P 14 18 44.3 +1.3**
comp=Z,7.1nm,1.0s
SVW2 Sparrevohn 46.99 37 *e*P **P 14 18 45.9 +1.9**
comp=Z,14nm,0.7s
MMRI Maumere 47.54 204 P **P 14 18 48.8 +0.1**
IPM Ipoh 47.59 238 *e*P **P 14 18 47.5 -1.7**
comp=Z,12nm,0.8s
BOK Bokaro 47.77 271 *e*P **P 14 18 50.7 +0.2**
BOK IAmb IAmb 14 18 51.6
comp=Z,34nm,0.9s
DGPR DIGLIPUR 47.79 254 *e*P **P 14 18 49.9 -0.9**
AAA Alma-Ata 47.86 299 *e*P **P 14 18 52.3 +1.2**
AAA pmax pmax
comp=Z,200nm,2.4s
AAA MLR MLR
comp=Z,300nm,19.0s
TPRI Tanjung Pinang 47.95 231 P **P 14 18 51.5 -0.4**
SOEI Soe 47.97 201 P **P 14 18 51.8 -0.4**
OHAK Old Harbor 48.26 42 *e*P **P 14 18 54.5 +0.6**
comp=Z,25nm,1.0s
RSO Redoubt South 48.38 38 *e*P **P 14 18 56.3 +1.4**
KDAK Kodiak Island 48.60 41 *e*P **P 14 18 57.3 +0.9**
KDAK pmax pmax
comp=Z,30nm,0.7s
KDAK Kodiak Island 48.60 41 *e*P **P 14 18 57.3 +0.9**
comp=Z,30nm,0.7s
PPLA Purkeypile 48.61 34 *e*P **P 14 18 58.8 +2.2**
comp=Z,22nm,1.0s
CAST Castle Rocks 48.66 34 *e*P **P 14 18 58.9 +2.0**
comp=Z,72nm,1.9s
SPU Mount Spurr 48.70 37 *e*P **P 14 18 58.8 +1.6**
PBA Port Blair 48.86 252 *e*P P 14 18 58.8 -0.2
TKM2 Tokmak 2 48.91 299 *e*P **P 14 19 00.1 +0.8**
TKM2 pmax pmax
comp=Z,47nm,0.8s

TKM2 Tokmak 2 48.91 299 *e*P **P 14 19 00.1 +0.8**
comp=Z,47nm,0.8s
DSRI Dabo 49.00 230 P P **P 14 18 56.1 -3.9**
BPAW Bear Paw Mtn. 49.15 33 *e*P **P 14 19 02.2 +1.6**
comp=Z,20nm,1.3s
KTH Kantishna Hill 49.18 34 *e*P **P 14 19 02.7 +1.8**
comp=Z,42nm,1.3s
MLY Manley 49.26 32 *e*P **P 14 19 03.4 +1.9**
comp=Z,31nm,1.4s
BRLK Bradley Lake 49.34 39 *e*P **P 14 19 01.9 -0.3**
comp=Z,13nm,0.9s
PPBI Pangkal Pinang 49.39 227 P P **P 14 19 00.4 -2.6**
MTN Manton Dam 49.43 191 *e*P **P 14 19 02.6 -0.6**
comp=Z,55nm,0.9s
TRF Thorofare Moun 49.47 34 *e*P **P 14 19 04.2 +1.0**
comp=Z,17nm,0.9s
COLD Coldfoot 49.53 29 *e*P **P 14 19 04.9 +1.5**
comp=Z,7.9nm,0.9s
KSH Kashi 49.58 294 P **P 14 19 08.4 +4.0**
KSH *ep*P sP 14 19 23.8 -2.3
KSH *es*P pP 14 19 31.1 +12
KSH *e*ScP **ScP 14 24 17.8 +2.0**
KSH S **S 14 26 12.0 +3.6**
KSH ScS **ScS 14 28 50.9 -0.1**
KSH pmax pmax
comp=Z,22nm,0.9s
KSH pmax pmax
comp=Z,110nm,4.6s
KSH LR LR
comp=Z,140nm,5.0s
KSH LR LR
comp=Z,110nm,6.3s
KSH LR LR
comp=Z,120nm,5.3s
FRU Bishkek 49.63 299⇑ *i*P **P 14 19 05.0 +0.4**
FRU pmax pmax
comp=Z,100nm,1.9s
AAK Ala-Archa 49.77 299 *c i*P **P 14 19 05.8 0.0**
AAK pmax pmax
comp=Z,62nm,0.7s
AAK Ala-Archa 49.77 299 *e*P **P 14 19 05.9 0.0**
comp=Z,27nm,0.6s
AAK Ala-Archa 49.77 299 P **P 14 19 06.2 +0.4**
SNR=16
AAK Ala-Archa 49.77 299 P **P 14 19 06.2 +0.4**
SNR=16
RC01 Rabbit Creek A 49.83 37 *e*P **P 14 19 06.0 +0.2**
comp=Z,17nm,1.0s
LGTI Lohaghat 49.84 280 *ex* P 14 19 11.4 +5.1
OTUK Ortayu 49.89 306 P **P 14 19 05.7 -0.8**
OTUK pmax pmax
comp=Z,62nm,0.7s
LHMI Lhok Sumawe 49.92 242 P P 14 19 02.1 -4.9
COEN Coen 49.96 176 *e*P **P 14 19 07.8 +0.6**
comp=Z,139nm,1.8s
CHKZ Chkalovo 49.96 313 P **P 14 19 05.9 -1.0**
CHKZ pmax pmax
comp=Z,15nm,0.5s
SEW Seward 50.04 38 *e*P **P 14 19 08.0 +0.6**
comp=Z,13nm,0.6s
MCK McKinley 50.06 33 *e*P **P 14 19 08.6 +1.0**
MCK pmax pmax
comp=Z,18nm,0.8s
MCK McKinley 50.06 33 *e*P **P 14 19 08.6 +1.0**
comp=Z,18nm,0.8s
PMR Palmer 50.08 36 *e*P **P 14 19 08.2 +0.5**
PMR pmax pmax
comp=Z,32nm,1.4s
PMR Palmer 50.08 36 *e*P **P 14 19 08.2 +0.5**
comp=Z,32nm,1.4s
RND Reindeer 50.11 34 *e*P **P 14 19 08.7 +0.7**
RND pmax pmax
comp=Z,67nm,1.5s
RND Reindeer 50.11 34 *e*P **P 14 19 08.7 +0.7**
comp=Z,66nm,1.5s
BVA0 Borovoye Array 50.20 313 *i* P **P 14 19 07.8 -0.9**
BVA0 pmax pmax
comp=Z,15nm,0.5s
BVAR Borovoye Array 50.20 313 P **P 14 19 08.7 -0.1**
comp=Z,21nm,0.6s,baz=81,slow=9.2,SNR=38
BRVK Borovoye 50.26 313 P **P 14 19 08.9 -0.3**
BRVK pmax pmax
comp=Z,15nm,0.7s
BRVK Borovoye 50.26 313 *e*P **P 14 19 08.8 -0.4**
comp=Z,13nm,0.8s
BRVK Borovoye 50.26 313 P **P 14 19 09.1 -0.1**
SNR=8.0
BRVK Borovoye 50.26 313 P **P 14 19 09.1 -0.1**
SNR=8.0
EKS2 Erkin-Say 50.27 299 *e*P **P 14 19 09.6 0.0**
EKS2 pmax pmax
comp=Z,22nm,0.7s
EKS2 Erkin-Say 50.27 299 *e*P **P 14 19 09.6 0.0**
comp=Z,22nm,0.7s
MDM Murphy Dome 50.33 32 *e*P **P 14 19 11.2 +1.6**
comp=Z,78nm,1.3s
WRH Wood River Hil 50.41 32 *e*P **P 14 19 11.0 +0.9**
comp=Z,15nm,0.9s
SML Sawmill 50.45 36 *e*P **P 14 19 11.6 +1.1**
SML pmax pmax
comp=Z,18nm,0.8s
SML Sawmill 50.45 36 *e*P **P 14 19 11.6 +1.1**
comp=Z,18nm,0.8s
COLA College 50.49 32 *c i*P **P 14 19 12.4 +1.7**
COLA pmax pmax
comp=Z,17nm,1.0s
COLA College 50.49 32 *e*P **P 14 19 12.1 +1.4**
comp=Z,17nm,0.8s
CCB Clear Creek Bu 50.52 32 *e*P **P 14 19 11.5 +0.6**
comp=Z,8.6nm,1.0s
HDA Harding Lake 50.90 32 *e*P **P 14 19 14.3 +0.4**
comp=Z,54nm,1.3s
IL1 Eielson Array 50.91 32 *e*P **P 14 19 14.4 +0.5**
ILAR Eielson Array 50.91 32 P **P 14 19 14.7 +0.8**
comp=Z,14nm,0.8s,baz=272,slow=6.0,SNR=93
ILAR LR LR 14 41 59.5
comp=Z,62nm,20.1s,baz=283,slow=37
ILAR Eielson Array 50.91 32 P **P 14 19 14.7 +0.8**
ILAR pmax pmax
comp=Z,14nm,0.8s
ILAR MLR MLR
comp=Z,62nm,20.1s
ILB Eielson Array 50.91 32 *e*P **P 14 19 14.3 +0.4**
SCM Sheep Creek Mo 50.92 36 *e*P **P 14 19 15.4 +1.3**
SCM pmax pmax
comp=Z,98nm,1.8s
SCM Sheep Creek Mo 50.92 36 *e*P **P 14 19 15.4 +1.3**
comp=Z,98nm,1.8s
ZRNK Zerenda 51.04 313 *e*P **P 14 19 14.9 -0.1**
ZRNK pmax pmax
comp=Z,23nm,0.8s
ZRNK Zerenda 51.04 313 *e*P **P 14 19 14.9 -0.1**
comp=Z,22nm,0.8s
MNAS Manas 51.22 299 P **P 14 19 17.2 +0.4**
MNAS pmax pmax
comp=Z,38nm,0.7s
DDI Dehra Dun 51.22 282 *e*P **P 14 19 16.4 -0.4**
SFK Sufi-Kurgan 51.24 296 P **P 14 19 17.3 +0.2**
SFK pmax pmax
comp=Z,48nm,1.0s
MNSI Mandalling Nat 51.26 236 P **P 14 19 17.7 +0.6**
comp=Z,15nm,1.0s,comp=Z,3μm
FYU Fort Yukon 51.50 30 *e*P **P 14 19 20.6 +2.3**
comp=Z,40nm,1.2s
WOJI Wonogiri, Jawa 51.51 218 P **P 14 19 18.0 -0.9**
SMLA Simla 51.60 284 *e*P **P 14 19 19.3 -0.3**
KLU Klutina 51.62 36 *e*P **P 14 19 20.9 +1.6**
comp=Z,58nm,1.6s
PAX Paxson 51.67 34 *e*P **P 14 19 20.6 +0.8**
PAX pmax pmax
comp=Z,9.0nm,0.9s
PAX Paxson 51.67 34 *e*P **P 14 19 20.6 +0.8**
comp=Z,8.6nm,0.9s
PCJI Pacitan 51.70 217 P P **P 14 19 19.3 -1.0**
DIV Divide 51.74 37 *e*P **P 14 19 21.0 +0.8**
comp=Z,20nm,0.8s
UGM Wanagama 51.78 218 P **P 14 19 19.0 -2.0**
EYAK Cordova Ski Ar 51.82 37 *e*P **P 14 19 22.2 +1.5**
comp=Z,12nm,0.8s
DHRM DHARAMSHALA 51.84 285 *e*P **P 14 19 21.1 -0.5**
PDSI Padang 51.95 234 P **P 14 19 21.0 -1.3**
DOT Dot Lake 52.23 33 *e*P **P 14 19 24.5 +0.7**
comp=Z,127nm,1.6s
GSI Gunungsitoli 52.25 238 P **P 14 19 23.7 -0.8**
GSI Gunungsitoli 52.25 238 *e*P **P 14 19 23.7 -0.8**
comp=Z,26nm,0.8s

LHSI Lahat 52.28 228 P **P** **14 19 21.3 -3.4**
BMRM Bremner River 52.32 37 *e*P **P** **14 19 26.2 +1.6**
LEM Lembang 52.37 222 P P 14 19 30.5 +5.0
comp=Z,53nm,0.8s,baz=44,slow=8.1,SNR=5.7
RAGM Ragged Mountai 52.37 37 *e*P **P** **14 19 26.8 +1.8**
comp=Z,14nm,0.9s
KK31 Karatay Array 52.44 300 *i* P **P** **14 19 25.3 -0.4**
KK31 pmax pmax
comp=Z,26nm,0.8s
KKAR Karatay Array 52.44 300 *e*P **P** **14 19 25.8 +0.1**
KKAR Karatay Array 52.44 300 *e*P **P** **14 19 25.8 +0.1**
MENT Mentasta 52.47 34 *e*P **P** **14 19 27.4 +1.7**
comp=Z,21nm,0.9s
NDI New Delhi 52.57 281 *e*P **P** **14 19 23.0 -3.8**
VIS Vishakhapatnam 52.87 265 *e*P **P** **14 19 28.5 -0.6**
CISI Cisompet, Garu 52.87 221 P **P** **14 19 28.2 -0.9**
CISI Cisompet, Garu 52.87 221 *e*P **P** **14 19 28.7 -0.4**
comp=Z,251nm,0.4s
EGAK Eagle 53.35 32 *e*P **P** **14 19 33.0 +1.0**
comp=Z,13nm,0.6s
BHPL Bhopal 54.86 275 *e*P **P** **14 19 42.5 -1.1**
BHPL IAmb IAmb 14 19 43.1
comp=Z,15nm,1.0s
SVE Sverdlovsk 54.94 319|| *e*P **P** **14 19 44.2 +0.5**
SVE pmax pmax
comp=Z,41nm,1.0s
FITZ Fitzroy Crossi 55.62 196 P **P** **14 19 49.7 +0.8**
comp=Z,14nm,0.6s,baz=15,slow=8.3,SNR=52
FITZ PP **PP** **14 21 52.2 -1.7**
comp=Z,5.5nm,1.1s,baz=301,slow=5.9,SNR=3.7
FITZ Fitzroy Crossi 55.62 196 *e*P **P** **14 19 49.3 +0.4**
comp=Z,15nm,0.6s
FITZ PP **PP** **14 21 52.2 -1.7**
INK Inuvik 55.74 27 *e*P **P** **14 19 50.2 +1.0**
INK Inuvik 55.74 27 *e*P **P** **14 19 50.2 +1.0**
WRAB Tennant Creek 56.04 186 *e*P **P** **14 19 51.5 -0.4**
WRAB pmax pmax
comp=Z,132nm,1.6s
WRAB Tennant Creek 56.04 186 *e*P **P** **14 19 51.5 -0.4**
comp=Z,132nm,1.6s
WB2 Warramunga Arr 56.05 186 *e*P **P** **14 19 51.9 -0.1**
comp=Z,91nm,1.4s
WRA Warramunga Arr 56.05 186 P **P** **14 19 51.5 -0.4**
comp=Z,19nm,0.5s,baz=1.0,slow=7.6,SNR=210
WRA PKPPKP **P'P'df** **14 49 48.7 +3.1**
comp=Z,0.4nm,0.8s,baz=177,slow=2.1,SNR=5.2
ARU Arti 56.15 319 P **P** **14 19 52.7 +0.3**
comp=Z,26nm,0.6s,baz=78,slow=4.6,SNR=24
ARU Arti 56.15 319*c i*P **P** **14 19 52.3 -0.1**
ARU 14 20 48.9
ARU 14 21 54.0
ARU S **S** **14 27 40.3 +3.2**
ARU SS **SS** **14 31 20.9 -2.7**
ARU pmax pmax
comp=Z,60nm,1.7s
ARU Arti 56.15 319 *e*P **P** **14 19 52.1 -0.2**
comp=Z,38nm,1.0s
SOKR Solikamsk 56.23 323 *e*P **P** **14 19 51.2 -1.6**
SOKR pmax pmax
comp=Z,34nm,1.5s
SOKR MLR MLR
comp=Z,248nm,18.0s
CTA Charters Tower 56.28 173 P **P** **14 19 55.9 +2.3**
comp=Z,3.7nm,0.5s,baz=354,slow=8.6,SNR=5.4
KBL Kabul 56.52 291 *e*P **P** **14 19 54.8 -0.8**
KBL pmax pmax
comp=Z,34nm,0.9s
KBL Kabul 56.52 291 *e*P **P** **14 19 54.8 -0.8**
comp=Z,34nm,0.9s
HYB Hyderabad 56.89 268 *i* P **P** **14 19 58.0 -0.2**
HYB Hyderabad 56.89 268 *e*P **P** **14 19 57.0 -1.2**
SKAG Skagway 57.16 37 *e*P **P** **14 20 01.8 +2.3**
comp=Z,20nm,1.1s
AB31 Akbulak array 57.51 310 *e*P **P** **14 20 01.9 -0.2**
AB31 pmax pmax
comp=Z,26nm,0.5s
ABKAR Akbulak array 57.51 310 *e*P **P** **14 20 02.0 -0.1**
MDRS Chennai 57.90 263 *e*P **P** **14 20 04.0 -1.3**
AKTO Aktyubinsk 58.29 312 P **P** **14 20 07.4 -0.2**
comp=Z,26nm,0.7s,baz=79,slow=5.8,SNR=48
AKTO Aktyubinsk 58.29 312 P **P** **14 20 07.2 -0.4**
AKTO pmax pmax
comp=Z,27nm,0.7s
AS01 Alice Springs 59.77 186 *e*P **P** **14 20 17.9 -0.2**
AS31 Alice Springs 59.77 186 *e*P **P** **14 20 17.9 -0.2**
comp=Z,5.6nm,0.6s
ASAR Alice Springs 59.77 186 P **P** **14 20 18.0 -0.1**
comp=Z,8.0nm,0.6s,baz=357,slow=6.3,SNR=126
ASAR LR LR 14 45 53.0
comp=Z,118nm,21.0s,baz=13,slow=36
ASAR PKPPKP **P'P'df** **14 49 35.2 -4.8**
comp=Z,0.4nm,0.8s,baz=145,slow=4.2,SNR=6.2
ASAR PKP2bc 14 49 55.8
comp=Z,2.5nm,0.9s,baz=165,slow=1.3,SNR=4.1
DLBC Dease Lake 60.10 37 *e*P **P** **14 20 22.2 +2.2**
comp=Z,13nm,0.9s
MBWA Marble Bar 60.10 202 *e*P **P** **14 20 19.8 -0.5**
comp=Z,72nm,1.5s
POO Poona 60.11 272 *e*P **P** **14 20 19.9 -0.8**
PALK Pallekele 60.92 257 P **P** **14 20 26.6 +0.4**
PALK Pallekele 60.92 257 *e*P **P** **14 20 26.4 +0.2**
PALK pmax pmax
comp=Z,22nm,0.8s
PALK Pallekele 60.92 257 *e*P **P** **14 20 26.4 +0.2**
comp=Z,22nm,0.8s
SPITS Spitsbergen Ar 61.12 349 P **P** **14 20 27.7 +1.1**
comp=Z,2.9nm,0.4s,baz=74,slow=8.8,SNR=24
KBS Kingsbay 61.28 350 *e*P **P** **14 20 28.9 +1.2**
KBS pmax pmax
comp=Z,429nm,2.5s
GOA Goa 61.74 269 *e*P **P** **14 20 30.9 -0.8**
TMCR Tamitsa 62.88 331 *e*P **P** **14 20 38.3 -0.2**
TMCR pmax pmax
comp=Z,64nm,1.4s
GEYT Alibeck 63.12 299 P **P** **14 20 41.3 +0.6**
comp=Z,32nm,0.8s,baz=37,slow=3.7,SNR=65
GEYT LR LR 14 49 17.1
comp=Z,78nm,18.7s,baz=70,slow=37
TRD Trivandrum 63.16 261 *e*P **P** **14 20 40.4 -0.7**
ARCES ARCESS Array B 64.35 339 P **P** **14 20 48.0 -0.2**
comp=Z,6.2nm,0.6s,baz=46,slow=8.7,SNR=21
ARCES LR LR 14 52 12.0
comp=Z,195nm,19.3s,baz=67,slow=39
ARCES ARCESS Array B 64.35 339 *e*P **P** **14 20 48.0 -0.2**
YKW3 Yellowknife Ar 65.16 29 *e*P **P** **14 20 53.4 -0.1**
comp=Z,9.4nm,1.0s
YKA Yellowknife Ar 65.20 30 P **P** **14 20 54.4 +0.6**
comp=Z,7.9nm,0.8s,baz=303,slow=6.7,SNR=136
YKB5 Yellowknife Ar 65.20 30 *e*P **P** **14 20 52.9 -0.9**
MOS Moscow 67.17 323 *e*P **P** **14 21 04.2 -2.3**
MOS *e* 14 21 27.7
MOS pmax pmax
comp=Z,34nm,0.7s
VRH Novokhopyorsk 67.35 318 *e*P **P** **14 21 06.9 -0.8**
VRH pmax pmax
comp=Z,60nm,0.7s
STKA Stephens Creek 67.71 178 P **P** **14 21 10.6 +0.5**
comp=Z,15nm,0.9s,baz=336,slow=7.6,SNR=31
STKA LR LR 14 51 39.3
comp=Z,97nm,19.8s,baz=24,slow=37
STKA Stephens Creek 67.71 178 *e*P **P** **14 21 10.4 +0.3**
comp=Z,2.3nm,0.8s
OBN Obninsk 68.01 323 P **P** **14 21 11.8 0.0**
comp=Z,24nm,0.5s,baz=182,slow=1.5,SNR=7.9
OBN Obninsk 68.01 323*c i*P **P** **14 21 11.5 -0.3**
OBN *e* 14 23 42.7
OBN pmax pmax
comp=Z,74nm,1.7s
OBN MLR MLR
comp=Z,216nm,19.0s
LPSR Galich'ya Gora 68.13 320 *e*P **P** **14 21 12.3 -0.3**
LPSR pmax pmax
comp=Z,40nm,0.7s
BBOO Buckleboo 68.71 183 *e*P **P** **14 21 16.5 +0.2**
comp=Z,14nm,0.8s
VSR Storozhevoye 68.72 318 *e*P **P** **14 21 15.9 -0.5**
VSR pmax pmax
comp=Z,70nm,0.9s
KULLO Kullorsuaq 68.95 5 *i* P **P** **14 21 17.8 +0.4**
comp=Z,35nm,0.7s
KULLO Kullorsuaq 68.95 5 *i* P **P** **14 21 17.8 +0.4**
KULLO pmax pmax
comp=Z,35nm,0.7s
FIA1 FINESS Array S 68.97 332 *e*P **P** **14 21 17.3 -0.4**
FINES FINESS Array B 68.97 332 P **P** **14 21 17.6 -0.2**
comp=Z,22nm,0.8s,baz=73,slow=6.6,SNR=49
FINES LR LR 14 53 15.2
comp=Z,140nm,18.6s,baz=42,slow=37
GOF Gofitskoye 69.70 311⇑ *e*P **P** **14 21 22.6 +0.1**
GOF pmax pmax
comp=Z,60nm,0.9s
WSAR Wadi Sarin 69.84 284 P **P** **14 21 24.2 +0.4**
comp=Z,15nm,0.9s,baz=88,slow=7.7,SNR=11
DGRG David-gareji 70.10 307 P **P** **14 21 27.2 +2.1**
DGRG David-gareji 70.10 307 *e*P **P** **14 21 27.2 +2.1**
GUDG Gudauri 70.15 308 P **P** **14 21 27.5 +1.8**
LTY Liberty 70.18 46 *e*P **P** **14 21 26.2 +0.6**
comp=Z,8.9nm,1.2s
DUS Dusheti 70.20 308 P **P** **14 21 27.3 +1.6**
DUS Dusheti 70.20 308 *e*P **P** **14 21 27.3 +1.6**
BANOM Banah 70.25 288 *i* P **P** **14 21 26.8 +0.5**
SNR=13
BANOM Banah 70.25 288 P **P** **14 21 26.7 +0.3**
SNR=5.3
BANOM Banah 70.25 288 P **P** **14 21 26.7 +0.3**
SNR=5.3
ZEI Tsey 70.34 309 *e*P **P** **14 21 25.6 -1.2**
ZEI pmax pmax
comp=Z,26nm,0.7s
B08A Colville Reser 70.36 44 *e*P **P** **14 21 27.6 +1.0**
comp=Z,12nm,1.3s
TBLG Delisi 70.36 308 P **P** **14 21 29.1 +2.4**
TBLG Delisi 70.36 308 *e*P **P** **14 21 29.0 +2.4**
SMDO Samad 70.39 285 P **P** **14 21 27.9 +0.7**
SNR=6.6
SMDO Samad 70.39 285 P **P** **14 21 27.9 +0.7**
SNR=6.6
I03D Drain, OR 70.45 50 P **P** **14 21 29.0 +1.9**
baz=302
KBZ Khabaz 70.48 310 P **P** **14 21 28.2 +0.9**
comp=Z,47nm,0.9s,baz=60,slow=3.6,SNR=90
KBZ LR LR 14 54 19.4
comp=Z,109nm,20.0s,baz=52,slow=38
KIV Kislovodsk 70.49 311 *i* P **P** **14 21 28.0 +0.5**
SNR=19
KIV Kislovodsk 70.49 311*c i*P **P** **14 21 27.9 +0.4**
KIV *e* 14 24 01.9
KIV *e*S **SKSac** **14 31 19.7 -4.8**
KIV pmax pmax
comp=Z,136nm,1.0s
KIV MLR MLR
comp=Z,88nm,18.0s
KIV Kislovodsk 70.49 311 *e*P **P** **14 21 27.8 +0.4**
comp=Z,97nm,0.8s
KIV Kislovodsk 70.49 311 P **P** **14 21 28.0 +0.4**
SNR=16
KIV Kislovodsk 70.49 311 P **P** **14 21 28.0 +0.4**
SNR=16
VSU Vasula 70.54 329*ce*P **P** **14 21 27.7 +0.3**
VSU pmax pmax
comp=Z,88nm,0.6s
H04A Detroit Lake 70.64 48 *e*P **P** **14 21 29.4 +1.0**
H04A *e*pP **pP** **14 21 44.5 +0.2**
ONI Oni 70.73 309 P **P** **14 21 30.1 +1.1**
ONI Oni 70.73 309 *e*P **P** **14 21 30.1 +1.1**
UOSS Minazif 70.84 287 *e*P **P** **14 21 29.6 -0.3**
comp=Z,1.6nm,0.8s
NEY Neytrino 70.84 310*c i*P **P** **14 21 30.8 +1.0**
NEY pmax pmax
comp=Z,5.0nm,0.8s
G05D Wamic, OR 70.87 48 P **P** **14 21 31.2 +1.4**
baz=302
HATD Hatta, Dubai 70.96 287 *i* P **P** **14 21 31.0 +0.5**
SNR=11
HATD Hatta, Dubai 70.96 287 P **P** **14 21 31.0 +0.5**
SNR=5.4
HATD Hatta, Dubai 70.96 287 P **P** **14 21 31.0 +0.5**
SNR=5.4
I04A Tendick Farm, 70.98 49 P **P** **14 21 31.7 +1.3**
baz=302
ASHO Ashiyiah 71.09 287 *i* P **P** **14 21 31.7 +0.3**
SNR=13
ASHO Ashiyiah 71.09 287 P **P** **14 21 31.5 +0.1**
SNR=7.7
ASHO Ashiyiah 71.09 287 P **P** **14 21 31.5 +0.1**
SNR=7.7
L02D Cave Junction, 71.10 51 P **P** **14 21 32.3 +1.1**
baz=302
GNI Garni 71.18 306 P **P** **14 21 32.6 +0.7**
comp=Z,26nm,0.8s,baz=352,slow=6.4,SNR=7.6
GNI Garni 71.18 306 P **P** **14 21 33.1 +1.3**
GNI Garni 71.18 306*ce*P **P** **14 21 32.8 +0.9**
GNI pmax pmax
comp=Z,117nm,0.7s
GNI Garni 71.18 306 *e*P **P** **14 21 32.6 +0.7**
comp=Z,22nm,0.8s
C09A Chrisman Ranch 71.25 44 *e*P **P** **14 21 32.9 +0.9**
comp=Z,12nm,1.0s
G06A Carlson Farm, 71.28 47 *e*pP pP 14 21 51.0 +2.9
D08A Wollman Farm, 71.29 45 *e*P **P** **14 21 33.4 +1.2**
comp=Z,8.3nm,1.0s
AKH Akhalkalaki 71.32 308 P **P** **14 21 34.3 +1.6**
AKH Akhalkalaki 71.32 308 *e*P **P** **14 21 34.3 +1.6**
I05D Terrebonne, OR 71.34 48 P **P** **14 21 34.2 +1.5**
baz=303
FAQ Al Faqa, Dubai 71.42 287 P **P** **14 21 33.1 -0.2**
FAQ *i* P **P** **14 21 33.2 -0.1**
SNR=6.2
FAQ Al Faqa, Dubai 71.42 287 P **P** **14 21 33.2 -0.1**
ARQ Araqi 71.44 286 P **P** **14 21 33.7 +0.2**
SNR=8.4
ARQ Araqi 71.44 286 P **P** **14 21 33.7 +0.2**
SNR=8.4
SUMG Summit 71.54 359 *i* P **P** **14 21 35.0 +1.2**
comp=Z,55nm,0.8s
SUMG Summit 71.54 359 *i* P **P** **14 21 35.0 +1.2**
SUMG pmax pmax
comp=Z,55nm,0.8s
SUMG Summit 71.54 359 *e*P **P** **14 21 34.9 +1.2**
comp=Z,54nm,0.7s
NEW Newport 71.64 43 P **P** **14 21 35.5 +1.1**
baz=304
NEW Newport 71.64 43 *e*P **P** **14 21 34.9 +0.6**
NEW pmax pmax
comp=Z,5.0nm,0.8s
NEW Newport 71.64 43 *e*P **P** **14 21 34.9 +0.6**
comp=Z,4.7nm,0.8s
YBH Yreka Blue Hor 71.89 51 *e*P **P** **14 21 38.5 +2.5**
YBH Yreka Blue Hor 71.89 51 *e*P **P** **14 21 38.5 +2.5**
NWAO Narrogin (SRO) 71.91 200 P **P** **14 21 36.0 +0.1**
comp=Z,20nm,0.7s,baz=99,slow=0.2,SNR=18
J05D Fort Rock, OR 71.97 49 P **P** **14 21 37.7 +1.2**
baz=303
M02C Callahan 71.98 52 P **P** **14 21 37.8 +1.3**
baz=303
N02D Trinity Center 72.30 52 P **P** **14 21 39.5 +1.0**
baz=303
M04C Macdoel 72.41 51 P **P** **14 21 40.5 +1.3**
baz=303
IZAR Zarasai 72.44 327 *e*P **P** **14 21 39.3 +0.4**
IZAR IAmb IAmb 14 21 40.5
comp=Z,16nm,0.7s
MICGM Minsk 72.48 325 *e* **P** **14 21 37.0 -2.2**
MNK Minsk 72.48 325 *e*P **P** **14 21 37.0 -2.2**
K05A Summer Lake 72.49 50 *e*P **P** **14 21 41.6 +1.9**
comp=Z,39nm,1.3s
IDID Didziasalis 72.49 327 *e*P **P** **14 21 39.6 +0.4**
IDID IAmb IAmb 14 21 41.0
comp=Z,16nm,0.8s
SOC Sochi 72.50 311 *e*P **P** **14 21 38.8 -0.7**
SOC *e*S **S** **14 31 00.6 +1.2**
SOC *e*SS **SS** **14 35 41.9 +3.6**
SOC *e*SSS SSS 14 38 51.8
SOC pmax pmax
comp=Z,36nm,0.8s
SOC MLR MLR
comp=Z,94nm,19.0s
ISAL Salakas 72.60 327 *e*P **P** **14 21 40.3 +0.4**
ISAL IAmb IAmb 14 21 41.7
comp=Z,26nm,0.8s
WDC Whiskeytown Da 72.62 52 *e*P **P** **14 21 41.9 +1.6**
WDC pmax pmax
comp=Z,12nm,0.9s
WDC Whiskeytown Da 72.62 52 *e*P **P** **14 21 41.9 +1.6**
comp=Z,12nm,0.9s
SCO Scoresbysund 72.83 354 *i* P **P** **14 21 42.2 +1.2**
comp=Z,25nm,1.0s
SCO Scoresbysund 72.83 354 *i* P **P** **14 21 42.2 +1.2**
SCO pmax pmax
comp=Z,25nm,1.0s
F10A Beach Ranch, E 72.87 45 *e*P **P** **14 21 42.7 +0.9**
comp=Z,8.4nm,0.9s
WALA Waterton Lakes 72.94 41 *e*P **P** **14 21 42.4 +0.2**
comp=Z,9.9nm,0.9s
ANN Anapa 73.19 313 *e*P **P** **14 21 43.3 -0.2**
ANN pmax pmax
comp=Z,65nm,1.0s
O03D Paynes Creek 73.25 52 P **P** **14 21 45.1 +1.0**
baz=304
MOD Modoc Plateau 73.31 50 *e*P **P** **14 21 45.8 +1.3**
comp=Z,12nm,0.9s
BLMT Blacktail Moun 73.31 42 *e*P **P** **14 21 46.8 +2.3**
BMO Blue Mountains 73.46 46 *e*P **P** **14 21 46.5 +1.2**
comp=Z,11nm,0.9s
JTMT Jette 73.50 43 *e*P **P** **14 21 46.6 +1.0**
YBMT Yellow Bay 73.58 42 *e*P **P** **14 21 47.2 +1.2**
SWMT Swartz Lake 73.80 43 *e*P **P** **14 21 48.4 +1.2**
ORV Oroville 73.85 53 *e*P **P** **14 21 48.3 +0.8**
ORV *e**PP **pP** **14 22 03.8 +0.3**
ORV Oroville 73.85 53 *e*P **P** **14 21 48.3 +0.8**
ORV *e*pP **pP** **14 22 03.8 +0.3**
WVOR Wild Horse Val 74.03 49 *e*P **P** **14 21 49.8 +1.1**
WVOR pmax pmax
comp=Z,11nm,1.0s
WVOR Wild Horse Val 74.03 49 *e*P **P** **14 21 49.8 +1.1**
comp=Z,11nm,1.0s
AKASG Malin Array Be 74.18 322 P **P** **14 21 49.0 -0.2**
comp=Z,28nm,0.7s,baz=46,slow=6.1,SNR=64
AKASG LR LR 14 57 14.9
comp=Z,343nm,19.4s,baz=40,slow=38
AKASG Malin Array Be 74.18 322 P **P** **14 21 49.0 -0.2**
AKASG pmax pmax
comp=Z,27nm,0.6s
AKASG MLR MLR
comp=Z,343nm,19.4s
AKBB Malin Array Si 74.18 322 *e*P **P** **14 21 48.8 -0.4**
AKBB pmax pmax
comp=Z,41nm,0.8s
AKBB Malin Array Si 74.18 322 *e*P **P** **14 21 48.8 -0.4**
comp=Z,41nm,0.8s
KIEV Kiev 74.19 322*c i*P **P** **14 21 48.8 -0.5**
KIEV pmax pmax
comp=Z,45nm,0.8s
KIEV Kiev 74.19 322 *e*P **P** **14 21 48.8 -0.5**
comp=Z,40nm,0.7s
AK11 Malin Array Si 74.22 322 *e*P **P** **14 21 48.9 -0.6**
MSO Missoula 74.23 43 P **P** **14 21 50.7 +0.9**
baz=306
MSO Missoula 74.23 43 *e*P **P** **14 21 49.7 -0.1**
comp=Z,6.3nm,0.9s
NC405 NORSAR Array S 74.26 337 *e*P **P** **14 21 49.4 -0.2**
NC303 NORSAR Array S 74.29 337 *e*P **P** **14 21 49.5 -0.2**
HFS Hagfors 74.33 335 P **P** **14 21 49.7 -0.3**
comp=Z,19nm,0.8s,baz=63,slow=6.8,SNR=34
NC204 NORSAR Array S 74.44 337 *e*P **P** **14 21 50.2 -0.4**
NB201 NORSAR Array S 74.44 337 *e*P **P** **14 21 50.4 -0.2**
NB2 NORSAR Subarra 74.48 337 P **P** **14 21 50.6 -0.2**
comp=Z,30nm,0.9s,baz=42,slow=6.2
NB2 NORSAR Subarra 74.48 337 P **P** **14 21 50.6 -0.2**
baz=42,slow=6.2
NOA NORSAR Array B 74.48 337 P **P** **14 21 50.9 0.0**
comp=Z,17nm,0.7s,baz=41,slow=5.9,SNR=58
NOA PP **PP** **14 24 37.3 +0.1**
comp=Z,4.6nm,0.9s,baz=40,slow=8.7,SNR=5.0
NOA LR LR 14 57 34.5
comp=Z,182nm,19.5s,baz=40,slow=38
NOA NORSAR Array B 74.48 337 P **P** **14 21 50.9 0.0**
NOA 14 24 37.3
NOA pmax pmax
comp=Z,18nm,0.7s
NOA pmax pmax
comp=Z,5.0nm,0.9s
NOA MLR MLR
comp=Z,182nm,19.5s
AFDM Forest Hills D 74.53 53 *e*P **P** **14 21 53.1 +1.6**
comp=Z,7.6nm,1.0s
CHMT Chamberlain Mo 74.56 43 *e*P **P** **14 21 51.9 +0.1**
NBO02 NORSAR Array S 74.58 337 *e*P **P** **14 21 51.4 0.0**
NC602 NORSAR Array S 74.60 336 *e*P **P** **14 21 50.9 -0.6**
ILULI Ilulissat 74.62 4 *i* P **P** **14 21 52.2 +0.8**
comp=Z,35nm,0.8s
ILULI Ilulissat 74.62 4 *i* P **P** **14 21 52.2 +0.8**
ILULI pmax pmax
comp=Z,35nm,0.8s
NBO00 NORSAR Array S 74.62 337 *e*P **P** **14 21 51.5 -0.2**
NAO01 NORSAR Array S 74.73 337 *e*P **P** **14 21 51.8 -0.4**
SUW Suwalki 74.91 327 *e*P **P** **14 21 53.7 +0.3**
SUW Suwalki 74.91 327 *e*P **P** **14 21 53.7 +0.3**
SIM Simferopol' 75.03 315*de*P **P** **14 21 54.8 +0.5**
SIM pmax pmax
comp=Z,51nm,0.8s
SIM MLR MLR
comp=Z,20nm,14.0s
FFC Flin Flon 75.12 32 *e*P **P** **14 21 55.4 +0.8**
FFC Flin Flon 75.12 32 *e*P **P** **14 21 55.4 +0.8**
MFID Camas Ranch 75.16 47 *e*P **P** **14 21 56.4 +1.2**
comp=Z,14nm,1.0s
FCC Fort Churchill 75.34 26 *e*P **P** **14 21 56.2 +0.4**
FCC pmax pmax
comp=Z,27nm,1.1s
FCC Fort Churchill 75.34 26 *e*P **P** **14 21 56.2 +0.4**
comp=Z,27nm,1.1s
CMB Columbia Colle 75.42 54 *e*P **P** **14 21 58.0 +1.2**
CMB pmax pmax
comp=Z,17nm,1.1s
CMB Columbia Colle 75.42 54 *e*P **P** **14 21 58.0 +1.2**
comp=Z,17nm,1.1s
LRM Limekiln Ridge 75.66 43 *e*P **P** **14 21 59.5 +1.2**
EGMT Eagleton 75.77 40 P **P** **14 21 59.8 +1.2**
baz=309
EGMT Eagleton 75.77 40 *e*P **P** **14 21 59.4 +0.8**
comp=Z,27nm,0.8s
DLMT Dillon 75.86 44 *e*P **P** **14 22 00.7 +1.5**
comp=Z,13nm,0.8s
HLID Hailey 75.90 46 P **P** **14 22 00.8 +1.2**
baz=307
HLID Hailey 75.90 46 *e*P **P** **14 22 01.1 +1.6**
comp=Z,11nm,1.0s
BMN Battle Mountai 76.05 50 *e*P **P** **14 22 02.1 +1.7**
BMN pmax pmax
comp=Z,19nm,0.8s
BMN Battle Mountai 76.05 50 *e*P **P** **14 22 02.1 +1.7**
comp=Z,19nm,0.8s
KONO Kongsberg 76.06 336 *e*P **P** **14 22 01.1 +1.2**
KONO pmax pmax
comp=Z,216nm,2.5s
BOZ Bozeman (W) 76.22 43 P **P** **14 22 02.4 +1.2**
baz=308
BOZ Bozeman (W) 76.22 43 *e*P **P** **14 22 02.5 +1.2**
BOZ pmax pmax
comp=Z,11nm,0.9s
BOZ Bozeman (W) 76.22 43 *e*P **P** **14 22 02.5 +1.2**
comp=Z,11nm,0.9s
NVAR Mina Array Bea 76.54 52 P **P** **14 22 05.0 +1.7**
comp=Z,12nm,0.9s,baz=286,slow=6.0,SNR=46
QLMT Earthquake Lak 76.84 44 *e*P **P** **14 22 06.2 +1.4**
SFJD Kangerlussuaq 76.85 4 P **P** **14 22 05.0 +0.8**
comp=Z,25nm,0.7s,baz=353,slow=4.7,SNR=20
SFJD Kangerlussuaq 76.85 4 *i* P **P** **14 22 04.6 +0.4**
comp=Z,25nm,0.8s
SFJD Kangerlussuaq 76.85 4 P **P** **14 22 05.0 +0.8**
SFJD pmax pmax
comp=Z,25nm,0.7s
SFJD Kangerlussuaq 76.85 4 *e*P **P** **14 22 04.8 +0.6**
comp=Z,27nm,0.8s
ELK Elko 77.09 49 *e*P **P** **14 22 08.1 +1.7**
ELK *e**PP **pP** **14 22 23.3 +0.9**
ELK Elko 77.09 49 *e*P **P** **14 22 08.1 +1.7**
ELK epP **pP** **14 22 23.3 +0.9**
YMR Madison River 77.20 44 *e*P **P** **14 22 08.7 +1.7**
comp=Z,11nm,0.9s
GCMT Greycliff 77.21 42 *e*P **P** **14 22 08.4 +1.5**
LVV L'vov 77.31 323 *e*P **P** **14 22 07.2 +0.1**
LVV *e*S **S** **14 31 50.4 -2.2**
MCID Moose Creek 77.37 44 *e*P **P** **14 22 09.0 +1.1**
YFT Old Faithful 77.41 44 *e*P **P** **14 22 11.8 +3.7**
BEL Belsk 77.45 326 *e*P **P** **14 22 09.2 +1.3**
BEL Belsk 77.45 326 *e*P **P** **14 22 09.2 +1.3**
LKWY Lake 77.58 44 *e*P **P** **14 22 11.4 +2.3**
LKWY pmax pmax
comp=Z,13nm,1.0s
LKWY Lake 77.58 44 *e*P **P** **14 22 11.4 +2.3**
comp=Z,13nm,1.0s
BSD Bornholm Skovb 77.58 331⇑ *i*P **P** **14 22 08.4 -0.1**
comp=Z,49nm,0.8s
BSD Bornholm Skovb 77.58 331⇑ *i*P **P** **14 22 08.4 -0.1**
BSD pmax pmax

comp=Z,49nm,0.8s
H17A Grant Village 77.59 44 P P 14 22 12.0 +2.9
baz=309
H17A Grant Village 77.59 44 *e*P P 14 22 12.0 +2.9
comp=Z,20nm,1.0s
PKM Mcpherson Peak 77.60 56 P P 14 22 10.7 +1.4
baz=306
FLWY Flagg Ranch 77.71 44 *e*P P 14 22 10.9 +1.1
comp=Z,14nm,0.9s
RLMT Red Lodge 77.85 43 P P 14 22 11.7 +1.1
baz=310,SNR=11
RLMT Red Lodge 77.85 43 *e*P P 14 22 11.4 +0.8
comp=Z,13nm,1.1s
MOOW Moose Ponds 77.89 44 *e*P P 14 22 12.6 +1.8
comp=Z,13nm,1.4s
GRAC Grapevine Rang 77.98 53 P P 14 22 13.1 +1.9
baz=306
ISA Isabella, Lake 78.04 55 P P 14 22 13.5 +1.9
baz=306
LOHW Long Hollow 78.06 44 *e*P P 14 22 14.0 +2.2
KWP Kalwaria Pacla 78.07 324 *e*P P 14 22 12.2 +0.9
KWP Kalwaria Pacla 78.07 324⇑*i*P P 14 22 12.3 +0.9
KWP Kalwaria Pacla 78.07 324 *e*P P 14 22 12.3 +0.9
REDW Red Top Meadow 78.08 45 *e*P P 14 22 13.2 +1.3
comp=Z,11nm,1.0s
COP Copenhagen 78.11 333 *i* P P 14 22 11.7 +0.3
comp=Z,34nm,1.0s
COP Copenhagen 78.11 333 *e*P P 14 22 11.7 +0.3
COP pmax pmax
comp=Z,34nm,1.0s
TESR Tescani 78.16 320⇓*i*P P 14 22 12.4 +0.4
BUR08 Bucovina Ar. S 78.17 321 *e*P P 14 22 12.3 +0.2
BURAR Bucovina Array 78.18 321⇑*i*P P 14 22 12.5 +0.3
CFR Carcaliu 78.23 318⇑*i*P P 14 22 12.6 +0.3
CFR Carcaliu 78.23 318 P P 14 22 12.6 +0.3
SCZ2 Santa Cruz Isl 78.24 57 P P 14 22 14.1 +1.5
baz=306
DAC Darwin (Calif) 78.25 54 *e*P P 14 22 13.8 +0.9
DAC pmax pmax
comp=Z,6.0nm,0.9s
DAC Darwin (Calif) 78.25 54 *e*P P 14 22 13.8 +0.9
comp=Z,5.5nm,0.9s
R11A Troy Canyon, C 78.31 51 P P 14 22 14.5 +1.3
baz=307,SNR=17
R11A Troy Canyon, C 78.31 51 *e*P P 14 22 14.6 +1.5
comp=Z,21nm,1.3s
DGMT Dagmar 78.31 38 P P 14 22 14.0 +1.2
baz=312
BGU Big Grassy Mou 78.31 48 *e*P P 14 22 14.9 +1.8
comp=Z,13nm,1.1s
BORG Borgarnes 78.33 352 P P 14 22 14.4 +1.9
comp=Z,25nm,0.8s,baz=2.8,slow=2.7,SNR=5.2
ODBI Odobesti 78.43 319⇑*i*P P 14 22 14.9 +1.5
BR131 Keskin Array S 78.45 311 *e*P P 14 22 13.6 -0.3
BRTR Keskin Array B 78.45 311 P P 14 22 14.1 +0.2
comp=Z,15nm,1.0s,baz=90,slow=4.9,SNR=48
BRTR LR LR 15 01 30.8
comp=Z,50nm,19.9s,baz=38,slow=39
MPMC Manual Prospec 78.45 54 P P 14 22 15.2 +1.2
baz=306,SNR=11
LAO LASA Array 78.47 40 P P 14 22 15.3 +1.6
baz=311
LAO LASA Array 78.47 40 *e*P P 14 22 14.6 +0.9
LAO *e*pP pP 14 22 30.3 +0.5
A25A Svangstu Ranch 78.53 37 P P 14 22 14.9 +1.0
baz=313
TIRR Tirgusor 78.54 317⇓*i*P P 14 22 14.4 +0.4
TIRR Tirgusor 78.54 317 *e*P P 14 22 14.1 +0.1
TIRR pmax pmax
comp=Z,11nm,0.8s
TIRR Tirgusor 78.54 317 *e*P P 14 22 14.1 +0.1
comp=Z,11nm,0.8s
VRI Vrincioaia 78.54 319⇓*i*P P 14 22 14.9 +0.8
VRI Vrincioaia 78.54 319 P P 14 22 15.4 +1.3
VRI pmax pmax
comp=Z,154nm,0.9s
BLG Laguna Peak, P 78.55 56 P P 14 22 15.6 +1.2
baz=306
PLOR Plostina 78.59 319⇑*i*P P 14 22 15.1 +0.7
PLOR Plostina 78.59 319 P P 14 22 15.0 +0.7
FURC Furnace Creek, 78.61 53 P P 14 22 16.1 +1.5
baz=307
HARR Harsova 78.65 318⇓*i*P P 14 22 14.9 +0.2
LRMC Laurel Mtn Rad 78.67 54 P P 14 22 16.2 +1.1
baz=306
TPNV Topopah Spring 78.72 52 P P 14 22 16.4 +1.0
baz=307,SNR=24
TPNV Topopah Spring 78.72 52 *e*P P 14 22 16.7 +1.2
TPNV pmax pmax
comp=Z,13nm,0.8s
TPNV Topopah Spring 78.72 52 *e*P P 14 22 16.7 +1.2
comp=Z,13nm,0.8s
KOLS Kolonicke sedl 78.75 323 *e*P P 14 22 15.5 +0.3
KOLS pmax pmax
comp=Z,13nm,1.0s
KOLS Kolonicke sedl 78.75 323 *e*P P 14 22 15.5 +0.3
KOLS *e* 14 48 23.3
HWUT Hardware Ranch 78.76 46 *e*P P 14 22 16.9 +1.3
comp=Z,15nm,1.0s
EDW2 Edwards Air Fo 78.81 55 P P 14 22 17.6 +1.8
baz=306
DUG Dugway, Tooele 78.89 48 P P 14 22 17.9 +1.6
baz=308,SNR=8.2
DUG Dugway, Tooele 78.89 48 *e*P P 14 22 17.8 +1.5
DUG *e*PP pP 14 22 33.5 +1.2
DUG pmax pmax
comp=Z,19nm,1.1s
DUG Dugway, Tooele 78.89 48 *e*P P 14 22 17.8 +1.5
comp=Z,19nm,1.1s
DUG *e*pP pP 14 22 33.5 +1.2
BR231 Keskin MP Arra 78.90 311 *e*P P 14 22 14.4 -1.9
STHS Stebnicka Huta 78.91 324 *e*P P 14 22 16.9 +0.8
STHS pmax pmax
comp=Z,19nm,0.9s
STHS Stebnicka Huta 78.91 324 *e*P P 14 22 16.9 +0.8
UZH Uzhgorod 78.95 323*d*i*P P 14 22 17.2 +1.0
UZH *e* 14 22 33.4
UZH *e*S S 14 32 11.2 +1.0
OJC Ojcow 79.03 325 *e*P P 14 22 17.1 +0.5
OJC Ojcow 79.03 325 *e*P P 14 22 16.3 -0.3
OJC pmax pmax
comp=Z,50nm,0.9s
OJC Ojcow 79.03 325 *e*P P 14 22 16.3 -0.3
comp=Z,50nm,0.9s
MSAB Monastry St. A 79.10 317⇑*i*P P 14 22 17.9 +0.8
ISR Istrita 79.12 319⇑*i*P P 14 22 18.5 +1.2
TCUT Toone Canyon 79.16 47 *e*P P 14 22 19.0 +1.2
comp=Z,22nm,1.0s
CRVS Cervenica-Dubn 79.16 324 *e*P P 14 22 18.1 +0.6
CRVS Cervenica-Dubn 79.16 324 *e*P P 14 22 18.0 +0.6
BW06 Boulder Array 79.19 45 P P 14 22 18.3 +0.3
baz=310,SNR=11
BW06 Boulder Array 79.19 45 *e*P P 14 22 18.5 +0.5
PD31 Pinedale Array 79.19 45 *e*P P 14 22 18.4 +0.5
PDAR Pinedale Array 79.19 45 P P 14 22 18.8 +0.8
comp=Z,4.9nm,0.8s,baz=287,slow=2.0,SNR=23
MLR Muntele Rosu 79.20 319⇓*i*P P 14 22 18.4 +0.5
MLR Muntele Rosu 79.20 319 *e*P P 14 22 17.7 -0.2
MLR pmax pmax
comp=Z,16nm,1.1s
MLR Muntele Rosu 79.20 319 *e*P P 14 22 17.7 -0.2
comp=Z,16nm,1.1s
CTU Camp Tracy 79.22 47 *e*P P 14 22 19.2 +1.1
comp=Z,5.8nm,0.8s
PSUT Pine Spring 79.28 50 *e*P P 14 22 19.6 +1.1
comp=Z,11nm,0.9s
SHOC Shoshone, Teco 79.33 53 P P 14 22 20.1 +1.4
baz=307
GSC Goldstone, Bar 79.35 54 P P 14 22 20.5 +1.7
baz=307
GSC Goldstone, Bar 79.35 54 *e*P P 14 22 19.8 +1.0
GSC pmax pmax
comp=Z,7.0nm,0.9s
GSC Goldstone, Bar 79.35 54 *e*P P 14 22 19.8 +1.0
comp=Z,7.1nm,0.9s
NIE Niedzica 79.36 325 *e*P P 14 22 19.5 +1.0
NIE *e* 14 25 20.4
NIE Niedzica 79.36 325 *e*P P 14 22 19.5 +1.0
NIE *e* 14 25 20.5
CIS Catalina Islan 79.41 56 P P 14 22 20.4 +1.3
baz=306
BFSC Mount Baldy Ra 79.42 55 P P 14 22 20.6 +1.3
baz=307
JLU Jordanelle 79.45 47 *e*P P 14 22 20.9 +1.4
comp=Z,8.1nm,0.9s
NLU North Lily Min 79.48 48 *e*P P 14 22 21.0 +1.4
comp=Z,11nm,1.0s
CJR Cluj-Napoca 79.60 321⇓*i*P P 14 22 21.3 +1.4
D25A Fairfield 79.64 38 P P 14 22 21.4 +1.3
baz=313
VOIR 79.71 319⇓*i*P P 14 22 21.9 +1.3
MPU Maple Canyon 79.71 48 *e*P P 14 22 22.1 +1.2
comp=Z,12nm,0.8s
C26A Wahner Farm, P 79.78 37 P P 14 22 22.2 +1.3
baz=314
TUQ Turquoise Moun 79.84 54 P P 14 22 22.6 +1.0
baz=307
A28A Rude Farm, Bot 79.91 36 P P 14 22 22.4 +0.9
baz=315
KECS Kecovo 79.92 324 *e*P P 14 22 22.2 +0.7
KECS pmax pmax
comp=Z,6.0nm,1.1s
KECS Kecovo 79.92 324 *e*P P 14 22 22.2 +0.7
LANS Liptovska Anna 79.93 325 *e*P P 14 22 22.8 +1.2
LANS Liptovska Anna 79.93 325 *e*P P 14 22 22.8 +1.2
HEC Hector,Ludlow 79.94 54 P P 14 22 23.0 +1.0
baz=307
ARR Arges 79.97 320⇑*i*P P 14 22 23.4 +1.4
DRGR 80.00 322⇑*i*P P 14 22 22.7 +0.6
E25A Miller Ranch, 80.04 39 P P 14 22 23.3 +1.0
baz=313
OKC Ostrava-Krasne 80.05 326 *e*P P 14 22 22.7 +0.5
OKC Ostrava-Krasne 80.05 326 *e*P P 14 22 22.7 +0.5
MURC Murrieta 80.11 56 P P 14 22 23.7 +0.8
baz=307
KSP Ksiaz 80.15 328 *e*P P 14 22 23.4 +0.7
KSP Ksiaz 80.15 328 *e*P P 14 22 23.4 +0.7
D26A Manning 80.16 38 P P 14 22 23.0 +0.1
baz=314
B28A Dugan Ranch, T 80.18 36 P P 14 22 24.1 +1.1
baz=315
MSU Marysvale 80.32 49 *e*P P 14 22 26.1 +1.9
MSU Marysvale 80.32 49 *e*P P 14 22 26.1 +1.9
MORC Moravsky Berou 80.37 326⇓*i*P P 14 22 24.4 +0.4
MORC Moravsky Berou 80.37 326 *e*P P 14 22 24.3 +0.4
MORC pmax pmax
comp=Z,97nm,1.0s
MORC Moravsky Berou 80.37 326 *e*P P 14 22 24.3 +0.4
comp=Z,97nm,1.0s
LOT Lotru 80.37 320⇓*i*P P 14 22 24.7 +0.5
A29A Manning Farm, 80.38 35 P P 14 22 24.6 +0.6
baz=316,SNR=6.1
F25A Bowman 80.40 39 P P 14 22 25.2 +0.9
baz=313
GMRC Granite Mounta 80.41 54 P P 14 22 25.5 +0.9
baz=308
TMUT Trail Mountain 80.42 48 *e*P P 14 22 25.5 +0.7
comp=Z,11nm,1.1s
DPC Dobruska-Polom 80.49 327 *e*P P 14 22 25.5 +0.9
DPC *e*PP PP 14 25 29.2 +1.4
DPC Dobruska-Polom 80.49 327 *e*P P 14 22 25.5 +0.9
DPC *e* 14 25 29.2
UPC Upice 80.51 327 *i* P P 14 22 25.5 +0.8
E26A Carlson Angus 80.53 38 P P 14 22 25.7 +0.8
baz=314
D27A Center 80.56 37 P P 14 22 25.9 +0.8
baz=314
P17A Butcher Ranch, 80.59 48 *e*P P 14 22 27.1 +1.5
comp=Z,22nm,1.0s
PFO Pinyon Flats O 80.59 55 P P 14 22 26.5 +0.9
baz=307,SNR=7.8
PFO Pinyon Flats O 80.59 55 *e*P P 14 22 26.5 +0.9
PFO pmax pmax
comp=Z,18nm,1.0s
PFO Pinyon Flats O 80.59 55 *e*P P 14 22 26.5 +0.9
comp=Z,18nm,1.0s
LCMT Little Creek M 80.59 51 *e*P P 14 22 27.2 +1.6
comp=Z,14nm,1.0s
PSZ Piszkesteto 80.60 324⇓*i*P P 14 22 25.9 +0.6
PSZ Piszkesteto 80.60 324‖*e*SKKPbc P 14 22 26.0 +0.6
PSZ Piszkesteto 80.60 324 *e*P P 14 22 25.9 +0.6
PSZ pmax pmax
comp=Z,32nm,0.9s
PSZ Piszkesteto 80.60 324 *e*P P 14 22 25.9 +0.6
comp=Z,32nm,0.9s
MTPU Mount Pierson 80.61 50 *e*P P 14 22 27.6 +1.7
comp=Z,8.8nm,0.9s
B29A Wagenman Farm, 80.65 35 P P 14 22 26.3 +0.8
baz=315
BELC Belle Mtn. Jos 80.66 55 P P 14 22 26.6 +0.7
baz=308
VYHS Vyhne 80.69 325 *e*P P 14 22 26.3 +0.6
VYHS pmax pmax
comp=Z,11nm,1.1s
VYHS Vyhne 80.69 325 *e*P P 14 22 26.3 +0.6
P18A Preston Nutter 80.78 47 *e*P P 14 22 28.0 +1.2
comp=Z,18nm,1.0s
A30A Hoffart Farm, 80.80 35 P P 14 22 26.7 +0.5
baz=316,SNR=14
F26A Lodgepole 80.85 39 P P 14 22 27.6 +0.9
baz=314
KNB Kanab 80.86 51 *e*P P 14 22 28.6 +1.6
KNB pmax pmax
comp=Z,23nm,1.1s
KNB Kanab 80.86 51 *e*P P 14 22 28.6 +1.6
comp=Z,22nm,1.1s
G25A Newell 80.92 40 P P 14 22 27.8 +0.8
baz=313
ULM Lac du Bonnet 80.93 32 P P 14 22 27.1 +0.2
comp=Z,6.6nm,0.9s,baz=322,slow=7.4,SNR=5.9
ULM Lac du Bonnet 80.93 32 *e*P P 14 22 26.9 0.0
ULM pmax pmax
comp=Z,10.0nm,0.9s
ULM Lac du Bonnet 80.93 32 *e*P P 14 22 26.9 0.0
comp=Z,9.8nm,0.9s
SRU San Rafael Swe 80.95 48 *e*P P 14 22 28.5 +1.0
SRU pmax pmax
comp=Z,19nm,0.8s
SRU San Rafael Swe 80.95 48 *e*P P 14 22 28.5 +1.0
comp=Z,19nm,0.8s
K22A Casper 80.96 43 P P 14 22 27.9 +0.4
baz=312
K22A Casper 80.96 43 *e*P P 14 22 28.7 +1.2
D28A Regan 80.97 37 P P 14 22 27.9 +0.7
baz=315
BAR Barrett 81.01 56 *e*P P 14 22 28.4 +0.7
comp=Z,18nm,0.8s
MONP2 Monument Peak 81.05 56 P P 14 22 29.1 +1.0
baz=308,SNR=7.6
MMU Miners Mountai 81.06 49 *e*P P 14 22 30.2 +2.0
PVCC Panska Ves 81.12 328 *e*P P 14 22 28.6 +0.7
PVCC Panska Ves 81.12 328 *e*P P 14 22 28.6 +0.7
IRM Iron Mountain 81.13 54 P P 14 22 29.4 +1.0
baz=308
BRG Berggiesshubel 81.13 329 *e*P P 14 22 28.3 +0.4
comp=Z,24nm,1.1s
BRG Berggiesshubel 81.13 329 *e*P P 14 22 28.3 +0.4
BRG pmax pmax
comp=Z,24nm,1.1s
VRAC Vranov 81.13 326 P P 14 22 28.6 +0.5
comp=Z,15nm,0.6s,baz=57,slow=5.8,SNR=19
VRAC Vranov 81.13 326⇓*i*P P 14 22 29.2 +1.2
B30A Myrvik Farm, E 81.14 35 P P 14 22 28.8 +0.7
baz=316,SNR=7.0
F27A Lemmon 81.17 39 P P 14 22 29.0 +0.7
baz=314
CLL Collm 81.19 329⇑*i*P P 14 22 28.2 -0.1
comp=Z,47nm,1.0s
CLL *e* 14 22 44.0
CLL *e*PP PP 14 25 33.0 -0.4
CLL *e*S S 14 32 36.0 +2.3
CLL *e*PS PnS 14 33 22.0 -4.7
CLL Lm MLR 15 05 00.0
comp=Z,100nm,18.6s
CLL Collm 81.19 329 *e*P P 14 22 28.0 -0.3
CLL pmax pmax
comp=Z,52nm,1.0s
CLL Collm 81.19 329 *e*P P 14 22 27.9 -0.3
comp=Z,52nm,1.0s
BC3 Big Chuckawall 81.23 55 P P 14 22 29.8 +0.8
baz=308,SNR=10
G26A Maurine 81.27 39 P P 14 22 29.3 +0.4
baz=314,SNR=6.4
RSSD Black Hills 81.33 41 P P 14 22 29.8 +0.3
baz=313
RSSD Black Hills 81.33 41 *e*P P 14 22 30.5 +1.1
RSSD Black Hills 81.33 41 *e*P P 14 22 30.5 +1.1
SMOL Smolenice 81.33 325 *e*P P 14 22 30.4 +1.3
SMOL Smolenice 81.33 325 *e*P P 14 22 30.3 +1.2
E28A Huff 81.34 37 P P 14 22 29.6 +0.4
baz=315
W13A Hualapai Mount 81.37 53 *e*P P 14 22 31.1 +1.3
comp=Z,7,6nm,1.0s
SWSC Sam W. Stewart 81.43 55 P P 14 22 31.0 +1.1
baz=308
GOPC GO Pecny, Ondr 81.48 328 *e*P P 14 22 30.5 +0.6
GOPC AMS AMS 15 02 20.0
comp=Z,200nm,13.6s
D29A Pettibone, Tap 81.53 37 P P 14 22 30.8 +0.6
baz=315
PRU Pruhonice 81.53 328 *e*P P 14 22 30.6 +0.5
PRU Pruhonice 81.53 328 *e*P P 14 22 30.6 +0.5
G27A Dupree 81.56 39 P P 14 22 30.9 +0.5
baz=314
U15A North Rim 81.56 51 *e*P P 14 22 33.2 +2.3
comp=Z,8.2nm,0.9s
I25A Rochford 81.56 41 P P 14 22 30.7 +0.1
baz=313
PKS7 Kunszentmiklos 81.57 324⇑*e*P P 14 22 31.1 +0.8
C30A Mose, Pekin 81.60 36 P P 14 22 31.0 +0.5
baz=316
A32A Rocking H Ranc 81.63 34 P P 14 22 31.0 +0.3
baz=317
TREC Trest 81.64 327 *e*P P 14 22 31.3 +0.6
TREC Trest 81.64 327 *e*P P 14 22 31.3 +0.6
O20A White River Ci 81.64 46 P P 14 22 31.6 +0.5
baz=311
PDMCI Parker Dam,Lak 81.69 54 P P 14 22 32.3 +1.1
baz=308,SNR=10
Y12C Blythe 81.78 54 P P 14 22 32.8 +1.1
baz=308
Y12C Blythe 81.78 54 *e*P P 14 22 33.2 +1.4
comp=Z,15nm,0.9s
C31A Landman Farms, 81.89 35 P P 14 22 31.9 -0.2
baz=317
MDVR Moldovita 81.89 321⇑*i*P P 14 22 32.2 0.0
D30A Buchanan 81.90 36 P P 14 22 32.6 +0.4
baz=316
J25A Sunshine Ranch 81.95 41 P P 14 22 32.4 -0.2
baz=313
PKST T`s 81.95 324⇑*e*P P 14 22 32.8 +0.4
B32A Ashes, Strandq 82.00 34 P P 14 22 32.6 0.0
baz=317
H27A Howes 82.00 39 P P 14 22 33.4 +0.7
baz=314,SNR=7.4
I26A New Underwood 82.01 40 P P 14 22 33.3 +0.5
baz=314
GLA Glamis 82.01 55 P P 14 22 34.4 +1.4
baz=308,SNR=8.8
GLA Glamis 82.01 55 *e*P P 14 22 34.3 +1.3
GLA pmax pmax
comp=Z,17nm,0.8s
GLA Glamis 82.01 55 *e*P P 14 22 34.3 +1.3
comp=Z,17nm,0.8s
A33A Warroad 82.11 33 P P 14 22 32.9 -0.3
baz=318,SNR=6.5
PV09 Paradox Valley 82.17 48 *e*P P 14 22 35.3 +1.2
NKC Novy Kostel 82.24 329 *e*P P 14 22 34.6 +0.8
NKC *e*PCP PcP 14 22 37.1 -2.0
NKC Novy Kostel 82.24 329 *e*P P 14 22 34.6 +0.8
E30A Jud 82.26 37 P P 14 22 34.5 +0.4
baz=316
F29A Eureka 82.29 38 P P 14 22 34.6 +0.4
baz=315
PKS9 Tamasi 82.32 324⇓*e*P P 14 22 34.8 +0.5
SOP Sopron 82.33 325⇑*e*P P 14 22 35.6 +1.2
AGMN Agassiz Nation 82.37 34 P P 14 22 34.4 -0.2
baz=318,SNR=6.1
AGMN Agassiz Nation 82.37 34 *e*P P 14 22 34.5 0.0
comp=Z,12nm,0.8s
PV04 Paradox Valley 82.38 48 *e*P P 14 22 36.4 +1.4
J26A Sides Ranch, S 82.39 41 P P 14 22 35.5 +0.6
baz=314
I27A Quinn 82.40 40 P P 14 22 34.6 -0.2
baz=314
PKSM Moragy 82.41 323⇑*i*P P 14 22 34.7 -0.1
D31A Mcclaflin, Tow 82.43 36 P P 14 22 34.7 -0.2
baz=317
N23A Red Feather La 82.45 44 P P 14 22 36.7 +1.2
baz=312,SNR=6.1
N23A Red Feather La 82.45 44 *e*P P 14 22 36.7 +1.2
PHWY Pilot Hill 82.45 44 *e*P P 14 22 36.3 +0.8
comp=Z,8.3nm,0.9s
PV05 Paradox Valley 82.47 48 *e*P P 14 22 37.1 +1.6
CONA Conrad Observa 82.47 326 *i* P P 14 22 36.1 +0.9
comp=Z,13nm,0.8s,SNR=11
KHC Kasperske Hory 82.59 328 *e*P P 14 22 36.1 +0.3
KHC Kasperske Hory 82.59 328 *e*P P 14 22 36.1 +0.3
KHC pmax pmax
comp=Z,10.0nm,1.0s
KHC Kasperske Hory 82.59 328 *e*P P 14 22 36.0 +0.3
comp=Z,9.5nm,1.0s
Y14A Wickenburg 82.66 53 *e*P P 14 22 37.7 +1.3
comp=Z,34nm,0.8s
WUAZ Wupatki 82.71 51 P P 14 22 38.5 +1.7
baz=310,SNR=11
WUAZ Wupatki 82.71 51 *e*P P 14 22 38.4 +1.7
comp=Z,14nm,0.8s
E31A Nome 82.71 36 P P 14 22 37.0 +0.7
baz=317
PV01 Paradox Valley 82.75 48 *e*P P 14 22 38.2 +1.2
GEC2 GERESS Array S 82.75 327 *e*P P 14 22 36.4 -0.3
GEC2 pmax pmax
comp=Z,12nm,0.9s
GEC2 GERESS Array S 82.75 327 *e*P P 14 22 36.4 -0.3
comp=Z,12nm,0.9s
GERES GERESS Array B 82.75 327 P P 14 22 36.6 0.0
comp=Z,4.4nm,0.6s,baz=35,slow=4.9,SNR=40
GERES LR LR 15 01 49.4
comp=Z,102nm,21.0s,baz=68,slow=37
GEA0 GERESS Array S 82.76 327 *e*P P 14 22 36.2 -0.5
B34A Aery, Baudette 82.77 33 P P 14 22 36.6 -0.1
baz=319
C33A Trail 82.81 34 P P 14 22 36.9 +0.1
baz=318
113A Mohawk Valley, 82.89 55 *e*P P 14 22 38.2 +0.7
comp=Z,4.9nm,0.8s
I28A Midland 82.91 39 P P 14 22 38.1 +0.7
baz=315
H29A Onida 82.95 39 P P 14 22 38.2 +0.6
baz=315
J27A Elkhorn Farm, 82.99 40 P P 14 22 38.7 +0.7
baz=314
SMCO Snowmass 83.00 46 *e*P P 14 22 38.5 0.0
comp=Z,6.8nm,0.8s
F31A Hecla 83.04 37 P P 14 22 38.9 +0.8
baz=316
G30A Faulkton 83.13 38 P P 14 22 38.9 +0.3
baz=316,SNR=6.2
ARSA Arzberg 83.13 325 *i* P P 14 22 39.0 +0.4
comp=Z,9.1nm,0.8s,SNR=5.4
GRFO Grafenberg 83.16 329 *e*P P 14 22 39.1 +0.4
GRFO pmax pmax
comp=Z,41nm,0.9s
GRFO Grafenberg 83.16 329 *e*P P 14 22 39.0 +0.4
comp=Z,41nm,0.9s
MOA Molln 83.25 327 *i* P P 14 22 39.7 +0.5
comp=Z,15nm,1.0s,SNR=7.2
B35A Bob, Littlefor 83.27 33 P P 14 22 39.7 +0.4
baz=319,SNR=7.2
J28A Allard Ranch, 83.28 40 P P 14 22 39.8 +0.4
baz=315
C34A RKJ Ranch, Bem 83.28 34 P P 14 22 39.4 +0.1
baz=318
I29A Vivian Onida 83.33 39 P P 14 22 40.3 +0.7
baz=315
X16A Lo Mia Camp, P 83.36 52 *e*P P 14 22 41.4 +1.2
comp=Z,15nm,1.0s
ISCO Idaho Springs 83.37 45 P P 14 22 41.3 +1.0
baz=312,SNR=7.4
ISCO Idaho Springs 83.37 45 *e*P P 14 22 41.7 +1.4
ISCO pmax pmax
comp=Z,5.0nm,0.7s
ISCO Idaho Springs 83.37 45 *e*P P 14 22 41.7 +1.4
comp=Z,4.6nm,0.7s
MVCO Mesa Verde 83.39 48 P P 14 22 41.6 +1.2
baz=311
MVCO Mesa Verde 83.39 48 *e*P P 14 22 41.6 +1.2
comp=Z,10nm,0.9s
EKA Eskdalemuir Ar 83.50 340 P P 14 22 40.7 +0.4
comp=Z,1.9nm,0.5s,baz=36,slow=4.9,SNR=12
EKA PP PP 14 25 53.3 +1.1
comp=Z,0.2nm,0.3s,baz=22,slow=9.0,SNR=3.9
D34A Park Rapids 83.58 34 P P 14 22 41.0 +0.2
baz=318
E33A Westby DABS, E 83.63 35 P P 14 22 41.4 +0.3
baz=318
C35A Jirik Farms, M 83.66 33 P P 14 22 41.0 -0.2
baz=319,SNR=6.3

SUSD **Miller** 83.71 38 P P 14 22 41.8 +0.2
baz=316
EIL **Elat** 83.75 302 P P 14 22 42.4 +0.4
comp=Z,35nm,0.9s,baz=5.7,slow=4.6,SNR=23
J29A **Okreek** 83.76 39 P P 14 22 42.0 +0.2
baz=315
PERS **Pernice** 83.77 325 *i* P P 14 22 42.0 +0.1
comp=Z,55nm,0.8s
SOKA **Soboth** 83.78 325 *i* P P 14 22 42.2 +0.3
comp=Z,46nm,1.0s,SNR=25
VAY **Valandovo** 83.83 318 *i* P P 14 22 42.6 +0.4
G32A **Webster** 83.84 37 P P 14 22 42.3 0.0
baz=317
I30A **Oacoma** 83.86 39 P P 14 22 42.0 -0.3
baz=316
SKO **Skopje** 83.98 319 *i* P P 14 22 44.1 +1.1
F33A **5 Mile Ranch,** 83.99 36 P P 14 22 43.5 +0.6
baz=318
W18A **Petrified Fore** 83.99 51 P P 14 22 44.3 +0.9
baz=311
214A **Organ Pipe Nat** 84.03 55 P P 14 22 44.5 +1.0
baz=309,SNR=7.8
214A **Organ Pipe Nat** 84.03 55 *e*P P 14 22 44.6 +1.2
comp=Z,65nm,0.8s
S22A **4UR Ranch, Cre** 84.04 47 P P 14 22 45.3 +1.6
baz=312,SNR=17
S22A **4UR Ranch, Cre** 84.04 47 *e*P P 14 22 45.3 +1.6
comp=Z,13nm,1.0s
D35A **Remer** 84.09 34 P P 14 22 43.8 +0.3
baz=319
C36A **Pine Crest Far** 84.12 33 P P 14 22 43.6 0.0
baz=320,SNR=5.1
OBKA **Obir** 84.13 325 *i* P P 14 22 43.5 -0.2
comp=Z,9.7nm,0.8s
BLY **Banja Luka** 84.18 323⇓ *i* P P 14 22 44.2 +0.3
Q24A **Divide** 84.20 45 P P 14 22 45.1 +0.6
baz=313
Q24A **Divide** 84.20 45 *e*P P 14 22 45.7 +1.1
comp=Z,5.8nm,0.8s
X18A **Snowflake** 84.23 51 *e*P P 14 22 45.8 +1.2
comp=Z,10nm,0.8s
J30A **Dallas** 84.24 39 P P 14 22 44.5 +0.2
baz=316
KBA **Koelnbreinsper** 84.25 326 *i* P P 14 22 44.4 -0.1
comp=Z,14nm,0.8s,SNR=7.4
E35A **Pequot Lakes** 84.33 34 P P 14 22 44.8 +0.2
baz=319
G33A **Ortonville** 84.40 36 P P 14 22 45.8 +0.8
baz=318
D36A **Goodland** 84.42 33 P P 14 22 45.1 0.0
baz=320
H32A **Carlson Farm,** 84.42 37 P P 14 22 45.3 +0.1
baz=317
C37A **Embarrass** 84.43 32 P P 14 22 45.8 +0.7
baz=320
MYKA **Terra Mystica** 84.45 326 *i* P P 14 22 44.9 -0.5
comp=Z,13nm,0.6s
LJU **Ljubljana** 84.49 325 *e*P P 14 22 45.0 -0.4
MEM **Membach** 84.49 332 P P 14 22 45.5 +0.1
comp=Z,12nm,1.2s
F34A **Alexandria** 84.51 35 P P 14 22 46.2 +0.7
baz=318
BOJS **Bojanci** 84.55 324 *i* P P 14 22 45.7 -0.1
comp=Z,27nm,1.0s
EYMN **Ely** 84.55 32 P P 14 22 45.9 +0.1
baz=321,SNR=5.8
EYMN **Ely** 84.55 32 *e*P P 14 22 46.0 +0.3
comp=Z,15nm,1.0s
OGNE **Ogallala** 84.58 42 P P 14 22 46.6 +0.5
baz=314
OGNE **Ogallala** 84.58 42 *e*P P 14 22 46.7 +0.6
comp=Z,14nm,0.8s
H33A **Prehn Over Nor** 84.63 37 P P 14 22 46.5 +0.3
baz=318,SNR=9.0
K30A **Basset** 84.65 40 P P 14 22 47.3 +0.9
baz=316
BIA **Bitola** 84.71 318 *i* P P 14 22 47.0 +0.2
I32A **Karley and Nic** 84.75 38 P P 14 22 48.1 +1.3
baz=317
PDG **Podgorica** 84.81 320⇑ *i* P P 14 22 47.4 +0.3
SDCO **Great Sand Dun** 84.82 46 P P 14 22 48.3 +0.6
baz=313,SNR=17
SDCO **Great Sand Dun** 84.82 46 *e*P P 14 22 48.8 +1.1
comp=Z,9.1nm,1.0s
C38A **Sawbill Land.** 84.83 32 P P 14 22 47.0 -0.1
baz=321,SNR=5.5
WTTA **Wattenberg** 84.86 327 *i* P P 14 22 47.4 -0.2
comp=Z,8.1nm,0.9s
ABTA **Abfaltersbach** 84.87 327 *i* P P 14 22 46.6 -0.9
comp=Z,19nm,1.1s,SNR=5.5
E36A **McGregor** 84.88 34 P P 14 22 47.6 +0.2
baz=320
BCLA **Clavier** 84.91 333 P P 14 22 47.3 -0.1
OHR **Ohrid** 84.93 318 *i* P P 14 22 47.8 0.0
MOTA **Moosalm** 85.03 328 *i* PcP P 14 22 49.0 +0.7
comp=Z,9.2nm,1.2s
PMOR **Pomariorio Ree** 85.03 112 *e*T T 15 55 43.6
comp=Z,16nm,0.2s
UDBI **Udbina** 85.03 323 P P 14 22 48.0 -0.3
J32A **Parkston** 85.04 38 P P 14 22 48.9 +0.5
baz=317
RETA **Reutte** 85.06 328 *i* PcP P 14 22 48.6 +0.2
comp=Z,18nm,0.8s,SNR=7.9
LANF **Langenberg** 85.11 331⇑ *e*P P 14 22 48.7 +0.2
K31A **O'Neill** 85.12 39 P P 14 22 49.3 +0.5
baz=316
TUC **Tucson** 85.13 53 P P 14 22 50.0 +0.9
baz=310
TUC **Tucson** 85.13 53 *e*P P 14 22 49.9 +0.9
TUC pmax pmax
comp=Z,10.0nm,0.9s
TUC **Tucson** 85.13 53 *e*P P 14 22 49.9 +0.9
comp=Z,10nm,0.9s
WLF **Walferdange** 85.20 332 P P 14 22 49.7 +0.7
comp=Z,16nm,1.7s
SNF **Seneffe** 85.21 333 P P 14 22 49.1 +0.1
CWF **Charnwood Fore** 85.21 337 *e*P P 14 22 48.7 -0.2
comp=Z,17nm,0.8s
STON **Ston** 85.29 321 P P 14 22 48.6 -0.9
ECSD **EROS Data Cent** 85.39 37 P P 14 22 50.4 +0.4
baz=318,SNR=10
ECSD **EROS Data Cent** 85.39 37 *e*P P 14 22 50.1 +0.1
comp=Z,8.8nm,0.8s
L31A **Butterfield Fa** 85.40 40 P P 14 22 50.6 +0.4
baz=316
BFO **Black Forest** 85.41 330 *e*P P 14 22 49.7 -0.4
BFO *e**PP pP 14 23 07.0 +0.7
BFO pmax pmax
comp=Z,27nm,1.1s
BFO **Black Forest** 85.41 330 *e*P P 14 22 49.6 -0.4
comp=Z,27nm,1.1s
BFO *epP pP 14 23 07.0 +0.7
PPT **Papeete** 85.42 115 LR LR 14 51 21.4
comp=Z,103nm,21.9s,baz=328,slow=29
PPT2 **Papeete2** 85.43 115 *e*LR LR 14 49 53.5
comp=Z,365nm,30.2s
NVLJ **Novalja** 85.43 324 P P 14 22 49.9 -0.3
DOU **Dourbes** 85.43 333 P P 14 22 50.0 -0.1
FETA **Feichten** 85.44 328 *i* PcP P 14 22 50.3 -0.2
comp=Z,10nm,0.7s
J33A **Davis** 85.52 38 P P 14 22 51.6 +0.9
baz=317
H35A **Sunnyside Ranc** 85.53 36 P P 14 22 51.9 +1.2
baz=319
DAVA **Damuels** 85.59 328 *i* PcP P 14 22 51.0 -0.1
comp=Z,23nm,1.0s,SNR=7.3
WLS **Welschbruch** 85.74 330 *e*P P 14 22 51.1 -0.6
CDF **Champ du Feu** 85.77 331 *e*P P 14 22 51.0 -1.0
CDF pmax pmax
comp=Z,19nm,0.8s
DAMY **Dhamar** 85.82 285 *e*P P 14 22 53.7 +0.7
comp=Z,36nm,1.1s
T25A **Trinidad** 85.87 46 P P 14 22 54.0 +1.2
baz=313
T25A **Trinidad** 85.87 46 *e*P P 14 22 53.7 +0.9
comp=Z,16nm,0.8s
M31A **Lambtecht Ranc** 85.93 40 P P 14 22 53.6 +0.7
baz=316
FUORN **Ofenpass-Fuorn** 85.95 328 *e*P P 14 22 52.7 -0.4
comp=Z,40nm,1.2s
L32A **Elgin** 85.95 39 P P 14 22 53.7 +0.8
baz=317
ECH **Echery** 85.98 330⇑ *e*P P 14 22 52.5 -0.4
DAVOX **Davos/Dischmat** 85.99 328 P P 14 22 53.6 +0.4
comp=Z,8.7nm,0.9s,baz=29,slow=2.6,SNR=8.4
K33A **Hardington** 86.03 38 P P 14 22 53.8 +0.5
baz=318

J34A **George** 86.04 37 P P 14 22 54.4 +1.1
baz=318
H36A **Jessenland, He** 86.04 35 P P 14 22 54.3 +1.0
baz=319
SPMN **Marine on St.** 86.07 34 P P 14 22 54.3 +0.9
baz=320
LAZ **Ladron** 86.07 50 *e*P P 14 22 55.5 +1.6
ANMO **Albuquerque** 86.13 49 P P 14 22 55.3 +1.2
baz=312
ANMO **Albuquerque** 86.13 49 *ce*P P 14 22 56.5 +2.4
ANMO pmax pmax
comp=Z,11nm,1.7s
ANMO **Albuquerque** 86.13 49 *e*P P 14 22 55.8 +1.7
comp=Z,7.4nm,1.0s
MOF **Molkenrain** 86.28 330⇑ *e*P P 14 22 54.1 -0.4
BGNE **Belgrade** 86.31 40 P P 14 22 55.1 +0.4
baz=317
K34A **Le Mars** 86.42 38 P P 14 22 55.5 +0.4
baz=318
Y22D **IRIS PASSCAL I** 86.42 50 P P 14 22 56.0 +0.4
baz=312
TUE **Stuetta** 86.46 328 *e*P P 14 22 55.7 +0.2
comp=Z,33nm,1.7s
H37A **Dierke Farm, C** 86.51 35 P P 14 22 56.6 +1.0
baz=320
SCHQ **Schefferville** 86.51 15 P P 14 22 55.2 -0.1
comp=Z,13nm,0.8s,baz=350,slow=5.6,SNR=9.9
SCHQ LR LR 15 05 56.2
comp=Z,56nm,18.8s,baz=12,slow=39
SCHQ **Schefferville** 86.51 15 *e*P P 14 22 55.9 +0.5
comp=Z,17nm,0.9s
BNM **Barren Site** 86.55 50 *e*P P 14 22 57.4 +1.2
O31A **Woolen Ranch,** 86.60 41 P P 14 22 56.5 +0.4
baz=316
M33A **Taylor Creek F** 86.68 39 P P 14 22 57.1 +0.6
baz=317
319A **Douglas** 86.71 53 *e*P P 14 22 58.8 +1.9
comp=Z,48nm,1.9s
I37A **Lemond, Waseca** 86.72 35 P P 14 22 57.5 +0.9
baz=320
J36A **Seneca 1, Swea** 86.79 36 P P 14 22 57.7 +0.8
baz=319
L34A **Svendsen Farm,** 86.81 38 P P 14 22 56.9 -0.2
baz=318
121A **Cookes Peak, D** 86.91 51 P P 14 22 59.1 +1.1
baz=312
121A **Cookes Peak, D** 86.91 51 *e*P P 14 22 59.9 +1.9
comp=Z,7.5nm,0.9s
COWI **Conover** 87.00 32 *e*P P 14 22 58.0 +0.1
comp=Z,9.9nm,1.0s
J37A **Redenius Farm,** 87.18 36 P P 14 22 59.5 +0.6
baz=320
I38A **Scanlan Farm,** 87.19 35 P P 14 22 59.5 +0.6
baz=320
TAOE **Nuku Hiva Isla** 87.22 103 *e*LR LR 14 50 47.5
comp=Z,278nm,30.2s
K36A **Gilmore City** 87.26 37 P P 14 22 59.9 +0.6
baz=319
P32A **Huiting Farm,** 87.37 41 P P 14 23 00.1 +0.3
baz=317
M35A **Neola** 87.52 38 P P 14 23 00.9 +0.4
baz=318
K37A **Belmond** 87.55 36 P P 14 23 01.0 +0.4
baz=320
N34A **Lincoln** 87.58 39 P P 14 23 01.0 +0.2
baz=318
J38A **Wedel Dairy, R** 87.68 35 P P 14 23 02.0 +0.8
baz=320
O34A **Beatrice** 87.96 40 P P 14 23 02.9 +0.3
baz=318
N35A **Tabor** 88.00 39 P P 14 23 03.5 +0.6
baz=318
LOR **Lormes** 88.04 332 *e*P P 14 23 01.7 -1.2
LOR pmax pmax
comp=Z,25nm,1.6s
Q33A **Connelly Farm,** 88.23 41 P P 14 23 04.1 +0.1
baz=317
LPG **La Plagne** 88.33 329 *e*P P 14 23 03.5 -1.2
LPG pmax pmax
comp=Z,5.0nm,0.6s
SSF **Saint Saulge** 88.35 332 *e*P P 14 23 04.1 -0.2
SSF pmax pmax
comp=Z,7.0nm,1.0s
P34A **Walnut Farm, R** 88.36 40 P P 14 23 04.7 +0.1
baz=318,SNR=5.5
LDF **La Druitiere** 88.38 335 *e*P P 14 23 07.7 +3.3
LDF pmax pmax
comp=Z,9.0nm,1.0s
M37A **Trindle Farm,** 88.38 37 P P 14 23 05.1 +0.5
baz=319
R33A **Olander Ranch,** 88.65 42 P P 14 23 06.2 +0.3
baz=317
Q34A **Chapman** 88.76 41 P P 14 23 07.0 +0.5
baz=318
M38A **Pleasantville** 88.79 37 P P 14 23 07.3 +0.8
baz=320
N37A **Lee Faris, Mou** 88.79 38 P P 14 23 07.2 +0.6
baz=319
KSU1 **Kansas State U** 88.80 40 P P 14 23 07.2 +0.5
baz=318
O36A **Bolckow** 88.89 39 P P 14 23 07.8 +0.8
baz=319
T32A **Huddler Ranch,** 88.96 43 P P 14 23 08.2 +0.7
baz=316
MNTX **Cornudas Mount** 88.97 51 P P 14 23 08.6 +1.0
baz=313
MNTX **Cornudas Mount** 88.97 51 *e*P P 14 23 08.7 +1.1
comp=Z,2.6nm,0.9s
AMTX **Amarillo** 89.02 46 P P 14 23 08.9 +1.1
baz=315
AMTX **Amarillo** 89.02 46 *e*P P 14 23 08.9 +1.1
comp=Z,13nm,0.9s
JFWS **Jewell Farm** 89.02 34 *e*P P 14 23 08.0 +0.4
JFWS pmax pmax
comp=Z,12nm,0.8s
JFWS **Jewell Farm** 89.02 34 *e*P P 14 23 08.0 +0.4
comp=Z,12nm,0.8s
R34A **Isabella, Hill** 89.06 41 P P 14 23 08.2 +0.4
baz=317
P36A **Good Intent, A** 89.15 39 P P 14 23 09.1 +0.9
baz=319
PLDF **La Plantade** 89.21 331 *e*P P 14 23 08.5 0.0
N38A **Joes South For** 89.25 37 P P 14 23 09.3 +0.6
baz=320
O37A **Wolven Farm, M** 89.27 38 P P 14 23 09.6 +0.8
baz=319
R35A **Emporia Munici** 89.59 41 P P 14 23 11.1 +0.8
baz=318
VLDQ **Val d'Or** 89.74 24 *e*P P 14 23 10.4 -0.4
comp=Z,28nm,1.3s
V32A **Arapaho** 89.94 44 P P 14 23 13.2 +1.1
baz=316
U33A **Lingo Farm, Me** 89.95 43 P P 14 23 12.9 +0.9
baz=317
R36A **Gordon, Harris** 89.96 40 P P 14 23 12.3 +0.2
baz=318
P38A **Dawn** 89.99 38 P P 14 23 13.2 +1.0
baz=320
O39A **Kirksville** 90.00 37 P P 14 23 12.7 +0.5
baz=320
S35A **Otter Creek Ra** 90.01 41 P P 14 23 13.1 +0.8
baz=318
MFF **Saint Martin d** 90.09 334 *e*P P 14 23 11.0 -1.5
MFF pmax pmax
comp=Z,11nm,0.9s
W32A **Sentinel** 90.26 45 P P 14 23 14.3 +0.7
baz=316
U34A **Anderson Ranch** 90.26 43 P P 14 23 14.4 +0.9
baz=317
U34A **Anderson Ranch** 90.26 43 *e*P P 14 23 14.5 +0.9
comp=Z,18nm,0.8s
V33A **Lossen Ranch,** 90.30 44 P P 14 23 14.5 +0.8
baz=317
R37A **Teagarden Farm** 90.32 40 P P 14 23 14.4 +0.6
baz=319
S36A **Lake Cedric, C** 90.36 41 P P 14 23 14.6 +0.6
baz=318
O40A **La Belle** 90.43 37 P P 14 23 14.7 +0.5
baz=321
Q38A **Cooks Store, C** 90.45 39 P P 14 23 15.1 +0.7
baz=320
T35A **Sooner Cattle** 90.47 42 P P 14 23 15.0 +0.5
baz=318
W33A **Caddo, Fort Co** 90.68 44 P P 14 23 16.2 +0.8
baz=317
CAF **Calviac** 90.68 331 *e*P P 14 23 15.1 -0.3
CAF pmax pmax
comp=Z,9.0nm,1.0s

T36A **Boggs Farm, Ca** 90.70 41 P P 14 23 16.4 +0.9
baz=318
Q39A **Willow Grove F** 90.71 38 P P 14 23 16.4 +0.9
baz=320
V34A **Guthrie** 90.71 43 P P 14 23 16.8 +1.1
baz=317
V34A **Guthrie** 90.71 43 *e*P P 14 23 16.2 +0.6
comp=Z,23nm,0.6s
S37A **Fort Scott** 90.73 40 P P 14 23 16.2 +0.5
baz=319
X32A **Elmer** 90.74 45 P P 14 23 16.4 +0.6
baz=316
P40A **Paris** 90.80 37 P P 14 23 16.9 +1.0
baz=321
R38A **Fenwick Farm,** 90.89 39 P P 14 23 16.4 0.0
baz=320
V35A **Meyer Ranch, C** 91.14 43 P P 14 23 18.1 +0.5
baz=318
T37A **Cheneyville 18** 91.17 41 P P 14 23 18.6 +0.9
baz=319
Q40A **Laux Farm, Aux** 91.20 38 P P 14 23 18.5 +0.7
baz=321
R39A **Chumby, Stover** 91.24 39 P P 14 23 18.2 +0.2
baz=320
U36A **Oologah** 91.28 42 P P 14 23 18.6 +0.4
baz=318
S38A **Stockton** 91.31 40 P P 14 23 18.7 +0.4
baz=320
Y33A **Hilltop Ranch,** 91.42 45 P P 14 23 19.7 +0.8
baz=317
X34A **Smith Ranch, M** 91.44 44 P P 14 23 20.4 +1.4
baz=317
T38A **Diamond** 91.56 40 P P 14 23 20.0 +0.5
baz=319
S39A **Bolivar** 91.57 39 P P 14 23 19.9 +0.3
baz=320
W35A **Tecumseh** 91.57 43 P P 14 23 20.4 +0.7
baz=318
U37A **Salina** 91.60 41 P P 14 23 20.5 +0.7
baz=319
TUL1 **Leonard** 91.60 42 P P 14 23 20.2 +0.5
baz=318
V36A **Jenks** 91.61 42 P P 14 23 20.8 +1.0
baz=318
R40A **Maddies Statio** 91.64 38 P P 14 23 20.1 +0.2
baz=320
TX31 **Lajitas Ar. Si** 91.67 51 *e*P P 14 23 21.3 +1.0
TXAR **Lajitas Array** 91.67 51 P P 14 23 21.4 +1.1
comp=Z,4.2nm,0.8s,baz=300,slow=3.2,SNR=58
TXAR PKKPbc **PKKPbc** 14 40 40.4 +2.4
comp=Z,0.3nm,0.5s,baz=150,slow=6.5,SNR=8.6
TXAR LR LR 14 58 46.2
comp=Z,19nm,21.8s,baz=0.0,slow=32
ABTX **Abilene, Hawle** 91.82 47 P P 14 23 21.5 +0.6
baz=316
ABTX **Abilene, Hawle** 91.82 47 *e*P P 14 23 21.6 +0.8
comp=Z,11nm,1.0s
Z33A **Whitaker Ranch** 91.86 46 P P 14 23 21.5 +0.5
baz=316
W36A **Wetumka** 91.94 43 P P 14 23 21.6 +0.2
baz=318
Y34A **Reagan Ranch,** 91.95 45 P P 14 23 21.8 +0.4
baz=317
U38A **Gravette** 91.96 41 P P 14 23 21.4 0.0
baz=319
V37A **Hulbert** 91.97 42 P P 14 23 22.1 +0.6
baz=319
T39A **Clever** 92.05 40 P P 14 23 21.8 0.0
baz=320
S40A **Lebanon** 92.06 39 P P 14 23 22.0 +0.2
baz=320
X35A **Drake** 92.07 44 P P 14 23 22.2 +0.2
baz=318
133A **Hamilton Ranch** 92.26 46 P P 14 23 23.6 +0.7
baz=316
Z34A **Collier Ranch,** 92.28 45 P P 14 23 23.3 +0.4
baz=317
X36A **Centrahoma** 92.29 43 P P 14 23 23.8 +0.9
baz=318
HHAR **Hobbs** 92.31 41 *e*P P 14 23 22.9 -0.2
comp=Z,34nm,1.6s
W37B **Quinton** 92.37 42 P P 14 23 23.9 +0.6
baz=318
V38A **Canehill** 92.38 41 P P 14 23 23.8 +0.5
baz=319
T40A **Mansfield** 92.39 39 P P 14 23 23.6 +0.2
baz=320
SFIN **Lafayette** 92.47 34 P P 14 23 22.8 -0.8
baz=324
U39A **Green Forest** 92.48 40 P P 14 23 22.8 -1.1
baz=320
233A **Rising Star** 92.69 47 P P 14 23 25.9 +1.0
baz=316
Z35A **Perchaven, San** 92.69 45 P P 14 23 24.7 -0.1
baz=317
134A **White-Moore Ra** 92.77 46 P P 14 23 25.5 +0.2
baz=317
V39A **Pettigrew** 92.81 41 P P 14 23 25.6 +0.3
baz=320
Y36A **Durant** 92.82 44 P P 14 23 26.3 +0.9
baz=318
U40A **Yellville** 92.83 40 P P 14 23 25.5 +0.1
baz=320
X38A **Whitesboro** 93.05 42 P P 14 23 26.7 +0.2
baz=319
333A **Richland Sprin** 93.14 47 P P 14 23 27.6 +0.6
baz=316
JCT **Junction City** 93.25 48 P P 14 23 27.9 +0.3
baz=316
JCT **Junction City** 93.25 48 *e*P P 14 23 27.2 -0.3
JCT pmax pmax
comp=Z,7.0nm,0.8s
JCT **Junction City** 93.25 48 *e*P P 14 23 27.2 -0.3
comp=Z,7.5nm,0.8s
433A **Art** 93.48 48 P P 14 23 29.2 +0.6
baz=316
X39A **Fountain Ranch** 93.56 42 P P 14 23 29.9 +1.1
baz=319
334A **Lometa** 93.58 47 P P 14 23 29.9 +1.0
baz=317
W40A **Ferguson Farm,** 93.60 41 P P 14 23 29.7 +0.7
baz=320
MIAR **Mount Ida** 93.82 42 P P 14 23 30.5 +0.4
baz=320
MIAR **Mount Ida** 93.82 42 *e*P P 14 23 29.9 -0.1
MIAR pmax pmax
comp=Z,41nm,1.8s
MIAR **Mount Ida** 93.82 42 *e*P P 14 23 29.9 -0.1
comp=Z,41nm,1.8s
X201 **Greenbrier Sit** 93.90 40 *e*P P 14 23 29.6 -0.8
comp=Z,13nm,1.2s
W41A **Tony Mavity, V** 94.05 40 P P 14 23 30.7 -0.3
baz=320
W41B **Gary Mavity, V** 94.05 40 P P 14 23 30.8 -0.2
baz=320
X40A **Basin Creek Fa** 94.26 41 P P 14 23 33.1 +1.1
baz=320
534A **Blanco** 94.38 48 P P 14 23 32.8 +0.1
baz=317
M54A **Oil Creek Stat** 94.65 29 P P 14 23 34.5 +0.8
baz=329
832A **Faith Ranch, C** 94.71 50 P P 14 23 35.0 +0.8
baz=316
KEST **Kesra** 94.91 322 P P 14 23 34.1 -1.0
comp=Z,4.1nm,0.8s,baz=216,slow=24,SNR=3.6
KEST LR LR 15 10 00.7
comp=Z,89nm,19.2s,baz=285,slow=38
SWET **Sewanee** 97.18 36 *e*P P 14 23 45.5 +0.1
comp=Z,2.7nm,1.0s
ESDC **Sonseca Array** 97.48 333 P P 14 23 46.0 -0.7
comp=Z,0.2nm,0.3s,baz=269,slow=30,SNR=4.3
ESDC PP PP 14 27 45.7 +2.4
comp=Z,0.2nm,0.3s,baz=40,slow=6.2,SNR=4.3
ESDC LR LR 15 11 23.4
comp=Z,70nm,18.2s,baz=70,slow=38
TKL **Tuckaleechee C** 97.83 35 *e*P Pdif 14 23 48.6 +0.3
TKL pmax pmax
comp=Z,7.0nm,0.6s
TKL **Tuckaleechee C** 97.83 35 *e*P Pdif 14 23 48.6 +0.3
comp=Z,6.6nm,0.6s
VNDA **Vanda** 114.23 175 PKP PKPdf 14 28 50.6 0.0
comp=Z,0.8nm,0.7s,baz=286,slow=2.6,SNR=3.8
TOA0 **Torodi Ar. Sit** 117.00 313 *e*PKPdf **PKPdf** 14 28 57.0 -0.9
TORD **Torodi Ar. Bea** 117.00 313 PKP **PKPdf** 14 28 57.4 -0.5
comp=Z,1.3nm,0.5s,baz=30,slow=1.4,SNR=20
TORD PP PP 14 29 58.6 -8.4
comp=Z,1.9nm,0.8s,baz=26,slow=6.0,SNR=6.8
TORD PKKPbc **PKKPbc** 14 39 24.3 +2.4

comp=Z,0.9nm,0.8s,baz=220,slow=3.5,SNR=5.5
MAW Mawson 118.21 205 PKP **PKPdf 14 28 59.3 +0.9**
comp=Z,2.6nm,0.6s,baz=291,slow=16,SNR=3.6
LBTB Lobatse 123.24 262 *e*PKIKP **PKPdf 14 29 09.8 +0.2**
LBTB Lobatse 123.24 262 *e*PKPdf **PKPdf 14 29 09.8 +0.2**
BOSA Boshof 125.14 258 PKP **PKPdf 14 29 13.3 +0.2**
comp=Z,5.2nm,0.8s,baz=276,slow=2.2,SNR=6.8
DBIC Dimbokro 126.01 315 PKP **PKPdf 14 29 15.2 +0.1**
comp=Z,2.3nm,0.4s,baz=356,slow=3.1,SNR=12
SNAA Sanae 139.55 197 P PKPpre 14 29 32.0
VNA2 Neumayer--Watz 141.13 196 P PKPpre 14 29 36.4
baz=131,slow=2.6
VNA3 Neumayer Olymp 141.40 195 P PKPpre 14 29 32.2
VNA1 Neumayer--Stat 141.53 196 P PKPpre 14 29 37.4
SAML Samuel 145.76 43 *e*PKPdf **PKPbc 14 29 52.3 +0.2**
LPAZ La Paz 148.24 59 PKPbc **PKPbc 14 30 00.9 +1.1**
comp=Z,11nm,0.7s,baz=323,slow=2.4,SNR=36
LPAZ La Paz 148.24 59 *e*PKPbc **PKPbc 14 30 00.7 +0.9**
PB11 IPOC Station P 149.43 66 *e*PKPbc **PKPbc 14 30 03.2 +1.1**
PB01 IPOC Station P 150.33 67 *e*PKPbc **PKPbc 14 30 05.0 +0.8**
PB04 IPOC Station P 150.58 70 *e*PKPbc **PKPbc 14 30 05.9 +1.0**
SIV San Ignacio 152.62 48 PKP **PKPdf 14 30 04.0 +1.6**
comp=Z,2.3nm,0.7s,baz=260,slow=0.1,SNR=5.5
SIV PKPbc **PKiKP 14 30 10.2 +0.4**
comp=Z,14nm,0.6s,baz=291,slow=2.2,SNR=35
USHA Ushuaia 153.09 143 PKPbc **PKPbc 14 30 10.5 +1.2**
comp=Z,75nm,0.9s,baz=16,slow=6.2,SNR=4.0
LCO Las Campanas 153.39 83 *e*PKPbc **PKPbc 14 30 12.1 +0.9**

JMA 19 14:11:12.1±0.2, 28°10N×128°06E, h16km±2km, M3.5, Ryukyu Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JTK	**Tokunoshima**	**0.85**	**111**	P	Pb	14 11 27.9	-0.6
JTK				S	Sb	14 11 38.9	-0.7
JOKE	**Okinoerabujima**	**0.86**	**148**	P	Pb	14 11 28.4	-0.3
JOKE				*e*S	Sg	14 11 40.3	0.0
JAMN	**Amaminishikomi**	**0.99**	**82**	P	Pb	14 11 30.5	-0.4
JAMN				S	Sb	14 11 43.8	0.0
JIH	**Iheya**	**1.06**	**184**	P	Pb	14 11 31.6	-0.5
JIH				S	Sb	14 11 45.8	0.0
JOW	**Kunigami**	**1.28**	**171**	P	Pn	14 11 35.2	-0.1
JOW				*e*S	Sb	14 11 51.8	-0.2
JAM	**Amami Oshima**	**1.40**	**77**	P	Pb	14 11 37.5	-0.3
JAM				*e*S	Sb	14 11 55.5	+0.1
JNTH	**Nagotoyohara**	**1.58**	**181**	P	Pn	14 11 39.9	+0.5
JNTH				S	Sn	14 11 59.3	-0.1

DJA 19 14:17:30.0±0.7, 5°S±4°×10°3E±°, h22km±6km, M3.5/11, MLv3.5/11, Southern Sumatera

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MNAI	**Manna**	**0.55**	**12**	P	Pb	14 17 41.5	+0.5
MNAI				S	Sb	14 17 48.6	+0.1
MNAI	**Manna**	**0.55**	**12**	P	Pb	14 17 39.5	-1.5
LWLI	**Liwa**	**1.22**	**96**	P	Pn	14 17 51.9	0.0
LWLI				S	Sn	14 18 07.1	-0.7
LWLI	**Liwa**	**1.22**	**96**	P	Pn	14 17 50.5	-1.4
LHSI	**Lahat**	**1.27**	**33**	P	Pn	14 17 52.7	+0.3
LHSI				S	Sn	14 18 08.3	-0.4
MDSI	**Maura Dua**	**1.40**	**73**	P	Pn	14 17 54.7	+0.5
MDSI				S	Sn	14 18 12.3	+0.4
MDSI	**Maura Dua**	**1.40**	**73**	P	Pn	14 17 54.1	-0.1
KASI	**Kota Agung**	**1.76**	**111**	P	Pn	14 17 59.4	+0.2
KASI				S	Sn	14 18 20.8	-0.2
KASI	**Kota Agung**	**1.76**	**111**	P	Pn	14 17 59.2	0.0
MASI	**Maura Aman, Be**	**1.85**	**341**	P	Pn	14 17 59.5	-0.9
KLSI		**1.90**	**84**	P	Pn	14 18 00.3	-0.7
KLSI				S	Sb	14 18 27.7	+0.5
KLI	**Kotabumi**	**2.01**	**89**	P	Pn	14 18 03.0	+0.4
KLI				S	Sn	14 18 23.8	-3.3
BLSI	**Bandar Lampung**	**2.44**	**101**	P	Pn	14 18 08.1	-0.5
CGJI	**Cibinong**	**3.31**	**121**	P	Pn	14 18 20.4	-0.1
CGJI	**Cibinong**	**3.31**	**121**	P	Pn	14 18 20.8	+0.3

*NSSC **19** 14:18:17.7±2.2, 36°12N×36°14E, h0km±10km, MD0.4, ML1.7*
*CSEM **19** 14:18:17.5±0.9, 36°12N×36°02E, h8km, ML1.7, Error ellipse: s-maj=23.4km s-min=9.1km az=114.0*
*DDA **19** 14:18:24.2, 36°34N×36°22E, h7km, Md2.6*
ISC 19 14:18:17.2±1.6, 36°10N±0°05×36°11E±0°07, h2km±12km, n12, σ0°93/23, Jordan-Syria region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ARNB	**Al Arnab**	**0.26**	**206**	*e*P	**Pg**	**14 18 21.8**	**-0.4**
ARNB				*e*S	**Sb**	**14 18 29.4**	**-0.3**
ARNB				AML	AML	14 18 32.1	
	comp=N,26nm,0.4s						
ARNB				AML	AML	14 18 32.4	
	comp=E,12nm,0.9s						
ARNB	**Al Arnab**	**0.26**	**206**	*e*P	**Pg**	**14 18 21.8**	**-0.4**
ARNB				*e*S	**Sb**	**14 18 29.4**	**-0.3**
	comp=E,12nm,0.9s						
BTCH	**Batrach**	**0.29**	**102**	*e*P	**Pb**	**14 18 24.4**	**-0.7**
BTCH				*e*S	**Sg**	**14 18 27.0**	**+0.5**
BTCH				AML	AML	14 18 28.5	
	comp=N,553nm,0.5s						
BTCH				AML	AML	14 18 32.0	
	comp=E,800nm,0.6s						
BTCH	**Batrach**	**0.29**	**102**	*e*P	**Pb**	**14 18 24.4**	**-0.7**
BTCH				*e*S	**Sg**	**14 18 27.0**	**+0.5**
	comp=E,800nm,0.6s						
SLNF	**Slenfeh**	**0.51**	**170**	*e*P	**Pb**	**14 18 28.3**	**-0.6**
SLNF				*e*S	**Sb**	**14 18 37.1**	**+0.2**
SLNF				AML	AML	14 18 44.7	
	comp=E,91nm,0.7s						
SLNF				AML	AML	14 18 44.9	
	comp=N,62nm,0.5s						
SLNF	**Slenfeh**	**0.51**	**170**	*e*P	**Pb**	**14 18 28.3**	**-0.6**
SLNF				*e*S	**Sb**	**14 18 37.1**	**+0.2**
	comp=N,62nm,0.5s						
DRWC	**Darouich**	**0.69**	**40**	*e*P	**Pg**	**14 18 30.8**	**+0.4**
DRWC				*e*S	**Sb**	**14 18 40.2**	**-1.8**
DRWC				AML	AML	14 18 43.9	
	comp=E,20nm,0.3s						
DRWC				AML	AML	14 18 44.7	
	comp=N,21nm,0.3s						
DRWC	**Darouich**	**0.69**	**40**	*e*P	**Pg**	**14 18 30.8**	**+0.4**
DRWC				*e*S	**Sb**	**14 18 40.2**	**-1.8**
	comp=N,21nm,0.3s						
KUZU	**Kuzuini**	**1.03**	**49**	*i* P	**Pn**	**14 18 39.5**	**+0.8**
KUZU				*i* S	**Sn**	**14 18 53.1**	**-0.7**
KUZU	**Kuzuini**	**1.03**	**49**	P	**Pn**	**14 18 39.5**	**+0.8**
KUZU				S	**Sn**	**14 18 53.1**	**-0.7**
KAMA	**Osmaniye**	**1.18**	**22**	*i* P	**Pn**	**14 18 41.3**	**+0.5**
KAMA				*i* S	**Sn**	**14 18 58.3**	**+0.8**
HCB	**Kahramanmara¯**	**1.40**	**27**	*i* P	Pb	14 18 47.2	+3.2
HCB				*i* S	**Sn**	**14 19 04.7**	**+1.8**

*ATH **19** 14:19:16.9, 39°57N×25°46E, h23km±1km, ML1.8/9, Error ellipse: s-maj=2.3km s-min=0.9km az=85.0*
*CSEM **19** 14:19:17.8±0.3, 39°57N×25°47E, h10km, ML1.8, Error ellipse: s-maj=8.2km s-min=5.0km az=45.0*
*THE **19** 14:19:17.2, 39°56N×25°47E, h15km±4km, ML2.0/4, Error ellipse: s-maj=7.5km s-min=0.9km az=229.0*
*ISCJB **19** 14:19:18.2±0.5, 39°58N±0°03×25°46E±0°05, h16km±7km, Error ellipse: s-maj=6.4km s-min=4.4km az=148.8*
*DDA **19** 14:19:31.6, 39°86N×26°69E, h7km, Md2.5*
ISC 19 14:19:17.4±0.9, 39°56N±0°02×25°46E±0°02, h15km±8km, n28, σ0°80/52, Aegean Sea

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
LIA	**Limnos Island**	**0.40**	**327**	P	**Pg**	**14 19 25.6**	**+0.2**
LIA				S	**Sg**	**14 19 31.3**	**+0.4**
LIA	**Limnos Island**	**0.40**	**327**	P	**Pb**	**14 19 25.9**	**-0.3**
LIA				S	**Sg**	**14 19 31.3**	**+0.4**
SIGR	**SIGRI**	**0.47**	**139**	P	**Pg**	**14 19 26.2**	**-0.5**
SIGR				S	**Sg**	**14 19 32.4**	**-0.5**
SIGR	**SIGRI**	**0.47**	**139**	P	**Pg**	**14 19 26.2**	**-0.5**
SIGR				S	**Sg**	**14 19 32.5**	**-0.5**
SIGR	**SIGRI**	**0.47**	**139**	P	**Pg**	**14 19 25.9**	**-0.8**
SIGR				S	**Sg**	**14 19 32.5**	**-0.5**
SIGR				AML	AML	14 19 33.2	
	comp=E,181µm,0.4s						
SIGR				AML	AML	14 19 38.1	
	comp=N,322µm,0.6s						
BOZC	**Bozcaada**	**0.54**	**58**	*i* P	**Pg**	**14 19 27.3**	**-0.7**
BOZC				*i* S	**Sg**	**14 19 35.3**	**+0.1**
PRK	**Paraskevi**	**0.70**	**116**	P	**Pg**	**14 19 30.5**	**-0.6**
PRK				S	**Sb**	**14 19 41.1**	**+0.2**
PRK	**Paraskevi**	**0.70**	**116**	P	**Pg**	**14 19 30.9**	**-0.2**
PRK				S	**Sb**	**14 19 41.1**	**+0.2**
PRK	**Paraskevi**	**0.70**	**116**	P	**Pg**	**14 19 30.9**	**-0.2**
PRK				S	**Sn**	**14 19 42.0**	**-1.4**
PRK				AML	AML	14 19 44.2	
	comp=E,250µm,0.4s						
PRK				AML	AML	14 19 46.0	
	comp=N,170µm,0.3s						
SMTH	**Samothraki Isl**	**0.91**	**3**	P	**Pg**	**14 19 34.9**	**-0.1**
SMTH				S	**Sb**	**14 19 46.6**	**-0.2**
SMTH	**Samothraki Isl**	**0.91**	**3**	P	**Pn**	**14 19 35.5**	**-0.2**
SMTH				S	**Sg**	**14 19 47.4**	**+0.5**
SMTH	**Samothraki Isl**	**0.91**	**3**	P	**Pn**	**14 19 35.5**	**-0.2**
SMTH				S	**Sg**	**14 19 47.4**	**+0.5**
SMTH				AML	AML	14 19 49.8	
	comp=E,94µm,0.5s						
SMTH				AML	AML	14 19 52.6	
	comp=N,115µm,0.8s						
AYVA	**Ayvalik**	**0.99**	**105**	*i* P	**Pn**	**14 19 38.2**	**+1.5**
AYVA				*i* S	**Sn**	**14 19 51.0**	**+0.6**
AYVA	**Ayvalik**	**0.99**	**105**	P	**Pn**	**14 19 38.2**	**+1.5**
AYVA				S	**Sn**	**14 19 51.0**	**+0.6**
CHOS	**Chios island**	**1.26**	**158**	P	**Pn**	**14 19 39.8**	**-0.8**
CHOS				S	**Sg**	**14 20 00.1**	**+1.9**
CHOS	**Chios island**	**1.26**	**158**	P	**Pn**	**14 19 39.8**	**-0.8**
CHOS				S	**Sg**	**14 20 00.1**	**+1.9**
CHOS				AML	AML	14 20 08.7	
	comp=N,139µm,0.9s						
CHOS				AML	AML	14 20 08.8	
	comp=E,194µm,1.2s						
AOS	**Alonnisos**	**1.29**	**253**	S	**Sg**	**14 19 59.7**	**+0.8**
AOS	**Alonnisos**	**1.29**	**253**	P	**Pn**	**14 19 39.5**	**-1.4**
AOS				S	**Sg**	**14 19 59.7**	**+0.8**
AOS				AML	AML	14 20 15.1	
	comp=N,126µm,1.5s						
AOS				AML	AML	14 20 16.4	
	comp=E,154µm,1.5s						
OUR	**Ouranopolis**	**1.37**	**305**	P	**Pn**	**14 19 40.9**	**-1.1**
OUR	**Ouranopolis**	**1.37**	**305**	P	**Pn**	**14 19 40.9**	**-1.1**
OUR				AML	AML	14 19 52.2	
	comp=N,37µm,0.1s						
OUR				AML	AML	14 19 52.2	
	comp=E,35µm,0.1s						
ALN	**Alexandroupoli**	**1.41**	**18**	P	**Pn**	**14 19 41.3**	**-1.2**
ALN				S	**Sg**	**14 20 03.5**	**+0.8**
ALN	**Alexandroupoli**	**1.41**	**18**	P	**Pn**	**14 19 41.3**	**-1.2**
ALN				S	**Sg**	**14 20 03.5**	**+0.8**
ALN				AML	AML	14 20 05.7	
	comp=E,42µm,0.8s						
ALN				AML	AML	14 20 21.5	
	comp=N,38µm,0.9s						
PAIG	**Paliouri**	**1.42**	**285**	P	**Pg**	**14 19 44.9**	**+0.2**
PAIG				S	**Sg**	**14 20 03.6**	**+0.4**
PAIG	**Paliouri**	**1.42**	**285**	P	**Pg**	**14 19 44.9**	**+0.2**
PAIG				S	**Sg**	**14 20 03.6**	**+0.4**
PAIG				AML	AML	14 20 05.2	
	comp=N,18µm,0.2s						
PAIG				AML	AML	14 20 07.5	
	comp=E,54µm,0.8s						
SKIA	**Skiathos**	**1.60**	**256**	P	**Pb**	**14 19 47.1**	**+0.5**
SKIA				S	**Sb**	**14 20 06.4**	**-0.2**
SKIA	**Skiathos**	**1.60**	**256**	P	**Pb**	**14 19 47.1**	**+0.5**
SKIA				S	**Sb**	**14 20 06.4**	**-0.2**
SKIA				AML	AML	14 20 13.0	
	comp=E,41µm,0.2s						
SKIA				AML	AML	14 20 15.5	
	comp=N,70µm,0.6s						
KAVA	**Kavala**	**1.60**	**333**	P	**Pn**	**14 19 45.8**	**+0.6**
KAVA				S	**Sn**	**14 20 05.4**	**-0.3**
KAVA	**Kavala**	**1.60**	**333**	P	**Pn**	**14 19 45.9**	**+0.6**

*DJA **19** 14:19:30.8±0.5, 10°S±4°×10°7E±°, h10km, M4.2/6, MLv3.9/2, MLv4.4/6*
*ISCJB **19** 14:19:31.7±0.5, 9.79°S±0.05°×107.36°E±0.04, h23km, mb3.9/10, MS3.8/1, Error ellipse: s-maj=7.9km s-min=5.0km az=3.0*
*IDC **19** 14:19:31.4±2.4, 9.75°S×107.41E, h0km, mb3.9/7, mb1 4.0/7, mb1mx3.7/45, mbtmp3.9/7, MS3.2/2, Ms1 3.3/2, ms1mx2.7/43, Error ellipse: s-maj=89.2km s-min=20.8km az=52.0*
*NEIC **19** 14:19:35.5±0.6, 9.87°S×107.35E, h35km, mb4.2/3, Error ellipse: s-maj=15.5km s-min=11.7km az=220.0*
ISC 19 14:19:33.7±0.7, 9.80S±0.06×107.32E±0.05, h23km, n48, σ1°84/50, mb4.1/10, South of Jawa

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
XMIS	**Christmas Isla**	**1.77**	**248**	*e*Pn	**Pn**	**14 20 02.1**	**-0.9**
XMIS				*e*Sn	**Sn**	**14 20 21.2**	**-3.7**
CISI	**Cisompet, Garu**	**2.29**	**12**	P	**Pn**	**14 20 08.8**	**-1.3**
CISI	**Cisompet, Garu**	**2.29**	**12**	*e*Pn	**Pn**	**14 20 09.2**	**-0.9**
CMJI	**Cimerak**	**2.30**	**29**	P	**Pn**	**14 20 09.1**	**-1.1**
CMJI	**Cimerak**	**2.30**	**29**	P	**Pn**	**14 20 07.2**	**-2.6**
CNJI	**Cibinong**	**2.49**	**356**	P	**Pn**	**14 20 11.9**	**-0.9**
SKJI	**Sukabumi**	**2.88**	**345**	P	**Pn**	**14 20 18.2**	**-0.1**
LEM	**Lembang**	**2.97**	**6**	Pn	**Pb**	**14 20 27.8**	**+1.6**
	31nm,0.3s,baz=186,slow=6.7,SNR=17						
LEM				Sn	**Sb**	**14 21 03.8**	**+1.7**
	24nm,0.3s,baz=170,slow=24,SNR=7.1						
LEM				LR	LR	14 21 36.1	
	comp=Z,119nm,18.2s,baz=231,slow=43						
LEM	**Lembang**	**2.97**	**6**	P	**Pb**	**14 20 26.8**	**+0.7**
LEM	**Lembang**	**2.97**	**6**	P	**Pb**	**14 20 24.7**	**-1.4**
CGJI	**Cibinong**	**3.56**	**333**	P	**Pn**	**14 20 26.6**	**-0.9**
UGM	**Wanagama**	**3.68**	**60**	P	**Pn**	**14 20 27.2**	**-2.1**
UGM				S	**Sn**	**14 21 08.0**	**-4.1**
WOJI	**Wonogiri, Jawa**	**4.06**	**62**	P	**Pn**	**14 20 33.9**	**-0.6**
WOJI				S	**Sn**	**14 21 17.9**	**-3.5**
SMRI	**Semarang**	**4.13**	**49**	P	**Pn**	**14 20 36.0**	**+0.6**
PCJI	**Pacitan**	**4.13**	**68**	P	**Pn**	**14 20 35.2**	**-0.3**
PCJI				S	**Sn**	**14 21 21.4**	**-1.7**
NGJI	**Ngawi**	**4.76**	**60**	P	**Pn**	**14 20 47.0**	**+2.9**
NGJI	**Ngawi**	**4.76**	**60**	P	**Pn**	**14 20 42.8**	**-1.3**
PWJI	**Pagerwojo**	**4.77**	**69**	P	**Pn**	**14 20 44.5**	**+0.2**
PWJI				S	**Sn**	**14 21 34.8**	**-4.1**
UWJI	**Ujung Watu**	**4.92**	**47**	P	**Pn**	**14 20 46.9**	**+0.6**
KASI	**Kota Agung**	**5.09**	**326**	P	Pn	14 20 55.0	+6.4
KASI				S	**Sn**	**14 21 41.6**	**-5.1**
LWLI	**Liwa**	**5.75**	**326**	P	Pn	14 21 02.9	+5.1
MDSI	**Maura Dua**	**6.13**	**329**	P	**Pn**	**14 21 02.2**	**-0.8**
GMJI	**Gumukmas**	**6.24**	**76**	P	**Pn**	**14 21 04.3**	**-0.1**
GMJI	**Gumukmas**	**6.24**	**76**	P	Pn	14 21 00.2	-4.2
JAGI	**Jajag, Banyuwa**	**6.88**	**79**	P	**Pn**	**14 21 12.2**	**-1.0**
JAGI	**Jajag, Banyuwa**	**6.88**	**79**	P	**Pn**	**14 21 10.6**	**-2.6**
JAGI	**Jajag, Banyuwa**	**6.88**	**79**	*e*Pn	**Pn**	**14 21 12.6**	**-0.6**
	31nm,0.4s						
ABJI	**Asem Bagus**	**7.12**	**74**	P	**Pn**	**14 21 18.5**	**+2.0**
ABJI	**Asem Bagus**	**7.12**	**74**	P	**Pn**	**14 21 17.7**	**+1.2**
SRBI	**Singaraja**	**7.98**	**78**	P	**Pn**	**14 21 29.2**	**+0.8**
MASI	**Maura Aman, Be**	**8.32**	**322**	P	Pn	14 21 29.1	-4.0
TWSI	**Taliwang, Sumb**	**9.50**	**84**	P	**Pn**	**14 21 48.0**	**-1.2**
PPSI	**Pulau Pagai**	**10.08**	**313**	P	**Pn**	**14 21 56.6**	**-0.6**
SDSI	**Sungai Dareh**	**10.58**	**326**	P	**Pn**	**14 22 04.4**	**+0.3**
MBWA	**Marble Bar**	**16.43**	**135**	*e*Pn	**Pn**	**14 23 20.4**	**-2.5**
WRA	**Warramunga Arr**	**27.95**	**114**	P	**P**	**14 25 23.1**	**+0.3**
	0.4nm,0.8s,baz=287,slow=11,SNR=2.7						
WRAB	**Tennant Creek**	**27.96**	**114**	*e*P	**P**	**14 25 23.3**	**+0.5**
	3.8nm,1.1s						
ASAR	**Alice Springs**	**28.88**	**122**	P	**P**	**14 25 31.9**	**+0.9**
	0.5nm,0.8s,baz=299,slow=8.4,SNR=2.9						
CMAR	**Chiang Mai Arr**	**29.27**	**344**	P	**P**	**14 25 35.5**	**+1.1**
	0.7nm,0.6s,baz=173,slow=9.2,SNR=4.2						
SONM	**Songino Array**	**57.39**	**359**	P	**P**	**14 29 21.7**	**+1.3**
	0.8nm,0.6s,baz=186,slow=5.5,SNR=3.1						
MKAR	**Makanchi Array**	**60.62**	**341**	P	**P**	**14 29 43.9**	**+1.2**
	1.6nm,0.6s,baz=143,slow=7.8,SNR=20						
KLR	**Kul'dur**	**62.58**	**18**	P	**P**	**14 29 55.5**	**-0.3**
	1.8nm,0.6s,baz=181,slow=1.6,SNR=5.6						
KURK	**Kurchatov**	**65.23**	**340**	*e*P	**P**	**14 30 14.1**	**+0.8**
	5.8nm,1.1s						
ABKAR	**Akbulak array**	**71.97**	**330**	*e*P	**P**	**14 30 56.4**	**+1.0**
	1.0nm,0.5s						
PETK	**Petropavlovsk-**	**75.88**	**29**	P	**P**	**14 31 18.1**	**-0.2**
	3.6nm,0.9s,baz=176,slow=4.2,SNR=4.4						
ARCES	**ARCESS Array B**	**96.26**	**340**	LR	LR	15 25 13.3	
	comp=Z,32nm,18.5s,baz=68,slow=41						
YKA	**Yellowknife Ar**	**119.36**	**21**	PKP	**PKPdf**	**14 38 21.5**	**+0.7**
	0.2nm,0.6s,baz=298,slow=1.4,SNR=5.2						
TXAR	**Lajitas Array**	**145.11**	**52**	PKPbc	**PKPdf**	**14 39 11.9**	**+1.8**
	0.9nm,0.9s,baz=253,slow=2.1,SNR=9.3						

*NIED **19** 14:29:00, 36°30N×141°00E, h38km, Mw3.7 Best double couple: M0 3.91000×10^14 NP1:φs294.00000°, δ15.00000°, λ-157.00000°. NP2:φs181.00000°, δ84.00000°, λ-76.00000°.*
*IDC **19** 14:29:31.3±1.6, 36°25N×141°21E, h0km, mb3.5/4, mb1 3.6/6, mb1mx3.4/38, mbtmp3.6/6, ML3.4/2, MS3.0/3, Ms1 3.0/3, ms1mx2.4/48, Error ellipse: s-maj=44.8km s-min=22.4km az=29.0*
*ISCJB **19** 14:29:34.9±1.2, 36°31N±0°04×141°10E±0°07, h33km±7km, mb3.5/4, MS3.1/2, Error ellipse: s-maj=9.9km s-min=6.5km az=5.5*
*JMA **19** 14:29:35.6±0.1, 36°31N×141°04E, h45km±1km, M3.6*
JMA Felt I J1.
ISC 19 14:29:35.9±1.6, 36°37N±0°05×141°01E±0°07, h29km±11km, n24, σ0°89/24, mb3.5/4, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JHO	**Hitachi**	**0.43**	**304**	P	**Pn**	**14 29 46.1**	**0.0**
JHO				S	**Sn**	**14 29 53.4**	**+0.4**
JYT	**Yasato**	**0.67**	**258**	P	**Pb**	**14 29 49.0**	**-0.1**
JYT				S	**Sb**	**14 29 58.2**	**+0.1**
ONAJ	**Iwakimizuishiy**	**0.75**	**347**	P	**Pb**	**14 29 50.4**	**0.0**
ONAJ				S	**Sb**	**14 30 00.6**	**+0.3**
JFK	**Kawauchi**	**1.00**	**354**	P	**Pn**	**14 29 53.6**	**-0.4**
JAG	**Ashikaga**	**1.26**	**273**	P	**Pn**	**14 29 57.6**	**+0.1**
JAG				S	**Sn**	**14 30 13.4**	**-0.1**
JFT	**Otama**	**1.27**	**335**	P	**Pb**	**14 29 59.0**	**-0.1**
JFT				S	**Sb**	**14 30 15.4**	**+0.4**
JFY	**Yanaizu**	**1.47**	**315**	P	**Pb**	**14 30 01.8**	**-0.8**
JKT	**Katashina**	**1.47**	**286**	P	**Pb**	**14 30 01.8**	**-0.8**
JKT				S	**Sb**	**14 30 20.5**	**-0.4**
MJAR	**Matsushiro Arr**	**2.26**	**275**	Pn	**Pn**	**14 30 12.1**	**+0.7**
	7.1nm,0.3s,baz=115,slow=8.8,SNR=35						
MJAR				LR	LR	14 31 17.5	
	comp=Z,80nm,19.2s,baz=145,slow=44						
MAT	**Matsushiro**	**2.27**	**275**	P	**Pn**	**14 30 12.4**	**+1.0**
MAT				S	**Sn**	**14 30 36.6**	**-1.8**
JHJ	**Hachijo jima 2**	**3.40**	**198**	Pn	**Pn**	**14 30 28.6**	**+1.7**
	9.1nm,0.3s,baz=305,slow=22,SNR=4.4						
JHJ				Sn	**Sn**	**14 31 05.9**	**-0.4**
	16nm,0.3s,baz=69,slow=23,SNR=4.2						
ASAJ	**Asahikawa**	**7.83**	**8**	Pn	**Pn**	**14 31 28.2**	**+0.4**
	0.6nm,0.3s,baz=232,slow=8.5,SNR=5.5						
GUMO	**Guam**	**22.95**	**170**	LR	LR	14 44 01.2	
	comp=Z,22nm,19.6s,baz=124,slow=38						
H11N2	**WAKE ISLAND Hy**	**28.10**	**119**	T	T	15 04 55.5	
	baz=81,slow=74,SNR=5.4						
H11N1	**WAKE ISLAND Hy**	**28.11**	**119**	T	T	15 04 45.8	
	baz=313,slow=74,SNR=6.1						
H11N3	**WAKE ISLAND Hy**	**28.12**	**119**	T	T	15 04 40.7	
TGY	**Tagaytay City**	**28.54**	**224**	LR	LR	14 45 25.0	
	comp=Z,180nm,19.6s,slow=33						
H11S1	**WAKE ISLAND Hy**	**28.78**	**121**	T	T	15 05 40.6	
	baz=314,slow=76,SNR=12						
H11S3	**WAKE ISLAND Hy**	**28.78**	**121**	T	T	15 05 34.3	
	baz=314,slow=76,SNR=7.9						
H11S2	**WAKE ISLAND Hy**	**28.80**	**121**	T	T	15 05 32.4	
	baz=314,slow=76,SNR=9.1						
ZALV	**Zalesovo Beam**	**42.12**	**313**	P	**P**	**14 37 25.8**	**+0.5**
	0.9nm,0.6s,baz=94,slow=7.9,SNR=4.9						
MKAR	**Makanchi Array**	**44.20**	**303**	P	**P**	**14 37 44.1**	**+1.8**
	2.5nm,0.7s,baz=89,slow=9.9,SNR=5.8						
WRA	**Warramunga Arr**	**56.36**	**188**	P	**P**	**14 39 12.9**	**-1.5**
	0.2nm,0.4s,baz=5.6,slow=7.4,SNR=8.7						
ASAR	**Alice Springs**	**60.09**	**188**	P	**P**	**14 39 40.1**	**-0.3**
	0.3nm,0.8s,baz=16,slow=8.0,SNR=4.0						

*NIED **19** 14:35:00, 28°10N×128°00E, h5km, Mw4.4 Best double couple: M0 3.92000×10^15 NP1:φs303.00000°, δ38.00000°, λ-19.00000°. NP2:φs48.00000°, δ79.00000°, λ-126.00000°.*
*ISCJB **19** 14:35:36.6±2.3, 28°07N±0°03×128°04E±0°04, h10km±16km, mb3.6/7, MS3.4/7, Error ellipse: s-maj=6.6km s-min=5.0km az=12.5*
*JMA **19** 14:35:36.1±0.2, 28°08N×128°03E, h10km±3km, M3.8*
*IDC **19** 14:35:48.2±3.4, 28°32N×128°04E, h95km±34km, mb3.3/7, mb1 3.5/10, mb1mx3.3/44, mbtmp3.7/10, MS3.4/11, Ms1 3.5/11, ms1mx3.2/32, Error ellipse: s-maj=34.7km s-min=17.2km az=71.0*
ISC 19 14:35:36.3±1.8, 28°06N±0°05×128°05E±0°06, h5km±12km, n23, σ0°99/22, mb3.6/7, MS3.4/7, Ryukyu Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JOKE	**Okinoerabujima**	**0.83**	**146**	P	**Pg**	**14 35 52.5**	**+0.2**
JOKE				S	**Sg**	**14 36 04.3**	**+1.2**
JTK	**Tokunoshima**	**0.84**	**109**	P	**Pg**	**14 35 52.5**	**+0.1**
JTK				S	**Sg**	**14 36 04.0**	**+0.6**
JAMN	**Amaminishikomi**	**1.01**	**79**	P	**Pg**	**14 35 55.3**	**-0.4**
JAMN				S	**Sg**	**14 36 08.8**	**0.0**
JIH	**Iheya**	**1.02**	**184**	P	**Pg**	**14 35 55.6**	**-0.3**
J

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.14**	**13**	⇑P	Pg	14 35 39.9	+0.2
ONAJ				S	Sg	14 35 42.2	+0.3
JHO	**Hitachi**	**0.39**	**203**	⇑P	Pg	14 35 44.3	+0.1
JHO				S	Sg	14 35 49.6	+0.3
JFK	**Kawauchi**	**0.41**	**13**	⇑P	Pg	14 35 44.5	0.0
JFK				S	Sg	14 35 50.3	+0.4
JFT	**Otama**	**0.64**	**328**	⇑P	Pg	14 35 49.0	0.0
JFT				S	Sg	14 35 57.4	0.0
JSB	**Shiboa**	**0.67**	**270**	⇑P	Pb	14 35 50.1	-0.3
JSB				S	Sb	14 35 59.2	-0.5
JYT	**Yasato**	**0.87**	**212**	⇑P	Pg	14 35 52.7	-0.5
JYT				S	Sg	14 36 04.8	+0.2
JMM	**Marumori**	**0.90**	**2**	⇑P	Pg	14 35 53.2	-0.5
JMM				S	Sg	14 36 04.9	-0.5
JFY	**Yanaizu**	**0.95**	**298**	P	Pg	14 35 54.5	-0.3
JFY				S	Sg	14 36 06.7	-0.4
MAT	**Matsushiro**	**2.09**	**259**	P	Pn	14 36 12.6	+0.9
MAT				S	Sb	14 36 40.1	-0.6

IDC 19 14:40:14.6±0.9, 12°.63N×143°.64E, h0km, mb3.7/7, mb1 4.0/7, mb1mx3.7/41, mbtmp3.7/7 Error ellipse: s-maj=28.5km s-min=18.8km az=118.0, South of Mariana Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GUMO	**Guam**	**1.53**	**51**	Pn	Pb	14 40 43.5	-0.3
	52nm,0.3s,baz=352,slow=20,SNR=56						
GUMO				Sn	Sg	14 41 01.8	-2.0
	99nm,0.3s,baz=50,slow=20,SNR=24						
H11S3	**WAKE ISLAND Hy**	**22.94**	**72**	T	T	15 09 09.7	
	baz=258,slow=75,SNR=11						
H11S1	**WAKE ISLAND Hy**	**22.96**	**72**	T	T	15 09 08.0	
	baz=258,slow=75,SNR=14						
H11S2	**WAKE ISLAND Hy**	**22.96**	**72**	T	T	15 09 12.6	
	baz=258,slow=75,SNR=15						
H11N1	**WAKE ISLAND Hy**	**23.40**	**69**	T	T	15 09 45.0	
	baz=255,slow=75,SNR=42						
H11N2	**WAKE ISLAND Hy**	**23.41**	**69**	T	T	15 09 47.7	
	baz=255,slow=75,SNR=28						
H11N3	**WAKE ISLAND Hy**	**23.41**	**69**	T	T	15 09 45.2	
	baz=255,slow=75,SNR=32						
WRA	**Warramunga Arr**	**33.64**	**196**	P	P	14 46 56.7	-0.4
	0.9nm,0.6s,baz=20,slow=9.7,SNR=11						
ASAR	**Alice Springs**	**37.31**	**195**	P	P	14 47 28.8	0.0
	0.2nm,0.6s,baz=17,slow=11,SNR=7.4						
CMAR	**Chiang Mai Arr**	**43.37**	**284**	P	P	14 48 19.6	+0.5
	0.8nm,0.8s,baz=84,slow=5.7,SNR=7.1						
STKA	**Stephens Creek**	**44.30**	**182**	P	P	14 48 26.3	+0.1
	1.0nm,0.8s,baz=238,slow=2.0,SNR=2.9						
MKAR	**Makanchi Array**	**61.36**	**317**	P	P	14 50 32.0	-0.4
	0.4nm,0.5s,baz=96,slow=7.8,SNR=6.1						
YKA	**Yellowknife Ar**	**84.25**	**27**	P	P	14 52 47.3	-0.7
	0.2nm,0.4s,baz=286,slow=5.0,SNR=4.5						
NVAR	**Mina Array Bea**	**88.45**	**51**	P	P	14 53 09.8	+0.3
	1.0nm,0.7s,baz=260,slow=5.4,SNR=5.2						

*NIED **19** 14:47:00,36°.90N×140°.90E,h5km,Mw4.2 Best double couple: M₀2.05000×10¹⁵ NP1:φs345.00000°,δ24.00000°, λ-72.00000°. NP2:φs145.00000°,δ68.00000°, λ-98.00000°.*

*NEIC **19** 14:47:06.9±2.1,36°.90N×140°.84E,h2km±13km,mb4.6/20, Error ellipse: s-maj=6.6km s-min=4.9km az=106.0*

NEIC Recorded [4 JMA] in Fukushima.

*ISCJB **19** 14:47:06.8±0.6,36°.87N±0°.02×140°.91E±0°.04,h12km±3km, mb4.4/60,MS3.3/3,Error ellipse: s-maj=5.2km s-min=3.4km az=23.4*

*IDC **19** 14:47:06.7±0.5,36°.89N×140°.80E,h0km,mb4.4/26, mb1 4.5/29,mb1mx4.4/42,mbtmp4.3/29,ML3.8/3,MS3.2/6, Ms1 3.3/6,ms1mx2.8/48,Error ellipse: s-maj=13.8km s-min=13.1km az=142.0*

*BJI **19** 14:47:07.9,37°.03N×140°.94E,h23km,mb4.7/7,mB4.8/4, Ms4.4/3,Ms7 4.3/3*

*JMA **19** 14:47:08.1,36°.88N×140°.81E,h8km±1km,M4.5*

JMA Felt IV J1.

*MOS **19** 14:47:10.3±1.1,36°.97N×140°.81E,h34km,mb4.7/42,Error ellipse: s-maj=9.2km s-min=5.4km az=104.6*

ISC 19 14:47:08.7±0.9, 36°.91N±0°.03×140°.80E±0°.05, h13km±5km, n156,σ1$10/163, mb4.5/60, MS3.2/3, 25C-10D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.20**	**0**	⇓P	**Pg**	**14 47 12.8**	**-0.4**
ONAJ				S	**Sg**	**14 47 16.0**	**-0.2**
JHO	**Hitachi**	**0.35**	**212**	⇑P	**Pg**	**14 47 14.7**	**-1.0**
JHO				S	**Sg**	**14 47 19.1**	**-1.3**
JFK	**Kawauchi**	**0.46**	**8**	⇓P	**Pg**	**14 47 17.6**	**-0.3**
JFK				S	**Sg**	**14 47 24.6**	**+0.5**
JSB	**Shiboa**	**0.71**	**275**	⇑P	**Pb**	**14 47 22.7**	**-0.1**
JSB				S	**Sb**	**14 47 32.7**	**+0.3**
JFT	**Otama**	**0.71**	**329**	⇓P	**Pg**	**14 47 22.4**	**-0.2**
JFT				S	**Sb**	**14 47 32.4**	**-0.3**
JYT	**Yasato**	**0.83**	**216**	⇑P	**Pg**	**14 47 23.5**	**-1.3**
JYT				eS	**Sg**	**14 47 34.6**	**-1.1**
JMM	**Marumori**	**0.96**	**360**	⇓P	**Pb**	**14 47 26.4**	**-0.7**
JMM				S	**Sb**	**14 47 39.4**	**-0.3**
JFY	**Yanaizu**	**1.01**	**300**	⇑P	**Pb**	**14 47 27.6**	**-0.3**
JFY				S	**Sb**	**14 47 40.7**	**-0.4**
MJAR	**Matsushiro Arr**	**2.11**	**261**	Pn	**Pn**	**14 47 44.7**	**+1.0**
	130nm,0.3s,baz=89,slow=15,SNR=973						
MJAR				Sn	**Sb**	**14 48 12.3**	**-0.5**
	130nm,0.3s,baz=90,slow=27,SNR=19						
MJAR				LR	LR	14 48 47.7	
	comp=Z,694nm,18.5s,baz=100,slow=48						
MAJO	**Matsushiro**	**2.11**	**261**	*c iP*	**Pn**	**14 47 45.1**	**+1.4**
MAJO	**Matsushiro**	**2.11**	**261**	*e*Pn	**Pn**	**14 47 45.1**	**+1.4**
MAT	**Matsushiro**	**2.11**	**261**	P	**Pn**	**14 47 44.9**	**+1.2**
MAT				S	**Sb**	**14 48 12.9**	**0.0**
JHJ	**Hachijo jima 2**	**3.87**	**193**	Pn	**Pn**	**14 48 09.9**	**+2.1**
	19nm,0.3s,baz=101,slow=22,SNR=4.7						
JHJ				Sn	**Sn**	**14 48 55.0**	**+2.0**
	37nm,0.3s,baz=266,slow=23,SNR=3.8						
JHJ				LR	LR	14 49 38.4	
	comp=Z,234nm,21.8s,baz=70,slow=39						
JHJ2	**Mitsune**	**3.87**	**192**	Pn	**Pn**	**14 48 06.5**	**-1.4**
ERM	**Erimo**	**5.42**	**19**	*e*P	**Pn**	**14 48 29.6**	**+0.5**
ERM	**Erimo**	**5.42**	**19**	*e*Pn	**Pn**	**14 48 27.7**	**-1.4**
ASAJ	**Asahikawa**	**7.33**	**10**	Pn	**Pn**	**14 48 55.0**	**-0.4**
	1.4nm,0.3s,baz=216,slow=13,SNR=14						
ASAJ	**Asahikawa**	**7.33**	**10**	P	**Pn**	**14 48 55.0**	**-0.4**
ASAJ				pmax	pmax		
	comp=Z,1.0nm,0.3s						
SHO	**Shikotan**	**8.34**	**32**	*e*P	**Pn**	**14 49 06.5**	**-2.6**
SHO				eS	Sn	14 50 35.8	-7.3
SHO				pmax	pmax		
	comp=Z,19nm,0.5s						
SHO				pmax	pmax		
	comp=N,7.0nm,0.3s						
SHO				pmax	pmax		
	comp=E,29nm,0.6s						
JNU	**Nakatsue**	**8.97**	**248**	Pn	**Pn**	**14 49 20.0**	**+2.1**
	comp=E,0.3nm,0.3s,baz=126,slow=9.4,SNR=4.7						
JNU				LR	LR	14 53 09.6	
	comp=E,144nm,18.4s,baz=113,slow=40						
CBIJ	**Chichi jima**	**9.85**	**173**	*e*Pn	**Pn**	**14 49 28.2**	**-1.7**
KUR	**Kuril'sk**	**9.88**	**30**	*e*P	**Pn**	**14 49 31.7**	**+1.4**
KUR				eS	**Sn**	**14 51 16.2**	**-4.7**
KUR				pmax	pmax		
	comp=Z,15nm,0.9s						
USRK	**Ussuriysk Ar.**	**9.89**	**320**	Pn	Pn	14 49 36.4	+5.9
	comp=Z,0.5nm,0.3s,baz=127,slow=12,SNR=16						
YSS	**Yuzh-Sakhalins**	**10.15**	**8**	*e*P	**Pn**	**14 49 34.4**	**+0.5**
KSRS	**Korea Array**	**10.29**	**277**	Pn	Pn	14 49 43.6	+7.8
	comp=Z,0.2nm,0.3s,baz=91,slow=1.3,SNR=8.3						
KSRS				LR	LR	14 53 17.7	
	comp=Z,144nm,20.0s,baz=104,slow=36						
KSAR	**Wonju Array Be**	**10.32**	**277**	P	Pn	14 49 43.7	+7.4
KSAR	**Wonju Array Be**	**10.32**	**277**	Pn	Pn	14 49 43.6	+7.3
HABR	**Khabarovsk**	**12.30**	**342**	*e*P	Pn	14 49 59.6	-3.8
KLR	**Kul'dur**	**13.97**	**335**	Pn	**Pn**	**14 50 26.1**	**0.0**
	comp=Z,0.2nm,0.3s,baz=133,slow=5.8,SNR=4.4						
TYV	**Tymovskoe**	**14.02**	**5**	*e*P	**Pn**	**14 50 27.0**	**+0.2**
TYV				pmax	pmax		
	comp=Z,6.0nm,0.6s						
NKL	**Nikolayevsk**	**16.25**	**360**	*e*P	**Pn**	**14 50 56.0**	**-0.3**
PETK	**Petropavlovsk-**	**20.05**	**31**	LR	LR	14 58 49.9	
	comp=Z,73nm,20.3s,baz=232,slow=35						
YAK	**Yakutsk**	**26.09**	**348**	P	**P**	**14 52 41.1**	**-0.6**
	comp=Z,14nm,0.5s,baz=348,slow=1.4,SNR=9.5						
YAK	**Yakutsk**	**26.09**	**348**	*e*P	**P**	**14 52 41.2**	**-0.5**
YAK				pmax	pmax		
	comp=Z,19nm,0.9s						
YAK				pmax	pmax		
	comp=N,10.0nm,1.0s						
YAK				pmax	pmax		
	comp=E,6.0nm,1.0s						
YAK	**Yakutsk**	**26.09**	**348**	*e*P	**P**	**14 52 40.9**	**-0.8**
	comp=E,28nm,0.9s						
ENH	**Enshi**	**26.83**	**265**	*e*P	**P**	**14 52 49.4**	**+0.6**
SEY	**Seymchan**	**27.01**	**12**	P	**P**	**14 52 50.8**	**+0.8**
	comp=E,3.6nm,0.9s,baz=176,slow=5.0,SNR=10						
ULN	**Ulaanbaatar**	**27.02**	**305**	*ce*P	**P**	**14 52 49.3**	**-1.2**
ULN				pmax	pmax		
	comp=Z,4.0nm,1.0s						
ULN	**Ulaanbaatar**	**27.02**	**305**	*e*P	**P**	**14 52 48.7**	**-1.7**
	comp=Z,3.0nm,0.8s						
BOD	**Bodaibo**	**27.38**	**328**	⇑*i*P	**P**	**14 52 52.2**	**-1.1**
BOD				pmax	pmax		
	comp=Z,3.0nm,0.9s						
SONM	**Songino Array**	**27.45**	**304**	P	**P**	**14 52 53.7**	**-0.6**
	comp=Z,4.4nm,0.7s,baz=116,slow=8.1,SNR=17						
H11N2	**WAKE ISLAND Hy**	**28.51**	**120**	T	T	15 22 48.5	
	baz=313,slow=75,SNR=1062						
H11N1	**WAKE ISLAND Hy**	**28.52**	**120**	T	T	15 22 49.2	
	baz=313,slow=75,SNR=1897						
H11N3	**WAKE ISLAND Hy**	**28.53**	**120**	T	T	15 22 50.0	
	baz=313,slow=75,SNR=1323						
H11S1	**WAKE ISLAND Hy**	**29.21**	**122**	T	T	15 23 40.1	
	baz=314,slow=75,SNR=1194						
H11S3	**WAKE ISLAND Hy**	**29.21**	**122**	T	T	15 23 40.6	
	baz=314,slow=75,SNR=1262						
H11S2	**WAKE ISLAND Hy**	**29.22**	**122**	T	T	15 23 41.7	
	baz=314,slow=75,SNR=912						
ZAK	**Zakamensk**	**29.96**	**309**	*e*P	**P**	**14 53 16.2**	**-0.4**
ZAK				pmax	pmax		
	comp=Z,2.0nm,1.2s						
TLY	**Talaya**	**30.04**	**311**	*e*P	**P**	**14 53 18.0**	**+0.8**
TLY				pmax	pmax		
	comp=Z,3.0nm,1.1s						
BILL	**Bilibino**	**34.29**	**17**	⇓*e*P	**P**	**14 53 54.7**	**+0.5**
BILL				*e*		14 55 10.6	
BILL				eS	S	14 59 08.4	-12
BILL				pmax	pmax		
	comp=Z,2.0nm,1.0s						
TIXI	**Tiksi**	**35.36**	**354**	*e*P	**P**	**14 54 03.3**	**0.0**
TIXI				pmax	pmax		
	comp=Z,7.0nm,2.5s						
TIXI	**Tiksi**	**35.36**	**354**	*e*P	**P**	**14 54 02.8**	**-0.5**
	comp=Z,1.6nm,0.6s						
CHTO	**Chiang Mai**	**40.78**	**255**	P	**P**	**14 54 50.7**	**+1.0**
CHTO	**Chiang Mai**	**40.78**	**255**	P	**P**	**14 54 50.7**	**+1.0**
CMAR	**Chiang Mai Arr**	**40.99**	**255**	P	**P**	**14 54 51.5**	**0.0**
	comp=Z,0.6nm,0.6s,baz=42,slow=8.9,SNR=6.5						
CMAR				LR	LR	15 13 19.2	
	comp=Z,33nm,18.4s,baz=60,slow=38						
ZALV	**Zalesovo Beam**	**41.64**	**312**	P	**P**	**14 54 56.7**	**+0.4**
	comp=Z,10nm,0.7s,baz=93,slow=6.4,SNR=47						
ZALV				PcP	**PcP**	**14 56 53.2**	**+0.2**
	comp=Z,2.8nm,0.8s,baz=89,slow=3.1,SNR=8.4						
NVS	**Novosibirsk**	**42.57**	**314**	*i* P	**P**	**14 55 04.4**	**+0.5**
NRIK	**Noril'sk**	**43.18**	**335**	P	**P**	**14 55 08.5**	**-0.2**
	comp=Z,1.5nm,0.4s,baz=19,slow=15,SNR=5.4						
MKAR	**Makanchi Array**	**43.77**	**302**	P	**P**	**14 55 14.2**	**+0.5**
	comp=Z,6.5nm,0.7s,baz=89,slow=10,SNR=94						
MKAR				PcP	**PcP**	**14 57 00.6**	**+0.2**
	comp=Z,1.7nm,0.8s,baz=75,slow=6.4,SNR=5.6						
KURK	**Kurchatov**	**45.62**	**308**	*e*P	**P**	**14 55 28.4**	**0.0**
KURK						14 57 06.4	
KURK				pmax	pmax		
	comp=Z,65nm,0.8s						
KURK	**Kurchatov**	**45.62**	**308**	*e*P	**P**	**14 55 28.4**	**0.0**
	comp=Z,65nm,0.8s						
KURK				PcP	**PcP**	**14 57 06.4**	**-0.2**
KURBB	**Kurchatov Arra**	**45.69**	**308**	P	**P**	**14 55 29.2**	**+0.2**
	comp=Z,19nm,0.8s,baz=82,slow=7.8,SNR=138						
KURBB				PcP	**PcP**	**14 57 06.4**	**-0.4**
	comp=Z,1.6nm,0.7s,baz=92,slow=3.6,SNR=4.2						
PDGK	**Podgornoye**	**46.40**	**298**	P	**P**	**14 55 35.0**	**+0.3**
PDGK				pmax	pmax		
	comp=Z,16nm,0.9s						
TKM2	**Tokmak 2**	**49.26**	**298**	*e*P	**P**	**14 55 57.9**	**+0.7**
TKM2				pmax	pmax		
	comp=Z,8.0nm,0.8s						
TKM2	**Tokmak 2**	**49.26**	**298**	*e*P	**P**	**14 55 57.9**	**+0.7**
	comp=Z,8.4nm,0.8s						
ILAR	**Eielson Array**	**49.87**	**32**	P	**P**	**14 56 01.0**	**-0.2**
	comp=Z,1.0nm,0.8s,baz=268,slow=6.0,SNR=12						
ILAR				PcP	**PcP**	**14 57 21.1**	**-0.4**
	comp=Z,0.4nm,0.6s,baz=271,slow=3.3,SNR=4.5						
OTUK	**Ortayu**	**50.10**	**306**	P	**P**	**14 56 03.2**	**-0.1**
OTUK				pmax	pmax		
	comp=Z,16nm,0.8s						
AAK	**Ala-Archa**	**50.12**	**298**	P	**P**	**14 56 04.0**	**+0.4**
	comp=Z,3.1nm,0.8s,baz=103,slow=5.5,SNR=12						
AAK	**Ala-Archa**	**50.12**	**298**	*e*P	**P**	**14 56 04.2**	**+0.6**
AAK				pmax	pmax		
	comp=Z,10.0nm,0.9s						
AAK	**Ala-Archa**	**50.12**	**298**	*e*P	**P**	**14 56 03.8**	**+0.2**
	comp=Z,3.8nm,0.9s						
BVAR	**Borovoye Array**	**50.29**	**312**	P	**P**	**14 56 04.6**	**0.0**
	comp=Z,5.4nm,0.7s,baz=78,slow=7.2,SNR=28						
BVAR				PcP	**PcP**	**14 57 23.8**	**+0.5**
	comp=Z,3.8nm,0.7s,baz=108,slow=3.3,SNR=12						
BRVK	**Borovoye**	**50.35**	**312**	*ce*P	**P**	**14 56 05.3**	**+0.3**
BRVK				pmax	pmax		
	comp=Z,9.0nm,1.0s						
BRVK	**Borovoye**	**50.35**	**312**	*e*P	**P**	**14 56 05.2**	**+0.2**
	comp=Z,7.8nm,0.8s						
MNAS	**Manas**	**51.56**	**299**	P	**P**	**14 56 15.3**	**+0.8**
MNAS				pmax	pmax		
	comp=Z,10.0nm,0.8s						
SFK	**Sufi-Kurgan**	**51.64**	**295**	P	**P**	**14 56 15.7**	**+0.4**
SFK				pmax	pmax		
	comp=Z,9.0nm,0.9s						
KKAR	**Karatay Array**	**52.76**	**300**	*e*P	**P**	**14 56 23.1**	**-0.1**
KKAR				pmax	pmax		
	comp=Z,4.0nm,0.8s						
KKAR	**Karatay Array**	**52.76**	**300**	*e*P	**P**	**14 56 23.1**	**-0.1**
	comp=Z,4.3nm,0.8s						
GSI	**Gunungsitoli**	**53.31**	**239**	*e*P	**P**	**14 56 27.7**	**+0.1**
	comp=Z,20nm,0.6s						
ARU	**Arti**	**56.13**	**318**	*d iP*	**P**	**14 56 46.7**	**-0.8**
ARU						14 58 48.4	
ARU				S	**S**	**15 04 32.4**	**-3.5**
ARU				SS	**SS**	**15 08 17.3**	**-4.4**
ARU				pmax	pmax		
	comp=Z,12nm,1.0s						
ARU	**Arti**	**56.13**	**318**	*e*P	**P**	**14 56 46.3**	**-1.2**
	comp=Z,13nm,1.0s						
WRAB	**Tennant Creek**	**56.86**	**187**	*e*P	**P**	**14 56 52.4**	**-0.6**
WRAB				pmax	pmax		
	comp=Z,4.0nm,0.7s						
WRAB	**Tennant Creek**	**56.86**	**187**	*e*P	**P**	**14 56 52.4**	**-0.6**
	comp=Z,3.8nm,0.7s						
WRA	**Warramunga Arr**	**56.87**	**187**	P	**P**	**14 56 52.4**	**-0.7**
	comp=Z,4.2nm,0.6s,baz=4.0,slow=7.2,SNR=54						
ABKAR	**Akbulak array**	**57.64**	**310**	*e*P	**P**	**14 56 58.0**	**-0.3**
	comp=Z,6.1nm,0.7s						
AKTO	**Aktyubinsk**	**58.39**	**312**	PcP	**PcP**	**14 57 54.3**	**0.0**
	comp=Z,2.0nm,0.8s,baz=255,slow=2.2,SNR=3.5						
ASAR	**Alice Springs**	**60.60**	**187**	P	**P**	**14 57 18.6**	**-0.4**
	comp=Z,1.5nm,0.7s,baz=11,slow=6.5,SNR=17						
MBWA	**Marble Bar**	**61.08**	**203**	*e*P	**P**	**14 57 22.4**	**+0.2**
	comp=Z,7.5nm,0.9s						
GEYT	**Alibeck**	**63.47**	**299**	P	**P**	**14 57 38.4**	**+0.1**
	comp=Z,3.4nm,0.7s,baz=344,slow=2.2,SNR=6.9						
ARCES	**ARCESS Array B**	**63.94**	**339**	P	**P**	**14 57 41.1**	**+0.2**
	comp=Z,4.3nm,0.8s,baz=52,slow=7.9,SNR=8.9						
COCO	**West Island**	**63.98**	**229**	*i* P	P	14 57 48.8	+7.0
YKA	**Yellowknife Ar**	**64.17**	**30**	P	**P**	**14 57 42.1**	**-0.3**
	comp=Z,0.7nm,0.7s,baz=303,slow=6.7,SNR=13						
YKA				PcP	**PcP**	**14 58 17.8**	**+0.5**
	comp=Z,0.4nm,0.7s,baz=301,slow=4.8,SNR=7.8						
OBN	**Obninsk**	**67.90**	**323**	⇓*e*P	**P**	**14 58 05.0**	**-1.6**
OBN				*e*		15 00 36.1	
OBN				eS	S	15 06 56.7	-7.9
OBN				pmax	pmax		
	comp=Z,8.0nm,0.5s						
OBN				MLR	MLR		
	comp=Z,28nm,15.0s						
STKA	**Stephens Creek**	**68.43**	**179**	P	**P**	**14 58 10.1**	**+0.1**
	comp=Z,1.3nm,0.7s,baz=343,slow=7.0,SNR=4.2						
FINES	**FINESS Array B**	**68.70**	**332**	P	**P**	**14 58 11.6**	**+0.2**
	comp=Z,9.7nm,0.8s,baz=64,slow=8.7,SNR=27						
VAF	**Ylistaro**	**68.90**	**334**	P	**P**	**14 58 12.1**	**-0.6**
VAF				pmax	pmax		
	comp=Z,11nm,1.1s						
KBZ	**Khabaz**	**70.61**	**310**	P	**P**	**14 58 24.2**	**+0.7**
	comp=Z,4.9nm,0.7s,baz=22,slow=4.5,SNR=13						
KIV	**Kislovodsk**	**70.62**	**311**	⇑*i*P	**P**	**14 58 24.1**	**+0.3**
KIV				*e*		15 00 55.8	
KIV				*e*PPP	PPP	15 02 42.3	
KIV				*e*S	S	15 07 25.8	-11
KIV				pmax	pmax		
	comp=Z,22nm,1.2s						
KIV	**Kislovodsk**	**70.62**	**311**	*e*P	**P**	**14 58 24.8**	**+1.0**
	comp=Z,14nm,0.8s						
FFC	**Flin Flon**	**74.08**	**32**	*i* P	**P**	**14 58 45.7**	**+1.6**
AKASG	**Malin Array Be**	**74.10**	**322**	P	**P**	**14 58 44.1**	**-0.1**
	comp=Z,3.2nm,0.6s,baz=47,slow=6.1,SNR=17						
AKASG	**Malin Array Be**	**74.10**	**322**	*ce*P	**P**	**14 58 44.2**	**-0.1**
AKASG				pmax	pmax		
	comp=Z,2.0nm,0.4s						
KIEV	**Kiev**	**74.11**	**322**	*e*P	**P**	**14 58 43.7**	**-0.6**
KIEV				pmax	pmax		
	comp=Z,6.0nm,0.9s						
KIEV	**Kiev**	**74.11**	**322**	*e*P	**P**	**14 58 43.6**	**-0.6**
	comp=Z,6.3nm,0.9s						
NB2	**NORSAR Subarra**	**74.11**	**337**	P	**P**	**14 58 44.3**	**+0.1**
	comp=Z,3.8nm,0.7s,baz=41,slow=6.2						
NOA	**NORSAR Array B**	**74.11**	**337**	P	**P**	**14 58 44.6**	**+0.3**
	comp=Z,3.5nm,0.7s,baz=40,slow=5.8,SNR=16						
EGMT	**Eagleton**	**74.69**	**41**	*e*P	**P**	**14 58 48.9**	**+1.0**
	comp=Z,2.6nm,0.8s						
BOZ	**Bozeman (W)**	**75.14**	**44**	*e*P	**P**	**14 58 52.1**	**+1.4**
BOZ				pmax	pmax		
	comp=Z,2.0nm,0.8s						
BOZ	**Bozeman (W)**	**75.14**	**44**	*e*P	**P**	**14 58 52.1**	**+1.4**
	comp=Z,2.0nm,0.8s						
NVAR	**Mina Array Bea**	**75.46**	**53**	P	**P**	**14 58 54.6**	**+1.9**
	comp=Z,2.4nm,0.7s,baz=286,slow=5.7,SNR=11						
H17A	**Grant Village**	**76.51**	**44**	*e*P	**P**	**14 59 01.6**	**+3.0**
	comp=Z,5.5nm,1.1s						
R11A	**Troy Canyon, C**	**77.23**	**52**	*e*P	**P**	**14 59 04.2**	**+1.5**
	comp=Z,3.9nm,1.1s						
BURAR	**Bucovina Array**	**78.11**	**321**	⇑*i*P	**P**	**14 59 08.0**	**+0.7**
BURAR	**Bucovina Array**	**78.11**	**321**	⇑P	**P**	**14 59 08.0**	**+0.7**
PDAR	**Pinedale Array**	**78.11**	**45**	P	**P**	**14 59 08.1**	**+0.5**
	comp=Z,1.0nm,0.7s,baz=261,slow=1.9,SNR=12						
TESR	**Tescani**	**78.11**	**320**	⇓*i*P	**P**	**14 59 04.1**	**-3.1**
VRI	**Vrincioaia**	**78.50**	**319**	⇑*i*P	**P**	**14 59 11.1**	**+1.7**
VRI	**Vrincioaia**	**78.50**	**319**	⇑P	**P**	**14 59 11.1**	**+1.7**
BRTR	**Keskin Array B**	**78.57**	**311**	P	**P**	**14 59 10.6**	**+0.5**
	comp=Z,2.5nm,0.8s,baz=72,slow=4.0,SNR=7.5						
KOLS	**Kolonicke sedl**	**78.63**	**324**	*e*P	**P**	**14 59 10.7**	**+0.6**
KOLS	**Kolonicke sedl**	**78.63**	**324**	*e*P	**P**	**14 59 10.7**	**+0.6**
STHS	**Stebnicka Huta**	**78.78**	**325**	*e*P	**P**	**14 59 12.4**	**+1.5**
STHS				pmax	pmax		
	comp=Z,3.0nm,1.0s						
STHS	**Stebnicka Huta**	**78.78**	**325**	*e*P	**P**	**14 59 12.3**	**+1.4**
VOIR		**79.66**	**320**	⇑*i*P	**P**	**14 59 17.4**	**+1.5**
VOIR		**79.66**	**320**	⇑P	**P**	**14 59 17.4**	**+1.5**
LANS	**Liptovska Anna**	**79.79**	**325**	*e*P	**P**	**14 59 17.8**	**+1.4**
LANS	**Liptovska Anna**	**79.79**	**325**	*e*P	**P**	**14 59 17.8**	**+1.4**
KECS	**Kecovo**	**79.79**	**324**	*e*P	**P**	**14 59 17.1**	**+0.7**
KECS				pmax	pmax		
	comp=Z,2.0nm,0.9s						
KECS	**Kecovo**	**79.79**	**324**	*e*P	**P**	**14 59 17.1**	**+0.7**
DRGR		**79.91**	**322**	⇑*i*P	**P**	**14 59 17.9**	**+0.7**
DRGR		**79.91**	**322**	⇑P	**P**	**14 59 17.9**	**+0.7**
MORC	**Moravsky Berou**	**80.19**	**327**	⇑*i*P	**P**	**14 59 18.8**	**+0.2**
MORC	**Moravsky Berou**	**80.19**	**327**	⇑P	**P**	**14 59 18.8**	**+0.2**
DPC	**Dobruska-Polom**	**80.30**	**328**	*e*P	**P**	**14 59 20.0**	**+0.8**
DPC	**Dobruska-Polom**	**80.30**	**328**	*e*P	**P**	**14 59 20.0**	**+0.8**
VYHS	**Vyhne**	**80.55**	**325**	*e*P	**P**	**14 59 21.4**	**+0.9**
VYHS				pmax	pmax		
	comp=Z,2.0nm,0.9s						
VYHS	**Vyhne**	**80.55**	**325**	*e*P	**P**	**14 59 21.4**	**+0.9**
SIRR	**Síria**	**80.80**	**322**	⇑*i*P	P	14 59 27.5	+5.6
BRG	**Berggiesshubel**	**80.91**	**329**	*e*P	**P**	**14 59 22.7**	**+0.3**
	comp=Z,5.9nm,1.0s						
BRG	**Berggiesshubel**	**80.91**	**329**	*e*P	**P**	**14 59 22.7**	**+0.3**
BRG				pm

	baz=332						
TWT				S	**Sb**	**14 56 23.2**	**-1.4**
	baz=332						
CHN5	**Tsauling**	**0.84**	**275**	⇑*i*P	**Pn**	**14 56 14.4**	**-0.2**
	baz=275						
CHN5				S	**Sn**	**14 56 25.8**	**-0.5**
	baz=275						
STYT	**Tauyuan**	**0.84**	**245**	⇑*i*P	**Pb**	**14 56 14.1**	**-0.2**
	baz=242						
STYT				*e*S	**Sb**	**14 56 24.3**	**-0.9**
	baz=242						
TWG	**Pinlang**	**0.84**	**214**	*e*P	**Pb**	**14 56 13.0**	**-1.3**
	baz=194						
TTN	**Taitung**	**0.87**	**208**	*e*P	**Pb**	**14 56 13.6**	**-1.0**
	baz=200						
WNT	**Mingjian**	**0.90**	**293**	⇑*i*P	**Pn**	**14 56 15.5**	**0.0**
	baz=293						
WNT				*e*S	**Sn**	**14 56 27.4**	**-0.3**
	baz=293						
ENA	**Nanau**	**0.91**	**9**	*e*P	**Pb**	**14 56 14.7**	**-0.7**
	baz=359						
CHN4	**Tsaushan**	**0.93**	**260**	⇑P	**Pn**	**14 56 16.1**	**+0.2**
	baz=256						
CHN4				S	**Sn**	**14 56 29.0**	**+0.5**
	baz=256						
NNS	**Nan Shan**	**0.94**	**348**	*e*P	**Pb**	**14 56 15.5**	**-0.3**
	baz=360						
NNS				*e*S	**Sb**	**14 56 25.8**	**-2.1**
	baz=360						
WTP	**Ta-pu**	**0.94**	**253**	⇑*i*P	**Pn**	**14 56 15.9**	**-0.1**
	baz=252						
WTP				*e*S	**Sn**	**14 56 28.4**	**-0.3**
	baz=252						
WGK	**Gukeng**	**0.96**	**280**	P	**Pn**	**14 56 16.2**	**0.0**
	baz=279						
WGK				*e*S	**Sb**	**14 56 28.1**	**-0.2**
	baz=279						
CHN2	**Minshiung**	**1.02**	**271**	P	**Pb**	**14 56 17.6**	**+0.3**
	baz=270						
CHN2				*e*S	**Sn**	**14 56 31.9**	**+1.2**
	baz=270						
SGST	**Jiashian**	**1.02**	**245**	⇓*i*P	**Pb**	**14 56 17.6**	**+0.3**
	baz=243						
SGST				S	**Sn**	**14 56 32.0**	**+1.2**
	baz=243						
CHN1	**Nanshi**	**1.03**	**251**	⇑*i*P	**Pb**	**14 56 17.6**	**+0.2**
	baz=251						
CHN1				S	**Sn**	**14 56 31.5**	**+0.5**
	baz=251						
TCU	**Taichung**	**1.04**	**307**	*e*P	**Pn**	**14 56 17.5**	**+0.1**
	baz=307						
TWK	**Hsinying**	**1.04**	**256**	⇑P	**Pb**	**14 56 17.6**	**0.0**
	baz=256						
TWK				*e*S	**Sn**	**14 56 31.1**	**-0.2**
	baz=256						
CHY	**Chiayi**	**1.07**	**269**	*e*P	**Pb**	**14 56 18.5**	**+0.4**
	baz=269						
CHY				*e*S	**Sn**	**14 56 32.3**	**+0.5**
	baz=269						
ECL	**Taimali**	**1.09**	**213**	*e*P	**Pn**	**14 56 16.2**	**-1.8**
	baz=194						
TWC	**Suao**	**1.11**	**12**	*e*P	**Pn**	**14 56 18.4**	**+0.1**
	baz=4.0						
TWQ1	**Liyutan**	**1.11**	**318**	⇑*i*P	**Pb**	**14 56 19.1**	**+0.3**
	baz=325						
TWQ1				S	**Sn**	**14 56 33.7**	**+0.7**
	baz=325						
ENTT	**Nioudou**	**1.11**	**359**	*e*P	**Pn**	**14 56 17.6**	**-0.8**
	baz=1.0						
NSK	**Sanguang**	**1.17**	**350**	*e*P	**Pn**	**14 56 18.9**	**-0.3**
	baz=348						
NSK				*e*S	**Sn**	**14 56 34.0**	**-0.4**
	baz=348						
NSY	**Sanyi**	**1.17**	**320**	*e*P	**Pb**	**14 56 20.1**	**+0.4**
	baz=318						
NSY				*e*S	**Sb**	**14 56 35.6**	**+1.1**
	baz=318						
SSD	**Sandimen**	**1.17**	**229**	*e*P	**Pn**	**14 56 19.2**	**+0.1**
	baz=225						
TWE	**Neicheng**	**1.20**	**3**	*e*P	**Pn**	**14 56 19.4**	**-0.1**
	baz=6.0						
CHN3	**Shihua**	**1.21**	**249**	*e*P	**Pb**	**14 56 20.7**	**+0.3**
	baz=262						
CHN3				*e*S	**Sb**	**14 56 39.0**	**+3.3**
	baz=262						
NSTT	**Nanjuang**	**1.23**	**334**	*e*P	**Pn**	**14 56 20.3**	**+0.4**
	baz=344						
NSTT				*e*S	**Sn**	**14 56 34.8**	**-1.0**
	baz=344						
WTCT	**Ta-ch'eng**	**1.25**	**286**	*e*P	**Pn**	**14 56 20.5**	**+0.3**
	baz=286						
WSF	**Szhu**	**1.26**	**276**	*e*P	**Pn**	**14 56 20.6**	**+0.3**
	baz=275						
WSF				*e*S	**Sb**	**14 56 37.1**	**0.0**
	baz=275						
CHN8	**Yiju**	**1.28**	**262**	*e*P	**Pn**	**14 56 20.6**	**0.0**
	baz=263						
CHN8				*e*S	**Sb**	**14 56 37.1**	**-0.5**
	baz=263						
TWM1	**Shoushan**	**1.28**	**237**	*e*P	**Pb**	**14 56 23.0**	**+1.4**
	baz=238						
SGLT	**Jiouru**	**1.28**	**232**	*e*P	**Pb**	**14 56 21.9**	**+0.2**
	baz=232						
EAST	**Anshuo**	**1.32**	**211**	*e*P	**Pn**	**14 56 21.1**	**-0.1**
	baz=194						
EGS		**1.35**	**13**	*e*P	**Pb**	**14 56 24.0**	**+1.1**
	baz=360						
SCZT	**Fangliau**	**1.45**	**218**	*e*P	**Pb**	**14 56 24.7**	**+0.1**
	baz=198						
SCZT				*e*S	**Sb**	**14 56 43.7**	**+1.1**
	baz=198						
LAY	**Lan-yu**	**1.48**	**181**	*e*P	**Pn**	**14 56 22.4**	**-0.9**
	baz=166						
TWB1	**Santiao Chiao**	**1.52**	**14**	*e*P	**Pb**	**14 56 25.2**	**-0.6**
	baz=358						
JYNG	**Yonagunijimaku**	**1.55**	**53**	P	**Pn**	**14 56 24.6**	**+0.3**
JYNG				*e*S	**Sn**	**14 56 44.4**	**+0.8**
NWF	**Wu-fen Shan**	**1.55**	**6**	*e*P	**Pn**	**14 56 25.1**	**+0.6**
	baz=8.0						
TWS1	**Kuangyinshan**	**1.58**	**354**	*e*P	**Pn**	**14 56 25.6**	**+0.8**
	baz=16						
YOJ	**Yonaguni jima**	**1.60**	**54**	P	**Pn**	**14 56 25.6**	**+0.6**
YOJ				*e*S	**Sn**	**14 56 45.5**	**+0.5**
YOJ	**Yonaguni jima**	**1.60**	**54**	*e*P	**Pn**	**14 56 25.4**	**+0.3**
	baz=60						
HEN	**Hengchun**	**1.70**	**208**	*e*P	**Pb**	**14 56 29.2**	**+0.3**
	baz=187						
TWK1	**Hengchun**	**1.73**	**205**	*e*P	**Pn**	**14 56 26.9**	**+0.1**
	baz=186						
WDGT	**Dungji**	**1.79**	**262**	*e*P	**Pn**	**14 56 27.2**	**-0.5**
	baz=263						
PNG	**Penghu**	**1.87**	**272**	*e*P	**Pn**	**14 56 28.6**	**-0.1**
	baz=272						
HATJ	**Hateruma jima**	**2.10**	**75**	P	**Pn**	**14 56 32.1**	**+0.2**
HATJ				*e*S	**Sn**	**14 56 57.1**	**-0.1**
IRIF	**Iriomote-Funau**	**2.12**	**67**	P	**Pn**	**14 56 32.8**	**+0.6**
IRIF				*e*S	**Sn**	**14 56 58.5**	**+0.7**
JKRS	**Kuro-shima**	**2.33**	**72**	P	**Pn**	**14 56 35.9**	**+0.9**
JKRS				*e*S	**Sn**	**14 57 03.1**	**+0.2**
JJ	**Ishigaki jima**	**2.48**	**70**	P	**Pn**	**14 56 37.1**	**-0.1**
JJ				*e*S	**Sn**	**14 57 05.9**	**-0.8**
JISG	**Ishigakijimahi**	**2.70**	**66**	P	**Pn**	**14 56 40.1**	**-0.1**
JISG				*e*S	**Sn**	**14 57 11.6**	**-0.6**
JTJ	**Tarama**	**3.06**	**68**	P	**Pn**	**14 56 45.3**	**+0.3**

JMA 19 14:56:35.6, 36.88N×140.81E, h7km±1km, M2.5, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.22**	**358**	P	Pg	14 56 40.3	+0.2
ONAJ				S	Sg	14 56 43.6	+0.5
JHO	**Hitachi**	**0.33**	**216**	P	Pg	14 56 42.2	+0.1
JHO				S	Sg	14 56 46.6	+0.1
JFT	**Otama**	**0.74**	**329**	P	Pg	14 56 50.0	+0.1
JFT				S	Sg	14 56 59.9	+0.4
JMM	**Marumori**	**0.98**	**359**	P	Pg	14 56 54.0	-0.5
JMM				S	Sg	14 57 07.2	-0.1
MAT	**Matsushiro**	**2.12**	**262**	P	Pn	14 57 12.1	+0.6
MAT				S	Sb	14 57 40.5	-0.3

JMA 19 14:59:59.7±0.2, 38.19N×144.46E, h44km, M3.6, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**2.36**	**293**	P	Pn	15 00 37.2	+1.3
OFUJ				*e*S	Sn	15 01 05.2	+1.6
JIO	**Ouri**	**2.46**	**277**	P	Pn	15 00 38.4	+1.1
JIO				S	Sn	15 01 07.2	+1.1
JMK	**Ichinoseki**	**2.65**	**288**	P	Pn	15 00 41.4	+1.5
JMK				S	Sn	15 01 12.7	+1.9
JTH	**Tanohata**	**2.67**	**312**	P	Pn	15 00 41.5	+1.3
JTH				*e*S	Sn	15 01 11.9	+0.6
JOM	**Ohasama**	**2.79**	**298**	P	Pn	15 00 43.5	+1.7
JOM				S	Sn	15 01 15.5	+1.3
JMM	**Marumori**	**2.91**	**265**	P	Pn	15 00 44.5	+1.0
JMM				S	Sn	15 01 18.0	+0.7
JOU	**Okura**	**2.99**	**275**	P	Pn	15 00 46.4	+1.8
JOU				S	Sn	15 01 21.4	+2.1
JANG	**Nango**	**3.16**	**315**	P	Pn	15 00 48.1	+1.2
JANG				*e*S	Sn	15 01 22.3	-1.0
JRG	**Rokugo**	**3.22**	**293**	P	Pn	15 00 50.0	+2.2
JRG				S	Sn	15 01 27.8	+2.9
JFT	**Otama**	**3.33**	**260**	P	Pn	15 00 47.7	-1.6
JRY	**Ryogami san**	**4.94**	**246**	P	Pn	15 01 12.3	+0.8
JRY				*e*S	Sn	15 02 07.2	-0.2

IDC 19 15:00:50.5±1.2, 36.88N×139.95E, h0km, mb3.5/4, mb1 3.7/5, mb1mx3.3/56, mbtmp3.6/5, ML3.7/1, Error ellipse: s-maj=30.2km s-min=22.8km az=108.0, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MJAR	**Matsushiro Arr**	**1.44**	**257**	Pn	Pn	15 01 17.8	-0.1
	0.9nm,0.3s,baz=90,slow=15,SNR=7.3						
ASAJ	**Asahikawa**	**7.50**	**15**	Pn	Pn	15 02 40.6	-0.6
	1.1nm,0.3s,baz=64,slow=13,SNR=8.6						
PETK	**Petropavlovsk-**	**20.42**	**32**	P	P	15 05 29.4	+0.4
	2.8nm,1.0s,baz=100,slow=7.7,SNR=3.6						
MKAR	**Makanchi Array**	**43.20**	**302**	P	P	15 08 53.0	-0.2
	0.1nm,0.4s,baz=93,slow=6.6,SNR=2.2						
WRA	**Warramunga Arr**	**56.77**	**186**	P	P	15 10 35.7	-0.7
	0.6nm,0.4s,baz=2.8,slow=7.7,SNR=13						
ASAR	**Alice Springs**	**60.49**	**186**	P	P	15 11 03.0	+0.7
	0.2nm,0.5s,baz=16,slow=12,SNR=4.1						

SKHL 19 15:01:27.2±0.3, 44.10N×148.87E, h49km, mb4.2/3, Kuril Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KUR	**Kuril'sk**	**1.34**	**328**	*e*P	Pn	15 01 48.7	-0.8
KUR				AMB	AMB	15 01 50.0	
	80nm,0.3s						
KUR				*i* S	Sn	15 02 04.6	-1.5
KUR				A	A	15 02 09.1	
	310nm,0.3s						
KUR				A	A	15 02 09.1	
	110nm,0.3s						
SHO	**Shikotan**	**1.49**	**262**	*i* P	Pn	15 01 50.7	-0.8
SHO				AMB	AMB	15 01 54.1	
	30nm,0.2s						
SHO				*i* S	Sn	15 02 08.5	-1.3
SHO				A	A	15 02 14.5	
	380nm,0.3s						
SHO				A	A	15 02 14.5	
	510nm,0.3s						
YUK	**Yuzh-Kuril'sk**	**2.17**	**269**	*e*P	Pn	15 02 00.7	-0.1
YUK				AMB	AMB	15 02 04.4	
	30nm,0.3s						
YUK				AMB	AMB	15 02 04.4	
	100nm,0.3s						
YUK				AMB	AMB	15 02 04.4	
	60nm,0.3s						
YUK				*i* S	Sn	15 02 25.3	-1.2
YUK				A	A	15 02 31.9	
	180nm,0.3s						
YUK				A	A	15 02 31.9	
	230nm,0.3s						
YSS	**Yuzh-Sakhalins**	**5.16**	**306**	*e*P	Pn	15 02 42.9	+1.1
TYV	**Tymovskoe**	**7.97**	**330**	*e*P	Pn	15 03 21.3	+1.1

IDC 19 15:02:38.5±1.9, 0.25N×126.14E, h0km, mb3.5/3, mb1 3.8/3, mb1mx3.4/42, mbtmp3.5/3, MS3.9/2, Ms1 3.9/2, ms1mx2.7/36, Error ellipse: s-maj=165.4km s-min=25.7km az=65.0, Northern Molucca Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**21.62**	**159**	P	P	15 07 29.4	-1.0
	1.0nm,0.5s,baz=337,slow=10,SNR=33						
ASAR	**Alice Springs**	**24.94**	**163**	P	P	15 08 04.4	+0.7
	0.8nm,0.6s,baz=345,slow=12,SNR=12						
JHJ	**Hachijo jima 2**	**35.13**	**20**	LR	LR	15 20 52.4	
	comp=Z,74nm,21.4s,baz=149,slow=31						
MKAR	**Makanchi Array**	**60.09**	**327**	P	P	15 12 47.5	-0.1
	0.2nm,0.4s,baz=121,slow=7.7,SNR=5.6						
RAO	**Raoul Island**	**60.84**	**124**	LR	LR	15 38 50.4	
	comp=Z,265nm,18.8s,baz=142,slow=36						

NIED ***19*** *15:05:00, 38.30N×144.50E, h8km, Mw3.8 Best double couple: M₀5.81000×10¹⁴ NP1:φ₀11.00000°, δ23.00000°, λ-100.00000°. NP2:φ₀201.00000°, δ68.00000°, λ-86.00000°*

ISCJB ***19*** *15:05:37.9±1.2, 38.32N±0.05×144.69E±0.09, h33km, mb3.4/2, MS3.5/3, Error ellipse: s-maj=10.5km s-min=6.9km az=3.5*

JMA ***19*** *15:05:39.3±0.2, 38.29N×144.54E, h32km, M3.9*

IDC ***19*** *15:05:41.8±3.4, 37.13N×144.49E, h0km, mb3.5/2, mb1 3.7/3, mb1mx3.3/49, mbtmp3.4/3, ML3.2/1, MS3.1/6, Ms1 3.1/6, ms1mx2.6/39, Error ellipse: s-maj=82.3km s-min=38.2km az=56.0*

ISC 19 15:05:39.2±1.7, 38.25N±0.07×144.7E±0.1, h35km, n22, σ0.86/20, MS3.6/3, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**2.50**	**290**	P	**Pn**	**15 06 17.4**	**0.0**
JIO	**Ouri**	**2.63**	**275**	P	**Pn**	**15 06 19.3**	**+0.2**
JIO				S	**Sn**	**15 06 48.6**	**-1.2**
JTH	**Tanohata**	**2.76**	**308**	P	**Pn**	**15 06 21.3**	**+0.3**
JTH				*e*S	**Sn**	**15 06 52.4**	**-0.8**
JMK	**Ichinoseki**	**2.80**	**285**	*e*S	**Sn**	**15 06 54.1**	**0.0**
JOM	**Ohasama**	**2.91**	**296**	P	**Pn**	**15 06 23.5**	**+0.4**
JOM				*e*S	**Sn**	**15 06 57.1**	**+0.3**
JMM	**Marumori**	**3.10**	**264**	P	**Pn**	**15 06 25.5**	**-0.1**
JOU	**Okura**	**3.16**	**273**	P	**Pn**	**15 06 27.7**	**+1.2**
JRG	**Rokugo**	**3.36**	**291**	P	**Pn**	**15 06 30.5**	**+1.3**
JYK	**Kaneyama**	**3.45**	**282**	P	**Pn**	**15 06 31.9**	**+1.4**
JTM	**Tenmabayashi**	**3.77**	**313**	*e*S	**Sn**	**15 07 16.7**	**-1.2**
JNBK	**Urakawa-nobuka**	**4.28**	**340**	P	**Pn**	**15 06 42.8**	**+0.9**
JNBK				S	**Sn**	**15 07 29.7**	**-0.9**
JCH	**Churui**	**4.47**	**347**	S	**Sn**	**15 07 34.2**	**-1.0**
JKB	**Kayabe**	**4.58**	**323**	*e*S	**Sn**	**15 07 37.9**	**-0.1**
JRY	**Ryogami san**	**5.13**	**246**	P	**Pn**	**15 06 53.4**	**-0.2**
MJAR	**Matsushiro Arr**	**5.43**	**254**	Pn	**Pn**	**15 06 58.7**	**+1.0**
	0.9nm,0.3s,baz=76,slow=14,SNR=5.8						
MJAR				LR	LR	15 09 11.3	
	comp=Z,63nm,21.1s,baz=70,slow=42						
USRK	**Ussuriysk Ar.**	**11.25**	**306**	LR	LR	15 13 23.4	
	comp=Z,71nm,18.2s,baz=130,slow=39						
KSRS	**Korea Array**	**13.27**	**272**	LR	LR	15 13 10.5	
	comp=Z,17nm,20.2s,baz=60,slow=34						
MKAR	**Makanchi Array**	**45.68**	**302**	P	P	15 14 08.0	+11
	0.3nm,0.6s,baz=81,slow=8.9,SNR=4.3						
WRA	**Warramunga Arr**	**58.70**	**191**	P	**P**	**15 15 33.2**	**-0.1**
	0.3nm,0.8s,baz=13,slow=7.3,SNR=5.5						
DZM	**Mont Dzumac**	**63.39**	**157**	LR	LR	15 37 19.1	
	comp=Z,102nm,21.8s,baz=52,slow=30						
AFI	**Afiamalu**	**65.99**	**133**	LR	LR	15 37 04.6	
	comp=Z,46nm,21.7s,baz=71,slow=29						
KVAR	**Kislovodsk Arr**	**72.04**	**312**	LR	LR	15 51 44.3	
	comp=Z,8.2nm,19.5s,slow=38						

ISCJB ***19*** *15:06:08.8±0.4, 37.41N±0.01×21.64E±0.02, h2km±2km, Error ellipse: s-maj=3.1km s-min=2.1km az=144.0*

ATH ***19*** *15:06:08.9, 37.41N×21.65E, h18km, ML3.2/34, Error ellipse: s-maj=0.8km s-min=0.5km az=52.0*

CSEM ***19*** *15:06:09.5±0.2, 37.47N×21.64E, h2km, ML3.6, Error ellipse: s-maj=4.5km s-min=2.9km az=51.0*

THE ***19*** *15:06:09.1, 37.42N×21.67E, h0km±2km, ML3.5/17, Error ellipse: s-maj=2.0km s-min=0.6km az=216.0*

ISC 19 15:06:09.0±0.7, 37.42N±0.01×21.66E±0.02, h12km±5km, n177, σ1.16/271, 1C-1D, Southern Greece

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AMT	**Artemida-Makis**	**0.12**	**19**	P	**Pg**	**15 06 12.3**	**+0.1**
AMT				S	**Sg**	**15 06 14.6**	**+0.2**
AMT	**Artemida-Makis**	**0.12**	**19**	P	**Pg**	**15 06 12.1**	**-0.1**
AMT				S	**Sg**	**15 06 14.3**	**-0.1**
AMT	**Artemida-Makis**	**0.12**	**19**	P	**Pg**	**15 06 12.1**	**-0.1**
AMT				S	**Sg**	**15 06 14.3**	**-0.1**
AMT				AML	AML	15 06 15.4	
	comp=E,88179μm,0.2s						
AMT				AML	AML	15 06 15.4	
	comp=N,73834μm,0.2s						
ITM	**Ithomi**	**0.32**	**138**	P	**Pb**	**15 06 15.7**	**-1.0**
ITM				S	**Sg**	**15 06 20.1**	**+0.3**
ITM	**Ithomi**	**0.32**	**138**	P	**Pb**	**15 06 16.1**	**-0.6**
ITM				S	**Sb**	**15 06 22.2**	**+0.4**
ITM	**Ithomi**	**0.32**	**138**	P	**Pb**	**15 06 16.1**	**-0.6**
ITM				AML	AML	15 06 21.9	
	comp=E,5955μm,0.3s						
ITM				S	**Sb**	**15 06 22.2**	**+0.4**
ITM				AML	AML	15 06 27.5	
	comp=N,4503μm,0.4s						
TRIP	**Tripoli**	**0.50**	**77**	P	**Pb**	**15 06 19.4**	**-0.3**
TRIP				S	**Sb**	**15 06 26.5**	**-0.5**
TRIP	**Tripoli**	**0.50**	**77**	P	**Pb**	**15 06 19.4**	**-0.3**
TRIP				S	**Sb**	**15 06 26.5**	**-0.5**
TRIP				AML	AML	15 06 28.3	
	comp=E,4422μm,0.4s						
TRIP				AML	AML	15 06 32.9	
	comp=N,2789μm,0.7s						
PYL	**PYLOS**	**0.53**	**173**	P	**Pg**	**15 06 19.0**	**-0.2**
PYL				S	**Sb**	**15 06 27.6**	**-0.1**
PYL	**PYLOS**	**0.53**	**173**	P	**Pg**	**15 06 19.1**	**-0.2**
PYL				S	**Sb**	**15 06 27.6**	**-0.1**
PYL	**PYLOS**	**0.53**	**173**	P	**Pg**	**15 06 19.1**	**-0.2**
PYL				S	**Sb**	**15 06 28.4**	**+0.7**
PYL				AML	AML	15 06 30.1	
	comp=N,4997μm,0.4s						
PYL				AML	AML	15 06 33.6	
	comp=E,3929μm,0.4s						
DRO	**Drossia**	**0.53**	**4**	P	**Pb**	**15 06 19.4**	**-0.9**
DRO				S	**Sb**	**15 06 28.0**	**0.0**
DRO	**Drossia**	**0.53**	**4**	P	**Pb**	**15 06 19.6**	**-0.7**
DRO				S	**Sb**	**15 06 29.2**	**+1.2**
DRO	**Drossia**	**0.53**	**4**	P	**Pb**	**15 06 19.6**	**-0.7**
DRO				S	**Sb**	**15 06 29.2**	**+1.2**
DRO				AML	AML	15 06 32.9	
	comp=E,22243μm,0.3s						
DRO				AML	AML	15 06 34.1	
	comp=N,20929μm,0.4s						
VLX	**Vlachokerasia**	**0.57**	**95**	P	**Pb**	**15 06 20.3**	**-0.8**
VLX				S	**Sb**	**15 06 28.7**	**-0.5**
VLX	**Vlachokerasia**	**0.57**	**95**	P	**Pb**	**15 06 20.5**	**-0.2**
VLX				S	**Sb**	**15 06 28.9**	**-0.3**
VLX	**Vlachokerasia**	**0.57**	**95**	P	**Pb**	**15 06 20.9**	**-0.2**
VLX				S	**Sb**	**15 06 28.1**	**-1.2**
VLX				AML	AML	15 06 32.2	
	comp=E,10118μm,0.4s						
VLX				AML	AML	15 06 32.3	
	comp=N,7517μm,0.6s						
RLS	**Riolos of Patr**	**0.66**	**347**	P	**Pg**	**15 06 21.3**	**-0.4**
RLS				S	**Sb**	**15 06 31.4**	**-0.1**
RLS	**Riolos of Patr**	**0.66**	**347**	P	**Pg**	**15 06 21.3**	**-0.4**
RLS				S	**Sg**	**15 06 30.1**	**-0.3**
RLS	**Riolos of Patr**	**0.66**	**347**	S	**Sg**	**15 06 30.1**	**-0.3**
RLS				AML	AML	15 06 34.6	
	comp=E,11032μm,0.3s						
RLS				AML	AML	15 06 34.8	
	comp=N,7123μm,0.6s						
KLV	**Kalavryta, Ach**	**0.73**	**32**	P	**Pg**	**15 06 22.5**	**-0.8**
KLV				S	**Sb**	**15 06 33.8**	**0.0**
KLV	**Kalavryta, Ach**	**0.73**	**32**	P	**Pg**	**15 06 22.0**	**-1.3**
KLV				S	**Sb**	**15 06 34.4**	**+0.6**
KLV	**Kalavryta, Ach**	**0.73**	**32**	P	**Pg**	**15 06 22.0**	**-1.3**
KLV				S	**Sb**	**15 06 34.4**	**+0.6**
KLV				AML	AML	15 06 36.5	
	comp=E,5482μm,0.3s						
KLV				AML	AML	15 06 38.0	
	comp=N,4822μm,0.3s						
GUR	**Goura**	**0.75**	**46**	P	**Pg**	**15 06 22.8**	**-0.7**
GUR				S	**Sb**	**15 06 33.8**	**-0.4**
GUR	**Goura**	**0.75**	**46**	P	**Pg**	**15 06 22.3**	**-1.2**
GUR				S	**Sb**	**15 06 35.3**	**+1.1**
GUR	**Goura**	**0.75**	**46**	P	**Pg**	**15 06 22.3**	**-1.2**
GUR				S	**Sb**	**15 06 35.3**	**+1.1**
GUR				AML	AML	15 06 37.2	
	comp=Z,6285μm,0.3s						
GUR				AML	AML	15 06 37.4	
	comp=N,15243μm,0.3s						
ZKS	**Zakynthos**	**0.75**	**292**	P	**Pg**	**15 06 22.8**	**-0.7**
ZKS				S	**Sb**	**15 06 35.2**	**+1.1**
ZKS	**Zakynthos**	**0.75**	**292**	P	**Pg**	**15 06 22.8**	**-0.7**
ZKS				S	**Sb**	**15 06 35.2**	**+1.1**
ZKS				AML	AML	15 06 44.6	
	comp=E,7561μm,0.3s						
ZKS				AML	AML	15 06 47.8	
	comp=N,5229μm,0.5s						
AXS	**Araxos**	**0.81**	**344**	P	**Pg**	**15 06 23.8**	**-0.8**
AXS				S	**Sb**	**15 06 37.0**	**+1.2**
AXS	**Araxos**	**0.81**	**344**	P	**Pg**	**15 06 23.9**	**-0.7**
AXS				S	**Sb**	**15 06 35.8**	**-0.1**
AXS	**Araxos**	**0.81**	**344**	P	**Pg**	**15 06 23.5**	**-1.1**
AXS				S	**Sb**	**15 06 35.8**	**-0.1**
LAKA	**Lakka**	**0.86**	**17**	P	**Pg**	**15 06 24.6**	**-1.0**
LAKA				S	**Sb**	**15 06 37.5**	**+0.2**
LAKA	**Lakka**	**0.86**	**17**	P	**Pg**	**15 06 24.1**	**-1.5**
LAKA				S	**Sg**	**15 06 36.3**	**-0.5**
LAKA	**Lakka**	**0.86**	**17**	P	**Pg**	**15 06 24.1**	**-1.5**
LAKA				S	**Sg**	**15 06 36.3**	**-0.5**
LAKA				AML	AML	15 06 41.3	
	comp=E,5592μm,0.3s						
LAKA				AML	AML	15 06 41.5	
	comp=N,6146μm,0.5s						
UPR	**University Cam**	**0.87**	**7**	P	**Pb**	**15 06 26.1**	**+0.1**
UPR				S	**Sb**	**15 06 39.0**	**+1.4**
UPR	**University Cam**	**0.87**	**7**	P	**Pn**	**15 06 26.7**	**-0.3**
UPR				S	**Sb**	**15 06 37.7**	**+0.1**
UPR	**University Cam**	**0.87**	**7**	P	**Pn**	**15 06 26.7**	**-0.3**
UPR				S	**Sb**	**15 06 37.7**	**+0.1**
RODI	**Rodini**	**0.92**	**12**	P	**Pg**	**15 06 25.9**	**-0.9**
RODI				S	**Sn**	**15 06 41.5**	**+0.6**
RODI	**Rodini**	**0.92**	**12**	P	**Pg**	**15 06 25.9**	**-0.9**
RODI				S	**Sn**	**15 06 41.5**	**+0.6**
RODI				AML	AML	15 06 46.7	
	comp=N,9656μm,0.3s						
RODI				AML	AML	15 06 46.7	
	comp=E,15775μm,0.4s						
KFL	**Anninata**	**0.98**	**315**	P	**Pg**	**15 06 26.8**	**-1.0**
KFL	**Anninata**	**0.98**	**315**	P	**Pg**	**15 06 26.8**	**-1.0**
KFL				S	**Sb**	**15 06 40.8**	**+0.1**
KFL	**

KALE				S	Sn	15 06 45.5	+1.5		
KALE				AML	AML	15 06 47.7			
	comp=E,3888μm,0.2s								
KALE				AML	AML	15 06 48.8			
	comp=N,8249μm,0.3s								
VLS	**Valsamata**	**1.14**	**312**	P	Pg	**15 06 29.2**	**-1.7**		
VLS				S	Sn	**15 06 47.3**	**+1.0**		
VLS	**Valsamata**	**1.14**	**312**	P	Pg	**15 06 28.2**	**-2.7**		
VLS				S	Sn	**15 06 47.8**	**+1.5**		
KRND	**KRANIDI**	**1.19**	**91**	P	Pn	**15 06 31.9**	**+0.5**		
KRND				S	Sn	**15 06 47.9**	**+0.4**		
KRND	**KRANIDI**	**1.19**	**91**	P	Pn	**15 06 32.2**	**+0.8**		
KRND				S	Sb	**15 06 47.1**	**+0.3**		
KRND	**KRANIDI**	**1.19**	**91**	P	Pn	**15 06 32.2**	**+0.8**		
KRND				S	Sb	**15 06 47.1**	**+0.3**		
KRND				AML	AML	15 06 55.4			
	comp=N,1525μm,0.6s								
KRND				AML	AML	15 06 55.5			
	comp=E,1153μm,0.4s								
ANX	**Ano Chora**	**1.19**	**10**	P	Pg	**15 06 30.9**	**-1.0**		
ANX				S	Sn	**15 06 49.0**	**+1.3**		
ANX	**Ano Chora**	**1.19**	**10**	P	Pg	**15 06 30.9**	**-1.0**		
ANX				S	Sn	**15 06 49.0**	**+1.3**		
LTK	**Loutraki**	**1.20**	**59**	P	Pg	**15 06 31.0**	**-1.1**		
LTK				S	Sb	**15 06 48.0**	**+0.9**		
LTK	**Loutraki**	**1.20**	**59**	P	Pg	**15 06 30.5**	**-1.6**		
LTK				S	Sn	**15 06 48.7**	**+0.9**		
LTK	**Loutraki**	**1.20**	**59**	P	Pg	**15 06 30.4**	**-1.6**		
LTK				S	Sn	**15 06 48.6**	**+0.9**		
LTK				AML	AML	15 06 52.8			
	comp=E,1293μm,0.5s								
LTK				AML	AML	15 06 52.9			
	comp=N,1761μm,0.4s								
PVO	**Paravola**	**1.20**	**355**	P	Pg	**15 06 30.3**	**-1.8**		
PVO				S	Sn	**15 06 50.7**	**+2.9**		
PVO	**Paravola**	**1.20**	**355**	P	Pg	**15 06 30.3**	**-1.8**		
PVO				S	Sn	**15 06 50.7**	**+2.9**		
PDO	**Prodromos**	**1.24**	**342**	P	Pg	**15 06 31.6**	**-1.2**		
PDO	**Prodromos**	**1.24**	**342**	P	Pg	**15 06 30.7**	**-2.1**		
PDO				S	Sb	**15 06 49.8**	**+1.1**		
PDO	**Prodromos**	**1.24**	**342**	P	Pg	**15 06 30.7**	**-2.1**		
PDO				S	Sn	**15 06 49.8**	**+1.1**		
PDO				AML	AML	15 06 55.8			
	comp=E,4400μm,0.4s								
PDO				AML	AML	15 06 56.1			
	comp=N,7128μm,0.6s								
VLI	**Veliai**	**1.24**	**124**	P	Pn	**15 06 32.8**	**+0.7**		
VLI	**Veliai**	**1.24**	**124**	P	Pn	**15 06 33.2**	**+1.1**		
VLI				S	Sb	**15 06 48.9**	**+0.7**		
VLI	**Veliai**	**1.24**	**124**	P	Pn	**15 06 33.2**	**+1.1**		
VLI				S	Sb	**15 06 48.9**	**+0.7**		
VLI				AML	AML	15 06 57.3			
	comp=N,1126μm,0.7s								
VLI				AML	AML	15 06 59.1			
	comp=E,1488μm,0.9s								
DID	**Didima**	**1.26**	**86**	P	Pb	**15 06 32.3**	**-0.4**		
DID				S	Sn	**15 06 51.1**	**+1.8**		
DID	**Didima**	**1.26**	**86**	P	Pg	**15 06 31.7**	**-1.5**		
DID				S	Sn	**15 06 51.1**	**+1.8**		
DID	**Didima**	**1.26**	**86**	P	Pg	**15 06 31.7**	**-1.5**		
DID				S	Sb	**15 06 48.8**	**0.0**		
DID				AML	AML	15 06 54.8			
	comp=N,1847μm,0.5s								
DID				AML	AML	15 06 55.7			
	comp=E,1946μm,0.7s								
PROD	**Prodromos**	**1.29**	**49**	P	Pg	**15 06 32.7**	**-1.1**		
PROD				S	Sn	**15 06 52.8**	**+2.7**		
PROD	**Prodromos**	**1.29**	**49**	P	Pg	**15 06 32.7**	**-1.1**		
PROD				S	Sn	**15 06 52.8**	**+2.7**		
PROD				AML	AML	15 06 55.5			
	comp=E,2126μm,0.2s								
PROD				AML	AML	15 06 55.8			
	comp=N,1983μm,0.3s								
VIL2	**Platees**	**1.50**	**58**	P	Pb	**15 06 36.7**	**-0.1**		
VIL2				S	Sn	**15 06 57.5**	**+2.3**		
VIL2				AML	AML	15 07 06.6			
	comp=N,1347μm,0.8s								
VIL2				AML	AML	15 07 07.6			
	comp=E,1353μm,0.6s								
EVR	**Evrytania**	**1.50**	**4**	P	Pb	**15 06 36.8**	**0.0**		
EVR				S	Sn	**15 06 58.9**	**+3.5**		
EVR	**Evrytania**	**1.50**	**4**	P	Pb	**15 06 36.8**	**0.0**		
EVR				S	Sn	**15 06 57.2**	**+1.8**		
EVR	**Evrytania**	**1.50**	**4**	P	Pn	**15 06 35.9**	**+0.1**		
EVR				S	Sn	**15 06 57.2**	**+1.8**		
EVR				AML	AML	15 07 07.8			
	comp=N,2300μm,0.9s								
VILL	**Villia**	**1.51**	**60**	P	Pb	**15 06 36.7**	**-0.2**		
VILL	**Villia**	**1.51**	**60**	P	Pb	**15 06 36.7**	**-0.2**		
VILL				S	Sn	**15 06 57.5**	**+2.1**		
LKD2	**Lefkada island**	**1.58**	**330**	P	Pn	**15 06 37.4**	**+0.6**		
LKD2				S	Sg	**15 07 00.7**	**+0.9**		
LKD2	**Lefkada island**	**1.58**	**330**	P	Pn	**15 06 37.4**	**+0.6**		
LKD2				S	Sn	**15 06 57.5**	**+0.3**		
LKD2	**Lefkada island**	**1.58**	**330**	P	Pn	**15 06 37.0**	**+0.2**		
LKD2				S	Sn	**15 06 57.5**	**+0.3**		
LKD2				AML	AML	15 07 05.5			
	comp=N,1736μm,0.4s								
LKD2				AML	AML	15 07 13.3			
	comp=E,1887μm,0.9s								
KYTH	**Kithira**	**1.58**	**135**	P	Pg	**15 06 39.1**	**-0.3**		
KYTH				S	Sg	**15 06 58.9**	**-1.1**		
KYTH	**Kithira**	**1.58**	**135**	P	Pg	**15 06 39.1**	**-0.3**		
LKR	**Lokris**	**1.62**	**40**	P	Pn	**15 06 38.1**	**+0.7**		
LKR	**Lokris**	**1.62**	**40**	P	Pn	**15 06 37.4**	**0.0**		
LKR				S	Sg	**15 07 02.3**	**+1.1**		
LKR	**Lokris**	**1.62**	**40**	P	Pn	**15 06 37.4**	**0.0**		
LKR				S	Sg	**15 07 02.3**	**+1.1**		
LKR				AML	AML	15 07 09.7			
	comp=E,902μm,0.4s								
LKR				AML	AML	15 07 10.0			
	comp=N,897μm,0.4s								
AGG	**Agios Georgios**	**1.69**	**18**	P	Pb	**15 06 39.3**	**-0.7**		
AGG				S	Sg	**15 07 04.3**	**+1.1**		
AGG	**Agios Georgios**	**1.69**	**18**	P	Pb	**15 06 39.3**	**-0.7**		
AGG				S	Sg	**15 07 04.3**	**+1.1**		
AGG				AML	AML	15 07 10.6			
	comp=E,2593μm,0.3s								
AGG				AML	AML	15 07 19.0			
	comp=N,2153μm,0.5s								
ATH	**Athens Observa**	**1.72**	**71**	P	Pb	**15 06 40.3**	**-0.3**		
ATH				S	Sg	**15 07 04.3**	**-0.1**		
VLY	**Voula,Athens**	**1.75**	**75**	P	Pb	**15 06 40.7**	**-0.3**		
VLY				S	Sb	**15 07 03.0**	**+0.1**		
VLY	**Voula,Athens**	**1.75**	**75**	P	Pb	**15 06 40.7**	**-0.3**		
VLY				S	Sb	**15 07 03.0**	**+0.1**		
VLY				AML	AML	15 07 09.3			
	comp=N,532μm,0.5s								
VLY				AML	AML	15 07 09.6			
	comp=E,705μm,0.6s								
DSL	**Palaion Diasel**	**1.77**	**346**	P	Pn	**15 06 40.6**	**+1.1**		
DSL	**Palaion Diasel**	**1.77**	**346**	P	Pn	**15 06 40.6**	**+1.1**		
DSL				S	Sn	**15 07 02.9**	**+1.0**		
DSL	**Palaion Diasel**	**1.77**	**346**	P	Pb	**15 06 41.5**	**+0.1**		
DSL				S	Sn	**15 07 02.9**	**+1.0**		
DSL				AML	AML	15 07 23.3			
	comp=E,1184μm,0.5s								
DSL				AML	AML	15 07 24.0			
	comp=N,1174μm,0.6s								
ATHU	**Athens Univers**	**1.77**	**71**	P	Pb	**15 06 41.2**	**-0.2**		
ATHU				S	Sn	**15 07 03.0**	**+1.1**		
ATHU	**Athens Univers**	**1.77**	**71**	P	Pb	**15 06 41.2**	**-0.2**		
ATHU				S	Sn	**15 07 03.0**	**+1.1**		
ATHU				AML	AML	15 07 07.4			
	comp=N,253μm,0.4s								
ATHU				AML	AML	15 07 07.5			
	comp=E,135μm,0.4s								
PTL	**Penteli**	**1.86**	**70**	P	Pg	**15 06 43.3**	**-1.3**		
PTL				S	Sn	**15 07 04.9**	**+0.8**		
PTL	**Penteli**	**1.86**	**70**	P	Pg	**15 06 43.3**	**-1.3**		
PTL				S	Sn	**15 07 04.9**	**+0.8**		
PTL				AML	AML	15 07 08.4			
	comp=E,447μm,0.6s								
PTL				AML	AML	15 07 09.0			
	comp=N,564μm,0.7s								
ANKY	**Antikythira Is**	**2.04**	**139**	P	Pg	**15 06 46.7**	**-1.3**		
ANKY				S	Sn	**15 07 08.6**	**+0.2**		
ANKY	**Antikythira Is**	**2.04**	**139**	P	Pg	**15 06 46.7**	**-1.3**		
ANKY				S	Sn	**15 07 08.6**	**+0.2**		
ANKY				AML	AML	15 07 34.4			
	comp=E,371μm,0.7s								
ANKY				AML	AML	15 07 35.6			
	comp=N,520μm,0.9s								
EREA	**Eretria**	**2.06**	**60**	P	Pb	**15 06 45.7**	**-0.6**		
EREA	**Eretria**	**2.06**	**60**	P	Pb	**15 06 45.7**	**-0.6**		
THL	**Klokotos Trika**	**2.16**	**7**	P	Pg	**15 06 49.0**	**-1.4**		
THL				S	Sg	**15 07 16.6**	**-1.8**		
FYTO	**Fytoko, Volos**	**2.23**	**26**	P	Pb	**15 06 47.9**	**-1.3**		
FYTO				S	Sb	**15 07 15.9**	**-0.8**		
FYTO	**Fytoko, Volos**	**2.23**	**26**	P	Pb	**15 06 47.9**	**-1.3**		
FYTO				S	Sb	**15 07 15.9**	**-0.8**		
NEO	**Neokhori**	**2.25**	**33**	P	Pb	**15 06 48.8**	**-0.8**		
NEO	**Neokhori**	**2.25**	**33**	P	Pb	**15 06 48.8**	**-0.8**		
SKIA	**Skiathos**	**2.25**	**39**	P	Pn	**15 06 46.3**	**+0.3**		
SKIA				S	Sn	**15 07 14.2**	**+0.5**		
SKIA	**Skiathos**	**2.25**	**39**	P	Pn	**15 06 46.3**	**+0.3**		
SKIA				S	Sn	**15 07 14.2**	**+0.5**		
SKIA				AML	AML	15 07 27.0			
	comp=E,310μm,0.8s								
SKIA				AML	AML	15 07 27.8			
	comp=N,277μm,0.8s								
SERI	**Serifos**	**2.27**	**96**	P	Pb	**15 06 49.3**	**-0.6**		
SERI				S	Sn	**15 07 15.7**	**+1.5**		
SERI	**Serifos**	**2.27**	**96**	P	Pb	**15 06 49.3**	**-0.6**		
SERI				S	Sn	**15 07 15.7**	**+1.5**		
SERI				AML	AML	15 07 18.6			
	comp=N,188μm,0.4s								
SERI				AML	AML	15 07 18.8			
	comp=E,152μm,0.4s								
XOR	**Xorichti**	**2.29**	**31**	P	Pn	**15 06 47.3**	**+0.7**		
XOR				S	Sb	**15 07 17.8**	**-0.7**		
XOR	**Xorichti**	**2.29**	**31**	P	Pn	**15 06 47.3**	**+0.7**		
XOR				S	Sb	**15 07 17.8**	**-0.7**		
XOR				AML	AML	15 07 27.7			
	comp=E,375μm,0.8s								
XOR				AML	AML	15 07 31.6			
	comp=N,410μm,0.7s								
MHLO	**Agia Marina, M**	**2.31**	**108**	P	Pb	**15 06 49.9**	**-0.7**		
MHLO	**Agia Marina, M**	**2.31**	**108**	P	Pb	**15 06 49.9**	**-0.7**		
JAN	**Janina**	**2.32**	**344**	P	Pb	**15 06 50.8**	**0.0**		
IGT	**Igoumenitsa**	**2.35**	**334**	P	Pn	**15 06 48.4**	**+0.9**		
IGT	**Igoumenitsa**	**2.35**	**334**	P	Pn	**15 06 48.4**	**+0.9**		
SGD	**Sagiada**	**2.46**	**333**	P	Pb	**15 06 53.0**	**-0.1**		
SGD	**Sagiada**	**2.46**	**333**	P	Pb	**15 06 53.0**	**-0.1**		
AOS	**Alonnisos**	**2.47**	**44**	P	Pn	**15 06 49.0**	**-0.1**		
AOS				S	Sb	**15 07 23.2**	**-0.5**		
AOS	**Alonnisos**	**2.47**	**44**	P	Pn	**15 06 49.0**	**-0.1**		
AOS				S	Sb	**15 07 23.2**	**-0.5**		
KPRO	**Kipourio**	**2.54**	**355**	P	Pb	**15 06 55.0**	**+0.4**		
KPRO	**Kipourio**	**2.54**	**355**	P	Pb	**15 06 55.0**	**+0.4**		
IMMV	**Iera Moni Meta**	**2.71**	**136**	P	Pb	**15 06 56.0**	**-1.3**		
IMMV	**Iera Moni Meta**	**2.71**	**136**	P	Pb	**15 06 56.0**	**-1.3**		
KEK	**Kerkira**	**2.71**	**328**	P	Pn	**15 06 52.9**	**+0.5**		
LIT	**Litokhoron**	**2.75**	**13**	P	Pb	**15 06 57.4**	**-0.8**		
LIT	**Litokhoron**	**2.75**	**13**	P	Pb	**15 06 57.4**	**-0.8**		
VAM	**Vamos**	**2.87**	**134**	P	Pb	**15 06 58.8**	**-1.3**		
KZN	**Kozani**	**2.88**	**2**	P	Pn	**15 06 56.6**	**+1.8**		
PAIG	**Paliouri**	**2.96**	**32**	P	Pn	**15 06 56.4**	**+0.6**		
PAIG	**Paliouri**	**2.96**	**32**	P	Pn	**15 06 56.4**	**+0.6**		
NEST	**Nestorio**	**3.03**	**351**	P	Pb	**15 07 01.0**	**-1.9**		
NEST	**Nestorio**	**3.03**	**351**	P	Pb	**15 07 01.0**	**-1.9**		
APE	**Apeiranthos**	**3.11**	**95**	P	Pn	**15 06 59.3**	**+1.4**		
APE	**Apeiranthos**	**3.11**	**95**	P	Pn	**15 06 59.3**	**+1.4**		
PLG	**Polygyros**	**3.26**	**25**	P	Pn	**15 07 00.3**	**+0.3**		
PLG	**Polygyros**	**3.26**	**25**	P	Pn	**15 07 00.3**	**+0.3**		
IDI	**Anoyia**	**3.37**	**128**	P	Pn	15 07 05.0	+3.6		
IDI	**Anoyia**	**3.37**	**128**	P	Pn	15 07 05.0	+3.6		
HORT	**Hortiatis**	**3.37**	**19**	P	Pn	**15 07 04.6**	**+3.1**		
HORT	**Hortiatis**	**3.37**	**19**	P	Pn	**15 07 04.6**	**+3.1**		
FNA	**Florina**	**3.37**	**356**	P	Pn	**15 07 03.4**	**+2.0**		
FNA	**Florina**	**3.37**	**356**	P	Pn	**15 07 03.4**	**+2.0**		
OUR	**Ouranopolis**	**3.43**	**31**	P	Pn	**15 07 02.9**	**+0.7**		
OUR	**Ouranopolis**	**3.43**	**31**	P	Pn	**15 07 02.9**	**+0.7**		
CHOS	**Chios island**	**3.61**	**73**	P	Pn	**15 07 06.4**	**+1.6**		
CHOS	**Chios island**	**3.61**	**73**	P	Pn	**15 07 06.5**	**+1.6**		
SOH	**Sokhos**	**3.64**	**21**	P	Pn	15 07 08.6	+3.4		
SOH	**Sokhos**	**3.64**	**21**	P	Pn	15 07 08.6	+3.4		
LIA	**Limnos Island**	**3.71**	**47**	P	Pn	**15 07 06.6**	**+0.6**		
SIGR	**SIGRI**	**3.75**	**60**	P	Pn	15 07 10.8	+4.1		
SIGR	**SIGRI**	**3.75**	**60**	P	Pn	15 07 10.8	+4.1		
LAST	**Lasithi**	**3.82**	**125**	P	Pb	15 07 12.2	-4.2		
LAST	**Lasithi**	**3.82**	**125**	P	Pb	15 07 12.2	-4.2		
KNT	**Kendrikon**	**3.86**	**14**	P	Pn	**15 07 11.1**	**+2.9**		
KNT	**Kendrikon**	**3.86**	**14**	P	Pn	**15 07 11.1**	**+2.9**		
SRS	**Serrai**	**3.99**	**22**	P	Pn	**15 07 12.5**	**+2.6**		
SRS	**Serrai**	**3.99**	**22**	P	Pn	**15 07 12.5**	**+2.6**		
SMG	**Samos**	**4.12**	**84**	P	Pn	**15 07 13.7**	**+1.9**		
SMG	**Samos**	**4.12**	**84**	P	Pn	**15 07 13.7**	**+1.9**		
KAVA	**Kavala**	**4.20**	**31**	P	Pn	**15 07 12.5**	**-0.4**		
KAVA	**Kavala**	**4.20**	**31**	P	Pn	**15 07 12.5**	**-0.4**		
NVR	**Nevrokopi**	**4.28**	**23**	P	Pn	15 07 17.4	+3.4		
SMTH	**Samothraki Isl**	**4.29**	**44**	P	Pn	**15 07 15.1**	**+1.0**		
SMTH	**Samothraki Isl**	**4.29**	**44**	P	Pn	**15 07 15.1**	**+1.0**		
KARP	**Karpathos**	**4.81**	**111**	P	Pn	15 07 25.9	+4.6		
KARP	**Karpathos**	**4.81**	**111**	P	Pn	15 07 25.9	+4.7		
ALN	**Alexandroupoli**	**4.87**	**43**	P	Pn	**15 07 24.3**	**+2.3**		
ALN	**Alexandroupoli**	**4.87**	**43**	P	Pn	**15 07 24.3**	**+2.3**		
BARS	**Barje**	**5.39**	**1**	*e*Pn	Pn	**15 07 30.6**	**+1.4**		
IVAS	**Ivanjica**	**6.26**	**350**	*e*Pn	Pn	**15 07 41.6**	**+0.5**		
DIVS	**Divibare**	**6.79**	**350**	*i*Pn	Pn	**15 07 48.4**	**-0.1**		
TEKS	**Tekeris**	**7.30**	**348**	*i*Pn	Pn	**15 07 55.0**	**-0.5**		

*NIED **19** 15:18:00,36°.30N×141°.90E,h20km,Mw3.8 Best double couple: M₀5.15000×10¹⁴ NP1:φ₁151.00000°,δ47.00000°, λ32.00000°. NP2:φ₂38.00000°,δ68.00000°,λ132.00000°.*
*IDC **19** 15:18:15.7±0.8,36°.19N×141°.89E,h0km,mb3.7/9, mb1 3.8/12,mb1mx3.7/47,mbtmp3.7/12,ML3.6/3,MS3.2/3, Ms1 3.2/3,ms1mx2.6/51,Error ellipse: s-maj=21.8km s-min=17.2km az=105.0*
*JMA **19** 15:18:18.2±0.2,36°.29N×141°.89E,h34km±4km,M3.7*
ISC 19 15:18:16.2±2.0,**36°.24N**±0°.05×**141°.89E**±0°.07,**h4**km±12km, **n35**,σ0**96**/34,**mb3.7**/9,**Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CHOJ	**Chosi**	**0.99**	**237**	P	**Pb**	**15 18 36.5**	**+0.5**
CHOJ				S	**Sb**	**15 18 50.3**	**+0.8**
JHO	**Hitachi**	**1.13**	**289**	P	**Pg**	**15 18 37.6**	**-0.2**
ONAJ	**Iwakimizuishiy**	**1.23**	**315**	P	**Pg**	**15 18 39.1**	**-0.7**
JFK	**Kawauchi**	**1.39**	**324**	P	**Pn**	**15 18 41.8**	**-0.6**
BSO1	**Boso 1**	**1.75**	**205**	P	**Pn**	**15 18 47.8**	**+0.9**
BSO1				S	**Sb**	**15 19 10.7**	**-0.1**
JFT	**Otama**	**1.78**	**316**	P	**Pn**	**15 18 47.8**	**0.0**
BSO3	**Boso 3**	**1.83**	**218**	P	**Pn**	**15 18 48.8**	**+0.6**
JMM	**Marumori**	**1.84**	**332**	P	**Pn**	**15 18 48.4**	**-0.2**
JAG	**Ashikaga**	**1.98**	**276**	P	**Pn**	**15 18 50.3**	**-0.2**
JAG				*e*S	**Sn**	**15 19 14.1**	**-1.6**
JFY	**Yanaizu**	**2.10**	**304**	P	**Pn**	**15 18 52.3**	**0.0**
JKT	**Katashina**	**2.19**	**285**	P	**Pn**	**15 18 54.0**	**+0.5**
JKT				*e*S	**Sn**	**15 19 20.6**	**-0.5**
JRY	**Ryogami san**	**2.43**	**266**	P	**Pn**	**15 18 56.5**	**-0.3**
JRY				*e*S	**Sn**	**15 19 25.5**	**-1.4**
JOD2	**Odawara 2**	**2.48**	**248**	P	**Pn**	**15 18 58.1**	**+0.7**
MJAR	**Matsushiro Arr**	**2.98**	**277**	Pn	**Pn**	**15 19 05.3**	**+0.9**
	7.1nm,0.3s,baz=113,slow=9.0,SNR=41						
MJAR				Sn	**Sn**	**15 19 42.4**	**+1.7**
	4.1nm,0.3s,baz=76,slow=14,SNR=7.6						
MAT	**Matsushiro**	**2.98**	**277**	P	**Pn**	**15 19 05.4**	**+1.0**
MAT				*e*S	**Sn**	**15 19 38.5**	**-2.2**
JHJ	**Hachijo jima 2**	**3.57**	**210**	Pn	**Pn**	**15 19 12.6**	**+0.2**
	23nm,0.3s,baz=145,slow=22,SNR=14						
JHJ				Sn	**Sn**	**15 19 52.5**	**-2.5**
	40nm,0.3s,baz=131,slow=23,SNR=11						
ASAJ	**Asahikawa**	**7.88**	**4**	Pn	**Pn**	**15 20 11.2**	**-0.4**
	0.8nm,0.3s,baz=204,slow=15,SNR=6.9						
KSRS	**Korea Array**	**11.26**	**280**	LR	LR	15 25 00.0	
	comp=Z,25nm,20.6s,baz=76,slow=36						
H11N2	**WAKE ISLAND Hy**	**27.42**	**120**	T	T	15 52 50.7	
	baz=312,slow=75,SNR=14						
H11N1	**WAKE ISLAND Hy**	**27.43**	**120**	T	T	15 52 52.7	
	baz=312,slow=75,SNR=12						
H11N3	**WAKE ISLAND Hy**	**27.44**	**120**	T	T	15 52 51.0	
	baz=312,slow=75,SNR=12						
H11S1	**WAKE ISLAND Hy**	**28.11**	**122**	T	T	15 53 47.6	
	baz=313,slow=76,SNR=14						
H11S3	**WAKE ISLAND Hy**	**28.11**	**122**	T	T	15 54 00.6	
	baz=313,slow=76,SNR=14						
H11S2	**WAKE ISLAND Hy**	**28.13**	**122**	T	T	15 53 58.5	
	baz=313,slow=76,SNR=8.5						
SONM	**Songino Array**	**28.55**	**305**	P	**P**	**15 24 13.1**	**0.0**
	1.0nm,0.5s,baz=110,slow=8.8,SNR=5.3						
ZALV	**Zalesovo Beam**	**42.73**	**313**	P	**P**	**15 26 14.3**	**0.0**
	0.9nm,0.3s,baz=94,slow=12,SNR=4.0						
MKAR	**Makanchi Array**	**44.86**	**303**	P	**P**	**15 26 31.7**	**+0.1**
	0.7nm,0.6s,baz=91,slow=9.6,SNR=9.1						
ILAR	**Eielson Array**	**49.96**	**32**	P	**P**	**15 27 11.7**	**+0.7**
	0.5nm,0.8s,baz=261,slow=5.9,SNR=5.8						
AAK	**Ala-Archa**	**51.20**	**299**	LR	LR	15 50 15.0	
	comp=Z,30nm,18.5s,baz=44,slow=38						
INK	**Inuvik**	**54.92**	**27**	P	**P**	**15 27 48.9**	**+1.3**
	0.6nm,0.4s,baz=329,slow=3.1,SNR=4.3						
WRA	**Warramunga Arr**	**56.34**	**189**	P	**P**	**15 27 57.6**	**-0.8**
	0.3nm,0.4s,baz=6.6,slow=7.5,SNR=8.2						
ASAR	**Alice Springs**	**60.06**	**188**	P	**P**	**15 28 24.1**	**-0.4**
	0.2nm,0.8s,baz=322,slow=39,SNR=3.5						
YKA	**Yellowknife Ar**	**64.30**	**30**	P	**P**	**15 28 52.8**	**+0.4**
	0.3nm,0.8s,baz=302,slow=6.5,SNR=5.4						
AFI	**Afiamalu**	**66.33**	**130**	LR	LR	15 51 06.9	
	comp=Z,59nm,21.2s,baz=268,slow=90						
FINES	**FINESS Array B**	**69.69**	**333**	P	**P**	**15 29 26.9**	**+0.2**
	1.0nm,0.8s,baz=66,slow=6.8,SNR=3.5						

*SJA **19** 15:24:51.7±0.6,32°.32S×71°.31W,h20km±26km,ML3.1, MW3.0*
*GUC **19** 15:24:53.5±0.5,32°.72S×71°.51W,h55km±7km,ML2.4*
ISC 19 15:24:51.6±3.0,**32°.49S**±0°.06×**71°.2W**±0°.1,**h1**km±14km,**n13**, σ0**940**/18,**3C,Near coast of central Chile**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ROCH	**El Roble**	**0.52**	**159**	*i*P	**Pn**	**15 25 06.2**	**-0.2**
ROCH				*i* S	**Sn**	**15 25 16.3**	**+0.4**
ROCH				AML	AML	15 25 17.2	
	comp=N,544nm,0.5s						
ROC1	**El Roble**	**0.52**	**160**	*i* P	**Pn**	**15 25 06.0**	**-0.4**
ROC1				*i* S	**Sn**	**15 25 16.2**	**+0.2**
PEL	**Peldehue**	**0.80**	**145**	*i*P	**Pn**	**15 25 09.9**	**-0.2**
PEL				*i* S	**Sn**	**15 25 22.4**	**-0.3**
PEL				AML	AML	15 25 23.7	
	comp=N,199nm,0.2s						
RCDM	**Rinconada Maip**	**1.06**	**161**	*e*P	**Pb**	**15 25 12.8**	**+0.1**
RCDM				*i* S	**Sg**	**15 25 26.2**	**+0.5**
CLCH	**Cerro Calan**	**1.08**	**148**	*i*P	**Pn**	**15 25 13.8**	**-0.1**
CLCH				*i* S	**Sn**	**15 25 29.7**	**+0.1**
CLCH				AML	AML	15 25 31.1	
	comp=E,186nm,0.3s						
AUSP	**Uspallata**	**1.58**	**81**	*i* P	**Pg**	**15 25 21.8**	**-0.1**
RTLS	**Leoncito**	**1.78**	**68**	*i* P	**Pb**	**15 25 24.5**	**-0.6**
RTLS				*i* S	**Sg**	**15 25 48.8**	**+0.2**
ASAL	**Salagasta**	**2.02**	**94**	*i* P	**Pb**	**15 25 28.6**	**-0.6**
RTCV	**Cerro Valdivia**	**2.36**	**75**	*i* P	**Pn**	**15 25 32.4**	**+0.8**
RTLL	**Cerro Villicun**	**2.61**	**64**	*i* P	**Pn**	**15 25 35.2**	**+0.3**
AMOG	**MOGNA**	**2.80**	**57**	*i* P	**Pn**	**15 25 37.8**	**+0.3**
AGUA	**GUANDACOL**	**3.80**	**39**	*i* P	**Pn**	**15 25 51.5**	**+0.1**
VCA	**Vinchina**	**4.56**	**36**	IAML		15 27 05.9	
	comp=Z,16nm,0.6s						

*MOS **19** 15:30:05.7±1.0,19°.86S×177°.68W,h370km,mb5.1/51, Error ellipse: s-maj=8.4km s-min=6.8km az=75.2*
*ISCJB **19** 15:30:06.3±0.6,19°.97S±0°.02×177°.69W±0°.02, h379km±6km,mb5.2/289,Error ellipse: s-maj=4.2km s-min=3.0km az=144.4*
*BJI **19** 15:30:08.6,19°.72S×177°.37W,h406km,mb5.2/50, mB5.1/33*
*IDC **19** 15:30:08.8±1.2,20°.00S×177°.72W,h392km±12km, mb4.6/21,mb1 4.8/23,mb1mx4.7/29,mbtmp5.3/23,Error ellipse: s-maj=11.2km s-min=8.6km az=140.0*
*NEIC **19** 15:30:09.6±0.1,20°.00S×177°.69W,mb5.0/203,Error ellipse: s-maj=4.4km s-min=2.9km az=144.0*
*GCMT **19** 15:30:09.6±0.4,20°.08S×177°.76W,h423km±2km, MW5.3/64,Moment Tensor Solution. s64,c110; Duration: 1ˢ1 Moment tensor: Scale 10¹⁷Nm; Mrr~0.46±.03; Mθθ~0.32±.05; Mφφ0.78±.05; Mrθ~0.97±.05; Mφθ0.22±.04; Mφr~0.44±.05; Best double couple: M₀1.26400×10¹⁷ NP1:φ₁51.00000°,δ79.00000

RPZ **Rata Peaks** 25.43 199 *e*P P 15 35 01.1 -1.2
31nm,0.7s
PAE **Paea** 26.64 90 *e*P P 15 35 13.9 +0.6
36nm,1.2s
PPT2 **Papeete2** 26.66 89 *e*P P 15 35 14.4 +0.9
227nm,1.2s
PPT **Papeete** 26.66 89 P P 15 35 14.7 +1.2
149nm,0.8s,baz=73,slow=4.0,SNR=14
PPT **Papeete** 26.66 89 *e*P P 15 35 14.4 +0.9
TIAR **Tiarei** 26.88 89 *e*P P 15 35 16.2 +0.8
43nm,1.1s
WHZ **Wether Hill Ro** 28.39 201 *e*P P 15 35 29.6 +1.2
52nm,1.0s
PMOR **Pomariorio Ree** 28.77 85 *e*P P 15 35 32.6 +0.5
343nm,1.2s
VAH **Vaihoa** 28.97 85 *e*P P 15 35 33.9 +0.1
157nm,1.1s
EIDS **Eidsvold** 29.30 254 P P 15 35 37.7 +0.9
baz=29,SNR=17
EIDS **Eidsvold** 29.30 254 *e*P P 15 35 37.6 +0.9
17nm,0.8s
ARMA **Armidale** 29.58 243 P P 15 35 41.2 +2.0
baz=30,SNR=50
ARMA **Armidale** 29.58 243 *e*P P 15 35 40.8 +1.6
41nm,0.6s
MGCD **Mangrove Creek** 30.74 238 P P 15 35 51.2 +2.0
baz=31,SNR=11
RIV **Riverview** 30.89 237 P P 15 35 52.3 +1.9
baz=31
RMQ **Roma** 31.47 252 P P 15 35 57.5 +1.8
baz=32,SNR=18
KWAJ **Kwajalein Atol** 32.13 332 *e*P P 15 36 01.2 -0.1
KWAJ pmax pmax
comp=Z,471nm,0.8s
KWAJ **Kwajalein Atol** 32.13 332 *e*P P 15 36 01.2 -0.1
comp=Z,471nm,0.8s
CNB **Canberra Magne** 32.77 235 P P 15 36 08.4 +1.7
baz=33,SNR=34
CAN **Canberra** 33.05 236 P P 15 36 10.3 +1.1
baz=33
CAN **Canberra** 33.05 236 *e*P P 15 36 10.2 +1.1
CAN pmax pmax
comp=Z,17nm,0.9s
CAN **Canberra** 33.05 236 *e*P P 15 36 10.2 +1.0
comp=Z,17nm,0.9s
YNG **Young** 33.22 238 P P 15 36 11.8 +1.3
baz=33
MILA **Mila** 33.52 233 P P 15 36 12.7 -0.4
baz=34
CTA **Charters Tower** 33.88 264 ScP ScP 15 41 52.9 +2.2
comp=Z,13nm,1.0s,baz=56,slow=4.2,SNR=4.4
CTAO **Charters Tower** 33.88 264 *e*P P 15 36 17.3 +0.9
CTAO *e*S S 15 41 11.4 +0.2
CTAO pmax pmax
comp=Z,80nm,0.6s
CTAO **Charters Tower** 33.88 264 *e*P P 15 36 17.3 +0.9
comp=Z,80nm,0.6s
CTAO *e*S S 15 41 11.4 +0.2
CTAO *e*ScP ScP 15 41 52.6 +1.9
CMSA **Cobar Meteorol** 34.80 243 P P 15 36 25.0 +1.1
baz=35,SNR=197
PMG **Port Moresby** 35.58 282 ScP ScP 15 41 59.5 +2.6
comp=Z,5.4nm,0.6s,baz=23,slow=3.9,SNR=3.8
PMG **Port Moresby** 35.58 282 *e*P P 15 36 30.7 -0.1
PMG pmax pmax
comp=Z,69nm,0.9s
PMG **Port Moresby** 35.58 282 *e*P P 15 36 30.6 -0.1
comp=Z,69nm,0.9s
PMG ScP ScP 15 41 59.5 +2.6
PATS **Pohnpei** 35.69 316 P P 15 36 32.3 +0.8
baz=36
COEN **Coen** 37.90 273 *e*P P 15 36 50.7 +0.6
comp=Z,68nm,0.8s
STKA **Stephens Creek** 38.30 244 P P 15 36 54.4 +1.2
comp=Z,40nm,0.6s,baz=87,slow=11,SNR=191
STKA ScP ScP 15 42 09.2 +2.3
comp=Z,6.7nm,0.9s,baz=138,slow=5.0,SNR=4.8
STKA **Stephens Creek** 38.30 244 *e*P P 15 36 53.9 +0.8
comp=Z,7.7nm,0.8s
STKA ScP ScP 15 42 09.2 +2.3
MANU **Manus Island** 38.58 293 *e*P P 15 36 56.3 +0.6
comp=Z,4µm,0.5s
RKT **Rikitea** 39.69 102 *e*P P 15 37 05.8 +1.2
comp=Z,117nm,1.1s
BBOO **Buckleboo** 43.06 243 *e*P P 15 37 31.7 +0.2
comp=Z,57nm,0.6s
JAY **Jayapura** 44.23 288 P P 15 37 41.0 0.0
GENI **Genyem** 44.68 287 P P 15 37 44.8 +0.4
AS01 **Alice Springs** 44.92 256 *e*P P 15 37 46.3 +0.1
AS31 **Alice Springs** 44.96 256 *e*P P 15 37 46.9 +0.3
comp=Z,46nm,0.8s
ASAR **Alice Springs** 44.96 256 P P 15 37 47.0 +0.5
comp=Z,137nm,0.7s,baz=90,slow=8.5,SNR=1573
ASAR ScP ScP 15 42 35.8 +2.0
comp=Z,7.7nm,0.8s,baz=101,slow=4.4,SNR=8.9
ASAR S S 15 43 52.9 -1.7
comp=Z,19nm,0.7s,baz=94,slow=15,SNR=42
ASAR **Alice Springs** 44.96 256 P P 15 37 47.1 +0.5
ASAR S S 15 43 52.9 -1.7
ASAR pmax pmax
comp=Z,140nm,0.7s
ASAR pmax pmax
comp=N,8.0nm,0.8s
ASAR smax smax
comp=N,19nm,0.7s
WB2 **Warramunga Arr** 45.00 262 *e*P P 15 37 46.5 -0.4
comp=N,45nm,0.6s
WRAB **Tennant Creek** 45.00 262 *ce*P P 15 37 46.5 -0.4
WRAB pmax pmax
comp=Z,87nm,0.7s
WRAB **Tennant Creek** 45.00 262 *e*P P 15 37 46.4 -0.5
comp=Z,37nm,0.7s
WRA **Warramunga Arr** 45.01 262 P P 15 37 46.6 -0.4
comp=Z,35nm,0.6s,baz=98,slow=5.8,SNR=467
WRA ScP ScP 15 42 35.6 +1.7
comp=Z,7.2nm,0.9s,baz=92,slow=4.3,SNR=7.4
WRA S S 15 43 52.9 -2.4
comp=Z,9.4nm,0.9s,baz=98,slow=13,SNR=12
WRA **Warramunga Arr** 45.01 262 P P 15 37 46.6 -0.4
WRA S S 15 43 52.9 -2.4
WRA pmax pmax
comp=Z,28nm,0.5s
WRA pmax pmax
comp=N,7.0nm,0.9s
WRA smax smax
comp=N,9.0nm,0.9s
POHA **Pohakuloa** 45.09 30 *e*P P 15 37 47.8 0.0
comp=N,186nm,1.3s
HPAH **Hawaii Prepara** 45.25 30 *e*P P 15 37 48.9 +0.1
comp=N,184nm,0.8s
KIP **Kipapa** 45.46 26 *ce*P P 15 37 50.1 -0.2
KIP pmax pmax
comp=Z,1µm,1.5s
KIP **Kipapa** 45.46 26 *e*P P 15 37 50.3 0.0
comp=Z,357nm,1.6s
MTN **Manton Dam** 49.51 270 *e*P P 15 38 20.8 -0.4
comp=Z,88nm,0.6s
GUMO **Guam** 49.78 309 *e*P P 15 38 23.4 +0.2
GUMO pmax pmax
comp=Z,395nm,0.9s
GUMO **Guam** 49.78 309 *e*P P 15 38 23.4 +0.2
comp=Z,395nm,0.9s
KNRA **Kununurra** 51.03 266 P P 15 38 32.9 +0.4
baz=51
FAKI **Fak Fak** 51.73 283 P P 15 38 37.9 +0.2
FAKI **Fak Fak** 51.73 283 *e*P P 15 38 37.4 -0.3
comp=Z,232nm,1.4s
BNDI **Bandanaira** 53.29 280 P P 15 38 48.5 -0.5
FITZ **Fitzroy Crossi** 53.43 262 *e*P P 15 38 50.3 +0.3
comp=Z,175nm,1.8s
SWI **Sorong** 53.46 284 P P 15 38 50.3 +0.1
MSAI **Masohi** 54.63 280 P P 15 38 59.5 +1.0
NLAI **Namlea** 56.36 280 P P 15 39 11.6 +0.9
SOEI **Soe** 56.83 271 P P 15 39 13.9 -0.2
SOEI **Soe** 56.83 271 *e*P P 15 39 15.6 +1.4
comp=Z,359nm,0.8s
LBMI **Labuha** 56.99 283 P P 15 39 16.4 +1.3
TNTI **Ternate** 57.68 284 P P 15 39 20.2 +0.4
TNTI **Ternate** 57.68 284 *e*P P 15 39 20.2 +0.4
comp=Z,308nm,1.0s
SANI **Sanana** 57.84 281 P P 15 39 22.1 +1.2
MBWA **Marble Bar** 58.29 257 *e*P P 15 39 23.8 -0.1
comp=Z,87nm,1.0s
VNDA **Vanda** 58.40 185 P P 15 39 25.4 +1.7
comp=Z,4.7nm,0.8s,baz=355,slow=7.6,SNR=17
VNDA **Vanda** 58.40 185 *e*P P 15 39 25.9 +2.2
VNDA pmax pmax
comp=Z,18nm,1.4s
VNDA **Vanda** 58.40 185 *e*P P 15 39 25.9 +2.2
comp=Z,18nm,1.4s
NWAO **Narrogin (SRO)** 58.88 243 *e*P P 15 39 28.1 +0.3
NWAO pmax pmax
comp=Z,32nm,0.8s
NWAO **Narrogin (SRO)** 58.88 243 *e*P P 15 39 28.1 +0.3
comp=Z,32nm,0.8s
MMRI **Maumere** 59.08 272 P P 15 39 28.3 -1.1
MMRI **Maumere** 59.08 272 *e*P P 15 39 29.1 -0.3
comp=Z,144nm,0.9s
MUN **Mundaring** 59.84 244 P P 15 39 34.5 +0.3
baz=60
KDI **Kendari** 60.27 277 P P 15 39 37.5 +0.1
comp=Z,54nm,1.1s,comp=Z,570nm
WSI **Waingapu** 60.59 270 P P 15 39 40.2 +0.7
comp=Z,504nm,0.9s,comp=Z,5µm
MRSI **Marisa** 62.54 281 P P 15 39 52.4 0.0
comp=Z,66nm,0.9s
KAPI **Kappang** 62.59 275 *e*P P 15 39 52.6 -0.2
comp=Z,23nm,0.6s
SPSI **Sidrap Palu** 62.93 276 P P 15 39 54.3 -0.7
comp=Z,50nm,0.8s,comp=Z,563nm
TTSI **Tana Toraja** 63.20 277 P P 15 39 57.2 +0.4
comp=Z,28nm,0.9s
PLAI **Plampang** 63.22 270 P P 15 39 56.9 +0.1
comp=Z,223nm,0.8s,comp=Z,2µm
TWSI **Taliwang, Sumb** 64.08 270 P P 15 40 02.5 +0.1
comp=Z,127nm,0.9s
JHJ2 **Mitsune** 66.67 322 *e*P P 15 40 18.5 +0.2
comp=Z,790nm,1.0s
JAGI **Jajag, Banyuwa** 66.73 269 P P 15 40 18.7 -0.5
comp=Z,110nm,1.0s
JAGI **Jajag, Banyuwa** 66.73 269 *e*P P 15 40 18.1 -1.1
comp=Z,110nm,1.0s
ABJI **Asem Bagus** 66.87 270 P P 15 40 20.3 +0.3
comp=Z,69nm,1.0s
GMJI **Gumukmas** 67.46 269 P P 15 40 23.6 -0.1
comp=Z,75nm,0.9s
MYLDM **Lahad Datu** 67.55 285 *e*P P 15 40 26.0 +1.8
comp=Z,66nm,0.9s
BBKI **Banjar Baru** 67.72 275 P P 15 40 26.4 +1.1
comp=Z,72nm,1.2s,comp=Z,875nm
MTKI **Muara Teweh, K** 68.55 277 P P 15 40 32.4 +2.0
comp=Z,52nm,0.8s,comp=Z,2µm
PWJI **Pagerwojo** 69.08 269 P P 15 40 34.2 +0.5
comp=Z,104nm,1.0s
NGJI **Ngawi** 69.61 269 P P 15 40 49.3 +12
PCJI **Pacitan** 69.61 269 P P 15 40 37.5 +0.6
comp=Z,207nm,0.8s
INU **Inuyama** 69.88 322 *e*P P 15 40 38.0 -0.1
comp=Z,52nm,1.0s
WOJI **Wonogiri, Jawa** 69.97 269 P P 15 40 40.2 +1.2
comp=Z,116nm,1.1s,comp=Z,4µm
KKM **Kota Kinabalu** 69.98 285 *e*P P 15 40 39.6 +0.4
comp=Z,96nm,0.8s
QSPA **South Pole Qui** 70.03 180 *e*P P 15 40 40.0 +1.4
comp=Z,194nm,1.0s
QSPA *e*pP pP 15 42 08.8 +3.0
MJAR **Matsushiro Arr** 70.05 323 P P 15 40 38.8 -0.2
comp=Z,98nm,0.6s,baz=156,slow=6.0,SNR=223
MAJO **Matsushiro** 70.05 323 *d*iP P 15 40 39.0 0.0
MAJO pmax pmax
comp=Z,633nm,0.7s
MAJO **Matsushiro** 70.05 323 *e*P P 15 40 38.8 -0.3
comp=Z,111nm,0.7s
MJB9 **Matsu-Tunnel** 70.05 323 *e*P P 15 40 38.7 -0.4
comp=Z,28nm,0.7s
UWJI **Ujung Watu** 70.39 270 P P 15 40 41.8 +0.2
comp=Z,139nm,0.8s,comp=Z,1µm
SMRI **Semarang** 70.67 269 P P 15 40 44.1 +0.8
comp=Z,92nm,0.8s
SMRI **Semarang** 70.67 269 *e*P P 15 40 43.4 +0.2
comp=Z,60nm,0.6s
PBKI **Pangkalan Bun** 70.95 274 P P 15 40 46.2 +1.3
comp=Z,196nm,1.1s,comp=Z,2µm
ERM **Erimo** 71.60 330 *e*P P 15 40 49.3 +1.3
ERM pmax pmax
comp=Z,6.0nm,0.5s
STKI **Sintang** 72.10 277 P P 15 40 52.8 +1.1
comp=Z,95nm,0.9s
KUR **Kuril'sk** 72.16 335 *e*P P 15 40 51.6 +0.4
JNU **Nakatsue** 72.18 316 *e*P P 15 40 51.6 -0.2
comp=Z,450nm,1.9s
SBUM **Sibu** 72.27 279 *e*P P 15 40 53.1 +0.4
comp=Z,24nm,0.8s
YOJ **Yonaguni jima** 72.76 305 *e*P P 15 40 55.3 0.0
YOJ pmax pmax
comp=Z,98nm,0.9s
YOJ **Yonaguni jima** 72.76 305 *e*P P 15 40 55.3 0.0
comp=Z,98nm,0.9s
CISI **Cisompet, Garu** 72.98 268 P P 15 40 58.6 +1.7
comp=Z,106nm,0.9s
CISI **Cisompet, Garu** 72.98 268 *e*P P 15 40 55.2 -1.7
comp=Z,72nm,0.9s
LEM **Lembang** 73.39 269 P P 15 41 05.6 +6.2
TWG **Pinlang** 73.43 302 *e*P P 15 40 57.5 -1.6
comp=Z,174nm,0.6s
ASAJ **Asahikawa** 73.49 331 *e*P P 15 41 00.1 +1.0
comp=Z,220nm,1.1s
YULB **Yu-li** 73.54 303 *e*P P 15 40 58.2 -1.6
comp=Z,35nm,0.6s
KSM **Kuching** 73.69 278 *e*P P 15 41 01.4 +0.4
comp=Z,121nm,1.0s
NACB **Ninganchiao** 73.71 304 *e*P P 15 41 00.1 -0.7
comp=Z,116nm,0.8s
SSLB **Suanglung** 74.01 303 *e*P P 15 41 01.4 -1.2
comp=Z,88nm,0.5s
TPUB **Ta-pu** 74.02 303 *e*P P 15 41 01.6 -1.0
comp=Z,164nm,0.7s
YHNB **Yeheng** 74.13 304 *e*P P 15 41 03.1 -0.2
comp=Z,110nm,1.0s
TATO **Taipei** 74.20 305 *e*P P 15 41 03.4 -0.2
comp=Z,128nm,0.6s
UNV **Unalaska Valle** 74.20 7 *e*P P 15 41 02.3 -0.6
comp=Z,68nm,0.7s
CBJI **Citeko** 74.25 269 P P 15 41 03.4 -0.7
comp=Z,341nm,0.9s
CGJI **Cibinong** 75.27 268 P P 15 41 09.3 -0.6
comp=Z,156nm,0.8s,comp=Z,1µm
PET **Petropavlovsk** 75.61 345 *i*P P 15 41 10.7 -0.2
PET pmax pmax
comp=Z,96nm,1.5s
YSS **Yuzh-Sakhalins** 75.64 333⇓ *i*P P 15 41 11.9 +0.7
YSS pmax pmax
comp=Z,190nm,0.8s
YSS **Yuzh-Sakhalins** 75.64 333 *e*P P 15 41 12.1 +0.9
comp=Z,237nm,1.0s
PEA0 **Petropavlovsk-** 75.92 345 *e*P P 15 41 12.3 -0.3
PEA0B **Petropavlovsk-** 75.92 345 *e*P P 15 41 12.6 0.0
comp=Z,273nm,1.3s
PETK **Petropavlovsk-** 75.92 345 P P 15 41 12.4 -0.3
comp=Z,60nm,0.6s,baz=132,slow=7.6,SNR=89
BLSI **Bandar Lampung** 76.10 269 P P 15 41 14.8 +0.2
comp=Z,124nm,0.8s
PPBI **Pangkal Pinang** 76.33 273 P P 15 41 16.4 +0.6
comp=Z,84nm,1.0s,comp=Z,2µm
QZH **Quanzhou** 76.45 303⇑ *i*P P 15 41 13.9 -2.3
QZH pmax pmax
comp=Z,130nm,0.6s
SDPT **Sand Point** 76.50 10 *e*P P 15 41 14.3 -1.4
comp=Z,89nm,0.9s
KASI **Kota Agung** 76.75 269 P P 15 41 17.4 -0.8
comp=Z,144nm,1.0s
KSRS **Korea Array** 76.77 318 P P 15 41 18.8 +1.1
comp=Z,15nm,0.6s,baz=128,slow=6.2,SNR=48
KS15 **Wonju Array Si** 76.79 318 *e*P P 15 41 17.8 0.0
KSAR **Wonju Array Be** 76.79 318 P P 15 41 18.8 +1.0
KSAR **Wonju Array Be** 76.79 318 P P 15 41 18.8 +1.0
KS01 **Wonju Array Si** 76.81 318 *e*P P 15 41 18.2 +0.3
SCZ2 **Santa Cruz Isl** 77.03 46 P P 15 41 19.9 +0.6
baz=235
SCI2 **San Clemente I** 77.21 48 P P 15 41 21.2 +0.9
baz=236
LWLI **Liwa** 77.33 269 P P 15 41 21.0 -0.5
comp=Z,163nm,0.7s
MDSI **Maura Dua** 77.39 270 P P 15 41 20.4 -1.3
comp=Z,85nm,0.9s
PKM **Mcpherson Peak** 77.43 45 P P 15 41 22.5 +0.9
baz=235,SNR=6.8
SAO **San Andreas Ge** 77.46 43 *e*P P 15 41 22.4 +0.8
SAO pmax pmax
comp=Z,25nm,0.8s
SAO **San Andreas Ge** 77.46 43 *e*P P 15 41 22.4 +0.8
comp=Z,25nm,0.8s
CIS **Catalina Islan** 77.53 47 P P 15 41 23.3 +1.3
baz=236
INCN **Inchon** 77.60 318 *e*P P 15 41 22.9 +0.5
comp=Z,48nm,0.9s
CHGN **Chignik** 77.76 11 *e*P P 15 41 21.5 -1.1
OSI **Osito Audit: C** 78.01 46 P P 15 41 25.4 +0.8
baz=235
DECC **Green Verdugo** 78.07 47 P P 15 41 25.9 +0.9
baz=236
VLA **Vladivostok** 78.11 325 *d*iP P 15 41 25.9 +1.0
VLA pmax pmax
comp=Z,61nm,1.0s
PASC **Pasadena Art C** 78.12 47 *e*P P 15 41 25.6 +0.4
comp=Z,24nm,0.8s
MSHR **Mys Shultsa** 78.15 324 *de*P P 15 41 26.3 +1.2
KMRM **Mail Ridge** 78.18 39 *e*P P 15 41 26.9 +1.4
comp=Z,71nm,0.8s
LHSI **Lahat** 78.22 270 P P 15 41 26.2 0.0
comp=Z,53nm,0.9s
ARVC **Arvin** 78.22 46 P P 15 41 26.7 +1.0
baz=235
MWC **Mount Wilson** 78.24 47 *e*P P 15 41 26.7 +0.6
MWC pmax pmax
comp=Z,29nm,0.8s
MWC **Mount Wilson** 78.24 47 *e*P P 15 41 26.7 +0.6
comp=Z,29nm,0.8s
BFSC **Mount Baldy Ra** 78.52 47 P P 15 41 28.1 +0.5
baz=236,SNR=7.5
KHMM **Horse Mountain** 78.58 39 *e*P P 15 41 28.9 +1.2
comp=Z,43nm,1.3s
MONP2 **Monument Peak** 78.65 49 P P 15 41 29.1 +0.7
baz=237,SNR=15
EDW2 **Edwards Air Fo** 78.65 46 P P 15 41 29.3 +1.1
baz=236,SNR=28
TYV **Tymovskoe** 78.77 336 *e*P P 15 41 29.2 +0.9
TYV pmax pmax
comp=Z,86nm,0.8s
ISA **Isabella, Lake** 78.77 45 P P 15 41 29.8 +1.0
baz=235,SNR=9.1
ISA **Isabella, Lake** 78.77 45 *e*P P 15 41 29.6 +0.8
ISA pmax pmax
comp=Z,24nm,1.0s
ISA **Isabella, Lake** 78.77 45 *e*P P 15 41 29.6 +0.8
comp=Z,24nm,1.0s
USRK **Ussuriysk Ar.** 78.78 326 P P 15 41 29.9 +1.4
comp=Z,47nm,0.8s,baz=145,slow=3.7,SNR=82
JMBI **JAMBI** 78.85 272 P P 15 41 32.0 +2.4
comp=Z,339nm,0.9s
CMB **Columbia Colle** 78.89 43 *e*P P 15 41 29.7 +0.3
CMB pmax pmax
comp=Z,22nm,0.9s
CMB **Columbia Colle** 78.89 43 *e*P P 15 41 29.7 +0.3
comp=Z,22nm,0.9s
TPRI **Tanjung Pinang** 78.90 275 P P 15 41 30.7 +0.8
comp=Z,53nm,1.1s,comp=Z,10µm
PFO **Pinyon Flats O** 79.01 48 P P 15 41 31.0 +0.8
baz=237,SNR=5.6
PFO **Pinyon Flats O** 79.01 48 *e*P P 15 41 30.7 +0.5
PFO pmax pmax
comp=Z,15nm,1.1s
PFO **Pinyon Flats O** 79.01 48 *e*P P 15 41 30.7 +0.5
comp=Z,15nm,1.1s
AFDM **Forest Hills D** 79.07 42 *e*P P 15 41 30.1 -0.2
comp=Z,20nm,1.1s
WDC **Whiskeytown Da** 79.10 40 *e*P P 15 41 30.5 +0.1
WDC pmax pmax
comp=Z,34nm,1.4s
WDC **Whiskeytown Da** 79.10 40 *e*P P 15 41 30.5 +0.1
comp=Z,34nm,1.4s
ORV **Oroville** 79.11 41 *e*P P 15 41 30.6 +0.2
ORV pmax pmax
comp=Z,15nm,0.9s
ORV **Oroville** 79.11 41 *e*P P 15 41 30.6 +0.2
comp=Z,15nm,0.9s
SWSC **Sam W. Stewart** 79.12 49 P P 15 41 31.6 +1.0
baz=238
LRMC **Laurel Mtn Rad** 79.20 46 P P 15 41 31.7 +0.5
baz=236,SNR=8.9
O03D **Paynes Creek** 79.37 40 P P 15 41 32.4 +0.5
baz=232,SNR=6.4
M02C **Callahan** 79.42 39 P P 15 41 33.3 +1.1
baz=231,SNR=9.9
L02D **Cave Junction,** 79.47 38 P P 15 41 33.1 +0.9
baz=231
BELC **Belle Mtn. Jos** 79.55 48 P P 15 41 33.9 +0.8
baz=237,SNR=14
OHAK **Old Harbor** 79.62 13 *e*P P 15 41 32.1 -0.6
comp=Z,48nm,0.7s
MPMC **Manual Prospec** 79.65 46 P P 15 41 34.4 +0.7
baz=236,SNR=13
MASI **Maura Aman, Be** 79.66 270 P P 15 41 34.8 +0.8
comp=Z,176nm,1.2s,comp=Z,16µm
GSC **Goldstone, Bar** 79.69 47 P P 15 41 34.3 +0.6
baz=236,SNR=7.2
GSC **Goldstone, Bar** 79.69 47 *e*P P 15 41 34.4 +0.6
GSC pmax pmax
comp=Z,14nm,1.1s
GSC **Goldstone, Bar** 79.69 47 *e*P P 15 41 34.4 +0.6
comp=Z,14nm,1.1s
DAC **Darwin (Calif)** 79.70 45 *e*P P 15 41 34.4 +0.5
DAC pmax pmax
comp=Z,25nm,1.7s
DAC **Darwin (Calif)** 79.70 45 *e*P P 15 41 34.4 +0.5
comp=Z,25nm,1.7s
YBH **Yreka Blue Hor** 79.72 39 *e*P P 15 41 34.5 +0.8
YBH pmax pmax
comp=Z,21nm,0.8s
YBH **Yreka Blue Hor** 79.72 39 *e*P P 15 41 34.5 +0.8
comp=Z,21nm,0.8s
BC3 **Big Chuckawall** 79.74 49 P P 15 41 35.0 +1.0
baz=238,SNR=9.1
HEC **Hector,Ludlow** 79.76 47 P P 15 41 34.4 +0.3
baz=237,SNR=9.4
MYKOM **Kota Tinggi** 79.83 276 *e*P P 15 41 35.2 +0.3
comp=Z,63nm,0.9s
NJ2 **Nanjing** 79.85 309 *e*P P 15 41 35.4 +0.9
NJ2 pmax pmax
comp=Z,33nm,0.6s
GLA **Glamis** 79.87 49 P P 15 41 35.9 +1.3
baz=238,SNR=5.7
GLA **Glamis** 79.87 49 *e*P P 15 41 36.1 +1.4
GLA pmax pmax
comp=Z,20nm,0.9s
GLA **Glamis** 79.87 49 *e*P P 15 41 36.1 +1.4
comp=Z,20nm,0.9s
HUMO **Hull Mountain** 80.12 38 *e*P P 15 41 36.7 +0.9
comp=Z,18nm,1.0s
GMRC **Granite Mounta** 80.20 48 P P 15 41 37.2 +0.7
baz=237
HABR **Khabarovsk** 80.22 330 *e*P P 15 41 35.1 -0.9
HABR *e*PP pP 15 43 05.0 -1.0
HABR *e* 15 44 43.7
HABR *e*PPP PPP 15 46 35.5
HABR *e*S S 15 51 06.8 -0.3
HABR *e*SS SS 15 56 28.8 -0.3
HABR *e*SSS SSS 15 59 57.6
HABR pmax pmax
comp=N,24nm,1.0s
HABR pmax pmax
comp=Z,206nm,1.0s
HABR pmax pmax
comp=E,25nm,1.0s
HABR MLR MLR
comp=Z,28nm,19.0s
IRM **Iron Mountain** 80.23 48 P P 15 41 37.5 +0.9
baz=238
GRAC **Grapevine Rang** 80.26 45 P P 15 41 37.8 +1.2
baz=236
M04C **Macdoel** 80.26 39 P P 15 41 37.2 +0.5
baz=232,SNR=7.8
KDAK **Kodiak Island** 80.29 13 *e*P P 15 41 36.8 +0.6
KDAK pmax pmax
comp=Z,37nm,0.8s
KDAK **Kodiak Island** 80.29 13 *e*P P 15 41 36.8 +0.6
comp=Z,37nm,0.8s
FURC **Furnace Creek,** 80.30 46 P P 15 41 37.9 +1.1
baz=236
MDJ **Mudanjiang** 80.34 325 P P 15 41 38.3 +1.5
MDJ pmax pmax
comp=Z,80nm,0.8s
MDJ pmax pmax
comp=Z,270nm,5.5s
MDJ **Mudanjiang** 80.34 325 *e*P P 15 41 37.5 +0.7
comp=Z,73nm,0.8s
TUQ **Turquoise Moun** 80.37 47 P P 15 41 38.0 +0.6
baz=237,SNR=7.0
SHOC **Shoshone, Teco** 80.38 46 P P 15 41 38.1 +0.8
baz=237
Y12C **Blythe** 80.45 49 P P 15 41 39.1 +1.5

baz=238
Y12C Blythe 80.45 49 *e*P P 15 41 38.8 +1.2
comp=Z,15nm,0.8s
NVAR Mina Array Bea 80.46 43 P P 15 41 38.5 +0.7
comp=Z,10nm,0.7s,baz=224,slow=8.6,SNR=77
113A Mohawk Valley, 80.48 50 *e*P P 15 41 39.1 +1.3
comp=Z,46nm,1.6s
I03D Drain, OR 80.59 37 P P 15 41 39.0 +0.9
baz=231
214A Organ Pipe Nat 80.76 51 P P 15 41 40.6 +1.2
baz=240,SNR=6.9
214A Organ Pipe Nat 80.76 51 *e*P P 15 41 40.5 +1.2
comp=Z,97nm,1.2s
NEE2 Needles Airpor 80.92 48 P P 15 41 41.3 +1.2
baz=238
TPNV Topopah Spring 80.98 45 P P 15 41 41.2 +0.6
baz=237,SNR=12
TPNV Topopah Spring 80.98 45 *e*P P 15 41 41.3 +0.7
TPNV pmax pmax
comp=Z,10.0nm,0.8s
TPNV Topopah Spring 80.98 45 *e*P P 15 41 41.3 +0.7
comp=Z,10.0nm,0.8s
MPOR Mary's Peak 80.99 36 P P 15 41 41.3 +1.0
PDMCI Parker Dam,Lak 81.01 49 P P 15 41 41.4 +0.9
baz=238,SNR=9.1
I04A Tendick Farm, 81.17 37 P P 15 41 41.9 +0.6
baz=231
MOD Modoc Plateau 81.25 39 *e*P P 15 41 42.1 +0.2
comp=Z,29nm,1.1s
NKL Nikolayevsk 81.32 336 *i* P P 15 41 41.8 +0.1
NKL *e* 15 51 18.8
K05A Summer Lake 81.39 39 *e*P P 15 41 43.3 +0.6
comp=Z,63nm,0.9s
J05D Fort Rock, OR 81.53 38 P P 15 41 44.6 +1.3
baz=232
G03D McMinnville, O 81.59 36 P P 15 41 44.5 +1.2
baz=231
W13A Hualapai Mount 81.60 48 *e*P P 15 41 45.0 +1.1
comp=Z,26nm,1.6s
Y14A Wickenburg 81.63 49 *e*P P 15 41 44.9 +1.0
comp=Z,84nm,1.1s
H04A Detroit Lake 81.86 36 *e*P P 15 41 44.6 -0.2
comp=Z,68nm,1.5s
PDSI Padang 82.08 272 P P 15 41 46.4 -0.3
comp=Z,24nm,0.8s
MAW Mawson 82.11 200 P P 15 41 46.6 +0.9
comp=Z,5.2nm,0.6s,baz=145,slow=6.3,SNR=9.3
MAW Mawson 82.11 200 *e*P P 15 41 46.2 +0.5
MAW pmax pmax
comp=Z,7.0nm,0.6s
MAW Mawson 82.11 200 *e*P P 15 41 46.2 +0.5
comp=Z,6.9nm,0.6s
I05D Terrebonne, OR 82.12 37 P P 15 41 47.3 +1.2
baz=232
CN2 Changchun 82.15 322 ⇓ *i*P P 15 41 46.8 +0.6
CN2 *e*pP pP 15 43 21.3 +4.6
CN2 pmax pmax
comp=Z,50nm,1.0s
R11A Troy Canyon, C 82.18 45 P P 15 41 46.9 +0.1
baz=237,SNR=16
R11A Troy Canyon, C 82.18 45 *e*P P 15 41 46.7 -0.1
comp=Z,8.1nm,1.0s
BMN Battle Mountai 82.28 42 *e*P P 15 41 47.5 +0.3
BMN pmax pmax
comp=Z,29nm,1.1s
BMN Battle Mountai 82.28 42 *e*P P 15 41 47.5 +0.3
comp=Z,29nm,1.1s
E03A Lebam 82.28 34 *e*P P 15 41 47.7 +0.9
comp=Z,41nm,0.9s
F04D Rainier, OR 82.28 35 P P 15 41 48.2 +1.3
baz=231
PPI Padang Panjang 82.30 272 P P 15 41 48.9 +1.2
KLR Kul'dur 82.31 329 *i* P P 15 41 47.6 +0.7
TUC Tucson 82.43 52 P P 15 41 49.8 +1.7
baz=241
TUC Tucson 82.43 52 *e*P P 15 41 48.8 +0.7
TUC pmax pmax
comp=Z,27nm,0.9s
TUC Tucson 82.43 52 *e*P P 15 41 48.8 +0.7
comp=Z,27nm,0.9s
WHN Wuhan 82.45 306 P P 15 41 48.1 0.0
WHN pmax pmax
comp=Z,140nm,1.3s
BRLK Bradley Lake 82.47 13 *e*P P 15 41 46.8 -0.8
comp=Z,66nm,0.8s
WVOR Wild Horse Val 82.56 40 *e*P P 15 41 48.8 +0.2
WVOR pmax pmax
comp=Z,22nm,0.9s
WVOR Wild Horse Val 82.56 40 *e*P P 15 41 48.8 +0.2
comp=Z,22nm,0.9s
G05D Wamic, OR 82.69 36 P P 15 41 49.5 +0.5
baz=232
CROR Criterion Ridg 82.71 37 P P 15 41 49.5 +0.3
SVW2 Sparrevohn 82.79 11 *e*P P 15 41 48.0 -1.1
comp=Z,20nm,0.9s
TDL Tradedollar La 82.88 35 P P 15 41 50.9 +0.9
X16A Lo Mia Camp, P 82.99 50 *e*P P 15 41 52.2 +1.2
comp=Z,26nm,1.0s
LCMT Little Creek M 83.04 47 *e*P P 15 41 51.9 +0.7
comp=Z,15nm,0.9s
G06A Carlson Farm, 83.06 37 *e*P P 15 41 50.8 -0.2
comp=Z,20nm,1.0s
VTHM Trough 83.07 37 P P 15 41 51.5 +0.5
SEW Seward 83.09 14 *e*P P 15 41 49.6 -1.0
comp=Z,38nm,0.8s
319A Douglas 83.10 53 *e*P P 15 41 53.0 +1.5
comp=Z,38nm,0.8s
TIA Tai'an 83.22 312 ⇓P P 15 41 52.4 +0.5
TIA pmax pmax
comp=Z,40nm,0.8s
KNB Kanab 83.33 47 *e*P P 15 41 53.6 +0.9
KNB pmax pmax
comp=Z,15nm,0.9s
KNB Kanab 83.33 47 *e*P P 15 41 53.6 +0.9
comp=Z,15nm,0.9s
LON Longmire 83.35 35 *e*P P 15 41 52.2 -0.2
LON pmax pmax
comp=Z,6.0nm,0.8s
LON Longmire 83.35 35 *e*P P 15 41 52.2 -0.2
comp=Z,6.3nm,0.8s
U15A North Rim 83.40 48 *e*P P 15 41 54.3 +1.1
comp=Z,24nm,0.8s
IPM Ipoh 83.42 277 *e*P P 15 41 54.0 +0.6
comp=Z,90nm,0.6s
PSUT Pine Spring 83.43 45 *e*P P 15 41 53.3 +0.1
comp=Z,7.3nm,0.6s
MA2 Magadan 83.44 344 P P 15 41 51.6 -0.8
comp=Z,58nm,1.0s,baz=160,slow=6.1,SNR=7.8
SPU Mount Spurr 83.52 12 *e*P P 15 41 51.0 -1.8
D05A Enumclaw 83.53 35 *e*P P 15 41 54.1 +1.0
comp=Z,56nm,1.1s
WUAZ Wupatki 83.58 49 P P 15 41 55.3 +1.3
baz=240
WUAZ Wupatki 83.58 49 *e*P P 15 41 54.8 +0.9
comp=Z,15nm,1.0s
GAMB Gambell 83.67 3 *e*P P 15 41 53.4 0.0
comp=Z,77nm,0.8s
ELK Elko 83.71 43 *e*P P 15 41 54.6 0.0
ELK pmax pmax
comp=Z,16nm,1.1s
ELK Elko 83.71 43 *e*P P 15 41 54.6 0.0
comp=Z,16nm,1.1s
RC01 Rabbit Creek A 83.91 13 *e*P P 15 41 53.8 -1.0
comp=Z,62nm,1.0s
KULM Kulim 84.05 278 *e*P P 15 41 57.2 +0.7
comp=Z,42nm,0.8s
X18A Snowflake 84.11 50 *e*P P 15 41 57.8 +1.1
comp=Z,8.2nm,0.7s
A04D Lummi Island 84.11 33 P P 15 41 57.3 +1.3
baz=231
B05A Bryant 84.14 34 P P 15 41 57.3 +1.1
baz=231
MTPU Mount Pierson 84.30 46 *e*P P 15 41 59.0 +1.4
comp=Z,9.6nm,0.7s
EYAK Cordova Ski Ar 84.36 15 *e*P P 15 41 56.1 -0.8
comp=Z,34nm,0.7s
HAWA Hanford 84.38 36 *e*P P 15 41 57.8 +0.3
comp=Z,21nm,1.1s
TT01 Tatalina 84.41 10 *e*P P 15 41 56.9 -0.3
TTA Tatalina 84.44 10 *e*P P 15 41 57.2 -0.2
TTA pmax pmax
comp=Z,50nm,0.9s
TTA Tatalina 84.44 10 *e*P P 15 41 57.2 -0.2
comp=Z,50nm,0.9s
RAGM Ragged Mountai 84.48 16 *e*P P 15 41 57.1 -0.6
comp=Z,36nm,1.0s
PMR Palmer 84.50 13 *e*P P 15 41 56.4 -1.2
PMR pmax pmax
comp=Z,42nm,0.6s
PMR Palmer 84.50 13 *e*P P 15 41 56.4 -1.2
comp=Z,42nm,0.6s
MSU Marysvale 84.54 46 *e*P P 15 41 59.7 +1.0
MSU Marysvale 84.54 46 *e*P P 15 41 59.7 +1.0
W18A Petrified Fore 84.55 50 P P 15 42 00.4 +1.6
baz=241
SKLT Songkhla 84.74 280 P P 15 42 01.4 +1.5
comp=Z,82nm,1.0s,comp=Z,727nm
BMO Blue Mountains 84.74 38 *e*P P 15 41 59.5 +0.1
comp=Z,9.2nm,0.9s
121A Cookes Peak, D 84.76 53 P P 15 42 00.8 +0.9
baz=242
121A Cookes Peak, D 84.76 53 *e*P P 15 42 01.5 +1.6
comp=Z,21nm,1.2s
PANO Nakornpanom 84.79 290 P P 15 42 00.8 +0.7
comp=Z,78nm,0.9s
MFID Camas Ranch 84.81 40 *e*P P 15 41 59.8 0.0
comp=Z,14nm,1.1s
DIV Divide 84.85 15 *e*P P 15 41 58.5 -1.0
comp=Z,78nm,0.8s
SML Sawmill 84.86 13 *e*P P 15 41 58.4 -1.1
SML pmax pmax
comp=Z,38nm,1.2s
SML Sawmill 84.86 13 *e*P P 15 41 58.4 -1.1
comp=Z,38nm,1.2s
DUG Dugway, Tooele 84.98 44 P P 15 42 01.3 +0.5
baz=239
BMRM Bremner River 85.00 15 *e*P P 15 41 59.3 -0.9
comp=Z,63nm,0.7s
PPLA Purkeypile 85.06 11 *e*P P 15 41 59.4 -1.2
comp=Z,14nm,0.7s
SCM Sheep Creek Mo 85.11 14 *e*P P 15 42 00.0 -0.8
SCM pmax pmax
comp=Z,108nm,0.7s
SCM Sheep Creek Mo 85.11 14 *e*P P 15 41 60.0 -0.8
comp=Z,108nm,0.7s
D08A Wollman Farm, 85.11 36 *e*P P 15 42 01.0 0.0
comp=Z,18nm,1.1s
KLU Klutina 85.14 15 *e*P P 15 41 59.7 -1.2
comp=Z,33nm,1.0s
WRAK Wrangell Islan 85.16 23 *e*P P 15 42 01.2 +0.2
comp=Z,18nm,0.9s
CHBT CHBT 85.18 285 P P 15 42 03.3 +1.2
comp=Z,46nm,1.1s,comp=Z,1μm
SKNT Sakolnakorn 85.28 290 P P 15 42 03.2 +0.7
comp=Z,104nm,0.9s
NLU North Lily Min 85.35 45 *e*P P 15 42 02.9 +0.2
comp=Z,3.5nm,0.9s
F10A Beach Ranch, E 85.43 37 *e*P P 15 42 02.8 0.0
comp=Z,29nm,0.9s
GSI Gunungsitoli 85.55 273 *e*P P 15 42 04.6 +0.6
comp=Z,79nm,0.7s
CAST Castle Rocks 85.56 11 *e*P P 15 42 00.7 -2.2
comp=Z,74nm,0.7s
TMUT Trail Mountain 85.59 46 *e*P P 15 42 04.5 +0.5
comp=Z,10nm,0.7s
B08A Colville Reser 85.66 35 *e*P P 15 42 03.2 -0.5
comp=Z,10.0nm,0.8s
HLID Hailey 85.75 41 P P 15 42 05.3 +0.8
baz=237
HLID Hailey 85.75 41 *e*P P 15 42 04.7 +0.2
comp=Z,5.4nm,0.8s
BJT Baijiatuao 85.80 315 *e*P P 15 42 04.7 +0.1
BJT pmax pmax
comp=Z,36nm,0.8s
BJT Baijiatuao 85.80 315 *e*P P 15 42 04.7 +0.1
comp=Z,36nm,0.8s
BJI Beijing 85.81 315 P P 15 42 05.3 +0.7
BJI pmax pmax
comp=Z,48nm,0.9s
TRTT Trang 85.84 280 P P 15 42 06.9 +1.6
comp=Z,80nm,1.2s,comp=Z,878nm
C09A Chrisman Ranch 85.90 36 *e*P P 15 42 04.5 -0.4
comp=Z,12nm,0.9s
KTH Kantishna Hill 85.90 12 *e*P P 15 42 02.8 -1.8
comp=Z,45nm,0.9s
SRAK Srakaew 85.91 286 P P 15 42 04.5 -1.1
comp=Z,76nm,1.3s,comp=Z,708nm
TRF Thorofare Moun 85.93 12 *e*P P 15 42 03.4 -1.4
comp=Z,87nm,0.7s
SRU San Rafael Swe 85.96 46 *e*P P 15 42 05.7 +0.1
SRU pmax pmax
comp=Z,9.0nm,0.8s
SRU San Rafael Swe 85.96 46 *e*P P 15 42 05.7 +0.1
comp=Z,9.4nm,0.8s
SEY Seymchan 86.01 347 *de*P P 15 42 04.4 -0.6
KHON Khomkaen 86.07 289 P P 15 42 07.7 +1.4
comp=Z,22nm,0.8s,comp=Z,1μm
ENH Enshi 86.07 304 *e*P P 15 42 06.5 +0.4
comp=Z,104nm,0.9s
RND Reindeer 86.18 13 *e*P P 15 42 05.0 -0.9
RND pmax pmax
comp=Z,142nm,1.0s
RND Reindeer 86.18 13 *e*P P 15 42 05.0 -0.9
comp=Z,142nm,1.0s
DHY Denali Highway 86.19 13 *e*P P 15 42 04.9 -1.2
comp=Z,22nm,1.0s
MNTX Cornudas Mount 86.20 54 P P 15 42 07.8 +1.0
baz=244
MNTX Cornudas Mount 86.20 54 *e*P P 15 42 07.4 +0.7
comp=Z,11nm,0.8s
BNM Barren Site 86.36 52 *e*P P 15 42 08.2 +0.5
TCUT Toone Canyon 86.38 44 *e*P P 15 42 08.1 +0.5
comp=Z,18nm,0.9s
BPAW Bear Paw Mtn. 86.39 11 *e*P P 15 42 04.8 -2.1
comp=Z,9.0nm,0.7s
P18A Preston Nutter 86.40 46 *e*P P 15 42 08.2 +0.3
comp=Z,5.7nm,1.0s
PV05 Paradox Valley 86.43 47 *e*P P 15 42 08.6 +0.7
LPM Los Pinos Moun 86.43 52 *e*P P 15 42 08.6 +0.6
SKAG Skagway 86.43 20 *e*P P 15 42 07.7 +0.6
comp=Z,16nm,1.0s
MCK McKinley 86.45 12 *e*P P 15 42 06.1 -1.1
MCK pmax pmax
comp=Z,86nm,0.8s
MCK McKinley 86.45 12 *e*P P 15 42 06.0 -1.1
comp=Z,86nm,0.8s
TX31 Lajitas Ar. Si 86.52 57 *e*P P 15 42 09.3 +0.9
TX31 *e*pP pP 15 43 41.6 +1.7
TXAR Lajitas Array 86.52 57 P P 15 42 09.7 +1.3
comp=Z,6.9nm,0.7s,baz=220,slow=6.1,SNR=56
PAX Paxson 86.53 14 *e*P P 15 42 06.3 -1.3
PAX pmax pmax
comp=Z,19nm,0.9s
PAX Paxson 86.53 14 *e*P P 15 42 06.3 -1.3
comp=Z,19nm,0.9s
PATY Pattaya 86.57 285 P P 15 42 10.6 +1.8
comp=Z,28nm,0.7s,comp=Z,2μm
PV09 Paradox Valley 86.61 47 *e*P P 15 42 09.1 +0.3
PV10 Paradox Valley 86.61 47 *e*P P 15 42 08.3 -0.5
GYA Guiyang 86.72 300 P P 15 42 10.3 +0.8
GYA pP pP 15 43 44.6 +3.6
GYA sP sP 15 44 25.0 +2.6
GYA PP **PP** **15 45 41.3 +2.5**
GYA SKS **SKSac** **15 51 55.6 -2.2**
GYA S **S** **15 52 11.8 -1.0**
GYA pmax pmax
comp=Z,20nm,1.0s
GYA pmax pmax
comp=Z,120nm,6.2s
NEW Newport 86.80 36 P P 15 42 08.9 -0.3
baz=235
PV01 Paradox Valley 86.82 48 *e*P P 15 42 09.6 -0.3
ANMO Albuquerque 86.85 51 P P 15 42 10.7 +0.8
baz=243
ANMO Albuquerque 86.85 51 *e*P P 15 42 10.5 +0.5
ANMO pmax pmax
comp=Z,7.0nm,0.8s
ANMO Albuquerque 86.85 51 *e*P P 15 42 10.1 +0.1
comp=Z,7.7nm,0.9s
MENT Mentasta 86.91 15 *e*P P 15 42 07.5 -1.8
comp=Z,18nm,0.8s
SURT Suratani 87.06 281 P P 15 42 12.8 +1.7
comp=Z,23nm,1.1s,comp=Z,238nm
SYO Syowa Base 87.25 193 ‖ *e*P P 15 42 09.6 -1.4
SYO Syowa Base 87.25 193 ‖ *e*PcP **PcP** 15 42 12.0 -0.6
MLY Manley 87.28 11 *e*P P 15 42 09.5 -1.6
comp=Z,24nm,0.8s
WRH Wood River Hil 87.28 12 *e*P P 15 42 09.4 -1.6
comp=Z,75nm,0.9s
MCMT McKenzie Canyo 87.38 40 *e*P P 15 42 12.5 +0.2
DOT Dot Lake 87.44 14 *e*P P 15 42 10.9 -0.9
comp=Z,52nm,0.9s
CCB Clear Creek Bu 87.50 12 *e*P P 15 42 10.8 -1.2
comp=Z,76nm,0.6s
CCB *e*pP **pP** **15 43 45.3 +1.5**
DLBC Dease Lake 87.50 23 *e*P P 15 42 12.6 +0.4
comp=Z,9.5nm,0.9s
COLA College 87.69 12 *e*P P 15 42 11.7 -1.2
COLA pmax pmax
comp=Z,110nm,0.6s
COLA College 87.69 12 *e*P P 15 42 11.7 -1.2
comp=Z,110nm,0.6s
MDM Murphy Dome 87.69 12 *e*P P 15 42 11.6 -1.4
comp=Z,71nm,0.9s
PHET Kaeng Krachan 87.69 285 P P 15 42 16.0 +1.9
comp=Z,37nm,0.8s,comp=Z,309nm
IL1 Eielson Array 87.79 13 *e*P P 15 42 11.8 -1.6
ILAR Eielson Array 87.79 13 P P 15 42 12.1 -1.4
comp=Z,25nm,0.8s,baz=217,slow=5.2,SNR=177
ILAR PP **PP** **15 45 42.9 -3.4**
comp=Z,3.2nm,1.1s,baz=219,slow=7.1,SNR=4.6
ILAR Eielson Array 87.79 13 P P 15 42 12.1 -1.4
ILAR 15 45 42.9
ILAR pmax pmax
comp=Z,24nm,0.8s
ILAR pmax pmax
comp=Z,3.0nm,1.1s
ILB Eielson Array 87.79 13 *e*P P 15 42 11.9 -1.5
MSO Missoula 87.80 38 P P 15 42 14.1 +0.1
baz=238
MSO Missoula 87.80 38 *e*P P 15 42 13.3 -0.7
comp=Z,6.8nm,1.1s
PBKT Sadao Pong 87.81 288 P P 15 42 16.0 +1.5
comp=Z,36nm,1.3s
DLMT Dillon 87.81 40 *e*P P 15 42 14.5 +0.3
comp=Z,30nm,1.3s
S22A 4UR Ranch, Cre 87.86 49 P P 15 42 15.4 +0.6
baz=243
S22A 4UR Ranch, Cre 87.86 49 *e*P P 15 42 15.1 +0.3
comp=Z,8.9nm,0.9s
REDW Red Top Meadow 87.86 42 *e*P P 15 42 15.0 +0.4
comp=Z,26nm,1.4s
BSMT Bassoo Peak 87.87 37 *e*P P 15 42 14.2 -0.2
FXWY Fox Creek 87.89 42 *e*P P 15 42 15.1 +0.4
comp=Z,12nm,1.4s
SNOW Snow King Moun 87.97 42 *e*P P 15 42 15.9 +0.8
comp=Z,10nm,0.8s
MOOW Moose Ponds 88.12 42 *e*P P 15 42 15.5 -0.3
comp=Z,16nm,1.6s
XAN Xi'an 88.13 307 P P 15 42 16.8 +1.0
XAN pmax pmax
comp=Z,67nm,0.9s
XAN pmax pmax
comp=Z,84nm,3.9s
LRM Limekiln Ridge 88.14 39 *e*P P 15 42 16.0 +0.1
LOHW Long Hollow 88.14 42 *e*P P 15 42 16.1 +0.2
comp=Z,23nm,1.6s
CHMT Chamberlain Mo 88.24 38 *e*P P 15 42 14.5 -1.7
QLMT Earthquake Lak 88.25 41 *e*P P 15 42 17.4 +1.1
FLWY Flagg Ranch 88.32 42 *e*P P 15 42 17.7 +1.0
comp=Z,20nm,1.1s
BW06 Boulder Array 88.39 43 P P 15 42 16.9 -0.1
baz=241
BW06 Boulder Array 88.39 43 *e*P P 15 42 16.9 -0.1
PD31 Pinedale Array 88.39 43 *e*P P 15 42 16.9 -0.1
PDAR Pinedale Array 88.39 43 P P 15 42 16.9 -0.1
comp=Z,4.1nm,0.7s,baz=220,slow=3.4,SNR=28
SMCO Snowmass 88.41 47 *e*P P 15 42 17.9 +0.4
YFT Old Faithful 88.42 41 *e*P P 15 42 19.0 +1.9
comp=Z,11nm,0.9s
YMR Madison River 88.45 41 *e*P P 15 42 17.8 +0.5
comp=Z,46nm,1.5s
SNAA Sanae 88.46 178 P P 15 42 16.3 -0.4
SNAA Sanae 88.46 178 *e*P P 15 42 16.4 -0.4
SNAA Sanae 88.46 178 *e*P P 15 42 16.4 -0.4
comp=Z,662nm,1.2s
SNAA *e*pP **pP** **15 43 50.9 +2.2**
BOZ Bozeman (W) 88.54 40 P P 15 42 18.7 +1.1
baz=239
BOZ Bozeman (W) 88.54 40 *e*P P 15 42 17.4 -0.2
BOZ pmax pmax
comp=Z,15nm,0.9s
BOZ Bozeman (W) 88.54 40 *e*P P 15 42 17.4 -0.2
comp=Z,15nm,0.9s
H17A Grant Village 88.55 41 P P 15 42 19.6 +1.7
baz=240
H17A Grant Village 88.55 41 *e*P P 15 42 19.5 +1.7
comp=Z,11nm,0.9s
VNA3 Neumayer Olymp 88.57 176 P P 15 42 17.3 +0.1
UTTA Uttaradit 88.60 289 P P 15 42 19.7 +1.4
comp=Z,6.2nm,0.8s
BILL Bilibino 88.62 354 *d* *i*P P 15 42 17.0 -0.2
BILL *i* *PP pP 15 43 44.0 -5.2
BILL *i* 15 45 56.3
BILL *i* PPP PPP 15 47 52.9
BILL *i* S **SKSac** **15 52 13.7 +6.7**
BILL pmax pmax
comp=Z,24nm,0.7s
BILL Bilibino 88.62 354 *e*P P 15 42 16.6 -0.6
comp=Z,25nm,0.7s
SRDT SRDT 88.67 286 P P 15 42 20.5 +1.9
comp=Z,159nm,1.0s
LKWY Lake 88.75 41 *e*P P 15 42 20.6 +1.8
LKWY pmax pmax
comp=Z,17nm,1.0s
LKWY Lake 88.75 41 *e*P P 15 42 20.6 +1.8
comp=Z,17nm,1.0s
SDCO Great Sand Dun 88.80 49 P P 15 42 19.5 +0.3
baz=244
SDCO Great Sand Dun 88.80 49 *e*P P 15 42 19.3 +0.2
comp=Z,3.6nm,0.8s
WALA Waterton Lakes 89.01 36 *e*P P 15 42 19.4 -0.3
comp=Z,8.7nm,0.9s
VNA2 Neumayer--Watz 89.02 177 P P 15 42 19.6 +0.3
baz=177,slow=3.5
832A Faith Ranch, C 89.05 60 P P 15 42 20.6 +0.5
baz=247
EGAK Eagle 89.08 15 *e*P P 15 42 18.9 -0.5
comp=Z,45nm,0.8s
MSTX Muleshoe 89.16 53 P P 15 42 21.0 +0.3
baz=245
NVL N'lazarevskaya 89.19 183 *e*P P 15 42 19.6 -0.5
VNA1 Neumayer--Stat 89.25 176 P P 15 42 20.3 0.0
HHC Hu-ho-hao-te 89.28 314 *e*P P 15 42 21.0 -0.1
HHC pmax pmax
comp=Z,39nm,1.0s
HHC pmax pmax
comp=Z,96nm,5.5s
T25A Trinidad 89.31 50 *e*P P 15 42 19.9 -1.5
comp=Z,4.6nm,0.9s
T25A *e*PKKPdf **PKKPbc** **15 59 57.5 +0.9**
PLCA Paso Flores 89.34 133 P P 15 42 23.0 +1.5
comp=Z,3.3nm,0.9s,baz=258,slow=7.6,SNR=5.4
PLCA PKKP **PKKPbc** **15 59 54.0 -1.8**
comp=Z,1.5nm,0.8s,baz=11,slow=3.6,SNR=3.7
COLD Coldfoot 89.37 10 *e*P P 15 42 20.7 0.0
comp=Z,47nm,0.8s
KMI Kunming 89.45 297 P P 15 42 24.1 +1.7
KMI pmax pmax
comp=Z,46nm,0.9s
KMI pmax pmax
comp=Z,140nm,6.1s
Q24A Divide 89.58 48 P P 15 42 23.5 +0.7
baz=244
ISCO Idaho Springs 89.63 47 P P 15 42 23.8 +0.7
baz=243
FYU Fort Yukon 89.70 12 *e*P P 15 42 21.4 -0.9
comp=Z,18nm,0.6s
LAMP Lampang 89.70 290 P P 15 42 24.8 +1.4
comp=Z,27nm,0.8s,comp=Z,218nm
RLMT Red Lodge 89.72 41 P P 15 42 24.2 +1.0
baz=241
RLMT Red Lodge 89.72 41 *e*P P 15 42 23.9 +0.7
comp=Z,11nm,1.0s
GCMT Greycliff 89.81 40 *e*P P 15 42 24.0 +0.5
N23A Red Feather La 89.90 46 P P 15 42 25.1 +0.9
baz=243
N23A Red Feather La 89.90 46 *e*P P 15 42 24.7 +0.5
comp=Z,9.2nm,1.0s
JCT Junction City 90.05 58 P P 15 42 25.2 +0.3
baz=247
633A Saathoff Ranch 90.15 59 P P 15 42 26.2 +1.0
baz=247
CM01 Chiang Mai Arr 90.26 289 *e*P P 15 42 27.4 +1.4
CM31 Chiang Mai Arr 90.29 289 *e*P P 15 42 27.7 +1.5
CMAR Chiang Mai Arr 90.29 289 P P 15 42 27.6 +1.5
comp=Z,25nm,0.9s,baz=119,slow=2.8,SNR=186
CMAR Chiang Mai Arr 90.29 289 P P 15 42 27.7 +1.5
CMAR pmax pmax
comp=Z,27nm,0.9s

K22A	**Casper**	**90.31**	**44**	P		**P**		**15 42 26.3**	**+0.4**	
	baz=243									
K22A	**Casper**	**90.31**	**44**	*e*P		**P**		**15 42 25.7**	**-0.2**	
	comp=Z,23nm,1.4s									
AMTX	**Amarillo**	**90.36**	**53**	P		**P**		**15 42 26.7**	**+0.4**	
	baz=246									
AMTX	**Amarillo**	**90.36**	**53**	*e*P		**P**		**15 42 26.2**	**0.0**	
	comp=Z,8.9nm,0.8s									
CMMT	**Chiang Mai**	**90.41**	**290**	P		**P**		**15 42 27.5**	**+0.8**	
	comp=Z,60nm,0.8s,comp=Z,610nm									
CHTO	**Chiang Mai**	**90.41**	**290**	P		**P**		**15 42 27.6**	**+0.9**	
	comp=Z,269nm,0.8s,comp=Z,3µm									
CHTO	**Chiang Mai**	**90.41**	**290**	*e*P		**P**		**15 42 27.9**	**+1.2**	
CHTO				pmax		pmax				
	comp=Z,40nm,0.8s									
CHTO	**Chiang Mai**	**90.41**	**290**	*e*P		**P**		**15 42 27.9**	**+1.2**	
	comp=Z,40nm,0.8s									
533A	**Kerrville**	**90.50**	**58**	P		**P**		**15 42 27.3**	**+0.3**	
	baz=247									
433A	**Art**	**90.72**	**58**	P		**P**		**15 42 28.4**	**+0.5**	
	baz=247									
CMAI	**Chiengmai2**	**90.72**	**291**	P		**P**		**15 42 29.2**	**+0.9**	
	comp=Z,60nm,1.1s,comp=Z,4µm									
CD2	**Chengdu**	**90.83**	**303**	P		**P**		**15 42 27.8**	**-0.7**	
CD2				pP		pP		15 44 01.3	+0.6	
CD2				sP		sP		15 44 43.4	+1.5	
CD2				PP		**PP**		**15 46 10.1**	**-1.0**	
CD2				SKS		**SKSac**		**15 52 19.3**	**-2.2**	
CD2				S		**S**		**15 52 48.9**	**-1.5**	
CD2				sS		sS		15 55 36.6	+1.7	
CD2				SS		**SS**		**15 59 04.4**	**-0.3**	
CD2				pmax		pmax				
	comp=Z,20nm,0.5s									
CD2				pmax		pmax				
	comp=Z,130nm,3.5s									
EGMT	**Eagleton**	**90.85**	**38**	P		**P**		**15 42 29.0**	**+0.8**	
	baz=241									
EGMT	**Eagleton**	**90.85**	**38**	*e*P		**P**		**15 42 28.4**	**+0.2**	
	comp=Z,7.3nm,1.0s									
534A	**Blanco**	**90.93**	**58**	P		**P**		**15 42 29.7**	**+0.8**	
	baz=247									
ABTX	**Abilene, Hawle**	**91.01**	**56**	P		**P**		**15 42 29.9**	**+0.7**	
	baz=247									
ABTX	**Abilene, Hawle**	**91.01**	**56**	*e*P		**P**		**15 42 29.3**	**0.0**	
	comp=Z,13nm,0.8s									
333A	**Richland Sprin**	**91.02**	**57**	P		**P**		**15 42 29.3**	**0.0**	
	baz=247									
MHMT	**Maesarieng**	**91.09**	**289**	P		**P**		**15 42 31.5**	**+1.7**	
	comp=Z,14nm,1.2s									
233A	**Rising Star**	**91.36**	**56**	P		**P**		**15 42 31.1**	**+0.2**	
	baz=247									
434A	**Burnet**	**91.39**	**58**	P		**P**		**15 42 31.5**	**+0.5**	
	baz=248									
133A	**Hamilton Ranch**	**91.57**	**56**	P		**P**		**15 42 32.5**	**+0.7**	
	baz=247									
334A	**Lometa**	**91.62**	**57**	P		**P**		**15 42 32.5**	**+0.5**	
	baz=248									
YAK	**Yakutsk**	**91.82**	**338**	*d* iP		**P**		**15 42 31.3**	**-0.8**	
YAK				*e*				15 46 15.5		
YAK				*e*PPP		PPP		15 48 19.5		
YAK				*e*S		**SKSac**		**15 52 24.2**	**-1.3**	
YAK				*e*				15 52 52.1		
YAK				*e*SSS		SSS		16 02 59.6		
YAK				pmax		pmax				
	comp=Z,38nm,0.8s									
YAK				pmax		pmax				
	comp=N,11nm,1.2s									
YAK				pmax		pmax				
	comp=E,13nm,1.1s									
YAK				pmax		pmax				
	comp=Z,171nm,5.2s									
YAK				pmax		pmax				
	comp=N,90nm,4.8s									
YAK				pmax		pmax				
	comp=E,89nm,5.7s									
YAK				smax		smax				
	comp=N,60nm,3.7s									
YAK				smax		smax				
	comp=E,72nm,4.0s									
YAK	**Yakutsk**	**91.82**	**338**	*e*P		**P**		**15 42 31.2**	**-1.0**	
	comp=E,77nm,0.9s									
Z33A	**Whitaker Ranch**	**91.95**	**55**	P		**P**		**15 42 34.0**	**+0.4**	
	baz=247									
X32A	**Elmer**	**91.99**	**54**	P		**P**		**15 42 34.0**	**+0.3**	
	baz=247									
W32A	**Sentinel**	**92.29**	**53**	P		**P**		**15 42 35.3**	**+0.2**	
	baz=247									
Y33A	**Hilltop Ranch,**	**92.33**	**55**	P		**P**		**15 42 36.1**	**+0.8**	
	baz=247									
LAO	**LASA Array**	**92.34**	**41**	P		**P**		**15 42 36.1**	**+1.1**	
	baz=243									
J25A	**Sunshine Ranch**	**92.42**	**44**	P		**P**		**15 42 35.9**	**+0.3**	
	baz=245									
637A	**Eagle Lake**	**92.44**	**60**	P		**P**		**15 42 36.0**	**+0.2**	
	baz=248									
RSSD	**Black Hills**	**92.59**	**44**	P		**P**		**15 42 36.6**	**+0.1**	
	baz=244									
RSSD	**Black Hills**	**92.59**	**44**	*e*P		**P**		**15 42 35.8**	**-0.6**	
RSSD				pmax		pmax				
	comp=Z,13nm,0.9s									
RSSD	**Black Hills**	**92.59**	**44**	*e*P		**P**		**15 42 35.8**	**-0.6**	
	comp=Z,12nm,0.9s									
I25A	**Rochford**	**92.74**	**44**	P		**P**		**15 42 37.6**	**+0.4**	
	baz=245									
J26A	**Sides Ranch, S**	**92.87**	**45**	P		**P**		**15 42 38.3**	**+0.7**	
	baz=245									
J27A	**Elkhorn Farm,**	**93.56**	**45**	P		**P**		**15 42 41.9**	**+1.1**	
	baz=246									
INK	**Inuvik**	**93.74**	**15**	P		**P**		**15 42 39.8**	**-1.0**	
	comp=Z,27nm,1.0s,baz=202,slow=6.6,SNR=43									
INK	**Inuvik**	**93.74**	**15**	*e*P		**P**		**15 42 40.0**	**-0.9**	
INK				pmax		pmax				
	comp=Z,27nm,0.9s									
INK	**Inuvik**	**93.74**	**15**	*e*P		**P**		**15 42 40.0**	**-0.9**	
	comp=Z,27nm,0.9s									
G26A	**Maurine**	**94.01**	**43**	P		**P**		**15 42 43.0**	**+0.2**	
	baz=246									
J28A	**Allard Ranch,**	**94.14**	**45**	P		**P**		**15 42 44.2**	**+0.8**	
	baz=246									
Q32A	**Meitler Ranch,**	**94.28**	**50**	P		**P**		**15 42 44.1**	**0.0**	
	baz=248									
DGMT	**Dagmar**	**94.35**	**40**	P		**P**		**15 42 44.8**	**+0.6**	
	baz=245									
DGMT	**Dagmar**	**94.35**	**40**	*e*P		**P**		**15 42 44.3**	**+0.1**	
	comp=Z,14nm,0.8s									
I28A	**Midland**	**94.42**	**45**	P		**P**		**15 42 45.0**	**+0.4**	
	baz=246									
P32A	**Huiting Farm,**	**94.49**	**50**	P		**P**		**15 42 45.4**	**+0.4**	
	baz=248									
W36A	**Wetumka**	**94.59**	**54**	P		**P**		**15 42 46.4**	**+0.8**	
	baz=249									
J29A	**Okreek**	**94.74**	**46**	P		**P**		**15 42 46.4**	**+0.3**	
	baz=247									
Q33A	**Connelly Farm,**	**94.81**	**50**	P		**P**		**15 42 47.0**	**+0.5**	
	baz=248									
D26A	**Manning**	**94.83**	**42**	P		**P**		**15 42 46.9**	**+0.5**	
	baz=246									
M31A	**Lambtecht Ranc**	**94.87**	**48**	P		**P**		**15 42 47.9**	**+1.2**	
	baz=248									
Z38A	**Mt. Pleasant**	**94.88**	**57**	P		**P**		**15 42 47.7**	**+0.7**	
	baz=249									
O32A	**Brockman Farm,**	**94.96**	**49**	P		**P**		**15 42 47.9**	**+0.8**	
	baz=248									
A25A	**Svangstu Ranch**	**95.20**	**40**	P		**P**		**15 42 49.0**	**+0.9**	
	baz=248									
ULN	**Ulaanbaatar**	**95.24**	**319**	*de*P		**P**		**15 42 48.0**	**-0.4**	
ULN				pmax		pmax				
	comp=Z,8.0nm,1.1s									
ULN	**Ulaanbaatar**	**95.24**	**319**	*e*P		**P**		**15 42 47.8**	**-0.7**	
	comp=Z,5.4nm,0.8s									
J30A	**Dallas**	**95.27**	**46**	P		**P**		**15 42 48.8**	**+0.2**	
	baz=248									
C26A	**Wahner Farm, P**	**95.36**	**41**	P		**P**		**15 42 49.8**	**+1.0**	
	baz=246									
O33A	**Hebron**	**95.38**	**49**	P		**P**		**15 42 49.7**	**+0.6**	
	baz=248									
SONA1	**Songino Array**	**95.64**	**319**	*e*P		**P**		**15 42 49.4**	**-0.8**	
SONM	**Songino Array**	**95.64**	**319**	P		**P**		**15 42 50.3**	**+0.1**	
	comp=Z,1.3nm,0.5s,baz=137,slow=5.8,SNR=7.9									
SONM				PP		**PP**		**15 46 45.7**	**-2.4**	
	comp=Z,1.9nm,0.9s,baz=126,slow=7.5,SNR=5.1									
P34A	**Walnut Farm, R**	**95.73**	**50**	P		**P**		**15 42 51.8**	**+1.1**	
	baz=249									
A26A	**Wade Farm, Ken**	**95.83**	**40**	P		**P**		**15 42 51.7**	**+0.8**	
	baz=246									
BOD	**Bodaibo**	**95.87**	**330**	*e*P		**P**		**15 42 48.9**	**-1.9**	
BOD				pmax		pmax				
	comp=Z,7.0nm,1.7s									
YKA	**Yellowknife Ar**	**95.95**	**25**	P		**P**		**15 42 50.4**	**-0.6**	
	comp=Z,3.6nm,0.7s,baz=244,slow=4.5,SNR=38									
YKA				PP		**PP**		**15 46 47.8**	**-2.1**	
	comp=Z,0.6nm,0.8s,baz=239,slow=7.7,SNR=5.4									
YKB5	**Yellowknife Ar**	**95.95**	**25**	*e*P		**P**		**15 42 50.0**	**-1.0**	
E29A	**Napoleon**	**96.41**	**43**	P		**P**		**15 42 54.1**	**+0.5**	
	baz=248									
N34A	**Lincoln**	**96.43**	**49**	P		**P**		**15 42 54.1**	**+0.4**	
	baz=249									
M34A	**Aspy Farms, Fr**	**96.61**	**48**	P		**P**		**15 42 55.4**	**+0.9**	
	baz=249									
P36A	**Good Intent, A**	**96.93**	**50**	P		**P**		**15 42 57.0**	**+0.9**	
	baz=250									
GTA	**Gaotai**	**96.95**	**309**	*e*P		**P**		**15 42 56.3**	**0.0**	
GTA				pP		pP		15 44 28.8	-0.1	
GTA				sP		sP		15 45 08.9	-1.1	
GTA				PP		**PP**		**15 47 00.0**	**+1.7**	
GTA				SKS		**SKSac**		**15 52 51.8**	**-2.4**	
GTA				S		**S**		**15 53 39.6**	**-3.8**	
GTA				sS		sS		15 56 27.8	-1.8	
GTA				pmax		pmax				
	comp=Z,8.0nm,1.2s									
GTA				pmax		pmax				
	comp=Z,73nm,4.7s									
ECSD	**EROS Data Cent**	**97.37**	**46**	*e*P		**P**		**15 42 57.0**	**-1.0**	
X301	**Greenbrier Sit**	**97.57**	**55**	*e*P		Pdif		15 42 59.2	+0.2	
	comp=Z,14nm,0.8s									
X201	**Greenbrier Sit**	**97.61**	**55**	*e*P		Pdif		15 42 59.6	+0.4	
	comp=Z,13nm,0.8s									
W41A	**Tony Mavity, V**	**97.67**	**55**	Pdiff		Pdif		15 43 00.3	+0.9	
	baz=251									
W41B	**Gary Mavity, V**	**97.67**	**55**	Pdiff		Pdif		15 43 00.2	+0.8	
	baz=251									
WHAR	**Wooly Hollow**	**97.67**	**55**	*e*P		Pdif		15 43 01.0	+1.5	
	comp=Z,8.2nm,0.7s									
TIXI	**Tiksi**	**98.39**	**345**	*de*P		Pdif		15 43 00.5	-1.3	
TIXI				pmax		pmax				
	comp=Z,9.0nm,0.9s									
TIXI	**Tiksi**	**98.39**	**345**	*e*Pdif		Pdif		15 43 00.8	-1.0	
	comp=Z,9.5nm,0.9s									
ZAK	**Zakamensk**	**98.50**	**321**	*e*P		Pdif		15 43 02.0	-0.9	
ZAK				pmax		pmax				
	comp=Z,2.0nm,1.3s									
TLY	**Talaya**	**98.75**	**322**	*e*P		**P**		**15 43 04.2**	**+0.3**	
TLY				pmax		pmax				
	comp=Z,3.0nm,0.6s									
F36A	**Milaca**	**100.15**	**45**	Pdiff		**Pdif**		**15 43 10.6**	**+0.4**	
	baz=252									
I38A	**Scanlan Farm,**	**100.40**	**47**	Pdiff		**Pdif**		**15 43 12.1**	**+0.7**	
	baz=252									
D36A	**Goodland**	**100.79**	**44**	Pdiff		**Pdif**		**15 43 13.9**	**+0.8**	
	baz=252									
D37A	**Cotton**	**101.27**	**44**	Pdiff		**Pdif**		**15 43 16.5**	**+1.3**	
	baz=253									
EYMN	**Ely**	**102.10**	**43**	Pdiff		**Pdif**		**15 43 19.5**	**+0.6**	
	baz=254									
TZTN	**Tazewell**	**104.83**	**56**	*e*PKKPbc		PKKPbc		15 59 13.2	-0.7	
O56A	**Blue Knob Stat**	**109.43**	**53**	Pdiff		**PKiKP**		**15 47 52.5**	**-0.2**	
	baz=252									
NRIK	**Noril'sk**	**110.27**	**338**	PKiKP		**PKiKP**		**15 47 52.2**	**-1.2**	
	comp=Z,1.3nm,0.4s,baz=90,slow=4.5,SNR=4.3									
ZAA0	**Zalesovo Array**	**110.35**	**321**	*e*PKiKP		**PKiKP**		**15 47 52.9**	**-1.1**	
ZAA0				*e*PP		**PP**		**15 48 35.8**	**-0.8**	
ZAA0				*e*PP		PP		15 48 36.3	-0.2	
ZALV	**Zalesovo Beam**	**110.35**	**321**	PKiKP		**PKiKP**		**15 47 53.0**	**-1.0**	
	comp=Z,3.8nm,0.6s,baz=150,slow=1.0,SNR=22									
MKAR	**Makanchi Array**	**111.13**	**314**	Pdiff		**Pdif**		**15 44 02.5**	**+3.4**	
	comp=Z,0.8nm,0.7s,baz=94,slow=5.2,SNR=8.9									
MKAR				PKiKP		**PKiKP**		**15 47 54.8**	**-1.0**	
	comp=Z,4.1nm,0.6s,baz=166,slow=0.2,SNR=39									
MAKZ	**Makanchi**	**111.35**	**313**	*e*PKiKP		**PKiKP**		**15 47 54.7**	**-1.4**	
MAKZ				*e*				15 48 40.0		
MAKZ	**Makanchi**	**111.35**	**313**	*e*PKiKP		**PKiKP**		**15 47 54.7**	**-1.4**	
MAKZ				*e*PP		**PP**		**15 48 40.0**	**-3.9**	
NVS	**Novosibirsk**	**111.36**	**322**	*e*PKiKP		**PKiKP**		**15 47 51.7**	**-4.1**	
KURK	**Kurchatov**	**113.89**	**318**	*i* PKiKP		**PKiKP**		**15 48 00.0**	**-0.8**	
KURK				pmax		pmax				
	comp=Z,6.0nm,0.7s									
KURK				pmax		pmax				
	comp=N,1.0nm,0.7s									
KURK	**Kurchatov**	**113.89**	**318**	PKiKP		**PKiKP**		**15 47 60.0**	**-0.8**	
KURK				*e*PP		**PP**		**15 48 58.7**	**-2.9**	
KURK				SKP				15 50 57.0		
KURBB	**Kurchatov Arra**	**113.94**	**317**	PKiKP		**PKiKP**		**15 47 60.0**	**-1.0**	
	comp=N,6.1nm,0.7s,baz=96,slow=1.9,SNR=59									
KURBB				SKP				15 50 57.0		
	comp=N,1.1nm,0.7s,baz=98,slow=1.7,SNR=6.3									
KSH	**Kashi**	**114.91**	**305**	PKP		PKPdf		15 48 04.1	+0.8	
KSH				*e*PP		PP		15 49 19.6	+10	
KSH				*es*PKP				15 50 25.1		
KSH				PKS		**PKSdf**		**15 51 39.8**	**-0.3**	
KSH				SKKS				15 55 28.3		
KSH				AMB		AMB				
	comp=N,85nm,5.3s									
TKM2	**Tokmak 2**	**115.50**	**309**	*e*PKiKP		**PKPdf**		**15 48 03.5**	**-1.0**	
TKM2	**Tokmak 2**	**115.50**	**309**	*e*PKPdf		**PKPdf**		**15 48 03.5**	**-1.0**	
AAK	**Ala-Archa**	**116.28**	**308**	PKP		**PKPdf**		**15 48 05.2**	**-0.7**	
	comp=N,2.5nm,0.7s,baz=112,slow=5.0,SNR=9.2									
AAK	**Ala-Archa**	**116.28**	**308**	*e*PKPdf		**PKPdf**		**15 48 05.1**	**-0.9**	
EKS2	**Erkin-Say**	**116.81**	**308**	*e*PKiKP		**PKPdf**		**15 48 06.2**	**-0.7**	
EKS2	**Erkin-Say**	**116.81**	**308**	*e*PKPdf		**PKPdf**		**15 48 06.2**	**-0.7**	
BVAR	**Borovoye Array**	**118.95**	**320**	PKP		**PKPdf**		**15 48 10.0**	**-0.5**	
	comp=N,14nm,0.6s,baz=125,slow=0.9,SNR=51									
BVAR	**Borovoye Array**	**118.95**	**320**	PKiKP		**PKPdf**		**15 48 10.0**	**-0.5**	
BVAR				pmax		pmax				
	comp=Z,14nm,0.6s									
BRVK	**Borovoye**	**119.01**	**320**	*c* iPKiKP		**PKPdf**		**15 48 09.6**	**-1.0**	
BRVK				pmax		pmax				
	comp=Z,17nm,1.0s									
BRVK	**Borovoye**	**119.01**	**320**	*e*PKPdf		**PKPdf**		**15 48 09.9**	**-0.7**	
KKAR	**Karatay Array**	**119.23**	**309**	*e*PKiKP		**PKPdf**		**15 48 10.3**	**-1.1**	
KKAR	**Karatay Array**	**119.23**	**309**	*e*PKPdf		**PKPdf**		**15 48 10.3**	**-1.1**	
ZRNK	**Zerenda**	**119.79**	**320**	*e*PKiKP		**PKPdf**		**15 48 11.1**	**-1.0**	
ZRNK				*e*				15 49 40.0		
ZRNK	**Zerenda**	**119.79**	**320**	*e*PKPdf		**PKPdf**		**15 48 11.1**	**-1.0**	
ZRNK				*e*PP		**PP**		**15 49 40.0**	**-2.2**	
KBL	**Kabul**	**119.97**	**299**	*e*PKiKP		**PKPdf**		**15 48 13.1**	**-0.3**	
KBL	**Kabul**	**119.97**	**299**	*e*PKPdf		**PKPdf**		**15 48 13.1**	**-0.3**	
SUMG	**Summit**	**122.63**	**14**	*i* P		**PKPdf**		**15 48 17.6**	**0.0**	
	comp=Z,7.1nm,0.9s									
SUMG	**Summit**	**122.63**	**14**	*i* PKiKP		**PKPdf**		**15 48 17.6**	**0.0**	
SUMG				pmax		pmax				
	comp=Z,7.0nm,0.9s									
SVE	**Sverdlovsk**	**123.81**	**326**	*e*PKiKP		**PKPdf**		**15 48 19.6**	**-0.1**	
SVE				pmax		pmax				
	comp=Z,22nm,0.9s									
SOKR	**Solikamsk**	**124.86**	**330**	*i* PKiKP		**PKPdf**		**15 48 19.7**	**-1.9**	
SOKR				pmax		pmax				
	comp=Z,36nm,1.0s									
ARU	**Arti**	**125.02**	**326**	PKP		**PKPdf**		**15 48 21.7**	**-0.4**	
	comp=Z,12nm,0.4s,baz=98,slow=0.5,SNR=22									
ARU	**Arti**	**125.02**	**326**	*i* PKiKP		**PKPdf**		**15 48 21.4**	**-0.6**	
ARU								15 50 15.9		
ARU								15 54 53.6		
ARU				SS		SS		16 06 38.1	-2.6	
ARU	**Arti**	**125.02**	**326**	*e*PKPdf		**PKPdf**		**15 48 21.5**	**-0.5**	
ARU				*e*PP		**PP**		**15 50 20.6**	**+3.5**	
ABKAR	**Akbulak array**	**125.99**	**317**	*e*PKPdf		**PKPdf**		**15 48 23.4**	**-0.8**	
BOSA	**Boshof**	**126.82**	**205**	PKP		**PKPdf**		**15 48 27.3**	**+0.6**	
	comp=Z,1.4nm,0.5s,baz=123,slow=6.8,SNR=3.7									
AKTO	**Aktyubinsk**	**126.95**	**319**	PKP		**PKPdf**		**15 48 26.0**	**0.0**	
	comp=Z,10nm,0.8s,baz=53,slow=2.3,SNR=13									
AKTO	**Aktyubinsk**	**126.95**	**319**	PKiKP		**PKPdf**		**15 48 26.0**	**0.0**	
AKTO				pmax		pmax				
	comp=Z,10.0nm,0.8s									
ARCES	**ARCESS Array B**	**128.53**	**350**	PKP		**PKPdf**		**15 48 28.2**	**-0.3**	
	comp=Z,7.5nm,0.5s,baz=25,slow=1.2,SNR=53									
GEYT	**Alibeck**	**128.83**	**303**	PKP		**PKPdf**		**15 48 30.1**	**+0.1**	
	comp=Z,6.8nm,0.6s,baz=243,slow=1.7,SNR=10									
GEYT				PP		**PP**		**15 50 40.8**	**-2.0**	
	comp=Z,3.4nm,1.0s,baz=64,slow=6.8,SNR=5.0									
GEYT				SKPbc		SKPbc		15 51 12.8		
	comp=Z,13nm,0.9s,baz=270,slow=0.4,SNR=16									
ARQ	**Araqi**	**129.81**	**284**	P		SKPbc		15 51 16.5	-0.2	
	SNR=6.8									
UOSS	**Minazif**	**130.28**	**286**	*e*PKPdf		**PKPdf**		**15 48 32.3**	**-0.7**	
BANOM	**Banah**	**130.28**	**287**	*i* P		**SKPbc**		**15 51 18.7**	**+0.4**	
	SNR=42									
BANOM	**Banah**	**130.28**	**287**	P		**SKPbc**		**15 51 18.2**	**-0.2**	
	SNR=13									
HATD	**Hatta, Dubai**	**130.33**	**286**	*i* P		**SKPbc**		**15 51 18.1**	**-0.4**	
	SNR=16									
HATD	**Hatta, Dubai**	**130.33**	**286**	P		**SKPbc**		**15 51 18.1**	**-0.4**	
	SNR=9.8									
ASHO	**Ashiyiah**	**130.38**	**286**	*i* P		**SKPbc**		**15 51 18.4**	**-0.3**	
	SNR=23									
ASHO	**Ashiyiah**	**130.38**	**286**	P		**SKPbc**		**15 51 18.3**	**-0.5**	
	SNR=12									
NAZ	**Nazwa, Dubai**	**130.77**	**286**	*i* P		**SKPbc**		**15 51 19.6**	**-0.5**	
	SNR=9.2									
NAZ	**Nazwa, Dubai**	**130.77**	**286**	P		**SKPbc**		**15 51 19.8**	**-0.3**	
	SNR=9.7									
FAQ	**Al Faqa, Dubai**	**130.81**	**286**	*i* P		**SKPbc**		**15 51 19.9**	**-0.4**	
	SNR=22									
FAQ	**Al Faqa, Dubai**	**130.81**	**286**	P		**SKPbc**		**15 51 19.9**	**-0.4**	
FAQ				P		**SKPbc**		**15 51 21.0**	**+0.7**	
	SNR=8.2									
ABTO	**Aybut**	**131.83**	**276**	P		**SKPbc**		**15 51 24.6**	**+0.5**	
	SNR=5.1									
MATP	**Matopo**	**132.34**	**214**	SKPbc		**SKPbc**		**15 51 26.3**	**+0.3**	
	comp=Z,7.7nm,0.7s,baz=156,slow=2.4,SNR=12									
FIA1	**FINESS Array S**	**135.43**	**344**	*e*PKPdf		**PKPdf**		**15 48 42.4**	**+0.8**	
FINES	**FINESS Array B**	**135.43**	**344**	PKPbc		PKPpre		15 48 33.6		
	comp=Z,1.8nm,0.6s,baz=28,slow=2.5,SNR=8.7									
FINES				PKP		**PKiKP**		**15 48 42.7**	**-0.5**	
	comp=Z,6.8nm,0.5s,baz=66,slow=3.1,SNR=20									
FINES				SKPbc		**SKPbc**		**15 51 35.0**	**+0.5**	
	comp=Z,4.3nm,0.8s,baz=49,slow=5.8,SNR=4.0									
OBN	**Obninsk**	**136.52**	**332**	PKP		**PKPdf**		**15 48 43.8**	**0.0**	
	comp=Z,16nm,0.4s,baz=319,slow=23,SNR=3.6									
OBN	**Obninsk**	**136.52**	**332**	⇑*i*PKiKP		**PKPdf**		**15 48 42.4**	**-1.4**	
OBN				*i*				15 51 33.5		
OBN				pmax		pmax				
	comp=Z,11nm,0.9s									
LSZ	**Lusaka**	**136.69**	**218**	PKP		**PKPdf**		**15 48 46.1**	**+0.6**	
	comp=Z,1.6nm,0.2s,baz=2.2,slow=7.0,SNR=3.6									
NC303	**NORSAR Array S**	**138.37**	**353**	*e*PKPdf		**PKPdf**		**15 48 48.9**	**+1.8**	
ZEI	**Tsey**	**138.47**	**313**	*i* PKiKP		**PKPdf**		**15 48 49.2**	**+1.1**	
ZEI				pmax		pmax				
	comp=Z,10.0nm,0.6s									
NB201	**NORSAR Array S**	**138.55**	**353**	*e*PKPdf		**PKPdf**		**15 48 48.4**	**+0.9**	
NB2	**NORSAR Subarra**	**138.57**	**354**	PKP		PKPpre		15 48 36.5		
	comp=Z,1.9nm,0.5s,baz=16,slow=3.2									
NOA	**NORSAR Array B**	**138.57**	**354**	PKiKP		PKPpre		15 48 39.4		
	comp=Z,4.9nm,0.7s,baz=20,slow=3.9,SNR=18									
NOA				PKP		**PKPdf**		**15 48 48.5**	**+1.1**	
	comp=Z,3.8nm,0.7s,baz=18,slow=4.2,SNR=10									
NOA				PP		**PP**		**15 51 43.3**	**+0.7**	
	comp=Z,4.9nm,1.0s,baz=15,slow=4.5,SNR=3.8									
NOA	**NORSAR Array B**	**138.57**	**354**	PKiKP		**PKPdf**		**15 48 48.6**	**+1.1**	
NOA								15 51 43.3		
NOA				pmax		pmax				
	comp=Z,3.0nm,0.6s									
NOA				pmax		pmax				
	comp=Z,5.0nm,1.0s									
NBO02	**NORSAR Array S**	**138.59**	**354**	*e*PKPpre		PKPpre		15 48 37.1		
NBO02				*e*PKPdf		**PKPdf**		**15 48 48.2**	**+0.7**	
NBO00	**NORSAR Array S**	**138.62**	**354**	*e*PKPdf		**PKPdf**		**15 48 48.3**	**+0.7**	
KBZ	**Khabaz**	**138.82**	**314**	PKiKP		PKPpre		15 48 43.9		
	comp=Z,2.1nm,0.8s,baz=51,slow=7.1,SNR=4.1									
KBZ				PP		**PP**		**15 51 46.2**	**+1.0**	
	comp=Z,8.5nm,1.0s,baz=160,slow=3.3,SNR=6.3									
KIV	**Kislovodsk**	**138.88**	**315**	*i* PKi

HLM1	Long Mynd	147.33	6	*e*P	PKPbc	15 49 05.1	-0.9
KSP	Ksiaz	147.35	344	*e*PKP	PKPbc	15 49 06.6	+0.4
KSP	Ksiaz	147.35	344	*e*PKP2	PKPbc	15 49 06.6	+0.4
NIE	Niedzica	147.37	338	*e*PKP	PKPbc	15 49 06.7	+0.4
NIE	Niedzica	147.37	338	*e*PKP2	PKPbc	15 49 06.8	+0.4
VRI	Vrincioaia	147.37	328	⇓*i*P	PKPbc	15 49 06.5	+0.1
VRI	Vrincioaia	147.37	328	⇓PKP2	PKPbc	15 49 06.5	+0.1
CRVS	Cervenica-Dubn	147.38	336	*e*PKP2	PKPbc	15 49 07.1	+0.8
CRVS	Cervenica-Dubn	147.38	336	*e*PKP	PKPbc	15 49 07.1	+0.8
CRVS				*e*		15 49 10.0	
PLOR	Plostina	147.42	328	⇑*i*P	PKPbc	15 49 06.6	0.0
PLOR	Plostina	147.42	328	⇑PKP2	PKPbc	15 49 06.6	0.0
TIRR	Tirgusor	147.42	324	⇓*i*P	PKPbc	15 49 06.7	+0.1
TIRR	Tirgusor	147.42	324	⇓PKP2	PKPbc	15 49 06.7	+0.1
TIRR	Tirgusor	147.42	324	*e*PKPbc	PKPbc	15 49 06.3	-0.2
HARR	Harsova	147.54	325	⇑*i*P	PKPbc	15 49 07.3	+0.5
HARR	Harsova	147.54	325	⇑PKP2	PKPbc	15 49 07.3	+0.5
BMR	Baia Mare	147.54	333	⇓*i*P	PKPbc	15 49 07.4	+0.6
BMR	Baia Mare	147.54	333	⇓PKP2	PKPbc	15 49 07.4	+0.6
LPW	Lampeter	147.60	7	*e*P	PKPbc	15 49 06.1	-0.6
ARCR	ARCALIA	147.62	331	⇑*i*P	PKPbc	15 49 07.9	+0.9
CLL	Collm	147.69	347	*e*PKPdf	PKPdf	15 49 04.0	+0.3
CLL				⇓*i*PKPbc	PKPbc	15 49 06.9	-0.1
	comp=Z,121nm,0.8s						
CLL				⇑*i*PKPab	PKPab	15 49 10.6	0.0
	comp=Z,78nm,0.8s						
CLL				*e*pPKPab	pPKPab	15 50 56.0	+11
CLL	Collm	147.69	347	⇓*e*PKIKP	PKPdf	15 49 04.0	+0.3
CLL				*i*		15 49 10.6	
CLL				pmax	pmax		
	comp=Z,121nm,0.8s						
CLL				pmax	pmax		
	comp=Z,78nm,0.8s						
OKC	Ostrava-Krasne	147.72	341	⇑*e*PKP	PKPbc	15 49 07.2	0.0
OKC				*e*PKPab	PKPab	15 49 11.2	+0.5
OKC	Ostrava-Krasne	147.72	341	*e*PKP2	PKPbc	15 49 07.2	0.0
UPC	Upice	147.73	344	⇑*e*PKP	PKPbc	15 49 08.5	+1.3
MANR	Mangalia	147.73	323	⇑*i*P	PKPbc	15 49 08.1	+0.7
DPC	Dobruska-Polom	147.79	343	*e*PKPDF	PKPdf	15 49 04.5	+0.5
DPC				⇑*e*PKP	PKPbc	15 49 07.9	+0.5
DPC				*e*PKPab	PKPab	15 49 11.8	+0.7
DPC	Dobruska-Polom	147.79	343	*e*PKIKP	PKPdf	15 49 04.5	+0.5
DPC				*e*		15 49 11.8	
MCH1	Michaelchurch	147.83	6	*e*P	PKPbc	15 49 06.6	-0.8
LANS	Liptovska Anna	147.88	339	*e*PKP2	PKPbc	15 49 09.1	+1.4
LANS	Liptovska Anna	147.88	339	*e*PKP	PKPbc	15 49 09.1	+1.4
MMAI	Mount Meron Ar	147.88	301	PKPbc	PKPbc	15 49 08.8	+0.5
	comp=Z,56nm,0.6s,baz=74,slow=6.2,SNR=92						
BRG	Berggiesshubel	147.90	346	*e*PKP	PKPdf	15 49 04.5	+0.4
	comp=Z,10nm,1.1s						
BRG				*i*		15 49 08.2	
	comp=Z,67nm,0.9s						
BRG				*i*		15 49 11.1	
	comp=Z,68nm,0.8s						
BRG				*e*pPKP	pPKPdf	15 50 37.4	-4.4
	comp=Z,6.2nm,1.0s						
BRG				*e*SKP		15 52 05.7	
	comp=Z,2.4nm,0.6s						
BRG				*e*PP	PP	15 52 40.9	+2.6
	comp=Z,3.3nm,0.8s						
BRG	Berggiesshubel	147.90	346	*e*PKIKP	PKPdf	15 49 04.5	+0.4
BRG				*i*		15 49 11.1	
BRG				*e*		15 50 37.4	
BRG				*e*		15 52 40.9	
BRG				pmax	pmax		
	comp=Z,10.0nm,1.1s						
BRG				pmax	pmax		
	comp=Z,67nm,1.0s						
BRG				pmax	pmax		
	comp=Z,68nm,0.8s						
BRG				pmax	pmax		
	comp=Z,6.0nm,1.0s						
BRG				pmax	pmax		
	comp=N,2.0nm,0.6s						
BRG				pmax	pmax		
	comp=Z,3.0nm,0.8s						
KRLC	Kraliky	147.91	342	*e*PKPDF	PKPdf	15 49 04.8	+0.6
KRLC				⇑*e*PKP	PKPbc	15 49 07.9	+0.2
KRLC	Kraliky	147.91	342	*e*PKIKP	PKPdf	15 49 04.8	+0.6
WTSB	Winterswijk	147.95	355	*e*PKPdf	PKPdf	15 49 04.6	+0.5
WTSB				*e*PKPbc	PKPbc	15 49 07.5	-0.1
	comp=Z,9.0nm,0.5s						
WTSB				*e*pPKPab	PKPab	15 49 11.5	0.0
	comp=Z,82nm,0.7s						
MORC	Moravsky Berou	147.96	341	⇓*i*P	PKPbc	15 49 08.6	+0.7
MORC	Moravsky Berou	147.96	341	⇓PKP2	PKPbc	15 49 08.6	+0.7
MORC	Moravsky Berou	147.96	341	*e*PKPbc	PKPbc	15 49 08.2	+0.4
ISR	Istrita	147.98	327	⇑*i*P	PKPbc	15 49 07.1	-1.0
ISR	Istrita	147.98	327	⇑PKIKP	PKPbc	15 49 07.1	-1.0
MSAB	Monastry St. A	147.98	324	⇑*i*P	PKPbc	15 49 08.4	+0.4
MONM	Monmouth	148.01	6	*e*P	PKPbc	15 49 07.2	-0.6
MLR	Muntele Rosu	148.02	328	⇑*i*P	PKPbc	15 49 08.1	-0.2
MLR	Muntele Rosu	148.02	328	⇑PKP2	PKPbc	15 49 08.1	-0.2
MLR	Muntele Rosu	148.02	328	*e*PKPbc	PKPbc	15 49 08.1	-0.2
KECS	Kecovo	148.09	337	*e*PKP2	PKPbc	15 49 08.8	+0.6
KECS	Kecovo	148.09	337	*e*PKP	PKPbc	15 49 08.8	+0.6
KECS				*e*		15 49 12.9	
CJR	Cluj-Napoca	148.24	332	⇑*i*P	PKPbc	15 49 09.3	+0.6
CJR	Cluj-Napoca	148.24	332	⇑PKP2	PKPbc	15 49 09.3	+0.6
SECR		148.28	327	⇓*i*P	PKPbc	15 49 09.2	+0.4
SKP1	Kophill	148.28	4	*e*P	PKPbc	15 49 07.3	-1.3
VOIR		148.50	329	⇑*i*P	PKPbc	15 49 09.7	+0.3
VOIR		148.50	329	⇑PKP2	PKPbc	15 49 09.7	+0.3
DRGR		148.56	333	⇑*i*P	PKPbc	15 49 09.8	+0.3
DRGR		148.56	333	⇑PKP2	PKPbc	15 49 09.8	+0.3
PRU	Pruhonice	148.59	345	⇑*e*PKP	PKPbc	15 49 09.6	+0.2
PRU				*e*PKPAB	PKPab	15 49 14.9	+0.6
PRU	Pruhonice	148.59	345	*e*PKP2	PKPbc	15 49 09.6	+0.2
GOPC	GO Pecny, Ondr	148.59	345	⇑*e*PKP	PKPbc	15 49 09.6	+0.2
GOPC				*e*PKPAB	PKPab	15 49 14.8	+0.5
MTUR	Matau	148.65	328	⇑*i*P	PKPab	15 49 12.7	-2.1
MTUR	Matau	148.65	328	⇑PKP2	PKPab	15 49 12.7	-2.1
VRAC	Vranov	148.65	342	⇑*i*P	PKPbc	15 49 10.5	+0.9
VRAC	Vranov	148.65	342	⇑PKP2	PKPbc	15 49 10.5	+0.9
VYHS	Vyhne	148.66	339	*e*PKP2	PKPbc	15 49 10.4	+0.8
VYHS	Vyhne	148.66	339	*e*PKP	PKPbc	15 49 10.4	+0.8
VYHS				*e*		15 49 15.5	
ARR	Arges	148.76	329	⇑*i*P	PKPbc	15 49 11.3	+1.2
PSZ	Piszkesteto	148.78	337	⇑*i*P	PKPbc	15 49 10.4	+0.4
PSZ	Piszkesteto	148.78	337	*e*PKP2	PKPbc	15 49 09.8	-0.3
PSZ	Piszkesteto	148.78	337	*e*PKPbc	PKPbc	15 49 09.8	-0.3
PRD	Provadia	148.79	323	P	PKPbc	15 49 10.3	+0.2
NKC	Novy Kostel	148.83	347	*e*PKPDF	PKPdf	15 49 06.2	+0.6
NKC				⇑*e*PKP	PKPbc	15 49 10.3	+0.3
NKC				*e*PKPAB	PKPab	15 49 15.6	+0.3
CSS	Mathiatis	148.93	305	P	PKPbc	15 49 10.1	-0.6
CSS	Mathiatis	148.93	305	*e*PKPbc	PKPbc	15 49 09.8	-1.0
GOLR		148.97	328	⇑*i*P	PKPbc	15 49 11.6	+1.1
TREC	Trest	148.98	343	⇑*e*PKP	PKPbc	15 49 10.5	+0.1
TREC				*e*PKPAB	PKPab	15 49 16.0	+0.1
TREC	Trest	148.98	343	*e*PKP2	PKPbc	15 49 10.5	+0.1
EIL	Elat	149.01	294	PKPbc	PKPbc	15 49 11.3	+0.2
	comp=Z,30nm,0.7s,baz=359,slow=4.1,SNR=20						
SMOL	Smolenice	149.11	340	*e*PKP2	PKPbc	15 49 12.0	+1.3
SMOL	Smolenice	149.11	340	*e*PKP	PKPbc	15 49 12.0	+1.3
SMOL				*e*		15 49 17.6	
LOT	Lotru	149.11	330	⇑*i*P	PKPbc	15 49 10.7	-0.3
DEV	Deva	149.18	331	⇓*i*P	PKPbc	15 49 11.8	+0.8
DEV	Deva	149.18	331	⇓PKP2	PKPbc	15 49 11.8	+0.8
HUMR	Humele	149.19	328	⇑*i*P	PKPbc	15 49 10.8	-0.2
BEBN	Eben Emael	149.20	356	PKPbc	PKPbc	15 49 11.1	+0.3
BEBN				PKPab	PKPab	15 49 16.8	+0.1
HGN	Heimansgroeve	149.21	356	*e*PKPbc	PKPbc	15 49 11.3	+0.5
	comp=Z,42nm,0.9s						
HGN				*e*pPKPab	PKPab	15 49 16.2	-0.6
	comp=Z,62nm,0.7s						
DYA	Yadsworthy	149.26	8	*e*PKPbc	PKPbc	15 49 10.8	-0.2
DYA				*e*PKPab	PKPab	15 49 16.9	-0.1
MEM	Membach	149.36	355	PKPbc	PKPbc	15 49 11.1	-0.1
MEM				PKPab	PKPab	15 49 17.8	+0.4
SIRR	Siria	149.42	333	⇑*i*P	PKPbc	15 49 12.2	+0.6
SZH	Strazhica	149.56	325	P	PKPbc	15 49 11.5	-0.5
SNF	Seneffe	149.56	358	PKPbc	PKPbc	15 49 11.7	0.0
SNF				PKPab	PKPab	15 49 18.3	+0.1
GRFO	Grafenberg	149.58	349	*e*PKHKP	PKPbc	15 49 12.1	+0.2
GRFO	Grafenberg	149.58	349	*e*PKPbc	PKPbc	15 49 12.1	+0.2
BCLA	Clavier	149.60	356	PKPbc	PKPbc	15 49 11.3	-0.5
BCLA				PKPab	PKPab	15 49 18.1	-0.3
KHC	Kasperske Hory	149.61	345	*e*PKPDF	PKPdf	15 49 07.3	+0.4
KHC				⇑*e*PKP	PKPbc	15 49 12.2	+0.2
KHC				*e*PKPAB	PKPab	15 49 19.0	+0.4
KHC				*e*pPKP	pPKPdf	15 50 56.7	+12
KHC	Kasperske Hory	149.61	345	*e*PKIKP	PKPdf	15 49 06.7	-0.2
KHC				*e*		15 49 19.1	
KHC	Kasperske Hory	149.61	345	*e*PKPdf	PKPdf	15 49 06.7	-0.2
KHC				*e*PKPbc	PKPbc	15 49 12.1	+0.2
KHC				*e*PKPab	PKPab	15 49 19.1	+0.4
ISP	Isparta	149.82	312	⇓*i*P	PKPbc	15 49 11.9	-1.0
ISP	Isparta	149.82	312	*e*PKHKP	PKPbc	15 49 11.5	-1.4
ISP	Isparta	149.82	312	*e*PKPbc	PKPbc	15 49 11.5	-1.4
GEC2	GERESS Array S	149.85	345	*e*PKHKP	PKPbc	15 49 12.6	-0.1
GEC2	GERESS Array S	149.85	345	*e*PKPbc	PKPbc	15 49 12.6	-0.1
GERES	GERESS Array B	149.85	345	PKP	PKPdf	15 49 08.7	+1.3
	comp=Z,28nm,0.6s,baz=152,slow=3.8,SNR=74						
GERES				PKPbc	PKPbc	15 49 12.6	-0.1
	comp=Z,43nm,0.8s,baz=29,slow=3.0,SNR=168						
GEA0	GERESS Array S	149.86	345	*e*PKPbc	PKPbc	15 49 12.6	-0.1
PVL	Pavlikeni	149.92	325	P	PKPbc	15 49 13.0	+0.2
BZS	Buzias	149.96	332	⇑*i*P	PKPbc	15 49 13.2	+0.4
DOU	Dourbes	149.96	357	PKPbc	PKPbc	15 49 12.6	-0.1
DOU				PKPab	PKPab	15 49 19.9	0.0
SRE	Strehaia	149.96	330	⇓*i*P	PKPbc	15 49 13.9	+1.0
SRE	Strehaia	149.96	330	⇓PKP2	PKPbc	15 49 13.9	+1.0
CONA	Conrad Observa	150.11	342	*i* PKiKP	PKiKP	15 49 14.2	+0.2
	comp=Z,50nm,0.6s,SNR=32						
WLF	Walferdange	150.29	355	PKPbc	PKPbc	15 49 14.3	+0.8
WLF	Walferdange	150.29	355	*e*PKIKP	PKPbc	15 49 14.0	+0.5
WLF	Walferdange	150.29	355	*e*PKPbc	PKPbc	15 49 14.0	+0.5
BANR	Banloc	150.35	333	⇑*i*P	PKPbc	15 49 15.0	+1.3
MDVR	Moldovita	150.56	331	⇑*i*P	PKPbc	15 49 14.5	+0.1
MOA	Molln	150.63	344	*i* PKiKP	PKPbc	15 49 14.4	0.0
	comp=Z,19nm,0.6s,SNR=12						
PKSM	Moragy	150.67	337	⇑*i*P	PKPbc	15 49 14.7	+0.2
PKSM	Moragy	150.67	337	⇑PKIKP	PKPbc	15 49 14.7	+0.2
JSA	Saint Aubin	150.69	6	*e*P	PKPbc	15 49 13.7	-0.7
KULA	Kula-Manisa	150.75	315	P	PKPbc	15 49 14.5	-0.6
LANF	Langenberg	150.80	353	PKP	PKPdf	15 49 09.0	+0.3
STU	Stuttgart	150.81	351	*e*PKIKP	PKPbc	15 49 15.3	+0.5
STU	Stuttgart	150.81	351	*e*PKPbc	PKPbc	15 49 15.3	+0.5
ARSA	Arzberg	150.82	341	*i* PKiKP	PKPbc	15 49 15.0	+0.1
	SNR=8.2						
KDZ	Kurdzhali	150.91	323	P	PKPbc	15 49 15.0	-0.2
ALN	Alexandroupoli	151.03	321	P	PKPbc	15 49 13.1	-2.4
BFO	Black Forest	151.37	352	*e*PKIKP	PKPbc	15 49 15.9	-0.2
BFO	Black Forest	151.37	352	*e*PKPbc	PKPbc	15 49 15.9	-0.2
WLS	Welschbruch	151.41	353	PKP	PKPdf	15 49 10.8	+1.1
SOKA	Soboth	151.48	342	*i* PKiKP	PKPbc	15 49 16.3	-0.2
	comp=Z,40nm,1.1s,SNR=16						
PERS	Pernice	151.49	341	*i* PKPbc	PKPbc	15 49 16.0	-0.5
PERS				*e*PKPab	PKPab	15 49 26.4	-0.2
KBA	Koelnbreinsper	151.58	344	*i* PKiKP	PKPbc	15 49 16.4	-0.4
	comp=Z,37nm,0.9s,SNR=17						
SMTH	Samothraki Isl	151.60	321	P	PKPbc	15 49 15.6	-1.2
SMTH	Samothraki Isl	151.60	321	*e*PKPbc	PKPbc	15 49 15.6	-1.2
ECH	Echery	151.63	353	PKP	PKPdf	15 49 10.0	0.0
WATA	Waldviertler	151.76	347	*i* PKiKP	PKPbc	15 49 16.8	-0.4
	comp=Z,54nm,1.1s,SNR=10.0						
OBKA	Obir	151.78	342	*i* PKPbc	PKPbc	15 49 16.5	-0.7
	comp=Z,23nm,1.4s,SNR=5.6						
RETA	Reutte	151.78	348	*i* PKiKP	PKPbc	15 49 16.9	-0.2
	comp=Z,35nm,1.4s,SNR=10						
WTTA	Wattenberg	151.81	347	*i* PKiKP	PKPbc	15 49 17.1	-0.2
	comp=Z,46nm,0.6s,SNR=16						
MOTA	Moosalm	151.85	347	*i* PKiKP	PKiKP	15 49 18.5	+0.9
	comp=Z,31nm,0.8s,SNR=14						
KAVA	Kavala	151.86	323	P	PKPbc	15 49 16.3	-1.1
KAVA	Kavala	151.86	323	*e*PKPbc	PKPbc	15 49 16.3	-1.1
MMB	Musomiste	151.90	325	P	PKPbc	15 49 16.4	-1.1
MYKA	Terra Mystica	151.92	343	*i* PKPbc	PKPbc	15 49 16.8	-0.6
	comp=Z,17nm,0.5s,SNR=9.6						
NVR	Nevrokopi	151.99	324	P	PKPbc	15 49 16.4	-1.3
MOF	Molkenrain	151.99	353	PKP	PKPdf	15 49 10.9	+0.2
ABTA	Abfaltersbach	152.10	345	*i* PKPbc	PKPbc	15 49 17.2	-0.7
	comp=Z,75nm,1.0s,SNR=14						
DAVA	Damuels	152.14	349	*i* PKiKP	PKiKP	15 49 18.3	+0.1
	comp=Z,60nm,1.3s,SNR=13						
LJU	Ljubljana	152.20	342	*i* PKPdf	PKPdf	15 49 11.3	+0.4
LJU				*i* PKPbc	PKPbc	15 49 18.1	+0.1
LJU				*i* PKPab	PKPab	15 49 29.3	-0.2
FETA	Feichten	152.24	348	*i* PKiKP	PKPbc	15 49 18.2	-0.1
	comp=Z,28nm,0.8s						
SRS	Serrai	152.29	324	P	PKPab	15 49 28.1	-2.0
SRS	Serrai	152.29	324	*e*PKPab	PKPab	15 49 28.1	-2.0
BLY	Banja Luka	152.46	337	⇓*i*P	PKPbc	15 49 19.0	+0.4
BOJS	Bojanci	152.47	340	*e*PKPdf	PKPdf	15 49 11.5	+0.2
BOJS				*i* PKPbc	PKiKP	15 49 18.9	+0.1
BOJS				*i* PKPab	PKPab	15 49 30.2	-0.3
LOMF	Lomont	152.52	353	PKP	PKPdf	15 49 11.6	+0.2
OUR	Ouranopolis	152.60	322	P	PKPab	15 49 31.5	+0.2
OUR	Ouranopolis	152.60	322	*e*PKP2	PKPab	15 49 31.5	+0.2
OUR	Ouranopolis	152.60	322	*e*PKPab	PKPab	15 49 31.5	+0.2
SOH	Sokhos	152.63	324	P	PKPab	15 49 31.4	-0.1
SOH	Sokhos	152.63	324	*e*PKP2	PKPab	15 49 31.4	-0.1
SOH	Sokhos	152.63	324	*e*PKPab	PKPab	15 49 31.4	-0.1
KNT	Kendrikon	152.64	325	P	PKPab	15 49 28.4	-3.1
VAY	Valandovo	152.71	325	*i* PKP	PKPbc	15 49 18.4	-0.8
FUORN	Ofenpass-Fuorn	152.71	348	*e*PKPbc	PKPbc	15 49 19.9	+0.5
TRI	Trieste	152.73	342	*e*PKIKP	PKPbc	15 49 18.8	-0.3
TRI				*e*		15 49 30.7	
TRI	Trieste	152.73	342	*e*PKPbc	PKPbc	15 49 18.8	-0.3
TRI				*e*PKPab	PKPab	15 49 30.7	-1.0
SKO	Skopje	152.82	328	*i* PKP	PKPbc	15 49 19.4	-0.1
TUE	Stuetta	153.02	349	*e*PKPbc	PKPbc	15 49 20.5	+0.5
TUE				*e*PKPab	PKPab	15 49 33.0	-0.1
PAIG	Paliouri	153.04	322	P	PKPab	15 49 33.3	+0.1
PAIG	Paliouri	153.04	322	*e*PKP2	PKPab	15 49 33.3	+0.1
PAIG	Paliouri	153.04	322	*e*PKPab	PKPab	15 49 33.3	+0.1
SENIN	Lac Senin/Sane	153.44	352	*e*PKPbc	PKPbc	15 49 21.3	+0.4
SENIN				*e*PKPab	PKPab	15 49 34.0	-0.1
PDG	Podgorica	153.51	331	⇑P	PKPab	15 49 35.0	+0.1
PDG	Podgorica	153.51	331	P	PKPab	15 49 34.6	-0.5
BIA	Bitola	153.58	326	*e*PKP	PKPbc	15 49 22.3	+1.1
LIT	Litokhoron	153.60	324	P	PKPab	15 49 34.9	-0.8
LIT	Litokhoron	153.60	324	*e*PKP2	PKPab	15 49 34.9	-0.8
LIT	Litokhoron	153.60	324	*e*PKPab	PKPab	15 49 34.9	-0.8
FNA	Florina	153.72	326	P	PKPbc	15 49 19.3	-2.2
OHR	Ohrid	153.78	327	*i* PKP	PKPbc	15 49 21.3	-0.4
SANT	Santorini	154.05	314	⇓*i*P	PKPab	15 49 36.8	-0.9
SANT	Santorini	154.05	314	*e*PKPab	PKPab	15 49 36.3	-1.4
TIR	Tirane	154.07	329	⇑*i*P	PKPab	15 49 37.6	0.0
TIR	Tirane	154.07	329	*e*PKP2	PKPab	15 49 37.2	-0.4
TIR	Tirane	154.07	329	*e*PKPab	PKPab	15 49 37.2	-0.4
LAST	Lasithi	154.66	311	⇑*i*P	PKPbc	15 49 23.9	+0.1
SSB	Saint Sauveur	154.77	356	*e*PKIKP	PKPbc	15 49 24.1	+0.5
SSB				*e*		15 49 40.5	
SSB	Saint Sauveur	154.77	356	*e*PKPbc	PKPbc	15 49 24.1	+0.5
SSB				*e*PKPab	PKPab	15 49 40.5	0.0
ANX	Ano Chora	154.94	322	P	PKPab	15 49 24.1	-0.2
IDI	Anoyia	155.01	312	PKPab	PKPab	15 49 41.2	-0.7
	comp=Z,6.4nm,0.4s,baz=351,slow=14,SNR=6.2						
DSL	Palaion Diasel	155.04	324	P	PKPab	15 49 41.4	-0.5
DSL	Palaion Diasel	155.04	324	*e*PKPab	PKPab	15 49 41.4	-0.5
PDO	Prodromos	155.37	323	P	PKPab	15 49 43.0	-0.2
AQU	L'Aquila	155.88	340	*e*PKP2	PKPab	15 49 46.0	+0.7
AQU	L'Aquila	155.88	340	*e*PKPab	PKPab	15 49 46.0	+0.7
PBRG	Braganca	156.97	18	*e*PKPab	PKPab	15 49 51.2	+1.2
TIP	Timpagrande	157.25	330	⇑*i*P	PKPab	15 49 51.6	+0.2
TIP	Timpagrande	157.25	330	P	PKPab	15 49 49.7	-1.7
TIP	Timpagrande	157.25	330	*e*PKPdf	PKPdf	15 49 17.1	-1.0
TIP				*e*PKPab	PKPab	15 49 51.4	0.0
MVO	Moncorvo	157.47	19	*e*PKPab	PKPab	15 49 53.1	+0.8
PVIS	Viseu	157.60	21	*e*PKPab	PKPab	15 49 54.2	+1.4
PCAS	Casmilo, Conde	157.98	23	*e*PKPab	PKPab	15 49 55.6	+1.1
MTE	Manteigas	158.00	21	*e*PKPab	PKPab	15 49 55.9	+1.3
CEL	Celeste	158.39	330	*e*PKPab	PKPab	15 49 55.8	-0.5
PTOM	Tomar	158.40	23	*e*PKPab	PKPab	15 49 55.9	-0.3
PCBR	Castelo Branco	158.53	21	*e*PKPab	PKPab	15 49 57.7	+0.9
PMRV	Marv??o	158.93	21	*e*PKPab	PKPab	15 49 59.8	+1.2
PMTG	Montargil	158.95	23	*e*PKPab	PKPab	15 49 58.3	-0.3
PVAQ	Vaqueiros	160.59	25	*e*PKPab	PKPab	15 50 07.7	+1.8
PESTR	Estremoz	159.36	23	*e*PKPab	PKPab	15 50 01.4	+0.9
EVO	Evora	159.50	24	*e*PKPab	PKPab	15 50 02.4	+1.3
PNCL	Nicolau / Gran	159.66	25	*e*PKPab	PKPab	15 50 03.3	+1.5
ES19	SONSECA Array	159.68	14	*e*PKPab	PKPab	15 50 01.9	0.0
ESDC	Sonseca Array	159.69	14	PKPab	PKPab	15 50 02.6	+0.7
	comp=Z,6.3nm,0.8s,baz=345,slow=4.2,SNR=23						
ESLA	Sonseca Array	159.69	14	*e*PKPab	PKPab	15 50 02.2	+0.3
PBAR	Barrancos	160.17	22	*e*PKPab	PKPab	15 50 05.2	+1.2
PVAQ	Vaqueiros	160.59	25	*e*PKPab	PKPab	15 50 07.7	+1.8
KEST	Kesra	163.21	340	*e*PKPab	PKPab	15 50 17.8	+0.3
	comp=Z,19nm,0.8s,baz=331,slow=2.2,SNR=17						
KEST	Kesra	163.21	340	*e*PKPab	PKPab	15 50 17.6	+0.1
DBIC	Dimbokro	164.97	151	PKPab	PKPab	15 50 27.0	+1.3
	comp=Z,3.4nm,0.8s,baz=196,slow=7.1,SNR=3.6						
DBIC	Dimbokro	164.97	151	PKP2	PKPab	15 50 27.0	+1.3
DBIC				pmax	pmax		
	comp=Z,3.0nm,0.8s						
TOA0	Torodi Ar. Sit	173.12	175	*e*PKPdf	PKPdf	15 49 31.2	-0.6
TOA0				*e*PKPab	PKPab	15 51 02.6	+1.1
TORD	Torodi Ar. Bea	173.12	175	PKP	PKPdf	15 49 31.4	-0.5
	comp=Z,2.9nm,0.9s,baz=263,slow=0.7,SNR=13						
TORD				PKPab	PKPab	15 51 02.1	+0.6
	comp=Z,1.2nm,0.6s,baz=171,slow=3.8,SNR=6.4						
TORD				SKP		15 52 38.4	
	comp=Z,2.8nm,0.9s,baz=177,slow=3.4,SNR=5.4						
TORD				PP	PP	15 54 52.7	+0.5
	comp=Z,1.5nm,1.0s,baz=181,slow=5.9,SNR=3.6						

CASC 19 15:34:42.6±2.7, 8°64'N×83°32'W, h5km±19km, MD3.5, Costa Rica

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
TBS2		0.67	77	*i* P		Pb	15 34 57.4	+0.4
TBS2				*e*S		Sb	15 35 08.3	+1.6
BUS	Buena Vista	1.01	335	*e*P		Pg	15 35 01.7	-0.3
BUS				*e*S		Sb	15 35 16.1	-0.5
QCR	Quepos	1.14	313	*e*P		Pg	15 35 03.9	-0.7
QCR				*e*S		Sb	15 35 20.2	+0.2
URSC	Urasca	1.27	339	*e*P		Pg	15 35 05.8	-1.2
URSC				*e*S		Sn	15 35 24.9	+0.1

*ISCJB **19** 15:43:07.7±0.5, 31°22'N±0°05×49°24'E±0°03, h10km, mb3.7/7, Error ellipse: s-maj=7.5km s-min=4.1km az=5.2*

	comp=Z,2.1nm,0.5s,baz=208,slow=10,SNR=5.4						
AKASG	**Malin Array Be**	**24.45**	**328**	P	**P**	**15 48 28.2**	**-0.9**
	comp=Z,0.5nm,0.5s,baz=107,slow=6.9,SNR=5.4						
FINES	**FINESS Array B**	**33.74**	**340**	P	P	15 49 50.0	-1.6
	comp=Z,2.9nm,0.5s,baz=149,slow=8.3,SNR=7.7						
NOA	**NORSAR Array B**	**38.77**	**331**	P	P	15 50 32.5	-2.1
	comp=Z,0.6nm,0.6s,baz=122,slow=8.5,SNR=3.3						
CMAR	**Chiang Mai Arr**	**45.44**	**94**	P	**P**	**15 51 36.9**	**-0.6**
	comp=Z,0.3nm,0.7s,baz=283,slow=8.5,SNR=4.3						
KSRS	**Korea Array**	**63.39**	**61**	P	P	15 53 37.8	-2.1
	comp=Z,1.4nm,0.6s,baz=282,slow=6.1,SNR=7.8						
ILAR	**Eielson Array**	**83.38**	**7**	P	**P**	**15 55 35.9**	**-1.4**
	comp=Z,0.4nm,0.7s,baz=323,slow=4.5,SNR=5.7						
YKA	**Yellowknife Ar**	**85.62**	**353**	P	P	15 55 47.2	-1.4
	comp=Z,0.4nm,0.6s,baz=14,slow=5.4,SNR=10						

IDC ***19*** *15:46:54.2±3.9, 4°.69S×125°.98E, h433km±57km, mb2.8/2, mb1 3.1/6, mb1mx2.7/61, mbtmp3.8/6, Error ellipse: s-maj=75.6km s-min=30.9km az=62.0*

ISC 19 15:46:52.0±2.2, 4°.6S±0°.2×126°.3E±0°.1, h398km, n6, σ0s87/8, Banda Sea

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
BATI	**Baumata**	**6.17**	**205**	P	**Pn**	**15 48 27.4**	**+1.0**
BATI				S	**S**	**15 49 43.2**	**-0.2**
KAPI	**Kappang**	**6.51**	**266**	P	**P**	**15 48 30.2**	**-0.6**
	1.2nm,0.3s,baz=35,slow=12,SNR=4.0						
FITZ	**Fitzroy Crossi**	**13.46**	**183**	P	**P**	**15 49 47.6**	**-0.2**
	0.2nm,0.3s,baz=353,slow=8.0,SNR=1.8						
WRA	**Warramunga Arr**	**17.18**	**153**	P	**P**	**15 50 28.5**	**+0.5**
	0.5nm,0.3s,baz=334,slow=9.9,SNR=13						
WRA				S	**S**	**15 53 25.7**	**-1.3**
	0.0nm,0.3s,baz=326,slow=18,SNR=2.4						
ASAR	**Alice Springs**	**20.37**	**160**	P	**P**	**15 51 00.7**	**+0.7**
	0.9nm,0.5s,baz=347,slow=15,SNR=18						
STKA	**Stephens Creek**	**30.74**	**154**	P	**P**	**15 52 32.1**	**-0.2**
	0.5nm,0.3s,baz=332,slow=8.7,SNR=1.8						

ISCJB ***19*** *15:47:09.2±0.6, 26°.32N±0°.06×140°.6E±0°.1, h400km, mb3.4/17, Error ellipse: s-maj=16.9km s-min=8.6km az=177.0*

IDC ***19*** *15:47:10.8±1.0, 26°.36N×140°.60E, h399km±12km, mb3.2/17, mb1 3.3/20, mb1mx3.0/70, mbtmp4.0/20, Error ellipse: s-maj=25.0km s-min=9.1km az=82.0*

ISC 19 15:47:10.5±0.7, 26°.37N±0°.08×140°.7E±0°.2, h400km, n21, σ1s02/23, mb3.4/17, Bonin Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JCJ	**Chichijima**	**1.50**	**61**	P	**Pn**	**15 48 04.2**	**+0.6**
	9.1nm,0.3s,baz=279,slow=22,SNR=9.7						
JCJ				S	**S**	**15 48 43.4**	**-3.2**
JHJ	**Hachijo jima 2**	**6.77**	**353**	P	**P**	**15 48 52.9**	**+0.8**
	26nm,0.3s,baz=55,slow=23,SNR=7.1						
JHJ				S	**S**	**15 50 12.2**	**-1.8**
	12nm,0.3s,baz=143,slow=23,SNR=3.5						
KSRS	**Korea Array**	**15.48**	**319**	P	**P**	**15 50 26.7**	**-1.3**
	0.1nm,0.3s,baz=144,slow=9.7,SNR=2.9						
USRK	**Ussuriysk Ar.**	**19.14**	**341**	P	**P**	**15 51 08.0**	**+1.3**
	0.3nm,0.3s,baz=153,slow=10,SNR=5.2						
KLR	**Kul'dur**	**23.86**	**345**	P	**P**	**15 51 50.2**	**+0.5**
	0.7nm,0.5s,baz=150,slow=16,SNR=3.7						
SEY	**Seymchan**	**37.36**	**9**	P	**P**	**15 53 47.6**	**+1.2**
	0.9nm,0.6s,baz=86,slow=22,SNR=6.5						
CMAR	**Chiang Mai Arr**	**39.28**	**267**	P	**P**	**15 54 02.5**	**-0.3**
	0.4nm,0.5s,baz=68,slow=5.6,SNR=6.6						
WRA	**Warramunga Arr**	**46.45**	**188**	P	**P**	**15 54 59.7**	**+0.1**
	1.9nm,0.3s,baz=6.9,slow=7.9,SNR=100						
FITZ	**Fitzroy Crossi**	**46.57**	**200**	P	**P**	**15 55 00.7**	**+0.3**
	0.8nm,0.4s,baz=347,slow=6.5,SNR=6.1						
ZALV	**Zalesovo Beam**	**49.18**	**320**	P	**P**	**15 55 19.3**	**-0.4**
	0.4nm,0.3s,baz=89,slow=7.4,SNR=3.6						
MKAR	**Makanchi Array**	**49.93**	**310**	P	**P**	**15 55 25.6**	**+0.2**
	0.7nm,0.6s,baz=95,slow=8.2,SNR=6.2						
ASAR	**Alice Springs**	**50.18**	**188**	P	**P**	**15 55 27.5**	**-0.1**
	0.2nm,0.5s,baz=358,slow=4.9,SNR=11						
KURBB	**Kurchatov Arra**	**52.61**	**315**	P	**P**	**15 55 45.0**	**-0.1**
	1.3nm,0.5s,baz=90,slow=7.9,SNR=18						
NRIK	**Noril'sk**	**52.85**	**339**	P	**P**	**15 55 46.5**	**+0.1**
	0.9nm,0.3s,baz=108,slow=7.2,SNR=3.7						
BVAR	**Borovoye Array**	**57.69**	**318**	P	**P**	**15 56 20.9**	**+0.1**
	2.0nm,0.4s,baz=86,slow=6.9,SNR=13						
STKA	**Stephens Creek**	**57.93**	**179**	P	**P**	**15 56 22.6**	**0.0**
	0.7nm,0.4s,baz=3.0,slow=3.5,SNR=4.4						
AKTO	**Aktyubinsk**	**65.63**	**316**	P	**P**	**15 57 13.2**	**0.0**
	1.3nm,0.7s,baz=76,slow=11,SNR=4.3						
ARCES	**ARCESS Array B**	**73.79**	**341**	P	**P**	**15 58 02.7**	**+0.7**
	5.6nm,1.1s,baz=76,slow=8.6,SNR=8.8						
FINES	**FINESS Array B**	**78.01**	**333**	P	**P**	**15 58 25.6**	**-0.1**
	0.8nm,0.4s,baz=68,slow=4.7,SNR=13						
AKASG	**Malin Array Be**	**82.42**	**323**	P	**P**	**15 58 48.7**	**-0.4**
	0.2nm,0.3s,baz=51,slow=4.0,SNR=4.0						
NOA	**NORSAR Array B**	**83.79**	**338**	P	**P**	**15 58 55.4**	**-0.5**
	0.3nm,0.4s,baz=37,slow=2.1,SNR=2.4						

JMA 19 15:48:29.8±0.1, 38°.29N×141°.89E, h66km±1km, M3.6, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**0.46**	**291**	P	Pn	15 48 42.0	+0.2
JIO				S	Sn	15 48 50.5	-0.1
OFUJ	**Ofunato**	**0.81**	**348**	P	Pn	15 48 45.8	+0.1
OFUJ				S	Sn	15 48 57.3	-0.1
JMK	**Ichinoseki**	**0.84**	**322**	P	Pn	15 48 46.5	+0.4
JMK				S	Sn	15 48 58.5	+0.3
JMM	**Marumori**	**0.96**	**244**	P	Pn	15 48 47.4	-0.2
JMM				S	Sn	15 49 00.4	-0.4
JOU	**Okura**	**0.97**	**275**	P	Pn	15 48 47.9	+0.2
JOU				S	Sn	15 49 01.2	+0.2
JFK	**Kawauchi**	**1.22**	**221**	P	Pn	15 48 51.0	0.0
JFK				S	Sn	15 49 06.7	-0.2
JOM	**Ohasama**	**1.27**	**339**	P	Pn	15 48 51.8	+0.2
JOM				S	Sn	15 49 08.3	+0.4
JYK	**Kaneyama**	**1.35**	**298**	P	Pn	15 48 53.0	+0.3
JYK				S	Sn	15 49 10.6	+0.7
JYS	**Shirataka**	**1.44**	**268**	P	Pn	15 48 54.2	+0.4
JYS				S	Sn	15 49 12.9	+1.0
JFT	**Otama**	**1.45**	**238**	P	Pn	15 48 54.4	+0.4
JFT				S	Sn	15 49 12.6	+0.4
JRG	**Rokugo**	**1.48**	**319**	P	Pn	15 48 54.8	+0.5
JRG				S	Sn	15 49 14.3	+1.5
MAT	**Matsushiro**	**3.41**	**240**	P	Pn	15 49 22.1	+1.5

IDC 19 15:49:02.6±1.6, 37°.29N×143°.94E, h0km, mb3.6/4, mb1 3.8/5, mb1mx3.4/58, mbtmp3.6/5, ML3.6/1, MS2.6/1, Ms1 2.6/1, ms1mx2.1/40, Error ellipse: s-maj=35.8km s-min=33.3km az=111.0, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MJAR	**Matsushiro Arr**	**4.65**	**262**	Pn	Pn	15 50 13.1	-1.0
	2.9nm,0.3s,baz=83,slow=16,SNR=9.3						
MJAR				LR	LR	15 52 16.5	
	comp=Z,74nm,19.4s,baz=90,slow=42						
SONM	**Songino Array**	**29.32**	**303**	P	P	15 55 08.5	+1.5
	0.7nm,0.6s,baz=86,slow=12,SNR=2.4						
KURBB	**Kurchatov Arra**	**47.43**	**308**	P	P	15 57 37.6	-1.1
	0.9nm,0.7s,baz=83,slow=8.0,SNR=5.6						
ILAR	**Eielson Array**	**48.20**	**33**	P	P	15 57 44.2	-0.3
	0.1nm,0.5s,baz=259,slow=7.3,SNR=1.5						
WRA	**Warramunga Arr**	**57.64**	**191**	P	P	15 58 54.8	+0.1
	0.6nm,0.8s,baz=6.6,slow=7.4,SNR=3.6						

MEX 19 15:50:33.6±0.3, 14°.21N×92°.01W, h20km±999km, MD3.6, Near coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PCIG		**1.89**	**322**	*e*P	Pn	15 51 02.1	-2.7
PCIG				*e*S	Sn	15 51 24.0	-4.0

IDC 19 15:57:21.6±8.4, 5°.40S×150°.95E, h79km±59km, mb3.6/3, mb1 3.8/4, mb1mx3.3/37, mbtmp4.0/4, ML2.3/1, MS2.9/2, Ms1 2.9/2, ms1mx2.5/26, Error ellipse: s-maj=103.5km s-min=56.5km az=124.0, New Britain region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PMG	**Port Moresby**	**5.48**	**223**	P	Pn	15 58 40.9	+0.1
	6.6nm,0.3s,baz=347,slow=3.3,SNR=12						
PMG				S	Sn	15 59 43.5	+1.1
	1.9nm,0.3s,baz=292,slow=21,SNR=2.0						
PMG				LR	LR	16 01 03.8	
	comp=Z,76nm,19.4s,baz=313,slow=40						
WRA	**Warramunga Arr**	**21.68**	**227**	P	P	16 02 05.5	-0.7
	2.1nm,0.6s,baz=51,slow=10,SNR=13						
ASAR	**Alice Springs**	**24.49**	**220**	P	P	16 02 33.5	-0.2
	1.2nm,0.5s,baz=57,slow=8.7,SNR=14						
FITZ	**Fitzroy Crossi**	**27.76**	**241**	P	P	16 03 03.7	+0.5
	2.3nm,0.8s,baz=57,slow=9.7,SNR=2.5						
JCJ	**Chichijima**	**33.40**	**346**	LR	LR	16 16 36.2	
	comp=Z,26nm,18.6s,baz=123,slow=35						
TORD	**Torodi Ar. Bea**	**148.72**	**286**	PKPbc	PKPbc	16 17 00.6	-0.4
	0.4nm,0.6s,baz=95,slow=3.1,SNR=3.1						

ISCJB ***19*** *15:58:48.0±0.5, 7°.05S±0°.07×105°.67E±0°.05, h100km, mb4.1/14, Error ellipse: s-maj=11.1km s-min=4.1km az=35.2*

NEIC ***19*** *15:58:48.2±1.0, 6°.82S×105°.67E, h108km±11km, mb4.2/2, Error ellipse: s-maj=25.0km s-min=9.7km az=46.0*

DJA ***19*** *15:58:50.3±0.3, 7°.5S×105°.6E±°, h85km±5km, M4.6/24, mB5.2/2, mb4.8/5, MLv4.4/24, Mw(mB)4.6/2*

IDC ***19*** *15:58:54.3±2.4, 6°.58S×105°.89E, h156km±15km, mb3.8/12, mb1 3.9/12, mb1mx3.5/46, mbtmp4.2/12, Error ellipse: s-maj=41.2km s-min=12.2km az=53.0*

ISC 19 15:58:48.1±0.6, 6°.87S±0°.06×105°.69E±0°.05, h100km, n49, σ2s57/46, mb4.1/14, Sunda Strait

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CGJI	**Cibinong**	**0.25**	**2**	P	**Pn**	**15 59 05.4**	**+2.8**
CGJI				S	**Sn**	**15 59 17.0**	**+3.7**
SBJI	**Serang**	**0.86**	**31**	P	**Pn**	**15 59 09.0**	**+1.8**
SKJI	**Sukabumi**	**0.88**	**99**	P	**Pn**	**15 59 08.8**	**+1.6**
CBJI	**Citeko**	**1.24**	**69**	P	**Pn**	**15 59 13.2**	**+1.9**
CNJI	**Cibinong**	**1.50**	**107**	P	**Pn**	**15 59 15.1**	**+0.7**
CNJI				S	**Sn**	**15 59 33.8**	**-0.5**
BLSI	**Bandar Lampung**	**1.56**	**344**	P	**Sn**	**15 59 32.0**	**-3.6**
KASI	**Kota Agung**	**1.78**	**318**	P	**Pn**	**15 59 21.6**	**+3.6**
KASI				S	**Sn**	**15 59 43.3**	**+2.6**
LEM	**Lembang**	**1.92**	**89**	P	Pn	15 59 27.6	+7.8
	301nm,0.3s,baz=326,slow=4.1,SNR=280						
LEM				S	**Sn**	**15 59 52.2**	**+8.2**
	88nm,0.3s,baz=267,slow=22,SNR=6.3						
LEM	**Lembang**	**1.92**	**89**	P	Pn	15 59 27.0	+7.2
KLI	**Kotabumi**	**2.16**	**337**	P	**Pn**	**15 59 25.7**	**+2.9**
CISI	**Cisompet, Garu**	**2.22**	**108**	P	**Pn**	**15 59 24.4**	**+0.8**
CISI	**Cisompet, Garu**	**2.22**	**108**	*e*Pn	**Pn**	**15 59 24.2**	**+0.5**
CISI				*e*Sn	**Sn**	**15 59 47.7**	**-3.2**
LWLI	**Liwa**	**2.45**	**319**	P	**Pn**	**15 59 30.2**	**+3.5**
JCJI	**Jatiwangi**	**2.59**	**82**	P	**Pn**	**15 59 28.9**	**+0.4**
MDSI	**Maura Dua**	**2.80**	**328**	P	**Pn**	**15 59 34.2**	**+2.9**
XMIS	**Christmas Isla**	**3.59**	**181**	*e*Pn	**Pn**	**15 59 41.5**	**-0.3**
MNAI	**Manna**	**3.69**	**312**	P	**Pn**	**15 59 46.1**	**+2.9**
MNAI	**Manna**	**3.69**	**312**	*e*Pn	**Pn**	**15 59 46.0**	**+2.9**
MNAI				*e*Sn	**Sn**	**16 00 27.1**	**+1.3**
LHSI	**Lahat**	**3.71**	**324**	P	**Pn**	**15 59 46.8**	**+3.3**
PPBI	**Pangkal Pinang**	**4.70**	**6**	P	**Pn**	**15 59 58.7**	**+1.9**
UGM	**Wanagama**	**4.91**	**102**	P	**Pn**	**16 00 01.1**	**+1.4**
MASI	**Maura Aman, Be**	**5.05**	**317**	P	**Pn**	**16 00 04.7**	**+3.1**
	267nm,0.7s,9μm1.0nm						
UWJI	**Ujung Watu**	**5.25**	**85**	P	**Pn**	**16 00 05.6**	**+1.4**
	71nm,0.7s,701nm0.3nm						
PWJI	**Pagerwojo**	**6.17**	**101**	P	**Pn**	**16 00 18.0**	**+1.2**
	47nm,0.8s,0.3nm						
ABJI	**Asem Bagus**	**8.53**	**97**	P	**Pn**	**16 00 52.2**	**+3.3**
GSI	**Gunungsitoli**	**11.46**	**315**	*e*Pn	Pn	16 01 25.4	-3.3
	32nm,0.4s						
GSI				*e*Sn	Sn	16 03 28.5	-6.5
MBWA	**Marble Bar**	**19.66**	**138**	*e*P	**Pn**	**16 03 16.4**	**+4.8**
CMAR	**Chiang Mai Arr**	**26.03**	**345**	P	**P**	**16 04 09.8**	**-2.3**
	0.5nm,0.7s,baz=183,slow=8.7,SNR=8.7						
H01W3	**Cape Leeuwin H**	**28.95**	**166**	T	T	16 35 17.9	
	baz=345,slow=76,SNR=11						
H01W1	**Cape Leeuwin H**	**28.96**	**166**	T	T	16 35 17.9	
	baz=345,slow=76,SNR=15						
H01W2	**Cape Leeuwin H**	**28.96**	**166**	T	T	16 35 19.7	
	baz=345,slow=76,SNR=21						
WRA	**Warramunga Arr**	**30.68**	**118**	P	**P**	**16 04 53.6**	**-0.1**
	2.0nm,0.8s,baz=335,slow=19,SNR=15						
WRAB	**Tennant Creek**	**30.69**	**118**	*e*P	**P**	**16 04 53.1**	**-0.6**
	2.2nm,0.6s						
ASAR	**Alice Springs**	**31.83**	**125**	P	**P**	**16 05 03.8**	**0.0**
	0.4nm,0.3s,baz=300,slow=7.9,SNR=20						
H08S2	**Diego Garcia H**	**32.93**	**267**	T	T	16 41 06.3	
	baz=91,slow=76,SNR=17						
H08S3	**Diego Garcia H**	**32.94**	**267**	T	T	16 41 14.0	
	baz=91,slow=76,SNR=12						
H08S1	**Diego Garcia H**	**32.95**	**267**	T	T	16 41 09.8	
	baz=91,slow=76,SNR=17						
PMG	**Port Moresby**	**41.12**	**96**	P	**P**	**16 06 22.2**	**-0.5**
	30nm,1.0s,baz=203,slow=3.0,SNR=12						
STKA	**Stephens Creek**	**41.70**	**131**	P	**P**	**16 06 28.4**	**+1.1**
	4.9nm,0.7s,baz=311,slow=8.0,SNR=24						
KSAR	**Wonju Array Be**	**48.72**	**24**	P	**P**	**16 07 21.4**	**-1.2**
KSRS	**Korea Array**	**48.74**	**24**	P	**P**	**16 07 21.4**	**-1.3**
	1.0nm,0.5s,baz=211,slow=7.3,SNR=6.3						
USRK	**Ussuriysk Ar.**	**56.10**	**23**	P	**P**	**16 08 14.1**	**-3.0**
	0.8nm,0.4s,baz=200,slow=6.2,SNR=4.2						
MKAR	**Makanchi Array**	**57.33**	**341**	P	**P**	**16 08 24.1**	**-1.6**
	1.8nm,0.4s,baz=149,slow=8.5,SNR=41						
ZALV	**Zalesovo Beam**	**63.09**	**346**	P	**P**	**16 09 02.8**	**-2.0**
	1.3nm,0.3s,baz=158,slow=5.9,SNR=9.6						
ABKAR	**Akbulak array**	**68.64**	**330**	*e*P	**P**	**16 09 39.5**	**-1.0**
	2.3nm,0.5s						
NRIK	**Noril'sk**	**77.07**	**353**	P	**P**	**16 10 28.6**	**-1.3**
	0.9nm,0.3s,baz=142,slow=5.1,SNR=4.2						
FINES	**FINESS Array B**	**91.04**	**332**	P	**P**	**16 11 41.4**	**+0.3**
	1.0nm,0.8s,baz=119,slow=6.7,SNR=4.7						
ARCES	**ARCESS Array B**	**92.96**	**340**	P	**P**	**16 11 49.6**	**-0.2**
	3.5nm,1.0s,baz=102,slow=5.2,SNR=6.6						
TXAR	**Lajitas Array**	**144.45**	**47**	PKP	**PKPab**	**16 18 12.2**	**+0.2**
	1.3nm,0.7s,baz=284,slow=1.0,SNR=11						

JMA 19 16:10:32.0±0.1, 38°.40N×141°.89E, h57km±1km, M3.6, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**0.43**	**277**	P	Pn	16 10 43.0	0.0
JIO				S	Sn	16 10 50.8	-0.1
OFUJ	**Ofunato**	**0.70**	**346**	P	Pn	16 10 46.0	-0.1
OFUJ				S	Sn	16 10 56.1	-0.3
JMK	**Ichinoseki**	**0.76**	**317**	P	Pn	16 10 47.1	+0.3
JMK				S	Sn	16 10 57.9	+0.2
JOU	**Okura**	**0.96**	**268**	P	Pn	16 10 49.6	+0.1
JOU				S	Sn	16 11 02.7	+0.3
JMM	**Marumori**	**1.02**	**239**	P	Pn	16 10 49.8	-0.3
JMM				S	Sn	16 11 03.0	-0.5
JOM	**Ohasama**	**1.17**	**337**	P	Pn	16 10 52.4	+0.2
JOM				S	Sn	16 11 07.7	+0.5
JYK	**Kaneyama**	**1.30**	**294**	P	Pn	16 10 54.4	+0.4
JYK				*e*S	Sn	16 11 11.1	+0.7
JFK	**Kawauchi**	**1.31**	**218**	P	Pn	16 10 54.0	-0.1
JFK				*e*S	Sn	16 11 10.3	-0.2
JRG	**Rokugo**	**1.40**	**316**	P	Pn	16 10 55.6	+0.4

WEL 19 16:18:48.0±0.3, 46°.38S×165°.47E, h12km, ML3.7/13, 3C-1D, Error ellipse: s-maj=3.1km s-min=3.0km az=0.0, Off west coast of South Island

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PYZ	**Puysegur Point**	**0.87**	**76**	⇑P*	Pg	16 19 04.1	-0.6
PYZ				S*	Sg	16 19 15.8	-0.3
PYZ				S*	Sb	16 19 16.0	-0.6
DCZ	**Deep Cove**	**1.49**	**53**	PN	Pn	16 19 11.4	-3.2
DCZ				AML	AML	16 19 35.0	
DCZ				AML	AML	16 19 37.3	
DCZ				AML	AML	16 19 37.3	
DCZ				AML	AML	16 19 40.9	
WHZ	**Wether Hill Ro**	**1.79**	**75**	⇓PN	Pn	16 19 18.0	-0.7
WHZ				SN	Sn	16 19 40.1	-1.3
WHZ				AML	AML	16 19 41.6	
APZ	**The Paps**	**1.79**	**105**	⇑PN	Pn	16 19 17.9	-0.9
APZ				AML	AML	16 19 40.6	
APZ				AML	AML	16 19 42.1	
MLZ	**Mavora Lakes**	**2.11**	**62**	PN	Pn	16 19 22.6	-0.6
MLZ				AML	AML	16 19 55.2	
MLZ				AML	AML	16 20 02.5	
MSZ	**Milford Sound**	**2.43**	**46**	PN	Pn	16 19 26.7	-0.8
MSZ				AML	AML	16 20 15.7	
MSZ				AML	AML	16 20 19.5	
SYZ	**Scrubby Hill**	**2.54**	**95**	PN	Pn	16 19 28.7	-0.3
SYZ				AML	AML	16 19 33.8	
SYZ				AML	AML	16 20 00.5	
SYZ				AML	AML	16 20 00.5	
SYZ				AML	AML	16 20 02.1	
EAZ	**Earnscleugh**	**2.92**	**68**	PN	Pn	16 19 34.2	-0.1
EAZ				AML	AML	16 20 15.8	
EAZ				AML	AML	16 20 21.3	
TUZ	**Tuapeka**	**2.92**	**83**	PN	Pn	16 19 33.7	-0.5
TUZ				AML	AML	16 20 08.9	
TUZ				AML	AML	16 20 08.9	
TUZ				AML	AML	16 20 09.1	
TUZ				AML	AML	16 20 09.1	
WKZ	**Wanaka**	**2.94**	**59**	PN	Pn	16 19 34.9	+0.4
WKZ				AML	AML	16 22 06.2	
JCZ	**Jackson Bay**	**3.29**	**47**	PN	Pn	16 19 40.0	+0.6
JCZ				AML	AML	16 20 34.3	
HHSZ	**Highcliff Hill**	**3.60**	**84**	PN	Pn	16 19 43.0	-0.6
ODZ	**Otahua Downs**	**3.87**	**72**	⇑PN	Pn	16 19 45.2	-2.0
ODZ				AML	AML	16 22 16.2	
LBZ	**Lake Benmore**	**3.88**	**61**	PN	Pn	16 19 46.4	-1.0
FOZ	**Fox Glacier**	**4.20**	**49**	PN	Pn	16 19 50.3	-1.5
FOZ				AML	AML	16 20 59.6	
FOZ				AML	AML	16 21 20.4	
RPZ	**Rata Peaks**	**4.77**	**58**	PN	Pn	16 19 57.7	-2.0
THZ	**Tophouse**	**7.07**	**52**	PN	Pn	16 20 30.6	-0.7
THZ				AML	AML	16 25 45.5	
MWZ	**Matawai**	**12.00**	**52**	PN	P	16 22 04.0	+12
CNGZ	**Carnagh Statio**	**12.27**	**55**	PN	P	16 22 04.0	+9.2
TWGZ	**Tauwhareparae**	**12.36**	**53**	PN	P	16 22 01.4	+5.5
TWGZ				SN		16 22 43.1	
HAZ	**Te Kaha**	**12.56**	**51**	PN	P	16 21 57.8	-0.2
PUZ	**Puketiti**	**12.59**	**53**	PN	P	16 21 58.2	-0.2
PUZ				SN		16 22 37.3	
PKGZ	**Pakihiroa**	**12.62**	**52**	PN	P	16 21 57.2	-1.6
WMGZ	**Waiomatatini S**	**12.86**	**53**	PN	Pn	16 21 55.8	+5.3
WMGZ				SN		16 22 33.5	

JMA 19 16:19:25.7, 36°.70N×140°.63E, h7km, M2.6, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JHO	**Hitachi**	**0.10**	**209**	P	Pg	16 19 28.0	0.0
JHO				S	Sg	16 19 29.7	+0.1
ONAJ	**Iwakimizuishiy**	**0.42**	**19**	P	Pg	16 19 34.0	+0.1
ONAJ				S	Sg	16 19 40.1	+0.6
JFK	**Kawauchi**	**0.69**	**16**	P	Pg	16 19 38.8	-0.3
JFK				S	Sg	16 19 48.1	0.0
JFT	**Otama**	**0.85**	**344**	S	Sg	16 19 53.2	+0.1
MAT	**Matsushiro**	**1.96**	**266**	P	Pg	16 20 02.6	-0.6
MAT				S	Sn	16 20 24.9	+0.8

IDC ***19*** *16:27:24.8±0.5, 34°.23N×89°.62E, h0km, mb4.6/27, mb1 4.7/31, mb1mx4.6/42, mbtmp4.6/31, ML3.8/4, MS3.9/33, Ms1 3.9/33, ms1mx3.8/55, Error ellipse: s-maj=15.2km s-min=11.3km az=33.0*

NEIC ***19*** *16:27:26.8±0.6, 34°.29N×89°.58E, h15km±3km, mb5.0/85, Error ellipse: s-maj=5.5km s-min=3.7km az=220.0*

ISCJB ***19*** *16:27:26.0±1.0, 34°.33N±0°.02×89°.55E±0°.02, h18km±7km, mb4.8/130, MS4.0/41, Error ellipse: s-maj=3.8km s-min=3.0km az=40.3*

GCMT ***19*** *16:27:26.8±0.2, 34°.33N×89°.72E, h16km, MW4.9/73, Moment Tensor Solution. s33,c42; s73,c131; Duration: 0 Moment tensor: Scale 10^16Nm; Mrr-2.26±.16; Mθθ-0.84±.09; Mϕϕ3.11±.11; Mrθ0.34±.32; Mϕθ1.38±.07; Mϕr0.32±.27; Best double couple: Mo2.95400×10^16 NP1:ϕs209.00000°, δ50.00000°, λ-74.00000°. NP2: ϕs5.00000°, δ42.00000°, λ-108.00000°. Principal axes: T 3.5720, Plg4.0000°, Azm288.0000°; N -1.2310, Plg12.0000°, Azm18.0000°; P -2.3360, Plg77.0000°, Azm180.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

MOS ***19*** *16:27:27.5±0.8, 34°.27N×89°.67E, h30km, mb5.1/58, MS4.0/20 Error ellipse: s-maj=7.0km s-min=4.2km az=117.2*

BJI ***19*** *16:27:28.3, 34°.30N×89°.80E, h10km, mb4.6/54, mB4.8/36, Ms4.8/67, Ms7 4.6/56*

ISC 19 16:27:28.1±0.5, 34°.36N±0°.04×89°.53E±0°.03, h17km±3km, h17km:pP-P,n393, σ1s70/411, mb4.9/129, MS4.0/42, 17C-21D, Xizang

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
LSA	**Lhasa**	**4.84**	**163**	Pn	**Pn**	**16 28 44.8**	**+4.3**
LSA				LR	LR		
	comp=N,2μm,6.2s						
LSA				LR	LR		
	comp=E,4μm,6.8s						
LSA				LR	LR		
	comp=Z,4μm,6.0s						
LSA	**Lhasa**	**4.84**	**163**	*e*P	**Pn**	**16 28 43.8**	**+3.3**
LSA	**Lhasa**	**4.84**	**163**	*e*Pn	**Pn**	**16 28 43.8**	**+3.3**
GUN	**Gumba**	**7.15**	**207**	*e*P	**Pn**	**16 29 13.2**	**+1.1**
	43nm,0.5s						
KKN	**Kakani**	**7.49**	**210**	*e*P	**Pn**	**16 29 17.4**	**

comp=Z,7.0nm,0.8s
KSH pmax pmax
comp=Z,130nm,4.5s
KSH LR LR
comp=N,2μm,8.4s
KSH LR LR
comp=E,1μm,7.7s
KSH LR LR
comp=Z,2μm,10.2s
CD2 Chengdu 12.47 102 P **Pn 16 30 26.3 +1.5**
CD2 sP sP 16 30 33.5
CD2 PP **P 16 30 37.5 +1.0**
CD2 S **Sn 16 32 48.3 +4.9**
CD2 SS **SnSn 16 32 57.8 +2.5**
CD2 pmax pmax
comp=Z,20nm,0.6s
CD2 pmax pmax
comp=Z,240nm,5.9s
CD2 LR LR
comp=Z,3μm,8.6s
CD2 LR LR
comp=Z,4μm,8.9s
AAA Alma-Ata 13.24 316 *e*P **Pn 16 30 39.6 +4.4**
AAA pmax pmax
comp=Z,400nm,4.1s
AAA MLR MLR
comp=Z,2μm,15.0s
MK01 Makanchi Array 13.56 338 *e*Pn **Pn 16 30 37.5 -1.9**
MKAR Makanchi Array 13.58 338 Pn **Pn 16 30 38.3 -1.5**
comp=Z,0.3nm,0.3s,baz=150,slow=14,SNR=24
MAKZ Makanchi 13.69 338 P **Pn 16 30 39.3 -2.0**
MAKZ pmax pmax
comp=Z,13nm,1.2s
MAKZ Makanchi 13.69 338 *e*Pn **Pn 16 30 38.7 -2.6**
TKM2 Tokmak 2 13.83 312 *e*P **Pn 16 30 44.8 +1.3**
TKM2 Tokmak 2 13.83 312 *e*Pn **Pn 16 30 44.8 +1.3**
AAK Ala-Archa 14.37 310 Pn **Pn 16 30 52.8 +2.0**
comp=Z,0.1nm,0.3s,baz=140,slow=14,SNR=12
AAK LR LR 16 38 00.1
comp=Z,231nm,21.7s,baz=106,slow=44
AAK Ala-Archa 14.37 310⇓ *i*P **Pn 16 30 52.5 +1.8**
AAK pmax pmax
comp=Z,27nm,1.3s
AAK Ala-Archa 14.37 310 *e*Pn **Pn 16 30 51.9 +1.1**
AAK Ala-Archa 14.37 310 Pn **Pn 16 30 52.6 +1.8**
SNR=29
AAK Ala-Archa 14.37 310 P **Pn 16 30 52.6 +1.8**
SNR=29
FRU Bishkek 14.40 310 *e*P **P 16 30 55.0 -2.8**
FRU pmax pmax
comp=Z,60nm,1.4s
KMI Kunming 14.69 125 P **Pn 16 30 55.8 +0.5**
KMI pP pP 16 31 01.4
KMI sP sP 16 31 03.3
KMI S **Sn 16 33 38.8 +0.9**
KMI SS **S 16 33 56.4 -0.2**
KMI pmax pmax
comp=Z,19nm,1.0s
KMI pmax pmax
comp=Z,49nm,3.1s
KMI LR LR
comp=Z,2μm,12.7s
KMI LR LR
comp=Z,2μm,13.8s
KMI LR LR
comp=Z,1μm,10.0s
EKS2 Erkin-Say 14.85 309 *e*P **Pn 16 30 59.1 +1.9**
EKS2 Erkin-Say 14.85 309 *e*Pn **Pn 16 30 59.1 +1.9**
MNAS Manas 15.60 306 P **P 16 31 09.6 -1.8**
MNAS pmax pmax
comp=Z,17nm,0.7s
XAN Xi'an 16.05 86 P **Pn 16 31 09.9 -3.0**
XAN pmax pmax
comp=Z,5.0nm,0.9s
XAN Xi'an 16.05 86 P **P 16 31 15.3 -1.0**
XAN pmax pmax
comp=Z,72nm,0.9s
XAN LR LR
comp=Z,3μm,17.0s
XAN LR LR
comp=Z,1μm,17.4s
XAN LR LR
comp=Z,3μm,8.9s
CHLP Challavanipeta 16.52 199 *e*P **Pn 16 31 18.1 -0.9**
GYA Guiyang 16.73 113⇓ *i*P **Pn 16 31 17.9 -3.8**
GYA PP **PnPn 16 31 35.3 +4.2**
GYA S **Sn 16 34 24.9 -2.3**
GYA SS **SnSn 16 34 46.3 +5.9**
GYA pmax pmax
comp=Z,80nm,1.1s
GYA pmax pmax
comp=Z,190nm,5.6s
GYA LR LR
comp=Z,970nm,9.6s
GYA LR LR
comp=Z,770nm,8.7s
GYA LR LR
comp=Z,640nm,6.9s
KBL Kabul 16.90 276 *e*P **Pn 16 31 21.6 -2.4**
KBL pmax pmax
comp=Z,16nm,1.0s
KBL Kabul 16.90 276 *e*Pn **Pn 16 31 21.6 -2.4**
comp=Z,16nm,1.0s
CRAI Chiangrai 17.04 143 P **P 16 31 28.7 +1.5**
comp=Z,150nm,0.9s,comp=Z,7μm
KK31 Karatay Array 17.19 306 *i* P **P 16 31 29.3 +0.5**
KK31 pmax pmax
comp=Z,7.0nm,0.7s
KKAR Karatay Array 17.19 306 *e*P **P 16 31 29.0 +0.1**
KKAR Karatay Array 17.19 306 *e*P **P 16 31 29.0 +0.1**
ENH Enshi 17.35 98 *e*P **P 16 31 30.0 -0.7**
comp=Z,32nm,0.9s
BTO Baotou 17.40 63 *e*P **Pn 16 31 26.5 -3.6**
CHTO Chiang Mai 17.60 149 P **P 16 31 32.9 -0.6**
comp=Z,76nm,1.1s,comp=Z,1μm
CHTO Chiang Mai 17.60 149 *e*P **Pn 16 31 29.0 -3.5**
CHTO pmax pmax
comp=Z,14nm,0.9s
CHTO Chiang Mai 17.60 149 *e*Pn **Pn 16 31 29.0 -3.5**
comp=Z,14nm,0.9s
CHTO Chiang Mai 17.60 149 Pn **P 16 31 33.3 -0.2**
SNR=9.8
CHTO Chiang Mai 17.60 149 P **P 16 31 33.3 -0.2**
SNR=9.8
CMMT Chiang Mai 17.61 149 P **P 16 31 32.8 -0.7**
comp=Z,17nm,1.1s,comp=Z,310nm
MHMT Maesarieng 17.77 153 P **P 16 31 35.8 +0.4**
comp=Z,57nm,1.0s,comp=Z,389nm
CM31 Chiang Mai Arr 17.92 150 *e*Pn **Pn 16 31 34.4 -2.1**
CMAR Chiang Mai Arr 17.92 150 P **Pn 16 31 34.6 -1.8**
comp=Z,0.2nm,0.3s,baz=335,slow=10,SNR=55
CMAR PcP **PcP 16 36 12.1 -0.1**
comp=Z,0.1nm,0.3s,baz=307,slow=2.5,SNR=15
CMAR LR LR 16 38 33.4
comp=Z,470nm,18.2s,baz=330,slow=38
CMAR Chiang Mai Arr 17.92 150 *i* P **Pn 16 31 34.7 -1.8**
CMAR pmax pmax
comp=Z,15nm,0.9s
RPR Rampur 17.93 213 *e*P **Pn 16 31 35.5 -1.0**
CM01 Chiang Mai Arr 17.96 150 *e*Pn **Pn 16 31 33.6 -3.3**
CM01 *e*PcP **PcP 16 36 11.6 -0.6**
KURBB Kurchatov Arra 18.14 337 P **Pn 16 31 37.5 -1.4**
comp=Z,0.1nm,0.3s,baz=152,slow=12,SNR=35
LAMP Lampang 18.16 148 P **P 16 31 40.2 +0.6**
comp=Z,8.2nm,0.9s
KURK Kurchatov 18.19 337 P **Pn 16 31 36.4 -3.1**
KURK pmax pmax
comp=Z,30nm,1.0s
KURK Kurchatov 18.19 337 *e*Pn **Pn 16 31 37.1 -2.4**
comp=Z,16nm,1.0s
KURK Kurchatov 18.19 337 Pn **Pn 16 31 39.0 -0.5**
SNR=8.7
KURK Kurchatov 18.19 337 P **Pn 16 31 39.0 -0.5**
SNR=8.7
SRSP Sriramsagar 18.31 216 *e*P **Pn 16 31 39.8 -1.4**
PVM Polavaram 18.45 205 *e*Pn **P 16 31 41.6 -1.1**
SONM Songino Array 18.46 38 P **Pn 16 31 43.0 -0.1**
comp=Z,0.9nm,0.3s,baz=227,slow=12,SNR=36
SONM LR LR 16 39 24.4
comp=Z,660nm,19.6s,baz=250,slow=39
SONA1 Songino Array 18.47 38 *e*P **P 16 31 42.3 -0.8**
HHC Hu-ho-hao-te 18.60 63 *e*P **Pn 16 31 44.9 +0.1**
HHC PP **PnPn 16 32 00.1 +3.5**
HHC S **Sn 16 35 09.8 -2.5**
HHC sS S 16 35 14.6 -1.3
HHC pmax pmax
comp=Z,27nm,1.0s
HHC pmax pmax
comp=Z,220nm,8.6s
HHC LR LR
comp=Z,1μm,11.8s
HHC LR LR
comp=Z,1μm,11.5s
HHC LR LR
comp=Z,990nm,13.8s
ULN Ulaanbaatar 18.82 39 *de*P **Pn 16 31 47.2 -0.3**
ULN pmax pmax
comp=Z,17nm,1.0s
ULN Ulaanbaatar 18.82 39 *e*P **P 16 31 46.1 -0.8**
comp=Z,15nm,0.9s
ULN Ulaanbaatar 18.82 39 P **Pn 16 31 46.8 -0.7**
SNR=12
ULN Ulaanbaatar 18.82 39 P **Pn 16 31 46.8 -0.7**
SNR=12
OTUK Ortayu 18.90 322 P **P 16 31 46.8 -0.8**
OTUK pmax pmax
comp=Z,14nm,0.8s
ZAK Zakamensk 18.91 28 *e*P **P 16 31 46.4 -1.5**
ZAK pmax pmax
comp=Z,10.0nm,1.2s
MOY Mondy 19.18 22 *e*P **Pn 16 31 52.1 +0.3**
MOY pmax pmax
comp=Z,70nm,3.5s
UTTA Uttaradit 19.25 146 P **Pn 16 31 54.0 +1.3**
comp=Z,4.0nm,0.9s,comp=Z,41nm
HYBB Hyderabad (bro 19.52 213 *e*Pn **P 16 31 54.7 +0.1**
HYB Hyderabad 19.52 213 *i* P **P 16 31 51.0 -3.6**
ZAA0 Zalesovo Array 19.87 352 *e*P **P 16 31 58.0 -0.1**
ZALV Zalesovo Beam 19.87 352 P **P 16 31 58.5 +0.4**
comp=Z,35nm,0.9s,baz=170,slow=11,SNR=111
ZALV LR LR 16 39 58.0
comp=Z,803nm,18.2s,baz=249,slow=38
KLRI Killari 19.91 219 *e*Pn **P 16 31 58.7 -0.2**
NJS Nagarjunasagar 19.96 210 *e*P **P 16 31 58.1 -1.3**
TLY Talaya 20.09 26 P Pn 16 32 01.6 -0.9
comp=Z,1.6nm,0.3s,baz=233,slow=10,SNR=5.6
TLY LR LR 16 40 17.2
comp=Z,373nm,21.5s,baz=204,slow=38
TLY Talaya 20.09 26 *e*P Pn 16 32 02.0 -0.5
TLY pmax pmax
comp=Z,16nm,1.5s
TLY MLR MLR
comp=Z,366nm,13.0s
TLY Talaya 20.09 26 *e*P **P 16 32 00.6 -0.1**
comp=Z,18nm,1.4s
TLY Talaya 20.09 26 P Pn 16 32 01.7 -0.8
SNR=8.9
TLY Talaya 20.09 26 P Pn 16 32 01.7 -0.8
SNR=8.9
ADKI Addanki 20.34 207 *e*P **P 16 32 02.5 -1.0**
PBKT Sadao Pong 20.47 147 P **P 16 32 04.9 0.0**
comp=Z,25nm,1.1s
SRLM Srisailam 20.54 210 *e*P **P 16 32 04.7 -1.1**
IRK Irkutsk 20.78 26 *e*P Pn 16 32 08.8 -1.7
IRK pmax pmax
comp=Z,82nm,1.6s
NVS Novosibirsk 20.95 350⇑ *i*P **P 16 32 10.0 +0.2**
NVS *e*S **S 16 36 00.4 -2.1**
NVS pmax pmax
comp=N,36nm,1.2s
NVS pmax pmax
comp=Z,63nm,1.2s
NVS pmax pmax
comp=E,27nm,1.4s
NVS smax smax
comp=N,18nm,1.9s
NVS smax smax
comp=E,16nm,1.7s
RCLA Racherla 21.09 209 *e*P **P 16 32 10.3 -1.4**
WHN Wuhan 21.27 93 P **P 16 32 17.1 +3.6**
WHN S **S 16 36 10.1 +0.9**
WHN pmax pmax
comp=E,750nm,5.8s
WHN LR LR
comp=E,3μm,9.6s
WHN LR LR
comp=E,1μm,13.1s
WHN LR LR
comp=E,4μm,23.0s
KHON Khomkaen 21.55 143 P **P 16 32 16.5 -0.1**
comp=E,19nm,1.0s,comp=E,2μm
SRDT SRDT 21.73 154 P **P 16 32 20.5 +2.1**
comp=E,80nm,1.0s
PANO Nakornpanom 21.82 138 P **P 16 32 19.2 -0.3**
comp=E,123nm,0.9s
BJT Baijiatuau 21.92 67 *e*P **P 16 32 19.5 -0.9**
BJT pmax pmax
comp=Z,19nm,0.9s
BJT Baijiatuau 21.92 67 *e*P **P 16 32 19.5 -0.9**
comp=Z,19nm,0.9s
BJI Beijing 21.93 67 P **P 16 32 20.3 -0.2**
BJI S **S 16 36 26.1 +4.2**
BJI pmax pmax
comp=Z,22nm,1.2s
BJI pmax pmax
comp=Z,180nm,6.5s
BJI LR LR
comp=Z,2μm,18.2s
BJI LR LR
comp=Z,610nm,12.6s
BJI LR LR
comp=Z,770nm,16.8s
URV Uravakonda 22.27 213⇓ *e*P **P 16 32 23.2 -1.2**
SKHT Srikalahasti 22.37 206 *e*P **P 16 32 24.2 -1.2**
TIA Tai'an 22.57 77 *e*P **P 16 32 26.0 -1.5**
TIA pmax pmax
comp=Z,20nm,1.0s
BVA0 Borovoye Array 23.11 330 *i* P **P 16 32 33.4 +0.5**
BVA0 pmax pmax
comp=Z,47nm,1.2s
BVAR Borovoye Array 23.11 330 P **P 16 32 33.7 +0.8**
comp=Z,8.5nm,0.8s,baz=128,slow=9.6,SNR=40
BVAR LR LR 16 42 21.5
comp=Z,194nm,20.3s,baz=151,slow=39
BVAR Borovoye Array 23.11 330 P **P 16 32 33.7 +0.8**
BVAR pmax pmax
comp=Z,8.0nm,0.8s
BVAR MLR MLR
comp=Z,194nm,20.3s
BRVK Borovoye 23.17 330 *de*P **P 16 32 34.1 +0.5**
BRVK pmax pmax
comp=Z,56nm,1.7s
BRVK Borovoye 23.17 330 *e*P **P 16 32 32.5 -1.1**
comp=Z,53nm,1.3s
BRVK Borovoye 23.17 330 P **P 16 32 34.2 +0.7**
SNR=22
BRVK Borovoye 23.17 330 P **P 16 32 34.2 +0.7**
SNR=22
BRVK P **P 16 32 34.2 +0.7**
SNR=22
SRAK Srakaew 23.20 148 P **P 16 32 36.9 +2.8**
comp=Z,60nm,0.9s,comp=Z,423nm
PHET Kaeng Krachan 23.24 154 P **P 16 32 35.9 +1.5**
comp=Z,9.0nm,0.8s,comp=Z,94nm
CHKZ Chkalovo 23.49 331 P **P 16 32 36.5 -0.2**
CHKZ pmax pmax
comp=Z,30nm,0.8s
QIZ Qiongzhong 23.64 125 P **P 16 32 37.0 -1.5**
QIZ LR LR
comp=Z,360nm,13.1s
QIZ LR LR
comp=Z,460nm,15.7s
ZRNK Zerenda 23.65 328 *e*P **P 16 32 38.4 +0.1**
ZRNK pmax pmax
comp=Z,28nm,1.1s
ZRNK Zerenda 23.65 328 *e*P **P 16 32 38.4 +0.1**
comp=Z,28nm,1.1s
GZH Guangzhou 23.65 112 P **P 16 32 38.8 +0.3**
GZH S **S 16 36 55.0 +2.5**
CHBT CHBT 24.45 149 P **P 16 32 46.7 +0.7**
comp=Z,23nm,1.4s
NJ2 Nanjing 24.61 87 *e*P **P 16 32 46.9 -0.5**
NJ2 S **S 16 37 03.3 -4.4**
NJ2 sS **sS 16 37 16.3 -0.2**
NJ2 pmax pmax
comp=Z,22nm,0.7s
NJ2 LR LR
comp=Z,2μm,13.6s
NJ2 LR LR
comp=Z,1μm,8.7s
NJ2 LR LR
comp=Z,770nm,11.4s
CIT Chita 24.69 37 *e*P **P 16 32 47.0 -1.0**
CIT *e* 16 32 55.8
GEYT Alibeck 25.56 287 P **P 16 32 57.9 +1.9**
comp=Z,8.4nm,0.9s,baz=101,slow=7.7,SNR=12
GEYT LR LR 16 45 10.4
comp=Z,396nm,18.1s,baz=50,slow=42
AB31 Akbulak array 26.40 313 *i* P **P 16 33 04.1 +0.7**
AB31 pmax pmax
comp=Z,17nm,1.0s
ABKAR Akbulak array 26.40 313 *e*P **P 16 33 04.0 +0.6**
QZH Quanzhou 26.86 103 P **P 16 33 09.3 +1.5**
QZH S **S 16 37 43.1 -0.6**
QZH LR LR
comp=Z,1μm,10.7s
QZH LR LR
comp=Z,2μm,12.8s
QZH LR LR
comp=Z,3μm,12.2s
AKTO Aktyubinsk 28.01 315 P **P 16 33 18.6 +0.7**
comp=Z,7.9nm,1.1s,baz=114,slow=7.0,SNR=8.9
AKTO LR LR 16 44 22.8
comp=Z,134nm,21.2s,baz=136,slow=36
AKTO Aktyubinsk 28.01 315 P P 16 33 10.7 -7.2
AKTO pmax pmax
comp=Z,9.0nm,1.0s
BOD Bodaibo 28.66 28 *e*P **P 16 33 23.1 -0.5**
BOD pmax pmax
comp=Z,16nm,1.2s
WSAR Wadi Sarin 29.15 256 P **P 16 33 29.1 +0.8**
comp=Z,7.3nm,1.1s,baz=89,slow=6.4,SNR=3.5
WSAR LR LR 16 46 49.4
comp=Z,238nm,20.4s,baz=102,slow=40
CN2 Changchun 29.24 60 *e*P **P 16 33 28.8 -0.1**
SVE Sverdlovsk 29.84 328⇓ *i*P **P 16 33 35.1 +1.0**
SVE pmax pmax
comp=Z,27nm,1.0s
ARU Arti 30.55 326 *d i*P **P 16 33 40.2 -0.2**
ARU 16 34 39.1
ARU S **S 16 38 42.4 +1.3**
ARU SS **ScP 16 40 19.3 -1.2**
ARU pmax pmax
comp=Z,16nm,1.7s
ARU Arti 30.55 326 *e*P **P 16 33 39.1 -1.2**
comp=Z,16nm,1.2s
KSAR Wonju Array Be 31.08 73 P **P 16 33 44.4 -0.8**
KSAR Wonju Array Be 31.08 73 P **P 16 33 44.4 -0.8**
KSRS Korea Array 31.11 73 P **P 16 33 44.4 -1.1**
comp=Z,8.9nm,1.0s,baz=269,slow=9.4,SNR=11
SOKR Solikamsk 33.11 330 *e*P **P 16 34 02.5 -0.3**
SOKR pmax pmax
comp=Z,22nm,0.9s
USRK Ussuriysk Ar. 33.98 60 P **P 16 34 10.0 -0.5**
comp=Z,7.3nm,1.0s,baz=215,slow=6.3,SNR=6.7
USRK LR LR 16 49 10.0
comp=Z,416nm,18.1s,baz=260,slow=38
JNU Nakatsue 34.24 80 LR LR 16 49 06.4
comp=Z,174nm,21.5s,baz=294,slow=38
KLR Kul'dur 34.33 51 *i* P **P 16 34 13.2 -0.3**
NRIK Noril'sk 35.05 359 P **P 16 34 20.3 +0.7**
comp=Z,4.0nm,0.6s,baz=171,slow=8.1,SNR=9.3
NRIK LR LR 16 49 32.4
comp=Z,186nm,19.6s,baz=162,slow=38
GNI Garni 35.82 293 *e*P **P 16 34 27.7 +0.9**
GNI pmax pmax
comp=Z,25nm,1.1s
GNI Garni 35.82 293 *e*P **P 16 34 27.2 +0.5**
comp=Z,18nm,1.1s
HABR Khabarovsk 36.38 53 *e*P **P 16 34 28.6 -2.6**
HABR *e**PP **sP 16 34 38.2 -0.6**
HABR *e**SP **pP 16 34 42.5 +5.9**
HABR *e* 16 35 51.1
HABR *e* 16 36 52.5
HABR *e*SS SS 16 42 38.7 -12
HABR *e* 16 44 42.3
HABR pmax pmax
comp=N,8.0nm,1.3s
HABR pmax pmax
comp=Z,8.0nm,1.3s
HABR pmax pmax
comp=E,3.0nm,0.9s
HABR MLR MLR
comp=Z,126nm,15.0s
GOF Gofitskoye 36.87 301⇑ *e*P **P 16 34 40.0 +4.6**
KBZ Khabaz 36.99 299 LR LR 16 53 29.0
comp=Z,214nm,18.8s,baz=97,slow=42
KIV Kislovodsk 37.14 299 *ce*P **P 16 34 37.1 -0.7**
KIV *e* 16 36 01.7
KIV *e*PPP PPP 16 36 20.9
KIV pmax pmax
comp=Z,10.0nm,1.2s
KIV MLR MLR
comp=Z,233nm,16.0s
KKM Kota Kinabalu 37.45 133 *e*P **P 16 34 40.1 -0.6**
comp=Z,32nm,0.7s
YAK Yakutsk 37.48 30 *e*P **P 16 34 40.3 -0.1**
YAK pmax pmax
comp=Z,23nm,0.9s
YAK pmax pmax
comp=N,7.0nm,1.3s
YAK pmax pmax
comp=E,17nm,1.2s
YAK Yakutsk 37.48 30 *e*P **P 16 34 39.8 -0.5**
comp=E,22nm,0.8s
KSM Kuching 38.04 145 *e*P **P 16 34 42.9 -2.6**
comp=E,5.9nm,0.8s
MJAR Matsushiro Arr 39.38 72 P **P 16 34 57.2 +0.5**
comp=E,3.8nm,0.9s,baz=277,slow=8.7,SNR=5.7
MYLDM Lahad Datu 39.53 131 *e*P **P 16 34 57.8 -0.3**
comp=E,36nm,0.9s
PPBI Pangkal Pinang 39.54 153 P **P 16 34 58.3 +0.2**
comp=E,10nm,1.6s
STKI Sintang 39.83 144 P **P 16 35 03.4 +2.9**
MDSI Maura Dua 41.03 157 P P 16 35 17.0 +6.5
MOS Moscow 41.24 318 *e*P **P 16 35 12.2 +0.4**
MOS pmax pmax
comp=Z,50nm,0.8s
TYV Tymovskoe 41.48 50 *e*P **P 16 35 15.0 +1.1**
YSS Yuzh-Sakhalins 41.54 56 *e*P **P 16 35 14.1 -0.3**
YSS pmax pmax
comp=Z,6.0nm,0.7s
YSS Yuzh-Sakhalins 41.54 56 *e*P **P 16 35 13.2 -1.2**
comp=Z,24nm,1.2s
OBN Obninsk 41.75 316⇓ *e*P **P 16 35 16.7 +0.7**
OBN *e* 16 36 51.1
OBN *e*S S 16 41 23.2 -9.0
OBN *e*SS **SS 16 44 35.1 -2.7**
OBN pmax pmax
comp=Z,38nm,1.7s
OBN MLR MLR
comp=Z,348nm,17.0s
TIXI Tiksi 42.65 17 *de*P **P 16 35 22.2 -0.9**
TIXI pmax pmax
comp=Z,18nm,1.7s
TIXI Tiksi 42.65 17 *e*P **P 16 35 21.9 -1.2**
comp=Z,7.5nm,0.8s
SIM Simferopol' 43.20 301 *e*P **P 16 35 29.0 +1.0**
SIM pmax pmax
comp=Z,8.0nm,0.5s
SIM MLR MLR
comp=Z,160nm,17.0s
BR131 Keskin Array S 44.33 294 *e*P **P 16 35 36.8 -0.5**
BRTR Keskin Array B 44.33 294 P **P 16 35 37.6 +0.3**
comp=Z,2.8nm,0.8s,baz=98,slow=8.9,SNR=17
BRTR Keskin Array B 44.33 294 P **P 16 35 37.6 +0.3**
BRTR pmax pmax
comp=Z,5.0nm,1.0s
LEM Lembang 44.39 154 LR LR 16 56 31.1
comp=Z,113nm,19.0s,baz=320,slow=40
ANTO Ankara 44.94 294 *e*P **P 16 35 41.6 -0.5**
ANTO pmax pmax
comp=Z,27nm,1.3s
ANTO Ankara 44.94 294 *e*P **P 16 35 41.6 -0.5**
comp=Z,27nm,1.3s
BR231 Keskin MP Arra 44.95 294 *e*P **P 16 35 38.2 -4.0**
SMRI Semarang 45.69 150 P **P 16 35 49.3 +1.2**
SMRI Semarang 45.69 150 *e*P **P 16 35 47.6 -0.5**
comp=Z,89nm,0.9s
AKASG Malin Array Be 46.04 310 P **P 16 35 50.4 -0.2**
comp=Z,7.3nm,1.1s,baz=78,slow=6.3,SNR=9.7
AKASG PcP **PcP 16 37 27.9 +1.1**
comp=Z,1.3nm,0.8s,baz=67,slow=4.0,SNR=4.2
AKASG LR LR 16 57 19.4
comp=Z,215nm,18.6s,baz=80,slow=39
KIEV Kiev 46.05 310 *e*P **P 16 35 50.5 -0.1**
KIEV pmax pmax
comp=Z,15nm,1.1s

KIEV	**Kiev**	46.05	310	*e*P		P	16 35 48.5	-2.2	
	comp=Z,15nm,1.1s								
AK11	**Malin Array Si**	46.08	310	*e*P		P	16 35 48.4	-2.4	
VSU	**Vasula**	47.42	321	*ce*P		P	16 36 01.5	+0.3	
VSU				pmax	pmax				
	comp=Z,119nm,1.2s								
SEY	**Seymchan**	47.76	33	*ce*P		P	16 36 04.0	+0.2	
FINES	**FINESS Array B**	47.91	325	P		P	16 36 06.1	+1.1	
	comp=Z,1.2nm,0.5s,baz=97,slow=8.1,SNR=9.5								
FINES				PcP		PcP	16 37 35.0	+1.9	
	comp=Z,4.7nm,1.0s,baz=71,slow=8.3,SNR=4.4								
FINES				LR		LR	16 55 56.2		
	comp=Z,224nm,19.6s,baz=93,slow=36								
VRI	**Vrincioaia**	48.24	304	⇓ *i*P		P	16 36 08.6	+0.8	
VRI	**Vrincioaia**	48.24	304	⇓P		P	16 36 08.6	+0.8	
PLOR	**Plostina**	48.29	304	⇑ *i*P		P	16 36 09.8	+1.6	
PLOR	**Plostina**	48.29	304	⇑P		P	16 36 09.8	+1.6	
MLR	**Muntele Rosu**	48.84	303	*i*P		P	16 36 14.3	+1.7	
MLR	**Muntele Rosu**	48.84	303	*e*P		P	16 36 14.2	+1.7	
MLR				pmax	pmax				
	comp=Z,39nm,1.3s								
MLR	**Muntele Rosu**	48.84	303	*e*P		P	16 36 14.2	+1.7	
	comp=Z,39nm,1.3s								
BURAR	**Bucovina Array**	48.98	306	⇓ *i*P		P	16 36 14.6	+1.0	
BURAR	**Bucovina Array**	48.98	306	⇓P		P	16 36 14.6	+1.0	
ARCES	**ARCESS Array B**	49.21	335	P		P	16 36 15.2	+0.3	
	comp=Z,6.3nm,0.9s,baz=79,slow=6.3,SNR=7.6								
ARCES				LR		LR	16 58 03.6		
	comp=Z,191nm,19.7s,baz=104,slow=37								
VOIR		49.47	303	⇑ *i*P		P	16 36 18.0	+0.7	
VOIR		49.47	303	⇑P		P	16 36 18.0	+0.7	
KWP	**Kalwaria Pacla**	50.32	309	⇓ *i*P		P	16 36 25.3	+1.6	
KWP	**Kalwaria Pacla**	50.32	309	⇓P		P	16 36 25.3	+1.6	
PETK	**Petropavlovsk-**	50.68	46	LR		LR	16 58 01.0		
	comp=Z,175nm,18.6s,baz=274,slow=36								
KOLS	**Kolonicke sedl**	50.71	308	*e*P		P	16 36 28.1	+1.5	
KOLS	**Kolonicke sedl**	50.71	308	*e*P		P	16 36 28.1	+1.5	
DRGR		50.81	305	⇑ *i*P		P	16 36 28.5	+1.0	
DRGR		50.81	305	⇑P		P	16 36 28.5	+1.0	
STHS	**Stebnicka Huta**	51.30	309	*e*P		P	16 36 31.7	+0.7	
STHS				pmax	pmax				
	comp=Z,4.0nm,1.0s								
STHS	**Stebnicka Huta**	51.30	309	*e*P		P	16 36 31.7	+0.7	
LAST	**Lasithi**	51.78	290	⇓ *i*P		P	16 36 25.7	-9.2	
LAST	**Lasithi**	51.78	290	*e*P		P	16 36 36.9	+1.9	
	comp=Z,61nm,1.2s								
MDVR	**Moldovita**	51.92	303	⇑ *i*P		P	16 36 34.4	-1.4	
KECS	**Kecovo**	51.96	308	*e*P		P	16 36 36.8	+0.8	
KECS				pmax	pmax				
	comp=Z,3.0nm,0.9s								
KECS	**Kecovo**	51.96	308	*e*P		P	16 36 36.8	+0.8	
VYHS	**Vyhne**	53.03	308	*e*P		P	16 36 44.8	+0.9	
VYHS	**Vyhne**	53.03	308	*e*P		P	16 36 44.8	+0.9	
MORC	**Moravsky Berou**	53.59	310	⇑ *i*P		P	16 36 48.9	+0.8	
MORC	**Moravsky Berou**	53.59	310	*e*P		P	16 36 48.3	+0.2	
MORC				pmax	pmax				
	comp=Z,34nm,1.2s								
MORC	**Moravsky Berou**	53.59	310	*e*P		P	16 36 48.3	+0.2	
	comp=Z,34nm,1.2s								
PKSM	**Moragy**	53.68	305	⇓ *i*P		P	16 36 48.8	+0.1	
PKSM	**Moragy**	53.68	305	⇓P		P	16 36 48.8	+0.1	
BILL	**Bilibino**	53.71	27	*d i*P		P	16 36 48.8	+0.2	
BILL				*e*			16 38 49.9		
BILL				*e*PPP		PPP	16 40 00.6		
BILL				*e*S		S	16 44 24.3	+2.7	
BILL				pmax	pmax				
	comp=Z,30nm,1.2s								
BILL				MLR		MLR			
	comp=Z,218nm,18.0s								
BILL	**Bilibino**	53.71	27	*e*P		P	16 36 48.5	-0.1	
	comp=Z,16nm,0.8s								
GUMO	**Guam**	53.94	98	LR		LR	16 58 36.7		
	comp=Z,50nm,20.9s,baz=313,slow=35								
KRLC	**Kraliky**	54.01	310	*e*P		P	16 36 52.0	+0.9	
KRLC				*ep*P		pP	16 36 54.7	-2.0	
KRLC	**Kraliky**	54.01	310	*e*P		P	16 36 52.0	+0.9	
DPC	**Dobruska-Polom**	54.24	311	*e*P		P	16 36 53.8	+1.0	
DPC				*ep*P		pP	16 36 57.1	-1.3	
DPC	**Dobruska-Polom**	54.24	311	*e*P		P	16 36 53.8	+1.0	
VRAC	**Vranov**	54.30	310	⇑ *i*P		P	16 36 53.4	+0.2	
VRAC	**Vranov**	54.30	310	⇑P		P	16 36 53.4	+0.2	
UPC	**Upice**	54.40	311	*ep*P		pP	16 36 58.4	-1.1	
NC405	**NORSAR Array S**	54.84	325	*e*P		P	16 36 56.9	-0.1	
SOEI	**Soe**	54.86	137	*e*P		P	16 36 55.0	-2.7	
	comp=Z,110nm,1.0s								
NC602	**NORSAR Array S**	54.98	324	*e*P		P	16 36 57.9	-0.1	
NC303	**NORSAR Array S**	54.99	325	*e*P		P	16 36 57.5	-0.5	
NB2	**NORSAR Subarra**	55.09	324	P		P	16 36 58.5	-0.3	
	comp=Z,30nm,1.2s,baz=81,slow=7.4								
NB2	**NORSAR Subarra**	55.09	324	P		P	16 36 58.5	-0.3	
	baz=81,slow=7.4								
NOA	**NORSAR Array B**	55.09	324	P		P	16 36 58.9	+0.1	
	comp=Z,12nm,0.9s,baz=82,slow=7.2,SNR=16								
NOA				LR		LR	17 03 15.0		
	comp=Z,101nm,18.2s,baz=65,slow=39								
CONA	**Conrad Observa**	55.10	308	*i*P		P	16 36 59.8	+0.7	
	comp=Z,4.7nm,0.7s								
NBO02	**NORSAR Array S**	55.26	325	*e*P		P	16 36 59.2	-0.8	
NC204	**NORSAR Array S**	55.27	325	*e*P		P	16 36 59.5	-0.6	
NAO01	**NORSAR Array S**	55.28	324	*e*P		P	16 36 59.5	-0.6	
PVCC	**Panska Ves**	55.29	311	*e*P		P	16 37 01.5	+1.2	
PVCC				*ep*P		pP	16 37 04.6	-1.3	
PVCC	**Panska Ves**	55.29	311	*e*P		P	16 37 01.5	+1.2	
GOPC	**GO Pecny, Ondr**	55.30	311	AMS		AMS	17 02 40.0		
	comp=Z,200nm,11.4s								
PRU	**Pruhonice**	55.44	311	*e*P		P	16 37 02.5	+1.1	
PRU				*ep*P		pP	16 37 05.7	-1.3	
PRU				AMS		AMS	17 02 50.0		
	comp=Z,200nm,19.2s								
PRU	**Pruhonice**	55.44	311	*e*P		P	16 37 02.5	+1.1	
PRU				MLR		MLR			
	comp=Z,200nm,19.2s								
BRG	**Berggiesshubel**	55.59	312	*e*P		P	16 37 02.8	+0.3	
	comp=Z,6.4nm,0.8s								
BRG				*i*			16 37 06.4		
	comp=Z,14nm,1.0s								
BRG				*i*			16 38 06.1		
	comp=Z,7.8nm,1.3s								
BRG	**Berggiesshubel**	55.59	312	*e*P		P	16 37 02.8	+0.3	
BRG				*i*			16 38 06.1		
BRG				pmax	pmax				
	comp=Z,6.0nm,0.8s								
BRG				pmax	pmax				
	comp=Z,14nm,1.0s								
BRG				pmax	pmax				
	comp=Z,8.0nm,1.3s								
CLL	**Collm**	56.06	313	⇓ *i*P		P	16 37 06.0	+0.1	
	comp=Z,8.0nm,1.3s								
CLL				*i*			16 37 09.4		
	comp=Z,9.0nm,1.0s								
CLL				*i*			16 37 12.4		
CLL				*e*PP		PP	16 39 12.0	+1.4	
CLL				*e*SS		SS	16 48 42.0	+2.6	
CLL				LmV			17 03 00.0		
	comp=Z,100nm,20.4s								
CLL	**Collm**	56.06	313	⇓ *i*P		P	16 37 06.0	+0.1	
CLL				pmax	pmax				
	comp=Z,8.0nm,1.3s								
CLL	**Collm**	56.06	313	*e*P		P	16 37 04.4	-1.5	
	comp=Z,9.4nm,0.9s								
KONO	**Kongsberg**	56.13	323	*e*P		P	16 37 06.5	+0.3	
KONO				pmax	pmax				
	comp=Z,22nm,1.2s								
KONO	**Kongsberg**	56.13	323	*e*P		P	16 37 06.5	+0.3	
	comp=Z,22nm,1.2s								
GEC2	**GERESS Array S**	56.25	310	*e*P		P	16 37 08.1	+0.7	
GEC2				pmax	pmax				
	comp=Z,12nm,1.0s								
GEC2	**GERESS Array S**	56.25	310	*e*P		P	16 37 08.1	+0.6	
	comp=Z,12nm,1.0s								
GERES	**GERESS Array B**	56.25	310	P		P	16 37 08.2	+0.7	
	comp=Z,3.1nm,0.6s,baz=75,slow=6.1,SNR=31								
GERES				LR		LR	17 04 41.9		
	comp=Z,127nm,18.7s,baz=80,slow=40								
GEA0	**GERESS Array S**	56.26	310	*e*P		P	16 37 07.8	+0.4	
KHC	**Kasperske Hory**	56.26	310	*e*P		P	16 37 08.3	+0.9	
KHC	**Kasperske Hory**	56.26	310	*e*P		P	16 37 07.2	-0.2	
KHC				pmax	pmax				
	comp=Z,5.0nm,1.6s								
KHC	**Kasperske Hory**	56.26	310	*e*P		P	16 37 07.2	-0.2	
	comp=Z,4.7nm,1.6s								
NKC	**Novy Kostel**	56.68	311	AMS		AMS	17 03 30.0		
	comp=Z,400nm,15.2s								
CUC	**Castrocucco**	57.47	299	*e*P		P	16 37 15.5	-0.6	
	comp=Z,12nm,1.0s								

CEL	**Celeste**	58.00	297	*e*P		P	16 37 18.8	-1.1	
	comp=Z,22nm,0.9s								
FETA	**Feichten**	58.69	308	*i* P		P	16 37 23.7	-1.0	
	comp=Z,3.7nm,0.7s								
DAVA	**Damuels**	59.16	309	*i* P		P	16 37 28.0	+0.1	
	comp=Z,5.7nm,0.9s								
TUE	**Stuetta**	59.77	308	*e*P		P	16 37 31.4	-0.8	
	comp=Z,13nm,1.1s								
BFO	**Black Forest**	59.81	310	*e*P		P	16 37 31.4	-0.9	
BFO				pmax	pmax				
	comp=Z,17nm,1.3s								
BFO	**Black Forest**	59.81	310	*e*P		P	16 37 31.4	-0.9	
	comp=Z,16nm,1.3s								
LANF	**Langenberg**	59.93	311	*e*P		P	16 37 33.5	+0.4	
WLS	**Welschbruch**	60.40	311	*e*P		P	16 37 35.4	-0.9	
MEM	**Membach**	60.50	313	P		P	16 37 37.7	+0.8	
	comp=Z,6.0nm,1.2s								
MEM				AP		pP	16 37 40.9	-1.7	
ECH	**Echery**	60.59	310	*e*P		P	16 37 37.5	-0.1	
WLF	**Walferdange**	60.73	312	P		P	16 37 39.0	+0.5	
	comp=Z,13nm,1.5s								
WLF				AP		pP	16 37 42.7	-1.4	
WLF	**Walferdange**	60.73	312	*e*P		P	16 37 38.5	+0.1	
WLF				pmax	pmax				
	comp=Z,53nm,1.7s								
WLF	**Walferdange**	60.73	312	*e*P		P	16 37 38.5	+0.1	
	comp=Z,54nm,1.7s								
MOF	**Molkenrain**	60.73	310	*e*P		P	16 37 38.7	+0.1	
BCLA	**Clavier**	60.99	313	P		P	16 37 40.5	+0.3	
BCLA				AP		pP	16 37 44.5	-1.4	
SENIN	**Lac Senin/Sane**	61.14	308	*e*P		P	16 37 40.9	-0.7	
	comp=Z,8.4nm,0.9s								
DOU	**Dourbes**	61.53	313	P		P	16 37 44.5	+0.6	
DOU				AP		pP	16 37 48.2	-1.3	
LUCF	**Luceram**	62.00	306	*e*P		P	16 37 47.1	-0.2	
MVIF	**Mont Vial**	62.13	306	*e*P		P	16 37 48.3	0.0	
CALN	**Calern**	62.36	306	*e*P		P	16 37 49.4	-0.4	
FITZ	**Fitzroy Crossi**	62.47	141	LR		LR	17 07 38.0		
	comp=Z,47nm,20.4s,baz=324,slow=39								
FITZ	**Fitzroy Crossi**	62.47	141	*e*P		P	16 37 49.0	-1.4	
OG26	**St.-Nazaire-De**	63.10	307	*e*P		P	16 37 54.8	+0.2	
SSB	**Saint Sauveur**	63.33	308	*e*P		P	16 37 53.5	-2.6	
SSB				pmax	pmax				
	comp=Z,13nm,1.3s								
SSB	**Saint Sauveur**	63.33	308	*e*P		P	16 37 53.5	-2.6	
	comp=Z,13nm,1.3s								
GAMB	**Gambell**	63.43	29	*e*P		P	16 37 59.2	+2.9	
	comp=Z,24nm,1.7s								
PLDF	**La Plantade**	63.66	309	*e*P		P	16 37 58.0	-0.3	
KEST	**Kesra**	63.81	297	*e*P		P	16 37 59.5	0.0	
	comp=Z,20nm,1.2s								
AGO	**Saint Agoulin**	63.94	309	*e*P		P	16 38 00.1	0.0	
ESK	**Eskdalemuir**	64.00	321	*e*P		P	16 38 00.5	+0.2	
ESK				pmax	pmax				
	comp=Z,44nm,1.4s								
ESK	**Eskdalemuir**	64.00	321	*e*P		P	16 38 00.5	+0.2	
	comp=Z,44nm,1.4s								
LBL	**Lubilhac**	64.19	308	*e*P		P	16 38 01.9	+0.1	
SUMG	**Summit**	67.53	345	*i* P		P	16 38 23.7	+0.5	
	comp=Z,40nm,1.4s								
SUMG	**Summit**	67.53	345	*e*P		P	16 38 23.7	+0.5	
SUMG				pmax	pmax				
	comp=Z,40nm,1.4s								
SUMG	**Summit**	67.53	345	*e*P		P	16 38 22.8	-0.5	
	comp=Z,29nm,1.3s								
WRA	**Warramunga Arr**	68.79	135	P		P	16 38 30.0	-1.4	
	comp=Z,14nm,1.0s,baz=329,slow=6.7,SNR=57								
WRA	**Warramunga Arr**	68.79	135	*i* P		P	16 38 30.0	-1.4	
WRA				pmax	pmax				
	comp=Z,14nm,1.0s								
WRAB	**Tennant Creek**	68.79	135	*ce*P		P	16 38 31.1	-0.2	
WRAB				pmax	pmax				
	comp=Z,72nm,1.7s								
WRAB	**Tennant Creek**	68.79	135	*e*P		P	16 38 29.5	-1.9	
	comp=Z,20nm,1.0s								
WB2	**Warramunga Arr**	68.80	135	*e*P		P	16 38 29.7	-1.7	
	comp=Z,20nm,1.0s								
COLD	**Coldfoot**	69.20	21	*e*P		P	16 38 33.2	0.0	
	comp=Z,17nm,1.2s								
PMG	**Port Moresby**	69.77	117	LR		LR	17 10 12.3		
	comp=Z,165nm,21.3s,baz=17,slow=37								
MLY	**Manley**	70.46	23	*e*P		P	16 38 40.2	-0.9	
	comp=Z,8.3nm,1.0s								
BPAW	**Bear Paw Mtn.**	70.98	24	*e*P		P	16 38 43.2	-1.1	
	comp=Z,16nm,1.3s								
CAST	**Castle Rocks**	71.05	25	*e*P		P	16 38 44.4	-0.3	
	comp=Z,14nm,1.0s								
FYU	**Fort Yukon**	71.10	20	*e*P		P	16 38 45.4	+0.5	
	comp=Z,23nm,1.3s								
RES	**Resolute Bay**	71.20	1	*e*P		P	16 38 45.3	-0.1	
RES	**Resolute Bay**	71.20	1	*e*P		P	16 38 45.3	-0.1	
SVW2	**Sparrevohn**	71.22	28	*e*P		P	16 38 46.1	+0.3	
	comp=Z,6.0nm,1.0s								
MDM	**Murphy Dome**	71.31	22	*e*P		P	16 38 45.9	-0.4	
	comp=Z,38nm,1.7s								
PPLA	**Purkeypile**	71.35	25	*e*P		P	16 38 46.9	+0.2	
	comp=Z,23nm,0.8s								
KTH	**Kantishna Hill**	71.36	24	*e*P		P	16 38 46.3	-0.3	
	comp=Z,14nm,1.0s								
ES19	**SONSECA Array**	71.39	306	*e*P		P	16 38 46.8	-0.4	
ESDC	**Sonseca Array**	71.44	306	P		P	16 38 47.4	-0.1	
	comp=Z,8.2nm,0.8s,baz=53,slow=6.6,SNR=31								
ESDC				LR		LR	17 12 38.9		
	comp=Z,75nm,21.9s,baz=345,slow=38								
ESLA	**Sonseca Array**	71.44	306	*e*P		P	16 38 46.2	-1.3	
	comp=Z,12nm,1.0s								
AS31	**Alice Springs**	71.46	137	*e*P		P	16 38 46.3	-1.4	
	comp=Z,2.2nm,0.9s								
ASAR	**Alice Springs**	71.46	137	P		P	16 38 46.4	-1.3	
	comp=Z,7.0nm,0.9s,baz=327,slow=6.7,SNR=59								
ASAR				LR		LR	17 14 15.9		
	comp=Z,55nm,20.0s,baz=316,slow=39								
AS01	**Alice Springs**	71.48	137	*e*P		P	16 38 46.3	-1.5	
COLA	**College**	71.48	22	*e*P		P	16 38 50.8	+3.6	
COLA				pmax	pmax				
	comp=Z,23nm,0.9s								
COLA	**College**	71.48	22	*e*P		P	16 38 50.8	+3.6	
	comp=Z,23nm,0.9s								
TRF	**Thorofare Moun**	71.64	24	*e*P		P	16 38 51.0	+2.5	
	comp=Z,8.5nm,1.3s								
CCB	**Clear Creek Bu**	71.65	22	*e*P		P	16 38 47.5	-0.8	
	comp=Z,25nm,1.6s								
WRH	**Wood River Hil**	71.68	23	*e*P		P	16 38 47.9	-0.6	
	comp=Z,5.1nm,0.9s								
PAB	**San Pablo**	71.76	306	*e*P		P	16 38 49.9	+0.4	
PAB				pmax	pmax				
	comp=Z,21nm,1.3s								
PAB	**San Pablo**	71.76	306	*e*P		P	16 38 49.9	+0.4	
	comp=Z,21nm,1.3s								
IL1	**Eielson Array**	71.86	22	*e*P		P	16 38 47.8	-1.8	
ILAR	**Eielson Array**	71.86	22	P		P	16 38 48.6	-0.9	
	comp=Z,7.4nm,1.0s,baz=298,slow=4.9,SNR=20								
ILAR				PP		PP	16 41 28.4	-0.1	
	comp=Z,1.8nm,1.2s,baz=306,slow=6.3,SNR=4.9								
ILAR				LR		LR	17 14 28.6		
	comp=Z,71nm,19.2s,baz=326,slow=39								
ILB	**Eielson Array**	71.86	22	*e*P		P	16 38 48.2	-1.3	
RND	**Reindeer**	72.16	24	*e*P		P	16 38 50.1	-1.4	
RND				pmax	pmax				
	comp=Z,10.0nm,1.2s								
RND	**Reindeer**	72.16	24	*e*P		P	16 38 50.1	-1.4	
	comp=Z,9.9nm,1.2s								
MVO	**Moncorvo**	72.72	308	*e*P		P	16 38 55.5	+0.3	
INK	**Inuvik**	72.74	15	*e*P		P	16 38 54.1	-0.6	
INK				pmax	pmax				
	comp=Z,20nm,1.0s								
INK	**Inuvik**	72.74	15	*e*P		P	16 38 54.1	-0.6	
	comp=Z,20nm,1.0s								
DHY	**Denali Highway**	72.87	24	*e*P		P	16 38 55.2	-0.6	
	comp=Z,6.3nm,0.8s								
PMR	**Palmer**	73.29	25	*e*P		P	16 38 57.4	-0.7	
PMR				pmax	pmax				
	comp=Z,17nm,1.0s								
PMR	**Palmer**	73.29	25	*e*P		P	16 38 57.4	-0.7	
	comp=Z,17nm,1.0s								
RC01	**Rabbit Creek A**	73.41	26	*e*P		P	16 38 58.7	-0.1	
	comp=Z,26nm,1.0s								
SML	**Sawmill**	73.42	25	*e*P		P	16 38 58.6	-0.3	
SML				pmax	pmax				
	comp=Z,34nm,0.8s								
SML	**Sawmill**	73.42	25	*e*P		P	16 38 58.6	-0.3	
	comp=Z,34nm,0.8s								
MTE	**Manteigas**	73.45	308	*e*P		P	16 39 00.5	+1.0	
EGAK	**Eagle**	73.56	20	*e*P		P	16 38 58.8	-0.9	
	comp=Z,11nm,1.0s								
PAX	**Paxson**	73.57	23	*e*P		P	16 38 58.8	-1.0	
PAX				pmax	pmax				
	comp=Z,5.0nm,1.0s								
PAX	**Paxson**	73.57	23	*e*P		P	16 38 58.8	-1.0	
	comp=Z,5.4nm,1.0s								
PCBR	**Castelo Branco**	73.70	307	*e*P		P	16 39 00.8	-0.1	
SCM	**Sheep Creek Mo**	73.75	24	*e*P		P	16 39 00.5	-0.4	
SCM				pmax	pmax				
	comp=Z,24nm,0.8s								
SCM	**Sheep Creek Mo**	73.75	24	*e*P		P	16 39 00.5	-0.4	
	comp=Z,24nm,0.8s								
PMRV	**Marv??o**	73.85	307	*e*P		P	16 39 02.5	+0.6	
SEW	**Seward**	74.18	27	*e*P		P	16 39 02.6	-0.7	
	comp=Z,15nm,1.1s								
PBAR	**Barrancos**	74.27	306	*e*P		P	16 39 04.6	+0.3	
KLU	**Klutina**	74.47	24	*e*P		P	16 39 03.2	-1.9	
	comp=Z,17nm,1.1s								
KDAK	**Kodiak Island**	74.51	29	*e*P		P	16 39 09.0	+3.7	
KDAK				pmax	pmax				
	comp=Z,22nm,0.9s								
KDAK	**Kodiak Island**	74.51	29	*e*P		P	16 39 09.0	+3.7	
	comp=Z,22nm,0.9s								
SFJD	**Kangerlussuaq**	74.52	345	LR		LR	17 18 19.0		
	comp=Z,50nm,18.0s,baz=35,slow=41								
SFJD	**Kangerlussuaq**	74.52	345	*e*P		P	16 39 04.3	-0.9	
SFJD				pmax	pmax				
	comp=Z,29nm,1.1s								
SFJD	**Kangerlussuaq**	74.52	345	*e*P		P	16 39 04.2	-0.9	
	comp=Z,29nm,1.1s								
BMRM	**Bremner River**	75.29	24	*e*P		P	16 39 08.6	-1.3	
	comp=Z,17nm,1.1s								
RAGM	**Ragged Mountai**	75.69	25	*e*P		P	16 39 11.2	-0.9	
	comp=Z,40nm,1.2s								
SKAG	**Skagway**	79.43	21	*e*P		P	16 39 33.6	+0.6	
	comp=Z,22nm,1.0s								
HNR	**Honiara**	79.50	109	LR		LR	17 12 07.0		
	comp=Z,60nm,21.8s,baz=328,slow=34								
MATP	**Matopo**	79.58	237	LR		LR	17 10 58.0		
	comp=Z,70nm,20.3s,slow=33								
TOA0	**Torodi Ar. Sit**	80.94	280	*e*P		P	16 39 39.6	-2.3	
TORD	**Torodi Ar. Bea**	80.94	280	P		P	16 39 40.5	-1.4	
	comp=Z,1.3nm,0.7s,baz=52,slow=4.8,SNR=11								
YKW3	**Yellowknife Ar**	81.48	11	*e*P		P	16 39 42.8	-1.1	
	comp=Z,19nm,1.1s								
YKA	**Yellowknife Ar**	81.55	11	P		P	16 39 43.2	-1.0	
	comp=Z,8.7nm,0.9s,baz=337,slow=4.9,SNR=44								
YKB5	**Yellowknife Ar**	81.55	11	*e*P		P	16 39 42.5	-1.8	
DLBC	**Dease Lake**	81.82	20	*e*P		P	16 39 45.7	-0.2	
	comp=Z,17nm,1.1s								
STKA	**Stephens Creek**	82.10	137	P		P	16 39 46.0	-1.5	
	comp=Z,9.0nm,0.9s,baz=327,slow=7.1,SNR=7.1								
STKA	**Stephens Creek**	82.10	137	*e*P		P	16 39 45.8	-1.7	
	comp=Z,2.6nm,0.9s								
LBTB	**Lobatse**	84.63	235	*e*P		P	16 39 59.4	-1.4	
LBTB				pmax	pmax				
	comp=Z,29nm,1.4s								
LBTB	**Lobatse**	84.63	235	*e*P		P	16 39 59.4	-1.4	
	comp=Z,29nm,1.4s								
TSUM	**Tsumeb**	86.64	244	LR		LR	17 19 23.2		
	comp=Z,56nm,19.1s,baz=23,slow=36								
FCC	**Fort Churchill**	87.18	2	*e*P		P	16 40 11.6	-1.3	
FCC				pmax	pmax				
	comp=Z,21nm,1.1s								
FCC	**Fort Churchill**	87.18	2	*e*P		P	16 40 11.6	-1.3	
	comp=Z,21nm,1.1s								
BOSA	**Boshof**	87.24	232	P		P	16 40 13.0	-0.7	
	comp=Z,9.8nm,1.0s,baz=59,slow=4.8,SNR=8.3								
BOSA				LR		LR	17 17 00.0		
	comp=Z,57nm,20.7s,baz=25,slow=34								
BOSA	**Boshof**	87.24	232	*e*P		P	16 40 12.7	-1.1	
BOSA				pmax	pmax				
	comp=Z,22nm,1.2s								
BOSA	**Boshof**	87.24	232	*e*P		P	16 40 12.7	-1.1	
	comp=Z,22nm,1.2s								
SCHQ	**Schefferville**	88.87	347	P		P	16 40 20.6	-0.4	
	comp=Z,8.9nm,0.9s,baz=

JYN	**Shimob**	**1.65**	**303**	P	**Pn**	**16 43 31.2**	**+0.4**
JYN				*e*S	**Sn**	**16 43 52.2**	**+0.6**
MJAR	**Matsushiro Arr**	**2.54**	**320**	Pn	**Pn**	**16 43 43.4**	**+0.8**
	3.6nm,0.3s,baz=142,slow=14,SNR=9.9						
MJAR				Sn	**Sn**	**16 44 10.1**	**-2.6**
	3.6nm,0.3s,baz=148,slow=15,SNR=3.1						
MAT	**Matsushiro**	**2.54**	**320**	P	**Pn**	**16 43 43.7**	**+1.0**
MAT				S	**Sn**	**16 44 13.7**	**+1.0**
JNU	**Nakatsue**	**7.92**	**262**	Pn	Pn	16 44 47.3	-8.6
	0.3nm,0.3s,baz=240,slow=22,SNR=2.6						
MKAR	**Makanchi Array**	**44.64**	**304**	P	**P**	**16 51 08.4**	**+0.7**
	0.2nm,0.4s,baz=93,slow=9.7,SNR=3.5						
WRA	**Warramunga Arr**	**54.54**	**187**	P	**P**	**16 52 21.9**	**-1.0**
	0.4nm,0.4s,baz=360,slow=7.5,SNR=4.5						

IDC 19 16:57:42.6±8.2, 6°51'S×149°22'E, h75km±55km, mb3.5/3, mb1 3.5/5, mb1mx3.2/45, mbtmp3.6/5, ML3.4/1, Error ellipse: s-maj=59.5km s-min=48.7km az=13.0, New Britain region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**3.53**	**215**	P	Pn	16 58 35.4	+0.4
	1.9nm,0.3s,baz=83,slow=8.7,SNR=8.2						
PMG				S	Sn	16 59 15.9	+0.2
	2.7nm,0.3s,baz=26,slow=15,SNR=8.1						
WRA	**Warramunga Arr**	**19.67**	**226**	P	Pn	17 02 07.7	-0.2
	0.1nm,0.3s,baz=50,slow=10,SNR=7.4						
ASAR	**Alice Springs**	**22.53**	**219**	P	P	17 02 36.9	+0.2
	0.4nm,0.5s,baz=50,slow=9.3,SNR=13						
FITZ	**Fitzroy Crossi**	**25.72**	**241**	P	P	17 03 06.0	-0.2
	1.5nm,0.6s,baz=59,slow=7.8,SNR=7.1						
VNDA	**Vanda**	**71.28**	**177**	P	P	17 08 53.1	-0.4
	1.2nm,0.6s,baz=352,slow=7.1,SNR=6.8						

IDC 19 17:07:08.4±45.0, 19°53'S×167°66'W, h0km, mb3.8/3, mb1 4.0/3, mb1mx3.5/49, mbtmp3.8/3, Error ellipse: s-maj=913.8km s-min=208.8km az=85.0, Tonga Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
STKA	**Stephens Creek**	**46.97**	**244**	P	P	17 15 39.4	-2.1
	1.0nm,0.5s,baz=86,slow=12,SNR=4.1						
ASAR	**Alice Springs**	**54.18**	**254**	P	P	17 16 36.8	+0.7
	1.2nm,0.7s,baz=101,slow=7.4,SNR=16						
WRA	**Warramunga Arr**	**54.35**	**259**	P	P	17 16 37.7	+0.4
	0.8nm,0.8s,baz=91,slow=6.0,SNR=11						

IDC ***19*** *17:07:45.7±3.3, 6°37'S×148°02'E, h0km, mb3.9/2, mb1 4.0/4, mb1mx3.5/50, mbtmp3.9/4, ML3.7/1, MS3.1/1, Ms1 3.1/1, ms1mx2.4/43, Error ellipse: s-maj=76.7km s-min=34.0km az=99.0*

ISCJB ***19*** *17:07:50.5±0.9, 6°26'S±0°.09×147°.5E±0°.1, h35km, mb4.1/4, Error ellipse: s-maj=16.4km s-min=11.1km az=30.9*

NEIC ***19*** *17:07:52.9±1.3, 6°.40'S×147°.59'E, h39km±12km, mb4.1/5, Error ellipse: s-maj=26.9km s-min=10.1km az=138.0*

ISC 19 17:07:52.8±1.1, 6°3S±0°.1×147°.5E±0°.1, h35km, n14, σ1§20/15, mb4.0/4, Eastern New Guinea region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**3.12**	**185**	Pn	**Pn**	**17 08 38.3**	**-1.1**
	5.0nm,0.3s,baz=353,slow=10,SNR=26						
PMG				Sn	**Sn**	**17 09 17.0**	**+1.5**
	16nm,0.3s,baz=353,slow=17,SNR=10						
PMG	**Port Moresby**	**3.12**	**185**	*e*Pn	**Pn**	**17 08 37.2**	**-2.2**
PMG				Sn	**Sn**	**17 09 17.0**	**+1.5**
RABL	**Rabaul**	**5.14**	**66**	*e*Pn	**Pn**	**17 09 06.6**	**-0.7**
WB2	**Warramunga Arr**	**18.61**	**222**	*e*P	**P**	**17 12 07.4**	**+0.1**
	13nm,1.5s						
WR1	**Warramunga Arr**	**18.61**	**222**	*e*P	**Pn**	**17 12 08.3**	**+0.4**
	11nm,1.4s						
WRA	**Warramunga Arr**	**18.61**	**222**	P	**Pn**	**17 12 08.3**	**+0.3**
	0.3nm,0.3s,baz=50,slow=11,SNR=14						
GUMO	**Guam**	**19.91**	**353**	LR	LR	17 20 10.8	
	comp=Z,45nm,18.2s,baz=160,slow=37						
AS01	**Alice Springs**	**21.61**	**216**	*e*P	**P**	**17 12 39.1**	**-0.9**
AS31	**Alice Springs**	**21.64**	**216**	*e*P	**P**	**17 12 39.9**	**-0.5**
	1.4nm,0.5s						
ASAR	**Alice Springs**	**21.64**	**216**	P	**P**	**17 12 39.8**	**-0.5**
	1.0nm,0.5s,baz=52,slow=8.8,SNR=47						
SOEI	**Soe**	**23.21**	**260**	*e*P	**P**	**17 12 56.7**	**-0.4**
	44nm,1.1s						
FITZ	**Fitzroy Crossi**	**24.30**	**239**	P	**P**	**17 13 08.8**	**+1.5**
	4.3nm,0.4s,baz=50,slow=7.8,SNR=36						
FITZ	**Fitzroy Crossi**	**24.30**	**239**	*e*P	**P**	**17 13 08.7**	**+1.5**
	23nm,1.6s						
TORD	**Torodi Ar. Bea**	**145.59**	**284**	PKPbc	**PKPdf**	**17 27 28.9**	**+0.4**
	0.3nm,0.4s,baz=60,slow=3.8,SNR=4.8						

ISCJB ***19*** *17:08:20.0±0.5, 42°.25'N±0°.04×142°.54'E±0°.05, h77km±4km, mb3.4/4, Error ellipse: s-maj=6.6km s-min=6.2km az=178.4*

JMA ***19*** *17:08:20.9±0.2, 42°.32'N×142°.56'E, h70km±2km, M3.0*

IDC ***19*** *17:08:22.1±2.2, 42°.32'N×142°.75'E, h81km±20km, mb3.3/4, mb1 3.5/7, mb1mx3.1/61, mbtmp3.6/7, MS2.4/1, Ms1 2.4/1, ms1mx2.0/26, Error ellipse: s-maj=40.0km s-min=14.2km az=107.0*

ISC 19 17:08:20.8±0.8, 42°28'N±0°.04×142°53'E±0°.04, h67km±7km, n29, σ1§27/32, mb3.4/4, Hokkaido region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JNBK	**Urakawa-nobuka**	**0.16**	**90**	P	**Pn**	**17 08 31.1**	**+0.2**
JNBK				*e*S	**Sn**	**17 08 39.0**	**+0.8**
JBT2	**Biratori 2**	**0.51**	**346**	P	**Pn**	**17 08 33.4**	**-0.1**
JBT2				*e*S	**Sn**	**17 08 42.8**	**0.0**
JEM	**Erimo**	**0.53**	**119**	P	**Pn**	**17 08 34.4**	**+0.7**
JEM				*e*S	**Sn**	**17 08 44.9**	**+1.8**
JCH	**Churui**	**0.70**	**61**	P	**Pn**	**17 08 35.7**	**+0.2**
JCH				*e*S	**Sn**	**17 08 46.6**	**+0.3**
JFR	**Furan**	**0.88**	**3**	P	**Pn**	**17 08 37.7**	**0.0**
JFR				*e*S	**Sn**	**17 08 50.6**	**+0.3**
JEW	**Eniwo**	**0.98**	**305**	P	**Pn**	**17 08 39.4**	**+0.5**
JEW				*e*S	**Sn**	**17 08 53.3**	**+1.0**
JNB	**Noboribetsu**	**1.12**	**280**	P	**Pn**	**17 08 40.4**	**-0.3**
JNB				*e*S	**Sn**	**17 08 54.9**	**-0.7**
JOB	**Onbets**	**1.15**	**57**	P	**Pn**	**17 08 41.7**	**+0.7**
JKB	**Kayabe**	**1.18**	**251**	P	**Pn**	**17 08 41.5**	**0.0**
JAB	**Ashibetsu**	**1.25**	**350**	P	**Pn**	**17 08 42.8**	**+0.5**
JAB				*e*S	**Sn**	**17 09 01.1**	**+2.7**
JAR	**Ashorobuto**	**1.36**	**41**	P	**Pn**	**17 08 43.8**	**-0.1**
JOT	**Ohata**	**1.43**	**232**	P	**Pn**	**17 08 44.9**	**+0.2**
JHR	**Hokuryu**	**1.58**	**338**	P	**Pn**	**17 08 48.0**	**+1.3**
JHR				*e*S	**Sn**	**17 09 09.4**	**+3.1**
JKK2	**Kamakawa 2**	**1.60**	**6**	P	**Pn**	**17 08 47.8**	**+0.8**
JKK2				*e*S	**Sn**	**17 09 08.2**	**+1.4**
ASAJ	**Asahikawa**	**1.84**	**1**	P	**Pn**	**17 08 51.5**	**+1.3**
	18nm,0.3s,baz=208,slow=13,SNR=213						
ASAJ				S	**Sn**	**17 09 14.1**	**+1.7**
	15nm,0.3s,baz=71,slow=30,SNR=17						
MJAR	**Matsushiro Arr**	**6.64**	**212**	P	**Pn**	**17 09 57.9**	**+2.2**
	0.6nm,0.3s,baz=19,slow=14,SNR=5.7						
USRK	**Ussuriysk Ar.**	**7.94**	**288**	LR	LR	17 13 08.8	
	comp=Z,25nm,21.3s,baz=239,slow=36						
KSRS	**Korea Array**	**12.21**	**252**	P	P	17 11 17.6	-4.3
	0.3nm,0.3s,baz=63,slow=14,SNR=6.0						
PETK	**Petropavlovsk-**	**14.85**	**38**	P	**Pn**	**17 11 45.7**	**-1.2**
	0.3nm,0.3s,baz=212,slow=13,SNR=6.0						
SEY	**Seymchan**	**21.48**	**12**	P	**P**	**17 13 01.1**	**-2.5**
	1.4nm,0.8s,baz=254,slow=18,SNR=5.8						
H11N2	**WAKE ISLAND Hy**	**30.48**	**130**	T	T	17 47 32.2	
	baz=311,slow=76,SNR=8.1						
H11N1	**WAKE ISLAND Hy**	**30.50**	**130**	T	T	17 47 18.1	
	SNR=8.9						
H11N3	**WAKE ISLAND Hy**	**30.50**	**130**	T	T	17 47 15.3	
	baz=323,slow=76,SNR=6.4						
H11S1	**WAKE ISLAND Hy**	**31.35**	**132**	T	T	17 48 04.2	
	SNR=10						
H11S3	**WAKE ISLAND Hy**	**31.36**	**132**	T	T	17 46 56.6	
	baz=323,slow=74,SNR=7.2						
H11S2	**WAKE ISLAND Hy**	**31.37**	**132**	T	T	17 47 20.9	
	baz=246,slow=74,SNR=7.4						
ILAR	**Eielson Array**	**44.66**	**35**	P	**P**	**17 16 26.6**	**+0.2**
	0.5nm,0.9s,baz=272,slow=7.8,SNR=6.1						
WRA	**Warramunga Arr**	**62.37**	**189**	P	**P**	**17 18 36.3**	**-0.1**
	0.2nm,0.8s,baz=6.7,slow=4.4,SNR=3.3						
FINES	**FINESS Array B**	**64.60**	**332**	P	**P**	**17 18 50.5**	**-0.1**
	0.6nm,0.5s,baz=47,slow=8.4,SNR=5.7						

ISCJB ***19*** *17:12:18.8±0.8, 5°.48'S±0°.06×35°.6E±0°.1, h10km, mb3.7/3, Error ellipse: s-maj=20.3km s-min=8.2km az=2.5*

IDC ***19*** *17:12:19.6±1.3, 5°.10'S×34°.90E, h0km, mb3.7/3, mb1 3.9/6, mb1mx3.5/46, mbtmp3.9/6, ML3.9/3, Error ellipse: s-maj=153.2km s-min=19.2km az=118.0*

ISC 19 17:12:20.3±0.9, 5°.50'S±0°.06×35°.7E±0°.2, h10km, n7, σ1§45/9, mb3.8/3, Tanzania

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DODT	**Dodoma, Tanzan**	**0.69**	**173**	*i* P	**Pg**	**17 12 33.3**	**-0.4**
DODT				*i* S	**Sg**	**17 12 42.4**	**-0.4**
KMBO	**Kilima Mbogo**	**4.62**	**20**	Pn	**Pn**	**17 13 28.7**	**-1.8**
	3.9nm,0.3s,baz=198,slow=15,SNR=41						
KMBO				Pg	**Pb**	**17 13 41.5**	**-0.2**
	9.8nm,0.3s,baz=215,slow=22,SNR=15						
KMBO				Lg	Lg	17 14 37.7	
	27nm,0.3s,baz=82,slow=22,SNR=19						
LSZ	**Lusaka**	**12.18**	**217**	Pn	**Pn**	**17 15 13.4**	**-0.7**
	0.6nm,0.3s,baz=33,slow=6.4,SNR=8.8						
LSZ				Lg	Lg	17 18 37.8	
	0.8nm,0.3s,baz=134,slow=18,SNR=6.9						
MATP	**Matopo**	**16.39**	**204**	Pn	**Pn**	**17 16 11.8**	**+1.0**
	0.2nm,0.3s,baz=44,slow=11,SNR=5.3						
MATP				Lg	Lg	17 20 58.0	
	0.2nm,0.3s,baz=296,slow=10,SNR=5.5						
LBTB	**Lobatse**	**21.68**	**205**	P	**P**	**17 17 11.8**	**+0.4**
	3.9nm,0.9s,baz=45,slow=12,SNR=4.1						
MKAR	**Makanchi Array**	**66.39**	**33**	P	**P**	**17 23 11.8**	**+2.2**
	0.6nm,0.8s,baz=238,slow=7.0,SNR=7.8						
ZALV	**Zalesovo Beam**	**72.06**	**28**	P	**P**	**17 23 46.0**	**+1.5**
	0.2nm,0.3s,baz=250,slow=4.3,SNR=2.3						

IDC 19 17:19:16.2±5.7, 48°.87S×110°.91E, h0km, mb3.7/2, mb1 4.0/2, mb1mx3.6/37, mbtmp3.7/2, Error ellipse: s-maj=246.2km s-min=57.0km az=112.0, Southeast Indian Ridge

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
H01W2	**Cape Leeuwin H**	**14.17**	**11**	T	T	17 37 10.2	
	baz=198,slow=74,SNR=67						
H01W1	**Cape Leeuwin H**	**14.18**	**11**	T	T	17 37 11.0	
	baz=198,slow=74,SNR=92						
H01W3	**Cape Leeuwin H**	**14.18**	**11**	T	T	17 37 11.0	
	baz=198,slow=74,SNR=88						
ASAR	**Alice Springs**	**31.01**	**44**	P	P	17 25 35.6	+0.2
	0.9nm,1.0s,baz=211,slow=8.4,SNR=4.6						
WRA	**Warramunga Arr**	**34.45**	**41**	P	P	17 26 05.4	-0.1
	1.6nm,1.0s,baz=208,slow=9.6,SNR=4.8						
TXAR	**Lajitas Array**	**147.22**	**114**	PKPbc	PKPbc	17 39 00.5	-0.8
	0.3nm,0.7s,baz=191,slow=6.0,SNR=3.7						

DHMR 19 17:20:49.2±1.8, 12°.02N×43°.92E, h3km±18km, ML3.5, Western Arabian Peninsula

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ADEN	**Aden**	**1.28**	**54**	*i* P	Pg	17 21 13.8	0.0
ADEN				*i* S	Sb	17 21 31.0	0.0
ADEN				AML	AML	17 21 32.9	
	comp=E,1μm,0.5s						
UDYN	**Al 'Udayn**	**1.94**	**1**	*i* P	Pn	17 21 23.1	-0.2
UDYN				*i* S	Sg	17 21 51.9	+0.2
BDHA	**Al Bayda'**	**2.52**	**39**	*i* P	Pb	17 21 33.5	-1.8
BDHA				*i* S	Sb	17 22 08.0	+1.0
BDHA				AML	AML	17 22 14.7	
	comp=N,259nm,0.5s						

ISCJB ***19*** *17:20:49.9±0.2, 28°.18'N±0°.02×104°.84'E±0°.03, h10km, mb4.3/41, MS3.1/4, Error ellipse: s-maj=4.4km s-min=3.3km az=164.2*

IDC ***19*** *17:20:50.2±0.6, 28°.22'N×104°.89'E, h0km, mb4.2/20, mb1 4.3/21, mb1mx4.1/56, mbtmp4.2/21, ML4.1/1, MS3.1/3, Ms1 3.1/3, ms1mx2.6/57, Error ellipse: s-maj=20.3km s-min=13.3km az=46.0*

BJI ***19*** *17:20:52.9, 28°.24'N×104°.88'E, h15km, mb4.2/22, mB4.5/13, ML4.1/25, Ms3.9/23, Ms7 3.8/21*

MOS ***19*** *17:20:54.0±1.1, 28°.27'N×104°.89'E, h38km, mb4.4/27, Error ellipse: s-maj=10.6km s-min=6.7km az=101.9*

NEIC ***19*** *17:20:57.5±0.5, 28°.28'N×104°.90'E, h55km±5km, mb4.4/22, Error ellipse: s-maj=4.6km s-min=3.9km az=82.0*

ISC 19 17:20:52.1±0.3, 28°25'N±0°.03×104°91'E±0°.04, h10km, n116, σ1§64/130, mb4.3/41, MS3.2/4, 4C-1D, Sichuan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GYA	**Guiyang**	**2.37**	**138**	Pn	**Pn**	**17 21 33.4**	**+2.2**
GYA				Pg	**Pg**	**17 21 39.4**	**+1.8**
GYA				Sn	**Sn**	**17 22 02.3**	**+1.8**
GYA				Sg	**Sb**	**17 22 07.4**	**+3.0**
GYA				smax	smax		
	comp=N,3μm,0.7s						
GYA				smax	smax		
	comp=E,1μm,0.8s						
CD2	**Chengdu**	**2.83**	**340**	Pn	**Pn**	**17 21 39.1**	**+1.6**
CD2				Pg	**Pg**	**17 21 46.6**	**+0.2**
CD2				Sn	**Sn**	**17 22 13.9**	**+2.2**
CD2				Sg	**Sg**	**17 22 26.5**	**+3.3**
CD2				smax	smax		
	comp=N,2μm,0.7s						
CD2				smax	smax		
	comp=E,1μm,0.6s						
KMI	**Kunming**	**3.67**	**212**	Pn	**Pn**	**17 21 51.5**	**+2.3**
KMI				Pg	**Pg**	**17 22 02.1**	**-0.4**
KMI				Sg	**Sg**	**17 22 49.4**	**-0.6**
KMI				smax	smax		
	comp=N,94nm,1.0s						
KMI				smax	smax		
	comp=E,63nm,1.0s						
KMI				LR	LR		
	comp=N,1μm,7.9s						
KMI				LR	LR		
	comp=E,1μm,7.8s						
KMI				LR	LR		
	comp=Z,550nm,7.5s						
ENH	**Enshi**	**4.48**	**62**	*e*Pn	**Pn**	**17 22 02.5**	**+2.4**
ENH				*e*Sn	Sn	17 22 43.1	-9.2
XAN	**Xi'an**	**6.72**	**30**	Pn	**Pn**	**17 22 32.8**	**+1.9**
XAN				Sn	**Sn**	**17 23 45.3**	**-2.2**
XAN				Sg	**Sg**	**17 24 23.3**	**-4.5**
XAN				smax	smax		
	comp=N,370nm,1.3s						
XAN				smax	smax		
	comp=E,290nm,1.1s						
XAN				LR	LR		
	comp=N,330nm,8.3s						
XAN				LR	LR		
	comp=E,400nm,11.1s						
XAN				LR	LR		
	comp=Z,260nm,7.9s						
LZH	**Lanzhou**	**7.86**	**354**	*e*P	**Pn**	**17 22 49.3**	**+2.6**
LZH				S	**Sn**	**17 24 14.4**	**-1.5**
LZH				smax	smax		
	comp=N,91nm,1.0s						
LZH				smax	smax		
	comp=E,200nm,1.2s						
LZH				LR	LR		
	comp=N,300nm,5.8s						
LZH				LR	LR		
	comp=E,710nm,6.2s						
LZH				LR	LR		
	comp=Z,430nm,6.2s						
WHN	**Wuhan**	**8.55**	**72**	↓P	**Pn**	**17 22 57.4**	**+1.4**
WHN				S	**Sn**	**17 24 28.8**	**-3.7**
WHN				LR	LR		
	comp=N,2μm,9.8s						
WHN				LR	LR		
	comp=E,650nm,7.9s						
WHN				LR	LR		
	comp=Z,2μm,9.7s						
CHTO	**Chiang Mai**	**10.87**	**211**	*e*P	**Pn**	**17 23 30.9**	**+3.1**
CHTO	**Chiang Mai**	**10.87**	**211**	*e*Pn	**Pn**	**17 23 30.9**	**+3.1**
CM31	**Chiang Mai Arr**	**11.18**	**211**	*e*Pn	**Pn**	**17 23 36.2**	**+4.2**
CMAR	**Chiang Mai Arr**	**11.18**	**211**	Pn	**Pn**	**17 23 35.5**	**+3.5**
	0.2nm,0.3s,baz=18,slow=12,SNR=49						
CM01	**Chiang Mai Arr**	**11.20**	**210**	*e*Pn	**Pn**	**17 23 35.6**	**+3.2**
GTA	**Gaotai**	**11.90**	**341**	*e*P	**Pn**	**17 23 43.5**	**+1.4**
GTA				pP		17 23 46.9	
GTA				sP		17 23 49.9	
GTA				S	**Sn**	**17 25 59.3**	**+4.3**
GTA				sS		17 26 03.5	
GTA				SS	**SnSn**	**17 26 13.5**	**+6.2**
GTA				pmax	pmax		
	comp=Z,3.0nm,1.1s						
GTA				pmax	pmax		
	comp=Z,69nm,4.7s						
GTA				LR	LR		
	comp=N,280nm,13.3s						
GTA				LR	LR		
	comp=E,410nm,14.7s						
GTA				LR	LR		
	comp=Z,130nm,11.9s						
LSA	**Lhasa**	**12.13**	**280**	*e*P	**Pn**	**17 23 46.4**	**+0.9**
LSA	**Lhasa**	**12.13**	**280**	*e*Pn	**Pn**	**17 23 46.4**	**+0.9**
HHC	**Hu-ho-hao-te**	**13.71**	**22**	*e*P	**Pn**	**17 24 09.1**	**+2.5**
HHC				pmax	pmax		
	comp=Z,22nm,1.0s						
HHC				pmax	pmax		
	comp=Z,36nm,8.3s						
BJI	**Beijing**	**14.99**	**35**	P	**Pn**	**17 24 26.9**	**+2.8**
BJI				pmax	pmax		
	comp=Z,7.0nm,1.2s						
PKIN	**Phulchoki**	**17.26**	**272**	*e*P	**Pn**	**17 24 50.9**	**-2.7**
	16nm,0.6s						
KKN	**Kakani**	**17.34**	**273**	*e*P	**Pn**	**17 24 52.0**	**-2.5**
	25nm,0.6s						
GKN	**Gorkha**	**17.88**	**274**	*e*P	**Pn**	**17 24 59.4**	**-1.8**
	18nm,0.8s						
KOLN	**Koldanda**	**18.82**	**274**	*e*P	**P**	**17 25 08.8**	**-3.5**
	18nm,0.9s						
PYUN	**Piuthan**	**19.32**	**275**	*e*P	**P**	**17 25 15.4**	**-2.4**
SONA0	**Songino Array**	**19.59**	**3**	*e*P	**P**	**17 25 21.3**	**+0.8**
SONM	**Songino Array**	**19.59**	**3**	P	**P**	**17 25 21.3**	**+0.8**
	0.5nm,0.3s,baz=186,slow=12,SNR=12						
SONA1	**Songino Array**	**19.60**	**3**	*e*P	**P**	**17 25 19.6**	**-1.0**
ULN	**Ulaanbaatar**	**19.65**	**4**	*e*P	**P**	**17 25 21.7**	**+0.5**
ULN				pmax	pmax		
	comp=Z,7.0nm,1.2s						
ULN	**Ulaanbaatar**	**19.65**	**4**	*e*P	**P**	**17 25 21.7**	**+0.5**
	comp=Z,7.3nm,1.2s						
WMQ	**Urumqi**	**20.80**	**323**	*e*P	**P**	**17 25 33.1**	**-0.4**
WMQ	**Urumqi**	**20.80**	**323**	*e*P	**P**	**17 25 34.3**	**+0.8**
WMQ				pmax	pmax		
	comp=Z,3.0nm,0.6s						
WMQ				pmax	pmax		
	comp=Z,19nm,3.8s						
WMQ				LR	LR		
	comp=Z,44nm,8.0s						
WMQ				LR	LR		
	comp=Z,36nm,6.4s						
KS15	**Wonju Array Si**	**21.33**	**59**	*e*P	**P**	**17 25 39.9**	**+0.7**
KSAR	**Wonju Array Be**	**21.33**	**59**	P	**P**	**17 25 39.3**	**+0.1**
KSAR	**Wonju Array Be**	**21.33**	**59**	P	**P**	**17 25 39.3**	**+0.1**
KSRS	**Korea Array**	**21.36**	**59**	P	**P**	**17 25 39.3**	**-0.3**
	comp=Z,5.4nm,0.9s,baz=241,slow=11,SNR=12						
ZAK	**Zakamensk**	**22.14**	**357**	*e*P	**P**	**17 25 48.0**	**+0.1**
ZAK				pmax	pmax		
	comp=Z,11nm,1.0s						
CN2	**Changchun**	**22.64**	**41**	*e*P	**P**	**17 25 56.8**	**+3.5**
JNU	**Nakatsue**	**22.83**	**71**	P	**P**	**17 25 55.9**	**+0.4**
	comp=Z,18nm,1.1s,baz=343,slow=5.6,SNR=4.3						
JNU	**Nakatsue**	**22.83**	**71**	*e*P	**P**	**17 25 55.9**	**+0.4**
	comp=Z,77nm,1.5s						
HIA	**Hailar**	**23.88**	**24**	*e*P	**P**	**17 26 06.0**	**+0.2**
HIA				pmax	pmax		
	comp=Z,10.0nm,1.1s						
HIA	**Hailar**	**23.88**	**24**	*e*P	**P**	**17 26 06.0**	**+0.2**
	comp=Z,10nm,1.1s						
IPM	**Ipoh**	**23.93**	**190**	*e*P	**P**	**17 26 04.6**	**-1.8**
	comp=Z,7.1nm,0.7s						
IRK	**Irkutsk**	**23.97**	**359**	*e*P	**P**	**17 26 07.8**	**+1.2**
IRK				pmax	pmax		
	comp=Z,21nm,1.4s						
MK01	**Makanchi Array**	**25.60**	**322**	*e*P	**P**	**17 26 21.1**	**-0.5**
MK31	**Makanchi Array**	**25.62**	**322**	*e*P	**P**	**17 26 21.7**	**-0.1**
MK31	**Makanchi Array**	**25.62**	**322**	*e*P	**P**	**17 26 21.7**	**-0.1**
MK32	**Makanchi Array**	**25.62**	**322**	*e*P	**P**	**17 26 21.8**	**+0.1**
MKAR	**Makanchi Array**	**25.62**	**322**	P	**P**	**17 26 21.8**	**+0.1**
	comp=Z,6.4nm,0.8s,baz=123,slow=9.0,SNR=48						
MKAR				LR	LR	17 36 22.5	
	comp=Z,18nm,21.5s,baz=248,slow=36						
MKAR	**Makanchi Array**	**25.62**	**322**	*e*P	**P**	**17 26 21.7**	**-0.1**
MAKZ	**Makanchi**	**25.80**	**322**	*e*P	**P**	**17 26 23.2**	**-0.2**
MAKZ				pmax	pmax		
	comp=Z,13nm,1.3s						
MAKZ	**Makanchi**	**25.80**	**322**	*e*P	**P**	**17 26 23.1**	**-0.2**
	comp=Z,13nm,1.3s						
SBUM	**Sibu**	**26.59**	**163**	*e*P	**P**	**17 26 31.5**	**+0.8**
	comp=Z,3.9nm,0.8s						
ZAA0	**Zalesovo Array**	**29.59**	**336**	*e*P	**P**	**17 26 56.0**	**-1.2**
ZALV	**Zalesovo Beam**	**29.59**	**336**	P	**P**	**17 26 56.5**	**-0.7**
	comp=Z,1.5nm,0.7s,baz=139,slow=7.8,SNR=7.7						
ZALV	**Zalesovo Beam**	**29.59**	**336**	P	**P**	**17 26 56.5**	**-0.7**
ZALV				pmax	pmax		
	comp=Z,1.0nm,0.6s						
ZAA1	**Zalesovo Array**	**29.60**	**336**	*e*P	**P**	**17 26 56.5**	**-0.7**
KURBB	**Kurchatov Arra**	**29.95**	**325**	P	**P**	**17 27 00.5**	**+0.1**
	comp=Z,2.2nm,0.7s,baz=131,slow=9.6,SNR=18						
KURK	**Kurchatov**	**29.97**	**326**	P	**P**	**17 27 00.5**	**0.0**
KURK				pmax	pmax		
	comp=Z,2.0nm,0.8s						
KURK	**Kurchatov**	**29.97**	**326**	*e*P	**P**	**17 27 00.5**	**0.0**
KBL	**Kabul**	**31.14**	**291**	*e*P	**P**	**17 27 09.5**	**-1.8**
KBL				pmax	pmax		
	comp=Z,6.0nm,1.2s						
KBL	**Kabul**	**31.14**	**291**	*e*P	**P**	**17 27 09.5**	**-1.8**
	comp=Z,6.0nm,1.2s						
KKAR	**Karatay Array**	**31.38**	**307**	*e*P	**P**	**17 27 13.4**	**+0.3**
KKAR	**Karatay Array**	**31.38**	**307**	*e*P	**P**	**17 27 13.4**	**+0.3**
VOSK	**Vostochnaya**	**35.02**	**324**	*e*P	**P**	**17 27 44.6**	**-0.1**
VOSK				pmax	pmax		
	comp=Z,6.0nm,1.5s						
VOSK	**Vostochnaya**	**35.02**	**324**	*e*P	**P**	**17 27 44.6**	**-0.1**
	comp=Z,6.3nm,1.5s						
BRVK	**Borovoye**	**35.55**	**324**	*e*P	**P**	**17 27 50.6**	**+1.3**
BRVK				pmax	pmax

AS31	**Alice Springs**	**58.70**	**149**	*e*P	**P**	**17 30 49.6**	**-0.6**
	comp=Z,1.0nm,0.8s							
ASAR	**Alice Springs**	**58.70**	**149**	P	**P**	**17 30 49.9**	**-0.3**
	comp=Z,2.1nm,0.7s,baz=324,slow=6.8,SNR=45							
AS01	**Alice Springs**	**58.72**	**149**	*e*P	**P**	**17 30 49.3**	**-1.0**
BR101	**Keskin Array S**	**58.78**	**301**	*e*P	**P**	**17 30 49.6**	**-1.2**
BRTR	**Keskin Array B**	**58.79**	**301**	P	**P**	**17 30 49.6**	**-1.2**
	comp=Z,0.6nm,0.6s,baz=90,slow=4.9,SNR=3.9							
AKASG	**Malin Array Be**	**59.86**	**315**	P	**P**	**17 30 57.0**	**-0.8**
	comp=Z,0.6nm,0.4s,baz=71,slow=6.2,SNR=5.7							
AKBB	**Malin Array Si**	**59.86**	**315**	*e*P	**P**	**17 30 57.1**	**-0.8**
AKBB				pmax	pmax			
	comp=Z,5.0nm,0.6s							
AKBB	**Malin Array Si**	**59.86**	**315**	*e*P	**P**	**17 30 57.0**	**-0.8**
	comp=Z,4.7nm,0.6s							
ARA0	**ARCESS Array S**	**60.14**	**337**	*e*P	**P**	**17 30 59.0**	**-0.6**
ARCES	**ARCESS Array B**	**60.14**	**337**	P	**P**	**17 30 59.0**	**-0.5**
	comp=Z,1.6nm,0.7s,baz=90,slow=7.9,SNR=5.8							
ARCES	**ARCESS Array B**	**60.14**	**337**	P	**P**	**17 30 59.0**	**-0.5**
ARCES				pmax	pmax			
	comp=Z,6.0nm,1.0s							
FIA0	**FINESS Array S**	**60.33**	**327**	*e*P	**P**	**17 31 00.3**	**-0.6**
FIA0	**FINESS Array S**	**60.33**	**327**	*e*P	**P**	**17 31 00.2**	**-0.6**
FINES	**FINESS Array B**	**60.33**	**327**	P	**P**	**17 31 00.2**	**-0.6**
	comp=Z,1.4nm,0.8s,baz=151,slow=4.4,SNR=4.2							
FINES	**FINESS Array B**	**60.33**	**327**	*ce*P	**P**	**17 31 01.6**	**+0.8**
FINES				pmax	pmax			
	comp=Z,1.0nm,0.6s							
NB200	**NORSAR Array S**	**67.44**	**328**	*e*P	**P**	**17 31 46.5**	**-1.3**
NOA	**NORSAR Array B**	**67.44**	**328**	P	**P**	**17 31 46.5**	**-1.3**
	comp=Z,0.9nm,0.7s,baz=54,slow=6.6,SNR=3.7							
GERES	**GERESS Array B**	**70.05**	**315**	P	**P**	**17 32 03.9**	**-0.5**
	comp=Z,0.6nm,0.6s,baz=74,slow=5.8,SNR=6.2							
BPAW	**Bear Paw Mtn.**	**70.82**	**27**	*e*P	**P**	**17 32 08.3**	**-0.4**
	comp=Z,4.7nm,1.0s							
PPLA	**Purkeypile**	**70.83**	**28**	*e*P	**P**	**17 32 08.5**	**-0.4**
	comp=Z,15nm,1.4s							
KMBO	**Kilima Mbogo**	**70.97**	**258**	P	**P**	**17 32 10.5**	**-0.2**
	comp=Z,1.5nm,0.7s,baz=50,slow=11,SNR=5.2							
KDAK	**Kodiak Island**	**72.83**	**33**	*ce*P	**P**	**17 32 22.8**	**+2.0**
INK	**Inuvik**	**74.61**	**19**	P	**P**	**17 32 31.0**	**-0.1**
	comp=Z,1.7nm,0.8s,baz=321,slow=7.4,SNR=4.3							
INK	**Inuvik**	**74.61**	**19**	*e*P	**P**	**17 32 31.0**	**-0.1**
	comp=Z,6.0nm,1.2s							
BMRM	**Bremner River**	**74.91**	**28**	*e*P	**P**	**17 32 31.7**	**-1.3**
	comp=Z,11nm,1.0s							
YKA	**Yellowknife Ar**	**84.20**	**17**	P	**P**	**17 33 23.4**	**0.0**
	comp=Z,0.9nm,0.8s,baz=328,slow=5.0,SNR=13							
YKB5	**Yellowknife Ar**	**84.20**	**17**	*e*P	**P**	**17 33 22.9**	**-0.6**
LSZ	**Lusaka**	**85.85**	**252**	P	**P**	**17 33 32.0**	**-0.6**
	comp=Z,0.8nm,0.4s,baz=54,slow=6.7,SNR=4.0							
LSZ	**Lusaka**	**85.85**	**250**	P	**P**	**17 33 32.0**	**-0.6**
LSZ				pmax	pmax			
	comp=Z,2.0nm,0.6s							
LSZ	**Lusaka**	**85.85**	**250**	*e*P	**P**	**17 33 32.0**	**-0.6**
	comp=Z,19nm,1.8s							
LTX	**Lajitas**	**116.55**	**28**	*e*PKIKP	**PKPdf**	**17 39 36.3**	**-0.7**
LTX	**Lajitas**	**116.55**	**28**	*e*PKPdf	**PKPdf**	**17 39 36.3**	**-0.7**
TXAR	**Lajitas Array**	**116.55**	**28**	PKP	**PKPdf**	**17 39 36.3**	**-0.7**
	comp=Z,0.4nm,0.7s,baz=160,slow=7.8,SNR=4.7							
ROSC	**El Rosal**	**147.09**	**359**	PKPbc	**PKPbc**	**17 40 36.5**	**-0.1**
	comp=Z,6.8nm,0.5s,baz=7.5,slow=20,SNR=4.5							

*ISCJB **19** 17:23:45.6±0.5,39.48N±0.04×143.61E±0.04,h11km, mb3.9/16,MS3.1/2,Error ellipse: s-maj=6.7km s-min=4.3km az=159.6*
*JMA **19** 17:23:47.8±0.1,39.50N×143.55E,h24km,M4.0*
*IDC **19** 17:23:51.4±2.6,39.48N×143.51E,h42km±23km, mb3.7/17, mb1 4.0/21,mb1mx3.8/47,mbtmp4.0/21,ML3.3/4,MS3.1/2, Ms1 3.1/2,ms1mx2.5/57,Error ellipse: s-maj=19.9km s-min=14.0km az=125.0*
ISC 19 17:23:47.2±0.7,39.52N±0.06×143.54E±0.06,h11km,n45, σ1§04/46,mb4.0/16,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
MIYJ	**Miyakonagasawa**	**1.33**	**273**	P		**Pn**	**17 24 11.3**	**-0.5**
MIYJ				*e*S		**Sb**	**17 24 28.1**	**-1.2**
JTH	**Tanohata**	**1.36**	**289**	P		**Pn**	**17 24 11.4**	**-0.8**
JTH				*e*S		**Sb**	**17 24 29.8**	**-0.3**
OFUJ	**Ofunato**	**1.52**	**254**	P		**Pn**	**17 24 14.0**	**-0.3**
JOM	**Ohasama**	**1.74**	**269**	P		**Pn**	**17 24 17.6**	**+0.2**
JOM				*e*S		**Sn**	**17 24 39.2**	**-0.4**
JKZ	**Kuzumaki**	**1.77**	**286**	P		**Pn**	**17 24 18.1**	**+0.3**
JKZ				*e*S		**Sn**	**17 24 39.9**	**-0.4**
JMK	**Ichinoseki**	**1.89**	**253**	P		**Pn**	**17 24 19.4**	**0.0**
JMK				*e*S		**Sn**	**17 24 43.2**	**0.0**
JIO	**Ouri**	**2.01**	**239**	P		**Pn**	**17 24 20.6**	**-0.5**
JIO				*e*S		**Sn**	**17 24 44.3**	**-1.9**
JRG	**Rokugo**	**2.26**	**268**	P		**Pn**	**17 24 25.0**	**+0.5**
JTM	**Tenmabayashi**	**2.28**	**305**	P		**Pn**	**17 24 24.9**	**+0.1**
JTM				*e*S		**Sn**	**17 24 52.9**	**0.0**
JAH	**Hinai**	**2.34**	**288**	P		**Pn**	**17 24 26.1**	**+0.5**
JEM	**Erimo**	**2.51**	**353**	P		**Pn**	**17 24 28.5**	**+0.5**
JYK	**Kaneyama**	**2.54**	**257**	P		**Pn**	**17 24 29.0**	**+0.6**
JNBK	**Urakawa-nobuka**	**2.82**	**348**	P		**Pn**	**17 24 32.6**	**+0.3**
JCH	**Churui**	**3.10**	**358**	P		**Pn**	**17 24 35.2**	**-0.8**
ASAJ	**Asahikawa**	**4.65**	**352**	P		**Pn**	**17 24 58.4**	**+1.0**
	2.1nm,0.3s,baz=196,slow=11,SNR=26							
ASAJ				S		**Sn**	**17 25 47.8**	**-3.6**
	3.0nm,0.3s,baz=208,slow=13,SNR=4.1							
MJAR	**Matsushiro Ar**	**5.15**	**236**	P		**Pn**	**17 25 05.9**	**+1.6**
	5.7nm,0.3s,baz=35,slow=13,SNR=66							
MAT	**Matsushiro**	**5.15**	**236**	P		**Pn**	**17 25 05.7**	**+1.4**
JHJ	**Hachijo jima 2**	**7.07**	**207**	S		Sn	17 26 44.1	-6.9
	20nm,0.3s,baz=61,slow=23,SNR=7.6							
USRK	**Ussuriysk Ar.**	**9.80**	**302**	P		**Pn**	**17 26 11.0**	**+2.9**
	0.3nm,0.3s,baz=113,slow=13,SNR=6.9							
KLR	**Kul'dur**	**12.85**	**323**	P		**Pn**	**17 26 51.4**	**+1.7**
	0.1nm,0.3s,baz=114,slow=12,SNR=4.1							
MA2	**Magadan**	**20.59**	**10**	P		**P**	**17 28 27.1**	**+1.0**
	6.7nm,0.6s,baz=209,slow=14,SNR=5.9							
SEY	**Seymchan**	**24.05**	**10**	P		**P**	**17 29 01.3**	**-0.7**
	5.3nm,0.8s,baz=185,slow=8.7,SNR=23							
H11N2	**WAKE ISLAND Hy**	**28.16**	**128**	T		T	18 00 48.1	
	baz=318,slow=75,SNR=80							
H11N1	**WAKE ISLAND Hy**	**28.17**	**128**	T		T	18 00 41.5	
	baz=318,slow=75,SNR=53							
H11N3	**WAKE ISLAND Hy**	**28.18**	**128**	T		T	18 00 39.3	
	baz=318,slow=75,SNR=44							
H11S1	**WAKE ISLAND Hy**	**28.97**	**130**	T		T	18 01 29.0	
	SNR=4.4							
H11S3	**WAKE ISLAND Hy**	**28.98**	**130**	T		T	18 00 51.1	
H11S2	**WAKE ISLAND Hy**	**28.99**	**130**	T		T	18 01 13.0	
	SNR=4.8							
ZALV	**Zalesovo Beam**	**41.53**	**310**	P		**P**	**17 31 34.7**	**+0.3**
	1.8nm,0.5s,baz=82,slow=6.8,SNR=10.0							
ZALV				PcP		**PcP**	**17 33 31.9**	**+0.3**
	1.6nm,0.6s,baz=102,slow=2.9,SNR=5.3							
CMAR	**Chiang Mai Arr**	**43.76**	**254**	P		**P**	**17 31 52.7**	**-0.2**
	0.7nm,0.8s,baz=46,slow=7.5,SNR=6.2							
MKAR	**Makanchi Array**	**44.27**	**300**	P		**P**	**17 31 56.8**	**+0.1**
	1.5nm,0.7s,baz=84,slow=9.8,SNR=16							
MKAR				LR		LR	17 51 19.9	
	comp=Z,27nm,19.9s,baz=36,slow=37							
ILAR	**Eielson Array**	**46.50**	**34**	P		**P**	**17 32 14.1**	**-0.1**
	1.4nm,0.7s,baz=262,slow=6.8,SNR=18							
INK	**Inuvik**	**51.41**	**28**	P		**P**	**17 32 52.4**	**+0.7**
	1.6nm,0.5s,baz=310,slow=5.0,SNR=5.9							
AKTO	**Aktyubinsk**	**58.28**	**311**	LR		LR	18 00 17.9	
	comp=Z,14nm,19.1s,baz=78,slow=38							
WRA	**Warramunga Arr**	**59.77**	**190**	P		**P**	**17 33 50.8**	**-1.5**
	0.6nm,0.5s,baz=9.1,slow=7.0,SNR=8.7							
YKA	**Yellowknife Ar**	**60.82**	**31**	P		**P**	**17 33 59.3**	**+0.3**
	0.6nm,0.6s,baz=301,slow=6.3,SNR=7.9							
ASAR	**Alice Springs**	**63.50**	**190**	P		**P**	**17 34 16.9**	**-0.4**
	0.5nm,0.8s,baz=26,slow=6.0,SNR=4.7							
FINES	**FINESS Array B**	**67.39**	**332**	P		**P**	**17 34 41.6**	**-0.6**
	1.0nm,0.6s,baz=44,slow=8.5,SNR=6.6							
KBZ	**Khabaz**	**70.55**	**311**	P		**P**	**17 35 02.8**	**+0.7**
	1.3nm,0.7s,baz=318,slow=2.2,SNR=4.5							
NVAR	**Mina Array Bea**	**72.17**	**55**	P		**P**	**17 35 12.7**	**+0.4**
	1.3nm,0.7s,baz=292,slow=5.6,SNR=5.9							
NB2	**NORSAR Subarra**	**72.53**	**338**	P		**P**	**17 35 13.7**	**-0.1**
	comp=Z,0.7nm,0.6s,baz=38,slow=6.2							
NOA	**NORSAR Array B**	**72.53**	**338**	P		**P**	**17 35 13.2**	**-0.7**
	comp=Z,0.9nm,0.6s,baz=38,slow=6.0,SNR=4.9							
AKASG	**Malin Array Be**	**73.35**	**323**	P		**P**	**17 35 17.4**	**-1.3**
	comp=Z,1.0nm,0.6s,baz=45,slow=6.6,SNR=7.9							
PDAR	**Pinedale Array**	**74.74**	**47**	P		**P**	**17 35 27.8**	**+0.4**
	comp=Z,0.5nm,0.5s,baz=264,slow=2.0,SNR=6.8							
TXAR	**Lajitas Array**	**87.29**	**54**	P		**P**	**17 36 34.7**	**+0.4**
	comp=Z,0.2nm,0.4s,baz=306,slow=3.7,SNR=5.3							

*IDC **19** 17:24:33.0±1.7,21.85S×170.02E,h0km,mb3.9/8, mb1 4.0/9,mb1mx3.8/41,mbtmp3.9/9,ML3.9/1,MS3.5/7, Ms1 3.5/7,ms1mx3.2/39,Error ellipse: s-maj=65.4km s-min=21.4km az=150.0*
*NEIC **19** 17:24:43.2±1.8,21.55S×169.53E,h61km±15km,mb4.2/2, Error ellipse: s-maj=50.9km s-min=11.2km az=161.0*
ISC 19 17:24:39.5±1.4,21.7S±0.3×169.7E±0.2,h35km,n28, σ1§03/24,mb3.8/9,MS3.8/5,1C,Southeast of Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**3.07**	**262**	Pn		**Pn**	**17 25 24.7**	**-0.9**
	12nm,0.3s,baz=91,slow=19,SNR=108							
DZM				Sn		**Sn**	**17 25 59.3**	**-2.0**
	109nm,0.3s,baz=118,slow=22,SNR=15							
DZM				LR		LR	17 26 06.3	
	comp=Z,252nm,21.2s,baz=98,slow=28							
MSVF	**Nonsavu**	**8.76**	**65**	*e*Pn		Pn	17 26 49.7	+5.9
HNR	**Honiara**	**15.37**	**321**	LR		LR	17 32 54.3	
	comp=Z,46nm,18.6s,baz=74,slow=32							
CTA	**Charters Tower**	**21.98**	**270**	P		**P**	**17 29 33.1**	**+2.5**
	2.1nm,0.7s,baz=48,slow=21,SNR=2.5							
STKA	**Stephens Creek**	**27.03**	**242**	P		**P**	**17 30 18.9**	**+0.5**
	1.0nm,0.6s,baz=20,slow=19,SNR=3.1							
STKA				LR		LR	17 40 08.6	
	comp=Z,106nm,19.0s,baz=188,slow=34							
STKA	**Stephens Creek**	**27.03**	**242**	*e*P		**P**	**17 30 19.5**	**+1.0**
	4.4nm,1.8s							
ASAR	**Alice Springs**	**33.06**	**260**	P		**P**	**17 31 11.8**	**-0.2**
	0.8nm,0.7s,baz=75,slow=8.5,SNR=14							
ASAR				LR		LR	17 43 57.1	
	comp=Z,54nm,21.9s,baz=108,slow=35							
FITZ	**Fitzroy Crossi**	**41.51**	**267**	P		**P**	**17 32 23.7**	**+0.1**
	1.5nm,0.7s,baz=102,slow=11,SNR=3.2							
FITZ	**Fitzroy Crossi**	**41.51**	**267**	*e*P		**P**	**17 32 24.1**	**+0.5**
	16nm,1.5s							
MMRI	**Maumere**	**47.44**	**278**	*e*P		**P**	**17 33 11.3**	**+0.3**
	125nm,1.5s							
JCJ	**Chichijima**	**55.31**	**330**	LR		LR	17 57 02.6	
	comp=Z,138nm,19.9s,baz=126,slow=35							
JNU	**Nakatsue**	**55.89**	**325**	LR		LR	17 57 47.9	
	comp=Z,118nm,21.3s,baz=46,slow=30							
KSRS	**Korea Array**	**70.75**	**326**	LR		LR	18 02 57.5	
	comp=Z,55nm,22.0s,baz=134,slow=32							
PETK	**Petropavlovsk-**	**75.18**	**353**	P		**P**	**17 36 18.7**	**+0.7**
	3.1nm,0.9s,baz=140,slow=7.3,SNR=3.4							
PEA1	**Petropavlovsk-**	**75.19**	**353**	*e*P		**P**	**17 36 18.7**	**+0.6**
KLR	**Kul'dur**	**78.25**	**336**	P		**P**	**17 36 36.0**	**+0.5**
	1.2nm,0.6s,baz=150,slow=3.1,SNR=4.0							
CMAR	**Chiang Mai Arr**	**79.91**	**294**	P		**P**	**17 36 46.5**	**+1.2**
	0.8nm,0.8s,baz=146,slow=4.1,SNR=6.8							
ILAR	**Eielson Array**	**92.40**	**17**	P		**P**	**17 37 43.5**	**-2.4**
	0.2nm,0.5s,baz=232,slow=5.0,SNR=4.2							
ARCES	**ARCESS Array B**	**127.51**	**345**	PKP		**PKPdf**	**17 43 39.5**	**-0.6**
	1.8nm,0.6s,baz=83,slow=1.8,SNR=16							
FINES	**FINESS Array B**	**132.98**	**337**	PKP		**PKPdf**	**17 43 50.2**	**-0.3**
	1.4nm,0.7s,baz=8.7,slow=2.5,SNR=6.4							
BRG	**Berggiesshubel**	**145.22**	**333**	*e*P		**PKPbc**	**17 44 12.6**	**-0.3**
	5.0nm,0.6s							
CLL	**Collm**	**145.29**	**334**	*i*P		**PKPbc**	**17 44 12.6**	**-0.5**
	comp=Z,12nm,1.2s							
EKA	**Eskdalemuir Ar**	**145.95**	**353**	PKPbc		**PKPdf**	**17 44 13.9**	**-0.4**
	comp=Z,3.7nm,0.5s,baz=0.5,slow=2.5,SNR=32							
KHC	**Kasperske Hory**	**146.67**	**331**	*e*PKP		**PKPbc**	**17 44 17.6**	**+0.1**
KHC				*ex*		x	17 44 27.7	
GERES	**GERESS Array B**	**146.82**	**331**	PKPbc		**PKPbc**	**17 44 17.9**	**-0.1**
	comp=Z,2.4nm,0.7s,baz=33,slow=3.2,SNR=20							
KBA	**Koelnbreinsper**	**148.25**	**329**	*i* PKPbc		**PKPbc**	**17 44 21.5**	**-0.5**
FETA	**Feichten**	**149.51**	**331**	*i* PKPbc		**PKPbc**	**17 44 24.9**	**-0.4**
	comp=Z,6.7nm,1.0s							
DAVOX	**Davos/Dischmat**	**150.08**	**332**	PKPbc		**PKPbc**	**17 44 26.5**	**-0.2**
	comp=Z,7.2nm,0.6s,baz=254,slow=1.3,SNR=7.2							

*IDC **19** 17:32:14.1±2.5,6.77S×147.27E,h0km,mb3.6/3, mb1 3.7/5,mb1mx3.5/34,mbtmp3.6/5,ML3.1/1,Error ellipse: s-maj=51.6km s-min=35.5km az=91.0*
ISC 19 17:32:17.3±2.7,6.9S±0.2×147.0E±0.4,h10km,n6,σ0§65/7, Eastern New Guinea region

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**2.51**	**176**	Pn		**Pn**	**17 32 57.6**	**-0.6**
	2.8nm,0.3s,baz=13,slow=8.7,SNR=14							
PMG				Sn		**Sg**	**17 33 38.2**	**+0.1**
	3.2nm,0.3s,baz=343,slow=19,SNR=3.1							
WRA	**Warramunga Arr**	**17.86**	**222**	P		**P**	**17 36 26.9**	**+0.1**
	0.1nm,0.3s,baz=48,slow=11,SNR=4.7							
ASAR	**Alice Springs**	**20.89**	**216**	P		**P**	**17 36 59.7**	**-0.2**
	0.5nm,0.5s,baz=54,slow=9.4,SNR=13							
FITZ	**Fitzroy Crossi**	**23.60**	**240**	P		**P**	**17 37 28.4**	**-0.2**
	2.1nm,0.5s,baz=36,slow=9.0,SNR=11							
STKA	**Stephens Creek**	**25.37**	**191**	P		**P**	**17 37 45.9**	**+1.1**
	0.7nm,0.7s,baz=345,slow=7.4,SNR=2.9							
TORD	**Torodi Ar. Bea**	**145.28**	**283**	PKPbc		**PKPab**	**17 51 56.2**	**-0.1**
	0.1nm,0.4s,baz=77,slow=5.9,SNR=2.1							

*NIED **19** 17:35:00,32.10N×132.00E,h32km,Mw3.8 Best double couple: M05.83000×10^14 NP1:ϕs166.00000°,δ41.00000°, λ-64.00000°. NP2:ϕs313.00000°,δ54.00000°, λ-111.00000°.*
*ISCJB **19** 17:35:32.8±0.5,32.13N±0.04×132.03E±0.04,h44km±7km, mb3.7/7,MS3.2/1,Error ellipse: s-maj=8.1km s-min=4.9km az=141.6*
*JMA **19** 17:35:33.4±0.1,32.17N×131.98E,h30km±1km,M3.7 Broadband fault plane solution: P waves. NP1: ϕs155.00000°,δ70.00000°,λ-69.00000°. NP2: ϕs287.00000°,δ29.00000°,λ-134.00000°. Principal axes: T Plg22.0000°, Azm229.0000°; N Plg19.0000°, Azm327.0000°; P Plg60.0000°, Azm95.0000°;*
JMA Felt II J1.
*IDC **19** 17:35:35.3±1.9,32.11N×131.98E,h51km±21km, mb3.4/7, mb1 3.7/11,mb1mx3.4/56,mbtmp3.8/11,ML3.7/4,MS3.0/4, Ms1 3.0/4,ms1mx2.6/39 Error ellipse: s-maj=22.3km s-min=13.7km az=38.0*
ISC 19 17:35:32.9±1.2,32.16N±0.04×132.00E±0.04,h29km±9km, n25,σ0§95/32,mb3.8/7,7C-2D,Shikoku

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
JTSN	**Tsuno**	**0.43**	**282**	⇓P		**Pb**	**17 35 41.9**	**-0.3**
JTSN				S		**Sb**	**17 35 48.3**	**-0.2**
JKIT	**Kitakata**	**0.66**	**315**	⇓P		**Pb**	**17 35 45.8**	**-0.1**
JKIT				S		**Sb**	**17 35 55.2**	**+0.5**
JTZ	**Takazaki**	**0.82**	**252**	⇑P		**Pb**	**17 35 48.1**	**-0.5**
JTZ				S		**Sn**	**17 35 59.7**	**+0.1**
JNAR	**Kushima--Naru**	**0.89**	**225**	⇑P		**Pn**	**17 35 49.9**	**+0.5**
JNAR				S		**Sn**	**17 36 02.7**	**+1.5**
JUS	**Usuki**	**0.93**	**347**	P		**Pn**	**17 35 50.3**	**+0.3**
JUS				S		**Sn**	**17 36 03.4**	**+1.1**
JTO	**Tosashimizu**	**0.97**	**44**	⇑P		**Pn**	**17 35 50.5**	**-0.1**
JTO				S		**Sb**	**17 36 03.0**	**-0.7**
JIU2	**Izumi 2**	**1.07**	**291**	⇑P		**Pn**	**17 35 52.2**	**+0.2**
JIU2				S		**Sn**	**17 36 06.2**	**+0.2**
UWA2	**Uwa jima 2**	**1.18**	**26**	⇑P		**Pn**	**17 35 53.4**	**0.0**
UWA2				S		**Sn**	**17 36 07.7**	**-0.8**
JNU	**Nakatsue**	**1.35**	**316**	P		**Pb**	**17 35 57.0**	**-0.6**
	65nm,0.3s,baz=139,slow=4.4,SNR=321							
JNU				S		**Sb**	**17 36 15.4**	**+1.0**
	88nm,0.3s,baz=346,slow=23,SNR=11							
JNA	**Nagahama**	**1.45**	**16**	⇑P		**Pn**	**17 35 57.4**	**+0.2**
JKU	**Kubokawa**	**1.45**	**38**	⇑P		**Pn**	**17 35 57.6**	**+0.4**
KSRS	**Korea Array**	**5.26**	**329**	P		**Pn**	**17 37 04.9**	**+1.7**
	0.3nm,0.3s,baz=147,slow=15,SNR=4.4							
KSRS				LR		LR	17 39 51.2	
	comp=Z,99nm,18.6s,baz=140,slow=41							
JHJ	**Hachijo jima 2**	**6.63**	**80**	P		**Pn**	**17 37 09.9**	**+1.5**
	34nm,0.3s,baz=61,slow=24,SNR=6.4							
MAT	**Matsushiro**	**6.74**	**48**	P		**Pn**	**17 37 11.4**	**+1.5**
MJAR	**Matsushiro Arr**	**6.74**	**48**	P		**Pn**	**17 37 12.2**	**+2.3**
	3.6nm,0.3s,baz=245,slow=14,SNR=33							
USRK	**Ussuriysk Ar.**	**12.02**	**360**	LR		LR	17 43 07.5	
	comp=Z,67nm,18.3s,baz=164,slow=38							
KLR	**Kul'dur**	**17.05**	**359**	P		**P**	**17 39 30.8**	**+0.2**
	0.1nm,0.3s,baz=215,slow=6.2,SNR=2.3							
KLR				LR		LR	17 45 28.1	
	comp=Z,32nm,20.2s,baz=218,slow=35							
SONM	**Songino Array**	**24.94**	**316**	P		**P**	**17 40 53.9**	**+0.2**
	0.8nm,0.8s,baz=139,slow=11,SNR=3.1							
MKAR	**Makanchi Array**	**40.38**	**306**	P		**P**	**17 43 06.2**	**-2.0**
	0.2nm,0.5s,baz=96,slow=8.8,SNR=3.3							
NRIK	**Noril'sk**	**44.75**	**339**	LR		LR	18 03 28.4	
	comp=Z,33nm,20.2s,baz=133,slow=37							
FITZ	**Fitzroy Crossi**	**50.35**	**188**	P		**P**	**17 44 26.8**	**-0.4**
	2.4nm,1.0s,baz=292,slow=5.4,SNR=3.2							
WRA	**Warramunga Arr**	**51.85**	**177**	P		**P**	**17 44 38.1**	**-0.5**
	0.9nm,0.6s,baz=353,slow=8.1,SNR=13							
ASAR	**Alice Springs**	**55.54**	**178**	P		**P**	**17 45 05.2**	**-0.3**
	0.7nm,0.8s,baz=13,slow=13,SNR=16							
STKA	**Stephens Creek**	**64.33**	**171**	P		**P**	**17 46 05.8**	**0.0**
	1.1nm,0.5s,baz=354,slow=6.6,SNR=6.6							
NVAR	**Mina Array Bea**	**84.07**	**48**	P		**P**	**17 48 02.2**	**+0.9**
	0.4nm,0.6s,baz=270,slow=4.1,SNR=3.2							

*IDC **19** 17:40:13.3±2.3,36.15N×10.55W,h0km,mb3.3/2, mb1 3.6/3,mb1mx3.2/60,mbtmp3.5/3,ML4.8/2,Error ellipse: s-maj=60.1km s-min=31.2km az=90.0*
*NEIC **19** 17:40:14.4±0.9,36.19N×10.56W,h10km,mb4.0/3,Error ellipse: s-maj=14.9km s-min=7.5km az=95.0*
*MDD **19** 17:40:15.7±0.8,36.31N×10.49W,h0km,mbLg3.5/38, Error ellipse: s-maj=8.5km s-min=6.1km az=87.0,PRXIMO*
*SFS **19** 17:40:16.0,36.25N×10.70W,h30km,ML3.5*
*CSEM **19** 17:40:16.4±0.3,36.33N×10.39W,h10km,ML4.3/5,Error ellipse: s-maj=6.1km s-min=4.5km az=74.0*
*CNRM **19** 17:40:17.9,36.20N×10.40W,h30km,MD3.6*
*INMG **19** 17:40:18.4±1.8,36.24N×10.62W,h31km±10km,MD2.9, ML3.3,Error ellipse: s-maj=5.8km s-min=3.4km az=65.0*
*LDG **19** 17:40:18.4±0.2,36.28N×10.64W,h30km,MI3.7/2,Error ellipse: s-maj=3.8km s-min=2.9km az=46.0*
*IGIL **19** 17:40:18.4,36.25N×10.58W,h31km,ML3.3*
ISC 19 17:40:17.9±1.2,36.34N±0.07×10.52W±0.09,h37km±3km, n231,σ1§37/352,15C-1D,Azores-Cape St. Vincent Ridge

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
PFVI	**Vila Bisbo**	**1.57**	**59**	⇑*i*Pn		**Pn**	**17 40 44.3**	**+1.0**
PFVI				*e*Sn		**Sn**	**17 41 03.2**	**+0.9**
PFVI				A		A	17 41 04.5	
	118nm,0.2s							
PFVI	**Vila Bisbo**	**1.57**	**59**	⇑P		**Pn**	**17 40 44.2**	**+1.0**
	85nm,0.1s,SNR=18							
PFVI				S		**Sn**	**17 41 02.9**	**+0.6**
	153nm,0.1s,SNR=7.9							
PFVI	**Vila Bisbo**	**1.57**	**59**	*e*Pn		**Pn**	**17 40 44.1**	**+0.9**
PFVI				*e*Sn		**Sn**	**17 41 02.8**	**+0.5**
PFVI	**Vila Bisbo**	**1.57**	**59**	*e*Pn		**Pn**	**17 40 44.1**	**+0.9**
PFVI				*e*Sn		**Sn**	**17 41 02.8**	**+0.5**
MORF	**Marmelete**	**1.78**	**57**	*e*P		**Pn**	**17 40 47.3**	**+1.1**
MORF				*e*S		**Sn**	**17 41 08.0**	**+0.3**
MORF				AML		AML	17 41 09.4	
	comp=N,227nm,0.4s							
MORF	**Marmelete**	**1.78**	**57**	⇑*i*Pn		**Pn**	**17 40 47.3**	**+1.1**
MORF				*e*Sn		**Sn**	**17 41 08.3**	**+0.7**
MORF				A		A	17 41 10.3	
	comp=N,235nm,0.2s							
MORF	**Marmelete**	**1.78**	**57**	P		**Pn**	**17

MOE S Sn 17 41 31.1 -1.1
EVO Evora 2.96 42 ePn Pn 17 41 03.3 +1.0
EVO eSn Sn 17 41 36.8 +0.2
EVO A A 17 41 38.8
comp=N,110nm,0.2s
EVO Evora 2.96 42 P Pn 17 41 03.3 +1.0
EVO S Sn 17 41 36.8 +0.2
comp=N,110nm,0.2s
EVO Evora 2.96 42 P Pn 17 41 03.3 +1.0
EVO S Sn 17 41 36.8 +0.2
comp=N,110nm,0.2s
ALMR Almeirim 3.21 28 eP Pn 17 41 06.5 +0.8
ALMR eS Sn 17 41 42.0 -0.6
ALMR AML AML 17 41 43.3
comp=E,97nm,0.2s
ALMR Almeirim 3.21 28 P Pn 17 41 06.5 +0.8
ALMR S Sn 17 41 42.0 -0.6
comp=E,48nm,0.2s
ALMR Almeirim 3.21 28 P Pn 17 41 06.5 +0.8
ALMR S Sn 17 41 42.0 -0.6
comp=E,48nm,0.2s
PMTG Montargil 3.28 33 ePn Pn 17 41 07.5 +0.8
PMTG eSn Sn 17 41 44.4 0.0
PMTG A A 17 41 47.1
comp=E,45nm,0.2s
PMTG Montargil 3.28 33 ePn Pn 17 41 07.5 +0.8
PMTG eSn Sn 17 41 44.4 0.0
comp=E,45nm,0.2s
PBAR Barrancos 3.33 55 ePn Pn 17 41 08.3 +1.0
PBAR eSn Sn 17 41 45.5 -0.1
PBAR A A 17 41 51.4
comp=E,78nm,0.3s
PBAR Barrancos 3.33 55 P Pn 17 41 08.3 +1.0
PBAR S Sn 17 41 45.5 -0.1
comp=E,78nm,0.3s
PBAR Barrancos 3.33 55 P Pn 17 41 08.3 +1.0
PBAR S Sn 17 41 45.5 -0.1
comp=E,78nm,0.3s
EMIN Mina Concepcio 3.39 64 ⇑P Pn 17 41 08.9 +0.7
comp=E,15nm,0.1s,SNR=18
EMIN S Sn 17 41 47.4 +0.2
comp=E,17nm,0.1s,SNR=12
EMIN Mina Concepcio 3.39 64 P Pn 17 41 08.9 +0.7
comp=E,15nm,0.1s,SNR=18
EMIN S Sn 17 41 47.4 +0.2
comp=E,17nm,0.1s,SNR=12
PESTR Estremoz 3.43 42 ePn Pn 17 41 09.3 +0.5
PESTR eSn Sn 17 41 48.3 +0.1
PESTR A A 17 41 50.2
comp=E,25nm,0.3s
PESTR Estremoz 3.43 42 P Pn 17 41 09.3 +0.5
PESTR S Sn 17 41 48.3 +0.1
comp=E,25nm,0.3s
PESTR Estremoz 3.43 42 P Pn 17 41 09.3 +0.5
PESTR S Sn 17 41 48.3 +0.1
comp=E,25nm,0.3s
PTOM Tomar 3.67 26 ePn Pn 17 41 13.1 +1.0
PTOM eSn Sn 17 41 54.1 -0.1
PTOM A A 17 41 55.6
comp=E,78nm,0.2s
PTOM Tomar 3.67 26 P Pn 17 41 13.1 +1.0
PTOM S Sn 17 41 54.1 -0.1
comp=E,39nm,0.2s
PTOM Tomar 3.67 26 P Pn 17 41 13.1 +1.0
PTOM S Sn 17 41 54.1 -0.1
comp=E,39nm,0.2s
EBAD Badajoz 3.69 48 ⇑P Pn 17 41 12.8 +0.5
comp=E,26nm,0.1s,SNR=18
EBAD S Sn 17 41 54.1 -0.4
comp=E,28nm,0.1s,SNR=12
EBAD Badajoz 3.69 48 P Pn 17 41 12.8 +0.5
comp=E,26nm,0.1s,SNR=18
EBAD S Sn 17 41 54.1 -0.4
comp=E,28nm,0.1s,SNR=12
ESPR Espera 3.79 81 ⇓P Pn 17 41 14.8 +1.1
comp=E,18nm,0.1s,SNR=18
ESPR S Sn 17 41 56.2 -0.8
comp=E,650nm,0.3s,SNR=7.7
ESPR Espera 3.79 81 P Pn 17 41 14.8 +1.1
comp=E,18nm,0.1s,SNR=18
ESPR S Sn 17 41 56.2 -0.8
comp=E,650nm,0.3s,SNR=7.7
RTC Rabat Centre 3.81 127 ePn Pn 17 41 11.9 -2.0
RTC Rabat Centre 3.81 127 ePn Pn 17 41 11.9 -2.0
PMRV Marv??o 3.95 38 ePn Pn 17 41 17.0 +1.0
PMRV eSn Sn 17 42 00.6 -0.5
PMRV A A 17 42 02.8
comp=E,42nm,0.3s
PMRV Marv??o 3.95 38 P Pn 17 41 17.0 +1.0
PMRV S Sn 17 42 00.6 -0.5
comp=E,42nm,0.3s
PMRV Marv??o 3.95 38 P Pn 17 41 17.0 +1.0
PMRV S Sn 17 42 00.6 -0.5
comp=E,42nm,0.3s
PCAS Casmilo, Conde 4.04 23 ePn Pn 17 41 18.1 +1.0
PCAS eSn Sn 17 42 02.5 -0.6
PCAS A A 17 42 05.1
comp=E,36nm,0.3s
PCAS Casmilo, Conde 4.04 23 ePn Pn 17 41 18.1 +1.0
PCAS eSn Sn 17 42 02.5 -0.6
comp=E,36nm,0.3s
EJIF Jimena Fronter 4.07 87 P Pn 17 41 18.9 +1.3
comp=E,3.6nm,0.2s,SNR=7.9
EJIF S Sn 17 42 04.7 +0.7
comp=E,4.3nm,0.2s,SNR=4.0
EJIF Jimena Fronter 4.07 87 P Pn 17 41 18.9 +1.3
comp=E,3.6nm,0.2s,SNR=7.9
EJIF S Sn 17 42 04.7 +0.7
comp=E,4.3nm,0.2s,SNR=4.0
LIJA Lijar 4.15 81 P Pn 17 41 20.0 +1.2
LIJA Lijar 4.15 81 P Pn 17 41 20.0 +1.2
ECEU Ceuta 4.18 94 P Pn 17 41 20.0 +0.8
comp=E,4.1nm,0.1s,SNR=6.3
ECEU S Sn 17 42 05.6 -1.2
comp=E,3.8nm,0.1s,SNR=4.0
ECEU Ceuta 4.18 94 P Pn 17 41 20.0 +0.8
comp=E,4.1nm,0.1s,SNR=6.3
ECEU S Sn 17 42 05.6 -1.2
comp=E,3.8nm,0.1s,SNR=4.0
PCBR Castelo Branco 4.24 34 ePn Pn 17 41 21.1 +1.2
PCBR eSn Sn 17 42 07.2 -0.9
PCBR A A 17 42 10.7
comp=E,13nm,0.3s
PCBR Castelo Branco 4.24 34 P Pn 17 41 21.1 +1.2
PCBR S Sn 17 42 07.2 -0.9
comp=E,6.6nm,0.3s
PCBR Castelo Branco 4.24 34 P Pn 17 41 21.1 +1.2
PCBR S Sn 17 42 07.2 -0.9
comp=E,6.6nm,0.3s
ECAB El Cabril 4.42 65 ⇑P Pn 17 41 23.2 +0.7
comp=E,9.8nm,0.1s,SNR=18
ECAB S Sn 17 42 11.3 -1.3
comp=E,29nm,0.2s,SNR=8.2
ECAB El Cabril 4.42 65 P Pn 17 41 23.2 +0.7
comp=E,9.8nm,0.1s,SNR=18
ECAB S Sn 17 42 11.4 -1.3
comp=E,29nm,0.2s,SNR=8.2
EMIJ Mijas 4.63 85 P Pn 17 41 25.7 +0.3
comp=E,1.3nm,0.1s,SNR=9.5
EMIJ S Sn 17 42 15.9 -2.1
comp=E,8.0nm,0.2s,SNR=10
EMIJ Mijas 4.63 85 P Pn 17 41 25.7 +0.3
comp=E,1.3nm,0.1s,SNR=9.5
EMIJ S Sn 17 42 15.9 -2.1
comp=E,8.0nm,0.2s,SNR=10
MTE Manteigas 4.68 29 ePn Pn 17 41 26.8 +0.8
MTE eSn Sn 17 42 17.7 -1.4
MTE A A 17 42 21.6
comp=E,29nm,0.2s
MTE Manteigas 4.68 29 P Pn 17 41 26.8 +0.8
MTE S Sn 17 42 17.7 -1.4
comp=E,15nm,0.2s
MTE Manteigas 4.68 29 P Pn 17 41 26.8 +0.8
MTE eSn Sn 17 42 17.2 -1.9
MTE S Sn 17 42 17.7 -1.4
comp=E,15nm,0.2s
MTE Manteigas 4.68 29 ePn Pn 17 41 26.9 +0.8
MTE eSn Sn 17 42 17.2 -1.9
PVIS Viseu 4.83 24 ePn Pn 17 41 29.1 +1.0
PVIS eSn Sn 17 42 21.2 -1.6
PVIS A A 17 42 24.1
comp=E,33nm,0.2s
PVIS Viseu 4.83 24 P Pn 17 41 29.1 +1.0
PVIS S Sn 17 42 21.2 -1.6
comp=E,16nm,0.2s
PVIS Viseu 4.83 24 P Pn 17 41 29.1 +1.0

PVIS S Sn 17 42 21.2 -1.6
comp=E,16nm,0.2s
CIA Chichaoua 4.98 162 P Pn 17 41 28.0 -2.1
CIA S Sn 17 42 19.0 -7.4
PTO Porto 5.02 17 eSn Sn 17 42 25.9 -1.5
PTO Porto 5.02 17 S Sn 17 42 25.9 -1.5
PTO Porto 5.02 17 S Sn 17 42 25.9 -1.5
EADA Adamuz 5.08 67 P Pn 17 41 32.1 +0.6
comp=E,15nm,0.1s,SNR=81
EADA S Sn 17 42 26.6 -2.2
comp=E,17nm,0.1s,SNR=6.0
EADA Adamuz 5.08 67 P Pn 17 41 32.1 +0.6
comp=E,15nm,0.1s,SNR=81
EADA S Sn 17 42 26.6 -2.2
comp=E,17nm,0.1s,SNR=6.0
EPLA Plasencia 5.10 42 P Pn 17 41 32.5 +0.7
comp=E,9.5nm,0.1s,SNR=17
EPLA S Sn 17 42 27.7 -1.8
comp=E,10nm,0.1s,SNR=10
EPLA Plasencia 5.10 42 P Pn 17 41 32.5 +0.7
comp=E,9.5nm,0.1s,SNR=17
EPLA S Sn 17 42 27.7 -1.8
comp=E,10nm,0.1s,SNR=10
EGOR Sierra Gorda, 5.20 80 P Pn 17 41 34.6 +1.3
comp=E,1.5nm,0.1s,SNR=7.9
EGOR S Sn 17 42 29.8 -2.3
comp=E,19nm,0.3s,SNR=7.9
EGOR Sierra Gorda, 5.20 80 P Pn 17 41 34.6 +1.3
comp=E,1.5nm,0.1s,SNR=7.9
EGOR S Sn 17 42 29.8 -2.3
comp=E,19nm,0.3s,SNR=7.9
MIF Mishlifen 5.24 122 P Pn 17 41 30.0 -3.8
MIF S Sn 17 42 25.0 -8.1
KIB El Ksiba 5.27 134 P Pn 17 41 32.0 -2.1
KIB S Sn 17 42 27.0 -6.6
KIB El Ksiba 5.27 134 *i* P Pn 17 41 32.0 -2.1
TZC Tazercounte 5.34 140 P Pn 17 41 33.0 -2.3
TZC S Sn 17 42 29.0 -6.7
PVRL Vila Real 5.39 23 ePn Pn 17 41 36.6 +0.8
PVRL eSn Sn 17 42 34.0 -2.6
PVRL A A 17 42 38.4
comp=E,37nm,0.2s
PVRL Vila Real 5.39 23 P Pn 17 41 36.6 +0.8
PVRL S Sn 17 42 34.0 -2.6
comp=E,19nm,0.2s
PVRL Vila Real 5.39 23 P Pn 17 41 36.6 +0.8
PVRL S Sn 17 42 34.0 -2.6
comp=E,19nm,0.2s
SELV Sierra Elvira 5.52 79 P Pn 17 41 38.7 +1.1
comp=E,0.4nm,0.1s,SNR=7.9
SELV S Sn 17 42 36.2 -3.6
comp=E,4.0nm,0.3s,SNR=7.9
SELV Sierra Elvira 5.52 79 P Pn 17 41 38.7 +1.1
comp=E,0.4nm,0.1s,SNR=7.9
SELV S Sn 17 42 36.2 -3.6
comp=E,4.0nm,0.3s,SNR=7.9
MVO Moncorvo 5.54 28 ePn Pn 17 41 38.2 +0.4
MVO eSn Sn 17 42 37.6 -2.6
MVO A A 17 42 40.5
comp=E,32nm,0.2s
MVO Moncorvo 5.54 28 P Pn 17 41 38.1 +0.3
comp=E,12nm,0.1s,SNR=7.9
MVO S Sn 17 42 37.6 -2.6
comp=E,12nm,0.1s,SNR=7.9
MVO Moncorvo 5.54 28 ePn Pn 17 41 38.2 +0.4
MVO S Sn 17 42 37.6 -2.6
comp=E,12nm,0.1s,SNR=7.9
OUK Oukaimeden 5.57 156 P Pn 17 41 36.0 -2.5
OUK S Sn 17 42 33.0 -8.4
TZK Tazeka 5.65 112 P Pn 17 41 38.0 -1.5
TZK S Sn 17 42 36.0 -7.2
ECOG Cogollos-Vega 5.66 78 P Pn 17 41 40.3 +0.9
comp=E,3.2nm,0.2s,SNR=7.9
ECOG S Sn 17 42 42.8 -0.4
comp=E,12nm,0.2s,SNR=8.9
ECOG Cogollos-Vega 5.66 78 P Pn 17 41 40.3 +0.9
comp=E,3.2nm,0.2s,SNR=7.9
ECOG S Sn 17 42 42.8 -0.4
comp=E,12nm,0.2s,SNR=8.9
PCAB Cabril 5.70 19 ePn Pn 17 41 40.4 +0.3
PCAB eSn Sn 17 42 41.8 -2.5
PCAB A A 17 42 46.2
comp=E,19nm,0.3s
PCAB Cabril 5.70 19 P Pn 17 41 40.4 +0.3
PCAB S Sn 17 42 41.8 -2.5
comp=E,9.4nm,0.3s
PCAB Cabril 5.70 19 P Pn 17 41 40.4 +0.3
PCAB S Sn 17 42 41.8 -2.5
comp=E,9.4nm,0.3s
EQUE Quentar 5.75 79 P Pn 17 41 42.1 +1.4
comp=E,1.0nm,0.1s,SNR=17
EQUE S Sn 17 42 43.5 -1.9
comp=E,5.2nm,0.2s
EQUE Quentar 5.75 79 P Pn 17 41 42.1 +1.4
comp=E,1.0nm,0.1s,SNR=17
EQUE S Sn 17 42 43.5 -1.9
comp=E,5.2nm,0.2s
PMPS Porto Santo 5.80 237 ePn Pn 17 41 38.5 -2.9
PMPS Porto Santo 5.80 237 P Pn 17 41 38.5 -2.9
PAB San Pablo 5.83 55 ePn Pn 17 41 42.0 +0.1
PAB eSn Sn 17 42 45.7 -1.8
PAB San Pablo 5.83 55 ePn Pn 17 41 42.0 +0.1
PAB eSn Sn 17 42 45.7 -1.8
ELOB Lobios 5.84 18 P Pn 17 41 42.1 +0.1
comp=E,1.4nm,0.1s,SNR=8.4
ELOB S Sn 17 42 43.3 -4.4
comp=E,4.9nm,0.1s,SNR=7.8
ELOB Lobios 5.84 18 P Pn 17 41 42.1 +0.1
comp=E,1.4nm,0.1s,SNR=8.4
PGAV Gavieira, Arco 5.88 17 ePn Pn 17 41 43.0 +0.4
PGAV eSn Sn 17 42 45.8 -3.0
PGAV A A 17 42 49.6
comp=E,21nm,0.2s
PGAV Gavieira, Arco 5.88 17 ePn Pn 17 41 43.0 +0.4
PGAV eSn Sn 17 42 45.8 -3.0
comp=E,21nm,0.2s
MDT Midelt 6.00 124 Pn Pn 17 41 42.8 -1.5
comp=E,16nm,0.3s,baz=263,slow=4.3,SNR=424
MDT Sn Sn 17 42 44.3 -7.5
comp=E,20nm,0.3s,baz=31,slow=23,SNR=20
EQES Quesada 6.13 74 P Pn 17 41 46.6 +0.6
comp=E,3.8nm,0.2s,SNR=7.9
EQES S Sn 17 42 51.2 -3.7
comp=E,7.7nm,0.2s,SNR=7.7
EQES Quesada 6.13 74 P Pn 17 41 46.6 +0.6
comp=E,3.8nm,0.2s,SNR=7.9
EQES S Sn 17 42 51.2 -3.7
comp=E,7.7nm,0.2s,SNR=7.7
ESDC Sonseca Array 6.15 55 Pn Pn 17 41 46.8 +0.5
comp=E,9.1nm,0.3s,baz=238,slow=13,SNR=54
ESDC Pg 17 42 01.9
comp=E,3.0nm,0.3s,baz=243,slow=14,SNR=6.5
ESDC Sn Sn 17 42 54.2 -1.2
comp=E,12nm,0.3s,baz=240,slow=24,SNR=22
ESDC Sonseca Array 6.15 55 P Pn 17 41 46.5 +0.2
comp=E,12nm,0.1s,baz=239,slow=12,SNR=94
ESDC S Sn 17 42 53.8 -1.6
comp=E,16nm,0.2s,baz=242,slow=23,SNR=35
ESDC Sonseca Array 6.15 55 P Pn 17 41 46.5 +0.2
comp=E,12nm,0.1s,SNR=94
ESDC Sonseca Array 6.15 55 ePg Pn 17 42 01.9 +16
ESDC S Sn 17 42 53.8 -1.6
comp=E,16nm,0.2s,SNR=35
ESLA Sonseca Array 6.15 55 ePn Pn 17 41 47.1 +0.8
ESLA eSn Sn 17 42 54.0 -1.4
ESLA Sonseca Array 6.15 55 ePn Pn 17 41 47.1 +0.8
ESLA eSn Sn 17 42 54.0 -1.4
EBER Berja 6.16 83 P Pn 17 41 47.1 +0.6
comp=E,0.8nm,0.2s,SNR=6.4
EBER S Sn 17 42 54.7 -1.0
comp=E,9.2nm,0.3s
EBER Berja 6.16 83 P Pn 17 41 47.1 +0.6
comp=E,0.8nm,0.2s,SNR=6.4
EBER S Sn 17 42 54.7 -1.0
comp=E,9.2nm,0.3s
PBRG Braganca 6.20 27 ePn Pn 17 41 47.7 +0.8
PBRG eSn Sn 17 42 53.5 -3.0
PBRG A A 17 42 56.6
comp=E,15nm,0.2s
PBRG Braganca 6.20 27 P Pn 17 41 47.7 +0.8
PBRG S Sn 17 42 53.5 -3.0
comp=E,7.3nm,0.2s
PBRG Braganca 6.20 27 P Pn 17 41 47.7 +0.8
PBRG S Sn 17 42 53.5 -3.0
comp=E,7.3nm,0.2s
ES19 SONSECA Array 6.21 55 ePn Pn 17 41 46.2 -0.8

ES19 eSn Sn 17 42 53.4 -3.3
ES19 SONSECA Array 6.21 55 ePn Pn 17 41 46.2 -0.8
ES19 eSn Sn 17 42 53.4 -3.3
ECAL Calabor 6.32 27 P Pn 17 41 48.6 +0.1
comp=E,5.9nm,0.1s,SNR=13
ECAL S Sn 17 42 56.1 -3.4
comp=E,3.8nm,0.1s,SNR=7.0
ECAL Calabor 6.32 27 P Pn 17 41 48.6 +0.1
comp=E,5.9nm,0.1s,SNR=13
ECAL S Sn 17 42 56.1 -3.4
comp=E,3.8nm,0.1s,SNR=7.0
EHUE Huescar 6.50 75 S Sn 17 43 00.9 -3.2
comp=E,4.0nm,0.1s,SNR=7.9
EHUE Huescar 6.50 75 S Sn 17 43 00.9 -3.2
comp=E,4.0nm,0.1s,SNR=7.9
PMOZ Porto Moniz, M 6.53 239 P Pn 17 41 47.2 -4.3
PMOZ Porto Moniz, M 6.53 239 P Pn 17 41 47.2 -4.3
comp=E,10nm,0.3s,SNR=4.0
GUD Guadarrama 6.58 47 P Pn 17 41 52.9 +0.6
comp=E,5.3nm,0.2s,SNR=30
GUD S Sn 17 43 03.4 -2.7
comp=E,3.9nm,0.1s
GUD Guadarrama 6.58 47 P Pn 17 41 52.9 +0.6
comp=E,5.3nm,0.2s,SNR=30
GUD S Sn 17 43 03.4 -2.7
comp=E,3.9nm,0.1s
SESP Santiago Espad 6.60 72 P Pn 17 41 52.7 +0.1
comp=E,3.2nm,0.1s,SNR=7.9
SESP S Sn 17 43 04.4 -2.2
comp=E,12nm,0.1s,SNR=7.9
SESP Santiago Espad 6.60 72 P Pn 17 41 52.7 +0.1
comp=E,3.2nm,0.1s,SNR=7.9
SESP S Sn 17 43 04.4 -2.2
comp=E,12nm,0.1s,SNR=7.9
ZFT Errachidia 6.67 128 P Pn 17 41 51.0 -2.5
ZFT S Sn 17 43 01.0 -7.3
EMAZ Mazaricos 6.71 10 P Pn 17 41 53.1 -0.7
comp=E,3.4nm,0.1s,SNR=7.9
EMAZ S Sn 17 43 02.6 -6.3
comp=E,14nm,0.1s,SNR=7.9
EMAZ Mazaricos 6.71 10 P Pn 17 41 53.1 -0.7
comp=E,3.4nm,0.1s,SNR=7.9
EAGO Agolada(Pontev 6.72 15 P Pn 17 41 54.0 0.0
comp=E,1.9nm,0.1s,SNR=7.9
EAGO S Sn 17 43 04.7 -4.6
comp=E,5.4nm,0.1s,SNR=7.9
EAGO Agolada(Pontev 6.72 15 P Pn 17 41 54.0 0.0
comp=E,1.9nm,0.1s,SNR=7.9
EPON Pontenova 7.45 19 P Pn 17 42 04.6 +0.7
comp=E,0.9nm,0.1s,SNR=7.2
EPON S Sn 17 43 22.6 -4.4
comp=E,6.0nm,0.3s,SNR=7.9
EPON Pontenova 7.45 19 P Pn 17 42 04.6 +0.7
comp=E,0.9nm,0.1s,SNR=7.2
ETOB Tobarra 7.49 69 P Pn 17 42 04.3 -0.4
comp=E,1.5nm,0.1s,SNR=17
ETOB S Sn 17 43 25.5 -2.8
comp=E,5.0nm,0.2s,SNR=5.7
ETOB Tobarra 7.49 69 P Pn 17 42 04.3 -0.4
comp=E,1.5nm,0.1s,SNR=17
ETOB S Sn 17 43 25.5 -2.8
comp=E,5.0nm,0.2s,SNR=5.7
EMUR La Murta 7.56 76 S Sn 17 43 26.7 -3.4
comp=E,6.1nm,0.3s,SNR=7.9
EMUR La Murta 7.56 76 S Sn 17 43 26.7 -3.4
comp=E,6.1nm,0.3s,SNR=7.9
EFAM Famara 7.62 200 S Sn 17 43 19.5 -12
comp=E,1.4nm,0.2s,SNR=7.9
ETOR Torete 8.00 53 P Pn 17 42 11.3 -0.3
comp=E,36nm,0.2s,SNR=46
ETOR S Sn 17 43 36.1 -4.6
comp=E,25nm,0.3s,SNR=6.6
ETOR Torete 8.00 53 P Pn 17 42 11.3 -0.3
comp=E,36nm,0.2s,SNR=46
ETOR S Sn 17 43 36.1 -4.6
comp=E,25nm,0.3s,SNR=6.6
EARI Arriondas 8.06 29 P Pn 17 42 13.4 +1.0
comp=E,1.4nm,0.2s,SNR=7.9
EARI S Sn 17 43 39.0 -3.3
comp=E,0.6nm,0.1s,SNR=7.9
EARI Arriondas 8.06 29 P Pn 17 42 13.4 +1.0
comp=E,1.4nm,0.2s,SNR=7.9
EARI S Sn 17 43 39.0 -3.3
comp=E,0.6nm,0.1s,SNR=7.9
CFUE Fuerteventura 8.19 202 S Sn 17 43 33.1 -12
comp=E,4.5nm,0.1s,SNR=7.9
AFON Font Roja 8.26 71 P Pn 17 42 15.1 -0.1
comp=E,0.1nm,0.1s,SNR=7.9
AFON S Sn 17 43 44.5 -2.8
comp=E,0.4nm,0.2s,SNR=4.0
AFON Font Roja 8.26 71 P Pn 17 42 15.1 -0.1
comp=E,0.1nm,0.1s,SNR=7.9
AFON S Sn 17 43 44.5 -2.8
comp=E,0.4nm,0.2s,SNR=4.0
CFTV Fuerteventura 8.46 202 S Sn 17 43 38.9 -13
comp=E,1.0nm,0.3s,SNR=4.0
ELAN Lanestosa 8.78 36 P Pn 17 42 24.1 +1.9
comp=E,0.8nm,0.2s,SNR=4.0
ELAN Lanestosa 8.78 36 P Pn 17 42 24.1 +1.9
comp=E,0.8nm,0.2s,SNR=4.0
EMOS Mosqueruela 8.85 60 P Pn 17 42 24.4 +1.0
comp=E,1.3nm,0.1s,SNR=4.0
EMOS S Sn 17 44 00.1 -1.8
comp=E,2.2nm,0.1s,SNR=7.9
EMOS Mosqueruela 8.85 60 P Pn 17 42 24.4 +1.0
comp=E,1.3nm,0.1s,SNR=4.0
EMOS S Sn 17 44 00.1 -1.8
comp=E,2.2nm,0.1s,SNR=7.9
ESAC San Caprasio 9.48 52 S Sn 17 44 13.6 -3.6
comp=E,3.8nm,0.2s,SNR=7.9
ESAC San Caprasio 9.48 52 S Sn 17 44 13.6 -3.6
comp=E,3.8nm,0.2s,SNR=7.9
IELO Elcoad 9.67 45 P Pn 17 42 35.2 +0.8
comp=E,1.8nm,0.1s,SNR=7.9
IELO S Sn 17 44 17.9 -3.8
comp=E,0.9nm,0.1s,SNR=7.9
IELO Elcoad 9.67 45 P Pn 17 42 35.2 +0.8
comp=E,1.8nm,0.1s,SNR=7.9
IELO S Sn 17 44 17.9 -3.8
comp=E,0.9nm,0.1s,SNR=7.9
EALK Alkurruntz 9.76 42 P Pn 17 42 36.2 +0.5
comp=E,0.5nm,0.1s,SNR=5.6
EALK S Sn 17 44 19.3 -4.7
comp=E,2.9nm,0.4s,SNR=7.9
EALK Alkurruntz 9.76 42 P Pn 17 42 36.2 +0.5
comp=E,0.5nm,0.1s,SNR=5.6
EALK S Sn 17 44 19.3 -4.7
comp=E,2.9nm,0.4s,SNR=7.9
SJPF Ste Jean 9.85 44 ePn Pn 17 42 38.1 +1.3
SJPF eSn Sn 17 44 21.4 -4.6
comp=E,1.7nm,0.3s
SJPF Ste Jean 9.85 44 P Pn 17 42 38.1 +1.3
SJPF S Sn 17 44 21.4 -4.6
comp=E,0.9nm,0.3s
SJPF Ste Jean 9.85 44 P Pn 17 42 38.1 +1.3
SJPF S Sn 17 44 21.4 -4.6
comp=E,0.9nm,0.3s
ETSF Etsaut 10.09 46 ePn Pn 17 42 41.0 +0.7
ETSF Etsaut 10.09 46 P Pn 17 42 41.0 +0.7
ETSF Etsaut 10.09 46 P Pn 17 42 41.0 +0.7
ATE Arette 10.12 45 P Pn 17 42 42.1 +1.5
comp=E,2.1nm,0.2s,SNR=7.9
ATE S Sn 17 44 28.9 -4.0
comp=E,1.7nm,0.2s,SNR=7.9
ATE Arette 10.12 45 P Pn 17 42 42.1 +1.5
comp=E,2.1nm,0.2s,SNR=7.9
ATE S Sn 17 44 28.9 -4.0
comp=E,1.7nm,0.2s,SNR=7.9
EPOB Poblet 10.33 58 P Pn 17 42 43.3 -0.3
comp=E,0.6nm,0.1s,SNR=7.9
EPOB Poblet 10.33 58 P Pn 17 42 43.3 -0.3
comp=E,0.6nm,0.1s,SNR=7.9
EPF Esparros 10.70 48 ePn Pn 17 42 48.9 +0.3
EPF eSn Sn 17 44 41.9 -5.2
comp=E,5.1nm,0.4s
EPF Esparros 10.70 48 P Pn 17 42 48.9 +0.3
EPF S Sn 17 44 41.9 -5.2
comp=E,2.6nm,0.4s
EPF Esparros 10.70 48 P Pn 17 42 48.9 +0.3
EPF S Sn 17 44 41.9 -5.2
comp=E,2.6nm,0.4s
CSOR Sort 10.85 53 P Pn 17 42 51.1 +0.5
comp=E,0.5nm,0.1s,SNR=7.9
CSOR S Sn 17 44 45.4 -5.3
comp=E,1.8nm,0.3s,SNR=7.9
CSOR Sort 10.85 53 P Pn 17 42 51.1 +0.5
comp=E,0.5nm,0.1s,SNR=7.9
CSOR S Sn 17 44 45.4 -5.3

comp=E,1.8nm,0.3s,SNR=7.9
CFON Fontmartina 11.43 58 P **Pn 17 42 59.3 +0.7**
comp=E,0.4nm,0.1s,SNR=7.9
CFON Fontmartina 11.43 58 P **Pn 17 42 59.3 +0.7**
comp=E,0.4nm,0.1s,SNR=7.9
CLLI Llivia 11.44 54 P **Pn 17 42 59.1 +0.4**
comp=E,0.7nm,0.2s,SNR=7.9
CLLI S Sn 17 45 00.3 -5.0
comp=E,0.6nm,0.2s,SNR=4.0
CLLI Llivia 11.44 54 P **Pn 17 42 59.1 +0.4**
comp=E,0.7nm,0.2s,SNR=7.9
CLLI S Sn 17 45 00.3 -5.0
comp=E,0.6nm,0.2s,SNR=4.0
LFF La Frestale 12.11 41 *e*Pn **Pn 17 43 07.9 +0.1**
LFF La Frestale 12.11 41 P **Pn 17 43 07.9 +0.1**
LFF La Frestale 12.11 41 P **Pn 17 43 07.9 +0.1**
RJF Les Rejaudoux 12.77 42 *e*Pn **Pn 17 43 16.3 -0.4**
RJF Les Rejaudoux 12.77 42 P **Pn 17 43 16.3 -0.4**
RJF Les Rejaudoux 12.77 42 P **Pn 17 43 16.3 -0.4**
CAF Calviac 12.83 44 *e*Pn **Pn 17 43 17.1 -0.5**
CAF Calviac 12.83 44 P **Pn 17 43 17.1 -0.5**
CAF Calviac 12.83 44 P **Pn 17 43 17.1 -0.5**
MFF Saint Martin d 12.86 34 *e*Pn **Pn 17 43 18.2 +0.2**
MFF Saint Martin d 12.86 34 P **Pn 17 43 18.2 +0.2**
MFF Saint Martin d 12.86 34 P **Pn 17 43 18.2 +0.2**
DYA Yadsworthy 14.87 17 *e*Pn **Pn 17 43 46.8 +1.5**
DYA Yadsworthy 14.87 17 *e*Pn **Pn 17 43 46.8 +1.5**
VSL Villasalto 16.01 73 *e*Pn **P 17 44 02.5 -0.8**
comp=E,25nm,1.2s
VSL Villasalto 16.01 73 *e*Pn **P 17 44 02.5 -0.8**
comp=E,25nm,1.2s
TUE Stuetta 17.97 50 *e*Pn **P 17 44 26.5 +1.4**
comp=E,6.7nm,0.9s
TUE Stuetta 17.97 50 *e*Pn **P 17 44 26.5 +1.4**
comp=E,6.7nm,0.9s
FUORN Ofenpass-Fuorn 18.60 50 *e*P P 17 44 26.8 -5.3
comp=E,8.2nm,0.8s
TOA1 Torodi Ar. Sit 25.56 151 *e*P **P 17 45 42.4 -0.9**
TOA1 Torodi Ar. Sit 25.56 151 *e*P **P 17 45 42.4 -0.9**
TORD Torodi Ar. Bea 25.57 151 P **P 17 45 42.4 -1.0**
comp=E,0.4nm,0.6s,baz=328,slow=9.5,SNR=2.8
MK32 Makanchi Array 66.33 49 *e*P **P 17 51 04.7 +2.1**
MK32 Makanchi Array 66.33 49 *e*P **P 17 51 04.7 +2.1**
MKAR Makanchi Array 66.33 49 P **P 17 51 04.7 +2.1**
comp=E,0.3nm,0.6s,baz=296,slow=3.9,SNR=3.8
WRA Warramunga Arr 145.20 72 PKPbc **PKPdf 17 59 52.2 +0.4**
comp=E,0.5nm,0.8s,baz=333,slow=2.8,SNR=4.8
ASAR Alice Springs 146.89 78 PKPbc **PKPab 17 59 57.5 -0.5**
comp=E,0.5nm,0.8s,baz=291,slow=1.6,SNR=3.0

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*BJI **19** 17:46:04.6, 13.28N×145.84E, h85km, mb5.0/57, mB4.9/38, Ms4.6/24, Ms7 4.4/20*
*MOS **19** 17:46:09.9±1.0, 13.82N×145.10E, h82km, mb5.1/64, Error ellipse: s-maj=8.3km s-min=5.2km az=98.0*
*IDC **19** 17:46:10.3±0.7, 13.77N×145.27E, h72km±5km, mb4.6/38, mb1 4.6/39, mb1mx4.6/52, mbtmp4.8/39, MS3.5/21, Ms1 3.6/21, ms1mx3.4/45, Error ellipse: s-maj=14.5km s-min=10.3km az=87.0*
*ISCJB **19** 17:46:10.1±0.5, 13.77N±0.03×145.16E±0.02, h82km±4km, mb4.9/226, Error ellipse: s-maj=5.0km s-min=3.7km az=159.3*
*GCMT **19** 17:46:11.2±0.4, 13.48N×145.29E, h102km±4km, MW4.9/65, Moment Tension Solution. s21,c26; s65,c91; Duration: 0 Moment tensor: Scale 10^{16}Nm; M_{rr}1.29±.13; $M_{\theta\theta}$-1.31±.12; $M_{\phi\phi}$0.02±.15; $M_{r\theta}$0.65±.08; $M_{\theta\phi}$2.23±.12; $M_{\phi r}$1.19±.10; Best double couple: M_o2.91300×10^{16} NP1:ϕ_s344.00000°, δ65.00000°, λ147.00000°. NP2: ϕ_s89.00000°, δ60.00000°, λ30.00000°. Principal axes: T 2.8450, Plg41.0000°, Azm305.0000°; N 0.1380, Plg49.0000°, Azm131.0000°; P -2.9810, Plg3.0000°, Azm37.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
*NEIC **19** 17:46:11.2±0.6, 13.75N×145.20E, h81km±5km, mb5.2/158 Error ellipse: s-maj=3.8km s-min=3.2km az=134.0*
NEIC Felt [II] at Andersen AFB and Dededo. Also felt at Apra Harbor, Barrigada, Hagatna, Mangilao, Santa Rita, Tamuning and Yigo.
*DJA **19** 17:46:23.0±1.1, 13°N±4'×14°6E±', h259km±17km, M4.7/13, mB5.6/1, mb4.7/13, Mw(mB)5.2/1*

ISC 19 17:46:11.1±0.6, 13.74N±0.04×145.29E±0.06, h81km±4km, n583, σ1§09/622, mb5.1/227, 11C-6D, Mariana Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
GUMO	**Guam**	**0.44**	**250**	P	**Pn**	**17 46 24.0**	**-0.5**
	2μm,0.3s,baz=76,slow=4.7,SNR=1743						
GUMO				S	**Sn**	**17 46 33.8**	**-0.6**
	3μm,0.3s,baz=33,slow=23,SNR=73						
GUMO	**Guam**	**0.44**	**250**	*e*Pn	**Pn**	**17 46 23.9**	**-0.6**
GUMO				*e*Sn	**Sn**	**17 46 33.4**	**-1.1**
PATS	**Pohnpei**	**14.53**	**117**	*e*Pn	Pn	17 49 28.0	-4.7
PATS				*e*Sn	Sn	17 51 53.8	-19
MANU	**Manus Island**	**15.82**	**172**	*e*Pn	**Pn**	**17 49 48.1**	**-1.1**
	83nm,1.4s						
JAY	**Jayapura**	**16.78**	**196**	P	**Pn**	**17 50 00.9**	**-0.3**
	0.1nm,0.3s,baz=325,slow=23,SNR=17						
JAY	**Jayapura**	**16.78**	**196**	P	**Pn**	**17 50 00.2**	**-1.0**
GENI	**Genyem**	**17.01**	**198**	P	**P**	**17 50 04.7**	**+0.1**
RABL	**Rabaul**	**19.08**	**159**	*e*P	**P**	**17 50 26.8**	**-0.6**
	237nm,1.8s						
JHJ	**Hachijo jima 2**	**19.93**	**346**	LR	LR	17 57 11.1	
	comp=Z,2μm,21.1s,baz=270,slow=33						
SWI	**Sorong**	**20.10**	**225**	P	Pn	17 50 42.8	+1.8
DAV	**Davao City (W)**	**20.48**	**253**	*e*P	**P**	**17 50 43.5**	**+0.8**
	293nm,0.4s						
JOW	**Kunigami**	**20.57**	**312**	*e*P	**P**	**17 50 43.8**	**+0.3**
	37nm,0.7s						
KMPI	**Kaimana, Papua**	**20.77**	**214**	P	**P**	**17 50 43.8**	**-1.9**
FAKI	**Fak Fak**	**21.01**	**219**	P	**P**	**17 50 49.0**	**+0.7**
FAKI	**Fak Fak**	**21.01**	**219**	*e*P	**P**	**17 50 49.0**	**+0.7**
	109nm,1.1s						
H11S3	**WAKE ISLAND Hy**	**21.08**	**74**	T	T	18 12 54.5	
	baz=261,slow=75,SNR=33						
H11S1	**WAKE ISLAND Hy**	**21.10**	**74**	T	T	18 12 57.0	
	baz=261,slow=75,SNR=19						
H11S2	**WAKE ISLAND Hy**	**21.10**	**74**	T	T	18 12 57.0	
	baz=261,slow=75,SNR=6.4						
H11N1	**WAKE ISLAND Hy**	**21.51**	**71**	T	T	18 13 59.4	
	baz=257,slow=75,SNR=19						
H11N2	**WAKE ISLAND Hy**	**21.52**	**71**	T	T	18 13 54.7	
	baz=257,slow=75,SNR=10						
H11N3	**WAKE ISLAND Hy**	**21.53**	**71**	T	T	18 14 00.8	
	baz=257,slow=75,SNR=16						
TNTI	**Ternate**	**21.93**	**235**	P	**P**	**17 50 57.1**	**-1.0**
TNTI	**Ternate**	**21.93**	**235**	*e*P	**P**	**17 50 57.6**	**-0.5**
	38nm,1.0s						
MMPI	**Merauke**	**22.60**	**193**	P	**P**	**17 51 00.6**	**-4.6**
LBMI	**Labuha**	**22.69**	**232**	P	**P**	**17 51 07.2**	**+0.9**
INU	**Inuyama**	**22.77**	**342**	*e*P	**P**	**17 51 07.9**	**+1.0**
	196nm,1.2s						
JNU	**Nakatsue**	**23.34**	**328**	P	**P**	**17 51 13.1**	**+0.6**
	22nm,0.6s,baz=188,slow=2.2,SNR=26						
JNU	**Nakatsue**	**23.34**	**328**	*e*P	**P**	**17 51 12.8**	**+0.4**
	168nm,1.7s						
MSAI	**Masohi**	**23.49**	**225**	P	**P**	**17 51 14.3**	**+0.3**
MJAR	**Matsushiro Arr**	**23.57**	**346**	P	**P**	**17 51 13.7**	**-0.9**
	32nm,0.8s,baz=177,slow=11,SNR=47						
MJAR				PcP	**PcP**	**17 54 57.9**	**+0.4**
	5.5nm,0.7s,baz=169,slow=3.4,SNR=7.9						
MJAR				LR	LR	17 59 28.7	
	comp=Z,283nm,21.8s,baz=150,slow=34						
MAJO	**Matsushiro**	**23.58**	**346**	*e*P	**P**	**17 51 14.2**	**-0.3**
MAJO				pmax	pmax		
	comp=Z,457nm,0.8s						
MAJO	**Matsushiro**	**23.58**	**346**	*e*P	**P**	**17 51 13.8**	**-0.7**
	comp=Z,71nm,0.8s						
MAT	**Matsushiro**	**23.58**	**346**	P	**P**	**17 51 13.8**	**-0.7**
MJB9	**Matsu-Tunnel**	**23.58**	**346**	*e*P	**P**	**17 51 13.9**	**-0.7**
	comp=Z,18nm,0.8s						
YULB	**Yu-li**	**24.66**	**296**	*e*P	**P**	**17 51 24.6**	**+0.2**
	comp=Z,26nm,1.1s						
NLAI	**Namlea**	**24.71**	**228**	P	**P**	**17 51 21.0**	**-3.9**
SANI	**Sanana**	**24.75**	**232**	P	**P**	**17 51 27.3**	**+2.0**
SSLB	**Suanglung**	**25.08**	**297**	*e*P	**P**	**17 51 28.5**	**+0.1**
	comp=Z,130nm,1.7s						
MRSI	**Marisa**	**26.61**	**242**	P	**P**	**17 51 40.3**	**-1.9**
LUWI	**Luwuk**	**26.72**	**238**	P	**P**	**17 51 41.0**	**-2.2**
LUWI	**Luwuk**	**26.72**	**238**	*e*P	**P**	**17 51 41.3**	**-1.9**
	comp=Z,116nm,0.9s						
APSI	**Ampana**	**27.59**	**240**	P	**P**	**17 51 48.4**	**-2.5**
MYLDM	**Lahad Datu**	**27.74**	**255**	⇓P	**P**	**17 51 53.4**	**+1.1**
MYLDM	**Lahad Datu**	**27.74**	**255**	*e*P	**P**	**17 51 53.7**	**+1.4**
	comp=Z,42nm,1.3s						
KSRS	**Korea Array**	**28.24**	**330**	P	**P**	**17 51 56.5**	**0.0**
	comp=Z,5.9nm,0.6s,baz=149,slow=9.0,SNR=27						
KSRS				PcP	**PcP**	**17 55 08.8**	**+0.7**
	comp=Z,8.4nm,1.0s,baz=148,slow=2.2,SNR=14						
KS15	**Wonju Array Si**	**28.25**	**330**	*e*P	**P**	**17 51 56.2**	**-0.4**
KSAR	**Wonju Array Be**	**28.25**	**330**	P	**P**	**17 51 56.5**	**-0.1**
KSAR						17 55 08.8	
KSAR	**Wonju Array Be**	**28.25**	**330**	P	**P**	**17 51 56.5**	**-0.1**
KSAR				PcP	**PcP**	**17 55 08.8**	**+0.6**
KS01	**Wonju Array Si**	**28.27**	**330**	*e*P	**P**	**17 51 56.2**	**-0.6**
KS01				*e*PcP	**PcP**	**17 55 08.8**	**+0.5**
KDI	**Kendari**	**28.56**	**234**	P	**P**	**17 51 59.0**	**-0.6**
	comp=Z,14nm,0.9s						
TTSI	**Tana Toraja**	**30.28**	**238**	P	P	17 52 22.6	+7.8
NJ2	**Nanjing**	**30.29**	**311**	*e*P	**P**	**17 52 16.0**	**+1.3**
NJ2				pmax	pmax		
	comp=Z,12nm,0.7s						
SPSI	**Sidrap Palu**	**30.84**	**237**	P	**P**	**17 52 17.9**	**-1.9**
MSHR	**Mys Shultsa**	**31.23**	**340**	*e*P	**P**	**17 52 23.3**	**+0.4**
KAPI	**Kappang**	**31.46**	**235**	LR	LR	18 05 40.9	
	comp=Z,56nm,19.5s,baz=67,slow=37						
KAPI	**Kappang**	**31.46**	**235**	*e*P	**P**	**17 52 24.3**	**-1.0**
	comp=Z,9.3nm,0.7s						
MMRI	**Maumere**	**31.91**	**227**	P	**P**	**17 52 30.1**	**+0.9**
MMRI	**Maumere**	**31.91**	**227**	*e*P	**P**	**17 52 27.8**	**-1.4**
	comp=Z,49nm,1.0s						
USRK	**Ussuriysk Ar.**	**32.42**	**342**	P	**P**	**17 52 34.0**	**+0.8**
	comp=Z,24nm,0.8s,baz=160,slow=8.9,SNR=44						
DL2	**Dalian**	**32.64**	**325**	P	**P**	**17 52 36.6**	**+1.3**
DL2				pmax	pmax		
	comp=Z,41nm,0.6s						
WHN	**Wuhan**	**33.03**	**306**	P	**P**	**17 52 40.3**	**+1.5**
BTM	**Bintulu**	**33.49**	**255**	⇓P	**P**	**17 52 42.6**	**-0.4**
MDJ	**Mudanjiang**	**33.56**	**340**	P	**P**	**17 52 44.0**	**+0.7**
MDJ				pmax	pmax		
	comp=Z,29nm,0.8s						
MDJ				pmax	pmax		
	comp=Z,110nm,5.3s						
MDJ	**Mudanjiang**	**33.56**	**340**	*e*P	**P**	**17 52 44.0**	**+0.7**
	comp=Z,24nm,0.8s						
SBUM	**Sibu**	**34.56**	**254**	⇑P	**P**	**17 52 52.7**	**+0.4**
SBUM	**Sibu**	**34.56**	**254**	*e*P	**P**	**17 52 52.1**	**-0.2**
	comp=Z,14nm,0.7s						
SBUM				*e*PcP	**PcP**	**17 55 25.9**	**+0.3**
WRAB	**Tennant Creek**	**35.15**	**198**	*e*P	**P**	**17 52 56.5**	**-0.8**
WRAB				pmax	pmax		
	comp=Z,10.0nm,1.0s						
WRAB	**Tennant Creek**	**35.15**	**198**	*e*P	**P**	**17 52 56.5**	**-0.8**
	comp=Z,9.9nm,1.0s						
WB2	**Warramunga Arr**	**35.16**	**198**	*e*P	**P**	**17 52 56.5**	**-0.9**
	comp=Z,15nm,1.1s						
WR1	**Warramunga Arr**	**35.17**	**198**	*e*P	**P**	**17 52 56.6**	**-0.8**
	comp=Z,10nm,0.8s						
WR1				*e*PcP	**PcP**	**17 55 28.1**	**+1.0**
WRA	**Warramunga Arr**	**35.17**	**198**	P	**P**	**17 52 56.6**	**-0.8**
	comp=Z,2.4nm,0.5s,baz=21,slow=9.6,SNR=36						
WRA				PcP	**PcP**	**17 55 28.1**	**+0.9**
	comp=Z,2.2nm,0.6s,baz=15,slow=3.2,SNR=7.9						
WRA				LR	LR	18 08 54.1	
	comp=Z,75nm,18.1s,baz=120,slow=39						
STKI	**Sintang**	**36.14**	**251**	P	**P**	**17 53 04.1**	**-1.8**
BJT	**Baijiatuan**	**36.57**	**321**	*e*P	**P**	**17 53 09.1**	**-0.2**
BJT				pmax	pmax		
	comp=Z,24nm,0.6s						
BJT	**Baijiatuan**	**36.57**	**321**	*e*P	**P**	**17 53 09.1**	**-0.2**
	comp=Z,24nm,0.6s						
BJI	**Beijing**	**36.58**	**321**	P	**P**	**17 53 09.6**	**+0.3**
BJI				pmax	pmax		
	comp=Z,26nm,0.7s						
BJI				pmax	pmax		
	comp=Z,81nm,4.2s						
KSM	**Kuching**	**36.69**	**254**	⇑P	**P**	**17 53 10.2**	**-0.3**
KSM	**Kuching**	**36.69**	**254**	*e*P	**P**	**17 53 09.4**	**-1.1**
	comp=Z,20nm,0.9s						
KSM				*e*PcP	**PcP**	**17 55 32.0**	**+0.1**
ENH	**Enshi**	**36.85**	**302**	*e*P	**P**	**17 53 12.2**	**+0.4**
	comp=Z,45nm,0.8s						
ENH				*e*PcP	**PcP**	**17 55 32.8**	**+0.6**
KLR	**Kul'dur**	**37.10**	**345**	LR	LR	18 07 16.7	
	comp=Z,143nm,21.4s,slow=34						
KLR	**Kul'dur**	**37.10**	**345**	*i* P	**P**	**17 53 13.6**	**0.0**
FITZ	**Fitzroy Crossi**	**37.11**	**212**	LR	LR	18 08 23.0	
	comp=Z,68nm,21.1s,baz=44,slow=36						
GYA	**Guiyang**	**38.27**	**295**	⇑*i*P	**P**	**17 53 24.5**	**+0.6**
GYA				pP	pP	17 53 45.0	+1.8
GYA				PP	**PnPn**	**17 54 58.3**	**+2.9**
GYA				PcP	**PcP**	**17 55 38.6**	**+1.9**
GYA				S	**S**	**17 59 12.3**	**0.0**
GYA				ScP	**ScP**	**17 59 17.0**	**-0.4**
GYA				sS	sS	17 59 48.3	+2.8
GYA				pmax	pmax		
	comp=Z,50nm,0.7s						
GYA				pmax	pmax		
	comp=Z,130nm,5.6s						
GYA				LR	LR		
	comp=Z,590nm,17.0s						
GYA				LR	LR		
	comp=Z,540nm,17.4s						
GYA				LR	LR		
	comp=Z,560nm,17.1s						
GMJI	**Gumukmas**	**38.45**	**237**	P	**P**	**17 53 25.1**	**-0.2**
XAN	**Xi'an**	**38.62**	**308**	P	**P**	**17 53 27.0**	**+0.3**
XAN				pmax	pmax		
	comp=Z,11nm,0.7s						
AS01	**Alice Springs**	**38.80**	**197**	*e*P	**P**	**17 53 27.8**	**-0.4**
AS01				*e*PP	**PnPn**	**17 55 01.8**	**+0.1**
AS31	**Alice Springs**	**38.81**	**197**	*e*P	**P**	**17 53 28.5**	**+0.2**
	comp=Z,1.4nm,0.8s						
AS31				*e*PcP	**PcP**	**17 55 39.4**	**+1.1**
AS31				*e*ScP	**S**	**17 59 20.7**	**+0.5**
ASAR	**Alice Springs**	**38.81**	**197**	P	**P**	**17 53 28.6**	**+0.3**
	comp=Z,2.5nm,1.0s,baz=12,slow=9.7,SNR=30						
ASAR				PP	**PP**	**17 54 58.8**	**0.0**
	comp=Z,5.3nm,1.0s,baz=17,slow=11,SNR=7.6						
ASAR				PcP	**PcP**	**17 55 39.4**	**+1.1**
	comp=Z,0.9nm,0.6s,baz=38,slow=2.6,SNR=4.2						
ASAR				ScP	**S**	**17 59 20.7**	**+0.5**
	comp=Z,0.8nm,0.8s,baz=22,slow=6.1,SNR=4.6						
ASAR	**Alice Springs**	**38.81**	**197**	P	**P**	**17 53 28.6**	**+0.3**
ASAR						17 54 58.8	
ASAR						17 55 39.4	
ASAR						17 59 20.7	
ASAR				pmax	pmax		
	comp=Z,2.0nm,0.9s						
ASAR				pmax	pmax		
	comp=Z,5.0nm,1.0s						
ASAR				pmax	pmax		
	comp=Z,1.0nm,0.6s						
ASAR				pmax	pmax		
	comp=N,1.0nm,0.9s						
PANO	**Nakornpanom**	**39.31**	**280**	P	**P**	**17 53 34.3**	**+1.7**
	comp=N,20nm,1.1s,comp=N,4μm						
NKL	**Nikolayevsk**	**39.48**	**356**	*e*P	**P**	**17 53 32.6**	**-0.9**
NKL				pmax	pmax		
	comp=N,5.0nm,0.8s						
NKL				pmax	pmax		
	comp=Z,14nm,0.8s						
PWJI	**Pagerwojo**	**39.66**	**239**	P	**P**	**17 53 32.8**	**-2.7**
SKNT	**Sakolnakorn**	**39.92**	**280**	P	**P**	**17 53 38.4**	**+0.8**
	comp=Z,17nm,0.7s						
HHC	**Hu-ho-hao-te**	**39.93**	**319**	*e*P	**P**	**17 53 38.0**	**+0.5**
HHC				pP	pP	17 53 58.9	+1.9
HHC				PP	**PnPn**	**17 55 20.8**	**+6.0**
HHC				S	**S**	**17 59 37.9**	**+1.1**
HHC				pmax	pmax		
	comp=Z,18nm,1.0s						
HHC				pmax	pmax		
	comp=Z,68nm,5.8s						
HHC				LR	LR		
	comp=Z,1μm,14.6s						
HHC				LR	LR		
	comp=Z,2μm,13.3s						
HHC				LR	LR		
	comp=Z,880nm,12.5s						
PEA0	**Petropavlovsk-**	**40.49**	**12**	*e*P	**P**	**17 53 41.2**	**-0.7**
PETK	**Petropavlovsk-**	**40.49**	**12**	P	**P**	**17 53 42.0**	**+0.1**
	comp=Z,9.6nm,0.6s,baz=146,slow=7.1,SNR=38						
PETK				PcP	**PcP**	**17 55 42.4**	**-0.7**
	comp=Z,5.3nm,0.7s,baz=174,slow=4.5,SNR=3.9						
PETK				LR	LR	18 07 49.7	
	comp=Z,54nm,21.4s,baz=205,slow=32						
PEA1	**Petropavlovsk-**	**40.50**	**12**	*e*P	**P**	**17 53 42.0**	**+0.1**
PEA1				*e*PcP	**PcP**	**17 55 42.4**	**-0.7**
PET	**Petropavlovsk**	**40.60**	**12**	*e*P	**P**	**17 53 42.6**	**-0.2**
PET				*e*S	**S**	**17 59 46.0**	**-0.3**
PET				pmax	pmax		
	comp=Z,50nm,0.9s						
PET				MLR	MLR		
	comp=Z,200nm,14.0s						
TPI	**Tanjungpandan**	**40.77**	**249**	P	P	17 53 37.7	-7.0
HIA	**Hailar**	**41.18**	**335**	*e*P	**P**	**17 53 48.3**	**+0.7**
HIA				pmax	pmax		
	comp=Z,16nm,0.8s						
HIA	**Hailar**	**41.18**	**335**	*e*P	**P**	**17 53 48.3**	**+0.7**
	comp=Z,16nm,0.8s						
KMI	**Kunming**	**41.53**	**292**	P	**P**	**17 53 52.8**	**+1.7**
KMI				pmax	pmax		
	comp=Z,10.0nm,1.1s						
KMI				LR	LR		
	comp=Z,110nm,15.8s						
KMI				LR	LR		
	comp=Z,89nm,16.8s						
KMI				LR	LR		
	comp=Z,96nm,20.5s						
CD2	**Chengdu**	**41.77**	**301**	P	**P**	**17 53 51.8**	**-1.0**
CD2				pP	pP	17 54 12.1	-0.2
CD2				sP	sP	17 54 22.1	+0.5
CD2				PP	**PP**	**17 55 30.1**	**-0.7**
CD2				S	**S**	**18 00 03.6**	**-0.8**
CD2				sS	sS	18 00 39.0	+1.2
CD2				SS	**SS**	**18 03 13.9**	**+0.8**
CD2				pmax	pmax		
	comp=Z,40nm,0.5s						
CD2				pmax	pmax		
	comp=Z,70nm,5.5s						
CD2				LR	LR		
	comp=Z,180nm,6.5s						
CD2				LR	LR		
	comp=Z,160nm,8.3s						
CHBT	**CHBT**	**41.79**	**274**	P	**P**	**17 53 54.8**	**+1.7**
	comp=Z,17nm,1.3s						
PPBI	**Pangkal Pinang**	**41.92**	**251**	P	**P**	**17 53 53.1**	**-1.0**
SRAK	**Srakaew**	**41.95**	**276**	P	P	17 53 50.8	-3.5
MYKOM	**Kota Tinggi**	**42.66**	**257**	⇓P	**P**	**17 54 00.3**	**+0.2**
MYKOM	**Kota Tinggi**	**42.66**	**257**	*e*P	**P**	**17 53 59.5**	**-0.7**
	comp=Z,35nm,1.0s						
PBKT	**Sadao Pong**	**42.81**	**280**	P	**P**	**17 54 02.1**	**+0.8**
	comp=Z,26nm,0.7s						
KGM	**Kluang**	**43.09**	**258**	⇑P	**P**	**17 54 03.1**	**-0.6**
LZH	**Lanzhou**	**43.25**	**309**	*e*P	**P**	**17 54 06.3**	**+1.5**
LZH				pP	pP	17 54 27.8	+3.3
LZH				sP	sP	17 54 37.3	+3.5
LZH				PcP	**PcP**	**17 55 54.6**	**+1.9**
LZH				*e*S	**S**	**18 00 31.0**	**+4.8**
LZH				pmax	pmax		
	comp=Z,29nm,1.0s						
LZH				pmax	pmax		
	comp=Z,120nm,4.2s						
LAMP	**Lampang**	**44.03**	**282**	P	**P**	**17 54 12.8**	**+1.6**
	comp=Z,3.0nm,0.7s						
CGJI	**Cibinong**	**44.21**	**245**	P	P	17 54 09.3	-3.3
SKLT	**Songkhla**	**44.36**	**266**	P	**P**	**17 54 15.1**	**+1.3**
	comp=Z,20nm,0.8s						
MDSI	**Maura Dua**	**44.64**	**249**	P	**P**	**17 54 13.9**	**-2.1**
CM01	**Chiang Mai Arr**	**44.67**	**282**	*e*P	**P**	**17 54 16.7**	**+0.4**
CM01				*e*PcP	**PcP**	**17 55 58.8**	**+1.1**
CMMT	**Chiang Mai**	**44.68**	**283**	P	**P**	**17 54 17.6**	**+1.3**
	comp=Z,10nm,0.9s						
CHTO	**Chiang Mai**	**44.68**	**283**	P	**P**	**17 54 18.0**	**+1.6**
	comp=Z,18nm,0.8s						
CHTO	**Chiang Mai**	**44.68**	**283**	*e*P	**P**	**17 54 16.1**	**-0.3**
CHTO				*e*		17 55 58.6	
CHTO	**Chiang Mai**	**44.68**	**283**	*e*P	**P**	**17 54 16.1**	**-0.3**
CHTO				*e*PcP	**PcP**	**17 55 58.6**	**+0.9**
CM31	**Chiang Mai Arr**	**44.69**	**282**	*e*P	**P**	**17 54 17.1**	**+0.7**
CM31				*e*PcP	**PcP**	**17 55 58.9**	**+1.2**
CMAR	**Chiang Mai Arr**	**44.69**	**282**	P	**P**	**17 54 16.9**	**+0.6**
	comp=Z,6.8nm,0.7s,baz=86,slow=6.1,SNR=73						
CMAR				PcP	**PcP**	**17 55 59.5**	**+1.8**
	comp=Z,25nm,0.7s,baz=93,slow=1.9,SNR=72						
CMAR				LR	LR	18 12 32.3	
	comp=Z,32nm,20.0s,baz=90,slow=35						
CMAR	**Chiang Mai Arr**	**44.69**	**282**	*i* P	**P**	**17 54 17.0**	**+0.6**
CMAR				pmax	pmax		
	comp=Z,8.0nm,0.7s						
KULM	**Kulim**	**44.76**	**264**	*e*P	**P**	**17 54 17.2**	**+0.2**
	comp=Z,33nm,1.0s						
KULM				*e*PcP	**PcP**	**17 55 56.8**	**-1.3**
KASI	**Kota Agung**	**44.79**	**247**	P	**P**	**17 54 16.5**	**-0.7**
	comp=Z,28nm,1.2s						
LHSI	**Lahat**	**44.97**	**250**	P	**P**	**17 54 17.8**	**-0.8**
SMY	**Shemya**	**45.15**	**24**	*e*P	**P**	**17 54 20.6**	**+1.1**
SMY				pmax	pmax		
	comp=Z,141nm,0.7s						
SMY	**Shemya**	**45.15**	**24**	*e*P	**P**	**17 54 20.6**	**+1.1**
	comp=Z,141nm,0.7s						
STKA	**Stephens Creek**	**45.50**	**184**	P	**P**	**17 54 22.1**	**-0.4**
	comp=Z,1.7nm,0.7s,baz=341,slow=11,SNR=4.9						
MHMT	**Maesarieng**	**45.66**	**282**	P	**P**	**17 54 26.1**	**+2.0**
	comp=Z,10nm,0.7s						
SURT	**Suratani**	**45.78**	**269**	P	**P**	**17 54 27.8**	**+2.7**
	comp=Z,6.5nm,1.1s						
MA2	**Magadan**	**45.93**	**4**	*e*P	**P**	**17 54 25.6**	**0.0**
ULN	**Ulaanbaatar**	**46.49**	**325**	*e*P	**P**	**17 54 30.7**	**+0.3**
ULN				*e*		17 56 03.7	
ULN	**Ulaanbaatar**	**46.49**	**325**	*e*P	**P**	**17 54 30.6**	**+0.3**
ULN				*e*PcP	**PcP**	**17 56 03.7**	**0.0**
SONA0	**Songino Array**	**46.85**	**325**	*e*P	**P**	**17 54 33.9**	**+0.8**
SONA0				*e*PcP	**PcP**	**17 56 05.7**	**+0.8**
SONM	**Songino Array**	**46.85**	**325**	P	**P**	**17 54 33.9**	**+0.8**
	comp=Z,5.2nm,0.6s,baz=140,slow=8.6,SNR=12						
SONM				PcP	**PcP**	**17 56 05.7**	**+0.8**
	comp=Z,4.6nm,0.5s,baz=151,slow=2.8,SNR=8.6						

TLY	Talaya	50.45	328	eP		P	17 55 00.1	-0.4	
	comp=Z,5.8nm,0.5s								
LSA	Lhasa	52.30	297	eP		P	17 55 15.9	+0.6	
LSA				e			17 56 26.2		
LSA					pmax	pmax			
	comp=Z,16nm,0.7s								
LSA	Lhasa	52.30	297	eP		P	17 55 15.9	+0.6	
	comp=Z,16nm,0.7s								
LSA				ePcP		PcP	17 56 26.2	+0.6	
BILL	Bilibino	55.94	9	c iP		P	17 55 39.8	-0.8	
BILL				e			17 57 50.1		
BILL					pmax	pmax			
	comp=Z,41nm,1.0s								
BILL	Bilibino	55.94	9	eP		P	17 55 39.7	-0.8	
	comp=Z,30nm,0.8s								
GUN	Gumba	56.80	294	eP		P	17 55 47.9	+0.1	
	comp=Z,45nm,0.8s								
PKIN	Phulchoki	57.23	294	eP		P	17 55 50.5	-0.2	
	comp=Z,3.5nm,0.4s								
WMQ	Urumqi	57.33	313	P		P	17 55 52.4	+1.5	
WMQ				pP		pP	17 56 14.5	+3.1	
WMQ				sP		sP	17 56 22.1	+1.6	
WMQ				PcP		PcP	17 56 45.1	+0.9	
WMQ					pmax	pmax			
	comp=Z,2.0nm,0.6s								
WMQ					pmax	pmax			
	comp=Z,8.0nm,4.4s								
WMQ					LR	LR			
	comp=Z,25nm,18.2s								
WMQ					LR	LR			
	comp=Z,31nm,25.0s								
KKN	Kakani	57.33	294	eP		P	17 55 50.9	-0.5	
	comp=Z,15nm,0.8s								
DMN	Daman	57.48	294	eP		P	17 55 52.2	-0.3	
	comp=Z,21nm,0.7s								
GKN	Gorkha	57.91	295	eP		P	17 55 54.9	-0.4	
	comp=Z,33nm,0.8s								
GAMB	Gambell	58.19	21	eP		P	17 55 56.4	0.0	
	comp=Z,12nm,0.8s								
TIXI	Tiksi	58.73	354	P		P	17 55 59.3	-0.8	
	comp=Z,3.8nm,0.5s,baz=142,slow=5.2,SNR=41								
TIXI	Tiksi	58.73	354	ceP		P	17 55 59.1	-0.9	
TIXI					pmax	pmax			
	comp=Z,5.0nm,0.8s								
TIXI	Tiksi	58.73	354	eP		P	17 55 58.7	-1.3	
	comp=Z,4.1nm,0.6s								
SDPT	Sand Point	58.79	33	eP		P	17 56 00.6	-0.2	
	comp=Z,168nm,0.8s								
KOLN	Koldanda	58.82	294	eP		P	17 56 01.4	-0.4	
	comp=Z,21nm,0.7s								
PYUN	Piuthan	59.36	295	eP		P	17 56 05.3	-0.2	
	comp=Z,17nm,0.5s								
CHGN	Chignik	60.23	32	eP		P	17 56 09.9	-0.7	
MK01	Makanchi Array	61.66	316	eP		P	17 56 20.6	0.0	
MK01				ePcP		PcP	17 57 01.0	-0.3	
MK31	Makanchi Array	61.67	316	P		P	17 56 20.7	0.0	
MK31					pmax	pmax			
	comp=Z,11nm,0.5s								
MK31	Makanchi Array	61.67	316	eP		P	17 56 20.8	+0.1	
MK31				ePcP		PcP	17 57 01.4	0.0	
MK32	Makanchi Array	61.67	316	eP		P	17 56 21.0	+0.3	
MK32				ePcP		PcP	17 57 01.2	-0.2	
MKAR	Makanchi Array	61.67	316	P		P	17 56 21.0	+0.3	
	comp=Z,19nm,0.4s,baz=91,slow=7.8,SNR=162								
MKAR				PcP		PcP	17 57 01.2	-0.2	
	comp=Z,6.8nm,0.7s,baz=95,slow=6.9,SNR=6.1								
MKAR				LR		LR	18 23 13.1		
	comp=Z,34nm,21.3s,baz=86,slow=36								
MKAR	Makanchi Array	61.67	316	eP		P	17 56 20.6	-0.1	
MKAR				e			17 57 01.3		
MKAR	Makanchi Array	61.67	316	eP		P	17 56 20.6	-0.1	
MKAR				ePcP		PcP	17 57 01.2	-0.2	
ZAA0	Zalesovo Array	61.74	324	eP		P	17 56 19.9	-1.1	
ZAA0				ePcP		PcP	17 57 00.4	-1.0	
ZALV	Zalesovo Beam	61.74	324	P		P	17 56 20.2	-0.7	
	comp=Z,1.3nm,0.3s,baz=107,slow=6.7,SNR=11								
ZALV				PcP		PcP	17 57 01.1	-0.4	
	comp=Z,7.3nm,0.5s,baz=124,slow=4.2,SNR=12								
ZALV				LR		LR	18 23 44.0		
	comp=Z,30nm,21.3s,baz=68,slow=36								
ZAA1	Zalesovo Array	61.74	324	eP		P	17 56 20.2	-0.8	
ZAA1				ePcP		PcP	17 57 01.1	-0.4	
MAKZ	Makanchi	61.88	316	eP		P	17 56 22.0	-0.1	
MAKZ					pmax	pmax			
	comp=Z,38nm,0.5s								
MAKZ	Makanchi	61.88	316	eP		P	17 56 22.0	-0.1	
	comp=Z,38nm,0.5s								
NVS	Novosibirsk	62.88	325	⇓ iP		P	17 56 28.4	-0.1	
NVS					pmax	pmax			
	comp=Z,12nm,1.0s								
NVS					pmax	pmax			
	comp=N,3.0nm,0.9s								
NVS					pmax	pmax			
	comp=E,8.0nm,0.9s								
OHAK	Old Harbor	63.20	32	eP		P	17 56 31.0	+0.5	
	comp=E,64nm,0.9s								
SVW2	Sparrevohn	63.35	28	eP		P	17 56 32.2	+0.6	
	comp=E,27nm,0.8s								
KDAK	Kodiak Island	63.72	32	eP		P	17 56 35.5	+1.5	
KDAK					pmax	pmax			
	comp=Z,94nm,1.4s								
KDAK	Kodiak Island	63.72	32	eP		P	17 56 35.5	+1.5	
	comp=Z,94nm,1.4s								
TT01	Tatalina	63.83	26	eP		P	17 56 34.9	+0.2	
TTA	Tatalina	63.84	26	eP		P	17 56 34.9	0.0	
TTA					pmax	pmax			
	comp=Z,26nm,1.2s								
TTA	Tatalina	63.84	26	eP		P	17 56 34.9	0.0	
	comp=Z,26nm,1.2s								
HYB	Hyderabad	64.11	283	i P		P	17 56 38.5	+1.1	
HYB				ePcP		PcP	17 57 12.0	+0.1	
RSO	Redoubt South	64.44	29	eP		P	17 56 38.7	-0.3	
KURK	Kurchatov	64.73	320	eP		P	17 56 40.4	-0.4	
KURK					pmax	pmax			
	comp=Z,38nm,0.5s								
KURK	Kurchatov	64.73	320	eP		P	17 56 40.4	-0.4	
	comp=Z,38nm,0.5s								
KURK	Kurchatov	64.73	320	P		P	17 56 40.6	-0.2	
	SNR=7.1								
SPU	Mount Spurr	64.99	28	eP		P	17 56 42.1	-0.3	
BRLK	Bradley Lake	65.13	30	eP		P	17 56 42.5	-0.7	
	comp=E,66nm,0.8s								
PPLA	Purkeypile	65.47	27	eP		P	17 56 46.0	+0.5	
	comp=Z,42nm,1.1s								
KSH	Kashi	65.48	307	P		P	17 56 48.6	+2.6	
KSH				epP		pP	17 57 08.8	+1.8	
KSH				esP		PcP	17 57 17.3	0.0	
KSH				PcS			18 01 22.8		
KSH				S		S	18 05 25.3	+0.5	
KSH					pmax	pmax			
	comp=Z,69nm,4.4s								
KSH					LR	LR			
	comp=Z,80nm,4.9s								
KSH					LR	LR			
	comp=Z,120nm,4.9s								
KSH					LR	LR			
	comp=Z,150nm,5.5s								
CAST	Castle Rocks	65.68	26	eP		P	17 56 46.7	-0.1	
	comp=Z,66nm,1.2s								
SEW	Seward	65.92	30	eP		P	17 56 48.1	-0.2	
	comp=Z,74nm,0.8s								
TKM2	Tokmak 2	65.93	311	eP		P	17 56 49.2	+0.2	
TKM2					pmax	pmax			
	comp=Z,4.0nm,0.6s								
TKM2	Tokmak 2	65.93	311	eP		P	17 56 49.2	+0.2	
	comp=Z,4.1nm,0.6s								
RC01	Rabbit Creek A	66.04	29	eP		P	17 56 48.9	-0.2	
	comp=Z,82nm,0.7s								
NRIK	Noril'sk	66.12	341	P		P	17 56 49.8	+0.4	
	comp=Z,23nm,0.6s,baz=116,slow=8.0,SNR=19								
NRIK					LR	LR	18 25 27.3		
	comp=Z,76nm,21.4s,baz=127,slow=36								
KTH	Kantishna Hill	66.22	26	eP		P	17 56 50.2	0.0	
	comp=Z,49nm,1.0s								
BPAW	Bear Paw Mtn.	66.36	25	eP		P	17 56 51.1	+0.1	
	comp=Z,55nm,1.4s								
PMR	Palmer	66.45	28	eP		P	17 56 51.1	-0.6	
PMR					pmax	pmax			
	comp=Z,49nm,0.7s								
PMR	Palmer	66.45	28	eP		P	17 56 51.1	-0.6	
	comp=Z,49nm,0.7s								
TRF	Thorofare Moun	66.46	26	eP		P	17 56 51.0	-0.9	
	comp=Z,35nm,1.1s								
AAK	Ala-Archa	66.72	311	⇓ iP		P	17 56 53.3	-0.7	
AAK					pmax	pmax			
	comp=Z,3.0nm,0.9s								
AAK	Ala-Archa	66.72	311	eP		P	17 56 53.3	-0.7	
	comp=Z,3.7nm,0.8s								
MLY	Manley	66.75	25	eP		P	17 56 53.6	+0.1	
	comp=Z,28nm,1.0s								
SML	Sawmill	66.88	28	eP		P	17 56 54.3	-0.1	
SML					pmax	pmax			
	comp=Z,126nm,1.0s								
SML	Sawmill	66.88	28	eP		P	17 56 54.3	-0.1	
	comp=Z,126nm,1.0s								
RND	Reindeer	67.06	26	eP		P	17 56 55.1	-0.5	
RND					pmax	pmax			
	comp=Z,39nm,1.2s								
RND	Reindeer	67.06	26	eP		P	17 56 55.1	-0.5	
	comp=Z,39nm,1.2s								
MCK	McKinley	67.12	26	eP		P	17 56 54.9	-1.0	
MCK					pmax	pmax			
	comp=Z,22nm,1.2s								
MCK	McKinley	67.12	26	eP		P	17 56 54.9	-1.0	
	comp=Z,22nm,1.2s								
EKS2	Erkin-Say	67.25	311	eP		P	17 56 57.1	-0.2	
EKS2					pmax	pmax			
	comp=Z,4.0nm,0.9s								
EKS2	Erkin-Say	67.25	311	eP		P	17 56 57.1	-0.2	
	comp=Z,4.0nm,0.9s								
SCM	Sheep Creek Mo	67.35	28	eP		P	17 56 57.6	+0.1	
SCM					pmax	pmax			
	comp=Z,124nm,0.9s								
SCM	Sheep Creek Mo	67.35	28	eP		P	17 56 57.6	+0.1	
	comp=Z,124nm,0.9s								
DHY	Denali Highway	67.63	27	eP		P	17 56 59.6	+0.3	
	comp=Z,25nm,1.2s								
COLD	Coldfoot	67.65	22	eP		P	17 56 59.3	+0.1	
	comp=Z,17nm,0.6s								
WRH	Wood River Hil	67.67	25	eP		P	17 56 58.6	-0.8	
	comp=Z,22nm,0.7s								
MDM	Murphy Dome	67.75	25	eP		P	17 56 59.3	-0.6	
	comp=Z,18nm,0.7s								
EYAK	Cordova Ski Ar	67.81	30	eP		P	17 57 00.5	+0.2	
	comp=Z,61nm,1.0s								
CCB	Clear Creek Bu	67.84	25	eP		P	17 56 59.5	-0.9	
	comp=Z,31nm,1.3s								
COLA	College	67.88	25	ceP		P	17 56 59.8	-0.8	
COLA					pmax	pmax			
	comp=Z,9.0nm,0.5s								
DIV	Divide	67.92	29	eP		P	17 57 01.7	+0.7	
	comp=Z,44nm,0.8s								
KLU	Klutina	67.93	29	eP		P	17 57 01.5	+0.4	
	comp=Z,43nm,0.7s								
HDA	Harding Lake	68.14	26	eP		P	17 57 01.1	-1.2	
	comp=Z,40nm,1.5s								
MNAS	Manas	68.19	310	P		P	17 57 00.3	-2.9	
MNAS					pmax	pmax			
	comp=Z,3.0nm,0.9s								
ILAR	Eielson Array	68.25	25	P		P	17 57 01.6	-1.5	
	comp=Z,15nm,0.5s,baz=251,slow=5.8,SNR=283								
ILAR					LR	LR	18 24 12.5		
	comp=Z,31nm,22.0s,baz=286,slow=33								
ILB	Eielson Array	68.25	25	eP		P	17 57 01.5	-1.5	
RAGM	Ragged Mountai	68.30	30	eP		P	17 57 04.0	+0.5	
	comp=Z,60nm,1.3s								
BMRM	Bremner River	68.45	30	eP		P	17 57 04.7	+0.4	
	comp=Z,53nm,0.8s								
PAX	Paxson	68.45	27	eP		P	17 57 04.3	0.0	
PAX					pmax	pmax			
	comp=Z,29nm,0.7s								
PAX	Paxson	68.45	27	eP		P	17 57 04.3	0.0	
	comp=Z,29nm,0.7s								
OTUK	Ortayu	68.53	317	P		P	17 57 04.4	-0.7	
OTUK					pmax	pmax			
	comp=Z,12nm,0.6s								
CRQM	Cirque	69.11	30	eP		P	17 57 09.0	+0.4	
	comp=Z,61nm,0.7s								
DOT	Dot Lake	69.21	27	eP		P	17 57 08.8	-0.2	
	comp=Z,71nm,0.8s								
MENT	Mentasta	69.22	28	eP		P	17 57 09.6	+0.4	
	comp=Z,27nm,1.1s								
FYU	Fort Yukon	69.35	24	eP		P	17 57 10.3	+0.6	
	comp=Z,118nm,1.6s								
BALM	Baldy	69.54	30	eP		P	17 57 11.4	+0.2	
BALM					pmax	pmax			
	comp=Z,38nm,0.8s								
BALM	Baldy	69.54	30	eP		P	17 57 11.4	+0.2	
	comp=Z,38nm,0.8s								
KK31	Karatay Array	69.66	311	i P		P	17 57 10.9	-1.3	
KK31					pmax	pmax			
	comp=Z,3.0nm,0.5s								
KKAR	Karatay Array	69.66	311	eP		P	17 57 11.7	-0.5	
KKAR	Karatay Array	69.66	311	eP		P	17 57 11.7	-0.5	
BVA0	Borovoye Array	70.06	322	i P		P	17 57 13.7	-0.7	
BVA0					pmax	pmax			
	comp=Z,13nm,0.5s								
BVAR	Borovoye Array	70.06	322	P		P	17 57 14.1	-0.4	
	comp=Z,22nm,0.4s,baz=107,slow=7.3,SNR=84								
BRVK	Borovoye	70.13	322	eP		P	17 57 14.1	-0.7	
BRVK					pmax	pmax			
	comp=Z,16nm,0.5s								
BRVK	Borovoye	70.13	322	eP		P	17 57 14.1	-0.7	
	comp=Z,16nm,0.5s								
BRVK	Bovoye	70.13	322	P		P	17 57 14.8	0.0	
	SNR=5.3								
EGAK	Eagle	70.66	26	eP		P	17 57 17.8	0.0	
	comp=Z,20nm,1.1s								
ZRNK	Zerenda	70.89	322	eP		P	17 57 18.7	-0.8	
ZRNK					pmax	pmax			
	comp=Z,10.0nm,0.8s								
ZRNK	Zerenda	70.89	322	eP		P	17 57 18.7	-0.8	
	comp=Z,10nm,0.8s								
PPT	Papeete	71.40	114	LR		LR	18 22 59.9		
	comp=Z,67nm,21.1s,baz=329,slow=31								
SKAG	Skagway	72.88	32	eP		P	17 57 32.3	+1.1	
	comp=Z,35nm,1.0s								
INK	Inuvik	74.07	22	eP		P	17 57 37.7	-0.3	
INK					pmax	pmax			
	comp=Z,14nm,0.8s								
INK	Inuvik	74.07	22	eP		P	17 57 37.6	-0.3	
	comp=Z,14nm,0.8s								
WRAK	Wrangell Islan	74.45	35	eP		P	17 57 41.7	+1.2	
	comp=Z,38nm,0.9s								
DLBC	Dease Lake	75.63	33	eP		P	17 57 48.5	+1.1	
	comp=Z,57nm,0.9s								
AB31	Akbulak array	76.71	318	P		P	17 57 52.4	-1.1	
AB31					pmax	pmax			
	comp=Z,9.0nm,0.6s								
ABKAR	Akbulak array	76.71	318	eP		P	17 57 52.5	-1.0	
ARU	Arti	76.88	325	P		P	17 57 53.8	-0.6	
	comp=Z,5.6nm,0.4s,baz=141,slow=4.8,SNR=12								
ARU	Arti	76.88	325	d iP		P	17 57 53.3	-1.0	
ARU							18 00 43.3		
ARU					S	S	18 07 34.7	-0.8	
ARU					SS	SS	18 12 28.8	-4.3	
ARU					pmax	pmax			
	comp=Z,10.0nm,1.0s								
ARU	Arti	76.88	325	eP		P	17 57 53.7	-0.6	
	comp=Z,7.9nm,0.6s								
AKTO	Aktyubinsk	77.82	319	P		P	17 57 59.2	-0.6	
	comp=Z,4.6nm,0.7s,baz=94,slow=8.4,SNR=8.9								
AKTO	Aktyubinsk	77.82	319	P		P	17 57 58.5	-1.2	
AKTO					pmax	pmax			
	comp=Z,8.0nm,0.7s								
GEYT	Alibeck	79.49	307	P		P	17 58 09.9	+0.6	
	comp=Z,9.2nm,0.7s,baz=93,slow=3.0,SNR=10								
GEYT					LR	LR	18 35 42.7		
	comp=Z,24nm,21.0s,baz=70,slow=37								
NLWA	Neilton Lookou	80.59	44	eP		P	17 58 16.6	+1.6	
	comp=Z,15nm,0.7s								
B05A	Bryant	81.60	42	P		P	17 58 21.4	+1.2	
	baz=281								
I03D	Drain, OR	81.62	47	P		P	17 58 20.9	+0.5	
	baz=281								
MBW	Mount Baker	81.63	42	P		P	17 58 21.7	+1.1	
JCW	Jim Creek	81.72	42	eP		P	17 58 22.1	+1.2	
L02D	Cave Junction,	81.72	49	P		P	17 58 22.2	+1.2	
	baz=281								
KHMM	Horse Mountain	81.88	50	eP		P	17 58 23.2	+1.2	
	comp=Z,44nm,1.4s								
OBSR	Observation Ro	82.06	44	eP		P	17 58 24.2	+1.2	
LON	Longmire	82.09	44	eP		P	17 58 23.4	+0.5	
LON					pmax	pmax			
	comp=Z,13nm,1.4s								
LON	Longmire	82.09	44	eP		P	17 58 23.4	+0.5	
	comp=Z,13nm,1.4s								
HUMO	Hull Mountain	82.11	48	eP		P	17 58 24.3	+1.3	
	comp=Z,33nm,1.4s								
H04A	Detroit Lake	82.24	46	eP		P	17 58 24.2	+0.5	
	comp=Z,27nm,1.4s								
I04A	Tendick Farm,	82.26	47	P		P	17 58 24.8	+0.9	
	baz=282								
M02C	Callahan	82.42	49	P		P	17 58 25.9	+1.1	
	baz=282								
YBH	Yreka Blue Hor	82.46	49	P		P	17 58 26.2	+1.2	
	comp=Z,10nm,0.8s,baz=319,slow=1.7,SNR=17								
YBH	Yreka Blue Hor	82.46	49	eP		P	17 58 26.7	+1.7	
YBH					pmax	pmax			
	comp=Z,14nm,0.9s								
YBH	Yreka Blue Hor	82.46	49	eP		P	17 58 26.7	+1.7	
	comp=Z,14nm,0.9s								
YKW3	Yellowknife Ar	82.51	27	eP		P	17 58 24.1	-0.6	
	comp=Z,16nm,0.9s								
YKA	Yellowknife Ar	82.53	27	P		P	17 58 24.6	-0.2	
	comp=Z,12nm,0.7s,baz=287,slow=5.3,SNR=210								
YKB5	Yellowknife Ar	82.53	27	eP		P	17 58 23.8	-1.0	
N02D	Trinity Center	82.62	50	P		P	17 58 26.8	+0.9	
	baz=282								
G05D	Wamic, OR	82.73	45	P		P	17 58 27.2	+0.9	
	baz=282								
LTY	Liberty	82.75	43	eP		P	17 58 26.9	+0.5	
	comp=Z,56nm,1.9s								
WDC	Whiskeytown Da	82.82	50	eP		P	17 58 27.6	+0.8	
WDC					pmax	pmax			
	comp=Z,12nm,1.1s								
WDC	Whiskeytown Da	82.82	50	eP		P	17 58 27.6	+0.8	
	comp=Z,12nm,1.1s								
I05D	Terrebonne, OR	82.91	46	P		P	17 58 28.4	+1.1	
	baz=282								
K04D	Chiloquin, OR	82.97	48	P		P	17 58 28.7	+1.0	
	baz=282								
CROR	Criterion Ridg	83.02	46	P		P	17 58 29.1	+1.3	
M04C	Macdoel	83.09	49	P		P	17 58 29.6	+1.2	
	baz=282								
J05D	Fort Rock, OR	83.21	47	P		P	17 58 30.0	+1.1	
	baz=282								
BANOM	Banah	83.22	295	i P		P	17 58 30.8	+1.6	
	SNR=7.9								
B08A	Colville Reser	83.39	42	eP		P	17 58 29.7	+0.1	
	comp=Z,26nm,0.8s								
O03D	Paynes Creek	83.43	50	P		P	17 58 31.1	+1.0	
	baz=282								
UOSS	Minazif	83.51	294	eP		P	17 58 31.0	+0.3	
	comp=Z,1.6nm,1.3s								
K05A	Summer Lake	83.57	48	eP		P	17 58 31.5	+0.6	
	comp=Z,22nm,0.9s								
HATD	Hatta, Dubai	83.60	294	i P		P	17 58 32.4	+1.3	
	SNR=6.0								
ASHO	Ashiyiah	83.69	294	i P		P	17 58 33.5	+1.8	
	SNR=7.7								
HAWA	Hanford	83.70	44	eP		P	17 58 31.7	+0.5	
	comp=Z,7.7nm,0.6s								
ORV	Oroville	83.82	51	eP		P	17 58 32.5	+0.6	
ORV					pmax	pmax			
	comp=Z,9.0nm,0.8s								
ORV	Oroville	83.82	51	eP		P	17 58 32.5	+0.6	
	comp=Z,9.1nm,0.8s								
D08A	Wollman Farm,	83.96	43	eP		P	17 58 33.5	+1.0	
	comp=Z,8.8nm,0.6s								
FAQ	Al Faqa, Dubai	84.10	294	P		P	17 58 34.4	+0.8	
MOD	Modoc Plateau	84.18	48	eP		P	17 58 34.9	+0.9	
	comp=Z,10nm,0.9s								
RES	Resolute Bay	84.31	13	P		P	17 58 34.0	+0.3	
	comp=Z,6.2nm,0.5s								
RES	Resolute Bay	84.31	13	P		P	17 58 34.0	+0.3	
RES					pmax	pmax			
	comp=Z,6.0nm,0.5s								
RES	Resolute Bay	84.31	13	eP		P	17 58 33.5	-0.1	
AFDM	Forest Hills D	84.35	51	eP		P	17 58 35.6	+0.9	
	comp=Z,8.9nm,0.9s								
NEW	Newport	84.84	42	P		P	17 58 37.9	+0.9	
	comp=Z,23nm,0.8s,baz=286,slow=3.5,SNR=24								
NEW	Newport	84.84	42	P		P	17 58 38.1	+1.2	
	baz=285								
NEW	Newport	84.84	42	eP		P	17 58 37.9	+0.9	
	comp=Z,30nm,0.9s								
CMB	Columbia Colle	85.01	52	eP		P	17 58 38.8	+0.7	
CMB					pmax	pmax			
	comp=Z,12nm,0.8s								
CMB	Columbia Colle	85.01	52	eP		P	17 58 38.8	+0.7	
	comp=Z,12nm,0.8s								
WVOR	Wild Horse Val	85.26	48	eP		P	17 58 40.3	+1.0	
WVOR					pmax	pmax			
	comp=Z,10.0nm,0.9s								
WVOR	Wild Horse Val	85.26	48	eP		P	17 58 40.3	+1.0	
	comp=Z,10nm,0.9s								
F10A	Beach Ranch, E	85.36	44	eP		P	17 58 40.5	+0.8	
	comp=Z,7.4nm,0.8s								
SHAO	Shalim	85.53	287	P		P	17 58 39.3	-1.6	
BMO	Blue Mountains	85.59	45	eP		P	17 58 41.6	+0.8	
BMO					pmax	pmax			
	comp=Z,15nm,0.8s								
BMO	Blue Mountains	85.59	45	eP		P	17 58 41.6	+0.8	
	comp=Z,15nm,0.8s								
PKM	Mcpherson Peak	86.20	55	P		P	17 58 45.6	+1.4	
	baz=284								
SBC	Santa Barbara	86.39	56	P		P	17 58 45.9	+1.0	
	baz=284								
BSMT	Bassoo Peak	86.46	42	eP		P	17 58 46.1	+0.8	
NV01	Mina Array Sit	86.50	51	eP		P	17 58 46.8	+1.1	
NVAR	Mina Array Bea	86.50	51	P		P	17 58 46.8	+1.1	
	comp=Z,0.9nm,0.3s,baz=168,slow=21,SNR=38								
WALA	Waterton Lakes	86.67	40	eP		P	17 58 47.2	+1.1	
	comp=Z,34nm,1.0s								
BLMT	Blacktail Moun	86.69	41	eP		P	17 58 47.2	+0.8	
BMN	Battle Mountai	86.80	49	eP		P	17 58 47.7	+0.7	
BMN					pmax	pmax			
	comp=Z,7.0nm,0.8s								
BMN	Battle Mountai	86.80	49	eP		P	17 58 47.7	+0.7	
	comp=Z,7.3nm,0.8s								
JTMT	Jette	86.82	42	eP		P	17 58 47.7	+0.8	
ARVC	Arvin	86.92	55	P		P	17 58 48.5	+1.0	
	baz=285								
YBMT	Yellow Bay	86.96	42	eP		P	17 58 48.4	+0.8	
BLG	Laguna Peak, P	86.99	56	P		P	17 58 48.2	+0.3	
	baz=285								
MFID	Camas Ranch	87.00	46	eP		P	17 58 49.0	+1.1	
	comp=Z,27nm,0.8s								
ARA0	ARCESS Array S	87.07	342	eP		P	17 58 46.6	-0.8	
ARCES	ARCESS Array B	87.07	342	P		P	17 58 46.6	-0.8	
	comp=Z

R11A	Troy Canyon, C	88.58	51	*e*P		P	17 58 56.8	+1.2
	comp=Z,8.0nm,0.9s							
LRM	Limekiln Ridge	88.60	43	*e*P		P	17 58 55.9	+0.4
MURC	Murrieta	88.62	56	P		P	17 58 56.6	+0.9
	baz=286							
MCMT	McKenzie Canyo	88.64	44	*e*P		P	17 58 56.5	+0.7
DLMT	Dillon	88.64	44	*e*P		P	17 58 56.6	+0.9
	comp=Z,29nm,1.8s							
SHOC	Shoshone, Teco	88.73	53	P		P	17 58 57.4	+1.3
	baz=286							
LPSR	Galich'ya Gora	88.85	324	*e*P		P	17 58 54.0	-2.2
LPSR				pmax		pmax		
	comp=Z,20nm,0.8s							
109C	Camp Elliot, M	88.89	57	P		P	17 58 58.1	+1.2
	baz=286							
ZEI	Tsey	88.94	314	*e*P		P	17 58 55.7	-1.5
ZEI				pmax		pmax		
	comp=Z,11nm,0.6s							
HEC	Hector,Ludlow	88.98	54	P		P	17 58 58.5	+1.1
	baz=286							
GNI	Garni	89.13	311	LR		LR	18 42 28.0	
	comp=Z,23nm,19.4s,baz=54,slow=38							
TUQ	Turquoise Moun	89.14	54	P		P	17 58 59.6	+1.4
	baz=286							
BOZ	Bozeman (W)	89.20	43	P		P	17 58 59.4	+1.1
	baz=289							
BOZ	Bozeman (W)	89.20	43	*e*P		P	17 58 59.0	+0.7
BOZ				pmax		pmax		
	comp=Z,24nm,1.6s							
BOZ	Bozeman (W)	89.20	43	*e*P		P	17 58 59.0	+0.7
	comp=Z,24nm,1.6s							
OBN	Obninsk	89.20	327	LR		LR	18 40 20.9	
	comp=Z,40nm,19.4s,baz=88,slow=36							
OBN	Obninsk	89.20	327	*e*P		P	17 58 55.6	-2.2
OBN				*e*			18 02 30.7	
OBN				*e*S		S	18 09 32.6	-7.7
OBN				pmax		pmax		
	comp=Z,5.0nm,0.9s							
OBN				MLR		MLR		
	comp=Z,49nm,19.0s							
VSR	Storozhevoye	89.21	323	*e*P		P	17 58 56.1	-1.9
VSR				pmax		pmax		
	comp=Z,10.0nm,0.5s							
PFO	Pinyon Flats O	89.21	56	P		P	17 58 58.8	+0.3
	comp=Z,7.9nm,1.0s,baz=237,slow=4.1,SNR=6.7							
PFO	Pinyon Flats O	89.21	56	P		P	17 58 59.6	+1.0
	baz=286							
PFO	Pinyon Flats O	89.21	56	*e*P		P	17 58 59.3	+0.7
PFO				pmax		pmax		
	comp=Z,9.0nm,0.9s							
PFO	Pinyon Flats O	89.21	56	*e*P		P	17 58 59.3	+0.7
	comp=Z,8.8nm,0.9s							
BAR	Barrett	89.29	57	*e*P		P	17 58 59.4	+0.5
	comp=Z,18nm,1.3s							
KBZ	Khabaz	89.35	315	P		P	17 58 57.7	-1.1
	comp=Z,4.8nm,0.9s,baz=178,slow=2.1,SNR=9.5							
KVAR	Kislovodsk Arr	89.42	315	P		P	17 58 58.6	-0.7
	comp=Z,8.8nm,0.8s,baz=185,slow=1.9,SNR=7.6							
KVAR				LR		LR	18 42 20.7	
	comp=Z,23nm,20.1s,slow=38							
KIV	Kislovodsk	89.42	315	P		P	17 58 59.2	-0.1
KIV	Kislovodsk	89.42	315	*ce*P		P	17 58 59.1	-0.2
KIV				*e*			18 02 26.4	
KIV				pmax		pmax		
	comp=Z,9.0nm,1.0s							
KIV				MLR		MLR		
	comp=Z,29nm,18.0s							
KIV	Kislovodsk	89.42	315	*e*P		P	17 58 58.5	-0.8
	comp=Z,11nm,0.8s							
MONP2	Monument Peak	89.44	56	P		P	17 59 00.9	+1.2
	baz=286							
BELC	Belle Mtn. Jos	89.47	55	P		P	17 59 00.8	+1.0
	baz=286							
GMRC	Granite Mounta	89.53	54	P		P	17 59 01.0	+1.0
	baz=286							
QLMT	Earthquake Lak	89.59	44	*e*P		P	17 59 01.6	+1.3
EGMT	Eagleton	89.62	40	P		P	17 59 01.2	+1.1
	baz=290							
EGMT	Eagleton	89.62	40	*e*P		P	17 59 01.0	+0.9
	comp=Z,9.0nm,1.1s							
BGU	Big Grassy Mou	89.71	48	*e*P		P	17 59 01.7	+0.9
	comp=Z,4.5nm,0.9s							
PSUT	Pine Spring	89.83	50	*e*P		P	17 59 02.4	+0.9
	comp=Z,12nm,0.8s							
LDFC	Landfair	89.88	54	*e*P		P	17 59 02.8	+1.2
	comp=Z,42nm,0.8s							
SWSC	Sam W. Stewart	89.93	56	P		P	17 59 02.6	+0.8
	baz=286							
YMR	Madison River	89.96	44	*e*P		P	17 59 03.7	+1.7
	comp=Z,56nm,1.6s							
BC3	Big Chuckawall	90.01	55	P		P	17 59 03.5	+1.3
	baz=287							
DUG	Dugway, Tooele	90.09	49	P		P	17 59 03.6	+1.0
	baz=288							
DUG	Dugway, Tooele	90.09	49	*e*P		P	17 59 03.5	+0.9
DUG				pmax		pmax		
	comp=Z,12nm,0.8s							
DUG	Dugway, Tooele	90.09	49	*e*P		P	17 59 03.5	+0.9
	comp=Z,12nm,0.8s							
IRM	Iron Mountain	90.11	55	P		P	17 59 03.9	+1.3
	baz=287							
YFT	Old Faithful	90.12	44	*e*P		P	17 59 05.5	+2.8
	comp=Z,42nm,1.7s							
FXWY	Fox Creek	90.26	45	*e*P		P	17 59 04.4	+1.0
	comp=Z,20nm,1.8s							
H17A	Grant Village	90.31	44	P		P	17 59 06.0	+2.3
	baz=290							
FLWY	Flagg Ranch	90.33	44	*e*P		P	17 59 05.0	+1.3
	comp=Z,13nm,0.6s							
NEE2	Needles Airpor	90.35	54	P		P	17 59 05.0	+1.3
	baz=287							
MOOW	Moose Ponds	90.42	45	*e*P		P	17 59 05.0	+0.9
	comp=Z,6.0nm,1.0s							
GCMT	Greycliff	90.44	43	*e*P		P	17 59 05.0	+0.9
REDW	Red Top Meadow	90.47	45	*e*P		P	17 59 05.5	+1.1
	comp=Z,7.1nm,1.1s							
HWUT	Hardware Ranch	90.55	47	*e*P		P	17 59 05.2	+0.5
	comp=Z,11nm,0.6s							
LOHW	Long Hollow	90.56	45	*e*P		P	17 59 05.9	+1.1
	comp=Z,20nm,1.8s							
GLA	Glamis	90.68	56	P		P	17 59 07.2	+1.8
	baz=287							
GLA	Glamis	90.68	56	*e*P		P	17 59 06.4	+1.1
GLA				pmax		pmax		
	comp=Z,17nm,0.8s							
GLA	Glamis	90.68	56	*e*P		P	17 59 06.4	+1.1
	comp=Z,17nm,0.8s							
Y12C	Blythe	90.72	55	P		P	17 59 06.7	+1.3
	baz=287							
Y12C	Blythe	90.72	55	*e*P		P	17 59 06.7	+1.3
	comp=Z,15nm,0.8s							
LCMT	Little Creek M	90.75	52	*e*P		P	17 59 07.2	+1.5
	comp=Z,6.7nm,0.8s							
TCUT	Toone Canyon	90.81	47	*e*P		P	17 59 06.2	+0.1
	comp=Z,20nm,0.7s							
W13A	Hualapai Mount	90.83	54	*e*P		P	17 59 07.5	+1.3
	comp=Z,11nm,0.8s							
PDMCI	Parker Dam,Lak	90.86	54	P		P	17 59 07.6	+1.6
	baz=287							
RLMT	Red Lodge	90.94	43	P		P	17 59 08.9	+2.4
	baz=291							
RLMT	Red Lodge	90.94	43	*e*P		P	17 59 07.8	+1.3
	comp=Z,7.5nm,0.8s							
JLU	Jordanelle	90.95	48	*e*P		P	17 59 07.6	+0.9
	comp=Z,8.2nm,0.7s							
KNB	Kanab	91.07	52	*e*P		P	17 59 09.0	+1.8
KNB				pmax		pmax		
	comp=Z,15nm,0.8s							
KNB	Kanab	91.07	52	*e*P		P	17 59 09.0	+1.8
	comp=Z,15nm,0.8s							
MSU	Marysvale	91.09	50	*e*P		P	17 59 08.8	+1.5
MSU	Marysvale	91.09	50	*e*P		P	17 59 08.8	+1.5
FIA1	FINESS Array S	91.20	335	*e*P		P	17 59 04.8	-2.2
FIA0	FINESS Array S	91.20	335	*e*P		P	17 59 05.1	-1.9
FIA0	FINESS Array S	91.20	335	*e*P		P	17 59 05.1	-1.9
FINES	FINESS Array B	91.20	335	P		P	17 59 05.1	-1.9
	comp=Z,5.4nm,0.5s,baz=66,slow=4.7,SNR=66							
FINES				LR		LR	18 40 10.9	
	comp=Z,35nm,21.9s,baz=46,slow=36							
MTPU	Mount Pierson	91.23	50	*e*P		P	17 59 09.6	+1.4
	comp=Z,3.0nm,0.8s							
FFC	Flin Flon	91.46	32	*e*P		P	17 59 08.0	-0.4
FFC				pmax		pmax		
	comp=Z,20nm,1.1s							
FFC	Flin Flon	91.46	32	*e*P		P	17 59 08.0	-0.4
	comp=Z,20nm,1.1s							
TMUT	Trail Mountain	91.55	49	*e*P		P	17 59 10.1	+0.6
	comp=Z,13nm,1.1s							
BW06	Boulder Array	91.56	45	P		P	17 59 09.8	+0.3
	baz=290							
BW06	Boulder Array	91.56	45	*e*P		P	17 59 09.4	-0.1
PD31	Pinedale Array	91.56	45	*e*P		P	17 59 09.6	+0.2
PDAR	Pinedale Array	91.56	45	P		P	17 59 10.0	+0.5
	comp=Z,2.6nm,0.6s,baz=230,slow=3.0,SNR=45							
PDAR				LR		LR	18 33 06.8	
	comp=Z,27nm,20.1s,baz=274,slow=31							
VNDA	Vanda	91.59	176	P		P	17 59 09.3	+1.0
	comp=Z,0.8nm,0.7s,baz=324,slow=6.3,SNR=4.8							
113A	Mohawk Valley,	91.62	56	*e*P		P	17 59 10.6	+1.0
	comp=Z,8.7nm,0.9s							
U15A	North Rim	91.66	52	*e*P		P	17 59 10.8	+0.7
	comp=Z,8.7nm,0.7s							
Y14A	Wickenburg	91.87	55	*e*P		P	17 59 11.9	+1.1
	comp=Z,61nm,0.8s							
SRU	San Rafael Swe	92.12	49	*e*P		P	17 59 12.5	+0.4
SRU				pmax		pmax		
	comp=Z,7.0nm,0.8s							
SRU	San Rafael Swe	92.12	49	*e*P		P	17 59 12.5	+0.4
	comp=Z,6.9nm,0.8s							
P18A	Preston Nutter	92.15	48	*e*P		P	17 59 13.2	+0.8
	comp=Z,3.0nm,0.7s							
LAO	LASA Array	92.34	41	P		P	17 59 14.2	+1.4
	baz=293							
LAO	LASA Array	92.34	41	*e*P		P	17 59 13.6	+0.9
	comp=Z,35nm,0.9s							
214A	Organ Pipe Nat	92.63	56	P		P	17 59 15.9	+1.6
	baz=288							
WUAZ	Wupatki	92.65	53	P		P	17 59 16.5	+1.9
	baz=289							
WUAZ	Wupatki	92.65	53	*e*P		P	17 59 16.0	+1.5
	comp=Z,12nm,0.8s							
DGMT	Dagmar	92.89	39	P		P	17 59 15.1	-0.1
	baz=294							
DGMT	Dagmar	92.89	39	*e*P		P	17 59 14.8	-0.4
	comp=Z,12nm,0.9s							
FCC	Fort Churchill	93.24	27	*e*P		P	17 59 16.0	-0.5
FCC				pmax		pmax		
	comp=Z,13nm,1.3s							
FCC	Fort Churchill	93.24	27	*e*P		P	17 59 16.0	-0.5
	comp=Z,14nm,1.3s							
A25A	Svangstu Ranch	93.34	38	P		P	17 59 17.1	-0.1
	baz=295							
O20A	White River Ci	93.42	47	P		P	17 59 18.1	0.0
	baz=291							
O20A	White River Ci	93.42	47	*e*P		P	17 59 17.8	-0.2
	comp=Z,4.0nm,0.8s							
K22A	Casper	93.69	45	P		P	17 59 20.1	+0.9
	baz=292							
K22A	Casper	93.69	45	*e*P		P	17 59 20.5	+1.3
	comp=Z,9.3nm,0.6s							
D25A	Fairfield	93.97	40	P		P	17 59 20.5	+0.3
	baz=295							
A26A	Wade Farm, Ken	94.00	38	P		P	17 59 20.3	0.0
	baz=296							
TUC	Tucson	94.15	55	P		P	17 59 22.4	+1.0
	baz=289							
E25A	Miller Ranch,	94.20	40	P		P	17 59 21.8	+0.5
	baz=295							
MVCO	Mesa Verde	94.27	50	P		P	17 59 22.5	+0.4
	baz=291							
F25A	Bowman	94.40	41	P		P	17 59 22.0	-0.3
	baz=295							
C26A	Wahner Farm, P	94.44	39	P		P	17 59 22.4	0.0
	baz=296							
SMCO	Snowmass	94.68	48	*e*P		P	17 59 24.6	+0.5
	comp=Z,3.2nm,0.8s							
N23A	Red Feather La	94.76	46	P		P	17 59 24.3	0.0
	baz=293							
RSSD	Black Hills	94.78	43	P		P	17 59 24.0	-0.3
	baz=294							
RSSD	Black Hills	94.78	43	*e*P		P	17 59 23.9	-0.3
RSSD				pmax		pmax		
	comp=Z,5.0nm,0.6s							
RSSD	Black Hills	94.78	43	*e*P		P	17 59 23.9	-0.3
	comp=Z,5.0nm,0.6s							
E26A	Carlson Angus	94.80	40	P		P	17 59 24.7	+0.7
	baz=296,SNR=8.2							
C27A	Sayler Ranch,	94.84	39	P		P	17 59 24.1	-0.1
	baz=296							
H25A	Fruitdale	94.86	42	P		P	17 59 25.1	+0.7
	baz=295							
F26A	Lodgepole	94.93	41	P		P	17 59 25.1	+0.5
	baz=296							
PHWY	Pilot Hill	94.94	46	*e*P		P	17 59 25.2	+0.1
	comp=Z,8.2nm,0.9s							
I25A	Rochford	95.02	43	P		P	17 59 25.7	+0.4
	baz=294							
A28A	Rude Farm, Bot	95.04	37	P		P	17 59 24.8	-0.3
	baz=298,SNR=5.0							
D27A	Center	95.10	39	P		P	17 59 25.5	+0.1
	baz=296							
AKASG	Malin Array Be	95.13	325	P		P	17 59 23.4	-1.9
	comp=Z,0.7nm,0.5s,baz=54,slow=4.5,SNR=5.8							
AKASG				LR		LR	18 44 34.2	
	comp=Z,48nm,21.4s,baz=60,slow=37							
AKASG	Malin Array Be	95.13	325	*i* P		P	17 59 23.1	-2.2
KIEV	Kiev	95.14	325	*e*P		P	17 59 24.5	-0.9
KIEV				pmax		pmax		
	comp=Z,2.0nm,1.0s							
B28A	Dugan Ranch, T	95.20	38	P		P	17 59 25.5	-0.3
	baz=297,SNR=8.6							
G26A	Maurine	95.22	41	P		P	17 59 25.7	-0.3
	baz=296,SNR=6.4							
J25A	Sunshine Ranch	95.23	43	P		P	17 59 26.3	+0.1
	baz=294							
S22A	4UR Ranch, Cre	95.31	49	P		P	17 59 27.2	+0.3
	baz=292							
F27A	Lemmon	95.33	40	P		P	17 59 27.2	+0.7
	baz=296,SNR=5.7							
E27A	Carson	95.38	40	P		P	17 59 27.2	+0.5
	baz=296,SNR=7.1							
H26A	Fairpoint	95.39	42	P		P	17 59 27.4	+0.5
	baz=295							
ISCO	Idaho Springs	95.42	47	P		P	17 59 27.5	+0.2
	baz=293							
I26A	New Underwood	95.58	42	P		P	17 59 27.6	-0.1
	baz=295							
G27A	Dupree	95.61	41	P		P	17 59 27.3	-0.4
	baz=296							
A29A	Manning Farm,	95.64	37	P		P	17 59 27.5	-0.2
	baz=298,SNR=11							
D28A	Regan	95.64	39	P		P	17 59 27.7	-0.1
	baz=297							
J26A	Sides Ranch, S	95.75	43	P		P	17 59 28.8	+0.4
	baz=295							
B29A	Wagenman Farm,	95.78	37	P		P	17 59 28.7	+0.3
	baz=298							
H27A	Howes	95.83	41	P		P	17 59 28.2	-0.6
	baz=296							
F28A	McLaughlin	96.11	40	P		P	17 59 29.3	-0.7
	baz=297							
A30A	Hoffart Farm,	96.17	36	P		P	17 59 30.0	-0.2
	baz=299,SNR=20							
SDCO	Great Sand Dun	96.29	49	P		P	17 59 30.7	-0.6
	baz=293							
D29A	Pettibone, Tap	96.30	39	P		P	17 59 30.4	-0.4
	baz=298							
G28A	Parade	96.38	41	P		P	17 59 31.4	+0.2
	baz=297							
B30A	Myrvik Farm, E	96.39	37	P		P	17 59 30.9	-0.2
	baz=299,SNR=17							
ANMO	Albuquerque	96.62	52	P		P	17 59 33.9	+1.1
	comp=Z,1.4nm,0.7s,baz=306,slow=4.4,SNR=3.9							
ANMO	Albuquerque	96.62	52	P		P	17 59 32.8	0.0
	baz=292							
ANMO	Albuquerque	96.62	52	*e*P		P	17 59 33.3	+0.5
ANMO				pmax		pmax		
	comp=Z,5.0nm,1.4s							
ANMO	Albuquerque	96.62	52	*e*P		P	17 59 33.3	+0.5
	comp=Z,4.6nm,1.4s							
C30A	Mose, Pekin	96.66	38	P		P	17 59 32.0	-0.4
	baz=299,SNR=5.5							
I28A	Midland	96.70	42	P		P	17 59 33.0	+0.3
	baz=296							
D30A	Buchanan	96.78	38	P		P	17 59 33.3	+0.3
	baz=298							
HFS	Hagfors	96.81	338	P		P	17 59 30.8	-2.0
	comp=Z,1.7nm,0.5s,baz=72,slow=4.8,SNR=13							
ULM	Lac du Bonnet	96.88	35	P		P	17 59 32.6	-0.7
	comp=Z,6.3nm,0.7s,baz=280,slow=3.9,SNR=12							
ULM	Lac du Bonnet	96.88	35	*e*P		P	17 59 32.6	-0.7
	comp=Z,6.8nm,0.8s							
J28A	Allard Ranch,	96.91	42	P		P	17 59 33.1	-0.7
	baz=296							
E30A	Jud	96.97	39	P		P	17 59 34.4	+0.5
	baz=298							
NB2	NORSAR Subarra	97.05	339	P		P	17 59 31.7	-2.2
	comp=Z,1.6nm,0.8s,baz=42,slow=4.6							
NB200	NORSAR Array S	97.05	339	*e*P		P	17 59 33.1	-0.8
NOA	NORSAR Array B	97.05	339	P		P	17 59 33.1	-0.8
	comp=Z,1.5nm,0.8s,baz=52,slow=4.3,SNR=8.2							
C31A	Landman Farms,	97.06	37	P		Pdif	17 59 34.4	+0.1
	baz=299							
BR101	Keskin Array S	97.25	314	*e*P		P	17 59 34.5	-0.9
BR131	Keskin Array S	97.25	314	*e*P		P	17 59 34.1	-1.3
BRTR	Keskin Array B	97.25	314	P		P	17 59 34.5	-0.9
	comp=Z,2.5nm,0.7s,baz=63,slow=4.0,SNR=15							
BRTR				LR		LR	18 45 35.7	
	comp=Z,9.9nm,21.8s,baz=77,slow=37							
D31A	Mcclaflin, Tow	97.43	38	P		P	17 59 35.6	-0.3
	baz=299							
J29A	Okreek	97.51	42	P		P	17 59 35.9	-0.5
	baz=297							
BR231	Keskin MP Arra	97.81	314	*e*P		P	17 59 34.6	-3.3
A33A	Warroad	97.83	35	P		P	17 59 37.2	-0.4
	baz=301							
AGMN	Agassiz Nation	97.89	36	P		P	17 59 37.5	-0.4
	baz=301							
AGMN	Agassiz Nation	97.89	36	*e*P		P	17 59 37.7	-0.2
	comp=Z,9.2nm,1.1s							
J30A	Dallas	98.09	42	P		P	17 59 38.3	-0.7
	baz=298							
B34A	Aery, Baudette	98.49	36	Pdiff		P	17 59 40.1	-0.5
	baz=302							
F33A	5 Mile Ranch,	98.89	38	Pdiff		P	17 59 42.4	0.0
	baz=300							
D34A	Park Rapids	98.90	37	Pdiff		P	17 59 42.5	0.0
	baz=301							
BUR08	Bucovina Ar. S	98.95	324	*e*P		P	17 59 41.9	-0.9
B35A	Bob, Littlefor	99.07	35	Pdiff		Pdif	17 59 43.0	-0.3
	baz=303							
G33A	Ortonville	99.12	39	Pdiff		Pdif	17 59 43.1	-0.4
	baz=300							
H33A	Prehn Over Nor	99.19	40	Pdiff		Pdif	17 59 43.6	-0.2
	baz=300							
C35A	Jirik Farms, M	99.28	36	Pdiff		Pdif	17 59 43.8	-0.4
	baz=302							
ECSD	EROS Data Cent	99.73	40	Pdiff		Pdif	17 59 45.7	-0.6
	baz=300							
C36A	Pine Crest Far	99.90	36	Pdiff		Pdif	17 59 45.9	-1.1
	baz=303							
D36A	Goodland	100.03	36	Pdiff		Pdif	17 59 46.5	-1.1
	baz=303							
E36A	McGregor	100.33	37	Pdiff		Pdif	17 59 48.7	-0.2
	baz=303							
F36A	Milaca	100.53	37	Pdiff		Pdif	17 59 48.8	-1.0
	baz=302							
EYMN	Ely	100.55	35	Pdiff		Pdif	17 59 49.1	-0.7
	baz=304							
LTX	Lajitas	100.93	56	*e*P		Pdif	17 59 53.4	+1.4
LTX	Lajitas	100.93	56	*e*Pdif		Pdif	17 59 53.4	+1.4
TXAR	Lajitas Array	100.93	56	P		Pdif	17 59 53.4	+1.4
	comp=Z,0.3nm,0.6s,baz=267,slow=2.6,SNR=4.2							
J37A	Redenius Farm,	101.86	40	Pdiff		Pdif	17 59 54.5	-1.3
	baz=302							
Z33A	Whitaker Ranch	103.13	51	Pdiff		Pdif	18 00 01.0	-0.6
	baz=296							
137A	Heron Place, G	105.69	50	PKiKP		PKiKP	18 04 25.4	-0.3
	baz=298							
T40A	Mansfield	105.76	45	PKiKP		PKiKP	18 04 25.4	-0.4
	baz=302							
SYO	Syowa Base	108.36	201⇑	*e*P		PKiKP	18 04 32.8	+3.3
446A	Poplarville	111.31	49	PKiKP		PKiKP	18 04 35.6	-0.7
	baz=302							
N59A	State Game Lan	113.66	33	PKiKP		PKiKP	18 04 40.2	-0.4
	baz=316							
LSZ	Lusaka	119.28	260	*e*PKIKP		PKPdf	18 04 52.7	+0.6
LSZ	Lusaka	119.28	260	*e*PKPdf		PKPdf	18 04 52.7	+0.6
ES19	SONSECA Array	119.58	333	*e*PKPdf		PKPdf	18 04 50.3	-1.8
ES19				*e*PP		PP	18 06 10.9	-3.3
ESDC	Sonseca Array	119.64	333	PKP		PKPdf	18 04 52.6	+0.4
	comp=Z,0.2nm,0.4s,baz=48,slow=2.2,SNR=4.5							
ESDC				PP		PP	18 06 15.2	+0.6
	comp=Z,1.3nm,0.7s,baz=27,slow=6.4,SNR=6.2							
VNA2	Neumayer--Watz	120.45	190	P		PKPdf	18 04 53.2	+0.6
	baz=147,slow=0.7							
VNA3	Neumayer Olymp	120.54	189	P		PKPdf	18 04 53.9	+1.0
LBTB	Lobatse	122.41	249	*e*PKIKP		PKPdf	18 04 58.5	+0.6
LBTB	Lobatse	122.41	249	*e*PKPdf		PKPdf	18 04 58.5	+0.6
BOSA	Boshof	122.69	245	PKP		PKPdf	18 04 57.7	-0.7
	comp=Z,4.1nm,0.7s,baz=95,slow=1.2,SNR=8.4							
TAM	Tamanrasset	126.42	312	*e*PKIKP		PKPdf	18 05 06.4	+0.7
TAM	Tamanrasset	126.42	312	*e*PKPdf		PKPdf	18 05 06.4	+0.7
TOA1	Torodi Ar. Sit	135.12	305	*e*PKPdf		PKPdf	18 05 23.0	+0.8
TORD	Torodi Ar. Bea	135.12	305	PKP		PKPdf	18 05 23.0	+0.8
	comp=Z,7.2nm,0.9s,baz=20,slow=1.9,SNR=20							
PLCA	Paso Flores	138.77	138	PKP		PKPdf	18 05 29.0	+0.7
	comp=Z,1.5nm,0.6s,baz=273,slow=3.1,SNR=6.1							
LCO	Las Campanas	143.37	120	*e*PKPdf		PKPbc	18 05 35.7	+1.2
DBIC	Dimbokro	144.09	303	PKP		PKPbc	18 05 37.0	+0.4
	comp=Z,62nm,0.6s,baz=33,slow=3.6,SNR=174							
DBIC	Dimbokro	144.09	303	*e*PKPdf		PKPbc	18 05 36.5	-0.2
TRQA	Tornquist	145.76	140	*e*PKPdf		PKPbc	18 05 41.1	-0.2
PB11	IPOC Station P	146.05	105	*e*PKPdf		PKPbc	18 05 43.0	+0.1
LPAZ	La Paz	147.64	99	PKPbc		PKPdf	18 05 46.4	+1.2
	comp=Z,3.9nm,0.7s,baz=276,slow=1.2,SNR=17							
LPAZ	La Paz	147.64	99	*e*PKPdf		PKPdf	18 05 45.9	+0.7
SAML	Samuel	151.69	83	*e*PKPdf		PKPdf	18 05 51.0	+0.1
PTGA	Pitinga	151.85	65	*e*PKPdf		PKPdf	18 05 52.2	+0.9
PTGA				*e*PKPbc		PKiKP	18 05 58.1	0.0

ISN ***19*** *17:47:55.8±4.2,37.2°N×42.2°E,58f,h35km±115km,ML3.2*
DDA 19 17:47:53.5,37°33'N×42°49'E,h6km,Ml3.0,Turkey

| Code | Station Name | Δ° | AZ° | Phase | ID | Op | ISC | Time | Res |
|

	43nm,0.3s,baz=260,slow=8.1,SNR=4.0							
DAV				S	Sn	17 58 43.7	-0.8	
	147nm,0.3s,baz=63,slow=22,SNR=5.9							
DMPH	**Davao City--Mi**	**2.01**	**334**⇓	*eP*	**Pn**	**17 58 20.6**	**+0.1**	
DMPH				*eS*	Sn	17 58 53.6	+8.1	
CTBH	**Cotabato--PC H**	**2.90**	**312**⇓	*eP*	Pn	17 58 26.3	-5.7	
CTBH				*i S*	Sn	17 58 55.7	-11	
BUKP	**Musuan**	**2.92**	**333**	*eP*	Pn	17 58 27.9	-4.6	
BUKP				*eS*	Sn	17 58 48.8	-18	
CGP	**Cagayan de Oro**	**3.59**	**332**⇓	*eP*	Pn	17 58 38.3	-3.1	
CGP				*eS*	**Sn**	**17 59 20.7**	**-2.3**	
PAGZ	**Pagadian**	**3.95**	**311**	*eP*	Pn	17 58 41.9	-4.3	
TNTI	**Ternate**	**4.57**	**168**	P	**Pn**	**17 58 53.0**	**-1.6**	
LBMI	**Labuha**	**5.97**	**169**	P	**Pn**	**17 59 11.7**	**-1.9**	
MRSI	**Marisa**	**6.52**	**223**	P	**Pn**	**17 59 21.3**	**+0.2**	
	42nm,0.5s,0.2nm							
APSI	**Ampana**	**7.76**	**218**	P	**Pn**	**17 59 37.3**	**-0.7**	
	44nm,1.1s,0.2nm							
NLAI	**Namlea**	**8.48**	**175**	P	Pn	17 59 43.4	-4.4	
	26nm,0.5s,966nm0.2nm							
FITZ	**Fitzroy Crossi**	**23.23**	**182**	P	**P**	**18 02 46.7**	**+0.3**	
	2.1nm,0.7s,baz=315,slow=10.0,SNR=5.3							
WRA	**Warramunga Arr**	**26.24**	**163**	P	**P**	**18 03 14.0**	**+0.4**	
	1.5nm,0.3s,baz=336,slow=10,SNR=17							
JCJ	**Chichijima**	**26.41**	**33**	LR	LR	18 13 36.3		
	comp=Z,28nm,21.2s,baz=354,slow=35							
ASAR	**Alice Springs**	**29.67**	**166**	P	**P**	**18 03 43.4**	**-0.9**	
	0.6nm,0.5s,baz=343,slow=7.1,SNR=10							
STKA	**Stephens Creek**	**39.67**	**160**	P	**P**	**18 05 11.4**	**+1.3**	
	4.3nm,0.9s,baz=340,slow=9.2,SNR=7.2							
MKAR	**Makanchi Array**	**56.12**	**325**	P	**P**	**18 07 15.2**	**-1.6**	
	0.3nm,0.3s,baz=120,slow=7.0,SNR=10.0							
ZALV	**Zalesovo Beam**	**59.08**	**333**	P	**P**	**18 07 36.4**	**-0.9**	
	0.4nm,0.3s,baz=105,slow=7.4,SNR=2.3							
ILAR	**Eielson Array**	**83.86**	**25**	P	**P**	**18 10 07.8**	**+1.8**	
	0.6nm,0.8s,baz=253,slow=4.3,SNR=4.9							
ARCES	**ARCESS Array B**	**88.90**	**340**	P	**P**	**18 10 32.8**	**+2.3**	
	2.3nm,0.9s,baz=359,slow=10,SNR=4.8							
FINES	**FINESS Array B**	**90.33**	**332**	P	**P**	**18 10 38.2**	**+0.8**	
	0.5nm,0.6s,baz=35,slow=7.0,SNR=4.2							

JMA 19 18:01:00.5±0.1, 29°.51N×130°.11E, h59km±2km, M3.5, Ryukyu Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JNN	**Nakanoshima**	**0.39**	**328**	P	Pn	18 01 11.2	-0.1
JNN				*eS*	Sn	18 01 19.6	+0.5
JYAK	**Yakushimahirau**	**0.80**	**25**	P	Pn	18 01 16.2	+0.2
JYAK				*eS*	Sn	18 01 27.7	+0.4
JTAJ	**Takarajima**	**0.87**	**246**	P	Pn	18 01 17.3	+0.5
JKC	**Kuchinoerabu**	**0.95**	**4**	P	Pn	18 01 18.1	+0.2
JKC				*eS*	Sn	18 01 31.1	+0.4
JAM	**Amami Oshima**	**1.18**	**202**	P	Pn	18 01 21.1	+0.2
JTN	**Tanegashima 3**	**1.37**	**33**	P	Pn	18 01 24.2	+0.8
JAMN	**Amaminishikomi**	**1.50**	**213**	P	Pn	18 01 25.5	+0.3
JAMN				*eS*	Sn	18 01 44.8	+1.0
JTK	**Tokunoshima**	**2.00**	**211**	P	Pn	18 01 32.5	+0.6
JOKE	**Okinoerabujima**	**2.53**	**213**	P	Pn	18 01 40.1	+0.9

*IDC **19** 18:01:43.2±1.6,21°.90S×169°.96E, h0km, mb4.2/9, mb1 4.3/10,mb1mx4.1/44,mbtmp4.2/10,ML3.6/1, MS3.7/16, Ms1 3.7/16,ms1mx3.5/41,Error ellipse: s-maj=53.3km s-min=22.1km az=149.0*

*ISCJB **19** 18:01:48.6±0.5,21°.76S±0°.09×169°.61E±0°.06, h35km, mb4.3/17,MS3.6/15,Error ellipse: s-maj=13.8km s-min=7.9km az=164.1*

*NEIC **19** 18:01:52.0±1.4,21°.74S×169°.68E, h58km±12km, mb4.6/7, Error ellipse: s-maj=19.7km s-min=10.2km az=154.0*

ISC 19 18:01:49.0±0.6, 21°.7S±0°.1×169°.74E±0°.10, h35km, n73, σ1s14/62, mb4.4/17, MS3.8/15, 1C, Southeast of Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**3.09**	**262**	Pn	**Pn**	**18 02 34.8**	**-0.6**
	7.0nm,0.3s,baz=109,slow=19,SNR=163						
DZM				LR	LR	18 03 05.6	
	comp=Z,559nm,22.0s,baz=84,slow=25						
DZM				Sn	**Sn**	**18 03 08.7**	**-2.5**
	25nm,0.3s,baz=114,slow=20,SNR=11						
MSVF	**Nonsavu**	**8.75**	**65**	*eP*n	Pn	18 03 58.8	+5.5
URZ	**Urewera**	**17.71**	**161**	LR	LR	18 11 20.6	
	comp=Z,265nm,19.8s,baz=343,slow=33						
CTA	**Charters Tower**	**22.00**	**270**	P	**P**	**18 06 41.6**	**+1.3**
	5.0nm,0.9s,baz=44,slow=11,SNR=4.0						
CAN	**Canberra**	**22.68**	**229**	*eP*	**P**	**18 06 49.8**	**+2.2**
	19nm,1.1s						
PMG	**Port Moresby**	**24.90**	**296**	LR	LR	18 15 04.1	
	comp=Z,216nm,20.1s,baz=138,slow=32						
STKA	**Stephens Creek**	**27.03**	**242**	P	**P**	**18 07 29.1**	**+1.0**
	1.8nm,0.6s,baz=63,slow=9.2,SNR=4.5						
STKA				LR	LR	18 17 18.7	
	comp=Z,325nm,21.1s,baz=37,slow=34						
STKA	**Stephens Creek**	**27.03**	**242**	*eP*	**P**	**18 07 28.6**	**+0.5**
	1.4nm,1.0s						
RAR	**Rarotonga**	**28.36**	**95**	LR	LR	18 18 51.7	
	comp=Z,63nm,18.1s,baz=301,slow=36						
AS01	**Alice Springs**	**33.03**	**260**	*eP*	**P**	**18 08 20.4**	**-1.0**
AS31	**Alice Springs**	**33.07**	**260**	*eP*	**P**	**18 08 21.6**	**-0.2**
	1.2nm,0.8s						
ASAR	**Alice Springs**	**33.08**	**260**	P	**P**	**18 08 22.0**	**+0.3**
	1.6nm,0.8s,baz=88,slow=8.8,SNR=16						
ASAR				LR	LR	18 21 39.9	
	comp=Z,175nm,18.0s,baz=94,slow=36						
WR1	**Warramunga Arr**	**33.09**	**266**	*eP*	**P**	**18 08 22.0**	**+0.1**
	17nm,1.5s						
WR1				*e*		18 22 08.8	
WRA	**Warramunga Arr**	**33.09**	**266**	P	**P**	**18 08 22.0**	**+0.1**
	1.7nm,1.0s,baz=96,slow=9.7,SNR=6.1						
WRA				LR	LR	18 22 08.8	
	comp=Z,541nm,19.0s,baz=90,slow=37						
JAY	**Jayapura**	**34.06**	**300**	LR	LR	18 21 52.5	
	comp=Z,6.6nm,21.2s,baz=67,slow=35						
FITZ	**Fitzroy Crossi**	**41.52**	**267**	LR	LR	18 27 20.2	
	comp=Z,397nm,18.9s,baz=104,slow=37						
GUMO	**Guam**	**42.71**	**323**	LR	LR	18 26 23.3	
	comp=Z,52nm,19.6s,baz=139,slow=34						
KAPI	**Kappang**	**51.12**	**281**	LR	LR	18 34 02.6	
	comp=Z,32nm,18.0s,baz=140,slow=38						
VNDA	**Vanda**	**56.03**	**182**	LR	LR	18 32 37.3	
	comp=Z,71nm,18.6s,baz=354,slow=33						
LEM	**Lembang**	**61.62**	**274**	LR	LR	18 40 08.0	
	comp=Z,75nm,18.2s,slow=37						
QSPA	**South Pole Qui**	**68.39**	**180**	*eP*	**P**	**18 12 47.4**	**+0.4**
KSRS	**Korea Array**	**70.77**	**326**	P	**P**	**18 13 03.0**	**+1.2**
	1.8nm,0.8s,baz=142,slow=6.3,SNR=4.9						
KSAR	**Wonju Array Be**	**70.78**	**326**	P	**P**	**18 13 03.0**	**+1.2**
USRK	**Ussuriysk Ar.**	**74.11**	**333**	P	**P**	**18 13 22.8**	**+1.2**
	3.4nm,0.9s,baz=132,slow=5.7,SNR=4.7						
PETK	**Petropavlovsk-**	**75.20**	**353**	P	**P**	**18 13 29.2**	**+1.5**
	2.8nm,0.7s,baz=132,slow=7.3,SNR=4.7						
PETK				LR	LR	18 45 11.2	
	comp=Z,40nm,18.1s,baz=151,slow=35						
PEA1	**Petropavlovsk-**	**75.20**	**353**	*eP*	**P**	**18 13 29.2**	**+1.5**
CM01	**Chiang Mai Arr**	**79.90**	**294**	*eP*	**P**	**18 13 56.7**	**+2.0**
CM31	**Chiang Mai Arr**	**79.93**	**294**	*eP*	**P**	**18 13 57.0**	**+2.1**
CMAR	**Chiang Mai Arr**	**79.93**	**294**	P	**P**	**18 13 57.0**	**+2.1**
	1.8nm,0.9s,baz=145,slow=4.0,SNR=13						
CMAR				LR	LR	18 50 53.6	
	comp=Z,8.6nm,19.6s,baz=255,slow=37						
CHTO	**Chiang Mai**	**80.09**	**295**	*eP*	**P**	**18 13 57.0**	**+1.3**
	4.3nm,1.0s						
SNAA	**Sanae**	**86.76**	**182**	*eP*	**P**	**18 14 28.6**	**-0.7**
	7.6nm,1.1s						
VNA3	**Neumayer Olymp**	**87.33**	**180**	P	**P**	**18 14 31.7**	**-0.3**
VNA2	**Neumayer--Watz**	**87.63**	**181**	P	**P**	**18 14 33.2**	**-0.2**
	baz=166,slow=4.2						
VNA1	**Neumayer--Stat**	**87.92**	**181**	P	**P**	**18 14 35.1**	**+0.4**
ULN	**Ulaanbaatar**	**89.09**	**323**	*eP*	**P**	**18 14 41.4**	**+0.6**
	6.5nm,1.2s						
SONA0	**Songino Array**	**89.44**	**323**	*eP*	**P**	**18 14 43.6**	**+1.3**
	3.4nm,1.0s						
SONM	**Songino Array**	**89.44**	**323**	P	**P**	**18 14 43.6**	**+1.3**
	2.3nm,0.8s,baz=120,slow=4.2,SNR=8.0						
SONA1	**Songino Array**	**89.44**	**323**	*eP*	**P**	**18 14 41.9**	**-0.4**
NVAR	**Mina Array Bea**	**90.06**	**48**	LR	LR	18 47 00.9	
	comp=Z,43nm,21.0s,baz=272,slow=30						
IL1	**Eielson Array**	**92.41**	**17**	*eP*	**P**	**18 14 53.4**	**-2.2**
ILAR	**Eielson Array**	**92.41**	**17**	P	**P**	**18 14 53.5**	**-2.0**
	0.5nm,0.9s,baz=209,slow=7.8,SNR=5.7						
TXAR	**Lajitas Array**	**97.51**	**62**	LR	LR	18 51 42.3	
	comp=Z,59nm,19.6s,baz=0.0,slow=31						

YKA	**Yellowknife Ar**	**102.60**	**27**	P	**Pdif**	**18 15 43.1**	**+1.4**	
	0.3nm,0.8s,baz=251,slow=4.0,SNR=5.3							
FRB	**Frobisher Bay**	**123.11**	**27**	PKP	**PKPdf**	**18 20 40.5**	**-0.8**	
	1.2nm,0.4s,baz=247,slow=6.6,SNR=4.1							
ARA0	**ARCESS Array S**	**127.53**	**345**	*e*PKPdf	**PKPdf**	**18 20 48.4**	**-1.3**	
ARCES	**ARCESS Array B**	**127.53**	**345**	PKP	**PKPdf**	**18 20 48.4**	**-1.3**	
	5.7nm,1.0s,baz=78,slow=3.1,SNR=13							
FIA0	**FINESS Array S**	**133.00**	**337**	*e*PKPdf	**PKPdf**	**18 21 00.8**	**+0.6**	
FINES	**FINESS Array B**	**133.00**	**337**	PKP	**PKPdf**	**18 21 00.8**	**+0.6**	
	3.8nm,1.0s,baz=20,slow=2.4,SNR=7.3							
DPC	**Dobruska-Polom**	**144.57**	**330**	*e*PKP	**PKPdf**	**18 21 20.2**	**-1.6**	
DPC				*ex*	x	18 21 31.5		
BRG	**Berggiesshubel**	**145.25**	**333**	*i* PKP	**PKPdf**	**18 21 22.7**	**-0.2**	
	13nm,0.8s							
BRG				*e*		18 21 33.0		
	7.6nm,0.9s							
CLL	**Collm**	**145.31**	**334**⇑	*i* P	**PKPdf**	**18 21 22.5**	**-0.4**	
	comp=Z,15nm,1.1s							
CLL				*i*		18 21 32.9		
CLL	**Collm**	**145.31**	**334**	*e*PKPbc	**PKPdf**	**18 21 22.5**	**-0.4**	
PRU	**Pruhonice**	**145.63**	**331**	*e*PKP	**PKPab**	**18 21 23.7**	**-0.5**	
ESK	**Eskdalemuir**	**145.99**	**353**	*e*PKPdf	**PKPab**	**18 21 23.9**	**-1.4**	
NKC	**Novy Kostel**	**146.36**	**333**	*e*PKP	**PKPab**	**18 21 26.4**	**-0.5**	
CONA	**Conrad Observa**	**146.45**	**328**	*i* PKPab	**PKPab**	**18 21 27.1**	**-0.3**	
	comp=Z,11nm,1.2s,SNR=5.8							
KHC	**Kasperske Hory**	**146.69**	**331**	*e*PKP	**PKPab**	**18 21 27.3**	**-1.0**	
KHC				*ex*	x	18 21 38.8		
GERES	**GERESS Array B**	**146.84**	**331**	PKPbc	**PKPab**	**18 21 27.9**	**-1.0**	
	comp=Z,7.3nm,0.8s,baz=35,slow=3.3,SNR=40							
MOA	**Molln**	**147.29**	**329**	*i* PKPbc	**PKPab**	**18 21 29.2**	**-1.5**	
SOKA	**Soboth**	**147.71**	**327**	*i* PKPbc	**PKPab**	**18 21 29.9**	**-2.6**	
	comp=Z,6.8nm,1.0s,SNR=5.5							
KBA	**Koelnbreinsper**	**148.27**	**329**	*i* PKPbc	**PKPbc**	**18 21 31.2**	**-0.5**	
	comp=Z,7.5nm,0.9s							
MYKA	**Terra Mystica**	**148.44**	**328**	*i* PKPbc	**PKPbc**	**18 21 31.6**	**-0.4**	
	comp=Z,3.3nm,0.6s							
ABTA	**Abfaltersbach**	**148.91**	**329**	*i* PKPbc	**PKPbc**	**18 21 32.7**	**-0.5**	
	comp=Z,9.1nm,0.9s,SNR=5.4							
WTTA	**Wattenberg**	**148.94**	**331**	*i* PKPbc	**PKPbc**	**18 21 33.3**	**-0.1**	
	comp=Z,6.8nm,0.7s							
MOTA	**Moosalm**	**149.12**	**331**	*i* PKiKP	**PKiKP**	**18 21 34.7**	**-0.4**	
	comp=Z,12nm,0.9s,SNR=8.7							
RETA	**Reutte**	**149.17**	**332**	*i* PKPbc	**PKPbc**	**18 21 33.9**	**+0.1**	
	comp=Z,4.6nm,0.9s							
WLF	**Walferdange**	**149.19**	**339**	*e*PKPbc	**PKPbc**	**18 21 33.5**	**-0.2**	
BFO	**Black Forest**	**149.52**	**335**	*e*PKPbc	**PKPbc**	**18 21 34.3**	**-0.3**	
FETA	**Feichten**	**149.54**	**331**	*i* PKiKP	**PKiKP**	**18 21 35.0**	**-0.9**	
	comp=Z,17nm,0.9s,SNR=8.3							
FUORN	**Ofenpass-Fuorn**	**150.05**	**331**	*e*PKPbc	**PKPbc**	**18 21 36.4**	**+0.1**	
TUE	**Stuetta**	**150.57**	**332**	*e*PKPbc	**PKPbc**	**18 21 37.3**	**-0.1**	
TIP	**Timpagrande**	**151.06**	**313**	*e*PKPbc	**PKPbc**	**18 21 38.2**	**-0.5**	
SENIN	**Lac Senin/Sane**	**151.52**	**334**	*e*PKPbc	**PKPbc**	**18 21 39.3**	**-0.4**	

JMA 19 18:02:05.8±0.2, 37°.61N×141°.90E, h28km±3km, M3.7, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**0.85**	**254**	P	Pn	18 02 21.7	-0.3
JMM	**Marumori**	**0.91**	**287**	P	Pn	18 02 22.5	-0.3
JMM				S	Sb	18 02 33.7	-1.1
JIO	**Ouri**	**0.95**	**333**	P	Pn	18 02 22.9	-0.4
JIO				*eS*	Sb	18 02 33.9	-1.9
ONAJ	**Iwakimizuishiy**	**1.01**	**240**	P	Pn	18 02 24.1	-0.1
ONAJ				S	Sn	18 02 36.6	-1.0
JOU	**Okura**	**1.23**	**308**	P	Pb	18 02 28.2	-0.3
JOU				S	Sn	18 02 43.2	+0.2
JFT	**Otama**	**1.25**	**266**	P	Pb	18 02 28.1	-0.6
JFT				S	Sb	18 02 43.8	-0.5
JHO	**Hitachi**	**1.46**	**227**	P	Pn	18 02 30.2	-0.1

*DDA **19** 18:02:57.5,37°.97N×28°.60E, h7km, Ml2.6*

*ISK **19** 18:02:57.9,38°.00N×28°.58E, h7km, MD2.4*

*CSEM **19** 18:02:58.2±0.2,37°.99N×28°.59E, h10km, MD2.4, Error ellipse: s-maj=6.9km s-min=3.6km az=128.0*

ISC 19 18:02:57.9±1.3, 38°.00N±0°.03×28°.58E±0°.03, h13km±11km, n16, σ0s43/28, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
UZP	**Denizli**	**0.47**	**86**	*i* P	**Pg**	**18 03 07.0**	**-0.2**
KULA	**Kula-Manisa**	**0.52**	**7**	*e*PG	**Pg**	**18 03 08.7**	**+0.5**
KULA				*e*SG	**Sb**	**18 03 16.1**	**-0.3**
KULA	**Kula-Manisa**	**0.52**	**7**	*e*Pg	**Pg**	**18 03 08.7**	**+0.5**
KULA				*e*Sg	**Sb**	**18 03 16.1**	**-0.3**
AYDB	**Zeytinkoy-Aydi**	**0.55**	**265**	*e*PG	**Pg**	**18 03 08.2**	**-0.4**
AYDB				*e*SG	**Sb**	**18 03 17.4**	**+0.2**
AYDB	**Zeytinkoy-Aydi**	**0.55**	**265**	*e*Pg	**Pg**	**18 03 08.2**	**-0.4**
AYDB				*e*Sg	**Sb**	**18 03 17.4**	**+0.2**
AYDN	**Tasoluk**	**0.65**	**239**	*i* P	**Pb**	**18 03 11.0**	**-0.1**
AYDN				*i* S	**Sb**	**18 03 19.9**	**-0.1**
AYDN	**Tasoluk**	**0.65**	**239**	P	**Pb**	**18 03 11.0**	**-0.1**
AYDN				S	**Sb**	**18 03 19.9**	**-0.1**
KHAL	**Karahalli**	**0.81**	**62**	*i* P	**Pg**	**18 03 13.3**	**-0.3**
KHAL				*i* S	**Sb**	**18 03 24.8**	**0.0**
KHAL	**Karahalli**	**0.81**	**62**	P	**Pg**	**18 03 13.3**	**-0.3**
KHAL				S	**Sb**	**18 03 24.8**	**0.0**
YER	**Yerkesik**	**0.89**	**195**	*e*PG	**Pg**	**18 03 15.4**	**+0.3**
YER				*e*SG	**Sn**	**18 03 28.4**	**-0.6**
YER	**Yerkesik**	**0.89**	**195**	*e*Pg	**Pg**	**18 03 15.4**	**+0.3**
YER				*e*Sg	**Sn**	**18 03 28.4**	**-0.6**
DEMI	**Demirci**	**1.05**	**6**	*i* P	**Pb**	**18 03 17.6**	**-0.3**
DEMI				*i* S	**Sn**	**18 03 33.6**	**+0.7**
DEMI	**Demirci**	**1.05**	**6**	P	**Pb**	**18 03 17.6**	**-0.3**
DEMI				S	**Sn**	**18 03 33.6**	**+0.7**
TURN	**Turunc**	**1.12**	**179**	*i* P	**Pg**	**18 03 20.5**	**+1.0**
TURN				*i* S	Sn	18 03 41.9	+7.4
TVSB	**Tavsanli**	**1.61**	**25**	*e*PN	**Pb**	**18 03 27.4**	**0.0**
TVSB	**Tavsanli**	**1.61**	**25**	*e*Pn	**Pb**	**18 03 27.4**	**0.0**

IDC 19 18:05:22.8±2.0, 2°.56N×125°.63E, h0km, mb3.5/3, mb1 3.7/3, mb1mx3.4/46, mbtmp3.5/3, Error ellipse: s-maj=188.8km s-min=24.7km az=65.0, Talaud Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**23.94**	**159**	P	P	18 10 37.5	-1.4
	1.0nm,0.4s,baz=338,slow=10,SNR=7.0						
ASAR	**Alice Springs**	**27.28**	**163**	P	P	18 11 10.8	+1.6
	0.2nm,0.3s,baz=347,slow=11,SNR=2.9						
MKAR	**Makanchi Array**	**57.90**	**326**	P	P	18 15 16.5	-0.3
	0.2nm,0.6s,baz=115,slow=7.1,SNR=3.2						
PPT2	**Papeete2**	**85.80**	**108**	*e*LR	LR	18 18 46.2	
	107nm,23.8s						

TRN 19 18:10:17.6, 11°.21N×60°.86W, h27km, MD3.5, Windward Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TOSP	**Speyside**	**0.34**	**74**	*e*P	Pn	18 10 26.7	0.0
TOSP				*e*S	Sn	18 10 32.9	+0.3
TBH	**Brigand Hill**	**0.74**	**196**	*e*P	Pn	18 10 34.2	+1.9
TBH				*e*S	Sn	18 10 44.7	+2.0
TRN	**Trinidad (W)**	**0.77**	**224**	*e*P	Pn	18 10 33.9	+1.3
TRN				*e*S	Sn	18 10 44.8	+1.5
FCV	**Fort Charlotte**	**1.98**	**349**	*e*P	Pn	18 10 50.9	+1.6
FCV				*e*S	Sn	18 11 14.1	+0.9
SVB	**Belmont**	**2.09**	**350**	*e*P	Pn	18 10 52.0	+1.2
SVB				*e*S	Sn	18 11 17.5	+1.5
SVV	**Soufriere Volc**	**2.13**	**351**	*e*P	Pn	18 10 53.0	+1.6
SVV				*e*S	Sn	18 11 18.4	+1.5
MCLT	**Moule a Chique**	**2.49**	**358**	*e*P	Pn	18 10 57.2	+0.9
MCLT				*e*S	Sn	18 11 27.9	+2.0

*IDC **19** 18:10:46.2±1.1,0°.75N×126°.19E, h0km, mb3.9/5, mb1 4.0/5,mb1mx3.6/43,mbtmp3.9/5,Error ellipse: s-maj=60.6km s-min=19.6km az=77.0*

*ISCJB **19** 18:10:49.6±0.5,0°.82N±0°.07×126°.32E±0°.06, h39km, mb3.9/11,Error ellipse: s-maj=10.0km s-min=8.0km az=7.4*

*NEIC **19** 18:10:51.4±1.3,0°.82N×126°.38E, h38km±14km, mb4.2/6, Error ellipse: s-maj=13.4km s-min=11.7km az=209.0*

ISC 19 18:10:51.3±0.8, 0°.8N±0°.1×126°.35E±0°.07, h39km, n16, σ1s08/16, mb4.0/11, Northern Molucca Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC

TNTI	**Ternate**	**1.02**	**90**	*e*Pn	**Pn**	**18 11 08.4**	**-0.8**	
TNTI				*e*Sn	**Sn**	**18 11 21.6**	**-0.7**	
LUWI	**Luwuk**	**4.00**	**243**	*e*Pn	**Pn**	**18 11 49.2**	**-0.9**	
LUWI				*e*Sn	Sn	18 12 42.3	+6.4	
FAKI	**Fak Fak**	**6.95**	**122**	*e*Pn	**Pn**	**18 12 31.3**	**+0.6**	
FAKI				*e*Sn	Sn	18 13 42.2	-6.3	
KAPI	**Kappang**	**8.74**	**229**	*e*Pn	Pn	18 12 58.3	+3.0	
WR1	**Warramunga Arr**	**22.03**	**160**	*e*P	**P**	**18 15 41.7**	**-1.0**	
	6.3nm,1.0s							
WRA	**Warramunga Arr**	**22.03**	**160**	P	**P**	**18 15 41.7**	**-1.0**	
	2.1nm,0.4s,baz=341,slow=11,SNR=25							
WB2	**Warramunga Arr**	**22.03**	**160**	*e*P	**P**	**18 15 42.5**	**-0.3**	
	11nm,1.4s							
AS31	**Alice Springs**	**25.38**	**164**	*e*P	**P**	**18 16 15.9**	**+0.7**	
	0.7nm,0.8s							
ASAR	**Alice Springs**	**25.38**	**164**	P	**P**	**18 16 16.4**	**+1.3**	
	0.8nm,0.4s,baz=345,slow=12,SNR=33							
AS01	**Alice Springs**	**25.39**	**164**	*e*P	**P**	**18 16 17.0**	**+1.8**	
USRK	**Ussuriysk Ar.**	**43.53**	**6**	P	**P**	**18 18 52.1**	**+0.9**	
	0.7nm,0.5s,baz=179,slow=5.8,SNR=3.0							
PETK	**Petropavlovsk-**	**58.30**	**22**	P	**P**	**18 20 43.7**	**+1.5**	
	2.7nm,0.9s,baz=193,slow=6.1,SNR=5.2							
MKAR	**Makanchi Array**	**59.77**	**326**	P	**P**	**18 20 52.0**	**-0.5**	
	0.3nm,0.3s,baz=121,slow=7.3,SNR=10							
MAKZ	**Makanchi**	**59.95**	**326**	*e*P	**P**	**18 20 54.2**	**+0.4**	
	6.6nm,1.8s							
ZRNK	**Zerenda**	**70.30**	**327**	*e*P	**P**	**18 21 59.6**	**-1.2**	
	3.0nm,1.1s							
TIXI	**Tiksi**	**70.78**	**1**	*e*P	**P**	**18 22 02.5**	**-0.8**	
	8.1nm,2.0s							

*ISCJB **19** 18:11:22.3±0.3,32°.60N±0°.02×115°.68W±0°.02, h22km±3km, Error ellipse: s-maj=3.7km s-min=3.4km az=164.9*

*NEIC **19** 18:11:23.0,32°.55N×115°.69W, h10km, ML2.8(PAS), After PAS.*

*ECX **19** 18:11:23.4±0.6,32°.55N×115°.69W, h4km, MD2.5, ML2.7*

*MEX **19** 18:11:24.3±0.7,32°.64N×115°.66W, h17km±73km, MD3.5*

ISC 19 18:11:22.1±0.8, 32°.58N±0°.02×115°.69W±0°.02, h17km±6km, n43, σ0s84/65, 8C-4D, California-Baja California border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SGL	**Mount Signal**	**0.08**	**338**	*i* P	**Pg**	**18 11 25.3**	**-0.3**
ERPC	**Ernies Place**	**0.17**	**8**	⇓*i* P	**Pg**	**18 11 27.2**	**+0.6**
WESC	**Westside Schoo**	**0.19**	**349**	⇓*i* P	**Pg**	**18 11 27.3**	**+0.5**
WESC				*e*S	**Sg**	**18 11 31.0**	**+1.0**
YUH	**Yuha Desert**	**0.21**	**290**⇑	*i* P	**Pg**	**18 11 27.3**	**+0.1**
COK	**Cook Ranch**	**0.28**	**353**	⇓*i* P	**Pg**	**18 11 29.1**	**+0.8**
DREC	**Desert Rsrch C**	**0.31**	**42**	*e*P	**Pg**	**18 11 29.7**	**+0.9**
RMX	**La Rumorosa**	**0.33**	**275**⇑	*i* P	**Pg**	**18 11 28.9**	**-0.3**
RMX				*e*S	**Pg**	**18 11 33.9**	**-0.2**
CPBX	**Cerro Prieto**	**0.36**	**116**⇑	*e*P	**Pg**	**18 11 29.9**	**+0.3**
CPBX				⇑*e*P	**Pg**	**18 11 30.0**	**+0.3**
CPBX				AML	AML	18 11 33.1	
	comp=N,3μm,0.1s						
CPBX				*e*		18 11 33.1	
CPBX				⇓*e*		18 11 37.2	
CPBX				AML	AML	18 11 37.2	
	comp=E,3μm,0.4s						
CPBX	**Cerro Prieto**	**0.36**	**116**	*e*Pg	**Pg**	**18 11 30.0**	**+0.3**
IKP	**In-Ko-Pah, Jac**	**0.36**	**282**⇑	*i* P	**Pg**	**18 11 30.1**	**+0.3**
SWSC	**Sam W. Stewart**	**0.38**	**346**	P	**Pg**	**18 11 30.2**	**+0.2**
	baz=168,SNR=20						
SWSC				S	**Sg**	**18 11 35.9**	**+0.5**
	baz=168						
MBIG	**Mexicali**	**0.45**

MAT	**Matsushiro**	**3.23**	**275**	P	**Pn**	**18 28 35.8**	**+1.1**
MAT				*e*S	**Sn**	**18 29 15.6**	**+2.2**
SONM	**Songino Array**	**28.70**	**305**	P	**P**	**18 33 39.8**	**-1.5**
	1.1nm,0.9s,baz=106,slow=9.4,SNR=3.3						
MKAR	**Makanchi Array**	**45.02**	**303**	P	**P**	**18 35 59.9**	**+0.1**
	0.6nm,0.6s,baz=88,slow=9.5,SNR=6.9						
KURBB	**Kurchatov Arra**	**46.93**	**309**	P	**P**	**18 36 17.7**	**+3.1**
	0.6nm,0.6s,baz=85,slow=8.9,SNR=3.7						
BVAR	**Borovoye Array**	**51.51**	**313**	P	P	18 36 56.2	+6.6
	0.2nm,0.5s,baz=51,slow=9.4,SNR=1.9						
WRA	**Warramunga Arr**	**56.47**	**189**	P	P	18 37 34.3	+8.1
	0.8nm,0.9s,baz=0.5,slow=7.6,SNR=3.9						

NIED ***19*** *18:41:00,40˚.20N×144˚.30E,h5km,Mw3.9 Best double couple: M₀7.86000×10¹⁴ NP1:φ₈13.00000°,δ25.00000°, λ-65.00000°. NP2:φ₈166.00000°,δ67.00000°, λ-101.00000°.*

IDC ***19*** *18:41:21.1±0.8,40˚.06N×144˚.55E,h0km,mb3.7/14, mb1 3.8/18,mb1mx3.7/47,mbtmp3.7/18,ML3.1/4,MS3.0/2, Ms1 3.0/2,ms1mx2.5/43,Error ellipse: s-maj=20.5km s-min=17.2km az=166.0*

ISCJB ***19*** *18:41:24.7±0.6,40˚.16N±0˚.05×144˚.32E±0˚.05,h34km, mb3.6/14,MS3.1/1,Error ellipse: s-maj=7.7km s-min=5.6km az=157.5*

JMA ***19*** *18:41:24.5±0.3,40˚.15N×144˚.31E,h43km,M3.7*

ISC 19 18:41:26.3±0.7, 40˚.13N±0˚.06×144˚.36E±0˚.07, h34km, n32, σ1§25/33, mb3.7/14, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JEM	**Erimo**	**2.09**	**335**	P	**Pn**	**18 41 57.7**	**-1.2**
JANG	**Nango**	**2.19**	**277**	P	**Pn**	**18 41 58.9**	**-1.4**
JKZ	**Kuzumaki**	**2.33**	**267**	P	**Pn**	**18 42 01.6**	**-0.6**
JKZ				S	**Sn**	**18 42 28.8**	**-0.9**
JCH	**Churui**	**2.59**	**343**	P	**Pn**	**18 42 04.4**	**-1.4**
JCH				*e*S	**Sn**	**18 42 33.4**	**-2.6**
JTM	**Tenmabayashi**	**2.59**	**286**	*e*S	**Sn**	**18 42 35.4**	**-0.8**
JMK	**Ichinoseki**	**2.70**	**245**	P	**Pn**	**18 42 06.0**	**-1.2**
JMK				*e*S	**Sn**	**18 42 36.6**	**-2.1**
JOT	**Ohata**	**2.81**	**297**	P	**Pn**	**18 42 07.9**	**-0.8**
JOT				*e*S	**Sn**	**18 42 39.8**	**-1.6**
JKB	**Kayabe**	**3.07**	**306**	P	**Pn**	**18 42 12.0**	**-0.3**
ASAJ	**Asahikawa**	**4.19**	**342**	Pn	**Pn**	**18 42 26.7**	**-1.1**
	1.6nm,0.3s,baz=189,slow=24,SNR=16						
MJAR	**Matsushiro Arr**	**6.02**	**235**	Pn	**Pn**	**18 42 53.2**	**+0.3**
	0.8nm,0.3s,baz=307,slow=50,SNR=2.6						
USRK	**Ussuriysk Ar.**	**10.04**	**298**	Pn	**Pn**	**18 43 48.5**	**+0.5**
	0.3nm,0.3s,baz=92,slow=15,SNR=5.4						
KLR	**Kul'dur**	**12.76**	**320**	Pn	**Pn**	**18 44 24.8**	**-0.3**
	0.1nm,0.3s,baz=129,slow=15,SNR=4.7						
KSRS	**Korea Array**	**13.10**	**263**	LR	LR	18 49 06.7	
	comp=Z,51nm,20.1s,baz=99,slow=35						
SEY	**Seymchan**	**23.34**	**9**	P	**P**	**18 46 32.6**	**+1.5**
	2.7nm,0.7s,baz=179,slow=7.9,SNR=10						
H11N2	**WAKE ISLAND Hy**	**28.05**	**130**	T	T	19 16 40.7	
	baz=314,slow=75,SNR=3.1						
H11N1	**WAKE ISLAND Hy**	**28.06**	**130**	T	T	19 16 47.8	
	baz=314,slow=75,SNR=3.3						
H11N3	**WAKE ISLAND Hy**	**28.07**	**130**	T	T	19 16 44.4	
	baz=314,slow=75,SNR=4.4						
SONM	**Songino Array**	**28.16**	**299**	P	**P**	**18 47 17.4**	**+2.0**
	0.3nm,0.5s,baz=76,slow=8.4,SNR=2.9						
SONM				LR	LR	18 59 12.4	
	comp=Z,43nm,18.8s,baz=80,slow=38						
ZALV	**Zalesovo Beam**	**41.62**	**310**	P	**P**	**18 49 12.7**	**+1.9**
	0.6nm,0.6s,baz=100,slow=7.8,SNR=3.5						
ZALV				PcP	**PcP**	**18 51 08.2**	**+0.9**
	0.5nm,0.4s,baz=114,slow=4.5,SNR=3.1						
MKAR	**Makanchi Array**	**44.50**	**300**	P	**P**	**18 49 35.5**	**+1.2**
	0.5nm,0.7s,baz=85,slow=9.2,SNR=6.5						
ILAR	**Eielson Array**	**45.64**	**34**	P	**P**	**18 49 42.7**	**-0.4**
	0.4nm,0.6s,baz=256,slow=7.1,SNR=4.9						
KURBB	**Kurchatov Arra**	**45.98**	**306**	P	**P**	**18 49 47.4**	**+1.5**
	1.4nm,0.6s,baz=79,slow=8.6,SNR=14						
INK	**Inuvik**	**50.57**	**28**	P	**P**	**18 50 20.1**	**-1.0**
	1.1nm,0.6s,baz=331,slow=5.7,SNR=4.3						
YKA	**Yellowknife Ar**	**59.97**	**32**	P	**P**	**18 51 28.5**	**-0.2**
	0.2nm,0.6s,baz=300,slow=6.4,SNR=6.0						
ASAR	**Alice Springs**	**64.21**	**191**	P	**P**	**18 51 57.0**	**-0.7**
	0.4nm,0.6s,baz=12,slow=5.4,SNR=11						
FINES	**FINESS Array B**	**67.14**	**333**	P	**P**	**18 52 16.4**	**+0.3**
	0.8nm,0.5s,baz=358,slow=11,SNR=4.8						
NVAR	**Mina Array Bea**	**71.31**	**55**	P	**P**	**18 52 43.4**	**+0.8**
	0.7nm,0.7s,baz=297,slow=6.0,SNR=2.0						
AKASG	**Malin Array Be**	**73.24**	**323**	P	**P**	**18 52 53.2**	**-0.5**
	0.7nm,0.6s,baz=45,slow=5.9,SNR=7.1						
PDAR	**Pinedale Array**	**73.86**	**47**	P	**P**	**18 52 57.0**	**-0.9**
	0.4nm,0.7s,baz=73,slow=5.1,SNR=3.7						
TXAR	**Lajitas Array**	**86.42**	**54**	P	**P**	**18 54 05.9**	**+0.3**
	0.4nm,0.7s,baz=312,slow=5.0,SNR=4.0						
SNAA	**Sanae**	**144.38**	**197**	P	**PKPab**	**19 00 53.9**	**-2.0**
VNA2	**Neumayer--Watz**	**145.93**	**196**	P	**PKPdf**	**19 01 00.4**	**+0.2**
	baz=72,slow=1.9						

CSEM ***19*** *18:42:56.8,36˚.40N×25˚.39E,h4km,ML1.5/3*

THE 19 18:42:56.8, 36˚.40N×25˚.39E, h4km±1km, ML1.5/3, Error ellipse: s-maj=1.7km s-min=0.5km az=121.0, Dodecanese Islands

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
THR3	**Thira Island,**	**0.01**	**22**	P	Pg	18 42 57.7	+0.1
THR3	**Thira Island,**	**0.01**	**22**	P	Pg	18 42 57.7	+0.1
THT1	**Athinios (Pele**	**0.03**	**110**	P	Pg	18 42 57.9	+0.2
THT1				S	Sg	18 42 58.6	+0.3
THT1	**Athinios (Pele**	**0.03**	**110**	P	Pg	18 42 57.9	+0.2
THT1				S	Sg	18 42 58.6	+0.3
THR7	**Fira-Santorini**	**0.04**	**46**	P	Pg	18 42 58.1	+0.3
THR7	**Fira-Santorini**	**0.04**	**46**	P	Pg	18 42 58.1	+0.3
THR6	**Thira Island,**	**0.04**	**177**	P	Pg	18 42 57.9	+0.1
THR6	**Thira Island,**	**0.04**	**177**	P	Pg	18 42 57.9	+0.1
THR5	**Thira Island,**	**0.04**	**299**	P	Pg	18 42 57.9	0.0
THR5	**Thira Island,**	**0.04**	**299**	P	Pg	18 42 57.9	0.0
SANT	**Santorini**	**0.06**	**116**	P	Pg	18 42 58.5	+0.4
SANT				S	Sg	18 42 59.2	+0.2
SANT	**Santorini**	**0.06**	**116**	P	Pg	18 42 58.5	+0.4
SANT				S	Sg	18 42 59.2	+0.2
CMBO	**Columbo, Santo**	**0.07**	**7**	P	Pg	18 42 58.8	+0.4
CMBO				S	Sg	18 42 59.8	+0.3
CMBO	**Columbo, Santo**	**0.07**	**7**	P	Pg	18 42 58.8	+0.4
CMBO				S	Sg	18 42 59.8	+0.3

SJA ***19*** *18:44:01.6±0.3,23˚.75S×66˚.79W,h209km±10km,ML3.0, MW3.4*

ISCJB ***19*** *18:44:02.2±0.4,23˚.78S±0˚.04×66˚.84W±0˚.04,h200km, mb3.6/3,Error ellipse: s-maj=6.9km s-min=4.2km az=34.8*

IDC ***19*** *18:44:02.4±2.6,23˚.77S×66˚.51W,h193km±22km,mb3.6/3, mb1 3.5/6,mb1mx3.3/28,mbtmp3.8/6,Error ellipse: s-maj=33.1km s-min=22.4km az=66.0*

GUC ***19*** *18:44:04.8±0.4,23˚.53S×67˚.38W,h249km±12km,ML4.4*

ISC 19 18:44:02.1±0.8, 23˚.72S±0˚.05×66˚.73W±0˚.05, h200km, n27, σ1§84/38, mb3.7/3, 10C-1D, Jujuy Province

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
HJA	**Humahuaca**	**1.31**	**68**	*i* P	**Pn**	**18 44 36.4**	**+1.7**
HJA				IAML		18 44 37.8	
	comp=Z,146nm,0.6s						
AZAP	**Zapla**	**1.60**	**109**	*i* P	**Pn**	**18 44 38.2**	**+1.2**
YJA	**Yavi**	**1.90**	**36**	*i* P	**Pn**	**18 44 42.1**	**+2.0**
YJA				IAML		18 44 43.6	
	comp=Z,52nm,0.2s						
ASTB	**Santa Barbara**	**2.10**	**97**	*i* P	**Pn**	**18 44 43.3**	**+1.5**
FSA	**Cafayete**	**2.48**	**164**	*i* P	**Pn**	**18 44 46.5**	**+0.6**
FSA				IAML		18 44 47.1	
	comp=Z,24nm,0.3s						
ALOL	**LOMAS DE OLMED**	**2.52**	**93**	*i* P	**Pn**	**18 44 47.3**	**+1.1**
PB06	**IPOC Station P**	**2.80**	**290**	⇑*i* P	**Pn**	**18 44 50.8**	**+1.2**
PB06				*i* S	**Sn**	**18 45 25.7**	**-1.0**
PB06				AML	AML	18 45 29.1	
	comp=N,508nm,0.2s						
PB09	**IPOC Station P**	**3.01**	**309**	⇑*i* P	**Pn**	**18 44 53.8**	**+1.7**
PB09				*i* S	**Sn**	**18 45 31.5**	**+0.5**
PB09				AML	AML	18 45 35.6	
	comp=E,765nm,0.1s						
AHML	**Horco Molle**	**3.30**	**158**	*i* P	**Pn**	**18 44 55.5**	**+0.2**
AHML				*i* S	**Sn**	**18 45 35.6**	**-1.6**
ANCH	**Antofagasta**	**3.38**	**270**	⇑*i* P	**Pn**	**18 44 57.0**	**+0.7**
ANCH				*i* S	**Sn**	**18 45 36.3**	**-2.3**
PB04	**IPOC Station P**	**3.44**	**293**	⇑*i* P	**Pn**	**18 44 57.6**	**+0.4**
PB04				*i* S	**Sn**	**18 45 38.2**	**-2.1**
PB04				AML	AML	18 45 42.4	
	comp=N,338nm,0.5s						
PB14	**IPOC Station P**	**3.48**	**254**	⇑*i* P	**Pn**	**18 44 57.5**	**-0.2**
PB14				*i* S	**Sn**	**18 45 38.3**	**-3.0**
PB14				AML	AML	18 45 41.4	
	comp=E,310nm,0.3s						
PB10	**IPOC Station P**	**3.52**	**273**	⇑*i* P	**Pn**	**18 44 58.4**	**+0.5**
PB07	**IPOC Station P**	**3.53**	**304**	⇑*i* P	**Pn**	**18 44 59.0**	**+0.7**
PB07				*i* S	**Sn**	**18 45 40.1**	**-2.1**
PB07				AML	AML	18 45 43.0	
	comp=N,433nm,0.3s						
PB01	**IPOC Station P**	**3.69**	**316**	⇑*i* P	**Pn**	**18 45 01.0**	**+0.8**
PB01				*i* S	**Sn**	**18 45 44.3**	**-1.4**
PB01				AML	AML	18 45 46.1	
	comp=E,551nm,0.3s						
PB11	**IPOC Station P**	**4.79**	**325**	⇑*i* P	**Pn**	**18 45 14.2**	**+0.2**
PB11				*i* S	**Sn**	**18 46 08.3**	**-2.3**
PSGC	**Pisagua**	**5.18**	**322**	⇓*i* P	**Pn**	**18 45 17.9**	**-1.0**
PSGC				*i* S	**Sn**	**18 46 14.8**	**-4.7**
PSGC				AML	AML	18 46 19.7	
	comp=N,76nm,0.2s						
MNMC	**Mine Minye**	**5.29**	**329**	⇑*i* P	**Pn**	**18 45 21.2**	**+0.6**
LPAZ	**La Paz**	**7.51**	**350**	P	**Pn**	**18 45 50.7**	**+1.1**
	comp=N,0.7nm,0.3s,baz=141,slow=6.1,SNR=9.9						
LPAZ				S	**Sn**	**18 47 09.4**	**-5.5**
	baz=136,slow=6.9,SNR=1.6						
CPUP	**Villa Florida**	**8.91**	**109**	P	**Pn**	**18 46 05.1**	**-2.1**
	comp=N,0.1nm,0.3s,baz=298,slow=12,SNR=5.1						
PLCA	**Paso Flores**	**17.27**	**190**	P	**Pn**	**18 47 50.9**	**-0.6**
	comp=N,0.2nm,0.3s,baz=41,slow=16,SNR=3.7						
TORD	**Torodi Ar. Bea**	**76.23**	**69**	P	**P**	**18 55 28.9**	**-0.1**
	comp=N,0.7nm,0.5s,baz=263,slow=6.1,SNR=9.3						
SCHQ	**Schefferville**	**78.23**	**360**	P	**P**	**18 55 41.0**	**+1.8**
	comp=N,2.2nm,0.6s,baz=144,slow=9.8,SNR=3.1						
YKA	**Yellowknife Ar**	**93.95**	**340**	P	**P**	**18 56 58.0**	**+1.5**
	comp=N,0.2nm,0.5s,baz=138,slow=4.4,SNR=6.0						
ASAR	**Alice Springs**	**128.81**	**204**	PKP	**PKPdf**	**19 02 47.0**	**+0.5**
	comp=N,0.2nm,0.7s,baz=125,slow=2.3,SNR=4.0						
WRA	**Warramunga Arr**	**131.99**	**207**	PKP	**PKPdf**	**19 02 53.2**	**+0.7**
	comp=N,0.6nm,1.0s,baz=154,slow=2.0,SNR=6.5						
MKAR	**Makanchi Array**	**146.15**	**39**	PKPbc	**PKPab**	**19 03 19.0**	**-0.8**
	comp=N,0.3nm,0.5s,baz=305,slow=3.4,SNR=5.4						

ROM ***19*** *18:44:18.7±0.2,42˚.91N×13˚.70E,h27km±1km,Md2.7/23, Ml2.4/24,Error ellipse: s-maj=2.0km s-min=1.3km az=79.0*

ISCJB ***19*** *18:44:19.0±0.3,42˚.90N±0˚.03×13˚.69E±0˚.04,h30km±3km, Error ellipse: s-maj=4.4km s-min=4.2km az=44.8*

CSEM ***19*** *18:44:19.2±0.1,42˚.91N×13˚.66E,h24km±1km,ML2.9/11, Error ellipse: s-maj=2.7km s-min=2.3km az=114.0*

ISC 19 18:44:19.3±0.9, 42˚.91N±0˚.02×13˚.66E±0˚.02, h26km±5km, n57, σ0§58/84, Central Italy

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
OFFI	**Offida**	**0.03**	**46**	Pg	**Pb**	**18 44 23.1**	**-0.7**
OFFI				Sg	**Sb**	**18 44 27.2**	**+0.4**
	6μm,0.5s						
OFFI	**Offida**	**0.03**	**46**	Pg	**Pb**	**18 44 23.1**	**-0.7**
OFFI				Sg	**Sb**	**18 44 27.2**	**+0.4**
	6μm,0.5s						
TRTR	**Tortoreto Alta**	**0.22**	**119**	Pg	**Pb**	**18 44 24.9**	**-0.4**
TRTR				Sg	**Sb**	**18 44 30.1**	**+0.8**
	2μm,0.4s						
TRTR	**Tortoreto Alta**	**0.22**	**119**	Pg	**Pb**	**18 44 24.9**	**-0.4**
TRTR				Sg	**Sb**	**18 44 30.1**	**+0.8**
	2μm,0.4s						
GUMA	**Gualdo di Mace**	**0.26**	**54**	Pg	**Pb**	**18 44 25.8**	**0.0**
GUMA				Sg	**Sb**	**18 44 31.6**	**+1.3**
	870nm,0.3s						
GUMA	**Gualdo di Mace**	**0.26**	**54**	Pg	**Pb**	**18 44 25.8**	**0.0**
GUMA				Sg	**Sb**	**18 44 31.6**	**+1.3**
	870nm,0.3s						
TERO	**Teramo**	**0.29**	**187**	Pg	**Pb**	**18 44 25.8**	**-0.5**
TERO				Sg	**Sb**	**18 44 31.7**	**+0.6**
	241nm,0.3s						
TERO	**Teramo**	**0.29**	**187**	Pg	**Pb**	**18 44 25.8**	**-0.5**
TERO				Sg	**Sb**	**18 44 31.7**	**+0.6**
	241nm,0.3s						
SMA1	**SAN MARTINO**	**0.37**	**220**	Pg	**Pb**	**18 44 27.0**	**-0.5**
SMA1				Sg	**Sb**	**18 44 33.8**	**+0.7**
	413nm,0.4s						
SMA1	**SAN MARTINO**	**0.37**	**220**	Pg	**Pb**	**18 44 27.0**	**-0.5**
SMA1				Sg	**Sb**	**18 44 33.8**	**+0.7**
	413nm,0.4s						
NRCA	**Norcia**	**0.41**	**259**	Pg	**Pb**	**18 44 27.8**	**-0.3**
NRCA				Sg	**Sb**	**18 44 35.2**	**+1.2**
	466nm,0.1s						
NRCA	**Norcia**	**0.41**	**259**	Pg	**Pb**	**18 44 27.8**	**-0.3**
NRCA				Sg	**Sb**	**18 44 35.2**	**+1.2**
	466nm,0.1s						
CAMP	**Campotosto**	**0.42**	**206**	Pg	**Pb**	**18 44 27.7**	**-0.6**
CAMP				Sg	**Sb**	**18 44 34.1**	**-0.3**
	162nm,0.5s						
CAMP	**Campotosto**	**0.42**	**206**	Pg	**Pb**	**18 44 27.7**	**-0.6**
CAMP				Sg	**Sb**	**18 44 34.1**	**-0.3**
	162nm,0.5s						
FDMO	**Fiordimonte**	**0.43**	**287**	Pg	**Pb**	**18 44 28.0**	**-0.5**
FDMO				Sg	**Sb**	**18 44 35.3**	**+0.5**
	132nm,0.2s						
FDMO	**Fiordimonte**	**0.43**	**287**	Pg	**Pb**	**18 44 28.0**	**-0.5**
FDMO				Sg	**Sb**	**18 44 35.3**	**+0.5**
	132nm,0.2s						
RM32	**Poggio Cancell**	**0.43**	**218**	Pg	**Pb**	**18 44 28.4**	**-0.2**
RM32				Sg	**Sb**	**18 44 35.1**	**+0.2**
	188nm,0.4s						
RM32	**Poggio Cancell**	**0.43**	**218**	Pg	**Pb**	**18 44 28.4**	**-0.2**
RM32				Sg	**Sb**	**18 44 35.1**	**+0.2**
	188nm,0.4s						
RM29	**Verrico (Monte**	**0.48**	**224**	Pg	**Pb**	**18 44 29.1**	**-0.3**
	198nm,0.4s						
RM29	**Verrico (Monte**	**0.48**	**224**	Pg	**Pb**	**18 44 29.1**	**-0.3**
	198nm,0.4s						
RM33	**Pellescritta (**	**0.52**	**219**	Pg	**Pb**	**18 44 29.6**	**-0.3**
	228nm,0.3s						
RM33	**Pellescritta (**	**0.52**	**219**	Pg	**Pb**	**18 44 29.6**	**-0.3**
	228nm,0.3s						
LNSS	**Leonessa**	**0.55**	**236**	Pg	**Pb**	**18 44 30.1**	**-0.3**
	423nm,0.5s						
LNSS	**Leonessa**	**0.55**	**236**	Pg	**Pb**	**18 44 30.1**	**-0.3**
	423nm,0.5s						
CESI	**CESI - Serrava**	**0.56**	**280**	Pg	**Pb**	**18 44 30.3**	**-0.3**
	51nm,0.3s						
CESI	**CESI - Serrava**	**0.56**	**280**	Pg	**Pb**	**18 44 30.3**	**-0.3**
	51nm,0.3s						
CING	**Cingoli**	**0.57**	**324**	Pg	**Pb**	**18 44 30.5**	**-0.3**
CING				Sg	**Sn**	**18 44 40.1**	**-0.3**
	86nm,0.2s						
CING	**Cingoli**	**0.57**	**324**	Pg	**Pb**	**18 44 30.5**	**-0.3**
CING				Sg	**Sn**	**18 44 40.1**	**-0.3**
	86nm,0.2s						
AQU	**L'Aquila**	**0.59**	**199**	Pg	**Pb**	**18 44 31.0**	**-0.1**
	123nm,0.5s						
AQU	**L'Aquila**	**0.59**	**199**	Pg	**Pb**	**18 44 31.0**	**-0.1**
	123nm,0.5s						
T0104	**Madonna delle**	**0.60**	**203**	Pg	**Pb**	**18 44 30.8**	**-0.5**
SNTG	**Esanatoglia**	**0.62**	**303**	Pg	**Pb**	**18 44 31.1**	**-0.6**
SNTG				Sg	**Sn**	**18 44 41.3**	**-0.4**
	96nm,0.2s						
SNTG	**Esanatoglia**	**0.62**	**303**	Pg	**Pb**	**18 44 31.1**	**-0.6**
SNTG				Sg	**Sn**	**18 44 41.3**	**-0.4**
	96nm,0.2s						
AOI	**Ancona**	**0.64**	**357**	Pg	**Pb**	**18 44 31.0**	**-0.9**
	101nm,0.4s						
AOI	**Ancona**	**0.64**	**357**	Pg	**Pb**	**18 44 31.0**	**-0.9**
	101nm,0.4s						
FIAM	**Fiamignano**	**0.76**	**212**	Pg	**Pn**	**18 44 34.4**	**0.0**
	98nm,0.6s						
FIAM	**Fiamignano**	**0.76**	**212**	Pg	**Pn**	**18 44 34.4**	**0.0**
	98nm,0.6s						
ARVD	**Arcevia**	**0.78**	**319**	Pg	**Pn**	**18 44 34.6**	**-0.1**
	70nm,0.5s						
ARVD	**Arcevia**	**0.78**	**319**	Pg	**Pn**	**18 44 34.6**	**-0.1**
	70nm,0.5s						
SSFR	**Montelago di S**	**0.82**	**310**	Pg	**Pb**	**18 44 35.0**	**-0.1**
	170nm,0.2s						
SSFR	**Montelago di S**	**0.82**	**310**	Pg	**Pb**	**18 44 35.0**	**-0.1**
	170nm,0.2s						
CESX	**Cesi**	**0.85**	**249**	Pg	**Pn**	**18 44 36.2**	**+0.6**
	228nm,0.5s						
CESX	**Cesi**	**0.85**	**249**	Pg	**Pn**	**18 44 36.2**	**+0.6**
	228nm,0.5s						
FRON	**Frontone**	**0.91**	**312**	Pg	**Pb**	**18 44 36.6**	**+0.1**
	90nm,0.5s						
FRON	**Frontone**	**0.91**	**312**	Pg	**Pb**	**18 44 36.6**	**+0.1**
	90nm,0.5s						
INTR	**Introdacqua**	**0.92**	**168**	Pg	**Pb**	**18 44 36.8**	**+0.1**
	152nm,0.6s						
INTR	**Introdacqua**	**0.92**	**168**	Pg	**Pb**	**18 44 36.8**	**+0.1**
	152nm,0.6s						
PIEI	**Pieia**	**1.03**	**308**	Pg	**Pn**	**18 44 38.1**	**0.0**
	47nm,0.5s						
PIEI	**Pieia**	**1.03**	**308**	Pg	**Pb**	**18 44 38.1**	**0.0**
	47nm,0.5s						
ATPC	**Poggio Castell**	**1.04**	**303**	Pg	**Pb**	**18 44 39.0**	**+0.3**
	94nm,0.5s						
ATPC	**Poggio Castell**	**1.04**	**303**	Pg	**Pb**	**18 44 39.0**	**+0.3**
	94nm,0.5s						
NVLJ	**Novalja**	**1.87**	**28**	*e*Pn	**Pn**	**18 44 49.0**	**-0.6**
NVLJ					**Sn**	**18 45 11.2**	**-1.2**
NVLJ	**Novalja**	**1.87**	**28**	*e*Pn	**Pn**	**18 44 49.0**	**-0.6**
NVLJ					**Sn**	**18 45 11.1**	**-1.2**
UDBI	**Udbina**	**2.22**	**43**	*e*Pn	**Pn**	**18 44 55.4**	**+0.8**
UDBI					**Sn**	**18 45 21.8**	**+0.6**
UDBI	**Udbina**	**2.22**	**43**	*e*Pn	**Pn**	**18 44 55.3**	**+0.8**
UDBI					**Sn**	**18 45 21.8**	**+0.6**
STON	**Ston**	**2.97**	**89**	*e*Pn	**Pn**	**18 45 04.8**	**+0.1**
STON					**Sn**	**18 45 38.5**	**-1.0**
STON	**Ston**	**2.97**	**89**	Sn	**Sn**	**18 45 38.5**	**-1.0**

JMA 19 18:58:15.6±0.3, 39˚.91N×143˚.30E, h9km±3km, M3.6, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JTH	**Tanohata**	**1.10**	**272**	P	Pg	18 58 35.9	-0.9
MIYJ	**Miyakonagasawa**	**1.19**	**254**	P	Pb	18 58 38.0	-0.3
MIYJ				*e*S	Sb	18 58 53.5	-0.3
JANG	**Nango**	**1.44**	**289**	P	Pn	18 58 41.6	-0.3
OFUJ	**Ofunato**	**1.51**	**237**	P	Pn	18 58 42.2	-0.6
JKZ	**Kuzumaki**	**1.52**	**273**	P	Pn	18 58 43.3	+0.3
JOM	**Ohasama**	**1.61**	**255**	P	Pn	18 58 44.6	+0.4
JMK	**Ichinoseki**	**1.87**	**240**	P	Pn	18 58 47.7	-0.1
JTM	**Tenmabayashi**	**1.92**	**298**	P	Pb	18 58 49.7	-1.0
JAH	**Hinai**	**2.06**	**279**	P	Pn	18 58 51.5	+1.1
JIO	**Ouri**	**2.10**	**227**	P	Pn	18 58 50.4	-0.5
JRG	**Rokugo**	**2.12**	**257**	P	Pn	18 58 52.4	+1.2
JOT	**Ohata**	**2.26**	**311**	P	Pb	18 58 55.2	-1.3
JNBK	**Urakawa-nobuka**	**2.40**	**350**	P	Pn	18 58 57.0	+1.9
JYK	**Kaneyama**	**2.48**	**247**	P	Pn	18 58 57.0	+0.8

NIED ***19*** *19:02:00,35˚.40N×140˚.90E,h23km,Mw4.2 Best double couple: M₀2.54000×10¹⁵ NP1:φ₈42.00000°,δ67.00000°, λ13.00000°. NP2:φ₈307.00000°,δ78.00000°,λ157.00000°.*

IDC ***19*** *19:02:04.1±0.7,35˚.38N×140˚.76E,h0km,mb3.9/16, mb1 4.1/18,mb1mx3.9/49,mbtmp3.9/18,ML3.6/2,MS3.3/10, Ms1 3.4/10,ms1mx3.1/42,Error ellipse: s-maj=21.9km s-min=15.2km az=99.0*

NEIC ***19*** *19:02:06.1±2.7,35˚.43N×140˚.96E,h12km±17km,mb4.5/21, Error ellipse: s-maj=7.6km s-min=6.2km az=102.0*

NEIC Recorded [2 JMA] in Chiba.

ISCJB ***19*** *19:02:07.0±0.3,35˚.39N±0˚.03×140˚.94E±0˚.05,h33km, mb4.3/43,MS3.4/6,Error ellipse: s-maj=5.4km s-min=3.9km az=11.7*

JMA ***19*** *19:02:07.0±0.1,35˚.45N×140˚.92E,h26km±1km,M4.2*

JMA Felt II J1.

MOS ***19*** *19:02:08.2±2.1,35˚.52N×140˚.95E,h36km,mb4.4/27,Error ellipse: s-maj=11.0km s-min=6.3km az=99.1*

ISC 19 19:02:08.6±0.5, 35˚.42N±0˚.04×140˚.94E±0˚.06, h33km, n120, σ1§36/98, mb4.2/43, MS3.3/6, 8C-6D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
CHOJ	**Chosi**	**0.29**	**347**	⇓P	**Pb**	**19 02 13.4**	**-2.8**
CHOJ				S	**Sn**	**19 02 18.2**	**-3.0**
KTR	**Katsuura**	**0.58**	**242**	⇑P	**Pn**	**19 02 18.3**	**-2.1**
KTR				S	**Sb**	**19 02 26.9**	**-1.6**
JCN	**Nagara**	**0.60**	**270**	⇑P	**Pn**	**19 02 19.2**	**-1.5**
BSO4	**Boso 4**	**0.65**	**229**	⇑P	**Pn**	**19 02 20.5**	**-0.9**
BSO3	**Boso 3**	**0.71**	**209**	⇓P	**Pn**	**19 02 20.8**	**-1.2**
BSO1	**Boso 1**	**0.77**	**177**	⇓P	**Pn**	**19 02 20.8**	**-1.8**
JYT	**Y

H11S1 WAKE ISLAND Hy 28.35 120 T T 19 37 38.0
baz=312,slow=76,SNR=3868
H11S3 WAKE ISLAND Hy 28.35 120 T T 19 37 37.1
baz=312,slow=76,SNR=2356
H11S2 WAKE ISLAND Hy 28.37 120 T T 19 37 37.3
baz=312,slow=76,SNR=2028
SONA1 Songino Array 28.39 307 *e*P **P** **19 08 01.3 +1.3**
SONA0 Songino Array 28.40 307 *e*P **P** **19 07 58.4 -1.6**
comp=Z,2.2nm,0.8s
SONM Songino Array 28.40 307 P **P** **19 07 58.4 -1.6**
comp=Z,0.5nm,0.5s,baz=101,slow=8.8,SNR=2.8
SEY Seymchan 28.44 11 P **P** **19 08 01.4 +1.3**
comp=Z,1.8nm,0.7s,baz=204,slow=5.4,SNR=7.5
BOD Bodaibo 28.70 330 *e*P **P** **19 08 00.3 -2.1**
BOD pmax pmax
comp=Z,4.0nm,1.1s
BILL Bilibino 35.68 16↑ *e*P P 19 09 07.7 +4.4
BILL *e* 19 10 25.1
BILL pmax pmax
comp=Z,3.0nm,1.1s
BILL MLR MLR
comp=Z,44nm,17.0s
TIXI Tiksi 36.84 354 *e*P **P** **19 09 13.2 0.0**
TIXI pmax pmax
comp=Z,2.0nm,0.9s
TIXI Tiksi 36.84 354 *e*P **P** **19 09 13.2 0.0**
comp=Z,2.2nm,0.9s
CMAR Chiang Mai Arr 40.73 257 LR LR 19 29 01.0
comp=Z,47nm,18.2s,baz=60,slow=40
LSA Lhasa 41.99 277 *e*P **P** **19 09 57.8 +0.5**
LSA pmax pmax
comp=Z,2.0nm,0.8s
LSA Lhasa 41.99 277 *e*P **P** **19 09 57.8 +0.5**
comp=Z,2.1nm,0.8s
ZAA0 Zalesovo Array 42.73 314 *e*P **P** **19 10 01.2 -1.1**
ZAA1 Zalesovo Array 42.73 314 *e*P **P** **19 10 02.6 +0.3**
ZALV Zalesovo Beam 42.73 314 P **P** **19 10 02.6 +0.3**
comp=Z,1.2nm,0.5s,baz=111,slow=8.1,SNR=5.9
MK01 Makanchi Array 44.66 303 *e*P **P** **19 10 18.0 0.0**
MK31 Makanchi Array 44.66 303 *e*P **P** **19 10 17.5 -0.6**
MK31 Makanchi Array 44.66 303 *e*P **P** **19 10 17.5 -0.6**
MK32 Makanchi Array 44.66 303 *e*P **P** **19 10 17.9 -0.2**
MKAR Makanchi Array 44.66 303 P **P** **19 10 17.9 -0.2**
comp=Z,0.7nm,0.5s,baz=86,slow=8.8,SNR=9.5
MKAR Makanchi Array 44.66 303 *e*P **P** **19 10 17.5 -0.6**
MAKZ Makanchi 44.88 303 *e*P **P** **19 10 21.8 +2.0**
MAKZ pmax pmax
comp=Z,3.0nm,1.0s
MAKZ Makanchi 44.88 303 *e*P **P** **19 10 21.8 +2.0**
comp=Z,3.1nm,1.0s
TARA Tarawa 45.08 132 *e*P **P** **19 10 22.8 +1.1**
comp=Z,237nm,1.5s
KURK Kurchatov 46.63 309 *e*P **P** **19 10 33.9 +0.4**
KURK pmax pmax
comp=Z,9.0nm,0.6s
KURK Kurchatov 46.63 309 *e*P **P** **19 10 33.9 +0.4**
comp=Z,9.4nm,0.6s
SOEI Soe 47.62 203 *e*P **P** **19 10 44.0 +2.4**
comp=Z,55nm,1.2s
KDAK Kodiak Island 48.56 41 *i* P P 19 10 55.2 +6.9
MLY Manley 49.42 31 *e*P **P** **19 10 56.1 +1.1**
comp=Z,14nm,2.0s
TKM2 Tokmak 2 50.07 299 *e*P P 19 11 03.0 +2.6
TKM2 pmax pmax
comp=Z,7.0nm,1.3s
TKM2 Tokmak 2 50.07 299 *e*P P 19 11 03.0 +2.6
comp=Z,6.6nm,1.3s
PMR Palmer 50.15 36 *e*P P 19 11 02.9 +2.5
PMR pmax pmax
comp=Z,26nm,1.9s
PMR Palmer 50.15 36 *e*P P 19 11 02.9 +2.4
comp=Z,26nm,1.9s
MDM Murphy Dome 50.49 31 *e*P **P** **19 11 04.4 +1.4**
comp=Z,2.8nm,0.9s
AAK Ala-Archa 50.93 299 *e*P **P** **19 11 08.1 +1.2**
AAK pmax pmax
comp=Z,2.0nm,1.0s
AAK Ala-Archa 50.93 299 *e*P **P** **19 11 08.1 +1.2**
comp=Z,2.3nm,1.0s
ILAR Eielson Array 51.06 32 P **P** **19 11 08.2 +0.8**
comp=Z,0.7nm,0.5s,baz=266,slow=5.9,SNR=18
ILB Eielson Array 51.06 32 *e*P **P** **19 11 07.4 +0.1**
EKS2 Erkin-Say 51.43 300 *e*P **P** **19 11 11.2 +0.6**
EKS2 pmax pmax
comp=Z,11nm,1.8s
EKS2 Erkin-Say 51.43 300 *e*P **P** **19 11 11.2 +0.6**
comp=Z,11nm,1.8s
BRVK Borovoye 51.44 313 *ce*P P 19 11 17.8 +7.5
BRVK pmax pmax
comp=Z,2.0nm,0.8s
ZRNK Zerenda 52.22 313 *e*P **P** **19 11 18.2 +2.1**
ZRNK pmax pmax
comp=Z,4.0nm,1.1s
ZRNK Zerenda 52.22 313 *e*P **P** **19 11 18.2 +2.1**
comp=Z,4.4nm,1.1s
WR1 Warramunga Arr 55.41 188 *e*P **P** **19 11 38.8 -1.0**
comp=Z,8.1nm,0.9s
WRA Warramunga Arr 55.41 188 P **P** **19 11 38.8 -1.0**
comp=Z,2.6nm,0.7s,baz=4.1,slow=7.5,SNR=14
INK Inuvik 56.00 27 P **P** **19 11 44.2 +0.9**
comp=Z,1.0nm,0.6s,baz=296,slow=7.7,SNR=4.8
INK Inuvik 56.00 27 *e*P **P** **19 11 44.4 +1.0**
INK pmax pmax
comp=Z,8.0nm,1.7s
INK Inuvik 56.00 27 *e*P **P** **19 11 44.4 +1.0**
comp=Z,7.8nm,1.7s
ARU Arti 57.32 319 *e*P P 19 11 57.9 +4.9
ARU pmax pmax
comp=Z,5.0nm,1.3s
ARU Arti 57.32 319 *e*P **P** **19 11 53.8 +0.8**
comp=Z,4.2nm,0.7s
HPO Honuapo 57.85 89 *e*P **P** **19 11 57.2 -0.1**
ABKAR Akbulak array 58.69 311 *e*P **P** **19 12 02.5 -0.2**
AS01 Alice Springs 59.14 187 *e*P **P** **19 12 06.2 +0.2**
AS31 Alice Springs 59.14 188 *e*P **P** **19 12 05.6 -0.5**
comp=Z,0.9nm,0.8s
ASAR Alice Springs 59.14 188 P **P** **19 12 06.0 0.0**
comp=Z,1.0nm,0.5s,baz=18,slow=10,SNR=5.7
ARA0 ARCESS Array S 65.37 340 *e*P **P** **19 12 47.8 +0.6**
ARCES ARCESS Array B 65.37 340 P **P** **19 12 47.8 +0.6**
comp=Z,1.6nm,0.8s,baz=64,slow=9.5,SNR=3.7
ARCES LR LR 19 44 51.6
comp=Z,48nm,18.3s,baz=34,slow=39
YKA Yellowknife Ar 65.39 30 P **P** **19 12 48.0 +0.6**
comp=Z,0.5nm,0.7s,baz=300,slow=6.8,SNR=9.5
OBN Obninsk 69.16 323↓ *e*P P 19 13 15.8 +4.4
OBN *e* 19 15 54.1
OBN *e*PPP PPP 19 17 29.2
OBN pmax pmax
comp=Z,3.0nm,1.0s
FIA1 FINESS Array S 70.06 332 *e*P **P** **19 13 16.9 +0.1**
FIA0 FINESS Array S 70.06 332 *e*P **P** **19 13 16.9 0.0**
FIA0 FINESS Array S 70.06 332 *e*P **P** **19 13 16.9 0.0**
FINES FINESS Array B 70.06 332 P **P** **19 13 16.9 0.0**
comp=Z,1.3nm,0.7s,baz=56,slow=7.2,SNR=9.6
FINES LR LR 19 48 54.5
comp=Z,40nm,18.2s,baz=348,slow=40
KIV Kislovodsk 71.67 311 *d* iP P 19 13 33.2 +6.1
KIV *e* 19 16 09.6
KIV *e*PPP PPP 19 17 53.2
KIV *e*S **ScS** **19 23 29.1 -1.0**
KIV pmax pmax
comp=Z,7.0nm,1.0s
AKASG Malin Array Be 75.33 322 *ce*P P 19 13 53.2 +4.8
AKASG pmax pmax
comp=Z,2.0nm,0.7s
NB2 NORSAR Subarra 75.52 337 P **P** **19 13 49.6 +0.2**
comp=Z,1.1nm,0.6s,baz=41,slow=5.9
NB200 NORSAR Array S 75.52 337 *e*P **P** **19 13 49.6 +0.2**
NOA NORSAR Array B 75.52 337 P **P** **19 13 49.6 +0.2**
comp=Z,1.3nm,0.6s,baz=40,slow=5.8,SNR=7.5
PDAR Pinedale Array 79.07 45 P **P** **19 14 11.1 +1.2**
comp=Z,0.3nm,0.5s,baz=327,slow=2.5,SNR=4.3
X16A Lo Mia Camp, P 83.09 53 *e*P **P** **19 14 31.9 +0.6**
comp=Z,3.7nm,0.6s
GERES GERESS Array B 83.87 328 P **P** **19 14 36.8 +1.8**
comp=Z,0.1nm,0.3s,baz=300,slow=2.2,SNR=2.8
HDIL Hopedale 91.40 36 *e*P **P** **19 15 12.5 +1.2**
comp=Z,3μm,0.8s
LTX Lajitas 91.41 52 *e*P P 19 15 14.6 +2.9
LTX Lajitas 91.41 52 *e*P P 19 15 14.6 +2.9
TXAR Lajitas Array 91.41 52 P P 19 15 14.6 +2.9
comp=Z,0.2nm,0.7s,baz=174,slow=1.8,SNR=3.1
TORD Torodi Ar. Bea 118.18 314 PKP **PKPdf** **19 20 52.5 -0.4**
comp=Z,0.2nm,0.5s,baz=112,slow=0.8,SNR=4.2
LPAZ La Paz 147.82 61 PKPbc **PKPab** **19 21 53.4 -0.4**
comp=Z,0.9nm,0.6s,baz=343,slow=4.9,SNR=4.4

IDC 19 19:04:15.8±2.7, 7.7°S×132.6°E, h0km, mb3.6/1, mb1 3.6/4, mb1mx3.4/26, mbtmp3.4/4, ML3.2/3, Error ellipse: s-maj=101.6km s-min=29.7km az=82.0, Tanimbar Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
FITZ	**Fitzroy Crossi**	**12.58**	**210**	Pn	Pn	19 07 15.4	-0.9
	0.2nm,0.3s,baz=20,slow=9.5,SNR=19						
FITZ				Sn	Sn	19 09 28.1	-9.2
	0.4nm,0.3s,baz=204,slow=15,SNR=6.7						
WRA	**Warramunga Arr**	**12.87**	**171**	Pn	Pn	19 07 20.2	0.0
	0.1nm,0.3s,baz=356,slow=13,SNR=7.8						
WRA				Sn	Sn	19 09 39.5	-4.7
	0.2nm,0.3s,baz=356,slow=25,SNR=1.1						
ASAR	**Alice Springs**	**16.48**	**174**	Pn	Pn	19 08 09.5	+0.8
	0.1nm,0.3s,baz=355,slow=13,SNR=7.9						
MKAR	**Makanchi Array**	**69.56**	**326**	P	P	19 15 26.7	0.0
	0.5nm,0.6s,baz=107,slow=7.8,SNR=5.5						

MEX 19 19:06:58.2±0.5, 16.01N×97.31W, h16km±29km, MD3.9, Oaxaca

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PNIG	**Pinotepa**	**0.87**	**296**	*e*P	Pb	19 07 11.9	-3.1
PNIG				*e*S	Sb	19 07 22.6	-3.8
VHO	**Vista Hermosa**	**1.19**	**28**	*i* P	Pn	19 07 16.6	-3.8
VHO				*e*S	Sb	19 07 32.0	-3.8
TLIG	**Tlapa**	**1.96**	**322**	*e*P	Pn	19 07 27.0	-3.9
TLIG				*e*S	Sn	19 07 50.1	-5.0

*NIED **19** 19:29:00, 37.00N×141.20E, h53km, Mw4.3 Best double couple: M0 3.31000×10^15 NP1:ϕ=196.00000°, δ=17.00000°, λ=88.00000°. NP2:ϕ=19.00000°, δ=73.00000°, λ=91.00000°.*
*ISCJB **19** 19:29:21.2±0.5, 37.06N±0.03×141.25E±0.05, h52km±3km, mb4.4/76, MS3.2/9, Error ellipse: s-maj=6.5km s-min=4.1km az=18.9*
*JMA **19** 19:29:22.9±0.1, 37.05N×141.16E, h47km±1km, M4.4*
JMA Felt III J1.
*IDC **19** 19:29:24.7±2.0, 37.09N×141.13E, h64km±16km, mb4.0/28, mb1 4.2/34, mb1mx4.0/52, mbtmp4.3/34, MS3.2/13, Ms1 3.3/13, ms1mx3.0/42, Error ellipse: s-maj=15.0km s-min=10.9km az=106.0*
*MOS **19** 19:29:24.0±0.9, 37.43N×140.97E, h55km, mb4.7/44, Error ellipse: s-maj=8.3km s-min=5.3km az=104.6*
*NEIC **19** 19:29:24.3±0.6, 37.10N×141.13E, h62km±4km, mb4.6/26, Error ellipse: s-maj=6.0km s-min=4.5km az=123.0*
NEIC Felt at Misawa and Yokosuka. Recorded [3 JMA] in Fukushima.
*BJI **19** 19:29:24.0, 36.95N×140.81E, h63km, mb4.7/41, mB4.8/20, Ms4.4/11, Ms7 4.2/8*

ISC 19 19:29:22.9±0.7, 37.08N±0.04×141.23E±0.05, h51km±5km, n233, σ1°25/254, mb4.5/76, MS3.3/10, 13C-12D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.35**	**274**	P	**Pn**	**19 29 31.9**	**-0.7**
ONAJ				S	**Sn**	**19 29 38.0**	**-1.5**
JFK	**Kawauchi**	**0.41**	**316**	P	**Pn**	**19 29 32.7**	**-0.5**
JFK				*i* S	**Sn**	**19 29 39.4**	**-1.1**
JHO	**Hitachi**	**0.71**	**229**	P	**Pn**	**19 29 35.6**	**-1.1**
JHO				S	**Sn**	**19 29 44.1**	**-2.7**
JFT	**Otama**	**0.84**	**302**	P	**Pn**	**19 29 38.7**	**+0.2**
JFT				S	**Sn**	**19 29 49.8**	**-0.1**
JMM	**Marumori**	**0.86**	**336**	P	**Pn**	**19 29 38.6**	**-0.1**
JMM				S	**Sn**	**19 29 49.8**	**-0.6**
JFY	**Yanaizu**	**1.26**	**286**	P	**Pn**	**19 29 43.7**	**-0.4**
MJAR	**Matsushiro Arr**	**2.48**	**258**	P	**Pn**	**19 30 01.0**	**+0.2**
	44nm,0.3s,baz=84,slow=16,SNR=170						
MJAR				S	**Sn**	**19 30 32.5**	**+2.6**
	41nm,0.3s,baz=293,slow=28,SNR=1.7						
MJAR				LR	LR	19 31 17.0	
	comp=Z,523nm,21.6s,baz=85,slow=47						
MAJO	**Matsushiro**	**2.48**	**258**	*e*P	**Pn**	**19 30 01.2**	**+0.4**
MAJO	**Matsushiro**	**2.48**	**258**	*e*Pn	**Pn**	**19 30 01.1**	**+0.3**
MAT	**Matsushiro**	**2.48**	**258**	P	**Pn**	**19 30 01.3**	**+0.5**
MAT				*e*S	**Sn**	**19 30 34.7**	**+4.7**
MJB9	**Matsu-Tunnel**	**2.49**	**259**	*e*Pn	**Pn**	**19 30 01.2**	**+0.4**
INU	**Inuyama**	**3.82**	**244**	*e*Pn	**Pn**	**19 30 20.2**	**+1.1**
JHJ	**Hachijo jima 2**	**4.12**	**197**	P	**Pn**	**19 30 22.6**	**-0.8**
	83nm,0.3s,baz=61,slow=22,SNR=14						
JHJ				S	**Sn**	**19 31 08.6**	**-1.6**
	107nm,0.3s,baz=239,slow=23,SNR=11						
JHJ2	**Mitsune**	**4.12**	**197**	*e*Pn	**Pn**	**19 30 23.7**	**+0.4**
JHJ2				*e*Sn	**Sn**	**19 31 10.4**	**+0.2**
ERM	**Erimo**	**5.15**	**16**	*e*P	**Pn**	**19 30 37.6**	**+0.3**
ERM				*e*		19 31 32.7	
ERM	**Erimo**	**5.15**	**16**	*e*Pn	**Pn**	**19 30 37.6**	**+0.3**
ERM				*e*Sn	**Sn**	**19 31 32.7**	**-2.8**
ASAJ	**Asahikawa**	**7.11**	**8**	P	**Pn**	**19 31 04.2**	**+0.1**
	5.8nm,0.3s,baz=205,slow=13,SNR=64						
ASAJ	**Asahikawa**	**7.11**	**8**	*e*Pn	**Pn**	**19 31 03.9**	**-0.3**
YUK	**Yuzh-Kuril'sk**	**7.79**	**25**	*e*P	**Pn**	**19 31 12.5**	**-1.0**
YUK				*e*S	Sn	19 32 34.6	-5.7
YUK				pmax	pmax		
	comp=Z,136nm,0.8s						
YUK				pmax	pmax		
	comp=E,83nm,0.5s						
YUK				pmax	pmax		
	comp=N,79nm,0.9s						
JNU	**Nakatsue**	**9.35**	**248**	P	**Pn**	**19 31 37.0**	**+2.0**
	comp=N,0.9nm,0.3s,baz=79,slow=0.8,SNR=7.3						
JNU				LR	LR	19 35 24.4	
	comp=N,128nm,18.9s,baz=103,slow=39						
JNU	**Nakatsue**	**9.35**	**248**	*e*Pn	**Pn**	**19 31 35.5**	**+0.4**
KUR	**Kuril'sk**	**9.56**	**29**	*e*P	**Pn**	**19 31 37.9**	**+0.2**
KUR				*e*S	Sn	19 33 17.7	-5.9
KUR				pmax	pmax		
	comp=Z,31nm,0.7s						
YSS	**Yuzh-Sakhalins**	**9.93**	**6**↑	*e*P	**Pn**	**19 31 42.9**	**+0.1**
YSS				pmax	pmax		
	comp=Z,20nm,0.4s						
YSS	**Yuzh-Sakhalins**	**9.93**	**6**	*e*Pn	**Pn**	**19 31 42.6**	**-0.2**
CBIJ	**Chichi jima**	**9.98**	**175**	*e*Pn	Pn	19 31 40.5	-3.2
USRK	**Ussuriysk Ar.**	**9.99**	**318**	P	**Pn**	**19 31 46.0**	**+2.3**
	comp=Z,1.6nm,0.3s,baz=136,slow=13,SNR=28						
USRK				LR	LR	19 35 21.3	
	comp=Z,155nm,20.0s,baz=137,slow=36						
KSRS	**Korea Array**	**10.61**	**276**	P	**Pn**	**19 31 54.9**	**+2.7**
	comp=Z,0.5nm,0.3s,baz=93,slow=14,SNR=21						
KSRS				LR	LR	19 35 32.5	
	comp=Z,176nm,21.8s,baz=87,slow=35						
KS01	**Wonju Array Si**	**10.64**	**276**	*e*Pn	**Pn**	**19 31 53.8**	**+1.3**
KS15	**Wonju Array Si**	**10.64**	**276**	*e*Pn	**Pn**	**19 31 54.6**	**+2.0**
KSAR	**Wonju Array Be**	**10.64**	**276**	P	**Pn**	**19 31 54.9**	**+2.2**
KSAR	**Wonju Array Be**	**10.64**	**276**	P	**Pn**	**19 31 54.9**	**+2.2**
MDJ	**Mudanjiang**	**11.58**	**314**	P	Pn	19 32 10.5	+5.1
MDJ				pmax	pmax		
	comp=Z,17nm,1.0s						
MDJ				pmax	pmax		
	comp=Z,94nm,6.0s						
MDJ	**Mudanjiang**	**11.58**	**314**	*e*Pn	Pn	19 32 09.8	+4.4
INCN	**Inchon**	**11.64**	**276**	*e*Pn	Pn	19 31 58.7	-7.5
CN2	**Changchun**	**13.76**	**304**	*e*P	**Pn**	**19 32 34.3**	**-0.8**
TYV	**Tymovskoe**	**13.82**	**4**	*e*P	**Pn**	**19 32 35.5**	**-0.4**
TYV				pmax	pmax		
	comp=Z,8.0nm,0.6s						
KLR	**Kul'dur**	**13.96**	**333**	P	**Pn**	**19 32 40.6**	**+2.7**
	comp=Z,0.3nm,0.3s,baz=148,slow=12,SNR=4.3						
KLR				LR	LR	19 37 37.3	
	comp=Z,101nm,20.2s,baz=148,slow=35						
NKL	**Nikolayevsk**	**16.08**	**359**	*e*P	**Pn**	**19 33 03.8**	**-1.5**
NJ2	**Nanjing**	**19.08**	**261**	*e*P	**P**	**19 33 40.8**	**-0.4**
NJ2				pmax	pmax		
	comp=Z,15nm,0.6s						
TIA	**Tai'an**	**19.36**	**275**	↓P	**Pn**	**19 33 46.5**	**+0.9**
TIA				pmax	pmax		
	comp=Z,20nm,1.1s						
BJI	**Beijing**	**19.80**	**286**	P	**P**	**19 33 47.6**	**-1.3**
BJI				pmax	pmax		
	comp=Z,7.0nm,1.0s						
HHC	**Hu-ho-hao-te**	**23.32**	**288**	*e*P	**P**	**19 34 24.3**	**-2.2**
HHC				sP	sP	19 34 43.5	-1.5
HHC				PP	**PnPn**	**19 34 56.8**	**+2.7**
HHC				S	S	19 38 27.0	-8.3
HHC				pmax	pmax		
	comp=Z,9.0nm,1.1s						
HHC				pmax	pmax		
	comp=Z,160nm,5.2s						
GUMO	**Guam**	**23.62**	**171**	LR	LR	19 46 10.9	
	comp=Z,15nm,18.6s,baz=6.0,slow=43						
YAK	**Yakutsk**	**26.00**	**348**	P	**P**	**19 34 50.2**	**-0.4**
	comp=Z,14nm,0.5s,baz=40,slow=2.8,SNR=11						
YAK	**Yakutsk**	**26.00**	**348**	*e*P	**P**	**19 34 49.3**	**-1.3**
YAK				*e*		19 35 30.5	
YAK				*e*		19 38 17.5	
YAK				*e*S	**S**	**19 39 14.6**	**-2.8**
YAK				*e**SS	**sS**	**19 39 40.3**	**+0.9**
YAK				*e*SS	**SnSn**	**19 40 16.9**	**-1.6**
YAK				*e*		19 45 39.4	
YAK				pmax	pmax		
	comp=Z,7.0nm,0.9s						
YAK				pmax	pmax		
	comp=N,5.0nm,1.1s						
YAK				pmax	pmax		
	comp=Z,70nm,3.8s						
YAK				pmax	pmax		
	comp=N,42nm,3.8s						
YAK				pmax	pmax		
	comp=E,77nm,4.8s						
YAK				smax	smax		
	comp=N,87nm,4.6s						
YAK				smax	smax		
	comp=E,90nm,4.3s						
YAK	**Yakutsk**	**26.00**	**348**	*e*P	**P**	**19 34 48.8**	**-1.7**
	comp=E,17nm,0.6s						
XAN	**Xi'an**	**26.39**	**273**	P	**P**	**19 34 51.9**	**-2.6**
XAN				pmax	pmax		
	comp=E,5.0nm,0.6s						
SEY	**Seymchan**	**26.78**	**11**	P	**P**	**19 34 58.6**	**+1.0**
	comp=E,4.2nm,0.7s,baz=198,slow=6.3,SNR=13						
ENH	**Enshi**	**27.19**	**265**	*e*P	**P**	**19 35 00.9**	**-0.8**
	comp=E,11nm,0.8s						
ULN	**Ulaanbaatar**	**27.21**	**304**	*e*P	**P**	**19 35 00.8**	**-1.1**
ULN				*e*		19 38 21.3	
ULN				pmax	pmax		
	comp=Z,7.0nm,0.8s						
ULN	**Ulaanbaatar**	**27.21**	**304**	*e*P	**P**	**19 35 00.8**	**-1.1**
	comp=Z,6.6nm,0.8s						
ULN				*e*PcP	**PcP**	**19 38 21.2**	**+0.4**
BOD	**Bodaibo**	**27.41**	**328**↑	*i* P	**P**	**19 35 02.7**	**-0.7**
BOD				pmax	pmax		
	comp=Z,6.0nm,0.8s						
SONA1	**Songino Array**	**27.64**	**304**	*e*P	**P**	**19 35 03.6**	**-2.1**
SONA0	**Songino Array**	**27.64**	**304**	*e*P	**P**	**19 35 04.7**	**-1.0**
SONA0				*e*PcP	**PcP**	**19 38 21.3**	**-0.5**
SONM	**Songino Array**	**27.64**	**304**	P	**P**	**19 35 04.7**	**-1.0**
	comp=Z,2.3nm,0.5s,baz=96,slow=8.7,SNR=13						
SONM				PcP	**PcP**	**19 38 21.3**	**-0.5**
	comp=Z,1.1nm,0.5s,baz=131,slow=3.4,SNR=5.3						
SONM				LR	LR	19 46 30.4	
	comp=Z,54nm,19.8s,baz=86,slow=37						
H11N2	**WAKE ISLAND Hy 28.30 121**			T	T	20 05 25.3	
	baz=314,slow=75,SNR=242						
H11N1	**WAKE ISLAND Hy 28.30 121**			T	T	20 05 28.2	
	baz=314,slow=75,SNR=261						
H11N3	**WAKE ISLAND Hy 28.31 121**			T	T	20 05 26.7	
	baz=314,slow=75,SNR=267						
H11S1	**WAKE ISLAND Hy 29.01 123**			T	T	20 06 10.6	
	baz=316,slow=76,SNR=354						
H11S3	**WAKE ISLAND Hy 29.01 123**			T	T	20 06 06.0	
	baz=316,slow=76,SNR=336						
H11S2	**WAKE ISLAND Hy 29.02 123**			T	T	20 06 12.2	
	baz=316,slow=76,SNR=250						
LZH	**Lanzhou**	**29.91**	**280**	*e*P	**P**	**19 35 27.8**	**+1.7**
LZH				pP	pP	19 35 41.9	+2.7
LZH				sP	sP	19 35 48.6	+3.4
LZH				pmax	pmax		
	comp=Z,15nm,1.4s						
ZAK	**Zakamensk**	**30.13**	**308**	*e*P	**P**	**19 35 27.0**	**-0.7**
ZAK				pmax	pmax		
	comp=Z,2.0nm,1.8s						
TLY	**Talaya**	**30.19**	**311**	P	**P**	**19 35 27.5**	**-0.7**
	comp=Z,5.1nm,0.6s,baz=298,slow=20,SNR=4.0						
CD2	**Chengdu**	**31.53**	**270**	P	**P**	**19 35 38.3**	**-1.9**
CD2				pmax	pmax		
	comp=Z,1.0nm,0.5s						
GTA	**Gaotai**	**32.41**	**287**	P	**P**	**19 35 46.8**	**-1.2**
GTA				pP	pP	19 35 59.5	-1.6
GTA				sP	sP	19 36 05.3	-1.8
GTA				PcP	**PcP**	**19 38 35.3**	**+0.9**
GTA				pmax	pmax		
	comp=Z,3.0nm,0.9s						
BILL	**Bilibino**	**34.03**	**17**↑	*e*P	**P**	**19 36 01.2**	**-0.4**
BILL				*e*		19 37 14.5	
BILL				*e*PPP	PPP	19 37 30.1	
BILL				*e*S	**S**	**19 41 24.6**	**+1.5**
BILL				*e*SS	**SS**	**19 43 59.5**	**+8.0**
BILL				pmax	pmax		
	comp=Z,1.0nm,1.0s						
BILL				MLR	MLR		
	comp=Z,34nm,17.0s						
KMI	**Kunming**	**34.82**	**261**	P	**P**	**19 36 08.8**	**-0.4**
KMI				pP	pP	19 36 22.8	+0.4
KMI				pmax	pmax		
	comp=Z,12nm,1.1s						
KMI				pmax	pmax		
	comp=Z,81nm,4.5s						
KMI				LR	LR		
	comp=Z,95nm,9.8s						
KMI				LR	LR		
	comp=Z,100nm,11.3s						
TIXI	**Tiksi**	**35.23**	**353**	P	**P**	**19 36 11.3**	**-0.6**
	comp=Z,0.8nm,0.3s,baz=147,slow=4.2,SNR=9.0						
TIXI	**Tiksi**	**35.23**	**353**	*e*P	**P**	**19 36 11.3**	**-0.6**
TIXI				pmax	pmax		
	comp=Z,4.0nm,1.7s						
TIXI	**Tiksi**	**35.23**	**353**	*e*P	**P**	**19 36 11.2**	**-0.6**
	comp=Z,1.7nm,0.8s						
WMQ	**Urumqi**	**40.69**	**297**	P	**P**	**19 36 59.0**	**+0.7**
WMQ				pP	pP	19 37 14.6	+2.9
WMQ				sP	sP	19 37 19.9	+2.2
WMQ				S	**S**	**19 42 59.9**	**-5.0**
WMQ				pmax	pmax		
	comp=Z,8.0nm,0.6s						
WMQ				pmax	pmax		
	comp=Z,31nm,3.6s						
CM31	**Chiang Mai Arr**	**41.37**	**255**	*e*P	**P**	**19 37 03.8**	**-0.3**
CMAR	**Chiang Mai Arr**	**41.37**	**255**	P	**P**	**19 37 03.8**	**-0.3**
	comp=Z,1.0nm,0.6s,baz=45,slow=8.5,SNR=13						
CMAR				LR	LR	19 54 19.6	
	comp=Z,39nm,18.5s,baz=70,slow=36						
ZAA0	**Zalesovo Array**	**41.78**	**312**	*e*PcP	**PcP**	**19 39 01.5**	**-0.9**
ZAA1	**Zalesovo Array**	**41.78**	**312**	*e*P	**P**	**19 37 06.9**	**-0.1**
ZAA1				*e*PcP	**PcP**	**19 39 02.2**	**-0.1**
ZALV	**Zalesovo Beam**	**41.78**	**312**	P	**P**	**19 37 06.9**	**-0.1**
	comp=Z,12nm,0.5s,baz=93,slow=6.8,SNR=55						
ZALV				PcP	**PcP**	**19 39 02.2**	**-0.1**
	comp=Z,3.4nm,0.4s,baz=101,slow=3.0,SNR=11						
ZALV				LR	LR	19 53 51.8	
	comp=Z,27nm,19.4s,baz=66,slow=35						
LSA	**Lhasa**	**42.06**	**275**	*e*P	**P**	**19 37 09.5**	**-0.7**
LSA				pmax	pmax		
	comp=Z,8.0nm,1.4s						
LSA	**Lhasa**	**42.06**	**275**	*e*P	**P**	**19 37 09.5**	**-0.7**
	comp=Z,7.7nm,1.4s						
NVS	**Novosibirsk**	**42.70**	**314**	*e*P	**P**	**19 37 14.4**	**-0.1**
NVS				pmax	pmax		
	comp=N,4.0nm,1.0s						
NVS				pmax	pmax		
	comp=E,9.0nm,1.0s						
NVS				pmax	pmax		
	comp=Z,13nm,1.0s						
MK01	**Makanchi Array**	**43.97**	**302**	*e*P	**P**	**19 37 24.0**	**-0.9**
MK01				*e*PP	**PcP**	**19 39 09.2**	**-0.8**
MK32	**Makanchi Array**	**43.97**	**302**	*e*P	**P**	**19 37 24.8**	**-0.2**
MK32				*e*PP	**PcP**	**19 39 09.9**	**0.0**
MKAR	**Makanchi Array**	**43.97**	**302**	P	**P**	**19 37 24.8

comp=Z,29nm,0.5s
KKN Kakani 47.53 276 *e*P P **19 37 53.4 -0.1**
comp=Z,23nm,0.6s
PKIN Phulchoki 47.53 275 *e*P P **19 37 55.0 +1.4**
comp=Z,12nm,0.6s
GKN Gorkha 47.95 276 *e*P P **19 37 56.5 -0.2**
comp=Z,35nm,0.6s
KOLN Koldanda 48.88 277 *e*P P **19 38 03.8 -0.1**
comp=Z,4.7nm,0.3s
PYUN Piuthan 49.22 277 *e*P P **19 38 06.5 0.0**
TKM2 Tokmak 2 49.48 298 *e*P P **19 38 08.3 0.0**
TKM2 pmax pmax
comp=Z,7.0nm,0.8s
TKM2 Tokmak 2 49.48 298 *e*P P **19 38 08.3 0.0**
comp=Z,6.8nm,0.8s
ILAR Eielson Array 49.54 32 *e*P P **19 38 08.9 +0.8**
comp=Z,1.2nm,0.7s,baz=268,slow=6.4,SNR=13
ILB Eielson Array 49.54 32 *e*P P **19 38 09.0 +0.8**
KSH Kashi 50.25 294 P P 19 38 18.3 +4.2
KSH *e*pP pP 19 38 33.6 +5.7
KSH *e*PcP **PcP** **19 39 35.5 +3.0**
KSH pmax pmax
comp=Z,130nm,4.8s
AAK Ala-Archa 50.34 298 *e*P P **19 38 13.9 -0.9**
AAK pmax pmax
comp=Z,3.0nm,0.8s
AAK Ala-Archa 50.34 298 *e*P P **19 38 13.8 -1.0**
comp=Z,2.2nm,0.6s
BVAR Borovoye Array 50.43 312 P P **19 38 14.9 -0.2**
comp=Z,2.7nm,0.5s,baz=76,slow=7.1,SNR=34
BVAR PcP **PcP** **19 39 32.9 +0.2**
comp=Z,4.3nm,0.6s,baz=83,slow=2.9,SNR=13
BRVK Borovoye 50.49 312 *e*P P **19 38 14.9 -0.6**
BRVK *e* 19 39 33.0
BRVK pmax pmax
comp=Z,5.0nm,0.7s
BRVK Borovoye 50.49 312 *e*P P **19 38 14.8 -0.6**
comp=Z,5.4nm,0.7s
BRVK *e*PcP **PcP** **19 39 33.0 +0.1**
EKS2 Erkin-Say 50.84 299 *e*P P **19 38 18.0 -0.5**
EKS2 *e* 19 39 33.8
EKS2 pmax pmax
comp=Z,2.0nm,0.6s
EKS2 Erkin-Say 50.84 299 *e*P P **19 38 18.0 -0.5**
comp=Z,2.4nm,0.6s
EKS2 *e*PcP **PcP** **19 39 33.8 -0.7**
ZRNK Zerenda 51.27 312 *e*P P **19 38 20.9 -0.5**
ZRNK pmax pmax
comp=Z,7.0nm,0.8s
ZRNK Zerenda 51.27 312 *e*P P **19 38 20.9 -0.5**
comp=Z,7.1nm,0.8s
KKAR Karatay Array 52.98 300 *e*P P **19 38 34.1 -0.1**
KKAR *e* 19 39 41.6
KKAR Karatay Array 52.98 300 *e*P P **19 38 34.1 -0.1**
KKAR *e*PcP **PcP** **19 39 41.6 -0.9**
GSI Gunungsitoli 53.70 239 *e*P P **19 38 39.1 -0.7**
comp=Z,18nm,0.7s
INK Inuvik 54.41 27 P P **19 38 44.2 -0.1**
comp=Z,0.6nm,0.6s,baz=303,slow=2.4,SNR=3.9
SVE Sverdlovsk 55.02 319 *e*P P **19 38 49.2 +0.4**
SVE pmax pmax
comp=Z,21nm,0.9s
ARU Arti 56.23 318 *c i*P P **19 38 57.2 -0.4**
ARU *e* 19 39 54.2
ARU 19 41 00.3
ARU S **S** **19 46 44.7 +1.4**
ARU SS **SS** **19 50 25.4 -4.5**
ARU pmax pmax
comp=Z,17nm,0.7s
ARU Arti 56.23 318 *e*P P **19 38 56.8 -0.7**
comp=Z,20nm,0.9s
WR1 Warramunga Arr 57.08 188 *e*P P **19 39 03.3 -0.7**
comp=Z,9.2nm,0.7s
WRA Warramunga Arr 57.08 188 P P **19 39 03.3 -0.7**
comp=Z,2.3nm,0.6s,baz=4.7,slow=7.2,SNR=19
WRA Warramunga Arr 57.08 188 *c e*P P 19 39 10.8 +6.8
WRA pmax pmax
comp=Z,2.0nm,0.5s
KBL Kabul 57.26 291 *e*P P **19 39 04.4 -1.1**
KBL pmax pmax
comp=Z,7.0nm,1.0s
KBL Kabul 57.26 291 *e*P P **19 39 04.4 -1.1**
comp=Z,6.8nm,1.0s
ABKAR Akbulak Array 57.80 310 *e*P P **19 39 08.0 -0.8**
HYB Hyderabad 58.06 268 *i*P P **19 39 11.0 -0.1**
AKTO Aktyubinsk 58.54 312 P P **19 39 13.8 -0.2**
comp=Z,5.1nm,0.8s,baz=77,slow=11,SNR=14
AKTO PcP **PcP** **19 40 03.3 -0.5**
comp=Z,3.0nm,0.6s,baz=27,slow=3.5,SNR=5.3
AKTO LR LR 20 05 36.4
comp=Z,26nm,18.4s,baz=78,slow=37
AS01 Alice Springs 60.80 188 *e*P P **19 39 29.4 -0.3**
AS31 Alice Springs 60.81 188 *e*P P **19 39 30.7 +0.9**
comp=Z,1.1nm,0.8s
ASAR Alice Springs 60.81 188 P P **19 39 29.7 -0.1**
comp=Z,0.7nm,0.8s,baz=11,slow=8.5,SNR=7.4
GEYT Alibeck 63.69 299 P P **19 39 49.4 +0.4**
comp=Z,5.2nm,0.8s,baz=48,slow=2.2,SNR=14
YKA Yellowknife Ar 63.84 30 P P **19 39 50.3 +0.7**
comp=Z,0.5nm,0.7s,baz=302,slow=6.4,SNR=10
ARA0 ARCESS Array S 63.90 339 *e*P P **19 39 50.2 +0.3**
ARCES ARCESS Array B 63.90 339 P P **19 39 50.2 +0.3**
comp=Z,5.0nm,0.8s,baz=56,slow=8.4,SNR=12
ARCES LR LR 20 10 27.4
comp=Z,20nm,19.3s,baz=40,slow=39
GNW Green Mountain 67.32 47 *e*P P **19 40 13.7 +1.5**
VRH Novokhopyorsk 67.45 318 *e*P P **19 40 12.3 -0.7**
VRH pmax pmax
comp=Z,10.0nm,0.6s
OBN Obninsk 67.97 323 *e*P P **19 40 14.5 -1.7**
OBN *e* 19 42 41.6
OBN pmax pmax
comp=Z,4.0nm,1.0s
NEWO Newport DOGAMI 68.08 50 *e*P P **19 40 19.0 +1.8**
LPSR Galich'ya Gora 68.17 320 *e*P P **19 40 17.2 -0.3**
LPSR pmax pmax
comp=Z,7.0nm,0.6s
SEPW September Lobe 68.39 48 *e*P P **19 40 16.9 -2.5**
STKA Stephens Creek 68.60 180 P P **19 40 20.3 0.0**
comp=Z,1.4nm,0.8s,baz=352,slow=5.1,SNR=2.9
FIA1 FINESS Array S 68.71 332 *e*P P **19 40 20.8 +0.1**
FIA0 FINESS Array S 68.71 332 *e*P P **19 40 20.8 +0.1**
FIA0 FINESS Array S 68.71 332 *e*P P **19 40 20.8 +0.1**
FINES FINESS Array B 68.71 332 P P **19 40 20.8 +0.1**
comp=Z,5.7nm,0.6s,baz=42,slow=7.9,SNR=25
VSR Storozhevoye 68.80 319 *e*P P **19 40 20.9 -0.6**
VSR pmax pmax
comp=Z,9.0nm,0.7s
VSU Vasula 70.34 329 *c e*P P **19 40 31.1 +0.3**
VSU pmax pmax
comp=Z,32nm,1.7s
SUMG Summit 70.64 360 *i*P P **19 40 34.5 +1.5**
comp=Z,14nm,1.2s
SUMG Summit 70.64 360 *i*P P **19 40 34.5 +1.5**
SUMG pmax pmax
comp=Z,14nm,1.2s
SUMG Summit 70.64 360 *e*P P **19 40 33.5 +0.5**
comp=Z,9.7nm,1.1s
KBZ Khabaz 70.76 311 P P **19 40 34.0 +0.4**
comp=Z,6.0nm,0.9s,baz=49,slow=3.2,SNR=8.8
KIV Kislovodsk 70.77 311 *i*P P **19 40 34.4 +0.5**
KIV *e* 19 43 11.5
KIV *e*PPP PPP 19 44 47.7
KIV *e*SS SS 19 54 07.8 -9.1
KIV pmax pmax
comp=Z,10.0nm,1.2s
NC204 NORSAR Array S 74.05 338 *e*P P **19 40 52.8 -0.3**
NB2 NORSAR Subarra 74.09 337 P P **19 40 53.0 -0.3**
comp=Z,4.8nm,0.8s,baz=42,slow=6.2
NB200 NORSAR Array S 74.09 337 *e*P P **19 40 53.3 +0.1**
NOA NORSAR Array B 74.09 337 P P **19 40 53.3 +0.1**
comp=Z,4.0nm,0.7s,baz=39,slow=5.8,SNR=20
NOA LR LR 20 16 49.5
comp=Z,23nm,19.4s,baz=50,slow=38
AKASG Malin Array Be 74.17 322 P P **19 40 53.5 -0.4**
comp=Z,4.4nm,0.4s,baz=47,slow=6.1,SNR=18
AKASG LR LR 20 15 50.9
comp=Z,27nm,20.1s,baz=280,slow=38
KIEV Kiev 74.19 322 *e*P P **19 40 52.6 -1.3**
KIEV pmax pmax
comp=Z,11nm,1.2s
KIEV Kiev 74.19 322 *e*P P **19 40 52.5 -1.3**
comp=Z,11nm,1.2s
NBO02 NORSAR Array S 74.19 337 *e*P P **19 40 53.6 -0.2**
SORM Soroca 76.26 321 *i*P P **19 41 05.5 -0.4**
TCUT Toone Canyon 77.70 48 *e*P P **19 41 16.9 +2.4**
comp=Z,20nm,0.7s
PD31 Pinedale Array 77.74 45 *e*P P **19 41 15.2 +0.6**
PDAR Pinedale Array 77.74 45 P P **19 41 16.1 +1.4**
comp=Z,0.4nm,0.5s,baz=257,slow=3.1,SNR=5.7
BUR08 Bucovina Ar. S 78.17 322 *e*P P **19 41 17.0 +0.2**
BURAR Bucovina Array 78.19 322 *i*P P **19 41 17.2 +0.3**
TESR Tescani 78.21 320 *i*P P **19 41 16.8 -0.1**
VRI Vrincioaia 78.60 320 *i*P P **19 41 19.7 +0.6**
TIRR Tirgusor 78.64 318 *i*P P **19 41 20.0 +0.7**
PLOR Plostina 78.65 320 *i*P P **19 41 20.7 +1.3**
KOLS Kolonicke sedl 78.70 324 *e*P P **19 41 19.9 +0.3**
KOLS pmax pmax
comp=Z,11nm,1.7s
KOLS Kolonicke sedl 78.70 324 *e*P P **19 41 19.9 +0.3**
BR101 Keskin Array S 78.71 311 *e*P P **19 41 20.1 +0.1**
BR131 Keskin Array S 78.71 311 *e*P P **19 41 19.6 -0.3**
BRTR Keskin Array B 78.71 311 P P **19 41 20.1 +0.1**
comp=Z,1.7nm,0.7s,baz=102,slow=3.1,SNR=7.4
GRER 78.80 319 *i*P P **19 41 22.0 +1.9**
STHS Stebnicka Huta 78.84 325 *e*P P **19 41 21.3 +1.0**
STHS pmax pmax
comp=Z,3.0nm,1.0s
STHS Stebnicka Huta 78.84 325 *e*P P **19 41 21.3 +1.0**
OJC Ojcow 78.92 326 *e*P P **19 41 21.3 +0.6**
OJC Ojcow 78.92 326 *e*P P **19 41 19.9 -0.8**
OJC pmax pmax
comp=Z,9.0nm,1.0s
OJC Ojcow 78.92 326 *e*P P **19 41 19.9 -0.8**
comp=Z,9.1nm,1.0s
CRVS Cervenica-Dubn 79.10 324 *e*P P **19 41 22.9 +1.1**
CRVS Cervenica-Dubn 79.10 324 *e*P P **19 41 22.9 +1.1**
BR231 Keskin MP Arra 79.15 312 *e*P P **19 41 19.9 -2.4**
MSAB Monastry St. A 79.20 318 *i*P P **19 41 23.0 +0.7**
MLR Muntele Rosu 79.26 320 *i*P P **19 41 23.2 +0.4**
NIE Niedzica 79.27 325 *e*P P **19 41 23.7 +1.0**
NIE Niedzica 79.27 325 *e*P P **19 41 23.7 +1.0**
VOIR 79.75 320 *i*P P **19 41 26.3 +0.8**
LANS Liptovska Anna 79.84 325 *e*P P **19 41 26.8 +1.0**
LANS Liptovska Anna 79.84 325 *e*P P **19 41 26.8 +1.0**
DRGR 79.99 322 *i*P P **19 41 26.5 -0.2**
MORC Moravsky Berou 80.24 327 *i*P P **19 41 28.6 +0.6**
MORC Moravsky Berou 80.24 327 *e*P P **19 41 27.8 -0.2**
MORC pmax pmax
comp=Z,14nm,0.9s
MORC Moravsky Berou 80.24 327 *e*P P **19 41 27.8 -0.2**
comp=Z,14nm,0.9s
DPC Dobruska-Polom 80.34 328 *e*P P **19 41 29.3 +0.8**
DPC Dobruska-Polom 80.34 328 *e*P P **19 41 29.3 +0.8**
KRLC Kraliky 80.35 327 *e*P P **19 41 28.9 +0.4**
KRLC Kraliky 80.35 327 *e*P P **19 41 28.9 +0.4**
PSZ Piszkesteto 80.54 324 *i*P P **19 41 29.2 -0.4**
GLA Glamis 80.56 56 *e*P P **19 41 31.9 +1.9**
GLA pmax pmax
comp=Z,5.0nm,0.8s
GLA Glamis 80.56 56 *e*P P **19 41 31.9 +1.9**
comp=Z,5.1nm,0.8s
VYHS Vyhne 80.61 325 *e*P P **19 41 30.5 +0.6**
VYHS Vyhne 80.61 325 *e*P P **19 41 30.5 +0.6**
BRG Berggiesshubel 80.94 329 *e*P P **19 41 32.6 +1.0**
comp=Z,5.1nm,1.1s
BRG Berggiesshubel 80.94 329 *e*P P **19 41 32.6 +1.0**
BRG pmax pmax
comp=Z,5.0nm,1.1s
PVCC Panska Ves 80.95 329 *e*P P **19 41 32.5 +0.9**
PVCC Panska Ves 80.95 329 *e*P P **19 41 32.5 +0.9**
CLL Collm 80.98 330 *i*P P **19 41 31.9 +0.1**
comp=Z,6.0nm,0.9s
CLL *e* 19 41 41.0
CLL Collm 80.98 330 *i*P P **19 41 31.9 +0.1**
CLL pmax pmax
comp=Z,6.0nm,0.9s
VRAC Vranov 81.00 327 *i*P P **19 41 31.2 -0.8**
PRU Pruhonice 81.37 328 *e*P P **19 41 34.7 +0.8**
PRU Pruhonice 81.37 328 *e*P P **19 41 34.7 +0.8**
TREC Trest 81.49 328 *e*P P **19 41 35.3 +0.7**
TREC Trest 81.49 328 *e*P P **19 41 35.3 +0.7**
MDVR Moldovita 81.91 321 *i*P P **19 41 36.4 -0.5**
CONA Conrad Observa 82.36 326 *i*P P **19 41 39.9 +0.6**
comp=Z,2.5nm,0.6s
KHC Kasperske Hory 82.43 328 *e*P P **19 41 40.1 +0.5**
KHC Kasperske Hory 82.43 328 *e*P P **19 41 39.5 -0.1**
KHC pmax pmax
comp=Z,2.0nm,0.9s
KHC Kasperske Hory 82.43 328 *e*P P **19 41 39.5 -0.1**
comp=Z,1.7nm,0.9s
GEC2 GERESS Array S 82.60 328 *e*P P **19 41 40.3 -0.2**
GEC2 pmax pmax
comp=Z,6.0nm,1.3s
GEC2 GERESS Array S 82.60 328 *e*P P **19 41 40.3 -0.2**
comp=Z,6.3nm,1.3s
GERES GERESS Array B 82.60 328 P P **19 41 40.5 0.0**
comp=Z,2.1nm,0.5s,baz=41,slow=6.1,SNR=18
GEA0 GERESS Array S 82.60 328 *e*P P **19 41 40.2 -0.3**
EKA Eskdalemuir Ar 83.04 340 P P **19 41 42.8 +0.2**
comp=Z,1.4nm,0.7s,baz=29,slow=4.7,SNR=7.8
EKA Eskdalemuir Ar 83.04 340 P P **19 41 42.8 +0.2**
EKA pmax pmax
comp=Z,2.0nm,0.7s
SOKA Soboth 83.68 326 *i*P P **19 41 46.1 0.0**
comp=Z,2.6nm,0.8s
ABTA Abfaltersbach 84.73 327 *i*P P **19 41 50.9 -0.6**
comp=Z,2.2nm,0.7s
BFO Black Forest 85.19 331 *e*P P **19 41 53.7 0.0**
BFO pmax pmax
comp=Z,6.0nm,0.9s
BFO Black Forest 85.19 331 *e*P P **19 41 53.7 0.0**
comp=Z,6.0nm,0.9s
FETA Feichten 85.27 329 *i*P P **19 41 53.5 -0.7**
comp=Z,2.9nm,1.0s
LTX Lajitas 90.21 52 *e*P P **19 42 19.8 +1.6**
LTX Lajitas 90.21 52 *e*P P **19 42 19.8 +1.6**
TXAR Lajitas Array 90.21 52 P P **19 42 19.8 +1.6**
comp=Z,0.6nm,0.7s,baz=281,slow=4.1,SNR=4.4
TOA1 Torodi Ar. Sit 117.19 315 *e*PKPdf **PKPdf** **19 48 02.1 -0.8**
TORD Torodi Ar. Bea 117.20 315 PKP **PKPdf** **19 48 02.1 -0.8**
comp=Z,0.5nm,0.5s,baz=55,slow=1.2,SNR=8.2
DBIC Dimbokro 126.16 317 PKP **PKPdf** **19 48 20.3 +0.1**
comp=Z,1.8nm,0.5s,baz=356,slow=1.0,SNR=5.4
LPAZ La Paz 146.80 59 PKPbc **PKPbc** **19 49 01.1 +0.6**
comp=Z,1.6nm,0.6s,baz=15,slow=5.9,SNR=8.3

MAN 19 19:30:26, 17.89N×120.51E, h29km, mb4.2, ML3.0, MS2.7, 1D, Luzon

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
SIPP	**Brgy, Tapao**	**0.06**	**300**	*i*P	Pb	19 30 32.3	+1.3
SIPP				*e*S	Sb	19 30 37.0	+2.7
ABRA	**Dolores**	**0.31**	**142**	*e*P	Pb	19 30 31.4	-2.1
ABRA				*e*S	Sb	19 30 35.5	-3.1
APYP	**Conner**	**0.70**	**93**	*e*P	Pn	19 30 39.9	-0.1
APYP				*e*S	Sn	19 30 50.3	+0.5
SGCP	**Mt. Cagua**	**1.50**	**76**	*e*P	Pb	19 30 53.2	0.0
SGCP				*e*S	Sb	19 31 25.0	+13
CAUP	**Cauayan**	**1.57**	**127**	*e*P	Pb	19 30 54.1	-0.3
BALP	**Baler**	**2.37**	**154**	*e*P	Pn	19 31 03.6	+0.7

*CRAAG **19** 19:33:05.6, 36.41N×2.83E, Ml3.8*
*CSEM **19** 19:33:06.7±0.2, 36.38N×2.74E, h10km, ML3.8, Error ellipse: s-maj=6.6km s-min=5.0km az=176.0*
*MDD **19** 19:33:07.0±0.4, 36.40N×2.74E, h0km, mb4.0/8, Error ellipse: s-maj=5.7km s-min=4.6km az=32.0, PRXIMO*

ISC 19 19:33:06.4±0.9, 36.40N±0.03×2.81E±0.03, h18km, n51, σ1.950/74, Northern Algeria

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
EMHD	**Djebel Mahouad**	**0.23**	**149**	P	**Pg**	**19 33 11.5**	**-0.3**
EMHD	**Djebel Mahouad**	**0.23**	**149**	P	**Pg**	**19 33 11.5**	**-0.3**
EMHD	**Djebel Mahouad**	**0.23**	**149**	P	**Pg**	**19 33 11.5**	**-0.3**
ABA	**Alger-Bouzarea**	**0.44**	**24**	P	**Pg**	**19 33 15.4**	**-0.1**
ABA	**Alger-Bouzarea**	**0.44**	**24**	P	**Pg**	**19 33 15.4**	**-0.1**
ABA	**Alger-Bouzarea**	**0.44**	**24**	P	**Pg**	**19 33 15.4**	**-0.1**
ADJB	**Djebel Djouab**	**0.56**	**115**	P	**Pg**	**19 33 17.8**	**+0.1**
ADJB	**Djebel Djouab**	**0.56**	**115**	P	**Pg**	**19 33 17.8**	**+0.1**
EBNR	**Beni Rached**	**1.04**	**265**	P	**Pg**	**19 33 26.4**	**-0.1**
EBNR	**Beni Rached**	**1.04**	**265**	P	**Pg**	**19 33 26.4**	**-0.1**
ECHA	**Ech Chlef**	**1.19**	**258**	P	**Pb**	**19 33 28.5**	**+0.1**
ECHA	**Ech Chlef**	**1.19**	**258**	P	**Pb**	**19 33 28.5**	**+0.1**
ECHF	**Ech Chlef**	**1.21**	**259**	P	**Pb**	**19 33 28.5**	**-0.2**
ECHF	**Ech Chlef**	**1.21**	**259**	P	**Pb**	**19 33 28.5**	**-0.2**
ATAF	**Djebel Tarf**	**1.30**	**113**	P	**Pg**	**19 33 32.8**	**+1.3**
ATAF	**Djebel Tarf**	**1.30**	**113**	P	**Pg**	**19 33 32.8**	**+1.3**
ATAF	**Djebel Tarf**	**1.30**	**113**	P	**Pg**	**19 33 32.8**	**+1.3**
EANR	**'Ain N'Sour**	**1.45**	**253**	P	**Pn**	**19 33 31.0**	**-0.8**
EANR	**'Ain N'Sour**	**1.45**	**253**	P	**Pn**	**19 33 31.0**	**-0.8**
EANR	**'Ain N'Sour**	**1.45**	**253**	P	**Pn**	**19 33 31.0**	**-0.8**
ETRT	**Tiaret**	**1.58**	**231**	P	**Pb**	**19 33 35.5**	**+0.3**
ETRT	**Tiaret**	**1.58**	**231**	P	**Pb**	**19 33 35.5**	**+0.3**
ETRT	**Tiaret**	**1.58**	**231**	P	**Pb**	**19 33 35.5**	**+0.3**
OKGL	**Djebel Kef Gue**	**1.79**	**259**	P	**Pn**	**19 33 36.4**	**+0.1**
	42nm,0.2s,SNR=7.9						
OKGL				S	**Sb**	**19 34 00.2**	**-0.4**
	707nm,0.4s,SNR=7.9						
OKGL	**Djebel Kef Gue**	**1.79**	**259**	P	**Pn**	**19 33 36.4**	**+0.1**
	42nm,0.2s,SNR=7.9						
OKGL				S	**Sb**	**19 34 00.2**	**-0.4**
	707nm,0.4s,SNR=7.9						
SET	**Setif**	**2.10**	**95**	P	**Pg**	**19 33 47.0**	**+0.2**
ODJA	**Bouhanifia**	**2.63**	**247**	P	**Pg**	**19 34 00.0**	**+3.3**
ETOS	**Mallorca**	**3.37**	**0**	P	**Pn**	**19 33 59.3**	**+1.2**
	2.4nm,0.3s,SNR=25						
ETOS				S	**Sn**	**19 34 35.6**	**-1.9**
	2.2nm,0.2s,SNR=4.8						
ETOS	**Mallorca**	**3.37**	**0**	P	**Pn**	**19 33 59.3**	**+1.2**
	2.4nm,0.3s,SNR=25						
ETOS				S	**Sn**	**19 34 35.6**	**-1.9**
	2.2nm,0.2s,SNR=4.8						
AFON	**Font Roja**	**3.49**	**311**	P	**Pn**	**19 34 01.4**	**+1.5**
	0.1nm,0.1s,SNR=7.9						
AFON				S	**Sn**	**19 34 39.8**	**-1.1**
	2.4nm,0.3s,SNR=4.0						
AFON	**Font Roja**	**3.49**	**311**	P	**Pn**	**19 34 01.4**	**+1.5**
	0.1nm,0.1s,SNR=7.9						
AFON				S	**Sn**	**19 34 39.8**	**-1.1**
	2.4nm,0.3s,SNR=4.0						
EMUR	**La Murta**	**3.54**	**295**	P	**Pn**	**19 34 01.6**	**+1.1**
	4.7nm,0.4s,SNR=7.9						
EMUR				S	**Sn**	**19 34 40.3**	**-1.6**
	3.2nm,0.3s,SNR=7.9						
EMUR	**La Murta**	**3.54**	**295**	P	**Pn**	**19 34 01.6**	**+1.1**
	4.7nm,0.4s,SNR=7.9						
EMUR				S	**Sn**	**19 34 40.3**	**-1.6**
	3.2nm,0.3s,SNR=7.9						
ETOB	**Tobarra**	**4.12**	**304**	P	**Pn**	**19 34 09.7**	**+1.2**
	1.4nm,0.2s,SNR=16						
ETOB				S	**Sn**	**19 34 54.4**	**-2.0**
	2.7nm,0.2s						
ETOB	**Tobarra**	**4.12**	**304**	P	**Pn**	**19 34 09.7**	**+1.2**
	1.4nm,0.2s,SNR=16						
ETOB				S	**Sn**	**19 34 54.4**	**-2.0**
	2.7nm,0.2s						
SESP	**Santiago Espad**	**4.60**	**294**	P	**Pn**	**19 34 16.8**	**+1.6**
	4.0nm,0.2s,SNR=7.9						
SESP				S	**Sn**	**19 35 07.4**	**-0.9**
	1.6nm,0.2s,SNR=7.9						
SESP	**Santiago Espad**	**4.60**	**294**	P	**Pn**	**19 34 16.8**	**+1.6**
	4.0nm,0.2s,SNR=7.9						
SESP				S	**Sn**	**19 35 07.4**	**-0.9**
	1.6nm,0.2s,SNR=7.9						
EBER	**Berja**	**4.61**	**278**	P	**Pn**	**19 34 14.8**	**-0.5**
	0.9nm,0.2s,SNR=7.5						
EBER				S	**Sn**	**19 35 06.5**	**-1.9**
	0.6nm,0.1s						
EBER	**Berja**	**4.61**	**278**	P	**Pn**	**19 34 14.8**	**-0.5**
	0.9nm,0.2s,SNR=7.5						
EBER				S	**Sn**	**19 35 06.5**	**-1.9**
	0.6nm,0.1s						
EMOS	**Mosqueruela**	**4.72**	**328**	P	**Pn**	**19 34 18.6**	**+1.7**
	1.6nm,0.2s,SNR=18						
EMOS				S	**Sn**	**19 35 09.2**	**-2.1**
	2.3nm,0.2s						
EMOS	**Mosqueruela**	**4.72**	**328**	P	**Pn**	**19 34 18.6**	**+1.7**
	1.6nm,0.2s,SNR=18						
EMOS				S	**Sn**	**19 35 09.2**	**-2.1**
	2.3nm,0.2s						
EQES	**Quesada**	**4.90**	**288**	P	**Pn**	**19 34 21.4**	**+2.1**
	0.9nm,0.1s,SNR=9.5						
EQES				S	**Sn**	**19 35 15.3**	**-0.3**
	5.3nm,0.5s,SNR=4.9						
EQES	**Quesada**	**4.90**	**288**	P	**Pn**	**19 34 21.4**	**+2.1**
	0.9nm,0.1s,SNR=9.5						
EQES				S	**Sn**	**19 35 15.3**	**-0.3**
	5.3nm,0.5s,SNR=4.9						
EPOB	**Poblet**	**5.13**	**345**	P	**Pn**	**19 34 23.9**	**+1.5**
	0.3nm,0.2s,SNR=4.0						
EPOB				S	**Sn**	**19 35 18.8**	**-2.3**
	0.2nm,0.1s,SNR=7.9						
EPOB	**Poblet**	**5.13**	**345**	P	**Pn**	**19 34 23.9**	**+1.5**
	0.3nm,0.2s,SNR=4.0						
EPOB				S	**Sn**	**19 35 18.8**	**-2.3**
	0.2nm,0.1s,SNR=7.9						
CFON	**Fontmartina**	**5.37**	**357**	P	**Pn**	**19 34 27.7**	**+2.1**
	2.4nm,0.2s,SNR=8.5						
CFON				S	**Sn**	**19 35 23.3**	**-3.6**
	1.1nm,0.1s						
CFON	**Fontmartina**	**5.37**	**357**	P	**Pn**	**19 34 27.7**	**+2.1**
	2.4nm,0.2s,SNR=8.5						
CLLI	**Llivia**	**6.11**	**354**	P	**Pn**	**19 34 38.8**	**+3.0**
	1.4nm,0.4s,SNR=7.9						
CLLI				S	**Sn**	**19 35 43.0**	**-2.4**
	0.4nm,0.2s,SNR=7.9						
CLLI	**Llivia**	**6.11**	**354**	P	**Pn**	**19 34 38.8**	**+3.0**
	1.4nm,0.4s,SNR=7.9						
CSOR	**Sort**	**6.11**	**348**	P	**Pn**	**19 34 36.6**	**+0.8**
	0.7nm,0.2s,SNR=7.9						
CSOR				S	**Sn**	**19 35 42.8**	**-2.5**
	0.2nm,0.2s,SNR=7.9						
CSOR	**Sort**	**6.11**	**348**	P	**Pn**	**19 34 36.6**	**+0.8**
	0.7nm,0.2s,SNR=7.9						

JMA 19 19:34:00.5±0.1, 39.45N×142.85E, h26km±1km, M3.6, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
MIYJ	**Miyakonagasawa**	**0.81**	**279**	P	Pb	19 34 15.6	-0.3
MIYJ				*e*S	Sb	19 34 26.0	-0.4
JTH	**Tanohata**	**0.90**	**303**	P	Pn	19 34 17.0	-0.5
JTH				S	Sb	19 34 29.2	0.0
OFUJ	**Ofunato**	**0.99**	**248**	P	Pn	19 34 18.4	-0.3
OFUJ				*e*S	Sb	19 34 31.6	0.0
JOM	**Ohasama**	**1.21**	**272**	P	Pn	19 34 21.9	+0.2
JOM				S	Sb	19 34 37.6	-0.2
JKZ	**Kuzumaki**	**1.29**	**295**	P	Pn	19 34 23.3	+0.4
JKZ				S	Sb	19 34 39.8	-0.4
JMK	**Ichinoseki**	**1.36**	**249**	P	Pn	19 34 24.5	+0.7
JMK				*e*S	Sb	19 34 42.0	-0.2
JANG	**Nango**	**1.38**	**312**	P	Pb	19 34 25.0	-0.6
JIO	**Ouri**	**1.54**	**230**	P	Pn	19 34 26.7	+0.5
JRG	**Rokugo**	**1.72**	**269**	P	Pb	19 34 30.4	-1.0
JAH	**Hinai**	**1.86**	**294**	P	Pb	19 34 32.2	-1.6
JTM	**Tenmabayashi**	**1.91**	**315**	P	Pn	19 34 32.6	+1.2
JTM				*e*S	Sn	19 34 56.2	+1.6

IDC 19 19:44:18.8±1.4, 48.48S×107.78E, h0km, mb3.8/4, mb1 4.1/4, mb1mx3.8/18, mbtmp3.8/4, MS3.8/11, Ms1 3.8/11, ms1mx3.5/29, Error ellipse: s-maj=55.2km s-min=28.0km az=95.0, Southeast Indian Ridge

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
H01W2	**Cape Leeuwin H**	**14.37**	**22**	T	T	20 02 23.9	
	baz=198,slow=74,SNR=45						
H01W1	**Cape Leeuwin H**	**14.38**	**22**	T	T	20 02 26.2	
	baz=198,slow=74,SNR=58						
H01W3	**Cape Leeuwin H**	**14.38**	**22**	T	T	20 02 25.3	
	baz=198,slow=74,SNR=59						
MAW	**Mawson**	**29.53**	**213**	LR	LR	19 59 36.4	
	comp=Z,119nm,18.1s,baz=58,slow=31						
STKA	**Stephens Creek**	**30.39**	**69**	LR	LR	20 00 41.3	
	comp=Z,108nm,20.4s,baz=207,slow=32						
ASAR	**Alice Springs**	**32.25**	**49**	P	P	19 50 48.8	-0.1
	1.3nm,1.1s,baz=207,slow=7.3,SNR=5.3						
VNDA	**Vanda**	**35.56**	**162**	P	P	19 51 16.9	-0.1
	1.3nm,0.9s,baz=287,slow=8.4,SNR=5.9						
VNDA				LR	LR	20 04 59.0	
	comp=Z,315nm,18.3s,baz=291,slow=35						
WRA	**Warramunga Arr**	**35.61**	**46**	P	P	19 51 17.9	-0.1
	2.1nm,0.9s,baz=210,slow=8.2,SNR=6.0						
SNAA	**Sanae**	**50.66**	**203**	P	P	19 53 17.4	-1.8
PMG	**Port Moresby**	**51.05**	**54**	LR	LR	20 14 43.9	
	comp=Z,39nm,18.6s,baz=204,slow=36

DZM	**Mont Dzumac**	**53.14**	**82**	LR	LR	20 12 12.2	
	comp=Z,49nm,18.6s,baz=217,slow=32						
HNR	**Honiara**	**58.38**	**66**	LR	LR	20 15 51.4	
	comp=Z,44nm,19.2s,baz=154,slow=32						
BOSA	**Boshof**	**64.42**	**255**	LR	LR	20 17 09.3	
	comp=Z,40nm,19.9s,baz=196,slow=31						
CMAR	**Chiang Mai Arr**	**67.09**	**351**	P	P	19 55 14.4	+0.5
	0.8nm,1.0s,baz=169,slow=5.4,SNR=4.3						
CMAR				LR	LR	20 23 45.3	
	comp=Z,52nm,18.5s,baz=151,slow=35						
AFI	**Afiamalu**	**73.41**	**92**	LR	LR	20 20 30.5	
	comp=Z,68nm,18.9s,baz=280,slow=30						
RAR	**Rarotonga**	**76.00**	**106**	LR	LR	20 23 55.4	
	comp=Z,98nm,19.0s,baz=247,slow=31						
PLCA	**Paso Flores**	**91.16**	**181**	LR	LR	20 38 08.6	
	comp=Z,91nm,18.3s,baz=188,slow=35						
NVAR	**Mina Array Bea**	**145.54**	**89**	PKPbc	PKPab	20 03 59.4	+0.3
	0.4nm,0.5s,baz=234,slow=6.4,SNR=5.7						
TXAR	**Lajitas Array**	**149.26**	**117**	PKPbc	PKPbc	20 04 08.8	-0.5
	1.0nm,0.8s,baz=191,slow=5.1,SNR=4.8						
YKA	**Yellowknife Ar**	**152.79**	**43**	PKPbc	PKPbc	20 04 14.7	-1.5
	0.1nm,0.3s,baz=284,slow=1.9,SNR=3.6						

JMA 19 19:44:37.4±0.2, 38°.03N×142°.84E, h37km, M3.5, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**1.25**	**290**	P	Pn	19 44 58.8	+0.6
JIO				*e*S	Sn	19 45 14.7	+0.9
OFUJ	**Ofunato**	**1.39**	**319**	P	Pn	19 45 01.1	+0.8
JMK	**Ichinoseki**	**1.57**	**306**	P	Pn	19 45 03.6	+0.9
JMM	**Marumori**	**1.63**	**265**	P	Pn	19 45 04.4	+0.9
JMM				*e*S	Sn	19 45 24.9	+1.8
JFK	**Kawauchi**	**1.69**	**248**	P	Pn	19 45 05.0	+0.6
MIYJ	**Miyakonagasawa**	**1.74**	**333**	P	Pn	19 45 06.3	+1.3
MIYJ				*e*S	Sn	19 45 27.4	+1.5
JOU	**Okura**	**1.75**	**282**	P	Pn	19 45 06.8	+1.7
JOM	**Ohasama**	**1.88**	**320**	S	Sn	19 45 31.6	+2.1

IDC 19 19:44:51.7±2.0, 7°.05S×128°.86E, h0km, mb3.3/1, mb1 3.3/3, mb1mx3.1/36, mbtmp3.1/3, ML3.1/2, Error ellipse: s-maj=132.2km s-min=31.6km az=67.0, Banda Sea

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
WRA	**Warramunga Arr**	**13.87**	**158**	Pn	Pn	19 48 08.7	-1.0
	0.1nm,0.3s,baz=337,slow=11,SNR=8.3						
WRA				Sn	Sn	19 50 32.0	-13
	0.3nm,0.3s,baz=335,slow=22,SNR=8.4						
ASAR	**Alice Springs**	**17.21**	**164**	P	P	19 48 54.6	-0.8
	0.1nm,0.3s,baz=339,slow=9.8,SNR=6.5						
MKAR	**Makanchi Array**	**67.66**	**327**	P	P	19 55 50.7	0.0
	0.1nm,0.4s,baz=131,slow=7.7,SNR=3.3						

IDC 19 19:52:59.9±346.0, 56°.45N×29°.24E, h0km, Error ellipse: s-maj=143.8km s-min=89.3km az=89.0, Baltic States-Belarus-Northwestern Russia

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
I43RU	**DUBNA INFRASON**	**4.42**	**83**	*i*		20 20 10.0	
	baz=269,slow=327,SNR=2.0						
I26DE	**FREYUNG INFRAS**	**12.09**	**238**	*i*		21 10 30.0	
	baz=44,slow=326,SNR=0.5						
I48TN	**KESRA INFRASON**	**24.66**	**222**	*i*		22 23 52.9	
	baz=23,slow=304,SNR=0.3						

IDC 19 19:53:16.1±2.8, 4°.66N×93°.28E, h0km, mb3.3/3, mb1 3.4/4, mb1mx3.2/46, mbtmp3.2/4, ML3.5/1, Error ellipse: s-maj=107.5km s-min=32.3km az=61.0, Off west coast of northern Sumatera

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CMAR	**Chiang Mai Arr**	**14.79**	**22**	Pn	Pn	19 56 46.4	-0.4
	0.1nm,0.3s,baz=214,slow=12,SNR=3.7						
MKAR	**Makanchi Array**	**43.04**	**349**	P	P	20 01 17.3	-0.3
	0.3nm,0.5s,baz=171,slow=8.6,SNR=4.2						
KURBB	**Kurchatov Arra**	**47.45**	**347**	P	P	20 01 52.8	+0.2
	0.2nm,0.5s,baz=171,slow=6.6,SNR=3.0						
ASAR	**Alice Springs**	**48.59**	**127**	P	P	20 02 01.7	-0.2
	0.2nm,0.8s,baz=303,slow=8.5,SNR=1.8						

*IASPEI **19** 20:04:41.8±0.9, 44°.31N±0°.02×7°.42E±0°.02, h22km±2km, Error ellipse: s-maj=3.2km s-min=2.3km az=73.9, GT5 selection from ISC bulletin GT5 identified by Bondˇjr and McLaughlin (2009) selection criteria Bondˇjr and McLaughlin, A new ground truth data set for seismic studies, Seism. Res. Let., 80, 465-472, 2009*

*ROM **19** 20:04:41.9±0.2, 44°.33N×7°.41E, h17km±3km, Md3.1/16, Ml2.8/17, Error ellipse: s-maj=4.0km s-min=1.6km az=41.0*

*ISCJB **19** 20:04:42.0±0.2, 44°.30N±0°.01×7°.41E±0°.02, h23km±2km, Error ellipse: s-maj=2.6km s-min=2.1km az=144.4*

*CSEM **19** 20:04:41.8±0.1, 44°.32N×7°.36E, h18km±1km, ML3.1/26, Error ellipse: s-maj=2.6km s-min=2.2km az=56.0*

*LDG **19** 20:04:42.7±0.1, 44°.29N×7°.39E, h10km, Md3.1/4, Ml3.0/39, Error ellipse: s-maj=1.6km s-min=1.3km az=63.0*

*GEN **19** 20:04:42.5, 44°.31N×7°.39E, h14km, ML2.8*

*STR **19** 20:04:43.2±0.2, 44°.28N×7°.29E, h5km, Ml3.0, Error ellipse: s-maj=0.0km s-min=0.0km az=0.0*

ISC 19 20:04:41.8±0.8, 44°.31N±0°.01×7°.42E±0°.02, h22km±2km, n143, σ1§59/225, Northern Italy

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ENR	**Entracque**	**0.08**	**178**	P	**Pb**	**20 04 45.6**	**-0.4**
ENR				S	**Sb**	**20 04 47.4**	**-1.4**
STV	**Sant Anna di V**	**0.09**	**228**	Pg	**Pb**	**20 04 45.7**	**-0.4**
STV				Sg	**Sb**	**20 04 47.5**	**-1.4**
	7µm,0.1s						
STV	**Sant Anna di V**	**0.09**	**228**	P	**Pb**	**20 04 45.7**	**-0.4**
STV				S	**Sb**	**20 04 47.5**	**-1.4**
DOI	**San Damiano**	**0.23**	**329**	Pg	**Pb**	**20 04 48.0**	**+0.1**
DOI				Sg	**Sb**	**20 04 51.6**	**-0.6**
	3µm,0.3s						
DOI	**San Damiano**	**0.23**	**329**	Pg	**Pb**	**20 04 48.0**	**+0.1**
DOI				Sg	**Sb**	**20 04 51.6**	**-0.6**
	3µm,0.3s						
PZZ	**Stroppo**	**0.29**	**313**	Pg	**Pb**	**20 04 48.8**	**+0.1**
PZZ				Sg	**Sb**	**20 04 53.1**	**-0.3**
	3µm,0.4s						
PZZ	**Stroppo**	**0.29**	**313**	P	**Pb**	**20 04 48.8**	**+0.1**
PZZ				S	**Sb**	**20 04 53.0**	**-0.3**
LUCF	**Luceram**	**0.41**	**187**	Pg	**Pb**	**20 04 50.4**	**-0.1**
LUCF				Sg	**Sb**	**20 04 56.0**	**-0.4**
SBF	**Sospel**	**0.44**	**178**	*e*Pg	**Pb**	**20 04 51.2**	**+0.3**
SBF				*e*Sg	**Sb**	**20 04 56.8**	**-0.3**
	3µm,0.4s						
SBF	**Sospel**	**0.44**	**178**	*e*Pg	**Pb**	**20 04 51.2**	**+0.3**
SBF				*e*Sg	**Sb**	**20 04 56.8**	**-0.3**
	2µm,0.4s						
MVIF	**Mont Vial**	**0.45**	**205**	Pg	**Pb**	**20 04 50.8**	**-0.4**
MVIF				Sg	**Sb**	**20 04 56.7**	**-0.8**
NEGI	**Seborga**	**0.50**	**156**	P	**Pb**	**20 04 52.5**	**+0.5**
NEGI				S	**Sb**	**20 04 59.2**	**+0.3**
RORO	**Rocca Rossa**	**0.51**	**112**	Pg	**Pb**	**20 04 52.4**	**+0.4**
RORO				Sg	**Sb**	**20 04 59.4**	**+0.5**
	581nm,0.2s						
RORO	**Rocca Rossa**	**0.51**	**112**	P	**Pb**	**20 04 52.4**	**+0.4**
RORO				S	**Sb**	**20 04 59.4**	**+0.5**
IMI	**Imperia**	**0.52**	**139**	Pg	**Pb**	**20 04 52.7**	**+0.4**
IMI				Sg	**Sb**	**20 04 59.8**	**+0.2**
	2µm,0.3s						
IMI	**Imperia**	**0.52**	**139**	P	**Pb**	**20 04 52.8**	**+0.4**
IMI				S	**Sb**	**20 04 59.8**	**+0.2**
BHB	**Bricherasio**	**0.55**	**349**	Pg	**Pb**	**20 04 52.3**	**-0.5**
BHB				Sg	**Sb**	**20 04 59.2**	**-1.1**
	342nm,0.1s						
BHB	**Bricherasio**	**0.55**	**349**	P	**Pb**	**20 04 52.3**	**-0.5**
BHB				S	**Sb**	**20 04 59.2**	**-1.1**
REVF	**Revere**	**0.57**	**184**	Pg	**Pb**	**20 04 53.2**	**0.0**
REVF				Sg	**Sb**	**20 05 00.7**	**-0.1**
REVF	**Revere**	**0.57**	**184**	Pg	**Pb**	**20 04 53.2**	**0.0**
REVF				Sg	**Sb**	**20 05 00.7**	**-0.1**
OG22	**Abries**	**0.62**	**327**	Pg	**Pb**	**20 04 53.9**	**-0.2**
OG22				Sg	**Sb**	**20 05 02.0**	**-0.5**
OG22	**Abries**	**0.62**	**327**	Pg	**Pb**	**20 04 53.9**	**-0.2**
OG22				Sg	**Sb**	**20 05 02.0**	**-0.5**
MBDF	**Montbardon**	**0.62**	**313**	*e*Pg	**Pb**	**20 04 54.4**	**+0.1**
MBDF				*e*Sg	**Sb**	**20 05 02.6**	**-0.1**
	992nm,0.3s						
MBDF	**Montbardon**	**0.62**	**313**	*e*Pg	**Pb**	**20 04 54.4**	**+0.1**
MBDF				*e*Sg	**Sb**	**20 05 02.6**	**-0.1**
	496nm,0.3s						
FINB	**Finale Ligure**	**0.67**	**101**	Pg	**Pb**	**20 04 55.6**	**+0.8**
FINB				Sg	**Sb**	**20 05 04.4**	**+0.8**
	1µm,0.3s						
FINB	**Finale Ligure**	**0.67**	**101**	Pg	**Pb**	**20 04 55.6**	**+0.8**
FINB				Sg	**Sb**	**20 05 04.4**	**+0.8**
	1µm,0.3s						
QLNO	**Quiliano**	**0.67**	**88**	Pg	**Pb**	**20 04 55.8**	**+1.0**
QLNO				Sg	**Sb**	**20 05 04.8**	**+1.1**
	565nm,0.3s						
QLNO	**Quiliano**	**0.67**	**88**	Pg	**Pb**	**20 04 55.8**	**+1.0**
QLNO				Sg	**Sb**	**20 05 04.8**	**+1.1**
	565nm,0.3s						
CALN	**Calern**	**0.67**	**215**	Pg	**Pb**	**20 04 55.3**	**+0.3**
CALN				Sg	**Sb**	**20 05 03.0**	**-0.9**
CALN	**Calern**	**0.67**	**215**	Pg	**Pb**	**20 04 55.3**	**+0.3**
CALN				Sg	**Sb**	**20 05 03.0**	**-0.9**
RRL	**Rocca Remolon**	**0.76**	**324**	Pg	**Pb**	**20 04 56.5**	**0.0**
RRL				Sg	**Sb**	**20 05 06.4**	**-0.2**
	160nm,0.5s						
RRL	**Rocca Remolon**	**0.76**	**324**	P	**Pb**	**20 04 56.5**	**0.0**
RRL				Sg	**Sb**	**20 05 06.4**	**-0.2**
	160nm,0.5s						
PCP	**Piancastagn**	**0.84**	**73**	Pg	**Pn**	**20 04 58.6**	**+0.1**
	259nm,0.3s						
PCP	**Piancastagn**	**0.84**	**73**	Pg	**Pn**	**20 04 58.6**	**+0.1**
	259nm,0.3s						
RSP	**Reno Superiore**	**0.85**	**353**	Pg	**Pb**	**20 04 57.1**	**-0.9**
	100nm,0.2s						
RSP	**Reno Superiore**	**0.85**	**353**	P	**Pb**	**20 04 57.1**	**-0.9**
MONC	**Moncucco Torin**	**0.85**	**25**	Pg	**Pn**	**20 04 58.6**	**+0.1**
	752nm,0.4s						
MONC	**Moncucco Torin**	**0.85**	**25**	Pg	**Pn**	**20 04 58.6**	**+0.1**
	752nm,0.4s						
ROTM	**Rocchetta Tana**	**0.86**	**51**	P	**Pn**	**20 05 00.3**	**+1.6**
FRF	**La Foret Royal**	**0.93**	**217**	*e*Pg	**Pn**	**20 04 59.5**	**-0.1**
FRF	**La Foret Royal**	**0.93**	**217**	*e*P	**Pn**	**20 05 01.0**	**+1.4**
FRF				*e*Sg	**Sb**	**20 05 11.3**	**+0.2**
	204nm,0.2s						
FRF	**La Foret Royal**	**0.93**	**217**	*e*Pg	**Pn**	**20 04 59.5**	**-0.1**
FRF	**La Foret Royal**	**0.93**	**217**	*e*P	**Pn**	**20 05 01.0**	**+1.4**
FRF				*e*Sg	**Sb**	**20 05 11.3**	**+0.2**
	102nm,0.2s						
LMR	**La Mourre**	**1.17**	**214**	*e*Pn	**Pb**	**20 05 03.4**	**0.0**
LMR	**La Mourre**	**1.17**	**214**	*e*Pg	**Pb**	**20 05 04.1**	**+0.7**
LMR				*e*Sg	**Sn**	**20 05 19.0**	**+0.8**
	837nm,0.4s						
LMR	**La Mourre**	**1.17**	**214**	*e*Pn	**Pb**	**20 05 03.4**	**0.0**
LMR	**La Mourre**	**1.17**	**214**	*e*Pg	**Pb**	**20 05 04.1**	**+0.7**
LMR				*e*Sg	**Sn**	**20 05 19.0**	**+0.8**
	418nm,0.4s						
LSD	**Lago del Serru**	**1.17**	**350**	Pg	**Pn**	**20 05 02.4**	**-0.7**
LSD				Sg	**Sb**	**20 05 17.3**	**-1.1**
	75nm,0.4s						
LSD	**Lago del Serru**	**1.17**	**350**	P	**Pn**	**20 05 02.5**	**-0.7**
LSD				Sg	**Sb**	**20 05 17.3**	**-1.1**
	75nm,0.4s						
LSD				S	**Sn**	**20 05 18.9**	**+0.3**
ORIF	**Oris-en-Rattie**	**1.26**	**300**	*e*Pg	**Pb**	**20 05 05.7**	**+0.8**
ORIF				*e*Sg	**Sb**	**20 05 22.0**	**+1.3**
	123nm,0.4s						
LPG	**La Plagne**	**1.28**	**339**	*e*Pn	**Pb**	**20 05 05.1**	**-0.4**
LPG	**La Plagne**	**1.28**	**339**	*e*Pg	**Pb**	**20 05 07.0**	**+1.5**
LPG				*e*Sg	**Sb**	**20 05 23.5**	**+1.9**
	76nm,0.3s						
LPG	**La Plagne**	**1.28**	**339**	*e*Pg	**Pb**	**20 05 07.0**	**+1.5**
LPG				*e*Sg	**Sb**	**20 05 23.5**	**+1.9**
	38nm,0.3s						
GDM	**Grand'Maison**	**1.29**	**315**	Pn	**Pb**	**20 05 06.5**	**+1.0**
GDM				Sg	**Sb**	**20 05 23.5**	**+1.8**
CIRO	**Champorcher**	**1.30**	**5**	Pg	**Pn**	**20 05 04.1**	**-0.9**
	34nm,0.6s						
CIRO	**Champorcher**	**1.30**	**5**	P	**Pn**	**20 05 04.0**	**-0.9**
CIRO				S	**Sn**	**20 05 19.9**	**-2.0**
LPL	**La Plagne**	**1.30**	**338**	*e*Pn	**Pb**	**20 05 05.6**	**-0.2**
LPL	**La Plagne**	**1.30**	**338**	*e*Pg	**Pb**	**20 05 07.4**	**+1.6**
LPL				*e*Sg	**Sb**	**20 05 24.2**	**+2.0**
	104nm,0.4s						
LPL	**La Plagne**	**1.30**	**338**	*e*Pg	**Pb**	**20 05 07.4**	**+1.6**
LPL				*e*Sg	**Sb**	**20 05 24.2**	**+2.0**
	52nm,0.4s						
SMRF	**Simiane la Rot**	**1.37**	**257**	*e*Pg	**Pb**	**20 05 07.6**	**+0.9**
SMRF				*e*Sg	**Sb**	**20 05 25.1**	**+1.4**
	95nm,0.3s						
SMRF	**Simiane la Rot**	**1.37**	**257**	*e*Pg	**Pb**	**20 05 07.6**	**+0.9**
SMRF				*e*Sg	**Sb**	**20 05 25.1**	**+1.4**
	48nm,0.3s						
LEPF	**PUYLOUBIER**	**1.47**	**238**	Pg	**Pb**	**20 05 08.4**	**0.0**
LEPF				Sg	**Sb**	**20 05 27.7**	**+1.1**
LEPF	**PUYLOUBIER**	**1.47**	**238**	Pg	**Pb**	**20 05 08.4**	**0.0**
LEPF				Sg	**Sb**	**20 05 27.7**	**+1.1**
MRGE	**Morge**	**1.49**	**350**	Pg	**Pb**	**20 05 08.2**	**-0.7**
	52nm,0.6s						
MRGE	**Morge**	**1.49**	**350**	Pg	**Pb**	**20 05 08.2**	**-0.7**
	52nm,0.6s						
RSL	**Roselend**	**1.49**	**338**	Pg	**Pb**	**20 05 11.7**	**+2.7**
RSL	**Roselend**	**1.49**	**338**	Pg	**Pb**	**20 05 11.7**	**+2.7**
MSSA	**Maissana**	**1.51**	**89**	Pg	**Pn**	**20 05 08.5**	**+0.9**
	61nm,0.8s						
GRN	**Grenoble**	**1.52**	**309**	Pg	**Pb**	**20 05 11.4**	**+2.1**
GRN				Sg	**Sb**	**20 05 30.8**	**+2.7**
SC2M	**Scurtabo**	**1.52**	**86**	Pg	**Pn**	**20 05 08.8**	**+1.0**
	88nm,0.4s						
SC2M	**Scurtabo**	**1.52**	**86**	P	**Pn**	**20 05 08.6**	**+0.8**
SC2M				S	**Sn**	**20 05 26.4**	**-0.5**
SATI	**Passo dei Sala**	**1.60**	**11**	P	**Pn**	**20 05 08.5**	**-0.7**
SATI				S	**Sn**	**20 05 27.7**	**-1.7**
CODM	**Codolo**	**1.75**	**86**	P	**Pn**	**20 05 12.1**	**+1.2**
CODM				S	**Sn**	**20 05 31.9**	**-0.6**
GRAM	**Graiana**	**1.91**	**83**	P	**Pn**	**20 05 14.6**	**+1.5**
GRAM				S	**Sn**	**20 05 35.3**	**-1.2**
VIVF	**Saint-Julien-l**	**2.04**	**287**	*e*Pn	**Pn**	**20 05 15.7**	**+0.8**
VIVF	**Saint-Julien-l**	**2.04**	**287**	*e*Pg	**Pb**	**20 05 20.3**	**+2.2**
VIVF				*e*Sg	**Sb**	**20 05 45.5**	**+2.5**
	19nm,0.3s						
VIVF	**Saint-Julien-l**	**2.04**	**287**	*e*Pg	**Pb**	**20 05 20.3**	**+2.2**
VIVF				*e*Sg	**Sb**	**20 05 45.5**	**+2.5**
	9.6nm,0.3s						
OG01	**Vacheresse**	**2.09**	**346**	Pn	**Pn**	**20 05 17.1**	**+1.5**
OG01	**Vacheresse**	**2.09**	**346**	Pn	**Pn**	**20 05 17.1**	**+1.5**
PGF	**Pioggiola**	**2.10**	**146**	*e*Pn	**Pn**	**20 05 15.7**	**-0.1**
PGF				*e*Sn	**Sn**	**20 05 39.6**	**-1.7**
	63nm,0.2s						
PGF	**Pioggiola**	**2.10**	**146**	*e*Pn	**Pn**	**20 05 15.7**	**-0.1**
PGF				*e*Sn	**Sn**	**20 05 39.6**	**-1.7**
	31nm,0.2s						
SARO	**Sassorosso**	**2.15**	**92**	P	**Pn**	**20 05 17.8**	**+1.4**
MAIM	**Mastiano**	**2.25**	**99**	P	**Pn**	**20 05 19.0**	**+1.3**
SSB	**Saint Sauveur**	**2.27**	**296**	Pn	**Pn**	**20 05 19.5**	**+1.5**
CABF	**La Chapelle**	**2.49**	**338**	*e*Pn	**Pn**	**20 05 22.2**	**+1.1**
CABF	**La Chapelle**	**2.49**	**338**	*e*Pg	**Pb**	20 05 29.2	+3.3
CABF				*e*Sg	**Sb**	**20 06 00.3**	**+4.2**
	25nm,0.6s						
CABF	**La Chapelle**	**2.49**	**338**	*e*Pn	**Pn**	**20 05 22.2**	**+1.1**
CABF	**La Chapelle**	**2.49**	**338**	*e*Pg	**Pb**	20 05 29.2	+3.3
CABF				*e*Sg	**Sb**	**20 06 00.3**	**+4.2**
	12nm,0.6s						
LASF	**Ste Croix**	**2.57**	**266**	*e*Pn	**Pn**	**20 05 23.0**	**+0.8**
LASF	**Ste Croix**	**2.57**	**266**	*e*Pg	Pb	20 05 30.4	+3.2
LASF				*e*Sn	**Sn**	**20 05 51.0**	**-1.8**
	28nm,0.5s						
LASF	**Ste Croix**	**2.57**	**266**	*e*Pg	Pb	20 05 30.4	+3.2
LASF				*e*Sn	**Sn**	**20 05 51.0**	**-1.8**
	14nm,0.5s						
LBL	**Lubilhac**	**3.11**	**289**	Pn	**Pn**	**20 05 30.8**	**+1.1**
PLDF	**La Plantade**	**3.16**	**303**	Pn	**Pn**	**20 05 31.1**	**+0.8**
SMF	**Signal de Mont**	**3.44**	**314**	*e*Pn	**Pn**	**20 05 36.3**	**+2.2**
SMF				*e*Sn	**Sn**	**20 06 12.1**	**-2.0**
	17nm,0.4s						
PYM	**Petit Puy Mans**	**3.44**	**296**	Pn	**Pn**	**20 05 35.3**	**+1.1**
AGO	**Saint Agoulin**	**3.50**	**301**	Pn	**Pn**	**20 05 36.5**	**+1.6**
HINF	**Hinteralfeld**	**3.53**	**354**	*e*Pn	**Pn**	**20 05 36.2**	**+0.8**
HINF				*e*Sn	**Sn**	**20 06 14.7**	**-1.9**
	5.3nm,0.3s						
HINF	**Hinteralfeld**	**3.53**	**354**	*e*Pn	**Pn**	**20 05 36.2**	**+0.8**
HINF				*e*Sn	**Sn**	**20 06 14.7**	**-1.9**
	2.7nm,0.3s						
FETA	**Feichten**	**3.57**	**39**	*i* P	Pn	20 05 40.3	+4.2
	0.1nm,0.1s						
FETA	**Feichten**	**3.57**	**39**	P	Pn	20 05 40.3	+4.2
	0.1nm,0.1s						
HAU	**Haudompre**	**3.77**	**349**	*e*Pn	**Pn**	**20 05 39.9**	**+1.2**
HAU				*e*Sn	**Sn**	**20 06 20.3**	**-2.2**
	11nm,0.3s						
HAU	**Haudompre**	**3.77**	**349**	*e*Pn	**Pn**	**20 05 39.9**	**+1.2**
HAU				*e*Sn	**Sn**	**20 06 20.3**	**-2.2**
	5.4nm,0.3s						
AVF	**Avril sur Loir**	**3.79**	**312**	*e*Pn	**Pn**	**20 05 40.8**	**+2.0**
AVF				*e*Sg	Sb	20 06 40.2	+6.9
	13nm,0.7s						
LOR	**Lormes**	**3.87**	**321**	*e*Pn	**Pn**	**20 05 41.5**	**+1.5**
	baz=144						
LOR				*e*Sn	**Sn**	**20 06 22.2**	**-2.6**
	baz=138						
LOR				*e*Sg	Sb	20 06 43.0	+7.3
	4.5nm,0.3s,baz=143						
LOR	**Lormes**	**3.87**	**321**	*e*Sg	Sb	20 06 43.0	+7.3
	2.2nm,0.3s						
CAF	**Calviac**	**3.87**	**281**	*e*Pn	**Pn**	**20 05 41.9**	**+1.8**
CAF				*e*Sn	**Sn**	**20 06 22.0**	**-2.9**
	5.6nm,0.5s						
MTLF	**Montolieu**	**3.88**	**257**	*e*Pn	**Pn**	**20 05 41.4**	**+1.2**
MTLF				*e*Sn	**Sn**	**20 06 22.5**	**-2.6**
	6.7nm,0.3s						
MTLF	**Montolieu**	**3.88**	**257**	*e*Pn	**Pn**	**20 05 41.4**	**+1.2**
MTLF				*e*Sn	**Sn**	**20 06 22.5**	**-2.6**
	3.3nm,0.3s						
SSF	**Saint Saulge**	**3.89**	**317**	*e*Pn	**Pn**	**20 05 42.0**	**+1.8**
SSF				*e*Sn	**Sn**	**20 06 22.6**	**-2.6**
SSF				*e*Sg	Sb	20 06 43.5	+7.3
	9.3nm,0.6s						
BGF	**Bois d'Agland**	**3.93**	**307**	*e*Pn	**Pn**	**20 05 43.0**	**+2.2**
BGF				*e*Sg	Sb	20 06 44.8	+7.4
	24nm,0.6s						
MOTA	**Moosalm**	**3.98**	**39**	*i* P	Pn	20 05 45.2	+3.4
	0.5nm,0.2s						
MOTA	**Moosalm**	**3.98**	**39**	P	Pn	20 05 45.2	+3.4
	0.5nm,0.2s						
CDF	**Champ du Feu**	**4.11**	**359**	*e*Pn	**Pn**	**20 05 43.2**	**-0.2**
CDF				*e*Sn	**Sn**	**20 06 28.5**	**-2.3**
	2.8nm,0.2s						
CDF	**Champ du Feu**	**4.11**	**359**	*e*Pn	**Pn**	**20 05 43.2**	**-0.2**
CDF				*e*Sn	**Sn**	**20 06 28.5**	**-2.3**
	1.4nm,0.2s						
TCF	**Toulx Ste Croi**	**4.17**	**300**	*e*P	**Pn**	**20 05 46.9**	**+2.7**
TCF				*e*Sn	**Sn**	**20 06 29.5**	**-2.8**
TCF				*e*Sg	Sb	20 06 52.5	+8.0
	5.1nm,0.6s						
SFTF	**Sexfontaines**	**4.24**	**338**	*e*Pn	**Pn**	**20 05 46.9**	**+1.9**
	baz=152						
SFTF				*e*Sn	**Sn**	**20 06 31.0**	**-2.8**
	5.6nm,0.2s						
SFTF	**Sexfontaines**	**4.24**	**338**	*e*Pn	**Pn**	**20 05 46.9**	**+1.9**
SFTF				*e*Sn	**Sn**	**20 06 31.0**	**-2.8**
	2.8nm,0.2s						
RJF	**Les Rejaudoux**	**4.32**	**285**	*e*Pn	**Pn**	**20 05 46.2**	**0.0**
RJF				*e*Sg	Sb	20 06 56.8	+8.2
	2.6nm,0.4s						
ABTA	**Abfaltersbach**	**4.33**	**54**	*i* P	Pn	20 05 50.2	+3.7
ABTA	**Abfaltersbach**	**4.33**	**54**	P	Pn	20 05 50.2	+3.7
PAGF	**Fort de Pagny**	**4.41**	**345**	*e*Pn	**Pn**	**20 05 47.0**	**-0.4**
	baz=166						
PAGF				*e*Sn	**Sn**	**20 06 35.4**	**-2.7**
	0.5nm,0.2s,baz=164						
PAGF	**Fort de Pagny**	**4.41**	**345**	*e*Pn	**Pn**	**20 05 47.0**	**-0.4**
PAGF				*e*Sn	**Sn**	**20 06 35.4**	**-2.7**
	0.2nm,0.2s						
HYF	**Humbligny**	**4.47**	**313**	*e*Pn	**Pn**	**20 05 48.7**	**+0.5**
HYF				*e*Sg	Sb	20 07 01.5	+8.6
MEZF	**Maizieres J'vi**	**4.50**	**340**	*e*Pn	**Pn**	**20 05 48.6**	**-0.1**
	baz=170						
MEZF				*e*Sn	**Sn**	**20 06 37.5**	**-2.9**
	7.7nm,0.4s,baz=158						
MEZF	**Maizieres J'vi**	**4.50**	**340**	*e*Pn	**Pn**	**20 05 48.6**	**-0.1**
MEZF				*e*Sn	**Sn**	**20 06 37.5**	**-2.9**
	3.8nm,0.4s						
LFF	**La Frestale**	**4.81**	**280**	*e*Pn	**Pn**	**20 05 53.2**	**+0.3**
LFF				*e*Sn	**Sn**	**20 06 44.6**	**-3.3**
	3.7nm,0.4s						
EPF	**Esparros**	**5.29**	**259**	*e*Pn	**Pn**	**20 05 59.5**	**-0.1**
EPF				*e*Sg	Sb	20 07 27.3	+11
	6.1nm,0.6s						
EPF	**Esparros**	**5.29**	**259**	*e*Pn	**Pn**	**20 05 59.5**	**-0.1**
EPF				*e*Sg	Sb	20 07 27.3	+

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHO	**Hitachi**	**0.43**	**280**	P	**Pb**	**20 21 03.9**	**+0.4**
JHO				S	**Sb**	**20 21 09.9**	**0.0**
ONAJ	**Iwakimizuishiy**	**0.61**	**337**	P	**Pb**	**20 21 06.9**	**+0.2**
JYT	**Yasato**	**0.79**	**247**	P	**Pg**	**20 21 09.2**	**0.0**
JYT				S	**Sg**	**20 21 18.9**	**-0.6**
JFK	**Kawauchi**	**0.85**	**348**	P	**Pg**	**20 21 10.3**	**0.0**
JFK				S	**Sg**	**20 21 21.6**	**+0.2**
JSB	**Shiboa**	**1.03**	**295**	P	**Pg**	**20 21 14.0**	**+0.1**
JSB				*eS*	**Sg**	**20 21 27.1**	**-0.3**
JFT	**Otama**	**1.15**	**329**	P	**Pb**	**20 21 16.0**	**+0.2**
JFT				S	**Sg**	**20 21 29.9**	**-1.2**
MJAR	**Matsushiro Arr**	**2.32**	**271**	Pn	**Pn**	**20 21 32.7**	**+0.7**
	6.2nm,0.3s,baz=94,slow=8.8,SNR=8.5						
JHJ	**Hachijo jima 2**	**3.58**	**198**	Pn	**Pn**	**20 21 49.6**	**+0.4**
	8.1nm,0.3s,baz=52,slow=21,SNR=1.6						
JHJ				Sn	**Sn**	**20 22 32.8**	**+1.3**
	17nm,0.3s,baz=232,slow=23,SNR=2.0						
ASAJ	**Asahikawa**	**7.66**	**8**	Pn	**Pn**	**20 22 46.7**	**+1.4**
	0.4nm,0.3s,baz=282,slow=20,SNR=1.3						
JNU	**Nakatsue**	**9.06**	**251**	LR	LR	20 27 02.6	
	comp=Z,55nm,18.4s,baz=55,slow=41						
PETK	**Petropavlovsk-**	**20.25**	**30**	LR	LR	20 34 39.4	
	comp=Z,16nm,18.6s,baz=216,slow=41						
ZALV	**Zalesovo Beam**	**42.06**	**313**	P	**P**	**20 28 44.6**	**-0.7**
	0.4nm,0.4s,baz=97,slow=11,SNR=2.4						
KURBB	**Kurchatov Arra**	**46.10**	**308**	P	**P**	**20 29 17.4**	**-0.4**
	0.4nm,0.5s,baz=84,slow=8.2,SNR=4.4						
ILAR	**Eielson Array**	**50.05**	**32**	P	**P**	**20 29 49.2**	**+1.1**
	0.2nm,0.7s,baz=272,slow=7.5,SNR=2.2						
WRA	**Warramunga Arr**	**56.53**	**188**	P	**P**	**20 30 34.5**	**-1.7**
	2.0nm,0.7s,baz=5.3,slow=7.4,SNR=9.8						
ASAR	**Alice Springs**	**60.26**	**188**	P	**P**	**20 31 01.9**	**-0.4**
	0.9nm,0.7s,baz=12,slow=7.0,SNR=7.8						
YKA	**Yellowknife Ar**	**64.37**	**30**	P	**P**	**20 31 27.6**	**-1.7**
	0.1nm,0.4s,baz=300,slow=6.5,SNR=1.3						
NVAR	**Mina Array Bea**	**75.49**	**53**	P	**P**	**20 32 38.7**	**+0.2**
	0.3nm,0.3s,baz=300,slow=5.8,SNR=2.3						

*IDC **19** 20:22:45.8±7.0, 18.97S×168.76E, h121km±67km, mb3.7/3, mb1 3.9/4, mb1mx3.4/35, mbtmp4.1/4, MS4.0/2, Ms1 4.0/2, ms1mx2.8/42, Error ellipse: s-maj=83.1km s-min=41.4km az=164.0*

ISC 19 20:22:47.9±2.3, 19.2S±0.2×168.9E±0.4, h147km, n7, σ0.9s95/7, mb3.8/3, Vanuatu Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**3.62**	**218**	P	**Pn**	**20 23 43.0**	**-0.2**
	13nm,0.3s,baz=60,slow=9.1,SNR=177						
DZM				S	**Sn**	**20 24 26.6**	**+0.4**
	23nm,0.3s,baz=125,slow=22,SNR=17						
WRA	**Warramunga Arr**	**32.51**	**263**	P	**P**	**20 29 03.6**	**-1.3**
	0.6nm,0.4s,baz=89,slow=8.4,SNR=17						
ASAR	**Alice Springs**	**32.79**	**256**	P	**P**	**20 29 07.5**	**+0.2**
	4.5nm,0.5s,baz=83,slow=8.8,SNR=109						
ASAR				LR	LR	20 42 21.9	
	comp=Z,68nm,19.8s,baz=234,slow=36						
CMAR	**Chiang Mai Arr**	**78.19**	**294**	P	**P**	**20 34 32.6**	**+1.1**
	0.4nm,0.5s,baz=125,slow=4.7,SNR=4.3						
BBB	**Bella Bella**	**89.66**	**33**	LR	LR	21 05 22.9	
	comp=Z,261nm,21.1s,baz=5.5,slow=29						
ARCES	**ARCESS Array B**	**94.92**	**346**	PKP	**PKPdf**	**20 41 29.2**	**-0.6**
	0.5nm,0.6s,baz=342,slow=1.1,SNR=3.7						
DAVOX	**Davos/Dischmat**	**147.57**	**333**	PKPbc	**PKPbc**	**20 42 15.2**	**+0.1**
	3.3nm,0.6s,baz=315,slow=1.4,SNR=6.0						

*NIED **19** 20:24:00, 37.30N×144.20E, h5km, Mw3.7 Best double couple: M0=4.51000×10^14 NP1:φs16.00000°, δ19.00000°, λ-88.00000°. NP2:φs193.00000°, δ71.00000°, λ-91.00000°.*

*IDC **19** 20:24:04.5±0.8, 37.13N×144.42E, h0km, mb3.8/10, mb1 4.0/12, mb1mx3.7/51, mbtmp3.8/12, ML3.9/2, MS2.5/1, Ms1 2.5/1, ms1mx2.1/57, Error ellipse: s-maj=24.3km s-min=17.2km az=109.0*

*ISCJB **19** 20:24:08.3±0.5, 37.23N±0.05×144.25E±0.04, h33km, mb4.1/15, Error ellipse: s-maj=7.5km s-min=4.5km az=171.8*

*NEIC **19** 20:24:08.6±4.0, 37.19N×144.40E, h25km±29km, mb4.7/6, Error ellipse: s-maj=16.5km s-min=9.4km az=117.0*

*JMA **19** 20:24:09.2±0.2, 37.32N×144.19E, h41km, M4.0*

ISC 19 20:24:10.1±0.8, 37.27N±0.07×144.28E±0.07, h35km, n44, σ1.911/46, mb4.2/15, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**2.60**	**298**	P	**Pn**	**20 24 49.1**	**-0.6**
JIO				*eS*	**Sn**	**20 25 18.7**	**-1.4**
JFK	**Kawauchi**	**2.72**	**273**	P	**Pn**	**20 24 50.8**	**-0.5**
OFUJ	**Ofunato**	**2.74**	**312**	P	**Pn**	**20 24 50.5**	**-1.1**
ONAJ	**Iwakimizuishiy**	**2.79**	**268**	P	**Pn**	**20 24 51.9**	**-0.4**
ONAJ				*eS*	**Sn**	**20 25 23.0**	**-1.7**
JMM	**Marumori**	**2.83**	**283**	P	**Pn**	**20 24 52.4**	**-0.5**
JMK	**Ichinoseki**	**2.94**	**306**	P	**Pn**	**20 24 54.4**	**+0.1**
JFT	**Otama**	**3.15**	**276**	P	**Pn**	**20 24 57.6**	**+0.3**
JFT				*eS*	**Sn**	**20 25 33.6**	**-0.1**
JOM	**Ohasama**	**3.22**	**314**	P	**Pn**	**20 24 57.7**	**-0.4**
JOM				*eS*	**Sn**	**20 25 33.3**	**-1.9**
JYK	**Kaneyama**	**3.50**	**299**	P	**Pn**	**20 25 02.2**	**+0.1**
JYK				*eS*	**Sn**	**20 25 42.3**	**0.0**
JRY	**Ryogami san**	**4.50**	**255**	P	**Pn**	**20 25 15.4**	**-0.5**
JRY				*eS*	**Sn**	**20 26 05.1**	**-2.0**
MJAR	**Matsushiro Arr**	**4.92**	**263**	Pn	**Pn**	**20 25 22.5**	**+0.9**
	2.8nm,0.3s,baz=88,slow=14,SNR=8.0						
MJAR				Sn	**Sn**	**20 26 16.5**	**-0.9**
	1.3nm,0.3s,baz=89,slow=15,SNR=4.8						
MJAR				LR	LR	20 28 01.6	
	comp=Z,47nm,18.1s,baz=100,slow=48						
MAJO	**Matsushiro**	**4.92**	**263**	*e*Pn	**Pn**	**20 25 22.6**	**+1.0**
MAT	**Matsushiro**	**4.92**	**263**	P	**Pn**	**20 25 22.6**	**+1.0**
MAT				S	**Sn**	**20 26 17.8**	**+0.4**
MJB9	**Matsu-Tunnel**	**4.92**	**263**	*e*Pn	**Pn**	**20 25 22.5**	**+0.9**
JHJ2	**Mitsune**	**5.53**	**223**	*e*Pn	**Pn**	**20 25 29.2**	**-0.7**
INU	**Inuyama**	**6.17**	**254**	*e*Pn	**Pn**	**20 25 41.3**	**+2.6**
ASAJ	**Asahikawa**	**6.95**	**350**	Pn	**Pn**	**20 25 47.8**	**-1.7**
	2.5nm,0.3s,baz=235,slow=20,SNR=18						
ASAJ	**Asahikawa**	**6.95**	**350**	*e*Pn	**Pn**	**20 25 47.6**	**-1.8**
SEY	**Seymchan**	**26.16**	**8**	P	**P**	**20 29 41.9**	**+1.0**
	0.6nm,0.5s,baz=185,slow=6.1,SNR=9.4						
H11N2	**WAKE ISLAND Hy**	**26.36**	**125**	T	T	20 56 13.8	
	SNR=93						
H11N1	**WAKE ISLAND Hy**	**26.37**	**125**	T	T	20 56 21.6	
	baz=312,slow=74,SNR=93						
H11N3	**WAKE ISLAND Hy**	**26.38**	**125**	T	T	20 56 46.1	
	baz=201,slow=74,SNR=90						
H11S1	**WAKE ISLAND Hy**	**27.12**	**127**	T	T	20 57 30.3	
	baz=314,slow=76,SNR=225						
H11S3	**WAKE ISLAND Hy**	**27.12**	**128**	T	T	20 57 19.2	
	baz=314,slow=76,SNR=144						
H11S2	**WAKE ISLAND Hy**	**27.14**	**127**	T	T	20 57 34.2	
	baz=314,slow=76,SNR=156						
MK32	**Makanchi Array**	**45.93**	**302**	*e*P	**P**	**20 32 30.3**	**+0.9**
MKAR	**Makanchi Array**	**45.93**	**302**	P	**P**	**20 32 30.3**	**+0.9**
	0.3nm,0.6s,baz=72,slow=7.8,SNR=4.2						
MCK	**McKinley**	**47.16**	**34**	*e*P	**P**	**20 32 40.4**	**+1.6**
	23nm,2.0s						
MDM	**Murphy Dome**	**47.49**	**32**	*e*P	**P**	**20 32 41.9**	**+0.6**
	4.9nm,1.3s						
KURK	**Kurchatov**	**47.59**	**308**	*e*P	**P**	**20 32 42.3**	**+0.1**
	13nm,1.9s						
KURBB	**Kurchatov Arra**	**47.66**	**308**	P	**P**	**20 32 43.6**	**+0.9**
	1.8nm,0.6s,baz=82,slow=7.9,SNR=16						
ILAR	**Eielson Array**	**48.06**	**32**	P	**P**	**20 32 45.4**	**-0.4**
	0.8nm,0.9s,baz=263,slow=6.3,SNR=7.8						
ILB	**Eielson Array**	**48.06**	**32**	*e*P	**P**	**20 32 45.0**	**-0.7**
INK	**Inuvik**	**53.12**	**27**	P	**P**	**20 33 24.1**	**+0.3**
	1.0nm,0.6s,baz=277,slow=2.8						
INK	**Inuvik**	**53.12**	**27**	*e*P	**P**	**20 33 24.3**	**+0.5**
	6.8nm,1.5s						
WR1	**Warramunga Arr**	**57.68**	**191**	*e*P	**P**	**20 33 55.0**	**-2.1**
	19nm,1.5s						
WRA	**Warramunga Arr**	**57.68**	**191**	P	**P**	**20 33 55.0**	**-2.1**
	1.1nm,0.5s,baz=10,slow=7.2,SNR=16						
ASAR	**Alice Springs**	**61.40**	**191**	P	**P**	**20 34 21.8**	**-0.9**
	0.4nm,0.6s,baz=15,slow=10,SNR=7.4						
YKA	**Yellowknife Ar**	**62.44**	**31**	P	**P**	**20 34 29.1**	**-0.2**
	0.2nm,0.5s,baz=302,slow=6.6,SNR=4.0						
FIA0	**FINESS Array S**	**69.65**	**333**	*e*P	**P**	**20 35 16.1**	**+0.5**
FINES	**FINESS Array B**	**69.65**	**333**	P	**P**	**20 35 16.1**	**+0.5**
	0.9nm,0.7s,baz=35,slow=15,SNR=2.5						

NV01	**Mina Array Sit**	**73.00**	**55**	*e*P	**P**	**20 35 37.2**	**+0.7**
NVAR	**Mina Array Bea**	**73.00**	**55**	P	**P**	**20 35 37.2**	**+0.7**
	1.6nm,0.9s,baz=290,slow=5.3,SNR=6.1						
KNB	**Kanab**	**77.35**	**53**	*e*P	**P**	**20 36 02.9**	**+1.3**
	8.8nm,1.0s						

*BJI **19** 20:30:28.8, 44.59N×29.45W, h11km, mb5.0/15, mB5.0/11, Ms4.8/9, Ms7 4.4/9*

*MOS **19** 20:30:28.1±0.9, 43.82N×28.96W, h12km, mb4.7/59, MS4.1/15, Error ellipse: s-maj=8.9km s-min=6.3km az=47.1*

*IDC **19** 20:30:28.0±0.6, 43.80N×28.89W, h0km, mb4.2/25, mb1 4.4/26, mb1mx4.2/56, mbtmp4.2/26, ML4.6/1, MS4.2/36, Ms1 4.2/36, ms1mx4.1/54, Error ellipse: s-maj=17.0km s-min=11.4km az=15.0*

*ISCJB **19** 20:30:28.3±0.2, 43.74N±0.05×28.98W±0.02, h14km, mb4.6/139, MS4.2/48, Error ellipse: s-maj=6.5km s-min=2.2km az=1.8*

*NEIC **19** 20:30:29.2±0.2, 43.70N×28.93W, h10km, mb4.8/97, Error ellipse: s-maj=6.3km s-min=2.9km az=183.0*

*CSEM **19** 20:30:29.3±0.1, 43.77N×28.95W, h10km, mb4.7/99, Error ellipse: s-maj=7.0km s-min=2.8km az=5.0*

*GCMT **19** 20:30:29.2±0.2, 43.68N×28.73W, h13km±1km, MW5.0/108, Moment Tensor Solution. s42,c52; s108,c162; Duration: 0 Moment tensor: Scale 10^16 Nm; Mrr-1.00±.10; Mθθ0.84±.10; Mφφ0.16±.08; Mrθ0.54±.22; Mφθ3.32±.08; Mrφ0.13±.19; Best double couple: M0 3.38100×10^16 NP1:φs273.00000°, δ88.00000°, λ-10.00000°. NP2: φs3.00000°, δ80.00000°, λ-178.00000°. Principal axes: T 3.8860, Plg6.0000°, Azm318.0000°; N -1.0090, Plg80.0000°, Azm83.0000°; P -2.8760, Plg8.0000°, Azm227.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

ISC 19 20:30:29.4±0.3, 43.69N±0.06×28.93W±0.05, h14km, n630, σ1.912/604, mb4.7/138, MS4.2/48, 5C-4D, Northern Mid-Atlantic Ridge

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PSET	**Sete Cidades**	**6.34**	**156**	*e*P	**Pn**	**20 31 59.5**	**-3.0**
PDA	**Ponta Delgada**	**6.43**	**156**	*e*S	**Pn**	**20 32 01.9**	**-1.8**
PDA				A	A	20 32 03.9	
	201nm,0.3s						
GRON	**Grota Negra**	**6.45**	**155**	*e*P	**Pn**	**20 32 02.7**	**-1.3**
CMLA	**Cha da Macela**	**6.46**	**155**	*e*S	**Pn**	**20 32 01.0**	**-3.1**
BART	**Pico Bartolome**	**6.56**	**153**	*e*P	Pn	20 31 59.2	-6.3
BART				*e*S	**Pn**	**20 32 02.1**	**-3.4**
BART				A	A	20 32 06.8	
	73nm,0.3s						
PSMA	**Santa Maria**	**7.29**	**155**	*e*S	**Pn**	**20 32 12.9**	**-2.5**
PSMA				A	A	20 32 14.2	
	116nm,0.3s						
PSMN	**Pico do Norte,**	**7.30**	**155**	*e*S	**Pn**	**20 32 13.1**	**-2.5**
PSMN				A	A	20 32 13.8	
	62nm,0.2s						
PMOZ	**Porto Moniz, M**	**14.22**	**136**	*e*LR	LR	20 37 03.4	
	1µm,20.0s						
PGAV	**Gavieira, Arco**	**15.26**	**89**	*e*P	**P**	**20 34 10.8**	**+1.5**
PGAV				*e*LR	LR	20 37 44.5	
	322nm,16.0s						
PGAV	**Gavieira, Arco**	**15.26**	**89**	*e*P	**P**	**20 34 10.8**	**+1.5**
PCAS	**Casmilo, Conde**	**15.64**	**96**	*e*P	**Pn**	**20 34 11.0**	**+1.6**
PMTG	**Montargil**	**16.20**	**99**	*e*P	**P**	**20 34 19.1**	**-0.6**
PMTG	**Montargil**	**16.20**	**99**	*e*P	**P**	**20 34 19.1**	**-0.6**
MTE	**Manteigas**	**16.22**	**94**	*e*P	**P**	**20 34 21.6**	**+1.7**
MTE				*e*LR	LR	20 37 25.1	
	366nm,18.0s						
MTE	**Manteigas**	**16.22**	**94**	*e*P	**P**	**20 34 21.6**	**+1.7**
MVO	**Moncorvo**	**16.36**	**91**	*e*P	**P**	**20 34 23.3**	**+1.8**
MVO				*e*LR	LR	20 38 25.3	
	351nm,16.0s						
MVO	**Moncorvo**	**16.36**	**91**	*e*P	**P**	**20 34 23.3**	**+1.8**
PNCL	**Nicolau / Gran**	**16.38**	**103**	*e*P	**P**	**20 34 22.6**	**+0.9**
	50nm,1.6s						
PNCL	**Nicolau / Gran**	**16.38**	**103**	*e*P	**P**	**20 34 22.6**	**+0.9**
	50nm,1.6s						
PBRG	**Braganca**	**16.40**	**89**	*e*P	**P**	**20 34 23.7**	**+1.7**
PBRG	**Braganca**	**16.40**	**89**	*e*P	**P**	**20 34 23.7**	**+1.7**
PCBR	**Castelo Branco**	**16.45**	**96**	*e*P	**Pn**	**20 34 21.1**	**+1.3**
EVO	**Evora**	**16.57**	**101**	*e*P	**Pn**	**20 34 22.3**	**+1.0**
PMRV	**Marv??o**	**16.66**	**97**	*e*P	**P**	**20 34 25.7**	**+0.9**
PMRV				*e*LR	LR	20 37 39.6	
	500nm,18.0s						
PMRV	**Marv??o**	**16.66**	**97**	*e*P	**P**	**20 34 25.7**	**+0.9**
MESJ	**Messejana**	**16.72**	**103**	*e*P	**P**	**20 34 25.3**	**-0.2**
MESJ	**Messejana**	**16.72**	**103**	*e*P	**P**	**20 34 25.3**	**-0.2**
PBEJ	**Beja**	**16.89**	**102**	*e*P	**P**	**20 34 28.1**	**+0.8**
PBEJ	**Beja**	**16.89**	**102**	*e*P	**P**	**20 34 28.1**	**+0.8**
PVAQ	**Vaqueiros**	**17.28**	**104**	*e*LR	LR	20 38 26.0	
	663nm,20.0s						
DYA	**Yadsworthy**	**18.27**	**60**	*e*Pn	**P**	**20 34 44.2**	**+1.8**
	37nm,1.2s						
DYA	**Yadsworthy**	**18.27**	**60**	*e*Pn	**P**	**20 34 44.2**	**+1.8**
	37nm,1.2s						
PAB	**San Pablo**	**18.82**	**94**	*e*P	**Pn**	**20 34 49.9**	**+0.7**
PAB				pmax	pmax		
	comp=Z,20nm,1.0s						
PAB	**San Pablo**	**18.82**	**94**	*e*P	**Pn**	**20 34 49.9**	**+0.7**
	comp=Z,20nm,1.0s						
PAB	**San Pablo**	**18.82**	**94**	*e*P	**Pn**	**20 34 49.9**	**+0.7**
	comp=Z,20nm,1.0s						
ESDC	**Sonseca Array**	**19.05**	**94**	P	**Pn**	**20 34 51.9**	**-0.1**
	comp=Z,0.4nm,0.3s,baz=295,slow=9.9,SNR=24						
ESDC				LR	LR	20 40 41.1	
	comp=Z,244nm,18.1s,baz=270,slow=32						
ESLA	**Sonseca Array**	**19.05**	**94**	*e*P	**P**	**20 34 51.0**	**-0.2**
	comp=Z,11nm,1.1s						
ESLA	**Sonseca Array**	**19.05**	**94**	*e*P	**P**	**20 34 51.0**	**-0.2**
	comp=Z,11nm,1.1s						
ES19	**SONSECA Array**	**19.09**	**93**	*e*P	**P**	**20 34 51.3**	**-0.3**
ES19	**SONSECA Array**	**19.09**	**93**	*e*P	**P**	**20 34 51.3**	**-0.3**
ESK	**Eskdalemuir**	**20.23**	**46**	*e*P	**P**	**20 35 03.3**	**-0.5**
ESK				pmax	pmax		
	comp=Z,14nm,0.9s						
ESK	**Eskdalemuir**	**20.23**	**46**	*e*P	**P**	**20 35 03.3**	**-0.5**
	comp=Z,14nm,0.9s						
ESK	**Eskdalemuir**	**20.23**	**46**	*e*P	**P**	**20 35 03.3**	**-0.5**
	comp=Z,14nm,0.9s						
EKA	**Eskdalemuir Ar**	**20.26**	**46**	P	**P**	**20 35 03.7**	**-0.5**
	comp=Z,6.9nm,0.8s,baz=247,slow=8.1,SNR=26						
DRLN	**Deer Lake**	**20.38**	**296**	*e*P	Pn	20 35 06.9	-0.8
	comp=Z,45nm,0.9s						
DRLN	**Deer Lake**	**20.38**	**296**	*e*P	Pn	20 35 06.9	-0.8
	comp=Z,45nm,0.9s						
CWF	**Charnwood Fore**	**20.40**	**54**	*e*P	Pn	20 35 07.3	-0.6
	comp=Z,43nm,1.4s						
CWF	**Charnwood Fore**	**20.40**	**54**	*e*P	Pn	20 35 07.3	-0.6
	comp=Z,43nm,1.4s						
MFF	**Saint Martin d**	**20.46**	**72**	*e*P	Pn	20 35 07.9	-0.7
MFF				pmax	pmax		
	comp=Z,44nm,1.6s						
MFF	**Saint Martin d**	**20.46**	**72**	*e*P	Pn	20 35 07.9	-0.7
	comp=Z,44nm,1.6s						
LDF	**La Druitiere**	**20.49**	**66**	*e*P	**P**	**20 35 07.6**	**+0.8**
LDF				pmax	pmax		
	comp=Z,24nm,1.2s						
LDF	**La Druitiere**	**20.49**	**66**	*e*P	**P**	**20 35 07.6**	**+0.8**
	comp=Z,24nm,1.2s						
REYF	**Montagne du Re**	**20.71**	**82**	*e*P	Pn	20 35 10.8	-0.9
REYF	**Montagne du Re**	**20.71**	**82**	*e*P	Pn	20 35 10.8	-0.9
LFF	**La Frestale**	**21.22**	**76**	*e*P	**P**	**20 35 14.8**	**+0.2**
LFF				pmax	pmax		
	comp=Z,91nm,1.8s						
LFF	**La Frestale**	**21.22**	**76**	*e*P	**P**	**20 35 14.8**	**+0.2**
	comp=Z,91nm,1.8s						
BORG	**Borgarnes**	**21.53**	**9**	LR	LR	20 40 56.3	
	comp=Z,343nm,20.9s,baz=143,slow=29						
MDT	**Midelt**	**21.89**	**112**	P	**P**	**20 35 22.4**	**+0.4**
	comp=Z,6.8nm,1.0s,baz=301,slow=13,SNR=5.9						
MDT				LR	LR	20 42 18.8	
	comp=Z,444nm,19.5s,baz=303,slow=32						
MENF	**Mencas**	**22.12**	**61**	*e*P	**P**	**20 35 24.6**	**+0.3**
MENF	**Mencas**	**22.12**	**61**	*e*P	**P**	**20 35 24.6**	**+0.3**
CAF	**Calviac**	**22.15**	**76**	*e*P	**P**	**20 35 24.1**	**-0.6**
CAF				pmax	pmax		
	comp=Z,6.0nm,0.9s						
CAF	**Calviac**	**22.15**	**76**	*e*P	**P**	**20 35 24.1**	**-0.6**
	comp=Z,6.0nm,0.9s						
PYM	**Petit Puy Mans**	**22.71**	**74**	*e*P	**P**	**20 35 34.1**	**+3.4**
PYM	**Petit Puy Mans**	**22.71**	**74**	*e*P	**P**	**20 35 34.1**	**+3.4**

AGO	**Saint Agoulin**	**22.76**	**73**	*e*P	**P**	**20 35 32.6**	**+1.4**
AGO	**Saint Agoulin**	**22.76**	**73**	*e*P	**P**	**20 35 32.6**	**+1.4**
LBL	**Lubilhac**	**22.94**	**75**	*e*P	**P**	**20 35 33.5**	**+0.3**
LBL	**Lubilhac**	**22.94**	**75**	*e*P	**P**	**20 35 33.5**	**+0.3**
LOR	**Lormes**	**23.17**	**70**	*e*P	**P**	**20 35 36.7**	**+1.3**
LOR				pmax	pmax		
	comp=Z,26nm,1.4s						
LOR	**Lormes**	**23.17**	**70**	*e*P	**P**	**20 35 36.7**	**+1.3**
	comp=Z,26nm,1.4s						
DOU	**Dourbes**	**23.65**	**62**	P	**P**	**20 35 41.0**	**+0.8**
DOU	**Dourbes**	**23.65**	**62**	P	**P**	**20 35 40.9**	**+0.8**
SSB	**Saint Sauveur**	**23.84**	**74**	*e*P	**P**	**20 35 43.6**	**+1.5**
SSB				pmax	pmax		
	comp=Z,12nm,1.3s						
SSB	**Saint Sauveur**	**23.84**	**74**	*e*P	**P**	**20 35 43.6**	**+1.5**
	comp=Z,12nm,1.3s						
SSB	**Saint Sauveur**	**23.84**	**74**	*e*P	**P**	**20 35 43.6**	**+1.5**
	comp=Z,12nm,1.3s						
BCLA	**Clavier**	**24.12**	**62**	P	**P**	**20 35 45.8**	**+1.2**
	comp=Z,13nm,2.3s						
BCLA	**Clavier**	**24.12**	**62**	P	**P**	**20 35 45.7**	**+1.2**
	comp=Z,13nm,2.3s						
WLF	**Walferdange**	**24.64**	**64**	*e*P	**P**	**20 35 50.5**	**+1.1**
WLF				pmax	pmax		
	comp=Z,27nm,1.4s						
WLF	**Walferdange**	**24.64**	**64**	*e*P	**P**	**20 35 50.5**	**+1.1**
	comp=Z,27nm,1.4s						
WLF	**Walferdange**	**24.64**	**64**	*e*P	**P**	**20 35 50.5**	**+1.1**
	comp=Z,27nm,1.4s						
LOMF	**Lomont**	**25.18**	**69**	*e*P	**P**	**20 35 57.9**	**+3.5**
ECH	**Echery**	**25.34**	**67**	*e*P	**P**	**20 36 00.0**	**+4.3**
WLS	**Welschbruch**	**25.46**	**67**	*e*P	**P**	**20 35 59.4**	**+2.6**
WLS	**Welschbruch**	**25.46**	**67**	*e*P	**P**	**20 35 59.4**	**+2.6**
SENIN	**Lac Senin/Sane**	**25.61**	**71**	*e*P	**P**	**20 36 01.7**	**+3.3**
	comp=Z,13nm,1.3s						
LANF	**Langenberg**	**25.73**	**65**	*e*P	**P**	**20 36 03.1**	**+3.8**
CALN	**Calern**	**25.77**	**77**	*e*P	**P**	**20 36 01.2**	**+1.4**
CALN	**Calern**	**25.77**	**77**	*e*P	**P**	**20 36 01.2**	**+1.4**
MVIF	**Mont Vial**	**25.92**	**77**	*e*P	**P**	**20 36 04.7**	**+3.5**
FELD	**Feldberg im Sc**	**25.93**	**68**	*e*P	**P**	**20 36 03.3**	**+2.1**
LUCF	**Luceram**	**26.06**	**77**	*e*P	**P**	**20 36 03.6**	**+1.2**
LUCF	**Luceram**	**26.06**	**77**	*e*P	**P**	**20 36 03.6**	**+1.2**
REVF	**Revere**	**26.11**	**77**	*e*P	**P**	**20 36 05.8**	**+3.0**
REVF	**Revere**	**26.11**	**77**	*e*P	**P**	**20 36 05.8**	**+3.0**
SFJD	**Kangerlussuaq**	**26.13**	**341**	LR	LR	20 44 06.8	
	comp=Z,1µm,18.5s,baz=146,slow=32						
SFJD	**Kangerlussuaq**	**26.13**	**341**	*e*P	**P**	**20 36 01.1**	**-1.5**
SFJD				pmax	pmax		
	comp=Z,24nm,1.4s						
SFJD	**Kangerlussuaq**	**26.13**	**341**	*e*P	**P**	**20 36 01.1**	**-1.5**
	comp=Z,24nm,1.4s						
SFJD	**Kangerlussuaq**	**26.13**	**341**	*e*P	**P**	**20 36 01.1**	**-1.5**
	comp=Z,24nm,1.4s						
SCHQ	**Schefferville**	**26.80**	**308**	P	**P**	**20 36 09.4**	**+0.5**
	comp=Z,13nm,0.9s,baz=102,slow=7.4,SNR=8.6						
SCHQ				LR	LR	20 45 01.3	
	comp=Z,834nm,19.8s,baz=98,slow=33						
SCHQ	**Schefferville**	**26.80**	**308**	*e*P	**P**	**20 36 08.4**	**-0.5**
	comp=Z,38nm,1.3s						
SCHQ	**Schefferville**	**26.80**	**308**	*e*P	**P**	**20 36 08.3**	**-0.5**
	comp=Z,38nm,1.3s						
DAVA	**Damuels**	**27.25**	**69**	*i* pP	pP	20 36 16.0	-1.4
	comp=Z,3.7nm,1.4s						
DAVA	**Damuels**	**27.25**	**69**	P	pP	20 36 16.0	-1.4
	comp=Z,3.7nm,1.4s						
DAVOX	**Davos/Dischmat**	**27.32**	**70**	LR	LR	20 45 37.1	
	comp=Z,436nm,18.4s,baz=280,slow=33						
KONO	**Kongsberg**	**28.22**	**42**	*e*P	**P**	**20 36 22.8**	**+1.3**
KONO				pmax	pmax		
	comp=Z,47nm,1.2s						
KONO	**Kongsberg**	**28.22**	**42**	*e*P	**P**	**20 36 22.8**	**+1.3**
	comp=Z,47nm,1.2s						
NKC	**Novy Kostel**	**28.70**	**62**	AMS	AMS	20 46 20.0	
	comp=Z,700nm,17.9s						
LMQ	**La Malbaie**	**28.96**	**292**	*e*P	**P**	**20 36 28.1**	**-0.2**
	comp=Z,29nm,1.0s						
LMQ	**La Malbaie**	**28.96**	**292**	*e*

comp=Z,600nm,14.8s
CONA Conrad Observa 31.17 66 *i* P **P 20 36 47.8 -0.1**
comp=Z,2.4nm,0.8s
CONA Conrad Observa 31.17 66 P **P 20 36 47.8 -0.1**
comp=Z,2.4nm,0.8s
MORC Moravsky Berou 32.01 62 *e*P **P 20 36 56.5 +1.3**
MORC pmax pmax
comp=Z,65nm,1.8s
MORC Moravsky Berou 32.01 62 *e*P **P 20 36 56.5 +1.3**
comp=Z,65nm,1.8s
MORC Moravsky Berou 32.01 62 *e*P **P 20 36 56.5 +1.3**
comp=Z,65nm,1.8s
OKC Ostrava-Krasne 32.39 62 AMS AMS 20 49 50.0
comp=Z,600nm,11.5s
LONY Lake Ozonia 32.44 288 *e*P **P 20 36 59.9 +0.9**
comp=Z,46nm,1.8s
LONY Lake Ozonia 32.44 288 *e*P **P 20 36 59.9 +0.9**
comp=Z,46nm,1.8s
VYHS Vyhne 33.04 65 *e*P **P 20 37 01.8 -2.4**
CUC Castrocucco 33.23 81 *e*P **P 20 37 05.2 -0.8**
comp=Z,8.9nm,1.1s
CUC Castrocucco 33.23 81 *e*P **P 20 37 05.2 -0.8**
comp=Z,8.9nm,1.1s
TIP Timpagrande 34.21 82 *e*P P 20 37 19.6 +5.0
comp=Z,18nm,1.6s
STHS Stebnicka Huta 34.44 62 *e*P **P 20 37 17.7 +1.3**
CRVS Cervenica-Dubn 34.68 63 *e*P **P 20 37 22.6 +4.2**
CRVS Cervenica-Dubn 34.68 63 *e*P **P 20 37 22.6 +4.2**
TAM Tamanrasset 35.20 115 *e*P **P 20 37 23.7 +0.4**
TAM pmax pmax
comp=Z,17nm,1.5s
TAM Tamanrasset 35.20 115 *e*P **P 20 37 23.7 +0.4**
comp=Z,17nm,1.5s
TAM Tamanrasset 35.20 115 *e*P **P 20 37 23.6 +0.4**
comp=Z,17nm,1.5s
SADO Sadowa 35.53 290 LR LR 20 51 08.2
comp=Z,761nm,19.6s,baz=92,slow=35
SADO Sadowa 35.53 290 *e*P **P 20 37 27.3 +1.5**
comp=Z,14nm,1.0s
SADO Sadowa 35.53 290 *e*P **P 20 37 27.3 +1.5**
comp=Z,14nm,1.0s
SSPA Standing Stone 36.00 282 *e*P **P 20 37 31.5 +1.6**
comp=Z,18nm,1.1s
SSPA Standing Stone 36.00 282 *e*P **P 20 37 31.5 +1.6**
comp=Z,18nm,1.1s
FIA0 FINESS Array S 36.53 41 *e*P **P 20 37 33.9 -0.2**
FIA0 FINESS Array S 36.53 41 *e*P **P 20 37 33.9 -0.2**
FIA0 FINESS Array S 36.53 41 *e*P **P 20 37 33.9 -0.2**
FINES FINESS Array B 36.53 41 P **P 20 37 33.9 -0.2**
comp=Z,3.1nm,0.9s,baz=316,slow=8.0,SNR=7.2
FINES LR LR 20 50 38.1
comp=Z,328nm,21.7s,baz=255,slow=33
FIA1 FINESS Array S 36.53 41 *e*P **P 20 37 33.4 -0.7**
FIA1 FINESS Array S 36.53 41 *e*P **P 20 37 33.4 -0.7**
VSU Vasula 36.81 46 *e*P **P 20 37 36.3 -0.2**
VSU pmax pmax
comp=Z,13nm,0.9s
VSU Vasula 36.81 46 *e*P **P 20 37 36.3 -0.2**
comp=Z,13nm,0.9s
URVA University of 36.96 278 *e*P **P 20 37 37.9 -0.2**
URVA University of 36.96 278 *e*P **P 20 37 37.9 -0.2**
JSRW J. Sargeant Re 37.16 278 *e*P **P 20 37 37.6 -2.1**
BUR08 Bucovina Ar. S 37.39 64 *e*P **P 20 37 43.5 +1.7**
BUR08 Bucovina Ar. S 37.39 64 *e*P **P 20 37 43.5 +1.7**
ARCES ARCESS Array B 37.56 28 LR LR 20 50 56.6
comp=Z,190nm,20.2s,baz=256,slow=33
MLR Muntele Rosu 38.48 68 P **P 20 37 52.0 +1.0**
MLR pmax pmax
comp=Z,7.0nm,1.9s
MLR Muntele Rosu 38.48 68 P **P 20 37 52.0 +1.0**
comp=Z,7.0nm,1.9s
H05N1 Guadeloupe/Mar 38.55 235 T T 21 18 38.9
SNR=4.3
KIEV Kiev 39.22 59 *e*P **P 20 37 56.7 -0.3**
KIEV pmax pmax
comp=Z,2.0nm,1.0s
KIEV Kiev 39.22 59 *e*P **P 20 37 56.7 -0.3**
comp=Z,2.0nm,1.0s
AKASG Malin Array Be 39.23 59 P **P 20 37 57.3 +0.3**
comp=Z,0.2nm,0.3s,baz=275,slow=8.8,SNR=7.0
AKASG LR LR 20 54 06.1
comp=Z,331nm,18.9s,baz=280,slow=36
AKASG Malin Array Be 39.23 59*c i*P **P 20 37 59.5 +2.5**
AKBB Malin Array Si 39.23 59 *e*P **P 20 37 57.4 +0.3**
AKBB pmax pmax
comp=Z,4.0nm,0.7s
AKBB Malin Array Si 39.23 59 *e*P **P 20 37 57.4 +0.3**
comp=Z,4.0nm,0.7s
AKBB Malin Array Si 39.23 59 *e*P **P 20 37 57.4 +0.3**
comp=Z,4.4nm,0.7s
TOA1 Torodi Ar. Sit 40.20 130 *e*P **P 20 38 05.8 +0.3**
comp=Z,11nm,1.2s
TOA1 Torodi Ar. Sit 40.20 130 *e*P **P 20 38 05.8 +0.3**
comp=Z,11nm,1.2s
TOA0 Torodi Ar. Sit 40.21 130 *e*P **P 20 38 04.7 -0.9**
TOA0 Torodi Ar. Sit 40.21 130 *e*P **P 20 38 04.7 -0.9**
TORD Torodi Ar. Bea 40.21 130 P **P 20 38 05.8 +0.3**
comp=Z,4.0nm,1.0s,baz=318,slow=5.7,SNR=17
TORD LR LR 20 53 27.2
comp=Z,825nm,19.4s,baz=320,slow=34
FCC Fort Churchill 41.73 315 *e*P **P 20 38 18.1 +0.5**
FCC pmax pmax
comp=Z,21nm,1.0s
FCC Fort Churchill 41.73 315 *e*P **P 20 38 18.1 +0.5**
comp=Z,21nm,1.0s
FCC Fort Churchill 41.73 315 *e*P **P 20 38 18.1 +0.5**
comp=Z,21nm,1.0s
TKL Tuckaleechee C 42.30 278 LR LR 20 56 18.8
comp=Z,126nm,18.4s,baz=82,slow=37
DBIC Dimbokro 42.49 143 P **P 20 38 25.7 +1.4**
comp=Z,4.0nm,1.0s,baz=299,slow=8.7,SNR=4.6
DBIC LR LR 20 54 35.8
comp=Z,462nm,19.8s,baz=318,slow=34
DBIC Dimbokro 42.49 143 *e*P **P 20 38 24.9 +0.6**
DBIC pmax pmax
comp=Z,27nm,1.4s
DBIC Dimbokro 42.49 143 *e*P **P 20 38 24.9 +0.6**
comp=Z,27nm,1.4s
DBIC Dimbokro 42.49 143 *e*P **P 20 38 24.9 +0.6**
comp=Z,27nm,1.4s
OBN Obninsk 42.59 51⇓*e*P **P 20 38 26.7 +2.0**
OBN *e* 20 40 07.1
OBN *e*PPP PPP 20 40 36.7
OBN *e*SS SS 20 47 44.3 -12
OBN pmax pmax
comp=Z,7.0nm,1.2s
OBN Obninsk 42.59 51 *e*P **P 20 38 26.7 +2.0**
comp=Z,7.0nm,1.2s
C38A Sawbill Land. 42.69 298 P **P 20 38 25.0 -0.6**
baz=71
EYMN Ely 42.76 298 P **P 20 38 26.2 0.0**
baz=71
D37A Cotton 43.61 298 P **P 20 38 33.0 -0.1**
baz=70
C36A Pine Crest Far 43.67 299 P **P 20 38 33.9 +0.3**
baz=71
B35A Bob, Littlefor 44.04 300 P **P 20 38 37.1 +0.6**
baz=71
D36A Goodland 44.08 298 P **P 20 38 36.2 -0.7**
baz=70
E36A McGregor 44.37 297 P **P 20 38 39.3 +0.1**
baz=69
C35A Jirik Farms, M 44.42 299 P **P 20 38 39.0 -0.5**
baz=70
SPMN Marine on St. 44.54 295 P **P 20 38 40.4 -0.1**
baz=68
SPMN Marine on St. 44.54 295 *e*P **P 20 38 41.0 +0.4**
comp=Z,14nm,0.8s
SPMN Marine on St. 44.54 295 *e*P **P 20 38 41.0 +0.4**
comp=Z,14nm,0.8s
B34A Aery, Baudette 44.58 300 P **P 20 38 40.3 -0.5**
baz=70,SNR=5.2
LPSR Galich'ya Gora 44.58 54 *e*P **P 20 38 39.9 -0.9**
LPSR pmax pmax
comp=Z,6.0nm,0.5s
LPSR MLR MLR
comp=Z,330nm,14.0s
LPSR Galich'ya Gora 44.58 54 *e*P **P 20 38 39.9 -0.9**
comp=Z,330nm,14.0s
D35A Remer 44.68 298 P **P 20 38 42.0 +0.3**
baz=69
ULM Lac du Bonnet 44.76 303 LR LR 20 55 48.2
comp=Z,847nm,20.4s,baz=73,slow=34
F36A Milaca 44.78 296 P **P 20 38 43.7 +1.2**
baz=68
A33A Warroad 44.89 301 P **P 20 38 43.9 +0.6**
baz=70
J38A Wedel Dairy, R 45.06 293 P **P 20 38 45.2 +0.5**
baz=66
G36A St. Michael 45.16 296 P **P 20 38 47.1 +1.6**
baz=68
BR231 Keskin MP Arra 45.25 73 *e*P **P 20 38 48.9 +2.5**
BR231 Keskin MP Arra 45.25 73 *e*P **P 20 38 48.9 +2.5**
AGMN Agassiz Nation 45.40 300 P **P 20 38 48.3 +1.0**
baz=70
AGMN Agassiz Nation 45.40 300 *e*P **P 20 38 47.8 +0.4**
comp=Z,7.9nm,0.8s
AGMN Agassiz Nation 45.40 300 *e*P **P 20 38 47.8 +0.4**
comp=Z,7.9nm,0.8s
I37A Lemond, Waseca 45.40 294 P **P 20 38 48.6 +1.2**
baz=67
D34A Park Rapids 45.41 299 P **P 20 38 47.9 +0.4**
baz=69
K38A Parkersburg 45.53 292 P **P 20 38 48.2 -0.3**
baz=66
C33A Trail 45.53 300 P **P 20 38 49.0 +0.6**
baz=69
A32A Rocking H Ranc 45.58 301 P **P 20 38 49.6 +0.8**
baz=70
E34A Wadena 45.60 298 P **P 20 38 50.1 +1.1**
baz=68
B32A Ashes, Strandq 45.79 301 P **P 20 38 51.2 +0.8**
baz=69
D33A AnnSam, Waubun 45.80 299 P **P 20 38 51.8 +1.2**
baz=68
BR101 Keskin Array S 45.90 72 *e*P **P 20 38 53.0 +1.4**
BR101 Keskin Array S 45.90 72 *e*P **P 20 38 53.0 +1.4**
BRTR Keskin Array B 45.90 72 P **P 20 38 53.0 +1.4**
comp=Z,2.3nm,0.9s,baz=292,slow=6.2,SNR=9.9
BRTR LR LR 20 58 46.6
comp=Z,76nm,18.2s,baz=294,slow=37
BRTR Keskin Array B 45.90 72 P **P 20 38 53.0 +1.4**
BRTR pmax pmax
comp=Z,2.0nm,0.9s
BRTR MLR MLR
comp=Z,76nm,18.2s
BRTR Keskin Array B 45.90 72 P **P 20 38 53.0 +1.4**
comp=Z,76nm,18.2s
O40A La Belle 45.99 288 P **P 20 38 53.2 +1.1**
baz=64
K37A Belmond 46.06 292 P **P 20 38 53.5 +0.8**
baz=66
Y47A UCPARC, Winfie 46.08 279 P **P 20 38 53.2 +0.3**
baz=64
E33A Westby DABS, E 46.14 298 P **P 20 38 53.8 +0.6**
baz=68
J36A Seneca 1, Swea 46.30 293 P **P 20 38 55.5 +1.0**
baz=66
M38A Pleasantville 46.33 291 P **P 20 38 55.3 +0.5**
baz=64
ANN Anapa 46.34 64 *e*P **P 20 38 51.6 -3.1**
ANN *e*S **S 20 45 36.4 -5.0**
ANN pmax pmax
comp=Z,37nm,1.4s
ANN MLR MLR
comp=Z,251nm,18.0s
L37A Phoenix Point, 46.41 292 P **P 20 38 56.1 +0.7**
baz=65
B31A Greenbush Farm 46.47 301 P **P 20 38 56.1 +0.3**
baz=69
I35A Creekview Farm 46.51 294 P **P 20 38 56.6 +0.4**
baz=66
A30A Hart Farm, 46.69 302 P **P 20 38 56.3 -1.2**
baz=69,SNR=6.3
C31A Landman Farms, 46.75 300 P **P 20 38 57.6 -0.4**
baz=68
B30A Myrvik Farm, E 46.88 301 P **P 20 38 59.6 +0.5**
baz=68,SNR=10
FFC Flin Flon 46.90 311 *e*P **P 20 38 59.5 +0.5**
FFC pmax pmax
comp=Z,12nm,1.0s
FFC Flin Flon 46.90 311 *e*P **P 20 38 59.5 +0.5**
comp=Z,12nm,1.0s
FFC Flin Flon 46.90 311 *e*P **P 20 38 59.5 +0.5**
comp=Z,12nm,1.0s
G33A Ortonville 46.93 297 P **P 20 38 59.6 +0.2**
baz=66
I34A Hadley 47.02 295 P **P 20 38 59.7 -0.4**
baz=66
D31A Mcclaflin, Tow 47.03 299 P **P 20 39 00.2 +0.1**
baz=68
L36A Harm Buss Farm 47.03 292 P **P 20 39 00.4 +0.1**
baz=65
R40A Maddies Statio 47.09 286 P **P 20 39 01.3 +0.5**
baz=62
K35A Storm Lake 47.15 293 P **P 20 39 01.6 +0.4**
baz=65
Q39A Willow Grove F 47.23 287 P **P 20 39 02.1 +0.3**
baz=63
C30A Mose, Pekin 47.25 300 P **P 20 39 02.2 +0.3**
baz=68
A29A Maring Farm, 47.27 302 P **P 20 39 02.7 +0.7**
baz=68,SNR=6.3
N37A Lee Faris, Mou 47.31 290 P **P 20 39 03.0 +0.6**
baz=64
E31A Nome 47.32 299 P **P 20 39 02.7 +0.2**
baz=67
H33A Prehn Over Nor 47.33 296 P **P 20 39 03.0 +0.4**
baz=66
J34A George 47.39 294 P **P 20 39 03.2 +0.1**
baz=65
S40A Lebanon 47.58 286 P **P 20 39 04.0 -0.6**
baz=62
ECSD EROS Data Cent 47.64 295 P **P 20 39 05.0 0.0**
baz=65,SNR=7.5
ECSD EROS Data Cent 47.64 295 *e*P **P 20 39 05.7 +0.7**
comp=Z,25nm,1.4s
ECSD EROS Data Cent 47.64 295 *e*P **P 20 39 05.7 +0.7**
comp=Z,25nm,1.4s
H32A Carson Farm, 47.86 296 P **P 20 39 06.6 -0.1**
baz=66
MDND Maddock 47.90 301 *e*P **P 20 39 08.1 +1.1**
comp=Z,20nm,0.9s
MDND Maddock 47.90 301 *e*P **P 20 39 08.1 +1.1**
comp=Z,20nm,0.9s
A28A Rude Farm, Bot 47.90 303 P **P 20 39 06.8 -0.2**
baz=68
E30A Jud 47.99 299 P **P 20 39 07.4 -0.3**
baz=66
S39A Bolivar 48.10 286 P **P 20 39 09.3 +0.6**
baz=61,SNR=5.9
B28A Dugan Ranch, T 48.14 302 P **P 20 39 09.1 +0.3**
baz=67
D29A Pettibone, Tap 48.20 300 P **P 20 39 09.6 +0.3**
baz=67
L34A Svendsen Farm, 48.24 293 P **P 20 39 09.7 +0.1**
baz=64
145A Houston Renfro 48.24 278 P **P 20 39 10.2 +0.4**
baz=58
R38A Fenwick Farm, 48.27 287 P **P 20 39 10.1 +0.1**
baz=62
F30A Leola 48.33 298 P **P 20 39 10.8 +0.4**
baz=66
U40A Yellville 48.42 284 P **P 20 39 10.9 -0.2**
baz=60
E29A Napoleon 48.43 299 P **P 20 39 11.2 +0.1**
baz=66
T39A Clever 48.46 285 P **P 20 39 11.1 -0.4**
baz=61
W41A Tony Mavity, V 48.58 283 P **P 20 39 12.1 -0.3**
baz=60
W41B Gary Mavity, V 48.58 283 P **P 20 39 12.6 +0.2**
baz=60
V40A Witts Springs 48.67 284 P **P 20 39 13.5 +0.4**
baz=60,SNR=6.4
G30A Faulkton 48.70 298 P **P 20 39 13.7 +0.5**
baz=65,SNR=5.8
D28A Regan 48.76 301 P **P 20 39 14.3 +0.6**
baz=66
F29A Eureka 48.85 299 P **P 20 39 14.7 +0.4**
baz=66
U39A Green Forest 48.85 285 P **P 20 39 14.6 +0.1**
baz=60
A26A Wade Farm, Ken 48.99 303 P **P 20 39 15.2 -0.1**
baz=67
T38A Diamond 49.10 286 P **P 20 39 16.0 -0.4**
baz=61
P35A Duane Minner, 49.10 290 P **P 20 39 15.7 -0.7**
baz=62
W40A Ferguson Farm, 49.15 283 P **P 20 39 17.1 +0.3**
baz=60
O34A Beatrice 49.26 291 P **P 20 39 17.6 +0.1**
baz=62
R36A Gordon, Harris 49.32 288 P **P 20 39 19.1 +1.1**
baz=61
F28A McLaughlin 49.46 299 P **P 20 39 19.9 +0.9**
baz=65
T37A Cheneyville 18 49.49 286 P **P 20 39 19.3 0.0**
baz=60
K31A O'Neill 49.53 294 P **P 20 39 19.6 0.0**
baz=63
H29A Onida 49.60 297 P **P 20 39 21.2 +1.1**
baz=64,SNR=5.4
A25A Svangstu Ranch 49.62 304 P **P 20 39 20.9 +0.7**
baz=66
P34A Walnut Farm, R 49.64 290 P **P 20 39 21.3 +0.8**
baz=62
W39A Magazine 49.66 283 P **P 20 39 21.8 +1.2**
baz=59
S36A Lake Cedric, C 49.67 287 P **P 20 39 21.5 +0.9**
baz=61
BGNE Belgrade 49.68 293 P **P 20 39 21.5 +0.8**
baz=63
E27A Carson 49.70 300 P **P 20 39 22.0 +1.2**
baz=65
J30A Dallas 49.70 296 P **P 20 39 21.8 +0.9**
baz=64
V38A Canehill 49.76 284 P **P 20 39 22.3 +0.9**
baz=60
L31A Butterfield Fa 49.79 294 P **P 20 39 22.2 +0.6**
baz=63
MIAR Mount Ida 49.84 283 P **P 20 39 22.5 +0.4**
baz=59,SNR=6.3
MIAR Mount Ida 49.84 283 *e*P **P 20 39 23.0 +1.0**
MIAR pmax pmax
comp=Z,89nm,1.9s
MIAR Mount Ida 49.84 283 *e*P **P 20 39 23.0 +1.0**
comp=Z,89nm,1.9s
MIAR Mount Ida 49.84 283 *e*P **P 20 39 23.0 +1.0**
comp=Z,89nm,1.9s
G28A Parade 49.86 298 P **P 20 39 22.8 +0.7**
baz=64
I29A Vivian Onida 49.92 297 P **P 20 39 24.0 +1.4**
baz=64
U37A Salina 49.98 285 P **P 20 39 23.9 +0.8**
baz=60
D26A Manning 49.99 301 P **P 20 39 23.9 +0.9**
baz=65
Q34A Chapman 50.02 289 P **P 20 39 23.7 +0.3**
baz=61
KIV Kislovodsk 50.11 63⇓*e*P **P 20 39 23.6 -0.5**
KIV *e* 20 41 24.0
KIV *e*PPP PPP 20 42 15.4
KIV *i* S **S 20 46 34.1 -0.9**
KIV pmax pmax
comp=Z,9.0nm,1.3s
KIV Kislovodsk 50.11 63 *e*P **P 20 39 23.6 -0.5**
comp=Z,9.0nm,1.3s
SDV Santo Domingo 50.15 239 *e*P **P 20 39 24.7 0.0**
comp=Z,9.4nm,1.1s
SDV Santo Domingo 50.15 239 *e*P **P 20 39 24.7 0.0**
comp=Z,9.4nm,1.1s
343A Vidalia 50.16 278 P **P 20 39 25.0 +0.6**
baz=57
J29A Okreek 50.21 296 P **P 20 39 24.9 +0.1**
baz=63
F27A Lemmon 50.22 300 P **P 20 39 24.9 +0.1**
baz=64
W38A Poteau 50.24 284 P **P 20 39 25.2 +0.2**
baz=59
E26A Carlson Angus 50.24 300 P **P 20 39 25.1 +0.1**
baz=65
M31A Lambtecht Ranc 50.26 293 P **P 20 39 25.3 +0.1**
baz=62
KBZ Khabaz 50.35 63 P **P 20 39 26.0 +0.3**
comp=Z,4.1nm,1.1s,baz=276,slow=4.3,SNR=3.6
KBZ LR LR 21 02 01.3
comp=Z,145nm,19.0s,baz=313,slow=38
KBZ Khabaz 50.35 63 P **P 20 39 26.0 +0.3**
KBZ pmax pmax
comp=Z,2.0nm,0.8s
KBZ MLR MLR
comp=Z,145nm,19.0s
KBZ Khabaz 50.35 63 P **P 20 39 26.0 +0.3**
comp=Z,145nm,19.0s
G27A Dupree 50.38 299 P **P 20 39 26.8 +0.8**
baz=64
D25A Fairfield 50.49 302 P **P 20 39 27.4 +0.6**
baz=65
I28A Midland 50.49 297 P **P 20 39 27.8 +0.9**
baz=64
YKA Yellowknife Ar 50.58 323 P **P 20 39 27.4 +0.2**
comp=Z,2.3nm,0.8s,baz=68,slow=7.5,SNR=34
YKB5 Yellowknife Ar 50.58 323 *e*P **P 20 39 26.0 -1.2**
YKB5 Yellowknife Ar 50.58 323 *e*P **P 20 39 26.0 -1.2**
T35A Sooner Cattle 50.70 287 P **P 20 39 29.3 +0.7**
baz=60
J28A Allard Ranch, 50.80 296 P **P 20 39 30.1 +0.8**
baz=63
G26A Maurine 50.84 299 P **P 20 39 30.1 +0.6**
baz=64
W37B Quinton 50.84 284 P **P 20 39 30.4 +0.8**
baz=59
ZEI Tsey 51.43 64 *e*P **P 20 39 35.6 +1.5**
ZEI pmax pmax
comp=Z,16nm,0.7s
X35A Drake 52.31 284 P **P 20 39 40.6 0.0**
baz=58
LAO LASA Array 52.48 302 P **P 20 39 42.4 +0.7**
baz=63,SNR=5.3
LAO LASA Array 52.48 302 *e*P **P 20 39 43.3 +1.5**
comp=Z,24nm,1.0s
LAO LASA Array 52.48 302 *e*P **P 20 39 43.3 +1.5**
comp=Z,24nm,1.0s
GNI Garni 53.24 67*c e*P **P 20 39 48.4 +0.8**
GNI pmax pmax
comp=Z,15nm,1.0s
GNI Garni 53.24 67 *e*P **P 20 39 48.4 +0.8**
comp=Z,15nm,1.0s
WMOK Wichita Mounta 53.40 286 *e*P **P 20 39 48.3 -0.4**
WMOK pmax pmax
comp=Z,11nm,1.1s
WMOK Wichita Mounta 53.40 286 *e*P **P 20 39 48.3 -0.4**
comp=Z,11nm,1.1s
WMOK Wichita Mounta 53.40 286 *e*P **P 20 39 48.3 -0.4**
comp=Z,11nm,1.1s
ARU Arti 53.84 43*d i*P **P 20 39 51.3 -0.3**
ARU 20 41 54.6
ARU S **S 20 47 23.4 -2.4**
ARU pmax pmax
comp=Z,9.0nm,1.7s
ARU Arti 53.84 43 *e*P **P 20 39 51.5 -0.1**
comp=Z,4.5nm,0.8s
ARU Arti 53.84 43 *e*P **P 20 39 51.5 -0.1**
comp=Z,4.5nm,0.8s
EGMT Eagleton 54.00 305 P **P 20 39 53.3 +0.4**
baz=62
EGMT Eagleton 54.00 305 *e*P **P 20 39 53.6 +0.6**
comp=Z,29nm,1.4s
EGMT Eagleton 54.00 305 *e*P **P 20 39 53.6 +0.6**
comp=Z,29nm,1.4s
134A White-Moore Ra 54.07 283 P **P 20 39 54.0 +0.4**
baz=57
Z33A Whitaker Ranch 54.17 284 P **P 20 39 54.6 +0.3**
baz=57
234A Clairette 54.42 282 P **P 20 39 56.5 +0.3**
baz=56
K22A Casper 54.58 298 P **P 20 39 57.8 +0.4**
baz=60
133A Hamilton Ranch 54.64 283 P **P 20 39 58.1 +0.3**
baz=56
334A Lometa 54.87 282 P **P 20 39 59.5 +0.1**
baz=56
233A Rising Star 54.95 283 P **P 20 40 00.6 +0.5**
baz=56
737A Port Lavaca 55.03 278 P **P 20 40 00.7 +0.1**
baz=55
N23A Red Feather La 55.08 296 P **P 20 40 01.7 +0.6**
baz=59,SNR=6.3
N23A Red Feather La 55.08 296 *e*P **P 20 40 02.6 +1.5**
comp=Z,29nm,1.4s
N23A Red Feather La 55.08 296 *e*P **P 20 40 02.6 +1.5**
comp=Z,29nm,1.4s
RLMT Red Lodge 55.09 302 *e*P **P 20 40 02.0 +0.9**
comp=Z,18nm,1.4s
RLMT Red Lodge 55.09 302 *e*P **P 20 40 02.0 +0.9**
comp=Z,18nm,1.4s
ABTX Abilene, Hawle 55.15 284 P **P 20 40 01.2 -0.2**
baz=56
INK Inuvik 55.18 334 P **P 20 40 00.0 -1.0**
comp=Z,6.2nm,1.0s,baz=65,slow=9.7,SNR=11
INK Inuvik 55.18 334 *e*P **P 20 40 00.5 -0.5**
INK Inuvik 55.18 334 *e*P **P 20 40 00.5 -0.5**

AMTX	Amarillo	55.34	287	P		P		20 40 03.0	+0.1	
	baz=57									
AMTX	Amarillo	55.34	287	eP		P		20 40 04.4	+1.5	
	comp=Z,12nm,0.9s									
AMTX	Amarillo	55.34	287	eP		P		20 40 04.4	+1.5	
	comp=Z,12nm,0.9s									
333A	Richland Sprin	55.40	282	P		P		20 40 03.3	+0.1	
	baz=56									
ISCO	Idaho Springs	55.42	294	P		P		20 40 03.7	0.0	
	baz=59									
ISCO	Idaho Springs	55.42	294	eP		P		20 40 05.6	+1.9	
ISCO				pmax		pmax				
	comp=Z,6.0nm,1.2s									
ISCO	Idaho Springs	55.42	294	eP		P		20 40 05.6	+1.9	
	comp=Z,6.0nm,1.2s									
ISCO	Idaho Springs	55.42	294	eP		P		20 40 05.6	+1.9	
	comp=Z,6.1nm,1.2s									
ROSC	El Rosal	55.58	239	LR		LR		20 59 52.4		
	comp=Z,123nm,21.4s,baz=64,slow=32									
534A	Blanco	55.77	281	P		P		20 40 06.4	+0.5	
	baz=55									
433A	Art	55.80	282	P		P		20 40 06.1	0.0	
	baz=56,SNR=7.1									
WALA	Waterton Lakes	55.93	308	eP		P		20 40 07.7	+0.7	
	comp=Z,17nm,1.1s									
WALA	Waterton Lakes	55.93	308	eP		P		20 40 07.7	+0.7	
	comp=Z,17nm,1.1s									
T25A	Trinidad	56.01	291	P		P		20 40 07.8	+0.1	
	baz=58									
533A	Kerrville	56.14	281	P		P		20 40 09.2	+0.6	
	baz=55									
H17A	Grant Village	56.26	301	eP		P		20 40 11.8	+2.3	
	comp=Z,7.0nm,1.2s									
H17A	Grant Village	56.26	301	eP		P		20 40 11.8	+2.3	
	comp=Z,7.0nm,1.2s									
BOZ	Bozeman (W)	56.28	303	P		P		20 40 08.9	-0.6	
	baz=60,SNR=5.5									
BOZ	Bozeman (W)	56.28	303	eP		P		20 40 09.6	+0.1	
BOZ				pmax		pmax				
	comp=Z,7.0nm,1.1s									
BOZ	Bozeman (W)	56.28	303	eP		P		20 40 09.6	+0.1	
	comp=Z,7.0nm,1.1s									
BOZ	Bozeman (W)	56.28	303	eP		P		20 40 09.6	+0.1	
	comp=Z,7.0nm,1.1s									
SDCO	Great Sand Dun	56.42	292	P		P		20 40 10.8	0.0	
	baz=58									
SDCO	Great Sand Dun	56.42	292	eP		P		20 40 10.8	0.0	
	comp=Z,16nm,1.7s									
SDCO	Great Sand Dun	56.42	292	eP		P		20 40 10.8	0.0	
	comp=Z,16nm,1.7s									
BW06	Boulder Array	56.45	299	P		P		20 40 09.8	-1.2	
	baz=59,SNR=7.2									
BW06	Boulder Array	56.45	299	eP		P		20 40 10.9	0.0	
BW06	Boulder Array	56.45	299	eP		P		20 40 10.9	0.0	
PD31	Pinedale Array	56.45	299	eP		P		20 40 11.5	+0.6	
PD31	Pinedale Array	56.45	299	eP		P		20 40 11.5	+0.6	
PDAR	Pinedale Array	56.45	299	LR		LR		21 03 36.3		
	comp=Z,428nm,18.1s,baz=72,slow=35									
JCT	Junction City	56.46	282	P		P		20 40 10.9	+0.1	
	baz=55									
JCT	Junction City	56.46	282	eP		P		20 40 10.9	+0.1	
JCT				pmax		pmax				
	comp=Z,9.0nm,0.9s									
JCT	Junction City	56.46	282	eP		P		20 40 10.9	+0.1	
	comp=Z,9.0nm,0.9s									
JCT	Junction City	56.46	282	eP		P		20 40 10.9	+0.1	
	comp=Z,8.6nm,0.9s									
633A	Saathoff Ranch	56.59	280	P		P		20 40 11.7	-0.1	
	baz=55									
MSTX	Muleshoe	56.59	287	P		P		20 40 11.3	-0.6	
	baz=56									
MSTX	Muleshoe	56.59	287	eP		P		20 40 11.2	-0.6	
	comp=Z,17nm,0.9s									
MSTX	Muleshoe	56.59	287	eP		P		20 40 11.2	-0.6	
	comp=Z,17nm,0.9s									
CHMT	Chamberlain Mo	56.61	305	eP		P		20 40 12.4	+0.4	
CHMT	Chamberlain Mo	56.61	305	eP		P		20 40 12.4	+0.4	
LOHW	Long Hollow	56.67	301	eP		P		20 40 13.1	+0.6	
	comp=Z,7.4nm,1.2s									
LOHW	Long Hollow	56.67	301	eP		P		20 40 13.1	+0.6	
	comp=Z,7.4nm,1.2s									
MOOW	Moose Ponds	56.69	301	eP		P		20 40 13.5	+0.9	
	comp=Z,22nm,1.7s									
MOOW	Moose Ponds	56.69	301	eP		P		20 40 13.5	+0.9	
	comp=Z,22nm,1.7s									
SNOW	Snow King Moun	56.85	301	eP		P		20 40 14.5	+0.8	
	comp=Z,21nm,1.4s									
SNOW	Snow King Moun	56.85	301	eP		P		20 40 14.5	+0.8	
	comp=Z,21nm,1.4s									
834A	Tilden	56.92	279	P		P		20 40 13.2	-0.9	
	baz=54									
FXWY	Fox Creek	56.93	301	eP		P		20 40 13.9	-0.4	
	comp=Z,18nm,1.8s									
FXWY	Fox Creek	56.93	301	eP		P		20 40 13.9	-0.4	
	comp=Z,18nm,1.8s									
REDW	Red Top Meadow	56.96	301	eP		P		20 40 15.6	+1.1	
	comp=Z,20nm,1.3s									
REDW	Red Top Meadow	56.96	301	eP		P		20 40 15.6	+1.1	
	comp=Z,20nm,1.3s									
O20A	White River Ci	56.97	296	P		P		20 40 13.4	-1.2	
	baz=58									
DLMT	Dillon	57.01	303	eP		P		20 40 16.0	+1.3	
	comp=Z,22nm,1.5s									
DLMT	Dillon	57.01	303	eP		P		20 40 16.0	+1.3	
	comp=Z,22nm,1.5s									
MSO	Missoula	57.06	305	P		P		20 40 14.8	-0.3	
	baz=59									
MSO	Missoula	57.06	305	eP		P		20 40 15.3	+0.3	
	comp=Z,10nm,1.3s									
MSO	Missoula	57.06	305	eP		P		20 40 15.3	+0.3	
	comp=Z,10nm,1.3s									
035A	Encino	57.29	277	P		P		20 40 17.0	+0.3	
	baz=54									
933A	Laredo	57.73	279	P		P		20 40 20.9	+1.1	
	baz=54									
NRIK	Noril'sk	58.08	22	P		P		20 40 22.6	+0.9	
	comp=Z,2.6nm,0.6s,baz=356,slow=1.8,SNR=3.6									
NRIK				LR		LR		21 04 13.0		
	comp=Z,74nm,20.2s,baz=307,slow=35									
NRIK	Noril'sk	58.08	22	P		P		20 40 22.6	+0.9	
NRIK				pmax		pmax				
	comp=Z,5.0nm,0.6s									
NRIK				MLR		MLR				
	comp=Z,74nm,20.2s									
NEW	Newport	58.17	308	P		P		20 40 23.2	+0.5	
	comp=Z,6.4nm,1.0s,baz=60,slow=6.5,SNR=8.6									
NEW				LR		LR		21 03 36.5		
	comp=Z,596nm,19.3s,baz=36,slow=34									
NEW	Newport	58.17	308	P		P		20 40 22.0	-0.7	
	baz=58,SNR=6.9									
NEW	Newport	58.17	308	eP		P		20 40 23.3	+0.5	
NEW				pmax		pmax				
	comp=Z,14nm,1.1s									
NEW	Newport	58.17	308	eP		P		20 40 23.3	+0.5	
	comp=Z,14nm,1.1s									
NEW	Newport	58.17	308	eP		P		20 40 23.3	+0.5	
	comp=Z,14nm,1.1s									
HWUT	Hardware Ranch	58.33	299	eP		P		20 40 24.7	+0.6	
	comp=Z,11nm,1.2s									
HWUT	Hardware Ranch	58.33	299	eP		P		20 40 24.7	+0.6	
	comp=Z,11nm,1.2s									
P18A	Preston Nutter	58.55	296	eP		P		20 40 27.0	+1.2	
	comp=Z,29nm,1.9s									
P18A	Preston Nutter	58.55	296	eP		P		20 40 27.0	+1.2	
	comp=Z,29nm,1.9s									
ANMO	Albuquerque	58.59	290	P		P		20 40 26.4	+0.4	
	baz=56									
ANMO	Albuquerque	58.59	290	ceP		P		20 40 29.5	+3.5	
ANMO				pmax		pmax				
	comp=Z,3.0nm,1.7s									
HLID	Hailey	59.06	302	P		P		20 40 29.2	0.0	
	baz=57									
HLID	Hailey	59.06	302	eP		P		20 40 30.2	+1.1	
	comp=Z,5.8nm,1.3s									
HLID	Hailey	59.06	302	eP		P		20 40 30.2	+1.1	
	comp=Z,5.8nm,1.3s									
DLBC	Dease Lake	59.21	323	LR		LR		21 03 39.4		
	comp=Z,324nm,19.2s,baz=347,slow=34									
DLBC	Dease Lake	59.21	323	eP		P		20 40 30.9	+1.1	
	comp=Z,7.8nm,1.1s									
DLBC	Dease Lake	59.21	323	eP		P		20 40 30.9	+1.1	
	comp=Z,7.8nm,1.1s									
BGU	Big Grassy Mou	59.63	299	eP		P		20 40 32.3	-0.8	
	comp=Z,22nm,2.0s									
BGU	Big Grassy Mou	59.63	299	eP		P		20 40 32.3	-0.8	
	comp=Z,22nm,2.0s									
MNTX	Cornudas Mount	59.69	286	P		P		20 40 33.6	+0.2	
	baz=55									
EGAK	Eagle	59.71	333	eP		P		20 40 33.1	0.0	
	comp=Z,12nm,1.5s									
EGAK	Eagle	59.71	333	eP		P		20 40 33.1	0.0	
	comp=Z,12nm,1.5s									
FYU	Fort Yukon	59.85	336	eP		P		20 40 34.3	+0.4	
	comp=Z,42nm,1.5s									
FYU	Fort Yukon	59.85	336	eP		P		20 40 34.3	+0.4	
	comp=Z,42nm,1.5s									
LTX	Lajitas	59.85	283	eP		P		20 40 35.8	+1.1	
LTX	Lajitas	59.85	283	eP		P		20 40 35.8	+1.1	
LTX	Lajitas	59.85	283	eP		P		20 40 35.8	+1.1	
TX31	Lajitas Ar. Si	59.85	283	eP		P		20 40 35.2	+0.4	
TX31	Lajitas Ar. Si	59.85	283	eP		P		20 40 35.2	+0.4	
TXAR	Lajitas Array	59.85	283	P		P		20 40 35.8	+1.1	
	comp=Z,14nm,1.2s,baz=64,slow=5.7,SNR=18									
TXAR				LR		LR		21 06 32.1		
	comp=Z,278nm,18.5s,baz=0.0,slow=36									
DUG	Dugway, Tooele	59.89	298	P		P		20 40 34.5	-0.4	
	baz=56,SNR=9.9									
DUG	Dugway, Tooele	59.89	298	eP		P		20 40 35.8	+0.9	
DUG				pmax		pmax				
	comp=Z,6.0nm,0.8s									
DUG	Dugway, Tooele	59.89	298	eP		P		20 40 35.8	+0.9	
	comp=Z,6.0nm,0.8s									
DUG	Dugway, Tooele	59.89	298	eP		P		20 40 35.8	+0.9	
	comp=Z,6.1nm,0.8s									
MSU	Marysvale	60.41	296	eP		P		20 40 39.0	+0.4	
MSU	Marysvale	60.41	296	eP		P		20 40 39.0	+0.4	
MSU	Marysvale	60.41	296	eP		P		20 40 39.0	+0.4	
RSW	Rattlesnake Hi	60.59	307	eP		P		20 40 38.3	-1.3	
RSW	Rattlesnake Hi	60.59	307	eP		P		20 40 38.3	-1.3	
LTY	Liberty	60.73	309	eP		P		20 40 40.4	-0.1	
	comp=Z,13nm,1.2s									
LTY	Liberty	60.73	309	eP		P		20 40 40.4	-0.1	
	comp=Z,13nm,1.2s									
ZRNK	Zerenda	60.83	43	eP		P		20 40 40.3	-0.6	
ZRNK				pmax		pmax				
	comp=Z,3.0nm,1.0s									
ZRNK	Zerenda	60.83	43	eP		P		20 40 40.3	-0.6	
	comp=Z,3.0nm,1.0s									
ZRNK	Zerenda	60.83	43	eP		P		20 40 40.3	-0.6	
	comp=Z,3.1nm,1.0s									
COLD	Coldfoot	60.83	338	eP		P		20 40 40.9	+0.2	
	comp=Z,7.4nm,1.1s									
COLD	Coldfoot	60.83	338	eP		P		20 40 40.9	+0.2	
	comp=Z,7.4nm,1.1s									
SAML	Samuel	60.92	220	eP		P		20 40 41.6	-0.3	
	comp=Z,5.6nm,1.3s									
SAML	Samuel	60.92	220	eP		P		20 40 41.6	-0.3	
	comp=Z,5.6nm,1.3s									
PKCU	Pink Cliffs	61.10	295	eP		P		20 40 43.7	+0.2	
	comp=Z,7.7nm,0.9s									
PKCU	Pink Cliffs	61.10	295	eP		P		20 40 43.7	+0.2	
	comp=Z,7.7nm,0.9s									
ELK	Elko	61.12	300	eP		P		20 40 44.6	+1.2	
ELK				pmax		pmax				
	comp=Z,5.0nm,1.0s									
ELK	Elko	61.12	300	eP		P		20 40 44.6	+1.2	
	comp=Z,5.0nm,1.0s									
ELK	Elko	61.12	300	eP		P		20 40 44.6	+1.2	
	comp=Z,5.2nm,1.0s									
BRVK	Borovoye	61.40	43	ceP		P		20 40 46.0	+1.2	
BRVK				pmax		pmax				
	comp=Z,4.0nm,1.0s									
BRVK	Borovoye	61.40	43	eP		P		20 40 44.6	-0.2	
	comp=Z,3.7nm,0.9s									
BRVK	Borovoye	61.40	43	eP		P		20 40 44.6	-0.2	
	comp=Z,3.7nm,0.9s									
BVAR	Borovoye Array	61.47	43	P		P		20 40 45.3	0.0	
	comp=Z,1.1nm,0.8s,baz=301,slow=6.6,SNR=9.2									
PSUT	Pine Spring	61.49	297	eP		P		20 40 45.9	0.0	
	comp=Z,4.7nm,1.0s									
PSUT	Pine Spring	61.49	297	eP		P		20 40 45.9	0.0	
	comp=Z,4.7nm,1.0s									
IL1	Eielson Array	61.57	335	eP		P		20 40 45.5	-0.2	
IL1	Eielson Array	61.57	335	eP		P		20 40 45.5	-0.2	
ILAR	Eielson Array	61.57	335	P		P		20 40 46.1	+0.4	
	comp=Z,0.6nm,0.6s,baz=46,slow=3.2,SNR=11									
ILAR				LR		LR		21 05 29.5		
	comp=Z,245nm,18.5s,baz=82,slow=34									
ILB	Eielson Array	61.57	335	eP		P		20 40 45.5	-0.2	
ILB	Eielson Array	61.57	335	eP		P		20 40 45.5	-0.2	
WUAZ	Wupatki	61.58	293	eP		P		20 40 46.8	+0.3	
	comp=Z,15nm,1.4s									
WUAZ	Wupatki	61.58	293	eP		P		20 40 46.8	+0.3	
	comp=Z,15nm,1.4s									
MDM	Murphy Dome	61.85	335	eP		P		20 40 48.2	+0.5	
	comp=Z,9.9nm,1.2s									
MDM	Murphy Dome	61.85	335	eP		P		20 40 48.2	+0.5	
	comp=Z,9.9nm,1.2s									
CCB	Clear Creek Bu	61.94	335	eP		P		20 40 48.4	+0.2	
	comp=Z,14nm,1.6s									
CCB	Clear Creek Bu	61.94	335	eP		P		20 40 48.4	+0.2	
	comp=Z,14nm,1.6s									
WRH	Wood River Hil	62.15	335	eP		P		20 40 49.8	+0.2	
	comp=Z,19nm,1.6s									
WRH	Wood River Hil	62.15	335	eP		P		20 40 49.8	+0.2	
	comp=Z,19nm,1.6s									
WVOR	Wild Horse Val	62.26	303	eP		P		20 40 52.7	+1.8	
WVOR				pmax		pmax				
	comp=Z,14nm,1.2s									
WVOR	Wild Horse Val	62.26	303	eP		P		20 40 52.7	+1.8	
	comp=Z,14nm,1.2s									
WVOR	Wild Horse Val	62.26	303	eP		P		20 40 52.7	+1.8	
	comp=Z,14nm,1.2s									
PAX	Paxson	62.34	333	eP		P		20 40 51.2	+0.1	
PAX				pmax		pmax				
	comp=Z,20nm,1.7s									
PAX	Paxson	62.34	333	eP		P		20 40 51.2	+0.1	
	comp=Z,20nm,1.7s									
PAX	Paxson	62.34	333	eP		P		20 40 51.2	+0.1	
	comp=Z,20nm,1.7s									
MLY	Manley	62.55	336	eP		P		20 40 52.3	-0.1	
	comp=Z,3.9nm,0.9s									
MLY	Manley	62.55	336	eP		P		20 40 52.3	-0.1	
	comp=Z,3.9nm,0.9s									
319A	Douglas	62.58	288	eP		P		20 40 54.2	+1.1	
	comp=Z,28nm,1.4s									
R11A	Troy Canyon, C	62.71	298	P		P		20 40 54.7	+0.7	
	baz=54									
DHY	Denali Highway	62.90	333	eP		P		20 40 55.2	+0.3	
	comp=Z,8.6nm,1.3s									
DHY	Denali Highway	62.90	333	eP		P		20 40 55.2	+0.3	
	comp=Z,8.6nm,1.3s									
GEYT	Alibeck	63.20	62	P		P		20 40 57.8	+0.6	
	comp=Z,2.4nm,0.8s,baz=290,slow=8.8,SNR=5.9									
GEYT				LR		LR		21 12 01.0		
	comp=Z,80nm,18.5s,baz=25,slow=40									
BPAW	Bear Paw Mtn.	63.30	335	eP		P		20 40 57.2	-0.2	
	comp=Z,6.6nm,1.2s									
BPAW	Bear Paw Mtn.	63.30	335	eP		P		20 40 57.2	-0.2	
	comp=Z,6.6nm,1.2s									
J05D	Fort Rock, OR	63.33	305	P		P		20 40 58.1	+0.1	
	baz=54									
K05A	Summer Lake	63.45	305	eP		P		20 40 58.1	-0.8	
	comp=Z,17nm,1.4s									
K05A	Summer Lake	63.45	305	eP		P		20 40 58.1	-0.8	
	comp=Z,17nm,1.4s									
TRF	Thorofare Moun	63.56	335	eP		P		20 40 59.3	0.0	
	comp=Z,34nm,1.7s									
TRF	Thorofare Moun	63.56	335	eP		P		20 40 59.3	0.0	
	comp=Z,34nm,1.7s									
KTH	Kantishna Hill	63.68	335	eP		P		20 40 59.6	-0.4	
	comp=Z,10.0nm,1.3s									
KTH	Kantishna Hill	63.68	335	eP		P		20 40 59.6	-0.4	
	comp=Z,10.0nm,1.3s									
TIXI	Tiksi	63.89	8	ceP		P		20 41 01.9	+0.8	
TIXI				pmax		pmax				
	comp=Z,11nm,2.5s									
TIXI	Tiksi	63.89	8	eP		P		20 41 01.5	+0.5	
	comp=Z,5.9nm,1.1s									
TIXI	Tiksi	63.89	8	eP		P		20 41 01.5	+0.5	
	comp=Z,5.9nm,1.1s									
NV01	Mina Array Sit	64.39	299	eP		P		20 41 06.3	+1.1	
NV01	Mina Array Sit	64.39	299	eP		P		20 41 06.3	+1.1	
NVAR	Mina Array Bea	64.39	299	P		P		20 41 06.3	+1.1	
	comp=Z,0.5nm,0.5s,baz=60,slow=5.0,SNR=3.6									
M04C	Macdoel	64.57	304	P		P		20 41 06.7	+0.5	
	baz=53									
214A	Organ Pipe Nat	64.64	291	P		P		20 41 07.4	+0.6	
	baz=53									
GMRC	Granite Mounta	64.85	295	P		P		20 41 08.6	+0.5	
	baz=53									
DAC	Darwin (Calif)	65.22	297	eP		P		20 41 11.0	+0.4	
DAC				pmax		pmax				
	comp=Z,6.0nm,1.2s									
DAC	Darwin (Calif)	65.22	297	eP		P		20 41 11.0	+0.4	
	comp=Z,6.0nm,1.2s									
DAC	Darwin (Calif)	65.22	297	eP		P		20 41 11.0	+0.4	
	comp=Z,6.3nm,1.2s									
MPMC	Manual Prospec	65.28	297	P		P		20 41 11.8	+0.7	
	baz=53									
GSC	Goldstone, Bar	65.30	296	eP		P		20 41 12.0	+1.0	
GSC				pmax		pmax				
	comp=Z,7.0nm,1.0s									
GSC	Goldstone, Bar	65.30	296	eP		P		20 41 12.0	+1.0	
	comp=Z,7.0nm,1.0s									
GSC	Goldstone, Bar	65.30	296	eP		P		20 41 12.0	+1.0	
	comp=Z,6.5nm,1.0s									
OTUK	Ortayu	65.34	46	P		P		20 41 11.3	+0.3	
OTUK				pmax		pmax				
	comp=Z,3.0nm,1.1s									
OTUK	Ortayu	65.34	46	P		P		20 41 11.3	+0.3	
	comp=Z,3.0nm,1.1s									
BC3	Big Chuckawall	65.40	294	P		P		20 41 12.1	+0.4	
	baz=53									
NVS	Novosibirsk	66.22	36	eP		P		20 41 16.5	0.0	
NVS	Novosibirsk	66.22	36	eP		P		20 41 16.5	0.0	
MURC	Murrieta	66.58	295	P		P		20 41 18.8	-0.4	
	baz=52,SNR=9.5									
KURK	Kurchatov	66.90	41	eP		P		20 41 20.1	-0.8	
KURK				pmax		pmax				
	comp=Z,7.0nm,0.9s									
KURK	Kurchatov	66.90	41	eP		P		20 41 20.1	-0.8	
	comp=Z,7.0nm,0.9s									
KURK	Kurchatov	66.90	41	eP		P		20 41 20.1	-0.8	
	comp=Z,6.9nm,0.9s									
ZAA1	Zalesovo Array	67.51	36	eP		P		20 41 24.5	-0.2	
ZAA1	Zalesovo Array	67.51	36	eP		P		20 41 24.6	-0.2	
ZAA0	Zalesovo Array	67.51	36	eP		P		20 41 23.8	-0.9	
ZAA0	Zalesovo Array	67.51	36	eP		P		20 41 23.8	-0.9	
ZALV	Zalesovo Beam	67.51	36	P		P		20 41 24.6	-0.2	
	comp=Z,1.0nm,0.6s,baz=308,slow=7.3,SNR=8.1									
ZALV				LR		LR		21 10 32.3		
	comp=Z,89nm,21.9s,baz=250,slow=36									
BILL	Bilibino	68.01	354	eP		P		20 41 28.0	+0.3	
BILL				e*PP		PcP		20 41 52.6	-1.2	
BILL				e				20 43 58.1		
BILL				pmax		pmax				
	comp=Z,3.0nm,1.5s									
BILL	Bilibino	68.01	354	eP		P		20 41 28.0	+0.3	
	comp=Z,3.0nm,1.5s									
BILL	Bilibino	68.01	354	ePcP		PcP		20 41 52.6	-1.2	
MNAS	Manas	69.09	51	P		P		20 41 35.8	+0.7	
MNAS				pmax		pmax				
	comp=Z,3.0nm,1.2s									
MNAS	Manas	69.09	51	P		P		20 41 35.8	+0.7	
	comp=Z,3.0nm,1.2s									
LPAZ	La Paz	69.63	220	P		P		20 41 40.0	+1.0	
	comp=Z,3.0nm,1.0s,baz=0.6,slow=4.6,SNR=6.9									
LPAZ				LR		LR		21 09 37.5		
	comp=Z,58nm,19.8s,baz=42,slow=34									
LPAZ	La Paz	69.63	220	eP		P		20 41 37.7	-1.4	
	comp=Z,5.2nm,1.1s									
EKS2	Erkin-Say	69.69	50	eP		P		20 41 38.5	-0.2	
EKS2				pmax		pmax				
	comp=Z,6.0nm,1.2s									
EKS2	Erkin-Say	69.69	50	eP		P		20 41 38.5	-0.2	
	comp=Z,6.0nm,1.2s									
EKS2	Erkin-Say	69.69	50	eP		P		20 41 38.5	-0.2	
	comp=Z,6.0nm,1.2s									
UOSS	Minazif	69.84	74	eP		P		20 41 39.6	-0.1	
	comp=Z,0.5nm,0.9s									
UOSS	Minazif	69.84	74	eP		P		20 41 39.6	-0.1	
	comp=Z,0.5nm,0.9s									
AAK	Ala-Archa	70.11	50	eP		P		20 41 42.9	+1.6	
AAK				pmax		pmax				
	comp=Z,3.0nm,1.0s									
AAK	Ala-Archa	70.11	50	eP		P		20 41 41.7	+0.3	
	comp=Z,3.9nm,1.3s									
AAK	Ala-Archa	70.11	50	eP		P		20 41 41.7	+0.3	
	comp=Z,3.9nm,1.3s									
MAKZ	Makanchi	71.19	43	eP		P		20 41 47.7	0.0	
MAKZ				pmax		pmax				
	comp=Z,4.0nm,1.1s									
MAKZ	Makanchi	71.19	43	eP		P		20 41 47.7	0.0	
	comp=Z,4.0nm,1.1s									
MAKZ	Makanchi	71.19	43	eP		P		20 41 47.7	0.0	
	comp=Z,3.5nm,1.1s									
MK31	Makanchi Array	71.35	43	eP		P		20 41 48.3	-0.4	
MK31	Makanchi Array	71.35	43	eP		P		20 41 48.3	-0.4	
MK31	Makanchi Array	71.35	43	eP		P		20 41 48.3	-0.4	
MK32	Makanchi Array	71.35	43	eP		P		20 41 47.8	-0.8	
MK32	Makanchi Array	71.35	43	eP		P		20 41 47.9	-0.8	
MKAR	Makanchi Array	71.35	43	P		P		20 41 47.9	-0.8	
	comp=Z,1.

comp=Z,44nm,5.2s
GTA LR LR
comp=Z,66nm,18.1s
GTA LR LR
comp=Z,90nm,17.6s
GTA LR LR
comp=Z,79nm,19.0s
BOSA Boshof 87.40 134 LR LR 21 20 46.7
comp=Z,363nm,19.5s,baz=318,slow=34
HHC Hu-ho-hao-te 88.63 29 *eP* **P 20 43 21.1 -1.1**
HHC sP sP 20 43 29.3 +0.8
HHC S **S 20 54 06.5 -1.8**
HHC sS sS 20 54 16.5 +0.5
HHC pmax pmax
comp=Z,12nm,0.9s
HHC pmax pmax
comp=Z,100nm,4.7s
HHC LR LR
comp=Z,150nm,16.1s
HHC LR LR
comp=Z,160nm,17.2s
HHC LR LR
comp=Z,190nm,17.2s
CN2 Changchun 89.93 18 *eP* **P 20 43 27.4 -0.6**
BJI Beijing 90.90 26 P **P 20 43 32.9 +0.3**
BJI pmax pmax
comp=Z,7.0nm,0.7s
PLCA Paso Flores 92.02 210 LR LR 21 23 13.0
comp=Z,85nm,21.3s,baz=42,slow=34
CD2 Chengdu 94.06 39 P **P 20 43 46.1 -1.4**
CD2 pmax pmax
comp=Z,1.0nm,0.5s
KMI Kunming 98.43 43 P Pdif 20 44 07.8 +0.2
KMI pmax pmax
comp=Z,8.0nm,1.4s
KMI pmax pmax
comp=Z,65nm,5.6s
KMI LR LR
comp=Z,110nm,17.3s
KMI LR LR
comp=Z,110nm,16.3s
KMI LR LR
comp=Z,150nm,22.6s
NJ2 Nanjing 99.07 27 *eP* **Pdif 20 44 09.8 -0.2**
NJ2 pmax pmax
comp=Z,14nm,0.8s
VNDA Vanda 145.78 184 PKPbc **PKPab 20 50 08.7 +1.7**
comp=Z,1.1nm,0.7s,baz=271,slow=2.4,SNR=5.8

IDC 19 20:44:43.7±3.8,4°.46N×125°.49E,**h0**km,**mb3.4**/3,
mb1 3.8/3,**mb1mx3.3**/43,**mbtmp3.4**/3,**Error ellipse:**
s-maj=212.2km s-min=31.1km az=88.0,Talaud Islands

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
WRA	**Warramunga Arr**	**25.76**	**161**	P	P	20 50 15.0	-1.4
	0.2nm,0.4s,baz=338,slow=11,SNR=16						
ASAR	**Alice Springs**	**29.13**	**164**	P	P	20 50 48.5	+1.8
	0.5nm,0.7s,baz=344,slow=9.8,SNR=5.3						
ILAR	**Eielson Array**	**84.98**	**25**	P	P	20 57 20.7	-0.1
	0.3nm,0.8s,baz=251,slow=6.1,SNR=3.8						

NIED ***19*** *20:48:00,37°.20N×142°.10E,h29km,Mw3.8 Best double couple: M₀4.83000×10¹⁴ NP1:φ₈297.00000°,δ65.00000°, λ171.00000°. NP2:φ₈30.00000°,δ82.00000°,λ25.00000°.*
IDC ***19*** *20:48:22.7±11.0,36°.79N×143°.11E,h0km,mb3.7/2, mb1 3.8/3,mb1mx3.4/53,mbtmp3.8/3,ML4.0/1,MS3.0/3, Ms1 3.0/3,ms1mx2.5/57,Error ellipse: s-maj=193.7km s-min=75.4km az=136.0*
ISCJB ***19*** *20:48:31.3±0.7,37°.27N±0°.05×142°.23E±0°.06,h19km, mb4.0/5,MS4.0/1,Error ellipse: s-maj=7.5km s-min=5.9km az=41.0*
JMA ***19*** *20:48:32.1±0.3,37°.23N×142°.14E,h24km±5km,M4.3*
NEIC ***19*** *20:48:35.8±0.8,37°.23N×142°.26E,h54km±5km,mb4.0/2, Error ellipse: s-maj=15.8km s-min=8.1km az=120.0*
ISC 19 20:48:32.0±1.0,**37°.15N**±0°.05×**142°.06E**±0°.06,**h19**km,**n32,**
σ1§**20**/35,**mb4.0/5,Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JFK	**Kawauchi**	**0.97**	**283**	P	**Pg**	20 48 50.8	**-0.1**
JFK				*eS*	**Sg**	20 49 03.4	**-0.4**
ONAJ	**Iwakimizuishiy**	**1.01**	**268**	P	**Pg**	20 48 51.5	**-0.2**
JMM	**Marumori**	**1.24**	**306**	P	**Pb**	20 48 54.2	**-0.6**
JMM				*eS*	**Sb**	20 49 09.9	**-0.4**
JHO	**Hitachi**	**1.31**	**246**	P	**Pb**	20 48 55.7	**-0.3**
JIO	**Ouri**	**1.42**	**337**	P	**Pn**	20 48 55.6	**-1.2**
JFT	**Otama**	**1.42**	**286**	P	**Pb**	20 48 58.3	**+0.3**
JFT				*eS*	**Sb**	20 49 16.4	**+0.7**
JOU	**Okura**	**1.65**	**318**	P	**Pn**	20 49 00.1	**+0.2**
JOU				*eS*	**Sn**	20 49 20.7	**+0.1**
JFY	**Yanaizu**	**1.90**	**279**	P	**Pb**	20 49 05.7	**-0.3**
JYS	**Shirataka**	**1.91**	**305**	P	**Pb**	20 49 05.4	**-0.9**
MJAR	**Matsushiro Arr**	**3.15**	**260**	Pn	**Pb**	20 49 24.4	**-3.0**
	9.2nm,0.3s,baz=86,slow=16,SNR=42						
MJAR				Sn	**Sb**	20 50 06.3	**+0.9**
	5.5nm,0.3s,baz=335,slow=32,SNR=4.9						
MJAR				LR	LR	20 50 55.9	
	comp=Z,94nm,20.1s,baz=100,slow=39						
MAJO	**Matsushiro**	**3.15**	**260**	*ePn*	**Pb**	20 49 25.1	**-2.3**
MAT	**Matsushiro**	**3.15**	**260**	P	**Pb**	20 49 24.8	**-2.6**
MAT				*eS*	**Sb**	20 50 06.3	**+0.9**
MJB9	**Matsu-Tunnel**	**3.15**	**260**	*ePn*	**Pb**	20 49 25.1	**-2.4**
JHJ2	**Mitsune**	**4.43**	**205**	*ePn*	Pn	20 49 41.5	+3.3
JHJ2				*eSn*	**Sn**	20 50 29.6	**+0.5**
INU	**Inuyama**	**4.46**	**248**	*ePn*	Pn	20 49 43.3	+4.8
ERM	**Erimo**	**4.93**	**10**	*ePn*	**Pn**	20 49 44.4	**-0.7**
ERM				*eSn*	**Sn**	20 50 40.8	**-0.8**
ASAJ	**Asahikawa**	**6.97**	**3**	*ePn*	**Pn**	20 50 13.2	**+0.1**
JNU	**Nakatsue**	**10.00**	**250**	*ePn*	**Pn**	20 50 54.7	**0.0**
KSRS	**Korea Array**	**11.27**	**276**	LR	LR	20 55 46.5	
	comp=Z,17nm,19.0s,baz=90,slow=36						
SONA1	**Songino Array**	**28.15**	**304**	*eP*	**P**	20 54 24.0	**+1.0**
SONA0	**Songino Array**	**28.15**	**304**	*eP*	**P**	20 54 24.1	**+1.0**
	6.1nm,1.9s						
SONM	**Songino Array**	**28.15**	**304**	P	**P**	20 54 24.1	**+1.0**
	0.4nm,0.4s,baz=95,slow=8.5,SNR=3.9						
ZAA0	**Zalesovo Array**	**42.22**	**312**	*eP*	**P**	20 56 23.1	**-0.5**
MK01	**Makanchi Array**	**44.49**	**302**	*eP*	**P**	20 56 42.7	**+0.6**
MK31	**Makanchi Array**	**44.50**	**302**	*eP*	**P**	20 56 42.4	**+0.3**
MK32	**Makanchi Array**	**44.50**	**302**	*eP*	**P**	20 56 43.2	**+1.1**
MKAR	**Makanchi Array**	**44.50**	**302**	P	**P**	20 56 43.2	**+1.1**
	0.4nm,0.5s,baz=88,slow=9.7,SNR=7.9						
MKAR	**Makanchi Array**	**44.50**	**302**	*eP*	**P**	20 56 42.2	**+0.1**
MAKZ	**Makanchi**	**44.71**	**302**	*eP*	**P**	20 56 46.3	**+2.6**
	6.9nm,1.9s						
WRAB	**Tennant Creek**	**57.24**	**189**	*eP*	**P**	20 58 18.3	**+0.2**
	43nm,1.5s						
RAR	**Rarotonga**	**79.81**	**126**	LR	LR	21 34 14.4	
	comp=Z,67nm,19.2s,baz=352,slow=35						
HDIL	**Hopedale**	**89.47**	**37**	*es*P	sP	21 01 48.9	+13

IDC ***19*** *20:53:51.2±1.0,6°.70S×147°.88E,h0km,mb4.0/12, mb1 4.2/13,mb1mx4.0/44,mbtmp4.0/13,ML3.9/1,MS3.9/16, Ms1 3.9/16,ms1mx3.6/39,Error ellipse: s-maj=36.8km s-min=15.9km az=98.0*
ISCJB ***19*** *20:53:57.5±0.4,6°.78S±0°.05×147°.77E±0°.08,h65km, mb4.1/22,Error ellipse: s-maj=11.8km s-min=6.3km az=14.4*
NEIC ***19*** *20:53:59.1±0.9,6°.78S×147°.77E,h61km±9km,mb4.4/12, Error ellipse: s-maj=12.6km s-min=6.8km az=107.0*
BJI ***19*** *20:54:00.0,7°.21S×147°.23E,h75km,mb4.4/6,mB4.8/5, Ms4.7/4,MS7 4.3/3*
ISC 19 20:53:59.7±0.6,**6°.79S**±0°.06×**147°.72E**±0°.10,**h65**km,**n55,**
σ1§**30**/46,**mb4.1**/22,**Eastern New Guinea region**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
PMG	**Port Moresby**	**2.66**	**192**	*ePn*	**Pn**	20 54 39.5	**-0.8**
	14nm,0.3s,baz=23,slow=8.1,SNR=77						
PMG				Sn	Sn	20 55 20.5	+9.0
	43nm,0.3s,baz=360,slow=18,SNR=5.8						
PMG				LR	LR	20 55 53.7	
	comp=Z,771nm,19.8s,baz=19,slow=44						
PMG	**Port Moresby**	**2.66**	**192**	*ePn*	**Pn**	20 54 39.9	**-0.4**
PMG				*eSn*	Sn	20 55 20.5	+9.0
MANU	**Manus Island**	**4.72**	**356**	*ePn*	**Pn**	20 55 08.1	**-0.4**
RABL	**Rabaul**	**5.12**	**60**	*ePn*	**Pn**	20 55 13.4	**-0.5**
JAY	**Jayapura**	**8.18**	**301**	Pn	**Pn**	20 55 55.9	**+0.1**
	0.1nm,0.3s,baz=308,slow=20,SNR=2.2						
WRAB	**Tennant Creek**	**18.42**	**224**	*eP*	**P**	20 58 10.1	**+0.2**
	43nm,1.5s						
WB2	**Warramunga Arr**	**18.43**	**223**	*eP*	**P**	20 58 10.2	**+0.2**
	47nm,1.5s						
WR1	**Warramunga Arr**	**18.43**	**224**	*eP*	**P**	20 58 10.4	**+0.3**
	68nm,1.7s						
WRA	**Warramunga Arr**	**18.43**	**224**	P	**P**	20 58 10.4	**+0.3**
	0.4nm,0.3s,baz=52,slow=11,SNR=23						
WRA				LR	LR	21 06 43.6	
	comp=Z,579nm,19.8s,baz=45,slow=42						
GUMO	**Guam**	**20.44**	**352**	LR	LR	21 04 39.2	
	comp=Z,265nm,22.0s,baz=166,slow=32						
AS01	**Alice Springs**	**21.37**	**217**	*eP*	**P**	20 58 42.2	**+0.2**
AS31	**Alice Springs**	**21.40**	**217**	*eP*	**P**	20 58 42.9	**+0.6**
	4.7nm,0.6s						
ASAR	**Alice Springs**	**21.40**	**217**	P	**P**	20 58 42.5	**+0.2**
	2.0nm,0.6s,baz=52,slow=9.3,SNR=35						
ASAR				LR	LR	21 07 57.3	
	comp=Z,387nm,20.7s,baz=44,slow=39						
DZM	**Mont Dzumac**	**23.61**	**132**	LR	LR	21 07 00.3	
	comp=Z,239nm,20.1s,baz=324,slow=34						
ARMA	**Armidale**	**23.79**	**172**	*eP*	**P**	20 59 04.7	**-2.0**
	21nm,1.2s						
BATI	**Baumata**	**24.03**	**260**	LR	LR	21 11 16.1	
	comp=Z,475nm,18.1s,baz=100,slow=43						
FITZ	**Fitzroy Crossi**	**24.29**	**240**	P	**P**	20 59 11.4	**+0.3**
	10nm,0.5s,baz=55,slow=8.1,SNR=70						
FITZ				LR	LR	21 10 21.8	
	comp=Z,247nm,19.1s,baz=61,slow=40						
FITZ	**Fitzroy Crossi**	**24.29**	**240**	*eP*	**P**	20 59 11.0	**-0.1**
	24nm,0.8s						
LUWI	**Luwuk**	**25.53**	**282**	*eP*	**P**	20 59 19.4	**-3.1**
	60nm,1.1s						
STKA	**Stephens Creek**	**25.61**	**192**	P	**P**	20 59 21.9	**-1.2**
	2.5nm,0.8s,baz=335,slow=8.1,SNR=6.7						
STKA				LR	LR	21 10 21.1	
	comp=Z,313nm,18.0s,baz=15,slow=38						
STKA	**Stephens Creek**	**25.61**	**192**	*eP*	**P**	20 59 23.0	**-0.1**
	1.6nm,0.9s						
DAV	**Davao City (W)**	**26.03**	**302**	LR	LR	21 10 10.4	
	comp=Z,100nm,21.5s,baz=154,slow=38						
KAPI	**Kappang**	**27.88**	**272**	LR	LR	21 13 25.0	
	comp=Z,182nm,19.6s,baz=106,slow=42						
MBWA	**Marble Bar**	**30.61**	**239**	*eP*	**P**	21 00 06.3	**-1.6**
	23nm,1.2s						
URZ	**Urewera**	**41.10**	**144**	LR	LR	21 17 57.3	
	comp=Z,402nm,18.4s,baz=315,slow=35						
RPZ	**Rata Peaks**	**42.09**	**155**	LR	LR	21 17 39.1	
	comp=Z,244nm,19.8s,baz=338,slow=34						
MJAR	**Matsushiro Arr**	**44.01**	**349**	P	**P**	21 02 00.8	**-0.1**
	6.0nm,1.1s,baz=172,slow=8.1,SNR=4.7						
CM31	**Chiang Mai Arr**	**54.25**	**298**	*eP*	**P**	21 03 20.6	**+1.2**
CMAR	**Chiang Mai Arr**	**54.25**	**298**	P	**P**	21 03 20.6	**+1.2**
	0.5nm,0.7s,baz=106,slow=6.0,SNR=3.7						
CMAR				LR	LR	21 26 21.6	
	comp=Z,37nm,21.6s,baz=305,slow=36						
CD2	**Chengdu**	**56.33**	**314**	P	**P**	21 03 34.0	**-0.3**
CD2				pmax	pmax		
	comp=Z,1.0nm,0.5s						
KLR	**Kul'dur**	**57.50**	**348**	P	**P**	21 03 40.5	**-1.6**
	1.2nm,0.8s,baz=214,slow=3.6,SNR=3.3						
HHC	**Hu-ho-hao-te**	**57.88**	**328**	*eP*	P	21 03 49.5	+4.4
HHC				pP	pP	21 04 05.5	+3.4
HHC				PP	PP	21 06 00.0	+5.9
HHC				S	**S**	**21 11 40.4**	**+0.3**
HHC				pmax	pmax		
	comp=Z,23nm,1.1s						
HHC				pmax	pmax		
	comp=Z,120nm,7.6s						
HHC				LR	LR		
	comp=N,150nm,16.9s						
HHC				LR	LR		
	comp=E,180nm,14.1s						
HHC				LR	LR		
	comp=Z,160nm,16.9s						
PETK	**Petropavlovsk-**	**60.26**	**7**	P	**P**	21 03 59.4	**-1.8**
	4.3nm,1.0s,baz=157,slow=5.9,SNR=4.7						
PEA1	**Petropavlovsk-**	**60.27**	**7**	*eP*	**P**	21 03 59.4	**-1.9**
SONA0	**Songino Array**	**65.44**	**331**	*eP*	**P**	21 04 36.0	**+0.1**
	7.9nm,1.8s						
SONM	**Songino Array**	**65.44**	**331**	P	**P**	21 04 36.0	**+0.1**
	1.6nm,1.0s,baz=142,slow=4.9,SNR=3.2						
SONM				LR	LR	21 32 35.9	
	comp=Z,86nm,20.4s,baz=98,slow=36						
SONA1	**Songino Array**	**65.44**	**331**	*eP*	**P**	21 04 38.5	**+2.6**
VNDA	**Vanda**	**71.09**	**177**	P	**P**	21 05 11.3	**+0.7**
	1.2nm,0.8s,baz=341,slow=4.9,SNR=6.5						
VNDA	**Vanda**	**71.09**	**177**	*eP*	**P**	21 05 11.1	**+0.4**
	4.2nm,1.1s						
WMQ	**Urumqi**	**73.85**	**319**	*eP*	**P**	21 05 28.3	**+0.6**
WMQ				pmax	pmax		
	comp=Z,3.0nm,0.5s						
WMQ				pmax	pmax		
	comp=Z,27nm,4.4s						
WMQ				LR	LR		
	comp=N,20nm,16.4s						
WMQ				LR	LR		
	comp=E,17nm,21.8s						
MK01	**Makanchi Array**	**78.54**	**320**	*eP*	**P**	21 05 53.1	**-1.1**
MK31	**Makanchi Array**	**78.56**	**320**	*eP*	**P**	21 05 53.6	**-0.7**
MK32	**Makanchi Array**	**78.56**	**320**	*eP*	**P**	21 05 53.4	**-0.9**
MKAR	**Makanchi Array**	**78.56**	**320**	P	**P**	21 05 53.4	**-0.9**
	0.2nm,0.4s,baz=102,slow=5.9,SNR=3.9						
MAKZ	**Makanchi**	**78.76**	**320**	*eP*	**P**	21 05 54.5	**-0.9**
	6.5nm,1.8s						
ZALV	**Zalesovo Beam**	**80.06**	**328**	P	**P**	21 06 02.6	**+0.4**
	0.4nm,0.4s,baz=109,slow=5.9,SNR=4.9						
ZALV				LR	LR	21 40 49.2	
	comp=Z,92nm,20.4s,baz=70,slow=35						
ZAA1	**Zalesovo Array**	**80.06**	**328**	*eP*	**P**	21 06 02.6	**+0.4**
ILAR	**Eielson Array**	**85.92**	**23**	P	P	21 06 28.4	-3.9
	0.9nm,1.0s,baz=252,slow=4.0,SNR=8.2						
ILB	**Eielson Array**	**85.92**	**23**	*eP*	**P**	21 06 31.4	**-0.9**
NRIK	**Norilʹsk**	**86.24**	**342**	LR	LR	21 46 58.9	
	comp=Z,41nm,18.7s,baz=124,slow=37						
BVAR	**Borovoye Array**	**87.82**	**324**	P	**P**	21 06 43.8	**+1.9**
	1.1nm,0.7s,baz=104,slow=6.3,SNR=8.4						
GERES	**GERESS Array B**	**122.96**	**326**	PKP	**PKPdf**	21 12 51.6	**+2.7**
	0.7nm,0.9s,baz=48,slow=2.0,SNR=4.7						
CPUP	**Villa Florida**	**139.08**	**145**	PKP	**PKPdf**	21 13 22.1	**+2.3**
	1.5nm,0.8s,baz=154,slow=6.2,SNR=3.6						
TORD	**Torodi Ar. Bea**	**145.97**	**283**	PKPbc	**PKPbc**	21 13 33.5	**+0.3**
	0.7nm,0.7s,baz=71,slow=3.2,SNR=6.9						
DBIC	**Dimbokro**	**152.77**	**271**	PKPbc	**PKPbc**	21 13 53.8	**+3.4**
	4.8nm,1.1s,baz=231,slow=7.2,SNR=4.1						

NIED ***19*** *20:58:00,37°.10N×141°.30E,h44km,Mw3.6 Best double couple: M₀2.62000×10¹⁴ NP1:φ₈20.00000°,δ42.00000°, λ-2.00000°. NP2:φ₈111.00000°,δ89.00000°, λ-132.00000°.*
IDC ***19*** *20:58:25.9±1.4,36°.96N×141°.69E,h0km,mb3.5/3, mb1 3.7/5,mb1mx3.4/49,mbtmp3.5/5,ML3.5/2,Error ellipse: s-maj=34.6km s-min=25.6km az=119.0*
ISCJB ***19*** *20:58:31.0±1.0,37°.08N±0°.04×141°.39E±0°.10, h47km±10km,mb3.5/3,Error ellipse: s-maj=12.9km s-min=7.0km az=7.9*
JMA ***19*** *20:58:33.0±0.1,37°.08N×141°.25E,h42km±1km,M3.7*
JMA Felt I J1.
ISC 19 20:58:31.0±1.7,**37°.09N**±0°.05×**141°.42E**±0°.09,**h32**km±10km,
n19,σ1§**17**/21,**mb3.5/3,Near east coast of eastern**
Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.50**	**272**	P	**Pn**	20 58 42.3	**+0.3**
ONAJ				S	**Sb**	20 58 48.4	**-0.3**
JFK	**Kawauchi**	**0.52**	**303**	P	**Pn**	20 58 42.7	**+0.5**
JFK				S	**Sb**	20 58 49.1	**-0.1**
JHO	**Hitachi**	**0.83**	**235**	P	**Pb**	20 58 46.5	**-0.5**
JHO				S	**Sn**	20 58 55.6	**-2.1**
JMM	**Marumori**	**0.92**	**327**	P	**Pb**	20 58 48.6	**+0.1**
JMM				S	**Sn**	20 58 59.5	**-0.4**
JFT	**Otama**	**0.96**	**297**	P	**Pb**	20 58 49.2	**0.0**
JFT				S	**Sn**	20 59 00.1	**-0.9**
JFY	**Yanaizu**	**1.41**	**284**	P	**Pn**	20 58 54.8	**+0.4**
JFY				S	**Sn**	20 59 10.4	**-1.5**
MJAR	**Matsushiro Arr**	**2.63**	**259**	Pn	**Pn**	20 59 12.2	**+0.9**
	7.9nm,0.3s,baz=82,slow=15,SNR=38						
MAT	**Matsushiro**	**2.64**	**259**	P	**Pn**	20 59 12.5	**+1.2**
MAT				S	**Sn**	20 59 44.1	**+1.9**
JHJ	**Hachijo jima 2**	**4.18**	**199**	Pn	**Pn**	20 59 35.0	**+2.4**
	9.8nm,0.3s,baz=127,slow=23,SNR=5.6						
JHJ				Sn	**Sn**	**21 00 20.5**	**+0.1**
	24nm,0.3s,baz=270,slow=22,SNR=5.1						
ASAJ	**Asahikawa**	**7.08**	**7**	Pn	**Pn**	**21 00 14.1**	**+1.8**
	0.9nm,0.3s,baz=199,slow=15,SNR=12						
H11N2	**WAKE ISLAND Hy**	**28.17**	**121**	T	T	21 34 38.2	
	SNR=18						
H11N1	**WAKE ISLAND Hy**	**28.18**	**121**	T	T	21 34 04.4	
	baz=200,slow=74,SNR=31						
H11N3	**WAKE ISLAND Hy**	**28.19**	**121**	T	T	21 34 04.3	
	baz=313,slow=74,SNR=26						
H11S1	**WAKE ISLAND Hy**	**28.88**	**123**	T	T	21 35 36.9	
	baz=316,slow=76,SNR=18						
H11S3	**WAKE ISLAND Hy**	**28.89**	**123**	T	T	21 35 36.7	
	baz=316,slow=76,SNR=17						
H11S2	**WAKE ISLAND Hy**	**28.90**	**123**	T	T	21 35 19.3	
	baz=316,slow=76,SNR=12						
MKAR	**Makanchi Array**	**44.09**	**302**	P	**P**	**21 06 36.3**	**+0.2**
	0.7nm,0.9s,baz=91,slow=6.3,SNR=2.8						
ILAR	**Eielson Array**	**49.45**	**32**	P	**P**	**21 07 17.2**	**-0.5**
	0.4nm,0.7s,baz=255,slow=6.6,SNR=2.6						
WRA	**Warramunga Arr**	**57.12**	**188**	P	**P**	**21 08 14.0**	**-0.4**
	0.3nm,0.6s,baz=28,slow=7.3,SNR=4.9						

ISCJB ***19*** *21:09:07.2±1.0,30°.27S±0°.07×179°.6W±0°.2,h321km, mb3.4/3,Error ellipse: s-maj=22.6km s-min=9.0km az=1.6*
IDC ***19*** *21:09:10.1±1.3,30°.39S×179°.49W,h346km±12km,mb3.4/3, mb1 3.6/4,mb1mx3.2/41,mbtmp4.2/4,Error ellipse: s-maj=25.7km s-min=18.1km az=141.0*
ISC 19 21:09:07.1±0.9,**30°.35S**±0°.08×**179°.4W**±0°.2,**h321**km,**n30,**
σ1§**18**/30,**mb3.7/3,Kermadec Islands region**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
RAO	**Raoul Island**	**1.68**	**50**	P	Pn	21 09 59.9	+6.3
	249nm,0.3s,baz=74,slow=22,SNR=4.1						
WMGZ	**Waiomatatini S**	**7.67**	**193**	*ePN*	Pn	21 11 01.8	+5.1
WMGZ				SN	**S**	**21 12 25.8**	**-0.1**
HAZ	**Te Kaha**	**7.75**	**197**	*ePN*	Pn	21 11 01.7	+3.9
PUZ	**Puketiti**	**7.95**	**194**	PN		21 11 03.9	
PUZ				SN	**S**	**21 12 30.8**	**-1.2**
MWZ	**Matawai**	**8.36**	**197**	*ePN*	**Pn**	**21 11 07.1**	**+1.9**
MWZ				*eSN*	**S**	**21 12 39.4**	**-1.9**
URZ	**Urewera**	**8.40**	**199**	P	**P**	**21 11 08.3**	**-1.5**
	3.0nm,0.3s,baz=270,slow=6.1,SNR=18						
URZ				S	**S**	**21 12 41.8**	**-0.4**
	3.5nm,0.3s,baz=95,slow=23,SNR=7.0						
URZ	**Urewera**	**8.40**	**199**	*ePN*	**Pn**	**21 11 07.6**	**+1.9**
URZ				SN	**S**	**21 12 39.8**	**-2.3**
RIGZ	**Rimuhau**	**8.66**	**195**	*ePN*	**P**	**21 11 12.7**	**-0.2**
KAHZ	**Kahuranaki**	**9.90**	**197**	*ePN*	**Pn**	**21 11 25.3**	**+1.4**
PXZ	**Pawanui**	**10.13**	**197**	*ePN*	**Pn**	**21 11 27.0**	**+0.3**
PXZ				*eSN*	S	21 13 13.8	-7.0
STKA	**Stephens Creek**	**33.32**	**257**	P	**P**	**21 15 17.7**	**+1.9**
	2.3nm,0.7s,baz=106,slow=10,SNR=6.3						
ASAR	**Alice Springs**	**41.92**	**268**	P	**P**	**21 16 26.8**	**-0.6**
	1.2nm,0.8s,baz=104,slow=7.0,SNR=10						
WRA	**Warramunga Arr**	**42.90**	**273**	P	**P**	**21 16 34.6**	**-0.7**
	2.5nm,0.5s,baz=111,slow=7.8,SNR=35						
SNAA	**Sanae**	**78.23**	**179**	P	**P**	**21 20 32.5**	**+1.2**
VNA3	**Neumayer Olymp**	**78.43**	**177**	P	**P**	**21 20 33.6**	**+1.2**
VNA2	**Neumayer--Watz**	**78.85**	**177**	P	**P**	**21 20 36.1**	**+1.5**
	baz=168,slow=3.0						
VNA1	**Neumayer--Stat**	**79.08**	**177**	P	**P**	**21 20 35.5**	**-0.4**
MKAR	**Makanchi Array**	**116.83**	**310**	PKP	**PKPdf**	**21 27 12.5**	**-0.9**
	0.3nm,0.6s,baz=228,slow=1.6,SNR=4.8						
KURBB	**Kurchatov Arra**	**120.19**	**314**	PKP	**PKPdf**	**21 27 18.5**	**-1.2**
	0.5nm,0.3s,baz=105,slow=1.9,SNR=8.3						
AAK	**Ala-Archa**	**121.09**	**304**	PKP	**PKPdf**	**21 27 21.0**	**-1.0**
	0.6nm,0.4s,baz=123,slow=5.6,SNR=4.5						
BVAR	**Borovoye Array**	**125.54**	**316**	PKP	**PKPdf**	**21 27 29.5**	**-0.4**
	0.9nm,0.6s,baz=38,slow=7.5,SNR=4.7						
ARCES	**ARCESS Array B**	**138.28**	**347**	PKhKP	PKPpre	21 27 46.2	
	3.0nm,0.8s,baz=19,slow=2.4,SNR=7.0						
KBZ	**Khabaz**	**144.09**	**304**	PKP	**PKPdf**	**21 28 04.1**	**-0.5**
	1.4nm,0.7s,baz=206,slow=5.1,SNR=4.3						
FINES	**FINESS Array B**	**144.68**	**339**	PKP	**PKPab**	**21 28 04.2**	**-0.6**
	5.4nm,0.4s,baz=49,slow=4.3,SNR=50						
NB2	**NORSAR Subarra**	**148.51**	**350**	PKP	**PKPbc**	**21 28 15.1**	**-0.5**
	comp=Z,0.9nm,0.5s,baz=16,slow=2.6						
NOA	**NORSAR Array B**	**148.51**	**350**	PKPbc	**PKPbc**	**21 28 15.4**	**-0.1**
	comp=Z,1.7nm,0.7s,baz=17,slow=4.2,SNR=7.3						
MMAI	**Mount Meron Ar**	**150.36**	**284**	PKPbc	**PKPbc**	**21 28 21.9**	**+0.9**
	comp=Z,3.0nm,0.6s,baz=88,slow=5.9,SNR=11						
AKASG	**Malin Array Be**	**150.53**	**322**	PKPbc	**PKPbc**	**21 28 20.3**	**-0.4**
	comp=Z,1.5nm,0.4s,baz=50,slow=2.6,SNR=11						
BRTR	**Keskin Array B**	**151.52**	**298**	PKPbc	**PKPbc**	**21 28 23.1**	**-0.5**
	comp=Z,0.8nm,0.5s,baz=144,slow=4.9,SNR=8.8						
TORD	**Torodi Ar. Bea**	**162.85**	**184**	PKPab	**PKPab**	**21 29 22.9**	**+0.4**
	comp=Z,1.4nm,0.6s,baz=168,slow=4.5,SNR=16						

ISN ***19*** *21:21:08.5±1.3,38°.98N×40°.69E,h0km±38km,ML3.7*
ISK ***19*** *21:21:19.2,39°.18N×40°.66E,h5km,ML3.6*
DDA ***19*** *21:21:19.4,39°.20N×40°.58E,h7km,Ml3.7*
CSEM ***19*** *21:21:20.3±0.2,39°.16N±0°.02×40°.65E±0°.03,h7km±3km, Error ellipse: s-maj=3.6km s-min=3.0km az=164.9*
ISCJB ***19*** *21:21:20.2±0.5,39°.16N±0°.02×40°.65E±0°.03,h7km±3km, Error ellipse: s-maj=3.6km s-min=3.0km az=164.9*
NSSC ***19*** *21:21:25.5±1.6,39°.03N×40°.53E,h38km±999km,ML3.1*
ISC 19 21:21:20.2±0.5,**39°.19N**±0°.02×**40°.59E**±0°.02,

TATV				S	Sg	21 22 07.7	-0.2	
GUMT	**Gumushane**	**1.53**	**327**	*e*PN	**Pb**	**21 21 48.5**	**+0.2**	
GUMT	**Gumushane**	**1.53**	**327**	*e*PN	**Pb**	21 21 48.5	+0.2	
ILIC	**ilic-Erzincan**	**1.59**	**280**	*e*PN	**Pg**	**21 21 50.8**	**+0.1**	
ILIC				*e*SN	**Sg**	21 22 12.9	+1.6	
ILIC	**ilic-Erzincan**	**1.59**	**280**	*e*Pn	**Pg**	**21 21 50.8**	**+0.1**	
ILIC				*e*Sn	**Sg**	21 22 12.9	+1.6	
EATA	**Eleskirt**	**1.62**	**65**	*i* P	**Pb**	**21 21 49.7**	**-0.3**	
EATA				*i* S	**Sg**	21 22 13.8	+1.3	
EATA	**Eleskirt**	**1.62**	**65**	P	**Pb**	**21 21 49.7**	**-0.3**	
EATA				S	**Sg**	21 22 13.8	+1.3	
MARD	**Mardin**	**1.88**	**175**	*i* P	**Pn**	**21 21 52.9**	**+1.0**	
MARD				*i* S	**Sg**	21 22 20.8	+0.1	
KTUT	**Trabzon**	**1.90**	**341**	*e*PN	**Pn**	**21 21 53.7**	**+1.5**	
KTUT	**Trabzon**	**1.90**	**341**	*e*Pn	**Pn**	**21 21 53.7**	**+1.5**	
KBSD	**Kabsdagh**	**2.19**	**181**	*e*P	**Pn**	**21 21 57.9**	**+1.8**	
KBSD				*e*S	**Sn**	21 22 19.3	-3.6	
KBSD				AML	AML	21 22 32.7		
	comp=Z,513nm,0.4s							
KBSD	**Kabsdagh**	**2.19**	**181**	*e*P	**Pn**	**21 21 57.9**	**+1.8**	
SIRN	**S¨–rnak**	**2.22**	**139**	*i* P	**Pb**	**21 21 59.5**	**-0.6**	
SIRN				*i* S	**Sg**	21 22 29.8	-1.8	
SIRN	**S¨–rnak**	**2.22**	**139**	P	**Pb**	**21 21 59.5**	**-0.6**	
SIRN				S	**Sg**	21 22 29.8	-1.8	
ESPY	**Espiye-Giresun**	**2.24**	**321**	*e*PN	**Pb**	**21 22 00.0**	**-0.4**	
ESPY	**Espiye-Giresun**	**2.24**	**321**	*e*Pn	**Pb**	21 22 00.0	-0.4	
TVAN	**Van**	**2.30**	**106**	*i* P	**Pb**	**21 22 01.3**	**-0.3**	
TVAN				*i* S	**Sg**	21 22 35.2	+1.1	
TVAN	**Van**	**2.30**	**106**	P	**Pb**	**21 22 01.3**	**-0.3**	
KARS	**Kars**	**2.40**	**52**	*e*PN	**Pn**	**21 22 00.6**	**+1.5**	
KARS	**Kars**	**2.40**	**52**	*e*Pn	**Pn**	21 22 00.6	+1.5	
RSDY	**Resadiye-TOKAT**	**2.78**	**297**	*e*PN	**Pb**	**21 22 08.2**	**-1.5**	
RSDY	**Resadiye-TOKAT**	**2.78**	**297**	*e*Pn	**Pb**	21 22 08.2	-1.5	
SFNV	**Sufian**	**2.79**	**188**	*e*P	**Pn**	**21 22 06.2**	**+1.7**	
SFNV				*e*S	**Sn**	21 22 34.5	-3.5	
SFNV				AML	AML	21 23 00.5		
	comp=Z,205nm,0.4s							
SFNV	**Sufian**	**2.79**	**188**	*e*P	**Pn**	**21 22 06.2**	**+1.7**	
CUKT	**Cukurca**	**3.07**	**128**	*e*PN	**Pn**	**21 22 09.8**	**+1.5**	
CUKT	**Cukurca**	**3.07**	**128**	*e*Pn	**Pn**	21 22 09.8	+1.5	
AKH	**Akhalkalaki**	**3.14**	**44**	P	**Pg**	**21 22 19.4**	**-1.0**	
TOKT	**Tokat**	**3.31**	**291**	*e*PN	Pn	21 22 15.5	+3.9	
TOKT	**Tokat**	**3.31**	**291**	*e*Pn	Pn	21 22 15.5	+3.9	
GAZ	**Gaziantep**	**3.33**	**234**	*e*PN	**Pn**	**21 22 14.6**	**+2.7**	
GAZ	**Gaziantep**	**3.33**	**234**	*e*Pn	**Pn**	21 22 14.6	+2.7	
MZRK	**Al-Mazaregh**	**3.36**	**179**	*e*P	**Pn**	**21 22 13.6**	**+1.4**	
MZRK				*e*S	**Sn**	21 22 48.5	-3.4	
MZRK				AML	AML	21 23 27.0		
	comp=Z,175nm,0.7s							
MZRK	**Al-Mazaregh**	**3.36**	**179**	*e*P	**Pn**	**21 22 13.6**	**+1.4**	
MNKR	**ALMNKUR**	**3.41**	**198**	*e*P	**Pn**	**21 22 14.8**	**+1.9**	
MNKR				*e*S	**Sn**	21 22 50.4	-2.6	
MNKR				AML	AML	21 23 18.6		
	comp=Z,131nm,0.3s							
MNKR	**ALMNKUR**	**3.41**	**198**	*e*P	**Pn**	**21 22 14.8**	**+1.9**	
MSL	**Mosul**	**3.43**	**144**	*e*Pn	Pn	21 22 08.0	-5.2	
MSL				*i* Sn	Sn	21 22 49.0	-4.6	
CHVG	**Ch'k'valeri**	**3.70**	**17**	P	**Pb**	**21 22 27.7**	**+2.3**	
BNN	**Bunyan**	**3.71**	**266**	*e*PN	Pn	21 22 20.7	+3.6	
BNN	**Bunyan**	**3.71**	**266**	*e*Pn	Pn	21 22 20.7	+3.6	
KVT	**Kavak**	**3.96**	**300**	*e*PN	Pn	21 22 24.1	+3.7	
KVT	**Kavak**	**3.96**	**300**	*e*Pn	Pn	21 22 24.2	+3.7	
DRWC	**Darouich**	**4.02**	**232**	*e*P	**Pn**	**21 22 22.7**	**+1.3**	
DRWC				*e*S	**Sn**	**21 23 05.0**	**-3.4**	
DRWC				AML	AML	21 23 39.3		
	comp=N,41nm,0.6s							
DRWC				AML	AML	21 23 45.0		
	comp=E,59nm,0.7s							
DRWC	**Darouich**	**4.02**	**232**	*e*P	**Pn**	**21 22 22.7**	**+1.3**	
ONI	**Oni**	**4.03**	**32**	P	**Pn**	**21 22 21.7**	**+0.2**	
TBLG	**Delisi**	**4.06**	**50**	P	Pn	21 22 13.9	-8.0	
YOZ	**Yozgat**	**4.10**	**278**	*e*PN	Pn	21 22 26.7	+4.1	
YOZ	**Yozgat**	**4.10**	**278**	*e*Pn	Pn	21 22 26.7	+4.1	
KOZT	**Kozan**	**4.11**	**247**	*e*PN	Pn	21 22 26.4	+3.8	
KOZT	**Kozan**	**4.11**	**247**	*e*Pn	Pn	21 22 26.4	+3.8	
BTCH	**Batrach**	**4.54**	**227**	*e*P	**Pn**	**21 22 30.2**	**+1.7**	
BTCH				*e*S	**Sn**	**21 23 17.9**	**-3.2**	
BTCH				AML	AML	21 23 55.4		
	comp=N,92nm,0.7s							
BTCH				AML	AML	21 23 55.5		
	comp=E,105nm,0.5s							
BTCH	**Batrach**	**4.54**	**227**	*e*P	**Pn**	**21 22 30.2**	**+1.7**	
CORM	**Corum**	**4.70**	**284**	*e*PN	Pn	21 22 34.5	+3.8	
CORM	**Corum**	**4.70**	**284**	*e*Pn	Pn	21 22 34.5	+3.8	
IKRK	**Kirkuk**	**4.82**	**140**	*e*Pn	Pn	21 22 30.0	-2.4	
IKRK				*i* Sn	Sn	21 23 26.0	-2.0	
RTB	**Rutbah**	**6.15**	**182**	*e*Pn	Pn	21 22 50.0	-0.6	
RTB				*i* Sn	Sn	21 24 02.1	+1.3	
BHD	**Baghdad**	**6.66**	**151**	*e*Pn	Pn	21 22 57.0	-0.5	
BHD				*i* Sn	Sn	21 24 14.0	+0.9	
IBDR	**Badra**	**7.45**	**143**	*e*Pn	Pn	21 23 10.0	+1.6	
IBDR				*i* Sn	Sn	21 24 35.0	+2.4	

IDC 19 21:22:26.3±2.6, 6°34′S×147°76′E, h0km, mb3.8/3, mb1 3.9/5, mb1mx3.5/41, mbtmp3.7/5, ML3.4/1, MS2.6/1, Ms1 2.6/1, ms1mx2.3/38, Error ellipse: s-maj=57.5km s-min=31.9km az=92.0, Eastern New Guinea region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
PMG	**Port Moresby**	**3.10**	**191**	Pn	Pn	21 23 17.2	+0.7
	4.2nm,0.3s,baz=9.0,slow=9.3,SNR=28						
PMG				Sn	Sn	21 23 56.9	+2.5
	8.1nm,0.3s,baz=24,slow=21,SNR=6.8						
PMG				LR	LR	21 24 30.8	
	comp=Z,91nm,19.9s,baz=271,slow=40						
WRA	**Warramunga Arr**	**18.78**	**223**	P	P	21 26 47.0	-0.4
	0.1nm,0.3s,baz=52,slow=11,SNR=10						
ASAR	**Alice Springs**	**21.71**	**216**	P	P	21 27 18.6	-1.4
	0.5nm,0.4s,baz=50,slow=9.5,SNR=12						
FITZ	**Fitzroy Crossi**	**24.54**	**240**	P	P	21 27 47.6	-0.3
	2.8nm,0.5s,baz=46,slow=8.6,SNR=16						
STKA	**Stephens Creek**	**26.05**	**192**	P	P	21 28 02.6	+1.1
	1.4nm,0.8s,baz=359,slow=16,SNR=2.8						
TORD	**Torodi Ar. Bea**	**145.90**	**284**	PKPbc	PKPdf	21 42 08.2	-0.1
	0.3nm,0.5s,baz=66,slow=2.8,SNR=3.6						

JMA 19 21:22:42.5, 36.92N×140.71E, h9km±1km, M3.1, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.20**	**21**	P	Pg	21 22 46.8	+0.2
ONAJ				S	Sg	21 22 49.7	+0.3
JHO	**Hitachi**	**0.33**	**200**	P	Pg	21 22 49.0	0.0
JHO				S	Sg	21 22 53.6	+0.2
JFK	**Kawauchi**	**0.47**	**16**	P	Pg	21 22 51.1	-0.1
JFK				S	Sg	21 22 57.8	+0.1
MAT	**Matsushiro**	**2.05**	**260**	P	Pn	21 23 18.0	+0.9
MAT				S	Sb	21 23 45.4	0.0

JMA 19 21:23:26.6±0.1, 38°31N×141°60E, h20km±1km, M2.5, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**0.24**	**306**	P	Pb	21 23 32.1	-0.3
JIO				S	Sb	21 23 36.2	-0.1
JMK	**Ichinoseki**	**0.71**	**335**	P	Pb	21 23 40.2	0.0
JMK				S	Sb	21 23 49.3	-0.2
JOU	**Okura**	**0.74**	**275**	P	Pb	21 23 41.0	+0.2
JOU				S	Sb	21 23 51.0	+0.6
OFUJ	**Ofunato**	**0.77**	**4**	P	Pb	21 23 41.0	-0.3
OFUJ				S	Sb	21 23 51.3	-0.1
MIYJ	**Miyakonagasawa**	**1.28**	**8**	P	Pn	21 23 48.2	-1.1
MIYJ				S	Sn	21 24 05.0	-0.8

*DDA **19** 21:29:03.0, 37°54N×35°60E, h6km, Ml3.0*
*ISCJB **19** 21:29:03.8±0.4, 37°49N±0°02×35°58E±0°02, h10km±2km, Error ellipse: s-maj=3.2km s-min=3.1km az=173.8*
*CSEM **19** 21:29:03.8±0.1, 37°49N×35°58E, h10km, MD3.0, Error ellipse: s-maj=3.2km s-min=3.0km az=95.0*
*ISK **19** 21:29:03.0, 37°52N×35°56E, h5km, MD3.0*

ISC 19 21:29:03.6±0.8, 37°47′N±0°02′×35°59′E±0°02′, h12km±5km, n51, σ0s62/86, Turkey

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
AKO	**Adana**	**0.12**	**266**	*i* P	**Pg**	**21 29 06.4**	**-0.3**
AKO				*i* S	**Sg**	21 29 08.7	-0.2
KOZT	**Kozan**	**0.19**	**87**	*e*PG	**Pg**	21 29 07.6	-0.1
KOZT				*e*SG	**Sg**	21 29 11.2	+0.6
KOZT	**Kozan**	**0.19**	**87**	*e*Pg	**Pg**	21 29 07.6	-0.1
KOZT				*e*Sg	**Sg**	21 29 11.2	+0.6
CEYT	**Ceyhan**	**0.48**	**165**	*e*PG	**Pb**	21 29 14.1	+0.2
CEYT				*e*SG	**Sb**	21 29 22.2	+1.4
CEYT	**Ceyhan**	**0.48**	**165**	*e*Pg	**Pb**	21 29 14.1	+0.2
CEYT				*e*Sg	**Sb**	21 29 22.2	+1.4
KARA	**Karaisali**	**0.48**	**244**	*e*PG	**Pg**	21 29 12.7	-0.2
KARA				*e*SG	**Sg**	21 29 19.6	+0.3
KARA	**Karaisali**	**0.48**	**244**	*e*Pg	**Pg**	21 29 12.7	-0.2
KARA				*e*Sg	**Sg**	21 29 19.6	+0.3
ANDN	**Andirin**	**0.61**	**79**	*i* P	**Pg**	21 29 15.0	-0.4
ANDN				*i* S	**Sn**	21 29 26.5	-1.4
ANDN	**Andirin**	**0.61**	**79**	P	**Pg**	21 29 15.0	-0.4
ANDN				S	**Sn**	21 29 26.5	-1.4
YURE	**YUREGIR**	**0.64**	**177**	*i* P	**Pb**	21 29 16.4	-0.3
YURE				*i* S	**Sn**	21 29 27.8	-0.8
YURE	**YUREGIR**	**0.64**	**177**	P	**Pb**	21 29 16.4	-0.3
YURE				S	**Sn**	21 29 27.8	-0.8
GULE	**Gulek**	**0.68**	**254**	*i* P	**Pg**	21 29 16.8	0.0
GULE				*i* S	**Sb**	21 29 26.8	0.0
GULE	**Gulek**	**0.68**	**254**	P	**Pg**	21 29 16.8	0.0
GULE				S	**Sb**	21 29 26.8	0.0
KRTS	**Karatas**	**0.91**	**191**	*e*PG	**Pn**	21 29 22.1	-0.1
KRTS				*e*SG	**Sn**	21 29 35.6	+0.4
KRTS	**Karatas**	**0.91**	**191**	*e*Pg	**Pn**	21 29 22.1	-0.1
KRTS				*e*Sg	**Sn**	21 29 35.6	+0.4
NIG	**Nigde**	**1.01**	**310**	*e*PG	**Pg**	21 29 21.9	-1.1
NIG	**Nigde**	**1.01**	**310**	*e*Pg	**Pg**	21 29 21.9	-1.1
KMRS	**Kahramanmaras**	**1.04**	**88**	*e*PG	**Pn**	21 29 24.0	0.0
KMRS	**Kahramanmaras**	**1.04**	**88**	*e*Pg	**Pn**	21 29 24.0	0.0
MERS	**Mersin**	**1.05**	**235**	*e*PG	**Pn**	21 29 23.9	-0.2
MERS				*e*SG	**Sn**	21 29 39.0	+0.4
MERS	**Mersin**	**1.05**	**235**	*e*Pg	**Pn**	21 29 23.9	-0.2
MERS				*e*Sg	**Sn**	21 29 39.0	+0.4
HCB	**Kahramanmara¯**	**1.05**	**96**	*i* P	**Pb**	21 29 23.1	-0.7
HCB				*i* S	**Sn**	21 29 38.6	-0.2
TAHT	**Tahtakopru-Hat**	**1.19**	**156**	*e*PN	**Pg**	21 29 26.5	0.0
TAHT	**Tahtakopru-Hat**	**1.19**	**156**	*e*Pn	**Pg**	21 29 26.5	0.0
GAZ	**Gaziantep**	**1.32**	**103**	*e*PN	**Pg**	21 29 29.2	+0.3
GAZ	**Gaziantep**	**1.32**	**103**	*e*Pn	**Pg**	21 29 29.3	+0.3
KUZU	**Kuzuini**	**1.37**	**120**	*i* P	**Pn**	21 29 28.3	-0.3
KUZU				*i* S	**Sn**	21 29 46.8	+0.1
KUZU	**Kuzuini**	**1.37**	**120**	P	**Pn**	21 29 28.3	-0.3
KUZU				S	**Sn**	21 29 46.8	+0.1
GULA	**Gulagac**	**1.38**	**310**	*e*PN	**Pn**	21 29 28.9	+0.1
GULA				*e*SN	**Sb**	21 29 47.8	+0.7
GULA	**Gulagac**	**1.38**	**310**	*e*Pn	**Pn**	21 29 28.9	+0.1
GULA				*e*Sn	**Sb**	21 29 47.8	+0.7
BNN	**Bunyan**	**1.39**	**8**	*e*PN	**Pn**	21 29 28.4	-0.5
BNN				*e*SN	**Sb**	21 29 48.0	+0.6
BNN	**Bunyan**	**1.39**	**8**	*e*Pn	**Pn**	21 29 28.4	-0.5
BNN				*e*Sn	**Sb**	21 29 48.0	+0.6
AVNS	**Nevsehir-Avano**	**1.46**	**336**	*i* P	**Pn**	21 29 30.0	+0.2
AVNS				*i* S	**Sn**	21 29 49.1	+0.3
AVNS	**Nevsehir-Avano**	**1.46**	**336**	P	**Pn**	21 29 30.0	+0.2
AVNS				S	**Sn**	21 29 49.2	+0.3
YAYL	**Yayladag**	**1.49**	**164**	*i* P	**Pn**	21 29 29.6	-0.7
YAYL				*i* S	**Sg**	21 29 51.4	-0.2
YAYL	**Yayladag**	**1.49**	**164**	P	**Pn**	21 29 29.6	-0.7
YAYL				S	**Sg**	21 29 51.4	-0.2
BTCH	**Batrach**	**1.59**	**154**	*e*P	**Pn**	21 29 31.4	-0.2
BTCH				*e*S	**Sn**	21 29 51.7	-0.4
	37nm,0.6s						
ARNB	**Al Arnab**	**1.64**	**169**	*e*P	**Pb**	21 29 33.6	-0.1
ARNB				*e*S	**Sb**	21 29 54.4	+0.1
	17nm,0.4s						
DARE	**Darende-Malaty**	**1.85**	**53**	*e*PN	**Pb**	21 29 36.5	-0.9
DARE				*e*SN	**Sb**	21 30 00.9	+0.3
DARE	**Darende-Malaty**	**1.85**	**53**	*e*Pn	**Pb**	21 29 36.5	-0.9
DARE				*e*Sn	**Sb**	21 30 00.9	+0.3
SLNF	**Slenfeh**	**1.94**	**165**	*e*P	**Pn**	21 29 36.3	-0.1
SLNF				*e*S	**Sn**	21 30 01.1	+0.3
	58nm,1.1s						
IKL	**Isikli**	**1.96**	**232**	*e*PN	**Pb**	**21 29 38.1**	**-1.1**
IKL				*e*SN	**Sb**	21 30 03.3	-0.3
IKL	**Isikli**	**1.96**	**232**	*e*Pn	**Pb**	**21 29 38.1**	**-1.1**
IKL				*e*Sn	**Sb**	21 30 03.3	-0.3
YOZ	**Yozgat**	**2.18**	**354**	*e*PN	**Pn**	21 29 40.5	+0.8
YOZ	**Yozgat**	**2.18**	**354**	*e*Pn	**Pn**	21 29 40.5	+0.8
ERMK	**Ermenek**	**2.30**	**250**	*i* P	**Pb**	21 29 45.5	+0.5
ERMK	**Ermenek**	**2.30**	**250**	P	**Pb**	21 29 45.5	+0.5
SVSK	**Karacayir**	**2.68**	**24**	*e*PN	**Pn**	21 29 47.6	+1.2
SVSK	**Karacayir**	**2.68**	**24**	*e*Pn	**Pn**	21 29 47.6	+1.2
CORM	**Corum**	**2.81**	**345**	*e*PN	**Pn**	21 29 49.6	+1.3
CORM	**Corum**	**2.81**	**345**	*e*Pn	**Pn**	21 29 49.6	+1.3

*ISCJB **19** 21:31:10.5±0.8, 19°.4N±0°.1×145°.5E±0°.2, h147km, mb3.5/9, Error ellipse: s-maj=31.3km s-min=17.2km az=5.4*
*IDC **19** 21:31:17.6±11.0, 19°.35N×145°.52E, h200km±108km, mb3.2/9, mb1 3.4/9, mb1mx3.1/51, mbtmp3.7/9, MS3.0/1, Ms1 3.0/1, ms1mx2.5/24, Error ellipse: s-maj=29.4km s-min=15.8km az=86.0*

ISC 19 21:31:12.0±0.9, 19°.4N±0°.2×145°.5E±0°.2, h147km, n10, σ1s07/9, mb3.6/9, Mariana Islands

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JCJ	**Chichijima**	**8.29**	**339**	LR	LR	21 35 27.3	
	comp=Z,102nm,19.0s,baz=36,slow=30						
KLR	**Kul'dur**	**31.79**	**343**	P	**P**	**21 37 23.4**	**+1.0**
	0.8nm,0.3s,baz=157,slow=17,SNR=6.0						
WRA	**Warramunga Arr**	**40.57**	**196**	P	**P**	**21 38 37.7**	**+0.4**
	1.3nm,0.5s,baz=23,slow=9.0,SNR=20						
ASAR	**Alice Springs**	**44.24**	**195**	P	**P**	**21 39 06.7**	**-0.2**
	0.2nm,0.5s,baz=14,slow=7.4,SNR=3.8						
MKAR	**Makanchi Array**	**57.89**	**314**	P	**P**	**21 40 49.3**	**+0.6**
	0.2nm,0.6s,baz=85,slow=10,SNR=2.9						
KURBB	**Kurchatov Arra**	**60.73**	**318**	P	**P**	**21 41 07.9**	**0.0**
	0.3nm,0.4s,baz=94,slow=7.7,SNR=7.3						
ILAR	**Eielson Array**	**63.12**	**26**	P	**P**	**21 41 22.7**	**-1.0**
	0.2nm,0.5s,baz=248,slow=4.8,SNR=3.2						
YKA	**Yellowknife Ar**	**77.48**	**28**	P	**P**	**21 42 51.2**	**+0.2**
	0.6nm,0.6s,baz=290,slow=5.6,SNR=9.4						
NVAR	**Mina Array Bea**	**82.86**	**52**	P	**P**	**21 43 21.6**	**+1.0**
	0.9nm,0.6s,baz=282,slow=5.6,SNR=5.7						
FINES	**FINESS Array B**	**86.22**	**335**	P	**P**	**21 43 34.9**	**-1.8**
	1.0nm,0.8s,baz=77,slow=8.4,SNR=4.4						

DHMR 19 21:34:42.3±1.2, 11°.96N×43°.92E, h10km±15km, ML4.0, 1D, Ethiopia

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
ADEN	**Aden**	**1.32**	**52**	*i* P	Pn	21 35 06.9	+0.1
ADEN				*i* S	Sg	21 35 25.1	+0.2
ADEN				AML	AML	21 35 25.6	
	comp=E,3μm,0.5s						
UDYN	**Al 'Udayn**	**2.00**	**1**	*i* P	Pn	21 35 17.5	+1.1
UDYN				*i* S	Sb	21 35 45.3	+1.3
BDHA	**Al Bayda'**	**2.57**	**38**	*i* P	Pn	21 35 26.0	+1.7
BDHA				*i* S	Sb	21 36 02.0	+1.6
DHBB	**Dhamar BB**	**2.64**	**10**	*i* P	Pb	21 35 28.5	-1.4
DHBB				*i* S	Sb	21 36 03.2	+0.7
HAJJ	**Hajjah**	**3.73**	**355**	*i* P	Pn	21 35 42.8	+2.6
HAJJ				*i* S	Sb	21 36 29.8	-4.2
HAJJ				AML	AML	21 36 43.3	
	comp=Z,663nm,0.5s						

*NIED **19** 21:36:00, 36°.60N×142°.50E, h23km, Mw4.0 Best double couple: Mo1.15000×10¹⁵ NP1:φs187.00000°, δ47.00000°, λ-51.00000°. NP2:φs317.00000°, δ55.00000°, λ-124.00000°.*
*ISCJB **19** 21:36:22.5±1.3, 36°.62N±0°.03×142°.51E±0°.05, h16km±9km, mb4.2/24, MS3.2/1, Error ellipse: s-maj=6.5km s-min=4.6km az=9.1*
*IDC **19** 21:36:22.0±0.7, 36°.58N×142°.41E, h0km, mb3.9/16, mb1 4.0/20, mb1mx3.9/57, mbtmp3.9/20, ML3.7/4, MS3.1/4, Ms1 3.1/4, ms1mx2.7/52, Error ellipse: s-maj=19.3km s-min=15.4km az=114.0*
*JMA **19** 21:36:22.5±0.3, 36°.64N×142°.46E, h14km±5km, M4.1*
*NEIC **19** 21:36:25.9±1.9, 36°.60N×142°.46E, h26km±13km, mb4.3/9, Error ellipse: s-maj=8.3km s-min=5.3km az=135.0*

ISC 19 21:36:22.6±2.9, 36°.63N±0°.04×142°.46E±0°.06, h3km±17km, n71, σ0s98/81, mb4.1/24, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**1.41**	**290**	P	**Pn**	**21 36 47.8**	**-1.4**
ONAJ				S	**Sg**	21 37 06.9	-1.1
JHO	**Hitachi**	**1.52**	**270**	P	**Pn**	21 36 49.3	-1.3
CHOJ	**Chosi**	**1.59**	**235**	P	**Pn**	21 36 51.1	-0.5
CHOJ				S	**Sn**	21 37 11.4	-1.3
JMM	**Marumori**	**1.81**	**313**	P	**Pn**	21 36 54.1	-0.5
JMM				S	**Sn**	21 37 16.7	-1.4
JFT	**Otama**	**1.91**	**298**	P	**Pn**	21 36 56.0	-0.1
JFT				S	**Sn**	21 37 20.0	-0.6
JIO	**Ouri**	**2.02**	**334**	P	**Pn**	21 36 56.6	-0.9
JIO				S	**Sn**	21 37 20.9	-2.4
JOU	**Okura**	**2.24**	**321**	P	**Pn**	**21 37 01.1**	**+0.5**
JOU				S	**Sn**	21 37 29.8	+1.0
BSO1	**Boso 1**	**2.31**	**212**	P	**Pn**	**21 37 01.0**	**0.0**
BSO1				S	**Sn**	21 37 29.9	+0.2
JAG	**Ashikaga**	**2.43**	**266**	P	**Pn**	21 37 02.5	-0.6
JAG				S	**Sn**	21 37 30.9	-2.5
JMK	**Ichinoseki**	**2.52**	**337**	P	**Pn**	21 37 04.0	-0.3
JMK				S	**Sn**	21 37 33.8	-1.6
JYK	**Kaneyama**	**2.82**	**325**	P	**Pn**	21 37 08.0	-0.6
JYK				S	**Sn**	21 37 43.1	0.0
JRY	**Ryogami san**	**2.94**	**259**	P	**Pn**	21 37 09.5	-0.7
JOM	**Ohasama**	**2.98**	**342**	P	**Pn**	21 37 10.2	-0.5
JOM				S	**Sn**	21 37 46.9	-0.1
JOD2	**Odawara 2**	**3.06**	**244**	P	**Pn**	21 37 11.4	-0.4
MJAR	**Matsushiro Arr**	**3.42**	**270**	Pn	**Pn**	21 37 16.4	-0.4
	18nm,0.3s,baz=320,slow=9.7,SNR=94						
MJAR				LR	LR	21 38 46.6	
	comp=Z,199nm,20.4s,baz=125,slow=43						
MAJO	**Matsushiro**	**3.42**	**270**	*e*Pn	**Pn**	**21 37 17.6**	**+0.8**
MAT	**Matsushiro**	**3.42**	**270**	P	**Pn**	21 37 17.5	+0.7
MAT				*e*S	**Sn**	21 38 01.1	+3.2
MJB9	**Matsu-Tunnel**	**3.42**	**270**	*e*Pn	**Pn**	21 37 17.8	+0.9
INU	**Inuyama**	**4.59**	**255**	*e*Pn	**Pn**	**21 37 33.9**	**+1.0**
ASAJ	**Asahikawa**	**7.48**	**1**	Pn	**Pn**	**21 38 11.8**	**-0.7**
	2.0nm,0.3s,baz=210,slow=14,SNR=18						
USRK	**Ussuriysk Ar.**	**10.98**	**317**	Pn	Pn	21 39 04.6	+4.1
	0.1nm,0.3s,baz=105,slow=17,SNR=3.1						
KSRS	**Korea Array**	**11.65**	**278**	Pn	**Pn**	**21 39 12.1**	**+2.5**
	0.1nm,0.3s,baz=94,slow=14,SNR=4.3						
KS15	**Wonju Array Si**	**11.68**	**278**	*e*Pn	**Pn**	**21 39 12.1**	**+2.0**
KSAR	**Wonju Array Be**	**11.68**	**278**	Pn	**Pn**	**21 39 12.1**	**+2.0**
KLR	**Kul'dur**	**14.81**	**332**	Pn	**Pn**	**21 39 54.1**	**+1.3**
	0.2nm,0.3s,baz=168,slow=6.0,SNR=5.1						
KLR				LR	LR	21 45 22.1	
	comp=Z,77nm,20.3s,baz=137,slow=36						
PETK	**Petropavlovsk-**	**19.63**	**28**	P	**Pn**	**21 40 53.8**	**+0.4**
	0.2nm,0.3s,baz=140,slow=17,SNR=3.6						
PETK				LR	LR	21 49 03.5	
	comp=Z,30nm,21.0s,baz=176,slow=39						
PEA1	**Petropavlovsk-**	**19.63**	**28**	*e*P	**Pn**	**21 40 53.8**	**+0.3**
YAK	**Yakutsk**	**26.65**	**347**	LR	LR	21 53 05.5	
	comp=Z,67nm,18.4s,baz=152,slow=38						
ENH	**Enshi**	**28.14**	**267**	*e*P	**P**	**21 42 15.2**	**-0.8**
	11nm,0.8s						
ULN	**Ulaanbaatar**	**28.27**	**305**	*e*P	**P**	**21 42 17.6**	**+0.5**
	3.6nm,1.0s						
SONA1	**Songino Array**	**28.70**	**304**	*e*P	**P**	**21 42 21.1**	**+0.2**
SONA0	**Songino Array**	**28.70**	**304**	*e*P	**P**	**21 42 20.7**	**-0.3**
	4.7nm,0.8s						
**SONM

MJAR	**Matsushiro Arr**	**2.26 275**	Pn	**Pn**	**21 38 35.4**	**-0.7**
	20nm,0.3s,baz=12,slow=24,SNR=3.9						
MAJO	**Matsushiro**	**2.26 275**	*e*Pn	**Pn**	**21 38 37.1**	**+1.1**
MAJO			*e*Sn	**Sn**	**21 39 00.6**	**-3.0**
MAT	**Matsushiro**	**2.26 275**	P	**Pn**	**21 38 36.7**	**+0.6**
MAT			*e*S	**Sn**	**21 39 05.3**	**+1.6**
MJB9	**Matsu-Tunnel**	**2.26 275**	*e*Pn	**Pn**	**21 38 36.4**	**+0.3**
INU	**Inuyama**	**3.39 254**	*e*Pn	**Pn**	**21 38 52.5**	**+0.8**
JHJ2	**Mitsune**	**3.40 197**	*e*Pn	**Pn**	**21 38 53.5**	**+1.8**
JHJ2			*e*Sn	**Sn**	**21 39 30.8**	**-1.0**
ASAJ	**Asahikawa**	**7.83 8**	Pn	**Pn**	**21 39 52.0**	**-0.5**
	2.9nm,0.3s,baz=214,slow=20,SNR=2.8						
CBIJ	**Chichi jima**	**9.31 173**	*e*Pn	**Pn**	**21 40 11.7**	**-1.2**
KSRS	**Korea Array**	**10.53 280**	Pn	**Pn**	**21 40 32.7**	**+3.1**
	0.2nm,0.3s,baz=90,slow=14,SNR=3.8						
KSAR	**Wonju Array Be**	**10.56 280**	Pn	**Pn**	**21 40 32.7**	**+2.7**
SEY	**Seymchan**	**27.50 11**	P	**P**	**21 43 47.5**	**+2.8**
	2.2nm,0.2s,baz=220,slow=11,SNR=3.0						
SONM	**Songino Array**	**27.88 305**	LR	LR	21 54 20.0		
	comp=Z,49nm,19.6s,baz=96,slow=35						
H11N2	**WAKE ISLAND Hy 28.11 119**		T	T	22 13 20.0		
	baz=312,slow=75,SNR=58						
H11N1	**WAKE ISLAND Hy 28.11 119**		T	T	22 13 34.4		
	baz=312,slow=75,SNR=61						
H11N3	**WAKE ISLAND Hy 28.12 119**		T	T	22 13 17.0		
	baz=312,slow=75,SNR=63						
H11S1	**WAKE ISLAND Hy 28.79 121**		T	T	22 14 21.1		
	baz=314,slow=76,SNR=230						
H11S3	**WAKE ISLAND Hy 28.79 121**		T	T	22 14 03.6		
	baz=314,slow=76,SNR=181						
H11S2	**WAKE ISLAND Hy 28.81 121**		T	T	22 14 04.0		
	baz=314,slow=76,SNR=249						
BILL	**Bilibino**	**34.75 16**	*e*P	**P**	**21 44 49.5**	**+1.0**
	7.5nm,1.7s						
KWAJ	**Kwajalein Atol**	**36.59 132**	*e*P	**P**	**21 45 03.2**	**-1.7**
	239nm,1.3s						
UNV	**Unalaska Valle**	**39.93 47**	*e*P	**P**	**21 45 33.5**	**+0.9**
	224nm,1.8s						
FAKI	**Fak Fak**	**39.94 194**	*e*P	**P**	**21 45 30.5**	**-2.5**
	147nm,1.5s						
LSA	**Lhasa**	**41.94 276**	*e*P	**P**	**21 45 49.1**	**-0.9**
	3.8nm,1.2s						
ZAA0	**Zalesovo Array**	**42.12 313**	*e*P	**P**	**21 45 50.0**	**-0.6**
ZAA1	**Zalesovo Array**	**42.12 313**	*e*P	**P**	**21 45 50.4**	**-0.2**
ZALV	**Zalesovo Beam**	**42.12 313**	P	**P**	**21 45 50.4**	**-0.2**
	2.1nm,0.5s,baz=100,slow=7.2,SNR=7.3						
MK32	**Makanchi Array**	**44.19 303**	*e*P	**P**	**21 46 07.1**	**-0.4**
MKAR	**Makanchi Array**	**44.19 303**	P	**P**	**21 46 07.1**	**-0.4**
	2.0nm,1.1s,baz=92,slow=8.5,SNR=3.3						
MAKZ	**Makanchi**	**44.40 303**	*e*P	**P**	**21 46 09.0**	**-0.2**
	2.6nm,1.3s						
TARA	**Tarawa**	**45.68 132**	*e*P	**P**	**21 46 18.0**	**-1.6**
	113nm,1.0s						
KURK	**Kurchatov**	**46.08 309**	*e*P	**P**	**21 46 22.4**	**0.0**
KURBB	**Kurchatov Arra**	**46.15 308**	P	**P**	**21 46 22.4**	**-0.6**
	1.3nm,0.6s,baz=82,slow=7.6,SNR=2.6						
OHAK	**Old Harbor**	**47.46 42**	*e*P	**P**	**21 46 34.1**	**+1.0**
	72nm,1.8s						
KDAK	**Kodiak Island**	**47.81 42**	*e*P	**P**	**21 46 36.7**	**+0.9**
	47nm,1.9s						
CAST	**Castle Rocks**	**47.95 34**	*e*P	**P**	**21 46 38.0**	**+1.1**
	14nm,1.9s						
MLY	**Manley**	**48.58 32**	*e*P	**P**	**21 46 43.2**	**+1.4**
	3.3nm,1.0s						
MCK	**McKinley**	**49.36 33**	*e*P	**P**	**21 46 48.2**	**+0.4**
	8.2nm,1.4s						
MDM	**Murphy Dome**	**49.65 32**	*e*P	**P**	**21 46 49.7**	**-0.2**
	6.0nm,1.1s						
CCB	**Clear Creek Bu**	**49.84 32**	*e*P	**P**	**21 46 53.7**	**+2.4**
	9.2nm,1.9s						
IL1	**Eielson Array**	**50.23 32**	*e*P	**P**	**21 46 56.7**	**+2.5**
ILAR	**Eielson Array**	**50.23 32**	P	**P**	**21 46 55.2**	**+0.9**
	0.8nm,0.7s,baz=265,slow=6.0,SNR=5.9						
ILB	**Eielson Array**	**50.23 32**	*e*P	**P**	**21 46 55.2**	**+0.9**
WR1	**Warramunga Arr**	**56.37 188**	*e*P	**P**	**21 47 40.0**	**+0.1**
	9.1nm,1.0s						
WRA	**Warramunga Arr**	**56.37 188**	P	**P**	**21 47 40.0**	**+0.1**
	1.1nm,0.7s,baz=23,slow=7.3,SNR=3.6						
ABKAR	**Akbulak array**	**58.11 310**	*e*P	**P**	**21 47 51.5**	**-0.5**
AS31	**Alice Springs**	**60.09 188**	*e*P	**P**	**21 48 06.4**	**+0.5**
	1.6nm,0.7s						
ASAR	**Alice Springs**	**60.09 188**	P	**P**	**21 48 06.4**	**+0.5**
	0.8nm,0.6s,baz=12,slow=7.6,SNR=4.8						
RES	**Resolute Bay**	**63.32 14**	P	**P**	**21 48 26.9**	**-0.1**
	1.0nm,0.8s,baz=4.7,slow=13,SNR=2.9						
RES	**Resolute Bay**	**63.32 14**	*e*P	**P**	**21 48 26.9**	**-0.1**
	11nm,1.9s						
YKA	**Yellowknife Ar**	**64.54 30**	P	**P**	**21 48 35.9**	**+0.6**
	0.2nm,0.8s,baz=309,slow=7.6,SNR=2.2						
YKB5	**Yellowknife Ar**	**64.54 30**	*e*P	**P**	**21 48 35.9**	**+0.6**
FIA0	**FINESS Array S**	**69.24 332**	*e*P	**P**	**21 49 04.6**	**-0.5**
FINES	**FINESS Array B**	**69.24 332**	P	**P**	**21 49 04.6**	**-0.5**
	1.4nm,1.0s,baz=49,slow=5.8,SNR=1.7						
NB2	**NORSAR Subarra**	**74.66 337**	P	**P**	**21 49 37.3**	**-0.5**
	comp=Z,1.0nm,0.7s,baz=41,slow=6.2						
NB200	**NORSAR Array S**	**74.66 337**	*e*P	**P**	**21 49 37.2**	**-0.5**
NOA	**NORSAR Array B**	**74.66 337**	P	**P**	**21 49 37.2**	**-0.5**
	comp=Z,0.6nm,0.6s,baz=121,slow=20,SNR=2.1						
PD31	**Pinedale Array**	**78.36 45**	*e*P	**P**	**21 50 01.1**	**+1.8**
PDAR	**Pinedale Array**	**78.36 45**	P	**P**	**21 50 01.1**	**+1.8**
	comp=Z,0.2nm,0.5s,baz=38,slow=1.6,SNR=1.8						
LTX	**Lajitas**	**90.78 52**	*e*P	**P**	**21 51 05.1**	**+2.9**
TXAR	**Lajitas Array**	**90.78 52**	P	**P**	**21 51 05.1**	**+2.9**
	comp=Z,0.2nm,0.4s,baz=232,slow=16,SNR=1.7						
LPAZ	**La Paz**	**147.31 60**	PKPbc	**PKPab**	**21 57 44.9**	**-0.3**
	comp=Z,0.5nm,0.6s,baz=263,slow=6.3,SNR=1.9						

IDC 19 21:39:45.6±9.6, 14.85S×167.16E, h138km±87km, mb3.2/3, mb1 3.3/4, mb1mx3.1/47, mbtmp3.6/4, Error ellipse: s-maj=76.8km s-min=46.7km az=169.0, Vanuatu Islands

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**7.22**	**185**	P		Pn	21 41 29.2	+0.6
	0.8nm,0.3s,baz=114,slow=19,SNR=1.4							
DZM				S		Sn	21 42 48.9	-0.4
	0.8nm,0.3s,baz=80,slow=5.1,SNR=2.9							
STKA	**Stephens Creek**	**26.84**	**230**	P		P	21 45 31.8	+0.8
	0.7nm,0.4s,baz=41,slow=10.0,SNR=1.8							
WRA	**Warramunga Arr**	**31.69**	**256**	P		P	21 45 56.2	-0.2
	0.2nm,0.6s,baz=81,slow=6.5,SNR=1.7							
ASAR	**Alice Springs**	**32.53**	**249**	P		P	21 46 03.3	-0.4
	0.5nm,0.5s,baz=76,slow=9.1,SNR=3.9							
ARCES	**ARCESS Array B**	**120.34**	**345**	PKP		PKPdf	21 58 19.6	-0.4
	2.9nm,1.0s,baz=96,slow=1.2,SNR=5.7							

*IDC **19** 21:44:33.0±1.1, 6.34S×147.89E, h0km, mb3.9/7, mb1 4.1/9, mb1mx3.9/36, mbtmp3.9/9, ML3.9/1, MS3.3/4, Ms1 3.3/4, ms1mx2.9/42, Error ellipse: s-maj=42.0km s-min=19.8km az=103.0*

*ISCJB **19** 21:44:38.5±1.0, 6.5S±0.1×147.7E±0.2, h51km, mb3.8/7, MS3.1/2, Error ellipse: s-maj=29.2km s-min=13.8km az=15.3*

*NEIC **19** 21:44:38.5±0.8, 6.38S×147.78E, h35km, mb4.0/2, Error ellipse: s-maj=27.7km s-min=12.5km az=104.0*

ISC 19 21:44:39.8±1.1, 6.3S±0.1×147.8E±0.3, h51km, n16, σ1s53/13, mb3.8/7, Eastern New Guinea region

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**3.12**	**192**	Pn		**Pn**	**21 45 24.6**	**-1.9**
	14nm,0.3s,baz=346,slow=10,SNR=44							
PMG						Sn	21 46 05.4	+2.9
	21nm,0.3s,baz=355,slow=17,SNR=13							
HNR	**Honiara**	**12.40**	**105**	LR		LR	21 51 49.6	
	comp=Z,107nm,20.2s,baz=314,slow=35							
CTA	**Charters Tower**	**13.75**	**186**	LR		LR	21 53 48.4	
	comp=Z,313nm,19.1s,baz=52,slow=40							
WRAB	**Tennant Creek**	**18.81**	**223**	*e*P		**P**	**21 48 54.2**	**-1.1**
	3.5nm,0.7s							
WRA	**Warramunga Arr**	**18.82**	**223**	P		**P**	**21 48 55.0**	**-0.5**
	0.4nm,0.3s,baz=51,slow=11,SNR=7.7							
GUMO	**Guam**	**20.01**	**352**	LR		LR	21 57 05.7	
	comp=Z,82nm,18.1s,baz=138,slow=38							
ASAR	**Alice Springs**	**21.81**	**216**	P		**P**	**21 49 26.1**	**-1.9**
	2.0nm,0.5s,baz=53,slow=9.3,SNR=16							
FITZ	**Fitzroy Crossi**	**24.59**	**240**	P		**P**	**21 49 55.0**	**-0.4**
	4.9nm,0.4s,baz=50,slow=8.0,SNR=19							
FITZ	**Fitzroy Crossi**	**24.59**	**240**	*e*P		**P**	**21 49 54.6**	**-0.7**
	6.9nm,0.7s							
STKA	**Stephens Creek**	**26.06**	**192**	P		**P**	**21 50 10.0**	**+1.4**
	1.9nm,0.7s,baz=1.9,slow=9.6,SNR=4.7							
MJAR	**Matsushiro Arr**	**43.59**	**349**	LR		LR	22 09 23.2	
	comp=Z,27nm,19.4s,baz=145,slow=34							
VNDA	**Vanda**	**71.53**	**177**	P		**P**	**21 55 54.5**	**-0.4**
	0.9nm,0.7s,baz=312,slow=8.5,SNR=4.7							
MKAR	**Makanchi Array**	**78.27**	**320**	P		**P**	**21 56 35.8**	**+1.3**
	0.2nm,0.5s,baz=107,slow=7.7,SNR=4.4							
ZALV	**Zalesovo Beam**	**79.73**	**328**	P		**P**	**21 56 42.8**	**+0.6**
	0.7nm,0.5s,baz=125,slow=7.4,SNR=3.9							
ILAR	**Eielson Array**	**85.47**	**23**	P		**P**	**21 57 11.4**	**-0.4**
	0.6nm,0.9s,baz=253,slow=4.5,SNR=6.4							
TORD	**Torodi Ar. Bea**	**145.96**	**284**	PKPbc		**PKPab**	**22 04 16.6**	**+1.1**
	0.6nm,0.4s,baz=66,slow=3.5,SNR=19							

*SIGU **19** 21:44:43.9, 46.16N×27.13E, h6km, mb3.0*

*BUC **19** 21:44:43.7±0.5, 46.17N×27.14E, h9km±6km, MD3.7/1, Error ellipse: s-maj=4.8km s-min=4.3km az=94.0*

*CSEM **19** 21:44:43.7, 46.17N×27.14E, h9km, MD3.7/1*

*ISCJB **19** 21:44:44.2±0.5, 46.18N±0.02×27.14E±0.03, h5km±3km, Error ellipse: s-maj=3.0km s-min=2.5km az=160.0*

ISC 19 21:44:44.4±1.1, 46.16N±0.01×27.14E±0.02, h5km±9km, n100, σ0s81/148, 35C-43D, Romania

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
VRI	**Vrincioaia**	**0.41**	**225**	⇓*i*P		**Pg**	**21 44 52.1**	**-0.2**
VRI	**Vrincioaia**	**0.41**	**225**	⇓*i*P		**Pg**	**21 44 52.1**	**-0.2**
VRI				*i* S		**Sg**	**21 44 58.2**	**+0.5**
VRI	**Vrincioaia**	**0.41**	**225**	⇓*i*P		**Pg**	**21 44 52.1**	**-0.2**
VRI				*i* S		**Sg**	**21 44 58.2**	**+0.5**
PETR	**Petresti**	**0.44**	**172**	⇑*i*P		**Pg**	**21 44 53.6**	**+0.7**
PETR	**Petresti**	**0.44**	**172**	⇑*i*P		**Pg**	**21 44 53.6**	**+0.7**
PETR				*i* S		**Sb**	**21 45 01.0**	**-0.6**
PETR	**Petresti**	**0.44**	**172**	⇑*i*P		**Pg**	**21 44 53.6**	**+0.7**
PETR				*i* S		**Sb**	**21 45 01.0**	**-0.6**
PLOR	**Plostina**	**0.46**	**228**	⇓*i*P		**Pg**	**21 44 53.0**	**-0.3**
PLOR	**Plostina**	**0.46**	**228**	⇓*i*P		**Pg**	**21 44 53.0**	**-0.3**
PLOR				*i* S		**Sg**	**21 45 00.1**	**+0.8**
PLOR	**Plostina**	**0.46**	**228**	⇓*i*P		**Pg**	**21 44 53.0**	**-0.3**
PLOR				*i* S		**Sg**	**21 45 00.1**	**+0.8**
TESR	**Tescani**	**0.49**	**316**	⇑*i*P		**Pg**	**21 44 53.7**	**-0.1**
TESR	**Tescani**	**0.49**	**316**	⇑*i*P		**Pg**	**21 44 53.7**	**-0.1**
TESR				*i* S		**Sg**	**21 45 00.0**	**-0.2**
TESR	**Tescani**	**0.49**	**316**	⇑*i*P		**Pg**	**21 44 53.7**	**-0.1**
TESR				*i* S		**Sg**	**21 45 00.0**	**-0.2**
GRER		**0.79**	**189**	⇑*i*P		**Pb**	**21 45 00.4**	**-0.2**
GRER		**0.79**	**189**	⇑*i*P		**Pb**	**21 45 00.4**	**-0.2**
GRER				*i* S		**Sb**	**21 45 12.3**	**+0.7**
GRER		**0.79**	**189**	⇑*i*P		**Pb**	**21 45 00.4**	**-0.2**
GRER				*i* S		**Sb**	**21 45 12.3**	**+0.7**
LEOM	**Leova**	**0.83**	**67**	⇑*i*P		**Pg**	**21 45 00.2**	**-0.1**
LEOM	**Leova**	**0.83**	**67**	⇑*i*P		**Pg**	**21 45 00.2**	**-0.1**
LEOM				*i* S		**Sb**	**21 45 12.4**	**-0.3**
LEOM	**Leova**	**0.83**	**67**	⇑*i*P		**Pg**	**21 45 00.2**	**-0.1**
LEOM				*i* S		**Sb**	**21 45 12.4**	**-0.3**
GIRR	**Girov**	**0.91**	**331**	⇓*i*P		**Pg**	**21 45 01.6**	**-0.2**
GIRR	**Girov**	**0.91**	**331**	⇓*i*P		**Pg**	**21 45 01.6**	**-0.2**
GIRR	**Girov**	**0.91**	**331**	⇓*i*P		**Pg**	**21 45 01.6**	**-0.2**
MLR	**Muntele Rosu**	**1.07**	**232**	⇓*i*P		**Pg**	**21 45 04.6**	**-0.3**
MLR	**Muntele Rosu**	**1.07**	**232**	⇓*i*P		**Pg**	**21 45 04.6**	**-0.3**
MLR				*i* S		**Sb**	**21 45 19.9**	**0.0**
MLR	**Muntele Rosu**	**1.07**	**232**	⇓*i*P		**Pg**	**21 45 04.6**	**-0.3**
MLR				*i* S		**Sb**	**21 45 19.9**	**0.0**
IAS	**Iasi**	**1.07**	**16**	⇓*i*P		**Pg**	**21 45 04.4**	**-0.6**
IAS	**Iasi**	**1.07**	**16**	⇓*i*P		**Pg**	**21 45 04.4**	**-0.6**
IAS				*i* S		**Sg**	**21 45 18.9**	**0.0**
IAS	**Iasi**	**1.07**	**16**	⇓*i*P		**Pg**	**21 45 04.4**	**-0.6**
IAS				*i* S		**Sg**	**21 45 18.9**	**0.0**
CFR	**Carcaliu**	**1.21**	**144**	S		**Sb**	**21 45 23.8**	**+0.2**
CFR	**Carcaliu**	**1.21**	**144**	*i* S		**Sb**	**21 45 23.8**	**+0.2**
CFR	**Carcaliu**	**1.21**	**144**	*i* S		**Sb**	**21 45 23.8**	**+0.2**
PGOR	**Pogoanele**	**1.26**	**185**	⇑*i*P		**Pn**	**21 45 08.3**	**-0.3**
PGOR	**Pogoanele**	**1.26**	**185**	⇑*i*P		**Pn**	**21 45 08.3**	**-0.3**
PGOR	**Pogoanele**	**1.26**	**185**	⇑*i*P		**Pn**	**21 45 08.3**	**-0.3**
SECR		**1.35**	**214**	⇑*i*P		**Pg**	**21 45 10.4**	**+0.1**
SECR		**1.35**	**214**	⇑*i*P		**Pg**	**21 45 10.4**	**+0.1**
SECR		**1.35**	**214**	⇑*i*P		**Pg**	**21 45 10.4**	**+0.1**
PRAR	**RASCA**	**1.36**	**333**	⇓*i*P		**Pn**	**21 45 09.7**	**-0.3**
PRAR	**RASCA**	**1.36**	**333**	⇓*i*P		**Pn**	**21 45 09.7**	**-0.3**
PRAR	**RASCA**	**1.36**	**333**	⇓*i*P		**Pn**	**21 45 09.7**	**-0.3**
MILM	**Milestii Mici**	**1.38**	**56**	⇓*i*P		**Pn**	**21 45 09.6**	**-0.7**
MILM	**Milestii Mici**	**1.38**	**56**	⇓*i*P		**Pn**	**21 45 09.6**	**-0.7**
MILM				*i* S		**Sb**	**21 45 28.4**	**-0.2**
MILM	**Milestii Mici**	**1.38**	**56**	⇓*i*P		**Pn**	**21 45 09.6**	**-0.7**
MILM				*i* S		**Sb**	**21 45 28.4**	**-0.2**
KIS	**Kishinev**	**1.43**	**53**	*i* P		**Pn**	**21 45 10.0**	**-1.0**
KIS				*i* S		**Sg**	**21 45 30.5**	**+0.2**
	760nm,1.0s							
KIS				XM			21 45 44.0	
	2µm,1.1s							
KIS	**Kishinev**	**1.43**	**53**	*i* Pn		**Pn**	**21 45 10.0**	**-1.0**
KIS				*i* Sn		**Sg**	**21 45 30.5**	**+0.2**
KIS				Smn			21 45 32.0	
TLCR		**1.53**	**129**	⇓*i*P		**Pn**	**21 45 12.1**	**-0.2**
TLCR		**1.53**	**129**	⇓*i*P		**Pn**	**21 45 12.1**	**-0.2**
TLCR				*i* S		**Sg**	**21 45 33.8**	**+0.4**
TLCR		**1.53**	**129**	⇓*i*P		**Pn**	**21 45 12.1**	**-0.2**
TLCR				*i* S		**Sg**	**21 45 33.8**	**+0.4**
SULR		**1.61**	**203**	⇓*i*P		**Pn**	**21 45 13.2**	**-0.3**
SULR		**1.61**	**203**	⇓*i*P		**Pn**	**21 45 13.2**	**-0.3**
SULR				*i* S		**Sb**	**21 45 35.3**	**+0.1**
SULR		**1.61**	**203**	⇓*i*P		**Pn**	**21 45 13.2**	**-0.3**
SULR				*i* S		**Sb**	**21 45 35.3**	**+0.1**
VOIR		**1.63**	**244**	⇑*i*P		**Pn**	**21 45 12.5**	**-1.4**
VOIR		**1.63**	**244**	⇑*i*P		**Pn**	**21 45 12.5**	**-1.4**
VOIR		**1.63**	**244**	⇑*i*P		**Pn**	**21 45 12.5**	**-1.4**
TIRR	**Tirgusor**	**1.93**	**152**	⇓*i*P		**Pn**	**21 45 16.8**	**-1.0**
TIRR	**Tirgusor**	**1.93**	**152**	⇓*i*P		**Pn**	**21 45 16.8**	**-1.0**
TIRR				*i* S		**Sb**	**21 45 44.1**	**-0.2**
TIRR	**Tirgusor**	**1.93**	**152**	⇓*i*P		**Pn**	**21 45 16.8**	**-1.0**
TIRR				*i* S		**Sb**	**21 45 44.1**	**-0.2**
ARR	**Arges**	**1.93**	**247**	⇓*i*P		**Pn**	**21 45 16.9**	**-1.0**
ARR	**Arges**	**1.93**	**247**	⇓*i*P		**Pn**	**21 45 16.9**	**-1.0**
ARR				*i* S		**Sn**	**21 45 42.0**	**-0.6**
ARR	**Arges**	**1.93**	**247**	⇓*i*P		**Pn**	**21 45 16.9**	**-1.0**
ARR				*i* S		**Sn**	**21 45 42.0**	**-0.6**
CVDA	**Cernavoda**	**1.93**	**161**	⇑*i*P		**Pn**	**21 45 17.6**	**-0.3**
CVDA	**Cernavoda**	**1.93**	**161**	⇑*i*P		**Pn**	**21 45 17.6**	**-0.3**
CVDA	**Cernavoda**	**1.93**	**161**	⇑*i*P		**Pn**	**21 45 17.6**	**-0.3**
BURAR	**Bucovina Array**	**1.96**	**318**	⇑*i*P		**Pb**	**21 45 19.6**	**-1.1**
BURAR	**Bucovina Array**	**1.96**	**318**	⇑*i*P		**Pb**	**21 45 19.6**	**-1.1**
BURAR	**Bucovina Array**	**1.96**	**318**	⇑*i*P		**Pb**	**21 45 19.6**	**-1.1**
BUC1	**Bucharest**	**1.98**	**204**	⇑*i*P		**Pn**	**21 45 18.7**	**+0.2**
BUC1	**Bucharest**	**1.98**	**204**	⇑*i*P		**Pn**	**21 45 18.7**	**+0.2**
BUC1	**Bucharest**	**1.98**	**204**	⇑*i*P		**Pn**	**21 45 18.7**	**+0.2**
MSAB	**Monastry St. A**	**2.13**	**167**	⇑*i*P		**Pn**	**21 45 19.8**	**-0.8**
MSAB	**Monastry St. A**	**2.13**	**167**	⇑*i*P		**Pn**	**21 45 19.8**	**-0.8**
MSAB	**Monastry St. A**	**2.13**	**167**	⇑*i*P		**Pn**	**21 45 19.8**	**-0.8**
ARCR	**ARCALIA**	**2.13**	**297**	⇓*i*P		**Pn**	**21 45 21.4**	**+0.7**
ARCR	**ARCALIA**	**2.13**	**297**	⇓*i*P		**Pn**	**21 45 21.4**	**+0.7**
ARCR	**ARCALIA**	**2.13**	**297**	⇓*i*P		**Pn**	**21 45 21.4**	**+0.7**
SORM	**Soroca**	**2.14**	**22**	⇓*i*P		**Pn**	**21 45 20.4**	**-0.4**
SORM	**Soroca**	**2.14**	**22**	⇓*i*P		**Pn**	**21 45 20.4**	**-0.4**
SORM				*i* S		**Sn**	**21 45 47.5**	**-0.2**
SORM	**Soroca**	**2.14**	**22**	⇓*i*P		**Pn**	**21 45 20.4**	**-0.4**
SORM				*i* S		**Sn**	**21 45 47.5**	**-0.2**
HUMR	**Humele**	**2.23**	**224**	⇑*i*P		**Pn**	**21 45 21.5**	**-0.6**
HUMR	**Humele**	**2.23**	**224**	⇑*i*P		**Pn**	**21 45 21.5**	**-0.6**
HUMR				*i* S		**Sb**	**21 45 51.8**	**-1.4**
HUMR	**Humele**	**2.23**	**224**	⇑*i*P		**Pn**	**21 45 21.5**	**-0.6**
HUMR				*i* S		**Sb**	**21 45 51.8**	**-1.4**
CHRU	**Chernivtsi**	**2.29**	**339**	*i* Pn		**Pn**	**21 45 23.2**	**+0.3**
CHRU				Pnm			21 45 23.8	
CHRU				*i* Sn		**Sn**	**21 45 52.2**	**+0.7**
CHRU				Snm			21 45 52.9	
NDNU	**Novodnistrovsk**	**2.44**	**4**	*i* Pn		**Pn**	**21 45 24.1**	**+0.2**
NDNU				Pnm			21 45 26.0	
NDNU				*i* Sn		**Sn**	**21 45 55.9**	**+0.8**
NDNU				Snm			21 45 59.4	
KMPD	**K-Podol'skiy**	**2.45**	**349**	*i* Pn		**Pn**	**21 45 24.5**	**-0.5**
KMPD				*i* Sn		**Sn**	**21 45 55.9**	**+0.6**
KSV	**Kosov**	**2.58**	**327**	*i* Pn		**Pn**	**21 45 27.5**	**+0.7**
KSV				Pnm			21 45 28.5	
KSV				*i* Sn		**Sn**	**21 45 59.7**	**+1.1**
KSV				Snm			21 46 04.5	
NSLU	**Nyzhne Selyshc**	**2.74**	**319**	*e*Pn		**Pg**	**21 45 36.1**	**-0.8**
NSLU				*e*Sn		**Sg**	**21 46 15.9**	**+3.6**
NSLU				Snm			21 46 22.5	
RAKU	**Rahkiv**	**2.76**	**314**	*e*Pn		**Pn**	**21 45 30.0**	**+0.7**
RAKU				*e*Sn		**Sn**	**21 46 03.8**	**+0.8**
RAKU				Snm			21 46 06.6	
RAKU				Sn		**Sg**	**21 46 11.2**	**-1.8**
HORU	**Horodok**	**3.09**	**351**	*i* Pn		**Pn**	**21 45 34.2**	**+0.3**
HORU				*i* Sn		**Sn**	**21 46 12.6**	**+1.3**
STNU	**Starunia**	**3.12**	**326**	*i* Pn		**Pn**	**21 45 35.0**	**+0.8**
STNU				*i* Sn		**Sn**	**21 46 13.0**	**+1.1**
DRGR		**3.12**	**283**	⇓*i*P		**Pn**	**21 45 34.0**	**-0.4**
DRGR		**3.12**	**283**	⇓*i*P		**Pn**	**21 45 34.0**	**-0.4**
DRGR				*i* S		**Sn**	**21 46 11.1**	**-1.1**
DRGR		**3.12**	**283**	⇓*i*P		**Pn**	**21 45 34.0**	**-0.4**
DRGR				*i* S		**Sn**	**21 46 11.1**	**-1.1**
KORU	**Korolevo**	**3.39**	**308**	*e*Sn		**Sn**	**21 46 19.3**	**+0.9**
MEZ	**Mezhgor'ye**	**3.41**	**315**	*e*Pn		**Pn**	**21 45 38.7**	**+0.4**
MEZ				*e*Sn		**Sn**	**21 46 20.3**	**+1.2**
MEZ				Snm			21 46 22.0	
MORU	**Morshyn**	**3.70**	**325**	*e*Pn		**Pn**	**21 45 43.0**	**+0.8**
MORU				*i* Sn		**Sn**	**21 46 27.5**	**+1.4**
SHIU	**Shidnytsya**	**3.99**	**322**	*e*Pn		**Pn**	**21 45 47.5**	**+1.3**
SHIU				*e*Sn		**Sn**	**21 46 35.1**	**+1.7**
SHIU				Snm			21 46 38.9	
LVV	**L'vov**	**4.21**	**331**	*e*Sn		**Sn**	**21 46 40.9**	**+2.0**
KOLS	**Kolonicke sedl**	**4.31**	**312**	*e*		**Pb**	**21 46 01.6**	**+1.0**
KOLS				*e*			21 47 26.5	
SEV	**Sevastopol'**	**4.88**	**107**	*e*Pn		**Pn**	**21 45 56.7**	**-1.7**
SEV				Pnm			21 46 01.3	
SEV				*e*Sn		**Sn**	**21 46 53.5**	**-1.7**
SEV				Snm			21 47 02.5	
ALU	**Alushta**	**5.32**	**104**	*e*Sn		**Sn**	**21 47 07.9**	**+1.7**
SUDU	**Sudak**	**5.67**	**100**	*e*Pn		**Pn**	**21 46 10.9**	**+1.7**
SUDU				Pnm			21 46 11.9	
SUDU				Snm			21 46 18.9	
SUDU				*e*Sn		**Sn**	**21 47 16.4**	**+1.7**

*CSEM **19** 21:50:08.3±0.1, 45.74N×15.10E, h10km, ML1.5/6, Error ellipse: s-maj=1.8km s-min=1.6km az=49.0*

LJU 19 21:50:08.3, 45.73N×15.09E, h6km, ML0.8, 2C, Northwestern Balkan Peninsula

| Code | Station Name | Δ° | AZ° | Phase ID | Op | IS

FITZ	**Fitzroy Crossi**	**24.70 240**	P		**P**	**21 58 36.2**	**+0.3**	
	2.6nm,0.5s,baz=66,slow=8.2,SNR=6.3							
KSRS	**Korea Array**	**47.39 338**	LR		LR	22 20 59.3		
	comp=Z,25nm,19.1s,baz=164,slow=35							
MKAR	**Makanchi Array**	**78.34 320**	P		**P**	**22 05 14.6**	**+0.3**	
	0.2nm,0.6s,baz=100,slow=7.9,SNR=4.1							
ILAR	**Eielson Array**	**85.41 23**	P		**P**	**22 05 51.1**	**0.0**	
	0.4nm,0.8s,baz=261,slow=4.5,SNR=3.3							
TORD	**Torodi Ar. Bea**	**146.07 284**	PKPbc		**PKPab**	**22 12 56.5**	**+1.1**	
	0.7nm,0.8s,baz=77,slow=3.4,SNR=5.6							

ISCJB ***19*** *22:02:35.0±3.4, 17.4S±0.8×178.8W±0.7, h539km, mb4.0/5, Error ellipse: s-maj=133.6km s-min=27.8km az=140.6*
IDC ***19*** *22:02:36.7±13.0, 17.4S±8×178.7W, h544km±135km, mb3.4/5, mb1 3.6/5, mb1mx3.0/50, mbtmp4.4/5, Error ellipse: s-maj=106.6km s-min=56.0km az=124.0*

ISC 19 22:02:35.6±3.3, 17.5S±0.8×178.7W±0.6, h539km, n7, σ0§38/6, mb4.1/5, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CTA	**Charters Tower**	**33.28 260**		P	**P**	**22 08 29.2**	**+0.4**
	2.9nm,0.7s,baz=90,slow=12,SNR=4.2						
STKA	**Stephens Creek**	**38.63 241**		P	**P**	**22 09 13.1**	**+0.1**
	5.4nm,0.5s,baz=90,slow=10,SNR=24						
WRA	**Warramunga Arr**	**44.47 259**		P	**P**	**22 09 58.9**	**-0.4**
	2.7nm,0.4s,baz=95,slow=7.3,SNR=32						
ASAR	**Alice Springs**	**44.68 254**		P	**P**	**22 10 00.5**	**-0.4**
	24nm,0.6s,baz=88,slow=8.3,SNR=44						
ILAR	**Eielson Array**	**85.50 13**		P	**P**	**22 14 16.2**	**0.0**
	0.1nm,0.4s,baz=220,slow=5.6,SNR=4.5						
BRTR	**Keskin Array B**	**144.29 315**		PKP	PKPbc	22 21 10.4	-0.1
	0.7nm,0.6s,baz=100,slow=3.4,SNR=6.3						
GERES	**GERESS Array B**	**147.11 345**		PKPbc	**PKPbc**	**22 21 18.2**	**0.0**
	0.8nm,0.5s,baz=12,slow=2.6,SNR=9.0						

IDC 19 22:04:51.1±26.0, 20.81S×173.20W, h0km, mb4.4/4, mb1 4.5/4, mb1mx3.8/48, mbtmp4.4/4, Error ellipse: s-maj=485.4km s-min=153.7km az=75.0, Tonga Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CTA	**Charters Tower**	**37.92 264**		P	P	22 12 11.5	+1.0
	6.1nm,0.4s,baz=92,slow=11,SNR=14						
STKA	**Stephens Creek**	**41.72 245**		P	P	22 12 40.1	-1.9
	1.6nm,0.4s,baz=76,slow=6.8,SNR=4.8						
ASAR	**Alice Springs**	**48.81 256**		P	P	22 13 38.2	-0.3
	2.9nm,0.8s,baz=94,slow=7.7,SNR=16						
WRA	**Warramunga Arr**	**49.00 261**		P	P	22 13 40.2	+0.3
	1.3nm,0.3s,baz=92,slow=8.4,SNR=44						

IDC 19 22:04:55.9±3.1, 6.36S×147.33E, h0km, mb3.8/2, mb1 4.0/4, mb1mx3.6/47, mbtmp3.8/4, ML3.5/1, MS3.3/3, Ms1 3.2/3, ms1mx2.7/39, Error ellipse: s-maj=60.1km s-min=34.0km az=86.0, Eastern New Guinea region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PMG	**Port Moresby**	**3.03 183**		Pn	Pn	22 05 45.0	-0.2
	12nm,0.3s,baz=356,slow=14,SNR=19						
PMG				Sn	Sn	22 06 23.9	+1.6
	8.8nm,0.3s,baz=7.4,slow=20,SNR=6.0						
WRA	**Warramunga Arr**	**18.48 222**		P	Pn	22 09 13.7	+0.1
	0.2nm,0.3s,baz=48,slow=11,SNR=6.4						
GUMO	**Guam**	**19.97 353**		LR	LR	22 17 26.8	
	comp=Z,73nm,18.5s,baz=162,slow=38						
ASAR	**Alice Springs**	**21.52 215**		P	P	22 09 46.5	-0.2
	1.0nm,0.5s,baz=50,slow=8.3,SNR=13						
FITZ	**Fitzroy Crossi**	**24.16 239**		P	P	22 10 14.2	+0.1
	4.5nm,0.5s,baz=56,slow=8.3,SNR=20						
DZM	**Mont Dzumac**	**24.18 132**		LR	LR	22 17 47.2	
	comp=Z,67nm,18.8s,baz=232,slow=32						
STKA	**Stephens Creek**	**25.95 191**		LR	LR	22 21 09.3	
	comp=Z,56nm,18.1s,baz=19,slow=38						
TORD	**Torodi Ar. Bea**	**145.50 284**		PKPbc	PKPdf	22 24 36.2	-1.0
	0.3nm,0.6s,baz=71,slow=3.2,SNR=4.4						

IDC 19 22:06:47.8±3.1, 6.37S×147.66E, h0km, mb3.6/2, mb1 3.7/4, mb1mx3.4/46, mbtmp3.5/4, ML0.6/1, Error ellipse: s-maj=73.6km s-min=33.1km az=95.0, Eastern New Guinea region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PMG	**Port Moresby**	**3.05 189**		Pn	Pn	22 07 37.8	+0.4
	0.6nm,0.3s,baz=346,slow=15,SNR=2.2						
PMG				Sn	Sn	22 08 17.8	+3.1
	3.7nm,0.3s,baz=58,slow=19,SNR=3.7						
WRA	**Warramunga Arr**	**18.69 223**		P	P	22 11 06.8	-1.1
	baz=48,slow=11,SNR=2.4						
ASAR	**Alice Springs**	**21.69 216**		P	P	22 11 39.8	-0.8
	0.5nm,0.4s,baz=50,slow=10,SNR=3.4						
FITZ	**Fitzroy Crossi**	**24.43 240**		P	P	22 12 08.7	+0.2
	1.3nm,0.4s,baz=94,slow=6.4,SNR=5.7						
TORD	**Torodi Ar. Bea**	**145.81 284**		PKPbc	PKPdf	22 26 29.6	0.0
	0.3nm,0.7s,baz=74,slow=2.9,SNR=8.0						

NIED ***19*** *22:10:00.37°30N×141.90E, h35km, Mw3.5 Best double couple: M0 2.32000×10^14 NP1:φs192.00000°, δ21.00000°, λ-15.00000°. NP2:φs296.00000°, δ85.00000°, λ-110.00000°.*
IDC ***19*** *22:10:27.5±1.3, 37.15N×142.19E, h0km, mb3.4/4, mb1 3.6/7, mb1mx3.4/58, mbtmp3.5/7, ML3.4/3, Error ellipse: s-maj=31.3km s-min=19.7km az=104.0*
ISCJB ***19*** *22:10:30.2±1.6, 37.26N±0.04×142.04E±0.07, h29km±11km, mb3.3/4, Error ellipse: s-maj=8.9km s-min=6.8km az=12.5*
JMA ***19*** *22:10:32.5±0.2, 37.30N×141.91E, h34km±3km, M3.8*

ISC 19 22:10:29.6±2.7, 37.28N±0.05×142.01E±0.08, h13km±16km, n15, σ1§42/24, mb3.4/4, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JFK	**Kawauchi**	**0.91 276**		P	**Pb**	**22 10 48.0**	**+0.7**
JFK				S	**Sg**	**22 10 58.4**	**-0.7**
ONAJ	**Iwakimizuishiy**	**0.99 260**		P	**Pb**	**22 10 49.1**	**+0.5**
ONAJ				S	**Sb**	**22 11 00.6**	**-1.0**
JMM	**Marumori**	**1.13 301**		P	**Pn**	**22 10 51.1**	**-0.1**
JMM				S	**Sb**	**22 11 04.0**	**-1.6**
JIO	**Ouri**	**1.28 336**		P	**Pn**	**22 10 53.5**	**+0.3**
JIO				S	**Sb**	**22 11 07.8**	**-2.2**
JHO	**Hitachi**	**1.34 240**		P	**Pn**	**22 10 54.1**	**+0.1**
JHO				S	**Sn**	**22 11 09.9**	**-1.8**
JFT	**Otama**	**1.35 280**		P	**Pn**	**22 10 55.2**	**+0.9**
JFT				S	**Sn**	**22 11 10.9**	**-1.2**
JOU	**Okura**	**1.52 316**		P	**Pn**	**22 10 57.5**	**+1.0**
JOU				S	**Sn**	**22 11 15.2**	**-1.0**
MJAR	**Matsushiro Arr**	**3.14 257**		Pn	**Pn**	**22 11 20.1**	**+1.3**
	2.2nm,0.3s,baz=77,slow=17,SNR=10						
MAT	**Matsushiro**	**3.14 258**		P	**Pn**	**22 11 20.9**	**+2.1**
MAT				*e*S	**Sn**	**22 11 58.8**	**+2.6**
JHJ	**Hachijo jima 2**	**4.54 204**		Pn	**Pn**	**22 11 37.5**	**-0.6**
	8.5nm,0.3s,baz=57,slow=17,SNR=3.1						
JHJ				Sn	**Sn**	**22 12 28.6**	**-2.1**
	16nm,0.3s,baz=253,slow=20,SNR=4.6						
ASAJ	**Asahikawa**	**6.84 4**		Pn	**Pn**	**22 12 09.7**	**0.0**
	0.7nm,0.3s,baz=255,slow=15,SNR=5.0						
ZALV	**Zalesovo Beam**	**42.10 312**		P	**P**	**22 18 22.7**	**+1.5**
	0.2nm,0.3s,baz=93,slow=7.2,SNR=2.1						
MKAR	**Makanchi Array**	**44.39 302**		P	**P**	**22 18 40.9**	**+1.1**
	0.1nm,0.5s,baz=79,slow=9.2,SNR=2.8						
ILAR	**Eielson Array**	**49.03 32**		P	**P**	**22 19 16.3**	**+0.5**
	0.3nm,0.7s,baz=258,slow=7.0,SNR=3.7						
WRA	**Warramunga Arr**	**57.38 189**		P	**P**	**22 20 16.6**	**-1.2**
	0.3nm,0.4s,baz=6.8,slow=7.3,SNR=10						

IDC 19 22:20:16.7±3.0, 6.42S×147.58E, h0km, mb3.5/2, mb1 3.6/4, mb1mx3.4/39, mbtmp3.4/4, ML3.2/1, Error ellipse: s-maj=68.1km s-min=32.8km az=94.0, Eastern New Guinea region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PMG	**Port Moresby**	**3.00 188**		Pn	Pn	22 21 06.7	+1.2
	2.0nm,0.3s,baz=359,slow=11,SNR=9.8						
PMG				Sn	Sn	22 21 44.4	+2.2
	3.5nm,0.3s,baz=65,slow=9.3,SNR=5.1						
WRA	**Warramunga Arr**	**18.60 222**		P	Pn	22 24 36.3	+0.3
	0.1nm,0.3s,baz=50,slow=11,SNR=3.9						
ASAR	**Alice Springs**	**21.61 216**		P	P	22 25 07.3	-1.3
	0.4nm,0.4s,baz=52,slow=9.3,SNR=6.4						
FITZ	**Fitzroy Crossi**	**24.35 240**		P	P	22 25 35.6	-1.0
	2.4nm,0.5s,baz=62,slow=6.7,SNR=9.9						
TORD	**Torodi Ar. Bea**	**145.75 284**		PKPbc	PKPbc	22 39 58.9	+0.1
	0.6nm,1.1s,baz=81,slow=4.7,SNR=3.7						

ISK ***19*** *22:21:15.3, 40.31N×27.43E, h7km, MD2.7*
ISCJB ***19*** *22:21:16.1±0.4, 40.36N±0.03×27.43E±0.03, h10km±3km, Error ellipse: s-maj=5.8km s-min=3.5km az=18.1*
CSEM ***19*** *22:21:16.2±0.1, 40.35N×27.43E, h12km, MD2.7, Error ellipse: s-maj=4.1km s-min=2.3km az=13.0*
DDA ***19*** *22:21:16.4, 40.34N×27.44E, h7km, Ml2.6*

ISC 19 22:21:16.4±0.8, 40.33N±0.03×27.43E±0.02, h11km±5km, n31, σ0§66/50, Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
KNL	**Bal˘–kesir**	**0.10 129**		*i* P	**Pg**	**22 21 18.5**	**-0.7**
KNL				*i* S	**Sg**	**22 21 20.9**	**-0.2**
KRBG	**Karabiga-Canak**	**0.12 302**		*e*PG	**Pg**	**22 21 18.7**	**-0.7**
KRBG				*e*SG	**Sg**	**22 21 22.5**	**+0.9**
KRBG	**Karabiga-Canak**	**0.12 302**		*e*Pg	**Pg**	**22 21 18.7**	**-0.7**
KRBG				*e*Sg	**Sg**	**22 21 22.5**	**+0.9**
MRMT	**Marmara Adasi**	**0.30 25**		*e*PG	**Pg**	**22 21 22.7**	**+0.1**
MRMT	**Marmara Adasi**	**0.30 25**		*e*Pg	**Pg**	**22 21 22.7**	**+0.1**
EDC	**Edincik**	**0.33 87**		*e*PG	**Pg**	**22 21 22.7**	**-0.5**
EDC				*e*SG	**Sg**	**22 21 27.3**	**-0.4**
EDC	**Edincik**	**0.33 87**		*e*Pg	**Pg**	**22 21 22.7**	**-0.5**
EDC				*e*Sg	**Sg**	**22 21 27.3**	**-0.4**
RKY	**Sarkoy-Tekirda**	**0.40 332**		*e*PG	**Pg**	**22 21 23.8**	**-0.7**
RKY				*e*SG	**Sg**	**22 21 30.5**	**+0.7**
RKY	**Sarkoy-Tekirda**	**0.40 332**		*e*Pg	**Pg**	**22 21 23.8**	**-0.7**
RKY				*e*Sg	**Sg**	**22 21 30.5**	**+0.7**
KCTX	**Karacabey (Bur**	**0.71 95**		*e*PG	**Pg**	**22 21 29.7**	**-0.6**
KCTX	**Karacabey (Bur**	**0.71 95**		*e*Pg	**Pg**	**22 21 29.7**	**-0.6**
GELI	**Tayfur-Gelibol**	**0.73 275**		*e*PG	**Pg**	**22 21 30.1**	**-0.5**
GELI				*e*SG	**Sg**	**22 21 40.4**	**+0.3**
GELI	**Tayfur-Gelibol**	**0.73 275**		*e*Pg	**Pg**	**22 21 30.1**	**-0.5**
GELI				*e*Sg	**Sg**	**22 21 40.4**	**+0.3**
ERIK	**Erikli-Kesan**	**0.77 296**		*e*PG	**Pb**	**22 21 31.6**	**-0.3**
ERIK	**Erikli-Kesan**	**0.77 296**		*e*Pg	**Pb**	**22 21 31.6**	**-0.3**
ENEZ	**Enez**	**1.05 293**		*e*PG	**Pg**	**22 21 35.6**	**-1.1**
ENEZ				*e*SG	**Sb**	**22 21 50.5**	**+0.1**
ENEZ	**Enez**	**1.05 293**		*e*Pg	**Pg**	**22 21 35.6**	**-1.1**
ENEZ				*e*Sg	**Sb**	**22 21 50.5**	**+0.1**
DURS	**Dursunbey**	**1.09 132**		*i* P	**Pn**	**22 21 37.9**	**+0.3**
DURS				*i* S	**Sb**	**22 21 52.1**	**+0.6**
DURS	**Dursunbey**	**1.09 132**		P	**Pn**	**22 21 37.9**	**+0.3**
DURS				S	**Sb**	**22 21 52.1**	**+0.6**
MDNY	**Mudanya-Bursa**	**1.11 88**		*e*PN	**Pg**	**22 21 37.4**	**-0.5**
MDNY				*e*SN	**Sb**	**22 21 52.9**	**+0.7**
MDNY	**Mudanya-Bursa**	**1.11 88**		*e*Pn	**Pg**	**22 21 37.4**	**-0.5**
MDNY				*e*Sn	**Sb**	**22 21 52.9**	**+0.7**
ARMT	**Armutlu**	**1.12 78**		*e*PN	**Pg**	**22 21 36.8**	**-1.2**
ARMT				*e*SN	**Sn**	**22 21 53.3**	**-0.1**
ARMT	**Armutlu**	**1.12 78**		*e*Pn	**Pg**	**22 21 36.8**	**-1.2**
ARMT				*e*Sn	**Sn**	**22 21 53.3**	**-0.1**
AYVA	**Ayvalik**	**1.17 209**		*i* P	**Pg**	**22 21 38.5**	**-0.4**
AYVA				*i* S	**Sb**	**22 21 54.5**	**+0.8**
AYVA	**Ayvalik**	**1.17 209**		P	**Pg**	**22 21 38.5**	**-0.4**
AYVA				S	**Sb**	**22 21 54.5**	**+0.8**
ALN	**Alexandroupoli**	**1.19 299**		*e*PN	**Pg**	**22 21 38.0**	**-1.4**
ALN	**Alexandroupoli**	**1.19 299**		*e*Pn	**Pg**	**22 21 38.0**	**-1.4**
CTKS	**Kestanelik-??a**	**1.22 42**		*e*PN	**Pb**	**22 21 39.2**	**-0.3**
CTKS	**Kestanelik-??a**	**1.22 42**		*e*Pn	**Pb**	**22 21 39.2**	**-0.3**
EDRB	**Edirne**	**1.60 341**		*e*PN	**Pn**	**22 21 45.0**	**+0.4**
EDRB	**Edirne**	**1.60 341**		*e*Pn	**Pn**	**22 21 45.0**	**+0.4**

IDC 19 22:21:47.1±3.1, 6.30S×147.60E, h0km, mb3.6/2, mb1 3.8/4, mb1mx3.5/39, mbtmp3.6/4, ML3.4/1, Error ellipse: s-maj=68.1km s-min=33.3km az=93.0, Eastern New Guinea region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PMG	**Port Moresby**	**3.11 188**		Pn	Pn	22 22 38.1	+0.6
	4.1nm,0.3s,baz=9.3,slow=9.7,SNR=9.4						
PMG				Sn	Sn	22 23 17.7	+2.3
	3.2nm,0.3s,baz=9.4,slow=19,SNR=3.1						
WRA	**Warramunga Arr**	**18.70 222**		P	P	22 26 07.2	0.0
	0.1nm,0.3s,baz=47,slow=11,SNR=5.6						
ASAR	**Alice Springs**	**21.71 216**		P	P	22 26 39.3	-0.8
	0.4nm,0.4s,baz=54,slow=9.3,SNR=5.9						
FITZ	**Fitzroy Crossi**	**24.42 239**		P	P	22 27 06.8	-0.9
	2.3nm,0.5s,baz=45,slow=8.2,SNR=8.9						
TORD	**Torodi Ar. Bea**	**145.74 284**		PKPbc	PKPbc	22 41 29.2	0.0
	0.3nm,0.7s,baz=64,slow=4.9,SNR=5.1						

IDC 19 22:24:47.1±1.6, 2.81S×138.18E, h0km, mb3.1/2, mb1 3.3/3, mb1mx3.2/25, mbtmp3.1/3, ML2.7/2, Error ellipse: s-maj=36.6km s-min=30.7km az=103.0, Irian Jaya

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JAY	**Jayapura**	**2.54 84**		Pn	Pn	22 25 30.2	+0.5
	0.2nm,0.3s,baz=179,slow=23,SNR=6.1						
JAY				Sn	Sn	22 25 57.0	-4.4
	0.6nm,0.3s,baz=58,slow=23,SNR=8.3						
WRA	**Warramunga Arr**	**17.44 192**		P	Pn	22 28 51.5	-0.5
	0.1nm,0.3s,baz=17,slow=12,SNR=3.4						
ASAR	**Alice Springs**	**21.15 191**		P	P	22 29 33.8	-0.2
	0.2nm,0.4s,baz=20,slow=10.0,SNR=3.2						
MKAR	**Makanchi Array**	**69.54 323**		P	P	22 35 57.9	0.0
	0.2nm,0.5s,baz=115,slow=7.9,SNR=4.1						

IDC 19 22:29:25.9±3.4, 6.29S×147.79E, h0km, mb3.4/2, mb1 3.4/4, mb1mx3.3/32, mbtmp3.3/4, ML3.0/1, Error ellipse: s-maj=82.1km s-min=33.9km az=96.0, Eastern New Guinea region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PMG	**Port Moresby**	**3.16 191**		Pn	Pn	22 30 18.0	+1.1
	2.1nm,0.3s,baz=34,slow=7.3,SNR=3.4						
PMG				Sn	Sn	22 30 57.5	+2.2
	1.9nm,0.3s,baz=12,slow=19,SNR=3.8						
WRA	**Warramunga Arr**	**18.84 223**		P	P	22 33 47.6	0.0
	0.1nm,0.3s,baz=50,slow=10,SNR=2.5						
ASAR	**Alice Springs**	**21.84 216**		P	P	22 34 19.0	-1.2
	0.3nm,0.4s,baz=53,slow=8.9,SNR=3.5						
FITZ	**Fitzroy Crossi**	**24.59 240**		P	P	22 34 47.4	-0.6
	2.5nm,0.7s,baz=64,slow=12,SNR=4.8						
TORD	**Torodi Ar. Bea**	**145.93 284**		PKPbc	PKPbc	22 49 08.4	-0.1
	0.2nm,0.6s,baz=69,slow=3.6,SNR=3.7						

ISCJB ***19*** *22:42:03.7±0.7, 12.9S±0.1×75.17W±0.09, h96km, mb3.9/7, Error ellipse: s-maj=19.6km s-min=8.1km az=33.4*
IDC ***19*** *22:42:05.2±1.3, 12.93S×75.23W, h99km±13km, mb3.7/7, mb1 3.9/10, mb1mx3.6/45, mbtmp4.1/10, MS2.4/1, Ms1 2.5/1, ms1mx2.3/25, Error ellipse: s-maj=26.8km s-min=12.9km az=38.0*

ISC 19 22:42:05.0±0.8, 12.9S±0.1×75.2W±0.1, h96km, n12, σ0§66/13, mb3.8/7, Central Peru

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
NNA	**Nana**	**1.85 299**		P	**Pn**	**22 42 35.3**	**-0.2**
	168nm,0.3s,baz=119,slow=12,SNR=156						
NNA				S	**Sn**	**22 42 58.9**	**+0.2**
	603nm,0.3s,baz=236,slow=19,SNR=33						
NNA				LR	LR	22 43 17.3	
	comp=Z,172nm,18.3s,baz=276,slow=39						
ATAH	**Atahualpa**	**6.54 331**		P	**Pn**	**22 43 40.0**	**+1.0**
	3.1nm,0.3s,baz=176,slow=4.3,SNR=13						
LPAZ	**La Paz**	**7.62 117**		P	**Pn**	**22 43 54.7**	**+0.8**
	1.1nm,0.3s,baz=299,slow=9.9,SNR=20						
LPAZ				LR	LR	22 46 40.2	
	comp=Z,27nm,21.3s,baz=303,slow=36						
PTGA	**Pitinga**	**19.34 52**		P	**Pn**	**22 46 25.1**	**+0.1**
	2.1nm,0.3s,baz=231,slow=15,SNR=15						
CPUP	**Villa Florida**	**21.45 131**		P	**P**	**22 46 46.0**	**+0.4**
	2.8nm,0.7s,baz=317,slow=9.3,SNR=6.8						
PLCA	**Paso Flores**	**28.02 172**		P	**P**	**22 47 47.4**	**+0.3**
	1.9nm,0.7s,baz=5.3,slow=9.9,SNR=5.5						
TXAR	**Lajitas Array**	**50.18 327**		P	**P**	**22 50 51.4**	**+0.2**
	0.5nm,0.7s,baz=142,slow=6.3,SNR=5.0						
DBIC	**Dimbokro**	**72.53 79**		P	**P**	**22 53 20.9**	**-1.2**
	7.6nm,1.1s,baz=242,slow=7.5,SNR=4.6						
TORD	**Torodi Ar. Bea**	**80.48 74**		P	**P**	**22 54 06.3**	**-0.8**
	1.8nm,0.7s,baz=271,slow=4.9,SNR=13						
YKA	**Yellowknife Ar**	**81.18 343**		P	**P**	**22 54 09.4**	**-0.3**
	0.7nm,0.9s,baz=137,slow=5.6,SNR=9.6						
INK	**Inuvik**	**90.89 342**		P	**P**	**22 54 57.1**	**-0.3**
	1.3nm,1.0s,baz=113,slow=8.5,SNR=3.3						
SONM	**Songino Array**	**145.15 358**		PKPbc	**PKPdf**	**23 01 32.2**	**+0.6**
	3.4nm,0.6s,baz=332,slow=3.1,SNR=11						
SONM				pPKPbc	pPKPbc	23 02 00.0	+2.4
	2.2nm,0.9s,baz=0.4,slow=1.4,SNR=4.9						

ISCJB ***19*** *22:42:24.8±0.5, 53.02N±0.05×158.5E±0.1, h152km±3km, mb3.3/3, Error ellipse: s-maj=13.3km s-min=6.6km az=30.4*
KRSC ***19*** *22:42:24.2±0.7, 53.06N×158.42E, h152km±5km, ML3.7*
IDC ***19*** *22:42:25.4±1.4, 53.15N×158.45E, h141km±39km, mb3.1/3, mb1 3.4/3, mb1mx2.9/53, mbtmp3.5/3, Error ellipse: s-maj=123.9km s-min=41.2km az=84.0*

ISC 19 22:42:25.6±0.9, 53.06N±0.06×158.45E±0.08, h151km±5km, n31, σ0§90/45, mb3.3/3, Near east coast of Kamchatka Peninsula

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PET	**Petropavlovsk**	**0.12 105**		*i* P	**Pn**	**22 42 45.7**	**-0.1**
PET				*e*S	**Sn**	**22 43 01.1**	**0.0**
DALK	**Dalny**	**0.18 98**		*e*P	**Pn**	**22 42 45.7**	**-0.2**
DALK				*e*S	**Sn**	**22 43 01.4**	**+0.1**
KOK	**Koryaka**	**0.26 25**		*e*P	**Pn**	**22 42 45.9**	**-0.3**
KOK				*e*S	**Sn**	**22 43 01.9**	**-0.1**
AVH	**Avacha**	**0.27 39**		*e*P	**Pn**	**22 42 46.4**	**+0.2**
UGLR	**Uglovaya**	**0.27 55**		*e*P	**Pn**	**22 42 46.6**	**+0.3**
UGLR				*e*S	**Sn**	**22 43 02.5**	**+0.5**
SMAR	**Somma**	**0.29 45**		*e*P	**Pn**	**22 42 46.7**	**+0.2**
SMAR				*e*S	**Sn**	**22 43 02.9**	**+0.5**
KRX	**Arik**	**0.33 21**		*e*P	**Pn**	**22 42 45.7**	**-0.8**
SDLR	**Sedlovina**	**0.34 49**		*i* P	**Pn**	**22 42 46.5**	**0.0**
SDLR				*e*S	**Sn**	**22 43 02.7**	**+0.3**
PETK	**Petropavlovsk-**	**0.46 277**		P	**Pn**	**22 42 46.2**	**-0.6**
	48nm,0.3s,baz=90,slow=7.4,SNR=694						
PETK				S	**Sn**	**22 43 02.1**	**-0.9**
	7.0nm,0.3s,baz=116,slow=6.7,SNR=5.6						
NLC	**Nalytchevo**	**0.55 78**		*e*P	**Pn**	**22 42 47.3**	**+0.1**
NLC				*e*S	**Sn**	**22 43 04.7**	**+1.0**
MTVR	**Mutnovka**	**0.60 196**		*e*P	**Pn**	**22 42 48.1**	**+0.4**
MTVR				*e*S	**Sn**	**22 43 04.8**	**+0.3**
RUS	**Russkaya**	**0.62 177**		*i* P	**Pn**	**22 42 47.2**	**-0.5**
RUS				*e*S	**Sn**	**22 43 04.2**	**-0.2**
GNL	**Ganaly**	**0.71 335**		*i* P	**Pn**	**22 42 47.6**	**-0.8**
GNL				*i* S	**Sn**	**22 43 05.0**	**-0.8**
ASAK	**Asacha**	**0.75 207**		*i* P	**Pn**	**22 42 48.9**	**+0.3**
SPN	**Mys Shipunski**	**0.95 87**		*e*P	**Pn**	**22 42 49.7**	**-0.3**
SPN				*e*S	**Sn**	**22 43 07.8**	**-0.7**
TUMR	**Tumrok**	**2.44 23**		*e*P	**Pn**	**22 43 06.0**	**-0.1**
SKR	**Severo-Kuril's**	**2.78 212**		*e*P	**Pn**	**22 43 10.1**	**-0.1**
SKR				*e*S	**Sn**	**22 43 43.6**	**-1.0**
KMNR	**Kamenistaya**	**2.90 20**		*e*P	**Pn**	**22 43 12.4**	**+0.7**
KPT	**Kopyto**	**3.09 19**		*e*P	**Pn**	**22 43 14.3**	**+0.1**
BZMR	**Bezymyannaya**	**3.12 22**		*e*P	**Pn**	**22 43 16.1**	**+1.5**
KOZ	**Kozyrevsk**	**3.12 15**		*e*P	**Pn**	**22 43 14.6**	**+0.2**
ZLN	**Zelenaya**	**3.27 24**		*e*P	**Pn**	**22 43 18.1**	**+1.7**
CIRR	**Tsirk**	**3.34 23**		*e*P	**Pn**	**22 43 19.2**	**+1.8**
KRSR	**Krestovskiy**	**3.40 20**		*e*P	**Pn**	**22 43 18.3**	**+0.2**
BDR	**Baidarnaya**	**3.86 23**		*e*P	**Pn**	**22 43 25.1**	**+1.0**
SRKR	**Sorokina**	**3.93 22**		*e*P	**Pn**	**22 43 26.1**	**+1.1**
KBTR	**Krutoberegovo**	**4.05 37**		*i* P	**Pn**	**22 43 26.2**	**-0.2**
KBTR				*e*S	**Sn**	**22 44 10.7**	**-3.1**
BKI	**Bering**	**4.92 61**		*e*S	**Sn**	**22 44 31.9**	**-2.2**
ILAR	**Eielson Array**	**29.54 45**		P	**P**	**22 48 15.7**	**+0.1**
	0.3nm,0.6s,baz=262,slow=7.8,SNR=4.5						
RES	**Resolute Bay**	**43.73 22**		P	**P**	**22 50 14.8**	**-0.3**
	0.3nm,0.4s,baz=310,slow=8.1,SNR=4.8						
TXAR	**Lajitas Array**	**71.56 66**		P	**P**	**22 53 31.1**	**+0.9**
	0.5nm,0.8s,baz=311,slow=5.9,SNR=3.9						

**JMA 19 22:46:56.1, 36.98N×138.64E, h9km±2km, M1.6,

BDHA					AML	AML	22 54 15.0		
	comp=N,373nm,0.6s								
DHBB	**Dhamar BB**	**2.53**	**11**	*i* P		Pn	22 53 30.2	+1.6	
DHBB				*i* S		Sb	22 54 05.3	+1.1	

IDC 19 22:53:35.8±2.2,1°.66N×127°.21E,h0km,mb3.6/3, mb1 3.9/3,mb1mx3.5/40,mbtmp3.7/3,MS3.7/1,Ms1 3.7/1, ms1mx2.9/26,Error ellipse: s-maj=184.5km s-min=24.0km az=66.0,Halmahera

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
WRA	**Warramunga Arr**	**22.57**	**162**	P	P	22 58 37.0	-1.1
	1.2nm,0.4s,baz=341,slow=11,SNR=24						
ASAR	**Alice Springs**	**26.00**	**166**	P	P	22 59 11.6	+0.9
	0.4nm,0.3s,baz=346,slow=12,SNR=6.9						
KSRS	**Korea Array**	**35.63**	**1**	LR	LR	23 13 53.0	
	comp=Z,125nm,20.8s,baz=90,slow=34						
MKAR	**Makanchi Array**	**59.53**	**326**	P	P	23 03 41.0	-0.1
	0.5nm,0.4s,baz=122,slow=7.8,SNR=12						

IDC 19 22:58:28.7±2.7,39°.2lN×142°.82E,h0km,mb3.7/3, mb1 3.8/4,mb1mx3.4/47,mbtmp3.6/4,ML3.2/1,MS4.3/1, Ms1 4.3/1,ms1mx2.5/44,Error ellipse: s-maj=68.9km s-min=30.4km az=71.0
JMA 19 22:58:33.9±0.1,39°.19N×142°.42E,h31km±1km,M3.9
JMA Felt I J1.
ISC 19 22:58:30.6±2.7,39°.20N±0°.05×142°.5E±0°.1,h5km±15km, n12,σ0°.61/17,mb3.7/3,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MIYJ	**Miyakonagasawa**	**0.64**	**306**	P	**Pn**	**22 58 45.6**	**-0.7**
MIYJ				S	**Sb**	**22 58 53.6**	**+0.1**
OFUJ	**Ofunato**	**0.65**	**260**	P	**Pn**	**22 58 45.6**	**-0.8**
OFUJ				S	**Sb**	**22 58 53.8**	**+0.1**
JTH	**Tanohata**	**0.88**	**327**	P	**Pn**	**22 58 49.5**	**-0.1**
JOM	**Ohasama**	**0.97**	**287**	P	**Pn**	**22 58 50.8**	**0.0**
JOM				S	**Sb**	**22 59 02.8**	**-0.1**
JMK	**Ichinoseki**	**1.02**	**256**	P	**Pn**	**22 58 51.2**	**-0.3**
JMK				S	**Sg**	**22 59 03.6**	**+0.3**
JIO	**Ouri**	**1.16**	**231**	P	**Pg**	**22 58 52.8**	**0.0**
JIO				S	**Sg**	**22 59 07.4**	**-0.5**
JKZ	**Kuzumaki**	**1.19**	**312**	P	**Pn**	**22 58 54.5**	**+0.6**
JKZ				S	**Sg**	**22 59 09.0**	**+0.1**
MJAR	**Matsushiro Arr**	**4.30**	**233**	Pn	**Pn**	**22 59 38.1**	**+1.4**
	1.2nm,0.3s,baz=41,slow=11,SNR=10						
ZALV	**Zalesovo Beam**	**41.12**	**311**	P	**P**	**23 06 15.7**	**+0.5**
	0.8nm,0.5s,baz=90,slow=9.5,SNR=4.6						
MKAR	**Makanchi Array**	**43.72**	**300**	P	**P**	**23 06 37.0**	**+0.4**
	0.8nm,0.9s,baz=74,slow=8.9,SNR=6.7						
BATI	**Baumata**	**52.18**	**204**	LR	LR	23 28 27.0	
	comp=Z,330nm,21.7s,slow=34						
WRA	**Warramunga Arr**	**59.32**	**189**	P	**P**	**23 08 32.7**	**-0.8**
	0.7nm,0.9s,baz=7.1,slow=7.1,SNR=8.0						

NIED 19 23:04:00,38°.10N×143°.50E,h5km,Mw4.0 Best double couple: M0 1.01000×10^15 NP1:φs42.00000°,δ17.00000°, λ-50.00000°. NP2:φs181.00000°,δ77.00000°, λ-101.00000°.
JMA 19 23:04:48.6±0.1,38°.07N×143°.52E,h29km,M3.9
IDC 19 23:04:50.8±0.6,37°.98N×143°.67E,h35km±4km,mb3.7/14, mb1 3.9/18,mb1mx3.8/45,mbtmp3.9/18,ML3.6/4,Error ellipse: s-maj=17.0km s-min=12.6km az=114.0
ISC 19 23:04:50.4±0.6,38°.06N±0°.06×143°.57E±0°.06,h30km±4km, n33,σ1s06/48,mb3.8/14,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**1.80**	**283**	P	**Pn**	**23 05 18.0**	**-1.3**
JIO				*e*S	**Sn**	**23 05 39.6**	**-1.4**
OFUJ	**Ofunato**	**1.81**	**305**	P	**Pn**	**23 05 18.1**	**-1.4**
OFUJ				*e*S	**Sn**	**23 05 40.0**	**-1.4**
JMK	**Ichinoseki**	**2.05**	**297**	P	**Pn**	**23 05 21.8**	**-1.0**
JMK				*e*S	**Sn**	**23 05 46.3**	**-1.0**
JMM	**Marumori**	**2.21**	**266**	P	**Pn**	**23 05 23.8**	**-1.1**
JMM				*e*S	**Sn**	**23 05 49.4**	**-1.7**
JFK	**Kawauchi**	**2.25**	**253**	P	**Pn**	**23 05 23.8**	**-1.7**
JFK				*e*S	**Sn**	**23 05 50.3**	**-2.0**
JOM	**Ohasama**	**2.28**	**309**	P	**Pn**	**23 05 25.1**	**-0.8**
JOM				*e*S	**Sn**	**23 05 52.4**	**-0.5**
JTH	**Tanohata**	**2.30**	**325**	*e*S	**Sn**	**23 05 51.7**	**-1.9**
JOU	**Okura**	**2.31**	**279**	P	**Pn**	**23 05 25.9**	**-0.5**
JOU				*e*S	**Sn**	**23 05 53.2**	**-0.6**
JFT	**Otama**	**2.62**	**259**	P	**Pn**	**23 05 30.4**	**-0.2**
JFT				*e*S	**Sn**	**23 06 00.2**	**-1.2**
JRG	**Rokugo**	**2.66**	**301**	P	**Pn**	**23 05 31.0**	**-0.2**
JRG				*e*S	**Sn**	**23 06 02.1**	**-0.3**
JYK	**Kaneyama**	**2.67**	**290**	P	**Pn**	**23 05 30.7**	**-0.5**
MJAR	**Matsushiro Arr**	**4.54**	**252**	Pn	**Pn**	**23 05 57.4**	**+0.4**
	2.3nm,0.3s,baz=68,slow=11,SNR=25						
MAT	**Matsushiro**	**4.54**	**252**	P	**Pn**	**23 05 57.8**	**+0.8**
MAT				*e*S	**Sn**	**23 06 49.0**	**+0.3**
ASAJ	**Asahikawa**	**6.10**	**353**	Pn	**Pn**	**23 06 17.8**	**-0.6**
	3.2nm,0.3s,baz=222,slow=7.4,SNR=10.0						
USRK	**Ussuriysk Ar.**	**10.67**	**309**	Pn	**Pn**	**23 07 22.9**	**+1.8**
	0.4nm,0.3s,baz=145,slow=39,SNR=5.4						
KSRS	**Korea Array**	**12.40**	**272**	Pn	**Pn**	**23 07 45.8**	**+1.0**
	0.3nm,0.3s,baz=83,slow=12,SNR=4.8						
KLR	**Kul'dur**	**14.05**	**326**	Pn	Pn	23 08 04.3	-2.9
	0.1nm,0.3s,baz=120,slow=13,SNR=4.5						
SEY	**Seymchan**	**25.48**	**9**	P	**P**	**23 10 15.2**	**-0.3**
	3.4nm,0.8s,baz=201,slow=8.9,SNR=9.9						
SONM	**Songino Array**	**28.67**	**302**	P	**P**	**23 10 45.5**	**+0.9**
	0.8nm,0.4s,baz=92,slow=10,SNR=5.5						
ZALV	**Zalesovo Beam**	**42.51**	**312**	P	**P**	**23 12 44.0**	**+1.3**
	1.4nm,0.7s,baz=77,slow=6.9,SNR=7.1						
MKAR	**Makanchi Array**	**45.04**	**302**	P	**P**	**23 13 04.2**	**+1.0**
	1.4nm,0.9s,baz=80,slow=9.1,SNR=8.2						
ILAR	**Eielson Array**	**47.71**	**33**	P	**P**	**23 13 23.4**	**-0.5**
	2.1nm,0.8s,baz=262,slow=6.3,SNR=26						
ILAR				pP	**sP**	**23 13 34.9**	**-1.8**
	1.1nm,0.7s,baz=263,slow=6.5,SNR=6.4						
INK	**Inuvik**	**52.69**	**28**	P	**P**	**23 14 01.4**	**-0.1**
	0.5nm,0.6s,baz=278,slow=9.0,SNR=4.2						
WRA	**Warramunga Arr**	**58.34**	**190**	P	**P**	**23 14 42.1**	**-0.5**
	5.6nm,0.8s,baz=8.6,slow=7.3,SNR=27						
WRA				pP	**pP**	**23 14 52.1**	**+0.2**
	2.4nm,0.7s,baz=9.0,slow=7.2,SNR=5.7						
YKA	**Yellowknife Ar**	**62.06**	**31**	P	**P**	**23 15 06.9**	**-0.7**
	0.7nm,0.8s,baz=298,slow=6.6,SNR=11						
YKA				pP	**pP**	**23 15 18.3**	**+1.4**
	0.4nm,0.7s,baz=303,slow=6.7,SNR=5.9						
ASAR	**Alice Springs**	**62.06**	**190**	P	**P**	**23 15 07.2**	**-0.9**
	1.6nm,0.8s,baz=11,slow=6.6,SNR=12						
ASAR				pP	**pP**	**23 15 17.8**	**+0.3**
	0.9nm,0.8s,baz=8.8,slow=7.5,SNR=4.0						
FINES	**FINESS Array B**	**68.70**	**333**	P	**P**	**23 15 50.6**	**0.0**
	1.2nm,0.7s,baz=21,slow=12,SNR=5.9						
FINES				pP	**pP**	**23 16 01.1**	**+1.0**
	1.1nm,0.6s,baz=36,slow=7.1,SNR=3.2						
NVAR	**Mina Array Bea**	**73.00**	**54**	P	**P**	**23 16 18.3**	**+0.8**
	0.2nm,0.3s,baz=292,slow=6.1,SNR=3.6						
NVAR				pP	**sP**	**23 16 29.3**	**-1.2**
	0.8nm,0.7s,baz=298,slow=5.6,SNR=2.3						
NB2	**NORSAR Subarra**	**73.90**	**338**	P	pP	23 16 33.5	+1.9
	comp=Z,0.6nm,0.6s,baz=39,slow=5.9						
NOA	**NORSAR Array B**	**73.90**	**338**	P	**P**	**23 16 22.8**	**+0.7**
	comp=Z,0.8nm,0.8s,baz=30,slow=7.4,SNR=2.7						
NOA				pP	**pP**	**23 16 32.4**	**+0.7**
	comp=Z,1.1nm,0.8s,baz=39,slow=5.7,SNR=2.8						
AKASG	**Malin Array Be**	**74.53**	**323**	pP	pP	23 16 36.7	+1.3
	comp=Z,1.0nm,0.5s,baz=43,slow=5.2,SNR=2.9						
PDAR	**Pinedale Array**	**75.72**	**47**	P	**P**	**23 16 32.6**	**-0.6**
	comp=Z,0.4nm,0.6s,baz=293,slow=1.6,SNR=5.1						
PDAR				pP	**pP**	**23 16 43.8**	**+1.0**
	comp=Z,0.3nm,0.5s,baz=217,slow=0.7,SNR=3.9						
ULM	**Lac du Bonnet**	**77.70**	**34**	P	**P**	**23 16 43.6**	**-0.3**
	comp=Z,1.9nm,0.7s,baz=314,slow=5.5,SNR=3.8						

MOS 19 23:06:55.7±0.9,34°.07N×140°.08E,h44km,mb5.3/100, MS4.1/6,Error ellipse: s-maj=6.6km s-min=3.8km az=100.1
BJI 19 23:06:56.5,34°.05N×140°.53E,h90km,mb4.9/69,mB4.9/48, Ms4.3/52,MS7 4.1/52
NIED 19 23:07:00,34°.10N×140°.20E,h80km,Mw4.9 Best double couple: M0 2.70000×10^16 NP1:φs13.00000°,δ31.00000°, λ66.00000°. NP2:φs221.00000°,δ62.00000°,λ104.00000°.
ISCJB 19 23:07:01.8±0.2,34°.04N±0°.02×140°.08E±0°.02,h97km±1km, mb4.9/280,Error ellipse: s-maj=3.1km s-min=2.8km az=168.5
JMA 19 23:07:02.2±0.1,34°.12N×140°.25E,h84km±2km,M5.0
JMA Felt II J1.
NEIC 19 23:07:02.3±0.1,34°.01N×140°.05E,mb5.0/199,Error ellipse: s-maj=2.9km s-min=2.4km az=153.0
NEIC Felt at Numazu, Tokyo, Yokohama and Yokosuka. Recorded [2 JMA] in Chiba, Kanagawa, Shizuoka and Tokyo.
IDC 19 23:07:02.4±0.3,34°.08N×140°.14E,h94km±2km,mb4.6/32, mb1 4.7/36,mb1mx4.7/44,mbtmp4.9/36,MS3.6/9, Ms1 3.6/9,ms1mx3.4/29,Error ellipse: s-maj=9.9km s-min=5.1km az=96.0
GCMT 19 23:07:03.5±0.3,34°.10N×140°.29E,h94km±2km,MW5.0/81, Moment Tensor Solution. s34,c44; s81,c134; Duration: 0 Moment tensor: Scale 10^16Nm; Mrr2.23±.12; Mθθ-0.06±.13; Mφφ-2.17±.13; Mrθ-1.18±.08; Mθφ-1.85±.11; Mφr-1.49±.08; Best double couple: M0 3.34000×10^16 NP1:φs217.00000°,δ63.00000°,λ98.00000°. NP2: φs20.00000°,δ28.00000°,λ74.00000°. Principal axes: T 2.8510, Plg71.0000°, Azm146.0000°; N 0.9790, Plg7.0000°, Azm33.0000°; P -3.8300, Plg17.0000°, Azm301.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.
ISC 19 23:07:01.9±0.3,34°.08N±0°.03×140°.19E±0°.03,h91km±2km, h91km:pP-P,n960,σ1s39/1081,mb5.0/282,28C-24D,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JMY	**Miyakejima3**	**0.56**	**269**	P	**Pn**	**23 07 17.5**	**+0.2**
JMY				S	**Sn**	**23 07 28.2**	**-0.6**
BSO3	**Boso 3**	**0.77**	**20**	⇑P	**Pn**	**23 07 18.7**	**-0.2**
JNIO	**Niijimaoohara**	**0.81**	**290**	P	**Pn**	**23 07 19.8**	**+0.2**
JNIO				*e*S	**Sn**	**23 07 32.9**	**+0.1**
BSO1	**Boso 1**	**0.87**	**48**	⇑P	**Pn**	**23 07 19.4**	**-0.2**
JKO	**Kozu shima**	**0.88**	**277**	⇑P	**Pn**	**23 07 20.8**	**+0.4**
JKO				S	**Sn**	**23 07 35.3**	**+1.1**
JIM2	**Oshima 3**	**0.89**	**316**	P	**Pn**	**23 07 20.3**	**-0.2**
JIM2				S	**Sn**	**23 07 34.1**	**-0.4**
BSO4	**Boso 4**	**0.92**	**8**	⇑P	**Pn**	**23 07 20.7**	**+0.1**
JHJ2	**Mitsune**	**1.01**	**198**	⇓P	**Pn**	**23 07 22.6**	**+0.7**
JHJ2	**Mitsune**	**1.01**	**198**	*e*Pn	**Pn**	**23 07 22.4**	**+0.6**
JHJ2				*e*Sn	**Sn**	**23 07 37.7**	**+0.9**
JHJ	**Hachijo jima 2**	**1.02**	**200**	P	**Pn**	**23 07 22.7**	**+0.8**
	3μm,0.3s,baz=322,slow=19,SNR=109						
JHJ				S	**Sn**	**23 07 38.3**	**+1.5**
	7μm,0.3s,baz=327,slow=22,SNR=31						
I30JP	**ISUMI INFRASON**	**1.23**	**5**	P	**Pn**	**23 07 24.0**	**-0.4**
	baz=197,slow=13,SNR=1.3						
I30JP				S	**Sn**	**23 07 42.0**	**+0.7**
KTJJ	**Kamata 2**	**1.26**	**313**	⇓P	**Pn**	**23 07 25.0**	**+0.3**
KTJJ				S	**Sn**	**23 07 42.3**	**+0.4**
JIZS	**Izushimoda**	**1.26**	**301**	⇑P	**Pn**	**23 07 25.3**	**+0.6**
JIZS				S	**Sn**	**23 07 42.4**	**+0.5**
JOD2	**Odawara 2**	**1.49**	**323**	⇓P	**Pn**	**23 07 27.6**	**0.0**
JOD2				S	**Sn**	**23 07 47.0**	**0.0**
SHZ3	**Shizuoka 3**	**1.91**	**302**	P	**Pn**	**23 07 34.3**	**+1.3**
TK04	**Tokai 4**	**1.94**	**280**	⇓P	**Pn**	**23 07 35.4**	**+2.1**
TK04				S	**Sn**	**23 08 00.9**	**+3.7**
JYN	**Shimob**	**1.96**	**317**	⇓P	**Pn**	**23 07 34.4**	**+0.7**
JYN				S	**Sn**	**23 08 00.2**	**+2.3**
INU	**Inuyama**	**2.91**	**297**	*e*Pn	**Pn**	**23 07 47.7**	**+1.5**
INU				*e*Sn	**Sn**	**23 08 22.4**	**+2.2**
MJAR	**Matsushiro Arr**	**2.94**	**327**	P	**Pn**	**23 07 47.2**	**+0.5**
	504nm,0.3s,baz=158,slow=12,SNR=895						
MJAR				LR	LR	23 08 51.3	
	comp=Z,947nm,19.5s,baz=135,slow=38						
MAJO	**Matsushiro**	**2.94**	**327**	*e*P	**Pn**	**23 07 47.5**	**+0.8**
MAJO				*e*		23 08 22.4	
MAJO	**Matsushiro**	**2.94**	**327**	*e*Pn	**Pn**	**23 07 47.5**	**+0.8**
MAJO				*e*Sn	**Sn**	**23 08 22.4**	**+1.2**
MAT	**Matsushiro**	**2.94**	**327**	P	**Pn**	**23 07 47.6**	**+0.9**
MAT				S	**Sn**	**23 08 21.4**	**+0.2**
MJB9	**Matsu-Tunnel**	**2.95**	**327**	*e*Pn	**Pn**	**23 07 47.6**	**+0.8**
MJB9				*e*Sn	**Sn**	**23 08 20.0**	**-1.3**
CBIJ	**Chichi jima**	**7.17**	**166**	*e*Pn	**Pn**	**23 08 42.0**	**-2.1**
CBIJ				*e*Sn	**Sn**	**23 09 57.4**	**-6.7**
JCJ	**Chichijima**	**7.17**	**166**	P	**Pn**	**23 08 41.6**	**-2.5**
	126nm,0.3s,baz=117,slow=22,SNR=34						
JCJ				S	**Sn**	**23 09 56.5**	**-7.6**
	105nm,0.3s,baz=90,slow=22,SNR=7.7						
JNU	**Nakatsue**	**7.83**	**266**	P	**Pn**	**23 08 53.3**	**+0.2**
	11nm,0.3s,baz=80,slow=6.0,SNR=62						
ERM	**Erimo**	**8.26**	**16**	*e*P	**Pn**	**23 08 55.8**	**-3.1**
ERM				*e*		23 10 23.1	
ERM	**Erimo**	**8.26**	**16**	*e*Pn	**Pn**	**23 08 55.8**	**-3.1**
ERM				*e*Sn	**Sn**	**23 10 23.1**	**-7.3**
ASAJ	**Asahikawa**	**10.20**	**10**	P	**Pn**	**23 09 21.1**	**-4.2**
	7.5nm,0.3s,baz=240,slow=14,SNR=13						
ASAJ				S	**Sn**	**23 11 11.7**	**-5.9**
	2.4nm,0.3s,baz=4.6,slow=26,SNR=4.5						
KSRS	**Korea Array**	**10.52**	**292**	P	**Pn**	**23 09 30.9**	**+1.3**
	3.3nm,0.3s,baz=110,slow=14,SNR=70						
KSRS	**Korea Array**	**10.52**	**292**	P	**Pn**	**23 09 31.0**	**+1.3**
KSRS				pmax	pmax		
	comp=Z,3.0nm,0.3s						
KS15	**Wonju Array Si**	**10.55**	**292**	*e*Pn	**Pn**	**23 09 30.9**	**+0.9**
KSAR	**Wonju Array Be**	**10.55**	**292**	P	**Pn**	**23 09 31.0**	**+0.9**
KSAR	**Wonju Array Be**	**10.55**	**292**	P	**Pn**	**23 09 30.9**	**+0.9**
KS01	**Wonju Array Si**	**10.55**	**292**	*e*Pn	**Pn**	**23 09 31.9**	**+1.8**
YUK	**Yuzh-Kuril'sk**	**10.87**	**22**	*i* P	**Pn**	**23 09 31.5**	**-2.9**
SHO	**Shikotan**	**11.05**	**26**	*e*P	Pn	23 09 48.8	+12
MSHR	**Mys Shultsa**	**11.05**	**323**	*e*P	**Pn**	**23 09 35.4**	**-1.5**
VLA	**Vladivostok**	**11.12**	**327**	*c i*P	**Pn**	**23 09 34.3**	**-3.4**
INCN	**Inchon**	**11.52**	**291**	*e*Pn	**Pn**	**23 09 47.4**	**+4.1**
USRK	**Ussuriysk Ar.**	**11.94**	**330**	P	**Pn**	**23 09 48.0**	**-0.8**
	comp=Z,1.7nm,0.3s,baz=141,slow=12,SNR=32						
USRK				LR	LR	23 14 19.4	
	comp=Z,469nm,18.1s,baz=128,slow=37						
JOW	**Kunigami**	**12.56**	**238**	*e*Pn	**P**	**23 10 04.6**	**-0.5**
KUR	**Kuril'sk**	**12.60**	**26**	*e*P	**Pn**	**23 09 54.6**	**-3.1**
YSS	**Yuzh-Sakhalins**	**13.01**	**8**	*i* *e*P	**Pn**	**23 09 59.3**	**-3.7**
YSS				pmax	pmax		
	comp=Z,40nm,0.4s						
YSS	**Yuzh-Sakhalins**	**13.01**	**8**	*e*Pn	**Pn**	**23 09 59.7**	**-3.4**
MDJ	**Mudanjiang**	**13.33**	**325**	P	**Pn**	**23 10 08.1**	**+0.8**
MDJ				S	**Sn**	**23 12 34.8**	**+1.1**
MDJ				pmax	pmax		
	comp=Z,110nm,0.8s						
MDJ				pmax	pmax		
	comp=Z,190nm,5.2s						
MDJ				LR	LR		
	comp=Z,330nm,26.1s						
MDJ				LR	LR		
	comp=Z,290nm,23.1s						
MDJ				LR	LR		
	comp=Z,550nm,28.1s						
MDJ	**Mudanjiang**	**13.33**	**325**	*e*Pn	**Pn**	**23 10 06.5**	**-0.8**
HABR	**Khabarovsk**	**14.88**	**347**	*e*P	**Pn**	**23 10 23.6**	**-3.8**
HABR				*e*S	**Sn**	**23 13 10.2**	**-1.1**
HABR				pmax	pmax		
	comp=Z,39nm,1.4s						
HABR				MLR	MLR		
	comp=Z,146nm,15.0s						
UGL	**Uglegorsk**	**15.05**	**5**	P	**Pn**	**23 10 30.0**	**+0.5**
UGL				pmax	pmax		
	comp=Z,350nm,2.0s						
UGL				pmax	pmax		
	comp=Z,55nm,0.7s						
UGL				MLR	MLR		
	comp=Z,800nm,16.0s						
UGL				MLR	MLR		
	comp=N,550nm,17.0s						
UGL				MLR	MLR		
	comp=E,500nm,18.0s						
SNY	**Shenyang**	**15.20**	**305**	⇑P	**Pn**	**23 10 31.8**	**+0.3**
SNY				pP	P	23 10 42.3	+7.9
SNY				S	**Sn**	**23 13 23.3**	**+4.2**
SNY				pmax	pmax		
	comp=E,30nm,1.1s						
SNY				pmax	pmax		
	comp=E,310nm,8.0s						
SNY				LR	LR		
	comp=E,260nm,5.3s						
SNY				LR	LR		
	comp=E,460nm,10.6s						
SNY				LR	LR		
	comp=E,480nm,10.8s						
DL2	**Dalian**	**15.68**	**293**	P	**Pn**	**23 10 38.6**	**+1.1**
DL2				*e*S	**Sn**	**23 13 27.1**	**-3.6**
DL2				pmax	pmax		
	comp=E,28nm,0.6s						
DL2				pmax	pmax		
	comp=E,380nm,5.1s						
DL2				LR	LR		
	comp=E,820nm,11.8s						
DL2				LR	LR		
	comp=E,1μm,14.2s						
KLR	**Kul'dur**	**16.38**	**340**	P	**Pn**	**23 10 42.6**	**-3.6**
	comp=E,22nm,0.3s,baz=154,slow=9.7,SNR=293						
KLR				LR	LR	23 16 55.4	
	comp=E,218nm,18.9s,baz=149,slow=36						
TYV	**Tymovskoe**	**16.87**	**5**	*e*P	**Pn**	**23 10 49.5**	**-2.7**
TYV				pmax	pmax		
	comp=Z,66nm,0.8s						
NJ2	**Nanjing**	**18.00**	**269**	*e*P	**Pn**	**23 11 05.8**	**-0.3**
NJ2				pmax	pmax		
	comp=Z,16nm,0.8s						
YHNB	**Yeheng**	**18.86**	**245**	*e*P	**P**	**23 11 15.4**	**+0.4**
	comp=Z,220nm,1.9s						
TIA	**Tai'an**	**18.98**	**283**	*e*P	**P**	**23 11 16.3**	**+0.2**
TIA				pmax	pmax		
	comp=Z,10.0nm,0.8s						
TIA				LR	LR		
	comp=Z,350nm,10.4s						
TIA				LR	LR		
	comp=Z,780nm,15.1s						
TIA				LR	LR		
	comp=Z,740nm,12.0s						
NACB	**Ninganchiao**	**18.98**	**244**	*e*P	**P**	**23 11 15.0**	**-1.2**
	comp=Z,39nm,1.2s						
NKL	**Nikolayevsk**	**19.07**	**1**	*e*P	**P**	**23 11 14.7**	**-2.2**
NKL				*e*		23 14 54.0	
NKL				pmax	pmax		
	comp=N,40nm,1.0s						
NKL				pmax	pmax		
	comp=Z,60nm,1.0s						
YULB	**Yu-li**	**19.66**	**242**	*e*P	**P**	**23 11 22.6**	**-1.1**
	comp=Z,53nm,1.5s						
SSLB	**Suanglung**	**19.68**	**244**	*e*P	**P**	**23 11 24.2**	**+0.3**
	comp=Z,28nm,1.0s						
BJI	**Beijing**	**20.04**	**294**	P	**P**	**23 11 27.8**	**+0.2**
BJI				pP	**pP**	**23 11 48.1**	**+2.9**
BJI				sP	**sP**	**23 11 56.0**	**-0.7**
BJI				S	**S**	**23 15 09.0**	**+1.2**
BJI				sS	**sS**	**23 15 37.5**	**+0.5**
BJI				pmax	pmax		
	comp=Z,10.0nm,1.7s						
BJI				LR	LR		
	comp=Z,210nm,14.2s						
BJI				LR	LR		
	comp=Z,290nm,13.1s						
BJI				LR	LR		
	comp=Z,630nm,30.6s						
TPUB	**Ta-pu**	**20.21**	**243**	*e*P	Pn	23 11 33.9	+1.6
	comp=Z,286nm,2.0s						
GUMO	**Guam**	**20.84**	**167**	P	**P**	**23 11 35.8**	**-0.6**
	comp=Z,83nm,0.4s,baz=6.5,slow=4.5,SNR=5.9						
GUMO	**Guam**	**20.84**	**167**	*e*P	**P**	**23 11 36.3**	**0.0**
HIA	**Hailar**	**21.43**	**321**	*e*P	**P**	**23 11 39.3**	**-3.2**
HIA				pmax	pmax		
	comp=Z,65nm,0.7s						
HIA	**Hailar**	**21.43**	**321**	*e*P	**P**	**23 11 39.2**	**-3.2**
	comp=Z,65nm,0.7s						
WHN	**Wuhan**	**22.10**	**268**	P	**P**	**23 11 47.1**	**-2.7**
WHN				pP	**pP**	**23 12 09.3**	**+1.5**
WHN				S	**S**	**23 15 42.6**	**-5.2**
WHN				LR	LR		
	comp=Z,760nm,16.0s						
WHN				LR	LR		
	comp=Z,1μm,15.5s						
WHN				LR	LR		
	comp=Z,690nm,13.8s						
PEA0	**Petropavlovsk-**	**22.75**	**28**	*e*pP	pP	23 12 18.8	+4.3
PETK	**Petropavlovsk-**	**22.75**	**28**	P	**P**	**23 11 57.0**	**+0.7**
	comp=Z,3.1nm,0.6s,baz=206,slow=9.7,SNR=4.1						
PETK				LR	LR	23 21 22.8	
	comp=Z,86nm,19.4s,baz=214,slow=38						
PEA1	**Petropavlovsk-**	**22.75**	**28**	*e*P	**P**	**23 11 57.0**	**+0.7**
PET	**Petropavlovsk**	**23.06**	**29**	*e*P	**P**	**23 11 58.5**	**-0.9**
PET				pmax	pmax		
	comp=Z,28nm,1.0s						
HHC	**Hu-ho-hao-te**	**23.64**	**295**	*e*P	**P**	**23 12 03.9**	**-1.1**
HHC				pP	pP	23 12 21.9	-2.5
HHC				PP	**PnPn**	**23 12 40.9**	**+3.5**
HHC				S	**S**	**23 16 10.0**	**-2.8**
HHC				pmax	pmax		
	comp=Z,41nm,1.0s						
HHC				pmax	pmax		
	comp=Z,100nm,4.1s						
HHC				LR	LR		
	comp=Z,1μm,13.5s						
HHC				LR	LR		
	comp=Z,3μm,13.3s						
HHC				LR	LR		
	comp=Z,3μm,12.8s						
XAN	**Xi'an**	**25.86**	**279**	P	**P**	**23 12 22.9**	**-2.2**
XAN				S	**S**	**23 16 50.8**	**+2.6**
XAN				pmax	pmax		
	comp=Z,39nm,0.7s						
XAN				LR	LR		
	comp=Z,210nm,18.7s						
XAN				LR	LR		
	comp=Z,400nm,15.5s						
XAN				LR	LR		
	comp=Z,500nm,14.3s						
ENH	**Enshi**	**26.21**	**270**	*e*P	**P**	**23 12 26.5**	**-1.8**
	comp=Z,26nm,0.8s						
CIT	**Chita**	**26.24**	**321**	*e*P	**P**	**23 12 27.4**	**-0.9**
CIT				*e*		23 12 35.2	
CIT				*e*		23 12 41.9	
MA2	**Magadan**	**26.45**	**12**	P	**P**	**23 12 31.1**	**+1.1**
	comp=Z,11nm,0.5s,baz=232,slow=5.4,SNR=7.0			

LZH pP pP 23 13 23.1 +2.9
LZH sP sP 23 13 31.3 +0.5
LZH PP **PnPn** **23 14 03.0 +4.2**
LZH PcP **PcP** **23 16 02.9 +1.4**
LZH *eS* **S** **23 17 47.8 -1.2**
LZH sS sS 23 18 24.0 -0.8
LZH SS **ScP** **23 19 33.5 -1.7**
LZH pmax pmax
comp=Z,15nm,1.0s
LZH pmax pmax
comp=Z,97nm,4.7s
LZH LR LR
comp=Z,1µm,12.8s
LZH LR LR
comp=Z,1µm,12.1s
LZH LR LR
comp=Z,1µm,13.4s
GYA Guiyang 29.84 264 ⇑ *i* P **P** **23 13 01.3 +0.6**
GYA pP pP 23 13 23.5 +2.1
GYA PP **PnPn** **23 14 02.0 +1.4**
GYA PcP **PcP** **23 16 03.9 +2.0**
GYA S **S** **23 17 51.0 -0.1**
GYA sS sS 23 18 27.3 +0.3
GYA ScP **ScP** **23 19 32.3 -3.4**
GYA ScS **ScS** **23 23 30.6 -0.7**
GYA pmax pmax
comp=Z,50nm,0.7s
GYA pmax pmax
comp=Z,130nm,5.4s
GYA LR LR
comp=Z,610nm,17.5s
GYA LR LR
comp=Z,560nm,17.8s
GYA LR LR
comp=Z,590nm,17.6s
SEY Seymchan 29.88 11 P **P** **23 13 01.1 +0.7**
comp=Z,1.5nm,0.3s,baz=286,slow=4.0,SNR=4.7
SEY Seymchan 29.88 11 *eP* **P** **23 13 02.0 +1.5**
CD2 Chengdu 30.79 274 P **P** **23 13 06.8 -2.2**
CD2 pP pP 23 13 27.3 -2.4
CD2 sP sP 23 13 38.1 -2.2
CD2 PP **PP** **23 14 17.5 -2.5**
CD2 S **S** **23 18 03.4 -2.4**
CD2 sS sS 23 18 40.0 -1.7
CD2 pmax pmax
comp=Z,50nm,0.6s
CD2 pmax pmax
comp=Z,110nm,4.9s
CD2 LR LR
comp=Z,560nm,11.3s
CD2 LR LR
comp=Z,580nm,14.3s
QIZ Qiongzhong 30.86 249 P **P** **23 13 10.8 +1.1**
QIZ sP **sP** **23 13 39.0 -2.0**
QIZ S **S** **23 18 09.4 +2.3**
QIZ LR LR
comp=Z,100nm,26.1s
QIZ LR LR
comp=Z,84nm,22.2s
ZAK Zakamensk 31.42 312 *eP* **P** **23 13 14.2 -0.2**
ZAK pmax pmax
comp=Z,26nm,1.1s
IRK Irkutsk 31.44 316 *eP* **P** **23 13 12.7 -1.7**
IRK pmax pmax
comp=Z,78nm,1.1s
TLY Talaya 31.61 315 P **P** **23 13 17.0 +1.0**
comp=Z,81nm,0.8s,baz=121,slow=6.4,SNR=112
TLY Talaya 31.61 315 *eP* **P** **23 13 16.5 +0.5**
TLY *eS* **S** **23 18 14.1 -4.1**
TLY pmax pmax
comp=Z,142nm,0.9s
TLY MLR MLR
comp=Z,222nm,20.0s
TLY Talaya 31.61 315 *eP* **P** **23 13 16.4 +0.4**
comp=Z,106nm,0.8s
TLY Talaya 31.61 315 P **P** **23 13 17.0 +1.0**
SNR=57
TLY Talaya 31.61 315 P **P** **23 13 17.0 +1.0**
SNR=57
GTA Gaotai 32.59 291 *eP* **P** **23 13 23.6 -1.2**
GTA pP pP 23 13 45.0 -0.6
GTA sP sP 23 13 55.8 -0.4
GTA PcP **PcP** **23 16 10.0 +0.9**
GTA S **S** **23 18 31.3 -2.6**
GTA sS sS 23 19 09.3 -0.6
GTA ScP **ScP** **23 19 44.1 -0.7**
GTA SS **SnSn** **23 20 34.3 -3.2**
GTA pmax pmax
comp=Z,3.0nm,1.1s
GTA pmax pmax
comp=Z,63nm,4.2s
GTA LR LR
comp=Z,130nm,13.3s
GTA LR LR
comp=Z,180nm,17.6s
GTA LR LR
comp=Z,180nm,16.6s
MOY Mondy 33.18 314 *eP* **P** **23 13 30.1 +0.3**
MOY pmax pmax
comp=Z,46nm,1.4s
KMI Kunming 33.61 265 P **P** **23 13 32.8 -1.2**
KMI S **S** **23 18 49.1 -1.1**
KMI SS **SnSn** **23 20 59.3 -3.3**
KMI pmax pmax
comp=Z,12nm,1.1s
KMI pmax pmax
comp=Z,65nm,3.6s
KMI LR LR
comp=Z,210nm,13.6s
KMI LR LR
comp=Z,260nm,12.7s
KMI LR LR
comp=Z,250nm,14.4s
SWI Sorong 35.76 195 P **P** **23 13 48.2 -4.0**
RKPI Ransiki, Papua 35.85 190 P P 23 14 05.7 +13
JAY Jayapura 36.40 179 P **P** **23 14 00.2 +2.5**
comp=Z,28nm,1.3s
GENI Genyem 36.48 180 P **P** **23 13 59.3 +1.0**
LBMI Labuha 36.53 202 P P **23 14 00.3 +1.5**
BILL Bilibino 37.13 16 ⇓ *eP* **P** **23 14 03.4 0.0**
BILL *e* 23 15 30.0
BILL *e*PPP PPP 23 15 45.6
BILL pmax pmax
comp=Z,9.0nm,1.0s
BILL MLR MLR
comp=Z,118nm,18.0s
BILL Bilibino 37.13 16 *eP* **P** **23 14 03.0 -0.4**
comp=Z,7.6nm,0.9s
MRSI Marisa 37.55 211 P **P** **23 14 06.3 -1.1**
FAKI Fak Fak 37.55 193 *eP* **P** **23 14 06.4 -1.0**
comp=Z,190nm,1.7s
CRAI Chiangrai 37.78 259 P **P** **23 14 10.2 +0.8**
comp=Z,26nm,0.8s,comp=Z,8µm
TIXI Tiksi 38.11 354 P **P** **23 14 10.3 -1.2**
comp=Z,6.8nm,0.5s,baz=147,slow=5.7,SNR=22
TIXI Tiksi 38.11 354 *eP* **P** **23 14 11.4 -0.1**
TIXI pmax pmax
comp=Z,7.0nm,0.7s
SANI Sanana 38.34 203 P **P** **23 14 16.3 +2.2**
comp=Z,24nm,1.1s
MSAI Masohi 38.71 198 P **P** **23 14 15.2 -2.0**
UTTA Uttaradit 38.91 255 P **P** **23 14 19.3 +0.4**
comp=Z,3.4nm,0.8s
PBKT Sadao Pong 39.22 254 P **P** **23 14 22.3 +0.9**
comp=Z,14nm,0.9s,comp=Z,2µm
LAMP Lampang 39.24 257 P **P** **23 14 24.7 +3.0**
comp=Z,5.7nm,0.9s
CMMT Chiang Mai 39.65 258 P **P** **23 14 25.7 +0.6**
comp=Z,7.2nm,0.9s
CHTO Chiang Mai 39.65 258 P P **23 14 25.8 +0.7**
comp=Z,21nm,1.0s
CHTO Chiang Mai 39.65 258 *eP* **P** **23 14 24.5 -0.6**
CHTO pmax pmax
comp=Z,6.0nm,0.9s
CHTO Chiang Mai 39.65 258 *eP* **P** **23 14 24.5 -0.6**
comp=Z,5.8nm,0.9s
CHTO *e*ScP **ScP** **23 20 11.4 +0.5**
CM31 Chiang Mai Arr 39.84 258 *eP* **P** **23 14 24.9 -1.7**
CM31 *e*PcP **PcP** **23 16 30.6 -0.3**
CM31 *e*ScP **ScP** **23 20 11.8 +0.3**
CMAR Chiang Mai Arr 39.84 258 P **P** **23 14 24.9 -1.7**
comp=Z,1.4nm,0.5s,baz=50,slow=6.9,SNR=9.4
CMAR PcP **PcP** **23 16 30.6 -0.3**
comp=Z,1.5nm,0.7s,baz=87,slow=1.6,SNR=5.1
CMAR ScP **ScP** **23 20 11.8 +0.3**
comp=Z,2.3nm,0.8s,baz=36,slow=3.5,SNR=10
CMAR LR LR 23 33 45.2
comp=Z,48nm,18.7s,baz=54,slow=40
CMAR Chiang Mai Arr 39.84 258 *i* P **P** **23 14 27.0 +0.4**
CMAR pmax pmax
comp=Z,2.0nm,0.6s
CM01 Chiang Mai Arr 39.84 258 *eP* **P** **23 14 24.7 -2.0**
CM01 *ep*P **pP** **23 14 42.9 -5.0**
CM01 *eS*cP **ScP** **23 20 12.4 +0.8**
WMQ Urumqi 41.36 300 P **P** **23 14 39.8 +0.9**
WMQ pP pP 23 15 00.6 +0.3
WMQ sP sP 23 15 13.5 +2.7
WMQ ScP **ScP** **23 20 17.6 +0.3**
WMQ S **S** **23 20 45.9 -0.9**
WMQ SS **SS** **23 23 47.8 -5.9**
WMQ ScS **ScS** **23 24 28.0 -5.5**
WMQ pmax pmax
comp=Z,24nm,0.8s
WMQ pmax pmax
comp=Z,95nm,4.0s
WMQ LR LR
comp=Z,33nm,20.4s
WMQ LR LR
comp=Z,29nm,22.6s
WMQ LR LR
comp=Z,34nm,20.4s
LSA Lhasa 41.55 278 *eP* **P** **23 14 40.7 -0.5**
LSA pmax pmax
comp=Z,4.0nm,0.7s
LSA Lhasa 41.55 278 *eP* **P** **23 14 40.6 -0.5**
comp=Z,4.1nm,0.7s
ZAA0 Zalesovo Array 43.22 315 *eP* **P** **23 14 53.5 -0.4**
ZAA0 *e*ScP **ScP** **23 20 23.1 -1.4**
ZAA0 *e*ScP **ScP** **23 20 24.5 +0.1**
ZAA1 Zalesovo Array 43.22 315 *eP* **P** **23 14 53.5 -0.3**
ZAA1 *e*PP **PcP** **23 16 41.2 -0.3**
ZAA1 *e*ScP **ScP** **23 20 24.4 -0.1**
ZALV Zalesovo Beam 43.22 315 P **P** **23 14 53.5 -0.3**
comp=Z,23nm,0.4s,baz=115,slow=7.5,SNR=82
ZALV PcP **PcP** **23 16 41.2 -0.2**
comp=Z,20nm,0.5s,baz=110,slow=3.3,SNR=18
ZALV ScP **ScP** **23 20 24.4 -0.1**
comp=Z,6.8nm,0.8s,baz=105,slow=3.4,SNR=12
KAPI Kappang 43.42 210 LR LR 23 32 05.4
comp=Z,24nm,19.3s,baz=2.8,slow=35
KAPI Kappang 43.42 210 *eP* **P** **23 14 56.3 +0.6**
comp=Z,9.8nm,0.8s
PMG Port Moresby 43.75 170 *eP* **P** **23 14 58.0 -0.4**
PMG pmax pmax
comp=Z,10.0nm,0.6s
PMG Port Moresby 43.75 170 *eP* **P** **23 14 58.0 -0.4**
comp=Z,9.5nm,0.6s
NVS Novosibirsk 44.21 316 ⇑ *iP* **P** **23 15 02.3 +0.6**
NVS *i* S **S** **23 21 27.9 -0.2**
NVS pmax pmax
comp=Z,72nm,1.1s
NVS pmax pmax
comp=N,12nm,1.0s
NVS pmax pmax
comp=E,46nm,1.0s
NVS smax smax
comp=N,11nm,1.9s
NVS smax smax
comp=E,17nm,1.7s
MK01 Makanchi Array 44.90 304 *eP* **P** **23 15 07.3 0.0**
MK32 Makanchi Array 44.90 304 *eP* **P** **23 15 07.5 +0.1**
MK32 *e*ScP **ScP** **23 20 32.0 +0.5**
MKAR Makanchi Array 44.90 304 P **P** **23 15 07.5 +0.1**
comp=E,31nm,0.7s,baz=82,slow=10,SNR=149
MKAR ScP **ScP** **23 20 32.0 +0.5**
comp=E,1.3nm,0.6s,baz=74,slow=4.7,SNR=5.8
MAKZ Makanchi 45.12 305 *eP* **P** **23 15 09.3 +0.2**
MAKZ pmax pmax
comp=Z,39nm,0.9s
MAKZ Makanchi 45.12 305 *eP* **P** **23 15 09.3 +0.2**
comp=Z,38nm,0.9s
NRIK Noril'sk 45.55 337 P **P** **23 15 12.4 +0.2**
comp=Z,14nm,0.8s,baz=113,slow=9.5,SNR=18
NRIK ScP **ScP** **23 20 34.1 +0.4**
comp=Z,10nm,1.0s,baz=114,slow=5.0,SNR=10.0
KURK Kurchatov 47.02 310 *eP* **P** **23 15 23.5 -0.4**
KURK Kurchatov 47.02 310 *eP* **P** **23 15 23.5 -0.4**
KURK Kurchatov 47.02 310 P **P** **23 15 23.5 -0.4**
SNR=31
KURK Kurchatov 47.02 310 P **P** **23 15 23.5 -0.4**
SNR=31
HNR Honiara 47.16 153 LR LR 23 36 22.6
comp=Z,49nm,18.4s,baz=305,slow=37
PDGK Podgornoye 47.34 300 P **P** **23 15 26.1 -0.3**
PDGK pmax pmax
comp=Z,196nm,0.9s
MTN Manton Dam 47.45 192 *eP* **P** **23 15 26.4 -1.1**
comp=Z,32nm,0.6s
COEN Coen 47.85 176 *eP* **P** **23 15 31.3 +0.7**
comp=Z,60nm,0.6s
TT01 Tatalina 48.42 33 *eP* **P** **23 15 35.8 +1.3**
TTA Tatalina 48.42 33 *eP* **P** **23 15 36.1 +1.4**
TTA pmax pmax
comp=Z,6.0nm,0.9s
TTA Tatalina 48.42 33 *eP* **P** **23 15 36.1 +1.4**
comp=Z,5.7nm,0.9s
SVW2 Sparrevohn 48.48 36 *eP* **P** **23 15 37.2 +2.1**
comp=Z,14nm,1.0s
RSO Redoubt South 49.85 37 *eP* **P** **23 15 47.0 +1.3**
KDAK Kodiak Island 49.98 40 P P 23 16 02.0 +16
comp=Z,20nm,0.5s,baz=270,slow=3.8,SNR=56
KDAK Kodiak Island 49.98 40 *eP* **P** **23 15 47.9 +1.5**
KDAK pmax pmax
comp=Z,42nm,1.1s
KDAK Kodiak Island 49.98 40 *eP* **P** **23 15 47.9 +1.5**
comp=Z,42nm,1.1s
PPLA Purkeypile 50.17 33 *eP* **P** **23 15 50.1 +2.1**
comp=Z,17nm,0.6s
SPU Mount Spurr 50.20 36 *eP* **P** **23 15 49.5 +1.3**
TKM2 Tokmak 2 50.21 300 *eP* **P** **23 15 49.5 +0.8**
TKM2 pmax pmax
comp=Z,53nm,0.8s
TKM2 Tokmak 2 50.21 300 *eP* **P** **23 15 49.5 +0.8**
comp=Z,53nm,0.8s
CAST Castle Rocks 50.23 33 *eP* **P** **23 15 50.2 +1.8**
comp=Z,26nm,1.3s
BPAW Bear Paw Mtn. 50.74 32 *eP* **P** **23 15 53.8 +1.6**
comp=Z,25nm,1.5s
KSH Kashi 50.75 296 P **P** **23 15 56.1 +3.4**
KSH *ep*P pP 23 16 19.8 +4.9
KSH *eS*P sP 23 16 30.5 +5.4
KSH *eP*cP **PcP** **23 17 11.9 +3.3**
KSH *eS*cP **ScP** **23 20 57.5 +1.0**
KSH S **S** **23 23 03.1 +1.6**
KSH pmax pmax
comp=Z,23nm,0.9s
KSH pmax pmax
comp=Z,110nm,3.0s
KSH LR LR
comp=Z,85nm,5.3s
KSH LR LR
comp=Z,87nm,4.7s
KSH LR LR
comp=Z,100nm,5.7s
KTH Kantishna Hill 50.76 33 *eP* **P** **23 15 53.9 +1.5**
comp=Z,21nm,1.2s
BRLK Bradley Lake 50.79 38 *eP* **P** **23 15 54.4 +1.8**
comp=Z,15nm,0.9s
MLY Manley 50.88 31 *eP* **P** **23 15 55.1 +1.9**
comp=Z,39nm,1.1s
FRU Bishkek 50.93 300 ⇓ *iP* **P** **23 15 54.0 +0.1**
FRU pmax pmax
comp=Z,90nm,1.4s
TRF Thorofare Moun 51.04 33 *eP* **P** **23 15 55.9 +1.3**
comp=Z,13nm,1.2s
AAK Ala-Arcba 51.06 300 *d iP* **P** **23 15 55.1 0.0**
AAK pmax pmax
comp=Z,69nm,0.9s
AAK Ala-Arcba 51.06 300 *eP* **P** **23 15 55.3 +0.2**
comp=Z,31nm,0.8s
AAK Ala-Arcba 51.06 300 P **P** **23 15 55.1 0.0**
SNR=15
LHSI Lahat 51.15 230 P **P** **23 15 57.1 +1.3**
comp=Z,29nm,1.0s
COLD Coldfoot 51.22 28 *eP* **P** **23 15 57.3 +1.6**
comp=Z,5.4nm,0.9s
RC01 Rabbit Creek A 51.32 36 *eP* **P** **23 15 57.3 +0.8**
comp=Z,29nm,1.2s
OTUK Ortayu 51.39 308 P **P** **23 15 57.3 0.0**
OTUK pmax pmax
comp=Z,39nm,1.2s
GSI Gunungsitoli 51.45 240 *eP* **P** **23 15 57.6 -0.5**
comp=Z,26nm,0.8s
SEW Seward 51.50 37 *eP* **P** **23 15 58.6 +0.8**
comp=Z,17nm,0.8s
EKS2 Erkin-Say 51.57 300 *eP* **P** **23 15 59.0 +0.2**
EKS2 pmax pmax
comp=Z,24nm,0.9s
EKS2 Erkin-Say 51.57 300 *eP* **P** **23 15 59.0 +0.2**
comp=Z,24nm,0.9s
PMR Palmer 51.60 35 *eP* **P** **23 15 58.9 +0.3**
PMR pmax pmax
comp=Z,18nm,1.0s
PMR Palmer 51.60 35 *eP* **P** **23 15 58.9 +0.3**
comp=Z,18nm,1.0s
MCK McKinley 51.65 32 *eP* **P** **23 15 59.9 +0.9**
MCK pmax pmax
comp=Z,21nm,0.9s
MCK McKinley 51.65 32 *eP* **P** **23 15 59.9 +0.9**
comp=Z,21nm,0.9s
RND Reindeer 51.69 33 *eP* **P** **23 16 00.0 +0.7**
RND pmax pmax
comp=Z,34nm,1.1s
RND Reindeer 51.69 33 *eP* **P** **23 16 00.0 +0.7**
comp=Z,34nm,1.1s
BRVK Borovoye 51.92 314 *eP* **P** **23 16 01.1 0.0**
BRVK pmax pmax
comp=Z,11nm,0.9s
BRVK Borovoye 51.92 314 *eP* **P** **23 16 01.1 0.0**
comp=Z,11nm,0.9s
BRVK *e*ScP **ScP** **23 21 01.0 -0.1**
BRVK Borovoye 51.92 314 P **P** **23 16 01.1 0.0**
SNR=11
BRVK Borovoye 51.92 314 P **P** **23 16 01.1 0.0**
SNR=11
MDM Murphy Dome 51.95 31 *eP* **P** **23 16 02.9 +1.7**
comp=Z,51nm,0.8s
SML Sawmill 51.97 35 *eP* **P** **23 16 02.4 +1.0**
SML pmax pmax
comp=Z,26nm,0.9s
SML Sawmill 51.97 35 *eP* **P** **23 16 02.4 +1.0**
comp=Z,26nm,0.9s
WRH Wood River Hil 52.01 31 *eP* **P** **23 16 02.9 +1.2**
comp=Z,11nm,0.7s
COLA College 52.11 31 *eP* **P** **23 16 04.5 +2.2**
COLA pmax pmax
comp=Z,26nm,0.8s
COLA College 52.11 31 *eP* **P** **23 16 04.5 +2.2**
comp=Z,26nm,0.8s
CCB Clear Creek Bu 52.13 31 *eP* **P** **23 16 03.4 +0.9**
comp=Z,10.0nm,0.7s
DHY Denali Highway 52.36 33 *eP* **P** **23 16 05.4 +0.9**
comp=Z,7.4nm,1.0s
SCM Sheep Creek Mo 52.45 35 *eP* **P** **23 16 06.1 +1.1**
SCM pmax pmax
comp=Z,36nm,1.0s
SCM Sheep Creek Mo 52.45 35 *eP* **P** **23 16 06.1 +1.1**
comp=Z,36nm,1.0s
SFK Sufi-Kurgan 52.45 297 P **P** **23 16 05.4 -0.1**
SFK pmax pmax
comp=Z,42nm,1.0s
MNAS Manas 52.52 300 P **P** **23 16 06.2 +0.3**
MNAS pmax pmax
comp=Z,33nm,1.1s
IL1 Eielson Array 52.53 31 *eP* **P** **23 16 05.6 +0.2**
ILAR Eielson Array 52.53 31 P **P** **23 16 05.8 +0.4**
comp=Z,20nm,0.9s,baz=271,slow=6.1,SNR=128
ILAR PcP **PcP** **23 17 13.7 -0.9**
comp=Z,2.3nm,0.6s,baz=284,slow=3.5,SNR=5.0
ILB Eielson Array 52.53 31 *eP* **P** **23 16 05.8 +0.4**
ILB *e*PcP **PcP** **23 17 13.7 -0.9**
ZRNK Zerenda 52.70 314 *eP* **P** **23 16 06.9 0.0**
ZRNK pmax pmax
comp=Z,46nm,1.4s
ZRNK Zerenda 52.70 314 *eP* **P** **23 16 06.9 0.0**
comp=Z,46nm,1.4s
ZRNK *e*ScP **ScP** **23 21 04.3 -0.2**
KLU Klutina 53.14 35 *eP* **P** **23 16 11.4 +1.3**
comp=Z,25nm,1.2s
FYU Fort Yukon 53.17 29 *eP* **P** **23 16 12.8 +2.7**
comp=Z,47nm,1.2s
PAX Paxson 53.24 33 *eP* **P** **23 16 11.8 +1.0**
PAX pmax pmax
comp=Z,9.0nm,0.8s
PAX Paxson 53.24 33 *eP* **P** **23 16 11.8 +1.0**
comp=Z,9.1nm,0.8s
DIV Divide 53.24 36 *eP* **P** **23 16 11.7 +0.9**
comp=Z,38nm,1.2s
EYAK Cordova Ski Ar 53.31 36 *eP* **P** **23 16 13.1 +1.9**
comp=Z,26nm,1.1s
FITZ Fitzroy Crossi 53.71 197 *eP* **P** **23 16 15.6 +1.0**
comp=Z,13nm,0.8s
KKAR Karatay Array 53.78 302 *eP* **P** **23 16 15.1 +0.1**
KKAR Karatay Array 53.78 302 *eP* **P** **23 16 15.1 +0.1**
DOT Dot Lake 53.82 32 *eP* **P** **23 16 15.7 +0.8**
comp=Z,38nm,0.7s
BMRM Bremner River 53.82 36 *eP* **P** **23 16 16.6 +1.5**
comp=Z,30nm,0.9s
RAGM Ragged Mountai 53.85 36 *eP* **P** **23 16 16.5 +1.3**
comp=Z,19nm,1.0s
WRAB Tennant Creek 54.00 187 *eP* **P** **23 16 16.2 -0.5**
WRAB pmax pmax
comp=Z,145nm,0.8s
WRAB Tennant Creek 54.00 187 *eP* **P** **23 16 16.2 -0.5**
comp=Z,145nm,0.8s
WB2 Warramunga Arr 54.01 187 *eP* **P** **23 16 15.9 -0.8**
comp=Z,148nm,0.8s
WR1 Warramunga Arr 54.01 187 *eP* **P** **23 16 16.2 -0.6**
comp=Z,145nm,0.8s
WR1 *e*ScP **ScP** **23 21 09.9 -0.6**
WR1 *eS* **S** **23 23 43.1 -2.8**
WRA Warramunga Arr 54.01 187 P **P** **23 16 16.2 -0.6**
comp=Z,162nm,0.7s,baz=4.7,slow=7.7,SNR=180
WRA ScP **ScP** **23 21 09.9 -0.6**
comp=Z,4.6nm,0.8s,baz=2.6,slow=4.6,SNR=14
WRA S **S** **23 23 43.1 -2.8**
comp=Z,2.7nm,1.0s,baz=8.1,slow=14,SNR=5.7
WRA Warramunga Arr 54.01 187 *i* P **P** **23 16 13.8 -3.0**
WRA pmax pmax
comp=Z,145nm,0.7s
MENT Mentasta 54.04 33 *eP* **P** **23 16 18.3 +1.7**
comp=Z,89nm,0.2s
CTA Charters Tower 54.17 173 P **P** **23 16 18.1 +0.2**
comp=Z,12nm,0.7s,baz=353,slow=7.8,SNR=18
CTAO Charters Tower 54.17 173 *eP* **P** **23 16 18.1 +0.2**
CTAO pmax pmax
comp=Z,88nm,1.7s
CTAO Charters Tower 54.17 173 *eP* **P** **23 16 18.1 +0.2**
comp=Z,88nm,1.7s
BALM Baldy 54.91 36 *eP* **P** **23 16 24.1 +1.1**
BALM pmax pmax
comp=Z,11nm,0.8s
BALM Baldy 54.91 36 *eP* **P** **23 16 24.1 +1.1**
comp=Z,11nm,0.8s
EGAK Eagle 54.97 31 *eP* **P** **23 16 23.5 +0.2**
comp=Z,10nm,0.6s
SVE Sverdlovsk 56.73 320 *eP* **P** **23 16 36.1 +0.2**
HYB Hyderabad 57.16 270 *i* P **P** **23 16 40.0 +0.5**
INK Inuvik 57.47 26 P **P** **23 16 42.0 +1.1**
comp=Z,9.3nm,0.6s,baz=292,slow=6.9,SNR=37
INK Inuvik 57.47 26 *eP* **P** **23 16 42.0 +1.1**
KBL Kabul 57.57 292 *eP* **P** **23 16 42.2 -0.3**
KBL pmax pmax
comp=Z,21nm,0.8s
KBL Kabul 57.57 292 *eP* **P** **23 16 42.2 -0.3**
comp=Z,21nm,0.8s
AS01 Alice Springs 57.73 187 *eP* **P** **23 16 42.2 -1.1**
AS31 Alice Springs 57.74 187 *eP* **P** **23 16 43.0 -0.4**
comp=Z,18nm,0.6s
AS31 *e*PcP **PcP** **23 17 36.4 +1.1**
AS31 *eS* **S** **23 24 32.9 -2.4**
ASAR Alice Springs 57.74 187 P **P** **23 16 43.0 -0.4**
comp=Z,28nm,0.6s,baz=16,slow=13,SNR=181
ASAR PcP **PcP** **23 17 36.4 +1.1**
comp=Z,12nm,0.8s,baz=12,slow=5.3,SNR=5.3
ASAR S **S** **23 24 32.9 -2.4**
comp=Z,2.7nm,1.0s,baz=18,slow=19,SNR=12
ASAR Alice Springs 57.74 187 P **P** **23 16 43.0 -0.4**
ARU Arti 57.93 320 *d iP* **P** **23 16 44.2 -0.2**
ARU 23 17 35.1
ARU 23 18 48.6
ARU S **S** **23 24 44.4 +7.2**
ARU 23 26 27.5
ARU SS **SS** **23 28 33.3 +4.4**
ARU pmax pmax
comp=Z,16nm,0.8s
ARU Arti 57.93 320 *eP* **P** **23 16 44.3 -0.1**

comp=Z,15nm,0.8s
SOKR Solikamsk 58.08 323 *e*P P 23 16 42.6 -2.7
SOKR pmax pmax
comp=Z,7.0nm,0.6s
SOKR MLR MLR
comp=Z,261nm,23.0s
MBWA Marble Bar 58.28 203 *e*P P 23 16 46.4 -0.7
comp=Z,15nm,0.6s
ABKAR Akbulak array 59.10 311 *e*P P 23 16 52.6 -0.1
EIDS Eidsvold 60.02 169 *e*P P 23 16 59.9 +0.8
comp=Z,49nm,1.0s
DLBC Dease Lake 61.57 37 P P 23 17 10.4 +1.0
comp=Z,4.4nm,0.6s,baz=321,slow=10,SNR=12
DLBC Dease Lake 61.57 37 *e*P P 23 17 10.4 +1.0
comp=Z,10nm,1.0s
MSVF Nonsavu 62.89 139 *e*P P 23 17 21.6 +2.9
MSVF pmax pmax
comp=Z,66nm,1.4s
MSVF Nonsavu 62.89 139 *e*P P 23 17 21.6 +2.9
comp=Z,66nm,1.4s
SPITS Spitsbergen Ar 63.22 349 LR LR 23 46 18.8
comp=Z,62nm,19.6s,baz=40,slow=37
GEYT Alibeck 64.41 300 P P 23 17 28.7 +0.2
comp=Z,5.5nm,0.7s,baz=56,slow=5.6,SNR=12
TMCR Tamitsa 64.86 332 *e*P P 23 17 31.8 +0.9
TMCR pmax pmax
comp=Z,16nm,1.1s
APA Apatity 64.97 336⇓ *i*P P 23 17 37.0 +5.4
APA MLR MLR
comp=Z,400nm,20.0s
ARMA Armidale 65.06 169 *e*P P 23 17 33.5 +0.9
comp=Z,35nm,1.1s
STKA Stephens Creek 65.62 179 P P 23 17 36.5 +0.4
comp=Z,23nm,0.8s,baz=345,slow=8.2,SNR=43
STKA Stephens Creek 65.62 179 *e*P P 23 17 36.5 +0.4
STKA pmax pmax
comp=Z,6.0nm,0.9s
STKA Stephens Creek 65.62 179 *e*P P 23 17 36.5 +0.4
comp=Z,6.4nm,0.9s
AFI Afiamalu 66.06 128 P P 23 17 40.0 +0.6
comp=Z,14nm,0.5s,baz=281,slow=8.6,SNR=8.1
AFI Afiamalu 66.06 128 *e*P P 23 17 40.0 +0.6
ARA0 ARCESS Array S 66.41 340 *e*P P 23 17 41.2 +0.4
ARCES ARCESS Array B 66.41 340 P P 23 17 41.2 +0.4
comp=Z,4.1nm,0.6s,baz=58,slow=6.9,SNR=30
BBOO Buckleboo 66.65 184 *e*P P 23 17 43.2 +0.6
comp=Z,22nm,0.9s
YKW3 Yellowknife Ar 66.83 29 *e*P P 23 17 43.9 +0.4
YKW3 *e*pP **pP** 23 18 08.3 +1.7
YKA Yellowknife Ar 66.86 29 P P 23 17 43.9 +0.1
comp=Z,1.8nm,0.5s,baz=304,slow=6.4,SNR=48
YKA pP **pP** 23 18 06.9 0.0
comp=Z,3.1nm,0.8s,baz=299,slow=6.1,SNR=6.0
YKB5 Yellowknife Ar 66.86 29 *e*P P 23 17 43.9 +0.1
YKB5 *e*pP **pP** 23 18 06.9 0.0
DAG Danmarks Havn 68.62 355 *i*P P 23 17 54.9 +0.3
comp=Z,19nm,0.9s
DAG Danmarks Havn 68.62 355 *e*P P 23 17 54.9 +0.3
DAG pmax pmax
comp=Z,16nm,0.9s
VRH Novokhopyorsk 69.11 318 *e*P P 23 17 56.4 -1.6
VRH pmax pmax
comp=Z,10.0nm,0.6s
CAN Canberra 69.53 172 *e*P P 23 18 01.4 +0.6
CAN pmax pmax
comp=Z,38nm,1.0s
CAN Canberra 69.53 172 *e*P P 23 18 01.4 +0.6
comp=Z,38nm,1.0s
OBN Obninsk 69.87 324⇑ *e*P P 23 18 02.4 -0.2
OBN *e* 23 20 40.7
OBN *e*PPP PPP 23 22 21.5
OBN *e*S **SKiKP** 23 27 38.4 -2.0
OBN pmax pmax
comp=Z,46nm,2.5s
OBN MLR MLR
comp=Z,185nm,16.0s
LPSR Galich'ya Gora 69.93 320 *e*P P 23 18 02.7 -0.4
LPSR pmax pmax
comp=Z,9.0nm,0.6s
NWAO Narrogin (SRO) 70.06 200 *e*P P 23 18 03.9 -0.1
NWAO pmax pmax
comp=Z,56nm,1.2s
NWAO Narrogin (SRO) 70.06 200 *e*P P 23 18 03.9 -0.1
comp=Z,56nm,1.2s
B05A Bryant 70.09 45 P P 23 18 05.4 +1.3
baz=299
JCW Jim Creek 70.22 45 *e*P P 23 18 06.6 +1.6
RPW Rockport 70.34 44 *e*P P 23 18 06.7 +0.9
VSR Storozhevoye 70.50 319 *e*P P 23 18 06.2 -0.4
VSR pmax pmax
comp=Z,10.0nm,0.7s
G03D McMinnville, O 70.87 48 P P 23 18 10.5 +1.5
baz=299
FIA1 FINESS Array S 70.96 332 *e*P P 23 18 09.5 +0.3
FIA0 FINESS Array S 70.96 332 *e*P P 23 18 09.4 +0.2
FIA0 FINESS Array S 70.96 332 *e*P P 23 18 09.3 +0.2
FINES FINESS Array B 70.96 332 P P 23 18 09.3 +0.2
comp=Z,15nm,0.8s,baz=67,slow=6.3,SNR=23
KULLO Kullorsuaq 71.00 5 *i*P P 23 18 09.7 +0.5
comp=Z,9.2nm,0.7s
KULLO Kullorsuaq 71.00 5 *e*P P 23 18 09.7 +0.5
KULLO pmax pmax
comp=Z,9.0nm,0.7s
F04A Amboy 71.04 47 *e*P P 23 18 12.0 +2.1
comp=Z,13nm,0.8s
BANOM Banah 71.21 289 *i*P P 23 18 11.9 +0.5
SNR=9.2
GOF Gofitskoye 71.32 312⇑ *e*P P 23 18 14.2 +2.5
GOF pmax pmax
comp=Z,25nm,0.8s
LTY Liberty 71.42 45 *e*P P 23 18 13.8 +1.4
comp=Z,16nm,1.6s
I03D Drain, OR 71.56 49 P P 23 18 15.5 +2.4
baz=300,SNR=7.7
B08A Colville Reser 71.64 44 *e*P P 23 18 14.9 +1.2
comp=Z,10nm,1.0s
UOSS Minazif 71.77 288 *e*P P 23 18 15.2 +0.5
comp=Z,1.2nm,1.1s
H04A Detroit Lake 71.80 48 *e*P P 23 18 16.3 +1.6
comp=Z,31nm,1.3s
BROR Big Rock Looko 71.84 49 *e*P P 23 18 17.0 +2.2
HATD Hatta, Dubai 71.88 288 *i*P P 23 18 16.0 +0.6
SNR=14
HATD Hatta, Dubai 71.88 288 P P 23 18 16.3 +0.8
SNR=7.7
HATD Hatta, Dubai 71.88 288 P P 23 18 16.3 +0.8
SNR=7.7
ZEI Tsey 71.91 310 *e*P P 23 18 14.4 -1.1
ZEI pmax pmax
comp=Z,12nm,0.6s
VFP Flag Point 71.92 47 P P 23 18 17.6 +2.1
ASHO Ashiyiah 72.01 288 *i*P P 23 18 16.7 +0.5
SNR=13
ASHO Ashiyiah 72.01 288 P P 23 18 16.8 +0.6
SNR=6.2
ASHO Ashiyiah 72.01 288 P P 23 18 16.8 +0.6
SNR=6.2
G05D Wamic, OR 72.05 47 P P 23 18 17.8 +1.7
baz=300
KBZ Khabaz 72.07 311 P P 23 18 17.2 +1.1
comp=Z,11nm,0.8s,baz=105,slow=1.7,SNR=21
KIV Kislovodsk 72.09 311 *i*P P 23 18 18.3 +1.9
SNR=6.6
KIV Kislovodsk 72.09 311⇓ *e*P P 23 18 16.4 0.0
KIV *e* 23 20 52.8
KIV *e*S **S** 23 27 34.8 +3.5
KIV *e*SS **SS** 23 32 08.2 -1.2
KIV pmax pmax
comp=Z,27nm,1.3s
KIV Kislovodsk 72.09 311 *e*P P 23 18 19.3 +2.9
comp=Z,23nm,0.8s
I04A Tendick Farm, 72.11 49 P P 23 18 18.0 +1.5
baz=300,SNR=8.9
L02D Cave Junction, 72.17 51 P P 23 18 19.0 +2.2
baz=300,SNR=5.9
ARQ Araqi 72.31 286 P P 23 18 18.2 +0.2
SNR=7.7
ARQ Araqi 72.31 286 P P 23 18 18.2 +0.2
SNR=7.7
FAQ Al Faqa, Dubai 72.35 288 *i*P P 23 18 18.4 +0.2
SNR=8.6
HUMO Hull Mountain 72.36 50 *e*P P 23 18 20.3 +2.3
comp=Z,11nm,1.2s
NEY Neytrino 72.42 311 *e*P P 23 18 20.5 +1.9
NEY pmax pmax
comp=Z,2.0nm,0.7s
G06A Carlson Farm, 72.47 47 *e*P P 23 18 20.6 +2.0
comp=Z,28nm,1.4s
VSU Vasula 72.49 330 *e*P P 23 18 16.4 -2.0
VSU pmax pmax
comp=Z,20nm,1.1s
I05D Terrebonne, OR 72.50 48 P P 23 18 20.3 +1.5
baz=301
C09A Chrisman Ranch 72.54 44 *e*P P 23 18 20.4 +1.4
comp=Z,58nm,1.8s
JCC Jacoby Creek, 72.56 52 *e*P P 23 18 21.8 +2.7
comp=Z,58nm,1.0s
GNI Garni 72.67 307 *e*P P 23 18 22.2 +2.1
GNI pmax pmax
comp=Z,77nm,1.2s
GNI Garni 72.67 307 *e*P P 23 18 23.4 +3.4
comp=Z,14nm,0.9s
KHMM Horse Mountain 72.72 52 *e*P P 23 18 23.1 +2.8
comp=Z,43nm,1.0s
NEW Newport 72.95 43 P P 23 18 22.6 +1.1
baz=302
NEW Newport 72.95 43 *e*P P 23 18 22.9 +1.5
NEW pmax pmax
comp=Z,42nm,1.6s
NEW Newport 72.95 43 *e*P P 23 18 22.9 +1.5
comp=Z,42nm,1.6s
YBH Yreka Blue Hor 72.96 51 *e*P P 23 18 23.8 +2.2
YBH pmax pmax
comp=Z,27nm,1.0s
YBH Yreka Blue Hor 72.96 51 *e*P P 23 18 23.8 +2.2
comp=Z,27nm,1.0s
M02C Callahan 73.04 51 P P 23 18 24.2 +2.1
baz=301
KMRM Mail Ridge 73.07 53 *e*P P 23 18 24.7 +2.4
comp=Z,29nm,1.0s
J05D Fort Rock, OR 73.10 49 P P 23 18 24.2 +1.6
baz=301,SNR=15
K04D Chiloquin, OR 73.11 50 P P 23 18 24.5 +1.9
baz=301,SNR=7.7
LHEM Herd Peak 73.33 51 *e*P P 23 18 25.7 +1.7
N02D Trinity Center 73.34 52 P P 23 18 25.9 +2.0
baz=301
M04C Macdoel 73.49 51 P P 23 18 26.4 +1.6
baz=301,SNR=12
K05A Summer Lake 73.60 49 *e*P P 23 18 27.4 +1.8
comp=Z,68nm,1.1s
SUMG Summit 73.63 360 *i*P P 23 18 26.7 +1.3
comp=Z,12nm,0.7s
SUMG Summit 73.63 360 *e*P P 23 18 25.9 +0.5
SUMG pmax pmax
comp=Z,19nm,0.7s
SUMG Summit 73.63 360 *e*P P 23 18 25.9 +0.5
comp=Z,19nm,0.7s
WDC Whiskeytown Da 73.65 52 *e*P P 23 18 27.5 +1.9
WDC pmax pmax
comp=Z,23nm,0.9s
WDC Whiskeytown Da 73.65 52 *e*P P 23 18 27.5 +1.9
comp=Z,23nm,0.9s
F10A Beach Ranch, E 74.12 45 *e*P P 23 18 30.6 +2.3
comp=Z,8.2nm,0.9s
O03D Paynes Creek 74.28 52 P P 23 18 30.7 +1.3
baz=302
WALA Waterton Lakes 74.30 41 *e*P P 23 18 30.8 +1.3
comp=Z,28nm,1.4s
MICGM Minsk 74.38 326 *e* P 23 18 33.0 +3.5
MNK Minsk 74.38 326 *e*P P 23 18 33.0 +3.5
MOD Modoc Plateau 74.41 50 *e*P P 23 18 31.9 +1.7
comp=Z,25nm,1.0s
BSMT Basseoo Peak 74.49 42 *e*P P 23 18 32.6 +2.0
NACGM Naroch 74.64 327 *e* P 23 18 36.0 +5.0
NACGM eLR LR 00 34 12.0
BLMT Blacktail Moun 74.64 42 *e*P P 23 18 33.1 +1.6
BMO Blue Mountains 74.68 46 *e*P P 23 18 33.3 +1.6
comp=Z,13nm,0.9s
JTMT Jette 74.83 42 *e*P P 23 18 34.0 +1.5
ORV Oroville 74.87 52 *e*P P 23 18 33.7 +1.0
ORV pmax pmax
comp=Z,48nm,1.3s
ORV Oroville 74.87 52 *e*P P 23 18 33.7 +1.0
comp=Z,48nm,1.3s
ORV *e*pP **pP** 23 18 58.8 +2.6
YBMT Yellow Bay 74.92 42 *e*P P 23 18 34.8 +1.8
SCO Scoresbysund 74.94 354 *i*P P 23 18 34.0 +1.5
comp=Z,6.6nm,0.7s
SCO Scoresbysund 74.94 354 *i*P P 23 18 34.0 +1.5
SCO pmax pmax
comp=Z,7.0nm,0.7s
SWMT Swartz Lake 75.12 42 *e*P P 23 18 35.5 +1.3
WVOR Wild Horse Val 75.17 49 *e*P P 23 18 36.3 +1.7
WVOR pmax pmax
comp=Z,21nm,1.1s
WVOR Wild Horse Val 75.17 49 *e*P P 23 18 36.3 +1.7
comp=Z,21nm,1.1s
AFDM Forest Hills D 75.54 53 *e*P P 23 18 38.3 +1.7
comp=Z,22nm,1.2s
MSO Missoula 75.54 43 P P 23 18 37.4 +0.8
baz=305
MSO Missoula 75.54 43 *e*P P 23 18 37.7 +1.1
comp=Z,14nm,1.1s
CHMT Chamberlain Mo 75.88 43 *e*P P 23 18 39.6 +0.9
AKASG Malin Array Be 76.02 322 P P 23 18 39.0 0.0
comp=Z,10.0nm,0.5s,baz=48,slow=6.1,SNR=36
AKASG pP **pP** 23 19 01.8 -0.9
comp=Z,11nm,0.5s,baz=48,slow=6.2,SNR=7.9
AKBB Malin Array Si 76.02 322 *e*P P 23 18 39.0 0.0
AKBB pmax pmax
comp=Z,19nm,0.6s
AKBB Malin Array Si 76.02 322 *e*P P 23 18 39.0 0.0
comp=Z,19nm,0.6s
AKBB *e*pP **pP** 23 19 01.8 -0.9
KIEV Kiev 76.03 322 *e*P P 23 18 38.3 -0.8
KIEV pmax pmax
comp=Z,18nm,0.6s
KIEV Kiev 76.03 322 *e*P P 23 18 38.2 -0.8
comp=Z,18nm,0.6s
AK11 Malin Array Si 76.06 322 *e*P P 23 18 40.5 +1.3
NC405 NORSAR Array S 76.30 337 *e*P P 23 18 41.0 +0.5
MFID Camas Ranch 76.36 47 *e*P P 23 18 43.0 +1.7
comp=Z,14nm,0.8s
MFID *e*pP **pP** 23 19 07.7 +2.7
SAO San Andreas Ge 76.38 55 *e*P P 23 18 43.5 +2.1
SAO pmax pmax
comp=Z,13nm,1.1s
SAO San Andreas Ge 76.38 55 *e*P P 23 18 43.5 +2.1
comp=Z,12nm,1.1s
CMB Columbia Colle 76.41 53 *e*P P 23 18 43.2 +1.6
CMB pmax pmax
comp=Z,28nm,1.0s
CMB Columbia Colle 76.41 53 *e*P P 23 18 43.2 +1.6
comp=Z,28nm,1.0s
NB201 NORSAR Array S 76.48 337 *e*P P 23 18 43.2 +1.7
NC204 NORSAR Array S 76.48 337 *e*P P 23 18 41.7 +0.1
NB2 NORSAR Subarra 76.52 337 P P 23 18 41.7 0.0
comp=Z,14nm,0.9s,baz=43,slow=5.9
NB2 NORSAR Subarra 76.52 337 P P 23 18 41.7 0.0
baz=43,slow=5.9
NB200 NORSAR Array S 76.52 337 *e*P P 23 18 41.8 +0.1
NB200 *e*pP **pP** 23 19 05.7 +0.3
NOA NORSAR Array B 76.52 337 P P 23 18 41.8 +0.1
comp=Z,8.0nm,0.9s,baz=41,slow=5.7,SNR=16
NOA pP **pP** 23 19 05.7 +0.3
comp=Z,12nm,0.9s,baz=41,slow=5.8,SNR=7.0
NOA LR LR 23 55 35.5
comp=Z,90nm,20.5s,baz=50,slow=38
NBO02 NORSAR Array S 76.62 337 *e*P P 23 18 42.4 +0.1
NBO00 NORSAR Array S 76.66 337 *e*P P 23 18 43.2 +0.7
FFC Flin Flon 76.73 32 *e*P P 23 18 43.4 +0.4
FFC pmax pmax
comp=Z,15nm,1.0s
FFC Flin Flon 76.73 32 *e*P P 23 18 43.4 +0.4
comp=Z,15nm,1.0s
FFC *e*pP **pP** 23 19 07.3 +0.6
HRY Holter Researc 76.80 42 *e*P P 23 18 45.4 +1.7
LRM Limekiln Ridge 76.97 43 *e*P P 23 18 46.1 +1.3
FCC Fort Churchill 77.09 26 *e*P P 23 18 45.0 +0.1
FCC pmax pmax
comp=Z,15nm,1.0s
FCC Fort Churchill 77.09 26 *e*P P 23 18 45.0 +0.1
comp=Z,15nm,1.0s
HLID Hailey 77.12 46 P P 23 18 46.9 +1.2
baz=305
HLID Hailey 77.12 46 *e*P P 23 18 47.3 +1.6
comp=Z,12nm,1.0s
DLMT Dillon 77.15 44 *e*P P 23 18 47.6 +1.9
comp=Z,29nm,0.8s
EGMT Eagleton 77.15 40 P P 23 18 46.8 +1.2
baz=307
EGMT Eagleton 77.15 40 *e*P P 23 18 46.8 +1.2
comp=Z,51nm,1.0s
BMN Battle Mountai 77.16 50 *e*P P 23 18 47.8 +1.9
BMN pmax pmax
comp=Z,26nm,1.1s
BMN Battle Mountai 77.16 50 *e*P P 23 18 47.8 +1.9
comp=Z,26nm,1.1s
LCCM Lewis and Clar 77.28 43 *e*P P 23 18 47.6 +1.2
MCMT McKenzie Canyo 77.31 44 *e*P P 23 18 48.1 +1.3
BOZ Bozeman (W) 77.53 43 P P 23 18 49.0 +1.1
baz=306
BOZ Bozeman (W) 77.53 43 *e*P P 23 18 49.4 +1.5
BOZ pmax pmax
comp=Z,23nm,1.0s
BOZ Bozeman (W) 77.53 43 *e*P P 23 18 49.4 +1.5
comp=Z,23nm,1.0s
NVAR Mina Array Bea 77.57 52 P P 23 18 49.9 +1.6
comp=Z,11nm,0.9s,baz=283,slow=5.7,SNR=49
NVAR pP **pP** 23 19 12.8 +0.8
comp=Z,8.4nm,0.7s,baz=276,slow=5.8,SNR=8.9
NV01 Mina Array Sit 77.57 52 *e*P P 23 18 49.9 +1.6
NV01 *e*pP **pP** 23 19 12.8 +0.8
MLAC Mammoth, Mammo 77.66 53 P P 23 18 50.3 +1.4
baz=304
QLMT Earthquake Lak 78.13 44 *e*P P 23 18 52.9 +1.6
ELK Elko 78.23 49 *e*P P 23 18 53.8 +1.8
ELK pmax pmax
comp=Z,6.0nm,0.6s
ELK Elko 78.23 49 *e*P P 23 18 53.8 +1.8
comp=Z,6.4nm,0.6s
YMR Madison River 78.49 44 *e*P P 23 18 55.5 +2.2
comp=Z,31nm,1.1s
PKM Mcpherson Peak 78.51 56 P P 23 18 54.9 +1.4
baz=304,SNR=7.0
GCMT Greycliff 78.55 42 *e*P P 23 18 54.9 +1.4
YFT Old Faithful 78.70 44 *e*P P 23 18 57.9 +3.5
comp=Z,16nm,0.8s
SBC Santa Barbara 78.83 56 P P 23 18 55.9 +0.9
baz=304
LKWY Lake 78.88 43 *e*P P 23 18 58.9 +3.4
LKWY pmax pmax
comp=Z,26nm,0.9s
LKWY Lake 78.88 43 *e*P P 23 18 58.9 +3.4
comp=Z,26nm,0.9s
H17A Grant Village 78.88 44 P P 23 18 58.5 +3.0
baz=307
H17A Grant Village 78.88 44 *e*P P 23 18 58.8 +3.4
comp=Z,48nm,1.0s
SFJD Kangerlussuaq 78.90 4 *i*P P 23 18 55.6 +0.8
comp=Z,11nm,0.7s
SFJD Kangerlussuaq 78.90 4 *i*P P 23 18 55.6 +0.8
SFJD pmax pmax
comp=Z,11nm,0.7s
GRAC Grapevine Rang 78.99 53 P P 23 18 57.3 +1.4
baz=304,SNR=5.4
ISA Isabella, Lake 79.00 54 P P 23 18 56.3 +0.3
baz=304
FLWY Flagg Ranch 79.00 44 *e*P P 23 18 58.5 +2.5
comp=Z,22nm,0.9s
ARVC Arvin 79.05 55 P P 23 18 56.9 +0.6
baz=304
FXWY Fox Creek 79.07 44 *e*P P 23 18 58.5 +2.0
comp=Z,9.7nm,0.9s
HVU Hansel Valley 79.14 47 *e*P P 23 18 58.6 +1.8
HVU pmax pmax
comp=Z,15nm,0.8s
HVU Hansel Valley 79.14 47 *e*P P 23 18 58.6 +1.8
comp=Z,15nm,0.8s
MOOW Moose Ponds 79.17 44 *e*P P 23 18 58.9 +1.8
comp=Z,8.8nm,0.9s
RLMT Red Lodge 79.18 42 P P 23 18 58.3 +1.2
baz=308
RLMT Red Lodge 79.18 42 *e*P P 23 18 58.6 +1.5
comp=Z,12nm,0.8s
DAC Darwin (Calif) 79.24 54 *e*P P 23 18 58.5 +1.0
DAC pmax pmax
comp=Z,21nm,1.3s
DAC Darwin (Calif) 79.24 54 *e*P P 23 18 58.5 +1.0
comp=Z,21nm,1.3s
LOHW Long Hollow 79.33 44 *e*P P 23 18 59.7 +1.7
comp=Z,10nm,1.0s
SNOW Snow King Moun 79.34 44 *e*P P 23 19 00.0 +2.0
comp=Z,15nm,0.9s
REDW Red Top Meadow 79.34 45 *e*P P 23 18 59.6 +1.6
comp=Z,24nm,1.3s
R11A Troy Canyon, C 79.38 51 P P 23 18 59.7 +1.4
baz=305
R11A Troy Canyon, C 79.38 51 *e*P P 23 18 59.6 +1.4
comp=Z,16nm,1.3s
MPMC Manual Prospec 79.44 54 P P 23 18 59.5 +1.0
baz=305,SNR=16
BGU Big Grassy Mou 79.49 48 *e*P P 23 19 00.7 +2.0
comp=Z,6.3nm,0.8s
AHID Auburn Hatcher 79.56 45 *e*P P 23 19 00.8 +1.7
comp=Z,14nm,1.0s
SPUT South Promonto 79.62 47 *e*P P 23 19 01.4 +2.0
comp=Z,8.0nm,0.9s
FURC Furnace Creek, 79.62 53 P P 23 19 00.6 +1.4
baz=305,SNR=6.1
SNCC San Nicolas Is 79.62 57 P P 23 19 00.7 +1.4
baz=304
TPNV Topopah Spring 79.75 52 P P 23 19 01.3 +1.1
baz=305,SNR=25
TPNV Topopah Spring 79.75 52 *e*P P 23 19 01.5 +1.3
TPNV pmax pmax
comp=Z,16nm,0.6s
TPNV Topopah Spring 79.75 52 *e*P P 23 19 01.5 +1.3
comp=Z,16nm,0.6s
EDW2 Edwards Air Fo 79.76 55 P P 23 19 01.2 +1.0
baz=304,SNR=6.5
DGMT Dagmar 79.77 38 P P 23 19 00.5 +0.6
baz=311
DGMT Dagmar 79.77 38 *e*P P 23 19 01.0 +1.0
comp=Z,26nm,0.9s
LAO LASA Array 79.87 40 P P 23 19 01.6 +1.0
baz=310
LAO LASA Array 79.87 40 *e*P P 23 19 02.2 +1.7
comp=Z,37nm,1.0s
KWP Kalwaria Pacla 79.94 324⇓ *i*P P 23 19 01.9 +1.1
KWP Kalwaria Pacla 79.94 324⇓ P P 23 19 01.9 +1.1
HWUT Hardware Ranch 79.97 46 *e*P P 23 19 03.0 +1.6
comp=Z,20nm,0.9s
CFR Carcaliu 79.99 318⇑ *i*P P 23 19 00.6 -0.5
CFR Carcaliu 79.99 318 ⇑P P 23 19 00.6 -0.5
BUR08 Bucovina Ar. S 79.99 322 *e*P P 23 19 01.9 +0.7
BURAR Bucovina Array 80.00 321⇓ *i*P P 23 19 02.1 +0.8
BURAR Bucovina Array 80.00 321⇓ P P 23 19 02.1 +0.8
A25A Svangstu Ranch 80.01 37 P P 23 19 02.4 +1.2
baz=311
DUG Dugway, Tooele 80.05 48 P P 23 19 03.0 +1.2
baz=306
DUG Dugway, Tooele 80.05 48 *e*P P 23 19 03.4 +1.6
DUG pmax pmax
comp=Z,11nm,0.8s
DUG Dugway, Tooele 80.05 48 *e*P P 23 19 03.4 +1.6
comp=Z,10nm,0.8s
BR101 Keskin Array S 80.06 311 *e*P P 23 19 02.2 +0.5
BR101 epP **pP** 23 19 25.1 -0.6
BR131 Keskin Array S 80.06 311 *e*P P 23 19 02.9 +1.1
BRTR Keskin Array B 80.06 311 P P 23 19 02.2 +0.5
comp=Z,3.6nm,0.8s,baz=125,slow=4.7,SNR=20
BRTR pP **pP** 23 19 25.1 -0.6
comp=Z,4.9nm,0.8s,baz=109,slow=3.3,SNR=4.9
MWC Mount Wilson 80.08 55 *e*P P 23 19 03.3 +1.2
MWC pmax pmax
comp=Z,17nm,0.9s
MWC Mount Wilson 80.08 55 *e*P P 23 19 03.3 +1.2
comp=Z,16nm,0.9s
GSC Goldstone, Bar 80.32 54 P P 23 19 04.2 +1.0
baz=305,SNR=9.3
GSC Goldstone, Bar 80.32 54 *e*P P 23 19 04.5 +1.2
GSC pmax pmax
comp=Z,23nm,1.3s
GSC Goldstone, Bar 80.32 54 *e*P P 23 19 04.5 +1.2
comp=Z,23nm,1.3s
VRI Vrincioaia 80.32 319⇑ *i*P P 23 19 04.5 +1.6
VRI Vrincioaia 80.32 319 ⇑P P 23 19 04.5 +1.6
BFSC Mount Baldy Ra 80.35 55 P P 23 19 04.1 +0.7
baz=305,SNR=6.7
TCUT Toone Canyon 80.36 47 *e*P P 23 19 05.3 +1.7
comp=Z,27nm,0.9s
PLOR Plostina 80.38 319⇓ *i*P P 23 19 04.4 +1.1
PLOR Plostina 80.38 319⇓ P P 23 19 04.4 +1.1
PSUT Pine Spring 80.38 50 *e*P P 23 19 05.3 +1.7
comp=Z,57nm,1.9s
CTU Camp Tracy 80.41 47 *e*P P 23 19 05.4 +1.7
comp=Z,11nm,0.9s

B25A	**Knox Farm, Ray**	**80.43**	**37**	P		**P**	**23 19 04.3**	**+0.8**
	baz=311								
BW06	**Boulder Array**	**80.46**	**44**	P		**P**	**23 19 04.6**	**+0.6**
	baz=308								
BW06	**Boulder Array**	**80.46**	**44**	*e*P		**P**	**23 19 04.7**	**+0.6**
PD31	**Pinedale Array**	**80.46**	**44**	*e*P		**P**	**23 19 04.7**	**+0.7**
PD31				*e*pP		**pP**	**23 19 28.4**	**+0.6**
PDAR	**Pinedale Array**	**80.46**	**44**	P		**P**	**23 19 04.7**	**+0.7**
	comp=Z,5.7nm,0.8s,baz=268,slow=1.6,SNR=42								
PDAR				pP		**pP**	**23 19 28.4**	**+0.6**
	comp=Z,3.2nm,0.7s,baz=298,slow=4.3,SNR=5.3								
ANTO	**Ankara**	**80.50**	**312**	*e*P		**P**	**23 19 05.0**	**+0.9**
ANTO				pmax	pmax				
	comp=Z,15nm,0.7s								
ANTO	**Ankara**	**80.50**	**312**	*e*P		**P**	**23 19 05.0**	**+0.9**
	comp=Z,15nm,0.7s								
BR231	**Keskin MP Arra**	**80.52**	**312**	*e*P		**P**	**23 19 05.8**	**+1.6**
A26A	**Wade Farm, Ken**	**80.57**	**36**	P		**P**	**23 19 04.9**	**+0.7**
	baz=312								
KOLS	**Kolonicke sedl**	**80.62**	**324**	*e*P		**P**	**23 19 05.7**	**+1.2**
KOLS				pmax	pmax				
	comp=Z,6.0nm,1.2s								
KOLS	**Kolonicke sedl**	**80.62**	**324**	*e*P		**P**	**23 19 05.7**	**+1.2**
KOLS				*e*PP		**PP**	**23 22 04.1**	**-4.5**
JLU	**Jordanelle**	**80.65**	**47**	*e*P		**P**	**23 19 06.9**	**+1.8**
	comp=Z,13nm,1.1s								
NLU	**North Lily Min**	**80.65**	**48**	*e*P		**P**	**23 19 06.9**	**+1.8**
	comp=Z,6.9nm,0.8s								
STHS	**Stebnicka Huta**	**80.79**	**325**	*e*P		**P**	**23 19 07.4**	**+2.0**
STHS				*e*			23 22 05.6		
STHS				pmax	pmax				
	comp=Z,7.0nm,1.0s								
STHS	**Stebnicka Huta**	**80.79**	**325**	*e*P		**P**	**23 19 07.4**	**+2.0**
STHS				*e*pP		**pP**	**23 19 30.5**	**+1.3**
STHS				*e*PP		**PP**	**23 22 05.6**	**-4.4**
UZH	**Uzhgorod**	**80.81**	**324**	*e*P		**P**	**23 19 09.0**	**+3.6**
B26A	**Jensen Ranch,**	**80.82**	**37**	P		**P**	**23 19 06.6**	**+1.0**
	baz=312								
TUQ	**Turquoise Moun**	**80.83**	**53**	P		**P**	**23 19 06.9**	**+0.9**
	baz=305,SNR=15								
MSAB	**Monastry St. A**	**80.84**	**318**	⇑*i*P		**P**	**23 19 06.1**	**+0.4**
MPU	**Maple Canyon**	**80.89**	**48**	*e*P		**P**	**23 19 08.2**	**+1.9**
	comp=Z,17nm,1.0s								
HEC	**Hector,Ludlow**	**80.91**	**54**	P		**P**	**23 19 07.8**	**+1.5**
	baz=305,SNR=8.3								
A27A	**Ledoux Ranch,**	**80.92**	**36**	P		**P**	**23 19 07.1**	**+1.1**
	baz=313								
OJC	**Ojcow**	**80.93**	**326**	*e*P		**P**	**23 19 07.1**	**+1.0**
OJC	**Ojcow**	**80.93**	**326**	*e*P		**P**	**23 19 07.0**	**+1.0**
OJC				*e*pP		**pP**	**23 19 30.7**	**+0.8**
DOPR	**Dopca**	**80.98**	**320**	⇑*i*P		pP	23 19 32.0	+1.7
MURC	**Murrieta**	**81.03**	**56**	P		**P**	**23 19 07.9**	**+0.9**
	baz=305								
D25A	**Fairfield**	**81.08**	**38**	P		**P**	**23 19 07.9**	**+0.9**
	baz=311								
C26A	**Wahner Farm, P**	**81.26**	**37**	P		**P**	**23 19 08.8**	**+0.9**
	baz=312,SNR=6.3								
GMRC	**Granite Mounta**	**81.39**	**54**	P		**P**	**23 19 09.9**	**+0.9**
	baz=306,SNR=11								
A28A	**Rude Farm, Bot**	**81.42**	**35**	P		**P**	**23 19 09.4**	**+0.6**
	baz=313,SNR=7.0								
MSU	**Marysvale**	**81.45**	**49**	*e*P		**P**	**23 19 11.3**	**+1.9**
MSU	**Marysvale**	**81.45**	**49**	*e*P		**P**	**23 19 11.3**	**+1.9**
E25A	**Miller Ranch,**	**81.47**	**39**	P		**P**	**23 19 09.9**	**+0.7**
	baz=311,SNR=5.6								
109C	**Camp Elliot, M**	**81.50**	**56**	P		**P**	**23 19 10.6**	**+1.2**
	baz=305								
VOIR		**81.50**	**320**	⇑*i*P		**P**	**23 19 10.3**	**+1.0**
VOIR		**81.50**	**320**	⇑P		**P**	**23 19 10.3**	**+1.0**
PFO	**Pinyon Flats O**	**81.52**	**55**	P		**P**	**23 19 10.5**	**+0.8**
	baz=305								
PFO	**Pinyon Flats O**	**81.52**	**55**	*e*P		**P**	**23 19 10.7**	**+1.0**
PFO				pmax	pmax				
	comp=Z,13nm,0.6s								
PFO	**Pinyon Flats O**	**81.52**	**55**	*e*P		**P**	**23 19 10.7**	**+1.0**
	comp=Z,13nm,0.6s								
TMUT	**Trail Mountain**	**81.58**	**48**	*e*P		**P**	**23 19 11.9**	**+1.7**
	comp=Z,6.0nm,0.8s								
BELC	**Belle Mtn. Jos**	**81.61**	**55**	P		**P**	**23 19 10.7**	**+0.5**
	baz=306,SNR=6.7								
D26A	**Manning**	**81.62**	**38**	P		**P**	**23 19 10.5**	**+0.7**
	baz=312								
C27A	**Sayler Ranch,**	**81.63**	**37**	P		**P**	**23 19 10.8**	**+0.9**
	baz=312,SNR=7.6								
B28A	**Dugan Ranch, T**	**81.69**	**36**	P		**P**	**23 19 10.7**	**+0.6**
	baz=313								
MTPU	**Mount Pierson**	**81.73**	**50**	*e*P		**P**	**23 19 12.9**	**+1.9**
	comp=Z,14nm,0.8s								
P17A	**Butcher Ranch,**	**81.76**	**48**	*e*P		**P**	**23 19 12.6**	**+1.7**
	comp=Z,36nm,1.1s								
ARR	**Arges**	**81.77**	**320**	⇓*i*P		**P**	**23 19 12.0**	**+1.3**
KECS	**Kecovo**	**81.79**	**324**	*e*PP		PP	23 22 12.6	-5.6
LANS	**Liptovska Anna**	**81.82**	**325**	*e*P		**P**	**23 19 13.6**	**+2.7**
LANS	**Liptovska Anna**	**81.82**	**325**	*e*P		**P**	**23 19 13.6**	**+2.7**
LANS				*e*pP		**pP**	**23 19 36.7**	**+1.9**
F25A	**Bowman**	**81.82**	**39**	P		**P**	**23 19 12.0**	**+1.0**
	baz=311								
DRGR		**81.83**	**322**	⇑*i*P		**P**	**23 19 11.6**	**+0.6**
DRGR		**81.83**	**322**	⇑P		**P**	**23 19 11.6**	**+0.6**
A29A	**Manning Farm,**	**81.91**	**35**	P		**P**	**23 19 11.8**	**+0.5**
	baz=314								
BAR	**Barrett**	**81.92**	**56**	*e*P		**P**	**23 19 12.5**	**+0.9**
	comp=Z,13nm,1.1s								
KNB	**Kanab**	**81.94**	**51**	*e*P		**P**	**23 19 13.7**	**+1.8**
KNB				pmax	pmax				
	comp=Z,27nm,0.8s								
KNB	**Kanab**	**81.94**	**51**	*e*P		**P**	**23 19 13.7**	**+1.8**
	comp=Z,27nm,0.8s								
MONP2	**Monument Peak**	**81.96**	**56**	P		**P**	**23 19 12.8**	**+0.7**
	baz=306,SNR=5.5								
P18A	**Preston Nutter**	**81.97**	**47**	*e*P		**P**	**23 19 14.0**	**+1.8**
	comp=Z,15nm,0.8s								
E26A	**Carlson Angus**	**81.98**	**38**	P		**P**	**23 19 12.5**	**+0.8**
	baz=312								
D27A	**Center**	**82.03**	**37**	P		**P**	**23 19 12.9**	**+0.9**
	baz=313								
IRM	**Iron Mountain**	**82.10**	**54**	P		**P**	**23 19 13.6**	**+1.0**
	baz=306,SNR=8.5								
SRU	**San Rafael Swe**	**82.12**	**48**	*e*P		**P**	**23 19 14.2**	**+1.4**
SRU				pmax	pmax				
	comp=Z,31nm,0.8s								
SRU	**San Rafael Swe**	**82.12**	**48**	*e*P		**P**	**23 19 14.2**	**+1.4**
	comp=Z,31nm,0.8s								
B29A	**Wagenman Farm,**	**82.17**	**35**	P		**P**	**23 19 13.2**	**+0.5**
	baz=314,SNR=8.7								
C28A	**Hausauer Farms**	**82.18**	**36**	P		**P**	**23 19 13.4**	**+0.7**
	baz=313								
BC3	**Big Chuckawall**	**82.18**	**55**	P		**P**	**23 19 13.8**	**+0.7**
	baz=306,SNR=12								
K22A	**Casper**	**82.27**	**43**	P		**P**	**23 19 13.8**	**+0.2**
	baz=310,SNR=7.3								
K22A	**Casper**	**82.27**	**43**	*e*P		**P**	**23 19 14.3**	**+0.8**
	comp=Z,15nm,0.8s								
MORC	**Moravsky Berou**	**82.28**	**327**	*e*P		**P**	**23 19 14.2**	**+1.0**
MORC				pmax	pmax				
	comp=Z,38nm,1.0s								
MORC	**Moravsky Berou**	**82.28**	**327**	*e*P		**P**	**23 19 14.2**	**+1.0**
	comp=Z,38nm,1.0s								
F26A	**Lodgepole**	**82.28**	**39**	P		**P**	**23 19 14.2**	**+0.9**
	baz=312								
G25A	**Newell**	**82.33**	**40**	P		**P**	**23 19 14.0**	**+0.4**
	baz=312								
A30A	**Hoffart Farm,**	**82.34**	**35**	P		**P**	**23 19 14.2**	**+0.7**
	baz=315,SNR=13								
SWSC	**Sam W. Stewart**	**82.36**	**55**	P		**P**	**23 19 14.5**	**+0.6**
	baz=306								
W13A	**Hualapai Mount**	**82.38**	**53**	*e*P		**P**	**23 19 15.2**	**+0.9**
	comp=Z,4.6nm,0.8s								
KRLC	**Kraliky**	**82.41**	**327**	*e*P		**P**	**23 19 15.0**	**+1.1**
KRLC				*e*PCP		**PcP**	**23 19 19.2**	**+0.3**
KRLC				*e*pP		**pP**	**23 19 38.1**	**+0.2**
KRLC	**Kraliky**	**82.41**	**327**	*e*P		**P**	**23 19 15.0**	**+1.1**
DPC	**Dobruska-Polom**	**82.42**	**328**	*e*P		**P**	**23 19 14.5**	**+0.5**
DPC				*e*pP		**pP**	**23 19 38.3**	**+0.4**
DPC				*e*PP		**PP**	**23 22 17.2**	**-6.1**
DPC	**Dobruska-Polom**	**82.42**	**328**	*e*P		**P**	**23 19 14.5**	**+0.5**
D28A	**Regan**	**82.45**	**37**	P		**P**	**23 19 15.1**	**+0.9**
	baz=313								
E27A	**Carson**	**82.47**	**38**	P		**P**	**23 19 14.9**	**+0.6**
	baz=313								
PSZ	**Piszkesteto**	**82.47**	**324**	⇓*i*P		**P**	**23 19 15.3**	**+1.0**
PSZ	**Piszkesteto**	**82.47**	**324**	*e*P		**P**	**23 19 15.3**	**+1.0**
PSZ	**Piszkesteto**	**82.47**	**324**	*e*P		**P**	**23 19 15.3**	**+1.0**
PSZ				*e*pP		**pP**	**23 19 38.2**	**0.0**
ULM	**Lac du Bonnet**	**82.52**	**32**	P		**P**	**23 19 14.0**	**-0.4**
	comp=Z,5.2nm,0.7s,baz=320,slow=5.4,SNR=8.8								
ULM	**Lac du Bonnet**	**82.52**	**32**	*e*P		**P**	**23 19 14.6**	**+0.2**
ULM				pmax	pmax				
	comp=Z,11nm,1.0s								
ULM	**Lac du Bonnet**	**82.52**	**32**	*e*P		**P**	**23 19 14.6**	**+0.2**
	comp=Z,11nm,1.0s								
VYHS	**Vyhne**	**82.58**	**325**	*e*P		**P**	**23 19 15.4**	**+0.6**
VYHS				*e*			23 22 20.6		
VYHS				pmax	pmax				
	comp=Z,7.0nm,1.1s								
VYHS	**Vyhne**	**82.58**	**325**	*e*P		**P**	**23 19 15.4**	**+0.6**
VYHS				*e*pP		**pP**	**23 19 40.1**	**+1.4**
VYHS				*e*PP		**PP**	**23 22 20.6**	**-4.1**
F27A	**Lemmon**	**82.61**	**39**	P		**P**	**23 19 15.4**	**+0.4**
	baz=312								
H25A	**Fruitdale**	**82.61**	**40**	P		**P**	**23 19 15.5**	**+0.4**
	baz=312								
U15A	**North Rim**	**82.63**	**51**	*e*P		**P**	**23 19 17.2**	**+1.6**
	comp=Z,47nm,1.8s								
B30A	**Myrvik Farm, E**	**82.67**	**35**	P		**P**	**23 19 15.4**	**+0.2**
	baz=315,SNR=9.2								
PDMCI	**Parker Dam,Lak**	**82.68**	**53**	P		**P**	**23 19 16.6**	**+1.1**
	baz=306								
G26A	**Maurine**	**82.69**	**39**	P		**P**	**23 19 15.9**	**+0.4**
	baz=312,SNR=7.7								
RSSD	**Black Hills**	**82.70**	**41**	P		**P**	**23 19 16.1**	**+0.3**
	baz=311								
RSSD	**Black Hills**	**82.70**	**41**	*e*P		**P**	**23 19 16.2**	**+0.4**
RSSD				pmax	pmax				
	comp=Z,34nm,1.6s								
RSSD	**Black Hills**	**82.70**	**41**	*e*P		**P**	**23 19 16.2**	**+0.4**
	comp=Z,34nm,1.6s								
GZR	**Gura Zlata**	**82.73**	**321**	⇓*i*P		**P**	**23 19 16.3**	**+0.6**
GZR	**Gura Zlata**	**82.73**	**321**	⇓P		**P**	**23 19 16.3**	**+0.6**
Y12C	**Blythe**	**82.75**	**54**	P		**P**	**23 19 16.3**	**+0.3**
	baz=306								
Y12C	**Blythe**	**82.75**	**54**	*e*P		**P**	**23 19 17.5**	**+1.6**
	comp=Z,37nm,1.5s								
E28A	**Huff**	**82.81**	**37**	P		**P**	**23 19 15.7**	**-0.3**
	baz=313								
O20A	**White River Ci**	**82.86**	**46**	P		**P**	**23 19 17.2**	**+0.5**
	baz=309,SNR=11								
O20A	**White River Ci**	**82.86**	**46**	*e*P		**P**	**23 19 17.5**	**+0.8**
	comp=Z,18nm,1.0s								
I25A	**Rochford**	**82.93**	**41**	P		**P**	**23 19 17.8**	**+0.8**
	baz=311								
GLA	**Glamis**	**82.96**	**55**	P		**P**	**23 19 18.2**	**+1.1**
	baz=306,SNR=5.3								
GLA	**Glamis**	**82.96**	**55**	*e*P		**P**	**23 19 18.4**	**+1.3**
GLA				pmax	pmax				
	comp=Z,11nm,0.7s								
GLA	**Glamis**	**82.96**	**55**	*e*P		**P**	**23 19 18.4**	**+1.3**
	comp=Z,11nm,0.7s								
G27A	**Dupree**	**82.98**	**39**	P		**P**	**23 19 17.6**	**+0.6**
	baz=312,SNR=7.7								
B31A	**Greenbush Farm**	**83.01**	**35**	P		**P**	**23 19 17.2**	**+0.2**
	baz=315								
D29A	**Pettibone, Tap**	**83.02**	**37**	P		**P**	**23 19 17.4**	**+0.3**
	baz=314								
VRAC	**Vranov**	**83.04**	**327**	⇑*i*P		**P**	**23 19 18.0**	**+0.8**
VRAC	**Vranov**	**83.04**	**327**	⇑P		**P**	**23 19 18.0**	**+0.8**
H26A	**Fairpoint**	**83.05**	**40**	P		**P**	**23 19 18.2**	**+0.9**
	baz=312								
PVCC	**Panska Ves**	**83.06**	**328**	*e*P		**P**	**23 19 18.9**	**+1.7**
PVCC				*e*pP		**pP**	**23 19 42.4**	**+1.2**
PVCC	**Panska Ves**	**83.06**	**328**	*e*P		**P**	**23 19 18.9**	**+1.7**
BRG	**Berggiesshubel**	**83.07**	**329**	*e*P		**P**	**23 19 18.3**	**+1.0**
	comp=Z,3.0nm,0.7s								
BRG				*e*			23 19 22.5		
	comp=Z,6.4nm,1.0s								
BRG				*e*			23 19 41.9		
	comp=Z,7.0nm,0.8s								
BRG				*e*			23 22 27.5		
	comp=Z,13nm,1.7s								
BRG	**Berggiesshubel**	**83.07**	**329**	*e*P		**P**	**23 19 18.3**	**+1.0**
BRG				*e*			23 22 27.5		
BRG				pmax	pmax				
	comp=Z,3.0nm,0.7s								
BRG				pmax	pmax				
	comp=Z,6.0nm,1.0s								
BRG				pmax	pmax				
	comp=Z,7.0nm,0.8s								
BRG				pmax	pmax				
	comp=Z,13nm,1.7s								
C30A	**Mose, Pekin**	**83.12**	**36**	P		**P**	**23 19 18.0**	**+0.4**
	baz=315,SNR=6.8								
CLL	**Collm**	**83.15**	**330**	*e*P		**P**	**23 19 17.0**	**-0.6**
	comp=Z,22nm,1.7s								
CLL				*i*			23 19 21.9		
	comp=Z,13nm,1.0s								
CLL				*e*			23 20 55.0		
CLL				*e*			23 22 22.0		
CLL				*e*PP		**PP**	**23 22 29.0**	**-0.2**
CLL	**Collm**	**83.15**	**330**	*i* P		**pP**	**23 19 41.6**	**0.0**
	comp=Z,17nm,1.0s								
CLL				*e*			23 19 52.0		
CLL	**Collm**	**83.15**	**330**	*e*P		**P**	**23 19 17.0**	**-0.6**
CLL				pmax	pmax				
	comp=Z,22nm,1.7s								
CLL	**Collm**	**83.15**	**330**	*e*P		**P**	**23 19 17.6**	**0.0**
CLL				*e*pP		**pP**	**23 19 42.0**	**+0.3**
BZS	**Buzias**	**83.18**	**322**	⇑*i*P		**P**	**23 19 17.9**	**-0.1**
BZS	**Buzias**	**83.18**	**322**	⇑P		**P**	**23 19 17.9**	**-0.1**
A32A	**Rocking H Ranc**	**83.20**	**34**	P		**P**	**23 19 18.0**	**0.0**
	baz=316								
F28A	**McLaughlin**	**83.25**	**38**	P		**P**	**23 19 19.0**	**+0.6**
	baz=313								
J25A	**Sunshine Ranch**	**83.31**	**41**	P		**P**	**23 19 18.7**	**-0.1**
	baz=312								
E29A	**Napoleon**	**83.34**	**37**	P		**P**	**23 19 18.9**	**+0.1**
	baz=314								
I26A	**New Underwood**	**83.40**	**40**	P		**P**	**23 19 19.5**	**+0.3**
	baz=312								
D30A	**Buchanan**	**83.40**	**36**	P		**P**	**23 19 19.6**	**+0.5**
	baz=314								
H27A	**Howes**	**83.41**	**40**	P		**P**	**23 19 19.8**	**+0.6**
	baz=312,SNR=13								
C31A	**Landman Farms,**	**83.41**	**35**	P		**P**	**23 19 19.1**	**0.0**
	baz=315,SNR=5.2								
GOPC	**GO Pecny, Ondr**	**83.41**	**328**	*e*P		**P**	**23 19 20.4**	**+1.3**
PRA	**Prague**	**83.45**	**328**	*e*P		**P**	**23 19 20.6**	**+1.4**
PRA	**Prague**	**83.45**	**328**	*e*P		**P**	**23 19 20.6**	**+1.4**
PRU	**Pruhonice**	**83.47**	**328**	*e*P		**P**	**23 19 20.1**	**+0.8**
PRU				*e*PCP		**PcP**	**23 19 24.8**	**+1.3**
PRU				*e*pP		**pP**	**23 19 43.5**	**+0.2**
PRU	**Pruhonice**	**83.47**	**328**	*e*P		**P**	**23 19 20.1**	**+0.8**
B32A	**Ashes, Strandq**	**83.55**	**34**	P		**P**	**23 19 19.6**	**-0.2**
	baz=316,SNR=7.0								
Y14A	**Wickenburg**	**83.66**	**53**	*e*P		**P**	**23 19 21.8**	**+1.1**
	comp=Z,50nm,0.8s								
A33A	**Warroad**	**83.69**	**33**	P		**P**	**23 19 20.4**	**-0.1**
	baz=317,SNR=5.9								
MDVR	**Moldovita**	**83.70**	**321**	⇓*i*P		**P**	**23 19 20.8**	**+0.1**
G28A	**Parade**	**83.72**	**39**	P		**P**	**23 19 21.3**	**+0.5**
	baz=313								
N23A	**Red Feather La**	**83.73**	**44**	P		**P**	**23 19 22.4**	**+1.2**
	baz=310,SNR=17								
N23A	**Red Feather La**	**83.73**	**44**	*e*P		**P**	**23 19 22.9**	**+1.6**
	comp=Z,32nm,0.9s								
E30A	**Jud**	**83.75**	**37**	P		**P**	**23 19 21.1**	**+0.3**
	baz=314								
F29A	**Eureka**	**83.75**	**38**	P		**P**	**23 19 21.2**	**+0.3**
	baz=314,SNR=6.1								
J26A	**Sides Ranch, S**	**83.76**	**41**	P		**P**	**23 19 21.9**	**+0.8**
	baz=312								
WUAZ	**Wupatki**	**83.77**	**51**	P		**P**	**23 19 22.4**	**+1.0**
	baz=308,SNR=14								
WUAZ	**Wupatki**	**83.77**	**51**	*e*P		**P**	**23 19 22.8**	**+1.4**
	comp=Z,26nm,0.9s								
I27A	**Quinn**	**83.80**	**40**	P		**P**	**23 19 22.0**	**+0.7**
	baz=312,SNR=6.5								
113A	**Mohawk Valley,**	**83.85**	**55**	*e*P		**P**	**23 19 22.4**	**+0.8**
	comp=Z,8.4nm,0.8s								
AGMN	**Agassiz Nation**	**83.93**	**34**	P		**P**	**23 19 21.3**	**-0.5**
	baz=316								
AGMN	**Agassiz Nation**	**83.93**	**34**	*e*P		**P**	**23 19 21.5**	**-0.3**
	comp=Z,12nm,1.2s								
H28A	**Mission Ridge**	**83.94**	**39**	P		**P**	**23 19 22.4**	**+0.5**
	baz=313,SNR=5.5								
PMOR	**Pomariorio Ree**	**83.94**	**113**	*e*T		T	00 52 01.2		
	comp=Z,9.9nm,0.2s								
D31A	**Mcclaflin, Tow**	**83.95**	**36**	P		**P**	**23 19 22.0**	**+0.2**
	baz=315,SNR=7.2								
C32A	**Crookston**	**83.96**	**35**	P		**P**	**23 19 21.8**	**-0.1**
	baz=316								
F30A	**Leola**	**84.16**	**37**	P		**P**	**23 19 23.0**	**0.0**
	baz=314								
NKC	**Novy Kostel**	**84.19**	**329**	*e*P		**P**	**23 19 23.7**	**+0.7**
NKC				*e*PCP		**PcP**	**23 19 28.4**	**+1.7**
NKC				*e*pP		**pP**	**23 19 47.9**	**+0.9**
NKC	**Novy Kostel**	**84.19**	**329**	*e*P		**P**	**23 19 23.7**	**+0.7**
E31A	**Nome**	**84.21**	**36**	P		**P**	**23 19 23.2**	**0.0**
	baz=315								
D32A	**Dogwood Acres,**	**84.22**	**35**	P		**P**	**23 19 23.4**	**+0.2**
	baz=316								
SMCO	**Snowmass**	**84.23**	**46**	*e*P		**P**	**23 19 25.4**	**+1.4**
	comp=Z,22nm,1.0s								
PPT2	**Papeete2**	**84.25**	**116**	*e*LR		LR	23 45 37.2		
	comp=Z,338nm,32.2s								
PKSM	**Moragy**	**84.27**	**324**	⇓*i*P		**P**	**23 19 23.6**	**+0.1**
PKSM	**Moragy**	**84.27**	**324**	⇓P		**P**	**23 19 23.6**	**+0.1**
I28A	**Midland**	**84.32**	**40**	P		**P**	**23 19 24.5**	**+0.6**
	baz=313,SNR=8.1								
B34A	**Aery, Baudette**	**84.35**	**33**	P		**P**	**23 19 23.5**	**-0.4**
	baz=317								
C33A	**Trail**	**84.36**	**34**	P		**P**	**23 19 23.8**	**-0.1**
	baz=316								
CONA	**Conrad Observa**	**84.38**	**326**	*i* P		**P**	**23 19 24.8**	**+0.7**
	comp=Z,6.4nm,0.6s,SNR=11								
J27A	**Elkhorn Farm,**	**84.38**	**40**	P		**P**	**23 19 24.8**	**+0.6**
	baz=313,SNR=6.1								
H29A	**Onida**	**84.39**	**39**	P		**P**	**23 19 24.7**	**+0.5**
	baz=314								
X16A	**Lo Mia Camp, P**	**84.40**	**52**	*e*P		**P**	**23 19 26.0**	**+1.3**
	comp=Z,17nm,0.9s								
KHC	**Kasperske Hory**	**84.52**	**328**	*e*P		**P**	**23 19 25.2**	**+0.4**
KHC				*e*PCP		**PcP**	**23 19 30.3**	**+2.1**
KHC				*e*pP		**pP**	**23 19 48.9**	**+0.1**
KHC				*e*PP		**PP**	**23 22 39.5**	**-1.0**
KHC	**Kasperske Hory**	**84.52**	**328**	*e*P		**P**	**23 19 25.2**	**+0.4**
KHC				pmax	pmax				
	comp=Z,7.0nm,0.9s								
KHC	**Kasperske Hory**	**84.52**	**328**	*e*P		**P**	**23 19 25.2**	**+0.4**
	comp=Z,6.7nm,0.9s								
F31A	**Hecla**	**84.53**	**37**	P		**P**	**23 19 24.9**	**+0.1**
	baz=315								
MVCO	**Mesa Verde**	**84.55**	**48**	P		**P**	**23 19 26.0**	**+0.7**
	baz=309,SNR=6.2								
MVCO	**Mesa Verde**	**84.55**	**48**	*e*P		**P**	**23 19 26.4**	**+1.1**
	comp=Z,19nm,1.0s								
G30A	**Faulkton**	**84.59**	**38**	P		**P**	**23 19 25.4**	**+0.3**
	baz=314,SNR=6.8								
ISCO	**Idaho Springs**	**84.63**	**45**	P		**P**	**23 19 26.9**	**+1.0**
	baz=311,SNR=16								
ISCO	**Idaho Springs**	**84.63**	**45**	*e*P		**P**	**23 19 27.3**	**+1.5**
ISCO				pmax	pmax				
	comp=Z,12nm,0.8s								
ISCO	**Idaho Springs**	**84.63**	**45**	*e*P		**P**	**23 19 27.3**	**+1.5**
	comp=Z,12nm,0.8s								
J28A	**Allard Ranch,**	**84.67**	**40**	P		**P**	**23 19 26.1**	**+0.5**
	baz=313,SNR=7.0								
GEC2	**GERESS Array S**	**84.68**	**328**	*e*P		**P**	**23 19 25.9**	**+0.3**
GEC2				pmax	pmax				
	comp=Z,11nm,0.8s								
GEC2	**GERESS Array S**	**84.68**	**328**	*e*P		**P**	**23 19 25.9**	**+0.3**
	comp=Z,11nm,0.8s								
GERES	**GERESS Array B**	**84.68**	**328**	P		**P**	**23 19 25.8**	**+0.1**
	comp=Z,4.2nm,0.7s,baz=38,slow=5.0,SNR=37								
GERES				pP		**pP**	**23 19 49.1**	**-0.5**
	comp=Z,7.6nm,0.8s,baz=35,slow=4.9,SNR=11								
GEA0	**GERESS Array S**	**84.69**	**328**	*e*P		**P**	**23 19 25.4**	**-0.3**
I29A	**Vivian Onida**	**84.76**	**39**	P		**P**	**23 19 26.4**	**+0.4**
	baz=314								
D33A	**AnnSam, Waubun**	**84.78**	**35**	P		**P**	**23 19 25.7**	**-0.4**
	baz=316								
C34A	**RKJ Ranch, Bem**	**84.84**	**34**	P		**P**	**23 19 26.0**	**-0.4**
	baz=317								
B35A	**Bob, Littlefor**	**84.86**	**33**	P		**P**	**23 19 26.4**	**0.0**
	baz=318								
214A	**Organ Pipe Nat**	**84.98**	**55**	P		**P**	**23 19 28.2**	**+0.9**
	baz=307								
214A	**Organ Pipe Nat**	**84.98**	**55**	*e*P		**P**	**23 19 27.9**	**+0.5**
	comp=Z,46nm,1.0s								
G31A	**Conde**	**84.99**	**37**	P		**P**	**23 19 27.7**	**+0.5**
	baz=315								
ARSA	**Arzberg**	**85.03**	**326

TAOE	Nuku Hiva Isla	86.45	103	*e*LR		LR		23 46 40.7
	comp=Z,2268nm,35.0s							
MEM	Membach	86.48	333	P		P		23 19 34.7 +0.3
J32A	Parkston	86.49	38	P		P		23 19 34.6 0.0
	baz=315							
I33A	Coleman	86.54	37	P		P		23 19 34.8 0.0
	baz=316							
K31A	O'Neill	86.54	39	P		P		23 19 35.3 +0.3
	baz=315,SNR=5.3							
H34A	Spellman Lake,	86.60	36	P		P		23 19 35.4 +0.2
	baz=317							
PDG	Podgorica	86.61	320	⇑*i*P		P		23 19 32.3 -2.9
JAVS	Javornik	86.71	326	*i* P		P		23 19 34.4 -1.3
JAVS				*e*				23 19 58.8
ABTA	Abfaltersbach	86.78	327	*i* P		P		23 19 35.3 -0.8
	comp=Z,1.9nm,0.5s							
F36A	Milaca	86.81	34	P		P		23 19 36.4 +0.4
	baz=318							
L31A	Butterfield Fa	86.81	40	P		P		23 19 36.7 +0.5
	baz=315,SNR=7.4							
G35A	Watkins	86.82	35	P		P		23 19 37.2 +1.0
	baz=317							
ECSD	EROS Data Cent	86.86	37	P		P		23 19 36.5 +0.1
	baz=316,SNR=11							
ECSD	EROS Data Cent	86.86	37	*e*P		P		23 19 36.5 +0.1
	comp=Z,14nm,0.9s							
KSCO	Kaye Shedlock'	86.89	44	P		P		23 19 37.3 +0.5
	baz=312							
KSCO	Kaye Shedlock'	86.89	44	*e*P		P		23 19 37.6 +0.8
	comp=Z,29nm,1.1s							
BCLA	Clavier	86.90	333	P		P		23 19 36.6 +0.1
K32A	Verdigre	86.93	39	P		P		23 19 37.4 +0.6
	baz=315							
H35A	Sunnyside Ranc	87.04	36	P		P		23 19 37.9 +0.6
	baz=317,SNR=8.6							
T25A	Trinidad	87.09	46	P		P		23 19 38.7 +0.8
	baz=312,SNR=7.0							
T25A	Trinidad	87.09	46	*e*P		P		23 19 39.2 +1.3
	comp=Z,10nm,0.9s							
G36A	St. Michael	87.16	35	P		P		23 19 38.3 +0.5
	baz=318							
CWF	Charnwood Fore	87.26	338	*e*P		P		23 19 38.7 +0.6
	comp=Z,19nm,1.2s							
ANMO	Albuquerque	87.26	49	P		P		23 19 39.8 +1.1
	baz=310							
ANMO	Albuquerque	87.26	49	*e*P		P		23 19 37.5 -1.3
ANMO				pmax		pmax		
	comp=Z,7.0nm,1.2s							
ANMO	Albuquerque	87.26	49	*e*P		P		23 19 40.0 +1.3
	comp=Z,5.5nm,1.0s							
M31A	Lambtecht Ranc	87.32	40	P		P		23 19 38.8 +0.1
	baz=315							
FETA	Feichten	87.37	328	*i* PcP		P		23 19 39.9 +0.9
L32A	Elgin	87.37	39	P		P		23 19 39.4 +0.5
	baz=315							
BFO	Black Forest	87.38	330	*e*P		P		23 19 38.3 -0.5
BFO	Black Forest	87.38	330	*e*P		P		23 19 38.3 -0.5
BFO				*e*pP		pP		23 20 04.2 +1.3
K33A	Hardington	87.47	38	P		P		23 19 40.0 +0.6
	baz=316							
J34A	George	87.51	37	P		P		23 19 40.2 +0.6
	baz=316							
H36A	Jessenland, He	87.56	35	P		P		23 19 41.0 +1.2
	baz=318							
SPMN	Marine on St.	87.62	34	P		P		23 19 40.5 +0.5
	baz=319							
SPMN	Marine on St.	87.62	34	*e*P		P		23 19 40.6 +0.5
	comp=Z,14nm,1.0s							
L33A	Hoskins	87.64	39	P		P		23 19 40.4 +0.2
	baz=316							
319A	Douglas	87.71	53	*e*P		P		23 19 42.1 +1.2
	comp=Z,4.9nm,0.6s							
BGNE	Belgrade	87.72	40	P		P		23 19 40.7 +0.1
	baz=315							
BGNE	Belgrade	87.72	40	*e*P		P		23 19 41.0 +0.4
	comp=Z,51nm,1.0s							
J35A	Milford	87.83	37	P		P		23 19 41.4 +0.3
	baz=317							
K34A	Le Mars	87.87	38	P		P		23 19 41.4 +0.1
	baz=316							
FUORN	Ofenpass-Fuorn	87.88	328	*e*P		P		23 19 41.9 +0.4
	comp=Z,19nm,1.1s							
I36A	Fitzsimmons Fa	87.94	36	P		P		23 19 42.0 +0.5
	baz=318							
121A	Cookes Peak, D	87.96	52	P		P		23 19 43.0 +0.9
	baz=310							
121A	Cookes Peak, D	87.96	52	*e*P		P		23 19 42.0 -0.2
	comp=Z,2.8nm,0.7s							
O31A	Woolen Ranch,	87.96	41	P		P		23 19 42.3 +0.5
	baz=314							
H37A	Dierke Farm, C	88.05	35	P		P		23 19 42.6 +0.6
	baz=318							
N32A	Stulken Farm,	88.09	40	P		P		23 19 42.4 0.0
	baz=315							
M33A	Taylor Creek F	88.11	39	P		P		23 19 42.6 +0.2
	baz=316							
I37A	Lemond, Waseca	88.24	36	P		P		23 19 43.4 +0.5
	baz=318							
L34A	Svendsen Farm,	88.25	39	P		P		23 19 43.1 0.0
	baz=316							
J36A	Seneca 1, Swea	88.29	36	P		P		23 19 43.4 +0.2
	baz=318							
SCHQ	Schefferville	88.44	15	P		P		23 19 44.4 +0.7
	comp=Z,11nm,0.8s,baz=339,slow=4.2,SNR=13							
SCHQ				pP		pP		23 20 07.6 -0.3
	comp=Z,18nm,0.8s,baz=13,slow=7.0,SNR=8.6							
L35A	Bielow Farm, R	88.57	38	P		P		23 19 44.3 -0.3
	baz=317							
CBKS	Cedar Bluff	88.67	43	P		P		23 19 45.5 +0.3
	baz=314							
I38A	Scanlan Farm,	88.73	35	P		P		23 19 45.5 +0.2
	baz=319							
P32A	Huiting Farm,	88.73	41	P		P		23 19 45.4 0.0
	baz=315							
K36A	Gilmore City	88.74	37	P		P		23 19 45.5 +0.1
	baz=318							
M35A	Neola	88.96	38	P		P		23 19 46.8 +0.3
	baz=317							
O33A	Hebron	88.97	40	P		P		23 19 46.5 0.0
	baz=316							
N34A	Lincoln	89.00	39	P		P		23 19 46.6 0.0
	baz=316							
K37A	Belmond	89.05	36	P		P		23 19 47.4 +0.6
	baz=318							
Q32A	Meitler Ranch,	89.20	42	P		P		23 19 47.7 +0.1
	baz=315							
P33A	Williams Farm,	89.36	41	P		P		23 19 48.3 0.0
	baz=316							
O34A	Beatrice	89.36	40	P		P		23 19 48.2 -0.2
	baz=316							
N35A	Tabor	89.43	39	P		P		23 19 49.5 +0.8
	baz=317							
M36A	Felix, Anita	89.43	38	P		P		23 19 49.6 +0.9
	baz=317							
L37A	Phoenix Point,	89.47	37	P		P		23 19 48.9 +0.1
	baz=318							
Q33A	Connelly Farm,	89.59	41	P		P		23 19 49.6 +0.1
	baz=315							
AQU	L'Aquila	89.66	324	*e*P		P		23 19 50.1 +0.3
AQU				pmax		pmax		
	comp=Z,20nm,1.0s							
AQU	L'Aquila	89.66	324	*e*P		P		23 19 50.1 +0.3
	comp=Z,20nm,1.0s							
O35A	Humboldt	89.72	39	P		P		23 19 49.9 -0.2
	baz=317							
P34A	Walnut Farm, R	89.75	40	P		P		23 19 50.0 -0.2
	baz=316							
N36A	Muff Farm, Cla	89.82	39	P		P		23 19 51.0 +0.6
	baz=317							
M37A	Trindle Farm,	89.85	38	P		P		23 19 51.2 +0.6
	baz=318							
L38A	Oak Wood Farm,	89.85	37	P		P		23 19 51.0 +0.4
	baz=318							
S32A	Newby Ranch, P	89.89	43	P		P		23 19 51.2 +0.3
	baz=315							
R33A	Olander Ranch,	90.00	42	P		P		23 19 51.8 +0.4
	baz=315							
MNTX	Cornudas Mount	90.05	51	P		P		23 19 52.0 +0.3
	baz=311							
MNTX	Cornudas Mount	90.05	51	*e*P		P		23 19 52.4 +0.7
	comp=Z,2.6nm,0.8s							
Q34A	Chapman	90.14	41	P		P		23 19 52.3 +0.3
	baz=316							
KSU1	Kansas State U	90.19	41	P		P		23 19 52.4 +0.2
	baz=316							
KSU1	Kansas State U	90.19	41	*e*P		P		23 19 52.4 +0.2
	comp=Z,22nm,0.8s							
MSTX	Muleshoe	90.19	48	P		P		23 19 52.6 +0.1
	baz=312							
AMTX	Amarillo	90.24	46	P		P		23 19 53.2 +0.5
	baz=313							
AMTX	Amarillo	90.24	46	*e*P		P		23 19 53.8 +1.1
	comp=Z,24nm,0.8s							
N37A	Lee Faris, Mou	90.25	38	P		P		23 19 52.9 +0.4
	baz=318							
T32A	Huddler Ranch,	90.27	43	P		P		23 19 53.1 +0.4
	baz=315							
M38A	Pleasantville	90.27	37	P		P		23 19 53.0 +0.4
	baz=318							
LPG	La Plagne	90.28	329	*e*P		P		23 19 52.6 -0.3
LPG				pmax		pmax		
	comp=Z,4.0nm,0.7s							
R34A	Isabella, Hill	90.41	42	P		P		23 19 53.4 +0.1
	baz=316							
S33A	Kaszmaul Farm,	90.50	42	P		P		23 19 54.2 +0.4
	baz=315							
P36A	Good Intent, A	90.56	39	P		P		23 19 53.9 -0.1
	baz=317							
O37A	Wolven Farm, M	90.71	39	P		P		23 19 55.0 +0.3
	baz=318							
N38A	Joes South For	90.72	38	P		P		23 19 55.2 +0.6
	baz=318							
U32A	Winter Ranch,	90.78	44	P		P		23 19 55.3 +0.2
	baz=315							
Q36A	Arnold C. Orve	90.91	40	P		P		23 19 55.9 +0.3
	baz=317							
S34A	Willow Spring	90.92	42	P		P		23 19 55.8 +0.2
	baz=316							
R35A	Emporia Munici	90.97	41	P		P		23 19 56.2 +0.3
	baz=316							
P37A	Lathrop	91.03	39	P		P		23 19 56.2 +0.1
	baz=318							
O38A	Galt	91.09	38	P		P		23 19 57.0 +0.6
	baz=318							
V32A	Arapaho	91.22	44	P		P		23 19 58.2 +1.1
	baz=315							
U33A	Lingo Farm, Me	91.25	43	P		P		23 19 57.7 +0.4
	baz=315							
R36A	Gordon, Harris	91.35	41	P		P		23 19 57.7 +0.1
	baz=317							
T34A	McClaskey Farm	91.36	42	P		P		23 19 58.0 +0.3
	baz=316							
S35A	Otter Creek Ra	91.37	41	P		P		23 19 58.0 +0.3
	baz=316							
SSB	Saint Sauveur	91.38	330	*e*P		P		23 19 59.3 +1.6
SSB				pmax		pmax		
	comp=Z,4.0nm,0.8s							
SSB	Saint Sauveur	91.38	330	*e*P		P		23 19 59.3 +1.6
	comp=Z,4.0nm,0.8s							
P38A	Dawn	91.43	39	P		P		23 19 58.4 +0.4
	baz=318							
O39A	Kirksville	91.47	38	P		P		23 19 58.9 +0.8
	baz=319							
Q37A	Longview Farm,	91.50	40	P		P		23 19 58.5 +0.2
	baz=318							
W32A	Sentinel	91.52	45	P		P		23 19 59.3 +0.8
	baz=314							
U34A	Anderson Ranch	91.58	43	P		P		23 19 59.2 +0.4
	baz=316							
U34A	Anderson Ranch	91.58	43	*e*P		P		23 19 59.9 +1.2
	comp=Z,29nm,0.9s							
V33A	Loen Ranch,	91.59	44	P		P		23 19 59.2 +0.4
	baz=315							
R37A	Teagarden Farm	91.72	40	P		P		23 19 59.4 +0.1
	baz=317							
S36A	Lake Cedric, C	91.73	41	P		P		23 19 59.9 +0.4
	baz=317							
T35A	Sooner Cattle	91.81	42	P		P		23 20 00.2 +0.4
	baz=316							
Q38A	Cooks Store, C	91.88	39	P		P		23 20 00.2 +0.2
	baz=318							
O40A	La Belle	91.91	37	P		P		23 20 00.8 +0.7
	baz=319							
W33A	Caddo, Fort Co	91.95	44	P		P		23 20 02.1 +1.6
	baz=315							
X32A	Elmer	91.98	45	P		P		23 20 00.9 +0.2
	baz=314							
V34A	Guthrie	92.02	43	P		P		23 20 00.8 +0.1
	baz=316							
SLBS	Sierra La Lagu	92.05	60	*e*P		P		23 20 03.5 +2.3
	comp=Z,26nm,0.9s							
T36A	Boggs Farm, Ca	92.06	42	P		P		23 20 01.4 +0.4
	baz=317							
WMOK	Wichita Mounta	92.06	45	*e*P		P		23 20 01.7 +0.7
WMOK				pmax		pmax		
	comp=Z,11nm,0.8s							
WMOK	Wichita Mounta	92.06	45	*e*P		P		23 20 01.6 +0.7
	comp=Z,11nm,0.8s							
U35A	Pawnee	92.08	43	P		P		23 20 01.6 +0.6
	baz=316							
MFF	Saint Martin d	92.09	334	*e*P		P		23 20 00.9 0.0
MFF				pmax		pmax		
	comp=Z,12nm,1.2s							
S37A	Fort Scott	92.12	41	P		P		23 20 01.3 +0.1
	baz=317							
Q39A	Willow Grove F	92.15	39	P		P		23 20 01.6 +0.3
	baz=318							
P40A	Paris	92.26	38	P		P		23 20 02.2 +0.4
	baz=319							
W34A	Bridge Creek,	92.30	44	P		P		23 20 03.0 +0.9
	baz=315							
W34A	Bridge Creek,	92.30	44	*e*P		P		23 20 03.4 +1.3
	comp=Z,22nm,0.9s							
R38A	Fenwick Farm,	92.30	40	P		P		23 20 01.6 -0.4
	baz=318							
X33A	Lawton	92.36	45	P		P		23 20 02.7 +0.3
	baz=315							
V35A	Meyer Ranch, C	92.45	43	P		P		23 20 03.1 +0.3
	baz=316							
T37A	Cheneyville 18	92.54	41	P		P		23 20 03.4 +0.3
	baz=317							
U36A	Oologah	92.62	42	P		P		23 20 03.8 +0.3
	baz=317							
CAF	Calviac	92.66	332	*e*P		P		23 20 03.9 +0.3
CAF				pmax		pmax		
	comp=Z,5.0nm,0.9s							
R39A	Chumby, Stover	92.66	39	P		P		23 20 03.6 -0.1
	baz=318							
Y33A	Hilltop Ranch,	92.66	45	P		P		23 20 03.7 -0.1
	baz=315							
S38A	Stockton	92.71	40	P		P		23 20 03.6 -0.3
	baz=318							
X34A	Smith Ranch, M	92.71	44	P		P		23 20 04.8 +0.8
	baz=315							
TX31	Lajitas Ar. Si	92.72	52	*e*P		P		23 20 05.3 +1.1
LTX	Lajitas	92.72	52	*e*P		P		23 20 05.3 +1.0
LTX	Lajitas	92.72	52	*e*P		P		23 20 05.2 +1.0
TXAR	Lajitas Array	92.72	52	P		P		23 20 05.2 +1.0
	comp=Z,14nm,0.8s,baz=287,slow=3.0,SNR=103							
W35A	Tecumseh	92.87	44	P		P		23 20 04.6 -0.1
	baz=316							
TUL1	Leonard	92.94	42	P		P		23 20 05.4 +0.4
	baz=317							
T38A	Diamond	92.94	41	P		P		23 20 05.2 +0.1
	baz=318							
V36A	Jenks	92.94	43	P		P		23 20 05.5 +0.4
	baz=316							
U37A	Salina	92.95	42	P		P		23 20 05.5 +0.4
	baz=317							
HPIG		92.97	55	*e*P		P		23 20 06.8 +1.3
	comp=Z,18nm,0.9s							
S39A	Bolivar	92.98	40	P		P		23 20 04.8 -0.4
	baz=318							
ABTX	Abilene, Hawle	93.02	47	P		P		23 20 06.0 +0.5
	baz=314							
ABTX	Abilene, Hawle	93.02	47	*e*P		P		23 20 06.3 +0.8
	comp=Z,17nm,1.0s							
R40A	Maddies Statio	93.08	39	P		P		23 20 05.8 +0.1
	baz=319							
Z33A	Whitaker Ranch	93.09	46	P		P		23 20 06.3 +0.6
	baz=315							
LFF	La Frestale	93.17	332	*e*P		P		23 20 06.1 +0.2
LFF				pmax		pmax		
	comp=Z,7.0nm,0.8s							
Y34A	Reagan Ranch,	93.21	45	P		P		23 20 06.6 +0.3
	baz=315							
W36A	Wetumka	93.25	43	P		P		23 20 06.8 +0.3
	baz=316							
V37A	Hulbert	93.32	42	P		P		23 20 06.7 -0.1
	baz=317							
U38A	Gravette	93.33	41	P		P		23 20 06.6 -0.2
	baz=318							
X35A	Drake	93.35	44	P		P		23 20 07.2 +0.3
	baz=316							
T39A	Clever	93.44	40	P		P		23 20 07.2 -0.1
	baz=318							
133A	Hamilton Ranch	93.47	47	P		P		23 20 07.5 -0.1
	baz=315							
S40A	Lebanon	93.48	39	P		P		23 20 07.5 0.0
	baz=319							
Z34A	Collier Ranch,	93.53	45	P		P		23 20 08.0 +0.2
	baz=315							
X36A	Centrahoma	93.59	44	P		P		23 20 08.3 +0.3
	baz=316							
Y35A	Marietta	93.67	44	P		P		23 20 08.7 +0.3
	baz=316							
W37B	Quinton	93.70	43	P		P		23 20 08.9 +0.4
	baz=317							
V38A	Canehill	93.74	42	P		P		23 20 08.7 0.0
	baz=318							
T40A	Mansfield	93.81	40	P		P		23 20 08.6 -0.4
	baz=319							
U39A	Green Forest	93.86	41	P		P		23 20 09.3 0.0
	baz=318							
Z35A	Perchaven, San	93.95	45	P		P		23 20 10.3 +0.5
	baz=316							
134A	White-Moore Ra	94.00	46	P		P		23 20 10.5 +0.5
	baz=315							
V39A	Pettigrew	94.18	41	P		P		23 20 10.7 -0.1
	baz=318							
U40A	Yellville	94.22	40	P		P		23 20 11.3 +0.3
	baz=318							
W38A	Poteau	94.26	42	P		P		23 20 11.5 +0.4
	baz=317							
333A	Richland Sprin	94.33	47	P		P		23 20 11.9 +0.4
	baz=314							
X38A	Whitesboro	94.38	43	P		P		23 20 12.3 +0.6
	baz=317							
Z36A	Blue Ridge	94.47	45	P		P		23 20 12.4 +0.3
	baz=316							
W39A	Magazine	94.58	42	P		P		23 20 12.7 +0.1
	baz=318							
433A	Art	94.66	48	P		P		23 20 13.1 0.0
	baz=314							
334A	Lometa	94.78	47	P		P		23 20 13.7 +0.1
	baz=315							
WHTX	Lake Whitney,	94.78	46	P		P		23 20 14.2 +0.7
	baz=315							
X39A	Fountain Ranch	94.90	42	P		P		23 20 14.4 +0.4
	baz=318							
W40A	Ferguson Farm,	94.97	41	P		P		23 20 14.3 0.0
	baz=318							
434A	Burnet	95.12	47	P		P		23 20 15.2 0.0
	baz=315							
MIAR	Mount Ida	95.17	42	P		P		23 20 15.6 +0.4
	baz=318							
MIAR	Mount Ida	95.17	42	*e*P		P		23 20 16.0 +0.7
MIAR				pmax		pmax		
	comp=Z,11nm,1.0s							
MIAR	Mount Ida	95.17	42	*e*P		P		23 20 16.0 +0.7
	comp=Z,11nm,1.0s							
335A	Moody	95.30	47	P		P		23 20 16.2 +0.3
	baz=315							
Y39A	Lockesburg	95.33	43	P		P		23 20 16.2 +0.3
	baz=318							
W41A	Tony Mavity, V	95.43	41	P		P		23 20 16.4 0.0
	baz=319							
W41B	Gary Mavity, V	95.43	41	P		P		23 20 16.5 +0.1
	baz=319							
633A	Saathoff Ranch	95.50	49	P		P		23 20 17.6 +0.7
	baz=314							
534A	Blanco	95.54	48	P		P		23 20 17.5 +0.4
	baz=315							
832A	Faith Ranch, C	95.81	50	P		P		23 20 18.9 +0.5
	baz=314							
933A	Laredo	96.72	50	P		P		23 20 23.3 +0.9
	baz=314							
KEST	Kesra	96.74	322	P		P		23 20 22.6 +0.2
	comp=Z,2.3nm,0.9s,baz=109,slow=3.3,SNR=5.4							
KEST	Kesra	96.74	322	*e*P		P		23 20 22.6 +0.2
	comp=Z,46nm,1.8s							
736A	Circle Diamond	97.17	48	P		Pdif		23 20 25.7 +1.2
	baz=315							
Y45A	Yeager Farm, C	97.87	40	P		Pdif		23 20 27.8 +0.2
	baz=320							
Y46A	Houston	98.22	39	P		P		23 20 28.3 -0.8
	baz=321							
N59A	State Game Lan	98.35	27	P		P		23 20 29.2 -0.3
	baz=331							
147A	Livingston	99.47	40	Pdiff		Pdif		23 20 34.6 -0.1
	baz=321							
248A	Dixon Mills	100.20	40	Pdiff		Pdif		23 20 37.7 -0.2
	baz=321							
546A	Slidell	100.55	42	Pdiff		Pdif		23 20 38.9 -0.7
	baz=320							
447A	Lucedale	100.71	41	Pdiff		Pdif		23 20 40.4 +0.2
	baz=321							
KMSC	Kings Mountain	100.93	34	Pdiff		Pdif		23 20 41.1 -0.1
	baz=326							
TOA1	Torodi Ar. Sit	118.65	313	*e*PKPdf		PKPdf		23 25 38.2 -1.7
TOA1				*e*PKKPbc		PKKPbc		23 35 56.5 +1.3
TOA0	Torodi Ar. Sit	118.65	313	*e*PKPdf		PKPdf		23 25 39.3 -0.6
TORD	Torodi Ar. Bea	118.65	313	PKP		PKPdf		23 25 38.2 -1.7
	comp=Z,2.0nm,0.6s,baz=30,slow=1.6,SNR=31							
TORD				PKKPbc		PKKPbc		23 35 56.5 +1.3
	comp=Z,1.4nm,0.9s,baz=220,slow=3.4,SNR=11							
LBTB	Lobatse	123.23	260	*e*PKIKP		PKPdf		23 25 48.8 +0.3
LBTB	Lobatse	123.23	260	*e*PKPdf		PKPdf		23 25 48.8 +0.3
BOSA	Boshof	124.99	257	PKP		PKPdf		23 25 50.8 -1.0
	comp=Z,3.7nm,0.7s,baz=32,slow=1.4,SNR=8.5							
DBIC	Dimbokro	127.69	314	PKP		PKPdf		23 25 56.6 -0.7
	comp=Z,1.8nm,0.5s,baz=45,slow=4.1,SNR=8.9							
SDV	Santo Domingo	128.22	40	PKP		PKPdf		23 25 58.1 -0.4
	comp=Z,8.5nm,0.4s,baz=268,slow=2.6,SNR=5.8							
PTGA	Pitinga	141.83	34	*e*PKPpre		PKPpre		23 26 18.1
SAML	Samuel	147.03	46	*e*PKPdf		PKPdf		23 26 33.3 +0.7
LPAZ	La Paz	149.00	62	PKP		PKPdf		23 26 34.5 -2.0
	comp=Z,3.6nm,0.8s,baz=339,slow=6.0,SNR=3.6							
LPAZ				PKPbc		PKPbc		23 26 41.5 +0.8
	comp=Z,23nm,0.7s,baz=9.2,slow=1.7,SNR=51							
PB11	IPOC Station P	149.94	69	*e*PKPdf		PKPdf		23 26 38.2 +0.9
PB01	IPOC Station P	150.78	71	*e*PKPdf		PKPdf		23 26 39.5 +1.0
LCO	Las Campanas	153.25	88	*e*PKPdf		PKPdf		23 26 43.4 +1.1
SIV	San Ignacio	153.72	52	PKP		PKPdf		23 26 41.2 -1.7
	comp=Z,3.3nm,0.8s,baz=26,slow=1.1,SNR=5.2							
SIV				PKPbc		PKPbc		23 26 50.2 -0.7
	comp=Z,6.5nm,0.7s,baz=275,slow=2.7,SNR=8.5							
PLCA	Paso Flores	154.78	114	PKPbc		PKPbc		23 26 52.4 -0.1
	comp=Z,3.6nm,1.0s,baz=301,slow=1.4,SNR=6.4							

WEL 19 23:13:05.8±0.1, 43°56S×172°81E, h8km, ML3.8/14, 5C-3D, Error ellipse: s-maj=1.4km s-min=0.6km az=90.0, South Island

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CRLZ	Canterbury Las	0.14	264	⇑PG	Pg	23 13 08.7	0.0
CRLZ				SG	Sg	23 13 10.5	-0.1
CRLZ				AML	AML	23 13 11.0	
MQZ	McQueen's Vall	0.18	218	⇑PG	Pg	23 13 09.7	+0.1
MQZ				SG	Sg	23 13 12.5	+0.4
MQZ				SG		23 13 12.6	
MQZ				AML	AML	23 13 12.7	
OXZ	Oxford	0.61	293	⇓P*	Pg	23 13 17.2	-0.3
LTZ	Lake Taylor	0.87	333	⇑P*	Pg	23 13 22.5	-0.1
LTZ				S*	Sg	23 13 34.5	+0.6
LTZ				AML	AML	23 13 35.2	
RPZ	Rata Peaks	1.28	263	⇓P*	Pn	23 13 28.5	-1.6
RPZ				AML	AML	23 13 49.8	
RPZ				AML	AML	23 13 58.4	
INZ	Inchbonnie	1.30	310	P

JCZ	**Jackson Bay**	**2.96**	**259**	PN	Pn	23 13 52.6	-0.6		
JCZ				AML	AML	23 14 50.8			
JCZ				AML	AML	23 14 54.5			
WKZ	**Wanaka**	**3.00**	**244**	PN	Pn	23 13 52.8	-1.0		
WKZ				AML	AML	23 14 46.9			
WKZ				AML	AML	23 14 48.1			
EAZ	**Earnscleugh**	**3.01**	**235**	PN	Pn	23 13 52.6	-1.3		
EAZ				AML	AML	23 14 43.3			
EAZ				AML	AML	23 14 45.1			
KIW	**Kapiti Island**	**3.12**	**31**	PN	Pn	23 13 53.3	-2.0		
MTW	**Mount Morrison**	**3.12**	**41**	PN	Pn	23 13 52.5	-2.9		
OGWZ	**Otaki Gorge**	**3.26**	**33**	PN	Pn	23 13 55.0	-2.3		
TUZ	**Tuapeka**	**3.29**	**222**	PN	Pn	23 13 56.8	-0.9		
TUZ				AML	AML	23 14 55.9			
TUZ				AML	AML	23 15 03.4			
MRZ	**Mangatainoka R**	**3.56**	**36**	PN	Pn	23 13 58.8	-2.6		
BFZ	**Birch Farm**	**3.85**	**43**	PN	Pn	23 14 02.2	-3.2		
SYZ	**Scrubby Hill**	**3.95**	**220**	PN	Pn	23 14 06.4	-0.4		

MEX 19 23:18:16.9±0.4, 15°00'N×92°79'W, h89km±7km, **MD3.8, Mexico-Guatemala border region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PCIG		**0.81**	**329**	*e*P	Pn	23 18 33.3	-1.2
PCIG				*e*S	Sn	23 18 45.8	-1.8
CCIG	**Comitan**	**1.42**	**26**	*i* P	Pn	23 18 40.5	-1.3
CCIG				*i* S	Sn	23 18 59.2	-1.3

SJA 19 23:19:57.0±0.6, 31°37S×68°89W, h107km±2km, **ML2.7, MW3.5, San Juan Province**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RTLL	**Cerro Villicun**	**0.36**	**83**	*i* P	Pn	23 20 13.4	+0.7
RTLL				*i* S	Sn	23 20 25.4	+0.9
RTLS	**Leoncito**	**0.55**	**219**	*i* P	Pn	23 20 14.9	+0.7
RTLS				*i* S	Sn	23 20 28.6	+1.5
AMOG	**MOGNA**	**0.55**	**39**	*i* P	Pn	23 20 14.9	+1.0
RTCV	**Cerro Valdivia**	**0.57**	**148**	*i* P	Pn	23 20 14.6	+0.5
RTCV				*i* S	Sn	23 20 27.9	+1.0
AUSP	**Uspallata**	**0.95**	**206**	*i* P	Pn	23 20 19.0	+1.3
AUSP				*i* S	Sn	23 20 35.2	+1.9
ASAL	**Salagasta**	**1.22**	**178**	*i* P	Pn	23 20 21.2	+0.8
AVFE	**Valle Fertil**	**1.42**	**60**	*i* P	Pn	23 20 24.2	+1.4
AVFE				*i* S	Sn	23 20 43.1	+0.8
AVFE	comp=Z,162nm,0.3s			IAML		23 20 44.7	
ARCO	**CERRO ARCO**	**1.47**	**181**	*i* P	Pn	23 20 24.3	+0.9
ARCO				*i* S	Sn	23 20 44.5	+1.1
ARCO	comp=Z,51nm,0.3s			IAML		23 20 50.9	
AAGR	**Agrelo**	**1.71**	**178**	*i* P	Pn	23 20 27.6	+1.3
ROC1	**El Roble**	**2.41**	**228**	*i* P	Pn	23 20 36.4	+1.1
ROC1				*i* S	Sn	23 21 05.9	+1.2
VCA	**Vinchina**	**2.69**	**13**	*i* P	Pn	23 20 40.2	+1.2
VCA	comp=Z,25nm,0.2s			IAML		23 21 17.4	
CYA	**Choya**	**3.97**	**43**	*i* P	Pn	23 20 56.9	+1.0

IDC **19** *23:21:24.9±3.0, 15°.98S×90°.75W, h0km, mb3.8/6, mb1 4.1/6, mb1mx3.9/26, mbtmp3.8/6, MS3.1/1, Ms1 3.1/1, ms1mx2.7/21, Error ellipse: s-maj=97.2km s-min=31.6km az=32.0*

ISC 19 23:21:25.8±3.0, 16°.1S±0°.6×90°.8W±0°.4, h10km, **n9**, σ0°.79/8, **mb3.9**/6, **Southeastcentral Pacific Ocean**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ATAH	**Atahualpa**	**15.07**	**55**	LR	LR	23 29 15.8	
	comp=Z,77nm,19.3s,baz=221,slow=32						
LPAZ	**La Paz**	**21.79**	**94**	P	**P**	**23 26 19.5**	**+0.7**
	1.7nm,0.8s,baz=273,slow=10,SNR=5.6						
TXAR	**Lajitas Array**	**46.83**	**345**	P	**P**	**23 29 57.2**	**+1.1**
	0.7nm,0.8s,baz=168,slow=8.8,SNR=5.0						
NVAR	**Mina Array Bea**	**60.04**	**335**	P	**P**	**23 31 33.6**	**+0.3**
	1.6nm,0.8s,baz=163,slow=8.1,SNR=11						
PDAR	**Pinedale Array**	**61.05**	**344**	P	**P**	**23 31 39.8**	**-0.3**
	0.9nm,0.8s,baz=163,slow=5.7,SNR=7.8						
SCHQ	**Schefferville**	**73.53**	**14**	P	**P**	**23 32 57.8**	**-0.9**
	2.2nm,0.8s,baz=186,slow=5.3,SNR=5.9						
YKA	**Yellowknife Ar**	**80.53**	**349**	P	**P**	**23 33 37.5**	**-0.3**
	0.7nm,1.0s,baz=152,slow=5.3,SNR=6.3						
GEYT	**Alibeck**	**145.06**	**45**	PKP	**PKPbc**	**23 41 02.7**	**-0.7**
	1.8nm,0.8s,baz=321,slow=1.8,SNR=6.2						
SONM	**Songino Array**	**145.31**	**339**	PKPbc	**PKPdf**	**23 41 04.3**	**+0.2**
	1.3nm,0.9s,baz=35,slow=5.3,SNR=2.9						

IDC **19** *23:29:09.7±0.4, 44°.32S×15°.96W, h0km, mb4.8/18, mb1 4.8/18, mb1mx4.8/23, mbtmp4.8/18, MS5.1/14, Ms1 5.1/14, ms1mx5.1/14, Error ellipse: s-maj=17.6km s-min=12.5km az=170.0*

ISCJB **19** *23:29:11.2±0.2, 44°.52S±0°.05×16°.21W±0°.06, h10km, mb5.3/68, MS5.1/183, Error ellipse: s-maj=7.1km s-min=5.6km az=144.7*

MOS **19** *23:29:11.9±1.2, 44°.55S×15°.67W, h11km, mb5.6/24, MS5.1/30, Error ellipse: s-maj=18.8km s-min=11.3km az=80.2*

NEIC **19** *23:29:13.0±0.4, 44°.47S×15°.85W, h16km±2km, mb5.6/39, MS5.2/147, MW5.4, Error ellipse: s-maj=10.0km s-min=6.8km az=170.0*

BJI **19** *23:29:13.2, 44°.40S×16°.10W, h17km, mB5.5/20, Ms5.5/22, Ms7 5.3/23*

GCMT **19** *23:29:13.0±0.1, 44°.58S×15°.71W, h12km, MW5.5/126, Moment Tensor Solution. s85,c142; s126,c315; Duration: 1s3 Moment tensor: Scale 10^{17}Nm; M_{rr}-1.97±.02; $M_{\theta\theta}$0.28±.02; $M_{\phi\phi}$1.68±.02; $M_{r\theta}$0.11±.06; $M_{\theta\phi}$-0.47±.02; $M_{r\phi}$0.24±.05; Best double couple: $M_0$1.91400×10^{17} NP1:ϕ_s168.00000°, δ48.00000°, λ-84.00000°. NP2:ϕ_s338.00000°, δ42.00000°, λ-97.00000°. Principal axes: T 1.8340, Plg3.0000°, Azm253.0000°; N 0.1530, Plg5.0000°, Azm344.0000°; P -1.9940, Plg84.0000°, Azm131.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface/mantle waves, cutoff=50s.*

NEIC **19** *23:29:14.0±0.0, 44°.41S×15°.86W, h16km, Moment Tensor Solution. s7 Moment tensor: Scale 10^{17}Nm; M_{rr}-1.43; $M_{\theta\theta}$0.50; $M_{\phi\phi}$0.93; $M_{r\theta}$-0.07; $M_{\theta\phi}$-0.60; $M_{r\phi}$0.50; Best double couple: $M_0$1.50000×10^{17} NP1:ϕ_s153.00000°, δ54.00000°, λ-80.00000°. NP2:ϕ_s317.00000°, δ37.00000°, λ-103.00000°. Principal axes: T 1.4300, Plg9.0000°, Azm236.0000°; N 0.1000, Plg7.0000°, Azm327.0000°; P -1.5300, Plg78.0000°, Azm97.0000°;*

ISC 19 23:29:13.0±0.7, 44°.39S±0°.06×16°.02W±0°.06, h14km±3km, **n581**, σ1s87/458, **mb5.4**/70, **MS5.2**/183, **5C-3D, Southern Mid-Atlantic Ridge**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
H09W1	**TRISTAN DA CUN**	**7.80**	**22**	T	T	23 39 03.2	
	SNR=13						
HOPE	**Hope Point**	**16.55**	**226**	*e*Pn	**Pn**	**23 33 02.1**	**-2.3**
	364nm,1.1s						
VNA1	**Neumayer--Stat**	**26.61**	**174**	P	**P**	**23 34 50.5**	**0.0**
VNA2	**Neumayer--Watz**	**26.95**	**174**	P	**P**	**23 34 52.6**	**-0.9**
	baz=343,slow=12						
VNA3	**Neumayer Olymp**	**27.11**	**175**	P	**P**	**23 34 53.9**	**-1.1**
SNAA	**Sanae**	**28.09**	**171**	P	**P**	**23 35 03.5**	**-0.3**
SNAA	**Sanae**	**28.09**	**171**	*c* P	**P**	**23 35 03.8**	**0.0**
SNAA	**Sanae**	**28.09**	**171**	*e*P	**P**	**23 35 03.4**	**-0.5**
	4μm,1.7s						
EFI	**East Falkland**	**28.72**	**240**	PFAKE		23 35 20.0	+11
EFI				LR	LR		
	comp=Z,9μm,22.0s						
SHEL	**Horse Pasture**	**29.65**	**20**	PFAKE		23 35 30.0	+12
SHEL				LR	LR		
	comp=Z,2μm,19.0s						
NVL	**N'lazarevskaya**	**29.79**	**162**	*e*P	**P**	**23 35 20.4**	**+1.6**
NVL				*e**SP	**sP**	**23 35 24.8**	**-0.1**
NVL				*e*		23 36 15.1	
NVL				*e*S	**S**	**23 40 16.7**	**+2.2**
SUR	**Sutherland**	**31.01**	**80**	PFAKE		23 35 40.0	+10
SUR				LR	LR		
	comp=Z,8μm,21.0s						
SPB	**Sao Paulo**	**32.99**	**299**	PFAKE		23 36 00.0	+13
SPB				LR	LR		
	comp=Z,4μm,20.0s						
PMSA	**Palmer Station**	**33.35**	**215**	PFAKE		23 36 00.0	+10
PMSA				LR	LR		
	comp=Z,2μm,22.0s						
USHA	**Ushuaia**	**34.75**	**234**	P	**P**	**23 36 01.8**	**-0.7**
	comp=Z,150nm,1.2s,baz=76,slow=12,SNR=3.7						
TRQA	**Tornquist**	**34.78**	**264**	*e*P	**P**	**23 36 03.5**	**+0.6**
	comp=Z,42nm,1.3s						
TRQA				*e*PcP	**PcP**	**23 38 41.9**	**+5.7**
TRQA				LR	LR		
	comp=Z,5μm,21.0s						
H10S2	**ASCENSION HYDR**	**35.32**	**2**	T	T	00 13 27.9	
	baz=182,slow=75,SNR=141						
H10S3	**ASCENSION HYDR**	**35.32**	**2**	T	T	00 13 28.4	
	baz=182,slow=75,SNR=119						
H10S1	**ASCENSION HYDR**	**35.34**	**2**	T	T	00 13 29.3	
	baz=182,slow=75,SNR=150						
BOSA	**Boshof**	**36.30**	**78**	P	**P**	**23 36 14.1**	**-2.1**
	comp=Z,7.9nm,1.1s,baz=243,slow=9.3,SNR=6.1						
BOSA				PcP	**PcP**	**23 38 39.5**	**-1.4**
	comp=Z,18nm,1.2s,baz=178,slow=4.3,SNR=5.6						
BOSA				LR	LR	23 47 38.8	
	comp=Z,2μm,21.3s,baz=226,slow=31						
BOSA	**Boshof**	**36.30**	**78**	*e*P	**P**	**23 36 16.2**	**0.0**
BOSA				*e*		23 38 41.0	
BOSA				pmax	pmax		
	comp=Z,38nm,1.3s						
BOSA	**Boshof**	**36.30**	**78**	*e*P	**P**	**23 36 14.1**	**-2.1**
BOSA				*e*PcP	**PcP**	**23 38 41.0**	**+0.1**
ASCN	**Ascension**	**36.35**	**3**	PFAKE		23 36 30.0	+14
ASCN				LR	LR		
	comp=Z,2μm,19.0s						
H10N1	**ASCENSION HYDR**	**36.43**	**3**	T	T	00 14 48.9	
	baz=189,slow=78,SNR=9.8						
H10N3	**ASCENSION HYDR**	**36.43**	**3**	T	T	00 14 51.8	
	baz=189,slow=78,SNR=83						
H10N2	**ASCENSION HYDR**	**36.45**	**3**	T	T	00 14 52.9	
	baz=189,slow=78,SNR=36						
SYO	**Syowa Base**	**37.23**	**151**	⇑*e*P	P	23 36 18.0	-5.5
SYO	**Syowa Base**	**37.23**	**151**	⇓*i*X	**P**	**23 36 20.4**	**-3.1**
SYO	**Syowa Base**	**37.23**	**151**	⇓*i*sP	sP	23 36 28.0	-1.6
SYO	**Syowa Base**	**37.23**	**151**	⇓*i*PnPn	PnPn	23 37 41.2	-7.4
TSUM	**Tsumeb**	**37.60**	**59**	P	**P**	**23 36 25.1**	**-2.2**
	comp=Z,8.4nm,1.1s,baz=224,slow=9.3,SNR=6.9						
TSUM	**Tsumeb**	**37.60**	**59**	*e*P	**P**	**23 36 26.7**	**-0.6**
	comp=Z,26nm,1.3s						
TSUM				LR	LR		
	comp=Z,4μm,22.0s						
CPUP	**Villa Florida**	**37.74**	**285**	P	**P**	**23 36 26.9**	**-1.4**
	comp=Z,18nm,1.0s,baz=117,slow=6.9,SNR=20						
CPUP				LR	LR	23 51 37.3	
	comp=Z,3μm,18.0s,baz=142,slow=36						
CPUP	**Villa Florida**	**37.74**	**285**	*e*P	**P**	**23 36 27.8**	**-0.5**
CPUP				*e*		23 38 51.2	
CPUP	**Villa Florida**	**37.74**	**285**	*e*P	**P**	**23 36 26.9**	**-1.4**
CPUP				*e*PcP	**PcP**	**23 38 51.1**	**+6.0**
LBTB	**Lobatse**	**38.79**	**74**	P	**P**	**23 36 35.9**	**-1.4**
	comp=Z,9.5nm,1.0s,baz=247,slow=7.4,SNR=8.6						
LBTB				PcP	**PcP**	**23 38 47.5**	**-1.1**
	comp=Z,15nm,1.2s,baz=347,slow=5.8,SNR=3.7						
LBTB	**Lobatse**	**38.79**	**74**	*e*P	**P**	**23 36 36.2**	**-1.1**
LBTB				*e*		23 38 49.8	
LBTB				pmax	pmax		
	comp=Z,50nm,1.3s						
LBTB	**Lobatse**	**38.79**	**74**	*e*P	**P**	**23 36 35.9**	**-1.4**
	comp=Z,50nm,1.3s						
LBTB				*e*PcP	**PcP**	**23 38 47.5**	**-1.1**
PLCA	**Paso Flores**	**39.71**	**256**	P	**P**	**23 36 44.4**	**-0.4**
	comp=Z,7.4nm,1.0s,baz=142,slow=6.4,SNR=11						
PLCA				LR	LR	23 50 44.8	
	comp=Z,5μm,21.5s,baz=150,slow=33						
PLCA	**Paso Flores**	**39.71**	**256**	*e*P	**P**	**23 36 45.9**	**+1.1**
PLCA				pmax	pmax		
	comp=Z,62nm,1.6s						
PLCA	**Paso Flores**	**39.71**	**256**	*e*P	**P**	**23 36 44.4**	**-0.4**
	comp=Z,62nm,1.6s						
RCBR	**Riachuelo**	**42.18**	**330**	PFAKE		23 37 20.0	+15
RCBR				LR	LR		
	comp=Z,2μm,20.0s						
ASAL	**Salagasta**	**42.31**	**268**	*i* P	**P**	**23 37 06.3**	**-0.1**
AUSP	**Uspallata**	**42.90**	**268**	*i* P	**P**	**23 37 10.5**	**-0.9**
AMOG	**MOGNA**	**42.96**	**270**	*i* P	**P**	**23 37 10.3**	**-1.3**
RTLS	**Leoncito**	**43.07**	**268**	*i* P	**P**	**23 37 12.3**	**-0.4**
AHML	**Horco Molle**	**43.09**	**277**	*i* P	**P**	**23 37 11.4**	**-1.2**
AHML				*i* P	**pP**	**23 37 11.7**	**-5.4**
ROC1	**El Roble**	**43.67**	**266**	*i* P	**P**	**23 37 16.5**	**-1.0**
ROC1	**El Roble**	**43.67**	**266**	*e*P	**P**	**23 37 19.0**	**+1.5**
	comp=Z,33nm,1.0s						
AGUA	**GUANDACOL**	**43.77**	**272**	*i* P	**P**	**23 37 17.9**	**-0.2**
MATP	**Matopo**	**43.84**	**72**	P	**P**	**23 37 16.4**	**-2.4**
	comp=Z,17nm,1.2s,baz=224,slow=8.9,SNR=16						
FSA	**Cafayete**	**43.96**	**277**	*i* P	**P**	**23 37 18.2**	**-1.7**
ALOL	**LOMAS DE OLMED**	**43.98**	**282**	*i* P	**P**	**23 37 20.0**	**+0.1**
AUSP	**Santa Barbara**	**44.23**	**281**	*i* P	**P**	**23 37 20.8**	**-1.2**
AZAP	**Zapla**	**44.48**	**280**	*i* P	**P**	**23 37 22.8**	**-1.3**
LCO	**Las Campanas**	**45.62**	**271**	*e*P	**P**	**23 37 31.9**	**-1.2**
	comp=Z,60nm,1.0s						
LCO				LR	LR		
	comp=Z,3μm,21.0s						
MAW	**Mawson**	**45.82**	**148**	P	**P**	**23 37 33.5**	**-0.4**
	comp=Z,17nm,1.2s,baz=248,slow=5.8,SNR=9.8						
MAW				LR	LR	23 53 14.9	
	comp=Z,1μm,19.7s,baz=260,slow=32						
MAW	**Mawson**	**45.82**	**148**	P	**P**	**23 37 33.5**	**-0.4**
MAW				pmax	pmax		
	comp=Z,53nm,1.4s						
MAW				MLR	MLR		
	comp=Z,1μm,19.7s						
QSPA	**South Pole Qui**	**45.87**	**180**	*e*P	**P**	**23 37 34.4**	**-0.2**
QSPA				LR	LR		
	comp=Z,1μm,20.0s						
YJA	**Yavi**	**46.11**	**282**	*i* P	**P**	**23 37 38.1**	**+0.8**
LSZ	**Lusaka**	**47.27**	**66**	*e*P	**P**	**23 37 45.0**	**-1.0**
LSZ				pmax	pmax		
	comp=Z,73nm,1.4s						
LSZ				MLR	MLR		
	comp=Z,4μm,22.0s						
LSZ	**Lusaka**	**47.27**	**66**	*e*P	**P**	**23 37 45.0**	**-1.0**
	comp=Z,72nm,1.4s						
LSZ				LR	LR		
	comp=Z,4μm,22.0s						
SIV	**San Ignacio**	**47.31**	**292**	P	**P**	**23 37 45.1**	**-1.2**
	comp=Z,15nm,1.0s,baz=152,slow=9.1,SNR=19						
PB04	**IPOC Station P**	**49.28**	**278**	*e*P	**P**	**23 38 01.8**	**+0.2**
	comp=Z,95nm,1.0s						
PB01	**IPOC Station P**	**49.65**	**280**	*e*P	**P**	**23 38 02.9**	**-1.4**
	comp=Z,116nm,1.3s						
PB11	**IPOC Station P**	**50.61**	**281**	*e*P	**P**	**23 38 10.5**	**-1.1**
	comp=Z,41nm,0.9s						
DBIC	**Dimbokro**	**51.81**	**14**	P	**P**	**23 38 18.0**	**-2.4**
	comp=Z,44nm,1.3s,baz=154,slow=12,SNR=11						
DBIC				LR	LR	23 54 35.5	
	comp=Z,1μm,21.5s,baz=162,slow=30						
DBIC	**Dimbokro**	**51.81**	**14**	*e*P	**P**	**23 38 17.0**	**-3.4**
DBIC				pmax	pmax		
	comp=Z,166nm,1.5s						
DBIC	**Dimbokro**	**51.81**	**14**	*e*P	**P**	**23 38 17.0**	**-3.4**
	comp=Z,166nm,1.5s						
LPAZ	**La Paz**	**51.89**	**286**	P	**P**	**23 38 19.2**	**-2.6**
	comp=Z,3.2nm,0.8s,baz=116,slow=7.4,SNR=16						
LPAZ				LR	LR	00 00 25.2	
	comp=Z,5μm,18.6s,baz=124,slow=36						
LPAZ	**La Paz**	**51.89**	**286**	*e*P	**P**	**23 38 19.4**	**-2.5**
LPAZ				pmax	pmax		
	comp=Z,19nm,1.1s						
LPAZ	**La Paz**	**51.89**	**286**	*e*P	**P**	**23 38 19.4**	**-2.5**
	comp=Z,18nm,1.1s						
SAML	**Samuel**	**53.89**	**296**	*e*P	**P**	**23 38 35.1**	**-0.8**
	comp=Z,58nm,1.0s						
SAML				LR	LR		
	comp=Z,4μm,19.0s						
MIR	**Mirnyy**	**56.95**	**153**	*i* P	**P**	**23 38 57.5**	**+0.3**
MIR				pmax	pmax		
	comp=Z,6.0nm,2.0s						
PTGA	**Pitinga**	**58.34**	**305**	*e*P	**P**	**23 39 07.5**	**-0.1**
	comp=Z,65nm,1.3s						
PTGA				LR	LR		
	comp=Z,41μm,22.0s						
VNDA	**Vanda**	**58.36**	**179**	P	**P**	**23 39 05.8**	**-1.2**
	comp=Z,7.5nm,1.1s,baz=195,slow=7.1,SNR=16						
VNDA				LR	LR	00 01 08.2	
	comp=Z,1μm,21.7s,baz=170,slow=33						
VNDA	**Vanda**	**58.36**	**179**	*e*P	**P**	**23 39 06.1**	**-0.9**
VNDA				pmax	pmax		
	comp=Z,80nm,1.8s						
VNDA	**Vanda**	**58.36**	**179**	*e*P	**P**	**23 39 05.8**	**-1.2**
	comp=Z,80nm,1.8s						
TOA0	**Torodi Ar. Sit**	**59.49**	**20**	*e*P	**P**	**23 39 13.4**	**-2.1**
TORD	**Torodi Ar. Bea**	**59.49**	**20**	P	**P**	**23 39 13.0**	**-2.5**
	comp=Z,32nm,1.0s,baz=201,slow=5.7,SNR=50						
TORD				LR	LR	23 59 02.5	
	comp=Z,1μm,21.6s,baz=185,slow=30						
TOA1	**Torodi Ar. Sit**	**59.49**	**20**	*e*P	**P**	**23 39 13.0**	**-2.5**
	comp=Z,141nm,1.4s						
NNA	**Nana**	**60.93**	**282**	PFAKE		23 39 40.0	+14
NNA				LR	LR		
	comp=Z,1μm,20.0s						
RER	**Riviere de l'E**	**62.64**	**93**	PFAKE		23 39 50.0	+13
RER				LR	LR		
	comp=Z,2μm,21.0s						
KMBO	**Kilima Mbogo**	**63.75**	**63**	LR	LR	00 04 20.8	
	comp=Z,3μm,21.1s,baz=186,slow=33						
KMBO	**Kilima Mbogo**	**63.75**	**63**	*e*P	**P**	**23 39 47.3**	**+2.6**
KMBO				pmax	pmax		
	comp=Z,59nm,2.0s						
KMBO				MLR	MLR		
	comp=Z,3μm,20.0s						
KMBO	**Kilima Mbogo**	**63.75**	**63**	*e*P	**P**	**23 39 47.3**	**+2.6**
	comp=Z,59nm,2.0s						
KMBO				LR	LR		
	comp=Z,3μm,20.0s						
KMBO	**Kilima Mbogo**	**63.75**	**63**	P	**P**	**23 39 47.0**	**+2.3**
	SNR=10.0						
MRIV	**Mauritius Mete**	**64.44**	**94**	*e*P	**P**	**23 39 51.6**	**+2.6**
BBGH	**Gun Hill**	**69.59**	**314**	PFAKE		23 40 30.0	+8.4
BBGH				LR	LR		
	comp=Z,2μm,20.0s						
TAM	**Tamanrasset**	**69.70**	**21**	*e*P	**P**	**23 40 20.9**	**-1.4**
TAM				pmax	pmax		
	comp=Z,50nm,1.3s						
TAM				MLR	MLR		
	comp=Z,787nm,22.0s						
TAM	**Tamanrasset**	**69.70**	**21**	*e*P	**P**	**23 40 20.9**	**-1.4**
	comp=Z,50nm,1.3s						
TAM				LR	LR		
	comp=Z,787nm,22.0s						
GRGR	**Grenville**	**69.84**	**312**	PFAKE		23 40 40.0	+17
GRGR				LR	LR		
	comp=Z,649nm,19.0s						
OTAV	**Otavalo**	**70.80**	**290**	*e*P	**P**	**23 40 30.5**	**+0.8**
	comp=Z,107nm,1.6s						
OTAV				LR	LR		
	comp=Z,2μm,20.0s						
OTAV	**Otavalo**	**70.80**	**290**	*e*P	**P**	**23 40 29.6**	**-0.1**
CHIC	**Chingaza**	**70.98**	**297**	*e*P	**P**	**23 40 27.9**	**-2.8**
ROSC	**El Rosal**	**71.52**	**297**	P	**P**	**23 40 34.1**	**+0.2**
	comp=Z,2.4nm,0.3s,baz=124,slow=2.8,SNR=12						
ROSC				LR	LR	00 10 40.1	
	comp=Z,2μm,19.0s,baz=169,slow=35						
ROSC	**El Rosal**	**71.52**	**297**	*e*P	**P**	**23 40 34.1**	**+0.2**
	comp=Z,62nm,1.4s						
ROSC	**El Rosal**	**71.52**	**297**	*e*P	**P**	**23 40 32.5**	**-1.5**
FDF	**Fort de France**	**71.75**	**314**	PFAKE		23 40 50.0	+15
FDF				LR	LR		
	comp=Z,412nm,19.0s						
SDV	**Santo Domingo**	**72.35**	**302**	PFAKE		23 40 50.0	+11
SDV				LR	LR		
	comp=Z,909nm,19.0s						
NORC	**Norcasia**	**72.42**	**297**	*e*P	**P**	**23 40 35.3**	**-3.7**
BRRC	**Barranca, Sant**	**72.87**	**299**	*e*P	**P**	**23 40 38.2**	**-3.3**
HELC	**Santa Helena**	**73.32**	**297**	*e*P	**P**	**23 40 44.2**	**-0.5**
	comp=Z,158nm,1.8s						
HELC	**Santa Helena**	**73.32**	**297**	*e*P	P	23 40 39.8	-4.9
GDHS	**Morne Mazeau,**	**73.36**	**314**	*e*P	**P**	**23 40 46.5**	**+2.1**
	comp=Z,191nm,1.4s						
RPN	**Rapa Nui**	**73.79**	**248**	PFAKE		23 41 00.0	+13
RPN				LR	LR		
	comp=Z,248nm,20.0s						
ANWB	**Willy Bob**	**74.54**	**315**	PFAKE		23 41 00.0	+8.8
ANWB				LR	LR		
	comp=Z,623nm,21.0s						
SABA	**Saba**	**75.25**	**314**	*e*P	**P**	**23 40 59.9**	**+4.6**
	comp=Z,100nm,1.2s						
MOTC	**Monteria, Cord**	**75.38**	**298**	*e*P	P	23 40 49.4	-6.8
HUMP	**Col San Antoni**	**77.06**	**312**	*e*P	**P**	**23 41 08.9**	**+3.3**
	comp=Z,48nm,1.5s						
SJG	**San Juan**	**77.19**	**312**	*e*P	**P**	**23 41 02.5**	**-3.9**
SJG				pmax	pmax		
	comp=Z,39nm,1.3s						
SJG				MLR	MLR		
	comp=Z,909nm,20.0s						
SJG	**San Juan**	**77.19**	**312**	*e*P	**P**	**23 41 02.5**	**-3.9**
	comp=Z,39nm,1.3s						
SJG				LR	LR		
	comp=Z,909nm,20.0s						
PAYG	**Puerto Ayora**	**78.32**	**281**	PFAKE		23 41 20.0	+7.1
PAYG				LR	LR		
	comp=Z,1μm,21.0s						
BCIP	**Isla Barro Col**	**78.35**	**295**	PFAKE		23 41 20.0	+7.1
BCIP				LR	LR		
	comp=Z,1μm,22.0s						
RTC	**Rabat Centre**	**78.45**	**8**	PFAKE		23 41 20.0	+7.0
RTC				LR	LR		
	comp=Z,7μm,20.0s						
SDDR	**Presa de Saban**	**80.73**	**308**	PFAKE		23 41 40.0	+14
SDDR				LR	LR		
	comp=Z,716nm,20.0s						
PVAQ	**Vaqueiros**	**81.76**	**7**	*e*P	**P**	**23 41 31.9**	**+1.1**
	comp=Z,94nm,1.7s						
PVAQ	**Vaqueiros**	**81.76**	**7**	*e*LR	LR	00 08 51.1	
	comp=Z,531nm,20.0s						
JTS	**JuntasAbangare**	**82.54**	**292**	*e*P	**P**	**23 41 36.7**	**+1.2**
JTS				pmax	pmax		
	comp=Z,73nm,1.4s						
JTS				MLR	MLR		
	comp=Z,770nm,20.0s						
JTS	**JuntasAbangare**	**82.54**	**292**	*e*P	**P**	**23 41 36.7**	**+1.2**
	comp=Z,73nm,1.4s						
JTS				LR	LR		
	comp=Z,770nm,20.0s						
PBAR	**Barrancos**	**82.59**	**7**	*e*P	**P**	**23 41 35.5**	**+0.4**
	comp=Z,177nm,1.6s						
GRTK	**Grand Turk**	**82.67**	**310**	PFAKE		23 41 50.0	+14
GRTK				LR	LR		
	comp=Z,853nm,20

PBRG Braganca 86.22 7 *e*P **P 23 41 55.3 +1.8**
comp=Z,60nm,0.9s
PGAV Gavieira, Arco 86.25 6 *e*LR LR 00 10 58.0
comp=Z,571nm,20.0s
VSL Villasalto 86.59 19 PFAKE 23 42 10.0 +15
VSL LR LR
comp=Z,946nm,20.0s
CEL Celeste 87.18 25 PFAKE 23 42 10.0 +12
CEL LR LR
comp=Z,643nm,19.0s
LAST Lasithi 87.69 33 *e*P P 23 42 06.7 +5.9
comp=Z,189nm,1.7s
VALF Valcebollere 87.91 13 *e*P **P 23 42 03.1 +1.3**
VIEF Viey 88.07 12 *e*P **P 23 42 04.0 +1.5**
LARF Larrau 88.08 11 *e*P **P 23 42 04.6 +2.1**
SALF Salau 88.12 13 *e*P **P 23 42 04.6 +1.9**
FILF Fillols 88.15 14 *e*P **P 23 42 04.0 +1.1**
ATE Arette 88.16 11 *e*P **P 23 42 04.9 +2.1**
MELF Melles 88.17 12 *e*P **P 23 42 05.1 +2.2**
REYF Montagne du Re 88.19 11 *e*P **P 23 42 04.9 +1.8**
CARF Carcanieres 88.23 13 *e*P **P 23 42 04.8 +1.5**
LABF Labassere 88.23 12 *e*P **P 23 42 05.1 +1.9**
ORDF Ordiarp 88.25 11 *e*P **P 23 42 04.6 +1.4**
TIP Timpagrande 88.29 25 *e*P **P 23 42 04.6 +1.0**
comp=Z,90nm,1.8s
TIP LR LR
comp=Z,555nm,21.0s
SANT Santorini 88.75 32 PFAKE 23 42 20.0 +14
SANT LR LR
comp=Z,449nm,20.0s
CUC Castrococco 88.76 24 PFAKE 23 42 20.0 +14
CUC LR LR
comp=Z,250nm,19.0s
H01W2 Cape Leeuwin H 89.02 141 T T 01 21 48.4
baz=212,slow=75,SNR=4.5
H01W1 Cape Leeuwin H 89.03 141 T T 01 21 53.1
baz=212,slow=75,SNR=4.7
H01W3 Cape Leeuwin H 89.03 141 T T 01 21 51.3
baz=212,slow=75,SNR=5.5
CALN Calern 90.11 16 *e*P **P 23 42 13.7 +1.6**
REVF Revere 90.19 17 *e*P **P 23 42 13.2 +0.8**
AQU L'Aquila 90.29 21 *e*P **P 23 42 14.1 +1.2**
AQU pmax pmax
comp=Z,91nm,1.6s
AQU MLR MLR
comp=Z,930nm,22.0s
AQU L'Aquila 90.29 21 *e*P **P 23 42 14.1 +1.2**
comp=Z,91nm,1.6s
AQU LR LR
comp=Z,930nm,22.0s
MVIF Mont Vial 90.30 17 *e*P **P 23 42 14.7 +1.7**
LUCF Luceram 90.33 17 *e*P **P 23 42 14.9 +1.8**
OG26 St.-Nazaire-De 90.59 15 *e*P **P 23 42 14.4 +0.1**
CSS Mathiatis 90.81 39 PFAKE 23 42 30.0 +15
CSS LR LR
comp=Z,557nm,20.0s
LBL Lubilhac 90.86 13 *e*P **P 23 42 17.3 +1.8**
SSB Saint Sauveur 91.13 14 *e*P **P 23 42 18.5 +1.8**
SSB *e* 23 45 57.8
SSB pmax pmax
comp=Z,49nm,1.9s
SSB MLR MLR
comp=Z,933nm,19.0s
SSB Saint Sauveur 91.13 14 *e*P **P 23 42 18.5 +1.8**
comp=Z,49nm,1.9s
SSB *e*PP **PP 23 45 57.8 +3.6**
SSB LR LR
comp=Z,933nm,19.0s
TIR Tirane 91.23 26 *e*P **P 23 42 18.7 +1.5**
TIR pmax pmax
comp=Z,127nm,1.6s
TIR MLR MLR
comp=Z,493nm,20.0s
TIR Tirane 91.23 26 *e*P **P 23 42 18.7 +1.5**
comp=Z,127nm,1.6s
TIR LR LR
comp=Z,493nm,20.0s
VLC Villacollemand 91.25 19 PFAKE 23 42 30.0 +13
VLC LR LR
comp=Z,399nm,20.0s
BNI Bardonecchia 91.31 16 PFAKE 23 42 30.0 +12
BNI LR LR
comp=Z,2µm,20.0s
OHR Ohrid 91.32 27 *i* P **P 23 42 19.7 +2.0**
PYM Petit Puy Mans 91.33 13 *e*P **P 23 42 19.5 +1.8**
LBZ Lake Benmore 91.44 184 *e*P **P 23 42 19.7 +1.2**
comp=Z,186nm,1.6s
AGO Saint Agoulin 91.64 13 *e*P **P 23 42 20.1 +1.1**
PLDF La Plantade 91.64 14 *e*P **P 23 42 20.7 +1.6**
TAU Tasmania Unive 91.81 168 PFAKE 23 42 30.0 +10
TAU LR LR
comp=Z,1µm,20.0s
TEIG Tepich 91.97 296 PFAKE 23 42 30.0 +8.8
TEIG LR LR
comp=Z,524nm,20.0s
ISP Isparta 92.02 35 PFAKE 23 42 30.0 +8.9
ISP LR LR
comp=Z,775nm,20.0s
VAY Valandovo 92.09 28 *i* P **P 23 42 21.6 +0.4**
RKT Rikitea 92.72 234 *e*SS SS 23 59 37.5 -3.5
comp=Z,403nm,30.5s
RKT Rikitea 92.72 234 *e*LR LR 00 12 23.1
comp=Z,2µm,31.5s,baz=143
MMB Musomiste 92.72 29 P **P 23 42 23.1 -1.1**
MMB Musomiste 92.72 29 P **P 23 42 23.1 -1.1**
KKB Krupnik 92.75 28 P **P 23 42 24.4 +0.1**
KKB Krupnik 92.75 28 P **P 23 42 24.4 +0.1**
RZN Rozhen 93.15 29 *e*P **P 23 42 24.4 -2.0**
RZN Rozhen 93.15 29 *e*P **P 23 42 24.4 -2.0**
TUE Stuetta 93.22 17 PFAKE 23 42 40.0 +13
TUE LR LR
comp=Z,838nm,21.0s
CEY Cerknica 93.71 21 *e*P **P 23 42 29.3 +0.6**
LJU Ljubljana 94.02 21 *e*P **P 23 42 30.9 +0.9**
FETA Feichten 94.04 18 *i* PcP **P 23 42 33.8 +3.5**
comp=Z,3.4nm,1.0s
DAVA Damuels 94.11 17 *i* P **P 23 42 31.1 +0.6**
comp=Z,4.5nm,0.9s
SNZO South Karori 94.14 188 PFAKE 23 42 40.0 +9.0
SNZO LR LR
comp=Z,515nm,20.0s
ABTA Abfaltersbach 94.19 19 *i* P **P 23 42 32.3 +1.5**
comp=Z,1.1nm,1.7s
MPEP Malo Peshtene 94.30 28 *e*P **P 23 42 30.7 -0.6**
MPEP Malo Peshtene 94.30 28 *e*P **P 23 42 30.7 -0.6**
MYKA Terra Mystica 94.35 20 *i* P **P 23 42 33.4 +1.9**
comp=Z,3.1nm,1.0s
OBKA Obir 94.46 21 *i* P **P 23 42 34.1 +2.0**
comp=Z,6.5nm,1.7s
WTTA Wattenberg 94.47 18 *i* P **P 23 42 33.9 +1.6**
comp=Z,5.7nm,1.1s
RETA Reutte 94.49 18 *i* P **P 23 42 32.0 -0.2**
comp=Z,3.2nm,1.4s
BR231 Keskin MP Arra 94.66 36 *e*P **P 23 42 34.0 +0.7**
ANTO Ankara 94.69 36 *e*P **P 23 42 36.6 +3.2**
ANTO pmax pmax
comp=Z,61nm,1.7s
ANTO MLR MLR
comp=Z,74nm,21.0s
ANTO Ankara 94.69 36 *e*P **P 23 42 36.6 +3.2**
comp=Z,61nm,1.7s
ANTO LR LR
comp=Z,74nm,21.0s
KBA Koelnbreinsper 94.70 20 *i* PcP **P 23 42 36.2 +2.9**
comp=Z,7.2nm,1.9s
SOKA Soboth 94.74 21 *i* P **P 23 42 34.8 +1.4**
comp=Z,7.5nm,1.5s,SNR=8.3
BFO Black Forest 94.78 16 PFAKE 23 42 40.0 +6.5
BFO LR LR
comp=Z,1µm,20.0s
KOGS Kog 94.85 22 *i* P **P 23 42 34.9 +1.1**
BR101 Keskin Array S 94.92 36 *e*P **P 23 42 33.2 -1.3**
BR101 *e*PP **PP 23 46 25.4 +1.2**
BR131 Keskin Array S 94.92 36 *e*P **P 23 42 35.4 +0.8**
BRTR Keskin Array B 94.92 36 P **P 23 42 33.2 -1.3**
comp=Z,3.8nm,1.1s,baz=184,slow=5.8,SNR=14
BRTR PP **PP 23 46 25.4 +1.2**
comp=Z,0.9nm,1.0s,baz=48,slow=2.0,SNR=3.7
BRTR LR LR 00 23 55.9
comp=Z,453nm,19.9s,baz=178,slow=35
BRTR Keskin Array B 94.92 36 *i* P **P 23 42 35.2 +0.7**
BRTR pmax pmax
comp=Z,4.0nm,1.0s
ASHO Ashiyiah 95.09 60 P P 23 42 40.5 +4.9
ASHO P P 23 42 40.5 +4.9

ARSA Arzberg 95.40 21 *i* P **P 23 42 37.8 +1.5**
comp=Z,8.0nm,1.6s
MOA Molln 95.64 20 *i* P **P 23 42 37.7 +0.2**
comp=Z,1.3nm,0.6s
WLF Walferdange 95.65 14 PFAKE 23 42 50.0 +13
WLF LR LR
comp=Z,968nm,20.0s
CONA Conrad Observa 96.11 21 *i* P **P 23 42 41.5 +1.9**
comp=Z,9.7nm,1.4s
GEA0 GERESS Array S 96.43 19 *e*PP PP 23 46 32.2 -3.3
GEC2 GERESS Array S 96.43 19 *e*PP PP 23 46 39.2 +3.6
GERES GERESS Array B 96.43 19 P **P 23 42 40.6 -0.5**
comp=Z,0.1nm,0.3s,baz=288,slow=1.3,SNR=3.7
GERES PP **PP 23 46 38.0 +2.4**
comp=Z,1.5nm,1.1s,baz=223,slow=7.1,SNR=6.3
GERES LR LR 00 21 55.2
comp=Z,417nm,21.1s,baz=197,slow=33
KHC Kasperske Hory 96.67 19 *e*PP PP 23 46 34.3 -3.1
KHC *ex* x 00 00 49.6
KHC AMS AMS 00 20 50.0
comp=Z,900nm,19.3s
NHSC New Hope 96.70 310 PFAKE 23 42 50.0 +7.4
NHSC LR LR
comp=Z,611nm,21.0s
MLR Muntele Rosu 96.92 28 *e*P **P 23 42 43.7 +0.3**
MLR pmax pmax
comp=Z,47nm,1.6s
MLR Muntele Rosu 96.92 28 *e*P **P 23 42 43.7 +0.3**
comp=Z,47nm,1.6s
CNNC Cliffs of the 97.11 313 PFAKE 23 43 00.0 +16
CNNC LR LR
comp=Z,726nm,19.0s
PSZ Piszkesteto 97.20 23 PFAKE 23 43 00.0 +15
PSZ LR LR
comp=Z,452nm,22.0s
COCO West Island 97.24 115 PFAKE 23 43 00.0 +14
COCO LR LR
comp=Z,1µm,19.0s
TREC Trest 97.28 20 AMS AMS 00 21 30.0
comp=Z,600nm,19.6s
VYHS Vyhne 97.42 23 *e*P Pdif 23 42 46.4 +0.9
VYHS pmax pmax
comp=Z,8.0nm,1.6s
VYHS Vyhne 97.42 23 *e*P Pdif 23 42 46.4 +0.9
VYHS *e*PP PP 23 46 27.0 -16
NKC Novy Kostel 97.45 18 AMS AMS 00 24 20.0
comp=Z,700nm,18.9s
GOPC GO Pecny, Ondr 97.69 20 AMS AMS 00 21 20.0
comp=Z,600nm,18.7s
PRU Pruhonice 97.70 19 AMS AMS 00 23 50.0
comp=Z,700nm,20.2s
PRA Prague 97.75 19 AMS AMS 00 23 50.0
comp=Z,800nm,16.9s
KECS Kecovo 97.88 24 *e*P Pdif 23 42 49.3 +1.8
KECS pmax pmax
comp=Z,3.0nm,1.2s
KECS Kecovo 97.88 24 *e*P Pdif 23 42 49.3 +1.8
PVCC Panska Ves 98.21 19 AMS AMS 00 23 00.0
comp=Z,500nm,20.1s
MORC Moravsky Berou 98.25 21 *e*P Pdif 23 42 56.1 +6.9
MORC *e* 23 46 51.7
MORC pmax pmax
comp=Z,123nm,2.0s
MORC Moravsky Berou 98.25 21 *e*P Pdif 23 42 56.1 +6.8
comp=Z,123nm,2.0s
MORC *e*PP **PP 23 46 51.7 +2.1**
KRLC Kraliky 98.33 21 *e*P Pdif 23 42 50.6 +1.0
KRLC Kraliky 98.33 21 *e*P Pdif 23 42 50.6 +1.0
DPC Dobruska-Polom 98.47 20 *e*P Pdif 23 42 52.1 +1.9
DPC AMS AMS 00 25 10.0
comp=Z,700nm,18.1s
DPC Dobruska-Polom 98.47 20 *e*P Pdif 23 42 52.1 +1.9
DPC MLR MLR
comp=Z,700nm,18.1s
UZH Uzhgorod 98.54 25 *e*P Pdif 23 42 51.0 +0.6
UZH *e* 23 42 56.1
BUR08 Bucovina Ar. S 98.56 27 *e*P Pdif 23 42 54.9 +4.1
BUR08 *e*PP PP 23 47 03.0 +11
CLL Collm 98.58 18 *e*Pdif Pdif 23 42 51.0 +0.4
CLL *e*PP **PP 23 46 53.0 +1.0**
comp=Z,21nm,1.8s
CLL *e*SS SS 00 01 07.0 +2.0
CLL *e*SSS SSS 00 04 54.0
CLL LmV 00 22 00.0
comp=Z,300nm,21.5s
CLL Collm 98.58 18 *e*P Pdif 23 42 51.0 +0.4
CLL *e* 23 46 53.0
CLL pmax pmax
comp=Z,21nm,1.8s
CLL MLR MLR
comp=Z,300nm,21.5s
GOGA Godfrey 98.75 309 PFAKE 23 43 00.0 +8.2
GOGA LR LR
comp=Z,591nm,19.0s
KOLS Kolonicke sedl 98.80 24 *e*PP PP 23 46 48.1 -5.6
CBN Corbin Frederi 99.13 316 PFAKE 23 43 00.0 +6.7
CBN LR LR
comp=Z,412nm,19.0s
CAN Canberra 99.50 168 PFAKE 23 43 10.0 +15
CAN LR LR
comp=Z,934nm,22.0s
ESK Eskdalemuir 99.93 7 PFAKE 23 43 10.0 +14
ESK LR LR
comp=Z,673nm,21.0s
BLA Blacksburg 99.94 313 PFAKE 23 43 10.0 +13
BLA LR LR
comp=Z,531nm,20.0s
GNI Garni 100.33 43 *e*P **Pdif 23 42 59.5 +0.6**
GNI pmax pmax
comp=Z,9.0nm,1.0s
GNI Garni 100.33 43 PFAKE 23 43 10.0 +11
GNI LR LR
comp=Z,1µm,19.0s
LRAL Lakeview Retre 100.49 306 *e*PP PP 23 47 12.7 +5.9
ANN Anapa 100.70 36 *i* P **Pdif 23 43 05.0 +4.9**
CPCT Cooper Cave 100.84 309 *e*PP PP 23 47 15.5 +6.0
BINY Binghamton 101.53 319 PFAKE 23 43 20.0 +16
BINY LR LR
comp=Z,487nm,19.0s
NCB Newcomb 102.10 321 PFAKE 23 43 20.0 +14
NCB LR LR
comp=Z,1µm,19.0s
KIV Kislovodsk 102.31 39 PFAKE 23 43 20.0 +12
KIV LR LR
comp=Z,726nm,19.0s
KIEV Kiev 102.52 28 PFAKE 23 43 20.0 +12
KIEV LR LR
comp=Z,301nm,20.0s
AKASG Malin Array Be 102.53 28 *i* P **Pdif 23 43 10.3 +2.1**
LONY Lake Ozonia 102.77 321 PFAKE 23 43 20.0 +11
LONY LR LR
comp=Z,478nm,21.0s
MBWA Marble Bar 103.25 138 PFAKE 23 43 20.0 +7.7
MBWA LR LR
comp=Z,1µm,21.0s
KVTX Kingsville 103.34 295 PFAKE 23 43 20.0 +7.6
KVTX LR LR
comp=Z,643nm,21.0s
ACSO Alum Creek Sta 103.52 314 PFAKE 23 43 20.0 +7.1
ACSO LR LR
comp=Z,359nm,20.0s
NATX Nacogdoches 104.18 301 PFAKE 23 43 30.0 +14
NATX LR LR
comp=Z,436nm,20.0s
WHAR Wooly Hollow 105.17 305 *e*PP PP 23 47 42.8 +0.9
PPT2 Papeete2 105.18 226 *e*PS PS 23 57 02.5 +6.3
comp=Z,212nm,25.0s
PPT2 *e*SS SS 00 02 40.9 +5.3
comp=Z,377nm,26.8s
PPT2 Papeete2 105.18 226 *e*LR LR 00 17 55.2
comp=Z,2µm,31.0s,baz=148
AAM Ann Arbor 105.38 315 PFAKE 23 47 50.0
AAM LR LR
comp=Z,572nm,19.0s
MIAR Mount Ida 105.43 303 PFAKE 23 47 50.0
MIAR LR LR
comp=Z,572nm,20.0s
KONO Kongsberg 105.80 13 PFAKE 23 47 50.0
KONO LR LR
comp=Z,513nm,20.0s
JCT Junction City 106.55 296 *e*PP PP 23 47 56.3 +4.1
JCT LR LR
comp=Z,255nm,19.0s
TAOE Nuku Hiva Isla 106.91 239 *e*SS SS 00 03 04.8 +4.9
comp=Z,272nm,26.4s

TAOE Nuku Hiva Isla 106.91 239 *e*LR LR 00 18 55.6
comp=Z,2µm,31.4s
LTX Lajitas 108.31 293 *e*PP PP 23 48 05.9 +0.7
LTX *e*PKKPab **PKKPab 23 59 03.7 +0.7**
TX31 Lajitas Ar. Si 108.31 293 *e*PP PP 23 48 05.6 +0.4
TXAR Lajitas Array 108.31 293 PP PP 23 48 05.9 +0.7
comp=Z,0.3nm,0.7s,baz=140,slow=6.5,SNR=4.9
TXAR PKKP **PKKPab 23 59 03.7 +0.7**
comp=Z,0.8nm,0.9s,baz=320,slow=3.3,SNR=3.6
OBN Obninsk 108.68 29 PFAKE 23 47 50.0
OBN LR LR
comp=Z,479nm,19.0s
WMOK Wichita Mounta 108.73 300 PFAKE 23 47 50.0
WMOK LR LR
comp=Z,692nm,19.0s
JFWS Jewell Farm 109.26 312 PFAKE 23 47 50.0
JFWS LR LR
comp=Z,668nm,19.0s
SCIA State Center 110.20 309 PFAKE 23 48 00.0
SCIA LR LR
comp=Z,648nm,20.0s
KSU1 Kansas State U 110.29 305 PFAKE 23 48 00.0
KSU1 LR LR
comp=Z,722nm,22.0s
WR1 Warramunga Arr 110.48 150 *e*PP PP 23 48 22.1 +2.5
WR1 *e*PKKPbc **PKKPbc 23 58 50.0 +6.6**
WRA Warramunga Arr 110.48 150 PP PP 23 48 22.1 +2.5
comp=Z,1.6nm,1.2s,baz=208,slow=5.1,SNR=5.3
WRA PKKPbc **PKKPbc 23 58 50.0 +6.6**
comp=Z,0.6nm,0.4s,baz=28,slow=4.0,SNR=4.8
WRAB Tennant Creek 110.49 150 PFAKE 23 48 00.0
WRAB LR LR
comp=Z,560nm,21.0s
FIA0 FINESS Array S 110.84 20 *e*PP PP 23 48 21.2 -1.6
FINES FINESS Array B 110.84 20 PP PP 23 48 21.2 -1.6
comp=Z,3.0nm,1.0s,baz=262,slow=5.8,SNR=5.4
FIA1 FINESS Array S 110.84 20 *e*PP PP 23 48 21.3 -1.5
COWI Conover 110.85 315 PFAKE 23 48 00.0
COWI LR LR
comp=Z,612nm,20.0s
MNTX Cornudas Mount 110.96 294 PFAKE 23 48 00.0
MNTX LR LR
comp=Z,558nm,21.0s
CBKS Cedar Bluff 111.96 303 PFAKE 23 48 00.0
CBKS LR LR
comp=Z,836nm,21.0s
KULM Kulim 112.60 105 PFAKE 23 48 00.0
KULM LR LR
comp=Z,547nm,20.0s
EYMN Ely 113.28 315 PFAKE 23 48 00.0
EYMN LR LR
comp=Z,505nm,21.0s
ECSD EROS Data Cent 113.29 309 PFAKE 23 48 00.0
ECSD LR LR
comp=Z,595nm,22.0s
BNM Barren Site 113.32 295 *e*PP PP 23 48 40.0 -1.4
ANMO Albuquerque 113.71 296 *e*PP PP 23 48 43.1 -1.0
ANMO LR LR
comp=Z,469nm,20.0s
LAZ Ladron 113.81 295 *e*PP PP 23 48 45.4 +0.5
CTAO Charters Tower 113.82 162 PFAKE 23 48 00.0
CTAO LR LR
comp=Z,564nm,19.0s
OGNE Ogallala 114.67 304 PFAKE 23 48 00.0 +7.6
OGNE LR LR
comp=Z,622nm,21.0s
SDCO Great Sand Dun 114.83 299 *e*PP PP 23 48 55.5 +3.4
SDCO LR LR
comp=Z,611nm,22.0s
TUC Tucson 114.92 291 PFAKE 23 48 00.0 +6.8
TUC LR LR
comp=Z,469nm,22.0s
S22A 4UR Ranch, Cre 115.66 298 *e*PP PP 23 48 58.9 +0.9
AGMN Agassiz Nation 115.76 313 PFAKE 23 48 10.0 +16
AGMN LR LR
comp=Z,584nm,21.0s
ISCO Idaho Springs 116.14 301 *e*PKIKP **PKPdf 23 47 57.4 +1.8**
ISCO *e* 23 49 00.3
ISCO MLR MLR
comp=Z,738nm,21.0s
ISCO Idaho Springs 116.14 301 *e*PKPdf **PKPdf 23 47 57.4 +1.8**
ISCO *e*PP **PP 23 49 00.3 -1.1**
ISCO LR LR
comp=Z,738nm,21.0s
KSM Kuching 116.25 116 PFAKE 23 48 10.0 +14
KSM LR LR
comp=Z,461nm,20.0s
KKAR Karatay Array 116.29 55 *e*PP PP 23 49 02.3 +0.3
MVCO Mesa Verde 116.40 297 PFAKE 23 48 10.0 +14
MVCO LR LR
comp=Z,649nm,19.0s
SMCO Snowmass 116.61 300 *e*PP PP 23 49 06.2 +1.3
X16A Lo Mia Camp, P 116.63 293 *e*PP PP 23 49 04.6 -0.1
KAPI Kappang 116.82 129 PFAKE 23 48 10.0 +13
KAPI LR LR
comp=Z,273nm,19.0s
WUAZ Wupatki 117.25 294 *e*PP PP 23 49 11.1 +2.1
WUAZ LR LR
comp=Z,385nm,20.0s
KSH Kashi 117.46 61 PKP **PKPdf 23 47 57.8 -0.1**
KSH PKS **PKSdf 23 51 31.8 -2.8**
KSH SKS **SKSdf 23 55 05.1 -4.4**
KSH SKKS **SKKSac 23 56 07.3 -2.7**
KSH AMB AMB
comp=Z,46nm,5.2s
KSH LR LR
comp=Z,250nm,14.7s
KSH LR LR
comp=Z,400nm,17.4s
KSH LR LR
comp=Z,690nm,20.6s
ARA0 ARCESS Array S 117.63 15 *e*PP PP 23 49 13.7 +2.9
ARCES ARCESS Array B 117.63 15 PP PP 23 49 13.7 +2.9
comp=Z,4.8nm,0.9s,baz=263,slow=2.1,SNR=4.2
APA Apatity 117.70 19 *i*PKIKP **PKPdf 23 47 55.0 -2.3**
RSSD Black Hills 117.76 306 *e*PP PP 23 49 15.1 +2.5
EKS2 Erkin-Say 117.96 57 *e*PKIKP **PKPdf 23 47 58.4 -0.4**
EKS2 MLR MLR
comp=Z,492nm,20.0s
EKS2 Erkin-Say 117.96 57 *e*PKPdf **PKPdf 23 47 58.4 -0.4**
EKS2 LR LR
comp=Z,492nm,20.0s
KEV Kevo 118.11 16 PFAKE 23 48 10.0 +12
KEV LR LR
comp=Z,405nm,21.0s
LVZ Lovozero 118.25 19 PFAKE 23 48 10.0 +12
LVZ LR LR
comp=Z,573nm,19.0s
ARU Arti 118.28 37 PKP **PKPdf 23 47 57.2 -1.5**
comp=Z,0.5nm,0.3s,baz=278,slow=3.6,SNR=4.2
ARU PP **PP 23 49 09.4 -6.1**
comp=Z,0.6nm,0.3s,baz=249,slow=6.7,SNR=4.3
ARU Arti 118.28 37 *i* PKIKP **PKPdf 23 47 59.1 +0.4**
ARU 23 49 13.9
ARU 23 55 11.1
ARU SP SP 23 58 58.9 0.0
ARU MLR MLR
comp=Z,697nm,24.0s
ARU Arti 118.28 37 *e*PKPdf **PKPdf 23 47 57.2 -1.5**
ARU *e*PP **PP 23 49 18.5 +3.0**
ARU LR LR
comp=Z,560nm,21.0s
AAK Ala-Archa 118.37 57 *e*PKIKP **PKPdf 23 47 58.9 -0.7**
AAK MLR MLR
comp=Z,1µm,22.0s
AAK Ala-Archa 118.37 57 *e*PKPdf **PKPdf 23 47 58.9 -0.7**
AAK LR LR
comp=Z,1µm,22.0s
W13A Hualapai Mount 118.66 292 *e*PKPdf **PKPdf 23 48 01.4 +0.9**
BC3 Big Chuckawall 118.86 290 P **PKPdf 23 48 00.2 -0.6**
baz=126
P18A Preston Nutter 118.93 298 *e*PKPdf **PKPdf 23 48 00.4 -0.6**
IRM Iron Mountain 118.94 291 P **PKPdf 23 48 00.2 -0.7**
baz=126
KNB Kanab 119.07 295 *e*PP PP 23 49 19.2 -2.4
TKM2 Tokmak 2 119.20 57 *e*PKIKP **PKPdf 23 48 01.3 +0.1**
TKM2 MLR MLR
comp=Z,663nm,19.0s
TKM2 Tokmak 2 119.20 57 *e*PKPdf **PKPdf 23 48 01.3 +0.1**
TKM2 LR LR
comp=Z,663nm,19.0s
LCMT Little Creek M 119.34 294 *e*PP PP 23 49 24.5 +1.0
PFO Pinyon Flats O 119.51 289 *i* PKIKP **PKPdf 23 48 09.8 +7.8**
MSU Marysvale 119.52 296 *e*PKIKP **PKPdf 23 48 02.0 -0.1**
MSU *e* 23 49 25.3

MSU	**Marysvale**	**119.52**	**296**	*e*PKPdf	**PKPdf**	**23 48 02.0**	**-0.1**
MSU				*e*PP	**PP**	**23 49 25.3**	**+0.5**
NLU	**North Lily Min**	**120.27**	**298**	*e*PKPdf	**PKPdf**	**23 48 04.3**	**+0.9**
PD31	**Pinedale Array**	**120.28**	**302**	*e*PKPdf	**PKPdf**	**23 48 00.3**	**-3.1**
PD31				*e*PKPdf	**PKiKP**	**23 48 03.7**	**+0.2**
PD31				*e*PP	**PP**	**23 49 30.0**	**0.0**
PD31				*e*PKKPbc	**PKKPab**	**23 58 12.5**	**+2.5**
PDAR	**Pinedale Array**	**120.28**	**302**	PKP	**PKPdf**	**23 48 00.3**	**-3.1**
	comp=Z,0.6nm,0.7s,baz=132,slow=2.2,SNR=7.8						
PDAR				PP	**PP**	**23 49 30.0**	**0.0**
	comp=Z,7.8nm,1.3s,baz=127,slow=3.9,SNR=8.8						
PDAR				PKKPbc	**PKKPab**	**23 58 12.5**	**+2.5**
	comp=Z,0.3nm,0.8s,baz=297,slow=4.6,SNR=3.9						
BW06	**Boulder Array**	**120.28**	**302**	*e*PKPdf	**PKPdf**	**23 47 59.6**	**-3.8**
BW06				*e*PKPdf	**PKiKP**	**23 48 02.7**	**-0.8**
BW06				*e*PP	**PP**	**23 49 26.9**	**-3.1**
BW06				LR	LR		
	comp=Z,618nm,20.0s						
DGMT	**Dagmar**	**120.34**	**310**	PFAKE		23 48 10.0	+7.0
DGMT				LR	LR		
	comp=Z,658nm,19.0s						
CM01	**Chiang Mai Arr**	**120.42**	**94**	*e*PKPdf	**PKPdf**	**23 48 03.6**	**-0.5**
CM31	**Chiang Mai Arr**	**120.43**	**94**	*e*PKPdf	**PKPdf**	**23 48 02.1**	**-1.9**
CM31				*e*PP	**PP**	**23 49 30.6**	**-0.3**
CMAR	**Chiang Mai Arr**	**120.43**	**94**	PKP	**PKPdf**	**23 48 02.1**	**-1.9**
	comp=Z,0.6nm,0.3s,baz=251,slow=3.4,SNR=7.9						
CMAR				PP	**PP**	**23 49 30.6**	**-0.3**
	comp=Z,0.5nm,0.3s,baz=221,slow=7.0,SNR=4.4						
LAO	**LASA Array**	**120.49**	**307**	*e*pPKPdf	**pPKPdf**	**23 48 09.4**	**+1.1**
LAO				LR	LR		
	comp=Z,530nm,20.0s						
PSUT	**Pine Spring**	**120.61**	**295**	*e*PKPdf	**PKPdf**	**23 48 05.2**	**+1.1**
CHTO	**Chiang Mai**	**120.67**	**93**	PFAKE		23 48 20.0	+15
CHTO				LR	LR		
	comp=Z,397nm,19.0s						
GSC	**Goldstone, Bar**	**120.72**	**291**	P	**PKPdf**	**23 48 05.0**	**+0.7**
	baz=125						
GSC	**Goldstone, Bar**	**120.72**	**291**	*e*PKIKP	**PKPdf**	**23 48 05.3**	**+1.0**
GSC	**Goldstone, Bar**	**120.72**	**291**	*e*PKPdf	**PKPdf**	**23 48 05.3**	**+1.0**
DUG	**Dugway, Tooele**	**120.87**	**298**	P	**PKPdf**	**23 48 05.0**	**+0.5**
	baz=124						
DUG	**Dugway, Tooele**	**120.87**	**298**	*e*PKIKP	**PKPdf**	**23 48 05.9**	**+1.4**
DUG				*e*		23 49 34.3	
DUG				MLR	MLR		
	comp=Z,344nm,20.0s						
DUG	**Dugway, Tooele**	**120.87**	**298**	*e*PKPdf	**PKPdf**	**23 48 05.9**	**+1.4**
DUG				*e*PP	**PP**	**23 49 34.3**	**+0.3**
DUG				LR	LR		
	comp=Z,344nm,20.0s						
HWUT	**Hardware Ranch**	**120.87**	**300**	*e*PKPdf	**PKPdf**	**23 48 03.7**	**-0.8**
HWUT				LR	LR		
	comp=Z,480nm,20.0s						
ZRNK	**Zerenda**	**121.16**	**45**	*e*PKIKP	**PKPdf**	**23 48 05.1**	**+0.7**
ZRNK				*e*		23 49 34.4	
ZRNK	**Zerenda**	**121.16**	**45**	*e*PKPdf	**PKPdf**	**23 48 05.1**	**+0.7**
ZRNK				*e*PP	**PP**	**23 49 34.4**	**-1.0**
FCC	**Fort Churchill**	**121.18**	**323**	*e*PKIKP	**PKPdf**	**23 48 03.6**	**-0.6**
FCC	**Fort Churchill**	**121.18**	**323**	*e*PKPdf	**PKPdf**	**23 48 03.6**	**-0.6**
AHID	**Auburn Hatcher**	**121.23**	**301**	*e*PKPdf	**PKPdf**	**23 48 06.0**	**+0.9**
AHID				LR	LR		
	comp=Z,782nm,22.0s						
SPUT	**South Promonto**	**121.26**	**299**	*e*pPKPdf	pPKPdf	23 48 11.3	+1.2
EDW2	**Edwards Air Fo**	**121.28**	**290**	P	**PKPdf**	**23 48 04.4**	**-1.0**
	baz=125						
TPNV	**Topopah Spring**	**121.28**	**293**	P	**PKPdf**	**23 48 05.4**	**0.0**
	baz=124						
TPNV	**Topopah Spring**	**121.28**	**293**	*e*PKIKP	**PKPdf**	**23 48 07.0**	**+1.6**
TPNV	**Topopah Spring**	**121.28**	**293**	*e*PKPdf	**PKPdf**	**23 48 07.0**	**+1.6**
LOHW	**Long Hollow**	**121.39**	**302**	*e*PKPdf	**PKPdf**	**23 48 06.3**	**+0.9**
REDW	**Red Top Meadow**	**121.40**	**302**	*e*PP	PP	23 49 37.1	-0.5
RLMT	**Red Lodge**	**121.41**	**304**	P	**PKPdf**	**23 48 04.7**	**-0.8**
	baz=123						
RLMT	**Red Lodge**	**121.41**	**304**	*e*PKPdf	**PKPdf**	**23 48 05.8**	**+0.3**
RLMT				LR	LR		
	comp=Z,542nm,20.0s						
BGU	**Big Grassy Mou**	**121.42**	**298**	*e*PKPdf	**PKPdf**	**23 48 06.9**	**+1.4**
MOOW	**Moose Ponds**	**121.55**	**302**	*e*PKPdf	**PKPdf**	**23 48 06.6**	**+0.8**
MOOW				*e*PP	**PP**	**23 49 38.7**	**+0.1**
MPMC	**Manual Prospec**	**121.61**	**291**	P	**PKPdf**	**23 48 06.8**	**+0.7**
	baz=125						
R11A	**Troy Canyon, C**	**121.63**	**294**	P	**PKPdf**	**23 48 06.3**	**+0.3**
	baz=124						
R11A	**Troy Canyon, C**	**121.63**	**294**	*e*PKPdf	**PKPdf**	**23 48 07.7**	**+1.6**
R11A				*e*PP	**PP**	**23 49 38.1**	**-1.1**
FXWY	**Fox Creek**	**121.66**	**302**	*e*PKPdf	**PKPdf**	**23 48 05.0**	**-1.1**
FXWY				*e*PP	**PP**	**23 49 39.4**	**0.0**
FLWY	**Flagg Ranch**	**121.70**	**302**	*e*PP	PP	23 49 40.1	+0.5
LKWY	**Lake**	**121.78**	**303**	PFAKE		23 48 20.0	+14
LKWY				LR	LR		
	comp=Z,746nm,22.0s						
DAC	**Darwin (Calif)**	**121.80**	**291**	*e*PKIKP	**PKPdf**	**23 48 08.8**	**+2.3**
DAC	**Darwin (Calif)**	**121.80**	**291**	*e*PKPdf	**PKPdf**	**23 48 08.8**	**+2.3**
LSA	**Lhasa**	**121.86**	**78**	*e*PKIKP	**PKPdf**	**23 48 06.5**	**-0.6**
LSA				MLR	MLR		
	comp=Z,605nm,20.0s						
LSA	**Lhasa**	**121.86**	**78**	*e*PKPdf	**PKPdf**	**23 48 06.5**	**-0.6**
LSA				LR	LR		
	comp=Z,605nm,20.0s						
BRVK	**Borovoye**	**121.86**	**45**	PFAKE		23 48 20.0	+14
BRVK				LR	LR		
	comp=Z,752nm,21.0s						
BVAR	**Borovoye Array**	**121.90**	**45**	PKP	**PKPdf**	**23 48 03.9**	**-2.0**
	comp=Z,1.8nm,0.9s,baz=220,slow=3.9,SNR=9.2						
BVAR				PKKPbc	**PKKPbc**	**23 58 06.6**	**+2.8**
	comp=Z,0.3nm,0.5s,baz=67,slow=8.4,SNR=4.4						
FFC	**Flin Flon**	**122.59**	**317**	*e*PKIKP	**PKPdf**	**23 48 07.8**	**+0.7**
FFC				MLR	MLR		
	comp=Z,447nm,21.0s						
FFC	**Flin Flon**	**122.59**	**317**	*e*PKPdf	**PKPdf**	**23 48 07.8**	**+0.7**
FFC				LR	LR		
	comp=Z,447nm,21.0s						
ELK	**Elko**	**122.72**	**297**	*e*PKIKP	**PKPdf**	**23 48 08.9**	**+0.8**
ELK	**Elko**	**122.72**	**297**	*e*PKPdf	**PKPdf**	**23 48 08.9**	**+0.8**
BOZ	**Bozeman (W)**	**123.10**	**304**	P	**PKPdf**	**23 48 08.9**	**+0.3**
	baz=122						
BOZ	**Bozeman (W)**	**123.10**	**304**	*e*PKIKP	**PKPdf**	**23 48 09.4**	**+0.8**
BOZ				MLR	MLR		
	comp=Z,445nm,22.0s						
BOZ	**Bozeman (W)**	**123.10**	**304**	*e*PKPdf	**PKPdf**	**23 48 09.4**	**+0.8**
BOZ				LR	LR		
	comp=Z,445nm,22.0s						
EGMT	**Eagleton**	**123.24**	**307**	P	**PKPdf**	**23 48 08.9**	**+0.3**
	baz=121						
EGMT	**Eagleton**	**123.24**	**307**	*e*PKPdf	**PKPdf**	**23 48 09.9**	**+1.2**
EGMT				*e*PP	**PP**	**23 49 50.7**	**+0.9**
EGMT				LR	LR		
	comp=Z,452nm,19.0s						
MCMT	**McKenzie Canyo**	**123.40**	**302**	*e*PP	PP	23 49 51.8	+0.6
NV01	**Mina Array Sit**	**123.46**	**293**	*e*PKPdf	**PKPdf**	**23 48 08.6**	**-1.0**
NVAR	**Mina Array Bea**	**123.46**	**293**	PKP	**PKPdf**	**23 48 08.6**	**-1.0**
	comp=Z,0.7nm,0.6s,baz=97,slow=1.9,SNR=8.2						
HLID	**Hailey**	**123.70**	**300**	P	**PKPdf**	**23 48 10.0**	**+0.2**
	baz=122						
HLID	**Hailey**	**123.70**	**300**	*e*PKPdf	**PKPdf**	**23 48 11.6**	**+1.7**
HLID				LR	LR		
	comp=Z,707nm,22.0s						
BMN	**Battle Mountai**	**123.83**	**296**	*e*PKIKP	**PKPdf**	**23 48 15.6**	**+5.4**
BMN	**Battle Mountai**	**123.83**	**296**	*e*pPKPdf	**PKPdf**	**23 48 15.6**	**+5.4**
KBS	**Kingsbay**	**124.16**	**6**	PFAKE		23 48 20.0	+11
KBS				LR	LR		
	comp=Z,401nm,19.0s						
PMG	**Port Moresby**	**124.33**	**160**	PFAKE		23 48 20.0	+8.2
PMG				LR	LR		
	comp=Z,468nm,20.0s						
MFID	**Camas Ranch**	**124.50**	**299**	*e*PKPdf	**PKPdf**	**23 48 12.9**	**+1.6**
MFID				*e*PP	**PP**	**23 49 58.9**	**+0.5**
CMB	**Columbia Colle**	**124.63**	**292**	*e*PKIKP	**PKPdf**	**23 48 13.3**	**+1.7**
CMB	**Columbia Colle**	**124.63**	**292**	*e*PKPdf	**PKPdf**	**23 48 13.3**	**+1.7**
CHMT	**Chamberlain Mo**	**124.71**	**304**	*e*PKPdf	**PKPdf**	**23 48 12.0**	**+0.3**
KURBB	**Kurchatov Arra**	**125.00**	**51**	PKP	**PKPdf**	**23 48 09.2**	**-2.6**
	comp=Z,6.4nm,1.2s,baz=234,slow=2.8,SNR=13						
KURBB				PP	**PP**	**23 50 00.9**	**-0.5**
	comp=Z,0.9nm,1.1s,baz=249,slow=6.3,SNR=4.9						
MSO	**Missoula**	**125.08**	**304**	P	**PKPdf**	**23 48 12.3**	**0.0**
	baz=120						
MSO	**Missoula**	**125.08**	**304**	*e*PKPdf	**PKPdf**	**23 48 12.2**	**0.0**
MSO				*e*PP	**PP**	**23 50 04.7**	**+2.4**
KURK	**Kurchatov**	**125.10**	**51**	*e*PKIKP	**PKPdf**	**23 48 09.2**	**-2.8**
KURK				*e*		23 48 11.5	
KURK				*e*		23 50 00.9	
KURK				MLR	MLR		
	comp=Z,2μm,20.0s						
KURK	**Kurchatov**	**125.10**	**51**	*e*PKPdf	**PKPdf**	**23 48 09.2**	**-2.8**
KURK				*e*PKPdf	**PKiKP**	**23 48 11.5**	**-0.8**
KURK				*e*PP	**PP**	**23 50 00.9**	**-1.2**
KURK				LR	LR		
	comp=Z,2μm,20.0s						
KURK	**Kurchatov**	**125.10**	**51**	PKPdf	**PKPdf**	**23 48 14.7**	**+2.7**
	SNR=6.8						
MAKZ	**Makanchi**	**125.11**	**56**	*e*PKIKP	**PKPdf**	**23 48 10.9**	**-1.3**
MAKZ	**Makanchi**	**125.11**	**56**	*e*PKPdf	**PKPdf**	**23 48 10.9**	**-1.3**
MK01	**Makanchi Array**	**125.28**	**56**	*e*PKPdf	**PKPdf**	**23 48 09.8**	**-2.8**
MK31	**Makanchi Array**	**125.29**	**56**	*e*PKIKP	**PKPdf**	**23 48 10.3**	**-2.3**
MK31	**Makanchi Array**	**125.29**	**56**	*e*PKPdf	**PKPdf**	**23 48 10.3**	**-2.3**
MK32	**Makanchi Array**	**125.29**	**56**	*e*PKPdf	**PKPdf**	**23 48 10.1**	**-2.5**
MKAR	**Makanchi Array**	**125.29**	**56**	PKP	**PKPdf**	**23 48 10.1**	**-2.5**
	comp=Z,3.2nm,1.0s,baz=259,slow=2.5,SNR=18						
SWMT	**Swartz Lake**	**125.45**	**304**	*e*PKPdf	**PKPdf**	**23 48 13.5**	**+0.5**
AFDM	**Forest Hills D**	**125.50**	**292**	*e*PKPdf	**PKPdf**	**23 48 14.1**	**+0.8**
FUNA	**Funafuti**	**125.56**	**199**	PFAKE		23 48 30.0	+16
FUNA				LR	LR		
	comp=Z,5μm,20.0s						
WVOR	**Wild Horse Val**	**125.78**	**297**	*e*PKIKP	**PKPdf**	**23 48 14.4**	**+0.6**
WVOR				MLR	MLR		
	comp=Z,485nm,19.0s						
WVOR	**Wild Horse Val**	**125.78**	**297**	*e*PKPdf	**PKPdf**	**23 48 14.4**	**+0.6**
WVOR				LR	LR		
	comp=Z,485nm,19.0s						
XMAS	**Kiritimati**	**125.79**	**230**	PFAKE		23 48 30.0	+15
XMAS				LR	LR		
	comp=Z,2.0nm,20.0s						
BSMT	**Bassoo Peak**	**126.08**	**305**	*e*PKPdf	**PKPdf**	**23 48 14.3**	**0.0**
BMO	**Blue Mountains**	**126.15**	**300**	*e*PKIKP	**PKPdf**	**23 48 14.1**	**-0.3**
BMO				MLR	MLR		
	comp=Z,820nm,21.0s						
BMO	**Blue Mountains**	**126.15**	**300**	*e*PKPdf	**PKPdf**	**23 48 14.1**	**-0.3**
BMO				LR	LR		
	comp=Z,820nm,21.0s						
WALA	**Waterton Lakes**	**126.15**	**306**	*e*PKPdf	**PKPdf**	**23 48 14.0**	**-0.3**
ORV	**Oroville**	**126.17**	**293**	*e*PKIKP	**PKPdf**	**23 48 21.2**	**+6.7**
ORV				*e*		23 50 15.6	
ORV	**Oroville**	**126.17**	**293**	*e*pPKPdf	**PKPdf**	**23 48 21.2**	**+6.7**
ORV				*e*PP	**PP**	**23 50 15.6**	**+6.1**
HNR	**Honiara**	**126.31**	**175**	PFAKE		23 48 30.0	+14
HNR				LR	LR		
	comp=Z,432nm,20.0s						
MOD	**Modoc Plateau**	**126.58**	**296**	*e*PKPdf	**PKPdf**	**23 48 15.7**	**+0.3**
O03D	**Paynes Creek**	**126.75**	**293**	P	**PKPdf**	**23 48 16.2**	**+0.5**
	baz=121						
WMQ	**Urumqi**	**127.16**	**62**	PKP	**PKPdf**	**23 48 16.8**	**+0.5**
WMQ				sPKP		23 48 22.1	
WMQ				PP	**PP**	**23 50 19.3**	**+3.2**
WMQ				SKS	**SKSdf**	**23 55 26.5**	**-0.9**
WMQ				AMB	AMB		
	comp=Z,23nm,9.8s						
WMQ				LR	LR		
	comp=Z,200nm,23.4s						
WMQ				LR	LR		
	comp=Z,170nm,20.0s						
WMQ				LR	LR		
	comp=Z,170nm,23.4s						
K05A	**Summer Lake**	**127.37**	**296**	*e*PKPdf	**PKPdf**	**23 48 18.2**	**+1.3**
K05A				*e*PP	**PP**	**23 50 22.8**	**+5.2**
KMI	**Kunming**	**127.37**	**90**	PKP	**PKPdf**	**23 48 17.6**	**+0.1**
KMI				sPKP		23 48 24.1	
KMI				LR	LR		
	comp=Z,240nm,21.1s						
KMI				LR	LR		
	comp=Z,290nm,22.2s						
KMI				LR	LR		
	comp=Z,430nm,21.8s						
WDC	**Whiskeytown Da**	**127.38**	**293**	*e*PKIKP	**PKPdf**	**23 48 16.7**	**0.0**
WDC	**Whiskeytown Da**	**127.38**	**293**	*e*PKPdf	**PKPdf**	**23 48 16.7**	**0.0**
M04C	**Macdoel**	**127.52**	**295**	P	**PKPdf**	**23 48 17.0**	**-0.2**
	baz=120						
NEW	**Newport**	**127.66**	**304**	PKP	**PKPdf**	**23 48 18.4**	**+1.3**
	comp=Z,1.5nm,0.6s,baz=128,slow=8.1,SNR=3.4						
NEW	**Newport**	**127.66**	**304**	PKIKP	**PKPdf**	**23 48 18.4**	**+1.3**
NEW				MLR	MLR		
	comp=Z,309nm,20.0s						
NEW	**Newport**	**127.66**	**304**	PKP	**PKPdf**	**23 48 18.4**	**+1.3**
NEW				LR	LR		
	comp=Z,309nm,20.0s						
N02D	**Trinity Center**	**127.68**	**294**	P	**PKPdf**	**23 48 17.9**	**+0.5**
	baz=120						
J05D	**Fort Rock, OR**	**127.86**	**297**	P	**PKPdf**	**23 48 18.2**	**+0.4**
	baz=119						
M02C	**Callahan**	**127.98**	**294**	P	**PKPdf**	**23 48 19.0**	**+1.0**
	baz=120						
YBH	**Yreka Blue Hor**	**128.06**	**294**	PKP	**PKPdf**	**23 48 18.2**	**+0.1**
	comp=Z,1.9nm,0.8s,baz=89,slow=6.2,SNR=2.9						
YBH	**Yreka Blue Hor**	**128.06**	**294**	*e*PKIKP	**PKPdf**	**23 48 18.2**	**+0.1**
YBH				*e*		23 50 24.5	
YBH	**Yreka Blue Hor**	**128.06**	**294**	*e*PKPdf	**PKPdf**	**23 48 18.2**	**+0.1**
YBH				*e*PP	**PP**	**23 50 24.5**	**+2.5**
C09A	**Chrisman Ranch**	**128.13**	**303**	*e*PP	PP	23 50 23.5	+1.1
HAWA	**Hanford**	**128.25**	**301**	PFAKE		23 48 30.0	+12
HAWA				LR	LR		
	comp=Z,640nm,22.0s						
G06A	**Carlson Farm,**	**128.40**	**299**	*e*PKPdf	**PKPdf**	**23 48 19.9**	**+1.3**
G06A				*e*PP	**PP**	**23 50 27.2**	**+3.0**
I05D	**Terrebonne, OR**	**128.43**	**298**	P	**PKPdf**	**23 48 18.9**	**+0.2**
	baz=118						
QIZ	**Qiongzhong**	**128.55**	**101**	PKP	**PKPdf**	**23 48 21.1**	**+1.5**
QIZ				PP	**PP**	**23 50 25.8**	**+0.6**
QIZ				LR	LR		
	comp=N,220nm,16.5s						
QIZ				LR	LR		
	comp=E,210nm,17.8s						
HUMO	**Hull Mountain**	**128.64**	**295**	*e*PKPdf	**PKPdf**	**23 48 19.7**	**+0.6**
B08A	**Colville Reser**	**129.02**	**303**	*e*PKPdf	**PKPdf**	**23 48 20.0**	**+0.3**
B08A				*e*PP	**PP**	**23 50 29.9**	**+1.7**
H04A	**Detroit Lake**	**129.12**	**298**	*e*PKPdf	**PKPdf**	**23 48 20.6**	**+0.6**
RES	**Resolute Bay**	**129.44**	**340**	PKP	**PKPdf**	**23 48 18.9**	**-0.7**
	comp=E,6.6nm,1.1s,baz=156,slow=1.6,SNR=9.0						
RES	**Resolute Bay**	**129.44**	**340**	PKIKP	**PKPdf**	**23 48 19.0**	**-0.7**
RES				pmax	pmax		
	comp=Z,7.0nm,1.1s						
NVS	**Novosibirsk**	**129.45**	**48**	*i*PKIKP	**PKPdf**	**23 48 20.8**	**+0.6**
NVS				*i*		23 50 27.1	
NVS				pmax	pmax		
	comp=Z,32nm,1.6s						
NVS				pmax	pmax		
	comp=N,9.0nm,1.4s						
NVS				pmax	pmax		
	comp=E,11nm,1.4s						
LON	**Longmire**	**129.82**	**301**	*e*PKIKP	**PKPdf**	**23 48 21.8**	**+0.5**
LON	**Longmire**	**129.82**	**301**	*e*PKPdf	**PKPdf**	**23 48 21.8**	**+0.5**
F04A	**Amboy**	**129.84**	**299**	*e*PKPdf	**PKPdf**	**23 48 22.0**	**+0.8**
ZAA0	**Zalesovo Array**	**129.94**	**49**	*e*PKPdf	**PKPdf**	**23 48 19.8**	**-1.3**
ZAA0				*e*PKPdf	**PKiKP**	**23 48 20.2**	**-1.7**
ZAA0				*e*PP	**PP**	**23 50 30.8**	**-3.1**
ZALV	**Zalesovo Beam**	**129.94**	**49**	PKP	**PKPdf**	**23 48 18.9**	**-2.3**
	comp=E,0.9nm,0.7s,baz=262,slow=4.5,SNR=6.5						
ZALV				PP	**PP**	**23 50 31.2**	**-2.7**
	comp=E,0.7nm,0.8s,baz=272,slow=7.0,SNR=4.6						
ZAA1	**Zalesovo Array**	**129.94**	**49**	*e*PKPdf	**PKPdf**	**23 48 18.9**	**-2.3**
ZAA1				*e*PP	**PP**	**23 50 31.2**	**-2.7**
DAV	**Davao City (W)**	**130.00**	**126**	PFAKE		23 48 30.0	+7.4
DAV				LR	LR		
	comp=Z,300nm,20.0s						
D05A	**Enumclaw**	**130.12**	**301**	*e*PKPdf	**PKPdf**	**23 48 23.3**	**+1.6**
B05A	**Bryant**	**130.64**	**302**	P	**PKPdf**	**23 48 23.8**	**+1.2**
	baz=115						
NLWA	**Neilton Lookou**	**131.36**	**300**	*e*PKPdf	**PKPdf**	**23 48 26.2**	**+2.1**
NLWA				LR	LR		
	comp=Z,485nm,19.0s						
CD2	**Chengdu**	**131.48**	**85**	PKP	**PKPdf**	**23 48 25.6**	**+0.7**
CD2				sPKP		23 48 33.3	
CD2				PP	**PP**	**23 50 45.4**	**+1.0**
CD2				SKS	**SKSdf**	**23 55 36.3**	**+0.4**
CD2				SKKS	**SKKSac**	**23 57 39.8**	**-0.2**
CD2				AMB	AMB		
	comp=Z,180nm,8.9s						
CD2				LR	LR		
	comp=Z,430nm,23.8s						
CD2				LR	LR		
	comp=Z,680nm,25.0s						
YKA	**Yellowknife Ar**	**131.85**	**322**	PKP	**PKPdf**	**23 48 23.4**	**-1.1**
	comp=Z,10nm,1.1s,baz=106,slow=2.1,SNR=46						
YKB5	**Yellowknife Ar**	**131.85**	**322**	*e*PKPdf	**PKPdf**	**23 48 23.4**	**-1.1**
YKW3	**Yellowknife Ar**	**131.87**	**322**	*e*PKPdf	**PKPdf**	**23 48 24.5**	**-0.1**
GTA	**Gaotai**	**133.06**	**73**	PKP	**PKPdf**	**23 48 27.9**	**+0.1**
GTA				PP	**PP**	**23 50 58.5**	**+3.9**
GTA				SKS	**SKSdf**	**23 55 34.1**	**-4.4**
GTA				SKKS	**SKKSac**	**23 57 45.6**	**-3.9**
GTA				AMB	AMB		
	comp=Z,110nm,5.7s						
GTA				LR	LR		
	comp=Z,290nm,20.0s						
GTA				LR	LR		
	comp=Z,350nm,20.9s						
GTA				LR	LR		
	comp=Z,380nm,21.4s						
LZH	**Lanzhou**	**134.26**	**79**	*e*PKP	**PKPdf**	**23 48 28.8**	**-1.4**
LZH				sPKP		23 48 34.8	
LZH				LR	LR		
	comp=Z,200nm,13.4s						
LZH				LR	LR		
	comp=Z,410nm,18.6s						
LZH				LR	LR		
	comp=Z,400nm,17.1s						
ENH	**Enshi**	**135.22**	**89**	PFAKE		23 48 40.0	+8.0
ENH				LR	LR		
	comp=Z,520nm,21.0s						
NRIK	**Noril'sk**	**135.35**	**29**	PKP	**PKPdf**	**23 48 29.7**	**-1.2**
	comp=Z,4.1nm,1.0s,baz=147,slow=3.6,SNR=5.4						
NRIK				PP	**PP**	**23 51 10.1**	**+1.9**
	comp=Z,0.9nm,0.4s,baz=285,slow=7.2,SNR=4.4						
DLBC	**Dease Lake**	**138.28**	**314**	PKP	**PKPdf**	**23 48 36.4**	**-0.3**
	comp=Z,10.0nm,1.2s,baz=119,slow=2.5,SNR=6.4						
MOY	**Mondy**	**138.44**	**57**	*e*PKIKP	**PKPdf**	**23 48 37.8**	**+0.5**
MOY				pmax	pmax		
	comp=Z,30nm,1.9s						
WRAK	**Wrangell Islan**	**139.14**	**310**	PFAKE		23 48 50.0	+12
WRAK				LR	LR		
	comp=Z,529nm,22.0s						
ZAK	**Zakamensk**	**139.48**	**59**	*e*PKIKP	**PKPdf**	**23 48 36.0**	**-3.3**
ZAK				pmax	pmax		
	comp=Z,14nm,1.6s						
TLY	**Talaya**	**140.03**	**57**	PKP	**PKPdf**	**23 48 41.0**	**+0.9**
	comp=Z,3.8nm,0.8s,baz=219,slow=5.3,SNR=7.4						
TLY	**Talaya**	**140.03**	**57**	*e*PKIKP	**PKPdf**	**23 48 36.5**	**-3.6**
TLY				pmax	pmax		
	comp=Z,31nm,1.9s						
TLY	**Talaya**	**140.03**	**57**	*e*PKPdf	**PKPdf**	**23 48 40.5**	**+0.3**
TLY				*e*PKPdf	**PKPdf**	**23 48 41.0**	**+0.9**
TLY				LR	LR		
	comp=Z,400nm,19.0s						
TLY	**Talaya**	**140.03**	**57**	PKPdf	**PKPdf**	**23 48 39.8**	**-0.4**
	SNR=14						
YHNB	**Yeheng**	**140.30**	**105**	PFAKE		23 48 50.0	+8.5
YHNB				LR	LR		
	comp=Z,503nm,21.0s						
INK	**Inuvik**	**140.38**	**329**	PKhKP	PKPpre	23 48 32.4	
	comp=Z,10nm,1.2s,baz=98,slow=4.6,SNR=10						
INK				PKP	**PKPdf**	**23 48 41.0**	**+0.8**
	comp=Z,40nm,1.2s,baz=96,slow=2.2,SNR=24						
INK	**Inuvik**	**140.38**	**329**	PKIKP	**PKPdf**	**23 48 41.0**	**+0.8**
INK				pmax	pmax		
	comp=Z,40nm,1.2s						
SONA0	**Songino Array**	**140.72**	**64**	*e*PKPpre	PKPpre	23 48 35.2	
SONA0				*e*PKPdf	**PKPdf**	**23 48 40.6**	**-1.0**
SONM	**Songino Array**	**140.72**	**64**	PKhKP	PKPpre	23 48 35.2	
	comp=Z,3.9nm,1.0s,baz=232,slow=1.7,SNR=3.7						
SONM				PKP	**PKPdf**	**23 48 40.6**	**-1.0**
	comp=Z,3.9nm,1.0s,baz=215,slow=1.8,SNR=11						
SONA1	**Songino Array**	**140.73**	**64**	*e*PKPpre	PKPpre	23 48 36.8	
ULN	**Ulaanbaatar**	**141.15**	**64**	*e*PKIKP	PKPpre	23 48 36.8	
ULN				MLR	MLR		
	comp=Z,589nm,21.0s						
ULN	**Ulaanbaatar**	**141.15**	**64**	*e*PKPpre	PKPpre	23 48 36.8	
ULN				LR	LR		
	comp=Z,589nm,21.0s						
HHC	**Hu-ho-hao-te**	**141.81**	**76**	*e*PKP	**PKPdf**	**23 48 48.1**	**+4.3**
HHC				PP	**PP**	**23 51 51.4**	**+2.3**
HHC				AMB	AMB		
	comp=Z,66nm,9.2s						
HHC				LR	LR		
	comp=Z,310nm,19.2s						
HHC				LR	LR		
	comp=Z,290nm,19.0s						
HHC				LR	LR		
	comp=Z,350nm,19.9s						
TIA	**Tai'an**	**143.76**	**86**	*e*P	PKPab	23 48 44.4	+0.2
TIA				pmax	pmax		
	comp=Z,30nm,1.2s						
EGAK	**

SPU	**Mount Spurr**	**149.30**	**319**	*e*PKPdf	**PKPdf**	**23 48 55.6**	**-0.3**
HIA	**Hailar**	**149.68**	**65**	*e*PKP2	**PKPbc**	**23 49 01.4**	**-0.1**
HIA				MLR	MLR		
	comp=Z,445nm,21.0s						
HIA	**Hailar**	**149.68**	**65**	*e*PKPbc	**PKPbc**	**23 49 01.4**	**-0.1**
HIA				LR	LR		
	comp=Z,445nm,21.0s						
RSO	**Redoubt South**	**149.80**	**318**	*e*PKPbc	**PKPbc**	**23 49 02.9**	**+1.3**
KDAK	**Kodiak Island**	**150.18**	**312**	PKPbc	PKPab	23 49 16.3	+7.8
	comp=Z,32nm,1.1s,baz=164,slow=0.8,SNR=10						
KDAK	**Kodiak Island**	**150.18**	**312**	*e*PKIKP	**PKPbc**	**23 49 03.3**	**+1.0**
KDAK				MLR	MLR		
	comp=Z,565nm,20.0s						
KDAK	**Kodiak Island**	**150.18**	**312**	*e*PKPbc	**PKPbc**	**23 49 03.3**	**+1.0**
KDAK				*ep*PKPab	**pPKPab**	**23 49 16.3**	**+3.1**
KDAK				LR	LR		
	comp=Z,565nm,20.0s						
TTA	**Tatalina**	**150.59**	**323**	*e*PKIKP	**PKPdf**	**23 48 59.2**	**+1.3**
TTA	**Tatalina**	**150.59**	**323**	*e*PKPdf	**PKPdf**	**23 48 59.2**	**+1.3**
SNY	**Shenyang**	**150.60**	**81**	⇑PKPbc	**PKPbc**	**23 49 02.9**	**-1.0**
TT01	**Tatalina**	**150.60**	**323**	*e*PKPdf	**PKPdf**	**23 48 59.3**	**+1.5**
OHAK	**Old Harbor**	**150.63**	**311**	*ep*PKPdf	pPKPdf	23 49 02.5	-0.3
SVW2	**Sparrevohn**	**150.98**	**319**	*e*PKPbc	**PKPbc**	**23 49 04.3**	**+0.1**
INCN	**Inchon**	**151.14**	**91**	PFAKE		23 49 10.0	-3.2
INCN				LR	LR		
	comp=Z,502nm,19.0s						
KS15	**Wonju Array Si**	**152.02**	**92**	*ep*PKPdf	pPKPdf	23 49 04.9	-0.7
KSAR	**Wonju Array Be**	**152.02**	**92**	PKIKP	**PKPbc**	**23 49 04.9**	**-2.4**
KSAR	**Wonju Array Be**	**152.02**	**92**	PKPbc	**PKPbc**	**23 49 04.9**	**-2.4**
KSRS	**Korea Array**	**152.05**	**92**	PKPbc	**PKPbc**	**23 49 04.9**	**-2.5**
	comp=Z,2.9nm,0.8s,baz=266,slow=2.9,SNR=5.1						
YAK	**Yakutsk**	**153.38**	**36**	PFAKE		23 49 10.0	+0.5
YAK				LR	LR		
	comp=Z,414nm,21.0s						
MDJ	**Mudanjiang**	**155.57**	**77**	PFAKE		23 49 20.0	-12
MDJ				LR	LR		
	comp=Z,614nm,21.0s						
BILL	**Bilibino**	**156.26**	**358**	*e*PKIKP	**PKPdf**	**23 49 04.5**	**-1.3**
BILL				MLR	MLR		
	comp=Z,442nm,20.0s						
BILL	**Bilibino**	**156.26**	**358**	*e*PKPdf	**PKPdf**	**23 49 04.5**	**-1.3**
BILL				LR	LR		
	comp=Z,442nm,20.0s						
KLR	**Kul'dur**	**157.52**	**66**	PKPab	**PKPab**	**23 49 40.4**	**+0.5**
	comp=Z,1.8nm,0.7s,baz=260,slow=6.1,SNR=2.5						
MJAR	**Matsushiro Arr**	**158.94**	**103**	PKP	**PKPdf**	**23 49 10.1**	**0.0**
	comp=Z,0.9nm,0.4s,baz=25,slow=5.2,SNR=3.6						
MJAR				PKPab	**PKPab**	**23 49 46.3**	**-0.2**
	comp=Z,2.7nm,0.9s,baz=207,slow=3.8,SNR=4.4						
SEY	**Seymchan**	**160.25**	**16**	PKP	**PKPdf**	**23 49 09.3**	**-1.5**
	comp=Z,2.2nm,0.2s,baz=219,slow=2.4,SNR=7.7						
NKL	**Nikolayevsk**	**162.38**	**52**	*e*PKIKP	PKPpre	23 49 03.0	
ERM	**Erimo**	**164.63**	**92**	PFAKE		23 49 30.0	+14
ERM				LR	LR		
	comp=Z,738nm,20.0s						
YSS	**Yuzh-Sakhalins**	**164.94**	**73**	PFAKE		23 49 30.0	+14
YSS				LR	LR		
	comp=Z,227nm,22.0s						
PET	**Petropavlovsk**	**170.67**	**20**	PFAKE		23 49 30.0	+10
PET				LR	LR		
	comp=Z,1μm,21.0s						

ISCJB ***19*** *23:33:27.1±2.4, 28˚.10N±0˚.03×128˚.06E±0˚.05, h7km±16km, mb3.4/5, MS3.0/2, Error ellipse: s-maj=7.6km s-min=4.8km az=26.4*

JMA ***19*** *23:33:27.8±0.2, 28˚.10N×128˚.07E, h14km±2km, M3.4*

IDC ***19*** *23:33:36.3±4.5, 28˚.12N×127˚.97E, h64km±44km, mb3.3/5, mb1 3.6/6, mb1mx3.2/43, mbtmp3.7/6, ML3.4/1, MS3.0/4, Ms1 3.0/4, ms1mx2.7/30, Error ellipse: s-maj=39.9km s-min=20.6km az=72.0*

ISC 19 23:33:28.5±2.1, 28˚.07N±0˚.05×128˚.12E±0˚.07, h11km±13km, n19, σ0˚79/21, mb3.3/5, Ryukyu Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JTK	**Tokunoshima**	**0.79**	**111**	P	**Pg**	**23 33 43.6**	**-0.1**
JTK				S	**Sg**	**23 33 54.7**	**+0.7**
JOKE	**Okinoerabujima**	**0.81**	**150**	P	**Pg**	**23 33 44.1**	**-0.1**
JOKE				*e*S	**Sg**	**23 33 55.7**	**+0.9**
JAMN	**Amaminishikomi**	**0.95**	**79**	P	**Pb**	**23 33 46.3**	**-0.7**
JAMN				*e*S	**Sb**	**23 33 59.6**	**+0.1**
JIH	**Iheya**	**1.04**	**187**	P	**Pb**	**23 33 47.5**	**-1.0**
JIH				S	**Sb**	**23 34 01.6**	**-0.6**
JOW	**Kunigami**	**1.24**	**174**	P	**Pn**	**23 33 51.0**	**-0.8**
JOW				S	**Sb**	**23 34 08.0**	**0.0**
JAM	**Amami Oshima**	**1.35**	**75**	P	**Pn**	**23 33 52.9**	**-0.5**
JAM				*e*S	**Sb**	**23 34 11.4**	**+0.1**
JTAJ	**Takarajima**	**1.44**	**41**	P	**Pn**	**23 33 53.8**	**-0.7**
JTAJ				*e*S	**Sn**	**23 34 11.8**	**-1.7**
JNTH	**Nagotoyohara**	**1.55**	**183**	P	**Pn**	**23 33 55.6**	**-0.4**
JNTH				*e*S	**Sn**	**23 34 15.7**	**-0.4**
JZK	**Kikaishima**	**1.65**	**81**	P	**Pb**	**23 33 58.4**	**-0.6**
JNU	**Nakatsue**	**5.57**	**25**	P	Pn	23 34 56.9	+5.5
	1.2nm,0.3s,baz=257,slow=5.2,SNR=8.8						
KSRS	**Korea Array**	**9.36**	**359**	LR	LR	23 39 15.1	
	comp=Z,84nm,20.9s,baz=182,slow=36						
MJAR	**Matsushiro Arr**	**12.00**	**43**	LR	LR	23 41 22.9	
	comp=Z,23nm,19.2s,baz=210,slow=39						
GUMO	**Guam**	**21.24**	**129**	LR	LR	23 44 53.7	
	comp=Z,49nm,20.7s,baz=118,slow=32						
SONM	**Songino Array**	**25.97**	**325**	P	**P**	**23 39 02.0**	**+0.7**
	0.8nm,0.7s,baz=141,slow=9.3,SNR=3.0						
TLY	**Talaya**	**29.88**	**329**	LR	LR	23 52 37.7	
	comp=Z,53nm,20.2s,baz=90,slow=38						
MKAR	**Makanchi Array**	**40.25**	**310**	P	**P**	**23 41 05.5**	**+0.1**
	0.5nm,0.7s,baz=96,slow=11,SNR=6.3						
WRA	**Warramunga Arr**	**48.11**	**172**	P	**P**	**23 42 09.5**	**+1.0**
	1.9nm,0.9s,baz=354,slow=8.6,SNR=6.2						
ASAR	**Alice Springs**	**51.74**	**173**	P	P	23 42 38.5	+2.4
	0.1nm,0.3s,baz=359,slow=6.1,SNR=5.6						
YKA	**Yellowknife Ar**	**76.91**	**25**	P	**P**	**23 45 21.5**	**+0.9**
	0.2nm,0.8s,baz=298,slow=5.3,SNR=3.9						

KRSC ***19*** *23:43:30.2±2.1, 48˚.15N×154˚.25E, h196km±30km, ML4.9*

SKHL ***19*** *23:43:33.3±0.5, 48˚.68N×153˚.33E, h162km±3km, mb5.3/2, msh4.8/2*

ISCJB ***19*** *23:43:33.6±0.3, 48˚.75N±0˚.04×153˚.17E±0˚.05, h170km±3km, mb4.1/47, Error ellipse: s-maj=7.7km s-min=2.4km az=138.4*

MOS ***19*** *23:43:34.1±1.0, 48˚.81N×153˚.10E, h172km, mb4.3/16, Error ellipse: s-maj=10.4km s-min=4.1km az=65.3*

BJI ***19*** *23:43:35.0, 48˚.90N×153˚.00E, h168km, mb4.5/7, mB4.6/4*

IDC ***19*** *23:43:36.4±0.7, 48˚.95N×152˚.87E, h176km±5km, mb3.7/28, mb1 3.9/33, mb1mx3.8/49, mbtmp4.3/33, MS4.0/4, Ms1 4.0/4, ms1mx2.9/48, Error ellipse: s-maj=12.3km s-min=7.5km az=148.0*

NEIC ***19*** *23:43:36.4±0.7, 48˚.87N×152˚.87E, h182km±6km, mb4.4/14, Error ellipse: s-maj=8.9km s-min=5.0km az=138.0*

ISC 19 23:43:35.4±0.5, 48˚.80N±0˚.06×153˚.15E±0˚.05, h175km±4km, h174km; pP-P, n207, σ1˚37/238, mb4.1/47, 4C-3D, Kuril Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SKR	**Severo-Kuril's**	**2.70**	**44**	*e*P	**Pn**	**23 44 19.5**	**-0.5**
SKR				*e*S	**Sn**	**23 44 54.6**	**-0.2**
SKR	**Severo-Kuril's**	**2.70**	**44**	*i* P	**Pn**	**23 44 18.5**	**-1.5**
SKR				*i* P	**Pn**	**23 44 18.5**	**-1.5**
SKR				AMB	AMB	23 44 19.4	
	220nm,0.6s						
SKR				AMB	AMB	23 44 19.4	
	150nm,0.6s						
SKR				AMB	AMB	23 44 19.4	
	560nm,0.6s						
SKR				AMB	AMB	23 44 20.0	
	2μm,2.0s						
SKR				*i* S	**Sn**	**23 44 54.2**	**-0.6**
SKR				A	A	23 45 01.7	
	690nm,0.3s						
SKR				A	A	23 45 01.7	
	860nm,0.3s						
SKR	**Severo-Kuril's**	**2.70**	**44**	⇑*i* PN	**Pn**	**23 44 18.5**	**-1.5**
SKR				*i* S	**Sn**	**23 44 53.7**	**-1.1**
SKR				pmax	pmax		
	comp=N,220nm,0.7s						
SKR				pmax	pmax		
	comp=Z,560nm,0.7s						
SKR				smax	smax		
	comp=N,690nm,0.3s						
SKR				smax	smax		
	comp=E,860nm,0.3s						
SKR				MLR	MLR		
	comp=Z,3μm,12.0s						
ASAK	**Asacha**	**4.70**	**38**	*e*P	**Pn**	**23 44 44.6**	**-0.7**
ASAK				*e*S	**Sn**	**23 45 38.7**	**-1.3**
MTVR	**Mutnovka**	**4.89**	**39**	*e*P	**Pn**	**23 44 47.0**	**-0.8**
MTVR				*e*S	**Sn**	**23 45 42.4**	**-2.2**
GRL	**Gorelyy**	**4.89**	**38**	*e*P	**Pn**	**23 44 48.0**	**+0.1**
GRL	**Gorelyy**	**4.89**	**38**	PN	**Pn**	**23 44 48.0**	**+0.1**
RUS	**Russkaya**	**4.99**	**41**	*e*P	**Pn**	**23 44 47.2**	**-1.8**
RUS				*e*S	**Sn**	**23 45 41.7**	**-5.1**
RUS	**Russkaya**	**4.99**	**41**	*e*P	**Pn**	**23 44 47.2**	**-1.8**
RUS	**Russkaya**	**4.99**	**41**	PN	**Pn**	**23 44 47.2**	**-1.8**
RUS				S	**Sn**	**23 45 41.7**	**-5.1**
KUR	**Kuril'sk**	**5.08**	**227**	*i* P	**Pn**	**23 44 49.7**	**-0.5**
KUR				AMB	AMB	23 44 51.1	
	comp=Z,800nm,1.0s						
KUR				AMB	AMB	23 44 51.1	
	comp=Z,730nm,1.0s						
KUR				*i* S	**Sn**	**23 45 49.6**	**+0.8**
KUR				A	A	23 45 53.6	
	comp=Z,470nm,2.2s						
KUR				A	A	23 46 00.8	
	comp=Z,600nm,0.6s						
KUR				A	A	23 46 00.8	
	comp=Z,250nm,0.6s						
KUR	**Kuril'sk**	**5.08**	**227**	⇓*e*PN	**Pn**	**23 44 51.1**	**+0.9**
KUR				*i* S	**Sn**	**23 45 52.6**	**+3.8**
KUR				pmax	pmax		
	comp=N,26nm,0.7s						
KUR				pmax	pmax		
	comp=E,24nm,0.7s						
KUR				pmax	pmax		
	comp=Z,186nm,0.7s						
KUR				smax	smax		
	comp=N,206nm,0.6s						
KUR				smax	smax		
	comp=E,107nm,0.6s						
PETK	**Petropavlovsk-**	**5.19**	**32**	P	**Pn**	**23 44 51.4**	**-0.2**
	comp=E,23nm,0.3s,baz=207,slow=16,SNR=209						
PET	**Petropavlovsk**	**5.48**	**37**	*e*P	**Pn**	**23 44 55.6**	**+0.2**
PET				*e*S	**Sn**	**23 45 56.7**	**-1.5**
PET	**Petropavlovsk**	**5.48**	**37**	*e*P	**Pn**	**23 44 54.4**	**-1.0**
PET				AMB	AMB	23 44 56.1	
	comp=E,100nm,0.6s						
PET				AMB	AMB	23 45 05.5	
	comp=E,420nm,3.3s						
PET				*e*S	**Sn**	**23 45 57.5**	**-0.7**
PET				A	A	23 45 58.3	
	comp=E,120nm,0.6s						
PET				A	A	23 46 07.0	
	comp=E,490nm,4.5s						
PET				A	A	23 46 07.0	
	comp=E,1μm,4.5s						
PET	**Petropavlovsk**	**5.48**	**37**	*e*PN	**Pn**	**23 44 54.4**	**-1.0**
PET				*e*S	**Sn**	**23 45 57.5**	**-0.7**
PET				pmax	pmax		
	comp=Z,95nm,0.6s						
PET				smax	smax		
	comp=N,102nm,0.6s						
PET				smax	smax		
	comp=E,121nm,0.6s						
PET				MLR	MLR		
	comp=Z,200nm,14.0s						
PET	**Petropavlovsk**	**5.48**	**37**	*e*Pn	**Pn**	**23 44 54.1**	**-1.2**
	comp=Z,75nm,0.7s						
PET				*e*Sn	**Sn**	**23 45 53.4**	**-4.8**
DALK	**Dalny**	**5.53**	**38**	*e*P	**Pn**	**23 44 54.8**	**-1.2**
DALK				*e*S	**Sn**	**23 45 56.6**	**-2.7**
KOK	**Koryaka**	**5.68**	**35**	*e*P	**Pn**	**23 44 58.1**	**0.0**
KOK	**Koryaka**	**5.68**	**35**	*e*P	**Pn**	**23 44 58.1**	**0.0**
KOK	**Koryaka**	**5.68**	**35**	PN	**Pn**	**23 44 58.1**	**0.0**
UGLR	**Uglovaya**	**5.69**	**37**	*e*P	**Pn**	**23 44 58.4**	**+0.2**
UGLR				*e*S	**Sn**	**23 46 02.3**	**-1.0**
AVH	**Avacha**	**5.70**	**36**	*e*P	**Pn**	**23 44 58.4**	**+0.1**
AVH				*e*S	**Sn**	**23 46 02.7**	**-0.8**
AVH	**Avacha**	**5.70**	**36**	PN	**Pn**	**23 44 58.4**	**+0.1**
AVH				S	**Sn**	**23 46 02.7**	**-0.8**
SMAR	**Somma**	**5.72**	**36**	*e*P	**Pn**	**23 44 58.9**	**+0.2**
SMAR	**Somma**	**5.72**	**36**	PN	**Pn**	**23 44 58.9**	**+0.2**
KRER	**Koryakskii**	**5.73**	**36**	*e*P	**Pn**	**23 44 59.2**	**+0.4**
KRER				*e*S	**Sn**	**23 46 03.4**	**-1.0**
KRX	**Arik**	**5.73**	**35**	*e*P	**Pn**	**23 44 59.0**	**+0.2**
KRX				*e*S	**Sn**	**23 46 03.7**	**-0.8**
GNL	**Ganaly**	**5.75**	**30**	*e*P	**Pn**	**23 44 59.3**	**+0.2**
GNL	**Ganaly**	**5.75**	**30**	PN	**Pn**	**23 44 59.3**	**+0.2**
SDLR	**Sedlovina**	**5.76**	**37**	*e*P	**Pn**	**23 44 58.5**	**-0.7**
SDLR				*e*S	**Sn**	**23 46 02.7**	**-2.4**
SDLR	**Sedlovina**	**5.76**	**37**	PN	**Pn**	**23 44 58.5**	**-0.7**
SDLR				S	**Sn**	**23 46 02.7**	**-2.4**
NLC	**Nalytchevo**	**5.87**	**39**	*e*P	**Pn**	**23 44 57.6**	**-2.9**
NLC				*e*S	Sn	23 46 00.4	-7.0
NLC	**Nalytchevo**	**5.87**	**39**	PN	**Pn**	**23 44 57.6**	**-2.9**
NLC				S	Sn	23 46 00.4	-7.0
SHO	**Shikotan**	**6.59**	**224**	*e*P	**Pn**	**23 45 07.2**	**-2.8**
SHO				AMB	AMB	23 45 07.5	
	comp=Z,400nm,0.6s						
SHO				*e*S	**Sn**	**23 46 20.2**	**-4.4**
SHO				A	A	23 46 26.7	
	comp=Z,380nm,0.6s						
SHO				A	A	23 46 26.7	
	comp=Z,160nm,0.6s						
YUK	**Yuzh-Kuril'sk**	**6.93**	**229**	*e*P	**Pn**	**23 45 14.0**	**-0.6**
YUK				AMB	AMB	23 45 15.2	
	comp=Z,250nm,0.5s						
YUK				*i* S	**Sn**	**23 46 32.0**	**-0.7**
YUK				A	A	23 46 42.0	
	comp=Z,250nm,0.4s						
YUK				A	A	23 46 42.0	
	comp=Z,310nm,0.4s						
YUK	**Yuzh-Kuril'sk**	**6.93**	**229**	*c i*PN	**Pn**	**23 45 13.8**	**-0.8**
YUK				*i* S	**Sn**	**23 46 32.1**	**-0.7**
YUK				pmax	pmax		
	comp=Z,2μm,0.5s						
YUK				pmax	pmax		
	comp=E,624nm,0.4s						
YUK				pmax	pmax		
	comp=N,263nm,0.5s						
TYV	**Tymovskoe**	**7.10**	**291**	*e*P	**Pn**	**23 45 18.0**	**+1.3**
YSS	**Yuzh-Sakhalins**	**7.23**	**259**	*e*P	**Pn**	**23 45 18.7**	**+0.2**
YSS				AMB	AMB	23 45 20.6	
	comp=N,50nm,1.0s						
YSS				*e*S	**Sn**	**23 46 40.7**	**+0.9**
YSS	**Yuzh-Sakhalins**	**7.23**	**259**	*e*PN	**Pn**	**23 45 19.9**	**+1.4**
YSS				pmax	pmax		
	comp=Z,50nm,1.3s						
YSS	**Yuzh-Sakhalins**	**7.23**	**259**	*e*Pn	**Pn**	**23 45 17.4**	**-1.1**
	comp=Z,19nm,0.6s						
UGL	**Uglegorsk**	**7.31**	**276**	*e*P	**Pn**	**23 45 19.8**	**+0.3**
JRA	**Rausu**	**7.38**	**232**	P	Pn	**23 45 19.8**	**-0.6**
TUMR	**Tumrok**	**7.79**	**31**	*e*P	**Pn**	**23 45 26.4**	**+0.5**
TUMR	**Tumrok**	**7.79**	**31**	PN	**Pn**	**23 45 26.4**	**+0.5**
JNK	**Nakash**	**7.83**	**231**	P	Pn	**23 45 25.0**	**-1.5**
ESO	**Esso**	**7.91**	**23**	*e*P	**Pn**	**23 45 28.8**	**+1.5**
ESO	**Esso**	**7.91**	**23**	PN	**Pn**	**23 45 28.8**	**+1.5**
JTKR	**Abashiri--Toko**	**8.01**	**236**	P	Pn	**23 45 28.6**	**-0.1**
KMNR	**Kamenistaya**	**8.21**	**29**	*e*P	**Pn**	**23 45 32.0**	**+0.6**
KMNR	**Kamenistaya**	**8.21**	**29**	PN	**Pn**	**23 45 32.0**	**+0.6**
JAK	**Akkeshi**	**8.27**	**229**	P	Pn	23 45 28.5	-3.7
JAK				*e*S	Sn	23 46 56.3	-8.3
JMP	**Maruseppu**	**8.29**	**238**	P	Pn	**23 45 32.6**	**+0.1**
KPT	**Kopyto**	**8.38**	**28**	*e*P	**Pn**	**23 45 33.1**	**-0.5**
KPT	**Kopyto**	**8.38**	**28**	PN	**Pn**	**23 45 33.1**	**-0.5**
BZMR	**Bezymyannaya**	**8.44**	**29**	*e*P	**Pn**	**23 45 34.9**	**+0.4**
ZLN	**Zelenaya**	**8.61**	**30**	*e*P	**Pn**	**23 45 37.0**	**+0.4**
ZLN	**Zelenaya**	**8.61**	**30**	PN	**Pn**	**23 45 37.0**	**+0.4**
LGNR	**Loginova**	**8.62**	**29**	*e*P	**Pn**	**23 45 37.0**	**0.0**
LGNR	**Loginova**	**8.62**	**29**	PN	**Pn**	**23 45 37.0**	**0.0**
JKA	**Kamikawa-asahi**	**8.66**	**241**	*e*P	**Pn**	**23 45 38.4**	**+1.1**
ASAJ	**Asahikawa**	**8.66**	**241**	P	**Pn**	**23 45 38.4**	**+1.0**
	comp=Z,25nm,0.3s,baz=59,slow=12,SNR=107						
ASAJ	**Asahikawa**	**8.66**	**241**	P	**Pn**	**23 45 38.8**	**+1.5**
ASAJ	**Asahikawa**	**8.66**	**241**	*e*Pn	**Pn**	**23 45 38.6**	**+1.3**
CIRR	**Tsirk**	**8.67**	**29**	*e*P	**Pn**	**23 45 37.7**	**+0.2**
CIRR	**Tsirk**	**8.67**	**29**	PN	**Pn**	**23 45 37.7**	**+0.2**
KRSR	**Krestovskiy**	**8.70**	**28**	*e*P	**Pn**	**23 45 37.4**	**-0.4**
KRSR	**Krestovskiy**	**8.70**	**28**	PN	**Pn**	**23 45 37.4**	**-0.4**
JOB	**Onbets**	**8.77**	**231**	P	**Pn**	**23 45 35.9**	**-2.9**
JOB				*e*S	Sn	23 47 09.4	-7.3
KLY	**Klyuchi**	**8.80**	**28**	*e*P	**Pn**	**23 45 39.9**	**+0.8**
JSS	**Shosan**	**8.93**	**245**	P	**Pn**	**23 45 44.0**	**+3.1**
NKL	**Nikolayevsk**	**8.99**	**304**	*e*P	**Pn**	**23 45 42.0**	**+0.4**
NKL	**Nikolayevsk**	**8.99**	**304**	*e*PN	**Pn**	**23 45 42.0**	**+0.4**
BDR	**Baidarnaya**	**9.19**	**29**	*e*P	**Pn**	**23 45 44.3**	**+0.1**
JCH	**Churui**	**9.22**	**232**	P	Pn	23 45 40.8	-3.9
JCH				*e*S	Sn	23 47 17.7	-10
JAB	**Ashibetsu**	**9.25**	**239**	P	**Pn**	**23 45 46.4**	**+1.3**
SRKR	**Sorokina**	**9.25**	**29**	*e*P	**Pn**	**23 45 44.2**	**-0.8**
SRKR	**Sorokina**	**9.25**	**29**	PN	**Pn**	**23 45 44.2**	**-0.8**
SMKR	**Semkarok**	**9.28**	**30**	*e*P	**Pn**	**23 45 45.9**	**+0.4**
SMKR	**Semkarok**	**9.28**	**30**	PN	**Pn**	**23 45 45.9**	**+0.4**
KBTR	**Krutoberegovo**	**9.47**	**35**	*e*P	**Pn**	**23 45 45.3**	**-2.6**
KBTR	**Krutoberegovo**	**9.47**	**35**	PN	**Pn**	**23 45 45.3**	**-2.6**
JBT2	**Biratori 2**	**9.64**	**235**	P	**Pn**	**23 45 48.4**	**-1.8**
JBT2				*e*S	Sn	23 47 30.7	-6.7
JEM	**Erimo**	**9.76**	**230**	P	Pn	23 45 48.4	-3.4
ERM	**Erimo**	**9.76**	**230**	*e*PN	**Pn**	**23 45 50.0**	**-1.8**
ERM				pmax	pmax		
	comp=Z,82nm,0.4s						
ERM	**Erimo**	**9.76**	**230**	*e*Pn	**Pn**	**23 45 50.0**	**-1.8**
	comp=Z,82nm,0.4s						
JNBK	**Urakawa-nobuka**	**9.78**	**232**	P	Pn	23 45 47.5	-4.5
JNBK				*e*S	Sn	23 47 29.0	-12
JEW	**Eniwo**	**10.10**	**238**	P	**Pn**	**23 45 55.5**	**-0.8**
BKI	**Bering**	**10.17**	**46**	*e*P	**Pn**	**23 45 54.5**	**-2.5**
BKI				*e*S	Sn	23 47 35.7	-14
BKI	**Bering**	**10.17**	**46**	PN	**Pn**	**23 45 54.5**	**-2.5**
JNB	**Noboribetsu**	**10.58**	**238**	P	**Pn**	**23 45 59.3**	**-3.2**
JKB	**Kayabe**	**10.97**	**235**	P	Pn	23 46 02.6	-4.9
JKB				*e*S	Sn	23 47 57.3	-12
JSH	**Shimam**	**11.03**	**241**	P	**Pn**	**23 46 07.2**	**-1.2**
JYM2	**Yakumo 2**	**11.18**	**238**	P	Pn	23 46 07.1	-3.2
HABR	**Khabarovsk**	**11.98**	**275**	*e*P	**Pn**	**23 46 18.1**	**-2.5**
HABR	**Khabarovsk**	**11.98**	**275**	*e*PN	**Pn**	**23 46 18.1**	**-2.5**
HABR				*e*S	**Sn**	**23 48 30.5**	**-3.0**
HABR				pmax	pmax		
	comp=E,46nm,1.6s						
HABR				pmax	pmax		
	comp=Z,40nm,1.6s						
HABR				pmax	pmax		
	comp=N,16nm,0.8s						
HABR				MLR	MLR		
	comp=Z,41nm,16.0s						
EKMR	**Ekimchan**	**13.43**	**296**	*e*P	**Pn**	**23 46 40.2**	**+1.2**
TILK	**Tilichiki**	**13.85**	**28**	*e*P	**Pn**	**23 46 43.1**	**-1.0**
KLR	**Kul'dur**	**14.05**	**280**	P	**Pn**	**23 46 46.3**	**-0.5**
	comp=Z,0.7nm,0.3s,baz=74,slow=12,SNR=21						
SEY	**Seymchan**	**14.18**	**359**	P	**Pn**	**23 46 48.6**	**+0.4**
	comp=Z,0.3nm,0.3s,baz=153,slow=11,SNR=4.8						
SEY	**Seymchan**	**14.18**	**359**	*e*P	**Pn**	**23 46 49.1**	**+0.9**
SEY	**Seymchan**	**14.18**	**359**	*e*P	**Pn**	**23 46 49.1**	**+0.9**
USRK	**Ussuriysk Ar.**	**15.27**	**260**	P	**Pn**	**23 47 01.6**	**-0.3**
	comp=Z,1.2nm,0.3s,baz=66,slow=13,SNR=15						
BMKR	**Bomnak**	**16.13**	**301**	*e*P	**Pn**	**23 47 12.8**	**+0.5**
MJA0	**Matsu Arr-Jizo**	**16.40**	**227**	*e*P	**Pn**	**23 47 16.0**	**+0.3**
MJA0				pmax	pmax		
	comp=Z,2.0nm,0.3s						
MAJO	**Matsushiro**	**16.42**	**227**	*e*P	**P**	**23 47 14.4**	**-1.1**
MAJO				pmax	pmax		
	comp=Z,39nm,0.8s						
MAJO	**Matsushiro**	**16.42**	**227**	*e*Pn	**P**	**23 47 14.4**	**-1.1**
	comp=Z,39nm,0.8s						
MAT	**Matsushiro**	**16.42**	**227**	P	**P**	**23 47 15.3**	**-0.2**
MJAR	**Matsushiro Arr**	**16.42**	**227**	P	**P**	**23 47 14.6**	**-0.9**
	comp=Z,24nm,0.3s,baz=28,slow=12,SNR=24						
MJAR	**Matsushiro Arr**	**16.42**	**227**	*e*P	**Pn**	**23 47 16.0**	**+0.1**
MDJ	**Mudanjiang**	**16.67**	**264**	*e*Pn	**P**	**23 47 16.8**	**-1.4**
	comp=Z,15nm,0.7s						
KROS	**Kirovskiy**	**17.16**	**299**	*e*P	**Pn**	**23 47 24.4**	**-0.2**
KROS				AMB	AMB	23 47 27.5	
	comp=Z,9.0nm,1.0s						
BILL	**Bilibino**	**20.40**	**14**	*e*P	**P**	**23 47 59.0**	**+0.7**
BILL	**Bilibino**	**20.40**	**14**	⇓*e*P	**P**	**23 47 59.0**	**+0.7**
BILL				*e**PP	**pP**	**23 48 29.3**	**+1.1**
BILL				*i* S	**S**	**23 51 33.5**	**-3.3**
BILL				pmax	pmax		
	comp=Z,6.0nm,1.0s						
BILL	**Bilibino**	**20.40**	**14**	*e*P	**P**	**23 47 58.7**	**+0.3**
	comp=Z,5.0nm,0.8s						
KSRS	**Korea Array**	**21.52**	**248**	P	**P**	**23 48 10.7**	**+0.1**
	comp=Z,8.1nm,0.6s,baz=47,slow=10,SNR=23						
KSRS	**Korea Array**	**21.52**	**248**	*e*P	**P**	**23 48 11.6**	**+1.0**
KSRS				pmax	pmax		
	comp=Z,8.0nm,0.6s						
KSAR	**Wonju Array Be**	**21.55**	**248**	P	**P**	**23 48 10.7**	**-0.2**

ARU	**Arti**	**53.53**	**316**	P	**P**	**23 52 35.7**	**-1.9**
	comp=Z,1.6nm,0.3s,baz=351,slow=3.7,SNR=4.2						
ARU				PcP	**PcP**	**23 53 41.9**	**0.0**
	comp=Z,1.6nm,0.4s,baz=160,slow=1.9,SNR=4.1						
ARU	**Arti**	**53.53**	**316**	*eP*	**P**	**23 52 36.2**	**-1.4**
ARU	**Arti**	**53.53**	**316**	*eP*	**P**	**23 52 36.2**	**-1.4**
ARU						23 53 42.1	
ARU						23 54 35.9	
ARU				S	**S**	**23 59 56.4**	**-0.1**
ARU				SS	**SS**	**00 03 37.2**	**-1.3**
NEW	**Newport**	**55.93**	**54**	P	**P**	**23 52 55.6**	**+0.6**
	comp=Z,2.4nm,0.8s,baz=338,slow=4.7,SNR=4.0						
YBH	**Yreka Blue Hor**	**56.77**	**63**	P	**P**	**23 53 02.5**	**+1.4**
	comp=Z,2.7nm,0.9s,baz=6.4,slow=5.4,SNR=5.2						
ABKAR	**Akbulak array**	**57.15**	**309**	*eP*	**P**	**23 53 02.1**	**-1.4**
	comp=Z,8.3nm,1.2s						
AKTO	**Aktyubinsk**	**57.40**	**311**	PcP	**PcP**	**23 53 56.4**	**-0.7**
	comp=Z,1.5nm,0.7s,baz=72,slow=4.8,SNR=5.8						
WVOR	**Wild Horse Val**	**58.69**	**60**	*eP*	**P**	**23 53 15.4**	**+0.9**
WVOR				pmax	pmax		
	comp=Z,2.0nm,0.7s						
WVOR	**Wild Horse Val**	**58.69**	**60**	*eP*	**P**	**23 53 15.4**	**+0.9**
	comp=Z,2.2nm,0.7s						
FFC	**Flin Flon**	**59.16**	**41**	*eP*	**P**	**23 53 18.9**	**+1.5**
FFC	**Flin Flon**	**59.16**	**41**	*eP*	**P**	**23 53 17.7**	**+0.3**
FFC				pmax	pmax		
	comp=Z,8.0nm,1.0s						
FFC	**Flin Flon**	**59.16**	**41**	*eP*	**P**	**23 53 17.7**	**+0.3**
	comp=Z,8.1nm,1.0s						
FCC	**Fort Churchill**	**59.54**	**34**	*eP*	**P**	**23 53 19.7**	**-0.1**
FCC				pmax	pmax		
	comp=Z,7.0nm,0.6s						
FCC	**Fort Churchill**	**59.54**	**34**	*eP*	**P**	**23 53 19.7**	**-0.1**
	comp=Z,6.6nm,0.6s						
BOZ	**Bozeman (W)**	**60.50**	**53**	*eP*	**P**	**23 53 27.9**	**+1.1**
BOZ				pmax	pmax		
	comp=Z,6.0nm,1.0s						
BOZ	**Bozeman (W)**	**60.50**	**53**	*eP*	**P**	**23 53 27.9**	**+1.1**
	comp=Z,6.1nm,1.0s						
NVAR	**Mina Array Bea**	**61.48**	**63**	P	**P**	**23 53 35.5**	**+1.9**
	comp=Z,3.1nm,0.7s,baz=296,slow=7.4,SNR=16						
FINES	**FINESS Array B**	**62.20**	**334**	P	**P**	**23 53 36.5**	**-1.3**
	comp=Z,0.9nm,0.3s,baz=33,slow=7.4,SNR=23						
PDAR	**Pinedale Array**	**63.53**	**55**	P	**P**	**23 53 48.6**	**+1.5**
	comp=Z,2.1nm,0.6s,baz=263,slow=1.2,SNR=33						
PDAR				pP	**pP**	**23 54 27.8**	**-0.3**
	comp=Z,1.8nm,0.9s,baz=299,slow=3.1,SNR=4.4						
ULM	**Lac du Bonnet**	**64.96**	**41**	P	**P**	**23 53 56.3**	**+0.3**
	comp=Z,1.2nm,0.4s,baz=317,slow=8.6,SNR=3.7						
GEYT	**Allbeck**	**65.59**	**300**	pP	pP	23 54 40.5	-0.9
	comp=Z,2.7nm,0.7s,baz=2.4,slow=3.6,SNR=6.2						
NOA	**NORSAR Array B**	**66.30**	**341**	P	**P**	**23 54 03.6**	**-0.9**
	comp=Z,0.3nm,0.3s,baz=28,slow=6.5,SNR=7.5						
AKASG	**Malin Array Be**	**69.86**	**326**	P	**P**	**23 54 25.6**	**-1.2**
	comp=Z,0.9nm,0.3s,baz=34,slow=5.8,SNR=2.5						
AKASG				LR	LR	00 27 16.8	
	comp=Z,198nm,21.7s,baz=205,slow=38						
AKASG	**Malin Array Be**	**69.86**	**326**	*eP*	P	23 54 30.4	+3.6
AKASG				pmax	pmax		
	comp=Z,1.0nm,0.3s						
WRAB	**Tennant Creek**	**70.45**	**199**	*ceP*	**P**	**23 54 31.0**	**+0.4**
WRAB				pmax	pmax		
	comp=Z,37nm,1.1s						
WRAB	**Tennant Creek**	**70.45**	**199**	*eP*	**P**	**23 54 30.7**	**+0.1**
	comp=Z,8.4nm,0.8s						
WRA	**Warramunga Arr**	**70.46**	**199**	P	**P**	**23 54 30.5**	**-0.1**
	comp=Z,8.2nm,0.9s,baz=18,slow=6.8,SNR=25						
WRA	**Warramunga Arr**	**70.46**	**199**	*eP*	**P**	**23 54 31.5**	**+0.8**
WRA	**Warramunga Arr**	**70.46**	**199**	*eP*	**P**	**23 54 31.5**	**+0.8**
WRA				pmax	pmax		
	comp=Z,7.0nm,0.8s						
ANMO	**Albuquerque**	**70.74**	**59**	*deP*	**P**	**23 54 33.3**	**+0.7**
ANMO				pmax	pmax		
	comp=Z,2.0nm,1.0s						
SCHQ	**Schefferville**	**71.41**	**23**	P	**P**	**23 54 36.6**	**+0.5**
	comp=Z,1.4nm,0.4s,baz=346,slow=5.6,SNR=12						
SCHQ				LR	LR	00 30 48.5	
	comp=Z,187nm,18.2s,baz=154,slow=40						
ASAR	**Alice Springs**	**74.16**	**198**	P	**P**	**23 54 54.0**	**+1.4**
	comp=Z,3.1nm,0.5s,baz=11,slow=5.5,SNR=42						
ASAR				LR	LR	00 25 36.0	
	comp=Z,277nm,21.6s,baz=206,slow=34						
ASAR	**Alice Springs**	**74.16**	**198**	*eP*	**P**	**23 54 54.0**	**+1.4**
ASAR	**Alice Springs**	**74.16**	**198**	P	**P**	**23 54 54.0**	**+1.4**
KHC	**Kasperske Hory**	**76.41**	**334**	*eP*	**P**	**23 55 07.4**	**+2.2**
KHC				*ex*	x	23 55 09.8	
KHC	**Kasperske Hory**	**76.41**	**334**	*eP*	**P**	**23 55 07.4**	**+2.2**
KHC				*e*		23 55 09.8	
TXAR	**Lajitas Array**	**76.47**	**61**	P	**P**	**23 55 07.5**	**+1.5**
	comp=Z,8.2nm,0.7s,baz=296,slow=4.5,SNR=78						
GERES	**GERESS Array B**	**76.63**	**334**	P	**P**	**23 55 06.5**	**0.0**
	comp=Z,0.3nm,0.3s,baz=2.8,slow=5.5,SNR=4.4						
BRTR	**Keskin Array B**	**76.92**	**316**	P	**P**	**23 55 08.4**	**0.0**
	comp=Z,0.4nm,0.6s,baz=6.5,slow=2.4,SNR=3.2						
BRTR				pP	**pP**	**23 55 51.1**	**+0.3**
	comp=Z,1.0nm,0.8s,baz=73,slow=3.2,SNR=4.0						
SOKA	**Soboth**	**78.17**	**332**	*i* P	**P**	**23 55 15.8**	**+0.7**
	comp=Z,1.4nm,0.9s						
KBA	**Koelnbreinsper**	**78.32**	**333**	*i* P	**P**	**23 55 16.7**	**+0.6**
	comp=Z,2.2nm,0.6s						
RETA	**Reutte**	**78.70**	**335**	*i* PcP	**PcP**	**23 55 25.2**	**-1.0**
	comp=Z,1.4nm,0.9s						
FETA	**Feichten**	**79.13**	**335**	*i* P	**P**	**23 55 21.0**	**+0.6**
	comp=Z,2.7nm,1.0s						
LDF	**La Druitiere**	**80.28**	**342**	*eP*	**P**	**23 55 26.9**	**+0.5**
LDF				pmax	pmax		
	comp=Z,34nm,2.1s						
LOR	**Lormes**	**80.67**	**339**	*eP*	**P**	**23 55 28.2**	**-0.3**
LOR				pmax	pmax		
	comp=Z,7.0nm,1.1s						
AVF	**Avril sur Loir**	**81.24**	**340**	*eP*	**P**	**23 55 32.2**	**+0.7**
AVF				pmax	pmax		
	comp=Z,3.0nm,0.6s						
SMF	**Signal de Mont**	**81.26**	**339**	*eP*	**P**	**23 55 32.5**	**+0.8**
SMF				pmax	pmax		
	comp=Z,5.0nm,0.8s						
LPG	**La Plagne**	**81.61**	**337**	*eP*	**P**	**23 55 34.5**	**+0.6**
LPG				pmax	pmax		
	comp=Z,5.0nm,0.9s						
MFF	**Saint Martin d**	**82.18**	**342**	*eP*	**P**	**23 55 36.5**	**+0.1**
MFF				pmax	pmax		
	comp=Z,6.0nm,1.0s						
CAF	**Calviac**	**83.30**	**340**	*eP*	**P**	**23 55 42.8**	**+0.5**
CAF				pmax	pmax		
	comp=Z,7.0nm,1.2s						
ESDC	**Sonseca Array**	**89.61**	**343**	P	**P**	**23 56 11.3**	**-1.8**
	comp=Z,0.2nm,0.4s,baz=310,slow=2.5,SNR=5.0						
KEST	**Kesra**	**89.89**	**331**	P	**P**	**23 56 13.7**	**-0.8**
	comp=Z,4.6nm,0.8s,baz=276,slow=0.5,SNR=5.1						
VNDA	**Vanda**	**126.16**	**178**	PKP	**PKPdf**	**00 02 14.9**	**-0.2**
	comp=Z,0.9nm,0.8s,baz=202,slow=0.6,SNR=4.3						
VNDA	**Vanda**	**126.16**	**178**	PKIKP	**PKPdf**	**00 02 15.0**	**-0.2**
CPUP	**Villa Florida**	**147.39**	**58**	PKPbc	**PKPbc**	**00 02 58.2**	**-0.1**
	comp=Z,2.2nm,0.7s,baz=262,slow=5.5,SNR=4.9						
PLCA	**Paso Flores**	**148.31**	**92**	PKPbc	**PKPbc**	**00 03 01.5**	**+1.1**
	comp=Z,12nm,0.8s,baz=316,slow=3.4,SNR=25						

*IDC **19** 23:51:30.3±0.8,21°.80N×144°.49E,h0km,mb3.8/10, mb1 4.0/10,mb1mx3.7/50,mbtmp3.8/10,Error ellipse: s-maj=28.9km s-min=20.9km az=93.0*
*ISCJB **19** 23:51:37.5±0.8,21°.8N±0°.1×144°.4E±0°.2,h69km,mb3.7/10, Error ellipse: s-maj=27.8km s-min=18.2km az=0.7*

ISC 19 23:51:39.1±0.9,21°.8N±0°.2×144°.4E±0°.2,h69km,n10, σ0s92/10,mb3.8/10,Mariana Islands region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
WRA	**Warramunga Arr**	**42.60**	**194**	P	**P**	**23 59 29.8**	**+1.1**
	1.7nm,0.7s,baz=16,slow=9.2,SNR=3.8						
ASAR	**Alice Springs**	**46.30**	**193**	P	**P**	**23 59 56.7**	**-1.4**
	0.4nm,0.5s,baz=11,slow=8.4,SNR=5.2						
ZALV	**Zalesovo Beam**	**54.87**	**321**	P	**P**	**00 01 02.3**	**-0.1**
	0.5nm,0.4s,baz=112,slow=9.4,SNR=3.5						
MKAR	**Makanchi Array**	**55.50**	**313**	P	**P**	**00 01 07.6**	**+0.6**
	0.4nm,0.6s,baz=88,slow=10,SNR=6.6						
KURBB	**Kurchatov Arra**	**58.26**	**317**	P	**P**	**00 01 26.9**	**+0.5**
	1.0nm,0.4s,baz=92,slow=7.9,SNR=10						
ILAR	**Eielson Array**	**61.46**	**27**	P	**P**	**00 01 47.5**	**-0.7**
	0.4nm,0.8s,baz=266,slow=6.1,SNR=5.6						
BVAR	**Borovoye Array**	**63.37**	**319**	P	**P**	**00 02 01.7**	**+0.6**
	0.8nm,0.3s,baz=97,slow=8.1,SNR=13						
YKA	**Yellowknife Ar**	**75.87**	**28**	P	**P**	**00 03 18.1**	**+0.3**
	0.3nm,0.4s,baz=291,slow=5.7,SNR=13						
NVAR	**Mina Array Bea**	**82.21**	**52**	P	**P**	**00 03 54.0**	**+0.7**
	0.4nm,0.6s,baz=284,slow=4.5,SNR=3.4						
FINES	**FINESS Array B**	**83.61**	**335**	P	**P**	**00 03 59.0**	**-0.8**
	0.6nm,0.4s,baz=76,slow=4.8,SNR=11						

*IDC **19** 23:57:57.7±0.9,38°.97N×144°.54E,h0km,mb3.4/7, mb1 3.7/9,mb1mx3.5/52,mbtmp3.4/9,ML3.1/2,Error ellipse: s-maj=25.2km s-min=20.5km az=125.0*
*NIED **19** 23:58:00,39°.20N×144°.20E,h8km,Mw3.7 Best double couple: Mo3.72000×10¹⁴ NP1:φs21.00000°,δ25.00000°, λ-57.00000°. NP2:φs166.00000°,δ69.00000°, λ-104.00000°.*
*ISCJB **19** 23:58:02.1±1.5,39°.13N±0°.08×144°.3E±0°.1,h44km±15km, mb3.4/7,Error ellipse: s-maj=15.9km s-min=12.2km az=136.2*
*JMA **19** 23:58:02.3±0.2,39°.18N×144°.24E,h40km,MS3.7*

ISC 19 23:58:04.3±2.2,39°.1N±0°.1×144°.2E±0°.1,h41km±22km,n18, σ1s27/15,mb3.4/7,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
MIYJ	**Miyakonagasawa**	**1.93**	**285**	P	Pn	23 58 33.5	-1.1
MIYJ				*eS*	**Sn**	**23 58 56.4**	**-1.2**
OFUJ	**Ofunato**	**2.00**	**270**	P	Pn	23 58 34.7	-0.8
JTH	**Tanohata**	**2.01**	**295**	P	Pn	23 58 34.3	-1.4
JTH				*eS*	**Sn**	**23 58 58.4**	**-1.2**
JOM	**Ohasama**	**2.31**	**280**	P	Pn	23 58 39.3	-0.5
JOM				*eS*	**Sn**	**23 59 06.9**	**-0.1**
JMK	**Ichinoseki**	**2.35**	**267**	P	Pn	23 58 39.9	-0.5
JRG	**Rokugo**	**2.81**	**277**	P	**Pn**	**23 58 47.2**	**+0.5**
JRG				*eS*	**Sn**	**23 59 20.4**	**+1.1**
JOU	**Okura**	**2.89**	**256**	P	Pn	23 58 47.7	-0.1
JTM	**Tenmabayashi**	**2.95**	**305**	P	Pn	23 58 47.5	-1.1
JTM				*eS*	**Sn**	**23 59 21.1**	**-1.7**
JYK	**Kaneyama**	**3.03**	**268**	P	Pn	23 58 49.6	0.0
MJAR	**Matsushiro Arr**	**5.42**	**244**	Pn	**Pn**	**23 59 22.8**	**+0.2**
	2.0nm,0.3s,baz=66,slow=12,SNR=12						
USRK	**Ussuriysk Ar.**	**10.47**	**303**	Pn	**Pn**	**00 00 32.7**	**+0.9**
	0.3nm,0.3s,baz=98,slow=14,SNR=5.5						
ZALV	**Zalesovo Beam**	**42.20**	**311**	P	**P**	**00 05 54.7**	**+1.9**
	0.2nm,0.3s,baz=90,slow=8.4,SNR=2.2						
MKAR	**Makanchi Array**	**44.93**	**301**	P	**P**	**00 06 15.4**	**+0.4**
	0.1nm,0.4s,baz=64,slow=6.7,SNR=3.2						
ILAR	**Eielson Array**	**46.54**	**33**	P	**P**	**00 06 26.9**	**-0.4**
	0.7nm,0.7s,baz=262,slow=6.1,SNR=8.3						
WRA	**Warramunga Arr**	**59.47**	**191**	P	**P**	**00 08 02.0**	**-1.0**
	0.3nm,0.4s,baz=8.8,slow=7.2,SNR=2.7						
YKA	**Yellowknife Ar**	**60.88**	**31**	P	**P**	**00 08 11.8**	**-0.4**
	0.2nm,0.6s,baz=301,slow=6.8,SNR=4.2						
ASAR	**Alice Springs**	**63.20**	**191**	P	**P**	**00 08 26.4**	**-1.7**
	0.5nm,0.8s,baz=15,slow=10,SNR=4.2						
PDAR	**Pinedale Array**	**74.62**	**47**	P	**P**	**00 09 38.1**	**-1.2**
	0.2nm,0.5s,baz=289,slow=5.6,SNR=2.7						

*ISCJB **20** 00:06:15.7±0.4,36°.35N±0°.03×26°.57E±0°.02,h118km±5km, Error ellipse: s-maj=4.3km s-min=2.8km az=167.5*
*ATH **20** 00:06:16.1,36°.38N×26°.54E,h112km±3km,ML3.1/8,Error ellipse: s-maj=3.7km s-min=1.0km az=132.0*
*CSEM **20** 00:06:16.8±0.3,36°.34N×26°.58E,h110km±3km,ML3.1, Error ellipse: s-maj=4.3km s-min=3.8km az=12.0*
*THE **20** 00:06:18.6,36°.36N×26°.54E,h107km±6km,ML3.2/13, Error ellipse: s-maj=6.3km s-min=1.1km az=143.0*
*HLW **20** 00:06:21.9,35°.85N×26°.83E,h33km±37km,Md3.9,Ml3.0*

ISC 20 00:06:15.3±1.2,36°.31N±0°.03×26°.60E±0°.02,h127km±7km, n129,σ1s59/191,Dodecanese Islands

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
NIS1	**Nisyros Isl.**	**0.55**	**58**	P	**Pn**	**00 06 35.6**	**+1.3**
NIS1	**Nisyros Isl.**	**0.55**	**58**	P	**Pn**	**00 06 35.6**	**+1.3**
KARP	**Karpathos**	**0.89**	**149**	P	**Pn**	**00 06 37.9**	**+1.0**
KARP				S	**Sn**	**00 06 53.2**	**0.0**
KARP	**Karpathos**	**0.89**	**149**	P	**Pn**	**00 06 37.9**	**+1.0**
KARP				S	**Sn**	**00 06 53.0**	**-0.2**
KARP	**Karpathos**	**0.89**	**149**	P	**Pn**	**00 06 38.1**	**+1.2**
KARP				S	**Sn**	**00 06 53.0**	**-0.2**
KARP				AML	AML	00 06 54.8	
	comp=N,1058μm,0.2s						
KARP				AML	AML	00 06 56.3	
	comp=E,998μm,0.2s						
SANT	**Santorini**	**0.93**	**274**	P	**Pn**	**00 06 37.9**	**+0.7**
SANT	**Santorini**	**0.93**	**274**	P	**Pn**	**00 06 37.9**	**+0.7**
THR2	**Thira island,**	**0.95**	**279**	P	**Pn**	**00 06 37.7**	**+0.3**
THR2	**Thira island,**	**0.95**	**279**	P	**Pn**	**00 06 37.7**	**+0.3**
THR7	**Fira-Santorini**	**0.95**	**277**	P	**Pn**	**00 06 38.5**	**+1.1**
THR7	**Fira-Santorini**	**0.95**	**277**	P	**Pn**	**00 06 38.5**	**+1.1**
THR6	**Thira Island,**	**0.97**	**273**	P	**Pn**	**00 06 38.0**	**+0.4**
THR6	**Thira Island,**	**0.97**	**273**	P	**Pn**	**00 06 38.0**	**+0.4**
THR3	**Thira Island,**	**0.97**	**276**	P	**Pn**	**00 06 37.9**	**+0.3**
THR3	**Thira Island,**	**0.97**	**276**	P	**Pn**	**00 06 37.9**	**+0.3**
CMBO	**Columbo, Santo**	**0.98**	**280**	P	**Pn**	**00 06 38.5**	**+0.9**
CMBO	**Columbo, Santo**	**0.98**	**280**	P	**Pn**	**00 06 38.5**	**+0.9**
BDRM	**Kayabasi**	**1.01**	**42**	*i* P	**Pn**	**00 06 38.1**	**+0.1**
BDRM				*i* S	**Sn**	**00 06 54.0**	**-1.3**
APE	**Apeiranthos**	**1.15**	**312**	P	**Pn**	**00 06 39.2**	**-0.2**
APE				S	**Sn**	**00 06 54.4**	**-3.3**
APE	**Apeiranthos**	**1.15**	**312**	P	**Pn**	**00 06 39.2**	**-0.2**
APE				S	**Sn**	**00 06 54.8**	**-2.9**
APE	**Apeiranthos**	**1.15**	**312**	P	**Pn**	**00 06 39.4**	**+0.4**
APE				S	**Sn**	**00 06 54.8**	**-2.9**
APE				AML	AML	00 06 56.3	
	comp=N,343μm,0.6s						
APE				AML	AML	00 06 57.8	
	comp=E,170μm,1.1s						
ZKR	**Zakros**	**1.23**	**195**	P	**Pn**	**00 06 41.7**	**+1.5**
ZKR				S	**Sn**	**00 07 00.2**	**+1.0**
ZKR	**Zakros**	**1.23**	**195**	P	**Pn**	**00 06 41.7**	**+1.5**
ZKR				S	**Sn**	**00 07 00.2**	**+1.0**
ZKR	**Zakros**	**1.23**	**195**	P	**Pn**	**00 06 42.2**	**+2.0**
ZKR				S	**Sn**	**00 07 00.9**	**+1.7**
ZKR				AML	AML	00 07 02.1	
	comp=E,539μm,0.6s						
ZKR				AML	AML	00 07 02.8	
	comp=N,294μm,0.4s						
ARG	**Arkhangelos**	**1.23**	**94**	P	**Pn**	**00 06 41.3**	**+1.1**
ARG				S	**Sn**	**00 06 59.1**	**-0.1**
ARG	**Arkhangelos**	**1.23**	**94**	P	**Pn**	**00 06 41.3**	**+1.1**
ARG				S	**Sn**	**00 06 59.1**	**-0.1**
NPS	**Neapolis**	**1.32**	**218**	P	**Pn**	**00 06 41.9**	**+0.7**
NPS				S	**Sn**	**00 07 00.2**	**-0.6**
NPS	**Neapolis**	**1.32**	**218**	P	**Pn**	**00 06 42.1**	**+0.9**
NPS				S	**Sn**	**00 07 00.2**	**-0.6**
NPS	**Neapolis**	**1.32**	**218**	P	**Pn**	**00 06 42.1**	**+0.9**
NPS				S	**Sn**	**00 06 59.6**	**-1.2**
NPS				AML	AML	00 07 01.7	
	comp=E,1513μm,0.3s						
NPS				AML	AML	00 07 01.8	
	comp=N,1442μm,0.2s						
SMG	**Samos**	**1.41**	**8**	P	**Pn**	**00 06 41.8**	**-0.3**
SMG	**Samos**	**1.41**	**8**	P	**Pn**	**00 06 41.8**	**-0.3**
SMG	**Samos**	**1.41**	**8**	P	**Pn**	**00 06 41.7**	**-0.3**
LAST	**Lasithi**	**1.47**	**219**	P	**Pn**	**00 06 43.7**	**+0.9**
LAST				S	**Sn**	**00 07 03.5**	**-0.3**
LAST	**Lasithi**	**1.47**	**219**	P	**Pn**	**00 06 43.8**	**+0.9**
LAST				S	**Sn**	**00 07 03.5**	**-0.3**
LAST	**Lasithi**	**1.47**	**219**	P	**Pn**	**00 06 43.8**	**+1.0**
GCAM	**G?zelcaml?**	**1.48**	**20**	*i* P	**Pn**	**00 06 43.0**	**+0.2**
YER	**Yerkesik**	**1.58**	**58**	P	**Pn**	**00 06 45.2**	**+1.1**
YER				S	**Sn**	**00 07 06.5**	**+0.4**
YER	**Yerkesik**	**1.58**	**58**	P	**Pn**	**00 06 45.2**	**+1.1**
YER				S	**Sn**	**00 07 06.5**	**+0.4**
AYDN	**Tasoluk**	**1.69**	**37**	*i* P	**Pn**	**00 06 46.1**	**+0.7**
AYDN				*i* S	**Sn**	**00 07 16.0**	**+7.5**
TURN	**Turunc**	**1.71**	**70**	*i* P	**Pn**	**00 06 42.7**	**-2.7**
TURN				*i* S	**Sn**	**00 07 02.2**	**-6.3**
IDI	**Anoyia**	**1.73**	**234**	P	**Pn**	**00 06 46.4**	**+0.6**
IDI				S	**Sn**	**00 07 07.8**	**-1.3**
IDI	**Anoyia**	**1.73**	**234**	P	**Pn**	**00 06 46.4**	**+0.6**
IDI				S	**Sn**	**00 07 07.8**	**-1.3**
IDI	**Anoyia**	**1.73**	**234**	P	**Pn**	**00 06 46.1**	**+0.3**
IDI				S	**Sn**	**00 07 07.3**	**-1.8**
IDI				AML	AML	00 07 08.9	
	comp=E,842μm,0.2s						
IDI				AML	AML	00 07 10.4	
	comp=N,602μm,0.2s						
MHLO	**Agia Marina, M**	**1.81**	**283**	P	**Pn**	**00 06 48.2**	**+1.4**
MHLO	**Agia Marina, M**	**1.81**	**283**	P	**Pn**	**00 06 48.2**	**+1.4**
ZEY	**˙zmir**	**1.93**	**358**	*i* P	**Pn**	**00 06 47.6**	**-0.6**
SIVA	**Sivas**	**1.95**	**229**	P	**Pn**	**00 06 50.1**	**+1.7**
SIVA				S	**Sn**	**00 07 14.0**	**+0.3**
SIVA	**Sivas**	**1.95**	**229**	P	**Pn**	**00 06 50.9**	**+2.5**
SIVA				S	**Sn**	**00 07 14.9**	**+1.2**
SIVA				AML	AML	00 07 20.0	
	comp=N,694μm,0.4s						
SIVA				AML	AML	00 07 20.2	
	comp=E,1262μm,0.4s						
FETY	**Fethiye**	**2.03**	**80**	P	**Pn**	**00 06 50.7**	**+1.3**
FETY				S	**Sn**	**00 07 14.9**	**-0.6**
FETY	**Fethiye**	**2.03**	**80**	P	**Pn**	**00 06 50.7**	**+1.3**
FETY				S	**Sn**	**00 07 14.9**	**-0.6**
CHOS	**Chios island**	**2.12**	**348**	P	**Pn**	**00 06 50.4**	**-0.2**
CHOS	**Chios island**	**2.12**	**348**	P	**Pn**	**00 06 50.4**	**-0.2**
VAM	**Vamos**	**2.15**	**246**	P	**Pn**	**00 06 51.5**	**+0.6**
VAM				S	**Sn**	**00 07 16.8**	**-1.4**
VAM	**Vamos**	**2.15**	**246**	P	**Pn**	**00 06 51.5**	**+0.6**
VAM				S	**Sn**	**00 07 17.5**	**-0.7**
IMMV	**Iera Moni Meta**	**2.29**	**249**	P	**Pn**	**00 06 53.4**	**+0.7**
IMMV				S	**Sn**	**00 07 20.2**	**-1.2**
IMMV	**Iera Moni Meta**	**2.29**	**249**	P	**Pn**	**00 06 53.4**	**+0.7**
IMMV				S	**Sn**	**00 07 20.2**	**-1.2**
IMMV	**Iera Moni Meta**	**2.29**	**249**	P	**Pn**	**00 06 53.3**	**+0.6**
AKAS	**Kas**	**2.43**	**91**	*i* P	**Pn**	**00 06 55.6**	**+1.1**
AKAS				*i* S	**Sn**	**00 07 23.1**	**-1.5**
GVD	**Gavdhos**	**2.52**	**235**	P	**Pn**	**00 06 57.5**	**+1.9**
GVD				S	**Sn**	**00 07 27.7**	**+1.1**
GVD	**Gavdhos**	**2.52**	**235**	P	**Pn**	**00 06 57.5**	**+1.9**
GVD				S	**Sn**	**00 07 27.7**	**+1.1**
GVD	**Gavdhos**	**2.52**	**235**	P	**Pn**	**00 06 57.5**	**+1.9**
GVD				S	**Sn**	**00 07 28.7**	**+2.1**
GVD				AML	AML	00 07 30.0	
	comp=N,925μm,0.5s						
GVD				AML	AML	00 07 31.0	
	comp=E,1245μm,0.2s						
ANKY	**Antikythira Is**	**2.71**	**262**	P	**Pn**	**00 06 58.7**	**+0.7**
ANKY				S	**Sn**	**00 07 29.4**	**-1.5**
ANKY	**Antikythira Is**	**2.71**	**262**	P	**Pn**	**00 06 58.7**	**+0.7**
ANKY				S	**Sn**	**00 07 29.4**	**-1.5**
ANKY	**Antikythira Is**	**2.71**	**262**	P	**Pn**	**00 06 57.7**	**-0.3**
ANKY				S	**Sn**	**00 07 28.2**	**-2.7**
ANKY				AML	AML	00 07 32.5	
	comp=N,147μm,0.4s						
ANKY				AML	AML	00 07 33.3	
	comp=E,159μm,0.5s						
VLY	**Voula,Athens**	**2.72**	**305**	P	**Pn**	**00 06 59.0**	**+0.9**
VLY	**Voula,Athens**	**2.72**	**305**	P	**Pn**	**00 06 59.0**	**+0.9**
PTL	**Penteli**	**2.79**	**309**	P	**Pn**	**00 07 00.3**	**+1.2**
PTL	**Penteli**	**2.79**	**309**	P	**Pn**	**00 07 00.3**	**+1.2**
ATHU	**Athens Univers**	**2.79**	**307**	P	**Pn**	**00 06 59.3**	**+0.2**
ATHU	**Athens Univers**	**2.79**	**307**	P	**Pn**	**00 06 59.3**	**+0.2**
KYTH	**Kithira**	**2.87**	**270**	P	**Pn**	**00 07 00.8**	**+0.7**
KYTH				S	**Sn**	**00 07 32.6**	**-2.1**
KYTH	**Kithira**	**2.87**	**270**	P	**Pn**	**00 07 00.8**	**+0.7**
KYTH				S	**Sn**	**00 07 32.6**	**-2.1**
KYTH	**Kithira**	**2.87**	**270**	P	**Pn**	**00 07 00.6**	**+0.5**
PRK	**Paraskevi**	**2.94**	**355**	P	**Pn**	**00 06 59.6**	**-1.4**
PRK	**Paraskevi**	**2.94**	**355**	P	**Pn**	**00 06 59.6**	**-1.4**
DID	**Didima**	**2.95**	**295**	P	**Pn**	**00 07 01.7**	**+0.6**
DID	**Didima**	**2.95**	**295**	P	**Pn**	**00 07 01.7**	**+0.6**
SIGR	**SIGRI**	**2.96**	**349**	P	**Pn**	**00 06 59.8**	**-1.4**
SIGR	**SIGRI**	**2.96**	**349**	P	**Pn**	**00 06 59.8**	**-1.4**
KRND	**KRANIDI**	**2.97**	**292**	P	**Pn**	**00 07 02.5**	**+1.2**
KRND	**KRANIDI**	**2.97**	**292**	P	**Pn**	**00 07 02.5**	**+1.2**
VLI	**Veliai**	**2.98**	**279**	P	**Pn**	**00 07 01.9**	**+0.4**
VLI				S	**Sn**	**00 07 35.6**	**-1.6**
VLI	**Veliai**	**2.98**	**279**	P	**Pn**	**00 07 01.9**	**+0.4**
VLI				S	**Sn**	**00 07 35.6**	**-1.6**
VLI	**Veliai**	**

RLMT				*e*Sn	**Sn**	**00 16 07.5**	**-2.7**
GCMT	**Greycliff**	**1.94**	**269**	*e*Pn	**Pn**	**00 15 46.5**	**-1.2**
GCMT				*e*Sn	**Sn**	**00 16 11.7**	**-1.2**
CRMT	**Chrome Mountai**	**2.31**	**261**	*e*Pn	**Pn**	**00 15 51.2**	**-1.8**
YMP	**Mirror Lake Pl**	**2.56**	**245**	*e*Pn	**Pn**	**00 15 56.7**	**+0.2**
RSSD	**Black Hills**	**2.68**	**130**	*e*Pn	**Pn**	**00 15 56.8**	**-1.2**
LKWY	**Lake**	**2.80**	**243**	*e*Pn	**Pn**	**00 16 01.2**	**+1.5**
YTP	**The Promontory**	**2.82**	**239**	*e*Pn	**Pn**	**00 16 00.2**	**+0.3**
EGMT	**Eagleton**	**2.91**	**319**	*e*Pn	**Pb**	**00 16 04.4**	**-1.8**
H17A	**Grant Village**	**2.99**	**242**	*e*Pn	**Pn**	**00 16 02.2**	**-0.2**
YMR	**Madison River**	**3.11**	**249**	*e*Pn	**Pn**	**00 16 06.0**	**+2.1**
YFT	**Old Faithful**	**3.13**	**244**	*e*Pn	**Pb**	**00 16 08.9**	**-1.1**
DGMT	**Dagmar**	**3.18**	**34**	*e*Pn	**Pn**	**00 16 06.8**	**+2.1**
K22A	**Casper**	**3.23**	**175**	*e*Pn	**Pn**	**00 16 04.6**	**-0.9**
FLWY	**Flagg Ranch**	**3.24**	**238**	*e*Pn	**Pn**	**00 16 06.2**	**+0.5**
BOZ	**Bozeman (W)**	**3.32**	**268**	*e*Pn	**Pn**	**00 16 06.9**	**+0.2**
QLMT	**Earthquake Lak**	**3.36**	**254**	*e*Pn	**Pn**	**00 16 09.5**	**+2.1**
QLMT				*e*Sn	**Sb**	**00 16 56.1**	**+0.6**
MOOW	**Moose Ponds**	**3.47**	**234**	*e*Pn	**Pn**	**00 16 09.9**	**+1.1**
MOOW				*e*Sn	**Sn**	**00 16 50.2**	**-0.5**
LOHW	**Long Hollow**	**3.48**	**231**	*e*Pn	**Pn**	**00 16 08.3**	**-0.6**
HRY	**Holter Researc**	**3.52**	**286**	*e*Pn	**Pn**	**00 16 09.9**	**+0.4**
HRY				*e*Sn	**Sn**	**00 16 54.4**	**+2.6**
BW06	**Boulder Array**	**3.65**	**212**	*e*Pn	**Pn**	**00 16 11.1**	**-0.2**
PD31	**Pinedale Array**	**3.65**	**212**	*e*Pn	**Pn**	**00 16 11.2**	**0.0**
PD31				*e*Sn	**Sn**	**00 16 54.5**	**-0.6**
PD31				*e*Lg	Lg	00 17 00.9	
PDAR	**Pinedale Array**	**3.65**	**212**	Pn	**Pn**	**00 16 10.9**	**-0.4**
	0.5nm,0.3s,baz=46,slow=12,SNR=15						
PDAR				Pg	**Pb**	**00 16 17.4**	**-1.5**
	1.8nm,0.3s,baz=38,slow=19,SNR=29						
PDAR				Lg	Lg	00 17 00.9	
	2.1nm,0.3s,baz=37,slow=32,SNR=6.2						
SNOW	**Snow King Moun**	**3.66**	**230**	*e*Pn	**Pn**	**00 16 13.3**	**+1.8**
SNOW				*e*Sn	**Sn**	**00 16 55.5**	**+0.1**
FXWY	**Fox Creek**	**3.69**	**234**	*e*Pn	**Pn**	**00 16 12.6**	**+0.7**
REDW	**Red Top Meadow**	**3.78**	**230**	*e*Pn	**Pn**	**00 16 11.2**	**-1.9**
LRM	**Limekiln Ridge**	**3.88**	**271**	*e*Pn	**Pn**	**00 16 13.9**	**-0.6**
MCMT	**McKenzie Canyo**	**4.32**	**258**	*e*Pn	**Pn**	**00 16 19.5**	**-1.1**
CHMT	**Chamberlain Mo**	**4.52**	**286**	*e*Pn	**Pn**	**00 16 22.6**	**-0.7**
CHMT				*e*Sn	**Sn**	**00 17 20.0**	**+3.5**
MSO	**Missoula**	**4.97**	**284**	*e*Pb	**Pb**	**00 16 40.3**	**-1.0**
MSO				*e*Sg	**Sg**	**00 17 52.9**	**-0.1**
N23A	**Red Feather La**	**5.03**	**172**	*e*Pn	**Pn**	**00 16 27.3**	**-3.0**
N23A				*e*Sn	**Sn**	**00 17 28.6**	**-0.6**
SWMT	**Swartz Lake**	**5.15**	**291**	*e*Pn	**Pn**	**00 16 31.6**	**-0.3**
SWMT				*e*Sn	**Sn**	**00 17 31.4**	**-0.6**
YBMT	**Yellow Bay**	**5.27**	**295**	*e*Pn	**Pn**	**00 16 32.7**	**-0.7**
YBMT				*e*Sn	**Sn**	**00 17 36.6**	**+1.7**
HDU	**Hyde Park**	**5.38**	**223**	*e*Sb	**Sb**	**00 17 50.4**	**-3.1**
BSMT	**Bassoo Peak**	**5.76**	**293**	*e*Pn	**Pn**	**00 16 42.7**	**+2.4**
MTUT	**Morton Thiokol**	**5.79**	**226**	*e*Sn	Sn	00 17 55.4	+7.7
MTUT				*e*Lg	Lg	00 18 26.4	
HVU	**Hansel Valley**	**5.90**	**228**	*e*Pg	**Pg**	**00 17 09.3**	**+2.8**
OGNE	**Ogallala**	**6.07**	**143**	*e*Lg	Lg	00 18 31.1	
ISCO	**Idaho Springs**	**6.14**	**171**	*e*Sb	**Sb**	**00 18 21.0**	**+5.3**
SMCO	**Snowmass**	**6.69**	**181**	*e*Pg	Pg	00 17 17.6	-4.0
P18A	**Preston Nutter**	**6.71**	**203**	*e*Pn	**Pn**	**00 16 53.0**	**-0.5**
SRU	**San Rafael Swe**	**7.27**	**203**	*e*Pn	**Pn**	**00 16 59.8**	**-1.2**
TMUT	**Trail Mountain**	**7.30**	**207**	*e*Pn	**Pn**	**00 17 02.5**	**+1.0**
I10CA	**LAC DU BONNET**	**8.47**	**55**	*i*		01 07 20.0	
	baz=241,slow=331,SNR=0.6						
ULM	**Lac du Bonnet**	**8.58**	**55**	Pn	**Pn**	**00 17 19.9**	**+1.1**
	0.3nm,0.3s,baz=237,slow=13,SNR=2.8						
ULM				Lg	Lg	00 19 45.5	
	0.8nm,0.3s,baz=319,slow=20,SNR=3.6						
YKA	**Yellowknife Ar**	**17.23**	**348**	Pn	**Pn**	**00 19 10.9**	**-4.3**
	0.0nm,0.3s,baz=159,slow=13,SNR=3.5						
YKA				Lg	Lg	00 24 07.7	
	0.0nm,0.3s,baz=161,slow=28,SNR=2.7						
MKAR	**Makanchi Array**	**87.36**	**354**	P	**P**	**00 28 02.8**	**+0.7**
	0.1nm,0.5s,baz=1.7,slow=4.9,SNR=2.5						

*ISCJB **20** 00:21:53.8±0.7, 44˚.42N±0˚.06×148˚.09E±0˚.09, h98km±4km, mb3.7/20, Error ellipse: s-maj=13.5km s-min=5.7km az=42.8*

*MOS **20** 00:21:54.5±1.4, 44˚.60N×147˚.93E, h100km, mb3.9/13, Error ellipse: s-maj=11.4km s-min=8.3km az=89.4*

*SKHL **20** 00:21:55.8±0.5, 44˚.58N×147˚.88E, h105km±5km, mb4.8/3, msh4.8/3*

*JMA **20** 00:21:55.8±0.4, 44˚.04N×148˚.17E, h79km, M3.8*

*IDC **20** 00:21:56.1±2.6, 44˚.53N×148˚.06E, h98km±23km, mb3.6/18, mb1 3.7/21, mb1mx3.6/38, mbtmp3.9/21, Error ellipse: s-maj=20.5km s-min=14.6km az=148.0*

ISC 20 00:21:54.2±0.9, 44˚.39N±0˚.06×148˚.11E±0˚.07, h89km±7km, n62, σ1§44/69, mb3.8/20, 2C-2D, Kuril Islands

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
					Op		h m s	ISC
KUR	**Kuril'sk**	**0.86**	**348**	*i* P		**Pn**	**00 22 13.0**	**+0.7**
KUR					AMB	AMB	00 22 13.6	
	270nm,0.3s							
KUR					AMB	AMB	00 22 13.6	
	470nm,0.3s							
KUR				*i* S		**Sn**	**00 22 26.3**	**+0.5**
KUR					A	A	00 22 28.0	
	240nm,0.3s							
KUR					A	A	00 22 28.0	
	150nm,0.3s							
KUR	**Kuril'sk**	**0.86**	**348**	*d* iPN		**Pn**	**00 22 13.0**	**+0.7**
KUR				*i* S		**Sn**	**00 22 26.2**	**+0.5**
KUR					pmax	pmax		
	comp=N,267nm,0.3s							
KUR					pmax	pmax		
	comp=Z,472nm,0.3s							
KUR					pmax	pmax		
	comp=E,228nm,0.1s							
KUR					smax	smax		
	comp=N,2μm,0.2s							
KUR					smax	smax		
	comp=E,2μm,0.2s							
SHO	**Shikotan**	**1.06**	**241**	*i* P		**Pn**	**00 22 14.7**	**+0.2**
SHO					AMB	AMB	00 22 15.7	
	comp=E,230nm,0.5s							
SHO				*i* S		**Sn**	**00 22 28.6**	**-1.1**
SHO					A	A	00 22 31.9	
	comp=E,120nm,0.4s							
SHO					A	A	00 22 31.9	
	comp=E,150nm,0.4s							
SHO	**Shikotan**	**1.06**	**241**	*d* iPN		**Pn**	**00 22 14.7**	**+0.2**
SHO				*i* S		**Sn**	**00 22 28.6**	**-1.1**
SHO					pmax	pmax		
	comp=Z,230nm,0.5s							
SHO					pmax	pmax		
	comp=E,130nm,0.3s							
SHO					pmax	pmax		
	comp=N,67nm,0.5s							
SHO					smax	smax		
	comp=N,1μm,0.4s							
SHO					smax	smax		
	comp=E,1μm,0.4s							
YUK	**Yuzh-Kuril'sk**	**1.66**	**258**	*i* P		**Pn**	**00 22 23.0**	**+1.1**
YUK					AMB	AMB	00 22 29.0	
	comp=E,80nm,0.2s							
YUK					AMB	AMB	00 22 29.0	
	comp=E,70nm,0.2s							
YUK					AMB	AMB	00 22 29.0	
	comp=E,180nm,0.2s							
YUK				*i* S		**Sn**	**00 22 43.2**	**+0.3**
YUK					A	A	00 22 47.2	
	comp=E,70nm,0.3s							
YUK					A	A	00 22 47.2	
	comp=E,110nm,0.3s							
YUK	**Yuzh-Kuril'sk**	**1.66**	**258**	*c* iPN		**Pn**	**00 22 23.0**	**+1.1**
YUK				*i* S		**Sn**	**00 22 43.1**	**+0.2**
YUK					pmax	pmax		
	comp=Z,174nm,0.2s							
YUK					pmax	pmax		
	comp=E,71nm,0.1s							
YUK					pmax	pmax		
	comp=N,83nm,0.2s							
YUK					smax	smax		
	comp=E,1μm,0.4s							
YUK					smax	smax		
	comp=N,698nm,0.2s							
NEM2	**Nemuro 2**	**2.00**	**240**	P		**Pn**	**00 22 26.5**	**+0.2**
NEM2				*e*S		**Sn**	**00 22 49.8**	**-0.9**
JRA	**Rausu**	**2.20**	**259**	P		**Pn**	**00 22 31.0**	**+2.0**
JRA				*e*S		**Sn**	**00 22 57.8**	**+2.3**
JNK	**Nakash**	**2.58**	**253**	P		**Pn**	**00 22 35.4**	**+1.4**
JNK				*e*S		**Sn**	**00 23 05.4**	**+0.8**
JAK	**Akkeshi**	**2.84**	**242**	P		**Pn**	**00 22 37.8**	**+0.2**
JAK				*e*S		**Sn**	**00 23 10.1**	**-0.8**
JTKR	**Abashiri--Toko**	**3.05**	**264**	P		**Pn**	**00 22 42.4**	**+2.0**
JAR	**Ashorobuto**	**3.33**	**252**	P		**Pn**	**00 22 46.2**	**+2.1**
JAR				*e*S		**Sn**	**00 23 24.4**	**+1.8**
JCH	**Churui**	**3.88**	**244**	P		**Pn**	**00 22 52.4**	**+0.8**
JCH				*e*S		**Sn**	**00 23 35.3**	**-0.8**
JKK2	**Kamakawa 2**	**3.90**	**264**	P		**Pn**	**00 22 54.4**	**+2.6**
ASAJ	**Asahikawa**	**3.97**	**268**	P		**Pn**	**00 22 55.3**	**+2.5**
	comp=N,1.7nm,0.3s,baz=121,slow=19,SNR=4.1							
ERM	**Erimo**	**4.33**	**238**	*eP*		**Pn**	**00 23 00.1**	**+2.4**
ERM	**Erimo**	**4.33**	**238**	*c* iPN		**Pn**	**00 23 00.1**	**+2.4**
JNBK	**Urakawa-nobuka**	**4.44**	**244**	P		**Pn**	**00 22 59.4**	**+0.2**
JNBK				*e*S		**Sn**	**00 23 47.0**	**-2.7**
YSS	**Yuzh-Sakhalins**	**4.55**	**306**	*eP*		**Pn**	**00 23 00.5**	**-0.1**
YSS	**Yuzh-Sakhalins**	**4.55**	**306**	*e*PN		**Pn**	**00 23 01.5**	**+0.9**
JKB	**Kayabe**	**5.75**	**247**	P		**Pn**	**00 23 17.6**	**+0.6**
JKB				*e*S		**Sn**	**00 24 18.0**	**-3.6**
HABR	**Khabarovsk**	**9.90**	**299**	PN		Pn	00 24 10.4	-3.0
HABR					pmax	pmax		
	comp=Z,14nm,1.4s							
HABR					pmax	pmax		
	comp=N,8.0nm,1.5s							
HABR					pmax	pmax		
	comp=E,20nm,1.5s							
HABR					MLR	MLR		
	comp=Z,39nm,13.0s							
PETK	**Petropavlovsk-**	**10.77**	**33**	P		**Pn**	**00 24 23.9**	**-1.4**
	comp=Z,0.1nm,0.3s,baz=234,slow=15,SNR=2.7							
USRK	**Ussuriysk Ar.**	**11.56**	**275**	P		**Pn**	**00 24 37.2**	**+1.1**
	comp=Z,0.1nm,0.3s,baz=81,slow=12,SNR=5.0							
MSHR	**Mys Shultsa**	**12.45**	**268**	*i* PN		**Pn**	**00 24 46.0**	**-2.0**
SEY	**Seymchan**	**18.74**	**6**	*eP*		**P**	**00 26 06.5**	**+0.8**
SEY	**Seymchan**	**18.74**	**6**	*eP*		**P**	**00 26 06.5**	**+0.8**
YAK	**Yakutsk**	**20.70**	**335**	*eP*		**P**	**00 26 24.5**	**-2.3**
YAK	**Yakutsk**	**20.70**	**335**	*eP*		**P**	**00 26 24.6**	**-2.3**
YAK					pmax	pmax		
	comp=Z,11nm,0.8s							
BILL	**Bilibino**	**25.55**	**16**	*eP*		**P**	**00 27 16.1**	**+1.8**
BILL	**Bilibino**	**25.55**	**16**	*eP*		**P**	**00 27 14.9**	**+0.6**
BILL					pmax	pmax		
	comp=Z,1.0nm,0.9s							
SONM	**Songino Array**	**28.87**	**292**	P		**P**	**00 27 45.2**	**+0.8**
	comp=Z,0.5nm,0.3s,baz=67,slow=11,SNR=2.4							
TIXI	**Tiksi**	**28.88**	**348**	*eP*		**P**	**00 27 41.3**	**-2.7**
TIXI	**Tiksi**	**28.88**	**348**	*eP*		**P**	**00 27 41.3**	**-2.7**
TIXI					pmax	pmax		
	comp=Z,2.0nm,0.8s							
H11N2	**WAKE ISLAND Hy**	**29.15**	**141**	T		T	00 58 43.5	
	baz=333,slow=76,SNR=248							
H11N1	**WAKE ISLAND Hy**	**29.16**	**142**	T		T	00 58 47.6	
	baz=333,slow=76,SNR=192							
H11N3	**WAKE ISLAND Hy**	**29.17**	**141**	T		T	00 58 44.8	
	baz=333,slow=76,SNR=188							
H11S1	**WAKE ISLAND Hy**	**30.14**	**143**	T		T	01 00 00.7	
	baz=334,slow=76,SNR=322							
H11S3	**WAKE ISLAND Hy**	**30.15**	**143**	T		T	01 00 01.0	
	baz=334,slow=76,SNR=217							
H11S2	**WAKE ISLAND Hy**	**30.16**	**143**	T		T	01 00 02.0	
	baz=334,slow=76,SNR=245							
ILAR	**Eielson Array**	**40.56**	**37**	P		**P**	**00 29 25.3**	**+0.9**
	comp=Z,0.3nm,0.6s,baz=271,slow=8.0,SNR=4.7							
MKAR	**Makanchi Array**	**44.91**	**297**	P		**P**	**00 30 00.1**	**+0.3**
	comp=Z,2.2nm,0.6s,baz=78,slow=8.6,SNR=29							
MKAR	**Makanchi Array**	**44.91**	**297**	*eP*		**P**	**00 30 00.4**	**+0.6**
MKAR					pmax	pmax		
	comp=Z,2.0nm,0.6s							
INK	**Inuvik**	**45.50**	**31**	P		**P**	**00 30 04.8**	**+0.7**
	comp=Z,0.8nm,0.4s,baz=302,slow=7.4,SNR=7.5							
RES	**Resolute Bay**	**54.16**	**17**	P		**P**	**00 31 09.1**	**-0.5**
	comp=Z,0.9nm,0.4s,baz=333,slow=8.2,SNR=13							
ARU	**Arti**	**54.35**	**317**	P		**P**	**00 31 09.7**	**-1.6**
YKA	**Yellowknife Ar**	**54.88**	**34**	P		**P**	**00 31 15.9**	**+0.9**
	comp=Z,0.2nm,0.6s,baz=299,slow=6.8,SNR=6.2							
ARCES	**ARCESS Array B**	**58.89**	**340**	P		**P**	**00 31 42.2**	**-1.0**
	comp=Z,4.5nm,1.0s,baz=33,slow=7.2,SNR=5.1							
FINES	**FINESS Array B**	**64.62**	**333**	P		**P**	**00 32 20.4**	**-1.3**
	comp=Z,1.8nm,0.4s,baz=35,slow=7.7,SNR=35							
GEYT	**Alibeck**	**64.74**	**299**	P		**P**	**00 32 23.7**	**+0.7**
	comp=Z,1.1nm,0.4s,baz=46,slow=6.2,SNR=3.7							
WRA	**Warramunga Arr**	**65.25**	**194**	P		**P**	**00 32 26.8**	**+0.5**
	comp=Z,1.0nm,0.8s,baz=15,slow=6.9,SNR=4.6							
NVAR	**Mina Array Bea**	**66.65**	**59**	P		**P**	**00 32 36.3**	**+0.7**
	comp=Z,0.4nm,0.7s,baz=308,slow=4.4,SNR=2.5							
FRB	**Frobisher Bay**	**68.37**	**17**	P		**P**	**00 32 45.2**	**-0.4**
	comp=Z,0.8nm,0.4s,baz=356,slow=7.2,SNR=2.7							
ASAR	**Alice Springs**	**68.96**	**194**	P		**P**	**00 32 51.6**	**+1.8**
	comp=Z,0.3nm,0.4s,baz=10,slow=5.7,SNR=3.9							
NOA	**NORSAR Array B**	**69.25**	**339**	P		**P**	**00 32 50.4**	**-0.9**
	comp=Z,0.3nm,0.5s,baz=30,slow=6.7,SNR=4.5							
KBZ	**Khabaz**	**69.89**	**312**	P		**P**	**00 32 56.8**	**+1.4**
	comp=Z,2.7nm,0.7s,baz=53,slow=3.0,SNR=6.1							
AKASG	**Malin Array Be**	**71.47**	**324**	P		**P**	**00 33 04.4**	**-0.5**
	comp=Z,0.3nm,0.2s,baz=38,slow=6.9,SNR=5.3							
AKASG	**Malin Array Be**	**71.47**	**324**	*i* P		**P**	**00 33 04.5**	**-0.3**
AKASG					pmax	pmax		
	comp=Z,1.0nm,0.4s							
CLL	**Collm**	**77.06**	**333**	*i* P		**P**	**00 33 37.6**	**+0.3**
KHC	**Kasperske Hory**	**78.73**	**331**	*eP*		**P**	**00 33 47.7**	**+1.0**
GERES	**GERESS Array B**	**78.94**	**331**	P		**P**	**00 33 48.5**	**+0.7**
	comp=Z,0.5nm,0.5s,baz=39,slow=6.8,SNR=6.5							
TXAR	**Lajitas Array**	**81.72**	**57**	P		**P**	**00 34 04.2**	**+1.0**
	comp=Z,0.1nm,0.3s,baz=336,slow=4.2,SNR=3.6							

NNC 20 00:29:28.1±3.4, 37˚.15N×70˚.36E, h0km, mb3.9, mpv3.5, 5D, Error ellipse: s-maj=25.9km s-min=21.5km az=0.0, Afghanistan-Tajikistan border region

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
					Op		h m s	ISC
SFK	**Sufi-Kurgan**	**3.77**	**40**	⇓P		Pn	00 30 27.2	-0.6
	5.5nm,0.3s							
SFK				⇓S		Sn	00 31 14.4	+1.4
	12nm,0.4s							
MNAS	**Manas**	**5.58**	**17**	⇓P		Pn	00 30 52.6	0.0
	4.1nm,0.6s							
MNAS				⇓S		Sn	00 31 58.1	+0.6
	7.9nm,0.4s							
KK31	**Karatay Array**	**5.95**	**1**	P		Pn	00 30 58.9	+1.4
	0.9nm,0.3s,baz=183,slow=13,SNR=66							
KK31				⇓S		Sn	00 32 07.8	+1.4
	18nm,0.8s,baz=183,slow=21							

*ISCJB **20** 00:39:23.2±0.7, 36˚.93N±0˚.03×140˚.73E±0˚.05, h15km±4km, mb3.6/14, Error ellipse: s-maj=6.5km s-min=4.3km az=24.4*

*JMA **20** 00:39:23.6, 36˚.94N×140˚.65E, h5km±1km, M3.9 Broadband fault plane solution: P waves. NP1: φs224.00000°, δ49.00000°, λ-105.00000°. NP2: φs67.00000°, δ43.00000°, λ-73.00000°. Principal axes: T Plg3.0000°, Azm325.0000°; N Plg12.0000°, Azm234.0000°; P Plg78.0000°, Azm69.0000°.*

JMA Felt II J1.

*IDC **20** 00:39:29.4±3.9, 36˚.95N×140˚.46E, h50km±36km, mb3.3/14, mb1 3.6/14, mb1mx3.5/39, mbtmp3.6/14 Error ellipse: s-maj=26.1km s-min=18.3km az=90.0*

ISC 20 00:39:23.1±1.1, 36˚.96N±0˚.03×140˚.55E±0˚.04, h6km±7km, n32, σ0§70/35, mb3.6/14, 8C, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
					Op		h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.25**	**54**	⇑P		**Pg**	**00 39 27.8**	**-0.2**
ONAJ					S	**Sg**	**00 39 30.9**	**-0.4**
JHO	**Hitachi**	**0.35**	**177**	⇑P		**Pg**	**00 39 30.2**	**+0.4**
JHO					S	**Sg**	**00 39 35.0**	**+0.6**
JFK	**Kawauchi**	**0.48**	**32**	⇑P		**Pg**	**00 39 32.5**	**0.0**
JFK					S	**Sg**	**00 39 38.8**	**0.0**
JSB	**Shiboa**	**0.50**	**271**	⇑P		**Pn**	**00 39 35.7**	**-1.2**
JSB					S	**Sn**	**00 39 44.1**	**-1.8**
JFT	**Otama**	**0.58**	**343**	⇑P		**Pb**	**00 39 35.9**	**+0.1**
JFT					S	**Sb**	**00 39 44.4**	**0.0**
JYT	**Yasato**	**0.78**	**201**	⇑P		**Pb**	**00 39 38.7**	**-0.4**
JYT					S	**Sb**	**00 39 49.3**	**-0.7**
JFY	**Yanaizu**	**0.81**	**304**	⇑P		**Pn**	**00 39 40.5**	**-0.6**
JFY					S	**Sb**	**00 39 52.0**	**+1.2**
JMM	**Marumori**	**0.93**	**12**	⇑P		**Pg**	**00 39 40.8**	**-0.2**
JMM					S	**Sg**	**00 39 53.2**	**+0.2**
MJAR	**Matsushiro Arr**	**1.92**	**258**	P		**Pb**	**00 39 58.6**	**0.0**
	21nm,0.3s,baz=95,slow=16,SNR=52							
MJAR					S	**Sb**	**00 40 23.8**	**+0.9**
	27nm,0.3s,baz=78,slow=28,SNR=18							
MAT	**Matsushiro**	**1.93**	**258**	P		**Pb**	**00 39 58.9**	**+0.3**
MAT					S	**Sg**	**00 40 25.1**	**+0.1**
USRK	**Ussuriysk Ar.**	**9.73**	**321**	P		Pn	00 41 50.0	+6.4
	0.1nm,0.3s,baz=141,slow=14,SNR=2.1							
SONM	**Songino Array**	**27.25**	**304**	P		**P**	**00 45 09.2**	**+1.0**
	0.7nm,0.7s,baz=99,slow=9.5,SNR=2.8							
H11N2	**WAKE ISLAND Hy**	**28.71**	**119**	T		T	01 15 07.2	
	baz=313,slow=75,SNR=21							
H11N1	**WAKE ISLAND Hy**	**28.72**	**120**	T		T	01 15 07.8	
	baz=313,slow=75,SNR=39							
H11N3	**WAKE ISLAND Hy**	**28.73**	**119**	T		T	01 15 08.5	
	baz=313,slow=75,SNR=26							
H11S1	**WAKE ISLAND Hy**	**29.41**	**122**	T		T	01 15 57.5	
	baz=314,slow=76,SNR=77							
H11S3	**WAKE ISLAND Hy**	**29.41**	**122**	T		T	01 16 00.2	
	baz=314,slow=76,SNR=42							
H11S2	**WAKE ISLAND Hy**	**29.42**	**122**	T		T	01 15 58.4	
	baz=314,slow=76,SNR=42							
ZALV	**Zalesovo Beam**	**41.45**	**312**	P		**P**	**00 47 08.9**	**-1.6**
	0.3nm,0.3s,baz=93,slow=7.2,SNR=3.7							
MKAR	**Makanchi Array**	**43.57**	**302**	P		**P**	**00 47 28.3**	**+0.5**
	0.2nm,0.6s,baz=83,slow=8.9,SNR=3.7							
ILAR	**Eielson Array**	**49.93**	**32**	P		**P**	**00 48 17.9**	**+0.6**
	0.4nm,0.6s,baz=275,slow=6.4,SNR=2.9							
WRA	**Warramunga Arr**	**56.90**	**187**	P		**P**	**00 49 08.5**	**-0.4**
	1.9nm,0.8s,baz=3.8,slow=7.4,SNR=9.9							
ASAR	**Alice Springs**	**60.62**	**187**	P		**P**	**00 49 34.8**	**-0.1**
	0.8nm,0.7s,baz=8.0,slow=6.8,SNR=7.4							
RES	**Resolute Bay**	**62.85**	**14**	P		**P**	**00 49 49.3**	**+0.1**
	0.5nm,0.6s,baz=316,slow=7.5,SNR=6.1							
YKA	**Yellowknife Ar**	**64.22**	**30**	P		**P**	**00 49 58.1**	**-0.4**
	0.3nm,0.8s,baz=303,slow=6.7,SNR=7.0							
FINES	**FINESS Array B**	**68.56**	**332**	P		**P**	**00 50 25.9**	**-0.4**
	1.4nm,0.8s,baz=71,slow=8.3,SNR=3.8							
NOA	**NORSAR Array B**	**73.99**	**337**	P		**P**	**00 50 59.1**	**-0.1**
	1.1nm,0.9s,baz=56,slow=6.3,SNR=2.6							
NVAR	**Mina Array Bea**	**75.59**	**53**	P		**P**	**00 51 10.1**	**+0.9**
	0.6nm,0.8s,baz=282,slow=5.4,SNR=2.7							
PDAR	**Pinedale Array**	**78.21**	**45**	P		**P**	**00 51 24.6**	**+0.7**
	0.2nm,0.7s,baz=274,slow=3.5,SNR=3.0							
GERES	**GERESS Array B**	**82.41**	**328**	P		**P**	**00 51 46.6**	**+0.4**
	0.2nm,0.5s,baz=34,slow=7.1,SNR=2.9							
TXAR	**Lajitas Array**	**90.72**	**52**	P		**P**	**00 52 27.7**	**+0.5**
	0.4nm,0.8s,baz=270,slow=0.6,SNR=4.7							
LPAZ	**La Paz**	**147.33**	**59**	PKPbc		**PKPbc**	**00 59 08.9**	**0.0**
	1.7nm,0.8s,baz=350,slow=4.1,SNR=7.6							

*KRNET **20** 00:48:15.5±0.1, 39˚.46N×73˚.59E, mb3.6*

*NNC **20** 00:48:18.2±2.0, 39˚.56N×73˚.51E, h0km, mb3.6, mpv3.2, Error ellipse: s-maj=39.1km s-min=10.6km az=91.0*

ISC 20 00:48:15.7±2.2, 39˚.49N±0˚.10×73˚.53E±0˚.04, h4km±13km, n15, σ2§13/27, 23C-9D, Tajikistan-Xinjiang border region

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
					Op		h m s	ISC
SFK	**Sufi-Kurgan**	**0.52**	**358**	⇓*e*P		**Pg**	**00 48 26.8**	**+1.1**
	baz=353							
SFK				⇓*e*S		**Sb**	**00 48 35.0**	**-0.6**
	baz=353							
SFK	**Sufi-Kurgan**	**0.52**	**358**	⇓P		**Pg**	**00 48 26.8**	**+1.1**
	93nm,0.4s							
SFK				⇑S		**Sg**	**00 48 33.9**	**+1.5**
	332nm,0.3s							
OHH	**Osh**	**1.18**	**331**	⇓*i*P		**Pg**	**00 48 39.3**	**+1.0**
	baz=330							
OHH				⇓*i*S		**Sn**	**00 48 57.3**	**+1.6**
	baz=330							
BTK	**Batken**	**2.16**	**286**	⇑*e*P		**Pb**	**00 48 56.1**	**+0.6**
	baz=287							
BTK				⇑*e*S		**Sg**	**00 49 26.1**	**+0.9**
	baz=287							
ARK	**Arkit**	**2.59**	**333**	⇑*e*P		**Pb**	**00 49 01.9**	**-1.0**
	baz=333							
ARK				⇑*e

JFT S **Sb** **00 51 08.5 +0.1**
JSB **Shiboa** **0.55 261** ⇑P **Pb** **00 51 02.4 +0.6**
JSB S **Sb** **00 51 10.7 +1.0**
JFY **Yanaizu** **0.79 296** ⇑P **Pb** **00 51 06.4 +0.5**
JFY S **Sb** **00 51 17.7 +1.0**
JMM **Marumori** **0.82 11** ⇑P **Pg** **00 51 05.6 -0.3**
JMM S **Sg** **00 51 16.9 +0.3**
JYT **Yasato** **0.89 201** ⇓P **Pg** **00 51 06.5 -0.7**
JYT S **Sg** **00 51 18.6 -0.2**
MJAR **Matsushiro Arr** **1.98 256** Pn **Pb** **00 51 25.4 -0.9**
129nm,0.3s,baz=76,slow=16,SNR=382
MJAR Sn **Sb** **00 51 51.5 +0.5**
263nm,0.3s,baz=83,slow=30,SNR=22
MAJO **Matsushiro** **1.98 256** *e*P **Pb** **00 51 25.7 -0.6**
MAJO *e* 00 51 53.9
MAJO **Matsushiro** **1.98 256** *e*Pn **Pb** **00 51 25.7 -0.6**
MAJO *e*Sn **Sg** **00 51 53.9 0.0**
MAT **Matsushiro** **1.98 256** P **Pb** **00 51 25.6 -0.7**
MAT S **Sg** **00 51 52.8 -1.0**
MJB9 **Matsu-Tunnel** **1.99 256** *e*Pn **Pb** **00 51 25.7 -0.6**
MJB9 *e*Sn **Sg** **00 51 52.5 -1.4**
INU **Inuyama** **3.36 241** *e*Pn **Pn** **00 51 45.2 +2.6**
INU *e*Sn **Sn** **00 52 18.5 -4.0**
JHJ **Hachijo jima 2** **3.99 190** Pn **Pn** **00 51 51.9 +0.6**
68nm,0.3s,baz=202,slow=9.7,SNR=4.3
JHJ Sn **Sn** **00 52 38.8 +0.8**
233nm,0.3s,baz=80,slow=22,SNR=6.2
JHJ LR LR 00 53 38.0
comp=Z,885nm,19.1s,baz=8.5,slow=42
JHJ2 **Mitsune** **3.99 189** *e*Pn **Pn** **00 51 51.5 +0.2**
JHJ2 *e*Sn **Sn** **00 52 37.3 -0.8**
ERM **Erimo** **5.33 21** *e*P **Pn** **00 52 09.4 -0.3**
ERM *e* 00 53 07.0
ERM **Erimo** **5.33 21** *e*Pn **Pn** **00 52 09.3 -0.3**
ERM *e*Sn **Sn** **00 53 07.0 -4.1**
ASAJ **Asahikawa** **7.21 12** Pn **Pn** **00 52 36.1 +0.6**
4.9nm,0.3s,baz=219,slow=16,SNR=15
ASAJ Sn **Sn** **00 53 57.0 -0.5**
3.1nm,0.3s,baz=198,slow=21,SNR=4.7
YUK **Yuzh-Kuril'sk** **8.04 28** *e*P **Pn** **00 52 47.2 +0.4**
YUK *e*S **Sn** **00 54 15.7 -2.1**
YUK pmax pmax
comp=Z,145nm,0.4s
YUK pmax pmax
comp=N,106nm,0.5s
YUK pmax pmax
comp=E,131nm,0.5s
YUK MLR MLR
comp=Z,719nm,19.0s
SHO **Shikotan** **8.30 33** *e*P **Pn** **00 52 48.5 -1.9**
SHO *e*S **Sn** **00 54 17.6 -6.5**
SHO pmax pmax
comp=Z,65nm,0.6s
SHO pmax pmax
comp=N,36nm,0.9s
SHO pmax pmax
comp=E,31nm,0.5s
JNU **Nakatsue** **8.88 247** Pn **Pn** **00 52 59.4 +0.9**
comp=E,0.6nm,0.3s,baz=338,slow=5.4,SNR=2.9
JNU LR LR 00 56 16.9
comp=E,211nm,21.5s,baz=124,slow=37
USRK **Ussuriysk Ar.** **9.67 320** Pn Pn 00 53 15.6 +6.4
comp=E,1.5nm,0.3s,baz=134,slow=12,SNR=54
USRK LR LR 00 56 38.1
comp=E,448nm,20.8s,baz=185,slow=36
KUR **Kuril'sk** **9.83 32** *e*P **Pn** **00 53 10.1 -1.3**
KUR *e*S **Sn** **00 54 56.4 -5.4**
KUR pmax pmax
comp=Z,95nm,0.4s
KUR pmax pmax
comp=E,33nm,0.8s
KUR pmax pmax
comp=N,23nm,0.4s
YSS **Yuzh-Sakhalins** **10.02 9**⇑ *e*P **Pn** **00 53 14.5 +0.5**
YSS *e*S **Sn** **00 55 06.0 -0.4**
YSS pmax pmax
comp=N,110nm,0.7s
YSS pmax pmax
comp=Z,110nm,0.7s
YSS pmax pmax
comp=E,40nm,0.8s
YSS MLR MLR
comp=Z,500nm,14.0s
YSS **Yuzh-Sakhalins** **10.02 9** *e*Pn **Pn** **00 53 14.9 +1.0**
CBIJ **Chichi jima** **10.03 172** *e*Pn **Pn** **00 53 10.7 -3.5**
KSRS **Korea Array** **10.11 276** Pn Pn 00 53 22.2 +6.9
comp=Z,0.5nm,0.3s,baz=93,slow=13,SNR=47
KSRS LR LR 00 56 55.0
comp=Z,486nm,19.7s,baz=203,slow=36
KSAR **Wonju Array Be** **10.14 276** P Pn 00 53 22.2 +6.5
KSAR **Wonju Array Be** **10.14 276** Pn Pn 00 53 22.2 +6.5
MDJ **Mudanjiang** **11.24 316** P Pn 00 53 37.4 +6.7
MDJ pmax pmax
comp=Z,29nm,1.0s
MDJ pmax pmax
comp=Z,180nm,4.4s
MDJ **Mudanjiang** **11.24 316** *e*Pn Pn 00 53 37.9 +7.2
KLR **Kul'dur** **13.76 335** Pn **Pn** **00 54 07.8 +2.7**
comp=Z,0.1nm,0.3s,baz=133,slow=13,SNR=15
TYV **Tymovskoe** **13.88 5** *e*P **Pn** **00 54 07.0 +0.3**
TYV pmax pmax
comp=Z,66nm,1.0s
NKL **Nikolayevsk** **16.09 0** *e*P **Pn** **00 54 32.5 -3.7**
NKL pmax pmax
comp=Z,10.0nm,0.9s
TIA **Tai'an** **18.85 275** *e*P **Pn** **00 55 13.5 +2.7**
TIA pmax pmax
comp=Z,20nm,1.0s
BJT **Baijiatuau** **19.32 286** *e*P **P** **00 55 11.7 -3.7**
BJT pmax pmax
comp=Z,16nm,0.9s
BJT **Baijiatuau** **19.32 286** *e*P **P** **00 55 11.7 -3.7**
comp=Z,16nm,0.9s
PEA0 **Petropavlovsk-** **20.00 31** *e*P **P** **00 55 23.5 +0.8**
PETK **Petropavlovsk-** **20.00 31** P **P** **00 55 23.1 +0.4**
comp=Z,11nm,0.8s,baz=198,slow=8.9,SNR=7.8
PEA1 **Petropavlovsk-** **20.00 31** *e*P **P** **00 55 23.1 +0.4**
MA2 **Magadan** **23.47 13** P **P** **00 55 59.6 0.0**
comp=Z,30nm,1.1s,baz=185,slow=8.5,SNR=5.3
YAK **Yakutsk** **25.91 348** *e*P **P** **00 56 21.5 -0.5**
YAK pmax pmax
comp=Z,15nm,0.9s
YAK pmax pmax
comp=N,13nm,1.3s
ENH **Enshi** **26.68 264** *e*P **P** **00 56 28.5 -0.8**
comp=N,12nm,0.6s
ULN **Ulaanbaatar** **26.80 304** *e*P **P** **00 56 29.7 -0.7**
ULN *e* 00 59 53.7
ULN pmax pmax
comp=Z,6.0nm,0.7s
ULN **Ulaanbaatar** **26.80 304** *e*P **P** **00 56 29.7 -0.7**
comp=Z,5.9nm,0.7s
ULN *e*PcP **PcP** **00 59 53.7 +0.6**
SEY **Seymchan** **26.90 12** P **P** **00 56 32.0 +1.1**
comp=Z,17nm,0.9s,baz=197,slow=6.5,SNR=23
SEY **Seymchan** **26.90 12** *ce*P **P** **00 56 32.5 +1.6**
BOD **Bodaibo** **27.16 328** *e*P **P** **00 56 32.4 -1.0**
BOD pmax pmax
comp=Z,6.0nm,0.8s
SONA1 **Songino Array** **27.22 304** *e*P **P** **00 56 33.6 -0.6**
SONA1 *e*PcP **PcP** **00 59 54.3 +0.2**
SONA0 **Songino Array** **27.23 304** *e*P **P** **00 56 34.6 +0.3**
comp=Z,12nm,0.8s
SONA0 *e*PcP **PcP** **00 59 54.3 +0.2**
SONM **Songino Array** **27.23 304** P **P** **00 56 34.6 +0.3**
comp=Z,12nm,0.7s,baz=104,slow=8.2,SNR=25
SONM PcP **PcP** **00 59 54.3 +0.2**
comp=Z,1.8nm,0.6s,baz=113,slow=1.7,SNR=6.9
H11N2 **WAKE ISLAND Hy** **28.73 120** T T 01 26 33.9
baz=313,slow=75,SNR=1196
H11N1 **WAKE ISLAND Hy** **28.73 120** T T 01 26 34.4
baz=313,slow=75,SNR=1247
H11N3 **WAKE ISLAND Hy** **28.75 120** T T 01 26 35.2
baz=313,slow=75,SNR=1517
H11S1 **WAKE ISLAND Hy** **29.43 122** T T 01 27 27.2
baz=314,slow=76,SNR=1792
H11S3 **WAKE ISLAND Hy** **29.43 122** T T 01 27 24.2
baz=314,slow=76,SNR=1058
H11S2 **WAKE ISLAND Hy** **29.44 122** T T 01 27 28.3
baz=314,slow=76,SNR=721
TLY **Talaya** **29.82 311** PcP **PcP** **01 00 01.1 +0.8**
comp=Z,1.6nm,0.5s,baz=256,slow=4.2,SNR=3.3
GTA **Gaotai** **31.93 287** *e*P **P** **00 57 16.0 0.0**
GTA pP pP 00 57 26.6 +7.6
GTA sP sP 00 57 30.3 +10

GTA PcP **PcP** **01 00 07.5 +1.2**
GTA pmax pmax
comp=Z,5.0nm,1.0s
GTA LR LR
comp=Z,270nm,20.0s
GTA LR LR
comp=Z,240nm,20.9s
GTA LR LR
comp=Z,290nm,20.4s
BILL **Bilibino** **34.19 17**⇓ *i*P **P** **00 57 34.6 -0.7**
BILL pmax pmax
comp=Z,15nm,1.2s
BILL MLR MLR
comp=Z,391nm,18.0s
BILL **Bilibino** **34.19 17** *e*P **P** **00 57 34.7 -0.5**
comp=Z,18nm,1.3s
TIXI **Tiksi** **35.19 354** P **P** **00 57 43.3 -0.5**
comp=Z,2.5nm,0.4s,baz=155,slow=6.2,SNR=12
TIXI **Tiksi** **35.19 354** *e*P **P** **00 57 43.3 -0.5**
comp=Z,0.4nm,0.8s
MIDW **Midway** **36.24 92** *e*P **P** **00 57 54.2 +0.9**
comp=Z,74nm,0.8s
NIKH **Nikolski High** **38.25 49** *e*P **P** **00 58 09.5 -0.7**
comp=Z,103nm,1.1s
GAMB **Gambell** **39.04 31** *e*P **P** **00 58 17.7 +1.2**
comp=Z,5.8nm,1.0s
FAKI **Fak Fak** **40.53 193** *e*P **P** **00 58 28.0 -1.5**
comp=Z,56nm,1.3s
CMAR **Chiang Mai Arr** **40.87 255** P **P** **00 58 32.6 +0.2**
comp=Z,0.7nm,0.4s,baz=47,slow=5.3,SNR=6.3
CMAR PcP **PcP** **01 00 32.6 -0.6**
comp=Z,1.6nm,0.8s,baz=25,slow=1.9,SNR=7.2
CMAR LR LR 01 16 16.5
comp=Z,70nm,19.9s,baz=30,slow=37
CMAR **Chiang Mai Arr** **40.87 255** *ce*P **P** **00 58 33.7 +1.3**
CMAR pmax pmax
comp=Z,1.0nm,0.4s
ZAA0 **Zalesovo Array** **41.41 312** *e*P **P** **00 58 35.6 -0.8**
ZAA0 *e*PcP **PcP** **01 00 34.0 -0.3**
ZAA0 *e*PcP **PcP** **01 00 34.3 0.0**
ZAA1 **Zalesovo Array** **41.41 312** *e*P **P** **00 58 36.0 -0.4**
ZAA1 *e*PcP **PcP** **01 00 34.0 -0.3**
ZAA1 *e*ScP **ScP** **01 04 24.7 +0.3**
ZALV **Zalesovo Beam** **41.41 312** P **P** **00 58 36.0 -0.4**
comp=Z,7.6nm,0.7s,baz=96,slow=6.9,SNR=31
ZALV PcP **PcP** **01 00 34.0 -0.3**
comp=Z,4.8nm,0.7s,baz=107,slow=2.2,SNR=7.6
ZALV ScP **ScP** **01 04 24.7 +0.3**
comp=Z,0.7nm,0.5s,baz=77,slow=3.2,SNR=5.2
NVS **Novosibirsk** **42.35 314**⇓ *i*P **P** **00 58 44.3 +0.2**
NVS pmax pmax
comp=Z,8.0nm,0.8s
NVS pmax pmax
comp=E,6.0nm,0.8s
NRIK **Noril'sk** **42.97 335** P **P** **00 58 48.7 -0.3**
comp=E,4.2nm,0.7s,baz=106,slow=8.8,SNR=7.3
NRIK PcP **PcP** **01 00 39.7 +0.5**
comp=E,4.0nm,0.7s,baz=108,slow=1.7,SNR=3.6
SDPT **Sand Point** **43.25 46** *e*P **P** **00 58 52.0 +0.6**
comp=E,138nm,1.4s
MK01 **Makanchi Array** **43.55 302** *e*P **P** **00 58 53.8 -0.2**
MK31 **Makanchi Array** **43.55 302** *e*P **P** **00 58 54.5 +0.5**
MK31 **Makanchi Array** **43.55 302** *e*P **P** **00 58 54.5 +0.5**
MK32 **Makanchi Array** **43.55 302** *e*P **P** **00 58 54.4 +0.4**
MK32 *e*PP **PcP** **01 00 41.5 -0.1**
MKAR **Makanchi Array** **43.55 302** P **P** **00 58 54.4 +0.4**
comp=E,5.4nm,0.6s,baz=88,slow=10.0,SNR=49
MKAR PcP **PcP** **01 00 41.5 -0.1**
comp=E,3.3nm,0.9s,baz=62,slow=5.6,SNR=4.9
MAKZ **Makanchi** **43.76 302** *e*P **P** **00 58 55.7 0.0**
MAKZ pmax pmax
comp=Z,7.0nm,0.6s
MAKZ **Makanchi** **43.76 302** *e*P **P** **00 58 55.7 0.0**
comp=Z,6.5nm,0.6s
CHGN **Chignik** **44.40 44** *e*P **P** **00 59 01.7 +1.1**
KURK **Kurchatov** **45.40 308** *e*P **P** **00 59 08.3 -0.3**
KURK pmax pmax
comp=Z,26nm,0.8s
KURK **Kurchatov** **45.40 308** *e*P **P** **00 59 08.3 -0.3**
comp=Z,26nm,0.8s
TT01 **Tatalina** **45.77 35** *e*P **P** **00 59 12.5 +1.1**
TTA **Tatalina** **45.77 35** *e*P **P** **00 59 12.9 +1.3**
TTA pmax pmax
comp=Z,7.0nm,1.1s
TTA **Tatalina** **45.77 35** *e*P **P** **00 59 12.9 +1.3**
comp=Z,6.8nm,1.1s
SVW2 **Sparrevohn** **45.90 37** *e*P **P** **00 59 12.8 +0.3**
comp=Z,12nm,0.7s
KAPI **Kappang** **46.16 209** P **P** **00 59 15.4 +0.4**
comp=Z,16nm,0.9s,baz=3.2,slow=7.0,SNR=7.8
PDGK **Podgornoye** **46.19 298** P **P** **00 59 15.5 +0.5**
PDGK pmax pmax
comp=Z,11nm,0.9s
OHAK **Old Harbor** **47.18 43** *e*P **P** **00 59 21.1 -1.4**
comp=Z,75nm,1.7s
RSO **Redoubt South** **47.29 38** *e*P **P** **00 59 25.8 +2.2**
KDAK **Kodiak Island** **47.52 42** *e*P **P** **00 59 26.7 +1.5**
KDAK pmax pmax
comp=Z,15nm,0.6s
KDAK **Kodiak Island** **47.52 42** *e*P **P** **00 59 26.7 +1.5**
comp=Z,15nm,0.6s
PPLA **Purkeypile** **47.52 35** *e*P **P** **00 59 27.4 +2.1**
comp=Z,31nm,1.5s
CAST **Castle Rocks** **47.57 34** *e*P **P** **00 59 27.1 +1.5**
comp=Z,6.5nm,0.8s
SPU **Mount Spurr** **47.61 37** *e*P **P** **00 59 27.4 +1.5**
BPAW **Bear Paw Mtn.** **48.06 33** *e*P **P** **00 59 30.9 +1.5**
comp=Z,5.6nm,1.0s
KTH **Kantishna Hill** **48.09 34** *e*P **P** **00 59 31.3 +1.6**
comp=Z,16nm,1.0s
MLY **Manley** **48.18 32** *e*P **P** **00 59 31.6 +1.3**
comp=Z,9.3nm,0.7s
MLY *e*PcP **PcP** **01 00 58.9 +1.4**
TRF **Thorofare Moun** **48.38 34** *e*P **P** **00 59 34.0 +2.0**
comp=Z,7.5nm,0.8s
COLD **Coldfoot** **48.45 29** *e*P **P** **00 59 33.7 +1.4**
comp=Z,4.9nm,1.0s
RC01 **Rabbit Creek A** **48.74 37** *e*P **P** **00 59 35.2 +0.6**
comp=Z,16nm,1.1s
RC01 *e*PcP **PcP** **01 01 00.6 +1.2**
SEW **Seward** **48.95 39** *e*P **P** **00 59 36.0 -0.3**
comp=Z,12nm,1.0s
MCK **McKinley** **48.98 34** *e*P **P** **00 59 37.2 +0.8**
MCK pmax pmax
comp=Z,12nm,0.9s
MCK **McKinley** **48.98 34** *e*P **P** **00 59 37.2 +0.8**
comp=Z,12nm,0.9s
PMR **Palmer** **49.00 37** *e*P **P** **00 59 36.9 +0.4**
PMR pmax pmax
comp=Z,20nm,1.3s
PMR **Palmer** **49.00 37** *e*P **P** **00 59 36.9 +0.4**
comp=Z,20nm,1.3s
RND **Reindeer** **49.03 34** *e*P **P** **00 59 37.5 +0.6**
RND pmax pmax
comp=Z,14nm,1.1s
RND **Reindeer** **49.03 34** *e*P **P** **00 59 37.5 +0.6**
comp=Z,14nm,1.1s
TKM2 **Tokmak 2** **49.04 298** *e*P **P** **00 59 38.3 +0.9**
TKM2 pmax pmax
comp=Z,21nm,1.2s
TKM2 **Tokmak 2** **49.04 298** *e*P **P** **00 59 38.3 +0.9**
comp=Z,21nm,1.2s
MDM **Murphy Dome** **49.24 32** *e*P **P** **00 59 39.6 +1.2**
comp=Z,17nm,1.0s
WRH **Wood River Hil** **49.32 33** *e*P **P** **00 59 39.8 +0.9**
WRH *e*PcP **PcP** **01 01 02.1 +0.6**
SML **Sawmill** **49.36 36** *e*P **P** **00 59 40.4 +1.0**
SML pmax pmax
comp=Z,10.0nm,0.8s
SML **Sawmill** **49.36 36** *e*P **P** **00 59 40.4 +1.0**
comp=Z,10nm,0.8s
CCB **Clear Creek Bu** **49.44 33** *e*P **P** **00 59 40.6 +0.8**
comp=Z,4.1nm,0.8s
DHY **Denali Highway** **49.71 35** *e*P **P** **00 59 43.5 +1.3**
comp=Z,6.0nm,0.8s
VOSK **Vostochnaya** **49.77 312** *e*P **P** **00 59 42.7 +0.1**
VOSK pmax pmax
comp=Z,18nm,0.8s
VOSK **Vostochnaya** **49.77 312** *e*P **P** **00 59 42.7 +0.1**
comp=Z,18nm,0.8s
KSH **Kashi** **49.80 294** P **P** **00 59 47.4 +4.2**
KSH *e*PP PP 01 01 45.5 +7.9
KSH pmax pmax
comp=Z,6.0nm,0.9s
KSH pmax pmax
comp=Z,110nm,4.2s

KSH LR LR
comp=Z,99nm,5.4s
KSH LR LR
comp=Z,100nm,5.9s
KSH LR LR
comp=Z,140nm,11.6s
ILAR **Eielson Array** **49.82 32** P **P** **00 59 43.1 +0.3**
comp=Z,9.2nm,0.8s,baz=271,slow=6.1,SNR=72
ILAR PcP **PcP** **01 01 02.8 -0.5**
comp=Z,1.5nm,0.8s,baz=275,slow=3.6,SNR=2.8
ILB **Eielson Array** **49.82 32** *e*P **P** **00 59 43.1 +0.3**
ILB *e*PcP **PcP** **01 01 02.8 -0.5**
IL1 **Eielson Array** **49.82 32** *e*P **P** **00 59 42.0 -0.8**
OTUK **Ortayu** **49.88 306** P **P** **00 59 43.7 +0.2**
OTUK pmax pmax
comp=Z,14nm,1.1s
AAK **Ala-Archa** **49.90 298** LR LR 01 22 03.6
comp=Z,289nm,19.3s,baz=48,slow=38
AAK **Ala-Archa** **49.90 298** *e*P **P** **00 59 44.1 +0.1**
AAK pmax pmax
comp=Z,4.0nm,0.8s
AAK **Ala-Archa** **49.90 298** *e*P **P** **00 59 44.1 +0.1**
comp=Z,4.4nm,0.8s
BRVK **Borovoye** **50.13 312** *e*P **P** **00 59 45.3 0.0**
BRVK pmax pmax
comp=Z,16nm,1.0s
BRVK **Borovoye** **50.13 312** *e*P **P** **00 59 45.3 0.0**
comp=Z,16nm,1.0s
EKS2 **Erkin-Say** **50.40 298** *e*P **P** **00 59 48.2 +0.5**
EKS2 pmax pmax
comp=Z,4.0nm,0.8s
EKS2 **Erkin-Say** **50.40 298** *e*P **P** **00 59 48.2 +0.5**
comp=Z,4.4nm,0.8s
KLU **Klutina** **50.54 37** *e*P **P** **00 59 49.6 +1.3**
comp=Z,21nm,1.5s
ZRNK **Zerenda** **50.90 312** *e*P **P** **00 59 51.2 0.0**
ZRNK pmax pmax
comp=Z,18nm,0.9s
ZRNK **Zerenda** **50.90 312** *e*P **P** **00 59 51.2 0.0**
comp=Z,18nm,0.9s
DOT **Dot Lake** **51.15 34** *e*P **P** **00 59 53.1 +0.2**
comp=Z,11nm,0.8s
BMRM **Bremner River** **51.23 37** *e*P **P** **00 59 55.0 +1.4**
comp=Z,11nm,1.0s
MNAS **Manas** **51.35 299** P **P** **00 59 55.7 +0.8**
MNAS pmax pmax
comp=Z,13nm,0.8s
MENT **Mentasta** **51.39 35** *e*P **P** **00 59 56.2 +1.5**
comp=Z,13nm,1.0s
SFK **Sufi-Kurgan** **51.43 295** P **P** **00 59 56.3 +0.7**
SFK pmax pmax
comp=Z,18nm,0.9s
EGAK **Eagle** **52.27 32** *e*P **P** **01 00 01.8 +0.7**
comp=Z,5.7nm,0.9s
BALM **Baldy** **52.31 37** *e*P **P** **01 00 02.9 +1.2**
BALM *e* 01 01 14.5
BALM **Baldy** **52.31 37** *e*P **P** **01 00 02.9 +1.2**
BALM *e*PcP **PcP** **01 01 14.5 +1.7**
KKAR **Karatay Array** **52.54 300** *e*P **P** **01 00 03.7 +0.1**
KKAR **Karatay Array** **52.54 300** *e*P **P** **01 00 03.7 +0.1**
GSI **Gunungsitoli** **53.25 238** *e*P **P** **01 00 08.8 -0.3**
comp=Z,72nm,1.2s
INK **Inuvik** **54.66 27** LR LR 01 27 45.9
comp=Z,145nm,18.6s,baz=260,slow=41
INK **Inuvik** **54.66 27** *e*P **P** **01 00 19.5 +0.8**
INK pmax pmax
comp=Z,14nm,1.3s
INK **Inuvik** **54.66 27** *e*P **P** **01 00 19.5 +0.8**
comp=Z,14nm,1.3s
SVE **Sverdlovsk** **54.69 318**⇑ *e*P **P** **01 00 19.2 +0.1**
SVE pmax pmax
comp=Z,17nm,0.9s
ARU **Arti** **55.91 318** *d i*P **P** **01 00 27.5 -0.4**
ARU 01 01 25.3
ARU 01 02 30.8
ARU S **S** **01 08 14.8 -0.5**
ARU SS **SS** **01 11 55.4 -5.1**
ARU pmax pmax
comp=Z,17nm,0.8s
ARU **Arti** **55.91 318** *e*P **P** **01 00 27.7 -0.2**
comp=Z,24nm,1.1s
FITZ **Fitzroy Crossi** **56.65 197** P **P** **01 00 33.8 +0.3**
comp=Z,4.1nm,0.6s,baz=36,slow=6.3,SNR=9.3
FITZ **Fitzroy Crossi** **56.65 197** *e*P **P** **01 00 33.8 +0.3**
comp=Z,10.0nm,1.0s
KBL **Kabul** **56.79 291** *e*P **P** **01 00 34.7 -0.1**
KBL pmax pmax
comp=Z,14nm,1.1s
KBL **Kabul** **56.79 291** *e*P **P** **01 00 34.7 -0.1**
comp=Z,14nm,1.1s
WRAB **Tennant Creek** **56.99 187** *e*P **P** **01 00 35.5 -0.4**
WRAB pmax pmax
comp=Z,29nm,0.8s
WRAB **Tennant Creek** **56.99 187** *e*P **P** **01 00 35.5 -0.4**
comp=Z,29nm,0.8s
WB2 **Warramunga Arr** **57.00 187** *e*P **P** **01 00 35.1 -0.9**
comp=Z,32nm,0.7s
WR1 **Warramunga Arr** **57.00 187** *e*P **P** **01 00 35.0 -0.9**
comp=Z,32nm,0.6s
WR1 *e*PcP **PcP** **01 01 31.9 +0.8**
WRA **Warramunga Arr** **57.00 187** P **P** **01 00 35.0 -1.0**
comp=Z,31nm,0.7s,baz=4.3,slow=7.4,SNR=98
WRA PcP **PcP** **01 01 31.9 +0.8**
comp=Z,6.9nm,1.0s,baz=0.2,slow=4.0,SNR=3.3
WRA **Warramunga Arr** **57.00 187** *i* P **P** **01 00 35.0 -1.0**
WRA pmax pmax
comp=Z,30nm,0.7s
CTA **Charters Tower** **57.09 174** P **P** **01 00 36.3 -0.4**
comp=Z,3.0nm,0.6s,baz=18,slow=7.0,SNR=5.0
ABKAR **Akbulak array** **57.42 310** *e*P **P** **01 00 38.5 -0.2**
HYB **Hyderabad** **57.55 268** *i* P **P** **01 00 40.0 -0.1**
DLBC **Dease Lake** **59.01 38** *e*P **P** **01 00 52.1 +2.3**
comp=Z,7.5nm,1.0s
AS01 **Alice Springs** **60.72 187** *e*P **P** **01 01 01.0 -0.8**
AS31 **Alice Springs** **60.73 187** *e*P **P** **01 01 01.4 -0.5**
comp=Z,3.2nm,0.6s
AS31 *e*PcP **PcP** **01 01 47.0 +1.1**
ASAR **Alice Springs** **60.73 187** P **P** **01 01 01.4 -0.5**
comp=Z,12nm,0.7s,baz=14,slow=6.4,SNR=102
ASAR PcP **PcP** **01 01 47.0 +1.1**
comp=Z,2.3nm,0.9s,baz=6.6,slow=4.7,SNR=1.9
ASAR PKP2bc 01 30 28.9
comp=Z,1.2nm,1.0s,baz=162,slow=2.1,SNR=4.3
RES **Resolute Bay** **62.74 14** *e*P **P** **01 01 14.7 -0.1**
RES pmax pmax
comp=Z,14nm,1.3s
RES **Resolute Bay** **62.74 14** *e*P **P** **01 01 14.7 -0.1**
comp=Z,14nm,1.3s
GEYT **Alibeck** **63.25 299** P **P** **01 01 19.2 +0.4**
comp=Z,9.7nm,0.7s,baz=31,slow=3.5,SNR=26
ARA0 **ARCESS Array S** **63.74 339** *e*P **P** **01 01 21.1 -0.5**
ARCES **ARCESS Array B** **63.74 339** P **P** **01 01 21.1 -0.5**
comp=Z,5.4nm,0.8s,baz=57,slow=7.8,SNR=9.9
ARCES LR LR 01 33 43.2
comp=Z,56nm,18.1s,baz=42,slow=40
YKW3 **Yellowknife Ar** **64.08 30** *e*P **P** **01 01 24.2 +0.4**
comp=Z,3.7nm,0.8s
YKA **Yellowknife Ar** **64.11 30** P **P** **01 01 23.8 -0.3**
comp=Z,3.1nm,0.8s,baz=302,slow=6.6,SNR=54
YKA PKP2bc 01 30 17.8
comp=Z,0.3nm,1.0s,baz=119,slow=1.5,SNR=4.0
YKB5 **Yellowknife Ar** **64.11 30** *e*P **P** **01 01 23.8 -0.3**
DAG **Danmarks Havn** **65.69 355** *i* P **P** **01 01 33.8 -0.3**
comp=Z,6.0nm,0.7s
DAG **Danmarks Havn** **65.69 355** *e*P **P** **01 01 33.8 -0.3**
DAG pmax pmax
comp=Z,4.0nm,0.7s
VRH **Novokhopyorsk** **67.12 318** *e*P **P** **01 01 41.8 -1.9**
VRH pmax pmax
comp=Z,10.0nm,0.5s
NLWA **Neilton Lookou** **67.18 47** *e*P **P** **01 01 46.3 +2.1**
comp=Z,11nm,1.1s
OBN **Obninsk** **67.68 323**⇑ *e*P **P** **01 01 46.1 -1.1**
OBN *e* 01 04 15.7
OBN pmax pmax
comp=Z,30nm,2.5s
OBN MLR MLR
comp=Z,97nm,20.0s
LPSR **Galich'ya Gora** **67.86 320** *e*P **P** **01 01 47.8 -0.6**
LPSR pmax pmax
comp=Z,10.0nm,0.6s
D05A **Enumclaw** **68.38 47** *e*P **P** **01 01 53.9 +2.1**
comp=Z,13nm,1.1s
VSR **Storozhevoye** **68.48 318** *e*P **P** **01 01 51.4 -0.9**
VSR pmax pmax
comp=Z,10.0nm,0.6s

FIA1 **FINESS Array S** 68.48 332 *e*P P 01 01 52.2 +0.1
comp=Z,17nm,0.8s
FIA0 **FINESS Array S** 68.48 332 *e*P P 01 01 51.8 -0.3
FIA0 **FINESS Array S** 68.48 332 *e*P P 01 01 51.8 -0.3
FINES **FINESS Array B** 68.48 332 P P 01 01 51.8 -0.3
comp=Z,13nm,0.8s,baz=59,slow=7.4,SNR=36
FINES **FINESS Array B** 68.48 332 *i* P P 01 01 51.7 -0.4
FINES pmax pmax
comp=Z,13nm,0.8s
STKA **Stephens Creek** 68.59 179 P P 01 01 53.1 +0.1
comp=Z,6.3nm,0.7s,baz=332,slow=9.1,SNR=13
STKA LR LR 01 33 17.9
comp=Z,81nm,18.1s,baz=10,slow=37
STKA **Stephens Creek** 68.59 179 *e*P P 01 01 53.1 +0.1
STKA pmax pmax
comp=Z,2.0nm,0.9s
STKA **Stephens Creek** 68.59 179 *e*P P 01 01 53.1 +0.1
comp=Z,2.2nm,0.9s
TDL **Tradedollar La** 68.69 48 P P 01 01 55.3 +1.5
VAF **Ylistaro** 68.69 334 P P 01 01 54.1 +0.7
VAF pmax pmax
comp=Z,55nm,0.8s
LON **Longmire** 68.72 47 *e*P P 01 01 55.1 +1.1
LON pmax pmax
comp=Z,3.0nm,0.8s
LON **Longmire** 68.72 47 *e*P P 01 01 55.0 +1.1
comp=Z,2.6nm,0.8s
F04A **Amboy** 68.79 48 *e*P P 01 01 55.8 +1.5
comp=Z,15nm,0.8s
NLW **Nelson Butte** 68.86 45 P P 01 01 56.0 +1.1
LTY **Liberty** 69.11 46 *e*P P 01 01 57.4 +1.0
comp=Z,4.2nm,0.7s
ETW **Entiat** 69.12 46 *e*P P 01 01 57.5 +1.0
B08A **Colville Reser** 69.28 45 *e*P P 01 01 58.1 +0.7
comp=Z,4.6nm,0.8s
H04A **Detroit Lake** 69.59 49 *e*P P 01 02 00.8 +1.4
comp=Z,12nm,0.8s
VSU **Vasula** 70.10 329 *ce*P P 01 02 02.6 +0.5
VSU pmax pmax
comp=Z,35nm,0.8s
CROR **Criterion Ridg** 70.14 48 P P 01 02 03.9 +1.1
C09A **Chrisman Ranch** 70.18 45 *e*P P 01 02 04.1 +1.2
comp=Z,7.4nm,0.8s
G06A **Carlson Farm,** 70.22 48 *e*P P 01 02 04.7 +1.5
comp=Z,5.9nm,0.8s
HAWA **Hanford** 70.23 46 *e*P P 01 02 05.0 +1.8
comp=Z,7.4nm,1.0s
ZEI **Tsey** 70.28 309 *e*P P 01 02 02.4 -1.4
ZEI pmax pmax
comp=Z,7.0nm,0.7s
KBZ **Khabaz** 70.39 310 P P 01 02 04.4 +0.2
comp=Z,7.9nm,0.9s,baz=39,slow=2.7,SNR=13
KIV **Kislovodsk** 70.39 311 *ce*P P 01 02 05.1 +0.7
KIV *e*S S 01 11 12.8 -4.2
KIV pmax pmax
comp=Z,27nm,1.0s
KIV **Kislovodsk** 70.39 311 *e*P P 01 02 05.7 +1.3
comp=Z,21nm,0.8s
NEW **Newport** 70.56 44 *e*P P 01 02 06.4 +1.1
NEW pmax pmax
comp=Z,7.0nm,0.8s
NEW **Newport** 70.56 44 *e*P P 01 02 06.4 +1.1
comp=Z,7.1nm,0.8s
SUMG **Summit** 70.66 360 *i* P P 01 02 06.5 +0.6
comp=Z,20nm,0.9s
SUMG **Summit** 70.66 360 *e*P P 01 02 06.7 +0.8
SUMG pmax pmax
comp=Z,21nm,0.9s
SUMG **Summit** 70.66 360 *e*P P 01 02 06.7 +0.8
comp=Z,21nm,0.9s
YBH **Yreka Blue Hor** 70.84 52 *e*P P 01 02 08.7 +1.5
YBH pmax pmax
comp=Z,4.0nm,0.9s
YBH **Yreka Blue Hor** 70.84 52 *e*P P 01 02 08.7 +1.5
comp=Z,4.0nm,0.9s
GNI **Garni** 71.16 306 *e*P P 01 02 09.4 +0.2
GNI pmax pmax
comp=Z,12nm,0.9s
UOSS **Minazif** 71.17 287 *e*P P 01 02 09.4 +0.1
comp=Z,0.4nm,1.0s
K05A **Summer Lake** 71.43 50 *e*P P 01 02 12.8 +2.0
comp=Z,15nm,0.9s
WDC **Whiskeytown Da** 71.58 53 *e*P P 01 02 12.9 +1.4
WDC pmax pmax
comp=Z,9.0nm,1.4s
WDC **Whiskeytown Da** 71.58 53 *e*P P 01 02 12.9 +1.4
comp=Z,8.6nm,1.4s
F10A **Beach Ranch, E** 71.80 46 *e*P P 01 02 14.4 +1.5
comp=Z,5.5nm,0.9s
WALA **Waterton Lakes** 71.86 42 *e*P P 01 02 14.3 +1.1
comp=Z,8.1nm,0.8s
SCO **Scoresbysund** 72.02 354 *i* P P 01 02 14.1 +0.5
comp=Z,5.6nm,0.8s
SCO **Scoresbysund** 72.02 354 *i* P P 01 02 14.1 +0.5
SCO pmax pmax
comp=Z,6.0nm,0.8s
IZAR **Zarasai** 72.03 327 *e*P P 01 02 14.4 +0.4
IZAR IAmb IAmb 01 02 18.6
comp=Z,7.0nm,0.7s
BSMT **Bassoo Peak** 72.09 43 *e*P P 01 02 15.9 +1.2
IDID **Didziasalis** 72.10 327 *e*P P 01 02 14.7 +0.4
IDID IAmb IAmb 01 02 17.2
comp=Z,7.4nm,0.8s
ISAL **Salakas** 72.20 327 *e*P P 01 02 15.4 +0.4
ISAL IAmb IAmb 01 02 16.1
comp=Z,12nm,0.9s
MOD **Modoc Plateau** 72.25 51 *e*P P 01 02 17.1 +1.3
comp=Z,3.8nm,0.8s
NACGM **Naroch** 72.34 326 *e* P 01 02 15.0 -0.8
BMO **Blue Mountains** 72.39 47 *e*P P 01 02 17.7 +1.3
comp=Z,8.0nm,0.8s
JTMT **Jette** 72.42 43 *e*P P 01 02 18.0 +1.3
CAN **Canberra** 72.44 173 *e*P P 01 02 17.2 +0.7
CAN pmax pmax
comp=Z,9.0nm,1.0s
CAN **Canberra** 72.44 173 *e*P P 01 02 17.2 +0.7
comp=Z,8.8nm,1.0s
SWMT **Swartz Lake** 72.72 43 *e*P P 01 02 19.5 +1.1
ORV **Oroville** 72.81 53 *e*P P 01 02 19.7 +0.8
ORV pmax pmax
comp=Z,8.0nm,1.3s
ORV **Oroville** 72.81 53 *e*P P 01 02 19.7 +0.8
comp=Z,7.6nm,1.3s
WVOR **Wild Horse Val** 72.98 50 *e*P P 01 02 21.1 +1.1
WVOR pmax pmax
comp=Z,6.0nm,1.1s
WVOR **Wild Horse Val** 72.98 50 *e*P P 01 02 21.1 +1.1
comp=Z,5.6nm,1.1s
MSO **Missoula** 73.15 44 *e*P P 01 02 21.6 +0.7
comp=Z,3.6nm,0.9s
NC405 **NORSAR Array S** 73.69 337 *e*P P 01 02 23.7 -0.1
NC204 **NORSAR Array S** 73.87 337 *e*P P 01 02 24.8 0.0
AKASG **Malin Array Be** 73.87 322 P P 01 02 24.4 -0.5
comp=Z,5.3nm,0.7s,baz=47,slow=6.0,SNR=33
AKASG LR LR 01 37 48.5
comp=Z,134nm,18.5s,baz=35,slow=38
AKBB **Malin Array Si** 73.87 322 *e*P P 01 02 24.5 -0.5
AKBB pmax pmax
comp=Z,12nm,0.8s
AKBB **Malin Array Si** 73.87 322 *e*P P 01 02 24.4 -0.5
comp=Z,12nm,0.8s
NB201 **NORSAR Array S** 73.88 337 *e*P P 01 02 25.0 +0.2
KIEV **Kiev** 73.89 322 *e*P P 01 02 24.5 -0.5
KIEV pmax pmax
comp=Z,11nm,0.8s
KIEV **Kiev** 73.89 322 *e*P P 01 02 24.5 -0.5
comp=Z,11nm,0.8s
NB2 **NORSAR Subarra** 73.91 337 P P 01 02 24.5 -0.5
comp=Z,9.2nm,0.8s,baz=40,slow=6.2
NB200 **NORSAR Array S** 73.91 337 *e*P P 01 02 24.8 -0.2
NOA **NORSAR Array B** 73.91 337 P P 01 02 24.8 -0.2
comp=Z,9.7nm,0.9s,baz=39,slow=5.8,SNR=28
NOA LR LR 01 38 07.3
comp=Z,86nm,18.1s,baz=30,slow=38
AK11 **Malin Array Si** 73.92 322 *e*P P 01 02 24.8 -0.4
NBO02 **NORSAR Array S** 74.01 337 *e*P P 01 02 25.5 -0.1
FFC **Flin Flon** 74.04 32 *e*P P 01 02 26.1 +0.2
FFC pmax pmax
comp=Z,10.0nm,0.8s
FFC **Flin Flon** 74.04 32 *e*P P 01 02 26.1 +0.2
comp=Z,9.5nm,0.8s
NBO00 **NORSAR Array S** 74.05 337 *e*P P 01 02 26.0 +0.2
MFID **Camas Ranch** 74.09 47 *e*P P 01 02 26.0 -0.5
comp=Z,7.1nm,0.8s
FCC **Fort Churchill** 74.27 26 *e*P P 01 02 27.0 -0.1
FCC pmax pmax
comp=Z,17nm,1.1s
FCC **Fort Churchill** 74.27 26 *e*P P 01 02 27.0 -0.1
comp=Z,17nm,1.1s
CMB **Columbia Colle** 74.39 54 *e*P P 01 02 29.2 +0.9
CMB pmax pmax
comp=Z,7.0nm,1.0s
CMB **Columbia Colle** 74.39 54 *e*P P 01 02 29.2 +0.9
comp=Z,6.6nm,1.0s
LRM **Limekiln Ridge** 74.58 44 *e*P P 01 02 30.4 +0.8
EGMT **Eagleton** 74.68 41 *e*P P 01 02 30.6 +0.7
comp=Z,21nm,0.8s
DLMT **Dillon** 74.78 44 *e*P P 01 02 31.1 +0.5
comp=Z,20nm,1.0s
HLID **Hailey** 74.83 47 *e*P P 01 02 32.4 +1.4
comp=Z,4.6nm,0.9s
MCMT **McKenzie Canyo** 74.97 45 *e*P P 01 02 32.5 +0.7
BMN **Battle Mountai** 75.00 51 *e*P P 01 02 33.6 +1.7
BMN pmax pmax
comp=Z,7.0nm,0.9s
BMN **Battle Mountai** 75.00 51 *e*P P 01 02 33.6 +1.7
comp=Z,6.6nm,0.9s
BOZ **Bozeman (W)** 75.15 44 *e*P P 01 02 33.7 +1.0
BOZ pmax pmax
comp=Z,10.0nm,0.8s
BOZ **Bozeman (W)** 75.15 44 *e*P P 01 02 33.7 +1.0
comp=Z,9.5nm,0.8s
NV01 **Mina Array Sit** 75.50 53 *e*P P 01 02 36.1 +1.2
NVAR **Mina Array Bea** 75.50 53 P P 01 02 36.1 +1.2
comp=Z,8.2nm,0.9s,baz=291,slow=5.9,SNR=34
SFJD **Kangerlussuaq** 75.91 5 *i* P P 01 02 34.5 -1.9
comp=Z,21nm,1.1s
SFJD **Kangerlussuaq** 75.91 5 *e*P P 01 02 34.5 -1.9
SFJD pmax pmax
comp=Z,21nm,1.1s
SFJD **Kangerlussuaq** 75.91 5 *e*P P 01 02 36.6 +0.2
comp=Z,18nm,1.4s
SORM **Soroca** 75.95 320 ⇑*i*P P 01 02 36.7 -0.3
SORM **Soroca** 75.95 320 ⇑P P 01 02 36.7 -0.3
ELK **Elko** 76.03 49 *e*P P 01 02 39.2 +1.3
ELK pmax pmax
comp=Z,4.0nm,0.8s
ELK **Elko** 76.03 49 *e*P P 01 02 39.2 +1.3
comp=Z,3.7nm,0.8s
YMR **Madison River** 76.12 44 *e*P P 01 02 40.1 +1.7
comp=Z,6.5nm,0.7s
GCMT **Greycliff** 76.13 43 *e*P P 01 02 39.8 +1.4
YFT **Old Faithful** 76.33 44 *e*P P 01 02 42.5 +3.0
comp=Z,8.8nm,0.8s
LKWY **Lake** 76.50 44 *e*P P 01 02 44.0 +3.4
LKWY pmax pmax
comp=Z,7.0nm,0.9s
LKWY **Lake** 76.50 44 *e*P P 01 02 44.0 +3.4
comp=Z,6.5nm,0.9s
H17A **Grant Village** 76.51 44 *e*P P 01 02 43.4 +2.8
comp=Z,13nm,0.8s
FLWY **Flagg Ranch** 76.64 45 *e*P P 01 02 43.5 +2.2
comp=Z,11nm,1.2s
FXWY **Fox Creek** 76.73 45 *e*P P 01 02 43.7 +1.9
comp=Z,6.0nm,0.9s
RLMT **Red Lodge** 76.77 43 *e*P P 01 02 43.1 +1.1
comp=Z,4.3nm,0.8s
MOOW **Moose Ponds** 76.82 45 *e*P P 01 02 43.8 +1.5
comp=Z,5.5nm,1.0s
HVU **Hansel Valley** 76.88 47 *e*P P 01 02 44.3 +1.7
HVU pmax pmax
comp=Z,8.0nm,0.8s
HVU **Hansel Valley** 76.88 47 *e*P P 01 02 44.2 +1.7
comp=Z,7.8nm,0.8s
LOHW **Long Hollow** 76.99 45 *e*P P 01 02 45.0 +1.7
comp=Z,2.6nm,0.8s
SNOW **Snow King Moun** 77.00 45 *e*P P 01 02 45.3 +1.9
comp=Z,6.4nm,0.8s
REDW **Red Top Meadow** 77.00 45 *e*P P 01 02 45.0 +1.7
comp=Z,6.3nm,1.0s
LEOM **Leova** 77.09 319 ⇓*i*P P 01 02 44.1 +0.6
LEOM **Leova** 77.09 319 ⇓P P 01 02 44.1 +0.6
DAC **Darwin (Calif)** 77.22 54 *e*P P 01 02 45.7 +1.0
DAC pmax pmax
comp=Z,7.0nm,1.3s
DAC **Darwin (Calif)** 77.22 54 *e*P P 01 02 45.7 +1.0
comp=Z,6.9nm,1.3s
DGMT **Dagmar** 77.22 38 *e*P P 01 02 45.0 +0.8
comp=Z,12nm,0.8s
AHID **Auburn Hatcher** 77.24 46 *e*P P 01 02 46.4 +1.7
comp=Z,6.0nm,0.7s
BGU **Big Grassy Mou** 77.25 48 *e*P P 01 02 46.2 +1.5
comp=Z,4.4nm,0.9s
R11A **Troy Canyon, C** 77.26 52 *e*P P 01 02 45.6 +0.8
comp=Z,10.0nm,1.1s
LAO **LASA Array** 77.38 40 *e*P P 01 02 46.5 +1.3
comp=Z,10nm,0.9s
TPNV **Topopah Spring** 77.69 53 *e*P P 01 02 48.3 +1.0
TPNV pmax pmax
comp=Z,12nm,0.9s
TPNV **Topopah Spring** 77.69 53 *e*P P 01 02 48.2 +1.0
comp=Z,12nm,0.9s
HWUT **Hardware Ranch** 77.69 47 *e*P P 01 02 48.8 +1.6
comp=Z,8.9nm,1.0s
KWP **Kalwaria Pacla** 77.72 324 *e*P P 01 02 47.5 +0.5
KWP **Kalwaria Pacla** 77.72 324 ⇑*i*P P 01 02 48.0 +1.0
KWP **Kalwaria Pacla** 77.72 324 ⇑P P 01 02 48.0 +1.0
DUG **Dugway, Tooele** 77.83 49 *e*P P 01 02 49.2 +1.2
DUG pmax pmax
comp=Z,8.0nm,0.8s
DUG **Dugway, Tooele** 77.83 49 *e*P P 01 02 49.2 +1.2
comp=Z,7.9nm,0.8s
BUR08 **Bucovina Ar. S** 77.87 321 *e*P P 01 02 48.5 +0.5
BURAR **Bucovina Array** 77.88 321 ⇓*i*P P 01 02 48.4 +0.3
BURAR **Bucovina Array** 77.88 321 ⇓P P 01 02 48.4 +0.3
TESR **Tescani** 77.89 320 ⇑*i*P P 01 02 48.3 +0.3
BW06 **Boulder Array** 78.11 45 *e*P P 01 02 49.8 +0.1
comp=Z,5.5nm,0.8s
PD31 **Pinedale Array** 78.11 45 *e*P P 01 02 50.0 +0.4
PDAR **Pinedale Array** 78.11 45 P P 01 02 50.0 +0.4
comp=Z,5.4nm,0.7s,baz=264,slow=2.9,SNR=38
PSUT **Pine Spring** 78.22 51 *e*P P 01 02 51.6 +1.4
comp=Z,5.8nm,0.8s
VRI **Vrincioaia** 78.28 319 ⇓*i*P P 01 02 51.6 +1.4
VRI **Vrincioaia** 78.28 319 ⇓P P 01 02 51.6 +1.4
GSC **Goldstone, Bar** 78.32 55 *e*P P 01 02 51.9 +1.2
GSC pmax pmax
comp=Z,4.0nm,0.4s
GSC **Goldstone, Bar** 78.32 55 *e*P P 01 02 51.9 +1.2
comp=Z,3.9nm,0.4s
PLOR **Plostina** 78.33 319 ⇓*i*P P 01 02 51.7 +1.2
PLOR **Plostina** 78.33 319 ⇓P P 01 02 51.7 +1.2
BR101 **Keskin Array S** 78.34 311 *e*P P 01 02 50.9 +0.1
BR131 **Keskin Array S** 78.34 311 *e*P P 01 02 50.4 -0.4
BRTR **Keskin Array B** 78.34 311 P P 01 02 50.9 +0.1
comp=Z,3.9nm,0.9s,baz=102,slow=4.1,SNR=17
JLU **Jordanelle** 78.39 48 *e*P P 01 02 53.2 +2.0
comp=Z,4.6nm,0.9s
KOLS **Kolonicke sedl** 78.41 324 *e*P P 01 02 51.3 +0.4
KOLS pmax pmax
comp=Z,7.0nm,1.1s
KOLS **Kolonicke sedl** 78.41 324 *e*P P 01 02 51.3 +0.4
NLU **North Lily Min** 78.42 49 *e*P P 01 02 52.8 +1.5
comp=Z,6.3nm,0.9s
STHS **Stebnicka Huta** 78.56 324 *e*P P 01 02 52.7 +1.0
STHS pmax pmax
comp=Z,7.0nm,1.0s
STHS **Stebnicka Huta** 78.56 324 *e*P P 01 02 52.7 +1.0
UZH **Uzhgorod** 78.61 323 *e*P P 01 02 53.5 +1.6
UZH *e* 01 03 01.0
MPU **Maple Canyon** 78.65 48 *e*P P 01 02 53.8 +1.2
comp=Z,9.5nm,0.9s
OJC **Ojcow** 78.65 326 *e*P P 01 02 52.4 +0.3
OJC **Ojcow** 78.65 326 *e*P P 01 02 52.7 +0.6
OJC pmax pmax
comp=Z,12nm,0.9s
OJC **Ojcow** 78.65 326 *e*P P 01 02 52.7 +0.6
comp=Z,12nm,0.9s
ARCR **ARCALIA** 78.67 321 ⇓*i*P P 01 02 52.9 +0.6
BR231 **Keskin MP Arra** 78.79 312 *e*P P 01 02 51.3 -1.9
CRVS **Cervenica-Dubn** 78.82 324 *e*P P 01 02 53.8 +0.7
CRVS **Cervenica-Dubn** 78.82 324 *e*P P 01 02 53.8 +0.7
MSAB **Monastry St. A** 78.87 317 ⇓*i*P P 01 02 54.0 +0.6
NIE **Niedzica** 78.99 325 *e*P P 01 02 54.8 +0.7
NIE **Niedzica** 78.99 325 *e*P P 01 02 54.8 +0.7
VOIR 79.44 320 ⇑*i*P P 01 02 56.9 +0.2
VOIR 79.44 320 ⇑P P 01 02 56.9 +0.2
P17A **Butcher Ranch,** 79.53 48 *e*P P 01 02 59.0 +1.6
comp=Z,12nm,0.8s
LCMT **Little Creek M** 79.55 51 *e*P P 01 02 59.2 +1.7
comp=Z,9.3nm,1.0s
MTPU **Mount Pierson** 79.56 50 *e*P P 01 02 59.9 +2.1
comp=Z,8.0nm,0.7s
LANS **Liptovska Anna** 79.57 325 *e*P P 01 02 57.6 +0.4
LANS **Liptovska Anna** 79.57 325 *e*P P 01 02 57.6 +0.4
KECS **Kecovo** 79.57 324 *e*P P 01 02 57.1 -0.1
KECS pmax pmax
comp=Z,1.0nm,0.8s
KECS **Kecovo** 79.57 324 *e*P P 01 02 57.1 -0.1
OKC **Ostrava-Krasne** 79.67 326 *e*P P 01 02 58.1 +0.4
OKC **Ostrava-Krasne** 79.67 326 *e*P P 01 02 58.1 +0.4
DRGR 79.69 322 ⇓*i*P P 01 02 58.3 +0.3
DRGR 79.69 322 ⇓P P 01 02 58.3 +0.3
ARR **Arges** 79.70 320 ⇑*i*P P 01 02 59.5 +1.4
P18A **Preston Nutter** 79.72 48 *e*P P 01 03 00.0 +1.4
comp=Z,12nm,1.0s
KSP **Ksiaz** 79.73 328 *e*P P 01 02 58.9 +0.9
KSP **Ksiaz** 79.73 328 *e*P P 01 02 58.9 +0.9
KNB **Kanab** 79.81 51 *e*P P 01 03 00.8 +1.9
KNB pmax pmax
comp=Z,11nm,1.0s
KNB **Kanab** 79.81 51 *e*P P 01 03 00.8 +1.9
comp=Z,11nm,1.0s
ULM **Lac du Bonnet** 79.84 33 P P 01 02 58.5 0.0
comp=Z,5.1nm,0.8s,baz=298,slow=4.8,SNR=6.7
ULM **Lac du Bonnet** 79.84 33 *e*P P 01 02 58.6 0.0
ULM pmax pmax
comp=Z,11nm,1.1s
ULM **Lac du Bonnet** 79.84 33 *e*P P 01 02 58.6 0.0
comp=Z,11nm,1.1s
K22A **Casper** 79.89 44 *e*P P 01 02 60.0 +0.7
comp=Z,7.1nm,0.8s
SRU **San Rafael Swe** 79.89 48 *e*P P 01 03 00.4 +1.0
SRU pmax pmax
comp=Z,13nm,0.8s
SRU **San Rafael Swe** 79.89 48 *e*P P 01 03 00.4 +1.0
comp=Z,13nm,0.8s
MORC **Moravsky Berou** 79.98 327 ⇑*i*P P 01 03 00.1 +0.7
MORC **Moravsky Berou** 79.98 327 *e*P P 01 03 00.1 +0.7
MORC pmax pmax
comp=Z,37nm,1.1s
MORC **Moravsky Berou** 79.98 327 *e*P P 01 03 00.1 +0.7
comp=Z,37nm,1.1s
MMU **Miners Mountai** 80.00 49 *e*P P 01 03 01.6 +1.5
DPC **Dobruska-Polom** 80.09 327 *e*P P 01 03 00.7 +0.7
DPC **Dobruska-Polom** 80.09 327 *e*P P 01 03 00.7 +0.7
LOT **Lotru** 80.09 320 ⇑*i*P P 01 03 01.2 +1.0
UPC **Upice** 80.10 328 *e*P P 01 03 00.5 +0.4
RSSD **Black Hills** 80.24 41 *e*P P 01 03 01.6 +0.4
RSSD pmax pmax
comp=Z,5.0nm,0.9s
RSSD **Black Hills** 80.24 41 *e*P P 01 03 01.6 +0.4
comp=Z,5.2nm,0.9s
PSZ **Piszkesteto** 80.25 324 ⇑*i*P P 01 03 00.6 -0.4
PSZ **Piszkesteto** 80.25 324 *e*P P 01 03 01.4 +0.4
PSZ pmax pmax
comp=Z,9.0nm,1.0s
PSZ **Piszkesteto** 80.25 324 *e*P P 01 03 01.4 +0.4
comp=Z,9.4nm,1.0s
VYHS **Vyhne** 80.33 325 *e*P P 01 03 01.6 +0.2
VYHS pmax pmax
comp=Z,2.0nm,1.0s
VYHS **Vyhne** 80.33 325 *e*P P 01 03 01.5 +0.2
U15A **North Rim** 80.51 51 *e*P P 01 03 04.6 +1.8
comp=Z,9.8nm,1.0s
O20A **White River Ci** 80.57 46 *e*P P 01 03 03.9 +0.8
comp=Z,6.9nm,0.8s
GZR **Gura Zlata** 80.63 321 ⇓*i*P P 01 03 03.3 +0.2
GZR **Gura Zlata** 80.63 321 ⇓P P 01 03 03.3 +0.2
BRG **Berggiesshubel** 80.69 329 *e*P P 01 03 03.2 0.0
comp=Z,6.7nm,1.0s
BRG *e* 01 03 10.4
comp=Z,5.5nm,1.0s
BRG **Berggiesshubel** 80.69 329 *e*P P 01 03 03.2 0.0
BRG pmax pmax
comp=Z,7.0nm,1.0s
BRG pmax pmax
comp=Z,6.0nm,1.0s
PVCC **Panska Ves** 80.70 328 *e*P P 01 03 04.0 +0.8
PVCC **Panska Ves** 80.70 328 *e*P P 01 03 04.0 +0.8
VRAC **Vranov** 80.74 327 ⇓*i*P P 01 03 04.3 +0.8
VRAC **Vranov** 80.74 327 ⇓P P 01 03 04.3 +0.8
CLL **Collm** 80.75 330 *i* P P 01 03 02.9 -0.6
comp=Z,16nm,1.1s
CLL *i* 01 03 11.3
CLL L L 01 42 00.0
comp=Z,100nm,21.1s
CLL Lm MLR 01 53 00.0
comp=Z,100nm,19.2s
CLL **Collm** 80.75 330 *e*P P 01 03 02.9 -0.6
CLL pmax pmax
comp=Z,15nm,0.9s
CLL **Collm** 80.75 330 *e*P P 01 03 02.9 -0.6
comp=Z,15nm,0.9s
Y12C **Blythe** 80.75 55 *e*P P 01 03 05.2 +1.3
comp=Z,8.2nm,0.9s
GLA **Glamis** 80.99 55 *e*P P 01 03 06.5 +1.3
GLA pmax pmax
comp=Z,16nm,1.4s
GLA **Glamis** 80.99 55 *e*P P 01 03 06.5 +1.3
comp=Z,16nm,1.4s
BZS **Buzias** 81.06 322 ⇑*i*P P 01 03 05.4 +0.1
BZS **Buzias** 81.06 322 ⇑P P 01 03 05.4 +0.1
GOPC **GO Pecny, Ondr** 81.07 328 *e*P P 01 03 05.6 +0.3
PRU **Pruhonice** 81.12 328 *e*P P 01 03 05.8 +0.3
PRU *ep*P PcP 01 03 14.4 +2.6
PRU **Pruhonice** 81.12 328 *e*P P 01 03 05.8 +0.3
TREC **Trest** 81.23 327 *e*P P 01 03 06.5 +0.3
TREC *ep*P PcP 01 03 15.2 +2.8
TREC **Trest** 81.23 327 *e*P P 01 03 06.5 +0.3
AGMN **Agassiz Nation** 81.28 34 *e*P P 01 03 06.2 -0.2
comp=Z,5.9nm,0.6s
N23A **Red Feather La** 81.38 45 *e*P P 01 03 08.9 +1.5
comp=Z,8.9nm,1.0s
MDVR **Moldovita** 81.60 321 ⇑*i*P P 01 03 07.7 -0.5
Y14A **Wickenburg** 81.62 54 *e*P P 01 03 09.5 +0.9
comp=Z,44nm,1.0s
WUAZ **Wupatki** 81.66 52 *e*P P 01 03 10.4 +1.6
comp=Z,12nm,0.9s
NKC **Novy Kostel** 81.80 329 *e*P P 01 03 09.6 +0.5
NKC **Novy Kostel** 81.80 329 *e*P P 01 03 09.6 +0.5
MOX **Moxa** 81.81 330 P P 01 03 10.2 +1.0
MOX pmax pmax
comp=Z,7.0nm,2.2s
113A **Mohawk Valley,** 81.86 55 *e*P P 01 03 10.8 +1.0
comp=Z,6.1nm,1.1s
SMCO **Snowmass** 81.94 47 *e*P P 01 03 10.7 +0.1
comp=Z,7.2nm,0.9s
PKSM **Moragy** 82.08 323 ⇑*i*P P 01 03 10.4 -0.2
PKSM **Moragy** 82.08 323 ⇑P P 01 03 10.4 -0.2
CONA **Conrad Observa** 82.09 326 *i* P P 01 03 11.3 +0.5
comp=Z,7.0nm,1.2s
KHC **Kasperske Hory** 82.18 328 *e*P P 01 03 11.4 +0.2
KHC *e*PCP PcP 01 03 18.5 +1.9
KHC **Kasperske Hory** 82.18 328 *e*P P 01 03 11.4 +0.2
KHC pmax pmax
comp=Z,4.0nm,1.1s
KHC **Kasperske Hory** 82.18 328 *e*P P 01 03 11.4 +0.2
comp=Z,3.6nm,1.1s
ISCO **Idaho Springs** 82.30 45 *e*P P 01 03 13.3 +0.9
ISCO pmax pmax
comp=Z,3.0nm,0.8s
ISCO **Idaho Springs** 82.30 45 *e*P P 01 03 13.3 +0.9
comp=Z,3.0nm,0.8s
X16A **Lo Mia Camp, P** 82.32 53 *e*P P 01 03 13.7 +1.3
comp=Z,8.3nm,1.0s
MVCO **Mesa Verde** 82.33 49 *e*P P 01 03 13.5 +1.0
comp=Z,8.2nm,0.9s
GEC2 **GERESS Array S** 82.34 328 *e*P P 01 03 12.3 +0.2
GEC2 pmax pmax
comp=Z,10.0nm,1.4s
GEC2 **GERESS Array S** 82.34 328 *e*P P 01 03 12.2 +0.2
comp=Z,9.5nm,1.4s
GERES **GERESS Array B** 82.34 328 P P 01 03 11.7 -0.4
comp=Z,2.4nm,0.8s,baz=46,slow=5.8,SNR=16
GERES PP PP 01 06 22.2 +2.1
comp=Z,0.5nm,0.7s,baz=28,slow=6.0,SNR=3.5
GEA0 **GERESS Array S** 82.35 328 *e*P P 01 03 11.3 -0.8
GRFO **Grafenberg** 82.72 330 *e*P P 01 03 14.9 +0.9
GRFO pmax pmax
comp=Z,13nm,0.9s
GRFO **Grafenberg** 82.72 330 *e*P P 01 03 14.9 +0.9
comp=Z,13nm,0.9s
MOA **Molln** 82.86 327 *i* PcP P 01 03 16.0 +1.2
comp=Z,3.0nm,0.8s
S22A **4UR Ranch, Cre** 82.97 48 *e*P P 01 03 17.6 +1.7
comp=Z,4.9nm,0.9s

PERS	**Pernice**	**83.40**	**326**	*i* P		**P**	**01 03 17.8**	**+0.2**
SOKA	**Soboth**	**83.41**	**326**	*i* P		**P**	**01 03 17.4**	**-0.2**
	comp=Z,4.5nm,0.8s							
OBKA	**Obir**	**83.75**	**326**	*i* P		**P**	**01 03 19.4**	**-0.1**
	comp=Z,0.9nm,0.4s							
KBA	**Koelnbreinsper**	**83.85**	**327**	*i* PcP		**P**	**01 03 21.0**	**+0.9**
	comp=Z,4.0nm,0.8s							
MYKA	**Terra Mystica**	**84.06**	**326**	*i* P		**P**	**01 03 20.6**	**-0.4**
	comp=Z,3.3nm,0.9s							
TUC	**Tucson**	**84.09**	**54**	*e*P		**P**	**01 03 22.7**	**+1.2**
TUC					pmax	pmax		
	comp=Z,5.0nm,0.9s							
TUC	**Tucson**	**84.09**	**54**	*e*P		**P**	**01 03 22.7**	**+1.2**
	comp=Z,5.2nm,0.9s							
VISS	**Visnje**	**84.16**	**325**	*i* P		**P**	**01 03 21.2**	**-0.2**
BOJS	**Bojanci**	**84.19**	**325**	*i* P		**P**	**01 03 21.4**	**-0.1**
ECSD	**EROS Data Cent**	**84.30**	**38**	*e*P		**P**	**01 03 22.4**	**+0.2**
	comp=Z,10nm,0.9s							
WATA	**Walderalm**	**84.41**	**328**	*i* PcP		**P**	**01 03 23.7**	**+0.8**
	comp=Z,1.8nm,0.5s							
JAVS	**Javornik**	**84.44**	**326**	*i* P		**P**	**01 03 22.0**	**-1.0**
ABTA	**Abfaltersbach**	**84.47**	**327**	*i* P		**P**	**01 03 22.0**	**-1.1**
	comp=Z,3.7nm,1.0s							
PDG	**Podgorica**	**84.53**	**321**	⇑*i*P		**P**	**01 03 23.4**	**+0.1**
MOTA	**Moosalm**	**84.61**	**328**	*i* PcP		**P**	**01 03 24.9**	**+1.0**
	comp=Z,7.3nm,1.1s							
RETA	**Reutte**	**84.64**	**328**	P		**P**	**01 03 23.7**	**-0.2**
	comp=Z,9.7nm,1.2s							
T25A	**Trinidad**	**84.80**	**47**	*e*P		**P**	**01 03 26.3**	**+1.1**
	comp=Z,10nm,0.9s							
BFO	**Black Forest**	**84.96**	**330**	*e*P		**P**	**01 03 25.1**	**-0.4**
BFO					pmax	pmax		
	comp=Z,9.0nm,0.9s							
BFO	**Black Forest**	**84.96**	**330**	*e*P		**P**	**01 03 25.1**	**-0.4**
	comp=Z,9.5nm,0.9s							
LAZ	**Ladron**	**85.02**	**50**	*e*P		**P**	**01 03 26.6**	**+0.4**
FETA	**Feichten**	**85.02**	**328**	*i* P		**P**	**01 03 25.7**	**-0.2**
	comp=Z,4.1nm,0.8s							
ANMO	**Albuquerque**	**85.07**	**49**	*e*P		**P**	**01 03 25.5**	**-1.0**
ANMO					pmax	pmax		
	comp=Z,10.0nm,1.2s							
ANMO	**Albuquerque**	**85.07**	**49**	*e*P		**P**	**01 03 27.9**	**+1.4**
	comp=Z,8.4nm,1.1s							
DAVA	**Damuels**	**85.16**	**329**	*i* P		**P**	**01 03 26.7**	**0.0**
	comp=Z,11nm,1.0s							
BGNE	**Belgrade**	**85.23**	**40**	*e*P		**P**	**01 03 28.1**	**+1.1**
	comp=Z,18nm,0.8s							
CDF	**Champ du Feu**	**85.31**	**331**	*e*P		**P**	**01 03 26.8**	**-0.5**
CDF					pmax	pmax		
	comp=Z,8.0nm,0.9s							
SCHQ	**Schefferville**	**85.49**	**16**	P		**P**	**01 03 28.6**	**+0.6**
	comp=Z,4.3nm,0.8s,baz=18,slow=7.0,SNR=3.8							
BNM	**Barren Site**	**85.50**	**50**	*e*P		**P**	**01 03 29.9**	**+1.2**
FUORN	**Ofenpass-Fuorn**	**85.53**	**328**	*e*P		**P**	**01 03 29.0**	**+0.4**
	comp=Z,9.1nm,0.9s							
319A	**Douglas**	**85.67**	**54**	*e*P		**P**	**01 03 30.8**	**+1.3**
	comp=Z,10nm,0.9s							
IDI	**Anoyia**	**86.49**	**312**	⇑*i*P		**P**	**01 03 34.4**	**+1.1**
LOR	**Lormes**	**87.55**	**332**	*e*P		**P**	**01 03 37.6**	**-0.6**
LOR					pmax	pmax		
	comp=Z,7.0nm,1.0s							
KSU1	**Kansas State U**	**87.72**	**41**	*e*P		**P**	**01 03 39.3**	**+0.1**
	comp=Z,9.5nm,0.8s							
LDF	**La Druitiere**	**87.84**	**335**	*e*P		**P**	**01 03 39.3**	**-0.3**
LDF					pmax	pmax		
	comp=Z,21nm,1.8s							
LPL	**La Plagne**	**87.88**	**330**	*e*P		**P**	**01 03 41.8**	**+1.7**
LPL					pmax	pmax		
	comp=Z,7.0nm,1.3s							
MNTX	**Cornudas Mount**	**87.93**	**51**	*e*P		**P**	**01 03 41.0**	**+0.7**
	comp=Z,2.4nm,1.0s							
AMTX	**Amarillo**	**87.96**	**47**	*e*P		**P**	**01 03 41.6**	**+1.1**
	comp=Z,8.2nm,0.9s							
MFF	**Saint Martin d**	**89.57**	**334**	*e*P		**P**	**01 03 49.9**	**+2.2**
MFF					pmax	pmax		
	comp=Z,6.0nm,1.0s							
WMOK	**Wichita Mounta**	**89.73**	**45**	*e*P		**P**	**01 03 49.4**	**+0.6**
WMOK					pmax	pmax		
	comp=Z,5.0nm,0.8s							
WMOK	**Wichita Mounta**	**89.73**	**45**	*e*P		**P**	**01 03 49.4**	**+0.6**
	comp=Z,5.2nm,0.8s							
TX31	**Lajitas Ar. Si**	**90.62**	**52**	*e*P		**P**	**01 03 54.0**	**+0.9**
LTX	**Lajitas**	**90.62**	**52**	*e*P		**P**	**01 03 53.6**	**+0.5**
LTX	**Lajitas**	**90.62**	**52**	*e*P		**P**	**01 03 53.6**	**+0.5**
TXAR	**Lajitas Array**	**90.62**	**52**	P		**P**	**01 03 53.6**	**+0.4**
	comp=Z,3.9nm,0.7s,baz=294,slow=3.3,SNR=37							
LFF	**La Frestale**	**90.68**	**333**	*e*P		**P**	**01 03 52.1**	**-0.8**
LFF					pmax	pmax		
	comp=Z,16nm,1.5s							
ABTX	**Abilene, Hawle**	**90.75**	**47**	*e*P		**P**	**01 03 54.5**	**+0.9**
	comp=Z,8.4nm,0.9s							
HPIG		**90.98**	**55**	*e*P		**P**	**01 03 56.1**	**+1.1**
	comp=Z,3.8nm,0.7s							
HHAR	**Hobbs**	**91.23**	**41**	*e*P		**P**	**01 03 56.1**	**+0.3**
	comp=Z,16nm,1.6s							
MIAR	**Mount Ida**	**92.74**	**42**	*e*P		**P**	**01 04 03.3**	**+0.6**
MIAR					pmax	pmax		
	comp=Z,7.0nm,1.1s							
MIAR	**Mount Ida**	**92.74**	**42**	*e*P		**P**	**01 04 03.3**	**+0.6**
	comp=Z,6.7nm,1.1s							
WHAR	**Wooly Hollow**	**92.85**	**41**	*e*P		**P**	**01 04 03.4**	**+0.2**
	comp=Z,32nm,1.9s							
ESDC	**Sonseca Array**	**96.97**	**333**	P		**P**	**01 04 22.0**	**-0.1**
	comp=Z,0.1nm,0.4s,baz=9.8,slow=5.0,SNR=3.7							
ESDC					LR	LR	01 50 51.9	
	comp=Z,50nm,21.1s,baz=35,slow=37							
VNDA	**Vanda**	**115.06**	**175**		PKP	**PKPdf**	**01 09 30.6**	**+0.5**
	comp=Z,0.6nm,0.6s,baz=349,slow=4.0,SNR=3.0							
TOA1	**Torodi Ar. Sit**	**116.84**	**314**	*e*PKPdf		**PKPdf**	**01 09 34.3**	**-1.1**
TOA1				*e*PP		**PP**	**01 10 40.9**	**-2.2**
TOA0	**Torodi Ar. Sit**	**116.84**	**314**	*e*PKPdf		**PKPdf**	**01 09 34.8**	**-0.7**
TORD	**Torodi Ar. Bea**	**116.84**	**314**	PKP		**PKPdf**	**01 09 34.3**	**-1.1**
	comp=Z,0.8nm,0.8s,baz=38,slow=2.4,SNR=6.4							
TORD					PP	**PP**	**01 10 40.9**	**-2.2**
	comp=Z,1.0nm,1.0s,baz=52,slow=9.6,SNR=3.7							
TORD					PKKPbc	**PKKPbc**	**01 20 01.9**	**+1.7**
	comp=Z,0.8nm,0.8s,baz=207,slow=2.2,SNR=4.8							
LBTB	**Lobatse**	**123.99**	**263**	*e*PKIKP		**PKPdf**	**01 09 49.6**	**+0.6**
LBTB	**Lobatse**	**123.99**	**263**	*e*PKPdf		**PKPdf**	**01 09 49.6**	**+0.6**
DBIC	**Dimbokro**	**125.82**	**316**	PKP		**PKPdf**	**01 09 52.4**	**-0.3**
	comp=Z,2.6nm,0.7s,baz=74,slow=3.6,SNR=5.4							
BOSA	**Boshof**	**125.94**	**259**	PKP		**PKPdf**	**01 09 52.1**	**-0.5**
	comp=Z,4.1nm,1.0s,baz=104,slow=4.2,SNR=3.9							
PTGA	**Pitinga**	**139.16**	**32**	PKP		**PKPdf**	**01 10 18.5**	**+0.6**
	comp=Z,2.5nm,0.6s,baz=327,slow=4.7,SNR=4.9							
SNAA	**Sanae**	**140.58**	**197**	P		PKPpre	01 10 11.5	
VNA2	**Neumayer--Watz**	**142.16**	**197**	P		PKPpre	01 10 14.0	
	baz=84,slow=1.6							
VNA3	**Neumayer Olymp**	**142.42**	**195**	P		PKPpre	01 10 13.2	
SAML	**Samuel**	**144.69**	**44**	*e*PKPdf		**PKPab**	**01 10 26.4**	**+0.1**
LPAZ	**La Paz**	**147.24**	**59**	PKPbc		**PKPbc**	**01 10 35.1**	**+0.2**
	comp=Z,18nm,0.8s,baz=359,slow=3.7,SNR=53							
PB11	**IPOC Station P**	**148.49**	**65**	*e*PKPdf		**PKPdf**	**01 10 35.1**	**+1.0**
PB01	**IPOC Station P**	**149.41**	**67**	*e*PKPdf		**PKPdf**	**01 10 35.9**	**+0.5**
SIV	**San Ignacio**	**151.56**	**48**	PKP		**PKPdf**	**01 10 39.4**	**+0.6**
	comp=Z,3.0nm,0.7s,baz=140,slow=0.4,SNR=6.4							
SIV					PKPbc	**PKPbc**	**01 10 45.3**	**+0.3**
	comp=Z,22nm,0.9s,baz=266,slow=1.8,SNR=25							
LCO	**Las Campanas**	**152.66**	**82**	*e*PKPbc		**PKPbc**	**01 10 48.1**	**+0.6**
CPUP	**Villa Florida**	**161.40**	**60**	PKPab		**PKPab**	**01 11 35.3**	**-0.1**
	comp=Z,1.3nm,0.7s,baz=354,slow=1.7,SNR=3.9							

*KRNET **20** 00:52:04.0±0.1,39.47N×73.64E,mb3.4*
*NNC **20** 00:52:05.7±4.7,39.67N×74.00E,h0km,mb3.5,mpv3.2,*
Error ellipse: s-maj=84.3km s-min=22.5km az=36.0
ISC 20 00:52:06.3±2.0,39.59N±0.08×73.53E±0.04,h9km±11km, n15,σ1§87/27,22C-11D,Tajikistan-Xinjiang border region

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
					Op	ISC	h m s	ISC
SFK	**Sufi-Kurgan**	**0.43**	**357**	⇓*e*P		**Pg**	**00 52 15.3**	**+0.6**
SFK	baz=349			⇓*e*S		**Sb**	**00 52 23.2**	**+0.3**
	baz=349							
SFK	**Sufi-Kurgan**	**0.43**	**357**	⇓P		**Pg**	**00 52 15.3**	**+0.6**
SFK	40nm,0.2s			⇑S		**Sg**	**00 52 23.0**	**+2.6**
	280nm,0.3s							
OHH	**Osh**	**1.10**	**329**	⇑*e*P		**Pg**	**00 52 27.8**	**+0.4**
OHH	baz=328			⇑*e*S		**Sn**	**00 52 46.0**	**+2.6**
	baz=328							
BTK	**Batken**	**2.14**	**284**	⇑*e*P		**Pb**	**00 52 45.1**	**-0.2**
	baz=286							
BTK				⇑*e*S		**Sg**	**00 53 14.7**	**-0.4**
	baz=286							
ARK	**Arkit**	**2.51**	**332**	⇓*e*P		**Pb**	**00 52 50.1**	**-1.6**
	baz=332							
ARK				⇓*e*S		**Sb**	**00 53 23.3**	**+0.6**
	baz=332							
AML	**Almayashu**	**2.55**	**3**	⇑*i*P		**Pb**	**00 52 52.2**	**-0.2**
	baz=1.0							
AML				⇑*i*S		**Sg**	**00 53 27.2**	**-0.9**
	baz=1.0							
NRN	**Naryn**	**2.64**	**45**	⇑*e*P		Pb	00 52 50.0	-3.9
	baz=42							
NRN				⇑*e*S		**Sb**	**00 53 23.8**	**-2.8**
	baz=42							
UCH	**Uchtor**	**2.74**	**15**	⇑*i*P		**Pb**	**00 52 54.6**	**-1.2**
	baz=13							
UCH				⇑*i*S		**Sb**	**00 53 32.0**	**+2.3**
	baz=13							
KZA	**Kyzart**	**2.81**	**27**	⇑*i*P		**Pb**	**00 52 55.7**	**-1.2**
	baz=25							
KZA				⇑*i*S		**Sg**	**00 53 35.2**	**-1.4**
	baz=25							
MNAS	**Manas**	**3.00**	**345**	⇑*e*P		**Pb**	**00 52 57.3**	**-2.7**
	baz=345							
MNAS				⇑*e*S		**Sb**	**00 53 35.4**	**-1.5**
	baz=345							
MNAS	**Manas**	**3.00**	**345**	⇑Pn		**Pb**	**00 52 58.2**	**-1.8**
	3.2nm,0.3s							
MNAS				⇓Pg		**Pg**	**00 53 03.3**	**-0.5**
	9.9nm,0.5s							
MNAS				⇓Lg		Lg	00 53 39.5	
	87nm,1.3s							
BOOM	**Boomskoye usch**	**3.43**	**31**	⇓*e*P		Pn	00 53 01.7	+1.6
	baz=29							
BOOM				⇓*e*S		**Sn**	**00 53 42.9**	**+1.9**
	baz=29							
TKM2	**Tokmak 2**	**3.68**	**24**	⇓Pn		**Pb**	**00 53 08.6**	**-3.0**
	1.4nm,0.4s							
TKM2				⇑Pg		**Pg**	**00 53 19.0**	**+2.2**
	4.8nm,0.5s							
TKM2				⇓Lg		Lg	00 54 05.4	
	15nm,0.6s							
KDJ	**Kajisay**	**3.76**	**46**	⇑*e*P		**Pn**	**00 53 05.4**	**+0.7**
	baz=44							
KDJ				⇑*e*S		**Sn**	**00 53 49.6**	**+0.5**
	baz=44							
KK31	**Karatay Array**	**4.18**	**328**	Pn		Pn	00 53 14.6	+4.3
	0.6nm,0.2s,baz=131,slow=12,SNR=34							
KK31				⇑Pg		Pg	00 53 23.6	-2.8
	2.9nm,0.5s,baz=148,slow=15,SNR=4.3							
KK31				⇑Sn		**Sb**	**00 54 07.3**	**-3.5**
	5.3nm,0.5s							
KK31				⇑Lg		Lg	00 54 20.4	
	11nm,0.5s,baz=132,slow=32,SNR=3.7							

JMA 20 00:56:40.0±0.3,28.10N×128.07E,h19km±4km,M2.6, Ryukyu Islands

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
					Op	ISC	h m s	ISC
JTK	**Tokunoshima**	**0.84**	**112**	P		Pb	00 56 55.6	-0.4
JTK				*e*S		Sb	00 57 06.8	-0.1
JOKE	**Okinoerabujima**	**0.86**	**149**	P		Pb	00 56 56.2	-0.1
JOKE				*e*S		Sb	00 57 07.4	0.0
JAMN	**Amaminishikomi**	**0.99**	**81**	P		Pb	00 56 58.4	-0.1
JAMN				*e*S		Sb	00 57 11.5	+0.4
JIH	**Iheya**	**1.06**	**185**	*e*S		Sb	00 57 13.5	+0.1
JOW	**Kunigami**	**1.28**	**172**	P		Pn	00 57 02.6	-0.2
JOW				*e*S		Sb	00 57 19.5	0.0
JOW	**Kunigami**	**1.28**	**172**	*e*S		Sn	00 57 19.4	0.0
JAM	**Amami Oshima**	**1.39**	**77**	P		Pb	00 57 05.3	0.0
JAM				*e*S		Sb	00 57 23.4	+0.7
JNTH	**Nagotoyohara**	**1.58**	**182**	P		Pn	00 57 07.2	+0.3
JNTH				*e*S		Sn	00 57 27.1	+0.3

IDC 20 01:00:48.2±5.0,23.93S×66.33W,h149km±58km,mb3.4/1, mb1 3.5/3,mb1mx3.1/17,mbtmp3.8/3,MS3.1/1,Ms1 3.1/1, ms1mx2.6/12,Error ellipse: s-maj=87.5km s-min=29.0km az=97.0,Jujuy Province

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
					Op	ISC	h m s	ISC
LPAZ	**La Paz**	**7.79**	**347**	P		Pn	01 02 40.2	+0.8
	0.7nm,0.3s,baz=169,slow=8.3,SNR=18							
LPAZ				S		Sn	01 04 06.1	-0.4
	0.1nm,0.3s,baz=5.9,slow=19,SNR=2.5							
NNA	**Nana**	**15.51**	**318**	LR		LR	01 10 34.3	
	comp=Z,64nm,19.4s,baz=216,slow=38							
PLCA	**Paso Flores**	**17.13**	**191**	P		P	01 04 37.7	-0.3
	0.2nm,0.3s,baz=28,slow=11,SNR=8.6							
TORD	**Torodi Ar. Bea**	**75.97**	**69**	P		P	01 12 19.3	0.0
	0.4nm,0.4s,baz=259,slow=5.5,SNR=10							
MKAR	**Makanchi Array**	**146.08**	**40**	PKPbc		PKPdf	01 20 10.0	+0.4
	0.3nm,0.6s,baz=320,slow=2.9,SNR=2.7							

*LJU **20** 01:02:27.1,46.39N×15.07E,h0km,ML1.0 Rockburst*
VIE 20 01:02:27.4±0.6,46.39N×15.09E,h0km,mb0.3/1,ml0.7/2, Error ellipse: s-maj=4.7km s-min=2.9km az=177.0, Suspected Mining induced.,Northwestern Balkan Peninsula

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
					Op	ISC	h m s	ISC
SOKA	**Soboth**	**0.29**	**352**	*i* Pg		Pg	01 02 32.2	-0.8
	1.2nm,0.3s							
SOKA				*i* Sg		Sg	01 02 37.3	+0.6
	2.0nm,0.4s							
OBKA	**Obir**	**0.39**	**288**	*i* Pg		Pg	01 02 34.5	-0.4
	0.6nm,0.3s							
OBKA				*i* Sg		Sg	01 02 41.0	+1.1
	2.7nm,0.5s							

*IDC **20** 01:14:32.5±0.8,37.96N×143.67E,h0km,mb3.7/14, mb1 3.9/15,mb1mx3.8/39,mbtmp3.7/15,ML3.2/1,Error ellipse: s-maj=22.9km s-min=17.5km az=129.0*
*ISCJB **20** 01:14:33.9±0.6,38.04N±0.07×143.59E±0.05,h19km, mb3.7/14,Error ellipse: s-maj=9.9km s-min=5.3km az=7.2*
*JMA **20** 01:14:34.5±0.1,38.18N×143.41E,h1km±3km,M3.6*
ISC 20 01:14:35.9±0.8,38.09N±0.08×143.55E±0.07,h19km,n23, σ0§66/29,mb3.7/14,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
					Op	ISC	h m s	ISC
JIO	**Ouri**	**1.77**	**283**	P		**Pn**	**01 15 04.5**	**-1.0**
JIO				*e*S		**Sn**	**01 15 26.4**	**-1.0**
OFUJ	**Ofunato**	**1.78**	**305**	P		**Pn**	**01 15 04.5**	**-1.1**
JMK	**Ichinoseki**	**2.02**	**296**	P		**Pn**	**01 15 08.4**	**-0.5**
JMK				S		**Sn**	**01 15 32.8**	**-0.8**
JOM	**Ohasama**	**2.24**	**309**	P		**Pn**	**01 15 11.7**	**-0.3**
JOM				*e*S		**Sn**	**01 15 38.9**	**-0.2**
JOU	**Okura**	**2.29**	**278**	P		**Pn**	**01 15 12.7**	**+0.1**
JOU				*e*S		**Sn**	**01 15 40.4**	**+0.1**
JFT	**Otama**	**2.61**	**258**	P		**Pn**	**01 15 17.3**	**+0.3**
JFT				*e*S		**Sn**	**01 15 48.3**	**+0.2**
JRG	**Rokugo**	**2.63**	**301**	P		**Pn**	**01 15 17.7**	**+0.4**
JRG				*e*S		**Sn**	**01 15 49.2**	**+0.6**
JYK	**Kaneyama**	**2.64**	**289**	P		**Pn**	**01 15 17.6**	**+0.2**
MJAR	**Matsushiro Arr**	**4.53**	**252**	Pn		**Pn**	**01 15 43.9**	**+0.5**
	1.1nm,0.3s,baz=63,slow=11,SNR=4.2							
SEY	**Seymchan**	**25.45**	**9**	P		**P**	**01 20 03.5**	**+1.2**
	2.5nm,0.8s,baz=184,slow=4.5,SNR=6.0							
MKAR	**Makanchi Array**	**45.01**	**302**	P		**P**	**01 22 50.7**	**+0.7**
	0.4nm,0.8s,baz=77,slow=6.2,SNR=3.8							
KURBB	**Kurchatov Arra**	**46.70**	**308**	P		**P**	**01 23 03.6**	**+0.4**
	1.0nm,0.5s,baz=81,slow=8.1,SNR=6.5							
ILAR	**Eielson Array**	**47.70**	**33**	P		**P**	**01 23 10.5**	**-0.3**
	1.0nm,0.8s,baz=264,slow=6.2,SNR=15							
AAK	**Ala-Archa**	**51.49**	**298**	P		**P**	**01 23 41.3**	**+1.0**
	0.4nm,0.4s,baz=180,slow=7.1,SNR=2.7							
INK	**Inuvik**	**52.67**	**28**	P		**P**	**01 23 48.6**	**+0.2**
	0.8nm,0.7s,baz=254,slow=3.8,SNR=3.3							
WRA	**Warramunga Arr**	**58.37**	**190**	P		**P**	**01 24 28.6**	**-1.2**
	2.9nm,0.8s,baz=9.1,slow=7.4,SNR=15							
YKA	**Yellowknife Ar**	**62.04**	**31**	P		**P**	**01 24 54.4**	**-0.2**
	0.4nm,0.8s,baz=301,slow=6.7,SNR=8.8							
ASAR	**Alice Springs**	**62.09**	**190**	P		**P**	**01 24 54.3**	**-1.0**
	0.4nm,0.6s,baz=7.4,slow=6.7,SNR=4.1							
GEYT	**Alibeck**	**64.81**	**299**	P		**P**	**01 25 13.3**	**-0.1**
	0.9nm,0.6s,baz=59,slow=5.6,SNR=2.2							
FINES	**FINESS Array B**	**68.67**	**333**	P		**P**	**01 25 37.9**	**+0.3**
	1.0nm,0.7s,baz=40,slow=11,SNR=3.1							
NVAR	**Mina Array Bea**	**73.00**	**54**	P		**P**	**01 26 04.3**	**-0.3**
	0.3nm,0.6s,baz=242,slow=13,SNR=3.7							
PDAR	**Pinedale Array**	**75.72**	**47**	P		**P**	**01 26 20.6**	**+0.2**
	0.2nm,0.6s,baz=282,slow=1.8,SNR=2.5							
TXAR	**Lajitas Array**	**88.13**	**54**	P		**P**	**01 27 25.7**	**0.0**
	0.2nm,0.6s,baz=291,slow=2.5,SNR=3.0							

*NSSP **20** 01:18:38.8,38.43N×45.43E,h11km,Ms3.2*
*AZER **20** 01:18:41.4±1.1,38.41N×45.02E,h2km,Error ellipse: s-maj=2.4km s-min=0.7km az=249.0*
*TEH **20** 01:18:41.3,38.44N×45.03E,h7km,ML3.0*
*CSEM **20** 01:18:44.8±0.3,38.40N×44.89E,h2km,ML3.0,Error ellipse: s-maj=9.0km s-min=4.9km az=168.0*
*DDA **20** 01:18:54.6,38.49N×44.79E,h8km,Ml2.9*
ISC 20 01:18:42.6±1.0,38.48N±0.02×45.15E±0.02,h10km±10km, n62,σ1§51/104,19C-18D,Iran-Armenia-Azerbaijan border region

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
					Op	ISC	h m s	ISC
ISHB	**Shabestar**	**0.42**	**118**	*e*Pg		**Pg**	**01 18 50.3**	**-0.5**
ISHB				*e*Sg		**Sg**	**01 18 56.6**	**+0.2**
ISHB				*e*AMB		AMB	01 18 57.1	
	comp=Z,36μm,0.1s							
IMRD	**Marand**	**0.49**	**62**	*e*Pg		**Pg**	**01 18 52.0**	**-0.2**
IMRD				*e*AMB		AMB	01 19 01.4	
	comp=Z,33μm,0.1s							
IMRD	**Marand**	**0.49**	**62**	*e*Pg		**Pg**	**01 18 52.0**	**-0.2**
NAX	**Nakhchivan**	**0.74**	**21**	⇑Pg		**Pg**	**01 18 57.0**	**+0.1**
NAX				⇓Sg		**Sb**	**01 19 08.1**	**+0.3**
ITBZ	**Tabriz**	**0.82**	**107**	*e*Pg		**Pg**	**01 18 57.9**	**-0.5**
ITBZ				*e*Sg		**Sb**	**01 19 09.9**	**-0.3**
ITBZ				*e*AMB		AMB	01 19 10.8	
	comp=Z,7μm,0.2s							
ITBZ	**Tabriz**	**0.82**	**107**	*e*Pg		**Pg**	**01 18 57.9**	**-0.5**
ITBZ				*e*Sg		**Sb**	**01 19 09.9**	**-0.3**
CLDR	**Caldiran**	**1.17**	**305**	*e*PG		**Pb**	**01 19 03.8**	**-1.2**
CLDR				*e*SG		**Sn**	**01 19 21.9**	**+0.6**
CLDR	**Caldiran**	**1.17**	**305**	*e*Pg		**Pb**	**01 19 03.8**	**-1.2**
CLDR				*e*Sg		**Sn**	**01 19 21.9**	**+0.6**
VMUR	**Van-Muradiye**	**1.34**	**293**	*i* P		**Pn**	**01 19 06.9**	**-0.5**
VMUR				*i* S		**Sg**	**01 19 29.6**	**+3.9**
VMUR	**Van-Muradiye**	**1.34**	**293**	P		**Pn**	**01 19 06.9**	**-0.5**
GRS	**Goris**	**1.37**	**42**	⇑*i*P		Pn	01 19 04.0	-3.9
GRS				⇓*i*S		**Sb**	**01 19 22.0**	**-4.0**
TVAN	**Van**	**1.37**	**272**	*i* P		**Pg**	**01 19 08.1**	**-0.8**
TVAN				*i* S		**Sg**	**01 19 28.6**	**+1.9**
TVAN	**Van**	**1.37**	**272**	P		**Pg**	**01 19 08.1**	**-0.8**
VANB	**Van**	**1.39**	**275**	*e*PG		**Pb**	**01 19 08.0**	**-0.6**
VANB				*e*SG		**Sb**	**01 19 24.6**	**-1.9**
VANB	**Van**	**1.39**	**275**	*e*Pg		**Pb**	**01 19 08.0**	**-0.6**
VANB				*e*Sg		**Sb**	**01 19 24.6**	**-1.9**
HAKT	**HAKKARI**	**1.47**	**231**	*i* P		**Pb**	**01 19 09.7**	**-0.4**
HAKT				*i* S		**Sg**	**01 19 32.4**	**+2.5**
HAKT	**HAKKARI**	**1.47**	**231**	P		**Pb**	**01 19 09.7**	**-0.4**
DYDN	**Diyadin**	**1.56**	**313**	*i* P		**Pg**	**01 19 11.9**	**-0.6**
DYDN				*i* S		Sg	01 19 38.5	+5.9
DYDN	**Diyadin**	**1.56**	**313**	P		**Pg**	**01 19 11.9**	**-0.6**
IBST	**Bostanabad**	**1.58**	**119**	*e*Pn		**Pn**	**01 19 10.7**	**-0.1**
IBST				*e*AMB		AMB	01 19 35.3	
	comp=Z,1μm,0.1s							
IBST	**Bostanabad**	**1.58**	**119**	*e*Pn		**Pn**	**01 19 10.7**	**-0.1**
GEVA	**Gevas**	**1.65**	**265**	*i* P		**Pn**	**01 19 11.6**	**-0.2**
GEVA				*i* S		**Sg**	**01 19 37.9**	**+2.1**
GEVA	**Gevas**	**1.65**	**265**	P		**Pn**	**01 19 11.6**	**-0.2**
GNI	**Garni**	**1.69**	**349**	⇓*i*P		**Pb**	**01 19 13.0**	**-0.9**
GNI				⇑*i*S		**Sg**	**01 19 37.6**	**+0.5**
GNI	**Garni**	**1.69**	**349**	⇓P		**Pb**	**01 19 13.0**	**-0.9**
GNI				S		**Sg**	**01 19 37.6**	**+0.5**
VADZ	**Vardenis**	**1.75**	**15**	*e*P		**Pn**	**01 19 13.0**	**-0.1**
VADZ				⇓S		**Sb**	**01 19 37.0**	**0.0**
STKZ		**1.82**	**43**	⇓*i*P		**Pn**	**01 19 14.8**	**+0.8**
STKZ	

TAP ***20*** *01:19:45.5,23.93N×122.28E,h5km±1km,ML3.8,D*
NEIC ***20*** *01:19:46.8±1.6,24.05N×122.31E,h25km±11km,mb4.0/6, Error ellipse: s-maj=11.3km s-min=8.7km az=117.0*
ISCJB ***20*** *01:19:46.6±0.4,23.91N±0.02×122.34E±0.01,h18km±3km, mb3.8/13,Error ellipse: s-maj=3.3km s-min=1.9km az=158.4*
JMA ***20*** *01:19:46.2±0.1,23.92N×122.29E,h21km±3km,M3.6*

ISC 20 01:19:45.0±1.0,**23.90N**±0.02×**122.35E**±0.02,**h16**km±7km, **n87**,σ0=**85**/131,**mb3.9**/13,**1D,Taiwan region**

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
HWA	**Hwalien** baz=274	**0.69**	**276**	P			**Pb**	**01 19 59.5**	**+0.8**
HWA				S			**Sb**	**01 20 08.7**	**+0.7**
TWD	**Chiawan** baz=283	**0.72**	**285**	P			**Pb**	**01 19 59.4**	**+0.3**
TWD				*e*S			**Sg**	**01 20 08.6**	**+0.1**
NACB	**Ninganchiao**	**0.75**	**292**	*e*Pg			**Pg**	**01 19 59.5**	**-0.1**
NACB	baz=283			*e*Sg			**Sg**	**01 20 09.3**	**-0.2**
ENA	**Nanau** baz=315	**0.77**	**313**	P			**Pg**	**01 19 59.9**	**-0.2**
ENA	baz=315			*e*S			**Sb**	**01 20 11.4**	**+1.1**
JYNG	**Yonaguni jima**	**0.77**	**44**	P			**Pn**	**01 20 01.3**	**0.0**
JYNG				S			**Sb**	**01 20 10.8**	**+0.5**
YOJ	**Yonaguni jima**	**0.82**	**47**	P			**Pn**	**01 20 02.3**	**+0.4**
YOJ				S			**Sb**	**01 20 12.3**	**+0.6**
YOJ	**Yonaguni jima**	**0.82**	**47**	*e*Pn			**Pn**	**01 20 02.1**	**+0.2**
TWC	**Suao** baz=330	**0.84**	**327**	P			**Pg**	**01 20 00.8**	**-0.6**
TWC	baz=330			*e*S			**Sg**	**01 20 11.8**	**-0.8**
ESL	**Shilin** baz=261	**0.85**	**264**	*e*P			**Pg**	**01 20 01.5**	**0.0**
ESL	baz=261			*e*S			**Sg**	**01 20 12.3**	**-0.4**
EGS	baz=341	**1.02**	**338**	P			**Pn**	**01 20 04.9**	**+0.2**
EGS	baz=341			*e*S			**Sn**	**01 20 19.5**	**+0.9**
ILA	**Ilan** baz=329	**1.02**	**327**	*e*P			**Pn**	**01 20 05.0**	**+0.2**
ILA	baz=329			*e*S			**Sg**	**01 20 18.3**	**0.0**
EHY	**Hungye** baz=244	**1.02**	**248**	*e*S			**Sg**	**01 20 18.2**	**-0.1**
WHF	**Hehuan Shan** baz=283	**1.02**	**284**	⇓*i*P			**Pb**	**01 20 04.5**	**-0.2**
WHF	baz=283			*e*S			**Sb**	**01 20 17.5**	**-0.6**
ENTT	**Nioudou** baz=317	**1.03**	**316**	P			**Pg**	**01 20 04.9**	**-0.1**
ENTT	baz=317			*e*S			**Sn**	**01 20 19.1**	**+0.1**
TWE	**Neicheng** baz=325	**1.03**	**323**	P			**Pn**	**01 20 05.0**	**+0.2**
TWE	baz=325			*e*S			**Sn**	**01 20 19.6**	**+0.7**
NNS	**Nan Shan** baz=301	**1.04**	**301**	*e*P			**Pb**	**01 20 04.9**	**+0.1**
YULB	**Yu-li**	**1.09**	**243**	*e*Pn			**Pb**	**01 20 05.2**	**-0.4**
TWF1	**Yuli** baz=237	**1.11**	**241**	*e*P			**Pn**	**01 20 06.3**	**+0.3**
TWF1	baz=237			*e*S			**Sb**	**01 20 19.6**	**-0.6**
TWT	**Tachien** baz=287	**1.13**	**288**	P			**Pg**	**01 20 06.9**	**0.0**
TWT	baz=287			S			**Sg**	**01 20 21.8**	**0.0**
TWB1	**Santiao Chiao** baz=346	**1.15**	**343**	P			**Pb**	**01 20 06.5**	**0.0**
TWB1	baz=346			*e*S			**Sn**	**01 20 23.0**	**+1.0**
YHNB	**Yeheng**	**1.18**	**311**	*e*Pn			**Pn**	**01 20 06.5**	**-0.4**
NSK	**Sanguang** baz=311	**1.19**	**311**	P			**Pn**	**01 20 07.2**	**+0.1**
NSK	baz=311			S			**Sg**	**01 20 24.0**	**+0.3**
CHKT	**Chengkung** baz=225	**1.21**	**229**	*e*S			**Sg**	**01 20 25.4**	**+1.3**
NWF	**Wu-fen Shan** baz=338	**1.28**	**336**	*e*P			**Pn**	**01 20 08.4**	**+0.1**
NWF	baz=338			*e*S			**Sb**	**01 20 24.5**	**-0.5**
TWA	**Mucha** baz=328	**1.28**	**327**	*e*P			**Pg**	**01 20 09.4**	**-0.4**
TWA	baz=328			*e*S			**Sg**	**01 20 26.8**	**+0.2**
SSLB	**Suanglung**	**1.29**	**265**	*e*Pn			**Pn**	**01 20 08.4**	**0.0**
IRIF	**Iriomote-Funau**	**1.33**	**71**	P			**Pg**	**01 20 11.0**	**+0.3**
IRIF				S			**Sg**	**01 20 28.9**	**+0.9**
TATO	**Taipei**	**1.33**	**324**	*e*Pn			**Pn**	**01 20 09.1**	**+0.1**
SMLT	**Sun Moon Lake** baz=267	**1.33**	**270**	P			**Pb**	**01 20 09.9**	**+0.1**
SMLT	baz=267			*e*S			**Sg**	**01 20 27.6**	**-0.5**
HATJ	**Hateruma jima**	**1.34**	**83**	P			**Pg**	**01 20 11.0**	**+0.2**
HATJ				S			**Sg**	**01 20 28.9**	**+0.7**
YUS	**Yu-Shan** baz=250	**1.35**	**253**	P			**Pg**	**01 20 10.8**	**-0.3**
YUS	baz=250			S			**Sb**	**01 20 27.0**	**-0.5**
TAP1	**Taipei** baz=327	**1.36**	**326**	*e*P			**Pg**	**01 20 11.2**	**-0.1**
TAP1	baz=327			*e*S			**Sg**	**01 20 30.6**	**+1.5**
TYC	**Yuchr** baz=268	**1.37**	**270**	P			**Pn**	**01 20 10.1**	**+0.5**
TYC	baz=268			*e*S			**Sg**	**01 20 29.1**	**-0.2**
TAP	**Taipei** baz=327	**1.37**	**326**	*e*S			**Sg**	**01 20 31.6**	**+2.2**
ELDTW	**Lidau** baz=237	**1.42**	**240**	*e*P			**Pn**	**01 20 10.6**	**+0.3**
NSTT	**Nanjuang** baz=300	**1.43**	**301**	P			**Pb**	**01 20 11.8**	**+0.4**
NSTT	baz=300			S			**Sb**	**01 20 29.7**	**+0.2**
TWS1	**Kuangyinshan** baz=326	**1.47**	**325**	*e*P			**Pb**	**01 20 11.9**	**-0.1**
TWS1	baz=326			*e*S			**Sg**	**01 20 31.8**	**-0.6**
ALS	**Alishan** baz=252	**1.47**	**255**	*e*P			**Pb**	**01 20 12.4**	**+0.2**
ALS	baz=252			*e*S			**Sn**	**01 20 30.4**	**+0.2**
NCU	**National Centr** baz=316	**1.50**	**315**	*e*P			**Pb**	**01 20 12.6**	**0.0**
NCU	baz=316			*e*S			**Sg**	**01 20 32.7**	**-0.9**
TWQ1	**Liyutan** baz=286	**1.51**	**287**	P			**Pb**	**01 20 13.1**	**+0.4**
TWQ1	baz=286			S			**Sb**	**01 20 32.3**	**+0.6**
TWY	**Chenhua** baz=335	**1.53**	**334**	P			**Pb**	**01 20 13.5**	**+0.4**
TWY	baz=335			*e*S			**Sg**	**01 20 36.3**	**+1.8**
NSY	**Sanyi** baz=289	**1.54**	**290**	*e*S			**Sb**	**01 20 33.7**	**+1.1**
JKRS	**Kuro-shima**	**1.55**	**77**	P			**Pg**	**01 20 14.7**	**-0.2**
JKRS				S			**Sg**	**01 20 34.7**	**-0.3**
TCU	**Taichung** baz=278	**1.55**	**279**	*e*P			**Pg**	**01 20 14.4**	**-0.5**
TCU	baz=278			*e*S			**Sb**	**01 20 33.5**	**+0.6**
CHN5	**Tsauling** baz=257	**1.56**	**259**	P			**Pb**	**01 20 14.1**	**+0.4**
CHN5	baz=257			*e*S			**Sb**	**01 20 33.4**	**0.0**
TTN	**Taitung** baz=221	**1.59**	**224**	*e*S			**Sb**	**01 20 34.6**	**+0.6**
TWG	**Pinlang** baz=224	**1.59**	**228**	P			**Pb**	**01 20 13.7**	**-0.5**
TWG	baz=224			*e*S			**Sn**	**01 20 32.8**	**-0.1**
TWG	**Pinlang**	**1.59**	**228**	*e*Pn			**Pg**	**01 20 15.7**	**0.0**
STYT	**Tauyuan** baz=241	**1.64**	**244**	*e*P			**Pb**	**01 20 14.6**	**-0.4**
STYT	baz=241			*e*S			**Sn**	**01 20 34.9**	**+0.8**
WGK	**Gukeng** baz=261	**1.66**	**263**	*e*S			**Sg**	**01 20 39.6**	**+1.2**
TPUB	**Ta-pu**	**1.69**	**250**	*e*Pn			**Pb**	**01 20 16.3**	**+0.5**
JIJ	**Ishigaki jima**	**1.70**	**74**	P			**Pb**	**01 20 16.0**	**+0.1**
JIJ				S			**Sb**	**01 20 37.9**	**+0.9**
CHN4	**Tsaushan** baz=249	**1.71**	**252**	*e*P			**Pg**	**01 20 17.1**	**-0.8**
CHN4	baz=249			S			**Sb**	**01 20 37.7**	**+0.5**
WTP	**Ta-pu** baz=245	**1.72**	**248**	P			**Pb**	**01 20 17.2**	**+0.8**
WTP	baz=245			S			**Sb**	**01 20 38.8**	**+1.0**
PCYT	**Pengchaiyu** baz=353	**1.74**	**352**	*e*P			**Pn**	**01 20 15.1**	**+0.5**
SGST	**Jiashian** baz=241	**1.82**	**244**	*e*S			**Sb**	**01 20 41.9**	**+1.3**
CHN1	**Nanshi** baz=245	**1.82**	**247**	*e*S			**Sb**	**01 20 41.5**	**+0.9**
TWK	**Hsinying** baz=247	**1.82**	**250**	*e*P			**Pb**	**01 20 18.3**	**+0.2**
TWK	baz=247			*e*S			**Sb**	**01 20 42.0**	**+1.2**
WTCT	**Ta-ch'eng** baz=267	**1.90**	**269**	*e*S			**Sb**	**01 20 44.0**	**+1.2**
JISG	**Ishigakijimahi**	**1.91**	**69**	P			**Pb**	**01 20 18.4**	**-1.2**
JISG				S			**Sb**	**01 20 43.1**	**-0.1**
SSD	**Sandimen** baz=232	**1.96**	**234**	*e*S			**Sb**	**01 20 44.7**	**+0.2**
WSF	**Szhu** baz=261	**1.97**	**263**	*e*S			**Sb**	**01 20 45.5**	**+0.6**
LAY	**Lan-yu** baz=199	**2.00**	**202**	*e*S			**Sn**	**01 20 41.5**	**-1.3**
CHN8	**Yiju** baz=252	**2.04**	**255**	*e*S			**Sn**	**01 20 45.7**	**+1.7**
EAST	**Anshuo** baz=220	**2.05**	**223**	*e*P			**Pb**	**01 20 20.9**	**-1.0**
TWM1	**Shoushan** baz=237	**2.07**	**239**	*e*S			**Sb**	**01 20 47.3**	**-0.6**
SCZT	**Fangliau** baz=224	**2.21**	**227**	*e*P			**Pb**	**01 20 24.9**	**+0.4**
SCZT	baz=224			*e*S			**Sb**	**01 20 51.4**	**-0.3**
JTJ	**Tarama**	**2.27**	**71**	P			**Pb**	**01 20 24.3**	**-1.3**
JTJ				S			**Sb**	**01 20 52.9**	**-0.5**
HEN	**Hengchun** baz=216	**2.40**	**219**	*e*S			**Sn**	**01 20 54.4**	**+1.6**
TWK1	**Hengchun** baz=214	**2.42**	**217**	*e*S			**Sn**	**01 20 55.2**	**+2.0**
PNG	**Penghu** baz=261	**2.59**	**263**	*e*S			**Sn**	**01 20 58.5**	**+1.1**
JIRB	**Irabujima**	**2.73**	**70**	S			**Sn**	**01 21 03.8**	**+2.8**
JIKM	**Ikemajima**	**2.83**	**68**	S			**Sn**	**01 21 05.7**	**+2.4**
KNM	**Kinmen** baz=277	**3.62**	**279**	*e*P			**Pn**	**01 20 42.2**	**+1.7**
KNM	baz=277			*e*S			**Sn**	**01 21 23.2**	**+0.4**
ULN	**Ulaanbaatar** 3.9nm,1.0s	**26.84**	**337**	*e*P			**P**	**01 25 23.9**	**-1.0**
SONM	**Songino Array** 3.7nm,0.7s,baz=147,slow=9.7,SNR=10	**27.05**	**336**	P			**P**	**01 25 26.4**	**-0.4**
TLY	**Talaya** 3.1nm,0.9s	**31.24**	**337**	*e*P			**P**	**01 26 01.3**	**-2.5**
MKAR	**Makanchi Array** 0.4nm,0.4s,baz=99,slow=10,SNR=8.9	**39.29**	**316**	P			**P**	**01 27 13.1**	**-0.1**
ZALV	**Zalesovo Beam** 0.9nm,0.4s,baz=113,slow=8.2,SNR=7.7	**41.06**	**327**	P			**P**	**01 27 26.1**	**-1.6**
TKM2	**Tokmak 2** 1.4nm,0.6s	**42.78**	**308**	*e*P			**P**	**01 27 42.5**	**+0.3**
KURK	**Kurchatov** 1.2nm,0.5s	**43.00**	**320**	*e*P			**P**	**01 27 42.8**	**-0.8**
WRA	**Warramunga Arr** 1.0nm,0.9s,baz=344,slow=9.1,SNR=4.9	**45.12**	**164**	P			**P**	**01 28 02.7**	**+1.8**
BRVK	**Borovoye** 1.0nm,0.8s	**48.64**	**321**	*e*P			**P**	**01 28 26.9**	**-1.2**
ABKAR	**Akbulak array** 1.1nm,0.8s	**54.40**	**314**	*e*P			**P**	**01 29 10.5**	**-0.8**
AKASG	**Malin Array Be** 0.3nm,0.4s,baz=59,slow=7.2,SNR=2.9	**73.79**	**319**	P			**P**	**01 31 17.4**	**-1.2**
BRTR	**Keskin Array B** 0.9nm,0.9s,baz=104,slow=5.2,SNR=4.7	**74.20**	**307**	P			**P**	**01 31 22.1**	**+0.6**
YKA	**Yellowknife Ar** 0.4nm,0.8s,baz=313,slow=4.9,SNR=8.4	**82.81**	**23**	P			**P**	**01 32 07.9**	**-0.3**

ISCJB ***20*** *01:31:46.0±0.8,36.98N±0.04×140.83E±0.08,h16km±6km, mb3.6/2,Error ellipse: s-maj=11.1km s-min=6.1km az=14.8*
IDC ***20*** *01:31:45.8±4.4,36.93N×140.75E,h0km,mb3.5/2, mb1 3.7/3,mb1mx3.3/35,mbtmp3.4/3,ML3.1/1,Error ellipse: s-maj=86.1km s-min=31.3km az=16.0*
JMA ***20*** *01:31:46.8,37.01N×140.67E,h7km±1km,M3.2*

ISC 20 01:31:46.9±1.0,**37.01N**±0.03×**140.69E**±0.05,**h11**km±8km, **n11**,σ0=**40**/17,**5C-1D,Eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.13**	**42**	⇓P			**Pg**	**01 31 50.0**	**0.0**
ONAJ				S			**Sg**	**01 31 52.3**	**+0.1**
JFK	**Kawauchi**	**0.39**	**22**	⇑P			**Pg**	**01 31 54.5**	**-0.1**
JFK				S			**Sg**	**01 32 00.0**	**+0.2**
JHO	**Hitachi**	**0.41**	**194**	⇑P			**Pg**	**01 31 54.7**	**-0.2**
JHO				S			**Sg**	**01 32 00.4**	**+0.1**
JFT	**Otama**	**0.58**	**331**	⇑P			**Pg**	**01 31 58.0**	**-0.2**
JFT				S			**Sg**	**01 32 05.7**	**-0.2**
JSB	**Shiboa**	**0.62**	**267**	P			**Pg**	**01 31 59.1**	**+0.2**
JMM	**Marumori**	**0.86**	**5**	⇑P			**Pg**	**01 32 02.8**	**-0.7**
JYT	**Yasato**	**0.87**	**207**	⇑P			**Pg**	**01 32 03.1**	**-0.6**
MJAR	**Matsushiro Arr** 6.2nm,0.3s,baz=78,slow=15,SNR=18	**2.05**	**258**	Pn			**Pn**	**01 32 21.5**	**+0.2**
MJAR				Sn			**Sb**	**01 32 49.4**	**-0.2**
MAT	**Matsushiro** 6.7nm,0.3s,baz=87,slow=27,SNR=12	**2.05**	**258**	P			**Pn**	**01 32 22.0**	**+0.7**
MAT				S			**Sb**	**01 32 49.2**	**-0.4**
WRA	**Warramunga Arr** 0.6nm,0.7s,baz=3.0,slow=7.3,SNR=4.7	**56.96**	**187**	P			**P**	**01 41 32.2**	**-0.2**
ASAR	**Alice Springs** 0.2nm,0.5s,baz=1.0,slow=5.6,SNR=2.8	**60.69**	**187**	P			**P**	**01 41 58.6**	**+0.3**

NIED ***20*** *01:35:00,22.10N×121.80E,h32km,Mw4.1 Best double couple: M0 1.44000×10^15 NP1:φ=167.00000°,δ58.00000°, λ23.00000°. NP2:φ=64.00000°,δ71.00000°,λ145.00000°.*
ISCJB ***20*** *01:35:55.8±0.5,21.91N±0.03×121.83E±0.02,h10km, mb3.7/12,MS3.2/1,Error ellipse: s-maj=4.6km s-min=2.7km az=170.4*
TAP ***20*** *01:35:56.8,21.86N×121.66E,h13km,ML3.9,C*
JMA ***20*** *01:35:57.9±0.2,22.13N×121.78E,h8km,M4.0*
IDC ***20*** *01:36:03.7±9.7,21.71N×121.74E,h61km±89km,mb3.5/11, mb1 3.6/11,mb1mx3.5/37,mbtmp3.8/11,MS3.2/2, Ms1 3.2/2,ms1mx2.7/36,Error ellipse: s-maj=43.1km s-min=24.9km az=66.0*

ISC 20 01:35:57.6±0.7,**22.00N**±0.04×**121.75E**±0.03,**h10**km,**n67**, σ1=**32**/85,**mb3.7**/12,**1C-1D,Taiwan region**

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
LAY	**Lan-yu** baz=333	**0.19**	**281**	⇑*i*P			**Pg**	**01 36 01.6**	**0.0**
TSEB	**Hengchuen, Pin** baz=273	**0.80**	**263**	*e*P			**Pg**	**01 36 11.8**	**-1.2**
TAW	**Tawu** baz=306	**0.87**	**294**	P			**Pg**	**01 36 13.0**	**-1.3**
TAW	baz=306			S			**Sg**	**01 36 24.8**	**-0.8**
TWK1	**Hengchun** baz=276	**0.88**	**266**	⇓*i*P			**Pg**	**01 36 12.5**	**-2.1**
TWK1	baz=276			*e*S			**Sg**	**01 36 24.1**	**-2.0**
EAST	**Anshuo** baz=306	**0.92**	**295**	P			**Pg**	**01 36 13.8**	**-1.6**
EAST	baz=306			*e*S			**Sg**	**01 36 26.2**	**-1.1**
TTN	**Taitung** baz=345	**0.94**	**323**	*e*P			**Pb**	**01 36 14.9**	**-1.0**
HEN	**Hengchun** baz=294	**0.94**	**270**	*e*P			**Pg**	**01 36 13.6**	**-2.1**
TWG	**Pinlang** baz=316	**1.03**	**322**	*e*P			**Pn**	**01 36 16.9**	**-1.2**
TWG	baz=316			*e*S			**Sn**	**01 36 32.6**	**0.0**
SCZT	**Fangliau** baz=310	**1.11**	**290**	*e*P			**Pb**	**01 36 16.7**	**-2.2**
SCZT	baz=310			*e*S			**Sb**	**01 36 33.2**	**-0.2**
CHKT	**Chengkung** baz=349	**1.15**	**342**	*e*P			**Pb**	**01 36 17.5**	**-2.1**
CHKT	baz=349			*e*S			**Sg**	**01 36 33.6**	**-1.1**
SSD	**Sandimen** baz=324	**1.27**	**306**	*e*P			**Pg**	**01 36 21.1**	**-0.9**
TWP	**Hsiaoliuchiu** baz=293	**1.33**	**285**	*e*P			**Pn**	**01 36 21.4**	**-0.8**
ELDTW	**Lidau** baz=346	**1.36**	**330**	*e*P			**Pg**	**01 36 22.9**	**-0.8**
TWF1	**Yuli** baz=358	**1.41**	**343**	*e*P			**Pn**	**01 36 22.4**	**-1.0**
TWF1	baz=358			*e*S			**Sg**	**01 36 43.3**	**+0.3**
STYT	**Tauyuan** baz=329	**1.48**	**322**	*e*P			**Pb**	**01 36 24.6**	**-0.6**
STYT	baz=329			*e*S			**Sg**	**01 36 45.8**	**+0.7**
TWM1	**Shoushan** baz=322	**1.48**	**304**	*e*P			**Pg**	**01 36 25.7**	**-0.2**
SGST	**Jiashian** baz=329	**1.52**	**315**	*e*P			**Pb**	**01 36 25.4**	**-0.6**
SGST	baz=329			*e*S			**Sg**	**01 36 47.5**	**+0.8**
EHY	**Hungye** baz=359	**1.55**	**345**	*e*P			**Pg**	**01 36 25.8**	**-1.5**
EHY	baz=359			*e*S			**Sg**	**01 36 46.0**	**-1.5**
WTP	**Ta-pu** baz=326	**1.62**	**320**	*e*P			**Pn**	**01 36 26.0**	**-0.3**
WTP	baz=326			*e*S			**Sg**	**01 36 51.0**	**+1.1**
CHN1	**Nanshi** baz=323	**1.63**	**316**	*e*P			**Pb**	**01 36 27.4**	**-0.5**
CHN1	baz=323			*e*S			**Sg**	**01 36 48.9**	**-1.2**
YUS	**Yu-Shan** baz=330	**1.65**	**334**	*e*P			**Pb**	**01 36 27.6**	**-0.9**
CHN4	**Tsaushan** baz=328	**1.72**	**322**	*e*P			**Pb**	**01 36 28.4**	**-0.8**
CHN4	baz=328			*e*S			**Sg**	**01 36 54.4**	**+1.5**
TWK	**Hsinying** baz=324	**1.72**	**317**	*e*P			**Pb**	**01 36 28.3**	**-1.0**
TWK	baz=324			*e*S			**Sb**	**01 36 50.5**	**-0.5**
ALS	**Alishan** baz=336	**1.74**	**330**	*e*P			**Pb**	**01 36 28.6**	**-1.1**
WDT	**Danda** baz=358	**1.84**	**342**	*e*P			**Pn**	**01 36 29.1**	**-0.4**
CHN5	**Tsauling** baz=334	**1.87**	**328**	*e*P			**Pb**	**01 36 30.9**	**-1.1**
CHN5	baz=334			*e*S			**Sg**	**01 36 56.0**	**-1.8**
SMLT	**Sun Moon Lake** baz=352	**2.03**	**337**	*e*P			**Pb**	**01 36 33.4**	**-1.3**
TYC	**Yuchr** baz=352	**2.06**	**337**	*e*P			**Pb**	**01 36 33.7**	**-1.5**
TYC	baz=352			*e*S			**Sg**	**01 37 02.1**	**-1.9**
TWD	**Chiawan** baz=9.0	**2.07**	**356**	*e*P			**Pn**	**01 36 31.6**	**-0.8**
WHF	**Hehuan Shan** baz=351	**2.18**	**348**	*e*P			**Pn**	**01 36 34.1**	**-0.2**
WDGT	**Dungji** baz=309	**2.30**	**303**	*e*P			**Pn**	**01 36 35.6**	**0.0**
TWT	**Tachien** baz=358	**2.30**	**347**	*e*P			**Pb**	**01 36 36.4**	**-3.0**
NNS	**Nan Shan** baz=4.0	**2.45**	**352**	*e*P			**Pb**	**01 36 41.3**	**-0.6**
TWQ1	**Liyutan** baz=326	**2.50**	**339**	*e*P			**Pb**	**01 36 40.6**	**-2.1**
TWQ1	baz=326			*e*S			**Sb**	**01 37 11.6**	**-2.0**
ENTT	**Nioudou** baz=358	**2.63**	**356**	*e*P			**Pb**	**01 36 42.6**	**-2.3**
JYNG	**Yonaguni jima**	**2.67**	**24**	P			**Pn**	**01 36 40.9**	**+0.2**
JYNG				S			**Sn**	**01 37 13.4**	**+0.2**
NSK	**Sanguang** baz=4.0	**2.69**	**352**	*e*P			Pb	01 36 42.4	-3.5
NSK	baz=4.0			*e*S			**Sn**	**01 37 14.4**	**+0.8**
NSTT	**Nanjuang** baz=356	**2.71**	**345**	*e*P			**Pb**	**01 36 43.4**	**-2.7**
YOJ	**Yonaguni jima**	**2.71**	**25**	P			**Pn**	**01 36 41.8**	**+0.6**
YOJ				S			**Sn**	**01 37 13.6**	**-0.4**
HATJ	**Hateruma jima**	**2.79**	**42**	P			**Pn**	**01 36 42.5**	**+0.2**
HATJ				S			**Sn**	**01 37 14.9**	**-1.0**
IRIF	**Iriomote-Funau**	**2.95**	**38**	P			**Pn**	**01 36 44.6**	**+0.1**
IRIF				S			**Sn**	**01 37 19.6**	**-0.4**
JKRS	**Kuro-shima**	**3.04**	**43**	P			**Pn**	**01 36 45.9**	**+0.1**
JKRS				S			**Sn**	**01 37 22.4**	**+0.1**
NWF	**Wu-fen Shan** baz=11	**3.06**	**1**	*e*P			**Pn**	**01 36 47.1**	**+1.1**
JIJ	**Ishigaki jima**	**3.22**	**43**	P			**Pn**	**01 36 47.7**	**-0.5**
JIJ				S			**Sn**	**01 37 24.6**	**-2.1**
JISG	**Ishigakijimahi**	**3.49**	**42**	P			**Pn**	**01 36 51.9**	**0.0**
JISG				S			*e*S	**01 37 32.5**	**-0.7**
JTJ	**Tarama**	**3.78**	**45**	P			**Pn**	**01 36 55.9**	**0.0**
JTJ				S			**Sn**	**01 37 38.6**	**-1.8**
JIRB	**Irabujima**	**4.22**	**48**	P			**Pn**	**01 37 02.1**	**+0.2**
JIRB				S			**Sn**	**01 37 50.1**	**-1.2**
JIKM	**Ikemajima**	**4.33**	**47**	S			**Sn**	**01 37 53.5**	**-0.6**
JNU	**Nakatsue** comp=Z,70nm,19.6s,baz=304,slow=36	**13.71**	**34**	LR			LR	01 44 26.0	
CMAR	**Chiang Mai Arr** 0.9nm,0.3s,baz=66,slow=9.0,SNR=4.9	**21.68**	**265**	P			**P**	**01 40 52.4**	**+3.6**
USRK	**Ussuriysk Ar.** 1.8nm,0.8s,baz=202,slow=11,SNR=4.9	**23.70**	**19**	P			**P**	**01 41 12.1**	**+2.5**
USRK	comp=Z,73nm,18.4s,baz=161,slow=38						LR	LR	01 51 21.5	
SONM	**Songino Array** 0.7nm,0.7s,baz=159,slow=8.6,SNR=2.7	**28.58**	**338**	P			P	P	01 41 56.9	+3.1
MKAR	**Makanchi Array** 0.8nm,0.6s,baz=116,slow=9.7,SNR=7.5	**40.28**	**318**	P			**P**	**01 43 36.5**	**+1.6**
H11N1	**WAKE ISLAND Hy 42.13** baz=282,slow=75,SNR=28	**85**		T			T	02 28 56.5	
H11N2	**WAKE ISLAND Hy 42.13** baz=282,slow=75,SNR=41	**85**		T			T	02 28 56.0	
H11N3	**WAKE ISLAND Hy 42.15** baz=282,slow=75,SNR=30	**85**		T			T	02 28 57.7	
H11S3	**WAKE ISLAND Hy 42.19** baz=283,slow=75,SNR=448	**86**		T			T	02 28 52.3	
H11S1	**WAKE ISLAND Hy 42.20** baz=283,slow=75,SNR=511	**86**		T			T	02 28 52.9	
H11S2	**WAKE ISLAND Hy 42.21** baz=283,slow=75,SNR=367	**86**		T			T	02 28 54.5	
ZALV	**Zalesovo Beam** 0.9nm,0.3s,baz=119,slow=8.1,SNR=3.9	**42.36**	**328**	P			**P**	**01 43 53.1**	**+1.3**
WRA	**Warramunga Arr** 0.6nm,0.8s,baz=343,slow=8.6,SNR=3.4	**43.47**	**163**	P			**P**	**01 43 58.6**	**-2.5**
NRIK	**Noril'sk** 1.4nm,0.3s,baz=130,slow=6.5,SNR=4.6	**51.64**	**345**	P			**P**	**01 45 05.5**	**+1.4**
FINES	**FINESS Array B** 1.6nm,1.0s,baz=181,slow=38,SNR=3.3	**73.59**	**330**	P			**P**	**01 47 32.3**	**+1.5**
AKASG	**Malin Array Be** 0.1nm,0.3s,baz=60,slow=5.6,SNR=4.1	**74.84**	**319**	P			**P**	**01 47 38.4**	**+0.1**
NOA	**NORSAR Array B** 0.7nm,0.8s,baz=85,slow=5.8,SNR=3.5	**80.39**	**332**	P			**P**	**01 48 08.9**	**-0.2**
YKA	**Yellowknife Ar** 0.4nm,0.9s,baz=313,slow=5.0,SNR=7.7	**84.77**	**23**	P			**P**	**01 48 32.6**	**+0.8**
GERES	**GERESS Array B** 0.2nm,0.3s,baz=45,slow=5.7,SNR=2.9	**84.86**	**321**	P			**P**	**01 48 33.1**	**+0.4**

CSEM ***20*** *01:45:43.9±0.4,37.93N×31.05E,h10km,MD2.8,Error ellipse: s-maj=12.3km s-min=7.9km az=157.0*
ISK ***20*** *01:45:43.0,38.10N×30.99E,h15km,MD2.8*
DDA ***20*** *01:45:46.7,38.07N×30.83E,h6km,Ml2.7*

ISC 20 01:45:43.8±1.3,**38.06N**±0.05×**31.01E**±0.04,**h1**km±12km, **n18**,σ1=**58**/28,**Turkey**

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
BAGO	**Egridir - ISPA**	**0.19**	**248**	*i* P			**Pg**	**01 45 47.7**	**+0.3**
BAGO				*i* S			**Sg**	**01 45 51.5**	**+1.7**
ISP	**Isparta**	**0.45**	**239**	*e*PG			**Pg**	**01 45 53.1**	**+0.6**
ISP				*e*SG			**Sg**	**01 45 59.1**	**+0.8**
ISP	**Isparta**	**0.45**	**239**	*e*Pg			**Pg**	**01 45 53.1**	**+0.6**
ISP				*e*Sg			**Sg**	**01 45 59.1**	**+0.8**
BOLV	**Bolvadin**	**0.66**	**356**	*i* P			**Pn**	**01 45 59.8**	**-0.6**
BOLV				*i* S			**Sn**	**01 46 12.4**	**+0.9**
BOLV	**

KONT	**Konya--Tatoy**	**1.07**	**96**	*e*Pn	**Pb**	**01 46 04.1**	**-1.1**
LADK	**Ladik-KONYA**	**1.08**	**82**	*e*PN	**Pb**	**01 46 04.6**	**-0.7**
LADK				*e*SN	**Sb**	**01 46 19.5**	**-0.5**
LADK	**Ladik-KONYA**	**1.08**	**82**	*e*Pn	**Pb**	**01 46 04.6**	**-0.7**
LADK				*e*Sn	**Sb**	**01 46 19.5**	**-0.5**
KORT	**Korkueli**	**1.18**	**207**	*i* P	**Pb**	**01 46 05.9**	**-1.2**
KORT				*i* S	**Sn**	**01 46 24.7**	**+0.4**
KORT	**Korkueli**	**1.18**	**207**	P	**Pb**	**01 46 05.9**	**-1.2**
KHAL	**Karahalli**	**1.23**	**285**	*i* P	**Pg**	**01 46 07.6**	**+0.1**
KHAL				*i* S	**Sn**	**01 46 29.9**	**+4.2**
KHAL	**Karahalli**	**1.23**	**285**	P	**Pg**	**01 46 07.6**	**+0.1**
SVRH	**Sivrihisar-ESK**	**1.44**	**16**	*e*PN	**Pn**	**01 46 08.2**	**-3.0**
KULA	**Kula-Manisa**	**1.90**	**285**	*e*PN	**Pn**	**01 46 15.6**	**-1.9**
KULA	**Kula-Manisa**	**1.90**	**285**	*e*Pn	**Pn**	**01 46 15.6**	**-1.9**

MEX 20 01:46:33.5±0.7,**15°10N**×**92°97W,h91**km±10km,**MD3.9, Mexico-Guatemala border region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PCIG		**0.65**	**338**	*e*P	Pn	01 46 48.6	-1.0
PCIG				*e*S	Sn	01 47 00.0	-1.6
CCIG	**Comitan**	**1.42**	**34**	*e*P	Pn	01 46 57.9	-0.7
CCIG				*i* S	Sn	01 47 15.5	-1.9
TGIG		**1.67**	**355**	*i* P	Pn	01 46 59.8	-1.8
TGIG				*e*S	Sn	01 47 21.3	-1.6

IDC ***20*** *01:46:27.9±6.0, 19°.10S×177°.48W, h492km±66km, mb3.1/8, mb1 3.4/9, mb1mx3.2/31, mbtmp4.0/9, Error ellipse: s-maj=28.7km s-min=23.4km az=39.0*

ISCJB ***20*** *01:46:33.3±0.7, 19°.3S±0°.1×177°.7W±0°.2, h570km, mb3.5/8, Error ellipse: s-maj=22.6km s-min=15.8km az=33.5*

ISC 20 01:46:34.5±0.6,**19°2S**±0°.1×**177°6W**±0°.2,**h570**km,**n18,** σ0**96**/19,**mb3.5/8,Fiji Islands region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
URZ	**Urewera**	**19.50**	**193**	P	**P**	**01 50 22.6**	**-2.3**
	2.1nm,0.3s,baz=311,slow=5.0,SNR=4.0						
STKA	**Stephens Creek**	**38.68**	**243**	P	**P**	**01 53 11.0**	**+0.7**
	2.9nm,0.8s,baz=105,slow=9.7,SNR=3.7						
WRA	**Warramunga Arr**	**45.15**	**261**	P	**P**	**01 54 00.9**	**-0.4**
	1.0nm,0.4s,baz=98,slow=8.1,SNR=8.0						
ASAR	**Alice Springs**	**45.18**	**255**	P	**P**	**01 54 01.6**	**0.0**
	2.7nm,0.7s,baz=87,slow=8.5,SNR=26						
VNDA	**Vanda**	**59.19**	**185**	P	**P**	**01 55 42.2**	**+1.4**
	0.9nm,0.7s,baz=351,slow=6.4,SNR=3.8						
PETK	**Petropavlovsk-**	**75.16**	**345**	P	**P**	**01 57 18.2**	**-0.6**
	3.4nm,0.9s,baz=140,slow=9.2,SNR=2.9						
TXAR	**Lajitas Array**	**86.07**	**57**	P	**P**	**01 58 16.2**	**+0.3**
	0.4nm,0.6s,baz=224,slow=7.3,SNR=7.0						
ILAR	**Eielson Array**	**87.01**	**13**	P	**P**	**01 58 19.0**	**-0.4**
	0.2nm,0.5s,baz=248,slow=4.5,SNR=4.7						
PDAR	**Pinedale Array**	**87.80**	**43**	P	**P**	**01 58 23.6**	**-0.3**
	0.2nm,0.5s,baz=146,slow=2.9,SNR=4.0						
VNA3	**Neumayer Olymp**	**89.36**	**176**	P	**P**	**01 58 30.1**	**-0.4**
VNA2	**Neumayer--Watz**	**89.81**	**177**	P	**P**	**01 58 32.5**	**-0.1**
	baz=181,slow=4.1						
ARCES	**ARCESS Array B**	**127.75**	**350**	PKP	**PKPdf**	**02 04 37.2**	**+2.2**
	4.3nm,1.0s,baz=20,slow=3.9,SNR=6.4						
AKASG	**Malin Array Be**	**142.09**	**332**	PKhKP	PKPpre	02 04 58.3	
	0.3nm,0.3s,baz=46,slow=3.7,SNR=3.9						
BRTR	**Keskin Array B**	**146.25**	**314**	PKPbc	**PKPbc**	**02 05 11.9**	**-0.3**
	1.1nm,0.7s,baz=145,slow=6.0,SNR=6.7						
BRTR				PKPab	**PKiKP**	**02 05 14.7**	**+0.2**
	1.0nm,0.6s,baz=119,slow=4.5,SNR=5.3						
DPC	**Dobruska-Polom**	**147.04**	**344**	*e*P	**PKPbc**	**02 05 14.5**	**+0.7**
KHC	**Kasperske Hory**	**148.85**	**346**	*e*P	**PKPbc**	**02 05 18.0**	**-0.4**
GERES	**GERESS Array B**	**149.09**	**345**	PKP	**PKPdf**	**02 05 13.5**	**-0.7**
	0.2nm,0.4s,baz=17,slow=1.4,SNR=3.5						
GERES				PKPbc	**PKPbc**	**02 05 18.9**	**-0.1**
	0.9nm,0.6s,baz=25,slow=2.6,SNR=7.7						
TORD	**Torodi Ar. Bea**	**173.90**	**174**	PKPab	**PKPab**	**02 07 14.7**	**+0.2**
	0.6nm,0.9s,baz=194,slow=2.7,SNR=4.0						

IDC ***20*** *01:46:40.3±1.4, 37°.89N×144°.61E, h0km, mb3.6/6, mb1 3.8/8, mb1mx3.5/46, mbtmp3.6/8, ML3.1/2, MS3.2/1, Ms1 3.2/1, ms1mx2.4/58, Error ellipse: s-maj=31.0km s-min=26.1km az=106.0*

JMA ***20*** *01:46:43.9±0.1, 38°.15N×144°.39E, h21km, M4.3*

ISCJB ***20*** *01:46:44.6±0.8, 38°.10N±0°.06×144°.44E±0°.06, h33km, mb3.6/6, MS3.1/1, Error ellipse: s-maj=9.3km s-min=6.4km az=173.1*

ISC 20 01:46:46.2±1.1,**38°11N**±0°.08×**144°47E**±0°.09,**h35**km,**n23,** σ0**91**/29,**mb3.6/6,Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**2.40**	**295**	P	**Pn**	**01 47 22.1**	**-0.8**
OFUJ				*e*S	**Sn**	**01 47 50.2**	**-0.8**
JIO	**Ouri**	**2.48**	**279**	P	**Pn**	**01 47 23.2**	**-0.8**
JIO				S	**Sn**	**01 47 52.4**	**-0.6**
JMK	**Ichinoseki**	**2.68**	**289**	S	**Sn**	**01 47 58.0**	**-0.1**
JOM	**Ohasama**	**2.83**	**300**	P	**Pn**	**01 47 28.6**	**-0.3**
JOM				*e*S	**Sn**	**01 48 01.0**	**-0.7**
JMM	**Marumori**	**2.92**	**266**	P	**Pn**	**01 47 29.3**	**-0.7**
JMM				S	**Sn**	**01 48 02.7**	**-1.1**
JOU	**Okura**	**3.01**	**276**	P	**Pn**	**01 47 31.2**	**-0.1**
JOU				S	**Sn**	**01 48 06.1**	**0.0**
JRG	**Rokugo**	**3.26**	**294**	P	**Pn**	**01 47 34.9**	**+0.1**
JRG				S	**Sn**	**01 48 12.9**	**+0.5**
JYK	**Kaneyama**	**3.32**	**285**	P	**Pn**	**01 47 35.7**	**+0.1**
JYK				*e*S	**Sn**	**01 48 14.8**	**+0.9**
JFT	**Otama**	**3.33**	**261**	P	**Pn**	**01 47 35.7**	**0.0**
JFT				S	**Sn**	**01 48 14.0**	**0.0**
JTM	**Tenmabayashi**	**3.75**	**316**	P	**Pn**	**01 47 40.6**	**-0.9**
JTM				S	**Sn**	**01 48 22.4**	**-2.0**
MJAR	**Matsushiro Arr**	**5.23**	**254**	Pn	**Pn**	**01 48 02.2**	**+0.3**
	2.1nm,0.3s,baz=77,slow=15,SNR=7.7						
MAT	**Matsushiro**	**5.23**	**254**	P	**Pn**	**01 48 02.6**	**+0.7**
MAT				S	**Sn**	**01 49 00.9**	**-0.1**
USRK	**Ussuriysk Ar.**	**11.20**	**307**	Pn	**Pn**	**01 49 24.6**	**+0.9**
	0.3nm,0.3s,baz=104,slow=13,SNR=7.1						
SEY	**Seymchan**	**25.32**			**P**	**01 52 11.2**	**+2.0**
	0.4nm,0.3s,baz=175,slow=8.9,SNR=3.6						
H11N2	**WAKE ISLAND Hy**	**26.73**	**127**	T	T	02 20 03.3	
	baz=319,slow=75,SNR=8.9						
H11N1	**WAKE ISLAND Hy**	**26.74**	**127**	T	T	02 20 05.6	
	baz=319,slow=75,SNR=3.4						
H11N3	**WAKE ISLAND Hy**	**26.75**	**127**	T	T	02 20 05.4	
	baz=319,slow=75,SNR=4.1						
TIXI	**Tiksi**	**34.55**	**351**	LR	LR	02 07 54.0	
	comp=Z,36nm,20.4s,baz=223,slow=37						
MKAR	**Makanchi Array**	**45.61**	**302**	P	**P**	**01 55 03.6**	**+0.7**
	0.4nm,0.6s,baz=81,slow=9.3,SNR=4.3						
KURBB	**Kurchatov Arra**	**47.26**	**308**	P	**P**	**01 55 16.0**	**+0.3**
	1.7nm,0.7s,baz=83,slow=8.1,SNR=11						
ILAR	**Eielson Array**	**47.28**	**33**	P	**P**	**01 55 15.7**	**+0.1**
	0.1nm,0.7s,baz=263,slow=7.1,SNR=2.9						
BVAR	**Borovoye Array**	**51.65**	**312**	P	**P**	**01 55 49.6**	**+0.5**
	0.5nm,0.6s,baz=72,slow=9.5,SNR=3.8						
WRA	**Warramunga Arr**	**58.53**	**191**	P	**P**	**01 56 37.0**	**-2.1**
	1.0nm,0.7s,baz=12,slow=7.3,SNR=6.0						

JMA ***20*** *02:04:01.2±0.2, 39°.93N×143°.18E, h11km±3km, M4.2*

ISCJB ***20*** *02:04:03.4±0.8, 39°.89N±0°.04×143°.21E±0°.07, h39km±6km, mb4.2/43, MS3.3/9, Error ellipse: s-maj=10.2km s-min=5.2km az=27.3*

IDC ***20*** *02:04:04.2±0.6, 39°.79N×143°.11E, h31km±3km, mb3.9/25, mb1 4.0/26, mb1mx3.9/51, mbtmp4.1/26, ML3.5/1, MS3.3/14, Ms1 3.3/14, ms1mx3.1/55, Error ellipse: s-maj=14.7km s-min=13.0km az=129.0*

NEIC ***20*** *02:04:04.8±1.8, 39°.87N×143°.12E, h34km±12km, mb4.6/12, Error ellipse: s-maj=7.0km s-min=4.7km az=124.0*

MOS ***20*** *02:04:04.3±0.9, 39°.89N×143°.14E, h45km, mb4.6/17, Error ellipse: s-maj=10.4km s-min=6.8km az=99.6*

ISC 20 02:04:04.5±0.6,**39°88N**±0°.05×**143°22E**±0°.06,**h33**km±1km, **h33**km:**pP-P,n103,** σ1**14**/106,**mb4.3**/43,**MS3.2**/9,**4C,Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JTH	**Tanohata**	**1.04**	**274**	P	**Pn**	**02 04 20.0**	**-2.8**
MIYJ	**Miyakonagasawa**	**1.12**	**255**	P	**Pn**	**02 04 21.7**	**-2.1**
MIYJ				*e*S	**Sn**	**02 04 36.8**	**-1.3**
JANG	**Nango**	**1.40**	**291**	P	**Pn**	**02 04 25.4**	**-2.2**
OFUJ	**Ofunato**	**1.44**	**237**	P	**Pn**	**02 04 27.1**	**-1.1**
OFUJ				S	**Sn**	**02 04 45.9**	**0.0**
JKZ	**Kuzumaki**	**1.45**	**275**	P	**Pn**	**02 04 27.3**	**-1.2**
JOM	**Ohasama**	**1.54**	**255**	P	**Pn**	**02 04 28.8**	**-0.8**
JOM				*e*S	**Sn**	**02 04 48.3**	**-0.1**
JMK	**Ichinoseki**	**1.80**	**240**	P	**Pn**	**02 04 32.4**	**-0.8**
JMK				S	**Sn**	**02 04 55.4**	**+0.5**
JTM	**Tenmabayashi**	**1.88**	**300**	P	**Pn**	**02 04 33.3**	**-1.0**
JTM				*e*S	**Sn**	**02 04 57.1**	**+0.3**
JIO	**Ouri**	**2.03**	**226**	P	**Pn**	**02 04 35.4**	**-1.0**
JIO				*e*S	**Sn**	**02 05 01.3**	**+0.7**
JRG	**Rokugo**	**2.05**	**257**	P	**Pn**	**02 04 36.4**	**-0.3**
ERM	**Erimo**	**2.14**	**359**	*e*P	**Pn**	**02 04 37.6**	**-0.2**
ERM				*e*		02 05 02.1	
ERM	**Erimo**	**2.14**	**359**	*e*Pn	**Pn**	**02 04 37.6**	**-0.2**
ERM				*e*Sn	**Sn**	**02 05 02.1**	**-1.1**
ASAJ	**Asahikawa**	**4.26**	**354**	Pn	**Pn**	**02 05 08.3**	**+1.3**
	2.0nm,0.3s,baz=239,slow=15,SNR=5.7						
ASAJ	**Asahikawa**	**4.26**	**354**	*e*Pn	**Pn**	**02 05 06.8**	**-0.2**
YUK	**Yuzh-Kuril'sk**	**4.60**	**25**	*e*P	**Pb**	**02 05 26.9**	**+2.5**
YUK				*e*S	**Sn**	**02 06 00.4**	**-3.5**
YUK				pmax	pmax		
	comp=E,138nm,0.4s						
YUK				pmax	pmax		
	comp=Z,193nm,0.4s						
YUK				pmax	pmax		
	comp=N,135nm,0.6s						
YUK				smax	smax		
	comp=N,476nm,0.4s						
YUK				smax	smax		
	comp=E,627nm,0.4s						
MJAR	**Matsushiro Arr**	**5.16**	**231**	Pn	**Pn**	**02 05 20.1**	**+0.6**
	comp=E,3.4nm,0.3s,baz=39,slow=12,SNR=27						
MJAR				LR	LR	02 07 31.6	
	comp=E,268nm,19.6s,baz=60,slow=41						
MAJO	**Matsushiro**	**5.16**	**231**	*e*P	**Pn**	**02 05 19.5**	**+0.1**
MAJO	**Matsushiro**	**5.16**	**231**	*e*Pn	**Pn**	**02 05 19.4**	**-0.1**
	comp=E,61nm,0.8s						
MAT	**Matsushiro**	**5.16**	**231**	P	**Pn**	**02 05 20.1**	**+0.7**
MAT				S	**Sb**	**02 06 35.4**	**-0.2**
KUR	**Kuril'sk**	**6.36**	**31**	*e*P	Pb	02 05 50.1	-4.3
KUR				*e*S	**Sn**	**02 06 43.1**	**-4.1**
KUR				pmax	pmax		
	comp=Z,45nm,0.4s						
KUR				smax	smax		
	comp=E,102nm,0.5s						
KUR				smax	smax		
	comp=N,79nm,0.4s						
YSS	**Yuzh-Sakhalins**	**7.08**	**357**	P	Pn	02 05 53.5	+7.8
USRK	**Ussuriysk Ar.**	**9.40**	**301**	Pn	**Pn**	**02 06 20.0**	**+2.4**
	comp=N,1.0nm,0.3s,baz=97,slow=13,SNR=15						
USRK				LR	LR	02 09 46.0	
	comp=N,288nm,18.7s,baz=120,slow=36						
JNU	**Nakatsue**	**11.99**	**240**	LR	LR	02 11 48.1	
	comp=N,210nm,20.9s,baz=117,slow=39						
KSRS	**Korea Array**	**12.20**	**263**	Pn	Pn	02 06 59.2	+3.3
	comp=N,0.3nm,0.3s,baz=82,slow=13,SNR=6.5						
KSRS				LR	LR	02 11 19.1	
	comp=N,226nm,18.3s,baz=86,slow=36						
KSAR	**Wonju Array Be**	**12.23**	**263**	P	**Pn**	**02 06 59.2**	**+2.9**
KSAR	**Wonju Array Be**	**12.23**	**263**	Pn	**Pn**	**02 06 59.2**	**+2.9**
KLR	**Kul'dur**	**12.41**	**323**	LR	LR	02 11 55.3	
	comp=N,193nm,19.2s,baz=128,slow=38						
NKL	**Nikolayevsk**	**13.39**	**353**	*e*P	**Pn**	**02 07 12.3**	**+0.3**
PETK	**Petropavlovsk-**	**16.52**	**32**	LR	LR	02 14 59.8	
	comp=N,35nm,18.4s,baz=207,slow=39						
MA2	**Magadan**	**20.29**	**11**	P	Pn	02 08 38.3	-1.0
	comp=N,4.3nm,0.5s,baz=238,slow=10,SNR=3.8						
MA2				LR	LR	02 15 57.6	
	comp=N,47nm,21.6s,baz=282,slow=35						
YAK	**Yakutsk**	**23.66**	**344**	*e*P	**P**	**02 09 11.6**	**-1.1**
YAK				pmax	pmax		
	comp=Z,19nm,1.0s						
SEY	**Seymchan**	**23.74**	**10**	P	**P**	**02 09 13.1**	**-0.3**
	comp=Z,7.9nm,0.9s,baz=195,slow=5.8,SNR=20						
SEY	**Seymchan**	**23.74**	**10**	*e*P	**P**	**02 09 14.1**	**+0.7**
GUMO	**Guam**	**26.23**	**176**	LR	LR	02 17 49.2	
	comp=Z,20nm,21.2s,baz=148,slow=32						
ULN	**Ulaanbaatar**	**27.07**	**299**	*e*P	**P**	**02 09 44.5**	**+0.5**
ULN				pmax	pmax		
	comp=Z,6.0nm,1.2s						
ULN	**Ulaanbaatar**	**27.07**	**299**	*e*P	**P**	**02 09 44.3**	**+0.3**
	comp=Z,1.6nm,0.6s						
SONM	**Songino Array**	**27.51**	**299**	P	**P**	**02 09 47.6**	**-0.4**
	comp=Z,2.4nm,0.8s,baz=100,slow=9.2,SNR=12						
SONM				LR	LR	02 21 20.4	
	comp=Z,218nm,18.2s,baz=130,slow=38						
H11N2	**WAKE ISLAND Hy**	**28.58**	**128**	T	T	02 40 50.4	
	baz=318,slow=75,SNR=91						
H11N1	**WAKE ISLAND Hy**	**28.59**	**128**	T	T	02 40 50.5	
	baz=318,slow=75,SNR=62						
H11N3	**WAKE ISLAND Hy**	**28.59**	**128**	T	T	02 40 51.7	
	baz=318,slow=75,SNR=73						
ENH	**Enshi**	**29.07**	**261**	*e*P	**P**	**02 10 00.7**	**-1.2**
	comp=Z,15nm,0.8s						
H11S1	**WAKE ISLAND Hy**	**29.40**	**130**	T	T	02 41 01.4	
	baz=322,slow=76,SNR=15						
H11S3	**WAKE ISLAND Hy**	**29.40**	**130**	T	T	02 41 02.3	
	baz=322,slow=76,SNR=13						
H11S2	**WAKE ISLAND Hy**	**29.41**	**130**	T	T	02 41 03.0	
	baz=322,slow=76,SNR=19						
TLY	**Talaya**	**29.65**	**307**	LR	LR	02 22 39.7	
	comp=Z,57nm,18.8s,baz=86,slow=38						
ZAK	**Zakamensk**	**29.73**	**304**	*e*P	**P**	**02 10 05.0**	**-2.7**
ZAK				pmax	pmax		
	comp=Z,2.0nm,1.1s						
TIXI	**Tiksi**	**32.66**	**352**	LR	LR	02 23 35.3	
	comp=Z,46nm,18.6s,baz=360,slow=36						
ZALV	**Zalesovo Beam**	**41.11**	**310**	P	**P**	**02 11 44.4**	**-0.6**
	comp=Z,3.8nm,0.6s,baz=89,slow=7.1,SNR=16						
ZALV				pP	**pP**	**02 11 54.5**	**-0.3**
	comp=Z,6.3nm,0.7s,baz=91,slow=7.3,SNR=12						
CMAR	**Chiang Mai Arr**	**43.62**	**254**	P	**P**	**02 12 06.0**	**+0.1**
	comp=Z,1.2nm,0.3s,baz=41,slow=7.2,SNR=6.5						
CMAR	**Chiang Mai Arr**	**43.62**	**254**	P	**P**	**02 12 06.0**	**+0.1**
MKAR	**Makanchi Array**	**43.87**	**300**	P	**P**	**02 12 07.2**	**-0.4**
	comp=Z,2.8nm,0.9s,baz=78,slow=9.2,SNR=16						
KURK	**Kurchatov**	**45.34**	**306**	*e*P	**P**	**02 12 18.7**	**-0.5**
KURK				pmax	pmax		
	comp=Z,20nm,0.8s						
KURK	**Kurchatov**	**45.34**	**306**	*e*P	**P**	**02 12 18.7**	**-0.5**
	comp=Z,20nm,0.8s						
KURBB	**Kurchatov Arra**	**45.42**	**306**	P	**P**	**02 12 19.4**	**-0.4**
	comp=Z,3.1nm,0.6s,baz=80,slow=8.8,SNR=21						
ILAR	**Eielson Array**	**46.34**	**34**	P	**P**	**02 12 27.8**	**+0.8**
	comp=Z,0.4nm,0.7s,baz=267,slow=6.4,SNR=6.6						
ILAR				pP	**pP**	**02 12 36.9**	**0.0**
	comp=Z,1.4nm,0.8s,baz=268,slow=6.5,SNR=12						
TKM2	**Tokmak 2**	**49.57**	**297**	*e*P	**P**	**02 12 52.5**	**0.0**
TKM2				pmax	pmax		
	comp=Z,7.0nm,0.6s						
TKM2	**Tokmak 2**	**49.57**	**297**	*e*P	**P**	**02 12 52.5**	**0.0**
	comp=Z,6.7nm,0.6s						
BVAR	**Borovoye Array**	**49.74**	**311**	P	**P**	**02 12 53.4**	**0.0**
	comp=Z,2.7nm,0.5s,baz=66,slow=8.8,SNR=18						
BVAR				pP	**pP**	**02 13 02.8**	**-0.5**
	comp=Z,4.2nm,0.7s,baz=72,slow=8.2,SNR=10						
BRVK	**Borovoye**	**49.80**	**311**	*e*P	**P**	**02 12 53.3**	**-0.5**
BRVK				pmax	pmax		
	comp=Z,5.0nm,0.7s						
BRVK	**Borovoye**	**49.80**	**311**	*e*P	**P**	**02 12 53.3**	**-0.5**
	comp=Z,4.6nm,0.7s						
AAK	**Ala-Archa**	**50.43**	**297**	P	**P**	**02 12 58.6**	**-0.4**
	comp=Z,0.6nm,0.3s,baz=143,slow=2.0,SNR=6.9						
AAK				pP	**pP**	**02 13 08.7**	**-0.2**
	comp=Z,2.0nm,0.6s,baz=134,slow=5.2,SNR=4.2						
EKS2	**Erkin-Say**	**50.91**	**297**	*e*P	**P**	**02 13 02.4**	**-0.1**
EKS2				pmax	pmax		
	comp=Z,5.0nm,0.8s						
EKS2	**Erkin-Say**	**50.91**	**297**	*e*P	**P**	**02 13 02.4**	**-0.1**
	comp=Z,5.2nm,0.8s						
INK	**Inuvik**	**51.22**	**28**	P	**P**	**02 13 05.5**	**+1.3**
	comp=Z,0.4nm,0.4s,baz=262,slow=5.2,SNR=3.6						
INK				pP	**pP**	**02 13 14.9**	**+0.7**
	baz=301,slow=7.8,SNR=4.7						
KKAR	**Karatay Array**	**52.96**	**299**	*e*P	**P**	**02 13 17.0**	**-0.6**
KKAR				pmax	pmax		
	comp=Z,3.0nm,0.8s						
KKAR	**Karatay Array**	**52.96**	**299**	*e*P	**P**	**02 13 17.0**	**-0.6**
	comp=Z,2.8nm,0.8s						
ARU	**Arti**	**55.19**	**318**	P	**P**	**02 13 33.3**	**-0.4**
	comp=Z,1.7nm,0.4s,baz=71,slow=9.5,SNR=4.5						
ARU	**Arti**	**55.19**	**318**	P	**P**	**02 13 33.9**	**+0.2**
ARU	**Arti**	**55.19**	**318**	*e*P	**P**	**02 13 33.5**	**-0.2**
	comp=Z,3.2nm,0.5s						
ABKAR	**Akbulak array**	**57.21**	**309**	*e*P	**P**	**02 13 47.7**	**-0.5**
	comp=Z,3.1nm,0.6s						
AKTO	**Aktyubinsk**	**57.85**	**311**	P	**P**	**02 13 52.3**	**-0.4**
	comp=Z,2.8nm,0.7s,baz=72,slow=12,SNR=11						
WRAB	**Tennant Creek**	**60.07**	**190**	*e*P	**P**	**02 14 07.8**	**-0.5**
WRAB				pmax	pmax		
	comp=Z,3.0nm,0.7s						
WRAB	**Tennant Creek**	**60.07**	**190**	*e*P	**P**	**02 14 07.8**	**-0.5**
	comp=Z,3.4nm,0.7s						
WRA	**Warramunga Arr**	**60.08**	**190**	P	**P**	**02 14 07.8**	**-0.6**
	comp=Z,2.3nm,0.9s,baz=7.6,slow=7.3,SNR=8.2						
WRA	**Warramunga Arr**	**60.08**	**190**	*e*P	P	02 14 15.3	+6.9
WRA				pmax	pmax		
	comp=Z,1.0nm,0.5s						
YKA	**Yellowknife Ar**	**60.65**	**31**	P	**P**	**02 14 12.8**	**+1.0**
	comp=Z,0.1nm,0.6s,baz=289,slow=4.4,SNR=4.0						
YKA				pP	**pP**	**02 14 22.3**	**+0.3**
	comp=Z,0.2nm,0.6s,baz=303,slow=6.9,SNR=3.8						
GEYT	**Alibeck**	**63.71**	**299**	P	**P**	**02 14 32.4**	**-0.4**
	comp=Z,3.5nm,0.8s,baz=46,slow=4.3,SNR=6.3						
ASAR	**Alice Springs**	**63.81**	**190**	P	**P**	**02 14 33.4**	**0.0**
	comp=Z,0.7nm,0.6s,baz=358,slow=4.7,SNR=8.1						
ASAR				pP	**pP**	**02 14 40.4**	**-3.3**
	comp=Z,0.9nm,0.7s,baz=11,slow=6.4,SNR=6.1						
VRH	**Novokhopyorsk**	**66.43**	**318**	*e*P	**P**	**02 14 48.3**	**-1.8**
VRH				pmax	pmax		
	comp=Z,6.0nm,0.6s						
OBN	**Obninsk**	**66.67**	**323**	*e*P	**P**	**02 14 52.4**	**+0.8**
OBN				pmax	pmax		
	comp=Z,2.0nm,1.0s						
FINES	**FINESS Array B**	**66.96**	**332**	P	**P**	**02 14 53.5**	**+0.1**
	comp=Z,2.5nm,0.7s,baz=47,slow=8.4,SNR=8.7						
FINES				pP	**pP**	**02 15 03.9**	**+0.2**
	comp=Z,2.2nm,0.7s,baz=45,slow=8.6,SNR=5.1						
LPSR	**Galich'ya Gora**	**67.03**	**320**	*e*P	**P**	**02 14 53.0**	**-1.0**
LPSR				pmax	pmax		
	comp=Z,8.0nm,0.8s						
VSR	**Storozhevoye**	**67.73**	**319**	*e*P	**P**	**02 14 57.9**	**-0.5**
VSR				pmax	pmax		
	comp=Z,6.0nm,0.7s						
SUMG	**Summit**	**67.84**	**1**	*e*P	**P**	**02 14 59.2**	**-0.1**
SUMG				pmax	pmax		
	comp=Z,5.0nm,0.8s						
SUMG	**Summit**	**67.84**	**1**	*e*P	**P**	**02 14 59.2**	**-0.1**
	comp=Z,4.5nm,0.8s						
KIV	**Kislovodsk**	**70.11**	**311**	*ce*	**P**	**02 15 15.7**	**+2.2**
KIV				*i*		02 17 46.3	
KIV				pmax	pmax		
	comp=Z,12nm,1.0s						
KIV				MLR	MLR		
	comp=Z,47nm,16.0s						
KBZ	**Khabaz**	**70.12**	**311**	P	**P**	**02 15 14.5**	**+1.1**
	comp=Z,5.4nm,0.9s,baz=11,slow=2.1,SNR=8.5						
KBZ				LR	LR	02 50 20.2	
	comp=Z,32nm,18.2s,baz=9.5,slow=40						
FFC	**Flin Flon**	**70.56**	**34**	*e*P	**P**	**02 15 16.1**	**+0.2**
FFC				pmax	pmax		
	comp=Z,1.0nm,0.6s						
FFC	**Flin Flon**	**70.56**	**34**	*e*P	**P**	**02 15 16.1**	**+0.2**
	comp=Z,1.2nm,0.6s						
HFS	**Hagfors**	**72.08**	**336**	P	**P**	**02 15 25.2**	**+0.3**
	comp=Z,3.0nm,0.8s,baz=54,slow=8.3,SNR=7.4						
HFS				pP	**pP**	**02 15 34.9**	**-0.4**
	comp=Z,1.9nm,0.7s,baz=29,slow=3.4,SNR=3.5						
NB2	**NORSAR Subarra**	**72.11**	**338**	P	**P**	**02 15 25.1**	**-0.1**
	comp=Z,1.2nm,0.7s,baz=38,slow=6.2						
NOA	**NORSAR Array B**	**72.11**	**338**	P	**P**	**02 15 25.1**	**-0.1**
	comp=Z,2.3nm,0.8s,baz=38,slow=6.0,SNR=10.0						
NOA				pP	**pP**	**02 15 35.7**	**+0.1**
	comp=Z,1.3nm,0.7s,baz=39,slow=6.1,SNR=4.2						
NOA				LR	LR	02 50 48.4	
	comp=Z,15nm,21.1s,baz=35,slow=39						
NVAR	**Mina Array Bea**	**72.17**	**55**	P	**P**	**02 15 27.4**	**+1.1**
	comp=Z,0.4nm,0.8s,baz=262,slow=8.4,SNR=3.3						
AKASG	**Malin Array Be**	**72.91**	**323**	P	**P**	**02 15 30.0**	**-0.1**
	comp=Z,0.7nm,0.5s,baz=44,slow=6.2,SNR=7.8						
BRTR	**Keskin Array B**	**78.

ISC 20 02:16:53.6±0.8, 79°29N±0°.09×124°.5E±0°.1, h10km, n11, σ1§49/9, mb3.5/7, East of Severnaya Zemlya

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TIXI	**Tiksi**	**7.75**	**170**		**Pn**	**02 18 47.5**	**+1.2**
	0.4nm,0.3s,baz=339,slow=11,SNR=3.4						
TIXI					Sn	**02 20 11.7**	**-2.2**
	1.1nm,0.3s,baz=103,slow=22,SNR=7.5						
YAK	**Yakutsk**	**17.41**	**172**	LR	LR	02 28 33.0	
	comp=Z,24nm,18.6s,baz=68,slow=40						
ARCES	**ARCESS Array B**	**24.60**	**303**	P	**P**	**02 22 12.2**	**-1.1**
	1.8nm,0.8s,baz=36,slow=10,SNR=2.9						
RES	**Resolute Bay**	**24.69**	**24**	LR	LR	02 31 26.0	
	comp=Z,26nm,21.6s,baz=272,slow=36						
ILAR	**Eielson Array**	**27.19**	**70**	P	**P**	**02 22 38.6**	**+1.9**
	0.3nm,0.7s,baz=339,slow=8.5,SNR=6.0						
TLY	**Talaya**	**28.65**	**208**	LR	LR	02 35 26.2	
	comp=Z,48nm,18.1s,baz=46,slow=39						
YKA	**Yellowknife Ar**	**34.37**	**45**	P	**P**	**02 23 39.2**	**-0.7**
	0.4nm,1.1s,baz=49,slow=4.3,SNR=4.0						
MKAR	**Makanchi Array**	**36.01**	**232**	P	**P**	**02 23 55.0**	**+0.7**
	0.2nm,0.6s,baz=354,slow=6.5,SNR=2.8						
BRTR	**Keskin Array B**	**51.46**	**280**	P	**P**	**02 25 59.0**	**+0.4**
	0.7nm,1.0s,baz=2.9,slow=12,SNR=2.4						
TXAR	**Lajitas Array**	**68.29**	**44**	P	**P**	**02 27 53.6**	**-0.8**
	0.4nm,0.9s,baz=2.3,slow=4.5,SNR=2.6						
TORD	**Torodi Ar. Bea**	**82.92**	**304**	P	**P**	**02 29 18.0**	**-0.2**
	0.6nm,1.0s,baz=355,slow=5.7,SNR=4.2						

IDC 20 02:18:21.8±24.0, 5°.26S×101°.60E, h0km, mb3.9/2, mb1 3.9/2, mb1mx3.3/52, mbtmp3.9/2, Error ellipse: s-maj=1158.0km s-min=77.5km az=51.0, Southwest of Sumatera

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MKAR	**Makanchi Array**	**54.58**	**344**	P	P	02 27 52.0	+0.1
	0.4nm,0.5s,baz=141,slow=7.8,SNR=4.9						
ZALV	**Zalesovo Beam**	**60.65**	**349**	P	P	02 28 34.3	-0.2
	1.2nm,0.4s,baz=172,slow=6.1,SNR=5.5						
TXAR	**Lajitas Array**	**146.17**	**42**	PKPbc	PKPdf	02 38 04.2	+0.1
	0.2nm,0.6s,baz=222,slow=1.5,SNR=4.1						

*IDC **20** 02:33:26.8±12.0, 6°.16S×130°.39E, h67km±112km, mb3.9/4, mb1 4.1/6, mb1mx3.6/37, mbtmp4.2/6, ML4.2/2, Error ellipse: s-maj=173.0km s-min=21.4km az=57.0*
*NEIC **20** 02:33:31.3±1.6, 6°.57S×129°.66E, h104km±19km, mb4.1/3, Error ellipse: s-maj=21.2km s-min=10.2km az=70.0*
*ISCJB **20** 02:33:33.4±0.7, 6°.50S±0°.08×130°.1E±0°.1, h146km, mb4.0/4, Error ellipse: s-maj=17.7km s-min=9.3km az=153.1*

ISC 20 02:33:34.7±0.8, 6°.5S±0°.1×129°.9E±0°.1, h146km, n13, σ1§38/12, mb4.0/4, Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FAKI	**Fak Fak**	**4.24**	**34**	*e*P	**Pn**	**02 34 36.8**	**-1.3**
FAKI				*e*Sn	Sn	02 35 17.4	-10
WRAB	**Tennant Creek**	**14.06**	**162**	*e*Pn	**Pn**	**02 36 46.2**	**-1.4**
	5.8nm,0.4s						
WRA	**Warramunga Arr**	**14.07**	**163**	P	Pn	02 36 44.2	-3.6
	1.2nm,0.3s,baz=345,slow=13,SNR=36						
WRA				S	Sn	02 39 10.0	-14
	4.1nm,0.3s,baz=344,slow=21,SNR=14						
COEN	**Coen**	**15.03**	**121**	*e*Pn	**Pn**	**02 37 00.1**	**+0.2**
	10nm,0.6s						
COEN				*e*Sn	Sn	02 39 35.1	-12
ASAR	**Alice Springs**	**17.52**	**168**	P	**Pn**	**02 37 30.5**	**+0.3**
	0.7nm,0.3s,baz=341,slow=10.0,SNR=33						
CTAO	**Charters Tower**	**20.87**	**132**	*e*P	**P**	**02 38 06.3**	**+0.9**
	3.6nm,0.8s						
MNAI	**Manna**	**26.89**	**273**	*e*P	**P**	**02 38 59.7**	**-2.6**
STKA	**Stephens Creek**	**27.54**	**158**	P	**P**	**02 39 08.4**	**+0.5**
	0.8nm,0.3s,baz=323,slow=15,SNR=2.6						
CMAR	**Chiang Mai Arr**	**39.31**	**310**	P	**P**	**02 40 50.7**	**+0.8**
	1.7nm,0.3s,baz=129,slow=7.1,SNR=3.9						
MKAR	**Makanchi Array**	**67.73**	**327**	P	**P**	**02 44 17.7**	**+1.2**
	1.0nm,0.5s,baz=114,slow=8.6,SNR=14						
KURBB	**Kurchatov Arra**	**72.01**	**328**	P	**P**	**02 44 43.6**	**+1.1**
	0.8nm,0.2s,baz=134,slow=5.1,SNR=4.8						
KURK	**Kurchatov**	**72.02**	**329**	P	**P**	**02 44 43.6**	**+1.0**
LPAZ	**La Paz**	**151.20**	**142**	PKPbc	**PKPbc**	**02 53 13.6**	**+0.9**
	0.4nm,0.4s,baz=43,slow=8.1,SNR=5.0						

*IDC **20** 02:41:43.0±1.3, 39°.94N×50°.10E, h0km, mb3.5/5, mb1 3.6/10, mb1mx3.5/46, mbtmp3.6/10, ML1.8/2, Error ellipse: s-maj=25.8km s-min=12.9km az=168.0*
*ISCJB **20** 02:41:48.2±0.5, 39°.93N±0°.03×50°.18E±0°.04, h81km±5km, mb3.3/5, Error ellipse: s-maj=5.5km s-min=4.9km az=0.5*
*AZER **20** 02:41:48.2±0.1, 39°.89N×50°.12E, h55km, Error ellipse: s-maj=0.8km s-min=0.4km az=266.0*
*CSEM **20** 02:41:49.0±0.3, 39°.90N×50°.22E, h60km, Error ellipse: s-maj=6.5km s-min=4.1km az=96.0*

ISC 20 02:41:50.1±0.9, 39°.93N±0°.03×50°.17E±0°.05, h68km±7km, n86, σ1§50/141, mb3.4/5, 29C-21D, Caspian Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GALA	**Gala**	**0.48**	**359**	⇓P	**Pn**	**02 42 00.8**	**-1.8**
	SNR=16						
GALA				⇑S	**Sn**	**02 42 12.3**	**+0.6**
GALA	**Gala**	**0.48**	**359**	P	**Pn**	**02 42 00.8**	**-1.8**
	SNR=16						
GALA	**Gala**	**0.48**	**359**	P	**Pn**	**02 42 00.8**	**-1.8**
	SNR=16						
GALA				S	**Sn**	**02 42 12.4**	**+0.6**
GOBA	**Gobu**	**0.58**	**325**	⇑P	**Pn**	**02 42 03.1**	**-0.5**
	SNR=6.2						
GOBA				⇑S	**Sn**	**02 42 14.6**	**+1.1**
GOBA	**Gobu**	**0.58**	**325**	P	**Pn**	**02 42 03.1**	**-0.5**
	SNR=6.2						
GOBA	**Gobu**	**0.58**	**325**	P	**Pn**	**02 42 03.1**	**-0.5**
	SNR=6.2						
GOBA				S	**Sn**	**02 42 14.6**	**+1.1**
NDR	**Nardaran**	**0.67**	**348**	⇑P	**Pn**	**02 42 03.0**	**-1.6**
	SNR=4.1						
NDR				⇓S	**Sn**	**02 42 15.8**	**+0.6**
NDR	**Nardaran**	**0.67**	**348**	P	**Pn**	**02 42 03.0**	**-1.6**
	SNR=4.1						
NDR	**Nardaran**	**0.67**	**348**	P	**Pn**	**02 42 03.0**	**-1.6**
	SNR=4.1						
NDR				S	**Sn**	**02 42 15.8**	**+0.6**
GBS	**Qobustan**	**1.12**	**303**	⇓P	**Pn**	**02 42 07.7**	**-2.4**
GBS				⇑S	**Sn**	**02 42 25.3**	**+0.2**
GBS	**Qobustan**	**1.12**	**303**	P	**Pn**	**02 42 07.7**	**-2.4**
GBS	**Qobustan**	**1.12**	**303**	P	**Pn**	**02 42 07.7**	**-2.4**
GBS				S	**Sn**	**02 42 25.3**	**+0.2**
ATGJ	**Altiaghaj**	**1.33**	**315**	⇑P	**Pn**	**02 42 14.0**	**+1.1**
	SNR=4.9						
ATGJ				⇑S	**Sn**	**02 42 30.0**	**+0.1**
ATGJ	**Altiaghaj**	**1.33**	**315**	P	**Pn**	**02 42 14.0**	**+1.1**
	SNR=4.9						
ATGJ	**Altiaghaj**	**1.33**	**315**	P	**Pn**	**02 42 14.0**	**+1.1**
	SNR=4.9						
ATGJ				S	**Sn**	**02 42 30.0**	**+0.1**
SAAT	**Saatly**	**1.35**	**268**	⇓P	**Pn**	**02 42 14.6**	**+1.6**
SAAT				⇓S	**Sn**	**02 42 31.8**	**+1.7**
SAAT	**Saatly**	**1.35**	**268**	P	**Pn**	**02 42 14.6**	**+1.6**
SAAT	**Saatly**	**1.35**	**268**	P	**Pn**	**02 42 14.6**	**+1.6**
SAAT				S	**Sn**	**02 42 31.8**	**+1.7**
PQL	**Pirkuli**	**1.48**	**306**	⇑P	**Pn**	**02 42 14.2**	**-0.8**
	SNR=5.9						
PQL				⇓Sn	**Sn**	**02 42 34.0**	**+0.4**
PQL	**Pirkuli**	**1.48**	**306**	Pn	**Pn**	**02 42 14.2**	**-0.8**
	SNR=5.9						
PQL	**Pirkuli**	**1.48**	**306**	Pn	**Pn**	**02 42 14.2**	**-0.8**
	SNR=5.9						
PQL				Sn	**Sn**	**02 42 34.0**	**+0.4**
SIZA	**Siyzn**	**1.50**	**320**	⇓Pn	**Pn**	**02 42 15.0**	**-0.2**
SIZA				⇓Sn	**Sn**	**02 42 34.5**	**+0.5**
SIZA	**Siyzn**	**1.50**	**320**	Pn	**Pn**	**02 42 15.0**	**-0.2**
SIZA	**Siyzn**	**1.50**	**320**	Pn	**Pn**	**02 42 15.0**	**-0.2**
SIZA				Sn	**Sn**	**02 42 34.5**	**+0.5**
GLBA	**Clilabad**	**1.53**	**244**	⇑Pn	**Pn**	**02 42 14.5**	**-0.9**
	SNR=2.9						
GLBA				⇓Sn	**Sn**	**02 42 35.1**	**+0.5**
GLBA	**Clilabad**	**1.53**	**244**	Pn	**Pn**	**02 42 14.5**	**-0.9**
	SNR=2.9						
GLBA	**Clilabad**	**1.53**	**244**	Pn	**Pn**	**02 42 14.5**	**-0.9**
	SNR=2.9						
GLBA				Sn	**Sn**	**02 42 35.1**	**+0.5**
LKRN	**Lenkeran, Azer**	**1.62**	**222**	⇑Pn	**Pn**	**02 42 15.6**	**-1.1**
	SNR=5.0						
LKRN				⇑Sn	**Sn**	**02 42 36.5**	**-0.2**
LKRN	**Lenkeran, Azer**	**1.62**	**222**	Pn	**Pn**	**02 42 15.6**	**-1.1**
	SNR=5.0						
LKRN	**Lenkeran, Azer**	**1.62**	**222**	Pn	**Pn**	**02 42 15.6**	**-1.1**
	SNR=5.0						
LKRN				Sn	**Sn**	**02 42 36.5**	**-0.2**
ASTR	**Astara**	**1.73**	**219**	⇑Pn	**Pn**	**02 42 17.1**	**-1.0**
	SNR=5.9						
ASTR				⇓Sn	**Sn**	**02 42 38.7**	**-0.7**
ASTR	**Astara**	**1.73**	**219**	Pn	**Pn**	**02 42 17.1**	**-1.0**
	SNR=5.9						
ASTR	**Astara**	**1.73**	**219**	Pn	**Pn**	**02 42 17.1**	**-1.0**
	SNR=5.9						
ASTR				Sn	**Sn**	**02 42 38.7**	**-0.7**
IML	**Ismayilli**	**1.75**	**300**	⇑Pn	**Pn**	**02 42 17.2**	**-1.2**
	SNR=9.0						
IML				⇓Sn	**Sn**	**02 42 39.1**	**-0.8**
IML	**Ismayilli**	**1.75**	**300**	Pn	**Pn**	**02 42 17.2**	**-1.2**
	SNR=9.0						
IML	**Ismayilli**	**1.75**	**300**	Pn	**Pn**	**02 42 17.2**	**-1.2**
	SNR=9.0						
IML				Sn	**Sn**	**02 42 39.1**	**-0.8**
LRK	**Lerik**	**1.91**	**229**	⇓Pn	**Pn**	**02 42 19.0**	**-1.7**
	SNR=6.8						
LRK				⇑Sn	**Sn**	**02 42 42.9**	**-1.0**
LRK	**Lerik**	**1.91**	**229**	Pn	**Pn**	**02 42 19.0**	**-1.7**
	SNR=6.8						
LRK	**Lerik**	**1.91**	**229**	Pn	**Pn**	**02 42 19.0**	**-1.7**
	SNR=6.8						
LRK				Sn	**Sn**	**02 42 42.9**	**-1.0**
QUBA	**Quba, Azerbaij**	**1.92**	**319**	⇑Pn	**Pn**	**02 42 19.1**	**-1.5**
QUBA				⇑Sn	**Sn**	**02 42 42.3**	**-1.5**
QUBA	**Quba, Azerbaij**	**1.92**	**319**	Pn	**Pn**	**02 42 19.1**	**-1.5**
QUBA	**Quba, Azerbaij**	**1.92**	**319**	Pn	**Pn**	**02 42 19.1**	**-1.5**
QUBA				Sn	**Sn**	**02 42 42.3**	**-1.5**
ZRD	**Zardab**	**1.94**	**281**	⇓Pn	**Pn**	**02 42 20.3**	**-0.6**
	SNR=35						
ZRD				⇓Sn	**Sn**	**02 42 44.9**	**+0.6**
ZRD	**Zardab**	**1.94**	**281**	Pn	**Pn**	**02 42 20.3**	**-0.6**
	SNR=35						
ZRD				Sn	**Sn**	**02 42 44.9**	**+0.6**
XNQ	**Khinaliq**	**1.99**	**310**	⇑Pn	**Pn**	**02 42 20.6**	**-1.2**
	SNR=6.8						
XNQ				⇓Sn	**Sn**	**02 42 44.1**	**-1.7**
XNQ	**Khinaliq**	**1.99**	**310**	Pn	**Pn**	**02 42 20.6**	**-1.2**
	SNR=6.8						
XNQ	**Khinaliq**	**1.99**	**310**	Pn	**Pn**	**02 42 20.6**	**-1.2**
	SNR=6.8						
XNQ				Sn	**Sn**	**02 42 44.1**	**-1.7**
QSAR	**Qusar**	**2.15**	**318**	⇑Pn	**Pn**	**02 42 23.1**	**-0.7**
QSAR				⇑Sn	**Sn**	**02 42 47.7**	**-1.8**
BRDA	**Brd**	**2.32**	**279**	⇑Pn	**Pn**	**02 42 25.8**	**-0.2**
	SNR=4.4						
BRDA				⇓Sn	**Sn**	**02 42 54.6**	**+1.1**
BRDA	**Brd**	**2.32**	**279**	Pn	**Pn**	**02 42 25.8**	**-0.2**
	SNR=4.4						
BRDA	**Brd**	**2.32**	**279**	Pn	**Pn**	**02 42 25.8**	**-0.2**
	SNR=4.4						
BRDA				Sn	**Sn**	**02 42 54.6**	**+1.1**
MNGR	**Mingechevir, A**	**2.50**	**291**	⇓Pn	**Pn**	**02 42 27.8**	**-0.7**
MNGR				⇓Sn	**Sn**	**02 42 57.6**	**-0.4**
MNGR	**Mingechevir, A**	**2.50**	**291**	Pn	**Pn**	**02 42 27.8**	**-0.7**
MNGR	**Mingechevir, A**	**2.50**	**291**	Pn	**Pn**	**02 42 27.8**	**-0.7**
MNGR				Sn	**Sn**	**02 42 57.6**	**-0.4**
SEKA	**Sheki**	**2.60**	**300**	⇑Pn	**Pn**	**02 42 28.6**	**-1.3**
	SNR=11						
SEKA				⇑Sn	**Sn**	**02 42 59.9**	**-0.6**
SEKA	**Sheki**	**2.60**	**300**	Pn	**Pn**	**02 42 28.6**	**-1.3**
	SNR=11						
SEKA	**Sheki**	**2.60**	**300**	Pn	**Pn**	**02 42 28.6**	**-1.3**
	SNR=11						
SEKA				Sn	**Sn**	**02 42 59.9**	**-0.6**
GANJ	**Ganja**	**3.03**	**285**	⇓Pn	**Pn**	**02 42 34.2**	**-1.5**
	SNR=5.7						
GANJ				⇑Sn	**Sn**	**02 43 07.9**	**-3.0**
GANJ	**Ganja**	**3.03**	**285**	Pn	**Pn**	**02 42 34.2**	**-1.5**
	SNR=5.7						
GANJ	**Ganja**	**3.03**	**285**	Pn	**Pn**	**02 42 34.2**	**-1.5**
	SNR=5.7						
GANJ				Sn	**Sn**	**02 43 07.9**	**-3.0**
ZKTA	**Zakatala**	**3.19**	**304**	⇑Pn	**Pn**	**02 42 36.8**	**-1.1**
	SNR=13						
ZKTA				⇑Sn	**Sn**	**02 43 15.1**	**+0.3**
GDB	**GEDABAY**	**3.47**	**285**	⇑Pn	**Pn**	**02 42 39.9**	**-1.9**
	SNR=25						
GDB				⇑Sn	**Sn**	**02 43 18.7**	**-3.1**
GDB	**GEDABAY**	**3.47**	**285**	Pn	**Pn**	**02 42 39.9**	**-1.9**
	SNR=25						
GDB	**GEDABAY**	**3.47**	**285**	Pn	**Pn**	**02 42 39.9**	**-1.9**
	SNR=25						
GDB				Sn	**Sn**	**02 43 18.7**	**-3.1**
NAX	**Nakhchivan**	**3.69**	**260**	⇓Pn	**Pn**	**02 42 43.3**	**-1.5**
	SNR=3.6						
NAX				⇓Sn	**Sn**	**02 43 25.6**	**-1.5**
NAX	**Nakhchivan**	**3.69**	**260**	Pn	**Pn**	**02 42 43.3**	**-1.5**
	SNR=3.6						
NAX	**Nakhchivan**	**3.69**	**260**	Pn	**Pn**	**02 42 43.3**	**-1.5**
	SNR=3.6						
NAX				Sn	**Sn**	**02 43 25.6**	**-1.5**
QZX	**Qazax, Azerbai**	**3.83**	**289**	⇑Pn	**Pn**	**02 42 45.4**	**-1.2**
	SNR=36						
QZX				⇑Sn	**Sn**	**02 43 28.8**	**-1.6**
QZX	**Qazax, Azerbai**	**3.83**	**289**	Pn	**Pn**	**02 42 45.4**	**-1.2**
	SNR=36						
QZX	**Qazax, Azerbai**	**3.83**	**289**	Pn	**Pn**	**02 42 45.4**	**-1.2**
	SNR=36						
QZX				Sn	**Sn**	**02 43 28.8**	**-1.6**
DGRG	**David-gareji**	**3.95**	**294**	P	**Pn**	**02 42 47.6**	**-0.7**
DGRG				S	**Sn**	**02 43 33.5**	**0.0**
DGRG	**David-gareji**	**3.95**	**294**	P	**Pn**	**02 42 47.6**	**-0.7**
DGRG				S	**Sn**	**02 43 33.5**	**0.0**
GNI	**Garni**	**4.17**	**275**	Pn	**Pn**	**02 42 51.3**	**-0.2**
	0.9nm,0.3s,baz=26,slow=13,SNR=3.9						
TBLG	**Delisi**	**4.50**	**295**	P	**Pn**	**02 42 54.3**	**-1.4**
TBLG				S	**Sn**	**02 43 42.6**	**-4.2**
TBLG	**Delisi**	**4.50**	**295**	P	**Pn**	**02 42 54.3**	**-1.4**
TBLG				S	**Sn**	**02 43 42.6**	**-4.2**
GUDG	**Gudauri**	**4.99**	**302**	P	**Pn**	**02 43 03.8**	**+1.2**
GUDG				S	**Sn**	**02 43 56.7**	**-2.4**
GUDG	**Gudauri**	**4.99**	**302**	P	**Pn**	**02 43 03.8**	**+1.2**
GUDG				S	**Sn**	**02 43 56.7**	**-2.4**
GEYT	**Alibeck**	**6.51**	**105**	Pn	**Pn**	**02 43 21.2**	**-2.1**
	1.0nm,0.3s,baz=286,slow=17,SNR=7.3						
GEYT				Sn	**Sn**	**02 44 32.2**	**-3.9**
	1.9nm,0.3s,baz=35,slow=14,SNR=5.5						
KBZ	**Khabaz**	**6.63**	**307**	Pn	**Pn**	**02 43 23.8**	**-1.0**
	0.1nm,0.3s,baz=100,slow=12,SNR=2.7						
KBZ				Sn	**Sn**	**02 44 33.9**	**-5.0**
	0.2nm,0.3s,baz=160,slow=6.3,SNR=3.4						
AKTO	**Aktyubinsk**	**11.87**	**25**	Pn	Pn	02 44 31.6	-4.7
	1.9nm,0.3s,baz=211,slow=9.2,SNR=28						
BVAR	**Borovoye Array**	**19.03**	**40**	P	**P**	**02 46 06.0**	**-0.4**
	0.4nm,0.3s,baz=231,slow=9.1,SNR=9.1						
KURBB	**Kurchatov Arra**	**22.51**	**52**	P	**P**	**02 46 45.1**	**+1.2**
	0.7nm,0.3s,baz=257,slow=12,SNR=5.1						
MKAR	**Makanchi Array**	**24.22**	**63**	P	**P**	**02 47 01.3**	**+0.9**
	0.6nm,0.4s,baz=269,slow=9.7,SNR=10						
FINES	**FINESS Array B**	**26.11**	**334**	P	**P**	**02 47 19.0**	**+1.7**
	0.4nm,0.5s,baz=135,slow=14,SNR=3.8						
ESDC	**Sonseca Array**	**41.04**	**288**	P	**P**	**02 49 27.3**	**+0.5**
	0.3nm,0.5s,baz=61,slow=8.1,SNR=4.2						
TORD	**Torodi Ar. Bea**	**50.13**	**252**	P	**P**	**02 50 39.6**	**+0.9**
	0.3nm,0.9s,baz=35,slow=7.1,SNR=5.1						

*ISCJB **20** 02:49:04.5±0.3, 63°.95N±0°.03×148°.97W±0°.07, h10km, mb3.3/1, Error ellipse: s-maj=4.8km s-min=3.3km az=28.3*
*NEIC **20** 02:49:04.3, 63°.94N×148°.97W, h0km, ML2.5(AEIC), After AEIC.*
*IDC **20** 02:49:06.1±2.4, 64°.03N×148°.82W, h0km, mb3.3/1, mb1 3.5/3, mb1mx3.1/38, mbtmp3.1/3, ML2.5/2, Error ellipse: s-maj=18.7km s-min=16.3km az=66.0*

ISC 20 02:49:04.5±0.8, 63°.94N±0°.03×148°.96W±0°.03, h10km, n36, σ0§99/39, Central Alaska

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MCK	**McKinley**	**0.21**	**177**	P	**Pg**	**02 49 08.2**	**-0.8**
MCK				S	**Sg**	**02 49 12.3**	**+0.4**
RND	**Reindeer**	**0.54**	**175**	P	**Pg**	**02 49 14.5**	**-0.5**
WRH	**Wood River Hil**	**0.66**	**35**	P	**Pg**	**02 49 16.6**	**-0.6**
WRH				S	**Sb**	**02 49 27.1**	**-0.2**
TRF	**Thorofare Moun**	**0.77**	**231**	P	**Pg**	**02 49 18.7**	**-0.6**
TRF				S	**Sb**	**02 49 29.8**	**-0.8**
CCB	**Clear Creek Bu**	**0.87**	**35**	P	**Pg**	**02 49 20.2**	**-1.0**
BPAW	**Bear Paw Mtn.**	**0.90**	**281**	P	**Pg**	**02 49 21.5**	**-0.4**
KTH	**Kantishna Hill**	**0.95**	**247**	P	**Pg**	**02 49 22.1**	**-0.7**
HDA	**Harding Lake**	**1.00**	**61**	P	**Pg**	**02 49 23.5**	**-0.2**
I53US	**FAIRBANKS INFR**	**1.05**	**27**	*i*		02 55 20.0	
	baz=206,slow=326,SNR=1.5						
COLA	**College**	**1.05**	**27**	P	**Pg**	**02 49 24.0**	**-0.8**
MDM	**Murphy Dome**	**1.07**	**17**	P	**Pg**	**02 49 24.5**	**-0.5**
PS08	**TAPS Pump Stn8**	**1.11**	**56**	P	**Pn**	**02 49 26.2**	**0.0**
DHY	**Denali Highway**	**1.12**	**140**	P	**Pg**	**02 49 24.8**	**-1.3**
ILAR	**Eielson Array**	**1.23**	**46**	Pg	**Pn**	**02 49 26.9**	**-0.9**
	7.9nm,0.3s,baz=228,slow=16,SNR=281						
ILAR				Lg	Lg	02 49 44.5	
	8.5nm,0.3s,baz=228,slow=28,SNR=27						
ILB	**Eielson Array**	**1.23**	**46**	P	**Pn**	**02 49 26.9**	**-0.9**
IL1	**Eielson Array**	**1.23**	**46**	P	**Pn**	**02 49 26.9**	**-0.9**
MLY	**Manley**	**1.34**	**326**	P	**Pn**	**02 49 29.1**	**-0.2**
CAST	**Castle Rocks**	**1.48**	**251**	P	**Pn**	**02 49 30.8**	**-0.5**
PS10	**TAPS Pump St10**	**1.52**	**109**	P	**Pn**	**02 49 32.1**	**+0.3**
PPLA	**Purkeypile**	**1.79**	**236**	P	**Pb**	**02 49 37.2**	**-0.3**
PAX	**Paxson**	**1.85**	**120**	P	**Pb**	**02 49 37.6**	**-0.8**
PS06	**TAPS Pump Stn6**	**1.95**	**351**	P	**Pb**	**02 49 39.8**	**-0.2**
SML	**Sawmill**	**2.16**	**172**	P	**Pn**	**02 49 41.5**	**+0.9**
DOT	**Dot Lake**	**2.19**	**95**	P	**Pn**	**02 49 42.1**	**+1.0**
SCM	**Sheep Creek Mo**	**2.25**	**160**	P	**Pn**	**02 49 42.8**	**+1.0**
PMR	**Palmer**	**2.36**	**182**	*e*Pn	**Pn**	**02 49 43.7**	**+0.5**
PS11	**TAPS Pump St11**	**2.46**	**138**	P	**Pb**	**02 49 46.6**	**-2.1**
STLK	**Strandline Lak**	**2.79**	**210**	P	**Pn**	**02 49 50.8**	**+1.6**
RC01	**Rabbit Creek A**	**2.88**	**187**	P	**Pn**	**02 49 52.3**	**+1.8**
IM3	**Indian Mountai**	**2.89**	**317**	P	**Pn**	**02 49 51.4**	**+0.9**
COLD	**Coldfoot**	**3.34**	**352**	*e*Pn	**Pn**	**02 49 57.5**	**+0.7**
EGAK	**Eagle**	**3.50**	**73**	*e*Pn	**Pn**	**02 49 59.3**	**+0.4**
EGAK				*e*Pg	**Pb**	**02 50 08.7**	**+2.3**
EGAK				*e*Sg	**Sg**	**02 50 55.4**	**-1.2**
BMRM	**Bremner River**	**3.61**	**144**	*e*Pn	**Pn**	**02 50 01.2**	**+0.7**
INK	**Inuvik**	**7.63**	**48**	Pn	**Pn**	**02 50 56.5**	**+0.9**
	0.2nm,0.3s,baz=238,slow=15,SNR=9.0						
YKA	**Yellowknife Ar**	**15.44**	**80**	Pn	**Pn**	**02 52 43.4**	**+1.3**
	0.0nm,0.3s,baz=288,slow=13,SNR=3.5						
NVAR	**Mina Array Bea**	**31.38**	**130**	P	P	02 55 28.8	+3.4
	0.3nm,0.7s,baz=320,slow=8.3,SNR=2.6						

MEX 20 03:05:46.8±0.6, 15°.54N×92°.98W, h20km±182km, MD3.5, Mexico-Guatemala border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PCIG		**0.28**	**305**	*e*P	Pb	03 05 51.6	-1.6
PCIG				*e*S	Sb	03 05 56.4	-1.1

*MOS **20** 03:09:06.1±0.9, 20°.67S×175°.62W, h49km, mb5.0/58, Error ellipse: s-maj=9.8km s-min=7.1km az=55.0*
*IDC **20** 03:09:10.2±1.5, 20°.72S×175°.55W, h75km±12km, mb4.5/27, mb1 4.7/28, mb1mx4.6/46, mbtmp4.8/28, MS3.7/23, Ms1 3.7/23, ms1mx3.6/34, Error ellipse: s-maj=13.9km s-min=10.3km az=149.0*
*ISCJB **20** 03:09:10.4±0.1, 20°.87S±0°.03×175°.60W±0°.03, h89km, mb4.8/160, Error ellipse: s-maj=5.5km s-min=3.1km az=43.6*
*BJI **20** 03:09:12.2, 20°.62S×175°.16W, h107km, mb5.0/24, mB5.2/15*
*NEIC **20** 03:09:13.4±1.0, 20°.84S×175°.62W, h105km±8km, mb4.8/115, Error ellipse: s-maj=6.0km s-min=3.6km az=150.0*
NEIC Felt at Nuku'alofa and Vaini.
*GCMT **20** 03:09:13.4±0.2, 20°.88S×175°.09W, h104km±2km, MW5.2/93, Moment Tensor Solution. s61,c72; s93,c144; Duration: 0 Moment tensor: Scale 10^{16}Nm; M_{rr}-0.14±.15; $M_{\theta\theta}$0.48±.19; $M_{\phi\phi}$-0.34±.18; $M_{r\theta}$-1.21±.12; $M_{r\phi}$5.18±.15; $M_{\theta\phi}$-3.94±.09; Best double couple: $M_0$6.56800×10^{16} NP1:ϕ_s183.00000°, δ87.00000°, λ143.00000°. NP2: ϕ_s275.00000°, δ53.00000°, λ3.00000°. Principal axes: T 7.1070, Plg27.0000°, Azm132.0000°; N -1.0770, Plg53.0000°, Azm360.0000°; P -6.0290, Plg23.0000°, Azm235.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

ISC 20 03:09:11.4±0.3, 20°.91S±0°.06×175°.41W±0°.06, h89km, n459, σ1§27/465, mb4.8/158, 28C-24D, Tonga Islands

| Code | Station Name | Δ° | AZ° | Phase ID Op | ISC | Time h

PPT Papeete 24.60 87 P **P** 03 14 23.2 -0.2
156nm,0.9s,baz=300,slow=1.3,SNR=9.8
PPT LR LR 03 21 57.4
comp=Z,134nm,20.6s,baz=214,slow=31
PPT Papeete 24.60 87 *eP* **P** 03 14 23.9 +0.4
OXZ Oxford 24.69 202 *eP* **P** 03 14 24.0 0.0
67nm,0.9s
TIAR Tiarei 24.82 87 *eP* **P** 03 14 25.3 -0.2
52nm,1.0s
TVO Taravao 24.86 87 *eP* **P** 03 14 25.5 -0.4
44nm,1.1s
TVO Taravao 24.86 87 *eT* T 03 39 23.9
2.4nm,0.2s
WVZ Waitaha Valley 24.96 205 PN **P** 03 14 27.2 +0.8
RPZ Rata Peaks 25.39 203 P **P** 03 14 32.6 +2.3
26nm,0.4s,baz=324,slow=7.2,SNR=11
RPZ LR LR 03 23 46.9
comp=Z,171nm,18.4s,baz=25,slow=34
RPZ Rata Peaks 25.39 203 *eP* **P** 03 14 31.6 +1.3
94nm,1.3s
FOZ Fox Glacier 25.71 205 PN **P** 03 14 33.6 +0.4
FOZ Fox Glacier 25.71 205 *eP* **P** 03 14 33.5 +0.3
76nm,0.6s
MEH Mehetia 25.95 88 *eT* T 03 40 44.1
41nm,0.2s
LBZ Lake Benmore 26.29 204 PN **P** 03 14 37.7 -0.7
HNR Honiara 26.34 292 LR LR 03 23 50.1
comp=Z,152nm,21.4s,baz=126,slow=34
JCZ Jackson Bay 26.57 206 PN **P** 03 14 41.8 +0.7
PMOR Pomariorio Ree 26.80 82 *eT* T 03 41 42.2
4.5nm,0.3s
WHZ Wether Hill Ro 28.41 205 *eP* **P** 03 14 59.4 +2.0
42nm,0.9s
EIDS Eidsvold 31.09 255 P **P** 03 15 21.4 +0.1
baz=31,SNR=11
EIDS Eidsvold 31.09 255 *eP* **P** 03 15 20.7 -0.7
24nm,0.8s
ARMA Armidale 31.09 246 P **P** 03 15 22.1 +0.7
baz=31,SNR=8.6
ARMA Armidale 31.09 246 *eP* **P** 03 15 21.5 0.0
11nm,0.8s
MGCD Mangrove Creek 32.10 241 P **P** 03 15 30.6 +0.5
baz=32,SNR=7.5
RMQ Roma 33.21 253 P **P** 03 15 40.6 +0.7
baz=33,SNR=25
CNB Canberra Magne 34.03 237 P **P** 03 15 47.1 +0.1
baz=34,SNR=9.3
CAN Canberra 34.32 238 P **P** 03 15 49.3 -0.2
baz=34
CAN Canberra 34.32 238 *eP* **P** 03 15 49.0 -0.5
CAN pmax pmax 03 15 49.0
comp=Z,14nm,0.6s
CAN Canberra 34.32 238 *eP* **P** 03 15 49.0 -0.5
comp=Z,14nm,0.6s
YNG Young 34.55 240 P **P** 03 15 51.5 0.0
baz=35,SNR=9.0
MILA Mila 34.69 235 P **P** 03 15 52.9 +0.2
baz=35,SNR=5.1
CTA Charters Tower 35.87 264 P **P** 03 16 02.8 -0.2
comp=Z,34nm,0.5s,baz=93,slow=11,SNR=61
CTA ScP **ScP** 03 22 09.3 +2.4
comp=Z,18nm,1.0s,baz=145,slow=3.2,SNR=9.7
CTA Charters Tower 35.87 264 P **P** 03 16 02.7 -0.2
baz=36
CTAO Charters Tower 35.87 264 *eP* **P** 03 16 02.5 -0.4
CTAO pmax pmax
comp=Z,52nm,0.8s
CTAO Charters Tower 35.87 264 *eP* **P** 03 16 02.5 -0.4
comp=Z,52nm,0.8s
TAOE Nuku Hiva Isla 36.03 76 *e*LR LR 03 25 23.8
comp=Z,734nm,32.3s
TAOE Nuku Hiva Isla 36.03 76 *eT* T 03 53 06.9
comp=Z,36nm,0.2s
CMSA Cobar Meteorol 36.30 245 P **P** 03 16 05.8 -0.7
baz=36,SNR=24
QLP Quilpie 37.26 253 P **P** 03 16 13.9 -0.8
baz=37,SNR=39
RKT Rikitea 37.47 101 *e*LR LR 03 26 10.3
comp=Z,708nm,34.0s
RKT Rikitea 37.47 101 *eT* T 03 55 26.6
comp=Z,8.3nm,0.2s
TOO Toolangi 37.63 235 P **P** 03 16 17.2 -0.6
baz=38,SNR=20
PMG Port Moresby 37.80 282 P **P** 03 16 19.1 -0.3
comp=Z,144nm,0.8s,baz=88,slow=6.4,SNR=41
PMG LR LR 03 30 48.4
comp=Z,94nm,18.9s,baz=136,slow=34
PMG Port Moresby 37.80 282 *eP* **P** 03 16 19.1 -0.3
comp=Z,141nm,0.8s
MTSU Mount Surprise 37.99 267 P **P** 03 16 20.8 -0.2
baz=38,SNR=67
TAU Tasmania Unive 38.06 226 *eP* **P** 03 16 21.7 +0.5
TAU pmax pmax
comp=Z,9.0nm,0.7s
TAU Tasmania Unive 38.06 226 *eP* **P** 03 16 21.7 +0.5
comp=Z,9.0nm,0.7s
STKA Stephens Creek 39.81 245 P **P** 03 16 35.6 -0.4
comp=Z,18nm,0.7s,baz=93,slow=9.2,SNR=37
STKA PcP **PcP** 03 18 41.7 +1.2
comp=Z,6.9nm,0.9s,baz=60,slow=6.8,SNR=3.6
STKA LR LR 03 30 44.4
comp=Z,91nm,20.0s,baz=65,slow=32
STKA Stephens Creek 39.81 245 P **P** 03 16 35.4 -0.6
baz=40,SNR=28
STKA Stephens Creek 39.81 245 *eP* **P** 03 16 35.5 -0.4
comp=Z,3.5nm,0.6s
STKA PcP **PcP** 03 18 41.7 +1.2
COEN Coen 40.03 273 P **P** 03 16 38.1 +0.1
baz=40,SNR=37
COEN Coen 40.03 273 *eP* **P** 03 16 38.2 +0.1
comp=Z,74nm,0.8s
ARPS Mount Arapiles 40.30 237 P **P** 03 16 39.3 -0.7
baz=40,SNR=14
MANU Manus Island 40.84 292 *eP* **P** 03 16 45.6 +0.9
comp=Z,146nm,1.8s
QIS Mount Isa 41.97 262 P **P** 03 16 52.5 -1.4
baz=42,SNR=7.1
HTT Hallett 42.19 243 P **P** 03 16 54.3 -1.3
baz=42,SNR=15
BBOO Buckleboo 44.55 244 P **P** 03 17 13.1 -1.4
baz=45,SNR=13
BBOO Buckleboo 44.55 244 *eP* **P** 03 17 12.6 -1.8
comp=Z,38nm,1.0s
JAY Jayapura 46.48 287 P **P** 03 17 29.4 -0.6
comp=Z,8.5nm,0.8s,baz=139,slow=23,SNR=38
JAY Jayapura 46.48 287 P **P** 03 17 28.2 -1.8
comp=Z,110nm,0.9s,comp=Z,720nm
AS01 Alice Springs 46.74 257 *eP* **P** 03 17 30.4 -1.6
AS31 Alice Springs 46.79 257 *eP* **P** 03 17 31.2 -1.1
comp=Z,13nm,0.8s
ASAR Alice Springs 46.79 257 P **P** 03 17 30.9 -1.4
comp=Z,51nm,0.9s,baz=89,slow=8.2,SNR=269
ASAR PcP **PcP** 03 19 03.6 -0.7
comp=Z,8.0nm,0.8s,baz=102,slow=3.8,SNR=8.3
ASAR ScP **ScP** 03 22 51.9 +1.9
comp=Z,2.2nm,0.7s,baz=90,slow=3.8,SNR=8.7
ASAR LR LR 03 36 34.0
comp=Z,64nm,18.5s,baz=106,slow=35
ASAR Alice Springs 46.79 257 P **P** 03 17 30.9 -1.4
ASAR 03 19 03.6
ASAR pmax pmax
comp=Z,52nm,0.9s
ASAR pmax pmax
comp=Z,8.0nm,0.8s
ASAR pmax pmax
comp=N,2.0nm,0.7s
ASAR MLR MLR
comp=Z,64nm,18.5s
WR8 Warramunga Arr 46.80 262 P **P** 03 17 30.7 -1.6
baz=47
GENI Genyem 46.92 287 P **P** 03 17 32.8 -0.6
WB2 Warramunga Arr 46.94 262 *eP* **P** 03 17 32.0 -1.5
comp=Z,57nm,0.8s
WRAB Tennant Creek 46.94 262 *de*P **P** 03 17 31.3 -2.2
WRAB pmax pmax
comp=Z,75nm,0.8s
WRAB Tennant Creek 46.94 262 *eP* **P** 03 17 31.0 -2.5
comp=Z,46nm,0.8s
WRA Warramunga Arr 46.95 262 P **P** 03 17 31.6 -2.0
comp=Z,35nm,0.8s,baz=96,slow=7.8,SNR=106
WRA PcP **PcP** 03 19 04.9 0.0
comp=Z,1.9nm,0.7s,baz=91,slow=4.0,SNR=6.1
WRA ScP **ScP** 03 22 52.0 +1.3
comp=Z,4.3nm,1.0s,baz=93,slow=4.2,SNR=7.8
WRA LR LR 03 35 09.1
comp=Z,188nm,21.8s,baz=200,slow=33
KDU Kakadu 50.38 271 P **P** 03 18 00.1 +0.1
baz=50,SNR=9.9

MTN Manton Dam 51.59 270 P **P** 03 18 08.0 -1.0
baz=52,SNR=25
MTN Manton Dam 51.59 270 *eP* **P** 03 18 08.4 -0.6
comp=Z,46nm,0.8s
WRKA Warakurna 51.69 254 P **P** 03 18 08.3 -1.3
baz=52
KNRA Kununurra 53.05 266 P **P** 03 18 19.1 -0.7
comp=Z,88nm,1.4s
FAKI Fak Fak 53.96 282 *eP* **P** 03 18 25.9 -0.6
comp=Z,88nm,1.4s
FITZ Fitzroy Crossi 55.38 262 P **P** 03 18 35.6 -1.0
baz=55,SNR=14
FITZ Fitzroy Crossi 55.38 262 *eP* **P** 03 18 35.4 -1.3
comp=Z,60nm,1.6s
KMBL Kambalda 56.60 246 P **P** 03 18 44.1 -1.1
baz=57
VNDA Vanda 57.73 186 P **P** 03 18 55.0 +2.6
comp=Z,4.7nm,1.0s,baz=9.3,slow=5.8,SNR=10
VNDA LR LR 03 39 35.6
comp=Z,26nm,20.9s,baz=4.0,slow=32
VNDA Vanda 57.73 186 P **P** 03 18 55.0 +2.6
VNDA pmax pmax
comp=Z,5.0nm,1.0s
VNDA Vanda 57.73 186 *eP* **P** 03 18 53.1 +0.7
comp=Z,4.6nm,0.7s
SOEI Soe 58.94 271 *eP* **P** 03 19 01.7 -0.3
comp=Z,84nm,0.8s
TNTI Ternate 59.91 284 *eP* **P** 03 19 08.1 -0.4
comp=Z,91nm,1.0s
KLBR Kellerberrin 60.08 245 P **P** 03 19 08.4 -1.0
baz=60,SNR=22
MBWA Marble Bar 60.13 257 *eP* **P** 03 19 08.5 -1.5
comp=Z,10nm,0.6s
MBWA *e*PcP **PcP** 03 19 54.8 -0.1
NWAO Narrogin (SRO) 60.35 243 P **P** 03 19 10.2 -1.1
comp=Z,10nm,0.6s,baz=240,slow=0.1,SNR=7.0
NWAO Narogin (SRO) 60.35 243 P **P** 03 19 10.9 -0.4
baz=60,SNR=6.6
RKGY Rocky Gully 60.38 241 P **P** 03 19 11.2 -0.2
baz=60
BLDU Ballidu 61.10 246 P **P** 03 19 15.4 -1.1
baz=61,SNR=14
GIRL Giralia 64.78 254 P **P** 03 19 41.0 +0.1
baz=65,SNR=5.5
QSPA South Pole Qui 69.16 180 *eP* **P** 03 20 10.0 +1.9
comp=Z,146nm,1.0s
MJAR Matsushiro Arr 72.00 322 P **P** 03 20 23.7 -1.8
comp=Z,5.2nm,0.8s,baz=156,slow=6.0,SNR=11
MJAR LR LR 03 48 00.4
comp=Z,34nm,20.9s,baz=155,slow=32
MAJO Matsushiro 72.00 322 *eP* **P** 03 20 26.9 +1.3
MAJO pmax pmax
comp=Z,138nm,2.0s
KKM Kota Kinabalu 72.21 284 *eP* **P** 03 20 26.8 -0.7
comp=Z,26nm,0.9s
H06E1 SOCORRO T-PHAS 74.45 63 T T 04 41 22.7
SNR=4.2
SBUM Sibu 74.47 279 *eP* **P** 03 20 39.9 -0.7
comp=Z,9.8nm,1.0s
KSM Kuching 75.87 277 *eP* **P** 03 20 48.0 -0.7
comp=Z,5.8nm,0.4s
NACB Ninganchiao 75.92 303 *eP* **P** 03 20 47.6 -1.1
comp=Z,33nm,0.8s
SSLB Suangiung 76.23 302 *eP* **P** 03 20 49.6 -1.0
comp=Z,94nm,1.7s
TPUB Ta-pu 76.25 302 *eP* **P** 03 20 48.2 -2.4
comp=Z,40nm,0.7s
SAO San Andreas Ge 76.69 42 *eP* **P** 03 20 53.0 +0.2
SAO pmax pmax
comp=Z,11nm,0.8s
SAO San Andreas Ge 76.69 42 *eP* **P** 03 20 53.0 +0.2
comp=Z,11nm,0.8s
PEA0 Petropavlovsk- 77.31 344 *eP* **P** 03 20 55.0 -0.9
PETK Petropavlovsk- 77.31 344 P **P** 03 20 54.3 -1.6
comp=Z,9.2nm,0.7s,baz=137,slow=6.9,SNR=7.0
PETK LR LR 03 49 19.0
comp=Z,18nm,21.2s,baz=155,slow=31
PETK Petropavlovsk- 77.31 344 P **P** 03 20 54.3 -1.6
PETK pmax pmax
comp=Z,10.0nm,0.7s
YSS Yuzh-Sakhalins 77.37 332 *eP* **P** 03 20 56.6 +0.3
YSS pmax pmax
comp=Z,25nm,0.9s
KMRM Mail Ridge 77.56 38 *eP* **P** 03 20 58.4 +0.8
comp=Z,85nm,1.8s
ISA Isabella, Lake 77.91 44 *eP* **P** 03 21 01.0 +1.3
ISA pmax pmax
comp=Z,8.0nm,0.8s
ISA Isabella, Lake 77.91 44 *eP* **P** 03 21 01.0 +1.3
comp=Z,8.2nm,0.8s
PFO Pinyon Flats O 78.06 47 P **P** 03 21 01.7 +1.0
comp=Z,4.2nm,0.7s,baz=276,slow=4.7,SNR=7.0
PFO Pinyon Flats O 78.06 47 *eP* **P** 03 21 01.3 +0.6
comp=Z,5.5nm,0.8s
CMB Columbia Colle 78.14 41 *eP* **P** 03 21 01.8 +0.9
CMB pmax pmax
comp=Z,5.0nm,0.8s
CMB Columbia Colle 78.14 41 *eP* **P** 03 21 01.8 +0.9
comp=Z,5.0nm,0.8s
AFDM Forest Hills D 78.35 40 *eP* **P** 03 21 03.2 +1.2
comp=Z,7.4nm,1.2s
ORV Oroville 78.42 40 *eP* **P** 03 21 03.2 +0.9
ORV pmax pmax
comp=Z,5.0nm,1.1s
ORV Oroville 78.42 40 *eP* **P** 03 21 03.2 +0.9
comp=Z,5.1nm,1.1s
WDC Whiskeytown Da 78.47 38 *eP* **P** 03 21 04.1 +1.5
WDC pmax pmax
comp=Z,10.0nm,1.3s
WDC Whiskeytown Da 78.47 38 *eP* **P** 03 21 04.1 +1.5
comp=Z,9.5nm,1.3s
GSC Goldstone, Bar 78.80 45 *eP* **P** 03 21 05.7 +1.1
GSC pmax pmax
comp=Z,8.0nm,0.8s
GSC Goldstone, Bar 78.80 45 *eP* **P** 03 21 05.7 +1.1
comp=Z,7.5nm,0.8s
KSRS Korea Array 78.82 317 P **P** 03 21 04.3 -0.2
comp=Z,2.8nm,0.9s,baz=140,slow=6.2,SNR=6.5
KSRS LR LR 03 52 47.4
comp=Z,30nm,18.5s,baz=136,slow=33
KSAR Wonju Array Be 78.83 317 P **P** 03 21 04.4 -0.3
KSAR Wonju Array Be 78.83 317 P **P** 03 21 04.3 -0.3
GLA Glamis 78.87 48 *eP* **P** 03 21 06.8 +1.8
GLA pmax pmax
comp=Z,12nm,1.0s
GLA Glamis 78.87 48 *eP* **P** 03 21 06.8 +1.8
comp=Z,12nm,1.0s
YBH Yreka Blue Hor 79.12 37 P **P** 03 21 07.1 +0.8
comp=Z,3.5nm,0.8s,baz=269,slow=4.1,SNR=6.8
113A Mohawk Valley, 79.45 49 *eP* **P** 03 21 09.7 +1.5
NVAR Mina Array Bea 79.68 42 P **P** 03 21 10.3 +0.8
comp=Z,6.0nm,0.7s,baz=223,slow=9.2,SNR=31
214A Organ Pipe Nat 79.69 50 *eP* **P** 03 21 10.2 +0.7
comp=Z,42nm,1.2s
NV11 Mina Array Sit 79.77 42 *eP* **P** 03 21 11.1 +1.1
comp=Z,17nm,1.3s
VLA Vladivostok 80.03 324 *eP* **P** 03 21 11.1 +0.1
VLA pmax pmax
comp=Z,23nm,0.9s
TPNV Topopah Spring 80.12 44 *eP* **P** 03 21 13.2 +1.3
TPNV pmax pmax
comp=Z,9.0nm,0.7s
TPNV Topopah Spring 80.12 44 *eP* **P** 03 21 13.2 +1.3
comp=Z,8.7nm,0.7s
TYV Tymovskoe 80.43 335 *eP* **P** 03 21 12.5 -0.5
TYV pmax pmax
comp=Z,26nm,1.0s
MOD Modoc Plateau 80.61 38 *eP* **P** 03 21 15.0 +0.6
comp=Z,7.1nm,0.8s
Y14A Wickenburg 80.62 48 *eP* **P** 03 21 15.6 +1.1
W13A Hualapai Mount 80.65 47 *eP* **P** 03 21 16.3 +1.4
KDAK Kodiak Island 80.68 12 *i* P **P** 03 21 15.5 +1.4
USRK Ussuriysk Ar. 80.69 325 P **P** 03 21 14.8 +0.3
comp=Z,4.9nm,0.9s,baz=143,slow=1.9,SNR=8.2
USRK LR LR 03 48 55.4
comp=Z,42nm,21.7s,baz=141,slow=30
K05A Summer Lake 80.79 37 *eP* **P** 03 21 16.6 +1.2
comp=Z,48nm,1.7s
TUC Tucson 81.34 51 *eP* **P** 03 21 19.8 +1.4
TUC pmax pmax
comp=Z,7.0nm,1.0s
TUC Tucson 81.34 51 *eP* **P** 03 21 19.8 +1.4
comp=Z,7.1nm,1.0s
R11A Troy Canyon, C 81.36 43 *eP* **P** 03 21 19.0 +0.5
comp=Z,5.1nm,1.3s
BMN Battle Mountai 81.55 41 *eP* **P** 03 21 19.7 +0.3
BMN pmax pmax
comp=Z,9.0nm,1.2s
BMN Battle Mountai 81.55 41 *eP* **P** 03 21 19.7 +0.3
comp=Z,9.4nm,1.2s
WVOR Wild Horse Val 81.91 39 *eP* **P** 03 21 21.6 +0.4
WVOR pmax pmax
comp=Z,10.0nm,1.3s
WVOR Wild Horse Val 81.91 39 *eP* **P** 03 21 21.6 +0.4
comp=Z,10nm,1.3s
319A Douglas 81.96 52 *eP* **P** 03 21 23.5 +1.7
X16A Lo Mia Camp, P 81.97 49 *eP* **P** 03 21 23.3 +1.5
MAW Mawson 81.99 199 P **P** 03 21 21.2 +0.1
comp=Z,6.9nm,0.5s,baz=131,slow=7.1,SNR=16
MAW Mawson 81.99 199 P **P** 03 21 21.3 +0.1
baz=82,SNR=12
HABR Khabarovsk 82.02 329 *eP* **P** 03 21 20.8 -0.6
HABR *e* 03 24 29.7
HABR *e*PPP PPP 03 26 20.7
HABR *e*S **S** 03 31 27.6 -0.8
HABR *e**SS **sS** 03 32 12.4 +3.9
HABR *e*SS **SS** 03 36 50.2 +0.3
HABR *e*SSS SSS 03 40 18.4
HABR pmax pmax
comp=N,10.0nm,0.6s
HABR pmax pmax
comp=E,12nm,0.6s
HABR pmax pmax
comp=Z,20nm,0.6s
HABR MLR MLR
comp=Z,61nm,19.0s
NJ2 Nanjing 82.02 309 *eP* **P** 03 21 21.9 +0.1
NJ2 pmax pmax
comp=Z,16nm,0.5s
LCMT Little Creek M 82.14 46 *eP* **P** 03 21 24.1 +1.5
comp=Z,17nm,1.7s
KNB Kanab 82.42 46 *eP* **P** 03 21 25.9 +1.8
KNB pmax pmax
comp=Z,19nm,1.4s
KNB Kanab 82.42 46 *eP* **P** 03 21 25.9 +1.8
comp=Z,19nm,1.4s
U15A North Rim 82.46 47 *eP* **P** 03 21 26.3 +1.9
PSUT Pine Spring 82.58 44 *eP* **P** 03 21 26.0 +1.0
comp=Z,14nm,1.7s
WUAZ Wupatki 82.60 48 *eP* **P** 03 21 26.3 +1.2
comp=Z,10nm,0.9s
ELK Elko 82.95 42 *eP* **P** 03 21 27.5 +0.6
ELK pmax pmax
comp=Z,5.0nm,1.1s
ELK Elko 82.95 42 *eP* **P** 03 21 27.5 +0.6
comp=Z,5.5nm,1.1s
NKL Nikolayevsk 82.97 335 *eP* **P** 03 21 25.0 -1.2
NKL pmax pmax
comp=Z,20nm,1.0s
PKCU Pink Cliffs 83.00 46 *eP* **P** 03 21 30.2 +3.0
comp=Z,12nm,0.9s
D05A Enumclaw 83.08 33 *eP* **P** 03 21 30.8 +3.8
comp=Z,40nm,1.3s
X18A Snowflake 83.08 49 *eP* **P** 03 21 29.2 +1.7
ZAIG Zacatecas 83.22 63 *eP* **P** 03 21 30.0 +1.4
comp=Z,6.9nm,1.0s
MTPU Mount Pierson 83.41 45 *eP* **P** 03 21 31.6 +2.2
comp=Z,7.5nm,0.9s
MSU Marysvale 83.67 45 *eP* **P** 03 21 32.4 +1.8
MSU Marysvale 83.67 45 *eP* **P** 03 21 32.4 +1.8
HAWA Hanford 83.86 35 *eP* **P** 03 21 31.6 +0.5
comp=Z,22nm,1.4s
CN2 Changchun 84.12 321 *eP* **P** 03 21 35.8 +3.4
CN2 pmax pmax
comp=Z,10.0nm,0.8s
KLR Kul'dur 84.13 328 *eP* **P** 03 21 31.6 -0.7
MFID Camas Ranch 84.15 39 *eP* **P** 03 21 33.3 +0.6
comp=Z,6.4nm,0.9s
DUG Dugway, Tooele 84.17 43 *eP* **P** 03 21 33.2 +0.2
DUG pmax pmax
comp=Z,6.0nm,1.4s
DUG Dugway, Tooele 84.17 43 *eP* **P** 03 21 33.2 +0.2
comp=Z,6.5nm,1.4s
GAMB Gambell 84.46 2 *eP* **P** 03 21 33.7 +0.1
comp=Z,23nm,1.4s
D08A Wollman Farm, 84.61 35 *eP* **P** 03 21 35.8 +0.9
comp=Z,8.8nm,0.8s
TMUT Trail Mountain 84.72 45 *eP* **P** 03 21 37.7 +1.7
comp=Z,9.8nm,0.7s
PMR Palmer 84.88 12 *eP* **P** 03 21 35.2 -0.6
PMR pmax pmax
comp=Z,6.0nm,1.0s
PMR Palmer 84.88 12 *eP* **P** 03 21 35.2 -0.6
comp=Z,6.2nm,1.0s
TT01 Tatalina 84.93 9 *eP* **P** 03 21 36.2 +0.2
TTA Tatalina 84.95 9 *eP* **P** 03 21 36.4 +0.1
TTA pmax pmax
comp=Z,20nm,1.5s
TTA Tatalina 84.95 9 *eP* **P** 03 21 36.4 +0.1
comp=Z,20nm,1.5s
MNTX Cornudas Mount 85.03 54 *eP* **P** 03 21 37.8 +0.5
comp=Z,9.6nm,1.0s
HVU Hansel Valley 85.07 42 *eP* **P** 03 21 38.2 +0.7
HVU pmax pmax
comp=Z,18nm,1.7s
HVU Hansel Valley 85.07 42 *eP* **P** 03 21 38.2 +0.7
comp=Z,18nm,1.7s
HLID Hailey 85.07 40 *eP* **P** 03 21 38.0 +0.5
comp=Z,10nm,1.2s
SRU San Rafael Swe 85.08 45 *eP* **P** 03 21 38.7 +1.1
SRU pmax pmax
comp=Z,9.0nm,0.7s
SRU San Rafael Swe 85.08 45 *eP* **P** 03 21 38.7 +1.1
comp=Z,8.7nm,0.7s
P17A Butcher Ranch, 85.13 45 *eP* **P** 03 21 39.8 +2.0
comp=Z,15nm,1.4s
B08A Colville Reser 85.20 34 *eP* **P** 03 21 37.9 +0.1
comp=Z,6.1nm,0.7s
TX31 Lajitas Air. Si 85.25 56 *eP* **P** 03 21 38.9 +0.3
TXAR Lajitas Array 85.25 56 P **P** 03 21 39.5 +1.0
comp=Z,5.8nm,0.8s,baz=218,slow=8.3,SNR=69
TXAR LR LR 03 51 41.8
comp=Z,22nm,21.1s,baz=0.0,slow=30
JLU Jordanelle 85.27 43 *eP* **P** 03 21 39.7 +1.1
comp=Z,14nm,1.6s
BNM Barren Site 85.27 51 *eP* **P** 03 21 40.4 +1.6
BMRM Bremner River 85.30 15 *eP* **P** 03 21 37.2 -0.8
comp=Z,31nm,1.7s
LPM Los Pinos Moun 85.35 51 *eP* **P** 03 21 40.6 +1.5
SCM Sheep Creek Mo 85.47 13 *eP* **P** 03 21 38.8 0.0
SCM pmax pmax
comp=Z,10.0nm,0.7s
SCM Sheep Creek Mo 85.47 13 *eP* **P** 03 21 38.8 0.0
comp=Z,9.9nm,0.7s
P18A Preston Nutter 85.53 45 *eP* **P** 03 21 41.1 +1.0
comp=Z,11nm,1.3s
TCUT Toone Canyon 85.57 43 *eP* **P** 03 21 41.1 +1.0
comp=Z,13nm,0.8s
HWUT Hardware Ranch 85.73 42 *eP* **P** 03 21 41.1 +0.3
comp=Z,12nm,1.6s
ANMO Albuquerque 85.78 50 *eP* **P** 03 21 42.0 +0.8
ANMO pmax pmax
comp=Z,8.0nm,1.2s
ANMO Albuquerque 85.78 50 *eP* **P** 03 21 42.0 +0.8
comp=Z,7.8nm,1.2s
CAST Castle Rocks 86.03 10 *eP* **P** 03 21 39.7 -1.8
comp=Z,5.3nm,0.8s
KTH Kantishna Hill 86.35 11 *eP* **P** 03 21 42.1 -1.1
comp=Z,6.1nm,0.9s
TRF Thorofare Moun 86.36 11 *eP* **P** 03 21 42.1 -1.3
comp=Z,14nm,0.8s
DHY Denali Highway 86.58 12 *eP* **P** 03 21 44.0 -0.4
comp=Z,6.5nm,1.2s
RND Reindeer 86.59 12 *eP* **P** 03 21 44.2 -0.1
RND pmax pmax
comp=Z,15nm,0.9s
RND Reindeer 86.59 12 *eP* **P** 03 21 44.2 -0.1
comp=Z,15nm,0.9s
MCMT McKenzie Canyo 86.72 39 *eP* **P** 03 21 46.4 +0.8
BPAW Bear Paw Mtn. 86.84 10 *eP* **P** 03 21 44.6 -0.9
comp=Z,18nm,1.9s
SYO Syowa Base 86.84 192 *i*eX P 03 21 40.6 -5.0
SYO Syowa Base 86.84 192 *i*eP pP 03 22 02.2 -7.1
MCK McKinley 86.87 11 *eP* **P** 03 21 44.7 -0.9
MCK pmax pmax
comp=Z,16nm,1.0s
MCK McKinley 86.87 11 *eP* **P** 03 21 44.7 -0.9
comp=Z,16nm,1.0s
PAX Paxson 86.88 13 *eP* **P** 03 21 45.3 -0.5
PAX pmax pmax
comp=Z,3.0nm,1.0s
PAX Paxson 86.88 13 *eP* **P** 03 21 45.3 -0.5
comp=Z,2.9nm,1.0s

PSI	**Prapat**	**86.94**	**274**	*e*P		**P**	**03 21 45.1**	**-2.2**
PSI				pmax	pmax				
	comp=Z,7.0nm,0.8s								
PSI	**Prapat**	**86.94**	**274**	*e*P		**P**	**03 21 45.1**	**-2.2**
	comp=Z,6.8nm,0.8s								
PLCA	**Paso Flores**	**87.22**	**133**	P		**P**	**03 21 50.2**	**+2.0**
	comp=Z,6.0nm,1.1s,baz=288,slow=3.1,SNR=7.1								
PLCA	**Paso Flores**	**87.22**	**133**	*e*P		**P**	**03 21 50.2**	**+2.0**
	comp=Z,20nm,1.4s								
SNOW	**Snow King Moun**	**87.24**	**41**	*e*P		**P**	**03 21 49.4**	**+1.2**
	comp=Z,3.6nm,0.8s								
BSMT	**Bassoo Peak**	**87.33**	**36**	*e*P		**P**	**03 21 48.8**	**+0.3**
SEY	**Seymchan**	**87.34**	**346**⇑	*e*P		**P**	**03 21 47.4**	**-0.5**
SMCO	**Snowmass**	**87.48**	**46**	*e*P		**P**	**03 21 50.2**	**+0.5**
	comp=Z,4.1nm,1.0s								
CMIG	**Matias Romero**	**87.50**	**71**	P		**P**	**03 21 50.1**	**+0.4**
	comp=Z,6.3nm,0.7s,baz=258,slow=4.8,SNR=7.6								
CMIG				LR		LR	03 51 06.8		
	comp=Z,66nm,21.3s,baz=188,slow=29								
SNAA	**Sanae**	**87.52**	**178**	P		**P**	**03 21 49.7**	**+0.8**
SNAA	**Sanae**	**87.52**	**178**	*e*P		**P**	**03 21 49.6**	**+0.6**
SNAA	**Sanae**	**87.52**	**178**	*e*P		**P**	**03 21 49.6**	**+0.6**
	comp=Z,318nm,1.0s								
SKNT	**Sakolnakorn**	**87.54**	**289**	P		**P**	**03 21 51.4**	**+1.5**
	comp=Z,22nm,0.9s								
VNA3	**Neumayer Olymp**	**87.56**	**175**	P		**P**	**03 21 50.0**	**+0.9**
BW06	**Boulder Array**	**87.61**	**42**	*e*P		**P**	**03 21 49.9**	**-0.1**
PD31	**Pinedale Array**	**87.61**	**42**	*e*P		**P**	**03 21 50.0**	**-0.1**
PDAR	**Pinedale Array**	**87.61**	**42**	P		**P**	**03 21 49.9**	**-0.2**
	comp=Z,1.2nm,0.6s,baz=201,slow=2.8,SNR=16								
PDAR				LR		LR	03 56 34.2		
	comp=Z,32nm,18.4s,baz=226,slow=32								
GSI	**Gunungsitoli**	**87.67**	**272**	*e*P		**P**	**03 21 50.7**	**0.0**
	comp=Z,28nm,1.1s								
WRH	**Wood River Hil**	**87.70**	**11**	*e*P		**P**	**03 21 48.8**	**-0.7**
	comp=Z,30nm,1.5s								
MLY	**Manley**	**87.75**	**10**	*e*P		**P**	**03 21 49.0**	**-0.9**
	comp=Z,4.4nm,1.1s								
SDCO	**Great Sand Dun**	**87.80**	**48**	*e*P		**P**	**03 21 51.6**	**+0.5**
	comp=Z,22nm,0.9s								
BOZ	**Bozeman (W)**	**87.89**	**39**	*e*P		**P**	**03 21 51.2**	**+0.1**
BOZ				pmax	pmax				
	comp=Z,11nm,1.5s								
BOZ	**Bozeman (W)**	**87.89**	**39**	*e*P		**P**	**03 21 51.2**	**+0.1**
	comp=Z,11nm,1.5s								
BJI	**Beijing**	**87.90**	**314**	P		**P**	**03 21 52.6**	**+1.5**
BJI				pmax	pmax				
	comp=Z,9.0nm,0.8s								
CCB	**Clear Creek Bu**	**87.91**	**12**	*e*P		**P**	**03 21 49.7**	**-0.8**
	comp=Z,22nm,1.6s								
MSTX	**Muleshoe**	**88.02**	**53**	*e*P		**P**	**03 21 51.9**	**-0.1**
	comp=Z,4.9nm,0.7s								
VNA2	**Neumayer--Watz**	**88.03**	**176**	P		**P**	**03 21 52.2**	**+0.9**
	baz=187,slow=3.3								
TRTT	**Trang**	**88.04**	**279**	P		**P**	**03 21 55.4**	**+3.0**
	comp=Z,14nm,1.0s								
COLA	**College**	**88.11**	**11**⇑	*i*P		**P**	**03 21 50.7**	**-0.8**
COLA				pmax	pmax				
	comp=Z,13nm,1.5s								
COLA	**College**	**88.11**	**11**	*e*P		**P**	**03 21 50.6**	**-0.8**
	comp=Z,14nm,1.3s								
MDM	**Murphy Dome**	**88.11**	**11**	*e*P		**P**	**03 21 50.8**	**-0.8**
	comp=Z,19nm,1.6s								
ILAR	**Eielson Array**	**88.20**	**12**	P		**P**	**03 21 51.0**	**-0.9**
	comp=Z,2.4nm,0.9s,baz=209,slow=5.1,SNR=19								
ILAR				LR		LR	03 54 39.1		
	comp=Z,25nm,19.3s,baz=218,slow=31								
ILB	**Eielson Array**	**88.20**	**12**	*e*P		**P**	**03 21 51.8**	**-0.1**
IL1	**Eielson Array**	**88.20**	**12**	*e*P		**P**	**03 21 50.8**	**-1.1**
VNA1	**Neumayer--Stat**	**88.24**	**176**	P		**P**	**03 21 54.9**	**+2.6**
ENH	**Enshi**	**88.29**	**303**	*e*P		**P**	**03 21 52.8**	**-0.4**
	comp=Z,17nm,1.0s								
WALA	**Waterton Lakes**	**88.50**	**35**	*e*P		**P**	**03 21 53.8**	**-0.1**
	comp=Z,33nm,1.8s								
GYA	**Guiyang**	**88.97**	**299**	*e*P		**P**	**03 21 57.3**	**+0.7**
GYA				pP		pP	03 22 25.6	+5.2
GYA				sP		sP	03 22 37.3	+7.4
GYA				PP		**PP**	**03 25 31.4**	**+3.7**
GYA				sS		S	03 33 23.3	+4.7
GYA				pmax	pmax				
	comp=Z,10.0nm,1.0s								
EGAK	**Eagle**	**89.40**	**14**	*e*P		**P**	**03 21 57.6**	**0.0**
	comp=Z,10nm,1.4s								
BILL	**Bilibino**	**89.71**	**353**	*e*P		**P**	**03 21 58.5**	**-0.5**
BILL				*e*			03 25 31.1		
BILL				*e*S		S	03 32 28.0	-15
BILL				pmax	pmax				
	comp=Z,1.0nm,0.9s								
COLD	**Coldfoot**	**89.86**	**10**	*e*P		**P**	**03 22 00.7**	**+1.0**
	comp=Z,3.3nm,0.8s								
PHET	**Kaeng Krachan**	**89.93**	**284**	P		**P**	**03 22 03.2**	**+2.0**
	comp=Z,6.2nm,0.9s								
PBKT	**Sadao Pong**	**90.06**	**288**	P		**P**	**03 22 03.1**	**+1.4**
	comp=Z,7.8nm,1.3s,comp=Z,1µm								
HHC	**Hu-ho-hao-te**	**91.39**	**313**	*e*P		**P**	**03 22 07.8**	**+0.2**
HHC				S		**S**	**03 32 55.6**	**-3.9**
HHC				pmax	pmax				
	comp=Z,20nm,1.0s								
HHC				pmax	pmax				
	comp=Z,91nm,8.0s								
LAO	**LASA Array**	**91.64**	**40**	*e*P		**P**	**03 22 09.7**	**+1.1**
	comp=Z,9.6nm,0.8s								
RSSD	**Black Hills**	**91.78**	**43**	*e*P		**P**	**03 22 09.7**	**+0.2**
RSSD				pmax	pmax				
	comp=Z,8.0nm,1.1s								
RSSD	**Black Hills**	**91.78**	**43**	*e*P		**P**	**03 22 09.7**	**+0.2**
	comp=Z,7.8nm,1.1s								
LAMP	**Lampang**	**91.96**	**289**	P		**P**	**03 22 12.9**	**+2.3**
	comp=Z,6.6nm,0.9s								
CM01	**Chiang Mai Arr**	**92.52**	**289**	*e*P		**P**	**03 22 13.4**	**+0.2**
CMAR	**Chiang Mai Arr**	**92.54**	**289**	P		**P**	**03 22 13.4**	**+0.2**
	comp=Z,5.5nm,0.9s,baz=118,slow=3.1,SNR=22								
CMAR				LR		LR	04 00 15.6		
	comp=Z,11nm,21.4s,baz=50,slow=33								
CMMT	**Chiang Mai**	**92.67**	**289**	P		**P**	**03 22 14.6**	**+0.7**
	comp=Z,7.5nm,0.9s								
CHTO	**Chiang Mai**	**92.67**	**289**	P		**P**	**03 22 14.7**	**+0.8**
	comp=Z,34nm,0.9s								
CHTO	**Chiang Mai**	**92.67**	**289**	*e*P		**P**	**03 22 14.3**	**+0.4**
CHTO				pmax	pmax				
	comp=Z,6.0nm,0.7s								
CHTO	**Chiang Mai**	**92.67**	**289**	*e*P		**P**	**03 22 14.3**	**+0.4**
	comp=Z,5.5nm,0.7s								
CD2	**Chengdu**	**93.06**	**302**	P		**P**	**03 22 14.8**	**-0.7**
CD2				pmax	pmax				
	comp=Z,2.0nm,0.5s								
DGMT	**Dagmar**	**93.69**	**39**	*e*P		**P**	**03 22 18.9**	**+1.0**
	comp=Z,13nm,0.8s								
ATAH	**Atahualpa**	**93.98**	**99**	LR		LR	03 56 52.7		
	comp=Z,56nm,19.9s,baz=229,slow=30								
INK	**Inuvik**	**94.05**	**14**	P		**P**	**03 22 18.6**	**-0.4**
	comp=Z,2.4nm,1.0s,baz=226,slow=4.3,SNR=4.8								
INK	**Inuvik**	**94.05**	**14**	*e*P		**P**	**03 22 19.2**	**+0.2**
YKA	**Yellowknife Ar**	**95.88**	**24**	P		**P**	**03 22 27.0**	**-0.5**
	comp=Z,0.5nm,0.6s,baz=240,slow=4.6,SNR=17								
YKA				PKKP		**PKKPbc**	**03 39 15.9**	**-2.9**
	comp=Z,0.1nm,0.4s,baz=49,slow=2.3,SNR=6.1								
YKA	**Yellowknife Ar**	**95.88**	**24**	P		**P**	**03 22 27.0**	**-0.5**
YKA				pmax	pmax				
	comp=Z,1.0nm,0.6s								
ECSD	**EROS Data Cent**	**96.47**	**46**	*e*P		**P**	**03 22 30.4**	**-0.3**
	comp=Z,18nm,1.6s								
ULN	**Ulaanbaatar**	**97.27**	**318**	*e*P		Pdif	03 22 34.5	0.0
ULN				pmax	pmax				
	comp=Z,5.0nm,1.5s								
SONM	**Songino Array**	**97.67**	**318**	P		Pdif	03 22 36.7	+0.5
	comp=Z,0.4nm,0.5s,baz=83,slow=6.4,SNR=4.7								
SONM	**Songino Array**	**97.67**	**318**	P		Pdif	03 22 36.7	+0.5
SONM				pmax	pmax				
	comp=Z,1.0nm,0.8s								
ULM	**Lac du Bonnet**	**99.38**	**40**	LR		LR	04 03 12.2		
	comp=Z,37nm,18.2s,baz=224,slow=33								
LPAZ	**La Paz**	**99.66**	**112**	P		**Pdif**	**03 22 48.7**	**+2.2**
	comp=Z,1.9nm,0.9s,baz=282,slow=3.5,SNR=7.3								
LPAZ				LR		LR	03 57 13.9		
	comp=Z,142nm,21.1s,baz=168,slow=29								
TIXI	**Tiksi**	**99.78**	**345**	*e*P		**Pdif**	**03 22 44.1**	**-0.7**
TIXI				pmax	pmax				
	comp=Z,4.0nm,2.5s								
ZALV	**Zalesovo Beam**	**112.34**	**321**	PKiKP		**PKiKP**	**03 27 35.1**	**-1.5**
	comp=Z,1.0nm,0.6s,baz=119,slow=1.9,SNR=5.0								
MKAR	**Makanchi Array**	**113.25**	**313**	PKiKP		**PKiKP**	**03 27 37.3**	**-1.3**
	comp=Z,0.7nm,0.4s,baz=78,slow=1.7,SNR=10								
KURK	**Kurchatov**	**115.94**	**317**	*e*PKiKP		**PKPdf**	**03 27 42.2**	**-1.4**
KURK	**Kurchatov**	**115.94**	**317**	*e*PKPdf		**PKPdf**	**03 27 42.2**	**-1.4**
KSH	**Kashi**	**117.12**	**305**	*e*PKP		**PKPdf**	**03 27 44.4**	**-2.0**
KSH				*es*PKP			03 28 21.1		
KSH				AMB	AMB				
	comp=Z,43nm,5.3s								
KSH				LR	LR				
	comp=Z,200nm,10.6s								
KSH				LR	LR				
	comp=Z,95nm,5.1s								
TKM2	**Tokmak 2**	**117.67**	**308**	*e*PKiKP		**PKPdf**	**03 27 46.2**	**-1.3**
TKM2	**Tokmak 2**	**117.67**	**308**	*e*PKPdf		**PKPdf**	**03 27 46.2**	**-1.3**
AAK	**Ala-Archa**	**118.46**	**308**	*e*PKiKP		**PKPdf**	**03 27 47.0**	**-2.0**
BRVK	**Borovoye**	**121.01**	**320**	*i* PKiKP		**PKPdf**	**03 27 52.7**	**-0.6**
BRVK				pmax	pmax				
	comp=Z,7.0nm,2.5s								
ARU	**Arti**	**126.91**	**326**	*i* PKiKP		**PKPdf**	**03 28 03.6**	**-0.9**
ARU							03 30 02.9		
ARU							03 35 05.3		
ARU				SP	SP		03 39 56.2	-1.2	
ARCES	**ARCESS Array B**	**129.74**	**351**	PKP		**PKPdf**	**03 28 09.2**	**-0.4**
	comp=Z,1.1nm,0.6s,baz=354,slow=1.2,SNR=14								
GEYT	**Alibeck**	**131.05**	**303**	PKP		**PKPdf**	**03 28 12.6**	**-0.4**
	comp=Z,1.7nm,0.6s,baz=302,slow=6.8,SNR=3.8								
GEYT				SKPbc		**SKPbc**	**03 31 29.6**	**-0.1**
	comp=Z,14nm,0.8s,baz=101,slow=1.5,SNR=15								
FINES	**FINESS Array B**	**136.82**	**345**	SKPbc		**SKPbc**	**03 31 47.4**	**-0.5**
	comp=Z,1.8nm,0.9s,baz=64,slow=4.4,SNR=3.9								
OBN	**Obninsk**	**138.25**	**333**	*e*PKiKP		**PKPdf**	**03 28 25.5**	**-0.3**
OBN				*e*			03 31 18.2		
OBN				pmax	pmax				
	comp=Z,6.0nm,0.8s								
NB2	**NORSAR Subarra**	**139.64**	**355**	PKP		PKPpre	03 28 21.1		
	comp=Z,0.5nm,0.7s,baz=20,slow=3.8								
NOA	**NORSAR Array B**	**139.64**	**355**	PKhKP		PKPpre	03 28 18.8		
	comp=Z,0.5nm,0.7s,baz=16,slow=2.4,SNR=3.6								
NOA				SKPbc		**SKPbc**	**03 31 56.3**	**+0.3**	
	comp=Z,0.9nm,0.8s,baz=13,slow=4.4,SNR=3.4								
KIV	**Kislovodsk**	**140.97**	**315**	*e*PKiKP		**PKPdf**	**03 28 29.5**	**-1.8**
KIV				*e*			03 31 32.3		
KIV				pmax	pmax				
	comp=Z,4.0nm,0.6s								
KMBO	**Kilima Mbogo**	**141.26**	**240**	*i* PKiKP		**PKPdf**	**03 28 29.2**	**-3.8**
KMBO				pmax	pmax				
	comp=Z,1.0nm,0.4s								
AKASG	**Malin Array Be**	**144.52**	**333**	PKP		**PKPab**	**03 28 34.5**	**-1.3**
	comp=Z,4.7nm,0.7s,baz=41,slow=4.3,SNR=40								
AKASG				SKPbc		**SKiKP**	**03 32 08.9**	**-0.2**	
	comp=Z,0.3nm,0.4s,baz=24,slow=2.7,SNR=4.3								
KIEV	**Kiev**	**144.53**	**333**	*e*PKiKP		**PKPab**	**03 28 34.8**	**-1.0**
KIEV	**Kiev**	**144.53**	**333**	*e*PKPdf		**PKPab**	**03 28 34.8**	**-1.0**
ESK	**Eskdalemuir**	**145.15**	**8**	*i* PKiKP		**PKPdf**	**03 28 38.3**	**+0.1**
ESK	**Eskdalemuir**	**145.15**	**8**	*e*PKPdf		**PKPbc**	**03 28 37.4**	**-0.5**
SFNV	**Sufian**	**145.44**	**304**	*e*P		**PKPdf**	**03 28 39.2**	**-0.2**
SIM	**Simferopol'**	**145.85**	**321**	*i* PKiKP		**PKPbc**	**03 28 40.2**	**-0.2**
SIM				pmax	pmax				
	comp=Z,31nm,0.7s								
SORM	**Soroca**	**146.79**	**330**⇑	*i*P		**PKPbc**	**03 28 42.5**	**-0.6**
SORM	**Soroca**	**146.79**	**330**⇑	PKP2		**PKPbc**	**03 28 42.5**	**-0.6**
LVV	**L'vov**	**147.29**	**336**	*e*PKiKP		**PKPdf**	**03 28 42.6**	**+0.6**
KWP	**Kalwaria Pacla**	**147.93**	**338**	*e*PKP		**PKPbc**	**03 28 45.7**	**-0.5**
KWP	**Kalwaria Pacla**	**147.93**	**338**⇓	*i*P		**PKPbc**	**03 28 46.0**	**-0.2**
KWP	**Kalwaria Pacla**	**147.93**	**338**⇓	PKP2		**PKPbc**	**03 28 46.0**	**-0.2**
DRWC	**Darouich**	**148.01**	**306**	*e*P		**PKPbc**	**03 28 46.9**	**-0.1**
BTCH	**Batrach**	**148.36**	**305**	*e*P		**PKPbc**	**03 28 47.7**	**-0.2**
OJC	**Ojcow**	**148.38**	**341**	*e*PKP		**PKPbc**	**03 28 47.6**	**+0.3**
OJC	**Ojcow**	**148.38**	**341**	*e*PKP2		**PKPbc**	**03 28 47.6**	**+0.3**
BURAR	**Bucovina Array**	**148.57**	**333**⇓	*i*P		**PKPbc**	**03 28 49.1**	**+1.0**
BURAR	**Bucovina Array**	**148.57**	**333**⇓	PKP2		**PKPbc**	**03 28 49.1**	**+1.0**
STHS	**Stebnicka Huta**	**148.62**	**339**	*e*PKP2		**PKPbc**	**03 28 48.6**	**+0.6**
STHS	**Stebnicka Huta**	**148.62**	**339**	*e*PKP		**PKPbc**	**03 28 48.6**	**+0.6**
STHS				*e*			03 28 53.2		
KOLS	**Kolonicke sedl**	**148.67**	**337**	*e*PKP2		**PKPbc**	**03 28 48.6**	**+0.4**
KOLS	**Kolonicke sedl**	**148.67**	**337**	*e*PKP		**PKPbc**	**03 28 48.6**	**+0.4**
KOLS				*e*			03 28 53.4		
TESR	**Tescani**	**148.77**	**330**⇑	*i*P		**PKPbc**	**03 28 48.3**	**-0.2**
BRTR	**Keskin Array B**	**148.90**	**314**	PKPbc		**PKPbc**	**03 28 48.4**	**-0.9**
	comp=Z,8.2nm,0.7s,baz=139,slow=4.2,SNR=26								
BRTR	**Keskin Array B**	**148.90**	**314**	*e*PKP2		**PKPbc**	**03 28 48.5**	**-0.7**
BRTR				pmax	pmax				
	comp=Z,8.0nm,0.7s								
UZH	**Uzhgorod**	**148.91**	**337**	*e*PKP2		**PKPbc**	**03 28 48.0**	**-0.7**
NIE	**Niedzica**	**148.92**	**340**	*e*PKP		**PKPbc**	**03 28 49.0**	**+0.2**
NIE	**Niedzica**	**148.92**	**340**	*e*PKP2		**PKPbc**	**03 28 49.0**	**+0.2**
CLL	**Collm**	**148.96**	**350**	*e*PKPdf		**PKPdf**	**03 28 46.0**	**+1.3**
CLL				⇓*i*PKPbc		**PKPbc**	**03 28 48.6**	**-0.2**
	comp=Z,13nm,0.8s								
CLL				*i* PKPab		**PKiKP**	**03 28 51.2**	**+1.2**
	comp=Z,8.0nm,0.5s								
CLL				*e*pPKPab		**pPKPab**	**03 29 17.0**	**-0.1**
CLL	**Collm**	**148.96**	**350**	⇓*i*PKP2		**PKPbc**	**03 28 48.6**	**-0.2**
CLL				pmax	pmax				
	comp=Z,13nm,0.8s								
CLL				pmax	pmax				
	comp=Z,8.0nm,0.5s								
MARH	**Ras Al Marh**	**148.97**	**302**	*e*P		**PKPbc**	**03 28 50.3**	**+0.5**
CRVS	**Cervenica-Dubn**	**148.98**	**338**	*e*PKP2		**PKPbc**	**03 28 49.0**	**+0.1**
CRVS	**Cervenica-Dubn**	**148.98**	**338**	*e*PKP		**PKPbc**	**03 28 49.0**	**+0.1**
CFR	**Carcaliu**	**148.99**	**327**⇑	*i*P		**PKPbc**	**03 28 49.0**	**0.0**
CFR	**Carcaliu**	**148.99**	**327**⇑	PKP2		**PKPbc**	**03 28 49.0**	**0.0**
UPC	**Upice**	**149.12**	**346**⇑	*e*PKP		**PKPbc**	**03 28 49.4**	**+0.2**
DPC	**Dobruska-Polom**	**149.19**	**345**⇑	*e*PKP		**PKPbc**	**03 28 49.8**	**+0.3**
DPC				*e*PKPAB		**PKPab**	**03 28 54.2**	**+0.1**
DPC	**Dobruska-Polom**	**149.19**	**345**	*e*PKP2		**PKPbc**	**03 28 49.8**	**+0.3**
OKC	**Ostrava-Krasne**	**149.19**	**343**⇑	*e*PKP		**PKPbc**	**03 28 49.7**	**+0.3**
OKC	**Ostrava-Krasne**	**149.19**	**343**	*e*PKP2		**PKPbc**	**03 28 49.7**	**+0.3**
VRI	**Vrincioaia**	**149.20**	**329**⇑	*i*P		**PKPbc**	**03 28 49.5**	**-0.1**
VRI	**Vrincioaia**	**149.20**	**329**⇑	PKP2		**PKPbc**	**03 28 49.5**	**-0.1**
BRG	**Berggiesshubel**	**149.21**	**348**	*i* PKP		**PKPbc**	**03 28 49.4**	**0.0**
	comp=Z,9.4nm,0.8s								
BRG	**Berggiesshubel**	**149.21**	**348**	*i* PKP2		**PKPbc**	**03 28 49.4**	**0.0**
BRG				pmax	pmax				
	comp=Z,9.0nm,0.8s								
PLOR	**Plostina**	**149.25**	**329**⇑	*i*P		**PKPab**	**03 28 54.5**	**0.0**
PLOR	**Plostina**	**149.25**	**329**⇑	PKP2		**PKPab**	**03 28 54.5**	**0.0**
TIRR	**Tirgusor**	**149.33**	**325**⇓	*i*P		**PKPbc**	**03 28 52.2**	**+2.3**
TIRR	**Tirgusor**	**149.33**	**325**⇓	PKP2		**PKPbc**	**03 28 52.2**	**+2.3**
KRLC	**Kraliky**	**149.34**	**345**⇑	*e*PKP		**PKPbc**	**03 28 50.0**	**+0.2**
KRLC	**Kraliky**	**149.34**	**345**	*e*PKP2		**PKPbc**	**03 28 50.0**	**+0.2**
PVCC	**Panska Ves**	**149.41**	**347**⇑	*e*PKP		**PKPbc**	**03 28 50.5**	**+0.6**
PVCC	**Panska Ves**	**149.41**	**347**	*e*PKP2		**PKPbc**	**03 28 50.5**	**+0.6**
MORC	**Moravsky Berou**	**149.41**	**343**⇑	*i*P		**PKPbc**	**03 28 50.4**	**+0.4**
MORC	**Moravsky Berou**	**149.41**	**343**⇑	PKP2		**PKPbc**	**03 28 50.4**	**+0.4**
LANS	**Liptovska Anna**	**149.42**	**341**	*e*PKP2		**PKPbc**	**03 28 50.8**	**+0.7**
LANS	**Liptovska Anna**	**149.42**	**341**	*e*PKP		**PKPbc**	**03 28 50.8**	**+0.7**
HARR	**Harsova**	**149.43**	**326**⇓	*i*P		**PKPab**	**03 29 02.2**	**+7.0**
KECS	**Kecovo**	**149.67**	**339**	*e*PKP2		**PKPbc**	**03 28 51.1**	**+0.4**
KECS	**Kecovo**	**149.67**	**339**	*e*PKP		**PKPbc**	**03 28 51.1**	**+0.4**
KECS				*e*			03 28 57.2		
TCHB	**Talchebab**	**149.75**	**299**	*e*P		**PKPbc**	**03 28 51.4**	**0.0**
MLR	**Muntele Rosu**	**149.85**	**329**⇓	*i*P		**PKPbc**	**03 28 51.4**	**0.0**
MLR	**Muntele Rosu**	**149.85**	**329**⇓	PKP2		**PKPbc**	**03 28 51.4**	**0.0**
PRU	**Pruhonice**	**149.93**	**347**⇑	*e*PKP		**PKPbc**	**03 28 51.2**	**0.0**
PRU				*e*PKPAB		**PKPab**	**03 28 57.1**	**+0.1**
PRU	**Pruhonice**	**149.93**	**347**	*e*PKP2		**PKPbc**	**03 28 51.2**	**0.0**
GOPC	**GO Pecny, Ondr**	**149.95**	**347**⇑	*e*PKP		**PKPbc**	**03 28 51.5**	**+0.2**
GOPC				*e*PKPAB		**PKPab**	**03 28 56.9**	**-0.3**
NKC	**Novy Kostel**	**150.09**	**350**⇑	*e*PKP		**PKPbc**	**03 28 51.8**	**+0.2**
NKC				*e*PKPAB		**PKPab**	**03 28 57.0**	**-0.7**
NKC				*es*PKP			03 29 30.6		
NKC	**Novy Kostel**	**150.09**	**350**	*e*PKP2		**PKPbc**	**03 28 51.8**	**+0.2**
VRAC	**Vranov**	**150.09**	**344**⇑	*i*P		**PKPbc**	**03 28 52.0**	**+0.3**
VRAC	**Vranov**	**150.09**	**344**⇑	PKP2		**PKPbc**	**03 28 52.0**	**+0.3**
VYHS	**Vyhne**	**150.20**	**341**	*e*PKP2		**PKPbc**	**03 28 52.0**	**+0.1**
VYHS	**Vyhne**	**150.20**	**341**	*e*PKP		**PKPbc**	**03 28 52.0**	**+0.1**
DRGR		**150.27**	**334**⇓	*i*P		**PKPbc**	**03 28 52.0**	**-0.2**
MEM	**Membach**	**150.34**	**358**	PKPbc		**PKPbc**	**03 28 52.3**	**+0.1**
PSZ	**Piszkesteto**	**150.36**	**339**⇓	*i*P		**PKPbc**	**03 28 52.1**	**-0.3**
PSZ	**Piszkesteto**	**150.36**	**339**	*e*PKIKP		**PKPdf**	**03 28 47.2**	**+0.1**
PSZ	**Piszkesteto**	**150.36**	**339**	*e*PKPdf		**PKPdf**	**03 28 47.2**	**+0.1**
TREC	**Trest**	**150.37**	**346**⇑	*e*PKP		**PKPbc**	**03 28 52.2**	**-0.2**
TREC	**Trest**	**150.37**	**346**	*e*PKIKP		**PKPbc**	**03 28 52.2**	**-0.2**
BCLA	**Clavier**	**150.55**	**359**	PKPbc		**PKPbc**	**03 28 53.3**	**+0.7**
ARR	**Arges**	**150.56**	**331**⇑	*i*P		**PKPbc**	**03 28 53.7**	**+0.7**
SMOL	**Smolenice**	**150.59**	**342**	*e*PKIKP		**PKPbc**	**03 28 53.4**	**+0.5**
SMOL	**Smolenice**	**150.59**	**342**	*e*PKP		**PKPbc**	**03 28 53.4**	**+0.5**
GRFO	**Grafenberg**	**150.80**	**351**	*e*PKIKP		**PKPbc**	**03 28 53.4**	**+0.1**
GRFO	**Grafenberg**	**150.80**	**351**	*e*PKPbc		**PKPbc**	**03 28 53.4**	**+0.1**
DOU	**Dourbes**	**150.88**	**360**	PKPbc		**PKPbc**	**03 28 53.7**	**+0.2**
LOT	**Lotru**	**150.88**	**332**⇓	*i*P		**PKPbc**	**03 28 52.8**	**-1.0**
KHC	**Kasperske Hory**	**150.94**	**348**	*e*PKP		**PKPbc**	**03 28 53.8**	**+0.1**
KHC				*e*PKPAB		**PKPab**	**03 29 02.0**	**+0.7**
KHC	**Kasperske Hory**	**150.94**	**348**	*e*PKIKP		**PKPbc**	**03 28 53.1**	**-0.6**
KHC	**Kasperske Hory**	**150.94**	**348**	*e*PKPbc		**PKPbc**	**03 28 53.1**	**-0.6**
SIRR	**Siria**	**151.11**	**335**⇓	*i*P		**PKPbc**	**03 28 54.1**	**-0.1**
CSS	**Mathiatis**	**151.13**	**305**	*e*PKPbc		**PKPbc**	**03 28 53.7**	**-0.9**
GERES	**GERESS Array B**	**151.19**	**347**	PKPbc		**PKPbc**	**03 28 53.9**	**-0.4**
	comp=Z,4.0nm,0.8s,baz=17,slow=1.8,SNR=23								
WLF	**Walferdange**	**151.28**	**358**	PKPbc		**PKPbc**	**03 28 55.2**	**+0.8**
WLF				PKPab		**PKPab**	**03 29 02.5**	**-0.1**
WLF	**Walferdange**	**151.28**	**358**	*e*PKIKP		**PKPbc**	**03 28 54.9**	**+0.5**
WLF	**Walferdange**	**151.28**	**358**	*e*PKPbc		**PKPbc**	**03 28 54.9**	**+0.5**
GZR	**Gura Zlata**	**151.36**	**333**⇓	*i*P		**PKPbc**	**03 28 54.2**	**-0.7**
GZR	**Gura Zlata**	**151.36**	**333**⇓	PKIKP		**PKPbc**	**03 28 54.2**	**-0.7**
CONA	**Conrad Observa**	**151.55**	**344**	*i* PKiKP		**PKPbc**	**03 28 55.2**	**0.0**
	comp=Z,5.4nm,0.9s								
BZS	**Buzias**	**151.66**	**334**⇓	*i*P		**PKPbc**	**03 28 54.9**	**-0.5**
BZS	**Buzias**	**151.66**	**334**⇓	PKIKP		**PKPbc**	**03 28 54.9**	**-0.5**
ARSA	**Arzberg**	**152.27**	**344**	*i* PKiKP		**PKiKP**	**03 28 57.8**	**+0.7**
	comp=Z,1.8nm,0.5s								
PKSM	**Mo

*SCB **20** 03:22:33.4±0.2,23°09S×66°82W,h195km,Ml3.9/2,Error ellipse: s-maj=6.9km s-min=3.3km az=38.0*
*SJA **20** 03:22:37.4±0.3,22°94S×66°53W,h241km±6km,ML3.5, MW4.2*
*ISCJB **20** 03:22:38.6±0.4,23°02S±0°04×66°61W±0°08,h222km, mb3.7/7, Error ellipse: s-maj=10.8km s-min=4.9km az=162.9*
*IDC **20** 03:22:46.7±2.8,22°28S×66°24W,h270km±20km,mb3.5/7, mb1 3.7/11,mb1mx3.5/28,mbtmp4.1/11, Error ellipse: s-maj=38.8km s-min=14.6km az=29.0*

ISC 20 03:22:39.1±0.7,**22°94S**±0°07×**66°51W**±0°10,**h222**km,**n27,** σ0**991**/32,**mb3.9**/7,**8C,Jujuy Province**

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
HJA	**Humahuaca**	**1.05**	**105**	*i* P		**Pn**	**03 23 13.1**	**+1.2**
HJA				IAML			03 23 14.1	
	comp=Z,2μm,0.5s							
YJA	**Yavi**	**1.20**	**50**	*i* P		**Pn**	**03 23 14.1**	**+1.1**
YJA				*i* S		**S**	**03 23 41.3**	**+2.0**
YJA				IAML			03 23 43.0	
	comp=Z,98nm,0.6s							
AZAP	**Zapla**	**1.84**	**134**	*i* P		**Pn**	**03 23 18.6**	**+0.6**
ASTB	**Santa Barbara**	**2.14**	**118**	*i* P		**Pn**	**03 23 21.2**	**+0.4**
ALOL	**LOMAS DE OLMED**	**2.48**	**111**	*i* P		**Pn**	**03 23 24.4**	**+0.2**
AHML	**Horco Molle**	**3.97**	**165**	*i* P		**Pn**	**03 23 41.2**	**-0.1**
CYA	**Choya**	**5.51**	**173**	*i* P		**Pn**	**03 23 59.8**	**-0.7**
CYA				IAML			03 24 58.5	
	comp=Z,3.4nm,0.4s							
VCA	**Vinchina**	**5.97**	**194**	*i* P		**Pn**	**03 24 05.8**	**-0.6**
VCA				IAML			03 25 52.8	
	comp=Z,16nm,0.3s							
BBOJ	**La Paz, Jacaqu**	**6.14**	**345**	⇑*i* Pn		**Pn**	**03 24 10.3**	**+1.2**
BBOE	**La Paz, Chanca**	**6.26**	**347**	⇑*i* Pn		**Pn**	**03 24 11.8**	**+1.2**
BBOD	**La Paz, Gloria**	**6.58**	**342**	⇑*i* Pn		**Pn**	**03 24 15.6**	**+1.0**
BBOD				⇑*i* Sn		**S**	**03 25 29.9**	**-0.6**
	comp=Z,30nm,0.8s							
AGUA	**GUANDACOL**	**6.75**	**195**	*i* P		**Pn**	**03 24 15.5**	**-0.9**
LPAZ	**La Paz**	**6.80**	**347**	P		**Pn**	**03 24 18.2**	**+0.6**
	comp=Z,1.3nm,0.3s,baz=156,slow=5.8,SNR=43							
LPAZ				S		**S**	**03 25 33.7**	**-2.1**
	comp=Z,0.4nm,0.3s,baz=68,slow=25,SNR=10.0							
LPAZ	**La Paz**	**6.80**	**347**	⇑Pn		**Pn**	**03 24 17.8**	**+0.3**
LPAZ				eSn		**S**	**03 25 35.7**	**-0.1**
BBOB	**La Paz, Bander**	**6.94**	**347**	⇑*i*Pn		**Pn**	**03 24 19.7**	**+0.4**
BBOB				⇑*i*Sn		**S**	**03 25 39.1**	**+0.1**
	comp=Z,45nm,0.8s							
SIV	**San Ignacio**	**8.61**	**38**	P		**Pn**	**03 24 38.9**	**-1.4**
	comp=Z,0.6nm,0.3s,baz=228,slow=14,SNR=19							
SIV	**San Ignacio**	**8.61**	**38**	⇑*i*P		**Pn**	**03 24 39.4**	**-0.9**
CPUP	**Villa Florida**	**9.01**	**114**	P		**P**	**03 24 54.0**	**+0.1**
	comp=Z,0.2nm,0.3s,baz=263,slow=9.3,SNR=4.8							
NNA	**Nana**	**14.68**	**316**	P		**P**	**03 25 57.1**	**-0.2**
	comp=Z,1.5nm,0.3s,baz=156,slow=10,SNR=5.6							
RCBR	**Riachuelo**	**34.06**	**65**	P		**P**	**03 29 02.8**	**+0.1**
	comp=Z,9.1nm,0.8s,baz=244,slow=8.9,SNR=5.1							
TXAR	**Lajitas Array**	**63.09**	**324**	P		**P**	**03 32 43.3**	**0.0**
	comp=Z,0.6nm,0.7s,baz=147,slow=7.0,SNR=14							
TORD	**Torodi Ar. Bea**	**75.77**	**69**	P		**P**	**03 33 60.0**	**-1.0**
	comp=Z,1.5nm,0.4s,baz=263,slow=6.4,SNR=35							
PDAR	**Pinedale Array**	**76.48**	**329**	P		**P**	**03 34 05.1**	**+0.4**
	comp=Z,0.7nm,0.6s,baz=117,slow=8.3,SNR=8.1							
ULM	**Lac du Bonnet**	**77.38**	**341**	P		**P**	**03 34 08.8**	**-0.4**
	comp=Z,1.5nm,0.5s,baz=177,slow=4.5,SNR=3.1							
NVAR	**Mina Array Bea**	**78.00**	**321**	P		**P**	**03 34 14.3**	**+1.1**
	comp=Z,0.5nm,0.6s,baz=158,slow=6.9,SNR=5.0							
YKA	**Yellowknife Ar**	**93.29**	**340**	P		**P**	**03 35 28.0**	**-0.1**
	comp=Z,0.5nm,0.5s,baz=132,slow=4.5,SNR=27							
MKAR	**Makanchi Array**	**145.43**	**39**	PKP		**PKPab**	**03 41 51.6**	**+0.2**
	comp=Z,0.6nm,0.3s,baz=307,slow=3.5,SNR=8.7							

*IDC **20** 03:24:15.3±2.3,38°49S×73°62W,h0km,mb3.5/3, mb1 3.8/4,mb1mx3.6/25,mbtmp3.5/4,ML3.6/1,MS3.4/2, Ms1 3.4/2,ms1mx2.9/18, Error ellipse: s-maj=69.6km s-min=18.9km az=53.0*
*ISCJB **20** 03:24:16.7±1.1,38°17S±0°03×73°4W±0°2,h16km±10km, mb3.5/3,MS3.7/1, Error ellipse: s-maj=23.5km s-min=5.0km az=5.7*
*NEIC **20** 03:24:17.0,38°17S×73°40W,h29km,mb4.2/1, ML4.0(GUC),After GUC.*
NEIC Felt [IV] at Angol, [III] at Lumaco and [II] at Curacautin, Puren, Puerto Saavedra, Tirua and Traiguen.
*GUC **20** 03:24:17.7±0.6,38°17S×73°40W,h29km±5km,ML4.0*

ISC 20 03:24:18.2±1.3,**38°18S**±0°04×**73°4W**±0°1,**h19**km±4km,**n13,** σ1**960**/17,**mb3.5**/3,**Near coast of central Chile**

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
PSCH	**Puerto Saavedr**	**0.62**	**176**	*i* P		**Pb**	**03 24 29.4**	**-0.9**
PSCH				*i* S		**Sb**	**03 24 37.9**	**-0.6**
CCSP	**San Pedro de C**	**1.36**	**11**	*i* P		**Pn**	**03 24 39.9**	**-2.2**
CCSP				*i* S		**Sn**	**03 24 57.2**	**-2.3**
CCSP				IAML			03 25 05.9	
	comp=N,3μm,0.6s							
VLCH	**Valdivia**	**1.63**	**175**	*i* P		**Pn**	**03 24 44.8**	**-1.0**
VLCH				*i* S		**Sn**	**03 25 05.2**	**-0.9**
VLCH				IAML			03 25 18.7	
	comp=N,5μm,0.5s							
CCHI	**Chillan**	**1.92**	**35**	*i* P		**Pn**	**03 24 49.0**	**-0.7**
CCHI				*i* S		**Sn**	**03 25 12.1**	**-1.1**
CCHI				IAML			03 25 24.1	
	comp=N,2μm,0.7s							
COCH	**Cobquecura**	**2.11**	**15**	*i* P		**Pn**	**03 24 51.7**	**-0.7**
COCH				*i* S		**Sn**	**03 25 17.0**	**-1.1**
COCH				IAML			03 25 30.6	
	comp=E,1μm,0.9s							
PLCA	**Paso Flores**	**3.39**	**140**	Pn		**Pn**	**03 25 09.3**	**-0.7**
	comp=E,1.7nm,0.3s,baz=312,slow=11,SNR=89							
PLCA				Lg		Lg	03 25 56.2	
	comp=E,6.5nm,0.3s,baz=59,slow=20,SNR=6.6							
PLCA	**Paso Flores**	**3.39**	**140**	*e*PP		**Pn**	**03 25 09.4**	**-0.6**
EFI	**East Falkland**	**17.29**	**146**	Pn		**Pn**	**03 28 17.8**	**-0.5**
	comp=E,19nm,0.9s							
CPUP	**Villa Florida**	**18.01**	**54**	LR		LR	03 35 56.1	
	comp=E,66nm,19.3s,baz=204,slow=38							
LPAZ	**La Paz**	**22.31**	**14**	P		**P**	**03 29 18.0**	**+2.8**
	comp=E,1.3nm,0.7s,baz=196,slow=9.2,SNR=3.2							
RCBR	**Riachuelo**	**46.86**	**56**	LR		LR	03 53 27.1	
	comp=E,73nm,18.4s,baz=136,slow=37							
TXAR	**Lajitas Array**	**72.87**	**333**	P		**P**	**03 35 46.6**	**+0.9**
	comp=E,0.2nm,0.6s,baz=164,slow=9.7,SNR=4.9							
TORD	**Torodi Ar. Bea**	**86.69**	**71**	P		**P**	**03 37 03.4**	**+2.5**
	comp=E,0.4nm,0.9s,baz=213,slow=4.4,SNR=2.7							
TORD				pP		**sP**	**03 37 08.9**	**-0.8**
	comp=E,0.3nm,0.5s,baz=232,slow=5.0,SNR=1.5							

MEX 20 03:28:29.4±0.3,**14°40N**×**92°18W**,**h67**km±9km,**MD3.8, Near coast of Chiapas**

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
PCIG		**1.64**	**322**	*e*P		Pn	03 28 54.9	-1.3
PCIG				*e*S		Sn	03 29 14.6	-1.8
CCIG	**Comitan**	**1.87**	**1**	*i* P		Pn	03 28 58.1	-1.3
CCIG				*i* S		Sn	03 29 20.7	-1.6

*MDD **20** 03:40:00.4±0.8,36°47N×9°82W,h0km,mbLg3.6/39,Error ellipse: s-maj=7.5km s-min=5.6km az=72.0,PRXIMO*
*CNRM **20** 03:40:02.6,36°21N×9°87W,h30km,MD3.6*
*SFS **20** 03:40:02.0,36°43N×9°97W,h48km,ML4.2*
*LDG **20** 03:40:03.1,36°43N×9°92W,h30km*
*INMG **20** 03:40:03.2±1.7,36°50N×9°81W,h12km±5km,MD2.9, ML3.4,Error ellipse: s-maj=5.7km s-min=2.3km az=54.0*
*IGIL **20** 03:40:03.1,36°40N×9°83W,h22km,ML3.4*
*CSEM **20** 03:40:05.0±0.3,36°66N×9°59W,h20km,ML4.5/8,Error ellipse: s-maj=5.9km s-min=3.5km az=49.0*

ISC 20 03:40:00.4±1.7,**36°55N**±0°06×**9°67W**±0°06,**h10**km,**n217,** σ1**992**/343,**19C-2D,West of Gibraltar**

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
PFVI	**Vila Bisbo**	**0.90**	**49**	⇑*i*P		**Pn**	**03 40 21.6**	**+2.6**
PFVI				*e*S		**Sn**	**03 40 35.2**	**+2.9**
PFVI				A		A	03 40 36.8	
	245nm,0.4s							
PFVI	**Vila Bisbo**	**0.90**	**49**	⇑P		**Pn**	**03 40 21.6**	**+2.6**
	200nm,0.1s,SNR=18							
PFVI				S		**Sn**	**03 40 35.2**	**+3.1**
	590nm,0.2s,SNR=7.9							
MORF	**Marmelete**	**1.11**	**47**	*e*P		**Pb**	**03 40 24.6**	**+2.8**
MORF				*e*S		**Sn**	**03 40 40.3**	**+2.7**
MORF				AML		AML	03 40 42.4	
	comp=N,648nm,0.3s							
MORF	**Marmelete**	**1.11**	**47**	⇑*i*P		**Pb**	**03 40 24.7**	**+2.8**
MORF				*e*S		**Sn**	**03 40 40.4**	**+2.8**
MORF				A		A	03 40 42.6	
	comp=N,340nm,0.2s							
MORF	**Marmelete**	**1.11**	**47**	P		**Pb**	**03 40 24.6**	**+2.8**
MORF				S		**Sn**	**03 40 40.4**	**+2.8**
	comp=N,340nm,0.2s							
MORF	**Marmelete**	**1.11**	**47**	P		**Pb**	**03 40 24.6**	**+2.8**
MORF				S		**Sn**	**03 40 40.4**	**+2.8**
	comp=N,340nm,0.2s							
PTEO	**Sao Teotonio**	**1.25**	**37**	⇑*i*P		**Pb**	**03 40 26.5**	**+2.4**
PTEO				*e*S		**Sn**	**03 40 43.8**	**+3.0**
PTEO				A		A	03 40 45.6	
	comp=N,255nm,0.5s							
PTEO	**Sao Teotonio**	**1.25**	**37**	P		**Pb**	**03 40 26.5**	**+2.4**
PTEO				S		**Sn**	**03 40 43.8**	**+3.0**
	comp=N,127nm,0.5s							
PTEO	**Sao Teotonio**	**1.25**	**37**	⇑*i*P		**Pb**	**03 40 26.5**	**+2.4**
PTEO				S		**Sn**	**03 40 43.8**	**+3.0**
	comp=N,127nm,0.5s							
PBDV	**Barranco-do-Ve**	**1.56**	**63**	⇑*i*Pn		**Pn**	**03 40 30.8**	**+2.6**
PBDV				*e*Sn		**Sn**	**03 40 50.9**	**+2.4**
PBDV				A		A	03 40 57.5	
	comp=N,116nm,0.2s							
PBDV	**Barranco-do-Ve**	**1.56**	**63**	P		**Pn**	**03 40 30.8**	**+2.6**
PBDV				S		**Sn**	**03 40 50.9**	**+2.4**
	comp=N,116nm,0.2s							
PBDV	**Barranco-do-Ve**	**1.56**	**63**	P		**Pn**	**03 40 30.8**	**+2.6**
PBDV				S		**Sn**	**03 40 50.9**	**+2.4**
	comp=N,116nm,0.2s							
PCVE	**Castro Verde**	**1.70**	**50**	⇑*e*Pn		**Pn**	**03 40 32.9**	**+2.8**
PCVE				*e*Sn		**Sb**	**03 40 55.0**	**+1.9**
PCVE				A		A	03 40 56.3	
	comp=N,80nm,0.2s							
PCVE	**Castro Verde**	**1.70**	**50**	P		**Pn**	**03 40 32.9**	**+2.8**
PCVE				S		**Sb**	**03 40 55.0**	**+1.9**
	comp=N,80nm,0.2s							
PCVE	**Castro Verde**	**1.70**	**50**	P		**Pn**	**03 40 32.9**	**+2.8**
PCVE				S		**Sb**	**03 40 55.0**	**+1.9**
	comp=N,80nm,0.2s							
MESJ	**Messejana**	**1.73**	**42**	*e*P		**Pn**	**03 40 33.1**	**+2.5**
MESJ				*e*S		**Sn**	**03 40 55.0**	**+2.2**
MESJ				AML		AML	03 40 57.2	
	comp=N,187nm,0.2s							
MESJ	**Messejana**	**1.73**	**42**	⇑*e*Pn		**Pn**	**03 40 33.2**	**+2.6**
MESJ				*e*Sn		**Sn**	**03 40 55.5**	**+2.7**
MESJ				A		A	03 40 57.7	
	comp=N,112nm,0.2s							
MESJ	**Messejana**	**1.73**	**42**	P		**Pn**	**03 40 33.1**	**+2.5**
MESJ				S		**Sn**	**03 40 55.5**	**+2.7**
	comp=N,112nm,0.2s							
MESJ	**Messejana**	**1.73**	**42**	P		**Pn**	**03 40 33.1**	**+2.5**
MESJ				S		**Sn**	**03 40 55.5**	**+2.7**
	comp=N,112nm,0.2s							
PVAQ	**Vaqueiros**	**1.78**	**61**	⇑*i*Pn		**Pn**	**03 40 33.8**	**+2.5**
PVAQ				*e*Sn		**Sn**	**03 40 56.1**	**+2.1**
PVAQ				A		A	03 40 57.5	
	comp=N,185nm,0.1s							
PVAQ	**Vaqueiros**	**1.78**	**61**	P		**Pn**	**03 40 33.8**	**+2.5**
PVAQ				S		**Sn**	**03 40 56.1**	**+2.1**
	comp=N,185nm,0.1s							
PVAQ	**Vaqueiros**	**1.78**	**61**	P		**Pn**	**03 40 33.8**	**+2.5**
PVAQ				S		**Sn**	**03 40 56.1**	**+2.1**
	comp=N,185nm,0.1s							
PNCL	**Nicolau / Gran**	**1.81**	**30**	⇑*e*Pn		**Pn**	**03 40 33.8**	**+2.2**
PNCL				*e*Sn		**Sn**	**03 40 56.9**	**+2.4**
PNCL				A		A	03 40 58.7	
	comp=N,134nm,0.1s							
PNCL	**Nicolau / Gran**	**1.81**	**30**	⇑*e*Pn		**Pn**	**03 40 33.8**	**+2.2**
PNCL				*e*Sn		**Sn**	**03 40 56.9**	**+2.4**
	comp=N,134nm,0.1s							
EGRO	**El Granado**	**2.01**	**60**	⇑P		**Pn**	**03 40 36.8**	**+2.4**
	comp=N,7.0nm,0.1s,SNR=18							
EGRO				S		**Sn**	**03 41 01.7**	**+2.2**
	comp=N,109nm,0.1s,SNR=4.9							
EGRO	**El Granado**	**2.01**	**60**	P		**Pn**	**03 40 36.8**	**+2.4**
	comp=N,7.0nm,0.1s,SNR=18							
EGRO				S		**Sn**	**03 41 01.7**	**+2.2**
	comp=N,109nm,0.1s,SNR=4.9							
PBEJ	**Beja**	**2.06**	**44**	⇑*e*Pn		**Pn**	**03 40 37.4**	**+2.3**
PBEJ				*e*Sn		**Sn**	**03 41 03.2**	**+2.3**
PBEJ				A		A	03 41 05.2	
	comp=N,86nm,0.1s							
PBEJ	**Beja**	**2.06**	**44**	P		**Pn**	**03 40 37.4**	**+2.3**
PBEJ				S		**Sn**	**03 41 03.2**	**+2.3**
	comp=N,43nm,0.1s							
PBEJ	**Beja**	**2.06**	**44**	P		**Pn**	**03 40 37.4**	**+2.3**
PBEJ				S		**Sn**	**03 41 03.2**	**+2.3**
	comp=N,43nm,0.1s							
LIS	**Lisbon**	**2.20**	**11**	*e*S		**Sn**	**03 41 05.8**	**+1.4**
LIS				AML		AML	03 41 07.3	
	comp=N,410nm,0.2s							
LIS	**Lisbon**	**2.20**	**11**	*e*Sn		**Sn**	**03 41 06.0**	**+1.7**
LIS				A		A	03 41 08.3	
	comp=N,250nm,0.3s							
LIS	**Lisbon**	**2.20**	**11**	S		**Sn**	**03 41 05.8**	**+1.4**
	comp=N,410nm,0.2s							
LIS	**Lisbon**	**2.20**	**11**	*e*Sn		**Sn**	**03 41 06.0**	**+1.7**
	comp=N,250nm,0.3s							
PMST	**Lisbon--Monsan**	**2.22**	**10**	*e*Pn		**Pn**	**03 40 38.9**	**+1.7**
PMST				*e*Sn		**Sn**	**03 41 06.4**	**+1.7**
PMST				A		A	03 41 08.5	
	comp=N,332nm,0.2s							
PMST	**Lisbon--Monsan**	**2.22**	**10**	*e*Pn		**Pn**	**03 40 38.9**	**+1.7**
PMST				*e*Sn		**Sn**	**03 41 06.4**	**+1.7**
	comp=N,332nm,0.2s							
MOE	**Montemor**	**2.23**	**28**	*e*Pn		**Pn**	**03 40 38.1**	**+0.7**
MOE				*e*Sn		**Sn**	**03 41 05.4**	**+0.3**
MOE	**Montemor**	**2.23**	**28**	P		**Pn**	**03 40 38.1**	**+0.7**
MOE				S		**Sn**	**03 41 05.4**	**+0.3**
MOE	**Montemor**	**2.23**	**28**	P		**Pn**	**03 40 38.1**	**+0.7**
MOE				*e*Sn		**Sn**	**03 41 05.4**	**+0.3**
EVO	**Evora**	**2.38**	**33**	*e*Pn		**Pn**	**03 40 41.6**	**+2.2**
EVO				*e*Sn		**Sn**	**03 41 10.4**	**+1.7**
EVO				A		A	03 41 12.3	
	comp=N,256nm,0.1s							
EVO	**Evora**	**2.38**	**33**	P		**Pn**	**03 40 41.6**	**+2.2**
EVO				S		**Sn**	**03 41 10.4**	**+1.7**
	comp=N,256nm,0.1s							
EVO	**Evora**	**2.38**	**33**	P		**Pn**	**03 40 41.6**	**+2.2**
EVO				S		**Sn**	**03 41 10.4**	**+1.7**
	comp=N,256nm,0.1s							
PBAR	**Barrancos**	**2.65**	**52**	*e*Pn		**Pn**	**03 40 45.5**	**+2.3**
PBAR				*e*Sn		**Sn**	**03 41 17.9**	**+2.5**
PBAR				A		A	03 41 20.8	
	comp=N,104nm,0.2s							
PBAR	**Barrancos**	**2.65**	**52**	P		**Pn**	**03 40 45.5**	**+2.3**
PBAR				S		**Sn**	**03 41 17.9**	**+2.5**
	comp=N,104nm,0.2s							
PBAR	**Barrancos**	**2.65**	**52**	P		**Pn**	**03 40 45.5**	**+2.3**
PBAR				S		**Sn**	**03 41 17.9**	**+2.5**
	comp=N,104nm,0.2s							
EMIN	**Mina Concepcio**	**2.69**	**62**	⇓P		**Pn**	**03 40 45.7**	**+2.0**
	comp=N,4.3nm,0.3s,SNR=18							
EMIN				S		**Sn**	**03 41 18.0**	**+1.7**
	comp=N,31nm,0.1s,SNR=12							
EMIN	**Mina Concepcio**	**2.69**	**62**	P		**Pn**	**03 40 45.7**	**+2.0**
	comp=N,4.3nm,0.3s,SNR=18							
EMIN				S		**Sn**	**03 41 18.0**	**+1.7**
	comp=N,31nm,0.1s,SNR=12							
ALMR	**Almeirim**	**2.74**	**18**	*e*P		**Pn**	**03 40 46.6**	**+2.1**
ALMR				*e*S		**Sn**	**03 41 18.7**	**+1.0**
ALMR				AML		AML	03 41 19.5	
	comp=N,70nm,0.1s							
ALMR	**Almeirim**	**2.74**	**18**	P		**Pn**	**03 40 46.6**	**+2.1**
ALMR				S		**Sn**	**03 41 18.7**	**+1.0**
	comp=N,35nm,0.1s							
ALMR	**Almeirim**	**2.74**	**18**	P		**Pn**	**03 40 46.6**	**+2.1**
ALMR				S		**Sn**	**03 41 18.7**	**+1.0**
	comp=N,35nm,0.1s							
PMTG	**Montargil**	**2.77**	**24**	*e*Pn		**Pn**	**03 40 47.0**	**+2.3**
PMTG				*e*Sn		**Sn**	**03 41 19.2**	**+1.0**
PMTG				A		A	03 41 21.4	
	comp=N,158nm,0.3s							
PMTG	**Montargil**	**2.77**	**24**	*e*Pn		**Pn**	**03 40 47.0**	**+2.3**
PMTG				*e*Sn		**Sn**	**03 41 19.2**	**+1.0**
	comp=N,158nm,0.3s							
PESTR	**Estremoz**	**2.84**	**35**	⇑*e*Pn		**Pn**	**03 40 47.7**	**+1.9**
PESTR				*e*Sn		**Sn**	**03 41 21.2**	**+1.0**
PESTR				A		A	03 41 24.1	
	comp=N,39nm,0.2s							
PESTR	**Estremoz**	**2.84**	**35**	P		**Pn**	**03 40 47.7**	**+1.9**
PESTR				S		**Sn**	**03 41 21.2**	**+1.0**
	comp=N,39nm,0.2s							
PESTR	**Estremoz**	**2.84**	**35**	P		**Pn**	**03 40 47.7**	**+1.9**
PESTR				S		**Sn**	**03 41 21.2**	**+1.0**
	comp=N,39nm,0.2s							
GIBL	**Gibalbin**	**2.99**	**84**	S		**Sn**	**03 41 25.0**	**+1.2**
GIBL	**Gibalbin**	**2.99**	**84**	*e*S		**Sn**	**03 41 25.0**	**+1.2**
EBAD	**Badajoz**	**3.05**	**43**	⇑P		**Pn**	**03 40 50.6**	**+1.9**
	comp=N,4.8nm,0.2s,SNR=18							
EBAD				S		**Sn**	**03 41 26.4**	**+1.1**
	comp=N,180nm,0.2s,SNR=5.0							
EBAD	**Badajoz**	**3.05**	**43**	P		**Pn**	**03 40 50.6**	**+1.9**
	comp=N,4.8nm,0.2s,SNR=18							
EBAD				S		**Sn**	**03 41 26.4**	**+1.1**
	comp=N,180nm,0.2s,SNR=5.0							
ESPR	**Espera**	**3.08**	**83**	P		**Pn**	**03 40 50.5**	**+1.4**
	comp=N,8.9nm,0.2s,SNR=7.9							
ESPR	**Espera**	**3.08**	**83**	P		**Pn**	**03 40 50.5**	**+1.4**
	comp=N,8.9nm,0.2s,SNR=7.9							
PTOM	**Tomar**	**3.22**	**18**	*e*Pn		**Pn**	**03 40 52.9**	**+1.9**
PTOM				*e*Sn		**Sn**	**03 41 30.0**	**+0.5**
PTOM				A		A	03 41 33.1	
	comp=N,165nm,0.4s							
PTOM	**Tomar**	**3.22**	**18**	P		**Pn**	**03 40 52.9**	**+1.9**
PTOM				S		**Sn**	**03 41 30.0**	**+0.5**
	comp=N,83nm,0.4s							
PTOM	**Tomar**	**3.22**	**18**	P		**Pn**	**03 40 52.9**	**+1.9**
PTOM				S		**Sn**	**03 41 30.0**	**+0.5**
	comp=N,83nm,0.4s							
ALJ	**Aljibe**	**3.24**	**89**	S		**Sn**	**03 41 27.9**	**-2.1**
ALJ	**Aljibe**	**3.24**	**89**	*e*S		**Sn**	**03 41 27.9**	**-2.1**
EJIF	**Jimena Fronter**	**3.39**	**90**	P		**Pn**	**03 40 55.6**	**+2.3**
	comp=N,3.4nm,0.2s,SNR=7.9							
EJIF				S		**Sn**	**03 41 31.0**	**-2.6**
	comp=N,18nm,0.3s,SNR=7.9							
EJIF	**Jimena Fronter**	**3.39**	**90**	P		**Pn**	**03 40 55.6**	**+2.3**
	comp=N,3.4nm,0.2s,SNR=7.9							
EJIF				S		**Sn**	**03 41 31.0**	**-2.6**
	comp=N,18nm,0.3s,SNR=7.9							
PMRV	**Marv??o**	**3.39**	**31**	*e*Pn		**Pn**	**03 40 55.5**	**+2.1**
PMRV				*e*Sn		**Sn**	**03 41 34.2**	**+0.5**
PMRV				A		A	03 41 36.8	
	comp=N,145nm,0.4s							
PMRV	**Marv??o**	**3.39**	**31**	P		**Pn**	**03 40 55.5**	**+2.1**
PMRV				S		**Sn**	**03 41 34.2**	**+0.5**
	comp=N,145nm,0.4s							
PMRV	**Marv??o**	**3.39**	**31**	P		**Pn**	**03 40 55.5**	**+2.1**
PMRV				S		**Sn**	**03 41 34.2**	**+0.5**
	comp=N,145nm,0.4s							
LIJA	**Lijar**	**3.45**	**83**	P		Pn	03 40 59.0	+4.8
LIJA				S		**Sn**	**03 41 33.7**	**-1.5**
LIJA	**Lijar**	**3.45**	**83**	*e*P		Pn	03 40 59.0	+4.8
LIJA				*e*S		**Sn**	**03 41 33.7**	**-1.5**
ECEU	**Ceuta**	**3.54**	**99**	P		**Pn**	**03 40 57.3**	**+1.9**
	comp=N,4.6nm,0.2s,SNR=7.9							
ECEU				S		Sn	03 41 32.7	-4.5
	comp=N,15nm,0.2s,SNR=7.9							
ECEU	**Ceuta**	**3.54**	**99**	P		**Pn**	**03 40 57.3**	**+1.9**
	comp=N,4.6nm,0.2s,SNR=7.9							
ECEU				S		Sn	03 41 32.7	-4.5
	comp=N,15nm,0.2s,SNR=7.9							
PCAS	**Casmilo, Conde**	**3.62**	**14**	*e*Pn		**Pn**	**03 40 58.3**	**+1.8**
PCAS				*e*Sn		**Sn**	**03 41 39.7**	**+0.4**
PCAS				A		A	03 41 44.0	
	comp=N,46nm,0.2s							
PCAS	**Casmilo, Conde**	**3.62**	**14**	*e*Pn		**Pn**	**03 40 58.3**	**+1.8**
PCAS				*e*Sn		**Sn**	**03 41 39.7**	**+0.4**
	comp=N,46nm,0.2s							
PCBR	**Castelo Branco**	**3.71**	**27**	*e*Pn		**Pn**	**03 41 00.0**	**+2.2**
PCBR				*e*Sn		**Sn**	**03 41 42.7**	**+1.1**
PCBR				A		A	03 41 46.2	
	comp=N,41nm,0.5s							
PCBR	**Castelo Branco**	**3.71**	**27**	P		**Pn**	**03 41 00.0**	**+2.2**
PCBR				S		**Sn**	**03 41 42.7**	**+1.1**
	comp=N,20nm,0.5s							
PCBR	**Castelo Branco**	**3.71**	**27**	P		**Pn**	**03 41 00.0**	**+2.2**
PCBR				S		**Sn**	**03 41 42.7**	**+1.1**
	comp=N,20nm,0.5s							
ECAB	**El Cabril**	**3.72**	**65**	⇓P		**Pn**	**03 40 59.9**	**+2.0**
	comp=N,6.5nm,0.3s,SNR=18							
ECAB				S		**Sn**	**03 41 42.3**	**+0.5**
	comp=N,32nm,0.1s,SNR=12							
ECAB	**El Cabril**	**3.72**	**65**	P		**Pn**	**03 40 59.9**	**+2.0**

ECOG Cogollos-Vega 4.95 80 P **Pn** 03 41 17.3 +2.4
comp=N,1.3nm,0.2s,SNR=7.9
ECOG S **Sn** 03 42 12.2 0.0
comp=N,16nm,0.3s,SNR=9.9
ECOG Cogollos-Vega 4.95 80 P **Pn** 03 41 17.3 +2.4
comp=N,1.3nm,0.2s,SNR=7.9
ECOG S **Sn** 03 42 12.2 0.0
comp=N,16nm,0.3s,SNR=9.9
PVRL Vila Real 4.96 17 *e*Pn **Pn** 03 41 16.4 +1.4
PVRL *e*Sn **Sn** 03 42 10.9 -1.5
PVRL A A 03 42 14.9
comp=N,81nm,0.2s
PVRL Vila Real 4.96 17 P **Pn** 03 41 16.4 +1.4
PVRL S **Sn** 03 42 10.9 -1.5
comp=N,41nm,0.2s
PVRL Vila Real 4.96 17 P **Pn** 03 41 16.4 +1.4
PVRL *e*Sn **Sn** 03 42 10.9 -1.5
comp=N,81nm,0.2s
KIB El Ksiba 4.97 142 P Pn 03 41 13.0 -2.2
KIB S Sn 03 42 04.0 -8.7
KIB El Ksiba 4.97 142 *i* P Pn 03 41 13.0 -2.2
KIB S Sn 03 42 04.0 -8.7
CIA Chichaoua 5.03 171 P Pn 03 41 11.0 -4.9
CIA S Sn 03 42 02.0 -12
CIA Chichaoua 5.03 171 P Pn 03 41 11.0 -4.9
CIA S Sn 03 42 02.0 -12
EQUE Quentar 5.04 81 P Pn 03 41 19.4 +3.3
comp=N,1.6nm,0.3s,SNR=7.6
EQUE S **Sn** 03 42 14.1 -0.4
comp=N,6.5nm,0.2s,SNR=6.8
EQUE Quentar 5.04 81 P Pn 03 41 19.4 +3.3
comp=N,1.6nm,0.3s,SNR=7.6
EQUE S **Sn** 03 42 14.1 -0.4
comp=N,6.5nm,0.2s,SNR=6.8
MVO Moncorvo 5.05 23⇑ *e*Pn **Pn** 03 41 17.9 +1.7
MVO *e*Sn **Sn** 03 42 13.3 -1.3
MVO A A 03 42 17.1
comp=N,56nm,0.2s
MVO Moncorvo 5.05 23 ⇑P **Pn** 03 41 17.8 +1.6
comp=N,17nm,0.2s,SNR=18
MVO S **Sn** 03 42 13.9 -0.7
comp=N,30nm,0.1s,SNR=7.9
MVO Moncorvo 5.05 23 P **Pn** 03 41 17.8 +1.6
comp=N,17nm,0.2s,SNR=18
MVO *e*Sn **Sn** 03 42 13.3 -1.3
comp=N,56nm,0.2s
MVO S Sb 03 42 13.9 -16
comp=N,30nm,0.1s,SNR=7.9
TZC Tazercounte 5.12 148 P Pn 03 41 14.0 -3.3
TZC S Sn 03 42 07.0 -10
TZC Tazercounte 5.12 148 P Pn 03 41 14.0 -3.3
TZC S Sn 03 42 07.0 -10
CZD Col de Zad 5.18 131 P Pn 03 41 16.0 -2.2
CZD S Sn 03 42 11.0 -7.2
CZD Col de Zad 5.18 131 *i* P Pn 03 41 16.0 -2.2
CZD S Sn 03 42 11.0 -7.2
PCAB Cabril 5.31 13 *e*Pn **Pn** 03 41 21.0 +1.2
PCAB *e*Sn **Sn** 03 42 19.9 -1.1
PCAB A A 03 42 24.6
comp=N,20nm,0.1s
PCAB Cabril 5.31 13 P **Pn** 03 41 21.0 +1.2
PCAB S **Sn** 03 42 19.9 -1.1
comp=N,10nm,0.1s
PCAB Cabril 5.31 13 P **Pn** 03 41 21.0 +1.2
PCAB S **Sn** 03 42 19.9 -1.1
comp=N,10nm,0.1s
GORA Gorafe 5.39 78 P **Pn** 03 41 22.9 +2.0
comp=N,1.0nm,0.1s,SNR=7.9
GORA S **Sn** 03 42 22.7 -0.3
comp=N,18nm,0.2s,SNR=7.9
GORA Gorafe 5.39 78 P **Pn** 03 41 22.9 +2.0
comp=N,1.0nm,0.1s,SNR=7.9
GORA S **Sn** 03 42 22.7 -0.3
comp=N,18nm,0.2s,SNR=7.9
EQES Quesada 5.42 75 P **Pn** 03 41 22.9 +1.5
comp=N,1.4nm,0.4s,SNR=24
EQES S **Sn** 03 42 23.7 -0.1
comp=N,20nm,0.2s
EQES Quesada 5.42 75 P **Pn** 03 41 22.9 +1.5
comp=N,1.4nm,0.4s,SNR=24
EQES S **Sn** 03 42 23.7 -0.1
comp=N,20nm,0.2s
ELOB Lobios 5.46 13 P **Pn** 03 41 23.2 +1.4
comp=N,4.7nm,0.3s,SNR=30
ELOB S **Sn** 03 42 23.0 -1.7
comp=N,35nm,0.1s,SNR=11
ELOB Lobios 5.46 13 P **Pn** 03 41 23.2 +1.4
comp=N,4.7nm,0.3s,SNR=30
ELOB S **Sn** 03 42 23.0 -1.7
comp=N,35nm,0.1s,SNR=11
EBER Berja 5.46 84 P **Pn** 03 41 24.2 +2.2
comp=N,8.3nm,0.9s,SNR=6.1
EBER S **Sn** 03 42 24.8 -0.2
comp=N,10nm,0.3s,SNR=5.4
EBER Berja 5.46 84 P **Pn** 03 41 24.2 +2.2
comp=N,8.3nm,0.9s,SNR=6.1
EBER S **Sn** 03 42 24.8 -0.2
comp=N,10nm,0.3s,SNR=5.4
ESDC Sonseca Array 5.48 54 P **Pn** 03 41 23.7 +1.6
comp=N,5.7nm,0.2s,baz=238,slow=13,SNR=165
ESDC S **Sn** 03 42 24.4 -0.8
comp=N,1.2nm,0.2s,baz=242,slow=23,SNR=3.6
ESDC Sonseca Array 5.48 54 P **Pn** 03 41 23.7 +1.6
comp=N,5.7nm,0.2s,SNR=165
ESDC S **Sn** 03 42 24.4 -0.8
comp=N,1.2nm,0.2s,SNR=3.6
PGAV Gavieira, Arco 5.52 11 *e*Pn **Pn** 03 41 23.7 +1.0
PGAV *e*Sn **Sn** 03 42 23.9 -2.3
PGAV A A 03 42 28.6
comp=N,29nm,0.2s
PGAV Gavieira, Arco 5.52 11 *e*Pn **Pn** 03 41 23.7 +1.0
PGAV *e*Sn **Sn** 03 42 23.9 -2.3
comp=N,29nm,0.2s
OUK Oukaimeden 5.53 164 P Pn 03 41 19.0 -4.1
OUK S Sn 03 42 15.0 -12
OUK Oukaimeden 5.53 164 P Pn 03 41 19.0 -4.1
OUK S Sn 03 42 15.0 -12
PBRG Braganca 5.72 23 *e*Pn **Pn** 03 41 26.9 +1.5
PBRG *e*Sn **Sn** 03 42 29.7 -1.4
PBRG A A 03 42 33.8
comp=N,29nm,0.1s
PBRG Braganca 5.72 23 P **Pn** 03 41 26.9 +1.5
PBRG S **Sn** 03 42 29.7 -1.4
comp=N,15nm,0.1s
PBRG Braganca 5.72 23 P **Pn** 03 41 26.9 +1.5
PBRG S **Sn** 03 42 29.7 -1.4
comp=N,15nm,0.1s
EHUE Huescar 5.79 75 S **Sn** 03 42 32.4 -0.6
comp=N,10nm,0.1s,SNR=5.1
EHUE Huescar 5.79 75 S **Sn** 03 42 32.4 -0.6
comp=N,10nm,0.1s,SNR=5.1
ECAL Calabor 5.85 22 P **Pn** 03 41 28.6 +1.4
comp=N,11nm,0.3s,SNR=48
ECAL S **Sn** 03 42 34.0 -0.3
comp=N,47nm,0.2s,SNR=10
ECAL Calabor 5.85 22 P **Pn** 03 41 28.6 +1.4
comp=N,11nm,0.3s,SNR=48
ECAL S **Sn** 03 42 34.0 -0.3
comp=N,47nm,0.2s,SNR=10
SESP Santiago Espad 5.89 72 P **Pn** 03 41 29.5 +1.6
comp=N,1.1nm,0.1s,SNR=7.9
SESP S **Sn** 03 42 34.8 -0.8
comp=N,24nm,0.1s,SNR=7.9
SESP Santiago Espad 5.89 72 P **Pn** 03 41 29.5 +1.6
comp=N,1.1nm,0.1s,SNR=7.9
SESP S **Sn** 03 42 34.8 -0.8
comp=N,24nm,0.1s,SNR=7.9
GUD Guadarrama 5.95 45 P **Pn** 03 41 30.3 +1.6
comp=N,7.1nm,0.3s,SNR=54
GUD S **Sn** 03 42 35.8 -1.1
comp=N,24nm,0.3s,SNR=8.1
GUD Guadarrama 5.95 45 P **Pn** 03 41 30.3 +1.6
comp=N,7.1nm,0.3s,SNR=54
GUD S **Sn** 03 42 35.8 -1.1
comp=N,24nm,0.3s,SNR=8.1
ENIJ Nijar 6.01 84 S **Sn** 03 42 37.3 -1.0
comp=N,8.8nm,0.3s,SNR=7.9
ENIJ Nijar 6.01 84 S **Sn** 03 42 37.3 -1.0
comp=N,8.8nm,0.3s,SNR=7.9
ZFT Errachidia 6.30 134 P Pn 03 41 32.0 -1.5
ZFT S Sn 03 42 38.0 -7.7
ZFT Errachidia 6.30 134 P Pn 03 41 32.0 -1.5
ZFT S Sn 03 42 38.0 -7.7
EAGO Agolada(Pontev 6.36 11 P **Pn** 03 41 35.1 +0.9
comp=N,5.2nm,0.1s,SNR=7.9
EAGO S **Sn** 03 42 43.9 -3.0
comp=N,18nm,0.1s,SNR=7.9
EAGO Agolada(Pontev 6.36 11 P **Pn** 03 41 35.1 +0.9
comp=N,5.2nm,0.1s,SNR=7.9
EAGO S **Sn** 03 42 43.9 -3.0
comp=N,18nm,0.1s,SNR=7.9
EMAZ Mazaricos 6.41 5 ⇑P **Pn** 03 41 35.1 +0.2
comp=N,4.9nm,0.1s,SNR=18
EMAZ S Sn 03 42 44.5 -3.6
comp=N,49nm,0.2s,SNR=7.9
EMAZ Mazaricos 6.41 5 P **Pn** 03 41 35.1 +0.2
comp=N,4.9nm,0.1s,SNR=18
EMAZ S Sn 03 42 44.5 -3.7
comp=N,49nm,0.2s,SNR=7.9
ETOB Tobarra 6.78 70 P **Pn** 03 41 41.3 +1.3
comp=N,3.1nm,0.6s,SNR=25
ETOB S **Sn** 03 42 55.3 -2.1
comp=N,3.7nm,0.1s,SNR=6.8
ETOB Tobarra 6.78 70 P **Pn** 03 41 41.3 +1.3
comp=N,3.1nm,0.6s,SNR=25
ETOB S **Sn** 03 42 55.3 -2.1
comp=N,3.7nm,0.1s,SNR=6.8
EMUR La Murta 6.85 77 P **Pn** 03 41 42.9 +1.9
comp=N,0.3nm,0.2s,SNR=7.9
EMUR S **Sn** 03 42 57.5 -1.6
comp=N,10nm,0.4s,SNR=6.8
EMUR La Murta 6.85 77 P **Pn** 03 41 42.9 +1.9
comp=N,0.3nm,0.2s,SNR=7.9
EMUR S **Sn** 03 42 57.5 -1.6
comp=N,10nm,0.4s,SNR=6.8
EPON Pontenova 7.04 15 P **Pn** 03 41 44.7 +1.2
comp=N,2.5nm,0.4s,SNR=12
EPON S **Sn** 03 43 00.9 -2.7
comp=N,5.1nm,0.1s,SNR=6.1
EPON Pontenova 7.04 15 P **Pn** 03 41 44.7 +1.2
comp=N,2.5nm,0.4s,SNR=12
EPON S **Sn** 03 43 00.9 -2.7
comp=N,5.1nm,0.1s,SNR=6.1
PMAR Madeira 7.08 239 *e*Sn Sn 03 42 49.0 -16
PMAR Madeira 7.08 239 S Sn 03 42 49.0 -16
PMAR Madeira 7.08 239 S Sn 03 42 49.0 -16
ETOR Torete 7.33 52 P **Pn** 03 41 49.8 +2.3
comp=N,20nm,0.3s,SNR=37
ETOR S **Sn** 03 43 08.9 -1.9
comp=N,44nm,0.2s,SNR=6.6
ETOR Torete 7.33 52 P **Pn** 03 41 49.8 +2.3
comp=N,20nm,0.3s,SNR=37
ETOR S **Sn** 03 43 08.9 -1.9
comp=N,44nm,0.2s,SNR=6.6
AFON Font Roja 7.55 71 P **Pn** 03 41 52.3 +1.7
comp=N,0.1nm,0.1s,SNR=7.9
AFON S **Sn** 03 43 14.3 -1.9
comp=N,5.0nm,0.4s,SNR=7.9
AFON Font Roja 7.55 71 P **Pn** 03 41 52.3 +1.7
comp=N,0.1nm,0.1s,SNR=7.9
AFON S **Sn** 03 43 14.4 -1.9
comp=N,5.0nm,0.4s,SNR=7.9
EARI Arriondas 7.56 26 P **Pn** 03 41 52.8 +2.1
comp=N,1.1nm,0.3s,SNR=17
EARI S **Sn** 03 43 14.5 -2.0
comp=N,2.8nm,0.3s,SNR=5.8
EARI Arriondas 7.56 26 P **Pn** 03 41 52.8 +2.1
comp=N,1.1nm,0.3s,SNR=17
EARI S **Sn** 03 43 14.5 -2.0
comp=N,2.8nm,0.3s,SNR=5.8
EFAM Famara 8.08 205 S Sn 03 43 13.8 -15
comp=N,7.0nm,0.2s,SNR=7.9
EFAM Famara 8.08 205 S Sn 03 43 13.8 -15
comp=N,7.0nm,0.2s,SNR=7.9
EMOS Mosqueruela 8.16 59 P **Pn** 03 42 01.8 +2.7
comp=N,1.3nm,0.4s,SNR=8.0
EMOS S **Sn** 03 43 28.8 -2.6
comp=N,4.7nm,0.2s,SNR=7.0
EMOS Mosqueruela 8.16 59 P **Pn** 03 42 01.8 +2.7
comp=N,1.3nm,0.4s,SNR=8.0
EMOS S **Sn** 03 43 28.8 -2.6
comp=N,4.7nm,0.2s,SNR=7.0
ELAN Lanestosa 8.22 34 P **Pn** 03 42 02.0 +2.4
comp=N,4.1nm,0.8s,SNR=12
ELAN S **Sn** 03 43 30.3 -2.3
comp=N,2.5nm,0.3s
ELAN Lanestosa 8.22 34 P **Pn** 03 42 02.0 +2.4
comp=N,4.1nm,0.8s,SNR=12
ELAN S **Sn** 03 43 30.3 -2.3
comp=N,2.5nm,0.3s
CFUE Fuerteventura 8.66 206 S Sn 03 43 26.8 -17
comp=N,7.2nm,0.2s,SNR=7.9
CFUE Fuerteventura 8.66 206 S Sn 03 43 26.8 -17
comp=N,7.2nm,0.2s,SNR=7.9
ESAC San Caprasio 8.82 51 S **Sn** 03 43 46.6 -0.8
comp=N,22nm,0.3s,SNR=4.0
ESAC San Caprasio 8.82 51 S **Sn** 03 43 46.6 -0.8
comp=N,22nm,0.3s,SNR=4.0
ERTA Horta de San J 8.97 58 P **Pn** 03 42 13.2 +3.1
comp=N,0.4nm,0.1s,SNR=4.0
ERTA S **Sn** 03 43 49.2 -1.9
comp=N,1.2nm,0.2s,SNR=7.9
ERTA Horta de San J 8.97 58 P **Pn** 03 42 13.1 +3.1
comp=N,0.4nm,0.1s,SNR=4.0
ERTA S **Sn** 03 43 49.2 -1.9
comp=N,1.2nm,0.2s,SNR=7.9
IELO Elcoad 9.04 43 P **Pn** 03 42 13.5 +2.5
comp=N,1.1nm,0.1s,SNR=7.9
IELO S **Sn** 03 43 49.6 -3.2
comp=N,2.2nm,0.2s,SNR=7.9
IELO Elcoad 9.04 43 P **Pn** 03 42 13.5 +2.5
comp=N,1.1nm,0.1s,SNR=7.9
IELO S **Sn** 03 43 49.6 -3.2
comp=N,2.2nm,0.2s,SNR=7.9
EALK Alkurruntz 9.15 41 P **Pn** 03 42 14.2 +1.7
comp=N,0.8nm,0.2s,SNR=7.9
EALK S Sn 03 43 51.4 -4.2
comp=N,10nm,0.4s,SNR=7.9
EALK Alkurruntz 9.15 41 P **Pn** 03 42 14.2 +1.7
comp=N,0.8nm,0.2s,SNR=7.9
EALK S Sn 03 43 51.4 -4.1
comp=N,10nm,0.4s,SNR=7.9
SJPF Ste Jean 9.23 42 *e*Pn **Pn** 03 42 15.9 +2.4
SJPF *e*Sn **Sn** 03 43 54.1 -3.3
comp=N,5.9nm,0.5s
SJPF Ste Jean 9.23 42 P **Pn** 03 42 15.9 +2.4
SJPF S **Sn** 03 43 54.1 -3.3
comp=N,3.0nm,0.5s
SJPF Ste Jean 9.23 42 P **Pn** 03 42 15.9 +2.4
SJPF S **Sn** 03 43 54.1 -3.3
comp=N,3.0nm,0.5s
ETSF Etsaut 9.46 45 *e*Pn **Pn** 03 42 19.0 +2.3
ETSF *e*Sn **Sn** 03 44 00.6 -2.5
comp=N,5.5nm,0.4s
ETSF Etsaut 9.46 45 P **Pn** 03 42 19.0 +2.3
ETSF S **Sn** 03 44 00.6 -2.5
comp=N,2.8nm,0.4s
ETSF Etsaut 9.46 45 P **Pn** 03 42 19.0 +2.3
ETSF S **Sn** 03 44 00.6 -2.5
comp=N,2.8nm,0.4s
EPF Esparros 10.06 47 *e*Pn **Pn** 03 42 27.3 +2.4
EPF *e*Sn **Sn** 03 44 14.6 -3.2
comp=N,5.2nm,0.3s
EPF Esparros 10.06 47 P **Pn** 03 42 27.3 +2.4
EPF S **Sn** 03 44 14.6 -3.2
comp=N,2.6nm,0.3s
EPF Esparros 10.06 47 P **Pn** 03 42 27.3 +2.4
EPF S **Sn** 03 44 14.6 -3.2
comp=N,2.6nm,0.3s
CSOR Sort 10.18 52 P **Pn** 03 42 28.4 +1.8
comp=N,0.3nm,0.1s,SNR=7.9
CSOR S **Sn** 03 44 18.2 -2.7
comp=N,3.1nm,0.5s,SNR=7.9
CSOR Sort 10.18 52 P **Pn** 03 42 28.4 +1.8
comp=N,0.3nm,0.1s,SNR=7.9
CSOR S **Sn** 03 44 18.2 -2.7
comp=N,3.1nm,0.5s,SNR=7.9
CFON Fontmartina 10.74 57 P **Pn** 03 42 37.1 +2.8
comp=N,0.4nm,0.2s,SNR=7.9
CFON Fontmartina 10.74 57 P **Pn** 03 42 37.1 +2.8
comp=N,0.4nm,0.2s,SNR=7.9
CLLI Llivia 10.77 53 P **Pn** 03 42 37.2 +2.5
comp=N,0.2nm,0.2s,SNR=7.9
CLLI S Sn 03 44 30.7 -4.6
comp=N,0.6nm,0.3s,SNR=7.9
CLLI Llivia 10.77 53 P **Pn** 03 42 37.2 +2.5
comp=N,0.2nm,0.2s,SNR=7.9
CLLI S Sn 03 44 30.7 -4.6
comp=N,0.6nm,0.3s,SNR=7.9
LFF La Frestale 11.51 40 *e*Pn **Pn** 03 42 45.8 +1.1
LFF *e*Sn Sn 03 44 48.7 -4.5
comp=N,2.9nm,0.5s
LFF La Frestale 11.51 40 P **Pn** 03 42 45.8 +1.1
LFF S Sn 03 44 48.7 -4.5
comp=N,1.4nm,0.5s
LFF La Frestale 11.51 40 P **Pn** 03 42 45.8 +1.1
LFF S Sn 03 44 48.7 -4.5
comp=N,1.4nm,0.5s
RJF Les Rejaudoux 12.16 41 *e*Pn **Pn** 03 42 54.1 +0.5
RJF *e*Sn Sn 03 45 04.2 -5.0
comp=N,1.2nm,0.3s
RJF Les Rejaudoux 12.16 41 P **Pn** 03 42 54.1 +0.5
RJF S Sn 03 45 04.2 -5.0
comp=N,0.6nm,0.3s
RJF Les Rejaudoux 12.16 41 P **Pn** 03 42 54.1 +0.5
RJF S Sn 03 45 04.2 -5.0
comp=N,0.6nm,0.3s
CAF Calviac 12.21 43 *e*Pn **Pn** 03 42 55.4 +1.1
CAF *e*Sn Sn 03 45 05.6 -4.8
comp=N,1.6nm,0.4s
CAF Calviac 12.21 43 P **Pn** 03 42 55.4 +1.1
CAF S Sn 03 45 05.6 -4.8
comp=N,0.8nm,0.4s
CAF Calviac 12.21 43 P **Pn** 03 42 55.4 +1.1
CAF S Sn 03 45 05.6 -4.8
comp=N,0.8nm,0.4s
MFF Saint Martin d 12.31 32 *e*Pn **Pn** 03 42 56.5 +0.9
MFF *e*Sn Sn 03 45 07.7 -5.1
comp=N,1.3nm,0.3s
MFF Saint Martin d 12.31 32 P **Pn** 03 42 56.5 +0.9
MFF S Sn 03 45 07.7 -5.1
comp=N,0.6nm,0.3s
MFF Saint Martin d 12.31 32 P **Pn** 03 42 56.5 +0.9
MFF S Sn 03 45 07.7 -5.1
comp=N,0.6nm,0.3s

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*GUC **20** 03:40:32.2±0.7, 38°.47S×74°.49W, h14km±12km, ML4.9*
*IDC **20** 03:40:37.4±0.8, 38°.19S×73°.87W, h0km, mb4.3/9, mb1 4.5/12, mb1mx4.3/35, mbtmp4.4/12, ML4.5/3, MS4.0/8, Ms1 3.9/8, ms1mx3.6/20, Error ellipse: s-maj=27.5km s-min=15.3km az=66.0*
*ISCJB **20** 03:40:38.7±0.3, 38°.20S±0°.03×73°.77W±0°.08, h18km, mb4.4/27, MS3.8/6, Error ellipse: s-maj=8.9km s-min=4.5km az=178.1*
*NEIC **20** 03:40:42.5±2.3, 38°.17S×73°.72W, h34km±15km, mb4.6/21, ML4.9(GUC), Error ellipse: s-maj=13.0km s-min=6.5km az=83.0*
NEIC Felt [IV] at Carahue and Puerto Saavedra, [III] at Angol and Tirua and [II] at Padre Las Casas. Also felt at Temuco.
*BJI **20** 03:40:42.8, 38°.20S×73°.70W, h34km*
ISC 20 03:40:39.9±0.4, 38°.20S±0°.04×73°.85W±0°.07, h18km, n89, σ1§10/82, mb4.5/27, MS3.9/6, 3C, Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
PSCH	**Puerto Saavedr**	**0.70**	**149**⇑	*i*P	**Pn**		**03 40 53.5**	**-1.4**
PSCH				*i*S	**Sn**		**03 41 05.5**	**+0.3**
CCSP	**San Pedro de C**	**1.47**	**24**	*e*P	**Pn**		**03 41 04.2**	**-1.3**
CCSP				*i*S	**Sg**		**03 41 28.8**	**+1.3**
CCSP				IAML			03 41 39.3	
comp=N,11μm,0.5s								
VLCH	**Valdivia**	**1.67**	**164**⇑	*i*P	**Pn**		**03 41 07.1**	**-1.2**
VLCH				*i*S	**Sn**		**03 41 27.5**	**-1.8**
CCHI	**Chillan**	**2.13**	**42**	*i*P	**Pb**		**03 41 15.4**	**-2.5**
CCHI				*i*S	**Sg**		**03 41 48.0**	**-0.4**
CCHI				IAML			03 41 59.5	
comp=N,10μm,1.0s								
COCH	**Cobquecura**	**2.23**	**23**⇑	*i*P	**Pn**		**03 41 15.1**	**-0.8**
COCH				IAML			03 42 02.6	
comp=E,5μm,0.6s								
TALC	**Talca**	**3.31**	**33**	*e*P	**Pn**		**03 41 31.2**	**+0.4**
TALC				*i*S	**Sb**		**03 42 15.6**	**-2.5**
PLCA	**Paso Flores**	**3.60**	**136**	*i*P	Pb		03 41 37.6	-5.4
PLCA				*i*S	**Sb**		**03 42 24.9**	**-1.5**
PLCA				IAML			03 42 41.2	
comp=Z,336nm,0.6s								
PLCA	**Paso Flores**	**3.60**	**136**	Pn	**Pn**		**03 41 36.1**	**+1.3**
comp=Z,4.8nm,0.3s,baz=318,slow=9.3,SNR=114								
PLCA				Lg	Lg		03 42 32.8	
comp=Z,22nm,0.3s,baz=42,slow=16,SNR=7.7								
ROC1	**El Roble**	**5.70**	**25**	*i*P	**Pn**		**03 42 02.9**	**-0.9**
ROC1	**El Roble**	**5.70**	**25**	*e*Pn	**Pn**		**03 42 03.0**	**-0.9**
ROCH	**El Roble**	**5.70**	**25**	*e*P	**Pn**		**03 42 02.4**	**-1.5**
ARCO	**CERRO ARCO**	**6.68**	**38**	*i*P	**Pn**		**03 42 17.5**	**+0.2**
ARCO				IAML			03 44 10.5	
comp=Z,24nm,0.6s								
RTLL	**Cerro Villicun**	**8.15**	**34**	*i*P	**Pn**		**03 42 36.4**	**-1.0**
MRA	**San Martin**	**8.80**	**51**	*i*P	**Pn**		**03 42 47.9**	**+1.6**
MRA				IAML			03 43 40.4	
comp=Z,16nm,0.6s								
CHRN	**Cochrane**	**9.09**	**175**	*e*Pn	**Pn**		**03 42 50.5**	**+0.3**
TRQA	**Tornquist**	**9.36**	**93**	*e*Pn	**Pn**		**03 42 55.2**	**+1.3**
LCO	**Las Campanas**	**9.53**	**17**	*e*Pn	**Pn**		**03 42 54.6**	**-1.8**
AGUA	**GUANDACOL**	**9.76**	**29**	*i*P	**Pn**		**03 42 58.0**	**-1.5**
PB04	**IPOC Station P**	**16.13**	**12**	*e*Pn	**P**		**03 44 27.4**	**-1.6**
comp=Z,122nm,1.4s								
USHA	**Ushuaia**	**17.04**	**169**	P	**P**		**03 44 38.1**	**-0.6**
comp=Z,9.1nm,0.3s,baz=289,slow=8.7,SNR=4.7								
USHA				LR	LR		03 52 21.5	
comp=Z,3μm,18.6s,baz=240,slow=41								
PB01	**IPOC Station P**	**17.51**	**14**	*e*Pn	Pn		03 44 38.2	-5.0
comp=Z,22nm,1.1s								
CPUP	**Villa Florida**	**18.28**	**54**	P	**P**		**03 44 51.5**	**-1.0**
comp=Z,0.4nm,0.3s,baz=249,slow=9.0,SNR=14								
CPUP				LR	LR		03 52 41.0	
comp=Z,378nm,20.1s,baz=230,slow=40								
PB11	**IPOC Station P**	**18.73**	**12**	*e*P	**Pn**		**03 45 01.4**	**+3.2**
comp=Z,60nm,0.9s								
LPAZ	**La Paz**	**22.40**	**15**	P	**P**		**03 45 39.2**	**+1.1**
comp=Z,8.5nm,0.9s,baz=180,slow=7.1,SNR=26								
LPAZ	**La Paz**	**22.40**	**15**	*e*P	**P**		**03 45 39.9**	**+1.9**
SIV	**San Ignacio**	**24.82**	**30**	P	**P**		**03 46 01.3**	**+0.1**
comp=Z,2.8nm,0.6s,baz=227,slow=8.3,SNR=8.0								
SIV				LR	LR		03 57 48.6	
comp=Z,437nm,18.4s,baz=214,slow=42								
PMSA	**Palmer Station**	**27.24**	**171**	LR	LR		03 55 52.7	
comp=Z,242nm,19.1s,baz=346,slow=34								
SAML	**Samuel**	**30.67**	**21**	*e*P	**P**		**03 46 52.9**	**-0.6**
comp=Z,2.8nm,0.8s								
OTAV	**Otavalo**	**38.48**	**353**	*e*P	**P**		**03 48 02.9**	**+1.5**
comp=Z,17nm,1.6s								
PTGA	**Pitinga**	**39.41**	**22**	P	**P**		**03 48 08.6**	**-0.1**
comp=Z,1.7nm,0.5s,baz=216,slow=10,SNR=6.7								
PTGA	**Pitinga**	**39.41**	**22**	*e*P	**P**		**03 48 08.7**	**0.0**
VNA3	**Neumayer Olymp**	**46.08**	**156**	P	**P**		**03 49 02.5**	**+0.2**
VNA2	**Neumayer--Watz**	**46.76**	**156**	P	**P**		**03 49 08.4**	**+0.7**
baz=289,slow=6.7								
SNAA	**Sanae**	**48.30**	**156**	P	**P**		**03 49 19.8**	**+0.1**
QSPA	**South Pole Qui**	**52.05**	**180**	*e*P	**P**		**03 49 46.2**	**-2.0**
comp=Z,33nm,1.0s								
RKT	**Rikitea**	**53.79**	**268**	*e*LR	LR		04 05 38.3	
comp=Z,201nm,28.0s								
RKT	**Rikitea**	**53.79**	**268**	*e*T	T		04 47 38.0	
comp=Z,1.6nm,0.3s								
TAOE	**Nuku Hiva Isla**	**65.97**	**278**	*e*LR	LR		04 11 17.7	
comp=Z,111nm,27.2s								
MEH	**Mehetia**	**66.92**	**265**	*e*T	T		05 04 05.3	
comp=Z,21nm,0.2s								
TVO	**Taravao**	**67.90**	**264**	*e*T	T		05 05 15.1	
comp=Z,1.0nm,0.2s								
TIAR	**Tiarei**	**68.11**	**264**	*e*T	T		05 05 34.0	
comp=Z,4.9nm,0.3s								
PPT2	**Papeete2**	**68.27**	**264**	*e*S	**S**		**04 00 38.6**	**-1.5**
comp=Z,64nm,23.8s								
PPT2	**Papeete2**	**68.27**	**264**	*e*LR	LR		04 12 19.4	
comp=Z,132nm,27.8s								
PPT	**Papeete**	**68.28**	**264**	LR	LR		04 14 41.5	
comp=Z,91nm,20.5s,baz=166,slow=30								
MAW	**Mawson**	**69.58**	**164**	P	**P**		**03 51 47.6**	**+0.4**
comp=Z,3.3nm,1.0s,baz=222,slow=5.1,SNR=4.1								
MAW				LR	LR		04 23 44.5	
comp=Z,97nm,18.9s,baz=238,slow=37								
LRAL	**Lakeview Retre**	**71.92**	**348**	*e*P	**P**		**03 52 01.6**	**-0.2**
comp=Z,6.5nm,1.2s								
JCT	**Junction City**	**72.49**	**337**	*e*P	**P**		**03 52 05.3**	**-0.1**
comp=Z,10nm,1.3s								
TXAR	**Lajitas Array**	**72.74**	**333**	P	**P**		**03 52 07.2**	**+0.3**
comp=Z,1.4nm,0.8s,baz=152,slow=8.1,SNR=15								
TXAR				LR	LR		04 18 08.8	
comp=Z,31nm,20.8s,baz=0.0,slow=31								
TX31	**Lajitas Ar. Si**	**72.74**	**333**	*e*P	**P**		**03 52 07.4**	**+0.5**
SWET	**Sewanee**	**73.90**	**350**	*e*P	**P**		**03 52 14.1**	**+0.6**
comp=Z,3.1nm,0.9s								
X301	**Greenbrier Sit**	**75.06**	**344**	*e*P	**P**		**03 52 20.8**	**+0.5**
comp=Z,7.6nm,0.9s								
WHAR	**Wooly Hollow**	**75.09**	**344**	*e*P	**P**		**03 52 21.4**	**+0.9**

	comp=Z,20nm,1.5s								
TUL1	**Leonard**	**76.48**	**342**	*e*P		**P**		03 52 28.7	**+0.3**
	comp=Z,19nm,1.4s								
DBIC	**Dimbokro**	**77.91**	**72**	P		**P**		03 52 37.9	**+1.0**
	comp=Z,4.1nm,0.7s,baz=212,slow=5.5,SNR=6.8								
ANMO	**Albuquerque**	**78.81**	**333**	*e*P		**P**		03 52 42.7	**+1.1**
	comp=Z,3.3nm,1.0s								
BOSA	**Boshof**	**79.41**	**118**	P		**P**		03 52 45.6	**+0.3**
	comp=Z,7.8nm,0.8s,baz=214,slow=5.5,SNR=11								
BOSA				LR		LR		04 27 50.9	
	comp=Z,26nm,18.0s,baz=192,slow=36								
T25A	**Trinidad**	**80.10**	**336**	*e*P		**P**		03 52 49.9	**+1.3**
	comp=Z,5.2nm,1.0s								
X16A	**Lo Mia Camp, P**	**80.23**	**329**	*e*P		**P**		03 52 50.4	**+1.0**
	comp=Z,3.4nm,1.0s								
SDCO	**Great Sand Dun**	**81.01**	**335**	*e*P		**P**		03 52 55.5	**+1.9**
	comp=Z,2.7nm,1.2s								
LBTB	**Lobatse**	**81.86**	**115**	*e*P		**P**		03 52 57.8	**-0.6**
	comp=Z,9.1nm,0.9s								
SMCO	**Snowmass**	**82.79**	**335**	*e*P		**P**		03 53 03.6	**+0.5**
	comp=Z,3.3nm,1.1s								
ECSD	**EROS Data Cent**	**84.12**	**344**	*e*P		P		03 53 05.5	-3.8
	comp=Z,8.7nm,1.0s								
P18A	**Preston Nutter**	**84.34**	**333**	*e*P		**P**		03 53 11.4	**+0.5**
	comp=Z,4.2nm,1.1s								
HWUT	**Hardware Ranch**	**86.56**	**333**	*e*P		**P**		03 53 22.1	**+0.4**
	comp=Z,6.7nm,1.3s								
BW06	**Boulder Array**	**86.88**	**335**	*e*P		**P**		03 53 23.6	**+0.3**
PDAR	**Pinedale Array**	**86.88**	**335**	P		**P**		03 53 25.0	**+1.6**
	comp=Z,0.4nm,0.7s,baz=175,slow=5.4,SNR=6.7								
TOA0	**Torodi Ar. Sit**	**87.00**	**71**	*e*P		**P**		03 53 24.1	**-0.2**
TORD	**Torodi Ar. Bea**	**87.00**	**71**	P		**P**		03 53 24.1	**-0.2**
	comp=Z,2.1nm,0.8s,baz=224,slow=5.2,SNR=22								
GERES	**GERESS Array B**	**116.11**	**47**	PKP		**PKPdf**		03 59 21.2	**-0.3**
	comp=Z,0.3nm,0.6s,baz=228,slow=2.5,SNR=4.2								
H11S2	**WAKE ISLAND Hyd**	**24.19**	**267**	T		T		06 15 44.7	
	baz=126,slow=74,SNR=10.0								
H11S1	**WAKE ISLAND Hyd**	**24.19**	**267**	T		T		06 15 49.9	
	baz=126,slow=74,SNR=8.3								
H11S3	**WAKE ISLAND Hyd**	**24.19**	**267**	T		T		06 15 45.8	
	baz=126,slow=74,SNR=8.9								
BRTR	**Keskin Array B**	**125.07**	**64**	PKP		**PKPdf**		03 59 37.5	**-1.5**
	comp=Z,1.1nm,1.0s,baz=183,slow=4.9,SNR=4.5								
SEY	**Seymchan**	**142.84**	**327**	PKP		**PKPdf**		04 00 11.8	**+0.6**
	comp=Z,2.6nm,1.0s,baz=185,slow=5.2,SNR=4.7								
ARU	**Arti**	**143.83**	**44**	PKP		PKPbc		04 00 11.0	+0.1
	comp=Z,1.8nm,0.3s,baz=321,slow=1.9,SNR=5.3								
AKTO	**Aktyubinsk**	**144.07**	**54**	PKP		**PKPdf**		04 00 11.9	**-1.9**
	comp=Z,4.3nm,0.6s,baz=299,slow=3.2,SNR=11								
TIXI	**Tiksi**	**144.52**	**348**	*e*PKPdf		**PKPab**		04 00 11.2	**-1.1**
ABKAR	**Akbulak array**	**145.33**	**56**	*e*PKPdf		**PKPdf**		04 00 15.9	**-0.1**
BVAR	**Borovoye Array**	**151.28**	**47**	PKPbc		**PKPbc**		04 00 32.3	**+0.7**
	comp=Z,2.4nm,0.6s,baz=320,slow=3.9,SNR=14								
AAK	**Ala-Archa**	**155.58**	**69**	PKPbc		PKPdf		04 00 42.2	+10
	comp=Z,0.8nm,0.5s,baz=342,slow=3.7,SNR=3.6								
AAK				PKPab		**PKPab**		04 00 59.2	**+0.7**
	comp=Z,2.3nm,0.7s,baz=200,slow=3.7,SNR=9.7								
KSH	**Kashi**	**156.51**	**77**	*e*PKP		**PKPdf**		04 00 34.3	**+0.7**
KSH				*ep*PKP		pPKPdf		04 00 44.8	+5.0
KSH				*e*PP		PP		04 04 45.3	+4.2
KURBB	**Kurchatov Arra**	**156.84**	**49**	PKP		**PKPdf**		04 00 33.4	**-0.1**
	comp=Z,0.4nm,0.7s,baz=289,slow=1.6,SNR=4.3								
KURBB				PKPab		**PKPab**		04 01 03.8	**+0.4**
	comp=Z,1.8nm,0.8s,baz=288,slow=4.8,SNR=14								
KURK	**Kurchatov**	**156.86**	**48**	PKP		**PKPdf**		04 00 33.4	**-0.1**
KURK				PKPab		**PKPab**		04 01 03.8	**+0.3**
ZALV	**Zalesovo Beam**	**158.52**	**36**	PKPab		**PKPab**		04 01 11.0	**+0.5**
	comp=Z,3.5nm,0.9s,baz=305,slow=5.2,SNR=6.4								
CMAR	**Chiang Mai Arr**	**159.35**	**160**	PKP		**PKPdf**		04 00 38.0	**+0.4**
	comp=Z,0.7nm,0.3s,baz=248,slow=1.0,SNR=4.4								
MKAR	**Makanchi Array**	**160.48**	**56**	PKP		**PKPdf**		04 00 37.9	**-0.1**
	comp=Z,0.5nm,0.7s,baz=354,slow=1.2,SNR=5.8								
MKAR				PKPab		**PKPab**		04 01 19.5	**+0.2**
	comp=Z,2.0nm,0.7s,baz=294,slow=4.1,SNR=17								
WMQ	**Urumqi**	**164.99**	**62**	*e*PKP		**PKPdf**		04 00 42.3	**-0.3**
CD2	**Chengdu**	**172.47**	**164**	PKP		**PKPdf**		04 00 46.8	**-1.0**
HHC	**Hu-ho-hao-te**	**175.04**	**304**	*e*PKP		**PKPdf**		04 00 48.3	**-0.2**

MEX 20 03:41:35.7±0.3,**27°58N**×**111°85W**,**h76**km±7km,**MD3.6,**
Gulf of California

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SRIG	**Santa Rosalia**	**0.43**	**233**	*i* P	Pn	03 41 47.1	-1.3
SRIG				*e*S	Sn	03 41 56.0	-1.8
GUYB	**Guaymas**	**0.93**	**70**	*e*P	Pn	03 41 52.2	-1.4
GUYB				*i* S	Sn	03 42 05.2	-1.7
HSIG		**1.64**	**29**	*e*P	Pn	03 42 01.6	-1.2
HSIG				*e*S	Sn	03 42 21.5	-1.7

*IDC **20** 03:45:50.8±14.0, 21°13S×176°25W, h315km±128km, mb3.7/5, mb1 3.7/6, mb1mx3.2/38, mbtmp4.4/6, Error ellipse: s-maj=75.0km s-min=33.6km az=50.0*

ISC 20 03:45:48.6±2.0,**21°1S**±0°3×**176°1W**±0°3,**h300**km,**n8,**
σ0s**62**/8,**mb3.7**/5,**Fiji Islands region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**16.26**	**263**	P	**P**	**03 49 20.5**	**+0.8**
	0.4nm,0.3s,baz=73,slow=19,SNR=4.5						
RPZ	**Rata Peaks**	**24.96**	**202**	P	**P**	**03 50 45.3**	**0.0**
	12nm,0.6s,baz=38,slow=1.8,SNR=7.7						
CTA	**Charters Tower**	**35.20**	**265**	P	**P**	03 52 15.0	**-0.2**
	3.5nm,0.5s,baz=84,slow=11,SNR=9.4						
STKA	**Stephens Creek**	**39.13**	**245**	P	**P**	03 52 48.1	**+0.2**
	2.1nm,0.6s,baz=76,slow=9.8,SNR=5.6						
ASAR	**Alice Springs**	**46.11**	**257**	P	**P**	**03 53 43.4**	**-0.4**
	2.3nm,0.8s,baz=89,slow=8.3,SNR=25						
WRA	**Warramunga Arr**	**46.27**	**262**	P	**P**	**03 53 44.2**	**-0.9**
	1.1nm,0.4s,baz=96,slow=7.8,SNR=8.7						
BRTR	**Keskin Array B**	**148.55**	**313**	PKPbc	**PKPbc**	**04 05 00.9**	**+0.4**
	0.4nm,0.6s,baz=95,slow=4.6,SNR=3.5						
GERES	**GERESS Array B**	**151.22**	**346**	PKPbc	**PKPbc**	**04 05 06.7**	**+0.1**
	0.4nm,0.7s,baz=48,slow=2.0,SNR=3.5						

*IDC **20** 03:49:15.1±6.5, 23°58S×179°93W, h436km±76km, mb3.7/8, mb1 3.9/9, mb1mx3.5/36, mbtmp4.5/9, Error ellipse: s-maj=66.6km s-min=22.7km az=176.0*

*ISCJB **20** 03:49:21.8±0.8, 23°9S±0°2×179°9E±0°2, h532km, mb4.0/8, Error ellipse: s-maj=26.1km s-min=16.4km az=152.1*

ISC 20 03:49:22.3±0.9,**24°0S**±0°2×**180°0W**±0°2,**h532**km,**n11,**
σ0s**77**/11,**mb3.9**/8,**South of Fiji Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
URZ	**Urewera**	**14.45**	**189**	P	**P**	**03 52 26.1**	**-0.1**
	1.6nm,0.3s,baz=15,slow=5.3,SNR=3.6						
CTA	**Charters Tower**	**31.49**	**270**	P	**P**	**03 55 01.1**	**+0.3**
	20nm,0.4s,baz=94,slow=11,SNR=50						
STKA	**Stephens Creek**	**34.71**	**248**	P	**P**	**03 55 28.3**	**+0.4**
	1.3nm,0.4s,baz=274,slow=3.5,SNR=4.2						
ASAR	**Alice Springs**	**42.04**	**261**	P	**P**	**03 56 26.8**	**-0.7**
	8.1nm,0.7s,baz=97,slow=7.9,SNR=49						
WRA	**Warramunga Arr**	**42.42**	**266**	P	**P**	**03 56 29.6**	**-0.9**
	8.9nm,0.3s,baz=96,slow=8.4,SNR=74						
NVAR	**Mina Array Bea**	**84.80**	**44**	P	**P**	**04 01 00.2**	**-0.7**
	0.7nm,0.7s,baz=232,slow=8.4,SNR=5.2						
CMAR	**Chiang Mai Arr**	**89.57**	**290**	P	**P**	**04 01 24.8**	**+1.2**
	0.7nm,0.4s,baz=146,slow=2.8,SNR=5.8						
TXAR	**Lajitas Array**	**90.46**	**58**	P	**P**	**04 01 28.2**	**+0.6**
	1.1nm,0.7s,baz=212,slow=6.7,SNR=18						
PDAR	**Pinedale Array**	**92.73**	**44**	P	**P**	**04 01 37.9**	**0.0**
	0.3nm,0.6s,baz=158,slow=4.8,SNR=4.0						
AKASG	**Malin Array Be**	**145.04**	**327**	PKP	**PKPdf**	**04 07 58.4**	**-0.4**
	0.6nm,0.4s,baz=44,slow=4.5,SNR=5.7						
BRTR	**Keskin Array B**	**147.64**	**307**	PKPbc	**PKPab**	**04 08 10.5**	**-0.9**
	1.3nm,0.6s,baz=100,slow=3.4,SNR=8.2						

MEX 20 04:01:46.1±0.5,**15°87N**×**95°44W**,**h15**km±11km,**MD3.7,**
Near coast of Oaxaca

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HUIG	**Huatulco**	**0.65**	**261**	*e*P	Pg	04 01 56.8	-2.1
HUIG				*e*S	Sg	04 02 05.2	-2.3
PANG	**Puerto Angel**	**1.01**	**258**	*i* P	Pb	04 02 00.9	-4.5
PANG				*e*S	Sb	04 02 10.5	-8.1
VHO	**Vista Hermosa**	**1.72**	**314**	*e*P	Pn	04 02 12.2	-3.6
VHO				*e*S	Sn	04 02 33.6	-4.0
PCIG		**2.15**	**94**	*i* P	Pn	04 02 18.9	-2.5
PCIG				*e*S	Sn	04 02 43.0	-4.7
PNIG	**Pinotepa**	**2.63**	**282**	*e*P	Pn	04 02 25.6	-2.5
PNIG				*e*S	Sn	04 02 56.3	-3.5

DJA 20 04:07:43.8±0.4,**8°S**±3°×**10°8E**±°,**h29**km±4km,**M3.9**/13,
MLv3.9/13,**Jawa**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CISI	**Cisompet, Garu**	**0.60**	**354**	P	Pn	04 07 56.5	0.0
CISI				S	Sn	04 08 05.5	+0.2
CMJI	**Cimerak**	**0.68**	**56**	P	Pn	04 07 58.0	+0.6
CMJI				S	Sb	04 08 06.5	+0.3
CNJI	**Cibinong**	**1.13**	**319**	P	Pn	04 08 03.7	+0.1
CNJI				S	Sn	04 08 17.6	-0.5
KPJI	**Karang Pucung**	**1.33**	**52**	P	Pn	04 08 06.2	-0.2
KPJI				S	Sn	04 08 23.2	+0.1
LEM	**Lembang**	**1.35**	**349**	P	Pb	04 08 11.0	+2.4
SKJI	**Sukabumi**	**1.74**	**311**	P	Pn	04 08 12.1	0.0
SKJI				S	Sn	04 08 34.9	+1.5
UGM	**Wanagama**	**2.63**	**85**	P	Pn	04 08 24.2	-0.2
UGM				S	Sn	04 08 55.6	+0.3
CGJI	**Cibinong**	**2.66**	**305**	P	Pn	04 08 24.1	-0.6
CGJI				S	Sn	04 08 54.7	-1.3
SBJI	**Serang**	**2.67**	**319**	P	Pn	04 08 25.1	+0.2
SMRI	**Semarang**	**2.77**	**67**	P	Pn	04 08 27.0	+0.8
PCJI	**Pacitan**	**3.26**	**91**	P	Pn	04 08 33.9	+0.8
PCJI				S	Sn	04 09 09.7	-1.3
PWJI	**Pagerwojo**	**3.89**	**88**	P	Pn	04 08 42.2	+0.6
PWJI				S	Sn	04 09 26.3	-0.1
KASI	**Kota Agung**	**4.26**	**308**	P	Pn	04 08 46.6	-0.2
KLI	**Kotabumi**	**4.44**	**317**	P	Pn	04 08 49.6	+0.3
KLSI		**4.66**	**318**	P	Pb	04 09 03.1	-1.7
MDSI	**Maura Dua**	**5.18**	**315**	P	Pn	04 08 59.4	0.0

*ISK **20** 04:09:47.9, 34°94N×33°91E, h28km, ML2.9*
*DDA **20** 04:09:48.6, 35°04N×33°92E, h33km, Ml3.4*
*ISCJB **20** 04:09:48.3±0.4, 34°88N±0°02×33°92E±0°03, h30km±4km, Error ellipse: s-maj=4.3km s-min=3.1km az=175.6*
*CSEM **20** 04:09:48.7±0.2, 34°89N×33°88E, h23km±2km, ML3.3, Error ellipse: s-maj=3.8km s-min=2.7km az=72.0*
*NIC **20** 04:09:50.0±0.4, 35°04N×33°80E, h16km, ML3.3*
*GII **20** 04:09:51.4±0.1, 34°87N×33°93E, h32km, MD2.2/3*

ISC 20 04:09:48.7±0.9,**34°90N**±0°02×**33°88E**±0°02,**h27**km±7km,
n66, σ0s**94**/102,**Cyprus region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PHNC	**Paralimni**	**0.16**	**49**	P	**Pn**	**04 09 55.2**	**-0.2**
	baz=280						
PHNC				S	**Sb**	**04 09 58.0**	**+0.1**
PHNC	**Paralimni**	**0.16**	**49**	P	**Pn**	**04 09 55.2**	**-0.2**
PHNC				S	**Sb**	**04 09 58.0**	**+0.1**
CSS	**Mathiatis**	**0.46**	**278**	P	**Pb**	**04 09 57.8**	**-0.5**
	baz=78						
CSS				S	**Sb**	**04 10 04.7**	**-0.2**
CSS	**Mathiatis**	**0.46**	**278**	P	**Pb**	**04 09 57.8**	**-0.5**
CSS				S	**Sb**	**04 10 04.7**	**-0.2**
LFK	**Lefkose**	**0.48**	**323**	*e*PG	**Pb**	**04 09 58.2**	**-0.5**
LFK				*e*SG	**Sb**	**04 10 05.9**	**+0.4**
LFK	**Lefkose**	**0.48**	**323**	*e*Pg	**Pb**	**04 09 58.2**	**-0.5**
LFK				*e*Sg	**Sb**	**04 10 05.9**	**+0.4**
MAMC	**Mammari**	**0.61**	**297**	P	**Pb**	**04 10 00.2**	**-0.6**
	baz=105						
MAMC	**Mammari**	**0.61**	**297**	P	**Pb**	**04 10 00.2**	**-0.6**
EREN	**Erenkoy**	**0.67**	**20**	*e*PG	**Pb**	**04 10 01.6**	**-0.3**
EREN	**Erenkoy**	**0.67**	**20**	*e*Pg	**Pb**	**04 10 01.6**	**-0.3**
SZAC	**Souni**	**0.83**	**261**	P	**Pn**	**04 10 04.9**	**+0.2**
	baz=69						
SZAC				S	**Sn**	**04 10 17.2**	**+1.1**
SZAC	**Souni**	**0.83**	**261**	P	**Pn**	**04 10 04.9**	**+0.2**
SZAC				S	**Sn**	**04 10 17.2**	**+1.1**
LEF	**Lefka**	**0.85**	**286**	*e*PG	**Pn**	**04 10 04.9**	**+0.1**
LEF				*e*SG	**Sn**	**04 10 17.3**	**+1.0**
LEF	**Lefka**	**0.85**	**286**	*e*Pg	**Pn**	**04 10 04.9**	**+0.1**
LEF				*e*Sg	**Sn**	**04 10 17.3**	**+1.0**
AKDN	**Akdeniz- K¯-br**	**0.85**	**298**	*e*PG	**Pb**	**04 10 04.3**	**-0.5**
AKDN	**Akdeniz- K¯-br**	**0.85**	**298**	*e*Pg	**Pb**	**04 10 04.3**	**-0.5**
ALFC	**Alefka**	**1.09**	**284**	P	**Pn**	**04 10 08.2**	**+0.1**
	baz=96						
ALFC	**Alefka**	**1.09**	**284**	P	**Pn**	**04 10 08.2**	**+0.1**
AKMC	**Akamas**	**1.28**	**276**	P	**Pb**	**04 10 11.8**	**-0.4**
	baz=88						
AKMC	**Akamas**	**1.28**	**276**	P	**Pb**	**04 10 11.8**	**-0.4**
IKL	**Isikli**	**1.35**	**353**	*e*PN	**Pn**	**04 10 10.8**	**-0.9**
IKL	**Isikli**	**1.35**	**353**	*e*Pn	**Pn**	**04 10 10.8**	**-0.9**
KIZK	**Mersin**	**1.59**	**8**	*i* P	**Pn**	**04 10 15.2**	**+0.1**
KIZK				*i* S	**Sn**	**04 10 34.9**	**+0.1**
KIZK	**Mersin**	**1.59**	**8**	P	**Pn**	**04 10 15.2**	**+0.1**
KIZK				S	**Sn**	**04 10 34.9**	**+0.1**
GAZI	**Gazipasa**	**1.85**	**317**	*i* P	**Pn**	**04 10 18.4**	**-0.2**
GAZI				*i* S	**Sn**	**04 10 40.5**	**-0.6**
GAZI	**Gazipasa**	**1.85**	**317**	P	**Pn**	**04 10 18.4**	**-0.2**
GAZI				S	**Sn**	**04 10 40.5**	**-0.6**
ERMK	**Ermenek**	**1.91**	**336**	*i* P	**Pn**	**04 10 20.2**	**+0.5**
ERMK				*i* S	**Sb**	**04 10 44.9**	**-1.7**
ERMK	**Ermenek**	**1.91**	**336**	P	**Pn**	**04 10 20.2**	**+0.5**
ERMK				S	**Sb**	**04 10 44.8**	**-1.7**
MERS	**Mersin**	**2.03**	**15**	*e*PN	**Pn**	**04 10 20.4**	**-0.8**
MERS	**Mersin**	**2.03**	**15**	*e*Pn	**Pn**	**04 10 20.4**	**-0.8**
HNTI	**Hanita**	**2.10**	**149**	Pn	**Pn**	**04 10 22.3**	**+0.2**
HNTI	**Hanita**	**2.10**	**149**	Pn	**Pn**	**04 10 22.3**	**+0.2**
YAYL	**Yayladag**	**2.14**	**57**	*i* P	**Pn**	**04 10 24.2**	**+1.5**
YAYL				*i* S	**Sn**	**04 10 49.6**	**+1.2**
YAYL	**Yayladag**	**2.14**	**57**	P	**Pn**	**04 10 24.2**	**+1.5**
YAYL				S	**Sn**	**04 10 49.6**	**+1.2**
DED	**Mersin**	**2.19**	**20**	*i* P	**Pn**	**04 10 22.6**	**-0.7**
DED				*i* S	**Sn**	**04 10 49.4**	**-0.2**
MMC7	**Mount Meron ar**	**2.25**	**146**	Pn	**Pn**	**04 10 24.3**	**+0.1**
MMC7	**Mount Meron ar**	**2.25**	**146**	Pn	**Pn**	**04 10 24.3**	**+0.1**
MMA0B	**Mount Meron ar**	**2.26**	**146**	Pn	**Pn**	**04 10 23.9**	**-0.4**
MMA0B				Sn	**Sn**	**04 10 50.3**	**-1.1**
MMA0B	**Mount Meron ar**	**2.26**	**146**	Pn	**Pn**	**04 10 23.9**	**-0.4**
MMA0B				Sn	**Sn**	**04 10 50.3**	**-1.1**
TAHT	**Tahtakopru-Hat**	**2.39**	**51**	*e*PN	**Pn**	**04 10 25.5**	**-0.5**
TAHT	**Tahtakopru-Hat**	**2.39**	**51**	*e*Pn	**Pn**	**04 10 25.5**	**-0.5**
YURE	**YUREGIR**	**2.39**	**36**	*i* P	**Pn**	**04 10 27.8**	**+1.7**
YURE				*i* S	**Sn**	**04 10 54.3**	**-0.2**
YURE	**YUREGIR**	**2.39**	**36**	P	**Pn**	**04 10 27.8**	**+1.7**
YURE				S	**Sn**	**04 10 54.3**	**-0.2**
BLGI	**Bet Lehem HaGe**	**2.42**	**153**	Pn	**Pn**	**04 10 26.5**	**+0.1**
BLGI	**Bet Lehem HaGe**	**2.42**	**153**	Pn	**Pn**	**04 10 26.5**	**+0.1**
OFRI	**'Ofer**	**2.45**	**158**	Pn	**Pn**	**04 10 26.7**	**-0.2**
OFRI	**'Ofer**	**2.45**	**158**	Pn	**Pn**	**04 10 26.7**	**-0.2**
GULE	**Gulek**	**2.49**	**17**	*i* P	**Pn**	**04 10 29.5**	**+1.9**
GULE				*i* S	**Sn**	**04 10 59.8**	**+2.7**
GULE	**Gulek**	**2.49**	**17**	P	**Pn**	**04 10 29.5**	**+1.9**
GULE				S	**Sn**	**04 10 59.8**	**+2.7**
KSHT	**Keshet**	**2.49**	**139**	Pn	**Pn**	**04 10 28.5**	**+1.0**
KSHT	**Keshet**	**2.49**	**139**	Pn	**Pn**	**04 10 28.5**	**+1.0**
KERG	**Konya-Eregli**	**2.52**	**4**	*i* P	**Pn**	**04 10 28.7**	**+0.7**
KERG				*i* S	**Sn**	**04 11 00.1**	**+2.2**
KERG	**Konya-Eregli**	**2.52**	**4**	P	**Pn**	**04 10 28.7**	**+0.7**
KERG				S	**Sn**	**04 11 00.1**	**+2.2**
SLTI	**Sal'it**	**2.82**	**160**	Pn	**Pn**	**04 10 32.1**	**+0.2**
SLTI				Sn	**Sn**	**04 11 04.8**	**-0.2**
SLTI	**Sal'it**	**2.82**	**160**	Pn	**Pn**	**04 10 32.1**	**+0.2**
SLTI				Sn	**Sn**	**04 11 04.8**	**-0.2**
AKO	**Adana**	**2.85**	**26**	*i* P	**Pn**	**04 10 32.9**	**+0.4**
AKO				*i* S	**Sn**	**04 11 04.8**	**-1.1**
HMDT	**Nahal Hemdat**	**2.97**	**152**	Pn	**Pn**	**04 10 35.1**	**+1.1**
HMDT	**Nahal Hemdat**	**2.97**	**152**	Pn	**Pn**	**04 10 35.1**	**+1.1**
KAMA	**Osmaniye**	**3.21**	**44**	*i* P	**Pn**	**04 10 37.8**	**+0.3**
KAMA				*i* S	**Sn**	**04 11 12.3**	**-2.5**
HCB	**Kahramanmara¯**	**3.46**	**44**	*i* P	**Pn**	**04 10 41.1**	**+0.4**
HCB				*i* S	**Sn**	**04 11 19.7**	**-1.2**
DSI	**Dead Sea**	**3.55**	**159**	Pn	**Pn**	**04 10 42.5**	**+0.6**
DSI	**Dead Sea**	**3.55**	**159**	Pn	**Pn**	**04 10 42.5**	**+0.6**
PRNI	**Paran**	**4.63**	**168**	Pn	**Pn**	**04 10 57.3**	**+0.4**
PRNI				Sn	**Sn**	**04 11 50.1**	**+0.4**
PRNI	**Paran**	**4.63**	**168**	Pn	**Pn**	**04 10 57.3**	**+0.4**
PRNI				Sn	**Sn**	**04 11 50.1**	**+0.4**
MBRI	**Mt Berech**	**5.16**	**170**	Pn	**Pn**	**04 11 05.6**	**+1.4**
MBRI				Sn	**Sn**	**04 12 02.9**	**0.0**
MBRI	**Mt Berech**	**5.16**	**170**	Pn	**Pn**	**04 11 05.6**	**+1.4**
MBRI				Sn	**Sn**	**04 12 02.9**	**0.0**

*ISCJB **20** 04:11:30.9±1.0, 20°81N±0°07×100°18E±0°06, h10km, Error ellipse: s-maj=11.4km s-min=4.6km az=142.1*

*BKK **20** 04:11:31.6±1.3, 21°N±7°×10°0E±°, h7km±9km, M4.6/3, MLv4.6/3*
*PLV **20** 04:11:36.4±1.0, 21°64N×100°29E, h23km±978km, ML3.9*

ISC 20 04:11:32.2±1.6,**20°77N**±0°09×**100°13E**±0°09,**h10**km,**n8,**
σ0s**78**/12,**Laos**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CRAI	**Chiangrai**	**0.58**	**157**	P	**Pb**	**04 11 44.1**	**-0.4**
CRAI				S	**Sg**	**04 11 50.7**	**-0.4**
CMMT	**Chiang Mai**	**2.24**	**210**	P	**Pn**	**04 12 08.9**	**-0.5**
CMMT				S	**Sn**	**04 12 39.0**	**+1.8**
CHTO	**Chiang Mai**	**2.24**	**210**	P	**Pn**	**04 12 08.8**	**-0.6**
DBV	**Dienbien**	**2.77**	**77**	*e*Pg	**Pg**	**04 12 25.8**	**+0.4**
DBV				*e*Sg	**Sg**	**04 13 01.6**	**+0.4**
DBV				AML	AML	04 13 10.0	
	comp=N,960nm,0.5s						
UTTA	**Uttaradit**	**3.03**	**172**	P	**Pn**	**04 12 20.5**	**+0.2**
MLVB	**It Ong**	**3.09**	**65**	*e*Pg	Pg	04 12 43.7	+12
MLVB				*e*Sg	Sg	04 13 30.9	+20
MLVB				AML	AML	04 13 48.4	
	comp=E,180nm,0.6s						
TGV	**Tuan Giao**	**3.17**	**74**	*e*Pn	**Pn**	**04 12 22.4**	**+0.2**
TGV				*e*Pg	**Pg**	**04 12 32.4**	**-0.6**
TGV				*e*Sg	**Sg**	**04 13 13.6**	**-0.6**
TGV				AML	AML	04 13 20.2	
	comp=E,254nm,0.6s						
MHMT	**Maesariang**	**3.31**	**219**	P	**Pn**	**04 12 23.9**	**-0.2**

*NIED **20** 04:12:00, 36°20N×142°00E, h20km, Mw3.8 Best double couple: M0 5.61000×10^14 NP1:φs±236.00000°, δ27.00000°, λ119.00000°. NP2:φs±25.00000°, δ67.00000°, λ76.00000°.*
*ISCJB **20** 04:12:19.3±0.7, 36°21N±0°05×142°09E±0°07, h19km, mb3.9/16, MS3.3/2, Error ellipse: s-maj=9.1km s-min=5.2km az=35.9*
*JMA **20** 04:12:20.9±0.2, 36°21N×142°01E, h51km, M3.6*
*IDC **20** 04:12:21.8±1.1, 36°68N×141°82E, h0km, mb3.8/10, mb1 4.0/11, mb1mx3.8/39, mbtmp3.8/11, ML3.9/1, MS2.9/4, Ms1 3.0/4, ms1mx2.7/34, Error ellipse: s-maj=26.5km s-min=24.5km az=174.0*
*NEIC **20** 04:12:28.0±1.5, 36°66N×141°67E, h45km±11km, mb4.2/6, Error ellipse: s-maj=18.0km s-min=11.0km az=137.0*

ISC 20 04:12:22.0±0.8,**36°30N**±0°05×**141°86E**±0°07,**h19**km,**n45,**
σ1s**21**/36,**mb3.9**/16,**Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**1.01**	**234**	P	**Pb**	**04 12 39.7**	**-1.1**
CHOJ				*e*S	**Sn**	**04 12 54.0**	**-0.7**
JHO	**Hitachi**	**1.09**	**287**	P	**Pb**	**04 12 41.5**	**-0.7**
ONAJ	**Iwakimizuishiy**	**1.17**	**314**	P	**Pn**	**04 12 43.0**	**+0.2**
JFK	**Kawauchi**	**1.33**	**324**	P	**Pn**	**04 12 45.7**	**+0.1**
JFT	**Otama**	**1.73**	**315**	P	**Pn**	**04 12 52.1**	**+1.1**
JMM	**Marumori**	**1.78**	**332**	P	**Pn**	**04 12 52.2**	**+0.4**
BSO1	**Boso 1**	**1.79**	**204**	P	**Pn**	**04 12 49.9**	**-1.5**
BSO1				*e*S	**Sn**	**04 13 12.3**	**-1.1**
BSO3	**Boso 3**	**1.85**	**217**	P	**Pn**	**04 12 51.6**	**-0.9**
JAG	**

JFY	**Yanaizu**	**0.95**	**292**	⇑P		**Pb**	**04 22 55.2**	**-0.2**
JFY				S		**Sg**	**04 23 07.3**	**-0.3**
MJAR	**Matsushiro Arr**	**2.15**	**257**	Pn		**Pn**	**04 23 13.7**	**+1.1**
	10.0nm,0.3s,baz=80,slow=16,SNR=33							
MJAR				Sn		**Sb**	**04 23 41.1**	**-1.3**
	23nm,0.3s,baz=80,slow=28,SNR=16							
MAT	**Matsushiro**	**2.15**	**257**	P		**Pn**	**04 23 14.2**	**+1.6**
MAT				S		**Sb**	**04 23 42.5**	**0.0**
KSRS	**Korea Array**	**10.28**	**276**	LR		LR	04 29 08.5	
	comp=Z,25nm,19.6s,baz=105,slow=38							
H11N2	**WAKE ISLAND Hy**	**28.57**	**120**	T		T	04 58 16.8	
	baz=313,slow=75,SNR=85							
H11N1	**WAKE ISLAND Hy**	**28.58**	**120**	T		T	04 58 21.4	
	baz=313,slow=75,SNR=81							
H11N3	**WAKE ISLAND Hy**	**28.59**	**120**	T		T	04 58 23.2	
	baz=313,slow=75,SNR=75							
H11S1	**WAKE ISLAND Hy**	**29.27**	**122**	T		T	04 59 16.2	
	baz=314,slow=76,SNR=93							
H11S3	**WAKE ISLAND Hy**	**29.27**	**122**	T		T	04 59 15.8	
	baz=314,slow=76,SNR=109							
H11S2	**WAKE ISLAND Hy**	**29.29**	**122**	T		T	04 59 18.1	
	baz=314,slow=76,SNR=88							
MKAR	**Makanchi Array**	**43.70**	**302**	P		**P**	**04 30 42.6**	**+0.8**
	0.3nm,0.6s,baz=83,slow=9.3,SNR=3.7							
WRA	**Warramunga Arr**	**57.01**	**187**	P		**P**	**04 32 21.2**	**-1.5**
	0.6nm,0.5s,baz=3.9,slow=7.3,SNR=10							

DHMR 20 04:22:46.5±0.5, 12°02'N×43°95'E, h10km±11km, ML4.1, Western Arabian Peninsula

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ADEN	**Aden**	**1.25**	**53**	*i* P	Pn	04 23 09.6	-0.5
ADEN				*i* S	Sn	04 23 27.3	+0.2
ADEN				AML	AML	04 23 27.8	
	comp=E,5μm,0.3s						
UDYN	**Al 'Udayn**	**1.93**	**0**	*i* P	Pn	04 23 20.3	+0.7
UDYN				*i* S	Sb	04 23 47.4	+1.2
BDHA	**Al Bayda'**	**2.50**	**39**	*i* P	Pb	04 23 29.9	-1.8
BDHA				*i* S	Sb	04 24 03.4	+0.8
BDHA				AML	AML	04 24 11.2	
	comp=N,958nm,0.8s						
DHBB	**Dhamar BB**	**2.57**	**10**	*i* P	Pb	04 23 31.0	-1.9

NIED ***20*** *04:39:00,36°.70N×141°.90E,h32km,Mw3.6 Best double couple: M₀2.56000×10¹⁴ NP1:φ₈163.00000°,δ23.00000°, λ68.00000°. NP2:φ₈8.00000°,δ69.00000°,λ99.00000°.*
IDC ***20*** *04:39:37.3±1.8,36°.65N×142°.22E,h0km,mb3.7/6, mb1 3.8/7,mb1mx3.5/38,mbtmp3.7/7,ML3.7/1,MS2.7/2, Ms1 2.7/2,ms1mx2.3/39,Error ellipse: s-maj=43.7km s-min=27.1km az=60.0*
ISCJB ***20*** *04:39:39.3±1.0,36°.61N±0°.08×142°.10E±0°.08,h19km, mb3.6/6,MS2.6/1,Error ellipse: s-maj=11.2km s-min=8.4km az=161.4*
JMA ***20*** *04:39:42.4±0.2,36°.65N×141°.91E,h29km±4km,M3.7*

ISC 20 04:39:41.1±1.3, 36°69N±0°.08×142°.01E±0°.09, h19km, n22, σ1§05/19, mb3.7/6, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**1.06**	**293**	P	**Pb**	**04 40 00.3**	**-0.5**
JFK	**Kawauchi**	**1.14**	**307**	P	**Pn**	**04 40 01.9**	**-0.1**
JHO	**Hitachi**	**1.16**	**267**	P	**Pn**	**04 40 01.4**	**-1.0**
JHO				*eS*	**Sb**	**04 40 15.5**	**-1.8**
JMM	**Marumori**	**1.53**	**321**	P	**Pb**	**04 40 08.0**	**-0.8**
JMM				*eS*	**Sn**	**04 40 26.3**	**-0.4**
JFT	**Otama**	**1.58**	**302**	P	**Pb**	**04 40 09.3**	**-0.4**
JIO	**Ouri**	**1.84**	**344**	P	**Pn**	**04 40 12.4**	**+0.7**
JAG	**Ashikaga**	**2.08**	**264**	P	**Pn**	**04 40 15.0**	**+0.1**
MJAR	**Matsushiro Arr**	**3.06**	**268**	Pn	**Pn**	**04 40 29.6**	**+1.1**
	9.2nm,0.3s,baz=80,slow=12,SNR=58						
MJAR				Sn	**Sn**	**04 41 06.9**	**+2.2**
	5.4nm,0.3s,baz=94,slow=18,SNR=5.5						
MJAR				LR	LR	04 41 53.2	
	comp=Z,100nm,18.3s,baz=115,slow=42						
MAT	**Matsushiro**	**3.07**	**268**	P	**Pn**	**04 40 29.9**	**+1.4**
MAT				S	**Sn**	**04 41 05.9**	**+1.2**
MA2	**Magadan**	**23.60**	**11**	LR	LR	04 54 55.1	
	comp=Z,20nm,18.7s,baz=46,slow=39						
H11N2	**WAKE ISLAND Hy**	**27.56**	**121**	T	T	05 14 44.0	
	baz=313,slow=75,SNR=20						
H11N1	**WAKE ISLAND Hy**	**27.56**	**121**	T	T	05 14 45.9	
	baz=313,slow=75,SNR=20						
H11N3	**WAKE ISLAND Hy**	**27.57**	**121**	T	T	05 14 42.0	
	baz=313,slow=75,SNR=13						
H11S1	**WAKE ISLAND Hy**	**28.27**	**123**	T	T	05 15 11.3	
	baz=312,slow=75,SNR=8.9						
H11S3	**WAKE ISLAND Hy**	**28.27**	**123**	T	T	05 15 11.3	
	baz=312,slow=75,SNR=9.5						
H11S2	**WAKE ISLAND Hy**	**28.28**	**123**	T	T	05 15 12.4	
	baz=312,slow=75,SNR=10.0						
SONM	**Songino Array**	**28.38**	**304**	P	**P**	**04 45 35.0**	**+0.8**
	1.7nm,0.7s,baz=104,slow=8.3,SNR=6.8						
ZALV	**Zalesovo Beam**	**42.50**	**313**	P	**P**	**04 47 35.7**	**+0.7**
	0.9nm,0.6s,baz=90,slow=5.8,SNR=4.1						
MKAR	**Makanchi Array**	**44.71**	**302**	P	**P**	**04 47 53.1**	**+0.2**
	0.6nm,0.6s,baz=81,slow=9.9,SNR=6.0						
KURBB	**Kurchatov Arra**	**46.59**	**308**	P	**P**	**04 48 07.8**	**+0.1**
	0.8nm,0.6s,baz=84,slow=8.1,SNR=7.8						
WRA	**Warramunga Arr**	**56.79**	**189**	P	**P**	**04 49 23.1**	**-0.9**
	0.4nm,0.8s,baz=6.0,slow=7.3,SNR=3.4						
AKASG	**Malin Array Be**	**74.87**	**323**	P	**P**	**04 51 20.0**	**-0.2**
	0.2nm,0.4s,baz=39,slow=7.4,SNR=2.8						

SKHL 20 04:51:02.8±0.5, 44°70N×149°37E, h49km±3km, mb4.4/2, Kuril Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KUR	**Kuril'sk**	**1.19**	**297**	*eP*	Pn	04 51 22.0	-1.1
KUR				AMB	AMB	04 51 23.8	
	100nm,0.3s						
KUR				*eS*	Sn	04 51 36.8	-1.4
KUR				A	A	04 51 42.0	
	270nm,0.4s						
KUR				A	A	04 51 42.0	
	250nm,0.4s						
SHO	**Shikotan**	**2.00**	**246**	*eP*	Pn	04 51 33.6	-0.5
SHO				AMB	AMB	04 51 34.9	
	380nm,0.7s						
SHO				*i* S	Sn	04 51 56.3	-1.7
SHO				A	A	04 52 04.9	
	240nm,0.3s						
SHO				A	A	04 52 04.9	
	90nm,0.3s						
YUK	**Yuzh-Kuril'sk**	**2.60**	**256**	*eP*	Pn	04 51 42.4	+0.1
YUK				*eS*	Sn	04 52 12.1	-0.6
YSS	**Yuzh-Sakhalins**	**5.14**	**298**	*eP*	Pn	04 52 18.4	+1.2
TYV	**Tymovskoe**	**7.64**	**326**	*eP*	Pn	04 52 53.7	+2.3

IDC 20 04:58:15.3±9.5, 44°62S×15°04W, h0km, mb4.0/1, mb1 4.0/1, mb1mx3.4/31, mbtmp4.0/1, MS3.3/1, Ms1 3.3/1, ms1mx2.7/20, Error ellipse: s-maj=540.7km s-min=70.1km az=130.0, Southern Mid-Atlantic Ridge

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
H10S2	**ASCENSION HYDR**	**35.53**	**1**	T	T	05 42 36.6	
	baz=180						
H10S3	**ASCENSION HYDR**	**35.53**	**1**	T	T	05 42 31.3	
	baz=180						
H10S1	**ASCENSION HYDR**	**35.55**	**1**	T	T	05 42 33.8	
	baz=180						
PLCA	**Paso Flores**	**40.34**	**255**	LR	LR	05 19 16.9	
	comp=Z,43nm,20.4s,baz=180,slow=31						
TORD	**Torodi Ar. Bea**	**59.47**	**19**	P	P	05 08 19.9	0.0
	1.8nm,0.9s,baz=199,slow=6.4,SNR=7.3						
YKA	**Yellowknife Ar**	**132.46**	**322**	PKP	PKPdf	05 17 30.3	-0.1
	0.2nm,0.8s,baz=100,slow=1.9,SNR=4.6						
ILAR	**Eielson Array**	**146.79**	**324**	PKPbc	PKPdf	05 17 57.1	+0.8
	1.8nm,0.9s,baz=64,slow=1.4,SNR=16						

JMA 20 04:59:39.2±0.1, 38°18N×144°37E, h29km, M3.5, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**2.30**	**294**	P	Pn	05 00 16.4	+1.3
OFUJ				S	Sn	05 00 44.3	+1.9
JIO	**Ouri**	**2.39**	**278**	P	Pn	05 00 17.8	+1.4
JIO				S	Sn	05 00 46.2	+1.5
JMK	**Ichinoseki**	**2.59**	**288**	*eS*	Sn	05 00 51.1	+1.6
JOM	**Ohasama**	**2.73**	**299**	*eS*	Sn	05 00 55.3	+2.2
JMM	**Marumori**	**2.84**	**265**	P	Pn	05 00 24.0	+1.4
JMM				S	Sn	05 00 57.4	+1.6
JOU	**Okura**	**2.92**	**275**	*eS*	Sn	05 01 00.0	+2.1

MEX 20 05:17:14.7±0.3, 13°73N×92°24W, h72km±59km, MD3.7, Off coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PCIG		**2.18**	**334**	*eP*	Pn	05 17 47.6	-1.3
PCIG				*eS*	Sn	05 18 13.3	-1.7
CCIG	**Comitan**	**2.54**	**2**	*eP*	Pn	05 17 52.7	-1.2

CSEM ***20*** *05:18:34.6±0.7,37°.03N×30°.62E,h10km,MD2.7,Error ellipse: s-maj=19.6km s-min=13.8km az=130.0*
ISK ***20*** *05:18:36.1,37°.21N×30°.58E,h30km,MD2.7*
ISCJB ***20*** *05:18:38.6±1.2,37°.23N±0°.07×30°.79E±0°.08,h10km,Error ellipse: s-maj=9.8km s-min=8.6km az=162.4*
DDA ***20*** *05:18:39.6,37°.35N×30°.81E,h7km,Md2.8*

ISC 20 05:18:35.7±1.5, 37°17N±0°.08×30°67E±0°.05, h10km, n12, σ1§13/17, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BCK	**Bucak**	**0.30**	**348**	*ePG*	**Pb**	**05 18 44.0**	**+0.7**
BCK				*eSG*	**Sb**	**05 18 48.4**	**+0.1**
BCK	**Bucak**	**0.30**	**348**	*ePg*	**Pb**	**05 18 44.0**	**+0.7**
BCK				*eSg*	**Sb**	**05 18 48.4**	**+0.1**
KORT	**Korkueli**	**0.30**	**237**	*i* P	**Pn**	**05 18 48.6**	**+2.2**
KORT				*i* S	Sb	05 18 57.9	+9.5
ISP	**Isparta**	**0.67**	**350**	*ePG*	**Pb**	**05 18 49.3**	**-0.2**
ISP	**Isparta**	**0.67**	**350**	*ePg*	**Pb**	**05 18 49.3**	**-0.2**
BAGO	**Egridir - ISPA**	**0.83**	**7**	*i* P	**Pb**	**05 18 52.5**	**+0.3**
BAGO				*i* S	**Sn**	**05 19 06.6**	**+0.7**
FETY	**Fethiye**	**1.38**	**248**	*ePN*	**Pn**	**05 18 58.8**	**-2.2**
FETY	**Fethiye**	**1.38**	**248**	*ePn*	**Pn**	**05 18 58.8**	**-2.2**
KONT	**Konya--Tatoy**	**1.56**	**59**	*ePN*	**Pn**	**05 19 02.8**	**-0.7**
KONT	**Konya--Tatoy**	**1.56**	**59**	*ePn*	**Pn**	**05 19 02.8**	**-0.7**
KDHN	**Kadinhani**	**1.77**	**40**	*i* P	**Pb**	**05 19 08.5**	**+0.1**
KDHN				*i* S	**Sb**	**05 19 31.3**	**+0.5**
KDHN	**Kadinhani**	**1.77**	**40**	P	**Pb**	**05 19 08.5**	**+0.1**
KDHN				S	**Sb**	**05 19 31.3**	**+0.5**

ISCJB ***20*** *05:21:04.9±0.5,30°.80N±0°.10×41°.60W±0°.06,h13km, mb4.4/55,MS3.6/27,Error ellipse: s-maj=14.2km s-min=6.8km az=169.6*
IDC ***20*** *05:21:04.4±0.8,30°.78N×41°.55W,h0km,mb3.9/17, mb1 4.2/17,mb1mx4.0/46,mbtmp3.9/17,MS3.6/25, Ms1 3.6/25,ms1mx3.5/43,Error ellipse: s-maj=25.5km s-min=15.5km az=176.0*
MOS ***20*** *05:21:04.0±1.0,30°.72N×41°.58W,h10km,mb4.6/36,Error ellipse: s-maj=14.6km s-min=6.7km az=49.5*
NEIC ***20*** *05:21:06.2±0.3,30°.82N×41°.55W,h10km,mb4.6/10,Error ellipse: s-maj=10.5km s-min=6.6km az=177.0*

ISC 20 05:21:06.7±0.6, 30°8N±0°.1×41°57W±0°.08, h13km, n107, σ1§10/82, mb4.4/55, MS3.6/27, 10C-2D, Northern Mid-Atlantic Ridge

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SJG	**San Juan**	**25.63**	**246**	LR	LR	05 34 21.1	
	comp=Z,71nm,21.8s,baz=66,slow=31						
BBTS	**Babate**	**28.04**	**119**	LR	LR	05 35 18.6	
	comp=Z,273nm,21.1s,baz=326,slow=30						
SCHQ	**Schefferville**	**30.02**	**330**	LR	LR	05 38 59.5	
	comp=Z,209nm,18.3s,baz=118,slow=36						
MFF	**Saint Martin d**	**35.51**	**52**	*eP*	**P**	**05 28 03.2**	**0.0**
MFF				pmax	pmax		
	comp=Z,25nm,1.5s						
PTGA	**Pitinga**	**35.92**	**213**	LR	LR	05 41 36.8	
	comp=Z,49nm,18.1s,baz=28,slow=34						
LDF	**La Druitiere**	**35.97**	**48**	*eP*	**P**	**05 28 06.8**	**-0.3**
LDF				pmax	pmax		
	comp=Z,8.0nm,1.0s						
ESK	**Eskdalemuir**	**36.50**	**37**	*ceP*	P	05 28 17.4	+5.8
SMF	**Signal de Mont**	**38.23**	**52**	*eP*	**P**	**05 28 26.1**	**-0.2**
SMF				pmax	pmax		
	comp=Z,13nm,1.0s						
LOR	**Lormes**	**38.33**	**51**	*eP*	**P**	**05 28 26.6**	**-0.6**
LOR				pmax	pmax		
	comp=Z,6.0nm,0.9s						
LPL	**La Plagne**	**40.11**	**55**	*eP*	**P**	**05 28 42.9**	**+0.6**
LPL				pmax	pmax		
	comp=Z,3.0nm,1.0s						
LPG	**La Plagne**	**40.12**	**55**	*eP*	**P**	**05 28 42.1**	**-0.4**
LPG				pmax	pmax		
	comp=Z,4.0nm,0.9s						
ROSC	**El Rosal**	**40.20**	**237**	LR	LR	05 45 11.3	
	comp=Z,28nm,19.2s,baz=92,slow=36						
CDF	**Champ du Feu**	**40.77**	**50**	*eP*	**P**	**05 28 47.0**	**-0.6**
CDF				pmax	pmax		
	comp=Z,8.0nm,1.0s						
BFO	**Black Forest**	**41.46**	**50**	P	**P**	**05 28 53.4**	**+0.2**
BFO				pmax	pmax		
	comp=Z,6.0nm,1.3s						
DBIC	**Dimbokro**	**41.94**	**117**	LR	LR	05 43 44.8	
	comp=Z,158nm,20.8s,baz=293,slow=32						
TAM	**Tamanrasset**	**42.53**	**89**	*eP*	**P**	**05 29 03.2**	**+0.8**
TAM				pmax	pmax		
	comp=Z,2.0nm,0.9s						
TAM	**Tamanrasset**	**42.53**	**89**	*eP*	**P**	**05 29 03.2**	**+0.8**
	comp=Z,2.3nm,0.9s						
TORD	**Torodi Ar. Bea**	**43.49**	**104**	P	**P**	**05 29 09.8**	**-0.2**
	comp=Z,2.9nm,1.0s,baz=303,slow=7.3,SNR=13						
TORD				LR	LR	05 45 40.4	
	comp=Z,64nm,18.4s,baz=215,slow=34						
MOX	**Moxa**	**43.84**	**47**	P	**P**	**05 29 12.7**	**+0.2**
MOX				pmax	pmax		
	comp=Z,5.0nm,0.9s						
NKC	**Novy Kostel**	**44.33**	**48**	*eP*	**P**	**05 29 16.8**	**+0.4**
NKC	**Novy Kostel**	**44.33**	**48**	*eP*	**P**	**05 29 16.8**	**+0.4**
KONO	**Kongsberg**	**44.52**	**34**	*eP*	P	05 29 22.5	+4.8
KONO				pmax	pmax		
	comp=Z,38nm,1.3s						
ULM	**Lac du Bonnet**	**44.52**	**312**	P	**P**	**05 29 17.9**	**0.0**
	comp=Z,1.7nm,0.7s,baz=146,slow=6.1,SNR=3.0						
ULM				LR	LR	05 45 36.9	
	comp=Z,78nm,21.7s,baz=96,slow=33						
SAML	**Samuel**	**44.64**	**211**	*eP*	**P**	**05 29 19.8**	**+0.6**
	comp=Z,4.2nm,1.0s						
CLL	**Collm**	**44.78**	**47**	*eP*	**P**	**05 29 20.0**	**0.0**
	comp=Z,11nm,1.4s						
CLL				*eSS*	SS	05 39 18.0	+0.8
CLL				*eSSS*	SSS	05 40 12.0	
CLL	**Collm**	**44.78**	**47**	*eP*	**P**	**05 29 20.0**	**0.0**
CLL				pmax	pmax		
	comp=Z,11nm,1.4s						
KHC	**Kasperske Hory**	**44.99**	**50**	*eP*	**P**	**05 29 21.9**	**+0.2**
KHC	**Kasperske Hory**	**44.99**	**50**	*eP*	**P**	**05 29 21.9**	**+0.2**
GERES	**GERESS Array B**	**45.05**	**50**	P	**P**	**05 29 21.7**	**-0.7**
	comp=Z,1.0nm,0.6s,baz=261,slow=8.0,SNR=8.5						
GERES				LR	LR	05 44 09.8	
	comp=Z,24nm,19.9s,baz=336,slow=31						
JTS	**JuntasAbangare**	**45.10**	**253**	*d iP*	**P**	**05 29 20.8**	**-2.2**
JTS				pmax	pmax		
	comp=Z,6.0nm,0.9s						
BRG	**Berggiesshubel**	**45.33**	**47**	*eP*	**P**	**05 29 24.6**	**+0.2**
	comp=Z,5.8nm,1.2s						
BRG	**Berggiesshubel**	**45.33**	**47**	*eP*	**P**	**05 29 24.6**	**+0.2**
BRG				pmax	pmax		
	comp=Z,6.0nm,1.2s						
NOA	**NORSAR Array B**	**45.69**	**33**	P	**P**	**05 29 27.5**	**+0.4**
	comp=Z,0.5nm,0.8s,baz=253,slow=8.1,SNR=2.5						
NOA				LR	LR	05 45 09.4	
	comp=Z,20nm,19.1s,baz=245,slow=32						
H10N2	**ASCENSION HYDR**	**46.37**	**141**	T	T	06 19 04.9	
	baz=327,slow=75,SNR=134						
H10N3	**ASCENSION HYDR**	**46.37**	**141**	T	T	06 19 05.1	
	baz=327,slow=75,SNR=165						
H10N1	**ASCENSION HYDR**	**46.39**	**141**	T	T	06 19 06.3	
	baz=327,slow=75,SNR=158						
HKT	**Hockley**	**46.43**	**283**	*i* P	P	05 29 28.9	-4.3
DPC	**Dobruska-Polom**	**46.82**	**48**	*eP*	**P**	**05 29 36.5**	**+0.4**
DPC	**Dobruska-Polom**	**46.82**	**48**	*eP*	**P**	**05 29 36.5**	**+0.4**
H10S1	**ASCENSION HYDR**	**47.22**	**142**	T	T	06 20 04.4	
	baz=328,slow=75,SNR=136						
H10S3	**ASCENSION HYDR**	**47.22**	**142**	T	T	06 20 09.4	
	baz=328,slow=75,SNR=160						
H10S2	**ASCENSION HYDR**	**47.23**	**142**	T	T	06 20 10.6	
	baz=328,slow=75,SNR=187						
WHTX	**Lake Whitney,**	**47.26**	**287**	*eP*	**P**	**05 29 39.6**	**-0.2**
VYHS	**Vyhne**	**48.45**	**51**	*eP*	**P**	**05 29 47.3**	**-1.6**
VYHS				pmax	pmax		
	comp=Z,2.0nm,0.9s						
VYHS	**Vyhne**	**48.45**	**51**	*eP*	**P**	**05 29 47.3**	**-1.6**
FFC	**Flin Flon**	**48.58**	**318**	*eP*	**P**	**05 29 49.8**	**+0.1**
FFC				pmax	pmax		
	comp=Z,6.0nm,1.0s						
FFC	**Flin Flon**	**48.58**	**318**	*eP*	**P**	**05 29 49.8**	**+0.1**
	comp=Z,5.5nm,1.0s						
STHS	**Stebnicka Huta**	**50.01**	**49**	*eP*	**P**	**05 30 01.8**	**+1.1**
STHS				pmax	pmax		
	comp=Z,4.0nm,1.2s						
STHS	**Stebnicka Huta**	**50.01**	**49**	*eP*	**P**	**05 30 01.8**	**+1.1**
CRVS	**Cervenica-Dubn**	**50.17**	**50**	*eP*	**P**	**05 30 02.8**	**+0.8**
CRVS	**Cervenica-Dubn**	**50.17**	**50**	*eP*	**P**	**05 30 02.8**	**+0.8**
UZH	**Uzhgorod**	**50.74**	**50**	*eP*	**P**	**05 30 05.5**	**-0.7**
UZH				*e*		05 30 13.0	
KWP	**Kalwaria Pacla**	**50.95**	**49**	P	**P**	**05 30 08.8**	**+1.0**
KWP				pmax	pmax		
	comp=Z,83nm,1.7s						
FINES	**FINESS Array B**	**52.83**	**34**	P	**P**	**05 30 22.4**	**+0.8**
	comp=Z,1.4nm,0.8s,baz=246,slow=12,SNR=4.1						
VSU	**Vasula**	**53.07**	**38**	*i* P	**P**	**05 30 24.3**	**+0.9**
TXAR	**Lajitas Array**	**53.13**	**285**	P	**P**	**05 30 24.6**	**+0.1**
	comp=Z,1.0nm,1.0s,baz=104,slow=5.3,SNR=6.2						
TXAR				LR	LR	05 51 57.0	
	comp=Z,37nm,19.5s,baz=0.0,slow=35						
LPAZ	**La Paz**	**53.35**	**212**	P	**P**	**05 30 26.0**	**-0.6**
	comp=Z,1.3nm,0.9s,baz=28,slow=8.9,SNR=3.8						
LPAZ				LR	LR	05 51 21.7	
	comp=Z,32nm,18.9s,baz=34,slow=34						
ANMO	**Albuquerque**	**53.80**	**293**	*eP*	P	05 30 25.9	-3.6
ANMO				pmax	pmax		
	comp=Z,3.0nm,2.1s						
BW06	**Boulder Array**	**54.39**	**303**	*eP*	**P**	**05 30 33.3**	**-0.4**
	comp=Z,6.8nm,1.0s						
PDAR	**Pinedale Array**	**54.39**	**303**	P	**P**	**05 30 33.5**	**-0.2**
	comp=Z,3.1nm,0.8s,baz=71,slow=7.4,SNR=25						
PDAR				LR	LR	05 52 39.2	
	comp=Z,251nm,18.9s,baz=116,slow=35						
AKASG	**Malin Array Be**	**55.02**	**47**	P	**P**	**05 30 36.6**	**-1.2**
	comp=Z,0.3nm,0.4s,baz=274,slow=6.6,SNR=6.9						
AKASG				LR	LR	05 52 20.1	
	comp=Z,52nm,18.2s,baz=285,slow=34						
AKASG	**Malin Array Be**	**55.02**	**47**	P	**P**	**05 30 36.6**	**-1.2**
AKASG				pmax	pmax		
	comp=Z,1.0nm,0.6s						
SNOW	**Snow King Moun**	**55.11**	**304**	*eP*	**P**	**05 30 39.0**	**0.0**
	comp=Z,31nm,1.8s						
YKA	**Yellowknife Ar**	**55.39**	**327**	P	**P**	**05 30 39.6**	**-0.7**
	comp=Z,1.1nm,1.0s,baz=86,slow=7.4,SNR=12						
DUG	**Dugway, Tooele**	**57.35**	**301**	*eP*	**P**	**05 30 55.1**	**+0.3**
DUG				pmax	pmax		
	comp=Z,10.0nm,1.4s						
DUG	**Dugway, Tooele**	**57.35**	**301**	*eP*	**P**	**05 30 55.1**	**+0.3**
	comp=Z,9.9nm,1.4s						
NEW	**Newport**	**58.49**	**311**	LR	LR	05 56 25.1	
	comp=Z,53nm,18.0s,baz=72,slow=36						
MFID	**Camas Ranch**	**58.73**	**305**	*eP*	**P**	**05 31 05.4**	**+1.0**
	comp=Z,3.8nm,0.9s						
OBN	**Obninsk**	**58.75**	**41**	*ceP*	**P**	**05 31 05.6**	**+1.5**
OBN				*e*		05 33 19.1	
OBN				*eS*	S	05 39 32.2	+24
OBN				pmax	pmax		
	comp=Z,31nm,1.5s						
OBN				MLR	MLR		
	comp=Z,33nm,15.0s						
CPUP	**Villa Florida**	**58.79**	**197**	LR	LR	05 56 18.2	
	comp=Z,23nm,18.1s,baz=149,slow=36						
BRTR	**Keskin Array B**	**60.41**	**59**	P	**P**	**05 31 15.6**	**-0.5**
	comp=Z,3.4nm,0.8s,baz=281,slow=5.3,SNR=13						
BRTR				LR	LR	05 55 55.4	
	comp=Z,14nm,20.0s,baz=241,slow=35						
LPSR	**Galich'ya Gora**	**60.62**	**44**	*eP*	**P**	**05 31 16.8**	**-0.3**
LPSR				pmax	pmax		
	comp=Z,10.0nm,0.8s						
VSR	**Storozhevoye**	**61.09**	**45**	*eP*	**P**	**05 31 19.4**	**-1.0**
VSR				pmax	pmax		
	comp=Z,10.0nm,1.5s						
ANN	**Anapa**	**61.66**	**53**	*eP*	P	05 31 21.3	-2.9
ANN				*eS*	**S**	**05 39 40.7**	**-5.6**
ANN				pmax	pmax		
	comp=Z,66nm,1.4s						
NVAR	**Mina Array Bea**	**61.93**	**300**	P	**P**	**05 31 26.7**	**+0.2**
	comp=Z,0.8nm,0.6s,baz=74,slow=6.7,SNR=4.0						
NVAR				LR	LR	05 57 17.5	
	comp=Z,258nm,19.5s,baz=75,slow=35						
INK	**Inuvik**	**62.47**	**335**	*eP*	**P**	**05 31 30.1**	**+0.8**
INK				pmax	pmax		
	comp=Z,7.0nm,1.3s						
INK	**Inuvik**	**62.47**	**335**	*eP*	**P**	**05 31 30.1**	**+0.8**
	comp=Z,7.4nm,1.3s						
VRH	**Novokhopyorsk**	**62.65**	**45**	*eP*	**P**	**05 31 29.1**	**-1.7**
VRH				pmax	pmax		
	comp=Z,9.0nm,0.7s						
KIV	**Kislovodsk**	**65.50**	**52**	*eP*	P	05 31 53.1	+3.3
KIV				*e*		05 34 17.4	
KIV				pmax	pmax		
	comp=Z,4.0nm,0.5s						
KIV				MLR	MLR		
	comp=Z,21nm,17.0s						
KBZ	**Khabaz**	**65.72**	**52**	P	**P**	**05 31 51.9**	**+0.8**
	comp=Z,2.6nm,0.9s,baz=275,slow=5.8,SNR=5.5						
ZEI	**Tsey**	**66.73**	**53**	*eP*	**P**	**05 31 56.2**	**-1.7**
ZEI				pmax	pmax		
	comp=Z,9.0nm,0.9s						
GNI	**Garni**	**68.30**	**55**	*ceP*	**P**	**05 32 08.8**	**+1.0**
GNI				pmax	pmax		
	comp=Z,53nm,2.2s						
ILAR	**Eielson Array**	**68.71

SFK	**Sufi-Kurgan**	**87.34**	**44**	P	**P**	**05 33 55.4**	**+1.5**
TLY	**Talaya**	**92.35**	**21**	LR	LR	06 15 28.3	
	comp=Z,24nm,19.5s,baz=340,slow=35						
PETK	**Petropavlovsk-**	**94.76**	**348**	LR	LR	06 20 54.1	
	comp=Z,15nm,18.8s,baz=99,slow=38						
COCO	**West Island**	**137.39**	**74**c	*i* PKIKP	**PKPdf**	**05 40 34.5**	**+3.8**
ASAR	**Alice Springs**	**171.82**	**31**	PKPab	**PKPab**	**05 42 37.1**	**-0.6**
	comp=Z,0.6nm,1.0s,baz=316,slow=3.9,SNR=3.9						

IDC 20 05:30:45.1±1.2, 37°.16N×144°.58E, h0km, mb3.4/4, mb1 3.7/5, mb1mx3.4/43, mbtmp3.4/5, ML3.5/1, MS2.5/1, Ms1 2.5/1, ms1mx2.1/27, Error ellipse: s-maj=50.7km s-min=25.1km az=119.0, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MJAR	**Matsushiro Arr**	**5.14**	**265**	Pn	Pn	05 32 03.1	-0.3
	1.8nm,0.3s,baz=88,slow=15,SNR=5.2						
MJAR				Sn	Sn	05 32 59.5	-4.0
	1.0nm,0.3s,baz=308,slow=36,SNR=3.6						
MAT	**Matsushiro**	**5.14**	**265**	P	Pn	05 32 03.8	+0.3
MAT				S	Sn	05 33 01.8	-1.8
KSRS	**Korea Array**	**13.27**	**276**	LR	LR	05 38 51.0	
	comp=Z,19nm,18.3s,baz=336,slow=36						
ILAR	**Eielson Array**	**48.03**	**32**	P	P	05 39 25.4	-0.4
	0.3nm,0.8s,baz=264,slow=7.2,SNR=3.1						
WRA	**Warramunga Arr**	**57.61**	**191**	P	P	05 40 36.9	-0.1
	1.2nm,0.6s,baz=12,slow=7.2,SNR=7.2						
ASAR	**Alice Springs**	**61.33**	**191**	P	P	05 41 02.7	0.0
	0.4nm,0.6s,baz=10,slow=6.1,SNR=3.6						
YKA	**Yellowknife Ar**	**62.42**	**31**	P	P	05 41 09.6	+0.1
	0.1nm,0.8s,baz=302,slow=7.0,SNR=2.8						

IDC 20 05:33:58.0±2.9, 0°.68S×134°.05E, h0km, mb3.2/2, mb1 3.4/3, mb1mx3.2/30, mbtmp3.2/3, ML3.4/1, Error ellipse: s-maj=144.3km s-min=26.5km az=76.0, Irian Jaya region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**19.14**	**179**	P	P	05 38 22.0	-1.0
	0.1nm,0.3s,baz=358,slow=11,SNR=6.8						
ASAR	**Alice Springs**	**22.85**	**180**	P	P	05 39 03.8	+0.7
	0.5nm,0.8s,baz=10,slow=11,SNR=5.2						
MKAR	**Makanchi Array**	**65.38**	**324**	P	P	05 44 42.4	-0.1
	0.2nm,0.4s,baz=117,slow=7.5,SNR=3.1						

*ISCJB **20** 05:44:01.0±1.8, 20°.8N±0°.1×99°.9E±0°.1, h10km, Error ellipse: s-maj=23.8km s-min=5.9km az=143.5*
*BKK **20** 05:44:03.0±2.2, 21°.N±19°×10°.0E±°, h0km, M3.9/7, MLv3.9/7*
*PLV **20** 05:44:08.6±1.1, 21°.42N×100°.13E, h23km±999km, ML3.5*
ISC 20 05:44:03.5±2.2, 20°.7N±0°.1×99°.8E±0°.1, h10km, n10, σ1§36/12, Myanmar

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CRAI	**Chiangrai**	**0.70**	**127**	P	**Pg**	**05 44 15.3**	**-1.7**
CHTO	**Chiang Mai**	**1.99**	**203**	P	**Pn**	**05 44 37.0**	**-0.3**
CMMT	**Chiang Mai**	**1.99**	**203**	P	**Pn**	**05 44 36.8**	**-0.5**
LAMP	**Lampang**	**2.12**	**184**	P	**Pn**	**05 44 38.2**	**-0.9**
UTTA	**Uttaradit**	**2.98**	**166**	P	**Pn**	**05 44 49.7**	**-1.2**
DBV	**Dienbien**	**3.12**	**76**	*e*Pg	**Pb**	**05 44 60.0**	**+0.8**
DBV				*e*Sg	**Sb**	**05 45 38.4**	**+1.0**
DBV				AML	AML	05 45 43.4	
	comp=N,320nm,0.5s						
MLVB	**It Ong**	**3.44**	**66**	*e*Pg	Pg	05 45 19.1	+10
MLVB				*e*Sg	Sg	05 46 08.3	+14
PHIT	**Phitsanulok**	**3.50**	**170**	P	**Pn**	**05 44 58.9**	**+0.9**
TGV	**Tuan Giao**	**3.52**	**74**	*e*Pn	**Pn**	**05 44 56.6**	**-1.8**
TGV				*e*Pg	**Pb**	**05 45 07.6**	**+1.6**
TGV				*e*Sg	**Sb**	**05 45 50.2**	**+1.3**
TGV				AML	AML	05 46 00.3	
	comp=N,79nm,0.5s						
PBKT	**Sadao Pong**	**4.21**	**164**	P	**Pn**	**05 45 08.9**	**+1.1**

JMA 20 06:05:04.4±0.3, 36°.66N×141°.40E, h32km±4km, M2.4, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.65**	**313**	P	Pb	06 05 17.3	-0.2
JHO	**Hitachi**	**0.67**	**266**	P	Pn	06 05 17.0	-0.7
JHO				S	Sb	06 05 26.8	0.0
JFK	**Kawauchi**	**0.82**	**329**	P	Pn	06 05 19.4	-0.4
JAG	**Ashikaga**	**1.58**	**262**	P	Pn	06 05 30.8	+0.5
MAT	**Matsushiro**	**2.57**	**268**	P	Pn	06 05 45.6	+1.8

*ISCJB **20** 06:05:16.0±1.3, 39°.15N±0°.05×142°.39E±0°.08, h33km±7km, mb3.9/19, Error ellipse: s-maj=11.0km s-min=8.3km az=10.7*
*JMA **20** 06:05:17.8±0.2, 39°.41N×142°.44E, h34km±2km, M4.4*
JMA Felt II J1.
*IDC **20** 06:05:17.5±2.9, 39°.03N×142°.52E, h38km±25km, mb3.7/19, mb1 3.8/24, mb1mx3.8/49, mbtmp3.9/24, ML3.4/5, MS2.8/4, Ms1 2.8/4, ms1mx2.5/50, Error ellipse: s-maj=18.5km s-min=15.5km az=107.0*
ISC 20 06:05:17.3±1.9, 39°.34N±0°.06×142°.44E±0°.09, h28km±11km, n46, σ1§05/37, mb3.9/19, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MIYJ	**Miyakonagasawa**	**0.54**	**296**	P	**Pb**	**06 05 28.2**	**-0.1**
MIYJ				S	**Sb**	**06 05 35.6**	**-0.2**
OFUJ	**Ofunato**	**0.66**	**247**	P	**Pn**	**06 05 29.8**	**-0.8**
OFUJ				*e*S	**Sn**	**06 05 39.9**	**-0.1**
OFUJ	**Ofunato**	**0.66**	**247**	P	**Pn**	**06 05 29.8**	**-0.8**
JTH	**Tanohata**	**0.75**	**323**	P	**Pn**	**06 05 30.8**	**-1.1**
JTH				S	**Sb**	**06 05 40.9**	**-0.7**
JOM	**Ohasama**	**0.90**	**279**	P	**Pn**	**06 05 34.1**	**0.0**
JMK	**Ichinoseki**	**1.03**	**248**	P	**Pb**	**06 05 37.0**	**+0.6**
JMK				S	**Sn**	**06 05 49.7**	**+0.5**
JKZ	**Kuzumaki**	**1.07**	**307**	P	**Pn**	**06 05 36.3**	**-0.2**
JKZ				S	**Sn**	**06 05 49.7**	**-0.8**
JANG	**Nango**	**1.26**	**326**	P	**Pn**	**06 05 38.4**	**-0.5**
JANG				*e*S	**Sn**	**06 05 53.3**	**-1.6**
MJAR	**Matsushiro Arr**	**4.36**	**231**	Pn	Pn	06 06 18.6	-3.0
	6.1nm,0.3s,baz=33,slow=13,SNR=22						
MJAR				LR	LR	06 08 27.6	
	comp=Z,65nm,19.0s,baz=50,slow=45						
MAT	**Matsushiro**	**4.36**	**232**	P	Pn	06 06 18.8	-2.8
MAT				*e*S	Sn	06 07 05.0	-6.5
ASAJ	**Asahikawa**	**4.78**	**1**	Pn	Pn	06 06 29.7	+2.5
	2.2nm,0.3s,baz=318,slow=12,SNR=5.4						
USRK	**Ussuriysk Ar.**	**9.20**	**305**	Pn	Pn	06 07 30.7	+2.7
	0.6nm,0.3s,baz=124,slow=15,SNR=15						
JNU	**Nakatsue**	**11.21**	**240**	LR	LR	06 12 26.5	
	comp=Z,83nm,18.3s,baz=322,slow=39						
KSRS	**Korea Array**	**11.55**	**265**	Pn	**Pn**	**06 08 01.2**	**+1.0**
	0.4nm,0.3s,baz=81,slow=15,SNR=4.3						
KSRS				LR	LR	06 12 02.7	
	comp=Z,22nm,19.7s,baz=345,slow=35						
KLR	**Kul'dur**	**12.49**	**326**	Pn	P	06 08 18.4	-6.1
	0.1nm,0.3s,baz=143,slow=17,SNR=2.7						
KLR				LR	LR	06 12 58.6	
	comp=Z,67nm,21.7s,baz=130,slow=36						
SEY	**Seymchan**	**24.38**	**11**	P	**P**	**06 10 34.2**	**+1.6**
	1.2nm,0.5s,baz=180,slow=13,SNR=5.0						
SONM	**Songino Array**	**27.25**	**300**	P	**P**	**06 10 60.0**	**+1.0**
	0.6nm,0.6s,baz=92,slow=9.2,SNR=3.7						
H11N2	**WAKE ISLAND Hy**	**28.73**	**126**	T	T	06 41 38.9	
	baz=317,slow=76,SNR=1242						
H11N1	**WAKE ISLAND Hy**	**28.74**	**126**	T	T	06 41 36.5	
	baz=317,slow=76,SNR=1090						
H11N3	**WAKE ISLAND Hy**	**28.75**	**126**	T	T	06 41 39.3	
	baz=317,slow=76,SNR=1100						
H11S1	**WAKE ISLAND Hy**	**29.53**	**128**	T	T	06 42 36.2	
	baz=318,slow=76,SNR=595						
H11S3	**WAKE ISLAND Hy**	**29.53**	**128**	T	T	06 42 35.9	
	baz=318,slow=76,SNR=595						
H11S2	**WAKE ISLAND Hy**	**29.54**	**128**	T	T	06 42 37.4	
	baz=318,slow=76,SNR=348						
ZALV	**Zalesovo Beam**	**41.00**	**310**	P	**P**	**06 12 58.1**	**+0.6**
	2.0nm,0.4s,baz=85,slow=7.6,SNR=7.8						
MKAR	**Makanchi Array**	**43.62**	**300**	P	**P**	**06 13 19.9**	**+0.9**
	2.0nm,0.5s,baz=84,slow=9.8,SNR=30						
ILAR	**Eielson Array**	**47.12**	**33**	P	**P**	**06 13 46.9**	**+0.5**
	0.4nm,0.5s,baz=268,slow=6.0,SNR=8.0						
GUN	**Gumba**	**47.77**	**274**	*e*P	**P**	**06 13 50.6**	**-1.8**
	7.8nm,0.4s						
PKIN	**Phulchoki**	**48.30**	**274**	*e*P	P	06 13 50.7	-5.7
	4.5nm,0.3s						
GKN	**Gorkha**	**48.68**	**275**	*e*P	**P**	**06 13 58.0**	**-1.2**
	5.2nm,0.2s						
KOLN	**Koldanda**	**49.60**	**275**	*e*P	P	06 14 01.3	-5.0
	1.4nm,0.3s						
BVAR	**Borovoye Array**	**49.65**	**311**	P	**P**	**06 14 07.8**	**+1.7**
	2.5nm,0.4s,baz=69,slow=8.1,SNR=10						
PYUN	**Piuthan**	**49.91**	**276**	*e*P	**P**	**06 14 07.8**	**-0.9**
INK	**Inuvik**	**51.97**	**28**	P	**P**	**06 14 24.1**	**+0.8**
	0.5nm,0.5s,baz=309,slow=5.6,SNR=4.5						
ARU	**Arti**	**55.19**	**318**	P	**P**	**06 14 47.8**	**+0.8**
	2.4nm,0.2s,baz=121,slow=3.5,SNR=7.2						
AKTO	**Aktyubinsk**	**57.76**	**311**	P	**P**	**06 15 05.9**	**+0.5**
	1.8nm,0.7s,baz=69,slow=13,SNR=8.8						
WRA	**Warramunga Arr**	**59.46**	**189**	P	P	06 15 14.0	-3.5
	1.0nm,0.5s,baz=6.4,slow=7.0,SNR=22						
YKA	**Yellowknife Ar**	**61.41**	**31**	P	**P**	**06 15 30.6**	**+0.2**
	0.2nm,0.5s,baz=299,slow=6.2,SNR=5.9						
ASAR	**Alice Springs**	**63.18**	**189**	P	**P**	**06 15 39.9**	**-2.9**
	0.4nm,0.6s,baz=2.6,slow=5.5,SNR=5.5						
FINES	**FINESS Array B**	**67.16**	**332**	P	**P**	**06 16 07.9**	**-0.2**
	1.7nm,0.6s,baz=47,slow=8.4,SNR=6.7						
KBZ	**Khabaz**	**70.02**	**310**	P	**P**	**06 16 26.1**	**-0.1**
	0.9nm,0.4s,baz=90,slow=7.1,SNR=3.3						
NOA	**NORSAR Array B**	**72.38**	**337**	P	**P**	**06 16 42.1**	**+1.8**
	0.5nm,0.6s,baz=40,slow=5.9,SNR=2.9						
AKASG	**Malin Array Be**	**72.97**	**322**	P	**P**	**06 16 43.0**	**-0.9**
	1.2nm,0.4s,baz=45,slow=5.9,SNR=6.9						
PDAR	**Pinedale Array**	**75.48**	**46**	P	**P**	**06 16 59.4**	**+0.3**
	0.2nm,0.5s,baz=191,slow=0.4,SNR=3.9						
BRTR	**Keskin Array B**	**77.93**	**312**	P	**P**	**06 17 13.3**	**+0.5**
	0.5nm,0.4s,baz=97,slow=3.1,SNR=4.4						
TXAR	**Lajitas Array**	**88.08**	**53**	P	**P**	**06 18 05.2**	**-0.2**
	0.1nm,0.5s,baz=289,slow=2.8,SNR=3.3						
LPAZ	**La Paz**	**144.81**	**58**	PKP	**PKPdf**	**06 24 51.8**	**-0.8**
	0.6nm,0.6s,baz=313,slow=5.2,SNR=4.0						

JMA 20 06:05:20.4±0.1, 38°.84N×142°.03E, h45km±1km, M4.0, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**0.37**	**311**	S	Sn	06 05 36.4	-0.1
JMK	**Ichinoseki**	**0.64**	**280**	P	Pn	06 05 33.3	+0.1
JMK				S	Sn	06 05 42.5	+0.1
JIO	**Ouri**	**0.66**	**234**	P	Pn	06 05 33.3	-0.1
JIO				S	Sn	06 05 42.2	-0.5
JOM	**Ohasama**	**0.85**	**318**	S	Sn	06 05 46.1	-1.3
JOU	**Okura**	**1.17**	**247**	P	Pn	06 05 40.6	+0.2
JOU				S	Sn	06 05 55.6	+0.4
JRG	**Rokugo**	**1.22**	**298**	P	Pn	06 05 41.1	+0.1
JYK	**Kaneyama**	**1.31**	**274**	P	Pn	06 05 42.5	+0.3
JMM	**Marumori**	**1.38**	**225**	P	Pn	06 05 43.3	+0.2
JMM				*e*S	Sn	06 05 59.9	-0.2

MAN 20 06:07:48, 12°.59N×120°.59E, h7km, mb4.2, ML3.0, MS2.8, 1D, Mindoro

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SJMP	**San Jose**	**0.53**	**104**	*e*P	Pb	06 07 59.6	0.0
SJMP				*e*S	Sb	06 08 07.7	+0.2
BUSP	**Coron**	**0.70**	**214**	*e*P	Pb	06 08 02.8	+0.3
BUSP				*e*S	Sb	06 08 13.2	+0.8
PGP	**Puerto Galera**	**0.97**	**21**$\Downarrow$	*e*P	Pg	06 08 06.8	+0.1
PGP				*i* S	Sg	06 08 19.8	+0.4
BOAC	**Boac**	**1.49**	**54**	*e*P	Pn	06 08 14.6	-0.6
BOAC				*e*S	Sg	06 08 37.5	+1.5
CUYO	**Cuyo Island**	**1.78**	**166**	*e*P	Pn	06 08 18.9	-0.2
ENPP	**El Nido**	**1.79**	**220**	*e*P	Pb	06 08 20.3	-0.8

IDC 20 06:14:46.0±4.6, 37°.07N×143°.14E, h0km, mb3.4/3, mb1 3.6/4, mb1mx3.3/56, mbtmp3.3/4, ML2.9/1, MS2.8/1, Ms1 2.8/1, ms1mx2.2/33, Error ellipse: s-maj=133.4km s-min=29.3km az=162.0, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MJAR	**Matsushiro Arr**	**3.99**	**264**	Pn	Pn	06 15 47.9	-0.5
	0.9nm,0.3s,baz=79,slow=15,SNR=3.6						
ASAJ	**Asahikawa**	**7.05**	**357**	LR	LR	06 19 33.6	
	comp=Z,73nm,19.7s,baz=14,slow=41						
H11N2	**WAKE ISLAND Hy**	**27.00**	**123**	T	T	06 49 29.6	
	baz=313						
H11N1	**WAKE ISLAND Hy**	**27.00**	**123**	T	T	06 49 32.0	
	baz=313						
H11N3	**WAKE ISLAND Hy**	**27.01**	**123**	T	T	06 49 27.6	
	baz=313						
MKAR	**Makanchi Array**	**45.27**	**302**	P	P	06 23 05.2	0.0
	0.5nm,0.7s,baz=93,slow=8.7,SNR=4.4						
ILAR	**Eielson Array**	**48.72**	**32**	P	P	06 23 31.6	-0.3
	0.3nm,0.5s,baz=255,slow=6.1,SNR=5.7						
YKA	**Yellowknife Ar**	**63.08**	**31**	P	P	06 25 14.8	+0.1
	0.2nm,0.6s,baz=302,slow=6.4,SNR=7.6						

*SCB **20** 06:14:43.3±0.3, 18°.04S×66°.23W, h26km, Ml3.5/4, Error ellipse: s-maj=11.4km s-min=2.7km az=13.0*
*IDC **20** 06:14:44.9±8.3, 18°.86S×66°.68W, h41km±60km, mb3.2/2, mb1 3.4/2, mb1mx3.1/27, mbtmp3.4/2, ML4.0/1, Error ellipse: s-maj=114.8km s-min=42.4km az=44.0*
ISC 20 06:14:46.4±1.9, 18°.5S±0°.2×66°.3W±0°.1, h35km, n9, σ1§47/13, 7D, Central Bolivia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BBOE	**La Paz, Chanca**	**2.33**	**317**$\Downarrow$	*i*Pg	**Pn**	**06 15 21.0**	**-1.8**
BBOJ	**La Paz, Jacaqu**	**2.36**	**311**$\Downarrow$	*i*Pg	**Pn**	**06 15 23.1**	**-0.1**
LPAZ	**La Paz**	**2.82**	**322**	P	**Pn**	**06 15 29.1**	**-0.5**
	19nm,0.3s,baz=147,slow=14,SNR=96						
LPAZ				S	**Sn**	**06 16 03.8**	**+1.1**
	19nm,0.3s,baz=250,slow=18,SNR=14						
LPAZ	**La Paz**	**2.82**	**322**$\Downarrow$	*i*Pg	**Pn**	**06 15 28.9**	**-0.7**
LPAZ				*e*Sg	**Sn**	**06 16 02.6**	**-0.1**
	113nm,0.3s						
BBOD	**La Paz, Gloria**	**2.88**	**311**$\Downarrow$	*i*Pg	**Pn**	**06 15 31.8**	**+1.5**
BBOD				$\Downarrow$*i*Sg	**Sn**	**06 16 07.3**	**+3.3**
	111nm,0.5s						
BBOB	**La Paz, Bander**	**2.94**	**324**$\Downarrow$	*i*Pg	**Pn**	**06 15 30.9**	**-0.2**
BBOB				$\Downarrow$*i*Sg	**Sn**	**06 16 05.7**	**+0.2**
	166nm,0.4s						
SIV	**San Ignacio**	**5.61**	**64**	*e*Pn	**Pn**	**06 16 08.1**	**+0.6**
SIV				*e*Sn	Sn	06 17 10.5	-0.3
	1.4nm,0.3s						
TORD	**Torodi Ar. Bea**	**74.06**	**70**	P	**P**	**06 26 19.7**	**+0.3**
	0.6nm,0.7s,baz=243,slow=5.9,SNR=3.6						
YKA	**Yellowknife Ar**	**89.24**	**340**	P	**P**	**06 27 36.7**	**-1.5**
	0.1nm,0.8s,baz=127,slow=4.6,SNR=4.6						

IDC 20 06:14:55.9±2.7, 29°.91S×138°.85E, h0km, mb1 3.0/3, mb1mx3.0/36, mbtmp2.7/3, ML2.6/2, Error ellipse: s-maj=93.0km s-min=15.2km az=48.0, South Australia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
STKA	**Stephens Creek**	**3.07**	**130**	Pn	Pn	06 15 44.9	-0.9
	0.2nm,0.3s,baz=299,slow=14,SNR=2.8						
STKA				Pg	Pb	06 15 51.6	+0.2
	0.7nm,0.3s,baz=299,slow=14,SNR=6.5						
STKA				Lg	Lg	06 16 34.5	
	2.6nm,0.3s,baz=29,slow=19,SNR=7.6						
ASAR	**Alice Springs**	**7.63**	**323**	Pn	Pn	06 16 48.8	+0.4
	baz=142,slow=13,SNR=3.4						
ASAR				Sn	Sn	06 18 15.9	+0.3
	0.1nm,0.3s,baz=147,slow=22,SNR=3.2						
WRA	**Warramunga Arr**	**10.73**	**337**	Pn	Pn	06 17 31.3	+0.4
	0.1nm,0.3s,baz=155,slow=13,SNR=2.4						
WRA				Sn	Sn	06 19 33.6	+1.7
	0.1nm,0.3s,baz=158,slow=20,SNR=3.2						

JMA 20 06:15:06.9±0.1, 37°.16N×141°.36E, h29km±2km, M2.5, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**0.44**	**298**	P	Pb	06 15 16.1	-0.2
JFK				S	Sb	06 15 22.5	-0.3
ONAJ	**Iwakimizuishiy**	**0.45**	**263**	P	Pb	06 15 16.5	-0.1
ONAJ				S	Sb	06 15 22.9	-0.3
JMM	**Marumori**	**0.84**	**328**	P	Pn	06 15 22.2	-0.5
JHO	**Hitachi**	**0.84**	**229**	P	Pn	06 15 21.7	-1.1
JHO				S	Sb	06 15 32.4	-1.4
MAT	**Matsushiro**	**2.60**	**257**	P	Pn	06 15 45.5	-1.5
MAT				S	Sn	06 16 18.1	+0.4

*ISCJB **20** 06:17:10.5±0.8, 12°.55N±0°.04×120°.56E±0°.05, h20km±7km, mb3.7/7, MS3.0/3, Error ellipse: s-maj=9.0km s-min=5.5km az=38.8*
*MAN **20** 06:17:10, 12°.47N×120°.63E, h13km, mb4.6, ML3.4, MS3.3*
*IDC **20** 06:17:13.2±3.8, 12°.61N×120°.81E, h35km±32km, mb3.5/7, mb1 3.7/7, mb1mx3.4/52, mbtmp3.7/7, MS3.2/3, Ms1 3.2/3, ms1mx2.7/37, Error ellipse: s-maj=37.5km s-min=17.4km az=66.0*
ISC 20 06:17:08.4±1.4, 12°.55N±0°.04×120°.49E±0°.05, h3km±10km, n20, σ1§24/23, mb3.7/7, MS3.0/3, 3D, Mindoro

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BUSP	**Coron**	**0.61**	**208**	*e*P	**Pn**	**06 17 23.6**	**-0.5**
BUSP				*e*S	**Sn**	**06 17 34.2**	**-0.3**
SJMP	**San Jose**	**0.62**	**98**	*e*P	**Pg**	**06 17 20.6**	**+0.2**
SJMP				*e*S	**Sg**	**06 17 29.1**	**+0.7**
PGP	**Puerto Galera**	**1.05**	**25**$\Downarrow$	*i*P	**Pg**	**06 17 27.8**	**-0.9**
PGP				*i* S	**Sg**	**06 17 40.9**	**-1.4**
BOAC	**Boac**	**1.60**	**55**	*e*P	**Pn**	**06 17 36.9**	**-0.8**
BOAC				*e*S	**Sn**	**06 17 58.7**	**-0.2**
TGY	**Tagaytay City**	**1.61**	**16**	Pn	**Pb**	**06 17 38.8**	**0.0**
	1μm,0.3s,baz=213,slow=3.5,SNR=86						
TGY				Lg	Lg	06 18 01.2	
	626nm,0.3s,baz=332,slow=22,SNR=8.9						
TGY				LR	LR	06 18 08.9	
	comp=Z,184nm,21.2s,baz=203,slow=38						
TGY	**Tagaytay City**	**1.61**	**16**$\Downarrow$	*i*P	**Pg**	**06 17 39.4**	**+0.2**
TGY				*i* S	**Sg**	**06 18 01.0**	**+0.9**
ENPP	**El Nido**	**1.69**	**218**	*e*P	**Pg**	**06 17 40.4**	**-0.5**
CUYO	**Cuyo Island**	**1.76**	**163**	*e*P	**Pn**	**06 17 39.6**	**-0.4**
AUQP	**San Andres**	**2.27**	**70**	*e*P	**Pn**	**06 17 47.6**	**+0.8**
GQP	**Guinayangan**	**2.33**	**54**$\Downarrow$	*e*P	**Pn**	**06 17 47.9**	**+0.1**
GQP				*e*S	**Sn**	**06 18 16.6**	**-0.4**
CMAR	**Chiang Mai Arr**	**21.57**	**289**	P	**P**	**06 22 03.1**	**+3.7**
	3.0nm,0.8s,baz=99,slow=8.2,SNR=18						
PSI	**Prapat**	**23.44**	**247**	LR	LR	06 31 21.0	
	comp=Z,58nm,19.9s,baz=88,slow=36						
KSRS	**Korea Array**	**25.68**	**14**	LR	LR	06 33 17.3	
	comp=Z,42nm,18.5s,baz=202,slow=38						
JHJ	**Hachijo jima 2**	**27.03**	**38**	LR	LR	06 31 07.2	
	comp=Z,53nm,19.4s,baz=88,slow=31						
WRA	**Warramunga Arr**	**35.05**	**157**	P	**P**	**06 24 02.0**	**-0.8**
	1.2nm,0.7s,baz=337,slow=9.4,SNR=10						
SONM	**Songino Array**	**37.10**	**344**	P	**P**	**06 24 18.9**	**-1.4**
	0.5nm,0.6s,baz=153,slow=9.7,SNR=2.6						
ASAR	**Alice Springs**	**38.31**	**160**	P	**P**	**06 24 30.6**	**0.0**
	0.5nm,0.5s,baz=340,slow=6.9,SNR=8.7						
MKAR	**Makanchi Array**	**46.84**	**324**	P	**P**	**06 25 42.1**	**+2.3**
	0.3nm,0.4s,baz=149,slow=8.2,SNR=4.8						
ZALV	**Zalesovo Beam**	**49.98**	**333**	P	**P**	**06 26 03.3**	**-0.5**
	1.7nm,0.6s,baz=108,slow=7.7,SNR=7.5						
YKA	**Yellowknife Ar**	**93.91**	**22**	P	**P**	**06 30 26.2**	**-1.1**
	0.2nm,0.8s,baz=309,slow=4.3,SNR=3.9						

*IDC **20** 06:17:45.1±1.2, 14°.60N×55°.69E, h0km, mb3.8/10, mb1 4.0/10, mb1mx3.7/50, mbtmp3.8/10, MS3.2/6, Ms1 3.2/6, ms1mx2.8/48, Error ellipse: s-maj=27.9km s-min=24.4km az=6.0*
*ISCJB **20** 06:17:46.8±0.9, 14°.6N±0°.1×55°.6E±0°.1, h22km, mb3.7/10, MS3.1/6, Error ellipse: s-maj=21.7km s-min=19.3km az=27.1*
ISC 20 06:17:48.6±1.2, 14°.6N±0°.2×55°.7E±0°.2, h22km, n18, σ0§38/10, mb3.7/10, MS3.1/6, Owen Fracture Zone region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GEYT	**Alibeck**	**23.30**	**5**	P	**P**	**06 22 54.6**	**-0.5**
	4.4nm,0.8s,baz=180,slow=9.5,SNR=3.8						
GEYT				LR	LR	06 34 06.2	
	comp=Z,49nm,18.2s,baz=275,slow=42						
H08N2	**Diego Garcia H**	**25.77**	**143**	T	T	06 49 55.0	
	baz=324,slow=76,SNR=11						
H08N3	**Diego Garcia H**	**25.78**	**143**	T	T	06 49 56.8	
	baz=324,slow=76,SNR=10						
H08N1	**Diego Garcia H**	**25.79**	**143**	T	T	06 49 57.1	
	baz=324,slow=76,SNR=9.8						
KBZ	**Khabaz**	**30.99**	**342**	LR	LR	06 38 31.9	
	comp=Z,41nm,19.3s,baz=156,slow=40						
BRTR	**Keskin Array B**	**31.60**	**326**	LR	LR	06 38 37.1	
	comp=Z,25nm,19.7s,baz=137,slow=40						
AKTO	**Aktyubinsk**	**35.76**	**3**	P	**P**	**06 24 46.3**	**+0.4**
	1.3nm,0.7s,baz=202,slow=12,SNR=3.7						
MKAR	**Makanchi Array**	**39.01**	**29**	P	**P**	**06 25 13.7**	**+0.1**
	0.8nm,0.5s,baz=216,slow=9.7,SNR=10.0						
BVAR	**Borovoye Array**	**40.04**	**14**	P	**P**	**06 25 22.0**	**0.0**
	0.6nm,0.5s,baz=169,slow=8.2,SNR=2.8						
CMAR	**Chiang Mai Ar

ZALV	**Zalesovo Beam**	**41.16**	**311**	P	**P**	**06 25 41.7**	**-0.5**
	0.5nm,0.3s,baz=79,slow=7.5,SNR=3.4						
MKAR	**Makanchi Array**	**43.69**	**301**	P	**P**	**06 26 02.3**	**-0.7**
	0.9nm,0.6s,baz=88,slow=10,SNR=5.7						
BVAR	**Borovoye Array**	**49.81**	**311**	P	**P**	**06 26 50.3**	**-0.4**
	0.6nm,0.3s,baz=64,slow=9.8,SNR=3.2						
WRA	**Warramunga Arr**	**58.95**	**189**	P	**P**	**06 27 56.4**	**-0.9**
	0.5nm,0.9s,baz=5.8,slow=7.0,SNR=4.6						
FINES	**FINESS Array B**	**67.49**	**332**	P	**P**	**06 28 51.8**	**-1.7**
	1.1nm,0.8s,baz=70,slow=9.0,SNR=2.9						
KBZ	**Khabaz**	**70.18**	**310**	P	**P**	**06 29 10.7**	**+0.1**
	1.4nm,0.7s,baz=352,slow=7.1,SNR=2.7						

SJA 20 06:24:13.9±0.6, 31°.75S×70°.35W, h74km±12km, ML2.1, MW3.6, Chile-Argentina border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RTLS	**Leoncito**	**0.90**	**94**	*i* P	Pn	06 24 33.2	+1.5
AUSP	**Uspallata**	**0.94**	**120**	*i* P	Pn	06 24 33.4	+1.2
AUSP				*i* S	Sn	06 24 48.2	+2.5
ROC1	**El Roble**	**1.35**	**205**	*i* P	Pn	06 24 39.0	+1.7
ROC1				*i* S	Sn	06 24 56.6	+1.8
RTCV	**Cerro Valdivia**	**1.54**	**95**	*i* P	Pn	06 24 41.3	+1.7
RTCV				*i* S	Sn	06 25 00.9	+1.9
RTLL	**Cerro Villicun**	**1.65**	**76**	*i* P	Pn	06 24 42.6	+1.6
RTLL				*i* S	Sn	06 25 03.7	+2.1
AMOG	**MOGNA**	**1.78**	**64**	*i* P	Pn	06 24 44.1	+1.3
AMOG				*i* S	Sn	06 25 06.8	+2.2
AGUA	**GUANDACOL**	**2.76**	**36**	*i* P	Pn	06 24 58.2	+2.1
VCA	**Vinchina**	**3.53**	**32**	*i* P	Pn	06 25 08.0	+1.5
VCA				IAML		06 25 55.3	
	comp=Z,3.9nm,0.3s						

JMA 20 06:28:20.0±0.2, 38°.60N×144°.55E, h31km, M3.7, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**2.30**	**283**	P	Pn	06 28 57.1	+1.3
JTH	**Tanohata**	**2.48**	**304**	P	Pn	06 28 59.1	+0.9
JTH				S	Sn	06 29 28.4	+1.0
JIO	**Ouri**	**2.52**	**268**	P	Pn	06 28 59.8	+1.1
JIO				S	Sn	06 29 29.4	+1.1
JMK	**Ichinoseki**	**2.63**	**279**	P	Pn	06 29 02.0	+1.8
JOM	**Ohasama**	**2.68**	**290**	*e*S	Sn	06 29 34.1	+1.6
JMM	**Marumori**	**3.05**	**257**	S	Sn	06 29 42.3	+0.8
JOU	**Okura**	**3.06**	**267**	P	Pn	06 29 08.1	+1.9
JOU				S	Sn	06 29 43.6	+1.8
JRG	**Rokugo**	**3.15**	**286**	P	Pn	06 29 09.7	+2.2
JYK	**Kaneyama**	**3.29**	**277**	P	Pn	06 29 11.7	+2.3
JYK				*e*S	Sn	06 29 50.9	+3.4
JFT	**Otama**	**3.50**	**253**	P	Pn	06 29 14.2	+2.0
JFT				*e*S	Sn	06 29 54.8	+2.2

IDC 20 06:41:36.8±2.9, 37°.67N×142°.14E, h0km, mb3.4/2, mb1 3.5/3, mb1mx3.2/65, mbtmp3.2/3, ML2.9/1, Error ellipse: s-maj=69.9km s-min=35.5km az=59.0, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MJAR	**Matsushiro Arr**	**3.33**	**251**	Pn	Pn	06 42 30.1	-0.2
	1.3nm,0.3s,baz=68,slow=14,SNR=4.5						
H11N2	**WAKE ISLAND Hy**	**27.99**	**123**	T	T	07 16 59.5	
	baz=315,slow=75,SNR=14						
H11N1	**WAKE ISLAND Hy**	**28.00**	**123**	T	T	07 17 01.6	
	baz=315,slow=75,SNR=14						
H11N3	**WAKE ISLAND Hy**	**28.01**	**123**	T	T	07 17 01.0	
	baz=315,slow=75,SNR=8.9						
H11S1	**WAKE ISLAND Hy**	**28.74**	**125**	T	T	07 17 57.6	
	baz=317,slow=76,SNR=7.4						
H11S3	**WAKE ISLAND Hy**	**28.74**	**125**	T	T	07 17 57.0	
	baz=317,slow=76,SNR=10						
H11S2	**WAKE ISLAND Hy**	**28.75**	**125**	T	T	07 17 54.6	
	baz=317,slow=76,SNR=6.9						
MKAR	**Makanchi Array**	**44.27**	**302**	P	P	06 49 48.0	-0.1
	0.3nm,0.7s,baz=81,slow=8.9,SNR=2.7						
WRA	**Warramunga Arr**	**57.77**	**189**	P	P	06 51 29.7	-0.1
	0.3nm,0.6s,baz=4.8,slow=7.0,SNR=4.3						

*ISCJB **20** 06:42:26.8±0.7, 32°.24N±0°.04×115°.35W±0°.07, h11km±8km, Error ellipse: s-maj=10.3km s-min=5.8km az=153.9*
*MEX **20** 06:42:27.7±0.5, 32°.39N×115°.15W, h26km±5km, MD3.8*
*ECX **20** 06:42:28.4±0.5, 32°.24N×115°.37W, h5km, MD2.3, ML2.6*
ISC 20 06:42:26.5±0.9, 32°.23N±0°.04×115°.36W±0°.05, h13km±10km, n13, σ0°.22/18, 2C-3D, California-Baja California border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CPBX	**Cerro Prieto**	**0.19**	**15**	⇓*e*P	**Pg**	**06 42 31.0**	**+0.1**
CPBX				*e*S	**Sg**	**06 42 34.2**	**+0.3**
CPBX				*e*		06 42 34.9	
CPBX				AML	AML	06 42 34.9	
	comp=E,3μm,0.3s						
CPBX				⇑*e*		06 42 35.0	
CPBX				AML	AML	06 42 35.0	
	comp=N,4μm,0.4s						
CPBX				⇑*e*		06 42 36.6	
MBIG	**Mexicali**	**0.23**	**38**	*e*P	**Pg**	**06 42 31.5**	**+0.1**
MBIG				*e*S	**Sg**	**06 42 34.1**	**-0.6**
SGL	**Mount Signal**	**0.52**	**324**	*e*P	**Pg**	**06 42 36.9**	**+0.2**
ERPC	**Ernies Place**	**0.57**	**334**	*e*P	**Pb**	**06 42 38.4**	**0.0**
DREC	**Desert Rsrch C**	**0.58**	**353**	*e*P	**Pb**	**06 42 38.4**	**-0.1**
WESC	**Westside Schoo**	**0.61**	**330**	⇓*e*P	**Pb**	**06 42 38.9**	**-0.1**
COA	**Coachella**	**0.66**	**18**	*e*P	**Pg**	**06 42 39.6**	**+0.2**
ECBX	**El Chinero**	**0.80**	**161**	⇓*e*P	**Pb**	**06 42 42.2**	**0.0**
ECBX				*e*S	**Sb**	**06 42 53.1**	**+0.1**
CBX	**Cerro Bola**	**1.10**	**275**	*e*P	**Pn**	**06 42 47.7**	**-0.1**
CBX	**Cerro Bola**	**1.10**	**275**	*e*P	**Pb**	**06 42 47.4**	**-0.1**
CBX				*e*S	**Sg**	**06 43 02.0**	**-0.2**
SPIG	**San Pedro Mart**	**1.18**	**184**	*e*P	**Pn**	**06 42 49.1**	**0.0**
SPIG	**San Pedro Mart**	**1.18**	**184**	*e*P	**Pn**	**06 42 49.1**	**0.0**
SPIG				*i* S	**Sg**	**06 43 04.7**	**-0.1**
SPX	**San Pedro Mart**	**1.18**	**184**	*e*P	**Pn**	**06 42 49.1**	**0.0**

*ISCJB **20** 06:43:15.7±0.6, 14°.8N±0°.1×55°.6E±0°.1, h10km, mb3.9/12, MS3.2/11, Error ellipse: s-maj=18.6km s-min=13.2km az=33.3*
*IDC **20** 06:43:15.8±0.8, 14°.77N×55°.65E, h0km, mb3.9/12, mb1 4.1/12, mb1mx3.7/67, mbtmp3.9/12, MS3.2/13, Ms1 3.2/13, ms1mx3.0/46, Error ellipse: s-maj=24.3km s-min=18.5km az=129.0*
ISC 20 06:43:17.4±0.8, 14°.8N±0°.1×55°.6E±0°.1, h10km, n25, σ1s04/13, mb4.0/12, MS3.2/11, Owen Fracture Zone region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WSAR	**Wadi Sarin**	**8.87**	**18**	Pn	Pn	06 45 30.7	+5.0
	0.2nm,0.3s,baz=237,slow=8.4,SNR=4.0						
WSAR				LR	LR	06 48 58.8	
	comp=Z,109nm,18.3s,baz=210,slow=39						
ATD	**Arta Tunnel**	**12.86**	**257**	LR	LR	06 50 08.8	
	comp=Z,96nm,18.5s,baz=80,slow=32						
GEYT	**Alibeck**	**23.15**	**5**	P	**P**	**06 48 23.9**	**0.0**
	1.1nm,0.4s,baz=191,slow=7.2,SNR=4.1						
GEYT				LR	LR	06 59 36.1	
	comp=Z,21nm,19.5s,baz=80,slow=42						
EIL	**Elat**	**24.13**	**311**	LR	LR	06 58 31.3	
	comp=Z,82nm,18.5s,baz=59,slow=38						
H08N2	**Diego Garcia H**	**25.94**	**143**	T	T	07 15 25.4	
	baz=324,slow=76,SNR=12						
H08N3	**Diego Garcia H**	**25.95**	**143**	T	T	07 15 26.3	
	baz=324,slow=76,SNR=15						
H08N1	**Diego Carcia H**	**25.96**	**143**	T	T	07 15 27.9	
	baz=324,slow=76,SNR=12						
GNI	**Garni**	**27.00**	**341**	LR	LR	07 01 40.2	
	comp=Z,113nm,19.3s,baz=176,slow=41						
BRTR	**Keskin Array B**	**31.43**	**326**	LR	LR	07 04 07.1	
	comp=Z,48nm,18.1s,baz=90,slow=40						
AAK	**Ala-Archa**	**32.15**	**27**	P	**P**	**06 49 47.1**	**+1.8**
	1.0nm,0.7s,baz=199,slow=10,SNR=5.4						
MKAR	**Makanchi Array**	**38.90**	**29**	P	**P**	**06 50 43.9**	**+0.7**
	0.9nm,0.5s,baz=208,slow=9.7,SNR=9.8						
MKAR				LR	LR	07 07 37.3	
	comp=Z,27nm,19.1s,baz=183,slow=38						
CMAR	**Chiang Mai Arr**	**41.59**	**79**	P	**P**	**06 51 05.8**	**-0.1**
	0.8nm,0.3s,baz=278,slow=8.8,SNR=5.4						
MATP	**Matopo**	**44.00**	**218**	P	**P**	**06 51 25.4**	**0.0**
	2.5nm,0.7s,baz=34,slow=7.3,SNR=3.3						
ZALV	**Zalesovo Beam**	**45.27**	**24**	P	**P**	**06 51 34.5**	**-0.5**
	1.0nm,0.5s,baz=228,slow=8.4,SNR=5.6						
ZALV				LR	LR	07 14 03.8	
	comp=Z,7.5nm,18.3s,baz=241,slow=41						
GERES	**GERESS Array B**	**48.25**	**324**	LR	LR	07 17 17.6	
	comp=Z,15nm,20.9s,baz=68,slow=42						
LBTB	**Lobatse**	**49.23**	**217**	P	**P**	**06 52 07.9**	**+1.6**
	3.5nm,0.8s,baz=45,slow=11,SNR=3.5						
FINES	**FINESS Array B**	**51.18**	**342**	P	**P**	**06 52 19.8**	**-0.8**
	1.9nm,0.9s,baz=146,slow=10,SNR=3.4						
FINES				LR	LR	07 16 52.6	
	comp=Z,56nm,18.8s,baz=206,slow=39						
TORD	**Torodi Ar. Bea**	**52.26**	**275**	P	**P**	**06 52 29.0**	**-0.4**
	1.1nm,1.1s,baz=110,slow=3.6,SNR=5.2						
NOA	**NORSAR Array B**	**56.09**	**336**	LR	LR	07 22 02.0	
	comp=Z,19nm,18.5s,baz=110,slow=42						
ESDC	**Sonseca Array**	**57.37**	**308**	P	**P**	**06 53 05.8**	**-0.3**
	1.2nm,0.7s,baz=79,slow=9.3,SNR=3.8						
ARCES	**ARCESS Array B**	**57.87**	**348**	LR	LR	07 21 56.6	
	comp=Z,36nm,18.4s,baz=206,slow=40						
DBIC	**Dimbokro**	**59.82**	**269**	LR	LR	07 21 16.0	
	comp=Z,25nm,18.6s,baz=108,slow=38						
WRA	**Warramunga Arr**	**84.72**	**112**	P	**P**	**06 55 51.5**	**-0.7**
	1.0nm,0.5s,baz=293,slow=4.3,SNR=4.9						
ASAR	**Alice Springs**	**85.47**	**116**	P	**P**	**06 55 54.6**	**-1.4**
	0.5nm,0.7s,baz=267,slow=6.3,SNR=4.7						
NVAR	**Mina Array Bea**	**126.75**	**354**	PKP	**PKPdf**	**07 02 23.1**	**+1.1**
	0.4nm,0.6s,baz=197,slow=0.9,SNR=2.9						

MAN 20 06:45:43, 12°.55N×120°.66E, h31km, mb4.4, ML3.3, MS3.1, 1C, Mindoro

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SJMP	**San Jose**	**0.46**	**101**	*e*P	Pn	06 45 54.1	+0.7
SJMP				*e*S	Sn	06 46 02.7	+2.1
BUSP	**Coron**	**0.70**	**220**	*e*P	Pb	06 45 57.3	+0.5
BUSP				*e*S	Sn	06 46 07.9	+1.3
PGP	**Puerto Galera**	**0.99**	**17**	⇑*i*P	Pb	06 46 02.1	+0.4
PGP				*i* S	Sb	06 46 14.1	-0.3
BOAC	**Boac**	**1.47**	**52**	*e*P	Pn	06 46 08.3	+1.0
CUYO	**Cuyo Island**	**1.72**	**168**	*e*P	Pb	06 46 13.0	-1.1

*IDC **20** 06:45:58.3±1.8, 43°.13N×15°.67E, h0km, mb3.4/2, mb1 3.8/7, mb1mx3.5/51, mbtmp3.5/7, ML3.4/5, MS2.5/1, Ms1 2.5/1, ms1mx2.0/36, Error ellipse: s-maj=35.4km s-min=20.2km az=63.0*
*CSEM **20** 06:45:58.6±0.1, 42°.97N×15°.62E, h2km, ML3.2, Error ellipse: s-maj=2.2km s-min=1.8km az=167.0*
*LDG **20** 06:45:58.2±0.1, 42°.94N×15°.57E, h10km, Ml3.6/13, Error ellipse: s-maj=2.2km s-min=1.1km az=23.0*
*PDG **20** 06:45:58.8±0.5, 43°.01N×15°.63E, h10km±1km, ML3.5/12, Error ellipse: s-maj=0.5km s-min=0.7km az=0.0*
*ROM **20** 06:45:58.6±0.3, 43°.00N×15°.67E, h10km, Ml3.2/41, Error ellipse: s-maj=4.9km s-min=2.4km az=58.0*
*PRU **20** 06:45:59.6, 43°.05N×15°.81E, h1km*
ISC 20 06:45:59.3±1.1, 42°.99N±0°.02×15°.46E±0°.03, h18km±7km, n206, σ1s46/252, 12C-23D, Adriatic Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CAFR	**Castel Frentan**	**1.12**	**228**	Pn	**Pg**	**06 46 22.8**	**+1.9**
	1μm,0.4s						
CAFR	**Castel Frentan**	**1.12**	**228**	Pn	**Pg**	**06 46 22.8**	**+1.9**
	1μm,0.4s						
FRES	**Fresagrandinar**	**1.17**	**210**	Pn	**Pg**	**06 46 22.4**	**+0.5**
	1μm,0.9s						
FRES	**Fresagrandinar**	**1.17**	**210**	Pn	**Pg**	**06 46 22.4**	**+0.5**
	1μm,0.9s						
SGRT	**San Giovanni R**	**1.25**	**170**	Pn	**Pn**	**06 46 21.6**	**-0.3**
	512nm,0.4s						
SGRT	**San Giovanni R**	**1.25**	**170**	Pn	**Pn**	**06 46 21.6**	**-0.3**
	512nm,0.4s						
OFFI	**Offida**	**1.30**	**268**	Pn	**Pg**	**06 46 25.9**	**+1.5**
	665nm,0.6s						
OFFI	**Offida**	**1.30**	**268**	Pn	**Pg**	**06 46 25.9**	**+1.5**
	665nm,0.6s						
MSAG	**Monte S. Angel**	**1.31**	**165**	Pn	**Pn**	**06 46 22.6**	**-0.3**
	1μm,0.5s						
MSAG	**Monte S. Angel**	**1.31**	**165**	Pn	**Pn**	**06 46 22.6**	**-0.3**
	1μm,0.5s						
MS1	**Monte Sant'Ang**	**1.33**	**164**	*e*Pn	**Pb**	**06 46 23.4**	**-0.3**
CIGN	**Sant'Elia a Pi**	**1.39**	**197**	Pn	**Pb**	**06 46 25.0**	**+0.2**
	364nm,0.6s						
CIGN	**Sant'Elia a Pi**	**1.39**	**197**	Pn	**Pb**	**06 46 25.0**	**+0.2**
	364nm,0.6s						
TRIV	**Trivento**	**1.39**	**209**	Pn	**Pg**	**06 46 25.7**	**-0.4**
	599nm,0.7s						
TRIV	**Trivento**	**1.39**	**209**	Pn	**Pg**	**06 46 25.7**	**-0.4**
	599nm,0.7s						
TERO	**Teramo**	**1.41**	**256**	Pn	**Pg**	**06 46 26.9**	**+0.4**
	145nm,0.5s						
TERO	**Teramo**	**1.41**	**256**	Pn	**Pg**	**06 46 26.9**	**+0.4**
	145nm,0.5s						
AOI	**Ancona**	**1.47**	**293**	Pn	**Pg**	**06 46 27.3**	**-0.3**
	183nm,0.6s						
AOI	**Ancona**	**1.47**	**293**	Pn	**Pg**	**06 46 27.3**	**-0.3**
	183nm,0.6s						
INTR	**Introdacqua**	**1.51**	**230**	Pn	**Pg**	**06 46 27.6**	**-0.7**
	519nm,0.6s						
INTR	**Introdacqua**	**1.51**	**230**	Pn	**Pg**	**06 46 27.6**	**-0.7**
	519nm,0.6s						
UDBI	**Udbina**	**1.56**	**8**	*e*Pn	**Pn**	**06 46 26.7**	**+0.5**
UDBI				Sn	**Sb**	**06 46 48.7**	**+1.6**
UDBI	**Udbina**	**1.56**	**8**	*e*Pn	**Pn**	**06 46 26.7**	**+0.5**
UDBI				Sn	**Sb**	**06 46 48.7**	**+1.6**
BSSO	**Busso**	**1.58**	**204**	Pn	**Pg**	**06 46 28.8**	**-0.8**
	393nm,0.7s						
BSSO	**Busso**	**1.58**	**204**	Pn	**Pg**	**06 46 28.8**	**-0.8**
	393nm,0.7s						
CAMP	**Campotosto**	**1.58**	**254**	Pn	**Pg**	**06 46 29.1**	**-0.5**
	106nm,0.6s						
CAMP	**Campotosto**	**1.58**	**254**	Pn	**Pg**	**06 46 29.1**	**-0.5**
	106nm,0.6s						
SMA1	**SAN MARTINO**	**1.60**	**258**	Pn	**Pb**	**06 46 28.2**	**-0.2**
	177nm,0.6s						
SMA1	**SAN MARTINO**	**1.60**	**258**	Pn	**Pb**	**06 46 28.2**	**-0.2**
	177nm,0.6s						
RNI2	**Rionero Sannit**	**1.61**	**218**	Pn	**Pg**	**06 46 30.5**	**+0.3**
	247nm,0.5s						
RNI2	**Rionero Sannit**	**1.61**	**218**	Pn	**Pg**	**06 46 30.5**	**+0.3**
	247nm,0.5s						
MIDA	**Miranda**	**1.61**	**214**	Pn	**Pb**	**06 46 28.3**	**-0.3**
	367nm,0.5s						
MIDA	**Miranda**	**1.61**	**214**	Pn	**Pb**	**06 46 28.3**	**-0.3**
	367nm,0.5s						
MOCO	**Biccari - m.te**	**1.63**	**188**	Pn	Pn	**06 46 27.9**	**+0.7**
	269nm,0.8s						
NVLJ	**Novalja**	**1.63**	**345**	*i* Pn	**Pb**	**06 46 28.6**	**-0.3**
NVLJ				Sn	**Sg**	**06 46 52.0**	**0.0**
NVLJ	**Novalja**	**1.63**	**345**	*i* Pn	**Pb**	**06 46 28.6**	**-0.3**
NVLJ				Sn	**Sg**	**06 46 51.9**	**0.0**
AQU	**L'Aquila**	**1.64**	**248**	*e*Pn	**Pg**	**06 46 30.2**	**-0.7**
STON	**Ston**	**1.65**	**93**	*i* Pn	**Pn**	**06 46 25.5**	**-1.9**
STON				Sn	**Sn**	**06 46 47.0**	**-1.1**
STON	**Ston**	**1.65**	**93**	*i* Pn	**Pn**	**06 46 25.4**	**-1.9**
STON	**Ston**	**1.65**	**93**	⇑*i* Pg	**Pn**	**06 46 25.8**	**-1.5**
STON				Sn	**Sn**	**06 46 46.9**	**-1.1**
RM32	**Poggio Cancell**	**1.65**	**256**	Pn	**Pb**	**06 46 30.2**	**+1.0**
	131nm,0.7s						
RM32	**Poggio Cancell**	**1.65**	**256**	Pn	**Pb**	**06 46 30.2**	**+1.0**
	131nm,0.7s						
SACR	**S. Croce Del S**	**1.68**	**200**	Pn	**Pb**	**06 46 29.5**	**-0.3**
	228nm,0.8s						
SACR	**S. Croce Del S**	**1.68**	**200**	Pn	**Pb**	**06 46 29.5**	**-0.3**
	228nm,0.8s						
CING	**Cingoli**	**1.70**	**284**	Pn	**Pb**	**06 46 30.6**	**+0.5**
	142nm,0.9s						
CING	**Cingoli**	**1.70**	**284**	Pn	**Pb**	**06 46 30.6**	**+0.5**
	142nm,0.9s						
FDMO	**Fiordimonte**	**1.74**	**272**	Pn	**Pb**	**06 46 31.1**	**+0.4**
	88nm,0.7s						
FDMO	**Fiordimonte**	**1.74**	**272**	Pn	**Pb**	**06 46 31.1**	**+0.4**
	88nm,0.7s						
CERA	**Filignano**	**1.75**	**218**	Pn	**Pg**	**06 46 32.1**	**-0.8**
	242nm,0.7s						
CERA	**Filignano**	**1.75**	**218**	Pn	**Pg**	**06 46 32.1**	**-0.8**
	242nm,0.7s						
VVLD	**Villa Vallelon**	**1.76**	**231**	Pn	**Pb**	**06 46 31.6**	**+0.5**
	212nm,0.7s						
VVLD	**Villa Vallelon**	**1.76**	**231**	Pn	**Pb**	**06 46 31.6**	**+0.5**
	212nm,0.7s						
PTRJ	**Pietraroja**	**1.76**	**203**	Pn	**Pb**	**06 46 30.1**	**-1.0**
	505nm,0.6s						
PTRJ	**Pietraroja**	**1.76**	**203**	Pn	**Pb**	**06 46 30.1**	**-1.0**
	505nm,0.6s						
SGG	**Gregorio Mates**	**1.79**	**207**	Pn	**Pb**	**06 46 30.8**	**-0.8**
	269nm,0.5s						
SGG	**Gregorio Mates**	**1.79**	**207**	Pn	**Pb**	**06 46 30.8**	**-0.8**
	269nm,0.5s						
PTQR	**Pietraquaria**	**1.80**	**238**	Pn	**Pg**	**06 46 33.4**	**-0.5**
PTQR	**Pietraquaria**	**1.80**	**238**	Pn	**Pg**	**06 46 33.4**	**-0.5**
POFI	**Posta Fibreno**	**1.81**	**226**	Pn	**Pb**	**06 46 31.9**	**-0.1**
	123nm,0.5s						
POFI	**Posta Fibreno**	**1.81**	**226**	Pn	**Pb**	**06 46 31.9**	**-0.1**
	123nm,0.5s						
VAGA	**Valle Agricola**	**1.81**	**211**	Pn	**Pb**	**06 46 31.8**	**-0.2**
	306nm,0.5s						
VAGA	**Valle Agricola**	**1.81**	**211**	Pn	**Pb**	**06 46 31.8**	**-0.2**
	306nm,0.5s						
LNSS	**Leonessa**	**1.82**	**259**	Pn	**Pb**	**06 46 32.8**	**+0.6**
	152nm,0.5s						
LNSS	**Leonessa**	**1.82**	**259**	Pn	**Pb**	**06 46 32.8**	**+0.6**
	152nm,0.5s						
SGTA	**Sant Agata di**	**1.85**	**182**	Pn	**Pb**	**06 46 32.9**	**+0.3**
	302nm,0.6s						
SGTA	**Sant Agata di**	**1.85**	**182**	Pn	**Pb**	**06 46 32.9**	**+0.3**
	302nm,0.6s						
SNTG	**Esanatoglia**	**1.86**	**279**	Pn	**Pb**	**06 46 32.9**	**+0.1**
	105nm,0.8s						
SNTG	**Esanatoglia**	**1.86**	**279**	Pn	**Pb**	**06 46 32.9**	**+0.1**
	105nm,0.8s						
FIAM	**Fiamignano**	**1.87**	**248**	Pn	**Pb**	**06 46 34.0**	**+1.0**
	135nm,0.6s						
FIAM	**Fiamignano**	**1.87**	**248**	Pn	**Pb**	**06 46 34.0**	**+1.0**
	135nm,0.6s						
MRB1	**Monte Rocchett**	**1.89**	**191**	Pn	**Pb**	**06 46 33.3**	**0.0**
	302nm,0.6s						
MRB1	**Monte Rocchett**	**1.89**	**191**	Pn	**Pb**	**06 46 33.3**	**0.0**
	302nm,0.6s						
ARVD	**Arcevia**	**1.91**	**286**	Pn	**Pb**	**06 46 33.7**	**+0.1**
	66nm,0.7s						
ARVD	**Arcevia**	**1.91**	**286**	Pn	**Pb**	**06 46 33.7**	**+0.1**
	66nm,0.7s						
CAFE	**Carife**	**1.96**	**185**	Pn	**Pb**	**06 46 33.2**	**-1.4**
	230nm,0.5s						
CAFE	**Carife**	**1.96**	**185**	Pn	**Pb**	**06 46 33.2**	**-1.4**
	230nm,0.5s						
CDT	**Castel del Mon**	**2.00**	**162**	*e*Pn	**Pb**	**06 46 33.5**	**-1.6**
MRVN	**Minervino Murg**	**2.00**	**164**	Pn	**Pn**	**06 46 31.4**	**-0.8**
	243nm,0.9s						
MRVN	**Minervino Murg**	**2.00**	**164**	Pn	**Pn**	**06 46 31.4**	**-0.8**
	243nm,0.9s						
SSFR	**Montelago di S**	**2.01**	**284**	Pn	**Pb**	**06 46 35.1**	**-0.2**
	96nm,0.5s						
SSFR	**Montelago di S**	**2.01**	**284**	Pn	**Pb**	**06 46 35.1**	**-0.2**
	96nm,0.5s						
PAOL	**Paolisi**	**2.06**	**199**	Pn	**Pn**	**06 46 33.6**	**+0.5**
	105nm,0.5s						
PAOL	**Paolisi**	**2.06**	**199**	Pn	**Pn**	**06 46 33.6**	**+0.5**
	105nm,0.5s						
SNAL	**S. Angelo Dei**	**2.07**	**185**	Pn	**Pn**	**06 46 33.5**	**+0.3**
SNAL	**S. Angelo Dei**	**2.07**	**185**	Pn	**Pn**	**06 46 33.5**	**+0.3**
FRON	**Frontone**	**2.07**	**286**	Pn	**Pb**	**06 46 35.7**	**-0.6**
	188nm,1.2s						
FRON	**Frontone**	**2.07**	**286**	Pn	**Pb**	**06 46 35.7**	**-0.6**
	188nm,1.2s						
TREB	**Trebinje**	**2.14**	**96**	⇑*i*Pn	**Pn**	**06 46 33.4**	**-0.7**
TREB				*e*Sn	**Sn**	**06 46 58.8**	**-1.5**
BLY	**Banja Luka**	**2.16**	**35**	Pn	**Pn**	**06 46 35.0**	**+0.6**
	535nm,0.5s						
BLY	**Banja Luka**	**2.16**	**35**	⇓*i*P	**Pn**	**06 46 35.4**	**+1.0**
BLY	**Banja Luka**	**2.16**	**35**	Pn	**Pn**	**06 46 35.0**	**+0.6**
	535nm,0.5s						
BLY	**Banja Luka**	**2.16**	**35**	⇓*i*P	**Pn**	**06 46 35.4**	**+1.0**
BLY				*e*Sn	**Sn**	**06 47 01.7**	**+1.0**
PIEI	**Pieia**	**2.21**	**285**	Pn	**Pb**	**06 46 37.6**	**-1.1**
	89nm,1.0s						
PIEI	**Pieia**	**2.21**	**285**	Pn	**Pb**	**06 46 37.6**	**-1.1**
	89nm,1.0s						
MCRV	**Calabrutti - M**	**2.21**	**186**	Pn	**Pn**	**06 46 36.2**	**+1.0**
	159nm,0.6s						
MCRV	**Calabrutti - M**	**2.21**	**186**	Pn	**Pn**	**06 46 36.2**	**+1.0**
	159nm,0.6s						
ATPC	**Poggio Castell**	**2.25**	**284**	Pn	**Pb**	**06 46 38.8**	**-0.6**
	181nm,1.0s						
ATPC	**Poggio Castell**	**2.25**	**284**	Pn	**Pb**	**06 46 38.8**	**-0.6**
	181nm,1.0s						
BRY	**Bratogost**	**2.26**	**91**	⇓*i*Pn	**Pn**	**06 46 35.4**	**-0.5**
BRY				*e*Sn	**Sn**	**06 47 04.4**	**+0.9**
BRY	**Bratogost**	**2.26**	**91**	⇓*i*Pn	**Pn**	**06 46 35.4**	**-0.5**
BRY				*e*Sn	**Sn**	**06 47 02.0**	**-1.5**
HCY	**Herceg Novi**	**2.30**	**103**	⇓*i*Pn	**Pn**	**06 46 36.1**

SOKA	**Soboth**		**3.71**	**355**	P		**Pn**	**06 46 56.7**	**+1.0**
	4.1nm,0.5s								
TRUS	**Trudelj**		**3.80**	**69**	*e*Pn		**Pn**	**06 46 55.1**	**-1.8**
MYKA	**Terra Mystica**		**3.87**	**341**	*i* P		**Pn**	**06 47 00.2**	**+2.3**
	5.5nm,0.5s,SNR=5.8								
MYKA	**Terra Mystica**		**3.87**	**341**	P		**Pn**	**06 47 00.2**	**+2.3**
	5.5nm,0.5s,SNR=5.8								
TIP	**Timpagrande**		**3.93**	**165**	*i* P		**Pg**	**06 47 13.7**	**-0.8**
PKSM	**Morągy**		**3.94**	**34**	*e*Pn		**Pn**	**06 46 59.7**	**+0.8**
ARSA	**Arzberg**		**4.26**	**1**	*i* Pn		**Pn**	**06 47 03.9**	**+0.6**
	6.9nm,0.6s								
ARSA	**Arzberg**		**4.26**	**1**	P		**Pn**	**06 47 03.9**	**+0.6**
	6.9nm,0.6s								
ABTA	**Abfaltersbach**		**4.31**	**332**	*i* Pn		**Pn**	**06 47 05.9**	**+1.9**
	14nm,0.5s,SNR=12								
ABTA	**Abfaltersbach**		**4.31**	**332**	P		**Pn**	**06 47 05.9**	**+1.9**
	14nm,0.5s,SNR=12								
KBA	**Koelnbreinsper**		**4.36**	**341**	*i* P		**Pn**	**06 47 06.8**	**+2.0**
	9.0nm,0.3s,SNR=15								
KBA	**Koelnbreinsper**		**4.36**	**341**	P		**Pn**	**06 47 06.8**	**+2.0**
	9.0nm,0.3s,SNR=15								
OHR	**Ohrid**		**4.39**	**113**	*i* Pn		**Pn**	**06 47 04.6**	**-0.5**
OHR	**Ohrid**		**4.39**	**113**	*i* Pn		**Pn**	**06 47 04.6**	**-0.5**
SKO	**Skopje**		**4.54**	**101**	*i* Pn		**Pn**	**06 47 07.2**	**+0.2**
SKO	**Skopje**		**4.54**	**101**	*i* Pn		**Pn**	**06 47 07.2**	**+0.2**
BARS	**Barje**		**4.67**	**90**	*e*Pn		**Pn**	**06 47 09.2**	**+0.3**
PGF	**Pioggiola**		**4.78**	**267**	*e*Pn		**Pn**	**06 47 09.2**	**-1.3**
PGF	**Pioggiola**		**4.78**	**267**	*e*Pn		**Pn**	**06 47 09.2**	**-1.3**
MDVR	**Moldovita**		**4.86**	**66**	⇓*i*P		**Pn**	**06 47 13.6**	**+2.0**
MDVR	**Moldovita**		**4.86**	**66**	⇓*i*P		**Pn**	**06 47 13.6**	**+2.0**
MOA	**Molln**		**4.94**	**351**	*i* P		**Pn**	**06 47 14.4**	**+1.8**
	8.6nm,0.5s,SNR=20								
MOA	**Molln**		**4.94**	**351**	P		**Pn**	**06 47 14.4**	**+1.8**
	8.6nm,0.5s,SNR=20								
CONA	**Conrad Observa**		**4.95**	**3**	*i* Pn		**Pn**	**06 47 14.0**	**+1.1**
	0.9nm,0.2s								
CONA	**Conrad Observa**		**4.95**	**3**	P		**Pn**	**06 47 14.0**	**+1.1**
	0.9nm,0.2s								
WTTA	**Wattenberg**		**5.06**	**329**	*i* P		Pn	06 47 18.0	+3.6
	6.0nm,0.5s								
WTTA	**Wattenberg**		**5.06**	**329**	P		Pn	06 47 18.0	+3.6
	6.0nm,0.5s								
WATA	**Walderalm**		**5.14**	**329**	*i* P		Pn	06 47 22.3	+6.8
	4.0nm,0.3s								
WATA	**Walderalm**		**5.14**	**329**	P		Pn	06 47 22.3	+6.8
	4.0nm,0.3s								
FETA	**Feichten**		**5.25**	**322**	*i* P		**Pn**	**06 47 19.4**	**+2.4**
	1.6nm,0.6s								
FETA	**Feichten**		**5.25**	**322**	P		**Pn**	**06 47 19.4**	**+2.4**
	1.6nm,0.6s								
MOTA	**Moosalm**		**5.34**	**326**	*i* P		Pb	06 47 26.8	-5.3
	3.6nm,0.3s								
DAVOX	**Davos/Dischmat**		**5.49**	**316**	Pn		**Pn**	**06 47 23.4**	**+3.1**
	1.0nm,0.3s,baz=126,slow=17,SNR=4.1								
DAVOX					Sn		**Sn**	**06 48 27.1**	**+4.1**
	0.5nm,0.3s,baz=143,slow=20,SNR=2.9								
GZR	**Gura Zlata**		**5.78**	**63**	⇓*i*P		**Pn**	**06 47 27.0**	**+2.7**
DAVA	**Damuels**		**5.84**	**319**	*i* P		Pn	06 47 28.4	+3.3
	1.1nm,0.2s								
DAVA	**Damuels**		**5.84**	**319**	P		Pn	06 47 28.4	+3.3
	1.1nm,0.2s								
SBF	**Sospel**		**5.91**	**281**	*e*Pn		**Pn**	**06 47 24.9**	**-1.1**
GERES	**GERESS Array B**		**5.99**	**349**	Pn		**Pn**	**06 47 28.3**	**+1.2**
	1.9nm,0.3s,baz=166,slow=13,SNR=37								
GERES					Sn		**Sn**	**06 48 34.8**	**-0.4**
	3.7nm,0.3s,baz=168,slow=23,SNR=13								
VYHS	**Vyhne**		**5.99**	**22**	*e*		**Pn**	**06 47 28.3**	**+1.2**
VYHS					*e*			06 48 31.9	
KHC	**Kasperske Hory**		**6.28**	**349**	*e*PN		**Pn**	**06 47 32.2**	**+1.1**
KHC					*ex*		x	06 47 40.4	
KHC					*e*SN		**Sn**	**06 48 42.0**	**-0.4**
KHC					*ex*		x	06 48 56.9	
VRAC	**Vranov**		**6.37**	**7**	LR		LR	06 50 00.2	
	comp=Z,38nm,19.7s,baz=147,slow=39								
FRF	**La Foret Royal**		**6.46**	**278**	*e*Pn		**Pn**	**06 47 32.2**	**-1.3**
MBDF	**Montbardon**		**6.52**	**288**	*e*Pn		**Pn**	**06 47 33.4**	**-1.0**
MBDF					*e*Sn		**Sn**	**06 48 44.8**	**-3.6**
	6.1nm,0.5s								
KECS	**Kecovo**		**6.53**	**31**	*e*		**Sn**	**06 48 46.0**	**-2.3**
LMR	**La Mourre**		**6.56**	**276**	*e*Pn		**Pn**	**06 47 33.4**	**-1.4**
LPG	**La Plagne**		**6.74**	**295**	*e*Pn		**Pn**	**06 47 36.5**	**-1.1**
LPG					*e*Sn		**Sn**	**06 48 50.3**	**-3.7**
	12nm,0.6s								
LPL	**La Plagne**		**6.76**	**295**	*e*Pn		**Pn**	**06 47 36.7**	**-1.1**
LPL					*e*Sn		**Sn**	**06 48 50.7**	**-3.7**
	12nm,0.4s								
LANS	**Liptovska Anna**		**6.77**	**23**	*e*Sg		**Sg**	**06 49 35.2**	**-1.0**
LANS	**Liptovska Anna**		**6.77**	**23**	*e*PG		**Sg**	**06 49 34.6**	**-1.6**
LANS					*e*SG		**Sg**	**06 49 35.2**	**-1.0**
ORIF	**Oris-en-Rattie**		**7.18**	**289**	*e*Pn		**Pn**	**06 47 42.3**	**-1.1**
ORIF					*e*Sn		**Sn**	**06 49 00.5**	**-4.1**
	7.4nm,0.6s								
SMRF	**Simiane la Rot**		**7.26**	**281**	*e*Pn		**Pn**	**06 47 43.0**	**-1.5**
NKC	**Novy Kostel**		**7.54**	**345**	*e*SN		**Sn**	**06 49 11.6**	**-1.7**
CABF	**La Chapelle**		**7.59**	**302**	*e*Pn		**Pn**	**06 47 47.9**	**-1.1**
CABF					*e*Sn		**Sn**	**06 49 10.3**	**-4.3**
	3.4nm,0.4s								
HINF	**Hinteralfeld**		**7.75**	**312**	*e*Pn		**Pn**	**06 47 49.9**	**-1.2**
HINF					*e*Sn		**Sn**	**06 49 14.1**	**-4.3**
	16nm,0.7s								
CDF	**Champ du Feu**		**7.89**	**316**	*e*Pn		**Pn**	**06 47 51.9**	**-1.2**
VIVF	**Saint-Julien-l**		**8.01**	**287**	*e*Pn		**Pn**	**06 47 53.3**	**-1.5**
HAU	**Haudompre**		**8.13**	**311**	*e*Pn		**Pn**	**06 47 55.0**	**-1.4**
HAU					*e*Sn		**Sn**	**06 49 23.2**	**-4.7**
	15nm,0.6s								
CLL	**Collm**		**8.49**	**349**	*e*Sb		Sb	06 50 06.0	-0.3
CLL					*e*Sg		Sn	06 50 32.0	+55
SMF	**Signal de Mont**		**9.03**	**298**	*e*Pn		**Pn**	**06 48 07.6**	**-1.2**
SMF					*e*Sn		**Sn**	**06 49 44.8**	**-5.2**
	6.0nm,0.4s								
LOR	**Lormes**		**9.25**	**302**	*e*Pn		**Pn**	**06 48 10.3**	**-1.4**
	baz=122								
LOR					*e*Sn		**Sn**	**06 49 49.8**	**-5.5**
	7.7nm,0.3s								
SSF	**Saint Saulge**		**9.39**	**300**	*e*Pn		**Pn**	**06 48 12.2**	**-1.5**
SSF					*e*Sn		**Sn**	**06 49 53.3**	**-5.5**
	3.6nm,0.4s								
AVF	**Avril sur Loir**		**9.40**	**298**	*e*Pn		**Pn**	**06 48 12.3**	**-1.4**
AVF					*e*Sn		**Sn**	**06 49 53.6**	**-5.3**
	3.7nm,0.7s								
NOA	**NORSAR Array B**		**18.26**	**353**	Pn		**P**	**06 50 12.0**	**+0.4**
	0.1nm,0.3s,baz=167,slow=11,SNR=5.0								
FINES	**FINESS Array B**		**19.55**	**15**	P		**P**	**06 50 25.8**	**+0.1**
	0.1nm,0.3s,baz=202,slow=10,SNR=4.0								
KBZ	**Khabaz**		**19.93**	**78**	P		**P**	**06 50 30.2**	**+0.2**
	0.1nm,0.3s,baz=310,slow=7.9,SNR=3.2								
YKA	**Yellowknife Ar**		**67.52**	**337**	P		**P**	**06 56 54.2**	**+0.4**
	0.1nm,0.8s,baz=51,slow=8.1,SNR=3.5								
PDAR	**Pinedale Array**		**81.40**	**322**	P		**P**	**06 58 17.3**	**+2.1**
	0.2nm,0.5s,baz=74,slow=6.7,SNR=3.0								

*NEIC **20** 06:46:01.7, 16°.49N×94°.67W, h80km, MD4.0(MEX), After MEX.*

MEX 20 06:46:01.7±1.2, 16°.49N×94°.67W, h80km±36km, MD4.0, Oaxaca

Code	Station Name	Δ°	AZ°	Phase	ID		Time		Res
				Op		ISC	h m s		ISC
TGIG		**1.52**	**79**	*e*P		Pn	06 46 25.7		-1.6
TGIG				*i* S		Sn	06 46 44.8		-1.8
TGIG		**1.52**	**79**	*e*P		Pn	06 46 25.7		-1.6
TGIG				*i* S		Sn	06 46 44.8		-1.8
HUIG	**Huatulco**	**1.55**	**243**	*e*P		Pn	06 46 25.1		-2.6
HUIG				*e*S		Sn	06 46 46.1		-1.3
HUIG	**Huatulco**	**1.55**	**243**	*e*P		Pn	06 46 25.1		-2.6
HUIG				*e*S		Sn	06 46 46.1		-1.3
PCIG		**1.60**	**119**	*e*P		Pn	06 46 27.7		-0.6
PCIG				*e*S		Sn	06 46 46.1		-2.4
PCIG		**1.60**	**119**	*e*P		Pn	06 46 27.7		-0.6
PCIG				*e*S		Sn	06 46 46.1		-2.4
PANG	**Puerto Angel**	**1.91**	**245**	*e*P		Pn	06 46 29.2		-3.2
PANG				*e*S		Sn	06 46 48.3		-7.5
VHO	**Vista Hermosa**	**2.06**	**287**	*e*P		Pn	06 46 33.8		-0.7
VHO				*i* S		Sn	06 46 58.7		-0.9
VHO	**Vista Hermosa**	**2.06**	**287**	*e*P		Pn	06 46 33.8		-0.7
VHO				*i* S		Sn	06 46 58.7		-0.9

*ISCJB **20** 06:50:59.9±1.1, 12°.55S±0°.08×166°.6E±0°.2, h150km, mb3.6/7, Error ellipse: s-maj=27.2km s-min=10.8km az=175.5*
*IDC **20** 06:51:00.3±6.8, 12°.52S×166°.65E, h142km±70km, mb3.5/7, mb1 3.6/8, mb1mx3.4/44, mbtmp3.9/8, Error ellipse: s-maj=52.0km s-min=27.9km az=147.0*

ISC 20 06:51:01.1±1.1, 12°.56S±0°.09×166°.7E±0°.2, h150km, n9, σ0996/10, mb3.7/7, Santa Cruz Islands

Code	Station Name	Δ°	AZ°	Phase	ID		Time		Res
				Op		ISC	h m s		ISC
DZM	**Mont Dzumac**	**9.46**	**182**	P		**Pn**	**06 53 14.8**		**+0.8**
	0.5nm,0.3s,baz=322,slow=15,SNR=9.9								
DZM				S		**Sn**	**06 54 57.8**		**-1.2**
	0.5nm,0.3s,baz=164,slow=22,SNR=6.2								
STKA	**Stephens Creek**	**30.04**	**226**	P		**P**	**06 56 56.9**		**+0.9**
	0.9nm,0.6s,baz=36,slow=8.7,SNR=3.3								
WRA	**Warramunga Arr**	**31.90**	**252**	P		**P**	**06 57 10.9**		**-1.6**
	0.2nm,0.4s,baz=84,slow=9.6,SNR=3.5								
ASAR	**Alice Springs**	**33.00**	**246**	P		**P**	**06 57 21.4**		**-0.8**
	0.8nm,0.7s,baz=70,slow=9.6,SNR=12								
FITZ	**Fitzroy Crossi**	**39.94**	**257**	P		**P**	**06 58 21.4**		**+0.5**
	2.9nm,0.9s,baz=62,slow=7.8,SNR=2.9								
KLR	**Kul'dur**	**68.82**	**336**	P		**P**	**07 01 48.9**		**-0.1**
	1.2nm,0.6s,baz=121,slow=5.9,SNR=5.4								
ILAR	**Eielson Array**	**84.64**	**18**	P		**P**	**07 03 17.3**		**-0.1**
	0.2nm,0.7s,baz=221,slow=3.6,SNR=3.0								
MKAR	**Makanchi Array**	**95.27**	**317**	P		**P**	**07 04 07.6**		**-0.3**
	0.7nm,0.6s,baz=90,slow=6.9,SNR=6.3								
ARCES	**ARCESS Array B**	**118.03**	**346**	PKP		**PKPdf**	**07 09 29.4**		**-0.1**
	3.1nm,0.8s,baz=90,slow=1.8,SNR=6.4								

JMA 20 07:09:29.5, 38°.35N×141°.74E, h57km±1km, M3.5, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID		Time		Res
				Op		ISC	h m s		ISC
JIO	**Ouri**	**0.33**	**289**	P		Pn	07 09 39.6		+0.1
JIO				S		Sn	07 09 46.6		-0.1
JMK	**Ichinoseki**	**0.73**	**326**	P		Pn	07 09 44.2		+0.3
JMK				S		Sn	07 09 54.6		+0.2
OFUJ	**Ofunato**	**0.73**	**356**	P		Pn	07 09 43.9		-0.1
OFUJ				S		Sn	07 09 54.4		-0.1
JOU	**Okura**	**0.85**	**271**	P		Pn	07 09 45.6		+0.2
JOU				S		Sn	07 09 57.5		+0.4
JMM	**Marumori**	**0.89**	**237**	P		Pn	07 09 45.7		-0.3
JMM				S		Sn	07 09 57.6		-0.5
JOM	**Ohasama**	**1.18**	**343**	P		Pn	07 09 50.1		+0.4
JOM				S		Sn	07 10 05.2		+0.4
JFK	**Kawauchi**	**1.20**	**215**	P		Pn	07 09 50.2		+0.1
JFK				S		Sn	07 10 05.3		-0.1
JYK	**Kaneyama**	**1.22**	**298**	P		Pn	07 09 50.8		+0.4
JYK				S		Sn	07 10 06.5		+0.6
JYS	**Shirataka**	**1.32**	**265**	P		Pn	07 09 52.2		+0.5
JYS				S		Sn	07 10 09.2		+0.8
JRG	**Rokugo**	**1.35**	**321**	P		Pn	07 09 53.0		+0.8
JRG				S		Sn	07 10 10.5		+1.4
JFT	**Otama**	**1.39**	**234**	S		Sn	07 10 10.1		+0.2

*KRSC **20** 07:12:52.5±2.5, 53°.92N×170°.54E, h29km±14km, ML4.9*
*MOS **20** 07:12:53.4±0.9, 53°.89N×170°.82E, h30km, mb4.7/38, Error ellipse: s-maj=6.7km s-min=5.7km az=38.7*
*ISCJB **20** 07:12:53.9±0.9, 53°.95N±0°.04×170°.72E±0°.02, h33km±6km, mb4.5/109, MS3.7/31, Error ellipse: s-maj=6.2km s-min=2.3km az=178.8*
*BJI **20** 07:12:55.7, 54°.43N×170°.52E, h34km, mb4.6/28, mB4.9/20, Ms4.6/12, Ms7 4.2/11*
*IDC **20** 07:12:55.4±0.5, 53°.95N×170°.86E, h30km±2km, mb3.9/26, mb1 4.2/28, mb1mx4.1/40, mbtmp4.1/28, ML4.6/2, MS3.6/28, Ms1 3.6/28, ms1mx3.5/52, Error ellipse: s-maj=14.0km s-min=8.7km az=165.0*
*NEIC **20** 07:12:56.2±0.2, 53°.92N×170°.86E, h35km, mb4.6/68, Error ellipse: s-maj=6.0km s-min=2.6km az=175.0*

ISC 20 07:12:55.7±0.4, 53°.94N±0°.05×170°.80E±0°.04, h30km±2km, h30km:pP-P, n290, σ1s24/358, mb4.5/109, MS3.7/31, 2C-7D, Near Islands

Code	Station Name	Δ°	AZ°	Phase	ID		Time		Res
				Op		ISC	h m s		ISC
SMY	**Shemya**	**2.32**	**120**	*e*P		Pn	07 13 27.6		-4.1
SMY	**Shemya**	**2.32**	**120**	*e*Pn		Pn	07 13 27.6		-4.1
BKI	**Bering**	**3.08**	**296**	*e*P		**Pn**	**07 13 40.6**		**-1.6**
BKI				*e*S		**Sn**	**07 14 16.4**		**-1.5**
BKI	**Bering**	**3.08**	**296**	P		**Pn**	**07 13 40.6**		**-1.6**
BKI				S		**Sn**	**07 14 16.4**		**-1.5**
KBTR	**Krutoberegovo**	**5.12**	**300**	*e*P		**Pn**	**07 14 09.1**		**-1.0**
KBTR				*e*S		**Sn**	**07 15 04.7**		**-3.4**
KBTR	**Krutoberegovo**	**5.12**	**300**	P		**Pn**	**07 14 09.1**		**-1.0**
KBTR				S		**Sn**	**07 15 04.7**		**-3.4**
SMKR	**Semkarok**	**5.96**	**300**	*e*P		**Pn**	**07 14 22.3**		**+0.6**
SMKR				*e*S		**Sn**	**07 15 27.1**		**-1.7**
SMKR	**Semkarok**	**5.96**	**300**	P		**Pn**	**07 14 22.3**		**+0.6**
SMKR				S		**Sn**	**07 15 27.1**		**-1.7**
BDR	**Baidarnaya**	**6.08**	**299**	*e*P		**Pn**	**07 14 24.1**		**+0.6**
BDR				*e*S		**Sn**	**07 15 31.8**		**-0.2**
ZLN	**Zelenaya**	**6.12**	**294**	*e*P		**Pn**	**07 14 25.8**		**+1.8**
ZLN				*e*S		**Sn**	**07 15 34.0**		**+1.0**
ZLN	**Zelenaya**	**6.12**	**294**	P		**Pn**	**07 14 25.8**		**+1.8**
ZLN				S		**Sn**	**07 15 34.0**		**+1.0**
SRKR	**Sorokina**	**6.14**	**300**	*e*P		**Pn**	**07 14 24.8**		**+0.6**
SRKR				*e*S		**Sn**	**07 15 34.2**		**+0.9**
SRKR	**Sorokina**	**6.14**	**300**	P		**Pn**	**07 14 24.8**		**+0.6**
SRKR				S		**Sn**	**07 15 34.2**		**+0.9**
CIRR	**Tsirk**	**6.18**	**295**	*e*P		**Pn**	**07 14 25.8**		**+1.0**
CIRR				*e*S		**Sn**	**07 15 35.1**		**+0.7**
CIRR	**Tsirk**	**6.18**	**295**	P		**Pn**	**07 14 25.8**		**+1.0**
CIRR				S		**Sn**	**07 15 35.1**		**+0.7**
TUMD	**Tumrok D**	**6.18**	**286**	*e*P		**Pn**	**07 14 25.2**		**+0.4**
TUMD				*e*S		**Sn**	**07 15 33.9**		**-0.5**
LGNR	**Loginova**	**6.20**	**294**	*e*P		**Pn**	**07 14 25.9**		**+0.6**
LGNR				*e*S		**Sn**	**07 15 34.7**		**-0.5**
LGNR	**Loginova**	**6.20**	**294**	P		**Pn**	**07 14 25.9**		**+0.6**
LGNR				S		**Sn**	**07 15 34.7**		**-0.5**
KLY	**Klyuchi**	**6.29**	**296**	*e*P		**Pn**	**07 14 26.7**		**+0.5**
KLY				*e*S		**Sn**	**07 15 34.6**		**-2.3**
KRSR	**Krestovskiy**	**6.30**	**295**	*e*P		**Pn**	**07 14 27.4**		**+0.9**
KRSR				*e*S		**Sn**	**07 15 36.3**		**-1.2**
KRSR	**Krestovskiy**	**6.30**	**295**	P		**Pn**	**07 14 27.4**		**+0.9**
KRSR				S		**Sn**	**07 15 36.3**		**-1.2**
OSSR	**Ossora**	**6.82**	**324**	*e*P		**Pn**	**07 14 34.1**		**+0.6**
NLC	**Nalytchevo**	**6.87**	**268**	*e*P		**Pn**	**07 14 34.1**		**-0.1**
NLC				*e*S		**Sn**	**07 15 46.5**		**-4.8**
NLC	**Nalytchevo**	**6.87**	**268**	P		**Pn**	**07 14 34.1**		**-0.1**
NLC				S		**Sn**	**07 15 46.5**		**-4.8**
TILK	**Tilichiki**	**6.99**	**341**	*e*P		**Pn**	**07 14 35.9**		**+0.1**
SDLR	**Sedlovina**	**7.12**	**269**	*e*P		**Pn**	**07 14 37.9**		**+0.1**
SDLR				*e*S		**Sn**	**07 15 55.3**		**-2.4**
SDLR	**Sedlovina**	**7.12**	**269**	P		**Pn**	**07 14 37.9**		**+0.1**
SDLR				S		**Sn**	**07 15 55.3**		**-2.4**
UGLR	**Uglovaya**	**7.17**	**269**	*e*P		**Pn**	**07 14 38.8**		**+0.3**
UGLR				*e*S		**Sn**	**07 15 57.8**		**-1.1**
SMAR	**Somma**	**7.18**	**269**	*e*P		**Pn**	**07 14 38.6**		**0.0**
SMAR				*e*S		**Sn**	**07 15 56.9**		**-2.2**
SMAR	**Somma**	**7.18**	**269**	P		**Pn**	**07 14 38.6**		**0.0**
SMAR				S		**Sn**	**07 15 56.9**		**-2.2**
KRER	**Koryakskii**	**7.20**	**270**	*e*P		**Pn**	**07 14 39.3**		**+0.4**
KRER				*e*S		**Sn**	**07 15 58.1**		**-1.6**
AVH	**Avacha**	**7.21**	**269**	*e*P		**Pn**	**07 14 39.4**		**+0.4**
AVH				*e*S		**Sn**	**07 15 57.4**		**-2.4**
AVH	**Avacha**	**7.21**	**269**	P		**Pn**	**07 14 39.4**		**+0.4**
AVH				S		**Sn**	**07 15 57.4**		**-2.4**
DALK	**Dalny**	**7.25**	**268**	*e*P		**Pn**	**07 14 39.4**		**0.0**
DALK				*e*S		**Sn**	**07 15 57.4**		**-3.2**
KRX	**Arik**	**7.25**	**270**	*e*P		**Pn**	**07 14 39.6**		**+0.1**
KRX				*e*S		**Sn**	**07 15 58.6**		**-2.2**
ESO	**Esso**	**7.25**	**291**	*e*P		**Pn**	**07 14 40.5**		**+1.1**
ESO				*e*S		**Sn**	**07 15 58.8**		**-1.8**
ESO	**Esso**	**7.25**	**291**	P		**Pn**	**07 14 40.5**		**+1.1**
ESO				S		**Sn**	**07 15 58.8**		**-1.8**
KOK	**Koryaka**	**7.27**	**270**	*e*P		**Pn**	**07 14 40.1**		**+0.3**
KOK	**Koryaka**	**7.27**	**270**	P		**Pn**	**07 14 40.1**		**+0.3**
PET	**Petropavlovsk**	**7.31**	**268**	*e*P		**Pn**	**07 14 40.7**		**+0.5**
PET				*e*S		**Sn**	**07 15 59.4**		**-2.6**
PET	**Petropavlovsk**	**7.31**	**268**	*e*P		**Pn**	**07 14 40.7**		**+0.5**
PET	**Petropavlovsk**	**7.31**	**268**	*e*Pn		**Pn**	**07 14 40.7**		**+0.5**
RUS	**Russkaya**	**7.54**	**263**	*e*P		**Pn**	**07 14 43.0**		**-0.3**
RUS				*e*S		**Sn**	**07 16 02.9**		**-4.8**
RUS	**Russkaya**	**7.54**	**263**	P		**Pn**	**07 14 43.0**		**-0.3**
RUS				S		**Sn**	**07 16 02.9**		**-4.8**
GNL	**Ganaly**	**7.62**	**273**	*e*P		**Pn**	**07 14 45.8**		**+1.2**
GNL				*e*S		**Sn**	**07 16 08.8**		**-1.0**
GNL	**Ganaly**	**7.62**	**273**	P		**Pn**	**07 14 45.8**		**+1.2**
GNL				S		**Sn**	**07 16 08.8**		**-1.0**

KRMR	**Karymshinskiy**		**7.66**	**267**	*e*P		**Pn**	**07 14 45.2**	**+0.2**
KRMR					*e*S		**Sn**	**07 16 07.0**	**-3.7**
MTVR	**Mutnovka**		**7.72**	**264**	*e*P		**Pn**	**07 14 45.0**	**-1.0**
MTVR					*e*S		**Sn**	**07 16 07.5**	**-4.8**
PEA0	**Petropavlovsk-**		**7.86**	**269**	*e*Pn		**Pn**	**07 14 48.0**	**+0.3**
PEA0B	**Petropavlovsk-**		**7.86**	**269**	*e*Pn		**Pn**	**07 14 48.6**	**+0.9**
PETK	**Petropavlovsk-**		**7.86**	**269**	Pn		**Pn**	**07 14 48.5**	**+0.7**
	18nm,0.3s,baz=95,slow=18,SNR=57								
PETK					Sn		**Sn**	**07 16 15.9**	**+0.3**
	5.9nm,0.3s,baz=320,slow=29,SNR=5.3								
PETK					LR		LR	07 17 58.9	
	comp=Z,375nm,19.8s,baz=93,slow=38								
ASAK	**Asacha**		**7.91**	**264**	*e*P		**Pn**	**07 14 49.0**	**+0.4**
APC	**Apacha**		**8.21**	**268**	*e*P		**Pn**	**07 14 53.5**	**+0.9**
APC	**Apacha**		**8.21**	**268**	P		**Pn**	**07 14 53.5**	**+0.9**
PAU	**Pauzhetka**		**8.85**	**259**	*e*P		**Pn**	**07 15 02.1**	**+0.8**
PAU					*e*S		**Sn**	**07 16 37.9**	**-2.0**
PAU	**Pauzhetka**		**8.85**	**259**	P		**Pn**	**07 15 02.1**	**+0.8**
PAU					S		**Sn**	**07 16 37.9**	**-2.0**
KMSK	**Kamenskaya**		**8.88**	**346**	*e*P		**Pn**	**07 15 01.1**	**-0.6**
SKR	**Severo-Kuril's**		**9.57**	**256**	*e*P		**Pn**	**07 15 10.9**	**-0.2**
SKR					*e*S		Sn	07 16 50.7	-6.8
SKR	**Severo-Kuril's**		**9.57**	**256**	*e*P		**Pn**	**07 15 10.0**	**-1.1**
SKR					pmax		pmax		
	comp=E,80nm,0.4s								
SKR					pmax		pmax		
	comp=Z,160nm,0.4s								
MA2	**Magadan**		**12.33**	**305**	Pn		**Pn**	**07 15 51.1**	**+2.2**
	comp=Z,0.4nm,0.3s,baz=142,slow=15,SNR=2.4								
SEY	**Seymchan**		**13.15**	**321**	Pn		**Pn**	**07 16 02.5**	**+2.5**
	comp=Z,0.1nm,0.3s,baz=117,slow=12,SNR=12								
GAMB	**Gambell**		**13.33**	**35**	*e*Pn		**Pn**	**07 16 03.5**	**+1.0**
UNV	**Unalaska Valle**		**13.38**	**81**	*e*Pn		**Pn**	**07 16 04.7**	**+1.6**
AKUT	**Akutan**		**13.76**	**80**	*e*Pn		**Pn**	**07 16 06.2**	**-2.1**
BILL	**Bilibino**		**14.31**	**353**	*de*P		**Pn**	**07 16 16.3**	**+0.5**
BILL					*e*S		**Sn**	**07 18 50.1**	**-3.1**
BILL					pmax		pmax		
	comp=Z,14nm,1.0s								
BILL					MLR		MLR		
	comp=Z,289nm,15.0s								
BILL	**Bilibino**		**14.31**	**353**	*e*Pn		**Pn**	**07 16 16.7**	**+0.9**
TYV	**Tymovskoe**		**17.40**	**271**	*e*P		**P**	**07 17 00.5**	**+3.6**
TYV					pmax		pmax		
	comp=Z,22nm,1.0s								
CHGN	**Chignik**		**17.69**	**70**	*e*Pn		**Pn**	**07 16 58.6**	**-0.8**
NKL	**Nikolayevsk**		**17.86**	**280**	*e*P		**P**	**07 17 04.0**	**+2.0

comp=Z,33nm,1.4s
COLA College 23.25 46 *e*P **P 07 17 59.8 -0.1**
comp=Z,33nm,1.4s
DHY Denali Highway 23.27 50 *e*P **P 07 18 00.0 -0.4**
comp=Z,10nm,1.1s
IL1 Eielson Array 23.64 46 *e*P **P 07 18 02.5 -1.3**
ILAR Eielson Array 23.64 46 P **P 07 18 03.0 -0.8**
comp=Z,4.7nm,1.1s,baz=253,slow=7.7,SNR=29
ILAR pP **pP 07 18 12.7 +0.2**
comp=Z,8.0nm,0.9s,baz=248,slow=6.8,SNR=18
ILAR LR LR 07 28 04.4
comp=Z,150nm,21.0s,baz=270,slow=38
ILB Eielson Array 23.64 46 *e*P **P 07 18 03.4 -0.4**
KLU Klutina 23.91 54 *e*P **P 07 18 06.5 -0.1**
comp=Z,14nm,1.1s
PAX Paxson 24.13 51 *e*P **P 07 18 08.0 -0.6**
PAX pmax pmax
comp=Z,28nm,1.2s
PAX Paxson 24.13 51 *e*P **P 07 18 08.0 -0.6**
comp=Z,28nm,1.2s
KLR Kul'dur 24.49 275 P **P 07 18 12.7 +0.8**
comp=Z,1.8nm,0.3s,baz=71,slow=7.5,SNR=9.9
BMRM Bremner River 24.57 55 *e*P **P 07 18 13.0 +0.4**
FYU Fort Yukon 24.58 42 *e*P **P 07 18 12.8 +0.4**
comp=Z,31nm,1.2s
DOT Dot Lake 24.79 49 *e*P **P 07 18 12.8 -1.6**
comp=Z,55nm,0.9s
MENT Mentasta 24.93 51 *e*P **P 07 18 15.4 -0.4**
comp=Z,18nm,1.2s
TIXI Tiksi 25.27 330 P **P 07 18 19.6 +0.9**
comp=Z,7.2nm,0.9s,baz=118,slow=8.9,SNR=7.0
TIXI LR LR 07 28 22.7
comp=Z,110nm,20.8s,baz=88,slow=37
TIXI Tiksi 25.27 330‖ *e*P **P 07 18 18.2 -0.5**
TIXI pmax pmax
comp=Z,7.0nm,1.0s
TIXI Tiksi 25.27 330 *e*P **P 07 18 18.6 0.0**
comp=Z,12nm,0.8s
USRK Ussuriysk Ar. 26.92 265 P **P 07 18 33.8 -0.1**
comp=Z,3.0nm,0.8s,baz=50,slow=12,SNR=5.0
USRK LR LR 07 29 49.6
comp=Z,117nm,19.6s,baz=45,slow=38
MAJO Matsushiro 28.45 246‖ *e*P **P 07 18 48.5 +0.9**
MAJO pmax pmax
comp=Z,52nm,1.1s
MJAR Matsushiro Arr 28.45 246 P **P 07 18 49.5 +1.8**
comp=Z,0.9nm,0.3s,baz=22,slow=11,SNR=6.1
MJAR LR LR 07 29 26.7
comp=Z,90nm,21.6s,baz=70,slow=35
INK Inuvik 29.23 39 P **P 07 18 53.5 -0.8**
comp=Z,1.3nm,0.6s,baz=277,slow=6.1,SNR=8.0
CN2 Changchun 31.01 270 *e*P **P 07 19 11.6 +1.4**
CN2 pmax pmax
comp=Z,10.0nm,0.6s
BOD Bodaibo 31.29 300 *e*P **P 07 19 12.0 -0.5**
BOD *e* 07 24 16.8
BOD pmax pmax
comp=Z,23nm,0.7s
DLBC Dease Lake 32.29 58 P **P 07 19 21.9 +0.4**
comp=Z,0.9nm,0.8s,baz=296,slow=6.8,SNR=3.7
DLBC pP **pP 07 19 31.3 +0.9**
comp=Z,3.5nm,0.9s,baz=286,slow=11,SNR=7.0
KSRS Korea Array 33.58 258 LR LR 07 32 52.2
comp=Z,50nm,21.6s,baz=63,slow=36
H11N2 WAKE ISLAND Hy 34.28 187 T T 07 55 03.3
baz=5.9,slow=74
H11N3 WAKE ISLAND Hy 34.30 187 T T 07 55 18.4
baz=5.9,slow=74
H11N1 WAKE ISLAND Hy 34.30 187 T T 07 55 07.2
baz=5.9
H11S1 WAKE ISLAND Hy 35.51 187 T T 07 56 35.7
baz=4.9,slow=76,SNR=831
H11S3 WAKE ISLAND Hy 35.52 187 T T 07 56 36.8
baz=4.9,slow=76,SNR=601
H11S2 WAKE ISLAND Hy 35.53 187 T T 07 56 38.4
baz=4.9,slow=76,SNR=455
YKA Yellowknife Ar 38.07 47 P **P 07 20 09.8 -1.1**
comp=Z,1.4nm,0.8s,baz=292,slow=8.5,SNR=16
YKA PcP **PcP 07 22 25.6 +0.1**
comp=Z,0.2nm,0.7s,baz=301,slow=3.6,SNR=2.4
YKA pPcP 07 22 34.5
comp=Z,0.4nm,0.7s,baz=288,slow=3.3,SNR=6.1
YKB5 Yellowknife Ar 38.07 47 *e*P **P 07 20 10.6 -0.3**
NRIK Noril'sk 38.86 326 LR LR 07 38 04.5
comp=Z,88nm,18.8s,baz=289,slow=39
TLY Talaya 39.28 295 *e*P **P 07 20 22.5 +1.2**
TLY pmax pmax
comp=Z,8.0nm,1.3s
TLY MLR MLR
comp=Z,93nm,15.0s
ULN Ulaanbaatar 39.43 288 *ce*P **P 07 20 23.0 +0.2**
ULN pmax pmax
comp=Z,6.0nm,1.0s
ULN Ulaanbaatar 39.43 288 *e*P **P 07 20 23.6 +0.8**
ULN *e*pP **pP 07 20 32.4 +0.6**
SONA1 Songino Array 39.81 288 *e*P **P 07 20 26.4 +0.5**
SONM Songino Array 39.82 288 P **P 07 20 26.5 +0.5**
comp=Z,4.5nm,0.7s,baz=61,slow=9.2,SNR=19
SONM pP **pP 07 20 35.6 +0.7**
comp=Z,5.8nm,0.6s,baz=51,slow=12,SNR=15
SONM LR LR 07 36 57.4
comp=Z,121nm,20.6s,baz=68,slow=36
RES Resolute Bay 40.02 24 P **P 07 20 26.5 -0.6**
comp=Z,1.6nm,0.9s,baz=307,slow=10.0,SNR=4.6
ZAK Zakamensk 40.16 293 *e*P **P 07 20 28.0 -0.7**
ZAK pmax pmax
comp=Z,7.0nm,1.2s
MOY Mondy 40.70 296 *e*P P 07 20 38.1 +4.9
HHC Hu-ho-hao-te 40.98 276 *e*P **P 07 20 36.6 +1.0**
HHC S **S 07 26 45.8 +0.1**
HHC pmax pmax
comp=Z,15nm,1.1s
HHC pmax pmax
comp=Z,57nm,5.4s
HHC LR LR
comp=Z,190nm,17.1s
HHC LR LR
comp=Z,230nm,16.6s
HHC LR LR
comp=Z,130nm,22.2s
B08A Colville Reser 42.55 68 *e*P **P 07 20 48.0 -0.2**
comp=Z,4.9nm,0.9s
NEW Newport 43.81 67 LR LR 07 38 35.7
comp=Z,84nm,19.4s,baz=312,slow=35
NEW Newport 43.81 67 *e*P **P 07 20 58.0 -0.4**
NEW *e**PP **pP 07 21 08.7 +1.2**
NEW Newport 43.81 67 *e*P P **07 20 58.0 -0.4**
NEW *e*pP **pP 07 21 08.7 +1.2**
YBH Yreka Blue Hor 44.65 78 LR LR 07 36 01.5
comp=Z,90nm,21.6s,baz=332,slow=31
K05A Summer Lake 45.07 75 *e*P **P 07 21 09.2 +0.4**
comp=Z,10nm,0.9s
WALA Waterton Lakes 45.07 64 *e*P **P 07 21 08.3 -0.3**
WALA *e*pP **pP 07 21 18.1 +0.5**
BSMT Bassoo Peak 45.32 66 *e*P **P 07 21 10.2 -0.5**
BLMT Blacktail Moun 45.45 65 *e*P **P 07 21 11.6 -0.2**
BLMT *e*pP **pP 07 21 21.3 +0.5**
JTMT Jette 45.65 66 *e*P **P 07 21 13.2 -0.1**
JTMT *e*pP **pP 07 21 21.3 -1.0**
YBMT Yellow Bay 45.73 65 *e*P **P 07 21 13.6 -0.3**
MOD Modoc Plateau 45.93 76 *e*P **P 07 21 15.6 0.0**
comp=Z,6.0nm,0.7s
MSO Missoula 46.40 66 *e*P **P 07 21 18.1 -1.0**
comp=Z,8.2nm,1.3s
WVOR Wild Horse Val 46.54 74 *e*P **P 07 21 19.0 -1.3**
WVOR *e**PP **pP 07 21 29.5 +0.1**
WVOR pmax pmax
comp=Z,6.0nm,1.1s
WVOR Wild Horse Val 46.54 74 *e*P **P 07 21 19.0 -1.3**
comp=Z,6.1nm,1.1s
WVOR *e*pP **pP 07 21 29.5 +0.1**
ORV Oroville 46.76 79 *e*P **P 07 21 21.2 -0.7**
ORV *e**PP **pP 07 21 30.6 -0.4**
ORV Oroville 46.76 79 *e*P **P 07 21 21.2 -0.7**
ORV *e*pP **pP 07 21 30.6 -0.4**
MFID Camas Ranch 47.50 71 *e*P **P 07 21 27.2 -0.5**
comp=Z,3.6nm,0.9s
ZAA0 Zalesovo Array 47.54 307 *e*P **P 07 21 28.0 +0.2**
ZAA0 *e*pP **pP 07 21 36.0 -0.9**
ZALV Zalesovo Beam 47.54 307 P **P 07 21 26.8 -1.0**
comp=Z,0.7nm,0.4s,baz=24,slow=11,SNR=4.0
ZALV pP **pP 07 21 35.6 -1.3**
comp=Z,3.6nm,0.7s,baz=62,slow=8.1,SNR=8.3
ZALV LR LR 07 41 46.5
comp=Z,100nm,20.6s,baz=106,slow=36
NVS Novosibirsk 47.74 309‖ *i*P P 07 21 38.0 +8.7
NVS pmax pmax
comp=Z,9.0nm,0.8s
NVS pmax pmax
comp=N,5.0nm,0.7s
NVS pmax pmax
comp=E,4.0nm,0.7s
HLID Hailey 48.19 70 *e*P **P 07 21 32.5 -0.7**
MCMT McKenzie Canyo 48.24 68 *e*P **P 07 21 32.6 -1.0**
CMB Columbia Colle 48.42 80 *e*P **P 07 21 34.4 -0.5**
CMB pmax pmax
comp=Z,3.0nm,0.8s
CMB Columbia Colle 48.42 80 *e*P **P 07 21 34.4 -0.5**
comp=Z,3.3nm,0.8s
BMN Battle Mountai 48.65 75 *e*P **P 07 21 36.8 +0.1**
BMN pmax pmax
comp=Z,6.0nm,0.8s
BMN Battle Mountai 48.65 75 *e*P **P 07 21 36.8 +0.1**
comp=Z,5.8nm,0.8s
GTA Gaotai 48.76 283 P **P 07 21 38.3 +0.7**
GTA pP pP 07 21 45.8 -0.9
GTA sP sP 07 21 48.4 -1.9
GTA S **S 07 28 38.8 +0.5**
GTA pmax pmax
comp=Z,8.0nm,1.1s
GTA pmax pmax
comp=Z,59nm,5.4s
GTA LR LR
comp=Z,320nm,15.2s
GTA LR LR
comp=Z,260nm,18.1s
GTA LR LR
comp=Z,240nm,16.6s
NVAR Mina Array Bea 49.37 78 P **P 07 21 41.7 -0.6**
comp=Z,1.3nm,0.5s,baz=298,slow=7.8,SNR=6.2
NVAR pP **pP 07 21 51.2 -0.3**
comp=Z,6.8nm,0.7s,baz=292,slow=8.3,SNR=6.8
NVAR LR LR 07 40 51.6
comp=Z,70nm,19.3s,baz=317,slow=34
YMR Madison River 49.38 67 *e*P **P 07 21 42.1 -0.2**
comp=Z,19nm,1.5s
DAG Danmarks Havn 49.41 3 *i* P **P 07 21 40.8 -1.1**
comp=Z,4.8nm,1.0s
DAG Danmarks Havn 49.41 3 *e*P **P 07 21 40.8 -1.1**
DAG pmax pmax
comp=Z,5.0nm,1.0s
LKWY Lake 49.75 67 P **P 07 21 45.3 +0.1**
LKWY pmax pmax
comp=Z,7.0nm,1.2s
LKWY Lake 49.75 67 P **P 07 21 45.3 +0.1**
comp=Z,6.9nm,1.2s
H17A Grant Village 49.76 67 *e*P **P 07 21 46.1 +0.8**
comp=Z,16nm,1.4s
FLWY Flagg Ranch 49.90 67 *e*P **P 07 21 46.6 +0.3**
comp=Z,6.3nm,0.8s
RLMT Red Lodge 50.00 66 *e*P **P 07 21 47.0 0.0**
RLMT *e*pP **pP 07 21 55.6 -0.6**
MOOW Moose Ponds 50.09 68 *e*P **P 07 21 47.6 -0.2**
comp=Z,8.8nm,1.5s
LOHW Long Hollow 50.26 68 *e*P **P 07 21 50.1 +1.1**
comp=Z,9.0nm,1.5s
HVU Hansel Valley 50.27 71 *e*P **P 07 21 51.9 +2.8**
HVU pmax pmax
comp=Z,3.0nm,0.9s
HVU Hansel Valley 50.27 71 *e*P **P 07 21 51.9 +2.8**
comp=Z,3.4nm,0.9s
LAO LASA Array 50.59 62 *e*P **P 07 21 51.3 -0.1**
LAO *e*pP **pP 07 22 01.2 +0.7**
R11A Troy Canyon, C 50.99 76 *e*P **P 07 21 53.9 -0.6**
comp=Z,5.9nm,0.8s
DAC Darwin (Calif) 51.25 79 *e*P P 07 22 00.0 +3.4
DAC *e**PP pP 07 22 05.6 -0.2
DAC Darwin (Calif) 51.25 79 *e*P P 07 22 00.0 +3.4
DAC *e*pP pP 07 22 05.6 -0.2
DUG Dugway, Tooele 51.31 73 *e*P **P 07 21 56.8 -0.1**
DUG *e**PP **pP 07 22 05.5 -0.6**
DUG Dugway, Tooele 51.31 73 *e*P **P 07 21 56.8 -0.1**
DUG *e*pP **pP 07 22 05.5 -0.6**
BW06 Boulder Array 51.39 68 *e*P **P 07 21 56.5 -1.1**
BW06 *e*P pP 07 21 57.1 -10
PD31 Pinedale Array 51.39 68 *e*P **P 07 21 57.1 -0.5**
PDAR Pinedale Array 51.39 68 P **P 07 21 56.5 -1.1**
comp=Z,2.7nm,1.0s,baz=291,slow=4.6,SNR=14
PDAR LR LR 07 45 11.1
comp=Z,59nm,18.1s,baz=348,slow=38
TPNV Topopah Spring 51.57 78 *e*P **P 07 21 58.9 0.0**
TPNV pmax pmax
comp=Z,13nm,0.8s
TPNV Topopah Spring 51.57 78 *e*P **P 07 21 58.9 0.0**
comp=Z,13nm,0.8s
SUMG Summit 52.14 11 *i* P **P 07 22 02.4 -0.6**
comp=Z,6.8nm,1.0s
SUMG Summit 52.14 11 *e*P **P 07 22 02.4 -0.6**
SUMG pmax pmax
comp=Z,7.0nm,1.0s
SUMG Summit 52.14 11 *e*P **P 07 22 02.2 -0.7**
SUMG *e*pP **pP 07 22 11.7 -0.5**
CD2 Chengdu 52.38 272 P **P 07 22 04.0 -0.9**
CD2 pmax pmax
comp=Z,1.0nm,0.5s
GSC Goldstone, Bar 52.39 80 *e*P **P 07 22 04.8 -0.1**
GSC pmax pmax
comp=Z,15nm,1.1s
GSC Goldstone, Bar 52.39 80 *e*P **P 07 22 04.8 -0.1**
comp=Z,15nm,1.1s
KURK Kurchatov 52.53 307 *e*P **P 07 22 05.1 -0.5**
KURK pmax pmax
comp=Z,33nm,0.9s
KURK Kurchatov 52.53 307 *e*P **P 07 22 05.1 -0.5**
comp=Z,33nm,0.9s
WMQ Urumqi 52.56 295 *e*P **P 07 22 08.8 +2.7**
WMQ pmax pmax
comp=Z,7.0nm,0.6s
WMQ pmax pmax
comp=Z,28nm,4.0s
WMQ LR LR
comp=Z,470nm,22.0s
WMQ LR LR
comp=Z,290nm,19.2s
WMQ LR LR
comp=Z,79nm,22.0s
MSU Marysvale 52.82 74 *e*P **P 07 22 09.3 +1.1**
MSU Marysvale 52.82 74 *e*P **P 07 22 09.3 +1.1**
TMUT Trail Mountain 52.83 72 *e*P **P 07 22 08.6 +0.2**
comp=Z,10nm,1.1s
K22A Casper 53.12 66 P **P 07 22 10.6 +0.3**
comp=Z,6.2nm,0.1s
MTPU Mount Pierson 53.14 74 *e*P **P 07 22 11.4 +0.7**
MTPU *e*pP **pP 07 22 20.9 +0.9**
LCMT Little Creek M 53.25 76 *e*P **P 07 22 11.7 +0.4**
comp=Z,19nm,1.5s
SRU San Rafael Swe 53.34 72 *e*P **P 07 22 12.3 +0.2**
SRU pmax pmax
comp=Z,9.0nm,0.9s
SRU San Rafael Swe 53.34 72 *e*P **P 07 22 12.3 +0.2**
comp=Z,9.3nm,0.9s
MK31 Makanchi Array 53.38 301 *e*P **P 07 22 11.2 -0.8**
MK31 Makanchi Array 53.38 301 *e*P **P 07 22 11.2 -0.8**
MKAR Makanchi Array 53.38 301 P **P 07 22 11.0 -1.0**
comp=Z,1.3nm,0.4s,baz=52,slow=6.6,SNR=25
MKAR pP **pP 07 22 19.9 -1.3**
comp=Z,7.2nm,0.7s,baz=49,slow=7.0,SNR=28
MKAR LR LR 07 44 38.5
comp=Z,113nm,19.3s,baz=30,slow=36
MK01 Makanchi Array 53.39 301 *e*P **P 07 22 10.8 -1.3**
ULM Lac du Bonnet 53.39 53 LR LR 07 47 19.3
comp=Z,106nm,18.2s,baz=326,slow=39
RSSD Black Hills 53.45 63 *e*P **P 07 22 11.7 -1.1**
RSSD *e**PP **pP 07 22 21.7 -0.4**
RSSD Black Hills 53.45 63 *e*P **P 07 22 11.7 -1.1**
RSSD *e*pP **pP 07 22 21.7 -0.4**
KNB Kanab 53.49 75 *e*P **P 07 22 13.8 +0.6**
KNB *e**PP **pP 07 22 22.4 0.0**
KNB Kanab 53.49 75 *e*P **P 07 22 13.8 +0.6**
KNB *e*pP **pP 07 22 22.4 0.0**
MAKZ Makanchi 53.52 301 *e*P **P 07 22 12.1 -0.9**
MAKZ pmax pmax
comp=Z,10.0nm,0.8s
MAKZ Makanchi 53.52 301 *e*P **P 07 22 12.1 -0.9**
comp=Z,9.7nm,0.8s
O20A White River Ci 53.91 70 *e*P **P 07 22 15.4 -0.8**
comp=Z,2.4nm,0.5s
W13A Hualapai Mount 54.23 78 *e*P **P 07 22 18.6 0.0**
comp=Z,4.6nm,0.8s
ARCES ARCESS Array B 54.26 346 P **P 07 22 18.1 0.0**
comp=Z,4.0nm,1.0s,baz=39,slow=8.3,SNR=4.3
ARCES LR LR 07 49 33.2
comp=Z,57nm,18.3s,baz=30,slow=40
BRVK Borovoye 54.70 313 *e*P **P 07 22 21.7 +0.2**
BRVK pmax pmax
comp=Z,11nm,0.8s
BRVK Borovoye 54.70 313 *e*P **P 07 22 21.7 +0.2**
comp=Z,10nm,0.8s
AGMN Agassiz Nation 54.73 55 *e*P **P 07 22 21.4 -0.4**
comp=Z,6.4nm,1.1s
Y14A Wickenburg 55.56 78 *e*P **P 07 22 28.7 +0.6**
comp=Z,16nm,0.9s
ISCO Idaho Springs 55.59 68 *e*P **P 07 22 29.1 +0.6**
ISCO *e**PP **pP 07 22 38.3 +0.5**
ISCO Idaho Springs 55.59 68 *e*P **P 07 22 29.1 +0.6**
ISCO *e*pP **pP 07 22 38.3 +0.5**
MVCO Mesa Verde 55.81 72 *e*P P 07 22 33.5 +3.5
comp=Z,13nm,1.2s
ARU Arti 56.88 322 *d i*P **P 07 22 36.6 -0.5**
ARU 07 24 39.5
ARU S **S 07 30 28.7 +0.4**
ARU SS **SS 07 34 12.7 -3.2**
ARU pmax pmax
comp=Z,5.0nm,1.2s
SDCO Great Sand Dun 57.10 70 *e*P **P 07 22 39.8 +0.5**
comp=Z,7.0nm,1.0s
214A Organ Pipe Nat 57.10 80 *e*P **P 07 22 37.8 -1.2**
comp=Z,17nm,1.3s
KMI Kunming 57.27 268 P **P 07 22 41.5 +1.0**
KMI pmax pmax
comp=Z,18nm,0.5s
KMI pmax pmax
comp=Z,110nm,4.4s
KSCO Kaye Shedlock' 57.78 67 *e*P **P 07 22 44.2 +0.3**
comp=Z,31nm,1.2s
TUC Tucson 58.02 78 *e*P **P 07 22 44.7 -0.9**
TUC pmax pmax
comp=Z,4.0nm,0.9s
TUC Tucson 58.02 78 *e*P **P 07 22 44.7 -0.9**
comp=Z,4.4nm,0.9s
SPMN Marine on St. 58.39 56 *e*P **P 07 22 46.7 -1.2**
comp=Z,6.0nm,0.8s
ANMO Albuquerque 58.58 73 *e*P **P 07 22 49.9 +0.3**
ANMO pmax pmax
comp=Z,15nm,1.9s
ANMO Albuquerque 58.58 73 *e*P **P 07 22 49.9 +0.3**
comp=Z,15nm,1.9s
TKM2 Tokmak 2 59.48 302 *e*P **P 07 22 55.7 0.0**
TKM2 pmax pmax
comp=Z,5.0nm,0.8s
TKM2 Tokmak 2 59.48 302 *e*P **P 07 22 55.7 0.0**
comp=Z,5.0nm,0.8s
AAK Ala-Archa 60.24 302 *e*P **P 07 23 00.4 -0.5**
AAK pmax pmax
comp=Z,12nm,1.2s
AAK Ala-Archa 60.24 302 *e*P **P 07 23 00.4 -0.5**
comp=Z,12nm,1.2s
AAK *e*P pP 07 23 01.1 -9.1
EKS2 Erkin-Say 60.58 303 *e*P **P 07 23 03.6 +0.4**
EKS2 pmax pmax
comp=Z,9.0nm,0.9s
EKS2 Erkin-Say 60.58 303 *e*P **P 07 23 03.6 +0.4**
comp=Z,8.9nm,0.9s
MSTX Muleshoe 61.37 71 *e*P **P 07 23 07.9 -0.7**
comp=Z,7.7nm,0.9s
MNTX Cornudas Mount 61.57 74 *e*P **P 07 23 10.2 +0.2**
comp=Z,5.8nm,0.7s
FIA1 FINESS Array S 61.61 342 *e*P **P 07 23 09.1 -0.6**
FIA1 *e*pP **pP 07 23 19.2 +0.2**
FINES FINESS Array B 61.61 342 P **P 07 23 09.0 -0.7**
comp=Z,2.8nm,0.7s,baz=33,slow=7.6,SNR=9.6
FINES pP **pP 07 23 18.6 -0.5**
comp=Z,6.1nm,0.8s,baz=38,slow=7.2,SNR=12
FINES LR LR 07 56 13.6
comp=Z,46nm,18.4s,baz=11,slow=42
SCHQ Schefferville 61.66 34 LR LR 07 54 16.0
comp=Z,66nm,18.6s,baz=43,slow=40
KSH Kashi 61.79 299 P P 07 23 15.3 +3.9
KSH *e*pP sP 07 23 25.1 +0.7
KSH *e*sP pP 07 23 29.4 +8.6
KSH *e*PcP **PcP 07 23 55.1 +2.8**
KSH S **S 07 31 35.3 +2.8**
KSH pmax pmax
comp=Z,13nm,0.8s
KSH pmax pmax
comp=Z,97nm,4.8s
KSH LR LR
comp=Z,97nm,7.1s
KSH LR LR
comp=Z,150nm,6.3s
KSH LR LR
comp=Z,130nm,5.4s
KKAR Karatay Array 61.85 305 *e*P **P 07 23 11.3 -0.3**
KKAR *e**PP **pP 07 23 20.6 -0.4**
KKAR Karatay Array 61.85 305 *e*P **P 07 23 11.3 -0.3**
KKAR *e*pP **pP 07 23 20.6 -0.4**
ABKAR Akbulak array 61.88 316 *e*P P 07 23 15.1 +3.4
NB2 NORSAR Subarra 64.22 349 P **P 07 23 26.5 -0.6**
comp=Z,5.9nm,1.0s,baz=13,slow=6.5
NOA NORSAR Array B 64.22 349 P **P 07 23 26.4 -0.6**
comp=Z,0.5nm,0.5s,baz=351,slow=3.0,SNR=7.5
NOA pP **pP 07 23 36.0 -0.5**
comp=Z,0.6nm,0.5s,baz=357,slow=5.2,SNR=3.5
NOA LR LR 07 50 29.7
comp=Z,26nm,21.7s,baz=10.0,slow=35
VSU Vasula 64.24 340‖ *e*P **P 07 23 28.7 +1.5**
VSU pmax pmax
comp=Z,13nm,1.0s
TX31 Lajitas Ar. Si 64.32 75 *e*P **P 07 23 27.6 -0.7**
TX31 *e*P pP 07 23 27.9 -10
TXAR Lajitas Array 64.32 75 P **P 07 23 27.3 -1.0**
comp=Z,3.3nm,1.0s,baz=307,slow=4.7,SNR=21
TXAR pP **pP 07 23 37.4 -0.3**
comp=Z,9.7nm,0.8s,baz=306,slow=5.1,SNR=28
TXAR LR LR 07 48 33.9
comp=Z,42nm,21.6s,baz=0.0,slow=33
CMAR Chiang Mai Arr 64.63 267 P **P 07 23 29.6 -0.6**
comp=Z,1.1nm,0.3s,baz=25,slow=7.8,SNR=7.7
CMAR LR LR 07 53 10.8
comp=Z,40nm,21.4s,baz=35,slow=37
JCT Junction City 65.64 71 *e*P **P 07 23 34.9 -1.9**
JCT *e**PP **pP 07 23 45.3 -1.0**
JCT Junction City 65.64 71 *e*P **P 07 23 34.9 -1.9**
JCT *e*pP **pP 07 23 45.2 -1.0**
LPSR Galich'ya Gora 66.52 330 *e*P **P 07 23 40.6 -1.4**
LPSR pmax pmax
comp=Z,2.0nm,0.9s
VSR Storozhevoye 67.66 329 *e*P **P 07 23 50.4 +1.1**
VSR pmax pmax
comp=Z,4.0nm,0.9s
AKASG Malin Array Be 70.86 335 P **P 07 24 08.8 -0.3**
comp=Z,0.4nm,0.4s,baz=25,slow=5.9,SNR=4.0
AKASG LR LR 07 58 21.8
comp=Z,83nm,18.9s,baz=355,slow=38
KBZ Khabaz 73.01 323 LR LR 08 01 00.5
comp=Z,64nm,18.1s,baz=42,slow=40
STHS Stebnicka Huta 73.86 340 *e*P P 07 24 31.6 +4.5
STHS pmax pmax
comp=Z,4.0nm,0.8s
STHS Stebnicka Huta 73.86 340 *e*P P 07 24 31.6 +4.5
DPC Dobruska-Polom 73.89 343 *e*P P 07 24 31.4 +4.2
DPC *e*pP pP 07 24 37.6 +0.8
DPC Dobruska-Polom 73.89 343 *e*P P 07 24 31.4 +4.2
DPC *e* 07 24 37.6
BUR08 Bucovina Ar. S 74.67 337 *e*P **P 07 24 34.0 +2.0**
KHC Kasperske Hory 75.51 345 *e*P **P 07 24 38.1 +1.4**
KHC *e*pP **pP 07 24 46.4 +0.2**
KHC Kasperske Hory 75.51 345 *e*P **P 07 24 38.1 +1.4**
KHC *e* 07 24 46.4
GERES GERESS Array B 75.77 345 P **P 07 24 38.1 -0.1**
comp=Z,0.4nm,0.5s,baz=26,slow=9.5,SNR=3.5
GERES pP **pP 07 24 48.0 +0.1**
comp=Z,1.3nm,0.7s,baz=31,slow=5.4,SNR=4.2
GERES LR LR 08 02 57.9
comp=Z,33nm,18.4s,baz=10,slow=40
BRTR Keskin Array B 79.68 328 P **P 07 25 01.2 +1.0**
comp=Z,0.6nm,0.5s,baz=63,slow=13,SNR=2.7
BRTR LR LR 08 03 23.1
comp=Z,31nm,20.3s,baz=45,slow=38
WRA Warramunga Arr 79.99 215 P **P 07 25 01.5 -0.3**
comp=Z,1.3nm,0.6s,baz=27,slow=6.2,SNR=17
WRA pP **pP 07 25 10.6 -0.8**
comp=Z,3.3nm,0.9s,baz=27,slow=6.0,SNR=12
WRA Warramunga Arr 79.99 215 *i* P **P 07 25 01.7 -0.1**
WRA pmax pmax
comp=Z,1.0nm,0.6s
AS01 Alice Springs 83.58 214 *e*P **P 07 25 20.4 -0.2**

AS01				*epP		**pP**	07 25 29.8	-0.5
ASAR	**Alice Springs**	**83.60**	**214**	P		**P**	07 25 20.9	+0.3
	comp=Z,1.5nm,0.6s,baz=20,slow=5.1,SNR=23							
ASAR				pP		**pP**	07 25 30.0	-0.4
	comp=Z,2.8nm,0.8s,baz=20,slow=5.1,SNR=13							
ASAR	**Alice Springs**	**83.60**	**214**	P		**P**	07 25 21.0	+0.3
ASAR				*PP		**pP**	07 25 30.0	-0.4
IDI	**Anoyia**	**86.37**	**333**	LR		LR	08 07 27.5	
	comp=Z,30nm,19.2s,baz=219,slow=38							
ESDC	**Sonseca Array**	**86.64**	**356**	P		**P**	07 25 35.8	-0.3
	comp=Z,0.2nm,0.3s,baz=228,slow=15,SNR=3.0							

MEX 20 07:22:40.4±0.3, 16°22'N×98°07'W, h14km±2km, MD3.9, Near coast of Guerrero

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
PNIG	**Pinotepa**	**0.18**	**342**	*eP*		Pg	07 22 43.9	-0.7
PNIG				*i* S		Sg	07 22 47.0	-0.4
TLIG	**Tlapa**	**1.41**	**340**	*eP*		Pn	07 23 02.4	-3.5
TLIG				*i* S		Sn	07 23 19.0	-5.4
VHO	**Vista Hermosa**	**1.54**	**56**	*eP*		Pn	07 23 03.9	-3.7
VHO				*eS		Sn	07 23 22.5	-5.0
PANG	**Puerto Angel**	**1.63**	**110**	*i* P		Pg	07 23 44.2	+32
HUIG	**Huatulco**	**1.94**	**103**	*eP*		Pn	07 23 09.3	-3.7
HUIG				*eS		Sn	07 23 32.9	-4.4
PCIG		**4.70**	**96**	*eP*		Pn	07 23 50.3	-0.6

SJA 20 07:23:07.0±0.3, 32°06S×69°19W, h17km±1km, ML2.2, MW3.5, Mendoza Province

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
AUSP	**Uspallata**	**0.23**	**227**	*i* P		Pb	07 23 13.3	+0.3
RTLS	**Leoncito**	**0.28**	**341**	*i* P		Pb	07 23 14.2	+0.4
RTLS				*i* S		Sb	07 23 19.4	+1.0
RTCV	**Cerro Valdivia**	**0.59**	**70**	*i* P		Pb	07 23 18.8	0.0
ASAL	**Salagasta**	**0.60**	**150**	*i* P		Pb	07 23 19.4	+0.1
ASAL				*i* S		Sb	07 23 28.4	+0.9
SJA	**San Juan**	**0.76**	**45**	IAML			07 25 05.0	
	comp=Z,153nm,0.1s							
RTLL	**Cerro Villicun**	**0.95**	**40**	*i* P		Pb	07 23 25.2	+0.1
AMOG	**MOGNA**	**1.27**	**28**	*i* P		Pg	07 23 31.2	-0.3
AMOG				*i* S		Sg	07 23 48.9	+0.9
AVFE	**Valle Fertil**	**2.04**	**47**	*i* P		Pb	07 23 43.1	-0.5
AVFE				*i* S		Sb	07 24 09.6	+0.8
AVFE				IAML			07 24 11.0	
	comp=Z,8.9nm,0.3s							

JMA 20 07:27:21.7±0.1, 38°35N×142°05E, h34km±1km, M3.7, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**0.56**	**281**	P		Pn	07 27 33.1	-0.1
JIO				S		Sb	07 27 41.0	-0.3
OFUJ	**Ofunato**	**0.79**	**338**	P		Pn	07 27 36.0	-0.4
OFUJ				S		Sn	07 27 46.3	-0.7
JMK	**Ichinoseki**	**0.89**	**313**	P		Pn	07 27 38.0	+0.3
JMK				S		Sn	07 27 49.4	0.0
JOU	**Okura**	**1.09**	**271**	P		Pb	07 27 41.4	-0.7
JOU				S		Sb	07 27 55.5	-0.5
JMM	**Marumori**	**1.10**	**244**	P		Pn	07 27 40.8	+0.1
JMM				S		Sn	07 27 54.6	-0.2
JOM	**Ohasama**	**1.27**	**332**	P		Pn	07 27 43.7	+0.7
JOM				S		Sn	07 27 59.5	+0.6
JFK	**Kawauchi**	**1.35**	**224**	P		Pn	07 27 43.6	-0.6
JFK				S		Sn	07 27 59.5	-1.5
JFT	**Otama**	**1.59**	**239**	P		Pn	07 27 48.4	+1.0

*ISCJB **20** 07:35:07.4±0.3, 59°59N±0°03×152°94W±0°05, h108km±3km, mb3.6/2, Error ellipse: s-maj=5.1km s-min=3.4km az=43.2*
*IDC **20** 07:35:08.2±5.7, 59°70N×153°11W, h90km±48km, mb3.3/2, mb1 3.6/6, mb1mx3.2/49, mbtmp3.8/6, Error ellipse: s-maj=45.2km s-min=24.2km az=33.0*
*NEIC **20** 07:35:09.7, 59°57N×152°94W, h94km, MG3.4(AEIC), After AEIC.*

ISC 20 07:35:08.4±0.8, 59°57N±0°04×152°95W±0°04, h101km±6km, n103, σ0°60/112, Southern Alaska

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
OPT	**Oil Point**	**0.16**	**299**	P		**Pn**	**07 35 22.6**	**-0.1**
AUE	**Augustine Isla**	**0.30**	**225**	P		**Pn**	**07 35 23.2**	**0.0**
AUL	**Augustine Lava**	**0.31**	**232**	P		**Pn**	**07 35 23.2**	**0.0**
AUL				S		**Sn**	**07 35 34.4**	**+0.2**
AUSE	**Augustine SEas**	**0.33**	**225**	P		**Pn**	**07 35 23.2**	**0.0**
AUI	**Augustine Isla**	**0.34**	**226**	P		**Pn**	**07 35 23.3**	**0.0**
AUI				S		**Sn**	**07 35 34.2**	**-0.3**
IVE	**Iliamna Volcan**	**0.45**	**356**	P		**Pn**	**07 35 23.8**	**-0.3**
ILW	**Iliamna West**	**0.50**	**349**	P		**Pn**	**07 35 24.4**	**-0.1**
HOM	**Homer**	**0.67**	**82**	P		**Pn**	**07 35 26.3**	**+0.6**
HOM				S		**Sn**	**07 35 39.7**	**+1.1**
CDD	**Cape Douglas**	**0.74**	**209**	P		**Pn**	**07 35 26.3**	**0.0**
MCNL	**McNeil River**	**0.81**	**242**	P		**Pn**	**07 35 27.0**	**+0.1**
FOPK	**Fourpeaked Vol**	**0.86**	**198**	P		**Pn**	**07 35 27.3**	**-0.2**
FOSS	**Fourpeaked Sta**	**0.87**	**207**	P		**Pn**	**07 35 27.6**	**+0.1**
RDWB	**Redoubt West**	**0.92**	**3**	P		**Pn**	**07 35 28.1**	**-0.1**
RDWB				S		**Sn**	**07 35 42.5**	**-0.6**
NCT	**North Crescent**	**0.99**	**1**	P		**Pn**	**07 35 29.0**	**+0.1**
RDJH	**Redoubt Jeurge**	**1.02**	**4**	P		**Pn**	**07 35 29.4**	**+0.1**
RDJH				S		**Sn**	**07 35 44.6**	**-0.4**
BRLK	**Bradley Lake**	**1.06**	**79**	P		**Pn**	**07 35 29.6**	**0.0**
BRLK				S		**Sn**	**07 35 44.7**	**-0.9**
KAHC	**Katmai Hardscr**	**1.41**	**230**	P		**Pn**	**07 35 33.9**	**+0.1**
KAWH	**Katmai**	**1.53**	**220**	P		**Pn**	**07 35 35.2**	**+0.1**
CKL	**Chakachamna La**	**1.66**	**10**	P		**Pn**	**07 35 37.2**	**+0.5**
SLKM	**Skilak Lake**	**1.66**	**54**	P		**Pn**	**07 35 37.2**	**+0.5**
SPCR	**Spurr Chakacha**	**1.67**	**12**	P		**Pn**	**07 35 37.3**	**+0.4**
KAKN	**Katmai Knife C**	**1.69**	**221**	P		**Pn**	**07 35 37.3**	**+0.2**
KAKN				S		**Sn**	**07 35 58.1**	**-0.8**
KVTA	**Katmai Vly 10**	**1.71**	**226**	P		**Pn**	**07 35 37.4**	**+0.1**
SPWE	**Spurr West**	**1.72**	**6**	P		**Pn**	**07 35 38.3**	**+0.8**
KABU	**Katmai Buttres**	**1.78**	**224**	P		**Pn**	**07 35 38.8**	**+0.5**
KABR	**Katmai Barrier**	**1.79**	**217**	P		**Pn**	**07 35 38.6**	**+0.2**
KDAK	**Kodiak Island**	**1.81**	**174**	P		Pn	07 35 53.1	+15
	65nm,0.3s,baz=28,slow=8.4,SNR=838							
KDAK				S		Sn	07 36 15.9	+15
	64nm,0.3s,baz=128,slow=22,SNR=16							
KDAK	**Kodiak Island**	**1.81**	**174**	P		**Pn**	**07 35 37.8**	**-0.7**
KDAK				P		Sn	07 35 53.1	-8.3
KDAK				S		Sn	07 36 15.9	+15
KELA	**Mount Kelaz**	**1.84**	**233**	P		**Pn**	**07 35 39.0**	**0.0**
SEW	**Seward**	**1.84**	**72**	P		**Pn**	**07 35 39.0**	**0.0**
STLK	**Strandline Lak**	**2.01**	**15**	P		**Pn**	**07 35 41.6**	**+0.5**
CNTC	**Contact Creek**	**2.01**	**230**	P		**Pn**	**07 35 41.5**	**+0.3**
SVW2	**Sparrevohn**	**2.01**	**321**	P		**Pn**	**07 35 41.1**	**0.0**
FIB	**Fire Island**	**2.11**	**40**	P		**Pn**	**07 35 44.1**	**+1.7**
RC01	**Rabbit Creek A**	**2.21**	**45**	P		**Pn**	**07 35 44.0**	**+0.4**
OHAK	**Old Harbor**	**2.37**	**184**	P		**Pn**	**07 35 45.0**	**-0.7**
PLK3	**Peulik 3**	**2.57**	**224**	P		**Pn**	**07 35 49.4**	**+1.0**
PLK1	**Peulik 1**	**2.61**	**229**	P		**Pn**	**07 35 49.8**	**+0.9**
PLK4	**Peulik 4**	**2.64**	**224**	P		**Pn**	**07 35 50.2**	**+0.8**
PMR	**Palmer**	**2.77**	**41**	P		**Pn**	**07 35 51.1**	**+0.2**
CUT	**Chulitna**	**3.13**	**24**	P		**Pn**	**07 35 55.9**	**+0.2**
SML	**Sawmill**	**3.19**	**43**	P		**Pn**	**07 35 56.9**	**+0.2**
PPLA	**Purkeypile**	**3.35**	**6**	P		**Pn**	**07 35 59.8**	**+0.8**
SCM	**Sheep Creek Mo**	**3.57**	**48**	P		**Pn**	**07 36 02.1**	**+0.3**
VLZ	**Valdez**	**3.64**	**62**	P		**Pn**	**07 36 02.9**	**+0.3**
TT01	**Tatalina**	**3.66**	**337**	P		**Pn**	**07 36 03.0**	**+0.1**
TTA	**Tatalina**	**3.68**	**338**	P		**Pn**	**07 36 03.2**	**-0.1**
EYAK	**Cordova Ski Ar**	**3.74**	**72**	P		**Pn**	**07 36 03.4**	**-0.6**
HUR	**Hurricane**	**3.77**	**24**	P		**Pn**	**07 36 05.5**	**+1.1**
CAST	**Castle Rocks**	**3.88**	**6**	P		**Pn**	**07 36 06.4**	**+0.5**
DIV	**Divide**	**3.89**	**63**	P		**Pn**	**07 36 05.9**	**-0.2**
KLU	**Klutina**	**3.97**	**58**	P		**Pn**	**07 36 06.9**	**-0.2**
TRF	**Thorofare Moun**	**4.09**	**17**	P		**Pn**	**07 36 09.3**	**+0.4**
KTH	**Kantishna Hill**	**4.11**	**13**	P		**Pn**	**07 36 09.1**	**+0.1**
RAGM	**Ragged Mountai**	**4.24**	**75**	P		**Pn**	**07 36 10.2**	**-0.6**
RND	**Reindeer**	**4.32**	**25**	P		**Pn**	**07 36 12.3**	**+0.5**
CHUM	**Lake Minchumin**	**4.33**	**4**	P		**Pn**	**07 36 12.4**	**+0.4**
BMRM	**Bremner River**	**4.38**	**68**	P		**Pn**	**07 36 12.3**	**-0.4**
CHGN	**Chignik**	**4.39**	**224**	P		**Pn**	**07 36 12.7**	**0.0**
DHY	**Denali Highway**	**4.42**	**35**	P		**Pn**	**07 36 13.5**	**+0.1**
PS11	**TAPS Pump St11**	**4.44**	**52**	P		**Pn**	**07 36 14.3**	**+0.8**
NICHA	**Nichawak Mount**	**4.57**	**78**	P		**Pn**	**07 36 15.1**	**-0.2**
MCK	**McKinley**	**4.59**	**23**	P		**Pn**	**07 36 16.1**	**+0.6**
BPAW	**Bear Paw Mtn.**	**4.64**	**11**	P		**Pn**	**07 36 15.9**	**-0.2**
BERG	**Berg Lake**	**4.72**	**76**	P		**Pn**	**07 36 17.1**	**-0.1**
GRIN	**Grindle Hills**	**4.90**	**78**	P		**Pn**	**07 36 20.1**	**+0.4**
KHIT	**Khitrov Hills**	**4.95**	**76**	P		**Pn**	**07 36 20.6**	**+0.2**
PAX	**Paxson**	**4.96**	**43**	P		**Pn**	**07 36 20.7**	**+0.2**
VRDI	**Verde Repeater**	**4.99**	**67**	P		**Pn**	**07 36 20.8**	**-0.3**
KULT	**Kultieth River**	**5.19**	**78**	P		**Pn**	**07 36 23.7**	**0.0**
MCARA	**McCarthy VSAT**	**5.24**	**65**	P		**Pn**	**07 36 24.8**	**+0.6**
ISLE	**Juniper Island**	**5.41**	**74**	P		**Pn**	**07 36 27.2**	**+0.5**
WRH	**Wood River Hil**	**5.42**	**23**	P		**Pn**	**07 36 26.5**	**-0.1**
KIAG	**Kiagna River**	**5.45**	**71**	P		**Pn**	**07 36 27.6**	**+0.4**
PTPK	**Patty Peak**	**5.45**	**68**	P		**Pn**	**07 36 27.6**	**+0.3**
BALM	**Baldy**	**5.47**	**70**	P		**Pn**	**07 36 28.0**	**+0.4**
BAGL	**Bagley Icefiel**	**5.52**	**76**	P		**Pn**	**07 36 28.7**	**+0.6**
MLY	**Manley**	**5.57**	**10**	P		**Pn**	**07 36 28.5**	**-0.3**
MESA	**MESA**	**5.58**	**79**	P		**Pn**	**07 36 29.2**	**+0.2**
MENT	**Mentasta**	**5.59**	**49**	P		**Pn**	**07 36 29.3**	**+0.3**
HDA	**Harding Lake**	**5.61**	**28**	P		**Pn**	**07 36 29.5**	**+0.2**
CCB	**Clear Creek Bu**	**5.63**	**23**	P		**Pn**	**07 36 29.1**	**-0.5**
BARN	**Barnard Glacie**	**5.80**	**70**	P		**Pn**	**07 36 32.5**	**+0.4**
COLA	**College**	**5.83**	**22**	P		**Pn**	**07 36 31.9**	**-0.2**
MDM	**Murphy Dome**	**5.83**	**20**	P		**Pn**	**07 36 32.2**	**-0.1**
DOT	**Dot Lake**	**5.89**	**42**	P		**Pn**	**07 36 33.3**	**+0.2**
IL1	**Eielson Array**	**5.94**	**26**	P		**Pn**	**07 36 33.1**	**-0.6**
ILAR	**Eielson Array**	**5.94**	**26**	P		**Pn**	**07 36 33.1**	**-0.6**
	2.4nm,0.3s,baz=216,slow=14,SNR=129							
ILAR				S		**Sn**	**07 37 38.2**	**-2.0**
	4.5nm,0.3s,baz=203,slow=22,SNR=15							
ILB	**Eielson Array**	**5.94**	**26**	P		**Pn**	**07 36 33.1**	**-0.6**
CTGM	**Chitina Glacie**	**5.95**	**71**	P		**Pn**	**07 36 35.2**	**+1.2**
LOGN	**Logan Glacier**	**6.09**	**73**	P		**Pn**	**07 36 35.6**	**-0.3**
BCA3	**Beaver Creek A**	**6.41**	**52**	P		**Pn**	**07 36 40.3**	**+0.1**
IM3	**Indian Mountai**	**6.45**	**357**	P		**Pn**	**07 36 41.0**	**+0.5**
EGAK	**Eagle**	**7.59**	**42**	P		**Pn**	**07 36 55.5**	**-0.5**
COLD	**Coldfoot**	**7.78**	**8**	P		**Pn**	**07 36 58.5**	**-0.2**
DAWY	**Dawson**	**7.83**	**49**	P		**Pn**	**07 37 00.0**	**+0.5**
BM3	**Burnt Mountain**	**8.70**	**22**	P		**Pn**	**07 37 09.9**	**-1.4**
SKAG	**Skagway**	**8.96**	**83**	*ePn*		**Pn**	**07 37 16.2**	**+1.5**
	5.2nm,0.5s							
DLBC	**Dease Lake**	**11.86**	**86**	P		**Pn**	**07 37 56.4**	**+2.4**
	1.4nm,0.3s,baz=309,slow=6.3,SNR=33							
DLBC				S		**Sn**	**07 40 04.6**	**+0.4**
	0.5nm,0.3s,baz=173,slow=20,SNR=7.2							
INK	**Inuvik**	**12.17**	**36**	P		**Pn**	**07 37 57.0**	**-0.9**
	0.3nm,0.3s,baz=255,slow=16,SNR=10							
YKA	**Yellowknife Ar**	**18.61**	**65**	P		**Pn**	**07 39 18.6**	**-0.3**
	0.1nm,0.3s,baz=277,slow=9.7,SNR=34							
YKA					PcP	**PcP**	**07 43 42.1**	**+0.5**
	0.0nm,0.3s,baz=276,slow=1.2,SNR=7.9							
SONM	**Songino Array**	**55.06**	**306**	P		**P**	**07 44 29.3**	**-0.1**
	0.9nm,0.7s,baz=24,slow=5.9,SNR=4.2							
MKAR	**Makanchi Array**	**64.78**	**321**	P		**P**	**07 45 35.7**	**0.0**
	0.2nm,0.5s,baz=41,slow=6.5,SNR=4.7							

*ISCJB **20** 07:38:48.2±0.4, 51°81N±0°04×1°87E±0°05, h0km, Error ellipse: s-maj=6.5km s-min=3.3km az=31.6*
*CSEM **20** 07:38:49.3±0.2, 51°79N×1°89E, h2km, ML2.5, Error ellipse: s-maj=8.0km s-min=3.6km az=29.0, Mining explosion.*
*UCC **20** 07:38:52.3, 51°52N×1°72E, h8km, ML2.3*

ISC 20 07:38:48.6±0.9, 51°79N±0°05×1°89E±0°03, h0km, n36, σ0°62/47, 1C-3D, United Kingdom

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
ELSH	**Elham, Standar**	**0.80**	**217**	*eP*		**Pg**	**07 39 04.4**	**+0.6**
ELSH				*eS*		**Sg**	**07 39 14.4**	**+0.3**
	128nm,0.2s							
BOST	**Ostende**	**0.86**	**130**	⇓P		**Pg**	**07 39 05.4**	**+0.4**
BOST				S		**Sb**	**07 39 17.7**	**-0.6**
	comp=N,17nm,0.1s							
BOST	**Ostende**	**0.86**	**130**	P		**Pg**	**07 39 05.3**	**+0.4**
BOST				S		**Sb**	**07 39 17.7**	**-0.6**
	comp=N,17nm,0.1s							
BZEV	**Zevekote**	**0.91**	**136**	P		**Pg**	**07 39 06.6**	**+0.6**
BZEV				S		**Sg**	**07 39 18.1**	**+0.3**
BZEV	**Zevekote**	**0.91**	**136**	P		**Pg**	**07 39 06.5**	**+0.6**
BZEV				S		**Sg**	**07 39 18.0**	**+0.3**
HMNX	**Herstmonceux**	**1.34**	**227**	*eP*		**Pg**	**07 39 13.7**	**-0.6**
	comp=N,116nm,0.4s							
SKP1	**Kophill**	**1.68**	**269**	*eP*		**Pn**	**07 39 19.6**	**+0.4**
BSKQ	**Steenkerk**	**1.79**	**129**	P		**Pg**	**07 39 23.0**	**+0.1**
BSKQ	**Steenkerk**	**1.79**	**129**	P		**Pg**	**07 39 22.9**	**+0.1**
BRQR	**Ronquières**	**1.89**	**128**	⇓P		**Pn**	**07 39 22.2**	**+0.2**
BRQR	**Ronquières**	**1.89**	**128**	P		**Pn**	**07 39 22.2**	**+0.2**
BBOU	**Bougnies**	**1.91**	**136**	⇑P		**Pn**	**07 39 23.4**	**+1.0**
BBOU	**Bougnies**	**1.91**	**136**	P		**Pn**	**07 39 23.3**	**+1.0**
BDSL	**Dessel**	**2.07**	**105**	P		**Pb**	**07 39 27.4**	**+0.5**
BDSL				S		**Sg**	**07 39 55.2**	**+0.3**
BDSL	**Dessel**	**2.07**	**105**	P		**Pb**	**07 39 27.4**	**+0.5**
BDSL				S		**Sg**	**07 39 55.2**	**+0.3**
LMK	**Market Rasen**	**2.15**	**322**	*eP*		**Pn**	**07 39 26.5**	**+0.9**
	comp=N,88nm,0.8s							
CWF	**Charnwood Fore**	**2.18**	**297**	*eP*		**Pn**	**07 39 26.8**	**+0.7**
	comp=N,17nm,0.2s							
SWN1	**Swindon**	**2.31**	**265**	*eP*		**Pb**	**07 39 30.7**	**-0.4**
BMRD	**Maredsous**	**2.35**	**128**	P		**Pn**	**07 39 28.8**	**+0.4**
BMRD	**Maredsous**	**2.35**	**128**	P		**Pn**	**07 39 28.8**	**+0.4**
DOU	**Dourbes**	**2.41**	**134**	P		**Pn**	**07 39 28.2**	**-1.0**
DOU				S		**Sb**	**07 40 02.0**	**-1.1**
DOU	**Dourbes**	**2.41**	**134**	P		**Pn**	**07 39 29.2**	**+0.1**
DOU	**Dourbes**	**2.41**	**134**	*eP*		**Pn**	**07 39 29.3**	**+0.1**
DOU				S		**Sb**	**07 40 01.9**	**-1.1**
BCLA	**Clavier**	**2.55**	**121**	⇓P		**Pn**	**07 39 31.6**	**+0.4**
BCLA	**Clavier**	**2.55**	**121**	P		**Pn**	**07 39 31.5**	**+0.4**
HGN	**Heimansgroeve**	**2.74**	**110**	*ePn*		**Pn**	**07 39 33.7**	**0.0**
	comp=N,1.0nm,0.2s							
HGN				*ePg*		**Pg**	**07 39 40.9**	**-0.2**
	comp=N,3.6nm,0.2s							
HGN				*eSg*		**Sg**	**07 40 15.0**	**-1.5**
MEM	**Membach**	**2.85**	**113**	P		**Pn**	**07 39 35.2**	**0.0**
MEM	**Membach**	**2.85**	**113**	P		**Pn**	**07 39 35.2**	**0.0**
MCH1	**Michaelchurch**	**3.04**	**276**	*eP*		**Pn**	**07 39 38.1**	**+0.3**
	comp=N,19nm,0.8s							
FOEL	**Foel Wylfa**	**3.31**	**291**	*eP*		**Pn**	**07 39 42.4**	**+0.8**
	comp=N,17nm,0.6s							
WPM1	**Penmaenmawr**	**3.83**	**295**	*eP*		**Pn**	**07 39 50.2**	**+1.4**
WME	**Mynydd Eilian**	**4.10**	**296**	*eP*		**Pn**	**07 39 52.6**	**+0.1**
YRC	**Rhoscolyn**	**4.21**	**293**	*eP*		**Pn**	**07 39 54.3**	**+0.4**
ECK	**Cauldkaine Hil**	**4.53**	**321**	*eP*		**Pn**	**07 39 58.1**	**-0.2**
ESK	**Eskdalemuir**	**4.66**	**321**	*eP*		**Pn**	**07 40 00.3**	**+0.2**
	comp=N,2.5nm,0.5s							
GAL1	**Galloway**	**5.01**	**311**	*eP*		**Pn**	**07 40 04.3**	**-0.7**
	comp=N,0.9nm,0.9s							

*NIED **20** 07:40:00, 36°60N×142°50E, h26km, Mw4.2 Best double couple: M0 2.15000×10^15 NP1:φs176.00000°, δ46.00000°, λ-65.00000°. NP2:φs322.00000°, δ50.00000°, λ-113.00000°.*
*IDC **20** 07:40:28.9±0.6, 36°58N×142°49E, h0km, mb4.0/21, mb1 4.2/26, mb1mx4.1/47, mbtmp4.1/26, ML3.9/5, MS3.4/6, Ms1 3.4/6, ms1mx3.0/62, Error ellipse: s-maj=16.6km s-min=13.6km az=135.0*
*ISCJB **20** 07:40:29.5±0.4, 36°61N±0°03×142°49E±0°05, h15km, mb4.1/27, Error ellipse: s-maj=5.4km s-min=4.1km az=18.8*
*JMA **20** 07:40:29.9±0.4, 36°65N×142°46E, h17km±4km, M4.3*
*NEIC **20** 07:40:33.6±0.3, 36°44N×142°47E, h35km, mb4.5/4, Error ellipse: s-maj=6.3km s-min=5.2km az=109.0*

ISC 20 07:40:31.5±0.5, 36°61N±0°04×142°39E±0°06, h15km, n65, σ1°16/64, mb4.2/27, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**1.37**	**292**	P		**Pn**	**07 40 55.0**	**-1.1**
JFK	**Kawauchi**	**1.43**	**302**	P		**Pn**	**07 40 55.8**	**-1.2**
JHO	**Hitachi**	**1.47**	**271**	P		**Pn**	**07 40 56.5**	**-0.9**
CHOJ	**Chosi**	**1.54**	**234**	P		**Pn**	**07 40 58.4**	**+0.1**
JMM	**Marumori**	**1.79**	**315**	P		**Pn**	**07 41 00.9**	**-0.9**
JMM				S		**Sn**	**07 41 24.4**	**+0.1**
JFT	**Otama**	**1.88**	**300**	P		**Pn**	**07 41 03.1**	**0.0**
JFT				S		**Sn**	**07 41 26.3**	**-0.2**
JIO	**Ouri**	**2.02**	**336**	P		**Pn**	**07 41 03.9**	**-1.1**
JIO				*eS		**Sn**	**07 41 28.2**	**-1.8**
JOU	**Okura**	**2.23**	**322**	P		**Pn**	**07 41 07.3**	**-0.6**
BSO1	**Boso 1**	**2.27**	**211**	P		**Pn**	**07 41 08.3**	**+0.4**
BSO1				*eS		**Sn**	**07 41 36.5**	**+1.2**
JAG	**Ashikaga**	**2.37**	**266**	P		**Pn**	**07 41 09.8**	**-0.1**
JMK	**Ichinoseki**	**2.52**	**339**	P		**Pn**	**07 41 11.3**	**-0.5**
JYK	**Kaneyama**	**2.81**	**326**	P		**Pn**	**07 41 15.6**	**-0.3**
JRY	**Ryogami san**	**2.88**	**259**	P		**Pn**	**07 41 16.6**	**-0.3**
JOM	**Ohasama**	**2.99**	**343**	P		**Pn**	**07 41 17.5**	**-0.8**
JOM				*eS		**Sn**	**07 41 52.4**	**-1.5**
JOD2	**Odawara 2**	**3.00**	**244**	P		**Pn**	**07 41 18.8**	**+0.3**
JOD2				*eS		**Sn**	**07 41 54.4**	**+0.2**
MJAR	**Matsushiro Arr**	**3.37**	**270**	Pn		**Pn**	**07 41 24.5**	**+0.9**
	30nm,0.3s,baz=94,slow=9.0,SNR=113							
MJAR				Sn		**Sb**	**07 42 10.3**	**-1.3**
	6.9nm,0.3s,baz=120,slow=7.4,SNR=4.8							
MJAR				LR		LR	07 42 54.1	
	comp=Z,308nm,21.1s,baz=120,slow=42							
MAJO	**Matsushiro**	**3.37**	**270**	*ePn*		**Pn**	**07 41 24.5**	**+0.9**
MAT	**Matsushiro**	**3.37**	**270**	P		**Pn**	**07 41 24.8**	**+1.2**
MAT				*eS		**Sb**	**07 42 07.7**	**-4.0**
JHJ2	**Mitsune**	**4.08**	**212**	Pn		**Pn**	**07 41 32.2**	**-1.2**
JHJ	**Hachijo jima 2**	**4.09**	**212**	Pn		**Pn**	**07 41 33.0**	**-0.5**
	89nm,0.3s,baz=65,slow=19,SNR=2.7							
JHJ				Sn		**Sn**	**07 42 18.8**	**-2.3**
	75nm,0.3s,baz=73,slow=19,SNR=3.2							
ASAJ	**Asahikawa**	**7.50**	**1**	Pn		**Pn**	**07 42 19.1**	**-1.2**
	3.2nm,0.3s,baz=222,slow=13,SNR=14							
ASAJ				LR		LR	07 45 33.1	
	comp=Z,374nm,19.4s,baz=178,slow=40							
CBIJ	**Chichi jima**	**9.49**	**181**	Sn		Sn	07 44 27.5	-6.5
JCJ	**Chichijima**	**9.49**	**181**	Sn		Sn	07 44 27.5	-6.5
	12nm,0.3s,baz=285,slow=20,SNR=3.4							
JNU	**Nakatsue**	**10.08**	**253**	Pn		**Pn**	**07 42 57.0**	**+1.3**
	0.2nm,0.3s,baz=79,slow=9.1,SNR=4.1							
USRK	**Ussuriysk Ar.**	**10.96**	**317**	Pn		**Pn**	**07 43 10.9**	**+3.1**
	0.3nm,0.3s,baz=134,slow=10,SNR=4.3							
USRK				LR		LR	07 47 30.9	
	comp=Z,346nm,18.3s,baz=113,slow=38							
KSRS	**Korea Array**	**11.60**	**278**	Pn		**Pn**	**07 43 19.2**	**+2.8**
	0.5nm,0.3s,baz=90,slow=13,SNR=6.0							
KSRS				LR		LR	07 47 41.2	
	comp=Z,216nm,18.2s,baz=82,slow=37							
KSAR	**Wonju Array Be**	**11.63**	**278**	Pn		**Pn**	**07 43 19.2**	**+2.3**
KLR	**Kul'dur**	**14.81**	**332**	Pn		**Pn**	**07 44 02.8**	**+2.5**
	0.3nm,0.3s,baz=130,slow=13,SNR=6.2							
KLR				LR		LR	07 49 51.7	
	comp=Z,184nm,19.1s,baz=118,slow=38							
PETK	**Petropavlovsk-**	**19.68**	**28**	LR		LR	07 54 06.0	
	comp=Z,52nm,18.0s,baz=226,slow=42							
SEY	**Seymchan**	**27.06**	**10**	P		**P**	**07 46 12.2**	**-0.8**
	1.0nm,0.5s,baz=198,slow=16,SNR=4.0							
H11N2	**WAKE ISLAND Hy**	**27.26**	**121**	T		T	08 14 55.9	
	baz=313							
H11N1	**WAKE ISLAND Hy**	**27.27**	**121**	T		T	08 14 50.1	
	baz=313							
H11N3	**WAKE ISLAND Hy**	**27.27**	**121**	T		T	08 14 53.6	
	ba

comp=Z,2.0nm,0.8s,baz=36,slow=6.0,SNR=6.7

CMAR Chiang Mai Arr 43.72 253 P P 07 49 59.9 +0.4
0.8nm,0.5s,baz=43,slow=8.0,SNR=3.6
WRA Warramunga Arr 60.46 190 P P 07 52 01.9 -2.0
0.9nm,0.7s,baz=8.2,slow=6.8,SNR=4.5
GEYT Alibeck 63.53 298 P P 07 52 24.3 -0.2
1.1nm,0.3s,baz=354,slow=3.0,SNR=3.7
ASAR Alice Springs 64.18 189 P P 07 52 27.0 -1.8
0.3nm,0.6s,baz=11,slow=11,SNR=2.6
FINES FINESS Array B 66.62 332 P P 07 52 44.3 +0.1
4.0nm,0.7s,baz=46,slow=8.2,SNR=11
KBZ Khabaz 69.88 311 P P 07 53 06.0 +1.1
3.6nm,0.8s,baz=46,slow=0.8,SNR=6.3
NB2 NORSAR Subarra 71.75 338 P P 07 53 15.8 -0.3
comp=Z,0.9nm,0.6s,baz=38,slow=6.2
NOA NORSAR Array B 71.75 338 P P 07 53 16.0 -0.1
comp=Z,2.0nm,0.8s,baz=36,slow=6.0,SNR=6.7

*ECX **20** 07:43:00.3±0.5, 32°.31N×115°.36W, h6km, MD2.3, ML2.5*
*MEX **20** 07:43:00.7±0.3, 32°.40N×115°.27W, h14km±19km, MD3.6*
ISC 20 07:42:58.7±1.1, 32°.37N±0°.04×115°.35W±0°.05, h23km±7km, n17, σ0950/23, 4C-7D, California-Baja California border region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CPBX	**Cerro Prieto**	**0.06**	**39**	⇓*eP*	**Pb**	**07 43 02.6**	**-0.3**
CPBX				⇓*eP*	**Pb**	**07 43 02.6**	**-0.3**
CPBX				*eS*	**Sb**	**07 43 05.0**	**-0.8**
CPBX				⇑*e*		07 43 05.9	
CPBX				AML	AML	07 43 05.9	
	comp=E,5μm,0.3s						
CPBX				⇓*e*		07 43 06.0	
CPBX				AML	AML	07 43 06.0	
	comp=N,4μm,0.1s						
MBIG	**Mexicali**	**0.14**	**73**	*eS*	**Sb**	**07 43 08.3**	**+1.6**
SGL	**Mount Signal**	**0.42**	**312**	*eP*	**Pb**	**07 43 08.2**	**+0.6**
DREC	**Desert Rsrch C**	**0.44**	**350**	⇑*eP*	**Pn**	**07 43 09.6**	**0.0**
ERPC	**Ernies Place**	**0.46**	**325**	*eP*	**Pn**	**07 43 09.6**	**-0.2**
EMSC	**East Mesa**	**0.48**	**40**	*eP*	**Pn**	**07 43 10.2**	**0.0**
WESC	**Westside Schoo**	**0.51**	**321**	⇓*eP*	**Pn**	**07 43 10.2**	**-0.2**
COA	**Coachella**	**0.53**	**21**	*eP*	**Pn**	**07 43 10.7**	**-0.1**
YUH	**Yuha Desert**	**0.56**	**300**	⇑*iP*	**Pb**	**07 43 10.1**	**+0.3**
ECBX	**El Chinero**	**0.93**	**164**	⇓*eP*	**Pn**	**07 43 16.4**	**+0.1**
ECBX				*eS*	**Sb**	**07 43 28.3**	**+0.3**
ECBX				AML	AML	07 43 29.1	
	comp=N,138nm,0.2s						
ECBX				⇑*e*		07 43 29.1	
ECBX				AML	AML	07 43 29.8	
	comp=E,96nm,0.2s						
CBX	**Cerro Bola**	**1.11**	**268**	*eP*	**Pb**	**07 43 19.7**	**+0.4**
CBX	**Cerro Bola**	**1.11**	**268**	*eP*	**Pb**	**07 43 19.3**	**0.0**
CBX				*eS*	**Sb**	**07 43 33.3**	**-0.1**
TJIG	**Tijuana**	**1.12**	**274**	*eP*	**Pb**	**07 43 19.3**	**-0.1**
TJIG				*eS*	**Sb**	**07 43 33.5**	**0.0**
BAR	**Barrett**	**1.16**	**286**	*eP*	**Pb**	**07 43 20.6**	**+0.5**
SPIG	**San Pedro Mart**	**1.32**	**184**	⇓*eP*	**Pn**	**07 43 22.1**	**0.0**
SPIG	**San Pedro Mart**	**1.32**	**184**	*eP*	**Pn**	**07 43 22.0**	**0.0**
SPIG				*i* S	**Sn**	**07 43 38.6**	**-0.4**
SPX	**San Pedro Mart**	**1.32**	**184**	⇓*eP*	**Pn**	**07 43 22.1**	**+0.1**

SKHL 20 07:46:24.9±1.0, 48°.74N×141°.97E, h10km, mb4.0/4, 1C-1D, Sakhalin Island

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
UGL	**Uglegorsk**	**0.34**	**11**	⇓*iPg*	Pb	07 46 32.8	-0.3
UGL				AMB	AMB	07 46 33.0	
	490nm,0.4s						
UGL				*eSg*	Sb	07 46 37.8	-0.8
UGL				A	A	07 46 37.9	
	3μm,0.4s						
UGL				A	A	07 46 37.9	
	4μm,0.4s						
YSS	**Yuzh-Sakhalins**	**1.86**	**163**	⇑*iPg*	Pg	07 47 02.6	+2.0
YSS				AMB	AMB	07 47 03.6	
	50nm,0.4s						
YSS				*eSg*	Sg	07 47 27.5	+2.7
YSS				A	A	07 47 29.2	
	100nm,0.6s						
YSS				A	A	07 47 29.2	
	70nm,0.6s						
TYV	**Tymovskoe**	**2.17**	**12**	*ePg*	Pg	07 47 07.0	+0.5
TYV				AMB	AMB	07 47 13.5	
	33nm,0.8s						
TYV				*eSg*	Sg	07 47 36.6	+2.0
TYV				A	A	07 47 37.5	
	44nm,0.8s						
TYV				A	A	07 47 37.5	
	70nm,0.8s						
NKL	**Nikolayevsk**	**4.49**	**350**	*ePg*	Pg	07 47 54.1	+3.2
NKL				AMB	AMB	07 47 58.0	
	9.0nm,0.5s						
NKL				*eSg*	Sg	07 48 57.1	+8.1
NKL				A	A	07 48 58.6	
	20nm,0.7s						
EKMR	**Ekimchan**	**7.16**	**311**	*eSg*	Sg	07 50 25.0	+10
EKMR				A	A	07 50 25.8	
	6.0nm,0.5s						
EKMR				A	A	07 50 25.8	
	4.0nm,0.5s						

IDC 20 07:48:32.5±1.0, 44°.20S×15°.98W, h0km, mb4.1/7, mb1 4.2/7, mb1mx3.9/36, mbtmp4.1/7, MS3.8/13, Ms1 3.8/13, ms1mx3.6/27, Error ellipse: s-maj=33.2km s-min=26.5km az=143.0, Southern Mid-Atlantic Ridge

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
H10S2	**ASCENSION HYDR**	**35.13**	**2**	T	T	08 32 50.2	
	baz=184						
H10S3	**ASCENSION HYDR**	**35.13**	**2**	T	T	08 32 49.3	
	baz=184						
H10S1	**ASCENSION HYDR**	**35.15**	**2**	T	T	08 32 50.5	
	baz=184						
BOSA	**Boshof**	**36.24**	**79**	LR	LR	08 07 10.8	
	comp=Z,64nm,19.4s,baz=204,slow=31						
TSUM	**Tsumeb**	**37.48**	**59**	LR	LR	08 07 58.8	
	comp=Z,128nm,19.1s,baz=319,slow=31						
CPUP	**Villa Florida**	**37.72**	**284**	P	P	07 55 50.5	+0.6
	3.6nm,1.0s,baz=92,slow=4.4,SNR=4.3						
CPUP				LR	LR	08 10 23.3	
	comp=Z,102nm,19.3s,baz=152,slow=35						
LBTB	**Lobatse**	**38.71**	**74**	LR	LR	08 09 12.1	
	comp=Z,165nm,18.9s,baz=242,slow=32						
PLCA	**Paso Flores**	**39.78**	**255**	LR	LR	08 09 58.0	
	comp=Z,184nm,21.7s,baz=167,slow=32						
RCBR	**Riachuelo**	**42.03**	**330**	LR	LR	08 09 50.1	
	comp=Z,72nm,19.9s,baz=159,slow=30						
SIV	**San Ignacio**	**47.27**	**292**	P	P	07 57 07.9	+0.2
	4.0nm,1.0s,baz=144,slow=10,SNR=3.9						
DBIC	**Dimbokro**	**51.62**	**14**	P	P	07 57 39.9	-0.9
	6.0nm,1.0s,baz=151,slow=9.3,SNR=3.1						
LPAZ	**La Paz**	**51.87**	**285**	P	P	07 57 42.2	-1.3
	0.9nm,0.9s,baz=147,slow=11,SNR=3.3						
LPAZ				LR	LR	08 19 37.8	
	comp=Z,214nm,19.1s,baz=102,slow=36						
OPO	**Ambohidratompo**	**58.14**	**85**	LR	LR	08 21 45.1	
	comp=Z,48nm,18.8s,baz=246,slow=34						
VNDA	**Vanda**	**58.55**	**179**	P	P	07 58 30.3	+0.2
	1.6nm,1.0s,baz=194,slow=4.9,SNR=3.2						
VNDA				LR	LR	08 22 29.2	
	comp=Z,90nm,18.1s,baz=80,slow=35						
TORD	**Torodi Ar. Bea**	**59.30**	**20**	P	P	07 58 36.2	+0.2
	4.1nm,0.9s,baz=199,slow=4.6,SNR=16						
TORD				LR	LR	08 18 56.5	
	comp=Z,47nm,21.0s,baz=240,slow=31						
KMBO	**Kilima Mbogo**	**63.64**	**63**	LR	LR	08 23 42.8	
	comp=Z,154nm,21.1s,baz=77,slow=33						
ROSC	**El Rosal**	**71.46**	**297**	LR	LR	08 30 01.8	
	comp=Z,86nm,18.5s,baz=144,slow=35						
ATD	**Arta Tunnel**	**76.89**	**59**	LR	LR	08 31 37.7	
	comp=Z,77nm,20.8s,slow=34						
ESDC	**Sonseca Array**	**84.20**	**9**	P	P	08 01 05.8	+0.4
	0.2nm,0.3s,baz=186,slow=5.4,SNR=4.6						
PDAR	**Pinedale Array**	**120.21**	**302**	PKP	PKPdf	08 07 24.6	-0.6
	0.3nm,0.7s,baz=139,slow=4.4,SNR=3.4						
MKAR	**Makanchi Array**	**125.16**	**56**	PKP	PKPdf	08 07 33.1	-1.2
	0.8nm,1.0s,baz=264,slow=1.2,SNR=3.8						
YKA	**Yellowknife Ar**	**131.72**	**322**	PKP	PKPdf	08 07 45.8	-0.4
	1.8nm,1.1s,baz=110,slow=1.8,SNR=13						
ILAR	**Eielson Array**	**146.06**	**325**	PKPbc	PKPbc	08 08 13.2	0.0
	5.3nm,1.0s,baz=71,slow=1.3,SNR=36						

*NIED **20** 07:52:00, 36°.20N×141°.90E, h11km, Mw4.6 Best double couple: M0 7.59000×10^15 NP1: ϕ=209.00000°, δ=17.00000°, λ=98.00000°. NP2: ϕ=20.00000°, δ=73.00000°, λ=87.00000°.*
*JMA **20** 07:52:14.1±0.2, 36°.25N×141°.85E, h33km, M4.4*
JMA Felt I J1.
*ISCJB **20** 07:52:15.1±0.8, 36°.29N±0°.03×141°.74E±0°.04, h28km±5km, mb4.5/75, MS4.0/23, Error ellipse: s-maj=5.3km s-min=4.4km az=39.1*
*BJI **20** 07:52:16.6, 36°.30N×141°.51E, h36km, mb4.8/39, mB4.8/23, Ms4.3/24, Ms7 4.2/24*
*IDC **20** 07:52:16.6±3.4, 36°.16N×141°.74E, h33km±25km, mb4.1/34, mb1 4.2/41, mb1mx4.1/77, mbtmp4.3/41, ML4.0/5, MS3.9/21, Ms1 3.9/21, ms1mx3.6/51, Error ellipse: s-maj=13.5km s-min=11.1km az=100.0*
*NEIC **20** 07:52:18.1±0.7, 36°.28N×141°.68E, h38km±6km, mb4.7/27, Error ellipse: s-maj=6.8km s-min=5.4km az=146.0*
*MOS **20** 07:52:19.2±0.8, 36°.66N×141°.57E, h46km, mb4.8/29, Error ellipse: s-maj=8.2km s-min=5.6km az=105.8*
ISC 20 07:52:15.9±0.6, 36°.24N±0°.04×141°.77E±0°.05, h26km±4km, h25km:pP-P, n195, σ1s20/206, mb4.5/75, MS4.0/23, 8C-5D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CHOJ	**Chosi**	**0.92**	**234**	P	**Pb**	**07 52 31.9**	**-1.2**
CHOJ				S	**Sb**	**07 52 44.3**	**-0.5**
JHO	**Hitachi**	**1.04**	**291**	P	**Pn**	**07 52 33.4**	**-1.4**
ONAJ	**Iwakimizuishiy**	**1.16**	**318**	P	**Pn**	**07 52 35.3**	**-1.2**
ONAJ				*eS*	**Sn**	**07 52 51.0**	**-0.6**
JFK	**Kawauchi**	**1.33**	**328**	P	**Pn**	**07 52 37.8**	**-1.1**
BSO1	**Boso 1**	**1.71**	**203**	P	**Pn**	**07 52 42.9**	**-0.6**
BSO1				S	**Sn**	**07 53 05.1**	**+0.8**
JFT	**Otama**	**1.72**	**318**	P	**Pn**	**07 52 44.3**	**+0.2**
BSO3	**Boso 3**	**1.77**	**216**	P	**Pn**	**07 52 44.1**	**-0.4**
JMM	**Marumori**	**1.80**	**335**	P	**Pn**	**07 52 44.9**	**-0.4**
JAG	**Ashikaga**	**1.88**	**276**	P	**Pn**	**07 52 45.8**	**-0.6**
JFY	**Yanaizu**	**2.03**	**306**	P	**Pn**	**07 52 49.2**	**+0.8**
JKT	**Katashina**	**2.10**	**285**	P	**Pn**	**07 52 49.5**	**0.0**
JKT				*eS*	**Sn**	**07 53 15.7**	**+0.9**
MJAR	**Matsushiro Arr**	**2.89**	**277**	Pn	**Pn**	**07 53 00.7**	**+0.4**
	78nm,0.3s,baz=108,slow=8.6,SNR=707						
MJAR				LR	LR	07 54 14.0	
	comp=Z,1μm,19.9s,baz=130,slow=41						
MAJO	**Matsushiro**	**2.89**	**277**	*eP*	**Pn**	**07 53 00.9**	**+0.6**
MAJO	**Matsushiro**	**2.89**	**277**	*ePn*	**Pn**	**07 53 00.9**	**+0.6**
MAT	**Matsushiro**	**2.89**	**277**	P	**Pn**	**07 53 00.9**	**+0.6**
MAT				S	**Sn**	**07 53 35.6**	**+1.3**
MJB9	**Matsu-Tunnel**	**2.90**	**277**	*ePn*	**Pn**	**07 53 01.3**	**+0.9**
JHJ2	**Mitsune**	**3.51**	**208**	*ePn*	**Pn**	**07 53 11.4**	**+2.6**
JHJ	**Hachijo jima 2**	**3.52**	**208**	Pn	**Pn**	**07 53 08.7**	**-0.2**
	121nm,0.3s,baz=68,slow=19,SNR=4.8						
JHJ				Sn	**Sn**	**07 53 46.4**	**-3.3**
	114nm,0.3s,baz=63,slow=23,SNR=4.5						
JHJ				LR	LR	07 54 50.3	
	comp=Z,579nm,19.3s,baz=354,slow=45						
INU	**Inuyama**	**3.97**	**258**	*ePn*	**Pn**	**07 53 16.5**	**+1.4**
ERM	**Erimo**	**5.87**	**10**	*eP*	**Pn**	**07 53 39.9**	**-1.2**
ERM	**Erimo**	**5.87**	**10**	*ePn*	**Pn**	**07 53 39.9**	**-1.2**
ASAJ	**Asahikawa**	**7.89**	**4**	Pn	**Pn**	**07 54 08.2**	**-0.7**
	2.4nm,0.3s,baz=247,slow=9.8,SNR=11						
ASAJ				Sn	**Sn**	**07 55 36.2**	**-1.1**
	0.5nm,0.3s,baz=98,slow=18,SNR=2.3						
ASAJ	**Asahikawa**	**7.89**	**4**	*ePn*	**Pn**	**07 54 07.8**	**-1.2**
ASAJ				Sn	**Sn**	**07 55 36.2**	**-1.1**
YUK	**Yuzh-Kuril'sk**	**8.39**	**21**	*eP*	**Pn**	**07 54 17.4**	**+1.7**
SHO	**Shikotan**	**8.55**	**25**	*eP*	**Pn**	**07 54 16.2**	**-1.7**
SHO				*eS*	Sn	07 55 45.4	-8.0
SHO				pmax	pmax		
	comp=Z,48nm,0.7s						
CBIJ	**Chichi jima**	**9.12**	**178**	Pn	Pn	07 54 22.7	-3.2
CBIJ				*ePn*	Pn	07 54 33.9	+8.0
JCJ	**Chichijima**	**9.12**	**178**	Pn	Pn	07 54 22.7	-3.2
	comp=Z,16nm,0.3s,baz=99,slow=23,SNR=6.1						
JNU	**Nakatsue**	**9.50**	**254**	Pn	**Pn**	**07 54 32.3**	**+1.3**
	comp=Z,0.7nm,0.3s,baz=22,slow=1.5,SNR=4.2						
JNU				LR	LR	07 58 27.0	
	comp=Z,690nm,18.8s,baz=76,slow=39						
JNU	**Nakatsue**	**9.50**	**254**	*ePn*	Pn	07 54 35.4	+4.4
YSS	**Yuzh-Sakhalins**	**10.73**	**4**	*eP*	**Pn**	**07 54 47.4**	**-0.4**
USRK	**Ussuriysk Ar.**	**10.91**	**320**	Pn	**Pn**	**07 54 51.6**	**+1.4**
	comp=Z,0.6nm,0.3s,baz=121,slow=12,SNR=8.3						
USRK				LR	LR	07 58 54.5	
	comp=Z,759nm,18.5s,baz=124,slow=36						
KSRS	**Korea Array**	**11.17**	**280**	Pn	**Pn**	**07 54 56.6**	**+2.9**
	comp=Z,0.4nm,0.3s,baz=94,slow=13,SNR=9.1						
KSRS				LR	LR	07 59 17.4	
	comp=Z,452nm,18.2s,baz=73,slow=38						
KSAR	**Wonju Array Be**	**11.20**	**280**	P	**Pn**	**07 54 56.7**	**+2.5**
KSAR	**Wonju Array Be**	**11.20**	**280**	Pn	**Pn**	**07 54 56.6**	**+2.5**
MDJ	**Mudanjiang**	**12.48**	**316**	P	**Pn**	**07 55 10.3**	**-1.5**
MDJ				pmax	pmax		
	comp=Z,4.0nm,0.5s						
MDJ				pmax	pmax		
	comp=Z,160nm,4.6s						
HABR	**Khabarovsk**	**13.19**	**340**	*eP*	Pn	07 55 17.0	-4.3
HABR				*eS*	Sn	07 57 39.1	-8.0
HABR				pmax	pmax		
	comp=Z,8.0nm,1.0s						
HABR				pmax	pmax		
	comp=Z,12nm,1.1s						
HABR				pmax	pmax		
	comp=E,18nm,1.2s						
HABR				MLR	MLR		
	comp=Z,350nm,13.0s						
CN2	**Changchun**	**14.60**	**306**	*eP*	**Pn**	**07 55 41.0**	**+0.4**
CN2				pmax	pmax		
	comp=Z,10.0nm,0.6s						
TYV	**Tymovskoe**	**14.63**	**2**	*eP*	**P**	**07 55 48.0**	**+0.9**
TYV				pmax	pmax		
	comp=Z,13nm,0.8s						
TYV				MLR	MLR		
	comp=E,900nm,16.0s						
TYV				MLR	MLR		
	comp=Z,1μm,16.0s						
KLR	**Kul'dur**	**14.91**	**334**	Pn	**Pn**	**07 55 43.6**	**-1.2**
	comp=Z,0.2nm,0.3s,baz=147,slow=8.5,SNR=4.6						
KLR				LR	LR	08 01 31.7	
	comp=Z,342nm,18.4s,baz=140,slow=37						
NKL	**Nikolayevsk**	**16.93**	**358**	*eP*	**Pn**	**07 56 07.0**	**-3.7**
TIA	**Tai'an**	**19.88**	**277**	*eP*	**P**	**07 56 43.3**	**-1.8**
TIA				pmax	pmax		
	comp=Z,20nm,1.2s						
PETK	**Petropavlovsk-**	**20.24**	**29**	LR	LR	08 04 42.0	
	comp=Z,112nm,20.9s,baz=217,slow=37						
BJI	**Beijing**	**20.46**	**288**	P	**P**	**07 56 51.3**	**-0.2**
BJI				S	**S**	**08 00 36.9**	**-2.4**
BJI				pmax	pmax		
	comp=Z,9.0nm,0.7s						
BJI				LR	LR		
	comp=Z,360nm,15.6s						
BJI				LR	LR		
	comp=Z,360nm,16.0s						
BJI				LR	LR		
	comp=Z,180nm,17.7s						
HHC	**Hu-ho-hao-te**	**24.01**	**290**	*eP*	**P**	**07 57 28.6**	**0.0**
HHC				S	**S**	**08 01 38.1**	**-6.0**
HHC				pmax	pmax		
	comp=Z,38nm,1.1s						
HHC				pmax	pmax		
	comp=Z,61nm,7.1s						
HHC				LR	LR		
	comp=Z,620nm,12.8s						
HHC				LR	LR		
	comp=Z,900nm,14.9s						
HHC				LR	LR		
	comp=Z,880nm,14.7s						
MA2	**Magadan**	**24.07**	**11**	P	**P**	**07 57 28.5**	**-0.4**
	comp=Z,2.4nm,0.5s,baz=197,slow=11,SNR=3.8						
XAN	**Xi'an**	**26.89**	**275**	P	**P**	**07 57 53.8**	**-0.9**
XAN				S	**S**	**08 02 33.0**	**+3.1**
XAN				pmax	pmax		
	comp=Z,10.0nm,0.6s						
XAN				LR	LR		
	comp=Z,160nm,12.6s						
XAN				LR	LR		
	comp=Z,180nm,13.2s						
XAN				LR	LR		
	comp=Z,290nm,14.7s						
YAK	**Yakutsk**	**26.91**	**347**	P	**P**	**07 57 53.7**	**-0.7**
	comp=Z,14nm,0.4s,baz=336,slow=4.0,SNR=4.3						
YAK	**Yakutsk**	**26.91**	**347**	*eP*	**P**	**07 57 53.6**	**-0.9**
YAK				pmax	pmax		
	comp=Z,35nm,1.3s						
YAK				pmax	pmax		
	comp=N,21nm,1.2s						
YAK				pmax	pmax		
	comp=E,10.0nm,1.4s						
H11N2	**WAKE ISLAND Hy**	**27.50**	**120**	T	T	08 27 21.4	
	baz=311,slow=75,SNR=43						
H11N1	**WAKE ISLAND Hy**	**27.50**	**120**	T	T	08 27 21.1	
	baz=311,slow=75,SNR=64						
SEY	**Seymchan**	**27.51**	**11**	P	**P**	**07 58 01.7**	**+1.7**
	comp=E,1.6nm,0.6s,baz=143,slow=5.3,SNR=3.9						
SEY	**Seymchan**	**27.51**	**11**	⇑*eP*	**P**	**07 58 02.2**	**+2.2**
H11N3	**WAKE ISLAND Hy**	**27.52**	**120**	T	T	08 27 24.6	
	baz=311,slow=75,SNR=47						
ENH	**Enshi**	**27.57**	**267**	*eP*	**P**	**07 58 00.2**	**-0.7**
	comp=E,32nm,0.7s						
ULN	**Ulaanbaatar**	**28.04**	**305**	*deP*	**P**	**07 58 05.0**	**-0.1**
ULN				pmax	pmax		
	comp=Z,15nm,1.7s						
ULN	**Ulaanbaatar**	**28.04**	**305**	*eP*	**P**	**07 58 05.5**	**+0.4**
	comp=Z,7.7nm,0.8s						
H11S1	**WAKE ISLAND Hy**	**28.19**	**122**	T	T	08 28 13.8	
	baz=314,slow=75,SNR=74						
H11S3	**WAKE ISLAND Hy**	**28.19**	**122**	T	T	08 28 15.1	
	baz=314,slow=75,SNR=55						
H11S2	**WAKE ISLAND Hy**	**28.21**	**122**	T	T	08 28 15.1	
	baz=314,slow=75,SNR=55						
BOD	**Bodaibo**	**28.35**	**328**	*eP*	**P**	**07 58 06.6**	**-0.9**
BOD				pmax	pmax		
	comp=Z,8.0nm,1.0s						
SONA1	**Songino Array**	**28.47**	**305**	*eP*	**P**	**07 58 08.9**	**0.0**
SONM	**Songino Array**	**28.47**	**305**	P	**P**	**07 58 08.6**	**-0.2**
	comp=Z,5.7nm,0.6s,baz=106,slow=9.0,SNR=27						
SONM				LR	LR	08 10 02.5	
	comp=Z,220nm,18.2s,baz=76,slow=37						
LZH	**Lanzhou**	**30.49**	**281**	*eP*	**P**	**07 58 29.6**	**+2.6**
LZH				pP	sP	07 58 39.9	+2.2
LZH				sP	pP	07 58 44.8	+10
LZH				PP	**PnPn**	**07 59 28.4**	**+2.3**
LZH				pmax	pmax		
	comp=Z,24nm,1.0s						
LZH				pmax	pmax		
	comp=Z,73nm,4.1s						
LZH				LR	LR		
	comp=Z,170nm,11.8s						
LZH				LR	LR		
	comp=Z,580nm,16.4s						
LZH				LR	LR		
	comp=Z,520nm,19.2s						
ZAK	**Zakamensk**	**30.99**	**309**	*eP*	**P**	**07 58 30.5**	**-0.6**
ZAK				pmax	pmax		
	comp=Z,6.0nm,1.3s						
TLY	**Talaya**	**31.07**	**312**	P	**P**	**07 58 32.1**	**+0.4**
	comp=Z,4.1nm,0.7s,baz=124,slow=8.1,SNR=11						
TLY	**Talaya**	**31.07**	**312**	*eP*	**P**	**07 58 32.3**	**+0.6**
TLY				pmax	pmax		
	comp=Z,15nm,1.4s						
TLY				MLR	MLR		
	comp=Z,415nm,16.0s						
TLY	**Talaya**	**31.07**	**312**	*eP*	**P**	**07 58 32.4**	**+0.6**
	comp=Z,15nm,1.2s						
CD2	**Chengdu**	**31.97**	**272**	P	**P**	**07 58 40.0**	**+0.1**
CD2				pmax	pmax		
	comp=Z,1.0nm,0.5s						
GTA	**Gaotai**	**33.08**	**288**	*eP*	P	07 58 46.3	-3.3
GTA				pP	pP	07 58 55.9	-1.3
GTA				S	S	08 04 00.1	-7.0
GTA				pmax	pmax		
	comp=Z,6.0nm,0.9s						
GTA				pmax	pmax		
	comp=Z,69nm,5.2s						
GTA				LR	LR		
	comp=Z,220nm,19.5s						
GTA				LR	LR		
	comp=Z,300nm,18.5s						
GTA				LR	LR		
	comp=Z,250nm,17.1s						
BILL	**Bilibino**	**34.71**	**16**	⇑*iP*	**P**	**07 59 03.9**	**+0.7**
BILL				*e*		08 00 20.1	
BILL				pmax	pmax		
	comp=Z,2.0nm,1.2s						
BILL				MLR	MLR		
	comp=Z,105nm,16.0s						
TIXI	**Tiksi**	**36.11**	**353**	P	**P**	**07 59 14.3**	**-0.9**
	comp=Z,1.7nm,0.3s,baz=144,slow=7.3,SNR=4.1						
TIXI	**Tiksi**	**36.11**	**353**	⇓*eP*	**P**	**07 59 15.5**	**+0.3**
TIXI				pmax	pmax		
	comp=Z,3.0nm,1.0s						
TIXI	**Tiksi**	**36.11**	**353**	*eP*	**P**	**07 59 15.2**	**0.0**
	comp=Z,5.2nm,0.5s						
WMQ	**Urumqi**	**41.46**	**298**	P	**P**	**08 00 02.1**	**+1.6**
WMQ				pP	sP	08 00 12.1	+0.7
WMQ				sP	pP	08 00 15.8	+7.5
WMQ				PP	**PnPn**	**08 01 40.9**	**-0.2**
WMQ				pmax	pmax		
	comp=Z,5.0nm,0.6s						
WMQ				pmax	pmax		
	comp=Z,89nm,3.6s						
WMQ				LR	LR		
	comp=Z,100nm,17.4s						
WMQ				LR	LR		
	comp=Z,110nm,19.6s						
WMQ				LR	LR		
	comp=Z,57nm,19.6s						
CMAR	**Chiang Mai Arr**	**41.58**	**256**	P	**P**	**08 00 01.2**	**-0.5**
	comp=Z,1.4nm,0.3s,baz=68,slow=5.3,SNR=6.5						
CMAR				LR	LR	08 18 01.0	
	comp=Z,65nm,20.6s,baz=60,slow=37						
CMAR	**Chiang Mai Arr**	**41.58**	**256**	*eP*	**P**	**08 00 02.2**	**+0.5**
CMAR				pmax	pmax		
	comp=Z,1.0nm,0.3s						
ZAA0	**Zalesovo Array**	**42.66**	**313**	*eP*	**P**	**08 00 10.0**	**-0.1**
ZAA0				*eP*	**P**	**08 00 10.6**	**+0.5**
ZALV	**Zalesovo Beam**	**42.66**	**313**	P	**P**	**08 00 10.5**	**+0.4**
	comp=Z,5.5nm,0.6s,baz=91,slow=6.6,SNR=21						
ZALV				PcP	**PcP**	**08 02 01.2**	**-0.4**
	comp=Z,2.0nm,0.6s,baz=81,slow=3.0,SNR=3.5						
NVS	**Novosibirsk**	**43.60**	**314**	⇓*iP*	**P**	**08 00 18.2**	**+0.6**
NVS				pmax	pmax		
	comp=Z,18nm,1.2s						
NVS				pmax	pmax		
	comp=E,13nm,1.3s						
MK01	**Makanchi Array**	**44.78**	**303**	*eP*	**P**	**08 00 27.4**	**+0.1**
MK31	**Makanchi Array**	**44.79**	**303**	*eP*	**P**	**08 00 27.7**	**+0.4**
MK31	**Makanchi Array**	**44.79**	**303**	*eP*	**P**	**08 00 27.7**	**+0.4**
MKAR	**Makanchi Array**	**44.79**	**303**	P	**P**	**08 00 27.6**	**+0.2**
	comp=E,4.1nm,0.6s,baz=88,slow=9.7,S

TKM2 pmax pmax
comp=Z,39nm,1.6s
TKM2 Tokmak 2 50.26 299 *e*P **P 08 01 11.3 +1.1**
comp=Z,39nm,1.6s
KSH Kashi 51.00 295 *e*P P 08 01 20.1 +4.5
KSH *e*pP sP 08 01 30.4 +3.8
KSH S **S 08 08 32.8 +1.5**
KSH pmax pmax
comp=Z,60nm,4.9s
AAK Ala-Archa 51.12 299 P **P 08 01 16.6 +0.1**
comp=Z,2.9nm,0.6s,baz=143,slow=6.3,SNR=8.0
AAK LR LR 08 24 01.5
comp=Z,436nm,18.4s,baz=62,slow=37
AAK Ala-Archa 51.12 299⇑ *e*P **P 08 01 16.7 +0.1**
AAK pmax pmax
comp=Z,5.0nm,0.9s
AAK Ala-Archa 51.12 299 *e*P **P 08 01 17.0 +0.4**
comp=Z,3.7nm,0.8s
OTUK Ortayu 51.13 306 *i*P **P 08 01 15.4 -1.0**
OTUK pmax pmax
comp=Z,10.0nm,1.0s
BVAR Borovoye Array 51.32 313 P **P 08 01 17.9 +0.2**
comp=Z,1.7nm,0.5s,baz=76,slow=7.8,SNR=12
BVAR PcP **PcP 08 02 32.2 -0.2**
comp=Z,1.7nm,0.6s,baz=90,slow=4.4,SNR=4.4
BVAR LR LR 08 24 12.4
comp=Z,276nm,18.7s,baz=75,slow=37
BRVK Borovoye 51.38 313*c* *i*P **P 08 01 18.2 +0.1**
BRVK pmax pmax
comp=Z,10.0nm,1.7s
BRVK Borovoye 51.38 313 *e*P **P 08 01 18.0 -0.1**
comp=Z,5.2nm,0.9s
ZRNK Zerenda 52.16 313 *i*P **P 08 01 23.8 -0.1**
ZRNK pmax pmax
comp=Z,8.0nm,0.9s
MNAS Manas 52.57 299 *i*P **P 08 01 27.7 +0.3**
MNAS pmax pmax
comp=Z,7.0nm,0.9s
SFK Sufi-Kurgan 52.64 296 *i*P **P 08 01 26.9 -1.1**
SFK pmax pmax
comp=Z,6.0nm,0.6s
KK31 Karatay Array 53.77 301 *e*P **P 08 01 36.5 +0.4**
KK31 pmax pmax
comp=Z,4.0nm,0.8s
KKAR Karatay Array 53.77 301 *e*P **P 08 01 36.7 +0.6**
KKAR Karatay Array 53.77 301 *e*P **P 08 01 36.7 +0.6**
INK Inuvik 54.96 27 P **P 08 01 45.1 +0.9**
comp=Z,1.7nm,0.5s,baz=295,slow=7.2,SNR=16
INK LR LR 08 26 25.5
comp=Z,46nm,21.1s,baz=242,slow=37
INK Inuvik 54.96 27 *e*P **P 08 01 45.5 +1.2**
INK pmax pmax
comp=Z,3.0nm,0.7s
INK Inuvik 54.96 27 *e*P **P 08 01 45.5 +1.2**
comp=Z,2.5nm,0.7s
WRAB Tennant Creek 56.31 188⇑ *e*P P 08 02 01.0 +6.6
WRAB pmax pmax
comp=Z,60nm,1.7s
WRAB Tennant Creek 56.31 188 *e*P **P 08 01 53.2 -1.3**
comp=Z,15nm,1.0s
WB2 Warramunga Arr 56.32 188 *e*P P 08 02 00.6 +6.1
comp=Z,10.0nm,0.9s
WRA Warramunga Arr 56.32 188 P **P 08 01 53.3 -1.2**
comp=Z,1.8nm,0.6s,baz=4.7,slow=6.9,SNR=41
WRA LR LR 08 25 18.7
comp=Z,98nm,20.0s,baz=115,slow=35
ARU Arti 57.15 319 P **P 08 01 59.4 -0.6**
comp=Z,3.3nm,0.2s,baz=84,slow=8.6,SNR=6.8
ARU Arti 57.15 319*d* *i*P **P 08 01 59.7 -0.4**
ARU 08 04 04.3
ARU S **S 08 09 52.8 -0.7**
ARU pmax pmax
comp=Z,10.0nm,1.0s
ARU Arti 57.15 319 *e*P **P 08 02 00.1 0.0**
comp=Z,12nm,1.2s
AB31 Akbulak array 58.67 311 *e*P **P 08 02 08.5 -2.4**
AB31 pmax pmax
comp=Z,3.0nm,0.6s
ABKAR Akbulak array 58.67 311 *e*P **P 08 02 10.5 -0.4**
comp=Z,3.1nm,0.5s
AKTO Aktyubinsk 59.42 312 P **P 08 02 15.1 -1.0**
comp=Z,3.2nm,0.8s,baz=71,slow=11,SNR=10
AKTO LR LR 08 29 01.8
comp=Z,144nm,19.7s,baz=100,slow=37
AS31 Alice Springs 60.04 188 P P 08 02 25.6 +5.0
comp=Z,1.1nm,0.8s
ASAR Alice Springs 60.05 188 P **P 08 02 19.6 -1.0**
comp=Z,0.9nm,0.8s,baz=15,slow=11,SNR=12
RES Resolute Bay 63.30 14 P **P 08 02 42.0 +0.2**
comp=Z,2.4nm,0.6s,baz=307,slow=5.8,SNR=18
RES Resolute Bay 63.30 14 *e*P **P 08 02 42.2 +0.4**
RES pmax pmax
comp=Z,14nm,1.5s
RES Resolute Bay 63.30 14 *e*P **P 08 02 42.2 +0.4**
comp=Z,14nm,1.5s
YKA Yellowknife Ar 64.35 30 P **P 08 02 49.2 +0.2**
comp=Z,0.8nm,0.8s,baz=300,slow=6.6,SNR=19
ARCES ARCESS Array B 64.84 340 P **P 08 02 51.8 -0.3**
comp=Z,2.0nm,0.8s,baz=48,slow=7.2,SNR=9.7
ARCES LR LR 08 34 03.4
comp=Z,102nm,21.2s,baz=48,slow=39
STKA Stephens Creek 67.76 180 P **P 08 03 09.6 -1.6**
comp=Z,1.7nm,0.7s,baz=288,slow=5.2,SNR=3.5
CDMR Cedar Moraine 68.27 47 *e*P **P 08 03 17.0 +2.6**
OBN Obninsk 68.90 324 LR LR 08 35 48.5
comp=Z,62nm,18.4s,baz=332,slow=38
FINES FINESS Array B 69.65 332 P **P 08 03 22.3 -0.4**
comp=Z,4.3nm,0.8s,baz=41,slow=10,SNR=7.0
FINES LR LR 08 36 16.8
comp=Z,92nm,18.2s,baz=46,slow=38
FINES FINESS Array B 69.65 332 *i*P **P 08 03 23.1 +0.4**
FINES pmax pmax
comp=Z,4.0nm,0.8s
VSU Vasula 71.28 330⇓ *e*P **P 08 03 33.4 +0.7**
VSU pmax pmax
comp=Z,16nm,0.9s
WSAR Wadi Sarin 71.35 285 P **P 08 03 33.1 -0.7**
comp=Z,2.4nm,0.7s,baz=227,slow=6.7,SNR=4.6
KBZ Khabaz 71.64 311 P **P 08 03 35.9 +0.8**
comp=Z,1.8nm,0.6s,baz=148,slow=19,SNR=3.6
KIV Kislovodsk 71.64 311*c* *e*P **P 08 03 35.5 +0.2**
KIV pmax pmax
comp=Z,10.0nm,1.0s
SWMT Swartz Lake 72.66 44 *e*P **P 08 03 42.6 +1.3**
LRM Limekiln Ridge 74.51 44 *e*P **P 08 03 53.3 +0.9**
DLMT Dillon 74.70 45 *e*P **P 08 03 54.8 +1.4**
comp=Z,8.0nm,1.2s
NC405 NORSAR Array S 74.82 337 *e*P **P 08 03 54.4 +0.8**
HFS Hagfors 74.93 336 P **P 08 03 54.2 0.0**
comp=Z,1.3nm,0.5s,baz=64,slow=3.4,SNR=7.1
NC204 NORSAR Array S 74.98 338 *e*P **P 08 03 55.1 +0.5**
NB2 NORSAR Subarra 75.03 337 P **P 08 03 54.9 +0.1**
comp=Z,3.2nm,0.6s,baz=40,slow=5.9
NOA NORSAR Array B 75.03 337 P **P 08 03 55.2 +0.3**
comp=Z,2.5nm,0.6s,baz=40,slow=5.8,SNR=14
NOA LR LR 08 40 22.6
comp=Z,92nm,18.4s,baz=80,slow=38
BOZ Bozeman (W) 75.08 44 *e*P **P 08 03 57.0 +1.4**
BOZ pmax pmax
comp=Z,8.0nm,1.4s
BOZ Bozeman (W) 75.08 44 *e*P **P 08 03 57.0 +1.4**
comp=Z,8.2nm,1.4s
AKASG Malin Array Be 75.10 323 P **P 08 03 54.6 -0.8**
comp=Z,4.2nm,0.5s,baz=46,slow=6.0,SNR=8.1
AKASG LR LR 08 39 56.5
comp=Z,182nm,18.4s,baz=55,slow=38
AKASG Malin Array Be 75.10 323 *i*P **P 08 03 55.4 0.0**
AKASG pmax pmax
comp=Z,4.0nm,0.5s
NBO02 NORSAR Array S 75.13 338 *e*P **P 08 03 55.7 +0.3**
NVAR Mina Array Bea 75.23 53 P **P 08 03 57.5 +0.8**
comp=Z,0.6nm,0.6s,baz=289,slow=5.6,SNR=1.5
H17A Grant Village 76.43 45 *e*P **P 08 04 06.4 +2.9**
comp=Z,9.3nm,1.1s
R11A Troy Canyon, C 77.02 52 *e*P **P 08 04 07.8 +1.0**
R11A *e*pP **sP 08 04 17.4 -0.6**
HWUT Hardware Ranch 77.55 47 *e*P **P 08 04 10.8 +1.1**
HWUT *e*pP **sP 08 04 21.4 +0.4**
DUG Dugway, Tooele 77.66 49 *e*P **P 08 04 11.6 +1.3**
DUG *e**PP **sP 08 04 22.0 +0.4**
DUG Dugway, Tooele 77.66 49 *e*P **P 08 04 11.6 +1.3**
DUG *e*pP **sP 08 04 22.0 +0.4**
PSUT Pine Spring 78.01 51 *e*P **P 08 04 13.6 +1.3**
PSUT *e*pP **sP 08 04 23.6 0.0**
BW06 Boulder Array 78.02 45 *e*P **P 08 04 12.4 0.0**
BW06 *e*pP **PcP 08 04 21.9 -0.1**
PDAR Pinedale Array 78.02 45 P **P 08 04 12.2 -0.1**
comp=Z,0.5nm,0.6s,baz=308,slow=1.3,SNR=7.6
NLU North Lily Min 78.25 49 *e*P **P 08 04 14.5 +0.8**
NLU *e*pP **sP 08 04 25.8 +0.8**
MPU Maple Canyon 78.48 49 *e*P **P 08 04 16.2 +1.2**
MPU *e*pP **sP 08 04 26.5 +0.2**
MSU Marysvale 79.07 50 *e*P **P 08 04 19.6 +1.4**
MSU *e**PP **sP 08 04 29.0 -0.5**
MSU Marysvale 79.07 50 *e*P **P 08 04 19.6 +1.4**
MSU *e*pP **sP 08 04 29.0 -0.5**
LCMT Little Creek M 79.31 52 *e*P **P 08 04 21.6 +2.1**
comp=Z,3.3nm,1.1s
LCMT *e*pP **sP 08 04 30.6 -0.2**
P17A Butcher Ranch, 79.36 49 *e*P **P 08 04 21.8 +2.0**
comp=Z,11nm,1.2s
KNB Kanab 79.58 52 *e*P **P 08 04 23.2 +2.2**
KNB pmax pmax
comp=Z,9.0nm,1.2s
KNB Kanab 79.58 52 *e*P **P 08 04 23.2 +2.2**
comp=Z,9.2nm,1.2s
BRTR Keskin Array B 79.59 312 P **P 08 04 20.1 -0.9**
comp=Z,1.6nm,0.7s,baz=90,slow=3.7,SNR=6.7
BRTR Keskin Array B 79.59 312 *i*P **P 08 04 21.3 +0.3**
BRTR pmax pmax
comp=Z,2.0nm,0.7s
SRU San Rafael Swe 79.72 49 *e*P **P 08 04 22.9 +1.2**
SRU pmax pmax
comp=Z,6.0nm,1.0s
SRU San Rafael Swe 79.72 49 *e*P **P 08 04 22.9 +1.2**
comp=Z,5.5nm,1.0s
BR231 Keskin MP Arra 80.04 312 *e*P **P 08 04 22.1 -1.2**
N23A Red Feather La 81.29 45 *e*P **P 08 04 31.8 +1.6**
comp=Z,8.2nm,1.1s
CLL Collm 81.93 330 *i*P **P 08 04 33.1 +0.1**
CLL Collm 81.93 330 *i*P **P 08 04 33.1 +0.1**
GERES GERESS Array B 83.54 328 P **P 08 04 41.2 -0.3**
comp=Z,0.9nm,0.4s,baz=56,slow=5.0,SNR=5.9
GERES LR LR 08 45 24.0
comp=Z,66nm,18.1s,baz=57,slow=38
GEA0 GERESS Array S 83.54 328 *e*P **P 08 04 41.3 -0.3**
PMOR Pomariorio Ree 83.60 114 *e*T T 09 36 59.9
comp=Z,2.2nm,0.2s
EKA Eskdalemuir Ar 83.97 341 P **P 08 04 43.3 -0.3**
comp=Z,0.7nm,0.5s,baz=31,slow=5.0,SNR=5.0
PPT2 Papeete2 84.03 117 *e*LR LR 08 31 32.7
comp=Z,83nm,22.2s
ANMO Albuquerque 84.88 50 *e*P **P 08 04 49.8 +1.0**
ANMO *e**PP **sP 08 05 00.9 +0.8**
ANMO Albuquerque 84.88 50 *e*P **P 08 04 49.8 +1.0**
ANMO *e*pP **sP 08 05 00.9 +0.8**
TXAR Lajitas Array 90.37 53 P **P 08 05 15.3 +0.1**
comp=Z,0.8nm,0.9s,baz=308,slow=4.2,SNR=7.9
ESDC Sonseca Array 98.13 334 LR LR 08 53 41.0
comp=Z,78nm,18.3s,baz=345,slow=38
LPAZ La Paz 146.83 61 PKPbc **PKPbc 08 11 57.0 0.0**
comp=Z,1.7nm,0.5s,baz=326,slow=2.0,SNR=14
LPAZ La Paz 146.83 61 PKP2 **PKPbc 08 11 57.0 0.0**

*IDC **20** 07:57:24.3±0.7,20.˚40S×174.˚44W,h0km,mb4.1/12, mb1 4.3/13,mb1mx4.2/28,mbtmp4.1/13,ML4.4/1,MS3.8/17, Ms1 3.8/17,ms1mx3.7/37,Error ellipse: s-maj=27.1km s-min=17.2km az=127.0*
*ISCJB **20** 07:57:29.9±0.5,20.˚59S±0.˚09×174.˚3W±0.˚1,h56km, mb4.3/17,MS3.9/13,Error ellipse: s-maj=15.1km s-min=11.4km az=33.6*
*NEIC **20** 07:57:29.4±0.4,20.˚48S×174.˚02W,h35km,mb4.4/1,Error ellipse: s-maj=14.1km s-min=11.3km az=117.0*
ISC 20 07:57:31.8±0.6, 20.˚5S±0.˚1×174.˚4W±0.˚2, h56km, n42,
σ1§06/28, mb4.2/17, MS3.9/13, Tonga Islands

Code Station Name Δ° AZ° Phase ID Op ISC Time h m s Res ISC
AFI Afiamalu 7.01 22 Pn Pn 07 59 03.3 -8.6
8.1nm,0.3s,baz=267,slow=12,SNR=12
AFI Sn Sn 08 00 16.9 -13
2.8nm,0.3s,baz=111,slow=21,SNR=2.4
AFI LR LR 08 01 44.4
comp=Z,530nm,20.0s,baz=186,slow=38
MSVF Nonsavu 7.62 290 *e*Pn Pn 07 59 23.7 +3.4
126nm,1.3s
RAR Rarotonga 13.72 96 Pn Pn 08 00 29.2 -14
6.7nm,0.3s,baz=250,slow=10,SNR=15
RAR LR LR 08 06 21.5
comp=Z,260nm,18.5s,baz=280,slow=39
RAR Rarotonga 13.72 96 Pn Pn 08 00 29.2 -14
RAR *e*Pn Pn 08 00 29.3 -14
DZM Mont Dzumac 17.90 261 P Pn 08 01 41.6 +4.6
0.5nm,0.3s,baz=76,slow=19,SNR=6.1
DZM LR LR 08 07 34.1
comp=Z,687nm,20.3s,baz=94,slow=34
URZ Urewera 19.17 201 P **P 08 01 50.4 -0.3**
1.1nm,0.3s,baz=80,slow=19,SNR=7.7
URZ LR LR 08 08 23.3
comp=Z,298nm,21.9s,baz=10,slow=34
PPT2 Papeete2 23.66 87 *e*S S 08 06 31.5 -18
137nm,25.1s
PPT2 *e*LR LR 08 07 58.9
699nm,26.2s
PPT Papeete 23.66 87 LR LR 08 10 57.0
comp=Z,196nm,18.6s,baz=268,slow=34
RPZ Rata Peaks 26.15 204 P **P 08 03 02.1 +1.3**
4.9nm,0.6s,baz=77,slow=2.6,SNR=5.6
TAOE Nuku Hiva Isla 35.04 76 *e*LR LR 08 13 06.4
371nm,27.1s
RKT Rikitea 36.65 101 *e*LR LR 08 14 07.6
441nm,27.2s
STKA Stephens Creek 40.82 245 P **P 08 05 07.0 -1.1**
3.0nm,0.8s,baz=97,slow=11,SNR=6.0
STKA LR LR 08 20 38.1
comp=Z,154nm,18.6s,baz=70,slow=34
ASAR Alice Springs 47.78 256 P **P 08 06 03.0 -0.9**
2.0nm,0.6s,baz=101,slow=7.9,SNR=27
ASAR PcP **PcP 08 07 32.7 +0.5**
1.0nm,0.8s,baz=92,slow=5.6,SNR=3.4
WRA Warramunga Arr 47.92 261 P **P 08 06 04.0 -0.9**
0.9nm,0.6s,baz=97,slow=7.9,SNR=17
WRA PcP **PcP 08 07 33.9 +1.2**
0.8nm,1.1s,baz=197,slow=3.6,SNR=3.2
GUMO Guam 52.42 307 LR LR 08 27 28.7
comp=Z,57nm,19.6s,baz=114,slow=34
VNDA Vanda 58.25 186 P **P 08 07 20.1 +0.1**
1.0nm,0.8s,baz=340,slow=6.3,SNR=4.1
QSPA South Pole Qui 69.59 180 *e*P **P 08 08 33.9 -1.0**
31nm,1.1s
MJAR Matsushiro Arr 72.23 322 P **P 08 08 51.2 +0.1**
0.7nm,0.2s,baz=134,slow=5.2,SNR=6.2
MJAR LR LR 08 34 28.7
comp=Z,36nm,21.2s,baz=130,slow=31
NVAR Mina Array Bea 78.75 42 P **P 08 09 28.2 -0.5**
1.9nm,0.8s,baz=227,slow=7.8,SNR=12
KSRS Konza Array 79.13 317 P **P 08 09 31.7 +1.2**
2.2nm,0.9s,baz=136,slow=6.3,SNR=5.7
KSRS LR LR 08 39 09.3
comp=Z,40nm,21.5s,baz=0.0,slow=32
KSAR Wonju Array Be 79.14 317 P **P 08 09 31.7 +1.1**
PMSA Palmer Station 79.96 156 LR LR 08 42 10.1
comp=Z,50nm,18.2s,baz=324,slow=34
KDAK Kodiak Island 80.07 12 LR LR 08 37 20.6
comp=Z,75nm,21.3s,baz=212,slow=30
USRK Ussuriysk Ar. 80.87 324 LR LR 08 40 50.4
comp=Z,98nm,20.9s,baz=123,slow=32
HLID Hailey 84.16 39 *e*P **P 08 09 55.7 -1.4**
4.3nm,1.3s
TRF Thorofare Moun 85.77 11 *e*P **P 08 10 04.1 -0.6**
11nm,1.0s
MCK McKinley 86.27 11 *e*P **P 08 10 06.5 -0.5**
18nm,1.1s
PDAR Pinedale Array 86.68 42 P **P 08 10 10.1 +0.3**
0.7nm,0.8s,baz=226,slow=4.9,SNR=7.4
PDAR LR LR 08 46 21.7
comp=Z,79nm,18.3s,baz=254,slow=34
COLA College 87.51 11 *e*P **P 08 10 11.6 -1.4**
9.2nm,1.0s
ILAR Eielson Array 87.59 11 P **P 08 10 12.8 -0.6**
0.4nm,0.6s,baz=204,slow=6.2,SNR=6.3
ILAR LR LR 08 40 57.4
comp=Z,37nm,20.8s,baz=138,slow=30
CMAR Chiang Mai Arr 93.28 288 P **P 08 10 42.5 +1.6**
0.8nm,0.3s,baz=111,slow=3.0,SNR=8.4
CMAR LR LR 08 53 44.3
comp=Z,34nm,18.3s,baz=145,slow=36
YKA Yellowknife Ar 95.12 24 P **P 08 10 48.5 +0.2**
0.2nm,0.8s,baz=232,slow=3.8,SNR=7.9
ULM Lac du Bonnet 98.47 40 LR LR 08 52 25.8
comp=Z,60nm,18.2s,baz=308,slow=34
LPAZ La Paz 98.96 111 LR LR 08 45 49.3
comp=Z,43nm,22.0s,baz=248,slow=29
ARCES ARCESS Array B 129.46 351 PKP **PKPdf 08 16 33.8 +0.2**
4.7nm,1.1s,baz=352,slow=2.5,SNR=4.2
AKASG Malin Array Be 144.54 334 PKP PKPbc 08 16 60.0 -0.6
0.4nm,0.4s,baz=41,slow=4.4,SNR=8.0
BRG Berggiesshubel 148.96 350 *e*P **PKPbc 08 17 14.1 +0.8**
5.9nm,1.2s
DPC Dobruska-Polom 149.00 347 *e*PKP **PKPab 08 17 15.5 -2.2**
BRTR Keskin Array B 149.25 315 PKPbc **PKPbc 08 17 15.2 +0.6**
1.0nm,0.6s,baz=129,slow=4.4,SNR=3.9
KHC Kasperske Hory 150.70 349 *e*PKP **PKPbc 08 17 19.2 +1.5**
GERES GERESS Array B 150.96 349 PKPbc **PKPbc 08 17 18.8 +0.5**
0.5nm,0.2s,baz=58,slow=3.5,SNR=4.9
TORD Torodi Ar. Bea 171.82 152 PKPab **PKPab 08 18 58.5 +1.3**
0.6nm,0.8s,baz=224,slow=4.0,SNR=2.8

*IDC **20** 08:00:00.3±2.8,52.˚25N×35.˚81E,h0km,mb3.0/1, mb1 3.2/4,mb1mx2.9/46,mbtmp3.1/4,ML2.9/3,MS3.3/2, Ms1 3.3/2,ms1mx2.4/25,Error ellipse: s-maj=34.1km s-min=16.3km az=120.0*
ISC 20 08:00:04.6±2.4, 52.˚7N±0.˚1×35.˚1E±0.˚2, h10km, n10,
σ1§36/8, Baltic States-Belarus-Northwestern Russia

Code Station Name Δ° AZ° Phase ID Op ISC Time h m s Res ISC
OBN Obninsk 2.62 19 Lg Lg 08 01 30.6
5.6nm,0.3s,baz=316,slow=22,SNR=6.1
AKASG Malin Array Be 4.13 244 Pn **Pn 08 01 06.9 -0.7**
1.0nm,0.3s,baz=61,slow=15,SNR=2.5
AKASG Sn **Sn 08 01 57.3 +1.4**
2.0nm,0.3s,baz=79,slow=10,SNR=3.6
I43RU DUBNA INFRASON 4.27 16 *i* 08 29 37.8
baz=194,slow=331,SNR=1.1
FINES FINESS Array B 10.08 335 Pn **Pn 08 02 28.9 -0.3**
0.3nm,0.3s,baz=116,slow=19,SNR=6.2
FINES Sn **Sn 08 04 22.5 +0.4**
0.2nm,0.3s,baz=160,slow=25,SNR=2.9
FINES Lg Lg 08 05 27.5
0.3nm,0.3s,baz=145,slow=27,SNR=2.7
HFS Hagfors 13.97 311 Pn **Pn 08 03 20.3 -2.0**
0.1nm,0.3s,baz=116,slow=13,SNR=2.8
ARU Arti 14.12 65 LR LR 08 09 02.5
comp=Z,72nm,21.5s,baz=202,slow=39
NOA NORSAR Array B 15.45 312 Pn **Pn 08 03 43.8 +1.5**
0.1nm,0.3s,baz=121,slow=9.7,SNR=2.6
ARCES ARCESS Array B 17.52 349 Pn **P 08 04 10.2 +0.4**
0.3nm,0.3s,baz=164,slow=10,SNR=6.9
NRIK Norilʹsk 29.19 35 LR LR 08 19 48.0
comp=Z,107nm,18.4s,baz=102,slow=41
YKA Yellowknife Ar 62.74 345 P **P 08 10 29.5 +0.3**
0.1nm,0.4s,baz=14,slow=6.6,SNR=4.5

MAN 20 08:03:23,12.˚65N×120.˚62E,h14km, mb4.1,ML2.9,MS2.6, 1D,Mindoro

Code Station Name Δ° AZ° Phase ID Op ISC Time h m s Res ISC
SJMP San Jose 0.53 111 *e*P Pb 08 03 34.4 +0.3
SJMP *e*S Sg 08 03 39.5 -0.9
BUSP Coron 0.76 212 *e*P Pg 08 03 37.6 -0.2
BUSP *e*S Sb 08 03 48.0 -0.2
PGP Puerto Galera 0.91 21⇓ *e*P Pn 08 03 41.6 +0.2
PGP *i*S Sn 08 03 54.5 +0.1
OTRP Odiongan 1.40 102 *e*P Pb 08 03 49.3 +0.3
BOAC Boac 1.44 56 *e*P Pn 08 03 48.1 -0.6
BOAC *e*S Sg 08 04 12.3 +2.8
CUYO Cuyo Island 1.83 168 *e*P Pn 08 03 54.0 0.0
ENPP El Nido 1.85 219 *e*P Pb 08 03 55.8 -0.8

*CSEM **20** 08:09:01.9±0.1,37.˚38N×8.˚47W,h15km,ML3.0/23,Error ellipse: s-maj=2.8km s-min=2.6km az=25.0*
*MDD **20** 08:09:02.8±0.2,37.˚37N×8.˚49W,h11km,mbLg2.6/11, Error ellipse: s-maj=3.1km s-min=2.1km az=150.0, PRXIMO*
*IGIL **20** 08:09:03.4,37.˚34N×8.˚49W,h10km,ML2.3*
*INMG **20** 08:09:03.1±1.6,37.˚35N×8.˚49W,h12km±3km,MD1.8, ML2.4,Error ellipse: s-maj=2.3km s-min=2.2km az=44.0*
ISC 20 08:09:01.6±0.9, 37.˚37N±0.˚02×8.˚48W±0.˚02, h18km±3km, n93, σ0§88/160, 10C-7D, Portugal

Code Station Name Δ° AZ° Phase ID Op ISC Time h m s Res ISC
MORF Marmelete 0.15 245 *e*P **Pg 08 09 06.1 +0.1**
MORF *e*S **Sg 08 09 08.5 -0.5**
MORF AML AML 08 09 08.9
comp=E,1μm,0.3s
MORF Marmelete 0.15 245⇑ *e*Pg **Pg 08 09 06.1 +0.1**
MORF *e*Sg **Sg 08 09 08.7 -0.2**
MORF A A 08 09 09.1
comp=E,3μm,0.2s
MORF Marmelete 0.15 245 Pg **Pg 08 09 06.1 +0.1**
MORF Lg Lg 08 09 08.5
comp=E,1μm,0.3s
MORF Marmelete 0.15 245⇑ *e*Pg **Pg 08 09 06.1 +0.1**
MORF Lg Lg 08 09 08.5
comp=E,1μm,0.3s
MORF *e*Sg **Sg 08 09 08.7 -0.2**
comp=E,3μm,0.2s
PTEO Sao Teotonio 0.26 312⇓ *i*Pg **Pb 08 09 08.4 +0.6**
PTEO *e*Sg **Sb 08 09 12.3 +0.4**
PTEO A A 08 09 13.9
comp=E,116nm,0.3s
PTEO Sao Teotonio 0.26 312 Pg **Pb 08 09 08.4 +0.6**
PTEO Lg Lg 08 09 12.3
comp=E,58nm,0.3s
PTEO Sao Teotonio 0.26 312⇓ *i*Pg **Pb 08 09 08.4 +0.6**
PTEO *e*Sg **Sb 08 09 12.3 +0.4**
comp=E,116nm,0.3s
PFVI Vila Bisbo 0.37 230⇑ *e*Pg **Pg 08 09 09.2 -0.1**
PFVI *e*Sg **Sg 08 09 13.7 -0.8**
PFVI A A 08 09 14.1
comp=E,280nm,0.1s
PFVI Vila Bisbo 0.37 230 ⇑Pg **Pg 08 09 09.2 -0.1**
comp=E,34nm,0.1s,SNR=18
PFVI Lg Lg 08 09 13.7
comp=E,644nm,0.2s,SNR=7.9
PFVI Vila Bisbo 0.37 230 Pg **Pg 08 09 09.2 -0.1**
comp=E,34nm,0.1s,SNR=18
PFVI *e*Sg **Sg 08 09 13.7 -0.8**
comp=E,280nm,0.1s
PCVE Castro Verde 0.43 53⇑ *e*Pg **Pb 08 09 11.8 +1.0**
PCVE *e*Sg **Sb 08 09 17.6 +0.6**
PCVE A A 08 09 18.3
comp=E,91nm,0.4s
PCVE Castro Verde 0.43 53 Pg **Pb 08 09 11.8 +1.0**
PCVE Lg Lg 08 09 17.6
comp=E,91nm,0.4s
PCVE Castro Verde 0.43 53⇑ *e*Pg **Pb 08 09 11.8 +1.0**
PCVE *e*Sg **Sb 08 09 17.6 +0.6**
comp=E,91nm,0.4s
PBDV Barranco-do-Ve 0.45 106⇓ *e*Pg **Pb 08 09 11.5 +0.4**
PBDV *e*Sg **Sb 08 09 18.1 +0.5**
PBDV A A 08 09 21.5
comp=E,83nm,0.1s
PBDV Barranco-do-Ve 0.45 106 Pg **Pb 08 09 11.5 +0.4**
PBDV Lg Lg 08 09 18.1
comp=E,83nm,0.1s
PBDV Barranco-do-Ve 0.45 106⇓ *e*Pg **Pb 08 09 11.5 +0.4**
PBDV *e*Sg **Sb 08 09 18.1 +0.5**
comp=E,83nm,0.1s
MESJ Messejana 0.51 23 *e*P **Pb 08 09 13.2 +1.1**
MESJ *e*S **Sb 08 09 20.7 +1.5**
MESJ AML AML 08 09 22.3
comp=E,98nm,0.2s
MESJ Messejana 0.51 23⇑ *e*Pg **Pb 08 09 13.2 +1.1**
MESJ *e*Sg **Sb 08 09 20.7 +1.5**
MESJ A A 08 09 24.0
comp=E,50nm,0.2s
MESJ Messejana 0.51 23 Pg **Pb 08 09 13.2 +1.1**
MESJ Lg Lg 08 09 20.7
comp=E,50nm,0.2s
MESJ Messejana 0.51 23⇑ *e*Pg **Pb 08 09 13.2 +1.1**
MESJ *e*Sg **Sb 08 09 20.7 +1.5**
comp=E,50nm,0.2s
PVAQ Vaqueiros 0.60 87⇓ *e*Pg **Pb 08 09 14.4 +0.8**
PVAQ *e*Sg **Sb 08 09 22.3 +0.5**
PVAQ A A 08 09 24.3
comp=E,138nm,0.1s
PVAQ Vaqueiros 0.60 87 Pg **Pb 08 09 14.4 +0.8**
PVAQ Lg Lg 08 09 22.3

	comp=E,138nm,0.1s								
PVAQ	**Vaqueiros**	**0.60**	**87**	⇓*e*Pg		**Pb**	**08 09 14.4**	**+0.8**
PVAQ				*e*Sg		**Sb**	**08 09 22.3**	**+0.5**
	comp=E,138nm,0.1s								
PNCL	**Nicolau / Gran**	**0.74**	**357**	*e*P		**Pb**	**08 09 17.0**	**+1.0**
PNCL				*e*S		**Sb**	**08 09 27.4**	**+1.6**
PNCL				A		A	08 09 28.4	
	comp=E,134nm,0.3s								
PNCL	**Nicolau / Gran**	**0.74**	**357**	*e*P		**Pb**	**08 09 17.0**	**+1.0**
PNCL				*e*S		**Sb**	**08 09 27.4**	**+1.6**
	comp=E,134nm,0.3s								
EGRO	**El Granado**	**0.81**	**78**	⇓Pg		**Pn**	**08 09 18.1**	**0.0**
	comp=E,16nm,0.1s,SNR=18								
EGRO				Lg		Lg	08 09 28.8		
	comp=E,152nm,0.2s,SNR=11								
EGRO	**El Granado**	**0.81**	**78**	Pg		**Pn**	**08 09 18.1**	**0.0**
	comp=E,16nm,0.1s,SNR=18								
EGRO				Lg		Lg	08 09 28.8		
	comp=E,152nm,0.2s,SNR=11								
PBEJ	**Beja**	**0.81**	**36**	*e*P		**Pn**	**08 09 18.7**	**+0.5**
PBEJ				*e*S		**Sn**	**08 09 29.4**	**-0.4**
PBEJ				A		A	08 09 30.8	
	comp=E,61nm,0.1s								
PBEJ	**Beja**	**0.81**	**36**	Pg		**Pn**	**08 09 18.7**	**+0.5**
PBEJ				Lg		Lg	08 09 29.4		
	comp=E,31nm,0.1s								
PBEJ	**Beja**	**0.81**	**36**	*e*P		**Pn**	**08 09 18.7**	**+0.5**
PBEJ				*e*S		**Sn**	**08 09 29.4**	**-0.4**
	comp=E,61nm,0.1s								
MOE	**Montemor**	**1.16**	**5**	*e*P		**Pn**	**08 09 23.1**	**+0.2**
MOE				*e*S		**Sb**	**08 09 37.7**	**0.0**
MOE	**Montemor**	**1.16**	**5**	Pg		**Pn**	**08 09 23.1**	**+0.2**
MOE				Sn		**Sb**	**08 09 37.7**	**0.0**
MOE	**Montemor**	**1.16**	**5**	*e*P		**Pn**	**08 09 23.1**	**+0.2**
MOE				*e*S		**Sb**	**08 09 37.7**	**0.0**
EVO	**Evora**	**1.22**	**17**	*e*P		**Pb**	**08 09 24.4**	**+0.3**
EVO				*e*S		**Sg**	**08 09 41.1**	**0.0**
EVO				A		A	08 09 44.7	
	comp=E,36nm,0.1s								
EVO	**Evora**	**1.22**	**17**	Pg		**Pb**	**08 09 24.4**	**+0.3**
EVO				Lg		Lg	08 09 41.1		
	comp=E,36nm,0.1s								
EVO	**Evora**	**1.22**	**17**	*e*P		**Pb**	**08 09 24.4**	**+0.3**
EVO				*e*S		**Sg**	**08 09 41.1**	**0.0**
	comp=E,36nm,0.1s								
PBAR	**Barrancos**	**1.39**	**54**	*e*P		**Pn**	**08 09 26.9**	**+0.7**
PBAR				*e*S		**Sb**	**08 09 44.9**	**+0.3**
PBAR				A		A	08 09 48.2	
	comp=E,63nm,0.3s								
PBAR	**Barrancos**	**1.39**	**54**	Pg		**Pn**	**08 09 26.9**	**+0.7**
PBAR				Lg		Lg	08 09 44.9		
	comp=E,63nm,0.3s								
PBAR	**Barrancos**	**1.39**	**54**	*e*P		**Pn**	**08 09 26.9**	**+0.7**
PBAR				*e*S		**Sb**	**08 09 44.9**	**+0.3**
	comp=E,63nm,0.3s								
PMST	**Lisbon--Monsan**	**1.47**	**338**	*e*Sg		**Sg**	**08 09 49.7**	**+0.4**
PMST				A		A	08 09 50.2	
	comp=E,41nm,0.6s								
PMST	**Lisbon--Monsan**	**1.47**	**338**	*e*Sg		**Sg**	**08 09 49.7**	**+0.4**
	comp=E,41nm,0.6s								
EMIN	**Mina Concepcio**	**1.49**	**74**	Pn		**Pn**	**08 09 27.9**	**+0.4**
	comp=E,0.6nm,0.1s,SNR=40								
EMIN				Pg		**Pg**	**08 09 30.2**	**-0.1**
	comp=E,4.2nm,0.1s,SNR=14								
EMIN				Sn		**Sn**	**08 09 46.0**	**-0.4**
	comp=E,5.7nm,0.1s,SNR=7.9								
EMIN				Lg		Lg	08 09 48.6		
	comp=E,16nm,0.1s,SNR=6.3								
EMIN	**Mina Concepcio**	**1.49**	**74**	Pn		**Pn**	**08 09 27.9**	**+0.4**
	comp=E,0.6nm,0.1s,SNR=40								
PESTR	**Estremoz**	**1.65**	**25**	*e*Pn		**Pn**	**08 09 30.2**	**+0.5**
PESTR	**Estremoz**	**1.65**	**25**	*e*Pg		**Pg**	**08 09 32.8**	**-0.6**
PESTR				*e*Sg		**Sg**	**08 09 54.8**	**-0.1**
PESTR				A		A	08 09 57.0	
	comp=E,11nm,0.3s								
PESTR	**Estremoz**	**1.65**	**25**	Pn		**Pn**	**08 09 30.2**	**+0.5**
PESTR				Pg		**Pg**	**08 09 32.8**	**-0.6**
PESTR				Lg		Lg	08 09 54.8	
	comp=E,11nm,0.3s								
PESTR	**Estremoz**	**1.65**	**25**	*e*Pn		**Pn**	**08 09 30.2**	**+0.5**
PESTR	**Estremoz**	**1.65**	**25**	*e*Pg		**Pg**	**08 09 32.8**	**-0.6**
PESTR				*e*Sg		**Sg**	**08 09 54.8**	**-0.1**
	comp=E,11nm,0.3s								
PMTG	**Montargil**	**1.71**	**7**	*e*Pn		**Pn**	**08 09 31.1**	**+0.6**
PMTG				*e*Sg		**Sg**	**08 09 56.3**	**-0.4**
PMTG				A		A	08 10 01.3	
	comp=E,16nm,0.1s								
PMTG	**Montargil**	**1.71**	**7**	*e*Pn		**Pn**	**08 09 31.1**	**+0.6**
PMTG				*e*Sg		**Sg**	**08 09 56.3**	**-0.4**
	comp=E,16nm,0.1s								
EBAD	**Badajoz**	**1.80**	**39**	Pn		**Pn**	**08 09 32.1**	**+0.3**
	comp=E,3.4nm,0.1s,SNR=13								
EBAD				Pg		**Pg**	**08 09 35.6**	**-0.6**
	comp=E,4.9nm,0.1s,SNR=6.7								
EBAD				Lg		Lg	08 09 58.6		
	comp=E,60nm,0.3s								
EBAD	**Badajoz**	**1.80**	**39**	Pn		**Pn**	**08 09 32.1**	**+0.3**
	comp=E,3.4nm,0.1s,SNR=13								
ESPR	**Espera**	**2.15**	**103**	Pn		**Pn**	**08 09 37.6**	**+1.0**
	comp=E,1.8nm,0.1s,SNR=12								
ESPR				Pg		**Pg**	**08 09 43.3**	**+0.3**
	comp=E,16nm,0.2s,SNR=7.9								
ESPR				Lg		Lg	08 10 12.6		
	comp=E,23nm,0.3s,SNR=4.9								
ESPR	**Espera**	**2.15**	**103**	Pn		**Pn**	**08 09 37.6**	**+1.0**
	comp=E,1.8nm,0.1s,SNR=12								
PMRV	**Marv??o**	**2.22**	**22**	*e*Pn		**Pn**	**08 09 38.3**	**+0.7**
PMRV	**Marv??o**	**2.22**	**22**	*e*Pg		**Pg**	**08 09 44.1**	**-0.3**
PMRV				*e*Sn		**Sn**	**08 10 04.1**	**-0.6**
PMRV				A		A	08 10 13.7	
	comp=E,16nm,0.5s								
PMRV	**Marv??o**	**2.22**	**22**	Pn		**Pn**	**08 09 38.3**	**+0.7**
PMRV				Pg		**Pg**	**08 09 44.1**	**-0.3**
PMRV				Sn		**Sn**	**08 10 04.1**	**-0.6**
	comp=E,16nm,0.5s								
PMRV	**Marv??o**	**2.22**	**22**	*e*Pn		**Pn**	**08 09 38.3**	**+0.7**
PTOM	**Tomar**	**2.25**	**1**	*e*Pn		**Pn**	**08 09 38.8**	**+0.9**
PTOM				*e*Sn		**Sn**	**08 10 04.2**	**-0.9**
PTOM				*e*Sg		**Sg**	**08 10 13.5**	**-0.4**
PTOM				A		A	08 10 15.8	
	comp=E,19nm,0.3s								
PTOM	**Tomar**	**2.25**	**1**	Pn		**Pn**	**08 09 38.8**	**+0.9**
PTOM				Sn		**Sn**	**08 10 04.2**	**-0.9**
PTOM				Lg		Lg	08 10 13.5	
	comp=E,9.4nm,0.3s								
PTOM	**Tomar**	**2.25**	**1**	*e*Pn		**Pn**	**08 09 38.8**	**+0.9**
PTOM				*e*Sn		**Sn**	**08 10 04.2**	**-0.9**
PTOM				*e*Sg		**Sg**	**08 10 13.5**	**-0.4**
	comp=E,19nm,0.3s								
ECAB	**El Cabril**	**2.52**	**73**	Pn		**Pn**	**08 09 42.7**	**+0.9**
	comp=E,1.4nm,0.1s,SNR=16								
ECAB				Pg		**Pg**	**08 09 49.5**	**-0.5**
	comp=E,1.1nm,0.1s,SNR=7.7								
ECAB				Sn		**Sn**	**08 10 12.6**	**+0.5**
	comp=E,5.4nm,0.2s,SNR=7.5								
ECAB				Lg		Lg	08 10 20.7		
	comp=E,6.6nm,0.2s,SNR=7.9								
ECAB	**El Cabril**	**2.52**	**73**	Pn		**Pn**	**08 09 42.7**	**+0.9**
	comp=E,1.4nm,0.1s,SNR=16								
PCBR	**Castelo Branco**	**2.59**	**17**	*e*Pn		**Pn**	**08 09 43.3**	**+0.7**
PCBR				*e*Sn		**Sn**	**08 10 14.2**	**+0.6**
PCBR				A		A	08 10 26.9	
	comp=E,5.9nm,0.6s								
PCBR	**Castelo Branco**	**2.59**	**17**	Pn		**Pn**	**08 09 43.3**	**+0.7**
PCBR				Sn		**Sn**	**08 10 14.2**	**+0.6**
	comp=E,3.0nm,0.6s								
PCBR	**Castelo Branco**	**2.59**	**17**	*e*Pn		**Pn**	**08 09 43.3**	**+0.7**
PCBR				Sn		**Sn**	**08 10 14.2**	**+0.6**
	comp=E,3.0nm,0.6s								
MTE	**Manteigas**	**3.11**	**13**	*e*Sn		**Sn**	**08 10 25.9**	**-0.7**
MTE				*e*Sg		**Sg**	**08 10 41.3**	**-0.3**
MTE				A		A	08 10 47.1	
	comp=E,14nm,0.6s								
MTE	**Manteigas**	**3.11**	**13**	Sn		**Sn**	**08 10 25.9**	**-0.7**
MTE				Lg		Lg	08 10 41.3		
	comp=E,6.8nm,0.6s								
MTE	**Manteigas**	**3.11**	**13**	*e*Sn		**Sn**	**08 10 25.9**	**-0.7**
MTE				*e*Sg		**Sg**	**08 10 41.3**	**-0.3**
	comp=E,14nm,0.6s								
EADA	**Adamuz**	**3.19**	**74**	Pn		**Pn**	**08 09 51.5**	**+0.6**
	comp=E,0.6nm,0.1s,SNR=7.9								
EADA				Sn		**Sn**	**08 10 28.5**	**0.0**
	comp=E,2.1nm,0.1s,SNR=7.1								
EADA				Lg		Lg	08 10 40.2		
	comp=E,2.6nm,0.1s,SNR=5.3								
EADA	**Adamuz**	**3.19**	**74**	Pn		**Pn**	**08 09 51.5**	**+0.6**
	comp=E,0.6nm,0.1s,SNR=7.9								
EADA				Sn		**Sn**	**08 10 28.5**	**0.0**
	comp=E,2.1nm,0.1s,SNR=7.1								
EADA				Lg		Lg	08 10 40.2		
	comp=E,2.6nm,0.1s,SNR=5.3								
EPLA	**Plasencia**	**3.28**	**34**	Pn		**Pn**	**08 09 52.4**	**+0.3**
	comp=E,0.7nm,0.0s,SNR=7.9								
EPLA				Sn		**Sn**	**08 10 30.1**	**-0.6**
	comp=E,13nm,0.3s,SNR=8.8								
EPLA				Lg		Lg	08 10 40.5		
	SNR=7.9								
EPLA	**Plasencia**	**3.28**	**34**	Pn		**Pn**	**08 09 52.4**	**+0.3**
	comp=E,0.7nm,0.0s,SNR=7.9								
EPLA				Sn		**Sn**	**08 10 30.1**	**-0.6**
	comp=E,13nm,0.3s,SNR=8.8								
EPLA				Lg		Lg	08 10 40.5		
	SNR=7.9								
MVO	**Moncorvo**	**3.95**	**16**	*e*Pn		**Pn**	**08 10 01.9**	**+0.5**
MVO				*e*Sn		**Sn**	**08 10 46.5**	**-0.9**
MVO				A		A	08 11 16.9	
	comp=E,5.2nm,0.4s								
MVO	**Moncorvo**	**3.95**	**16**	Pn		**Pn**	**08 10 01.8**	**+0.4**
	comp=E,1.6nm,0.1s,SNR=7.9								
MVO				Sn		**Sn**	**08 10 45.7**	**-1.7**
	comp=E,1.8nm,0.2s,SNR=7.9								
MVO				Lg		Lg	08 11 08.7		
	comp=E,3.1nm,0.3s,SNR=7.9								
MVO	**Moncorvo**	**3.95**	**16**	*e*Pn		**Pn**	**08 10 01.9**	**+0.5**
MVO				*e*Sn		**Sn**	**08 10 46.5**	**-0.9**
	comp=E,5.2nm,0.4s								
MVO				Lg		Lg	08 11 08.7		
	comp=E,3.1nm,0.3s,SNR=7.9								
ESDC	**Sonseca Array**	**4.22**	**56**	Pn		**Pn**	**08 10 03.7**	**-1.4**
	comp=E,0.4nm,0.1s,baz=242,slow=13,SNR=7.9								
ESDC				Sn		**Sn**	**08 10 52.7**	**-1.3**
	comp=E,3.9nm,0.2s,baz=242,slow=23,SNR=19								
ESDC				Lg		Lg	08 11 14.0		
	comp=E,2.1nm,0.3s,baz=237,slow=28,SNR=5.4								
ESDC	**Sonseca Array**	**4.22**	**56**	Pn		**Pn**	**08 10 03.7**	**-1.4**
	comp=E,0.4nm,0.1s,SNR=7.9								
ESDC				Sn		**Sn**	**08 10 52.7**	**-1.3**
	comp=E,3.9nm,0.2s,SNR=19								
ESDC				Lg		Lg	08 11 14.0		
	comp=E,2.1nm,0.3s,SNR=5.4								
EQES	**Quesada**	**4.31**	**83**	Sn		**Sn**	**08 10 55.7**	**-0.7**
	comp=E,2.1nm,0.2s,SNR=7.9								
EQES				Lg		Lg	08 11 21.7		
	comp=E,1.6nm,0.3s,SNR=7.9								
EQES	**Quesada**	**4.31**	**83**	Sn		**Sn**	**08 10 55.7**	**-0.7**
	comp=E,2.1nm,0.2s,SNR=7.9								
EQES				Lg		Lg	08 11 21.7		
	comp=E,1.6nm,0.3s,SNR=7.9								
ELOB	**Lobios**	**4.50**	**4**	Pn		**Pn**	**08 10 09.7**	**+0.7**
	comp=E,2.3nm,0.1s,SNR=11								
ELOB				Sn		**Sn**	**08 10 57.8**	**-3.1**
	comp=E,1.5nm,0.2s,SNR=5.9								
ELOB	**Lobios**	**4.50**	**4**	Pn		**Pn**	**08 10 09.7**	**+0.7**
	comp=E,2.3nm,0.1s,SNR=11								
ELOB				Sn		**Sn**	**08 10 57.8**	**-3.1**
	comp=E,1.5nm,0.2s,SNR=5.9								
PGAV	**Gavieira, Arco**	**4.59**	**2**	*e*Pn		**Pn**	**08 10 11.0**	**+0.7**
PGAV				*e*Sn		**Sn**	**08 11 01.3**	**-1.9**
PGAV	**Gavieira, Arco**	**4.59**	**2**	*e*Pn		**Pn**	**08 10 11.0**	**+0.7**
GUD	**Guadarrama**	**4.69**	**45**	Pn		**Pn**	**08 10 11.2**	**-0.5**
	SNR=7.9								
GUD				Sn		**Sn**	**08 11 04.2**	**-1.5**
	comp=E,0.1nm,0.1s,SNR=7.9								
GUD				Lg		Lg	08 11 25.8		
	comp=E,0.8nm,0.3s,SNR=7.9								
GUD	**Guadarrama**	**4.69**	**45**	Pn		**Pn**	**08 10 11.2**	**-0.5**
	SNR=7.9								
GUD				Sn		**Sn**	**08 11 04.2**	**-1.5**
	comp=E,0.1nm,0.1s,SNR=7.9								
GUD				Lg		Lg	08 11 25.8		
	comp=E,0.8nm,0.3s,SNR=7.9								
ECAL	**Calabor**	**4.76**	**16**	Pn		**Pn**	**08 10 12.5**	**0.0**
	SNR=7.9								
ECAL				Sn		**Sn**	**08 11 05.7**	**-1.5**
	comp=E,2.2nm,0.3s,SNR=7.9								
ECAL				Lg		Lg	08 11 34.2		
	comp=E,1.7nm,0.3s,SNR=7.9								
ECAL	**Calabor**	**4.76**	**16**	Pn		**Pn**	**08 10 12.5**	**0.0**
	SNR=7.9								
ECAL				Sn		**Sn**	**08 11 05.7**	**-1.5**
	comp=E,2.2nm,0.3s,SNR=7.9								
ECAL				Lg		Lg	08 11 34.2		
	comp=E,1.7nm,0.3s,SNR=7.9								
SESP	**Santiago Espad**	**4.76**	**79**	Sn		**Sn**	**08 11 06.2**	**-1.2**
	comp=E,0.8nm,0.1s,SNR=7.9								
SESP				Lg		Lg	08 11 32.4		
	comp=E,3.3nm,0.3s,SNR=7.9								
SESP	**Santiago Espad**	**4.76**	**79**	Sn		**Sn**	**08 11 06.2**	**-1.2**
	comp=E,0.8nm,0.1s,SNR=7.9								
SESP				Lg		Lg	08 11 32.4		
	comp=E,3.3nm,0.3s,SNR=7.9								
EAGO	**Agolada(Pontev**	**5.43**	**3**	Pn		**Pn**	**08 10 21.7**	**0.0**
	comp=E,0.8nm,0.1s,SNR=7.9								
EAGO	**Agolada(Pontev**	**5.43**	**3**	Pn		**Pn**	**08 10 21.7**	**0.0**
	comp=E,0.8nm,0.1s,SNR=7.9								
ETOR	**Torete**	**6.07**	**53**	Sn		**Sn**	**08 11 35.4**	**-4.1**
	comp=E,2.2nm,0.4s,SNR=7.9								
ETOR				Lg		Lg	08 12 15.5		
	comp=E,2.7nm,0.3s,SNR=7.9								

WEL 20 08:11:02.7±0.1, 43.58S×172.75E, h8km, ML3.7/15, 3C-4D, Error ellipse: s-maj=1.0km s-min=0.5km az=90.0, South Island

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
CRLZ	**Canterbury Las**	**0.09**	**275**	⇑PG	Pg	08 11 04.9	0.0
CRLZ				SG	Sg	08 11 05.8	-0.7
CRLZ				SG		08 11 06.4	
CRLZ				SG		08 11 06.5	
CRLZ				AML	AML	08 11 07.2	
CRLZ				AML	AML	08 11 07.2	
MQZ	**McQueen's Vall**	**0.14**	**209**	⇑PG	Pg	08 11 06.0	+0.3
MQZ				SG	Sg	08 11 08.4	+0.6
MQZ				AML	AML	08 11 08.5	
MQZ				AML	AML	08 11 08.5	
OXZ	**Oxford**	**0.58**	**296**	⇓P*	Pg	08 11 13.8	0.0
OXZ				S*	Sg	08 11 21.2	-0.1
LTZ	**Lake Taylor**	**0.87**	**336**	⇓P*	Pg	08 11 19.7	+0.2
LTZ				S*	Sb	08 11 31.5	-0.4
LTZ				AML	AML	08 11 32.3	
RPZ	**Rata Peaks**	**1.24**	**263**	P*	Pn	08 11 25.0	-1.2
RPZ				AML	AML	08 11 44.4	
RPZ				AML	AML	08 11 45.9	
INZ	**Inchbonnie**	**1.28**	**312**	P*	Pn	08 11 25.4	-1.4
KHZ	**Kahutara**	**1.30**	**27**	P*	Pn	08 11 25.6	-1.5
WVZ	**Waitaha Valley**	**1.55**	**288**	PN	Pn	08 11 29.6	-0.9
WVZ				AML	AML	08 11 56.3	
WVZ				AML	AML	08 11 58.2	
THZ	**Tophouse**	**1.82**	**4**	PN	Pn	08 11 32.9	-1.4
THZ				AML	AML	08 12 08.3	
THZ				AML	AML	08 12 16.8	
DSZ	**Denniston Nort**	**1.96**	**339**	*e*PN	Pn	08 11 35.4	-0.8
DSZ				AML	AML	08 12 03.3	
DSZ				AML	AML	08 12 03.3	
DSZ				AML	AML	08 12 03.4	
DSZ				AML	AML	08 12 03.4	
LBZ	**Lake Benmore**	**2.02**	**246**	PN	Pn	08 11 36.1	-0.8
LBZ				AML	AML	08 12 14.2	
LBZ				AML	AML	08 12 16.2	
BSWZ	**Blackbirch Sta**	**2.04**	**24**	PN	Pn	08 11 36.1	-1.2
ODZ	**Otahua Downs**	**2.10**	**225**	⇓PN	Pn	08 11 36.8	-1.2
ODZ				AML	AML	08 12 13.5	
ODZ				AML	AML	08 12 13.6	
ODZ				AML	AML	08 12 18.0	
FOZ	**Fox Glacier**	**2.13**	**270**	⇑PN	Pn	08 11 39.1	+0.6
FOZ				AML	AML	08 12 05.5	
TUWZ	**Tuamarina**	**2.33**	**23**	PN	Pn	08 11 39.7	-1.5
QRZ	**Quartz Range**	**2.76**	**357**	PN	Pn	08 11 46.7	-0.4
QRZ				AML	AML	08 12 34.4	
QRZ				AML	AML	08 12 40.9	
JCZ	**Jackson Bay**	**2.91**	**259**	PN	Pn	08 11 48.7	-0.6
JCZ				AML	AML	08 12 41.9	
WKZ	**Wanaka**	**2.96**	**244**	PN	Pn	08 11 48.9	-0.9
WKZ				AML	AML	08 12 41.7	
WKZ				AML	AML	08 12 47.8	
EAZ	**Earnscleugh**	**2.96**	**235**	⇓PN	Pn	08 11 49.0	-1.0
EAZ				AML	AML	08 12 40.0	
EAZ				AML	AML	08 12 43.6	
EAZ				AML	AML	08 12 43.7	
EAZ				AML	AML	08 12 44.2	
CAW	**Cannon Point**	**3.01**	**36**	*e*PN	Pn	08 11 48.2	-2.4
TUZ	**Tuapeka**	**3.25**	**222**	PN	Pn	08 11 52.7	-1.1
TUZ				AML	AML	08 12 52.2	
TUZ				AML	AML	08 12 54.2	
MRZ	**Mangatainoka R**	**3.60**	**37**	PN	Pn	08 11 56.1	-2.6
SYZ	**Scrubby Hill**	**3.91**	**220**	*e*PN	Pn	08 12 02.6	-0.3
WHZ	**Wether Hill Ro**	**4.13**	**234**	PN	Pn	08 12 03.9	-2.1
APZ	**The Paps**	**4.67**	**224**	PN	Pn	08 12 13.1	-0.4
VRZ	**Vera Road**	**4.71**	**19**	*e*PN	Pn	08 12 13.5	-0.3
WNVZ	**Wahianoa**	**4.76**	**28**	*e*PN	Pn	08 12 14.2	-0.7
HIZ	**Hauiti**	**5.31**	**18**	*e*PN	Pn	08 12 20.8	-1.4

NIED ***20*** *08:14:00, 39.20N×142.40E, h56km, Mw3.7 Best double couple: M0 3.53000×10^14 NP1:ϕs 352.00000°, δ41.00000°, λ-94.00000°. NP2:ϕs 177.00000°, δ49.00000°, λ-87.00000°.*

JMA 20 08:14:15.6±0.1, 39.18N×142.42E, h34km±2km, M3.8, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
OFUJ	**Ofunato**	**0.59**	**261**	P	Pn	08 14 27.3	-0.2
OFUJ				S	Sn	08 14 35.5	-0.5
MIYJ	**Miyakonagasawa**	**0.61**	**311**	P	Pn	08 14 27.3	-0.5
MIYJ				*e*S	Sn	08 14 35.3	-1.2
JOM	**Ohasama**	**0.92**	**289**	P	Pn	08 14 32.3	+0.2
JOM				S	Sn	08 14 44.4	+0.2
JMK	**Ichinoseki**	**0.96**	**257**	P	Pn	08 14 33.0	+0.3
JMK				S	Sn	08 14 45.4	+0.3
JIO	**Ouri**	**1.11**	**229**	P	Pn	08 14 34.5	-0.2
JIO				S	Sn	08 14 48.1	-0.6
JKZ	**Kuzumaki**	**1.16**	**314**	P	Pn	08 14 36.2	+0.7
JKZ				S	Sn	08 14 51.0	+0.7
JANG	**Nango**	**1.38**	**330**	P	Pn	08 14 39.1	+0.6
JANG				S	Sn	08 14 56.7	+1.1
JRG	**Rokugo**	**1.40**	**279**	P	Pb	08 14 40.3	-0.9
JRG				S	Sb	08 14 58.7	-0.1
JOU	**Okura**	**1.59**	**240**	P	Pn	08 14 42.5	+1.1
JOU				S	Sb	08 15 03.2	-1.1

IDC 20 08:18:28.6±7.6, 17.93S×68.08E, h0km, mb3.6/3, mb1 3.8/3, mb1mx3.4/57, mbtmp3.6/3, MS3.5/1, Ms1 3.5/1, ms1mx2.8/41, Error ellipse: s-maj=444.7km s-min=35.3km az=37.0, Mid-Indian Ridge

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
H08S1	**Diego Carcia H**	**11.08**	**23**	T	T	08 33 48.9	
	baz=203,slow=75,SNR=104						
H08S2	**Diego Garcia H**	**11.09**	**23**	T	T	08 33 49.1	
	baz=203,slow=75,SNR=45						
H08S3	**Diego Garcia H**	**11.10**	**23**	T	T	08 33 51.8	
	baz=203,slow=75,SNR=94						
LBTB	**Lobatse**	**40.03**	**252**	LR	LR	08 41 01.0	
	comp=Z,62nm,18.3s,baz=136,slow=34						
H01W3	**Cape Leeuwin H**	**44.17**	**122**	T	T	09 13 40.3	
	baz=279,slow=75,SNR=13						
H01W2	**Cape Leeuwin H**	**44.17**	**122**	T	T	09 13 41.3	
	baz=279,slow=75,SNR=15						
H01W1	**Cape Leeuwin H**	**44.18**	**122**	T	T	09 13 42.5	
	baz=279,slow=75,SNR=12						
ASAR	**Alice Springs**	**61.34**	**108**	P	P	08 28 45.6	-1.0
	0.6nm,0.8s,baz=254,slow=5.2,SNR=5.5						
WRA	**Warramunga Arr**	**62.34**	**104**	P	P	08 28 54.3	+0.9
	0.7nm,0.9s,baz=269,slow=5.4,SNR=5.0						
AKASG	**Malin Array Be**	**76.39**	**336**	P	P	08 30 19.4	-0.2
	0.3nm,0.4s,baz=132,slow=4.5,SNR=4.2						
YKA	**Yellowknife Ar**	**135.44**	**2**	PKP	PKPdf	08 37 50.6	+0.4
	0.2nm,0.8s,baz=351,slow=1.8,SNR=3.3						

ISCJB ***20*** *08:18:48.2±0.2, 37.77N±0.03×68.79E±0.03, h10km, mb4.4/61, MS3.9/11, Error ellipse: s-maj=3.9km s-min=3.6km az=168.8*

NNC ***20*** *08:18:49.9±2.1, 37.92N×68.47E, h0km, mb4.9, mpv4.5, Error ellipse: s-maj=15.9km s-min=13.9km az=40.0*

BJI ***20*** *08:18:50.5, 38.19N×68.87E, h10km, mb4.6/32, mB4.6/19, Ms4.0/17, Ms7 3.8/17*

IDC ***20*** *08:18:52.7±2.9, 37.71N×68.80E, h33km±22km, mb4.0/27, mb1 4.2/36, mb1mx4.1/61, mbtmp4.3/36, ML3.9/7, MS3.7/5, Ms1 3.7/5, ms1mx3.1/64, Error ellipse: s-maj=13.9km s-min=9.7km az=1.0*

NEIC ***20*** *08:18:52.2±1.8, 37.83N×68.76E, h22km±12km, mb4.6/21, Error ellipse: s-maj=8.0km s-min=5.7km az=149.0*

MOS ***20*** *08:18:52.4±1.1, 37.93N×68.72E, h35km, mb4.5/21, Error ellipse: s-maj=7.5km s-min=4.9km az=73.6*

**ISC 20 08:18:50.0±0.3, 37.75N±0.04×68.70E±0.03, h10km, n176, σ1.833/159, mb4.5/61, MS3.8/11, 13C-12D, Afghanistan

GEYT Alibeck 8.38 274 Pn Pn 08 20 48.2 -3.3
comp=E,9.9nm,0.3s,baz=111,slow=9.5,SNR=29
GEYT Sn **Sn** **08 22 22.7 -3.4**
comp=E,7.0nm,0.3s,baz=100,slow=16,SNR=3.9
GEYT LR LR 08 25 21.0
comp=E,478nm,18.7s,baz=80,slow=46
SDNR Sundarnagar 9.24 130 *ex* Pn 08 21 08.0 +4.7
SMLA Simla 9.62 131 *eP* **Pn** **08 21 07.8 -0.7**
SMLA *eS* **Sn** **08 22 52.9 -3.7**
DDI Dehra Dun 10.73 131 *eS* **Sn** **08 23 21.3 -2.6**
DDI IAML 08 23 47.8
comp=E,143nm,0.1s
DDI IAML 08 23 48.7
comp=N,134nm,0.3s
OTUK Ortayu 10.82 13 ⇑Pn **Pn** **08 21 24.3 -0.6**
comp=N,9.3nm,0.7s
NDI New Delhi 11.51 139 *eP* Pn 08 21 30.1 -4.3
NDI *ex* x 08 23 19.1
AB31 Akbulak array 13.12 334 S Sn 08 24 14.4 -7.9
comp=N,25nm,0.6s,baz=154,slow=24,SNR=21
AB31 Akbulak array 13.12 334 *i* P Pn 08 21 54.0 -2.4
AB31 pmax pmax
comp=Z,5.0nm,0.3s
ABKAR Akbulak array 13.12 334 *e*Pn Pn 08 21 53.9 -2.5
MAKZ Makanchi 13.34 43 *eP* Pn 08 21 58.2 -1.2
MAKZ Makanchi 13.34 43 *e*Pn Pn 08 21 58.2 -1.2
MK01 Makanchi Array 13.50 44 *e*Pn Pn 08 21 60.0 -1.6
MK31 Makanchi Array 13.51 44 *eP* **Pn** **08 22 00.8 -0.9**
MK31 Makanchi Array 13.51 44 *e*Pn **Pn** **08 22 00.8 -0.9**
MKAR Makanchi Array 13.51 44 Pn Pn 08 21 59.8 -1.8
comp=Z,0.5nm,0.3s,baz=229,slow=13,SNR=57
MKAR Makanchi Array 13.51 44 *eP* **Pn** **08 22 00.7 -0.9**
MKAR pmax pmax
comp=Z,1.0nm,0.3s
KURBB Kurchatov Arra 14.65 25 Pn Pn 08 22 13.4 -3.8
comp=Z,0.1nm,0.3s,baz=212,slow=12,SNR=28
KURBB Lg Lg 08 26 27.6
comp=Z,0.1nm,0.3s,baz=218,slow=23,SNR=5.2
KURK Kurchatov 14.76 25 P Pn 08 22 13.4 -5.3
KURK Kurchatov 14.76 25 Pn Pn 08 22 13.4 -5.3
KURK Lg Lg 08 26 27.6
AKTO Aktyubinsk 14.80 332 Pn Pn 08 22 17.0 -2.2
comp=Z,1.4nm,0.3s,baz=141,slow=15,SNR=18
AKTO Sn Sn 08 24 54.0 -9.2
comp=Z,1.9nm,0.3s,baz=308,slow=21,SNR=4.1
AKTO Aktyubinsk 14.80 332 ⇑S Sn 08 24 53.4 -10
comp=Z,48nm,1.1s
BVAR Borovoye Array 15.32 4 Pn Pn 08 22 23.5 -2.6
comp=Z,1.0nm,0.3s,baz=178,slow=11,SNR=8.9
BRVK Borovoye 15.34 4 *eP* **Pn** **08 22 25.7 -0.8**
BRVK pmax pmax
comp=Z,20nm,0.8s
BRVK Borovoye 15.34 4 *e*Pn **Pn** **08 22 25.7 -0.8**
comp=Z,20nm,0.8s
BRVK *e*S **S** **08 25 30.3 -2.5**
PYUN Piuthan 15.37 125 *eP* Pn 08 22 22.0 -5.2
comp=Z,69nm,0.7s
WMQ Urumqi 15.60 61 P **Pn** **08 22 32.9 +2.9**
WMQ sP P 08 22 36.0 +1.8
WMQ PP sP 08 22 44.9 +6.5
WMQ pmax pmax
comp=Z,6.0nm,0.8s
WMQ pmax pmax
comp=Z,69nm,4.0s
WMQ LR LR
comp=Z,170nm,11.6s
WMQ LR LR
comp=Z,210nm,11.6s
WMQ LR LR
comp=Z,81nm,13.2s
KOLN Koldanda 15.99 124 *eP* Pn 08 22 30.7 -4.5
comp=Z,82nm,0.8s
BHPL Bhopal 16.29 150 *eP* **Pn** **08 22 38.9 -0.1**
GKN Gorkha 16.53 121 *eP* Pn 08 22 37.1 -5.0
comp=Z,108nm,0.8s
UOSS Minazif 16.62 223 *e*Pn **P** **08 22 46.3 +0.7**
comp=Z,0.7nm,1.2s
WSAR Wadi Sarin 16.85 214 Pn **Pn** **08 22 45.7 -0.4**
baz=16,slow=7.4,SNR=2.6
DMN Daman 17.10 122 *eP* Pn 08 22 44.6 -4.8
comp=Z,166nm,1.0s
KKN Kakani 17.10 121 *eP* Pn 08 22 45.1 -4.3
comp=Z,99nm,0.6s
PKIN Phulchoki 17.31 121 *eP* Pn 08 22 47.5 -4.6
comp=Z,101nm,0.7s
GUN Gumba 17.43 119 *eP* Pn 08 22 48.2 -5.5
comp=Z,125nm,0.8s
DGRG David-gareji 18.34 289 P **Pn** **08 23 03.7 -0.8**
DGRG David-gareji 18.34 289 *eP* **Pn** **08 23 03.6 -0.8**
GNI Garni 18.78 285 P **P** **08 23 10.0 +0.5**
comp=Z,1.0nm,0.3s,baz=308,slow=8.6,SNR=5.8
GNI Garni 18.78 285 *eP* **Pn** **08 23 11.4 +1.5**
GNI pmax pmax
comp=Z,30nm,0.9s
GNI Garni 18.78 285 *eP* **Pn** **08 23 11.4 +1.5**
comp=Z,30nm,0.9s
TBLG Delisi 18.83 290 P P 08 23 02.7 -7.2
TBLG Delisi 18.83 290 *eP* P 08 23 02.7 -7.2
GUDG Gudauri 19.09 292 P **Pn** **08 23 15.7 +1.9**
ZEI Tsey 19.55 293 *eP* **P** **08 23 19.6 +1.6**
ZEI pmax pmax
comp=Z,17nm,0.7s
ZAA0 Zalesovo Array 19.63 29 *eP* **P** **08 23 16.6 -1.9**
ZAA0 *eP* Pn 08 23 17.0 -2.9
ZALV Zalesovo Beam 19.63 29 P **P** **08 23 16.8 -1.7**
comp=Z,3.0nm,0.3s,baz=215,slow=10,SNR=37
NVS Novosibirsk 19.75 25 ⇑*iP* **P** **08 23 19.0 -0.8**
NVS *e* 08 26 57.0
NVS pmax pmax
comp=N,13nm,1.3s
NVS pmax pmax
comp=E,12nm,1.3s
NVS pmax pmax
comp=Z,22nm,1.3s
NVS smax smax
comp=N,18nm,1.9s
ONI Oni 19.86 292 P **P** **08 23 22.5 +1.3**
ONI Oni 19.86 292 *eP* **P** **08 23 22.5 +1.3**
ARU Arti 19.88 343 P **P** **08 23 22.0 +0.8**
comp=N,0.0nm,0.3s,baz=158,slow=3.8,SNR=11
ARU Arti 19.88 343 *eP* **P** **08 23 21.2 0.0**
ARU S **S** **08 27 04.5 -0.3**
ARU Arti 19.88 343 *eP* **P** **08 23 21.5 +0.3**
comp=N,18nm,0.8s
BOK Bokaro 20.24 129 *eP* **P** **08 23 25.3 -0.1**
BOK IAmb IAmb 08 23 27.6
comp=Z,16nm,0.7s
KBZ Khabaz 20.40 295 P **P** **08 23 27.3 +0.3**
comp=Z,14nm,0.9s,baz=132,slow=8.8,SNR=17
NEY Neytrino 20.46 294‖ *eP* **P** **08 23 30.0 +2.1**
NEY pmax pmax
comp=Z,3.0nm,0.9s
KVAR Kislovodsk Arr 20.58 296 LR LR 08 33 51.3
comp=Z,180nm,18.0s,baz=50,slow=44
KIV Kislovodsk 20.58 296 *de*P **P** **08 23 29.6 +0.5**
KIV *i* 08 23 39.3
KIV *e* 08 23 46.7
KIV *e*S **S** **08 27 18.3 -0.9**
KIV *e*SS **SnSn** **08 27 38.5 +0.5**
KIV pmax pmax
comp=Z,23nm,0.7s
KIV MLR MLR
comp=Z,156nm,16.0s
KIV Kislovodsk 20.58 296 *eP* **P** **08 23 30.4 +1.3**
comp=Z,38nm,0.7s
HYB Hyderabad 22.03 154 *i* P **P** **08 23 47.0 +2.2**
HYB Hyderabad 22.03 154 *eP* **P** **08 23 44.2 -0.6**
SHL Shillong 23.11 115 *eP* **P** **08 23 53.5 -2.8**
VRH Novokhopyorsk 23.32 314 *eP* **P** **08 24 02.7 +4.7**
VRH pmax pmax
comp=Z,20nm,0.8s
GTA Gaotai 24.32 76 P P **08 24 08.1 +0.1**
GTA pP pP 08 24 12.3 +1.3
GTA sP sP 08 24 15.1 +2.8
GTA S **S** **08 28 25.4 -1.7**
GTA sS sS 08 28 32.3 +0.2
GTA pmax pmax
comp=Z,14nm,1.0s
GTA pmax pmax
comp=Z,77nm,4.6s
GTA LR LR
comp=Z,190nm,13.8s
GTA LR LR
comp=Z,270nm,15.2s
GTA LR LR
comp=Z,280nm,16.6s
VSR Storozhevoye 24.80 312 *e*P **P** **08 24 11.2 -0.8**
VSR pmax pmax
comp=Z,6.0nm,0.5s
LPSR Galich'ya Gora 25.47 315 *eP* **P** **08 24 17.8 -0.2**
LPSR pmax pmax
comp=Z,10.0nm,0.9s
BR131 Keskin Array S 27.32 285 *eP* **P** **08 24 36.2 +1.2**
BRTR Keskin Array B 27.32 285 P P **08 24 35.4 +0.3**
comp=Z,1.5nm,0.6s,baz=110,slow=8.8,SNR=6.3
BRTR Keskin Array B 27.32 285 *i* P **P** **08 24 35.7 +0.6**
BRTR pmax pmax
comp=Z,2.0nm,0.6s
ZAK Zakamensk 27.60 52 *eP* **P** **08 24 36.5 -1.0**
ZAK pmax pmax
comp=Z,3.0nm,1.4s
OBN Obninsk 27.79 319⇑ *eP* **P** **08 24 39.3 +0.4**
OBN *e* 08 25 26.5
OBN *e*S **S** **08 29 22.4 +0.9**
OBN pmax pmax
comp=Z,25nm,1.8s
OBN MLR MLR
comp=Z,206nm,16.0s
BR231 Keskin MP Arra 27.96 286 *eP* P 08 24 36.1 -4.7
LZH Lanzhou 28.05 83 *eP* P 08 24 46.0 +4.3
LZH pP sP 08 24 50.5 +4.5
LZH sP pP 08 24 52.8 +8.1
LZH *e*S **S** **08 29 27.0 +0.6**
LZH sS sS 08 29 38.4 +7.0
LZH pmax pmax
comp=Z,19nm,1.0s
LZH pmax pmax
comp=Z,130nm,4.4s
LZH LR LR
comp=Z,1μm,12.9s
LZH LR LR
comp=Z,1μm,13.7s
LZH LR LR
comp=Z,1μm,14.4s
TLY Talaya 28.16 49 LR LR 08 36 52.7
comp=Z,106nm,20.3s,baz=260,slow=38
TLY Talaya 28.16 49 *eP* **P** **08 24 43.4 +1.1**
TLY pmax pmax
comp=Z,2.0nm,0.9s
TLY MLR MLR
comp=Z,139nm,15.0s
EIL Elat 29.09 264 LR LR 08 39 22.1
comp=Z,191nm,18.2s,baz=58,slow=42
SONM Songino Array 29.18 58 P **P** **08 24 50.8 -0.7**
comp=Z,2.0nm,0.9s,baz=254,slow=10,SNR=7.5
SONM Songino Array 29.18 58 *eP* **P** **08 24 51.5 -0.1**
SONM pmax pmax
comp=Z,2.0nm,0.9s
SONA1 Songino Array 29.18 58 *eP* **P** **08 24 51.9 +0.3**
ULN Ulaanbaatar 29.62 58 *eP* **P** **08 24 56.1 +0.6**
ULN pmax pmax
comp=Z,3.0nm,0.8s
ULN Ulaanbaatar 29.62 58 *eP* **P** **08 24 56.1 +0.6**
comp=Z,3.4nm,0.8s
CD2 Chengdu 29.62 93 P P **08 24 56.3 +0.7**
CD2 pmax pmax
comp=Z,20nm,0.5s
AKASG Malin Array Be 30.73 308 P **P** **08 25 05.1 +0.1**
comp=Z,1.1nm,0.5s,baz=84,slow=7.1,SNR=6.4
KIEV Kiev 30.73 308⇑ *eP* **P** **08 25 05.9 +0.8**
KIEV pmax pmax
comp=Z,12nm,1.8s
KMI Kunming 31.48 104 P P 08 25 16.5 +4.3
KMI pmax pmax
comp=Z,12nm,0.6s
KMI pmax pmax
comp=Z,46nm,3.1s
XAN Xi'an 32.62 84 P **P** **08 25 21.8 -0.2**
XAN S **S** **08 30 39.6 +1.8**
XAN pmax pmax
comp=Z,6.0nm,0.8s
XAN LR LR
comp=Z,120nm,14.9s
XAN LR LR
comp=Z,120nm,19.2s
XAN LR LR
comp=Z,140nm,14.9s
CMAR Chiang Mai Arr 32.67 118 P **P** **08 25 22.6 +0.2**
comp=Z,1.4nm,0.6s,baz=301,slow=8.4,SNR=7.0
CMAR Chiang Mai Arr 32.67 118 *eP* P 08 25 26.3 +3.9
CMAR pmax pmax
comp=Z,1.0nm,0.6s
HHC Hu-ho-hao-te 33.07 71 *eP* **P** **08 25 27.8 +1.9**
HHC S **S** **08 30 44.6 -0.3**
HHC pmax pmax
comp=Z,20nm,1.0s
HHC pmax pmax
comp=Z,130nm,6.3s
HHC LR LR
comp=Z,520nm,13.3s
HHC LR LR
comp=Z,560nm,16.0s
HHC LR LR
comp=Z,580nm,14.2s
NRIK Noril'sk 33.26 12 P **P** **08 25 27.5 +0.5**
comp=Z,3.9nm,0.5s,baz=219,slow=5.1,SNR=6.7
NRIK Noril'sk 33.26 12 P **P** **08 25 27.5 +0.5**
NRIK pmax pmax
comp=Z,2.0nm,0.4s
GYA Guiyang 33.86 98 *eP* **P** **08 25 35.8 +2.8**
GYA pmax pmax
comp=Z,10.0nm,0.8s
FINES FINESS Array B 35.42 326 P **P** **08 25 45.2 -0.6**
comp=Z,0.9nm,0.4s,baz=118,slow=9.3,SNR=11
FINES FINESS Array B 35.42 326 *eP* **P** **08 25 46.4 +0.6**
FINES pmax pmax
comp=Z,2.0nm,0.5s
BOD Bodaibo 35.57 41 *eP* **P** **08 25 46.2 -1.0**
BOD pmax pmax
comp=Z,10.0nm,1.0s
BJI Beijing 36.68 71 P **P** **08 25 57.9 +1.0**
BJI pmax pmax
comp=Z,9.0nm,0.6s
ARCES ARCESS Array B 39.29 338 P **P** **08 26 18.6 0.0**
comp=Z,2.5nm,0.9s,baz=108,slow=8.0,SNR=6.1
GERES GERESS Array B 40.70 304 P **P** **08 26 31.3 +0.5**
comp=Z,0.5nm,0.5s,baz=77,slow=8.6,SNR=4.3
GERES GERESS Array B 40.70 304 *eP* **P** **08 26 33.0 +2.2**
GERES pmax pmax
comp=Z,1.0nm,0.5s
NC303 NORSAR Array S 42.22 323 *eP* **P** **08 26 43.2 +0.3**
NB2 NORSAR Subarra 42.27 322 P P 08 26 41.8 -1.6
comp=Z,1.4nm,0.5s,baz=96,slow=8.6
NOA NORSAR Array B 42.27 322 P **P** **08 26 42.7 -0.7**
comp=Z,1.9nm,0.5s,baz=98,slow=8.1,SNR=13
CN2 Changchun 42.67 63 *eP* **P** **08 26 47.1 +0.3**
CN2 pmax pmax
comp=Z,10.0nm,0.8s
YAK Yakutsk 44.03 36 P P 08 26 56.1 -1.4
comp=Z,30nm,0.5s,baz=251,slow=3.3,SNR=4.4
YAK Yakutsk 44.03 36 *eP* **P** **08 26 57.1 -0.4**
YAK pmax pmax
comp=Z,18nm,0.9s
TIXI Tiksi 45.31 23 P P 08 27 05.8 -1.8
comp=Z,14nm,0.7s,baz=276,slow=6.1,SNR=19
TIXI Tiksi 45.31 23*c* *iP* **P** **08 27 06.9 -0.7**
TIXI pmax pmax
comp=Z,14nm,0.9s
TIXI Tiksi 45.31 23 *eP* **P** **08 27 07.2 -0.4**
comp=Z,15nm,0.7s
KLR Kul'dur 45.90 54 P P **08 27 11.3 -1.2**
comp=Z,2.6nm,0.9s,baz=275,slow=10,SNR=5.5
KSAR Wonju Array Be 46.19 71 P **P** **08 27 14.9 -0.1**
KSAR Wonju Array Be 46.19 71 P **P** **08 27 14.8 -0.1**
KSRS Korea Array 46.21 71 P **P** **08 27 14.8 -0.3**
comp=Z,3.5nm,0.9s,baz=283,slow=7.1,SNR=7.3
KSRS Korea Array 46.21 71 *eP* **P** **08 27 14.8 -0.3**
KSRS pmax pmax
comp=Z,5.0nm,1.1s
USRK Ussuriysk Ar. 47.17 61 P **P** **08 27 21.8 -0.8**
comp=Z,1.2nm,0.6s,baz=296,slow=9.3,SNR=4.7
MJAR Matsushiro Arr 54.20 68 P **P** **08 28 14.7 -1.2**
comp=Z,3.4nm,0.9s,baz=292,slow=8.0,SNR=6.6
MJA0 Matsu Arr-Jizo 54.23 68 *eP* **P** **08 28 14.6 -1.5**
MJA0 pmax pmax
comp=Z,3.0nm,0.9s
SEY Seymchan 54.40 34 P **P** **08 28 16.5 -0.4**
comp=Z,1.1nm,0.6s,baz=297,slow=7.6,SNR=4.6
SEY Seymchan 54.40 34*d* *iP* **P** **08 28 16.8 0.0**
ESDC Sonseca Array 55.25 296 P **P** **08 28 23.0 -0.4**
comp=Z,0.7nm,0.4s,baz=64,slow=8.5,SNR=7.5
BILL Bilibino 58.29 26⇓ *eP* **P** **08 28 45.0 +0.5**
BILL *e* 08 30 53.1
BILL *i* S S 08 36 41.4 -4.9
BILL pmax pmax
comp=Z,2.0nm,0.9s
BILL MLR MLR
comp=Z,31nm,14.0s
TOA0 Torodi Ar. Sit 63.93 267 *eP* **P** **08 29 22.3 -1.2**
TOA0 *eP* **P** **08 29 22.7 -0.8**
TORD Torodi Ar. Bea 63.93 267 P **P** **08 29 22.3 -1.2**
comp=Z,5.9nm,0.5s,baz=50,slow=6.3,SNR=50
MATP Matopo 69.13 220 P **P** **08 29 56.0 -0.6**
comp=Z,5.5nm,0.4s,baz=19,slow=5.3,SNR=6.5
COLD Coldfoot 71.25 15 *eP* **P** **08 30 09.5 +0.5**
comp=Z,6.3nm,0.7s
DBIC Dimbokro 72.95 265 P **P** **08 30 19.9 0.0**
comp=Z,7.3nm,1.0s,baz=22,slow=4.5,SNR=4.5
DBIC LR LR 09 06 57.7
comp=Z,43nm,18.7s,baz=356,slow=40
INK Inuvik 72.95 8 P **P** **08 30 19.2 +0.1**
comp=Z,3.9nm,0.6s,baz=357,slow=7.1,SNR=15
INK Inuvik 72.95 8 *eP* **P** **08 30 19.6 +0.5**
INK pmax pmax
comp=Z,4.0nm,0.6s
INK Inuvik 72.95 8 *eP* **P** **08 30 19.6 +0.5**
comp=Z,3.9nm,0.6s
MLY Manley 73.01 16 *eP* **P** **08 30 20.7 +1.1**
comp=Z,3.7nm,0.8s
BPAW Bear Paw Mtn. 73.75 17 *eP* **P** **08 30 24.7 +0.7**
comp=Z,5.5nm,1.2s
COLA College 73.77 15 *i* P P 08 30 22.0 -2.0
COLA pmax pmax
comp=Z,6.0nm,0.8s
ILAR Eielson Array 74.06 15 P **P** **08 30 24.4 -1.3**
comp=Z,1.4nm,1.1s,baz=329,slow=4.7,SNR=12
ILAR Eielson Array 74.06 15 *eP* **P** **08 30 25.2 -0.5**
ILAR pmax pmax
comp=Z,2.0nm,0.8s
CAST Castle Rocks 74.07 18 *eP* **P** **08 30 26.1 +0.3**
comp=Z,5.3nm,0.8s
KTH Kantishna Hill 74.23 17 *eP* **P** **08 30 27.3 +0.4**
comp=Z,6.6nm,1.0s
PPLA Purkeypile 74.48 18 *eP* **P** **08 30 29.6 +1.2**
comp=Z,30nm,1.9s
EGAK Eagle 75.15 13 *eP* **P** **08 30 34.7 +2.6**
comp=Z,9.2nm,1.4s
DHY Denali Highway 75.45 16 *eP* **P** **08 30 35.2 +1.2**
comp=Z,3.3nm,0.6s
PAX Paxson 75.95 15 *eP* **P** **08 30 36.7 -0.1**
PAX pmax pmax
comp=Z,5.0nm,0.6s
PAX Paxson 75.95 15 *eP* **P** **08 30 36.7 -0.1**
comp=Z,5.0nm,0.6s
SML Sawmill 76.34 17 *eP* **P** **08 30 40.4 +1.4**
SML pmax pmax
comp=Z,14nm,0.9s
SML Sawmill 76.34 17 *eP* **P** **08 30 40.4 +1.4**
comp=Z,14nm,0.9s
SCM Sheep Creek Mo 76.55 17 *eP* **P** **08 30 41.6 +1.4**
SCM pmax pmax
comp=Z,11nm,0.8s
SCM Sheep Creek Mo 76.55 17 *eP* **P** **08 30 41.6 +1.4**
comp=Z,11nm,0.8s
RC01 Rabbit Creek A 76.63 18 *eP* **P** **08 30 41.6 +1.1**
comp=Z,9.3nm,1.0s
KLU Klutina 77.17 16 *eP* **P** **08 30 44.9 +1.1**
comp=Z,4.1nm,0.7s
BOSA Boshof 77.56 218 P **P** **08 30 47.2 +0.9**
comp=Z,2.9nm,0.8s,baz=61,slow=7.6,SNR=3.2
YKW3 Yellowknife Ar 79.99 2 *eP* P 08 31 03.4 +4.3
comp=Z,5.3nm,0.9s
YKA Yellowknife Ar 80.06 2 P **P** **08 30 59.4 -0.1**
comp=Z,5.2nm,0.6s,baz=352,slow=5.4,SNR=44
YKB5 Yellowknife Ar 80.06 2 *eP* **P** **08 30 59.2 -0.2**
SCHQ Schefferville 80.21 336 P **P** **08 30 59.9 -0.6**
comp=Z,2.1nm,0.7s,baz=12,slow=7.2,SNR=5.5
WRA Warramunga Arr 84.21 121 P P 08 31 18.6 -3.3
comp=Z,0.2nm,0.5s,baz=324,slow=4.7,SNR=6.3
WRA Warramunga Arr 84.21 121 *eP* **P** **08 31 23.0 +1.1**
ASAR Alice Springs 86.48 123 P **P** **08 31 31.0 -2.1**
comp=Z,0.5nm,0.6s,baz=314,slow=4.8,SNR=8.4

JMA 20 08:21:34.9, 36.88N×140.68E, h7km±1km, M2.7, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.24**	**23**	P	Pg	08 21 40.0	+0.3
ONAJ				*e*S	Sg	08 21 43.7	+0.7
JHO	**Hitachi**	**0.28**	**198**	P	Pg	08 21 40.5	0.0
JHO				S	Sg	08 21 44.5	+0.3
JFK	**Kawauchi**	**0.51**	**18**	P	Pg	08 21 44.8	0.0
JFT	**Otama**	**0.69**	**337**	S	Sg	08 21 57.9	+0.6
JMM	**Marumori**	**0.99**	**5**	P	Pg	08 21 53.6	-0.3
JMM				S	Sg	08 22 06.4	-0.3
JOU	**Okura**	**1.48**	**360**	S	Sb	08 22 22.1	+0.2
MAT	**Matsushiro**	**2.02**	**261**	P	Pn	08 22 10.4	+1.1
MAT				S	Sb	08 22 36.3	-0.9

*IDC **20** 08:24:36.9±2.3, 25.15S×179.93E, h474km±23km, mb3.4/6, mb1 3.6/9, mb1mx3.3/32, mbtmp4.2/9, Error ellipse: s-maj=26.2km s-min=20.5km az=161.0*
*ISCJB **20** 08:24:38.7±0.9, 25.15S±0.10×179.7E±0.1, h501km, mb3.8/6, Error ellipse: s-maj=16.4km s-min=13.1km az=178.1*

ISC 20 08:24:39.7±0.9, 25.2S±0.1×179.8E±0.1, h501km, n11, σ1§43/14, mb3.9/6, South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
DZM	**Mont Dzumac**	**12.63**	**282**	P	**P**	**08 27 24.2**	**-0.9**
	0.2nm,0.3s,baz=130,slow=16,SNR=2.8						
URZ	**Urewera**	**13.18**	**189**	P	**P**	**08 27 29.2**	**-1.3**
	1.2nm,0.3s,baz=291,slow=5.0,SNR=8.6						
URZ				S	**S**	**08 29 52.2**	**+0.9**
	0.3nm,0.3s,baz=217,slow=20,SNR=4.7						
RPZ	**Rata Peaks**	**19.76**	**199**	P	**P**	**08 28 35.2**	**-0.7**
	0.9nm,0.3s,baz=358,slow=14,SNR=5.0						
STKA	**Stephens Creek**	**34.06**	**250**	P	**P**	**08 30 42.5**	**+0.8**
	1.8nm,0.5s,baz=103,slow=16,SNR=13						
ASAR	**Alice Springs**	**41.64**	**262**	P	**P**	**08 31 43.8**	**-0.1**
	4.6nm,0.8s,baz=82,slow=8.2,SNR=37						
ASAR				ScP	**ScP**	**08 36 33.9**	**+2.4**
	0.4nm,0.8s,baz=92,slow=4.6,SNR=3.1						
WRA	**Warramunga Arr**	**42.14**	**268**	P	**P**	**08 31 47.0**	**-0.8**
	3.3nm,0.3s,baz=99,slow=6.9,SNR=93						
WRA				ScP	**ScP**	**08 36 36.3**	**+2.8**
	0.8nm,1.0s,baz=100,slow=3.8,SNR=4.8						
WRA				S	**S**	**08 37 30.0**	**-1.1**
	1.2nm,1.0s,baz=97,slow=15,SNR=4.3						
NVAR	**Mina Array Bea**	**85.85**	**44**	P	**P**	**08 36 25.5**	**-0.7**
	0.5nm,0.7s,baz=229,slow=6.8,SNR=4.2						
CMAR	**Chiang Mai Arr**	**89.81**	**290**	P	**P**	**08 36 46.3**	**+1.4**
	0.7nm,0.3s,baz=106,slow=2.9,SNR=5.3						
TXAR	**Lajitas Array**	**91.30**	**58**	P	**P**	**08 36 51.3**	**-0.4**
	0.6nm,0.8s,baz=205,slow=5.6,SNR=6.7						
HFS	**Hagfors**	**143.81**	**348**	PKP	PKPab	08 43 13.9	-1.9
	2.0nm,0.6s,baz=64,slow=3.4,SNR=5.7						
AKASG	**Malin Array Be**	**145.98**	**326**	PKPbc	**PKPdf**	**08 43 21.2**	**+0.3**
	0.3nm,0.3s,baz=44,slow=4.0,SNR=5.0						

*NIED **20** 08:30:00, 36.80N×141.10E, h44km, Mw4.0 Best double couple: M₀1.24000×10¹⁵ NP1:φ₁=271.00000°, δ24.00000°, λ-90.00000°. NP2:φ₂91.00000°, δ66.00000°, λ-90.00000°.*
*MOS **20** 08:30:23.5±1.1, 36.85N×141.20E, h47km, mb4.5/11, Error ellipse: s-maj=9.5km s-min=6.8km az=92.9*
*NEIC **20** 08:30:24.3±0.4, 36.81N×141.19E, h35km, mb4.4/10, Error ellipse: s-maj=9.4km s-min=6.6km az=137.0*
NEIC Recorded [3 JMA] in Ibaraki.
*ISCJB **20** 08:30:24.0±0.5, 36.79N±0.03×141.16E±0.05, h52km±3km, mb4.2/39, MS3.8/2, Error ellipse: s-maj=7.2km s-min=4.2km az=29.9*
*JMA **20** 08:30:25.2±0.1, 36.78N×141.10E, h46km±1km, M4.1*
JMA Felt III J1.
*BJI **20** 08:30:25.1, 37.00N×140.90E, h17km, mb4.5/11, mB4.9/7, Ms4.5/1, Ms7 4.2/1*
*IDC **20** 08:30:26.1±1.8, 36.76N×141.08E, h56km±17km, mb3.9/25, mb1 4.0/27, mb1mx3.9/53, mbtmp4.2/27, ML4.3/2, MS3.6/3, Ms1 3.6/3, ms1mx2.8/59, Error ellipse: s-maj=13.1km s-min=10.2km az=76.0*

ISC 20 08:30:25.5±0.8, 36°79N±0°04×141°11E±0°07, h48km±6km, n99, σ1°16/104, mb4.1/39, 2D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.40**	**322**	P	**Pn**	**08 30 34.9**	**-0.6**
ONAJ				S	**Sn**	**08 30 41.9**	**-0.6**
JHO	**Hitachi**	**0.47**	**248**	P	**Pn**	**08 30 35.6**	**-0.6**
JHO				S	**Sn**	**08 30 42.9**	**-0.9**
JFK	**Kawauchi**	**0.60**	**342**	P	**Pn**	**08 30 37.4**	**-0.5**
JFK				S	**Sn**	**08 30 46.0**	**-0.9**
JYT	**Yasato**	**0.92**	**233**	P	**Pn**	**08 30 41.5**	**-0.6**
JYT				S	**Sn**	**08 30 53.4**	**-0.9**
JFT	**Otama**	**0.95**	**320**	P	**Pn**	**08 30 42.9**	**+0.4**
JFT				S	**Sn**	**08 30 55.4**	**+0.4**
JMM	**Marumori**	**1.10**	**347**	P	**Pn**	**08 30 44.1**	**-0.4**
JFY	**Yanaizu**	**1.28**	**299**	P	**Pn**	**08 30 47.0**	**+0.1**
JAG	**Ashikaga**	**1.38**	**255**	P	**Pn**	**08 30 48.0**	**-0.3**
JAG				S	**Sn**	**08 31 04.2**	**-1.2**
JKT	**Katashina**	**1.49**	**270**	P	**Pn**	**08 30 50.1**	**+0.2**
JKT				S	**Sn**	**08 31 08.3**	**0.0**
MJAR	**Matsushiro Arr**	**2.34**	**265**	P	**Pn**	**08 31 01.8**	**+0.3**
	28nm,0.3s,baz=88,slow=15,SNR=118						
MJAR				S	**Sn**	**08 31 29.6**	**+0.5**
	38nm,0.3s,baz=85,slow=17,SNR=6.8						
MAJO	**Matsushiro**	**2.34**	**265**	*e*P	**Pn**	**08 31 02.7**	**+1.2**
MAJO	**Matsushiro**	**2.34**	**265**	*e*Pn	**Pn**	**08 31 02.7**	**+1.2**
MAT	**Matsushiro**	**2.34**	**265**	P	**Pn**	**08 31 02.5**	**+1.0**
MAT				S	**Sn**	**08 31 29.6**	**+0.5**
MJB9	**Matsu-Tunnel**	**2.35**	**265**	*e*Pn	**Pn**	**08 31 02.9**	**+1.4**
INU	**Inuyama**	**3.61**	**248**	*e*Pn	**Pn**	**08 31 21.7**	**+2.8**
JHJ	**Hachijo jima 2**	**3.82**	**197**	P	**Pn**	**08 31 21.3**	**-0.5**
	143nm,0.3s,baz=321,slow=23,SNR=71						
JHJ				S	**Sn**	**08 32 05.5**	**+0.1**
	165nm,0.3s,baz=106,slow=24,SNR=11						
JHJ				LR	LR	08 33 05.4	
	comp=Z,276nm,19.6s,baz=134,slow=42						
JHJ2	**Mitsune**	**3.82**	**196**	*e*Pn	**Pn**	**08 31 22.8**	**+1.0**
ERM	**Erimo**	**5.46**	**16**	*e*P	**Pn**	**08 31 43.7**	**-0.4**
ERM				*e*		08 32 46.4	
ERM	**Erimo**	**5.46**	**16**	*e*Pn	**Pn**	**08 31 43.7**	**-0.4**
ERM				*e*Sn	**Sn**	**08 32 46.4**	**+0.9**
ASAJ	**Asahikawa**	**7.41**	**8**	P	**Pn**	**08 32 09.7**	**-1.2**
	4.5nm,0.3s,baz=218,slow=10,SNR=21						
ASAJ				S	**Sn**	**08 33 32.9**	**-0.7**
	1.7nm,0.3s,baz=108,slow=20,SNR=2.6						
SHO	**Shikotan**	**8.31**	**30**	*e*P	Pn	08 32 19.9	-3.4
SHO				*e*S	Sn	08 33 46.6	-9.1
SHO				pmax	pmax		
	comp=Z,31nm,0.7s						
JNU	**Nakatsue**	**9.16**	**249**	P	**Pn**	**08 32 37.5**	**+2.5**
	comp=Z,0.3nm,0.3s,baz=53,slow=12,SNR=2.7						
JNU	**Nakatsue**	**9.16**	**249**	*e*Pn	**Pn**	**08 32 34.2**	**-0.8**
CBIJ	**Chichi jima**	**9.71**	**174**	P	Pn	08 32 39.2	-3.3
CBIJ				S	Sn	08 34 21.5	-8.7
JCJ	**Chichijima**	**9.71**	**174**	P	Pn	08 32 39.2	-3.3
	baz=270,slow=18						
JCJ				S	Sn	08 34 21.5	-8.7
	baz=255,slow=20						
USRK	**Ussuriysk Ar.**	**10.14**	**320**	P	Pn	08 32 54.0	+5.7
	comp=Z,0.7nm,0.3s,baz=134,slow=13,SNR=19						
YSS	**Yuzh-Sakhalins**	**10.23**	**6**	*e*P	**Pn**	**08 32 49.7**	**+0.2**
YSS				pmax	pmax		
	comp=Z,20nm,1.0s						
KSRS	**Korea Array**	**10.55**	**278**	P	Pn	08 32 57.3	+3.3
	comp=Z,0.1nm,0.3s,baz=277,slow=33,SNR=4.7						
KSAR	**Wonju Array Be**	**10.58**	**277**	P	**Pn**	**08 32 57.3**	**+2.9**
KSAR	**Wonju Array Be**	**10.58**	**277**	P	**Pn**	**08 32 57.3**	**+2.9**
CN2	**Changchun**	**13.84**	**305**	*e*P	**Pn**	**08 33 39.3**	**+0.4**
CN2				pmax	pmax		
	comp=Z,10.0nm,0.6s						
PETK	**Petropavlovsk-**	**20.02**	**30**	P	**P**	**08 34 52.8**	**-1.3**
	comp=Z,2.7nm,0.8s,baz=224,slow=10,SNR=3.3						
HHC	**Hu-ho-hao-te**	**23.32**	**289**	*e*P	**P**	**08 35 29.8**	**+0.4**
HHC				pmax	pmax		
	comp=Z,12nm,1.0s						
HHC				pmax	pmax		
	comp=Z,87nm,7.4s						
MA2	**Magadan**	**23.64**	**12**	P	**P**	**08 35 31.2**	**-1.0**
	comp=Z,5.8nm,0.9s,baz=153,slow=15,SNR=4.2						
SEY	**Seymchan**	**27.08**	**11**	P	**P**	**08 36 03.8**	**+0.6**
	comp=Z,5.9nm,0.7s,baz=204,slow=6.8,SNR=22						
BOD	**Bodaibo**	**27.61**	**328**	*e*P	**P**	**08 36 06.2**	**-1.8**
BOD				pmax	pmax		
	comp=Z,3.0nm,0.9s						
SONM	**Songino Array**	**27.72**	**304**	P	**P**	**08 36 09.7**	**+0.3**
	comp=Z,2.8nm,0.7s,baz=106,slow=9.3,SNR=9.9						
H11N2	**WAKE ISLAND Hy**	**28.24**	**120**	T	T	09 06 18.4	
	baz=313,slow=75,SNR=181						
H11N1	**WAKE ISLAND Hy**	**28.25**	**120**	T	T	09 06 18.1	
	baz=313,slow=75,SNR=170						
H11N3	**WAKE ISLAND Hy**	**28.25**	**120**	T	T	09 06 20.7	
	baz=313,slow=75,SNR=138						
H11S1	**WAKE ISLAND Hy**	**28.94**	**122**	T	T	09 07 09.9	
	baz=314,slow=76,SNR=238						
H11S3	**WAKE ISLAND Hy**	**28.94**	**122**	T	T	09 07 08.7	
	baz=314,slow=76,SNR=182						
H11S2	**WAKE ISLAND Hy**	**28.95**	**122**	T	T	09 07 12.2	
	baz=314,slow=76,SNR=186						
CD2	**Chengdu**	**31.43**	**270**	P	**P**	**08 36 41.9**	**-0.4**
CD2				pmax	pmax		
	comp=Z,1.0nm,0.5s						
TIXI	**Tiksi**	**35.50**	**353**	*e*P	**P**	**08 37 16.2**	**-1.0**
TIXI				pmax	pmax		
	comp=Z,2.0nm,0.4s						
TIXI	**Tiksi**	**35.50**	**353**	*e*P	**P**	**08 37 16.2**	**-1.0**
	comp=Z,2.2nm,0.4s						
WMQ	**Urumqi**	**40.73**	**297**	P	**P**	**08 38 02.5**	**+0.9**
WMQ				pP	pP	08 38 12.5	-1.9
WMQ				sP	sP	08 38 16.5	-3.5
WMQ				pmax	pmax		
	comp=Z,5.0nm,0.8s						
WMQ				pmax	pmax		
	comp=Z,43nm,3.6s						
CMAR	**Chiang Mai Arr**	**41.20**	**255**	P	**P**	**08 38 03.9**	**-1.7**
	comp=Z,0.9nm,0.3s,baz=60,slow=4.4,SNR=2.9						
ZAA0	**Zalesovo Array**	**41.90**	**313**	*e*P	**P**	**08 38 10.5**	**-0.5**
ZAA0				*e*P	**P**	**08 38 10.7**	**-0.3**
ZAA0				*e*PcP	**PcP**	**08 40 10.9**	**+5.2**
ZALV	**Zalesovo Beam**	**41.90**	**313**	P	**P**	**08 38 10.3**	**-0.6**
	comp=Z,4.4nm,0.5s,baz=89,slow=7.1,SNR=19						
ZALV				PcP	**PcP**	**08 40 05.3**	**-0.5**
	comp=Z,1.6nm,0.6s,baz=92,slow=2.6,SNR=5.0						
NRIK	**Noril'sk**	**43.39**	**335**	P	**P**	**08 38 22.0**	**-0.8**
	comp=Z,1.6nm,0.4s,baz=47,slow=5.9,SNR=3.6						
NRIK	**Noril'sk**	**43.39**	**335**	P	**P**	**08 38 22.0**	**-0.8**
NRIK				pmax	pmax		
	comp=Z,2.0nm,0.4s						
MK01	**Makanchi Array**	**44.04**	**302**	*e*P	**P**	**08 38 27.8**	**-0.6**
MK31	**Makanchi Array**	**44.04**	**302**	*e*P	**P**	**08 38 28.4**	**0.0**
MK31	**Makanchi Array**	**44.04**	**302**	*e*P	**P**	**08 38 28.4**	**0.0**
MKAR	**Makanchi Array**	**44.04**	**302**	P	**P**	**08 38 28.3**	**-0.1**
	comp=Z,2.3nm,0.7s,baz=88,slow=9.8,SNR=17						
MAKZ	**Makanchi**	**44.25**	**302**	*e*P	**P**	**08 38 30.0**	**-0.1**
MAKZ				pmax	pmax		
	comp=Z,3.0nm,0.8s						
MAKZ	**Makanchi**	**44.25**	**302**	*e*P	**P**	**08 38 30.0**	**-0.1**
	comp=Z,2.5nm,0.8s						
KURK	**Kurchatov**	**45.89**	**308**	*e*P	**P**	**08 38 42.0**	**-1.0**
KURK				pmax	pmax		
	comp=Z,5.0nm,0.9s						
KURK	**Kurchatov**	**45.89**	**308**	*e*P	**P**	**08 38 42.0**	**-1.0**
	comp=Z,4.9nm,0.9s						
MYKOM	**Kota Tinggi**	**48.92**	**233**	*e*PcP	**PcP**	**08 40 34.3**	**+3.5**
MDM	**Murphy Dome**	**49.25**	**32**	*e*P	**P**	**08 39 10.7**	**+1.8**
	comp=Z,6.5nm,1.1s						
TKM2	**Tokmak 2**	**49.53**	**299**	*e*P	**P**	**08 39 12.4**	**+0.8**
TKM2				pmax	pmax		
	comp=Z,3.0nm,0.7s						
TKM2	**Tokmak 2**	**49.53**	**299**	*e*P	**P**	**08 39 12.4**	**+0.8**
	comp=Z,3.4nm,0.7s						
ILAR	**Eielson Array**	**49.83**	**32**	P	**P**	**08 39 13.3**	**0.0**
	comp=Z,1.3nm,0.7s,baz=268,slow=6.3,SNR=16						
ZRNK	**Zerenda**	**51.39**	**313**	*e*P	**P**	**08 39 25.3**	**+0.1**
ZRNK				pmax	pmax		
	comp=Z,4.0nm,1.1s						
ZRNK	**Zerenda**	**51.39**	**313**	*e*P	**P**	**08 39 25.3**	**+0.1**
	comp=Z,4.2nm,1.1s						
KKAR	**Karatay Array**	**53.03**	**300**	*e*P	**P**	**08 39 37.5**	**-0.1**
KKAR	**Karatay Array**	**53.03**	**300**	*e*P	**P**	**08 39 37.5**	**-0.1**
INK	**Inuvik**	**54.72**	**27**	P	**P**	**08 39 50.4**	**+0.9**
	comp=Z,1.9nm,0.6s,baz=300,slow=7.5,SNR=17						
ARU	**Arti**	**56.38**	**319**	*e*P	**P**	**08 40 01.4**	**-0.2**
ARU				pmax	pmax		
	comp=Z,9.0nm,1.0s						
ARU	**Arti**	**56.38**	**319**	*e*P	**P**	**08 40 01.4**	**-0.2**
	comp=Z,9.4nm,1.0s						
WRA	**Warramunga Arr**	**56.79**	**188**	P	**P**	**08 40 04.2**	**-0.6**
	comp=Z,0.8nm,0.5s,baz=5.3,slow=7.4,SNR=20						
ABKAR	**Akbulak array**	**57.91**	**310**	*e*P	**P**	**08 40 12.2**	**-0.3**
ASAR	**Alice Springs**	**60.51**	**188**	P	**P**	**08 40 30.1**	**-0.6**
	comp=Z,0.1nm,0.3s,baz=6.9,slow=6.4,SNR=4.6						
RES	**Resolute Bay**	**62.90**	**14**	P	**P**	**08 40 45.9**	**-0.2**
	comp=Z,1.1nm,0.8s,baz=322,slow=7.3,SNR=5.8						
YKA	**Yellowknife Ar**	**64.14**	**30**	P	**P**	**08 40 54.7**	**+0.2**
	comp=Z,0.5nm,0.7s,baz=306,slow=7.1,SNR=15						
STKA	**Stephens Creek**	**68.31**	**180**	P	**P**	**08 41 21.1**	**-0.4**
	comp=Z,0.6nm,0.4s,baz=343,slow=6.7,SNR=3.0						
FINES	**FINESS Array B**	**68.92**	**332**	P	**P**	**08 41 24.4**	**-0.6**
	comp=Z,1.8nm,0.8s,baz=328,slow=6.8,SNR=5.7						
FINES				LR	LR	09 15 55.1	
	comp=Z,115nm,18.4s,baz=24,slow=40						
KBZ	**Khabaz**	**70.87**	**311**	P	**P**	**08 41 37.6**	**+0.3**
	comp=Z,4.6nm,0.8s,baz=28,slow=2.2,SNR=8.4						
KIV	**Kislovodsk**	**70.88**	**311**	⇓*i*P	**P**	**08 41 38.7**	**+1.2**
KIV				pmax	pmax		
	comp=Z,10.0nm,0.5s						
HFS	**Hagfors**	**74.21**	**336**	P	**P**	**08 41 56.4**	**-0.5**
	comp=Z,1.0nm,0.5s,baz=72,slow=9.7,SNR=4.5						
NB2	**NORSAR Subarra**	**74.32**	**337**	P	**P**	**08 41 57.2**	**-0.3**
	comp=Z,1.3nm,0.6s,baz=41,slow=5.9						
NOA	**NORSAR Array B**	**74.32**	**337**	P	**P**	**08 41 57.3**	**-0.3**
	comp=Z,0.7nm,0.5s,baz=40,slow=5.9,SNR=5.5						
NOA				LR	LR	09 17 28.1	
	comp=Z,27nm,21.0s,baz=75,slow=38						
AKASG	**Malin Array Be**	**74.34**	**322**	P	**P**	**08 41 57.2**	**-0.6**
	comp=Z,1.8nm,0.3s,baz=47,slow=6.0,SNR=9.2						
LRM	**Limekiln Ridge**	**74.49**	**44**	*e*P	**P**	**08 42 00.6**	**+1.5**
DLMT	**Dillon**	**74.69**	**45**	*e*P	**P**	**08 42 01.8**	**+1.7**
	comp=Z,3.6nm,0.8s						
BOZ	**Bozeman (W)**	**75.06**	**44**	*e*P	**P**	**08 42 03.9**	**+1.6**
BOZ				pmax	pmax		
	comp=Z,2.0nm,0.6s						
BOZ	**Bozeman (W)**	**75.06**	**44**	*e*P	**P**	**08 42 03.9**	**+1.6**
	comp=Z,1.9nm,0.6s						
FRB	**Frobisher Bay**	**77.07**	**13**	P	**P**	**08 42 12.7**	**-0.4**
	comp=Z,1.9nm,0.8s,baz=301,slow=3.9,SNR=4.6						
BW06	**Boulder Array**	**78.01**	**45**	*e*P	**P**	**08 42 19.3**	**+0.2**
PDAR	**Pinedale Array**	**78.01**	**45**	P	**P**	**08 42 19.3**	**+0.1**
	comp=Z,0.7nm,0.6s,baz=257,slow=2.5,SNR=10						
BRTR	**Keskin Array B**	**78.83**	**311**	P	**P**	**08 42 23.8**	**+0.2**
	comp=Z,1.2nm,0.8s,baz=120,slow=4.4,SNR=4.5						
SRU	**San Rafael Swe**	**79.76**	**49**	*e*P	**P**	**08 42 30.2**	**+1.5**
SRU				pmax	pmax		
	comp=Z,3.0nm,0.7s						
SRU	**San Rafael Swe**	**79.76**	**49**	*e*P	**P**	**08 42 30.2**	**+1.5**
	comp=Z,2.9nm,0.7s						
GERES	**GERESS Array B**	**82.79**	**328**	P	**P**	**08 42 43.6**	**-0.9**
	comp=Z,1.0nm,0.5s,baz=18,slow=4.8,SNR=6.2						
TXAR	**Lajitas Array**	**90.47**	**52**	P	**P**	**08 43 22.3**	**-0.1**
	comp=Z,0.5nm,0.7s,baz=295,slow=2.8,SNR=9.7						
TORD	**Torodi Ar. Bea**	**117.33**	**314**	PKP	**PKPdf**	**08 49 05.0**	**-1.2**
	comp=Z,0.2nm,0.4s,baz=242,slow=3.1,SNR=2.8						
LPAZ	**La Paz**	**147.03**	**60**	PKPbc	**PKPbc**	**08 50 04.5**	**+0.3**
	comp=Z,1.8nm,0.7s,baz=354,slow=3.0,SNR=11						
LPAZ				pPKPbc	**pPKPbc**	**08 50 20.7**	**+2.1**
	comp=Z,1.7nm,0.7s,baz=38,slow=10,SNR=5.9						

MOS ***20*** *08:35:09.5±1.3, 30°21S×177°99W, h33km, mb5.1/20, Error ellipse: s-maj=12.3km s-min=9.8km az=58.3*

ISCJB ***20*** *08:35:11.6±0.2, 30°65S±0°03×178°02W±0°05, h61km, mb5.0/49, Error ellipse: s-maj=7.2km s-min=2.5km az=26.6*

BJI ***20*** *08:35:12.0, 30°65S×177°95W, h61km, mb5.3/17, mB5.3/14, Ms5.2/6, Ms7 4.9/4*

IDC ***20*** *08:35:13.3±0.5, 29°95S×178°02W, h61km±4km, mb4.3/18, mb1 4.5/19, mb1mx4.4/39, mbtmp4.6/19, MS3.7/23, Ms1 3.7/23, ms1mx3.7/32, Error ellipse: s-maj=15.2km s-min=8.1km az=94.0*

NEIC ***20*** *08:35:13.6±0.2, 30°16S×178°08W, mb5.0/23, Error ellipse: s-maj=8.8km s-min=5.3km az=137.0*

ISC 20 08:35:11.2±0.3, 30°48S±0°05×177°99W±0°07, h43km±2km, h43km:pP-P, n290, σ1s71/330, mb5.1/48, MS3.8/23, 11C-4D, Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**1.22**	**3**	P	Pn	08 35 27.8	-3.9
	2μm,0.3s,baz=110,slow=7.0,SNR=75						
RAO				S	Sn	08 35 39.3	-7.8
	10μm,0.3s,baz=102,slow=20,SNR=36						
RAO	**Raoul Island**	**1.22**	**3**	*e*P	Pn	08 35 27.8	-4.0
RAO				*e*		08 35 40.5	
RAO	**Raoul Island**	**1.22**	**3**	*e*Pn	Pn	08 35 27.8	-4.0
RAO				*e*Sn	Sn	08 35 40.5	-6.6
MXZ	**Matakaoa Point**	**7.71**	**203**	*e*PN	**Pn**	**08 36 59.5**	**-1.2**
MXZ				SN	**Sn**	**08 38 30.9**	**+4.2**
WMGZ	**Waiomatatini S**	**7.91**	**201**	PN	**Pn**	**08 37 02.8**	**-0.8**
WMGZ				SN	**Sn**	**08 38 37.1**	**+5.4**
HAZ	**Te Kaha**	**8.06**	**205**	PN	**Pn**	**08 37 05.0**	**-0.6**
HAZ				SN	Sn	08 38 41.3	+5.9
PKGZ	**Pakihiroa**	**8.08**	**203**	*e*PN	**Pn**	**08 37 04.7**	**-1.3**
PKGZ				*e*SN	**Sn**	**08 38 40.4**	**+4.4**
PUZ	**Puketiti**	**8.19**	**201**	*e*PN	**Pn**	**08 37 05.9**	**-1.5**
PUZ				SN	**Sn**	**08 38 37.3**	**-1.3**
TWGZ	**Tauwhareparae**	**8.37**	**202**	*e*PN	**Pn**	**08 37 09.3**	**-0.7**
TWGZ				SN	**Sn**	**08 38 43.6**	**+0.4**
WCZ	**Waipu Caves**	**8.42**	**228**	*e*PN	Pn	08 37 18.5	+8.0
OUZ	**Omahuta**	**8.51**	**234**	PN	Pn	08 37 21.0	+9.2
OUZ	**Omahuta**	**8.51**	**234**	*e*Pn	Pn	08 37 21.3	+9.4
CNGZ	**Carnagh Statio**	**8.58**	**200**	*e*PN	**Pn**	**08 37 12.0**	**-0.8**
TKGZ	**Te Karaka**	**8.65**	**202**	SN	**Sn**	**08 38 51.0**	**+1.0**
MWZ	**Matawai**	**8.67**	**204**	PN	**Pn**	**08 37 12.3**	**-1.7**
MWZ				SN	**Sn**	**08 38 52.8**	**+2.4**
URZ	**Urewera**	**8.76**	**206**	P	**Pn**	**08 37 13.7**	**-1.4**
	1.3nm,0.3s,baz=257,slow=3.0,SNR=16						
URZ				S	**Sn**	**08 38 54.8**	**+2.3**
	15nm,0.3s,baz=228,slow=22,SNR=15						
URZ	**Urewera**	**8.76**	**206**	PN	**Pn**	**08 37 13.5**	**-1.7**
URZ				SN	**Sn**	**08 38 55.4**	**+3.0**
URZ	**Urewera**	**8.76**	**206**	P	**Pn**	**08 37 13.7**	**-1.4**
URZ				*e*Pn	Pn	08 37 20.4	+5.3
URZ				S	**Sn**	**08 38 54.8**	**+2.3**
RIGZ	**Rimuhau**	**8.93**	**202**	PN	**Pn**	**08 37 16.1**	**-1.4**
RIGZ				SN	**Sn**	**08 38 59.0**	**+2.3**
SNGZ	**Shannon Statio**	**9.13**	**204**	PN	**Pn**	**08 37 18.6**	**-1.7**
SNGZ				SN	**Sn**	**08 39 03.3**	**+1.4**
KNZ	**Kokohu**	**9.24**	**202**	SN	**Sn**	**08 39 02.9**	**-1.5**
MHGZ	**Mahia Peninsul**	**9.29**	**200**	*e*PN	**Pn**	**08 37 21.2**	**-1.3**
MHGZ				*e*SN	**Sn**	**08 39 08.5**	**+2.9**
NMHZ	**Naumai**	**9.61**	**205**	PN	**Pn**	**08 37 24.4**	**-2.5**
BKZ	**Black Stump Fm**	**9.78**	**206**	*e*PN	**Pn**	**08 37 26.2**	**-3.0**
BKZ				SN	**Sn**	**08 39 17.6**	**-0.2**
BKZ	**Black Stump Fm**	**9.78**	**206**	*e*Pn	Pn	08 37 34.6	+5.4
BKZ				*e*Sn	**Sn**	**08 39 20.9**	**+3.2**
KWHZ	**Kaweka Forest**	**10.03**	**206**	*e*PN	Pn	08 37 29.2	-3.5
KAHZ	**Kahuranaki**	**10.20**	**203**	*e*PN	Pn	08 37 31.4	-3.6
BHHZ	**Black Hill Sta**	**10.23**	**207**	SN	**Sn**	**08 39 29.0**	**+0.3**
POWZ	**Post Office Ro**	**11.12**	**206**	SN	**Sn**	**08 39 47.7**	**-2.8**
BFZ	**Birch Farm**	**11.21**	**203**	*e*PN	Pn	08 37 43.8	-4.9
BFZ				SN	**Sn**	**08 39 49.0**	**-3.6**
TIWZ	**Tintock**	**11.42**	**204**	SN	**Sn**	**08 39 53.4**	**-4.4**
MRZ	**Mangatainoka R**	**11.43**	**205**	*e*PN	Pn	08 37 46.8	-5.0
MRZ				SN	**Sn**	**08 39 53.5**	**-4.5**
HOWZ	**Holdsworth Sta**	**11.66**	**205**	SN	**Sn**	**08 39 58.0**	**-5.6**
TMWZ	**Te Maipa**	**11.71**	**203**	SN	**Sn**	**08 40 00.2**	**-4.7**
KIW	**Kapiti Island**	**11.86**	**207**	SN	**Sn**	**08 40 04.3**	**-4.2**
PAWZ	**Paruwai Farm**	**12.12**	**204**	SN	**Sn**	**08 40 10.7**	**-4.1**
MSWZ	**Moikau Station**	**12.21**	**205**	SN	**Sn**	**08 40 11.5**	**-5.6**
PLWZ	**Palliser**	**12.34**	**204**	SN	**Sn**	**08 40 14.6**	**-5.7**
TCW	**Tory Channel**	**12.41**	**208**	SN	**Sn**	**08 40 17.1**	**-4.8**
NNZ	**Nelson**	**12.79**	**211**	*e*PN	P	08 38 15.5	-4.9
CTZ	**Chatham Island**	**13.28**	**176**	PN	**Pn**	**08 38 17.7**	**+0.7**
CTZ				SN	Sn	08 40 35.1	-8.1
THZ	**Tophouse**	**13.44**	**211**	*e*PN	Pn	08 38 14.9	-4.4
THZ				SN	Sn	08 40 41.1	-6.2
THZ	**Tophouse**	**13.44**	**211**	*e*Pn	P	08 38 30.9	+3.2
KHZ	**Kahutara**	**13.72**	**207**	*e*PN	**Pn**	**08 38 20.1**	**-2.8**
KHZ				SN	Sn	08 40 44.5	-9.3
KHZ	**Kahutara**	**13.72**	**207**	*e*Pn	**P**	**08 38 27.9**	**-2.8**
LTZ	**Lake Taylor**	**14.55**	**210**	*e*PN	**Pn**	**08 38 34.7**	**+0.5**
LTZ				SN	Sn	08 41 04.1	-10
INZ	**Inchbonnie**	**14.87**	**212**	*e*PN	**Pn**	**08 38 36.5**	**-1.8**
OXZ	**Oxford**	**15.09**	**209**	*e*PN	**Pn**	**08 38 38.5**	**-2.9**
OXZ				SN	Sn	08 41 15.3	-12
OXZ	**Oxford**	**15.09**	**209**	*e*Pn	**P**	**08 38 45.1**	**-0.8**
	27nm,0.5s						
MQZ	**McQueen's Vall**	**15.15**	**207**	SN	Sn	08 41 17.6	-11
RPZ	**Rata Peaks**	**15.82**	**210**	P	**Pn**	**08 38 47.0**	**-3.9**
	1.4nm,0.3s,baz=24,slow=20,SNR=7.5						
RPZ				S	Sn	08 41 35.6	-10
	2.2nm,0.3s,baz=308,slow=23,SNR=8.0						
RPZ	**Rata Peaks**	**15.82**	**210**	P	**Pn**	**08 38 47.0**	**-3.9**
RPZ				*e*Pn	**P**	**08 38 52.4**	**-1.7**
RPZ				S	Sn	08 41 35.6	-10
DZM	**Mont Dzumac**	**16.27**	**297**	P	**P**	**08 39 03.2**	**+4.0**
	0.3nm,0.3s,baz=102,slow=13,SNR=6.6						
DZM				LR	LR	08 43 58.4	
	comp=Z,624nm,20.1s,baz=84,slow=33						
JCZ	**Jackson Bay**	**17.14**	**214**	PN	**Pn**	**08 39 06.9**	**-0.6**
AFI	**Afiamalu**	**17.45**	**21**	P	Pn	08 39 02.0	-10
	1.1nm,0.3s,baz=10.0,slow=19,SNR=3.2						
AFI				S	Sn	08 42 01.6	-23
	1.2nm,0.3s,baz=176,slow=19,SNR=2.8						
AFI	**Afiamalu**	**17.45**	**21**	P	Pn	08 39 02.0	-10
RAR	**Rarotonga**	**18.79**	**65**	P	**P**	**08 39 24.4**	**-2.6**
	3.5nm,0.3s,baz=242,slow=9.6,SNR=8.6						
RAR				S	Sn	08 42 36.5	-21
	1.6nm,0.3s,baz=212,slow=19,SNR=4.8						
RAR				LR	LR	08 44 19.6	
	comp=Z,340nm,21.9s,baz=279,slow=29						
ARMA	**Armidale**	**26.16**	**262**	*e*P	**P**	**08 40 46.0**	**+4.4**
	14nm,1.1s						
CAN	**Canberra**	**28.06**	**251**	*e*P	**P**	**08 41 01.0**	**+2.4**
CAN				pmax	pmax		
	comp=Z,17nm,0.9s						
CAN	**Canberra**	**28.06**	**251**	*e*P	**P**	**08 41 01.0**	**+2.4**
	comp=Z,17nm,0.9s						
PAE	**Paea**	**28.81**	**70**	*e*T	T	09 11 03.4	
	comp=Z,16nm,0.3s						
PPT2	**Papeete2**	**28.85**	**70**	*e*LR	LR	08 48 16.3	
	comp=Z,611nm,27.5s						
PPT2	**Papeete2**	**28.85**	**70**	*e*T	T	09 11 07.6	
	comp=Z,8.2nm,0.2s						
PPT	**Papeete**	**28.87**	**70**	LR	LR	08 49 25.6	
	comp=Z,144nm,21.8s,baz=212,slow=30						
TVO	**Taravao**	**29.02**	**71**	*e*T	T	09 11 19.9	
	comp=Z,4.3nm,0.3s						
HNR	**Honiara**	**29.36**	**311**	LR	LR	08 51 05.9	
	comp=Z,90nm,20.8s,baz=162,slow=33						
MEH	**Mehetia**	**29.94**	**72**	*e*T	T	09 12 30.2	
	comp=Z,39nm,0.2s						
PMOR	**Pomariorio Ree**	**31.61**	**68**	*e*T	T	09 14 31.8	
	comp=Z,8.0nm,0.3s						
VAH	**Vaihoa**	**31.69**	**68**	*e*T	T	09 14 37.8	
	comp=Z,92nm,0.2s						
CTAO	**Charters Tower**	**33.82**	**279**	*e*P	**P**	**08 41 50.9**	**+1.5**
CTAO				pmax	pmax		
	comp=Z,20nm,0.6s						
CTAO	**Charters Tower**	**33.82**	**279**	*e*P	**P**	**08 41 50.9**	**+1.5**
	comp=Z,20nm,0.6s						
STKA	**Stephens Creek**	**34.47**	**257**	P	**P**	**08 41 56.8**	**+1.8**
	comp=Z,30nm,0.6s,baz=102,slow=10,SNR=73						
STKA				LR	LR	08 54 59.5	
	comp=Z,257nm,18.5s,baz=76,slow=34				

KSAR **Wonju Array Be** 84.42 320 P P 08 47 38.6 -0.4
KSAR **Wonju Array Be** 84.42 320 P P 08 47 38.6 -0.4
YSS **Yuzh-Sakhalins** 84.82 334 *e*P P 08 47 43.2 +2.5
YSS *e* 08 47 53.5
YSS pmax pmax
comp=Z,20nm,0.8s
YSS **Yuzh-Sakhalins** 84.82 334 *e*P P 08 47 41.6 +0.9
comp=Z,19nm,0.8s
PET **Petropavlovsk** 85.61 346 *e*P P 08 47 47.1 +2.6
PET pmax pmax
comp=Z,47nm,1.4s
ARVC **Arvin** 85.77 45 P P 08 47 46.2 +0.4
baz=228
MURC **Murrieta** 85.78 47 P P 08 47 46.5 +0.6
baz=229
PETK **Petropavlovsk-** 85.89 346 P P 08 47 44.7 -1.2
comp=Z,12nm,0.8s,baz=107,slow=8.4,SNR=21
PETK LR LR 09 19 17.1
comp=Z,42nm,21.6s,baz=172,slow=31
BFSC **Mount Baldy Ra** 85.91 46 P P 08 47 46.5 -0.2
baz=229
EDW2 **Edwards Air Fo** 86.12 46 P P 08 47 47.6 0.0
baz=229
PFO **Pinyon Flats O** 86.25 47 P P 08 47 47.9 -0.5
comp=Z,2.1nm,0.7s,baz=263,slow=1.0,SNR=4.6
PFO pP sP 08 48 06.2 0.0
comp=Z,3.5nm,0.7s,baz=260,slow=4.8,SNR=4.4
PFO **Pinyon Flats O** 86.25 47 P P 08 47 48.7 +0.4
baz=230
NJ2 **Nanjing** 86.30 311 *e*P P 08 47 51.5 +3.0
NJ2 pmax pmax
comp=Z,24nm,0.5s
ISA **Isabella, Lake** 86.34 45 P P 08 47 48.7 -0.1
baz=228
ISA **Isabella, Lake** 86.34 45 *e*P P 08 47 48.9 +0.2
ISA pmax pmax
comp=Z,14nm,0.8s
ISA **Isabella, Lake** 86.34 45 *e*P P 08 47 48.9 +0.2
comp=Z,14nm,0.8s
ROC1 **El Roble** 86.47 126 *e*P P 08 47 50.8 +0.9
comp=Z,15nm,0.9s
SDPT **Sand Point** 86.79 10 *e*P P 08 47 49.5 -0.8
comp=Z,52nm,0.9s
BELC **Belle Mtn. Jos** 86.79 47 P P 08 47 51.4 +0.3
baz=230
CMB **Columbia Colle** 86.81 42 *e*P P 08 47 50.8 -0.1
CMB pmax pmax
comp=Z,11nm,0.9s
CMB **Columbia Colle** 86.81 42 *e*P P 08 47 50.8 -0.1
comp=Z,11nm,0.9s
GLA **Glamis** 86.94 49 P P 08 47 52.3 +0.6
baz=231
GSC **Goldstone, Bar** 87.13 46 P P 08 47 52.9 +0.3
baz=229
GSC **Goldstone, Bar** 87.13 46 *e*P P 08 47 53.0 +0.4
GSC *e**PP sP 08 48 10.4 0.0
GSC **Goldstone, Bar** 87.13 46 *e*P P 08 47 53.0 +0.4
GSC *e*pP sP 08 48 10.4 0.0
MPMC **Manual Prospec** 87.21 45 P P 08 47 53.0 -0.1
baz=229
ORV **Oroville** 87.22 40 *e*P P 08 47 52.7 -0.1
ORV *e**PP sP 08 48 10.1 -0.6
ORV **Oroville** 87.22 40 *e*P P 08 47 52.7 -0.1
ORV *e*pP sP 08 48 10.1 -0.6
USRK **Ussuriysk Ar.** 87.23 327 P P 08 47 51.7 -1.0
comp=Z,3.1nm,0.8s,baz=153,slow=5.3,SNR=7.9
DAC **Darwin (Calif)** 87.29 45 *e*P P 08 47 53.7 +0.2
DAC pmax pmax
comp=Z,6.0nm,1.1s
DAC **Darwin (Calif)** 87.29 45 *e*P P 08 47 53.7 +0.2
comp=Z,6.3nm,1.1s
WDC **Whiskeytown Da** 87.37 39 *e*P P 08 47 53.3 -0.2
WDC *e**PP sP 08 48 11.0 -0.3
WDC **Whiskeytown Da** 87.37 39 *e*P P 08 47 53.3 -0.2
WDC *e*pP sP 08 48 11.0 -0.3
IRM **Iron Mountain** 87.44 48 P P 08 47 54.6 +0.6
baz=230
GMRC **Granite Mounta** 87.51 47 P P 08 47 54.6 +0.1
baz=230
214A **Organ Pipe Nat** 87.58 51 P P 08 47 55.6 +0.8
baz=232
TUQ **Turquoise Moun** 87.77 46 P P 08 47 56.4 +0.7
baz=230
SHOC **Shoshone, Teco** 87.85 46 P P 08 47 56.4 +0.5
baz=230
CHGN **Chignik** 88.03 11 *e*P P 08 47 55.3 -0.9
YBH **Yreka Blue Hor** 88.08 38 pP pP 08 48 14.2 +4.2
comp=Z,4.2nm,0.8s,baz=90,slow=1.4,SNR=4.6
PDMCI **Parker Dam,Lak** 88.17 48 P P 08 47 58.2 +0.8
baz=231
NV01 **Mina Array Sit** 88.29 43 *e*P P 08 47 57.5 -0.7
NVAR **Mina Array Bea** 88.29 43 P P 08 47 57.6 -0.6
comp=Z,3.5nm,0.7s,baz=221,slow=8.2,SNR=33
NVAR pP sP 08 48 15.3 -0.8
comp=Z,7.0nm,0.8s,baz=230,slow=8.0,SNR=18
NVAR LR LR 09 23 21.6
comp=Z,65nm,18.2s,baz=238,slow=33
TPNV **Topopah Spring** 88.54 45 P P 08 47 59.5 +0.1
baz=230
TPNV **Topopah Spring** 88.54 45 *e*P P 08 47 59.8 +0.4
TPNV *e**PP sP 08 48 16.8 -0.5
TPNV **Topopah Spring** 88.54 45 *e*P P 08 47 59.8 +0.4
TPNV *e*pP sP 08 48 16.8 -0.5
Y14A **Wickenburg** 88.68 49 *e*P P 08 48 00.8 +0.8
MDJ **Mudanjiang** 88.69 326 P P 08 48 01.4 +1.7
MDJ pmax pmax
comp=Z,7.0nm,0.8s
MDJ pmax pmax
comp=Z,140nm,5.4s
TUC **Tucson** 89.15 51 P P 08 48 03.3 +1.0
baz=233
TUC **Tucson** 89.15 51 *e*P P 08 48 03.2 +1.0
TUC pmax pmax
comp=Z,36nm,1.6s
TUC **Tucson** 89.15 51 *e*P P 08 48 03.2 +0.9
comp=Z,36nm,1.6s
MOD **Modoc Plateau** 89.50 39 *e*P P 08 48 03.4 -0.4
MOD *e*pP sP 08 48 20.9 -0.7
319A **Douglas** 89.62 53 *e*P P 08 48 05.5 +1.0
319A *e*pP sP 08 48 23.2 +0.8
HPIG 89.62 58 *e*P P 08 48 04.1 -0.6
HPIG *e*pP sP 08 48 22.5 -0.2
J05D **Fort Rock, OR** 89.95 38 P P 08 48 05.8 0.0
baz=226
CN2 **Changchun** 90.21 323 *e*P P 08 48 09.8 +3.0
CN2 *e*sP sP 08 48 33.8 +9.1
CN2 *e*S S 08 58 55.9 -1.3
CN2 pmax pmax
comp=Z,10.0nm,0.7s
CN2 pmax pmax
comp=Z,200nm,3.0s
CN2 LR LR
comp=Z,400nm,17.0s
CN2 LR LR
comp=Z,500nm,17.0s
CN2 LR LR
comp=Z,300nm,19.0s
BMN **Battle Mountai** 90.24 42 *e*P P 08 48 06.5 -0.7
BMN *e**PP sP 08 48 24.6 -0.5
BMN **Battle Mountai** 90.24 42 *e*P P 08 48 06.5 -0.7
BMN *e*pP sP 08 48 24.6 -0.5
H04A **Detroit Lake** 90.43 36 *e*P P 08 48 07.4 -0.5
H04A *e*pP sP 08 48 24.8 -1.0
LCMT **Little Creek M** 90.44 46 *e*P P 08 48 08.8 +0.6
LCMT *e*pP sP 08 48 26.2 0.0
I05D **Terrebonne, OR** 90.62 37 P P 08 48 08.9 0.0
baz=226
KNB **Kanab** 90.70 47 *e*P P 08 48 10.3 +0.8
KNB *e**PP pP 08 48 19.8 -2.8
KNB **Kanab** 90.70 47 *e*P P 08 48 10.3 +0.8
KNB *e*pP pP 08 48 19.8 -2.8
WUAZ **Wupatki** 90.71 48 P P 08 48 10.3 +0.8
baz=233
WUAZ **Wupatki** 90.71 48 *e*P P 08 48 10.4 +0.9
WUAZ *e*pP sP 08 48 27.6 +0.2
WVOR **Wild Horse Val** 90.77 40 *e*P P 08 48 09.8 +0.2
WVOR *e**PP sP 08 48 26.5 -1.0
WVOR **Wild Horse Val** 90.77 40 *e*P P 08 48 09.8 +0.2
WVOR *e*pP sP 08 48 26.5 -1.0
X18A **Snowflake** 91.04 50 *e*P P 08 48 12.1 +0.9
X18A *e*pP sP 08 48 29.1 +0.1
KLR **Kul'dur** 91.11 330 P P 08 48 09.8 -1.0
comp=Z,4.0nm,0.7s,baz=131,slow=3.2,SNR=16
GYA **Guiyang** 91.60 300 *e*P P 08 48 15.3 +1.5
GYA pP sP 08 48 32.4 +0.7
GYA sP pP 08 48 40.8 +14
GYA PP PP 08 51 56.8 +3.9
GYA SKS SKSac 08 58 41.0 -2.2
GYA S S 08 59 07.6 -3.4
GYA pmax pmax
comp=Z,20nm,1.0s
GYA pmax pmax
comp=Z,120nm,6.2s
G06A **Carlson Farm,** 91.61 37 *e*P P 08 48 13.0 -0.3
G06A *e*pP sP 08 48 30.6 -0.6
MTPU **Mount Pierson** 91.74 46 *e*P P 08 48 15.4 +0.8
MTPU *e*pP sP 08 48 33.3 +0.8
MSU **Marysvale** 92.03 46 *e*P P 08 48 15.5 -0.2
MSU *e**PP sP 08 48 34.0 +0.4
MSU **Marysvale** 92.03 46 *e*P P 08 48 15.4 -0.2
MSU *e*pP sP 08 48 34.0 +0.4
D05A **Enumclaw** 92.28 34 *e*P P 08 48 16.8 +0.5
D05A *e*pP sP 08 48 34.6 +0.4
TX31 **Lajitas Ar. Si** 92.42 57 *e*P P 08 48 17.0 -0.6
TX31 *e*P PcP 08 48 18.2 -0.1
TX31 *e*pP sP 08 48 35.0 -0.4
TXAR **Lajitas Array** 92.42 57 P P 08 48 16.8 -0.8
comp=Z,0.9nm,0.9s,baz=212,slow=6.9,SNR=9.3
TXAR pP sP 08 48 35.4 -0.1
comp=Z,2.2nm,0.9s,baz=207,slow=5.1,SNR=10
TXAR LR LR 09 20 23.0
comp=Z,28nm,21.2s,baz=0.0,slow=29
MNTX **Cornudas Mount** 92.52 55 P P 08 48 17.9 +0.1
baz=236
MNTX **Cornudas Mount** 92.52 55 *e*P P 08 48 17.7 -0.2
MNTX *e*pP sP 08 48 35.6 -0.2
MFID **Camas Ranch** 92.97 40 *e*P P 08 48 19.6 -0.2
MFID *e*pP sP 08 48 36.5 -1.2
TMUT **Trail Mountain** 93.11 46 *e*P P 08 48 21.3 +0.5
comp=Z,5.2nm,0.7s
SRU **San Rafael Swe** 93.42 46 *e*P P 08 48 21.9 -0.2
SRU *e**PP sP 08 48 39.9 -0.1
SRU **San Rafael Swe** 93.42 46 *e*P P 08 48 21.9 -0.2
SRU *e*pP sP 08 48 39.9 -0.1
CMAR **Chiang Mai Arr** 93.43 289 LR LR 09 32 02.8
comp=Z,22nm,19.8s,baz=184,slow=37
CMAR **Chiang Mai Arr** 93.43 289 *ce*P P 08 48 22.0 -0.4
CMAR pmax pmax
comp=Z,2.0nm,0.3s
SPUT **South Promonto** 93.59 43 *e*P P 08 48 22.3 -0.5
SPUT *e*pP sP 08 48 40.7 0.0
ANMO **Albuquerque** 93.62 51 P P 08 48 23.2 +0.1
baz=235
ANMO **Albuquerque** 93.62 51 *e*P P 08 48 22.4 -0.7
ANMO pmax pmax
comp=Z,4.0nm,2.5s
ANMO **Albuquerque** 93.62 51 *e*P P 08 48 22.8 -0.3
ANMO *e*pP sP 08 48 40.8 -0.2
HVU **Hansel Valley** 93.68 43 *e*P P 08 48 23.2 0.0
HVU *e**PP sP 08 48 40.4 -0.7
HVU **Hansel Valley** 93.68 43 *e*P P 08 48 23.2 0.0
HVU *e*pP sP 08 48 40.4 -0.7
HLID **Hailey** 93.86 41 P P 08 48 24.2 +0.3
baz=231
HLID **Hailey** 93.86 41 *e*P P 08 48 23.9 -0.1
HLID *e*pP sP 08 48 41.4 -0.4
KMI **Kunming** 93.86 297 P P 08 48 23.8 -0.7
KMI pmax pmax
comp=Z,13nm,0.9s
KMI pmax pmax
comp=Z,130nm,4.6s
GAMB **Gambell** 94.06 3 *e*P P 08 48 23.8 -0.2
comp=Z,5.8nm,0.4s
BMRM **Bremner River** 95.10 16 *e*P P 08 48 29.2 +0.1
BMRM *e*pP pP 08 48 43.4 +1.3
KLU **Klutina** 95.27 15 *e*P P 08 48 28.6 -1.2
KLU *e*pP pP 08 48 41.9 -1.0
MCMT **McKenzie Canyo** 95.53 40 *e*P P 08 48 31.4 -0.3
MCMT *e*pP sP 08 48 49.0 -0.5
SNOW **Snow King Moun** 95.89 42 *e*P P 08 48 33.2 -0.2
comp=Z,4.5nm,0.8s
DLMT **Dillon** 96.00 40 *e*P P 08 48 33.0 -0.7
SEY **Seymchan** 96.05 347 P P 08 48 31.4 -1.8
comp=Z,1.7nm,0.7s,baz=140,slow=5.7,SNR=5.4
SEY **Seymchan** 96.05 347 *e*P P 08 48 33.4 +0.2
CD2 **Chengdu** 96.14 302 P P 08 48 34.5 0.0
CD2 pmax pmax
comp=Z,3.0nm,0.5s
TRF **Thorofare Moun** 96.16 12 *e*P P 08 48 33.6 -0.3
TRF *e*pP sP 08 48 49.7 -2.2
BW06 **Boulder Array** 96.18 44 *e*P P 08 48 33.5 -1.2
BW06 *e*pP sP 08 48 50.8 -1.8
BW06 *e*PP PP 08 52 31.9 +3.3
PDAR **Pinedale Array** 96.18 44 P P 08 48 33.5 -1.1
comp=Z,0.5nm,0.8s,baz=211,slow=2.6,SNR=5.6
PDAR pP sP 08 48 51.1 -1.5
comp=Z,0.8nm,0.8s,baz=198,slow=2.7,SNR=6.9
PDAR LR LR 09 27 39.7
comp=Z,44nm,18.1s,baz=254,slow=33
HHC **Hu-ho-hao-te** 96.29 314 *e*P P 08 48 36.6 +1.5
HHC pmax pmax
comp=Z,29nm,1.2s
HHC pmax pmax
comp=Z,110nm,7.4s
FLWY **Flagg Ranch** 96.30 42 *e*P P 08 48 34.9 -0.3
FLWY *e*pP sP 08 48 52.8 -0.3
FLWY *e*PP PP 08 52 34.8 +5.4
RND **Reindeer** 96.39 13 *e*P P 08 48 33.6 -1.3
RND pmax pmax
comp=Z,18nm,1.6s
RND **Reindeer** 96.39 13 *e*P P 08 48 33.6 -1.3
comp=Z,18nm,1.6s
WRH **Wood River Hil** 97.50 13 *e*P P 08 48 38.7 -1.1
WRH *e*pP sP 08 48 55.5 -2.1
DOT **Dot Lake** 97.58 15 *e*P P 08 48 39.1 -1.1
DOT *e*pP pP 08 48 55.0 +1.7
ILAR **Eielson Array** 98.00 13 P P 08 48 40.2 -1.8
comp=Z,0.9nm,0.8s,baz=216,slow=6.0,SNR=12
ILAR pP pP 08 48 57.3 +2.2
comp=Z,1.3nm,0.7s,baz=225,slow=5.4,SNR=8.7
ILAR LR LR 09 31 10.4
comp=Z,25nm,19.1s,baz=195,slow=34
LPAZ **La Paz** 98.11 114 P Pdif 08 48 44.7 +0.1
comp=Z,0.4nm,0.6s,baz=240,slow=7.9,SNR=3.6
LPAZ LR LR 09 26 12.0
comp=Z,16nm,18.4s,baz=190,slow=31
LZH **Lanzhou** 98.77 307 *e*P Pdif 08 48 47.8 +1.3
LZH pP pP 08 49 06.5 +7.0
LZH sP sP 08 49 12.6 +8.2
LZH pmax pmax
comp=Z,15nm,1.0s
BILL **Bilibino** 98.92 354 *e*P Pdif 08 48 47.3 +1.2
BILL pmax pmax
comp=Z,1.0nm,0.9s
YKA **Yellowknife Ar** 105.51 26 PKiKP PKiKP 08 53 26.9 -1.8
comp=Z,0.2nm,0.6s,baz=266,slow=1.3,SNR=9.1
YKA PKKPbc PKKPbc 09 04 53.5 -1.9
comp=Z,0.7nm,0.8s,baz=38,slow=3.1,SNR=14
WMQ **Urumqi** 113.28 308 *e*PKP 08 53 44.3
WMQ LR LR
comp=Z,17nm,22.2s
WMQ LR LR
comp=Z,51nm,22.2s
BOSA **Boshof** 117.19 203 PKP PKPdf 08 53 51.9 -0.3
comp=Z,1.7nm,0.6s,baz=49,slow=2.0,SNR=4.2
RES **Resolute Bay** 117.31 17 PKP PKPdf 08 53 49.2 -1.5
comp=Z,1.2nm,0.8s,baz=164,slow=2.3,SNR=5.4
MKAR **Makanchi Array** 117.83 310 PKP PKPdf 08 53 50.7 -1.9
comp=Z,1.4nm,0.6s,baz=90,slow=1.6,SNR=8.6
MKAR **Makanchi Array** 117.83 310 *c* iPKIKP PKPdf 08 53 51.2 -1.4
MKAR pmax pmax
comp=Z,1.0nm,0.6s
ZALV **Zalesovo Beam** 118.09 318 PKP PKPdf 08 53 51.0 -1.8
comp=Z,0.9nm,0.4s,baz=153,slow=1.0,SNR=3.9
ZALV **Zalesovo Beam** 118.09 318 PKIKP PKPdf 08 53 51.0 -1.8
KSH **Kashi** 120.29 301 *e*PKP PKPdf 08 54 00.8 +3.1
KSH *e*PP PP 08 55 26.3 +1.9
KSH SKKS 09 02 15.0
KSH AMB AMB
comp=Z,40nm,3.8s
KSH LR LR
comp=Z,59nm,6.0s
KSH LR LR
comp=Z,85nm,5.7s
KURK **Kurchatov** 121.11 314 *i* PKIKP PKPdf 08 54 00.7 +2.0
TKM2 **Tokmak 2** 121.44 304 *e*PKIKP PKPdf 08 53 58.5 -1.4
TKM2 **Tokmak 2** 121.44 304 *e*PKPdf PKPdf 08 53 58.5 -1.4
AAK **Ala-Archa** 122.16 304 ⇓ iPKIKP PKPdf 08 54 00.0 -1.2
AAK **Ala-Archa** 122.16 304 *e*PKPdf PKPdf 08 53 59.8 -1.4
EKS2 **Erkin-Say** 122.68 304 *e*PKIKP PKPdf 08 54 01.3 -0.9
EKS2 **Erkin-Say** 122.68 304 *e*PKPdf PKPdf 08 54 01.3 -0.9
KKAR **Karatay Array** 125.12 304 *e*PKIKP PKPdf 08 54 05.5 -1.2
KKAR **Karatay Array** 125.12 304 *e*PKPdf PKPdf 08 54 05.5 -1.2
SCHQ **Schefferville** 126.29 42 PKP PKPdf 08 54 06.9 -1.6
comp=Z,4.9nm,0.9s,baz=35,slow=8.0,SNR=3.7
BRVK **Borovoye** 126.53 316 *i* PKIKP PKPdf 08 54 10.7 +1.7
LSZ **Lusaka** 128.00 213 *e*PKIKP PKPdf 08 54 13.7 +0.5
LSZ **Lusaka** 128.00 213 *e*PKPdf PKPdf 08 54 13.7 +0.5
ABKAR **Akbulak array** 132.97 311 *e*PKPdf PKPdf 08 54 21.2 -0.1
ARU **Arti** 133.15 321 *i* PKIKP PKPdf 08 54 23.9 +2.4
ARU 08 56 46.3
GEYT **Alibeck** 133.60 295 PKP PKPdf 08 54 23.1 0.0
comp=Z,4.6nm,0.4s,baz=297,slow=0.3,SNR=3.6
KMBO **Kilima Mbogo** 134.04 233 *i* PKIKP PKPdf 08 54 28.2 +3.3
ARCES **ARCESS Array B** 138.66 348 PKhKP PKPpre 08 54 22.6
comp=Z,1.8nm,0.7s,baz=32,slow=4.8,SNR=4.6
VRH **Novokhopyorsk** 144.10 317 *e*PKIKP PKPdf 08 54 40.7 -1.0
VRH pmax pmax
comp=Z,6.0nm,0.3s
GNI **Garni** 144.11 297 ⇑ *i* PKIKP PKPdf 08 54 46.3 +4.0
ZEI **Tsey** 144.55 302 *i* PKIKP PKPab 08 54 40.5 -1.1
ZEI pmax pmax
comp=Z,24nm,0.9s
KBZ **Khabaz** 145.16 304 PKP PKPbc 08 54 42.2 -1.2
comp=Z,6.1nm,0.8s,baz=170,slow=2.2,SNR=6.5
LPSR **Galich'ya Gora** 145.18 320 *e*PKIKP PKPbc 08 54 41.4 -1.7
LPSR pmax pmax
comp=Z,10.0nm,0.7s
FINES **FINESS Array B** 145.22 340 PKP PKPbc 08 54 40.9 -2.1
comp=Z,30nm,0.6s,baz=59,slow=3.5,SNR=93
FINES **FINESS Array B** 145.22 340 *c* iPKIKP PKPdf 08 54 48.5 +5.2
FINES pmax pmax
comp=Z,6.0nm,0.6s
OBN **Obninsk** 145.24 325 ⇓ *e*PKIKP PKPdf 08 54 44.5 +1.0
OBN pmax pmax
comp=Z,22nm,0.6s
KIV **Kislovodsk** 145.28 304 ⇑ *e*PKIKP PKPdf 08 54 45.5 +1.4
KIV pmax pmax
comp=Z,8.0nm,0.9s
NEY **Neytrino** 145.35 303 *ce*PKIKP PKPab 08 54 44.7 +0.2
VSR **Storozhevoye** 145.60 318 *e*PKP2 PKPdf 08 54 42.5 -1.8
VSR pmax pmax
comp=Z,20nm,1.2s
NB2 **NORSAR Subarra** 148.83 351 PKP PKPbc 08 54 51.7 -1.7
comp=Z,5.8nm,0.6s,baz=14,slow=2.8
NOA **NORSAR Array B** 148.83 351 PKPbc PKPdf 08 54 51.1 +1.7
comp=Z,8.1nm,0.7s,baz=14,slow=4.3,SNR=30
HFS **Hagfors** 149.32 349 PKPbc PKPdf 08 54 52.2 +2.0
comp=Z,12nm,0.6s,baz=90,slow=1.5,SNR=26
KONO **Kongsberg** 150.38 352 *e*PKIKP PKPbc 08 54 54.6 -2.5
KONO **Kongsberg** 150.38 352 *e*PKPbc PKPbc 08 54 54.5 -2.5
AKASG **Malin Array Be** 151.37 323 PKPbc PKPbc 08 54 57.9 -1.9
comp=Z,21nm,0.8s,baz=49,slow=2.8,SNR=52
AKASG **Malin Array Be** 151.37 323 *c* iPKIKP PKPbc 08 54 58.2 -1.5
AKASG pmax pmax
comp=Z,21nm,0.7s
KIEV **Kiev** 151.38 323 *e*PKIKP PKPdf 08 54 52.6 -1.1
KIEV *e* 08 54 58.4
KIEV **Kiev** 151.38 323 *e*PKPdf PKPdf 08 54 52.6 -1.1
KIEV *e*PKPbc PKPbc 08 54 58.4 -1.3
BRTR **Keskin Array B** 152.64 298 PKPbc PKPbc 08 55 01.6 -1.6
comp=Z,5.4nm,0.9s,baz=101,slow=3.9,SNR=10.0
EKA **Eskdalemuir Ar** 154.88 7 PKPab PKPab 08 55 20.8 -1.9
comp=Z,3.6nm,0.7s,baz=345,slow=2.9,SNR=9.7
LIC **Lamto** 154.99 163 *e*PKP2 PKPab 08 55 26.7 +2.5
comp=Z,41nm,1.3s
KIC **Kosan Boka** 155.19 164 *e*PKP2 PKPab 08 55 25.5 +0.5
comp=Z,24nm,0.8s
TIC **Toumodi** 155.39 163 *e*PKP2 PKPab 08 55 26.6 +0.7
DPC **Dobruska-Polom** 157.43 336 *e*PKPAB PKPab 08 55 35.9 +2.0
DPC **Dobruska-Polom** 157.43 336 *e*PKP2 PKPab 08 55 35.9 +2.0
KRLC **Kraliky** 157.49 335 *e*PKPAB PKPab 08 55 35.3 +1.2
KRLC **Kraliky** 157.49 335 *e*PKP2 PKPab 08 55 35.3 +1.2
CLL **Collm** 157.64 342 *e*PKPab PKPab 08 55 33.0 -1.6
comp=Z,6.0nm,0.7s
CLL *i* 08 55 36.1
comp=Z,9.0nm,0.7s
CLL **Collm** 157.64 342 *e*PKP2 PKPab 08 55 33.0 -1.6
CLL pmax pmax
comp=Z,6.0nm,0.7s
BRG **Berggiesshubel** 157.76 340 *e*P PKPab 08 55 36.5 +1.4
comp=Z,5.5nm,0.8s
BRG **Berggiesshubel** 157.76 340 *e*PKP2 PKPab 08 55 36.5 +1.4
BRG pmax pmax
comp=Z,6.0nm,0.8s
KHC **Kasperske Hory** 159.40 338 *e*PKPAB PKPab 08 55 43.8 +1.4
KHC **Kasperske Hory** 159.40 338 *e*PKP2 PKPab 08 55 43.8 +1.4
GERES **GERESS Array B** 159.61 337 PKPab PKPab 08 55 44.3 +0.9
comp=Z,1.6nm,0.6s,baz=25,slow=4.4,SNR=6.5
TORD **Torodi Ar. Bea** 162.75 179 PKP PKPdf 08 55 08.3 -0.9
comp=Z,1.5nm,1.0s,baz=2.5,slow=1.6,SNR=5.6
TORD PKPab PKPab 08 55 58.5 +0.8
comp=Z,11nm,0.9s,baz=180,slow=3.5,SNR=32

IDC 20 08:50:50.3±3.1, 6.35S×147.39E, h0km, mb3.3/2, mb1 3.4/4, mb1mx3.3/40, mbtmp3.2/4, ML3.0/1, MS3.6/1, Ms1 3.6/1, ms1mx2.5/19, Error ellipse: s-maj=68.0km s-min=33.2km az=90.0, Eastern New Guinea region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**3.05**	**184**	Pn		Pn	Pn	08 51 40.1	+0.3
	2.4nm,0.3s,baz=353,slow=11,SNR=7.1								
PMG				Sn		Sn	Sn	08 52 19.0	+2.0
	1.5nm,0.3s,baz=37,slow=18,SNR=3.9								
WRA	**Warramunga Arr**	**18.53**	**222**	P		Pn		08 55 09.2	+0.5
	0.1nm,0.3s,baz=50,slow=11,SNR=4.1								
ASAR	**Alice Springs**	**21.56**	**216**	P		P		08 55 41.1	-0.5
	0.2nm,0.5s,baz=49,slow=9.6,SNR=7.6								
FITZ	**Fitzroy Crossi**	**24.22**	**239**	P		P		08 56 07.7	-1.3
	1.2nm,0.5s,baz=53,slow=10,SNR=8.0								
JHJ	**Hachijo jima 2**	**39.91**	**350**	LR		LR		09 11 11.0	
	comp=Z,82nm,20.0s,baz=90,slow=31								
TORD	**Torodi Ar. Bea**	**145.55**	**284**	PKPbc		PKPbc		09 10 31.8	0.0
	0.2nm,0.5s,baz=60,slow=2.7,SNR=2.9								

IDC 20 09:02:23.1±2.0, 5.01N×126.33E, h0km, mb3.6/4, mb1 3.8/4, mb1mx3.5/48, mbtmp3.6/4, Error ellipse: s-maj=168.6km s-min=24.0km az=65.0, Mindanao

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**26.02**	**163**	P		P		09 07 58.1	-0.1
	0.5nm,0.7s,baz=343,slow=10,SNR=11								
ASAR	**Alice Springs**	**29.45**	**166**	P		P		09 08 29.4	+0.5
	0.2nm,0.3s,baz=338,slow=7.0,SNR=9.3								
STKA	**Stephens Creek**	**39.46**	**159**	P		P		09 09 54.7	-0.6
	1.3nm,0.7s,baz=324,slow=7.4,SNR=4.1								
MKAR	**Makanchi Array**	**56.28**	**325**	P		P		09 12 05.6	-0.1
	0.4nm,0.5s,baz=132,slow=8.5,SNR=3.5								

NIED ***20*** *09:06:00, 37.00N×141.20E, h59km, Mw3.8 Best double couple: M0 6.51000×10^14 NP1:φs 53.00000°, δ 39.00000°, λ 59.00000°. NP2:φs 270.00000°, δ 57.00000°, λ 112.00000°.*

IDC ***20*** *09:06:12.1±1.2, 36.60N×141.33E, h0km, mb3.4/3, mb1 3.7/5, mb1mx3.4/49, mbtmp3.4/5, ML2.7/2, MS2.4/2, Ms1 2.4/2, ms1mx2.2/23, Error ellipse: s-maj=27.5km s-min=26.9km az=167.0*

ISCJB ***20*** *09:06:14.0±0.8, 36.94N±0.04×141.37E±0.08, h41km±11km, mb3.4/3, Error ellipse: s-maj=11.2km s-min=5.6km az=19.1*

JMA ***20*** *09:06:15.8±0.1, 36.96N×141.22E, h42km±1km, M3.7*

JMA Felt II J1.

ISC 20 09:06:13.6±1.3, 36.96N±0.04×141.38E±0.07, h25km±9km, n24, σ0.74/26, mb3.5/3, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.48**	**288**	P		Pn		09 06 25.0	-0.1
ONAJ				S		Sb		09 06 31.0	+0.6
JFK	**Kawauchi**	**0.57**	**316**	P		Pn		09 06 26.3	0.0
JFK				S		Sb		09 06 33.3	+0.4
JHO	**Hitachi**	**0.73**	**242**	P		Pn		09 06 28.1	-0.3
JHO				S		Sb		09 06 36.7	-0.7
JFT	**Otama**	**1.00**	**304**	P		Pb		09 06 32.7	+0.4
JFT				S		Sn		09 06 44.6	-0.9
JMM	**Marumori**	**1.02**	**333**	P		Pn		09 06 32.6	+0.2
JMM				S		Sn		09 06 44.5	-1.4

JFY	**Yanaizu**	**1.41**	**289**	P	**Pn**	**09 06 37.8**	**0.0**
JIO	**Ouri**	**1.50**	**359**	P	**Pn**	**09 06 39.8**	**+0.9**
JIO				S	**Sn**	**09 06 56.9**	**-0.8**
JOU	**Okura**	**1.52**	**338**	P	**Pn**	**09 06 40.2**	**+0.9**
JOU				S	**Sn**	**09 06 58.1**	**-0.1**
MJAR	**Matsushiro Arr**	**2.58**	**262**	Pn	**Pn**	**09 06 54.5**	**+0.6**
	5.3nm,0.3s,baz=82,slow=15,SNR=34						
MJAR				Sn	**Sn**	**09 07 24.7**	**+0.3**
	6.7nm,0.3s,baz=78,slow=17,SNR=7.9						
MJAR				LR	LR	09 08 12.9	
	comp=Z,38nm,21.4s,baz=190,slow=49						
MAT	**Matsushiro**	**2.58**	**262**	P	**Pn**	**09 06 55.0**	**+1.2**
MAT				S	**Sn**	**09 07 24.4**	**0.0**
JHJ	**Hachijo jima 2**	**4.04**	**199**	Pn	**Pn**	**09 07 15.5**	**+1.5**
	28nm,0.3s,baz=66,slow=22,SNR=13						
JHJ				Sn	**Sn**	**09 08 00.6**	**+0.1**
	43nm,0.3s,baz=82,slow=23,SNR=6.5						
ASAJ	**Asahikawa**	**7.21**	**7**	Pn	**Pn**	**09 07 58.3**	**+0.8**
	1.6nm,0.3s,baz=209,slow=16,SNR=19						
USRK	**Ussuriysk Ar.**	**10.16**	**318**	Pn	Pn	09 08 42.0	+4.2
	0.2nm,0.3s,baz=126,slow=13,SNR=5.5						
USRK				LR	LR	09 12 21.6	
	comp=Z,53nm,18.9s,baz=21,slow=36						
H11N2	**WAKE ISLAND Hy**	**28.13**	**121**	T	T	09 41 25.7	
	baz=313,slow=76,SNR=72						
H11N1	**WAKE ISLAND Hy**	**28.14**	**121**	T	T	09 41 35.4	
	baz=313,slow=76,SNR=62						
H11N3	**WAKE ISLAND Hy**	**28.15**	**121**	T	T	09 41 30.9	
	baz=313,slow=76,SNR=49						
H11S1	**WAKE ISLAND Hy**	**28.84**	**123**	T	T	09 42 44.2	
	baz=315,slow=76,SNR=47						
H11S3	**WAKE ISLAND Hy**	**28.84**	**123**	T	T	09 42 26.0	
	baz=315,slow=76,SNR=28						
H11S2	**WAKE ISLAND Hy**	**28.86**	**123**	T	T	09 42 40.5	
	baz=315,slow=76,SNR=23						
ILAR	**Eielson Array**	**49.58**	**32**	pP	pP	09 15 16.1	+6.2
	0.9nm,0.7s,baz=268,slow=6.8,SNR=8.7						
WRA	**Warramunga Arr**	**56.98**	**188**	P	**P**	**09 15 56.9**	**-0.2**
	0.8nm,0.6s,baz=5.3,slow=7.3,SNR=16						
WRA				pP	**pP**	**09 16 04.1**	**-0.7**
	0.6nm,0.7s,baz=0.1,slow=7.6,SNR=2.5						
ASAR	**Alice Springs**	**60.71**	**188**	P	**P**	**09 16 23.0**	**0.0**
	0.3nm,0.7s,baz=16,slow=7.0,SNR=3.7						
YKA	**Yellowknife Ar**	**63.89**	**30**	P	P	09 16 49.2	+5.4
	0.1nm,0.9s,baz=280,slow=7.5,SNR=2.8						
YKA				pP	sP	09 16 57.7	+3.1
	0.2nm,0.7s,baz=305,slow=6.8,SNR=5.2						
LPAZ	**La Paz**	**146.76**	**60**	PKPbc	**PKPab**	**09 25 55.6**	**-0.3**
	0.6nm,0.4s,baz=297,slow=2.3,SNR=3.6						

IDC ***20*** *09:16:10.9±0.9, 37.69N×141.94E, h0km, mb3.4/8, mb1 3.7/11, mb1mx3.5/41, mbtmp3.5/11, ML3.4/3, Error ellipse: s-maj=27.9km s-min=17.3km az=114.0*
JMA ***20*** *09:16:12.9±0.1, 37.70N×141.88E, h22km±2km, M3.9*
ISC 20 09:16:13.4±0.8, 37.72N±0.04×141.81E±0.06, h17km±4km, n26, σ0s80/28, mb3.5/8, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**0.81**	**334**	P	**Pb**	**09 16 28.9**	**-0.3**
JIO				S	**Sg**	**09 16 39.6**	**-0.5**
JMM	**Marumori**	**0.82**	**280**	P	**Pb**	**09 16 29.0**	**-0.2**
JMM				S	**Sg**	**09 16 40.2**	**+0.1**
JFK	**Kawauchi**	**0.82**	**245**	P	**Pg**	**09 16 29.4**	**-0.1**
JFK				S	**Sg**	**09 16 40.7**	**+0.3**
ONAJ	**Iwakimizuishiy**	**1.02**	**233**	P	**Pb**	**09 16 32.0**	**-0.6**
ONAJ				S	**Sg**	**09 16 46.2**	**-0.3**
JOU	**Okura**	**1.11**	**306**	P	**Pn**	**09 16 34.3**	**+0.1**
JOU				S	**Sg**	**09 16 49.0**	**-0.4**
JFT	**Otama**	**1.19**	**260**	P	**Pb**	**09 16 35.6**	**+0.1**
JHO	**Hitachi**	**1.49**	**222**	P	**Pn**	**09 16 38.5**	**-0.9**
MJAR	**Matsushiro Arr**	**3.11**	**249**	Pn	**Pn**	**09 17 03.4**	**+1.7**
	11nm,0.3s,baz=82,slow=16,SNR=56						
MAT	**Matsushiro**	**3.11**	**249**	P	**Pn**	**09 17 03.9**	**+2.1**
MAT				S	**Sb**	**09 17 44.6**	**-1.4**
JHJ	**Hachijo jima 2**	**4.88**	**200**	Pn	**Pn**	**09 17 26.5**	**+0.3**
	15nm,0.3s,baz=240,slow=13,SNR=5.7						
JHJ				Sn	**Sn**	**09 18 21.8**	**-0.5**
	14nm,0.3s,baz=73,slow=19,SNR=3.3						
ASAJ	**Asahikawa**	**6.41**	**5**	Pn	**Pn**	**09 17 46.0**	**-1.1**
	0.4nm,0.3s,baz=232,slow=19,SNR=3.5						
USRK	**Ussuriysk Ar.**	**9.85**	**314**	Pn	Pn	09 18 39.2	+5.0
	0.2nm,0.3s,baz=145,slow=11,SNR=5.7						
H11N2	**WAKE ISLAND Hy**	**28.24**	**122**	T	T	09 51 37.0	
	baz=315,slow=75,SNR=36						
H11N1	**WAKE ISLAND Hy**	**28.25**	**122**	T	T	09 51 36.9	
	baz=315,slow=75,SNR=100						
H11N3	**WAKE ISLAND Hy**	**28.26**	**122**	T	T	09 51 36.1	
	baz=315,slow=75,SNR=48						
H11S1	**WAKE ISLAND Hy**	**28.98**	**124**	T	T	09 52 31.0	
	baz=317,slow=76,SNR=27						
H11S3	**WAKE ISLAND Hy**	**28.98**	**125**	T	T	09 52 31.2	
	baz=317,slow=76,SNR=29						
H11S2	**WAKE ISLAND Hy**	**29.00**	**124**	T	T	09 52 33.4	
	baz=317,slow=76,SNR=26						
ZALV	**Zalesovo Beam**	**41.69**	**312**	P	**P**	**09 24 01.6**	**+0.6**
	0.4nm,0.4s,baz=338,slow=1.6,SNR=5.5						
ZALV				pP	**sP**	**09 24 07.8**	**-0.4**
	1.6nm,0.6s,baz=101,slow=8.5,SNR=5.3						
MKAR	**Makanchi Array**	**44.02**	**302**	P	**P**	**09 24 20.6**	**+0.5**
	0.4nm,0.6s,baz=91,slow=10,SNR=3.3						
ILAR	**Eielson Array**	**48.74**	**33**	P	**P**	**09 24 56.5**	**-0.4**
	0.2nm,0.6s,baz=304,slow=6.4,SNR=4.6						
ILAR				pP	**sP**	**09 25 04.8**	**+0.7**
	0.4nm,0.7s,baz=280,slow=6.7,SNR=3.7						
WRA	**Warramunga Arr**	**57.79**	**188**	P	**P**	**09 26 03.8**	**-0.1**
	0.6nm,0.7s,baz=5.8,slow=7.0,SNR=6.5						
ASAR	**Alice Springs**	**61.51**	**188**	P	**P**	**09 26 28.8**	**-0.6**
	0.2nm,0.6s,baz=12,slow=13,SNR=2.4						
YKA	**Yellowknife Ar**	**63.05**	**30**	P	**P**	**09 26 39.4**	**+0.1**
	0.1nm,0.6s,baz=299,slow=6.0,SNR=3.9						
PDAR	**Pinedale Array**	**76.96**	**46**	P	**P**	**09 28 05.6**	**+0.2**
	0.3nm,0.6s,baz=317,slow=3.8,SNR=3.5						
TXAR	**Lajitas Array**	**89.45**	**53**	P	**P**	**09 29 10.7**	**+0.9**
	0.1nm,0.5s,baz=317,slow=3.8,SNR=2.9						

DDA ***20*** *09:17:39.0, 38.46N×29.12E, h8km, Md2.6*
CSEM ***20*** *09:17:38.9±0.2, 38.41N×29.11E, h8km, MD2.6, Error ellipse: s-maj=4.8km s-min=3.5km az=18.0*
ISK ***20*** *09:17:38.6, 38.40N×29.10E, h6km, MD2.9*
ISCJB ***20*** *09:17:39.2±0.5, 38.43N±0.04×29.10E±0.04, h9km±7km, Error ellipse: s-maj=7.4km s-min=4.6km az=11.4*
ISC 20 09:17:39.0±0.9, 38.44N±0.03×29.11E±0.02, h12km±8km, n28, σ0s57/42, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KHAL	**Karahalli**	**0.31**	**102**	*i* P	**Pg**	**09 17 45.4**	**+0.1**
KHAL				*i* S	**Sg**	**09 17 49.9**	**+0.3**
KHAL	**Karahalli**	**0.31**	**102**	P	**Pg**	**09 17 45.4**	**+0.1**
KHAL				S	**Sg**	**09 17 49.9**	**+0.3**
KHL	**Karahalli**	**0.34**	**109**	*e*PG	**Pg**	**09 17 46.4**	**+0.4**
KHL				*e*SG	**Sg**	**09 17 51.1**	**+0.4**
KHL	**Karahalli**	**0.34**	**109**	*e*Pg	**Pg**	**09 17 46.4**	**+0.4**
KHL				*e*Sg	**Sg**	**09 17 51.1**	**+0.4**
KULA	**Kula-Manisa**	**0.36**	**283**	*e*PG	**Pg**	**09 17 46.4**	**+0.1**
KULA				*e*SG	**Sg**	**09 17 51.3**	**+0.1**
KULA	**Kula-Manisa**	**0.36**	**283**	*e*Pg	**Pg**	**09 17 46.4**	**+0.1**
KULA				*e*Sg	**Sg**	**09 17 51.3**	**+0.1**
UZP	**Denizli**	**0.41**	**173**	*i* P	**Pb**	**09 17 47.7**	**-0.5**
UZP				*i* S	**Sb**	**09 17 53.9**	**-0.5**
DEMI	**Demirci**	**0.68**	**333**	*i* P	**Pg**	**09 17 51.9**	**-0.4**
DEMI				*i* S	**Sg**	**09 18 01.1**	**-0.2**
DEMI	**Demirci**	**0.68**	**333**	P	**Pg**	**09 17 51.9**	**-0.4**
DEMI				S	**Sg**	**09 18 01.1**	**-0.2**
GDZ	**Gediz**	**0.71**	**24**	*i* P	**Pg**	**09 17 52.5**	**-0.5**
GDZ				*i* S	**Sb**	**09 18 03.8**	**+0.5**
GDZ	**Gediz**	**0.71**	**24**	P	**Pg**	**09 17 52.5**	**-0.5**
GDZ				S	**Sb**	**09 18 03.8**	**+0.5**
TVSB	**Tavsanli**	**1.05**	**15**	*e*PN	**Pn**	**09 17 59.7**	**+0.1**
TVSB				*e*SN	**Sn**	**09 18 15.1**	**+0.8**
TVSB	**Tavsanli**	**1.05**	**15**	*e*Pn	**Pn**	**09 17 59.7**	**+0.1**
TVSB				*e*Sn	**Sn**	**09 18 15.1**	**+0.8**
AYDB	**Zeytinkoy-Aydi**	**1.08**	**243**	*e*PG	**Pb**	**09 17 59.2**	**-0.4**
AYDB	**Zeytinkoy-Aydi**	**1.08**	**243**	*e*Pg	**Pb**	**09 17 59.2**	**-0.4**
AKS	**Akhisar**	**1.11**	**294**	*e*PN	**Pg**	**09 18 00.4**	**+0.1**
AKS	**Akhisar**	**1.11**	**294**	*e*Pn	**Pg**	**09 18 00.4**	**+0.1**
AYDN	**Tasoluk**	**1.24**	**232**	*i* P	Pn	09 17 53.0	-9.2
AYDN				*i* S	Sb	09 18 00.1	-18
DURS	**Dursunbey**	**1.27**	**337**	*i* P	**Pg**	**09 18 03.9**	**+0.5**
DURS				*i* S	**Sg**	**09 18 21.0**	**+1.2**
DURS	**Dursunbey**	**1.27**	**337**	P	**Pg**	**09 18 03.9**	**+0.5**
DURS				S	**Sg**	**09 18 21.0**	**+1.2**
ISP	**Isparta**	**1.27**	**118**	*e*PN	**Pn**	**09 18 02.2**	**-0.5**
ISP	**Isparta**	**1.27**	**118**	*e*Pn	**Pn**	**09 18 02.2**	**-0.5**
IZM	**Izmir**	**1.45**	**269**	*e*PN	**Pb**	**09 18 05.7**	**-0.3**
IZM	**Izmir**	**1.45**	**269**	*e*Pn	**Pb**	**09 18 05.7**	**-0.3**
KCTX	**Karacabey (Bur**	**1.92**	**343**	*e*PN	**Pb**	**09 18 13.2**	**-0.7**
KCTX	**Karacabey (Bur**	**1.92**	**343**	*e*Pn	**Pb**	**09 18 13.2**	**-0.7**
ARMT	**Armutlu**	**2.14**	**355**	*e*PN	**Pb**	**09 18 16.4**	**-1.2**
ARMT	**Armutlu**	**2.14**	**355**	*e*Pn	**Pb**	**09 18 16.4**	**-1.2**

IDC 20 09:20:12.8±6.5, 7.26S×148.41E, h101km±46km, mb3.0/1, mb1 3.3/3, mb1mx3.0/33, mbtmp3.5/3, Error ellipse: s-maj=123.4km s-min=65.2km az=118.0, Eastern New Guinea region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**2.46**	**210**	P	Pn	09 20 51.7	+0.1
	3.3nm,0.3s,baz=12,slow=10,SNR=16						
PMG				S	Sn	09 21 30.5	+9.3
	2.7nm,0.3s,baz=352,slow=5.6,SNR=4.2						
WRA	**Warramunga Arr**	**18.58**	**226**	P	P	09 24 21.7	-0.5
	0.1nm,0.3s,baz=52,slow=11,SNR=12						
ASAR	**Alice Springs**	**21.45**	**219**	P	P	09 24 53.5	+0.3
	0.6nm,0.4s,baz=50,slow=9.5,SNR=9.8						
TORD	**Torodi Ar. Bea**	**146.75**	**283**	PKPbc	PKPbc	09 39 43.4	-0.8
	0.2nm,0.4s,baz=75,slow=3.7,SNR=5.9						

ISCJB ***20*** *09:24:31.6±0.8, 53.1N±0.2×35.2W±0.1, h13km, mb3.6/8, MS3.0/4, Error ellipse: s-maj=26.1km s-min=11.4km az=11.0*
IDC ***20*** *09:24:31.3±1.1, 53.06N×35.18W, h0km, mb3.6/8, mb1 3.8/10, mb1mx3.6/50, mbtmp3.6/10, ML3.2/2, MS3.1/4, Ms1 3.1/4, ms1mx2.7/43, Error ellipse: s-maj=35.9km s-min=17.0km az=14.0*
ISC 20 09:24:33.1±0.9, 53.0N±0.2×35.2W±0.1, h13km, n15, σ0s85/13, mb3.5/8, MS2.9/4, Reykjanes Ridge

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SCHQ	**Schefferville**	**18.63**	**288**	P	**Pn**	**09 28 50.4**	**-0.1**
	0.1nm,0.3s,baz=91,slow=7.7,SNR=3.9						
EKA	**Eskdalemuir Ar**	**18.81**	**70**	P	**P**	**09 28 51.7**	**-0.4**
	baz=286,slow=9.1,SNR=4.3						
FRB	**Frobisher Bay**	**20.24**	**315**	LR	LR	09 35 00.0	
	comp=Z,40nm,20.6s,baz=208,slow=31						
ESDC	**Sonseca Array**	**25.13**	**110**	P	**P**	**09 29 58.4**	**+0.7**
	0.6nm,0.5s,baz=309,slow=8.7,SNR=4.4						
NOA	**NORSAR Array B**	**25.99**	**54**	P	**P**	**09 30 04.3**	**-0.9**
	0.8nm,0.8s,baz=273,slow=9.4,SNR=2.9						
NOA				LR	LR	09 38 14.3	
	comp=Z,30nm,20.5s,baz=335,slow=32						
HFS	**Hagfors**	**27.29**	**55**	LR	LR	09 39 17.0	
	comp=Z,34nm,18.9s,baz=310,slow=32						
DAVOX	**Davos/Dischmat**	**29.30**	**84**	LR	LR	09 40 17.3	
	comp=Z,67nm,18.8s,baz=264,slow=32						
FINES	**FINES Array B**	**33.02**	**51**	P	**P**	**09 31 06.8**	**-0.8**
	1.3nm,0.7s,baz=312,slow=13,SNR=3.5						
YKA	**Yellowknife Ar**	**40.76**	**316**	P	**P**	**09 32 13.0**	**-0.3**
	0.4nm,0.9s,baz=62,slow=8.1,SNR=6.5						
YKA				PcP	**PcP**	**09 34 13.7**	**-0.5**
	0.2nm,0.8s,baz=63,slow=3.7,SNR=3.8						
BRTR	**Keskin Array B**	**47.51**	**77**	P	**P**	**09 33 09.1**	**+1.1**
	1.5nm,0.7s,baz=304,slow=7.2,SNR=6.6						
PDAR	**Pinedale Array**	**48.76**	**289**	P	**P**	**09 33 17.4**	**-0.2**
	5.3nm,1.4s,baz=72,slow=9.5,SNR=5.2						
TORD	**Torodi Ar. Bea**	**49.41**	**130**	P	**P**	**09 33 22.3**	**-0.3**
	0.5nm,0.8s,baz=334,slow=8.0,SNR=3.6						
ILAR	**Eielson Array**	**51.35**	**329**	P	**P**	**09 33 38.1**	**+1.4**
	0.6nm,0.9s,baz=39,slow=7.2,SNR=6.3						
WRA	**Warramunga Arr**	**145.99**	**18**	PKPbc	**PKPbc**	**09 44 12.5**	**0.0**
	0.8nm,0.8s,baz=342,slow=3.6,SNR=5.7						
ASAR	**Alice Springs**	**149.53**	**20**	PKPbc	**PKPbc**	**09 44 20.8**	**-1.2**
	0.4nm,0.5s,baz=358,slow=2.3,SNR=5.9						

NIED ***20*** *09:27:00, 39.60N×140.70E, h11km, Mw3.4 Best double couple: M0 1.43000×10^14 NP1:ϕs67.00000°, δ22.00000°, λ90.00000°. NP2:ϕs248.00000°, δ68.00000°, λ90.00000°.*
ISCJB ***20*** *09:27:19.1±0.6, 39.62N±0.03×140.66E±0.05, h19km±6km, mb3.9/7, Error ellipse: s-maj=6.1km s-min=5.1km az=9.6*
JMA ***20*** *09:27:19.2, 39.62N×140.62E, h4km±1km, M3.8 Broadband fault plane solution: P waves. NP1: ϕs234.00000°, δ86.00000°, λ86.00000°. NP2: ϕs102.00000°, δ6.00000°, λ138.00000°. Principal axes: T Plg49.0000°, Azm139.0000°; N Plg4.0000°, Azm234.0000°; P Plg41.0000°, Azm328.0000°;*
JMA Felt III J1.
IDC ***20*** *09:27:22.8±5.8, 39.63N×140.42E, h33km±46km, mb3.6/7, mb1 3.8/9, mb1mx3.4/49, mbtmp3.7/9, ML2.9/2 Error ellipse: s-maj=31.9km s-min=17.4km az=99.0*
ISC 20 09:27:19.7±1.0, 39.60N±0.03×140.66E±0.04, h11km±7km, n18, σ1s26/25, mb4.1/7, 4C-2D, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JRG	**Rokugo**	**0.21**	**186**	⇑P	**Pg**	**09 27 23.9**	**-0.2**
JRG				S	**Sg**	**09 27 27.4**	**+0.4**
JYW	**Yuwa**	**0.35**	**260**	⇓P	**Pg**	**09 27 26.2**	**-0.6**
JYW				S	**Sg**	**09 27 31.6**	**+0.1**
JOM	**Ohasama**	**0.51**	**105**	⇑P	**Pg**	**09 27 29.3**	**-0.3**
JOM				S	**Sg**	**09 27 36.5**	**+0.2**
JAH	**Hinai**	**0.59**	**358**	⇓P	**Pg**	**09 27 30.2**	**-0.9**
JAH				S	**Sg**	**09 27 38.0**	**-0.9**
JYK	**Kaneyama**	**0.72**	**199**	⇑P	**Pg**	**09 27 32.8**	**-0.9**
JYK				S	**Sg**	**09 27 42.3**	**-0.8**
JMK	**Ichinoseki**	**0.78**	**146**	⇑P	**Pg**	**09 27 34.1**	**-0.7**
JMK				S	**Sg**	**09 27 44.8**	**-0.2**
MAT	**Matsushiro**	**3.62**	**213**	P	**Pn**	**09 28 16.8**	**+1.0**
MAT				S	**Sn**	**09 29 00.9**	**+2.4**
MJAR	**Matsushiro Arr**	**3.62**	**213**	Pn	**Pn**	**09 28 16.2**	**+0.5**
	1.0nm,0.3s,baz=29,slow=15,SNR=4.5						
ASAJ	**Asahikawa**	**4.74**	**17**	Pn	**Pn**	**09 28 32.7**	**+1.6**
	0.5nm,0.3s,baz=216,slow=8.7,SNR=3.6						
KSRS	**Korea Array**	**10.21**	**262**	Pn	**Pn**	**09 29 47.8**	**+1.6**
	0.8nm,0.3s,baz=69,slow=14,SNR=8.6						
KLR	**Kul'dur**	**11.53**	**329**	Pn	**Pn**	**09 30 06.3**	**+2.0**
	0.3nm,0.3s,baz=118,slow=11,SNR=5.9						
ZALV	**Zalesovo Beam**	**39.78**	**310**	P	**P**	**09 34 49.6**	**-2.9**
	1.3nm,0.7s,baz=99,slow=7.8,SNR=5.9						
ILAR	**Eielson Array**	**47.66**	**34**	P	**P**	**09 35 54.8**	**-1.0**
	0.2nm,0.6s,baz=287,slow=7.3,SNR=4.1						
WRA	**Warramunga Arr**	**59.53**	**187**	P	**P**	**09 37 22.3**	**-0.9**
	1.5nm,0.8s,baz=3.2,slow=7.1,SNR=20						
YKA	**Yellowknife Ar**	**61.90**	**31**	P	**P**	**09 37 39.7**	**+0.8**
	0.2nm,0.6s,baz=301,slow=6.4,SNR=4.9						
GEYT	**Alibeck**	**62.10**	**297**	P	**P**	**09 37 39.4**	**-1.3**
	3.1nm,0.4s,baz=69,slow=4.8,SNR=3.2						
ASAR	**Alice Springs**	**63.25**	**187**	P	**P**	**09 37 48.2**	**-0.2**
	1.0nm,0.8s,baz=10,slow=5.6,SNR=16						
GERES	**GERESS Array B**	**80.22**	**328**	P	**P**	**09 39 30.3**	**0.0**
	0.9nm,0.5s,baz=41,slow=6.5,SNR=5.4						

IDC 20 09:35:19.3±1.8, 16.28S×177.51W, h0km, mb4.1/5, mb1 4.2/5, mb1mx3.7/35, mbtmp4.1/5, MS3.4/8, Ms1 3.4/8, ms1mx3.1/26, Error ellipse: s-maj=53.3km s-min=30.4km az=125.0, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AFI	**Afiamalu**	**6.01**	**68**	LR	LR	09 38 50.2	
	comp=Z,230nm,20.5s,baz=254,slow=35						
RAO	**Raoul Island**	**12.92**	**182**	LR	LR	09 42 31.1	
	comp=Z,118nm,20.4s,baz=76,slow=33						
DZM	**Mont Dzumac**	**16.21**	**247**	LR	LR	09 44 16.2	
	comp=Z,160nm,18.8s,baz=22,slow=33						
RAR	**Rarotonga**	**17.49**	**109**	LR	LR	09 44 20.5	
	comp=Z,123nm,21.5s,baz=291,slow=31						
URZ	**Urewera**	**22.40**	**191**	P	P	09 40 19.5	+0.1
	12nm,0.9s,baz=20,slow=15,SNR=3.6						
URZ				LR	LR	09 47 05.5	
	comp=Z,95nm,19.6s,baz=44,slow=32						
HNR	**Honiara**	**23.00**	**284**	LR	LR	09 48 02.6	
	comp=Z,138nm,19.7s,baz=109,slow=33						
PPT2	**Papeete2**	**26.74**	**97**	eLR	LR	09 47 37.8	
	120nm,28.8s						
PPT	**Papeete**	**26.74**	**97**	LR	LR	09 51 00.8	
	comp=Z,28nm,18.2s,baz=305,slow=35						
CTA	**Charters Tower**	**34.60**	**258**	P	P	09 42 10.8	+0.5
	3.9nm,0.8s,baz=104,slow=7.8,SNR=4.6						
TAOE	**Nuku Hiva Isla**	**37.15**	**83**	*e*LR	LR	09 52 25.9	
	93nm,24.7s						
STKA	**Stephens Creek**	**40.18**	**240**	P	P	09 42 57.5	0.0
	2.0nm,0.8s,baz=88,slow=8.9,SNR=4.6						
ASAR	**Alice Springs**	**46.08**	**253**	P	P	09 43 44.9	-0.6
	3.2nm,0.7s,baz=85,slow=8.5,SNR=41						
ASAR				LR	LR	10 01 30.2	
	comp=Z,84nm,18.9s,baz=180,slow=34						
ILAR	**Eielson Array**	**84.12**	**13**	P	P	09 47 51.8	0.0
	0.3nm,1.0s,baz=208,slow=5.1,SNR=2.9						

NIED ***20*** *09:44:00, 28.10N×128.10E, h5km, Mw3.9 Best double couple: M0 7.52000×10^14 NP1:ϕs197.00000°, δ60.00000°, λ-165.00000°. NP2:ϕs100.00000°, δ77.00000°, λ-31.00000°.*
JMA 20 09:44:59.0±0.2, 28.08N×128.10E, h11km±3km, M3.8, Ryukyu Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JTK	**Tokunoshima**	**0.81**	**111**	P	**Pg**	**09 45 14.3**	**-0.3**
JTK				*e*S	**Sg**	**09 45 25.3**	**+0.1**
JOKE	**Okinoerabujima**	**0.83**	**150**	P	**Pg**	**09 45 15.0**	**0.0**
JOKE				*e*S	**Sb**	**09 45 26.5**	**-0.1**
JAMN	**Amaminishikomi**	**0.96**	**80**	P	**Pg**	**09 45 17.3**	**-0.3**
JAMN				*e*S	**Sb**	**09 45 30.3**	**-0.1**
JIH	**Iheya**	**1.05**	**187**	P	**Pb**	**09 45 18.5**	**-0.6**
JIH				*e*S	**Sg**	**09 45 32.4**	**-0.4**
JOW	**Kunigami**	**1.25**	**173**	P	**Pn**	**09 45 22.0**	**-0.5**
JOW				*e*S	**Sb**	**09 45 38.7**	**-0.1**
JAM	**Amami Oshima**	**1.37**	**76**	P	**Pn**	**09 45 24.1**	**+0.1**
JAM				*e*S	**Sb**	**09 45 41.0**	**-1.1**
JTAJ	**Takarajima**	**1.44**	**42**	P	**Pb**	**09 45 25.5**	**-0.4**
JTAJ				*e*S	**Sn**	**09 45 43.5**	**-0.5**
JNTH	**Nagotoyohara**	**1.56**	**183**	P	**Pb**	**09 45 27.4**	**-0.4**
JNTH				*e*S	**Sn**	**09 45 46.7**	**-0.1**
JJT2	**Tamagusuku 2**	**1.96**	**189**	P	**Pb**	**09 45 34.8**	**+0.2**
JYAK	**Yakushimahirau**	**3.01**	**44**	P	**Pn**	**09 45 49.2**	**+2.6**

JMA 20 10:01:22.0±0.1, 38.17N×141.76E, h55km±1km, M3.6, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**0.43**	**311**	P	**Pn**	**10 01 32.8**	**0.0**
JIO				S	**Sn**	**10 01 40.6**	**0.0**
JMM	**Marumori**	**0.82**	**249**	S	**Sn**	**10 01 48.6**	**-0.3**
JOU	**Okura**	**0.89**	**283**	P	**Pn**	**10 01 38.5**	**+0.1**
JOU				S	**Sn**	**10 01 50.5**	**+0.1**
JMK	**Ichinoseki**	**0.89**	**332**	P	**Pn**	**10 01 38.6**	**+0.2**
JMK				S	**Sn**	**10 01 50.4**	**0.0**
JFK	**Kawauchi**	**1.07**	**221**	P	**Pn**	**10 01 40.5**	**-0.3**
JFK				S	**Sn**	**10 01 54.1**	**-0.6**
JFT	**Otama**	**1.30**	**240**	P	**Pn**	**10 01 44.6**	**+0.7**
JFT				S	**Sn**	**10 02 00.7**	**+0.4**
JYK	**Kaneyama**	**1.33**	**305**	P	**Pn**	**10 01 44.4**	**+0.1**
JYK				S	**Sn**	**10 02 01.9**	**+1.0**
JYS	**Shirataka**	**1.34**	**273**	P	**Pn**	**10 01 44.7**	**+0.3**
JYS				S	**Sn**	**10 02 01.9**	**+0.8**
JOM	**Ohasama**	**1.35**	**344**	P	**Pn**	**10 01 45.0**	**+0.4**
JOM				S	**Sn**	**10 02 01.8**	**+0.3**
JRG	**Rokugo**	**1.51**	**325**	P	**Pn**	**10 01 47.3**	**+0.6**
JYA	**Atsumi**	**1.66**	**285**	P	**Pn**	**10 01 49.0**	**+0.2**

SJA 20 10:04:08.9±0.5, 31.57S×68.73W, h101km±2km, ML1.9, MW3.5, San Juan Province

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RTLL	**Cerro Villicun**	**0.32**	**42**	*i* P	**Pn**	**10 04 24.5**	**+0.8**
RTLL				*i* S	**Sn**	**10 04 35.9**	**+1.0**
RTCV	**Cerro Valdivia**	**0.33**	**152**	*i* P	**Pn**	**10 04 24.5**	**+0.7**
RTCV				*i* S	**Sn**	**10 04 35.9**	**+0.9**
RTLS	**Leoncito**	**0.54**	**245**	*i* P	**Pn**	**10 04 26.8**	**+1.4**
RTLS				*i* S	**Sn**	**10 04 39.7**

ANDN	**Andirin**	**1.88**	**274**	P	**Pg**	**10 09 09.0**	**+0.8**
ANDN				S	**Sg**	**10 09 32.3**	**-0.4**
BINT	**Bingol**	**1.99**	**44**	*e*Pn	**Pb**	**10 09 08.6**	**+0.5**
CUKAN	**kangal_SIVAS**	**2.09**	**333**	*i* P	**Pb**	**10 09 09.0**	**-0.7**
CUKAN				*i* S	**Sg**	**10 09 38.5**	**-1.0**
CUKAN	**kangal_SIVAS**	**2.09**	**333**	P	**Pb**	**10 09 09.0**	**-0.7**
CUKAN				S	**Sg**	**10 09 38.5**	**-1.0**
BNGB	**Bing¯¶l**	**2.18**	**45**	*e*PN	**Pn**	**10 09 08.6**	**+0.8**
BTCH	**Batrach**	**2.29**	**232**	*e*P	**Pb**	**10 09 13.1**	**0.0**
BTCH				*e*S	**Sb**	**10 09 40.1**	**-1.2**
BTCH				AML	AML	10 09 52.6	
	comp=N,244nm,0.4s						
BTCH				AML	AML	10 09 52.8	
	comp=E,206nm,0.4s						
BTCH	**Batrach**	**2.29**	**232**	*e*P	**Pb**	**10 09 13.1**	**0.0**
BTCH				*e*S	**Sb**	**10 09 40.1**	**-1.2**
WRDH	**Warideh**	**2.69**	**224**	*e*P	**Pb**	**10 09 18.4**	**-1.4**
WRDH				*e*S	**Sb**	**10 09 52.5**	**+0.1**
WRDH				AML	AML	10 10 01.0	
	comp=N,28nm,0.4s						
WRDH				AML	AML	10 10 11.0	
	comp=E,80nm,0.6s						
WRDH	**Warideh**	**2.69**	**224**	*e*P	**Pb**	**10 09 18.4**	**-1.4**
WRDH				*e*S	**Sb**	**10 09 52.5**	**0.0**
	comp=E,80nm,0.6s						
SVSK	**Karacayir**	**2.79**	**332**	*e*PN	**Pn**	**10 09 15.9**	**-0.2**
SVSK	**Karacayir**	**2.79**	**332**	*e*Pn	**Pn**	**10 09 15.9**	**-0.2**
HAWK	**Haweek**	**3.48**	**213**	*e*P	**Pb**	**10 09 32.7**	**-0.6**
HAWK				*e*S	**Sb**	**10 10 14.5**	**-0.8**
HAWK				AML	AML	10 10 36.2	
	comp=N,11nm,0.6s						
HAWK				AML	AML	10 10 39.2	
	comp=E,16nm,0.4s						
HAWK	**Haweek**	**3.48**	**213**	*e*P	**Pb**	**10 09 32.7**	**-0.6**
HAWK				*e*S	**Sb**	**10 10 14.5**	**-0.8**
	comp=E,16nm,0.4s						

*ISK **20** 10:22:08.3,40˚.86N×41˚.39E, h29km, MD2.7*
*ISCJB **20** 10:22:09.6±0.6,40˚.74N±0˚.06×41˚.22E±0˚.06, h12km, Error ellipse: s-maj=10.9km s-min=3.9km az=144.7*
*CSEM **20** 10:22:09.4±0.2, 40˚.74N×41˚.22E, h15km, MD2.4, Error ellipse: s-maj=7.8km s-min=3.8km az=139.0*
*DDA **20** 10:22:09.7, 40˚.73N×41˚.27E, h7km, Md2.4*

ISC 20 10:22:09.3±0.9, 40˚.76N±0˚.05×41˚.17E±0˚.04, h12km, n19, σ0°53/25, Turkey

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
DBAD	**Bademkaya**	**0.48**	**57**	*i* P	**Pg**	**10 22 18.5**	**-0.2**
DBAD	**Bademkaya**	**0.48**	**57**	P	**Pg**	**10 22 18.5**	**-0.2**
DAGI	**Agillar**	**0.65**	**60**	*i* P	**Pg**	**10 22 21.6**	**-0.4**
DAGI				*i* S	**Sg**	**10 22 30.2**	**-0.3**
DBOC	**Borcka**	**0.70**	**33**	*i* P	**Pb**	**10 22 23.2**	**-0.3**
DBOC				*i* S	**Sb**	**10 22 33.0**	**-0.1**
DBOC	**Borcka**	**0.70**	**33**	P	**Pb**	**10 22 23.2**	**-0.3**
DBOC				S	**Sb**	**10 22 33.0**	**-0.1**
ARTV	**Artvin**	**0.72**	**53**	*i* P	**Pg**	**10 22 23.1**	**-0.2**
ARTV				*i* S	**Sb**	**10 22 33.7**	**-0.1**
ARTV	**Artvin**	**0.72**	**53**	P	**Pg**	**10 22 23.1**	**-0.2**
ARTV				S	**Sb**	**10 22 33.7**	**-0.1**
BAYT	**Ayd¯–ntepe-Bay**	**0.86**	**245**	*e*PG	**Pn**	**10 22 27.4**	**-0.1**
BAYT				*e*SG	**Sn**	**10 22 41.6**	**+1.6**
BAYT	**Ayd¯–ntepe-Bay**	**0.86**	**245**	*e*Pg	**Pn**	**10 22 27.4**	**-0.1**
ERZM	**Erzurum**	**0.86**	**170**	*i* P	**Pg**	**10 22 25.6**	**-0.5**
ERZM	**Erzurum**	**0.86**	**170**	P	**Pg**	**10 22 25.6**	**-0.5**
KTUT	**Trabzon**	**1.09**	**283**	*e*PN	**Pb**	**10 22 29.6**	**-0.5**
KTUT	**Trabzon**	**1.09**	**283**	*e*Pn	**Pb**	**10 22 29.6**	**-0.5**
GUMT	**Gumushane**	**1.32**	**257**	*e*PN	**Pg**	**10 22 34.1**	**-0.6**
GUMT	**Gumushane**	**1.32**	**257**	*e*Pn	**Pg**	**10 22 34.1**	**-0.6**
ESPY	**Espiye-Giresun**	**1.86**	**276**	*e*PN	**Pn**	**10 22 41.6**	**+0.6**
ESPY	**Espiye-Giresun**	**1.86**	**276**	*e*Pn	**Pn**	**10 22 41.6**	**+0.6**
PTK	**Pertek**	**2.31**	**217**	*e*PN	**Pn**	**10 22 48.1**	**+0.7**
PTK	**Pertek**	**2.31**	**217**	*e*Pn	**Pn**	**10 22 48.1**	**+0.7**

*CSEM **20** 10:23:03.6,39˚.95N×35˚.33E, h16km, MD2.7*

ISK 20 10:23:03.6,39˚.95N×35˚.33E, h16km, MD2.7, Turkey

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
YOZ	**Yozgat**	**0.31**	**182**	*e*PG	Pg	10 23 10.4	+0.2
YOZ				*e*SG	Sb	10 23 15.6	0.0
YOZ	**Yozgat**	**0.31**	**182**	*e*Pg	Pg	10 23 10.4	+0.2
YOZ				*e*Sg	Sb	10 23 15.6	-0.1
SVSK	**Karacayir**	**1.28**	**91**	*e*PN	Pb	10 23 27.3	0.0
SVSK	**Karacayir**	**1.28**	**91**	*e*Pn	Pb	10 23 27.3	0.0
KAMT	**Kaman**	**1.38**	**246**	*e*PN	Pn	10 23 28.6	+0.3
KAMT	**Kaman**	**1.38**	**246**	*e*Pn	Pn	10 23 28.6	+0.3
TOS	**Tosya**	**1.48**	**318**	*e*PN	Pb	10 23 30.3	-0.4
TOS	**Tosya**	**1.48**	**318**	*e*Pn	Pb	10 23 30.3	-0.4

WEL 20 10:24:28.6±0.3, 36˚.42S×177˚.28E, h194km±4km, ML3.9/10, 1C-6D, Error ellipse: s-maj=6.1km s-min=4.7km az=90.0, Off east coast of North Island

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
HAZ	**Te Kaha**	**1.39**	**164**	PN	Pn	10 25 01.0	+0.2
HAZ				SN	Sn	10 25 24.9	-0.9
MXZ	**Matakaoa Point**	**1.40**	**145**	PN	Pn	10 25 00.9	+0.1
MXZ				SN	Sn	10 25 26.2	+0.2
MXZ				AML	AML	10 25 27.7	
PKGZ	**Pakihiroa**	**1.59**	**157**	PN	Pn	10 25 02.8	+0.1
PKGZ				SN	Sn	10 25 28.9	-0.4
WMGZ	**Waiomatatini S**	**1.66**	**147**	⇓PN	Pn	10 25 03.2	0.0
WMGZ				SN	Sn	10 25 29.4	-0.8
PUZ	**Puketiti**	**1.82**	**155**	⇓PN	Pn	10 25 04.4	-0.4
PUZ				SN	Sn	10 25 31.1	-2.1
PUZ				AML	AML	10 25 33.7	
TWGZ	**Tauwhareparae**	**1.84**	**163**	⇓PN	Pn	10 25 05.2	+0.2
TWGZ				SN	Sn	10 25 33.3	-0.2
URZ	**Urewera**	**1.84**	**184**	⇓PN	Pn	10 25 05.0	+0.1
URZ				AML	AML	10 25 34.5	
URZ				AML	AML	10 25 34.7	
MWZ	**Matawai**	**1.92**	**174**	PN	Pn	10 25 05.7	-0.2
MWZ				SN	Sn	10 25 34.1	-0.9
MWZ				AML	AML	10 25 35.9	
RAGZ	**Rawiri**	**2.07**	**177**	PN	Pn	10 25 07.5	+0.1
RAGZ				SN	Sn	10 25 37.6	-0.3
MUGZ	**Murupara**	**2.09**	**191**	⇓PN	Pn	10 25 07.6	0.0
MUGZ				SN	Sn	10 25 37.4	-0.8
CNGZ	**Carnagh Statio**	**2.19**	**161**	PN	Pn	10 25 08.1	-0.5
RIGZ	**Rimuhau**	**2.31**	**171**	PN	Pn	10 25 09.2	-0.8
RIGZ				SN	Sn	10 25 40.5	-2.0
SNGZ	**Shannon Statio**	**2.36**	**179**	PN	Pn	10 25 09.8	-0.7
RAHZ	**Arahi**	**2.50**	**184**	PN	Pn	10 25 11.4	-0.6
MRHZ	**Matea Rd**	**2.50**	**196**	PN	Pn	10 25 11.6	-0.6
KNZ	**Kokohu**	**2.61**	**173**	PN	Pn	10 25 11.8	-1.5
WHHZ	**Waihua**	**2.65**	**181**	PN	Pn	10 25 12.9	-0.9
NMHZ	**Naumai**	**2.70**	**188**	PN	Pn	10 25 13.8	-0.6
MHGZ	**Mahia Peninsul**	**2.77**	**170**	PN	Pn	10 25 13.9	-1.3
BKZ	**Black Stump Fm**	**2.81**	**193**	⇓PN	Pn	10 25 14.3	-1.4
ARHZ	**Aropaoanui**	**2.85**	**185**	PN	Pn	10 25 15.0	-1.0
KWHZ	**Kaweka Forest**	**3.07**	**193**	PN	Pn	10 25 17.4	-1.4
WNVZ	**Wahianoa**	**3.19**	**204**	⇑PN	Pn	10 25 19.4	-1.0
BHHZ	**Black Hill Sta**	**3.21**	**197**	PN	Pn	10 25 18.8	-1.7
KRHZ	**Kereru**	**3.30**	**192**	PN	Pn	10 25 19.4	-2.0
KAHZ	**Kahuranaki**	**3.38**	**185**	PN	Pn	10 25 20.6	-1.9
PNHZ	**Pukenui**	**3.59**	**193**	PN	Pn	10 25 22.5	-2.5
PXZ	**Pawanui**	**3.62**	**185**	PN	Pn	10 25 22.6	-2.7
ANWZ	**Angora Road**	**4.08**	**189**	PN	Pn	10 25 28.2	-2.9
PRWZ	**Pori Road**	**4.25**	**194**	PN	Pn	10 25 29.6	-3.7
MRZ	**Mangatainoka R**	**4.44**	**197**	PN	Pn	10 25 32.0	-3.6
MRZ				SN	Sn	10 26 22.5	-5.9
TIWZ	**Tintock**	**4.48**	**194**	PN	Pn	10 25 32.6	-3.6
HOWZ	**Holdsworth Sta**	**4.68**	**197**	PN	Pn	10 25 35.2	-3.5
OGWZ	**Otaki Gorge**	**4.69**	**200**	PN	Pn	10 25 35.2	-3.6
TMWZ	**Te Maipa**	**4.80**	**193**	PN	Pn	10 25 36.9	-3.4
KIW	**Kapiti Island**	**4.81**	**202**	PN	Pn	10 25 36.6	-3.7
MTW	**Mount Morrison**	**4.93**	**196**	PN	Pn	10 25 37.7	-4.2
CAW	**Cannon Point**	**4.99**	**200**	PN	Pn	10 25 38.3	-4.3
DUWZ	**D'Urville Isla**	**5.11**	**210**	*e*PN	Pn	10 25 44.5	+0.4
MSWZ	**Moikau Station**	**5.23**	**197**	PN	Pn	10 25 41.3	-4.4
PLWZ	**Palliser**	**5.38**	**196**	*e*PN	Pn	10 25 42.5	-5.1

*IDC **20** 10:24:53.2±6.3, 42˚.03N×78˚.99E, h0km, mb3.0/1, mb1 3.3/3, mb1mx3.0/59, mbtmp3.2/3, ML2.8/2, Error ellipse: s-maj=244.3km s-min=50.4km az=127.0*
*SOME **20** 10:25:18.7, 43˚.43N×81˚.37E, h10km*

ISC 20 10:25:22.2±1.9, 43˚.49N±0˚.07×81˚.12E±0˚.07, h5km±12km, n18, σ1°56/33, 3C-1D, Northern Xinjiang

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
KTMS	**Ketmen**	**0.56**	**266**	*e*P	**Pg**	**10 25 33.0**	**0.0**
	72nm,0.1s						
KTMS				*e*S	**Sb**	**10 25 43.3**	**+0.4**
	259nm,0.3s						
SHLS	**Shalkode**	**0.96**	**250**	⇑*i* P	**Pg**	**10 25 40.4**	**-0.2**
	75nm,0.1s						
SHLS				⇑*i* S	**Sb**	**10 25 56.0**	**+1.5**
	94nm,0.3s						
DJR	**Jarkent**	**1.28**	**312**	*e*P	**Pn**	**10 25 45.3**	**-1.5**
	24nm,0.4s						
DJR				*e*S	**Sn**	**10 26 04.7**	**+0.3**
	43nm,0.3s						
KPKS	**Kokpek**	**1.77**	**270**	*e*P	**Pn**	**10 25 54.3**	**+0.7**
	165nm,0.7s						
KPKS				*e*S	**Sg**	**10 26 20.8**	**+1.6**
	98nm,0.5s						
ZHN	**Zhinishke**	**1.98**	**262**	*e*P	**Pb**	**10 25 58.2**	**-0.6**
	25nm,0.2s						
ZHN				*e*S	**Sg**	**10 26 27.4**	**+1.5**
	158nm,0.3s						
MNBS	**Baschi**	**2.05**	**288**	*e*P	**Pn**	**10 25 58.0**	**+0.5**
	21nm,0.3s						
MNBS				*e*S	**Sb**	**10 26 26.1**	**+0.1**
	320nm,0.4s						
KURS	**Kuram**	**2.14**	**271**	*e*P	**Pb**	**10 26 01.7**	**+0.2**
	12nm,0.5s						
KURS				*e*S	**Sg**	**10 26 32.5**	**+1.4**
	18nm,0.5s						
KAPS	**Kapalarasan**	**2.20**	**326**	⇓*i* P	**Pb**	**10 26 02.1**	**-0.4**
	40nm,0.3s						
KAPS				⇑*i* S	**Sg**	**10 26 33.1**	**+0.3**
	118nm,0.5s						
ARXS	**Arharly**	**2.49**	**288**	*e*P	**Pb**	**10 26 07.0**	**-0.4**
	8.3nm,0.4s						
ARXS				*e*S	**Sg**	**10 26 41.4**	**-0.7**
	49nm,0.3s						
KOTS	**Kotyrbulak**	**2.93**	**266**	*e*P	**Pb**	**10 26 16.0**	**+1.0**
	6.0nm,0.1s						
KOTS				*e*S	**Sg**	**10 26 56.5**	**+0.2**
	6.7nm,0.3s						
CHKK	**Chushkaly**	**3.01**	**279**	*e*P	**Pb**	**10 26 15.8**	**-0.5**
	7.3nm,0.3s						
CHKK				*e*S	**Sb**	**10 26 57.1**	**+3.7**
	34nm,0.2s						
TNSS	**Tian-Shan**	**3.08**	**263**	*e*P	**Pb**	**10 26 16.9**	**-0.8**
	2.0nm,0.1s						
TNSS				*e*S	**Sb**	**10 26 59.4**	**+3.7**
	3.1nm,0.4s						
KTBS	**Karatobe**	**3.23**	**276**	*e*P	**Pb**	**10 26 19.9**	**-0.1**
	2.6nm,0.3s						
KTBS				*e*S	**Sg**	**10 27 04.5**	**-1.4**
	2.1nm,0.2s						
IZV	**Izvestkoviy**	**3.32**	**264**	*e*P	**Pb**	**10 26 21.4**	**-0.3**
	4.2nm,0.1s						
IZV				*e*S	**Sg**	**10 27 06.7**	**-2.2**
	46nm,0.2s						
MKAR	**Makanchi Array**	**3.41**	**14**	Pn	**Pn**	**10 26 15.5**	**-0.5**
	0.4nm,0.3s,baz=213,slow=10,SNR=22						
MKAR				Sn	**Sg**	**10 27 14.7**	**+2.9**
	2.0nm,0.3s,baz=194,slow=30,SNR=9.3						
DGS	**Degeres**	**3.91**	**268**	*e*P	**Pb**	**10 26 32.5**	**+0.9**
	1.8nm,0.4s						
DGS				*e*S	**Sg**	**10 27 25.0**	**-2.6**
	25nm,0.3s						
ZALV	**Zalesovo Beam**	**10.75**	**12**	Pn	**Pn**	**10 27 54.6**	**-2.1**
	0.2nm,0.3s,baz=198,slow=14,SNR=3.0						
YKA	**Yellowknife Ar**	**73.62**	**8**	P	P	10 36 37.5	-19
	0.1nm,0.5s,baz=354,slow=5.4,SNR=4.3						

*MEX **20** 10:37:09.8±1.0, 32˚.42N×115˚.18W, h27km±16km, MD3.7*
*ECX **20** 10:37:09.3±0.7, 32˚.25N×115˚.35W, h6km, MD2.4, ML2.6*

ISC 20 10:37:08.0±1.2, 32˚.20N±0˚.03×115˚.40W±0˚.04, h4km±14km, n18, σ0°35/26, 3C-7D, California-Baja California border region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
CPBX	**Cerro Prieto**	**0.24**	**20**	⇑*e*P	**Pg**	**10 37 12.5**	**0.0**
CPBX				⇑*e*P	**Pg**	**10 37 12.6**	**0.0**
CPBX				*e*S	**Sg**	**10 37 15.2**	**-0.4**
CPBX				⇑*e*		10 37 16.3	
CPBX				AML	AML	10 37 16.3	
	comp=N,5μm,0.1s						
CPBX				AML	AML	10 37 16.7	
	comp=E,7μm,0.2s						
CPBX				*e*		10 37 16.7	
MBIG	**Mexicali**	**0.27**	**39**	⇓*e*P	**Pg**	**10 37 13.7**	**+0.4**
MBIG	**Mexicali**	**0.27**	**39**	*e*P	**Pg**	**10 37 13.8**	**+0.6**
MBIG				*i* S	**Sg**	**10 37 16.7**	**-0.1**
SGL	**Mount Signal**	**0.53**	**329**	⇓*i* P	**Pg**	**10 37 18.1**	**-0.2**
ERPC	**Ernies Place**	**0.59**	**338**	⇓*i* P	**Pg**	**10 37 19.5**	**+0.1**
DREC	**Desert Rsrch C**	**0.61**	**356**	⇓*e*P	**Pg**	**10 37 19.5**	**-0.3**
WESC	**Westside Schoo**	**0.63**	**333**	⇓*e*P	**Pg**	**10 37 20.0**	**-0.1**
WESC				*e*S	**Sg**	**10 37 28.4**	**+0.1**
YUH	**Yuha Desert**	**0.63**	**316**	⇓*i* P	**Pg**	**10 37 20.0**	**-0.1**
EMSC	**East Mesa**	**0.65**	**33**	*e*P	**Pg**	**10 37 20.2**	**-0.2**
COA	**Coachella**	**0.71**	**19**	*e*P	**Pg**	**10 37 20.6**	**-1.0**
ECBX	**El Chinero**	**0.78**	**158**	*e*P	**Pn**	**10 37 26.2**	**+0.4**
ECBX				*e*S	**Sn**	**10 37 37.6**	**-0.3**
ECBX				⇓*e*		10 37 39.0	
ECBX				AML	AML	10 37 39.0	
	comp=N,147nm,0.2s						
ECBX				AML	AML	10 37 39.0	
	comp=E,116nm,0.3s						
ZAX	**El Zacaton**	**1.01**	**228**	*e*P	**Pb**	**10 37 28.3**	**+0.2**
CBX	**Cerro Bola**	**1.08**	**277**	*e*P	**Pb**	**10 37 29.2**	**-0.2**
CBX				*e*S	**Sb**	**10 37 44.1**	**+0.3**
CBX	**Cerro Bola**	**1.08**	**277**	*e*P	**Pb**	**10 37 29.6**	**+0.2**
CBX				*e*S	**Sb**	**10 37 43.6**	**-0.3**
TJIG	**Tijuana**	**1.11**	**283**	*e*P	**Pg**	**10 37 29.4**	**+0.2**
TJIG				*e*S	**Sb**	**10 37 44.4**	**-0.1**
SPIG	**San Pedro Mart**	**1.15**	**183**	*e*P	**Pg**	**10 37 29.6**	**-0.4**
SPIG	**San Pedro Mart**	**1.15**	**183**	*e*P	**Pg**	**10 37 29.8**	**-0.2**
SPIG				*i* S	Sg	10 37 33.5	-11
SPX	**San Pedro Mart**	**1.15**	**183**	*e*P	**Pg**	**10 37 29.8**	**-0.2**

*ISCJB **20** 10:40:43.9±0.7, 36˚.94N±0˚.03×33˚.90E±0˚.05, h12km±5km, Error ellipse: s-maj=7.2km s-min=5.2km az=13.0*
*ISK **20** 10:40:43.1, 36˚.96N×33˚.89E, h10km, MD2.7*
*DDA **20** 10:40:44.5, 36˚.97N×33˚.91E, h6km, Md2.4*
*CSEM **20** 10:40:44.1±0.3, 36˚.96N×33˚.91E, h12km, MD2.4, Error ellipse: s-maj=7.0km s-min=4.5km az=97.0*

ISC 20 10:40:44.0±1.1, 36˚.95N±0˚.02×33˚.90E±0˚.04, h10km±10km, n28, σ0°89/41, Turkey

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
KERG	**Konya-Eregli**	**0.50**	**21**	*i* P	**Pg**	**10 40 54.3**	**+0.6**
KERG				*i* S	**Sg**	**10 41 01.8**	**+1.5**
KERG	**Konya-Eregli**	**0.50**	**21**	P	**Pg**	**10 40 54.3**	**+0.6**
KERG				S	**Sg**	**10 41 01.8**	**+1.5**
MERS	**Mersin**	**0.50**	**99**	*e*PG	**Pg**	**10 40 53.8**	**0.0**
MERS				*e*SG	**Sb**	**10 41 01.5**	**-0.9**
MERS	**Mersin**	**0.50**	**99**	*e*Pg	**Pg**	**10 40 53.8**	**0.0**
MERS				*e*Sg	**Sb**	**10 41 01.5**	**-0.9**
KIZK	**Mersin**	**0.51**	**158**	*i* P	**Pg**	**10 40 54.7**	**-0.3**
KIZK				*i* S	**Sg**	**10 41 00.8**	**+0.2**
KIZK	**Mersin**	**0.51**	**158**	P	**Pb**	**10 40 54.7**	**-0.3**
KIZK				S	**Sg**	**10 41 00.8**	**+0.2**
DED	**Mersin**	**0.72**	**89**	*i* P	**Pg**	**10 40 57.3**	**-0.6**
DED				*i* S	**Sg**	**10 41 06.9**	**-0.4**
IKL	**Isikli**	**0.73**	**194**	*e*PG	**Pg**	**10 40 58.2**	**0.0**
IKL				*e*SG	**Sg**	**10 41 08.4**	**+0.7**
IKL	**Isikli**	**0.73**	**194**	*e*Pg	**Pg**	**10 40 58.2**	**0.0**
IKL				*e*Sg	**Sg**	**10 41 08.4**	**+0.7**
GULE	**Gulek**	**0.77**	**64**	*i* P	**Pg**	**10 40 59.1**	**+0.1**
GULE				*i* S	**Sb**	**10 41 09.6**	**-0.7**
GULE	**Gulek**	**0.77**	**64**	P	**Pg**	**10 40 59.1**	**+0.1**
GULE				S	**Sb**	**10 41 09.6**	**-0.7**
KARA	**Karaisali**	**0.97**	**71**	*e*PG	**Pg**	**10 41 01.7**	**-1.0**
KARA	**Karaisali**	**0.97**	**71**	*e*Pg	**Pg**	**10 41 01.7**	**-1.0**
SULT	**Sultanhani-AKS**	**1.28**	**346**	*e*PN	**Pg**	**10 41 07.8**	**-0.9**
SULT	**Sultanhani-AKS**	**1.28**	**346**	*e*Pn	**Pg**	**10 41 07.8**	**-0.9**
NIG	**Nigde**	**1.29**	**26**	*e*PN	**Pg**	**10 41 08.3**	**-0.5**
NIG	**Nigde**	**1.29**	**26**	*e*Pn	**Pg**	**10 41 08.3**	**-0.5**
AKO	**Adana**	**1.33**	**67**	*i* P	**Pn**	**10 41 09.0**	**+0.3**
AKO				*i* S	**Sg**	**10 41 26.2**	**-0.7**
YURE	**YUREGIR**	**1.39**	**95**	*i* P	**Pg**	**10 41 11.6**	**+0.9**
YURE				*i* S	**Sn**	**10 41 31.3**	**+3.3**
YURE	**YUREGIR**	**1.39**	**95**	P	**Pg**	**10 41 11.6**	**+0.9**
GULA	**Gulagac**	**1.42**	**11**	*e*PN	**Pn**	**10 41 09.6**	**-0.4**
GULA	**Gulagac**	**1.42**	**11**	*e*Pn	**Pn**	**10 41 09.6**	**-0.4**
CEYT	**Ceyhan**	**1.48**	**87**	*e*PN	**Pn**	**10 41 10.3**	**-0.4**
CEYT	**Ceyhan**	**1.48**	**87**	*e*Pn	**Pn**	**10 41 10.3**	**-0.4**
KOZT	**Kozan**	**1.62**	**70**	*e*PN	**Pn**	**10 41 12.0**	**-0.7**
KOZT	**Kozan**	**1.62**	**70**	*e*Pn	**Pn**	**10 41 12.0**	**-0.7**
TAHT	**Tahtakopru-Hat**	**1.92**	**107**	*e*PN	**Pn**	**10 41 16.0**	**-0.8**
TAHT	**Tahtakopru-Hat**	**1.92**	**107**	*e*Pn	**Pn**	**10 41 16.0**	**-0.8**

*BUC **20** 10:41:51.9±0.7, 44˚.87N×22˚.41E, h27km±9km, MD2.5/2, Error ellipse: s-maj=9.7km s-min=4.3km az=353.0*
*CSEM **20** 10:41:52.1±0.2, 44˚.99N×22˚.42E, h2km, ML1.5, Error ellipse: s-maj=5.3km s-min=3.7km az=122.0*
*BEO **20** 10:41:52.9±0.3, 45˚.01N×22˚.38E, h0km, M1.5/3*

ISC 20 10:41:51.5±1.1, 44˚.96N±0˚.02×22˚.46E±0˚.03, h9km±10km, n31, σ0°61/50, 6C-9D, Romania

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
GZR	**Gura Zlata**	**0.49**	**28**	*e*Pg	**Pg**	**10 42 01.0**	**0.0**
GZR				*e*Sg	**Sg**	**10 42 08.1**	**+0.7**
GZR	**Gura Zlata**	**0.49**	**28**	*e*Pg	**Pg**	**10 42 01.0**	**0.0**
GZR				*e*Sg	**Sg**	**10 42 08.1**	**+0.7**
MDVR	**Moldovita**	**0.56**	**251**	⇑*i* P	**Pg**	**10 42 02.6**	**+0.3**
MDVR	**Moldovita**	**0.56**	**251**	⇑*i* P	**Pg**	**10 42 02.6**	**+0.3**
MDVR				*i* S	**Sg**	**10 42 09.8**	**+0.2**
MDVR	**Moldovita**	**0.56**	**251**	⇑*i* P	**Pg**	**10 42 02.6**	**+0.3**
MDVR				S	**Sg**	**10 42 09.8**	**+0.2**
KUBS	**Kucevo**	**0.78**	**226**	*e*Pg	**Pg**	**10 42 05.9**	**-0.7**
KUBS				*e*Sg	**Sg**	**10 42 16.5**	**-0.2**
KUBS	**Kucevo**	**0.78**	**226**	*e*Pg	**Pg**	**10 42 05.9**	**-0.7**
KUBS				*e*Sg	**Sg**	**10 42 16.5**	**-0.2**
BZS	**Buzias**	**0.88**	**318**	⇑*i* P	**Pb**	**10 42 09.4**	**+0.4**
BZS	**Buzias**	**0.88**	**318**	⇑*i* P	**Pb**	**10 42 09.4**	**+0.4**
BZS				*i* S	**Sb**	**10 42 21.4**	**+0.5**
BZS	**Buzias**	**0.88**	**318**	*e*Pg	**Pg**	**10 42 07.5**	**-1.0**
BZS				*e*Sg	**Sg**	**10 42 18.8**	**-1.2**
BZS	**Buzias**	**0.88**	**318**	*e*Pg	**Pg**	**10 42 07.5**	**-1.0**
BZS	**Buzias**	**0.88**	**318**	⇑*i* P	**Pb**	**10 42 09.4**	**+0.4**
BZS				*e*Sg	**Pb**	**10 42 18.8**	**-1.2**
BZS				S	**Sb**	**10 42 21.4**	**+0.5**
LOT	**Lotru**	**1.05**	**62**	⇓*i* P	**Pn**	**10 42 12.5**	**0.0**
LOT	**Lotru**	**1.05**	**62**	⇓*i* P	**Pn**	**10 42 12.5**	**0.0**
LOT				*i* S	**Sn**	**10 42 27.0**	**-0.4**
LOT	**Lotru**	**1.05**	**62**	⇓*i* P	**Sn**	**10 42 12.5**	**0.0**
LOT				S	**Sn**	**10 42 27.0**	**-0.4**
SIRR	**Siria**	**1.42**	**337**	⇓*i* P	**Pb**	**10 42 18.3**	**+0.1**
SIRR	**Siria**	**1.42**	**337**	⇓*i* P	**Pb**	**10 42 18.3**	**+0.1**
SIRR				*i* S	**Sb**	**10 42 36.8**	**+0.4**
SIRR	**Siria**	**1.42**	**337**	⇓*i* P	**Pb**	**10 42 18.3**	**+0.1**
SIRR				S	**Sb**	**10 42 36.8**	**+0.4**
ARR	**Arges**	**1.59**	**74**	S	**Sn**	**10 42 40.6**	**-0.2**
ARR	**Arges**	**1.59**	**74**	*i* S	**Sn**	**10 42 40.6**	**-0.2**
ARR	**Arges**	**1.59**	**74**	S	**Sn**	**10 42 40.6**	**-0.2**
GRUS	**Gruza**	**1.65**	**230**	*e*Pg	**Pg**	**10 42 23.5**	**+0.5**
GRUS				*e*Sg	**Sg**	**10 42 45.2**	**+0.8**
GRUS	**Gruza**	**1.65**	**230**	*e*Pg	**Pg**	**10 42 23.5**	**+0.5**
GRUS				*e*Sg	**Sg**	**10 42 45.2**	**+0.8**
ZAPS	**Zavoj**	**1.69**	**176**	*e*Pn	**Pg**	**10 42 24.6**	**+0.6**
DRGR		**1.84**	**5**	⇓*i* P	**Pn**	**10 42 23.8**	**+0.4**
DRGR		**1.84**	**5**

SBA	**Scott Base**	**17.44**	**200**	*e*Pn	**Pn**	**11 06 56.0**	**-1.2**
	143nm,1.3s						
VNDA	**Vanda**	**18.04**	**203**	P	**P**	**11 07 05.0**	**-0.1**
	0.6nm,0.3s,baz=66,slow=18,SNR=56						
VNDA				S	S	11 10 37.8	+6.2
	0.0nm,0.3s,baz=96,slow=9.2,SNR=1.6						
VNDA				LR	LR	11 12 08.3	
	comp=Z,4μm,19.7s,baz=54,slow=31						
RPZ	**Rata Peaks**	**23.77**	**313**	P	**P**	**11 08 07.8**	**+1.1**
	12nm,1.1s,baz=162,slow=16,SNR=1.7						
RPZ				LR	LR	11 15 04.4	
	comp=Z,3μm,21.0s,baz=155,slow=31						
URZ	**Urewera**	**27.02**	**327**	LR	LR	11 17 05.6	
	comp=Z,2μm,21.7s,baz=162,slow=32						
QSPA	**South Pole Qui**	**27.22**	**180**	*e*P	**P**	**11 08 37.0**	**-1.1**
	184nm,1.1s						
QSPA				*e*PcP	PcP	11 11 46.8	-11
RKT	**Rikitea**	**44.52**	**41**	*e*S	S	11 17 35.9	-5.0
	131nm,30.2s						
RKT				*e*LQ	LQ	11 21 26.2	
	3μm,29.8s						
RKT				*e*LR	LR	11 23 15.3	
	1μm,28.5s,baz=194						
RKT	**Rikitea**	**44.52**	**41**	*e*T	T	11 58 28.2	
	5.2nm,0.2s						
VNA3	**Neumayer Olymp**	**45.03**	**169**	P	**P**	**11 11 08.3**	**-1.2**
SNAA	**Sanae**	**45.13**	**172**	P	**P**	**11 11 09.7**	**-0.6**
SNAA	**Sanae**	**45.13**	**172**	*e*P	**P**	**11 11 09.4**	**-0.9**
	5μm,1.2s						
MAW	**Mawson**	**45.35**	**203**	P	**P**	**11 11 12.4**	**+0.5**
	5.4nm,0.9s,baz=183,slow=9.8,SNR=5.3						
MAW				LR	LR	11 28 59.3	
	comp=Z,2μm,18.3s,baz=148,slow=34						
VNA2	**Neumayer--Watz**	**45.53**	**170**	P	**P**	**11 11 12.3**	**-1.0**
	baz=191,slow=9.0						
STKA	**Stephens Creek**	**45.72**	**287**	LR	LR	11 28 17.2	
	comp=Z,331nm,19.2s,baz=169,slow=33						
VNA1	**Neumayer--Stat**	**45.73**	**169**	P	**P**	**11 11 14.8**	**-0.1**
USHA	**Ushuaia**	**45.91**	**127**	P	**P**	**11 11 17.8**	**+1.3**
	30nm,0.7s,baz=244,slow=8.2,SNR=3.5						
PPT2	**Papeete2**	**46.48**	**20**	*e*S	**S**	**11 18 05.5**	**-3.9**
	754nm,26.2s						
PPT2				*e*LQ	LQ	11 22 14.5	
	3μm,27.2s						
PPT2				*e*LR	LR	11 24 06.8	
	1μm,24.8s,baz=193						
PPT	**Papeete**	**46.50**	**20**	LR	LR	11 26 56.8	
	comp=Z,493nm,18.1s,baz=190,slow=31						
SYO	**Syowa Base**	**47.25**	**192**	⇑*e*P	**P**	**11 11 24.0**	**-2.8**
SYO	**Syowa Base**	**47.25**	**192**	⇓*p*P	**P**	**11 11 27.0**	**+0.2**
VAH	**Vaihoa**	**49.10**	**22**	*e*T	T	12 04 19.7	
	85nm,0.3s						
H01W1	**Cape Leeuwin H**	**55.63**	**260**	T	T	12 12 45.5	
	baz=147,slow=76,SNR=9.9						
H01W2	**Cape Leeuwin H**	**55.63**	**260**	T	T	12 12 46.5	
	baz=147,slow=76,SNR=11						
H01W3	**Cape Leeuwin H**	**55.64**	**260**	T	T	12 12 47.2	
	baz=147,slow=76,SNR=10						
ASAR	**Alice Springs**	**56.20**	**285**	P	**P**	**11 12 35.0**	**+0.7**
	3.8nm,0.9s,baz=152,slow=7.4,SNR=19						
ASAR				LR	LR	11 32 45.0	
	comp=Z,314nm,21.3s,baz=153,slow=32						
PLCA	**Paso Flores**	**56.48**	**115**	P	**P**	**11 12 37.5**	**+1.4**
	3.9nm,0.8s,baz=242,slow=8.1,SNR=7.5						
PLCA				LR	LR	11 32 04.0	
	comp=Z,551nm,19.2s,baz=228,slow=31						
WRA	**Warramunga Arr**	**59.27**	**287**	P	**P**	**11 12 56.2**	**+0.3**
	2.3nm,1.0s,baz=160,slow=6.2,SNR=7.8						
WRA				LR	LR	11 35 16.9	
	comp=Z,464nm,20.6s,baz=215,slow=33						
WRAB	**Tennant Creek**	**59.27**	**287**	P	**P**	**11 12 55.4**	**-0.5**
	1.1nm,0.6s						
FITZ	**Fitzroy Crossi**	**64.76**	**280**	LR	LR	11 38 54.6	
	comp=Z,405nm,19.3s,slow=33						
CPUP	**Villa Florida**	**74.40**	**117**	P	**P**	**11 14 31.1**	**-1.0**
	4.3nm,0.7s,baz=23,slow=4.3,SNR=4.9						
CPUP				LR	LR	11 43 32.5	
	comp=Z,370nm,19.4s,baz=208,slow=33						
NNA	**Nana**	**78.48**	**94**	LR	LR	11 40 51.3	
	comp=Z,214nm,18.9s,baz=230,slow=29						
LPAZ	**La Paz**	**78.64**	**103**	P	**P**	**11 14 57.6**	**+0.6**
	4.7nm,1.0s,baz=161,slow=2.7,SNR=12						
KAPI	**Kappang**	**78.96**	**281**	LR	LR	11 48 05.9	
	comp=Z,391nm,18.3s,baz=163,slow=34						
SUR	**Sutherland**	**84.95**	**185**	LR	LR	11 50 29.7	
	comp=Z,35nm,18.2s,baz=168,slow=34						
BOSA	**Boshof**	**88.46**	**189**	P	**P**	**11 15 46.8**	**+0.1**
	4.2nm,1.0s,baz=186,slow=4.3,SNR=3.5						
BOSA				LR	LR	11 51 40.5	
	comp=Z,843nm,19.9s,baz=174,slow=33						
KSM	**Kuching**	**88.98**	**275**	*e*P	**P**	**11 15 48.1**	**-1.0**
	9.1nm,0.9s						
LBTB	**Lobatse**	**92.01**	**189**	LR	LR	11 53 38.8	
	comp=Z,560nm,20.4s,baz=188,slow=33						
JTS	**JuntasAbangare**	**94.47**	**76**	*e*P	P	11 16 06.0	-8.6
	61nm,0.6s						
ROSC	**El Rosal**	**94.47**	**88**	LR	LR	11 50 55.0	
	comp=Z,138nm,20.4s,baz=210,slow=30						
PTGA	**Pitinga**	**96.07**	**104**	LR	LR	11 53 06.0	
	comp=Z,62nm,18.7s,baz=202,slow=31						
JCJ	**Chichijima**	**99.05**	**314**	LR	LR	11 57 42.4	
	comp=Z,190nm,19.8s,baz=230,slow=33						
KLR	**Kul'dur**	**122.49**	**316**	PKP	**PKPdf**	**11 21 48.1**	**-0.4**
	1.1nm,0.8s,baz=149,slow=3.1,SNR=4.4						
ULM	**Lac du Bonnet**	**125.14**	**47**	PKP	**PKPdf**	**11 21 52.9**	**-0.7**
	1.3nm,0.6s,baz=207,slow=6.8,SNR=2.4						
ILAR	**Eielson Array**	**128.04**	**10**	PKP	**PKPdf**	**11 21 59.2**	**+0.5**
	2.0nm,1.1s,baz=226,slow=1.6,SNR=12						
TORD	**Torodi Ar. Bea**	**129.40**	**163**	PKP	**PKPdf**	**11 22 02.8**	**-0.1**
	1.5nm,1.0s,baz=195,slow=0.9,SNR=5.4						
YKA	**Yellowknife Ar**	**130.62**	**28**	PKP	**PKPdf**	**11 22 03.3**	**-0.3**
	0.5nm,1.0s,baz=193,slow=2.2,SNR=8.2						
ZALV	**Zalesovo Beam**	**144.24**	**289**	PKP	**PKPab**	**11 22 27.3**	**+0.4**
	1.2nm,0.7s,baz=187,slow=1.2,SNR=6.9						
RES	**Resolute Bay**	**144.59**	**26**	*e*PKPdf	PKPbc	11 22 28.9	+1.2
KURK	**Kurchatov**	**144.75**	**280**	*e*PKPdf	PKPbc	11 22 29.4	+0.4
BRVK	**Borovoye**	**150.13**	**277**	*e*PKPbc	**PKPbc**	**11 22 44.7**	**+0.9**
NRIK	**Noril'sk**	**151.69**	**315**	PKPbc	**PKPbc**	**11 22 48.6**	**+1.6**
	3.7nm,0.8s,baz=46,slow=2.8,SNR=3.5						
ESDC	**Sonseca Array**	**154.04**	**145**	PKP	**PKPdf**	**11 22 46.2**	**+1.0**
	0.2nm,0.3s,baz=207,slow=1.3,SNR=5.6						
ESDC				PKPbc	**PKiKP**	**11 22 55.1**	**+1.8**
	0.2nm,0.3s,baz=222,slow=1.3,SNR=4.6						
ESDC				PKPab	**PKPab**	**11 23 07.2**	**+0.4**
	3.3nm,0.8s,baz=193,slow=2.8,SNR=8.1						
BRTR	**Keskin Array B**	**154.30**	**214**	PKP	**PKPdf**	**11 22 45.4**	**-0.3**
	0.9nm,1.0s,baz=115,slow=5.1,SNR=2.9						
BRTR				PKPbc	**PKiKP**	**11 22 54.3**	**+0.3**
	2.2nm,1.0s,baz=191,slow=5.7,SNR=7.2						
KBZ	**Khabaz**	**155.02**	**233**	PKPab	**PKPab**	**11 23 12.0**	**+1.3**
	2.5nm,1.0s,baz=135,slow=2.8,SNR=4.6						
AKASG	**Malin Array Be**	**165.62**	**218**	PKPab	**PKPab**	**11 23 55.9**	**-0.9**
	0.7nm,0.6s,baz=174,slow=4.4,SNR=4.9						

SJA 20 11:03:14.8±0.5, 32°28S×68°95W, h10km, ML2.7, MW3.9, Mendoza Province

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
RTCV	**Cerro Valdivia**	**0.54**	**40**	*i* P	Pb	11 03 27.1	+0.6
RTCV				*i* S	Sb	11 03 35.8	+1.5
ARCO	**CERRO ARCO**	**0.56**	**178**	IAML		11 03 41.4	
	comp=Z,142nm,0.1s						
RTLS	**Leoncito**	**0.56**	**328**	*i* P	Pb	11 03 27.6	+0.7
AAGR	**Agrelo**	**0.81**	**173**	*i* P	Pb	11 03 31.7	+0.6
AAGR				*i* S	Sn	11 03 44.1	-0.4
SJA	**San Juan**	**0.82**	**24**	*i* P	Pn	11 03 31.9	-0.6
SJA				IAML		11 03 48.7	
	comp=Z,220nm,0.1s						
AMOG	**MOGNA**	**1.39**	**16**	*i* P	Pn	11 03 39.9	-0.5
ACAN	**Cantantal**	**1.49**	**90**	*i* P	Pn	11 03 41.3	-0.4
ACAN				*i* S	Sn	11 04 01.1	-0.2
ROC1	**El Roble**	**1.88**	**248**	*i* P	Pn	11 03 46.9	-0.3
AVFE	**Valle Fertil**	**2.06**	**39**	*i* P	Pn	11 03 49.7	+0.1
AVFE				IAML		11 04 21.1	
	comp=Z,71nm,0.4s						
MRA	**San Martin**	**2.74**	**94**	IAML		11 04 44.3	
	comp=Z,80nm,0.6s						
AGUA	**GUANDACOL**	**2.81**	**8**	*i* P	Pn	11 04 00.3	+0.4

*ATH **20** 11:07:17.5, 36°59N×21°38E, h15km±1km, ML3.0/12, Error ellipse: s-maj=1.8km s-min=0.9km az=48.0*
*CSEM **20** 11:07:18.8±0.3, 36°63N×21°41E, h2km, ML3.2, Error ellipse: s-maj=6.3km s-min=3.7km az=45.0*

*THE **20** 11:07:19.6, 36°67N×21°42E, h0km±2km, ML3.2/15, Error ellipse: s-maj=2.7km s-min=1.4km az=223.0*
ISC 20 11:07:17.2±1.1, 36°59N±0°03×21°36E±0°03, h16km±8km, n105, σ1s06/148, Southern Greece

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PYL	**PYLOS**	**0.43**	**44**	P	**Pg**	**11 07 25.9**	**0.0**
PYL				S	**Sg**	**11 07 30.6**	**-1.3**
PYL	**PYLOS**	**0.43**	**44**	P	**Pg**	**11 07 25.9**	**0.0**
PYL				S	**Sg**	**11 07 30.6**	**-1.3**
PYL	**PYLOS**	**0.43**	**44**	P	**Pg**	**11 07 26.1**	**+0.2**
PYL				AML	AML	11 07 31.8	
	comp=N,7473μm,0.5s						
PYL				S	**Sg**	**11 07 32.1**	**+0.2**
PYL				AML	AML	11 07 32.5	
	comp=E,6173μm,0.5s						
ITM	**Ithomi**	**0.74**	**37**	P	**Pg**	**11 07 31.3**	**-0.4**
ITM				S	**Sg**	**11 07 40.4**	**-1.2**
ITM	**Ithomi**	**0.74**	**37**	P	**Pg**	**11 07 31.3**	**-0.4**
ITM				S	**Sg**	**11 07 40.4**	**-1.2**
ITM	**Ithomi**	**0.74**	**37**	P	**Pg**	**11 07 30.9**	**-0.8**
ITM				S	**Sg**	**11 07 40.3**	**-1.2**
ITM				AML	AML	11 07 41.3	
	comp=E,3162μm,0.5s						
ITM				AML	AML	11 07 41.6	
	comp=N,3868μm,0.4s						
AMT	**Artemida-Makis**	**0.98**	**16**	P	**Pb**	**11 07 35.9**	**+0.1**
AMT				S	**Sn**	**11 07 49.9**	**0.0**
AMT	**Artemida-Makis**	**0.98**	**16**	P	**Pb**	**11 07 36.0**	**+0.1**
AMT				S	**Sn**	**11 07 49.9**	**0.0**
AMT	**Artemida-Makis**	**0.98**	**16**	P	**Pb**	**11 07 36.0**	**+0.1**
AMT				S	**Sn**	**11 07 51.2**	**+1.2**
AMT				AML	AML	11 07 52.9	
	comp=N,3023μm,0.7s						
AMT				AML	AML	11 07 53.0	
	comp=E,3586μm,0.6s						
VLX	**Vlachokerasia**	**1.13**	**46**	P	**Pb**	**11 07 38.5**	**+0.1**
VLX				S	**Sb**	**11 07 52.6**	**-0.2**
VLX	**Vlachokerasia**	**1.13**	**46**	P	**Pb**	**11 07 38.5**	**+0.1**
VLX				S	**Sb**	**11 07 52.6**	**-0.2**
VLX	**Vlachokerasia**	**1.13**	**46**	P	**Pb**	**11 07 38.1**	**-0.2**
VLX				S	**Sb**	**11 07 52.1**	**-0.7**
VLX				AML	AML	11 07 54.2	
	comp=N,2221μm,0.6s						
VLX				AML	AML	11 07 55.1	
	comp=E,1821μm,0.4s						
ZKS	**Zakynthos**	**1.20**	**338**	P	**Pb**	**11 07 40.2**	**+0.6**
ZKS				S	**Sg**	**11 07 57.3**	**+1.3**
ZKS	**Zakynthos**	**1.20**	**338**	P	**Pb**	**11 07 40.2**	**+0.6**
ZKS				S	**Sg**	**11 07 57.3**	**+1.3**
ZKS				AML	AML	11 08 00.4	
	comp=N,1170μm,0.4s						
ZKS				AML	AML	11 08 00.6	
	comp=E,1679μm,0.3s						
VLI	**Veliai**	**1.27**	**84**	P	**Pg**	**11 07 41.9**	**+0.2**
VLI				S	**Sg**	**11 08 02.5**	**+4.2**
VLI	**Veliai**	**1.27**	**84**	P	**Pg**	**11 07 41.9**	**+0.2**
VLI				S	**Sg**	**11 07 59.8**	**+1.5**
VLI	**Veliai**	**1.27**	**84**	P	**Pg**	**11 07 42.0**	**+0.3**
VLI				S	**Sg**	**11 07 59.8**	**+1.5**
VLI				AML	AML	11 08 01.8	
	comp=N,440μm,0.4s						
VLI				AML	AML	11 08 02.8	
	comp=E,587μm,0.9s						
KYTH	**Kithira**	**1.38**	**102**	P	**Pg**	**11 07 44.3**	**+0.5**
KYTH				S	**Sg**	**11 08 04.1**	**+2.3**
KYTH	**Kithira**	**1.38**	**102**	P	**Pg**	**11 07 43.7**	**-0.1**
KYTH				S	**Sg**	**11 08 02.6**	**+0.8**
KYTH	**Kithira**	**1.38**	**102**	P	**Pg**	**11 07 43.6**	**-0.1**
DRO	**Drossia**	**1.39**	**11**	P	**Pb**	**11 07 43.0**	**+0.2**
DRO				S	**Sg**	**11 08 03.8**	**+1.7**
DRO	**Drossia**	**1.39**	**11**	P	**Pg**	**11 07 44.2**	**+0.2**
DRO				S	**Sg**	**11 08 01.4**	**-0.7**
DRO	**Drossia**	**1.39**	**11**	P	**Pg**	**11 07 44.1**	**+0.2**
DRO				S	**Sg**	**11 08 01.4**	**-0.7**
DRO				AML	AML	11 08 08.3	
	comp=E,1661μm,0.4s						
DRO				AML	AML	11 08 09.0	
	comp=N,1225μm,0.6s						
RLS	**Riolos of Patr**	**1.47**	**3**	P	**Pg**	**11 07 45.1**	**-0.4**
RLS				S	**Sg**	**11 08 05.4**	**+0.8**
RLS	**Riolos of Patr**	**1.47**	**3**	S	**Sg**	**11 08 05.4**	**+0.8**
RLS				AML	AML	11 08 13.4	
	comp=N,534μm,0.4s						
RLS				AML	AML	11 08 14.4	
	comp=E,736μm,0.7s						
GUR	**Goura**	**1.56**	**30**	P	**Pb**	**11 07 45.6**	**-0.1**
GUR				S	**Sg**	**11 08 08.4**	**+1.0**
GUR	**Goura**	**1.56**	**30**	P	**Pb**	**11 07 46.2**	**+0.5**
GUR				S	**Sg**	**11 08 07.6**	**+0.2**
GUR	**Goura**	**1.56**	**30**	P	**Pb**	**11 07 46.1**	**+0.5**
GUR				S	**Sg**	**11 08 07.6**	**+0.2**
GUR				AML	AML	11 08 13.2	
	comp=N,1987μm,0.4s						
GUR				AML	AML	11 08 13.5	
	comp=E,1226μm,0.3s						
KLV	**Kalavryta, Ach**	**1.58**	**23**	P	**Pb**	**11 07 46.2**	**+0.1**
KLV				S	**Sg**	**11 08 08.6**	**+0.3**
KLV	**Kalavryta, Ach**	**1.58**	**23**	P	**Pg**	**11 07 47.3**	**-0.4**
KLV				S	**Sg**	**11 08 08.6**	**+0.3**
KLV	**Kalavryta, Ach**	**1.58**	**23**	P	**Pg**	**11 07 47.3**	**-0.4**
KLV				S	**Sg**	**11 08 10.2**	**+1.9**
KLV				AML	AML	11 08 13.2	
	comp=E,532μm,0.9s						
KLV				AML	AML	11 08 13.9	
	comp=N,356μm,0.7s						
KFL	**Anninata**	**1.59**	**343**	P	**Pb**	**11 07 46.3**	**+0.2**
KFL				S	**Sg**	**11 08 09.0**	**+0.6**
KFL	**Anninata**	**1.59**	**343**	P	**Pb**	**11 07 46.3**	**+0.2**
KFL				S	**Sg**	**11 08 09.0**	**+0.6**
KFL	**Anninata**	**1.59**	**343**	P	**Pn**	**11 07 45.8**	**+1.1**
KFL				S	**Sg**	**11 08 09.8**	**+1.4**
AXS	**Araxos**	**1.61**	**0**	P	**Pg**	**11 07 48.0**	**-0.1**
AXS				S	**Sb**	**11 08 07.7**	**+1.2**
AXS	**Araxos**	**1.61**	**0**	P	**Pg**	**11 07 48.0**	**-0.1**
AXS				S	**Sb**	**11 08 07.7**	**+1.2**
AXS	**Araxos**	**1.61**	**0**	P	**Pg**	**11 07 47.5**	**-0.5**
KRND	**KRANIDI**	**1.64**	**60**	P	**Pb**	**11 07 47.4**	**+0.5**
KRND				S	**Sg**	**11 08 09.1**	**-0.8**
KRND	**KRANIDI**	**1.64**	**60**	P	**Pb**	**11 07 47.5**	**+0.5**
KRND				S	**Sg**	**11 08 09.1**	**-0.8**
KRND	**KRANIDI**	**1.64**	**60**	P	**Pb**	**11 07 47.5**	**+0.6**
VLS	**Valsamata**	**1.70**	**339**	P	**Pb**	**11 07 48.1**	**0.0**
VLS				S	**Sg**	**11 08 11.7**	**-0.4**
VLS	**Valsamata**	**1.70**	**339**	P	**Pb**	**11 07 48.1**	**0.0**
VLS				S	**Sg**	**11 08 12.4**	**+0.3**
LAKA	**Lakka**	**1.72**	**16**	P	**Pb**	**11 07 49.4**	**+1.0**
LAKA				S	**Sg**	**11 08 11.9**	**-0.8**
LAKA	**Lakka**	**1.72**	**16**	P	**Pb**	**11 07 49.4**	**+1.0**
LAKA				S	**Sg**	**11 08 11.9**	**-0.8**
ANKY	**Antikythira Is**	**1.72**	**114**	P	**Pg**	**11 07 50.6**	**+0.3**
ANKY				S	**Sg**	**11 08 14.5**	**+1.8**
ANKY	**Antikythira Is**	**1.72**	**114**	P	**Pg**	**11 07 49.5**	**-0.8**
ANKY	**Antikythira Is**	**1.72**	**114**	P	**Pg**	**11 07 49.5**	**-0.8**
DID	**Didima**	**1.76**	**58**	P	**Pb**	**11 07 49.2**	**+0.2**
DID				S	**Sg**	**11 08 13.3**	**-0.5**
DID	**Didima**	**1.76**	**58**	P	**Pb**	**11 07 49.2**	**+0.2**
DID				S	**Sg**	**11 08 13.1**	**-0.7**
DID	**Didima**	**1.76**	**58**	P	**Pb**	**11 07 49.2**	**+0.2**
DID				S	**Sg**	**11 08 13.1**	**-0.7**
DID				AML	AML	11 08 17.2	
	comp=E,306μm,0.6s						
DID				AML	AML	11 08 17.3	
	comp=N,598μm,0.5s						
THAL	**Thalero**	**1.78**	**35**	P	**Pg**	**11 07 50.7**	**-0.7**
THAL				S	**Sg**	**11 08 14.4**	**-0.1**
THAL	**Thalero**	**1.78**	**35**	P	**Pb**	**11 07 49.2**	**-0.2**
THAL				S	**Sg**	**11 08 14.4**	**-0.1**
THAL	**Thalero**	**1.78**	**35**	P	**Pb**	**11 07 49.2**	**-0.2**
KALE	**Kalithea**	**1.91**	**19**	P	**Pb**	**11 07 52.3**	**+0.7**
KALE	**Kalithea**	**1.91**	**19**	P	**Pb**	**11 07 52.1**	**+0.5**
KALE	**Kalithea**	**1.91**	**19**	P	**Pb**	**11 07 52.1**	**+0.5**
LTK	**Loutraki**	**1.92**	**41**	P	**Pb**	**11 07 51.9**	**+0.1**
LTK				S	**Sg**	**11 08 18.2**	**-0.8**
LTK	**Loutraki**	**1.92**	**41**	P	**Pb**	**11 07 51.9**	**+0.1**
LTK				S	**Sg**	**11 08 18.2**	**-0.8**
LTK	**Loutraki**	**1.92**	**41**	P	**Pb**	**11 07 52.2**	**+0.4**
PDO	**Prodromos**	**2.01**	**356**	P	**Pb**	**11 07 53.2**	**-0.2**
PDO	**Prodromos**	**2.01**	**356**	P	**Pb**	**11 07 53.2**	**-0.2**
PDO				S	**Sb**	**11 08 19.1**	**+0.9**
PDO	**Prodromos**	**2.01**	**356**	P	**Pb**	**11 07 53.1**	**-0.3**
PDO				S	**Sb**	**11 08 19.1**	**+0.9**
PDO				AML	AML	11 08 30.9	
	comp=N,455μm,0.5s						
PDO				AML	AML	11 08 31.3	
	comp=E,485μm,0.5s						
ANX	**Ano Chora**	**2.05**	**12**	P	**Pb**	**11 07 54.7**	**+0.6**
ANX				S	**Sb**	**11 08 19.4**	**0.0**
ANX	**Ano Chora**	**2.05**	**12**	P	**Pb**	**11 07 53.9**	**-0.2**
ANX				S	**Sb**	**11 08 19.4**	**0.0**
PROD	**Prodromos**	**2.07**	**36**	P	**Pb**	**11 07 55.3**	**+0.9**
PROD	**Prodromos**	**2.07**	**36**	P	**Pb**	**11 07 55.3**	**+0.9**
VILL	**Villia**	**2.21**	**44**	P	**Pb**	**11 07 55.9**	**-0.9**
VIL2	**Platees**	**2.22**	**42**	P	**Pb**	**11 07 55.9**	**-1.0**
LKD2	**Lefkada island**	**2.27**	**346**	P	**Pb**	**11 07 57.2**	**-0.5**
LKD2	**Lefkada island**	**2.27**	**346**	P	**Pb**	**11 07 57.2**	**-0.5**
VLY	**Voula,Athens**	**2.31**	**56**	P	**Pn**	**11 07 55.3**	**+0.7**
VLY	**Voula,Athens**	**2.31**	**56**	P	**Pn**	**11 07 55.3**	**+0.7**
EVR	**Evrytania**	**2.35**	**8**	P	**Pb**	**11 07 58.3**	**-1.0**
EVR	**Evrytania**	**2.35**	**8**	P	**Pb**	**11 07 58.3**	**-1.0**
ATHU	**Athens Univers**	**2.37**	**54**	P	**Pn**	**11 07 56.2**	**+0.8**
ATHU	**Athens Univers**	**2.37**	**54**	P	**Pn**	**11 07 56.1**	**+0.8**
IMMV	**Iera Moni Meta**	**2.40**	**117**	P	**Pb**	**11 07 58.4**	**-1.5**
IMMV	**Iera Moni Meta**	**2.40**	**117**	P	**Pb**	**11 07 58.4**	**-1.5**
LKR	**Lokris**	**2.44**	**32**	P	**Pb**	**11 07 59.2**	**-1.4**
LKR	**Lokris**	**2.44**	**32**	P	**Pb**	**11 07 59.2**	**-1.4**
PTL	**Penteli**	**2.47**	**53**	P	**Pn**	**11 07 58.0**	**+1.2**
PTL	**Penteli**	**2.47**	**53**	P	**Pn**	**11 07 58.0**	**+1.2**
DSL	**Palaion Diasel**	**2.55**	**355**	P	**Pb**	**11 08 01.4**	**-1.2**
DSL	**Palaion Diasel**	**2.55**	**355**	P	**Pb**	**11 08 01.4**	**-1.2**
EREA	**Eretria**	**2.74**	**47**	P	**Pn**	**11 08 01.7**	**+1.2**
EREA	**Eretria**	**2.74**	**47**	P	**Pn**	**11 08 01.7**	**+1.2**
THL	**Klokotos Trika**	**3.02**	**10**	P	**Pn**	**11 08 06.7**	**+2.5**
SKIA	**Skiathos**	**3.07**	**32**	P	**Pn**	**11 08 07.0**	**+2.0**
SKIA	**Skiathos**	**3.07**	**32**	P	**Pn**	**11 08 07.0**	**+2.0**
IDI	**Anoyia**	**3.14**	**113**	P	**Pb**	**11 08 10.6**	**-2.0**
IDI	**Anoyia**	**3.14**	**113**	P	**Pb**	**11 08 10.6**	**-2.0**
SGD	**Sagiada**	**3.15**	**344**	P	**Pb**	**11 08 10.8**	**-2.0**
SGD	**Sagiada**	**3.15**	**344**	P	**Pb**	**11 08 10.8**	**-2.0**
AOS	**Alonnisos**	**3.26**	**37**	P	Pn	11 08 11.2	+3.6
AOS	**Alonnisos**	**3.26**	**37**	P	Pn	11 08 11.2	+3.7
KEK	**Kerkira**	**3.36**	**339**	P	**Pn**	**11 08 10.8**	**+1.9**
KPRO	**Kipourio**	**3.36**	**360**	P	Pn	11 08 12.4	+3.3
KPRO	**Kipourio**	**3.36**	**360**	P	Pn	11 08 12.4	+3.3
LAST	**Lasithi**	**3.63**	**112**	P	Pb	11 08 17.4	-3.6
LAST	**Lasithi**	**3.63**	**112**	P	Pb	11 08 17.4	-3.6
PAIG	**Paliouri**	**3.80**	**28**	P	Pn	11 08 19.2	+4.2
PAIG	**Paliouri**	**3.80**	**28**	P	Pn	11 08 19.2	+4.2
NEST	**Nestorio**	**3.83**	**356**	P	Pn	11 08 19.3	+3.8
NEST	**Nestorio**	**3.83**	**356**	P	Pn	11 08 19.3	+3.8
STON	**Ston**	**6.88**	**337**	*e*Pn	**Pn**	**11 08 57.3**	**0.0**
STON				Sn	**Sn**	**11 10 10.4**	**-4.9**

SJA 20 11:09:59.8±0.6, 22°42S×65°26W, h14km±4km, ML3.0, MW3.6, Jujuy Province

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
YJA	**Yavi**	**0.34**	**315**	*i* P	Pb	11 10 08.3	+0.4
YJA				*i* S	Sb	11 10 13.9	+0.6
YJA				IAML		11 10 14.4	
	comp=Z,1μm,0.3s						
HJA	**Humahuaca**	**0.80**	**190**	*i* P	Pb	11 10 16.0	+0.2
HJA				*i* S	Sn	11 10 28.4	-0.7
HJA				IAML		11 10 32.2	
	comp=Z,287nm,0.3s						
ASTB	**Santa Barbara**	**1.70**	**154**	*i* P	Pb	11 10 31.6	+0.7
ASTB				*i* S	Sg	11 10 55.2	+0.7
AZAP	**Zapla**	**1.81**	**174**	*i* P	Pb	11 10 33.2	+0.2
AZAP				*i* S	Sg	11 10 57.9	-0.2
AZAP				IAML		11 11 04.8	
	comp=Z,281nm,0.6s						
ALOL	**LOMAS DE OLMED**	**1.82**	**140**	*i* P	Pb	11 10 32.8	-0.2
ALOL				*i* S	Sb	11 10 57.1	+1.3

*ISCJB **20** 11:10:00.8±0.8, 32°32N±0°06×115°34W±0°06, h17km±10km, Error ellipse: s-maj=11.2km s-min=6.6km az=37.2*
*ECX **20** 11:10:01.9±0.4, 32°30N×115°35W, h6km, MD2.0, ML2.2*
*MEX **20** 11:10:02.1±0.4, 32°43N×115°20W, h16km±

PRRZ	Plateau Road	0.61	182	⇑PN	Pn	11 30 45.7	+0.1
MUGZ	Murupara	0.65	155	⇑PN	Pn	11 30 45.5	-0.3
URZ	Urewera	0.66	124	⇑PN	Pn	11 30 45.3	-0.5
URZ				SN	Sn	11 31 03.5	-1.2
URZ				AML	AML	11 31 03.5	
WPRZ	Whakapapatarin	0.66	197	⇑PN	Pn	11 30 46.2	+0.3
ALRZ	Allen Road	0.68	185	⇑PN	Pn	11 30 46.1	+0.2
KUTZ	Kaahu Road	0.76	218	⇑PN	Pn	11 30 46.9	+0.4
TLZ	Tolley Road	0.82	237	PN	Pn	11 30 47.0	+0.1
MRHZ	Matea Rd	0.95	180	⇑PN	Pn	11 30 47.7	-0.1
MRHZ				SN	Sn	11 31 07.2	-1.0
MWZ	Matawai	0.98	117	PN	Pn	11 30 47.8	-0.3
MWZ				AML	AML	11 31 10.6	
MWZ				AML	AML	11 31 10.9	
MWZ				AML	AML	11 31 11.3	
RAGZ	Rawiri	0.99	128	PN	Pn	11 30 48.2	+0.1
RAGZ				SN	Sn	11 31 08.2	-0.7
HAZ	Te Kaha	1.09	84	⇓PN	Pn	11 30 47.8	-1.0
SNGZ	Shannon Statio	1.15	141	⇑PN	Pn	11 30 49.6	+0.2
SNGZ				SN	Sn	11 31 10.4	-0.7
RAHZ	Arahi	1.16	153	PN	Pn	11 30 49.8	+0.4
KATZ	Kakaramea	1.23	207	PN	Pn	11 30 50.1	0.0
NMHZ	Naumai	1.25	166	PN	Pn	11 30 50.9	+0.6
KUZ	Kuaotunu	1.27	334	PN	Pn	11 30 49.8	-0.5
MKAZ	Moumakai	1.27	308	⇓PN	Pn	11 30 50.7	+0.3
TWGZ	Tauwhareparae	1.27	104	PN	Pn	11 30 50.4	0.0
TWGZ				SN	Sn	11 31 12.4	-0.4
BKZ	Black Stump Fm	1.28	177	⇑PN	Pn	11 30 50.1	-0.4
BKZ				AML	AML	11 31 12.9	
BKZ				AML	AML	11 31 13.1	
PKGZ	Pakihiroa	1.31	91	PN	Pn	11 30 50.5	-0.3
RIGZ	Rimuhau	1.34	128	PN	Pn	11 30 51.3	+0.3
KRVZ	Karewarewa	1.35	207	PN	Pn	11 30 51.2	-0.1
WHHZ	Waihua	1.35	152	PN	Pn	11 30 51.3	+0.3
HIZ	Hauiti	1.38	243	PN	Pn	11 30 51.6	+0.2
WTVZ	West Tongariro	1.39	208	PN	Pn	11 30 51.5	-0.1
OTVZ	Oturere	1.40	205	PN	Pn	11 30 51.8	0.0
TWVZ	Taurewa	1.41	213	⇑PN	Pn	11 30 51.7	0.0
NGZ	Ngauruhoe	1.44	206	PN	Pn	11 30 52.0	-0.1
ARHZ	Aropaoanui	1.45	162	PN	Pn	11 30 52.4	+0.4
PUZ	Puketiti	1.47	98	PN	Pn	11 30 51.6	-0.7
KNZ	Kokohu	1.50	139	⇑PN	Pn	11 30 52.5	0.0
KNZ				AML	AML	11 31 17.2	
KNZ				AML	AML	11 31 17.5	
TUVZ	Tukino	1.50	203	PN	Pn	11 30 52.7	0.0
FWVZ	Far West T-bar	1.52	206	PN	Pn	11 30 52.6	-0.4
CNGZ	Carnagh Statio	1.53	113	PN	Pn	11 30 53.6	+0.8
MXZ	Matakaoa Point	1.53	78	PN	Pn	11 30 52.7	-0.2
KWHZ	Kaweka Forest	1.54	180	⇓PN	Pn	11 30 52.9	0.0
WHVZ	Whangaehu Hut	1.54	205	⇑PN	Pn	11 30 53.0	-0.1
PRGZ	Paritu Road	1.55	132	PN	Pn	11 30 53.0	0.0
TRVZ	Turoa	1.57	205	PN	Pn	11 30 53.2	-0.3
MCHZ	McNeill Hill	1.57	172	⇑PN	Pn	11 30 53.6	+0.4
WNVZ	Wahianoa	1.57	204	⇑PN	Pn	11 30 53.2	-0.2
WMGZ	Waiomatatini S	1.58	88	PN	Pn	11 30 53.0	-0.4
MOVZ	Moawhango	1.60	199	⇑PN	Pn	11 30 53.0	-0.6
BHHZ	Black Hill Sta	1.62	190	⇑PN	Pn	11 30 53.3	-0.5
PKVZ	Pokaka	1.63	211	PN	Pn	11 30 53.7	-0.2
MTVZ	Mangateitei	1.67	206	⇓PN	Pn	11 30 54.2	-0.1
MHGZ	Mahia Peninsul	1.72	138	PN	Pn	11 30 55.0	+0.2
KRHZ	Kereru	1.75	181	⇑PN	Pn	11 30 54.7	-0.5
VRZ	Vera Road	1.79	226	⇓PN	Pn	11 30 55.7	+0.2
CKHZ	Cape Kidnapper	1.84	164	⇓PN	Pn	11 30 56.2	+0.2
KAHZ	Kahuranaki	1.94	169	⇑PN	Pn	11 30 57.1	-0.1
PNHZ	Pukenui	2.03	185	PN	Pn	11 30 57.4	-0.7
PXZ	Pawanui	2.17	171	PN	Pn	11 30 59.0	-0.6
PXZ				AML	AML	11 31 30.0	
PXZ				AML	AML	11 31 30.1	
PXZ				AML	AML	11 31 30.2	
PXZ				AML	AML	11 31 30.2	
WAZ	Wanganui	2.17	210	⇑PN	Pn	11 30 59.2	-0.5
WPHZ	Waipukurau	2.17	180	⇑PN	Pn	11 30 58.9	-0.8
TSZ	Takapari Road	2.20	189	⇑PN	Pn	11 30 59.0	-1.0
TSZ				AML	AML	11 30 59.3	
TSZ				AML	AML	11 30 59.8	
LREZ	Lake Rotokare	2.23	224	PN	Pn	11 31 00.7	+0.4
NEZ	North Egmont	2.28	232	PN	Pn	11 31 01.6	+0.5
PRHZ	Porangahau	2.38	176	PN	Pn	11 31 01.3	-0.8
DVHZ	Dannevirke	2.42	185	⇑PN	Pn	11 31 01.2	-1.3
OHWZ	Ohakea	2.47	200	PN	Pn	11 31 02.4	-0.7
POWZ	Post Office Ro	2.55	191	PN	Pn	11 31 02.7	-1.4
ANWZ	Angora Road	2.57	179	PN	Pn	11 31 03.4	-0.9
PRWZ	Pori Road	2.69	187	⇑PN	Pn	11 31 04.5	-1.2
BFZ	Birch Farm	2.79	183	PN	Pn	11 31 05.4	-1.6
MRZ	Mangatainoka R	2.85	193	⇑PN	Pn	11 31 05.7	-1.9
TIWZ	Tintock	2.92	188	⇑PN	Pn	11 31 06.7	-1.8
TIWZ				AML	AML	11 31 07.9	
TIWZ				AML	AML	11 31 44.2	
CPWZ	Castlepoint	3.02	183	PN	Pn	11 31 08.6	-1.2
OGWZ	Otaki Gorge	3.08	198	PN	Pn	11 31 08.5	-2.1
HOWZ	Holdsworth Sta	3.09	193	⇑PN	Pn	11 31 08.3	-2.3
KIW	Kapiti Island	3.19	201	PN	Pn	11 31 09.4	-2.5
TMWZ	Te Maipa	3.24	187	PN	Pn	11 31 10.3	-2.3
MTW	Mount Morrison	3.34	192	⇑PN	Pn	11 31 11.1	-2.7
CAW	Cannon Point	3.38	198	⇓PN	Pn	11 31 11.7	-2.5
CAW				AML	AML	11 31 12.3	
CAW				AML	AML	11 31 12.9	
DUWZ	D'Urville Isla	3.50	213	PN	Pn	11 31 12.9	-2.8
TRWZ	Traveller	3.55	189	PN	Pn	11 31 13.8	-2.6
PAWZ	Paruwai Farm	3.57	192	⇑PN	Pn	11 31 13.8	-2.9
WEL	Wellington	3.62	200	PN	Pn	11 31 14.6	-2.7
MSWZ	Moikau Station	3.64	194	PN	Pn	11 31 14.5	-3.0
TCW	Tory Channel	3.71	206	PN	Pn	11 31 15.6	-2.8
TCW				AML	AML	11 32 01.8	
TCW				AML	AML	11 32 03.5	
BHW	Baring Head	3.71	198	PN	Pn	11 31 15.4	-3.0
BHW				AML	AML	11 31 15.8	
BHW				AML	AML	11 31 16.0	
PLWZ	Palliser	3.79	193	⇑PN	Pn	11 31 16.2	-3.2
TUWZ	Tuamarina	4.02	208	PN	Pn	11 31 19.0	-3.4
NNZ	Nelson	4.07	214	PN	Pn	11 31 19.1	-3.9
QRZ	Quartz Range	4.21	225	PN	Pn	11 31 21.0	-3.8
BSWZ	Blackbirch Sta	4.29	206	PN	Pn	11 31 23.0	-2.9
THZ	Tophouse	4.72	214	ℯPN	Pn	11 31 27.8	-3.7
DSZ	Denniston Nort	5.24	221	PN	Pn	11 31 33.9	-4.3
OXZ	Oxford	6.37	210	PN	Pn	11 31 48.0	-5.1
MQZ	McQueen's Vall	6.48	205	PN	Pn	11 31 49.0	-5.5
RPZ	Rata Peaks	7.10	213	PN	Pn	11 31 58.3	-4.4
ODZ	Otahua Downs	8.36	209	PN	Pn	11 32 14.9	-4.4

BJI ***20*** *11:31:43.3, 4.˚41N×94.˚54E, h38km, mb4.6/29, mB4.6/23, Ms4.2/16, Ms7 3.9/14*

ISCJB ***20*** *11:31:46.8±0.8, 4.˚69N±0.˚04×94.˚54E±0.˚04, h51km±7km, mb4.5/61, MS3.9/13, Error ellipse: s-maj=8.2km s-min=5.1km az=146.7*

MOS ***20*** *11:31:46.9±1.0, 4.˚73N×94.˚59E, h53km, mb4.8/33, Error ellipse: s-maj=11.1km s-min=5.9km az=109.5*

IDC ***20*** *11:31:48.4±0.6, 4.˚77N×94.˚55E, h47km±5km, mb4.1/21, mb1 4.2/24, mb1mx4.0/43, mbtmp4.3/24, MS3.9/9, Ms1 3.9/9, ms1mx3.5/51, Error ellipse: s-maj=19.2km s-min=8.9km az=43.0*

NEIC ***20*** *11:31:48.0±0.6, 4.˚73N×94.˚54E, h46km±5km, mb4.7/11, Error ellipse: s-maj=6.1km s-min=3.5km az=51.0*

NEIC Felt [III] at Banda Aceh.

KLM ***20*** *11:31:49.7, 4.˚80N×94.˚61E, h10km, mb4.6, ML4.4, MS5.7*

DJA ***20*** *11:31:50.8±0.6, 5.˚1N×3.˚9×9.˚5E±.˚, h47km±8km, M4.5/9, mb4.6/9, mB4.9/5, MLv4.6/8, Mw(mB)4.2/5*

ISC 20 11:31:47.6±0.4, 4.70N±0.˚05×94.˚44E±0.˚05, h42km±3km, h41km:pP-P, n184, σ1°46/196, mb4.5/61, MS4.0/14, 3C-9D, Off west coast of northern Sumatera

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h	m	s	Res ISC
CMBY	CAMPBELL BAY	2.36	348	*ex*	Pn	11	32	25.2	+1.4
LHMI	Lhok Sumawe	2.56	78	P	Pn	11	32	27.0	+0.4
LHMI				S	Sn	11	32	53.5	-3.0
LHMI	Lhok Sumawe	2.56	78	ℯPn	Pn	11	32	25.9	-0.7
TPTI		3.09	117	P	Pn	11	32	33.7	-0.2
TPTI				S	Sn	11	33	07.7	-1.9
KCSI	Kotacane, Aceh	3.52	109	P	Pn	11	32	39.7	-0.2
KCSI				S	Sn	11	33	18.3	-2.1
TSI	Tuntungan	4.29	106	P	Pn	11	32	50.9	+0.5
GSI	Gunungsitoli	4.60	137	P	Pn	11	32	53.6	-1.1
GSI				S	Sn	11	33	12.8	-34
GSI	Gunungsitoli	4.60	137	ℯPn	Pn	11	32	53.8	-0.9
PSI	Prapat	4.86	113	P	Pn	11	32	59.4	+1.0
	14nm,0.3s,baz=323,slow=17,SNR=24								
PSI				S	Sn	11	33	54.1	+0.7
	15nm,0.3s,baz=304,slow=8.5,SNR=4.5								
PSI				LR	LR	11	35	17.9	
	comp=Z,1μm,18.6s,baz=270,slow=43								
PSI	Prapat	4.86	113	ℯP	Pn	11	32	57.7	-0.6
PSI				S	Sn	11	33	54.1	+0.7
PSI	Prapat	4.86	113	ℯPn	Pn	11	32	57.7	-0.6
PSI				S	Sn	11	33	54.1	+0.7
PKDT	Phuket	5.01	50	P	Pn	11	33	00.1	-0.2
SURT	Suratani	6.05	45	P	Pn	11	33	14.7	0.0
	87nm,0.4s,1μm0.4nm								
TRTT	Trang	6.08	59	P	Pn	11	33	14.3	-0.8
	130nm,0.5s,2μm0.5nm								
KULM	Kulim	6.22	84	⇓P	Pn	11	33	16.8	-0.1
KULM	Kulim	6.22	84	ℯPn	Pn	11	33	16.0	-0.9
MNSI	Mandailing Nat	6.43	127	P	Pn	11	33	19.6	-0.3
IPM	Ipoh	6.57	92	⇓P	Pn	11	33	21.3	-0.5
IPM	Ipoh	6.57	92	ℯPn	Pn	11	33	20.6	-1.2
BKNI	Bangkinang	7.89	123	P	Pn	11	33	40.7	+0.7
PDSI	Padang	8.20	133	P	Pn	11	33	44.1	-0.1
	17nm,0.5s,3μm0.2nm								
DGPR	DIGLIPUR	8.56	350	*ex*	Pn	11	33	48.5	-0.5
KTGM	Kuala Trenggan	8.69	85	⇓P	Pn	11	33	50.2	-0.6
PHET	Kaeng Krachan	9.64	32	P	Pn	11	34	06.4	+2.5
	9.3nm,0.9s,183nm0.0nm								
SRDT	SRDT	10.65	25	P	Pn	11	34	24.0	+6.3
	42nm,1.2s,4μm								
CHBT	CHBT	11.18	44	P	Pn	11	34	29.8	+4.9
	75nm,0.2s,9μm								
MDSI	Maura Dua	13.34	133	P	Pn	11	34	52.4	-2.1
	15nm,0.7s								
PHIT	Phitsanulok	13.73	25	P	P	11	35	05.5	-2.1
	23nm,0.9s,288nm								
MHMT	Maesariang	13.83	14	P	P	11	35	06.1	-2.5
	24nm,0.9s,467nm								
PALK	Pallekele	13.90	281	P	Pn	11	35	04.0	+1.9
	0.6nm,0.3s,baz=115,slow=14,SNR=3.0								
PALK				S	Sn	11	37	25.9	-9.3
	3.4nm,0.3s,baz=18,slow=20,SNR=7.6								
PALK				LR	LR	11	40	04.0	
	comp=Z,444nm,19.1s,baz=116,slow=35								
KASI	Kota Agung	14.28	135	P	Pn	11	35	08.2	+0.9
UTTA	Uttaradit	14.29	24	P	P	11	35	13.4	-0.3
	6.7nm,0.9s								
CM01	Chiang Mai Arr	14.34	18	ℯP	P	11	35	13.3	-1.1
CM31	Chiang Mai Arr	14.37	17	ℯPn	Pn	11	35	07.1	-1.4
CMAR	Chiang Mai Arr	14.37	17	P	Pn	11	35	09.8	+1.2
	0.7nm,0.3s,baz=207,slow=12,SNR=28								
CMAR				LR	LR	11	40	17.9	
	comp=Z,170nm,21.6s,baz=206,slow=36								
LAMP	Lampang	14.65	20	P	P	11	35	17.5	-0.3
	9.9nm,0.9s								
CHTO	Chiang Mai	14.71	17	P	P	11	35	17.6	-0.8
	98nm,1.0s								
CHTO	Chiang Mai	14.71	17	ℯP	Pn	11	35	12.2	-0.8
CHTO	Chiang Mai	14.71	17	ℯPn	Pn	11	35	12.2	-0.8
CHTO				ℯpP	P	11	35	17.6	-0.8
CMMT	Chiang Mai	14.71	17	P	P	11	35	17.5	-1.0
	22nm,1.0s,294nm								
SKNT	Sakolnakorn	15.38	37	P	P	11	35	26.8	+0.9
	19nm,1.0s								
CMAI	Chiengmai2	15.80	16	P	P	11	35	30.4	-0.3
	9.9nm,1.0s								
PANO	Nakornpanom	15.89	38	P	P	11	35	34.0	+2.4
	125nm,0.8s								
KSM	Kuching	16.17	101	⇓P	P	11	35	37.1	+2.4
KSM	Kuching	16.17	101	ℯPn	Pn	11	35	31.5	-0.5
KSM				ℯpP	P	11	35	36.5	+1.8
CRAI	Chiangrai	16.49	20	P	P	11	35	43.4	+5.2
	7.7nm,1.0s								
SBUM	Sibu	17.89	97	ℯPn	Pn	11	35	53.0	-0.4
SBUM				ℯSn	S	11	39	22.3	+5.1
BOK	Bokaro	20.70	337	ℯP	P	11	36	25.4	+0.9
KMI	Kunming	21.82	21	P	P	11	36	37.8	+1.1
KMI				pP	pP	11	36	47.4	+0.3
KMI				sP	sP	11	36	53.9	+1.5
KMI				pmax	pmax				
	comp=Z,13nm,0.9s								
KMI				pmax	pmax				
	comp=Z,100nm,3.8s								
KMI				LR	LR				
	comp=N,150nm,13.7s								
KMI				LR	LR				
	comp=E,210nm,11.5s								
KMI				LR	LR				
	comp=Z,120nm,18.4s								
BBKI	Banjar Baru	21.94	111	P	P	11	36	38.2	+0.4
PKIN	Phulchoki	24.33	340	ℯP	P	11	37	02.1	+0.2
KKN	Kakani	24.57	340	ℯP	P	11	37	04.4	+0.4
GKN	Gorkha	24.99	339	ℯP	P	11	37	07.9	+0.2
	29nm,0.4s								
LSA	Lhasa	25.07	353	ℯP	P	11	37	09.8	+1.0
LSA				pmax	pmax				
	comp=Z,15nm,0.6s								
LSA	Lhasa	25.07	353	ℯP	P	11	37	09.8	+1.0
	comp=Z,15nm,0.6s								
H08S2	Diego Garcia H	25.09	241	T	T	12	02	52.1	
	baz=61,slow=76,SNR=363								
H08S3	Diego Garcia H	25.09	241	T	T	12	02	52.1	
	baz=61,slow=76,SNR=284								
H08S1	Diego Garcia H	25.11	241	T	T	12	02	52.1	
	baz=61,slow=76,SNR=298								
KOLN	Koldanda	25.16	337	ℯP	P	11	37	09.7	+0.3
	comp=Z,16nm,0.4s								
PYUN	Piuthan	25.70	336	ℯP	P	11	37	15.3	+1.1
	comp=Z,59nm,0.5s								
H08N1	Diego Garcia H	25.83	245	T	T	12	04	09.5	
	baz=188								
H08N2	Diego Garcia H	25.83	245	T	T	12	04	12.4	
	baz=188								
H08N3	Diego Garcia H	25.85	245	T	T	12	04	13.4	
	baz=188								
KAPI	Kappang	27.06	111	P	P	11	37	25.9	-0.6
	comp=Z,3.1nm,0.4s,baz=26,slow=1.9,SNR=6.1								
CD2	Chengdu	27.52	18	P	P	11	37	30.5	+0.1
CD2				sP	sP	11	37	48.4	+1.6
CD2				S	S	11	42	10.3	+1.6
CD2				sS	sS	11	42	29.1	+1.5
CD2				SS	SnSn	11	43	30.3	+8.4
CD2				pmax	pmax				
	comp=Z,30nm,0.4s								
CD2				pmax	pmax				
	comp=Z,110nm,4.1s								
CD2				LR	LR				
	comp=Z,290nm,11.3s								
CD2				LR	LR				
	comp=Z,200nm,10.1s								
XAN	Xi'an	32.15	23	P	P	11	38	09.3	-2.1
XAN				pmax	pmax				
	comp=Z,17nm,0.8s								
XAN				LR	LR				
	comp=Z,140nm,17.2s								
XAN				LR	LR				
	comp=Z,190nm,13.4s								
XAN				LR	LR				
	comp=Z,270nm,14.7s								
LZH	Lanzhou	32.42	14	ℯP	P	11	38	15.3	+1.4
LZH				pP	pP	11	38	27.1	+1.8
LZH				sP	sP	11	38	31.8	+1.5
LZH				pmax	pmax				
	comp=Z,25nm,1.2s								
LZH				pmax	pmax				
	comp=Z,110nm,5.1s								
LZH				LR	LR				
	comp=Z,130nm,10.5s								
LZH				LR	LR				
	comp=Z,220nm,14.4s								
LZH				LR	LR				
	comp=Z,170nm,18.0s								
GTA	Gaotai	34.90	7	P	P	11	38	34.8	-0.6
GTA				pP	pP	11	38	47.0	+0.1
GTA				sP	sP	11	38	51.8	-0.1
GTA				S	S	11	44	02.6	-1.4
GTA				sS	sS	11	44	23.1	0.0
GTA				SS	SnSn	11	46	19.1	-2.2
GTA				pmax	pmax				
	comp=Z,6.0nm,0.9s								
GTA				pmax	pmax				
	comp=Z,44nm,4.8s								
GTA				LR	LR				
	comp=Z,140nm,17.1s								
GTA				LR	LR				
	comp=Z,150nm,19.5s								
GTA				LR	LR				
	comp=Z,64nm,19.5s								
NJ2	Nanjing	35.55	37	ℯP	P	11	38	42.1	+1.2
NJ2				pmax	pmax				
	comp=Z,21nm,0.5s								
FITZ	Fitzroy Crossi	38.21	127	P	P	11	39	02.2	-1.5
	comp=Z,3.7nm,0.8s,baz=317,slow=6.5,SNR=9.1								
FITZ				PcP	PcP	11	41	18.4	+0.7
	comp=Z,1.0nm,0.4s,baz=332,slow=7.9,SNR=5.1								
KSH	Kashi	38.48	337	ℯP	P	11	39	07.3	+1.4
KSH				ℯsP	sP	11	39	24.8	+2.4
KSH				S	S	11	44	59.6	+1.0
KSH				SS	SnSn	11	47	42.8	-5.1
KSH				pmax	pmax				
	comp=Z,76nm,8.2s								
KSH				LR	LR				
	comp=Z,280nm,11.1s								
KSH				LR	LR				
	comp=Z,140nm,9.5s								
HHC	Hu-ho-hao-te	39.15	21	ℯP	P	11	39	13.6	+2.2
HHC				pmax	pmax				
	comp=Z,28nm,0.9s								
HHC				pmax	pmax				
	comp=Z,87nm,8.6s								
WMQ	Urumqi	39.42	352	ℯP	P	11	39	14.8	+1.2
WMQ				pP	pP	11	39	23.5	-1.7
WMQ				sP	sP	11	39	28.8	-1.3
WMQ				PP	PnPn	11	40	49.8	+2.1
WMQ				pmax	pmax				
	comp=Z,4.0nm,0.6s								
WMQ				pmax	pmax				
	comp=Z,33nm,3.6s								
WMQ				LR	LR				
	comp=Z,24nm,22.0s								
WMQ				LR	LR				
	comp=Z,31nm,23.0s								
WMQ				LR	LR				
	comp=Z,26nm,24.0s								
SFK	Sufi-Kurgan	39.91	335	*i* P	P	11	39	18.1	+0.1
SFK				pmax	pmax				
	comp=Z,15nm,0.8s								
BJI	Beijing	40.28	26	P	P	11	39	21.3	+0.6
BJI				pmax	pmax				
	comp=Z,14nm,1.2s								
PDGK	Podgornoye	40.69	343	P	P	11	39	25.8	+1.8
PDGK				pmax	pmax				
	comp=Z,9.0nm,1.4s								
TKM2	Tokmak 2	41.58	339	ℯP	P	11	39	31.6	0.0
TKM2				pmax	pmax				
	comp=Z,11nm,1.4s								
TKM2	Tokmak 2	41.58	339	ℯP	P	11	39	31.6	0.0
	comp=Z,11nm,1.4s								
AAK	Ala-Archa	41.73	338	P	P	11	39	33.1	+0.3
	comp=Z,3.2nm,0.7s,baz=175,slow=8.2,SNR=5.9								
AAK	Ala-Archa	41.73	338	⇓ℯP	P	11	39	34.0	+1.2
AAK				pmax	pmax				
	comp=Z,10.0nm,1.1s								
AAK	Ala-Archa	41.73	338	ℯP	P	11	39	33.0	+0.2
	comp=Z,6.7nm,0.8s								
FRU	Bishkek	41.86	338	ℯP	P	11	39	38.0	+4.3
FRU				*e*		11	39	52.0	
EKS2	Erkin-Say	42.03	337	ℯP	P	11	39	35.3	+0.1
EKS2				pmax	pmax				
	comp=Z,16nm,0.3s								
EKS2	Erkin-Say	42.03	337	ℯP	P	11	39	35.3	+0.1
	comp=Z,16nm,0.3s								
MNAS	Manas	42.39	336	*i* P	P	11	39	38.7	+0.5
MNAS				pmax	pmax				
	comp=Z,6.0nm,0.9s								
MK01	Makanchi Array	43.21	348	ℯP	P	11	39	44.7	+0.1
MK31	Makanchi Array	43.24	348	ℯP	P	11	39	44.9	0.0
MK31	Makanchi Array	43.24	348	ℯP	P	11	39	44.9	0.0
MKAR	Makanchi Array	43.24	348	P	P	11	39	44.9	+0.1
	comp=Z,4.8nm,0.5s,baz=162,slow=8.4,SNR=43								
MKAR				pP	pP	11	39	58.0	+1.5
	comp=Z,7.3nm,0.6s,baz=169,slow=8.4,SNR=13								
MKAR				LR	LR	11	59	46.5	
	comp=Z,46nm,22.0s,baz=153,slow=39								
H01W3	Cape Leeuwin H	43.52	156	T	T	12	26	24.1	
	baz=332,slow=76,SNR=4.3								
H01W2	Cape Leeuwin H	43.53	156	T	T	12	26	22.4	
	baz=332,slow=76,SNR=5.8								
H01W1	Cape Leeuwin H	43.53	156	T	T	12	26	22.4	
	baz=332,slow=76,SNR=2.9								
KKAR	Karatay Array	43.73	335	ℯP	P	11	39	48.4	-0.5
KKAR				pmax	pmax				
	comp=Z,2.0nm,0.4s								
KKAR	Karatay Array	43.73	335	ℯP	P	11	39	48.4	-0.5
	comp=Z,2.4nm,0.4s								
SONM	Songino Array	44.19	12	P	P	11	39	51.5	-1.2
	comp=Z,1.5nm,0.6s,baz=183,slow=8.2,SNR=7.3								
SONM				PcP	PcP	11	41	36.7	-0.1
	comp=Z,0.4nm,0.3s,baz=208,slow=5.0,SNR=2.6								
SONA1	Songino Array	44.20	12	ℯP	P	11	39	51.3	-1.4
ULN	Ulaanbaatar	44.35	12	⇓ℯP	P	11	39	52

ABKAR	**Akbulak array**	**53.16**	**332**	*e*P		**P**	**11 41 01.7**	**+0.4**
KLR	**Kul'dur**	**54.48**	**29**	LR		LR	12 08 50.0	
	comp=Z,156nm,18.2s,slow=41							
AKTO	**Aktyubinsk**	**54.87**	**332**	*i* P		**P**	**11 41 13.5**	**-0.3**
AKTO				pmax	pmax			
	comp=Z,8.0nm,1.0s							
BOD	**Bodaibo**	**55.16**	**13**	*e*P		**P**	**11 41 12.9**	**-2.9**
BOD				pmax	pmax			
	comp=Z,4.0nm,1.2s							
STKA	**Stephens Creek**	**57.73**	**132**	P		**P**	**11 41 34.3**	**-0.2**
	comp=Z,1.1nm,0.6s,baz=304,slow=7.7,SNR=6.3							
STKA				LR		LR	12 09 22.9	
	comp=Z,72nm,19.3s,baz=236,slow=39							
ARU	**Arti**	**58.92**	**338**	*d* P		**P**	**11 41 42.2**	**-0.2**
ARU							11 43 50.5	
ARU				S		**S**	**11 49 46.5**	**+1.2**
ARU				pmax	pmax			
	comp=Z,8.0nm,1.7s							
ARU	**Arti**	**58.92**	**338**	*e*P		**P**	**11 41 42.4**	**0.0**
	comp=Z,9.7nm,1.1s							
YSS	**Yuzh-Sakhalins**	**59.12**	**37**	*e*P		**P**	**11 41 44.1**	**+0.2**
YSS				pmax	pmax			
	comp=Z,11nm,1.0s							
YAK	**Yakutsk**	**62.91**	**18**	LR		LR	12 11 56.8	
	comp=Z,304nm,21.9s,baz=91,slow=38							
YAK	**Yakutsk**	**62.91**	**18**	*i* P		**P**	**11 42 07.9**	**-1.4**
YAK				pmax	pmax			
	comp=Z,9.0nm,0.9s							
NRIK	**Noril'sk**	**64.71**	**357**	P		**P**	**11 42 20.2**	**-0.9**
	comp=Z,3.4nm,0.5s,baz=182,slow=6.5,SNR=4.9							
BRTR	**Keskin Array B**	**64.74**	**312**	P		**P**	**11 42 21.9**	**-0.2**
	comp=Z,1.7nm,0.6s,baz=133,slow=7.1,SNR=7.7							
BRTR				pP		**pP**	**11 42 36.0**	**+1.7**
	comp=Z,1.3nm,0.7s,baz=136,slow=6.4,SNR=4.0							
BR231	**Keskin MP Arra**	**65.41**	**312**	*e*P		**P**	**11 42 23.1**	**-3.3**
OBN	**Obninsk**	**68.22**	**328**⇓	*e*P		**P**	**11 42 42.9**	**-0.8**
OBN				*i*			11 42 56.6	
OBN				*e*			11 45 14.4	
OBN				pmax	pmax			
	comp=Z,35nm,2.5s							
TIXI	**Tiksi**	**70.28**	**11**	LR		LR	12 18 03.5	
	comp=Z,167nm,21.7s,baz=118,slow=40							
TIXI	**Tiksi**	**70.28**	**11**⇓	*e*P		**P**	**11 42 54.7**	**-1.5**
TIXI				pmax	pmax			
	comp=Z,10.0nm,1.7s							
TIXI	**Tiksi**	**70.28**	**11**	*e*P		**P**	**11 42 54.8**	**-1.5**
TIXI				*e*pP		**pP**	**11 43 07.9**	**-0.7**
AKASG	**Malin Array Be**	**70.82**	**322**	P		**P**	**11 42 58.9**	**-1.1**
	comp=Z,0.6nm,0.5s,baz=88,slow=4.6,SNR=8.6							
AKASG				pP		**pP**	**11 43 13.2**	**+0.8**
	comp=Z,1.6nm,0.6s,baz=90,slow=4.9,SNR=3.3							
KIEV	**Kiev**	**70.83**	**322**⇑	*e*P		**P**	**11 42 59.8**	**-0.2**
KIEV				pmax	pmax			
	comp=Z,3.0nm,1.0s							
MLR	**Muntele Rosu**	**71.65**	**316**	*e*P		**P**	**11 43 05.6**	**+0.3**
MLR				*e**PP		**sP**	**11 43 21.5**	**-0.9**
MLR	**Muntele Rosu**	**71.65**	**316**	*e*P		**P**	**11 43 05.6**	**+0.3**
MLR				*e*pP		**sP**	**11 43 21.5**	**-0.9**
LBTB	**Lobatse**	**73.01**	**242**	*e*P		**P**	**11 43 14.0**	**+0.3**
LBTB				*e**PP		**pP**	**11 43 24.3**	**-1.8**
LBTB	**Lobatse**	**73.01**	**242**	*e*P		**P**	**11 43 14.0**	**+0.3**
LBTB				*e*pP		**pP**	**11 43 24.3**	**-1.8**
CRVS	**Cervenica-Dubn**	**75.31**	**319**	*e*P		**P**	**11 43 28.9**	**+2.3**
CRVS	**Cervenica-Dubn**	**75.31**	**319**	*e*P		**P**	**11 43 28.9**	**+2.3**
STHS	**Stebnicka Huta**	**75.53**	**320**	*e*P		**P**	**11 43 29.6**	**+1.7**
STHS				*e*			11 43 42.1	
STHS				pmax	pmax			
	comp=Z,6.0nm,1.0s							
STHS	**Stebnicka Huta**	**75.53**	**320**	*e*P		**P**	**11 43 29.6**	**+1.7**
STHS				*e*			11 43 42.1	
FINES	**FINESS Array B**	**75.64**	**333**	P		**P**	**11 43 28.0**	**-0.2**
	comp=Z,1.3nm,0.3s,baz=104,slow=5.2,SNR=18							
FINES	**FINESS Array B**	**75.64**	**333**	P		**P**	**11 43 28.0**	**-0.2**
FINES				pmax	pmax			
	comp=Z,1.0nm,0.3s							
KECS	**Kecovo**	**75.88**	**319**	*e*P		**P**	**11 43 31.5**	**+1.7**
KECS				pmax	pmax			
	comp=Z,3.0nm,1.0s							
KECS	**Kecovo**	**75.88**	**319**	*e*P		**P**	**11 43 31.5**	**+1.7**
MORC	**Moravsky Berou**	**77.97**	**320**	*e*P		**P**	**11 43 41.9**	**+0.3**
MORC				*e*			11 43 57.0	
MORC	**Moravsky Berou**	**77.97**	**320**	*e*P		**P**	**11 43 41.9**	**+0.3**
MORC				*e*PcP		**sP**	**11 43 57.0**	**-1.9**
ARCES	**ARCESS Array B**	**78.34**	**340**	P		**P**	**11 43 43.0**	**-0.2**
	comp=Z,7.3nm,1.1s,baz=100,slow=6.8,SNR=6.9							
KRLC	**Kraliky**	**78.49**	**320**	*e*P		**P**	**11 43 45.5**	**+1.0**
KRLC				*e*pP		**pP**	**11 43 59.4**	**+2.3**
KRLC	**Kraliky**	**78.49**	**320**	*e*P		**P**	**11 43 45.5**	**+1.0**
KRLC				*e*			11 43 59.4	
DPC	**Dobruska-Polom**	**78.82**	**320**	*e*P		**P**	**11 43 47.2**	**+0.9**
DPC				*e*pP		**sP**	**11 44 01.6**	**-2.0**
DPC	**Dobruska-Polom**	**78.82**	**320**	*e*P		**P**	**11 43 47.2**	**+0.9**
DPC				*e*			11 44 01.6	
BILL	**Bilibino**	**78.92**	**211**⇑	*e*P		**P**	**11 43 45.2**	**-1.2**
BILL				*i*			11 44 07.7	
BILL				pmax	pmax			
	comp=Z,4.0nm,1.1s							
GEA0	**GERESS Array S**	**80.38**	**319**	*e*P		**P**	**11 43 55.4**	**+0.5**
GEC2	**GERESS Array S**	**80.38**	**319**	*e*P		**P**	**11 43 55.3**	**+0.4**
GEC2	**GERESS Array S**	**80.38**	**319**	*e*P		**P**	**11 43 55.3**	**+0.4**
GERES	**GERESS Array B**	**80.38**	**319**	P		**P**	**11 43 55.5**	**+0.6**
	comp=Z,3.3nm,0.8s,baz=90,slow=5.9,SNR=21							
GERES				pP		**pP**	**11 44 09.2**	**+1.8**
	comp=Z,4.9nm,0.9s,baz=94,slow=5.8,SNR=7.0							
KHC	**Kasperske Hory**	**80.48**	**319**	*e*pP		pP	11 44 09.7	+1.8
KHC	**Kasperske Hory**	**80.48**	**319**	*e*P		pP	11 44 09.7	+1.8
NOA	**NORSAR Array B**	**82.63**	**331**	P		**P**	**11 44 06.2**	**-0.3**
	comp=Z,1.1nm,0.9s,baz=96,slow=5.3,SNR=3.6							
NOA				pP		**pP**	**11 44 20.1**	**+1.0**
	comp=Z,0.9nm,0.8s,baz=94,slow=5.4,SNR=3.3							
KEST	**Kesra**	**83.30**	**305**	LR		LR	12 25 39.2	
	comp=Z,268nm,21.3s,baz=98,slow=39							
TORD	**Torodi Ar. Bea**	**91.61**	**283**	P		**P**	**11 44 51.0**	**0.0**
	comp=Z,0.7nm,0.9s,baz=80,slow=3.2,SNR=2.9							
PAE	**Paea**	**116.16**	**107**	*e*T		T	12 00 58.6	
	comp=Z,1.5nm,0.2s							
PPT2	**Papeete2**	**116.17**	**107**	*e*T		T	12 01 01.8	
	comp=Z,6.2nm,0.3s							
TVO	**Taravao**	**116.46**	**107**	*e*T		T	12 00 53.6	
	comp=Z,1.6nm,0.3s							
MEH	**Mehetia**	**117.58**	**108**	*e*T		T	12 01 00.5	
	comp=Z,38nm,0.3s							
NVAR	**Mina Array Bea**	**127.45**	**32**	PKP		**PKPdf**	**11 50 49.8**	**+1.0**
	comp=Z,0.3nm,0.5s,baz=322,slow=3.7,SNR=3.2							
PDAR	**Pinedale Array**	**127.59**	**22**	PKP		**PKPdf**	**11 50 48.8**	**-0.9**
	comp=Z,0.2nm,0.4s,baz=89,slow=0.3,SNR=5.0							
TXAR	**Lajitas Array**	**141.96**	**26**	PKhKP		PKPpre	11 51 10.6	
	comp=Z,0.2nm,0.4s,baz=74,slow=0.8,SNR=5.9							
CPUP	**Villa Florida**	**145.48**	**229**	PKPbc		**PKPab**	**11 51 23.4**	**+1.1**
	comp=Z,2.4nm,0.6s,baz=120,slow=3.4,SNR=7.0							
PTGA	**Pitinga**	**154.13**	**278**	PKPab		**PKPab**	**11 51 58.3**	**+0.3**
	comp=Z,0.9nm,0.4s,baz=1.8,slow=4.3,SNR=4.9							
LPAZ	**La Paz**	**159.37**	**235**	PKPab		**PKPab**	**11 52 21.8**	**+0.8**
	comp=Z,1.3nm,0.8s,baz=110,slow=3.9,SNR=3.0							

*SJA **20** 11:59:52.4±0.4, 33°.28S×71°.28W, h70km±2km, ML2.3, MW3.7*

*GUC **20** 11:59:53.7±0.4, 33°.34S×71°.10W, h62km±5km, ML2.7*

ISC 20 11:59:54.0±3.8, 33°.4S±0°.1×71°.2W±0°.2, h53km±15km, n13, σ0s58/18, 1C, Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ROC1	**El Roble**	**0.47**	**22**	*i* P	**Pn**	**12 00 05.2**	**-0.2**
ROC1				*i* S	**Sn**	**12 00 14.6**	**+1.0**
ROCH	**El Roble**	**0.48**	**23**	*e*P	**Pn**	**12 00 05.6**	**+0.1**
ROCH				*i* S	**Sn**	**12 00 14.2**	**+0.6**
ROCH				IAML		12 00 15.1	
	comp=N,1μm,0.1s						
ANTU	**Antumapu**	**0.52**	**107**	*e*P	**Pn**	**12 00 05.5**	**-0.2**
ANTU				*i* S	**Sn**	**12 00 14.8**	**+0.6**
ANTU				IAML		12 00 16.8	
	comp=E,453nm,0.2s						
PEL	**Peldehue**	**0.53**	**59**	*e*P	**Pn**	**12 00 05.0**	**-0.9**
PEL				*i* S	**Sn**	**12 00 13.9**	**-0.5**
PEL				IAML		12 00 14.3	
	comp=N,777nm,0.3s						
CLCH	**Cerro Calan**	**0.58**	**88**⇑	*i*P	**Pn**	**12 00 06.1**	**-0.4**
CLCH				*i* S	**Sn**	**12 00 15.2**	**-0.2**
CLCH				IAML		12 00 16.1	
	comp=N,533nm,0.5s						
AUSP	**Uspallata**	**1.96**	**53**	*i* P	**Pn**	**12 00 25.4**	**+0.3**
ARCO	**CERRO ARCO**	**2.01**	**74**	*i* P	**Pn**	**12 00 26.2**	**+0.6**
ARCO				IAML		12 00 59.9	
	comp=Z,16nm,0.6s						
ASAL	**Salagasta**	**2.17**	**68**	*i* P	**Pn**	**12 00 28.0**	**+0.2**
RTLS	**Leoncito**	**2.29**	**46**	*i* P	**Pn**	**12 00 29.9**	**+0.2**
RTCV	**Cerro Valdivia**	**2.75**	**56**	*i* P	**Pn**	**12 00 35.6**	**-0.1**
AMOG	**MOGNA**	**3.39**	**44**	*i* P	**Pn**	**12 00 44.2**	**-0.3**
AVFE	**Valle Fertil**	**4.22**	**50**	*i* P	**Pn**	**12 00 55.6**	**-0.3**
AVFE				IAML		12 01 49.3	
	comp=Z,4.0nm,0.4s						
AGUA	**GUANDACOL**	**4.56**	**32**	*i* P	**Pn**	**12 00 59.6**	**-1.0**

JMA 20 12:02:50.5±0.3, 37°.88N×144°.44E, h25km, M3.6, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**2.48**	**300**	P	Pn	12 03 30.8	+1.5
OFUJ				*e*S	Sn	12 04 00.9	+2.1
JIO	**Ouri**	**2.50**	**284**	S	Sn	12 04 00.7	+1.4
JMK	**Ichinoseki**	**2.75**	**294**	*e*S	Sn	12 04 07.7	+2.4
JMM	**Marumori**	**2.89**	**271**	*e*S	Sn	12 04 09.4	+0.6
JOM	**Ohasama**	**2.93**	**304**	P	Pn	12 03 37.2	+1.7
JOM				*e*S	Sn	12 04 12.8	+2.9
JOU	**Okura**	**3.02**	**280**	S	Sn	12 04 14.3	+2.3
JYK	**Kaneyama**	**3.37**	**289**	P	Pn	12 03 44.2	+2.7
JYK				*e*S	Sn	12 04 24.0	+3.3
JANG	**Nango**	**3.37**	**318**	P	Pn	12 03 43.3	+1.7

*ISCJB **20** 12:04:43.4±1.3, 34°.02S±0°.03×73°.19W±0°.03, h31km±9km, mb4.7/57, MS3.5/1, Error ellipse: s-maj=5.7km s-min=4.5km az=166.5*

*GUC **20** 12:04:43.1±0.3, 33°.86S×73°.08W, h29km±1km, ML4.1*

*BJI **20** 12:04:43.2, 34°.00S×73°.20W, h17km, mB5.1/3, Ms5.3/4, Ms7 4.9/3*

*NEIC **20** 12:04:44.7±1.4, 33°.99S×73°.14W, h28km±9km, mb4.7/48, ML4.1(GUC), Error ellipse: s-maj=6.4km s-min=3.8km az=75.0*

NEIC Felt at Vina del Mar.

*IDC **20** 12:04:45.1±0.7, 34°.04S×73°.33W, h32km±4km, mb4.3/9, mb1 4.4/12, mb1mx4.2/28, mbtmp4.4/12, ML4.6/3, MS3.2/3, Ms1 3.2/3, ms1mx3.0/24, Error ellipse: s-maj=24.1km s-min=18.1km az=72.0*

ISC 20 12:04:44.5±1.2, 33°.99S±0°.04×73°.17W±0°.06, h31km±7km, n138, σ1s25/172, mb4.7/56, 2C-4D, Off coast of central Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHPI	**Pichilemu**	**1.04**	**113**	*e*P	**Pb**	**12 05 01.4**	**-2.6**
CHPI				*i* S	**Sb**	**12 05 15.6**	**-1.8**
TALC	**Talca**	**1.89**	**138**⇑	*i*P	**Pn**	**12 05 14.6**	**-0.1**
TALC				*e*S	**Sn**	**12 05 36.8**	**-0.6**
ROC1	**El Roble**	**2.06**	**61**	*i* P	**Pn**	**12 05 17.3**	**0.0**
ROC1				*i* S	**Sn**	**12 05 43.1**	**+0.9**
ROC1	**El Roble**	**2.06**	**61**	*e*Pn	**Pn**	**12 05 17.1**	**-0.3**
ROC1				*e*Sn	**Sn**	**12 05 41.0**	**-1.2**
ROCH	**El Roble**	**2.07**	**61**⇑	*e*P	**Pn**	**12 05 16.7**	**-0.7**
ROCH				*e*S	**Sn**	**12 05 42.0**	**-0.2**
ROCH				AML	AML	12 05 45.4	
	comp=E,2μm,0.8s						
ANTU	**Antumapu**	**2.15**	**79**	*e*P	**Pn**	**12 05 17.8**	**-0.6**
ANTU				*e*S	**Sn**	**12 05 44.3**	**+0.3**
PEL	**Peldehue**	**2.24**	**68**⇓	*e*P	**Pn**	**12 05 18.8**	**-0.7**
PEL				*e*S	**Sn**	**12 05 46.0**	**-0.2**
PEL				AML	AML	12 05 50.7	
	comp=N,3μm,0.7s						
FSR	**Penalolen**	**2.26**	**78**	*e*P	**Pn**	**12 05 19.7**	**-0.1**
FSR				*e*S	**Sn**	**12 05 46.7**	**0.0**
CLCH	**Cerro Calan**	**2.27**	**76**⇓	*e*P	**Pn**	**12 05 19.4**	**-0.6**
CLCH				*e*S	**Sn**	**12 05 47.1**	**+0.1**
CLCH				AML	AML	12 05 52.2	
	comp=N,2μm,0.3s						
YECH	**El Yeso**	**2.59**	**84**	*e*P	**Pn**	**12 05 24.8**	**+0.2**
YECH				*e*S	**Sn**	**12 05 56.4**	**+1.3**
AUSP	**Uspallata**	**3.63**	**62**	*i* P	**Pn**	**12 05 40.5**	**+1.6**
AUSP				*i* S	**Sn**	**12 06 22.9**	**+2.1**
ARCO	**CERRO ARCO**	**3.72**	**73**	*i* P	**Pn**	**12 05 41.7**	**+1.6**
ARCO				IAML		12 06 31.3	
	comp=Z,134nm,0.6s						
AAGR	**Agrelo**	**3.73**	**77**	*i* P	**Pn**	**12 05 42.0**	**+1.8**
ASAL	**Salagasta**	**3.89**	**70**	*i* P	**Pn**	**12 05 43.9**	**+1.6**
ASAL				*i* S	**Sn**	**12 06 28.9**	**+2.0**
RTLS	**Leoncito**	**3.92**	**57**	*i* P	**Pn**	**12 05 44.5**	**+1.6**
RTLS				*i* S	**Sn**	**12 06 29.3**	**+1.3**
CANA	**Caviahue**	**4.25**	**157**	*i* P	**Pn**	**12 05 49.8**	**+2.5**
RTCV	**Cerro Valdivia**	**4.43**	**63**	*i* P	**Pn**	**12 05 51.4**	**+1.6**
SJA	**San Juan**	**4.59**	**59**	*i* P	**Pn**	**12 05 53.4**	**+1.5**
SJA				IAML		12 07 19.6	
	comp=Z,259nm,0.1s						
RTLL	**Cerro Villicun**	**4.76**	**57**	*i* P	**Pn**	**12 05 55.9**	**+1.6**
AMOG	**MOGNA**	**4.99**	**54**	*i* P	**Pn**	**12 05 58.7**	**+1.3**
ACAN	**Cantantal**	**5.30**	**73**	*i* P	**Pn**	**12 06 03.5**	**+1.9**
LCO	**Las Campanas**	**5.39**	**24**	*e*Pn	**Pn**	**12 06 00.9**	**-2.3**
LCO				*e*Sn	**Sn**	**12 07 01.2**	**-3.1**
AVFE	**Valle Fertil**	**5.87**	**57**	*i* P	**Pn**	**12 06 11.0**	**+1.5**
AVFE				IAML		12 07 27.5	
	comp=Z,48nm,0.6s						
AGUA	**GUANDACOL**	**6.00**	**43**	*i* P	**Pn**	**12 06 12.5**	**+1.1**
SUCO	**SUCO**	**6.94**	**87**	*i* P	**Pn**	**12 06 25.3**	**+1.2**
PLCA	**Paso Flores**	**7.04**	**164**	Pn	**Pn**	**12 06 25.9**	**+0.3**
	comp=Z,11nm,0.3s,baz=353,slow=11,SNR=200						
PLCA				Sn	Sn	12 07 55.3	+11
	comp=Z,0.3nm,0.3s,baz=308,slow=15,SNR=1.7						
PLCA				LR	LR	12 08 35.3	
	comp=Z,61nm,20.8s,baz=33,slow=33						
CYA	**Choya**	**8.39**	**51**	*i* P	**Pn**	**12 06 41.9**	**-2.2**
TRQA	**Tornquist**	**9.93**	**117**	*e*Pn	**Pn**	**12 07 06.0**	**+0.9**
CHRN	**Cochrane**	**13.25**	**178**	*e*Pn	**Pn**	**12 07 49.2**	**-1.2**
CPUP	**Villa Florida**	**15.67**	**65**	Pn	**P**	**12 08 27.2**	**+0.2**
	comp=Z,0.2nm,0.3s,baz=237,slow=10,SNR=4.4						
CPUP				LR	LR	12 14 45.1	
	comp=Z,120nm,18.1s,baz=238,slow=38						
CPUP	**Villa Florida**	**15.67**	**65**	*e*Pn	**Pn**	**12 08 23.3**	**+0.1**
LPAZ	**La Paz**	**18.20**	**16**	P	**P**	**12 08 56.9**	**+1.3**
	comp=Z,0.3nm,0.3s,baz=162,slow=4.1,SNR=32						
LPAZ	**La Paz**	**18.20**	**16**	*e*Pn	**P**	**12 08 56.9**	**+1.3**
	comp=Z,10.0nm,0.9s						
SIV	**San Ignacio**	**20.98**	**34**	P	**P**	**12 09 26.1**	**+0.8**
	comp=Z,111nm,0.9s,baz=231,slow=13,SNR=20						
SPB	**Sao Paulo**	**24.76**	**72**	*e*P	**P**	**12 10 03.8**	**+0.3**
	comp=Z,27nm,1.0s						
SAML	**Samuel**	**26.56**	**23**	P	**P**	**12 10 20.2**	**+0.3**
	comp=Z,4.7nm,1.2s						
JTS	**JuntasAbangare**	**45.44**	**344**	LR	LR	12 26 58.8	
	comp=Z,61nm,20.6s,baz=158,slow=29						
VNA3	**Neumayer Olymp**	**49.72**	**158**	P	**P**	**12 13 34.7**	**+1.3**
VNA2	**Neumayer--Watz**	**50.38**	**157**	P	**P**	**12 13 39.7**	**+1.3**
	baz=285,slow=9.1						
SNAA	**Sanae**	**51.95**	**158**	P	**P**	**12 13 50.5**	**+0.3**
SNAA	**Sanae**	**51.95**	**158**	*e*P	**P**	**12 13 51.5**	**+1.3**
	comp=Z,1μm,1.1s						
CMIG	**Matias Romero**	**54.85**	**334**	P	**P**	**12 14 12.2**	**+0.1**
	comp=Z,1.9nm,0.7s,baz=234,slow=17,SNR=2.7						
QSPA	**South Pole Qui**	**56.24**	**180**	*e*P	**P**	**12 14 22.8**	**+1.1**
SYO	**Syowa Base**	**66.22**	**159**⇓	*e*P	**P**	**12 15 27.0**	**-1.9**
SYO	**Syowa Base**	**66.22**	**159**⇓	*e*pP	pP	12 15 35.8	-2.7
HPIG		**67.99**	**329**	*e*P	**P**	**12 15 41.4**	**+0.5**
	comp=Z,7.2nm,1.0s						
JCT	**Junction City**	**68.88**	**335**	*e*P	**P**	**12 15 47.1**	**+0.8**
	comp=Z,16nm,0.9s						
TXAR	**Lajitas Array**	**69.28**	**332**	P	**P**	**12 15 49.2**	**+0.4**
	comp=Z,4.5nm,0.7s,baz=154,slow=8.2,SNR=51						
TX31	**Lajitas Ar. Si**	**69.28**	**332**	*e*P	**P**	**12 15 49.4**	**+0.6**
OXF	**Oxford**	**69.83**	**346**	*e*P	**P**	**12 15 51.9**	**0.0**
	comp=Z,34nm,1.1s						
SWET	**Sewanee**	**69.88**	**349**	*e*P	**P**	**12 15 52.7**	**+0.4**
	comp=Z,6.3nm,1.1s						
CPCT	**Cooper Cave**	**69.89**	**350**	*e*P	**P**	**12 15 52.6**	**+0.2**
	comp=Z,12nm,1.3s						
ABTX	**Abilene, Hawle**	**70.79**	**337**	*e*P	**P**	**12 15 58.4**	**+0.4**
	comp=Z,15nm,0.8s						
WVT	**Waverly**	**71.09**	**347**	*e*P	**P**	**12 15 59.5**	**-0.1**
	comp=Z,40nm,1.0s						
X301	**Greenbrier Sit**	**71.19**	**343**	*e*P	**P**	**12 16 00.8**	**+0.6**
	comp=Z,21nm,0.9s						
WHAR	**Wooly Hollow**	**71.21**	**344**	*e*P	**P**	**12 16 00.8**	**+0.4**
	comp=Z,21nm,1.2s						
X201	**Greenbrier Sit**	**71.23**	**343**	*e*P	**P**	**12 16 01.0**	**+0.5**
	comp=Z,20nm,1.0s						
MNTX	**Cornudas Mount**	**72.05**	**331**	*e*P	**P**	**12 16 05.2**	**-0.4**
	comp=Z,4.9nm,0.8s						
MSTX	**Muleshoe**	**73.09**	**335**	*e*P	**P**	**12 16 11.7**	**-0.1**
	comp=Z,11nm,0.8s						
319A	**Douglas**	**73.40**	**328**	*e*P	**P**	**12 16 15.0**	**+1.3**
MAW	**Mawson**	**73.45**	**164**	P	**P**	**12 16 13.9**	**+0.5**
	comp=Z,3.4nm,0.7s,baz=268,slow=6.9,SNR=4.3						
AMTX	**Amarillo**	**73.54**	**336**	*e*P	**P**	**12 16 14.7**	**+0.3**
	comp=Z,18nm,1.3s						
TUC	**Tucson**	**74.86**	**328**	*e*P	**P**	**12 16 22.5**	**+0.4**
	comp=Z,5.5nm,1.1s						
LAZ	**Ladron**	**75.12**	**331**	*e*P	**P**	**12 16 25.4**	**+1.6**
ANMO	**Albuquerque**	**75.33**	**332**	*e*P	**P**	**12 16 25.4**	**+0.4**
	comp=Z,3.9nm,0.9s						
DBIC	**Dimbokro**	**76.07**	**72**	P	**P**	**12 16 30.2**	**+0.8**
	comp=Z,6.0nm,0.6s,baz=205,slow=5.9,SNR=14						
DBIC				pP	**PcP**	**12 16 40.8**	**-0.8**
	comp=Z,5.8nm,0.7s,baz=209,slow=7.4,SNR=4.3						
T25A	**Trinidad**	**76.52**	**335**	*e*P	**P**	**12 16 32.9**	**+1.1**
	comp=Z,19nm,1.1s						
SDCO	**Great Sand Dun**	**77.45**	**334**	*e*P	**P**	**12 16 37.5**	**+0.4**
	comp=Z,2.6nm,0.8s						
KSCO	**Kaye Shedlock'**	**77.60**	**337**	*e*P	**P**	**12 16 38.8**	**+1.1**
	comp=Z,12nm,1.0s						
WUAZ	**Wupatki**	**77.83**	**329**	*e*P	**P**	**12 16 39.9**	**+0.9**
	comp=Z,8.1nm,1.1s						
S22A	**4UR Ranch, Cre**	**77.94**	**333**	*e*P	**P**	**12 16 40.3**	**+0.6**
	comp=Z,3.8nm,1.2s						
MVCO	**Mesa Verde**	**78.11**	**332**	*e*P	**P**	**12 16 41.3**	**+0.6**
	comp=Z,9.9nm,1.1s						
W13A	**Hualapai Mount**	**78.59**	**327**	*e*P	**P**	**12 16 44.7**	**+1.4**
SMCO	**Snowmass**	**79.25**	**334**	*e*P	**P**	**12 16 47.9**	**+0.8**
	comp=Z,13nm,1.3s						
ISCO	**Idaho Springs**	**79.32**	**335**	*e*P	**P**	**12 16 48.2**	**+0.9**
	comp=Z,12nm,1.6s						
KNB	**Kanab**	**79.72**	**329**	*e*P	**P**	**12 16 50.9**	**+1.4**
	comp=Z,8.8nm,1.0s						
LCMT	**Little Creek M**	**79.90**	**328**	*e*P	**P**	**12 16 51.2**	**+0.8**
	comp=Z,7.4nm,1.4s						
GSC	**Goldstone, Bar**	**80.12**	**325**	*e*P	**P**	**12 16 51.1**	**-0.4**
	comp=Z,8.3nm,1.3s						
ECSD	**EROS Data Cent**	**80.26**	**343**	*e*P	**P**	**12 16 51.8**	**-0.1**
	comp=Z,17nm,1.3s						
MTPU	**Mount Pierson**	**80.32**	**330**	*e*P	**P**	**12 16 53.6**	**+0.7**
	comp=Z,6.1nm,1.2s						
N23A	**Red Feather La**	**80.41**	**335**	*e*P	**P**	**12 16 54.3**	**+1.2**
SRU	**San Rafael Swe**	**80.55**	**331**	*e*P	**P**	**12 16 54.7**	**+0.8**
	comp=Z,7nm,0.9s						
P18A	**Preston Nutter**	**80.89**	**332**	*e*P	**P**	**12 16 56.5**	**+0.7**
	comp=Z,12nm,1.3s						
BOSA	**Boshof**	**80.90**	**118**	P	**P**	**12 16 57.0**	**+0.9**
	comp=Z,4.5nm,0.9s,baz=240,slow=4.8,SNR=4.0						
TMUT	**Trail Mountain**	**80.98**	**331**	*e*P	**P**	**12 16 56.8**	**+0.5**
	comp=Z,7.7nm,1.3s						
TPNV	**Topopah Spring**	**81.20**	**326**	*e*P	**P**	**12 16 58.3**	**+0.9**
	comp=Z,10nm,1.4s						
DAC	**Darwin (Calif)**	**81.28**	**325**	*e*P	**P**	**12 16 58.4**	**+0.5**
	comp=Z,5.5nm,1.0s						
PSUT	**Pine Spring**	**81.44**	**329**	*e*P	**P**	**12 16 59.3**	**+0.6**
	comp=Z,3.3nm,0.9s						
R11A	**Troy Canyon, C**	**82.04**	**328**	*e*P	**P**	**12 17 03.1**	**+1.3**
	comp=Z,3.0nm,1.0s						
K22A	**Casper**	**82.17**	**336**	*e*P	**P**	**12 17 02.8**	**+0.5**
	comp=Z,10nm,1.1s						
DUG	**Dugway, Tooele**	**82.40**	**330**	*e*P	**P**	**12 17 04.4**	**+0.8**
	comp=Z,9.3nm,1.3s						
RSSD	**Black Hills**	**82.67**	**338**	*e*P	**P**	**12 17 05.5**	**+0.5**
	comp=Z,4.7nm,0.9s						

MKAR				PKPab	**PKPab**	**12 25 09.6**	**+0.5**
	comp=Z,1.4nm,0.7s,baz=299,slow=3.5,SNR=8.2								
WMQ	**Urumqi**	**162.20**	**51**	*e*PKP	**PKPdf**	**12 24 42.6**	**-0.2**
CMAR	**Chiang Mai Arr**	**163.00**	**154**	PKP	**PKPdf**	**12 24 44.7**	**+0.4**
	comp=Z,0.8nm,0.6s,baz=253,slow=2.2,SNR=10.0								
SONM	**Songino Array**	**166.17**	**1**	PKP	**PKPdf**	**12 24 46.1**	**-0.2**
	comp=Z,0.4nm,0.4s,baz=94,slow=1.9,SNR=3.5								
SONM				PKPab	**PKPab**	**12 25 47.8**	**+0.8**
	comp=Z,1.5nm,0.7s,baz=345,slow=4.1,SNR=6.4								
GTA	**Gaotai**	**172.19**	**44**	*e*PKP	**PKPdf**	**12 24 51.3**	**+1.0**
HHC	**Hu-ho-hao-te**	**172.19**	**333**	*e*PKP	**PKPdf**	**12 24 48.0**	**-2.3**
CD2	**Chengdu**	**175.97**	**139**	PKP	**PKPdf**	**12 24 51.1**	**-0.7**
LZH	**Lanzhou**	**176.78**	**49**	*e*PKP	**PKPdf**	**12 24 48.4**	**-3.5**
LZH				pPKP	pPKPdf	12 24 56.8	-5.4
LZH				sPKP		12 25 00.9	
LZH				LR	LR		
	comp=Z,640nm,16.2s								
LZH				LR	LR		
	comp=Z,220nm,14.0s								
LZH				LR	LR		
	comp=Z,180nm,18.2s								

JSN 20 12:22:34.6±0.8, 18°22.N × 76°54.W, h8km±9km, MD3.5, 4C, Jamaica region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
GWJ	**Greenwich**	**0.23**	**232**	*i* P		12 22 39.1	-0.2
STH	**Stony Hill**	**0.29**	**242**	*i* P		12 22 39.8	-0.6
YHJ	**Yallahs**	**0.33**	**172**	*i* P		12 22 41.1	+0.1
BNJ	**Bonny Gate**	**0.41**	**285**	*i* P		12 22 42.6	+0.1
BBJ	**Bamboo Saint A**	**0.71**	**284**	*i* P		12 22 47.4	-0.9
CVJ	**Coleyville**	**0.95**	**271**	*i* P		12 22 50.9	-1.9
MCJ	**Malvern**	**1.13**	**255**	*i* P		12 22 54.1	-2.2
MCJ				*i* S		12 23 09.6	-1.4

NIED ***20*** *12:30:00, 34°.30N × 142°.10E, h5km, Mw3.7 Best double couple: M₀4.24000×10¹⁴ NP1:φ₀301.00000°, δ38.00000°, λ96.00000°. NP2:φ₀114.00000°, δ52.00000°, λ86.00000°.*
JMA ***20*** *12:30:25.6±0.3, 34°.32N × 142°.10E, h29km±5km, M3.5*
IDC ***20*** *12:30:28.1±0.9, 34°.50N × 141°.73E, h0km, mb3.5/9, mb1 3.7/11, mb1mx3.6/51, mbtmp3.5/11, ML3.3/2, MS3.5/1, Ms1 3.5/1, ms1mx2.3/39, Error ellipse: s-maj=22.1km s-min=18.1km az=129.0*
ISCJB ***20*** *12:30:29.3±1.4, 34°.46N±0°.05 × 141°.86E±0°.06, h25km±9km, mb3.4/9, MS3.5/1, Error ellipse: s-maj=9.1km s-min=7.0km az=37.2*

ISC 20 12:30:28.8±2.1, 34°.49N±0°.06 × 141°.76E±0°.06, h7km±12km, n24, σ1°28/34, mb3.5/9, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
BSO1	**Boso 1**	**0.67**	**284**	P	**Pn**	**12 30 43.2**	**-1.0**
BSO1				S	**Sn**	**12 30 56.8**	**+2.2**
BSO3	**Boso 3**	**1.08**	**287**	P	**Pn**	**12 30 50.0**	**-0.1**
BSO3				S	**Sn**	**12 31 07.6**	**+2.4**
BSO4	**Boso 4**	**1.27**	**293**	P	**Pg**	**12 30 53.1**	**-0.2**
BSO4				S	**Sg**	**12 31 12.3**	**+2.5**
CHOJ	**Chosi**	**1.42**	**329**	P	**Pb**	**12 30 54.5**	**-1.1**
CHOJ				*e*S	**Sb**	**12 31 13.7**	**-0.2**
JIM2	**Oshima 3**	**1.94**	**277**	P	**Pn**	**12 31 02.0**	**-0.2**
JHJ	**Hachijo jima 2**	**2.14**	**231**	Pn	**Pn**	**12 31 04.8**	**-0.1**
	24nm,0.3s,baz=103,slow=22,SNR=9.5						
JHJ				Sn	**Sn**	**12 31 30.6**	**-1.2**
	53nm,0.3s,baz=26,slow=22,SNR=9.1						
JOD2	**Odawara 2**	**2.33**	**290**	P	**Pn**	**12 31 06.8**	**-0.8**
JOD2				*e*S	**Sn**	**12 31 36.8**	**+0.3**
JIZS	**Izushimoda**	**2.39**	**276**	P	**Pn**	**12 31 08.1**	**-0.3**
JIZS				*e*S	**Sb**	**12 31 39.7**	**-2.1**
JAG	**Ashikaga**	**2.70**	**316**	P	**Pn**	**12 31 12.8**	**+0.2**
JRY	**Ryogami san**	**2.79**	**304**	P	**Pn**	**12 31 14.1**	**+0.1**
JRY				*e*S	**Sb**	**12 31 50.5**	**-3.0**
JYN	**Shimob**	**2.83**	**292**	P	**Pn**	**12 31 14.4**	**-0.1**
JYN				*e*S	**Sn**	**12 31 49.1**	**+0.3**
MJAR	**Matsushiro Arr**	**3.55**	**306**	Pn	**Pn**	**12 31 25.1**	**+0.7**
	2.5nm,0.3s,baz=42,slow=4.7,SNR=26						
MJAR				Sn	**Sn**	**12 32 07.9**	**+1.4**
	2.0nm,0.3s,baz=124,slow=9.1,SNR=4.5						
MAT	**Matsushiro**	**3.55**	**306**	P	**Pn**	**12 31 25.3**	**+0.9**
MAT				S	**Sn**	**12 32 06.0**	**-0.6**
ASAJ	**Asahikawa**	**9.63**	**4**	Pn	**Pn**	**12 32 45.2**	**-2.7**
	0.6nm,0.3s,baz=226,slow=13,SNR=8.2						
ASAJ				Sn	Sn	12 34 28.3	-8.0
	0.3nm,0.3s,baz=107,slow=20,SNR=2.3						
SONM	**Songino Array**	**29.50**	**308**	P	**P**	**12 36 34.5**	**+0.7**
	0.3nm,0.4s,baz=94,slow=10,SNR=2.9						
CMAR	**Chiang Mai Arr**	**41.20**	**258**	P	**P**	**12 38 14.4**	**+0.1**
	0.4nm,0.5s,baz=51,slow=7.1,SNR=2.7						
ZALV	**Zalesovo Beam**	**43.86**	**314**	P	**P**	**12 38 34.8**	**-0.8**
	0.8nm,0.6s,baz=75,slow=7.3,SNR=3.7						
MKAR	**Makanchi Array**	**45.74**	**304**	P	**P**	**12 38 49.9**	**-0.8**
	0.4nm,0.7s,baz=92,slow=7.2,SNR=2.4						
ILAR	**Eielson Array**	**51.50**	**31**	P	**P**	**12 39 34.9**	**+0.2**
	0.4nm,0.7s,baz=259,slow=5.8,SNR=5.2						
FITZ	**Fitzroy Crossi**	**54.51**	**199**	LR	LR	13 03 38.9	
	comp=Z,37nm,18.5s,slow=36						
WRA	**Warramunga Arr**	**54.59**	**189**	P	**P**	**12 39 58.5**	**+0.5**
	0.2nm,0.3s,baz=1.7,slow=7.5,SNR=3.8						
ASAR	**Alice Springs**	**58.32**	**188**	P	**P**	**12 40 24.9**	**+0.4**
	0.2nm,0.5s,baz=9.1,slow=12,SNR=2.8						
YKA	**Yellowknife Ar**	**65.87**	**30**	P	**P**	**12 41 14.8**	**+0.1**
	0.1nm,0.8s,baz=296,slow=6.0,SNR=3.6						
NVAR	**Mina Array Bea**	**76.29**	**53**	P	**P**	**12 42 19.7**	**+1.0**
	0.4nm,0.7s,baz=278,slow=7.8,SNR=4.4						

IDC 20 12:35:07.8±2.2, 7°12S × 131°02E, h0km, mb3.8/1, mb1 3.9/4, mb1mx3.6/38, mbtmp3.8/4, ML3.8/3, MS3.3/1, Ms1 3.3/1, ms1mx2.5/33, Error ellipse: s-maj=81.7km s-min=28.6km az=79.0, Tanimbar Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
FITZ	**Fitzroy Crossi**	**12.11**	**205**	Pn	Pn	12 38 02.7	+0.9
	1.0nm,0.3s,baz=23,slow=10,SNR=24						
FITZ				Sn	Sn	12 40 10.5	-7.1
	0.5nm,0.3s,baz=66,slow=20,SNR=4.8						
WRA	**Warramunga Arr**	**13.15**	**166**	Pn	Pn	12 38 14.7	-1.3
	0.3nm,0.3s,baz=348,slow=14,SNR=19						
WRA				Sn	Sn	12 40 32.8	-10
	0.6nm,0.3s,baz=348,slow=20,SNR=6.8						
ASAR	**Alice Springs**	**16.68**	**171**	Pn	Pn	12 39 03.5	+0.3
	0.3nm,0.3s,baz=355,slow=9.5,SNR=23						
ASAR				Sn	Sn	12 42 01.0	-8.3
	0.1nm,0.3s,baz=356,slow=28,SNR=4.6						
STKA	**Stephens Creek**	**26.53**	**160**	LR	LR	12 52 12.2	
	comp=Z,71nm,19.9s,baz=204,slow=39						
MKAR	**Makanchi Array**	**68.88**	**326**	P	P	12 46 14.4	0.0
	0.4nm,0.4s,baz=116,slow=8.1,SNR=6.5						

IDC ***20*** *12:40:08.4±0.9, 35°.74N × 140°.99E, h0km, mb3.4/6, mb1 3.6/9, mb1mx3.5/50, mbtmp3.5/9, ML3.3/3, Error ellipse: s-maj=26.9km s-min=16.9km az=100.0*
ISCJB ***20*** *12:40:13.1±0.6, 35°.83N±0°.05 × 140°.83E±0°.08, h48km±5km, mb3.4/6, Error ellipse: s-maj=11.9km s-min=7.5km az=157.4*
JMA ***20*** *12:40:14.0±0.1, 35°.87N × 140°.87E, h39km±1km, M3.1*

ISC 20 12:40:13.8±1.3, 35°.86N±0°.05 × 140°.80E±0°.08, h32km±10km, n20, σ1°04/18, mb3.6/6, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CHOJ	**Chosi**	**0.16**	**162**	P	**Pn**	**12 40 20.7**	**+0.6**
CHOJ				S	**Sn**	**12 40 25.8**	**+1.9**
JYT	**Yasato**	**0.61**	**307**	P	**Pn**	**12 40 26.6**	**+0.3**
JYT				S	**Sb**	**12 40 35.0**	**+0.4**
JHO	**Hitachi**	**0.77**	**346**	P	**Pb**	**12 40 28.7**	**-0.2**
BSO3	**Boso 3**	**1.08**	**193**	P	**Pb**	**12 40 33.6**	**-0.2**
MJAR	**Matsushiro Arr**	**2.20**	**289**	Pn	**Pn**	**12 40 48.3**	**+0.2**
	5.0nm,0.3s,baz=105,slow=9.0,SNR=35						
MAT	**Matsushiro**	**2.20**	**289**	P	**Pn**	**12 40 49.3**	**+1.1**
MAT				S	**Sn**	**12 41 14.4**	**+0.1**
JHJ	**Hachijo jima 2**	**2.86**	**197**	Pn	**Pn**	**12 40 56.0**	**-1.2**
	6.3nm,0.3s,baz=60,slow=20,SNR=4.0						
JHJ				Sn	**Sn**	**12 41 30.4**	**-0.1**
	15nm,0.3s,baz=73,slow=19,SNR=5.1						
ASAJ	**Asahikawa**	**8.36**	**9**	Pn	**Pn**	**12 42 11.5**	**-1.2**
	0.7nm,0.3s,baz=255,slow=7.6,SNR=4.2						
H11N2	**WAKE ISLAND Hy**	**28.00**	**118**	T	T	13 15 08.1	
	baz=311,slow=75,SNR=14						
H11N1	**WAKE ISLAND Hy**	**28.01**	**118**	T	T	13 15 07.5	
	baz=311,slow=75,SNR=13						
H11N3	**WAKE ISLAND Hy**	**28.02**	**118**	T	T	13 15 06.4	
	baz=311,slow=75,SNR=14						
H11S1	**WAKE ISLAND Hy**	**28.67**	**120**	T	T	13 15 53.5	
	baz=312,slow=75,SNR=13						
H11S3	**WAKE ISLAND Hy**	**28.67**	**120**	T	T	13 15 51.5	
	baz=312,slow=75,SNR=12						
H11S2	**WAKE ISLAND Hy**	**28.68**	**120**	T	T	13 15 51.5	
	baz=312,slow=75,SNR=6.9						
MKAR	**Makanchi Array**	**44.33**	**303**	P	**P**	**12 48 21.6**	**+0.8**
	0.7nm,0.5s,baz=90,slow=10,SNR=4.7						
ILAR	**Eielson Array**	**50.75**	**32**	P	**P**	**12 49 10.4**	**+0.1**
	0.2nm,0.6s,baz=256,slow=7.0,SNR=2.8						
BVAR	**Borovoye Array**	**51.00**	**313**	P	**P**	**12 49 13.3**	**+0.9**
	0.3nm,0.4s,baz=79,slow=9.0,SNR=2.5						
WRA	**Warramunga Arr**	**55.83**	**187**	P	**P**	**12 49 46.2**	**-1.9**
	0.8nm,0.9s,baz=1.5,slow=7.7,SNR=10						
ASAR	**Alice Springs**	**59.56**	**187**	P	**P**	**12 50 13.1**	**-1.2**
	0.3nm,0.7s,baz=14,slow=8.3,SNR=5.1						
YKA	**Yellowknife Ar**	**65.07**	**30**	P	**P**	**12 50 50.4**	**-0.4**
	0.1nm,0.8s,baz=297,slow=5.5,SNR=3.0						

MEX 20 12:46:25.9±0.3, 15°.42N × 93°.29W, h91km±4km, MD3.6, Near coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PCIG		**0.29**	**14**	*e*P	Pn	12 46 38.1	-1.4
PCIG				*i* S	Sn	12 46 47.7	-1.8
TGIG		**1.36**	**7**	*e*P	Pn	12 46 48.9	-1.2
TGIG				*e*S	Sn	12 47 05.8	-2.5
CCIG	**Comitan**	**1.40**	**52**	*e*P	Pn	12 46 49.1	-1.6
CCIG				*i* S	Sn	12 47 08.5	-0.9

MEX 20 12:46:35.4±0.4, 15°.77N × 96°.39W, h20km±11km, MD3.7, Near coast of Oaxaca

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PANG	**Puerto Angel**	**0.13**	**218**	*e*P	Pb	12 46 38.4	-1.3
PANG				*i* S	Sb	12 46 41.9	-0.7
HUIG	**Huatulco**	**0.27**	**91**	*e*P	Pb	12 46 40.8	-0.8
HUIG				*e*S	Sb	12 46 44.5	-1.4
VHO	**Vista Hermosa**	**1.33**	**346**	*e*P	Pn	12 46 55.8	-3.3
VHO				*e*S	Sn	12 47 11.8	-4.6

SJA ***20*** *12:46:56.4±0.4, 22°.63S × 68°.98W, h207km±30km, ML2.9, MW3.9*
ISCJB ***20*** *12:46:57.1±0.5, 22°.69S±0°.04 × 69°.05W±0°.05, h107km±7km, mb3.6/2, Error ellipse: s-maj=7.8km s-min=6.4km az=9.1*
GUC ***20*** *12:46:57.1±0.9, 22°.64S × 69°.01W, h100km±7km, ML4.2*
IDC ***20*** *12:46:59.1±1.0, 22°.69S × 68°.67W, h95km±7km, mb3.5/2, mb1 3.6/6, mb1mx3.3/34, mbtmp3.8/6, Error ellipse: s-maj=31.8km s-min=25.7km az=99.0*

ISC 20 12:46:58.5±0.7, 22°.70S±0°.05 × 69°.04W±0°.06, h96km±6km, n27, σ1°25/34, 2C-3D, Northern Chile

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PB06	**IPOC Station P**	**0.49**	**270**	*i* P	**Pn**	**12 47 13.7**	**-0.3**
PB06				*i* S	**Sn**	**12 47 25.9**	**+0.2**
PB09	**IPOC Station P**	**0.92**	**348**	*i* P	**Pn**	**12 47 17.6**	**-0.4**
PB09				*i* S	**Sn**	**12 47 32.0**	**-0.6**
PB04	**IPOC Station P**	**1.09**	**289**	*i* P	**Pn**	**12 47 19.4**	**-0.4**
PB04				*i* S	**Sn**	**12 47 36.3**	**+0.4**
PB04				IAML		12 47 41.7	
	comp=N,5μm,0.3s						
PB10	**IPOC Station P**	**1.61**	**240**	*e*P	**Pn**	**12 47 26.0**	**0.0**
PB01	**IPOC Station P**	**1.70**	**346**	*i* P	**Pn**	**12 47 26.4**	**-0.9**
PB01				*i* S	**Sn**	**12 47 47.9**	**-1.2**
PB01				IAML		12 47 49.0	
	comp=E,7μm,0.2s						
PATCX	**Punta Patache**	**2.14**	**331**	*i* P	**Pn**	**12 47 31.3**	**-1.5**
PATCX				IAML		12 48 01.3	
	comp=E,2μm,0.5s						
PB14	**IPOC Station P**	**2.29**	**213**	*e*P	**Pn**	**12 47 35.4**	**+0.4**
PB14				*e*S	**Sn**	**12 48 01.6**	**-1.3**
PB14				IAML		12 48 09.0	
	comp=E,804nm,0.7s						
YJA	**Yavi**	**3.30**	**82**	*i* P	**Pn**	**12 47 50.7**	**+2.1**
HJA	**Humahuaca**	**3.38**	**99**	*i* P	**Pn**	**12 47 52.1**	**+2.6**
HJA				IAML		12 48 36.4	
	comp=Z,16nm,0.6s						
AZAP	**Zapla**	**3.95**	**113**	*i* P	**Pn**	**12 47 59.0**	**+1.9**
FSA	**Cafayete**	**4.39**	**141**	*i* P	**Pn**	**12 48 04.5**	**+1.5**
FSA				IAML		12 49 02.2	
	comp=Z,2.6nm,0.5s						
ASTB	**Santa Barbara**	**4.39**	**107**	*i* P	**Pn**	**12 48 03.9**	**+0.8**
ALOL	**LOMAS DE OLMED**	**4.78**	**104**	*i* P	**Pn**	**12 48 08.4**	**+0.3**
ALOL				*i* S	**Sn**	**12 49 01.6**	**-0.8**
VCA	**Vinchina**	**6.05**	**173**	*i* P	**Pn**	**12 48 26.1**	**+0.4**
VCA				IAML		12 49 12.6	
	comp=Z,16nm,0.4s						
LPAZ	**La Paz**	**6.44**	**8**	P	**Pn**	**12 48 30.7**	**-0.6**
	comp=Z,1.4nm,0.3s,baz=103,slow=2.2,SNR=20						
AVFE	**Valle Fertil**	**8.05**	**170**	*i* P	**Pn**	**12 48 52.3**	**-0.4**
AMOG	**MOGNA**	**8.22**	**177**	*i* P	**Pn**	**12 48 54.1**	**-0.9**
RTLS	**Leoncito**	**9.06**	**181**	*i* P	**Pn**	**12 49 04.5**	**-2.2**
SIV	**San Ignacio**	**10.05**	**50**	P	Pn	12 49 16.5	-3.4
	comp=Z,0.6nm,0.3s,baz=254,slow=6,SNR=8.6						
SIV				S	Sn	12 50 58.5	-12
	comp=Z,0.2nm,0.3s,baz=172,slow=14,SNR=2.2						
CPUP	**Villa Florida**	**11.25**	**111**	P	**Pn**	**12 49 33.3**	**-2.9**
	comp=Z,0.1nm,0.3s,baz=260,slow=10,SNR=3.4						
PLCA	**Paso Flores**	**18.02**	**184**	P	**Pn**	**12 51 02.5**	**-0.1**
	comp=Z,0.2nm,0.3s,baz=28,slow=10,SNR=4.8						
TORD	**Torodi Ar. Bea**	**77.87**	**70**	P	**P**	**12 58 44.8**	**-1.3**
	comp=Z,2.0nm,0.6s,baz=252,slow=4.8,SNR=12						
TORD				pP	**pP**	**12 59 10.1**	**-0.9**
	comp=Z,0.6nm,0.4s,baz=255,slow=6.1,SNR=2.5						
YKA	**Yellowknife Ar**	**92.28**	**341**	P	**P**	**12 59 58.7**	**+1.5**
	comp=Z,0.1nm,0.6s,baz=140,slow=3.9,SNR=3.2						
YKA				pP	**pP**	**13 00 24.1**	**+1.4**
	comp=Z,0.1nm,0.5s,baz=137,slow=4.6,SNR=3.0						
ASAR	**Alice Springs**	**128.80**	**207**	pPKP	pPKPdf	13 06 22.1	+0.1
	comp=Z,0.2nm,0.8s,baz=148,slow=1.3,SNR=2.1						
WRA	**Warramunga Arr**	**131.86**	**210**	PKP	**PKPdf**	**13 06 01.5**	**+0.2**
	comp=Z,0.5nm,0.9s,baz=146,slow=1.6,SNR=4.4						
WRA				pPKP	**pPKPdf**	**13 06 27.8**	**0.0**
	comp=Z,0.3nm,0.8s,baz=163,slow=1.4,SNR=1.9						
ZALV	**Zalesovo Beam**	**143.08**	**26**	PKP	**PKPdf**	**13 06 21.2**	**+0.4**
	comp=Z,0.4nm,0.4s,baz=339,slow=3.7,SNR=2.9						
MKAR	**Makanchi Array**	**146.67**	**37**	PKPbc	**PKPbc**	**13 06 29.1**	**0.0**
	comp=Z,0.2nm,0.6s,baz=337,slow=2.6,SNR=3.1						
MKAR				pPKPbc	pPKPbc	13 06 54.2	-1.1
	comp=Z,0.7nm,0.9s,baz=319,slow=3.5,SNR=4.7						

IDC 20 13:01:40.1±1.6, 36°.68N × 142°.56E, h0km, mb3.3/4, mb1 3.4/5, mb1mx3.3/36, mbtmp3.3/5, ML3.2/1, Error ellipse: s-maj=35.8km s-min=33.7km az=29.0, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MJAR	**Matsushiro Arr**	**3.50**	**269**	Pn	Pn	13 02 35.8	0.0
	2.3nm,0.3s,baz=103,slow=10,SNR=25						
MAT	**Matsushiro**	**3.51**	**269**	P	Pn	13 02 36.4	+0.5
MAT				S	Sb	13 03 25.2	-1.0
H11N2	**WAKE ISLAND Hy**	**27.18**	**122**	T	T	13 36 00.1	
	baz=312						
H11N1	**WAKE ISLAND Hy**	**27.19**	**122**	T	T	13 35 56.1	
	baz=312						
H11N3	**WAKE ISLAND Hy**	**27.20**	**122**	T	T	13 36 01.8	
	baz=312						
H11S1	**WAKE ISLAND Hy**	**27.90**	**124**	T	T	13 36 57.9	
	baz=325						
H11S3	**WAKE ISLAND Hy**	**27.90**	**124**	T	T	13 36 58.5	
	baz=325						
H11S2	**WAKE ISLAND Hy**	**27.91**	**124**	T	T	13 36 58.5	
	baz=325						
SONM	**Songino Array**	**28.74**	**304**	P	P	13 07 39.3	0.0
	0.9nm,0.7s,baz=100,slow=8.6,SNR=6.2						
MKAR	**Makanchi Array**	**45.08**	**303**	P	P	13 09 57.3	-0.5
	0.2nm,0.3s,baz=76,slow=8.5,SNR=3.3						
ASAR	**Alice Springs**	**60.58**	**189**	P	P	13 11 52.4	0.0
	0.2nm,0.9s,baz=15,slow=7.7,SNR=3.6						
YKA	**Yellowknife Ar**	**63.65**	**30**	P	P	13 12 12.7	+0.1
	0.1nm,0.8s,baz=293,slow=5.2,SNR=2.9						

ISCJB ***20*** *13:02:04.4±0.3, 40°.19N±0°.02 × 29°.39E±0°.02, h0km, Error ellipse: s-maj=3.1km s-min=2.3km az=147.5*
CSEM ***20*** *13:02:04.6±0.1, 40°.19N × 29°.38E, h1km, MD2.5, Error ellipse: s-maj=2.6km s-min=1.9km az=143.0, Suspected Mining explosion.*
DDA ***20*** *13:02:04.4, 40°.19N × 29°.40E, h6km, Md2.7, Suspected Mining explosion.*
ISK ***20*** *13:02:04.2, 40°.19N × 29°.38E, h8km, MD2.5*

ISC 20 13:02:04.5±0.8, 40°.19N±0°.02 × 29°.39E±0°.02, h0km, n52, σ0°65/79, Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
IGD	**Bursa**	**0.16**	**298**	*i* P	**Pg**	**13 02 07.5**	**-0.1**
IGD				*i* S	**Sg**	**13 02 09.9**	**+0.2**
IZI	**Iznik**	**0.16**	**23**	*e*PG	**Pg**	**13 02 08.7**	**+1.1**
IZI				*e*SG	**Sg**	**13 02 11.4**	**+1.7**
IZI	**Iznik**	**0.16**	**23**	*e*Pg	**Pg**	**13 02 08.7**	**+1.1**
IZI				*e*Sg	**Sg**	**13 02 11.4**	**+1.7**
ULDT	**Uludag**	**0.20**	**257**	*i* P	**Pg**	**13 02 09.1**	**+0.8**
ULDT				*i* S	**Sg**	**13 02 11.9**	**+1.0**
ULDT	**Uludag**	**0.20**	**257**	P	**Pg**	**13 02 09.1**	**+0.8**
ULDT				S	**Sg**	**13 02 11.9**	**+1.0**
GEMT	**Gemlik**	**0.29**	**328**	*e*PG	**Pg**	**13 02 10.2**	**+0.1**
GEMT				*e*SG	**Sg**	**13 02 14.7**	**+0.9**
GEMT	**Gemlik**	**0.29**	**328**	*e*Pg	**Pg**	**13 02 10.2**	**+0.1**
GEMT				*e*Sg	**Sg**	**13 02 14.7**	**+0.9**
CAVI	**Cavuskoy**	**0.35**	**88**	*e*PG	**Pg**	**13 02 11.6**	**+0.4**
CAVI				*e*SG	**Sg**	**13 02 16.3**	**+0.6**
CAVI	**Cavuskoy**	**0.35**	**88**	*e*Pg	**Pg**	**13 02 11.6**	**+0.4**
CAVI				*e*Sg	**Sg**	**13 02 16.3**	**+0.6**
ADVT	**Abdulvahap**	**0.36**	**47**	*e*PG	**Pg**	**13 02 12.0**	**+0.6**
ADVT				*e*SG	**Sg**	**13 02 17.2**	**+1.1**
ADVT	**Abdulvahap**	**0.36**	**47**	*e*Pg	**Pg**	**13 02 12.0**	**+0.6**
ADVT				*e*Sg	**Sg**	**13 02 17.2**	**+1.1**
ORLT	**Orhaneli**	**0.40**	**250**	*e*PG	**Pg**	**13 02 13.0**	**+0.8**
ORLT				*e*SG	**Sg**	**13 02 18.3**	**+0.8**
ORLT	**Orhaneli**	**0.40**	**250**	*e*Pg	**Pg**	**13 02 13.0**	**+0.8**
ORLT				*e*Sg	**Sg**	**13 02 18.3**	**+0.8**
MDNY	**Mudanya-Bursa**	**0.43**	**295**	*e*PG	**Pg**	**13 02 13.1**	**+0.5**
MDNY	**Mudanya-Bursa**	**0.43**	**295**	*e*Pg	**Pg**	**13 02 13.1**	**+0.5**
HRT	**Hereke**	**0.67**	**19**	*e*PG	**Pg**	**13 02 17.2**	**-0.1**
HRT				*e*SG	**Sg**	**13 02 26.6**	**+0.6**
HRT	**Hereke**	**0.67**	**19**	*e*Pg	**Pg**	**13 02 17.2**	**-0.1**
HRT				*e*Sg	**Sg**	**13 02 26.6**	**+0.6**
GPA	**Golpazari**	**0.71**	**82**	*e*PG	**Pg**	**13 02 18.2**	**+0.1**
TVSB	**Tavsanli**	**0.74**	**176**	*e*PG	**Pg**	**13 02 19.3**	**+0.6**
TVSB	**Tavsanli**	**0.74**	**176**	*e*Pg	**Pg**	**13 02 19.3**	**+0.6**
KCTX	**Karacabey (Bur**	**0.79**	**276**	*e*PG	**Pg**	**13 02 20.2**	**+0.6**
KCTX	**Karacabey (Bur**	**0.79**	**276**	*e*Pg	**Pg**	**13 02 20.3**	**+0.6**
BORA	**Eskisehir**	**0.87**	**110**	*i* P	**Pg**	**13 02 20.9**	**-0.3**
BORA				*i* S	**Sg**	**13 02 33.4**	**+0.9**
BORA	**Eskisehir**	**0.87**	**110**	P	**Pg**	**13 02 20.9**	**-0.3**
BORA				S	**Sg**	**13 02 33.4**	**+0.9**
GULT	**Gulveren**	**0.90**	**74**	*e*PG	**Pb**	**13 02 22.4**	**-0.5**
GULT	**Gulveren**	**0.90**	**74**	*e*Pg	**Pb**	**13 02 22.4**	**-0.5**
ISK	**Istanbul-Kandi**	**0.91**	**344**	*e*PG	**Pg**	**13 02 21.3**	**-0.7**
ISK	**Istanbul-Kandi**	**0.91**	**344**	*e*Pg	**Pg**	**13 02 21.3**	**-0.7**
DURS	**Dursunbey**	**0.92**	**230**	*i* P	**Pg**	**13 02 22.3**	**+0.3**
DURS				*i* S	**Sg**	**13 02 34.1**	**+0.2**
DURS	**Dursunbey**	**0.92**	**230**	P	**Pg**	**13 02 22.3**	**+0.3**
DURS				S	**Sg**	**13 02 34.1**	**+0.2**
SILT	**Sile**	**0.98**	**11**	*e*PG	**Pg**	**13 02 23.0**	**-0.3**
SILT	**Sile**	**0.98**	**11**	*e*Pg	**Pg**	**13 02 23.0**	**-0.3**
KAND	**Kocaeli-Kandir**	**1.09**	**34**	*i* P	**Pg**	**13 02 25.5**	**+0.1**
KAND				*i* S	**Sg**	**13 02 40.4**	**+0.8**
KAND	**Kocaeli-Kandir**	**1.09**	**34**	P	**Pg**	**13 02 25.5**	**+0.1**
KAND				S	**Sg**	**13 02 40.4**	**+0.8**
GDZ	**Gediz**	**1.10**	**176**	*i* P	**Pb**	**13 02 26.4**	**0.0**
GDZ				*i* S	**Sb**	**13 02 41.5**	**-0.1**
GDZ	**Gediz**	**1.10**	**176**	P	**

n25,σ1$59/44,3C, Northern Colombia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BTLC	**Betulia, Santa**	**0.24**	**287**	*i* P	**Pn**	**13 23 14.3**	**+0.3**
GIRC	**Giron, Santand**	**0.28**	**325**	*e*P	**Pn**	**13 23 14.2**	**+0.1**
GIRC				*e*S	**Sn**	**13 23 29.3**	**-2.1**
BARC	**Barichara**	**0.29**	**210**	*e*P	**Pn**	**13 23 14.0**	**-0.2**
BARC				*e*S	**Sn**	**13 23 29.1**	**-2.5**
BARC				*i*		13 23 30.4	
	comp=Z,414nm,0.4s						
PAMC	**Pamplona, Colo**	**0.59**	**34**	*i* P	**Pn**	**13 23 16.9**	**+1.2**
PAMC				*i*		13 23 17.1	
	comp=Z,134nm,0.2s						
PAMC				*e*S	**Sn**	**13 23 34.4**	**+0.1**
BRRC	**Barranca, Sant**	**0.72**	**291**	*i* P	**Pn**	**13 23 16.0**	**+0.2**
BRRC				*i*		13 23 16.3	
	comp=Z,622nm,0.2s						
BRRC				*e*S	**Sn**	**13 23 33.5**	**-1.0**
CBRI	**Barrientos, No**	**0.89**	**15**	*i* P	**Pn**	**13 23 18.6**	**+1.4**
CBRI				*e*S	**Sn**	**13 23 36.2**	**-0.9**
CBRI				*i*		13 23 42.1	
	comp=Z,139nm,0.4s						
GRMC	**Gramalote, San**	**0.89**	**15**	*i* P	**Pn**	**13 23 19.9**	**+2.7**
GRMC				*i*		13 23 21.4	
	comp=Z,204nm,0.3s						
GRMC				*e*S	**Sn**	**13 23 39.0**	**+2.0**
CAPV	**Capacho**	**1.24**	**35⇑**	*i*P	**Pn**	**13 23 21.9**	**+1.9**
CAPV				*e*S	**Sn**	**13 23 41.8**	**-0.3**
OCAC	**Ocana**	**1.41**	**348**	*e*P	**Pn**	**13 23 22.2**	**+0.6**
YOPC	**Yopal, Colombi**	**1.60**	**158**	*e*P	**Pn**	**13 23 24.5**	**+1.0**
YOPC				*i*		13 23 25.3	
	comp=Z,50nm,0.5s						
YOPC				*e*S	**Sn**	**13 23 48.5**	**+0.3**
NORC	**Norcasia**	**2.23**	**235**	*e*P	**Pn**	**13 23 30.4**	**+0.1**
NORC				*e*S	**Sn**	**13 23 58.6**	**-1.6**
CHIC	**Chingaza**	**2.31**	**198**	*e*P	**Pn**	**13 23 31.9**	**+0.3**
CHIC				*e*S	**Sn**	**13 24 02.4**	**-0.2**
CHIC				*i*		13 24 05.6	
	comp=Z,42nm,0.5s						
ROSC	**El Rosal**	**2.37**	**213**	*e*P	**Pn**	**13 23 33.5**	**+1.2**
ROSC				*i*		13 24 11.8	
	comp=Z,111nm,0.3s						
HELC	**Santa Helena**	**2.56**	**255**	*e*P	**Pn**	**13 23 36.0**	**+1.4**
HELC				*e*S	**Sn**	**13 24 08.2**	**+0.3**
HELC				*i*		13 24 12.5	
	comp=Z,83nm,0.3s						
VIGV	**El Vigia**	**2.58**	**40⇑**	*e*P	**Pn**	**13 23 36.4**	**+2.0**
VIGV				*e*S	**Sn**	**13 24 07.1**	**-0.6**
SOCV	**Socops**	**2.59**	**56⇑**	*e*P	**Pn**	**13 23 36.2**	**+1.7**
SOCV				*e*S	**Sn**	**13 24 07.7**	**-0.1**
VILC	**Villavicencio,**	**2.80**	**194**	*e*P	**Pn**	**13 23 38.3**	**+1.2**
VILC				*e*S	**Sn**	**13 24 10.6**	**-2.0**
GUYC	**Guyana, Colomb**	**2.85**	**236**	*e*P	**Pn**	**13 23 39.4**	**+1.3**
GUYC				*e*S	**Sn**	**13 24 14.2**	**+0.1**
GUYC				*i*		13 24 21.9	
	comp=Z,101nm,0.4s						
DBBC	**Dabeiba**	**3.16**	**273**	*e*P	**Pn**	**13 23 42.3**	**+0.7**
TOLC	**Tolima**	**3.20**	**225**	*e*P	**Pn**	**13 23 43.3**	**+1.0**
ELOV	**Elorza**	**3.53**	**87**	*e*P	**Pn**	**13 23 48.2**	**+2.0**
ELOV				*e*S	**Sn**	**13 24 26.7**	**-1.9**
VIRV	**Villa del Rosa**	**3.68**	**10**	*e*P	**Pn**	**13 23 48.7**	**+0.6**
VIRV				*e*S	**Sn**	**13 24 29.6**	**-2.8**
CURV	**Curarigua**	**4.37**	**44**	*e*P	**Pn**	**13 23 58.5**	**+1.4**
CURV				*e*S	**Sn**	**13 24 45.5**	**-2.8**
BAUV	**El Baul**	**5.37**	**67**	*e*P	**Pn**	**13 24 10.7**	**+0.8**
BAUV				*e*S	**Sn**	**13 25 07.2**	**-4.3**
MONV	**Montecano**	**5.91**	**31**	*e*P	**Pn**	**13 24 18.2**	**+1.1**

*NIED **20** 13:24:00, 36.˙40N×141.˙10E, h32km, Mw3.7 Best double couple: M₀3.71000×10¹⁴ NP1:φs285.00000°, δ57.00000°, λ159.00000°. NP2:φs27.00000°, δ73.00000°, λ35.00000°.*
*ISCJB **20** 13:24:13.3±0.9, 36.˙43N±0.˙04×141.˙20E±0.˙07, h43km±8km, mb3.6/6, Error ellipse: s-maj=9.8km s-min=6.3km az=19.5*
*JMA **20** 13:24:14.4±0.1, 36.˙44N×141.˙08E, h45km±2km, M3.8*
JMA Felt I J1.
*IDC **20** 13:24:14.7±2.8, 36.˙41N×141.˙28E, h41km±24km, mb3.4/6, mb1 3.6/9, mb1mx3.3/54, mbtmp3.7/9, ML3.6/3, MS2.7/1, Ms1 2.7/1, ms1mx2.2/44, Error ellipse: s-maj=22.1km s-min=11.5km az=67.0*

ISC 20 13:24:13.6±1.9, 36.˙44N±0.˙05×141.˙20E±0.˙08, h30km±12km, n26,σ1$09/27, mb3.5/6, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHO	**Hitachi**	**0.53**	**289**	P	**Pb**	**13 24 24.6**	**+0.1**
JHO				S	**Sb**	**13 24 31.7**	**-0.3**
ONAJ	**Iwakimizuishiy**	**0.73**	**334**	P	**Pn**	**13 24 27.5**	**-0.5**
JYT	**Yasato**	**0.84**	**256**	P	**Pn**	**13 24 28.6**	**-0.7**
JYT				S	**Sn**	**13 24 38.4**	**-2.2**
JFK	**Kawauchi**	**0.96**	**344**	P	**Pn**	**13 24 30.7**	**-0.4**
JFT	**Otama**	**1.28**	**328**	P	**Pn**	**13 24 36.3**	**+0.9**
JFT				S	**Sn**	**13 24 51.9**	**+0.3**
JAG	**Ashikaga**	**1.41**	**270**	P	**Pn**	**13 24 36.9**	**-0.3**
JAG				S	**Sn**	**13 24 53.2**	**-1.5**
JMM	**Marumori**	**1.46**	**347**	P	**Pn**	**13 24 38.3**	**+0.4**
JMM				S	**Sn**	**13 24 55.6**	**-0.4**
JFY	**Yanaizu**	**1.54**	**309**	P	**Pn**	**13 24 39.6**	**+0.6**
JKT	**Katashina**	**1.60**	**282**	S	**Sn**	**13 24 57.5**	**-2.2**
MJAR	**Matsushiro Arr**	**2.41**	**273**	P	**Pn**	**13 24 52.2**	**+1.2**
	15nm,0.3s,baz=95,slow=9.3,SNR=146						
MJAR				S	**Sn**	**13 25 21.6**	**+2.0**
	8.4nm,0.3s,baz=87,slow=21,SNR=8.0						
MAT	**Matsushiro**	**2.41**	**273**	P	**Pn**	**13 24 52.1**	**+1.1**
MAT				S	**Sn**	**13 25 21.0**	**+1.4**
JHJ	**Hachijo jima 2**	**3.51**	**200**	P	**Pn**	**13 25 08.1**	**+1.9**
	14nm,0.3s,baz=88,slow=23,SNR=11						
JHJ				S	**Sn**	**13 25 46.6**	**-0.1**
	34nm,0.3s,baz=71,slow=22,SNR=8.4						
ASAJ	**Asahikawa**	**7.74**	**8**	P	**Pn**	**13 26 04.6**	**+0.4**
	1.0nm,0.3s,baz=212,slow=15,SNR=13						
KSRS	**Korea Array**	**10.67**	**279**	LR	LR	13 30 29.3	
	comp=Z,43nm,21.3s,baz=295,slow=35						
SONM	**Songino Array**	**27.98**	**305**	P	**P**	**13 30 01.6**	**-0.1**
	0.3nm,0.4s,baz=97,slow=7.7,SNR=2.7						
H11N2	**WAKE ISLAND Hy**	**28.00**	**120**	T	T	13 59 30.6	
	baz=313,slow=75,SNR=14						
H11N1	**WAKE ISLAND Hy**	**28.01**	**120**	T	T	13 59 30.1	
	baz=313,slow=75,SNR=14						
H11N3	**WAKE ISLAND Hy**	**28.02**	**120**	T	T	13 59 33.5	
	baz=313,slow=75,SNR=12						
H11S1	**WAKE ISLAND Hy**	**28.69**	**122**	T	T	14 00 24.3	
	baz=314,slow=76,SNR=25						
H11S3	**WAKE ISLAND Hy**	**28.69**	**122**	T	T	14 00 23.8	
	baz=314,slow=76,SNR=16						
H11S2	**WAKE ISLAND Hy**	**28.71**	**122**	T	T	14 00 24.3	
	baz=314,slow=76,SNR=16						
ZALV	**Zalesovo Beam**	**42.19**	**313**	P	**P**	**13 32 03.6**	**+0.2**
	1.0nm,0.6s,baz=84,slow=7.8,SNR=5.3						
MKAR	**Makanchi Array**	**44.29**	**303**	P	**P**	**13 32 20.6**	**+0.1**
	0.3nm,0.6s,baz=94,slow=6.8,SNR=3.6						
KURBB	**Kurchatov Arra**	**46.23**	**308**	P	**P**	**13 32 35.7**	**-0.1**
	2.2nm,0.5s,baz=83,slow=7.7,SNR=6.6						
WRA	**Warramunga Arr**	**56.45**	**188**	P	**P**	**13 33 52.7**	**+0.1**
	0.5nm,0.9s,baz=2.9,slow=7.5,SNR=4.1						
ASAR	**Alice Springs**	**60.18**	**188**	P	**P**	**13 34 18.4**	**-0.3**
	0.4nm,0.9s,baz=11,slow=7.5,SNR=3.3						

*NSSC **20** 13:31:14.0±1.3, 33.˙86N×35.˙81E, h0km±3km, MD1.3, ML1.8 GRAL **20** 13:31:14.7±0.3, 33.˙88N×35.˙84E, h0km±75km, MD2.8 CSEM **20** 13:31:14.2±0.1, 33.˙86N×35.˙82E, h2km, ML2.8, Error ellipse: s-maj=3.2km s-min=1.9km az=99.0*

ISC 20 13:31:13.4±1.1, 33.˙85N±0.˙02×35.˙78E±0.˙03, h14km±13km, n26,σ0$41/48, Jordan-Syria region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BHL	**Bhannes**	**0.12**	**298**	*e*P	**Pb**	**13 31 17.6**	**0.0**
BHL	**Bhannes**	**0.12**	**298**	*e*P	**Pb**	**13 31 17.5**	**0.0**
DQRL	**Deir Qamar**	**0.23**	**231**	*e*P	**Pb**	**13 31 19.9**	**+0.5**
DQRL				*e*S	**Sb**	**13 31 23.5**	**+0.2**
DQRL	**Deir Qamar**	**0.23**	**231**	*e*P	**Pb**	**13 31 19.9**	**+0.5**
DQRL				*e*S	**Sb**	**13 31 23.5**	**+0.2**
RCY	**Rachaya**	**0.35**	**172**	*e*P	**Pb**	**13 31 21.4**	**-0.1**
RCY				*e*S	**Sb**	**13 31 26.5**	**-0.6**
RCY	**Rachaya**	**0.35**	**172**	*e*P	**Pb**	**13 31 21.5**	**-0.1**
RCY				*e*S	**Sb**	**13 31 26.5**	**-0.6**
HWQ	**Hawqa**	**0.45**	**18**	*e*P	**Pg**	**13 31 22.1**	**-0.4**
HWQ	**Hawqa**	**0.45**	**18**	*e*P	**Pg**	**13 31 22.1**	**-0.4**
BRBR	**Barbar**	**0.46**	**162**	*e*P	**Pb**	**13 31 23.3**	**-0.1**
BRBR				*e*S	**Sb**	**13 31 30.3**	**+0.2**
BRBR				AML	AML	13 31 32.2	
	comp=N,96nm,0.4s						
BRBR				AML	AML	13 31 33.4	
	comp=E,53nm,0.3s						
BRBR	**Barbar**	**0.46**	**162**	*e*P	**Pb**	**13 31 23.3**	**-0.1**
BRBR				*e*S	**Sb**	**13 31 30.3**	**+0.2**
	comp=E,53nm,0.3s						
MARH	**Ras Al Marh**	**0.61**	**73**	*e*P	**Pg**	**13 31 25.4**	**-0.1**
MARH				*e*S	**Sb**	**13 31 34.5**	**-0.1**
MARH				AML	AML	13 31 37.1	
	comp=E,119nm,0.4s						
MARH				AML	AML	13 31 40.1	
	comp=N,130nm,0.4s						
MARH	**Ras Al Marh**	**0.61**	**73**	*e*P	**Pg**	**13 31 25.4**	**-0.1**
MARH				*e*S	**Sb**	**13 31 34.5**	**-0.1**
	comp=N,130nm,0.4s						
HAWK	**Haweek**	**0.85**	**38**	*e*P	**Pg**	**13 31 29.8**	**-0.1**
HAWK				*e*S	**Sb**	**13 31 41.3**	**0.0**
HAWK				AML	AML	13 31 44.5	
	comp=N,32nm,0.6s						
HAWK				AML	AML	13 31 45.9	
	comp=E,23nm,0.4s						
HAWK	**Haweek**	**0.85**	**38**	*e*P	**Pg**	**13 31 29.8**	**-0.1**
HAWK				*e*S	**Sb**	**13 31 41.3**	**0.0**
	comp=E,23nm,0.4s						
BIDA	**Albida**	**1.25**	**21**	*e*P	**Pg**	**13 31 37.4**	**-0.1**
BIDA				*e*S	**Sg**	**13 31 54.4**	**+0.7**
BIDA				AML	AML	13 31 59.5	
	comp=N,53nm,0.3s						
BIDA				AML	AML	13 31 59.9	
	comp=E,89nm,0.3s						
BIDA	**Albida**	**1.25**	**21**	*e*P	**Pg**	**13 31 37.4**	**-0.1**
BIDA				*e*S	**Sg**	**13 31 54.4**	**+0.7**
	comp=E,89nm,0.3s						
ROOS	**tl_alroos**	**1.29**	**75**	*e*P	**Pg**	**13 31 38.6**	**+0.2**
ROOS				*e*S	**Sg**	**13 31 56.2**	**+1.0**
ROOS				AML	AML	13 32 01.2	
	comp=E,27nm,0.5s						
ROOS				AML	AML	13 32 04.0	
	comp=N,30nm,0.7s						
ROOS	**tl_alroos**	**1.29**	**75**	*e*P	**Pg**	**13 31 38.6**	**+0.2**
ROOS				*e*S	**Sg**	**13 31 56.2**	**+1.0**
	comp=N,30nm,0.7s						
SALA	**Sala**	**1.39**	**145**	*e*P	**Pg**	**13 31 39.9**	**-0.2**
SALA				*e*S	**Sg**	**13 31 58.5**	**+0.3**
SALA				AML	AML	13 32 03.6	
	comp=E,3.3nm,0.6s						
SALA				AML	AML	13 32 06.1	
	comp=N,20nm,0.5s						
SALA	**Sala**	**1.39**	**145**	*e*P	**Pg**	**13 31 39.9**	**-0.2**
SALA				*e*S	**Sg**	**13 31 58.5**	**+0.3**
	comp=N,20nm,0.5s						
ZALF	**Zalf**	**1.60**	**125**	*e*P	**Pb**	**13 31 42.6**	**-0.1**
ZALF				*e*S	**Sg**	**13 32 04.6**	**-0.3**
ZALF				AML	AML	13 32 07.4	
	comp=E,7.5nm,0.6s						
ZALF				AML	AML	13 32 11.2	
	comp=N,12nm,0.5s						
ZALF	**Zalf**	**1.60**	**125**	*e*P	**Pb**	**13 31 42.6**	**-0.1**
ZALF				*e*S	**Sg**	**13 32 04.6**	**-0.3**
	comp=N,12nm,0.5s						
WRDH	**Warideh**	**1.74**	**17**	*e*P	**Pb**	**13 31 45.6**	**+0.5**
WRDH				*e*S	**Sg**	**13 32 08.5**	**-0.8**
WRDH				AML	AML	13 32 15.3	
	comp=E,38nm,0.6s						
WRDH				AML	AML	13 32 16.0	
	comp=N,14nm,0.4s						
WRDH	**Warideh**	**1.74**	**17**	*e*P	**Pb**	**13 31 45.6**	**+0.5**
WRDH				*e*S	**Sg**	**13 32 08.5**	**-0.8**
	comp=N,14nm,0.4s						
ARNB	**Al Arnab**	**2.01**	**4**	*e*P	**Pb**	**13 31 49.4**	**-0.5**
ARNB				*e*S	**Sb**	**13 32 14.9**	**+0.1**
ARNB				AML	AML	13 32 24.5	
	comp=N,16nm,0.3s						
ARNB				AML	AML	13 32 30.1	
	comp=E,7.9nm,0.7s						
ARNB	**Al Arnab**	**2.01**	**4**	*e*P	**Pb**	**13 31 49.4**	**-0.5**
ARNB				*e*S	**Sb**	**13 32 14.9**	**+0.1**
	comp=E,8.0nm,0.7s						

*NNC **20** 13:35:56.1±1.1, 44.˙50N×79.˙52E, h0km, mb3.0, mpv2.9, Error ellipse: s-maj=17.1km s-min=5.6km az=105.0*
*SOME **20** 13:35:56.3, 44.˙57N×79.˙45E, h20km*

ISC 20 13:35:55.8±1.2, 44.˙60N±0.˙03×79.˙56E±0.˙03, h20km±4km, n22,σ0$82/45, 12C-3D, Eastern Kazakhstan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DJR	**Jarkent**	**0.31**	**149**	*e*P	**Pb**	**13 36 03.0**	**+0.3**
	228nm,0.1s						
DJR				*e*S	**Sb**	**13 36 07.5**	**0.0**
	2µm,0.2s						
KAPS	**Kapalarasan**	**0.70**	**348**	*e*P	**Pn**	**13 36 11.2**	**+0.6**
	47nm,0.1s						
KAPS				*e*S	**Sn**	**13 36 21.3**	**+0.4**
	279nm,0.2s						
TDK	**Taldyqorghan**	**0.92**	**297**	*e*P	**Pb**	**13 36 13.2**	**+0.2**
	28nm,0.1s						
TDK				*e*S	**Sb**	**13 36 24.7**	**-0.1**
	120nm,0.2s						
MNBS	**Baschi**	**0.98**	**238**	*e*P	**Pb**	**13 36 13.2**	**-1.0**
	25nm,0.1s						
MNBS				*e*S	**Sb**	**13 36 25.0**	**-1.7**
	621nm,0.2s						
PDGK	**Podgornoye**	**1.27**	**183**	⇑P	**Pn**	**13 36 18.6**	**+0.2**
	10nm,0.3s						
PDGK				⇑S	**Sn**	**13 36 34.2**	**-0.6**
	72nm,0.4s						
KTMS	**Ketmen**	**1.29**	**153**	*e*P	**Pn**	**13 36 19.3**	**+0.6**
	39nm,0.1s						
KTMS				*e*S	**Sn**	**13 36 35.4**	**0.0**
	193nm,0.1s						
KPKS	**Kokpek**	**1.30**	**209**	*e*P	**Pn**	**13 36 18.7**	**-0.1**
	120nm,0.2s						
KPKS				*e*S	**Sn**	**13 36 35.0**	**-0.7**
	612nm,0.4s						
ARXS	**Arharly**	**1.30**	**253**	*e*P	**Pn**	**13 36 18.9**	**0.0**
	20nm,0.1s						
ARXS				*e*S	**Sn**	**13 36 35.2**	**-0.5**
	308nm,0.2s						
SHLS	**Shalkode**	**1.46**	**171**	⇑*i*P	**Pb**	**13 36 22.1**	**-0.2**
	48nm,0.2s						
SHLS				⇓*i*S	**Sb**	**13 36 40.5**	**-0.1**
	156nm,0.2s						
KURS	**Kuram**	**1.50**	**223**	⇑*i*P	**Pn**	**13 36 22.3**	**+0.7**
	49nm,0.4s						
KURS				⇑*i*S	**Sn**	**13 36 40.5**	**0.0**
	137nm,0.5s						
ZHN	**Zhinishke**	**1.65**	**210**	*e*P	**Pb**	**13 36 24.9**	**-0.6**
	44nm,0.2s						
ZHN				*e*S	**Sn**	**13 36 45.2**	**+0.9**
	1µm,0.3s						
CHKK	**Chushkaly**	**1.98**	**249**	⇓*i*P	**Pb**	**13 36 30.5**	**-0.6**
	57nm,0.2s						
CHKK				*e*S	**Sb**	**13 36 55.2**	**-0.1**
	221nm,0.3s						
KOTS	**Kotyrbulak**	**2.24**	**233**	*e*P	**Pb**	**13 36 34.7**	**-0.9**
	23nm,0.1s						
KOTS				*e*S	**Sb**	**13 37 03.0**	**+0.2**
	36nm,0.2s						
KTBS	**Karatobe**	**2.25**	**248**	*e*P	**Pb**	**13 36 34.6**	**-1.2**
	19nm,0.1s						
KTBS				*e*S	**Sb**	**13 37 03.4**	**+0.1**
	12nm,0.2s						
AAA	**Alma-Ata**	**2.31**	**236**	*e*P	**Pb**	**13 36 36.9**	**+0.2**
	69nm,0.2s						
AAA				*e*S	**Sb**	**13 37 06.3**	**+1.4**
	134nm,0.3s						
MDOK	**Medeo**	**2.32**	**233**	⇑*i*P	**Pb**	**13 36 35.8**	**-1.1**
	26nm,0.1s						
MDOK				*e*S	**Sb**	**13 37 04.5**	**-0.7**
	89nm,0.2s						
IZV	**Izvestkoviy**	**2.65**	**235**	*e*P	**Pb**	**13 36 42.0**	**-0.5**
	7.1nm,0.2s						
IZV				*e*S	**Sb**	**13 37 15.5**	**+0.9**
	97nm,0.2s						
MTBS	**Maitube**	**2.70**	**238**	*e*P	**Pb**	**13 36 42.1**	**-1.3**
	14nm,0.3s						
MTBS				*e*S	**Sb**	**13 37 15.7**	**-0.4**
	171nm,0.3s						
MK31	**Makanchi Array**	**2.91**	**40**	Pn	**Pb**	**13 36 45.8**	**-1.2**
	0.3nm,0.2s,baz=229,slow=15,SNR=39						
MK31				Pg	Pn	13 36 52.5	+12
	0.5nm,0.2s,baz=213,slow=14,SNR=13						
MK31				⇑Sn	**Sb**	**13 37 22.0**	**-0.1**
	4.6nm,0.5s						
MK31				⇑Lg	Lg	13 37 28.9	
	10nm,0.3s,baz=225,slow=28						
KST	**Kastek**	**3.03**	**240**	⇓*i*P	**Pb**	**13 36 48.5**	**-0.7**
	8.1nm,0.7s						
KST				⇑*i*S	**Sb**	**13 37 25.9**	**+0.1**
	122nm,0.4s						
DGS	**Degeres**	**3.06**	**245**	*e*P	**Pb**	**13 36 48.6**	**-0.9**
	11nm,0.2s						
DGS				*e*S	**Sb**	**13 37 26.4**	**0.0**
	86nm,0.3s						
TKM2	**Tokmak 2**	**3.33**	**241**	⇑Pn	**Pn**	**13 36 48.8**	**+1.9**
	1.6nm,0.4s						
TKM2				⇑Pg	**Pb**	**13 36 55.9**	**+1.7**
	4.9nm,0.5s						
TKM2				⇑Sn	**Sb**	**13 37 35.1**	**+0.8**
	13nm,0.5s						

*IDC **20** 13:35:53.1±3.9, 8.˙93S×117.˙62E, h81km±29km, mb3.0/3, mb1 3.3/7, mb1mx3.1/57, mbtmp3.5/7, Error ellipse: s-maj=62.5km s-min=13.5km az=55.0*
*ISCJB **20** 13:35:55.7±1.2, 8.˙8S±0.˙1×118.˙2E±0.˙2, h121km, mb3.3/3, Error ellipse: s-maj=27.7km s-min=10.7km az=148.1*

ISC 20 13:35:57.2±1.4, 8.˙9S±0.˙1×118.˙2E±0.˙2, h121km, n7, σ2$52/9, mb3.4/3, Sumbawa region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KAPI	**Kappang**	**4.16**	**22**	P	**Pn**	**13 36 58.5**	**-0.4**
	0.7nm,0.3s,baz=215,slow=16,SNR=5.8						
BATI	**Baumata**	**5.57**	**104**	P	**Pn**	**13 37 20.0**	**+2.1**
FITZ	**Fitzroy Crossi**	**11.68**	**142**	P	**Pn**	**13 38 42.0**	**+1.8**
	0.1nm,0.3s,baz=330,slow=11,SNR=3.2						
FITZ				S	**Sn**	**13 40 45.4**	**-3.5**
	0.5nm,0.3s,baz=48,slow=18,SNR=15						
WRA	**Warramunga Arr**	**19.11**	**127**	P	**Pn**	**13 40 12.7**	**-0.3**
	0.2nm,0.3s,baz=302,slow=13,SNR=17						
WRA				S	**S**	**13 43 38.8**	**-2.4**
	0.1nm,0.3s,baz=303,slow=26,SNR=4.1						
ASAR	**Alice Springs**	**21.03**	**136**	P	**P**	**13 40 35.0**	**+3.4**
	0.8nm,0.5s,baz=309,slow=9.1,SNR=39						
ASAR				S	Sn	13 44 28.6	-5.1
	0.4nm,0.7s,baz=305,slow=22,SNR=5.7						
SONM	**Songino Array**	**57.44**	**351**	P	**P**	**13 45 32.8**	**-0.6**
	0.2nm,0.4s,baz=164,slow=8.4,SNR=2.4						
MKAR	**Makanchi Array**	**63.99**	**333**	P	**P**	**13 46 17.0**	**-0.8**
	0.1nm,0.4s,baz=152,slow=6.2,SNR=2.6						

*NIED **20** 13:36:00, 28.˙10N×128.˙00E, h5km, Mw4.4 Best double couple: M₀3.98000×10¹⁵ NP1:φs307.00000°, δ39.00000°, λ-13.00000°. NP2:φs47.00000°, δ82.00000°, λ-128.00000°.*
*JMA **20** 13:36:39.0±0.2, 28.˙10N×128.˙05E, h21km±3km, M3.6*
*IDC **20** 13:36:48.5±4.4, 28.˙17N×128.˙01E, h72km±43km, mb3.4/6, mb1 3.6/7, mb1mx3.2/72, mbtmp3.7/7, ML3.3/1, MS3.4/17, Ms1 3.5/17, ms1mx3.3/32, Error ellipse: s-maj=39.1km s-min=20.1km az=69.0*

ISC 20 13:36:39.4±1.7, 28.˙04N±0.˙05×128.˙11E±0.˙05, h4km±11km, n35,σ1$65/28, mb3.6/7, MS3.3/12, Ryukyu Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JTK	**Tokunoshima**	**0.79**	**109**	P	**Pg**	**13 36 54.8**	**+0.2**
JTK				*e*S	**Sg**	**13 37 05.8**	**+1.0**
JOKE	**Okinoerabujima**	**0.79**	**149**	P	**Pg**	**13 36 55.1**	**+0.5**
JOKE				*e*S	**Sb**	**13 37 07.2**	**+0.3**
JAMN	**Amaminishikomi**	**0.96**	**78**	P	**Pg**	**13 36 57.4**	**-0.5**
JAMN				*e*S	**Sg**	**13 37 10.2**	**-0.2**
JIH	**Iheya**	**1.01**	**187**	P	**Pg**	**13 36 58.1**	**-0.7**
JIH				*e*S	**Sg**	**13 37 12.5**	**+0.5**
JOW	**Kunigami**	**1.22**	**173**	P	**Pb**	**13 37 01.5**	**-1.5**
JAM	**Amami Oshima**	**1.37**	**74**	P	**Pn**	**13 37 04.2**	**-1.1**
JAM				*e*S	**Sb**	**13 37 21.6**	**-1.9**
JTAJ	**Takarajima**	**1.47**	**41**	P	Pn	13 37 04.5	-2.1
JTAJ				*e*S	**Sn**	**13 37 22.9**	**-3.3**
JNTH	**Nagotoyohara**	**1.52**	**183**	P	**Pn**	**13 37 06.4**	**-0.9**
JAGN	**Aguni-jima**	**1.64**	**208**	P	**Pn**	**13 37 07.1**	**-1.9**
JAGN				*e*S	**Sn**	**13 37 27.4**	**-3.1**
JZK	**Kikaishima**	**1.67**	**80**	P	**Pn**	**13 37 10.2**	**+0.8**
JZK				*e*S	**Sn**	**13 37 29.7**	**-1.5**
JJT2	**Tamagusuku 2**	**1.92**	**190**	P	**Pn**	**13 37 14.4**	**+1.5**
JJT2				*e*S	**Sn**	**13 37 36.2**	**-1.3**
JYAK	**Yakushimahirau**	**3.03**	**43**	P	**Pn**	**13 37 28.0**	**-0.2**
JNU	**Nakatsue**	**5.60**	**25**	P	Pn	13 38 08.4	+4.9
	0.9nm,0.3s,baz=156,slow=6.4,SNR=9.2						
JNU				LR	LR	13 40 22.3	
	comp=Z,397nm,20.2s,baz=218,slow=39						
KSRS	**Korea Array**	**9.39**	**359**	LR	LR	13 42 45.2	
	comp=Z,316nm,18.1s,baz=160,slow=39						
MJAR	**Matsushiro Arr**	**12.03**	**43**	LR	LR	13 44 32.8	
	comp=Z,171nm,19.0s,baz=235,slow=39						
USRK	**Ussuriysk Ar.**	**16.42**	**10**	P	**P**	**13 40 35.7**	**+2.2**
	0.1nm,0.3s,baz=179,slow=14,SNR=2.4						
USRK				LR	LR	13 46 35.6	
	comp=Z,138nm,19.3s,baz=180,slow=36						
ASAJ	**Asahikawa**	**19.81**	**32**	LR	LR	13 48 09.6	
	comp=Z,106nm,21.5s,baz=216,slow=34						
DAV	**Davao City (W)**	**21.00**	**187**	LR	LR	13 49 51.5	
	comp=Z,81nm,20.2s,baz=315,slow=37						
KLR	**Kul'dur**	**21.34**	**7**	LR	LR	13 49 32.1	
	comp=Z,90nm,21.9s,baz=180,slow=36						
SONM	**Songino Array**	**25.99**	**325**	P

VMT				S	Sb	13 37 11.8	+0.1	
VLZ	**Valdez**	**0.56**	**46**	P	Pb	13 37 05.5	+0.6	
VLZ				S	Sb	13 37 12.9	0.0	
EYAK	**Cordova Ski Ar**	**0.72**	**105**	P	Pn	13 37 09.5	+0.2	
DIV	**Divide**	**0.78**	**60**	P	Pb	13 37 09.0	+0.3	
DIV				S	Sb	13 37 18.9	-0.5	
KLU	**Klutina**	**0.96**	**38**	P	Pg	13 37 11.5	+0.1	
KLU				S	Sg	13 37 23.3	-0.6	
SCM	**Sheep Creek Mo**	**1.09**	**356**	P	Pg	13 37 13.8	-0.1	
SML	**Sawmill**	**1.21**	**333**	P	Pb	13 37 15.9	0.0	
SML				S	Sb	13 37 31.6	0.0	
PS12	**TAPS Pump St12**	**1.22**	**52**	P	Pb	13 37 16.0	-0.2	
PS12				S	Sb	13 37 31.7	-0.4	
BMRM	**Bremner River**	**1.27**	**79**	P	Pg	13 37 17.8	+0.4	
BMRM				S	Sn	13 37 34.7	+0.6	
PMR	**Palmer**	**1.28**	**313**	P	Pn	13 37 16.9	0.0	
PMR				S	Sb	13 37 33.6	+0.1	
RAGM	**Ragged Mountai**	**1.28**	**105**	P	Pg	13 37 18.1	+0.6	
RC01	**Rabbit Creek A**	**1.30**	**286**	P	Pg	13 37 18.1	+0.1	
SEW	**Seward**	**1.30**	**241**	P	Pg	13 37 18.3	+0.4	
SLKM	**Skilak Lake**	**1.53**	**262**	P	Pb	13 37 21.7	+0.4	
FIB	**Fire Island**	**1.53**	**287**	P	Pg	13 37 22.1	-0.2	
PS11	**TAPS Pump St11**	**1.57**	**31**	P	Pb	13 37 22.0	-0.1	
NICHA	**Nichawak Mount**	**1.66**	**107**	P	Pn	13 37 22.9	+0.7	
BERG	**Berg Lake**	**1.75**	**100**	P	Pn	13 37 23.9	+0.6	
SUCK	**Suckling Hills**	**1.81**	**110**	P	Pn	13 37 24.9	+0.6	
VRDI	**Verde Repeater**	**1.87**	**73**	P	Pn	13 37 26.2	+0.9	
KHIT	**Khitrov Hills**	**1.96**	**97**	P	Pn	13 37 26.8	+0.4	
GRIN	**Grindle Hills**	**1.96**	**102**	P	Pn	13 37 27.0	+0.7	
BRLK	**Bradley Lake**	**2.10**	**244**	P	Pn	13 37 29.7	+1.4	
MCARA	**McCarthy VSAT**	**2.11**	**71**	P	Pn	13 37 29.4	+1.0	
CUT	**Chuitna**	**2.23**	**320**	P	Pb	13 37 31.9	-1.5	
KULT	**Kultieth River**	**2.25**	**101**	P	Pn	13 37 30.9	+0.5	
BARK	**Barkley Ridge**	**2.33**	**96**	P	Pn	13 37 32.4	+0.9	
PTPK	**Patty Peak**	**2.33**	**77**	P	Pn	13 37 32.9	+1.3	
DHY	**Denali Highway**	**2.34**	**358**	P	Pn	13 37 32.8	+1.1	
KIAG	**Kiagna River**	**2.36**	**84**	P	Pn	13 37 32.8	+0.8	
PAX	**Paxson**	**2.37**	**19**	P	Pn	13 37 33.5	+1.4	
BALM	**Baldy**	**2.37**	**81**	P	Pn	13 37 33.0	+0.9	
ISLE	**Juniper Island**	**2.38**	**91**	P	Pn	13 37 32.7	+0.5	
STLK	**Strandline Lak**	**2.39**	**290**	P	Pn	13 37 33.5	+1.3	
SPCR	**Spurr Chakacha**	**2.50**	**283**	P	Pn	13 37 34.6	+0.8	
BAGL	**Bagley Icefiel**	**2.52**	**94**	P	Pn	13 37 34.8	+0.9	
HUR	**Hurricane**	**2.53**	**333**	P	Pn	13 37 36.0	+1.9	
CKL	**Chakachamna La**	**2.56**	**282**	P	Pn	13 37 35.5	+0.8	
MESA	**MESA**	**2.65**	**100**	P	Pn	13 37 36.5	+0.5	
SPWE	**Spurr West**	**2.68**	**284**	P	Pn	13 37 37.1	+0.9	
BARN	**Barnard Glacie**	**2.71**	**81**	P	Pn	13 37 37.8	+1.0	
MENT	**Mentasta**	**2.74**	**35**	P	Pn	13 37 38.3	+1.3	
PS10	**TAPS Pump St10**	**2.77**	**15**	P	Pn	13 37 38.9	+1.5	
RSO	**Redoubt South**	**2.77**	**267**	P	Pn	13 37 38.5	+0.8	
RDJH	**Redoubt Jeurge**	**2.78**	**269**	P	Pn	13 37 38.5	+0.9	
RND	**Reindeer**	**2.79**	**344**	P	Pn	13 37 39.3	+1.6	
NCT	**North Crescent**	**2.84**	**269**	P	Pn	13 37 39.5	+0.9	
CTGM	**Chitina Glacie**	**2.86**	**83**	P	Pn	13 37 39.9	+1.1	
RKAV	**Rock Avalanche**	**2.91**	**96**	P	Pn	13 37 40.7	+1.2	
TABL	**Table Mountain**	**2.99**	**93**	P	Pn	13 37 41.1	+0.5	
LOGN	**Logan Glacier**	**3.02**	**86**	P	Pn	13 37 41.9	+0.9	
TRF	**Thorofare Moun**	**3.09**	**333**	P	Pn	13 37 43.6	+1.7	
MCK	**McKinley**	**3.11**	**345**	P	Pn	13 37 44.1	+2.0	
PPLA	**Purkeypile**	**3.21**	**314**	P	Pn	13 37 44.5	+0.8	
DOT	**Dot Lake**	**3.25**	**25**	P	Pn	13 37 45.4	+1.3	
KTH	**Kantishna Hill**	**3.32**	**330**	P	Pn	13 37 46.8	+1.7	
AUL	**Augustine Lava**	**3.43**	**249**	P	Pn	13 37 49.4	+2.9	
BCA3	**Beaver Creek A**	**3.45**	**45**	P	Pn	13 37 48.3	+1.5	
CAST	**Castle Rocks**	**3.54**	**321**	P	Pn	13 37 49.5	+1.4	
HDA	**Harding Lake**	**3.68**	**1**	P	Pn	13 37 50.9	+1.0	
CDD	**Cape Douglas**	**3.74**	**244**	P	Pn	13 37 52.5	+1.7	
FOPK	**Fourpeaked Vol**	**3.76**	**241**	P	Pn	13 37 52.6	+1.5	
WRH	**Wood River Hil**	**3.76**	**354**	P	Pn	13 37 52.0	+0.9	
BPAW	**Bear Paw Mtn.**	**3.81**	**334**	P	Pn	13 37 52.6	+0.9	
PS08	**TAPS Pump Stn8**	**3.81**	**2**	P	Pn	13 37 52.5	+0.7	
CCB	**Clear Creek Bu**	**3.93**	**356**	P	Pn	13 37 54.0	+0.7	
IL1	**Eielson Array**	**4.04**	**2**	P	Pn	13 37 55.1	+0.2	
ILAR	**Eielson Array**	**4.04**	**2**	Pn	Pn	13 37 55.2	+0.3	
	10.0nm,0.3s,baz=184,slow=13,SNR=281							
ILAR				Sn	Sn	13 38 47.6	+5.4	
	13nm,0.3s,baz=178,slow=22,SNR=8.3							
ILAR				LR	LR	13 39 39.8		
	comp=Z,99nm,19.6s,baz=145,slow=39							
ILB	**Eielson Array**	**4.04**	**2**	P	Pn	13 37 55.2	+0.3	
KDAK	**Kodiak Island**	**4.07**	**225**	Pn	Pg	13 38 11.6	+0.7	
	5.5nm,0.3s,baz=43,slow=10.0,SNR=86							
KDAK				Sn	Sb	13 38 55.0	+1.1	
	7.1nm,0.3s,baz=317,slow=23,SNR=20							
KDAK				Lg	Lg	13 39 16.3		
	2.7nm,0.3s,baz=305,slow=19,SNR=2.0							
KDAK	**Kodiak Island**	**4.07**	**225**	P	Pn	13 37 56.5	+1.3	
SVW2	**Sparrevohn**	**4.12**	**279**	P	Pn	13 37 55.7	-0.3	
COLA	**College**	**4.16**	**356**	P	Pn	13 37 57.1	+0.7	
MDM	**Murphy Dome**	**4.26**	**354**	P	Pn	13 37 58.6	+0.8	
MLY	**Manley**	**4.60**	**341**	P	Pn	13 38 03.6	+1.0	
TT01	**Tatalina**	**4.72**	**301**	P	Pn	13 38 04.0	-0.3	
TTA	**Tatalina**	**4.73**	**301**	P	Pn	13 38 04.0	-0.4	
OHAK	**Old Harbor**	**4.75**	**225**	P	Pn	13 38 05.2	+0.7	
KVTA	**Katmai Vly 10**	**4.77**	**244**	P	Pn	13 38 06.7	+1.8	
EGAK	**Eagle**	**4.90**	**32**	*e*Pn	Pn	13 38 08.1	+1.5	
DAWY	**Dawson**	**4.91**	**44**	P	Pn	13 38 08.5	+1.6	
PS06	**TAPS Pump Stn6**	**5.26**	**348**	P	Pn	13 38 12.7	+1.2	
PLBC	**Pleasant Camp**	**5.56**	**99**	P	Pn	13 38 17.1	+1.4	
FYU	**Fort Yukon**	**5.91**	**8**	P	Pn	13 38 20.9	+0.5	
IM3	**Indian Mountai**	**6.03**	**333**	P	Pn	13 38 23.3	+1.1	
WHY	**Whitehorse**	**6.03**	**85**	P	Pn	13 38 23.5	+1.1	
SKAG	**Skagway**	**6.06**	**97**	*e*Pn	Pn	13 38 24.5	+1.9	
	22nm,0.7s							
COLD	**Coldfoot**	**6.64**	**350**	*e*Pn	Pn	13 38 31.2	+0.7	
	9.7nm,0.3s							
DLBC	**Dease Lake**	**8.99**	**97**	Pn	Pn	13 39 03.7	+0.9	
	1.6nm,0.3s,baz=265,slow=7.9,SNR=25							
DLBC				Lg	Lg	13 41 31.2		
	0.2nm,0.3s,baz=218,slow=19,SNR=3.1							
INK	**Inuvik**	**9.57**	**32**	Pn	Pn	13 39 11.8	+1.1	
	0.5nm,0.3s,baz=232,slow=18,SNR=27							
INK	**Inuvik**	**9.57**	**32**	*e*Pn	Pn	13 39 11.4	+0.8	
	4.3nm,0.8s							
BBB	**Bella Bella**	**13.53**	**121**	LR	LR	13 44 54.8		
	comp=Z,44nm,18.9s,baz=102,slow=36							
YKA	**Yellowknife Ar**	**15.49**	**69**	Pn	Pn	13 40 30.7	-0.5	
	0.3nm,0.3s,baz=278,slow=10,SNR=6.8							
RES	**Resolute Bay**	**23.13**	**32**	P	P	13 41 59.1	+0.3	
	0.4nm,0.5s,baz=229,slow=13,SNR=4.3							
ARCES	**ARCESS Array B**	**49.90**	**3**	P	P	13 45 45.1	-0.9	
	1.1nm,0.5s,baz=354,slow=8.5,SNR=6.6							
NOA	**NORSAR Array B**	**57.41**	**12**	P	P	13 46 40.0	-1.1	
	0.5nm,0.6s,baz=345,slow=7.4,SNR=2.9							
FINES	**FINESS Array B**	**58.03**	**4**	P	P	13 46 44.5	-0.9	
	2.0nm,0.4s,baz=0.3,slow=8.4,SNR=23							
MKAR	**Makanchi Array**	**65.57**	**325**	P	P	13 47 34.8	-1.6	
	0.2nm,0.6s,baz=35,slow=6.5,SNR=3.7							
AKASG	**Malin Array Be**	**68.87**	**2**	P	P	13 47 56.4	-0.8	
	0.4nm,0.3s,baz=358,slow=5.9,SNR=3.4							
ESDC	**Sonseca Array**	**75.50**	**29**	P	P	13 48 37.2	0.0	
	0.3nm,0.4s,baz=326,slow=10,SNR=3.7							

*TAP **20** 13:37:59.9,24.°69N×122.°37E,h97km,ML3.4,C*
*JMA **20** 13:37:59.6±0.2,24.°63N×122.°35E,h96km±2km,M2.0*
*ISCJB **20** 13:38:00.3±0.6,24.°64N±0.°04×122.°39E±0.°02,h91km±5km, Error ellipse: s-maj=6.0km s-min=2.7km az=168.2*

ISC 20 13:38:01.0±1.4,24.°61N±0.°05×122.°39E±0.°02,h87km,9km, n50,σ0§77/90,3C-9D,Taiwan region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
EGS		**0.48**	**299**	*e*P	**Pn**	**13 38 15.6**	**+0.3**
	baz=285						
TWC	**Suao**	**0.49**	**270**	P	**Pn**	**13 38 15.1**	**-0.2**
	baz=260						
TWC				S	**Sn**	**13 38 25.9**	**-0.2**
	baz=260						
JYNG	**Yonagunijimaku**	**0.53**	**108**	P	**Pn**	**13 38 15.8**	**+0.1**
JYNG				S	**Sn**	**13 38 27.4**	**+0.8**
TWB1	**Santiao Chiao**	**0.54**	**317**	*e*P	**Pn**	**13 38 15.0**	**-0.7**
	baz=310						
YOJ	**Yonaguni jima**	**0.59**	**105**	P	**Pn**	**13 38 16.2**	**0.0**
YOJ				*e*S	**Sn**	**13 38 28.1**	**+0.7**
ILA	**Ilan**	**0.60**	**285**	*e*P	**Pn**	**13 38 15.6**	**-0.8**
	baz=277						
ILA				*e*S	**Sn**	**13 38 27.9**	**+0.2**
	baz=277						
ENA	**Nanau**	**0.62**	**253**	⇓P	**Pn**	**13 38 16.7**	**+0.2**
	baz=245						
ENA				S	**Sn**	**13 38 29.4**	**+1.4**
	baz=245						
TWE	**Neicheng**	**0.67**	**279**	⇓*i*P	**Pn**	**13 38 16.9**	**0.0**
	baz=275						
TWE				S	**Sn**	**13 38 28.9**	**+0.1**
	baz=275						
NWF	**Wu-fen Shan**	**0.72**	**310**	P	**Pn**	**13 38 17.0**	**-0.5**
	baz=299						
NWF				S	**Sn**	**13 38 28.9**	**-0.9**
	baz=299						
ENTT	**Nioudou**	**0.75**	**272**	P	**Pn**	**13 38 18.0**	**+0.2**
	baz=271						
TWD	**Chiawan**	**0.90**	**234**	P	**Pn**	**13 38 18.8**	**-0.5**
	baz=228						
TWD				S	**Sn**	**13 38 33.3**	**+0.3**
	baz=228						
NSK	**Sanguang**	**0.94**	**274**	⇓P	**Pn**	**13 38 19.9**	**0.0**
	baz=276						
NSK				S	**Sn**	**13 38 33.9**	**-0.1**
	baz=276						
NNS	**Nan Shan**	**0.94**	**260**	⇓*i*P	**Pn**	**13 38 20.1**	**+0.1**
	baz=249						
NNS				S	**Sn**	**13 38 34.5**	**+0.3**
	baz=249						
HWA	**Hwalien**	**0.96**	**229**	*e*P	**Pn**	**13 38 20.0**	**0.0**
	baz=223						
TWS1	**Kuangyinshan**	**1.01**	**299**	P	**Pn**	**13 38 19.9**	**-0.7**
	baz=295						
TWS1				S	**Sn**	**13 38 34.5**	**-0.7**
	baz=295						
WHF	**Hehuan Shan**	**1.13**	**246**	⇓*i*P	**Pn**	**13 38 22.5**	**0.0**
	baz=241						
WHF				S	**Sn**	**13 38 38.3**	**-0.2**
	baz=241						
TWT	**Tachien**	**1.16**	**252**	⇓*i*P	**Pn**	**13 38 23.3**	**+0.6**
	baz=241						
TWT				S	**Sn**	**13 38 39.6**	**+0.8**
	baz=241						
ESL	**Shilin**	**1.18**	**228**	P	**Pn**	**13 38 22.0**	**-0.6**
	baz=232						
ESL				*e*S	**Sn**	**13 38 38.2**	**-0.8**
	baz=232						
IRIF	**Iriomote-Funau**	**1.25**	**103**	P	**Pn**	**13 38 23.1**	**-0.4**
IRIF				S	**Sn**	**13 38 40.7**	**+0.3**
NSTT	**Nanjuang**	**1.26**	**271**	P	**Pn**	**13 38 23.5**	**-0.1**
	baz=267						
NSTT				S	**Sn**	**13 38 40.5**	**-0.3**
	baz=267						
HATJ	**Hateruma jima**	**1.41**	**113**	S	**Sn**	**13 38 45.0**	**+1.2**
WDT	**Danda**	**1.43**	**234**	⇓P	**Pn**	**13 38 25.9**	**-0.2**
	baz=224						
WDT				S	**Sn**	**13 38 44.2**	**-0.7**
	baz=224						
EHY	**Hungye**	**1.47**	**222**	P	**Pn**	**13 38 25.5**	**-0.8**
	baz=227						
EHY				*e*S	**Sn**	**13 38 44.0**	**-1.4**
	baz=227						
NSY	**Sanyi**	**1.50**	**263**	⇑*e*P	**Pn**	**13 38 26.7**	**+0.1**
	baz=259						
NSY				*e*S	**Sn**	**13 38 46.3**	**+0.3**
	baz=259						
TWQ1	**Liyutan**	**1.50**	**260**	P	**Pn**	**13 38 26.7**	**+0.1**
	baz=256						
TWQ1				S	**Sn**	**13 38 46.1**	**+0.1**
	baz=256						
JKRS	**Kuro-shima**	**1.52**	**104**	P	**Pn**	**13 38 27.0**	**+0.1**
JKRS				S	**Sn**	**13 38 47.0**	**+0.5**
SMLT	**Sun Moon Lake**	**1.54**	**242**	*e*P	**Pn**	**13 38 28.1**	**+0.8**
	baz=233						
SMLT				*e*S	**Sn**	**13 38 47.7**	**+0.6**
	baz=233						
TYC	**Yuchr**	**1.57**	**244**	⇓*e*P	**Pn**	**13 38 28.3**	**+0.8**
	baz=240						
TYC				*e*S	**Sn**	**13 38 48.0**	**+0.5**
	baz=240						
TWF1	**Yuli**	**1.61**	**219**	P	**Pn**	**13 38 27.2**	**-0.8**
	baz=223						
TWF1				*e*S	**Sn**	**13 38 47.0**	**-1.4**
	baz=223						
JIJ	**Ishigaki jima**	**1.62**	**99**	P	**Pn**	**13 38 27.6**	**-0.5**
JIJ				S	**Sn**	**13 38 48.2**	**-0.5**
WNT	**Mingjian**	**1.72**	**245**	*e*P	**Pn**	**13 38 30.0**	**+0.5**
	baz=251						
YUS	**Yu-Shan**	**1.73**	**230**	P	**Pn**	**13 38 30.4**	**+0.4**
	baz=219						
YUS				*e*S	**Sn**	**13 38 51.9**	**0.0**
	baz=219						
JISG	**Ishigakijimahi**	**1.75**	**90**	P	**Pn**	**13 38 29.5**	**-0.3**
JISG				S	**Sn**	**13 38 52.3**	**+0.6**
CHKT	**Chengkung**	**1.78**	**212**	⇑*e*P	**Pn**	**13 38 28.9**	**-1.3**
	baz=203						
CHKT				S	**Sn**	**13 38 50.8**	**-1.6**
	baz=203						
ALS	**Alishan**	**1.82**	**233**	⇑P	**Pn**	**13 38 31.9**	**+0.9**
	baz=224						
ALS				*e*S	**Sn**	**13 38 54.2**	**+0.4**
	baz=224						
CHN5	**Tsauling**	**1.86**	**237**	⇓P	**Pn**	**13 38 32.2**	**+0.8**
	baz=244						
CHN5				*e*S	**Sn**	**13 38 56.2**	**+1.6**
	baz=244						
ELDTW	**Lidau**	**1.90**	**222**	*e*P	**Pn**	**13 38 31.1**	**-0.7**
	baz=219						
ELDTW				*e*S	**Sn**	**13 38 54.7**	**-0.7**
	baz=219						
CHN4	**Tsaushan**	**2.07**	**233**	*e*P	**Pn**	**13 38 33.9**	**-0.2**
	baz=230						
CHN4				*e*S	**Sn**	**13 39 01.0**	**+1.8**
	baz=230						
STYT	**Tauyuan**	**2.08**	**226**	*e*P	**Pn**	**13 38 34.8**	**+0.6**
	baz=216						
STYT				*e*S	**Sn**	**13 39 00.7**	**+1.1**
	baz=216						
JTJ	**Tarama**	**2.10**	**89**	P	**Pn**	**13 38 34.5**	**0.0**
JTJ				*e*S	**Sn**	**13 39 00.7**	**+0.7**
WTP	**Ta-pu**	**2.12**	**230**	*e*P	**Pn**	**13 38 35.2**	**+0.4**
	baz=228						
WTP				*e*S	**Sn**	**13 39 01.7**	**+1.2**
	baz=228						
TWG	**Pinlang**	**2.16**	**214**	*e*P	**Pn**	**13 38 33.6**	**-1.6**
	baz=211						
TWG				*e*S	**Sn**	**13 38 59.8**	**-1.5**
	baz=211						
TWK	**Hsinying**	**2.20**	**233**	*e*P	**Pn**	**13 38 36.3**	**+0.5**
	baz=230						
TWK				*e*S	**Sn**	**13 39 03.7**	**+1.3**
	baz=230						
WSF	**Szhu**	**2.21**	**244**	*e*P	**Pn**	**13 38 34.3**	**-1.5**
	baz=241						
CHN1	**Nanshi**	**2.22**	**231**	*e*P	**Pn**	**13 38 36.6**	**+0.6**
	baz=228						
CHN1				S	**Sn**	**13 39 04.0**	**+1.1**
	baz=228						
SGST	**Jiashian**	**2.25**	**228**	*e*P	**Pn**	**13 38 35.6**	**-0.9**
	baz=225						
SGST				*e*S	**Sn**	**13 39 04.6**	**+1.0**
	baz=225						
ECL	**Taimali**	**2.40**	**214**	*e*P	**Pn**	**13 38 38.0**	**-0.4**
	baz=211						
SSD	**Sandimen**	**2.46**	**221**	*e*P	**Pn**	**13 38 40.1**	**+0.8**
	baz=231						
SSD				*e*S	**Sn**	**13 39 09.6**	**+1.0**
	baz=231						
JIRB	**Irabujima**	**2.54**	**85**	S	**Sn**	**13 39 09.8**	**-0.6**
EAST	**Anshuo**	**2.63**	**213**	*e*P	**Pn**	**13 38 41.3**	**-0.3**
	baz=206						

MAN 20 13:48:16,12.°61N×120.°55E,h20km,mb4.3,ML3.2,MS3.0, 1D,Mindoro

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
SJMP	**San Jose**	**0.58**	**105**	*e*P	Pb	13 48 27.1	-0.3
SJMP				*e*S	Sb	13 48 35.3	0.0
BUSP	**Coron**	**0.69**	**209**	*e*P	Pn	13 48 30.2	-0.5
BUSP				*e*S	Sn	13 48 41.8	+1.0
PGP	**Puerto Galera**	**0.97**	**24**	⇓*e*P	Pb	13 48 34.2	+0.1
PGP				*i* S	Sn	13 48 47.8	+0.1
OTRP	**Odiongan**	**1.46**	**100**	*e*P	Pb	13 48 42.0	-0.5
OTRP				*e*S	Sn	13 48 58.0	-1.8
BOAC	**Boac**	**1.52**	**56**	*e*P	Pb	13 48 43.5	0.0
BOAC				*e*S	Sb	13 49 04.6	+2.2
ENPP	**El Nido**	**1.78**	**218**	*e*P	Pn	13 48 43.9	-1.7
CUYO	**Cuyo Island**	**1.81**	**165**	*e*P	Pn	13 48 46.3	+0.3

*ISCJB **20** 13:50:50.2±0.5,81.°43N±0.°07×5.°0W±0.°4,h10km,mb3.6/12, MS3.3/12,Error ellipse: s-maj=9.9km s-min=8.6km az=150.2*
*IDC **20** 13:50:50.9±0.7,81.°61N×4.°34W,h0km,mb3.6/13, mb1 3.9/15,mb1mx3.7/53,mbtmp3.7/15,ML3.9/2,MS3.3/16, Ms1 3.4/16,ms1mx3.1/46,Error ellipse: s-maj=20.3km s-min=13.7km az=45.0*

ISC 20 13:50:52.0±0.6,81.48N±0.°08×4.59W±0.°07,h10km,n26, σ1§56/19,mb3.6/12,MS3.4/12,North of Svalbard

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
SPITS	**Spitsbergen Ar**	**4.94**	**121**	Pn	**Pn**	**13 52 03.8**	**-2.4**
	baz=346,slow=9.8,SNR=140						
SPITS				Sn	Sn	13 52 55.9	-7.4
	baz=309,slow=18,SNR=1.8						
SPITS				LR	LR	13 53 49.9	
	comp=Z,544nm,19.4s,baz=335,slow=36						
DAG	**Danmarks Havn**	**5.40**	**216**	*i* P	**Pn**	**13 52 12.2**	**-0.2**
DAG				*i* S	**Sn**	**13 53 11.1**	**-3.4**
SUMG	**Summit**	**11.42**	**238**	*i* P	**Pn**	**13 53 34.1**	**-1.2**
SUMG				*e*S	Sn	13 55 31.9	-11
ARCES	**ARCESS Array B**	**13.82**	**132**	Pn	**Pn**	**13 54 06.7**	**-1.0**
	0.4nm,0.3s,baz=356,slow=14,SNR=8.0						
ARCES				LR	LR	13 59 02.0	
	comp=Z,84nm,21.0s,baz=13,slow=35						
RES	**Resolute Bay**	**17.63**	**299**	Pn	Pn	13 54 51.3	-5.9
	0.3nm,0.3s,baz=35,slow=12,SNR=9.7						
RES				LR	LR	14 01 47.0	
	comp=Z,164nm,18.3s,baz=28,slow=37						
SFJD	**Kangerlussuaq**	**18.20**	**245**	Pn	Pn	13 54 58.1	-6.2
	0.8nm,0.3s,baz=14,slow=11,SNR=4.8						
SFJD				LR	LR	14 02 40.5	
	comp=Z,121nm,18.6s,baz=16,slow=38						
NOA	**NORSAR Array B**	**20.99**	**158**	P	**P**	**13 55 36.7**	**+1.7**
	1.9nm,0.9s,baz=351,slow=11,SNR=4.4						
NOA				LR	LR	14 02 48.1	
	comp=Z,20nm,18.0s,baz=335,slow=34						
FINES	**FINESS Array B**	**21.75**	**139**	P	**P**	**13 55 44.2**	**+1.2**
	1.6nm,0.7s,baz=342,slow=8.7,SNR=3.6						
FINES				LR	LR	14 03 39.0	
	comp=Z,67nm,21.6s,baz=259,slow=35						
HFS	**Hagfors**	**22.04**	**155**	P	**P**	**13 55 47.1**	**+0.9**
	1.6nm,0.8s,baz=12,slow=8.0,SNR=5.6						
FRB	**Frobisher Bay**	**23.83**	**262**	P	**P**	**13 56 04.4**	**-0.2**
	7.3nm,1.0s,baz=17,slow=10,SNR=8.8						
FRB				LR	LR	14 05 59.7	
	comp=Z,103nm,19.1s,baz=18,slow=38						
TIXI	**Tiksi**	**25.12**	**33**	P	**P**	**13 56 15.7**	**-0.8**
	3.1nm,0.9s,baz=359,slow=7.1,SNR=12						
INK	**Inuvik**	**27.98**	**322**	LR	LR	14 09 26.7	
	comp=Z,23nm,20.6s,baz=192,slow=40						
YKA	**Yellowknife Ar**	**31.56**	**304**	P	**P**	**13 57 14.5**	**+0.6**
	0.3nm,0.8s,baz=8.0,slow=8.8,SNR=5.4						
YKA				PcP	**PcP**	**14 00 06.0**	**+0.1**
	0.7nm,1.1s,baz=7.9,slow=2.4,SNR=4.0						
SCHQ	**Schefferville**	**32.14**	**254**	LR	LR	14 10 51.9	
	comp=Z,75nm,18.2s,baz=43,slow=37						
ILAR	**Eielson Array**	**32.56**	**331**	P	**P**	**13 57 21.6**	**-1.2**
	0.6nm,0.8s,baz=5.5,slow=7.0,SNR=6.0						
AKASG	**Malin Array Be**	**32.65**	**139**	P	**P**	**13 57 24.6**	**+1.0**
	0.3nm,0.4s,baz=354,slow=9.1,SNR=3.4						
GERES	**GERESS Array B**	**33.29**	**158**	P	**P**	**13 57 32.3**	**+3.0**
	2.1nm,1.0s,baz=15,slow=6.9,SNR=8.1						
ZALV	**Zalesovo Beam**	**37.02**	**79**	LR	LR	14 16 06.5	
	comp=Z,60nm,18.4s,baz=54,slow=41						
ULM	**Lac du Bonnet**	**40.89**	**281**	LR	LR	14 15 45.3	
	comp=Z,107nm,18.8s,baz=21,slow=36						
MKAR	**Makanchi Array**	**43.61**	**84**	P	**P**	**13 58 55.7**	**-0.3**
	0.6nm,0.6s,baz=349,slow=6.5,SNR=7.3						
SONM	**Songino Array**	**46.00**	**61**	P	**P**	**13 59 15.2**	**+0.2**
	0.8nm,0.7s,baz=354,slow=7.4,SNR=6.3						
SONM				LR	LR	14 20 03.0	
	comp=Z,31nm,18.2s,baz=287,slow=38						
PDAR	**Pinedale Array**	**50.16**	**292**	LR	LR	14 22 23.6	
	comp=Z,63nm,18.0s,baz=3.5,slow=38						
NVAR	**Mina Array Bea**	**55.60**	**299**	LR	LR	14 25 49.2	
	comp=Z,47nm,20.5s,baz=16,slow=38						
TXAR	**Lajitas Array**	**62.52**	**284**	P	**P**	**14 01 16.4**	**+0.9**
	0.2nm,0.5s,baz=28,slow=4.3,SNR=3.1						
TXAR				LR	LR	14 28 48.1	
	comp=Z,34nm,20.2s,baz=0.0,slow=36						
TORD	**Torodi Ar. Bea**	**68.41**	**173**	P	**P**	**14 01 54.6**	**+1.0**
	0.5nm,0.6s,baz=356,slow=7.1,SNR=3.0						
CMAR	**Chiang Mai Arr**	**73.86**	**74**	LR	LR	14 36 36.9	
	comp=Z,11nm,21.2s

KSRS	Korea Array	47.45	337	P		P		14 03 49.7	+0.7
	3.7nm,0.7s,baz=154,slow=7.3,SNR=12								
KSAR	Wonju Array Be	47.45	336	P		P		14 03 49.7	+0.7
USRK	Ussuriysk Ar.	52.15	344	P		P		14 04 25.1	+0.8
	4.5nm,0.7s,baz=168,slow=7.4,SNR=11								
CMAR	Chiang Mai Arr	55.36	297	P		P		14 04 48.5	+0.2
	0.4nm,0.6s,baz=134,slow=5.2,SNR=3.8								
CD2	Chengdu	56.92	313	P		P		14 04 57.8	-1.4
CD2				pmax	pmax				
	comp=Z,1.0nm,0.5s								
PETK	Petropavlovsk-	59.01	6	P		P		14 05 13.7	+0.4
	11nm,0.7s,baz=158,slow=5.9,SNR=27								
SONM	Songino Array	65.42	330	P		P		14 05 57.4	+1.2
	1.8nm,0.9s,baz=138,slow=4.7,SNR=9.3								
SONA1	Songino Array	65.42	330	*e*P		P		14 05 56.8	+0.5
WMQ	Urumqi	74.25	318	*e*P		P		14 06 50.0	-0.2
WMQ				pmax	pmax				
	comp=Z,3.0nm,0.6s								
WMQ				pmax	pmax				
	comp=Z,24nm,3.6s								
MKAR	Makanchi Array	78.91	320	P		P		14 07 16.2	-0.1
	0.4nm,0.5s,baz=101,slow=6.0,SNR=4.6								
ZALV	Zalesovo Beam	80.14	327	P		P		14 07 21.6	-1.1
	0.9nm,0.6s,baz=102,slow=5.8,SNR=6.8								
CAST	Castle Rocks	81.59	23	*e*P		P		14 07 29.2	-1.1
	6.5nm,1.2s								
RND	Reindeer	82.84	24	*e*P		P		14 07 35.3	-1.6
	4.4nm,0.8s								
MLY	Manley	82.91	22	*e*P		P		14 07 36.5	-0.6
	3.4nm,1.0s								
MCK	McKinley	82.97	23	*e*P		P		14 07 35.9	-1.5
	8.8nm,1.1s								
KLU	Klutina	83.20	26	*e*P		P		14 07 38.6	-0.2
	5.8nm,1.0s								
WRH	Wood River Hil	83.64	23	*e*P		P		14 07 39.4	-1.4
	3.9nm,1.0s								
CCB	Clear Creek Bu	83.83	23	*e*P		P		14 07 39.9	-1.9
	12nm,1.8s								
IL1	Eielson Array	84.24	23	*e*P		P		14 07 41.7	-2.1
ILAR	Eielson Array	84.24	23	P		P		14 07 41.9	-2.0
	2.3nm,1.0s,baz=255,slow=5.1,SNR=14								
ILB	Eielson Array	84.24	23	*e*P		P		14 07 41.5	-2.4
DOT	Dot Lake	84.88	24	*e*P		P		14 07 46.5	-0.7
	16nm,1.2s								
NRIK	Noril'sk	85.80	342	P		P		14 07 51.9	+0.4
	3.2nm,0.6s,baz=123,slow=4.0,SNR=5.3								
EGAK	Eagle	86.49	24	*e*P		P		14 07 54.7	-0.3
	5.2nm,1.0s								
INK	Inuvik	90.47	21	P		P		14 08 12.8	-0.9
	1.9nm,1.0s,baz=238,slow=4.8,SNR=5.3								
NVAR	Mina Array Bea	95.20	52	P		P		14 08 37.0	+0.4
	0.2nm,0.5s,baz=268,slow=8.1,SNR=2.2								
TORD	Torodi Ar. Bea	147.47	285	PKPbc		PKPbc		14 14 56.6	-0.3
	0.9nm,0.5s,baz=59,slow=3.1,SNR=13								
PTGA	Pitinga	149.84	101	PKPbc		PKPbc		14 15 02.9	-0.2
	5.4nm,0.3s,baz=253,slow=19,SNR=5.7								

MEX 20 13:59:27.9±0.4, 17°88N×100°55W, h55km±9km, MD3.7, Guerrero

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ARIG	Puente Sto Nin	0.44	26	*e*P	Pn	13 59 37.2	-1.7
ARIG				*i* S	Sn	13 59 45.0	-1.8
CAIG	El Cayaco	0.87	162	*e*P	Pn	13 59 42.5	-1.6
CAIG				*e*S	Sn	13 59 53.4	-2.7
MEIG	Mezcala	0.88	87	*e*P	Pn	13 59 43.1	-1.3
MEIG				*i* S	Sn	13 59 54.5	-2.0
ZIIG	Zihuatanejo	0.92	253	*e*P	Pn	13 59 44.0	-0.7
YAIG	Yautepec	1.71	55	*e*P	Pn	13 59 54.1	-1.4
YAIG				*e*S	Sn	14 00 14.3	-2.0
HMTT	Tlapaneco	1.90	92	*e*P	Pn	13 59 52.2	-5.8
TLIG	Tlapa	1.92	99	*e*P	Pn	13 59 56.5	-1.8
TLIG				*i* S	Sn	14 00 19.5	-1.8
EZ5V		3.30	299	*e*P	Pn	14 00 11.9	-5.5
R15V		3.50	292	*e*P	Pn	14 00 22.2	+2.3

PDG ***20*** *14:04:36.6±0.5, 43.02N×15.68E, h7km±1km, ML3.5/13, Error ellipse: s-maj=0.6km s-min=0.6km az=0.0*
ROM ***20*** *14:04:36.2±0.2, 43.00N×15.75E, h10km, Ml3.4/49, Error ellipse: s-maj=4.2km s-min=1.8km az=54.0*
LDG ***20*** *14:04:36.7±0.1, 42.97N×15.62E, h10km, Ml3.7/18, Error ellipse: s-maj=3.3km s-min=1.4km az=22.0*
CSEM ***20*** *14:04:37.7±0.1, 42.95N×15.63E, h10km, ML3.4, Error ellipse: s-maj=1.8km s-min=1.7km az=174.0*
PRU ***20*** *14:04:38.5, 43.06N×15.54E, h0km*
IDC ***20*** *14:04:39.7±5.2, 43.06N×15.68E, h29km±34km, mb3.4/4, mb1 3.6/8, mb1mx3.3/47, mbtmp3.5/8, ML3.3/4, MS3.0/5, Ms1 3.0/5, ms1mx2.6/34, Error ellipse: s-maj=32.3km s-min=19.9km az=55.0*

ISC 20 14:04:37.8±1.1, 43.00N±0.02×15.46E±0.03, h20km±4km, n261, σ1962/316, mb3.6/4, 15C-14D, Adriatic Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CAFR	Castel Frentan	1.13	227	Pn	Pg	14 05 01.0	+1.4
	3µm,0.7s						
CAFR	Castel Frentan	1.13	227	Pn	Pg	14 05 01.0	+1.4
	3µm,0.7s						
FRES	Fresagrandinar	1.18	210	Pn	Pg	14 05 00.2	-0.4
	3µm,1.2s						
FRES	Fresagrandinar	1.18	210	Pn	Pg	14 05 00.2	-0.4
	3µm,1.2s						
SGRT	San Giovanni R	1.26	170	Pn	Pn	14 04 59.6	-0.8
	881nm,0.8s						
SGRT	San Giovanni R	1.26	170	Pn	Pn	14 04 59.6	-0.8
	881nm,0.8s						
OFFI	Offida	1.30	268	Pn	Pg	14 05 04.7	+1.7
	1µm,0.7s						
OFFI	Offida	1.30	268	Pn	Pg	14 05 04.7	+1.7
	1µm,0.7s						
MSAG	Monte S. Angel	1.33	165	Pn	Pn	14 05 00.3	-1.0
	2µm,0.7s						
MSAG	Monte S. Angel	1.33	165	Pn	Pn	14 05 00.3	-1.0
	2µm,0.7s						
VCEL	Villa Celiera	1.34	244	Pn	Pg	14 05 04.3	+0.7
	718nm,0.7s						
VCEL	Villa Celiera	1.34	244	Pn	Pg	14 05 04.3	+0.7
	718nm,0.7s						
MS1	Monte Sant'Ang	1.34	164	*e*Pn	Pn	14 05 00.4	-1.1
MS1				Sn	Sg	14 05 23.0	+1.7
TRIV	Trivento	1.40	209	Pn	Pb	14 05 03.7	+0.4
	967nm,0.8s						
TRIV	Trivento	1.40	209	Pn	Pb	14 05 03.7	+0.4
	967nm,0.8s						
CIGN	Sant'Elia a Pi	1.41	197	Pn	Pb	14 05 03.2	-0.1
	460nm,1.9s						
CIGN	Sant'Elia a Pi	1.41	197	Pn	Pb	14 05 03.2	-0.1
	460nm,1.9s						
TERO	Teramo	1.42	255	Pn	Pg	14 05 04.9	-0.2
	222nm,0.5s						
TERO	Teramo	1.42	255	Pn	Pg	14 05 04.9	-0.2
	222nm,0.5s						
AOI	Ancona	1.46	293	Pn	Pg	14 05 05.5	-0.5
	499nm,1.0s						
AOI	Ancona	1.46	293	Pn	Pg	14 05 05.5	-0.5
	499nm,1.0s						
INTR	Introdacqua	1.51	230	Pn	Pb	14 05 05.5	+0.2
	955nm,0.7s						
INTR	Introdacqua	1.51	230	Pn	Pb	14 05 05.5	+0.2
	955nm,0.7s						
GATE	Gambatesa	1.54	196	Pn	Pb	14 05 05.3	-0.4
	600nm,0.8s						
GATE	Gambatesa	1.54	196	Pn	Pb	14 05 05.3	-0.4
	600nm,0.8s						
UDBI	Udbina	1.54	8	*e*Pn	Pn	14 05 04.4	+0.1
UDBI				Sn	Sg	14 05 27.0	-0.7
UDBI	Udbina	1.54	8	*e*Pn	Pn	14 05 04.3	+0.1
UDBI				Sn	Sg	14 05 27.0	-0.7
FAGN	Fagnano	1.56	243	Pn	Pg	14 05 07.2	-0.8
	782nm,0.5s						
FAGN	Fagnano	1.56	243	Pn	Pg	14 05 07.2	-0.8
	782nm,0.5s						
CAMP	Campotosto	1.58	254	Pn	Pb	14 05 07.0	+0.6
	271nm,1.1s						
CAMP	Campotosto	1.58	254	Pn	Pb	14 05 07.0	+0.6
	271nm,1.1s						
BSSO	Busso	1.59	204	Pn	Pb	14 05 06.2	-0.3
	607nm,0.8s						
BSSO	Busso	1.59	204	Pn	Pb	14 05 06.2	-0.3
	607nm,0.8s						
SMA1	SAN MARTINO	1.60	257	Pn	Pg	14 05 07.6	-1.1
	311nm,0.7s						
SMA1	SAN MARTINO	1.60	257	Pn	Pg	14 05 07.6	-1.1
	311nm,0.7s						
RNI2	Rionero Sannit	1.62	217	Pn	Pg	14 05 08.1	-0.8
	606nm,1.0s						
RNI2	Rionero Sannit	1.62	217	Pn	Pg	14 05 08.1	-0.8
	606nm,1.0s						
NVLJ	Novalja	1.62	345	*i* Pn	Pb	14 05 07.2	+0.2
NVLJ				Sn	Sg	14 05 30.3	+0.2
NVLJ	Novalja	1.62	345	*i* Pn	Pb	14 05 07.2	+0.2
NVLJ				Sn	Sg	14 05 30.3	+0.2
MIDA	Miranda	1.62	214	Pn	Pb	14 05 06.7	-0.4
	564nm,0.6s						
MIDA	Miranda	1.62	214	Pn	Pb	14 05 06.7	-0.4
	564nm,0.6s						
MOCO	Biccari - m.te	1.64	188	Pn	Pn	14 05 06.1	+0.4
	635nm,1.1s						
AQU	L'Aquila	1.65	248	Pn	Pg	14 05 08.7	-0.8
	650nm,1.0s						
AQU	L'Aquila	1.65	248	Pn	Pg	14 05 08.7	-0.8
	650nm,1.0s						
STON	Ston	1.65	94	*i* Pn	Pn	14 05 03.6	-2.0
STON				Sn	Sn	14 05 25.9	-0.4
STON	Ston	1.65	94	⇑*i* Pg	Pn	14 05 03.6	-2.0
STON				*e*Sg	Sn	14 05 25.1	-1.2
SACR	S. Croce Del S	1.69	200	Pn	Pb	14 05 07.5	-0.8
	342nm,0.8s						
SACR	S. Croce Del S	1.69	200	Pn	Pb	14 05 07.5	-0.8
	342nm,0.8s						
CING	Cingoli	1.70	284	Pn	Pb	14 05 09.1	+0.7
	323nm,1.0s						
CING	Cingoli	1.70	284	Pn	Pb	14 05 09.1	+0.7
	323nm,1.0s						
NRCA	Norcia	1.73	265	Pn	Pg	14 05 10.0	-1.1
	246nm,0.9s						
NRCA	Norcia	1.73	265	Pn	Pg	14 05 10.0	-1.1
	246nm,0.9s						
FDMO	Fiordimonte	1.74	272	Pn	Pb	14 05 09.5	+0.4
	189nm,0.9s						
FDMO	Fiordimonte	1.74	272	Pn	Pb	14 05 09.5	+0.4
	189nm,0.9s						
CERA	Filignano	1.76	218	Pn	Pb	14 05 10.1	+0.6
	519nm,0.9s						
CERA	Filignano	1.76	218	Pn	Pb	14 05 10.1	+0.6
	519nm,0.9s						
VVLD	Villa Vallelon	1.77	231	Pn	Pb	14 05 09.3	-0.2
	551nm,1.1s						
VVLD	Villa Vallelon	1.77	231	Pn	Pb	14 05 09.3	-0.2
	551nm,1.1s						
PTRJ	Pietraroja	1.77	203	Pn	Pn	14 05 08.3	+0.8
	727nm,0.7s						
PTRJ	Pietraroja	1.77	203	Pn	Pn	14 05 08.3	+0.8
	727nm,0.7s						
PTQR	Pietraquaria	1.81	238	Pn	Pg	14 05 11.8	-0.8
PTQR	Pietraquaria	1.81	238	Pn	Pg	14 05 11.8	-0.8
POFI	Posta Fibreno	1.82	226	Pn	Pb	14 05 09.8	-0.7
	243nm,0.8s						
POFI	Posta Fibreno	1.82	226	Pn	Pb	14 05 09.8	-0.7
	243nm,0.8s						
LNSS	Leonessa	1.82	258	Pn	Pb	14 05 11.2	+0.7
	329nm,0.7s						
LNSS	Leonessa	1.82	258	Pn	Pb	14 05 11.2	+0.7
	329nm,0.7s						
VAGA	Valle Agricola	1.82	210	Pn	Pb	14 05 09.8	-0.7
	413nm,0.4s						
VAGA	Valle Agricola	1.82	210	Pn	Pb	14 05 09.8	-0.7
	413nm,0.4s						
SNTG	Esanatoglia	1.86	279	Pn	Pb	14 05 11.4	+0.3
	100nm,0.8s						
SNTG	Esanatoglia	1.86	279	Pn	Pb	14 05 11.4	+0.3
	100nm,0.8s						
CESI	CESI - Serrava	1.87	271	Pn	Pb	14 05 11.7	+0.3
	87nm,0.8s						
CESI	CESI - Serrava	1.87	271	Pn	Pb	14 05 11.7	+0.3
	87nm,0.8s						
FIAM	Fiamignano	1.88	248	Pn	Pg	14 05 12.5	-1.4
	266nm,0.7s						
FIAM	Fiamignano	1.88	248	Pn	Pg	14 05 12.5	-1.4
	266nm,0.7s						
ARVD	Arcevia	1.91	286	Pn	Pb	14 05 11.8	-0.1
	122nm,0.8s						
ARVD	Arcevia	1.91	286	Pn	Pb	14 05 11.8	-0.1
	122nm,0.8s						
GUAR	Guarcino	1.99	234	Pn	Pb	14 05 13.1	-0.3
	646nm,1.7s						
GUAR	Guarcino	1.99	234	Pn	Pb	14 05 13.1	-0.3
	646nm,1.7s						
SSFR	Montelago di S	2.00	284	Pn	Pb	14 05 13.3	-0.3
	133nm,0.4s						
SSFR	Montelago di S	2.00	284	Pn	Pb	14 05 13.3	-0.3
	133nm,0.4s						
CDT	Castel del Mon	2.01	162	*e*Pn	Pn	14 05 10.6	0.0
MRVN	Minervino Murg	2.01	164	Pn	Pn	14 05 09.7	-1.0
	713nm,1.3s						
MRVN	Minervino Murg	2.01	164	Pn	Pn	14 05 09.7	-1.0
	713nm,1.3s						
FRON	Frontone	2.06	285	Pn	Pb	14 05 14.1	-0.5
	191nm,0.8s						
FRON	Frontone	2.06	285	Pn	Pb	14 05 14.1	-0.5
	191nm,0.8s						
SNAL	S. Angelo Dei	2.08	185	Pn	Pn	14 05 11.4	-0.2
SNAL	S. Angelo Dei	2.08	185	Pn	Pn	14 05 11.4	-0.2
TREB	Trebinje	2.15	97	*e*Pn	Pn	14 05 11.0	-1.5
TREB				*e*Sn	Sn	14 05 37.0	-1.5
BLY	Banja Luka	2.15	35	Pn	Pn	14 05 12.9	+0.4
	737nm,0.9s						
BLY	Banja Luka	2.15	35	Pn	Pn	14 05 12.9	+0.4
	737nm,0.9s						
BLY				*e*Sn	Sn	14 05 39.2	+0.6
BAI	Bari	2.17	150	*e*Pn	Pb	14 05 16.5	+0.2
MCRV	Calabrutti - M	2.23	186	Pn	Pn	14 05 14.1	+0.4
	194nm,0.7s						
MCRV	Calabrutti - M	2.23	186	Pn	Pn	14 05 14.1	+0.4
	194nm,0.7s						
ATPC	Poggio Castell	2.25	283	Pn	Pb	14 05 17.0	-0.7
	230nm,0.7s						
ATPC	Poggio Castell	2.25	283	Pn	Pb	14 05 17.0	-0.7
	230nm,0.7s						
AMUR	Altamura	2.26	157	Pn	Pn	14 05 13.1	-0.9
	324nm,0.9s						
AMUR	Altamura	2.26	157	Pn	Pn	14 05 13.1	-0.9
	324nm,0.9s						
ATVO	AVT- Monte Val	2.26	281	Pn	Pb	14 05 17.5	-0.5
	168nm,0.9s						
ATVO	AVT- Monte Val	2.26	281	Pn	Pb	14 05 17.5	-0.5
	168nm,0.9s						
BRY	Bratogost	2.26	91	*e*Pn	Pn	14 05 13.0	-1.2
BRY				*e*Sn	Sn	14 05 42.1	+0.4
BRY	Bratogost	2.26	91	*e*Pn	Pn	14 05 13.0	-1.2
BRY				*e*Sn	Sn	14 05 39.7	-2.0
HCY	Herceg Novi	2.30	103	⇑*i*Pn	Pn	14 05 13.8	-0.9
HCY				*e*Sn	Sn	14 05 42.9	+0.5
HCY	Herceg Novi	2.30	103	⇑*i*Pn	Pn	14 05 13.8	-0.9
HCY				*e*Sn	Sn	14 05 40.2	-2.2
PARC	Parchiule	2.44	287	Pn	Pb	14 05 19.6	-1.4
	193nm,1.2s						
PARC	Parchiule	2.44	287	Pn	Pb	14 05 19.6	-1.4
	193nm,1.2s						
BOJS	Bojanci	2.51	357	*i* Pn	Pn	14 05 19.0	+1.5
BOJS				*e*Sn	Sb	14 05 52.5	-0.1
	comp=Z,301nm,0.5s						
BOJS	Bojanci	2.51	357	*i* Pn	Pn	14 05 19.0	+1.5
BOJS				*e*Sn	Sb	14 05 52.5	-0.1
	comp=Z,301nm,0.5s						
CDRU	Civita di Ruta	2.51	183	Pn	Pn	14 05 18.0	+0.4
	comp=Z,178nm,1.1s						
CDRU	Civita di Ruta	2.51	183	Pn	Pn	14 05 18.0	+0.4
	comp=Z,178nm,1.1s						
UPM	Unac-Piva	2.53	84	*e*Pn	Pn	14 05 17.9	-0.1
UPM				*e*Sn	Sn	14 05 48.6	+0.2
UPM	Unac-Piva	2.53	84	*e*Pn	Pn	14 05 17.9	-0.1
UPM				*e*Sn	Sn	14 05 47.4	-1.0
GBRS	Gornja Briga	2.57	350	*i* Pn	Pn	14 05 20.2	+1.8
CAFI	Castiglion Fio	2.58	279	Pn	Pb	14 05 21.9	-1.4
	comp=Z,74nm,0.8s						
CAFI	Castiglion Fio	2.58	279	Pn	Pb	14 05 21.9	-1.4
	comp=Z,74nm,0.8s						
NKME	Niksic	2.58	94	⇑*i*Pn	Pn	14 05 17.7	-0.8
NKME				*e*Sn	Sn	14 05 49.6	+0.3
NKME	Niksic	2.58	94	⇑*i*Pn	Pn	14 05 17.7	-0.8
NKME				*e*Sn	Sn	14 05 49.6	+0.3
DOB	Doboj	2.58	47	*e*Sn	Sn	14 05 49.5	+0.3
CEME	Cevo	2.59	99	⇓*i*Pn	Pn	14 05 18.1	-0.5
CEME				*e*Sn	Sn	14 05 49.5	0.0
CEME	Cevo	2.59	99	⇓*i*Pn	Pn	14 05 18.1	-0.5
CEME				*e*Sn	Sn	14 05 49.5	0.0
LTRZ	Laterza	2.60	157	Pn	Pn	14 05 18.1	-0.7
	comp=Z,225nm,0.8s						
LTRZ	Laterza	2.60	157	Pn	Pn	14 05 18.1	-0.7
	comp=Z,225nm,0.8s						
NKY	Niksic	2.60	93	⇓*i*Pn	Pn	14 05 18.3	-0.6
NKY				*e*Sn	Sn	14 05 50.2	+0.2
NKY	Niksic	2.60	93	⇓*i*Pn	Pn	14 05 18.3	-0.6
NKY				*e*Sn	Sn	14 05 50.2	+0.2
BUM	Brajici-Budva	2.63	104	⇓*i*Pn	Pn	14 05 18.3	-0.9
BUM				*e*Sn	Sn	14 05 50.5	0.0
BUM	Brajici-Budva	2.63	104	⇓*i*Pn	Pn	14 05 18.3	-0.9
BUM				*e*Sn	Sn	14 05 50.5	0.0
CRE	Caprese Michel	2.63	285	Pn	Pb	14 05 22.8	-1.6
	comp=Z,186nm,1.3s						
CRE	Caprese Michel	2.63	285	Pn	Pb	14 05 22.8	-1.6
	comp=Z,186nm,1.3s						
TOLF	Tolfa	2.72	251	Pn	Pb	14 05 23.8	-2.0
	comp=Z,84nm,1.0s						
TOLF	Tolfa	2.72	251	Pn	Pb	14 05 23.8	-2.0
	comp=Z,84nm,1.0s						
HAPS	Han Pijesak,Bl	2.76	66	*e*Pn	Pn	14 05 20.0	-1.1
HAPS				*e*Sn	Sn	14 05 53.4	-0.5
CRES	Cresnjev	2.83	360	*e*Pn	Pn	14 05 23.8	+1.9
CRES				*e*Sn	Sn	14 05 58.1	+2.7
CEY	Cerknica	2.84	345	*e*Pn	Pn	14 05 24.0	+2.0
CEY				*e*Sn	Sn	14 05 58.7	+3.0
PDG	Podgorica	2.85	100	⇑*i*P	Pn	14 05 22.5	+0.3
PDG	Podgorica	2.85	100	*e*Pn	Pn	14 05 21.4	-0.8
PDG	Podgorica	2.85	100	⇑*i*P	Pn	14 05 22.5	+0.3
PDG				*e*Sn	Sn	14 05 55.2	-0.8
TTG	Podgorica	2.85	100	⇑*i*Pn	Pn	14 05 22.0	-0.2
TTG				*e*Sn	Sn	14 05 56.3	+0.3
DRME	Dracevica, Mon	2.87	105	⇑*i*Pn	Pn	14 05 21.5	-0.9
DRME				*e*Sn	Sn	14 05 56.6	+0.2
DRME	Dracevica, Mon	2.87	105	⇑*i*Pn	Pn	14 05 21.5	-0.9
DRME				*e*Sn	Sn	14 05 54.2	-2.2
GCIS	Gornji Cirnik	2.87	2	*e*Pn	Pn	14 05 23.6	+1.1
	comp=Z,234nm,0.8s						
GCIS	Gornji Cirnik	2.87	2	*e*Pn	Pn	14 05 23.6	+1.1
	comp=Z,234nm,0.8s						
PLE	Pljevlja	2.90	82	⇓*i*Pn	Pn	14 05 21.9	-1.0
PLE				*e*Sn	Sn	14 05 57.0	-0.2
PLE	Pljevlja	2.90	82	⇓*i*Pn	Pn	14 05 21.9	-1.0
PLE				*e*Sn	Sn	14 05 57.0	-0.2
ULC	Ulcinj	2.99	109	⇓*i*Pn	Pn	14 05 23.2	-0.9
ULC				*e*Sn	Sn	14 05 59.6	+0.3
ULC	Ulcinj	2.99	109	⇓*i*Pn	Pn	14 05 23.2	-0.9
ULC				*e*Sn	Sn	14 05 59.6	+0.3
BBLS	Lazići	3.00	72	*e*Pn	Pn	14 05 24.3	0.0
BBLS				*e*Sn	Sn	14 05 58.9	-0.9
GBAS	Gorenja Brezov	3.02	346	*i* Pn	Pn	14 05 26.2	+1.6
	comp=Z,275nm,0.5s						
GBAS	Gorenja Brezov	3.02	346	*i* Pn	Pn	14 05 26.2	+1.6
LJU	Ljubljana	3.12	348	*e*Pn	Pn	14 05 28.0	+2.2
LJU				*e*Sn	Sn	14 06 05.0	+2.5
LJU	Ljubljana	3.12	348	⇑*i*Pn	Pn	14 05 27.8	+2.0
LJU				*e*Sn	Sn	14 06 05.7	+3.2
VNDS	Vrh nad Dolski	3.15	350	*e*Pn	Pn	14 05 27.8	+1.5
VNDS	Vrh nad Dolski	3.15	350	*e*Pn	Pn	14 05 27.8	+1.5
CRNS	Crni Vrh	3.20	345	*i* Pn	Pn	14 05 28.7	+1.7
CRNS	Crni Vrh	3.20	345	*i* Pn	Pn	14 05 28.7	+1.7
BEY	Berane	3.26	91	⇓*i*Pn	Pn	14 05 27.9	0.0
BEY				*e*Sn	Sn	14 06 06.1	0.0
IVA	Berane	3.26	91	⇓*i*Pn	Pn	14 05 27.9	0.0
IVA				*e*Sn	Sn	14 06 06.1	0.0
TEKS	Tekeris	3.33	61	*e*Pn	Pn	14 05 29.0	+0.2
TEKS				*e*Sn	Sn	14 06 06.9	-0.9
PVY	Plav	3.34	95	*e*Pn	Pn	14 05 29.0	0.0
PVY				*e*Sn	Sn	14 06 07.9	-0.2
DIVS	Divibare	3.47	70	*e*Pn	Pn	14 06 33.0	+2.2
OBKA	Obir	3.57	350	*i* Pn	Pn	14 05 33.8	+1.7
	comp=Z,18nm,0.9s,SNR=14						
OBKA				*i* Sn	Sn	14 06 17.3	+3.5
	comp=Z,148nm,0.7s						
OBKA	Obir	3.57	350	Pn	Pn	14 05 33.8	+1.7
	comp=Z,18nm,0.9s,SNR=14						
OBKA				Sn	Sn	14 06 17.3	+3.5
	comp=Z,148nm,0.7s						
BEHE	Becsehely	3.60	15	*e*Pn	Pn	14 05 33.7	+1.3
BEHE				*e*Sn	Sn	14 06 15.6	+1.3
SOKA	Soboth	3.69	355	*i* Pn	Pn	14 05 34.8	+1.0
	comp=Z,4.0nm,0.6s,SNR=5.8						
SOKA				*i* Sn	Sn	14 06 21.2	+4.4
SOKA	Soboth	3.69	355	Pn	Pn	14 05 34.8	+1.0
	comp=Z,4.0nm,0.6s,SNR=5.8						
SOKA				Sn	Sn	14 06 21.2	+4.4
MYKA	Terra Mystica	3.85	341	*i* Pn	Pn	14 05 39.0	+3.0
	comp=Z,7.3nm,0.4s						
MYKA				*i* Sn	Sn	14 06 25.7	+4.9
	comp=Z,56nm,0.7s						
MYKA	Terra Mystica	3.85	341	Pn	Pn	14 05 39.0	+3.0
	comp=Z,7.3nm,0.4s						
MYKA				Sn	Sn	14 06 25.7	+4.9
	comp=Z,56nm,0.7s						
SARO	Sassorosso	3.86	290	P	Pn	14 05 37.8	+1.7
GRUS	Gruza	3.93	75	*e*Pn	Pn	14 05

KHC				*ex*	x	14 06 14.5		
KHC				*e*PG	**Pg**	**14 06 35.3**	**-2.5**	
KHC				*e*Sn	**Sn**	**14 07 19.8**	**-0.5**	
KHC				*ex*	x	14 07 32.9		
KHC				AMS	AMS	14 08 50.0		
	comp=Z,300nm,7.6s							
TREC	**Trest**	**6.30**	**0**	AMS	AMS	14 08 40.0		
	comp=Z,300nm,9.6s							
VRAC	**Vranov**	**6.36**	**7**	LR	LR	14 08 54.1		
	comp=Z,68nm,21.9s,baz=146,slow=40							
FRF	**La Foret Royal**	**6.46**	**278**	*e*Pn	**Pn**	**14 06 11.0**	**-0.7**	
FRF	**La Foret Royal**	**6.46**	**278**	*e*Pn	**Pn**	**14 06 11.0**	**-0.7**	
MBDF	**Montbardon**	**6.51**	**288**	*e*Pn	**Pn**	**14 06 12.2**	**-0.4**	
MBDF				*e*Sn	**Sn**	**14 07 23.6**	**-2.8**	
	comp=Z,14nm,0.7s							
MBDF	**Montbardon**	**6.51**	**288**	*e*Pn	**Pn**	**14 06 12.2**	**-0.4**	
KECS	**Kecovo**	**6.51**	**31**	*e*	**Sn**	**14 07 24.2**	**-2.0**	
LMR	**La Mourre**	**6.55**	**276**	*e*Pn	**Pn**	**14 06 12.4**	**-0.6**	
LMR	**La Mourre**	**6.55**	**276**	*e*Pn	**Pn**	**14 06 12.4**	**-0.6**	
LPG	**La Plagne**	**6.73**	**295**	*e*Pn	**Pn**	**14 06 15.2**	**-0.6**	
LPG				*e*Sn	**Sn**	**14 07 29.1**	**-2.9**	
	comp=Z,26nm,0.7s							
LPG	**La Plagne**	**6.73**	**295**	*e*Pn	**Pn**	**14 06 15.2**	**-0.6**	
LPL	**La Plagne**	**6.75**	**295**	*e*Pn	**Pn**	**14 06 15.3**	**-0.7**	
LPL				*e*Sn	**Sn**	**14 07 29.6**	**-2.8**	
	comp=Z,22nm,0.8s							
LPL	**La Plagne**	**6.75**	**295**	*e*Pn	**Pn**	**14 06 15.3**	**-0.7**	
MORC	**Moravsky Berou**	**6.93**	**11**	⇑*i*P	Pn	14 06 24.7	+6.5	
MORC	**Moravsky Berou**	**6.93**	**11**	*e*Sn	**Sn**	**14 07 34.8**	**-1.7**	
GOPC	**GO Pecny, Ondr**	**6.93**	**356**	*e*SN	**Sn**	**14 07 38.8**	**+2.3**	
GOPC				AMS	AMS	14 09 00.0		
	comp=Z,200nm,9.2s							
ARR	**Arges**	**7.01**	**67**	⇑*i*P	**Pn**	**14 06 22.4**	**+3.1**	
PRU	**Pruhonice**	**7.02**	**355**	AMS	AMS	14 09 00.0		
	comp=Z,300nm,7.2s							
OKC	**Ostrava-Krasne**	**7.09**	**14**	AMS	AMS	14 09 30.0		
	comp=Z,300nm,12.0s							
KRLC	**Kraliky**	**7.14**	**7**	*e*SN	**Sn**	**14 07 41.0**	**-0.6**	
ORIF	**Oris-en-Rattie**	**7.17**	**289**	*e*Pn	**Pn**	**14 06 20.8**	**-0.8**	
ORIF				*e*Sn	**Sn**	**14 07 39.4**	**-3.2**	
	comp=Z,9.5nm,0.6s							
ORIF	**Oris-en-Rattie**	**7.17**	**289**	*e*Pn	**Pn**	**14 06 20.8**	**-0.8**	
SMRF	**Simiane la Rot**	**7.25**	**281**	*e*Pn	**Pn**	**14 06 21.9**	**-0.8**	
SMRF	**Simiane la Rot**	**7.25**	**281**	*e*Pn	**Pn**	**14 06 21.9**	**-0.8**	
VOIR		**7.31**	**67**	⇑*i*P	**Pn**	**14 06 26.6**	**+3.1**	
DPC	**Dobruska-Polom**	**7.38**	**4**	*ex*	Sn	14 07 59.8	+12	
DPC				AMS	AMS	14 09 20.0		
	comp=Z,200nm,9.4s							
NKC	**Novy Kostel**	**7.53**	**345**	*e*SN	**Sn**	**14 07 49.1**	**-2.0**	
NKC				AMS	AMS	14 09 30.0		
	comp=Z,300nm,11.8s							
PVCC	**Panska Ves**	**7.56**	**356**	AMS	AMS	14 09 20.0		
	comp=Z,200nm,7.9s							
CABF	**La Chapelle**	**7.58**	**302**	*e*Pn	**Pn**	**14 06 26.4**	**-0.8**	
CABF				*e*Sn	**Sn**	**14 07 49.0**	**-3.5**	
	comp=Z,23nm,1.0s							
CABF	**La Chapelle**	**7.58**	**302**	*e*Pn	**Pn**	**14 06 26.4**	**-0.8**	
HINF	**Hinteralfeld**	**7.74**	**311**	*e*Pn	**Pn**	**14 06 28.4**	**-0.9**	
HINF				*e*Sn	**Sn**	**14 07 52.3**	**-4.0**	
	comp=Z,20nm,0.6s							
HINF	**Hinteralfeld**	**7.74**	**311**	*e*Pn	**Pn**	**14 06 28.4**	**-0.9**	
CDF	**Champ du Feu**	**7.88**	**316**	*e*Pn	**Pn**	**14 06 30.3**	**-1.0**	
CDF				*e*Sn	**Sn**	**14 07 55.8**	**-4.1**	
	comp=Z,7.8nm,0.6s							
CDF	**Champ du Feu**	**7.88**	**316**	*e*Pn	**Pn**	**14 06 30.3**	**-1.0**	
VIVF	**Saint-Julien-l**	**8.00**	**287**	*e*Pn	**Pn**	**14 06 32.3**	**-0.7**	
VIVF				*e*Sn	**Sn**	**14 07 59.2**	**-3.7**	
	comp=Z,4.2nm,0.5s							
VIVF	**Saint-Julien-l**	**8.00**	**287**	*e*Pn	**Pn**	**14 06 32.3**	**-0.7**	
HAU	**Haudompre**	**8.12**	**311**	*e*Pn	**Pn**	**14 06 33.5**	**-1.1**	
HAU				*e*Sn	**Sn**	**14 08 01.7**	**-4.1**	
	comp=Z,24nm,0.5s							
HAU	**Haudompre**	**8.12**	**311**	*e*Pn	**Pn**	**14 06 33.5**	**-1.1**	
CLL	**Collm**	**8.48**	**349**	*e*Sn	Sn	14 08 07.0	-7.5	
CLL				*e*Sb	Sb	14 08 29.0	-15	
CLL				*e*		14 08 53.0		
CLL				*e*Sg		14 09 11.0		
	comp=Z,46nm,1.3s							
LASF	**Ste Croix**	**8.50**	**281**	*e*Pn	**Pn**	**14 06 38.9**	**-0.8**	
LASF	**Ste Croix**	**8.50**	**281**	*e*Pn	**Pn**	**14 06 38.9**	**-0.8**	
KEST	**Kesra**	**8.66**	**215**	LR	LR	14 10 18.0		
	comp=Z,72nm,19.9s,baz=248,slow=38							
SMF	**Signal de Mont**	**9.02**	**298**	*e*Pn	**Pn**	**14 06 46.0**	**-0.9**	
SMF				*e*Sn	**Sn**	**14 08 23.6**	**-4.3**	
	comp=Z,8.8nm,0.6s							
SMF	**Signal de Mont**	**9.02**	**298**	*e*Pn	**Pn**	**14 06 46.0**	**-0.9**	
LOR	**Lormes**	**9.24**	**301**	*e*Pn	**Pn**	**14 06 49.1**	**-0.8**	
	baz=120							
LOR				*e*Sn	**Sn**	**14 08 28.7**	**-4.6**	
	comp=Z,8.5nm,0.4s							
LOR	**Lormes**	**9.24**	**301**	*e*Pn	**Pn**	**14 06 49.1**	**-0.8**	
SSF	**Saint Saulge**	**9.38**	**300**	*e*Pn	**Pn**	**14 06 50.9**	**-1.0**	
SSF				*e*Sn	**Sn**	**14 08 32.1**	**-4.7**	
	comp=Z,12nm,0.9s							
SSF	**Saint Saulge**	**9.38**	**300**	*e*Pn	**Pn**	**14 06 50.9**	**-1.0**	
AVF	**Avril sur Loir**	**9.39**	**298**	*e*Pn	**Pn**	**14 06 50.8**	**-1.1**	
AVF				*e*Sn	**Sn**	**14 08 32.3**	**-4.6**	
	comp=Z,8.1nm,0.8s							
AVF	**Avril sur Loir**	**9.39**	**298**	*e*Pn	**Pn**	**14 06 50.8**	**-1.1**	
TCF	**Toulx Ste Croi**	**10.00**	**294**	*e*Pn	**Pn**	**14 06 59.4**	**-0.9**	
TCF				*e*Sn	**Sn**	**14 08 46.8**	**-5.1**	
	comp=Z,3.8nm,0.5s							
TCF	**Toulx Ste Croi**	**10.00**	**294**	*e*Pn	**Pn**	**14 06 59.4**	**-0.9**	
NB2	**NORSAR Subarra**	**18.25**	**353**	P	**P**	**14 08 51.0**	**+1.2**	
	comp=Z,1.8nm,1.0s,baz=164,slow=11							
NB2	**NORSAR Subarra**	**18.25**	**353**	P	**P**	**14 08 51.0**	**+1.2**	
	comp=Z,1.8nm,1.0s,SNR=4.2							
NOA	**NORSAR Array B**	**18.25**	**353**	Pn	**P**	**14 08 50.6**	**+0.9**	
	comp=Z,0.1nm,0.3s,baz=166,slow=11,SNR=4.4							
NOA				LR	LR	14 16 31.3		
	comp=Z,37nm,19.4s,baz=35,slow=39							
FINES	**FINESS Array B**	**19.54**	**15**	Pn	**P**	**14 09 03.7**	**-0.1**	
	comp=Z,0.1nm,0.3s,baz=204,slow=13,SNR=3.7							
ZALV	**Zalesovo Beam**	**45.50**	**51**	P	**P**	**14 12 55.5**	**+0.1**	
	comp=Z,0.2nm,0.2s,baz=303,slow=8.4,SNR=2.9							
MKAR	**Makanchi Array**	**46.21**	**61**	P	**P**	**14 13 00.1**	**-1.2**	
	comp=Z,0.6nm,0.8s,baz=282,slow=5.8,SNR=5.1							
RCBR	**Riachuelo**	**67.22**	**237**	LR	LR	14 44 25.3		
	comp=Z,108nm,19.7s,baz=354,slow=35							
PDAR	**Pinedale Array**	**81.39**	**322**	P	**P**	**14 16 53.2**	**-0.2**	
	comp=Z,0.4nm,0.8s,baz=67,slow=6.9,SNR=4.4							
TXAR	**Lajitas Array**	**88.89**	**310**	P	**P**	**14 17 33.3**	**+2.3**	
	comp=Z,0.3nm,0.7s,baz=68,slow=5.0,SNR=3.3							

IDC 20 14:13:11.8±2.6,21°.26S×67°.45W,h163km±26km,mb3.5/1, mb1 3.3/4,mb1mx3.1/26,mbtmp3.6/4,Error ellipse: s-maj=29.4km s-min=23.1km az=79.0,Chile-Bolivia border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LPAZ	**La Paz**	**4.98**	**352**	P	Pn	14 14 26.4	+0.6
	1.0nm,0.3s,baz=162,slow=7.9,SNR=17						
LPAZ				S	Sn	14 15 23.8	+0.1
	0.2nm,0.3s,baz=215,slow=14,SNR=2.3						
SIV	**San Ignacio**	**8.00**	**50**	P	Pn	14 15 06.7	+1.5
	0.5nm,0.3s,baz=251,slow=12,SNR=6.4						
SIV				S	Sn	14 16 33.5	-1.2
	0.1nm,0.3s,baz=302,slow=19,SNR=4.6						
PLCA	**Paso Flores**	**19.59**	**187**	P	P	14 17 26.9	-0.6
	0.1nm,0.3s,baz=22,slow=11,SNR=3.2						
YKA	**Yellowknife Ar**	**91.42**	**340**	P	P	14 25 58.5	-0.3
	0.4nm,0.6s,baz=132,slow=4.4,SNR=8.7						
MKAR	**Makanchi Array**	**144.63**	**37**	PKP	PKPdf	14 32 29.3	+0.3
	0.3nm,0.7s,baz=288,slow=1.3,SNR=3.6						

*ISCJB **20** 14:28:54.3±0.4,51°.56N±0°.02×16°.13E±0°.03,h0km, mb3.3/1,MS2.8/1,Error ellipse: s-maj=3.2km s-min=2.3km az=12.3*

*IPEC **20** 14:28:56.6±0.4,51°.55N×16°.20E,h0km,2km,ML2.5/3, Error ellipse: s-maj=4.3km s-min=1.9km az=55.0*

*CSEM **20** 14:28:56.2±0.2,51°.60N×16°.11E,h2km,ML3.0,Error ellipse: s-maj=4.7km s-min=2.9km az=17.0*

*IDC **20** 14:28:57.1±0.8,51°.54N×16°.06E,h0km,mb3.3/1, mb1 3.4/6,mb1mx3.2/41,mbtmp3.2/6,ML3.1/4,MS2.9/1, Ms1 2.9/1,ms1mx2.1/28,Error ellipse: s-maj=15.3km s-min=7.4km az=110.0*

*BGR **20** 14:28:58.8±0.9,51°.44N×16°.05E,h1km,ML3.0/7,Error ellipse: s-maj=15.6km s-min=5.6km az=13.0*

ISC 20 14:28:55.8±0.7,51°.61N±0°.03×16°.12E±0°.02,h0km,n72, σ0s92/118,11D,Poland

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KSP	**Ksiaz**	**0.77**	**172**	*i* Pg	**Pg**	**14 29 10.8**	**+0.2**
KSP				*e*Sg	**Sg**	**14 29 20.3**	**-0.2**
KSP	**Ksiaz**	**0.77**	**172**	*i* Pg	**Pg**	**14 29 10.8**	**+0.2**
KSP				*e*Sg	**Sg**	**14 29 20.3**	**-0.2**
KSP	**Ksiaz**	**0.77**	**172**	*e*Pg	**Pg**	**14 29 10.7**	**+0.2**
UPC	**Upice**	**1.10**	**183**	⇓*e*PG	**Pg**	**14 29 17.2**	**+0.3**
UPC				*e*SG	**Sg**	**14 29 30.6**	**-0.5**
	comp=Z,190nm,0.4s						
DPC	**Dobruska-Polom**	**1.26**	**174**	⇓*i*PG	**Pg**	**14 29 19.7**	**-0.3**
DPC				*e*SG	**Sg**	**14 29 35.2**	**-1.1**
	comp=Z,56nm,0.3s						
DPC	**Dobruska-Polom**	**1.26**	**174**	Pg	**Pg**	**14 29 19.6**	**-0.4**
DPC	**Dobruska-Polom**	**1.26**	**174**	*e*Pg	**Pg**	**14 29 19.6**	**-0.4**
PVCC	**Panska Ves**	**1.46**	**223**	⇓*e*PG	**Pn**	**14 29 23.1**	**-0.2**
PVCC				*e*SG	**Sb**	**14 29 42.8**	**+0.1**
	comp=Z,241nm,0.2s						
BRG	**Berggiesshubel**	**1.55**	**243**	PN	**Pn**	**14 29 23.4**	**-1.3**
BRG				PG	**Pg**	**14 29 25.6**	**+0.1**
BRG				SG	**Sg**	**14 29 45.8**	**+0.3**
	125nm,0.4s						
BRG	**Berggiesshubel**	**1.55**	**243**	Pn	**Pb**	**14 29 25.4**	**+0.1**
BRG				Sg	**Sg**	**14 29 45.9**	**+0.3**
BRG	**Berggiesshubel**	**1.55**	**243**	*e*Pn	**Pb**	**14 29 25.4**	**+0.1**
BRG				*e*Sg	**Sg**	**14 29 45.9**	**+0.3**
KRLC	**Kraliky**	**1.59**	**164**	⇓*e*PG	**Pn**	**14 29 24.8**	**-0.4**
KRLC				*e*SG	**Sn**	**14 29 45.6**	**-0.9**
FBE	**Freiberg**	**1.86**	**250**	Pn	**Pb**	**14 29 30.6**	**-0.1**
FBE				Sg	**Sb**	**14 29 54.9**	**+0.4**
FBE	**Freiberg**	**1.86**	**250**	*e*Pn	**Pb**	**14 29 30.6**	**-0.1**
FBE				*e*Sg	**Sb**	**14 29 54.9**	**+0.4**
PRA	**Prague**	**1.87**	**215**	⇓*e*PN	**Pn**	**14 29 28.9**	**-0.1**
PRA				*e*SG	**Sb**	**14 29 55.0**	**+0.3**
	comp=Z,63nm,0.4s						
GOPC	**GO Pecny, Ondr**	**1.89**	**207**	⇓*e*PN	**Pn**	**14 29 28.8**	**-0.6**
GOPC				*e*PG	**Pb**	**14 29 30.9**	**-0.3**
GOPC				*e*SG	**Sb**	**14 29 55.1**	**-0.3**
	comp=Z,32nm,0.2s						
PRU	**Pruhonice**	**1.90**	**212**	⇓*e*PN	**Pn**	**14 29 29.1**	**-0.4**
PRU				*e*PG	**Pg**	**14 29 32.0**	**-0.2**
PRU				*ex*	x	14 29 48.1	
PRU				*e*SG	**Sb**	**14 29 55.2**	**-0.4**
	comp=Z,52nm,0.3s						
CLL	**Collm**	**1.97**	**262**	*i* Pn	**Pn**	**14 29 29.9**	**-0.5**
CLL				*i* Pg	**Pb**	**14 29 32.9**	**+0.4**
CLL				*i*		14 29 36.2	
CLL				*e*Sg	**Sg**	**14 29 59.0**	**0.0**
	comp=Z,50nm,0.5s						
CLL	**Collm**	**1.97**	**262**	Pn	**Pn**	**14 29 29.9**	**-0.5**
CLL	**Collm**	**1.97**	**262**	*e*Pn	**Pn**	**14 29 29.9**	**-0.5**
MORC	**Moravsky Berou**	**2.04**	**153**	Pn	**Pn**	**14 29 31.0**	**-0.5**
MORC				*e*Sg	**Sn**	**14 29 58.4**	**+0.7**
MORC	**Moravsky Berou**	**2.04**	**153**	*e*Pn	**Pn**	**14 29 31.0**	**-0.5**
OKC	**Ostrava-Krasne**	**2.19**	**143**	⇓*e*PN	**Pn**	**14 29 32.5**	**-0.9**
OKC				*e*PG	**Pb**	**14 29 36.8**	**+0.5**
OKC				*e*SG	**Sb**	**14 30 04.1**	**+0.2**
	comp=Z,44nm,0.4s						
VRAC	**Vranov**	**2.32**	**172**	Pn	**Pn**	**14 29 35.0**	**-0.2**
	comp=Z,3.2nm,0.3s,baz=346,slow=16,SNR=13						
VRAC				Lg	Lg	14 30 08.8	
	comp=Z,9.2nm,0.3s,baz=29,slow=19,SNR=7.6						
VRAC	**Vranov**	**2.32**	**172**	*e*Pn	**Pn**	**14 29 35.2**	**0.0**
VRAC				*e*Sg	**Sb**	**14 30 07.2**	**-0.5**
	comp=Z,24nm,0.3s,baz=354						
TREC	**Trest**	**2.35**	**190**	⇓*e*PN	**Pn**	**14 29 35.7**	**+0.1**
TREC				*e*PG	**Pb**	**14 29 39.6**	**+0.6**
TREC				*e*SG	**Sb**	**14 30 08.8**	**+0.3**
	comp=Z,32nm,0.2s						
KRUC	**Moravsky**	**2.55**	**176**	*e*Pn	**Pn**	**14 29 38.4**	**0.0**
KRUC				*e*Sg	**Sb**	**14 30 14.6**	**+0.2**
	comp=Z,16nm,0.3s,baz=357						
NKC	**Novy Kostel**	**2.70**	**241**	⇓*e*PN	**Pn**	**14 29 40.5**	**+0.1**
NKC				*e*PG	**Pg**	**14 29 47.4**	**0.0**
NKC				*e*SG	**Sg**	**14 30 21.2**	**-1.2**
	comp=Z,82nm,0.5s						
OJC	**Ojcow**	**2.71**	**119**	*e*Pn	**Pn**	**14 29 40.4**	**-0.2**
OJC				*e*Pg	**Pg**	**14 29 48.9**	**+1.2**
OJC				*e*Sg	**Sg**	**14 30 24.2**	**+1.3**
OJC	**Ojcow**	**2.71**	**119**	*e*Pn	**Pn**	**14 29 40.4**	**-0.2**
KHC	**Kasperske Hory**	**2.96**	**214**	⇓*e*PN	**Pn**	**14 29 43.8**	**-0.3**
KHC				*e*PG	**Pb**	**14 29 50.1**	**+0.7**
KHC				*e*SN	**Sn**	**14 30 19.6**	**-0.7**
KHC				*e*SG	**Sb**	**14 30 28.1**	**+1.9**
	comp=Z,15nm,0.3s						
MOX	**Moxa**	**2.99**	**253**	Sg	**Sg**	**14 30 32.6**	**+0.7**
MOX	**Moxa**	**2.99**	**253**	*e*Sg	**Sg**	**14 30 32.6**	**+0.7**
MANZ	**Manzenberg**	**3.02**	**239**	Pn	**Pn**	**14 29 44.7**	**-0.1**
MANZ	**Manzenberg**	**3.02**	**239**	*e*Pn	**Pn**	**14 29 44.7**	**-0.1**
ROTZ	**Rotzenmuhle**	**3.09**	**235**	Pn	**Pn**	**14 29 45.9**	**+0.1**
ROTZ	**Rotzenmuhle**	**3.09**	**235**	*e*Pn	**Pn**	**14 29 45.9**	**+0.1**
GEC2	**GERESS Array S**	**3.17**	**210**	Pn	**Pn**	**14 29 47.3**	**+0.3**
GEC2	**GERESS Array S**	**3.17**	**210**	*e*Pn	**Pn**	**14 29 47.3**	**+0.3**
GERES	**GERESS Array B**	**3.17**	**210**	Pn	**Pn**	**14 29 46.7**	**-0.3**
	comp=Z,2.4nm,0.3s,baz=27,slow=14,SNR=30						
GERES				Pg	**Pb**	**14 29 54.0**	**+1.1**
	comp=Z,4.8nm,0.3s,baz=26,slow=15,SNR=26						
GERES				Lg	Lg	14 30 35.3	
	comp=Z,8.1nm,0.3s,baz=30,slow=28,SNR=15						
SMOL	**Smolenice**	**3.21**	**164**	*e*Pg	**Pg**	**14 29 57.2**	**0.0**
SMOL				*e*Sg	**Sg**	**14 30 39.9**	**+1.1**
SMOL	**Smolenice**	**3.21**	**164**	*e*PG	**Pg**	**14 29 57.2**	**0.0**
SMOL				*e*SG	**Sg**	**14 30 39.9**	**+1.1**
WET	**Wettzell**	**3.22**	**221**	Pn	**Pn**	**14 29 47.7**	**+0.1**
WET	**Wettzell**	**3.22**	**221**	*e*Pn	**Pn**	**14 29 47.7**	**+0.1**
LANS	**Liptovska Anna**	**3.26**	**138**	*e*Pg	**Pg**	**14 29 57.3**	**-1.0**
LANS				*e*Sg	**Sg**	**14 30 39.2**	**-1.3**
LANS	**Liptovska Anna**	**3.26**	**138**	*e*PG	**Pg**	**14 29 57.3**	**-1.0**
LANS				*e*SG	**Sg**	**14 30 39.2**	**-1.3**
NIE	**Niedzica**	**3.45**	**128**	*e*P	**Pg**	**14 30 01.1**	**-0.8**
NIE				*e*S	**Sg**	**14 30 45.6**	**-1.1**
VYHS	**Vyhne**	**3.58**	**150**	*e*Pn	**Pn**	**14 29 52.2**	**-0.3**
VYHS	**Vyhne**	**3.58**	**150**	*e*PN	**Pn**	**14 29 52.2**	**-0.3**
VYHS				*e*PG	**Pg**	**14 30 05.3**	**+1.0**
VYHS				*e*SG	**Sb**	**14 30 46.5**	**+2.7**
BSD	**Bornholm Skovb**	**3.59**	**349**	*i* P	**Pn**	**14 29 52.5**	**-0.1**
BSD				*i* S	**Sn**	**14 30 34.3**	**-1.3**
BSD	**Bornholm Skovb**	**3.59**	**349**	*i* P	**Pn**	**14 29 52.5**	**-0.1**
BSD				*i* S	**Sn**	**14 30 34.3**	**-1.3**
CONA	**Conrad Observa**	**3.69**	**183**	*i* P	**Pg**	**14 30 04.4**	**-2.0**
	comp=Z,0.1nm,0.0s						
STHS	**Stebnicka Huta**	**3.94**	**122**	*e*Pn	**Pn**	**14 29 58.1**	**+0.6**
STHS	**Stebnicka Huta**	**3.94**	**122**	*e*Pn	**Pn**	**14 29 58.0**	**+0.6**
STHS				*e*PG	**Pg**	**14 30 12.8**	**+1.6**
STHS				*e*SG	**Sg**	**14 31 05.0**	**+2.8**
STHS				*e*LG	Lg	14 31 17.3	
MOA	**Molln**	**3.95**	**198**	*i* Pn	**Pn**	**14 29 57.9**	**+0.2**
	comp=Z,7.2nm,0.3s						
MOA	**Molln**	**3.95**	**198**	P	**Pn**	**14 29 57.8**	**+0.2**
	comp=Z,7.2nm,0.3s						
KECS	**Kecovo**	**4.21**	**136**	*e*Pg	**Pg**	**14 30 16.8**	**+0.4**
KECS				*e*Sg	**Sg**	**14 31 08.0**	**-2.9**
KECS	**Kecovo**	**4.21**	**136**	*e*PG	**Pg**	**14 30 16.8**	**+0.4**
KECS				*e*SG	**Sg**	**14 31 08.0**	**-2.9**
CRVS	**Cervenica-Dubn**	**4.37**	**126**	*e*Pg	**Pg**	**14 30 20.8**	**+1.3**
CRVS	**Cervenica-Dubn**	**4.37**	**126**	*e*PG	**Pg**	**14 30 20.8**	**+1.3**
CRVS				*e*SG	**Sg**	**14 31 16.0**	**-0.1**
ARSA	**Arzberg**	**4.38**	**185**	*i* Pn	**Pn**	**14 30 03.2**	**-0.3**
ARSA	**Arzberg**	**4.38**	**185**	P	**Pn**	**14 30 03.2**	**-0.3**
KOLS	**Kolonicke sedl**	**4.77**	**122**	*e*Sg	**Sg**	**14 31 26.3**	**-2.6**
KOLS	**Kolonicke sedl**	**4.77**	**122**	*e*SG	**Sg**	**14 31 26.3**	**-2.6**
KBA	**Koelnbreinsper**	**4.88**	**203**	*i* Pn	**Pn**	**14 30 11.0**	**+0.5**
	comp=Z,6.5nm,0.4s						
KBA	**Koelnbreinsper**	**4.88**	**203**	P	**Pn**	**14 30 11.0**	**+0.5**
	comp=Z,6.5nm,0.4s						
AKASG	**Malin Array Be**	**8.29**	**91**	Pn	**Pn**	**14 30 55.8**	**-1.4**
	comp=Z,1.1nm,0.3s,baz=280,slow=12,SNR=4.2						
HFS	**Hagfors**	**8.65**	**352**	Pn	**Pn**	**14 31 01.9**	**-0.2**
	comp=Z,0.1nm,0.3s,baz=168,slow=15,SNR=2.7						
FINES	**FINESS Array B**	**11.28**	**25**	Pn	**Pn**	**14 31 36.6**	**-1.4**
	comp=Z,0.2nm,0.3s,baz=213,slow=13,SNR=5.8						
FINES				Sn	Sn	14 33 35.6	-8.9
	comp=Z,0.3nm,0.3s,baz=213,slow=22,SNR=5.5						
EKA	**Eskdalemuir Ar**	**12.07**	**296**	Pn	Pn	14 31 45.1	-3.7
	baz=103,slow=14,SNR=3.3						
JMIC	**Jan Mayen**	**22.43**	**339**	LR	LR	14 43 01.8	
	comp=Z,34nm,19.9s,baz=93,slow=38						
YKA	**Yellowknife Ar**	**59.77**	**336**	P	**P**	**14 39 02.7**	**+0.7**
	comp=Z,0.2nm,0.6s,baz=30,slow=6.3,SNR=5.4						

*JMA **20** 14:35:13.8±0.1,24°.62N×122°.77E,h113km±2km,M3.2*

*ISCJB **20** 14:35:14.1±0.5,24°.59N±0°.04×122°.82E±0°.02, h109km±4km,Error ellipse: s-maj=6.2km s-min=2.5km az=168.2*

*TAP **20** 14:35:14.0,24°.65N×122°.76E,h119km,ML3.5,C*

ISC 20 14:35:14.2±1.4,24°.60N±0°.05×122°.81E±0°.03,h111km±8km, n53,σ0s73/91,2C-10D,Taiwan region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JYNG	**Yonagunijimaku**	**0.19**	**139**	P	**Pn**	**14 35 29.8**	**+0.1**
JYNG				S	**Sn**	**14 35 41.5**	**+0.2**
YOJ	**Yonaguni jima**	**0.23**	**126**	P	**Pn**	**14 35 30.0**	**+0.2**
YOJ				S	**Sn**	**14 35 42.1**	**+0.6**
EGS		**0.83**	**287**	*e*P	**Pn**	**14 35 33.9**	**0.0**
	baz=276						
TWB1	**Santiao Chiao**	**0.85**	**299**	*e*P	**Pn**	**14 35 33.5**	**-0.5**
	baz=293						
TWC	**Suao**	**0.87**	**271**	⇓*i*P	**Pn**	**14 35 34.0**	**-0.2**
	baz=263						
TWC				S	**Sn**	**14 35 48.5**	**-0.8**
	baz=263						
IRIF	**Iriomote-Funau**	**0.88**	**107**	P	**Pn**	**14 35 34.6**	**+0.3**
ILA	**Ilan**	**0.98**	**280**	P	**Pn**	**14 35 35.6**	**+0.3**
	baz=273						
ILA				S	**Sn**	**14 35 51.4**	**+0.2**
	baz=273						
ENA	**Nanau**	**0.99**	**260**	P	**Pn**	**14 35 35.6**	**+0.2**
	baz=251						
ENA				*e*S	**Sn**	**14 35 51.5**	**+0.2**
	baz=251						
TWE	**Neicheng**	**1.05**	**277**	⇓*i*P	**Pn**	**14 35 36.1**	**+0.2**
	baz=272						
TWE				*e*S	**Sn**	**14 35 51.7**	**-0.7**
	baz=272						
NWF	**Wu-fen Shan**	**1.05**	**297**	*e*P	**Pn**	**14 35 35.8**	**-0.2**
	baz=288						
HATJ	**Hateruma jima**	**1.06**	**120**	P	**Pn**	**14 35 37.0**	**+0.9**
HATJ				*e*S	**Sn**	**14 35 53.3**	**+0.7**
ENTT	**Nioudou**	**1.13**	**272**	P	**Pn**	**14 35 37.4**	**+0.5**
	baz=265						
JKRS	**Kuro-shima**	**1.15**	**108**	P	**Pn**	**14 35 37.9**	**+0.8**
JKRS				S	**Sn**	**14 35 55.2**	**+0.8**
TWD	**Chiawan**	**1.22**	**245**	P	**Pn**	**14 35 37.6**	**-0.2**
	baz=237						
TWD				S	**Sn**	**14 35 55.4**	**-0.3**
	baz=237						
JIJ	**Ishigaki jima**	**1.24**	**101**	P	**Pn**	**14 35 38.2**	**+0.1**
JIJ				S	**Sn**	**14 35 55.5**	**-0.6**
HWA	**Hwalien**	**1.26**	**241**	*e*P	**Pn**	**14 35 38.2**	**-0.1**
	baz=237						
TWY	**Chenhua**	**1.29**	**302**	*e*P	**Pn**	**14 35 39.2**	**+0.5**
	baz=300						
NNS	**Nan Shan**	**1.32**	**264**	P	**Pn**	**14 35 39.2**	**+0.1**
	baz=254						
NNS				*e*S	**Sn**	**14 35 57.3**	**-0.6**
	baz=254						
NSK	**Sanguang**	**1.32**	**274**	⇓*i*P	**Pn**	**14 35 39.5**	**

JKE	**Kume jima 2**	**3.99**	**64**	P		**Pn**	**14 36 12.8**	**-0.6**
JKE				S		**Sn**	**14 36 58.6**	**-0.7**

CASC 20 14:38:26.0±2.7, 9°.69N×83°.21W, h3km±13km, MD3.6, 2D, Costa Rica

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BUS	**Buena Vista**	**0.55**	**256**	⇓*e*P	Pb	14 38 38.2	-0.5
BUS				*e*S	Sb	14 38 46.7	-0.5
URSC	**Urasca**	**0.57**	**284**	⇓*e*P	Pg	14 38 37.5	+0.5
URSC				*e*S	Sg	14 38 45.6	+1.1
QCR	**Quepos**	**0.97**	**254**	*e*P	Pb	14 38 45.7	+0.1
QCR				*e*S	Sn	14 39 00.8	-0.2
TBS2		**1.05**	**148**	*e*P	Pg	14 38 46.4	+0.3
TBS2				*e*S	Sb	14 39 00.7	-0.5
JTS	**JuntasAbangare**	**1.81**	**289**	*e*P	Pn	14 38 58.3	+0.1
JTS				*e*S	Sb	14 39 23.4	+0.3

*IDC **20** 14:43:11.3±1.6, 24°.24S×176°.32W, h0km, mb3.9/3, mb1 4.3/6, mb1mx3.9/41, mbtmp4.3/6, ML3.9/3, MS3.2/4, Ms1 3.2/4, ms1mx2.9/33, Error ellipse: s-maj=54.8km s-min=27.9km az=147.0*
*ISCJB **20** 14:43:12.9±0.7, 24°.25S±0°.09×176°.2W±0°.1, h30km, mb4.0/4, MS3.3/1, Error ellipse: s-maj=16.7km s-min=11.0km az=39.3*
*NEIC **20** 14:43:17.0±1.1, 24°.42S×176°.01W, h58km±14km, mb4.2/1, Error ellipse: s-maj=15.2km s-min=11.5km az=111.0*
ISC 20 14:43:15.4±0.8, 24°.3S±0°.1×176°.2W±0°.1, h30km, n22, σ0s94/13, mb4.0/4, South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**5.18**	**197**	*e*P	**Pn**	**14 44 30.4**	**-0.5**
MSVF	**Nonsavu**	**8.45**	**319**	*e*P	Pn	14 45 21.0	+5.1
	98nm,0.9s						
AFI	**Afiamalu**	**11.13**	**23**	Pn	**Pn**	**14 45 52.5**	**-0.1**
	4.2nm,0.3s,baz=158,slow=5.4,SNR=9.1						
AFI				LR	LR	14 48 44.1	
	comp=Z,34nm,21.6s,baz=182,slow=30						
URZ	**Urewera**	**15.05**	**201**	Pn	**Pn**	**14 46 45.0**	**-1.0**
	0.2nm,0.3s,baz=101,slow=16,SNR=2.5						
URZ				LR	LR	14 51 25.9	
	comp=Z,134nm,20.9s,baz=353,slow=33						
URZ	**Urewera**	**15.05**	**201**	P	**Pn**	**14 46 46.0**	**+0.1**
RAR	**Rarotonga**	**15.45**	**82**	Pn	**Pn**	**14 46 50.7**	**-0.6**
	1.9nm,0.3s,baz=259,slow=9.2,SNR=9.0						
DZM	**Mont Dzumac**	**16.12**	**274**	LR	LR	14 51 50.4	
	comp=Z,120nm,19.2s,baz=82,slow=32						
PAE	**Paea**	**25.68**	**80**	*e*T	T	15 15 16.6	
	19nm,0.3s						
PPT2	**Papeete2**	**25.70**	**80**	*e*LR	LR	14 55 06.6	
	141nm,25.8s						
PPT2	**Papeete2**	**25.70**	**80**	*e*T	T	15 15 20.1	
	8.3nm,0.3s						
TVO	**Taravao**	**25.93**	**81**	*e*T	T	15 15 37.0	
	1.9nm,0.3s						
MEH	**Mehetia**	**26.97**	**82**	*e*T	T	15 16 54.8	
	58nm,0.3s						
HNR	**Honiara**	**27.13**	**299**	LR	LR	14 57 56.6	
	comp=Z,84nm,19.2s,baz=162,slow=33						
VAH	**Vaihoa**	**28.30**	**77**	*e*T	T	15 18 32.9	
	14nm,0.2s						
RKT	**Rikitea**	**37.66**	**97**	*e*T	T	15 30 14.6	
	8.2nm,0.3s						
ASAR	**Alice Springs**	**45.41**	**260**	P	**P**	**14 51 31.1**	**-0.5**
	1.3nm,0.8s,baz=94,slow=7.6,SNR=19						
ASAR				PcP	**PcP**	**14 53 12.0**	**+1.3**
	0.4nm,1.1s,baz=117,slow=3.6,SNR=2.7						
WRAB	**Tennant Creek**	**45.84**	**265**	*e*P	**P**	**14 51 34.7**	**-0.4**
	1.5nm,0.5s						
WRA	**Warramunga Arr**	**45.85**	**265**	P	**P**	**14 51 33.5**	**-1.7**
	1.3nm,0.8s,baz=102,slow=8.4,SNR=16						
WRA				PcP	**PcP**	**14 53 12.3**	**0.0**
	0.5nm,0.9s,baz=100,slow=3.1,SNR=3.0						
SBA	**Scott Base**	**54.23**	**184**	P	P	14 52 34.5	-3.4
FITZ	**Fitzroy Crossi**	**54.27**	**265**	P	**P**	**14 52 39.4**	**+0.4**
	2.0nm,0.9s,baz=111,slow=8.6,SNR=3.2						
QSPA	**South Pole Qui**	**65.80**	**180**	*e*P	**P**	**14 53 59.0**	**+1.4**
AKASG	**Malin Array Be**	**147.12**	**330**	PKPbc	**PKPbc**	**15 02 54.8**	**-0.5**
	0.4nm,0.3s,baz=43,slow=4.1,SNR=3.2						

*ISCJB **20** 14:43:57.4±0.8, 21°.14S±0°.04×68°.2W±0°.1, h201km±11km, mb3.8/1, Error ellipse: s-maj=21.9km s-min=6.3km az=3.4*
*GUC **20** 14:43:57.6±0.7, 21°.14S×68°.19W, h190km±6km, ML3.9*
*IDC **20** 14:44:02.0±6.7, 20°.76S×67°.35W, h195km±49km, mb3.7/1, mb1 3.6/3, mb1mx3.2/25, mbtmp4.1/3, Error ellipse: s-maj=73.0km s-min=26.7km az=13.0*
ISC 20 14:43:57.9±1.2, 21°.13S±0°.05×68°.1W±0°.1, h191km±12km, n18, σ0s83/31, 7C-6D, Chile-Bolivia border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PB09	**IPOC Station P**	**1.25**	**238**	⇓*i*P	**Pn**	**14 44 28.8**	**+0.1**
PB09				*i* S	**Sn**	**14 44 52.6**	**-0.1**
PB09				IAML		14 44 54.4	
	comp=E,1μm,0.7s						
PB01	**IPOC Station P**	**1.29**	**274**	⇑*i*P	**Pn**	**14 44 29.0**	**0.0**
PB01				*i* S	**Sn**	**14 44 52.8**	**-0.3**
PB08	**IPOC Station P**	**1.39**	**315**	⇓*i*P	**Pn**	**14 44 30.4**	**+0.2**
PB08				*i* S	**Sn**	**14 44 55.2**	**0.0**
PB07	**IPOC Station P**	**1.76**	**250**	⇓*i*P	**Pn**	**14 44 33.8**	**+0.3**
PB07				*i* S	**Sn**	**14 45 00.8**	**-0.3**
PB07				IAML		14 45 01.0	
	comp=N,1μm,0.3s						
HMBC	**Humberstone**	**1.87**	**297**	⇓*i*P	**Pn**	**14 44 34.7**	**+0.1**
HMBC				*i* S	**Sn**	**14 45 02.7**	**-0.2**
PATCX	**Punta Patache**	**1.94**	**279**	⇓*i*P	**Pn**	**14 44 35.7**	**+0.5**
PATCX				*i* S	**Sn**	**14 45 04.1**	**0.0**
PATCX				IAML		14 45 07.2	
	comp=N,433nm,0.2s						
PB11	**IPOC Station P**	**1.99**	**313**	⇓*i*P	**Pn**	**14 44 35.9**	**+0.1**
PB11				*i* S	**Sn**	**14 45 05.1**	**-0.2**
PB06	**IPOC Station P**	**2.08**	**221**	⇑*i*P	**Pn**	**14 44 36.7**	**+0.1**
PB06				*i* S	**Sn**	**14 45 06.4**	**-0.6**
PB06				IAML		14 45 07.2	
	comp=E,553nm,0.2s						
PB04	**IPOC Station P**	**2.25**	**237**	⇑*i*P	**Pn**	**14 44 38.9**	**+0.4**
PB04				*i* S	**Sn**	**14 45 09.6**	**-0.6**
PB04				IAML		14 45 10.3	
	comp=N,253nm,0.6s						
PSGC	**Pisagua**	**2.43**	**308**	*e*P	**Pn**	**14 44 40.1**	**-0.4**
PSGC				*e*S	**Sn**	**14 45 13.2**	**-0.6**
MNMC	**Minye Minye**	**2.43**	**325**	⇑*i*P	**Pn**	**14 44 41.5**	**+0.7**
MNMC				*i* S	**Sn**	**14 45 14.4**	**+0.3**
MNMC				IAML		14 45 16.3	
	comp=N,392nm,0.7s						
PB13	**IPOC Station P**	**3.08**	**334**	⇑*i*P	**Pn**	**14 44 49.8**	**+1.2**
PB13				*e*S	**Sn**	**14 45 29.9**	**+1.7**
PB12	**IPOC Station P**	**3.26**	**320**	⇑*i*P	**Pn**	**14 44 49.6**	**-0.7**
PB12				*e*S	**Sn**	**14 45 29.4**	**-1.9**
PB10	**IPOC Station P**	**3.28**	**223**	⇑*i*P	**Pn**	**14 44 50.5**	**+0.1**
LPAZ	**La Paz**	**4.82**	**360**	P	**Pn**	**14 45 10.6**	**+0.2**
	comp=N,1.8nm,0.3s,baz=170,slow=9.8,SNR=34						
LPAZ				S	**Sn**	**14 46 05.1**	**-2.1**
	comp=N,0.2nm,0.3s,baz=260,slow=16,SNR=2.1						
SIV	**San Ignacio**	**8.40**	**54**	P	Pn	14 45 50.1	-6.4
	comp=N,3.3nm,0.3s,baz=245,slow=14,SNR=38						
SIV				S	Sn	14 47 17.0	-14
	comp=N,0.2nm,0.3s,baz=166,slow=17,SNR=2.9						
TORD	**Torodi Ar. Bea**	**76.52**	**70**	P	**P**	**14 55 26.8**	**-0.7**
	comp=N,1.2nm,0.5s,baz=248,slow=5.6,SNR=13						
MKAR	**Makanchi Array**	**144.89**	**36**	PKP	**PKPdf**	**15 03 13.7**	**+1.5**
	comp=N,0.4nm,0.4s,baz=315,slow=3.5,SNR=8.4						

*IDC **20** 14:55:05.7±2.4, 3°.33S×128°.81E, h0km, mb3.3/2, mb1 3.6/3, mb1mx3.3/41, mbtmp3.3/3, ML3.3/1, Error ellipse: s-maj=195.5km s-min=26.9km az=68.0*
*ISCJB **20** 14:55:07.1±1.0, 3°.21S±0°.05×128°.98E±0°.04, h10km±6km, mb3.3/1, Error ellipse: s-maj=8.9km s-min=6.8km az=26.9*
*DJA **20** 14:55:07.9±0.3, 3°.S±2°×12°.9E±°, h10km, M3.2/8, MLv3.2/8*
ISC 20 14:55:07.8±1.1, 3°.27S±0°.07×128°.99E±0°.05, h13km±7km, n9, σ0s52/15, Seram

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MSAI	**Masohi**	**0.10**	**216**	P	**Pg**	**14 55 10.9**	**+0.1**
MSAI				S	**Sg**	**14 55 12.9**	**0.0**
BNDI	**Bandanaira**	**1.55**	**144**	P	**Pb**	**14 55 36.4**	**+0.1**
BNDI				S	**Sg**	**14 55 58.1**	**+0.4**
NLAI	**Namlea**	**1.88**	**271**	P	**Pn**	**14 55 40.0**	**+0.3**
NLAI				S	**Sn**	**14 56 03.9**	**+0.6**
LBMI	**Labuha**	**3.00**	**330**	P	**Pn**	**14 55 54.8**	**-0.3**
LBMI				S	**Sn**	**14 56 31.3**	**+0.3**
SANI	**Sanana**	**3.23**	**292**	P	**Pn**	**14 55 58.2**	**0.0**
SANI				S	**Sn**	**14 56 37.2**	**+0.6**
SWI	**Sorong**	**3.30**	**44**	P	**Pn**	**14 55 59.1**	**-0.1**
SWI				S	**Sn**	**14 56 39.3**	**+1.1**
WRA	**Warramunga Arr**	**17.38**	**163**	P	**Pn**	**14 59 09.5**	**-0.7**
	0.1nm,0.3s,baz=345,slow=13,SNR=10						
ASAR	**Alice Springs**	**20.83**	**167**	P	**P**	**14 59 49.1**	**-0.2**
	1.1nm,0.5s,baz=349,slow=11,SNR=34						
MKAR	**Makanchi Array**	**64.57**	**326**	P	**P**	**15 05 44.5**	**-0.4**
	0.2nm,0.6s,baz=127,slow=8.1,SNR=3.1						

*NIED **20** 15:00:00, 37°.00N×140°.80E, h5km, Mw3.6 Best double couple: M₀3.21000×10¹⁴ NP1:φs197.00000°, δ39.00000°, λ-121.00000°. NP2:φs55.00000°, δ57.00000°, λ-67.00000°.*
*ISCJB **20** 15:00:21.9±0.9, 37°.02N±0°.03×141°.00E±0°.06, h11km±4km, mb3.7/9, Error ellipse: s-maj=7.7km s-min=4.7km az=18.2*
*JMA **20** 15:00:23.9, 37°.04N×140°.84E, h9km±1km, M3.8*
JMA Felt II J1.
*IDC **20** 15:00:27.4±1.7, 36°.98N×140°.96E, h43km±16km, mb3.5/9, mb1 3.7/14, mb1mx3.5/45, mbtmp3.7/14, ML3.2/4, MS2.7/2, Ms1 2.7/2, ms1mx2.2/38, Error ellipse: s-maj=14.9km s-min=10.5km az=92.0*
ISC 20 15:00:23.4±1.3, 37°.02N±0°.04×140°.91E±0°.06, h9km±7km, n29, σ0s89/31, mb3.6/9, 5C-1D, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.12**	**312**	⇑P	**Pg**	**15 00 26.1**	**-0.2**
ONAJ				S	**Sg**	**15 00 27.7**	**-0.5**
JFK	**Kawauchi**	**0.35**	**355**	⇑P	**Pg**	**15 00 30.7**	**+0.4**
JHO	**Hitachi**	**0.49**	**214**	⇑P	**Pg**	**15 00 33.1**	**+0.1**
JHO				S	**Sg**	**15 00 39.5**	**+0.1**
JFT	**Otama**	**0.68**	**317**	⇑P	**Pg**	**15 00 36.3**	**-0.2**
JFT				S	**Sg**	**15 00 44.8**	**-0.6**
JSB	**Shiboa**	**0.80**	**267**	⇑P	**Pg**	**15 00 38.8**	**0.0**
JSB				S	**Sg**	**15 00 49.2**	**+0.1**
JMM	**Marumori**	**0.85**	**354**	⇓P	**Pg**	**15 00 39.6**	**-0.2**
JMM				S	**Sg**	**15 00 50.9**	**0.0**
MJAR	**Matsushiro Arr**	**2.22**	**258**	P	**Pn**	**15 01 01.6**	**+1.0**
	9.8nm,0.3s,baz=96,slow=15,SNR=45						
MJAR				S	**Sn**	**15 01 28.8**	**+0.7**
	41nm,0.3s,baz=322,slow=7.5,SNR=23						
MAT	**Matsushiro**	**2.22**	**258**	P	**Pn**	**15 01 01.4**	**+0.9**
MAT				S	**Sb**	**15 01 30.6**	**-0.9**
JHJ	**Hachijo jima 2**	**4.00**	**194**	P	**Pn**	**15 01 26.1**	**+1.1**
	5.0nm,0.3s,baz=74,slow=20,SNR=3.5						
JHJ				S	**Sn**	**15 02 11.8**	**-0.2**
	10nm,0.3s,baz=73,slow=19,SNR=3.5						
ASAJ	**Asahikawa**	**7.20**	**10**	P	**Pn**	**15 02 08.8**	**-0.1**
	0.5nm,0.3s,baz=213,slow=12,SNR=5.8						
ASAJ				S	**Sn**	**15 03 31.8**	**+0.9**
	0.2nm,0.3s,baz=180,slow=20,SNR=1.7						
USRK	**Ussuriysk Ar.**	**9.87**	**319**	P	**Pn**	**15 02 47.3**	**+1.8**
	baz=150,slow=12,SNR=2.9						
KSRS	**Korea Array**	**10.37**	**276**	P	**Pn**	**15 02 53.9**	**+1.6**
	0.1nm,0.3s,baz=89,slow=14,SNR=2.9						
KSRS				LR	LR	15 06 40.2	
	comp=Z,40nm,18.9s,baz=130,slow=36						
KLR	**Kul'dur**	**13.90**	**334**	LR	LR	15 08 33.4	
	comp=Z,25nm,21.1s,baz=141,slow=35						
SONM	**Songino Array**	**27.46**	**304**	P	**P**	**15 06 09.4**	**-0.4**
	0.6nm,0.7s,baz=98,slow=7.7,SNR=3.6						
H11N2	**WAKE ISLAND Hy**	**28.49**	**120**	T	T	15 36 02.2	
	baz=313,slow=75,SNR=146						
H11N1	**WAKE ISLAND Hy**	**28.49**	**120**	T	T	15 36 02.8	
	baz=313,slow=75,SNR=126						
H11N3	**WAKE ISLAND Hy**	**28.50**	**120**	T	T	15 36 03.6	
	baz=313,slow=75,SNR=99						
H11S1	**WAKE ISLAND Hy**	**29.19**	**122**	T	T	15 37 00.4	
	baz=314,slow=75,SNR=162						
H11S3	**WAKE ISLAND Hy**	**29.19**	**122**	T	T	15 37 00.1	
	baz=314,slow=75,SNR=106						
H11S2	**WAKE ISLAND Hy**	**29.20**	**122**	T	T	15 36 57.1	
	baz=314,slow=75,SNR=68						
ZALV	**Zalesovo Beam**	**41.63**	**312**	P	**P**	**15 08 11.2**	**-0.5**
	0.4nm,0.4s,baz=97,slow=7.4,SNR=3.4						
MKAR	**Makanchi Array**	**43.79**	**302**	P	**P**	**15 08 29.3**	**-0.2**
	0.7nm,0.7s,baz=90,slow=10,SNR=11						
ILAR	**Eielson Array**	**49.72**	**32**	P	**P**	**15 09 16.4**	**+0.7**
	0.4nm,0.9s,baz=267,slow=7.5,SNR=5.0						
WRA	**Warramunga Arr**	**56.99**	**187**	P	**P**	**15 10 06.8**	**-2.7**
	0.4nm,0.7s,baz=360,slow=7.1,SNR=6.8						
ASAR	**Alice Springs**	**60.72**	**187**	P	**P**	**15 10 35.0**	**-0.4**
	0.4nm,0.8s,baz=19,slow=8.2,SNR=4.7						
ARCES	**ARCESS Array B**	**63.87**	**339**	P	**P**	**15 10 55.8**	**-0.1**
	6.0nm,1.1s,baz=55,slow=8.0,SNR=4.0						
FINES	**FINESS Array B**	**68.64**	**332**	P	**P**	**15 11 26.0**	**-0.6**
	1.5nm,0.7s,baz=51,slow=11,SNR=7.0						
NB2	**NORSAR Subarra**	**74.04**	**337**	P	**P**	**15 11 59.0**	**-0.4**
	comp=Z,0.4nm,0.5s,baz=40,slow=6.2						
NOA	**NORSAR Array B**	**74.04**	**337**	P	**P**	**15 11 58.6**	**-0.8**
	comp=Z,1.0nm,0.8s,baz=40,slow=5.9,SNR=4.1						

*IDC **20** 15:07:10.3±13.0, 39°.37N×143°.82E, h0km, mb3.4/2, mb1 3.5/3, mb1mx3.1/33, mbtmp3.3/3, ML3.1/1, Error ellipse: s-maj=298.8km s-min=63.7km az=179.0*
*JMA **20** 15:07:21.5±0.2, 38°.19N×143°.36E, h22km, M3.0*
ISC 20 15:07:21.0±2.0, 38°.2N±0°.1×143°.4E±0°.1, h15km, n10, σ0s86/12, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**1.61**	**303**	P	**Pn**	**15 07 49.0**	**+0.1**
JIO	**Ouri**	**1.64**	**279**	P	**Pn**	**15 07 49.1**	**-0.1**
JIO				*e*S	**Sn**	**15 08 09.0**	**-1.0**
JMK	**Ichinoseki**	**1.86**	**294**	P	**Pn**	**15 07 52.8**	**+0.4**
JMM	**Marumori**	**2.10**	**261**	P	**Pn**	**15 07 55.6**	**0.0**
JOU	**Okura**	**2.17**	**275**	P	**Pn**	**15 07 57.4**	**+0.8**
JOU				*e*S	**Sn**	**15 08 23.0**	**-0.1**
JFK	**Kawauchi**	**2.19**	**248**	P	**Pn**	**15 07 56.5**	**-0.3**
JYK	**Kaneyama**	**2.49**	**287**	P	**Pn**	**15 08 02.1**	**+1.1**
MJAR	**Matsushiro Arr**	**4.47**	**250**	Pn	**Pn**	**15 08 29.9**	**+1.7**
	0.7nm,0.3s,baz=57,slow=12,SNR=8.4						
WRA	**Warramunga Arr**	**58.48**	**190**	P	**P**	**15 17 15.8**	**-0.7**
	0.4nm,0.7s,baz=8.2,slow=6.6,SNR=4.9						
ASAR	**Alice Springs**	**62.21**	**190**	P	**P**	**15 17 42.0**	**+0.1**
	0.3nm,0.9s,baz=4.7,slow=6.2,SNR=5.0						

*IDC **20** 15:24:10.3±3.0, 33°.12S×179°.03W, h0km, mb3.4/2, mb1 3.7/3, mb1mx3.5/29, mbtmp3.5/3, ML3.4/1, Error ellipse: s-maj=69.8km s-min=45.9km az=117.0*
*ISCJB **20** 15:24:13.8±1.3, 33°.51S±0°.07×178°.9W±0°.2, h45km, mb3.3/2, Error ellipse: s-maj=23.9km s-min=8.4km az=14.7*
ISC 20 15:24:14.6±2.0, 33°.49S±0°.10×178°.7W±0°.2, h45km, n19, σ1s19/28, South of Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MXZ	**Matakaoa Point**	**4.73**	**210**	*e*PN	**Pn**	**15 25 23.7**	**+0.3**
MXZ				SN	**Sn**	**15 26 18.5**	**+1.5**
WMGZ	**Waiomatatini S**	**4.91**	**208**	PN	**Pn**	**15 25 27.4**	**+1.6**
PKGZ	**Pakihiroa**	**5.10**	**210**	PN	**Pn**	**15 25 29.3**	**+0.7**
HAZ	**Te Kaha**	**5.12**	**213**	*e*PN	**Pn**	**15 25 29.6**	**+0.8**
HAZ				SN	**Sn**	**15 26 28.3**	**+1.7**
PUZ	**Puketiti**	**5.19**	**207**	PN	**Pn**	**15 25 30.6**	**+0.9**
PUZ				SN	**Sn**	**15 26 28.2**	**-0.1**
TWGZ	**Tauwhareparae**	**5.39**	**209**	PN	**Pn**	**15 25 32.5**	**0.0**
TWGZ				SN	**Sn**	**15 26 35.9**	**+2.6**
CNGZ	**Carnagh Statio**	**5.57**	**206**	PN	**Pn**	**15 25 35.7**	**+0.7**
MWZ	**Matawai**	**5.71**	**211**	PN	**Pn**	**15 25 36.8**	**-0.1**
MWZ				*e*SN	**Sn**	**15 26 40.4**	**-0.8**
URZ	**Urewera**	**5.84**	**214**	Pn	**Pn**	**15 25 40.2**	**+1.6**
	1.0nm,0.3s,baz=260,slow=4.0,SNR=12						
URZ				Sn	**Sn**	**15 26 44.2**	**-0.1**
	1.2nm,0.3s,baz=89,slow=23,SNR=9.3						
URZ	**Urewera**	**5.84**	**214**	PN	**Pn**	**15 25 37.5**	**-1.1**
URZ				SN	**Sn**	**15 26 43.5**	**-0.8**
RIGZ	**Rimuhau**	**5.93**	**208**	*e*PN	**Pn**	**15 25 41.3**	**+1.3**
RIGZ				SN	**Sn**	**15 26 45.6**	**-1.1**
MUGZ	**Murupara**	**6.17**	**215**	SN	**Sn**	**15 26 51.9**	**-0.7**
OUZ	**Omahuta**	**6.59**	**253**	PN	**Pn**	**15 25 49.6**	**+0.7**
BKZ	**Black Stump Fm**	**6.86**	**213**	PN	**Pn**	**15 25 52.0**	**-0.7**
KAHZ	**Kahuranaki**	**7.22**	**208**	*e*PN	**Pn**	**15 25 55.8**	**-1.8**
PXZ	**Pawanui**	**7.43**	**207**	*e*PN	**Pn**	**15 26 00.4**	**0.0**
PXZ				SN	**Sn**	**15 27 21.1**	**-2.2**
ASAR	**Alice Springs**	**42.43**	**271**	P	**P**	**15 32 04.8**	**-0.4**
	0.2nm,0.3s,baz=107,slow=6.9,SNR=5.5						
WRA	**Warramunga Arr**	**43.70**	**276**	P	**P**	**15 32 14.7**	**-0.8**
	0.3nm,0.4s,baz=116,slow=7.9,SNR=13						
FINES	**FINESS Array B**	**147.80**	**338**	PKPbc	**PKPbc**	**15 43 54.3**	**+0.6**
	0.5nm,0.5s,baz=57,slow=5.1,SNR=5.3						

*IDC **20** 15:24:14.9±0.8, 37°.14N×143°.87E, h0km, mb3.8/15, mb1 4.0/21, mb1mx3.9/46, mbtmp3.9/21, ML3.7/5, Error ellipse: s-maj=18.9km s-min=14.9km az=110.0*
*ISCJB **20** 15:24:18.3±0.5, 37°.22N±0°.04×143°.67E±0°.05, h33km, mb3.8/17, Error ellipse: s-maj=5.6km s-min=5.1km az=157.2*
*JMA **20** 15:24:18.7±0.3, 37°.26N×143°.67E, h47km, M4.2*
*NEIC **20** 15:24:20.3±0.6, 37°.26N×143°.77E, h35km, mb4.3/2, Error ellipse: s-maj=12.9km s-min=9.4km az=126.0*
ISC 20 15:24:20.5±0.7, 37°.23N±0°.05×143°.67E±0°.08, h35km, n45, σ1s53/54, mb3.8/17, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**2.21**	**304**	P	**Pn**	**15 24 54.0**	**-0.6**
JIO				*e*S	**Sn**	**15 25 19.3**	**-1.4**
JFK	**Kawauchi**	**2.23**	**274**	*e*S	**Sn**	**15 25 20.6**	**-0.9**
ONAJ	**Iwakimizuishiy**	**2.30**	**268**	P	**Pn**	**15 24 55.5**	**-0.5**
ONAJ				*e*S	**Sn**	**15 25 22.1**	**-1.0**
JMM	**Marumori**	**2.37**	**286**	P	**Pn**	**15 24 56.5**	**-0.4**
JMM				S	**Sn**	**15 25 23.4**	**-1.4**
OFUJ	**Ofunato**	**2.43**	**320**	P	**Pn**	**15 24 56.3**	**-1.4**
OFUJ				*e*S	**Sn**	**15 25 24.0**	**-2.1**
JMK	**Ichinoseki**	**2.58**	**312**	P	**Pn**	**15 24 59.0**	**-0.8**
JFT	**Otama**	**2.67**	**277**	P	**Pn**	**15 25 01.6**	**+0.5**
JFT				*e*S	**Sn**	**15 25 32.9**	**+0.7**
CHOJ	**Chosi**	**2.73**	**237**	P	**Pn**	**15 25 01.2**	**-0.7**
JOM	**Ohasama**	**2.92**	**321**	P	**Pn**	**15 25 03.6**	**-0.8**
JOM				S	**Sn**	**15 25 36.4**	**-1.8**
BSO1	**Boso 1**	**3.38**	**221**	P	**Pn**	**15 25 09.3**	**-1.0**
JAG	**Ashikaga**	**3.48**	**258**	P	**Pn**	**15 25 11.9**	**-0.3**
JRY	**Ryogami san**	**4.03**	**254**	P	**Pn**	**15 25 19.0**	**-0.7**
JRY				*e*S	**Sn**	**15 26 03.3**	**-2.3**
JOD2	**Odawara 2**	**4.19**	**243**	P	**Pn**	**15 25 21.1**	**-0.9**
JOD2				*e*S	**Sn**	**15 26 07.0**	**-2.8**
MJAR	**Matsushiro Arr**	**4.43**	**263**	Pn	**Pn**	**15 25 25.3**	**0.0**
	10nm,0.3s,baz=327,slow=14,SNR=25						
MAJO	**Matsushiro**	**4.43**	**263**	*e*Pn	**Pn**	**15 25 26.7**	**+1.4**
ERM	**Erimo**	**4.79**	**355**	*e*Pn	**Pn**	**15 25 27.5**	**-2.6**
JHJ	**Hachijo jima 2**	**5.20**	**219**	Pn	**Pn**	**15 25 33.1**	**-2.6**
	23nm,0.3s,baz=339,slow=21,SNR=12						
JHJ				Sn	**Sn**	**15 26 30.8**	**-3.7**
	39nm,0.3s,baz=87,slow=22,SNR=6.0						
ASAJ	**Asahikawa**	**6.92**	**354**	Pn	**Pn**	**15 25 57.7**	**-1.8**
	1.7nm,0.3s,baz=210,slow=5.1,SNR=20						
ASAJ				Sn	**Sn**	**15 27 14.0**	**-3.0**
	0.7nm,0.3s,baz=52,slow=19,SNR=2.3						
ASAJ	**Asahikawa**	**6.92**	**354**	*e*Pn	**Pn**	**15 25 57.2**	**-2.2**
	6.0nm,0.7s						
ASAJ				Sn	**Sn**	**15 27 14.0**	**-3.0**
JNU	**Nakatsue**	**11.24**	**252**	Pn	**Pn**	**15 26 58.1**	**-0.7**
	0.2nm,0.3s,baz=51,slow=12,SNR=4.0						
USRK	**Ussuriysk Ar.**	**11.26**	**312**	Pn	**Pn**	**15 26 58.2**	**-0.7**
	0.1nm,0.3s,baz=125,slow=16,SNR=4.1						
KSRS	**Korea Array**	**12.54**	**276**	Pn	**Pn**	**15 27 18.6**	**+2.2**
	0.2nm,0.3s,baz=85,slow=14,SNR=8.2						
KSAR	**Wonju Array Be**	**12.57**	**276**	Pn	**Pn**	**15 27 18.6**	**+1.8**
KLR	**Kul'dur**	**14.78**	**328**	Pn	**Pn**	**15 27 44.8**	**-2.1**
	0.1nm,0.3s,baz=128,slow=17,SNR=3.1						
SEY	**Seymchan**	**26.28**	**9**	P	**P**	**15 29 53.0**	**+0.8**
	2.1nm,0.8s,baz=78,slow=24,SNR=7.1						
H11N2	**WAKE ISLAND Hy**	**26.73**	**124**	T	T	15 57 40.3	
	baz=316,slow=75,SNR=3.3						
H11N1	**WAKE ISLAND Hy**	**26.74**	**124**	T	T	15 57 35.1	
	baz=316,slow=75,SNR=10						
H11N3	**WAKE ISLAND Hy**	**26.75**	**124**	T	T	15 57 43.5	
	baz=316,slow=75,SNR=8.6						
SONM	**Songino Array**	**29.18**	**303**	P	**P**	**15

*NEIC **20** 15:29:45.4±0.6,36.60N×140.90E,h54km±6km,mb4.5/10, Error ellipse: s-maj=7.0km s-min=5.8km az=110.0*
NEIC Recorded [3 JMA] in Ibaraki.
*JMA **20** 15:29:45.2±0.1,36.64N×140.90E,h50km±1km,M4.2*
JMA Felt III J1.
*IDC **20** 15:29:47.3±1.5,36.58N×140.78E,h70km±14km,mb3.9/23, mb1 4.0/28,mb1mx4.0/44,mbtmp4.2/28,MS3.1/14, Ms1 3.1/14,ms1mx2.9/52,Error ellipse: s-maj=12.9km s-min=8.7km az=71.0*

ISC 20 15:29:44.9±0.8,36.65N±0.04×140.97E±0.05,h49km±6km, n99,σ1.937/106,mb4.3/35,MS3.2/8,3C-4D,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JHO	**Hitachi**	**0.32**	**264**	P	**Pn**	**15 29 54.1**	**0.0**
JHO				S	**Sn**	**15 30 00.1**	**-0.6**
ONAJ	**Iwakimizuishiy**	**0.47**	**344**	P	**Pn**	**15 29 55.8**	**0.0**
ONAJ				S	**Sn**	**15 30 03.3**	**-0.4**
JFK	**Kawauchi**	**0.72**	**354**	P	**Pn**	**15 29 58.7**	**-0.2**
JFK				S	**Sn**	**15 30 08.6**	**-0.5**
JFT	**Otama**	**1.01**	**330**	P	**Pn**	**15 30 03.3**	**+0.6**
JFT				S	**Sn**	**15 30 16.1**	**+0.3**
JMM	**Marumori**	**1.23**	**354**	P	**Pn**	**15 30 05.8**	**+0.2**
JMM				S	**Sn**	**15 30 21.3**	**+0.2**
JAG	**Ashikaga**	**1.24**	**260**	P	**Pn**	**15 30 05.4**	**-0.4**
JAG				S	**Sn**	**15 30 19.9**	**-1.5**
JFY	**Yanaizu**	**1.26**	**307**	P	**Pn**	**15 30 06.2**	**0.0**
JFY				S	**Sn**	**15 30 22.1**	**+0.1**
JKT	**Katashina**	**1.38**	**276**	P	**Pn**	**15 30 07.9**	**0.0**
JKT				S	**Sn**	**15 30 24.6**	**-0.5**
MJAR	**Matsushiro Arr** 74nm,0.3s,baz=89,slow=15,SNR=103	**2.22**	**268**	P	**Pn**	**15 30 19.6**	**+0.3**
MJAR				S	**Sn**	**15 30 44.9**	**-0.6**
	109nm,0.3s,baz=66,slow=9.7,SNR=9.7						
MJAR				LR	LR	15 31 00.4	
	comp=Z,60nm,20.3s,baz=100,slow=36						
MAJO	**Matsushiro**	**2.22**	**268**	*e*P	**Pn**	**15 30 20.2**	**+0.9**
MAJO	**Matsushiro**	**2.22**	**268**	*e*Pn	**Pn**	**15 30 20.2**	**+0.9**
MAT	**Matsushiro**	**2.22**	**268**	P	**Pn**	**15 30 20.1**	**+0.8**
MAT				S	**Sn**	**15 30 48.4**	**+2.9**
JHJ	**Hachijo jima 2** 35nm,0.3s,baz=319,slow=19,SNR=32	**3.65**	**196**	P	**Pn**	**15 30 39.4**	**+0.6**
JHJ				S	**Sn**	**15 31 20.3**	**-0.3**
	169nm,0.3s,baz=269,slow=23,SNR=11						
JHJ				LR	LR	15 32 13.8	
	comp=Z,173nm,21.8s,baz=68,slow=41						
JHJ2	**Mitsune**	**3.65**	**195**	*e*Pn	**Pn**	**15 30 39.6**	**+0.8**
ERM	**Erimo**	**5.62**	**17**	*e*P	**Pn**	**15 31 06.1**	**+0.2**
ERM	**Erimo**	**5.62**	**17**	*e*Pn	**Pn**	**15 31 06.1**	**+0.2**
ASAJ	**Asahikawa** 2.4nm,0.3s,baz=234,slow=7.7,SNR=22	**7.57**	**9**	P	**Pn**	**15 31 32.4**	**-0.1**
ASAJ				S	**Sn**	**15 32 57.4**	**+0.6**
	1.2nm,0.3s,baz=346,slow=25,SNR=2.7						
ASAJ	**Asahikawa** 3.7nm,0.6s	**7.57**	**9**	*e*Pn	**Pn**	**15 31 31.6**	**-0.8**
ASAJ				S	**Sn**	**15 32 57.4**	**+0.6**
YUK	**Yuzh-Kuril'sk**	**8.27**	**25**	*e*P	**Pn**	**15 31 43.6**	**+1.5**
YUK				*e*S	**Sn**	**15 33 09.7**	**-4.4**
YUK				pmax	pmax		
	comp=Z,61nm,0.3s						
YUK				pmax	pmax		
	comp=N,30nm,0.2s						
SHO	**Shikotan**	**8.49**	**30**	*e*P	**Pn**	**15 31 43.8**	**-1.4**
SHO				pmax	pmax		
	comp=Z,23nm,0.7s						
SHO				pmax	pmax		
	comp=N,14nm,0.8s						
JNU	**Nakatsue** comp=N,112nm,18.4s,baz=116,slow=38	**9.00**	**250**	LR	LR	15 35 27.2	
CBIJ	**Chichi jima**	**9.58**	**173**	*e*Pn	**Pn**	**15 31 57.6**	**-2.5**
KUR	**Kuril'sk**	**10.04**	**29**	P	**Pn**	**15 32 07.5**	**+1.2**
KUR				*e*S	**Sn**	**15 33 51.9**	**-5.5**
KUR				smax	smax		
	comp=N,23nm,0.5s						
KUR				smax	smax		
	comp=E,8.0nm,0.5s						
USRK	**Ussuriysk Ar.** comp=E,0.9nm,0.3s,baz=138,slow=12,SNR=26	**10.18**	**321**	P	**Pn**	**15 32 11.3**	**+3.0**
USRK				LR	LR	15 35 52.3	
	comp=E,146nm,20.1s,baz=138,slow=36						
YSS	**Yuzh-Sakhalins**	**10.39**	**7**	*e*P	**Pn**	**15 32 10.9**	**-0.2**
YSS				pmax	pmax		
	comp=Z,10.0nm,1.1s						
KSRS	**Korea Array** comp=Z,0.3nm,0.3s,baz=86,slow=14,SNR=15	**10.46**	**278**	P	**Pn**	**15 32 14.2**	**+2.1**
KSRS				LR	LR	15 36 05.4	
	comp=Z,116nm,20.8s,baz=88,slow=36						
KSAR	**Wonju Array Be**	**10.49**	**278**	P	**Pn**	**15 32 14.2**	**+1.7**
KSAR	**Wonju Array Be**	**10.49**	**278**	P	**Pn**	**15 32 14.2**	**+1.7**
KLR	**Kul'dur** comp=Z,0.1nm,0.3s,baz=132,slow=12,SNR=12	**14.26**	**335**	P	**Pn**	**15 33 05.5**	**+1.6**
KLR				LR	LR	15 38 21.6	
	comp=Z,86nm,19.4s,baz=164,slow=36						
PETK	**Petropavlovsk-** comp=Z,3.5nm,0.9s,baz=252,slow=8.7,SNR=4.9	**20.20**	**30**	P	Pn	15 34 18.2	+0.5
PETK				LR	LR	15 41 37.9	
	comp=Z,9.8nm,20.6s,baz=176,slow=35						
YAK	**Yakutsk** comp=Z,8.7nm,0.5s,baz=240,slow=2.9,SNR=3.5	**26.37**	**348**	P	**P**	**15 35 15.8**	**-0.3**
YAK	**Yakutsk**	**26.37**	**348**	*e*P	**P**	**15 35 15.7**	**-0.5**
YAK				pmax	pmax		
	comp=Z,14nm,1.1s						
ENH	**Enshi** comp=Z,5.1nm,0.5s	**26.94**	**266**	*e*P	**P**	**15 35 21.0**	**-0.7**
SEY	**Seymchan** comp=Z,5.4nm,0.8s,baz=202,slow=6.9,SNR=17	**27.24**	**11**	P	**P**	**15 35 25.2**	**+1.2**
SEY	**Seymchan**	**27.24**	**11**	⇓*e*P	**P**	**15 35 25.7**	**+1.7**
ULN	**Ulaanbaatar**	**27.28**	**305**	*e*P	**P**	**15 35 25.5**	**+0.8**
ULN				pmax	pmax		
	comp=Z,9.0nm,0.8s						
ULN	**Ulaanbaatar** comp=Z,8.7nm,0.8s	**27.28**	**305**	*e*P	**P**	**15 35 25.5**	**+0.8**
SONM	**Songino Array** comp=Z,8.4nm,0.6s,baz=112,slow=8.8,SNR=47	**27.71**	**305**	P	**P**	**15 35 28.3**	**-0.2**
SONM				LR	LR	15 45 53.7	
	comp=Z,43nm,20.9s,baz=122,slow=35						
H11N2	**WAKE ISLAND Hy** baz=313,slow=75,SNR=142	**28.26**	**120**	T	T	16 05 31.3	
H11N1	**WAKE ISLAND Hy** baz=313,slow=75,SNR=184	**28.27**	**120**	T	T	16 05 33.1	
H11N3	**WAKE ISLAND Hy** baz=313,slow=75,SNR=142	**28.28**	**120**	T	T	16 05 34.0	
H11S1	**WAKE ISLAND Hy** baz=314,slow=76,SNR=633	**28.96**	**122**	T	T	16 06 13.4	
H11S3	**WAKE ISLAND Hy** baz=314,slow=76,SNR=287	**28.96**	**122**	T	T	16 06 18.1	
H11S2	**WAKE ISLAND Hy** baz=314,slow=76,SNR=507	**28.97**	**122**	T	T	16 06 15.1	
ZAK	**Zakamensk**	**30.23**	**309**	*e*P	P	15 35 43.0	-7.8
ZAK				pmax	pmax		
	comp=Z,1.0nm,1.0s						
ZAK				pmax	pmax		
	comp=Z,2.0nm,1.7s						
BILL	**Bilibino**	**34.50**	**16**	⇑*e*P	**P**	**15 36 29.0**	**+1.1**
BILL				pmax	pmax		
	comp=Z,1.0nm,1.2s						
TIXI	**Tiksi**	**35.63**	**353**	⇓*i*P	**P**	**15 36 37.2**	**-0.3**
TIXI				pmax	pmax		
	comp=Z,2.0nm,0.7s						
CHTO	**Chiang Mai**	**40.85**	**256**	*e*P	**P**	**15 37 20.8**	**-1.2**
CHTO	**Chiang Mai**	**40.85**	**256**	*e*P	**P**	**15 37 20.8**	**-1.2**
CMAR	**Chiang Mai Arr** comp=Z,0.3nm,0.3s,baz=57,slow=6.3,SNR=2.8	**41.05**	**255**	P	**P**	**15 37 22.7**	**-1.0**
CMAR				LR	LR	15 56 31.0	
	comp=Z,23nm,20.4s,baz=155,slow=39						
ZALV	**Zalesovo Beam** comp=Z,5.2nm,0.6s,baz=97,slow=7.1,SNR=27	**41.91**	**313**	P	**P**	**15 37 29.9**	**-0.4**
ZALV				LR	LR	15 55 39.9	
	comp=Z,29nm,19.3s,baz=70,slow=37						
ZALV	**Zalesovo Beam**	**41.91**	**313**	*i*P	**P**	**15 37 30.2**	**-0.1**
ZALV				pmax	pmax		
	comp=Z,5.0nm,0.6s						
MKAR	**Makanchi Array** comp=Z,1.6nm,0.6s,baz=88,slow=9.9,SNR=18	**44.02**	**302**	P	**P**	**15 37 47.1**	**-0.5**
MKAR				LR	LR	15 56 25.1	
	comp=Z,36nm,19.5s,baz=56,slow=36						
MKAR	**Makanchi Array**	**44.02**	**302**	*e*P	**P**	**15 37 48.2**	**+0.7**
MKAR				pmax	pmax		
	comp=Z,2.0nm,0.6s						
KURK	**Kurchatov**	**45.89**	**308**	*e*P	**P**	**15 38 01.4**	**-0.9**
KURK				pmax	pmax		
	comp=Z,16nm,0.8s						
KURK	**Kurchatov** comp=Z,16nm,0.8s	**45.89**	**308**	*e*P	**P**	**15 38 01.4**	**-0.9**
KDAK	**Kodiak Island**	**47.63**	**42**	*i*P	**P**	**15 38 18.1**	**+2.4**
TKM2	**Tokmak 2**	**49.50**	**299**	*e*P	**P**	**15 38 30.8**	**+0.2**
TKM2				pmax	pmax		
	comp=Z,7.0nm,0.6s						
TKM2	**Tokmak 2** comp=Z,6.5nm,0.6s	**49.50**	**299**	*e*P	**P**	**15 38 30.8**	**+0.2**
ILAR	**Eielson Array** comp=Z,1.9nm,0.8s,baz=269,slow=6.3,SNR=24	**50.01**	**32**	P	**P**	**15 38 35.1**	**+1.1**
AAK	**Ala-Archa**	**50.36**	**299**	⇓*e*P	**P**	**15 38 38.5**	**+1.4**
AAK				pmax	pmax		
	comp=Z,7.0nm,0.6s						
AAK	**Ala-Archa** comp=Z,2.5nm,0.6s	**50.36**	**299**	P	**P**	**15 38 36.6**	**-0.5**
BVAR	**Borovoye Array** comp=Z,0.8nm,0.5s,baz=86,slow=6.0,SNR=5.4	**50.57**	**312**	P	**P**	**15 38 38.1**	**-0.2**
BRVK	**Borovoye**	**50.62**	**313**	*e*P	**P**	**15 38 38.7**	**0.0**
BRVK	**Borovoye**	**50.62**	**313**	*e*P	**P**	**15 38 38.7**	**0.0**
EKS2	**Erkin-Say**	**50.86**	**299**	*e*P	**P**	**15 38 41.0**	**+0.2**
EKS2				pmax	pmax		
	comp=Z,3.0nm,0.7s						
EKS2	**Erkin-Say** comp=Z,3.0nm,0.7s	**50.86**	**299**	*e*P	**P**	**15 38 41.0**	**+0.2**
EGAK	**Eagle**	**52.46**	**32**	*e*P	**P**	**15 38 53.4**	**+1.1**
ARU	**Arti**	**56.41**	**319**	*c i*P	**P**	**15 39 20.5**	**-0.6**
ARU						15 41 23.3	
ARU				S	**S**	**15 47 06.7**	**-1.4**
ARU				SS	**SS**	**15 50 48.5**	**-6.6**
ARU				pmax	pmax		
	comp=Z,8.0nm,0.8s						
ARU	**Arti** comp=Z,5.2nm,0.6s	**56.41**	**319**	*e*P	**P**	**15 39 19.8**	**-1.3**
WRAB	**Tennant Creek**	**56.62**	**187**	*e*P	**P**	**15 39 22.6**	**-0.3**
WRAB	**Tennant Creek**	**56.62**	**187**	*e*P	**P**	**15 39 22.6**	**-0.3**
WRA	**Warramunga Arr** comp=Z,4.9nm,0.5s,baz=4.1,slow=7.3,SNR=132	**56.63**	**187**	P	**P**	**15 39 22.7**	**-0.3**
ABKAR	**Akbulak array** comp=Z,1.6nm,0.5s	**57.91**	**310**	*e*P	**P**	**15 39 30.8**	**-1.0**
AKTO	**Aktyubinsk** comp=Z,0.6nm,0.5s,baz=82,slow=18,SNR=2.2	**58.67**	**312**	P	**P**	**15 39 36.7**	**-0.3**
ASAR	**Alice Springs** comp=Z,1.8nm,0.8s,baz=15,slow=7.2,SNR=20	**60.36**	**187**	P	**P**	**15 39 48.9**	**0.0**
ARCES	**ARCESS Array B** comp=Z,3.1nm,0.9s,baz=51,slow=7.1,SNR=2.8	**64.23**	**339**	P	**P**	**15 40 14.5**	**+0.2**
YKA	**Yellowknife Ar** comp=Z,0.5nm,0.6s,baz=304,slow=6.7,SNR=10	**64.32**	**30**	P	**P**	**15 40 15.8**	**+0.8**
AFI	**Afiamalu** comp=Z,102nm,19.9s,baz=138,slow=30	**67.16**	**129**	LR	LR	16 04 01.2	
STKA	**Stephens Creek** comp=Z,1.7nm,0.4s,baz=329,slow=8.0,SNR=5.8	**68.17**	**179**	P	**P**	**15 40 40.0**	**+0.2**
STKA	**Stephens Creek**	**68.17**	**179**	P	**P**	**15 40 40.0**	**+0.2**
FINES	**FINESS Array B** comp=Z,3.2nm,0.9s,baz=90,slow=3.8,SNR=8.3	**68.99**	**332**	P	**P**	**15 40 44.7**	**0.0**
FINES				LR	LR	16 11 52.2	
	comp=Z,29nm,19.5s,baz=2.5,slow=37						
FINES	**FINESS Array B**	**68.99**	**332**	*i*P	**P**	**15 40 44.5**	**-0.2**
FINES				pmax	pmax		
	comp=Z,3.0nm,0.8s						
KBZ	**Khabaz** comp=Z,2.7nm,1.1s,baz=69,slow=3.8,SNR=3.7	**70.88**	**311**	P	**P**	**15 40 56.0**	**-0.6**
AKASG	**Malin Array Be** comp=Z,0.8nm,0.4s,baz=47,slow=6.0,SNR=8.0	**74.38**	**322**	P	**P**	**15 41 16.2**	**-1.1**
AKASG	**Malin Array Be**	**74.38**	**322**	*i*P	**P**	**15 41 16.8**	**-0.5**
AKASG				pmax	pmax		
	comp=Z,1.0nm,0.4s						
NB2	**NORSAR Subarra** comp=Z,1.1nm,0.8s,baz=40,slow=6.2	**74.40**	**337**	P	**P**	**15 41 17.0**	**-0.3**
NOA	**NORSAR Array B** comp=Z,1.5nm,0.7s,baz=39,slow=5.8,SNR=8.4	**74.40**	**337**	P	**P**	**15 41 17.4**	**+0.1**
NOA				LR	LR	16 17 12.8	
	comp=Z,20nm,18.9s,baz=280,slow=38						
DLMT	**Dillon** comp=Z,3.3nm,0.7s	**74.87**	**44**	*e*P	**P**	**15 41 22.0**	**+1.5**
BOZ	**Bozeman (W)**	**75.24**	**44**	*e*P	**P**	**15 41 22.3**	**-0.3**
BOZ				pmax	pmax		
	comp=Z,3.0nm,0.8s						
BOZ	**Bozeman (W)** comp=Z,2.8nm,0.8s	**75.24**	**44**	*e*P	**P**	**15 41 22.3**	**-0.3**
NVAR	**Mina Array Bea** comp=Z,1.7nm,0.6s,baz=291,slow=5.1,SNR=14	**75.51**	**53**	P	**P**	**15 41 25.9**	**+1.6**
PDAR	**Pinedale Array** comp=Z,0.9nm,0.6s,baz=254,slow=2.3,SNR=12	**78.19**	**45**	P	**P**	**15 41 40.0**	**+0.6**
CLL	**Collm**	**81.25**	**330**	*e*P	**P**	**15 41 56.0**	**+0.5**
CLL	**Collm**	**81.25**	**330**	*e*P	**P**	**15 41 56.0**	**+0.5**
GERES	**GERESS Array B** comp=Z,0.5nm,0.6s,baz=23,slow=4.4,SNR=5.4	**82.85**	**328**	P	**P**	**15 42 03.8**	**-0.2**
ANMO	**Albuquerque**	**85.11**	**50**	⇓*e*P	**P**	**15 42 18.5**	**+2.5**
ANMO				pmax	pmax		
	comp=Z,5.0nm,2.5s						
TXAR	**Lajitas Array** comp=Z,1.0nm,0.7s,baz=289,slow=2.8,SNR=13	**90.64**	**52**	P	**P**	**15 42 43.3**	**+0.9**
LPAZ	**La Paz** comp=Z,1.3nm,0.6s,baz=333,slow=4.6,SNR=6.0	**147.20**	**60**	PKPbc	**PKPbc**	**15 49 24.6**	**+0.7**

*ISCJB **20** 15:35:31.8±0.4,41.28S±0.06×89.65W±0.10,h10km, mb4.6/30,MS4.1/10,Error ellipse: s-maj=11.0km s-min=8.5km az=149.3*
*IDC **20** 15:35:31.6±0.6,41.23S×89.81W,h0km,mb4.5/6, mb1 4.8/8,mb1mx4.5/22,mbtmp4.5/8,ML3.8/1,MS4.0/11, Ms1 4.0/11,ms1mx3.8/22,Error ellipse: s-maj=23.5km s-min=22.6km az=102.0*
*BJI **20** 15:35:32.0,41.30S×89.60W,h10km,mB4.8/1,Ms4.7/2, Ms7 4.4/2*
*NEIC **20** 15:35:33.1±0.3,41.28S×89.63W,h10km,mb4.7/27,Error ellipse: s-maj=12.3km s-min=9.8km az=66.0*
*GCMT **20** 15:35:33.1±0.2,41.42S×89.63W,h22km±1km,MW5.0/91, Moment Tensor Solution. s54,c65; s91,c121; Duration: 0 Moment tensor: Scale 10^16 Nm; Mrr-0.73±.15; Mθθ 1.33±.14; Mϕϕ-0.59±.13; Mrθ-0.34±.21; Mϕθ-4.38±.11; Mϕr0.50±.21; Best double couple: Mo4.51900×10^16 NP1:ϕs354.00000°,δ88.00000°,λ6.00000°. NP2: ϕs264.00000°,δ84.00000°,λ178.00000°. Principal axes: T 4.9100, Plg6.0000°, Azm219.0000°; N -0.7820, Plg83.0000°, Azm11.0000°; P -4.1270, Plg3.0000°, Azm129.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

ISC 20 15:35:32.9±0.5,41.31S±0.09×89.74W±0.08,h10km,n81, σ1.226/72,mb4.7/30,MS4.1/10,1C,Southeast of Easter Island

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PLCA	**Paso Flores** 0.1nm,0.3s,baz=278,slow=14,SNR=7.4	**14.50**	**94**	Pn	**Pn**	**15 39 00.9**	**+2.8**
PLCA				LR	LR	15 42 23.3	
	comp=Z,362nm,18.3s,baz=286,slow=28						
PLCA	**Paso Flores** 33nm,1.1s	**14.50**	**94**	*e*Pn	**P**	**15 39 03.0**	**-1.9**
ROC1	**El Roble** 13nm,0.3s,baz=309,slow=11,SNR=3.3	**17.06**	**67**	*e*Pn	**P**	**15 39 34.8**	**+1.2**
USHA	**Ushuaia**	**19.53**	**141**	P	**Pn**	**15 40 02.6**	**+1.1**
LCO	**Las Campanas** 63nm,1.6s	**19.77**	**58**	*e*P	**P**	**15 40 00.9**	**-2.4**
TRQA	**Tornquist** 41nm,1.0s	**21.57**	**90**	*e*P	**P**	**15 40 23.3**	**+0.7**
PB04	**IPOC Station P** 45nm,1.0s	**25.09**	**47**	*e*P	**P**	**15 40 57.7**	**-0.2**
CPUP	**Villa Florida** 9.2nm,1.0s,baz=253,slow=9.2,SNR=12	**30.58**	**71**	P	**P**	**15 41 45.8**	**-1.0**
CPUP	**Villa Florida**	**30.58**	**71**	*e*P	**P**	**15 41 45.6**	**-1.2**
LPAZ	**La Paz** 12nm,1.1s,baz=207,slow=5.5,SNR=32	**31.13**	**43**	P	**P**	**15 41 53.2**	**+0.8**
LPAZ				LR	LR	15 51 41.4	
	comp=Z,561nm,18.5s,baz=206,slow=31						
LPAZ	**La Paz** 18nm,0.9s	**31.13**	**43**	*e*P	**P**	**15 41 52.9**	**+0.5**
SAML	**Samuel** 10nm,0.9s	**39.87**	**44**	*e*P	**P**	**15 43 05.7**	**-1.2**
RKT	**Rikitea** 648nm,30.2s	**41.83**	**281**	*e*LQ	LQ	15 53 11.2	
RKT				*e*LR	LR	15 55 04.0	
	416nm,27.8s						
OTAV	**Otavalo** 20nm,1.5s	**42.60**	**17**	*e*P	**P**	**15 43 29.8**	**0.0**
ROSC	**El Rosal** comp=Z,235nm,21.1s,baz=152,slow=33	**48.04**	**21**	LR	LR	16 01 40.8	
VNA3	**Neumayer Olymp**	**48.37**	**155**	P	**P**	**15 44 15.9**	**+1.5**
PTGA	**Pitinga** 7.4nm,0.7s	**48.53**	**41**	*e*P	**P**	**15 44 14.8**	**-1.4**
VNA1	**Neumayer--Stat**	**48.91**	**154**	P	**P**	**15 44 18.5**	**0.0**
VNA2	**Neumayer--Watz** baz=272,slow=7.5	**49.15**	**154**	P	**P**	**15 44 22.0**	**+1.6**
SNAA	**Sanae**	**50.45**	**156**	P	**P**	**15 44 28.4**	**-2.0**
SNAA	**Sanae** 640nm,1.1s	**50.45**	**156**	*e*P	**P**	**15 44 29.4**	**-1.0**
SBA	**Scott Base** 14nm,1.0s	**52.74**	**195**	*e*P	**P**	**15 44 48.4**	**+1.2**
VNDA	**Vanda** 5.2nm,0.9s,baz=107,slow=6.3,SNR=7.6	**53.84**	**195**	P	**P**	**15 44 56.5**	**+1.2**
VNDA				LR	LR	16 02 44.6	
	comp=Z,248nm,22.0s,baz=110,slow=30						
VNDA	**Vanda** 8.4nm,1.1s	**53.84**	**195**	*e*P	**P**	**15 44 56.5**	**+1.2**
TAOE	**Nuku Hiva Isla** 111nm,24.4s	**54.90**	**291**	*e*S	**S**	**15 52 44.2**	**-1.5**
TAOE				*e*LR	LR	16 01 00.4	
	295nm,26.0s						
PPT2	**Papeete2** 66nm,26.2s	**56.05**	**276**	*e*S	**S**	**15 53 01.8**	**+0.9**
PPT2				*e*LR	LR	16 01 34.1	
	325nm,24.5s						
PPT	**Papeete** comp=Z,144nm,21.6s,baz=158,slow=29	**56.06**	**276**	LR	LR	16 02 27.3	
SYO	**Syowa Base**	**63.81**	**162**	⇑*e*P	**P**	**15 46 02.0**	**-2.7**
TXAR	**Lajitas Array** 3.1nm,0.9s,baz=163,slow=9.1,SNR=18	**71.46**	**347**	P	**P**	**15 46 53.8**	**+0.3**
TX31	**Lajitas Ar. Si**	**71.46**	**347**	*e*P	**P**	**15 46 53.7**	**+0.2**
TUC	**Tucson** 3.9nm,1.0s	**75.78**	**342**	*e*P	**P**	**15 47 19.4**	**+0.6**
MSTX	**Muleshoe** 10nm,1.0s	**75.86**	**349**	*e*P	**P**	**15 47 19.2**	**-0.1**
CPCT	**Cooper Cave** 19nm,1.8s	**76.53**	**4**	*e*P	**P**	**15 47 25.3**	**+2.4**
TKL	**Tuckaleechee C** comp=Z,134nm,21.2s,baz=186,slow=31	**76.79**	**5**	LR	LR	16 15 41.5	
ANMO	**Albuquerque** comp=Z,67nm,19.9s,baz=168,slow=32	**77.42**	**346**	LR	LR	16 16 48.4	
ANMO	**Albuquerque** 3.4nm,0.9s	**77.42**	**346**	*e*P	**P**	**15 47 28.5**	**+0.3**
S22A	**4UR Ranch, Cre** 5.0nm,1.0s	**80.21**	**346**	*e*P	**P**	**15 47 44.4**	**+0.8**
TJR	**Tejon Ranch**	**80.50**	**336**	*e*P	**P**	**15 47 44.0**	**-0.8**
KNB	**Kanab** 10nm,1.5s	**80.76**	**341**	*e*P	**P**	**15 47 47.7**	**+1.2**
SMCO	**Snowmass** 6.3nm,1.0s	**81.63**	**347**	*e*P	**P**	**15 47 51.9**	**+0.6**
PSUT	**Pine Spring** 3.1nm,1.0s	**82.45**	**341**	*e*P	**P**	**15 47 56.4**	**+1.0**
TMUT	**Trail Mountain** 6.9nm,0.9s	**82.58**	**343**	*e*P	**P**	**15 47 56.9**	**+0.8**
P18A	**Preston Nutter** 4.8nm,0.9s	**82.69**	**344**	*e*P	**P**	**15 47 55.4**	**-1.3**
R11A	**Troy Canyon, C** 4.1nm,1.4s	**82.72**	**340**	*e*P	**P**	**15 47 57.5**	**+0.8**
N23A	**Red Feather La** 10nm,1.3s	**83.13**	**348**	*e*P	**P**	**15 47 59.3**	**+0.4**
NLU	**North Lily Min** 6.0nm,1.0s	**83.39**	**343**	*e*P	**P**	**15 48 01.1**	**+0.9**
NV01	**Mina Array Sit**	**83.53**	**338**	*e*P	**P**	**15 48 01.5**	**+0.5**
NVAR	**Mina Array Bea** 1.8nm,0.9s,baz=191,slow=6.0,SNR=3.7	**83.53**	**338**	P	**P**	**15 48 01.6**	**+0.6**
DUG	**Dugway, Tooele** 5.7nm,0.9s	**83.79**	**342**	*e*P	**P**	**15 48 02.8**	**+0.6**
ECSD	**EROS Data Cent** 9.8nm,0.9s	**84.88**	**355**	*e*P	**P**	**15 48 07.0**	**-0.4**
BW06	**Boulder Array**	**85.58**	**345**	*e*P	**P**	**15 48 11.3**	**0.0**
PD31	**Pinedale Array**	**85.58**	**345**	*e*P	**P**	**15 48 10.9**	**-0.4**
PDAR	**Pinedale Array** 2.6nm,0.9s,baz=160,slow=4.7,SNR=15	**85.58**	**345**	P	**P**	**15 48 12.0**	**+0.7**
FXWY	**Fox Creek** 2.2nm,0.9s	**86.71**	**345**	*e*P	**P**	**15 48 16.1**	**-0.6**
FLWY	**Flagg Ranch** 5.5nm,0.8s	**87.07**	**345**	*e*P	**P**	**15 48 19.2**	**+0.7**
YBH	**Yreka Blue Hor** comp=Z,52nm,18.5s,baz=164,slow=31	**87.88**	**336**	LR	LR	16 20 18.9	
ULM	**Lac du Bonnet** comp=Z,75nm,21.7s,baz=182,slow=32	**91.33**	**356**	LR	LR	16 24 44.3	
E03A	**Lebam**	**92.51**	**327**	*e*PP	PP	15 52 27.9	+2.3
STKA	**Stephens Creek** comp=Z,89nm,20.3s,baz=207,slow=30	**93.15**	**222**	LR	LR	16 21 53.9	
SCHQ	**Schefferville** comp=Z,48nm,19.5s,baz=59,slow=35	**97.75**	**13**	LR	LR	16 31 54.0	
ILAR	**Eielson Array** 0.1nm,0.5s,baz=148,slow=27,SNR=2.6	**114.77**	**337**	PKiKP	PKPdf	15 54 12.1	-0.4
GEA0	**GERESS Array S**	**127.54**	**54**	*e*PKPdf	**PKPdf**	**15 54 36.7**	**-1.0**
GERES	**GERESS Array B** 0.6nm,0.6s,baz=207,slow=1.5,SNR=5.7	**127.54**	**54**	PKP	**PKPdf**	**15 54 37.2**	**-0.5**
NOA	**NORSAR Array B** 1.7nm,1.1s,baz=258,slow=1.7,SNR=3.1	**130.10**	**39**	PKP	**PKPdf**	**15 54 42.9**	**+0.9**
TIXI	**Tiksi**	**144.12**	**340**	*e*PKPdf	**PKPab**	**15 55 05.5**	**+0.4**
KBZ	**Khabaz** 3.9nm,1.0s,baz=78,slow=1.9,SNR=5.5	**145.37**	**70**	PKPbc	**PKPbc**	**15 55 10.1**	**-0.3**
YAK	**Yakutsk** 24nm,0.7s,baz=105,slow=0.5,SNR=14	**148.68**	**325**	PKPbc	**PKPbc**	**15 55 18.1**	**-1.1**
USRK	**Ussuriysk Ar.** 1.3nm,0.7s,baz=119,slow=5.1,SNR=4.2	**149.46**	**290**	PKPbc	**PKPdf**	**15 55 20.0**	**+2.7**
KSRS	**Korea Array** 1.6nm,0.7s,baz=116,slow=2.8,SNR=7.3	**150.79**	**275**	PKPbc	**PKPbc**	**15 55 25.9**	**+0.7**
KSAR	**Wonju Array Be**	**150.82**	**275**	PKPbc	**PKPbc**	**15 55 25.9**	**+0.7**
CN2	**Changchun**	**154.08**	**287**	*e*PKPbc	**PKPdf**	**15 55 21.0**	**-3.3**
CM01	**Chiang Mai Arr**	**156.00**	**201**	*e*PKPdf	**PKPdf**	**15 55 25.6**	**-2.1**
CMAR	**Chiang Mai Arr** 0.2nm,0.5s,baz=222,slow=2.3,SNR=4.1	**156.04**	**201**	PKP	**PKPdf**	**15 55 25.9**	**-1.8**
ABKAR	**Akbulak array**	**157.35**	**59**	*e*PKPdf	**PKPdf**	**15 55 28.8**	**+0.3**
ZRNK	**Zerenda**	**161.51**	**44**	*e*PKPdf	**PKPdf**	**15 55 35.8**	**+2.6**
HHC	**Hu-ho-h

LTZ				AML	AML	15 50 07.1
RPZ	**Rata Peaks**	**1.19**	**263**	P*	Pg	15 49 59.9 -1.4
INZ	**Inchbonnie**	**1.24**	**313**	P*	Pg	15 50 01.7 -0.6
KHZ	**Kahutara**	**1.32**	**29**	P*	Pn	15 50 01.3 -2.1
WVZ	**Waitaha Valley**	**1.50**	**289**	*e*Pn	Pn	15 50 04.6 -1.3
DSZ	**Denniston Nort**	**1.94**	**340**	AML	AML	15 50 38.9
LBZ	**Lake Benmore**	**1.97**	**245**	AML	AML	15 50 06.3
ODZ	**Otahua Downs**	**2.07**	**224**	PN	Pn	15 50 12.1 -1.7
FOZ	**Fox Glacier**	**2.08**	**270**	AML	AML	15 50 40.8
EAZ	**Earnscleugh**	**2.93**	**234**	*e*Pn	Pn	15 50 24.0 -1.6
TUZ	**Tuapeka**	**3.22**	**221**	PN	Pn	15 50 27.9 -1.7

IDC ***20*** *15:55:29.1±1.1, 6°.50S×148°.13E, h0km, mb3.9/6, mb1 4.1/8, mb1mx3.8/38, mbtmp3.9/8, ML3.7/1, MS3.6/2, Ms1 3.6/2, ms1mx2.8/38, Error ellipse: s-maj=40.8km s-min=20.6km az=106.0*
NEIC ***20*** *15:55:33.9±7.9, 6°.50S×147°.95E, h28km±53km, mb4.1/2, Error ellipse: s-maj=27.2km s-min=25.1km az=58.0*
ISCJB ***20*** *15:55:34.5±1.1, 6°.6S±0°.1×147°.9E±0°.2, h51km, mb3.8/6, MS3.5/2, Error ellipse: s-maj=30.0km s-min=14.3km az=19.6*

ISC 20 15:55:36.4±1.0, 6°.5S±0°.1×147°.9E±0°.2, h51km, n15, σ1ș20/15, mb3.8/6, Eastern New Guinea region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
PMG	**Port Moresby**	**2.99**	**194**	Pn	**Pn**	**15 56 20.5**	**-0.9**
	6.1nm,0.3s,baz=354,slow=7.5,SNR=38						
PMG				Sn	Sn	15 57 00.9	+5.0
	10nm,0.3s,baz=351,slow=18,SNR=7.6						
PMG	**Port Moresby**	**2.99**	**194**	*e*Pn	**Pn**	**15 56 20.4**	**-0.9**
PMG				*e*S	**Sn**	**15 56 58.1**	**+2.2**
COEN	**Coen**	**8.76**	**212**	Pn	**Pn**	**15 57 39.0**	**-1.5**
WRAB	**Tennant Creek**	**18.76**	**223**	*e*P	**P**	**15 59 51.7**	**+0.3**
	2.4nm,0.4s						
WRA	**Warramunga Arr**	**18.77**	**223**	P	**P**	**15 59 50.1**	**-1.5**
	0.3nm,0.3s,baz=52,slow=11,SNR=19						
ASAR	**Alice Springs**	**21.75**	**217**	P	**P**	**16 00 23.4**	**-0.4**
	1.5nm,0.4s,baz=52,slow=8.8,SNR=29						
ASAR				LR	LR	16 08 49.9	
	comp=Z,132nm,21.3s,baz=142,slow=37						
FITZ	**Fitzroy Crossi**	**24.59**	**240**	P	**P**	**16 00 52.4**	**+0.4**
	7.2nm,0.5s,baz=53,slow=7.8,SNR=48						
FITZ	**Fitzroy Crossi**	**24.59**	**240**	*e*P	**P**	**16 00 51.8**	**-0.1**
	7.9nm,0.6s						
STKA	**Stephens Creek**	**25.94**	**192**	P	**P**	**16 01 03.2**	**-0.7**
	2.7nm,0.8s,baz=357,slow=7.1,SNR=6.0						
JCJ	**Chichijima**	**33.84**	**351**	LR	LR	16 12 35.7	
	comp=Z,143nm,20.1s,baz=38,slow=30						
VNDA	**Vanda**	**71.37**	**177**	P	**P**	**16 06 50.4**	**-0.1**
	0.8nm,0.6s,baz=341,slow=6.1,SNR=5.1						
MKAR	**Makanchi Array**	**78.45**	**320**	P	**P**	**16 07 33.0**	**+1.1**
	0.3nm,0.6s,baz=117,slow=5.6,SNR=4.0						
ILAR	**Eielson Array**	**85.58**	**23**	P	**P**	**16 08 07.7**	**-1.2**
	0.5nm,0.9s,baz=260,slow=5.4,SNR=4.0						
SAML	**Samuel**	**145.42**	**116**	*e*PKP	**PKPab**	**16 15 11.1**	**+1.1**
TORD	**Torodi Ar. Bea**	**146.09**	**284**	PKPbc	**PKPab**	**16 15 13.8**	**+1.3**
	0.8nm,0.4s,baz=57,slow=3.2,SNR=9.2						

IDC 20 16:01:02.8±2.4, 6°.70S×129°.61E, h0km, mb3.4/1, mb1 3.5/4, mb1mx3.3/34, mbtmp3.3/4, ML3.3/3, Error ellipse: s-maj=97.7km s-min=29.1km az=76.0, Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
FITZ	**Fitzroy Crossi**	**11.98**	**198**	Pn	Pn	16 03 56.3	+1.3
	0.3nm,0.3s,baz=20,slow=9.6,SNR=12						
FITZ				Sn	Sn	16 05 59.9	-10
	0.3nm,0.3s,baz=66,slow=12,SNR=4.3						
WRA	**Warramunga Arr**	**13.95**	**161**	Pn	Pn	16 04 21.4	-0.5
	0.1nm,0.3s,baz=331,slow=14,SNR=9.4						
WRA				Sn	Sn	16 06 43.9	-14
	0.4nm,0.3s,baz=327,slow=23,SNR=10						
ASAR	**Alice Springs**	**17.37**	**167**	P	Pn	16 05 06.0	-0.9
	0.1nm,0.3s,baz=343,slow=12,SNR=4.9						
ASAR				S	Sn	16 08 06.3	-15
	0.1nm,0.3s,baz=348,slow=22,SNR=6.2						
MKAR	**Makanchi Array**	**67.76**	**327**	P	P	16 12 02.5	0.0
	0.2nm,0.5s,baz=114,slow=7.5,SNR=4.3						

MEX 20 16:01:19.5±0.4, 16°.01N×94°.58W, h54km±18km, MD3.9, Oaxaca

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
PCIG		**1.34**	**103**	*e*P	Pn	16 01 40.4	-1.5
PCIG				*e*S	Sn	16 01 56.6	-2.1
HUIG	**Huatulco**	**1.49**	**261**	*e*P	Pn	16 01 42.2	-1.8
HUIG				*i* S	Sn	16 02 00.5	-1.9
TGIG		**1.59**	**61**	*e*P	Pn	16 01 43.8	-1.6
TGIG				*i* S	Sn	16 02 03.6	-1.4
VHO	**Vista Hermosa**	**2.32**	**297**	*e*P	Pn	16 01 54.7	-0.8
VHO				*e*S	Sn	16 02 22.4	-0.6

IDC ***20*** *16:09:01.1±2.3, 4°.81S×102°.41E, h0km, mb3.9/10, mb1 4.0/10, mb1mx3.8/40, mbtmp3.9/10, Error ellipse: s-maj=83.2km s-min=16.2km az=59.0*
NEIC ***20*** *16:09:04.7±1.1, 5°.08S×102°.01E, h35km, mb4.1/2, Error ellipse: s-maj=45.7km s-min=8.6km az=55.0*
DJA ***20*** *16:09:05.8±0.9, 5°.S±4°.×10°.2E±°., h14km±7km, M4.0/8, MLv4.0/8*

ISC 20 16:09:01.8±2.0, 5°.21S±0°.07×102°.06E±0°.07, h15km±11km, n24, σ1ș26/27, mb4.0/11, Southern Sumatera

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
MNAI	**Manna**	**1.23**	**47**	P	**Pg**	**16 09 25.5**	**-0.1**
MNAI				S	**Sn**	**16 09 43.3**	**+2.5**
LWLI	**Liwa**	**2.00**	**85**	P	**Pb**	**16 09 37.1**	**-1.0**
LWLI				S	**Sb**	**16 10 01.1**	**-1.8**
LHSI	**Lahat**	**2.00**	**47**	P	**Pb**	**16 09 37.5**	**-0.5**
LHSI				S	**Sb**	**16 10 03.0**	**+0.2**
MASI	**Maura Aman, Be**	**2.06**	**5**	P	**Pg**	**16 09 42.2**	**+0.8**
MASI				S	**Sg**	**16 10 08.6**	**+0.4**
MDSI	**Maura Dua**	**2.23**	**71**	P	**Pb**	**16 09 40.9**	**-1.0**
MDSI				S	**Sb**	**16 10 07.6**	**-1.7**
KASI	**Kota Agung**	**2.45**	**97**	P	**Pb**	**16 09 43.9**	**-1.7**
KASI				S	**Sn**	**16 10 11.9**	**+0.9**
CGJI	**Cibinong**	**3.88**	**111**	P	**Pn**	**16 10 02.6**	**+1.7**
CGJI				S	**Sn**	**16 10 46.6**	**+0.4**
CMAR	**Chiang Mai Arr**	**23.71**	**353**	P	**P**	**16 14 13.4**	**0.0**
	0.9nm,0.8s,baz=180,slow=8.4,SNR=6.9						
FITZ	**Fitzroy Crossi**	**26.37**	**121**	P	**P**	**16 14 38.1**	**+0.4**
	3.8nm,0.8s,baz=283,slow=4.8,SNR=5.5						
FITZ	**Fitzroy Crossi**	**26.37**	**121**	*e*P	**P**	**16 14 39.2**	**+1.5**
	4.0nm,0.8s						
H08S2	**Diego Garcia H**	**29.47**	**264**	T	T	16 45 48.5	
	baz=86,slow=75,SNR=23						
H08S3	**Diego Garcia H**	**29.48**	**264**	T	T	16 45 43.7	
	baz=86,slow=75,SNR=22						
H08S1	**Diego Carcia H**	**29.49**	**264**	T	T	16 45 46.1	
	baz=86,slow=75,SNR=15						
WRA	**Warramunga Arr**	**34.65**	**118**	P	**P**	**16 15 51.6**	**+0.7**
	1.1nm,0.7s,baz=291,slow=12,SNR=8.7						
WRAB	**Tennant Creek**	**34.65**	**118**	*e*P	**P**	**16 15 51.8**	**+0.8**
	2.9nm,0.9s						
ASAR	**Alice Springs**	**35.74**	**124**	P	**P**	**16 16 01.9**	**+1.5**
	1.2nm,0.7s,baz=304,slow=8.4,SNR=26						
STKA	**Stephens Creek**	**45.51**	**131**	P	**P**	**16 17 21.8**	**+0.9**
	0.7nm,0.5s,baz=314,slow=8.7,SNR=2.9						
SONM	**Songino Array**	**52.95**	**4**	P	**P**	**16 18 17.2**	**-0.5**
	1.4nm,0.7s,baz=179,slow=9.5,SNR=13						
MKAR	**Makanchi Array**	**54.66**	**343**	P	**P**	**16 18 28.9**	**-1.2**
	0.3nm,0.4s,baz=149,slow=7.7,SNR=6.7						
USRK	**Ussuriysk Ar.**	**56.07**	**26**	P	P	16 18 36.5	-3.7
	2.1nm,0.6s,baz=207,slow=6.8,SNR=6.7						
KLR	**Kul'dur**	**60.06**	**22**	P	**P**	**16 19 06.7**	**-1.4**
	0.9nm,0.6s,baz=225,slow=5.2,SNR=3.7						
ZALV	**Zalesovo Beam**	**60.69**	**348**	P	**P**	**16 19 10.9**	**-1.5**
	0.5nm,0.3s,baz=184,slow=5.9,SNR=3.6						
ABKAR	**Akbulak array**	**65.42**	**331**	*e*P	**P**	**16 19 42.9**	**-1.0**
TXAR	**Lajitas Array**	**145.83**	**42**	PKPbc	**PKPdf**	**16 28 41.5**	**+0.7**
	0.2nm,0.5s,baz=174,slow=1.3,SNR=4.4						

NIED ***20*** *16:12:00, 39°.10N×143°.30E, h23km, Mw3.5 Best double couple: M₀2.24000×10¹⁴ NP1:ϕs173.00000°, δ66.00000°, λ.4.00000°. NP2:ϕs82.00000°, δ87.00000°, λ.156.00000°.*

IDC ***20*** *16:12:39.6±0.9, 39°.13N×143°.51E, h0km, mb3.5/8, mb1 3.7/11, mb1mx3.5/43, mbtmp3.5/11, ML3.6/2, Error ellipse: s-maj=26.1km s-min=17.0km az=105.0*
ISCJB ***20*** *16:12:40.8±0.6, 39°.13N±0°.05×143°.43E±0°.06, h20km, mb3.4/8, Error ellipse: s-maj=7.9km s-min=5.5km az=37.3*
JMA ***20*** *16:12:42.0±0.2, 39°.10N×143°.35E, h24km, M3.8*

ISC 20 16:12:42.3±0.9, 39°.09N±0°.06×143°.35E±0°.08, h20km, n30, σ1ș32/28, mb3.6/9, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
OFUJ	**Ofunato**	**1.31**	**270**	P	**Pn**	**16 13 05.2**	**-0.2**
OFUJ				*e*S	**Sn**	**16 13 22.1**	**-0.2**
JTH	**Tanohata**	**1.43**	**307**	P	**Pn**	**16 13 06.6**	**-0.5**
JTH				*e*S	**Sn**	**16 13 25.1**	**-0.1**
JOM	**Ohasama**	**1.64**	**284**	P	**Pn**	**16 13 10.0**	**0.0**
JMK	**Ichinoseki**	**1.66**	**266**	P	**Pn**	**16 13 10.6**	**+0.3**
JIO	**Ouri**	**1.69**	**249**	P	**Pn**	**16 13 10.6**	**0.0**
JIO				*e*S	**Sn**	**16 13 30.8**	**-0.8**
JOU	**Okura**	**2.22**	**252**	P	**Pn**	**16 13 18.6**	**+0.6**
JMM	**Marumori**	**2.35**	**239**	P	**Pn**	**16 13 19.8**	**+0.1**
JTM	**Tenmabayashi**	**2.44**	**315**	P	**Pn**	**16 13 22.0**	**+1.1**
JFK	**Kawauchi**	**2.60**	**229**	P	**Pn**	**16 13 23.3**	**+0.1**
JFT	**Otama**	**2.84**	**237**	P	**Pn**	**16 13 27.5**	**+1.0**
JOT	**Ohata**	**2.89**	**323**	P	**Pn**	**16 13 28.6**	**+1.5**
MJAR	**Matsushiro Arr**	**4.80**	**240**	Pn	**Pn**	**16 13 56.2**	**+2.8**
	2.3nm,0.3s,baz=32,slow=14,SNR=14						
MAT	**Matsushiro**	**4.80**	**240**	P	**Pn**	**16 13 56.1**	**+2.7**
MAT				S	**Pb**	**16 14 03.1**	**-2.6**
ASAJ	**Asahikawa**	**5.05**	**354**	Pn	**Pn**	**16 13 55.7**	**-1.2**
	1.9nm,0.3s,baz=208,slow=10,SNR=14						
ASAJ				Sn	**Sn**	**16 14 53.8**	**-0.8**
	0.5nm,0.3s,baz=131,slow=31,SNR=2.4						
USRK	**Ussuriysk Ar.**	**9.91**	**305**	Pn	**Pn**	**16 15 06.5**	**+3.0**
	0.1nm,0.3s,baz=101,slow=12,SNR=4.4						
MA2	**Magadan**	**21.04**	**11**	P	**P**	**16 17 24.7**	**0.0**
	3.3nm,0.7s,baz=236,slow=8.0,SNR=4.7						
SEY	**Seymchan**	**24.49**	**10**	P	**P**	**16 18 00.1**	**+0.3**
	0.7nm,0.4s,baz=284,slow=24,SNR=5.4						
H11N2	**WAKE ISLAND Hy**	**28.02**	**127**	T	T	16 47 47.5	
	baz=319,slow=74,SNR=30						
H11N1	**WAKE ISLAND Hy**	**28.03**	**127**	T	T	16 47 51.5	
	baz=319,slow=74,SNR=22						
H11N3	**WAKE ISLAND Hy**	**28.04**	**127**	T	T	16 47 49.0	
	baz=319,slow=74,SNR=29						
H11S1	**WAKE ISLAND Hy**	**28.82**	**129**	T	T	16 48 55.3	
	baz=321,slow=76,SNR=8.7						
H11S3	**WAKE ISLAND Hy**	**28.82**	**129**	T	T	16 48 54.7	
	baz=321,slow=76,SNR=5.7						
H11S2	**WAKE ISLAND Hy**	**28.84**	**129**	T	T	16 48 54.3	
	baz=321,slow=76,SNR=7.6						
ZALV	**Zalesovo Beam**	**41.70**	**311**	P	**P**	**16 20 29.2**	**-0.1**
	0.4nm,0.3s,baz=106,slow=9.1,SNR=2.6						
MKAR	**Makanchi Array**	**44.35**	**301**	P	**P**	**16 20 51.8**	**+0.7**
	0.3nm,0.8s,baz=85,slow=9.5,SNR=2.7						
ILAR	**Eielson Array**	**46.94**	**33**	P	**P**	**16 21 12.0**	**+0.8**
	0.7nm,0.8s,baz=265,slow=7.0,SNR=7.7						
WRA	**Warramunga Arr**	**59.33**	**190**	P	**P**	**16 22 42.7**	**-0.1**
	0.5nm,0.8s,baz=8.2,slow=6.9,SNR=4.3						
YKA	**Yellowknife Ar**	**61.26**	**31**	P	**P**	**16 22 54.6**	**-1.0**
	0.1nm,0.4s,baz=300,slow=6.3,SNR=3.5						
ASAR	**Alice Springs**	**63.05**	**190**	P	**P**	**16 23 09.7**	**+1.6**
	0.3nm,1.1s,baz=12,slow=6.2,SNR=3.1						
NB2	**NORSAR Subarra**	**72.87**	**358**	P	P	16 24 17.0	+7.6
	comp=Z,0.4nm,0.5s,baz=37,slow=6.2						

BJI 20 16:15:55.6, 36°.08N×112°.94E, h5km, mb3.7/2, ML3.6/13, Southeastern China

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
TIY	**Taiyuan**	**1.68**	**346**	Pg	Pg	16 16 28.5	+0.7
TIY				Sg	Sg	16 16 52.3	+2.7
TIY				smax	smax		
	comp=N,510nm,0.6s						
TIY				smax	smax		
	comp=E,620nm,0.7s						
TIA	**Tai'an**	**3.39**	**87**	Pg	Pb	16 16 57.3	+1.2
TIA				Sg	Sb	16 17 39.9	+2.2
TIA				smax	smax		
	comp=N,250nm,0.7s						
TIA				smax	smax		
	comp=E,70nm,0.5s						
XAN	**Xi'an**	**3.87**	**239**	Pn	Pn	16 16 57.6	+1.7
XAN				Sn	Sn	16 17 44.9	+3.1
XAN				Sg	Sg	16 17 57.0	-3.0
XAN				smax	smax		
	comp=N,54nm,0.5s						
XAN				smax	smax		
	comp=E,51nm,0.7s						
LZH	**Lanzhou**	**7.37**	**273**	*e*Pg	Pb	16 18 08.8	+4.8
LZH				Sg	Sg	16 19 43.3	-8.8
LZH				smax	smax		
	comp=N,64nm,0.9s						
LZH				smax	smax		
	comp=E,39nm,1.1s						
GTA	**Gaotai**	**10.91**	**292**	*e*P	Pn	16 18 35.8	+3.3
GTA				pP		16 18 39.0	
GTA				sP		16 18 41.8	
GTA				pmax	pmax		
	comp=Z,2.0nm,1.2s						

DSN ***20*** *16:20:29.8±1.8, 26°.92N×56°.00E, h10km, ML3.3, Error ellipse: s-maj=33.2km s-min=7.2km az=64.0*
OMAN ***20*** *16:20:29.7, 26°.69N×55°.81E, h5km*
ISCJB ***20*** *16:20:30.6±0.5, 26°.88N±0°.03×55°.82E±0°.05, h14km, Error ellipse: s-maj=6.9km s-min=4.3km az=3.8*
TEH ***20*** *16:20:31.3, 26°.76N×55°.84E, h18km, ML3.2*
CSEM ***20*** *16:20:32.1±0.2, 26°.86N×55°.95E, h20km, ML2.9, Error ellipse: s-maj=7.8km s-min=4.9km az=87.0*

ISC 20 16:20:30.5±0.8, 26°.81N±0°.03×55°.79E±0°.04, h14km, n41, σ1ș04/47, Southern Iran

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
BNDS	**Bandar-Abbas**	**0.68**	**30**	*e*Pg	**Pg**	**16 20 43.0**	**-0.9**
GENO	**Geno**	**0.68**	**30**	*e*Pg	**Pg**	**16 20 42.6**	**-1.3**
GENO	**Geno**	**0.68**	**30**	*e*Pg	**Pg**	**16 20 42.6**	**-1.3**
IBND	**Bandar-abas**	**0.93**	**46**	*e*Pg	**Pb**	**16 20 47.9**	**-0.5**
IBND				*e*Sg	**Sg**	**16 21 00.8**	**+0.2**
IBND				*e*AMB	AMB	16 21 10.5	
	comp=Z,27μm,0.2s						
IBND	**Bandar-abas**	**0.93**	**46**	*e*Pg	**Pb**	**16 20 47.9**	**-0.5**
IBND				*e*Sg	**Sg**	**16 21 00.8**	**+0.2**
BANOM	**Banah**	**0.99**	**152**	*e*P	**Pg**	**16 20 49.2**	**-0.4**
	SNR=921						
BANOM				S	**Sn**	**16 21 04.7**	**+0.9**
BANOM	**Banah**	**0.99**	**152**	P	**Pg**	**16 20 49.2**	**-0.4**
	SNR=921						
BANOM				S	**Sn**	**16 21 04.7**	**+0.9**
BANOM	**Banah**	**0.99**	**152**	Pg	**Pb**	**16 20 48.7**	**-0.8**
	SNR=921						
BANOM	**Banah**	**0.99**	**152**	P	**Pb**	**16 20 48.7**	**-0.8**
	SNR=921						
KHSK	**Kohestak**	**1.13**	**92**	*e*Pg	**Pb**	**16 20 51.3**	**-0.5**
KHSK	**Kohestak**	**1.13**	**92**	*e*Pg	**Pb**	**16 20 51.3**	**-0.5**
NIAN	**Nian**	**1.20**	**51**	*e*Pg	**Pn**	**16 20 52.4**	**-0.5**
NIAN	**Nian**	**1.20**	**51**	*e*Pg	**Pn**	**16 20 52.4**	**-0.5**
NAZ	**Nazwa, Dubai**	**1.81**	**184**	*e*P	**Pb**	**16 21 03.8**	**+0.3**
	SNR=7.6						
NAZ	**Nazwa, Dubai**	**1.81**	**184**	P	**Pb**	**16 21 03.8**	**+0.3**
NAZ	**Nazwa, Dubai**	**1.81**	**184**	P	**Pb**	**16 21 03.8**	**+0.3**
HATD	**Hatta, Dubai**	**2.00**	**171**	*e*P	**Pb**	**16 21 05.8**	**-0.8**
	SNR=40						
HATD	**Hatta, Dubai**	**2.00**	**171**	P	**Pb**	**16 21 05.8**	**-0.8**
	SNR=40						
HATD	**Hatta, Dubai**	**2.00**	**171**	P	**Pb**	**16 21 06.1**	**-0.5**
FAQ	**Al Faqa, Dubai**	**2.06**	**185**	P	**Pb**	**16 21 06.3**	**-1.4**
FAQ	**Al Faqa, Dubai**	**2.06**	**185**	P	**Pb**	**16 21 06.5**	**-1.2**
FAQ	**Al Faqa, Dubai**	**2.06**	**185**	P	**Pb**	**16 21 06.5**	**-1.2**
ASHO	**Ashiyiah**	**2.13**	**173**	*e*P	**Pb**	**16 21 07.3**	**-1.6**
	SNR=48						
ASHO	**Ashiyiah**	**2.13**	**173**	P	**Pb**	**16 21 07.3**	**-1.6**
	SNR=48						
ASHO	**Ashiyiah**	**2.13**	**173**	Pn	**Pb**	**16 21 07.3**	**-1.6**
	SNR=48						
ASHO	**Ashiyiah**	**2.13**	**173**	P	**Pb**	**16 21 07.3**	**-1.6**
	SNR=48						
GHIR	**Ghir-Karzin**	**2.89**	**301**	*e*Pn	**Pb**	**16 21 20.0**	**-2.0**
GHIR				*e*Sg	**Sb**	**16 21 58.5**	**+1.2**
KRBR	**Kerman**	**3.28**	**15**	*e*Pn	**Pn**	**16 21 21.9**	**+0.1**
KRBR				*e*Sg	**Sn**	**16 22 02.4**	**+1.6**
ARQ	**Araqi**	**3.52**	**169**	P	**Pn**	**16 21 25.5**	**+0.7**
	SNR=10						
ARQ	**Araqi**	**3.52**	**169**	Pn	**Pn**	**16 21 25.5**	**+0.7**
	SNR=10						
ARQ	**Araqi**	**3.52**	**169**	P	**Pn**	**16 21 25.5**	**+0.7**
	SNR=10						
IKAZ	**Kazeroun**	**4.57**	**311**	*e*Pn	**Pn**	**16 21 39.7**	**+0.1**
IKAZ				*e*AMB	AMB	16 22 37.8	
	comp=Z,779nm,0.2s						
IKAZ	**Kazeroun**	**4.57**	**311**	*e*Pn	**Pn**	**16 21 39.7**	**+0.1**
IMEH	**Mehriz**	**4.68**	**348**	*e*Pn	**Pn**	**16 21 42.4**	**+1.4**
IMEH				*e*AMB	AMB	16 22 43.8	
	comp=Z,128nm,0.1s						
IMEH	**Mehriz**	**4.68**	**348**	*e*Pn	**Pn**	**16 21 42.4**	**+1.4**
IBAF	**Bafgh**	**4.77**	**358**	*e*Pn	**Pn**	**16 21 43.1**	**+0.9**
IBAF				*e*AMB	AMB	16 22 39.5	
	comp=Z,112nm,0.1s						
IBAF	**Bafgh**	**4.77**	**358**	*e*Pn	**Pn**	**16 21 43.1**	**+0.9**
IRAM	**Ramesheh**	**5.81**	**330**	*e*Pn	**Pn**	**16 21 58.3**	**+1.9**
IRAM	**Ramesheh**	**5.81**	**330**	*e*Pn	**Pn**	**16 21 58.3**	**+1.9**
IZEF	**Zefreh**	**6.77**	**334**	*e*Pn	**Pn**	**16 22 09.9**	**+0.1**
IZEF				*e*AMB	AMB	16 23 37.6	
	comp=Z,35nm,0.1s						
IZEF	**Zefreh**	**6.77**	**334**	*e*Pn	**Pn**	**16 22 09.9**	**+0.1**

IDC 20 16:25:55.6±2.1, 7°.36S×129°.90E, h0km, mb3.3/1, mb1 3.7/4, mb1mx3.4/40, mbtmp3.5/4, ML3.6/3, Error ellipse: s-maj=79.2km s-min=27.8km az=77.0, Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
FITZ	**Fitzroy Crossi**	**11.46**	**201**	Pn	Pn	16 28 40.7	+0.1
	0.4nm,0.3s,baz=26,slow=12,SNR=18						
FITZ				Sn	Sn	16 30 39.4	-10
	0.3nm,0.3s,baz=252,slow=20,SNR=4.9						
WRA	**Warramunga Arr**	**13.23**	**161**	Pn	Pn	16 29 05.0	+0.1
	0.3nm,0.3s,baz=340,slow=11,SNR=20						
WRA				Sn	Sn	16 31 22.7	-10
	0.4nm,0.3s,baz=342,slow=23,SNR=6.0						
ASAR	**Alice Springs**	**16.67**	**167**	Pn	Pn	16 29 50.5	-0.2
	0.1nm,0.3s,baz=342,slow=11,SNR=21						
ASAR				Sn	Sn	16 32 45.6	-11
	0.1nm,0.3s,baz=341,slow=25,SNR=3.6						
MKAR	**Makanchi Array**	**68.47**	**327**	P	P	16 36 59.7	0.0
	0.1nm,0.4s,baz=119,slow=7.2,SNR=3.8						

IDC ***20*** *16:30:05.0±1.5, 34°.84S×74°.12W, h0km, mb3.7/3, mb1 3.9/5, mb1mx3.8/20, mbtmp3.7/5, ML3.8/2, MS3.2/4, Ms1 3.2/4, ms1mx2.9/24, Error ellipse: s-maj=51.0km s-min=25.9km az=76.0*
ISCJB ***20*** *16:30:09.8±0.9, 34°.69S±0°.05×73°.57W±0°.08, h33km, mb3.7/3, MS3.2/2, Error ellipse: s-maj=10.7km s-min=6.3km az=33.2*
GUC ***20*** *16:30:12.6±0.5, 33°.77S×73°.56W, h15km±14km, ML3.4*

ISC 20 16:30:11.8±1.0, 34°.59S±0°.08×73°.7W±0°.1, h35km, n24, σ1ș33/28, mb3.7/3, 1C, Off coast of central Chile

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
RCDM	**Rinconada Maip**	**2.60**	**66**	*e*P	**Pn**	**16 30 49.5**	**-1.9**
RCDM				*e*S	**Sn**	**16 31 19.6**	**-2.2**
ANTU	**Antumapu**	**2.70**	**69**	*i* S	**Sn**	**16 31 25.4**	**+1.1**
ANTU				IAML		16 31 25.8	
	comp=E,383nm,0.5s						
ROC1	**El Roble**	**2.72**	**54**	*i* P	**Pn**	**16 30 52.7**	**-0.5**
ROC1				*i* S	**Sn**	**16 31 24.0**	**-1.1**
ROCH	**El Roble**	**2.73**	**54**	*e*P	**Pn**	**16 30 52.2**	**-1.1**
ROCH				*e*S	**Sn**	**16 31 21.8**	**-3.4**
ROCH				AML	AML	16 31 30.0	
	comp=N,190nm,0.6s						
CLCH	**Cerro Calan**	**2.85**	**66**	*e*P	**Pn**	**16 30 55.2**	**+0.4**
CLCH				*e*S	**Sn**	**16 31 28.1**	**+0.2**
CLCH				AML	AML	16 31 36.5	
	comp=N,261nm,0.9s						
PEL	**Peldehue**	**2.86**	**60**	*i*P	**Pn**	**16 30 54.5**	**-0.4**
PEL				*e*S	**Sn**	**16 31 26.4**	**-1.8**
PEL				AML	AML	16 31 34.0	
	comp=N,201nm,0.3s						
AUSP	**Uspallata**	**4.28**	**58**	*i* P	**Pn**	**16 31 15.1**	**+0.4**
ARCO	**CERRO ARCO**	**4.30**	**67**	*i* P	**Pn**	**16 31 15.8**	**+0.9**
ARCO				IAML		16 32 21.8	
	comp=Z,19nm,0.6s						
ASAL	**Salagasta**	**4.49**	**65**	*i* P	**Pn**	**16 31 18.1**	**+0.8**
ASAL				*i* S	**Sn**	**16 32 08.5**	**+0.1**
RTLS	**Leoncito**	**4.59**	**54**	*i* P	**Pn**	**16 31 19.7**	**+0.8**
RTLS				*i* S	**Sn**	**16 32 11.1**	**-0.1**
SJA	**San Juan**	**5.25**	**56**	IAML		16 31 54.5	
	comp=Z,147nm,0.3s						
AMOG	**MOGNA**	**5.67**	**51**	*i* P	**Pn**	**16

JFT S **Sn** **16 33 59.2 +0.4**
JOM Ohasama 1.38 342 P **Pn** **16 33 43.8 +1.4**
JOM S **Sn** **16 34 01.7 +2.1**
JYK Kaneyama 1.39 304 P **Pn** **16 33 43.2 +0.7**
JYK S **Sn** **16 34 00.7 +1.0**
JYS Shirataka 1.40 273 P **Pn** **16 33 43.3 +0.6**
JYS S **Sn** **16 34 00.8 +0.8**
JRG Rokugo 1.55 323 P **Pn** **16 33 46.2 +1.4**
MJAR Matsushiro Arr 3.31 242 P **Pn** **16 34 10.1 +1.2**
14nm,0.3s,baz=56,slow=10,SNR=161
MJAR LR LR 16 35 35.4
comp=Z,888nm,20.2s,baz=60,slow=42
MAJO Matsushiro 3.31 242 *e*P **Pn** **16 34 10.6 +1.7**
MAJO Matsushiro 3.31 242 *e*Pn **Pn** **16 34 10.6 +1.7**
MAT Matsushiro 3.31 242 P **Pn** **16 34 10.8 +1.9**
MAT S Sn 16 34 53.3 +6.3
MJB9 Matsu-Tunnel 3.31 242 *e*Pn **Pn** **16 34 10.4 +1.4**
ERM Erimo 3.98 14 *e*P **Pn** **16 34 18.4 +0.3**
ERM Erimo 3.98 14 *e*Pn **Pn** **16 34 18.4 +0.3**
INU Inuyama 4.78 236 *e*Pn **Pn** **16 34 31.4 +2.4**
JHJ2 Mitsune 5.30 199 *e*Pn **Pn** **16 34 36.6 +0.5**
JHJ2 *e*Sn **Sn** **16 35 36.5 +0.7**
JHJ Hachijo jima 2 5.30 199 P **Pn** **16 34 36.3 +0.1**
33nm,0.3s,baz=99,slow=22,SNR=18
JHJ S **Sn** **16 35 33.3 -2.6**
131nm,0.3s,baz=279,slow=23,SNR=7.7
JHJ LR LR 16 36 58.0
comp=Z,352nm,19.8s,baz=66,slow=41
ASAJ Asahikawa 5.98 5 P **Pn** **16 34 45.8 +0.3**
3.1nm,0.3s,baz=201,slow=16,SNR=48
ASAJ S **Sn** **16 35 52.9 +0.3**
2.2nm,0.3s,baz=93,slow=14,SNR=3.8
ASAJ Asahikawa 5.98 5 *e*Pn **Pn** **16 34 45.5 0.0**
ASAJ S **Sn** **16 35 52.9 +0.3**
YUK Yuzh-Kuril'sk 6.61 26 *e*P **Pn** **16 34 53.0 -1.0**
YUK *e*S **Sn** **16 36 03.7 -4.3**
YUK pmax pmax
comp=Z,119nm,0.8s
YUK pmax pmax
comp=N,137nm,0.4s
SHO Shikotan 6.84 32 *e*P **Pn** **16 34 55.2 -2.0**
SHO *e*S Sn 16 36 06.2 -7.5
SHO pmax pmax
comp=Z,39nm,0.4s
SHO pmax pmax
comp=N,19nm,0.3s
SHO pmax pmax
comp=E,22nm,0.4s
KUR Kuril'sk 8.38 31 *e*P **Pn** **16 35 16.5 -1.8**
KUR *e*S Sn 16 36 46.2 -5.3
KUR pmax pmax
comp=Z,17nm,0.4s
KUR smax smax
comp=N,43nm,0.2s
KUR smax smax
comp=E,80nm,0.5s
YSS Yuzh-Sakhalins 8.82 4⇑ *e*P **Pn** **16 35 21.9 -2.4**
YSS *e*S **Sn** **16 37 00.5 -1.6**
YSS pmax pmax
comp=Z,20nm,1.0s
YSS Yuzh-Sakhalins 8.82 4 *e*Pn **Pn** **16 35 23.5 -0.7**
VLA Vladivostok 9.04 306⇓ *e*P Pn 16 35 30.5 +3.1
MSHR Mys Shultsa 9.27 302⇑ *e*P **Pn** **16 35 30.7 +0.2**
USRK Ussuriysk Ar. 9.56 312 P **Pn** **16 35 36.0 +1.5**
comp=Z,2.8nm,0.3s,baz=124,slow=14,SNR=66
USRK LR LR 16 39 00.6
comp=Z,319nm,21.0s,baz=125,slow=36
JNU Nakatsue 10.23 244 P **Pn** **16 35 45.4 +1.6**
comp=Z,0.3nm,0.3s,baz=45,slow=5.7,SNR=5.0
JNU Nakatsue 10.23 244 *e*Pn **Pn** **16 35 46.2 +2.4**
KSRS Korea Array 11.03 271 P **Pn** **16 35 57.4 +2.8**
comp=Z,0.5nm,0.3s,baz=82,slow=15,SNR=13
KSRS LR LR 16 40 06.3
comp=Z,143nm,19.8s,baz=78,slow=37
KS15 Wonju Array Si 11.07 271 *e*Pn Pn 16 35 58.7 +3.6
KSAR Wonju Array Be 11.07 271 P **Pn** **16 35 57.4 +2.3**
KSAR Wonju Array Be 11.07 271 P **Pn** **16 35 57.4 +2.3**
MDJ Mudanjiang 11.23 309 P **Pn** **16 35 57.3 0.0**
MDJ S **Sn** **16 38 00.3 -1.0**
MDJ PcP **PcP** **16 41 46.8 -2.6**
MDJ ScS **ScS** **16 48 50.8 -2.2**
MDJ pmax pmax
comp=Z,22nm,1.3s
MDJ pmax pmax
comp=Z,82nm,4.8s
MDJ LR LR
comp=Z,220nm,18.3s
MDJ LR LR
comp=Z,190nm,20.1s
MDJ LR LR
comp=Z,400nm,21.5s
MDJ Mudanjiang 11.23 309 *e*P **Pn** **16 35 59.2 +1.9**
HABR Khabarovsk 11.43 337 *e*P **Pn** **16 35 57.0 -2.9**
HABR *e*S **Sn** **16 38 04.0 -2.0**
HABR pmax pmax
comp=E,30nm,1.8s
HABR pmax pmax
comp=N,5.0nm,0.9s
HABR pmax pmax
comp=Z,14nm,1.8s
HABR MLR MLR
comp=Z,47nm,11.0s
TYV Tymovskoe 12.72 2 *e*P Pn 16 36 22.2 +4.7
KLR Kul'dur 13.24 330 P **Pn** **16 36 24.0 -0.7**
comp=Z,0.1nm,0.3s,baz=115,slow=12,SNR=4.8
KLR LR LR 16 41 21.4
comp=Z,216nm,20.9s,baz=178,slow=36
KLR Kul'dur 13.24 330 P **Pn** **16 36 24.0 -0.7**
CN2 Changchun 13.60 300 *e*P **Pn** **16 36 31.0 +1.4**
CN2 *es*P sP 16 36 50.0
CN2 *e*S **Sn** **16 38 59.0 -0.1**
CN2 pmax pmax
comp=Z,10.0nm,0.7s
CN2 pmax pmax
comp=Z,200nm,3.0s
CN2 LR LR
comp=Z,600nm,13.0s
CN2 LR LR
comp=Z,500nm,13.0s
CN2 LR LR
comp=Z,500nm,14.0s
DL2 Dalian 15.84 279 P **P** **16 37 00.8 -1.2**
DL2 pmax pmax
comp=Z,60nm,1.2s
PETK Petropavlovsk- 18.55 31 P **P** **16 37 31.9 0.0**
comp=Z,0.1nm,0.3s,baz=232,slow=7.3,SNR=5.8
PETK LR LR 16 44 25.8
comp=Z,84nm,20.6s,baz=202,slow=36
PET Petropavlovsk 18.89 33 *e*P **P** **16 37 35.4 -0.2**
TIA Tai'an 19.77 272⇑ P **Pn** **16 37 46.6 -0.7**
TIA pmax pmax
comp=Z,40nm,0.9s
BJI Beijing 19.99 283 P **P** **16 37 47.3 -0.4**
BJI S **S** **16 41 26.1 -3.6**
BJI pmax pmax
comp=Z,17nm,1.2s
BJI pmax pmax
comp=Z,160nm,3.8s
BJI LR LR
comp=Z,130nm,28.4s
BJI LR LR
comp=Z,140nm,25.5s
BJI LR LR
comp=Z,150nm,21.7s
BJT Baijiatuau 20.00 283 *e*P **P** **16 37 48.0 +0.2**
BJT Baijiatuau 20.00 283 *e*P **P** **16 37 48.0 +0.2**
MA2 Magadan 22.19 12 P **P** **16 38 11.3 +0.1**
comp=Z,17nm,0.7s,baz=222,slow=11,SNR=20
HHC Hu-ho-hao-te 23.46 286 *e*P **P** **16 38 23.3 -1.3**
HHC pmax pmax
comp=Z,27nm,1.0s
HHC pmax pmax
comp=Z,76nm,8.6s
CIT Chita 24.12 314 *e*P **P** **16 38 29.1 -1.4**
CIT *e* 16 38 43.7
YAK Yakutsk 25.05 346 P **P** **16 38 39.0 +0.3**
comp=Z,8.9nm,0.4s,baz=332,slow=4.2,SNR=6.3
YAK Yakutsk 25.05 346 *e*P **P** **16 38 39.3 +0.5**
YAK *e**PP **sP** **16 38 59.6 +2.0**
YAK *e*S **S** **16 42 56.1 -3.2**
YAK pmax pmax
comp=E,5.0nm,1.0s
YAK pmax pmax
comp=Z,25nm,1.0s
YAK pmax pmax
comp=N,9.0nm,1.0s
YAK smax smax
comp=N,325nm,5.6s
YAK smax smax
comp=E,115nm,4.9s
SEY Seymchan 25.62 11 P **P** **16 38 45.2 +1.3**
comp=E,18nm,0.9s,baz=195,slow=7.1,SNR=42
SEY Seymchan 25.62 11⇓ *e*P **P** **16 38 45.9 +2.0**
ULN Ulaanbaatar 27.02 302⇓ *e*P **P** **16 38 58.7 +1.8**
ULN pmax pmax
comp=Z,12nm,1.2s
ULN Ulaanbaatar 27.02 302 P **P** **16 38 58.0 +1.1**
comp=Z,7.0nm,0.9s
SONA1 Songino Array 27.45 302 *e*P **P** **16 39 00.5 -0.2**
SONM Songino Array 27.46 302 P **P** **16 38 59.8 -1.0**
comp=Z,3.1nm,0.7s,baz=94,slow=10,SNR=17
SONM PcP **PcP** **16 42 17.6 -0.6**
comp=Z,0.9nm,0.7s,baz=144,slow=3.8,SNR=3.6
SONM LR LR 16 49 33.2
comp=Z,96nm,21.4s,baz=79,slow=36
ENH Enshi 27.78 263 *e*P **P** **16 39 03.1 -0.7**
comp=Z,31nm,0.6s
H11N2 WAKE ISLAND Hy 28.46 123 T T 17 09 33.7
baz=316,slow=76,SNR=2248
H11N1 WAKE ISLAND Hy 28.46 123 T T 17 09 34.5
baz=316,slow=76,SNR=3082
H11N3 WAKE ISLAND Hy 28.47 123 T T 17 09 35.1
baz=316,slow=76,SNR=2325
H11S1 WAKE ISLAND Hy 29.21 125 T T 17 10 30.2
baz=318,slow=76,SNR=1100
H11S3 WAKE ISLAND Hy 29.21 125 T T 17 10 26.8
baz=318,slow=76,SNR=1519
H11S2 WAKE ISLAND Hy 29.22 125 T T 17 10 24.9
baz=318,slow=76,SNR=951
ZAK Zakamensk 29.85 307 *e*P **P** **16 39 22.3 +0.3**
ZAK *e* 16 42 22.6
ZAK pmax pmax
comp=Z,4.0nm,1.1s
ZAK pmax pmax
comp=Z,2.0nm,1.4s
TLY Talaya 29.86 309 LR LR 16 51 54.8
comp=Z,136nm,19.1s,baz=102,slow=37
LZH Lanzhou 30.23 278 *e*P **P** **16 39 27.3 +1.7**
LZH pP sP 16 39 42.3 -2.3
LZH sP pP 16 39 49.1 +11
LZH PcP **PcP** **16 42 26.8 +1.4**
LZH pmax pmax
comp=Z,25nm,1.0s
LZH pmax pmax
comp=Z,130nm,4.1s
LZH LR LR
comp=Z,150nm,11.2s
LZH LR LR
comp=Z,140nm,14.5s
LZH LR LR
comp=Z,110nm,16.2s
GYA Guiyang 31.75 259 P **P** **16 39 39.8 +0.7**
GYA pP pP 16 39 55.4 +3.3
GYA sP sP 16 40 03.0 +4.9
GYA PP **PnPn** **16 40 46.8 +2.2**
GYA PcP **PcP** **16 42 31.3 +1.8**
GYA S **S** **16 44 43.3 -2.3**
GYA sS sS 16 45 11.0 +3.4
GYA ScP **ScP** **16 46 07.9 -0.7**
GYA ScS **ScS** **16 50 03.4 -3.7**
GYA pmax pmax
comp=Z,20nm,0.8s
GYA pmax pmax
comp=Z,100nm,5.0s
GYA LR LR
comp=Z,480nm,16.5s
GYA LR LR
comp=Z,410nm,17.2s
GYA LR LR
comp=Z,460nm,17.0s
CD2 Chengdu 32.02 269 P **P** **16 39 39.6 -1.7**
CD2 pmax pmax
comp=Z,1.0nm,0.5s
GTA Gaotai 32.57 286 *e*P **P** **16 39 47.4 +1.3**
GTA pP pP 16 40 02.3 +3.1
GTA sP sP 16 40 09.9 +4.7
GTA PcP **PcP** **16 42 32.4 +0.8**
GTA S **S** **16 44 56.8 -1.4**
GTA sS sS 16 45 21.5 +1.3
GTA SS **SnSn** **16 46 55.1 -0.7**
GTA pmax pmax
comp=Z,5.0nm,1.1s
GTA pmax pmax
comp=Z,65nm,3.9s
GTA LR LR
comp=Z,75nm,17.6s
GTA LR LR
comp=Z,150nm,20.9s
GTA LR LR
comp=Z,190nm,22.3s
BILL Bilibino 32.85 17⇓ *i*P **P** **16 39 48.5 +0.4**
BILL *i* 16 40 00.4
BILL *e* 16 40 57.9
BILL pmax pmax
comp=Z,13nm,1.2s
BILL MLR MLR
comp=Z,48nm,18.0s
BILL Bilibino 32.85 17 *e*P **P** **16 39 47.9 -0.2**
comp=Z,11nm,1.1s
TIXI Tiksi 34.22 353 P **P** **16 39 59.1 -0.8**
comp=Z,1.7nm,0.8s,baz=137,slow=5.5,SNR=6.9
TIXI Tiksi 34.22 353 *e*P **P** **16 39 58.8 -1.1**
TIXI pmax pmax
comp=Z,2.0nm,1.0s
TIXI Tiksi 34.22 353 *e*P **P** **16 39 58.8 -1.1**
comp=Z,3.4nm,1.1s
KMI Kunming 35.48 260 P **P** **16 40 13.3 +1.8**
KMI pmax pmax
comp=Z,14nm,0.8s
KMI pmax pmax
comp=Z,78nm,4.4s
WMQ Urumqi 40.65 296 P **P** **16 40 55.0 +0.3**
WMQ pP pP 16 41 09.6 +1.6
WMQ sP sP 16 41 16.8 +2.9
WMQ pmax pmax
comp=Z,5.0nm,0.6s
WMQ pmax pmax
comp=Z,32nm,4.8s
WMQ LR LR
comp=Z,29nm,28.4s
WMQ LR LR
comp=Z,46nm,28.4s
WMQ LR LR
comp=Z,49nm,28.4s
ZAA0 Zalesovo Array 41.42 311 *e*P **P** **16 41 00.4 -0.4**
ZAA0 *e*PcP **PcP** **16 42 57.6 -0.3**
ZALV Zalesovo Beam 41.42 311 P **P** **16 41 00.7 -0.1**
comp=Z,3.5nm,0.4s,baz=89,slow=7.2,SNR=25
ZALV PcP **PcP** **16 42 57.0 -0.9**
comp=Z,1.9nm,0.7s,baz=97,slow=3.2,SNR=3.9
CHTO Chiang Mai 41.90 255 *e*P **P** **16 41 04.2 -1.0**
CHTO pmax pmax
comp=Z,6.0nm,0.8s
CHTO Chiang Mai 41.90 255 *e*P **P** **16 41 04.2 -1.0**
comp=Z,6.0nm,0.8s
CMAR Chiang Mai Arr 42.12 254 P **P** **16 41 07.0 0.0**
comp=Z,0.9nm,0.5s,baz=48,slow=3.7,SNR=7.7
CMAR PcP **PcP** **16 43 00.9 +0.1**
comp=Z,1.0nm,0.6s,baz=16,slow=2.2,SNR=6.0
CMAR LR LR 16 59 32.0
comp=Z,32nm,20.6s,baz=15,slow=37
CMAR Chiang Mai Arr 42.12 254 *i*P **P** **16 41 06.5 -0.4**
CMAR pmax pmax
comp=Z,1.0nm,0.5s
CM01 Chiang Mai Arr 42.12 254 *e*P **P** **16 41 06.6 -0.4**
CM01 *e*PcP **PcP** **16 43 01.2 +0.3**
NVS Novosibirsk 42.32 313 *e*P **P** **16 41 06.5 -1.6**
LSA Lhasa 42.45 274 P **P** **16 41 12.5 +2.4**
LSA pmax pmax
comp=Z,8.0nm,0.6s
LSA Lhasa 42.45 274 P **P** **16 41 12.5 +2.4**
comp=Z,7.8nm,0.6s
MK01 Makanchi Array 43.81 301 *e*P **P** **16 41 19.5 -0.9**
MK31 Makanchi Array 43.82 301 *e*P **P** **16 41 20.4 0.0**
MK31 Makanchi Array 43.82 301 *e*P **P** **16 41 20.4 0.0**
MKAR Makanchi Array 43.82 301 P **P** **16 41 20.1 -0.4**
comp=Z,3.2nm,0.6s,baz=85,slow=9.7,SNR=38
MKAR Makanchi Array 43.82 301 *e*P **P** **16 41 20.4 0.0**
MAKZ Makanchi 44.02 301 *e*P **P** **16 41 22.7 +0.6**
MAKZ pmax pmax
comp=Z,7.0nm,0.9s
MAKZ Makanchi 44.02 301 *e*P **P** **16 41 22.7 +0.6**
comp=Z,7.3nm,0.9s
SVW2 Sparrevohn 44.43 38 *e*P **P** **16 41 27.2 +2.1**
comp=Z,8.8nm,0.8s
KURK Kurchatov 45.51 307 *e*P **P** **16 41 32.9 -0.9**
KURK pmax pmax
comp=Z,26nm,0.8s
KURK Kurchatov 45.51 307 *e*P **P** **16 41 32.9 -0.9**
comp=Z,26nm,0.8s
RSO Redoubt South 45.81 39 *e*P **P** **16 41 37.8 +1.4**
KDAK Kodiak Island 46.04 43 *i*P **P** **16 41 38.8 +1.0**
PPLA Purkeypile 46.06 36 *e*P **P** **16 41 39.8 +1.7**
comp=Z,8.3nm,1.1s
CAST Castle Rocks 46.11 35 *e*P **P** **16 41 40.3 +1.9**
comp=Z,6.3nm,0.8s
SPU Mount Spurr 46.14 38 *e*P **P** **16 41 40.0 +1.3**
PDGK Podgornoye 46.56 297 P **P** **16 41 42.6 +0.5**
PDGK pmax pmax
comp=Z,18nm,1.0s
BPAW Bear Paw Mtn. 46.60 34 *e*P **P** **16 41 43.9 +1.6**
comp=Z,3.4nm,0.7s
KTH Kantishna Hill 46.63 35 *e*P **P** **16 41 44.0 +1.5**
comp=Z,13nm,0.9s
MLY Manley 46.72 33 *e*P **P** **16 41 44.6 +1.4**
comp=Z,6.2nm,0.8s
TRF Thorofare Moun 46.92 35 *e*P **P** **16 41 46.4 +1.5**
comp=Z,8.1nm,0.8s
COLD Coldfoot 47.01 30 *e*P **P** **16 41 46.9 +1.6**
comp=Z,6.3nm,1.4s
GUN Gumba 47.39 275 *e*P **P** **16 41 49.5 +0.2**
comp=Z,58nm,0.7s
MCK McKinley 47.51 34 *e*P **P** **16 41 50.1 +0.8**
MCK pmax pmax
comp=Z,8.0nm,0.9s
MCK McKinley 47.51 34 *e*P **P** **16 41 50.1 +0.8**
comp=Z,8.1nm,0.9s
RND Reindeer 47.56 35 *e*P **P** **16 41 50.8 +1.0**
RND pmax pmax
comp=Z,10.0nm,0.8s
RND Reindeer 47.56 35 *e*P **P** **16 41 50.8 +1.0**
comp=Z,9.5nm,0.8s
KAPI Kappang 47.60 210 *e*P **P** **16 41 50.7 +0.2**
MDM Murphy Dome 47.79 33 *e*P **P** **16 41 53.1 +1.7**
comp=Z,14nm,1.0s
WRH Wood River Hil 47.86 33 *e*P **P** **16 41 53.1 +1.1**
WRH *e*PcP **PcP** **16 43 20.7 +0.9**
SML Sawmill 47.89 37 *e*P **P** **16 41 53.3 +1.0**
SML pmax pmax
comp=Z,12nm,0.8s
SML Sawmill 47.89 37 *e*P **P** **16 41 53.3 +1.0**
comp=Z,12nm,0.8s
KKN Kakani 47.91 275 *e*P **P** **16 41 53.3 +0.1**
comp=Z,35nm,0.6s
PKIN Phulchoki 47.92 275 *e*P **P** **16 41 53.0 -0.3**
comp=Z,12nm,0.6s
CCB Clear Creek Bu 47.98 33 *e*P **P** **16 41 54.1 +1.2**
comp=Z,11nm,1.7s
GKN Gorkha 48.32 276 *e*P **P** **16 41 56.2 0.0**
comp=Z,40nm,0.9s
HDA Harding Lake 48.36 33 *e*P **P** **16 41 56.5 +0.6**
comp=Z,8.1nm,0.9s
SCM Sheep Creek Mo 48.36 37 *e*P **P** **16 41 57.4 +1.4**
SCM pmax pmax
comp=Z,14nm,0.9s
SCM Sheep Creek Mo 48.36 37 *e*P **P** **16 41 57.4 +1.4**
comp=Z,14nm,0.9s
IL1 Eielson Array 48.37 33 *e*P **P** **16 41 56.5 +0.6**
ILAR Eielson Array 48.37 33 P **P** **16 41 57.0 +1.2**
comp=Z,5.4nm,0.7s,baz=269,slow=6.6,SNR=70
ILAR LR LR 17 04 34.2
comp=Z,25nm,19.4s,baz=282,slow=39
ILB Eielson Array 48.37 33 *e*P **P** **16 41 56.6 +0.7**
KLU Klutina 49.07 37 *e*P **P** **16 42 02.7 +1.3**
comp=Z,8.0nm,0.6s
KOLN Koldanda 49.24 276 *e*P **P** **16 42 02.4 -1.0**
comp=Z,16nm,0.8s
TKM2 Tokmak 2 49.40 298 *e*P **P** **16 42 04.7 +0.3**
TKM2 pmax pmax
comp=Z,15nm,0.8s
TKM2 Tokmak 2 49.40 298 *e*P **P** **16 42 04.7 +0.3**
comp=Z,15nm,0.8s
PYUN Piuthan 49.57 277 *e*P **P** **16 42 05.8 -0.1**
DOT Dot Lake 49.69 34 *e*P **P** **16 42 06.6 +0.6**
comp=Z,8.8nm,0.8s
BMRM Bremner River 49.76 38 *e*P **P** **16 42 07.9 +1.2**
comp=Z,11nm,1.0s
MENT Mentasta 49.92 35 *e*P **P** **16 42 09.8 +2.0**
comp=Z,7.4nm,1.1s
OTUK Ortayu 50.05 305 P **P** **16 42 10.6 +1.6**
OTUK pmax pmax
comp=Z,10.0nm,1.4s
BRVK Borovoye 50.13 312⇓ *e*P **P** **16 42 09.4 -0.1**
BRVK pmax pmax
comp=Z,3.0nm,1.2s
AAK Ala-Archa 50.26 298 LR LR 17 05 10.3
comp=Z,46nm,19.1s,baz=66,slow=38
AAK Ala-Archa 50.26 298⇑ *e*P **P** **16 42 11.5 +0.6**
AAK pmax pmax
comp=Z,6.0nm,0.8s
AAK Ala-Archa 50.26 298 *e*P **P** **16 42 11.2 +0.3**
comp=Z,4.1nm,0.8s
KSH Kashi 50.26 293 *e*P P 16 42 16.8 +5.9
KSH *ep*P pP 16 42 32.5 +7.9
KSH *es*P sP 16 42 39.8 +9.4
KSH S **S** **16 49 25.1 +5.3**
KSH SS **SS** **16 52 57.3 +3.9**
KSH pmax pmax
comp=Z,66nm,5.2s
KSH LR LR
comp=Z,340nm,11.6s
KSH LR LR
comp=Z,260nm,11.0s
EKS2 Erkin-Say 50.75 298 *e*P **P** **16 42 13.9 -0.6**
EKS2 pmax pmax
comp=Z,5.0nm,0.7s
EKS2 Erkin-Say 50.75 298 *e*P **P** **16 42 13.9 -0.6**
comp=Z,4.7nm,0.7s
ZRNK Zerenda 50.90 312 *e*P **P** **16 42 15.1 -0.2**
ZRNK pmax pmax
comp=Z,12nm,1.1s
ZRNK Zerenda 50.90 312 *e*P **P** **16 42 15.1 -0.2**
comp=Z,12nm,1.1s
MNAS Manas 51.70 298 P **P** **16 42 22.4 +0.8**
MNAS pmax pmax
comp=Z,19nm,0.8s
SFK Sufi-Kurgan 51.86 295 P **P** **16 42 23.5 +0.5**
SFK pmax pmax
comp=Z,10.0nm,0.7s
PSI Prapat 52.66 239 P **P** **16 42 28.2 -0.8**
comp=Z,3.6nm,0.4s,baz=11,slow=7.6,SNR=5.0
KKAR Karatay Array 52.86 299 *e*P **P** **16 42 29.6 -0.5**
KKAR Karatay Array 52.86 299 *e*P **P** **16 42 29.6 -0.5**
INK Inuvik 53.23 28 *e*P **P** **16 42 33.7 +1.3**
INK pmax pmax
comp=Z,10.0nm,0.9s
INK Inuvik 53.23 28 *e*P **P** **16 42 33.7 +1.3**
comp=Z,9.9nm,0.9s
ARU Arti 55.75 318 *c i*P **P** **16 42 50.5 -0.3**
ARU 16 43 48.7
ARU 16 44 52.2
ARU S **S** **16 50 36.8 +3.2**
ARU SS **SS** **16 54 17.5 -1.5**
ARU pmax pmax
comp=Z,11nm,1.2s
KBL Kabul 57.33 290 *e*P **P** **16 43 02.2 -0.5**
KBL pmax pmax
comp=Z,13nm,1.1s
KBL Kabul 57.33 290 *e*P **P** **16 43 02.2 -0.5**
comp=Z,13nm,1.1s
ABKAR Akbulak array 57.48 310 *e*P **P** **16 43 01.4 -1.9**
DLBC Dease Lake 57.54 39 *e*P **P** **16 43 06.1 +2.5**
comp=Z,7.1nm,1.1s
FITZ Fitzroy Crossi 57.99 198 *e*P **P** **16 43 07.2 +0.1**
comp=Z,22nm,1.5s
WRAB Tennant Creek 58.21 188⇑ *e*P **P** **16 43 07.4 -1.2**
WRAB pmax pmax
comp=Z,24nm,0.8s
WB2 Warramunga Arr 58.22 188 *e*P **P** **16 43 08.2 -0.4**
comp=Z,29nm,1.4s
WRA Warramunga Arr 58.22 188 P **P** **16 43 08.3 -0.3**
comp=Z,8.4nm,0.6s,baz=5.4,slow=7.2,SNR=180
AS01 Alice Springs 61.94 188 *e*P **P** **16 43 33.9 -0.2**
AS31 Alice Springs 61.95 188 *e*P **P** **16 43 34.0 -0.1**
comp=Z,1.9nm,0.8s
ASAR Alice Springs 61.95 188 P **P** **16 43 34.2 +0.1**
comp=Z,6.3nm,0.7s,baz=12,slow=5.6,SNR=115

ASAR					LR	LR	17 10 54.2				
	comp=Z,63nm,18.8s,baz=168,slow=36										
MBWA	**Marble Bar**	**62.55**	**203**		*eP*	**P**	**16 43 37.9**	**-0.3**			
	comp=Z,12nm,0.8s										
YKW3	**Yellowknife Ar**	**62.63**	**30**		*eP*	**P**	**16 43 38.6**	**+0.3**			
	comp=Z,11nm,1.4s										
YKA	**Yellowknife Ar**	**62.67**	**31**		P	**P**	**16 43 39.1**	**+0.6**			
	comp=Z,3.4nm,0.9s,baz=302,slow=6.6,SNR=42										
YKB5	**Yellowknife Ar**	**62.67**	**31**		*eP*	**P**	**16 43 38.5**	**-0.1**			
ARCES	**ARCESS Array B**	**63.06**	**339**		P	**P**	**16 43 40.6**	**-0.5**			
	comp=Z,2.4nm,0.6s,baz=50,slow=8.0,SNR=11										
ARCES					LR	LR	17 16 08.7				
	comp=Z,46nm,20.3s,baz=53,slow=41										
GEYT	**Alibeck**	**63.59**	**299**		P	**P**	**16 43 45.0**	**-0.2**			
	comp=Z,2.0nm,0.7s,baz=86,slow=7.6,SNR=3.5										
DAG	**Danmarks Havn**	**64.69**	**355**		*i* P	**P**	**16 43 50.8**	**-0.8**			
	comp=Z,10nm,0.9s										
DAG	**Danmarks Havn**	**64.69**	**355**		*i* P	**P**	**16 43 50.8**	**-0.8**			
DAG					pmax	pmax					
	comp=Z,9.0nm,0.9s										
NLWA	**Neilton Lookou**	**65.71**	**48**		*eP*	**P**	**16 44 00.9**	**+2.1**			
	comp=Z,23nm,1.0s										
VRH	**Novokhopyorsk**	**66.97**	**318**		*eP*	**P**	**16 44 04.6**	**-2.1**			
VRH					*e**SP	**pP**	**16 44 18.5**	**-2.4**			
VRH					pmax	pmax					
	comp=Z,8.0nm,0.5s										
OBN	**Obninsk**	**67.40**	**323**	⇓	*eP*	**P**	**16 44 08.3**	**-1.0**			
OBN					*i*		16 44 22.6				
OBN					*e*		16 46 41.9				
OBN					pmax	pmax					
	comp=Z,24nm,1.7s										
OBN					MLR	MLR					
	comp=Z,46nm,20.0s										
LPSR	**Galich'ya Gora**	**67.66**	**320**		*eP*	**P**	**16 44 09.4**	**-1.6**			
LPSR					*e**SP	**pP**	**16 44 22.2**	**-3.0**			
LPSR					pmax	pmax					
	comp=Z,10.0nm,0.6s										
B08A	**Colville Reser**	**67.81**	**45**		*eP*	**P**	**16 44 13.2**	**+1.0**			
	comp=Z,10nm,1.4s										
FIA1	**FINESS Array S**	**67.98**	**332**		*eP*	**P**	**16 44 12.6**	**-0.3**			
	comp=Z,13nm,0.9s										
FINES	**FINESS Array B**	**67.98**	**332**		P	**P**	**16 44 12.7**	**-0.2**			
	comp=Z,7.8nm,0.7s,baz=54,slow=7.5,SNR=28										
FINES					LR	LR	17 15 04.7				
	comp=Z,56nm,18.5s,baz=48,slow=37										
H04A	**Detroit Lake**	**68.12**	**50**		*eP*	**P**	**16 44 16.0**	**+1.8**			
	comp=Z,10nm,1.0s										
VSR	**Storozhevoye**	**68.31**	**319**		*eP*	**P**	**16 44 14.1**	**-1.1**			
VSR					*e**SP	**pP**	**16 44 28.3**	**-1.1**			
VSR					pmax	pmax					
	comp=Z,10.0nm,0.8s										
C09A	**Chrisman Ranch**	**68.71**	**45**		*eP*	**P**	**16 44 18.5**	**+0.8**			
	comp=Z,10nm,1.0s										
NEW	**Newport**	**69.09**	**45**		*eP*	**P**	**16 44 21.3**	**+1.1**			
NEW					pmax	pmax					
	comp=Z,8.0nm,0.9s										
NEW	**Newport**	**69.09**	**45**		*eP*	**P**	**16 44 21.3**	**+1.1**			
	comp=Z,8.2nm,0.9s										
SUMG	**Summit**	**69.56**	**0**		*i* P	**P**	**16 44 23.7**	**+0.7**			
	comp=Z,12nm,0.9s										
SUMG	**Summit**	**69.56**	**0**		*eP*	**P**	**16 44 23.8**	**+0.7**			
SUMG					pmax	pmax					
	comp=Z,14nm,1.0s										
SUMG	**Summit**	**69.56**	**0**		*eP*	**P**	**16 44 23.8**	**+0.7**			
	comp=Z,14nm,1.0s										
VSU	**Vasula**	**69.66**	**329**	⇑	*eP*	**P**	**16 44 23.3**	**-0.1**			
VSU					pmax	pmax					
	comp=Z,41nm,1.7s										
STKA	**Stephens Creek**	**69.68**	**180**		P	**P**	**16 44 24.3**	**+0.6**			
	comp=Z,3.6nm,0.8s,baz=349,slow=7.1,SNR=7.3										
K05A	**Summer Lake**	**69.97**	**51**		*eP*	**P**	**16 44 28.2**	**+2.3**			
	comp=Z,19nm,0.9s										
ZEI	**Tsey**	**70.35**	**309**		*eP*	P	16 44 24.9	-3.3			
ZEI					pmax	pmax					
	comp=Z,6.0nm,0.8s										
WALA	**Waterton Lakes**	**70.38**	**43**		*eP*	**P**	**16 44 29.3**	**+1.2**			
	comp=Z,8.1nm,0.8s										
KIV	**Kislovodsk**	**70.43**	**311**		*d iP*	**P**	**16 44 29.0**	**+0.5**			
KIV					*i*		16 44 43.2				
KIV					*i* S	**S**	**16 53 35.3**	**-2.2**			
KIV					pmax	pmax					
	comp=Z,20nm,1.0s										
KIV					MLR	MLR					
	comp=Z,27nm,16.0s										
KBZ	**Khabaz**	**70.43**	**311**		P	**P**	**16 44 27.7**	**-0.7**			
	comp=Z,5.5nm,0.8s,baz=77,slow=3.0,SNR=12										
MOD	**Modoc Plateau**	**70.80**	**52**		*eP*	**P**	**16 44 33.1**	**+2.2**			
	comp=Z,6.9nm,0.8s										
JTMT	**Jette**	**70.95**	**44**		*eP*	**P**	**16 44 33.4**	**+1.7**			
YBMT	**Yellow Bay**	**71.03**	**44**		*eP*	**P**	**16 44 33.8**	**+1.6**			
SCO	**Scoresbysund**	**71.03**	**354**		*i* P	**P**	**16 44 32.3**	**+0.8**			
	comp=Z,8.2nm,1.0s										
SCO	**Scoresbysund**	**71.03**	**354**		*i* P	**P**	**16 44 32.3**	**+0.8**			
SCO					pmax	pmax					
	comp=Z,8.0nm,1.0s										
SWMT	**Swartz Lake**	**71.24**	**44**		*eP*	**P**	**16 44 34.4**	**+1.0**			
ORV	**Oroville**	**71.36**	**54**		*eP*	**P**	**16 44 34.8**	**+0.6**			
ORV					pmax	pmax					
	comp=Z,6.0nm,1.1s										
ORV	**Oroville**	**71.36**	**54**		*eP*	**P**	**16 44 34.8**	**+0.6**			
	comp=Z,6.3nm,1.1s										
WVOR	**Wild Horse Val**	**71.52**	**50**		*eP*	**P**	**16 44 36.2**	**+1.0**			
WVOR					pmax	pmax					
	comp=Z,5.0nm,0.9s										
WVOR	**Wild Horse Val**	**71.52**	**50**		*eP*	**P**	**16 44 36.2**	**+1.0**			
	comp=Z,5.5nm,0.9s										
MSO	**Missoula**	**71.68**	**45**		*eP*	**P**	**16 44 37.0**	**+0.9**			
	comp=Z,8.7nm,1.4s										
FFC	**Flin Flon**	**72.58**	**33**		*i* P	**P**	**16 44 42.2**	**+1.1**			
FCC	**Fort Churchill**	**72.85**	**27**		*eP*	**P**	**16 44 42.7**	**+0.1**			
FCC					pmax	pmax					
	comp=Z,15nm,1.3s										
FCC	**Fort Churchill**	**72.85**	**27**		*eP*	**P**	**16 44 42.7**	**+0.1**			
	comp=Z,16nm,1.3s										
CMB	**Columbia Colle**	**72.94**	**55**		*eP*	**P**	**16 44 45.0**	**+1.3**			
CMB					pmax	pmax					
	comp=Z,5.0nm,0.8s										
CMB	**Columbia Colle**	**72.94**	**55**		*eP*	**P**	**16 44 45.0**	**+1.3**			
	comp=Z,5.0nm,0.8s										
NC405	**NORSAR Array S**	**73.07**	**337**		*eP*	**P**	**16 44 43.8**	**-0.2**			
LRM	**Limekiln Ridge**	**73.11**	**45**		*eP*	**P**	**16 44 46.1**	**+1.4**			
EGMT	**Eagleton**	**73.21**	**42**		*eP*	**P**	**16 44 46.2**	**+1.1**			
	comp=Z,18nm,0.9s										
NC204	**NORSAR Array S**	**73.23**	**338**		*eP*	**P**	**16 44 45.4**	**+0.4**			
NB201	**NORSAR Array S**	**73.25**	**337**		*eP*	**P**	**16 44 45.0**	**-0.1**			
NB2	**NORSAR Subarra**	**73.28**	**337**		P	**P**	**16 44 44.9**	**-0.3**			
	comp=Z,9.8nm,0.9s,baz=39,slow=6.2										
NOA	**NORSAR Array B**	**73.28**	**337**		P	**P**	**16 44 45.3**	**+0.1**			
	comp=Z,5.4nm,0.8s,baz=39,slow=5.9,SNR=23										
NOA					LR	LR	17 19 40.5				
	comp=Z,47nm,21.5s,baz=20,slow=38										
DLMT	**Dillon**	**73.31**	**45**		*eP*	**P**	**16 44 47.2**	**+1.3**			
	comp=Z,11nm,1.0s										
HLID	**Hailey**	**73.36**	**47**		*eP*	**P**	**16 44 46.9**	**+0.7**			
	comp=Z,6.4nm,1.0s										
NBO02	**NORSAR Array S**	**73.38**	**337**		*eP*	**P**	**16 44 45.7**	**-0.1**			
NBO00	**NORSAR Array S**	**73.42**	**337**		*eP*	**P**	**16 44 45.1**	**-0.9**			
BMN	**Battle Mountai**	**73.55**	**51**		*eP*	**P**	**16 44 47.8**	**+0.4**			
BMN					pmax	pmax					
	comp=Z,7.0nm,0.9s										
BMN	**Battle Mountai**	**73.55**	**51**		*eP*	**P**	**16 44 47.8**	**+0.4**			
	comp=Z,6.9nm,0.9s										
AKASG	**Malin Array Be**	**73.62**	**322**		P	**P**	**16 44 47.0**	**-0.3**			
	comp=Z,4.0nm,0.6s,baz=46,slow=6.4,SNR=25										
AKASG					LR	LR	17 20 05.7				
	comp=Z,41nm,18.4s,baz=55,slow=38										
AKASG	**Malin Array Be**	**73.62**	**322**		P	**P**	**16 44 47.0**	**-0.3**			
AKBB	**Malin Array Si**	**73.62**	**322**		*eP*	**P**	**16 44 46.6**	**-0.7**			
AKBB					pmax	pmax					
	comp=Z,8.0nm,0.8s										
AKBB	**Malin Array Si**	**73.62**	**322**		*eP*	**P**	**16 44 46.5**	**-0.7**			
	comp=Z,7.7nm,0.8s										
KIEV	**Kiev**	**73.63**	**322**	⇓	*eP*	**P**	**16 44 47.3**	**-0.1**			
KIEV					pmax	pmax					
	comp=Z,9.0nm,1.0s										
KIEV	**Kiev**	**73.63**	**322**		*eP*	**P**	**16 44 46.0**	**-1.4**			
	comp=Z,7.3nm,0.8s										
AK11	**Malin Array Si**	**73.66**	**322**		*eP*	**P**	**16 44 46.0**	**-1.6**			
BOZ	**Bozeman (W)**	**73.67**	**44**		*eP*	**P**	**16 44 49.5**	**+1.5**			
BOZ					pmax	pmax					
	comp=Z,6.0nm,0.8s										
BOZ	**Bozeman (W)**	**73.67**	**44**		*eP*	**P**	**16 44 49.5**	**+1.5**			
	comp=Z,6.3nm,0.8s										
NV01	**Mina Array Sit**	**74.05**	**54**		*eP*	**P**	**16 44 51.8**	**+1.4**			
NVAR	**Mina Array Bea**	**74.05**	**54**		P	**P**	**16 44 52.2**	**+1.8**			
	comp=Z,5.2nm,0.8s,baz=282,slow=6.3,SNR=29										
ELK	**Elko**	**74.57**	**50**		*eP*	**P**	**16 44 55.2**	**+1.8**			
ELK					pmax	pmax					
	comp=Z,3.0nm,0.9s										
ELK	**Elko**	**74.57**	**50**		*eP*	**P**	**16 44 55.2**	**+1.8**			
	comp=Z,2.9nm,0.9s										
YMR	**Madison River**	**74.65**	**45**		*eP*	**P**	**16 44 55.0**	**+1.2**			
	comp=Z,16nm,0.3s										
GCMT	**Greycliff**	**74.66**	**43**		*eP*	**P**	**16 44 54.9**	**+1.2**			
KONO	**Kongsberg**	**74.88**	**337**		*i* P	**P**	**16 44 55.2**	**+0.7**			
KONO					pmax	pmax					
	comp=Z,28nm,1.1s										
H17A	**Grant Village**	**75.04**	**45**		*eP*	**P**	**16 44 59.1**	**+3.0**			
	comp=Z,13nm,0.8s										
IMW	**Indian Meadow**	**75.14**	**46**		*eP*	**P**	**16 44 58.5**	**+1.8**			
	comp=Z,9.4nm,0.8s										
FLWY	**Flagg Ranch**	**75.16**	**45**		*eP*	**P**	**16 44 59.2**	**+2.5**			
	comp=Z,13nm,1.3s										
FXWY	**Fox Creek**	**75.26**	**46**		*eP*	**P**	**16 44 59.3**	**+2.0**			
	comp=Z,6.8nm,0.9s										
RLMT	**Red Lodge**	**75.30**	**44**		*eP*	**P**	**16 44 59.1**	**+1.6**			
	comp=Z,29nm,1.9s										
MOOW	**Moose Ponds**	**75.35**	**46**		*eP*	**P**	**16 44 59.7**	**+1.9**			
	comp=Z,7.2nm,1.0s										
HVU	**Hansel Valley**	**75.41**	**48**		*eP*	**P**	**16 44 59.8**	**+1.7**			
HVU					pmax	pmax					
	comp=Z,11nm,1.1s										
HVU	**Hansel Valley**	**75.41**	**48**		*eP*	**P**	**16 44 59.8**	**+1.7**			
	comp=Z,11nm,1.1s										
LOHW	**Long Hollow**	**75.51**	**46**		*eP*	**P**	**16 45 00.4**	**+1.7**			
	comp=Z,5.5nm,1.1s										
REDW	**Red Top Meadow**	**75.53**	**46**		*eP*	**P**	**16 45 00.4**	**+1.5**			
	comp=Z,8.8nm,1.0s										
DGMT	**Dagmar**	**75.75**	**39**		*eP*	**P**	**16 45 00.5**	**+0.7**			
	comp=Z,42nm,1.6s										
DAC	**Darwin (Calif)**	**75.78**	**55**		*eP*	**P**	**16 44 59.7**	**-0.7**			
DAC					pmax	pmax					
	comp=Z,5.0nm,0.8s										
DAC	**Darwin (Calif)**	**75.78**	**55**		*eP*	**P**	**16 44 59.7**	**-0.7**			
	comp=Z,4.9nm,0.8s										
R11A	**Troy Canyon, C**	**75.81**	**52**		*eP*	**P**	**16 45 02.0**	**+1.5**			
	comp=Z,9.4nm,1.2s										
LAO	**LASA Array**	**75.91**	**41**		*eP*	**P**	**16 45 02.3**	**+1.6**			
	comp=Z,17nm,0.9s										
HWUT	**Hardware Ranch**	**76.22**	**48**		*eP*	**P**	**16 45 04.4**	**+1.6**			
	comp=Z,17nm,1.2s										
TPNV	**Topopah Spring**	**76.24**	**54**		*eP*	**P**	**16 45 04.5**	**+1.5**			
TPNV					pmax	pmax					
	comp=Z,11nm,1.0s										
TPNV	**Topopah Spring**	**76.24**	**54**		*eP*	**P**	**16 45 04.5**	**+1.5**			
	comp=Z,11nm,1.0s										
TCUT	**Toone Canyon**	**76.62**	**48**		*eP*	**P**	**16 45 06.7**	**+1.5**			
	comp=Z,11nm,0.8s										
BW06	**Boulder Array**	**76.64**	**46**		*eP*	**P**	**16 45 06.2**	**+1.0**			
	comp=Z,6.2nm,0.8s										
PD31	**Pinedale Array**	**76.64**	**46**		*eP*	**P**	**16 45 06.1**	**+0.9**			
PDAR	**Pinedale Array**	**76.64**	**46**		P	**P**	**16 45 06.3**	**+1.1**			
	comp=Z,5.1nm,0.7s,baz=265,slow=2.4,SNR=51										
PSUT	**Pine Spring**	**76.77**	**51**		*eP*	**P**	**16 45 07.3**	**+1.3**			
	comp=Z,5.4nm,0.9s										
NLU	**North Lily Min**	**76.96**	**49**		*eP*	**P**	**16 45 08.4**	**+1.4**			
	comp=Z,6.1nm,0.9s										
MPU	**Maple Canyon**	**77.18**	**49**		*eP*	**P**	**16 45 09.9**	**+1.6**			
	comp=Z,8.7nm,0.9s										
KWP	**Kalwaria Pacla**	**77.41**	**324**	⇓	*iP*	**P**	**16 45 10.2**	**+1.1**			
KWP	**Kalwaria Pacla**	**77.41**	**324**	⇓	P	**P**	**16 45 10.2**	**+1.1**			
BUR08	**Bucovina Ar. S**	**77.63**	**322**		*eP*	**P**	**16 45 10.4**	**-0.1**			
BURAR	**Bucovina Array**	**77.64**	**322**	⇓	*iP*	**P**	**16 45 10.9**	**+0.4**			
BURAR	**Bucovina Array**	**77.64**	**322**	⇓	P	**P**	**16 45 11.0**	**+0.4**			
MSU	**Marysvale**	**77.81**	**50**		*eP*	**P**	**16 45 13.3**	**+1.5**			
MSU	**Marysvale**	**77.81**	**50**		P	**P**	**16 45 13.3**	**+1.5**			
TMUT	**Trail Mountain**	**77.89**	**49**		*eP*	**P**	**16 45 14.4**	**+2.0**			
	comp=Z,4.7nm,1.0s										
P17A	**Butcher Ranch,**	**78.06**	**49**		*eP*	**P**	**16 45 14.7**	**+1.6**			
	comp=Z,13nm,1.0s										
LCMT	**Little Creek M**	**78.09**	**52**		*eP*	**P**	**16 45 15.2**	**+1.9**			
	comp=Z,6.5nm,0.9s										
MTPU	**Mount Pierson**	**78.10**	**51**		*eP*	**P**	**16 45 15.4**	**+1.8**			
	comp=Z,6.6nm,0.9s										
KOLS	**Kolonicke sedl**	**78.11**	**324**		*eP*	**P**	**16 45 13.0**	**0.0**			
KOLS					pmax	pmax					
	comp=Z,3.0nm,1.0s										
KOLS	**Kolonicke sedl**	**78.11**	**324**		*eP*	**P**	**16 45 13.0**	**0.0**			
PFO	**Pinyon Flats O**	**78.14**	**57**		*i* P	**P**	**16 45 15.8**	**+2.2**			
STHS	**Stebnicka Huta**	**78.23**	**325**		*eP*	**P**	**16 45 14.8**	**+1.1**			
STHS					pmax	pmax					
	comp=Z,4.0nm,0.9s										
STHS	**Stebnicka Huta**	**78.23**	**325**		*eP*	**P**	**16 45 14.8**	**+1.1**			
P18A	**Preston Nutter**	**78.25**	**49**		*eP*	**P**	**16 45 15.5**	**+1.1**			
	comp=Z,20nm,1.5s										
OJC	**Ojcow**	**78.30**	**326**		*eP*	**P**	**16 45 14.6**	**+0.6**			
OJC					pmax	pmax					
	comp=Z,526nm,1.2s										
OJC	**Ojcow**	**78.30**	**326**		*eP*	**P**	**16 45 14.6**	**+0.6**			
	comp=Z,526nm,1.2s										
KNB	**Kanab**	**78.35**	**52**		*eP*	**P**	**16 45 16.6**	**+1.8**			
KNB					pmax	pmax					
	comp=Z,18nm,1.4s										
KNB	**Kanab**	**78.35**	**52**		*eP*	**P**	**16 45 16.6**	**+1.8**			
	comp=Z,18nm,1.4s										
BRTR	**Keskin Array B**	**78.36**	**312**		P	**P**	**16 45 14.7**	**0.0**			
	comp=Z,2.2nm,0.9s,baz=62,slow=2.9,SNR=6.0										
ULM	**Lac du Bonnet**	**78.38**	**34**		P	**P**	**16 45 14.3**	**-0.1**			
	comp=Z,4.0nm,0.8s,baz=278,slow=3.7,SNR=4.7										
ULM	**Lac du Bonnet**	**78.38**	**34**		*eP*	**P**	**16 45 14.2**	**-0.3**			
ULM					pmax	pmax					
	comp=Z,6.0nm,0.8s										
ULM	**Lac du Bonnet**	**78.38**	**34**		*eP*	**P**	**16 45 14.2**	**-0.3**			
	comp=Z,5.5nm,0.8s										
SRU	**San Rafael Swe**	**78.42**	**49**		*eP*	**P**	**16 45 16.5**	**+1.3**			
SRU					pmax	pmax					
	comp=Z,10.0nm,0.8s										
SRU	**San Rafael Swe**	**78.42**	**49**		*eP*	**P**	**16 45 16.5**	**+1.3**			
	comp=Z,10nm,0.8s										
CRVS	**Cervenica-Dubn**	**78.51**	**324**		*eP*	**P**	**16 45 16.4**	**+1.2**			
CRVS	**Cervenica-Dubn**	**78.51**	**324**		*eP*	**P**	**16 45 16.4**	**+1.2**			
W13A	**Hualapai Mount**	**78.89**	**54**		*eP*	**P**	**16 45 18.6**	**+0.8**			
	comp=Z,3.1nm,0.9s										
U15A	**North Rim**	**79.05**	**52**		*eP*	**P**	**16 45 20.5**	**+1.7**			
	comp=Z,7.2nm,0.8s										
DRGR		**79.43**	**322**	⇓	*iP*	**P**	**16 45 21.0**	**+0.6**			
DRGR		**79.43**	**322**	⇓	P	**P**	**16 45 21.0**	**+0.6**			
ARR	**Arges**	**79.49**	**320**	⇑	*iP*	**P**	**16 45 22.6**	**+1.8**			
MORC	**Moravsky Berou**	**79.60**	**327**		*eP*	**P**	**16 45 21.1**	**-0.2**			
MORC	**Moravsky Berou**	**79.60**	**327**		*eP*	**P**	**16 45 21.1**	**-0.2**			
DPC	**Dobruska-Polom**	**79.69**	**328**		*eP*	**P**	**16 45 22.6**	**+0.9**			
DPC	**Dobruska-Polom**	**79.69**	**328**		*eP*	**P**	**16 45 22.6**	**+0.9**			
KRLC	**Kraliky**	**79.70**	**328**		*eP*	**P**	**16 45 22.3**	**+0.5**			
KRLC	**Kraliky**	**79.70**	**328**		*eP*	**P**	**16 45 22.3**	**+0.5**			
AGMN	**Agassiz Nation**	**79.82**	**35**		*eP*	**P**	**16 45 22.2**	**-0.1**			
	comp=Z,2.0nm,0.8s										
N23A	**Red Feather La**	**79.91**	**45**		*eP*	**P**	**16 45 25.1**	**+1.8**			
	comp=Z,15nm,1.1s										
VYHS	**Vyhne**	**79.99**	**325**		*eP*	**P**	**16 45 24.0**	**+0.7**			
VYHS					pmax	pmax					
	comp=Z,2.0nm,0.9s										
VYHS	**Vyhne**	**79.99**	**325**		*eP*	**P**	**16 45 24.0**	**+0.7**			
WUAZ	**Wupatki**	**80.21**	**52**		*eP*	**P**	**16 45 26.4**	**+1.5**			
	comp=Z,9.6nm,0.9s										
BRG	**Berggiesshubel**	**80.26**	**330**		*eP*	**P**	**16 45 24.8**	**+0.1**			
	comp=Z,3.5nm,0.9s										
BRG	**Berggiesshubel**	**80.26**	**330**		*eP*	**P**	**16 45 24.8**	**+0.1**			
BRG					pmax	pmax					
	comp=Z,4.0nm,0.9s										
CLL	**Collm**	**80.29**	**330**	⇓	*iP*	**P**	**16 45 25.0**	**+0.2**			
	comp=Z,10.0nm,1.0s										
CLL					*e*		16 45 39.0				
CLL	**Collm**	**80.29**	**330**	⇓	*iP*	**P**	**16 45 25.0**	**+0.2**			
CLL					*e*		16 45 39.0				
CLL					pmax	pmax					
	comp=Z,10.0nm,1.0s										
CLL	**Collm**	**80.29**	**330**		*eP*	**P**	**16 45 24.6**	**-0.3**			
	comp=Z,9.1nm,0.8s										
113A	**Mohawk Valley,**	**80.43**	**56**		*eP*	**P**	**16 45 26.4**	**+0.5**			
	comp=Z,6.1nm,0.9s										
SMCO	**Snowmass**	**80.47**	**47**		*eP*	**P**	**16 45 27.7**	**+1.1**			
	comp=Z,8.0nm,1.3s										
PRU	**Pruhonice**	**80.70**	**329**		*eP*	**P**	**16 45 27.7**	**+0.6**			
PRU	**Pruhonice**	**80.70**	**329**		*eP*	**P**	**16 45 27.7**	**+0.6**			
ISCO	**Idaho Springs**	**80.83**	**46**		*eP*	**P**	**16 45 29.7**	**+1.4**			
ISCO					pmax	pmax					
	comp=Z,7.0nm,1.2s										
ISCO	**Idaho Springs**	**80.83**	**46**		*eP*	**P**	**16 45 29.7**	**+1.4**			
	comp=Z,7.0nm,1.2s										
MVCO	**Mesa Verde**	**80.87**	**50**		*eP*	**P**	**16 45 30.1**	**+1.6**			
	comp=Z,11nm,1.2s										
NKC	**Novy Kostel**	**81.35**	**330**		*eP*	**P**	**16 45 30.7**	**+0.1**			
NKC	**Novy Kostel**	**81.35**	**330**		*eP*	**P**	**16 45 30.7**	**+0.1**			
MDVR	**Moldovita**	**81.36**	**321**	⇑	*iP*	**P**	**16 45 30.8**	**0.0**			
S22A	**4UR Ranch, Cre**	**81.50**	**48**		*eP*	**P**	**16 45 33.7**	**+1.7**			
	comp=Z,8.7nm,1.3s										
CONA	**Conrad Observa**	**81.73**	**327**		*i* P	**P**	**16 45 33.7**	**+1.0**			
	comp=Z,5.2nm,1.0s										
KHC	**Kasperske Hory**	**81.76**	**329**		*eP*	**P**	**16 45 33.2**	**+0.4**			
KHC					*e*pP	**pP**	**16 45 47.0**	**-0.4**			
KHC	**Kasperske Hory**	**81.76**	**329**		*eP*	**P**	**16 45 32.8**	**0.0**			
KHC					pmax	pmax					
	comp=Z,3.0nm,1.0s										
KHC	**Kasperske Hory**	**81.76**	**329**		*eP*	**P**	**16 45 32.8**	**0.0**			
	comp=Z,3.3nm,1.0s										
GEC2	**GERESS Array S**	**81.93**	**328**		*eP*	**P**	**16 45 33.2**	**-0.6**			
GEC2					pmax	pmax					
	comp=Z,3.0nm,0.5s										
GEC2	**GERESS Array S**	**81.93**	**328**		*eP*	**P**	**16 45 33.2**	**-0.6**			
	comp=Z,3.1nm,0.5s										
GERES	**GERESS Array B**	**81.93**	**328**		P	**P**	**16 45 33.7**	**-0.1**			
	comp=Z,2.8nm,0.9s,baz=38,slow=5.0,SNR=14										
GEA0	**GERESS Array S**	**81.94**	**328**		*eP*	**P**	**16 45 33.3**	**-0.5**			
SDCO	**Great Sand Dun**	**82.28**	**48**		*eP*	**P**	**16 45 37.4**	**+1.4**			
	comp=Z,7.7nm,1.5s										
ARSA	**Arzberg**	**82.39**	**326**		*i* P	**P**	**16 45 36.9**	**+0.7**			
	comp=Z,2.2nm,0.7s										
MOA	**Molln**	**82.47**	**327**		*i* PcP	**P**	**16 45 37.9**	**+1.4**			
	comp=Z,4.4nm,1.1s										
TUC	**Tucson**	**82.65**	**55**		*eP*	**P**	**16 45 39.4**	**+1.6**			
TUC					pmax	pmax					
	comp=Z,12nm,1.6s										
TUC	**Tucson**	**82.65**	**55**		*eP*	**P**	**16 45 39.4**	**+1.6**			
	comp=Z,12nm,1.6s										
URZ	**Urewera**	**82.69**	**153**		LR	LR	17 18 58.2				
	comp=Z,60nm,20.6s,baz=318,slow=33										
ECSD	**

JMM	**Marumori**	**1.10 251**	P		**Pn**	**16 57 29.8**	**-0.7**
JMM			*e*S		**Sn**	**16 57 43.2**	**-1.6**
JOU	**Okura**	**1.15 277**	P		**Pn**	**16 57 31.0**	**-0.1**
JFK	**Kawauchi**	**1.31 229**	P		**Pn**	**16 57 33.0**	**-0.4**
JFK			*e*S		**Sn**	**16 57 48.3**	**-1.7**
MIYJ	**Miyakonagasawa**	**1.35 350**	P		**Pn**	**16 57 33.7**	**-0.3**
MIYJ			S		**Sn**	**16 57 49.2**	**-1.8**
JOM	**Ohasama**	**1.39 333**	P		**Pn**	**16 57 34.6**	**+0.2**
JYK	**Kaneyama**	**1.53 297**	P		**Pn**	**16 57 36.3**	**-0.1**
JFT	**Otama**	**1.58 243**	P		**Pn**	**16 57 37.6**	**+0.5**
JFT			*e*S		**Sn**	**16 57 56.3**	**-0.2**
JYS	**Shirataka**	**1.61 270**	P		**Pn**	**16 57 37.5**	**0.0**
JYS			*e*S		**Sn**	**16 57 56.4**	**-0.9**
JRG	**Rokugo**	**1.63 315**	P		**Pn**	**16 57 38.4**	**+0.6**
MJAR	**Matsushiro Arr**	**3.54 243**	Pn		**Pn**	**16 58 05.9**	**+1.8**
	2.9nm,0.3s,baz=53,slow=10,SNR=23						
MJAR			LR		LR	16 59 42.7	
	comp=Z,81nm,20.6s,baz=105,slow=42						
MAT	**Matsushiro**	**3.54 243**	P		**Pn**	**16 58 06.6**	**+2.5**
MAT			S		**Sb**	**16 58 55.8**	**+0.3**
JHJ	**Hachijo jima 2**	**5.45 201**	Pn		**Pn**	**16 58 29.8**	**-0.5**
	9.7nm,0.3s,baz=229,slow=20,SNR=4.6						
JHJ			Sn		**Sn**	**16 59 28.9**	**-3.1**
	15nm,0.3s,baz=114,slow=20,SNR=3.3						
ASAJ	**Asahikawa**	**5.88 3**	Pn		**Pn**	**16 58 37.8**	**+1.6**
	1.3nm,0.3s,baz=228,slow=9.7,SNR=13						
USRK	**Ussuriysk Ar.**	**9.67 311**	Pn		Pn	16 59 32.8	+4.7
	0.2nm,0.3s,baz=124,slow=15,SNR=3.6						
JNU	**Nakatsue**	**10.46 244**	LR		LR	17 03 51.9	
	comp=Z,45nm,20.1s,baz=133,slow=38						
H11N2	**WAKE ISLAND Hy**	**28.32 124**	T		T	17 33 19.9	
	baz=317,slow=75						
H11N1	**WAKE ISLAND Hy**	**28.33 124**	T		T	17 33 22.4	
	baz=317,slow=75						
H11N3	**WAKE ISLAND Hy**	**28.34 124**	T		T	17 33 23.0	
	baz=317,slow=75						
H11S1	**WAKE ISLAND Hy**	**29.08 126**	T		T	17 34 24.5	
	baz=318,slow=76						
H11S3	**WAKE ISLAND Hy**	**29.08 126**	T		T	17 34 24.3	
	baz=318,slow=76						
H11S2	**WAKE ISLAND Hy**	**29.10 126**	T		T	17 34 25.4	
	baz=318,slow=76						
MKAR	**Makanchi Array**	**43.96 301**	P		**P**	**17 05 17.2**	**+1.7**
	0.2nm,0.6s,baz=88,slow=9.8,SNR=3.2						
ILAR	**Eielson Array**	**48.18 33**	P		**P**	**17 05 48.9**	**+0.5**
	0.3nm,0.7s,baz=251,slow=5.6,SNR=3.9						
WRA	**Warramunga Arr**	**58.33 189**	P		**P**	**17 07 02.7**	**-0.8**
	0.3nm,0.8s,baz=0.0,slow=7.6,SNR=3.6						
ASAR	**Alice Springs**	**62.06 189**	P		**P**	**17 07 28.4**	**-0.5**
	0.3nm,0.9s,baz=7.9,slow=6.2,SNR=3.0						
PDAR	**Pinedale Array**	**76.43 46**	P		**P**	**17 08 58.5**	**+0.3**
	0.4nm,0.7s,baz=294,slow=6.8,SNR=2.2						

ISC 20 16:59:16.3±1.4,**51°50N**±0°07×**15°91E**±0°03,**h0km**,**n13**, σ0**84**/30,**Poland**

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time	Res
								h m s	ISC
KSP	**Ksiaz**	**0.70**	**160**	*e*Pg		**Pg**	**Pg**	**16 59 29.2**	**-0.4**
KSP				*e*Sg		**Sg**	**Sg**	**16 59 39.4**	**+0.8**
UPC	**Upice**	**0.99**	**176**	*e*PG		**Pg**	**Pg**	**16 59 35.4**	**+0.1**
UPC				*e*SG		**Sb**	**Sb**	**16 59 49.5**	**-0.5**
	comp=Z,20nm,0.3s								
DPC	**Dobruska-Polom**	**1.18**	**167**	*e*PG		**Pg**	**Pg**	**16 59 38.0**	**-0.8**
DPC				*e*SG		**Sb**	**Sb**	**16 59 55.1**	**-0.2**
	comp=Z,9.8nm,0.3s								
PVCC	**Panska Ves**	**1.29**	**222**	*e*PG		**Pg**	**Pg**	**16 59 41.1**	**+0.1**
PVCC				*e*SG		**Sn**	**Sn**	**17 00 00.1**	**+0.6**
	comp=Z,38nm,0.2s								
BRG	**Berggiesshubel**	**1.39**	**244**	PG		**Pg**	**Pg**	**16 59 42.6**	**-0.2**
BRG				SG		**Sn**	**Sn**	**17 00 02.2**	**+0.3**
	46nm,0.6s								
KRLC	**Kraliky**	**1.53**	**159**	*e*PG		**Pn**	**Pn**	**16 59 43.2**	**-1.6**
KRLC				*e*SG		**Sg**	**Sg**	**17 00 05.5**	**+0.2**
GOPC	**GO Pecny, Ondr**	**1.74**	**205**	*e*PG		**Pb**	**Pb**	**16 59 49.2**	**+0.1**
GOPC				*e*SG		**Sg**	**Sg**	**17 00 12.5**	**+0.4**
	comp=Z,7.9nm,0.4s								
PRU	**Pruhonice**	**1.75**	**210**	*e*PN		**Pn**	**Pn**	**16 59 47.0**	**-0.8**
PRU				*e*PG		**Pb**	**Pb**	**16 59 48.6**	**-0.5**
PRU				*e*SG		**Sg**	**Sg**	**17 00 12.7**	**+0.4**
	comp=Z,9.7nm,0.4s								
CLL	**Collm**	**1.83**	**265**	*e*Pg		**Pn**	**Pn**	**16 59 47.0**	**-2.0**
CLL				*i* Sg		**Sg**	**Sg**	**17 00 15.1**	**0.0**
	comp=Z,9.0nm,0.5s								
OKC	**Ostrava-Krasne**	**2.19**	**139**	*e*PG		**Pb**	**Pb**	**16 59 56.2**	**-0.5**
OKC				*e*SG		**Sb**	**Sb**	**17 00 25.8**	**+1.5**
NKC	**Novy Kostel**	**2.54**	**241**	*e*PN		**Pn**	**Pn**	**16 59 58.2**	**-0.5**
NKC				*e*PG		**Pb**	**Pb**	**17 00 03.8**	**+1.2**
NKC				*e*SG		**Sg**	**Sg**	**17 00 38.4**	**+0.8**
	comp=Z,12nm,0.4s								
OJC	**Ojcow**	**2.77**	**116**	*e*Pg		**Pb**	**Pb**	**17 00 07.6**	**+0.9**
OJC				*e*SG		**Sb**	**Sb**	**17 00 42.7**	**+1.5**
KHC	**Kasperske Hory**	**2.80**	**213**	*e*PN		**Pn**	**Pn**	**17 00 01.5**	**-0.9**
KHC				*e*PG		**Pb**	**Pb**	**17 00 08.0**	**+0.8**
KHC				*e*SN		**Sn**	**Sn**	**17 00 37.1**	**+0.2**
KHC				*e*SG		**Sg**	**Sg**	**17 00 46.4**	**+0.2**
	comp=Z,4.0nm,0.4s								

CSEM ***20*** *17:10:38.1±0.6,39°.80N×38°.86E,h2km, MD2.4, Error ellipse: s-maj=13.6km s-min=9.2km az=147.0*
ISK ***20*** *17:10:40.8,40°.08N×38°.82E,h10km, MD2.6*
ISCJB ***20*** *17:10:41.2±0.7,40°.08N±0°.06×38°.83E±0°.04,h10km±9km, Error ellipse: s-maj=9.6km s-min=5.2km az=4.9*
DDA ***20*** *17:10:41.2,40°.05N×38°.80E,h7km, Md2.4*

ISC 20 17:10:40.3±1.8,**40°02N**±0°07×**38°87E**±0°05,**h4km**±19km, **n15**,σ0**23**/24,**Turkey**

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time	Res
								h m s	ISC
KELT	**Kelkit**	**0.32**	**67**	*i* P		**Pb**	**Pb**	**17 10 48.6**	**0.0**
KELT				*i* S		**Sb**	**Sb**	**17 10 54.1**	**-0.1**
KELT	**Kelkit**	**0.32**	**67**	P		**Pb**	**Pb**	**17 10 48.7**	**0.0**
KELT				S		**Sb**	**Sb**	**17 10 54.2**	**-0.1**
SUSE	**Susehri**	**0.55**	**290**	*i* P		**Pg**	**Pg**	**17 10 50.8**	**0.0**
SUSE				*i* S		**Sg**	**Sg**	**17 10 58.2**	**+0.3**
SUSE	**Susehri**	**0.55**	**290**	P		**Pg**	**Pg**	**17 10 50.8**	**0.0**
SUSE				S		**Sg**	**Sg**	**17 10 58.2**	**+0.3**
REFA	**Refahiye_ERZ¯**	**0.63**	**188**	*i* P		Pg	Pg	17 10 44.7	-7.7
REFA				*i* S		Sg	Sg	17 10 47.0	-14
REFA	**Refahiye_ERZ¯**	**0.63**	**188**	P		Pg	Pg	17 10 44.7	-7.7
REFA				S		Sg	Sg	17 10 47.0	-14
GUMT	**Gumushane**	**0.64**	**47**	*e*PG		**Pb**	**Pb**	**17 10 53.6**	**-0.4**
GUMT				*e*SG		**Sb**	**Sb**	**17 11 03.5**	**+0.1**
GUMT	**Gumushane**	**0.64**	**47**	*e*Pg		**Pb**	**Pb**	**17 10 53.7**	**-0.4**
GUMT				*e*Sg		**Sb**	**Sb**	**17 11 03.5**	**+0.1**
ERZN	**Erzincan**	**0.79**	**123**	*e*PG		**Pn**	**Pn**	**17 10 58.2**	**-0.1**
ESPY	**Espiye-Giresun**	**0.90**	**353**	*e*PG		**Pg**	**Pg**	**17 10 57.4**	**-0.1**
ESPY				*e*SG		**Sg**	**Sg**	**17 11 09.4**	**+0.2**
ESPY	**Espiye-Giresun**	**0.90**	**353**	*e*Pg		**Pg**	**Pg**	**17 10 57.4**	**-0.1**
BAYT	**Ayd¯–ntepe-Bay**	**1.04**	**69**	*e*PG		**Pb**	**Pb**	**17 11 01.1**	**+0.2**
BAYT				*e*SG		**Sb**	**Sb**	**17 11 15.3**	**+0.3**
BAYT	**Ayd¯–ntepe-Bay**	**1.04**	**69**	*e*Pg		**Pb**	**Pb**	**17 11 01.1**	**+0.2**
BAYT				*e*Sg		**Sb**	**Sb**	**17 11 15.3**	**+0.3**
SVSK	**Karacayir**	**1.44**	**266**	*e*PN		**Pn**	**Pn**	**17 11 07.2**	**+0.1**
SVSK				*e*SN		**Sg**	**Sg**	**17 11 26.4**	**-0.3**
SVSK	**Karacayir**	**1.44**	**266**	*e*Pn		**Pn**	**Pn**	**17 11 07.2**	**+0.1**
SVSK				*e*Sn		**Sg**	**Sg**	**17 11 26.4**	**-0.3**

IDC 20 17:14:43.3±15.0,**17°39S**×**178°57W**,**h601**km±142km, **mb3.2**/4,**mb1 3.4**/4,**mb1mx2.8**/39,**mbtmp4.3**/4,**Error ellipse: s-maj=138.4km s-min=70.6km az=111.0,Fiji Islands region**

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time	Res
								h m s	ISC
CTA	**Charters Tower**	**33.39**	**260**	P		P	P	17 20 34.2	+0.3
	1.6nm,0.7s,baz=103,slow=10,SNR=5.8								
STKA	**Stephens Creek**	**38.75**	**241**	P		P	P	17 21 17.4	-0.3
	1.6nm,0.6s,baz=94,slow=6.8,SNR=5.2								
WRA	**Warramunga Arr**	**44.58**	**259**	P		P	P	17 22 03.5	-0.3
	1.8nm,0.5s,baz=94,slow=7.5,SNR=94								
WRA				PcP		PcP	PcP	17 23 33.3	-0.1
	1.3nm,0.9s,baz=83,slow=3.9,SNR=3.2								
ASAR	**Alice Springs**	**44.79**	**254**	P		P	P	17 22 05.2	-0.1
	6.9nm,0.5s,baz=88,slow=8.5,SNR=152								
ASAR				PcP		PcP	PcP	17 23 33.5	-0.6
	0.4nm,0.5s,baz=106,slow=3.9,SNR=5.8								
GERES	**GERESS Array B**	**147.08**	**345**	PKPbc		PKPbc	PKPbc	17 33 19.2	-0.6
	0.5nm,0.5s,baz=28,slow=3.2,SNR=4.5								

ISCJB ***20*** *17:20:05.6±1.1,35°.79N±0°.07×142°.21E±0°.10,h23km, mb3.3/4,Error ellipse: s-maj=11.3km s-min=9.5km az=168.0*
IDC ***20*** *17:20:05.1±2.2,35°.70N×142°.11E,h0km,mb3.3/4, mb1 3.5/6,mb1mx3.3/48,mbtmp3.3/6,ML3.2/2,Error ellipse: s-maj=44.8km s-min=25.6km az=63.0*
JMA ***20*** *17:20:06.9±0.2,35°.87N×142°.12E,h70km±4km,M2.8*

ISC 20 17:20:08.0±1.4,**35°81N**±0°07×**142°1E**±0°1,**h23km**,**n20**, σ0**85**/16,**mb3.2/4,Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time	Res
								h m s	ISC
CHOJ	**Chosi**	**1.02**	**264**	P		**Pn**	**Pn**	**17 20 26.1**	**-0.9**
CHOJ				S		**Sb**	**Sb**	**17 20 40.3**	**+0.2**
BSO1	**Boso 1**	**1.48**	**219**	P		**Pn**	**Pn**	**17 20 33.0**	**+0.2**
BSO3	**Boso 3**	**1.65**	**233**	P		**Pn**	**Pn**	**17 20 35.6**	**+0.2**
JFT	**Otama**	**2.22**	**321**	P		**Pn**	**Pn**	**17 20 42.8**	**-0.7**
JAG	**Ashikaga**	**2.24**	**287**	P		**Pn**	**Pn**	**17 20 42.4**	**-1.3**
JOD2	**Odawara 2**	**2.53**	**258**	P		**Pn**	**Pn**	**17 20 47.1**	**-0.6**
JYN	**Shimob**	**2.92**	**265**	P		**Pn**	**Pn**	**17 20 53.0**	**-0.2**
MJAR	**Matsushiro Arr**	**3.24**	**284**	Pn		**Pn**	**Pn**	**17 20 56.6**	**-0.9**
	1.3nm,0.3s,baz=95,slow=9.3,SNR=15								
MAT	**Matsushiro**	**3.24**	**284**	P		**Pn**	**Pn**	**17 20 57.4**	**-0.1**
JHJ	**Hachijo jima 2**	**3.30**	**216**	Pn		**Pn**	**Pn**	**17 20 56.5**	**-1.9**
	12nm,0.3s,baz=75,slow=20,SNR=4.2								
JHJ				Sn		**Sn**	**Sn**	**17 21 36.5**	**-0.3**
	13nm,0.3s,baz=107,slow=19,SNR=2.8								
H11N2	**WAKE ISLAND Hy**	**27.05**	**120**	T		T	T	17 54 09.0	
	baz=312,slow=75,SNR=8.0								
H11N1	**WAKE ISLAND Hy**	**27.06**	**120**	T		T	T	17 54 14.1	
	baz=312,slow=75,SNR=4.7								
H11N3	**WAKE ISLAND Hy**	**27.06**	**120**	T		T	T	17 54 10.8	
	baz=312,slow=75,SNR=6.0								
H11S1	**WAKE ISLAND Hy**	**27.73**	**122**	T		T	T	17 54 49.3	
	baz=314,slow=76,SNR=7.4								
H11S3	**WAKE ISLAND Hy**	**27.73**	**122**	T		T	T	17 54 54.1	
	baz=314,slow=76,SNR=8.0								
H11S2	**WAKE ISLAND Hy**	**27.74**	**122**	T		T	T	17 54 57.5	
	baz=314,slow=76,SNR=6.2								
CMAR	**Chiang Mai Arr**	**41.75**	**257**	P		**P**	**P**	**17 27 56.2**	**+0.6**
	0.3nm,0.6s,baz=40,slow=8.5,SNR=2.8								
MKAR	**Makanchi Array**	**45.25**	**303**	P		**P**	**P**	**17 28 24.6**	**+1.0**
	0.2nm,0.6s,baz=80,slow=8.0,SNR=3.8								
WRA	**Warramunga Arr**	**55.93**	**189**	P		**P**	**P**	**17 29 43.9**	**-0.5**
	0.7nm,0.6s,baz=7.0,slow=7.4,SNR=9.4								
ASAR	**Alice Springs**	**59.66**	**189**	P		**P**	**P**	**17 30 10.5**	**0.0**
	0.1nm,0.6s,baz=7.3,slow=7.3,SNR=5.4								

NIED ***20*** *17:37:00.3°.40N×144°.10E,h8km,Mw3.7 Best double couple: M0=4.48000×10^14 NP1:φs=54.00000°,δ20.00000°, λ-104.00000°. NP2:φs=249.00000°,δ70.00000°, λ-85.00000°.*
IDC ***20*** *17:37:39.3±0.9,37°.20N×144°.43E,h0km,mb3.6/6, mb1 3.9/10,mb1mx3.6/35,mbtmp3.7/10,ML4.0/3,MS2.7/1, Ms1 2.7/1,ms1mx2.1/34,Error ellipse: s-maj=26.1km s-min=18.1km az=111.0*
ISCJB ***20*** *17:37:41.9±0.6,37°.28N±0°.05×144°.19E±0°.06,h33km, mb3.7/8,Error ellipse: s-maj=6.7km s-min=6.2km az=26.9*
JMA ***20*** *17:37:44.1±0.3,37°.37N×144°.06E,h50km,M3.9*
NEIC ***20*** *17:37:44.1±0.8,37°.19N×144°.34E,h35km,mb4.0/2,Error ellipse: s-maj=18.8km s-min=13.8km az=138.0*

ISC 20 17:37:43.9±0.9,**37°28N**±0°06×**144°21E**±0°08,**h35km**,**n36**, σ1**64**/37,**mb3.7/8,Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time	Res
								h m s	ISC
JIO	**Ouri**	**2.55**	**298**	P		**Pn**	**Pn**	**17 38 22.2**	**-0.5**
JIO				*e*S		**Sn**	**Sn**	**17 38 50.8**	**-1.8**
JFK	**Kawauchi**	**2.66**	**273**	P		**Pn**	**Pn**	**17 38 24.1**	**-0.2**
JFK				*e*S		**Sn**	**Sn**	**17 38 53.8**	**-1.6**
OFUJ	**Ofunato**	**2.69**	**313**	P		**Pn**	**Pn**	**17 38 23.8**	**-0.9**
ONAJ	**Iwakimizuishiy**	**2.73**	**267**	*e*S		**Sn**	**Sn**	**17 38 55.8**	**-1.3**
JMM	**Marumori**	**2.78**	**283**	P		**Pn**	**Pn**	**17 38 25.4**	**-0.5**
JMM				*e*S		**Sn**	**Sn**	**17 38 56.5**	**-1.7**
JOU	**Okura**	**3.01**	**292**	P		**Pn**	**Pn**	**17 38 29.4**	**+0.3**
JFT	**Otama**	**3.10**	**276**	P		**Pn**	**Pn**	**17 38 31.2**	**+1.0**
JOM	**Ohasama**	**3.17**	**315**	P		**Pn**	**Pn**	**17 38 30.7**	**-0.6**
JOM				*e*S		**Sn**	**Sn**	**17 39 06.0**	**-1.9**
JYK	**Kaneyama**	**3.45**	**300**	P		**Pn**	**Pn**	**17 38 35.5**	**+0.4**
BSO1	**Boso 1**	**3.70**	**226**	P		**Pn**	**Pn**	**17 38 37.7**	**-0.4**
JANG	**Nango**	**3.74**	**327**	P		**Pn**	**Pn**	**17 38 38.2**	**-0.9**
JAG	**Ashikaga**	**3.91**	**259**	P		**Pn**	**Pn**	**17 38 41.8**	**+0.4**
JRY	**Ryogami san**	**4.45**	**255**	P		**Pn**	**Pn**	**17 38 48.3**	**-0.6**
JRY				*e*S		**Sn**	**Sn**	**17 39 35.9**	**-3.6**
JOD2	**Odawara 2**	**4.60**	**246**	P		**Pn**	**Pn**	**17 38 50.5**	**-0.5**
MJAR	**Matsushiro Arr**	**4.87**	**263**	Pn		**Pn**	**Pn**	**17 38 56.1**	**+1.5**
	3.7nm,0.3s,baz=88,slow=15,SNR=22								
MAJO	**Matsushiro**	**4.87**	**263**	*e*Pn		**Pn**	**Pn**	**17 38 56.5**	**+1.9**
MAT	**Matsushiro**	**4.87**	**263**	P		**Pn**	**Pn**	**17 38 56.5**	**+1.9**
MAT				S		**Sn**	**Sn**	**17 39 49.4**	**-0.3**
JHJ2	**Mitsune**	**5.50**	**222**	*e*Pn		**Pn**	**Pn**	**17 39 02.5**	**-0.7**
JHJ	**Hachijo jima 2**	**5.51**	**222**	Pn		**Pn**	**Pn**	**17 39 02.2**	**-1.2**
	14nm,0.3s,baz=274,slow=19,SNR=5.5								
JHJ				Sn		**Sn**	**Sn**	**17 40 00.7**	**-4.8**
	15nm,0.3s,baz=17,slow=18,SNR=3.6								
ASAJ	**Asahikawa**	**6.94**	**350**	Pn		**Pn**	**Pn**	**17 39 21.6**	**-1.5**
	3.1nm,0.3s,baz=194,slow=10.0,SNR=30								
ASAJ				Sn		**Sn**	**Sn**	**17 40 38.5**	**-2.3**
	0.0nm,0.3s,baz=32,slow=19,SNR=2.7								
USRK	**Ussuriysk Ar.**	**11.56**	**311**	Pn		**Pn**	**Pn**	**17 40 27.4**	**+1.1**
	0.2nm,0.3s,baz=114,slow=15,SNR=4.4								
KLR	**Kul'dur**	**14.98**	**327**	LR		LR		17 47 30.6	
	comp=Z,25nm,18.3s,baz=131,slow=39								
H11N2	**WAKE ISLAND Hy**	**26.40**	**125**	T		T	T	18 10 44.6	
	baz=317,slow=75,SNR=26								
H11N1	**WAKE ISLAND Hy**	**26.41**	**125**	T		T	T	18 10 45.7	
	baz=317,slow=75,SNR=14								
H11N3	**WAKE ISLAND Hy**	**26.42**	**125**	T		T	T	18 10 43.8	
	baz=317,slow=75,SNR=16								
H11S1	**WAKE ISLAND Hy**	**27.17**	**127**	T		T	T	18 11 23.0	
	baz=317,slow=74								
H11S3	**WAKE ISLAND Hy**	**27.17**	**127**	T		T	T	18 11 19.1	
	baz=317,slow=74								
H11S2	**WAKE ISLAND Hy**	**27.19**	**127**	T		T	T	18 11 37.6	
	baz=317								
CMAR	**Chiang Mai Arr**	**43.73**	**257**	P		**P**	**P**	**17 45 48.2**	**+2.3**
	0.4nm,0.7s,baz=52,slow=7.7,SNR=5.7								
MKAR	**Makanchi Array**	**45.88**	**302**	P		**P**	**P**	**17 46 05.0**	**+2.3**
	0.2nm,0.7s,baz=90,slow=8.9,SNR=2.2								
ILAR	**Eielson Array**	**48.09**	**32**	P		**P**	**P**	**17 46 20.6**	**+0.9**
	0.5nm,0.8s,baz=276,slow=8.1,SNR=6.5								
INK	**Inuvik**	**53.15**	**27**	P		**P**	**P**	**17 46 58.1**	**+0.4**
	0.4nm,0.5s,baz=295,slow=4.8,SNR=2.9								
WRAB	**Tennant Creek**	**57.66**	**191**	*e*P		**P**	**P**	**17 47 29.6**	**-1.1**
	1.2nm,0.6s								
WRA	**Warramunga Arr**	**57.67**	**191**	P		**P**	**P**	**17 47 30.8**	**0.0**
	1.6nm,0.5s,baz=9.7,slow=7.0,SNR=34								
ABKAR	**Akbulak array**	**59.48**	**311**	P		**P**	**P**	**17 47 41.6**	**-1.6**
	0.5nm,0.6s								
ASAR	**Alice Springs**	**61.39**	**191**	P		**P**	**P**	**17 47 57.0**	**+0.5**
	0.5nm,0.8s,baz=17,slow=9.3,SNR=8.9								

GCMT ***20*** *17:56:08.0±0.3,41°.32S×89°.29W,h15km,MW4.9/76, Moment Tensor Solution. s35,c41; s76,c97; Duration: 0 Moment tensor: Scale 10^16Nm; Mrr-0.23±.12; Mθθ0.26±.12; Mθθ-0.03±.12; Mrθ-0.51±.36; Mθφ-2.82±.07; Mφr-0.14±.34; Best double couple: M0=2.87600×10^16 NP1:φs89.00000°,δ86.00000°,λ-169.00000°. NP2: φs358.00000°,δ79.00000°,λ-4.00000°. Principal axes: T 2.9630, Plg5.0000°, Azm223.0000°; N -0.1740, Plg79.0000°, Azm107.0000°; P -2.7890, Plg10.0000°, Azm314.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

IDC 20 17:56:13.0±5.0,**40°92S**×**89°19W**,**h0km**,**mb3.7**/3, **mb1 4.1**/4,**mb1mx3.7**/26,**mbtmp3.7**/4,**ML3.2/1**,**MS4.0**/11, **Ms1 4.0**/11,**ms1mx3.8**/32 **Error ellipse: s-maj=129.1km s-min=43.7km az=12.0,West Chile Rise**

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time	Res
								h m s	ISC
PLCA	**Paso Flores**	**14.12**	**95**	Pn		Pn	Pn	17 59 33.7	-0.6
	0.0nm,0.3s,baz=265,slow=10,SNR=2.3								
PLCA				LR		LR	LR	18 03 42.8	
	comp=Z,437nm,21.1s,baz=282,slow=32								
PMSA	**Palmer Station**	**27.93**	**157**	LR		LR	LR	18 09 53.4	
	comp=Z,208nm,21.3s,baz=310,slow=29								
CPUP	**Villa Florida**	**30.06**	**71**	LR		LR	LR	18 13 35.1	
	comp=Z,399nm,18.5s,baz=242,slow=35								
LPAZ	**La Paz**	**30.57**	**43**	P		P	P	18 02 29.4	+0.3
	0.5nm,0.5s,baz=228,slow=13,SNR=3.7								
LPAZ				LR		LR	LR	18 12 13.4	
	comp=Z,386nm,18.6s,baz=200,slow=31								
NNA	**Nana**	**30.79**	**24**	LR		LR	LR	18 11 36.7	
	comp=Z,195nm,21.3s,baz=189,slow=30								
SIV	**San Ignacio**	**34.77**	**53**	LR		LR	LR	18 16 00.1	
	comp=Z,286nm,21.0s,baz=223,slow=34								
ATAH	**Atahualpa**	**34.99**	**19**	LR		LR	LR	18 13 58.3	
	comp=Z,564nm,20.8s,baz=216,slow=30								
ROSC	**El Rosal**	**47.53**	**20**	LR		LR	LR	18 23 16.8	
	comp=Z,164nm,18.2s,baz=192,slow=34								
VNDA	**Vanda**	**54.32**	**195**	LR		LR	LR	18 23 23.5	
	comp=Z,139nm,21.9s,baz=112,slow=30								
MAW	**Mawson**	**69.75**	**169**	LR		LR	LR	18 36 08.8	
	comp=Z,83nm,19.8s,baz=235,slow=34								
TXAR	**Lajitas Array**	**71.17**	**347**	P		P	P	18 07 33.1	-0.4
	0.2nm,0.5s,baz=155,slow=6.9,SNR=2.5								
PDAR	**Pinedale Array**	**85.31**	**345**	P		P	P	18 08 52.2	+0.5
	0.2nm,0.3s,baz=163,slow=6.6,SNR=3.6								
BOSA	**Boshof**	**87.99**	**127**	LR		LR	LR	18 39 47.0	
	comp=Z,70nm,21.9s,baz=208,slow=30								

JMA ***20*** *18:12:44.6±0.2,28°.12N×128°.00E,h14km±2km,M3.0*
IDC ***20*** *18:12:48.3±1.3,28°.04N×128°.19E,h0km,mb3.4/4, mb1 3.5/5,mb1mx3.3/40,mbtmp3.4/5,ML3.0/1,MS2.8/3, Ms1 2.8/3,ms1mx2.4/35,Error ellipse: s-maj=54.1km s-min=22.1km az=74.0*

ISC 20 18:12:48.2±1.8,**27°98N**±0°05×**128°24E**±0°07,**h8km**±11km, **n16**,σ1**79**/19,**mb3.2**/4,**Ryukyu Islands**

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time	Res
								h m s	ISC
JTK	**Tokunoshima**	**0.66**	**107**	P		P	**Pg**	**18 13 01.4**	**+0.6**
JTK				S		S	**Sb**	**18 13 13.2**	**+2.0**
JOKE	**Okinoerabujima**	**0.68**	**155**	P		P	**Pg**	**18 13 01.9**	**+0.5**
JOKE				S		S	**Sb**	**18 13 14.0**	**+2.0**
JAMN	**Amaminishikomi**	**0.86**	**72**	P		P	**Pg**	**18 13 03.9**	**-0.9**
JAMN				S		S	**Sb**	**18 13 18.0**	**+0.8**
JIH	**Iheya**	**0.97**	**195**	P		P	Pg	18 13 04.6	-2.3
JIH				S		S	**Sg**	**18 13 19.1**	**-0.5**
JOW	**Kunigami**	**1.14**	**179**	P		P	**Pn**	**18 13 08.2**	**-2.4**
JOW				S		S	**Sb**	**18 13 25.3**	**0.0**
JAM	**Amami Oshima**	**1.28**	**70**	P		P	**Pn**	**18 13 10.9**	**-1.5**
JAM				*e*S		S	**Sb**	**18 13 28.7**	**-0.4**
JTAJ	**Takarajima**	**1.44**	**36**	P		P	**Pn**	**18 13 11.1**	**-3.6**
JTAJ				S		S	**Sn**	**18 13 30.1**	**-3.7**
JNTH	**Nagotoyohara**	**1.47**	**188**	P		P	**Pn**	**18 13 12.7**	**-2.3**
JNTH				S		S	**Sn**	**18 13 33.0**	**-1.5**
**J

4.2nm,0.3s,baz=260,slow=29,SNR=4.5
X18A Snowflake 7.10 10 *e*Pn **Pn 18 23 26.5 -2.5**
PFO Pinyon Flats O 7.46 326 Pn **Pn 18 23 32.6 -1.3**
0.4nm,0.3s,baz=146,slow=13,SNR=4.8
PFO Lg Lg 18 25 43.3
0.2nm,0.3s,baz=101,slow=5.2,SNR=1.8
PFO LR LR 18 26 12.0
comp=Z,4μm,19.9s,baz=146,slow=36
PFO Pinyon Flats O 7.46 326 *e*Pn **Pn 18 23 32.9 -1.0**
PFO Lg Lg 18 25 43.3
W18A Petrified Fore 7.71 10 *e*Pn **Pn 18 23 38.8 +1.4**
LAZ Ladron 7.78 27 *e*Pn Pn 18 23 40.5 +2.2
BNM Barren Site 7.78 31 *e*Pn **Pn 18 23 38.1 -0.3**
W13A Hualapai Mount 7.84 345 *e*Pn **Pn 18 23 37.2 -2.0**
LPM Los Pinos Moun 7.92 30 *e*Pn **Pn 18 23 38.9 -1.3**
WUAZ Wupatki 7.97 0 *e*Pn **Pn 18 23 42.5 +1.6**
ANMO Albuquerque 8.53 29 Pn **Pn 18 23 48.1 -0.6**
0.1nm,0.3s,baz=79,slow=18,SNR=2.3
ANMO Lg Lg 18 26 08.9
1.6nm,0.3s,baz=305,slow=21,SNR=11
U15A North Rim 8.91 355 *e*Pn **Pn 18 23 55.1 +1.1**
OSI Osito Audit: C 9.44 320 *e*Pn Pn 18 24 04.3 +3.3
KNB Kanab 9.54 353 *e*Pn **Pn 18 24 01.9 -0.6**
WSHM Spangler Hills 9.57 329 *e*Sn **Sn 18 25 47.9 -2.6**
WSHM eLg Lg 18 26 51.7
LCMT Little Creek M 9.59 351 *e*Pn **Pn 18 24 02.6 -0.5**
MSTX Muleshoe 9.83 47 *e*Pn **Pn 18 24 06.7 +0.3**
ISA Isabella, Lake 10.10 325 *e*Pn **Pn 18 24 11.6 +1.5**
DAC Darwin (Calif) 10.18 331 *e*Pn **Pn 18 24 13.2 +2.0**
DAC eLg Lg 18 27 24.2
TPNV Topopah Spring 10.25 338 *e*Pn **Pn 18 24 12.5 +0.4**
JCT Junction City 10.59 71 *e*Pn **Pn 18 24 17.3 +0.6**
S22A 4UR Ranch, Cre 10.90 20 *e*Pn Pn 18 24 23.9 +2.7
MSU Marysvale 10.98 357 *e*Pn **Pn 18 24 21.4 -0.8**
AMTX Amarillo 11.10 46 *e*Pn **Pn 18 24 22.8 -1.0**
T25A Trinidad 11.27 30 *e*Pn Pn 18 24 28.0 +1.8
SDCO Great Sand Dun 11.35 25 *e*Pn **Pn 18 24 24.1 -3.2**
R11A Troy Canyon, C 11.35 343 *e*Pn **Pn 18 24 26.6 -0.7**
ABTX Abilene, Hawke 11.39 61 *e*Pn **Pn 18 24 27.2 -0.5**
SRU San Rafael Swe 11.58 3 *e*Pn **Pn 18 24 31.7 +1.3**
TMUT Trail Mountain 11.74 1 *e*Pn Pn 18 24 35.1 +2.3
P17A Butcher Ranch, 11.93 3 *e*Pn **Pn 18 24 36.8 +1.6**
P18A Preston Nutter 12.11 4 *e*Pn Pn 18 24 40.2 +2.4
NV11 Mina Array Sit 12.26 334 *e*Pn **Pn 18 24 41.0 +1.4**
NV01 Mina Array Sit 12.31 334 *e*Pn Pn 18 24 43.2 +2.7
NVAR Mina Array Bea 12.31 334 Pn Pn 18 24 44.2 +3.7
0.2nm,0.3s,baz=158,slow=15,SNR=15
NVAR Lg Lg 18 28 12.8
1.5nm,0.3s,baz=259,slow=24,SNR=8.8
NVAR LR LR 18 29 23.2
comp=Z,1μm,18.8s,baz=146,slow=38
NLU North Lily Min 12.41 358 *e*Pn Pn 18 24 44.0 +2.2
MPU Maple Canyon 12.46 359 *e*Pn Pn 18 24 44.8 +2.3
DUG Dugway, Tooele 12.69 355 *e*Pn Pn 18 24 47.7 +2.1
O20A White River Ci 12.85 11 *e*Pn **Pn 18 24 47.9 +0.1**
32nm,1.0s
CMB Columbia Colle 12.91 327 *e*Pn **Pn 18 24 48.3 -0.2**
WHTX Lake Whitney, 12.92 66 *e*Pn **Pn 18 24 49.5 +1.0**
WMOK Wichita Mounta 12.99 53 *e*Pn **Pn 18 24 47.9 -1.6**
JLU Jordanelle 13.05 360 *e*Pn Pn 18 24 53.5 +3.0
CTU Camp Tracy 13.14 359 *e*Pn **Pn 18 24 53.5 +1.8**
BGU Big Grassy Mou 13.44 355 *e*Pn Pn 18 24 58.1 +2.4
ELK Elko 13.56 348 LR LR 18 30 08.4
comp=Z,2μm,20.1s,baz=136,slow=38
ELK Elko 13.56 348 *e*Pn **Pn 18 24 59.6 +2.1**
BMN Battle Mountai 13.74 341 *e*Pn **Pn 18 25 01.5 +1.6**
AFDM Forest Hills D 13.91 327 *e*Pn **Pn 18 25 04.2 +2.2**
HWUT Hardware Ranch 14.05 360 *e*Pn Pn 18 25 06.7 +2.6
HVU Hansel Valley 14.27 356 *e*Pn **Pn 18 25 07.8 +0.7**
ORV Oroville 14.64 328 *e*Pn P 18 25 15.0 -3.4
U34A Anderson Ranch 14.74 49 *e*Pn **Pn 18 25 11.9 -1.6**
11nm,0.7s
AHID Auburn Hatcher 15.21 1 *e*Pn **Pn 18 25 21.2 +1.3**
58nm,1.6s
PDAR Pinedale Array 15.29 5 Pn **P 18 25 24.5 -1.4**
baz=146,slow=9.8,SNR=3.3
PDAR LR LR 18 31 58.7
comp=Z,1μm,19.7s,baz=193,slow=41
K22A Casper 15.61 14 *e*Pn **P 18 25 32.8 +3.4**
134nm,1.4s
WDC Whiskeytown Da 15.94 328 *e*Pn **P 18 25 31.8 -1.0**
36nm,1.3s
WVOR Wild Horse Val 16.00 340 *e*Pn **P 18 25 31.8 -1.8**
51nm,1.5s
MOD Modoc Plateau 16.08 335 *e*Pn **P 18 25 33.7 -0.9**
57nm,1.3s
HLID Hailey 16.19 352 *e*Pn **P 18 25 35.3 -0.5**
12nm,1.2s
HLID *e*PcP PcP 18 30 31.9 +4.4
MOOW Moose Ponds 16.20 2 *e*Pn **P 18 25 34.5 -1.5**
37nm,1.5s
KMRM Mail Ridge 16.25 324 *e*Pn **P 18 25 36.4 0.0**
102nm,1.2s
MFID Camas Ranch 16.25 348 *e*Pn **P 18 25 34.8 -1.6**
26nm,1.3s
IMW Indian Meadow 16.34 1 *e*Pn **Pn 18 25 34.9 +0.2**
47nm,1.4s
FLWY Flagg Ranch 16.54 2 *e*Pn **P 18 25 40.2 +0.5**
42nm,1.3s
KHMM Horse Mountain 16.74 326 *e*Pn **P 18 25 43.4 +1.5**
62nm,1.3s
MIAR Mount Ida 16.81 61 *e*P **Pn 18 25 38.5 -1.8**
11nm,1.1s
H17A Grant Village 16.85 2 *e*P **Pn 18 25 37.1 -4.0**
14nm,1.3s
KSU1 Kansas State U 16.90 43 *e*P **P 18 25 43.2 -0.4**
42nm,0.8s
YBH Yreka Blue Hor 16.93 330 Pn **P 18 25 43.0 -0.9**
0.1nm,0.3s,baz=131,slow=6.5,SNR=8.5
YBH LR LR 18 31 57.6
comp=Z,1μm,19.2s,baz=170,slow=36
K05A Summer Lake 17.02 336 *e*Pn **P 18 25 47.3 +2.3**
148nm,1.4s
HHAR Hobbs 17.20 55 *e*Pn **P 18 25 47.5 +0.6**
13nm,1.0s
MCMT McKenzie Canyo 17.31 357 *e*Pn P 18 25 52.7 +4.4
BMO Blue Mountains 17.93 346 *e*Pn **P 18 25 56.6 +1.7**
30nm,1.5s
X301 Greenbrier Sit 17.95 60 *e*Pn **P 18 25 56.0 +0.9**
46nm,1.2s
X301 *e*Sn **S 18 29 20.0 -1.2**
X201 Greenbrier Sit 18.00 60 *e*Pn **P 18 25 56.0 +0.3**
43nm,1.1s
WHAR Wooly Hollow 18.05 60 *e*Pn **P 18 25 56.8 +0.5**
75nm,1.4s
BOZ Bozeman (W) 18.09 360 *e*Pn **P 18 25 56.2 -0.5**
19nm,1.3s
GCMT Greycliff 18.29 4 *e*P Pn 18 25 50.8 -8.0
CMIG Matías Romero 18.47 121 P **Pn 18 26 01.8 +0.8**
0.2nm,0.3s,baz=306,slow=13,SNR=3.8
CMIG LR LR 18 32 18.6
comp=Z,1μm,18.6s,baz=264,slow=34
F10A Beach Ranch, E 18.98 347 *e*P **P 18 26 02.3 -4.3**
F10A *e*Pn **pP 18 26 07.8 -1.6**
G06A Carlson Farm, 19.15 340 *e*P **Pn 18 26 10.6 +1.4**
45nm,1.4s
H04A Detroit Lake 19.18 336 *e*P **Pn 18 26 11.4 +1.9**
18nm,0.9s
HAWA Hanford 19.90 343 *e*P **Pn 18 26 18.6 +0.6**
22nm,1.3s
SWMT Swartz Lake 20.05 355 *e*P Pn 18 26 22.8 +2.8
TRW Toppenish Ridg 20.08 341 P Pn 18 26 22.9 +2.7
JTMT Jette 20.31 354 *e*P Pn 18 26 24.6 +1.5
D08A Wollman Farm, 20.37 345 *e*P Pn 18 26 23.7 +0.1
14nm,0.9s
YBMT Yellow Bay 20.41 355 *e*P Pn 18 26 24.1 -0.1
BSMT Bassoo Peak 20.46 354 *e*P Pn 18 26 26.8 +1.8
EGMT Eagleton 20.51 3 *e*P Pn 18 26 23.8 -1.6
LON Longmire 20.87 340 P **P 18 26 26.9 -0.2**
TBM Table Mountain 20.90 342 P Pn 18 26 30.6 +0.8
C09A Chrisman Ranch 20.94 347 *e*P Pn 18 26 28.7 -1.6
13nm,1.1s
FMW Mount Fremont 20.99 340 P **P 18 26 28.9 +0.4**
LTY Liberty 21.00 342 *e*P **P 18 26 31.2 +2.8**
24nm,1.3s
NEW Newport 21.18 349 P **P 18 26 29.5 -0.9**
20nm,0.8s,baz=168,slow=11,SNR=21
NEW LR LR 18 35 24.9
comp=Z,911nm,20.2s,baz=174,slow=39
NEW Newport 21.18 349 *e*P **P 18 26 29.5 -0.9**
24nm,0.8s
SIUC Southern Illin 21.24 56 *e*P **P 18 26 34.1 +3.1**
48nm,1.0s
GSM Grass Mountain 21.27 340 P **P 18 26 30.5 -0.9**
E03A Lebam 21.27 336 *e*P **P 18 26 31.8 +0.5**
42nm,1.0s
D05A Enumclaw 21.32 340 *e*P **P 18 26 34.1 +2.4**
152nm,1.8s
NLW Nelson Butte 21.67 344 P **P 18 26 38.8 +3.0**
B08A Colville Reser 21.69 346 *e*P **P 18 26 37.9 +2.0**
14nm,1.2s
WVT Waverly 21.76 61 *e*P **P 18 26 35.8 -0.9**
51nm,1.3s
LRAL Lakeview Retre 21.77 69 *e*P **P 18 26 35.1 -1.7**
12nm,0.8s
NLWA Neilton Lookou 22.11 337 *e*P **P 18 26 41.3 +1.0**
52nm,1.8s
TEIG Tepich 22.35 104 LR LR 18 37 28.7
comp=Z,473nm,19.4s,baz=6.0,slow=42
OLIL Olney 22.44 54 *e*P **P 18 26 43.4 -0.5**
40nm,1.0s
SWET Sewanee 23.03 64 *e*P **P 18 26 48.3 -1.9**
7.2nm,1.3s
AGMN Agassiz Nation 24.01 26 *e*P **P 18 27 01.1 +1.4**
18nm,1.1s
CPCT Cooper Cave 24.21 64 *e*P **P 18 27 02.1 +0.4**
22nm,1.4s
GOGA Godfrey 24.76 69 *e*P P 18 27 09.8 +3.1
25nm,1.4s
TKL Tuckaleechee C 24.85 64 P **P 18 27 09.0 +1.5**
11nm,0.8s,baz=232,slow=7.0,SNR=6.7
TKL LR LR 18 37 10.5
comp=Z,857nm,19.6s,baz=256,slow=37
TKL Tuckaleechee C 24.85 64 *e*P **P 18 27 09.9 +2.4**
49nm,1.5s
TZTN Tazewell 25.21 62 *e*P **P 18 27 11.6 +0.8**
21nm,1.2s
COWI Conover 25.59 38 *e*P **P 18 27 14.7 +0.6**
16nm,1.0s
ULM Lac du Bonnet 25.61 23 LR LR 18 36 05.5
comp=Z,367nm,20.9s,baz=215,slow=34
ULM Lac du Bonnet 25.61 23 *e*P **P 18 27 16.9 +2.6**
18nm,1.1s
BBB Bella Bella 27.63 338 LR LR 18 38 21.2
comp=Z,554nm,19.9s,baz=169,slow=36
FFC Flin Flon 28.04 12 *e*P P 18 27 32.5 -3.6
3.9nm,0.9s
FCC Fort Churchill 33.48 16 *e*P **P 18 28 21.3 -2.7**
15nm,0.9s
DLBC Dease Lake 33.52 342 P **P 18 28 24.9 +0.4**
6.5nm,0.9s,baz=187,slow=7.1
DLBC Dease Lake 33.52 342 *e*P **P 18 28 24.8 +0.2**
13nm,1.2s
YKA Yellowknife Ar 35.03 357 P **P 18 28 37.2 -0.3**
1.4nm,0.9s,baz=172,slow=8.1,SNR=18
YKB5 Yellowknife Ar 35.03 357 *e*P **P 18 28 38.1 +0.6**
YKB5 *e*PcP **PcP 18 31 11.0 +1.8**
YKW3 Yellowknife Ar 35.10 357 *e*P **P 18 28 39.2 +1.2**
16nm,1.6s
EGAK Eagle 41.78 341 *e*P **P 18 29 34.5 +0.3**
4.3nm,0.9s
DOT Dot Lake 41.83 339 *e*P **P 18 29 34.0 -0.7**
8.2nm,0.9s
ROSC El Rosal 41.89 116 LR LR 18 48 07.5
comp=Z,194nm,18.6s,baz=336,slow=38
SML Sawmill 42.12 335 *e*P **P 18 29 38.9 +1.8**
15nm,1.1s
SCHQ Schefferville 42.20 37 P **P 18 29 38.3 +0.6**
10nm,1.1s,baz=262,slow=4.8,SNR=3.2
SCHQ LR LR 18 48 07.4
comp=Z,452nm,18.3s,baz=264,slow=38
INK Inuvik 42.89 348 P **P 18 29 42.2 -0.9**
4.5nm,0.9s,baz=154,slow=11,SNR=13
INK LR LR 18 47 52.0
comp=Z,629nm,18.0s,baz=139,slow=37
INK Inuvik 42.89 348 *e*P **P 18 29 42.0 -1.1**
9.1nm,1.0s
SPU Mount Spurr 43.23 333 *e*P **P 18 29 47.9 +1.8**
RND Reindeer 43.29 336 *e*P **P 18 29 47.9 +1.4**
30nm,1.9s
IL1 Eielson Array 43.51 339 *e*P **P 18 29 47.9 -0.3**
ILAR Eielson Array 43.51 339 P **P 18 29 47.1 -1.2**
3.6nm,1.0s,baz=148,slow=7.4,SNR=15
ILB Eielson Array 43.51 339 *e*P **P 18 29 47.4 -0.8**
MCK McKinley 43.52 337 *e*P **P 18 29 48.3 -0.1**
42nm,2.0s
TRF Thorofare Moun 43.83 336 *e*P **P 18 29 51.4 +0.4**
20nm,1.2s
KTH Kantishna Hill 44.12 336 *e*P **P 18 29 52.4 -0.9**
8.3nm,0.9s
PPLA Purkeypile 44.22 335 *e*P **P 18 29 53.7 -0.4**
43nm,1.4s
FYU Fort Yukon 44.24 341 *e*P **P 18 29 56.0 +2.0**
45nm,1.6s
BPAW Bear Paw Mtn. 44.47 336 *e*P **P 18 29 55.0 -1.0**
59nm,2.0s
CAST Castle Rocks 44.47 335 *e*P **P 18 29 56.1 0.0**
4.9nm,0.7s
SVW2 Sparrevohn 44.66 331 *e*P **P 18 29 57.5 -0.1**
38nm,1.8s
MLY Manley 44.94 338 *e*P **P 18 29 59.2 -0.6**
29nm,1.7s
TAOE Nuku Hiva Isla 45.63 222 *e*LR LR 18 42 50.6
456nm,24.7s
TT01 Tatalina 45.72 333 *e*P **P 18 30 05.7 -0.2**
TTA Tatalina 45.73 333 *e*P P 18 30 08.7 +2.7
18nm,1.7s
COLD Coldfoot 46.14 340 *e*P **P 18 30 07.6 -1.5**
7.4nm,1.1s
RES Resolute Bay 47.98 6 P **P 18 30 24.4 +1.1**
0.4nm,0.4s,baz=197,slow=13,SNR=4.1
PPT Papeete 58.11 224 LR LR 18 50 24.4
comp=Z,178nm,18.9s,baz=6.5,slow=30
PPT2 Papeete2 58.13 224 *e*LR LR 18 48 39.5
429nm,24.0s,baz=28
SAML Samuel 59.11 121 *e*P **P 18 31 43.4 -2.5**
18nm,1.8s
LPAZ La Paz 60.48 131 P P 18 31 58.0 +2.1
1.4nm,0.9s,baz=338,slow=11,SNR=3.2
LPAZ LR LR 18 56 39.1
comp=Z,120nm,21.6s,baz=330,slow=35
PETK Petropavlovsk- 68.99 320 LR LR 19 01 09.3
comp=Z,35nm,18.8s,baz=80,slow=34
TIXI Tiksi 72.75 343 *e*P **P 18 33 10.4 -2.4**
5.4nm,1.0s
PLCA Paso Flores 77.78 149 LR LR 19 01 01.3
comp=Z,236nm,18.9s,baz=354,slow=30
YAK Yakutsk 78.29 335 LR LR 19 09 15.8
comp=Z,154nm,19.0s,baz=55,slow=36
NB2 NORSAR Subarra 80.30 25 P P 18 33 57.8 +1.9
comp=Z,3.7nm,1.1s,baz=310,slow=5.9
NOA NORSAR Array B 80.30 25 P **P 18 33 57.3 +1.4**
comp=Z,1.1nm,0.8s,baz=311,slow=5.3,SNR=4.3
NRIK Noril'sk 82.43 353 LR LR 19 12 08.3
comp=Z,326nm,20.2s,baz=0.5,slow=37
FINES FINESS Array B 84.92 19 P P 18 34 21.7 +1.9
comp=Z,2.5nm,0.8s,baz=354,slow=7.7,SNR=7.5
FINES LR LR 19 11 17.1
comp=Z,422nm,21.0s,baz=330,slow=35
KLR Kul'dur 85.16 324 P P 18 34 23.4 +2.1
comp=Z,0.4nm,0.4s,baz=86,slow=7.9,SNR=3.7
MDT Midelt 88.18 54 LR LR 19 11 39.3
comp=Z,221nm,19.2s,baz=339,slow=34
MJAR Matsushiro Arr 88.65 311 LR LR 19 05 53.7
comp=Z,96nm,21.6s,baz=35,slow=30
DAVOX Davos/Dischmat 89.03 36 LR LR 19 13 51.5
comp=Z,346nm,18.3s,baz=298,slow=35
AKASG Malin Array Be 94.70 24 LR LR 19 19 19.1
comp=Z,170nm,18.2s,baz=315,slow=36
KSRS Korea Array 94.71 317 LR LR 19 12 55.3
comp=Z,29nm,20.5s,baz=130,slow=32
GUMO Guam 95.59 288 LR LR 19 09 10.7
comp=Z,84nm,21.8s,baz=31,slow=30
KEST Kesra 95.88 45 LR LR 19 16 43.7
comp=Z,157nm,20.1s,baz=255,slow=34
SONA1 Songino Array 97.63 335 *e*P Pdif 18 35 19.4 -0.5
SONM Songino Array 97.64 335 LR LR 19 24 08.9
comp=Z,110nm,18.3s,baz=53,slow=38
ZALV Zalesovo Beam 97.66 350 LR LR 19 21 59.4
comp=Z,124nm,21.5s,baz=68,slow=37
WRA Warramunga Arr 119.93 262 PKP **PKPdf 18 40 35.7 -0.5**
comp=Z,0.9nm,0.7s,baz=64,slow=2.4,SNR=9.3
ASAR Alice Springs 121.56 259 PKP **PKPdf 18 40 40.9 +1.5**
comp=Z,0.6nm,0.7s,baz=68,slow=2.7,SNR=8.3
CMAR Chiang Mai Arr 125.64 324 PKP **PKPdf 18 40 49.0 +1.7**
comp=Z,0.7nm,0.8s,baz=350,slow=2.0,SNR=7.3
CM01 Chiang Mai Arr 125.66 324 *e*PKPdf **PKPdf 18 40 48.5 +1.1**

*IDC **20** 18:25:07.0±1.6,35°.95N×140°.09E,h75km±13km,mb3.7/11, mb1 3.7/14,mb1mx3.4/61,mbtmp4.0/14,MS3.8/3, Ms1 3.8/3,ms1mx2.8/49,Error ellipse: s-maj=25.9km s-min=9.0km az=80.0*

*ISCJB **20** 18:25:07.2±0.6,35°.90N±0°.04×139°.85E±0°.08,h89km±4km, mb4.0/12,Error ellipse: s-maj=11.6km s-min=5.6km az=168.5*

*NEIC **20** 18:25:07.3±1.0,35°.92N×140°.00E,h76km±7km,mb4.6/1, Error ellipse: s-maj=12.6km s-min=8.3km az=100.0*

*JMA **20** 18:25:09.0±0.1,35°.90N×139°.82E,h77km±1km,M3.4 Broadband fault plane solution: P waves. NP1: φs=357.00000°,δ70.00000°,λ87.00000°. NP2: φs=185.00000°,δ20.00000°,λ98.00000°. Principal axes: T Plg65.0000°, Azm262.0000°; N Plg3.0000°, Azm358.0000°; P Plg25.0000°, Azm89.0000°;*

JMA Felt I J1.

ISC 20 18:25:07.9±0.9,35°.92N±0°.05×139°.90E±0°.07,h81km±7km, n32,σ0°94/35,mb4.2/12,1C-5D,Near south coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time	Res
								h m s	ISC
JAG	**Ashikaga**	**0.62**	**325**	⇓P		**Pn**		**18 25 23.7**	**+0.9**
JAG				S		**Sn**		**18 25 34.1**	**+0.3**
JRY	**Ryogami san**	**0.81**	**277**	⇓P		**Pn**		**18 25 25.5**	**+0.7**
JRY				S		**Sn**		**18 25 37.6**	**+0.1**
JOD2	**Odawara 2**	**0.93**	**225**	⇓P		**Pn**		**18 25 25.9**	**-0.2**
JOD2				S		**Sn**		**18 25 38.4**	**-1.4**
JKT	**Katashina**	**0.99**	**328**	P		**Pn**		**18 25 27.9**	**+0.9**
JKT				S		**Sn**		**18 25 41.6**	**+0.4**
JYN	**Shimob**	**1.18**	**249**	⇓P		**Pn**		**18 25 29.2**	**0.0**
JYN				S		**Sn**		**18 25 44.1**	**-1.1**
BSO3	**Boso 3**	**1.22**	**156**	⇑P		**Pn**		**18 25 30.5**	**+1.1**
BSO3				X				18 25 48.1	
JIM2	**Oshima 3**	**1.26**	**198**	⇓P		**Pn**		**18 25 30.1**	**-0.1**
JIM2				S		**Sn**		**18 25 46.0**	**-0.9**
MJAR	**Matsushiro Arr**	**1.50**	**295**	P		**Pn**		**18 25 33.3**	**+0.1**
	51nm,0.3s,baz=88,slow=27,SNR=230								
MAJO	**Matsushiro**	**1.50**	**295**	*e*Pn		**Pn**		**18 25 33.4**	**+0.2**
MAT	**Matsushiro**	**1.50**	**295**	P		**Pn**		**18 25 33.7**	**+0.5**
MAT				S		**Sn**		**18 25 51.8**	**-0.6**
JHJ	**Hachijo jima 2**	**2.80**	**182**	P		**Pn**		**18 25 51.8**	**+1.3**
	45nm,0.3s,baz=115,slow=22,SNR=11								
JHJ				S		**Sn**		**18 26 23.2**	**0.0**
	93nm,0.3s,baz=68,slow=23,SNR=8.3								
JNU	**Nakatsue**	**7.95**	**252**	P		**Pn**		**18 27 01.4**	**+0.7**
	0.3nm,0.3s,baz=49,slow=9.3,SNR=6.3								
ASAJ	**Asahikawa**	**8.44**	**13**	P		**Pn**		**18 27 06.9**	**-0.5**
	0.5nm,0.3s,baz=189,slow=20,SNR=5.8								
ASAJ				S		**Sn**		**18 28 37.4**	**-3.6**
	0.5nm,0.3s,baz=54,slow=19,SNR=3.0								
H11N2	**WAKE ISLAND Hy**	**28.68**	**117**	T		T		19 00 57.2	
	baz=308,slow=75,SNR=4.6								
H11N1	**WAKE ISLAND Hy**	**28.69**	**117**	T		T		19 00 52.9	
	baz=308,slow=75,SNR=3.3								
H11N3	**WAKE ISLAND Hy**	**28.70**	**117**	T		T		19 00 58.5	
	baz=308,slow=75,SNR=4.2								
CMAR	**Chiang Mai Arr**	**40.03**	**255**	LR		LR		18 49 18.9	
	comp=Z,32nm,19.9s,baz=170,slow=36								
ZALV	**Zalesovo Beam**	**41.77**	**313**	P		**P**		**18 32 49.4**	**+0.3**
	2.2nm,0.4s,baz=102,slow=8.2,SNR=12								
MKAR	**Makanchi Array**	**43.68**	**303**	P		**P**		**18 33 06.3**	**+1.6**
	0.5nm,0.5s,baz=92,slow=5.3,SNR=4.0								
PMG	**Port Moresby**	**45.60**	**170**	LR		LR		18 50 44.9	
	comp=Z,75nm,18.2s,baz=170,slow=34								
KURK	**Kurchatov**	**45.66**	**309**	P		**P**		**18 33 20.7**	**+0.4**
KURBB	**Kurchatov Arra**	**45.73**	**309**	P		**P**		**18 33 20.7**	**-0.1**
	1.2nm,0.3s,baz=76,slow=7.1,SNR=28								
TKM2	**Tokmak 2**	**49.09**	**299**	*e*P		**P**		**18 33 48.2**	**+0.9**
	2.6nm,0.4s								
AAK	**Ala-Archa**	**49.95**	**299**	P		**P**		**18 33 54.0**	**+0.3**
	1.2nm,0.5s,baz=133,slow=3.2,SNR=5.5								
BVAR	**Borovoye Array**	**50.42**	**313**	P		**P**		**18 33 57.2**	**+0.3**
	0.2nm,0.3s,baz=95,slow=8.7,SNR=4.1								
FITZ	**Fitzroy Crossi**	**55.40**	**197**	P		**P**		**18 34 33.9**	**+0.1**
	1.7nm,0.6s,baz=15,slow=5.5,SNR=10								
WRA	**Warramunga Arr**	**55.81**	**186**	P		**P**		**18 34 36.5**	**-0.3**
	0.8nm,0.5s,baz=0.7,slow=7.5,SNR=13								
ARU	**Arti**	**56.39**	**319**	P		**P**		**18 34 40.2**	**-0.3**
	1.2nm,0.4s,baz=106,slow=15,SNR=3.5								
ASAR	**Alice Springs**	**59.53**	**186**	P		**P**		**18 35 03.0**	**+0.1**
	0.5nm,0.7s,baz=5.0,slow=6.9,SNR=13								
ARCES	**ARCESS Array B**	**64.60**	**339**	P		**P**		**18 35 36.3**	**0.0**
	3.2nm,0.8s,baz=60,slow=7.4,SNR=3.4								
FINES	**FINESS Array B**	**69.22**	**332**	P		**P**		**18 36 05.7**	**0.0**
	0.8nm,0.7s,baz=94,slow=6.3,SNR=4.0								
GERES	**GERESS Array B**	**83.00**	**328**	LR		LR		19 16 14.1	
	comp=Z,231nm,18.8s,baz=292,slow=37								

*IDC **20** 18:40:29.7±1.3,38°.55N×144°.92E,h0km,mb3.8/8, mb1 4.0/10,mb1mx3.6/49,mbtmp3.8/10,ML3.2/2,MS3.0/2, Ms1 3.0/2,ms1mx2.4/47,Error ellipse: s-maj=45.9km s-min=19.7km az=80.0*

*ISCJB **20** 18:40:34.3±1.0,38°.5N±0°.1×144°.7E±0°.3,h43km,mb3.8/8, MS4.4/1,Error ellipse: s-maj=29.6km s-min=16.5km az=163.8*

ISC 20 18:40:36.2±1.3,38°.6N±0°.2×144°.8E±0°.2,h43km,n16, σ0°60/9,mb3.7/8,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time	Res
								h m s	ISC
MJAR	**Matsushiro Arr**	**5.59**	**251**	LR		LR		18 44 20.8	
	comp=Z,116nm,18.1s,baz=75,slow=41								
ASAJ	**Asahikawa**	**5.80**	**344**	Pn		Pn		18 41 56.5	-3.2
	1.0nm,0.3s,baz=199,slow=13,SNR=15								
USRK	**Ussuriysk Ar.**	**11.14**	**305**	Pn		**Pn**		**18 43 12.4**	**-0.3**
	0.3nm,0.3s,baz=99,slow=14,SNR=7.9								
KSRS	**Korea Array**	**13.34**	**271**	LR		LR		18 47 55.9	
	comp=Z,65nm,21.1s,baz=98,slow=33								
SEY	**Seymchan**	**24.85**	**8**	P		**P**		**18 45 54.4**	**+0.1**
	1.2nm,0.6s,baz=203,slow=4.1,SNR=5.5								
H11N2	**WAKE ISLAND Hy**	**26.80**	**128**	T		T		19 14 08.7	
	baz=320								
H11N1	**WAKE ISLAND Hy**	**26.81**	**128**	T		T		19 14 08.7	
	baz=320								
H11N3	**WAKE ISLAND Hy**	**26.82**	**128**	T		T		19 14 08.0	
	baz=320								
ZALV	**Zalesovo Beam**	**42.89**	**311**	P		**P**		**18 48 30.3**	**+0.1**
	0.4nm,0.4s,baz=93,slow=6.3,SNR=3.3								
MKAR	**Makanchi Array**	**45.59**	**301**	P		**P**		**18 48 52.3**	**+0.4**
	1.0nm,0.9s,baz=86,slow=9.8,SNR=9.2								
WRA	**Warramunga Arr**	**59.00**	**191**	P		**P**		**18 50 30.9**	**-0.6**
	1.0nm,0.8s,baz=10,slow=7.0,SNR=7.1								
ASAR	**Alice Springs**	**62.72**	**191**	P		**P**		**18 50 57.0**	**+0.3**
	0.5nm,0.8s,baz=2.8,slow=5.1,SNR=5.1								
FINES	**FINESS Array B**	**68.69**	**333**	P		**P**		**18 51 34.0**	**-0.9**
	1.3nm,0.6s,baz=54,slow=9.7,SNR=7.4								
STKA	**Stephens Creek**	**70.13**	**183**	LR		LR		19 24 00.4	
	comp=Z,187nm,18.6s,baz=188,slow=37								
KBZ	**Khabaz**	**71.91**	**312**	P		**P**		**18 51 55.6**	**+0.8**
	1.9nm,0.8s,baz=354,slow=4.1,SNR=4.6								
AKASG	**Malin Array Be**	**74.70**	**324**	P		**P**		**18 52 11.3**	**+0.2**
	0.5nm,0.6s,baz=40,slow=7.4,SNR=4.6								

*NIED **20** 18:41:00,37°.10N×140°.70E,h5km,Mw3.8 Best double couple: M₀5.09000×10¹⁴ NP1:φs341.00000°,δ38.00000°, λ-104.00000°. NP2:φs177.00000°,δ54.00000°, λ-80.00000°.*

*ISCJB **20** 18:41:05.2±0.5,37°.06N±0°.03×140°.77E±0°.05,h15km±4km, mb3.9/12,Error ellipse: s-maj=6.7km s-min=4.9km az=34.6*

*JMA **20** 18:41:05.7,37°.07N×140°.68E,h8km±1km,M3.9 Broadband fault plane solution: P waves. NP1: φs208.00000°,δ57.00000°,λ-100.00000°. NP2: φs45.00000°,δ35.00000°,λ-76.00000°. Principal axes: T Plg11.0000°, Azm305.0000°; N Plg8.0000°, Azm213.0000°; P Plg76.0000°, Azm89.0000°;*

JMA Felt III J1.

*IDC **20** 18:41:12.3±3.4,37°.01N×140°.45E,h59km±30km,mb3.7/12, mb1 3.8/12,mb1mx3.6/48,mbtmp3.9/12 Error ellipse: s-maj=23.5km s-min=16.3km az=89.0*

ISC 20 18:41:05.3±1.1,37°.08N±0°.03×140°.61E±0°.04,h6km±7km, n29,σ0°81/31,mb3.9/12,7C,Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time	Res
								h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.15**	**82**	⇑P		**Pg**		**18 41 08.3**	**-0.1**
ONAJ				S		**Sg**		**18 41 10.0**	**-0.4**
JFK	**Kawauchi**	**0.35**	**36**	⇑P		**Pg**		**18 41 12.4**

JFT	**Otama**	**0.49**	**333**	⇑P		**Pb**	**18 41 16.1**	**-0.3**
JFT				S		**Sb**	**18 41 23.1**	**-0.7**
JSB	**Shiboa**	**0.57**	**259**	⇑P		**Pb**	**18 41 18.2**	**+0.5**
JSB				S		**Sb**	**18 41 26.6**	**+0.5**
JFY	**Yanaizu**	**0.79**	**294**	⇑P		**Pb**	**18 41 21.9**	**+0.3**
JFY				S		**Sb**	**18 41 32.9**	**+0.3**
JMM	**Marumori**	**0.80**	**10**	⇑P		**Pg**	**18 41 20.6**	**0.0**
JMM				S		**Sg**	**18 41 31.5**	**+0.5**
MJAR	**Matsushiro Arr**	**2.00**	**255**	P		**Pb**	**18 41 41.4**	**-0.9**
	31nm,0.3s,baz=77,slow=15,SNR=119							
MJAR				S		**Sb**	**18 42 08.2**	**+0.8**
	17nm,0.3s,baz=93,slow=25,SNR=6.2							
MAT	**Matsushiro**	**2.00**	**255**	P		**Pb**	**18 41 41.6**	**-0.6**
MAT				S		**Sg**	**18 42 09.3**	**-0.4**
KSRS	**Korea Array**	**10.12**	**276**	P		Pn	18 43 37.5	+6.2
	0.3nm,0.3s,baz=91,slow=13,SNR=12							
SONM	**Songino Array**	**27.23**	**304**	P		**P**	**18 46 50.6**	**+0.4**
	1.3nm,0.7s,baz=104,slow=9.0,SNR=8.8							
H11N2	**WAKE ISLAND Hy**	**28.73**	**120**	T		T	19 16 48.7	
	baz=313,slow=75,SNR=54							
H11N1	**WAKE ISLAND Hy**	**28.73**	**120**	T		T	19 16 49.3	
	baz=313,slow=75,SNR=55							
H11N3	**WAKE ISLAND Hy**	**28.74**	**120**	T		T	19 16 50.0	
	baz=313,slow=75,SNR=50							
H11S1	**WAKE ISLAND Hy**	**29.43**	**122**	T		T	19 17 39.6	
	baz=314,slow=76,SNR=56							
H11S3	**WAKE ISLAND Hy**	**29.43**	**122**	T		T	19 17 41.9	
	baz=314,slow=76,SNR=52							
H11S2	**WAKE ISLAND Hy**	**29.44**	**122**	T		T	19 17 43.0	
	baz=314,slow=76,SNR=32							
MKAR	**Makanchi Array**	**42.55**	**302**	P		**P**	**18 49 10.0**	**+0.1**
	0.8nm,0.5s,baz=84,slow=8.3,SNR=10							
ILAR	**Eielson Array**	**49.80**	**32**	P		**P**	**18 49 58.4**	**-0.2**
	1.1nm,0.7s,baz=273,slow=5.7,SNR=8.3							
INK	**Inuvik**	**54.64**	**27**	P		**P**	**18 50 36.5**	**+2.0**
	0.9nm,0.8s,baz=259,slow=8.3,SNR=3.3							
WRA	**Warramunga Arr**	**57.02**	**187**	P		**P**	**18 50 51.0**	**-1.1**
	6.0nm,0.6s,baz=2.9,slow=7.3,SNR=57							
ASAR	**Alice Springs**	**60.75**	**187**	P		**P**	**18 51 17.3**	**-0.7**
	1.9nm,0.7s,baz=13,slow=7.0,SNR=18							
GEYT	**Ailbeck**	**63.25**	**299**	P		**P**	**18 51 34.9**	**0.0**
	1.6nm,0.8s,baz=317,slow=6.1,SNR=4.0							
YKA	**Yellowknife Ar**	**64.09**	**30**	P		**P**	**18 51 41.7**	**+1.8**
	0.1nm,0.5s,baz=292,slow=6.5,SNR=3.7							
FINES	**FINESS Array B**	**68.47**	**332**	P		**P**	**18 52 07.5**	**-0.4**
	1.5nm,0.7s,baz=50,slow=10,SNR=5.1							
STKA	**Stephens Creek**	**68.61**	**179**	P		**P**	**18 52 09.0**	**-0.1**
	1.5nm,0.7s,baz=323,slow=13,SNR=3.4							
AKASG	**Malin Array Be**	**73.87**	**322**	P		**P**	**18 52 38.9**	**-2.0**
	0.4nm,0.5s,baz=46,slow=5.7,SNR=6.8							
PDAR	**Pinedale Array**	**78.09**	**45**	P		**P**	**18 53 05.8**	**+0.3**
	0.5nm,0.6s,baz=29,slow=3.4,SNR=4.4							
LPAZ	**La Paz**	**147.22**	**59**	PKPbc		**PKPbc**	**19 00 50.5**	**-0.4**
	1.5nm,0.7s,baz=22,slow=5.9,SNR=5.6							

*CSEM **20** 18:47:21.3,36.65N×21.52E,h22km,ML1.8/3*
ATH 20 18:47:21.3,36.65N×21.52E, h22km±5km, ML1.8/3, Error ellipse: s-maj=8.8km s-min=3.5km az=84.0, Southern Greece

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PYL	**PYLOS**	**0.30**	**36**	P	Pb	18 47 28.2	0.0
PYL				S	Sb	18 47 33.2	+0.4
PYL	**PYLOS**	**0.30**	**36**	P	Pb	18 47 22.6	-5.6
PYL				S	Sb	18 47 23.2	-10
PYL				AML	AML	18 47 34.2	
	comp=N,218μm,0.2s						
PYL				AML	AML	18 47 34.5	
	comp=E,483μm,0.3s						
PYL	**PYLOS**	**0.30**	**36**	P	Pb	18 47 28.2	0.0
PYL				S	Sb	18 47 33.2	+0.4
PYL				AML	AML	18 47 34.2	
	comp=N,218μm,0.2s						
PYL				AML	AML	18 47 34.5	
	comp=E,483μm,0.3s						
ITM	**Ithomi**	**0.62**	**31**	P	Pb	18 47 33.7	+0.2
ITM				S	Sb	18 47 41.7	-0.2
ITM	**Ithomi**	**0.62**	**31**	P	Pb	18 47 31.1	-2.4
ITM	**Ithomi**	**0.62**	**31**	P	Pb	18 47 31.1	-2.4
ITM				S	Sb	18 47 32.4	-10
ITM				AML	AML	18 47 43.6	
	comp=N,228μm,0.3s						
ITM				AML	AML	18 47 45.1	
	comp=E,122μm,0.1s						
ITM	**Ithomi**	**0.62**	**31**	P	Pb	18 47 33.7	+0.2
ITM				S	Sb	18 47 41.7	-0.2
ITM				AML	AML	18 47 43.6	
	comp=N,228μm,0.3s						
ITM				AML	AML	18 47 45.1	
	comp=E,122μm,0.1s						
AMT	**Artemida-Makis**	**0.89**	**9**	P	Pb	18 47 37.6	-0.6
AMT				S	Sn	18 47 51.8	+0.9
AMT	**Artemida-Makis**	**0.89**	**9**	P	Pb	18 47 37.6	-0.6
AMT				S	Sn	18 47 51.8	+0.9
AMT				AML	AML	18 47 55.6	
	comp=N,147μm,0.4s						
AMT				AML	AML	18 47 58.5	
	comp=E,142μm,0.4s						
VLX	**Vlachokerasia**	**0.99**	**43**	P	Pn	18 47 40.8	+0.8
VLX	**Vlachokerasia**	**0.99**	**43**	P	Pn	18 47 40.9	+0.8

*IDC **20** 18:49:04.2±2.0,37.21N×144.47E,h0km,mb3.3/2, mb1 3.6/5,mb1mx3.3/54,mbtmp3.6/5,ML3.3/3, Error ellipse: s-maj=38.0km s-min=31.6km az=71.0*
*ISCJB **20** 18:49:07.9±1.1,37.25N±0.06×144.42E±0.08,h35km, mb3.4/2, Error ellipse: s-maj=9.6km s-min=9.3km az=175.3*
*JMA **20** 18:49:09.6±0.3,37.32N×144.33E,h47km,M4.0*
ISC 20 18:49:07.6±1.5, 37.26N±0.07×144.57E±0.10, h35km, n18, σ1§77/22, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**2.81**	**296**	P	**Pn**	**18 49 50.7**	**+0.6**
JIO				eS	**Sn**	**18 50 21.6**	**-1.1**
OFUJ	**Ofunato**	**2.92**	**309**	P	**Pn**	**18 49 52.1**	**+0.6**
JFK	**Kawauchi**	**2.95**	**273**	P	**Pn**	**18 49 52.8**	**+0.8**
ONAJ	**Iwakimizuishiy**	**3.02**	**268**	S	**Sn**	**18 50 26.1**	**-1.8**
JMM	**Marumori**	**3.06**	**282**	P	**Pn**	**18 49 54.1**	**+0.6**
JMK	**Ichinoseki**	**3.13**	**304**	P	**Pn**	**18 49 55.3**	**+0.8**
JHO	**Hitachi**	**3.27**	**260**	P	**Pn**	**18 49 57.0**	**+0.6**
JOU	**Okura**	**3.28**	**291**	P	**Pn**	**18 49 58.3**	**+1.7**
JFT	**Otama**	**3.38**	**276**	P	**Pn**	**18 49 59.7**	**+1.8**
JOM	**Ohasama**	**3.39**	**312**	P	**Pn**	**18 49 59.0**	**+1.0**
JOM				S	**Sn**	**18 50 36.1**	**-0.9**
JANG	**Nango**	**3.92**	**323**	P	**Pn**	**18 50 06.1**	**+0.9**
JAG	**Ashikaga**	**4.19**	**260**	P	**Pn**	**18 50 10.1**	**+1.1**
JRY	**Ryogami san**	**4.72**	**256**	eS	**Sn**	**18 51 07.6**	**-2.4**
MJAR	**Matsushiro Arr**	**5.15**	**264**	Pn	**Pn**	**18 50 22.5**	**+0.3**
	0.6nm,0.3s,baz=81,slow=7.5,SNR=4.8						
MJAR				Sn	**Sn**	**18 51 20.6**	**+0.2**
	0.6nm,0.3s,baz=90,slow=24,SNR=4.1						
JHJ	**Hachijo jima 2**	**5.70**	**225**	Pn	Pn	18 50 26.9	-2.9
	6.4nm,0.3s,baz=61,slow=18,SNR=3.6						
JHJ				Sn	**Sn**	**18 51 29.3**	**-4.6**
	10nm,0.3s,baz=45,slow=16,SNR=3.6						
ASAJ	**Asahikawa**	**7.01**	**348**	Pn	**Pn**	**18 50 47.8**	**+0.1**
	0.4nm,0.3s,baz=198,slow=19,SNR=5.6						
ASAJ				Sn	**Sn**	**18 52 03.4**	**-2.7**
	0.4nm,0.3s,baz=22,slow=19,SNR=2.2						
WRA	**Warramunga Arr**	**57.71**	**191**	P	**P**	**18 58 54.9**	**+0.1**
	0.4nm,1.0s,baz=13,slow=7.5,SNR=2.7						
ASAR	**Alice Springs**	**61.43**	**191**	P	**P**	**18 59 23.2**	**+2.8**
	0.2nm,0.5s,baz=9.7,slow=8.1,SNR=3.5						

*ATH **20** 18:46:59.8,35.15N×23.05E,h37km±4km, ML3.0/4, Error ellipse: s-maj=5.9km s-min=1.4km az=46.0*
*ISCJB **20** 18:47:01.0±1.1,35.19N±0.05×23.07E±0.06,h32km±6km, Error ellipse: s-maj=11.3km s-min=4.9km az=41.3*
*CSEM **20** 18:47:01.6±0.8,35.21N×23.11E,h26km±5km, ML2.9, Error ellipse: s-maj=14.2km s-min=5.4km az=43.0*
*THE **20** 18:47:03.3,35.27N×23.22E,h19km±1km, ML2.9/8, Error ellipse: s-maj=1.1km s-min=0.4km az=104.0*
ISC 20 18:47:02.5±1.6, 35.24N±0.05×23.19E±0.06, h24km±13km, n56, σ1§04/71, Crete

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ANKY	**Antikythira Is**	**0.63**	**9**	P	**Pb**	**18 47 14.9**	**0.0**
ANKY				S	**Sb**	**18 47 23.8**	**+0.5**
ANKY	**Antikythira Is**	**0.63**	**9**	P	**Pb**	**18 47 14.9**	**0.0**
ANKY				S	**Sb**	**18 47 23.8**	**+0.5**
ANKY	**Antikythira Is**	**0.63**	**9**	P	**Pb**	**18 47 14.9**	**0.0**
ANKY				S	**Sn**	**18 47 25.4**	**+0.1**
ANKY				AML	AML	18 47 26.9	
	comp=N,2134μm,0.9s						
ANKY				AML	AML	18 47 27.9	
	comp=E,2106μm,0.5s						
IMMV	**Iera Moni Meta**	**0.69**	**71**	P	**Pb**	**18 47 15.8**	**0.0**
IMMV				S	**Sb**	**18 47 25.4**	**+0.5**
IMMV	**Iera Moni Meta**	**0.69**	**71**	P	**Pb**	**18 47 15.8**	**0.0**
IMMV				S	**Sn**	**18 47 27.1**	**+0.5**
IMMV	**Iera Moni Meta**	**0.69**	**71**	P	**Pb**	**18 47 15.8**	**0.0**
IMMV				S	**Sn**	**18 47 27.1**	**+0.5**
IMMV				AML	AML	18 47 28.8	
	comp=N,2282μm,0.6s						
IMMV				AML	AML	18 47 30.7	
	comp=E,2397μm,0.5s						
GVD	**Gavdhos**	**0.84**	**118**	P	**Pn**	**18 47 18.4**	**-0.4**
GVD				S	**Sn**	**18 47 30.5**	**+0.1**
GVD	**Gavdhos**	**0.84**	**118**	P	**Pb**	**18 47 18.0**	**-0.4**
GVD				S	**Sn**	**18 47 30.5**	**+0.1**
GVD	**Gavdhos**	**0.84**	**118**	P	**Pb**	**18 47 18.0**	**-0.4**
VAM	**Vamos**	**0.84**	**78**	P	**Pn**	**18 47 18.5**	**-0.4**
VAM				S	**Sb**	**18 47 29.8**	**+0.3**
VAM	**Vamos**	**0.84**	**78**	P	**Pn**	**18 47 18.5**	**-0.4**
VAM				S	**Sb**	**18 47 29.8**	**+0.3**
KYTH	**Kithira**	**1.03**	**354**	P	**Pb**	**18 47 21.2**	**-0.4**
KYTH				S	**Sn**	**18 47 35.6**	**+0.5**
KYTH	**Kithira**	**1.03**	**354**	P	**Pb**	**18 47 21.2**	**-0.4**
KYTH				S	**Sn**	**18 47 35.6**	**+0.5**
KYTH	**Kithira**	**1.03**	**354**	P	**Pb**	**18 47 21.6**	**0.0**
SIVA	**Sivas**	**1.35**	**99**	P	**Pn**	**18 47 26.1**	**+0.3**
SIVA				S	**Sn**	**18 47 43.4**	**+0.4**
SIVA	**Sivas**	**1.35**	**99**	P	**Pn**	**18 47 26.1**	**+0.3**
SIVA				S	**Sn**	**18 47 43.4**	**+0.4**
IDI	**Anoyia**	**1.40**	**88**	P	**Pn**	**18 47 25.9**	**-0.6**
IDI	**Anoyia**	**1.40**	**88**	P	**Pn**	**18 47 25.9**	**-0.6**
VLI	**Veliai**	**1.49**	**352**	P	**Pn**	**18 47 27.6**	**-0.1**
VLI				S	**Sb**	**18 47 42.7**	**-0.7**
VLI	**Veliai**	**1.49**	**352**	P	**Pn**	**18 47 27.6**	**-0.1**
VLI				S	**Sb**	**18 47 42.7**	**-0.7**
VLI	**Veliai**	**1.49**	**352**	P	**Pb**	**18 47 29.1**	**-0.3**
MHLO	**Agia Marina, M**	**1.75**	**34**	P	**Pn**	**18 47 31.2**	**-0.1**
MHLO				S	**Sn**	**18 47 53.0**	**+0.2**
MHLO	**Agia Marina, M**	**1.75**	**34**	P	**Pn**	**18 47 31.2**	**-0.1**
MHLO				S	**Sn**	**18 47 53.0**	**+0.2**
LAST	**Lasithi**	**1.88**	**92**	P	**Pn**	**18 47 33.5**	**+0.3**
LAST	**Lasithi**	**1.88**	**92**	P	**Pn**	**18 47 33.5**	**+0.3**
KRND	**KRANIDI**	**2.14**	**359**	P	**Pn**	**18 47 37.7**	**+1.0**
KRND	**KRANIDI**	**2.14**	**359**	P	**Pn**	**18 47 37.7**	**+1.0**
VLX	**Vlachokerasia**	**2.22**	**343**	P	**Pb**	**18 47 45.3**	**+3.3**
DID	**Didima**	**2.26**	**1**	P	**Pn**	**18 47 37.2**	**-1.2**
DID	**Didima**	**2.26**	**1**	P	**Pn**	**18 47 37.2**	**-1.2**
AMT	**Artemida-Makis**	**2.58**	**333**	P	Pn	18 47 34.4	-8.4
VLY	**Voula,Athens**	**2.65**	**10**	P	**Pn**	**18 47 41.4**	**-2.3**
VLY	**Voula,Athens**	**2.65**	**10**	P	**Pn**	**18 47 41.4**	**-2.3**
GUR	**Goura**	**2.77**	**346**	P	**Pn**	**18 47 45.7**	**+0.2**
GUR	**Goura**	**2.77**	**346**	P	**Pn**	**18 47 45.7**	**+0.2**
LTK	**Loutraki**	**2.78**	**356**	P	**Pn**	**18 47 44.9**	**-0.6**
LTK	**Loutraki**	**2.78**	**356**	P	**Pn**	**18 47 44.9**	**-0.6**
KLV	**Kalavryta, Ach**	**2.92**	**344**	P	**Pn**	**18 47 47.6**	**+0.2**
KLV	**Kalavryta, Ach**	**2.92**	**344**	P	**Pn**	**18 47 47.6**	**+0.2**
VILL	**Villia**	**2.92**	**2**	P	**Pn**	**18 47 45.5**	**-2.0**
DRO	**Drossia**	**2.95**	**337**	P	Pn	18 47 41.8	-6.1
DRO	**Drossia**	**2.95**	**337**	P	Pn	18 47 41.8	-6.2
VIL2	**Platees**	**2.96**	**1**	P	**Pn**	**18 47 45.5**	**-2.6**
PROD	**Prodromos**	**3.02**	**356**	P	**Pn**	**18 47 50.6**	**+1.8**
PROD	**Prodromos**	**3.02**	**356**	P	**Pn**	**18 47 50.6**	**+1.8**
LAKA	**Lakka**	**3.15**	**342**	P	**Pn**	**18 47 49.4**	**-1.2**
LAKA	**Lakka**	**3.15**	**342**	P	**Pn**	**18 47 49.4**	**-1.2**
DSF	**Desfina**	**3.21**	**351**	P	**Pn**	**18 47 50.2**	**-1.2**
DSF	**Desfina**	**3.21**	**351**	P	**Pn**	**18 47 50.2**	**-1.2**
TRIZ	**Trizonia**	**3.24**	**344**	P	**Pn**	**18 47 50.3**	**-1.5**
KALE	**Kalithea**	**3.25**	**345**	P	**Pn**	**18 47 51.2**	**-0.9**
KALE	**Kalithea**	**3.25**	**345**	P	**Pn**	**18 47 51.2**	**-0.9**
EFP	**Efpalio**	**3.34**	**342**	P	**Pn**	**18 47 51.2**	**-2.0**
EFP	**Efpalio**	**3.34**	**342**	P	**Pn**	**18 47 51.2**	**-2.0**
AGG	**Agios Georgios**	**3.83**	**350**	P	**Pn**	**18 47 58.6**	**-1.4**
AGG	**Agios Georgios**	**3.83**	**350**	P	**Pn**	**18 47 58.6**	**-1.4**

*JMA **20** 18:50:02.7±0.1,30.62N×132.36E,h57km,M3.4*
*IDC **20** 18:50:07.1±1.4,30.74N×130.95E,h0km,mb3.4/3, mb1 3.5/5,mb1mx3.2/57,mbtmp3.3/5,ML2.8/2,Error ellipse: s-maj=73.7km s-min=18.1km az=80.0*
ISC 20 18:50:00.3±2.6, 30.65N±0.07×132.38E±0.10, h9km±12km, n17, σ0§93/20, mb3.4/3, Southeast of Shikoku

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JTN	**Tanegashima 3**	**1.21**	**270**	P	**Pg**	**18 50 23.3**	**-0.2**
JTN				S	**Sg**	**18 50 39.6**	**+0.4**
JNAR	**Kushima--Naru**	**1.29**	**313**	P	**Pg**	**18 50 25.1**	**0.0**
JNAR				S	**Sg**	**18 50 41.8**	**-0.1**
JTSR	**Tashiro 2**	**1.36**	**293**	P	Pn	18 50 25.4	-0.1
JTSR				S	**Sg**	**18 50 42.6**	**-1.3**
JTZ	**Takazaki**	**1.67**	**319**	P	**Pn**	**18 50 30.4**	**+0.7**
JTZ				S	**Sn**	**18 50 50.6**	**-0.6**
JYAK	**Yakushimahirau**	**1.67**	**256**	P	Pn	18 50 29.6	-0.1
JYAK				S	**Sn**	**18 50 50.6**	**-0.7**
JTO	**Tosashimizu**	**2.23**	**9**	P	**Pn**	**18 50 36.9**	**-0.5**
JTO				eS	Sn	18 51 00.9	-4.2
JIU2	**Izumi 2**	**2.31**	**325**	P	**Pn**	**18 50 59.9**	**+1.3**
JIU2				S	**Sn**	**18 51 06.1**	**-1.1**
JNN	**Nakanoshima**	**2.32**	**250**	P	**Pn**	**18 50 38.8**	**+0.2**
JNN				eS	**Sn**	**18 51 06.1**	**-1.2**
JSJ	**Shimokoshiki**	**2.50**	**295**	P	Pn	18 50 41.0	-0.2
JSJ				S	Sn	18 51 09.6	-2.3
UWA2	**Uwa jima 2**	**2.56**	**5**	P	**Pn**	**18 50 42.3**	**+0.3**
UWA2				S	Sn	18 51 09.4	-3.9
JNU	**Nakatsue**	**2.77**	**333**	Pn	**Pn**	**18 50 46.6**	**+1.6**
	3.4nm,0.3s,baz=183,slow=11,SNR=104						
JNU				Sn	**Sn**	**18 51 18.4**	**-0.3**
	10.0nm,0.3s,baz=88,slow=12,SNR=11						
JNA	**Nagahama**	**2.90**	**2**	P	**Pn**	**18 50 47.3**	**+0.7**
JNA				S	Sn	18 51 18.1	-3.5
JTJ	**Takarajima**	**3.14**	**242**	P	**Pn**	**18 50 51.2**	**+1.3**
KSRS	**Korea Array**	**7.73**	**333**	Pn	**Pn**	**18 51 53.9**	**+1.0**
	0.3nm,0.3s,baz=166,slow=16,SNR=8.9						
SONM	**Songino Array**	**26.26**	**318**	P	**P**	**18 55 36.1**	**+0.1**
	0.3nm,0.5s,baz=133,slow=8.7,SNR=4.9						
WRA	**Warramunga Arr**	**50.34**	**178**	P	P	18 59 06.6	+9.0
	0.4nm,0.8s,baz=356,slow=8.3,SNR=3.0						
ASAR	**Alice Springs**	**54.03**	**178**	P	P	18 59 34.6	+9.5
	0.2nm,0.5s,baz=14,slow=13,SNR=4.1						

*SKO **20** 18:53:22.4,40.92N×20.51E,h27km,M1.8,ML2.2*
*ATH **20** 18:53:23.0,40.97N×20.53E,h20km±1km,ML2.3/3, Error ellipse: s-maj=2.8km s-min=1.1km az=144.0*
*CSEM **20** 18:53:23.6±0.1,40.93N×20.54E,h2km,ML2.2, Error ellipse: s-maj=4.0km s-min=2.3km az=48.0*
*THE **20** 18:53:23.3,40.97N×20.52E,h0km±1km,ML2.3/7, Error ellipse: s-maj=1.7km s-min=0.9km az=333.0*
*PDG **20** 18:53:24.3±0.3,41.06N×20.57E,h6km,ML2.6/11, Error ellipse: s-maj=0.6km s-min=0.6km az=0.0*
ISC 20 18:53:23.3±1.1, 40.95N±0.02×20.54E±0.02, h4km±10km, n66, σ0§89/115, 15C-12D, Greece-Albania border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OHR	**Ohrid**	**0.25**	**51**	⇓iPg	**Pb**	**18 53 29.7**	**-0.8**
OHR				⇑iSg	**Sb**	**18 53 35.2**	**-0.1**
OHR				eLg	Lg	18 53 35.3	
	comp=E,436nm,0.5s						
OHR				eLg	Lg	18 53 35.4	
	comp=N,238nm,0.4s						
OHR	**Ohrid**	**0.25**	**51**	⇓iPg	**Pb**	**18 53 29.7**	**-0.8**
OHR				eLg	Lg	18 53 35.2	
	comp=N,436nm,0.5s						

BIA	**Bitola**	**0.60**	**83**	⇑iPg		**Pg**	**18 53 35.3**	**+0.5**
BIA				iSg		**Sb**	**18 53 44.6**	**-0.6**
BIA				eLg		Lg	18 53 44.8	
	comp=E,58nm,0.2s							
BIA				eLg		Lg	18 53 44.9	
	comp=N,67nm,0.3s							
BIA	**Bitola**	**0.60**	**83**	⇑iPg		**Pg**	**18 53 35.3**	**+0.5**
BIA				iSg		**Sb**	**18 53 44.6**	**-0.6**
BIA				eLg		Lg	18 53 44.8	
	comp=N,58nm,0.2s							
TIR	**Tirane**	**0.64**	**308**	iPG		**Pg**	**18 53 35.2**	**-0.4**
TIR				iSG		**Sb**	**18 53 45.7**	**-0.8**
TIR	**Tirane**	**0.64**	**308**	iPg		**Pg**	**18 53 35.2**	**-0.4**
	SNR=90							
TIR				iSg		**Sb**	**18 53 45.7**	**-0.8**
	SNR=90							
FNA	**Florina**	**0.66**	**105**	P		**Pb**	**18 53 36.9**	**-0.5**
FNA				S		**Sb**	**18 53 46.3**	**-0.6**
FNA	**Florina**	**0.66**	**105**	P		**Pg**	**18 53 36.6**	**+0.7**
FNA				S		**Sb**	**18 53 46.3**	**-0.6**
FNA	**Florina**	**0.66**	**105**	P		**Pg**	**18 53 36.6**	**+0.7**
FNA				S		**Sb**	**18 53 46.3**	**-0.6**
FNA				AML		AML	18 53 47.8	
	comp=N,2040μm,0.3s							
FNA				AML		AML	18 53 48.9	
	comp=E,1524μm,0.4s							
NEST	**Nestorio**	**0.66**	**144**	P		**Pg**	**18 53 35.9**	**-0.1**
NEST				S		**Sb**	**18 53 46.6**	**-0.5**
NEST	**Nestorio**	**0.66**	**144**	P		**Pg**	**18 53 35.6**	**-0.4**
NEST				S		**Sb**	**18 53 46.2**	**-0.9**
NEST	**Nestorio**	**0.66**	**144**	P		**Pg**	**18 53 35.6**	**-0.4**
NEST				S		**Sb**	**18 53 46.2**	**-0.9**
NEST				AML		AML	18 53 49.9	
	comp=N,323μm,0.3s							
NEST				AML		AML	18 53 50.0	
	comp=E,376μm,0.3s							
KZN	**Kozani**	**1.14**	**124**	P		**Pg**	**18 53 44.9**	**-0.2**
KZN				S		**Sn**	**18 54 02.1**	**-0.1**
KZN	**Kozani**	**1.14**	**124**	P		**Pg**	**18 53 44.7**	**-0.4**
KZN				S		**Sg**	**18 54 00.5**	**+0.6**
KPRO	**Kipourio**	**1.18**	**147**	P		**Pg**	**18 53 45.4**	**-0.5**
KPRO				S		**Sn**	**18 54 04.1**	**+0.9**
KPRO	**Kipourio**	**1.18**	**147**	P		**Pg**	**18 53 45.4**	**-0.5**
KPRO				S		**Sn**	**18 54 04.1**	**+0.9**
KPRO	**Kipourio**	**1.18**	**147**	P		**Pg**	**18 53 45.3**	**-0.5**
SKO	**Skopje**	**1.22**	**33**	P		**Pn**	**18 53 47.1**	**-0.1**
SKO	**Skopje**	**1.22**	**33**	P		**Pn**	**18 53 47.1**	**-0.1**
SGD	**Sagiada**	**1.36**	**190**	P		**Pg**	**18 53 49.8**	**+0.5**
SGD	**Sagiada**	**1.36**	**190**	P		**Pg**	**18 53 49.8**	**+0.5**
KEK	**Kerkira**	**1.36**	**205**	P		**Pn**	**18 53 49.1**	**0.0**
KEK				S		**Sn**	**18 54 08.6**	**+1.0**
KEK	**Kerkira**	**1.36**	**205**	P		**Sn**	**18 53 49.1**	**0.0**
KEK				S		**Sb**	**18 54 06.9**	**-0.2**
ULC	**Ulcinj**	**1.40**	**317**	ePg		**Pn**	**18 53 48.9**	**-0.8**
ULC				eSg		**Sn**	**18 54 10.1**	**+1.4**
ULC	**Ulcinj**	**1.40**	**317**	ePg		**Pn**	**18 53 48.9**	**-0.8**
ULC				eSg		**Sn**	**18 54 10.1**	**+1.4**
GRG	**Griva**	**1.41**	**89**	P		**Pn**	**18 53 49.8**	**0.0**
GRG				S		**Sg**	**18 54 10.1**	**+1.5**
GRG	**Griva**	**1.41**	**89**	P		**Pn**	**18 53 49.8**	**0.0**
GRG				S		**Sg**	**18 54 10.1**	**+1.5**
GRG	**Griva**	**1.41**	**89**	P		**Pn**	**18 53 50.0**	**+0.1**
IGT	**Igoumenitsa**	**1.43**	**186**	P		**Pn**	**18 53 49.5**	**-0.5**
IGT				S		**Sg**	**18 54 10.8**	**+1.6**
IGT	**Igoumenitsa**	**1.43**	**186**	P		**Pn**	**18 53 49.5**	**-0.5**
IGT				S		**Sg**	**18 54 10.8**	**+1.6**
IGT				AML		AML	18 54 13.4	
	comp=E,332μm,0.6s							
IGT				AML		AML	18 54 14.4	
	comp=N,142μm,0.5s							
DRME	**Dracevica, Mon**	**1.60**	**321**	⇓iPg		**Pb**	**18 53 52.8**	**-0.6**
DRME				eSg		**Sg**	**18 54 16.4**	**+1.8**
DRME	**Dracevica, Mon**	**1.60**	**321**	⇓iPg		**Pb**	**18 53 52.8**	**-0.6**
DRME				eSg		**Sg**	**18 54 16.4**	**+1.8**
PVY	**Plav**	**1.70**	**345**	ePn		**Pn**	**18 53 53.9**	**+0.1**
PVY				eSn		**Sg**	**18 54 17.9**	**+0.1**
PVY	**Plav**	**1.70**	**345**	ePn		**Pn**	**18 53 53.9**	**+0.1**
PVY				eSn		**Sg**	**18 54 17.9**	**+0.1**
LIT	**Litokhoron**	**1.71**	**119**	P		**Pn**	**18 53 54.1**	**+0.1**
LIT				S		**Sb**	**18 54 17.7**	**+0.4**
LIT	**Litokhoron**	**1.71**	**119**	P		**Pn**	**18 53 54.1**	**+0.1**
LIT				S		**Sb**	**18 54 17.7**	**+0.4**
LIT	**Litokhoron**	**1.71**	**119**	P		**Pn**	**18 53 53.3**	**-0.7**
PDG	**Podgorica**	**1.76**	**327**	⇓iPn		**Pb**	**18 53 55.6**	**-0.6**
PDG				eSn		**Sg**	**18 54 20.0**	**+0.1**
TTG	**Podgorica**	**1.76**	**327**	⇓iPn		**Pb

JHU	**Hanno**	**10.34**	**353**	P	**Pn**	**18 59 55.2**	**-1.4**
JHU				*e*S	**Sn**	**19 01 49.3**	**-1.8**
JRY	**Ryogami san**	**10.54**	**352**	P	**Pn**	**19 00 00.5**	**+1.1**
JRY				*e*S	**Sn**	**19 01 54.2**	**-2.0**
JYT	**Yasato**	**10.64**	**357**	P	**Pn**	**18 59 59.4**	**-1.2**
JYT				*e*S	Sn	19 01 49.6	-8.8
MJAR	**Matsushiro Arr**	**11.16**	**349**	P	**Pn**	**19 00 09.4**	**+1.9**
	0.8nm,0.3s,baz=124,slow=11,SNR=5.3						
ASAJ	**Asahikawa**	**18.57**	**4**	P	**P**	**19 01 38.0**	**+1.1**
	0.2nm,0.3s,baz=323,slow=5.1,SNR=5.0						
KLR	**Kul'dur**	**24.66**	**346**	P	**P**	**19 02 38.6**	**+0.5**
	0.5nm,0.4s,baz=143,slow=5.8,SNR=4.1						
SEY	**Seymchan**	**38.15**	**9**	P	**P**	**19 04 36.8**	**+1.0**
	3.8nm,0.4s,baz=26,slow=1.4,SNR=21						
WRA	**Warramunga Arr**	**45.67**	**189**	P	**P**	**19 05 37.3**	**+0.1**
	2.2nm,0.4s,baz=11,slow=8.7,SNR=51						
ASAR	**Alice Springs**	**49.39**	**188**	P	**P**	**19 06 04.8**	**-1.1**
	0.2nm,0.4s,baz=3.7,slow=5.4,SNR=6.3						
ZALV	**Zalesovo Beam**	**49.84**	**320**	P	**P**	**19 06 09.2**	**+0.2**
	0.4nm,0.6s,baz=98,slow=6.3,SNR=2.7						
MKAR	**Makanchi Array**	**50.51**	**311**	P	**P**	**19 06 15.2**	**+1.1**
	0.1nm,0.3s,baz=86,slow=9.1,SNR=2.6						
ILAR	**Eielson Array**	**59.65**	**28**	P	**P**	**19 07 19.1**	**-0.2**
	1.3nm,1.0s,baz=283,slow=7.2,SNR=7.9						
INK	**Inuvik**	**64.93**	**24**	P	**P**	**19 07 54.0**	**-0.4**
	1.1nm,0.3s,baz=293,slow=5.6,SNR=19						
YKA	**Yellowknife Ar**	**74.07**	**28**	P	**P**	**19 08 50.4**	**-0.1**
	0.9nm,0.5s,baz=294,slow=5.7,SNR=19						
FINES	**FINESS Array B**	**78.76**	**334**	P	**P**	**19 09 16.7**	**-0.2**
	0.6nm,0.3s,baz=66,slow=5.1,SNR=14						
AKASG	**Malin Array Be**	**83.11**	**323**	P	**P**	**19 09 39.9**	**-0.2**
	0.3nm,0.3s,baz=50,slow=5.1,SNR=3.3						
NOA	**NORSAR Array B**	**84.56**	**338**	P	**P**	**19 09 46.2**	**-1.2**
	0.5nm,0.5s,baz=45,slow=5.0,SNR=2.9						
PDAR	**Pinedale Array**	**86.17**	**44**	P	**P**	**19 09 56.1**	**+0.1**
	0.8nm,0.7s,baz=258,slow=7.1,SNR=3.9						
PLCA	**Paso Flores**	**149.90**	**128**	PKPbc	**PKPbc**	**19 17 03.0**	**-0.9**
	1.2nm,0.9s,baz=193,slow=6.2,SNR=2.8						
LPAZ	**La Paz**	**157.**	**7**	PKPbc	**PKPbc**	**19 17 08.5**	**-0.5**
	1.3nm,0.5s,baz=1.7,slow=2.6,SNR=6.3						

*ISCJB **20** 19:00:56.9±0.7,36˚.92N±0˚.05×28˚.28E±0˚.05,h11km±7km, Error ellipse: s-maj=8.5km s-min=5.8km az=34.5*
*ISK **20** 19:00:56.7,36˚.95N×28˚.23E,h5km,MD2.7*
*DDA **20** 19:00:57.4,36˚.99N×28˚.27E,h7km,Md2.6*
*CSEM **20** 19:00:57.3±0.3,36˚.91N×28˚.26E,h2km,MD2.7, Error ellipse: s-maj=7.4km s-min=4.8km az=24.0*

ISC 20 19:00:56.7±1.1,36˚.91N±0˚.05×28˚.27E±0˚.03,h8km±9km, n14,σ0°39/25,Dodecanese Islands

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
YER	**Yerkesik**	**0.22**	**3**	*e*PG	**Pg**	**19 01 01.5**	**+0.2**
YER				*e*SG	**Sg**	**19 01 04.5**	**+0.2**
YER	**Yerkesik**	**0.22**	**3**	*e*Pg	**Pg**	**19 01 01.5**	**+0.2**
YER				*e*Sg	**Sg**	**19 01 04.6**	**+0.2**
TURN	**Turunc**	**0.27**	**98**	*i* P	**Pg**	**19 01 01.9**	**-0.2**
TURN				*i* S	**Sg**	**19 01 05.5**	**-0.2**
TURN	**Turunc**	**0.27**	**98**	P	**Pg**	**19 01 01.9**	**-0.2**
TURN				S	**Sg**	**19 01 05.5**	**-0.2**
DALY	**Dalyan (Mu˘la**	**0.32**	**107**	*e*PG	**Pb**	**19 01 04.6**	**-0.1**
DALY				*e*SG	**Sb**	**19 01 11.4**	**+1.3**
DALY	**Dalyan (Mu˘la**	**0.32**	**107**	*e*Pg	**Pb**	**19 01 04.6**	**-0.1**
BDRM	**Kayabasi**	**0.68**	**283**	*i* P	**Pg**	**19 01 09.9**	**+0.1**
BDRM				*i* S	**Sb**	**19 01 20.3**	**-0.1**
BDRM	**Kayabasi**	**0.68**	**283**	P	**Pg**	**19 01 09.9**	**+0.1**
BODT	**Bodrum**	**0.78**	**281**	*e*PG	**Pg**	**19 01 12.3**	**+0.5**
BODT				*e*SG	**Sb**	**19 01 23.4**	**0.0**
BODT	**Bodrum**	**0.78**	**281**	*e*Pg	**Pg**	**19 01 12.3**	**+0.5**
BODT				*e*Sg	**Sb**	**19 01 23.4**	**0.0**
AYDN	**Tasoluk**	**0.81**	**338**	*i* P	**Pg**	**19 01 12.3**	**-0.1**
AYDN				*i* S	**Sg**	**19 01 22.4**	**-0.5**
AYDN	**Tasoluk**	**0.81**	**338**	P	**Pg**	**19 01 12.3**	**-0.1**
AYDB	**Zeytinkoy-Aydi**	**1.08**	**344**	*e*PG	**Pn**	**19 01 18.0**	**-0.3**
AYDB				*e*SG	**Sn**	**19 01 33.7**	**+0.2**
AYDB	**Zeytinkoy-Aydi**	**1.08**	**344**	*e*Pg	**Pn**	**19 01 18.0**	**-0.3**
AYDB				*e*Sg	**Sn**	**19 01 33.7**	**+0.2**

DJA 20 19:01:03.6±1.7,9˚S±5˚×11˚3E±˚,h34km±18km,M3.8/4, MLv3.8/4,South of Jawa

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
GMJI	**Gumukmas**	**1.27**	**21**	P	Pn	19 01 25.5	+0.5
GMJI				S	Sn	19 01 41.3	+0.4
JAGI	**Jajag, Banyuwa**	**1.52**	**49**	P	Pn	19 01 28.3	-0.1
JAGI				S	Sn	19 01 47.5	+0.5
PWJI	**Pagerwojo**	**1.86**	**321**	P	Pn	19 01 31.1	-1.9
PWJI				S	Sn	19 01 53.9	-1.4
ABJI	**Asem Bagus**	**2.07**	**37**	P	Pn	19 01 35.9	-0.1
PCJI	**Pacitan**	**2.19**	**305**	P	Pn	19 01 37.9	+0.2
PCJI				S	Sn	19 02 04.7	+1.0
DNP	**Denpasar**	**2.33**	**70**	P	Pn	19 01 39.8	+0.3
DNP				S	Sn	19 02 09.4	+2.4
NGJI	**Ngawi**	**2.58**	**324**	P	Pn	19 01 42.8	-0.2
WOJI	**Wonogiri, Jawa**	**2.61**	**308**	P	Pn	19 01 43.7	+0.3
TWSI	**Taliwang, Sumb**	**3.91**	**80**	P	Pn	19 02 01.5	+0.2

*CSEM **20** 19:02:36.1±0.4,36˚.65N×21˚.37E,h2km,ML3.1,Error ellipse: s-maj=7.2km s-min=4.5km az=35.0*
*ATH **20** 19:02:36.1,36˚.67N×21˚.42E,h12km±1km,ML3.0/10,Error ellipse: s-maj=2.5km s-min=1.2km az=41.0*
*THE **20** 19:02:37.1,36˚.71N×21˚.42E,h0km,ML3.1/22,Error ellipse: s-maj=0.9km s-min=0.4km az=217.0*
*IDC **20** 19:02:37.6±3.0,37˚.16N×21˚.67E,h0km,mb3.3/4, mb1 3.4/5,mb1mx3.2/56,mbtmp3.3/5,ML2.2/1,Error ellipse: s-maj=73.4km s-min=23.0km az=43.0*

ISC 20 19:02:35.5±1.3,36˚.64N±0˚.03×21˚.37E±0˚.03,h5km±8km, n96,σ0°97/157,mb3.4/4,Southern Greece

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
PYL	**PYLOS**	**0.39**	**49**	P	**Pg**	**19 02 43.5**	**+0.3**
PYL				S	**Sg**	**19 02 48.7**	**+0.4**
PYL	**PYLOS**	**0.39**	**49**	P	**Pg**	**19 02 43.5**	**+0.3**
PYL				S	**Sg**	**19 02 48.7**	**+0.4**
PYL	**PYLOS**	**0.39**	**49**	P	**Pg**	**19 02 44.0**	**+0.9**
PYL				S	**Sg**	**19 02 48.7**	**+0.4**
PYL				AML	AML	19 02 49.4	
	comp=N,6580μm,0.4s						
PYL				AML	AML	19 02 49.9	
	comp=E,6674μm,0.4s						
ITM	**Ithomi**	**0.70**	**39**	P	**Pg**	**19 02 49.2**	**+0.2**
ITM				S	**Sg**	**19 02 58.3**	**+0.2**
ITM	**Ithomi**	**0.70**	**39**	P	**Pg**	**19 02 49.2**	**+0.2**
ITM				S	**Sg**	**19 02 58.3**	**+0.2**
ITM	**Ithomi**	**0.70**	**39**	P	**Pg**	**19 02 49.2**	**+0.2**
ITM				S	**Sg**	**19 02 58.4**	**+0.2**
ITM				AML	AML	19 02 58.9	
	comp=E,3156μm,0.5s						
ITM				AML	AML	19 02 59.2	
	comp=N,4002μm,0.4s						
AMT	**Artemida-Makis**	**0.94**	**17**	P	**Pg**	**19 02 53.5**	**0.0**
AMT				S	**Sg**	**19 03 05.7**	**+0.1**
AMT	**Artemida-Makis**	**0.94**	**17**	P	**Pg**	**19 02 53.5**	**0.0**
AMT				S	**Sg**	**19 03 05.7**	**+0.1**
AMT	**Artemida-Makis**	**0.94**	**17**	P	**Pb**	**19 02 54.1**	**-0.1**
AMT				S	**Sg**	**19 03 06.3**	**+0.7**
AMT				AML	AML	19 03 10.5	
	comp=E,3010μm,0.7s						
AMT				AML	AML	19 03 12.7	
	comp=N,3181μm,0.5s						
VLX	**Vlachokerasia**	**1.09**	**47**	P	**Pg**	**19 02 56.1**	**-0.3**
VLX				S	**Sg**	**19 03 11.1**	**+0.5**
VLX	**Vlachokerasia**	**1.09**	**47**	P	**Pg**	**19 02 56.1**	**-0.3**
VLX				S	**Sg**	**19 03 11.1**	**+0.5**
VLX	**Vlachokerasia**	**1.09**	**47**	P	**Pg**	**19 02 55.0**	**-1.5**
VLX				S	**Sg**	**19 03 09.2**	**-1.4**
VLX				AML	AML	19 03 11.5	
	comp=N,2168μm,0.5s						
VLX				AML	AML	19 03 14.8	
	comp=E,2406μm,0.6s						
TRIP	**Tripoli**	**1.15**	**39**	P	**Pg**	**19 02 56.2**	**-1.3**
TRIP				S	**Sg**	**19 03 12.0**	**-0.4**
TRIP	**Tripoli**	**1.15**	**39**	P	**Pg**	**19 02 56.1**	**-1.3**
TRIP				S	**Sg**	**19 03 12.0**	**-0.4**
TRIP				AML	AML	19 03 16.0	
	comp=N,1418μm,0.5s						
TRIP				AML	AML	19 03 17.6	
	comp=E,1163μm,0.5s						
ZKS	**Zakynthos**	**1.16**	**336**	P	**Pg**	**19 02 57.7**	**0.0**
ZKS				S	**Sn**	**19 03 15.6**	**+1.0**
ZKS	**Zakynthos**	**1.16**	**336**	P	**Pg**	**19 02 57.7**	**0.0**
ZKS				S	**Sn**	**19 03 15.6**	**+1.0**
ZKS				AML	AML	19 03 20.5	
	comp=N,1663μm,0.5s						
ZKS				AML	AML	19 03 23.6	
	comp=E,2148μm,0.4s						
VLI	**Veliai**	**1.26**	**86**	P	**Pb**	**19 02 59.9**	**+0.2**
VLI				S	**Sn**	**19 03 18.6**	**+1.5**
VLI	**Veliai**	**1.26**	**86**	P	**Pb**	**19 02 59.9**	**+0.2**
VLI				S	**Sn**	**19 03 18.6**	**+1.5**
VLI	**Veliai**	**1.26**	**86**	P	**Pn**	**19 03 00.1**	**+0.3**
DRO	**Drossia**	**1.34**	**11**	P	**Pg**	**19 03 00.1**	**-1.2**
DRO				S	**Sb**	**19 03 19.7**	**+1.0**
DRO	**Drossia**	**1.34**	**11**	P	**Pg**	**19 03 00.1**	**-1.2**
DRO				S	**Sb**	**19 03 19.7**	**+1.0**
DRO	**Drossia**	**1.34**	**11**	P	**Pg**	**19 02 59.5**	**-1.8**
KYTH	**Kithira**	**1.39**	**104**	P	**Pb**	**19 03 03.6**	**+1.7**
KYTH				S	**Sn**	**19 03 22.9**	**+2.7**
KYTH	**Kithira**	**1.39**	**104**	P	**Pb**	**19 03 03.6**	**+1.7**
KYTH				S	**Sn**	**19 03 20.7**	**+0.5**
KYTH	**Kithira**	**1.39**	**104**	P	**Pn**	**19 02 59.8**	**-1.7**
RLS	**Riolos of Patr**	**1.42**	**3**	P	**Pn**	**19 03 02.1**	**+0.1**
RLS				S	**Sn**	**19 03 22.0**	**+0.9**
RLS	**Riolos of Patr**	**1.42**	**3**	P	**Pn**	**19 03 02.2**	**+0.2**
RLS				S	**Sn**	**19 03 22.0**	**+0.9**
RLS	**Riolos of Patr**	**1.42**	**3**	S	**Sg**	**19 03 19.6**	**-1.6**
RLS				AML	AML	19 03 31.6	
	comp=E,754μm,0.7s						
RLS				AML	AML	19 03 33.7	
	comp=N,681μm,0.7s						
GUR	**Goura**	**1.51**	**30**	P	**Pn**	**19 03 03.6**	**+0.3**
GUR				S	**Sn**	**19 03 24.4**	**+0.9**
GUR	**Goura**	**1.51**	**30**	P	**Pn**	**19 03 03.6**	**+0.3**
GUR				S	**Sn**	**19 03 24.4**	**+0.9**
GUR	**Goura**	**1.51**	**30**	P	**Pn**	**19 03 03.3**	**-0.1**
GUR				S	**Sn**	**19 03 22.1**	**-1.4**
GUR				AML	AML	19 03 30.8	
	comp=N,1656μm,0.5s						
GUR				AML	AML	19 03 31.1	
	comp=E,1026μm,0.3s						
KLV	**Kalavryta, Ach**	**1.54**	**24**	P	**Pn**	**19 03 03.8**	**+0.2**
KLV				S	**Sn**	**19 03 24.9**	**+0.9**
KLV	**Kalavryta, Ach**	**1.54**	**24**	P	**Pn**	**19 03 03.8**	**+0.2**
KLV				S	**Sn**	**19 03 24.9**	**+0.9**
KLV	**Kalavryta, Ach**	**1.54**	**24**	P	**Pn**	**19 03 02.5**	**-1.2**
KLV				S	**Sn**	**19 03 23.4**	**-0.7**
KLV				AML	AML	19 03 30.4	
	comp=E,545μm,0.9s						
KLV				AML	AML	19 03 38.1	
	comp=N,490μm,0.7s						
KFL	**Anninata**	**1.54**	**343**	P	**Pn**	**19 03 04.0**	**+0.3**
KFL				S	**Sg**	**19 03 25.4**	**+0.2**
KFL	**Anninata**	**1.54**	**343**	P	**Pn**	**19 03 04.0**	**+0.3**
KFL				S	**Sg**	**19 03 25.4**	**+0.2**
KFL	**Anninata**	**1.54**	**343**	P	**Pn**	**19 03 02.9**	**-0.8**
KFL				S	**Sg**	**19 03 26.1**	**+1.0**
AXS	**Araxos**	**1.56**	**0**	P	**Pb**	**19 03 05.2**	**+0.4**
AXS	**Araxos**	**1.56**	**0**	P	**Pb**	**19 03 05.2**	**+0.4**
KRND	**KRANIDI**	**1.61**	**62**	P	**Pn**	**19 03 05.2**	**+0.7**
KRND				S	**Sn**	**19 03 26.6**	**+1.0**
KRND	**KRANIDI**	**1.61**	**62**	P	**Pn**	**19 03 05.2**	**+0.7**
KRND				S	**Sn**	**19 03 26.6**	**+1.0**
KRND	**KRANIDI**	**1.61**	**62**	P	**Pn**	**19 03 05.0**	**+0.5**
VLS	**Valsamata**	**1.66**	**338**	P	**Pn**	**19 03 05.1**	**-0.2**
LAKA	**Lakka**	**1.67**	**17**	P	**Pn**	**19 03 05.9**	**+0.4**
LAKA				S	**Sn**	**19 03 28.3**	**+0.9**
LAKA	**Lakka**	**1.67**	**17**	P	**Pn**	**19 03 05.9**	**+0.4**
LAKA				S	**Sn**	**19 03 28.3**	**+0.9**
LAKA	**Lakka**	**1.67**	**17**	P	**Pn**	**19 03 06.4**	**+0.9**
LAKA				S	**Sg**	**19 03 31.3**	**+2.0**
LAKA				AML	AML	19 03 40.1	
	comp=N,492μm,0.7s						
LAKA				AML	AML	19 03 44.2	
	comp=E,477μm,0.6s						
DID	**Didima**	**1.73**	**59**	P	**Pn**	**19 03 06.6**	**+0.4**
DID				S	**Sn**	**19 03 29.6**	**+1.0**
DID	**Didima**	**1.73**	**59**	P	**Pn**	**19 03 06.6**	**+0.4**
DID				S	**Sn**	**19 03 29.6**	**+1.0**
DID	**Didima**	**1.73**	**59**	P	**Pn**	**19 03 05.8**	**-0.4**
ANKY	**Antikythira Is**	**1.74**	**116**	P	**Pb**	**19 03 07.5**	**-0.4**
ANKY				S	**Sg**	**19 03 31.7**	**+0.4**
ANKY	**Antikythira Is**	**1.74**	**116**	P	**Pb**	**19 03 07.5**	**-0.4**
ANKY				S	**Sg**	**19 03 31.7**	**+0.4**
ANKY	**Antikythira Is**	**1.74**	**116**	P	**Pg**	**19 03 08.6**	**-0.2**
THAL	**Thalero**	**1.74**	**36**	P	**Pn**	**19 03 07.3**	**+0.9**
THAL				S	**Sn**	**19 03 29.7**	**+0.9**
THAL	**Thalero**	**1.74**	**36**	P	**Pn**	**19 03 07.2**	**+0.9**
THAL				S	**Sn**	**19 03 29.7**	**+0.9**
THAL	**Thalero**	**1.74**	**36**	P	**Pn**	**19 03 07.2**	**+0.9**
TRIZ	**Trizonia**	**1.81**	**18**	P	**Pg**	**19 03 10.6**	**+0.3**
EFP	**Efpalio**	**1.84**	**13**	P	**Pg**	**19 03 11.2**	**+0.4**
EFP	**Efpalio**	**1.84**	**13**	P	**Pg**	**19 03 11.2**	**+0.4**
KALE	**Kalithea**	**1.86**	**19**	P	**Pn**	**19 03 08.5**	**+0.5**
KALE				S	**Sn**	**19 03 32.8**	**+0.9**
KALE	**Kalithea**	**1.86**	**19**	P	**Pn**	**19 03 08.5**	**+0.5**
KALE				S	**Sn**	**19 03 32.8**	**+0.9**
KALE	**Kalithea**	**1.86**	**19**	P	**Pb**	**19 03 09.7**	**-0.3**
LTK	**Loutraki**	**1.88**	**42**	P	**Pn**	**19 03 08.9**	**+0.6**
LTK				S	**Sn**	**19 03 33.0**	**+0.6**
LTK	**Loutraki**	**1.88**	**42**	P	**Pn**	**19 03 08.9**	**+0.6**
LTK				S	**Sn**	**19 03 33.0**	**+0.6**
LTK	**Loutraki**	**1.88**	**42**	P	**Pn**	**19 03 09.1**	**+0.7**
PDO	**Prodromos**	**1.97**	**356**	P	**Pn**	**19 03 10.2**	**+0.7**
PDO				S	**Sn**	**19 03 35.6**	**+1.1**
PDO	**Prodromos**	**1.97**	**356**	P	**Pn**	**19 03 10.2**	**+0.7**
PDO				S	**Sn**	**19 03 35.6**	**+1.1**
PDO	**Prodromos**	**1.97**	**356**	P	**Pn**	**19 03 09.5**	**0.0**
DSF	**Desfina**	**2.00**	**27**	P	**Pn**	**19 03 10.5**	**+0.5**
DSF				S	**Sn**	**19 03 36.0**	**+0.6**
DSF	**Desfina**	**2.00**	**27**	P	**Pn**	**19 03 10.5**	**+0.5**
DSF				S	**Sn**	**19 03 36.0**	**+0.6**
DSF	**Desfina**	**2.00**	**27**	P	**Pn**	**19 03 10.1**	**+0.2**
ANX	**Ano Chora**	**2.00**	**12**	P	**Pb**	**19 03 13.3**	**+0.8**
PROD	**Prodromos**	**2.03**	**36**	P	**Pn**	**19 03 09.8**	**-0.6**
PROD	**Prodromos**	**2.03**	**36**	P	**Pn**	**19 03 09.8**	**-0.6**
VILL	**Villia**	**2.17**	**45**	P	**Pn**	**19 03 13.2**	**+0.8**
VIL2	**Platees**	**2.18**	**43**	P	**Pn**	**19 03 13.2**	**+0.7**
LKD2	**Lefkada island**	**2.22**	**345**	P	**Pn**	**19 03 14.1**	**+1.0**
LKD2				S	**Sn**	**19 03 42.5**	**+1.6**
LKD2	**Lefkada island**	**2.22**	**345**	P	**Pn**	**19 03 14.1**	**+1.0**
LKD2				S	**Sn**	**19 03 42.5**	**+1.6**
LKD2	**Lefkada island**	**2.22**	**345**	P	**Pb**	**19 03 16.0**	**-0.2**
VLY	**Voula,Athens**	**2.28**	**57**	P	**Pn**	**19 03 14.2**	**+0.4**
VLY				S	**Sn**	**19 03 43.9**	**+1.6**
VLY	**Voula,Athens**	**2.28**	**57**	P	**Pn**	**19 03 14.2**	**+0.4**
VLY				S	**Sn**	**19 03 43.9**	**+1.6**
EVR	**Evrytania**	**2.30**	**8**	P	**Pn**	**19 03 14.4**	**+0.2**
EVR	**Evrytania**	**2.30**	**8**	P	**Pn**	**19 03 14.4**	**+0.2**
AGG	**Agios Georgios**	**2.50**	**17**	P	**Pb**	**19 03 19.6**	**-1.3**
AGG	**Agios Georgios**	**2.50**	**17**	P	**Pb**	**19 03 19.6**	**-1.3**
DSL	**Palaion Diasel**	**2.50**	**355**	P	**Pn**	**19 03 17.3**	**+0.4**
DSL				S	**Sn**	**19 03 49.1**	**+1.2**
DSL	**Palaion Diasel**	**2.50**	**355**	P	**Pn**	**19 03 17.5**	**+0.6**
DSL				S	**Sn**	**19 03 49.1**	**+1.2**
DSL	**Palaion Diasel**	**2.50**	**355**	P	**Pn**	**19 03 17.5**	**+0.6**
SGD	**Sagiada**	**3.11**	**344**	P	**Pn**	**19 03 26.2**	**+1.1**
SGD				S	**Sn**	**19 04 04.6**	**+2.0**
SGD	**Sagiada**	**3.11**	**344**	P	**Pn**	**19 03 26.2**	**+1.1**
SGD				S	**Sn**	**19 04 04.6**	**+2.0**
IDI	**Anoyia**	**3.15**	**114**	Pn	**Pb**	**19 03 29.9**	**-2.2**
	comp=E,0.3nm,0.3s,baz=275,slow=11,SNR=2.2						
IDI				Sn	**Sn**	**19 04 07.5**	**+3.5**
	comp=E,2.0nm,0.3s,baz=28,slow=17,SNR=3.5						
FINES	**FINESS Array B**	**25.01**	**5**	P	**P**	**19 07 58.2**	**-1.8**
	comp=E,1.0nm,0.7s,baz=164,slow=9.6,SNR=7.3						
EKA	**Eskdalemuir Ar**	**25.08**	**326**	P	**P**	**19 08 00.9**	**+0.1**
	comp=E,0.7nm,0.8s,baz=122,slow=11,SNR=3.6						
NB2	**NORSAR Subarra**	**25.26**	**348**	P	**P**	**19 08 00.8**	**-1.6**
	comp=Z,0.4nm,0.6s,baz=156,slow=9.3						
NB2	**NORSAR Subarra**	**25.26**	**348**	P	**P**	**19 08 00.8**	**-1.6**
	comp=Z,0.4nm,0.6s,SNR=4.2						
NOA	**NORSAR Array B**	**25.26**	**348**	P	**P**	**19 08 00.6**	**-1.7**
	comp=Z,0.5nm,0.6s,baz=157,slow=9.0,SNR=4.9						
MKAR	**Makanchi Array**	**45.55**	**57**	P	**P**	**19 10 55.1**	**-1.0**
	comp=Z,0.1nm,0.4s,baz=262,slow=6.7,SNR=2.5						

*NIED **20** 19:04:00,36˚.90N×140˚.70E,h5km,Mw3.8 Best double couple: M0 5.65000×10^14 NP1:φs30.00000°,δ22.00000°, λ-54.00000°. NP2:φs171.00000°,δ73.00000°, λ-103.00000°.*
*IDC **20** 19:04:21.7±0.8,36˚.79N×140˚.75E,h0km,mb3.7/10, mb1 3.8/13,mb1mx3.7/55,mbtmp3.7/13,ML3.6/2,Error ellipse: s-maj=18.8km s-min=14.3km az=152.0*
*ISCJB **20** 19:04:22.8±0.7,36˚.87N±0˚.03×140˚.82E±0˚.06,h20km±4km, mb3.7/10,Error ellipse: s-maj=8.3km s-min=4.2km az=23.2*
*JMA **20** 19:04:23.8,36˚.89N×140˚.71E,h10km±1km,M3.8 Broadband fault plane solution: P waves. NP1: φs186.00000°,δ46.00000°,λ-95.00000°. NP2:φs14.00000°, δ44.00000°,λ-84.00000°. Principal axes: T Plg1.0000°, Azm280.0000°; N Plg4.0000°, Azm190.0000°; P Plg86.0000°, Azm24.0000°;*
JMA Felt III J1.

ISC 20 19:04:23.8±1.0,36˚.89N±0˚.03×140˚.71E±0˚.05,h12km±6km, n29,σ0°75/34,mb3.7/10,5C-2D,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.22**	**19**	P	**Pg**	**19 04 28.6**	**0.0**
ONAJ				S	**Sg**	**19 04 32.2**	**+0.4**
JHO	**Hitachi**	**0.30**	**202**	⇑P	**Pg**	**19 04 29.8**	**-0.2**
JHO				S	**Sg**	**19 04 33.9**	**-0.2**
JFK	**Kawauchi**	**0.49**	**16**	⇓P	**Pg**	**19 04 33.3**	**-0.2**
JFK				S	**Sg**	**19 04 40.0**	**-0.1**
JSB	**Shiboa**	**0.64**	**277**	⇑P	**Pb**	**19 04 36.7**	**-0.2**
JSB				S	**Sb**	**19 04 45.5**	**-0.2**
JFT	**Otama**	**0.69**	**335**	⇑P	**Pg**	**19 04 37.3**	**+0.1**
JFT				S	**Sg**	**19 04 46.3**	**0.0**
JYT	**Yasato**	**0.78**	**212**	⇑P	**Pg**	**19 04 38.4**	**-0.5**
JYT				*e*S	**Sg**	**19 04 48.8**	**-0.3**
JFY	**Yanaizu**	**0.95**	**303**	⇑P	**Pg**	**19 04 41.6**	**-0.6**
JFY				S	**Sg**	**19 04 53.9**	**-0.7**
JMM	**Marumori**	**0.97**	**4**	⇓P	**Pg**	**19 04 41.8**	**-0.8**
JMM				S	**Sg**	**19 04 54.7**	**-0.6**
MJAR	**Matsushiro Arr**	**2.04**	**261**	Pn	**Pn**	**19 04 58.7**	**+0.8**
	46nm,0.3s,baz=87,slow=15,SNR=184						
MJAR				Lg	Lg	19 05 26.0	
	44nm,0.3s,baz=78,slow=28,SNR=5.3						
MAT	**Matsushiro**	**2.04**	**261**	P	**Pn**	**19 04 59.0**	**+1.0**
MAT				S	**Sb**	**19 05 26.5**	**+0.4**
ASAJ	**Asahikawa**	**7.36**	**11**	Pn	**Pn**	**19 06 11.0**	**0.0**
	0.6nm,0.3s,baz=254,slow=15,SNR=8.9						
ASAJ				Sn	**Sn**	**19 07 33.3**	**-1.1**
	0.1nm,0.3s,baz=79,slow=18,SNR=1.4						
USRK	**Ussuriysk Ar.**	**9.86**	**320**	Pn	Pn	19 06 48.7	+3.4
	0.1nm,0.3s,baz=134,slow=14,SNR=3.2						
KSRS	**Korea Array**	**10.22**	**277**	Pn	**Pn**	**19 06 51.5**	**+1.2**
	baz=92,slow=13,SNR=3.0						
SEY	**Seymchan**	**27.04**	**12**	P	**P**	**19 10 08.0**	**+2.3**
	1.5nm,0.3s,baz=330,slow=19,SNR=6.4						
SONM	**Songino Array**	**27.40**	**304**	P	**P**	**19 10 09.3**	**+0.1**
	1.3nm,0.7s,baz=105,slow=8.1,SNR=5.6						
SONM				PcP	**PcP**	**19 13 28.2**	**+0.4**
	0.4nm,0.6s,baz=113,slow=3.4,SNR=3.6						
H11N2	**WAKE ISLAND Hy**	**28.57**	**120**	T	T	19 40 06.0	
	baz=313,slow=75,SNR=511						
H11N1	**WAKE ISLAND Hy**	**28.57**	**120**	T	T	19 40 06.6	
	baz=313,slow=75,SNR=599						
H11N3	**WAKE ISLAND Hy**	**28.58**	**120**	T	T	19 40 06.7	
	baz=313,slow=75,SNR=625						
H11S1	**WAKE ISLAND Hy**	**29.26**	**122**	T	T	19 40 57.4	
	baz=314,slow=75,SNR=330						
H11S3	**WAKE ISLAND Hy**	**29.28**	**122**	T	T	19 40 57.5	
	baz=314,slow=75,SNR=237						
H11S2	**WAKE ISLAND Hy**	**29.28**	**122**	T	T	19 40 58.9	
	baz=314,slow=75,SNR=177						
ZALV	**Zalesovo Beam**	**41.59**	**313**	P	**P**	**19 12 11.0**	**-0.3**
	0.7nm,0.4s,baz=90,slow=7.4,SNR=4.4						
ZALV				PcP	**PcP**

JOU	**Okura**	**2.43**	**282**	P	**Pn**	**19 22 31.8**	**+0.9**
JOM	**Ohasama**	**2.45**	**311**	P	**Pn**	**19 22 31.5**	**+0.4**
JOM				*eS*	**Sn**	**19 23 00.9**	**+0.4**
JTH	**Tanohata**	**2.49**	**326**	P	**Pn**	**19 22 31.6**	**0.0**
JTH				*eS*	**Sn**	**19 23 00.6**	**-0.9**
JYK	**Kaneyama**	**2.81**	**292**	P	**Pn**	**19 22 37.2**	**+1.2**
JYK				S	**Sn**	**19 23 10.0**	**+0.6**
JRG	**Rokugo**	**2.82**	**303**	P	**Pn**	**19 22 37.2**	**+1.0**
JRG				*eS*	**Sn**	**19 23 10.9**	**+1.2**
JANG	**Nango**	**3.00**	**326**	P	**Pn**	**19 22 38.6**	**0.0**
JANG				*eS*	**Sn**	**19 23 13.9**	**-0.1**
JTM	**Tenmabayashi**	**3.53**	**326**	*eS*	**Sn**	**19 23 26.3**	**-0.9**
ASAJ	**Asahikawa**	**6.27**	**353**	Pn	**Pn**	**19 23 23.5**	**-0.1**
	6.9nm,0.3s,baz=200,slow=11,SNR=70						
ASAJ				Sn	**Sn**	**19 24 38.9**	**+4.2**
	baz=162,slow=20,SNR=2.0						
USRK	**Ussuriysk Ar.**	**10.85**	**309**	Pn	**Pn**	**19 24 28.5**	**+2.3**
	0.1nm,0.3s,baz=121,slow=14,SNR=3.1						
KLR	**Kul'dur**	**14.24**	**327**	Pn	**P**	**19 25 17.6**	**-2.3**
	0.2nm,0.3s,baz=116,slow=4.7,SNR=6.2						
PETK	**Petropavlovsk-**	**18.05**	**28**	P	**P**	**19 26 02.7**	**+0.6**
	0.1nm,0.3s,baz=198,slow=13,SNR=3.0						
SEY	**Seymchan**	**25.62**	**9**	P	**P**	**19 27 20.8**	**+0.7**
	1.7nm,0.8s,baz=179,slow=9.3,SNR=6.0						
SONM	**Songino Array**	**28.83**	**302**	P	**P**	**19 27 48.5**	**-0.8**
	0.7nm,0.7s,baz=104,slow=9.4,SNR=2.6						
ZALV	**Zalesovo Beam**	**42.68**	**312**	P	**P**	**19 29 48.2**	**+0.8**
	1.7nm,0.6s,baz=104,slow=6.2,SNR=8.3						
MKAR	**Makanchi Array**	**45.20**	**302**	P	**P**	**19 30 08.7**	**+0.9**
	0.9nm,0.8s,baz=86,slow=10,SNR=9.9						
KURK	**Kurchatov**	**46.83**	**308**	*eP*	**P**	**19 30 21.3**	**+0.7**
	4.1nm,0.7s						
ILAR	**Eielson Array**	**47.79**	**33**	P	**P**	**19 30 27.9**	**0.0**
	1.3nm,0.7s,baz=260,slow=6.6,SNR=17						
BRVK	**Borovoye**	**51.39**	**312**	P	**P**	**19 30 51.8**	**-3.6**
	2.0nm,1.0s						
INK	**Inuvik**	**52.79**	**28**	P	**P**	**19 31 05.9**	**+0.3**
	0.7nm,0.8s,baz=276,slow=6.4,SNR=3.5						
WRA	**Warramunga Arr**	**58.20**	**190**	P	P	19 31 39.3	-5.7
	0.4nm,0.4s,baz=7.7,slow=7.2,SNR=5.8						
ASAR	**Alice Springs**	**61.92**	**190**	P	P	19 32 05.4	-5.1
	0.6nm,0.8s,baz=20,slow=8.3,SNR=4.2						
YKA	**Yellowknife Ar**	**62.15**	**31**	P	**P**	**19 32 11.5**	**-0.1**
	0.3nm,0.6s,baz=301,slow=6.6,SNR=6.6						
ARCES	**ARCESS Array B**	**63.82**	**340**	P	**P**	**19 32 21.4**	**-1.3**
	2.2nm,0.9s,baz=54,slow=9.1,SNR=4.0						
GEYT	**Alibeck**	**65.00**	**300**	P	**P**	**19 32 31.7**	**+0.8**
	0.8nm,0.5s,baz=76,slow=6.1,SNR=3.0						
FINES	**FINESS Array B**	**68.89**	**333**	P	**P**	**19 32 55.5**	**+0.3**
	1.3nm,0.6s,baz=36,slow=10,SNR=8.7						
NOA	**NORSAR Array B**	**74.08**	**338**	P	**P**	**19 33 27.0**	**+0.4**
	0.3nm,0.5s,baz=37,slow=6.0,SNR=3.6						
AKASG	**Malin Array Be**	**74.71**	**323**	P	**P**	**19 33 30.1**	**-0.2**
	0.7nm,0.4s,baz=44,slow=6.1,SNR=6.2						
PDAR	**Pinedale Array**	**75.77**	**47**	P	**P**	**19 33 36.9**	**-0.1**
	0.4nm,0.6s,baz=318,slow=1.3,SNR=4.2						

NIED ***20*** *19:22:00,36.˚40N×141.˚00E, h29km, Mw3.6 Best double couple: M₀2.42000×10¹⁴ NP1:φs317.00000°, δ28.00000°, λ-178.00000°. NP2:φs225.00000°, δ89.00000°, λ-62.00000°.*

JMA 20 19:22:00.4±0.1, 36.˚38N×141.˚01E, h39km±1km, M3.6, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHO	**Hitachi**	**0.42**	**303**	P	Pn	19 22 09.8	-0.2
JHO				S	Sn	19 22 16.2	-0.7
JYT	**Yasato**	**0.68**	**257**	P	Pn	19 22 13.4	-0.1
JYT				S	Sn	19 22 22.1	-0.7
ONAJ	**Iwakimizuishiy**	**0.74**	**347**	P	Pn	19 22 14.2	-0.2
ONAJ				S	Sn	19 22 23.9	-0.6
JFK	**Kawauchi**	**0.99**	**354**	P	Pn	19 22 17.6	-0.2
JFK				S	Sn	19 22 29.6	-1.0
JSB	**Shiboa**	**1.05**	**304**	P	Pn	19 22 19.7	+1.0
JAG	**Ashikaga**	**1.26**	**273**	P	Pn	19 22 21.9	+0.5
JFT	**Otama**	**1.26**	**335**	P	Pn	19 22 23.0	+1.5
JFT				S	Sn	19 22 38.4	+1.2
MAJO	**Matsushiro**	**2.27**	**275**	*eP*	Pn	19 22 37.3	+1.9

NIED ***20*** *19:25:00,39.˚60N×140.˚40E, h5km, Mw3.6 Best double couple: M₀2.87000×10¹⁴ NP1:φs351.00000°, δ60.00000°, λ169.00000°. NP2:φs87.00000°, δ80.00000°, λ31.00000°.*

IDC ***20*** *19:25:01.2±1.0, 39.˚54N×140.˚52E, h0km, mb3.4/4, mb1 3.6/8, mb1mx3.4/42, mbtmp3.4/8, ML2.8/4, MS2.8/4, Ms1 2.8/4, ms1mx2.5/39, Error ellipse: s-maj=34.9km s-min=18.3km az=113.0*

ISCJB ***20*** *19:25:02.0±0.6, 39.˚64N±0.˚03×140.˚40E±0.˚05, h17km±6km, mb3.5/4, Error ellipse: s-maj=6.5km s-min=5.2km az=26.4*

JMA ***20*** *19:25:02.3, 39.˚63N×140.˚40E, h4km±1km, M3.7*

JMA Felt III J1.

ISC 20 19:25:02.5±1.1, 39.˚62N±0.˚03×140.˚44E±0.˚04, h8km±8km, n16, σ0§94/21, mb3.6/4, 4C-2D, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JYW	**Yuwa**	**0.20**	**247**	⇓P	**Pg**	**19 25 06.1**	**-0.4**
JYW				S	**Sg**	**19 25 09.5**	**+0.3**
JRG	**Rokugo**	**0.27**	**146**	⇑P	**Pg**	**19 25 08.2**	**+0.4**
JRG				*eS*	**Sb**	**19 25 13.1**	**-1.2**
JAH	**Hinai**	**0.59**	**14**	⇓P	**Pg**	**19 25 13.6**	**-0.4**
JAH				S	**Sg**	**19 25 21.7**	**0.0**
JOM	**Ohasama**	**0.67**	**102**	⇑P	**Pg**	**19 25 15.5**	**0.0**
JOM				S	**Sg**	**19 25 25.0**	**+0.7**
JYK	**Kaneyama**	**0.70**	**185**	⇑P	**Pg**	**19 25 15.3**	**-0.7**
JYK				S	**Sg**	**19 25 24.7**	**-0.5**
JMK	**Ichinoseki**	**0.90**	**138**	⇑P	**Pg**	**19 25 19.2**	**-0.6**
MAT	**Matsushiro**	**3.54**	**211**	P	**Pn**	**19 25 58.8**	**+1.0**
MAT				S	**Sn**	**19 26 40.4**	**+0.5**
MJAR	**Matsushiro Arr**	**3.54**	**211**	Pn	**Pn**	**19 25 58.3**	**+0.5**
	2.5nm,0.3s,baz=23,slow=14,SNR=7.6						
MJAR				LR	LR	19 27 40.1	
	comp=Z,150nm,18.4s,baz=55,slow=45						
ASAJ	**Asahikawa**	**4.78**	**19**	Pn	**Pn**	**19 26 14.6**	**-0.1**
	0.3nm,0.3s,baz=235,slow=12,SNR=3.3						
ASAJ				LR	LR	19 28 19.2	
	comp=Z,92nm,19.0s,baz=131,slow=41						
USRK	**Ussuriysk Ar.**	**7.79**	**309**	Pn	**Pn**	**19 26 55.2**	**-0.9**
	0.3nm,0.3s,baz=114,slow=13,SNR=8.7						
USRK				LR	LR	19 29 26.3	
	comp=Z,95nm,18.5s,baz=56,slow=34						
KSRS	**Korea Array**	**10.04**	**262**	Pn	**Pn**	**19 27 29.6**	**+2.5**
	0.2nm,0.3s,baz=77,slow=13,SNR=3.8						
JNU	**Nakatsue**	**10.07**	**233**	LR	LR	19 31 37.8	
	comp=Z,30nm,19.9s,baz=119,slow=39						
ILAR	**Eielson Array**	**47.74**	**34**	P	**P**	**19 33 40.4**	**+0.8**
	0.3nm,0.8s,baz=265,slow=6.2,SNR=3.3						
WRA	**Warramunga Arr**	**59.52**	**187**	P	**P**	**19 35 05.3**	**-1.1**
	0.7nm,0.7s,baz=5.9,slow=6.9,SNR=7.6						
YKA	**Yellowknife Ar**	**61.97**	**31**	P	**P**	**19 35 22.7**	**+0.2**
	0.1nm,0.6s,baz=305,slow=7.4,SNR=2.9						
ASAR	**Alice Springs**	**63.25**	**187**	P	**P**	**19 35 30.6**	**-1.0**
	0.4nm,0.7s,baz=9.4,slow=7.8,SNR=6.9						

ISCJB ***20*** *19:39:02.9±0.4, 43.˚64N±0.˚04×105.˚11W±0.˚05, h0km, mb4.2/2, MS3.5/1, Error ellipse: s-maj=5.9km s-min=4.8km az=37.5*

IDC ***20*** *19:39:04.0±1.7, 43.˚64N×105.˚39W, h0km, mb3.9/2, mb1 3.8/6, mb1mx3.4/53, mbtmp3.6/6, ML3.5/4, MS3.1/5, Ms1 3.1/5, ms1mx2.7/57, Error ellipse: s-maj=49.1km s-min=7.7km az=150.0*

NEIC ***20*** *19:39:04.7±0.4, 43.˚61N×105.˚11W, h0km, ML3.4, Error ellipse: s-maj=6.7km s-min=5.3km az=133.0, Suspected Mining explosion.*

NEIC 78 km [49 miles] WSW of Newcastle.

ISC 20 19:39:04.4±0.8, 43.˚58N±0.˚05×105.˚19W±0.˚05, h0km, n43, σ1§37/35, Wyoming

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RSSD	**Black Hills**	**0.99**	**57**	*eP*	**Pg**	**19 39 23.1**	**-0.4**
K22A	**Casper**	**1.35**	**227**	*eP*	**Pg**	**19 39 28.6**	**-1.5**
PHWY	**Pilot Hill**	**2.29**	**185**	*eP*	**Pn**	**19 39 44.1**	**+0.5**
LAO	**LASA Array**	**3.19**	**347**	*eP*	**Pn**	**19 39 56.3**	**+0.4**
BW06	**Boulder Array**	**3.30**	**257**	*eP*	**Pn**	**19 39 57.1**	**-0.3**
PDAR	**Pinedale Array**	**3.30**	**257**	Pn	**Pn**	**19 39 57.8**	**+0.3**
	4.4nm,0.3s,baz=83,slow=16,SNR=67						
PDAR				Pg	**Pb**	**19 40 04.4**	**+0.6**
	14nm,0.3s,baz=75,slow=18,SNR=66						
PDAR				Lg	Lg	19 40 42.9	
	21nm,0.3s,baz=85,slow=33,SNR=7.4						
RLMT	**Red Lodge**	**3.31**	**299**	*eP*	**Pn**	**19 39 57.5**	**-0.1**
OGNE	**Ogallala**	**3.52**	**137**	*eP*	**Pn**	**19 40 01.6**	**+1.2**
ISCO	**Idaho Springs**	**3.79**	**185**	*eP*	**Pn**	**19 40 04.4**	**+0.1**
LKWY	**Lake**	**3.88**	**287**	*eP*	Pn	19 40 09.2	+3.6
LOHW	**Long Hollow**	**3.93**	**272**	*eP*	**Pn**	**19 40 08.7**	**+2.5**
H17A	**Grant Village**	**3.97**	**284**	*eP*	**Pn**	**19 40 08.4**	**+1.6**
FLWY	**Flagg Ranch**	**4.02**	**279**	*eP*	**Pn**	**19 40 08.8**	**+1.4**
MOOW	**Moose Ponds**	**4.04**	**274**	*eP*	**Pn**	**19 40 08.8**	**+1.2**
O20A	**White River Ci**	**4.13**	**215**	*eP*	**Pn**	**19 40 09.8**	**+1.0**
REDW	**Red Top Meadow**	**4.13**	**265**	*eP*	**Pn**	**19 40 11.3**	**+2.4**
IMW	**Indian Meadow**	**4.16**	**276**	*eP*	**Pn**	**19 40 08.8**	**-0.8**
AHID	**Auburn Hatcher**	**4.40**	**261**	*eP*	**Pn**	**19 40 15.5**	**+2.9**
SMCO	**Snowmass**	**4.60**	**198**	*eP*	**Pn**	**19 40 16.5**	**+1.0**
DGMT	**Dagmar**	**4.94**	**8**	*eP*	**Pn**	**19 40 20.9**	**+1.0**
KSCO	**Kaye Shedlock'**	**4.95**	**156**	*eP*	**Pn**	**19 40 20.8**	**+0.7**
BOZ	**Bozeman (W)**	**5.04**	**296**	*eP*	**Pn**	**19 40 20.0**	**-1.4**
	9.0nm,0.5s						
HWUT	**Hardware Ranch**	**5.10**	**249**	*eP*	**Pn**	**19 40 22.6**	**+0.4**
	14nm,0.5s						
EGMT	**Eagleton**	**5.47**	**326**	*eP*	**Pn**	**19 40 26.8**	**-0.4**
	12nm,0.5s						
MDND	**Maddock**	**5.79**	**41**	*eP*	Pn	19 40 28.7	-2.8
	23nm,0.6s						
SDCO	**Great Sand Dun**	**5.83**	**182**	*eP*	**Pn**	**19 40 33.8**	**+1.4**
	1.1nm,0.5s						
DUG	**Dugway, Tooele**	**6.62**	**242**	*eP*	**Pn**	**19 40 42.7**	**-0.3**
	67nm,1.1s						
HLID	**Hailey**	**6.70**	**273**	*eP*	**Pn**	**19 40 46.5**	**+2.3**
	2.3nm,0.5s						
AGMN	**Agassiz Nation**	**8.03**	**51**	*eP*	**Pn**	**19 41 03.2**	**+1.0**
	6.5nm,0.4s						
I10CA	**LAC DU BONNET**	**9.12**	**40**	*i*		20 44 10.0	
	baz=227,slow=282,SNR=7.4						
ULM	**Lac du Bonnet**	**9.22**	**40**	Pn	**Pn**	**19 41 16.6**	**-1.9**
	1.4nm,0.3s,baz=235,slow=11,SNR=9.2						
ULM				Lg	Lg	19 43 50.6	
	0.5nm,0.3s,baz=314,slow=17,SNR=3.4						
WUAZ	**Wupatki**	**9.36**	**213**	*eP*	**Pn**	**19 41 22.5**	**+1.9**
	5.2nm,0.5s						
NEW	**Newport**	**9.54**	**304**	LR	LR	19 45 26.7	
	comp=Z,123nm,20.2s,baz=160,slow=41						
I56US	**NEWPORT INFRAS**	**9.54**	**304**	*i*		20 34 30.0	
	baz=115,slow=328,SNR=1.9						
NVAR	**Mina Array Bea**	**11.16**	**247**	Pn	**Pn**	**19 41 47.4**	**+2.1**
	0.3nm,0.3s,baz=42,slow=11,SNR=3.6						
FFC	**Flin Flon**	**11.35**	**10**	*eP*	**Pn**	**19 41 47.5**	**-0.1**
	2.1nm,0.6s						
TXAR	**Lajitas Array**	**14.27**	**175**	LR	LR	19 48 19.1	
	comp=Z,89nm,19.5s,baz=0.0,slow=39						
BBB	**Bella Bella**	**17.56**	**307**	LR	LR	19 51 11.4	
	comp=Z,22nm,21.5s,baz=174,slow=42						
TKL	**Tuckaleechee C**	**18.26**	**108**	LR	LR	19 50 33.3	
	comp=Z,65nm,19.4s,baz=55,slow=37						
YKA	**Yellowknife Ar**	**19.73**	**347**	P	**P**	**19 43 35.4**	**0.0**
	0.1nm,0.3s,baz=156,slow=11,SNR=5.5						
SFJD	**Kangerlussuaq**	**37.13**	**32**	LR	LR	20 01 48.4	
	comp=Z,67nm,18.1s,baz=307,slow=37						
ARCES	**ARCESS Array B**	**61.55**	**18**	P	**P**	**19 49 21.3**	**-1.4**
	2.2nm,0.8s,baz=342,slow=4.1,SNR=5.9						
FINES	**FINESS Array B**	**68.15**	**23**	P	**P**	**19 50 05.4**	**-0.4**
	0.7nm,0.6s,baz=338,slow=3.3,SNR=6.3						

ISCJB ***20*** *19:53:18.5±0.3, 5.˚15N±0.˚03×127.˚93E±0.˚05, h35km, mb4.3/33, MS3.5/6, Error ellipse: s-maj=6.5km s-min=4.3km az=172.7*

IDC ***20*** *19:53:21.6±1.8, 5.˚00N×127.˚73E, h50km±15km, mb4.0/22, mb1 4.0/24, mb1mx3.9/48, mbtmp4.2/24, ML3.2/2, MS3.4/9, Ms1 3.4/9, ms1mx3.0/38, Error ellipse: s-maj=23.3km s-min=10.4km az=70.0*

NEIC ***20*** *19:53:22.2±1.3, 4.˚97N×127.˚65E, h56km±11km, mb4.5/10, Error ellipse: s-maj=13.1km s-min=6.1km az=72.0*

MAN ***20*** *19:53:23, 5.˚16N×127.˚58E, h32km, mb5.0, ML4.0, MS4.1*

DJA ***20*** *19:53:26.4±0.6, 5.˚N±4.˚×12.˚8E±.˚, h44km±7km, M4.5/19, mb4.7/19, mB5.0/9, MLv4.8/7, Mw(mB)4.2/9*

ISC 20 19:53:20.7±0.6, 5.˚19N±0.˚06×127.˚84E±0.˚08, h35km, n79, σ1§38/66, mb4.3/33, MS3.4/6, 1C-4D, Philippine Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MATI	**Mati**	**2.35**	**318**	*eP*	**Pn**	**19 53 58.1**	**+1.3**
MATI				*eS*	**Sn**	**19 54 25.1**	**+0.5**
SGSI	**Sangihe**	**2.75**	**237**	P	**Pn**	**19 54 02.3**	**0.0**
SGSI				S	**Sn**	**19 54 33.3**	**-1.1**
DAV	**Davao City (W)**	**2.92**	**310**	P	**Pn**	**19 54 06.3**	**+1.5**
	3.4nm,0.3s,baz=103,slow=3.5,SNR=4.2						
DAV				S	**Sn**	**19 54 42.5**	**+3.8**
	82nm,0.3s,baz=124,slow=22,SNR=6.8						
DAV				LR	LR	19 55 50.6	
	comp=Z,831nm,20.3s,baz=232,slow=50						
DMPH	**Davao City--Mi**	**2.99**	**309**	*eP*	Pn	19 54 11.3	+5.7
DMPH				*eS*	Sn	19 54 53.9	+14
KCP	**Kidapawan**	**3.28**	**304**	*eP*	**Pn**	**19 54 10.9**	**+1.2**
KCP				*i* S	Sn	19 54 56.5	+8.9
BIPH	**Bislig**	**3.32**	**334**	*eP*	**Pn**	19 54 13.8	+3.7
BIPH				*i* S	**Sn**	**19 54 47.6**	**-0.8**
BUKP	**Musuan**	**3.84**	**314**	*eP*	Pn	19 54 21.1	+3.7
CTBH	**Cotabato--PC H**	**4.11**	**300**	*eP*	Pn	**19 54 22.1**	**+1.1**
BUTP	**Butuan**	**4.35**	**330**	*eP*	Pn	19 54 28.7	+4.3
TNTI	**Ternate**	**4.42**	**186**	P	**Pn**	**19 54 27.1**	**+1.8**
CGP	**Cagayan de Oro**	**4.50**	**316**	*eP*	**Pn**	**19 54 27.7**	**+1.2**
CGP				*eS*	Sn	19 55 28.4	+11
PAGZ	**Pagadian**	**5.16**	**301**	*eP*	Pn	19 54 38.3	+2.8
LBMI	**Labuha**	**5.80**	**183**	P	**Pn**	**19 54 47.3**	**+3.0**
	78nm,0.8s,738nm0.4nm						
SWI	**Sorong**	**6.91**	**150**	P	Pn	19 55 04.6	+5.0
SANI	**Sanana**	**7.43**	**194**	P	**Pn**	**19 55 06.4**	**-0.3**
	36nm,0.8s,586nm0.2nm						
MRSI	**Marisa**	**7.53**	**232**	P	**Pn**	**19 55 07.6**	**-0.4**
	80nm,0.6s,2µm0.3nm						
LUWI	**Luwuk**	**8.00**	**219**	P	**Pn**	**19 55 16.6**	**+2.1**
	111nm,1.0s,1µm0.4nm						
NLAI	**Namlea**	**8.41**	**185**	P	**Pn**	**19 55 21.6**	**+1.5**
	23nm,0.8s,490nm						
APSI	**Ampana**	**8.66**	**226**	P	**Pn**	**19 55 25.6**	**+2.0**
	73nm,1.0s						
SPSI	**Sidrap Palu**	**12.16**	**222**	P	**Pn**	**19 56 12.5**	**+1.0**
KAPI	**Kappang**	**12.96**	**219**	P	Pn	19 56 18.8	-3.7
	0.1nm,0.3s,baz=8.4,slow=16,SNR=4.4						
GENI	**Genyem**	**14.54**	**122**	P	P	19 57 03.5	+13
JAY	**Jayapura**	**14.96**	**120**	LR	LR	20 01 34.1	
	comp=Z,47nm,21.1s,baz=86,slow=33						
BBKI	**Banjar Baru**	**15.58**	**237**	P	**Pn**	**19 56 58.8**	**+1.0**
	49nm,1.1s						
STKI	**Sintang**	**17.12**	**253**	P	**P**	**19 57 19.1**	**+0.3**
TWSI	**Taliwang, Sumb**	**17.63**	**218**	P	**P**	**19 57 26.0**	**+1.5**
KSM	**Kuching**	**17.89**	**259**	*eP*	**Pn**	**19 57 25.6**	**-1.4**
	52nm,0.8s						
GUMO	**Guam**	**18.74**	**62**	LR	LR	20 05 15.5	
	comp=Z,28nm,18.0s,baz=176,slow=38						
FITZ	**Fitzroy Crossi**	**23.25**	**185**	P	**P**	**19 58 23.6**	**-1.5**
	1.7nm,0.8s,baz=153,slow=14,SNR=5.3						
MDSI	**Maura Dua**	**25.52**	**248**	P	**P**	**19 58 48.3**	**+2.1**
	5.8nm,1.1s						
WRAB	**Tennant Creek**	**25.77**	**166**	P	P	19 58 46.0	-2.4
	6.7nm,0.7s						
WRA	**Warramunga Arr**	**25.78**	**166**	P	**P**	**19 58 46.7**	**-1.8**
	0.4nm,0.5s,baz=345,slow=10,SNR=11						
WRA				ScP	**ScP**	**20 05 54.0**	**-0.9**
	0.8nm,0.7s,baz=338,slow=2.9,SNR=7.7						
LWLI	**Liwa**	**25.83**	**247**	P	**P**	**19 58 51.5**	**+2.3**
	23nm,0.7s,3µm						
ASAR	**Alice Springs**	**29.29**	**169**	P	P	19 59 18.3	-1.6
	0.4nm,0.5s,baz=352,slow=7.6,SNR=19						
ASAR				ScP	**ScP**	**20 06 04.6**	**-1.0**
	0.5nm,0.6s,baz=349,slow=2.6,SNR=7.3						
JHJ	**Hachijo jima 2**	**29.93**	**20**	LR	LR	20 12 02.4	
	comp=Z,45nm,19.5s,baz=266,slow=37						
ENH	**Enshi**	**30.36**	**327**	*eP*	**P**	**19 59 27.7**	**-1.8**
CMAR	**Chiang Mai Arr**	**31.14**	**297**	P	**P**	**19 59 35.5**	**-0.9**
	1.5nm,0.7s,baz=113,slow=7.6,SNR=14						
CHTO	**Chiang Mai**	**31.27**	**298**	*eP*	**P**	**19 59 35.7**	**-1.9**
	2.1nm,0.7s						
KSAR	**Wonju Array Be**	**32.10**	**0**	P	**P**	**19 59 46.8**	**+2.3**
KSRS	**Korea Array**	**32.11**	**0**	P	**P**	**19 59 46.8**	**+2.2**
	1.8nm,0.9s,baz=177,slow=11,SNR=4.6						
MJAR	**Matsushiro Arr**	**32.62**	**16**	LR	LR	20 10 59.6	
	comp=Z,46nm,21.6s,baz=205,slow=32						
HNR	**Honiara**	**35.14**	**114**	LR	LR	20 12 53.3	
	comp=Z,64nm,18.4s,baz=285,slow=33						
USRK	**Ussuriysk Ar.**	**39.02**	**5**	P	**P**	**20 00 45.7**	**+1.8**
	1.6nm,0.7s,baz=197,slow=6.0,SNR=4.1						
STKA	**Stephens Creek**	**39.12**	**161**	P	P	20 00 43.2	-1.7
	1.0nm,0.4s,baz=333,slow=5.5,SNR=4.8						
LSA	**Lhasa**	**42.34**	**309**	*eP*	**P**	**20 01 12.2**	**+0.1**
	4.0nm,1.0s						
GUN	**Gumba**	**45.80**	**304**	*eP*	**P**	**20 01 38.4**	**-1.4**
	41nm,0.8s						
PKIN	**Phulchoki**	**46.07**	**304**	*eP*	**P**	**20 01 40.5**	**-1.4**
	6.1nm,0.7s						
ULN	**Ulaanbaatar**	**46.10**	**341**	*eP*	**P**	**20 01 42.5**	**+0.9**
	3.1nm,0.8s						
KKN	**Kakani**	**46.25**	**304**	*eP*	**P**	**20 01 41.5**	**-1.6**
	14nm,0.9s						
SONM	**Songino Array**	**46.29**	**340**	P	**P**	**20 01 44.0**	**+0.9**
	1.1nm,0.7s,baz=158,slow=7.9,SNR=8.1						
SONM				LR	LR	20 24 12.4	
	comp=Z,34nm,18.0s,baz=195,slow=40						
DMN	**Daman**	**46.33**	**304**	*eP*	**P**	**20 01 43.6**	**-0.2**
GKN	**Gorkha**	**46.85**	**304**	*eP*	**P**	**20 01 46.6**	**-1.2**
	5.2nm,0.6s						
KOLN	**Koldanda**	**47.63**	**303**	*eP*	**P**	**20 01 53.4**	**-0.6**
	33nm,0.6s						
PYUN	**Piuthan**	**48.25**	**303**	*eP*	**P**	**20 01 58.3**	**-0.5**
	17nm,0.5s						
PETK	**Petropavlovsk-**	**53.67**	**22**	P	**P**	**20 02 41.3**	**+2.4**
	5.8nm,0.8s,baz=197,slow=4.6,SNR=5.6						
MKAR	**Makanchi Array**	**57.01**	**324**	P	**P**	**20 03 03.4**	**+0.3**
	5.7nm,0.5s,baz=119,slow=8.0,SNR=107						
TKM2	**Tokmak 2**	**59.41**	**318**	*eP*	**P**	**20 03 20.5**	**+0.4**
	4.8nm,0.8s						
ZALV	**Zalesovo Beam**	**59.81**	**332**	P	**P**	**20 03 21.1**	**-1.2**
	0.9nm,0.3s,baz=127,slow=6.7,SNR=7.0						
EKS2	**Erkin-Say**	**60.54**	**317**	*eP*	**P**	**20 03 28.2**	**+0.4**
	9.4nm,0.9s						
KURK	**Kurchatov**	**61.12**	**327**	*eP*	**P**	**20 03 31.8**	**+0.4**
	20nm,0.6s						
RPZ	**Rata Peaks**	**62.33**	**146**	LR	LR	20 29 16.0	
	comp=Z,108nm,19.5s,baz=272,slow=35						
URZ	**Urewera**	**62.86**	**138**	LR	LR	20 30 35.7	
	comp=Z,69nm,19.2s,baz=272,slow=36						
TIXI	**Tiksi**	**66.38**	**0**	P	**P**	**20 04 05.6**	**-0.1**
	1.2nm,0.3s,baz=77,slow=1.6,SNR=9.3						
TIXI	**Tiksi**	**66.38**	**0**	*eP*	**P**	**20 04 06.1**	**+0.4**
BRVK	**Borovoye**	**66.79**	**326**	*eP*	**P**	**20 04 08.9**	**+0.2**
	6.0nm,0.6s						
GEYT	**Alibeck**	**70.86**	**308**	P	**P**	**20 04 34.2**	**-0.1**
	9.3nm,0.8s,baz=146,slow=3.4,SNR=27						
ABKAR	**Akbulak array**	**71.74**	**320**	*eP*	**P**	**20 04 39.1**	**-0.2**
	5.6nm,0.8s						
ARU	**Arti**	**74.31**	**327**	P	**P**	**20 04 53.0**	**-1.4**
	4.1nm,0.6s,baz=102,slow=1.7,SNR=11						
ARU	**Arti**	**74.31**	**327**	*eP*	**P**	**20 04 53.9**	**-0.5**
KBZ	**Khabaz**	**82.79**	**313**	P	**P**	**20 05 41.2**	**-0.2**
	2.4nm,0.9s,baz=218,slow=4.1,SNR=5.2						
ILAR	**Eielson Array**	**83.31**	**25**	P	**P**	**20 05 43.8**	**0.0**
	0.7nm,0.8s,baz=250,slow=4.9,SNR=7.9						
PAX	**Paxson**	**83.90**	**27**	*eP*	**P**	**20 05 47.4**	**+0.5**
ARCES	**ARCESS Array B**	**89.47**	**340**	P	**P**	**20 06 13.2**	**-0.6**
	5.1nm,0.9s,baz=79,slow=6.3,SNR=11						
BRTR	**Keskin Array B**	**89.95**	**310**	P	**P**	**20 06 15.3**	**-1.6**
	1.6nm,0.9s,baz=117,slow=5.0,SNR=3.9						
FINES	**FINESS Array B**	**91.08**	**332**	P	**P**	**20 06 20.4**	**-1.1**
	2.5nm,0.9s,baz=99,slow=6.0,SNR=6.4						

0.2nm,0.6s,baz=6.8,slow=7.2,SNR=2.7

IDC ***20*** *20:07:00.9±0.7, 37°.24N×142°.16E, h0km, mb3.8/15, mb1 3.9/20, mb1mx3.8/47, mbtmp3.8/20, ML3.4/4, MS3.1/5, Ms1 3.1/5, ms1mx2.7/42, Error ellipse: s-maj=20.4km s-min=14.4km az=114.0*

NEIC ***20*** *20:07:01.7±3.4, 37°.25N×142°.12E, h5km±20km, mb4.4/2, Error ellipse: s-maj=12.7km s-min=6.3km az=132.0*

ISCJB ***20*** *20:07:02.8±0.5, 37°.31N±0°.05×142°.10E±0°.05, h24km, mb3.8/16, MS3.5/3, Error ellipse: s-maj=6.8km s-min=5.4km az=167.0*

JMA ***20*** *20:07:02.7±0.2, 37°.31N×142°.11E, h29km±4km, M4.2*

ISC 20 20:07:04.5±0.7, 37°.30N±0°.05×142°.00E±0°.06, h24km, n44, σ1§11/40, mb3.8/16, MS3.5/3, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JFK	**Kawauchi**	**0.90**	**275**	P	**Pb**	**20 07 20.6**	**-0.9**
JFK				S	**Sn**	**20 07 33.8**	**-0.2**
ONAJ	**Iwakimizuishiy**	**0.98**	**259**	P	**Pn**	**20 07 22.1**	**-0.7**
JMM	**Marumori**	**1.12**	**301**	P	**Pn**	**20 07 23.5**	**-1.1**
JMM				eS	**Sb**	**20 07 38.1**	**-1.1**
JIO	**Ouri**	**1.27**	**336**	P	**Pn**	**20 07 24.9**	**-1.8**
JFT	**Otama**	**1.34**	**280**	P	**Pn**	**20 07 27.9**	**+0.1**
JOU	**Okura**	**1.50**	**316**	P	**Pn**	**20 07 29.7**	**-0.3**
JOU				eS	**Sn**	**20 07 48.7**	**-0.1**
JMK	**Ichinoseki**	**1.76**	**340**	P	**Pn**	**20 07 32.8**	**-0.7**
JYS	**Shirataka**	**1.79**	**302**	P	**Pb**	**20 07 35.2**	**-1.4**
JFY	**Yanaizu**	**1.83**	**274**	P	**Pn**	**20 07 35.0**	**+0.5**
JYK	**Kaneyama**	**2.07**	**322**	P	**Pn**	**20 07 37.7**	**-0.1**
JOM	**Ohasama**	**2.24**	**346**	P	**Pn**	**20 07 39.2**	**-0.9**
MJAR	**Matsushiro Arr**	**3.13**	**257**	Pn	**Pn**	**20 07 53.2**	**+0.8**
	1.5nm,0.3s,baz=81,slow=16,SNR=13						
MAJO	**Matsushiro**	**3.13**	**257**	*e*Pn	**Pn**	**20 07 52.8**	**+0.4**
MAT	**Matsushiro**	**3.13**	**257**	P	**Pn**	**20 07 53.8**	**+1.4**
MAT				S	**Sb**	**20 08 35.8**	**-1.5**
JHJ	**Hachijo jima 2**	**4.55**	**204**	Pn	**Pn**	**20 08 12.4**	**+0.6**
	17nm,0.3s,baz=90,slow=19,SNR=6.0						
JHJ				Sn	**Sn**	**20 08 59.6**	**-4.3**
	18nm,0.3s,baz=90,slow=20,SNR=2.8						
ERM	**Erimo**	**4.80**	**10**	*e*Pn	**Pn**	**20 08 13.2**	**-2.0**
ASAJ	**Asahikawa**	**6.83**	**4**	Pn	**Pn**	**20 08 43.5**	**+0.5**
	1.2nm,0.3s,baz=212,slow=15,SNR=7.9						
ASAJ				LR	LR	20 11 06.3	
	comp=Z,35nm,19.4s,baz=108,slow=36						
USRK	**Ussuriysk Ar.**	**10.25**	**315**	Pn	Pn	20 09 33.2	+3.1
	0.1nm,0.3s,baz=120,slow=14,SNR=3.5						
KLR	**Kul'dur**	**14.06**	**331**	LR	LR	20 15 35.8	
	comp=Z,42nm,18.8s,baz=164,slow=36						
PETK	**Petropavlovsk-**	**19.23**	**30**	P	**P**	**20 11 26.9**	**+0.2**
	0.2nm,0.3s,baz=254,slow=10,SNR=3.0						
MA2	**Magadan**	**23.00**	**11**	P	**P**	**20 12 08.0**	**+0.7**
	2.1nm,0.3s,baz=184,slow=1.7,SNR=3.5						
SEY	**Seymchan**	**26.44**	**11**	P	**P**	**20 12 40.7**	**+1.5**
	2.1nm,0.6s,baz=196,slow=11,SNR=7.9						
H11N2	**WAKE ISLAND Hy**	**27.88**	**122**	T	T	20 41 51.3	
	baz=315,slow=75,SNR=75						
H11N1	**WAKE ISLAND Hy**	**27.89**	**122**	T	T	20 41 57.0	
	baz=315,slow=75,SNR=53						
H11N3	**WAKE ISLAND Hy**	**27.90**	**122**	T	T	20 41 52.6	
	baz=315,slow=75,SNR=40						
SONM	**Songino Array**	**28.03**	**303**	P	**P**	**20 12 54.9**	**+1.1**
	0.5nm,0.6s,baz=106,slow=9.4,SNR=5.1						
H11S1	**WAKE ISLAND Hy**	**28.61**	**124**	T	T	20 42 46.4	
	SNR=64						
H11S3	**WAKE ISLAND Hy**	**28.61**	**124**	T	T	20 43 18.7	
	baz=314,slow=74,SNR=45						
H11S2	**WAKE ISLAND Hy**	**28.63**	**124**	T	T	20 43 27.2	
	baz=254,slow=74,SNR=30						
ZALV	**Zalesovo Beam**	**42.09**	**312**	P	**P**	**20 14 55.0**	**+0.8**
	1.3nm,0.5s,baz=88,slow=6.7,SNR=7.4						
MKAR	**Makanchi Array**	**44.38**	**302**	P	**P**	**20 15 13.9**	**+1.0**
	0.5nm,0.7s,baz=88,slow=9.9,SNR=7.3						
KURK	**Kurchatov**	**46.14**	**308**	*e*P	**P**	**20 15 27.4**	**+0.6**
	5.8nm,0.7s						
ILAR	**Eielson Array**	**49.02**	**32**	P	**P**	**20 15 48.9**	**-0.1**
	0.7nm,0.7s,baz=272,slow=6.1,SNR=9.9						
INK	**Inuvik**	**53.94**	**27**	P	**P**	**20 16 25.4**	**-0.3**
	1.2nm,0.8s,baz=290,slow=5.8,SNR=5.5						
INK	**Inuvik**	**53.94**	**27**	*e*P	**P**	**20 16 25.8**	**+0.2**
	1.5nm,0.8s						
WRA	**Warramunga Arr**	**57.39**	**189**	P	**P**	**20 16 50.6**	**-0.3**
	0.7nm,0.7s,baz=5.2,slow=7.4,SNR=11						
ASAR	**Alice Springs**	**61.12**	**188**	P	**P**	**20 17 16.9**	**+0.2**
	0.2nm,0.7s,baz=0.0,slow=4.8,SNR=3.4						
RES	**Resolute Bay**	**62.23**	**15**	P	**P**	**20 17 23.9**	**+0.3**
	0.4nm,0.6s,baz=336,slow=9.7,SNR=4.8						
YKA	**Yellowknife Ar**	**63.34**	**30**	P	**P**	**20 17 31.3**	**+0.1**
	0.4nm,0.7s,baz=302,slow=6.7,SNR=8.1						
FINES	**FINESS Array B**	**68.80**	**332**	P	**P**	**20 18 07.0**	**+0.7**
	2.1nm,0.8s,baz=53,slow=9.8,SNR=5.9						
NOA	**NORSAR Array B**	**74.12**	**337**	P	**P**	**20 18 39.1**	**+0.6**
	1.1nm,0.9s,baz=38,slow=5.9,SNR=2.9						
PDAR	**Pinedale Array**	**77.15**	**46**	P	**P**	**20 18 56.2**	**-0.1**
	0.3nm,0.6s,baz=316,slow=2.5,SNR=3.2						
PDAR				LR	LR	20 52 44.2	
	comp=Z,17nm,19.2s,baz=8.5,slow=36						
ULM	**Lac du Bonnet**	**79.03**	**34**	LR	LR	20 55 04.7	
	comp=Z,23nm,21.7s,baz=32,slow=36						
GERES	**GERESS Array B**	**82.73**	**328**	P	**P**	**20 19 26.2**	**-0.1**
	0.3nm,0.4s,baz=46,slow=5.8,SNR=4.5						
GERES				LR	LR	20 58 16.9	
	comp=Z,20nm,18.6s,baz=44,slow=37						

IDC 20 20:15:39.7±50.0, 22°.34S×172°.38W, h0km, mb3.7/3, mb1 3.9/3, mb1mx3.6/35, mbtmp3.7/3, Error ellipse: s-maj=954.5km s-min=174.6km az=87.0, Tonga Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
STKA	**Stephens Creek**	**41.79**	**247**	P	P	20 23 29.8	-1.3
	0.6nm,0.4s,baz=79,slow=5.2,SNR=2.6						
ASAR	**Alice Springs**	**49.21**	**257**	P	P	20 24 30.1	0.0
	0.2nm,0.3s,baz=95,slow=6.9,SNR=9.5						
WRA	**Warramunga Arr**	**49.54**	**262**	P	P	20 24 33.4	+0.8
	0.6nm,0.3s,baz=99,slow=7.0,SNR=41						

MEX 20 20:17:30.8±0.4, 17°.16N×100°.22W, h44km±5km, MD3.9, Guerrero

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CAIG	**El Cayaco**	**0.12**	**200**	*e*P	Pn	20 17 36.4	-1.6
CAIG				*e*S	Sn	20 17 41.2	-1.7
ACP2	**Acapulco**	**0.43**	**131**	*e*P	Pn	20 17 39.3	-1.5
ACP2				*e*S	Sn	20 17 46.3	-1.6
ACX	**Acapulco**	**0.45**	**130**	*i* P	Pn	20 17 44.5	+3.4
ACX				*e*S	Sn	20 17 51.0	+2.5
MEIG	**Mezcala**	**0.95**	**37**	*i* P	Pn	20 17 46.1	-1.7
MEIG				*e*S	Sn	20 17 57.9	-2.5
ARIG	**Puente Sto Nin**	**1.12**	**354**	*e*P	Pn	20 17 48.4	-1.7
ARIG				*e*S	Sn	20 18 02.3	-2.0
ZIIG	**Zihuatanejo**	**1.27**	**291**	*i* P	Pn	20 17 51.2	-0.9
TLIG	**Tlapa**	**1.63**	**76**	*e*P	Pn	20 17 56.4	-0.8
TLIG				*i* S	Sn	20 18 14.5	-2.6
PNIG	**Pinotepa**	**2.15**	**111**	*i* P	Pn	20 18 02.9	-1.3
PNIG				*i* S	Sn	20 18 27.0	-2.7
EZ5V		**3.95**	**306**	*e*P	Pn	20 18 33.0	+3.8
R15V		**4.09**	**300**	*e*P	Pn	20 18 36.3	+5.3

SJA ***20*** *20:24:13.9±1.0, 31°.68S×69°.76W, h113km±6km, ML3.3, MW3.7*

ISCJB ***20*** *20:24:14.1±0.8, 31°.67S±0°.04×69°.74W±0°.05, h120km±9km, Error ellipse: s-maj=7.6km s-min=5.4km az=141.3*

GUC ***20*** *20:24:15.1±0.5, 31°.67S×70°.20W, h147km±8km, ML3.4*

ISC 20 20:24:14.3±1.7, 31°.68S±0°.05×69°.75W±0°.05, h120km±15km, n16, σ0§92/33, 2C-2D, San Juan Province

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
AUSP	**Uspallata**	**0.62**	**150**	*i* P	**Pn**	**20 24 33.3**	**-0.2**
AUSP				*i* S	**Sn**	**20 24 47.2**	**-0.7**
RTCV	**Cerro Valdivia**	**1.04**	**100**	*i* P	**Pn**	**20 24 37.0**	**+0.2**
RTCV				*i* S	**Sn**	**20 24 53.5**	**-0.4**
RTLL	**Cerro Villicun**	**1.14**	**72**	*i* P	**Pn**	**20 24 38.2**	**+0.4**
RTLL				*i* S	**Sn**	**20 24 55.8**	**+0.1**
ASAL	**Salagasta**	**1.19**	**140**	*i* P	**Pn**	**20 24 38.6**	**+0.2**
ASAL				*i* S	**Sn**	**20 24 56.8**	**+0.1**
ARCO	**CERRO ARCO**	**1.35**	**149**	*i* P	**Pn**	**20 24 40.8**	**+0.6**
ARCO				*i* S	**Sn**	**20 24 59.7**	**-0.1**
ARCO				IAML		20 25 04.2	
	comp=Z,290nm,0.6s						
AAGR	**Agrelo**	**1.60**	**151**	*i* P	**Pn**	**20 24 43.4**	**+0.4**
PEL	**Peldehue**	**1.66**	**208**	⇓*i* P	**Pn**	**20 24 44.1**	**+0.5**
PEL				⇑*i* P	**Pn**	**20 24 44.4**	**+0.7**
PEL				*i* S	**Sn**	**20 25 06.2**	**+0.2**
PEL				*i* S	**Sn**	**20 25 06.3**	**+0.3**
PEL				AML	AML	20 25 07.9	
	comp=N,479nm,0.2s						
ROCH	**El Roble**	**1.67**	**219**	*e*P	**Pn**	**20 24 43.8**	**-0.2**
ROCH				⇑*i* P	**Pn**	**20 24 44.1**	**+0.1**
ROCH				*i* S	**Sn**	**20 25 06.5**	**-0.1**
ROCH				*i* S	**Sn**	**20 25 06.5**	**-0.1**
ROCH				AML	AML	20 25 08.1	
	comp=N,462nm,0.1s						
ROC1	**El Roble**	**1.68**	**219**	*i* P	**Pn**	**20 24 44.3**	**+0.3**
ROC1				*i* S	**Sn**	**20 25 06.6**	**-0.1**
TLL	**Tololo Astrono**	**1.76**	**329**	*e*P	**Pn**	**20 24 45.6**	**+0.5**
TLL				*i* S	**Sn**	**20 25 08.2**	**-0.4**
TLL				AML	AML	20 25 10.4	
	comp=N,363nm,0.5s						
CLCH	**Cerro Calan**	**1.83**	**201**	⇓*i* P	**Pn**	**20 24 46.9**	**+1.1**
CLCH				*i* S	**Sn**	**20 25 10.8**	**+0.9**
CLCH				AML	AML	20 25 13.4	
	comp=N,396nm,0.7s						
STL	**Santa Lucia**	**1.90**	**203**	*e*P	**Pn**	**20 24 45.9**	**-0.6**
STL				*i* S	**Sn**	**20 25 11.8**	**+0.5**
ANTU	**Antumapu**	**2.02**	**201**	*e*P	**Pn**	**20 24 48.8**	**+0.7**
ANTU				*i* S	**Sn**	**20 25 09.8**	**-4.1**
ACAN	**Cantantal**	**2.25**	**106**	*i* P	**Pn**	**20 24 51.5**	**+0.6**
ACAN				*i* S	**Sn**	**20 25 19.0**	**-0.1**
VCA	**Vinchina**	**3.23**	**25**	*i* P	**Pn**	**20 25 04.5**	**+0.7**
VCA				IAML		20 25 49.3	
	comp=Z,148nm,0.3s						
CYA	**Choya**	**4.71**	**48**	*i* P	**Pn**	**20 25 22.5**	**-0.8**
CYA				IAML		20 26 17.7	
	comp=Z,10nm,0.4s						

NIED ***20*** *20:32:00, 36°.20N×140°.10E, h56km, Mw3.6 Best double couple: M0 2.74000×10^14 NP1:φs243.00000°, δ27.00000°, λ108.00000°. NP2:φs43.00000°, δ64.00000°, λ81.00000°.*

IDC ***20*** *20:32:20.2±1.8, 36°.33N×140°.44E, h0km, mb3.4/5, mb1 3.6/6, mb1mx3.4/46, mbtmp3.5/6, ML3.9/1, MS2.8/1, Ms1 2.8/1, ms1mx2.1/32, Error ellipse: s-maj=43.5km s-min=19.1km az=56.0*

ISCJB ***20*** *20:32:27.1±0.5, 36°.14N±0°.03×140°.10E±0°.06, h59km±5km, mb3.3/5, Error ellipse: s-maj=7.6km s-min=5.4km az=18.6*

JMA ***20*** *20:32:28.4±0.1, 36°.18N×140°.05E, h51km±1km, M3.7 Broadband fault plane solution: P waves. NP1: φs39.00000°, δ73.00000°, λ83.00000°. NP2:φs241.00000°, δ18.00000°, λ111.00000°. Principal axes: T Plg61.0000°, Azm299.0000°; N Plg6.0000°, Azm41.0000°; P Plg28.0000°, Azm134.0000°;*

JMA Felt II J1.

ISC 20 20:32:28.2±0.9, 36°.15N±0°.04×140°.08E±0°.05, h53km±7km, n17, σ0§86/28, mb3.4/5, 1C-6D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JYT	**Yasato**	**0.12**	**52**	⇑P	**Pn**	**20 32 36.6**	**+0.2**
JYT				S	**Sn**	**20 32 42.3**	**+0.1**
JAG	**Ashikaga**	**0.57**	**299**	⇓P	**Pn**	**20 32 40.3**	**-0.1**
JAG				S	**Sn**	**20 32 48.5**	**-0.8**
JKT	**Katashina**	**0.91**	**313**	⇓P	**Pn**	**20 32 44.4**	**-0.4**
JKT				S	**Sn**	**20 32 56.5**	**-0.5**
JRY	**Ryogami san**	**0.96**	**262**	⇓P	**Pn**	**20 32 45.5**	**+0.1**
JRY				S	**Sn**	**20 32 57.9**	**-0.3**
JOD2	**Odawara 2**	**1.20**	**222**	P	**Pn**	**20 32 49.4**	**+0.8**
JOD2				S	**Sn**	**20 33 04.3**	**+0.5**
JFY	**Yanaizu**	**1.29**	**347**	⇓P	**Pn**	**20 32 50.0**	**+0.2**
JFY				S	**Sn**	**20 33 06.3**	**+0.3**
JFK	**Kawauchi**	**1.37**	**28**	P	**Pn**	**20 32 50.9**	**-0.1**
JFK				S	**Sn**	**20 33 07.3**	**-0.8**
JFT	**Otama**	**1.38**	**9**	⇓P	**Pn**	**20 32 51.2**	**+0.1**
JFT				eS	**Sn**	**20 33 08.7**	**+0.5**
JHK	**Hiroka**	**1.39**	**322**	⇓P	**Pn**	**20 32 51.3**	**+0.2**
MJAR	**Matsushiro Arr**	**1.56**	**285**	Pn	**Pn**	**20 32 53.0**	**-0.4**
	30nm,0.3s,baz=113,slow=8.1,SNR=139						
MJAR				Sn	**Sn**	**20 33 14.8**	**+2.3**
	12nm,0.3s,baz=73,slow=23,SNR=8.1						
MAT	**Matsushiro**	**1.56**	**285**	P	**Pn**	**20 32 54.1**	**+0.6**
MAT				S	**Sn**	**20 33 10.2**	**-2.4**
JHJ	**Hachijo jima 2**	**3.04**	**185**	Pn	**Pn**	**20 33 13.3**	**-0.4**
	32nm,0.3s,baz=343,slow=23,SNR=6.5						
JHJ				Sn	**Sn**	**20 33 47.8**	**-1.0**
	26nm,0.3s,baz=252,slow=20,SNR=2.8						
JHJ				LR	LR	20 34 34.1	
	comp=Z,123nm,18.2s,baz=22,slow=41						
SONM	**Songino Array**	**27.40**	**306**	P	**P**	**20 38 08.7**	**0.0**
	0.4nm,0.6s,baz=102,slow=8.2,SNR=4.8						
ZALV	**Zalesovo Beam**	**41.72**	**313**	P	**P**	**20 40 11.6**	**-0.1**
	0.4nm,0.4s,baz=84,slow=5.1,SNR=3.1						
MKAR	**Makanchi Array**	**43.68**	**303**	P	**P**	**20 40 27.4**	**-0.4**
	0.6nm,0.9s,baz=69,slow=12,SNR=5.1						
WRA	**Warramunga Arr**	**56.05**	**187**	P	**P**	**20 42 01.3**	**-0.5**
	0.2nm,0.4s,baz=0.6,slow=7.5,SNR=7.8						
ASAR	**Alice Springs**	**59.78**	**187**	P	**P**	**20 42 29.1**	**+1.2**
	0.3nm,0.9s,baz=15,slow=12,SNR=3.5						

ISCJB ***20*** *20:49:23.0±0.7, 45°.93N±0°.06×106°.37W±0°.10, h0km, Error ellipse: s-maj=10.9km s-min=7.4km az=35.3*

IDC ***20*** *20:49:24.0±1.4, 45°.91N×106°.59W, h0km, mb1 3.8/3, mb1mx3.3/57, mbtmp3.5/3, ML4.0/2, Error ellipse: s-maj=49.5km s-min=11.3km az=133.0*

NEIC ***20*** *20:49:24.6±0.7, 45°.92N×106°.36W, h0km, ML2.8, Error ellipse: s-maj=10.9km s-min=8.0km az=128.0, Suspected Mining explosion.*

NEIC 21 km [13 miles] E of Colstrip.

ISC 20 20:49:24.2±0.9, 45°.90N±0°.05×106°.21W±0°.06, h0km, n19, σ1§08/17, Montana

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
LAO	**LASA Array**	**0.78**	**359**	*e*Pg	**Pg**	**20 49 38.4**	**-0.8**
RLMT	**Red Lodge**	**2.29**	**251**	*e*Pn	Pn	20 49 60.0	-3.5
RSSD	**Black Hills**	**2.35**	**138**	*e*Pn	**Pb**	**20 50 07.5**	**-0.1**
DGMT	**Dagmar**	**2.91**	**27**	*e*Pn	**Pb**	**20 50 16.9**	**-0.1**
EGMT	**Eagleton**	**3.23**	**312**	*e*Pn	**Pn**	**20 50 15.7**	**-0.5**
K22A	**Casper**	**3.26**	**184**	*e*Pn	**Pn**	**20 50 16.2**	**-0.6**
FLWY	**Flagg Ranch**	**3.67**	**242**	*e*Pn	**Pn**	**20 50 22.8**	**+0.4**
BOZ	**Bozeman (W)**	**3.80**	**268**	*e*Pn	Pn	20 50 19.4	-4.8
LOHW	**Long Hollow**	**3.88**	**235**	*e*Pn	**Pn**	**20 50 25.3**	**0.0**
MOOW	**Moose Ponds**	**3.88**	**238**	*e*Pn	**Pn**	**20 50 26.0**	**+0.6**
IMW	**Indian Meadow**	**3.92**	**241**	*e*P	**Pn**	**20 50 24.0**	**-1.9**
PDAR	**Pinedale Array**	**3.95**	**219**	Pn	**Pn**	**20 50 25.6**	**-0.8**
	1.6nm,0.3s,baz=44,slow=12,SNR=31						
PDAR				Pg	**Pb**	**20 50 35.0**	**+0.2**
	4.5nm,0.3s,baz=37,slow=20,SNR=30						
PDAR				Lg	Lg	20 51 23.5	
	3.6nm,0.3s,baz=43,slow=32,SNR=11						
BW06	**Boulder Array**	**3.95**	**219**	*e*Pn	**Pn**	**20 50 24.9**	**-1.4**
REDW	**Red Top Meadow**	**4.18**	**234**	*e*Pn	**Pn**	**20 50 28.6**	**-0.8**
DLMT	**Dillon**	**4.51**	**265**	Pg	**Pg**	**20 50 51.3**	**+0.6**
HWUT	**Hardware Ranch**	**5.79**	**224**	*e*Pn	**Pn**	**20 50 50.0**	**-1.4**
	3.5nm,0.4s						
I10CA	**LAC DU BONNET**	**8.06**	**54**	*i*		21 40 50.0	
	baz=240,slow=327,SNR=1.6						
ULM	**Lac du Bonnet**	**8.17**	**54**	Pn	**Pn**	**20 51 25.6**	**+1.7**
	0.2nm,0.3s,baz=248,slow=12,SNR=3.1						
ULM				Lg	Lg	20 53 37.0	
	0.4nm,0.3s,baz=318,slow=18,SNR=2.2						
NVAR	**Mina Array Bea**	**11.67**	**234**	Pn	**Pn**	**20 52 10.5**	**-1.6**
	0.7nm,0.3s,baz=52,slow=16,SNR=3.3						

NIED ***20*** *20:51:00, 37°.10N×140°.70E, h5km, Mw4.0 Best double couple: M0 1.29000×10^15 NP1:φs33.00000°, δ26.00000°, λ-100.00000°. NP2:φs225.00000°, δ65.00000°, λ-85.00000°.*

IDC ***20*** *20:51:54.6±0.5, 37°.06N×140°.63E, h0km, mb4.1/25, mb1 4.3/29, mb1mx4.2/60, mbtmp4.1/29, ML3.6/4, MS3.5/7, Ms1 3.5/7, ms1mx3.0/43, Error ellipse: s-maj=15.1km s-min=10.5km az=116.0*

ISCJB ***20*** *20:51:55.0±0.5, 37°.06N±0°.02×140°.77E±0°.04, h17km±3km, mb4.1/30, MS3.6/6, Error ellipse: s-maj=6.0km s-min=3.7km az=21.7*

JMA ***20*** *20:51:55.5, 37°.07N×140°.70E, h8km±1km, M4.3 Broadband fault plane solution: P waves. NP1: φs249.00000°, δ72.00000°, λ-59.00000°. NP2:φs6.00000°, δ36.00000°, λ-149.00000°. Principal axes: T Plg21.0000°, Azm316.0000°; N Plg30.0000°, Azm59.0000°; P Plg52.0000°, Azm196.0000°;*

JMA Felt III J1.

NEIC ***20*** *20:51:58.5±1.9, 37°.04N×140°.63E, h27km±13km, mb4.4/5 Error ellipse: s-maj=8.6km s-min=4.9km az=125.0*

NEIC Recorded [3 JMA] in Fukushima.

ISC 20 20:51:55.6±0.9, 37°.06N±0°.03×140°.69E±0°.03, h8km±5km, n67, σ0§72/68, mb4.2/30, MS3.5/6, 6C, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.10**	**66**	⇑P	**Pg**	**20 51 57.7**	**-0.3**
ONAJ				S	**Sg**	**20 51 59.4**	**-0.3**
JFK	**Kawauchi**	**0.34**	**26**	⇑P	**Pg**	**20 52 02.2**	**-0.1**
JFK				S	**Sg**	**20 52 06.8**	**0.0**
JHO	**Hitachi**	**0.46**	**192**	P	**Pg**	**20 52 04.6**	**+0.1**
JHO				S	**Sg**	**20 52 10.9**	**+0.3**
JFT	**Otama**	**0.53**	**329**	⇑P	**Pg**	**20 52 06.2**	**+0.2**
JFT				S	**Sg**	**20 52 13.4**	**+0.4**
JSB	**Shiboa**	**0.62**	**262**	⇑P	**Pb**	**20 52 08.5**	**-0.2**
JSB				S	**Sb**	**20 52 17.4**	**-0.2**
JMM	**Marumori**	**0.81**	**6**	⇑P	**Pg**	**20 52 10.6**	**-0.6**
JMM				S	**Sg**	**20 52 21.7**	**0.0**
JFY	**Yanaizu**	**0.85**	**294**	⇑P	**Pg**	**20 52 12.1**	**0.0**
JFY				S	**Sg**	**20 52 23.3**	**+0.1**
JYT	**Yasato**	**0.92**	**206**	S	**Sg**	**20 52 25.0**	**-0.3**
MJAR	**Matsushiro Arr**	**2.05**	**256**	Pn	**Pn**	**20 52 31.3**	**+0.8**
	53nm,0.3s,baz=95,slow=16,SNR=300						
MJAR				Sn	**Sb**	**20 52 58.8**	**-0.1**
	95nm,0.3s,baz=60,slow=14,SNR=15						
MJAR				LR	LR	20 53 34.8	
	comp=Z,210nm,20.2s,baz=80,slow=50						
MAJO	**Matsushiro**	**2.06**	**256**	*e*Pn	**Pn**	**20 52 31.6**	**+1.1**
JHJ	**Hachijo jima 2**	**4.00**	**191**	Pn	**Pn**	**20 52 57.9**	**+0.7**
	45nm,0.3s,baz=86,slow=23,SNR=5.9						
JHJ				Sn	**Sn**	**20 53 44.2**	**-0.1**
	15nm,0.3s,baz=24,slow=20,SNR=2.0						
JHJ2	**Mitsune**	**4.00**	**190**	*e*P	Pn	20 52 51.1	-6.2
ASAJ	**Asahikawa**	**7.20**	**11**	Pn	**Pn**	**20 53 41.4**	**+0.3**
	3.3nm,0.3s,baz=204,slow=11,SNR=25						
ASAJ				Sn	**Sn**	**20 55 01.4**	**-1.6**
	baz=17,slow=17,SNR=1.5						
JNU	**Nakatsue**	**8.95**	**247**	Pn	**Pn**	**20 54 04.0**	**-1.2**
	0.1nm,0.3s,baz=30,slow=20,SNR=2.3						
USRK	**Ussuriysk Ar.**	**9.72**	**320**	Pn	Pn	20 54 21.4	+5.7
	0.2nm,0.3s,baz=137,slow=13,SNR=26						
YSS	**Yuzh-Sakhalins**	**10.00**	**8**	*e*P	**Pn**	**20 54 20.9**	**+1.3**
	27nm,0.6s						
KSRS	**Korea Array**	**10.18**	**276**	Pn	Pn	20 54 28.4	+6.4
	0.2nm,0.3s,baz=94,slow=14,SNR=12						
KSRS				LR	LR	20 58 00.0	
	comp=Z,102nm,19.4s,baz=77,slow=36						
KSAR	**Wonju Array Be**	**10.21**	**276**	Pn	Pn	20 54 28.4	+6.0
KLR	**Kul'dur**	**13.79**	**335**	Pn	**Pn**	**20 55 13.6**	**+2.3**
	0.1nm,0.3s,baz=128,slow=18,SNR=2.9						
PETK	**Petropavlovsk-**	**19.96**	**31**	P	**P**	**20 56 27.9**	**-0.2**
	0.2nm,0.3s,baz=189,slow=8.2,SNR=3.3						
MA2	**Magadan**	**23.45**	**13**	P	**P**	**20 57 05.3**	**+0.1**
	7.2nm,0.7s,baz=203,slow=6.4,SNR=5.7						
ENH	**Enshi**	**26.75**	**265**	*e*P	**P**	**20 57 34.9**	**-1.0**
SEY	**Seymchan**	**26.88**	**12**	P	**P**	**20 57 37.9**	**+1.2**
	5.5nm,0.9s,baz=205,slow=6.4,SNR=13						
SONM	**Songino Array**	**27.29**	**304**	P	**P**	**20 57 40.8**	**+0.2**
	2.1nm,0.7s,baz=105,slow=8.7,SNR=19						
H11N2	**WAKE ISLAND Hy**	**28.66**	**120**	T	T	21 27 41.8	
	baz=313,slow=75,SNR=588						
H11N1	**WAKE ISLAND Hy**	**28.67**	**120**	T	T	21 27 37.7	
	baz=313,slow=75,SNR=561						
H11N3	**WAKE ISLAND Hy**	**28.68**	**120**	T	T	21 27 43.2	
	baz=313,slow=75,SNR=413						
H11S1	**WAKE ISLAND Hy**	**29.37**	**122**	T	T	21 28 36.0	
	baz=314,slow=75,SNR=262						
H11S3	**WAKE ISLAND Hy**	**29.37**	**122**	T	T	21 28 36.6	
	baz=314,slow=75,SNR=142						
H11S2	**WAKE ISLAND Hy**	**29.38**	**122**	T	T	21 28 36.3	
	baz=314,slow=75,SNR=110						
TLY	**Talaya**	**29.87**	**311**	LR	LR	21 10 31.9	
	comp=Z,36nm,18.8s,baz=110,slow=37						
TIXI	**Tiksi**	**35.20**	**354**	P	**P**	**20 58 49.2**	**

MEX 20 20:54:09.2±0.5, 15°14.N×90°.95W, h12km±999km, MD3.9, Guatemala

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
PCIG		**2.26**	**285**	*eP*	Pn	20 54 43.6	-2.9
PCIG				*eS*	Sn	20 55 11.8	-2.5

*NIED **20** 20:54:00, 36°.20N×142°.00E, h17km, Mw3.8 Best double couple: M₀6.53000×10¹⁴ NP1:φ=217.00000°, δ=27.00000°, λ=98.00000°. NP2:φ=29.00000°, δ=64.00000°, λ=86.00000°.*
*IDC **20** 20:54:38.0±0.8, 36°.14N×141°.89E, h0km, mb3.8/15, mb1 3.9/20, mb1mx3.8/63, mbtmp3.8/20, ML3.8/4, MS2.9/1, Ms1 2.9/1, ms1mx2.4/45, Error ellipse: s-maj=21.8km s-min=16.0km az=94.0*
*ISCJB **20** 20:54:39.3±0.5, 36°.20N±0°.04×142°.03E±0°.06, h23km, mb3.9/19, Error ellipse: s-maj=7.5km s-min=5.1km az=24.3*
*JMA **20** 20:54:40.7±0.2, 36°.22N×141°.95E, h53km, M3.9*
*NEIC **20** 20:54:40.6±4.3, 36°.19N×142°.00E, h18km±26km, mb4.5/4, Error ellipse: s-maj=15.0km s-min=9.8km az=107.0*

ISC 20 20:54:40.2±0.8, 36°.20N±0°.04×142°.03E±0°.08, h23km, n46, σ1°24/39, mb4.0/19, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
CHOJ	**Chosi**	**1.07**	**243**	P	**Pb**	**20 54 59.0**	**-1.0**
CHOJ				*eS*	**Sn**	**20 55 13.0**	**-0.9**
JHO	**Hitachi**	**1.25**	**290**	P	**Pb**	**20 55 01.0**	**-2.1**
ONAJ	**Iwakimizuishiy**	**1.34**	**313**	P	**Pb**	**20 55 02.4**	**-2.3**
JFK	**Kawauchi**	**1.49**	**322**	P	**Pb**	**20 55 05.2**	**-2.1**
BSO1	**Boso 1**	**1.76**	**209**	P	**Pb**	**20 55 09.3**	**-2.2**
BSO1				*eS*	**Sb**	**20 55 31.5**	**-1.4**
JFT	**Otama**	**1.89**	**315**	P	**Pb**	**20 55 11.6**	**-2.5**
JMM	**Marumori**	**1.94**	**330**	P	Pb	20 55 11.5	-3.4
JAG	**Ashikaga**	**2.09**	**277**	P	**Pn**	**20 55 13.2**	**-0.7**
JFY	**Yanaizu**	**2.22**	**304**	P	Pb	20 55 15.7	-4.0
JRY	**Ryogami san**	**2.54**	**267**	P	**Pn**	**20 55 19.5**	**-0.5**
JOD2	**Odawara 2**	**2.56**	**250**	P	**Pn**	**20 55 20.4**	**0.0**
MJAR	**Matsushiro Arr**	**3.10**	**278**	Pn	**Pn**	**20 55 28.4**	**+0.6**
	27nm,0.3s,baz=87,slow=9.4,SNR=17						
MAJO	**Matsushiro**	**3.10**	**278**	*e*Pn	**Pn**	**20 55 28.5**	**+0.7**
MAT	**Matsushiro**	**3.10**	**278**	P	**Pn**	**20 55 28.5**	**+0.7**
MAT				S	**Sn**	**20 56 04.7**	**+0.5**
JHJ2	**Mitsune**	**3.57**	**211**	*e*Pn	**Pn**	**20 55 34.5**	**+0.2**
JHJ	**Hachijo jima 2**	**3.58**	**212**	Pn	**Pn**	**20 55 34.0**	**-0.4**
	25nm,0.3s,baz=221,slow=19,SNR=4.3						
JHJ				Sn	**Sn**	**20 56 13.2**	**-2.8**
	72nm,0.3s,baz=51,slow=22,SNR=7.3						
ASAJ	**Asahikawa**	**7.92**	**3**	Pn	**Pn**	**20 56 33.8**	**-0.2**
	1.8nm,0.3s,baz=195,slow=14,SNR=5.9						
ASAJ				Sn	**Sn**	**20 58 00.2**	**-2.7**
	0.8nm,0.3s,baz=63,slow=18,SNR=5.2						
JCJ	**Chichijima**	**9.07**	**179**	LR	LR	21 04 06.7	
	comp=Z,69nm,18.0s,baz=104,slow=63						
USRK	**Ussuriysk Ar.**	**11.08**	**319**	Pn	Pn	20 57 18.6	+1.4
	0.2nm,0.3s,baz=137,slow=13,SNR=4.3						
KSRS	**Korea Array**	**11.38**	**281**	Pn	Pn	20 57 25.2	+3.9
	0.5nm,0.3s,baz=93,slow=14,SNR=5.7						
KSAR	**Wonju Array Be**	**11.40**	**280**	Pn	Pn	20 57 25.2	+3.5
KLR	**Kul'dur**	**15.04**	**333**	Pn	**Pn**	**20 58 11.0**	**-0.2**
	0.2nm,0.3s,baz=153,slow=9.2,SNR=4.6						
ENH	**Enshi**	**27.77**	**267**	*e*P	**P**	**21 00 27.0**	**-0.4**
	12nm,0.6s						
SONM	**Songino Array**	**28.67**	**305**	P	**P**	**21 00 36.0**	**+0.7**
	1.9nm,0.6s,baz=103,slow=8.8,SNR=15						
TLY	**Talaya**	**31.25**	**312**	P	**P**	**21 00 58.7**	**+0.6**
	1.7nm,0.6s,baz=100,slow=3.7,SNR=3.6						
CMAR	**Chiang Mai Arr**	**41.77**	**257**	P	**P**	**21 02 28.6**	**+0.6**
	0.4nm,0.3s,baz=41,slow=8.4,SNR=4.4						
LSA	**Lhasa**	**42.78**	**276**	*e*P	P	21 02 39.6	+2.9
	1.6nm,0.5s						
ZALV	**Zalesovo Beam**	**42.84**	**313**	P	P	21 02 37.6	+1.3
	1.6nm,0.6s,baz=88,slow=6.8,SNR=7.3						
MKAR	**Makanchi Array**	**44.98**	**303**	P	**P**	**21 02 54.5**	**+0.8**
	2.6nm,0.6s,baz=67,slow=9.0,SNR=20						
KURK	**Kurchatov**	**46.84**	**309**	*e*P	**P**	**21 03 08.5**	**+0.3**
	8.0nm,0.8s						
KKN	**Kakani**	**48.27**	**277**	*e*P	**P**	**21 03 19.6**	**-0.3**
GKN	**Gorkha**	**48.69**	**277**	*e*P	**P**	**21 03 23.7**	**+0.6**
	4.6nm,0.5s						
KOLN	**Koldanda**	**49.62**	**278**	*e*P	**P**	**21 03 30.9**	**+0.6**
ILAR	**Eielson Array**	**49.94**	**32**	P	P	21 03 34.7	+2.8
	0.3nm,0.8s,baz=251,slow=5.6,SNR=2.8						
PYUN	**Piuthan**	**49.97**	**278**	*e*P	**P**	**21 03 33.5**	**+0.6**
	32nm,1.0s						
WRA	**Warramunga Arr**	**56.30**	**189**	P	**P**	**21 04 19.6**	**+0.4**
	0.4nm,0.6s,baz=5.5,slow=7.3,SNR=6.1						
ABKAR	**Akbulak array**	**58.86**	**311**	*e*P	**P**	**21 04 37.1**	**+0.2**
	1.3nm,0.5s						
ASAR	**Alice Springs**	**60.03**	**189**	P	**P**	**21 04 46.0**	**+0.8**
	0.2nm,0.5s,baz=17,slow=11,SNR=4.2						
YKA	**Yellowknife Ar**	**64.28**	**30**	P	P	21 05 16.6	+3.3
	0.4nm,1.0s,baz=299,slow=6.9,SNR=4.2						
ARCES	**ARCESS Array B**	**64.95**	**340**	P	P	21 05 19.4	+1.8
	3.0nm,0.8s,baz=67,slow=3.3,SNR=5.0						
FINES	**FINESS Array B**	**69.78**	**333**	P	**P**	**21 05 49.1**	**+0.8**
	1.6nm,0.8s,baz=38,slow=7.6,SNR=7.0						
NB2	**NORSAR Subarra**	**75.15**	**338**	P	**P**	**21 06 21.5**	**+1.2**
	comp=Z,0.4nm,0.5s,baz=39,slow=5.9						
NOA	**NORSAR Array B**	**75.15**	**338**	P	**P**	**21 06 20.9**	**+0.6**
	comp=Z,0.9nm,0.7s,baz=39,slow=5.8,SNR=4.6						
AKASG	**Malin Array Be**	**75.26**	**323**	P	**P**	**21 06 22.1**	**+1.0**
	comp=Z,0.6nm,0.3s,baz=46,slow=5.8,SNR=4.4						
BRTR	**Keskin Array B**	**79.78**	**312**	P	**P**	**21 06 47.6**	**+0.8**
	comp=Z,0.4nm,0.6s,baz=105,slow=4.0,SNR=2.9						
GERES	**GERESS Array B**	**83.68**	**329**	P	P	21 07 08.4	+1.2
	comp=Z,0.3nm,0.6s,baz=24,slow=7.5,SNR=3.2						

*ISCJB **20** 20:55:05.6±0.5, 31°.61S±0°.03×70°.92W±0°.06, h80km±6km, mb4.3/6, Error ellipse: s-maj=8.8km s-min=4.9km az=2.2*
*IDC **20** 20:55:05.2±0.7, 31°.62S×71°.03W, h54km±5km, mb4.1/5, mb1 4.0/9, mb1mx3.7/39, mbtmp4.2/9, MS3.2/5, Ms1 3.2/5, ms1mx2.9/29, Error ellipse: s-maj=24.8km s-min=17.9km az=95.0*
*NEIC **20** 20:55:06.0±1.0, 31°.59S×71°.08W, h63km±9km, mb4.8/1, Error ellipse: s-maj=17.6km s-min=7.4km az=88.0*
*GUC **20** 20:55:06.1±0.5, 31°.75S×71°.12W, h55km, ML4.4*
*SJA **20** 20:55:07.4±0.5, 32°.20S×70°.77W, h147km±6km, ML4.3, MW4.2*

ISC 20 20:55:05.8±0.7, 31°.60S±0°.04×70°.96W±0°.07, h59km±7km, n39, σ1°23/42, mb4.4/6, 6C, Chile-Argentina border region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
ROCH	**El Roble**	**1.36**	**182**	⇑*iP*	**Pn**	**20 55 28.9**	**0.0**
ROCH				⇑*iP*	**Pn**	**20 55 28.9**	**0.0**
ROCH				*iS*	**Sn**	**20 55 46.0**	**-0.1**
ROCH				AML	AML	20 55 48.9	
	comp=N,13μm,0.4s						
ROC1	**El Roble**	**1.37**	**182**	*i*P	**Pn**	**20 55 31.3**	**+2.3**
ROC1				*i*S	**Sn**	**20 55 48.6**	**+2.3**
RTLS	**Leoncito**	**1.43**	**98**	*i*P	Pn	20 55 36.1	+6.2
TLL	**Tololo Astrono**	**1.44**	**5**	⇑*iP*	**Pn**	**20 55 31.3**	**+1.4**
TLL				*i*S	**Sn**	**20 55 49.8**	**+1.8**
TLL				AML	AML	20 55 57.6	
	comp=N,10μm,0.5s						
PEL	**Peldehue**	**1.55**	**171**	⇑*iP*	**Pn**	**20 55 32.4**	**+1.1**
PEL				*eS*	**Sn**	**20 55 52.3**	**+1.9**
CLCH	**Cerro Calan**	**1.82**	**169**	⇑*iP*	**Pn**	**20 55 34.9**	**-0.1**
CLCH				*i*S	**Sn**	**20 55 57.6**	**+0.6**
CLCH				AML	AML	20 56 14.8	
	comp=E,4μm,0.2s						
RCDM	**Rinconada Maip**	**1.89**	**176**	*e*P	**Pn**	**20 55 36.1**	**+0.3**
RCDM				*i*S	**Sn**	**20 55 58.3**	**-0.1**
ANTU	**Antumapu**	**1.98**	**172**	*e*P	**Pn**	**20 55 37.3**	**+0.3**
ANTU				*i*S	**Sn**	**20 56 02.6**	**+1.8**
SJA	**San Juan**	**2.05**	**89**	*i*P	Pn	20 55 42.7	+4.7
SJA				IAML		20 56 18.5	
	comp=Z,1μm,0.5s						
ASAL	**Salagasta**	**2.06**	**119**	*i*S	**Sn**	**20 56 03.3**	**+0.6**
RTCV	**Cerro Valdivia**	**2.08**	**98**	*i*P	Pn	20 55 42.4	+4.0
ARCO	**CERRO ARCO**	**2.12**	**126**	*i*S	**Sn**	**20 56 03.3**	**-1.0**
ARCO				IAML		20 56 26.7	
	comp=Z,840nm,0.6s						
RTLL	**Cerro Villicun**	**2.14**	**83**	*i*P	Pn	20 55 44.9	+5.6
LCO	**Las Campanas**	**2.59**	**5**	*e*P	**Pn**	**20 55 46.5**	**+0.8**
AVIZ	**Vizcacheras**	**2.78**	**133**	*i*P	**Pn**	**20 55 46.5**	**-1.5**
VCA	**Vinchina**	**3.72**	**41**	IAML		20 57 05.3	
	comp=Z,1μm,0.5s						
CYA	**Choya**	**5.47**	**56**	IAML		20 57 45.9	
	comp=Z,134nm,0.6s						
PLCA	**Paso Flores**	**9.12**	**178**	P	**Pn**	**20 57 14.3**	**-0.4**
	comp=Z,1.2nm,0.3s,baz=4.0,slow=10,SNR=29						
PLCA				LR	LR	21 00 06.9	
	comp=Z,59nm,20.2s,baz=330,slow=33						
LVC	**Limon Verde**	**9.14**	**12**	*e*P	**Pn**	**20 57 15.8**	**+0.4**
	comp=Z,13nm,0.6s						
TRQA	**Tornquist**	**9.79**	**134**	*e*P	**Pn**	**20 57 27.0**	**+3.1**
	comp=Z,16nm,0.6s						
CPUP	**Villa Florida**	**13.04**	**70**	P	**Pn**	**20 58 08.8**	**+0.6**
	comp=Z,0.3nm,0.3s,baz=248,slow=10,SNR=5.9						
CPUP				S	**Sn**	**21 00 31.4**	**-0.2**
	comp=Z,0.3nm,0.3s,baz=195,slow=14,SNR=2.4						
CPUP				LR	LR	21 03 54.2	
	comp=Z,144nm,19.9s,baz=240,slow=40						
LPAZ	**La Paz**	**15.46**	**10**	P	**Pn**	**20 58 40.5**	**-0.4**
	comp=Z,0.1nm,0.3s,baz=183,slow=9.6,SNR=4.7						
SIV	**San Ignacio**	**17.97**	**32**	P	**P**	**20 59 09.8**	**-1.6**
	comp=Z,0.4nm,0.3s,baz=218,slow=5.3,SNR=4.1						
SIV				LR	LR	21 06 33.6	
	comp=Z,53nm,18.2s,baz=172,slow=38						
USHA	**Ushuaia**	**23.29**	**176**	P	**P**	**21 00 07.6**	**-0.6**
	comp=Z,33nm,0.7s,baz=349,slow=10,SNR=4.3						
PTGA	**Pitinga**	**32.42**	**21**	P	**P**	**21 01 30.4**	**+0.2**
	comp=Z,1.9nm,0.5s,baz=172,slow=15,SNR=3.4						
SNAA	**Sanae**	**53.47**	**159**	*e*P	**P**	**21 04 18.6**	**-1.0**
TEIG	**Tepich**	**54.15**	**340**	P	**P**	**21 04 24.6**	**-0.4**
	comp=Z,2.4nm,0.5s,baz=270,slow=20,SNR=4.8						
QSPA	**South Pole Qui**	**58.63**	**180**	*e*P	**P**	**21 04 56.8**	**+0.1**
	comp=Z,6.0nm,0.8s						
LPIG	**La Paz**	**66.97**	**321**	LR	LR	21 28 53.0	
	comp=Z,28nm,19.4s,baz=210,slow=30						
SYO	**Syowa Base**	**67.76**	**159**	*e*pP	pP	21 06 09.2	-3.7
TXAR	**Lajitas Array**	**68.11**	**329**	P	**P**	**21 05 59.2**	**-0.4**
	comp=Z,0.5nm,0.5s,baz=159,slow=9.1,SNR=4.8						
TXAR				Pb	**pP**	**21 06 15.2**	**-0.5**
	comp=Z,0.4nm,0.6s,baz=140,slow=8.0,SNR=2.6						
DBIC	**Dimbokro**	**73.55**	**71**	P	**P**	**21 06 33.7**	**+0.9**
	comp=Z,3.4nm,0.9s,baz=198,slow=11,SNR=3.2						
TSUM	**Tsumeb**	**78.99**	**106**	LR	LR	21 37 52.7	
	comp=Z,28nm,18.6s,baz=180,slow=32						
YKA	**Yellowknife Ar**	**100.09**	**341**	P	**Pdif**	**21 08 43.2**	**-0.9**
	comp=Z,0.1nm,0.5s,baz=138,slow=4.6,SNR=3.8						
ASAR	**Alice Springs**	**120.11**	**206**	pPKP	pPKPdf	21 14 05.0	-2.9
	comp=Z,0.5nm,0.9s,baz=163,slow=4.7,SNR=3.6						
WRA	**Warramunga Arr**	**123.29**	**209**	PKP	**PKPdf**	**21 13 55.6**	**-1.1**
	comp=Z,0.5nm,0.5s,baz=155,slow=1.7,SNR=13						
WRA				pPKP	**pPKPdf**	**21 14 11.4**	**-2.6**
	comp=Z,1.0nm,0.7s,baz=159,slow=1.7,SNR=4.9						
BRVK	**Borovoye**	**144.83**	**41**	*e*PKPdf	**PKPdf**	**21 14 36.5**	**+0.9**
ZALV	**Zalesovo Beam**	**151.72**	**31**	PKPbc	**PKPbc**	**21 14 53.5**	**+0.4**
	comp=Z,1.9nm,0.5s,baz=304,slow=3.3,SNR=14						
ZALV				pPKPbc	**pPKPbc**	**21 15 09.4**	**-1.0**
	comp=Z,4.8nm,0.6s,baz=302,slow=3.2,SNR=10						
MKAR	**Makanchi Array**	**154.48**	**46**	PKPbc	**PKPbc**	**21 14 59.6**	**+0.2**
	comp=Z,0.2nm,0.6s,baz=263,slow=3.8,SNR=2.7						
MKAR				pPKPbc	**PKPab**	**21 15 15.4**	**+1.3**
	comp=Z,0.5nm,0.6s,baz=306,slow=3.4,SNR=6.4						

*ISCJB **20** 20:56:51.3±0.5, 40°.24N±0°.03×29°.39E±0°.03, h6km±5km, Error ellipse: s-maj=5.1km s-min=4.3km az=171.8*
*CSEM **20** 20:56:51.4±0.1, 40°.22N×29°.41E, h10km, MD2.7, Error ellipse: s-maj=3.5km s-min=2.9km az=155.0*
*ISK **20** 20:56:51.0, 40°.22N×29°.42E, h15km, MD2.7*
*DDA **20** 20:56:51.9, 40°.21N×29°.34E, h6km, Md2.7*

ISC 20 20:56:51.3±1.0, 40°.23N±0°.03×29°.39E±0°.03, h8km±8km, n26, σ0°30/40, Turkey

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
IGD	**Bursa**	**0.15**	**284**	*i*P	**Pg**	**20 56 53.9**	**-0.5**
IGD				*i*S	**Sg**	**20 56 56.6**	**+0.1**
ULDT	**Uludag**	**0.21**	**246**	*i*P	**Pg**	**20 56 55.7**	**+0.1**
ULDT	**Uludag**	**0.21**	**246**	P	**Pg**	**20 56 55.7**	**+0.1**
ADVT	**Abdulvahap**	**0.34**	**53**	*e*PG	**Pg**	**20 56 58.3**	**+0.4**
ADVT	**Abdulvahap**	**0.34**	**53**	*e*Pg	**Pg**	**20 56 58.3**	**+0.4**
CAVI	**Cavuskoy**	**0.35**	**94**	*e*PG	**Pg**	**20 56 58.0**	**-0.1**
CAVI				*e*SG	**Sg**	**20 57 02.9**	**+0.1**
CAVI	**Cavuskoy**	**0.35**	**94**	*e*Pg	**Pg**	**20 56 58.0**	**-0.1**
CAVI				*e*Sg	**Sg**	**20 57 02.9**	**+0.1**
MDNY	**Mudanya-Bursa**	**0.41**	**290**	*e*PG	**Pb**	**20 57 00.5**	**-0.2**
MDNY	**Mudanya-Bursa**	**0.41**	**290**	*e*Pg	**Pb**	**20 57 00.5**	**-0.2**
HRT	**Hereke**	**0.63**	**20**	*e*PG	**Pg**	**20 57 03.3**	**-0.1**
HRT				*e*SG	**Sb**	**20 57 12.9**	**-0.6**
HRT	**Hereke**	**0.63**	**20**	*e*Pg	**Pg**	**20 57 03.3**	**-0.1**
HRT				*e*Sg	**Sb**	**20 57 12.9**	**-0.6**
TVSB	**Tavsanli**	**0.78**	**176**	*e*PG	**Pg**	**20 57 06.0**	**-0.3**
TVSB	**Tavsanli**	**0.78**	**176**	*e*Pg	**Pg**	**20 57 06.0**	**-0.3**
KCTX	**Karacabey (Bur**	**0.79**	**273**	*e*PG	**Pb**	**20 57 07.9**	**+0.7**
KCTX	**Karacabey (Bur**	**0.79**	**273**	*e*Pg	**Pb**	**20 57 07.9**	**+0.7**
GULT	**Gulveren**	**0.89**	**76**	*e*PG	**Pg**	**20 57 08.2**	**-0.1**
GULT				*e*SG	**Sb**	**20 57 20.8**	**-0.1**
GULT	**Gulveren**	**0.89**	**76**	*e*Pg	**Pg**	**20 57 08.2**	**-0.1**
GULT				*e*Sg	**Sb**	**20 57 20.8**	**-0.1**
GDZ	**Gediz**	**1.14**	**176**	*i*P	**Pg**	**20 57 13.2**	**0.0**
GDZ				*i*S	**Sn**	**20 57 29.2**	**-0.3**
GDZ	**Gediz**	**1.14**	**176**	P	**Pg**	**20 57 13.2**	**0.0**
GDZ				S	**Sn**	**20 57 29.2**	**-0.3**
EDC	**Edincik**	**1.17**	**276**	*e*PN	**Pn**	**20 57 14.0**	**+0.1**
EDC	**Edincik**	**1.17**	**276**	*e*Pn	**Pn**	**20 57 14.0**	**+0.1**
CTKS	**Kestanelik-??a**	**1.21**	**327**	*e*PN	**Pb**	**20 57 14.3**	**0.0**
CTKS				*e*SN	**Sn**	**20 57 31.2**	**+0.3**
CTKS	**Kestanelik-??a**	**1.21**	**327**	*e*Pn	**Pb**	**20 57 14.3**	**0.0**
CTKS				*e*Sn	**Sn**	**20 57 31.3**	**+0.3**
DEMI	**Demirci**	**1.29**	**204**	*i*P	**Pb**	**20 57 16.1**	**+0.2**
DEMI				*i*S	**Sn**	**20 57 33.5**	**+0.3**
BALB	**Balikesir**	**1.30**	**244**	*e*PN	**Pn**	**20 57 15.6**	**-0.1**
BALB				*e*SN	**Sn**	**20 57 33.4**	**+0.2**
BALB	**Balikesir**	**1.30**	**244**	*e*Pn	**Pn**	**20 57 15.6**	**-0.1**
BALB				*e*Sn	**Sn**	**20 57 33.4**	**+0.2**

*ISCJB **20** 20:57:45.3±1.1, 37°.05N±0°.03×140°.81E±0°.07, h14km±9km, mb3.9/2, Error ellipse: s-maj=9.2km s-min=4.7km az=8.8*
*JMA **20** 20:57:45.9, 37°.06N×140°.70E, h7km±1km, M3.2 Broadband fault plane solution: P waves. NP1: φ=217.00000°, δ=77.00000°, λ=-87.00000°. NP2:φ=25.00000°, δ=13.00000°, λ=-102.00000°. Principal axes: T Plg32.0000°, Azm305.0000°; N Plg3.0000°, Azm37.0000°; P Plg58.0000°, Azm131.0000°;*
JMA Felt I J1.
*IDC **20** 20:57:50.0±2.3, 36°.27N×140°.48E, h0km, mb3.7/2, mb1 4.0/2, mb1mx3.3/56, mbtmp3.7/2 Error ellipse: s-maj=41.5km s-min=25.3km az=46.0*

ISC 20 20:57:45.5±1.0, 37°.08N±0°.04×140°.66E±0°.05, h8km±10km, n12, σ0°49/21, 6C-1D, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.11**	**79**	⇑P	**Pg**	**20 57 48.1**	**0.0**
ONAJ				S	**Sg**	**20 57 49.8**	**-0.1**
JFK	**Kawauchi**	**0.33**	**31**	⇑P	**Pg**	**20 57 52.6**	**+0.5**
JHO	**Hitachi**	**0.47**	**189**	P	**Pg**	**20 57 54.8**	**+0.1**
JHO				S	**Sg**	**20 58 01.2**	**+0.3**
JFT	**Otama**	**0.51**	**330**	⇑P	**Pb**	**20 57 56.6**	**-0.1**
JFT				S	**Sb**	**20 58 03.9**	**-0.4**
JSB	**Shiboa**	**0.60**	**260**	⇑P	**Pb**	**20 57 58.8**	**+0.5**
JSB				S	**Sb**	**20 58 07.7**	**+0.7**
JMM	**Marumori**	**0.79**	**8**	⇑P	**Pg**	**20 58 01.0**	**+0.3**
JMM				S	**Sb**	**20 58 11.9**	**-0.6**
JFY	**Yanaizu**	**0.83**	**293**	⇑P	**Pb**	**20 58 02.5**	**+0.3**
JFY				S	**Sb**	**20 58 13.8**	**+0.3**
JYT	**Yasato**	**0.93**	**204**	⇓P	**Pg**	**20 58 03.2**	**-0.2**
JYT				S	**Sg**	**20 58 15.5**	**+0.1**
MJAR	**Matsushiro Arr**	**2.04**	**255**	Pn	**Pb**	**20 58 21.9**	**-0.9**
	8.9nm,0.3s,baz=95,slow=16,SNR=7.8						
MJAR				Sn	**Sb**	**20 58 49.0**	**+0.6**
	10nm,0.3s,baz=99,slow=28,SNR=10.0						
MAT	**Matsushiro**	**2.04**	**255**	P	**Pb**	**20 58 22.4**	**-0.4**
MAT				S	**Sg**	**20 58 50.2**	**-0.9**
WRA	**Warramunga Arr**	**57.03**	**187**	P	**P**	**21 07 31.7**	**-0.2**
	1.4nm,0.7s,baz=4.0,slow=7.3,SNR=13						
ASAR	**Alice Springs**	**60.76**	**187**	P	**P**	**21 07 58.1**	**+0.3**
	0.4nm,0.8s,baz=7.8,slow=7.5,SNR=4.5						

WEL 20 21:17:50.6±0.1, 43°.15S×170°.80E, h6km±1km, ML3.6/14,

2C-1D, Error ellipse: s-maj=1.0km s-min=0.5km az=90.0, South Island

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
WVZ	**Waitaha Valley**	**0.09**	**329**	PG	Pg	21 17 52.6	+0.1
WVZ				SG	Sg	21 17 53.9	+0.2
WVZ				SG	Sg	21 17 53.9	+0.2
RPZ	**Rata Peaks**	**0.59**	**162**	⇓P*	Pg	21 18 02.4	+0.4
RPZ				SG	Sg	21 18 10.1	+0.4
RPZ				SG	Sb	21 18 10.4	-1.8
INZ	**Inchbonnie**	**0.64**	**48**	⇑P*	Pg	21 18 01.8	-0.9
FOZ	**Fox Glacier**	**0.81**	**242**	⇑P*	Pg	21 18 06.2	+0.1
FOZ				S*	Sb	21 18 17.8	-0.6
FOZ				AML	AML	21 18 20.1	
FOZ				AML	AML	21 18 20.2	
FOZ				AML	AML	21 18 20.2	
OXZ	**Oxford**	**0.92**	**101**	P*	Pg	21 18 07.9	-0.4
LTZ	**Lake Taylor**	**1.14**	**72**	P*	Pg	21 18 12.2	-0.3
LTZ				S*	Sg	21 18 27.1	-0.2
LTZ				AML	AML	21 18 30.7	
LBZ	**Lake Benmore**	**1.31**	**200**	P*	Pn	21 18 14.9	-0.6
LBZ				S*	Sn	21 18 34.0	+0.5
LBZ				AML	AML	21 18 37.0	
CRLZ	**Canterbury Las**	**1.40**	**108**	*e*PN	Pn	21 18 16.5	-0.1
MQZ	**McQueen's Vall**	**1.46**	**113**	PN	Pn	21 18 16.9	-0.6
DSZ	**Denniston Nort**	**1.59**	**28**	PN	Pn	21 18 18.1	-1.3
DSZ				SN	Sn	21 18 39.3	-0.9
DSZ				AML	AML	21 18 42.3	
DSZ				AML	AML	21 18 42.3	
DSZ				AML	AML	21 18 43.5	
JCZ	**Jackson Bay**	**1.73**	**237**	*e*PN	Pn	21 18 20.4	-0.9
JCZ				AML	AML	21 18 54.0	
JCZ				AML	AML	21 18 54.5	
ODZ	**Otahua Downs**	**1.90**	**183**	PN	Pn	21 18 23.6	+0.1
ODZ				AML	AML	21 18 28.6	
ODZ				AML	AML	21 19 04.5	
THZ	**Tophouse**	**2.09**	**49**	*e*PN	Pn	21 18 25.6	-0.5
THZ				AML	AML	21 19 00.8	
THZ				AML	AML	21 19 02.4	
WKZ	**Wanaka**	**2.11**	**217**	*e*PN	Pn	21 18 26.1	-0.4
WKZ				AML	AML	21 19 07.5	
WKZ				AML	AML	21 19 13.0	
EAZ	**Earnscleugh**	**2.34**	**207**	PN	Pn	21 18 29.7	0.0
EAZ				AML	AML	21 19 12.8	
EAZ				AML	AML	21 19 17.8	
QRZ	**Quartz Range**	**2.66**	**30**	*e*PN	Pn	21 18 32.7	-1.2
QRZ				AML	AML	21 19 19.2	
QRZ				AML	AML	21 19 19.2	
QRZ				AML	AML	21 19 21.6	
QRZ				AML	AML	21 19 21.6	
NNZ	**Nelson**	**2.72**	**46**	*e*PN	Pn	21 18 35.3	+0.4
TUWZ	**Tuamarina**	**2.90**	**55**	PN	Pn	21 18 37.7	+0.4
TUZ	**Tuapeka**	**2.93**	**196**	*e*PN	Pn	21 18 37.0	-0.7
TUZ				AML	AML	21 18 49.3	
TUZ				AML	AML	21 19 35.6	
MLZ	**Mavora Lakes**	**2.94**	**220**	PN	Pn	21 18 38.4	+0.6
MLZ				AML	AML	21 19 32.9	
MLZ				AML	AML	21 19 36.4	
DUWZ	**D'Urville Isla**	**3.31**	**46**	*e*PN	Pn	21 18 44.0	+1.1

*IDC **20** 21:23:50.7±9.2, 29°.71S×68°.08W, h78km±69km, mb1 3.4/2, mb1mx3.2/32, mbtmp3.4/2, ML3.6/2, Error ellipse: s-maj=97.4km s-min=58.0km az=49.0*
*ISCJB **20** 21:23:55.0±0.8, 29°.44S±0°.04×67°.9W±0°.1, h102km±10km, Error ellipse: s-maj=17.4km s-min=6.5km az=7.8*
*SJA **20** 21:23:55.1±0.6, 29°.46S×68°.01W, h9km×6km, ML3.3, MW3.4*

ISC 20 21:23:54.8±0.9, 29°.41S±0°.05×68°.0W±0°.1, h107km±9km, n16, σ0°9⁶/21, La Rioja Province

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
VCA	**Vinchina**	**0.70**	**342**	*i

HUMP				*e*S		**Sn**	21 37 53.9 -0.2
HUMP	**Col San Antoni**	**1.10**	**233**⇓	*e*P		**Pn**	21 37 39.8 +0.1
HUMP				*e*S		**Sn**	21 37 53.9 -0.2
SMRT	**St. Maarten**	**1.91**	**113**⇓	*e*P		**Pn**	21 37 50.1 -0.7
SMRT	**St. Maarten**	**1.91**	**113**	*e*S		**Sn**	21 38 11.5 -2.6
SMRT	**St. Maarten**	**1.91**	**113**⇓	*e*P		**Pn**	21 37 50.1 -0.7
SMRT				*e*S		**Sn**	21 38 11.5 -2.6
SMRT	**St. Maarten**	**1.91**	**113**⇓	*e*P		**Pn**	21 37 50.1 -0.7
SMRT				*e*S		**Sn**	21 38 11.5 -2.6

MAN 20 21:44:04, 17°88N×121°44E, h35km, mb4.0, ML2.8, MS2.4, Luzon

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
APYP	**Conner**	**0.19**	**266**	*e*P	Pn	21 44 11.2	+0.5
APYP				*e*S	Sn	21 44 15.2	-0.2
CVP	**Callao Caves**	**0.40**	**115**	*i* P	Pn	21 44 15.6	+2.3
CVP				*i* S	Sn	21 44 21.3	+1.6
SGCP	**Mt. Cagua**	**0.68**	**58**	*e*P	Pn	21 44 18.9	+1.7
SGCP				*e*S	Sn	21 44 28.6	+2.1
ABRA	**Dolores**	**0.73**	**252**	*e*P	Pn	21 44 19.7	+1.9
ABRA				*e*S	Sn	21 44 29.5	+1.7
CAUP	**Cauayan**	**1.00**	**159**	*e*P	Pn	21 44 28.5	+7.0

JMA 20 21:45:29.4±0.3, 37°68N×142°83E, h12km±4km, M3.5, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**1.40**	**304**	P	Pn	21 45 54.8	0.0
JIO				*e*S	Sn	21 46 13.0	-0.2
JMM	**Marumori**	**1.62**	**277**	P	Pn	21 45 57.9	+0.1
JMM				*e*S	Sn	21 46 19.2	+0.5
OFUJ	**Ofunato**	**1.67**	**327**	P	Pn	21 45 58.5	0.0
JMK	**Ichinoseki**	**1.79**	**316**	P	Pn	21 46 00.9	+0.7
JOU	**Okura**	**1.84**	**292**	P	Pn	21 46 01.8	+0.9
JFT	**Otama**	**1.99**	**266**	P	Pn	21 46 03.9	+1.1
JFT				S	Sb	21 46 29.6	-0.6
JHO	**Hitachi**	**2.10**	**240**	S	Sn	21 46 30.9	+0.5
JOM	**Ohasama**	**2.16**	**327**	P	Pn	21 46 06.6	+1.4
JYK	**Kaneyama**	**2.30**	**303**	P	Pn	21 46 08.5	+1.3

MEX 20 21:46:06.5±0.4, 15°54N×98°26W, h16km±35km, MD3.6, Off coast of Guerrero

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PNIG	**Pinotepa**	**0.86**	**9**	*i* P	Pb	21 46 20.2	-3.0
PNIG				*i* S	Sb	21 46 30.9	-3.6
TLIG	**Tlapa**	**2.04**	**352**	*e*P	Pn	21 46 37.5	-2.9
TLIG				*i* S	Sn	21 47 01.2	-4.3
HUIG	**Huatulco**	**2.09**	**83**	*e*P	Pn	21 46 37.5	-3.4
HUIG				*e*S	Sn	21 47 02.0	-4.6
VHO	**Vista Hermosa**	**2.12**	**44**	*e*P	Pn	21 46 39.2	-2.3
VHO				*e*S	Sn	21 47 03.8	-3.9

*IGIL **20** 21:46:57.5, 37°24N×13°44W, h0km, ML1.6*
*MDD **20** 21:46:58.2±2.1, 37°23N×13°40W, h0km, mb3.9/1, Error ellipse: s-maj=20.4km s-min=15.2km az=20.0, PRXIMO*
*CSEM **20** 21:47:00.9±0.6, 37°36N×13°12W, h5km, ML2.8/11, Error ellipse: s-maj=11.2km s-min=8.6km az=31.0*
*INMG **20** 21:47:00.4±1.1, 36°98N×13°67W, h0km, ML2.1, Error ellipse: s-maj=7.4km s-min=6.7km az=1.0*

ISC 20 21:46:55.2±3.4, 37°24N±0°09×13°5W±0°2, h10km, n69, σ2s16/113, Azores-Cape St. Vincent Ridge

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PFVI	**Vila Bisbo**	**3.75**	**90**	*e*Pn	**Pn**	**21 47 54.9**	**+1.9**
PFVI				*e*Sn	**Sn**	**21 48 35.8**	**-1.4**
PFVI				A	A	21 48 37.6	
	4.2nm,0.2s						
PFVI	**Vila Bisbo**	**3.75**	**90**	P	**Pn**	**21 47 55.0**	**+2.0**
	0.4nm,0.1s,SNR=7.9						
PFVI				S	**Sn**	**21 48 35.7**	**-1.4**
	2.8nm,0.1s,SNR=7.9						
PFVI	**Vila Bisbo**	**3.75**	**90**	P	**Pn**	**21 47 55.0**	**+2.0**
	0.4nm,0.1s,SNR=7.9						
PFVI				*e*Sn	**Sn**	**21 48 35.8**	**-1.4**
	4.2nm,0.2s						
PMAFR	**Mafra**	**3.75**	**62**	*e*Pn	**Pn**	**21 47 56.3**	**+3.1**
PMAFR				*e*Sn	**Sn**	**21 48 38.7**	**+1.3**
PMAFR	**Mafra**	**3.75**	**62**	P	**Pn**	**21 47 56.3**	**+3.1**
	1.1nm,0.1s,SNR=7.9						
PMAFR				S	**Sn**	**21 48 36.0**	**-1.4**
	1.0nm,0.1s,SNR=7.9						
PMAFR	**Mafra**	**3.75**	**62**	P	**Pn**	**21 47 56.3**	**+3.1**
	1.1nm,0.1s,SNR=7.9						
PMAFR				S	**Sn**	**21 48 36.0**	**-1.4**
	1.0nm,0.1s,SNR=7.9						
PMAFR				*e*Sn	**Sn**	**21 48 38.7**	**+1.3**
PTEO	**Sao Teotonio**	**3.83**	**84**	*e*Sn	**Sn**	**21 48 38.0**	**-1.2**
PTEO	**Sao Teotonio**	**3.83**	**84**	Sn	**Sn**	**21 48 38.0**	**-1.2**
PTEO	**Sao Teotonio**	**3.83**	**84**	Sn	**Sn**	**21 48 38.0**	**-1.2**
MORF	**Marmelete**	**3.88**	**88**	*e*P	**Pn**	**21 47 55.8**	**+0.8**
MORF	**Marmelete**	**3.88**	**88**	*e*Sn	**Sn**	**21 48 38.6**	**-2.0**
MORF				A	A	21 48 40.5	
	4.4nm,0.7s						
MORF	**Marmelete**	**3.88**	**88**	P	**Pn**	**21 47 55.8**	**+0.8**
MORF				Sn	**Sn**	**21 48 38.6**	**-2.0**
	4.4nm,0.7s						
MORF	**Marmelete**	**3.88**	**88**	P	**Pn**	**21 47 55.8**	**+0.8**
MORF				*e*Sn	**Sn**	**21 48 38.6**	**-2.0**
	4.4nm,0.7s						
PNCL	**Nicolau / Gran**	**4.05**	**76**	*e*Pn	**Pn**	**21 47 59.7**	**+2.5**
PNCL				*e*Sn	**Sn**	**21 48 44.1**	**-0.6**
PNCL				A	A	21 48 45.1	
	1.9nm,0.6s						
PNCL	**Nicolau / Gran**	**4.05**	**76**	*e*Pn	**Pn**	**21 47 59.7**	**+2.5**
PNCL				*e*Sn	**Sn**	**21 48 44.1**	**-0.6**
	1.9nm,0.6s						
MESJ	**Messejana**	**4.25**	**80**	*e*S	**Sn**	**21 48 46.6**	**-3.0**
MESJ				AML	AML	21 48 49.4	
	comp=E,1.3nm,0.3s						
MESJ	**Messejana**	**4.25**	**80**	*e*Pn	**Pn**	**21 48 02.8**	**+2.8**
MESJ				*e*Sn	**Sn**	**21 48 48.5**	**-1.2**
MESJ				A	A	21 49 01.5	
	comp=E,1.9nm,0.8s						
MESJ	**Messejana**	**4.25**	**80**	Pn	**Pn**	**21 48 02.8**	**+2.8**
MESJ				S	**Sn**	**21 48 46.6**	**-3.0**
	comp=E,1.3nm,0.3s						
MESJ				Sn	**Sn**	**21 48 48.5**	**-1.2**
	comp=E,1.9nm,0.8s						
MESJ	**Messejana**	**4.25**	**80**	Pn	**Pn**	**21 48 02.8**	**+2.8**
MESJ				S	**Sn**	**21 48 46.7**	**-3.0**
	comp=E,1.3nm,0.3s						
MESJ				*e*Sn	**Sn**	**21 48 48.5**	**-1.2**
	comp=E,1.9nm,0.8s						
MOE	**Montemor**	**4.28**	**71**	*e*Sn	**Sn**	**21 48 50.1**	**-0.4**
MOE	**Montemor**	**4.28**	**71**	Sn	**Sn**	**21 48 50.1**	**-0.4**
MOE	**Montemor**	**4.28**	**71**	Sn	**Sn**	**21 48 50.1**	**-0.4**
PCVE	**Castro Verde**	**4.38**	**83**	*e*Sn	**Sn**	**21 48 51.3**	**-1.5**
PCVE	**Castro Verde**	**4.38**	**83**	Sn	**Sn**	**21 48 51.3**	**-1.5**
PCVE	**Castro Verde**	**4.38**	**83**	Sn	**Sn**	**21 48 51.3**	**-1.5**
PBDV	**Barranco-do-Ve**	**4.46**	**88**	*e*Sn	**Sn**	**21 48 53.1**	**-1.7**
PBDV				A	A	21 48 59.0	
	comp=E,3.0nm,0.7s						
PBDV	**Barranco-do-Ve**	**4.46**	**88**	Sn	**Sn**	**21 48 53.1**	**-1.7**
	comp=E,3.0nm,0.7s						
PBDV	**Barranco-do-Ve**	**4.46**	**88**	*e*Sn	**Sn**	**21 48 53.1**	**-1.7**
	comp=E,3.0nm,0.7s						
EVO	**Evora**	**4.54**	**72**	*e*Sn	**Sn**	**21 48 56.5**	**-0.3**
EVO				A	A	21 49 00.6	
	comp=E,3.1nm,0.3s						
EVO	**Evora**	**4.54**	**72**	Sn	**Sn**	**21 48 56.5**	**-0.3**
	comp=E,3.1nm,0.3s						
EVO	**Evora**	**4.54**	**72**	*e*Sn	**Sn**	**21 48 56.5**	**-0.3**
	comp=E,3.1nm,0.3s						
PMTG	**Montargil**	**4.55**	**65**	*e*Pn	**Pn**	**21 48 06.7**	**+2.6**
PMTG				*e*Sn	**Sn**	**21 48 57.0**	**-0.1**
PMTG				A	A	21 49 05.8	
	comp=E,1.4nm,0.8s						
PMTG	**Montargil**	**4.55**	**65**	*e*Pn	**Pn**	**21 48 06.7**	**+2.6**
PMTG				*e*Sn	**Sn**	**21 48 57.0**	**-0.1**
	comp=E,1.4nm,0.8s						
PVAQ	**Vaqueiros**	**4.62**	**86**	*e*Pn	**Pn**	**21 48 08.2**	**+3.1**
PVAQ				*e*Sn	**Sn**	**21 48 57.3**	**-1.6**
PVAQ				A	A	21 49 03.3	
	comp=E,2.6nm,0.6s						
PVAQ	**Vaqueiros**	**4.62**	**86**	Pn	**Pn**	**21 48 08.2**	**+3.1**
PVAQ				*e*Sn	**Sn**	**21 48 57.3**	**-1.6**
	comp=E,2.6nm,0.6s						
EGRO	**El Granado**	**4.81**	**85**	P	**Pn**	**21 48 09.0**	**+1.3**
	comp=E,0.2nm,0.1s,SNR=7.9						
EGRO				S	**Sn**	**21 49 01.8**	**-1.7**
	comp=E,1.6nm,0.1s,SNR=7.9						
EGRO	**El Granado**	**4.81**	**85**	P	**Pn**	**21 48 09.0**	**+1.3**
	comp=E,0.2nm,0.1s,SNR=7.9						
EGRO				S	**Sn**	**21 49 01.8**	**-1.7**
	comp=E,1.6nm,0.1s,SNR=7.9						
PESTR	**Estremoz**	**4.95**	**69**	*e*Sn	**Sn**	**21 49 06.9**	**-0.1**
PESTR	**Estremoz**	**4.95**	**69**	Sn	**Sn**	**21 49 06.9**	**-0.1**
PESTR	**Estremoz**	**4.95**	**69**	Sn	**Sn**	**21 49 06.9**	**-0.1**
PBAR	**Barrancos**	**5.22**	**78**	*e*Sn	**Sn**	**21 49 12.7**	**-0.8**
PBAR				A	A	21 49 16.6	
	comp=E,1.4nm,0.1s						
PBAR	**Barrancos**	**5.22**	**78**	Sn	**Sn**	**21 49 12.7**	**-0.8**
	comp=E,1.4nm,0.1s						
PBAR	**Barrancos**	**5.22**	**78**	*e*Sn	**Sn**	**21 49 12.7**	**-0.8**
	comp=E,1.4nm,0.1s						
PMRV	**Marv??o**	**5.29**	**64**	*e*Pn	**Pn**	**21 48 17.6**	**+3.3**
PMRV				*e*Sn	**Sn**	**21 49 14.7**	**-0.6**
PMRV				A	A	21 49 18.8	
	comp=E,0.8nm,0.1s						
PMRV	**Marv??o**	**5.29**	**64**	Pn	**Pn**	**21 48 17.6**	**+3.3**
PMRV				Sn	**Sn**	**21 49 14.7**	**-0.6**
	comp=E,0.8nm,0.1s						
PMRV	**Marv??o**	**5.29**	**64**	Pn	**Pn**	**21 48 17.6**	**+3.3**
PMRV				*e*Sn	**Sn**	**21 49 14.7**	**-0.6**
	comp=E,0.8nm,0.1s						
EBAD	**Badajoz**	**5.36**	**72**	P	**Pn**	**21 48 16.6**	**+1.5**
	comp=E,0.1nm,0.1s,SNR=7.9						
EBAD				S	**Sn**	**21 49 15.2**	**-1.6**
	comp=E,0.9nm,0.1s,SNR=5.6						
EBAD	**Badajoz**	**5.36**	**72**	P	**Pn**	**21 48 16.6**	**+1.5**
	comp=E,0.1nm,0.1s,SNR=7.9						
EBAD				S	**Sn**	**21 49 15.2**	**-1.6**
	comp=E,0.9nm,0.1s,SNR=5.6						
EMIN	**Mina Concepcio**	**5.47**	**82**	P	**Pn**	**21 48 18.8**	**+2.1**
	comp=E,0.0nm,0.0s,SNR=7.9						
EMIN				S	**Sn**	**21 49 16.9**	**-2.7**
	comp=E,0.0nm,0.1s,SNR=7.9						
EMIN	**Mina Concepcio**	**5.47**	**82**	P	**Pn**	**21 48 18.8**	**+2.1**
	SNR=7.9						
EMIN				S	**Sn**	**21 49 16.9**	**-2.7**
	SNR=7.9						
ESPR	**Espera**	**6.14**	**91**	P	**Pn**	**21 48 26.0**	**+0.1**
	comp=E,0.1nm,0.0s,SNR=7.9						
ESPR				S	**Sn**	**21 49 32.8**	**-3.3**
	comp=E,1.0nm,0.2s,SNR=7.9						
ESPR	**Espera**	**6.14**	**91**	P	**Pn**	**21 48 26.0**	**+0.1**
	comp=E,0.1nm,0.0s,SNR=7.9						
ESPR				S	**Sn**	**21 49 32.8**	**-3.3**
	comp=E,1.0nm,0.2s,SNR=7.9						
PGAV	**Gavieira, Arco**	**6.22**	**39**	*e*Pn	**Pn**	**21 48 30.6**	**+3.5**
PGAV				*e*Sn	**Sn**	**21 49 36.2**	**-2.1**
PGAV				A	A	21 49 40.3	
	comp=E,1.2nm,0.2s						
PGAV	**Gavieira, Arco**	**6.22**	**39**	*e*Pn	**Pn**	**21 48 30.6**	**+3.5**
PGAV				*e*Sn	**Sn**	**21 49 36.2**	**-2.1**
	comp=E,1.2nm,0.2s						
ELOB	**Lobios**	**6.26**	**41**	P	**Pn**	**21 48 28.1**	**+0.5**
	comp=E,0.0nm,0.0s,SNR=7.9						
ELOB				S	**Sn**	**21 49 36.4**	**-2.8**
	comp=E,0.9nm,0.1s,SNR=7.9						
ELOB	**Lobios**	**6.26**	**41**	P	**Pn**	**21 48 28.1**	**+0.5**
	SNR=7.9						
ELOB				S	**Sn**	**21 49 36.4**	**-2.8**
	comp=E,0.9nm,0.1s,SNR=7.9						
EPLA	**Plasencia**	**6.47**	**62**	P	**Pn**	**21 48 32.5**	**+2.0**
	comp=E,0.0nm,0.0s,SNR=7.9						
EPLA				S	**Sn**	**21 49 41.7**	**-2.6**
	comp=E,0.3nm,0.1s,SNR=7.9						
EPLA	**Plasencia**	**6.47**	**62**	P	**Pn**	**21 48 32.5**	**+2.0**
	SNR=7.9						
EPLA				S	**Sn**	**21 49 41.7**	**-2.6**
	comp=E,0.3nm,0.1s,SNR=7.9						
ECAB	**El Cabril**	**6.48**	**80**	P	**Pn**	**21 48 32.5**	**+1.9**
	comp=E,0.1nm,0.0s,SNR=7.9						
ECAB				S	**Sn**	**21 49 41.7**	**-2.9**
	comp=E,0.7nm,0.3s,SNR=7.9						
ECAB	**El Cabril**	**6.48**	**80**	P	**Pn**	**21 48 32.5**	**+1.9**
	comp=E,0.1nm,0.0s,SNR=7.9						
ECAB				S	**Sn**	**21 49 41.7**	**-2.9**
	comp=E,0.7nm,0.3s,SNR=7.9						
EMAZ	**Mazaricos**	**6.68**	**30**	P	**Pn**	**21 48 35.5**	**+2.1**
	comp=E,0.0nm,0.0s,SNR=7.9						
EMAZ				S	**Sn**	**21 49 44.5**	**-5.0**
	comp=E,0.7nm,0.3s,SNR=7.9						
EMAZ	**Mazaricos**	**6.68**	**30**	P	**Pn**	**21 48 35.5**	**+2.1**
	SNR=7.9						
EAGO	**Agolada(Pontev**	**6.94**	**35**	P	**Pn**	**21 48 38.7**	**+1.7**
	comp=E,0.0nm,0.0s,SNR=7.9						
EAGO				S	**Sn**	**21 49 50.7**	**-5.3**
	comp=E,0.5nm,0.1s,SNR=7.9						
EAGO	**Agolada(Pontev**	**6.94**	**35**	P	**Pn**	**21 48 38.7**	**+1.7**
	SNR=7.9						
ECAL	**Calabor**	**7.03**	**46**	S	**Sn**	**21 49 54.7**	**-3.6**
	comp=E,0.1nm,0.1s,SNR=7.9						
ECAL	**Calabor**	**7.03**	**46**	S	**Sn**	**21 49 54.7**	**-3.6**
	comp=E,0.1nm,0.1s,SNR=7.9						
EADA	**Adamuz**	**7.15**	**80**	P	**Pn**	**21 48 41.4**	**+1.6**
	comp=E,0.1nm,0.1s,SNR=7.9						
EADA				S	**Sn**	**21 49 58.6**	**-2.5**
	comp=E,0.3nm,0.1s,SNR=7.9						
EADA	**Adamuz**	**7.15**	**80**	P	**Pn**	**21 48 41.4**	**+1.6**
	comp=E,0.1nm,0.1s,SNR=7.9						
EADA				S	**Sn**	**21 49 58.6**	**-2.5**
	comp=E,0.3nm,0.1s,SNR=7.9						

*IDC **20** 21:55:44.6±3.0, 21°25S×68°22W, h118km±27km, mb3.7/2, mb1 3.8/5, mb1mx3.4/33, mbtmp4.1/5, Error ellipse: s-maj=51.9km s-min=25.0km az=99.0*
*ISCJB **20** 21:55:45.7±0.7, 21°14S±0°04×68°7W±0°1, h146km±7km, mb3.8/2, Error ellipse: s-maj=21.8km s-min=5.8km az=0.4*
*GUC **20** 21:55:45.8±0.7, 21°10S×68°64W, h135km±5km, ML4.0*

ISC 20 21:55:46.5±1.0, 21°12S±0°04×68°7W±0°1, h140km±9km, n19, σ0s49/28, 9C-1D, Chile-Bolivia border region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PB01	**IPOC Station P**	**0.76**	**276**⇑	*i*P	**Pn**	**21 56 08.2**	**-0.2**
PB01				*i* S	**Sn**	**21 56 24.9**	**0.0**
PB01				AML	AML	21 56 28.6	
	comp=E,2μm,0.2s						
PB09	**IPOC Station P**	**0.85**	**218**⇓	*i*P	**Pn**	**21 56 09.2**	**0.0**
PB09				*i* S	**Sn**	**21 56 26.6**	**+0.1**
PB09				AML	AML	21 56 28.2	
	comp=N,7μm,0.2s						
PB08	**IPOC Station P**	**1.07**	**336**⇑	*i*P	**Pn**	**21 56 11.2**	**-0.1**
PB08				*i* S	**Sn**	**21 56 30.1**	**-0.2**
PB08				AML	AML	21 56 31.6	
	comp=E,2μm,0.5s						
PB07	**IPOC Station P**	**1.27**	**242**	*i* P	**Pn**	**21 56 13.2**	**+0.2**
PB07				*i* S	**Sn**	**21 56 33.8**	**+0.5**
PB07				AML	AML	21 56 35.1	
	comp=E,3μm,0.2s						
HMBC	**Humberstone**	**1.41**	**307**⇑	*i*P	**Pn**	**21 56 14.4**	**0.0**
HMBC				*i* S	**Sn**	**21 56 36.1**	**+0.4**
HMBC				AML	AML	21 56 36.8	
	comp=N,2μm,0.4s						
PB11	**IPOC Station P**	**1.63**	**326**⇑	*i*P	**Pn**	**21 56 16.5**	**-0.4**
PB11				*i* S	**Sn**	**21 56 40.0**	**-0.2**
PB06	**IPOC Station P**	**1.78**	**208**⇑	*i*P	**Pn**	**21 56 18.3**	**-0.2**
PB06				*i* S	**Sn**	**21 56 43.0**	**-0.2**
PB06				AML	AML	21 56 43.9	
	comp=E,1μm,0.1s						
MNMC	**Minye Minye**	**2.16**	**336**⇑	*i*P	**Pn**	**21 56 23.3**	**+0.1**
MNMC				*i* S	**Sn**	**21 56 51.7**	**+0.3**
MNMC				AML	AML	21 56 53.1	
	comp=E,2μm,0.4s						
PB13	**IPOC Station P**	**2.88**	**344**⇑	*i*P	**Pn**	**21 56 33.0**	**+0.5**
PB13				*i* S	**Sn**	**21 57 08.0**	**+0.1**
PB12	**IPOC Station P**	**2.94**	**328**⇑	*i*P	**Pn**	**21 56 31.3**	**-1.5**
PB12				*e*S	**Sn**	**21 57 08.2**	**-0.3**
ANCH	**Antofagasta**	**3.01**	**212**⇑	*i*P	**Pn**	**21 56 32.8**	**-0.7**
ANCH				*i* S	Sn	21 57 04.5	-5.3
LPAZ	**La Paz**	**4.84**	**6**	P	**Pn**	**21 56 57.8**	**-0.4**
	comp=E,5.4nm,0.3s,baz=173,slow=6.5,SNR=133						
SIV	**San Ignacio**	**8.84**	**56**	P	Pn	21 57 44.3	-7.0
	comp=E,4.1nm,0.3s,baz=256,slow=13,SNR=33						
PLCA	**Paso Flores**	**19.61**	**184**	P	**P**	**22 00 03.3**	**-0.7**
	comp=E,0.1nm,0.3s,baz=5.0,slow=10,SNR=3.8						
PTGA	**Pitinga**	**21.98**	**24**	P	**P**	**22 00 28.9**	**-0.6**
	comp=E,2.0nm,0.3s,baz=203,slow=13,SNR=6.2						
YKA	**Yellowknife Ar**	**90.90**	**341**	P	**P**	**22 08 34.5**	**+0.7**
	comp=E,0.5nm,0.6s,baz=134,slow=4.5,SNR=13						
WRA	**Warramunga Arr**	**133.38**	**210**	PKP	**PKPdf**	**22 14 47.1**	**+0.3**
	comp=E,0.2nm,0.6s,baz=150,slow=1.7,SNR=4.9						
ZALV	**Zalesovo Beam**	**141.53**	**25**	PKP	**PKPdf**	**22 15 01.3**	**+0.6**
	comp=E,0.5nm,0.5s,baz=270,slow=2.7,SNR=3.2						
MKAR	**Makanchi Array**	**145.21**	**36**	PKPbc	**PKPab**	**22 15 07.6**	**0.0**
	comp=E,1.0nm,0.4s,baz=330,slow=3.3,SNR=30						

*IDC **20** 21:56:31.2±0.8, 12°63N×120°74E, h0km, mb4.0/12, mb1 4.1/12, mb1mx3.8/43, mbtmp4.0/12, Error ellipse: s-maj=40.9km s-min=17.2km az=65.0*
*MAN **20** 21:56:35, 12°38N×120°49E, h28km, mb4.7, ML3.6, MS3.6*

ISC 20 21:56:35.3±1.5, 12°49N±0°05×120°45E±0°05, h27km±11km, n26, σ0s87/33, mb4.0/12, 1C, Mindoro

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SJMP	**San Jose**	**0.65**	**93**	*e*P	**Pb**	**21 56 47.8**	**-0.3**
SJMP				*e*S	**Sn**	**21 56 58.2**	**+0.1**
OTRP	**Odiongan**	**1.54**	**95**	*e*P	**Pb**	**21 57 03.0**	**-0.1**
OTRP				*e*S	**Sn**	**21 57 20.1**	**+0.1**
ENPP	**El Nido**	**1.63**	**218**	*e*P	**Pn**	**21 57 01.8**	**-0.4**
ENPP				*e*S	**Sn**	**21 57 21.0**	**-1.2**
TGY	**Tagaytay City**	**1.67**	**16**⇑	*e*P	**Pb**	**21 57 05.8**	**+0.3**
TGY				*e*S	**Sb**	**21 57 26.0**	**0.0**
CUYO	**Cuyo Island**	**1.72**	**161**	*e*P	**Pn**	**21 57 02.6**	**-0.9**
CUYO				*e*S	**Sn**	**21 57 25.6**	**+1.0**
AUQP	**San Andres**	**2.32**	**69**	*e*P	**Pn**	**21 57 09.8**	**-1.8**
GQP	**Guinayangan**	**2.40**	**54**	*e*P	**Pn**	**21 57 13.3**	**+0.5**
GUIM	**Jordan**	**2.80**	**131**	*e*P	**Pn**	**21 57 19.7**	**+1.4**
CMAR	**Chiang Mai Arr**	**21.55**	**289**	P	**P**	**22 01 24.9**	**+2.2**
	4.7nm,0.9s,baz=103,slow=8.7,SNR=28						
CMAR				PcP	**PcP**	**22 05 25.5**	**+0.8**
	0.2nm,0.6s,baz=111,slow=1.2,SNR=3.5						
WRA	**Warramunga Arr**	**35.01**	**157**	P	**P**	**22 03 25.6**	**-0.1**
	1.0nm,0.5s,baz=336,slow=9.4,SNR=7.1						
GUN	**Gumba**	**35.73**	**301**	*e*P	**P**	**22 03 31.5**	**-0.9**
PKIN	**Phulchoki**	**36.04**	**300**	*e*P	**P**	**22 03 34.1**	**-0.8**
	5.9nm,0.9s						
KKN	**Kakani**	**36.20**	**300**	*e*P	**P**	**22 03 36.1**	**-0.1**
	4.7nm,0.6s						
GKN	**Gorkha**	**36.81**	**300**	*e*P	**P**	**22 03 41.6**	**+0.3**
	8.6nm,1.0s						
SONM	**Songino Array**	**37.15**	**344**	P	**P**	**22 03 43.9**	**0.0**
	1.6nm,0.6s,baz=166,slow=9.4,SNR=15						
KOLN	**Koldanda**	**37.62**	**299**	*e*P	**P**	**22 03 48.7**	**+0.4**
	3.1nm,0.6s						
ASAR	**Alice Springs**	**38.27**	**160**	P	**P**	**22 03 54.1**	**+0.7**
	0.7nm,0.6s,baz=342,slow=6.7,SNR=11						
MKAR	**Makanchi Array**	**46.86**	**324**	P	**P**	**22 05 04.0**	**+0.9**
	1.2nm,0.8s,baz=130,slow=8.8,SNR=11						
MKAR				PcP	**PcP**	**22 06 35.5**	**-0.2**
	0.7nm,0.7s,baz=114,slow=2.9,SNR=6.6						
ZALV	**Zalesovo Beam**	**50.02**	**333**	P	**P**	**22 05 27.2**	**-0.1**
	1.3nm,0.3s,baz=121,slow=6.7,SNR=12						
NRIK	**Noril'sk**	**60.53**	**347**	P	**P**	**22 06 42.6**	**-0.1**
	1.8nm,0.5s,baz=114,slow=7.7,SNR=4.1						
ARCES	**ARCESS Array B**	**80.12**	**339**	P	**P**	**22 08 43.0**	**+0.4**
	2.8nm,0.9s,baz=76,slow=7.0,SNR=4.7						
FINES	**FINESS Array B**	**81.22**	**331**	P	**P**	**22 08 49.0**	**+0.5**
	0.8nm,0.5s,baz=55,slow=5.3,SNR=15						
INK	**Inuvik**	**84.30**	**21**	P	**P**	**22 09 03.5**	**-0.9**
	0.6nm,0.7s,baz=280,slow=7.7,SNR=3.5						
NB2	**NORSAR Subarra**	**88.22**	**333**	P	**P**	**22 09 22.8**	**-1.1**
	comp=Z,1.2nm,0.7s,baz=70,slow=4.6						
NOA	**NORSAR Array B**	**88.22**	**333**	P	**P**	**22 09 22.7**	**-1.2**
	comp=Z,1.2nm,0.7s,baz=70,slow=4.6,SNR=9.1						
YKA	**Yellowknife Ar**	**93.98**	**22**	P	**P**	**22 09 49.8**	**-0.7**
	comp=Z,0.2nm,0.6s,baz=302,slow=4.4,SNR=5.7						

MEX 20 22:06:46.7±0.9, 16°54N×98°00W, h16km±7km, MD3.8, Near coast of Guerrero

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PNIG	**Pinotepa**	**0.19**	**219**	*i* P	Pg	22 06 50.5	-0.8
PNIG				*e*S	Sg	22 06 53.6	-0.7
TLIG	**Tlapa**	**1.15**	**332**	*i* P	Pn	22 07 05.4	-2.9
TLIG				*i* S	Sb	22 07 17.7	-5.4
VHO	**Vista Hermosa**	**1.32**	**66**	*

baz=290,slow=75,SNR=5.5
H11N3 WAKE ISLAND Hy 35.41 95 T T 22 54 35.2
baz=290,slow=75,SNR=8.0
MKAR Makanchi Array 40.87 310 P **P** **22 17 58.5 -0.4**
0.2nm,0.7s,baz=93,slow=11,SNR=4.4
MKAR PcP **PcP** **22 19 59.4 +0.2**
0.2nm,0.7s,baz=74,slow=2.1,SNR=2.4
MKAR LR LR 22 35 27.8
comp=Z,17nm,21.7s,baz=39,slow=37
ZALV Zalesovo Beam 41.21 321 P **P** **22 18 01.9 +0.4**
0.4nm,0.4s,baz=108,slow=9.3,SNR=3.0
WRA Warramunga Arr 48.11 173 P **P** **22 18 55.9 -0.9**
0.9nm,0.6s,baz=354,slow=8.3,SNR=9.7
ASAR Alice Springs 51.76 174 P **P** **22 19 24.8 +0.2**
0.4nm,0.7s,baz=6.2,slow=14,SNR=8.3
ILAR Eielson Array 62.34 29 P **P** **22 20 41.5 +2.5**
0.2nm,0.7s,baz=307,slow=6.6,SNR=3.6
KBZ Khabaz 68.56 309 P **P** **22 21 18.4 -1.1**
2.3nm,0.9s,baz=12,slow=9.8,SNR=4.9
FINES FINESS Array B 71.57 330 P **P** **22 21 35.8 -1.8**
0.8nm,0.8s,baz=59,slow=4.9,SNR=6.6
AKASG Malin Array Be 74.58 319 P **P** **22 21 53.6 -2.0**
0.4nm,0.4s,baz=64,slow=6.3,SNR=4.0
YKA Yellowknife Ar 76.42 25 P **P** **22 22 06.9 +1.0**
0.1nm,0.3s,baz=308,slow=5.8,SNR=5.7
BRTR Keskin Array B 76.48 308 P **P** **22 22 06.8 -0.2**
1.1nm,0.9s,baz=60,slow=5.7,SNR=3.5

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*IGQ **20** 22:27:54.4±0.8S×79.6±0.9W,h111km±12km,Mb4.1,Error ellipse: s-maj=6.2km s-min=3.4km az=86.7*
*ISCJB **20** 22:27:56.9±0.3,3.96S±0.03×79.61W±0.03,h95km, mb4.6/67,Error ellipse: s-maj=5.0km s-min=3.4km az=36.7*
*NEIC **20** 22:27:60.0±0.6,3.88S×79.47W,h103km±5km,mb4.7/63, MD4.5(IGQ),Error ellipse: s-maj=7.3km s-min=4.1km az=61.0*
NEIC Felt [II] at Cuenca and Guayaquil. Also felt at Catamayo, Celica, Loja, Macara, Pinas and Zaruma. Felt [II] at Ayabaca, Peru. Also felt at Mancora and Pucara.
*IDC **20** 22:27:59.4±2.0,3.84S×79.47W,h96km±19km,mb4.1/16, mb1 4.3/21,mb1mx4.0/40,mbtmp4.5/21,MS2.9/3, Ms1 2.9/3,ms1mx2.7/26,Error ellipse: s-maj=20.9km s-min=11.8km az=61.0*
*BJI **20** 22:27:59.5,3.90S×79.50W,h97km,mB5.0/4*
ISC 20 22:27:58.8±0.4,3.91S±0.05×79.55W±0.07,h95km,n375, σ0s75/383,mb4.7/67,17C-7D,Near coast of Ecuador

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res
				Op				
AGUAY	**Guayaquil**	1.18	200	P		Pn	22 28 27.4	+6.4
	baz=352							
RIOE	**Riobamba**	2.33	23	P		Pn	22 28 35.4	-0.5
	baz=24							
RIOE				S		Sn	22 29 04.7	+0.5
	baz=24							
IGUA	**Igualata**	2.57	21	P		Pn	22 28 39.9	+0.6
	baz=22							
BMAS	**Trigal station**	2.62	24	⇑P		Pn	22 28 39.4	-0.4
	baz=25							
ARRY	**Arrayan**	2.62	25	⇑P		Pn	22 28 39.1	-0.7
	baz=25							
PAT1	**Patacocha**	2.63	25	⇓P		Pn	22 28 40.6	+0.6
	baz=25							
BPAT	**Tungurahua Vol**	2.63	25	⇑P		Pn	22 28 40.7	+0.6
	baz=25							
BPAT				⇑S		Sn	22 29 12.1	+0.5
	baz=25							
BIL2	**Estacion Bilba**	2.65	23	⇓P		Pn	22 28 40.3	+0.1
	baz=24							
BBIL	**Ulba Tungurahu**	2.66	24	⇑P		Pn	22 28 40.1	-0.3
	baz=24							
BBIL				⇑S		Sn	22 29 13.4	+1.3
	baz=24							
RETU	**Refugio**	2.68	24	⇓P		Pn	22 28 40.1	-0.6
	baz=25							
JUI6	**Juive**	2.69	24	⇓P		Pn	22 28 41.5	+0.8
	baz=24							
BULB	**Ulba Tungurahu**	2.70	25	⇑P		Pn	22 28 40.5	-0.5
	baz=25							
BRUN	**Tungurahua Vol**	2.72	25	⇑P		Pn	22 28 41.5	+0.4
	baz=25							
BRUN				⇑S		Sn	22 29 14.1	+0.6
	baz=25							
RUN5	**Runtun**	2.72	25	P		Pn	22 28 41.7	+0.6
	baz=25							
AQUE	**Quevedo**	2.84	1	P		Pn	22 28 41.1	-1.3
	baz=5.0							
PISA	**Pisayambo**	3.06	22	P		Pn	22 28 46.5	+0.7
	baz=23							
PECV	**Mancha de Ca P**	3.15	351	P		Pn	22 28 46.9	+0.4
	baz=348							
AMANT	**Manta**	3.17	338	P		Pn	22 28 46.6	-0.2
	baz=341							
PAST	**Pastocalle**	3.32	16	P		Pn	22 28 50.7	+1.5
	baz=17							
BMOR	**Cotopaxi Volca**	3.34	19	⇑P		Pn	22 28 49.2	-0.4
	baz=20							
MOV1	**Cotopaxi Vol s**	3.36	19	P		Pn	22 28 49.4	-0.6
	baz=20							
CAMI	**Rancho Maria**	3.37	18	⇓P		Pn	22 28 50.1	+0.1
	baz=19							
BNAS	**Cotopaxi Volca**	3.39	18	⇑P		Pn	22 28 50.9	+0.7
	baz=19							
ATAH	**Atahualpa**	3.41	160	P		Pn	22 28 51.8	+1.4
	12nm,0.3s,baz=1.8,slow=8.8,SNR=52							
ATAH				S		Sn	22 29 20.2	-10
	62nm,0.3s,baz=11,slow=13,SNR=10.0							
ATAH				LR		LR	22 30 09.9	
	comp=Z,184nm,20.1s,baz=317,slow=38							
BTAM	**Cotopaxi Volca**	3.41	20	⇑P		Pn	22 28 50.2	-0.4
	baz=20							
NAS2	**Nasa**	3.42	19	⇓P		Pn	22 28 51.1	+0.5
	baz=19							
VC1	**Cotopaxi 1**	3.44	20	P		Pn	22 28 51.8	+0.9
	baz=20							
COV1	**Cotopaxi Volc**	3.44	21	P		Pn	22 28 51.8	+0.7
	baz=20							
PITA	**Cotopaxi Volc**	3.51	19	P		Pn	22 28 52.9	+1.1
	baz=19							
ASDO	**Santo Domingo**	3.64	7	P		Pn	22 28 52.0	-1.3
	baz=8.0							
JAMA	**Jama**	3.68	350	P		Pn	22 28 51.2	-2.5
	baz=352							
ANTI	**Antisana**	3.70	22	⇑P		Pn	22 28 54.1	-0.4
	baz=22							
JUA2	**San Juan 2**	3.79	14	P		Pn	22 28 55.4	-0.2
	baz=15							
MAG1	**Magdalena**	3.81	357	P		Pn	22 28 54.4	-1.1
	baz=358							
TERV	**Terraza Guagua**	3.83	14	P		Pn	22 28 56.3	+0.1
	baz=15							
GGP	**Refugio Guagua**	3.83	14	P		Pn	22 28 56.8	+0.6
	baz=15							
YANA	**Yana**	3.89	15	P		Pn	22 28 55.2	-1.7
	baz=15							
ELAGU	**Cayambe Volc**	4.16	22	P		Pn	22 29 01.9	+1.2
	baz=22							
CHAR	**Charly**	4.23	26	⇓P		Pn	22 29 02.0	+0.4
	baz=26							
CAYA	**Cayambe**	4.25	22	P		Pn	22 29 03.0	+1.1
	baz=22							
OTAV	**Otavalo**	4.26	15	⇑P		Pn	22 29 01.3	-0.7
	baz=16							
OTAV	**Otavalo**	4.26	15	*e*Pn		Pn	22 29 01.2	-0.7
OTAV	**Otavalo**	4.26	15	*e*P		Pn	22 29 01.2	-0.7
CUIC	**Cuicocha-Domo**	4.35	16	⇑P		Pn	22 29 02.4	-0.7
	baz=16							
COTA	**Cotacachi**	4.38	16	P		Pn	22 29 03.5	-0.2
	baz=17							
URCU	**Urcuqui**	4.50	17	⇑P		Pn	22 29 06.0	+0.7
	baz=17							
ECEN	**Cerro Negro**	4.96	19	P		Pn	22 29 15.5	+4.0
	baz=19							
CMBC	**Cumbal**	5.11	20	*e*P		Pn	22 29 13.3	-0.3
CRUC	**La Cruz**	6.03	26	*e*P		Pn	22 29 25.1	-0.8
FLOC	**Florencia**	6.70	36	*e*P		Pn	22 29 31.1	-3.7
NNA	**Nana**	8.47	162	P		Pn	22 29 59.0	+0.2
	8.4nm,0.3s,baz=293,slow=6.9,SNR=6.4							
NNA				S		Sn	22 31 32.0	-0.7
	6.6nm,0.3s,baz=244,slow=21,SNR=7.0							
SJAC	**San Juan de Ar**	9.06	38	*e*P		Pn	22 30 05.5	-1.5
ROSC	**El Rosal**	10.14	31	LR		LR	22 35 15.0	
	comp=Z,70nm,20.8s,baz=227,slow=43							
HELC	**Santa Helena**	10.80	22	*e*Pn		Pn	22 30 31.4	+0.5
RUSC	**La Rusia**	11.68	34	*e*P		Pn	22 30 39.9	-3.0
JTS	**JuntasAbangare**	15.09	339	P		Pn	22 31 28.1	+0.9
	0.4nm,0.3s,baz=319,slow=20,SNR=2.6							
JTS				LR		LR	22 36 27.1	
	comp=Z,36nm,21.8s,baz=159,slow=34							
JTS	**JuntasAbangare**	15.09	339	*e*Pn		Pn	22 31 28.1	+0.9
	53nm,1.4s							
JTS				*e*PcP		PcP	22 36 27.1	-1.8
LPAZ	**La Paz**	16.65	138	P		P	22 31 48.9	+0.9
	0.2nm,0.3s,baz=296,slow=8.8,SNR=11							
LPAZ	**La Paz**	16.65	138	*e*Pn		P	22 31 48.2	+0.1
	39nm,1.3s							
SAML	**Samuel**	17.02	108	*e*Pn		Pn	22 31 51.1	+0.1
	21nm,0.9s							
PTGA	**Pitinga**	19.82	81	P		P	22 32 22.1	-0.1
	1.9nm,0.3s,baz=262,slow=13,SNR=26							
PTGA	**Pitinga**	19.82	81	*e*P		P	22 32 22.1	-0.1
	25nm,0.8s							
CELP	**Cerrillos**	25.31	30	*e*P		P	22 33 17.2	+0.4
SJG	**San Juan**	25.56	31	P		P	22 33 19.5	+0.4
	15nm,0.6s,baz=212,slow=3.9,SNR=15							
SJG	**San Juan**	25.56	31	*e*P		P	22 33 20.4	+1.4
HUMP	**Col San Antoni**	25.74	31	*e*P		P	22 33 22.8	+2.1
	16nm,1.0s							
CMIG	**Matias Romero**	25.78	324	P		P	22 33 21.9	+0.8
	4.2nm,0.8s,baz=89,slow=23,SNR=4.0							
CBYP	**Canovanas**	25.84	31	*e*P		P	22 33 22.1	+0.4
	35nm,1.2s							
035A	**Encino**	35.52	331	P		P	22 34 48.3	+1.6
	baz=147							
034A	**Hebbronville**	35.91	330	P		P	22 34 51.6	+1.5
	baz=146							
934A	**Benavides**	36.28	331	P		P	22 34 54.8	+1.6
	baz=147							
933A	**Laredo**	36.66	330	P		P	22 34 57.6	+1.2
	baz=146							
734A	**La Parita Cree**	37.34	332	P		P	22 35 02.9	+0.7
	148							
635A	**Leesville**	37.44	333	P		P	22 35 03.4	+0.4
	baz=149							
PLCA	**Paso Flores**	37.55	169	P		P	22 35 05.5	+1.6
	1.9nm,1.0s,baz=324,slow=8.7,SNR=2.7							
PLCA				PcP		PcP	22 37 21.9	+1.7
	4.8nm,1.2s,baz=334,slow=3.9,SNR=3.5							
PLCA	**Paso Flores**	37.55	169	*e*P		P	22 35 05.5	+1.6
	26nm,1.8s							
PLCA				*e*PcP		PcP	22 37 21.9	+1.7
633A	**Saathoff Ranch**	38.14	332	P		P	22 35 09.4	+0.4
	baz=147							
534A	**Blanco**	38.30	333	P		P	22 35 10.8	+0.4
	baz=148							
Y46A	**Houston**	38.60	348	P		P	22 35 11.6	-1.1
	baz=165							
434A	**Burnet**	38.88	334	P		P	22 35 15.4	+0.3
	baz=149							
335A	**Moody**	38.92	335	P		P	22 35 16.2	+0.7
	baz=151							
433A	**Art**	39.19	333	P		P	22 35 18.1	+0.3
	baz=148,SNR=5.7							
334A	**Lometa**	39.31	334	P		P	22 35 19.2	+0.5
	baz=150,SNR=5.8							
333A	**Richland Sprin**	39.63	333	P		P	22 35 21.8	+0.4
	baz=149							
234A	**Clairette**	39.85	335	P		P	22 35 23.4	+0.2
	baz=150							
Y40A	**Okiona**	39.88	342	P		P	22 35 24.0	+0.6
	baz=158							
135A	**Vickery Place,**	40.03	336	P		P	22 35 25.1	+0.4
	baz=152							
134A	**White-Moore Ra**	40.32	336	P		P	22 35 27.4	+0.4
	baz=151							
LTX	**Lajitas**	40.34	327	*e*P		P	22 35 27.9	+0.4
LTX				*e*PcP		PcP	22 37 29.8	+0.6
TXAR	**Lajitas Array**	40.34	327	P		P	22 35 27.9	+0.4
	1.6nm,0.7s,baz=149,slow=9.1,SNR=18							
TXAR				PcP		PcP	22 37 29.8	+0.6
	0.8nm,0.7s,baz=148,slow=5.6,SNR=6.8							
TX31	**Lajitas Ar. Si**	40.34	327	*e*P		P	22 35 27.8	+0.4
SLBS	**Sierra La Lagu**	40.37	314	*e*P		P	22 35 29.6	+1.9
	12nm,0.8s							
MIAR	**Mount Ida**	40.46	342	P		P	22 35 27.9	-0.3
	baz=158							
X39A	**Fountain Ranch**	40.60	341	P		P	22 35 29.9	+0.5
	baz=157							
W41A	**Tony Mavity, V**	40.66	344	P		P	22 35 29.5	-0.3
	baz=160							
W41B	**Gary Mavity, V**	40.66	344	P		P	22 35 29.4	-0.5
	baz=160							
X38A	**Whitesboro**	40.98	341	P		P	22 35 33.0	+0.5
	baz=156							
ABTX	**Abilene, Hawle**	41.03	334	P		P	22 35 33.5	+0.6
	baz=148							
Y35A	**Marietta**	41.07	338	P		P	22 35 34.2	+0.9
	baz=153							
X37A	**Clayton**	41.09	340	P		P	22 35 33.9	+0.5
	baz=156,SNR=5.4							
W39A	**Magazine**	41.13	342	P		P	22 35 34.0	+0.4
	baz=158,SNR=6.1							
Z33A	**Whitaker Ranch**	41.22	335	P		P	22 35 34.7	+0.2
	baz=150							
X36A	**Centrahoma**	41.41	339	P		P	22 35 36.0	0.0
	baz=154							
V40A	**Witts Springs**	41.41	344	P		P	22 35 36.0	0.0
	baz=160							
W37B	**Quinton**	41.61	340	P		P	22 35 37.7	+0.1
	baz=156							
V39A	**Pettigrew**	41.68	343	P		P	22 35 38.3	0.0
	baz=158							
Y33A	**Hilltop Ranch,**	41.79	336	P		P	22 35 39.1	0.0
	baz=151							
V38A	**Canehill**	41.94	342	P		P	22 35 39.9	-0.4
	baz=157,SNR=9.2							
U40A	**Yellville**	41.94	344	P		P	22 35 39.9	-0.4
	baz=160,SNR=5.9							
X34A	**Smith Ranch, M**	41.99	337	P		P	22 35 41.2	+0.4
	baz=152							
W35A	**Tecumseh**	42.12	339	P		P	22 35 42.0	+0.1
	baz=154							
U39A	**Green Forest**	42.14	343	P		P	22 35 41.5	-0.4
	baz=159							
V37A	**Hulbert**	42.19	341	P		P	22 35 42.3	-0.1
	baz=156							
X33A	**Lawton**	42.20	336	P		P	22 35 42.6	+0.1
	baz=151							
V36A	**Jenks**	42.37	340	P		P	22 35 43.9	+0.2
	baz=155							
X32A	**Elmer**	42.42	336	P		P	22 35 44.3	+0.1
	baz=150							
TUL1	**Leonard**	42.43	340	P		P	22 35 44.7	+0.4
	baz=156							
TUL1	**Leonard**	42.43	340	*e*P		P	22 35 43.4	-0.9
	68nm,1.8s							
U38A	**Gravette**	42.46	342	P		P	22 35 44.6	0.0
	baz=158							
T40A	**Mansfield**	42.59	345	P		P	22 35 45.5	-0.2
	baz=161							
U37A	**Salina**	42.66	341	P		P	22 35 46.2	+0.1
	baz=157,SNR=5.1							
T39A	**Clever**	42.71	344	P		P	22 35 46.2	-0.4
	baz=159							
W33A	**Caddo, Fort Co**	42.72	337	P		P	22 35 47.4	+0.7
	baz=152							
U36A	**Oologah**	42.85	341	P		P	22 35 48.3	+0.6
	baz=156							
V34A	**Guthrie**	42.97	338	P		P	22 35 48.3	-0.4
	baz=153							
T38A	**Diamond**	42.99	343	P		P	22 35 48.9	+0.1
	baz=158							
W32A	**Sentinel**	43.01	336	P		P	22 35 49.0	0.0
	baz=150							
S40A	**Lebanon**	43.01	345	P		P	22 35 48.2	-0.8
	baz=161							
MNTX	**Cornudas Mount**	43.11	327	P		P	22 35 50.1	+0.3
	baz=140,SNR=9.9							
MNTX	**Cornudas Mount**	43.11	327	*e*P		P	22 35 50.0	+0.2
	7.0nm,1.1s							
U35A	**Pawnee**	43.17	340	P		P	22 35 50.5	+0.2
	baz=154							
V33A	**Losen Ranch,**	43.24	338	P		P	22 35 51.4	+0.5
	baz=152							
T37A	**Cheneyville 18**	43.26	342	P		P	22 35 50.9	0.0
	baz=157							
S39A	**Bolivar**	43.32	344	P		P	22 35 50.6	-0.9
	baz=160							
S38A	**Stockton**	43.43	343	P		P	22 35 51.4	-1.0
	baz=159							
V32A	**Arapaho**	43.45	337	P		P	22 35 52.7	+0.1
	baz=151							
T36A	**Boggs Farm, Ca**	43.50	341	P		P	22 35 53.0	+0.1
	baz=156							
U34A	**Anderson Ranch**	43.51	339	P		P	22 35 53.2	+0.2
	baz=153							
MSTX	**Muleshoe**	43.58	332	P		P	22 35 53.8	0.0
	baz=145,SNR=6.6							
MSTX	**Muleshoe**	43.58	332	*e*P		P	22 35 54.3	+0.5
	20nm,1.1s							
T35A	**Sooner Cattle**	43.58	340	P		P	22 35 53.9	+0.3
	baz=155							
R40A	**Maddies Statio**	43.61	345	P		P	22 35 53.1	-0.7
	baz=161							
S37A	**Fort Scott**	43.82	342	P		P	22 35 55.2	-0.3
	baz=158,SNR=5.8							
R39A	**Chumby, Stover**	43.83	345	P		P	22 35 55.0	-0.5
	baz=160							
T34A	**McClaskey Farm**	43.91	340	P		P	22 35 55.9	-0.3
	baz=154							
R38A	**Fenwick Farm,**	43.95	344	P		P	22 35 55.7	-0.7
	baz=159							
O56A	**Blue Knob Stat**	43.97	1	P		P	22 35 55.5	-1.2
	baz=181							
U32A	**Winter Ranch,**	44.01	337	P		P	22 35 56.8	-0.2
	baz=151							
S36A	**Lake Cedric, C**	44.02	342	P		P	22 35 57.4	+0.3
	baz=157							
S35A	**Otter Creek Ra**	44.21	341	P		P	22 35 58.9	+0.3
	baz=156							
Q40A	**Laux Farm, Aux**	44.23	346	P		P	22 35 57.9	-0.8
	baz=162							
R36A	**Gordon, Harris**	44.54	342	P		P	22 36 01.0	-0.3
	baz=157							
Q38A	**Cooks Store, C**	44.59	344	P		P	22 36 01.4	-0.2
	baz=160							
R35A	**Emporia Munici**	44.76	341	P		P	22 36 03.3	+0.4
	baz=156							
121A	**Cookes Peak, D**	45.06	326	P		P	22 36 06.5	+0.8
	baz=138							
R34A	**Isabella, Hill**	45.08	340	P		P	22 36 06.2	+0.7
	baz=155							
319A	**Douglas**	45.09	323	*e*P		P	22 36 07.1	+1.2
	12nm,0.6s							
Q36A	**Arnold C. Orve**	45.12	342	P		P	22 36 05.4	-0.4
	baz=157,SNR=5.4							
P38A	**Dawn**	45.19	345	P		P	22 36 05.3	-1.1
	baz=160							
O40A	**La Belle**	45.25	347	P		P	22 36 05.6	-1.2
	baz=162							
R33A	**Olander Ranch,**	45.34	340	P		P	22 36 07.7	+0.1
	baz=154							
P37A	**Lathrop**	45.38	344	P		P	22 36 06.8	-1.0
	baz=159							
Q34A	**Chapman**	45.54	341	P		P	22 36 09.0	-0.1
	baz=155,SNR=5.3							
P36A	**Good Intent, A**	45.65	343	P		P	22 36 09.7	-0.3
	baz=158							
P35A	**Duane Minner,**	45.81	342	P		P	22 36 10.9	-0.4
	baz=157,SNR=5.7							
O37A	**Wolven Farm, M**	45.86	344	P		P	22 36 10.8	-0.8
	baz=159							
Q33A	**Connelly Farm,**	45.91	340	P		P	22 36 12.6	+0.5
	baz=154							
P34A	**Walnut Farm, R**	46.08	341	P		P	22 36 13.1	-0.2
	baz=156							
Q32A	**Meitler Ranch,**	46.15	339	P		P	22 36 14.1	+0.1
	baz=153							
ANMO	**Albuquerque**	46.19	329	P		P	22 36 15.7	+1.1
	9.2nm,0.8s,baz=143,slow=10,SNR=20							
ANMO	**Albuquerque**	46.19	329	P		P	22 36 15.6	+1.1
	baz=141							
ANMO	**Albuquerque**	46.19	329	*e*P		P	22 36 15.7	+1.1
	9.8nm,0.8s							
N38A	**Joes South For**	46.21	346	P		P	22 36 13.7	-0.7
	baz=161							
CBKS	**Cedar Bluff**	46.42	338	P		P	22 36 16.2	+0.1
	baz=152							
N37A	**Lee Faris, Mou**	46.43	345	P		P	22 36 15.6	-0.5
	baz=160							
O35A	**Humboldt**	46.45	343	P		P	22 36 15.6	-0.7
	baz=157							
O34A	**Beatrice**	46.61	342	P		P	22 36 17.4	-0.1
	baz=156							
TUC	**Tucson**	46.65	323	P		P	22 36 18.5	+0.4
	baz=135							
TUC	**Tucson**	46.65	323	*e*P		P	22 36 18.4	+0.4
	5.7nm,0.9s							
N35A	**Tabor**	46.92	343	P		P	22 36 19.7	-0.2
	baz=158							
T25A	**Trinidad**	46.94	333	P		P	22 36 20.6	+0.1
	baz=145							
T25A	**Trinidad**	46.94	333	*e*P		P	22 36 20.9	+0.5
	14nm,1.4s							
N34A	**Lincoln**	47.15	342	P		P	22 36 21.4	-0.3
	baz=157							
O32A	**Brockman Farm,**	47.19	340	P		P	22 36 21.8	-0.3
	baz=154							
M36A	**Felix, Anita**	47.24	344	P		P	22 36 21.8	-0.6
	baz=159							
M35A	**Neola**	47.50	344	P		P	22 36 24.0	-0.3
	baz=158							
214A	**Organ Pipe Nat**	47.66	321	P		P	22 36 26.7	+0.8
	baz=132,SNR=7.2							
M34A	**Aspy Farms, Fr**	47.79	343	P		P	22 36 26.5	-0.1
	baz=157							
L36A	**Harm Buss Farm**	47.81	345	P		P	22 36 25.7	-1.1
	baz=159							
SDCO	**Great Sand Dun**	47.94	332	P		P	22 36 28.5	+0.2
	baz=144							
L35A	**Bielow Farm, R**	48.05	344	P		P	22 36 27.9	-0.7
	baz=158							
L34A	**Svendsen Farm,**	48.15	343	P		P	22 36 28.6	-0.9
	baz=157							
K36A	**Gilmore City**	48.26	345	P		P	22 36 29.8	-0.4
	baz=160							
X16A	**Lo Mia Camp, P**	48.53	324	*e*P		P	22 36 31.3	-1.4
	4.7nm,0.9s							
L33A	**Hoskins**	48.60	342	P		P	22 36 33.0	+0.1
	baz=156							
MVCO	**Mesa Verde**	48.98	329	P		P	22 36 36.5	+0.3
	baz=140							
MVCO	**Mesa Verde**	48.98	329	*e*P		P	22 36 36.9	+0.7
	4.1nm,0.8s							
L31A	**Butterfield Fa**	49.10	341	P		P	22 36 37.1	+0.4
	baz=154							
Y14A	**Wickenburg**	49.12	323	*e*P		P	22 36 38.1	+1.1
	16nm,0.9s							
J35A	**Milford**	49.13	345	P		P	22 36 36.4	-0.5
	baz=159							
J34A	**George**	49.26	344	P		P	22 36 37.3	-0.6
	baz=158							
K32A	**Verdigre**	49.26	342	P		P	22 36 37.6	-0.4
	baz=155							
WUAZ	**Wupatki**	49.27	325	P		P	22 36 39.6	+1.2
	baz=136,SNR=6.1							
WUAZ	**Wupatki**	49.27	325	*e*P		P	22 36 40.0	+1.7
	14nm,0.9s							
K31A	**O'Neill**	49.48	341	P		P	22 36 39.5	0.0
	baz=154							
J33A	**Davis**	49.57	343	P		P	22 36 40.1	-0.2
	baz=157							
GLA	**Glamis**	49.66	320	P		P	22 36 41.9	+0.7
	baz=131							
ISCO	**Idaho Springs**	49.66	334	P		P	22 36 41.2	-0.1
	baz=145							
SMCO	**Snowmass**	49.78	332	*e*P		P	22 36 43.3	+0.9
	3.9nm,0

H32A	**Carlson Farm,** baz=157	**50.79**	**344**	P	**P**	**22 36 48.9 -0.6**
BELC	**Belle Mtn. Jos** baz=130	**51.02**	**321**	P	**P**	**22 36 52.2 +0.7**
G33A	**Ortonville** baz=158	**51.16**	**345**	P	**P**	**22 36 51.2 -1.0**
SUSD	**Miller** baz=155	**51.18**	**342**	P	**P**	**22 36 52.0 -0.4**
GMRC	**Granite Mounta** baz=131	**51.31**	**322**	P	**P**	**22 36 54.7 +1.0**
G32A	**Webster** baz=157	**51.50**	**344**	P	**P**	**22 36 54.0 -0.7**
F33A	**5 Mile Ranch,** baz=158	**51.72**	**345**	P	**P**	**22 36 55.5 -0.8**
G30A	**Faulkton** baz=155,SNR=5.5	**51.86**	**342**	P	**P**	**22 36 56.7 -0.7**
MSU	**Marysvale**	**51.88**	**327**	*e*P	**P**	**22 36 58.5 +0.5**
F32A	**Veblen** baz=157	**51.97**	**344**	P	**P**	**22 36 57.2 -1.0**
D37A	**Cotton** baz=164	**52.10**	**349**	P	**P**	**22 36 57.8 -1.3**
BFSC	**Mount Baldy Ra** baz=129	**52.23**	**320**	P	**P**	**22 37 00.9 +0.4**
F31A	**Hecla** baz=156	**52.27**	**344**	P	**P**	**22 37 00.1 -0.3**
GSC	**Goldstone, Bar** baz=130	**52.37**	**321**	P	**P**	**22 37 02.7 +1.2**
GSC	**Goldstone, Bar** 8.8nm,1.0s	**52.37**	**321**	*e*P	**P**	**22 37 02.5 +1.0**
F30A	**Leola** baz=155	**52.47**	**343**	P	**P**	**22 37 01.4 -0.6**
C37A	**Embarrass** baz=164	**52.60**	**349**	P	**P**	**22 37 01.9 -1.0**
C36A	**Pine Crest Far** baz=163,SNR=5.5	**52.75**	**349**	P	**P**	**22 37 02.9 -1.1**
PSUT	**Pine Spring** 5.0nm,0.9s	**52.81**	**326**	*e*P	**P**	**22 37 06.3 +1.5**
SNCC	**San Nicolas Is** baz=126	**52.86**	**318**	P	**P**	**22 37 05.6 +0.6**
E30A	**Jud** baz=156	**53.04**	**343**	P	**P**	**22 37 06.1 0.0**
C34A	**RKJ Ranch, Bem** baz=161	**53.09**	**347**	P	**P**	**22 37 06.0 -0.4**
TPNV	**Topopah Spring** baz=132	**53.10**	**323**	P	**P**	**22 37 08.1 +1.1**
TPNV	**Topopah Spring** 6.2nm,1.0s	**53.10**	**323**	*e*P	**P**	**22 37 09.1 +2.1**
D31A	**Mcclaflin, Tow** baz=157	**53.21**	**345**	P	**P**	**22 37 07.0 -0.4**
MPMC	**Manual Prospec** baz=130	**53.28**	**322**	P	**P**	**22 37 09.4 +1.1**
RCWM	**Renegade Canyo**	**53.30**	**321**	*e*P	**P**	**22 37 07.6 -0.8**
E29A	**Napoleon** baz=155	**53.31**	**343**	P	**P**	**22 37 07.9 -0.2**
TCUT	**Toone Canyon** 12nm,0.7s	**53.42**	**330**	*e*P	**P**	**22 37 10.1 +0.8**
DUG	**Dugway, Tooele** baz=137	**53.45**	**328**	P	**P**	**22 37 10.5 +1.0**
DAC	**Darwin (Calif)** 5.0nm,1.0s	**53.48**	**322**	*e*P	**P**	**22 37 10.8 +1.0**
D30A	**Buchanan** baz=156,SNR=5.4	**53.55**	**344**	P	**P**	**22 37 09.6 -0.2**
C32A	**Crookston** baz=159	**53.63**	**346**	P	**P**	**22 37 10.1 -0.2**
E28A	**Huff** baz=153	**53.63**	**342**	P	**P**	**22 37 10.5 0.0**
R11A	**Troy Canyon, C** baz=133,SNR=6.8	**53.66**	**325**	P	**P**	**22 37 12.0 +0.9**
R11A	**Troy Canyon, C** 3.4nm,0.9s	**53.66**	**325**	*e*P	**P**	**22 37 12.1 +1.1**
D29A	**Pettibone, Tap** baz=155	**53.74**	**343**	P	**P**	**22 37 11.4 +0.2**
E27A	**Carson** baz=152	**53.78**	**341**	P	**P**	**22 37 11.6 0.0**
PD31	**Pinedale Array**	**53.81**	**333**	*e*P	**P**	**22 37 11.9 -0.2**
PDAR	**Pinedale Array** 2.7nm,0.7s,baz=148,slow=8.6,SNR=4.1	**53.81**	**333**	P	**P**	**22 37 11.9 -0.2**
B34A	**Aery, Baudette** baz=161,SNR=5.6	**53.82**	**348**	P	**P**	**22 37 11.1 -0.7**
B33A	**Robert and Kas** baz=160	**53.82**	**347**	P	**P**	**22 37 11.7 -0.1**
HWUT	**Hardware Ranch** 10nm,0.8s	**53.87**	**331**	*e*P	**P**	**22 37 12.5 0.0**
C31A	**Landman Farms,** baz=157	**53.90**	**345**	P	**P**	**22 37 11.7 -0.7**
AGMN	**Agassiz Nation** baz=160,SNR=9.2	**53.91**	**347**	P	**P**	**22 37 11.7 -0.7**
AGMN	**Agassiz Nation** 12nm,0.7s	**53.91**	**347**	*e*P	**P**	**22 37 12.2 -0.2**
C30A	**Mose, Pekin** baz=156	**54.02**	**344**	P	**P**	**22 37 13.2 0.0**
PKM	**Mcpherson Peak** baz=127	**54.03**	**319**	P	**P**	**22 37 13.7 -0.1**
BGU	**Big Grassy Mou** 3.7nm,0.8s	**54.10**	**329**	*e*P	**P**	**22 37 14.8 +0.7**
E26A	**Carlson Angus** baz=151	**54.11**	**341**	P	**P**	**22 37 13.9 -0.1**
D28A	**Regan** baz=154	**54.15**	**342**	P	**P**	**22 37 14.1 -0.1**
B32A	**Ashes, Strandq** baz=159	**54.16**	**346**	P	**P**	**22 37 13.8 -0.4**
D27A	**Center** baz=153	**54.37**	**342**	P	**P**	**22 37 15.6 -0.3**
A33A	**Warroad** baz=160,SNR=7.7	**54.41**	**347**	P	**P**	**22 37 15.5 -0.5**
MDND	**Maddock** baz=155	**54.46**	**344**	P	**P**	**22 37 16.8 +0.4**
MDND	**Maddock** 41nm,1.0s	**54.46**	**344**	*e*P	**P**	**22 37 17.1 +0.6**
B31A	**Greenbush Farm** baz=158	**54.46**	**345**	P	**P**	**22 37 16.0 -0.5**
A32A	**Rocking H Ranc** baz=159,SNR=5.4	**54.64**	**346**	P	**P**	**22 37 17.0 -0.7**
B30A	**Myrvik Farm, E** baz=157	**54.66**	**345**	P	**P**	**22 37 17.7 -0.3**
B29A	**Wagenman Farm,** baz=156,SNR=5.7	**54.95**	**344**	P	**P**	**22 37 20.2 +0.2**
D25A	**Fairfield** baz=151	**54.99**	**340**	P	**P**	**22 37 20.9 +0.6**
A30A	**Hoffart Farm,** baz=157,SNR=8.4	**55.11**	**345**	P	**P**	**22 37 20.8 -0.3**
NV11	**Mina Array Sit** 7.6nm,0.8s	**55.22**	**323**	*e*P	**P**	**22 37 23.8 +1.5**
NV01	**Mina Array Sit**	**55.30**	**323**	*e*P	**P**	**22 37 24.3 +1.3**
NVAR	**Mina Array Bea** 5.3nm,0.7s,baz=140,slow=7.0,SNR=15	**55.30**	**323**	P	**P**	**22 37 24.3 +1.3**
A29A	**Manning Farm,** baz=156,SNR=12	**55.34**	**344**	P	**P**	**22 37 22.6 -0.1**
B26A	**Jensen Ranch,** baz=152	**55.71**	**342**	P	**P**	**22 37 25.8 +0.3**
ULM	**Lac du Bonnet** 6.7nm,0.6s,baz=154,slow=6.6,SNR=14	**55.75**	**347**	P	**P**	**22 37 24.7 -0.9**
ULM	**Lac du Bonnet** 8.8nm,0.7s	**55.75**	**347**	*e*P	**P**	**22 37 24.9 -0.8**
YHB	**Horse Butte**	**56.10**	**333**	*e*P	**P**	**22 37 27.8 -0.8**
A26A	**Wade Farm, Ken** baz=153	**56.12**	**342**	P	**P**	**22 37 28.5 +0.1**
DGMT	**Dagmar** baz=150	**56.43**	**341**	P	**P**	**22 37 30.5 -0.1**
A25A	**Svangstu Ranch** baz=151	**56.48**	**342**	P	**P**	**22 37 31.6 +0.6**
HLID	**Hailey** baz=137,SNR=9.7	**56.73**	**330**	P	**P**	**22 37 33.3 +0.3**
HLID	**Hailey** 5.8nm,0.8s	**56.73**	**330**	*e*P	**P**	**22 37 33.8 +0.8**
MFID	**Camas Ranch** 16nm,0.8s	**57.33**	**329**	*e*P	**P**	**22 37 38.3 +1.1**
ORV	**Oroville** 13nm,0.8s	**57.94**	**322**	*e*P	**P**	**22 37 43.0 +1.6**
WVOR	**Wild Horse Val** 9.3nm,0.9s	**58.14**	**327**	*e*P	**P**	**22 37 43.4 +0.5**
O03D	**Paynes Creek** baz=128	**58.58**	**323**	P	**P**	**22 37 46.1 +0.2**
MOD	**Modoc Plateau** 7.7nm,1.0s	**58.72**	**325**	*e*P	**P**	**22 37 47.5 +0.5**
MSO	**Missoula** baz=139,SNR=6.9	**58.93**	**333**	P	**P**	**22 37 48.4 +0.1**
MSO	**Missoula** 8.3nm,0.9s	**58.93**	**333**	*e*P	**P**	**22 37 48.6 +0.4**
M04C	**Macdoel** baz=129,SNR=6.3	**59.53**	**324**	P	**P**	**22 37 52.7 +0.2**
K05A	**Summer Lake** 14nm,0.8s	**59.59**	**326**	*e*P	**P**	**22 37 54.3 +1.3**
YBMT	**Yellow Bay**	**59.74**	**334**	*e*P	**P**	**22 37 54.6 +0.7**
M02C	**Callahan** baz=128	**59.88**	**323**	P	**P**	**22 37 54.7 -0.2**
YBH	**Yreka Blue Hor** 5.9nm,0.7s,baz=85,slow=6.0,SNR=19	**60.01**	**324**	P	**P**	**22 37 55.2 -0.5**
YBH	**Yreka Blue Hor** 6.6nm,0.8s	**60.01**	**324**	*e*P	**P**	**22 37 55.2 -0.5**
BSMT	**Bassoo Peak**	**60.08**	**333**	*e*P	**P**	**22 37 57.1 +0.9**
J05D	**Fort Rock, OR** baz=130,SNR=6.4	**60.14**	**326**	P	**P**	**22 37 57.3 +0.6**
WALA	**Waterton Lakes** 12nm,0.8s	**60.61**	**335**	*e*P	**P**	**22 38 00.3 +0.6**
L02D	**Cave Junction,** baz=127	**60.80**	**324**	P	**P**	**22 38 01.3 +0.3**
I04A	**Tendick Farm,** baz=129	**61.12**	**326**	P	**P**	**22 38 02.7 -0.6**
FFC	**Flin Flon** 22nm,1.7s	**61.32**	**345**	*e*P	**P**	**22 38 04.2 -0.1**
NEW	**Newport** 4.8nm,0.7s,baz=143,slow=7.0,SNR=8.3	**61.44**	**332**	P	**P**	**22 38 05.6 +0.4**
NEW	**Newport** baz=136,SNR=5.6	**61.44**	**332**	P	**P**	**22 38 05.7 +0.4**
NEW	**Newport** 5.8nm,0.8s	**61.44**	**332**	*e*P	**P**	**22 38 05.7 +0.4**
G05D	**Wamic, OR** baz=131	**61.45**	**328**	P	**P**	**22 38 06.4 +1.0**
I03D	**Drain, OR** baz=128	**61.59**	**325**	P	**P**	**22 38 06.3 0.0**
LTY	**Liberty** 3.6nm,0.6s	**62.45**	**330**	*e*P	**P**	**22 38 13.0 +0.8**
LON	**Longmire** 5.6nm,0.8s	**62.70**	**329**	*e*P	**P**	**22 38 13.3 -0.4**
FCC	**Fort Churchill** 20nm,1.7s	**63.54**	**352**	*e*P	**P**	**22 38 18.0 -0.9**
A04D	**Lummi Island** baz=131	**64.45**	**330**	P	**P**	**22 38 25.1 0.0**
YKA	**Yellowknife Ar** 3.8nm,0.6s,baz=140,slow=5.8,SNR=86	**71.38**	**344**	P	**P**	**22 39 07.6 -0.7**
YKB5	**Yellowknife Ar**	**71.38**	**344**	*e*P	**P**	**22 39 07.6 -0.7**
YKW3	**Yellowknife Ar** 5.0nm,0.6s	**71.44**	**344**	*e*P	**P**	**22 39 07.4 -1.3**
DLBC	**Dease Lake** 9.1nm,0.8s,baz=120,slow=6.8,SNR=20	**73.95**	**335**	P	**P**	**22 39 24.6 +0.8**
DLBC	**Dease Lake** 11nm,0.8s	**73.95**	**335**	*e*P	**P**	**22 39 24.6 +0.8**
DBIC	**Dimbokro** 2.7nm,0.9s,baz=212,slow=3.7,SNR=4.3	**75.30**	**82**	P	**P**	**22 39 31.3 -1.1**
DBIC	**Dimbokro** 31nm,1.6s	**75.30**	**82**	*e*P	**P**	**22 39 31.3 -1.1**
SUMG	**Summit** 8.0nm,1.0s	**80.68**	**12**	*e*P	**P**	**22 40 01.4 0.0**
INK	**Inuvik** 4.9nm,0.9s,baz=126,slow=4.9,SNR=19	**81.06**	**342**	P	**P**	**22 40 03.1 +0.1**
INK	**Inuvik** 9.4nm,1.1s	**81.06**	**342**	*e*P	**P**	**22 40 03.1 +0.1**
ESDC	**Sonseca Array** 0.3nm,0.4s,baz=258,slow=5.2,SNR=5.2	**81.45**	**49**	P	**P**	**22 40 06.0 +0.1**
BMRM	**Bremner River** 6.0nm,0.8s	**81.59**	**333**	*e*P	**P**	**22 40 06.4 +0.3**
EGAK	**Eagle** 10nm,0.8s	**81.83**	**338**	*e*P	**P**	**22 40 07.2 0.0**
DOT	**Dot Lake** 12nm,0.8s	**82.47**	**336**	*e*P	**P**	**22 40 10.3 -0.3**
PAX	**Paxson** 4.7nm,0.9s	**82.77**	**335**	*e*P	**P**	**22 40 12.1 -0.2**
IL1	**Eielson Array**	**84.05**	**337**	*e*P	**P**	**22 40 17.7 -1.0**
ILAR	**Eielson Array** 2.6nm,0.8s,baz=101,slow=5.9,SNR=29	**84.05**	**337**	P	**P**	**22 40 18.1 -0.6**
ILB	**Eielson Array**	**84.05**	**337**	*e*P	**P**	**22 40 18.1 -0.6**
RND	**Reindeer** 17nm,1.6s	**84.36**	**335**	*e*P	**P**	**22 40 20.7 +0.4**
MDM	**Murphy Dome** 6.4nm,1.0s	**84.65**	**337**	*e*P	**P**	**22 40 21.7 0.0**
BPAW	**Bear Paw Mtn.** 4.9nm,0.9s	**85.48**	**335**	*e*P	**P**	**22 40 25.5 -0.4**
PPLA	**Purkeypile** 18nm,1.5s	**85.63**	**334**	*e*P	**P**	**22 40 25.8 -1.0**
MLY	**Manley** 3.4nm,0.6s	**85.68**	**336**	*e*P	**P**	**22 40 26.7 -0.2**
CAST	**Castle Rocks** 8.3nm,1.3s	**85.74**	**335**	*e*P	**P**	**22 40 26.8 -0.4**
SYO	**Syowa Base**	**96.43**	**162**	*e*P	**P**	**22 41 14.4 -2.6**
ABKAR	**Akbulak array**	**123.24**	**31**	*e*PKPdf	**PKPdf**	**22 46 45.2 +0.5**
ZRNK	**Zerenda**	**124.67**	**23**	*e*PKPdf	**PKPdf**	**22 46 47.7 +0.3**
ZAA1	**Zalesovo Array**	**128.50**	**12**	*e*PKPdf	**PKPdf**	**22 46 54.4 -0.3**
ZAA0	**Zalesovo Array**	**128.50**	**12**	*e*PKPdf	**PKPdf**	**22 46 54.4 -0.3**
ZALV	**Zalesovo Beam** 1.2nm,0.4s,baz=286,slow=2.9,SNR=11	**128.50**	**12**	PKP	**PKPdf**	**22 46 54.4 -0.3**
GEYT	**Alibeck** 1.7nm,0.7s,baz=253,slow=4.5,SNR=5.8	**128.66**	**43**	PKP	**PKPdf**	**22 46 56.0 +0.5**
MK32	**Makanchi Array**	**134.47**	**17**	*e*PKPdf	**PKPdf**	**22 47 05.9 -0.3**
MKAR	**Makanchi Array** 0.6nm,0.6s,baz=6.8,slow=2.2,SNR=9.7	**134.47**	**17**	PKP	**PKPdf**	**22 47 05.9 -0.3**
MK01	**Makanchi Array**	**134.49**	**17**	*e*PKPdf	**PKPdf**	**22 47 05.9 -0.4**
SONA0	**Songino Array**	**135.94**	**354**	*e*PKPdf	**PKPdf**	**22 47 09.0 -0.1**
SONM	**Songino Array** 0.8nm,0.7s,baz=292,slow=2.0,SNR=6.5	**135.94**	**354**	PKP	**PKPdf**	**22 47 09.0 -0.1**
AS31	**Alice Springs**	**137.41**	**228**	*e*PKPdf	**PKPdf**	**22 47 12.2 -0.2**
ASAR	**Alice Springs** 0.5nm,0.6s,baz=138,slow=2.9,SNR=5.4	**137.41**	**228**	PKP	**PKPdf**	**22 47 12.2 -0.2**
KSRS	**Korea Array** 1.1nm,0.7s,baz=323,slow=1.5,SNR=4.3	**138.19**	**327**	PKP	**PKPdf**	**22 47 13.2 -0.1**
KS15	**Wonju Array Si**	**138.22**	**327**	*e*PKPdf	**PKPdf**	**22 47 13.2 -0.2**
KSAR	**Wonju Array Be**	**138.22**	**327**	PKP	**PKPdf**	**22 47 13.2 -0.2**
WR1	**Warramunga Arr**	**139.13**	**233**	*e*PKPdf	**PKPdf**	**22 47 15.6 0.0**
WRA	**Warramunga Arr** 1.5nm,0.9s,baz=114,slow=1.6,SNR=10	**139.13**	**233**	PKP	**PKPdf**	**22 47 15.6 0.0**
FITZ	**Fitzroy Crossi** 3.0nm,0.9s,baz=90,slow=5.0,SNR=4.2	**146.91**	**228**	PKPbc	**PKPbc**	**22 47 31.0 -0.3**
LZH	**Lanzhou**	**147.82**	**355**	*e*PKPbc	**PKPbc**	**22 47 34.4 +0.8**
LZH				pPKP	pPKPdf	22 48 01.3 +4.4
LZH				sPKP		22 48 11.0
PYUN	**Piuthan**	**150.75**	**33**	*e*P	**PKPbc**	**22 47 41.6 +0.4**
KOLN	**Koldanda** 5.8nm,0.6s	**151.34**	**32**	*e*P	**PKPbc**	**22 47 42.1 -0.4**
GKN	**Gorkha** 24nm,0.7s	**151.69**	**31**	*e*P	**PKPbc**	**22 47 43.3 0.0**
KKN	**Kakani** 9.2nm,0.7s	**152.19**	**30**	*e*P	**PKPbc**	**22 47 43.8 -0.7**
CD2	**Chengdu**	**152.96**	**354**	PKPbc	**PKPdf**	**22 47 36.5 -2.1**
CM31	**Chiang Mai Arr**	**165.46**	**6**	*e*PKPdf	**PKPdf**	**22 47 53.5 +0.2**
CM31				*e*PKPab	**PKPab**	**22 48 50.9 -0.7**
CMAR	**Chiang Mai Arr** 1.0nm,0.9s,baz=299,slow=1.3,SNR=6.2	**165.46**	**6**	PKP	**PKPdf**	**22 47 53.5 +0.2**
CMAR				PKPab	**PKPab**	**22 48 50.9 -0.7**
	1.8nm,0.8s,baz=333,slow=5.0,SNR=9.5					

NIED ***20*** *22:29:00,38˚.20N×142˚.20E,h50km,Mw3.6 Best double couple: M0 2.74000×10^14 NP1:ϕs 163.00000˚, δ54.00000˚, λ169.00000˚. NP2:ϕs 260.00000˚, δ81.00000˚, λ37.00000˚.*
IDC ***20*** *22:29:13.5±1.4,37.94N×143.16E,h0km,mb3.5/4, mb1 3.6/5,mb1mx3.3/42,mbtmp3.4/5,ML2.8/1,MS2.7/2, Ms1 2.7/2,ms1mx2.2/40,Error ellipse: s-maj=41.0km s-min=25.9km az=121.0*
JMA ***20*** *22:29:17.1±0.1,38˚.23N×142˚.23E,h38km±2km,M3.5*

ISC 20 22:29:15.5±1.5,38˚.21N±0˚.04×142˚.19E±0˚.06,h19km±4km, n18,σ 0s65/24,mb3.5/4,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
					Op	ISC	h m s	ISC
JIO	**Ouri**	**0.70**	**290**	P		**Pn**	**22 29 31.0**	**+0.5**
JIO				S		**Sn**	**22 29 40.6**	**-0.2**
OFUJ	**Ofunato**	**0.95**	**335**	P		**Pg**	**22 29 34.1**	**0.0**
OFUJ				S		**Sg**	**22 29 46.2**	**-0.5**
JMK	**Ichinoseki**	**1.06**	**314**	P		**Pg**	**22 29 36.1**	**+0.1**
JMK				S		**Sg**	**22 29 49.9**	**0.0**
JMM	**Marumori**	**1.15**	**253**	P		**Pg**	**22 29 37.4**	**-0.5**
JMM				S		**Sb**	**22 29 51.7**	**+0.2**
JOU	**Okura**	**1.21**	**278**	P		**Pg**	**22 29 38.9**	**0.0**
JOU				S		**Sg**	**22 29 54.7**	**0.0**
JFK	**Kawauchi**	**1.34**	**231**	P		**Pn**	**22 29 39.3**	**0.0**
JFK				S		**Sn**	**22 29 55.4**	**-1.3**
MIYJ	**Miyakonagasawa**	**1.39**	**348**	P		**Pn**	**22 29 39.9**	**-0.1**
MIYJ				S		**Sn**	**22 29 56.5**	**-1.4**
JOM	**Ohasama**	**1.44**	**331**	P		**Pb**	**22 29 41.6**	**-0.2**
JOM				S		**Sb**	**22 29 59.6**	**-0.1**
JYK	**Kaneyama**	**1.59**	**297**	P		**Pb**	**22 29 44.4**	**0.0**
JFT	**Otama**	**1.62**	**245**	P		**Pb**	**22 29 45.0**	**+0.1**
JFT				S		**Sb**	**22 30 04.7**	**-0.3**
JRG	**Rokugo**	**1.69**	**315**	P		**Pb**	**22 29 46.6**	**+0.5**
MJAR	**Matsushiro Arr** 0.6nm,0.3s,baz=82,slow=17,SNR=4.6	**3.58**	**243**	Pn		**Pb**	**22 30 19.0**	**+0.7**
KLR	**Kul'dur** comp=Z,34nm,19.1s,baz=143,slow=35	**13.33**	**329**	LR		LR	22 37 26.9	
MA2	**Magadan** comp=Z,19nm,18.5s,baz=158,slow=35	**22.07**	**12**	LR		LR	22 42 17.3	
SEY	**Seymchan** 1.0nm,0.3s,baz=65,slow=22,SNR=4.3	**25.52**	**11**	P		**P**	**22 34 44.3**	**+1.7**
MKAR	**Makanchi Array** 0.3nm,0.7s,baz=81,slow=10,SNR=4.5	**44.02**	**301**	P		P	22 37 28.9	+7.0
ILAR	**Eielson Array** 0.2nm,0.6s,baz=272,slow=5.7,SNR=4.3	**48.17**	**33**	P		**P**	**22 37 54.1**	**-0.2**
WRA	**Warramunga Arr** 0.3nm,0.5s,baz=7.6,slow=6.9,SNR=4.7	**58.31**	**189**	P		**P**	**22 39 09.0**	**-0.3**

ISCJB ***20*** *22:41:56.9±0.6,31˚.27N±0˚.04×115˚.63W±0˚.04,h4km±9km, Error ellipse: s-maj=7.2km s-min=5.5km az=11.5*
ECX ***20*** *22:41:57.7±0.6,31˚.27N×115˚.60W,h5km,MD3.1,ML3.3*
MEX ***20*** *22:41:59.3±0.4,31˚.19N×115˚.46W,h16km±46km,MD3.6*

ISC 20 22:41:57.3±1.2,31˚.27N±0˚.05×115˚.64W±0˚.04,h3km±13km, n15,σ 1s30/24,4C-6D,Baja California

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
					Op	ISC	h m s	ISC
SPIG	**San Pedro Mart**	**0.27**	**147**	⇓*e*P		**Pg**	**22 42 02.4**	**-0.1**
SPIG				*e*S		**Sg**	**22 42 06.0**	**0.0**
SPIG	**San Pedro Mart**	**0.27**	**147**	*e*P		**Pg**	**22 42 02.8**	**+0.3**
SPIG				*i*S		**Sg**	**22 42 05.9**	**-0.1**
SPX	**San Pedro Mart**	**0.27**	**147**	⇓*e*P		**Pg**	**22 42 02.9**	**+0.3**
SPX				*e*S		**Sg**	**22 42 06.2**	**+0.2**
SPX				AML		AML	22 42 06.9	
	comp=N,3μm,0.1s							
SPX				⇑*e*			22 42 06.9	
ECBX	**El Chinero**	**0.54**	**68**	⇑*e*P		**Pg**	**22 42 07.0**	**-0.6**
ECBX				*e*S		**Sg**	**22 42 13.9**	**-0.7**
ECBX				AML		AML	22 42 14.4	
	comp=E,1μm,0.3s							
ECBX				⇓*e*			22 42 14.4	
ZAX	**El Zacaton**	**0.60**	**294**	⇓*e*P		Pg	22 42 08.8	-0.1
ZAX				*e*S		**Sg**	**22 42 17.3**	**+0.8**
ZAX				⇑*e*			22 42 19.3	
ZAX				AML		AML	22 42 19.3	
	comp=N,2μm,0.6s							
ECNX	**Esteban Cantu**	**0.91**	**295**	⇓*e*P		Pg	22 42 14.4	-0.3
ECNX				*e*S		**Sg**	**22 42 26.8**	**+0.2**
PBX	**Punta Banda**	**1.04**	**297**	⇓*e*P		Pb	22 42 16.7	-1.4
PBX				*e*S		**Sb**	**22 42 30.4**	**-1.8**
MBIG	**Mexicali**	**1.19**	**18**	*i*P		Pn	22 42 18.1	-2.8
CBX	**Cerro Bola**	**1.36**	**320**	⇓*e*P		**Pn**	**22 42 22.2**	**-1.2**
CBX				*e*S		**Sn**	**22 42 39.7**	**-2.3**
TJIG	**Tijuana**	**1.46**	**323**	*e*P		**Pn**	**22 42 23.8**	**-0.8**
TJIG				*e*S		**Sn**	**22 42 42.4**	**-1.9**
SWSC	**Sam W. Stewart** baz=182	**1.67**	**355**	P		**Pn**	**22 42 28.0**	**+0.5**
SWSC				Sb		**Sn**	**22 42 50.6**	**+1.1**
	baz=182							
MONP2	**Monument Peak** baz=162	**1.75**	**338**	Pb		**Pn**	**22 42 29.4**	**+0.6**
MONP2				Sb		**Sn**	**22 42 51.7**	**0.0**
	baz=162							
109C	**Camp Elliot, M** baz=145	**2.04**	**323**	Pb		**Pn**	**22 42 33.7**	**+1.1**
109C				Sb		**Sn**	**22 42 59.2**	**+0.5**
	baz=145							
PFO	**Pinyon Flats O** baz=167	**2.43**	**344**	Pb		**Pb**	**22 42 42.0**	**+0.1**
PFO				Sb		**Sb**	**22 43 12.8**	**+0.5**
	baz=167							
MURC	**Murrieta** baz=153	**2.67**	**331**	Sb		**Sn**	**22 43 18.1**	**+3.8**

RSPR 20 22:55:00.6,19˚.64N×68˚.20W,h82km±12km,MD3.6/9, 8C-2D,North Atlantic Ocean

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
					Op	ISC	h m s	ISC
AGPR	**Aguadilla, PR**	**1.56**	**138**	⇑*e*P		Pn	22 55 26.1	-0.7
AGPR	**Aguadilla, PR**	**1.56**	**138**	*e*S		Sn	22 55 45.9	-0.7
LSP	**Las Mesas**	**1.80**	**144**	⇑*e*P		Pn	22 55 28.4	-1.5
LSP	**Las Mesas**	**1.80**	**144**	*e*S		Sn	22 55 51.7	-0.6
LRS	**Lares**	**1.86**	**136**	⇑*e*P		Pn	22 55 30.5	-0.3
LRS				*e*S		Sn	22 55 53.8	+0.1
AOPR	**Arecibo Observ**	**1.88**	**133**	⇑*e*P		Pn	22 55 29.9	-1.2
AOPR	**Arecibo Observ**	**1.88**	**133**	*e*S		Sn	22 55 54.6	+0.4
CRPR	**Cabo Rojo, PR**	**1.93**	**147**	⇑*e*P		Pn	22 55 31.2	-0.5
CRPR	**Cabo Rojo, PR**	**1.93**	**147**	*e*S		Sn	22 55 54.7	-0.5
GBPR	**Guanica, Bosqu**	**2.08**	**143**	⇑*e*P		Pn	22 55 33.5	-0.1
GBPR	**Guanica, Bosqu**	**2.08**	**143**	*e*S		Sn	22 55 58.7	-0.1
CELP	**Cerrillos**	**2.19**	**135**	⇑*e*P		Pn	22 55 34.6	-0.5
CELP				*e*S		Sn	22 56 00.7	-0.8
CBYP	**Canovanas**	**2.60**	**121**	⇑*e*P		Pn	22 55 40.3	-0.4
CBYP	**Canovanas**	**2.60**	**121**	*e*S		Sn	22 56 10.9	-0.6
HUMP	**Col San Antoni**	**2.68**	**123**	⇓*e*P		Pn	22 55 41.5	-0.1
HUMP	**Col San Antoni**	**2.68**	**123**	*e*S		Sn	22 56 13.4	+0.2
MTP	**Monte Pirata**	**2.94**	**121**	⇓*e*P		Pn	22 55 45.2	0.0
MTP	**Monte Pirata**	**2.94**	**121**	*e*S		Sn	22 56 19.0	-0.6

IDC ***20*** *23:04:32.2±11.0,56˚.13N×164˚.45E,h0km,mb3.3/3, mb1 3.6/3,mb1mx3.2/41,mbtmp3.3/3,MS2.7/1,Ms1 2.7/1, ms1mx2.2/31,Error ellipse: s-maj=372.0km s-min=30.7km az=170.0*
KRSC ***20*** *23:04:42.8±0.7,58˚.61N×163˚.59E,h6km±3km,ML4.3*
MOS ***20*** *23:04:44.7±1.6,58˚.63N×163˚.58E,h21km,mb4.4/1,Error ellipse: s-maj=38.8km s-min=17.8km az=87.0*

ISC 20 23:04:46.5±1.2,58˚.73N±0˚.05×162˚.9E±0˚.1,h35km,n15, σ 0s98/16,mb3.3/3,Kamchatka Peninsula

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
					Op	ISC	h m s	ISC
OSSR	**Ossora**	**0.54**	**10**	*e*P		**Pn**	**23 04 56.7**	**-0.9**
OSSR				*e*S		**Sn**	**23 05 06.9**	**+1.5**
OSSR	**Ossora**	**0.54**	**10**	PN		**Pn**	**23 04 56.7**	**-0.9**
OSSR				S		**Sn**	**23 05 06.9**	**+1.5**
PALN	**Palana**	**1.55**	**285**	*e*P		Pn	23 05 19.4	+7.8
PALN	**Palana**	**1.55**	**285**	PN		Pn	23 05 19.4	+7.8
TILK	**Tilichiki**	**2.40**	**43**	*e*P		**Pn**	**23 05 22.5**	**-0.7**
TILK				*e*S		**Sn**	**23 05 52.2**	**+1.0**
TILK	**Tilichiki**	**2.40**	**43**	PN		**Pn**	**23 05 22.5**	**-0.7**
TILK				S		**Sn**	**23 05 52.2**	**+1.0**
KBTR	**Krutoberegovo**	**2.52**	**181**	*e*P		**Pn**	**23 05 24.4**	**-0.5**
KBTR				*e*S		**Sn**	**23 05 55.5**	**+1.1**
KBTR	**Krutoberegovo**	**2.52**	**181**	PN		**Pn**	**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BOAC	Boac	1.08	91	eP	Pb	23 24 39.6	-1.5
BOAC				eS	Sb	23 24 54.1	-1.3
SJMP	San Jose	1.09	160	eP	Pb	23 24 41.5	+0.2
SJMP				eS	Sn	23 24 58.0	+1.1
BUSP	Coron	1.56	199	eP	Pn	23 24 47.5	-0.7
BUSP				eS	Sn	23 25 08.0	-0.7
OTRP	Odiongan	1.68	132	eP	Pn	23 24 50.5	+0.6
GQP	Guinayangan	1.72	76	⇑eP	Pn	23 24 49.8	-0.6
GQP				iS	Sb	23 25 15.3	+1.6
AUQP	San Andres	1.90	95	eP	Pn	23 24 52.4	-0.4
ENPP	El Nido	2.60	210	eP	Pn	23 25 01.5	-1.1
CUYO	Cuyo Island	2.64	174	eP	Pn	23 25 03.2	+0.1
DAV	Davao City (W)	7.96	143	LR	LR	23 30 07.7	
	comp=Z,80nm,18.2s,baz=18,slow=44						
CMAR	Chiang Mai Arr	21.52	286	P	P	23 29 11.5	+1.7
	1.1nm,0.3s,baz=92,slow=8.7,SNR=7.5						
WRA	Warramunga Arr	35.82	158	P	P	23 31 19.8	-0.6
	1.7nm,0.6s,baz=335,slow=9.6,SNR=9.0						
WRA				LR	LR	23 47 36.5	
	comp=Z,84nm,20.4s,baz=190,slow=39						
SONM	Songino Array	36.27	344	P	P	23 31 24.6	+0.5
	0.3nm,0.5s,baz=148,slow=8.4,SNR=3.1						
ASAR	Alice Springs	39.11	161	P	P	23 31 48.2	0.0
	1.2nm,0.6s,baz=340,slow=7.4,SNR=14						
MKAR	Makanchi Array	46.22	324	P	P	23 32 46.9	+1.1
	0.3nm,0.8s,baz=127,slow=9.3,SNR=3.3						
KURBB	Kurchatov Arra	50.38	326	P	P	23 33 16.1	-1.7
	0.4nm,0.8s,baz=128,slow=7.5,SNR=4.3						

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*ISCJB **20** 23:27:11.1±1.3, 35°.82N±0°.08×141°.6E±0°.1, h26km, mb3.2/3, Error ellipse: s-maj=12.6km s-min=10.9km az=1.7*
*JMA **20** 23:27:12.2±0.1, 35°.79N×141°.53E, h38km±2km, M2.9*
*IDC **20** 23:27:13.6±2.5, 36°.71N×141°.38E, h0km, mb3.2/3, mb1 3.3/4, mb1mx3.1/52, mbtmp3.1/4, ML2.6/1, Error ellipse: s-maj=65.1km s-min=29.8km az=61.0*
ISC 20 23:27:12.8±1.9**, 35°.78N**±0°.07×**141°.5E**±0°.1**, h26km, n10, σ0.67**/11**, mb3.2**/3**, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	Chosi	0.50	261	P	Pb	23 27 23.4	+0.4
CHOJ				S	Sn	23 27 31.8	-0.3
JHO	Hitachi	1.10	319	P	Pn	23 27 31.7	-0.8
JYT	Yasato	1.12	294	P	Pn	23 27 32.5	-0.3
JYT				S	Sn	23 27 46.8	-0.6
BSO1	Boso 1	1.20	200	P	Pn	23 27 33.4	+0.1
BSO3	Boso 3	1.25	219	P	Pn	23 27 34.2	-0.2
JFT	Otama	1.96	333	P	Pn	23 27 45.0	+0.7
MJAR	Matsushiro Arr	2.74	287	Pn	Pn	23 27 56.3	+1.1
	1.2nm,0.3s,baz=87,slow=11,SNR=8.2						
MKAR	Makanchi Array	44.83	303	P	P	23 35 23.9	-0.6
	0.2nm,0.8s,baz=84,slow=7.4,SNR=3.0						
KURBB	Kurchatov Arra	46.81	309	P	P	23 35 40.3	+0.3
	0.1nm,0.4s,baz=85,slow=8.1,SNR=3.7						
WRA	Warramunga Arr	55.83	188	P	P	23 36 59.2	+11
	0.2nm,0.5s,baz=4.3,slow=7.5,SNR=2.6						

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*CSEM **20** 23:27:21.0±0.2, 67°.83N×20°.22E, h2km, ML0.8, Error ellipse: s-maj=5.2km s-min=4.1km az=173.0, Mining explosion.*
*UPP **20** 23:27:21.1, 67°.84N×20°.19E, h0km, ML0.8, Mining explosion.*
HEL 20 23:27:22.1, 67°.84N×20°.20E, h0km, ML1.6, Explosion, Sweden

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KUA	Kurravaara	0.13	24	iP	Pg	23 27 23.8	-0.8
KUA				iS	Sg	23 27 25.6	-0.7
KUA	Kurravaara	0.13	24	P	Pg	23 27 23.8	-0.8
KUA				S	Sg	23 27 25.6	-0.7
NIKU	Nikkaluokta	0.44	275	iP	Pg	23 27 29.5	-1.0
NIKU				iS	Sg	23 27 34.8	-1.4
NIKU	Nikkaluokta	0.44	275	P	Pn	23 27 34.8	-0.9
NIKU	Nikkaluokta	0.44	275	P	Pg	23 27 29.5	-1.0
NIKU				S	Sg	23 27 34.8	-1.4
LANU	Lannavaara	0.71	72	eP	Pg	23 27 34.8	-0.9
LANU	Lannavaara	0.71	72	P	Pg	23 27 34.4	-1.3
LANU	Lannavaara	0.71	72	Pg	Pg	23 27 34.7	-1.0
MASU	Masugnsbyn	0.79	118	iP	Pg	23 27 36.0	-1.2
MASU	Masugnsbyn	0.79	118	P	Pg	23 27 36.0	-1.1
SALU	Saltoluokta	0.79	236	iP	Pg	23 27 35.9	-1.3
SALU	Saltoluokta	0.79	236	P	Pg	23 27 35.9	-1.4
KIF	Kilpisjarvi	1.20	11	ePN	Pg	23 27 44.9	-0.1
KIF				eSB	Sg	23 27 59.7	-0.7
KIF	Kilpisjarvi	1.20	11	Pg	Pg	23 27 44.9	-0.1
KIF				Sg	Sg	23 27 59.7	-0.7
PAJU	Pajala	1.39	125	eP	Pg	23 27 46.4	-2.3
PAJU	Pajala	1.39	125	P	Pg	23 27 46.4	-2.3
HEF	Hetta	1.42	65	ePG	Pn	23 27 47.2	-1.9
HEF				MSG		23 28 04.9	
	comp=Z,5.3nm,0.2s						
HEF				eSN	Sn	23 28 10.8	+2.3
HEF	Hetta	1.42	65	Sn	Sn	23 28 10.8	+2.3
HEF	Hetta	1.42	65	Pg	Pn	23 27 47.2	-1.9
ERTU	Ertsjaerv	1.50	148	eP	Pn	23 27 48.6	-1.7
ERTU	Ertsjaerv	1.50	148	P	Pn	23 27 48.6	-1.7
HARU	Harads	1.71	169	eP	Pn	23 27 52.4	-0.6
HARU	Harads	1.71	169	P	Pn	23 27 52.4	-0.7
TOF	Tornio	2.40	135	eP	Pn	23 28 02.8	+0.3
TOF				eSB	Sb	23 28 35.0	-1.1
TOF	Tornio	2.40	135	Sg	Sb	23 28 35.0	-1.1
TOF	Tornio	2.40	135	Pn	Pn	23 28 02.8	+0.3
SGF	Sodankyl	2.45	96	ePG	Pb	23 28 07.0	0.0
SGF				eSG	Sg	23 28 40.0	-0.7
SGF	Sodankyl	2.45	96	Pg	Pb	23 28 07.0	0.0
SGF				Sg	Sg	23 28 40.0	-0.8
RNF	Rovaniemi	2.58	116	ePB	Pn	23 28 06.0	+1.1
RNF				eSG	Sb	23 28 40.8	-0.5
RNF	Rovaniemi	2.58	116	Pb	Pn	23 28 06.0	+1.0
RNF				Sg	Sb	23 28 40.8	-0.5
ARE0	ARCESS Array S	2.58	46	ePB	Pn	23 28 06.0	+0.9
ARE0				eSB	Sb	23 28 39.8	-1.7
ARE0	ARCESS Array S	2.58	46	Pb	Pn	23 28 06.0	+0.9
ARE0				Sg	Sb	23 28 39.8	-1.7
KEV	Kevo	3.14	49	MSG		23 28 54.1	
	comp=Z,1.5nm,0.2s						
KEV				eSB	Sb	23 28 56.4	-1.0

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*CSEM **20** 23:27:23.2±0.4, 67°.75N×20°.67E, h1km, ML0.9, Error ellipse: s-maj=13.6km s-min=6.6km az=28.0, Mining explosion.*
UPP 20 23:27:26.3, 67°.85N×20°.20E, h0km, ML0.9, Mining explosion., Sweden

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KUA	Kurravaara	0.12	26	P	Pg	23 27 28.7	+0.2
KUA				S	Sg	23 27 30.6	+0.5
LANU	Lannavaara	0.70	73	P	Pg	23 27 39.6	-0.2
MASU	Masugnsbyn	0.79	119	P	Pg	23 27 41.1	-0.3
SALU	Saltoluokta	0.80	235	P	Pg	23 27 41.1	-0.5

WEL 20 23:32:11.9±0.7**, 35°.98S×178°.27E, h33km, ML3.5**/4**, 1C, Error ellipse: s-maj=9.4km s-min=5.0km az=90.0, Off east coast of North Island**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MXZ	Matakaoa Point	1.58	179	P*	Pn	23 32 35.8	-1.9
MXZ				S*	Sn	23 32 56.5	-0.5
HAZ	Te Kaha	1.82	192	eP*	Pn	23 32 41.0	+0.1
HAZ				S*	Sn	23 33 03.2	+0.4
WMGZ	Waiomatatini S	1.84	176	ePN	Pn	23 32 40.4	-0.8
PKGZ	Pakihiroa	1.91	185	PN	Pn	23 32 42.2	0.0
PUZ	Puketiti	2.09	180	⇑PN	Pn	23 32 43.7	-1.0
PUZ				SN	Sn	23 33 07.6	-2.0
TWGZ	Tauwhareparae	2.21	186	PN	Pn	23 32 46.1	-0.2
TWGZ				SN	Sn	23 33 12.7	+0.2
MWZ	Matawai	2.42	194	P*	Pn	23 32 49.7	+0.4
MWZ				S*	Sn	23 33 18.3	+0.5
URZ	Urewera	2.46	202	P*	Pn	23 32 50.1	+0.4
URZ				S*	Sn	23 33 17.1	-1.4
URZ				AML	AML	23 33 25.5	
CNGZ	Carnagh Statio	2.50	181	PN	Pn	23 32 49.0	-1.3
RAGZ	Rawiri	2.60	195	P*	Pn	23 32 52.0	+0.2
RIGZ	Rimuhau	2.75	188	PN	Pn	23 32 52.6	-1.2
KNZ	Kokohu	3.08	189	PN	Pn	23 32 55.7	-2.5
KAHZ	Kahuranaki	3.96	196	PN	Pn	23 33 08.4	-2.1
PRHZ	Porangahau	4.47	196	ePN	Pn	23 33 14.5	-2.8
BFZ	Birch Farm	4.96	198	ePN	Pn	23 33 20.8	-3.3

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*NIED **20** 23:34:00, 38°.40N×142°.10E, h32km, Mw3.7 Best double couple: M0 3.55000×10^{14} NP1:φs201.00000°, δ47.00000°, λ-32.00000°. NP2:φs314.00000°, δ67.00000°, λ-133.00000°.*
*JMA **20** 23:34:05.2±0.1, 38°.41N×142°.10E, h38km±1km, M4.0*
JMA Felt I J1.
*IDC **20** 23:34:07.0±2.9, 38°.31N×142°.18E, h48km±28km, mb3.5/7, mb1 3.6/9, mb1mx3.3/48, mbtmp3.7/9, ML3.5/2, MS2.8/1, Ms1 2.8/1, ms1mx2.2/41, Error ellipse: s-maj=28.2km s-min=17.0km az=100.0*
ISC 20 23:34:02.2±3.4**, 38°.39N**±0°.06×**142°.18E**±0°.08**, h7km**±20km**, n17, σ1.28**/23**, mb3.9**/7**, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	Ouri	0.66	276	P	Pn	23 34 17.2	-0.7
JIO				S	Sb	23 34 25.4	+0.1
OFUJ	Ofunato	0.80	330	P	Pn	23 34 19.2	-0.6
OFUJ				S	Sb	23 34 29.0	-0.4
JMK	Ichinoseki	0.94	307	P	Pn	23 34 21.3	-0.5
JMK				S	Sg	23 34 32.7	+0.3
JOU	Okura	1.19	269	P	Pb	23 34 25.0	-0.1
JOU				S	Sb	23 34 39.9	-0.8
JMM	Marumori	1.21	245	P	Pn	23 34 24.6	-0.9
JOM	Ohasama	1.28	328	P	Pn	23 34 26.5	0.0
JOM				S	Sb	23 34 42.2	-1.2
JFK	Kawauchi	1.45	226	P	Pn	23 34 28.0	-0.9
MJAR	Matsushiro Arr	3.66	241	P	Pn	23 35 00.9	+1.7
	3.6nm,0.3s,baz=61,slow=11,SNR=18						
MJAR				LR	LR	23 36 35.9	
	comp=Z,116nm,18.1s,baz=45,slow=41						
MAT	Matsushiro	3.66	241	P	Pn	23 35 01.3	+2.1
MAT				eS	Sn	23 35 45.3	+2.7
ASAJ	Asahikawa	5.73	3	P	Pn	23 35 29.6	+1.9
	1.3nm,0.3s,baz=200,slow=7.7,SNR=4.5						
SEY	Seymchan	25.35	11	P	P	23 39 30.5	+1.1
	0.6nm,0.2s,baz=0.0,slow=20,SNR=3.0						
ZALV	Zalesovo Beam	41.47	311	P	P	23 41 49.4	0.0
	0.3nm,0.3s,baz=98,slow=10,SNR=2.5						
MKAR	Makanchi Array	43.93	301	P	P	23 42 10.4	+0.8
	0.2nm,0.4s,baz=89,slow=10,SNR=3.6						
KURBB	Kurchatov Arra	45.66	307	P	P	23 42 21.8	-1.4
	1.1nm,0.4s,baz=81,slow=8.0,SNR=11						
ILAR	Eielson Array	48.03	33	P	P	23 42 41.3	-0.2
	0.1nm,0.6s,baz=282,slow=4.5,SNR=4.0						
WRA	Warramunga Arr	58.49	189	P	P	23 43 57.4	-1.6
	1.7nm,0.4s,baz=6.2,slow=7.2,SNR=8.7						
ASAR	Alice Springs	62.22	189	P	P	23 44 23.2	-1.2
	0.9nm,0.6s,baz=8.0,slow=6.5,SNR=12						

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*ISCJB **20** 23:38:36.0±0.5, 36°.90N±0°.04×71°.33E±0°.06, h100km, mb3.5/6, Error ellipse: s-maj=7.3km s-min=5.1km az=146.3*
*IDC **20** 23:38:36.4±3.3, 36°.83N×71°.45E, h85km±28km, mb3.4/6, mb1 3.5/12, mb1mx3.2/56, mbtmp3.7/12, MS3.2/4, Ms1 3.2/4, ms1mx2.7/30, Error ellipse: s-maj=29.2km s-min=21.6km az=33.0*
*NNC **20** 23:38:40.7±8.9, 37°.25N×70°.97E, h88km±252km, mb3.6, mpv4.1, Error ellipse: s-maj=86.9km s-min=70.5km az=96.0*
ISC 20 23:38:36.8±0.7**, 36°.90N**±0°.06×**71°.44E**±0°.06**, h100km, n28, σ2.62**/34**, mb3.5**/6**, 8C-2D, Afghanistan-Tajikistan border region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SFK	Sufi-Kurgan	3.50	27	⇑P	Pn	23 39 32.2	+2.7
	19nm,0.4s						
SFK				⇓S	Sn	23 40 12.0	+1.8
	113nm,0.5s						
MNAS	Manas	5.64	8	⇑P	Pn	23 39 59.4	+1.1
	11nm,0.5s						
MNAS				⇑S	Sn	23 40 58.6	-3.1
	12nm,0.4s						
THN	Thein Dam	5.68	140	eP	Pn	23 40 03.0	+4.2
THN				eS	Sn	23 41 05.0	+2.3
AAK	Ala-Archa	6.19	21	P	Pn	23 40 07.4	+1.6
	4.9nm,0.3s,baz=174,slow=6.2,SNR=91						
AAK				S	Sn	23 41 13.5	-1.7
	2.4nm,0.3s,baz=132,slow=24,SNR=17						
AAK	Ala-Archa	6.19	21	⇑P	Pn	23 40 07.1	+1.4
	11nm,0.5s						
AAK				⇑S	Sn	23 41 12.8	-2.4
	7.9nm,0.3s						
KK31	Karatay Array	6.24	354	P	Pn	23 40 06.8	+0.5
	10nm,0.3s,baz=182,slow=13,SNR=351						
KK31				⇑S	Sn	23 41 12.8	-3.2
	8.8nm,0.3s,baz=176,slow=21						
TKM2	Tokmak 2	6.81	27	⇓P	Pn	23 40 15.1	+0.9
	7.3nm,0.6s						
GEYT	Alibeck	10.64	280	P	Pn	23 41 05.5	-0.7
	0.3nm,0.3s,baz=108,slow=9.4,SNR=4.4						
GEYT				S	Sn	23 43 01.1	-2.3
	0.9nm,0.3s,baz=135,slow=25,SNR=5.6						
MKAR	Makanchi Array	12.76	36	P	Pn	23 41 35.0	+0.6
	0.1nm,0.3s,baz=222,slow=13,SNR=6.6						
PYUN	Piuthan	13.11	129	ePn	Pn	23 41 40.2	+0.9
PYUN				eSn	Sn	23 43 56.8	-6.8
	23nm,0.5s						
KOLN	Koldanda	13.72	128	ePn	Pn	23 41 47.0	-0.3
KOLN				eSn	Sn	23 44 11.1	-7.4
	8.8nm,0.5s						
GKN	Gorkha	14.23	125	ePn	Pn	23 41 54.5	+0.6
GKN				eSn	Sn	23 44 22.1	-8.7
	12nm,0.5s						
KURBB	Kurchatov Arra	14.63	18	P	Pn	23 41 58.2	-0.4
	0.0nm,0.3s,baz=212,slow=11,SNR=3.3						
KKN	Kakani	14.80	124	ePn	Pn	23 42 00.9	-0.3
KKN				eSn	Sn	23 44 34.8	-10
AB31	Akbulak array	14.91	330	P	Pn	23 42 00.1	-2.0
	0.7nm,0.3s,baz=160,slow=11,SNR=37						
AB31				⇑S	Sn	23 44 31.8	-15
	2.9nm,0.7s,baz=158,slow=23						
PKIN	Phulchoki	15.02	124	ePn	Pn	23 42 05.2	+1.2
PKIN				eSn	Sn	23 44 41.5	-8.4
	8.0nm,0.5s						
AKTO	Aktyubinsk	16.61	329	P	P	23 42 24.6	+0.4
	0.4nm,0.3s,baz=127,slow=11,SNR=8.8						
AKTO	Aktyubinsk	16.61	329	⇑P	P	23 42 23.7	-0.5
	2.6nm,0.8s						
ZALV	Zalesovo Beam	19.41	24	P	P	23 42 55.5	+0.7
	0.6nm,0.3s,baz=222,slow=10,SNR=11						
ZALV				LR	LR	23 51 36.8	
	comp=Z,41nm,19.2s,baz=70,slow=40						
NRIK	Noril'sk	33.67	10	LR	LR	00 02 06.6	
	comp=Z,22nm,20.5s,baz=104,slow=42						
FINES	FINESS Array B	37.35	326	P	P	23 45 40.8	+1.6
	0.4nm,0.5s,baz=115,slow=13,SNR=4.0						
ARCES	ARCESS Array B	40.91	337	P	P	23 46 10.1	+1.3
	3.4nm,0.9s,baz=117,slow=9.7,SNR=6.4						
NOA	NORSAR Array B	44.27	323	P	P	23 46 38.0	+1.9
	0.6nm,0.6s,baz=96,slow=7.8,SNR=3.9						
KSRS	Korea Array	44.42	71	LR	LR	00 08 54.5	
	comp=Z,58nm,19.5s,baz=124,slow=41						
DAV	Davao City (W)	57.38	107	LR	LR	00 14 34.8	
	comp=Z,39nm,18.6s,baz=312,slow=38						
YKA	Yellowknife Ar	80.83	3	P	P	23 50 40.6	+1.6
	0.5nm,0.6s,baz=349,slow=5.4,SNR=13						
WRA	Warramunga Arr	81.91	122	P	P	23 50 46.5	+1.0
	0.2nm,0.3s,baz=328,slow=4.9,SNR=6.8						
ASAR	Alice Springs	84.20	125	P	P	23 50 58.3	+1.1
	0.2nm,0.6s,baz=309,slow=5.9,SNR=2.3						

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*IDC **20** 23:39:59.4±5.9, 50°.00N×160°.04E, h0km, mb3.4/3, mb1 3.8/4, mb1mx3.3/53, mbtmp3.4/4, ML2.3/1, MS2.3/1, Ms1 2.3/1, ms1mx2.0/42, Error ellipse: s-maj=119.1km s-min=34.0km az=45.0*
*KRSC **20** 23:40:00.5±1.1, 50°.11N×160°.25E, h46km±24km, ML4.0*
*MOS **20** 23:40:06.5±1.0, 50°.45N×160°.44E, h33km, mb4.2/1, Error ellipse: s-maj=22.8km s-min=6.2km az=104.0*
ISC 20 23:40:05.4±1.6**, 50°.1N**±0°.1×**160°.17E**±0°.08**, h35km, n36, σ0.92**/52**, mb3.3**/3**, East of Kuril Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RUS	Russkaya	2.52	336	eP	Pn	23 40 42.1	-1.6
RUS				eS	Sn	23 41 12.3	-0.8
RUS	Russkaya	2.52	336	PN	Pn	23 40 42.1	-1.6
RUS				S	Sn	23 41 12.3	-0.8
SKR	Severo-Kuril's	2.65	283	PN	Pn	23 40 51.5	+6.0
SKR				pmax	pmax		
	comp=Z,50nm,0.3s						
MTVR	Mutnovka	2.65	333	eP	Pn	23 40 44.4	-1.4
MTVR				eS	Sn	23 41 17.0	+0.3
MTVR	Mutnovka	2.65	333	PN	Pn	23 40 44.4	-1.4
MTVR				S	Sn	23 41 17.0	+0.3
ASAK	Asacha	2.66	328	eP	Pn	23 40 44.6	-1.2
ASAK				eS	Sn	23 41 16.9	+0.2
ASAK	Asacha	2.66	328	PN	Pn	23 40 44.6	-1.2
ASAK				S	Sn	23 41 16.9	+0.2
KRMR	Karymshinskiy	2.98	335	eP	Pn	23 40 49.0	-1.1
KRMR				eS	Sn	23 41 24.9	+0.4
KRMR	Karymshinskiy	2.98	335	PN	Pn	23 40 49.0	-1.1
KRMR				S	Sn	23 41 24.9	+0.4
DALK	Dalny	3.02	344	eP	Pn	23 40 49.5	-1.2
DALK				eS	Sn	23 41 25.5	-0.1
DALK	Dalny	3.02	344	PN	Pn	23 40 49.5	-1.2
DALK				S	Sn	23 41 25.5	-0.1
PET	Petropavlovsk	3.03	342	eS	Sn	23 41 26.5	+0.6
NLC	Nalytchevo	3.07	351	eS	Sn	23 41 27.9	+1.0
UGLR	Uglovaya	3.18	345	eP	Pn	23 40 52.7	-0.3
UGLR	Uglovaya	3.18	345	PN	Pn	23 40 52.7	-0.3
SMAR	Somma	3.24	345	eP	Pn	23 40 54.1	+0.2
SMAR	Somma	3.24	345	PN	Pn	23 40 54.1	+0.2
AVH	Avacha	3.25	345	eP	Pn	23 40 53.4	-0.5
AVH				eS	Sn	23 41 32.5	+1.1
AVH	Avacha	3.25	345	PN	Pn	23 40 53.4	-0.5
AVH				S	Sn	23 41 32.5	+1.1
KRER	Koryakskii	3.29	345	eP	Pn	23 40 54.4	-0.1
KRER	Koryakskii	3.29	345	PN	Pn	23 40 54.4	-0.1
PETK	Petropavlovsk-	3.34	334	Pn	Pn	23 40 54.5	-0.6
	comp=Z,1.5nm,0.3s,baz=117,slow=18,SNR=13						
PETK				Sn	Sn	23 41 35.9	+2.3
	comp=Z,1.7nm,0.3s,baz=85,slow=16,SNR=5.0						
PETK				LR	LR	23 42 49.3	
	comp=Z,41nm,18.4s,baz=161,slow=49						
KRX	Arik	3.35	344	eP	Pn	23 40 54.5	-0.9
KRX	Arik	3.35	344	PN	Pn	23 40 54.5	-0.9
APC	Apacha	3.36	327	eP	Pn	23 40 54.4	-0.9
APC				eS	Sn	23 41 34.4	+0.5
APC	Apacha	3.36	327	PN	Pn	23 40 54.4	-0.9
APC				S	Sn	23 41 34.4	+0.5
GNL	Ganaly	3.81	340	eP	Pn	23 41 01.3	-0.4
GNL	Ganaly	3.81	340	PN	Pn	23 41 01.3	-0.4
TUMD	Tumrok D	5.07	2	eP	Pn	23 41 19.0	+0.1
TUMD				eS	Sn	23 42 16.6	+0.5
TUMR	Tumrok	5.15	360	PN	Pn	23 41 19.0	-1.0
TUMR				S	Sn	23 42 16.6	-1.6
BKI	Bering	6.18	33	eS	Sn	23 42 41.8	-1.5
KBTR	Krutoberegovo	6.28	14	eP	Pn	23 41 35.2	-0.2
KBTR	Krutoberegovo	6.28	14	PN	Pn	23 41 35.2	-0.2
ILAR	Eielson Array	30.93	42	P	P	23 46 18.4	-0.1
	comp=Z,0.3nm,0.6s,baz=248,slow=8.0,SNR=7.8						
YKA	Yellowknife Ar	45.34	41	P	P	23 48 20.8	+1.2
	comp=Z,0.2nm,0.6s,baz=298,slow=7.7,SNR=2.9						
TXAR	Lajitas Array	71.78	66	P	P	23 51 24.3	0.0
	comp=Z,0.4nm,0.5s,baz=309,slow=4.9,SNR=8.8						

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*IDC **20** 23:48:29.0±10.0, 36°.65N×142°.75E, h0km, mb3.5/2, mb1 3.5/3, mb1mx3.2/43, mbtmp3.5/3, ML3.4/1, MS2.3/1, Ms1 2.3/1, ms1mx1.9/45, Error ellipse: s-maj=177.5km s-min=75.5km az=136.0*
*JMA **20** 23:48:39.7±0.2, 37°.04N×141°.73E, h32km±3km, M3.4*
ISC 20 23:48:40.9±2.4**, 37°.07N**±0°.10×**141°.8E**±0°.2**, h35km, n12, σ1.91**/15**, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	Kawauchi	0.80	292	P	Pn	23 48 54.0	-1.7
ONAJ	Iwakimizuishiy	0.81	273	P	Pn	23 48 53.9	-1.9
ONAJ				S	Sn	23 49 03.3	-3.4
JHO	Hitachi	1.10	246	P	Pn	23 48 57.5	-2.2
JMM	Marumori	1.14	315	P	Pn	23 48 59.1	-1.1
JFT	Otama	1.26	291	P	Pn	23 49 01.5	-0.4
JIO	Ouri	1.43	345	P	Pn	23 49 03.5	-0.8
JOU	Okura	1.58	325	P	Pn	23 49 06.3	-0.1
JOU				S	Sn	23 49 26.2	+0.5
JFY	Yanaizu	1.71	282	P	Pn	23 49 08.1	-0.1
MJAR	Matsushiro Arr	2.94	261	Pn	Pn	23 49 26.4	+1.4
	2.8nm,0.3s,baz=86,slow=15,SNR=12						
MJAR				LR	LR	23 50 58.5	
	comp=Z,37nm,19.6s,baz=220,slow=41						
MAT	Matsushiro	2.94	261	P	Pn	23 49 25.6	+0.5
MAT				S	Sn	23 50 03.0	+3.8
SONM	Songino Array	28.03	304	P	P	23 54 29.9	+1.2
	0.3nm,0.5s,baz=99,slow=8.9,SNR=3.3						
MKAR	Makanchi Array	44.37	302	P	P	23 56 47.5	-0.2
	0.6nm,0.9s,baz=81,slow=8.9,SNR=4.5						

KRSC 20 23:53:13.3±1.2**, 58°.62N×163°.70E, h6km**±9km**, ML4.1, Kamchatka Peninsula**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OSSR	Ossora	0.71	333	eP	Pb	23 53 27.7	-0.4
OSSR				eS	Sb	23 53 37.7	-0.4
PALN	Palana	2.00	285	eP	Pb	23 53 50.4	+0.5
TILK	Tilichiki	2.21	33	eP	Pn	23 53 52.0	+1.5
TILK				eS	Sb	23 54 21.8	+0.5
KBTR	Krutoberegovo	2.46	191	eP	Pn	23 53 55.4	+1.4
KBTR				eS	Sn	23 54 26.4	+2.1

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*NIED **21** 00:01:00, 36°.70N×142°.40E, h20km, Mw3.8 Best double couple: M0 5.18000×10^{14} NP1:φs197.00000°, δ26.00000°, λ86.00000°. NP2:φs21.00000°, δ64.00000°, λ92.00000°.*
*JMA **21** 00:01:48.5±0.3, 36°.74N×142°.41E, h16km±4km, M3.8*
*ISCJB **21** 00:01:49.6±1.9, 36°.71N±0°.05×142°.39E±0°.06, h25km±15km, mb3.5/8, MS2.9/1, Error ellipse: s-maj=9.0km s-min=8.2km az=24.8*
*IDC **21** 00:01:53.9±5.0, 36°.75N×142°.32E, h41km±45km, mb3.3/8, mb1 3.5/9, mb1mx3.3/44, mbtmp3.6/9, ML3.6/1, MS2.7/4, Ms1 2.7/4, ms1mx2.4/28, Error ellipse: s-maj=28.9km s-min=19.8km az=87.0*
ISC 21 00:01:51.2±1.0**, 36°.76N**±0°.06×**142°.29E**±0°.08**, h20km**±6km**, n32, σ0.73**/31**, mb3.6**/8**, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	Iwakimizuishiy	1.24	286	P	Pn	00 02 12.6	-0.9
ONAJ				eS	Sn	00 02 30.3	+0.6
JFK	Kawauchi	1.28	298	P	Pn	00 02 13.0	-1.1
JFK				eS	Sb	00 02 30.9	+0.1
JHO	Hitachi	1.39	264	P	Pn	00 02 14.7	-0.8
JMM	Marumori	1.62	313	P	Pn	00 02 18.3	-0.4
JMM				eS	Sb	00 02 40.3	-0.2
JFT	Otama	1.73	296	P	Pn	00 02 20.5	+0.3
JFT				eS	Sb	00 02 43.4	-0.3
JIO	Ouri	1.85	336	P	Pn	00 02 20.9	-0.9
JOU	Okura	2.06	322	P	Pn	00 02 24.4	-0.3
JFY	Yanaizu	2.16	288	P	Pn	00 02 26.5	+0.3
JAG	Ashikaga	2.31	262	P	Pn	00 02 28.1	0.0
JAG				eS	Sn	00 02 56.2	+0.3
JMK	Ichinoseki	2.34	339	P	Pn	00 02 28.4	-0.2
JMK				S	Sn	00 02 56.9	+0.1
JYK	Kaneyama	2.64	325	P	Pn	00 02 32.7	0.0
JRY	Ryogami san	2.83	256	P	Pn	00 02 35.0	-0.4
MJAR	Matsushiro Arr	3.29	267	P	Pn	00 02 42.7	+1.0
	7.0nm,0.3s,baz=87,slow=14,SNR=32						
MJAR				S	Sb	00 03 27.4	-1.1
	3.2nm,0.3s,baz=80,slow=9.2,SNR=5.7						
MJAR				LR	LR	00 03 52.2	
	comp=Z,58nm,19.0s,baz=105,slow=36						
MAT	Matsushiro	3.29	267	P	Pn	00 02 42.7	+1.0
MAT				eS	Sn	00 03 18.4	-1.8
ASAJ	Asahikawa	7.35	2	LR	LR	00 06 55.0	
	comp=Z,57nm,18.2s,baz=334,slow=41						
JNU	Nakatsue	10.04	252	LR	LR	00 08 03.3	
	comp=Z,32nm,21.4s,baz=312,slow=37						
USRK	Ussuriysk Ar.	10.80	317	P	Pn	00 04 32.0	+7.4
	0.2nm,0.3s,baz=135,slow=13,SNR=3.8						

H11N2 WAKE ISLAND Hy 27.41 122 T T 00 36 16.4
baz=314,slow=75,SNR=6.4
H11N1 WAKE ISLAND Hy 27.41 122 T T 00 36 13.2
baz=314,slow=75,SNR=5.8
H11N3 WAKE ISLAND Hy 27.43 122 T T 00 36 17.3
baz=314,slow=75,SNR=6.0
H11S1 WAKE ISLAND Hy 28.12 124 T T 00 37 15.6
baz=321
H11S3 WAKE ISLAND Hy 28.12 124 T T 00 37 15.4
baz=321
H11S2 WAKE ISLAND Hy 28.14 124 T T 00 37 18.6
baz=321
SONM Songino Array 28.52 304 P **P 00 07 46.2 +0.8**
2.8nm,0.8s,baz=103,slow=8.6,SNR=20
TLY Talaya 31.04 311 LR LR 00 20 41.5
comp=Z,24nm,18.6s,baz=25,slow=36
ZALV Zalesovo Beam 42.61 313 P **P 00 09 45.9 0.0**
0.4nm,0.4s,baz=82,slow=10,SNR=3.6
MKAR Makanchi Array 44.86 302 P **P 00 10 04.1 +0.1**
0.7nm,0.7s,baz=86,slow=9.2,SNR=10
ILAR Eielson Array 49.35 32 P **P 00 10 38.9 +0.1**
0.3nm,0.6s,baz=259,slow=6.6,SNR=6.1
WRA Warramunga Arr 56.90 189 P **P 00 11 33.5 -1.3**
0.2nm,0.6s,baz=5.4,slow=7.0,SNR=4.2
WRA pP **sP 00 11 44.1 +0.4**
0.3nm,0.6s,baz=3.0,slow=7.6,SNR=2.7
ASAR Alice Springs 60.62 189 P **P 00 12 01.5 +0.8**
0.4nm,0.7s,baz=305,slow=6.9,SNR=4.2
YKA Yellowknife Ar 63.69 30 P **P 00 12 20.5 -0.3**
0.1nm,0.7s,baz=305,slow=6.9,SNR=4.2
AKASG Malin Array Be 74.94 323 P **P 00 13 30.4 -0.2**
0.4nm,0.5s,baz=50,slow=4.1,SNR=4.5

SJA 21 00:02:41.8±0.5,31°.69S×68°.98W,h102km±2km, ML2.0, MW3.5, San Juan Province

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
RTLS	**Leoncito**	**0.29**	**248**	*i* P			Pn	00 02 58.1	+1.2
RTLS				*i* S			Sn	00 03 10.2	+1.9
RTCV	**Cerro Valdivia**	**0.41**	**114**	*i* P			Pn	00 02 58.2	+0.9
RTCV				*i* S			Sn	00 03 09.7	+0.7
RTLL	**Cerro Villicun**	**0.56**	**50**	*i* P			Pn	00 02 59.1	+0.7
RTLL				*i* S			Sn	00 03 11.8	+1.1
AUSP	**Uspallata**	**0.63**	**213**	*i* P			Pn	00 03 00.3	+1.1
AUSP				*i* S			Sn	00 03 13.7	+1.5
ASAL	**Salagasta**	**0.91**	**172**	*i* P			Pn	00 03 02.2	+0.7
ARCO	**CERRO ARCO**	**1.15**	**178**	*i* P			Pn	00 03 05.2	+1.0
ARCO				IAML				00 03 24.5	
	comp=Z,23nm,0.2s								
AAGR	**Agrelo**	**1.40**	**175**	*i* P			Pn	00 03 08.1	+1.0
AAGR				*i* S			Sn	00 03 27.9	+1.7
AGUA	**GUANDACOL**	**2.24**	**11**	*i* P			Pn	00 03 18.8	+1.1

*CSEM **21** 00:03:10.8, 42°.55N×13°.30E, h14km, MD1.9/10*
ROM 21 00:03:10.8±0.1, 42°.55N×13°.30E, h14km, Md1.9/10, Ml1.3/4, Error ellipse: s-maj=0.7km s-min=0.6km az=107.0, Central Italy

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
RM32	**Poggio Cancell**	**0.02**	**353**	Pg		Pg	Pg	00 03 13.8	+0.2
RM32				Sg		Sg	Sg	00 03 15.6	+0.1
	131nm,0.2s								
RM32	**Poggio Cancell**	**0.02**	**353**	Pg		Pg	Pg	00 03 13.8	+0.2
RM32				Sg		Sg	Sg	00 03 15.6	+0.1
	131nm,0.2s								
RM29	**Verrico (Monte**	**0.07**	**282**	Pg		Pg	Pg	00 03 14.1	+0.2
RM29				Sg		Sg	Sg	00 03 16.2	+0.3
	116nm,0.3s								
RM29	**Verrico (Monte**	**0.07**	**282**	Pg		Pg	Pg	00 03 14.1	+0.2
RM29				Sg		Sg	Sg	00 03 16.2	+0.3
	116nm,0.3s								
RM33	**Pellescritta (**	**0.07**	**239**	Pg		Pg	Pg	00 03 14.1	+0.3
RM33				Sg		Sg	Sg	00 03 16.0	+0.1
	143nm,0.2s								
RM33	**Pellescritta (**	**0.07**	**239**	Pg		Pg	Pg	00 03 14.1	+0.3
RM33				Sg		Sg	Sg	00 03 16.0	+0.1
	143nm,0.2s								
CAMP	**Campotosto**	**0.08**	**97**	Pg		Pg	Pg	00 03 14.3	+0.3
CAMP				Sg		Sg	Sg	00 03 16.4	+0.3
	47nm,0.3s								
CAMP	**Campotosto**	**0.08**	**97**	Pg		Pg	Pg	00 03 14.3	+0.3
CAMP				Sg		Sg	Sg	00 03 16.4	+0.3
	47nm,0.3s								
SMA1	**SAN MARTINO**	**0.09**	**19**	Pg		Pg	Pg	00 03 14.4	+0.3
SMA1				Sg		Sg	Sg	00 03 16.7	+0.5
	578nm,0.2s								
SMA1	**SAN MARTINO**	**0.09**	**19**	Pg		Pg	Pg	00 03 14.4	+0.3
SMA1				Sg		Sg	Sg	00 03 16.7	+0.5
	578nm,0.2s								
T0104	**Madonna delle**	**0.19**	**171**	Pg		Pg	Pb	00 03 15.7	-0.3
T0104				Sg		Sg	Sb	00 03 19.2	-0.3
LNSS	**Leonessa**	**0.20**	**287**	Pg		Pg	Pg	00 03 15.8	+0.3
LNSS				Sg		Sg	Sb	00 03 19.4	-0.5
	76nm,0.3s								
LNSS	**Leonessa**	**0.20**	**287**	Pg		Pg	Pg	00 03 15.8	+0.3
LNSS				Sg		Sg	Sb	00 03 19.4	-0.5
	76nm,0.3s								
TERO	**Teramo**	**0.24**	**71**	Pg		Pg	Pg	00 03 16.3	+0.2
TERO				Sg		Sg	Sg	00 03 20.2	+0.6
	26nm,0.3s								
TERO	**Teramo**	**0.24**	**71**	Pg		Pg	Pg	00 03 16.3	+0.2
TERO				Sg		Sg	Sg	00 03 20.2	+0.6
	26nm,0.3s								
FIAM	**Fiamignano**	**0.31**	**206**	Pg		Pg	Pg	00 03 17.6	+0.3
FIAM				Sg		Sg	Sb	00 03 22.4	-0.6
	15nm,0.4s								
FIAM	**Fiamignano**	**0.31**	**206**	Pg		Pg	Pg	00 03 17.6	+0.3
FIAM				Sg		Sg	Sb	00 03 22.4	-0.6
	15nm,0.4s								
NRCA	**Norcia**	**0.32**	**335**	Pg		Pg	Pg	00 03 17.7	+0.3
NRCA				Sg		Sg	Sb	00 03 22.7	-0.6
	35nm,0.1s								
NRCA	**Norcia**	**0.32**	**335**	Pg		Pg	Pg	00 03 17.7	+0.3
NRCA				Sg		Sg	Sb	00 03 22.7	-0.6
	35nm,0.1s								

*ISCJB **21** 00:10:36.6±1.4, 65°.50N±0°.03×124°.72E±0°.07, h6km±9km, mb4.3/54, MS2.8/3, Error ellipse: s-maj=5.5km s-min=4.4km az=145.9*
*MOS **21** 00:10:38.6±1.1, 65°.58N×124°.50E, h17km, mb4.5/30, Error ellipse: s-maj=13.5km s-min=6.8km az=97.5*
*YARS **21** 00:10:39.9±0.3, 65°.09N±0°.04×125°.95E±0°.04, h10km*
*IDC **21** 00:10:40.7±0.3, 65°.59N×124°.78E, h20km±2km, mb4.1/35, mb1 4.3/38, mb1mx4.2/58, mbtmp4.3/38, ML3.7/2, MS2.8/6, Ms1 2.8/6, ms1mx2.7/44, Error ellipse: s-maj=8.9km s-min=6.1km az=60.0*
*NEIC **21** 00:10:40.9±1.9, 65°.60N×124°.71E, h22km±14km, mb4.5/21, Error ellipse: s-maj=4.2km s-min=4.1km az=149.0*
ISC 21 00:10:39.5±0.3, 65°.50N±0°.03×124°.77E±0°.04, h16km±1km, h16km:pP-P, n180, σ1°.68/220, mb4.4/54, MS2.8/3, 22C-4D, Northern and central Siberia

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
YAK	**Yakutsk**	**4.11**	**146**	Pn			Pn	**00 11 43.8**	**+2.4**
	0.1nm,0.3s,baz=170,slow=1.4,SNR=11								
YAK				Pg			**Pg**	**00 11 57.0**	**-1.1**
	0.2nm,0.3s,baz=154,slow=3.6,SNR=15								
YAK				Sn			**Sn**	**00 12 29.4**	**+0.3**
	0.3nm,0.3s,baz=341,slow=13,SNR=19								
YAK				Lg			Lg	00 12 53.4	
	0.2nm,0.3s,baz=99,slow=20,SNR=3.5								
YAK	**Yakutsk**	**4.11**	**146**	*e*P			Pn	**00 11 43.7**	**+2.2**
YAK				*e*				00 12 31.0	
YAK				pmax		pmax			
	comp=Z,194nm,0.5s								
YAK				pmax		pmax			
	comp=N,61nm,0.4s								
YAK				pmax		pmax			
	comp=E,36nm,0.3s								
YAK				smax		smax			
	comp=E,208nm,0.3s								
YAK				smax		smax			
	comp=N,156nm,0.3s								
YAK				smax		smax			
	comp=Z,200nm,14.6s								
YAK	**Yakutsk**	**4.11**	**146**	*e*P			**Pn**	**00 11 43.1**	**+1.6**
YAK				*e*S			**Sn**	**00 12 27.5**	**-1.6**
NBS	**Nizhniy Bestya**	**4.24**	**145**	*e*P			**Pn**	**00 11 45.7**	**+2.4**
NBS				*e*S			**Sn**	**00 12 32.7**	**+0.3**
TBGR	**Tabaga**	**4.28**	**147**	*e*P			**Pn**	**00 11 45.9**	**+2.0**
TBGR				*e*S			**Sn**	**00 12 33.1**	**-0.3**
BTGS	**Batagay**	**4.49**	**57**	*e*P			**Pn**	**00 11 46.7**	**-0.1**
BTGS				*e*P			**Pb**	**00 11 57.6**	**-0.3**
BTGS				*e*S			**Sn**	**00 12 35.6**	**-2.9**
BTGS				*e*S			**Sb**	**00 12 54.0**	**+2.4**
OLMR	**Olekminsk**	**5.51**	**203**	*e*P			**Pn**	**00 12 00.0**	**-0.7**
OLMR				*e*P			**Pb**	**00 12 16.0**	**+0.9**
OLMR				*e*S			**Sn**	**00 12 59.0**	**-4.5**
OLMR				*e*S			**Sb**	**00 13 25.8**	**+5.0**
TIXI	**Tiksi**	**6.36**	**12**	Pn			**Pn**	**00 12 11.4**	**-0.9**
	comp=Z,13nm,0.3s,baz=196,slow=8.9,SNR=66								
TIXI				Sn			**Sn**	**00 13 17.7**	**-6.7**
	comp=Z,35nm,0.3s,baz=328,slow=8.8,SNR=8.2								
TIXI				Lg			Lg	00 13 59.4	
	comp=Z,18nm,0.3s,baz=310,slow=23,SNR=8.5								
TIXI				LR			LR	00 15 29.5	
	comp=Z,28nm,18.7s,baz=200,slow=46								
TIXI	**Tiksi**	**6.36**	**12**	*e*Pn			Pn	00 12 19.4	+7.1
TIXI				*e*S			**Sn**	**00 13 31.5**	**+7.1**
TIXI	**Tiksi**	**6.36**	**12**	*e*Pn			**Pn**	**00 12 10.3**	**-2.0**
TIXI				*e*Sn			**Sn**	**00 13 17.7**	**-6.7**
ALDR	**Aldan**	**6.92**	**177**	*e*S			Sn	00 13 27.7	-11
DEPR	**Deputatskiy**	**7.00**	**49**	*e*S			Sb	00 14 13.7	+10
DEPR				Smax				00 14 13.7	
	comp=N,373nm,1.5s								
CGD	**Chagda**	**7.30**	**155**	*e*P			Pb	00 12 41.7	-4.0
CGD				*e*S			Sn	00 13 32.5	-15
MOMR	**Moma**	**7.58**	**74**	*e*P			**Pb**	**00 12 50.3**	**-0.2**
MOMR				*e*S			**Sb**	**00 14 22.3**	**+1.9**
UNR	**Ust'-Nera**	**7.86**	**88**	*e*S			Sn	00 13 48.7	-13
VTMR	**Vitim**	**8.29**	**229**	*e*P			**Pn**	**00 12 42.9**	**+4.0**
VTMR				*e*S			**Sn**	**00 14 13.2**	**+1.1**
CLNS	**Chul'man**	**8.69**	**180**	*e*P			**Pn**	**00 12 41.5**	**-3.0**
CLNS				*e*S			Sn	00 14 10.1	-12
ATKR	**Artyk**	**8.77**	**89**	*e*P			Pn	00 12 40.4	-5.0
ATKR				*e*S			Sn	00 14 09.3	-14
KHN	**Khani**	**8.93**	**198**	*e*P			**Pn**	**00 12 47.1**	**-0.7**
KHN				*e*S			**Sn**	**00 14 19.8**	**-8.1**
YKLR	**Yuktali**	**9.06**	**191**	*e*P			**Pn**	**00 12 48.0**	**-1.5**
YKLR				*e*S			Sn	00 14 22.1	-9.0
IENR	**Iengra**	**9.31**	**180**	*e*P			**Pn**	**00 12 50.3**	**-2.6**
IENR				*e*P				00 13 19.5	
IENR				*e*S			Sn	00 14 24.8	-12
IENR				*e*S				00 15 16.2	
SEY	**Seymchan**	**12.24**	**89**	Pn			Pn	00 13 38.1	+5.2
	comp=N,0.7nm,0.3s,baz=342,slow=20,SNR=4.1								
SEY				Lg			Lg	00 17 12.8	
	comp=N,0.4nm,0.3s,baz=26,slow=17,SNR=4.5								
MA2	**Magadan**	**13.31**	**104**	LR			LR	00 19 43.8	
	comp=N,68nm,21.7s,baz=324,slow=41								
NRIK	**Noril'sk**	**14.62**	**302**	Pn			**Pn**	**00 14 02.1**	**-3.3**
	comp=N,0.7nm,0.3s,baz=92,slow=14,SNR=7.9								
NRIK				Sn			Sn	00 16 35.2	-12
	comp=N,1.0nm,0.3s,baz=316,slow=8.9,SNR=5.0								
NRIK				Lg			Lg	00 18 02.9	
	comp=N,3.1nm,0.3s,baz=12,slow=23,SNR=7.5								
KLR	**Kul'dur**	**16.72**	**164**	Pn			**P**	**00 14 36.4**	**+1.4**
	comp=N,0.3nm,0.3s,baz=340,slow=12,SNR=11								
KLR				Lg			Lg	00 19 31.9	
	comp=N,0.2nm,0.3s,baz=258,slow=20,SNR=4.7								
KLR				LR			LR	00 20 26.5	
	comp=N,23nm,19.5s,baz=318,slow=35								
TLY	**Talaya**	**17.55**	**228**	P			**Pn**	**00 14 39.4**	**-3.8**
	comp=N,0.0nm,0.3s,baz=38,slow=13,SNR=3.4								
TLY	**Talaya**	**17.55**	**228**	*e*P			**Pn**	**00 14 38.3**	**-4.9**
TLY				pmax		pmax			
	comp=Z,4.0nm,0.6s								
TLY	**Talaya**	**17.55**	**228**	*e*Pn			**Pn**	**00 14 38.3**	**-4.9**
	comp=Z,4.3nm,0.6s								
MOY	**Mondy**	**18.42**	**233**	*e*P			**P**	**00 14 52.2**	**-1.7**
MOY				pmax		pmax			
	comp=Z,12nm,1.1s								
ZAK	**Zakamensk**	**18.80**	**227**	*e*P			**P**	**00 14 57.2**	**-0.9**
ZAK				pmax		pmax			
	comp=Z,3.0nm,0.9s								
ULN	**Ulaanbaatar**	**20.04**	**217**	*e*P			**P**	**00 15 11.1**	**-0.6**
ULN				pmax		pmax			
	comp=Z,3.0nm,0.9s								
ULN	**Ulaanbaatar**	**20.04**	**217**	*e*P			**P**	**00 15 11.1**	**-0.6**
	comp=Z,3.1nm,0.9s								
SONA1	**Songino Array**	**20.22**	**218**	*e*P			**P**	**00 15 14.7**	**+1.1**
SONA0	**Songino Array**	**20.24**	**218**	*e*P			Pn	00 15 16.3	+0.5
	comp=Z,3.8nm,0.9s								
SONA0				*e*ScP			**ScP**	**00 23 01.9**	**-0.3**
SONM	**Songino Array**	**20.24**	**218**	P			Pn	00 15 16.3	+0.5
	comp=Z,2.5nm,0.5s,baz=13,slow=11,SNR=24								
SONM				LR			LR	00 23 01.9	
	comp=Z,25nm,20.4s,baz=18,slow=36								
PEA1	**Petropavlovsk-**	**20.58**	**111**	*e*P			Pn	00 15 23.5	+3.9
PEA0	**Petropavlovsk-**	**20.58**	**111**	*e*P			**P**	**00 15 12.8**	**-4.5**
PEA0B	**Petropavlovsk-**	**20.58**	**111**	*e*P			**P**	**00 15 13.1**	**-4.2**
	comp=Z,48nm,1.4s								
PETK	**Petropavlovsk-**	**20.58**	**111**	P			Pn	00 15 23.5	+3.9
	comp=Z,4.7nm,0.7s,baz=15,slow=6.2,SNR=4.9								
PETK				LR			LR	00 24 21.2	
	comp=Z,36nm,19.4s,baz=281,slow=40								
PETK	**Petropavlovsk-**	**20.58**	**111**	P			Pn	00 15 23.5	+3.9
PETK				pmax		pmax			
	comp=Z,4.0nm,0.8s								
PETK				MLR		MLR			
	comp=Z,36nm,19.4s								
USRK	**Ussuriysk Ar.**	**21.72**	**166**	P			**P**	**00 15 31.2**	**+1.6**
	comp=Z,1.3nm,0.6s,baz=347,slow=12,SNR=3.4								
ZAA1	**Zalesovo Array**	**22.77**	**259**	*e*P			**P**	**00 15 40.6**	**-0.2**
ZAA0	**Zalesovo Array**	**22.77**	**259**	*e*P			**P**	**00 15 41.0**	**+0.3**
ZALV	**Zalesovo Beam**	**22.77**	**259**	P			**P**	**00 15 40.6**	**-0.2**
	comp=Z,3.0nm,0.5s,baz=34,slow=7.0,SNR=17								
NVS	**Novosibirsk**	**22.78**	**262**	*e*P			**P**	**00 15 39.7**	**-1.2**
NVS				pmax		pmax			
	comp=N,6.0nm,0.9s								
NVS				pmax		pmax			
	comp=E,7.0nm,0.9s								
NVS				pmax		pmax			
	comp=Z,11nm,0.9s								
ASAJ	**Asahikawa**	**23.59**	**147**	P			**P**	**00 15 51.8**	**+2.7**
	comp=Z,8.3nm,0.7s,baz=332,slow=9.8,SNR=5.1								
ASAJ	**Asahikawa**	**23.59**	**147**	P			**P**	**00 15 51.8**	**+2.7**
ASAJ				pmax		pmax			
	comp=Z,9.0nm,0.7s								
ASAJ	**Asahikawa**	**23.59**	**147**	*e*P			**P**	**00 15 51.8**	**+2.7**
	comp=Z,60nm,1.8s								
ERM	**Erimo**	**25.71**	**147**	*e*P			**P**	**00 16 09.8**	**+1.2**
ERM				pmax		pmax			
	comp=Z,123nm,1.6s								
ERM	**Erimo**	**25.71**	**147**	*e*P			**P**	**00 16 09.8**	**+1.2**
	comp=Z,123nm,1.6s								
KURK	**Kurchatov**	**27.72**	**260**	*e*P			**P**	**00 16 26.8**	**+0.2**
KURK				pmax		pmax			
	comp=Z,12nm,0.5s								
KURK	**Kurchatov**	**27.72**	**260**	*e*P			**P**	**00 16 26.8**	**+0.2**
	comp=Z,12nm,0.5s								
KURBB	**Kurchatov Arra**	**27.82**	**260**	P			**P**	**00 16 27.8**	**+0.2**
	comp=Z,9.6nm,0.6s,baz=44,slow=9.3,SNR=148								
KSRS	**Korea Array**	**28.15**	**175**	LR			LR	00 29 15.7	
	comp=Z,41nm,18.0s,baz=90,slow=40								
MK31	**Makanchi Array**	**29.34**	**251**	*e*P			**P**	**00 16 40.8**	**-0.4**
MK31	**Makanchi Array**	**29.34**	**251**	*e*P			**P**	**00 16 40.8**	**-0.4**
MK32	**Makanchi Array**	**29.34**	**251**	*e*P			**P**	**00 16 41.2**	**0.0**
MKAR	**Makanchi Array**	**29.34**	**251**	P			**P**	**00 16 41.2**	**0.0**
	comp=Z,2.1nm,0.5s,baz=40,slow=6.8,SNR=60								
MKAR	**Makanchi Array**	**29.34**	**251**	*e*P			**P**	**00 16 40.8**	**-0.4**
MKAR	**Makanchi Array**	**29.34**	**251**	*e*P			**P**	**00 16 40.8**	**-0.4**
MK01	**Makanchi Array**	**29.36**	**251**	*e*P			**P**	**00 16 41.1**	**-0.2**
BVAR	**Borovoye Array**	**29.42**	**271**	P			**P**	**00 16 41.9**	**+0.1**
	comp=Z,1.5nm,0.4s,baz=61,slow=9.6,SNR=19								
BRVK	**Borovoye**	**29.44**	**272**	*e*P			**P**	**00 16 42.0**	**+0.1**
BRVK				pmax		pmax			
	comp=Z,3.0nm,0.6s								
BRVK	**Borovoye**	**29.44**	**272**	*e*P			**P**	**00 16 42.0**	**+0.1**
	comp=Z,3.0nm,0.6s								
MAKZ	**Makanchi**	**29.45**	**252**	*e*P			**P**	**00 16 42.5**	**+0.3**
MAKZ				pmax		pmax			
	comp=Z,3.0nm,0.6s								
MAKZ	**Makanchi**	**29.45**	**252**	*e*P			**P**	**00 16 42.5**	**+0.3**
	comp=Z,2.9nm,0.6s								
ZRNK	**Zerenda**	**30.05**	**273**	*e*P			**P**	**00 16 47.7**	**+0.3**
ZRNK				pmax		pmax			
	comp=Z,6.0nm,0.6s								
ZRNK	**Zerenda**	**30.05**	**273**	*e*P			**P**	**00 16 47.7**	**+0.3**
	comp=Z,5.5nm,0.6s								
MJB9	**Matsu-Tunnel**	**30.06**	**158**	*e*PP			PP	00 17 57.3	+1.9
MJAR	**Matsushiro Arr**	**30.07**	**158**	P			P	00 16 53.7	+6.0
	comp=Z,1.8nm,0.7s,baz=352,slow=7.3,SNR=6.1								
MJAR				pP			pP	00 17 00.1	+7.4
	comp=Z,2.4nm,0.8s,baz=348,slow=9.1,SNR=4.2								
ARU	**Arti**	**31.88**	**286**	P			**P**	**00 17 04.0**	**+0.6**
	comp=Z,1.3nm,0.3s,baz=58,slow=4.7,SNR=4.8								
ARU	**Arti**	**31.88**	**286**	*e*P			**P**	**00 17 04.0**	**+0.6**
	comp=Z,18nm,1.6s								
ARA0	**ARCESS Array S**	**34.19**	**322**	*e*P			**P**	**00 17 23.5**	**0.0**
ARA0				*e*pP			**pP**	**00 17 29.1**	**+0.7**
ARA0				*e*PcP			**PcP**	**00 20 00.1**	**+0.4**
ARCES	**ARCESS Array B**	**34.19**	**322**	P			**P**	**00 17 23.5**	**0.0**
	comp=Z,1.2nm,0.5s,baz=50,slow=8.4,SNR=8.1								
ARCES				pP			**pP**	**00 17 29.1**	**+0.7**
	comp=Z,3.9nm,0.8s,baz=37,slow=9.7,SNR=2.3								
ARCES				PcP			**PcP**	**00 20 00.1**	**+0.4**
	comp=Z,4.3nm,1.0s,baz=40,slow=2.1,SNR=4.4								
ILAR	**Eielson Array**	**34.27**	**50**	P			**P**	**00 17 24.6**	**+0.4**
	comp=Z,0.6nm,0.4s,baz=306,slow=6.5,SNR=18								
ILAR				pP			**sP**	**00 17 30.9**	**-0.4**
	comp=Z,1.1nm,0.7s,baz=309,slow=6.8,SNR=8.5								
ILB	**Eielson Array**	**34.27**	**50**	*e*P			**P**	**00 17 24.6**	**+0.4**
ILB				*e*pP			**sP**	**00 17 30.9**	**-0.4**
HDA	**Harding Lake**	**34.50**	**50**	*e*PP			PP	00 18 41.2	-3.0
RSO	**Redoubt South**	**35.26**	**58**	*e*P			P	00 17 38.3	+5.3
RSO				*e*ScP			**ScP**	**00 23 53.6**	**+5.8**
AAK	**Ala-Archa**	**35.90**	**255**	*e*P			**P**	**00 17 40.3**	**+1.6**
AAK				pmax		pmax			
	comp=Z,2.0nm,0.9s								
AAK	**Ala-Archa**	**35.90**	**255**	*e*P			**P**	**00 17 40.3**	**+1.6**
	comp=Z,2.3nm,0.9s								
EGAK	**Eagle**	**36.05**	**47**	*e*S			**S**	**00 23 15.6**	**-1.7**
AKTO	**Aktyubinsk**	**36.48**	**279**	P			**P**	**00 17 43.6**	**+0.3**
	comp=Z,2.0nm,0.3s,baz=64,slow=8.8,SNR=5.6								
ABKAR	**Akbulak array**	**36.60**	**276**	*e*P			**P**	**00 17 44.6**	**+0.3**
KKAR	**Karatay Array**	**37.13**	**260**	*e*P			**P**	**00 17 50.3**	**+1.3**
KKAR	**Karatay Array**	**37.13**	**260**	*e*P			**P**	**00 17 50.2**	**+1.3**
OHAK	**Old Harbor**	**37.39**	**62**	*e*ScS			ScS	00 28 04.9	+1.8
RES	**Resolute Bay**	**37.73**	**16**	P			**P**	**00 17 53.2**	**-0.4**
	comp=Z,0.5nm,0.4s,baz=348,slow=8.5,SNR=3.7								
RES				pP			**pP**	**00 17 59.1**	**+0.4**
	comp=Z,1.1nm,0.8s,baz=325,slow=13,SNR=3.2								
RES				PcP			**PcP**	**00 20 10.8**	**+0.7**
	comp=Z,0.9nm,0.6s,baz=29,slow=5.1,SNR=3.8								
RES	**Resolute Bay**	**37.73**	**16**	*e*P			**P**	**00 17 53.2**	**-0.4**
	comp=Z,3.8nm,1.2s								
RES				*e*pP			**pP**	**00 17 59.1**	**+0.4**
RES				*e*PcP			**PcP**	**00 20 10.8**	**+0.7**
FIA0	**FINESS Array S**	**39.93**	**312**	*e*P			**P**	**00 18 12.3**	**0.0**
FIA0				*e**PP			**sP**	**00 18 19.3**	**0.0**
FIA0				*e*				00 20 16.7	
FIA0	**FINESS Array S**	**39.93**	**312**	*e*P			**P**	**00 18 12.2**	**0.0**
FIA0				*e*pP			**sP**	**00 18 19.3**	**0.0**
FIA0				*e*PcP			**PcP**	**00 20 16.7**	**-0.5**
FINES	**FINESS Array B**	**39.93**	**312**	P			**P**	**00 18 12.2**	**0.0**
	comp=Z,2.2nm,0.4s,baz=45,slow=8.6,SNR=31								
FINES				pP			**sP**	**00 18 19.3**	**0.0**
	comp=Z,1.4nm,0.5s,baz=33,slow=7.9,SNR=3.4								
FINES				PcP			**PcP**	**00 20 16.7**	**-0.5**
	comp=Z,0.4nm,0.4s,baz=23,slow=7.5,SNR=2.7								
OBN	**Obninsk**	**41.28**	**300**	P			**P**	**00 18 24.0**	**+0.5**
	comp=Z,9.5nm,0.6s,baz=274,slow=10,SNR=4.5								
OBN	**Obninsk**	**41.28**	**300**	*e*P			**P**	**00 18 24.0**	**+0.5**
	comp=Z,9.2nm,0.6s								
LPSR	**Galich'ya Gora**	**42.38**	**296**	*e*P			**P**	**00 18 32.6**	**+0.2**
LPSR				pmax		pmax			
	comp=Z,5.0nm,0.7s								
VRH	**Novokhopyorsk**	**42.42**	**292**	*e*P			**P**	**00 18 32.2**	**-0.6**
VRH				pmax		pmax			
	comp=Z,10.0nm,0.8s								
VSR	**Storozhevoye**	**43.39**	**294**	*e*P			**P**	**00 18 40.6**	**0.0**
VSR				pmax		pmax			
	comp=Z,10.0nm,0.5s								
NC405	**NORSAR Array S**	**44.34**	**320**	*e*P			**P**	**00 18 48.4**	**+0.2**
NB2	**NORSAR Subarra**	**44.53**	**320**	P			**P**	**00 18 49.4**	**-0.3**
	comp=Z,3.3nm,0.7s,baz=30,slow=7.4								
NB200	**NORSAR Array S**	**44.53**	**320**	*e*P			**P**	**00 18 49.4**	**-0.3**
NOA	**NORSAR Array B**	**44.53**	**320**	P			**P**	**00 18 49.4**	**-0.3**

comp=Z,3.0nm,0.6s
FETA Feichten 56.86 312 *i* P **P 00 20 23.4 +0.4**
comp=Z,2.0nm,0.9s
DAVOX Davos/Dischmat 57.34 312 P **P 00 20 27.2 +0.7**
comp=Z,1.4nm,0.5s,baz=3.1,slow=4.8,SNR=8.0
DAVOX Davos/Dischmat 57.34 312 P **P 00 20 27.2 +0.7**
DAVOX pmax pmax
comp=Z,2.0nm,0.5s
LNOR Lincton Mounta 58.78 47 *e*P **P 00 20 37.0 +0.6**
LNOR Lincton Mounta 58.78 47 *e*P **P 00 20 37.0 +0.6**
SCHQ Schefferville 59.67 8 P **P 00 20 41.4 -0.9**
comp=Z,13nm,0.4s,baz=354,slow=5.6,SNR=105
SCHQ pP **pP 00 20 47.8 +0.1**
comp=Z,10nm,0.5s,baz=334,slow=4.8,SNR=7.5
SCHQ Schefferville 59.67 8 *e*P **P 00 20 41.4 -0.9**
comp=Z,16nm,0.5s
SCHQ *e*pP **pP 00 20 47.8 +0.1**
OHCM Honcut 63.67 52 *e*P **P 00 21 09.9 +0.5**
PD31 Pinedale Array 64.16 42 *e*P **P 00 21 12.2 -0.8**
PD31 *e*pP **pP 00 21 18.1 -0.3**
PDAR Pinedale Array 64.16 42 P **P 00 21 12.2 -0.8**
comp=Z,0.4nm,0.6s,baz=350,slow=4.8,SNR=4.6
PDAR pP **pP 00 21 18.0 -0.3**
comp=Z,0.5nm,0.6s,baz=346,slow=3.1,SNR=3.2
PSI Prapat 65.23 209 P **P 00 21 20.7 +0.6**
comp=Z,3.8nm,0.6s,baz=96,slow=15,SNR=4.3
PSI Prapat 65.23 209 *e*P **P 00 21 20.7 +0.6**
comp=Z,4.7nm,0.6s
NV01 Mina Array Sit 65.53 50 *e*P **P 00 21 23.5 +1.6**
NVAR Mina Array Bea 65.53 50 P **P 00 21 23.5 +1.6**
comp=Z,0.4nm,0.3s,baz=345,slow=6.5,SNR=2.1
ES19 SONSECA Array 67.84 319 *e*P **P 00 21 37.1 +0.7**
ESDC Sonseca Array 67.88 319 P **P 00 21 37.1 +0.4**
comp=Z,1.6nm,0.5s,baz=12,slow=6.5,SNR=20
ESDC pP **sP 00 21 43.4 -0.6**
comp=Z,0.8nm,0.4s,baz=12,slow=7.0,SNR=6.9
LTX Lajitas 78.38 42 *e*P **P 00 22 39.8 +0.8**
LTX *e**PP **sP 00 22 47.0 +0.7**
LTX Lajitas 78.38 42 *e*P **P 00 22 39.8 +0.8**
LTX *e*pP **sP 00 22 47.0 +0.7**
TXAR Lajitas Array 78.38 42 P **P 00 22 39.8 +0.8**
comp=Z,0.4nm,0.7s,baz=53,slow=4.1,SNR=5.8
TXAR pP **sP 00 22 47.0 +0.7**
comp=Z,0.3nm,0.5s,baz=18,slow=4.4,SNR=3.6
FITZ Fitzroy Crossi 83.35 179 P **P 00 23 06.3 +1.1**
comp=Z,3.9nm,0.6s,baz=350,slow=3.8,SNR=11
FITZ pP **sP 00 23 12.4 -0.2**
comp=Z,3.8nm,0.7s,baz=359,slow=5.6,SNR=3.8
WR1 Warramunga Arr 85.49 171 *e*P **P 00 23 16.7 +0.6**
comp=Z,6.7nm,0.7s
WR1 *e*pP **sP 00 23 22.9 -0.6**
WRA Warramunga Arr 85.49 171 P **P 00 23 16.7 +0.6**
comp=Z,4.5nm,0.7s,baz=351,slow=5.5,SNR=26
WRA pP **sP 00 23 22.9 -0.6**
comp=Z,4.2nm,0.7s,baz=350,slow=5.4,SNR=13
WB2 Warramunga Arr 85.49 171 *e*P **P 00 23 17.1 +1.0**
comp=Z,6.6nm,0.7s
AS31 Alice Springs 89.16 172 *e*P **P 00 23 34.3 +0.6**
comp=Z,1.0nm,0.9s
AS31 *e*pP **sP 00 23 40.9 -0.3**
ASAR Alice Springs 89.16 172 P **P 00 23 34.3 +0.6**
comp=Z,2.9nm,0.9s,baz=358,slow=4.8,SNR=17
ASAR pP **sP 00 23 40.9 -0.3**
comp=Z,2.7nm,0.9s,baz=355,slow=4.6,SNR=10.0
AS01 Alice Springs 89.16 172 *e*P **P 00 23 34.4 +0.7**
VNDA Vanda 144.56 167 PKP **PKPab 00 30 11.5 0.0**
comp=Z,0.7nm,0.7s,baz=325,slow=7.0,SNR=3.6
VNDA pPKP **pPKPdf 00 30 18.7 +0.1**
comp=Z,1.3nm,0.7s,baz=354,slow=2.8,SNR=4.5
PLCA Paso Flores 153.69 27 PKPbc **PKPbc 00 30 37.5 +1.0**
comp=Z,1.3nm,0.9s,baz=251,slow=3.8,SNR=2.5
PLCA pPKPbc **pPKPbc 00 30 43.8 +1.6**
comp=Z,1.9nm,0.9s,baz=74,slow=23,SNR=1.7
PLCA PKPab **PKPab 00 30 49.5 +0.1**
comp=Z,0.8nm,0.6s,baz=167,slow=3.7,SNR=3.6
PLCA pPKPab **pPKPab 00 30 55.5 +0.6**
comp=Z,1.1nm,0.7s,baz=5.6,slow=4.7,SNR=1.3

*ISCJB **21** 00:12:03.2±0.7, 73.81°N±0.03°×10.4°E±0.2, h10km, mb2.9/1, MS3.0/7, Error ellipse: s-maj=8.5km s-min=4.2km az=164.0*
*BER **21** 00:12:05.9±3.7, 73.85°N×9.64°E, h0km±25km, MD2.7, ML2.3, ML3.4(NAO)*
*CSEM **21** 00:12:05.5±0.3, 73.93°N×9.90°E, h10km, ML3.4, Error ellipse: s-maj=10.1km s-min=3.7km az=81.0*
*NAO **21** 00:12:06.8±1.7, 73.95°N×10.72°E, ML3.4*
*IDC **21** 00:12:08.0±4.5, 73.43°N×9.80°E, h0km, mb3.1/1, mb1 3.4/6, mb1mx3.2/55, mbtmp3.2/6, ML3.1/5, MS3.0/12, Ms1 3.0/12, ms1mx2.9/26, Error ellipse: s-maj=56.5km s-min=20.2km az=174.0*
ISC 21 00:12:04.8±1.0, 73.85°N±0.05°×9.94°E±0.10, h10km, n45, σ1s65/50, MS3.0/7, Greenland Sea

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
HSPB	**Hornsund (broa**	**3.47**	**21**	*e*P	**Pn**	**00 12 58.9**	**+0.3**
HSPB	**Hornsund (broa**	**3.47**	**21**	*e*P	**Pn**	**00 12 58.9**	**+0.3**
	SNR=50						
HSP	**Hornsund**	**3.47**	**21**	Pn	**Pn**	**00 12 58.9**	**+0.2**
BRBA	**Barentsburg A**	**4.36**	**12**	Pn	**Pn**	**00 13 10.7**	**-0.1**
SPA0	**Spitsbergen Ar**	**4.62**	**17**	Pn	**Pn**	**00 13 14.9**	**+0.4**
	baz=194,slow=16						
SPA0	**Spitsbergen Ar**	**4.62**	**17**	Pn	**Pn**	**00 13 14.9**	**+0.4**
	baz=194,slow=16						
SPA0	**Spitsbergen Ar**	**4.62**	**17**	Pn	**Pn**	**00 13 14.9**	**+0.4**
	baz=194,slow=15,SNR=63						
HOPEN	**Hopen**	**4.69**	**48**	Pn	**Pn**	**00 13 16.5**	**+1.0**
HOPEN				Sn	**Sn**	**00 14 09.8**	**+0.1**
HOPEN	**Hopen**	**4.69**	**48**	*e*P	**Pn**	**00 13 16.4**	**+1.0**
HOPEN				*e*S	**Sn**	**00 14 10.2**	**+0.5**
HOPEN				IAML		00 14 12.0	
	comp=Z,9.7nm,0.3s						
HOPEN	**Hopen**	**4.69**	**48**	*e*P	**Pn**	**00 13 16.4**	**+1.0**
	SNR=49						
HOPEN				Sn	**Sn**	**00 14 09.8**	**+0.1**
HOPEN				*e*S	**Sn**	**00 14 10.2**	**+0.5**
	SNR=49						
TRO	**Tromso**	**5.09**	**142**	*e*P	**Pn**	**00 13 22.2**	**+1.3**
TRO				*e*S	**Sn**	**00 14 16.2**	**-3.4**
TRO				IAML		00 14 22.8	
	comp=Z,15nm,0.5s						
TRO	**Tromso**	**5.09**	**142**	*e*P	**Pn**	**00 13 22.2**	**+1.3**
	SNR=49						
KBS	**Kingsbay**	**5.12**	**4**	Pn	**Pn**	**00 13 20.3**	**-1.1**
KBS				Sn	**Sn**	**00 14 20.2**	**-0.3**
KBS	**Kingsbay**	**5.12**	**4**	Pn	**Pn**	**00 13 20.3**	**-1.1**
KBS				Sn	**Sn**	**00 14 20.2**	**-0.3**
KBS	**Kingsbay**	**5.12**	**4**	*i* P	**Pn**	**00 13 20.3**	**-1.1**
KBS				Sn	**Sn**	**00 14 20.2**	**-0.3**
HAMF	**Hammerfest**	**5.29**	**121**	*e*P	**Pn**	**00 13 25.7**	**+2.0**
HAMF				*e*S	**Sn**	**00 14 21.3**	**-3.2**
HAMF				IAML		00 14 23.0	
	comp=Z,8.6nm,0.4s						
HAMF	**Hammerfest**	**5.29**	**121**	*e*P	**Pn**	**00 13 25.7**	**+2.0**
	SNR=49						
KIF	**Kilpisjarvi**	**5.97**	**139**	*e*P	**Pn**	**00 13 34.3**	**+1.3**
KIF				*e*S	**Sn**	**00 14 39.0**	**-2.3**
KIF	**Kilpisjarvi**	**5.97**	**139**	*e*P	**Pn**	**00 13 34.3**	**+1.3**
	SNR=49						
JMIC	**Jan Mayen**	**6.27**	**252**	LR	LR	00 15 17.7	
	comp=Z,87nm,19.8s,baz=79,slow=31						
ARA0	**ARCESS Array S**	**6.53**	**124**	Pn	**Pn**	**00 13 42.4**	**+1.7**
	baz=320,slow=12						
ARA0				Sn	**Sn**	**00 14 52.3**	**-2.7**
	baz=323,slow=22						
ARA0	**ARCESS Array S**	**6.53**	**124**	Pn	**Pn**	**00 13 42.4**	**+1.7**
	baz=320,slow=12						
ARA0				Sn	**Sn**	**00 14 52.3**	**-2.7**
	baz=323,slow=22						
ARA0	**ARCESS Array S**	**6.53**	**124**	Pn	**Pn**	**00 13 42.4**	**+1.7**
	baz=320,slow=12,SNR=8.2						
ARCES	**ARCESS Array B**	**6.53**	**124**	Pn	**Pn**	**00 13 42.7**	**+2.1**
	comp=Z,0.5nm,0.3s,baz=328,slow=12,SNR=20						
ARCES				Sn	**Sn**	**00 14 52.5**	**-2.5**
	comp=Z,1.2nm,0.3s,baz=320,slow=20,SNR=10						
ARCES				LR	LR	00 16 14.5	
	comp=Z,120nm,19.7s,baz=341,slow=39						
ARE0	**ARCESS Array S**	**6.53**	**124**	*e*P	**Pn**	**00 13 43.0**	**+2.4**
ARE0				*e*S	**Sn**	**00 14 53.5**	**-1.5**
ARE0				IAML		00 14 56.7	
	comp=Z,3.9nm,0.5s						
ARE0	**ARCESS Array S**	**6.53**	**124**	*e*P	**Pn**	**00 13 43.0**	**+2.4**
	SNR=47						
DAG	**Danmarks Havn**	**7.77**	**305**	*i* P	Pn	00 13 51.8	-5.8
MOR8	**Moi Rana**	**7.87**	**167**	*e*S	Sn	00 15 18.8	-9.2
APA0	**Apatity Array**	**9.79**	**118**	Pn	**Pn**	**00 14 25.8**	**+0.4**
	baz=314,slow=12						
APA0	**Apatity Array**	**9.79**	**118**	Pn	**Pn**	**00 14 25.8**	**+0.4**
	baz=314,slow=12						
APA0	**Apatity Array**	**9.79**	**118**	Pn	**Pn**	**00 14 25.8**	**+0.4**
	baz=314,slow=12,SNR=4.6						
NOA	**NORSAR Array B**	**12.88**	**177**	Pn	**Pn**	**00 15 06.3**	**-1.4**
	comp=Z,0.1nm,0.3s,baz=354,slow=13,SNR=2.6						
NOA				LR	LR	00 19 31.1	
	comp=Z,35nm,19.8s,baz=355,slow=36						
FINES	**FINESS Array B**	**13.80**	**146**	Pn	**Pn**	**00 15 20.0**	**-0.1**
	comp=Z,0.1nm,0.3s,baz=336,slow=12,SNR=6.9						
FINES				LR	LR	00 20 11.3	
	comp=Z,84nm,19.3s,baz=337,slow=36						
HFS	**Hagfors**	**13.86**	**172**	Pn	**Pn**	**00 15 23.9**	**+3.0**
	baz=329,slow=12						
HFS	**Hagfors**	**13.86**	**172**	Pn	**Pn**	**00 15 23.9**	**+3.0**
	baz=329,slow=12						
HFS	**Hagfors**	**13.86**	**172**	Pn	**Pn**	**00 15 21.1**	**+0.2**
	comp=Z,0.1nm,0.3s,baz=307,slow=16,SNR=3.6						
HFS				LR	LR	00 20 04.5	
	comp=Z,45nm,20.2s,baz=322,slow=36						
HFS	**Hagfors**	**13.86**	**172**	Pn	**Pn**	**00 15 23.9**	**+3.0**
	baz=329,slow=11						
EKA	**Eskdalemuir Ar**	**19.33**	**203**	P	**P**	**00 16 29.5**	**-0.3**
	baz=13,slow=10,SNR=3.2						
SFJD	**Kangerlussuaq**	**20.47**	**282**	LR	LR	00 23 25.3	
	comp=Z,75nm,18.3s,baz=32,slow=33						
OBN	**Obninsk**	**21.64**	**136**	LR	LR	00 25 34.3	
	comp=Z,40nm,18.2s,baz=271,slow=38						
GERES	**GERESS Array B**	**25.15**	**174**	P	**P**	**00 17 29.6**	**-0.1**
	comp=Z,0.1nm,0.3s,baz=360,slow=13,SNR=2.3						
GERES				LR	LR	00 27 17.7	
	comp=Z,28nm,18.2s,baz=327,slow=37						
ARU	**Arti**	**25.71**	**106**	LR	LR	00 27 25.4	
	comp=Z,27nm,20.4s,baz=305,slow=36						
AKTO	**Aktyubinsk**	**30.95**	**112**	LR	LR	00 31 19.8	
	comp=Z,38nm,20.4s,baz=5.7,slow=37						
KBZ	**Khabaz**	**33.75**	**135**	LR	LR	00 32 31.9	
	comp=Z,42nm,19.0s,baz=62,slow=37						
SCHQ	**Schefferville**	**34.91**	**280**	LR	LR	00 32 20.7	
	comp=Z,34nm,19.2s,baz=27,slow=35						

IDC 21 00:16:04.1±1.4, 2.62°N×126.42°E, h0km, mb3.6/6, mb1 3.8/6, mb1mx3.5/39, mbtmp3.7/6, Error ellipse: s-maj=111.0km s-min=17.5km az=70.0, Northern Molucca Sea

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
FITZ	**Fitzroy Crossi**	**20.60**	**182**	P	Pn	00 20 46.9	-0.3
	1.6nm,0.7s,baz=0.1,slow=11,SNR=2.8						
WRA	**Warramunga Arr**	**23.73**	**161**	P	P	00 21 18.0	-0.1
	0.7nm,0.5s,baz=337,slow=10,SNR=13						
ASAR	**Alice Springs**	**27.12**	**165**	P	P	00 21 48.0	-1.1
	0.2nm,0.5s,baz=351,slow=7.7,SNR=3.1						
MKAR	**Makanchi Array**	**58.29**	**326**	P	P	00 26 01.2	+0.4
	0.5nm,0.5s,baz=126,slow=7.4,SNR=11						
ZALV	**Zalesovo Beam**	**61.44**	**333**	P	P	00 26 21.6	-0.6
	0.5nm,0.4s,baz=309,slow=42,SNR=3.9						
KURBB	**Kurchatov Arra**	**62.51**	**328**	P	P	00 26 29.5	0.0
	0.7nm,0.4s,baz=128,slow=6.1,SNR=6.9						

*CSEM **21** 00:17:35.6, 43.35°N×12.50°E, h12km, MD1.5/5*
ROM 21 00:17:35.6±0.3, 43.35°N×12.50°E, h12km±4km, Md1.5/5, Ml0.6/3, Error ellipse: s-maj=3.2km s-min=1.3km az=43.0, Central Italy

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
ATVO	**AVT- Monte Val**	**0.07**	**297**	Pg	Pg	00 17 38.5	+0.4
ATVO				Sg	Sg	00 17 40.2	+0.2
	12nm,0.2s						
ATVO	**AVT- Monte Val**	**0.07**	**297**	Pg	Pg	00 17 38.5	+0.4
ATVO				Sg	Sg	00 17 40.2	+0.2
	12nm,0.2s						
MURB	**Monte Urbino**	**0.09**	**167**	Pg	Pg	00 17 38.9	+0.6
MURB				Sg	Sg	00 17 41.1	+0.8
	28nm,0.3s						
MURB	**Monte Urbino**	**0.09**	**167**	Pg	Pg	00 17 38.9	+0.6
MURB				Sg	Sg	00 17 41.1	+0.8
	28nm,0.3s						
ATPC	**Poggio Castell**	**0.14**	**348**	Pg	Pg	00 17 39.5	+0.6
ATPC				Sg	Sg	00 17 42.3	+1.0
	14nm,0.2s						
ATPC	**Poggio Castell**	**0.14**	**348**	Pg	Pg	00 17 39.5	+0.6
ATPC				Sg	Sg	00 17 42.3	+1.0
	14nm,0.2s						
PIEI	**Pieia**	**0.19**	**8**	Pg	Pg	00 17 40.3	+0.5
PIEI				Sg	Sg	00 17 43.9	+1.2
	7.0nm,0.2s						
PIEI	**Pieia**	**0.19**	**8**	Pg	Pg	00 17 40.3	+0.5
PIEI				Sg	Sg	00 17 43.9	+1.2
	7.0nm,0.2s						
SSFR	**Montelago di S**	**0.23**	**67**	Pg	Pg	00 17 40.7	+0.3
SSFR				Sg	Sg	00 17 44.6	+0.9
	7.0nm,0.2s						
SSFR	**Montelago di S**	**0.23**	**67**	Pg	Pg	00 17 40.7	+0.3
SSFR				Sg	Sg	00 17 44.6	+0.9
	7.0nm,0.2s						

SJA 21 00:35:45.1±0.6, 24.71°S×64.45°W, h25km±2km, ML1.8, MW3.6, Salta Province

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
AZAP	**Zapla**	**0.74**	**311**	*i* P	Pn	00 36 00.2	0.0
AZAP				*i* S	Sn	00 36 11.9	+1.1
ASTB	**Santa Barbara**	**0.76**	**0**	*i* P	Pn	00 36 00.4	-0.1
ALOL	**LOMAS DE OLMED**	**0.99**	**26**	*i* P	Pb	00 36 04.1	+0.4
ALOL				*i* S	Sn	00 36 19.0	+2.2
HJA	**Humahuaca**	**1.73**	**330**	*i* P	Pb	00 36 16.9	+0.4
HJA				*i* S	Sb	00 36 40.2	+2.2
HJA				IAML		00 36 44.4	
	comp=Z,16nm,0.4s						
FSA	**Cafayete**	**1.96**	**224**	*i* P	Pb	00 36 19.4	-0.8
FSA				*i* S	Sb	00 36 45.2	+0.9
FSA				IAML		00 36 50.2	
	comp=Z,6.4nm,0.4s						
YJA	**Yavi**	**2.71**	**339**	*i* P	Pb	00 36 30.7	-2.5
YJA				IAML		00 37 13.9	
	comp=Z,2.6nm,0.3s						

*NIED **21** 00:36:00, 35.80°N×140.80°E, h8km, Mw3.6 Best double couple: M◻2.60000×10^14 NP1:φs45.00000°, δ44.00000°, λ-15.00000°. NP2:φs146.00000°, δ80.00000°, λ-133.00000°.*
*ISCJB **21** 00:36:10.0±0.8, 35.80°N±0.05°×140.8E±0.1, h13km±7km, mb3.2/4, Error ellipse: s-maj=16.2km s-min=7.7km az=172.6*
*JMA **21** 00:36:10.5, 35.79°N×140.76°E, h6km±1km, M3.8*
JMA Felt II J1.
*IDC **21** 00:36:16.1±1.2, 34.92°N×138.86°E, h0km, mb3.3/4, mb1 3.6/4, mb1mx3.3/44, mbtmp3.3/4, Error ellipse: s-maj=36.8km s-min=20.7km az=82.0*
ISC 21 00:36:10.2±1.1, 35.81°N±0.06°×140.79E±0.09, h10km±8km, n12, σ0s31/14, mb3.3/4, 1C-1D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
CHOJ	**Chosi**	**0.12**	**150**	⇑P	**Pg**	**00 36 13.0**	**0.0**
CHOJ				S	**Sg**	**00 36 15.0**	**0.0**
JCN	**Nagara**	**0.61**	**231**	P	**Pb**	**00 36 23.2**	**+0.2**
JYT	**Yasato**	**0.64**	**311**	P	**Pg**	**00 36 22.7**	**+0.2**
JYT				S	**Sg**	**00 36 31.0**	**+0.1**
JHO	**Hitachi**	**0.82**	**348**	⇓P	**Pg**	**00 36 26.0**	**0.0**
JHO				S	**Sb**	**00 36 37.7**	**0.0**
BSO4	**Boso 4**	**0.89**	**204**	P	**Pb**	**00 36 27.9**	**+0.2**
BSO3	**Boso 3**	**1.03**	**193**	P	**Pb**	**00 36 30.1**	**+0.2**
MJAR	**Matsushiro Arr**	**2.21**	**290**	Pg	**Pn**	**00 36 46.6**	**-0.3**
	6.6nm,0.3s,baz=94,slow=14,SNR=37						
MAT	**Matsushiro**	**2.21**	**290**	P	**Pn**	**00 36 46.5**	**-0.5**
MAT				*e*S	**Sn**	**00 37 14.0**	**-0.4**
MKAR	**Makanchi Array**	**44.35**	**303**	P	**P**	**00 44 21.1**	**+0.5**
	0.2nm,0.6s,baz=81,slow=8.9,SNR=3.4						
ILAR	**Eielson Array**	**50.80**	**32**	P	P	00 45 30.9	+21
	0.4nm,0.7s,baz=282,slow=6.2,SNR=4.5						
WRA	**Warramunga Arr**	**55.78**	**187**	P	**P**	**00 45 47.4**	**0.0**
	0.2nm,0.5s,baz=2.8,slow=7.3,SNR=4.4						
YKA	**Yellowknife Ar**	**65.12**	**30**	P	P	00 47 07.2	+16
	0.1nm,0.7s,baz=289,slow=7.8,SNR=3.3						

*NIED **21** 00:39:00, 40.30°N×143.70E, h11km, Mw5.6 Best double couple: M◻3.19000×10^17 NP1:φs153.00000°, δ28.00000°, λ25.00000°. NP2:φs41.00000°, δ78.00000°, λ116.00000°.*
*BJI **21** 00:39:01.0, 40.26N×143.47E, h10km, mb5.5/90, mB5.7/73, Ms5.8/98, Ms7 5.7/90*
*JMA **21** 00:39:01.5±0.3, 40.33N×143.68E, h10km, M5.7*
JMA Felt II J1.
*ISCJB **21** 00:39:01.0±0.6, 40.35N±0.02°×143.59E±0.02, h6km±3km, mb5.4/388, MS5.3/421, Error ellipse: s-maj=3.1km s-min=1.9km az=158.9*
*GCMT **21** 00:39:03.2±0.1, 40.30N×143.85E, h15km, MW5.7/124, Moment Tensor Solution. s89,c162; s124,c307; Duration: 1s6 Moment tensor: Scale 10^17Nm; Mrr1.60±.02; Mθθ-0.10±.02; Mφφ-1.51±.02; Mrθ1.24±.07; Mθφ-0.53±.01; Mrφ3.23±.07; Best double couple: M◻3.83000×10^17 NP1:φs21.00000°, δ77.00000°, λ91.00000°. NP2:φs196.00000°, δ13.00000°, λ85.00000°. Principal axes: T 3.7890, Plg58.0000°, Azm292.0000°; N 0.0780, Plg1.0000°, Azm201.0000°; P -3.8720, Plg32.0000°, Azm110.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface/mantle waves, cutoff=50s.*
*NEIC **21** 00:39:03.2±0.1, 40.34N×143.55E, h10km, mb5.4/237, ME5.4, MS5.2/299, MW5.7, MW5.7 Error ellipse: s-maj=3.9km s-min=2.4km az=148.0, Moment Tensor Solution. s33 Moment tensor: Scale 10^17Nm; Mrr1.65; Mθθ-0.81; Mφφ-0.84; Mrθ1.79; Mθφ-1.39; Mrφ2.92; Best double couple: M◻4.00000×10^17 NP1:φs243.00000°, δ17.00000°, λ120.00000°. NP2:φs32.00000°, δ76.00000°, λ82.00000°. Principal axes: T 3.7100, Plg58.0000°, Azm291.0000°; N 0.4600, Plg8.0000°, Azm34.0000°; P -4.1700, Plg30.0000°, Azm129.0000°; Broadband fault plane solution: P waves. NP1:φs200.00000°, δ5.00000°, λ90.00000°. NP2:φs20.00000°, δ85.00000°, λ90.00000°. Principal axes: T Plg50.0000°, Azm290.0000°; N Plg0.0000°, Azm0.0000°; P Plg40.0000°, Azm110.0000°; Depth from synthetics of broadband displacement seismograms. Energy computed from BB mechanism.*
*IDC **21** 00:39:05.0±3.2, 40.33N×143.69E, h26km±21km, mb4.9/34, mb1 5.0/40, mb1mx5.0/44, mbtmp5.1/40, ML4.3/6, MS5.3/37, Ms1 5.3/37, ms1mx5.1/47 Error ellipse: s-maj=11.6km s-min=9.3km az=86.0*
*NEIC **21** 00:39:04.0±0.0, 40.50N×143.68E, h15km, Moment Tensor Solution. s15 Moment tensor: Scale 10^17Nm; Mrr0.80; Mθθ0.10; Mφφ-0.90; Mrθ1.20; Mθφ0.20; Mrφ4.00; Best double couple: M◻4.00000×10^17 NP1:φs15.00000°, δ84.00000°, λ95.00000°. NP2:φs149.00000°, δ7.00000°, λ44.00000°. Principal axes: T 4.3000, Plg49.0000°, Azm291.0000°; N -0.1000, Plg5.0000°, Azm195.0000°; P -4.2000, Plg39.0000°, Azm100.0000°;*
*MOS **21** 00:39:05.1±1.0, 40.48N×143.54E, h33km, mb5.7/107, MS5.5/93 Error ellipse: s-maj=5.8km s-min=3.9km az=104.9*
ISC 21 00:39:04.6±0.3, 40.37N±0.03°×143.67E±0.03, h21km±3km, h21km:pP-P, n1489, σ1s26/1506, mb5.5/414, MS5.3/430, 159C-32D, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
MIYJ	**Miyakonagasawa**	**1.63**	**241**	P	**Pn**	**00 39 30.2**	**-1.8**
JANG	**Nango**	**1.64**	**271**	⇑P	**Pn**	**00 39 30.9**	**-1.4**
ERM	**Erimo**	**1.69**	**347**	*d* iP	**Pn**	**00 39 31.9**	**-0.9**
ERM				pmax	pmax		
	comp=Z,897nm,1.0s						
ERM	**Erimo**	**1.69**	**347**	⇓ *i* Pn	**Pn**	**00 39 31.9**	**-0.9**
JEM	**Erimo**	**1.69**	**347**	P	**Pn**	**00 39 32.0**	**-0.9**
JEM				*e*S	**Sn**	**00 39 53.6**	**-0.2**
JTM	**Tenmabayashi**	**2.02**	**283**	⇑P	**Pn**	**00 39 37.1**	**-0.4**
JNBK	**Urakawa-nobuka**	**2.03**	**340**	P	**Pn**	**00 39 37.0**	**-0.6**
JOM	**Ohasama**	**2.04**	**245**	P	**Pn**	**00 39 36.6**	**-1.1**
JOT	**Ohata**	**2.23**	**298**	⇑P	**Pn**	**00 39 40.0**	**-0.3**
JCH	**Churui**	**2.25**	**354**	S	**Sn**	**00 40 08.2**	**+0.4**
JAH	**Hinai**	**2.33**	**266**	⇑P	**Pn**	**00 39 41.5**	**-0.2**
JMK	**Ichinoseki**	**2.36**	**234**	P	**Pn**	**00 39 41.5**	**-0.6**
ASAJ	**Asahikawa**	**3.83**	**348**	Pn	**Pn**	**00 40 02.2**	**-0.1**
	comp=Z,16nm,0.3s,baz=203,slow=13,SNR=36						
ASAJ				Sn	**Sn**	**00 40 50.8**	**+4.2**
	comp=Z,80nm,0.3s,baz=60,slow=22,SNR=6.6						
ASAJ				LR	LR	00 42 01.5	
	comp=Z,18μm,21.6s,baz=186,slow=46						
ASAJ	**Asahikawa**	**3.83**	**348**	*e*Pn	**Pn**	**00 40 02.1**	**-0.1**
ASAJ				*e*Sn	Sn	00 40 29.4	-17
ASAJ				*e*Sg	Sb	00 40 50.8	-6.5
YUK	**Yuzh-Kuril'sk**	**4.01**	**23**	*d* iP	**Pn**	**00 40 02.7**	**-2.0**
YUK				*i* S	**Sn**	**00 40 45.6**	**-5.4**
YUK				pmax	pmax		
	comp=N,321nm,0.4s						
YUK				pmax	pmax		
	comp=Z,1μm,0.4s						
YUK				pmax	pmax		
	comp=E,330nm,0.2s						
YUK				MLR	MLR		
	comp=Z,29μm,15.0s						
YUK				MLR	MLR		
	comp=E,51μm,9.0s						
YUK				MLR	MLR		
	comp=N,27μm,12.0s						
SHO	**Shikotan**	**4.21**	**33**	*d* iP	**Pn**	**00 40 05.2**	**-2.4**
SHO				*i* S	Sn	00 40 50.0	-6.1
SHO				pmax	pmax		
	comp=N,581nm,0.4s						
SHO				pmax	pmax		
	comp=Z,951nm,0.4s						
SHO				pmax	pmax		
	comp=E,852nm,0.5s						
MJAR	**Matsushiro Arr**	**5.74**	**230**	Pn	**Pn**	**00 40 27.6**	**-1.0**
	comp=E,23nm,0.3s,baz=32,slow=12,SNR=121						
MJAR				LR	LR	00 43 11.4	
	comp=E,19μm,18.2s,baz=55,slow=43						
MAJO	**Matsushiro**	**5.74**	**230**	*ce*P	**Pn**	**00 40 28.5**	**-0.1**
MAJO	**Matsushiro**	**5.74**	**230**	*e*Pn	**Pn**	**00 40 28.2**	**-0.4**
MAT	**Matsushiro**	**5.74**	**230**	P	**Pn**	**00 40 28.0**	**-0.6**
MAT				*e*S	**Sn**	**00 41 33.9**	**0.0**
MJB9	**Matsu-Tunnel**	**5.74**	**230**	*e*Pn	**Pn**	**00 40 28.2**	**-0.4**
KUR	**Kuril'sk**	**5.76**	**31**	*c* iP	**Pn**	**00 40 28.5**	**-0.3**
KUR				*i* S	**Sn**	**00 41 29.9**	**-4.2**
KUR				pmax	pmax		
	comp=N,219nm,0.6s						
KUR				pmax	pmax		
	comp=Z,855nm,0.6s						
KUR				pmax	pmax		
	comp=E,184nm,0.5s						
KUR				MLR	ML

UGL pmax pmax
comp=N,2μm,9.0s
UGL pmax pmax
comp=E,800nm,9.0s
UGL pmax pmax
comp=Z,2μm,9.0s
UGL pmax pmax
comp=Z,180nm,0.9s
UGL smax smax
comp=N,3μm,8.0s
UGL smax smax
comp=E,6μm,8.0s
UGL MLR MLR
comp=Z,31μm,15.0s
UGL MLR MLR
comp=N,21μm,16.0s
UGL MLR MLR
comp=E,58μm,19.0s
VLA Vladivostok 9.23 291 *ce*P **Pn 00 41 17.8 +1.4**
VLA MLR MLR
comp=Z,29μm,14.0s
USRK Ussuriysk Ar. 9.46 298 Pn **Pn 00 41 21.2 +1.6**
comp=Z,14nm,0.3s,baz=99,slow=13,SNR=199
USRK LR LR 00 45 04.3
comp=Z,19μm,18.6s,baz=82,slow=38
MSHR Mys Shultsa 9.65 287‖ *e*P **Pn 00 41 24.1 +2.0**
HABR Khabarovsk 10.17 326 *c i*P **Pn 00 41 27.4 -1.9**
HABR *e*S **Sn 00 43 19.0 -3.6**
HABR pmax pmax
comp=Z,288nm,1.3s
HABR pmax pmax
comp=E,144nm,1.3s
HABR pmax pmax
comp=N,123nm,1.3s
HABR MLR MLR
comp=Z,15μm,12.0s
TYV Tymovskoe 10.52 356 *e*P **Pn 00 41 34.5 +0.5**
TYV pmax pmax
comp=Z,2μm,8.0s
TYV pmax pmax
comp=Z,132nm,1.0s
MDJ Mudanjiang 11.22 297 P **Pn 00 41 44.8 +1.1**
MDJ S **Sn 00 43 50.3 +1.8**
MDJ ScP **ScP 00 51 11.8 +2.0**
MDJ PcS **PcS 00 51 14.3 +2.1**
MDJ pmax pmax
comp=Z,5μm,7.7s
MDJ LR LR
comp=Z,19μm,16.1s
MDJ LR LR
comp=Z,28μm,16.1s
MDJ LR LR
comp=Z,48μm,16.6s
MDJ Mudanjiang 11.22 297 *e*Pn **Pn 00 41 45.8 +2.0**
KLR Kul'dur 12.24 320 Pn **Pn 00 41 57.3 -0.3**
comp=Z,0.9nm,0.3s,baz=126,slow=13,SNR=191
KLR LR LR 00 47 16.4
comp=Z,9μm,19.1s,baz=130,slow=40
JNU Nakatsue 12.54 239 Pn **Pn 00 42 00.8 -1.1**
comp=Z,2.7nm,0.3s,baz=42,slow=6.5,SNR=21
JNU LR LR 00 47 17.6
comp=Z,31μm,18.0s,baz=46,slow=39
KSRS Korea Array 12.61 262 Pn **Pn 00 42 04.5 +1.8**
comp=Z,0.6nm,0.3s,baz=70,slow=14,SNR=19
KSRS LR LR 00 46 53.7
comp=Z,18μm,18.2s,baz=73,slow=37
KSRS PcP **PcP 00 47 41.5 +1.3**
comp=Z,0.4nm,0.3s,baz=298,slow=0.9,SNR=4.4
KSRS PKiKP **PKiKP 00 55 38.6 +1.2**
comp=Z,0.7nm,0.3s,baz=211,slow=1.5,SNR=4.5
KS01 Wonju Array Si 12.62 262 *e*Pn **Pn 00 42 03.6 +0.7**
KS15 Wonju Array Si 12.64 262 *e*Pn **Pn 00 42 05.3 +2.2**
KSAR Wonju Array Be 12.64 262 P **Pn 00 42 04.5 +1.4**
KSAR Wonju Array Be 12.64 262 Pn **Pn 00 42 04.5 +1.4**
NKL Nikolayevsk 12.95 352 *i* P **Pn 00 42 06.0 -1.2**
NKL *e*S **Sn 00 44 32.0 +1.6**
NKL pmax pmax
comp=N,30nm,1.0s
NKL pmax pmax
comp=Z,86nm,1.0s
NKL pmax pmax
comp=N,2μm,8.0s
NKL pmax pmax
comp=E,600nm,8.0s
NKL pmax pmax
comp=Z,4μm,8.0s
NKL smax smax
comp=E,5μm,14.0s
NKL MLR MLR
comp=N,20μm,15.0s
NKL MLR MLR
comp=E,12μm,15.0s
NKL MLR MLR
comp=Z,30μm,14.0s
OKH Okha 13.19 358 *e*P **Pn 00 42 08.4 -2.2**
OKH *e*S **Sn 00 44 40.0 +3.5**
OKH pmax pmax
comp=Z,2μm,12.0s
OKH smax smax
comp=E,4μm,15.0s
OKH MLR MLR
comp=Z,23μm,16.0s
CBIJ Chichi jima 13.30 186 Pn Pn 00 42 01.2 -11
CBIJ *e*Sn Sn 00 44 27.9 -11
JCJ Chichijima 13.30 186 Pn Pn 00 42 01.2 -11
comp=Z,2.3nm,0.3s,baz=351,slow=18,SNR=2.7
JCJ Sn Sn 00 44 27.9 -11
comp=Z,18nm,0.3s,baz=132,slow=24,SNR=5.2
SKR Severo-Kuril's 13.49 36 *e*P Pn 00 42 07.9 -6.7
SKR *e*S Sn 00 44 36.0 -7.7
SKR pmax pmax
comp=N,60nm,0.5s
SKR pmax pmax
comp=Z,90nm,0.5s
SKR MLR MLR
comp=N,11μm,14.0s
SKR MLR MLR
comp=E,20μm,14.0s
SKR MLR MLR
comp=Z,14μm,14.0s
INCN Inchon 13.57 263 *e*Pn **Pn 00 42 15.3 -0.6**
CN2 Changchun 13.96 290 *e*P **Pn 00 42 20.8 -0.3**
CN2 *ep*P P 00 42 24.3 -4.7
CN2 *e*S **Sn 00 44 57.9 +2.6**
CN2 pmax pmax
comp=Z,40nm,1.0s
CN2 pmax pmax
comp=Z,400nm,10.0s
CN2 LR LR
comp=Z,19μm,15.0s
CN2 LR LR
comp=Z,16μm,15.0s
CN2 LR LR
comp=Z,17μm,13.0s
SNY Shenyang 15.22 282 ⇑P **Pn 00 42 38.8 +0.7**
SNY S **Sn 00 45 26.8 +0.8**
SNY pmax pmax
comp=Z,140nm,1.2s
SNY LR LR
comp=Z,12μm,14.2s
SNY LR LR
comp=Z,22μm,14.0s
SNY LR LR
comp=Z,32μm,13.5s
PEA0 Petropavlovsk- 15.92 32 *e*Pn **Pn 00 42 44.4 -2.9**
PEA0B Petropavlovsk- 15.92 32 *e*Pn **Pn 00 42 47.6 +0.3**
comp=Z,112nm,1.3s
PETK Petropavlovsk- 15.92 32 Pn Pn 00 42 42.4 -4.9
comp=Z,0.5nm,0.3s,baz=189,slow=8.7,SNR=6.0
PETK LR LR 00 48 41.3
comp=Z,6μm,19.2s,baz=216,slow=36
PEA1 Petropavlovsk- 15.93 32 *e*Pn Pn 00 42 42.4 -4.9
PET Petropavlovsk 16.26 34 *e*P **P 00 42 57.7 +3.2**
PET *e*S **Sn 00 45 56.5 +5.3**
PET pmax pmax
comp=Z,114nm,1.1s
PET MLR MLR
comp=Z,12μm,16.0s
PET MLR MLR
comp=Z,11μm,17.0s
PET Petropavlovsk 16.26 34 *e*Pn **P 00 42 54.9 +0.4**
PET *es*P **sP 00 43 02.9 -0.1**
DL2 Dalian 17.04 272 ⇑*i*P **Pn 00 42 59.8 -1.7**
DL2 S **Sn 00 46 10.0 -0.2**
DL2 pmax pmax
comp=Z,310nm,1.4s
DL2 pmax pmax
comp=Z,5μm,7.7s
DL2 LR LR
comp=Z,7μm,12.7s
DL2 LR LR
comp=Z,13μm,12.8s
DL2 LR LR
comp=Z,9μm,12.4s
JOW Kunigami 18.58 228 *e*P **P 00 43 18.8 -1.5**
JOW *es*P **pP 00 43 26.6 +0.4**
HIA Hailar 19.10 306 *e*P **P 00 43 24.6 -1.3**
HIA pmax pmax
comp=Z,117nm,0.9s
HIA Hailar 19.10 306 *e*P **P 00 43 24.6 -1.3**
comp=Z,117nm,0.9s
MA2 Magadan 19.74 11 P **P 00 43 29.8 -2.9**
comp=Z,2.0nm,0.3s,baz=218,slow=8.2,SNR=28
MA2 LR LR 00 52 13.5
comp=Z,9μm,18.1s,baz=217,slow=40
SSE Sheshan 20.42 250 ⇑P **P 00 43 37.6 -2.7**
SSE pP Pn 00 43 41.5 -1.0
SSE S **S 00 47 26.9 -1.1**
SSE sS Sn 00 47 33.5 +1.5
SSE pmax pmax
comp=Z,1μm,8.9s
SSE LR LR
comp=Z,6μm,18.2s
SSE LR LR
comp=Z,2μm,18.1s
SSE LR LR
comp=Z,4μm,18.8s
CLNS Chul'man 20.52 330 *e*P **P 00 43 40.2 -1.1**
CLNS *e**PP **sP 00 43 49.0 -0.9**
CLNS *e* 00 43 55.2
CLNS *e*S **S 00 47 28.2 -1.5**
CLNS *e*SS **SnSn 00 47 49.3 +0.7**
CLNS *e* 00 47 50.3
CLNS pmax pmax
comp=E,73nm,1.1s
CLNS pmax pmax
comp=Z,231nm,1.0s
CLNS pmax pmax
comp=N,168nm,1.2s
CLNS pmax pmax
comp=E,175nm,1.1s
CLNS pmax pmax
comp=N,197nm,1.1s
CLNS pmax pmax
comp=Z,225nm,1.1s
CLNS smax smax
comp=E,2μm,12.5s
CLNS smax smax
comp=N,2μm,15.4s
CLNS MLR MLR
comp=Z,13μm,13.0s
CLNS MLR MLR
comp=E,6μm,15.0s
CLNS MLR MLR
comp=N,10μm,13.0s
BJI Beijing 20.97 278 P **P 00 43 43.6 -2.7**
BJI pmax pmax
comp=N,110nm,2.1s
BJI pmax pmax
comp=N,2μm,6.4s
BJI LR LR
comp=N,10μm,15.3s
BJI LR LR
comp=N,14μm,12.4s
BJI LR LR
comp=N,8μm,21.2s
BJT Baijiatuau 20.98 278 *e*P **P 00 43 44.2 -2.2**
BJT pmax pmax
comp=Z,313nm,1.2s
BJT MLR MLR
comp=Z,11μm,19.0s
BJT Baijiatuau 20.98 278 *e*P **P 00 43 44.2 -2.2**
comp=Z,313nm,1.2s
BJT LR LR
comp=Z,11μm,19.0s
TIA Tai'an 21.21 267 ⇑P **P 00 43 46.3 -2.6**
TIA S **S 00 47 37.6 -6.2**
TIA pmax pmax
comp=Z,100nm,1.0s
TIA pmax pmax
comp=Z,3μm,9.0s
TIA LR LR
comp=Z,18μm,14.0s
TIA LR LR
comp=Z,19μm,13.0s
TIA LR LR
comp=Z,24μm,15.5s
NJ2 Nanjing 21.62 255 *e*P **P 00 43 51.3 -2.0**
NJ2 sP **sP 00 44 05.3 +3.3**
NJ2 pmax pmax
comp=Z,110nm,1.1s
NJ2 pmax pmax
comp=Z,2μm,9.3s
NJ2 LR LR
comp=Z,15μm,15.2s
NJ2 LR LR
comp=Z,15μm,16.3s
NJ2 LR LR
comp=Z,19μm,17.3s
SEY Seymchan 23.19 10 P **P 00 44 08.9 -0.7**
comp=Z,110nm,0.7s,baz=188,slow=7.1,SNR=231
SEY S **S 00 48 16.6 -3.5**
comp=Z,5.5nm,0.9s,baz=48,slow=22,SNR=7.4
SEY Seymchan 23.19 10‖ *e*P **P 00 44 08.2 -1.4**
YAK Yakutsk 23.29 343 P **P 00 44 07.1 -3.5**
comp=Z,309nm,0.8s,baz=6.1,slow=1.7,SNR=24
YAK S **S 00 48 18.1 -3.5**
comp=Z,16nm,0.3s,baz=182,slow=20,SNR=7.8
YAK LR LR 00 54 13.2
comp=Z,7μm,18.0s,baz=148,slow=39
YAK Yakutsk 23.29 343 *e*P **P 00 44 07.1 -3.5**
YAK *e**PP pP 00 44 11.1 -5.6
YAK *e*PPP PPP 00 44 39.5
YAK *e*S S 00 48 13.0 -8.7
YAK *e**SS sS 00 48 23.0 -9.1
YAK *e*SSS SSS 00 48 56.3
YAK pmax pmax
comp=E,16nm,1.2s
YAK pmax pmax
comp=N,39nm,1.1s
YAK pmax pmax
comp=Z,57nm,1.1s
YAK pmax pmax
comp=Z,126nm,0.8s
YAK smax smax
comp=N,1μm,2.0s
YAK smax smax
comp=E,2μm,2.7s
YAK MLR MLR
comp=E,8μm,18.0s
YAK MLR MLR
comp=Z,15μm,17.0s
YAK MLR MLR
comp=N,12μm,17.0s
YAK Yakutsk 23.29 343 *e*P **P 00 44 07.1 -3.5**
comp=N,361nm,0.9s
YAK *e*S **S 00 48 18.1 -3.5**
YAK LR LR
comp=Z,8μm,18.0s
YOJ Yonaguni jima 23.49 234 PFAKE 00 44 20.0 +7.1
YOJ LR LR
comp=Z,10μm,20.0s
CIT Chita 23.70 310 *e*P **P 00 44 14.0 -0.9**
CIT *e* 00 44 24.5
CIT *e* 00 44 27.2
CIT *e* 00 44 41.4
CIT *e* 00 44 51.7
CIT pmax pmax
comp=Z,584nm,1.3s
TATO Taipei 24.08 237 *e*P **P 00 44 18.3 -0.2**
comp=Z,249nm,0.9s
TATO LR LR
comp=Z,22μm,18.0s
HHC Hu-ho-hao-te 24.31 282 *e*P **P 00 44 19.1 -1.6**
HHC sP pP 00 44 26.3 -0.8
HHC PP **PnPn 00 44 52.1 +1.2**
HHC S **S 00 48 34.3 -4.4**
HHC SS **SnSn 00 49 25.8 +3.9**
HHC pmax pmax
comp=Z,47nm,1.0s
HHC pmax pmax
comp=Z,2μm,6.7s
HHC LR LR
comp=Z,5μm,13.6s
HHC LR LR
comp=Z,12μm,14.7s
HHC LR LR
comp=Z,13μm,13.9s
TIY Taiyuan 24.34 274 *e*P **P 00 44 18.8 -2.2**
TIY S **S 00 48 39.5 +0.3**
TIY sS **sS 00 48 49.5 -0.1**
TIY pmax pmax
comp=Z,19nm,0.7s
TIY pmax pmax
comp=Z,2μm,8.1s
TIY LR LR
comp=Z,8μm,12.6s
TIY LR LR
comp=Z,4μm,12.6s
TIY LR LR
comp=Z,6μm,13.6s
YHNB Yeheng 24.36 237 *e*P **P 00 44 18.8 -2.5**
comp=Z,95nm,1.1s
YHNB LR LR
comp=Z,22μm,18.0s
NACB Ninganchiao 24.58 236 *e*P **P 00 44 19.7 -3.5**
comp=Z,62nm,1.0s
NACB LR LR
comp=Z,5μm,18.0s
SSLB Suanglung 25.26 236 *e*P **P 00 44 27.9 -1.4**
comp=Z,74nm,1.2s
SSLB LR LR
comp=Z,10μm,18.0s
YULB Yu-li 25.33 235 *e*P **P 00 44 27.1 -2.9**
comp=Z,58nm,0.9s
YULB LR LR
comp=Z,7μm,20.0s
BTO Baotou 25.51 282 *e*P **P 00 44 29.8 -1.8**
WHN Wuhan 25.71 257 P **P 00 44 32.1 -1.3**
WHN S S 00 48 51.6 -9.5
WHN pmax pmax
comp=Z,470nm,1.2s
WHN pmax pmax
comp=Z,5μm,9.0s
WHN LR LR
comp=Z,38μm,13.8s
WHN LR LR
comp=Z,27μm,14.6s
WHN LR LR
comp=Z,41μm,17.7s
BOD Bodaibo 25.80 323 *e*P **P 00 44 33.7 -0.2**
BOD pmax pmax
comp=Z,304nm,1.1s
TPUB Ta-pu 25.82 236 *e*P **P 00 44 33.5 -0.9**
comp=Z,127nm,1.2s
TPUB LR LR
comp=Z,12μm,19.0s
TWG Pinlang 25.89 234 *e*P **P 00 44 34.0 -1.1**
comp=Z,660nm,1.1s
TWG LR LR
comp=Z,35μm,19.0s
QZH Quanzhou 26.00 241 ⇑*i*P **P 00 44 31.8 -4.2**
QZH S **S 00 49 03.0 -2.6**
QZH pmax pmax
comp=Z,860nm,2.0s
QZH pmax pmax
comp=Z,6μm,9.7s
QZH LR LR
comp=Z,16μm,13.0s
QZH LR LR
comp=Z,5μm,11.0s
QZH LR LR
comp=Z,17μm,14.2s
ULN Ulaanbaatar 27.13 298 *c i*P **P 00 44 46.0 -0.3**
ULN pmax pmax
comp=Z,111nm,1.2s
ULN MLR MLR
comp=Z,22μm,15.0s
ULN Ulaanbaatar 27.13 298 *e*P **P 00 44 46.2 -0.1**
comp=Z,116nm,1.2s
ULN LR LR
comp=Z,12μm,18.0s
ULN Ulaanbaatar 27.13 298 P **P 00 44 46.3 0.0**
SNR=59
ULN Ulaanbaatar 27.13 298 P **P 00 44 46.3 0.0**
SNR=59
SONA1 Songino Array 27.57 298 *e*P **P 00 44 49.1 -1.1**
SONA0 Songino Array 27.57 298 *e*P **P 00 44 49.9 -0.3**
comp=Z,127nm,1.2s
SONM Songino Array 27.57 298 P **P 00 44 49.9 -0.3**
comp=Z,49nm,1.0s,baz=94,slow=7.0,SNR=151
SONM LR LR 00 56 09.6
comp=Z,7μm,19.9s,baz=88,slow=37
SONM Songino Array 27.57 298 P **P 00 44 49.9 -0.3**
SONM pmax pmax
comp=Z,50nm,1.0s
SONM MLR MLR
comp=Z,7μm,19.9s
XAN Xi'an 28.26 268 P **P 00 44 55.1 -1.3**
XAN pP sP 00 45 05.5 +0.2
XAN sP pP 00 45 08.5 +5.8
XAN pmax pmax
comp=Z,86nm,1.4s
XAN pmax pmax
comp=Z,2μm,10.3s
XAN LR LR
comp=Z,6μm,15.8s
XAN LR LR
comp=Z,9μm,15.7s
XAN LR LR
comp=Z,10μm,12.9s
H11N2 WAKE ISLAND Hy 28.61 129 T T 01 15 52.6
baz=314,slow=75,SNR=124
H11N1 WAKE ISLAND Hy 28.62 129 T T 01 15 50.9
baz=314,slow=75,SNR=118
H11N3 WAKE ISLAND Hy 28.63 129 T T 01 15 37.4
baz=314,slow=75,SNR=223
IRK Irkutsk 29.32 307 *e*P **P 00 45 06.6 +1.0**
IRK *e*S **S 00 50 03.5 +5.8**
IRK pmax pmax
comp=Z,378nm,0.8s
H11S1 WAKE ISLAND Hy 29.45 131 T T 01 16 06.6
baz=323,slow=74,SNR=70
H11S3 WAKE ISLAND Hy 29.45 131 T T 01 16 09.0
baz=122,slow=74,SNR=76
H11S2 WAKE ISLAND Hy 29.47 131 T T 01 16 44.6
SNR=61
ENH Enshi 29.49 261 *e*P **P 00 45 06.2 -1.2**
comp=Z,325nm,1.4s
ENH LR LR
comp=Z,11μm,18.0s
TLY Talaya 29.64 306 P **P 00 45 09.6 +1.2**
comp=Z,55nm,0.9s,baz=120,slow=16,SNR=26
TLY LR LR 00 57 11.3
comp=Z,3μm,20.5s,baz=117,slow=37
TLY Talaya 29.64 306 *c i*P **P 00 45 08.5 +0.1**
TLY *e* 00 46 08.5
TLY *e*S **S 00 50 06.2 +3.6**
TLY pmax pmax
comp=Z,87nm,0.9s
TLY MLR MLR
comp=Z,8μm,13.0s
TLY Talaya 29.64 306 *e*P **P 00 45 09.1 +0.7**
comp=Z,117nm,1.1s
TLY Talaya 29.64 306 P **P 00 45 08.7 +0.3**
SNR=47
TLY Talaya 29.64 306 P **P 00 45 08.7 +0.3**
SNR=47
TLY P **P 00 45 08.7 +0.3**
SNR=47
ZAK Zakamensk 29.75 303 *e*P **P 00 45 09.2 -0.3**
ZAK pmax pmax
comp=Z,45nm,1.3s
BILL Bilibino 30.33 17 *c i*P **P 00 45 14.1 -0.2**
BILL *i* 00 45 23.1
BILL *i* S **S 00 50 09.2 -3.9**
BILL pmax pmax
comp=Z,101nm,1.0s
BILL MLR MLR
comp=Z,5μm,15.0s
BILL Bilibino 30.33 17 *e*P **P 00 45 14.1 -0.2**
comp=Z,80nm,0.9s
BILL LR LR
comp=Z,5μm,20.0s
GZH Guangzhou 30.81 245 P P 00 45 13.3 -5.7
GZH PP **PnPn 00 46 16.8 -2.6**
GZH S S 00 50 11.8 -10
GZH pmax pmax
comp=Z,2μm,5.5s

MOY	**Mondy**	**31.28**	**306**	*e*P		**P**		**00 45 24.1**	**+1.1**
MOY				pmax		pmax			
	comp=Z,103nm,1.9s								
LZH	**Lanzhou**	**31.39**	**275**	⇑P		**P**		**00 45 24.1**	**-0.1**
LZH				pP		pP		00 45 29.6	-1.0
LZH				sP		sP		00 45 31.3	-1.9
LZH				PP		**PnPn**		**00 46 27.0**	**+0.1**
LZH				S		**S**		**00 50 29.5**	**-1.1**
LZH				sS		sS		00 50 36.0	-5.1
LZH				SS		**SnSn**		**00 52 14.3**	**-0.5**
LZH				pmax		pmax			
	comp=Z,230nm,1.5s								
LZH				pmax		pmax			
	comp=Z,1μm,9.0s								
LZH				LR		LR			
	comp=Z,9μm,13.0s								
LZH				LR		LR			
	comp=Z,7μm,12.8s								
LZH				LR		LR			
	comp=Z,10μm,16.2s								
TIXI	**Tiksi**	**32.23**	**351**	P		**P**		**00 45 29.4**	**-1.5**
	comp=Z,41nm,0.8s,baz=145,slow=6.9,SNR=100								
TIXI				S		**S**		**00 50 42.5**	**-0.1**
	comp=Z,0.9nm,0.3s,baz=269,slow=16,SNR=2.0								
TIXI	**Tiksi**	**32.23**	**351**	*c* *i*P		**P**		**00 45 29.3**	**-1.6**
TIXI				pmax		pmax			
	comp=Z,67nm,1.0s								
TIXI				MLR		MLR			
	comp=Z,11μm,16.0s								
GTA	**Gaotai**	**33.41**	**283**	P		**P**		**00 45 41.8**	**0.0**
GTA				pP		pP		00 45 46.0	-2.2
GTA				sP		sP		00 45 49.6	-1.2
GTA				S		**S**		**00 51 01.5**	**-0.4**
GTA				sS		sS		00 51 07.9	-4.5
GTA				SS		**SnSn**		**00 53 04.8**	**+1.1**
GTA				pmax		pmax			
	comp=Z,100nm,1.1s								
GTA				pmax		pmax			
	comp=Z,2μm,5.9s								
GTA				LR		LR			
	comp=Z,6μm,14.3s								
GTA				LR		LR			
	comp=Z,12μm,15.2s								
GTA				LR		LR			
	comp=Z,12μm,15.2s								
CD2	**Chengdu**	**33.54**	**266**	P		**P**		**00 45 42.0**	**-1.0**
CD2				sP		pP		00 45 48.6	-0.8
CD2				PP		**PnPn**		**00 46 54.8**	**+0.3**
CD2				S		**S**		**00 51 03.0**	**-1.0**
CD2				sS		sS		00 51 10.9	-3.6
CD2				pmax		pmax			
	comp=Z,90nm,1.0s								
CD2				pmax		pmax			
	comp=Z,2μm,7.6s								
CD2				LR		LR			
	comp=Z,11μm,16.2s								
CD2				LR		LR			
	comp=Z,6μm,18.0s								
GYA	**Guiyang**	**33.60**	**257**	⇑*i*P		**P**		**00 45 42.6**	**-1.0**
GYA				PP		**PnPn**		**00 46 56.8**	**+1.4**
GYA				PcP		**PcP**		**00 48 26.0**	**+2.3**
GYA				S		**S**		**00 51 05.6**	**+0.4**
GYA				ScP		**ScP**		**00 52 09.0**	**+2.0**
GYA				SS		**SnSn**		**00 53 08.3**	**-0.5**
GYA				ScS		**ScS**		**00 56 08.9**	**+0.4**
GYA				pmax		pmax			
	comp=Z,180nm,1.0s								
GYA				pmax		pmax			
	comp=Z,1μm,8.4s								
GYA				LR		LR			
	comp=Z,10μm,19.1s								
GYA				LR		LR			
	comp=Z,5μm,18.1s								
GYA				LR		LR			
	comp=Z,7μm,20.0s								
MIDW	**Midway**	**34.14**	**99**	PFAKE				00 46 00.0	+12
MIDW				LR		LR			
	comp=Z,2μm,20.0s								
NIKH	**Nikolski High**	**34.30**	**52**	PFAKE				00 46 00.0	+11
NIKH				LR		LR			
	comp=Z,2μm,21.0s								
GAMB	**Gambell**	**34.96**	**33**	*e*P		**P**		**00 45 54.9**	**+0.2**
	comp=Z,30nm,1.1s								
GAMB				*es*P		**pP**		**00 46 01.6**	**+0.5**
UNV	**Unalaska Valle**	**35.73**	**51**	PFAKE				00 46 10.0	+8.5
UNV				LR		LR			
	comp=Z,2μm,20.0s								
PATS	**Pohnpei**	**35.88**	**155**	PFAKE				00 46 20.0	+17
PATS				LR		LR			
	comp=Z,4μm,19.0s								
QIZ	**Qiongzhong**	**35.95**	**244**	P		**P**		**00 46 03.3**	**-0.5**
QIZ				PP		**PP**		**00 47 26.0**	**+0.4**
QIZ				S		**S**		**00 51 43.0**	**+1.9**
QIZ				pmax		pmax			
	comp=Z,14nm,1.3s								
QIZ				LR		LR			
	comp=Z,3μm,13.6s								
QIZ				LR		LR			
	comp=Z,3μm,13.7s								
AKUT	**Akutan**	**36.17**	**50**	PFAKE				00 46 20.0	+15
AKUT				LR		LR			
	comp=Z,2μm,18.0s								
KRAR	**Krasnoyarsk**	**36.38**	**313**	⇓*e*P		**P**		**00 46 05.0**	**-2.1**
KRAR				pmax		pmax			
	comp=Z,116nm,1.1s								
KRAR				MLR		MLR			
	comp=Z,7μm,16.0s								
DAV	**Davao City (W)**	**36.90**	**211**	P		**P**		**00 46 12.4**	**+0.5**
	comp=Z,101nm,0.4s,baz=96,slow=9.6,SNR=3.1								
DAV	**Davao City (W)**	**36.90**	**211**	*e*P		**P**		**00 46 12.4**	**+0.5**
	comp=Z,164nm,0.7s								
DAV				LR		LR			
	comp=Z,4μm,20.0s								
KMI	**Kunming**	**37.28**	**259**	P		**P**		**00 46 14.9**	**-0.5**
KMI				pP		pP		00 46 20.3	-1.5
KMI				sP		sP		00 46 22.6	-1.8
KMI				PP		**PnPn**		**00 47 40.9**	**-0.1**
KMI				S		**S**		**00 52 00.0**	**-1.8**
KMI				sS		sS		00 52 12.9	+0.5
KMI				pmax		pmax			
	comp=Z,140nm,1.5s								
KMI				pmax		pmax			
	comp=Z,2μm,6.9s								
KMI				LR		LR			
	comp=Z,10μm,14.6s								
KMI				LR		LR			
	comp=Z,11μm,16.1s								
KMI				LR		LR			
	comp=Z,14μm,16.9s								
FALS	**False Pass**	**37.55**	**49**	PFAKE				00 46 30.0	+13
FALS				LR		LR			
	comp=Z,2μm,18.0s								
KWAJ	**Kwajalein Atol**	**37.98**	**139**	PFAKE				00 46 30.0	+9.0
KWAJ				LR		LR			
	comp=Z,2μm,21.0s								
SDPT	**Sand Point**	**39.24**	**48**	PFAKE				00 46 40.0	+8.8
SDPT				LR		LR			
	comp=Z,2μm,18.0s								
PANO	**Nakornpanom**	**40.86**	**247**	P		**P**		**00 46 46.1**	**+1.0**
	comp=Z,69nm,0.8s								
WMQ	**Urumqi**	**41.01**	**294**	P		**P**		**00 46 46.4**	**+0.2**
WMQ				pP		pP		00 46 51.3	-1.3
WMQ				sP		sP		00 46 53.5	-1.7
WMQ				PP		**PnPn**		**00 48 26.9**	**+1.8**
WMQ				S		**S**		**00 52 54.4**	**-2.9**
WMQ				sS		sS		00 53 04.3	-3.6
WMQ				SS		**SS**		**00 55 53.3**	**-6.0**
WMQ				pmax		pmax			
	comp=Z,74nm,0.8s								
WMQ				pmax		pmax			
	comp=Z,870nm,5.4s								
WMQ				LR		LR			
	comp=Z,3μm,12.8s								
WMQ				LR		LR			
	comp=Z,5μm,14.2s								
WMQ				LR		LR			
	comp=Z,3μm,17.0s								
NRIK	**Noril'sk**	**41.03**	**333**	P		**P**		**00 46 45.1**	**-0.8**
	comp=Z,23nm,1.0s,baz=107,slow=9.3,SNR=36								
NRIK				LR		LR		01 05 10.7	
	comp=Z,9μm,19.6s,baz=102,slow=38								
ZAA1	**Zalesovo Array**	**41.06**	**310**	*e*P		**P**		**00 46 46.0**	**-0.4**
ZAA1				*e*PcP		**PcP**		**00 48 46.3**	**+0.6**
ZALV	**Zalesovo Beam**	**41.06**	**310**	P		**P**		**00 46 46.0**	**-0.4**
	comp=Z,89nm,0.9s,baz=87,slow=7.1,SNR=245								
ZALV				PcP		**PcP**		**00 48 46.3**	**+0.6**
	comp=Z,13nm,0.8s,baz=90,slow=5.8,SNR=2.9								
ZALV				LR		LR		01 04 51.2	
	comp=Z,6μm,18.6s,baz=82,slow=38								
SKNT	**Sakolnakorn**	**41.42**	**247**	P		**P**		**00 46 49.8**	**+0.1**
	comp=Z,146nm,1.0s								
TT01	**Tatalina**	**41.68**	**37**	*e*P		**P**		**00 46 53.0**	**+1.6**
TTA	**Tatalina**	**41.69**	**37**	*e*P		**P**		**00 46 53.7**	**+2.2**
TTA				pmax		pmax			
	comp=Z,38nm,1.1s								
TTA				MLR		MLR			
	comp=Z,2μm,19.0s								
TTA	**Tatalina**	**41.69**	**37**	*e*P		**P**		**00 46 53.7**	**+2.2**
	comp=Z,38nm,1.1s								
TTA				LR		LR			
	comp=Z,2μm,19.0s								
MYLDM	**Lahad Datu**	**41.71**	**220**	⇑P		**P**		**00 46 53.3**	**+1.2**
MYLDM	**Lahad Datu**	**41.71**	**220**	*e*P		**P**		**00 46 54.6**	**+2.5**
	comp=Z,372nm,1.4s								
SVW2	**Sparrevohn**	**41.81**	**39**	*e*P		**P**		**00 46 53.6**	**+1.1**
	comp=Z,39nm,0.9s								
SVW2				LR		LR			
	comp=Z,2μm,19.0s								
NVS	**Novosibirsk**	**41.89**	**311**	⇑*i*P		**P**		**00 46 53.0**	**-0.2**
NVS				*e*S		**S**		**00 53 11.1**	**+1.2**
NVS				pmax		pmax			
	comp=Z,190nm,1.8s								
NVS				pmax		pmax			
	comp=E,105nm,1.7s								
NVS				smax		smax			
	comp=E,165nm,2.8s								
CRAI	**Chiangrai**	**41.93**	**255**	P		**P**		**00 46 54.9**	**+1.0**
	comp=E,63nm,1.2s								
SDKM	**Sandakan**	**41.96**	**222**	⇑P		**P**		**00 46 54.2**	**0.0**
TNTI	**Ternate**	**42.11**	**205**	P		**P**		**00 46 56.3**	**+1.0**
	comp=E,91nm,0.7s								
TNTI	**Ternate**	**42.11**	**205**	PFAKE				00 47 10.0	+15
TNTI				LR		LR			
	comp=Z,4μm,20.0s								
KKM	**Kota Kinabalu**	**42.12**	**223**	*e*P		**P**		**00 46 57.7**	**+2.2**
	comp=Z,123nm,1.4s								
KKM				LR		LR			
	comp=Z,2μm,19.0s								
ZSN	**Zaisan**	**42.37**	**300**	⇑*i*P		**P**		**00 46 55.1**	**-2.1**
	comp=Z,1μm,1.2s								
ZSN				*e*S		**S**		**00 53 15.0**	**-2.2**
ZSN				LRM		MLR		01 06 20.6	
	comp=Z,6μm,13.1s								
SWI	**Sorong**	**42.57**	**199**	P		**P**		**00 46 57.7**	**-1.4**
	comp=Z,42nm,1.7s,comp=Z,1μm								
KHON	**Khomkaen**	**42.67**	**248**	P		**P**		**00 47 00.3**	**+0.4**
	comp=Z,34nm,0.9s,comp=Z,2μm								
JAY	**Jayapura**	**42.77**	**184**	P		P		00 47 10.8	+10
TSM	**Tawau**	**42.78**	**220**	⇓P		**P**		**00 47 02.1**	**+1.3**
CMAI	**Chiengmai2**	**43.09**	**255**	P		**P**		**00 47 04.1**	**+0.6**
	comp=Z,143nm,1.0s,comp=Z,7μm								
OHAK	**Old Harbor**	**43.13**	**45**	PFAKE				00 47 20.0	+17
OHAK				LR		LR			
	comp=Z,2μm,21.0s								
UTTA	**Uttaradit**	**43.37**	**252**	P		**P**		**00 47 05.7**	**+0.2**
	comp=Z,21nm,1.0s,comp=Z,168nm								
LBMI	**Labuha**	**43.40**	**204**	P		P		00 47 17.0	+11
PPLA	**Purkeypile**	**43.44**	**37**	*e*P		**P**		**00 47 08.9**	**+3.1**
	comp=Z,62nm,1.2s								
PPLA				LR		LR			
	comp=Z,2μm,20.0s								
KDAK	**Kodiak Island**	**43.46**	**44**	P		P		00 47 19.8	+14
	comp=Z,18nm,0.9s,baz=285,slow=2.4,SNR=9.0								
KDAK	**Kodiak Island**	**43.46**	**44**	*e*P		**P**		**00 47 06.1**	**+0.3**
KDAK	**Kodiak Island**	**43.46**	**44**	*e*P		**P**		**00 47 05.5**	**-0.3**
	comp=Z,59nm,0.9s								
CAST	**Castle Rocks**	**43.48**	**36**	*e*P		**P**		**00 47 07.1**	**+1.1**
	comp=Z,45nm,1.0s								
CAST				LR		LR			
	comp=Z,2μm,18.0s								
SPU	**Mount Spurr**	**43.52**	**39**	*e*P		**P**		**00 47 07.0**	**+0.6**
LAMP	**Lampang**	**43.54**	**253**	P		**P**		**00 47 07.7**	**+0.7**
	comp=Z,17nm,0.9s,comp=Z,168nm								
LSA	**Lhasa**	**43.73**	**273**	P		**P**		**00 47 09.8**	**+0.8**
LSA				S		**S**		**00 53 38.9**	**+0.4**
LSA				pmax		pmax			
	comp=Z,12nm,1.0s								
LSA				pmax		pmax			
	comp=Z,2μm,8.2s								
LSA				LR		LR			
	comp=Z,2μm,15.9s								
LSA				LR		LR			
	comp=Z,3μm,17.2s								
LSA				LR		LR			
	comp=Z,5μm,14.5s								
LSA	**Lhasa**	**43.73**	**273**	*e*P		**P**		**00 47 10.1**	**+1.1**
LSA				pmax		pmax			
	comp=Z,174nm,1.5s								
LSA				MLR		MLR			
	comp=Z,5μm,19.0s								
LSA	**Lhasa**	**43.73**	**273**	*e*P		**P**		**00 47 10.1**	**+1.1**
	comp=Z,174nm,1.5s								
LSA				LR		LR			
	comp=Z,5μm,19.0s								
PBKT	**Sadao Pong**	**43.83**	**250**	P		**P**		**00 47 09.2**	**-0.1**
	comp=Z,57nm,1.2s,comp=Z,1μm								
CMMT	**Chiang Mai**	**43.86**	**254**	P		**P**		**00 47 09.6**	**0.0**
	comp=Z,50nm,1.9s,comp=Z,2μm								
CHTO	**Chiang Mai**	**43.86**	**254**	P		**P**		**00 47 09.7**	**+0.1**
	comp=Z,227nm,1.9s,comp=Z,7μm								
CHTO	**Chiang Mai**	**43.86**	**254**	*e*P		**P**		**00 47 09.7**	**+0.1**
CHTO				pmax		pmax			
	comp=Z,33nm,0.8s								
CHTO				MLR		MLR			
	comp=Z,3μm,19.0s								
CHTO	**Chiang Mai**	**43.86**	**254**	*e*P		**P**		**00 47 09.7**	**+0.1**
	comp=Z,33nm,0.8s								
CHTO				LR		LR			
	comp=Z,3μm,19.0s								
CHTO	**Chiang Mai**	**43.86**	**254**	P		**P**		**00 47 09.1**	**-0.5**
	SNR=30								
CHTO	**Chiang Mai**	**43.86**	**254**	P		**P**		**00 47 09.1**	**-0.5**
	SNR=30								
CHTO				P		**P**		**00 47 09.1**	**-0.5**
	SNR=30								
MK01	**Makanchi Array**	**43.92**	**300**	*e*P		**P**		**00 47 08.8**	**-1.0**
MK31	**Makanchi Array**	**43.92**	**300**	*i* P		**P**		**00 47 09.5**	**-0.3**
MK31				pmax		pmax			
	comp=Z,154nm,1.0s								
MK31	**Makanchi Array**	**43.92**	**300**	*e*P		**P**		**00 47 09.4**	**-0.3**
MK32	**Makanchi Array**	**43.92**	**300**	*e*P		**P**		**00 47 09.4**	**-0.4**
MKAR	**Makanchi Array**	**43.92**	**300**	P		**P**		**00 47 09.4**	**-0.4**
	comp=Z,113nm,0.9s,baz=81,slow=7.3,SNR=343								
MKAR				LR		LR		01 06 06.4	
	comp=Z,4μm,18.3s,baz=82,slow=37								
MKAR	**Makanchi Array**	**43.92**	**300**	*ce*P		**P**		**00 47 09.3**	**-0.5**
MKAR				pmax		pmax			
	comp=Z,113nm,0.9s								
BPAW	**Bear Paw Mtn.**	**43.98**	**35**	*e*P		**P**		**00 47 12.2**	**+2.3**
	comp=Z,24nm,1.0s								
BPAW				LR		LR			
	comp=Z,2μm,19.0s								
KTH	**Kantishna Hill**	**44.01**	**36**	*e*P		**P**		**00 47 11.2**	**+0.9**
	comp=Z,66nm,1.0s								
KTH				LR		LR			
	comp=Z,2μm,18.0s								
CM31	**Chiang Mai Arr**	**44.09**	**254**	*e*P		**P**		**00 47 11.0**	**-0.4**
CMAR	**Chiang Mai Arr**	**44.09**	**254**	P		**P**		**00 47 11.0**	**-0.4**
	comp=Z,14nm,0.8s,baz=52,slow=6.4,SNR=51								
CMAR				LR		LR		01 07 39.4	
	comp=Z,3μm,18.8s,baz=64,slow=39								
MLY	**Manley**	**44.09**	**34**	*e*P		**P**		**00 47 12.0**	**+1.0**
	comp=Z,34nm,0.9s								
MLY				LR		LR			
	comp=Z,2μm,18.0s								
CM01	**Chiang Mai Arr**	**44.10**	**254**	*e*P		**P**		**00 47 10.1**	**-1.4**
MAKZ	**Makanchi**	**44.13**	**300**	*e*P		**P**		**00 47 11.1**	**-0.3**
MAKZ				pmax		pmax			
	comp=Z,203nm,1.0s								
MAKZ				MLR		MLR			
	comp=Z,5μm,21.0s								
MAKZ	**Makanchi**	**44.13**	**300**	*e*P		**P**		**00 47 11.1**	**-0.3**
	comp=Z,203nm,1.0s								
MAKZ				LR		LR			
	comp=Z,5μm,21.0s								
BRLK	**Bradley Lake**	**44.18**	**41**	PFAKE				00 47 20.0	+8.3
BRLK				LR		LR			
	comp=Z,2μm,20.0s								
TRF	**Thorofare Moun**	**44.29**	**36**	*e*P		**P**		**00 47 15.6**	**+2.9**
	comp=Z,28nm,0.9s								
TRF				LR		LR			
	comp=Z,2μm,19.0s								
FAKI	**Fak Fak**	**44.33**	**196**	P		P		00 47 23.1	+10
FAKI	**Fak Fak**	**44.33**	**196**	*e*P		**P**		**00 47 14.0**	**+0.7**
	comp=Z,147nm,1.5s								
FAKI				LR		LR			
	comp=Z,4μm,20.0s								
MRSI	**Marisa**	**44.35**	**212**	P		**P**		**00 47 14.4**	**+1.0**
	comp=Z,100nm,1.2s,comp=Z,3μm								
COLD	**Coldfoot**	**44.38**	**31**	*e*P		**P**		**00 47 14.8**	**+1.7**
	comp=Z,39nm,0.9s								
COLD				LR		LR			
	comp=Z,2μm,18.0s								
SEM	**Semipalatinsk**	**44.39**	**305**	⇑*i*P		**P**		**00 47 12.9**	**-0.5**
	comp=Z,1μm,1.2s								
SEM				*i* PP		**PP**		**00 48 56.1**	**-0.8**
SEM				*e*S		**S**		**00 53 46.5**	**-0.2**
SEM				*e*SS		**SS**		**00 57 07.0**	**+1.6**
SEM				LR		LR		01 05 59.1	
SEM				LRM		MLR		01 07 36.5	
	comp=Z,3μm,13.3s								
RC01	**Rabbit Creek A**	**44.65**	**39**	*e*P		**P**		**00 47 16.4**	**+1.1**
	comp=Z,36nm,0.9s								
RC01				LR		LR			
	comp=Z,2μm,18.0s								
SEW	**Seward**	**44.87**	**41**	PFAKE				00 47 30.0	+13
SEW				LR		LR			
	comp=Z,2μm,20.0s								
MCK	**McKinley**	**44.89**	**36**	*e*P		**P**		**00 47 18.8**	**+1.5**
MCK				pmax		pmax			
	comp=Z,42nm,0.9s								
MCK				MLR		MLR			
	comp=Z,2μm,19.0s								
MCK	**McKinley**	**44.89**	**36**	*e*P		**P**		**00 47 18.8**	**+1.5**
	comp=Z,42nm,0.9s								
MCK				LR		LR			
	comp=Z,2μm,19.0s								
PMR	**Palmer**	**44.91**	**39**	*e*P		**P**		**00 47 17.5**	**+0.1**
PMR				pmax		pmax			
	comp=Z,40nm,1.1s								
PMR				MLR		MLR			
	comp=Z,2μm,20.0s								
PMR	**Palmer**	**44.91**	**39**	*e*P		**P**		**00 47 17.5**	**+0.1**
	comp=Z,40nm,1.1s								
PMR				LR		LR			
	comp=Z,2μm,20.0s								
RND	**Reindeer**	**44.94**	**36**	*e*P		**P**		**00 47 17.5**	**-0.2**
RND				pmax		pmax			
	comp=Z,44nm,1.0s								
RND				MLR		MLR			
	comp=Z,2μm,18.0s								
RND	**Reindeer**	**44.94**	**36**	*e*P		**P**		**00 47 17.5**	**-0.2**
	comp=Z,44nm,1.0s								
RND				LR		LR			
	comp=Z,2μm,18.0s								
MHMT	**Maesarieng**	**45.01**	**254**	P		**P**		**00 47 19.4**	**+0.7**
	comp=Z,56nm,0.9s,comp=Z,681nm								
RABL	**Rabaul**	**45.03**	**168**	PFAKE				00 47 30.0	+11
RABL				LR		LR			
	comp=Z,1μm,19.0s								
MDM	**Murphy Dome**	**45.16**	**34**	*e*P		**P**		**00 47 20.2**	**+0.8**
	comp=Z,86nm,1.2s								
MDM				LR		LR			
	comp=Z,3μm,19.0s								
SANI	**Sanana**	**45.21**	**205**	P		**P**		**00 47 21.2**	**+1.0**
	comp=Z,73nm,1.2s,comp=Z,1μm								
WRH	**Wood River Hil**	**45.23**	**35**	*e*P		**P**		**00 47 21.6**	**+1.6**
	comp=Z,29nm,0.8s								
WRH				LR		LR			
	comp=Z,2μm,19.0s								
SHL	**Shillong**	**45.27**	**267**	*e*P		**P**		**00 47 20.5**	**-0.4**
SHL				IAmb		IAmb		00 47 23.5	
	comp=Z,28nm,0.9s								
COLA	**College**	**45.32**	**34**	⇓*e*P		**P**		**00 47 22.9**	**+2.3**
COLA				pmax		pmax			
	comp=Z,14nm,1.1s								
COLA				MLR		MLR			
	comp=Z,2μm,17.0s								
KURK	**Kurchatov**	**45.34**	**306**	*e*P		**P**		**00 47 20.1**	**-0.8**
KURK				pmax		pmax			
	comp=Z,188nm,0.8s								
KURK				MLR		MLR			
	comp=Z,3μm,18.0s								
KURK	**Kurchatov**	**45.34**	**306**	*e*P		**P**		**00 47 20.1**	**-0.8**
	comp=Z,188nm,0.8s								
KURK				LR		LR			
	comp=Z,3μm,18.0s								
KURK	**Kurchatov**	**45.34**	**306**	P		**P**		**00 47 20.7**	**-0.3**
	SNR=94								
KURK	**Kurchatov**	**45.34**	**306**	P		**P**		**00 47 20.7**	**-0.3**
	SNR=94								
KURK				P		**P**		**00 47 20.7**	**-0.3**
	SNR=94								
CCB	**Clear Creek Bu**	**45.35**	**34**	*e*P		**P**		**00 47 22.2**	**+1.3**
	comp=Z,25nm,1.0s								
CHBT	**CHBT**	**45.48**	**245**	P		**P**		**00 47 23.0**	**+0.6**
	comp=Z,149nm,1.0s,comp=Z,4μm								
DHY	**Denali Highway**	**45.62**	**36**	*e*P		**P**		**00 47 24.6**	**+1.4**
	comp=Z,32nm,0.9s								
DHY				LR		LR			
	comp=Z,2μm,22.0s								
HDA	**Harding Lake**	**45.73**	**35**	*e*P		**P**		**00 47 24.1**	**+0.2**
	comp=Z,31nm,1.0s								
HDA				LR		LR			
	comp=Z,2μm,19.0s								
APSI	**Ampana**	**45.73**	**212**	P		**P**		**00 47 25.5**	**+1.1**
	comp=Z,105nm,1.2s,comp=Z,1μm								
IL1	**Eielson Array**	**45.74**	**34**	*e*P		**P**		**00 47 22.8**	**-1.1**
ILAR	**Eielson Array**	**45.74**	**34**	P		**P**		**00 47 23.4**	**-0.6**
	comp=Z,7.7nm,0.7s,baz=262,slow=6.3,SNR=58								
ILAR				LR		LR		01 06 49.5	
	comp=Z,2μm,21.1s,baz=288,slow=36								
ILB	**Eielson Array**	**45.74**	**34**	*e*P		**P**		**00 47 23.4**	**-0.6**
SCM	**Sheep Creek Mo**	**45.75**	**38**	*e*P		**P**		**00 47 25.3**	**+1.1**
SCM				pmax		pmax			
	comp=Z,50nm,1.0s								
SCM				MLR		MLR			
	comp=Z,2μm,19.0s								
SCM	**Sheep Creek Mo**	**45.75**	**38**	*e*P		**P**		**00 47 25.3**	**+1.1**
	comp=Z,50nm,1.0s								
SCM				LR		LR			
	comp=Z,2μm,19.0s								
NLAI	**Namlea**	**45.98**	**203**	P		**P**		**00 47 25.1**	**-1.2**
	comp=Z,50nm,1.1s,comp=Z,1μm								
FYU	**Fort Yukon**	**46.34**	**32**	*e*P		**P**		**00 47 31.2**	**+2.6**
	comp=Z,136nm,1.3s								
PATY	**Pattaya**	**46.38**	**246**	P		**P**		**00 47 31.0**	**+1.5**
	comp=Z,15nm,1.0s,comp=Z,1μm								
KLU	**Klutina**	**46.45**	**39**	*e*P		**P**		**00 47 30.1**	**+0.4**
	comp=Z,47nm,1.0s								
KLU				LR		LR			
	comp=Z,1μm,20.0s								
PAX	**Paxson**	**46.50**	**37**	*e*P		**P**		**00 47 32.8**	**+2.7**
PAX				pmax		pmax			
	comp=Z,17nm,0.9s								
PAX				MLR		MLR			
	comp=Z,2μm,18.0s								
PAX	**Paxson**	**46.50**	**37**	*e*P		**P**		**00 47 32.8**	**+2.7**
	comp=Z,17nm,0.9s								
PAX				LR		LR			
	comp=Z,2μm,18.0s								
DIV	**Divide**	**46.56**	**39**	*e*P		**P**		**00 47 32.0**	**+1.4**
	comp=Z,52

BMRM Bremner River 47.15 39 *e*P P 00 47 37.5 +2.3
comp=Z,45nm,1.0s
BMRM LR LR
comp=Z,2μm,20.0s
RAGM Ragged Mountai 47.20 40 PFAKE 00 47 50.0 +14
RAGM LR LR
comp=Z,3μm,18.0s
UZB Uzynbulak 47.23 296⇑ *i*P P 00 47 35.7 -0.5
comp=Z,518nm,1.4s
UZB *e*S S 00 54 27.7 -0.3
UZB LRM MLR 01 09 19.9
comp=Z,4μm,16.2s
SBUM Sibu 47.27 225 ⇓P P 00 47 37.1 +0.6
SBUM Sibu 47.27 225 *e*P P 00 47 36.7 +0.2
comp=Z,18nm,1.0s
SBUM LR LR
comp=Z,3μm,20.0s
MENT Mentasta 47.30 36 *e*P P 00 47 37.2 +1.0
comp=Z,61nm,1.3s
MENT LR LR
comp=Z,2μm,18.0s
BKB Balikpapan 48.10 217 P P 00 47 45.1 +2.2
comp=Z,148nm,1.0s,comp=Z,2μm
EGAK Eagle 48.18 34 *e*P P 00 47 44.4 +1.4
comp=Z,36nm,0.8s
EGAK LR LR
comp=Z,2μm,21.0s
BALM Baldy 48.23 39 *e*P P 00 47 44.0 +0.4
BALM pmax pmax
comp=Z,29nm,0.9s
BALM Baldy 48.23 39 *e*P P 00 47 44.0 +0.4
comp=Z,29nm,0.9s
CHKK Chushkaly 48.36 297⇑ *i*P P 00 47 44.3 -0.4
comp=Z,934nm,1.3s
TTSI Tana Toraja 48.41 213 P P 00 47 49.3 +4.0
comp=Z,30nm,1.1s
MDOK Medeo 48.58 296⇓ *i*P P 00 47 46.5 -0.1
comp=Z,529nm,1.5s
MDOK *i* PP PP 00 49 39.0 -0.3
MDOK *e*S S 00 54 46.2 -1.0
MDOK *e*SS SS 00 58 20.4 +3.5
MDOK LRM MLR 01 10 25.1
comp=Z,6μm,14.2s
AAA Alma-Ata 48.61 297 *e*P P 00 47 47.0 +0.3
AAA pmax pmax
comp=Z,1μm,7.4s
AAA MLR MLR
comp=Z,11μm,17.0s
AAA Alma-Ata 48.61 297⇑ *e*P P 00 47 47.0 +0.3
comp=Z,622nm,1.0s
AAA *e*S S 00 54 46.0 -1.4
AAA LR LR 01 08 13.9
AAA LRM MLR 01 10 25.8
comp=Z,5μm,14.4s
GUN Gumba 48.64 274 *e*P P 00 47 47.4 -0.1
comp=Z,193nm,0.7s
KUU Kurty 48.80 298⇑ *i*P P 00 47 47.4 -0.8
comp=Z,1μm,1.1s
KUU *i* PP PP 00 49 42.9 +1.7
KUU *e*S S 00 54 47.8 -2.2
KUU LR LR 01 09 14.2
comp=Z,8μm,14.7s
KSM Kuching 49.13 227 ⇑P P 00 47 51.3 +0.5
KSM Kuching 49.13 227 *e*P P 00 47 51.6 +0.8
comp=Z,46nm,0.9s
KSM LR LR
comp=Z,2μm,18.0s
KKN Kakani 49.15 274 *e*P P 00 47 51.0 -0.3
comp=Z,237nm,1.1s
PKIN Phulchoki 49.17 274 *e*P P 00 47 51.0 -0.5
comp=Z,85nm,0.7s
BRZS Berezniki 49.20 306⇑ *i*P P 00 47 50.8 -0.3
comp=Z,225nm,0.6s
BRZS *e*S S 00 54 56.5 +1.0
BRZS LRM MLR 01 10 43.9
comp=Z,170nm,13.6s
DMN Daman 49.38 274 *e*P P 00 47 53.0 0.0
comp=Z,358nm,1.4s
GKN Gorkha 49.53 275 *e*P P 00 47 53.8 -0.3
comp=Z,295nm,1.1s
TKM2 Tokmak 2 49.66 297 P P 00 47 54.8 -0.1
TKM2 pmax pmax
comp=Z,230nm,1.2s
TKM2 Tokmak 2 49.66 297 *e*P P 00 47 55.0 +0.1
comp=Z,222nm,1.1s
TKM2 LR LR
comp=Z,6μm,19.0s
STKI Sintang 49.66 224 P P 00 47 56.2 +1.3
comp=Z,56nm,0.9s,comp=Z,18μm
BVA0 Borovoye Array 49.69 311 P P 00 47 54.2 -0.5
BVA0 pmax pmax
comp=Z,108nm,1.3s
BRVK Borovoye 49.74 311 *c i*P P 00 47 55.4 +0.3
BRVK pmax pmax
comp=Z,117nm,1.0s
BRVK MLR MLR
comp=Z,8μm,16.0s
BRVK Borovoye 49.74 311 *e*P P 00 47 55.3 +0.2
comp=Z,149nm,1.2s
BRVK LR LR
comp=Z,2μm,19.0s
BRVK Borovoye 49.74 311 P P 00 47 55.3 +0.2
SNR=69
BRVK Borovoye 49.74 311 P P 00 47 55.3 +0.2
SNR=69
BRVK P P 00 47 55.3 +0.2
SNR=69
BRVK P P 00 47 55.3 +0.2
SNR=69
OTUK Ortayu 49.96 304 P P 00 47 56.5 -0.4
OTUK pmax pmax
comp=Z,132nm,1.0s
KAPI Kappang 50.23 212 *e*P P 00 47 59.3 +0.1
comp=Z,59nm,1.0s
KAPI Kappang 50.23 212 P P 00 47 59.1 -0.1
SNR=15
KAPI Kappang 50.23 212 P P 00 47 59.1 -0.1
SNR=15
KAPI P P 00 47 59.1 -0.1
SNR=15
FRU Bishkek 50.36 297 *i* P P 00 48 00.0 0.0
FRU *e*S S 00 55 08.0 -3.9
FRU pmax pmax
comp=Z,260nm,2.0s
FRU MLR MLR
comp=E,8μm,15.0s
KTGM Kuala Trenggan 50.38 237 ⇓P P 00 48 01.9 +1.5
KOLN Koldanda 50.44 275 *e*P P 00 48 00.8 -0.3
comp=E,181nm,1.0s
ZRNK Zerenda 50.51 311 *e*P P 00 48 01.1 +0.1
ZRNK pmax pmax
comp=Z,232nm,1.3s
ZRNK MLR MLR
comp=Z,6μm,19.0s
ZRNK Zerenda 50.51 311 *e*P P 00 48 01.1 +0.1
comp=Z,232nm,1.3s
ZRNK LR LR
comp=Z,6μm,19.0s
AAK Ala-Archa 50.52 297 *c i*P P 00 48 00.8 -0.6
AAK pmax pmax
comp=Z,81nm,1.3s
AAK MLR MLR
comp=Z,11μm,17.0s
AAK Ala-Archa 50.52 297 *e*P P 00 48 01.0 -0.4
comp=Z,91nm,1.3s
AAK LR LR
comp=Z,5μm,18.0s
AAK Ala-Archa 50.52 297 P P 00 48 01.0 -0.4
SNR=38
AAK Ala-Archa 50.52 297 P P 00 48 01.0 -0.4
SNR=38
AAK P P 00 48 01.0 -0.4
SNR=38
SURT Suratani 50.60 244 P P 00 48 03.0 +0.9
comp=Z,30nm,1.2s,comp=Z,496nm
INK Inuvik 50.62 29 P P 00 48 02.2 +0.7
comp=Z,13nm,0.8s,baz=291,slow=6.6,SNR=68
INK Inuvik 50.62 29 *e*P P 00 48 02.2 +0.7
INK LR LR
comp=Z,2μm,18.0s
SKLT Songkhla 50.65 241 P P 00 48 04.0 +1.5
comp=Z,97nm,0.9s,comp=Z,1μm
KSH Kashi 50.71 292 P P 00 48 06.9 +4.0
KSH *e*pP sP 00 48 11.4 -0.6
KSH *e*PP PP 00 50 05.1 +6.3
KSH PcS **PcS** **00 53 20.4 +3.0**
KSH S **S** **00 55 20.3 +3.2**
KSH ScS **ScS** **00 57 54.9 +2.3**
KSH pmax pmax
comp=Z,72nm,1.1s
KSH pmax pmax
comp=Z,890nm,6.0s
KSH LR LR
comp=Z,14μm,14.1s
KSH LR LR
comp=Z,10μm,14.2s
KSH LR LR
comp=Z,18μm,14.6s
PYUN Piuthan 50.74 276 *e*P P 00 48 03.0 -0.3
comp=Z,489nm,1.1s
TRTT Trang 50.79 243 P P 00 48 04.6 +1.1
comp=Z,103nm,1.3s,comp=Z,1μm
BOK Bokaro 50.80 269 *e*P P 00 48 02.5 -1.1
BSSI Bau Bau, Buton 50.97 210 P P 00 48 09.9 +5.1
comp=Z,57nm,1.2s,comp=Z,856nm
BBKI Banjar Baru 50.99 218 P P 00 48 04.1 -0.9
comp=Z,87nm,1.1s
EKS2 Erkin-Say 50.99 297 *e*P P 00 48 04.7 -0.3
EKS2 pmax pmax
comp=Z,61nm,1.1s
EKS2 MLR MLR
comp=Z,3μm,21.0s
EKS2 Erkin-Say 50.99 297 *e*P P 00 48 04.7 -0.3
comp=Z,60nm,1.1s
EKS2 LR LR
comp=Z,3μm,21.0s
PKDT Phuket 51.68 244 P P 00 48 11.2 +1.0
comp=Z,164nm,1.1s,comp=Z,2μm
HNR Honiara 51.79 159 P P 00 48 08.9 -2.0
comp=Z,44nm,0.4s,baz=73,slow=21,SNR=2.4
HNR Honiara 51.79 159 *e*P P 00 48 08.9 -2.0
HNR LR LR
comp=Z,2μm,20.0s
DGPR DIGLIPUR 51.90 253 *e*P P 00 48 10.8 -1.0
MNAS Manas 51.93 297 P P 00 48 10.9 -1.1
MNAS pmax pmax
comp=Z,183nm,1.1s
KULM Kulim 52.02 240 ⇓P P 00 48 13.7 +1.0
KULM Kulim 52.02 240 *e*P P 00 48 13.7 +1.0
comp=Z,77nm,1.1s
KULM LR LR
comp=Z,2μm,19.0s
LGTI Lohaghat 52.14 279 *ex* P P 00 48 19.1 +5.6
SFK Sufi-Kurgan 52.24 294 P P 00 48 13.3 -1.2
SFK pmax pmax
comp=Z,151nm,1.2s
IPM Ipoh 52.38 238 ⇑P P 00 48 15.7 +0.3
IPM Ipoh 52.38 238 *e*P P 00 48 15.7 +0.3
comp=Z,66nm,1.1s
IPM LR LR
comp=Z,3μm,21.0s
OPA Opana 52.40 92 *e*P P 00 48 16.9 +1.4
OPA pmax pmax
comp=Z,83nm,1.0s
OPA Opana 52.40 92 *e*P P 00 48 16.9 +1.4
comp=Z,82nm,1.0s
KIP Kipapa 52.54 93⇑ *e*P P 00 48 16.9 +0.3
KIP pmax pmax
comp=Z,1μm,2.5s
KIP MLR MLR
comp=Z,5μm,15.0s
MMRI Maumere 52.63 207 P P 00 48 27.9 +11
MYKOM Kota Tinggi 52.66 234 ⇑P P 00 48 18.4 +0.9
MYKOM Kota Tinggi 52.66 234 *e*P P 00 48 18.4 +0.9
comp=Z,49nm,1.2s
MYKOM LR LR
comp=Z,2μm,18.0s
KGM Kluang 52.81 234 ⇓P P 00 48 19.9 +1.3
TPRI Tanjung Pinang 52.93 232 P P 00 48 21.7 +2.2
comp=Z,74nm,0.4s,comp=Z,68μm
SOEI Soe 53.01 204 P P 00 48 32.3 +12
SOEI Soe 53.01 204 PFAKE 00 48 30.0 +10
SOEI LR LR
comp=Z,2μm,21.0s
KK31 Karatay Array 53.03 299 P P 00 48 19.4 -0.5
KK31 pmax pmax
comp=Z,33nm,0.8s
KKAR Karatay Array 53.03 299 *e*P P 00 48 19.3 -0.6
KKAR Karatay Array 53.03 299 *e*P P 00 48 19.3 -0.6
PBA Port Blair 53.04 252 *e*P P 00 48 20.9 +0.6
DDI Dehra Dun 53.35 281 *e*P P 00 48 23.2 +0.6
SDNR Sundarnagar 53.58 283 *ex* P 00 48 25.0 +0.8
SMLA Simla 53.62 282 *e*P P 00 48 23.6 -0.8
SMLA *i* x x 00 48 24.3
DHRM DHARAMSHALA 53.72 284 *e*P P 00 48 24.5 -0.9
IUG Iuzhnay 53.74 298⇑ *i*P P 00 48 25.2 -0.1
comp=Z,1μm,1.4s
IUG *e*S S 00 55 56.8 -1.7
IUG LRM MLR 01 13 46.0
comp=Z,2μm,12.8s
SVE Sverdlovsk 53.85 317 *de*P P 00 48 26.2 +0.5
SVE *e* 00 50 26.9
SVE *e*PPP PPP 00 51 36.8
SVE *e*S S **00 56 00.2 +0.9**
SVE *e* 00 58 13.8
SVE pmax pmax
comp=Z,179nm,1.2s
SVE pmax pmax
comp=Z,924nm,16.0s
SVE MLR MLR
comp=E,14μm,15.0s
SVE MLR MLR
comp=Z,19μm,14.0s
SVE MLR MLR
comp=N,4μm,14.0s
COEN Coen 54.05 181 *e*P P 00 48 32.5 +4.9
comp=N,25nm,1.1s
MTN Manton Dam 54.21 195 *e*P P 00 48 28.3 -0.4
comp=N,44nm,0.9s
CRAG Craig 54.42 44 PFAKE 00 48 40.0 +10
CRAG LR LR
comp=Z,1μm,18.0s
PPBI Pangkal Pinang 54.46 228 P P 00 48 31.2 +0.5
comp=Z,46nm,1.2s,comp=Z,22μm
WRAK Wrangell Islan 54.49 43 PFAKE 00 48 50.0 +20
WRAK LR LR
comp=Z,1μm,18.0s
LHMI Lhok Sumawe 54.55 243 P P 00 48 35.0 +3.7
comp=Z,84nm,1.2s,comp=Z,5μm
TWSI Taliwang, Sumb 54.77 213 P P 00 48 33.1 +0.2
comp=Z,49nm,1.0s,comp=Z,860nm
SRBI Singaraja 54.90 215 P P 00 48 35.2 +1.4
comp=Z,47nm,1.8s
DLBC Dease Lake 54.92 40 P P 00 48 34.6 +0.9
comp=Z,4.9nm,1.1s,baz=182,slow=26,SNR=1.6
DLBC Dease Lake 54.92 40 *e*P P 00 48 34.6 +0.9
comp=Z,18nm,1.1s
DLBC LR LR
comp=Z,1μm,20.0s
PSI Prapat 55.02 239 *e*P P 00 48 35.1 +0.2
PSI pmax pmax
comp=Z,72nm,1.2s
PSI MLR MLR
comp=Z,2μm,18.0s
PSI Prapat 55.02 239 *e*P P 00 48 35.1 +0.2
comp=Z,72nm,1.2s
PSI LR LR
comp=Z,2μm,18.0s
ARU Arti 55.06 318 *c i*P P **00 48 34.3 -0.2**
ARU 00 49 33.1
ARU 00 50 33.5
ARU PPP PPP 00 51 52.0
ARU *e*S S **00 56 15.8 +0.2**
ARU 00 58 18.5
ARU SS SS **01 00 02.3 +3.4**
ARU SSS SSS 01 02 01.5
ARU pmax pmax
comp=Z,242nm,1.7s
ARU MLR MLR
comp=Z,17μm,18.0s
ARU Arti 55.06 318 *e*P P 00 48 34.5 -0.1
comp=Z,182nm,1.2s
ARU LR LR
comp=Z,10μm,19.0s
ABJI Asem Bagus 55.08 216 P P 00 48 45.0 +10
KCSI Kotacane, Aceh 55.24 241 P P 00 48 36.1 -0.3
comp=Z,22nm,1.2s,comp=Z,474nm
BKNI Bangkinang 55.54 235 P P 00 48 39.8 +1.3
comp=Z,242nm,1.1s,comp=Z,6μm
BKNI Bangkinang 55.54 235 *e*P P 00 48 39.5 +0.9
comp=Z,186nm,0.9s
BKNI LR LR
comp=Z,2μm,21.0s
GMJI Gumukmas 55.87 217 P P 00 48 49.1 +8.4
MNSI Mandailing Nat 56.11 237 P P **00 48 43.6 +1.0**
comp=Z,43nm,1.6s,comp=Z,3μm
VIS Vishakhapatnam 56.25 265 *e*P P **00 48 44.1 +0.6**
VIS IAmb IAmb 00 48 44.7
comp=Z,73nm,1.4s
SDSI Sungai Dareh 56.28 234 P P **00 48 44.5 +0.7**
comp=Z,129nm,1.1s,comp=Z,47μm
PWJI Pagerwojo 56.42 219 P P **00 48 44.5 -0.2**
comp=Z,82nm,1.1s
PDSI Padang 56.87 235 P P **00 48 48.8 +0.8**
comp=Z,28nm,0.7s,comp=Z,11μm
GSI Gunungsitoli 57.02 239 P P **00 48 50.7 +1.6**
comp=Z,142nm,1.3s,comp=Z,4μm
GSI Gunungsitoli 57.02 239 *e*P P **00 48 50.0 +1.0**
comp=Z,408nm,1.6s
GSI LR LR
comp=Z,3μm,20.0s
AB31 Akbulak array 57.17 309 *i* P P **00 48 49.5 -0.2**
AB31 pmax pmax
comp=Z,118nm,1.1s
ABKAR Akbulak array 57.17 309 *e*P P **00 48 49.7 0.0**
HOPEN Hopen 57.24 346 *e*P P **00 48 50.8 +1.1**
HOPEN IAMs_20 IAMs_20 01 13 01.4
comp=Z,4μm,19.2s
LHSI Lahat 57.32 230 P P **00 48 51.7 +0.6**
comp=Z,104nm,1.3s,comp=Z,2μm
MDSI Maura Dua 57.47 229 P P **00 48 51.3 -0.9**
LEM Lembang 57.51 224 P P 00 48 57.9 +5.3
BHPL Bhopal 57.57 274 *e*P P **00 48 52.4 -0.5**
KBS Kingsbay 57.67 350 *e*P P **00 48 54.6 +1.8**
KBS IAmb IAmb 00 48 55.2
comp=Z,89nm,0.9s
KBS *e*S S **00 56 52.8 +3.1**
KBS IAMs_20 IAMs_20 01 17 23.5
comp=Z,2μm,19.2s
KBS Kingsbay 57.67 350 *e*P P **00 48 54.4 +1.5**
KBS pmax pmax
comp=Z,90nm,0.9s
KBS MLR MLR
comp=Z,2μm,18.0s
KBS Kingsbay 57.67 350 *e*P P **00 48 54.4 +1.5**
comp=Z,90nm,0.9s
KBS LR LR
comp=Z,2μm,18.0s
KBL Kabul 57.90 290 *e*P P **00 48 54.8 -0.6**
KBL pmax pmax
comp=Z,108nm,1.0s
KBL MLR MLR
comp=Z,4μm,18.0s
KBL Kabul 57.90 290 *e*P P **00 48 54.8 -0.6**
comp=Z,108nm,1.0s
KBL LR LR
comp=Z,4μm,18.0s
CISI Cisompet, Garu 58.02 223 PFAKE 00 49 10.0 +14
CISI LR LR
comp=Z,1μm,20.0s
HSPB Hornsund (broa 58.55 348 *e*P P **00 49 00.4 +1.4**
HSPB IAmb IAmb 00 49 01.3
comp=Z,95nm,0.9s
HSPB *e*S S **00 57 03.3 +2.1**
RES Resolute Bay 58.93 15 P P **00 49 02.0 +0.4**
comp=Z,25nm,0.9s,baz=303,slow=6.4,SNR=87
RES LR LR 01 17 26.7
comp=Z,2μm,19.8s,baz=332,slow=39
RES Resolute Bay 58.93 15 *e*P P **00 49 02.0 +0.4**
comp=Z,66nm,0.8s
BJO Bjornoya 59.66 345 *e*P P 00 49 10.6 +4.0
LVZ Lovozero 59.80 336 *e*P P **00 49 07.8 0.0**
LVZ pmax pmax
comp=Z,48nm,1.2s
LVZ MLR MLR
comp=Z,4μm,20.0s
LVZ Lovozero 59.80 336 *e*P P **00 49 07.8 0.0**
comp=Z,48nm,1.2s
LVZ LR LR
comp=Z,4μm,20.0s
YKW3 Yellowknife Ar 60.00 32 *e*P P **00 49 08.9 -0.3**
comp=Z,14nm,1.0s
YKA Yellowknife Ar 60.04 32 P P **00 49 08.8 -0.7**
comp=Z,3.5nm,0.6s,baz=301,slow=6.5,SNR=80
YKA PKPPKP P'P'df 01 18 31.7 -10
comp=Z,0.5nm,0.9s,baz=96,slow=1.7,SNR=5.1
YKB5 Yellowknife Ar 60.04 32 *e*P P **00 49 08.8 -0.6**
HYB Hyderabad 60.07 268 *i* P P **00 49 10.0 -0.4**
HYB *e*S S **00 57 22.0 -0.5**
HYB Hyderabad 60.07 268 *e*P P **00 49 09.3 -1.1**
HYB IAmb IAmb 00 49 11.2
APA Apatity 60.38 336⇑ *i*P P **00 49 12.6 +0.9**
APA *i* 00 51 28.0
APA *i* S S **00 57 20.0 -5.0**
APA *i* 00 59 00.0
APA *i* SS SS **01 01 22.0 +0.1**
APA pmax pmax
comp=Z,52nm,1.0s
APA MLR MLR
comp=Z,4μm,14.0s
FITZ Fitzroy Crossi 60.55 200 *e*P P **00 49 13.1 -0.2**
comp=Z,28nm,1.1s
WRAB Tennant Creek 60.62 190⇓ *e*P P **00 49 14.8 +0.9**
WRAB pmax pmax
comp=Z,41nm,1.2s
WRAB MLR MLR
comp=Z,3μm,18.0s
WRAB Tennant Creek 60.62 190 *e*P P **00 49 16.4 +2.5**
comp=Z,42nm,1.2s
WB2 Warramunga Arr 60.63 190 *e*P P **00 49 12.6 -1.4**
comp=Z,36nm,1.0s
WR1 Warramunga Arr 60.63 190 *e*P P **00 49 11.9 -2.0**
comp=Z,32nm,0.9s
WRA Warramunga Arr 60.63 190 P P **00 49 11.9 -2.0**
comp=Z,4.3nm,0.6s,baz=8.3,slow=6.8,SNR=46
WRA LR LR 01 16 02.0
comp=Z,538nm,19.8s,baz=15,slow=37
WRA PKP2bc 01 18 44.6
comp=Z,1.4nm,0.9s,baz=210,slow=2.2,SNR=5.1
WRA Warramunga Arr 60.63 190 *ce*P P **00 49 12.3 -1.6**
WRA pmax pmax
comp=Z,4.0nm,0.6s
TMCR Tamitsa 60.67 331 *e*P P **00 49 13.9 +0.1**
TMCR pmax pmax
comp=Z,104nm,0.9s
KEV Kevo 60.95 339 *e*P P **00 49 16.7 +1.1**
KEV pmax pmax
comp=Z,47nm,0.9s
KEV MLR MLR
comp=Z,4μm,20.0s
KEV Kevo 60.95 339 *e*P P **00 49 16.7 +1.1**
comp=Z,47nm,0.9s
KEV LR LR
comp=Z,4μm,20.0s
MDRS Chennai 61.44 263 *e*P P **00 49 18.8 -0.9**
ARA0 ARCESS Array S 61.50 339 *e*P P **00 49 20.0 +0.7**
ARCES ARCESS Array B 61.50 339 P P **00 49 20.0 +0.7**
comp=Z,20nm,0.9s,baz=60,slow=7.3,SNR=18
ARCES LR LR 01 21 59.7
comp=Z,5μm,18.1s,baz=26,slow=42
ARE0 ARCESS Array S 61.50 339 *e*P P **00 49 20.5 +1.2**
ARE0 IAMs_20 IAMs_20 01 21 34.3
comp=Z,5μm,21.1s
ARE0 ARCESS Array S 61.50 339 PFAKE 00 49 30.0 +11
ARE0 LR LR
comp=Z,4μm,20.0s
KTK1 Kautokeino 62.45 339 *e*P P **00 49 26.5 +0.7**
DAG Danmarks Havn 62.60 355⇑ *i*P P **00 49 27.0 +0.4**
comp=Z,50nm,0.9s
POO Poona 63.01 272 *e*P P **00 49 29.7 -0.6**
POO IAmb IAmb 00 49 31.7
comp=Z,33nm,0.8s
TRO Tromso 63.13 341 *e*P P **00 49 30.8 +0.6**
TRO IAmb IAmb 00 49 31.7
comp=Z,66nm,0.8s
NLWA Neilton Lookou 63.19 50 *e*P P **00 49 33.2 +2.2**
comp=Z,26nm,1.0s
NLWA LR LR
comp=Z,900nm,19.0s
BHJ Bhuj 63.46 279 *e*P P **00 49 32.4 -0.7**
BHJ IAmb IAmb 00 49 35.1
comp=Z,54nm,1.3s
B05A Bryant 63.75 48 P P **00 49 35.0 +0.4**
baz=302
GEYT Alibeck 63.78 299 P P **00 49 34.8 -0.3**
comp=Z,59nm,0.9s,baz=29,slow=3.4,SNR=123
GEYT LR LR 01 18 58.4
comp=Z,3μm,19.4s,baz=40,slow=38
E03A Lebam 63.81 50 PFAKE 00 49 50.0 +15

E03A LR LR
comp=Z,800nm,19.0s
B06A Marblemount 63.96 48 PFAKE 00 49 50.0 +14
B06A LR LR
comp=Z,1μm,19.0s
AS01 Alice Springs 64.35 190 *e*P **P 00 49 36.9 -1.8**
AS31 Alice Springs 64.35 190 *e*P **P 00 49 37.1 -1.7**
comp=Z,4.7nm,1.0s
ASAR Alice Springs 64.35 190 P **P 00 49 37.1 -1.7**
comp=Z,3.5nm,0.9s,baz=11,slow=6.0,SNR=30
ASAR LR LR 01 16 11.5
comp=Z,771nm,21.9s,baz=4.0,slow=35
ASAR PKP2bc 01 18 34.5
comp=Z,1.4nm,0.9s,baz=177,slow=2.7,SNR=9.1
TDL Tradedollar La 64.70 50 P **P 00 49 42.6 +1.5**
LON Longmire 64.72 49 *e*P **P 00 49 42.8 +1.7**
LON pmax pmax
comp=Z,13nm,1.0s
LON MLR MLR
comp=Z,500nm,20.0s
LON Longmire 64.72 49 *e*P **P 00 49 42.8 +1.7**
comp=Z,12nm,1.0s
LON LR LR
comp=Z,500nm,20.0s
F04A Amboy 64.81 50 *e*P **P 00 49 40.3 -1.3**
comp=Z,43nm,1.2s
F04A LR LR
comp=Z,600nm,20.0s
NLW Nelson Butte 64.84 47 P **P 00 49 43.0 +1.0**
GOA Goa 64.84 269 *e*P **P 00 49 41.1 -1.2**
COR Corvallis 65.01 52 PFAKE 00 50 00.0 +17
COR LR LR
comp=Z,1μm,20.0s
LTY Liberty 65.10 48 *e*P **P 00 49 43.4 -0.2**
comp=Z,76nm,1.8s
LTY LR LR
comp=Z,800nm,22.0s
ETW Entiat 65.10 48 *e*P **P 00 49 43.7 0.0**
B08A Colville Reser 65.25 47 *e*P **P 00 49 44.5 0.0**
comp=Z,25nm,1.1s
B08A LR LR
comp=Z,1μm,19.0s
STEI Steigen 65.30 341 *e*P **P 00 49 45.0 +0.6**
XMAS Kiritimati 65.33 110 PFAKE 00 50 00.0 +15
XMAS LR LR
comp=Z,5μm,20.0s
I03D Drain, OR 65.46 53 P **P 00 49 46.6 +0.7**
baz=303
H04A Detroit Lake 65.62 51 *e*P **P 00 49 47.7 +0.7**
comp=Z,34nm,1.0s
MOS Moscow 65.62 323*α i*P **P 00 49 45.9 -0.8**
MOS *e* 00 49 55.0
MOS *e* 00 50 15.4
MOS *e* 00 52 08.5
MOS *e*S **S 00 58 29.4 -1.5**
MOS *e* 00 58 41.9
MOS *e* 00 59 02.4
MOS pmax pmax
comp=Z,173nm,1.6s
MOS pmax pmax
comp=Z,800nm,3.6s
MOS smax smax
comp=N,400μm,3.1s
MOS smax smax
comp=E,500nm,3.3s
MOS MLR MLR
comp=N,5μm,16.0s
MOS MLR MLR
comp=E,4μm,16.0s
MOS MLR MLR
comp=Z,5μm,16.0s
DZM Mont Dzumac 65.65 157 P **P 00 49 47.3 0.0**
comp=Z,20nm,0.9s,baz=350,slow=17,SNR=3.1
G05D Wamic, OR 65.83 50 P **P 00 49 48.6 +0.2**
baz=304
I04A Tendick Farm, 65.97 52 P **P 00 49 49.3 0.0**
baz=304,SNR=5.9
L02D Cave Junction, 66.15 54 P **P 00 49 50.9 +0.5**
baz=304
C09A Chrisman Ranch 66.15 47 *e*P **P 00 49 50.4 +0.1**
comp=Z,33nm,0.9s
C09A LR LR
comp=Z,800nm,19.0s
D08A Wollman Farm, 66.20 48 *e*P **P 00 49 52.8 +2.1**
comp=Z,101nm,2.0s
PUL Pulkovo 66.22 329⇑ *e*P **P 00 49 51.3 +0.8**
PUL pmax pmax
comp=Z,53nm,0.5s
PUL MLR MLR
comp=Z,5μm,17.0s
HAWA Hanford 66.23 49 *e*P P 00 49 54.1 +3.3
comp=Z,28nm,1.3s
HAWA LR LR
comp=Z,900nm,21.0s
VRH Novokhopyorsk 66.30 318 *e*P **P 00 49 50.4 -0.7**
VRH *e*S **S 00 58 38.8 -0.4**
VRH *e*SS **SS 01 02 51.9 -2.9**
VRH pmax pmax
comp=Z,100nm,0.9s
VRH smax smax
comp=E,350nm,4.8s
VRH MLR MLR
comp=Z,11μm,15.0s
HUMO Hull Mountain 66.30 54 PFAKE 00 50 00.0 +8.6
HUMO LR LR
comp=Z,1μm,22.0s
I05D Terrebonne, OR 66.32 51 P **P 00 49 51.6 +0.1**
baz=304
OBN Obninsk 66.48 323*c i*P **P 00 49 51.4 -0.8**
OBN *i* 00 49 57.0
OBN *i* 00 52 17.5
OBN *i* S **S 00 58 36.0 -5.3**
OBN *i* SS **SS 01 02 54.0 -3.4**
OBN pmax pmax
comp=Z,95nm,1.0s
OBN MLR MLR
comp=Z,6μm,17.0s
OBN Obninsk 66.48 323 *e*P **P 00 49 52.5 +0.2**
comp=Z,112nm,1.0s
OBN LR LR
comp=Z,6μm,19.0s
NEW Newport 66.53 46 P **P 00 49 52.9 +0.1**
baz=305,SNR=7.5
NEW Newport 66.53 46 *e*P **P 00 49 53.3 +0.5**
NEW pmax pmax
comp=Z,28nm,1.0s
NEW MLR MLR
comp=Z,800nm,20.0s
NEW Newport 66.53 46 *e*P **P 00 49 53.3 +0.5**
comp=Z,28nm,1.0s
NEW LR LR
comp=Z,800nm,20.0s
FIA1 FINESS Array S 66.68 332 *e*P **P 00 49 53.0 -0.4**
FIA0 FINESS Array S 66.68 332 *e*P **P 00 49 53.2 -0.3**
FIA0 FINESS Array S 66.68 332 *e*P **P 00 49 53.2 -0.3**
FINES FINESS Array B 66.68 332 P **P 00 49 53.2 -0.3**
comp=Z,70nm,0.8s,baz=46,slow=8.2,SNR=167
FINES LR LR 01 21 39.4
comp=Z,5μm,21.1s,baz=36,slow=38
FINES FINESS Array B 66.68 332*ce*P **P 00 49 53.4 0.0**
FINES pmax pmax
comp=Z,71nm,0.8s
KHMM Horse Mountain 66.78 56 *e*P **P 00 49 56.5 +1.9**
comp=Z,34nm,1.0s
KHMM LR LR
comp=Z,1μm,18.0s
TRD Trivandrum 66.82 261 *e*P **P 00 49 54.4 -0.6**
MOR8 Moi Rana 66.84 340 *e*P **P 00 49 52.9 -1.5**
MOR8 IAmb IAmb 00 49 54.5
comp=Z,95nm,0.7s
LPSR Galich'ya Gora 66.88 320 *e*P **P 00 49 54.7 -0.1**
LPSR *e* 00 52 21.6
LPSR *e*S **S 00 58 45.0 -1.2**
LPSR pmax pmax
comp=Z,140nm,0.9s
LPSR smax smax
comp=N,150nm,3.0s
LPSR MLR MLR
comp=Z,6μm,14.0s
YBH Yreka Blue Hor 66.94 54 *e*P **P 00 49 56.3 +0.8**
YBH pmax pmax
comp=Z,18nm,1.0s
YBH MLR MLR
comp=Z,700nm,18.0s
YBH Yreka Blue Hor 66.94 54 *e*P **P 00 49 56.3 +0.8**
comp=Z,18nm,1.0s
YBH LR LR
comp=Z,700nm,18.0s
E09A Wood Farm, Sta 66.95 48 PFAKE 00 50 10.0 +15
E09A LR LR
comp=Z,800nm,18.0s
J05D Fort Rock, OR 66.97 52 P **P 00 49 55.7 -0.1**
baz=304,SNR=8.1
K04D Chiloquin, OR 67.03 53 P **P 00 49 56.8 +0.7**
baz=304
M02C Callahan 67.04 55 P **P 00 49 57.1 +0.9**
baz=304,SNR=5.3
LHEM Herd Peak 67.30 54 *e*P **P 00 49 58.9 +0.9**
SUMG Summit 67.34 1⇑ *i*P **P 00 49 59.3 +1.3**
comp=Z,58nm,0.9s
comp=Z,3μm,16.0s
SUMG Summit 67.34 1 *e*P **P 00 49 58.7 +0.7**
SUMG pmax pmax
comp=Z,61nm,0.9s
SUMG MLR MLR
comp=Z,3μm,21.0s
SUMG Summit 67.34 1 *e*P **P 00 49 58.7 +0.7**
comp=Z,61nm,0.9s
SUMG LR LR
comp=Z,3μm,21.0s
N02D Trinity Center 67.36 55 P **P 00 49 58.4 +0.2**
baz=304,SNR=6.8
M04C Macdoel 67.45 54 P **P 00 49 58.8 -0.1**
baz=304,SNR=8.6
K05A Summer Lake 67.49 53 *e*P **P 00 50 00.1 +1.0**
comp=Z,98nm,1.2s
K05A LR LR
comp=Z,900nm,20.0s
VSR Storozhevoye 67.59 319 *e*P **P 00 49 59.2 -0.2**
VSR *e* 00 52 26.4
VSR *e*S **S 00 58 52.1 -2.7**
VSR *e*SS **SS 01 03 09.0 -5.8**
VSR pmax pmax
comp=Z,90nm,0.9s
VSR smax smax
comp=E,570nm,6.8s
VSR MLR MLR
comp=Z,6μm,15.0s
WDC Whiskeytown Da 67.69 55 *e*P **P 00 50 01.1 +0.9**
WDC pmax pmax
comp=Z,26nm,1.1s
WDC MLR MLR
comp=Z,600nm,22.0s
WDC Whiskeytown Da 67.69 55 *e*P **P 00 50 01.1 +0.9**
comp=Z,26nm,1.1s
WDC LR LR
comp=Z,600nm,22.0s
F10A Beach Ranch, E 67.78 48 PFAKE 00 50 10.0 +9.1
F10A LR LR
comp=Z,700nm,21.0s
WALA Waterton Lakes 67.80 44 *e*P **P 00 50 01.4 +0.5**
comp=Z,22nm,0.9s
WALA LR LR
comp=Z,1μm,18.0s
BSMT Bassoo Peak 68.04 45 *e*P **P 00 50 04.0 +1.4**
BLMT Blacktail Moun 68.18 45 *es*P sP 00 50 09.6 -3.1
HOPS Hopland Field 68.25 57 PFAKE 00 50 20.0 +16
HOPS LR LR
comp=Z,1μm,19.0s
O03D Paynes Creek 68.32 55 P **P 00 50 04.5 +0.2**
baz=305,SNR=6.2
MOD Modoc Plateau 68.32 53 *e*P **P 00 50 05.3 +0.9**
comp=Z,18nm,1.0s
MOD LR LR
comp=Z,800nm,21.0s
JTMT Jette 68.38 45 *e*P **P 00 50 05.1 +0.5**
BMO Blue Mountains 68.39 49 *e*P P 00 50 11.1 +6.4
BMO Blue Mountains 68.39 49 *es*P P 00 50 11.1 +6.4
YBMT Yellow Bay 68.45 45 *e*P **P 00 50 07.6 +2.6**
VSU Vasula 68.47 330*c i*P **P 00 50 04.8 0.0**
VSU pmax pmax
comp=Z,356nm,1.7s
VSU MLR MLR
comp=Z,9μm,16.0s
SWMT Swartz Lake 68.67 45 *e*P **P 00 50 06.3 -0.1**
NSS Namsos 68.78 340 *e*P **P 00 50 06.5 0.0**
NSS IAMs_20 IAMs_20 01 25 00.8
comp=Z,6μm,21.4s
ORV Oroville 68.93 56 *e*P **P 00 50 08.0 0.0**
ORV pmax pmax
comp=Z,29nm,1.4s
ORV Oroville 68.93 56 *e*P **P 00 50 08.0 0.0**
comp=Z,29nm,1.4s
SCO Scoresbysund 68.96 355 *i* P **P 00 50 08.7 +1.0**
comp=Z,18nm,1.0s
WVOR Wild Horse Val 69.02 52 *e*P **P 00 50 10.0 +1.3**
WVOR pmax pmax
comp=Z,31nm,1.1s
WVOR MLR MLR
comp=Z,900nm,19.0s
WVOR Wild Horse Val 69.02 52 *e*P **P 00 50 10.0 +1.3**
comp=Z,31nm,1.1s
WVOR LR LR
comp=Z,900nm,19.0s
MSO Missoula 69.11 46 P **P 00 50 09.1 -0.1**
baz=307,SNR=8.0
MSO Missoula 69.11 46 *es*P **sP 00 50 15.7 -2.8**
MSO LR LR
comp=Z,900nm,20.0s
GOF Gofitskoye 69.19 312⇑ *e*P **P 00 50 09.7 +0.2**
GOF *e*S **S 00 59 16.2 +2.1**
GOF pmax pmax
comp=Z,165nm,0.9s
CHMT Chamberlain Mo 69.44 45 *e*P **P 00 50 13.0 +1.6**
AFDM Forest Hills D 69.62 56 *e*P P 00 50 16.1 +3.8
comp=Z,13nm,1.0s
GUDG Gudauri 69.90 309 P **P 00 50 15.3 +1.1**
FFC Flin Flon 69.95 34 *e*P **P 00 50 13.4 -0.7**
FFC pmax pmax
comp=Z,29nm,1.0s
FFC MLR MLR
comp=Z,2μm,18.0s
FFC Flin Flon 69.95 34 *e*P **P 00 50 13.4 -0.7**
comp=Z,29nm,1.0s
FFC LR LR
comp=Z,2μm,18.0s
DGRG David-gareji 69.96 308 P **P 00 50 13.1 -1.3**
DGRG David-gareji 69.96 308 P **P 00 50 13.1 -1.3**
DUS Dusheti 69.98 309 P **P 00 50 13.1 -1.5**
DUS Dusheti 69.98 309 P **P 00 50 13.1 -1.5**
ZEI Tsey 70.04 309 *e*P **P 00 50 14.6 -0.5**
ZEI *e*S **S 00 59 22.8 -1.9**
ZEI pmax pmax
comp=Z,208nm,1.0s
ZEI pmax pmax
comp=N,50nm,0.8s
ZEI pmax pmax
comp=E,100nm,0.8s
KIV Kislovodsk 70.05 311 *i* P **P 00 50 16.3 +1.3**
SNR=178
KIV Kislovodsk 70.05 311 *e*P **P 00 50 15.6 +0.6**
KIV *i* 00 50 23.7
KIV *i* 00 50 37.3
KIV *i* 00 52 47.4
KIV *e*S S 00 59 14.1 -10
KIV *i* SS SS 01 03 46.1 -7.3
KIV pmax pmax
comp=Z,323nm,1.0s
KIV Kislovodsk 70.05 311 *e*P **P 00 50 14.8 -0.2**
comp=Z,320nm,1.0s
KIV LR LR
comp=Z,4μm,18.0s
KIV Kislovodsk 70.05 311 P **P 00 50 15.5 +0.5**
SNR=88
KIV Kislovodsk 70.05 311 P **P 00 50 15.5 +0.5**
SNR=88
KIV P **P 00 50 15.5 +0.5**
SNR=88
KBZ Khabaz 70.07 311 P **P 00 50 15.8 +0.9**
comp=Z,102nm,0.9s,baz=53,slow=3.7,SNR=152
KBZ LR LR 01 26 38.5
comp=Z,4μm,18.1s,baz=28,slow=41
MFID Camas Ranch 70.10 50 *e*P **P 00 50 15.7 +0.3**
comp=Z,15nm,0.9s
TBLG Delisi 70.18 308 P **P 00 50 17.2 +1.4**
TBLG Delisi 70.18 308 P **P 00 50 17.1 +1.4**
ILULI Ilulissat 70.19 6 *i* P **P 00 50 14.4 -0.8**
comp=Z,3μm,19.0s
FCC Fort Churchill 70.23 28 *e*P **P 00 50 15.5 -0.1**
FCC pmax pmax
comp=Z,29nm,1.2s
FCC MLR MLR
comp=Z,2μm,21.0s
FCC Fort Churchill 70.23 28 *e*P **P 00 50 15.5 -0.1**
comp=Z,28nm,1.2s
FCC LR LR
comp=Z,2μm,21.0s
TBLU Trondheim 70.26 340 *e*P **P 00 50 15.1 -0.7**
TBLU *e*S **S 00 59 27.6 +1.5**
HRY Holter Researc 70.33 45 *e*P **P 00 50 18.3 +1.6**
ONI Oni 70.43 310 P **P 00 50 17.6 +0.3**
ONI Oni 70.43 310 P **P 00 50 17.5 +0.3**
NEY Neytrino 70.46 310⇓ *e*P **P 00 50 18.6 +1.0**
NEY pmax pmax
comp=Z,14nm,0.9s
CMB Columbia Colle 70.53 56 *e*P **P 00 50 19.0 +1.1**
CMB pmax pmax
comp=Z,21nm,0.9s
CMB Columbia Colle 70.53 56 *e*P **P 00 50 19.0 +1.1**
comp=Z,21nm,0.9s
IZAR Zarasai 70.53 328 *e*P **P 00 50 17.7 +0.1**
IZAR IAmb IAmb 00 50 19.9
comp=Z,22nm,0.8s
LRM Limekiln Ridge 70.55 46 *e*P **P 00 50 18.3 +0.1**
SAO San Andreas Ge 70.59 58 PFAKE 00 50 30.0 +12
SAO LR LR
comp=Z,900nm,18.0s
EGMT Eagleton 70.62 43 P **P 00 50 18.0 -0.4**
baz=309,SNR=11
EGMT Eagleton 70.62 43 *e*P **P 00 50 18.3 -0.1**
comp=Z,32nm,0.9s
EGMT LR LR
comp=Z,1μm,18.0s
IDID Didziasalis 70.63 327 *e*P **P 00 50 18.3 +0.1**
IDID IAmb IAmb 00 50 20.8
comp=Z,48nm,0.9s
ISAL Salakas 70.71 328 *e*P **P 00 50 18.7 +0.1**
ISAL IAmb IAmb 00 50 21.3
comp=Z,65nm,0.9s
MICGM Minsk 70.72 326⇑ *e*P **P 00 50 20.0 +1.3**
MICGM PM 00 50 21.0
comp=Z,0.4nm,1.0s
MICGM *e*PcP **sP 00 50 30.0 +2.0**
MICGM *e*PP **PP 00 52 50.0 -4.9**
MICGM *e*PPP PPP 00 54 50.0
MICGM *e*S **S 00 59 34.0 +2.3**
MICGM *e*PS **PnS 01 00 05.0 +4.9**
MICGM *e*SS **SS 01 04 05.0 +2.2**
MICGM *e*SSS SSS 01 08 10.0
MICGM *e*LQ LQ 01 18 05.0
MICGM *e*LR LR 01 22 10.0
MICGM LRM MLR 01 25 52.0
comp=Z,11nm,14.0s
MICGM LRM MLR 01 25 54.0
comp=E,7.9nm,12.0s
MNK Minsk 70.72 326⇑ *e*P **P 00 50 20.0 +1.3**
MNK *e* 00 50 30.0
MNK *e* 00 52 50.0
MNK *e*S **S 00 59 34.0 +2.3**
MNK *e*PS **PnS 01 00 05.0 +4.9**
MNK *e*SS **SS 01 04 05.0 +2.2**
MNK pmax pmax
comp=Z,400nm,1.0s
MNK MLR MLR
comp=Z,11μm,14.0s
MNK MLR MLR
comp=E,8μm,12.0s
DLMT Dillon 70.75 47 *e*P **P 00 50 20.1 +0.7**
comp=E,57nm,1.0s
DLMT LR LR
comp=Z,800nm,19.0s
HLID Hailey 70.83 49 P **P 00 50 19.9 0.0**
baz=308,SNR=7.7
HLID Hailey 70.83 49 *e*P **P 00 50 20.3 +0.4**
comp=Z,18nm,1.0s
HLID LR LR
comp=Z,900nm,18.0s
NACGM Naroch 70.90 327 *e*P **P 00 50 20.0 +0.2**
NACGM PM 00 50 21.0
comp=Z,0.5nm,0.8s
NACGM *e*PP PP 00 53 10.0 +14
NACGM *e*PPP PPP 00 54 44.0
NACGM *e*S **S 00 59 34.0 +0.2**
NACGM *e*PS **PnS 01 00 10.0 +7.4**
NACGM *e*SS **SS 01 04 02.0 -3.6**
NACGM *e*SSS SSS 01 08 06.0
NACGM *e*LQ LQ 01 15 22.0
NACGM *e*LR LR 01 20 43.0
NACGM LRM MLR 01 25 12.0
comp=N,5.0nm,14.0s
NACGM LRM MLR 01 25 21.0
comp=E,9.7nm,16.0s
NACGM LRM MLR 01 25 32.0
comp=Z,13nm,14.0s
MCMT McKenzie Canyo 70.94 47 *e*P **P 00 50 22.2 +1.6**
BOZ Bozeman (W) 71.11 46 P **P 00 50 21.5 +0.1**
baz=309,SNR=17
BOZ Bozeman (W) 71.11 46 *e*P **P 00 50 21.9 +0.4**
BOZ pmax pmax
comp=Z,38nm,0.9s
BOZ MLR MLR
comp=Z,800nm,20.0s
BOZ Bozeman (W) 71.11 46 *e*P **P 00 50 21.9 +0.4**
comp=Z,38nm,0.9s
BOZ LR LR
comp=Z,800nm,20.0s
AKH Akhalkalaki 71.12 309 P **P 00 50 22.8 +1.1**
AKH Akhalkalaki 71.12 309⇑ *i*P **P 00 50 23.5 +1.9**
AKH Akhalkalaki 71.12 309 P **P 00 50 22.7 +1.1**
GNI Garni 71.12 307 *i* P **P 00 50 22.4 +0.8**
SNR=20
GNI Garni 71.12 307*c i*P **P 00 50 22.6 +0.9**
GNI pmax pmax
comp=Z,529nm,1.2s
GNI MLR MLR
comp=Z,7μm,18.0s
GNI Garni 71.12 307 *e*P **P 00 50 23.1 +1.4**
comp=Z,80nm,1.0s
GNI LR LR
comp=Z,3μm,18.0s
GNI Garni 71.12 307 P **P 00 50 19.6 -2.1**
SNR=15
GNI Garni 71.12 307 P **P 00 50 19.6 -2.1**
SNR=15
CHVG Ch'k'valeri 71.15 310 P **P 00 50 22.1 +0.5**
CHVG Ch'k'valeri 71.15 310⇑ *i*P **P 00 50 23.3 +1.7**
MOL Molde 71.53 340 *e*P **P 00 50 24.6 +1.1**
MOL *e*S **S 00 59 41.7 +0.9**
MOL IAMs_20 IAMs_20 01 26 45.2
comp=Z,5μm,18.7s
NC405 NORSAR Array S 71.58 338 *e*P **P 00 50 23.9 +0.1**
NC303 NORSAR Array S 71.59 338 *e*P **P 00 50 24.2 +0.3**
NV01 Mina Array Sit 71.61 55 *e*P **P 00 50 25.0 +0.3**
NVAR Mina Array Bea 71.61 55 P **P 00 50 25.0 +0.3**
comp=Z,4.5nm,0.7s,baz=290,slow=6.6,SNR=12
NVAR LR LR 01 18 08.3
comp=Z,422nm,19.5s,baz=302,slow=33
NV11 Mina Array Sit 71.70 55 *e*P P 00 50 29.2 +4.1
comp=Z,29nm,1.3s
NV11 LR LR
comp=Z,900nm,19.0s
NC204 NORSAR Array S 71.72 338 *e*P **P 00 50 24.2 -0.5**
QLMT Earthquake Lak 71.73 46 *e*P P 00 50 29.5 +4.2
NB201 NORSAR Array S 71.75 338 *e*P **P 00 50 24.6 -0.3**
NB2 NORSAR Subarra 71.78 338 P **P 00 50 25.3 +0.2**
comp=Z,82nm,0.9s,baz=37,slow=6.2
NB2 NORSAR Subarra 71.78 338 P **P 00 50 25.3 +0.2**
baz=37,slow=6.2
NB200 NORSAR Array S 71.78 338 *e*P **P 00 50 24.6 -0.5**
NOA NORSAR Array B 71.78 338 P **P 00 50 24.6 -0.5**
comp=Z,62nm,0.8s,baz=37,slow=6.0,SNR=226
NOA LR LR 01 26 00.5
comp=Z,3μm,20.1s,baz=40,slow=39
NOA NORSAR Array B 71.78 338 P **P 00 50 24.6 -0.5**
NOA pmax pmax
comp=Z,63nm,0.8s
NOA MLR MLR
comp=Z,3μm,20.1s
BANOM Banah 71.81 289 *i* P **P 00 50 26.7 +0.8**
SNR=46
BANOM Banah 71.81 289 P **P 00 50 25.4 -0.5**
SNR=32
BANOM Banah 71.81 289 P **P 00 50 25.4 -0.5**
SNR=32
BANOM P **P 00 50 25.4 -0.5**
SNR=32
NBO02 NORSAR Array S 71.88 338 *e*P **P 00 50 25.4 -0.3**

BIDO Bidbid 71.91 286 P P 00 50 28.0 +1.6
SNR=14
BIDO Bidbid 71.91 286 P P 00 50 28.0 +1.6
BIDO P P 00 50 28.0 +1.6
SNR=14
STKA Stephens Creek 71.91 182 P P 00 50 25.4 -0.6
comp=Z,2.0nm,0.6s,baz=341,slow=13,SNR=3.8
STKA LR LR 01 22 15.2
comp=Z,605nm,20.6s,baz=360,slow=36
NBO00 NORSAR Array S 71.91 338 *e*P P 00 50 26.4 +0.5
NC602 NORSAR Array S 71.93 337 *e*P P 00 50 26.2 +0.2
NC602 IAmb IAmb 00 50 27.1
comp=Z,27nm,1.0s
NC602 NORSAR Array S 71.93 337 *e*P P 00 50 25.8 -0.2
SOC Sochi 71.98 312 *c i*P P 00 50 26.8 +0.3
SOC *e**PP **sP** 00 50 36.3 +0.4
SOC *e* 00 53 06.1
SOC *e*PPP PPP 00 54 51.7
SOC *e*S S 00 59 47.2 +0.5
SOC *e*SS SS 01 04 24.2 +1.5
SOC pmax pmax
comp=Z,61nm,1.1s
AKN Aaknes 72.00 340 *e*P P 00 50 27.0 +0.6
AKN *e*S S 00 59 49.4 +3.1
AKN IAMs_20 IAMs_20 01 26 40.3
comp=Z,5μm,18.6s
NAO01 NORSAR Array S 72.03 338 *e*P P 00 50 26.9 +0.3
ELK Elko 72.07 52 *e*P P 00 50 28.3 +0.8
ELK pmax pmax
comp=Z,10.0nm,0.9s
ELK MLR MLR
comp=Z,800nm,19.0s
ELK Elko 72.07 52 *e*P P 00 50 28.3 +0.8
comp=Z,10nm,0.9s
ELK LR LR
comp=Z,800nm,19.0s
GCMT Greycliff 72.08 45 *e*P P 00 50 27.8 +0.5
SMDO Samad 72.24 285 P P 00 50 29.6 +1.0
SNR=11
SMDO Samad 72.24 285 P P 00 50 29.6 +1.0
SNR=11
YFT Old Faithful 72.30 46 *e*P P 00 50 31.5 +2.7
comp=Z,38nm,1.0s
SFJD Kangerlussuaq 72.40 6 *i*P P 00 50 28.7 +0.1
comp=Z,22nm,0.9s
SFJD Kangerlussuaq 72.40 6 *e*P P 00 50 29.2 +0.6
SFJD pmax pmax
comp=Z,27nm,0.9s
SFJD MLR MLR
comp=Z,2μm,21.0s
SFJD Kangerlussuaq 72.40 6 *e*P P 00 50 29.2 +0.6
comp=Z,27nm,0.9s
SFJD LR LR
comp=Z,2μm,21.0s
UOSS Minazif 72.46 288 *e*P P 00 50 28.8 -0.9
comp=Z,5.5nm,1.0s
UOSS LR LR
comp=Z,2μm,20.0s
H17A Grant Village 72.47 46 P P 00 50 31.2 +1.3
baz=310,SNR=14
H17A Grant Village 72.47 46 *e*P P 00 50 31.9 +2.1
comp=Z,54nm,0.9s
H17A LR LR
comp=Z,2μm,20.0s
ANN Anapa 72.48 314 *e*P P 00 50 29.1 -0.4
ANN *e* 00 53 06.9
ANN *e*PPP PPP 00 54 56.8
ANN *e*S S 00 59 52.4 +0.1
ANN *e*SS SS 01 04 35.5 +5.3
ANN pmax pmax
comp=Z,79nm,1.0s
ANN MLR MLR
comp=N,6μm,17.0s
ANN MLR MLR
comp=Z,4μm,17.0s
HATD Hatta, Dubai 72.59 288 *i*P P 00 50 31.0 +0.5
SNR=36
HATD Hatta, Dubai 72.59 288 P P 00 50 31.1 +0.6
SNR=29
HATD Hatta, Dubai 72.59 288 P P 00 50 31.1 +0.6
SNR=29
HATD P P 00 50 31.1 +0.6
SNR=29
IMW Indian Meadow 72.59 47 *e*P P 00 50 31.5 +0.9
comp=Z,27nm,0.9s
FLWY Flagg Ranch 72.61 47 *e*P P 00 50 31.2 +0.7
comp=Z,39nm,1.3s
FLWY LR LR
comp=Z,800nm,19.0s
FXWY Fox Creek 72.71 47 *e*P P 00 50 32.1 +0.9
comp=Z,25nm,1.0s
ASHO Ashiyiah 72.73 288 *i*P P 00 50 31.1 -0.3
SNR=38
ASHO Ashiyiah 72.73 288 P P 00 50 31.7 +0.3
SNR=25
ASHO Ashiyiah 72.73 288 P P 00 50 31.7 +0.3
SNR=25
ASHO P P 00 50 31.7 +0.3
SNR=25
RLMT Red Lodge 72.73 45 P P 00 50 30.8 -0.5
baz=310,SNR=5.6
RLMT Red Lodge 72.73 45 *e*P P 00 50 31.7 +0.4
comp=Z,36nm,1.4s
RLMT LR LR
comp=Z,1μm,18.0s
AKASG Malin Array Be 72.73 323 P P 00 50 30.4 -0.5
comp=Z,64nm,0.8s,baz=44,slow=6.0,SNR=231
AKASG LR LR 01 25 39.1
comp=Z,3μm,18.2s,baz=45,slow=38
AKASG Malin Array Be 72.73 323 *ce*P P 00 50 30.3 -0.5
AKASG pmax pmax
comp=Z,65nm,0.8s
AKBB Malin Array Si 72.73 323 *e*P P 00 50 30.4 -0.5
AKBB pmax pmax
comp=Z,118nm,0.9s
AKBB MLR MLR
comp=Z,5μm,18.0s
AKBB Malin Array Si 72.73 323 *e*P P 00 50 30.4 -0.5
comp=Z,118nm,0.9s
AKBB LR LR
comp=Z,5μm,18.0s
KIEV Kiev 72.74 323 *c i*P P 00 50 30.8 -0.1
KIEV pmax pmax
comp=Z,111nm,1.0s
KIEV MLR MLR
comp=Z,4μm,15.0s
KIEV Kiev 72.74 323 *e*P P 00 50 30.1 -0.8
comp=Z,109nm,0.9s
KIEV LR LR
comp=Z,5μm,18.0s
AK11 Malin Array Si 72.77 323 *e*P P 00 50 31.0 -0.2
PKM Mcpherson Peak 72.78 59 P P 00 50 31.8 0.0
baz=308,SNR=5.9
MOOW Moose Ponds 72.79 47 *e*P P 00 50 32.4 +0.7
comp=Z,26nm,1.0s
OSL Oslo 72.82 337 *e*P P 00 50 32.3 +1.1
OSL IAmb IAmb 00 50 33.0
comp=Z,62nm,0.9s
NAZ Nazwa, Dubai 72.83 288 *i*P P 00 50 32.2 +0.3
SNR=6.3
NAZ Nazwa, Dubai 72.83 288 P P 00 50 31.4 -0.5
SNR=12
NAZ Nazwa, Dubai 72.83 288 P P 00 50 31.4 -0.5
SNR=12
NAZ P P 00 50 31.4 -0.5
SNR=12
HVU Hansel Valley 72.88 50 *e*P P 00 50 32.8 +0.6
HVU pmax pmax
comp=Z,36nm,0.9s
HVU MLR MLR
comp=Z,700nm,18.0s
HVU Hansel Valley 72.88 50 *e*P P 00 50 32.8 +0.6
comp=Z,36nm,0.9s
HVU LR LR
comp=Z,700nm,18.0s
LOHW Long Hollow 72.96 47 *e*P P 00 50 33.5 +0.8
comp=Z,16nm,1.1s
SNOW Snow King Moun 72.97 47 *e*P P 00 50 34.8 +2.0
comp=Z,26nm,1.0s
SNOW LR LR
comp=Z,700nm,20.0s
REDW Red Top Meadow 72.98 47 *e*P P 00 50 33.5 +0.7
comp=Z,25nm,1.0s
REDW LR LR
comp=Z,900nm,18.0s
FOO Floro 72.99 341 *e*P P 00 50 33.3 +1.1

SUW Suwalki 73.02 328 *e*P P 00 50 32.8 +0.3
SUW *e*S S 00 59 57.5 -0.7
SUW LMZ LR 01 27 19.4
SUW Suwalki 73.02 328 *e*P P 00 50 32.9 +0.4
SUW *e*S S 00 59 57.5 -0.7
SUW MLR MLR
comp=Z,5μm,16.7s
FAQ Al Faqa, Dubai 73.03 288 *i*P P 00 50 33.0 -0.1
SNR=15
FAQ Al Faqa, Dubai 73.03 288 P P 00 50 33.2 +0.1
SNR=13
FAQ Al Faqa, Dubai 73.03 288 P P 00 50 33.2 +0.1
SNR=13
FAQ P P 00 50 33.2 +0.1
SNR=13
HYA Hoyanger 73.06 340 *e*P P 00 50 33.7 +1.1
HYA IAmb IAmb 00 50 34.4
comp=Z,58nm,1.0s
GRAC Grapevine Rang 73.07 56 P P 00 50 33.3 +0.1
baz=308,SNR=38
DGMT Dagmar 73.14 40 P P 00 50 33.2 -0.3
baz=312,SNR=5.8
DGMT Dagmar 73.14 40 *e*P P 00 50 33.5 0.0
comp=Z,35nm,0.8s
DGMT LR LR
comp=Z,1μm,21.0s
ISA Isabella, Lake 73.18 57 P P 00 50 33.9 0.0
baz=308
ISA Isabella, Lake 73.18 57 PFAKE 00 50 50.0 +16
ISA LR LR
comp=Z,700nm,21.0s
ARQ Araqi 73.19 286 P P 00 50 34.6 +0.5
SNR=16
ARQ Araqi 73.19 286 P P 00 50 34.6 +0.5
SNR=16
AHID Auburn Hatcher 73.22 48 *e*P P 00 50 35.5 +1.3
comp=Z,16nm,0.9s
AHID LR LR
comp=Z,700nm,19.0s
BGU Big Grassy Mou 73.27 50 *e*P P 00 50 35.6 +1.1
comp=Z,11nm,1.0s
ARVC Arvin 73.27 58 P P 00 50 34.7 +0.2
baz=308
LAO LASA Array 73.31 42 P P 00 50 34.9 +0.3
baz=312,SNR=6.0
LAO LASA Array 73.31 42 *e*P P 00 50 36.5 +1.9
comp=Z,38nm,0.9s
LAO LR LR
comp=Z,1μm,19.0s
R11A Troy Canyon, C 73.34 54 P P 00 50 35.1 +0.1
baz=309,SNR=7.1
R11A Troy Canyon, C 73.34 54 *e*P P 00 50 32.3 -2.7
comp=Z,26nm,1.2s
R11A LR LR
comp=Z,800nm,19.0s
DAC Darwin (Calif) 73.36 56 *e*P P 00 50 35.2 0.0
DAC pmax pmax
comp=Z,13nm,1.0s
DAC MLR MLR
comp=Z,800nm,20.0s
DAC Darwin (Calif) 73.36 56 *e*P P 00 50 35.2 0.0
comp=Z,13nm,1.0s
DAC LR LR
comp=Z,800nm,20.0s
SPUT South Promonto 73.37 50 *e*P P 00 50 38.0 +2.9
comp=Z,73nm,1.8s
SPUT LR LR
comp=Z,600nm,20.0s
KONO Kongsberg 73.38 338 *e*P P 00 50 35.1 +0.5
KONO *e*S S 01 00 02.8 +0.7
KONO IAMs_20 IAMs_20 01 28 49.3
comp=Z,5μm,18.4s
KONO Kongsberg 73.38 338 *e*P P 00 50 35.3 +0.7
KONO pmax pmax
comp=Z,25nm,0.9s
KONO MLR MLR
comp=Z,5μm,18.0s
KONO Kongsberg 73.38 338 *e*P P 00 50 35.3 +0.7
comp=Z,25nm,0.9s
KONO LR LR
comp=Z,5μm,18.0s
MPMC Manual Prospec 73.56 57 P P 00 50 36.4 +0.1
baz=308,SNR=6.3
OSI Osito Audit: C 73.66 58 P P 00 50 37.7 +0.9
baz=308
OSI Osito Audit: C 73.66 58 *e*P P 00 50 39.7 +3.0
comp=Z,20nm,0.8s
HWUT Hardware Ranch 73.69 49 *e*P P 00 50 37.6 +0.6
comp=Z,35nm,1.0s
HWUT LR LR
comp=Z,700nm,19.0s
FURC Furnace Creek, 73.71 56 P P 00 50 37.9 +1.0
baz=308
KLNR Kaliningrad 73.76 330 *i*P P 00 50 36.9 0.0
KLNR pmax pmax
comp=Z,101nm,1.0s
LRMC Laurel Mtn Rad 73.80 57 P P 00 50 38.1 +0.4
baz=308
TPNV Topopah Spring 73.80 55 P P 00 50 38.0 +0.3
baz=309,SNR=9.1
TPNV Topopah Spring 73.80 55 *e*P P 00 50 37.9 +0.2
TPNV pmax pmax
comp=Z,32nm,1.1s
TPNV MLR MLR
comp=Z,800nm,21.0s
TPNV Topopah Spring 73.80 55 *e*P P 00 50 37.9 +0.2
comp=Z,32nm,1.1s
TPNV LR LR
comp=Z,800nm,21.0s
DUG Dugway, Tooele 73.86 51 P P 00 50 38.1 +0.1
baz=310,SNR=34
DUG Dugway, Tooele 73.86 51 *e*P P 00 50 38.5 +0.5
DUG pmax pmax
comp=Z,32nm,0.8s
DUG MLR MLR
comp=Z,800nm,20.0s
DUG Dugway, Tooele 73.86 51 *e*P P 00 50 38.5 +0.5
comp=Z,32nm,0.8s
DUG LR LR
comp=Z,800nm,20.0s
A26A Wade Farm, Ken 73.90 39 P P 00 50 37.8 -0.1
baz=314,SNR=5.7
BER Bergen 73.95 340 *e*P P 00 50 38.8 +0.9
BER IAmb IAmb 00 50 39.8
comp=Z,55nm,0.8s
BER *e*S S 01 00 09.5 +1.1
BER IAMs_20 IAMs_20 01 28 38.8
comp=Z,5μm,20.6s
EDW2 Edwards Air Fo 73.97 58 P P 00 50 38.8 +0.3
baz=308,SNR=6.2
SNCC San Nicolas Is 73.97 60 PFAKE 00 50 50.0 +11
SNCC LR LR
comp=Z,900nm,20.0s
ODD1 Odda 74.00 339 *e*P P 00 50 39.3 +1.0
ODD1 IAmb IAmb 00 50 40.2
comp=Z,40nm,0.9s
BW06 Boulder Array 74.09 47 P P 00 50 39.0 -0.4
baz=311,SNR=28
PD31 Pinedale Array 74.09 47 *e*P P 00 50 38.8 -0.6
PDAR Pinedale Array 74.09 47 P P 00 50 38.8 -0.6
comp=Z,3.4nm,0.6s,baz=270,slow=1.4,SNR=45
TCUT Toone Canyon 74.10 49 *e*P P 00 50 41.0 +1.5
comp=Z,51nm,1.1s
TCUT LR LR
comp=Z,1μm,19.0s
B26A Jensen Ranch, 74.16 39 P P 00 50 39.5 +0.1
baz=314
SIM Simferopol' 74.17 316 *c i*P P 00 50 40.0 +0.5
SIM *e*S S 01 00 13.0 +1.4
SIM pmax pmax
comp=Z,55nm,0.8s
SIM MLR MLR
comp=Z,2μm,17.8s
GMU Granite Mounta 74.24 50 *e*P P 00 50 40.3 +0.1
A27A Ledoux Ranch, 74.24 38 P P 00 50 40.2 +0.3
baz=314
PSUT Pine Spring 74.29 53 *e*P P 00 50 41.5 +0.9
comp=Z,21nm,1.0s
PSUT LR LR
comp=Z,700nm,19.0s
JLU Jordanelle 74.40 50 *e*P P 00 50 46.0 +4.8
comp=Z,22nm,1.2s
JLU LR LR
comp=Z,700nm,18.0s
NLU North Lily Min 74.45 51 *e*P P 00 50 41.9 +0.4
comp=Z,29nm,1.0s
NLU LR LR
comp=Z,700nm,21.0s
BLS5 Blasjo 74.46 339 *e*P P 00 50 41.8 +0.8
BLS5 IAmb IAmb 00 50 43.0
comp=Z,35nm,1.0s
BLS5 IAMs_20 IAMs_20 01 29 11.9
comp=Z,4μm,18.1s
GSC Goldstone, Bar 74.47 57 P P 00 50 41.6 +0.1
baz=309,SNR=6.2
GSC Goldstone, Bar 74.47 57 *e*P P 00 50 50.2 +8.7
GSC pmax pmax
comp=Z,15nm,0.9s
GSC Goldstone, Bar 74.47 57 *e*P P 00 50 50.2 +8.7
comp=Z,15nm,0.9s
D25A Fairfield 74.47 41 P P 00 50 41.9 +0.6
baz=313
BFSC Mount Baldy Ra 74.58 58 P P 00 50 42.6 +0.3
baz=309
C26A Wahner Farm, P 74.61 40 P P 00 50 42.6 +0.6
baz=314
MPU Maple Canyon 74.67 50 *e*P P 00 50 43.7 +0.9
comp=Z,26nm,0.8s
MPU LR LR
comp=Z,600nm,19.0s
A28A Rude Farm, Bot 74.73 38 P P 00 50 42.9 +0.1
baz=315,SNR=6.0
SCI2 San Clemente I 74.78 60 P P 00 50 44.2 +0.9
baz=308
HOMB Homborsund 74.84 337 *e*P P 00 50 43.7 +0.6
E25A Miller Ranch, 74.88 41 P P 00 50 44.1 +0.4
baz=313
SORM Soroca 74.92 321 ⇑ *i*P P 00 50 44.1 +0.4
SORM Soroca 74.92 321 ⇑ P P 00 50 44.1 +0.4
KMY Karmoy 74.97 339 *e*P P 00 50 45.0 +1.2
KMY IAmb IAmb 00 50 45.8
comp=Z,32nm,0.9s
C27A Sayler Ranch, 74.98 39 P P 00 50 44.6 +0.4
baz=314
D26A Manning 74.99 40 P P 00 50 44.8 +0.5
baz=314
B28A Dugan Ranch, T 75.01 38 P P 00 50 44.0 -0.3
baz=315,SNR=6.9
HEC Hector,Ludlow 75.06 57 P P 00 50 45.8 +0.9
baz=309
STAV Stavanger 75.08 339 *e*P P 00 50 45.0 +0.5
STAV IAmb IAmb 00 50 46.3
comp=Z,25nm,0.9s
SNART Snartemo 75.16 338 *e*P P 00 50 46.1 +1.1
SNART IAmb IAmb 00 50 46.8
comp=Z,33nm,0.9s
A29A Manning Farm, 75.20 37 P P 00 50 45.7 +0.3
baz=315,SNR=7.9
CCUT Cedar City 75.21 53 PFAKE 00 51 00.0 +14
CCUT LR LR
comp=Z,700nm,19.0s
MURC Murrieta 75.28 58 P P 00 50 46.1 0.0
baz=309
MSU Marysvale 75.31 52 *e*P P 00 50 48.4 +1.9
MSU Marysvale 75.31 52 *e*P P 00 50 48.4 +1.9
BSD Bornholm Skovb 75.33 332 ⇑ *i*P P 00 50 46.5 +0.5
comp=Z,110nm,1.0s
comp=Z,3μm,14.0s
E26A Carlson Angus 75.37 41 P P 00 50 47.0 +0.6
baz=314
TMUT Trail Mountain 75.39 51 *e*P P 00 50 49.5 +2.5
comp=Z,34nm,1.3s
TMUT LR LR
comp=Z,600nm,20.0s
B29A Wagenman Farm, 75.47 38 P P 00 50 47.5 +0.6
baz=315
KIS Kishinev 75.48 320 *e*P P 00 50 47.0 0.0
comp=Z,200nm,1.4s
KIS Kishinev 75.48 320 *i* PcP **PcP** 00 50 57.0 -3.1
KIS Kishinev 75.48 320 *e*PP PP 00 53 31.0 -4.7
KIS Kishinev 75.48 320 *e*PPP PPP 00 55 24.0
KIS *e*S **S** **01 00 25.0 -1.1**
KIS Kishinev 75.48 320 *e*PS **SKSac** **01 00 55.0 -0.6**
KIS *e*SS **SS** **01 05 16.0 +0.2**
KIS *e*SSS SSS 01 09 00.0
KIS LRM MLR 01 27 34.0
comp=Z,5μm,16.0s
KIS Kishinev 75.48 320 ⇓ *i*P P 00 50 47.1 0.0
KIS Kishinev 75.48 320 *e*P P 00 50 47.0 0.0
KIS *i* 00 50 57.0
KIS *e* 00 53 36.0
KIS *e*PPP PPP 00 55 24.0
KIS *e*S **S** **01 00 25.0 -1.1**
KIS *e*PS **PnS** **01 00 55.0 -7.8**
KIS *e*SS **SS** **01 05 16.0 +0.2**
KIS pmax pmax
comp=Z,180nm,1.4s
KIS pmax pmax
comp=Z,700nm,8.0s
KIS pmax pmax
comp=Z,800nm,14.0s
KIS MLR MLR
comp=Z,5μm,15.0s
KIS MLR MLR
comp=N,3μm,16.0s
KIS MLR MLR
comp=E,3μm,14.0s
KIS MLR MLR
comp=Z,5μm,16.0s
GMRC Granite Mounta 75.53 57 P P 00 50 47.9 +0.2
baz=309,SNR=5.3
P17A Butcher Ranch, 75.55 50 *e*P P 00 50 48.3 +0.5
comp=Z,46nm,1.0s
P17A LR LR
comp=Z,700nm,21.0s
BEL Belsk 75.60 327 *e*P P 00 50 48.1 +0.5
BEL *e*PP PP 00 53 45.2 +8.7
BEL *e*S S 01 00 33.5 +6.3
BEL LMZ LR 01 27 27.2
BEL Belsk 75.60 327 *e*P P 00 50 48.1 +0.5
BEL *e* 00 53 45.2
BEL MLR MLR
comp=Z,4μm,18.0s
MTPU Mount Pierson 75.61 52 *e*P P 00 50 53.8 +5.4
comp=Z,31nm,1.3s
MTPU LR LR
comp=Z,700nm,20.0s
A30A Hoffart Farm, 75.62 37 P P 00 50 47.5 -0.3
baz=316,SNR=14
LCMT Little Creek M 75.63 54 *e*P P 00 50 52.6 +4.3
comp=Z,28nm,1.0s
LCMT LR LR
comp=Z,800nm,20.0s
KBSD Kabsdagh 75.66 306 *e*P P 00 50 48.5 +0.3
LVV L'vov 75.71 324 *e*P P 00 50 48.7 +0.4
LVV *e* 00 53 39.7
LVV *e*S **S** **01 00 28.1 -0.4**
LVV *e*PS PnS 01 01 22.5 +17
LVV *e*SS **SS** **01 05 18.7 -0.4**
LVV MLR MLR
comp=N,3μm,14.0s
LVV MLR MLR
comp=E,4μm,14.0s
LVV MLR MLR
comp=Z,5μm,15.0s
COP Copenhagen 75.72 334 ⇑ *i*P P 00 50 49.3 +1.1
comp=Z,55nm,0.9s
comp=Z,1μm,14.0s
P18A Preston Nutter 75.74 50 *e*P P 00 50 50.1 +1.1
comp=Z,38nm,1.3s
P18A LR LR
comp=Z,600nm,20.0s
PFO Pinyon Flats O 75.75 58 P P 00 50 49.2 +0.2
baz=309
PFO Pinyon Flats O 75.75 58 *e*P P 00 50 49.4 +0.4
PFO pmax pmax
comp=Z,17nm,0.9s
PFO MLR MLR
comp=Z,1μm,18.0s
PFO Pinyon Flats O 75.75 58 *e*P P 00 50 49.4 +0.4
comp=Z,17nm,0.9s
PFO LR LR
comp=Z,1μm,18.0s
ULM Lac du Bonnet 75.75 35 P P 00 50 47.9 -0.7
comp=Z,7.6nm,0.6s,baz=317,slow=6.9,SNR=14
ULM LR LR 01 27 35.8
comp=Z,929nm,18.1s,baz=338,slow=38
ULM Lac du Bonnet 75.75 35 *e*P P 00 50 47.8 -0.7
comp=Z,13nm,0.8s
ULM LR LR
comp=Z,2μm,18.0s
G25A Newell 75.77 42 P P 00 50 49.4 +0.6
baz=314

BELC	**Belle Mtn. Jos**	**75.80**	**57**	P		**P**	**00 50 49.2**	**-0.1**
	baz=309							
E27A	**Carson**	**75.84**	**40**	P		**P**	**00 50 49.5**	**+0.3**
	baz=314							
K22A	**Casper**	**75.84**	**46**	*e*P		P	00 50 53.6	+4.2
	comp=Z,46nm,1.3s							
K22A				LR		LR		
	comp=Z,700nm,19.0s							
KNB	**Kanab**	**75.88**	**53**	*e*P		**P**	**00 50 51.8**	**+2.1**
KNB				pmax		pmax		
	comp=Z,45nm,1.3s							
KNB				MLR		MLR		
	comp=Z,700nm,19.0s							
KNB	**Kanab**	**75.88**	**53**	*e*P		**P**	**00 50 51.8**	**+2.1**
	comp=Z,45nm,1.3s							
KNB				LR		LR		
	comp=Z,700nm,19.0s							
SRU	**San Rafael Swe**	**75.91**	**51**	*e*P		**P**	**00 50 50.1**	**+0.2**
SRU				pmax		pmax		
	comp=Z,36nm,0.9s							
SRU				MLR		MLR		
	comp=Z,600nm,20.0s							
SRU	**San Rafael Swe**	**75.91**	**51**	*e*P		**P**	**00 50 50.1**	**+0.2**
	comp=Z,36nm,0.9s							
SRU				LR		LR		
	comp=Z,600nm,20.0s							
B30A	**Myrvik Farm, E**	**75.96**	**37**	P		**P**	**00 50 49.7**	**-0.1**
	baz=316,SNR=17							
IAS	**Iasi**	**75.96**	**321**	⇓*i*P		**P**	**00 50 50.3**	**+0.6**
G26A	**Maurine**	**76.11**	**42**	P		**P**	**00 50 50.6**	**-0.2**
	baz=314,SNR=6.8							
LEOM	**Leova**	**76.13**	**320**	⇑*i*P		**P**	**00 50 51.3**	**+0.6**
MUD	**Monsted U'grnd**	**76.15**	**336**	⇑*i*P		**P**	**00 50 51.7**	**+1.1**
	comp=Z,43nm,0.9s							
	comp=Z,3µm,15.0s							
RSSD	**Black Hills**	**76.18**	**43**	P		**P**	**00 50 51.6**	**+0.2**
	baz=313							
RSSD	**Black Hills**	**76.18**	**43**	*e*P		**P**	**00 50 51.1**	**-0.3**
RSSD				pmax		pmax		
	comp=Z,21nm,0.9s							
RSSD				MLR		MLR		
	comp=Z,900nm,18.0s							
RSSD	**Black Hills**	**76.18**	**43**	*e*P		**P**	**00 50 51.1**	**-0.3**
	comp=Z,21nm,0.9s							
RSSD				LR		LR		
	comp=Z,900nm,18.0s							
BAR	**Barrett**	**76.20**	**59**	*e*P		P	00 50 56.9	+5.5
	comp=Z,19nm,1.1s							
BAR				LR		LR		
	comp=Z,700nm,22.0s							
MONP2	**Monument Peak**	**76.22**	**59**	P		**P**	**00 50 52.4**	**+0.6**
	baz=309							
IRM	**Iron Mountain**	**76.25**	**57**	P		**P**	**00 50 52.0**	**+0.3**
	baz=310,SNR=5.6							
B31A	**Greenbush Farm**	**76.29**	**37**	P		**P**	**00 50 52.3**	**+0.7**
	baz=316							
SFNV	**Sufian**	**76.30**	**306**	*e*P		**P**	**00 50 52.5**	**+0.5**
RGN	**Rugen**	**76.34**	**333**	*e*P		**P**	**00 50 53.1**	**+1.4**
	comp=Z,108nm,1.0s							
RGN				LR		LR		
	comp=Z,4µm,19.0s							
MZRK	**Al-Mazaregh**	**76.34**	**305**	*e*P		**P**	**00 50 53.9**	**+1.7**
D29A	**Pettibone, Tap**	**76.36**	**39**	P		**P**	**00 50 52.8**	**+0.7**
	baz=316							
BC3	**Big Chuckawall**	**76.37**	**57**	P		**P**	**00 50 52.7**	**+0.2**
	baz=310,SNR=5.9							
I25A	**Rochford**	**76.41**	**43**	P		**P**	**00 50 53.0**	**+0.3**
	baz=314,SNR=7.4							
C30A	**Mose, Pekin**	**76.43**	**38**	P		**P**	**00 50 52.9**	**+0.4**
	baz=316							
KWP	**Kalwaria Pacla**	**76.43**	**325**	*e*P		**P**	**00 50 52.9**	**+0.5**
KWP				*e*PP		**PP**	**00 53 44.2**	**+0.6**
KWP				*e*S		**S**	**01 00 39.1**	**+2.6**
KWP				LMZ		LR	01 28 11.3	
KWP	**Kalwaria Pacla**	**76.43**	**325**	⇑*i*P		**P**	**00 50 53.1**	**+0.7**
KWP	**Kalwaria Pacla**	**76.43**	**325**	*e*P		**P**	**00 50 53.0**	**+0.5**
KWP				*e*			00 53 44.3	
KWP				*e*S		**S**	**01 00 39.2**	**+2.7**
KWP				MLR		MLR		
	comp=Z,6µm,16.8s							
W13A	**Hualapai Mount**	**76.45**	**55**	*e*P		**P**	**00 50 54.1**	**+1.1**
	comp=Z,7.6nm,0.8s							
PRAR	**RASCA**	**76.48**	**322**	⇓*i*P		**P**	**00 50 53.5**	**+0.8**
H26A	**Fairpoint**	**76.49**	**42**	P		**P**	**00 50 53.1**	**+0.1**
	baz=314							
O20A	**White River Ci**	**76.56**	**49**	P		**P**	**00 50 53.7**	**+0.1**
	baz=312							
O20A	**White River Ci**	**76.56**	**49**	*e*P		**P**	**00 50 53.4**	**-0.2**
	comp=Z,29nm,1.2s							
U15A	**North Rim**	**76.59**	**54**	*e*P		P	00 50 58.5	+4.6
	comp=Z,26nm,1.0s							
U15A				LR		LR		
	comp=Z,700nm,19.0s							
F28A	**McLaughlin**	**76.63**	**40**	P		**P**	**00 50 54.0**	**+0.3**
	baz=315							
C31A	**Landman Farms,**	**76.71**	**37**	P		**P**	**00 50 54.0**	**-0.1**
	baz=317,SNR=6.3							
D30A	**Buchanan**	**76.72**	**38**	P		**P**	**00 50 54.6**	**+0.4**
	baz=316							
TLCR		**76.76**	**319**	⇓*i*P		**P**	**00 50 55.1**	**+0.8**
BUR08	**Bucovina Ar. S**	**76.76**	**322**	*e*P		**P**	**00 50 54.7**	**+0.3**
BURAR	**Bucovina Array**	**76.77**	**322**	⇑*i*P		**P**	**00 50 55.9**	**+1.4**
PDMCI	**Parker Dam,Lak**	**76.80**	**56**	P		**P**	**00 50 55.2**	**+0.5**
	baz=310,SNR=5.7							
J25A	**Sunshine Ranch**	**76.81**	**44**	P		**P**	**00 50 55.4**	**+0.6**
	baz=314							
B32A	**Ashes, Strandq**	**76.82**	**36**	P		**P**	**00 50 54.3**	**-0.3**
	baz=317,SNR=11							
H27A	**Howes**	**76.84**	**42**	P		**P**	**00 50 54.8**	**-0.1**
	baz=314,SNR=5.2							
I26A	**New Underwood**	**76.86**	**43**	P		**P**	**00 50 55.5**	**+0.5**
	baz=314							
TESR	**Tescani**	**76.88**	**321**	⇑*i*P		**P**	**00 50 55.8**	**+0.8**
Y12C	**Blythe**	**76.91**	**57**	P		**P**	**00 50 56.0**	**+0.6**
	baz=310,SNR=6.5							
Y12C	**Blythe**	**76.91**	**57**	*e*P		**P**	**00 50 56.2**	**+0.9**
	comp=Z,29nm,1.0s							
Y12C				LR		LR		
	comp=Z,900nm,18.0s							
A33A	**Warroad**	**76.94**	**35**	P		**P**	**00 50 54.7**	**-0.6**
	baz=318,SNR=16							
E30A	**Jud**	**77.09**	**39**	P		**P**	**00 50 56.8**	**+0.6**
	baz=316							
SHAO	**Shalim**	**77.10**	**283**	P		**P**	**00 50 56.7**	**0.0**
CFR	**Carcaliu**	**77.10**	**319**	⇑*i*P		**P**	**00 50 57.1**	**+0.9**
G28A	**Parade**	**77.12**	**41**	P		**P**	**00 50 57.4**	**+1.0**
	baz=315							
F29A	**Eureka**	**77.12**	**40**	P		**P**	**00 50 57.0**	**+0.6**
	baz=316							
MNKR	**ALMNKUR**	**77.12**	**306**	*e*P		**P**	**00 50 56.0**	**-0.5**
KOLS	**Kolonicke sedl**	**77.14**	**325**	*e*P		**P**	**00 50 57.5**	**+1.1**
KOLS				*e*PP		**PP**	**00 53 51.3**	**+1.7**
KOLS				*e*S		**S**	**01 00 44.3**	**0.0**
KOLS				*e*L		L	01 29 22.9	
GLA	**Glamis**	**77.16**	**58**	P		**P**	**00 50 57.6**	**+0.7**
	baz=310							
GLA	**Glamis**	**77.16**	**58**	*e*P		**P**	**00 50 57.8**	**+0.9**
GLA				pmax		pmax		
	comp=Z,21nm,1.0s							
GLA				MLR		MLR		
	comp=Z,700nm,20.0s							
GLA	**Glamis**	**77.16**	**58**	*e*P		**P**	**00 50 57.8**	**+0.9**
	comp=Z,20nm,1.0s							
GLA				LR		LR		
	comp=Z,700nm,20.0s							
PETR	**Petresti**	**77.16**	**320**	⇑*i*P		**P**	**00 50 58.8**	**+2.2**
AGMN	**Agassiz Nation**	**77.20**	**36**	P		**P**	**00 50 56.7**	**-0.1**
	baz=318							
AGMN	**Agassiz Nation**	**77.20**	**36**	PFAKE			00 51 10.0	+13
AGMN				LR		LR		
	comp=Z,800nm,19.0s							
ODBI	**Odobesti**	**77.22**	**320**	⇓*i*P		**P**	**00 50 59.1**	**+2.2**
STHS	**Stebnicka Huta**	**77.23**	**326**	*e*P		**P**	**00 50 58.1**	**+1.2**
OJC	**Ojcow**	**77.23**	**327**	*e*P		**P**	**00 50 57.3**	**+0.4**
OJC				*e*S		**S**	**01 00 45.4**	**+0.2**
OJC				LMZ		LR	01 29 03.4	
OJC	**Ojcow**	**77.23**	**327**	*e*P		**P**	**00 50 57.4**	**+0.5**
OJC				*e*S		**S**	**01 00 45.5**	**+0.2**
OJC				MLR		MLR		
	comp=Z,5µm,17.5s							
OJC	**Ojcow**	**77.23**	**327**	*e*P		**P**	**00 50 56.7**	**-0.3**
	comp=Z,133nm,1.1s							
J26A	**Sides Ranch, S**	**77.24**	**43**	P		**P**	**00 50 57.9**	**+0.7**
	baz=314							
I27A	**Quinn**	**77.25**	**42**	P		**P**	**00 50 57.4**	**+0.2**
	baz=315,SNR=6.7							
D31A	**Mcclaflin, Tow**	**77.26**	**38**	P		**P**	**00 50 57.7**	**+0.6**
	baz=317							
VRI	**Vrincioaia**	**77.31**	**320**	⇑*i*P		**P**	**00 50 58.7**	**+1.2**
B33A	**Robert and Kas**	**77.34**	**36**	P		**P**	**00 50 57.7**	**+0.2**
	baz=318							
PHWY	**Pilot Hill**	**77.34**	**46**	PFAKE			00 51 10.0	+12
PHWY				LR		LR		
	comp=Z,699nm,19.0s							
H28A	**Mission Ridge**	**77.35**	**41**	P		**P**	**00 50 58.3**	**+0.6**
	baz=315,SNR=5.7							
N23A	**Red Feather La**	**77.35**	**47**	P		**P**	**00 50 58.4**	**+0.3**
	baz=313							
N23A	**Red Feather La**	**77.35**	**47**	*e*P		**P**	**00 51 00.1**	**+2.0**
	comp=Z,25nm,1.0s							
N23A				LR		LR		
	comp=Z,800nm,18.0s							
UZH	**Uzhgorod**	**77.36**	**325**	*e*P		**P**	**00 50 56.0**	**-1.6**
UZH				*e*			00 51 02.0	
UZH				*e*			00 53 58.4	
UZH				*i*S		**S**	**01 00 41.2**	**-5.3**
UZH				MLR		MLR		
	comp=N,8µm,15.0s							
UZH				MLR		MLR		
	comp=E,10µm,15.0s							
UZH				MLR		MLR		
	comp=Z,8µm,15.0s							
PLOR	**Plostina**	**77.36**	**320**	⇑*i*P		**P**	**00 50 58.9**	**+1.1**
TIRR	**Tirgusor**	**77.47**	**318**	⇓*i*P		**P**	**00 50 59.0**	**+0.7**
TIRR	**Tirgusor**	**77.47**	**318**	PFAKE			00 51 10.0	+12
TIRR				LR		LR		
	comp=Z,2µm,20.0s							
F30A	**Leola**	**77.51**	**40**	P		**P**	**00 50 59.0**	**+0.4**
	baz=316							
CRVS	**Cervenica-Dubn**	**77.52**	**325**	*e*P		**P**	**00 50 59.1**	**+0.5**
BMR	**Baia Mare**	**77.52**	**323**	⇓*i*P		**P**	**00 50 59.8**	**+1.2**
D32A	**Dogwood Acres,**	**77.52**	**38**	P		**P**	**00 50 58.8**	**+0.2**
	baz=317							
G29A	**Hoven**	**77.53**	**40**	P		**P**	**00 50 59.4**	**+0.7**
	baz=316							
E31A	**Nome**	**77.53**	**38**	P		**P**	**00 50 58.5**	**-0.2**
	baz=317,SNR=7.8							
GRER		**77.53**	**320**	⇓*i*P		**P**	**00 50 59.8**	**+1.1**
HARR	**Harsova**	**77.55**	**319**	⇓*i*P		**P**	**00 50 59.8**	**+1.0**
ARCR	**ARCALIA**	**77.56**	**322**	⇓*i*P		**P**	**00 51 00.8**	**+2.0**
B34A	**Aery, Baudette**	**77.60**	**35**	P		**P**	**00 50 58.3**	**-0.7**
	baz=318,SNR=5.6							
TRPA	**Tarpa**	**77.62**	**324**	⇑*e*PKPPKPbP			**00 51 00.6**	**+1.5**
EFOR	**EFORIE**	**77.63**	**318**	⇑*i*P		**P**	**00 51 01.1**	**+1.9**
NIE	**Niedzica**	**77.63**	**326**	*e*P		**P**	**00 51 00.0**	**+0.8**
NIE				*e*S		**S**	**01 00 51.1**	**+1.5**
NIE				LMZ		LR	01 29 19.6	
NIE	**Niedzica**	**77.63**	**326**	*e*P		**P**	**00 51 00.1**	**+0.8**
NIE				*e*S		**S**	**01 00 51.2**	**+1.6**
NIE				MLR		MLR		
	comp=Z,3µm,17.5s							
C33A	**Trail**	**77.64**	**36**	P		**P**	**00 50 59.0**	**-0.2**
	baz=318,SNR=7.8							
WUAZ	**Wupatki**	**77.74**	**54**	P		**P**	**00 50 59.6**	**-0.7**
	baz=311,SNR=5.5							
WUAZ	**Wupatki**	**77.74**	**54**	*e*P		**P**	**00 51 01.8**	**+1.5**
	comp=Z,30nm,0.9s							
WUAZ				LR		LR		
	comp=Z,700nm,18.0s							
I28A	**Midland**	**77.75**	**42**	P		**P**	**00 51 00.4**	**+0.4**
	baz=315,SNR=6.2							
Y14A	**Wickenburg**	**77.75**	**56**	*e*P		**P**	**00 51 00.6**	**+0.4**
	comp=Z,83nm,0.9s							
H29A	**Onida**	**77.79**	**41**	P		**P**	**00 51 00.5**	**+0.4**
	baz=316,SNR=7.0							
J27A	**Elkhorn Farm,**	**77.84**	**43**	P		**P**	**00 51 01.7**	**+1.1**
	baz=315							
F31A	**Hecla**	**77.86**	**39**	P		**P**	**00 51 00.7**	**+0.1**
	baz=317							
PGOR	**Pogoanele**	**77.87**	**320**	⇑*i*P		**P**	**00 51 02.4**	**+1.9**
E32A	**Braaten, Kindr**	**77.89**	**38**	P		**P**	**00 51 01.8**	**+1.1**
	baz=317							
SMCO	**Snowmass**	**77.93**	**49**	*e*P		**P**	**00 51 02.7**	**+1.2**
	comp=Z,17nm,1.1s							
ISR	**Istrita**	**77.94**	**320**	⇑*i*P		**P**	**00 51 02.5**	**+1.5**
BR101	**Keskin Array S**	**77.94**	**312**	*e*P		**P**	**00 51 01.3**	**+0.1**
BR101				*e*PP		**PP**	**00 53 57.5**	**+0.7**
BR131	**Keskin Array S**	**77.94**	**312**	*e*P		**P**	**00 51 01.7**	**+0.4**
BRTR	**Keskin Array B**	**77.94**	**312**	P		**P**	**00 51 01.3**	**+0.1**
	comp=Z,17nm,1.0s,baz=68,slow=3.3,SNR=38							
BRTR				PP		**PP**	**00 53 57.5**	**+0.7**
	comp=Z,12nm,1.0s,baz=54,slow=6.3,SNR=7.4							
BRTR				LR		LR	01 32 51.8	
	comp=Z,2µm,18.1s,baz=5.0,slow=41							
BRTR	**Keskin Array B**	**77.94**	**312**	*c*eP		**P**	**00 51 01.7**	**+0.4**
BRTR				pmax		pmax		
	comp=Z,17nm,1.0s							
G30A	**Faulkton**	**77.96**	**40**	P		**P**	**00 51 01.6**	**+0.5**
	baz=316,SNR=8.0							
MLR	**Muntele Rosu**	**77.96**	**320**	⇑*i*P		**P**	**00 51 02.3**	**+1.1**
MLR	**Muntele Rosu**	**77.96**	**320**	*e*P		**P**	**00 51 02.0**	**+0.7**
MLR				pmax		pmax		
	comp=Z,72nm,1.4s							
MLR				MLR		MLR		
	comp=Z,4µm,22.0s							
MLR	**Muntele Rosu**	**77.96**	**320**	*e*P		**P**	**00 51 02.0**	**+0.7**
	comp=Z,72nm,1.4s							
MLR				LR		LR		
	comp=Z,4µm,22.0s							
RAC	**Raciborz**	**78.00**	**328**	*e*P		**P**	**00 51 02.0**	**+0.8**
RAC				*e*S		**S**	**01 00 55.7**	**+2.2**
RAC				MLR		MLR		
	comp=Z,5µm,18.4s							
113A	**Mohawk Valley,**	**78.02**	**57**	PFAKE			00 51 10.0	+8.4
113A				LR		LR		
	comp=Z,900nm,18.0s							
MSAB	**Monastry St. A**	**78.03**	**318**	⇑*i*P		**P**	**00 51 02.8**	**+1.3**
D33A	**AnnSam, Waubun**	**78.06**	**37**	P		**P**	**00 51 00.8**	**-0.8**
	baz=318,SNR=6.8							
B35A	**Bob, Littlefor**	**78.10**	**35**	P		**P**	**00 51 01.1**	**-0.7**
	baz=319,SNR=8.2							
C34A	**RKJ Ranch, Bem**	**78.11**	**36**	P		**P**	**00 51 01.3**	**-0.6**
	baz=318							
J28A	**Allard Ranch,**	**78.12**	**42**	P		**P**	**00 51 02.4**	**+0.3**
	baz=315,SNR=5.5							
PSN	**Preselentsi**	**78.14**	**318**	P		**P**	**00 51 04.2**	**+2.1**
I29A	**Vivian Onida**	**78.17**	**41**	P		**P**	**00 51 01.5**	**-0.9**
	baz=316,SNR=8.2							
KSP	**Ksiaz**	**78.17**	**329**	*e*P		**P**	**00 51 02.2**	**+0.1**
KSP				*e*S		**S**	**01 00 56.2**	**+0.9**
KSP				LMZ		LR	01 29 40.6	
KSP	**Ksiaz**	**78.17**	**329**	*e*P		**P**	**00 51 02.3**	**+0.1**
KSP				*e*S		**S**	**01 00 56.3**	**+0.9**
KSP				MLR		MLR		
	comp=Z,6µm,17.7s							
CJR	**Cluj-Napoca**	**78.18**	**323**	⇑*i*P		**P**	**00 51 04.0**	**+1.6**
LANS	**Liptovska Anna**	**78.19**	**326**	*e*P		**P**	**00 51 04.1**	**+1.8**
OKC	**Ostrava-Krasne**	**78.21**	**327**	*e*P		**P**	**00 51 03.2**	**+0.8**
OKC				*e*PCP		**sP**	**00 51 13.4**	**+1.6**
OKC				*e*PP		PP	00 53 53.2	-5.3
OKC				*e*S		**S**	**01 00 57.1**	**+1.3**
OKC				AMS		AMS	01 30 30.0	
	comp=Z,5µm,14.3s							
OKC	**Ostrava-Krasne**	**78.21**	**327**	*e*P		**P**	**00 51 03.2**	**+0.8**
OKC				*e*			00 51 13.4	
OKC				*e*S		**S**	**01 00 57.1**	**+1.3**
OKC				MLR		MLR		
	comp=Z,5µm,14.3s							
SECR		**78.23**	**320**	⇑*i*P		**P**	**00 51 04.6**	**+2.0**
DRWC	**Darouich**	**78.26**	**308**	*e*P		**P**	**00 51 04.2**	**+1.3**
KECS	**Kecovo**	**78.26**	**325**	*e*P		**P**	**00 51 03.2**	**+0.5**
KECS				*e*PP		PP	00 53 53.5	-5.4
ISCO	**Idaho Springs**	**78.28**	**47**	P		**P**	**00 51 03.9**	**+0.5**
	baz=313							
ISCO	**Idaho Springs**	**78.28**	**47**	*e*P		**P**	**00 51 05.3**	**+1.9**
ISCO				pmax		pmax		
	comp=Z,16nm,1.0s							
ISCO				MLR		MLR		
	comp=Z,1µm,20.0s							
ISCO	**Idaho Springs**	**78.28**	**47**	*e*P		**P**	**00 51 05.3**	**+1.9**
	comp=Z,16nm,1.0s							
ISCO				LR		LR		
	comp=Z,1µm,20.0s							
ANTO	**Ankara**	**78.32**	**313**	*e*P		**P**	**00 51 04.6**	**+1.3**
ANTO				pmax		pmax		
	comp=Z,78nm,1.0s							
ANTO				MLR		MLR		
	comp=Z,1µm,18.0s							
ANTO	**Ankara**	**78.32**	**313**	*e*P		**P**	**00 51 04.6**	**+1.3**
	comp=Z,78nm,1.0s							
ANTO				LR		LR		
	comp=Z,1µm,18.0s							
G31A	**Conde**	**78.35**	**40**	P		**P**	**00 51 03.8**	**+0.6**
	baz=317							
MVCO	**Mesa Verde**	**78.36**	**51**	P		**P**	**00 51 04.1**	**+0.3**
	baz=312,SNR=6.3							
MVCO	**Mesa Verde**	**78.36**	**51**	*e*P		**P**	**00 51 04.7**	**+0.9**
	comp=Z,22nm,1.0s							
MVCO				LR		LR		
	comp=Z,600nm,20.0s							
SULR		**78.39**	**320**	⇑*i*P		**P**	**00 51 04.9**	**+1.4**
F32A	**Veblen**	**78.40**	**39**	P		**P**	**00 51 03.6**	**+0.1**
	baz=317							
D34A	**Park Rapids**	**78.40**	**37**	P		**P**	**00 51 03.2**	**-0.3**
	baz=318,SNR=5.5							
X16A	**Lo Mia Camp, P**	**78.42**	**55**	*e*P		**P**	**00 51 04.8**	**+0.7**
	comp=Z,15nm,0.9s							
X16A				LR		LR		
	comp=Z,600nm,18.0s							
MVH1	**Achvaich**	**78.43**	**343**	*e*P		**P**	**00 51 03.9**	**+0.5**
VOIR		**78.43**	**321**	⇑*i*P		**P**	**00 51 05.0**	**+1.2**
E33A	**Westby DABS, E**	**78.46**	**37**	P		**P**	**00 51 03.4**	**-0.4**
	baz=318,SNR=9.1							
C35A	**Jirik Farms, M**	**78.49**	**36**	P		**P**	**00 51 03.6**	**-0.4**
	baz=319,SNR=10							
MORC	**Moravsky Berou**	**78.51**	**328**	⇑*i*P		**P**	**00 51 05.4**	**+1.3**
MORC	**Moravsky Berou**	**78.51**	**328**	⇑P		**P**	**00 51 05.4**	**+1.3**
MORC	**Moravsky Berou**	**78.51**	**328**	*e*P		**P**	**00 51 04.9**	**+0.9**
	comp=Z,294nm,1.0s							
MORC				LR		LR		
	comp=Z,18µm,18.0s							
MCD	**Coleburn Disti**	**78.53**	**343**	⇑*e*P		**P**	**00 51 04.6**	**+0.6**
DRGR		**78.53**	**323**	⇑*i*P		**P**	**00 51 05.4**	**+1.1**
SUSD	**Miller**	**78.55**	**40**	P		**P**	**00 51 04.6**	**+0.2**
	baz=316							
DPC	**Dobruska-Polom**	**78.55**	**329**	*e*P		**P**	**00 51 05.0**	**+0.7**
DPC				*e*PP		**PP**	**00 54 02.7**	**+1.4**
DPC				*e*S		**S**	**01 01 01.0**	**+1.5**
DPC				AMS		AMS	01 31 00.0	
	comp=Z,5µm,15.0s							
DPC	**Dobruska-Polom**	**78.55**	**329**	*e*P		**P**	**00 51 05.0**	**+0.7**
DPC				*e*			00 54 02.7	
DPC				*e*S		**S**	**01 01 01.0**	**+1.5**
DPC				MLR		MLR		
	comp=Z,5µm,15.0s							
MTUR	**Matau**	**78.58**	**321**	⇓*i*P		**P**	**00 51 06.2**	**+1.6**
KRLC	**Kraliky**	**78.58**	**328**	*e*P		**P**	**00 51 04.7**	**+0.2**
KRLC				*e*PCP		**sP**	**00 51 14.7**	**+0.8**
KRLC	**Kraliky**	**78.58**	**328**	*e*P		**P**	**00 51 04.7**	**+0.2**
KRLC				*e*			00 51 14.7	
J29A	**Okreek**	**78.60**	**42**	P		**P**	**00 51 05.1**	**+0.4**
	baz=316,SNR=7.4							
G32A	**Webster**	**78.67**	**39**	P		**P**	**00 51 05.5**	**+0.4**
	baz=317							
ARR	**Arges**	**78.68**	**321**	⇑*i*P		**P**	**00 51 07.1**	**+1.9**
I30A	**Oacoma**	**78.69**	**41**	P		**P**	**00 51 05.1**	**-0.1**
	baz=316							
MME1	**Meikle Cairn**	**78.71**	**342**	⇑*e*P		**P**	**00 51 05.4**	**+0.3**
BTCH	**Batrach**	**78.77**	**308**	*e*P		**P**	**00 51 06.4**	**+0.6**
F33A	**5 Mile Ranch,**	**78.81**	**38**	P		**P**	**00 51 05.2**	**-0.5**
	baz=318,SNR=9.6							
PRD	**Provadia**	**78.88**	**318**	P		**P**	**00 51 05.2**	**-1.0**
GOLR		**78.91**	**321**	⇓*i*P		**P**	**00 51 07.8**	**+1.5**
D35A	**Remer**	**78.92**	**36**	P		**P**	**00 51 05.9**	**-0.5**
	baz=319							
PSZ	**Piszkesteto**	**78.95**	**325**	⇑*i*P		**P**	**00 51 08.0**	**+1.4**
PSZ	**Piszkesteto**	**78.95**	**325**	⇑*e*PKPPKPaP			**00 51 07.3**	**+0.7**
PSZ	**Piszkesteto**	**78.95**	**325**	*e*P		**P**	**00 51 07.2**	**+0.7**
PSZ				pmax		pmax		
	comp=Z,101nm,1.0s							
PSZ				MLR		MLR		
	comp=Z,4µm,20.0s							
PSZ	**Piszkesteto**	**78.95**	**325**	*e*P		**P**	**00 51 07.2**	**+0.6**
	comp=Z,101nm,1.0s							
PSZ				LR		LR		
	comp=Z,4µm,20.0s							
C36A	**Pine Crest Far**	**78.95**	**35**	P		**P**	**00 51 06.1**	**-0.4**
	baz=320,SNR=9.8							
VYHS	**Vyhne**	**78.96**	**326**	*e*P		**P**	**00 51 07.3**	**+0.7**
VYHS				*e*PP		**PP**	**00 54 01.2**	**-3.6**
VYHS				*e*S		**S**	**01 01 07.1**	**+3.2**
VYHS				*e*L		L	01 31 15.0	
DRUM	**Mains of Drumt**	**78.96**	**342**	*e*P		**P**	**00 51 07.1**	**+0.7**
DRUM				AMB		AMB	00 51 08.3	
	comp=Z,45nm,1.1s							
DRUM				AMS		AMS	01 32 52.0	
	comp=Z,3µm,16.2s							
S22A	**4UR Ranch, Cre**	**78.98**	**50**	P		**P**	**00 51 07.6**	**+0.4**
	baz=313,SNR=7.1							
S22A	**4UR Ranch, Cre**	**78.98**	**50**	*e*P		**P**	**00 51 09.8**	**+2.5**
	comp=Z,14nm,1.0s							
S22A				LR		LR		
	comp=Z,800nm,19.0s							
W18A	**Petrified Fore**	**79.01**	**53**	PFAKE			00 51 20.0	+13
W18A				LR		LR		
	comp=Z,700nm,21.0s							
LOT	**Lotru**	**79.04**	**322**	⇓*i*P		**P**	**00 51 07.9**	**+0.7**
I31A	**Royce, Wessing**	**79.05**	**41**	P		**P**	**00 51 08.1**	**+1.0**
	baz=317							
BRG	**Berggiesshubel**	**79.06**	**330**	*i* P		**P**	**00 51 07.9**	**+0.9**
	comp=Z,42nm,1.0s							
BRG				*i*			00 51 15.4	
	comp=Z,17nm,0.9s							
BRG				PP		**PP**	**00 54 05.0**	**-0.5**
BRG				S		**S**	**01 01 06.0**	**+

E35A	**Pequot Lakes**	79.16	37	P		P	00 51 08.2	+0.5	
	baz=319								
214A	**Organ Pipe Nat**	79.16	57	P		P	00 51 08.9	+0.9	
	baz=311								
ARNB	**Al Arnab**	79.18	308	*e*P		P	00 51 08.6	+0.5	
SLNF	**Slenfeh**	79.21	308	*e*P		P	00 51 08.3	0.0	
G33A	**Ortonville**	79.22	39	P		P	00 51 06.0	-2.0	
	baz=318,SNR=6.4								
D36A	**Goodland**	79.25	36	P		P	00 51 07.9	-0.2	
	baz=320								
H32A	**Carlson Farm,**	79.25	40	P		P	00 51 08.7	+0.4	
	baz=317								
C37A	**Embarrass**	79.25	35	P		P	00 51 07.7	-0.5	
	baz=320,SNR=7.8								
VRAC	**Vranov**	79.26	328⇑	*i*P		P	00 51 09.7	+1.5	
VRAC	**Vranov**	79.26	328	⇑P		P	00 51 09.7	+1.5	
X18A	**Snowflake**	79.27	54	*e*P		P	00 51 13.6	+4.8	
	comp=Z,15nm,1.0s								
X18A				LR		LR			
	comp=Z,800nm,21.0s								
F34A	**Alexandria**	79.33	38	P		P	00 51 09.2	+0.5	
	baz=318								
KSB	**Sheil Bridge**	79.36	343	*e*P		P	00 51 09.2	+0.7	
EYMN	**Ely**	79.39	34	P		P	00 51 08.5	-0.4	
	baz=320,SNR=6.4								
EYMN	**Ely**	79.39	34	*e*P		P	00 51 09.1	+0.2	
	comp=Z,30nm,0.9s								
EYMN				LR		LR			
	comp=Z,900nm,20.0s								
SIRR	**Siria**	79.41	323⇓	*i*P		P	00 51 10.0	+0.9	
OGNE	**Ogallala**	79.45	45	P		P	00 51 10.2	+0.7	
	baz=315								
OGNE	**Ogallala**	79.45	45	*e*P		P	00 51 10.8	+1.3	
	comp=Z,60nm,1.0s								
OGNE				LR		LR			
	comp=Z,900nm,21.0s								
H33A	**Prehn Over Nor**	79.45	39	P		P	00 51 10.0	+0.7	
	baz=318,SNR=14								
GOPC	**GO Pecny, Ondr**	79.50	329	*e*P		P	00 51 10.2	+0.7	
GOPC				*e*PCP		sP	00 51 18.5	-0.4	
GOPC				*e*PP		PP	00 54 06.1	-3.1	
GOPC				*e*S		S	01 01 11.1	+1.5	
GOPC				AMS		AMS	01 30 10.0		
	comp=Z,5µm,17.0s								
GOPC	**GO Pecny, Ondr**	79.50	329	*e*P		P	00 51 10.2	+0.7	
GOPC				*e*			00 51 18.5		
GOPC				*e*			00 54 06.1		
GOPC				*e*S		S	01 01 11.1	+1.5	
GOPC				MLR		MLR			
	comp=Z,5µm,17.0s								
ROOS	**tl_alroos**	79.51	306	*e*P		P	00 51 10.2	+0.3	
PRA	**Prague**	79.51	329	*e*P		P	00 51 10.9	+1.4	
PRA				*e*PCP		PcP	00 51 18.2	+0.7	
PRA				*e*S		S	01 01 11.1	+1.5	
PRA				AMS		AMS	01 30 30.0		
	comp=Z,6µm,15.2s								
PRA	**Prague**	79.51	329	*e*P		P	00 51 10.9	+1.4	
PRA				*e*			00 51 18.2		
PRA				*e*S		S	01 01 11.1	+1.5	
PRA				MLR		MLR			
	comp=Z,6µm,15.2s								
PRU	**Pruhonice**	79.54	329	*e*P		P	00 51 10.2	+0.6	
PRU				*e*PCP		sP	00 51 19.2	+0.2	
PRU				*e*PP		PP	00 54 08.6	-0.9	
PRU				*e*S		S	01 01 12.6	+2.7	
PRU				AMS		AMS	01 30 30.0		
	comp=Z,6µm,16.7s								
PRU	**Pruhonice**	79.54	329	*e*P		P	00 51 10.2	+0.6	
PRU				*e*			00 51 19.2		
PRU				*e*			00 54 08.6		
PRU				*e*S		S	01 01 12.6	+2.7	
PRU				MLR		MLR			
	comp=Z,6µm,16.7s								
SMOL	**Smolenice**	79.54	327	*e*P		P	00 51 11.3	+1.6	
BIDA	**Albida**	79.54	307	*e*P		P	00 51 09.6	-0.5	
ZIMR		79.58	319⇓	*i*P		P	00 51 11.1	+1.1	
SZH	**Strazhica**	79.58	319	P		P	00 51 11.1	+1.1	
D37A	**Cotton**	79.58	35	P		P	00 51 10.0	0.0	
	baz=320								
F35A	**Swanville**	79.60	37	P		P	00 51 10.2	0.0	
	baz=319								
BUD	**Budapest**	79.66	325⇑	*e*PKPPKPaP		P	00 51 11.5	+1.2	
C38A	**Sawbill Land.**	79.66	34	P		P	00 51 10.1	-0.3	
	baz=321,SNR=8.5								
E36A	**McGregor**	79.70	36	P		P	00 51 10.3	-0.4	
	baz=320,SNR=13								
TREC	**Trest**	79.72	328	*e*P		P	00 51 11.2	+0.5	
TREC				*e*PCP		sP	00 51 19.7	-0.4	
TREC				*e*S		S	01 01 13.4	+1.5	
TREC	**Trest**	79.72	328	*e*P		P	00 51 11.2	+0.5	
TREC				*e*			00 51 19.7		
TREC				*e*S		S	01 01 13.4	+1.5	
SDCO	**Great Sand Dun**	79.75	49	*e*P		P	00 51 14.4	+3.0	
SDCO				*e*PcP		sP	00 51 20.3	-0.5	
SDCO				LR		LR			
	comp=Z,500nm,18.0s								
JMB	**Yambol**	79.83	318	P		P	00 51 12.4	+1.0	
ESY	**Stoneypath**	79.89	341	*e*P		P	00 51 11.5	0.0	
I33A	**Coleman**	79.89	40	P		P	00 51 11.3	-0.4	
	baz=318,SNR=7.2								
BZS	**Buzias**	79.92	323⇑	*i*P		P	00 51 12.7	+0.9	
H34A	**Spellman Lake,**	79.93	39	P		P	00 51 12.5	+0.6	
	baz=318								
PKS7	**Kunszentmiklos**	79.93	325⇑	*e*PKPPKPaP		P	00 51 13.1	+1.3	
K31A	**O'Neill**	79.96	42	P		P	00 51 12.5	+0.4	
	baz=317,SNR=6.8								
PKSG		80.00	326⇑	*e*PKPPKPaP			00 51 13.5	+1.3	
EAB	**Aberfoyle**	80.05	342⇑	*e*P		P	00 51 13.2	+0.9	
C39A	**Grand Marais**	80.07	34	P		P	00 51 12.9	+0.3	
	baz=321								
CSKK	**Cs˙tkako**	80.08	326⇑	*e*PKPPKPaP		P	00 51 13.4	+0.7	
F36A	**Milaca**	80.08	37	P		P	00 51 12.9	+0.2	
	baz=320								
PKS6	**Bocsa**	80.10	325	*e*PKPPKPaP		P	00 51 14.4	+1.7	
MARH	**Ras Al Marh**	80.10	306	*e*P		P	00 51 14.4	+0.9	
OUZ	**Omahuta**	80.11	156	PFAKE			00 51 20.0	+7.3	
OUZ				LR		LR			
	comp=Z,3µm,19.0s								
G35A	**Watkins**	80.12	38	P		P	00 51 13.6	+0.7	
	baz=319								
NKC	**Novy Kostel**	80.14	331	*e*P		P	00 51 13.4	+0.5	
NKC				*e*PP		PP	00 54 16.5	+2.0	
NKC				*e*S		S	01 01 15.7	-0.6	
NKC				AMS		AMS	01 32 20.0		
	comp=Z,6µm,14.5s								
NKC	**Novy Kostel**	80.14	331	*e*P		P	00 51 13.4	+0.5	
NKC				*e*			00 54 16.5		
NKC				*e*S		S	01 01 15.7	-0.6	
NKC				MLR		MLR			
	comp=Z,6µm,14.5s								
ECSD	**EROS Data Cent**	80.22	40	P		P	00 51 13.2	-0.3	
	baz=318,SNR=11								
ECSD	**EROS Data Cent**	80.22	40	*e*P		P	00 51 12.9	-0.5	
	comp=Z,21nm,0.9s								
ECSD				LR		LR			
	comp=Z,1µm,20.0s								
TUC	**Tucson**	80.22	56	P		P	00 51 14.8	+0.9	
	baz=312								
TUC	**Tucson**	80.22	56	*e*P		P	00 51 15.1	+1.3	
TUC				pmax		pmax			
	comp=Z,14nm,1.0s								
TUC				MLR		MLR			
	comp=Z,800nm,18.0s								
TUC	**Tucson**	80.22	56	*e*P		P	00 51 15.1	+1.3	
	comp=Z,14nm,1.0s								
TUC				LR		LR			
	comp=Z,800nm,18.0s								
L31A	**Butterfield Fa**	80.25	42	P		P	00 51 13.8	+0.1	
	baz=317,SNR=5.7								
PKST	**T˜'s**	80.26	326⇑	*e*PKPPKPaP		P	00 51 14.5	+0.9	
BANR	**Banloc**	80.32	323⇑	*i*P		P	00 51 15.4	+1.5	
H35A	**Sunnyside Ranc**	80.35	38	P		P	00 51 14.1	-0.1	
	baz=319,SNR=15								
I34A	**Hadley**	80.36	39	P		P	00 51 14.8	+0.6	
	baz=318								
PGBU	**Glenifferbraes**	80.43	342	*e*P		P	00 51 14.8	+0.5	
KSCO	**Kaye Shedlock'**	80.49	46	PFAKE			00 51 30.0	+15	
KSCO				LR		LR			
	comp=Z,800nm,20.0s								
MDVR	**Moldovita**	80.50	322⇑	*i*P		P	00 51 15.5	+0.4	
SOP	**Sopron**	80.55	327⇑	*e*PKPPKPaP		P	00 51 16.2	+1.0	
ESK	**Eskdalemuir**	80.58	342	*e*P		P	00 51 15.7	+0.6	
ESK				AMB		AMB	00 51 17.2		
	comp=Z,30nm,1.1s								
ESK				AMS		AMS	01 33 33.7		
	comp=Z,3µm,16.4s								
ESK	**Eskdalemuir**	80.58	342	*ce*P		P	00 51 16.8	+1.6	
ESK	**Eskdalemuir**	80.58	342	*e*P		P	00 51 16.1	+1.0	
	comp=Z,26nm,0.9s								
ESK				LR		LR			
	comp=Z,3µm,19.0s								
TOTH	**TOTAH**	80.58	306	*e*P		P	00 51 16.6	+0.9	
MPEP	**Malo Peshtene**	80.60	320	P		P	00 51 16.5	+1.0	
KHC	**Kasperske Hory**	80.60	329	*e*P		P	00 51 15.8	+0.3	
KHC				*e*PCP		pP	00 51 23.9	+1.5	
KHC				*e*PP		PP	00 54 19.6	+1.2	
KHC				*e*S		S	01 01 22.0	+0.8	
KHC				AMS		AMS	01 32 20.0		
	comp=Z,8µm,15.2s								
KHC	**Kasperske Hory**	80.60	329	*e*P		P	00 51 15.8	+0.4	
KHC				*e*			00 51 23.9		
KHC				*e*			00 54 19.6		
KHC				*e*S		S	01 01 22.0	+0.8	
KHC				MLR		MLR			
	comp=Z,8µm,15.2s								
KHC	**Kasperske Hory**	80.60	329	*e*P		P	00 51 15.8	+0.4	
KHC				LR		LR			
	comp=Z,30nm,0.9s								
KHC				LR		LR			
	comp=Z,2µm,18.0s								
CONA	**Conrad Observa**	80.65	327	*i* pP		P	00 51 16.5	+0.7	
	comp=Z,54nm,0.9s,SNR=52								
PKS9	**Tamasi**	80.67	325⇑	*e*PKPPKPaP		P	00 51 16.4	+0.6	
WTSB	**Winterswijk**	80.68	335	*i* P		P	00 51 16.4	+0.6	
	comp=Z,98nm,1.2s								
ECK	**Cauldkaine Hil**	80.68	341⇑	*e*P		P	00 51 16.3	+0.5	
RAR	**Rarotonga**	80.75	128	LR		LR	01 20 37.3		
	comp=Z,869nm,20.4s,baz=305,slow=31								
M31A	**Lambtecht Ranc**	80.78	43	P		P	00 51 17.0	+0.4	
	baz=317								
GEC2	**GERESS Array S**	80.78	329	*e*P		P	00 51 16.8	+0.3	
GEC2				pmax		pmax			
	comp=Z,32nm,1.0s								
GEC2				MLR		MLR			
	comp=Z,6µm,18.0s								
GEC2	**GERESS Array S**	80.78	329	*e*P		P	00 51 16.8	+0.3	
	comp=Z,32nm,1.0s								
GEC2				LR		LR			
	comp=Z,6µm,18.0s								
GERES	**GERESS Array B**	80.78	329	P		P	00 51 16.1	-0.5	
	comp=Z,20nm,0.9s,baz=35,slow=4.9,SNR=125								
GERES				LR		LR	01 31 33.0		
	comp=Z,5µm,18.0s,baz=10.0,slow=39								
BHH	**Howats Hill**	80.79	341⇑	*e*P		P	00 51 17.2	+0.9	
GEA0	**GERESS Array S**	80.79	329	*e*P		P	00 51 16.3	-0.3	
L32A	**Elgin**	80.79	42	P		P	00 51 17.4	+0.7	
	baz=317								
T25A	**Trinidad**	80.80	49	P		P	00 51 17.0	+0.1	
	baz=314,SNR=5.1								
T25A	**Trinidad**	80.80	49	*e*P		P	00 51 19.1	+2.1	
	comp=Z,26nm,0.9s								
PKSM	**Moragy**	80.81	325⇑	*i*P		P	00 51 17.0	+0.4	
PKSM	**Moragy**	80.81	325⇑	*e*PKPPKPaP		P	00 51 16.8	+0.2	
PKSM	**Moragy**	80.81	325	⇑P		P	00 51 17.0	+0.4	
K33A	**Hardington**	80.86	41	P		P	00 51 17.4	+0.5	
	baz=318								
H36A	**Jessenland, He**	80.87	38	P		P	00 51 17.9	+0.9	
	baz=319								
J34A	**George**	80.87	40	P		P	00 51 17.8	+0.8	
	baz=318								
SPMN	**Marine on St.**	80.89	37	P		P	00 51 17.0	-0.1	
	baz=320								
SPMN	**Marine on St.**	80.89	37	*e*P		P	00 51 17.3	+0.3	
	comp=Z,18nm,1.1s								
SPMN				LR		LR			
	comp=Z,1µm,18.0s								
I35A	**Creekview Farm**	80.91	39	P		P	00 51 17.8	+0.6	
	baz=319								
PGB	**Panagyurishte**	80.98	319	P		P	00 51 19.0	+1.3	
ISP	**Isparta**	81.02	313	PFAKE			00 51 30.0	+12	
ISP				LR		LR			
	comp=Z,1µm,22.0s								
KDZ	**Kurdzhali**	81.02	318	P		P	00 51 19.3	+1.5	
GRFO	**Grafenberg**	81.04	331	*e*P		P	00 51 18.4	+0.6	
GRFO				pmax		pmax			
	comp=Z,88nm,0.9s								
GRFO				MLR		MLR			
	comp=Z,2µm,20.0s								
GRFO	**Grafenberg**	81.04	331	*e*P		P	00 51 18.4	+0.6	
	comp=Z,88nm,0.9s								
GRFO				LR		LR			
	comp=Z,2µm,20.0s								
PLD	**Plovdiv**	81.04	319	P		P	00 51 18.3	+0.4	
LAZ	**Ladron**	81.07	52	*e*P		P	00 51 20.4	+2.0	
ANMO	**Albuquerque**	81.11	51	P		P	00 51 19.2	+0.6	
	baz=314								
ANMO	**Albuquerque**	81.11	51⇑	*e*P		P	00 51 18.2	-0.5	
ANMO				pmax		pmax			
	comp=Z,9.0nm,1.2s								
ANMO				MLR		MLR			
	comp=Z,509nm,16.0s								
ANMO	**Albuquerque**	81.11	51	*e*P		P	00 51 19.3	+0.6	
	comp=Z,23nm,1.1s								
ANMO				LR		LR			
	comp=Z,600nm,20.0s								
GMK	**Mull of Kintyr**	81.11	343⇑	*e*P		P	00 51 18.8	+0.8	
BGNE	**Belgrade**	81.16	42	P		P	00 51 19.1	+0.5	
	baz=317,SNR=5.3								
BGNE	**Belgrade**	81.16	42	*e*P		P	00 51 19.8	+1.2	
	comp=Z,86nm,1.0s								
BGNE				LR		LR			
	comp=Z,1µm,18.0s								
N31A	**Bailey Ranch,**	81.17	43	P		P	00 51 18.9	+0.2	
	baz=317								
J35A	**Milford**	81.17	39	P		P	00 51 19.4	+0.8	
	baz=319								
K34A	**Le Mars**	81.25	40	P		P	00 51 19.5	+0.5	
	baz=318								
I36A	**Fitzsimmons Fa**	81.25	38	P		P	00 51 19.9	+0.9	
	baz=319								
ARSA	**Arzberg**	81.32	327	*i* pP		P	00 51 20.4	+1.0	
	SNR=27								
H37A	**Dierke Farm, C**	81.33	37	P		P	00 51 19.8	+0.4	
	baz=320								
RZN	**Rozhen**	81.34	318	P		P	00 51 20.1	+0.3	
MOA	**Molln**	81.36	328	*i* pP		P	00 51 20.9	+1.3	
	comp=Z,20nm,1.1s,SNR=23								
CSS	**Mathiatis**	81.37	309	P		P	00 51 19.2	-0.6	
CSS	**Mathiatis**	81.37	309	*e*P		P	00 51 20.6	+0.7	
	comp=Z,11nm,1.2s								
BEHE	**Becsehely**	81.41	326⇑	*e*P		P	00 51 20.4	+0.6	
Y22D	**IRIS PASSCAL I**	81.43	52	PFAKE			00 51 30.0	+10	
Y22D				LR		LR			
	comp=Z,900nm,20.0s								
O31A	**Woolen Ranch,**	81.46	44	P		P	00 51 20.9	+0.6	
	baz=317								
I37A	**Lemond, Waseca**	81.54	38	P		P	00 51 21.0	+0.4	
	baz=320,SNR=5.3								
BNM	**Barren Site**	81.55	52	*e*P		P	00 51 22.7	+1.6	
J36A	**Seneca 1, Swea**	81.62	39	P		P	00 51 21.2	+0.2	
	baz=319								
SCHQ	**Schefferville**	81.64	17	P		P	00 51 20.9	+0.1	
	comp=Z,11nm,0.9s,baz=359,slow=5.3,SNR=15								
SCHQ				LR		LR	01 32 52.0		
	comp=Z,2µm,18.2s,baz=350,slow=40								
SCHQ	**Schefferville**	81.64	17	*e*P		P	00 51 20.9	+0.1	
	comp=Z,13nm,0.9s								
SCHQ				LR		LR			
	comp=Z,2µm,18.0s								
K35A	**Storm Lake**	81.64	40	P		P	00 51 21.2	+0.1	
	baz=319								
L34A	**Svendsen Farm,**	81.64	41	P		P	00 51 21.1	0.0	
	baz=318								
319A	**Douglas**	81.80	56	*e*P		P	00 51 22.8	+0.5	
	comp=Z,39nm,0.9s								
319A				LR		LR			
	comp=Z,900nm,19.0s								
COWI	**Conover**	81.83	34	PFAKE			00 51 30.0	+7.9	
COWI				LR		LR			
	comp=Z,1µm,20.0s								
M34A	**Aspy Farms, Fr**	81.88	41	P		P	00 51 22.9	+0.5	
	baz=318								
MMB	**Musomiste**	81.92	319	P		P	00 51 23.1	+0.5	
L35A	**Bielow Farm, R**	81.95	40	P		P	00 51 23.7	+1.0	
	baz=319								
121A	**Cookes Peak, D**	81.95	54	P		P	00 51 23.9	+0.8	
	baz=313								
PERS	**Pernice**	81.98	327⇑	*i*P		P	00 51 22.9	0.0	
	comp=Z,205nm,1.0s								
PERS				*e*S		S	01 01 35.9	+0.2	
SOKA	**Soboth**	81.98	327	*i* P		P	00 51 23.1	+0.2	
	comp=Z,101nm,0.9s,SNR=132								
HGN	**Heimansgroeve**	81.99	334	*i* P		P	00 51 23.4	+0.6	
	comp=Z,76nm,1.2s								
HGN				*e*PP		PP	00 54 32.5	+2.8	
HGN				*e*S		S	01 01 32.7	-2.7	
HGN				*e*SS		SS	01 07 22.0	+29	
WIM	**Isle of Man**	82.00	342⇑	*e*P		P	00 51 23.4	+0.7	
J37A	**Redenius Farm,**	82.01	38	P		P	00 51 23.3	+0.3	
	baz=320								
I38A	**Scanlan Farm,**	82.02	37	P		P	00 51 22.8	-0.2	
	baz=320								
NVR	**Nevrokopi**	82.03	319	P		P	00 51 23.5	+0.3	
NVR	**Nevrokopi**	82.03	319	P		P	00 51 23.5	+0.3	
KKB	**Krupnik**	82.03	320	P		P	00 51 24.2	+1.0	
BEBN	**Eben Emael**	82.05	335	P		P	00 51 23.3	+0.3	
	comp=Z,23nm,1.3s								
K36A	**Gilmore City**	82.09	39	P		P	00 51 24.0	+0.6	
	baz=319								
MEM	**Membach**	82.10	334	P		P	00 51 23.5	+0.2	
CBKS	**Cedar Bluff**	82.21	45	P		P	00 51 25.4	+1.2	
	baz=317								
CBKS	**Cedar Bluff**	82.21	45	*e*P		P	00 51 28.1	+3.9	
CBKS				pmax		pmax			
	comp=Z,53nm,1.2s								
CBKS				MLR		MLR			
	comp=Z,1µm,20.0s								
CBKS	**Cedar Bluff**	82.21	45	*e*P		P	00 51 28.1	+3.9	
	comp=Z,53nm,1.2s								
CBKS				LR		LR			
	comp=Z,1µm,20.0s								
GMM	**Mts of Mourne**	82.21	343⇑	*e*P		P	00 51 24.4	+0.6	
P32A	**Huiting Farm,**	82.23	44	P		P	00 51 24.4	+0.2	
	baz=317								
HSIG		82.31	58	PFAKE			00 51 40.0	+15	
HSIG				LR		LR			
	comp=Z,600nm,18.0s								
OBKA	**Obir**	82.32	327	*i* pP		P	00 51 25.5	+0.8	
	comp=Z,39nm,0.8s,SNR=31								
SRS	**Serrai**	82.33	319	P		P	00 51 24.2	-0.6	
SRS	**Serrai**	82.33	319	P		P	00 51 24.2	-0.6	
SRS	**Serrai**	82.33	319	P		P	00 51 24.2	-0.6	
KBA	**Koelnbreinsper**	82.35	328	*i* pP		P	00 51 26.5	+1.6	
	SNR=68								
M35A	**Neola**	82.36	41	P		P	00 51 25.2	+0.4	
	baz=319								
SISC	**Sisak**	82.37	326	P		P	00 51 26.5	+1.6	
K37A	**Belmond**	82.38	39	P		P	00 51 24.9	-0.1	
	baz=320,SNR=5.2								
L36A	**Harm Buss Farm**	82.39	40	P		P	00 51 25.2	+0.2	
	baz=319								
N34A	**Lincoln**	82.42	42	P		P	00 51 25.6	+0.4	
	baz=318								
CWF	**Charnwood Fore**	82.42	339	*e*P		P	00 51 25.4	+0.5	
CWF				AMB		AMB	00 51 27.0		
	comp=Z,44nm,1.4s								
CWF				AMS		AMS	01 36 14.3		
	comp=Z,2µm,16.6s								
CWF	**Charnwood Fore**	82.42	339	*e*P		P	00 51 26.1	+1.1	
	comp=Z,36nm,1.1s								
CWF				LR		LR			
	comp=Z,2µm,18.0s								
UCC	**Uccle**	82.47	335	P		P	00 51 26.0	+0.7	
BCLA	**Clavier**	82.49	335	P		P	00 51 25.9	+0.5	
J38A	**Wedel Dairy, R**	82.51	38	P		P	00 51 26.0	+0.4	
	baz=320								
STU	**Stuttgart**	82.55	332	*e*P		P	00 51 26.8	+1.1	
STU				pmax		pmax			
	comp=Z,73nm,0.9s								
STU				MLR		MLR			
	comp=Z,2µm,21.0s								
STU	**Stuttgart**	82.55	332	*e*P		P	00 51 26.8	+1.1	
	comp=Z,73nm,0.9s								
STU				LR		LR			
	comp=Z,2µm,21.0s								
SRIG	**Santa Rosalia**	82.58	60	PFAKE			00 51 40.0	+14	
SRIG				LR		LR			
	comp=Z,700nm,18.0s								
BLY	**Banja Luka**	82.59	325⇑	*i*P		P	00 51 26.7	+0.7	
MYKA	**Terra Mystica**	82.59	328	*i* P		P	00 51 26.1	0.0	
	comp=Z,53nm,1.3s,SNR=28								
WPM1	**Penmaenmawr**	82.63	341⇑	*e*P		P	00 51 27.0	+0.9	
KNT	**Kendrikon**	82.65	319	P		P	00 51 26.4	0.0	
KNT	**Kendrikon**	82.65	319	P		P	00 51 26.4	0.0	
KNT	**Kendrikon**	82.65	319	P		P	00 51 26.4	0.0	
VAY	**Valandovo**	82.69	319	P		P	00 51 26.9	+0.3	
VAY	**Valandovo**	82.69	319	*i* P		P	00 51 27.0	+0.3	
VAY	**Valandovo**	82.69	319	P		P	00 51 26.9	+0.3	
VAY	**Valandovo**	82.69	319	P		P	00 51 26.9	+0.3	
PLE	**Plievlja**	82.69	323⇑	*i*P		P	00 51 26.9	+0.2	
LJU	**Ljubljana**	82.70	327⇑	*e*P		P	00 51 25.9	-0.6	
	comp=Z,106nm,1.1s								
LJU				*e*PP		PP	00 54 37.3	+1.6	
LJU				*e*PPP		PPP	00 56 28.7		
LJU				*e*S		S	01 01 42.3	-0.7	
Q32A	**Meitler Ranch,**	82.71	44	P		P	00 51 27.0	+0.2	
	baz=317,SNR=5.6								
WLF1	**Llynfaes**	82.72	341⇑	*e*P		P	00 51 27.1	+0.6	
WLF1				AMB		AMB	00 51 28.8		
	comp=Z,41nm,2.3s								
WLF1				AMS		AMS	01 35 04.5		
	comp=Z,2µm,16.9s								
SNF	**Seneffe**	82.75	335	P		P	00 51 27.1	+0.4	
SKO	**Skopje**	82.76	321	*i* P		P	00 51 28.1	+1.2	
FOEL	**Foel Wylfa**	82.78	340	*e*P		P	00 51 27.9	+1.0	
FOEL				AMB		AMB	00 51 28.7		
	comp=Z,71nm,1.0s								
FOEL				AMS		AMS	01 34 01.3		
	comp=Z,2µm,17.9s								
YLL	**Llanberis**	82.80	341⇑	*e*P		P	00 51 27.7	+0.8	
O34A	**Beatrice**	82.81	42	P		P	00 51 27.6	+0.4	
	baz=318								
M36A	**Felix, Anita**	82.81	40

P34A Walnut Farm, R 83.21 43 P P 00 51 29.9 +0.5
baz=318
M37A Trindle Farm, 83.21 40 P P 00 51 30.0 +0.7
baz=320
STR Strasbourg 83.22 332 *e*P P 00 51 30.3 +1.1
BFO Black Forest 83.23 332 *ce*P P 00 51 29.9 +0.6
BFO Black Forest 83.23 332 *e*P P 00 51 28.9 -0.4
comp=Z,33nm,0.9s
BFO LR LR
comp=Z,2µm,19.0s
DSB Dublin 83.23 342 *e*P P 00 51 30.1 +0.9
comp=Z,35nm,1.0s
DSB LR LR
comp=Z,900nm,18.0s
SCIA State Center 83.24 39 PFAKE 00 51 40.0 +11
SCIA LR LR
comp=Z,1µm,19.0s
SSW Stow on the Wo 83.27 339⇑ *e*P P 00 51 30.2 +0.9
NKY Niksic 83.28 322⇑ *i*P P 00 51 30.2 +0.4
TRI Trieste 83.29 327 *e*P P 00 51 28.9 -0.7
TRI pmax pmax
comp=Z,64nm,0.9s
TRI MLR MLR
comp=Z,2µm,20.0s
TRI Trieste 83.29 327 *e*P P 00 51 28.9 -0.7
comp=Z,64nm,0.9s
TRI LR LR
comp=Z,2µm,20.0s
NKME Niksic 83.33 322⇑ *i*P P 00 51 30.2 +0.2
MENF Mencas 83.37 336 *e*P P 00 51 29.4 -0.5
UDBI Udbina 83.39 325 P P 00 51 30.3 0.0
BRY Bratogost 83.42 323⇑ *i*P P 00 51 30.6 +0.1
FETA Feichten 83.43 330 *i* pP P 00 51 31.2 +0.7
SNR=33
PDG Podgorica 83.45 322⇑ *i*P P 00 51 31.0 +0.5
PDG Podgorica 83.45 322 P P 00 51 30.5 0.0
S32A Newby Ranch, P 83.45 45 P P 00 51 31.5 +0.8
baz=317
TTG Podgorica 83.45 322⇑ *i*P P 00 51 31.2 +0.7
TTG Podgorica 83.45 322 P P 00 51 30.5 0.0
TTG Podgorica 83.45 322 P P 00 51 30.5 0.0
WLS Welschbruch 83.51 332 *e*P P 00 51 31.1 +0.3
R33A Olander Ranch, 83.52 44 P P 00 51 31.4 +0.4
baz=318
CEME Cevo 83.52 322⇑ *i*P P 00 51 31.3 +0.3
STRD Stroud 83.52 339 *e*P P 00 51 30.4 -0.3
STRD AMB AMB 00 51 32.3
comp=Z,99nm,1.3s
STRD AMS AMS 01 36 57.7
comp=Z,2µm,13.1s
DAVA Damuels 83.53 330 *i* pP P 00 51 31.6 +0.6
SNR=29
HIZ Hauiti 83.53 156 PFAKE 00 51 40.0 +9.3
HIZ LR LR
comp=Z,1µm,21.0s
BIA Bitola 83.54 320 *e*P P 00 51 30.4 -0.7
MCH1 Michaelchurch 83.54 340 *e*P P 00 51 31.4 +0.6
MCH1 AMB AMB 00 51 32.4
comp=Z,55nm,1.6s
MCH1 AMS AMS 01 35 14.1
comp=Z,2µm,16.2s
Q34A Chapman 83.61 43 P P 00 51 31.9 +0.4
baz=318
M38A Pleasantville 83.62 39 P P 00 51 31.8 +0.3
baz=320
N37A Lee Faris, Mou 83.63 40 P P 00 51 31.6 +0.1
baz=320
MONM Monmouth 83.64 340 *e*P P 00 51 31.5 +0.2
MONM AMB AMB 00 51 32.8
comp=Z,73nm,1.5s
MONM AMS AMS 01 34 27.1
comp=Z,2µm,17.3s
P35A Duane Minner, 83.64 42 P P 00 51 31.8 +0.3
baz=319
KSU1 Kansas State U 83.65 43 PFAKE 00 51 40.0 +8.4
KSU1 LR LR
comp=Z,1µm,18.0s
DRME Dracevica, Mon 83.67 322⇑ *i*P P 00 51 32.5 +0.8
FNA Florina 83.69 320 P P 00 51 30.5 -1.4
FNA Florina 83.69 320 P P 00 51 30.5 -1.4
FNA Florina 83.69 320 P P 00 51 30.5 -1.4
LPW Lampeter 83.71 341 *e*P P 00 51 31.3 -0.4
LPW AMB AMB 00 51 33.2
comp=Z,70nm,1.3s
LPW AMS AMS 01 34 38.0
comp=Z,3µm,16.7s
BUM Brajici-Budva 83.72 322⇑ *i*P P 00 51 32.3 +0.3
O36A Bolckow 83.72 41 P P 00 51 32.6 +0.6
baz=319
OHR Ohrid 83.72 320 *i* P P 00 51 31.7 -0.4
NVLJ Novalja 83.74 326 P P 00 51 31.4 -0.6
ECH Echery 83.74 332⇑ *e*P P 00 51 32.7 +0.7
HCY Herceg Novi 83.79 323⇑ *i*P P 00 51 32.3 0.0
ULC Ulcinj 83.82 322⇑ *i*P P 00 51 32.8 +0.4
T32A Huddler Ranch, 83.84 45 P P 00 51 32.7 +0.1
baz=317
JFWS Jewell Farm 83.85 37 PFAKE 00 51 40.0 +7.4
JFWS LR LR
comp=Z,1µm,20.0s
R34A Isabella, Hill 83.91 44 P P 00 51 33.0 +0.1
baz=318
FUORN Ofenpass-Fuorn 83.94 330 *e*P P 00 51 33.4 +0.1
comp=Z,148nm,1.0s
FUORN LR LR
comp=Z,4µm,18.0s
FYTO Fytoko, Volos 83.94 318 P P 00 51 33.2 +0.1
FYTO Fytoko, Volos 83.94 318 P P 00 51 33.2 +0.1
AMTX Amarillo 83.95 49 PFAKE 00 51 50.0 +17
AMTX LR LR
comp=Z,800nm,18.0s
PMOR Pomariorio Ree 83.95 115 *e*T T 02 23 53.1
comp=Z,6.6nm,0.2s
P36A Good Intent, A 83.99 42 P P 00 51 33.8 +0.5
baz=319
TIR Tirane 84.00 321⇑ *i*P P 00 51 34.1 +0.8
TIR Tirane 84.00 321 *e*P P 00 51 33.5 +0.2
TIR pmax pmax
comp=Z,100nm,0.9s
TIR MLR MLR
comp=Z,2µm,20.0s
TIR Tirane 84.00 321 *e*P P 00 51 33.5 +0.2
comp=Z,100nm,0.9s
TIR LR LR
comp=Z,2µm,20.0s
MNTX Cornudas Mount 84.00 53 P P 00 51 34.0 +0.4
baz=314,SNR=6.0
MNTX Cornudas Mount 84.00 53 *e*P P 00 51 33.7 +0.2
comp=Z,15nm,1.0s
MNTX LR LR
comp=Z,500nm,20.0s
URZ Urewera 84.03 154 P P 00 51 33.4 +0.2
comp=Z,8.5nm,0.8s,baz=319,slow=12,SNR=3.9
MOF Molkenrain 84.06 332⇑ *e*P P 00 51 34.2 +0.5
N38A Joes South For 84.08 40 P P 00 51 34.1 +0.3
baz=320
O37A Wolven Farm, M 84.11 41 P P 00 51 34.3 +0.4
baz=320
Q35A Mercer Eighty, 84.13 43 P P 00 51 34.0 -0.1
baz=319
NEST Nestorio 84.13 320 P P 00 51 33.6 -0.6
SMIA Simia 84.20 317 P P 00 51 34.6 +0.1
N39A Derby Farms, D 84.37 39 P P 00 51 35.6 +0.3
baz=320
U32A Winter Ranch, 84.38 46 P P 00 51 35.4 0.0
baz=317
TUE Stuetta 84.41 330 *e*P P 00 51 35.9 +0.3
comp=Z,55nm,1.0s
TUE LR LR
comp=Z,2µm,20.0s
P37A Lathrop 84.44 41 P P 00 51 35.8 +0.1
baz=320
R35A Emporia Munici 84.45 43 P P 00 51 36.6 +0.9
baz=319
LKR Lokris 84.48 317 P P 00 51 35.2 -0.6
LKR Lokris 84.48 317 P P 00 51 35.2 -0.6
KARP Karpathos 84.53 313 *e*P P 00 51 37.0 +0.9
comp=Z,29nm,1.0s
KARP LR LR
comp=Z,700nm,18.0s
AGG Agios Georgios 84.54 318 PFAKE 00 51 50.0 +14
AGG LR LR
comp=Z,6µm,19.0s
LOMF Lomont 84.60 332⇑ *e*P P 00 51 37.3 +0.9
PPT Papeete 84.60 118 LR LR 01 22 53.2
comp=Z,2µm,19.9s,baz=350,slow=31
PPT2 Papeete2 84.62 118 *e*S S 01 02 01.3 -1.7
comp=Z,530nm,24.0s
PPT2 Papeete2 84.62 118 *e*LR LR 01 18 20.4
comp=Z,3µm,21.5s,baz=317
R36A Gordon, Harris 84.81 43 P P 00 51 37.8 +0.3
baz=319,SNR=8.7
JAN Janina 84.81 319 P P 00 51 38.1 +0.6
JAN Janina 84.81 319 P P 00 51 38.1 +0.6
JAN Janina 84.81 319 P P 00 51 38.1 +0.6
P38A Dawn 84.83 41 P P 00 51 37.8 +0.2
baz=320
U33A Lingo Farm, Me 84.83 46 P P 00 51 38.4 +0.7
baz=318
O39A Kirksville 84.83 40 P P 00 51 38.0 +0.5
baz=321
V32A Arapaho 84.84 47 P P 00 51 38.8 +1.1
baz=317
S35A Otter Creek Ra 84.86 44 P P 00 51 38.0 +0.2
baz=318,SNR=14
T34A McClaskey Farm 84.89 45 P P 00 51 38.5 +0.6
baz=318
Q37A Longview Farm, 84.93 42 P P 00 51 38.6 +0.5
baz=320
ANX Ano Chora 85.08 318 P P 00 51 38.5 -0.5
DSL Palaion Diasel 85.08 319 P P 00 51 39.2 +0.3
DSL Palaion Diasel 85.08 319 P P 00 51 39.2 +0.3
KALE Kalithea 85.12 318 P P 00 51 37.7 -1.4
KALE Kalithea 85.12 318 P P 00 51 37.7 -1.4
U34A Anderson Ranch 85.14 45 P P 00 51 39.9 +0.7
baz=318,SNR=5.4
U34A Anderson Ranch 85.14 45 *e*P P 00 51 40.5 +1.3
comp=Z,53nm,1.1s
U34A LR LR
comp=Z,1µm,18.0s
SGD Sagiada 85.15 320 P P 00 51 39.0 -0.2
W32A Sentinel 85.16 47 P P 00 51 40.1 +0.7
baz=317
IGT Igoumenitsa 85.16 320 P P 00 51 39.3 0.0
IGT Igoumenitsa 85.16 320 P P 00 51 39.3 0.0
IGT Igoumenitsa 85.16 320 P P 00 51 39.3 0.0
R37A Teagarden Farm 85.16 42 P P 00 51 39.7 +0.4
baz=319
V33A Lossen Ranch, 85.18 46 P P 00 51 40.4 +1.0
baz=318
DYA Yadsworthy 85.21 340 *e*P P 00 51 40.4 +1.1
comp=Z,97nm,1.3s
DYA LR LR
comp=Z,2µm,18.0s
S36A Lake Cedric, C 85.21 43 P P 00 51 39.4 -0.2
baz=319,SNR=6.3
O40A La Belle 85.26 39 P P 00 51 40.6 +0.8
baz=321
SENIN Lac Senin/Sane 85.27 331 *e*P P 00 51 40.0 0.0
comp=Z,40nm,0.9s
SENIN LR LR
comp=Z,3µm,19.0s
KEK Kerkira 85.29 320 P P 00 51 39.6 -0.3
KEK Kerkira 85.29 320 P P 00 51 39.6 -0.3
Q38A Cooks Store, C 85.29 41 P P 00 51 40.4 +0.5
baz=320
TAOE Nukuva Isla 85.32 106 *e*LR LR 01 18 18.1
comp=Z,3µm,20.8s,baz=315
T35A Sooner Cattle 85.33 44 P P 00 51 41.1 +0.9
baz=318,SNR=6.1
GUR Goura 85.36 317 P P 00 51 39.8 -0.6
GUR Goura 85.36 317 P P 00 51 39.8 -0.6
PDO Prodromos 85.45 318 P P 00 51 40.7 0.0
Q39A Willow Grove F 85.55 41 P P 00 51 41.6 +0.4
baz=320,SNR=7.2
T36A Boggs Farm, Ca 85.56 44 P P 00 51 41.5 +0.2
baz=319,SNR=5.8
LKD2 Lefkada island 85.57 319 P P 00 51 41.4 +0.1
LKD2 Lefkada island 85.57 319 P P 00 51 41.4 +0.1
W33A Caddo, Fort Co 85.57 47 P P 00 51 43.1 +1.7
baz=318
S37A Fort Scott 85.58 43 P P 00 51 41.6 +0.2
baz=319,SNR=5.3
V34A Guthrie 85.59 46 P P 00 51 42.1 +0.6
baz=318
V34A Guthrie 85.59 46 PFAKE 00 51 50.0 +8.5
V34A LR LR
comp=Z,800nm,18.0s
U35A Pawnee 85.62 45 P P 00 51 42.2 +0.6
baz=318
P40A Paris 85.63 40 P P 00 51 42.1 +0.5
baz=321
X32A Elmer 85.65 48 P P 00 51 42.7 +0.9
baz=317
WMOK Wichita Mounta 85.70 47 *e*P P 00 51 43.3 +1.2
WMOK pmax pmax
comp=Z,13nm,1.1s
WMOK MLR MLR
comp=Z,900nm,18.0s
WMOK Wichita Mounta 85.70 47 *e*P P 00 51 43.2 +1.2
comp=Z,13nm,1.1s
WMOK LR LR
comp=Z,900nm,18.0s
RLS Riolos of Patr 85.72 318 P P 00 51 42.4 +0.4
RLS Riolos of Patr 85.72 318 P P 00 51 42.4 +0.4
R38A Fenwick Farm, 85.73 42 P P 00 51 42.3 +0.2
baz=320
LAST Lasithi 85.75 314⇑ *i*P P 00 51 43.8 +1.4
LAST Lasithi 85.75 314 *e*P P 00 51 41.0 -1.3
comp=Z,92nm,1.1s
MEH Mehetia 85.84 118 *e*T T 02 26 13.2
comp=Z,7.1nm,0.3s
W34A Bridge Creek, 85.89 46 P P 00 51 43.2 +0.2
baz=318
W34A Bridge Creek, 85.89 46 PFAKE 00 51 50.0 +7.0
W34A LR LR
comp=Z,1µm,18.0s
VLC Villacollemand 85.93 328 *e*P P 00 51 45.2 +2.2
comp=Z,20nm,1.1s
VLC LR LR
comp=Z,3µm,19.0s
IDI Anoyia 85.98 314 PFAKE 00 51 50.0 +6.5
IDI LR LR
comp=Z,2µm,19.0s
X33A Lawton 86.00 47 P P 00 51 43.4 -0.1
baz=318
T37A Cheneyville 18 86.02 43 P P 00 51 44.1 +0.6
baz=319
Q40A Laux Farm, Aux 86.03 40 P P 00 51 43.3 -0.3
baz=321
MATE Matera 86.03 322⇑ *i*P P 00 51 42.9 -0.6
VLS Valsamata 86.07 319 P P 00 51 43.3 -0.5
VLS Valsamata 86.07 319 P P 00 51 43.3 -0.5
VLS Valsamata 86.07 319 P P 00 51 43.3 -0.5
R39A Chumby, Stover 86.08 41 P P 00 51 43.2 -0.6
baz=320
U36A Oologah 86.14 44 P P 00 51 44.0 -0.2
baz=319
HDIL Hopedale 86.14 38 PFAKE 00 52 00.0 +16
HDIL LR LR
comp=Z,8µm,19.0s
ITM Ithomi 86.14 317 P P 00 51 43.1 -1.1
ITM Ithomi 86.14 317 P P 00 51 43.1 -1.1
AQU L'Aquila 86.16 325 *e*P P 00 51 44.4 +0.2
AQU pmax pmax
comp=Z,59nm,1.1s
AQU MLR MLR
comp=Z,3µm,18.0s
AQU L'Aquila 86.16 325 *e*P P 00 51 44.4 +0.2
comp=Z,59nm,1.1s
AQU LR LR
comp=Z,3µm,18.0s
S38A Stockton 86.16 42 P P 00 51 44.3 0.0
baz=320
Y33A Hilltop Ranch, 86.32 47 P P 00 51 45.9 +0.8
baz=318
X34A Smith Ranch, M 86.33 47 P P 00 51 46.3 +1.1
baz=318
S39A Bolivar 86.41 42 P P 00 51 45.1 -0.4
baz=320,SNR=5.9
T38A Diamond 86.41 43 P P 00 51 45.5 0.0
baz=320,SNR=7.9
W35A Tecumseh 86.45 46 P P 00 51 46.5 +0.7
baz=318
U37A Salina 86.45 44 P P 00 51 45.9 +0.2
baz=319,SNR=5.8
TUL1 Leonard 86.47 44 P P 00 51 46.5 +0.7
baz=319
TUL1 Leonard 86.47 44 PFAKE 00 52 00.0 +14
TUL1 LR LR
comp=Z,1µm,19.0s
R40A Maddies Statio 86.48 41 P P 00 51 45.4 -0.4
baz=321,SNR=5.5
V36A Jenks 86.48 45 P P 00 51 46.5 +0.6
baz=319
BNI Bardonecchia 86.61 331 PFAKE 00 52 00.0 +13
BNI LR LR
comp=Z,3µm,20.0s
GDM Grand'Maison 86.69 331⇑ *e*P P 00 51 48.0 +1.1
TX31 Lajitas Ar. Si 86.71 54 *e*P P 00 51 47.5 +0.3
LTX Lajitas 86.71 54 *e*P P 00 51 46.8 -0.4
LTX Lajitas 86.71 54 *e*P P 00 51 46.8 -0.4
LTX ePKKPbc **PKKPbc 01 09 41.9 +1.6**
TXAR Lajitas Array 86.71 54 P P 00 51 46.8 -0.4
comp=Z,3.8nm,0.8s,baz=303,slow=3.6,SNR=18
TXAR PKKPbc **PKKPbc 01 09 41.9 +1.6**
comp=Z,0.3nm,0.8s,baz=129,slow=3.4,SNR=3.4
TXAR LR LR 01 25 35.4
comp=Z,380nm,21.9s,baz=0.0,slow=32
ABTX Abilene, Hawle 86.75 49 P P 00 51 48.0 +0.7
baz=317
ABTX Abilene, Hawle 86.75 49 *e*P P 00 51 49.0 +1.6
comp=Z,41nm,1.4s
ABTX LR LR
comp=Z,900nm,19.0s
Z33A Whitaker Ranch 86.77 48 P P 00 51 47.8 +0.4
baz=318
GRN Grenoble 86.79 332⇑ *e*P P 00 51 48.7 +1.4
W36A Wetumka 86.81 45 P P 00 51 48.4 +0.9
baz=319
U38A Gravette 86.81 43 P P 00 51 48.0 +0.5
baz=320
V37A Hulbert 86.84 44 P P 00 51 47.8 +0.2
baz=319,SNR=6.1
T39A Clever 86.89 42 P P 00 51 48.3 +0.4
baz=320
S40A Lebanon 86.90 41 P P 00 51 48.2 +0.4
baz=321
PLDF La Plantade 86.91 333⇑ *e*P P 00 51 48.7 +0.8
SADO Sadowa 86.93 29 PFAKE 00 52 00.0 +12
SADO LR LR
comp=Z,2µm,20.0s
X35A Drake 86.95 46 P P 00 51 48.8 +0.6
baz=318
CUC Castrocucco 86.97 323 *e*P P 00 51 47.7 -0.6
comp=Z,12nm,1.0s
CUC LR LR
comp=Z,2µm,18.0s
AGO Saint Agoulin 87.00 334⇑ *e*P P 00 51 49.7 +1.4
HPIG 87.14 57 *e*P P 00 51 53.7 +4.2
comp=Z,30nm,1.3s
HPIG LR LR
comp=Z,800nm,19.0s
HHAR Hobbs 87.17 43 *e*P P 00 51 49.4 +0.1
comp=Z,23nm,1.3s
HHAR LR LR
comp=Z,1µm,19.0s
X36A Centrahoma 87.17 46 P P 00 51 49.9 +0.6
baz=319
TIP Timpagrande 87.17 322⇑ *i*P P 00 51 49.5 +0.2
TIP Timpagrande 87.17 322 P P 00 51 49.0 -0.3
TIP Timpagrande 87.17 322 *e*P P 00 51 49.0 -0.3
comp=Z,25nm,1.1s
TIP LR LR
comp=Z,3µm,21.0s
SSB Saint Sauveur 87.19 332 *e*P P 00 51 48.5 -0.7
SSB pmax pmax
comp=Z,25nm,0.9s
SSB MLR MLR
comp=Z,2µm,22.0s
SSB Saint Sauveur 87.19 332 *e*P P 00 51 48.5 -0.7
comp=Z,25nm,0.9s
SSB LR LR
comp=Z,2µm,22.0s
SLM Saint Louis 87.21 39 PFAKE 00 52 00.0 +11
SLM LR LR
comp=Z,1µm,19.0s
AAM Ann Arbor 87.22 33 PFAKE 00 52 00.0 +11
AAM LR LR
comp=Z,2µm,20.0s
T40A Mansfield 87.23 42 P P 00 51 49.8 +0.2
baz=321
V38A Canehill 87.24 44 P P 00 51 49.1 -0.4
baz=320,SNR=5.8
W37B Quinton 87.24 45 P P 00 51 50.7 +1.1
baz=319
SFIN Lafayette 87.29 36 P P 00 51 49.3 -0.5
baz=324
SFIN Lafayette 87.29 36 PFAKE 00 52 00.0 +10
SFIN LR LR
comp=Z,1µm,20.0s
PYM Petit Puy Mans 87.31 334⇑ *e*P P 00 51 51.0 +1.2
U39A Green Forest 87.33 43 P P 00 51 49.8 -0.2
baz=320
LUCF Luceram 87.35 330 *e*P P 00 51 50.0 -0.1
LMQ La Malbaie 87.39 22 PFAKE 00 52 00.0 +10
LMQ LR LR
comp=Z,2µm,20.0s
MVIF Mont Vial 87.42 330 *e*P P 00 51 50.9 +0.4
REVF Revere 87.47 330 *e*P P 00 51 50.9 +0.3
DAMY Dhamar 87.59 287 PFAKE 00 52 00.0 +8.1
DAMY LR LR
comp=Z,2µm,19.0s
233A Rising Star 87.62 49 P P 00 51 51.7 +0.2
baz=317
CALN Calern 87.64 330 *e*P P 00 51 51.6 +0.1
V39A Pettigrew 87.66 43 P P 00 51 51.9 +0.2
baz=320
U40A Yellville 87.67 42 P P 00 51 51.3 -0.4
baz=320
LBL Lubilhac 87.68 333 *e*P P 00 51 52.6 +1.0
X38A Whitesboro 87.92 45 P P 00 51 53.3 +0.5
baz=320
W39A Magazine 88.08 44 P P 00 51 53.8 +0.2
baz=320
333A Richland Sprin 88.08 50 P P 00 51 54.2 +0.4
baz=317
Z36A Blue Ridge 88.09 47 P P 00 51 53.7 0.0
baz=319
OLIL Olney 88.15 38 *e*P P 00 51 55.1 +1.2
comp=Z,25nm,1.0s
OLIL LR LR
comp=Z,1µm,19.0s
JCT Junction City 88.22 51 PFAKE 00 52 10.0 +16
JCT LR LR
comp=Z,800nm,20.0s
CEL Celeste 88.31 321 *e*P P 00 51 55.0 +0.3
comp=Z,31nm,0.9s
CEL LR LR
comp=Z,2µm,21.0s
X39A Fountain Ranch 88.42 44 P P 00 51 55.3 +0.1
baz=320
SIUC Southern Illin 88.43 39 *e*P P 00 51 55.9 +0.7
comp=Z,47nm,1.1s
SIUC LR LR
comp=Z,1µm,19.0s
WHTX Lake Whitney, 88.47 48 PFAKE 00 52 10.0 +14
WHTX LR LR
comp=Z,1µm,19.0s
334A Lometa 88.51 49 P P 00 51 56.3 +0.6
baz=318
BLO Bloomington 88.53 37 PFAKE 00 52 10.0 +14
BLO LR LR
comp=Z,1µm,18.0s
PBMO Poplar Bluff 88.57 41 *e*P P 00 51 57.0 +1.1
comp=Z,50nm,0.8s
LONY Lake Ozonia 88.67 26 PFAKE 00 52 10.0 +14
LONY LR LR
comp=Z,1µm,20.0s
MIAR Mount Ida 88.68 44 P P 00 51 56.8 +0.3
baz=320
MIAR Mount Ida 88.68 44 *e*P P 00 51 57.2 +0.7
MIAR pmax pmax
comp=Z,67nm,1.9s
MIAR MLR MLR
comp=Z,1µm,18.0s
MIAR Mount Ida 88.68 44 *e*P P 00 51 57.2 +0.7
comp=Z,67nm,1.9s
MIAR LR LR
comp=Z,1µm,18.0s
X201 Greenbrier Sit 88.75 43 *e*P P 00 51 57.5 +0.7
comp=Z,36nm,1.3s
X201 LR LR
comp=Z,700nm,20.0s
X301 Greenbrier Sit 88.77 43 *e*P P 00 51 59.7 +2.9
comp=Z,36nm,1.5s
X301 LR LR
comp=Z,800nm,19.0s
WHAR Wooly Hollow 88.79 43 *e*P P 00 51 57.4 +0.5
comp=Z,54nm,1.4s

WHAR LR LR
comp=Z,700nm,20.0s
FRNY Flat Rock 88.81 26 PFAKE 00 52 10.0 +13
FRNY LR LR
comp=Z,2μm,19.0s
DRLN Deer Lake 88.82 14 PFAKE 00 52 10.0 +13
DRLN LR LR
comp=Z,2μm,21.0s
ERPA Erie 88.86 31 PFAKE 00 52 10.0 +13
ERPA LR LR
comp=Z,1μm,19.0s
Y39A Lockesburg 88.87 45 P **P 00 51 58.1 +0.7**
baz=320
W41A Tony Mavity, V 88.90 43 P **P 00 51 58.3 +0.8**
baz=321
W41B Gary Mavity, V 88.90 43 P **P 00 51 58.5 +1.1**
baz=321
Z38A Mt. Pleasant 88.91 46 P **P 00 51 57.3 -0.3**
baz=319
USIN University of 88.97 38 PFAKE 00 52 10.0 +12
USIN LR LR
comp=Z,1μm,20.0s
UALR University of 89.16 43 PFAKE 00 52 10.0 +11
UALR LR LR
comp=Z,1μm,18.0s
ALLY Alegheny Colle 89.20 31 PFAKE 00 52 10.0 +11
ALLY LR LR
comp=Z,1μm,20.0s
PVMO Portageville 89.22 40 PFAKE 00 52 10.0 +11
PVMO LR LR
comp=Z,1μm,19.0s
ACSO Alum Creek Sta 89.22 34 *e*P **P 00 51 59.6 +0.7**
comp=Z,14nm,0.7s
ACSO LR LR
comp=Z,2μm,20.0s
534A Blanco 89.33 50 P **P 00 51 59.5 -0.2**
baz=318
NCB Newcomb 89.36 26 PFAKE 00 52 10.0 +10
NCB LR LR
comp=Z,2μm,20.0s
WCI Wyandotte Cave 89.40 37 PFAKE 00 52 10.0 +10
WCI LR LR
comp=Z,2μm,18.0s
M54A Oil Creek Stat 89.51 31 P **P 00 52 00.1 -0.1**
baz=328
WLAR White Oak Lake 89.59 44 PFAKE 00 52 10.0 +9.3
WLAR LR LR
comp=Z,900nm,19.0s
PKME Peaks-Kenny Pk 89.77 23 PFAKE 00 52 10.0 +8.7
PKME LR LR
comp=Z,2μm,19.0s
N54A Moraine State 89.84 32 P **P 00 52 01.9 +0.1**
baz=328
CLTB Caltabellotta 90.11 323 PFAKE 00 52 10.0 +6.8
CLTB LR LR
comp=Z,3μm,21.0s
CCAR Cane Creek 90.12 43 PFAKE 00 52 20.0 +17
CCAR LR LR
comp=Z,1μm,19.0s
MET Memphis--Engin 90.12 41 PFAKE 00 52 20.0 +17
MET LR LR
comp=Z,800nm,19.0s
Y42A Garnett, Star 90.17 43 P **P 00 52 03.3 -0.2**
baz=321
VSL Villasalto 90.23 326 PFAKE 00 52 20.0 +16
VSL LR LR
comp=Z,3μm,18.0s
BINY Binghamton 90.30 28 PFAKE 00 52 20.0 +16
BINY LR LR
comp=Z,2μm,19.0s
WVT Waverly 90.36 39 *e*P **P 00 52 04.9 +0.6**
WVT pmax pmax
comp=Z,13nm,1.0s
WVT MLR MLR
comp=Z,1μm,20.0s
WVT Waverly 90.36 39 *e*P **P 00 52 04.9 +0.6**
comp=Z,13nm,1.0s
WVT LR LR
comp=Z,1μm,20.0s
LMN Caledonia Moun 90.45 19 PFAKE 00 52 20.0 +15
LMN LR LR
comp=Z,1μm,20.0s
OXF Oxford 90.87 41 PFAKE 00 52 20.0 +13
OXF LR LR
comp=Z,900nm,18.0s
WDD Wied Dalam 90.88 321 PFAKE 00 52 20.0 +13
WDD LR LR
comp=Z,1μm,19.0s
HKT Hockley 90.92 48 PFAKE 00 52 20.0 +13
HKT LR LR
comp=Z,900nm,20.0s
KSPA Keystone Colle 90.94 28 PFAKE 00 52 20.0 +13
KSPA LR LR
comp=Z,1μm,18.0s
SSPA Standing Stone 90.95 30 PFAKE 00 52 20.0 +13
SSPA LR LR
comp=Z,2μm,20.0s
O56A Blue Knob Stat 91.00 31 P **P 00 52 08.3 +1.0**
baz=329
MCWV Mont Chateau 91.01 32 PFAKE 00 52 20.0 +13
MCWV LR LR
comp=Z,800nm,18.0s
PLAL Pickwick Lake 91.16 40 PFAKE 00 52 20.0 +12
PLAL LR LR
comp=Z,1μm,21.0s
N59A State Game Lan 91.50 29 P **P 00 52 10.2 +0.6**
baz=331
HRV Adam Dziewonsk 91.56 25 PFAKE 00 52 20.0 +10
HRV LR LR
comp=Z,1μm,20.0s
Y46A Houston 91.64 41 P **P 00 52 11.1 +0.9**
baz=323
ODNJ Ogdensburg 91.78 28 PFAKE 00 52 20.0 +9.2
ODNJ LR LR
comp=Z,1μm,20.0s
LUPA Lehigh Univers 91.92 29 PFAKE 00 52 20.0 +8.5
LUPA LR LR
comp=Z,2μm,19.0s
SWET Sewanee 92.01 39 *e*P **P 00 52 12.6 +0.5**
comp=Z,11nm,1.7s
SWET LR LR
comp=Z,300nm,19.0s
TZTN Tazewell 92.03 36 PFAKE 00 52 20.0 +8.0
TZTN LR LR
comp=Z,1μm,20.0s
ZAIG Zacatecas 92.06 58 PFAKE 00 52 20.0 +7.2
ZAIG LR LR
comp=Z,800nm,19.0s
PAL Palisades 92.09 28 PFAKE 00 52 20.0 +7.8
PAL LR LR
comp=Z,1μm,20.0s
VBMS Vicksburg 92.10 43 PFAKE 00 52 20.0 +7.6
VBMS LR LR
comp=Z,700nm,20.0s
BRNJ Basking Ridge 92.14 28 PFAKE 00 52 20.0 +7.6
BRNJ LR LR
comp=Z,2μm,20.0s
SDMD Soldier's Deli 92.41 30 PFAKE 00 52 30.0 +16
SDMD LR LR
comp=Z,800nm,18.0s
CPCT Cooper Cave 92.48 38 PFAKE 00 52 30.0 +16
CPCT LR LR
comp=Z,1μm,18.0s
TKL Tuckaleechee C 92.66 37 PFAKE 00 52 30.0 +15
TKL LR LR
comp=Z,1μm,18.0s
BLA Blacksburg 92.84 34 PFAKE 00 52 30.0 +14
BLA LR LR
comp=Z,1μm,18.0s
CBN Corbin Frederi 93.24 31 PFAKE 00 52 30.0 +12
CBN LR LR
comp=Z,2μm,19.0s
LRAL Lakeview Retre 93.25 41 PFAKE 00 52 30.0 +12
LRAL LR LR
comp=Z,900nm,18.0s
KEST Kesra 93.39 324 P **P 00 52 18.6 +0.2**
comp=Z,9.1nm,0.9s,baz=286,slow=1.3,SNR=9.6
KEST LR LR 01 40 22.2
comp=Z,3μm,18.2s,baz=322,slow=39
KEST Kesra 93.39 324 *e*P **P 00 52 18.6 +0.2**
comp=Z,14nm,1.0s
KEST LR LR
comp=Z,3μm,18.0s
KMSC Kings Mountain 94.19 36 PFAKE 00 52 30.0 +8.0
KMSC LR LR
comp=Z,2μm,19.0s
GOGA Godfrey 94.65 38 PFAKE 00 52 40.0 +16
GOGA LR LR
comp=Z,1μm,18.0s
ES19 SONSECA Array 94.99 335 *e*P **P 00 52 26.4 +0.7**
ESDC Sonseca Array 95.03 335 P **P 00 52 25.8 -0.1**
comp=Z,2.9nm,0.8s,baz=13,slow=3.9,SNR=16
ESDC LR LR 01 39 48.2
comp=Z,2μm,18.6s,baz=35,slow=38
ESLA Sonseca Array 95.03 335 PFAKE 00 52 40.0 +14
ESLA LR LR
comp=Z,3μm,21.0s
PAB San Pablo 95.27 336 PFAKE 00 52 40.0 +13
PAB LR LR
comp=Z,3μm,21.0s
MTE Manteigas 95.44 338 PFAKE 00 52 40.0 +12
MTE LR LR
comp=Z,2μm,19.0s
FURI Furi 95.52 286 *e*P **P 00 52 31.3 +2.5**
comp=Z,20nm,1.0s
FURI LR LR
comp=Z,1μm,18.0s
CNNC Cliffs of the 95.59 33 PFAKE 00 52 40.0 +12
CNNC LR LR
comp=Z,1μm,21.0s
TIGA Tifton 96.22 39 PFAKE 00 52 40.0 +8.7
TIGA LR LR
comp=Z,902nm,19.0s
NHSC New Hope 96.42 36 PFAKE 00 52 40.0 +7.8
NHSC LR LR
comp=Z,1μm,20.0s
UNM Universidad Na 96.72 58 PFAKE 00 52 50.0 +16
UNM LR LR
comp=Z,800nm,18.0s
RKT Rikitea 98.41 113 *e*SKSac **SKSac 01 03 14.1 -3.8**
comp=Z,522nm,25.5s
RKT *e*SP **SP 01 05 30.9 -2.2**
comp=Z,371nm,32.8s
RKT *e*SS **SS 01 10 51.3 -2.1**
comp=Z,420nm,25.0s
RKT Rikitea 98.41 113 *e*LR LR 01 24 16.7
comp=Z,1μm,34.0s,baz=303
PFVI Vila Bisbo 98.84 338 PFAKE 00 52 50.0 +6.9
PFVI LR LR
comp=Z,2μm,20.0s
DWPF Disney Wildern 100.02 39 PFAKE 00 53 00.0 +12
DWPF LR LR
comp=Z,1μm,20.0s
RTC Rabat Centre 101.16 335 PFAKE 00 53 00.0 +6.6
RTC LR LR
comp=Z,6μm,19.0s
BBSR BB Station 103.01 24 PFAKE 00 53 10.0 +8.3
BBSR LR LR
comp=Z,900nm,19.0s
KMBO Kilima Mbogo 103.21 280 Pdiff **Pdif 00 53 03.3 +0.2**
comp=Z,0.7nm,0.3s,baz=44,slow=7.5,SNR=7.0
KMBO PP **PP 00 57 16.9 -1.4**
comp=Z,0.6nm,0.2s,baz=35,slow=4.6,SNR=3.4
KMBO Kilima Mbogo 103.21 280 *e*Pdif **Pdif 00 53 03.3 +0.2**
KMBO *e*PP **PP 00 57 16.8 -1.4**
KMBO LR LR
comp=Z,900nm,19.0s
TAM Tamanrasset 106.06 320 PFAKE 00 57 40.0
TAM LR LR
comp=Z,1μm,20.0s
GTBY Guantanamo Bay 109.98 39 PFAKE 00 57 50.0
GTBY LR LR
comp=Z,800nm,20.0s
MTDJ Mount Denham 110.23 42 PFAKE 00 57 50.0
MTDJ LR LR
comp=Z,900nm,19.0s
GRTK Grand Turk 110.42 35 PFAKE 00 57 50.0
GRTK LR LR
comp=Z,1μm,20.0s
SDDR Presa de Saban 112.58 36 PFAKE 00 57 50.0
SDDR LR LR
comp=Z,2μm,21.0s
HDC Heredia 113.23 53 PFAKE 00 57 50.0
HDC LR LR
comp=Z,900nm,20.0s
SJG San Juan 115.53 32 PFAKE 00 58 00.0 +15
SJG LR LR
comp=Z,800nm,20.0s
HUMP Col San Antoni 115.63 31 PFAKE 00 58 00.0 +14
HUMP LR LR
comp=Z,900nm,21.0s
SMRT St. Maarten 116.77 29 PFAKE 00 58 00.0 +12
SMRT LR LR
comp=Z,700nm,20.0s
SABA Saba 117.10 29 PFAKE 00 58 00.0 +12
SABA LR LR
comp=Z,800nm,21.0s
SEUS St. Eustatius 117.32 29 PFAKE 00 58 00.0 +11
SEUS LR LR
comp=Z,800nm,19.0s
VNDA Vanda 118.16 176 PKP **PKPdf 00 57 51.8 +3.2**
comp=Z,1.5nm,1.0s,baz=321,slow=4.3,SNR=4.8
GDHS Morne Mazeau, 118.88 28 PFAKE 00 58 00.0 +8.0
GDHS LR LR
comp=Z,1μm,20.0s
HELC Santa Helena 121.30 47 PFAKE 00 58 10.0 +13
HELC LR LR
comp=Z,2μm,22.0s
SDV Santo Domingo 121.64 41 PFAKE 00 58 10.0 +12
SDV LR LR
comp=Z,800nm,21.0s
GRGR Grenville 122.73 30 PFAKE 00 58 10.0 +11
GRGR LR LR
comp=Z,800nm,22.0s
ROSC El Rosal 123.09 47 PFAKE 00 58 10.0 +9.4
ROSC LR LR
comp=Z,300nm,20.0s
MAW Mawson 123.31 207 PKP **PKPdf 00 57 59.0 +0.3**
comp=Z,3.3nm,0.8s,baz=338,slow=7.0,SNR=4.0
MAW Mawson 123.31 207 PKIKP **PKPdf 00 57 59.0 +0.3**
MAW pmax pmax
comp=Z,3.0nm,0.8s
OTAV Otavalo 124.34 54 PFAKE 00 58 20.0 +17
OTAV LR LR
comp=Z,400nm,20.0s
DBIC Dimbokro 124.94 321 PKP **PKPdf 00 58 03.4 -0.2**
comp=Z,7.4nm,0.8s,baz=345,slow=5.4,SNR=8.8
DBIC PP **PP 00 59 50.0 -1.1**
comp=Z,6.0nm,0.9s,baz=350,slow=6.2,SNR=4.6
TIC Toumodi 125.05 321 *e*PKIKP **PKPdf 00 58 03.1 -0.7**
KIC Kosan Boka 125.16 320 *e*PKIKP **PKPdf 00 58 03.5 -0.5**
comp=Z,17nm,0.9s
LIC Lamto 125.42 321 *e*PKIKP **PKPdf 00 58 03.6 -0.9**
comp=Z,1.0nm,0.1s
SYO Syowa Base 131.98 208 *e*X **PKiKP 00 58 20.6 +4.4**
NNA Nana 134.55 63 PFAKE 00 58 30.0 +8.2
NNA LR LR
comp=Z,2μm,18.0s
PTGA Pitinga 135.08 35 *e*PKPdf **PKPdf 00 58 24.1 +1.2**
PTGA LR LR
comp=Z,600nm,21.0s
SAML Samuel 140.64 45 *e*PKPpre PKPpre 00 58 28.8
SAML LR LR
comp=Z,300nm,18.0s
LPAZ La Paz 143.46 58 PKhKP PKPpre 00 58 35.6
comp=Z,1.9nm,0.5s,baz=16,slow=4.7,SNR=8.2
SNAA Sanae 144.45 197 PKP **PKPab 00 58 36.3 -0.2**
SNAA Sanae 144.45 197 *e*PKIKP **PKPab 00 58 35.8 -0.7**
SNAA Sanae 144.45 197 *e*PKPdf **PKPab 00 58 35.8 -0.7**
PB11 IPOC Station P 144.90 64 *e*PKPab PKPbc 00 58 40.0 +0.3
PB01 IPOC Station P 145.87 66 *e*PKPdf **PKPbc 00 58 42.8 +0.1**
VNA2 Neumayer--Watz 146.01 197 PKP **PKPdf 00 58 40.0 -0.7**
baz=130,slow=3.2
VNA3 Neumayer Olymp 146.24 195 PKP **PKPdf 00 58 38.0 -3.1**
VNA1 Neumayer--Stat 146.41 196 PKP **PKPab 00 58 45.0 +1.4**
LCO Las Campanas 149.73 79 *e*PKPbc **PKPbc 00 58 53.4 +0.2**
PLCA Paso Flores 154.09 102 PKPbc **PKPbc 00 59 03.2 +0.6**
comp=Z,2.2nm,0.6s,baz=288,slow=0.7,SNR=8.7

PRU 21 00:39:08.6, 50.34N×18.76E, h0km, Poland

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
CHZP	**Chorzow**	**0.16**	**108**	*e*Pg	Pg	00 39 11.7	+0.1
CHZP				*e*Sg	Sg	00 39 14.0	+0.4
OKC	**Ostrava-Krasne**	**0.64**	**218**	*e*PG	Pg	00 39 20.9	+0.1
OKC				*e*SG	Sb	00 39 30.7	-1.4
	comp=Z,5.1nm,0.6s						
OJC	**Ojcow**	**0.68**	**100**	*e*Pg	Pg	00 39 21.2	-0.4
OJC				*e*Sg	Sg	00 39 29.9	-0.4
KRLC	**Kraliky**	**1.30**	**259**	*e*PG	Pg	00 39 32.6	-0.9
NIE	**Niedzica**	**1.36**	**132**	*e*Pg	Pg	00 39 33.5	-1.1
NIE				*e*Sg	Sg	00 39 51.9	-0.3
DPC	**Dobruska-Polom**	**1.56**	**271**	*e*PG	Pn	00 39 37.5	-0.2
DPC				*e*SG	Sn	00 39 58.4	-0.2
	comp=Z,2.3nm,0.6s						
KSP	**Ksiaz**	**1.65**	**289**	*e*Pg	Pg	00 39 40.6	+0.4
KSP				*e*Sg	Sg	00 40 03.6	+2.0
KHC	**Kasperske Hory**	**3.57**	**252**	*e*SG	Sg	00 41 02.8	-0.5

JMA 21 00:40:01.2±0.1, 37.31N×141.14E, h26km±1km, M4.4, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JFK	**Kawauchi**	**0.22**	**285**	P	Pb	00 40 07.2	0.0
JFK				S	Sb	00 40 11.2	-0.2
ONAJ	**Iwakimizuishiy**	**0.34**	**233**	P	Pb	00 40 08.9	-0.1
ONAJ				S	Sb	00 40 14.1	-0.2
JMM	**Marumori**	**0.62**	**334**	P	Pb	00 40 13.1	-0.4
JFT	**Otama**	**0.67**	**288**	P	Pb	00 40 14.6	+0.2
JFT				S	Sb	00 40 23.5	+0.2
JHO	**Hitachi**	**0.83**	**213**	P	Pb	00 40 15.9	-1.2
JSB	**Shiboa**	**1.03**	**251**	P	Pb	00 40 20.7	+0.3
JSB				S	Sn	00 40 34.6	+0.9

JMA 21 00:42:12.1, 38.43N×141.89E, h55km±1km, M3.5, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**0.43**	**273**	P	Pn	00 42 22.9	0.0
JIO				S	Sn	00 42 30.4	-0.2
OFUJ	**Ofunato**	**0.67**	**345**	P	Pn	00 42 25.7	0.0
OFUJ				S	Sn	00 42 35.5	-0.1
JMK	**Ichinoseki**	**0.74**	**315**	P	Pn	00 42 26.8	+0.2
JMK				S	Sn	00 42 37.2	+0.1
JOU	**Okura**	**0.96**	**267**	S	Sn	00 42 42.3	-0.1
JOM	**Ohasama**	**1.14**	**336**	P	Pn	00 42 32.1	+0.3
JOM				S	Sn	00 42 47.2	+0.7
MIYJ	**Miyakonagasawa**	**1.15**	**357**	P	Pn	00 42 31.8	-0.1
MIYJ				S	Sn	00 42 46.3	-0.3
JYK	**Kaneyama**	**1.29**	**293**	P	Pn	00 42 34.1	+0.2

JMA 21 00:42:59.1±0.2, 37.66N×141.87E, h29km±4km, M3.6, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JFK	**Kawauchi**	**0.84**	**250**	P	Pn	00 43 14.9	-0.2
JFK				S	Sb	00 43 25.4	-0.8
JMM	**Marumori**	**0.88**	**284**	P	Pn	00 43 15.4	-0.1
JMM				S	Sb	00 43 26.3	-0.9
JIO	**Ouri**	**0.89**	**333**	P	Pn	00 43 15.4	-0.3
JIO				S	Sb	00 43 26.1	-1.5
ONAJ	**Iwakimizuishiy**	**1.02**	**237**	P	Pn	00 43 17.3	-0.2
ONAJ				S	Sn	00 43 29.6	-1.3
JOU	**Okura**	**1.19**	**307**	P	Pb	00 43 20.4	-0.6
JOU				S	Sn	00 43 34.9	0.0
JFT	**Otama**	**1.23**	**264**	P	Pb	00 43 21.3	-0.4
JFT				S	Sn	00 43 36.5	+0.6

*IDC **21** 00:44:13.9±0.7, 40.14N×143.70E, h0km, mb3.9/15, mb1 4.1/15, mb1mx3.9/36, mbtmp3.9/15, Error ellipse: s-maj=20.7km s-min=18.3km az=117.0*
*JMA **21** 00:44:16.6±0.3, 40.28N×143.55E, h5km, M4.0*
*NEIC **21** 00:44:19.8±1.6, 40.24N×143.78E, h39km±14km, mb4.7/5, Error ellipse: s-maj=15.3km s-min=10.3km az=111.0*

ISC 21 00:44:15.6±3.7, 40.28N±0.05×143.70E±0.07, h7km±22km, n54, σ1.05/50, mb4.1/20, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JANG	**Nango**	**1.68**	**274**	P	**Pn**	**00 44 44.8**	**-0.5**
JANG				*e*S	**Sn**	**00 45 05.6**	**-1.4**
JEM	**Erimo**	**1.78**	**347**	P	**Pb**	**00 44 48.4**	**-0.1**
JKZ	**Kuzumaki**	**1.84**	**261**	P	**Pn**	**00 44 47.8**	**+0.1**
JKZ				*e*S	**Sn**	**00 45 10.8**	**-0.5**
OFUJ	**Ofunato**	**1.98**	**233**	P	**Pn**	**00 44 49.6**	**+0.1**
OFUJ				*e*S	**Sn**	**00 45 13.6**	**-0.9**
JOM	**Ohasama**	**2.02**	**247**	P	**Pn**	**00 44 49.2**	**-0.9**
JTM	**Tenmabayashi**	**2.07**	**285**	P	**Pn**	**00 44 51.3**	**+0.6**
JNBK	**Urakawa-nobuka**	**2.12**	**341**	P	**Pn**	**00 44 52.8**	**+1.4**
JNBK				*e*S	**Sn**	**00 45 19.2**	**+1.2**
JOT	**Ohata**	**2.29**	**299**	P	**Pn**	**00 44 53.5**	**-0.3**
JMK	**Ichinoseki**	**2.33**	**236**	P	**Pn**	**00 44 54.9**	**+0.5**
JMK				*e*S	**Sn**	**00 45 23.5**	**+0.2**
JCH	**Churui**	**2.34**	**354**	P	**Pn**	**00 44 54.0**	**-0.5**
JAH	**Hinai**	**2.35**	**269**	P	**Pn**	**00 44 55.3**	**+0.7**
JRG	**Rokugo**	**2.52**	**250**	P	**Pn**	**00 44 58.2**	**+1.2**
JIO	**Ouri**	**2.58**	**226**	P	**Pn**	**00 44 58.3**	**+0.5**
JYK	**Kaneyama**	**2.92**	**243**	P	**Pn**	**00 45 03.7**	**+1.2**
ASAJ	**Asahikawa**	**3.92**	**348**	Pn	**Pn**	**00 45 14.4**	**-1.7**
	2.5nm,0.3s,baz=150,slow=31,SNR=3.9						
ASAJ					Sn	**00 46 03.4**	**+1.0**
	3.7nm,0.3s,baz=354,slow=32,SNR=4.7						
MJAR	**Matsushiro Arr**	**5.71**	**231**	Pn	**Pn**	**00 45 42.6**	**+1.8**
	1.2nm,0.3s,baz=39,slow=11,SNR=6.3						
USRK	**Ussuriysk Ar.**	**9.53**	**298**	Pn	Pn	00 46 37.1	+4.0
	1.0nm,0.3s,baz=96,slow=14,SNR=9.7						
KLR	**Kul'dur**	**12.32**	**320**	*e*Pn	Pn	00 47 16.4	+5.1
JNU	**Nakatsue**	**12.52**	**239**	*e*Pn	Pn	00 47 17.6	+3.4
SEY	**Seymchan**	**23.27**	**10**	P	**P**	**00 49 22.6**	**-0.8**
	4.5nm,0.7s,baz=4.2,slow=23,SNR=4.9						
SONA0	**Songino Array**	**27.64**	**298**	*e*P	**P**	**00 50 04.3**	**+0.4**
	27nm,1.6s						
SONM	**Songino Array**	**27.64**	**298**	P	**P**	**00 50 04.3**	**+0.4**
	1.4nm,0.6s,baz=78,slow=9.0,SNR=3.0						
H11N2	**WAKE ISLAND Hy**	**28.54**	**129**	T	T	01 20 04.8	
	baz=315						
H11N1	**WAKE ISLAND Hy**	**28.55**	**129**	T	T	01 20 06.1	
	baz=315						
H11N3	**WAKE ISLAND Hy**	**28.55**	**129**	T	T	01 20 03.9	
	baz=315						
H11S1	**WAKE ISLAND Hy**	**29.38**	**131**	T	T	01 21 06.4	
	baz=325						
H11S3	**WAKE ISLAND Hy**	**29.38**	**131**	T	T	01 21 09.8	
	baz=325						
H11S2	**WAKE ISLAND Hy**	**29.39**	**131**	T	T	01 21 10.3	
	baz=325						
ZAA1	**Zalesovo Array**	**41.13**	**310**	*e*P	**P**	**00 51 59.6**	**-0.4**
ZALV	**Zalesovo Beam**	**41.13**	**310**	P	**P**	**00 51 59.6**	**-0.4**
	2.3nm,0.6s,baz=95,slow=8.0,SNR=5.0						
MK32	**Makanchi Array**	**43.99**	**300**	*e*P	**P**	**00 52 23.6**	**+0.2**
MKAR	**Makanchi Array**	**43.99**	**300**	P	**P**	**00 52 23.6**	**+0.2**
	2.6nm,0.8s,baz=74,slow=11,SNR=4.4						
ILAR	**Eielson Array**	**45.80**	**34**	P	**P**	**00 52 37.1**	**-0.4**
	0.6nm,0.8s,baz=283,slow=4.5,SNR=3.7						
ILB	**Eielson Array**	**45.80**	**34**	*e*P	**P**	**00 52 37.1**	**-0.4**
INK	**Inuvik**	**50.68**	**28**	P	**P**	**00 53 17.0**	**+1.9**
	0.8nm,0.5s,baz=124,slow=31,SNR=2.3						
INK	**Inuvik**	**50.68**	**28**	*e*P	**P**	**00 53 17.0**	**+1.9**
	10nm,1.5s						
RES	**Resolute Bay**	**59.00**	**15**	P	P	00 54 22.5	+7.2
	1.7nm,0.5s,baz=311,slow=5.5,SNR=6.9						
YKA	**Yellowknife Ar**	**60.10**	**32**	P	**P**	**00 54 22.8**	**-0.2**
	0.1nm,0.6s,baz=298,slow=6.2,SNR=2.1						
YKB5	**Yellowknife Ar**	**60.10**	**32**	*e*P	**P**	**00 54 22.8**	**-0.2**
WR1	**Warramunga Arr**	**60.55**	**190**	*e*P	**P**	**00 54 25.8**	**-0.8**
	22nm,1.8s						
WRA	**Warramunga Arr**	**60.55**	**190**	P	**P**	**00 54 25.8**	**-0.8**
	0.5nm,0.6s,baz=9.1,slow=7.1,SNR=3.1						
AS31	**Alice Springs**	**64.27**	**190**	*e*P	**P**	**00 54 48.6**	**-2.9**
	1.1nm,1.0s						
ASAR	**Alice Springs**	**64.27**	**190**	P	**P**	**00 54 48.6**	**-2.9**
	0.2nm,0.4s,baz=18,slow=6.2,SNR=2.8						
FIA0	**FINESS Array S**	**66.77**	**332**	*e*P	**P**	**00 55 06.9**	**-0.3**
FINES	**FINESS Array B**	**66.77**	**332**	P	**P**	**00 55 06.9**	**-0.3**
	2.9nm,0.7s,baz=59,slow=6.8,SNR=5.8						
KBZ	**Khabaz**	**70.14**	**311**	P	**P**	**00 55 29.7**	**+1.1**
	3.9nm,0.9s,baz=33,slow=14,SNR=3.7						
NB200	**NORSAR Array S**	**71.87**	**338**	*e*P	**P**	**00 55 38.7**	**-0.2**
NOA	**NORSAR Array B**	**71.87**	**338**	P	**P**	**00 55 38.7**	**-0.2**
	1.2nm,0.6s,baz=36,slow=6.1,SNR=3.9						
AKASG	**Malin Array Be**	**72.81**	**323**	P	**P**	**00 55 44.5**	**-0.1**
	1.2nm,0.5s,baz=44,slow=5.9,SNR=5.4						
AKBB	**Malin Array Si**	**72.81**	**323**	*e*P	**P**	**00 55 44.5**	**-0.1**
	27nm,1.7s						
PD31	**Pinedale Array**	**74.13**	**47**	*e*P	**P**	**00 55 52.6**	**-0.2**
PDAR	**Pinedale Array**	**74.13**	**47**	P	**P**	**00 55 52.6**	**-0.2**
	0.4nm,0.7s,baz=307,slow=3.3,SNR=3.1						

LTX	Lajitas	86.74	54	*eP*	P	00 57 01.8	+1.2
TXAR	Lajitas Array	86.74	54	P	P	00 57 01.8	+1.2
	0.2nm,0.6s,baz=357,slow=5.4,SNR=2.7						

MEX 21 01:01:42.8±1.4, 16.70N×94.53W, h100km±45km, MD3.9, Oaxaca

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TGIG		1.35	87	*eP*	Pn	01 02 06.0	-1.3
TGIG				*eS*	Sn	01 02 24.3	-1.6
PCIG		1.60	128	*eP*	Pn	01 02 09.0	-1.3
PCIG				*eS*	Sn	01 02 29.6	-1.7
HUIG	Huatulco	1.78	239	*eP*	Pn	01 02 10.0	-2.6
HUIG				*eS*	Sn	01 02 34.3	-0.8
VHO	Vista Hermosa	2.14	280	*eP*	Pn	01 02 16.9	-0.5
VHO				*eS*	Sn	01 02 42.8	-1.0
ACP2	Acapulco	5.13	273	*iP*	Pn	01 02 55.7	-1.6

*ISCJB **21** 01:05:54.2±0.5, 40.32N±0.04×143.84E±0.07, h16km, mb3.9/17, Error ellipse: s-maj=8.3km s-min=4.4km az=33.5*
*JMA **21** 01:05:55.6±0.2, 40.34N×143.83E, h38km, M4.2*
*IDC **21** 01:05:58.1±5.2, 40.26N×143.87E, h31km±37km, mb3.7/17, mb1 3.9/22, mb1mx3.8/42, mbtmp3.9/22, ML3.4/5, Error ellipse: s-maj=21.1km s-min=14.6km az=117.0*

ISC 21 01:05:56.0±0.7, 40.30N±0.06×143.85E±0.08, h16km, n42, σ1s06/41, mb4.0/17, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MIYJ	Miyakonagasawa	1.72	246	P	Pn	01 06 24.3	-1.0
MIYJ				*eS*	Sn	01 06 45.2	-1.7
JANG	Nango	1.78	273	P	Pn	01 06 24.8	-1.4
OFUJ	Ofunato	2.08	235	P	Pn	01 06 29.1	-1.1
OFUJ				*eS*	Sn	01 06 53.3	-2.4
JOM	Ohasama	2.13	248	P	Pn	01 06 30.3	-0.6
JTM	Tenmabayashi	2.17	284	P	Pn	01 06 30.6	-0.9
JTM				*eS*	Sn	01 06 56.4	-1.6
JMK	Ichinoseki	2.44	237	P	Pn	01 06 34.3	-0.8
JAH	Hinai	2.46	268	P	Pn	01 06 35.2	-0.2
JRG	Rokugo	2.63	251	P	Pn	01 06 37.8	0.0
JAR	Ashorobuto	2.99	359	P	Pn	01 06 41.3	-1.5
JAR				S	Sn	01 07 15.8	-2.5
JYK	Kaneyama	3.03	244	P	Pn	01 06 43.2	-0.1
JOU	Okura	3.13	233	P	Pn	01 06 44.6	-0.2
ASAJ	Asahikawa	3.92	347	Pn	Pn	01 06 56.2	+0.6
	1.8nm,0.3s,baz=113,slow=26,SNR=3.3						
ASAJ				Sn	Sn	01 07 40.3	-0.9
	2.7nm,0.3s,baz=303,slow=24,SNR=4.2						
MAT	Matsushiro	5.80	232	P	Pn	01 07 21.0	-0.4
MJAR	Matsushiro Arr	5.80	231	P	Pn	01 07 21.2	-0.2
	2.2nm,0.3s,baz=39,slow=11,SNR=24						
USRK	Ussuriysk Ar.	9.62	298	Pn	Pn	01 08 15.0	+1.4
	1.4nm,0.3s,baz=95,slow=15,SNR=26						
KLR	Kul'dur	12.38	320	Pn	Pn	01 08 51.9	+0.4
	0.1nm,0.3s,baz=123,slow=14,SNR=6.9						
JNU	Nakatsue	12.62	239	Pn	Pn	01 08 57.4	+2.4
	0.4nm,0.3s,baz=71,slow=7.5,SNR=3.6						
KSRS	Korea Array	12.73	262	Pn	P	01 09 01.9	-5.5
	0.3nm,0.3s,baz=240,slow=31,SNR=2.8						
SEY	Seymchan	23.23	10	P	P	01 11 02.0	-0.2
	1.8nm,0.5s,baz=202,slow=9.0,SNR=6.8						
SONM	Songino Array	27.73	298	P	P	01 11 43.8	+0.1
	1.5nm,0.6s,baz=94,slow=8.3,SNR=11						
H11N2	WAKE ISLAND Hy 28.46	129		T	T	01 41 35.0	
	baz=322,slow=75,SNR=4.5						
H11N1	WAKE ISLAND Hy 28.47	129		T	T	01 41 42.2	
	baz=322,slow=75,SNR=4.8						
H11N3	WAKE ISLAND Hy 28.48	129		T	T	01 41 41.5	
	baz=322,slow=75,SNR=3.6						
H11S1	WAKE ISLAND Hy 29.30	131		T	T	01 42 47.7	
	baz=329,slow=74,SNR=4.2						
H11S2	WAKE ISLAND Hy 29.32	131		T	T	01 42 48.7	
	baz=0.2,slow=74,SNR=3.0						
ZALV	Zalesovo Beam	41.21	310	P	P	01 13 39.7	0.0
	2.3nm,0.6s,baz=89,slow=7.6,SNR=12						
MKAR	Makanchi Array	44.08	300	P	P	01 14 03.0	-0.1
	3.5nm,0.9s,baz=80,slow=10.0,SNR=15						
CMAR	Chiang Mai Arr	44.20	254	P	P	01 14 05.1	+0.7
	1.1nm,0.4s,baz=42,slow=7.3,SNR=6.7						
ILAR	Eielson Array	45.72	34	P	P	01 14 15.8	-0.2
	0.7nm,0.9s,baz=267,slow=6.3,SNR=6.2						
INK	Inuvik	50.61	28	P	P	01 14 54.8	+1.1
	0.6nm,0.8s,baz=280,slow=6.7,SNR=2.5						
RES	Resolute Bay	58.96	15	P	P	01 15 54.4	+0.4
	1.0nm,1.0s,baz=309,slow=6.5,SNR=3.2						
YKA	Yellowknife Ar	60.03	32	P	P	01 16 01.8	+0.3
	0.3nm,0.9s,baz=301,slow=6.6,SNR=4.9						
WRA	Warramunga Arr	60.58	190	P	P	01 16 04.5	-1.3
	0.7nm,0.5s,baz=6.7,slow=7.0,SNR=6.7						
GEYT	Alibeck	63.93	299	P	P	01 16 27.9	-0.4
	2.2nm,0.8s,baz=35,slow=5.4,SNR=5.3						
ASAR	Alice Springs	64.31	190	P	P	01 16 30.1	-0.5
	0.4nm,0.7s,baz=5.1,slow=6.5,SNR=4.6						
FINES	FINESS Array B	66.81	332	P	P	01 16 45.9	-0.5
	2.2nm,0.7s,baz=68,slow=7.0,SNR=7.4						
KBZ	Khabaz	70.22	311	P	P	01 17 09.6	+1.6
	3.1nm,1.0s,baz=217,slow=6.1,SNR=5.5						
NB2	NORSAR Subarra	71.90	338	P	P	01 17 18.0	0.0
	comp=Z,1.3nm,0.8s,baz=40,slow=6.2						
NOA	NORSAR Array B	71.90	338	P	P	01 17 18.0	0.0
	comp=Z,1.3nm,0.8s,baz=37,slow=6.0,SNR=5.3						
AKASG	Malin Array Be	72.87	323	P	P	01 17 23.8	-0.1
	comp=Z,1.6nm,0.6s,baz=43,slow=6.1,SNR=14						
KHC	Kasperske Hory	80.73	329	*eP*	P	01 18 07.5	-0.9
GERES	GERESS Array B	80.91	329	P	P	01 18 08.9	-0.5
	comp=Z,0.5nm,0.8s,baz=19,slow=4.5,SNR=4.8						

*IDC **21** 01:23:40.0±1.2, 40.27N×144.09E, h0km, mb3.5/8, mb1 3.6/11, mb1mx3.5/37, mbtmpg3.6/11, ML3.2/3, Error ellipse: s-maj=27.9km s-min=21.7km az=104.0*
*ISCJB **21** 01:23:41.2±0.7, 40.31N±0.05×143.90E±0.08, h16km, mb3.6/8, Error ellipse: s-maj=9.8km s-min=5.2km az=29.3*
*JMA **21** 01:23:41.8±0.2, 40.35N×143.74E, h9km, M3.6*

ISC 21 01:23:43.1±0.9, 40.33N±0.06×143.84E±0.09, h16km, n29, σ0s80/28, mb3.6/8, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MIYJ	Miyakonagasawa	1.72	245	P	Pn	01 24 11.6	-0.8
JEM	Erimo	1.77	343	P	Pn	01 24 12.4	-0.5
JANG	Nango	1.78	272	P	Pn	01 24 12.0	-1.1
JKZ	Kuzumaki	1.95	261	P	Pn	01 24 14.7	-0.9
JKZ				*eS*	Sn	01 24 38.4	-1.4
OFUJ	Ofunato	2.09	234	P	Pn	01 24 16.6	-0.8
JNBK	Urakawa-nobuka	2.12	338	P	Pn	01 24 17.6	-0.2
JOM	Ohasama	2.14	247	P	Pn	01 24 17.8	-0.3
JTM	Tenmabayashi	2.16	283	P	Pn	01 24 18.2	-0.2
JCH	Churui	2.31	351	P	Pn	01 24 20.5	0.0
JCH				S	Sn	01 24 48.2	-0.4
JOT	Ohata	2.37	297	P	Pn	01 24 20.8	-0.4
JMK	Ichinoseki	2.44	237	P	Pn	01 24 22.0	-0.3
JAH	Hinai	2.46	268	P	Pn	01 24 22.7	+0.3
JAH				S	Sn	01 24 51.9	-0.2
JIO	Ouri	2.69	227	P	Pn	01 24 24.4	-1.2
JYK	Kaneyama	3.03	244	P	Pn	01 24 30.5	+0.1
ASAJ	Asahikawa	3.90	347	Pn	Pn	01 24 41.6	-0.7
	1.8nm,0.3s,baz=151,slow=32,SNR=2.9						
ASAJ				Sn	Sn	01 25 25.9	-1.8
	1.5nm,0.3s,baz=303,slow=30,SNR=3.3						
MJAR	Matsushiro Arr	5.81	231	Pn	Pn	01 25 09.3	+0.6
	1.0nm,0.3s,baz=40,slow=11,SNR=8.9						
USRK	Ussuriysk Ar.	9.60	298	Pn	Pn	01 26 04.1	+3.6
	0.6nm,0.3s,baz=94,slow=14,SNR=12						
SEY	Seymchan	23.21	10	P	P	01 28 48.4	-0.6
	0.9nm,0.2s,baz=166,slow=9.1,SNR=3.6						
SONM	Songino Array	27.71	298	P	P	01 29 32.1	+1.5
	0.3nm,0.5s,baz=91,slow=30,SNR=3.0						
H11N2	WAKE ISLAND Hy 28.48	129		T	T	01 59 25.3	
	baz=323,slow=74,SNR=5.2						
H11N1	WAKE ISLAND Hy 28.49	129		T	T	01 59 37.6	
	baz=71,slow=74,SNR=4.6						
H11N3	WAKE ISLAND Hy 28.50	129		T	T	02 02 06.0	
	SNR=9.6						
ZALV	Zalesovo Beam	41.19	310	P	P	01 31 24.4	-2.2
	0.3nm,0.4s,baz=110,slow=6.3,SNR=2.8						
MKAR	Makanchi Array	44.06	300	P	P	01 31 50.7	+0.6
	0.3nm,0.4s,baz=78,slow=12,SNR=3.6						
BVAR	Borovoye Array	49.82	311	P	P	01 32 35.6	+0.7
	0.2nm,0.4s,baz=56,slow=9.4,SNR=2.5						
YKA	Yellowknife Ar	60.01	32	P	P	01 33 48.3	-0.2
	0.0nm,0.4s,baz=299,slow=6.4,SNR=3.4						
WRA	Warramunga Arr	60.61	190	P	P	01 33 52.2	-0.8
	0.5nm,0.8s,baz=7.1,slow=7.0,SNR=3.2						
FINES	FINESS Array B	66.78	332	P	P	01 34 33.8	+0.5
	1.5nm,0.9s,baz=34,slow=12,SNR=4.6						
AKASG	Malin Array Be	72.84	323	P	P	01 35 11.0	+0.3
	0.4nm,0.5s,baz=44,slow=6.1,SNR=5.8						

JMA 21 01:25:40.9, 36.97N×140.52E, h7km±1km, M2.6, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	Iwakimizuishiy	0.26	59	P	Pg	01 25 46.3	+0.3
ONAJ				S	Sg	01 25 50.2	+0.7
JHO	Hitachi	0.36	174	P	Pg	01 25 48.0	+0.1
JHO				S	Sg	01 25 53.2	+0.5
JFK	Kawauchi	0.49	35	P	Pg	01 25 50.3	0.0
JFK				S	Sg	01 25 56.9	+0.2
JFT	Otama	0.57	345	P	Pg	01 25 52.0	+0.1
JFT				S	Sg	01 25 59.5	+0.2
JMM	Marumori	0.92	14	P	Pg	01 25 58.2	-0.4
JMM				S	Sg	01 26 09.6	-1.0
MAT	Matsushiro	1.91	258	P	Pn	01 26 13.8	0.0
MAT				*eS*	Sb	01 26 39.3	-0.7

*ISCJB **21** 01:26:47.1±0.8, 40.32N±0.04×143.85E±0.10, h16km, mb3.5/7, Error ellipse: s-maj=11.3km s-min=4.9km az=19.1*
*JMA **21** 01:26:48.0±0.2, 40.36N×143.75E, h18km, M3.7*
*IDC **21** 01:26:52.1±3.7, 40.20N×143.73E, h39km±31km, mb3.3/7, mb1 3.5/10, mb1mx3.3/36, mbtmpg3.6/10, ML3.1/3, Error ellipse: s-maj=30.2km s-min=21.0km az=93.0*

ISC 21 01:26:48.9±1.0, 40.31N±0.06×143.75E±0.10, h16km, n28, σ1s01/28, mb3.5/7, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MIYJ	Miyakonagasawa	1.66	244	P	Pn	01 27 17.7	+0.3
JANG	Nango	1.71	273	P	Pn	01 27 17.3	-0.8
JEM	Erimo	1.76	345	P	Pn	01 27 17.6	-1.1
JEM				*eS*	Sn	01 27 38.6	-2.2
JKZ	Kuzumaki	1.89	261	P	Pn	01 27 20.4	-0.1
JKZ				*eS*	Sn	01 27 43.6	-0.4
OFUJ	Ofunato	2.03	233	P	Pn	01 27 22.1	-0.3
JOM	Ohasama	2.07	247	P	Pn	01 27 23.3	+0.3
JNBK	Urakawa-nobuka	2.10	339	P	Pn	01 27 23.0	-0.5
JOT	Ohata	2.31	298	P	Pn	01 27 26.2	-0.1
JCH	Churui	2.32	353	P	Pn	01 27 25.5	-0.9
JCH				*eS*	Sn	01 27 52.9	-1.7
JMK	Ichinoseki	2.38	236	P	Pn	01 27 27.4	+0.1
JAH	Hinai	2.39	268	P	Pn	01 27 28.0	+0.6
JRG	Rokugo	2.57	250	P	Pn	01 27 31.1	+1.2
JKB	Kayabe	2.59	308	P	Pn	01 27 29.5	-0.6
JIO	Ouri	2.63	226	P	Pn	01 27 30.0	-0.7
JYK	Kaneyama	2.97	243	P	Pn	01 27 36.0	+0.6
ASAJ	Asahikawa	3.90	348	Pn	Pn	01 27 50.8	+2.7
	1.4nm,0.3s,baz=232,slow=21,SNR=2.2						
ASAJ				Sn	Sn	01 28 34.2	+0.7
	1.9nm,0.3s,baz=99,slow=30,SNR=3.4						
MJAR	Matsushiro Arr	5.75	231	Pn	Pn	01 28 12.6	-1.1
	1.3nm,0.3s,baz=39,slow=11,SNR=5.3						
USRK	Ussuriysk Ar.	9.55	298	Pn	Pn	01 29 09.4	+3.7
	0.4nm,0.3s,baz=94,slow=14,SNR=8.4						
SONM	Songino Array	27.66	298	P	P	01 32 36.3	+0.2
	0.6nm,0.6s,baz=96,slow=11,SNR=4.7						
H11S1	WAKE ISLAND Hy 29.36	131		T	T	02 03 49.3	
	baz=317						
H11S3	WAKE ISLAND Hy 29.37	131		T	T	02 03 39.0	
	baz=317						
H11S2	WAKE ISLAND Hy 29.38	131		T	T	02 03 37.5	
	baz=317						
ZALV	Zalesovo Beam	41.15	310	P	P	01 34 32.6	+0.5
	0.8nm,0.6s,baz=74,slow=9.5,SNR=3.5						
MKAR	Makanchi Array	44.01	300	P	P	01 34 55.9	+0.4
	1.0nm,0.8s,baz=81,slow=10.0,SNR=7.3						
BVAR	Borovoye Array	49.77	311	P	P	01 35 40.9	+0.5
	0.2nm,0.4s,baz=76,slow=7.6,SNR=2.8						
YKA	Yellowknife Ar	60.06	32	P	P	01 36 55.5	+0.9
	0.1nm,0.5s,baz=297,slow=6.9,SNR=2.6						
WRA	Warramunga Arr	60.58	190	P	P	01 36 57.8	-0.9
	0.2nm,0.5s,baz=6.8,slow=7.0,SNR=2.5						
FINES	FINESS Array B	66.77	332	P	P	01 37 39.2	+0.2
	1.1nm,0.7s,baz=30,slow=6.4,SNR=4.1						

*IDC **21** 01:32:24.3±1.2, 37.63N×144.69E, h0km, mb3.3/4, mb1 3.6/5, mb1mx3.3/33, mbtmpg3.3/5, ML3.6/1, Error ellipse: s-maj=34.6km s-min=23.2km az=140.0*
*ISCJB **21** 01:32:27.3±1.0, 37.7N±0.2×144.39E±0.09, h33km, mb3.3/4, Error ellipse: s-maj=21.8km s-min=10.3km az=173.8*
*JMA **21** 01:32:28.6±0.1, 37.89N×144.25E, h34km, M3.2*

ISC 21 01:32:29.8±1.1, 37.8N±0.2×144.3E±0.1, h35km, n10, σ1s08/11, mb3.3/4, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	Ouri	2.45	286	P	Pn	01 31 06.5	-0.7
JMM	Marumori	2.81	272	P	Pn	01 33 11.6	-0.6
JMM				*eS*	Sn	01 33 43.9	-1.0
JOU	Okura	2.96	282	P	Pn	01 33 13.8	-0.4
JYK	Kaneyama	3.32	291	P	Pn	01 33 18.9	-0.3
MJAR	Matsushiro Arr	5.06	257	Pn	Pn	01 33 43.6	+0.5
	1.9nm,0.3s,baz=87,slow=14,SNR=19						
MJAR				Sn	Sn	01 34 47.5	+7.1
	0.5nm,0.3s,baz=76,slow=20,SNR=2.4						
MAT	Matsushiro	5.06	257	P	Pn	01 33 43.9	+0.7
MKAR	Makanchi Array	45.68	302	P	P	01 40 49.4	+2.3
	0.2nm,0.4s,baz=90,slow=7.6,SNR=2.9						
ILAR	Eielson Array	47.59	33	P	P	01 41 01.6	0.0
	0.1nm,0.6s,baz=256,slow=7.0,SNR=4.5						
WRA	Warramunga Arr	58.21	191	P	P	01 42 19.5	-1.0
	0.3nm,0.5s,baz=11,slow=7.3,SNR=3.0						
YKA	Yellowknife Ar	61.95	31	P	P	01 42 45.2	-0.5
	0.2nm,0.8s,baz=288,slow=6.2,SNR=4.1						

*GUC **21** 01:35:16.2±0.4, 33.85S×71.60W, h20km±7km, ML3.4*
*SJA **21** 01:35:18.0±0.4, 33.72S×71.55W, h61km±5km, ML3.7, MW4.1*

ISC 21 01:35:15.8±1.3, 33.84S±0.06×71.58W±0.08, h6km±15km, n17, σ0s35/21, Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHPI	Pichilemu	0.65	213	*iP*	Pg	01 35 27.9	-0.4
CHPI				*iS*	Sg	01 35 37.2	+0.4
FSR	Penalolen	0.95	68	*iP*	Pg	01 35 33.6	-0.4
FSR				*iS*	Sb	01 35 47.2	-0.4
ROC1	El Roble	0.98	29	*iP*	Pb	01 35 35.5	+0.1
ROC1				*iS*	Sb	01 35 48.6	-0.1
ROCH	El Roble	0.99	29	*iP*	Pg	01 35 35.0	+0.1
ROCH				*iS*	Sb	01 35 48.8	-0.1
PEL	Peldehue	1.02	47	*iP*	Pg	01 35 35.0	-0.4
PEL				*iS*	Sg	01 35 49.0	+0.4
PEL				IAML		01 35 50.4	
	comp=N,2μm,0.3s						
YECH	El Yeso	1.26	82	IAML		01 35 57.8	
	comp=E,2μm,1.0s						
AAGR	Agrelo	2.42	73	*iP*	Pn	01 35 56.4	+0.4
ARCO	CERRO ARCO	2.43	66	*iP*	Pn	01 35 56.3	+0.1
ARCO				IAML		01 36 15.1	
	comp=Z,195nm,0.8s						
AUSP	Uspallata	2.45	49	*iP*	Pn	01 35 57.0	+0.4
ASAL	Salagasta	2.62	62	*iP*	Pn	01 35 59.0	+0.3
RTLS	Leoncito	2.80	44	*iP*	Pn	01 36 01.7	+0.2
RTCV	Cerro Valdivia	3.23	53	*iP*	Pn	01 36 07.2	+0.1
RTLL	Cerro Villicun	3.63	47	*iP*	Pn	01 36 12.8	+0.2
AMOG	MOGNA	3.90	43	*iP*	Pn	01 36 16.1	-0.3
ACAN	Cantantal	4.00	68	*iP*	Pn	01 36 18.2	+0.4
AGUA	GUANDACOL	5.08	32	*iP*	Pn	01 36 32.6	0.0
VCA	Vinchina	5.85	30	*iP*	Pn	01 36 42.8	-0.5
VCA				IAML		01 38 07.6	
	comp=Z,47nm,0.5s						

*JMA **21** 01:47:45.8±0.2, 40.34N×143.77E, h26km, M3.5*
*ISCJB **21** 01:47:52.6±0.9, 40.17N±0.07×143.1E±0.1, h12km, mb3.6/6, Error ellipse: s-maj=13.4km s-min=9.5km az=29.9*
*IDC **21** 01:47:53.4±1.2, 40.23N×142.89E, h0km, mb3.5/6, mb1 3.6/8, mb1mx3.4/40, mbtmp3.5/8, ML2.7/2, Error ellipse: s-maj=31.7km s-min=24.7km az=93.0*

ISC 21 01:47:55.0±1.1, 40.14N±0.08×142.8E±0.1, h12km, n25, σ0s99/18, mb3.7/6, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MIYJ	Miyakonagasawa	0.96	235	P	Pn	01 48 14.4	+0.1
JANG	Nango	1.04	283	P	Pb	01 48 14.8	-0.1
JANG				*eS*	Sn	01 48 36.4	+6.5
JKZ	Kuzumaki	1.17	263	P	Pg	01 48 17.8	+0.3
JKZ				S	Sn	01 48 41.1	+8.0
JOM	Ohasama	1.36	241	P	Pg	01 48 20.5	-0.7
OFUJ	Ofunato	1.39	221	P	Pn	01 48 19.3	-0.9
JTM	Tenmabayashi	1.50	296	P	Pn	01 48 21.0	-0.7
JAH	Hinai	1.69	272	P	Pb	01 48 25.3	-0.7
JMK	Ichinoseki	1.73	227	P	Pn	01 48 24.6	-0.2
JIO	Ouri	2.04	215	P	Pn	01 48 27.3	-1.8
JYK	Kaneyama	2.27	238	P	Pn	01 48 33.3	+1.0
JCH	Churui	2.50	9	P	Pn	01 48 23.0	-13
JCH				*eS*	Sn	01 48 50.4	-16
MJAR	Matsushiro Arr	5.11	227	Pn	Pn	01 49 12.4	+1.0
	0.6nm,0.3s,baz=39,slow=12,SNR=5.0						
USRK	Ussuriysk Ar.	9.02	300	Pn	Pn	01 50 04.7	-0.3
	0.3nm,0.3s,baz=98,slow=14,SNR=6.5						
H11N2	WAKE ISLAND Hy 28.96	128		T	T	02 23 26.9	
	baz=329,slow=74,SNR=4.4						
H11N1	WAKE ISLAND Hy 28.97	128		T	T	02 23 35.4	
	baz=329						
H11N3	WAKE ISLAND Hy 28.98	128		T	T	02 23 34.7	
	baz=329,slow=74,SNR=4.0						
H11S1	WAKE ISLAND Hy 29.79	129		T	T	02 24 35.1	
	baz=330						
H11S3	WAKE ISLAND Hy 29.79	129		T	T	02 24 46.1	
	baz=330						
H11S2	WAKE ISLAND Hy 29.80	129		T	T	02 24 32.8	
	baz=330						
MKAR	Makanchi Array	43.49	300	P	P	01 55 56.4	-1.6
	0.2nm,0.3s,baz=83,slow=12,SNR=3.8						
BVAR	Borovoye Array	49.36	311	P	P	01 56 45.4	+1.4
	0.5nm,0.4s,baz=74,slow=9.4,SNR=6.5						
WRA	Warramunga Arr	60.29	189	P	P	01 58 04.6	+1.1
	0.4nm,0.8s,baz=8.8,slow=6.7,SNR=3.7						
YKA	Yellowknife Ar	60.57	31	P	P	01 58 04.1	-0.8
	0.1nm,0.5s,baz=310,slow=7.9,SNR=3.1						
FINES	FINESS Array B	66.59	332	P	P	01 58 45.3	+0.6
	1.1nm,0.8s,baz=49,slow=6.4,SNR=2.9						
AKASG	Malin Array Be	72.53	322	P	P	01 59 21.5	0.0
	0.3nm,0.4s,baz=45,slow=5.1,SNR=4.3						

*NIED **21** 01:54:00, 40.30N×143.70E, h17km, Mw5.8 Best double couple: M0 5.09000×10^17 NP1:φs136.00000°, δ33.00000°, λ6.00000°. NP2:φs41.00000°, δ87.00000°, λ123.00000°.*
*BJI **21** 01:54:37.8, 40.25N×143.70E, h10km, mb5.7/84, mB6.0/75, Ms6.1/96, Ms7 6.0/89*
*ISCJB **21** 01:54:39.2±0.5, 40.31N±0.02×143.70E±0.01, h6km±3km, mb5.6/426, MS5.6/436, Error ellipse: s-maj=2.9km s-min=1.8km az=162.7*
*JMA **21** 01:54:40.5±0.4, 40.31N×143.65E, h11km±5km, M6.0*
JMA Felt II J1.
*NEIC **21** 01:54:40.0±0.0, 40.32N×144.08E, h15km, Moment Tensor Solution. s22 Moment tensor: Scale 10^17Nm; Mrr1.30; Mθθ-0.10; Mφφ-1.20; Mrθ1.50; Mrφ0.00; Mθφ6.70; Best double couple: M0 7.00000×10^17 NP1:φs12.00000°, δ85.00000°, λ91.00000°. NP2:φs172.00000°, δ5.00000°, λ69.00000°. Principal axes: T 7.1000, Plg49.0000°, Azm284.0000°; N -0.2000, Plg1.0000°, Azm192.0000°; P -6.9000, Plg40.0000°, Azm101.0000°;*
*GCMT **21** 01:54:41.6±0.1, 40.33N×143.87E, h15km, MW5.8/122, Moment Tensor Solution. s103,c206; s122,c281; Duration: 1s9 Moment tensor: Scale 10^17Nm; Mrr1.47±.03; Mθθ0.17±.02; Mφφ-1.65±.02; Mrθ1.90±.09; Mθφ-0.08±.02; Mrφ6.47±.08; Best double couple: M0 6.92300×10^17 NP1:φs16.00000°, δ84.00000°, λ93.00000°. NP2:φs167.00000°, δ7.00000°, λ61.00000°. Principal axes: T 6.8820, Plg51.0000°, Azm290.0000°; N 0.0780, Plg3.0000°, Azm196.0000°; P -6.9650, Plg39.0000°, Azm103.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface/mantle waves, cutoff=50s.*
*NEIC **21** 01:54:41.6±0.1, 40.31N×143.63E, h11km, mb5.7/285, ME5.9, MS5.5/297, MW5.8, MW5.8 Error ellipse: s-maj=3.3km s-min=2.2km az=148.0, Moment Tensor Solution. s64 Moment tensor: Scale 10^17Nm; Mrr2.87; Mθθ-0.39; Mφφ-2.48; Mrθ1.24; Mrφ-0.04; Mθφ6.77; Best double couple: M0 7.40000×10^17 NP1:φs176.00000°, δ11.00000°, λ77.00000°. NP2:φs10.00000°, δ79.00000°, λ92.00000°. Principal axes: T 7.6000, Plg55.0000°, Azm283.0000°; N -0.4300, Plg2.0000°, Azm189.0000°; P -7.1600, Plg34.0000°, Azm98.0000°; Broadband fault plane solution: P waves. NP1:φs190.00000°, δ5.00000°, λ90.00000°. NP2:φs10.00000°, δ85.00000°, λ90.00000°. Principal axes: T Plg50.0000°, Azm280.0000°; N Plg0.0000°, Azm0.0000°; P Plg40.0000°, Azm100.0000°; Depth from synthetics of broadband displacement seismograms. Energy computed from BB mechanism.*
NEIC Felt at Ichinoseki and Misawa.
*IDC **21** 01:54:42.8±1.8, 40.34N×143.75E, h22km±11km, mb4.9/32, mb1 5.1/38, mb1mx5.0/44, mbtmp5.1/38, ML4.6/5, MS5.5/41, Ms1 5.5/41, ms1mx5.4/55 Error ellipse: s-maj=10.4km s-min=10.0km az=112.0*
*MOS **21** 01:54:43.7±1.0, 40.43N×143.65E, h33km, mb5.9/125, MS5.6/73, Error ellipse: s-maj=5.6km s-min=3.7km az=102.3*

**ISC 21 01:54:42.6±0.4, 40.33N±0.03×143.74

SHO				pmax	pmax				
	comp=N,921nm,0.5s								
SHO				pmax	pmax				
	comp=Z,2μm,0.5s								
SHO				pmax	pmax				
	comp=E,1μm,0.6s								
MAJO	**Matsushiro**	**5.76**	**231**	*c i*P	**Pn**	**01 56 07.0**	**-0.1**		
MAJO	**Matsushiro**	**5.76**	**231**	*e*Pn	**Pn**	**01 56 07.0**	**-0.1**		
MAJO				*e*Sn	Sn	01 57 01.4	-11		
MAT	**Matsushiro**	**5.76**	**231**	P	**Pn**	**01 56 06.5**	**-0.6**		
MAT				S	**Sn**	**01 57 14.4**	**+1.8**		
MJAR	**Matsushiro Arr**	**5.76**	**231**	Pn	**Pn**	**01 56 06.7**	**-0.4**		
	comp=E,26nm,0.3s,baz=32,slow=12,SNR=196								
MJAR				LR	LR	01 58 07.6			
	comp=E,13μm,21.8s,baz=55,slow=36								
MJB9	**Matsu-Tunnel**	**5.76**	**231**	*e*Pn	**Pn**	**01 56 07.0**	**-0.1**		
MJB9				*e*Sn	Sn	01 57 04.1	-8.5		
KUR	**Kuril'sk**	**5.77**	**30**	*d i*P	**Pn**	**01 56 06.2**	**-1.0**		
KUR				*e*S	**Sn**	**01 57 11.2**	**-1.6**		
KUR				pmax	pmax				
	comp=Z,3μm,2.2s								
KUR				pmax	pmax				
	comp=Z,808nm,1.0s								
KUR				pmax	pmax				
	comp=N,308nm,0.5s								
KUR				pmax	pmax				
	comp=E,293nm,1.0s								
KUR				smax	smax				
	comp=N,1μm,0.5s								
KUR				smax	smax				
	comp=E,454nm,0.5s								
KUR				pmax	pmax				
	comp=N,8μm,5.9s								
KUR				pmax	pmax				
	comp=E,12μm,5.9s								
KUR				MLR	MLR				
	comp=N,29μm,13.0s								
KUR				MLR	MLR				
	comp=Z,16μm,13.0s								
YSS	**Yuzh-Sakhalins**	**6.67**	**354**⇓	*e*P	**Pn**	**01 56 19.5**	**0.0**		
YSS				*e*S	**Sn**	**01 57 38.3**	**+3.4**		
YSS				pmax	pmax				
	comp=Z,4μm,8.0s								
YSS				MLR	MLR				
	comp=Z,70μm,17.0s								
YSS				MLR	MLR				
	comp=N,54μm,14.0s								
YSS				MLR	MLR				
	comp=E,69μm,14.0s								
YSS	**Yuzh-Sakhalins**	**6.67**	**354**	*e*Pn	**Pn**	**01 56 18.8**	**-0.7**		
YSS				*e*Sn	Sn	01 57 26.5	-8.3		
INU	**Inuyama**	**7.28**	**229**	*e*Pn	**Pn**	**01 56 28.2**	**+0.2**		
INU				*e*Sn	Sn	01 57 37.3	-13		
JHJ2	**Mitsune**	**7.86**	**205**	*e*Pn	**Pn**	**01 56 32.9**	**-3.0**		
JHJ	**Hachijo jima 2**	**7.86**	**205**	Pn	**Pn**	**01 56 32.9**	**-3.1**		
	comp=E,65nm,0.3s,baz=96,slow=23,SNR=10.0								
JHJ				Sn	Sn	01 57 57.8	-6.6		
	comp=E,80nm,0.3s,baz=248,slow=22,SNR=4.1								
UGL	**Uglegorsk**	**8.83**	**353**	*e*P	**Pn**	**01 56 52.0**	**+2.8**		
UGL				S	**Sn**	**01 58 27.0**	**-1.2**		
UGL				pmax	pmax				
	comp=Z,126nm,0.8s								
UGL				smax	smax				
	comp=E,11μm,12.0s								
UGL				smax	smax				
	comp=N,12μm,10.0s								
UGL				MLR	MLR				
	comp=Z,36μm,14.0s								
UGL				MLR	MLR				
	comp=N,24μm,16.0s								
UGL				MLR	MLR				
	comp=E,100μm,22.0s								
VLA	**Vladivostok**	**9.30**	**291**	*c i*P	**Pn**	**01 56 56.6**	**+1.0**		
USRK	**Ussuriysk Ar.**	**9.53**	**298**	Pn	**Pn**	**01 56 59.9**	**+1.0**		
	comp=E,4.0nm,0.3s,baz=101,slow=13,SNR=182								
USRK				LR	LR	02 00 42.9			
	comp=E,50μm,19.1s,baz=92,slow=38								
MSHR	**Mys Shultsa**	**9.71**	**288**	*c e*P	**Pn**	**01 57 02.8**	**+1.5**		
HABR	**Khabarovsk**	**10.24**	**326**	*c i*P	**Pn**	**01 57 06.5**	**-2.0**		
HABR				*e*S	**Sn**	**01 59 00.4**	**-2.3**		
HABR				pmax	pmax				
	comp=N,99nm,1.9s								
HABR				pmax	pmax				
	comp=E,89nm,1.9s								
HABR				pmax	pmax				
	comp=Z,185nm,1.9s								
HABR				MLR	MLR				
	comp=N,25μm,13.0s								
HABR				MLR	MLR				
	comp=Z,33μm,13.0s								
HABR				MLR	MLR				
	comp=E,30μm,12.0s								
MDJ	**Mudanjiang**	**11.29**	**297**	P	**Pn**	**01 57 23.6**	**+0.6**		
MDJ				S	**Sn**	**01 59 29.8**	**+1.2**		
MDJ				ScS	**ScS**	**02 10 25.9**	**+2.1**		
MDJ				pmax	pmax				
	comp=E,100nm,1.4s								
MDJ				pmax	pmax				
	comp=E,10μm,8.0s								
MDJ				LR	LR				
	comp=E,36μm,16.3s								
MDJ				LR	LR				
	comp=E,65μm,15.4s								
MDJ				LR	LR				
	comp=E,108μm,15.4s								
MDJ	**Mudanjiang**	**11.29**	**297**	*e*Pn	**Pn**	**01 57 24.0**	**+1.0**		
KLR	**Kul'dur**	**12.31**	**320**	Pn	**Pn**	**01 57 35.8**	**-1.0**		
	comp=E,0.6nm,0.3s,baz=131,slow=12,SNR=94								
KLR				LR	LR	02 02 55.8			
	comp=E,30μm,18.8s,baz=132,slow=40								
JNU	**Nakatsue**	**12.57**	**239**	Pn	**Pn**	**01 57 38.3**	**-2.2**		
	comp=E,2.3nm,0.3s,baz=31,slow=5.8,SNR=14								
JNU				LR	LR	02 02 55.8			
	comp=E,61μm,18.0s,baz=47,slow=39								
JNU	**Nakatsue**	**12.57**	**239**	*e*Pn	**Pn**	**01 57 38.5**	**-2.0**		
KSRS	**Korea Array**	**12.65**	**262**	Pn	**Pn**	**01 57 41.2**	**-0.3**		
	comp=E,1.0nm,0.3s,baz=70,slow=13,SNR=19								
KSRS				LR	LR	02 02 14.4			
	comp=E,46μm,18.3s,baz=78,slow=36								
KS01	**Wonju Array Si**	**12.67**	**262**	*e*Pn	**Pn**	**01 57 40.9**	**-0.9**		
KS15	**Wonju Array Si**	**12.69**	**262**	*e*Pn	**Pn**	**01 57 40.7**	**-1.3**		
KSAR	**Wonju Array Be**	**12.69**	**262**	P	**Pn**	**01 57 41.3**	**-0.8**		
KSAR	**Wonju Array Be**	**12.69**	**262**	Pn	**Pn**	**01 57 41.2**	**-0.8**		
NKL	**Nikolayevsk**	**13.00**	**352**	*i* Pn	**Pn**	**01 57 46.0**	**-0.2**		
NKL				*e*S	**Sn**	**02 00 10.0**	**-0.1**		
NKL				pmax	pmax				
	comp=N,3μm,7.0s								
NKL				pmax	pmax				
	comp=E,1μm,7.0s								
NKL				pmax	pmax				
	comp=Z,5μm,7.0s								
NKL				pmax	pmax				
	comp=N,620nm,2.5s								
NKL				pmax	pmax				
	comp=Z,1μm,2.5s								
NKL				smax	smax				
	comp=E,10μm,15.0s								
NKL				MLR	MLR				
	comp=N,36μm,15.0s								
NKL				MLR	MLR				
	comp=E,28μm,15.0s								
NKL				MLR	MLR				
	comp=Z,50μm,15.0s								
OKH	**Okha**	**13.24**	**358**	*e*P	**Pn**	**01 57 50.0**	**+0.5**		
OKH				*i* S	**Sn**	**02 00 15.8**	**-0.3**		
OKH				pmax	pmax				
	comp=Z,2μm,6.0s								
OKH				smax	smax				
	comp=E,7μm,12.0s								
OKH				MLR	MLR				
	comp=Z,42μm,17.0s								
CBIJ	**Chichi jima**	**13.26**	**186**	Pn	Pn	01 57 44.4	-5.5		
CBIJ				Sn	Sn	02 00 03.1	-14		
JCJ	**Chichijima**	**13.26**	**186**	Pn	Pn	01 57 44.4	-5.5		
JCJ				Sn	Sn	02 00 03.1	-14		
	comp=Z,13nm,0.3s,baz=20,slow=22,SNR=6.0								
SKR	**Severo-Kuril's**	**13.49**	**36**	*e*P	Pn	01 57 49.0	-3.9		
SKR				pmax	pmax				
	comp=Z,80nm,0.6s								
SKR				MLR	MLR				
	comp=E,34μm,14.0s								
SKR				MLR	MLR				
	comp=Z,24μm,14.0s								
SKR				MLR	MLR				
	comp=N,20μm,16.0s								
INCN	**Inchon**	**13.62**	**263**	P	**Pn**	**01 57 53.7**	**-1.2**		
INCN	**Inchon**	**13.62**	**263**	Pn	**Pn**	**01 57 53.7**	**-1.2**		
CN2	**Changchun**	**14.03**	**290**	*e*P	**Pn**	**01 57 59.6**	**-0.7**		
CN2				*e*S	**Sn**	**02 00 40.0**	**+4.6**		
CN2				pmax	pmax				
	comp=N,60nm,1.0s								
CN2				pmax	pmax				
	comp=N,4μm,10.0s								
CN2				LR	LR				
	comp=N,31μm,14.0s								
CN2				LR	LR				
	comp=N,36μm,14.0s								
CN2				LR	LR				
	comp=N,37μm,13.0s								
SNY	**Shenyang**	**15.28**	**282**	⇑P	**Pn**	**01 58 16.0**	**-1.3**		
SNY				pmax	pmax				
	comp=N,170nm,1.5s								
SNY				pmax	pmax				
	comp=N,13μm,12.2s								
SNY				LR	LR				
	comp=N,27μm,13.5s								
SNY				LR	LR				
	comp=N,48μm,14.3s								
SNY				LR	LR				
	comp=N,63μm,13.9s								
PEA0	**Petropavlovsk-**	**15.93**	**32**	*e*Pn	Pn	01 58 20.6	-5.0		
PEA0B	**Petropavlovsk-**	**15.93**	**32**	*e*Pn	**Pn**	**01 58 21.6**	**-4.0**		
	comp=N,99nm,1.0s								
PETK	**Petropavlovsk-**	**15.93**	**32**	Pn	Pn	01 58 19.7	-5.9		
	comp=N,0.3nm,0.3s,baz=198,slow=9.1,SNR=8.9								
PETK				LR	LR	02 04 19.9			
	comp=N,10μm,19.3s,baz=220,slow=36								
PETK	**Petropavlovsk-**	**15.93**	**32**	P	Pn	01 58 19.7	-5.9		
PETK				MLR	MLR				
	comp=Z,10μm,19.3s								
PET	**Petropavlovsk**	**16.27**	**34**	⇑*i*P	**P**	**01 58 33.6**	**+0.8**		
PET				pmax	pmax				
	comp=Z,119nm,1.4s								
PET				pmax	pmax				
	comp=Z,1μm,15.9s								
PET				MLR	MLR				
	comp=Z,22μm,16.0s								
PET				MLR	MLR				
	comp=Z,22μm,15.0s								
PET	**Petropavlovsk**	**16.27**	**34**	*e*Pn	**P**	**01 58 31.9**	**-0.9**		
	comp=Z,191nm,1.3s								
DL2	**Dalian**	**17.10**	**272**	P	**Pn**	**01 58 37.8**	**-2.7**		
DL2				S	**Sn**	**02 01 48.3**	**-1.7**		
DL2				pmax	pmax				
	comp=Z,390nm,1.5s								
DL2				pmax	pmax				
	comp=Z,10μm,8.2s								
DL2				LR	LR				
	comp=Z,28μm,13.0s								
DL2				LR	LR				
	comp=Z,14μm,12.6s								
DL2				LR	LR				
	comp=Z,16μm,13.4s								
HIA	**Hailar**	**19.17**	**306**	*e*P	**P**	**01 59 01.4**	**-3.6**		
HIA				pmax	pmax				
	comp=Z,367nm,1.3s								
HIA	**Hailar**	**19.17**	**306**	*e*P	**P**	**01 59 01.4**	**-3.6**		
	comp=Z,367nm,1.3s								
MA2	**Magadan**	**19.77**	**11**	P	**P**	**01 59 10.2**	**-1.2**		
	comp=Z,1.1nm,0.3s,baz=221,slow=8.4,SNR=20								
MA2				LR	LR	02 07 43.7			
	comp=Z,16μm,18.3s,baz=218,slow=40								
SSE	**Sheshan**	**20.46**	**250**	⇑P	**P**	**01 59 15.8**	**-3.2**		
SSE				S	**S**	**02 03 06.6**	**-0.7**		
SSE				pmax	pmax				
	comp=Z,3μm,8.9s								
SSE				LR	LR				
	comp=Z,12μm,17.1s								
SSE				LR	LR				
	comp=Z,4μm,17.1s								
SSE				LR	LR				
	comp=Z,8μm,16.9s								
CLNS	**Chul'man**	**20.58**	**330**	*e*P	**P**	**01 59 19.2**	**-1.1**		
CLNS				*e**PP	**sP**	**01 59 27.5**	**-0.6**		
CLNS				*e*		01 59 37.5			
CLNS				*e*S	**S**	**02 03 09.1**	**-0.4**		
CLNS				*e*		02 03 23.5			
CLNS				*e*SS	SnSn	02 03 46.7	+18		
CLNS				pmax	pmax				
	comp=E,49nm,0.9s								
CLNS				pmax	pmax				
	comp=Z,142nm,0.9s								
CLNS				pmax	pmax				
	comp=N,164nm,1.3s								
CLNS				pmax	pmax				
	comp=Z,333nm,1.5s								
CLNS				pmax	pmax				
	comp=N,230nm,1.2s								
CLNS				pmax	pmax				
	comp=E,157nm,1.0s								
CLNS				smax	smax				
	comp=E,5μm,10.9s								
CLNS				smax	smax				
	comp=N,5μm,15.2s								
CLNS				MLR	MLR				
	comp=E,11μm,14.0s								
CLNS				MLR	MLR				
	comp=Z,21μm,14.0s								
CLNS				MLR	MLR				
	comp=N,15μm,14.0s								
BJI	**Beijing**	**21.04**	**278**	P	**P**	**01 59 21.9**	**-3.4**		
BJI				S	**S**	**02 03 19.5**	**+0.8**		
BJI				pmax	pmax				
	comp=N,180nm,2.0s								
BJI				pmax	pmax				
	comp=N,5μm,7.1s								
BJI				LR	LR				
	comp=N,16μm,14.0s								
BJI				LR	LR				
	comp=N,27μm,15.6s								
BJI				LR	LR				
	comp=N,19μm,19.3s								
BJT	**Baijiatuau**	**21.05**	**278**	*e*P	**P**	**01 59 21.8**	**-3.6**		
BJT				pmax	pmax				
	comp=Z,392nm,1.1s								
BJT				MLR	MLR				
	comp=Z,27μm,20.0s								
BJT	**Baijiatuau**	**21.05**	**278**	*e*P	**P**	**01 59 21.8**	**-3.6**		
	comp=Z,392nm,1.1s								
BJT				*e*S	S	02 03 02.4	-17		
BJT				LR	LR				
	comp=Z,27μm,20.0s								
TIA	**Tai'an**	**21.27**	**267**	⇑P	**P**	**01 59 24.3**	**-3.5**		
TIA				S	S	02 03 15.9	-7.4		
TIA				pmax	pmax				
	comp=Z,100nm,1.3s								
TIA				pmax	pmax				
	comp=Z,7μm,10.0s								
TIA				LR	LR				
	comp=Z,34μm,13.0s								
TIA				LR	LR				
	comp=Z,42μm,13.0s								
TIA				LR	LR				
	comp=Z,55μm,15.0s								
NJ2	**Nanjing**	**21.67**	**255**	*e*P	**P**	**01 59 30.0**	**-2.1**		
NJ2				S	**S**	**02 03 33.4**	**+2.2**		
NJ2				pmax	pmax				
	comp=Z,60nm,1.1s								
NJ2				pmax	pmax				
	comp=Z,4μm,10.8s								
NJ2				LR	LR				
	comp=Z,25μm,16.3s								
NJ2				LR	LR				
	comp=Z,28μm,16.8s								
NJ2				LR	LR				
	comp=Z,40μm,17.9s								
SEY	**Seymchan**	**23.23**	**10**	P	**P**	**01 59 46.5**	**-1.8**		
	comp=Z,77nm,0.7s,baz=189,slow=7.6,SNR=146								
SEY				S	**S**	**02 03 59.1**	**0.0**		
	comp=Z,5.7nm,1.0s,baz=52,slow=21,SNR=6.7								
YAK	**Yakutsk**	**23.35**	**343**	P	**P**	**01 59 46.2**	**-3.4**		
	comp=Z,78nm,0.5s,baz=162,slow=1.8,SNR=15								
YAK				S	**S**	**02 03 55.7**	**-5.5**		
	comp=Z,19nm,0.3s,baz=234,slow=22,SNR=7.3								
YAK				LR	LR	02 09 44.1			
	comp=Z,7μm,19.7s,baz=148,slow=39								
YAK	**Yakutsk**	**23.35**	**343**	*c i*P	**P**	**01 59 46.2**	**-3.4**		
YAK				*e*PPP	PPP	02 00 16.9			
YAK				*e*S	S	02 03 51.9	-9.3		
YAK				pmax	pmax				
	comp=Z,27nm,1.0s								
YAK				pmax	pmax				
	comp=N,26nm,1.3s								
YAK				pmax	pmax				
	comp=E,10.0nm,0.9s								
YAK				pmax	pmax				
	comp=N,40nm,0.6s								
YAK				pmax	pmax				
	comp=E,36nm,0.9s								
YAK				pmax	pmax				
	comp=Z,192nm,0.8s								
YAK				smax	smax				
	comp=N,467nm,1.6s								
YAK				smax	smax				
	comp=E,849nm,2.5s								
YAK				MLR	MLR				
	comp=Z,24μm,16.0s								
YAK				MLR	MLR				
	comp=N,21μm,17.0s								
YAK				MLR	MLR				
	comp=E,16μm,16.0s								
YAK	**Yakutsk**	**23.35**	**343**	*e*P	**P**	**01 59 45.0**	**-4.6**		
	comp=E,177nm,0.8s								
YAK				*e*S	S	02 03 52.7	-8.5		
YOJ	**Yonaguni jima**	**23.51**	**234**	PFAKE		02 00 00.0	+8.6		
YOJ				LR	LR				
	comp=Z,21μm,21.0s								
CIT	**Chita**	**23.77**	**310**	*e*P	**P**	**01 59 52.1**	**-1.8**		
CIT				*e*		02 00 04.5			
CIT				*e*		02 00 21.2			
CIT				*e*		02 00 31.8			
CIT				*e*S	**S**	**02 04 07.4**	**-1.0**		
CIT				pmax	pmax				
	comp=Z,749nm,1.7s								
SMY	**Shemya**	**24.09**	**49**	*e*P	**P**	**01 59 54.8**	**-2.0**		
SMY				pmax	pmax				
	comp=Z,501nm,1.2s								
SMY	**Shemya**	**24.09**	**49**	*e*P	**P**	**01 59 54.8**	**-2.0**		
	comp=Z,501nm,1.2s								
TATO	**Taipei**	**24.10**	**237**	*e*P	**P**	**01 59 54.8**	**-2.3**		
	comp=Z,113nm,0.8s								
TATO				LR	LR				
	comp=Z,48μm,18.0s								
TATO	**Taipei**	**24.10**	**237**	P	**P**	**01 59 54.1**	**-3.0**		
TATO				P	**P**	**01 59 54.1**	**-3.0**		
TATO	**Taipei**	**24.10**	**237**	P	**P**	**01 59 54.1**	**-3.0**		
HHC	**Hu-ho-hao-te**	**24.37**	**282**	*e*P	**P**	**01 59 57.1**	**-2.6**		
HHC				PP	**PnPn**	**02 00 30.8**	**+0.8**		
HHC				S	**S**	**02 04 13.8**	**-4.5**		
HHC				SS	**SnSn**	**02 05 03.9**	**+2.0**		
HHC				pmax	pmax				
	comp=Z,84nm,1.6s								
HHC				pmax	pmax				
	comp=Z,3μm,8.4s								
HHC				LR	LR				
	comp=Z,8μm,14.9s								
HHC				LR	LR				
	comp=Z,24μm,14.1s								
HHC				LR	LR				
	comp=Z,28μm,15.0s								
YHNB	**Yeheng**	**24.39**	**237**	*e*P	**P**	**01 59 55.4**	**-4.4**		
	comp=Z,101nm,0.9s								
YHNB				LR	LR				
	comp=Z,42μm,18.0s								
TIY	**Taiyuan**	**24.40**	**274**	*e*P	**P**	**01 59 56.4**	**-3.5**		
TIY				S	**S**	**02 04 16.3**	**-2.4**		
TIY				pmax	pmax				
	comp=Z,31nm,0.9s								
TIY				pmax	pmax				
	comp=Z,3μm,7.4s								
TIY				LR	LR				
	comp=Z,16μm,13.0s								
TIY				LR	LR				
	comp=Z,4μm,10.4s								
TIY				LR	LR				
	comp=Z,14μm,14.0s								
NACB	**Ninganchiao**	**24.60**	**236**	*e*P	**P**	**01 59 57.0**	**-4.6**		
	comp=Z,117nm,1.3s								
NACB				LR	LR				
	comp=Z,11μm,20.0s								
SSLB	**Suanglung**	**25.28**	**236**	*e*P	**P**	**02 00 04.9**	**-3.0**		
	comp=Z,106nm,1.2s								
SSLB				LR	LR				
	comp=Z,18μm,18.0s								
YULB	**Yu-li**	**25.35**	**235**	*e*P	**P**	**02 00 04.6**	**-4.0**		
	comp=Z,100nm,1.2s								
YULB				LR	LR				
	comp=Z,14μm,21.0s								
WHN	**Wuhan**	**25.76**	**257**	P	**P**	**02 00 09.6**	**-2.5**		
WHN				S	S	02 04 29.6	-11		
WHN				pmax	pmax				
	comp=Z,910nm,1.5s								
WHN				pmax	pmax				
	comp=Z,7μm,9.8s								
WHN				LR	LR				
	comp=Z,86μm,14.4s								
WHN				LR	LR				
	comp=Z,67μm,14.6s								
WHN				LR	LR				
	comp=Z,97μm,16.6s								
TPUB	**Ta-pu**	**25.84**	**236**	*e*P	**P**	**02 00 09.6**	**-3.3**		
	comp=Z,182nm,1.2s								
TPUB				LR	LR				
	comp=Z,24μm,20.0s								
BOD	**Bodaibo**	**25.87**	**323**	*e*P	**P**	**02 00 12.4**	**-0.5**		
BOD				pmax	pmax				
	comp=Z,289nm,1.1s								
TWG	**Pinlang**	**25.91**	**234**	*e*P	**P**	**02 00 10.9**	**-2.7**		
	comp=Z,2μm,1.4s								
TWG				LR	LR				
	comp=Z,58μm,19.0s								
QZH	**Quanzhou**	**26.03**	**242**	⇑*i*P	**P**	**02 00 09.9**	**-4.7**		
QZH				S	**S**	**02 04 40.5**	**-4.1**		
QZH				pmax	pmax				
	comp=Z,1μm,2.1s								
QZH				pmax	pmax				
	comp=Z,7μm,3.5s								
QZH				LR	LR				
	comp=Z,35μm,13.7s								
QZH				LR	LR				
	comp=Z,14μm,13.1s								
QZH				LR	LR				
	comp=Z,43μm,14.0s								
ULN	**Ulaanbaatar**	**27.21**	**298**	*c i*P	**P**	**02 00 25.2**	**-0.1**		
ULN				pmax	pmax				
	comp=Z,316nm,2.5s								
ULN				MLR	MLR				
	comp=Z,48μm,14.0s								
ULN	**Ulaanbaatar**	**27.21**	**298**	*e*P	**P**	**02 00 25.1**	**-0.1**		
	comp=Z,127nm,1.0s								
ULN				LR	LR				
	comp=Z,32μm,18.0s								
ULN	**Ulaanbaatar**	**27.21**	**298**	P	**P**	**02 00 25.0**	**-0.2**		
ULN				P	**P**	**02 00 25.0**	**-0.2**		
ULN	**Ulaanbaatar**	**27.21**	**298**	P	**P**	**02 00 25.0**	**-0.2**		
SONA1	**Songino Array**	**27.64**	**298**	*e*P	**P**	**02 00 28.8**	**-0.4**		
SONM	**Songino Array**	**27.65**	**298**	P	**P**	**02 00 28.9**	**-0.3**		
	comp=Z,26nm,0.9s,baz=95,slow=6.5,SNR=188								
SONM				LR	LR	02 12 18.9			
	comp=Z,28μm,18.3s,baz=94,slow=38								
SONM				PKKP	**PKKPdf**	**02 26 26.2**	**+4.9**		
	comp=Z,0.1nm,0.3s,baz=41,slow=4.7,SNR=3.9								
XAN	**Xi'an**	**28.32**	**268**	P	**P**	**02 00 33.8**	**-1.4**		
XAN				pP	sP	02 00 44.1	+0.8		
XAN				sP	pP	02 00 47.9	+7.0		
XAN				S	**S**	**02 05 23.9**	**+3.1**		
XAN				pmax	pmax				
	comp=Z,91nm,1.8s								
XAN				pmax	pmax				
	comp=Z,3μm,10.6s								
XAN				LR	LR				
	comp=Z,16μm,14.6s								
XAN				LR	LR				
	comp=Z,20μm,15.7s								
XAN				LR	LR				
	comp=Z,21μm,11.5s								
H11N2	**WAKE ISLAND Hy 28.54**	**129**		T	T	02 30 29.7			
	baz=322,slow=74,SNR=329								
H11N1	**WAKE ISLAND Hy 28.55**	**129**		T	T	02 30 30.5			
	baz=322,slow=74,SNR=436								
H11N3	**WAKE ISLAND Hy 28.56**	**129**		T	T	02 30 39.1			
	baz=322,slow=74,SNR=405								
H11S1	**WAKE ISLAND Hy 29.38**	**131**		T	T	02 31 41.6			
	baz=323,slow=76,SNR=93								
H11S3	**WAKE ISLAND Hy 29.38**	**131**		T	T	02 31 42.6			
	baz=323,slow=76,SNR=147								
H11S2	**WAKE ISLAND Hy 29.40**	**131**		T	T	02 31 42.9			
	baz=323,slow=76,SNR=150								
IRK	**Irkutsk**	**29.40**	**307**	*e*P	**P**	**02 00 44.1**	**-0.5**		
IRK				*e*		02 00 59.9			

IRK *e* 02 01 39.5
IRK pmax pmax
comp=Z,395nm,1.5s
ENH Enshi 29.54 261 *e*P **P 02 00 44.8 -1.3**
comp=Z,994nm,1.8s
ENH LR LR
comp=Z,30μm,18.0s
TLY Talaya 29.71 306 P **P 02 00 46.7 -0.7**
comp=Z,38nm,1.0s,baz=114,slow=6.4,SNR=16
TLY LR LR 02 13 37.4
comp=Z,12μm,18.0s,baz=102,slow=38
TLY Talaya 29.71 306*c i*P **P 02 00 47.1 -0.3**
TLY *e* 02 01 41.6
TLY *e* 02 03 51.3
TLY *e*S **S 02 05 43.9 +1.6**
TLY *e*SS **SnSn 02 07 20.4 +8.6**
TLY *e*SSS SSS 02 07 38.4
TLY pmax pmax
comp=Z,136nm,1.7s
TLY MLR MLR
comp=Z,13μm,12.0s
TLY Talaya 29.71 306 *e*P **P 02 00 47.0 -0.4**
comp=Z,184nm,1.3s
TLY Talaya 29.71 306 P **P 02 00 47.6 +0.2**
SNR=61
TLY P **P 02 00 47.6 +0.2**
SNR=61
TLY Talaya 29.71 306 pP **P 02 00 47.6 +0.2**
SNR=61
BILL Bilibino 30.36 17*d i*P **P 02 00 52.8 -0.1**
BILL pmax pmax
comp=Z,113nm,1.1s
BILL MLR MLR
comp=Z,8μm,16.0s
BILL Bilibino 30.36 17 *e*P **P 02 00 53.2 +0.4**
comp=Z,161nm,1.0s
BILL LR LR
comp=Z,8μm,21.0s
HKC Hong Kong Obse 30.79 243 *i*P P 02 01 06.0 +8.9
GZH Guangzhou 30.84 245⇑*i*P P 02 00 52.5 -5.1
GZH PP **PnPn 02 01 54.4 -3.7**
GZH S S 02 05 50.5 -10
GZH pmax pmax
comp=Z,4μm,6.2s
MOY Mondy 31.35 306 *e*P **P 02 01 01.6 -0.4**
MOY pmax pmax
comp=Z,189nm,3.1s
LZH Lanzhou 31.45 275⇑P **P 02 01 02.8 -0.3**
LZH pP pP 02 01 04.3 -4.5
LZH PP **PnPn 02 02 06.5 +0.5**
LZH S **S 02 06 09.0 -1.1**
LZH sS sS 02 06 14.0 -5.6
LZH SS **SnSn 02 07 53.0 -1.7**
LZH pmax pmax
comp=Z,430nm,1.5s
LZH pmax pmax
comp=Z,3μm,5.3s
LZH LR LR
comp=Z,17μm,12.5s
LZH LR LR
comp=Z,14μm,12.9s
LZH LR LR
comp=Z,20μm,13.6s
TIXI Tiksi 32.28 351 P **P 02 01 08.8 -0.9**
comp=Z,15nm,0.8s,baz=146,slow=8.1,SNR=41
TIXI LR LR 02 16 18.3
comp=Z,12μm,18.3s,baz=162,slow=40
TIXI Tiksi 32.28 351 *e*P **P 02 01 09.5 -0.3**
comp=Z,46nm,1.1s
GTA Gaotai 33.47 283 P **P 02 01 20.8 +0.1**
GTA pP pP 02 01 24.8 -1.7
GTA sP sP 02 01 27.9 -0.9
GTA S **S 02 06 43.1 +1.6**
GTA sS sS 02 06 50.8 -0.2
GTA pmax pmax
comp=Z,200nm,1.4s
GTA pmax pmax
comp=Z,3μm,5.5s
GTA LR LR
comp=Z,12μm,15.0s
GTA LR LR
comp=Z,27μm,15.4s
GTA LR LR
comp=Z,29μm,15.0s
CD2 Chengdu 33.59 267⇓*i*P **P 02 01 21.1 -0.7**
CD2 sP pP 02 01 24.6 -2.9
CD2 PP **PnPn 02 02 31.0 -2.4**
CD2 S **S 02 06 42.3 -1.1**
CD2 sS sS 02 06 48.1 -4.8
CD2 pmax pmax
comp=Z,90nm,1.1s
CD2 pmax pmax
comp=Z,3μm,7.6s
CD2 LR LR
comp=Z,49μm,13.2s
CD2 LR LR
comp=Z,31μm,15.6s
GYA Guiyang 33.65 257⇑*i*P **P 02 01 21.1 -1.3**
GYA PP **PnPn 02 02 35.0 +0.8**
GYA PcP **PcP 02 04 03.8 +1.6**
GYA S **S 02 06 42.6 -1.8**
GYA ScP **ScP 02 07 47.4 +1.7**
GYA SS **SnSn 02 08 47.0 -1.3**
GYA ScS **ScS 02 11 47.3 0.0**
GYA pmax pmax
comp=Z,150nm,1.2s
GYA pmax pmax
comp=Z,2μm,8.1s
GYA LR LR
comp=Z,21μm,15.1s
GYA LR LR
comp=Z,18μm,16.4s
GYA LR LR
comp=Z,34μm,14.6s
MIDW Midway 34.07 99 PFAKE 02 01 40.0 +14
MIDW LR LR
comp=Z,4μm,20.0s
NIKH Nikolski High 34.28 52 PFAKE 02 01 40.0 +13
NIKH LR LR
comp=Z,4μm,20.0s
GAMB Gambell 34.96 33 *e*P **P 02 01 33.6 +0.4**
comp=Z,43nm,1.0s
UNV Unalaska Valle 35.72 51 PFAKE 02 01 50.0 +10
UNV LR LR
comp=Z,4μm,20.0s
PATS Pohnpei 35.81 155 PFAKE 02 01 50.0 +9.1
PATS LR LR
comp=Z,7μm,18.0s
QIZ Qiongzhong 35.98 244 P **P 02 01 43.6 +1.2**
QIZ S **S 02 07 21.4 +1.2**
QIZ LR LR
comp=Z,6μm,10.2s
QIZ LR LR
comp=Z,6μm,10.2s
AKUT Akutan 36.16 50 PFAKE 02 02 00.0 +17
AKUT LR LR
comp=Z,3μm,19.0s
KRAR Krasnoyarsk 36.46 313*ce*P **P 02 01 46.4 +0.3**
KRAR pmax pmax
comp=Z,339nm,1.5s
KRAR MLR MLR
comp=Z,12μm,16.0s
DAV Davao City (W) 36.89 211 P **P 02 01 51.1 +1.0**
comp=Z,156nm,0.4s,baz=12,slow=8.1,SNR=2.5
DAV Davao City (W) 36.89 211⇑*e*P **P 02 01 48.3 -1.9**
DAV Davao City (W) 36.89 211⇑S **S 02 07 35.6 +1.5**
DAV Davao City (W) 36.89 211 P **P 02 01 51.1 +1.0**
DAV LR LR
comp=Z,7μm,20.0s
KMI Kunming 37.33 259 P **P 02 01 53.6 -0.5**
KMI pP pP 02 01 57.0 -2.9
KMI PP **PP 02 03 17.1 -2.2**
KMI S **S 02 07 36.6 -4.5**
KMI pmax pmax
comp=Z,140nm,1.5s
KMI pmax pmax
comp=Z,3μm,7.9s
KMI LR LR
comp=Z,24μm,16.7s
KMI LR LR
comp=Z,24μm,16.4s
KMI LR LR
comp=Z,33μm,16.1s
SDPT Sand Point 39.23 48 PFAKE 02 02 20.0 +11
SDPT LR LR
comp=Z,3μm,19.0s
PANO Nakornpanom 40.90 247 P **P 02 02 24.8 +1.1**
comp=Z,138nm,1.0s,comp=Z,3μm
WMQ Urumqi 41.08 294 P **P 02 02 25.8 +0.7**
WMQ PP **PnPn 02 04 05.3 +1.1**
WMQ PcP **PcP 02 04 26.9 +2.4**
WMQ ScP **ScP 02 08 17.0 +3.8**
WMQ S **S 02 08 37.0 +0.1**
WMQ SS **SS 02 11 34.0 -5.2**
WMQ pmax pmax
comp=Z,70nm,1.0s
WMQ pmax pmax
comp=Z,1μm,8.0s
WMQ LR LR
comp=Z,10μm,16.2s
WMQ LR LR
comp=Z,5μm,12.4s
WMQ LR LR
comp=Z,6μm,19.0s
NRIK Noril'sk 41.09 333 P **P 02 02 24.7 -0.1**
comp=Z,27nm,1.2s,baz=109,slow=8.1,SNR=39
NRIK LR LR 02 20 58.7
comp=Z,15μm,19.8s,baz=102,slow=38
ZAA0 Zalesovo Array 41.13 310 *e*P **P 02 02 24.9 -0.4**
ZALV Zalesovo Beam 41.13 310 P **P 02 02 24.1 -1.2**
comp=Z,28nm,0.6s,baz=90,slow=7.2,SNR=110
ZALV LR LR 02 20 29.3
comp=Z,11μm,20.4s,baz=86,slow=38
TT01 Tatalina 41.68 37 *e*P **P 02 02 30.7 +1.0**
TTA Tatalina 41.69 37 *e*P **P 02 02 30.7 +0.9**
TTA pmax pmax
comp=Z,86nm,1.4s
TTA Tatalina 41.69 37 *e*P **P 02 02 30.7 +0.9**
comp=Z,86nm,1.4s
MYLDM Lahad Datu 41.71 220 *e*P **P 02 02 33.5 +3.1**
comp=Z,446nm,1.4s
SVW2 Sparrevohn 41.81 39 *e*P **P 02 02 32.0 +1.2**
comp=Z,79nm,1.0s
SVW2 LR LR
comp=Z,3μm,19.0s
SDKM Sandakan 41.96 222⇑P **P 02 02 34.3 +1.8**
NVS Novosibirsk 41.97 311 *e*P **P 02 02 31.6 -0.5**
NVS *e* 02 04 21.3
NVS *e*S **S 02 08 48.1 -1.5**
NVS pmax pmax
comp=E,274nm,1.9s
NVS pmax pmax
comp=Z,377nm,1.9s
NVS smax smax
comp=E,309nm,2.6s
CRAI Chiangrai 41.97 255 P P 02 02 38.7 +6.1
comp=E,75nm,1.6s,comp=E,3μm
TNTI Ternate 42.09 205 P P 02 02 37.4 +3.9
TNTI Ternate 42.09 205 PFAKE 02 02 40.0 +6.5
TNTI LR LR
comp=Z,9μm,18.0s
KKM Kota Kinabalu 42.13 223 PFAKE 02 02 40.0 +6.1
KKM LR LR
comp=Z,6μm,19.0s
ZSN Zaisan 42.44 300⇑*i*P **P 02 02 33.9 -2.2**
comp=Z,1μm,1.6s
ZSN *i* PP PcP 02 04 22.4 -6.5
ZSN *e*S **S 02 08 53.8 -3.1**
ZSN *i* SS **SS 02 12 06.2 +0.3**
ZSN LR LR 02 20 41.8
comp=Z,13μm,13.9s
SWI Sorong 42.55 199 P **P 02 02 39.9 +2.7**
KHON Khomkaen 42.70 248 P **P 02 02 39.7 +1.2**
comp=Z,40nm,0.9s
TSM Tawau 42.78 220⇑P **P 02 02 40.8 +1.7**
GENI Genyem 42.84 185 P P 02 02 43.6 +4.1
OHAK Old Harbor 43.12 45 *e*P **P 02 02 41.5 +0.1**
comp=Z,126nm,1.4s
OHAK LR LR
comp=Z,4μm,21.0s
RSO Redoubt South 43.20 40 *e*P **P 02 02 43.0 +0.7**
LBMI Labuha 43.38 204 P **P 02 02 46.7 +2.8**
UTTA Uttaradit 43.41 252 P **P 02 02 45.1 +0.9**
comp=Z,23nm,1.1s,comp=Z,234nm
PPLA Purkeypile 43.44 37 *e*P **P 02 02 46.3 +2.2**
comp=Z,331nm,1.5s
KDAK Kodiak Island 43.45 44 *i*P **P 02 02 43.9 -0.2**
KDAK Kodiak Island 43.45 44 *e*P **P 02 02 44.3 +0.2**
comp=Z,162nm,1.1s
KDAK LR LR
comp=Z,5μm,19.0s
CAST Castle Rocks 43.49 36 *e*P **P 02 02 45.4 +1.0**
comp=Z,363nm,2.0s
CAST LR LR
comp=Z,3μm,18.0s
SPU Mount Spurr 43.52 39 *e*P **P 02 02 45.8 +1.0**
LSA Lhasa 43.79 273 P **P 02 02 48.5 +0.7**
LSA S **S 02 09 14.0 -3.9**
LSA pmax pmax
comp=Z,34nm,2.0s
LSA pmax pmax
comp=Z,3μm,8.4s
LSA LR LR
comp=Z,4μm,14.9s
LSA LR LR
comp=Z,8μm,17.8s
LSA LR LR
comp=Z,13μm,17.1s
LSA Lhasa 43.79 273 *e*P **P 02 02 49.4 +1.6**
LSA pmax pmax
comp=Z,270nm,1.8s
LSA MLR MLR
comp=Z,13μm,20.0s
LSA Lhasa 43.79 273 *e*P **P 02 02 49.4 +1.6**
comp=Z,270nm,1.8s
LSA LR LR
comp=Z,13μm,20.0s
CMMT Chiang Mai 43.90 254 P P 02 02 52.9 +4.7
comp=Z,109nm,2.6s,comp=Z,2μm
CHTO Chiang Mai 43.90 254 P P 02 02 53.0 +4.8
comp=Z,491nm,2.7s,comp=Z,11μm
CHTO Chiang Mai 43.90 254 PFAKE 02 03 00.0 +12
CHTO LR LR
comp=Z,4μm,18.0s
CHTO Chiang Mai 43.90 254 P **P 02 02 48.1 -0.2**
CHTO P **P 02 02 48.1 -0.2**
CHTO Chiang Mai 43.90 254 P **P 02 02 48.1 -0.2**
BPAW Bear Paw Mtn. 43.98 35 *e*P **P 02 02 50.0 +1.7**
comp=Z,107nm,1.4s
BPAW LR LR
comp=Z,3μm,18.0s
MK01 Makanchi Array 43.99 300 *e*P **P 02 02 48.4 -0.3**
MK31 Makanchi Array 44.00 300 P **P 02 02 47.6 -1.1**
MK31 pmax pmax
comp=Z,267nm,1.0s
MK31 Makanchi Array 44.00 300 *e*P **P 02 02 48.4 -0.3**
MKAR Makanchi Array 44.00 300 P **P 02 02 48.2 -0.5**
comp=Z,60nm,0.9s,baz=80,slow=8.0,SNR=202
MKAR S **S 02 09 20.0 +0.3**
comp=Z,1.1nm,0.8s,baz=121,slow=8.7,SNR=2.3
MKAR LR LR 02 22 24.9
comp=Z,12μm,18.6s,baz=82,slow=38
KTH Kantishna Hill 44.01 36 *e*P **P 02 02 50.3 +1.6**
comp=Z,241nm,1.3s
MLY Manley 44.10 34 *e*P **P 02 02 50.3 +1.0**
comp=Z,87nm,1.2s
MLY LR LR
comp=Z,3μm,19.0s
CMAR Chiang Mai Arr 44.13 254 P **P 02 02 49.9 -0.1**
comp=Z,4.4nm,0.5s,baz=40,slow=7.1,SNR=2.8
CMAR LR LR 02 23 17.6
comp=Z,7μm,18.3s,baz=66,slow=39
CM01 Chiang Mai Arr 44.14 254 *e*P **P 02 02 50.6 +0.5**
BRLK Bradley Lake 44.18 41 *e*P **P 02 02 50.9 +0.9**
comp=Z,53nm,1.0s
BRLK LR LR
comp=Z,3μm,21.0s
MAKZ Makanchi 44.20 300 P **P 02 02 50.7 +0.4**
MAKZ pmax pmax
comp=Z,326nm,1.3s
MAKZ Makanchi 44.20 300 *e*P **P 02 02 49.8 -0.5**
comp=Z,352nm,1.2s
MAKZ LR LR
comp=Z,15μm,19.0s
TRF Thorofare Moun 44.30 36 *e*P **P 02 02 52.1 +1.0**
comp=Z,55nm,1.0s
TRF LR LR
comp=Z,3μm,19.0s
FAKI Fak Fak 44.31 197 P **P 02 02 54.1 +2.7**
FAKI Fak Fak 44.31 197 *e*P **P 02 02 50.9 -0.5**
comp=Z,348nm,1.5s
FAKI LR LR
comp=Z,8μm,18.0s
MRSI Marisa 44.34 212 P **P 02 02 53.4 +1.7**
comp=Z,195nm,1.5s,comp=Z,4μm
COLD Coldfoot 44.40 31 *e*P **P 02 02 52.9 +1.3**
comp=Z,122nm,1.3s
COLD LR LR
comp=Z,3μm,21.0s
SEM Semipalatinsk 44.46 305⇑*i*P **P 02 02 51.7 -0.6**
comp=Z,938nm,1.5s
SEM *i* PP **PcP 02 04 35.1 -0.4**
SEM *e*S **S 02 09 25.2 -1.1**
SEM *i* SS **SS 02 12 46.8 +1.4**
SEM LQ LQ 02 18 44.0
SEM LR LR 02 21 32.7
comp=Z,6μm,12.6s
RC01 Rabbit Creek A 44.65 39 *e*P **P 02 02 53.9 +0.2**
comp=Z,110nm,1.1s
RC01 LR LR
comp=Z,4μm,18.0s
SEW Seward 44.87 41 *e*P **P 02 02 55.8 +0.3**
comp=Z,227nm,1.6s
SEW LR LR
comp=Z,4μm,20.0s
MCK McKinley 44.89 36 *e*P **P 02 02 56.0 +0.3**
MCK pmax pmax
comp=Z,78nm,1.1s
MCK MLR MLR
comp=Z,4μm,19.0s
MCK McKinley 44.89 36 *e*P **P 02 02 56.0 +0.3**
comp=Z,78nm,1.1s
MCK LR LR
comp=Z,4μm,19.0s
PMR Palmer 44.91 39 *e*P **P 02 02 55.8 +0.1**
PMR pmax pmax
comp=Z,75nm,1.1s
PMR MLR MLR
comp=Z,4μm,20.0s
PMR Palmer 44.91 39 *e*P **P 02 02 55.8 +0.1**
comp=Z,75nm,1.1s
PMR LR LR
comp=Z,4μm,20.0s
RND Reindeer 44.94 36 *e*P **P 02 02 56.5 +0.4**
RND pmax pmax
comp=Z,124nm,1.2s
RND MLR MLR
comp=Z,4μm,18.0s
RND Reindeer 44.94 36 *e*P **P 02 02 56.5 +0.4**
comp=Z,124nm,1.2s
RND LR LR
comp=Z,4μm,18.0s
RABL Rabaul 44.97 168 PFAKE 02 03 10.0 +13
RABL LR LR
comp=Z,3μm,20.0s
MDM Murphy Dome 45.17 34 *e*P **P 02 02 58.6 +0.8**
comp=Z,169nm,1.2s
MDM LR LR
comp=Z,4μm,21.0s
SANI Sanana 45.19 205 P **P 02 02 58.3 -0.1**
comp=Z,124nm,2.1s,comp=Z,3μm
WRH Wood River Hil 45.24 35 *e*P **P 02 02 59.5 +1.1**
comp=Z,49nm,1.0s
SHL Shillong 45.32 267 *e*P **P 02 02 58.0 -1.7**
SHL IAmb IAmb 02 02 59.7
comp=Z,68nm,1.5s
SHL *e*S **S 02 09 40.0 +0.3**
COLA College 45.33 34*d i*P **P 02 02 59.0 0.0**
COLA pmax pmax
comp=Z,50nm,1.2s
COLA MLR MLR
comp=Z,4μm,17.0s
COLA College 45.33 34 *e*P **P 02 03 00.3 +1.3**
comp=Z,174nm,1.1s
CCB Clear Creek Bu 45.36 34 *e*P **P 02 03 00.2 +0.9**
comp=Z,115nm,1.5s
KURK Kurchatov 45.41 306 P **P 02 02 59.5 -0.4**
KURK pmax pmax
comp=Z,436nm,0.8s
KURK Kurchatov 45.41 306 *e*P **P 02 02 59.4 -0.5**
comp=Z,249nm,0.8s
KURK S **S 02 09 39.9 -0.1**
KURK LR LR
comp=Z,1μm,19.0s
KURK Kurchatov 45.41 306 P **P 02 02 59.8 -0.1**
KURK P **P 02 02 59.8 -0.1**
KURK Kurchatov 45.41 306 pP **P 02 02 59.8 -0.1**
KURBB Kurchatov Arra 45.49 306 P **P 02 02 59.9 -0.6**
comp=Z,77nm,0.6s,baz=79,slow=8.1,SNR=306
KURBB S **S 02 09 39.9 -1.2**
comp=Z,2.6nm,0.8s,baz=79,slow=16,SNR=3.4
CHBT CHBT 45.51 245 P **P 02 03 02.2 +1.2**
comp=Z,130nm,2.4s,comp=Z,4μm
DHY Denali Highway 45.63 36 *e*P **P 02 03 02.2 +0.6**
comp=Z,87nm,1.2s
DHY LR LR
comp=Z,3μm,22.0s
APSI Ampana 45.72 212 P P 02 03 06.3 +3.6
comp=Z,207nm,1.2s,comp=Z,3μm
HDA Harding Lake 45.74 35 *e*P **P 02 03 02.3 0.0**
comp=Z,82nm,1.1s
HDA LR LR
comp=Z,4μm,20.0s
ILAR Eielson Array 45.75 34 P **P 02 03 01.8 -0.6**
comp=Z,59nm,1.1s,baz=264,slow=5.7,SNR=213
ILAR LR LR 02 22 28.7
comp=Z,3μm,21.4s,baz=285,slow=36
ILB Eielson Array 45.75 34 *e*P **P 02 03 02.8 +0.4**
IL1 Eielson Array 45.75 34 *e*P **P 02 03 02.1 -0.3**
SCM Sheep Creek Mo 45.75 38 *e*P **P 02 03 03.4 +0.9**
SCM pmax pmax
comp=Z,92nm,1.0s
SCM MLR MLR
comp=Z,3μm,19.0s
SCM Sheep Creek Mo 45.75 38 *e*P **P 02 03 03.4 +0.9**
comp=Z,92nm,1.0s
SCM LR LR
comp=Z,3μm,19.0s
NLAI Namlea 45.96 203 P **P 02 03 05.9 +1.4**
comp=Z,58nm,2.2s,comp=Z,1μm
FYU Fort Yukon 46.35 32 *e*P **P 02 03 09.5 +2.4**
comp=Z,852nm,1.9s
BNDI Bandanaira 46.40 199 P **P 02 03 10.9 +2.9**
comp=Z,513nm,1.5s,comp=Z,7μm
KLU Klutina 46.45 39 *e*P **P 02 03 09.1 +1.1**
comp=Z,104nm,1.1s
KLU LR LR
comp=Z,3μm,21.0s
PAX Paxson 46.50 36 *e*P **P 02 03 08.9 +0.4**
PAX pmax pmax
comp=Z,44nm,1.2s
PAX MLR MLR
comp=Z,4μm,19.0s
PAX Paxson 46.50 36 *e*P **P 02 03 08.9 +0.4**
comp=Z,44nm,1.2s
PAX LR LR
comp=Z,4μm,19.0s
DIV Divide 46.56 39 *e*P **P 02 03 10.2 +1.3**
comp=Z,170nm,1.2s
DIV LR LR
comp=Z,5μm,20.0s
JOHN Johnston Islan 46.64 106 PFAKE 02 03 20.0 +10
JOHN LR LR
comp=Z,8μm,19.0s
EYAK Cordova Ski Ar 46.65 40 *e*P **P 02 03 11.0 +1.5**
comp=Z,96nm,1.1s
EYAK LR LR
comp=Z,5μm,20.0s
SHLS Shalkode 46.70 295⇑*i*P **P 02 03 09.7 -0.8**
comp=Z,537nm,1.9s
SHLS *e*S **S 02 09 58.1 -1.1**
SHLS LR LR 02 23 26.8
comp=Z,10μm,14.5s
PDGK Podgornoye 46.92 296 P **P 02 03 11.4 -0.4**
PDGK pmax pmax
comp=Z,147nm,1.0s
TARA Tarawa 46.97 138 PFAKE 02 03 20.0 +7.5
TARA LR LR
comp=Z,5μm,18.0s
DOT Dot Lake 47.06 35 *e*P **P 02 03 13.0 +0.2**
comp=Z,408nm,1.9s
DOT LR LR
comp=Z,8μm,19.0s
BMRM Bremner River 47.15 39 P **P 02 03 14.1 +0.6**
comp=Z,138nm,1.2s
RAGM Ragged Mountai 47.20 40 *e*P **P 02 03 15.5 +1.6**
comp=Z,253nm,1.5s
RAGM LR LR

SBUM **Sibu** 47.27 225 ⇓P **P** **02 03 16.5 +1.6**
SBUM **Sibu** 47.27 225 *eP* **P** **02 03 15.9 +1.0**
comp=Z,58nm,1.4s
SBUM LR LR
comp=Z,6μm,19.0s
UZB **Uzynbulak** 47.30 296⇑ *iP* **P** **02 03 14.2 -0.8**
comp=Z,577nm,1.9s
UZB *eS* **S** **02 10 05.9 -1.7**
UZB *i* SS **SS** **02 13 36.0 +1.3**
UZB LR LR 02 23 31.8
comp=Z,8μm,14.8s
MENT **Mentasta** 47.30 36 *eP* **P** **02 03 15.9 +1.2**
comp=Z,81nm,1.0s
MENT LR LR
comp=Z,3μm,20.0s
EGAK **Eagle** 48.19 34 *eP* **P** **02 03 21.4 0.0**
comp=Z,135nm,1.3s
EGAK LR LR
comp=Z,3μm,22.0s
CHKK **Chushkaly** 48.43 297 *eP* **P** **02 03 22.9 -0.8**
comp=Z,615nm,1.2s
MDOK **Medeo** 48.65 296⇓ *iP* **P** **02 03 25.4 -0.1**
comp=Z,600nm,2.0s
MDOK *i* PP **PP** **02 05 17.5 -0.8**
MDOK *i* S **S** **02 10 25.6 -1.1**
MDOK LR LR 02 24 29.5
comp=Z,13μm,15.9s
AAA **Alma-Ata** 48.68 297 *i* P **P** **02 03 26.3 +0.7**
AAA *i* S **S** **02 10 26.0 -1.0**
AAA pmax pmax
comp=Z,2μm,1.8s
AAA smax smax
comp=E,3μm,8.1s
AAA MLR MLR
comp=Z,26μm,11.0s
AAA **Alma-Ata** 48.68 297⇑ *eP* **P** **02 03 26.5 +1.0**
comp=Z,865nm,2.0s
AAA *eS* **S** **02 10 26.9 0.0**
AAA LR LR 02 24 19.3
comp=Z,10μm,13.2s
GUN **Gumba** 48.70 274 *eP* **P** **02 03 26.1 -0.2**
comp=Z,411nm,0.6s
KUU **Kurty** 48.87 298⇑ *iP* **P** **02 03 25.8 -1.2**
comp=Z,1μm,1.6s
KUU *i* PP **PP** **02 05 19.9 -0.2**
KUU *eS* **S** **02 10 27.4 -2.2**
KUU LRM MLR 02 25 30.2
comp=Z,16μm,14.8s
KSM **Kuching** 49.14 227 ⇓P **P** **02 03 31.0 +1.7**
KSM **Kuching** 49.14 227 *eP* **P** **02 03 30.6 +1.4**
comp=Z,102nm,1.2s
KKN **Kakani** 49.21 274 *eP* **P** **02 03 29.8 -0.3**
comp=Z,410nm,1.0s
PKIN **Phulchoki** 49.23 274 *eP* **P** **02 03 29.7 -0.6**
comp=Z,605nm,1.3s
SPSI **Sidrap Palu** 49.26 212 P **P** **02 03 29.9 -0.3**
BRZS **Berezniki** 49.27 306⇓ *iP* **P** **02 03 30.8 +0.8**
comp=Z,161nm,0.8s
BRZS *i* PP **PP** **02 05 26.6 +2.9**
BRZS *eS* **S** **02 10 35.1 0.0**
BRZS LR LR 02 24 42.6
comp=Z,330nm,13.0s
DMN **Daman** 49.44 274 *eP* **P** **02 03 31.6 -0.2**
comp=Z,558nm,1.2s
CHKZ **Chkalovo** 49.45 311 P **P** **02 03 31.0 -0.2**
CHKZ pmax pmax
comp=Z,297nm,1.4s
GKN **Gorkha** 49.60 275 *eP* **P** **02 03 32.8 -0.1**
comp=Z,335nm,1.0s
STKI **Sintang** 49.67 224 P **P** **02 03 35.2 +1.9**
comp=Z,92nm,1.7s
TKM2 **Tokmak 2** 49.73 297 P **P** **02 03 33.6 -0.2**
TKM2 pmax pmax
comp=Z,306nm,1.0s
TKM2 **Tokmak 2** 49.73 297 *eP* **P** **02 03 33.8 0.0**
comp=Z,274nm,0.9s
TKM2 LR LR
comp=Z,15μm,18.0s
BVA0 **Borovoye Array** 49.76 311 *i* P **P** **02 03 33.8 +0.2**
BVA0 pmax pmax
comp=Z,77nm,1.1s
BVAR **Borovoye Array** 49.76 311 P **P** **02 03 33.3 -0.4**
comp=Z,24nm,0.8s,baz=79,slow=7.7,SNR=131
BVAR S **S** **02 10 40.5 -1.2**
comp=Z,2.9nm,1.0s,baz=90,slow=3.0,SNR=2.7
BRVK **Borovoye** 49.81 311 P **P** **02 03 34.1 +0.1**
BRVK pmax pmax
comp=Z,204nm,1.1s
BRVK **Borovoye** 49.81 311 *eP* **P** **02 03 34.2 +0.1**
comp=Z,114nm,0.9s
BRVK LR LR
comp=Z,17μm,18.0s
BRVK **Borovoye** 49.81 311 P **P** **02 03 34.5 +0.4**
BRVK P **P** **02 03 34.5 +0.4**
BRVK **Borovoye** 49.81 311 pP **P** **02 03 34.5 +0.4**
OTUK **Ortayu** 50.03 304 P **P** **02 03 35.2 -0.6**
OTUK pmax pmax
comp=Z,173nm,1.4s
KAPI **Kappang** 50.22 212 *eP* **P** **02 03 37.7 +0.2**
comp=Z,299nm,1.6s
KAPI **Kappang** 50.22 212 P **P** **02 03 37.6 +0.2**
SNR=43
KAPI P **P** **02 03 37.6 +0.2**
SNR=43
KAPI P **P** **02 03 37.6 +0.2**
SNR=43
KAPI **Kappang** 50.22 212 P **P** **02 03 37.6 +0.2**
SNR=43
FRU **Bishkek** 50.43 297⇑ *iP* **P** **02 03 38.5 -0.4**
FRU *e* 02 05 37.0
FRU *eS* **S** **02 10 50.0 -1.4**
FRU *i* 02 11 11.0
FRU pmax pmax
comp=Z,750nm,2.5s
FRU smax smax
comp=N,470nm,3.0s
FRU smax smax
comp=E,2μm,8.0s
KOLN **Koldanda** 50.50 275 *eP* **P** **02 03 40.3 +0.4**
comp=E,278nm,1.0s
ZRNK **Zerenda** 50.58 311 P **P** **02 03 40.0 +0.1**
ZRNK pmax pmax
comp=Z,212nm,1.2s
ZRNK **Zerenda** 50.58 311 *eP* **P** **02 03 39.9 0.0**
comp=Z,170nm,0.9s
ZRNK *e*PP **PP** **02 05 35.9 +0.4**
ZRNK LR LR
comp=Z,13μm,19.0s
AAK **Ala-Archa** 50.59 297 P **P** **02 03 39.8 -0.4**
comp=Z,16nm,0.8s,baz=78,slow=6.5,SNR=74
AAK **Ala-Archa** 50.59 297 *iP* **P** **02 03 39.2 -1.1**
AAK pmax pmax
comp=Z,203nm,1.5s
AAK MLR MLR
comp=Z,26μm,18.0s
AAK **Ala-Archa** 50.59 297 *eP* **P** **02 03 39.8 -0.4**
comp=Z,72nm,0.9s
AAK LR LR
comp=Z,12μm,18.0s
AAK **Ala-Archa** 50.59 297 P **P** **02 03 40.4 +0.1**
SNR=46
AAK P **P** **02 03 40.4 +0.1**
SNR=46
AAK **Ala-Archa** 50.59 297 pP **P** **02 03 40.4 +0.1**
SNR=46
INK **Inuvik** 50.63 28 *eP* **P** **02 03 41.0 +1.0**
INK pmax pmax
comp=Z,66nm,1.1s
INK MLR MLR
comp=Z,3μm,18.0s
INK **Inuvik** 50.63 28 *eP* **P** **02 03 41.0 +1.0**
comp=Z,66nm,1.1s
INK LR LR
comp=Z,3μm,18.0s
SURT **Suratani** 50.63 245 P **P** **02 03 42.1 +1.4**
comp=Z,34nm,2.2s,comp=Z,909nm
SKLT **Songkhla** 50.68 241 P **P** **02 03 43.0 +2.0**
comp=Z,180nm,1.5s,comp=Z,2μm
KSH **Kashi** 50.78 292 P P 02 03 45.9 +4.2
KSH *e*PP PP 02 05 44.4 +6.7
KSH PcS **PcS** **02 08 59.8 +3.7**
KSH S S 02 11 03.5 +6.9
KSH SS **SS** **02 14 37.0 +6.1**
KSH pmax pmax
comp=Z,120nm,1.5s
KSH pmax pmax
comp=Z,2μm,6.9s
KSH LR LR
comp=Z,29μm,14.4s
KSH LR LR
comp=Z,22μm,14.4s
KSH LR LR
comp=Z,40μm,15.2s
PYUN **Piuthan** 50.80 276 *eP* **P** **02 03 41.8 -0.3**
comp=Z,1μm,1.1s
TRTT **Trang** 50.82 243 P **P** **02 03 43.5 +1.4**
comp=Z,118nm,1.7s,comp=Z,2μm
BOK **Bokaro** 50.86 269 *eP* **P** **02 03 40.7 -1.6**
BSSI **Bau Bau, Buton** 50.95 210 P **P** **02 03 46.0 +3.0**
EKS2 **Erkin-Say** 51.06 297 *eP* **P** **02 03 43.8 0.0**
EKS2 pmax pmax
comp=Z,81nm,1.0s
EKS2 MLR MLR
comp=Z,8μm,20.0s
EKS2 **Erkin-Say** 51.06 297 *eP* **P** **02 03 43.8 0.0**
comp=Z,81nm,1.0s
EKS2 LR LR
comp=Z,8μm,20.0s
HNR **Honiara** 51.73 159 PFAKE 02 04 00.0 +11
HNR LR LR
comp=Z,3μm,19.0s
DGPR **DIGLIPUR** 51.94 254 *eP* **P** **02 03 49.1 -1.3**
SKAG **Skagway** 51.99 40 *eP* **P** **02 03 52.4 +2.1**
comp=Z,75nm,1.3s
SKAG LR LR
comp=Z,2μm,20.0s
MNAS **Manas** 52.00 297 P **P** **02 03 51.1 +0.3**
MNAS pmax pmax
comp=Z,170nm,0.8s
KULM **Kulim** 52.05 240 ⇑P **P** **02 03 52.4 +1.1**
KULM **Kulim** 52.05 240 *eP* **P** **02 03 51.6 +0.3**
comp=Z,119nm,1.2s
KULM LR LR
comp=Z,4μm,19.0s
LGTI **Lohaghat** 52.20 279 *ex* P 02 03 57.1 +4.8
SFK **Sufi-Kurgan** 52.31 294 P **P** **02 03 53.3 0.0**
SFK pmax pmax
comp=Z,165nm,1.1s
OPA **Opana** 52.34 93 *eP* **P** **02 03 54.9 +1.5**
OPA pmax pmax
comp=Z,181nm,1.1s
OPA **Opana** 52.34 93 *eP* **P** **02 03 54.9 +1.5**
comp=Z,181nm,1.1s
IPM **Ipoh** 52.41 239 *eP* **P** **02 03 53.9 -0.1**
comp=Z,158nm,1.4s
IPM LR LR
comp=Z,5μm,20.0s
KIP **Kipapa** 52.48 93⇑ *eP* **P** **02 03 55.8 +1.4**
KIP pmax pmax
comp=Z,891nm,2.5s
KIP MLR MLR
comp=Z,10μm,16.0s
KIP **Kipapa** 52.48 93 *eP* **P** **02 03 55.9 +1.4**
comp=Z,144nm,1.3s
MMRI **Maumere** 52.61 207 P **P** **02 03 56.8 +1.4**
MYKOM **Kota Tinggi** 52.68 234 *eP* **P** **02 03 57.6 +1.7**
comp=Z,325nm,2.0s
MYKOM *e*PP **PP** **02 05 58.2 +2.9**
MYKOM LR LR
comp=Z,4μm,22.0s
SOEI **Soe** 52.99 204 *eP* **P** **02 03 58.4 +0.1**
comp=Z,903nm,1.9s
SOEI LR LR
comp=Z,4μm,21.0s
PBA **Port Blair** 53.08 252 *eP* P 02 03 59.2 +0.3
PBA IAmb IAmb 02 04 01.1
comp=Z,208nm,1.5s
KK31 **Karatay Array** 53.10 299 P **P** **02 03 57.9 -0.9**
KK31 pmax pmax
comp=Z,98nm,1.2s
KKAR **Karatay Array** 53.10 299 *eP* **P** **02 03 58.0 -0.8**
KKAR **Karatay Array** 53.10 299 *eP* **P** **02 03 58.0 -0.8**
DDI **Dehra Dun** 53.42 281 *eP* **P** **02 04 00.4 -0.9**
DDI IAmb IAmb 02 04 03.0
SDNR **Sundarnagar** 53.65 283 *eP* **P** **02 04 03.0 0.0**
SMLA **Simla** 53.69 282 *iP* **P** **02 04 02.8 -0.4**
DHRM **DHARAMSHALA** 53.78 284 *eP* **P** **02 04 02.9 -1.3**
IUG **Iuzhnay** 53.81 298⇑ *iP* **P** **02 04 04.1 -0.1**
comp=Z,984nm,1.7s
IUG *i* PP **PP** **02 06 07.2 +2.2**
IUG *eS* **S** **02 11 37.8 -0.3**
IUG LRM MLR 02 29 24.5
comp=Z,5μm,13.1s
SVE **Sverdlovsk** 53.92 318*d* *iP* **P** **02 04 05.4 +0.8**
SVE *e*PPP PPP 02 07 11.9
SVE *eS* **S** **02 11 38.0 -0.8**
SVE *e* 02 13 47.1
SVE *e*SS **SKiKP** **02 15 12.5 -3.9**
SVE pmax pmax
comp=Z,336nm,1.5s
SVE pmax pmax
comp=Z,1μm,15.5s
SVE MLR MLR
comp=Z,44μm,15.0s
SVE MLR MLR
comp=N,10μm,16.0s
SVE MLR MLR
comp=E,28μm,15.0s
COEN **Coen** 54.01 181 *eP* **P** **02 04 05.4 -0.2**
comp=E,47nm,1.3s
COEN LR LR
comp=Z,3μm,20.0s
THN **Thein Dam** 54.13 285 *eP* **P** **02 04 05.8 -0.6**
THN *ex* x 02 11 38.0
MTN **Manton Dam** 54.18 195 *eP* **P** **02 04 06.4 -0.4**
comp=Z,114nm,1.1s
CRAG **Craig** 54.41 44 PFAKE 02 04 20.0 +12
CRAG LR LR
comp=Z,2μm,18.0s
PPBI **Pangkal Pinang** 54.47 229 P **P** **02 04 10.3 +1.2**
comp=Z,75nm,2.1s,comp=Z,15μm
WRAK **Wrangell Islan** 54.48 43 *eP* **P** **02 04 10.7 +2.0**
comp=Z,52nm,1.3s
WRAK LR LR
comp=Z,2μm,18.0s
LHMI **Lhok Sumawe** 54.58 243 P P 02 04 13.1 +3.2
comp=Z,143nm,1.4s,comp=Z,5μm
TWSI **Taliwang, Sumb** 54.76 213 P **P** **02 04 11.5 +0.3**
comp=Z,55nm,1.1s,comp=Z,877nm
SRBI **Singaraja** 54.90 215 P **P** **02 04 12.0 -0.1**
comp=Z,97nm,2.9s,comp=Z,2μm
DLBC **Dease Lake** 54.92 40 *eP* **P** **02 04 14.2 +2.2**
comp=Z,125nm,1.5s
DLBC LR LR
comp=Z,2μm,20.0s
PSI **Prapat** 55.04 239 *eP* **P** **02 04 13.4 0.0**
PSI pmax pmax
comp=Z,82nm,1.2s
PSI MLR MLR
comp=Z,3μm,21.0s
PSI **Prapat** 55.04 239 *eP* **P** **02 04 13.4 0.0**
comp=Z,82nm,1.2s
PSI LR LR
comp=Z,3μm,21.0s
HPAH **Hawaii Prepara** 55.05 93 PFAKE 02 04 30.0 +17
HPAH LR LR
comp=Z,3μm,19.0s
ABJI **Asem Bagus** 55.08 217 P P 02 04 16.8 +3.4
comp=Z,84nm,2.6s,comp=Z,3μm
ARU **Arti** 55.13 318*c* *iP* **P** **02 04 13.2 -0.2**
ARU 02 05 13.2
ARU 02 06 13.2
ARU *eS* **S** **02 11 54.8 -0.3**
ARU 02 13 57.8
ARU pmax pmax
comp=Z,258nm,1.7s
ARU pmax pmax
comp=Z,892nm,8.9s
ARU smax smax
comp=N,910nm,11.1s
ARU MLR MLR
comp=Z,31μm,15.0s
ARU **Arti** 55.13 318 *eP* **P** **02 04 13.3 -0.1**
comp=Z,471nm,1.4s
ARU LR LR
comp=Z,32μm,18.0s
KCSI **Kotacane, Aceh** 55.27 241 P **P** **02 04 15.4 +0.5**
comp=Z,23nm,1.3s,comp=Z,1μm
CHLP **Challavanipeta** 55.28 265 *eP* **P** **02 04 14.9 -0.1**
CHLP IAmb IAmb 02 04 26.1
comp=Z,437nm,2.0s
CHLP *eS* **S** **02 11 58.9 +0.9**
CHLP IVMs_BB IVMs_BB 02 31 21.6
comp=Z,2μm,15.8s
POHA **Pohakuloa** 55.34 93 *eP* **P** **02 04 16.1 +0.4**
comp=Z,140nm,1.1s
POHA LR LR
comp=Z,3μm,18.0s
CMBY **CAMPBELL BAY** 55.40 247 *eP* **P** **02 04 15.9 +0.1**
CMBY IAmb IAmb 02 04 17.8
comp=Z,112nm,1.1s
BKNI **Bangkinang** 55.56 235 PFAKE 02 04 30.0 +13
BKNI LR LR
comp=Z,3μm,20.0s
UWE **Uwekahuna** 55.72 93 PFAKE 02 04 30.0 +12
UWE LR LR
comp=Z,3μm,18.0s
NGJI **Ngawi** 56.02 220 P P 02 04 23.7 +3.5
comp=Z,88nm,2.6s,comp=Z,3μm
MNSI **Mandailing Nat** 56.13 237 P **P** **02 04 20.7 -0.4**
comp=Z,41nm,1.4s,comp=Z,6μm
SMRI **Semarang** 56.25 221 P **P** **02 04 21.9 0.0**
comp=Z,232nm,1.9s,comp=Z,4μm
SMRI **Semarang** 56.25 221 PFAKE 02 04 30.0 +8.1
SMRI LR LR
comp=Z,3μm,20.0s
SDSI **Sungai Dareh** 56.30 234 P **P** **02 04 23.7 +1.4**
comp=Z,181nm,2.0s,comp=Z,69μm
VIS **Vishakhapatnam** 56.30 265 *eP* **P** **02 04 21.4 -0.9**
PDSI **Padang** 56.88 235 P **P** **02 04 28.5 +2.0**
comp=Z,24nm,2.8s
UGM **Wanagama** 56.95 220 P **P** **02 04 27.6 +0.7**
comp=Z,195nm,1.9s
UGM **Wanagama** 56.95 220 *eP* **P** **02 04 26.1 -0.7**
comp=Z,196nm,1.1s
UGM LR LR
comp=Z,3μm,21.0s
GSI **Gunungsitoli** 57.05 239 P **P** **02 04 27.8 +0.2**
comp=Z,307nm,2.1s,comp=Z,8μm
GSI **Gunungsitoli** 57.05 239 *eP* **P** **02 04 28.3 +0.7**
comp=Z,488nm,1.4s
GSI LR LR
comp=Z,6μm,20.0s
AB31 **Akbulak array** 57.24 309 *i* P **P** **02 04 28.4 -0.2**
AB31 pmax pmax
comp=Z,74nm,0.9s
ABKAR **Akbulak array** 57.24 309 *eP* **P** **02 04 28.5 -0.1**
LHSI **Lahat** 57.33 230 P P 02 04 33.5 +3.9
comp=Z,215nm,2.0s,comp=Z,6μm
KLI **Kotabumi** 57.40 228 P **P** **02 04 30.4 +0.3**
comp=Z,132nm,1.7s,comp=Z,3μm
MDSI **Maura Dua** 57.48 229 P **P** **02 04 30.5 -0.1**
comp=Z,121nm,2.3s,comp=Z,3μm
LEM **Lembang** 57.51 224 P P 02 04 36.1 +5.1
comp=Z,34nm,0.7s,baz=61,slow=12,SNR=5.3
MASI **Maura Aman, Be** 57.55 232 P **P** **02 04 32.2 +1.1**
comp=Z,270nm,1.7s,comp=Z,5μm
BHPL **Bhopal** 57.63 274 *eP* **P** **02 04 29.4 -2.3**
KBS **Kingsbay** 57.73 350 *eP* **P** **02 04 32.6 +1.0**
KBS pmax pmax
comp=Z,172nm,1.3s
KBS MLR MLR
comp=Z,4μm,18.0s
KBS **Kingsbay** 57.73 350 *eP* **P** **02 04 32.5 +1.0**
comp=Z,172nm,1.3s
KBS LR LR
comp=Z,4μm,18.0s
AKTO **Aktyubinsk** 57.86 311 P **P** **02 04 32.1 -0.8**
AKTO pmax pmax
comp=Z,125nm,1.2s
PVM **Polavaram** 57.88 266 *eP* **P** **02 04 33.3 -0.2**
PVM IAmb IAmb 02 04 35.3
comp=Z,461nm,2.6s
PVM *eS* **S** **02 12 33.1 +0.6**
PVM IVMs_BB IVMs_BB 02 31 55.6
comp=Z,1μm,17.7s
KBL **Kabul** 57.97 290 *eP* **P** **02 04 33.5 -0.7**
KBL pmax pmax
comp=Z,154nm,0.9s
KBL MLR MLR
comp=Z,11μm,18.0s
KBL **Kabul** 57.97 290 *eP* **P** **02 04 33.5 -0.7**
comp=Z,154nm,0.9s
KBL LR LR
comp=Z,11μm,18.0s
CISI **Cisompet, Garu** 58.02 223 PFAKE 02 04 50.0 +16
CISI LR LR
comp=Z,2μm,20.0s
MNAI **Manna** 58.09 230 PFAKE 02 04 50.0 +15
MNAI LR LR
comp=Z,2μm,18.0s
HSPB **Hornsund (broa** 58.61 348 *eP* P 02 04 47.2 +9.4
HSPB *eS* **S** **02 12 42.1 +1.6**
RPR **Rampur** 58.71 269 *eP* **P** **02 04 38.8 -0.5**
RPR IAmb IAmb 02 04 40.6
comp=Z,129nm,1.4s
RPR *eS* **S** **02 12 44.0 +0.7**
RPR IVMs_BB IVMs_BB 02 33 23.6
comp=Z,2μm,14.2s
RES **Resolute Bay** 58.96 15 *eP* **P** **02 04 39.8 -0.4**
RES pmax pmax
comp=Z,85nm,0.9s
RES MLR MLR
comp=Z,5μm,20.0s
RES **Resolute Bay** 58.96 15 *eP* **P** **02 04 39.8 -0.4**
comp=Z,85nm,0.9s
RES LR LR
comp=Z,5μm,20.0s
SRSP **Sriramsagar** 59.40 270 *eP* **P** **02 04 43.3 -0.8**
SRSP IAmb IAmb 02 04 45.1
comp=Z,196nm,1.4s
SRSP *eS* **S** **02 12 51.4 -0.8**
SRSP IVMs_BB IVMs_BB 02 35 35.7
comp=Z,2μm,14.5s
LVZ **Lovozero** 59.87 336⇑ *eP* **P** **02 04 46.5 -0.1**
LVZ pmax pmax
comp=Z,124nm,2.5s
LVZ **Lovozero** 59.87 336 PFAKE 02 05 00.0 +13
LVZ LR LR
comp=Z,6μm,20.0s
ADKI **Addanki** 59.99 266 *eP* **P** **02 04 47.2 -1.0**
ADKI IAmb IAmb 02 04 50.2
comp=Z,290nm,2.2s
ADKI *eS* **S** **02 13 01.1 +1.2**
ADKI IVMs_BB IVMs_BB 02 36 48.4
comp=Z,1μm,16.4s
YKW3 **Yellowknife Ar** 60.01 32 *eP* **P** **02 04 46.9 -0.7**
comp=Z,137nm,1.6s
YKA **Yellowknife Ar** 60.05 32 P **P** **02 04 46.9 -1.0**
comp=Z,15nm,0.9s,baz=301,slow=6.5,SNR=193
YKA PKPPKP **P'P'df** **02 34 15.4 -4.6**
comp=Z,0.9nm,1.0s,baz=114,slow=2.0,SNR=6.4
YKA PKP2bc 02 34 25.2
comp=Z,0.6nm,0.8s,baz=113,slow=2.1,SNR=4.7
YKB5 **Yellowknife Ar** 60.05 32 *eP* **P** **02 04 46.5 -1.4**
NJS **Nagarjunasagar** 60.07 267 *eP* **P** **02 04 48.1 -0.6**
NJS IAmb IAmb 02 04 49.9
comp=Z,682nm,3.2s
NJS *eS* **S** **02 13 00.0 -0.9**
NJS IVMs_BB IVMs_BB 02 41 42.4
comp=Z,1μm,12.4s
HYB **Hyderabad** 60.13 268 *iP* **P** **02 04 49.0 -0.1**
HYB *e* 02 04 57.0
HYB *e*PcP **PcP** **02 05 35.0 +0.2**
HYB *e*PP **PP** **02 07 06.0 +4.3**
HYB *eS* **S** **02 13 02.0 +0.3**
HYB *e*SS SS 02 17 06.0 +7.3
HYB **Hyderabad** 60.13 268 *eP* **P** **02 04 47.9 -1.3**
HYBB **Hyderabad (bro** 60.13 268 *eP* **P** **02 04 48.5 -0.6**
HYBB IAmb IAmb 02 04 50.2
comp=Z,776nm,2.9s
HYBB *eS* **S** **02 13 00.9 -0.9**
HYBB IVMs_BB IVMs_BB 02 37 41.5
comp=Z,1μm,13.5s
CTAO **Charters Tower** 60.15 177 *eP* **P** **02 04 48.0 -1.0**
CTAO pmax pmax
comp=Z,59nm,1.7s
CTAO **Charters Tower** 60.15 177 *eP* **P** **02 04 48.0 -1.0**
comp=Z,59nm,1.7s
APA **Apatity** 60.44 336⇑ *iP* **P** **02 04 51.0 +0.5**
APA *i* S **S** **02 13 02.0 -2.4**
APA *i* PS **PnS** **02 13 14.0 -4.2**
APA *i* 02 14 38.0
APA *i* SS **SS** **02 17 00.0 -1.5**
APA *i* SSS SSS 02 19 42.0
APA MLR MLR
comp=Z,7μm,20.0s

FITZ Fitzroy Crossi 60.52 200 *e*P P 02 04 51.0 -0.6
comp=Z,100nm,1.4s
WRAB Tennant Creek 60.58 190*c* *i*P P 02 04 51.0 -1.0
WRAB pmax pmax
comp=Z,34nm,0.8s
WRAB MLR MLR
comp=Z,4μm,18.0s
WRAB Tennant Creek 60.58 190 *e*P P 02 04 51.2 -0.8
comp=Z,212nm,1.9s
WB2 Warramunga Arr 60.59 190 *e*P P 02 04 50.8 -1.2
comp=Z,140nm,1.7s
WRA Warramunga Arr 60.59 190 P P 02 04 50.3 -1.7
comp=Z,16nm,0.7s,baz=7.6,slow=7.0,SNR=23
WRA LR LR 02 29 32.7
comp=Z,1μm,21.1s,baz=20,slow=34
WRA PKP2bc 02 34 21.5
comp=Z,2.4nm,1.1s,baz=187,slow=1.9,SNR=5.3
WRA Warramunga Arr 60.59 190 *i*P P 02 04 50.5 -1.6
WRA pmax pmax
comp=Z,16nm,0.7s
SRLM Srisailam 60.66 267 *e*P P 02 04 52.0 -0.8
SRLM IAmb IAmb 02 04 53.8
comp=Z,657nm,3.2s
SRLM *e*S S 02 13 07.2 -1.3
SRLM IVMs_BB IVMs_BB 02 36 21.6
comp=Z,2μm,14.0s
TMCR Tamitsa 60.74 331 *e*P P 02 04 52.6 0.0
TMCR pmax pmax
comp=Z,70nm,1.1s
RCLA Racherla 61.00 266 *e*P P 02 04 54.2 -0.9
RCLA IAmb IAmb 02 04 56.4
comp=Z,286nm,2.5s
RCLA *e*S S 02 13 12.8 -0.1
RCLA IVMs_BB IVMs_BB 02 34 34.4
comp=Z,1μm,15.9s
KEV Kevo 61.02 339 PFAKE 02 05 10.0 +16
KEV LR LR
comp=Z,7μm,20.0s
KLRI Killari 61.24 270 *e*P P 02 04 55.8 -1.0
KLRI IAmb IAmb 02 04 57.5
comp=Z,309nm,1.6s
KLRI *e*S S 02 13 13.9 -2.1
KLRI IVMs_BB IVMs_BB 02 38 57.0
comp=Z,2μm,12.7s
SKHT Srikalahasti 61.48 264 *e*P P 02 04 58.6 +0.3
SKHT IAmb IAmb 02 05 00.3
comp=Z,685nm,2.9s
SKHT *e*S S 02 13 20.5 +1.5
SKHT IVMs_BB IVMs_BB 02 43 26.4
comp=Z,1μm,13.0s
MDRS Chennai 61.49 263 *e*P P 02 04 58.3 -0.1
ARCES ARCESS Array B 61.56 339 P P 02 04 58.6 +0.5
comp=Z,4.4nm,0.7s,baz=39,slow=7.9,SNR=13
ARCES LR LR 02 37 30.0
comp=Z,7μm,18.9s,baz=27,slow=42
ARCES ARCESS Array B 61.56 339 P P 02 04 58.6 +0.5
ARCES pmax pmax
comp=Z,6.0nm,0.8s
ARE0 ARCESS Array S 61.56 339 PFAKE 02 05 10.0 +12
ARE0 LR LR
comp=Z,6μm,20.0s
KTK1 Kautokeino 62.52 340 *e*P P 02 05 05.0 +0.5
URV Uravakonda 62.61 267 *e*P P 02 05 05.0 -0.9
URV IAmb IAmb 02 05 07.1
comp=Z,499nm,2.9s
URV *e*S S 02 13 33.1 -0.2
URV IVMs_BB IVMs_BB 02 37 58.8
comp=Z,2μm,14.9s
DAG Danmarks Havn 62.65 356⇑ *i*P P 02 05 05.8 +0.5
POO Poona 63.06 272 *e*P P 02 05 07.7 -1.3
POO IAmb IAmb 02 05 10.6
comp=Z,95nm,1.2s
A04D Lummi Island 63.15 48 P P 02 05 09.3 +0.3
baz=301
NLWA Neilton Lookou 63.17 50 *e*P P 02 05 10.9 +1.7
comp=Z,93nm,1.3s
NLWA LR LR
comp=Z,2μm,20.0s
TRO Tromso 63.19 341 *e*P P 02 05 10.1 +1.1
BHJ Bhuj 63.52 279 *e*P P 02 05 12.3 +0.5
B05A Bryant 63.74 48 P P 02 05 13.4 +0.5
baz=302
B05A S S 02 13 47.0 +0.5
baz=302
E03A Lebam 63.79 50 *e*P P 02 05 15.0 +1.7
comp=Z,134nm,1.3s
E03A LR LR
comp=Z,1μm,20.0s
GEYT Alibeck 63.85 299 P P 02 05 13.0 -0.9
comp=Z,24nm,0.9s,baz=33,slow=3.5,SNR=55
GEYT LR LR 02 35 18.7
comp=Z,8μm,18.9s,baz=40,slow=38
B06A Marblemount 63.95 48 *e*P P 02 05 15.2 +1.0
comp=Z,91nm,1.5s
B06A LR LR
comp=Z,2μm,18.0s
F03A Seaside 64.12 51 *e*P P 02 05 17.1 +1.6
comp=Z,247nm,1.5s
F03A LR LR
comp=Z,2μm,20.0s
AS01 Alice Springs 64.31 190 *e*P P 02 05 16.0 -0.8
AS31 Alice Springs 64.32 190 *e*P P 02 05 16.3 -0.6
comp=Z,5.0nm,0.8s
ASAR Alice Springs 64.32 190 P P 02 05 15.9 -1.0
comp=Z,9.1nm,0.9s,baz=7.3,slow=5.6,SNR=42
ASAR LR LR 02 31 48.5
comp=Z,2μm,21.7s,baz=4.5,slow=35
ASAR PKP2bc 02 34 13.4
comp=Z,2.0nm,1.1s,baz=176,slow=3.9,SNR=5.4
ASAR Alice Springs 64.32 190 P P 02 05 16.0 -1.0
ASAR pmax pmax
comp=Z,9.0nm,0.9s
F04D Rainier, OR 64.36 50 P P 02 05 17.8 +0.7
baz=302
D05A Enumclaw 64.37 49 *e*P P 02 05 19.1 +2.0
comp=Z,276nm,1.8s
C06D Leavenworth 64.60 48 P P 02 05 18.9 +0.3
baz=303
G03D McMinnville, O 64.68 51 P P 02 05 19.5 +0.4
baz=302
LON Longmire 64.71 49 *e*P P 02 05 20.4 +1.0
LON pmax pmax
comp=Z,18nm,1.1s
LON MLR MLR
comp=Z,1μm,21.0s
LON Longmire 64.71 49 *e*P P 02 05 20.4 +1.0
comp=Z,18nm,1.1s
LON LR LR
comp=Z,1μm,21.0s
F04A Amboy 64.79 50 *e*P P 02 05 21.3 +1.4
comp=Z,120nm,1.4s
F04A LR LR
comp=Z,1μm,19.0s
GOA Goa 64.90 269 *e*P P 02 05 18.6 -2.4
COR Corvallis 64.99 52 *e*P P 02 05 23.3 +2.1
COR pmax pmax
comp=Z,168nm,1.4s
COR MLR MLR
comp=Z,2μm,19.0s
COR Corvallis 64.99 52 *e*P P 02 05 23.3 +2.1
comp=Z,168nm,1.4s
COR LR LR
comp=Z,2μm,19.0s
LTY Liberty 65.09 48 *e*P P 02 05 22.5 +0.6
comp=Z,84nm,1.4s
LTY LR LR
comp=Z,2μm,20.0s
MBWA Marble Bar 65.13 205 P P 02 05 20.9 -1.4
MBWA P P 02 05 20.9 -1.4
MBWA Marble Bar 65.13 205 P P 02 05 20.9 -1.4
B08A Colville Reser 65.24 47 *e*P P 02 05 23.8 +0.9
comp=Z,131nm,1.5s
B08A LR LR
comp=Z,1μm,20.0s
XMAS Kiritimati 65.26 110 PFAKE 02 05 40.0 +17
XMAS LR LR
comp=Z,9μm,18.0s
I03D Drain, OR 65.44 53 P P 02 05 25.4 +1.3
baz=303,SNR=13
DZM Mont Dzumac 65.58 157 LR LR 02 35 08.9
comp=Z,2μm,18.4s,baz=346,slow=37
H04A Detroit Lake 65.61 51 *e*P P 02 05 26.6 +1.4
comp=Z,137nm,1.4s
H04A LR LR
comp=Z,1μm,18.0s
MOS Moscow 65.70 323α *i*P P 02 05 25.3 -0.3
MOS *e* 02 07 46.0
MOS *i*S S 02 14 09.1 -1.3
MOS *e* 02 14 40.5
MOS *e* 02 15 19.0
MOS *e*SS SS 02 18 21.0 -2.8
MOS pmax pmax
comp=Z,1μm,3.4s
MOS pmax pmax
comp=N,500nm,2.8s
MOS pmax pmax
comp=E,800nm,4.6s
MOS pmax pmax
comp=Z,182nm,1.8s
MOS smax smax
comp=N,2μm,3.9s
MOS smax smax
comp=E,2μm,5.6s
MOS MLR MLR
comp=N,11μm,16.0s
MOS MLR MLR
comp=E,10μm,16.0s
MOS MLR MLR
comp=Z,14μm,16.0s
G05D Wamic, OR 65.82 50 P P 02 05 27.3 +0.7
baz=304,SNR=7.9
I04A Tendick Farm, 65.96 52 P P 02 05 27.9 +0.3
baz=304,SNR=22
L02D Cave Junction, 66.13 54 P P 02 05 29.5 +0.8
baz=304,SNR=7.0
C09A Chrisman Ranch 66.14 47 P P 02 05 28.7 +0.1
D08A Wollman Farm, 66.19 48 *e*P P 02 05 30.0 +1.0
comp=Z,173nm,1.8s
HAWA Hanford 66.22 49 PFAKE 02 05 40.0 +11
HAWA LR LR
comp=Z,1μm,21.0s
G06A Carlson Farm, 66.22 50 *e*P P 02 05 30.6 +1.3
comp=Z,197nm,1.8s
HUMO Hull Mountain 66.28 54 *e*P P 02 05 31.3 +1.7
comp=Z,76nm,1.6s
HUMO LR LR
comp=Z,2μm,22.0s
PUL Pulkovo 66.29 330⇓ *e*P P 02 05 30.4 +1.1
PUL pmax pmax
comp=Z,76nm,0.6s
PUL MLR MLR
comp=Z,10μm,17.0s
I05D Terrebonne, OR 66.30 51 P P 02 05 30.5 +0.8
baz=304,SNR=12
VRH Novokhopyorsk 66.37 318 *e*P P 02 05 29.8 -0.1
VRH *e**PP sP 02 05 38.1 -0.2
VRH *e*S S 02 14 15.3 -3.4
VRH pmax pmax
comp=Z,90nm,1.3s
VRH smax smax
comp=N,990nm,10.8s
VRH MLR MLR
comp=Z,24μm,15.0s
NEW Newport 66.52 46 LR LR 02 30 53.5
comp=Z,1μm,20.4s,baz=324,slow=33
NEW Newport 66.52 46 P P 02 05 31.3 +0.2
baz=305,SNR=41
NEW Newport 66.52 46 *e*P P 02 05 31.5 +0.4
NEW pmax pmax
comp=Z,94nm,1.3s
NEW Newport 66.52 46 *e*P P 02 05 31.5 +0.4
comp=Z,94nm,1.3s
OBN Obninsk 66.55 323 P P 02 05 31.4 +0.4
comp=Z,16nm,0.4s,baz=41,slow=2.4,SNR=19
OBN Obninsk 66.55 323*c* *i*P P 02 05 31.2 +0.1
OBN *e* 02 05 39.3
OBN *i* 02 06 01.8
OBN *i* 02 07 56.8
OBN *i*S S 02 14 13.0 -7.8
OBN pmax pmax
comp=Z,66nm,1.2s
OBN MLR MLR
comp=Z,15μm,16.0s
OBN Obninsk 66.55 323 *e*P P 02 05 32.0 +1.0
comp=Z,128nm,1.0s
OBN LR LR
comp=Z,16μm,19.0s
JCC Jacoby Creek, 66.60 56 *e*P P 02 05 33.7 +2.1
comp=Z,121nm,1.4s
FIA1 FINESS Array S 66.75 332 *e*P P 02 05 32.0 -0.2
FIA1 *e*PP PP 02 07 59.4 +0.6
FINES FINESS Array B 66.75 332 P P 02 05 31.6 -0.6
comp=Z,19nm,0.7s,baz=47,slow=7.6,SNR=93
FINES PP PP 02 07 58.5 -0.2
comp=Z,5.3nm,0.8s,baz=53,slow=9.8,SNR=2.5
FINES LR LR 02 36 19.5
comp=Z,10μm,21.8s,baz=36,slow=37
FINES FINESS Array B 66.75 332 *i*P P 02 05 32.2 0.0
FINES pmax pmax
comp=Z,19nm,0.6s
KHMM Horse Mountain 66.76 56 *e*P P 02 05 35.0 +2.1
comp=Z,96nm,1.3s
KHMM LR LR
comp=Z,1μm,20.0s
TRD Trivandrum 66.87 261 *e*P P 02 05 31.8 -1.9
MOR8 Moi Rana 66.91 340 *e*P P 02 05 32.2 -0.9
MOR8 IAmb IAmb 02 05 33.4
comp=Z,36nm,0.6s
YBH Yreka Blue Hor 66.92 54 *e*P P 02 05 34.8 +1.0
YBH pmax pmax
comp=Z,73nm,1.4s
YBH MLR MLR
comp=Z,1μm,20.0s
YBH Yreka Blue Hor 66.92 54 *e*P P 02 05 34.8 +1.0
comp=Z,73nm,1.4s
YBH LR LR
comp=Z,1μm,20.0s
LPSR Galich'ya Gora 66.95 320 *e*P P 02 05 33.6 0.0
LPSR *e**PP sP 02 05 42.4 +0.4
LPSR *e*S S 02 14 21.0 -4.6
LPSR pmax pmax
comp=Z,80nm,1.1s
LPSR smax smax
comp=N,680nm,9.8s
LPSR MLR MLR
comp=Z,12μm,14.0s
J05D Fort Rock, OR 66.95 52 P P 02 05 35.1 +1.0
baz=304,SNR=42
K04D Chiloquin, OR 67.01 53 P P 02 05 35.0 +0.6
baz=304
M02C Callahan 67.02 55 P P 02 05 35.6 +1.1
baz=304,SNR=22
KMRM Mail Ridge 67.13 56 *e*P P 02 05 37.4 +2.2
comp=Z,138nm,1.7s
KMRM *e*PP PP 02 07 58.3 -4.5
N02D Trinity Center 67.34 55 P P 02 05 37.6 +1.1
baz=304,SNR=12
SUMG Summit 67.39 1 *i*P P 02 05 38.1 +1.5
comp=Z,77nm,1.1s
SUMG Summit 67.39 1 *e*P P 02 05 36.8 +0.2
SUMG pmax pmax
comp=Z,141nm,1.1s
SUMG MLR MLR
comp=Z,6μm,21.0s
SUMG Summit 67.39 1 *e*P P 02 05 36.8 +0.2
comp=Z,141nm,1.1s
SUMG LR LR
comp=Z,6μm,21.0s
M04C Macdoel 67.43 54 P P 02 05 38.1 +1.1
baz=304,SNR=31
K05A Summer Lake 67.47 53 *e*P P 02 05 38.5 +1.1
comp=Z,269nm,1.4s
K05A LR LR
comp=Z,2μm,19.0s
VSR Storozhevoye 67.66 319 *e*P P 02 05 37.9 -0.3
VSR *e**PP sP 02 05 46.5 0.0
VSR *e*S S 02 14 31.5 -2.8
VSR pmax pmax
comp=Z,120nm,1.5s
VSR smax smax
comp=N,910nm,10.0s
VSR MLR MLR
comp=Z,12μm,13.0s
WDC Whiskeytown Da 67.67 55 *e*P P 02 05 39.8 +1.4
WDC pmax pmax
comp=Z,48nm,1.2s
WDC MLR MLR
comp=Z,1μm,19.0s
WDC Whiskeytown Da 67.67 55 *e*P P 02 05 39.8 +1.4
comp=Z,48nm,1.2s
WDC LR LR
comp=Z,1μm,19.0s
F10A Beach Ranch, E 67.77 48 *e*P P 02 05 39.5 +0.4
comp=Z,154nm,1.8s
F10A LR LR
comp=Z,1μm,20.0s
WALA Waterton Lakes 67.79 44 *e*P P 02 05 40.2 +1.0
comp=Z,76nm,1.3s
WALA LR LR
comp=Z,2μm,18.0s
AFI Afiamalu 67.93 133 LR LR 02 33 09.7
comp=Z,2μm,18.4s,baz=326,slow=34
COCO West Island 67.95 230 P P 02 05 41.8 +1.5
COCO P P 02 05 41.8 +1.5
COCO West Island 67.95 230 P P 02 05 41.8 +1.5
HEL Helsinki 68.02 332 PFAKE 02 05 50.0 +10
HEL LR LR
comp=Z,4μm,22.0s
BSMT Bassoo Peak 68.03 45 *e*P P 02 05 41.7 +0.8
BLMT Blacktail Moun 68.17 45 *e*P P 02 05 42.6 +0.9
HOPS Hopland Field 68.23 57 PFAKE 02 05 50.0 +8.0
HOPS LR LR
comp=Z,2μm,20.0s
O03D Paynes Creek 68.30 55 P P 02 05 42.7 +0.1
baz=305,SNR=20
MOD Modoc Plateau 68.30 53 *e*P P 02 05 44.0 +1.3
comp=Z,115nm,1.6s
JTMT Jette 68.37 45 *e*P P 02 05 43.4 +0.5
BMO Blue Mountains 68.38 49 *e*P P 02 05 43.5 +0.5
BMO pmax pmax
comp=Z,70nm,1.4s
BMO Blue Mountains 68.38 49 *e*P P 02 05 43.5 +0.5
comp=Z,70nm,1.4s
YBMT Yellow Bay 68.45 45 *e*P P 02 05 43.8 +0.4
VSU Vasula 68.54 330*c* *i*P P 02 05 43.3 -0.2
VSU pmax pmax
comp=Z,487nm,2.5s
VSU MLR MLR
comp=Z,20μm,17.0s
SWMT Swartz Lake 68.67 45 *e*P P 02 05 45.0 +0.3
NSS Namsos 68.84 340 *e*P P 02 05 46.2 +0.9
MCCM Marconi Confer 68.84 58 PFAKE 02 06 00.0 +14
MCCM LR LR
comp=Z,2μm,21.0s
ORV Oroville 68.91 56 *e*P P 02 05 46.9 +0.7
ORV pmax pmax
comp=Z,93nm,1.6s
ORV Oroville 68.91 56 *e*P P 02 05 46.9 +0.7
comp=Z,93nm,1.6s
WVOR Wild Horse Val 69.00 52 *e*P P 02 05 47.5 +0.5
WVOR pmax pmax
comp=Z,136nm,1.5s
WVOR Wild Horse Val 69.00 52 *e*P P 02 05 47.5 +0.5
comp=Z,136nm,1.5s
SCO Scoresbysund 69.01 355 *i*P P 02 05 47.5 +1.2
comp=Z,103nm,1.7s
MSO Missoula 69.11 46 P P 02 05 47.5 0.0
baz=307,SNR=41
MSO Missoula 69.11 46 *e*P P 02 05 48.1 +0.7
comp=Z,93nm,1.4s
MSO LR LR
comp=Z,2μm,18.0s
GOF Gofitskoye 69.26 312⇑ *i*P P 02 05 48.8 +0.5
GOF *e*S S 02 14 54.6 +1.0
GOF pmax pmax
comp=Z,89nm,1.0s
GOF smax smax
comp=E,36nm,1.4s
CHMT Chamberlain Mo 69.43 46 *e*P P 02 05 49.5 -0.1
AFDM Forest Hills D 69.60 56 *e*P P 02 05 51.5 +1.0
comp=E,48nm,1.3s
AFDM LR LR
comp=Z,1μm,21.0s
FFC Flin Flon 69.96 34 *e*P P 02 05 52.3 -0.1
FFC pmax pmax
comp=Z,75nm,1.1s
FFC MLR MLR
comp=Z,2μm,19.0s
FFC Flin Flon 69.96 34 *e*P P 02 05 52.3 -0.1
comp=Z,75nm,1.1s
FFC LR LR
comp=Z,2μm,19.0s
GUDG Gudauri 69.97 309 P P 02 05 53.8 +0.7
DGRG David-gareji 70.03 308 P P 02 05 53.9 +0.7
DGRG David-gareji 70.03 308 P P 02 05 53.9 +0.7
DUS Dusheti 70.06 309 P P 02 05 55.5 +2.1
DUS Dusheti 70.06 309 P P 02 05 55.5 +2.1
MFID Camas Ranch 70.09 50 *e*P P 02 05 54.1 +0.5
comp=Z,162nm,1.8s
ZEI Tsey 70.12 310 *e*P P 02 05 53.5 -0.4
ZEI *e*S S 02 15 02.4 -1.8
ZEI pmax pmax
comp=Z,92nm,0.8s
ZEI pmax pmax
comp=N,93nm,0.9s
ZEI pmax pmax
comp=E,88nm,0.8s
KIV Kislovodsk 70.12 311 *i*P P 02 05 54.5 +0.7
SNR=66
KIV Kislovodsk 70.12 311*c* *i*P P 02 05 54.1 +0.3
KIV pmax pmax
comp=Z,222nm,1.0s
KIV Kislovodsk 70.12 311 *e*P P 02 05 55.0 +1.2
comp=Z,216nm,0.9s
KIV LR LR
comp=Z,6μm,21.0s
KIV Kislovodsk 70.12 311 P P 02 05 54.6 +0.8
SNR=137
KIV P P 02 05 54.6 +0.8
SNR=137
KIV Kislovodsk 70.12 311 pP P 02 05 54.6 +0.8
SNR=137
KBZ Khabaz 70.14 311 P P 02 05 53.6 -0.1
comp=Z,55nm,1.0s,baz=61,slow=5.3,SNR=67
KBZ S S 02 15 05.6 +1.8
comp=Z,0.3nm,0.5s,baz=34,slow=22,SNR=3.9
KBZ LR LR 02 42 26.5
comp=Z,10μm,18.0s,baz=28,slow=41
ILULI Ilulissat 70.23 6 *i*P P 02 05 53.9 +0.1
FCC Fort Churchill 70.25 28 *e*P P 02 05 54.4 +0.3
FCC pmax pmax
comp=Z,234nm,1.8s
FCC MLR MLR
comp=Z,3μm,20.0s
FCC Fort Churchill 70.25 28 *e*P P 02 05 54.4 +0.3
comp=Z,234nm,1.8s
FCC LR LR
comp=Z,3μm,20.0s
TBLG Delisi 70.25 308 P P 02 05 56.9 +2.3
TBLG Delisi 70.25 308 P P 02 05 56.8 +2.3
TBLU Trondheim 70.32 340 *e*P P 02 05 54.5 0.0
ONI Oni 70.50 310 P P 02 05 56.7 +0.6
ONI Oni 70.50 310 P P 02 05 56.7 +0.6
CMB Columbia Colle 70.50 56 *e*P P 02 05 56.2 +0.1
CMB pmax pmax
comp=Z,70nm,1.4s
CMB Columbia Colle 70.50 56 *e*P P 02 05 56.2 +0.1
comp=Z,70nm,1.4s
NEY Neytrino 70.53 310*c* *e*P P 02 05 56.8 +0.4
NEY pmax pmax
comp=Z,9.0nm,1.0s
LRM Limekiln Ridge 70.54 46 *e*P P 02 05 56.7 +0.2
SAO San Andreas Ge 70.57 58 *e*P P 02 05 57.6 +1.1
SAO pmax pmax
comp=Z,92nm,1.7s
SAO San Andreas Ge 70.57 58 *e*P P 02 05 57.6 +1.1
comp=Z,92nm,1.7s
IZAR Zarasai 70.60 328 *e*P P 02 05 56.7 +0.4
IZAR IAmb IAmb 02 06 07.2
comp=Z,54nm,1.2s
EGMT Eagleton 70.61 43 P P 02 05 56.8 +0.1
baz=309,SNR=42
EGMT Eagleton 70.61 43 *e*P P 02 05 56.8 +0.1
comp=Z,247nm,1.6s
EGMT LR LR
comp=Z,2μm,18.0s
IDID Didziasalis 70.70 327 *e*P P 02 05 57.3 +0.4
IDID IAmb IAmb 02 06 07.9
comp=Z,65nm,1.1s
DLMT Dillon 70.74 47 PFAKE 02 06 10.0 +12
DLMT LR LR
comp=Z,900nm,20.0s
ARMA Armidale 70.77 173 *e*P P 02 05 58.4 +0.8
comp=Z,70nm,1.6s
ISAL Salakas 70.78 328 *e*P P 02 05 57.8 +0.4
ISAL IAmb IAmb 02 06 08.3
comp=Z,69nm,1.0s
MICGM Minsk 70.78 326⇓ *i*P P 02 05 59.0 +1.5
MICGM PM 02 06 01.0
comp=Z,0.4nm,1.5s

MICGM ePcP **sP** **02 06 10.0 +4.1**
MICGM ePP **PP** **02 08 30.0 -3.8**
MICGM ePPP PPP 02 10 16.0
MICGM eS **S** **02 15 10.0 -1.1**
MICGM ePS PnS 02 15 28.0 -11
MICGM eSS SS 02 19 28.0 -14
MICGM eSSS SSS 02 22 20.0
MICGM eLQ LQ 02 31 50.0
MICGM LQM 02 34 20.0
comp=E,6.9nm,18.0s
MICGM eLR LR 02 36 20.0
MICGM LRM MLR 02 41 24.0
comp=Z,24nm,16.0s
MICGM LRM MLR 02 41 30.0
comp=Z,22nm,14.0s
MICGM LRM MLR 02 41 40.0
comp=E,13nm,14.0s
MNK Minsk 70.78 326 *d* *i*P **P** **02 05 59.0 +1.5**
HLID Hailey 70.82 49 P **P** **02 05 58.7 +0.6**
baz=308,SNR=38
HLID Hailey 70.82 49 *e*P **P** **02 05 58.6 +0.4**
comp=E,40nm,1.1s
HLID LR LR
comp=Z,2µm,19.0s
MCMT McKenzie Canyo 70.93 47 *e*P **P** **02 05 58.8 -0.1**
NACGM Naroch 70.97 327 *e*P **P** **02 05 59.0 +0.4**
NACGM eP **pP** **02 06 00.0 -4.7**
NACGM PM 02 06 09.0
comp=Z,0.3nm,0.8s
NACGM ePP **PP** **02 08 31.0 -4.4**
NACGM ePPP PPP 02 10 23.0
NACGM eS **S** **02 15 11.0 -2.2**
NACGM ePS **PnS** **02 15 48.0 +6.2**
NACGM eSS **SS** **02 19 42.0 -3.2**
NACGM eSSS SSS 02 23 26.0
NACGM eLQ LQ 02 32 02.0
NACGM eLR LR 02 34 20.0
NACGM LRM MLR 02 40 51.0
comp=N,8.4nm,14.0s
NACGM LRM MLR 02 41 00.0
comp=E,19nm,16.0s
NACGM LRM MLR 02 41 14.0
comp=Z,22nm,14.0s
BMN Battle Mountai 71.05 53 *e*P **P** **02 06 01.2 +1.6**
BMN pmax pmax
comp=Z,82nm,1.3s
BMN Battle Mountai 71.05 53 *e*P **P** **02 06 01.2 +1.6**
comp=Z,82nm,1.3s
BOZ Bozeman (W) 71.10 46 P **P** **02 06 00.6 +0.8**
baz=309,SNR=36
BOZ Bozeman (W) 71.10 46 *e*P **P** **02 06 00.3 +0.5**
BOZ pmax pmax
comp=Z,83nm,1.1s
BOZ MLR MLR
comp=Z,2µm,18.0s
BOZ Bozeman (W) 71.10 46 *e*P **P** **02 06 00.3 +0.5**
comp=Z,83nm,1.1s
BOZ LR LR
comp=Z,2µm,18.0s
AKH Akhalkalaki 71.19 309 P **P** **02 06 01.9 +1.5**
AKH Akhalkalaki 71.19 309 ⇑ *i*P **P** **02 06 02.3 +1.9**
GNI Garni 71.20 307 *i* P **P** **02 06 01.7 +1.2**
SNR=10
GNI Garni 71.20 307 *c* *i*P **P** **02 06 01.3 +0.8**
GNI pmax pmax
comp=Z,538nm,1.2s
GNI MLR MLR
comp=Z,15µm,18.0s
GNI Garni 71.20 307 *e*PP PP 02 08 40.7 +2.8
GNI LR LR
comp=Z,6µm,18.0s
GNI Garni 71.20 307 P **P** **02 06 01.9 +1.4**
SNR=26
GNI Garni 71.20 307 pP **P** **02 06 01.9 +1.4**
SNR=26
CHVG Ch'k'valeri 71.22 310 P **P** **02 06 02.2 +1.8**
CHVG Ch'k'valeri 71.22 310 ⇓ *i*P **P** **02 06 01.5 +1.1**
NVAR Mina Array Bea 71.58 55 P **P** **02 06 03.0 +0.1**
comp=Z,24nm,0.9s,baz=281,slow=6.3,SNR=8.2
NVAR LR LR 02 33 47.3
comp=Z,908nm,19.3s,baz=306,slow=33
NC405 NORSAR Array S 71.64 338 *e*P **P** **02 06 02.9 +0.3**
NC303 NORSAR Array S 71.65 338 *e*P **P** **02 06 03.2 +0.6**
NV11 Mina Array Sit 71.68 55 PFAKE 02 06 20.0 +17
NV11 LR LR
comp=Z,2µm,19.0s
QLMT Earthquake Lak 71.72 46 *e*P **P** **02 06 04.2 +0.6**
MLAC Mammoth, Mammo 71.73 56 P **P** **02 06 04.8 +1.0**
baz=307
NC204 NORSAR Array S 71.78 338 *e*P **P** **02 06 03.6 +0.1**
NB201 NORSAR Array S 71.81 338 *e*P **P** **02 06 04.2 +0.5**
NB2 NORSAR Subarra 71.84 338 P **P** **02 06 03.8 -0.1**
comp=Z,88nm,1.1s,baz=36,slow=6.2
NB2 NORSAR Subarra 71.84 338 P **P** **02 06 03.8 -0.1**
baz=36,slow=6.2
NOA NORSAR Array B 71.84 338 P **P** **02 06 03.7 -0.1**
comp=Z,21nm,0.9s,baz=36,slow=6.0,SNR=62
NOA LR LR 02 40 45.1
comp=Z,4µm,21.5s,baz=35,slow=38
NOA NORSAR Array B 71.84 338 P **P** **02 06 03.7 -0.1**
NOA pmax pmax
comp=Z,22nm,0.9s
NOA MLR MLR
comp=Z,4µm,21.5s
STKA Stephens Creek 71.87 182 P **P** **02 06 03.4 -0.7**
comp=Z,5.6nm,0.6s,baz=338,slow=7.1,SNR=11
STKA LR LR 02 37 43.9
comp=Z,1µm,20.7s,baz=0.2,slow=36
STKA Stephens Creek 71.87 182 *e*P **P** **02 06 03.7 -0.4**
STKA Stephens Creek 71.87 182 *e*P **P** **02 06 03.7 -0.4**
comp=Z,3.7nm,1.1s
BANOM Banah 71.88 289 *i*P **P** **02 06 05.7 +1.0**
SNR=45
BANOM Banah 71.88 289 P **P** **02 06 04.5 -0.2**
SNR=34
BANOM P **P** **02 06 04.5 -0.2**
SNR=34
BANOM P **sP** **02 06 12.8 -0.3**
SNR=15
BANOM P **sP** **02 06 12.8 -0.3**
SNR=15
BANOM Banah 71.88 289 P **P** **02 06 04.5 -0.2**
SNR=34
BANOM pP **sP** **02 06 12.8 -0.3**
SNR=15
NBO02 NORSAR Array S 71.94 338 *e*P **P** **02 06 04.6 +0.2**
BIDO Bidbid 71.97 286 P **P** **02 06 05.5 +0.3**
SNR=23
BIDO P **P** **02 06 05.5 +0.3**
SNR=23
BIDO Bidbid 71.97 286 pP **P** **02 06 05.5 +0.3**
SNR=23
NBO00 NORSAR Array S 71.98 338 *e*P **P** **02 06 05.2 +0.5**
NC602 NORSAR Array S 72.00 337 *e*P **P** **02 06 04.8 +0.1**
SOC Sochi 72.05 312 *c* *i*P **P** **02 06 05.8 +0.5**
SOC *e**PP **sP** **02 06 14.1 +0.4**
SOC *e*PPP PPP 02 10 31.0
SOC *i* S **S** **02 15 25.3 -0.8**
SOC *e* 02 20 03.8
SOC pmax pmax
comp=Z,71nm,1.1s
ELK Elko 72.06 52 *e*P **P** **02 06 07.2 +1.5**
ELK pmax pmax
comp=Z,82nm,1.6s
ELK MLR MLR
comp=Z,1µm,20.0s
ELK Elko 72.06 52 *e*P **P** **02 06 07.2 +1.5**
comp=Z,82nm,1.6s
ELK LR LR
comp=Z,1µm,20.0s
GCMT Greycliff 72.07 45 *e*P **P** **02 06 06.7 +1.1**
YMR Madison River 72.08 46 *e*P **P** **02 06 07.3 +1.5**
comp=Z,78nm,1.3s
NAO01 NORSAR Array S 72.10 338 *e*P **P** **02 06 05.7 +0.4**
YPM Purple Mountai 72.14 46 *e*P **P** **02 06 06.8 +0.5**
MCID Moose Creek 72.26 47 *e*P **P** **02 06 08.3 +1.5**
RCTC Rector, Farmer 72.27 57 P **P** **02 06 06.8 +0.1**
baz=307
YFT Old Faithful 72.29 46 *e*P **P** **02 06 09.8 +2.8**
comp=Z,99nm,1.3s
YFT LR LR
comp=Z,3µm,19.0s
SMDO Samad 72.31 285 P **P** **02 06 08.1 +0.7**
SNR=19
SMDO Samad 72.31 285 pP **P** **02 06 08.1 +0.7**
SNR=19

SMMC Simmler 72.38 59 P **P** **02 06 08.4 +0.9**
baz=307
SFJD Kangerlussuaq 72.44 6 LR LR 02 40 34.7
comp=Z,3µm,19.9s,baz=350,slow=38
SFJD Kangerlussuaq 72.44 6 *i*P **P** **02 06 07.9 +0.7**
SFJD Kangerlussuaq 72.44 6 *e*P **P** **02 06 08.4 +1.2**
SFJD pmax pmax
comp=Z,75nm,1.1s
SFJD Kangerlussuaq 72.44 6 *e*P **P** **02 06 08.4 +1.2**
comp=Z,75nm,1.1s
TIN Tinemaha, Big 72.46 56 P **P** **02 06 08.6 +0.5**
baz=308
H17A Grant Village 72.47 46 P **P** **02 06 10.5 +2.3**
baz=310,SNR=72
H17A Grant Village 72.47 46 *e*P **P** **02 06 10.3 +2.1**
comp=Z,108nm,1.1s
UOSS Minazif 72.53 288 *e*P **P** **02 06 08.0 -0.5**
comp=Z,14nm,1.4s
UOSS LR LR
comp=Z,5µm,20.0s
ANN Anapa 72.55 314 *e*P **P** **02 06 08.4 +0.1**
ANN *e* 02 06 17.4
ANN *e* 02 08 46.4
ANN *e*PPP PPP 02 10 35.2
ANN *e*S **S** **02 15 31.5 -0.3**
ANN *e* 02 16 12.0
ANN *e*SS **SS** **02 20 09.3 -0.6**
ANN *e*SSS SSS 02 23 16.3
ANN pmax pmax
comp=Z,137nm,1.9s
ANN smax smax
comp=N,850nm,9.1s
ANN smax smax
comp=E,2µm,9.2s
ANN MLR MLR
comp=E,10µm,17.0s
ANN MLR MLR
comp=N,11µm,17.0s
ANN MLR MLR
comp=Z,9µm,17.0s
IMW Indian Meadow 72.58 47 *e*P **P** **02 06 10.0 +1.1**
comp=Z,62nm,1.1s
FLWY Flagg Ranch 72.60 47 *e*P **P** **02 06 10.2 +1.3**
comp=Z,378nm,1.9s
HATD Hatta, Dubai 72.66 288 *i*P **P** **02 06 09.3 0.0**
SNR=21
HATD Hatta, Dubai 72.66 288 P **P** **02 06 09.7 +0.4**
SNR=55
HATD P **P** **02 06 09.7 +0.4**
SNR=55
HATD Hatta, Dubai 72.66 288 pP **P** **02 06 09.7 +0.4**
SNR=55
FXWY Fox Creek 72.69 47 *e*P **P** **02 06 10.6 +1.0**
comp=Z,87nm,1.4s
RLMT Red Lodge 72.72 45 P **P** **02 06 10.3 +0.7**
baz=310,SNR=36
RLMT Red Lodge 72.72 45 *e*P **P** **02 06 10.2 +0.6**
comp=Z,131nm,1.6s
RLMT LR LR
comp=Z,2µm,18.0s
PKM Mcpherson Peak 72.75 59 P **P** **02 06 10.5 +0.6**
baz=308,SNR=11
MOOW Moose Ponds 72.78 47 *e*P **P** **02 06 10.8 +0.8**
comp=Z,117nm,1.4s
ASHO Ashiyiah 72.79 288 *i*P **P** **02 06 10.0 -0.1**
SNR=21
ASHO Ashiyiah 72.79 288 P **P** **02 06 10.1 0.0**
SNR=50
ASHO P **P** **02 06 10.1 0.0**
SNR=50
ASHO Ashiyiah 72.79 288 pP **P** **02 06 10.1 0.0**
SNR=50
AKASG Malin Array Be 72.80 323 P **P** **02 06 09.3 -0.4**
comp=Z,18nm,0.6s,baz=43,slow=6.4,SNR=169
AKASG PP **PP** **02 08 51.2 +0.1**
comp=Z,5.2nm,0.8s,baz=42,slow=9.0,SNR=3.6
AKASG LR LR 02 41 18.3
comp=Z,9µm,18.1s,baz=45,slow=38
AKBB Malin Array Si 72.80 323 *e*P **P** **02 06 09.0 -0.7**
AKBB pmax pmax
comp=Z,153nm,1.3s
AKBB MLR MLR
comp=Z,10µm,18.0s
AKBB Malin Array Si 72.80 323 *e*P **P** **02 06 08.9 -0.7**
comp=Z,153nm,1.3s
AKBB LR LR
comp=Z,10µm,18.0s
KIEV Kiev 72.81 323 *c* *i*P **P** **02 06 09.5 -0.2**
KIEV pmax pmax
comp=Z,61nm,1.1s
KIEV MLR MLR
comp=Z,10µm,16.0s
KIEV Kiev 72.81 323 PFAKE 02 06 20.0 +10
KIEV LR LR
comp=Z,10µm,18.0s
AK11 Malin Array Si 72.84 323 *e*P **P** **02 06 10.1 +0.2**
HVU Hansel Valley 72.87 50 *e*P **P** **02 06 11.2 +0.7**
HVU pmax pmax
comp=Z,46nm,1.0s
HVU MLR MLR
comp=Z,1µm,18.0s
HVU Hansel Valley 72.87 50 *e*P **P** **02 06 11.2 +0.7**
comp=Z,46nm,1.0s
HVU LR LR
comp=Z,1µm,18.0s
NAZ Nazwa, Dubai 72.90 288 *i*P **P** **02 06 10.6 0.0**
SNR=33
NAZ Nazwa, Dubai 72.90 288 P **P** **02 06 10.7 0.0**
SNR=33
NAZ P **P** **02 06 10.7 0.0**
SNR=33
NAZ Nazwa, Dubai 72.90 288 pP **P** **02 06 10.7 0.0**
SNR=33
LOHW Long Hollow 72.95 47 *e*P **P** **02 06 12.0 +1.0**
comp=Z,102nm,1.5s
SNOW Snow King Moun 72.96 47 *e*P **P** **02 06 12.9 +1.8**
comp=Z,66nm,1.3s
SNOW LR LR
comp=Z,1µm,19.0s
REDW Red Top Meadow 72.97 47 *e*P **P** **02 06 12.0 +0.8**
comp=Z,122nm,1.5s
REDW LR LR
comp=Z,2µm,18.0s
GRAC Grapevine Rang 73.05 56 P **P** **02 06 12.4 +1.0**
baz=308,SNR=27
SUW Suwalki 73.09 328 *e*P **P** **02 06 11.3 0.0**
SUW *e*PcP **sP** **02 06 19.7 0.0**
SUW *e*S **S** **02 15 36.1 -1.4**
SUW LMZ LR 02 42 57.3
SUW Suwalki 73.09 328 ⇑ *e*P **P** **02 06 11.4 +0.1**
SUW *e* 02 06 19.8
SUW *e*S **S** **02 15 36.2 -1.3**
SUW MLR MLR
comp=Z,10µm,17.0s
SBC Santa Barbara 73.09 59 P **P** **02 06 12.0 +0.4**
baz=308
FAQ Al Faqa, Dubai 73.10 288 *i*P **P** **02 06 11.8 -0.1**
SNR=24
FAQ Al Faqa, Dubai 73.10 288 P **P** **02 06 11.8 -0.1**
SNR=29
FAQ P **P** **02 06 11.8 -0.1**
SNR=29
FAQ Al Faqa, Dubai 73.10 288 P **P** **02 06 11.8 -0.1**
SNR=29
MTUT Morton Thiokol 73.10 49 *e*P **P** **02 06 12.7 +0.9**
BBOO Buckleboo 73.12 187 *e*P **P** **02 06 12.3 +0.7**
comp=Z,120nm,1.7s
DGMT Dagmar 73.14 40 P **P** **02 06 11.8 -0.1**
baz=312,SNR=15
DGMT Dagmar 73.14 40 *e*P **P** **02 06 12.5 +0.7**
comp=Z,82nm,1.0s
DGMT LR LR
comp=Z,2µm,21.0s
ISA Isabella, Lake 73.15 57 P **P** **02 06 11.7 -0.4**
baz=308,SNR=5.6
ISA Isabella, Lake 73.15 57 *e*P **P** **02 06 12.5 +0.4**
ISA pmax pmax
comp=Z,44nm,1.4s
ISA MLR MLR
comp=Z,1µm,20.0s
ISA Isabella, Lake 73.15 57 *e*P **P** **02 06 12.5 +0.4**
comp=Z,44nm,1.4s
ISA LR LR
comp=Z,1µm,20.0s
AHID Auburn Hatcher 73.21 48 *e*P **P** **02 06 13.5 +1.0**
comp=Z,88nm,1.5s
ARVC Arvin 73.25 58 P **P** **02 06 12.8 +0.2**
baz=308,SNR=9.3
BGU Big Grassy Mou 73.26 50 *e*P **P** **02 06 13.7 +0.9**
comp=Z,61nm,1.5s
ARQ Araqi 73.26 287 P **P** **02 06 13.8 +0.9**
SNR=22
ARQ Araqi 73.26 287 pP **P** **02 06 13.8 +0.9**
SNR=22
LAO LASA Array 73.31 42 P **P** **02 06 13.2 +0.3**
baz=312,SNR=16
LAO LASA Array 73.31 42 *e*P **P** **02 06 14.1 +1.2**
comp=Z,273nm,1.7s
LAO LR LR
comp=Z,2µm,20.0s
R11A Troy Canyon, C 73.32 54 P **P** **02 06 13.9 +0.6**
baz=308,SNR=51
R11A Troy Canyon, C 73.32 54 *e*P **P** **02 06 13.7 +0.4**
comp=Z,107nm,1.5s
R11A LR LR
comp=Z,1µm,19.0s
DAC Darwin (Calif) 73.34 56 *e*P **P** **02 06 14.0 +0.6**
DAC pmax pmax
comp=Z,46nm,1.3s
DAC Darwin (Calif) 73.34 56 *e*P **P** **02 06 14.0 +0.6**
comp=Z,46nm,1.3s
A25A Svangstu Ranch 73.35 39 P **P** **02 06 13.1 +0.1**
baz=313,SNR=6.8
SPUT South Promonto 73.36 50 *e*P **P** **02 06 14.9 +1.5**
comp=Z,147nm,1.7s
SPUT LR LR
comp=Z,1µm,19.0s
SCZ2 Santa Cruz Isl 73.41 59 P **P** **02 06 13.4 -0.2**
baz=308
KONO Kongsberg 73.45 338 *e*P **P** **02 06 13.9 +0.6**
KONO pmax pmax
comp=Z,90nm,1.6s
KONO MLR MLR
comp=Z,6µm,21.0s
KONO Kongsberg 73.45 338 *e*P **P** **02 06 13.9 +0.6**
comp=Z,90nm,1.6s
KONO LR LR
comp=Z,6µm,21.0s
MPMC Manual Prospec 73.54 57 P **P** **02 06 15.0 +0.4**
baz=308,SNR=32
OSI Osito Audit: C 73.63 58 P **P** **02 06 15.6 +0.6**
baz=308
OSI Osito Audit: C 73.63 58 *e*P **P** **02 06 16.4 +1.5**
comp=Z,78nm,1.3s
OSI *e*PP **PP** **02 08 58.3 -0.5**
OSI LR LR
comp=Z,2µm,19.0s
HWUT Hardware Ranch 73.68 49 *e*P **P** **02 06 15.9 +0.6**
comp=Z,110nm,1.3s
HWUT LR LR
comp=Z,1µm,18.0s
FURC Furnace Creek, 73.69 56 P **P** **02 06 15.9 +0.7**
baz=308,SNR=21
BLG Laguna Peak, P 73.72 59 P **P** **02 06 15.6 +0.2**
baz=308
RSUT Red Spur Mount 73.75 49 *e*P **P** **02 06 16.6 +0.7**
LRMC Laurel Mtn Rad 73.77 57 P **P** **02 06 16.1 +0.3**
baz=308,SNR=7.5
TPNV Topopah Spring 73.78 55 P **P** **02 06 16.2 +0.3**
baz=308,SNR=37
TPNV Topopah Spring 73.78 55 *e*P **P** **02 06 16.4 +0.5**
TPNV pmax pmax
comp=Z,106nm,1.4s
TPNV MLR MLR
comp=Z,2µm,21.0s
TPNV Topopah Spring 73.78 55 *e*P **P** **02 06 16.4 +0.5**
comp=Z,106nm,1.4s
TPNV LR LR
comp=Z,2µm,21.0s
B25A Knox Farm, Ray 73.78 40 P **P** **02 06 15.7 +0.1**
baz=313
KLNR Kaliningrad 73.83 330 *i*P **P** **02 06 15.3 -0.3**
KLNR pmax pmax
comp=Z,75nm,1.1s
DUG Dugway, Tooele 73.84 51 P **P** **02 06 16.9 +0.6**
baz=309,SNR=63
DUG Dugway, Tooele 73.84 51 *e*P **P** **02 06 16.8 +0.6**
DUG pmax pmax
comp=Z,65nm,1.0s
DUG Dugway, Tooele 73.84 51 PFAKE 02 06 30.0 +14
DUG LR LR
comp=Z,1µm,19.0s
A26A Wade Farm, Ken 73.90 39 P **P** **02 06 16.4 +0.2**
baz=314,SNR=28
EDW2 Edwards Air Fo 73.94 58 P **P** **02 06 17.3 +0.5**
baz=308,SNR=34
SNCC San Nicolas Is 73.94 60 P **P** **02 06 16.9 +0.2**
baz=308
SNCC San Nicolas Is 73.94 60 PFAKE 02 06 30.0 +13
SNCC LR LR
comp=Z,2µm,20.0s
BW06 Boulder Array 74.08 47 P **P** **02 06 17.5 -0.1**
baz=311,SNR=40
BW06 Boulder Array 74.08 47 *e*P **P** **02 06 17.6 -0.1**
comp=Z,64nm,1.3s
BW06 LR LR
comp=Z,2µm,18.0s
PD31 Pinedale Array 74.08 47 *e*P **P** **02 06 17.9 +0.2**
PDAR Pinedale Array 74.08 47 P **P** **02 06 16.9 -0.8**
comp=Z,11nm,0.8s,baz=270,slow=2.7,SNR=89
PDAR LR LR 02 41 44.7
comp=Z,546nm,19.2s,baz=344,slow=38
TCUT Toone Canyon 74.08 49 *e*P **P** **02 06 19.2 +1.4**
comp=Z,314nm,1.8s
DECC Green Verdugo 74.11 59 P **P** **02 06 18.1 +0.4**
baz=308
C25A Freed Ranch, W 74.12 40 P **P** **02 06 18.0 +0.4**
baz=313
CTU Camp Tracy 74.16 50 *e*P **P** **02 06 19.4 +1.3**
comp=Z,54nm,1.2s
CTU LR LR
comp=Z,1µm,18.0s
B26A Jensen Ranch, 74.16 39 P **P** **02 06 18.1 +0.3**
baz=314,SNR=6.8
A27A Ledoux Ranch, 74.24 38 P **P** **02 06 18.7 +0.5**
baz=314
SIM Simferopol' 74.25 316 *c* *i*P **P** **02 06 18.0 -0.3**
SIM *i* S **S** **02 15 51.0 0.0**
SIM pmax pmax
comp=Z,180nm,1.7s
PASC Pasadena Art C 74.25 59 *e*P **P** **02 06 19.5 +1.0**
comp=Z,176nm,1.8s
PASC LR LR
comp=Z,2µm,21.0s
PSUT Pine Spring 74.27 53 *e*P **P** **02 06 20.1 +1.3**
comp=Z,68nm,1.3s
PSUT LR LR
comp=Z,1µm,21.0s
MWC Mount Wilson 74.30 58 *e*P **P** **02 06 19.8 +0.7**
MWC pmax pmax
comp=Z,122nm,1.4s
MWC Mount Wilson 74.30 58 *e*P **P** **02 06 19.8 +0.7**
comp=Z,122nm,1.4s
JLU Jordanelle 74.39 50 *e*P **P** **02 06 20.8 +1.3**
comp=Z,116nm,1.6s
SHOC Shoshone, Teco 74.41 56 P **P** **02 06 19.9 +0.4**
baz=309
NLU North Lily Min 74.44 51 *e*P **P** **02 06 20.9 +1.1**
comp=Z,61nm,1.3s
NLU LR LR
comp=Z,1µm,19.0s
GSC Goldstone, Bar 74.45 57 P **P** **02 06 20.2 +0.4**
baz=309,SNR=9.3
GSC Goldstone, Bar 74.45 57 *e*P **P** **02 06 20.8 +1.0**
GSC pmax pmax
comp=Z,47nm,1.2s
GSC MLR MLR
comp=Z,1µm,20.0s
GSC Goldstone, Bar 74.45 57 *e*P **P** **02 06 20.8 +1.0**
comp=Z,47nm,1.2s
GSC LR LR
comp=Z,1µm,20.0s
FMP Fort Macarthur 74.47 59 P **P** **02 06 20.0 +0.2**
baz=308
D25A Fairfield 74.47 41 P **P** **02 06 19.9 +0.3**
baz=313,SNR=9.6
BFSC Mount Baldy Ra 74.56 58 P **P** **02 06 20.7 +0.3**
baz=308,SNR=19
CIS Catalina Islan 74.58 59 P **P** **02 06 20.9 +0.4**
baz=308,SNR=6.4
RRX Edison Barstow 74.59 57 P **P** **02 06 20.9 +0.4**
baz=309
C26A Wahner Farm, P 74.61 40 P **P** **02 06 20.7 +0.3**
baz=314,SNR=21
B27A Peters Farms, 74.61 39 P **P** **02 06 20.7 +0.3**

baz=314
MPU Maple Canyon 74.66 50 *e*P P 02 06 22.5 +1.5
comp=Z,59nm,1.1s
MPU LR LR
comp=Z,1µm,19.0s
A28A Rude Farm, Bot 74.73 38 P P 02 06 21.4 +0.3
baz=315,SNR=34
SCI2 San Clemente I 74.75 60 P P 02 06 21.9 +0.5
baz=306
E25A Miller Ranch, 74.87 41 P P 02 06 22.2 +0.2
baz=313,SNR=18
TUQ Turquoise Moun 74.92 56 P P 02 06 22.8 +0.2
baz=309
C27A Sayler Ranch, 74.98 39 P P 02 06 22.6 +0.1
baz=314,SNR=9.6
SORM Soroca 74.99 321⇑ *i*P P 02 06 22.9 +0.4
D26A Manning 74.99 40 P P 02 06 22.5 -0.2
baz=314,SNR=9.1
B28A Dugan Ranch, T 75.01 38 P P 02 06 22.8 +0.1
baz=315,SNR=18
BBRC Big Bear Solar 75.02 58 P P 02 06 23.0 -0.2
baz=309
HEC Hector,Ludlow 75.04 57 P P 02 06 23.5 +0.3
baz=309,SNR=7.2
CCUT Cedar City 75.19 53 PFAKE 02 06 40.0 +16
CCUT LR LR
comp=Z,1µm,18.0s
A29A Manning Farm, 75.20 37 P P 02 06 23.8 0.0
baz=315,SNR=44
F25A Bowman 75.24 42 P P 02 06 24.3 +0.2
baz=313,SNR=8.1
MURC Murrieta 75.25 58 P P 02 06 24.4 0.0
baz=309,SNR=10
E26A Carlson Angus 75.36 41 P P 02 06 24.8 -0.1
baz=314,SNR=7.4
TMUT Trail Mountain 75.37 51 *e*P P 02 06 26.5 +1.2
comp=Z,66nm,1.4s
TMUT LR LR
comp=Z,1µm,19.0s
D27A Center 75.39 40 P P 02 06 25.1 +0.2
baz=314
BSD Bornholm Skovb 75.39 332⇑ *i*P P 02 06 24.8 +0.1
comp=Z,85nm,1.2s
CAN Canberra 75.43 176 *e*P P 02 06 25.8 +0.8
CAN pmax pmax
comp=Z,46nm,1.5s
CAN Canberra 75.43 176 *e*P P 02 06 25.8 +0.8
comp=Z,46nm,1.5s
B29A Wagenman Farm, 75.47 38 P P 02 06 25.3 0.0
baz=315,SNR=14
GMRC Granite Mounta 75.50 57 P P 02 06 26.2 +0.3
baz=309,SNR=15
C28A Hausauer Farms 75.51 39 P P 02 06 25.8 +0.2
baz=315
P17A Butcher Ranch, 75.53 50 *e*P P 02 06 27.5 +1.5
comp=Z,114nm,1.3s
P17A LR LR
comp=Z,1µm,20.0s
KIS Kishinev 75.56 320 *e*P P 02 06 26.0 +0.2
comp=Z,300nm,2.0s
KIS Kishinev 75.56 320 *e*PcP **PcP** 02 06 35.0 -3.7
KIS Kishinev 75.56 320 *e*PP PP 02 09 16.0 +1.4
KIS Kishinev 75.56 320 *e*PPP PPP 02 10 58.0
KIS *e*S **S** **02 16 04.0 -1.5**
comp=Z,1µm,8.0s
KIS *e*ScS sS 02 16 24.0 +8.3
KIS Kishinev 75.56 320 *e*PS **SKSac** **02 16 35.0 +0.3**
KIS *e*SS **SS** **02 20 50.0 -5.5**
KIS *e*SSS SSS 02 24 34.0
KIS LRM MLR 02 43 20.0
comp=Z,11µm,16.0s
KIS Kishinev 75.56 320 *e*P P 02 06 26.0 +0.2
KIS *e* 02 06 35.0
KIS *e* 02 06 40.0
KIS *e* 02 09 16.0
KIS *e*PPP PPP 02 10 58.0
KIS *e*S **S** **02 16 04.0 -1.5**
KIS *e* 02 16 24.0
KIS *e*PS **SKSac** **02 16 35.0 +0.3**
KIS *e*SS **SS** **02 20 50.0 -5.5**
KIS pmax pmax
comp=Z,290nm,2.0s
KIS pmax pmax
comp=Z,1µm,8.0s
KIS pmax pmax
comp=Z,1µm,18.0s
KIS smax smax
comp=E,2µm,14.0s
KIS smax smax
comp=N,1µm,8.0s
MTPU Mount Pierson 75.59 52 *e*P P 02 06 28.6 +1.9
comp=N,174nm,1.8s
MTPU LR LR
comp=Z,1µm,20.0s
LCMT Little Creek M 75.61 54 *e*P P 02 06 28.2 +1.7
comp=Z,76nm,1.2s
A30A Hoffart Farm, 75.62 37 P P 02 06 26.4 +0.2
baz=316,SNR=23
BEL Belsk 75.67 327 *e*P P 02 06 27.2 +0.8
BEL *e*PcP **sP** **02 06 36.1 +1.3**
BEL *e*S **S** **02 16 07.6 +1.0**
BEL LMZ LR 02 43 06.7
BEL Belsk 75.67 327⇑ *e*P P 02 06 27.2 +0.8
BEL *e* 02 06 36.1
BEL *e*S **S** **02 16 07.6 +1.0**
BEL MLR MLR
comp=Z,8µm,18.6s
F26A Lodgepole 75.69 41 P P 02 06 26.8 0.0
baz=314,SNR=7.8
P18A Preston Nutter 75.72 50 *e*P P 02 06 28.6 +1.3
comp=Z,234nm,1.9s
P18A LR LR
comp=Z,1µm,18.0s
PFO Pinyon Flats O 75.72 58 LR LR 02 33 04.0
comp=Z,2µm,21.9s,baz=305,slow=30
PFO Pinyon Flats O 75.72 58 P P 02 06 27.1 0.0
baz=309,SNR=15
PFO Pinyon Flats O 75.72 58 *e*P P 02 06 27.2 0.0
PFO pmax pmax
comp=Z,50nm,1.2s
PFO Pinyon Flats O 75.72 58 *e*P P 02 06 27.2 0.0
comp=Z,50nm,1.2s
KBSD Kabsdagh 75.73 306 *e*P P 02 06 29.1 +2.1
109C Camp Elliot, M 75.76 59 P P 02 06 27.3 +0.1
baz=309
ULM Lac du Bonnet 75.76 35 P P 02 06 26.0 -1.0
comp=Z,21nm,1.0s,baz=312,slow=6.1,SNR=28
ULM Lac du Bonnet 75.76 35 *e*P P 02 06 26.9 0.0
ULM pmax pmax
comp=Z,185nm,1.8s
ULM MLR MLR
comp=Z,3µm,18.0s
ULM Lac du Bonnet 75.76 35 *e*P P 02 06 26.9 0.0
comp=Z,185nm,1.8s
ULM LR LR
comp=Z,3µm,18.0s
G25A Newell 75.76 42 P P 02 06 27.4 +0.3
baz=314
BELC Belle Mtn. Jos 75.78 57 P P 02 06 27.2 -0.4
baz=309,SNR=10
LVV L'vov 75.78 325 *e*P P 02 06 26.2 -0.9
LVV *e* 02 06 43.8
LVV *e* 02 09 17.6
LVV *e*PPP PPP 02 11 05.8
LVV *e*S **S** **02 16 05.4 -2.5**
LVV *e* 02 16 34.0
LVV *e*PS PS 02 16 56.6
LVV pmax pmax
comp=Z,400nm,1.4s
LVV MLR MLR
comp=N,8µm,14.0s
LVV MLR MLR
comp=E,8µm,14.0s
LVV MLR MLR
comp=Z,10µm,14.0s
COP Copenhagen 75.79 334⇑ *i*P P 02 06 27.9 +0.9
comp=Z,52nm,2.6s
D28A Regan 75.79 39 P P 02 06 27.2 -0.1
baz=315
K22A Casper 75.84 46 P P 02 06 27.6 -0.2
baz=312,SNR=9.8
K22A Casper 75.84 46 *e*P P 02 06 28.4 +0.6
comp=Z,236nm,1.8s
K22A LR LR
comp=Z,1µm,18.0s
E27A Carson 75.84 40 P P 02 06 27.9 +0.3
baz=314,SNR=18
KNB Kanab 75.86 53 *e*P P 02 06 27.7 -0.3
KNB pmax pmax
comp=Z,307nm,1.9s
KNB MLR MLR
comp=Z,1µm,18.0s
KNB Kanab 75.86 53 *e*P P 02 06 27.7 -0.3
comp=Z,307nm,1.9s
KNB LR LR
comp=Z,1µm,18.0s
SRU San Rafael Swe 75.89 51 *e*P P 02 06 28.6 +0.4
SRU pmax pmax
comp=Z,58nm,1.0s
SRU MLR MLR
comp=Z,1µm,21.0s
SRU San Rafael Swe 75.89 51 *e*P P 02 06 28.6 +0.4
comp=Z,58nm,1.0s
SRU LR LR
comp=Z,1µm,21.0s
PKCU Pink Cliffs 75.90 53 *e*P P 02 06 29.2 +0.8
comp=Z,86nm,1.2s
B30A Myrvik Farm, E 75.96 37 P P 02 06 28.5 +0.3
baz=316,SNR=27
F27A Lemmon 76.00 41 P P 02 06 27.9 -0.6
baz=314,SNR=8.2
MMU Miners Mountai 76.03 52 *e*P P 02 06 30.0 +0.9
IAS Iasi 76.03 321⇑ *i*P P 02 06 29.3 +0.8
H25A Fruitdale 76.06 43 P P 02 06 28.5 -0.3
baz=314,SNR=8.5
G26A Maurine 76.11 42 P P 02 06 28.9 -0.2
baz=314,SNR=19
A31A Linda, St. Vin 76.14 36 P P 02 06 28.2 -0.9
baz=317
E28A Huff 76.17 40 P P 02 06 29.5 +0.1
baz=315
BAR Barrett 76.17 59 *e*P P 02 06 30.5 +0.8
comp=Z,120nm,1.8s
BAR LR LR
comp=Z,2µm,20.0s
RSSD Black Hills 76.17 43 P P 02 06 29.6 -0.2
baz=313
RSSD Black Hills 76.17 43 *e*P P 02 06 29.5 -0.2
RSSD pmax pmax
comp=Z,52nm,1.1s
RSSD MLR MLR
comp=Z,1µm,20.0s
RSSD Black Hills 76.17 43 *e*P P 02 06 29.5 -0.3
comp=Z,52nm,1.1s
RSSD LR LR
comp=Z,1µm,20.0s
NEE2 Needles Airpor 76.18 56 P P 02 06 29.9 +0.3
baz=310
MONP2 Monument Peak 76.20 59 P P 02 06 29.9 -0.2
baz=309,SNR=6.5
LEOM Leova 76.20 320⇑ *i*P P 02 06 30.8 +1.3
MUD Monsted U'grnd 76.22 336⇑ *i*P P 02 06 30.5 +1.1
comp=Z,51nm,1.2s
IRM Iron Mountain 76.23 57 P P 02 06 30.6 +0.6
baz=310,SNR=13
B31A Greenbush Farm 76.29 37 P P 02 06 29.5 -0.5
baz=316,SNR=6.9
BC3 Big Chuckawall 76.35 57 P P 02 06 30.9 +0.2
baz=310,SNR=19
D29A Pettibone, Tap 76.36 39 P P 02 06 30.0 -0.4
baz=316
SFNV Sufian 76.37 306 *e*P P 02 06 31.4 +0.7
G27A Dupree 76.39 41 P P 02 06 30.5 -0.2
baz=314,SNR=11
RGN Rugen 76.40 333 *e*P P 02 06 31.9 +1.4
comp=Z,287nm,1.5s
RGN LR LR
comp=Z,8µm,19.0s
I25A Rochford 76.40 43 P P 02 06 30.6 -0.4
baz=314,SNR=23
MZRK Al-Mazaregh 76.41 305 *e*P P 02 06 33.2 +2.2
C30A Mose, Pekin 76.43 38 P P 02 06 30.5 -0.3
baz=316,SNR=9.7
W13A Hualapai Mount 76.43 55 *e*P P 02 06 32.4 +1.1
comp=Z,33nm,1.3s
A32A Rocking H Ranc 76.46 36 P P 02 06 30.7 -0.3
baz=317,SNR=17
H26A Fairpoint 76.49 42 P P 02 06 31.1 -0.2
baz=314
KWP Kalwaria Pacla 76.50 325 *e*P P 02 06 32.2 +1.0
KWP *e*PcP **sP** **02 06 41.1 +1.5**
KWP *e*PP PP **02 09 22.9 +0.4**
KWP *e*S **S** **02 16 16.3 +0.4**
KWP LMZ LR 02 43 49.6
KWP Kalwaria Pacla 76.50 325⇑ *i*P P 02 06 32.8 +1.6
KWP Kalwaria Pacla 76.50 325⇑ *e*P P 02 06 32.2 +1.0
KWP *e* 02 06 41.1
KWP *e* 02 09 22.9
KWP *e*S **S** **02 16 16.4 +0.5**
KWP MLR MLR
comp=Z,16µm,16.7s
PRAR RASCA 76.55 322⇑ *i*P P 02 06 33.0 +1.5
O20A White River Ci 76.55 49 P P 02 06 31.8 -0.1
baz=312,SNR=20
O20A White River Ci 76.55 49 *e*P P 02 06 32.6 +0.7
comp=Z,55nm,1.3s
O20A LR LR
comp=Z,1µm,19.0s
U15A North Rim 76.57 54 *e*P P 02 06 33.9 +1.7
comp=Z,313nm,1.9s
U15A LR LR
comp=Z,2µm,20.0s
SWSC Sam W. Stewart 76.57 58 P P 02 06 31.8 0.0
baz=310,SNR=6.0
F28A McLaughlin 76.63 40 P P 02 06 31.8 -0.2
baz=315,SNR=11
E29A Napoleon 76.69 39 P P 02 06 31.8 -0.6
baz=316
C31A Landman Farms, 76.71 37 P P 02 06 32.0 -0.4
baz=316,SNR=18
D30A Buchanan 76.72 39 P P 02 06 32.2 -0.3
baz=316,SNR=23
PDMCI Parker Dam,Lak 76.78 56 P P 02 06 33.4 +0.4
baz=310,SNR=14
J25A Sunshine Ranch 76.80 44 P P 02 06 32.4 -0.7
baz=314,SNR=6.7
B32A Ashes, Strandq 76.82 36 P P 02 06 32.2 -0.8
baz=317,SNR=32
BUR08 Bucovina Ar. S 76.83 322 *e*P P 02 06 33.6 +0.4
BUR08 *e*PP PP 02 09 17.6 -7.8
TLCR 76.83 319⇑ *i*P P 02 06 33.7 +0.6
H27A Howes 76.84 42 P P 02 06 33.0 -0.2
baz=314
BURAR Bucovina Array 76.84 322⇑ *i*P P 02 06 33.6 +0.3
I26A New Linderwood 76.85 43 P P 02 06 33.4 0.0
baz=314,SNR=8.0
Y12C Blythe 76.88 57 P P 02 06 34.1 +0.4
baz=310,SNR=12
Y12C Blythe 76.88 57 *e*P P 02 06 34.9 +1.3
comp=Z,78nm,1.3s
Y12C LR LR
comp=Z,2µm,18.0s
A33A Warroad 76.94 36 P P 02 06 33.0 -0.7
baz=318,SNR=39
TESR Tescani 76.96 321⇑ *i*P P 02 06 34.6 +0.8
E30A Jud 77.09 39 P P 02 06 34.0 -0.5
baz=316,SNR=14
G28A Parade 77.11 41 P P 02 06 34.4 -0.4
baz=315,SNR=11
F29A Eureka 77.12 40 P P 02 06 34.6 -0.2
baz=316,SNR=8.6
GLA Glamis 77.14 58 P P 02 06 35.5 +0.4
baz=310,SNR=6.5
GLA Glamis 77.14 58 PFAKE 02 06 50.0 +15
GLA LR LR
comp=Z,2µm,22.0s
SHAO Shalim 77.17 283 P P 02 06 35.9 +0.5
SHAO P P 02 06 35.9 +0.5
SHAO Shalim 77.17 283 pP P 02 06 35.9 +0.5
CFR Carcaliu 77.17 319⇑ *i*P P 02 06 36.7 +1.7
MNKR ALMNKUR 77.19 306 *e*P P 02 06 34.7 -0.6
AGMN Agassiz Nation 77.20 36 P P 02 06 34.2 -0.9
baz=318,SNR=26
AGMN Agassiz Nation 77.20 36 *e*P P 02 06 34.2 -0.9
comp=Z,58nm,1.1s
AGMN LR LR
comp=Z,2µm,18.0s
KOLS Kolonicke sedl 77.21 325 *e*P P 02 06 36.3 +1.1
KOLS *e*S **S** **02 16 23.5 -0.1**
KOLS *e*L L 02 44 18.9
J26A Sides Ranch, S 77.24 43 P P 02 06 35.6 0.0
baz=314,SNR=7.0
PETR Petresti 77.24 320⇓ *i*P P 02 06 36.9 +1.6
I27A Quinn 77.24 42 P P 02 06 35.6 +0.1
baz=314,SNR=23
C32A Crookston 77.25 37 P P 02 06 34.8 -0.6
baz=317
D31A Mcclaflin, Tow 77.26 38 P P 02 06 35.2 -0.3
baz=317
ODBI Odobesti 77.29 320⇓ *i*P P 02 06 36.3 +0.6
STHS Stebnicka Huta 77.30 326 *e*P P 02 06 37.2 +1.5
OJC Ojcow 77.30 327 *e*P P 02 06 36.6 +0.9
OJC *e*PcP **sP** **02 06 44.9 +0.8**
OJC *e*S **S** **02 16 23.9 -0.6**
OJC LMZ LR 02 44 39.8
OJC Ojcow 77.30 327⇑ *e*P P 02 06 36.7 +1.0
OJC *e* 02 06 44.9
OJC *e*S **S** **02 16 24.0 -0.6**
OJC MLR MLR
comp=Z,10µm,17.7s
OJC Ojcow 77.30 327 *e*P P 02 06 36.3 +0.6
comp=Z,617nm,1.9s
PHWY Pilot Hill 77.33 46 *e*P P 02 06 37.1 +0.7
comp=Z,97nm,1.8s
PHWY LR LR
comp=Z,1µm,19.0s
N23A Red Feather La 77.34 47 P P 02 06 36.9 +0.5
baz=313
B33A Robert and Kas 77.34 36 P P 02 06 35.2 -0.8
baz=318,SNR=7.3
H28A Mission Ridge 77.34 41 P P 02 06 36.0 0.0
baz=315,SNR=21
VRI Vrincioaia 77.38 320⇑ *i*P P 02 06 38.5 +2.3
KSRV Kasrt alli 77.41 306 *e*P P 02 06 31.6 -5.0
UZH Uzhgorod 77.43 325 *e*P P 02 06 32.6 -3.8
UZH *e* 02 06 42.8
UZH *e* 02 09 30.0
UZH *i*S S 02 16 18.4 -7.5
UZH MLR MLR
comp=N,15µm,15.0s
UZH MLR MLR
comp=E,24µm,15.0s
UZH MLR MLR
comp=Z,17µm,15.0s
PLOR Plostina 77.43 320⇓ *i*P P 02 06 38.1 +1.6
F30A Leola 77.51 40 P P 02 06 36.4 -0.6
baz=316
D32A Dogwood Acres, 77.52 38 P P 02 06 36.3 -0.6
baz=317,SNR=5.3
G29A Hoven 77.53 40 P P 02 06 36.5 -0.5
baz=316
E31A Nome 77.53 38 P P 02 06 36.7 -0.4
baz=317,SNR=13
TIRR Tirgusor 77.54 318⇑ *i*P P 02 06 38.7 +1.6
TIRR Tirgusor 77.54 318 PFAKE 02 06 50.0 +13
TIRR LR LR
comp=Z,13µm,18.0s
CRVS Cervenica-Dubn 77.59 325 *e*P P 02 06 38.4 +1.1
CRVS *e* 02 06 46.9
CRVS *e*S **S** **02 16 27.7 0.0**
BMR Baia Mare 77.59 323⇓ *i*P P 02 06 38.0 +0.7
B34A Aery, Baudette 77.60 35 P P 02 06 36.6 -0.8
baz=318,SNR=17
HARR Harsova 77.62 319⇑ *i*P P 02 06 38.3 +0.8
C33A Trail 77.64 37 P P 02 06 36.7 -0.9
baz=318,SNR=14
TRPA Tarpa 77.69 324⇑ *e*P P 02 06 39.2 +1.4
NIE Niedzica 77.70 326 *e*P P 02 06 39.4 +1.4
NIE *e*PcP **PcP** **02 06 47.4 -0.6**
NIE *e*S **S** **02 16 27.8 -1.2**
NIE LMZ LR 02 44 37.7
NIE Niedzica 77.70 326⇑ *e*P P 02 06 39.4 +1.4
NIE *e* 02 06 47.4
NIE *e*S **S** **02 16 27.8 -1.2**
NIE MLR MLR
comp=Z,5µm,19.9s
WUAZ Wupatki 77.72 54 P P 02 06 39.3 +0.8
baz=311,SNR=22
WUAZ Wupatki 77.72 54 PFAKE 02 06 50.0 +11
WUAZ LR LR
comp=Z,1µm,18.0s
Y14A Wickenburg 77.73 56 *e*P P 02 06 38.7 +0.3
comp=Z,228nm,1.1s
I28A Midland 77.75 42 P P 02 06 38.4 +0.1
baz=315,SNR=31
H29A Onida 77.79 41 P P 02 06 38.4 -0.2
baz=316,SNR=9.1
J27A Elkhorn Farm, 77.84 43 P P 02 06 39.2 +0.3
baz=315,SNR=10.0
F31A Hecla 77.86 39 P P 02 06 38.1 -0.8
baz=316,SNR=12
JHLN Al Jahlan 77.88 307 *e*P P 02 06 44.0 +4.8
E32A Braaten, Kindr 77.90 38 P P 02 06 38.4 -0.6
baz=317
SMCO Snowmass 77.92 49 *e*P P 02 06 41.0 +1.2
comp=Z,49nm,1.3s
SMCO LR LR
comp=Z,2µm,19.0s
PGOR Pogoanele 77.94 320⇑ *i*P P 02 06 41.4 +2.1
G30A Faulkton 77.96 40 P P 02 06 39.2 -0.3
baz=316,SNR=27
113A Mohawk Valley, 78.00 57 *e*P P 02 06 40.8 +0.9
comp=Z,58nm,1.3s
ISR Istrita 78.01 320⇓ *i*P P 02 06 41.7 +1.9
BR131 Keskin Array S 78.01 312 *e*P P 02 06 41.0 +1.0
BR131 *e*PP PP 02 09 30.2 -5.5
BRTR Keskin Array B 78.01 312 P P 02 06 40.3 +0.3
comp=Z,6.7nm,0.9s,baz=102,slow=4.2,SNR=29
BRTR PP PP 02 09 36.7 +1.0
comp=Z,12nm,1.1s,baz=64,slow=5.6,SNR=4.6
BRTR LR LR 02 48 13.0
comp=Z,4µm,18.3s,baz=6.0,slow=41
BRTR Keskin Array B 78.01 312 *ce*P P 02 06 41.2 +1.2
BRTR pmax pmax
comp=Z,7.0nm,0.9s
MLR Muntele Rosu 78.03 321⇓ *i*P P 02 06 41.1 +1.1
MLR Muntele Rosu 78.03 321 *e*P P 02 06 40.6 +0.6
MLR pmax pmax
comp=Z,96nm,1.3s
MLR MLR MLR
comp=Z,5µm,19.0s
MLR Muntele Rosu 78.03 321 *e*P P 02 06 40.6 +0.6
comp=Z,96nm,1.3s
MLR LR LR
comp=Z,5µm,19.0s
D33A AnnSam, Waubun 78.06 37 P P 02 06 39.3 -0.7
baz=318,SNR=11
RAC Raciborz 78.07 328 *e*P P 02 06 41.7 +1.8
RAC *e*S **S** **02 16 32.2 -0.6**
RAC MLR MLR
comp=Z,10µm,18.9s
MSAB Monastry St. A 78.10 319⇓ *i*P P 02 06 41.9 +1.7
B35A Bob, Littlefor 78.11 35 P P 02 06 39.6 -0.5
baz=319,SNR=23
C34A RKJ Ranch, Bem 78.11 36 P P 02 06 39.3 -0.9
baz=318,SNR=11
J28A Allard Ranch, 78.12 42 P P 02 06 40.6 +0.2
baz=315,SNR=7.5
I29A Vivian Onida 78.17 42 P P 02 06 40.3 -0.4
baz=316,SNR=24
PSN Preselentsi 78.21 318 P P 02 06 42.5 +1.7
KSP Ksiaz 78.24 329 *e*P P 02 06 42.0 +1.1
KSP *e*PcP **PcP** **02 06 49.9 -0.4**
KSP *e*S **S** **02 16 34.9 +0.2**
KSP LMZ LR 02 45 22.1
KSP Ksiaz 78.24 329⇑ *e*P P 02 06 42.1 +1.1
KSP *e* 02 06 50.0
KSP *e*S **S** **02 16 34.9 +0.2**
KSP MLR MLR
comp=Z,10µm,18.1s
CJR Cluj-Napoca 78.25 323⇑ *i*P P 02 06 42.7 +1.6
LANS Liptovska Anna 78.26 326 *e*P P 02 06 43.4 +2.3
LANS *e* 02 06 51.1
ISCO Idaho Springs 78.27 47 P P 02 06 42.2 +0.5
baz=313,SNR=27
ISCO Idaho Springs 78.27 47 *e*P P 02 06 43.0 +1.3
ISCO pmax pmax
comp=Z,88nm,1.5s
ISCO MLR MLR
comp=Z,2µm,20.0s
ISCO Idaho Springs 78.27 47 *e*P P 02 06 43.0 +1.3
comp=Z,88nm,1.5s
ISCO LR LR
comp=Z,2µm,20.0s
OKC Ostrava-Krasne 78.28 327⇑ *e*P P 02 06 42.9 +1.8
OKC *e*PCP **PcP** **02 06 51.1 +0.6**
OKC *e*S **S** **02 16 35.7 +0.6**
OKC AMS AMS 02 45 30.0

comp=Z,9µm,14.4s
OKC Ostrava-Krasne 78.28 327 eP P 02 06 42.9 +1.8
OKC e 02 06 51.1
OKC eS **S 02 16 35.7 +0.6**
OKC MLR MLR
comp=Z,9µm,14.4s
SECR 78.30 320⇑ iP P 02 06 42.2 +0.9
KECS Kecovo 78.33 325 eP P 02 06 41.2 -0.2
KECS e 02 06 48.5
KECS ePP **PP 02 09 35.5 -2.3**
DRWC Darouich 78.33 308 eP P 02 06 42.1 +0.3
G31A Conde 78.35 40 P P 02 06 41.4 -0.1
baz=317,SNR=8.6
MVCO Mesa Verde 78.35 51 P P 02 06 42.2 +0.2
baz=312,SNR=21
MVCO Mesa Verde 78.35 51 PFAKE 02 06 50.0 +8.0
MVCO LR LR
comp=Z,1µm,21.0s
ANTO Ankara 78.39 313 eP P 02 06 43.6 +1.6
ANTO pmax pmax
comp=Z,85nm,1.1s
ANTO MLR MLR
comp=Z,3µm,18.0s
ANTO Ankara 78.39 313 eP P 02 06 43.6 +1.6
comp=Z,85nm,1.1s
ANTO LR LR
comp=Z,3µm,18.0s
F32A Veblen 78.40 39 P P 02 06 41.0 -0.9
baz=317
D34A Park Rapids 78.40 37 P P 02 06 41.0 -0.9
baz=318,SNR=15
X16A Lo Mia Camp, P 78.40 55 eP P 02 06 43.1 +0.8
comp=Z,50nm,1.1s
BR231 Keskin MP Arra 78.42 313 eP P 02 06 41.3 -0.9
E33A Westby DABS, E 78.46 38 P P 02 06 41.7 -0.5
baz=318,SNR=23
SULR 78.47 320⇓ iP P 02 06 44.0 +1.8
C35A Jirik Farms, M 78.49 36 P P 02 06 41.4 -0.9
baz=319,SNR=24
VOIR 78.50 321⇑ iP P 02 06 44.0 +1.4
SUSD Miller 78.54 40 P P 02 06 42.3 -0.4
baz=316,SNR=8.9
MORC Moravsky Berou 78.58 328⇑ iP P 02 06 43.9 +1.1
MORC Moravsky Berou 78.58 328 eP P 02 06 43.5 +0.7
MORC pmax pmax
comp=Z,506nm,1.3s
MORC MLR MLR
comp=Z,34µm,18.0s
MORC Moravsky Berou 78.58 328 eP P 02 06 43.5 +0.7
comp=Z,506nm,1.3s
MORC LR LR
comp=Z,34µm,18.0s
J29A Okreek 78.60 42 P P 02 06 42.8 -0.3
baz=316,SNR=14
DRGR 78.61 323⇑ iP P 02 06 44.1 +1.0
DPC Dobruska-Polom 78.62 329⇑ eP P 02 06 44.5 +1.4
DPC ePCP **PcP 02 06 54.0 +2.0**
DPC eS **S 02 16 40.0 +1.2**
DPC AMS AMS 02 46 30.0
comp=Z,11µm,14.5s
DPC Dobruska-Polom 78.62 329⇑ eP P 02 06 44.5 +1.4
DPC e 02 06 54.0
DPC eS **S 02 16 40.0 +1.2**
DPC MLR MLR
comp=Z,11µm,14.5s
KRLC Kraliky 78.65 328⇑ eP P 02 06 44.4 +1.2
KRLC ePCP **PcP 02 06 53.2 +1.0**
KRLC Kraliky 78.65 328 eP P 02 06 44.4 +1.2
KRLC e 02 06 53.2
G32A Webster 78.67 39 P P 02 06 43.0 -0.4
baz=317,SNR=22
I30A Oacoma 78.69 41 P P 02 06 43.1 -0.4
baz=316,SNR=14
ARR Arges 78.75 321⇓ iP P 02 06 46.2 +2.3
H31A Wolsey 78.75 40 P P 02 06 43.5 -0.4
baz=317
F33A 5 Mile Ranch, 78.81 38 P P 02 06 44.0 -0.1
baz=318,SNR=20
E34A Wadena 78.84 37 P P 02 06 43.6 -0.7
baz=318,SNR=7.7
BTCH Batrach 78.84 308 eP P 02 06 44.9 +0.3
D35A Remer 78.92 36 P P 02 06 43.7 -1.1
baz=319,SNR=11
C36A Pine Crest Far 78.95 35 P P 02 06 44.1 -0.8
baz=320,SNR=19
PRD Provadia 78.95 318 P P 02 06 44.8 -0.1
S22A 4UR Ranch, Cre 78.97 50 P P 02 06 46.5 +0.9
baz=313,SNR=25
S22A 4UR Ranch, Cre 78.97 50 eP P 02 06 46.3 +0.8
comp=Z,60nm,1.4s
S22A LR LR
comp=Z,1µm,19.0s
W18A Petrified Fore 78.99 53 P P 02 06 46.3 +0.8
baz=312,SNR=5.9
W18A Petrified Fore 78.99 53 PFAKE 02 07 00.0 +14
W18A LR LR
comp=Z,2µm,22.0s
PSZ Piszkesteto 79.02 325⇑ iP P 02 06 46.7 +1.4
PSZ Piszkesteto 79.02 325⇑ eP P 02 06 46.6 +1.3
PSZ Piszkesteto 79.02 325 eP P 02 06 46.2 +0.9
PSZ pmax pmax
comp=Z,184nm,1.3s
PSZ MLR MLR
comp=Z,14µm,19.0s
PSZ Piszkesteto 79.02 325 eP P 02 06 46.2 +0.9
comp=Z,184nm,1.3s
PSZ LR LR
comp=Z,14µm,19.0s
VYHS Vyhne 79.03 326 eP P 02 06 46.4 +1.1
VYHS e 02 06 54.6
VYHS ePP PP 02 09 38.2 -5.5
VYHS eS **S 02 16 43.8 +0.6**
VYHS eL L 02 44 30.3
I31A Royce, Wessing 79.05 41 P P 02 06 45.0 -0.5
baz=317,SNR=6.6
J30A Dallas 79.08 42 P P 02 06 45.3 -0.4
baz=316,SNR=12
Q24A Divide 79.10 48 P P 02 06 46.7 +0.4
baz=314,SNR=6.8
Q24A Divide 79.10 48 eP P 02 06 47.4 +1.1
comp=Z,15nm,0.9s
Q24A LR LR
comp=Z,2µm,19.0s
LOT Lotru 79.11 322⇓ iP P 02 06 47.3 +1.4
BRG Berggiesshubel 79.13 330 i P P 02 06 46.5 +0.7
comp=Z,59nm,1.4s
BRG i PCP **sP 02 06 55.3 +1.1**
comp=Z,127nm,1.5s
BRG PP **PP 02 09 42.0 -2.4**
BRG S **S 02 16 44.0 -0.1**
BRG Berggiesshubel 79.13 330 i P P 02 06 46.5 +0.7
BRG i 02 06 55.3
BRG 02 09 42.0
BRG S **S 02 16 44.0 -0.1**
BRG pmax pmax
comp=Z,59nm,1.4s
BRG MLR MLR
comp=N,5µm,14.3s
BRG MLR MLR
comp=E,7µm,14.3s
BRG MLR MLR
comp=Z,11µm,14.4s
KAC Achnashellach 79.13 344⇑ eP P 02 06 46.3 +0.7
CLL Collm 79.13 331⇑ iP P 02 06 46.2 +0.5
CLL comp=Z,425nm,2.5s ePmax 02 06 50.0
CLL i 02 06 55.0
comp=Z,406nm,2.2s
CLL i 02 06 58.4
CLL e 02 10 21.0
CLL eS **S 02 16 41.0 -3.1**
CLL eSP **SPn 02 17 23.0 -1.7**
CLL eSS SS 02 21 24.0 -25
CLL e 02 22 42.0
CLL eSSS SSS 02 25 12.0
CLL e 02 26 24.0
CLL eSSSS 02 28 06.0
CLL LmH 02 40 00.0
comp=N,8µm,20.7s
CLL LmH 02 40 00.0
comp=E,15µm,21.9s
CLL Lmax 02 46 00.0
CLL Collm 79.13 331⇑ iP P 02 06 46.2 +0.5
CLL i 02 06 55.0
CLL eS **S 02 16 41.0 -3.1**
CLL pmax pmax
comp=Z,425nm,2.5s
CLL Collm 79.13 331 eP P 02 06 45.2 -0.5
comp=Z,133nm,1.3s
CLL LR LR
comp=Z,7µm,21.0s
214A Organ Pipe Nat 79.14 57 P P 02 06 46.5 +0.3
baz=311,SNR=24
E35A Pequot Lakes 79.16 37 P P 02 06 45.5 -0.6
baz=319,SNR=5.1
PVCC Panska Ves 79.16 330⇑ eP P 02 06 47.5 +1.5
PVCC ePCP **sP 02 06 56.0 +1.6**
PVCC eS **S 02 16 45.2 +0.7**
PVCC AMS AMS 02 47 00.0
comp=Z,8µm,15.1s
PVCC Panska Ves 79.16 330 eP P 02 06 47.5 +1.5
PVCC e 02 06 56.0
PVCC eS **S 02 16 45.2 +0.7**
PVCC MLR MLR
comp=Z,8µm,15.1s
HUMR Humele 79.20 320⇑ iP P 02 06 48.1 +1.8
G33A Ortonville 79.22 39 P P 02 06 45.8 -0.6
baz=318,SNR=29
WRDH Warideh 79.23 308 eP PcP 02 06 59.0 +4.1
H32A Carlson Farm, 79.25 40 P P 02 06 45.9 -0.7
baz=317,SNR=11
D36A Goodland 79.25 36 P P 02 06 45.6 -0.9
baz=320,SNR=9.2
X18A Snowflake 79.25 54 eP P 02 06 48.4 +1.4
comp=Z,74nm,1.5s
X18A LR LR
comp=Z,1µm,20.0s
ARNB Al Arnab 79.26 308 eP P 02 06 50.5 +3.6
C37A Embarrass 79.26 35 P P 02 06 45.6 -0.9
baz=320,SNR=17
SLNF Slenfeh 79.28 308 eP P 02 06 47.7 +0.5
VRAC Vranov 79.33 328⇑ iP P 02 06 48.3 +1.4
F34A Alexandria 79.33 38 P P 02 06 46.6 -0.4
baz=318,SNR=14
EYMN Ely 79.39 34 P P 02 06 46.5 -0.8
baz=320,SNR=18
EYMN Ely 79.39 34 eP P 02 06 47.5 +0.2
comp=Z,90nm,1.2s
EYMN LR LR
comp=Z,2µm,18.0s
OGNE Ogallala 79.44 45 P P 02 06 47.9 +0.1
baz=315,SNR=13
OGNE Ogallala 79.44 45 eP P 02 06 47.9 +0.1
comp=Z,151nm,1.2s
OGNE LR LR
comp=Z,1µm,18.0s
H33A Prehn Over Nor 79.45 39 P P 02 06 47.4 -0.3
baz=318,SNR=39
RABH Abou Rabah 79.46 306 eP P 02 06 50.3 +2.3
SIRR Siria 79.48 323⇓ iP P 02 06 49.5 +1.7
J31A Geddes 79.48 41 P P 02 06 47.2 -0.7
baz=317
K30A Basset 79.48 42 P P 02 06 47.6 -0.3
baz=316,SNR=6.3
G34A Benson 79.57 38 P P 02 06 47.8 -0.5
baz=318,SNR=12
GOPC GO Pecny, Ondr 79.57 329⇑ eP P 02 06 49.6 +1.4
GOPC ePCP **sP 02 06 58.3 +1.6**
GOPC eS **S 02 16 49.8 +0.9**
GOPC AMS AMS 02 46 10.0
comp=Z,10µm,16.4s
GOPC GO Pecny, Ondr 79.57 329 eP P 02 06 49.6 +1.4
GOPC e 02 06 58.3
GOPC eS **S 02 16 49.8 +0.9**
GOPC MLR MLR
comp=Z,10µm,16.4s
PRA Prague 79.58 330⇑ eP P 02 06 50.1 +1.9
PRA AMS AMS 02 46 20.0
comp=Z,11µm,15.2s
PRA Prague 79.58 330 eP P 02 06 50.1 +1.9
PRA MLR MLR
comp=Z,11µm,15.2s
ROOS tl_alroos 79.58 306 eP P 02 06 49.4 +0.7
I32A Karley and Nic 79.58 40 P P 02 06 47.8 -0.7
baz=317
D37A Cotton 79.59 35 P P 02 06 47.3 -1.1
baz=320,SNR=9.2
F35A Swnville 79.61 37 P P 02 06 47.7 -0.8
baz=319,SNR=11
PRU Pruhonice 79.61 329⇑ eP P 02 06 49.4 +1.0
PRU ePCP **sP 02 06 58.5 +1.7**
PRU ePP **PP 02 09 52.7 +4.3**
PRU eS **S 02 16 49.2 0.0**
PRU AMS AMS 02 46 10.0
comp=Z,11µm,16.3s
PRU Pruhonice 79.61 329 eP P 02 06 49.4 +1.0
PRU e 02 06 58.5
PRU e 02 09 52.7
PRU eS **S 02 16 49.2 0.0**
PRU MLR MLR
comp=Z,11µm,16.3s
SMOL Smolenice 79.61 327 eP P 02 06 50.5 +2.1
SMOL e 02 06 58.9
BIDA Albida 79.61 307 eP P 02 06 48.4 -0.5
ZIMR 79.65 320⇓ iP P 02 06 49.8 +1.1
SZH Strazhica 79.65 319 P P 02 06 50.2 +1.4
C38A Sawbill Land. 79.66 34 P P 02 06 47.9 -0.8
baz=321,SNR=18
E36A McGregor 79.71 36 P P 02 06 48.6 -0.4
baz=320,SNR=20
BUD Budapest 79.73 325⇑ eP P 02 06 50.3 +1.2
SDCO Great Sand Dun 79.74 49 P P 02 06 50.0 +0.4
baz=314,SNR=16
SDCO Great Sand Dun 79.74 49 eP P 02 06 50.1 +0.4
comp=Z,46nm,1.6s
SDCO LR LR
comp=Z,1µm,21.0s
TREC Trest 79.78 329⇑ eP P 02 06 51.1 +1.7
TREC ePCP **sP 02 06 59.5 +1.6**
TREC eS **S 02 16 51.8 +0.6**
TREC AMS AMS 02 46 20.0
comp=Z,6µm,16.0s
TREC Trest 79.78 329 eP P 02 06 51.1 +1.7
TREC e 02 06 59.5
TREC eS **S 02 16 51.8 +0.6**
TREC MLR MLR
comp=Z,6µm,16.0s
J32A Parkston 79.87 41 P P 02 06 49.2 -0.8
baz=317,SNR=5.7
HAWK Haweek 79.89 307 eP P 02 06 51.9 +1.5
I33A Coleman 79.89 40 P P 02 06 49.7 -0.4
baz=318,SNR=9.7
JMB Yambol 79.90 318 P P 02 06 51.8 +1.7
H34A Spellman Lake, 79.93 39 P P 02 06 50.1 -0.2
baz=318,SNR=11
K31A O'Neill 79.96 42 P P 02 06 50.2 -0.3
baz=317,SNR=17
PVL Pavlikeni 79.98 319 P P 02 06 51.8 +1.3
BZS Buzias 79.99 323⇑ iP P 02 06 50.9 +0.3
PKS7 Kunszentmiklos 80.00 325⇓ eP P 02 06 52.2 +1.6
OUZ Omahuta 80.05 156 eP P 02 06 51.6 +0.9
comp=Z,90nm,1.7s
OUZ LR LR
comp=Z,4µm,19.0s
E37A Wrenshall 80.05 36 P P 02 06 50.1 -0.8
baz=320
PKSG 80.07 326⇓ eP P 02 06 52.7 +1.8
C39A Grand Marais 80.07 34 P P 02 06 49.7 -1.3
baz=321
F36A Milaca 80.08 37 P P 02 06 50.4 -0.7
baz=319
EAB Aberfoyle 80.11 343⇑ eP P 02 06 51.9 +0.9
G35A Watkins 80.12 38 P P 02 06 51.4 +0.1
baz=319,SNR=7.3
CSKK Cs˙ŧkako 80.15 326⇓ eP P 02 06 52.8 +1.4
PKS6 Bocsa 80.17 325⇑ eP P 02 06 52.6 +1.1
MARH Ras Al Marh 80.17 306 eP P 02 06 53.2 +1.1
TUC Tucson 80.20 56 P P 02 06 52.5 +0.5
baz=312
TUC Tucson 80.20 56 eP P 02 06 52.6 +0.5
TUC pmax pmax
comp=Z,47nm,1.3s
TUC MLR MLR
comp=Z,2µm,18.0s
TUC Tucson 80.20 56 eP P 02 06 52.6 +0.5
comp=Z,47nm,1.3s
TUC LR LR
comp=Z,2µm,18.0s
NKC Novy Kostel 80.21 331⇑ eP P 02 06 52.8 +1.1
NKC ePCP **sP 02 07 01.3 +1.2**
NKC eS **S 02 16 54.7 -0.9**
NKC MLR MLR
comp=Z,10µm,14.6s
ECSD EROS Data Cent 80.22 40 P P 02 06 51.4 -0.4
baz=318,SNR=35
ECSD EROS Data Cent 80.22 40 eP P 02 06 51.2 -0.6
comp=Z,96nm,1.4s
ECSD LR LR
comp=Z,2µm,20.0s
L31A Butterfield Fa 80.24 42 P P 02 06 51.9 -0.2
baz=317,SNR=21
EDRB Edirne 80.26 318 P P 02 06 52.2 +0.1
K32A Verdigre 80.33 41 P P 02 06 51.8 -0.7
baz=317
J33A Davis 80.35 40 P P 02 06 52.2 -0.4
baz=318,SNR=7.5
H35A Sunnyside Ranc 80.35 38 P P 02 06 52.5 0.0
baz=319,SNR=42
I34A Hadley 80.36 39 P P 02 06 52.2 -0.4
baz=318
ZALF Zalf 80.38 305 eP PcP 02 07 04.2 +4.2
G36A St. Michael 80.45 37 P P 02 06 52.3 -0.8
baz=319,SNR=5.3
KSCO Kaye Shedlock' 80.48 46 P P 02 06 53.5 0.0
baz=315
KSCO Kaye Shedlock' 80.48 46 eP P 02 06 54.8 +1.3
comp=Z,114nm,1.4s
KSCO LR LR
comp=Z,2µm,20.0s
PGBU Glenifferbraes 80.49 342⇑ eP P 02 06 54.2 +1.2
PGBU AMB AMB 02 06 55.1
comp=Z,111nm,1.6s
PGBU AMS AMS 02 49 42.0
comp=Z,2µm,15.2s
MDVR Moldovita 80.58 322⇓ iP P 02 06 54.8 +1.0
SOP Sopron 80.62 327⇑ eP P 02 06 55.4 +1.5
QASN Qassioun 80.63 306 eP P 02 06 47.7 -6.7
ESK Eskdalemuir 80.64 342 i P P 02 06 55.8 +1.9
ESK Eskdalemuir 80.64 342 eP P 02 06 53.9 0.0
comp=Z,67nm,1.4s
ESK LR LR
comp=Z,6µm,18.0s
TOTH TOTAH 80.65 306 eP P 02 06 55.0 +0.6
KHC Kasperske Hory 80.67 329⇑ eP P 02 06 54.7 +0.5
KHC ex x 02 07 04.3
KHC ePP PP 02 10 04.0 +6.7
KHC eS **S 02 16 59.5 -1.1**
KHC AMS AMS 02 47 50.0
comp=Z,14µm,15.0s
KHC Kasperske Hory 80.67 329 eP P 02 06 54.7 +0.5
KHC pmax pmax
comp=Z,34nm,1.1s
KHC MLR MLR
comp=Z,4µm,18.0s
KHC Kasperske Hory 80.67 329 eP P 02 06 54.7 +0.5
comp=Z,34nm,1.1s
KHC LR LR
comp=Z,4µm,18.0s
MPEP Malo Peshtene 80.67 320 P P 02 06 55.3 +1.0
RAR Rarotonga 80.68 128 LR LR 02 38 25.4
comp=Z,2µm,18.9s,baz=300,slow=32
CONA Conrad Observa 80.72 327 i pP P 02 06 55.6 +1.0
comp=Z,45nm,1.2s,SNR=51
DIM Dimitrovgrad 80.74 318 P P 02 06 56.4 +1.8
PKS9 Tamasi 80.74 325⇓ eP P 02 06 55.6 +1.0
ECK Cauldkaine Hil 80.75 341⇑ eP P 02 06 55.1 +0.7
WTSB Winterswijk 80.75 335 i P P 02 06 55.0 +0.5
comp=Z,236nm,1.8s
DGAR Diego Garcia 80.76 252 PFAKE 02 07 10.0 +15
DGAR LR LR
comp=Z,3µm,18.0s
M31A Lambtecht Ranc 80.77 43 P P 02 06 54.2 -0.7
baz=317,SNR=5.4
T25A Trinidad 80.78 49 P P 02 06 55.6 +0.3
baz=314,SNR=5.1
T25A Trinidad 80.78 49 eP P 02 06 54.9 -0.4
comp=Z,49nm,1.1s
L32A Elgin 80.79 42 P P 02 06 54.6 -0.4
baz=317
GERES GERESS Array B 80.85 329 P P 02 06 55.2 0.0
comp=Z,8.0nm,0.9s,baz=38,slow=5.0,SNR=51
GERES PP **PP 02 10 00.9 +2.0**
comp=Z,2.3nm,0.8s,baz=46,slow=5.8,SNR=3.9
GERES LR LR 02 47 12.0
comp=Z,10µm,18.1s,baz=11,slow=39
K33A Hardington 80.86 41 P P 02 06 55.1 -0.2
baz=318
J34A George 80.87 40 P P 02 06 54.8 -0.5
baz=318
H36A Jessenland, He 80.87 38 P P 02 06 55.3 0.0
baz=319,SNR=5.9
PKSM Moragy 80.88 325⇓ iP P 02 06 56.1 +0.8
PKSM Moragy 80.88 325⇑ eP P 02 06 55.6 +0.3
SPMN Marine on St. 80.90 37 P P 02 06 55.0 -0.4
baz=320,SNR=6.0
SPMN Marine on St. 80.90 37 PFAKE 02 07 10.0 +15
SPMN LR LR
comp=Z,2µm,19.0s
I35A Creekview Farm 80.91 39 P P 02 06 55.2 -0.4
baz=319,SNR=7.4
BRBR Barbar 80.92 306 eP P 02 06 55.9 -0.2
L33A Hoskins 81.04 41 P P 02 06 55.7 -0.7
baz=318
LAZ Ladron 81.06 52 eP P 02 06 57.8 +1.0
PGB Panagyurishte 81.06 319 P P 02 06 57.4 +1.0
KDZ Kurdzhali 81.09 318 P P 02 06 57.9 +1.4
ANMO Albuquerque 81.09 51 P P 02 06 57.8 +0.8
baz=313
ANMO Albuquerque 81.09 51 d iP P 02 06 57.2 +0.3
ANMO pmax pmax
comp=Z,62nm,1.2s
ANMO MLR MLR
comp=Z,1µm,17.0s
ANMO Albuquerque 81.09 51 eP P 02 06 57.8 +0.8
comp=Z,72nm,1.3s
ANMO LR LR
comp=Z,1µm,21.0s
GRFO Grafenberg 81.11 331 eP P 02 06 57.6 +1.1
GRFO pmax pmax
comp=Z,187nm,1.3s
GRFO MLR MLR
comp=Z,6µm,19.0s
GRFO Grafenberg 81.11 331 eP P 02 06 57.6 +1.1
comp=Z,187nm,1.3s
GRFO LR LR
comp=Z,6µm,19.0s
BGNE Belgrade 81.15 42 P P 02 06 56.4 -0.5
baz=317,SNR=13
BGNE Belgrade 81.15 42 eP P 02 06 57.2 +0.3
comp=Z,134nm,1.0s
BGNE LR LR
comp=Z,2µm,18.0s
N31A Bailey Ranch, 81.16 43 P P 02 06 56.1 -0.9
baz=317
J35A Milford 81.17 39 P P 02 06 56.5 -0.4
baz=319
GMK Mull of Kintyr 81.17 343⇑ eP P 02 06 57.3 +0.6
K34A Le Mars 81.25 40 P P 02 06 56.6 -0.8
baz=318,SNR=7.9
I36A Fitzsimmons Fa 81.25 38 P P 02 06 57.1 -0.3
baz=319,SNR=10.0
KESW Keswick, Cumbr 81.28 341 eP P 02 06 58.2 +0.9
KESW AMB AMB 02 06 59.3
comp=Z,78nm,1.5s
H37A Dierke Farm, C 81.34 37 P P 02 06 57.0 -0.8
baz=320
ARSA Arzberg 81.39 327 i pP P 02 06 59.3 +1.3
SNR=22
TCHB Talchebab 81.41 306 eP P 02 06 59.5 +1.1
GAL1 Galloway 81.41 342 eP P 02 06 57.9 0.0
GAL1 AMB AMB 02 06 59.6
comp=Z,23nm,1.6s
Y22D IRIS PASSCAL I 81.41 52 P P 02 06 59.6 +1.0
baz=313
Y22D IRIS PASSCAL I 81.41 52 PFAKE 02 07 10.0 +11
Y22D LR LR
comp=Z,2µm,20.0s
RZN Rozhen 81.42 319 P P 02 06 50.2 -8.3
RZN P P 02 06 51.8 -6.7
LPM Los Pinos Moun 81.42 52 eP P 02 07 00.2 +1.5
MOA Molln 81.43 328 i pP P 02 06 59.4 +1.1

comp=Z,40nm,1.6s,SNR=25
CSS Mathiatis 81.45 309 P P 02 06 59.2 +0.6
CSS Mathiatis 81.45 309 eP P 02 06 59.2 +0.6
comp=Z,11nm,0.9s
O31A Woolen Ranch, 81.45 44 P P 02 06 58.0 -0.5
baz=317,SNR=5.6
BEHE Becsehely 81.48 326⇑ eP P 02 06 59.7 +1.2
M33A Taylor Creek F 81.52 42 P P 02 06 57.9 -0.9
baz=318
BNM Barren Site 81.54 52 eP P 02 06 60.0 +0.6
I37A Lemond, Waseca 81.54 38 P P 02 06 58.9 -0.1
baz=320,SNR=22
N32A Stulken Farm, 81.55 43 P P 02 06 58.0 -1.0
baz=317
J36A Seneca 1, Swea 81.62 39 P P 02 06 58.4 -0.9
baz=319,SNR=5.8
L34A Svendsen Farm, 81.64 41 P P 02 06 58.9 -0.5
baz=318,SNR=8.1
K35A Storm Lake 81.64 40 P P 02 06 58.8 -0.7
baz=319,SNR=6.9
SCHQ Schefferville 81.67 17 P P 02 06 59.7 +0.4
comp=Z,7.5nm,0.8s,baz=2.0,slow=6.2,SNR=21
SCHQ LR LR 02 48 31.1
comp=Z,3μm,18.3s,baz=351,slow=40
SCHQ Schefferville 81.67 17 eP P 02 06 59.9 +0.5
comp=Z,151nm,1.9s
319A Douglas 81.78 56 eP P 02 07 01.1 +0.6
comp=Z,88nm,1.1s
319A LR LR
comp=Z,1μm,19.0s
COWI Conover 81.84 34 eP P 02 06 58.8 -1.7
comp=Z,49nm,1.4s
COWI LR LR
comp=Z,2μm,19.0s
M34A Aspy Farms, Fr 81.88 41 P P 02 07 00.5 -0.3
baz=318
O32A Brockman Farm, 81.93 43 P P 02 06 59.4 -1.7
baz=317
121A Cookes Peak, D 81.93 54 P P 02 07 02.3 +0.9
baz=313,SNR=22
L35A Bielow Farm, R 81.94 40 P P 02 07 00.3 -0.8
baz=319
MMB Musomiste 81.99 319 P P 02 07 01.9 +0.6
N33A J Bar K, Exete 82.00 42 P P 02 07 00.3 -1.2
baz=318
J37A Redenius Farm, 82.01 38 P P 02 07 00.8 -0.6
baz=320,SNR=12
I38A Scanlan Farm, 82.02 37 P P 02 07 01.0 -0.4
baz=320,SNR=5.8
PERS Pernice 82.05 327 i P P 02 07 01.9 +0.3
comp=Z,535nm,1.9s
PERS ePP PP 02 10 09.2 +0.4
PERS ePPP PPP 02 11 58.3
PERS eS S 02 17 14.3 -0.8
SOKA Soboth 82.05 327 i pP P 02 07 02.7 +1.1
comp=Z,96nm,1.5s,SNR=68
HGN Heimansgroeve 82.06 334 i P P 02 07 01.9 +0.5
comp=Z,187nm,1.8s
HGN ePP PP 02 10 12.8 +4.2
HGN eS S 02 17 15.8 +1.1
HGN eSS SS 02 22 33.2 +0.6
WIM Isle of Man 82.06 342⇑ eP P 02 07 02.2 +0.7
K36A Gilmore City 82.08 39 P P 02 07 01.5 -0.3
baz=319,SNR=14
NVR Nevrokopi 82.10 319 P P 02 07 02.4 +0.5
KKB Krupnik 82.10 320 P P 02 07 03.3 +1.4
BEBN Eben Emael 82.11 335 P P 02 07 02.5 +0.8
MEM Membach 82.17 334 P P 02 07 02.5 +0.4
comp=Z,36nm,2.4s
CBKS Cedar Bluff 82.20 45 P P 02 07 01.4 -1.2
baz=316
CBKS Cedar Bluff 82.20 45 PFAKE 02 07 10.0 +7.5
CBKS LR LR
comp=Z,2μm,19.0s
P32A Huiting Farm, 82.22 44 P P 02 07 01.4 -1.1
baz=317,SNR=17
GMM Mts of Mourne 82.27 343⇑ eP P 02 07 03.1 +0.6
HSIG 82.28 58 eP P 02 07 00.2 -2.8
comp=Z,97nm,1.7s
HSIG LR LR
comp=Z,1μm,18.0s
M35A Neola 82.35 41 P P 02 07 02.9 -0.3
baz=318,SNR=12
K37A Belmond 82.38 39 P P 02 07 02.9 -0.4
baz=320,SNR=23
L36A Harm Buss Farm 82.39 40 P P 02 07 02.7 -0.7
baz=319
OBKA Obir 82.39 327 i pP P 02 07 04.1 +0.7
comp=Z,24nm,1.1s,SNR=13
SRS Serrai 82.41 319 P P 02 07 02.6 -0.9
N34A Lincoln 82.42 42 P P 02 07 02.2 -1.4
baz=318,SNR=7.1
KBA Koelnbreinsper 82.42 328 i pP P 02 07 05.2 +1.6
comp=Z,69nm,1.6s,SNR=42
O33A Hebron 82.42 43 P P 02 07 02.4 -1.3
baz=318
SISC Sisak 82.44 326 P P 02 07 02.7 -0.8
CWF Charnwood Fore 82.49 339⇑ eP P 02 07 04.4 +0.7
CWF AMS AMS 02 52 00.7
comp=Z,4μm,15.2s
CWF Charnwood Fore 82.49 339 eP P 02 07 03.3 -0.4
comp=Z,106nm,1.4s
CWF LR LR
comp=Z,4μm,22.0s
J38A Wedel Dairy, R 82.51 38 P P 02 07 02.9 -1.1
baz=320,SNR=7.5
UCC Uccle 82.54 335 P P 02 07 05.2 +1.3
SRIG Santa Rosalia 82.56 61 PFAKE 02 07 20.0 +16
SRIG LR LR
comp=Z,1μm,19.0s
BCLA Clavier 82.56 335 P P 02 07 05.0 +0.9
comp=Z,57nm,2.2s
STU Stuttgart 82.61 332 eP P 02 07 05.4 +1.0
STU pmax pmax
comp=Z,122nm,1.3s
STU MLR MLR
comp=Z,5μm,21.0s
STU Stuttgart 82.61 332 eP P 02 07 05.4 +1.0
comp=Z,122nm,1.3s
STU LR LR
comp=Z,5μm,21.0s
BLY Banja Luka 82.66 325⇑ iP P 02 07 05.7 +1.0
MYKA Terra Mystica 82.66 328 i pP P 02 07 05.2 +0.3
comp=Z,28nm,1.0s,SNR=18
WPM1 Penmaenmawr 82.69 341⇑ eP P 02 07 05.4 +0.7
Q32A Meitler Ranch, 82.70 44 P P 02 07 04.1 -1.0
baz=317,SNR=13
KNT Kendrikon 82.72 319 P P 02 07 04.0 -1.1
PLE Pljevlja 82.77 323⇑ iP P 02 07 05.4 -0.1
VAY Valandovo 82.77 319 P P 02 07 04.5 -0.8
VAY Valandovo 82.77 319 iP P 02 07 06.3 +0.9
LJU Ljubljana 82.77 327 eP P 02 07 05.4 +0.1
LJU eS S 02 17 18.8 -3.5
WLF1 Llynfaes 82.78 341 eP P 02 07 05.7 +0.6
WLF1 AMB AMB 02 07 07.0
comp=Z,62nm,2.2s
WLF1 AMS AMS 02 50 43.7
comp=Z,4μm,16.3s
O34A Beatrice 82.80 42 P P 02 07 04.4 -1.1
baz=318,SNR=5.9
M36A Felix, Anita 82.81 40 P P 02 07 05.3 -0.3
baz=319,SNR=8.7
L37A Phoenix Point, 82.81 39 P P 02 07 04.8 -0.8
baz=320,SNR=14
SNF Seneffe 82.81 335 P P 02 07 06.0 +0.6
SKO Skopje 82.83 321 iP P 02 07 07.2 +1.5
YER Yerkesik 82.83 313 P P 02 07 06.7 +0.9
N35A Tabor 82.83 41 P P 02 07 05.4 -0.3
baz=319,SNR=15
VISS Visnje 82.83 327 iP P 02 07 05.9 +0.2
P33A Williams Farm, 82.83 43 P P 02 07 04.6 -1.1
baz=318
FOEL Foel Wylfa 82.85 341⇑ eP P 02 07 06.0 +0.4
FOEL AMB AMB 02 07 07.6
comp=Z,111nm,2.3s
FOEL AMS AMS 02 49 48.4
comp=Z,3μm,19.6s
YLL Llanberis 82.86 341⇑ eP P 02 07 06.5 +0.9
IVA Berane 82.88 322⇑ iP P 02 07 06.8 +0.7
K38A Parkersburg 82.88 38 P P 02 07 05.4 -0.5
baz=320
BOJS Bojanci 82.90 326 eP P 02 07 06.4 +0.5
comp=Z,388nm,2.4s
WATA Walderalm 82.91 329 i pP P 02 07 08.1 +1.9
comp=Z,12nm,0.8s,SNR=5.9
WLF Walferdange 82.92 334 P P 02 07 07.0 +1.0
comp=Z,95nm,2.2s
WLF Walferdange 82.92 334 eP P 02 07 07.1 +1.0
WLF pmax pmax
comp=Z,91nm,1.4s
WLF MLR MLR
comp=Z,9μm,21.0s
WLF Walferdange 82.92 334 eP P 02 07 07.1 +1.0
comp=Z,91nm,1.4s
WLF LR LR
comp=Z,9μm,21.0s
LANF Langenberg 82.94 333⇑ eP P 02 07 06.7 +0.6
WTTA Wattenberg 82.94 329 i pP P 02 07 07.5 +1.1
comp=Z,60nm,1.9s,SNR=14
ABTA Abfaltersbach 83.02 329 i P P 02 07 06.7 0.0
comp=Z,31nm,1.3s,SNR=20
PLG Polygyros 83.03 318 P P 02 07 07.2 +0.4
R32A Long Quarter, 83.04 45 P P 02 07 05.4 -1.5
baz=317
PVY Plav 83.06 322⇑ iP P 02 07 07.3 +0.2
DOU Dourbes 83.07 335 P P 02 07 07.2 +0.4
YRE Yr Eifl 83.07 341⇑ eP P 02 07 07.6 +0.9
MOTA Moosalm 83.08 330 i pP P 02 07 08.7 +1.6
comp=Z,44nm,1.1s,SNR=28
Q33A Connelly Farm, 83.08 44 P P 02 07 06.3 -0.8
baz=318,SNR=13
UPM Unac-Piva 83.09 323⇑ iP P 02 07 06.9 -0.3
RETA Reutte 83.10 330 i pP P 02 07 08.2 +1.1
comp=Z,56nm,1.4s,SNR=35
HLM1 Long Mynd 83.10 340⇑ eP P 02 07 07.3 +0.4
HLM1 AMB AMB 02 07 08.8
comp=Z,72nm,2.5s
HLM1 AMS AMS 02 49 26.8
comp=Z,3μm,18.5s
O35A Humboldt 83.14 42 P P 02 07 06.4 -0.9
baz=318
L38A Oak Wood Farm, 83.18 39 P P 02 07 06.8 -0.7
baz=320,SNR=6.4
P34A Walnut Farm, R 83.20 43 P P 02 07 06.7 -1.0
baz=318,SNR=14
N36A Muff Farm, Cla 83.21 41 P P 02 07 07.5 -0.2
baz=319
M37A Trindle Farm, 83.21 40 P P 02 07 08.1 +0.5
baz=320
SCIA State Center 83.24 39 eP P 02 07 08.0 +0.2
comp=Z,181nm,1.4s
SCIA LR LR
comp=Z,2μm,19.0s
SKP1 Kophill 83.26 339⇑ eP P 02 07 08.0 +0.2
STR Strasbourg 83.28 332⇑ eP P 02 07 09.0 +1.1
DSB Dublin 83.29 342 eP P 02 07 08.8 +1.0
comp=Z,99nm,1.3s
DSB LR LR
comp=Z,2μm,18.0s
BFO Black Forest 83.30 332 i P P 02 07 08.8 +0.8
BFO Black Forest 83.30 332 eP P 02 07 08.5 +0.5
comp=Z,146nm,1.6s
BFO LR LR
comp=Z,5μm,19.0s
SSW Stow on the Wo 83.33 339 eP P 02 07 08.7 +0.7
NKY Niksic 83.35 323⇑ iP P 02 07 08.7 +0.2
TRI Trieste 83.36 327 eP P 02 07 08.1 -0.2
TRI pmax pmax
comp=Z,67nm,1.1s
TRI MLR MLR
comp=Z,4μm,21.0s
TRI Trieste 83.36 327 eP P 02 07 08.1 -0.2
comp=Z,67nm,1.1s
TRI LR LR
comp=Z,4μm,21.0s
NKME Niksic 83.40 322⇑ iP P 02 07 09.1 +0.4
MENF Mencas 83.43 336⇑ eP P 02 07 09.0 +0.4
S32A Newby Ranch, P 83.44 45 P P 02 07 08.3 -0.6
baz=317
UDBI Udbina 83.45 325 P P 02 07 08.9 0.0
HIZ Hauiti 83.47 156 eP P 02 07 10.7 +2.0
comp=Z,113nm,1.3s
BRY Bratogost 83.49 323 eP P 02 07 09.2 -0.1
FETA Feichten 83.50 330 i pP P 02 07 10.8 +1.5
comp=Z,30nm,1.0s,SNR=20
R33A Olander Ranch, 83.51 44 P P 02 07 08.8 -0.5
baz=318,SNR=6.6
PDG Podgorica 83.52 322⇓ iP P 02 07 09.8 +0.6
PDG Podgorica 83.52 322 P P 02 07 08.6 -0.6
WLS Welschbruch 83.58 332 eP P 02 07 10.1 +0.6
ARG Arkhangelos 83.58 313 P P 02 07 17.5 +7.9
STRD Stroud 83.58 339⇑ eP P 02 07 10.3 +0.9
STRD AMB AMB 02 07 12.1
comp=Z,175nm,2.1s
STRD AMS AMS 02 52 36.4
comp=Z,4μm,14.7s
CEME Cevo 83.59 322⇑ iP P 02 07 09.8 +0.1
DAVA Damuels 83.60 330 i pP P 02 07 10.6 +0.9
comp=Z,47nm,1.3s,SNR=23
MCH1 Michaelchurch 83.61 340⇑ eP P 02 07 10.3 +0.9
MCH1 AMB AMB 02 07 12.4
comp=Z,105nm,2.4s
MCH1 AMS AMS 02 50 53.6
comp=Z,3μm,16.8s
BIA Bitola 83.61 320 eP P 02 07 09.9 +0.1
Q34A Chapman 83.61 43 P P 02 07 09.1 -0.6
baz=318,SNR=8.9
M38A Pleasantville 83.62 39 P P 02 07 09.2 -0.5
baz=320,SNR=14
N37A Lee Faris, Mou 83.62 40 P P 02 07 09.7 -0.2
baz=320,SNR=15
P35A Duane Minner, 83.64 42 P P 02 07 09.0 -0.9
baz=318,SNR=8.7
KSU1 Kansas State U 83.65 43 P P 02 07 09.2 -0.8
baz=318,SNR=7.5
KSU1 Kansas State U 83.65 43 eP P 02 07 08.6 -1.4
comp=Z,38nm,1.0s
KSU1 LR LR
comp=Z,2μm,18.0s
MONM Monmouth 83.70 340⇑ eP P 02 07 09.8 -0.1
MONM AMB AMB 02 07 11.8
comp=Z,114nm,2.0s
MONM AMS AMS 02 52 57.9
comp=Z,4μm,14.8s
HMNX Herstmonceux 83.70 338 eP P 02 07 11.2 +1.2
HMNX AMS AMS 02 51 30.7
comp=Z,4μm,14.6s
O36A Bolckow 83.72 41 P P 02 07 09.8 -0.5
baz=319,SNR=7.1
MXZ Matakaoa Point 83.74 153 PFAKE 02 07 20.0 +10
MXZ LR LR
comp=Z,2μm,18.0s
DRME Dracevica, Mon 83.74 322⇑ iP P 02 07 11.2 +0.8
FNA Florina 83.76 320 P P 02 07 09.7 -0.9
LPW Lampeter 83.77 341⇑ eP P 02 07 11.2 +0.9
LPW AMB AMB 02 07 12.2
comp=Z,88nm,1.8s
LPW AMS AMS 02 50 16.4
comp=Z,4μm,17.5s
BUM Brajici-Budva 83.79 322⇑ iP P 02 07 10.7 0.0
OHR Ohrid 83.80 320 iP P 02 07 11.3 +0.5
ECH Echery 83.81 332⇑ eP P 02 07 11.4 +0.7
T32A Huddler Ranch, 83.83 46 P P 02 07 10.4 -0.5
baz=317,SNR=9.4
HCY Herceg Novi 83.86 323⇑ iP P 02 07 11.4 +0.4
PMOR Pomariorio Ree 83.88 115 eT T 03 39 15.3
comp=Z,8.5nm,0.2s
ULC Ulcinj 83.89 322⇑ iP P 02 07 11.5 +0.3
R34A Isabella, Hill 83.91 44 P P 02 07 10.6 -0.8
baz=318
AMTX Amarillo 83.94 49 P P 02 07 12.2 +0.5
baz=316
AMTX Amarillo 83.94 49 eP P 02 07 12.2 +0.5
comp=Z,141nm,1.6s
AMTX LR LR
comp=Z,1μm,19.0s
MSTX Muleshoe 83.95 50 P P 02 07 11.5 -0.3
baz=315,SNR=16
MSTX Muleshoe 83.95 50 eP P 02 07 12.4 +0.6
comp=Z,78nm,1.3s
MSTX LR LR
comp=Z,2μm,20.0s
URZ Urewera 83.96 154 PFAKE 02 07 20.0 +8.8
URZ LR LR
comp=Z,2μm,18.0s
MNTX Cornudas Mount 83.98 53 P P 02 07 11.9 +0.1
baz=314,SNR=46
MNTX Cornudas Mount 83.98 53 eP P 02 07 12.1 +0.2
comp=Z,79nm,1.4s
MNTX LR LR
comp=Z,1μm,19.0s
P36A Good Intent, A 83.98 42 P P 02 07 11.0 -0.6
baz=319,SNR=9.6
FUORN Ofenpass-Fuorn 84.01 330 eP P 02 07 13.2 +1.2
comp=Z,223nm,1.1s
FUORN LR LR
comp=Z,9μm,18.0s
FYTO Fytoko, Volos 84.02 318 P P 02 07 11.6 -0.2
S33A Kaszmaul Farm, 84.03 45 P P 02 07 11.3 -0.6
baz=318
TIR Tirane 84.07 321⇑ iP P 02 07 12.9 +0.8
TIR Tirane 84.07 321 eP P 02 07 12.6 +0.5
TIR pmax pmax
comp=Z,140nm,1.1s
TIR MLR MLR
comp=Z,4μm,20.0s
TIR Tirane 84.07 321 eP P 02 07 12.6 +0.5
comp=Z,140nm,1.1s
TIR LR LR
comp=Z,4μm,20.0s
N38A Joes South For 84.08 40 P P 02 07 11.6 -0.5
baz=320,SNR=8.8
O37A Wolven Farm, M 84.10 41 P P 02 07 11.6 -0.7
baz=320,SNR=7.6
Q35A Mercer Eighty, 84.13 43 P P 02 07 11.7 -0.8
baz=319
MOF Molkenrain 84.13 332⇑ eP P 02 07 13.0 +0.6
NEST Nestorio 84.20 320 P P 02 07 08.1 -4.8
T33A Patterson Ranc 84.27 45 P P 02 07 13.1 -0.1
baz=318
Q36A Arnold C. Orve 84.35 42 P P 02 07 12.5 -1.0
baz=319
N39A Derby Farms, D 84.37 39 P P 02 07 13.3 -0.3
baz=320,SNR=9.5
U32A Winter Ranch, 84.37 46 P P 02 07 13.7 0.0
baz=317,SNR=7.3
KPRO Kipourio 84.40 319 P P 02 07 12.6 -1.3
S34A Willow Spring 84.42 44 P P 02 07 13.6 -0.4
baz=318,SNR=8.0
P37A Lathrop 84.44 41 P P 02 07 13.5 -0.5
baz=320,SNR=11
R35A Emporia Munici 84.44 43 P P 02 07 13.9 -0.1
baz=318,SNR=17
O38A Galt 84.47 40 P P 02 07 14.0 -0.2
baz=320,SNR=6.3
TUE Stuetta 84.48 330 eP P 02 07 14.4 0.0
comp=Z,61nm,1.0s
TUE LR LR
comp=Z,5μm,18.0s
PPT Papeete 84.53 118 LR LR 02 39 04.1
comp=Z,3μm,20.0s,baz=296,slow=32
PPT2 Papeete2 84.55 118 eS S 02 17 31.9 -9.0
comp=Z,3μm,32.5s
PPT2 Papeete2 84.55 118 eLR LR 02 33 46.1
comp=Z,6μm,21.5s,baz=319
PPT2 Papeete2 84.55 118 eT T 03 40 06.5
comp=Z,3.7nm,0.3s
LKR Lokris 84.55 317 P P 02 07 13.5 -1.1
BKZ Black Stump Fm 84.58 155 PFAKE 02 07 30.0 +16
BKZ LR LR
comp=Z,3μm,20.0s
KARP Karpathos 84.60 313 PFAKE 02 07 30.0 +15
KARP LR LR
comp=Z,1μm,19.0s
LOMF Lomont 84.67 332⇑ eP P 02 07 15.8 +0.7
R36A Gordon, Harris 84.80 43 P P 02 07 15.6 -0.3
baz=319,SNR=22
U33A Lingo Farm, Me 84.82 46 P P 02 07 16.1 +0.1
baz=318,SNR=10.0
P38A Dawn 84.82 41 P P 02 07 15.6 -0.3
baz=320,SNR=6.2
V32A Arapaho 84.83 47 P P 02 07 16.3 +0.2
baz=317
O39A Kirksville 84.83 40 P P 02 07 15.4 -0.5
baz=320
S35A Otter Creek Ra 84.86 44 P P 02 07 15.9 -0.3
baz=318,SNR=30
JAN Janina 84.88 319 P P 02 07 16.6 +0.3
T34A McClaskey Farm 84.88 45 P P 02 07 16.0 -0.3
baz=318,SNR=18
Q37A Longview Farm, 84.93 42 P P 02 07 15.8 -0.6
baz=319
U34A Anderson Ranch 85.13 45 P P 02 07 17.7 +0.1
baz=318,SNR=20
U34A Anderson Ranch 85.13 45 eP P 02 07 18.4 +0.9
comp=Z,168nm,1.4s
U34A LR LR
comp=Z,2μm,18.0s
W32A Sentinel 85.15 47 P P 02 07 17.9 +0.2
baz=317,SNR=11
ANX Ano Chora 85.15 318 P P 02 07 16.5 -1.2
R37A Teagarden Farm 85.16 42 P P 02 07 16.9 -0.8
baz=319,SNR=14
V33A Lossen Ranch, 85.17 46 P P 02 07 17.5 -0.2
baz=318,SNR=5.6
KALE Kalithea 85.19 318 P P 02 07 16.5 -1.4
S36A Lake Cedric, C 85.21 43 P P 02 07 17.5 -0.4
baz=319,SNR=18
SGD Sagiada 85.22 320 P P 02 07 15.8 -2.1
IGT Igoumenitsa 85.23 320 P P 02 07 15.3 -2.7
TAOE Nuku Hiva Isla 85.25 106 eS S 02 17 41.2 -6.9
comp=Z,754nm,25.3s
TAOE Nuku Hiva Isla 85.25 106 eLR LR 02 34 14.4
comp=Z,5μm,20.8s,baz=312
TAOE Nuku Hiva Isla 85.25 106 PFAKE 02 07 30.0 +12
TAOE LR LR
comp=Z,4μm,20.0s
O40A La Belle 85.26 39 P P 02 07 17.5 -0.5
baz=321,SNR=14
DYA Yadsworthy 85.27 340 eP P 02 07 17.9 0.0
DYA AMB AMB 02 07 19.5
comp=Z,109nm,1.8s
DYA AMS AMS 02 59 38.3
comp=Z,4μm,12.5s
DYA Yadsworthy 85.27 340 eP P 02 07 17.9 0.0
comp=Z,221nm,1.3s
DYA LR LR
comp=Z,4μm,18.0s
Q38A Cooks Store, C 85.29 41 P P 02 07 17.9 -0.4
baz=320,SNR=8.8
T35A Sooner Cattle 85.33 44 P P 02 07 18.5 0.0
baz=318,SNR=21
SENIN Lac Senin/Sane 85.33 331 eP P 02 07 19.3 +0.7
comp=Z,86nm,1.1s
SENIN LR LR
comp=Z,6μm,20.0s
KEK Kerkira 85.36 320 P P 02 07 17.9 -0.7
VAL Valentia 85.36 344⇓ iP P 02 07 27.3 +9.0
VAL Valentia 85.36 344 eS S 02 17 53.0 +5.1
VAL Valentia 85.36 344⇓ iSS SS 02 23 22.2 +1.1
PDO Prodromos 85.52 319 P P 02 07 17.6 -1.8
Q39A Willow Grove F 85.54 41 P P 02 07 19.4 -0.2
baz=320,SNR=15
T36A Boggs Farm, Ca 85.55 44 P P 02 07 19.6 0.0
baz=319,SNR=19
W33A Caddo, Fort Co 85.56 47 P P 02 07 20.2 +0.5
baz=318,SNR=11
S37A Fort Scott 85.58 43 P P 02 07 19.5 -0.3
baz=319,SNR=22
V34A Guthrie 85.58 46 P P 02 07 20.1 +0.3
baz=318,SNR=19
V34A Guthrie 85.58 46 eP P 02 07 18.7 -1.1
comp=Z,232nm,1.6s
V34A LR LR
comp=Z,1μm,20.0s
U35A Pawnee 85.61 45 P P 02 07 19.8 -0.1
baz=318,SNR=20
P40A Paris 85.63 40 P P 02 07 19.8 -0.2
baz=321,SNR=20
X32A Elmer 85.64 48 P P 02 07 19.9 -0.2
baz=317,SNR=15
LKD2 Lefkada island 85.64 319 P P 02 07 20.0 -0.1
WMOK Wichita Mounta 85.69 47 eP P 02 07 20.1 -0.3
WMOK pmax pmax
comp=Z,96nm,1.7s
WMOK Wichita Mounta 85.69 47 PFAKE 02 07 30.0 +10
WMOK LR LR
comp=Z,2μm,18.0s
R38A Fenwick Farm, 85.73 42 P P 02 07 19.3 -1.1
baz=320,SNR=14
DRO Drossia 85.74 318 P P 02 07 20.7 +0.1
MEH Mehetia 85.77 118 eT T 03 41 37.5
comp=Z,8.1nm,0.2s
RLS Riolos of Patr 85.79 318 P P 02 07 20.9 +0.2
LAST Lasithi 85.82 314⇓ iP P 02 07 23.2 +2.1
LAST Lasithi 85.82 314 PFAKE 02 07 30.0 +8.9
LAST LR LR
comp=Z,3μm,20.0s
JQE Queens East 85.88 338⇑ eP P 02 07 21.5 +0.5

THZ	**Tophouse**	**85.89**	**159**	*eP*	**P**	02 07 20.9	**0.0**
	comp=Z,146nm,1.7s						
W34A	**Bridge Creek,**	**85.89**	**46**	P	**P**	**02 07 21.6**	**+0.2**
	baz=318,SNR=8.2						
W34A	**Bridge Creek,**	**85.89**	**46**	*eP*	**P**	**02 07 22.4**	**+1.1**
	comp=Z,153nm,1.5s						
W34A				LR	LR		
	comp=Z,2µm,20.0s						
JSA	**Saint Aubin**	**85.93**	**338⇑**	*eP*	**P**	**02 07 21.9**	**+0.7**
JSA				AMB	AMB	02 07 22.9	
	comp=Z,89nm,1.9s						
SNZO	**South Karori**	**85.99**	**157**	PFAKE		02 07 30.0	+8.7
SNZO				LR	LR		
	comp=Z,2µm,20.0s						
X33A	**Lawton**	**85.99**	**47**	P	**P**	**02 07 21.8**	**-0.1**
	baz=318						
VLC	**Villacollemand**	**86.00**	**328**	PFAKE		02 07 30.0	+8.2
VLC				LR	LR		
	comp=Z,4µm,19.0s						
V35A	**Meyer Ranch, C**	**86.01**	**45**	P	**P**	**02 07 21.4**	**-0.5**
	baz=318						
T37A	**Cheneyville 18**	**86.01**	**43**	P	**P**	**02 07 21.3**	**-0.6**
	baz=319,SNR=22						
Q40A	**Laux Farm, Aux**	**86.03**	**40**	P	**P**	**02 07 21.9**	**0.0**
	baz=321,SNR=16						
IDI	**Anoyia**	**86.05**	**314**	PFAKE		02 07 30.0	+7.8
IDI				LR	LR		
	comp=Z,3µm,18.0s						
R39A	**Chumby, Stover**	**86.07**	**41**	P	**P**	**02 07 21.5**	**-0.7**
	baz=320,SNR=24						
MATE	**Matera**	**86.11**	**322⇑**	*iP*	**P**	**02 07 23.7**	**+1.4**
U36A	**Oologah**	**86.13**	**44**	P	**P**	**02 07 22.3**	**-0.2**
	baz=319						
VLS	**Valsamata**	**86.14**	**319**	P	**P**	**02 07 22.2**	**-0.3**
S38A	**Stockton**	**86.15**	**42**	P	**P**	**02 07 21.4**	**-1.1**
	baz=320,SNR=11						
ITM	**Ithomi**	**86.22**	**317**	P	**P**	**02 07 22.2**	**-0.7**
AQU	**L'Aquila**	**86.22**	**326**	*eP*	**P**	**02 07 23.8**	**+0.9**
AQU				pmax	pmax		
	comp=Z,136nm,1.4s						
AQU				MLR	MLR		
	comp=Z,7µm,19.0s						
AQU	**L'Aquila**	**86.22**	**326**	*eP*	**P**	**02 07 23.8**	**+0.9**
	comp=Z,136nm,1.4s						
AQU				LR	LR		
	comp=Z,7µm,19.0s						
Y33A	**Hilltop Ranch,**	**86.31**	**48**	P	**P**	**02 07 22.9**	**-0.6**
	baz=317						
X34A	**Smith Ranch, M**	**86.32**	**47**	P	**P**	**02 07 23.9**	**+0.4**
	baz=318,SNR=14						
T38A	**Diamond**	**86.40**	**43**	P	**P**	**02 07 23.6**	**-0.3**
	baz=320,SNR=33						
S39A	**Bolivar**	**86.41**	**42**	P	**P**	**02 07 22.9**	**-0.9**
	baz=320,SNR=21						
W35A	**Tecumseh**	**86.44**	**46**	P	**P**	**02 07 24.1**	**0.0**
	baz=318,SNR=8.6						
U37A	**Salina**	**86.45**	**44**	P	**P**	**02 07 23.8**	**-0.3**
	baz=319,SNR=16						
TUL1	**Leonard**	**86.46**	**45**	P	**P**	**02 07 23.8**	**-0.4**
	baz=319,SNR=9.1						
TUL1	**Leonard**	**86.46**	**45**	PFAKE		02 07 40.0	+16
TUL1				LR	LR		
	comp=Z,2µm,18.0s						
V36A	**Jenks**	**86.47**	**45**	P	**P**	**02 07 24.0**	**-0.2**
	baz=319,SNR=9.6						
R40A	**Maddies Statio**	**86.48**	**41**	P	**P**	**02 07 23.4**	**-0.8**
	baz=321						
SLBS	**Sierra La Lagu**	**86.52**	**62**	*eP*	**P**	**02 07 25.0**	**+0.3**
	comp=Z,88nm,1.4s						
BNI	**Bardonecchia**	**86.68**	**331**	PFAKE		02 07 40.0	+15
BNI				LR	LR		
	comp=Z,7µm,20.0s						
TX31	**Lajitas Ar. Si**	**86.69**	**54**	*eP*	**P**	**02 07 25.9**	**+0.4**
TXAR	**Lajitas Array**	**86.69**	**54**	P	**P**	**02 07 24.6**	**-0.9**
	comp=Z,28nm,1.1s,baz=298,slow=2.7,SNR=121						
TXAR				LR	LR	02 41 03.3	
	comp=Z,654nm,22.0s,baz=0.0,slow=32						
ABTX	**Abilene, Hawle**	**86.74**	**49**	P	**P**	**02 07 25.6**	**0.0**
	baz=317,SNR=16						
ABTX	**Abilene, Hawle**	**86.74**	**49**	*eP*	**P**	**02 07 26.3**	**+0.6**
	comp=Z,105nm,1.4s						
ABTX				LR	LR		
	comp=Z,1µm,18.0s						
GDM	**Grand'Maison**	**86.75**	**331⇑**	*eP*	**P**	**02 07 26.6**	**+1.0**
Z33A	**Whitaker Ranch**	**86.76**	**48**	P	**P**	**02 07 25.2**	**-0.5**
	baz=317,SNR=6.7						
W36A	**Wetumka**	**86.80**	**45**	P	**P**	**02 07 25.7**	**-0.1**
	baz=319,SNR=7.3						
U38A	**Gravette**	**86.81**	**43**	P	**P**	**02 07 25.3**	**-0.5**
	baz=320,SNR=10						
V37A	**Hulbert**	**86.83**	**44**	P	**P**	**02 07 25.6**	**-0.4**
	baz=319,SNR=19						
Y34A	**Reagan Ranch,**	**86.84**	**47**	P	**P**	**02 07 25.6**	**-0.5**
	baz=318,SNR=6.4						
GRN	**Grenoble**	**86.86**	**332⇑**	*eP*	**P**	**02 07 27.3**	**+1.3**
T39A	**Clever**	**86.89**	**42**	P	**P**	**02 07 25.8**	**-0.4**
	baz=320,SNR=9.5						
S40A	**Lebanon**	**86.89**	**41**	P	**P**	**02 07 25.6**	**-0.7**
	baz=321,SNR=19						
SADO	**Sadowa**	**86.94**	**29**	PFAKE		02 07 40.0	+14
SADO				LR	LR		
	comp=Z,3µm,20.0s						
X35A	**Drake**	**86.95**	**46**	P	**P**	**02 07 25.8**	**-0.7**
	baz=318,SNR=7.7						
PLDF	**La Plantade**	**86.98**	**333**	*eP*	**P**	**02 07 27.2**	**+0.6**
CUC	**Castrocucco**	**87.04**	**323**	*eP*	**P**	**02 07 26.6**	**-0.4**
	comp=Z,9.3nm,0.9s						
CUC				LR	LR		
	comp=Z,4µm,19.0s						
AGO	**Saint Agoulin**	**87.07**	**334⇑**	*eP*	**P**	**02 07 28.2**	**+1.2**
OXZ	**Oxford**	**87.10**	**160**	*eP*	**P**	**02 07 27.9**	**+1.2**
	comp=Z,120nm,1.7s						
HPIG		**87.11**	**57**	*eP*	**P**	**02 07 28.5**	**+0.8**
	comp=Z,95nm,1.4s						
HPIG				LR	LR		
	comp=Z,2µm,18.0s						
X36A	**Centrahoma**	**87.16**	**46**	P	**P**	**02 07 27.6**	**0.0**
	baz=319,SNR=11						
HHAR	**Hobbs**	**87.16**	**43**	*eP*	**P**	**02 07 26.4**	**-1.1**
	comp=Z,121nm,1.7s						
HHAR				LR	LR		
	comp=Z,2µm,18.0s						
133A	**Hamilton Ranch**	**87.17**	**49**	P	**P**	**02 07 27.7**	**0.0**
	baz=317,SNR=7.7						
Z34A	**Collier Ranch,**	**87.18**	**48**	P	**P**	**02 07 27.2**	**-0.5**
	baz=318						
SLM	**Saint Louis**	**87.21**	**39**	*eP*	**P**	**02 07 28.1**	**+0.4**
SLM				pmax	pmax		
	comp=Z,157nm,1.6s						
SLM				MLR	MLR		
	comp=Z,2µm,20.0s						
SLM	**Saint Louis**	**87.21**	**39**	*eP*	**P**	**02 07 28.1**	**+0.4**
	comp=Z,157nm,1.6s						
SLM				LR	LR		
	comp=Z,2µm,20.0s						
RPZ	**Rata Peaks**	**87.21**	**161**	LR	LR	02 41 51.2	
	comp=Z,1µm,20.1s,baz=332,slow=32						
T40A	**Mansfield**	**87.23**	**42**	P	**P**	**02 07 27.1**	**-0.8**
	baz=321,SNR=15						
AAM	**Ann Arbor**	**87.23**	**33**	PFAKE		02 07 40.0	+12
AAM				LR	LR		
	comp=Z,3µm,20.0s						
V38A	**Canehill**	**87.23**	**44**	P	**P**	**02 07 27.7**	**-0.3**
	baz=320,SNR=22						
W37B	**Quinton**	**87.23**	**45**	P	**P**	**02 07 27.9**	**0.0**
	baz=319,SNR=9.2						
TIP	**Timpagrande**	**87.24**	**322‖**	*iP*	**P**	**02 07 29.9**	**+1.9**
TIP	**Timpagrande**	**87.24**	**322**	P	**P**	**02 07 27.4**	**-0.6**
TIP	**Timpagrande**	**87.24**	**322**	*eP*	**P**	**02 07 28.2**	**+0.3**
	comp=Z,211nm,2.0s						
TIP				LR	LR		
	comp=Z,6µm,21.0s						
SSB	**Saint Sauveur**	**87.26**	**332**	*eP*	**P**	**02 07 28.1**	**+0.2**
SSB				pmax	pmax		
	comp=Z,33nm,1.1s						
SSB				MLR	MLR		
	comp=Z,3µm,22.0s						
SSB	**Saint Sauveur**	**87.26**	**332**	*eP*	**P**	**02 07 28.1**	**+0.2**
	comp=Z,33nm,1.1s						
SSB				LR	LR		
	comp=Z,3µm,22.0s						
Y35A	**Marietta**	**87.28**	**47**	P	**P**	**02 07 28.1**	**-0.1**
	baz=318						
SFIN	**Lafayette**	**87.30**	**36**	P	**P**	**02 07 27.7**	**-0.4**
	baz=324						
SFIN	**Lafayette**	**87.30**	**36**	*eP*	**P**	**02 07 28.5**	**+0.3**
	comp=Z,140nm,1.8s						
SFIN				LR	LR		
	comp=Z,2µm,20.0s						
U39A	**Green Forest**	**87.32**	**43**	P	**P**	**02 07 27.9**	**-0.4**
	baz=320,SNR=21						
PYM	**Petit Puy Mans**	**87.38**	**334⇑**	*eP*	**P**	**02 07 29.4**	**+0.9**
LUCF	**Luceram**	**87.42**	**330**	*eP*	**P**	**02 07 28.8**	**0.0**
MVIF	**Mont Vial**	**87.48**	**330⇑**	*eP*	**P**	**02 07 29.0**	**-0.2**
REVF	**Revere**	**87.54**	**330⇑**	*eP*	**P**	**02 07 29.0**	**-0.3**
Z35A	**Perchaven, San**	**87.58**	**47**	P	**P**	**02 07 29.1**	**-0.6**
	baz=318,SNR=7.5						
233A	**Rising Star**	**87.61**	**49**	P	**P**	**02 07 29.7**	**-0.1**
	baz=317,SNR=16						
LBZ	**Lake Benmore**	**87.62**	**161**	*eP*	**P**	**02 07 30.0**	**+0.8**
	comp=Z,143nm,1.7s						
V39A	**Pettigrew**	**87.65**	**43**	P	**P**	**02 07 29.4**	**-0.6**
	baz=320,SNR=16						
DAMY	**Dhamar**	**87.66**	**287**	*eP*	**P**	**02 07 30.8**	**+0.2**
	comp=Z,232nm,1.8s						
DAMY				LR	LR		
	comp=Z,5µm,19.0s						
U40A	**Yellville**	**87.67**	**42**	P	**P**	**02 07 29.5**	**-0.5**
	baz=320,SNR=30						
134A	**White-Moore Ra**	**87.68**	**48**	P	**P**	**02 07 29.9**	**-0.2**
	baz=318,SNR=8.6						
X37A	**Clayton**	**87.68**	**45**	P	**P**	**02 07 29.8**	**-0.2**
	baz=319,SNR=6.4						
Y36A	**Durant**	**87.70**	**46**	P	**P**	**02 07 29.6**	**-0.6**
	baz=319						
CALN	**Calern**	**87.71**	**330⇑**	*eP*	**P**	**02 07 30.2**	**0.0**
LBL	**Lubilhac**	**87.75**	**333**	*eP*	**P**	**02 07 30.7**	**+0.4**
W38A	**Poteau**	**87.78**	**44**	P	**P**	**02 07 30.2**	**-0.4**
	baz=320,SNR=8.9						
X38A	**Whitesboro**	**87.91**	**45**	P	**P**	**02 07 31.3**	**+0.1**
	baz=319,SNR=11						
Y37A	**Hugo**	**88.00**	**46**	P	**P**	**02 07 31.0**	**-0.6**
	baz=319						
234A	**Clairette**	**88.06**	**49**	P	**P**	**02 07 32.2**	**+0.3**
	baz=318,SNR=8.0						
135A	**Vickery Place,**	**88.07**	**48**	P	**P**	**02 07 32.1**	**+0.2**
	baz=318						
333A	**Richland Sprin**	**88.07**	**50**	P	**P**	**02 07 31.9**	**-0.1**
	baz=317						
W39A	**Magazine**	**88.07**	**44**	P	**P**	**02 07 31.7**	**-0.2**
	baz=320,SNR=7.8						
Z36A	**Blue Ridge**	**88.08**	**47**	P	**P**	**02 07 31.6**	**-0.5**
	baz=319,SNR=7.9						
V40A	**Witts Springs**	**88.11**	**43**	P	**P**	**02 07 31.5**	**-0.7**
	baz=320,SNR=7.5						
OLIL	**Olney**	**88.15**	**38**	*eP*	**P**	**02 07 32.9**	**+0.7**
	comp=Z,127nm,1.6s						
OLIL				LR	LR		
	comp=Z,2µm,19.0s						
JCT	**Junction City**	**88.21**	**51**	P	**P**	**02 07 32.0**	**-0.7**
	baz=317						
JCT	**Junction City**	**88.21**	**51**	*eP*	**P**	**02 07 31.5**	**-1.2**
JCT				pmax	pmax		
	comp=Z,125nm,1.8s						
JCT				MLR	MLR		
	comp=Z,2µm,21.0s						
JCT	**Junction City**	**88.21**	**51**	*eP*	**P**	**02 07 31.4**	**-1.2**
	comp=Z,125nm,1.8s						
JCT				LR	LR		
	comp=Z,2µm,21.0s						
LEPF	**PUYLOUBIER**	**88.35**	**331⇑**	*eP*	**P**	**02 07 33.7**	**+0.6**
CEL	**Celeste**	**88.38**	**322**	*eP*	**P**	**02 07 34.0**	**+0.6**
	comp=Z,50nm,1.2s						
CEL				LR	LR		
	comp=Z,4µm,20.0s						
X39A	**Fountain Ranch**	**88.42**	**44**	P	**P**	**02 07 33.7**	**+0.1**
	baz=320,SNR=14						
433A	**Art**	**88.42**	**50**	P	**P**	**02 07 33.5**	**-0.2**
	baz=317,SNR=8.0						
SIUC	**Southern Illin**	**88.43**	**39**	*eP*	**P**	**02 07 33.8**	**+0.2**
	comp=Z,80nm,1.0s						
W40A	**Ferguson Farm,**	**88.45**	**43**	P	**P**	**02 07 33.5**	**-0.2**
	baz=320,SNR=5.5						
WHTX	**Lake Whitney,**	**88.46**	**48**	P	**P**	**02 07 34.2**	**+0.4**
	baz=318,SNR=8.3						
WHTX	**Lake Whitney,**	**88.46**	**48**	*eP*	**P**	**02 07 34.0**	**+0.1**
	comp=Z,133nm,1.5s						
WHTX				LR	LR		
	comp=Z,2µm,19.0s						
334A	**Lometa**	**88.50**	**49**	P	**P**	**02 07 34.0**	**-0.1**
	baz=318,SNR=16						
Y38A	**Idabel**	**88.53**	**45**	P	**P**	**02 07 33.4**	**-0.7**
	baz=320						
BLO	**Bloomington**	**88.53**	**37**	PFAKE		02 07 50.0	+16
BLO				LR	LR		
	comp=Z,3µm,18.0s						
Z37A	**Pogue Cattle C**	**88.59**	**46**	P	**P**	**02 07 34.2**	**-0.2**
	baz=319						
136A	**Ennis**	**88.62**	**47**	P	**P**	**02 07 34.1**	**-0.4**
	baz=319						
MIAR	**Mount Ida**	**88.68**	**44**	P	**P**	**02 07 35.0**	**+0.2**
	baz=320,SNR=12						
MIAR	**Mount Ida**	**88.68**	**44**	*eP*	**P**	**02 07 34.3**	**-0.5**
MIAR				pmax	pmax		
	comp=Z,76nm,1.4s						
MIAR				MLR	MLR		
	comp=Z,2µm,18.0s						
MIAR	**Mount Ida**	**88.68**	**44**	*eP*	**P**	**02 07 34.3**	**-0.5**
	comp=Z,76nm,1.4s						
MIAR				LR	LR		
	comp=Z,2µm,18.0s						
LONY	**Lake Ozonia**	**88.69**	**26**	PFAKE		02 07 50.0	+15
LONY				LR	LR		
	comp=Z,2µm,19.0s						
X201	**Greenbrier Sit**	**88.74**	**43**	*eP*	**P**	**02 07 33.6**	**-1.5**
	comp=Z,98nm,1.4s						
X201				LR	LR		
	comp=Z,1µm,18.0s						
X301	**Greenbrier Sit**	**88.76**	**43**	*eP*	**P**	**02 07 35.4**	**+0.2**
	comp=Z,96nm,1.5s						
X301				LR	LR		
	comp=Z,1µm,20.0s						
WHAR	**Wooly Hollow**	**88.78**	**43**	*eP*	**P**	**02 07 35.6**	**+0.3**
	comp=Z,99nm,1.3s						
WHAR				LR	LR		
	comp=Z,1µm,21.0s						
FRNY	**Flat Rock**	**88.83**	**26**	PFAKE		02 07 50.0	+15
FRNY				LR	LR		
	comp=Z,4µm,18.0s						
DRLN	**Deer Lake**	**88.85**	**14**	PFAKE		02 07 50.0	+15
DRLN				LR	LR		
	comp=Z,4µm,20.0s						
434A	**Burnet**	**88.86**	**49**	P	**P**	**02 07 35.4**	**-0.3**
	baz=318						
Y39A	**Lockesburg**	**88.86**	**45**	P	**P**	**02 07 35.8**	**+0.1**
	baz=320						
ERPA	**Erie**	**88.87**	**31**	PFAKE		02 07 50.0	+14
ERPA				LR	LR		
	comp=Z,2µm,20.0s						
W41A	**Tony Mavity, V**	**88.89**	**43**	P	**P**	**02 07 35.3**	**-0.5**
	baz=321,SNR=12						
W41B	**Gary Mavity, V**	**88.89**	**43**	P	**P**	**02 07 35.3**	**-0.5**
	baz=321,SNR=12						
Z38A	**Mt. Pleasant**	**88.90**	**46**	P	**P**	**02 07 35.4**	**-0.5**
	baz=319						
533A	**Kerrville**	**88.96**	**50**	P	**P**	**02 07 36.3**	**0.0**
	baz=317						
137A	**Heron Place, G**	**88.97**	**47**	P	**P**	**02 07 36.2**	**0.0**
	baz=319						
USIN	**University of**	**88.97**	**38**	PFAKE		02 07 50.0	+14
USIN				LR	LR		
	comp=Z,2µm,20.0s						
236A	**Katherine and**	**88.98**	**48**	P	**P**	**02 07 35.8**	**-0.4**
	baz=319						
335A	**Moody**	**89.00**	**49**	P	**P**	**02 07 35.7**	**-0.7**
	baz=318						
X40A	**Basin Creek Fa**	**89.11**	**44**	P	**P**	**02 07 36.8**	**0.0**
	baz=320,SNR=9.5						
MMNY	**Mt. Morris Dam**	**89.15**	**29**	PFAKE		02 07 50.0	+13
MMNY				LR	LR		
	comp=Z,5µm,18.0s						
UALR	**University of**	**89.15**	**43**	*eP*	**P**	**02 07 36.9**	**-0.1**
	comp=Z,82nm,1.8s						
UALR				*eP*P	PP	02 10 59.7	-6.9
UALR				LR	LR		
	comp=Z,2µm,20.0s						
ALLY	**Alegheny Colle**	**89.21**	**31**	*eP*	**P**	**02 07 36.1**	**-1.1**
	comp=Z,162nm,1.6s						
ALLY				LR	LR		
	comp=Z,3µm,20.0s						
PVMO	**Portageville**	**89.22**	**40**	PFAKE		02 07 50.0	+13
PVMO				LR	LR		
	comp=Z,2µm,19.0s						
ACSO	**Alum Creek Sta**	**89.23**	**34**	*eP*	**P**	**02 07 36.5**	**-0.8**
	comp=Z,182nm,2.0s						
ACSO				LR	LR		
	comp=Z,3µm,19.0s						
Y40A	**Okolona**	**89.24**	**44**	P	**P**	**02 07 37.1**	**-0.4**
	baz=320						
336A	**Riesel**	**89.26**	**48**	P	**P**	**02 07 37.4**	**-0.2**
	baz=318						
435B	**Jarrell**	**89.28**	**49**	P	**P**	**02 07 37.3**	**-0.4**
	baz=318						
138A	**Matatall Enter**	**89.29**	**46**	P	**P**	**02 07 37.7**	**0.0**
	baz=319						
534A	**Blanco**	**89.32**	**50**	P	**P**	**02 07 37.6**	**-0.3**
	baz=318,SNR=17						
633A	**Saathoff Ranch**	**89.32**	**51**	P	**P**	**02 07 38.0**	**+0.1**
	baz=317						
Z39A	**Irene McRaven,**	**89.34**	**45**	P	**P**	**02 07 38.0**	**0.0**
	baz=320						
NCB	**Newcomb**	**89.38**	**26**	PFAKE		02 07 50.0	+12
NCB				LR	LR		
	comp=Z,4µm,20.0s						
237A	**Washetta, Mont**	**89.38**	**47**	P	**P**	**02 07 38.1**	**-0.1**
	baz=319						
WCI	**Wyandotte Cave**	**89.40**	**37**	*eP*	**P**	**02 07 38.8**	**+0.6**
WCI				pmax	pmax		
	comp=Z,140nm,1.8s						
WCI				MLR	MLR		
	comp=Z,3µm,20.0s						
WCI	**Wyandotte Cave**	**89.40**	**37**	*eP*	**P**	**02 07 38.8**	**+0.6**
	comp=Z,140nm,1.8s						
WCI				LR	LR		
	comp=Z,3µm,20.0s						
GNAR	**Gosnell**	**89.41**	**41**	PFAKE		02 07 50.0	+12
GNAR				LR	LR		
	comp=Z,3887µm,21.0s						
M54A	**Oil Creek Stat**	**89.52**	**31**	P	**P**	**02 07 38.6**	**-0.1**
	baz=328						
WLAR	**White Oak Lake**	**89.58**	**44**	*eP*	**P**	**02 07 40.7**	**+1.7**
	comp=Z,70nm,1.3s						
WLAR				LR	LR		
	comp=Z,2µm,22.0s						
139A	**Bunkhouse Ranc**	**89.66**	**46**	P	**P**	**02 07 39.7**	**+0.3**
	baz=320						
832A	**Faith Ranch, C**	**89.70**	**52**	P	**P**	**02 07 39.6**	**-0.2**
	baz=317,SNR=5.6						
436A	**Wall Ranch, Ga**	**89.74**	**49**	P	**P**	**02 07 40.0**	**+0.2**
	baz=318						
Z40A	**Long Farm, Mag**	**89.75**	**45**	P	**P**	**02 07 40.5**	**+0.6**
	baz=320						
238A	**Jacksonville**	**89.77**	**47**	P	**P**	**02 07 40.1**	**+0.2**
	baz=319						
PKME	**Peaks-Kenny Pk**	**89.79**	**23**	PFAKE		02 07 50.0	+10
PKME				LR	LR		
	comp=Z,4µm,18.0s						
733A	**Divot King Ran**	**89.79**	**52**	P	**P**	**02 07 40.3**	**+0.2**
	baz=317						
535A	**Dale**	**89.84**	**50**	P	**P**	**02 07 40.5**	**+0.2**
	baz=318						
N54A	**Moraine State**	**89.85**	**32**	P	**P**	**02 07 40.0**	**-0.2**
	baz=328,SNR=8.2						
337A	**Centerville**	**89.85**	**48**	P	**P**	**02 07 41.0**	**+0.7**
	baz=319						
634A	**China Grove, S**	**89.86**	**50**	P	**P**	**02 07 40.3**	**-0.2**
	baz=318						
833A	**Chaparral WMA,**	**90.02**	**52**	P	**P**	**02 07 41.5**	**+0.3**
	baz=317						
437A	**Phantom Ranch,**	**90.07**	**48**	P	**P**	**02 07 42.0**	**+0.6**
	baz=319						
ACCN	**Adirondack Com**	**90.09**	**26**	PFAKE		02 07 50.0	+8.7
ACCN				LR	LR		
	comp=Z,3µm,20.0s						
536A	**Bastrop**	**90.10**	**49**	P	**P**	**02 07 41.9**	**+0.3**
	baz=318						
CCAR	**Cane Creek**	**90.11**	**43**	PFAKE		02 07 50.0	+8.5
CCAR				LR	LR		
	comp=Z,2µm,20.0s						
239A	**Gary**	**90.11**	**46**	P	**P**	**02 07 42.1**	**+0.5**
	baz=320						
MET	**Memphis--Engin**	**90.12**	**41**	PFAKE		02 07 50.0	+8.5
MET				LR	LR		
	comp=Z,1µm,21.0s						
140A	**Cam and Jess,**	**90.13**	**45**	P	**P**	**02 07 42.2**	**+0.5**
	baz=320						
734A	**La Parita Cree**	**90.14**	**51**	P	**P**	**02 07 42.2**	**+0.5**
	baz=318						
338A	**Crockett**	**90.15**	**47**	P	**P**	**02 07 42.0**	**+0.3**
	baz=319						
Y42A	**Garnett, Star**	**90.17**	**43**	P	**P**	**02 07 41.5**	**-0.3**
	baz=321						
635A	**Leesville**	**90.20**	**50**	P	**P**	**02 07 42.5**	**+0.5**
	baz=318						
NATX	**Nacogdoches**	**90.20**	**47**	P	**P**	**02 07 42.3**	**+0.3**
	baz=320						
NATX	**Nacogdoches**	**90.20**	**47**	PFAKE		02 07 50.0	+8.0
NATX				LR	LR		
	comp=Z,2µm,18.0s						
VSL	**Villasalto**	**90.30**	**326**	PFAKE		02 07 50.0	+7.7
VSL				LR	LR		
	comp=Z,6µm,18.0s						
BINY	**Binghamton**	**90.32**	**28**	*eP*	**P**	**02 07 43.0**	**+0.6**
	comp=Z,72nm,1.5s						
BINY				LR	LR		
	comp=Z,3µm,18.0s						
WVT	**Waverly**	**90.36**	**39**	*eP*	**P**	**02 07 43.1**	**+0.5**
WVT				pmax	pmax		
	comp=Z,70nm,1.8s						
WVT				MLR	MLR		
	comp=Z,2µm,19.0s						
WVT	**Waverly**	**90.36**	**39**	*eP*	**P**	**02 07 43.1**	**+0.5**
	comp=Z,70nm,1.8s						
WVT				LR	LR		
	comp=Z,2µm,19.0s						
240A	**Hunter Patters**	**90.49**	**46**	P	**P**	**02 07 43.6**	**+0.3**
	baz=320						
438A	**Sam Houston St**	**90.51**	**48**	P	**P**	**02 07 43.6**	**+0.2**
	baz=319						
141A	**Papa Simpson,**	**90.52**	**45**	P	**P**	**02 07 44.0**	**+0.5**
	baz=320						
537A	**Green Hill Far**	**90.53**	**49**	P	**P**	**02 07 44.5**	**+0.9**
	baz=319						
636A	**Smothers Creek**	**90.55**	**50**	P	**P**	**02 07 44.3**	**+0.7**
	baz=318						
Y43A	**Makayla and Ka**	**90.56**	**43**	P	**P**	**02 07 43.9**	**+0.4**
	baz=322						
735A	**Kenedy**	**90.57**	**50**	P	**P**	**02 07 44.6**	**+0.8**
	baz=318						
933A	**Laredo**	**90.61**	**52**	P	**P**	**02 07 44.6**	**+0.6**
	baz=317,SNR=12						
834A	**Tilden**	**90.67**	**51**	P	**P**	**02 07 45.1**	**+0.8**
	baz=318						
OXF	**Oxford**	**90.86**	**41**	*eP*	**P**	**02 07 44.2**	**-0.8**
OXF				pmax	pmax		
	comp=Z,69nm,1.0s						
OXF				MLR	MLR		
	comp=Z,2µm,19.0s						
OXF	**Oxford**	**90.86**	**41**	*eP*	**P**	**02 07 44.2**	**-0.8**
	comp=Z,69nm,1.0s						
OXF				LR	LR		
	comp=Z,2µm,19.0s						
439A	**Center Grove,**	**90.88**	**47**	P	**P**	**02 07 45.8**	**+0.7**
	baz=320						
Y44A	**Strider, Charl**	**90.89**	**42**	P	**P**	**02 07 45.6**	**+0.5**
	baz=322						
340A	**Bronson**	**90.89**	**46**	P	**P**	**02 07 45.3**	**+0.2**
	baz=320						
HKT	**Hockley**	**90.91**	**48**	*eP*	**P**	**02 07 46.2**	**+1.0**
HKT				pmax	pmax		
	comp=Z,68nm,1.8s						
HKT				MLR	MLR		
	comp=Z,1µm,21.0s						
HKT	**Hockley**	**90.91**	**48**	*eP*	**P**	**02 07 46.2**	**+1.0**
	comp=

637A	**Eagle Lake**	**91.00**	**49**	P	**P**	**02 07 46.1**	**+0.3**
	baz=319							
O56A	**Blue Knob Stat**	**91.01**	**31**	P	**P**	**02 07 45.7**	**0.0**
	baz=329							
MCWV	**Mont Chateau**	**91.02**	**32**	PFAKE		02 08 00.0	+14
MCWV				LR	LR			
	comp=Z,2µm,18.0s							
934A	**Benavides**	**91.07**	**52**	P	**P**	**02 07 46.8**	**+0.7**
	baz=318							
142A	**Monroe**	**91.08**	**44**	P	**P**	**02 07 46.3**	**+0.3**
	baz=321							
PLAL	**Pickwick Lake**	**91.16**	**40**	PFAKE		02 08 00.0	+14
PLAL				LR	LR			
	comp=Z,2µm,20.0s							
143A	**Socs Landing,**	**91.25**	**44**	P	**P**	**02 07 47.1**	**+0.2**
	baz=321							
Y45A	**Yeager Farm, C**	**91.30**	**42**	P	**P**	**02 07 47.3**	**+0.2**
	baz=322							
Z44A	**Pea Ridge, Bel**	**91.31**	**43**	P	**P**	**02 07 47.3**	**+0.2**
	baz=322							
341A	**Kurthwood**	**91.35**	**46**	P	**P**	**02 07 48.1**	**+0.8**
	baz=320							
034A	**Hebbronville**	**91.37**	**52**	P	**P**	**02 07 48.7**	**+1.2**
	baz=318,SNR=8.3							
737A	**Port Lavaca**	**91.44**	**50**	P	**P**	**02 07 48.7**	**+0.9**
	baz=319							
N59A	**State Game Lan**	**91.51**	**29**	P	**P**	**02 07 48.0**	**0.0**
	baz=331,SNR=6.3							
HRV	**Adam Dziewonsk**	**91.57**	**25**	PFAKE		02 08 00.0	+12
HRV				LR	LR			
	comp=Z,3µm,18.0s							
Y46A	**Houston**	**91.64**	**41**	P	**P**	**02 07 48.6**	**0.0**
	baz=323							
540A	**Vidor**	**91.76**	**47**	P	**P**	**02 07 49.9**	**+0.7**
	baz=320							
342A	**Flagon Creek P**	**91.78**	**45**	P	**P**	**02 07 49.4**	**+0.1**
	baz=321							
035A	**Encino**	**91.81**	**52**	P	**P**	**02 07 49.8**	**+0.2**
	baz=318							
144A	**Alexander Plac**	**91.82**	**43**	P	**P**	**02 07 49.6**	**+0.1**
	baz=322							
LUPA	**Lehigh Univers**	**91.94**	**29**	PFAKE		02 08 00.0	+10
LUPA				LR	LR			
	comp=Z,3µm,19.0s							
SWET	**Sewanee**	**92.01**	**39**	*e*P	**P**	**02 07 49.5**	**-0.9**
	comp=Z,23nm,1.7s							
SWET				LR	LR			
	comp=Z,600nm,19.0s							
TZTN	**Tazewell**	**92.03**	**36**	*e*P	**P**	**02 07 49.9**	**-0.5**
	comp=Z,38nm,1.3s							
TZTN				LR	LR			
	comp=Z,2µm,20.0s							
ZAIG	**Zacatecas**	**92.03**	**58**	*e*P	**P**	**02 07 51.0**	**0.0**
	comp=Z,30nm,1.3s							
ZAIG				LR	LR			
	comp=Z,1µm,19.0s							
VBMS	**Vicksburg**	**92.09**	**44**	P	**P**	**02 07 50.8**	**+0.1**
	baz=322							
VBMS	**Vicksburg**	**92.09**	**44**	PFAKE		02 08 00.0	+9.3
VBMS				LR	LR			
	comp=Z,2µm,18.0s							
145A	**Houston Renfro**	**92.10**	**43**	P	**P**	**02 07 51.4**	**+0.6**
	baz=322							
PAL	**Palisades**	**92.11**	**28**	PFAKE		02 08 00.0	+9.4
PAL				LR	LR			
	comp=Z,3µm,18.0s							
Y47A	**UCPARC, Winfie**	**92.13**	**41**	P	**P**	**02 07 50.7**	**-0.2**
	baz=323							
244A	**Avery, Jackson**	**92.14**	**44**	P	**P**	**02 07 51.7**	**+0.7**
	baz=322							
BRNJ	**Basking Ridge**	**92.16**	**28**	PFAKE		02 08 00.0	+9.1
BRNJ				LR	LR			
	comp=Z,3µm,19.0s							
035Z	**Hargill**	**92.18**	**52**	P	**P**	**02 07 52.3**	**+1.1**
	baz=318							
SDMD	**Soldier's Deli**	**92.42**	**30**	PFAKE		02 08 00.0	+7.9
SDMD				LR	LR			
	comp=Z,2µm,19.0s							
CPCT	**Cooper Cave**	**92.48**	**38**	*e*P	**P**	**02 07 51.7**	**-0.8**
	comp=Z,32nm,1.7s							
CPCT				LR	LR			
	comp=Z,1µm,18.0s							
245A	**Little AP, Sta**	**92.56**	**43**	P	**P**	**02 07 53.5**	**+0.6**
	baz=322							
344A	**Westbrook Farm**	**92.58**	**44**	P	**P**	**02 07 53.0**	**0.0**
	baz=322							
TKL	**Tuckaleechee C**	**92.66**	**37**	*e*P	**P**	**02 07 53.8**	**+0.5**
TKL				pmax	pmax			
	comp=Z,43nm,1.6s							
TKL	**Tuckaleechee C**	**92.66**	**37**	*e*P	**P**	**02 07 52.5**	**-0.8**
	comp=Z,43nm,1.6s							
TKL				LR	LR			
	comp=Z,2µm,18.0s							
BLA	**Blacksburg**	**92.85**	**34**	PFAKE		02 08 10.0	+16
BLA				LR	LR			
	comp=Z,2µm,19.0s							
247A	**Quitman**	**93.22**	**42**	P	**P**	**02 07 56.1**	**+0.2**
	baz=323							
LRAL	**Lakeview Retre**	**93.25**	**41**	PFAKE		02 08 10.0	+14
LRAL				LR	LR			
	comp=Z,2µm,18.0s							
CBN	**Corbin Frederi**	**93.25**	**31**	PFAKE		02 08 10.0	+14
CBN				LR	LR			
	comp=Z,3µm,19.0s							
445A	**Amite**	**93.35**	**44**	P	**P**	**02 07 57.5**	**+1.0**
	baz=322							
KEST	**Kesra**	**93.46**	**324**	P	**P**	**02 07 57.6**	**+0.5**
	comp=Z,4.7nm,1.0s,baz=295,slow=12,SNR=3.5							
KEST				PP	**PP**	**02 11 43.8**	**+3.2**
	comp=Z,5.8nm,1.0s,baz=348,slow=5.7,SNR=3.2							
KEST				LR	LR	02 56 01.7		
	comp=Z,5µm,18.1s,baz=320,slow=39							
KEST	**Kesra**	**93.46**	**324**	*e*P	**P**	**02 07 54.4**	**-2.8**
	comp=Z,21nm,1.1s							
KEST				PP	**PP**	**02 11 43.8**	**+3.2**
PBRG	**Braganca**	**93.97**	**338**	*e*P	**P**	**02 07 59.5**	**+0.2**
PBRG	**Braganca**	**93.97**	**338**	*e*PP	PP	02 11 50.4	+6.1
KMSC	**Kings Mountain**	**94.19**	**36**	PFAKE		02 08 10.0	+10
KMSC				LR	LR			
	comp=Z,3µm,19.0s							
PGAV	**Gavieira, Arco**	**94.25**	**339**	*e*PP	PP	02 11 51.3	+4.8
PGAV				*e*SKS	SKSac	02 18 43.0	+8.1
PGAV				*e*SS	**SS**	**02 25 36.9**	**+6.5**
PGAV	**Gavieira, Arco**	**94.25**	**339**	*e*LQ	LQ	02 37 25.9	
PGAV				*e*LR	LR	02 43 01.8	
	comp=Z,3µm,18.0s							
MVO	**Moncorvo**	**94.65**	**338**	*e*P	**P**	**02 08 02.9**	**+0.4**
MVO	**Moncorvo**	**94.65**	**338**	*e*PP	PP	02 11 51.6	+2.0
MVO				*e*SKS	**SKSac**	**02 18 42.5**	**+5.5**
MVO				*e*SS	**SS**	**02 25 42.7**	**+6.6**
MVO	**Moncorvo**	**94.65**	**338**	*e*LQ	LQ	02 38 43.2	
MVO				*e*LR	LR	02 44 04.3	
	comp=Z,3µm,20.0s							
GOGA	**Godfrey**	**94.65**	**38**	PFAKE		02 08 10.0	+7.5
GOGA				LR	LR			
	comp=Z,2µm,18.0s							
PVRL	**Vila Real**	**94.74**	**339**	*e*P	P	02 08 12.0	+9.2
ES19	**SONSECA Array**	**95.06**	**336**	*e*P	**P**	**02 08 03.3**	**-1.1**
ESDC	**Sonseca Array**	**95.10**	**336**	P	**P**	**02 08 04.5**	**0.0**
	comp=Z,1.3nm,0.9s,baz=5.7,slow=2.4,SNR=9.2							
ESDC				PP	**PP**	**02 11 55.9**	**+2.7**
	comp=Z,1.2nm,0.8s,baz=23,slow=7.0,SNR=2.8							
ESDC				LR	LR	02 55 27.0		
	comp=Z,3µm,18.5s,baz=35,slow=38							
ESLA	**Sonseca Array**	**95.10**	**336**	PFAKE		02 08 20.0	+15
ESLA				LR	LR			
	comp=Z,7µm,21.0s							
MOIG	**Morelia**	**95.13**	**59**	PFAKE		02 08 20.0	+15
MOIG				LR	LR			
	comp=Z,1µm,20.0s							
PAB	**San Pablo**	**95.34**	**336**	PFAKE		02 08 20.0	+14
PAB				LR	LR			
	comp=Z,6µm,21.0s							
MTE	**Manteigas**	**95.50**	**338**	*e*P	P	02 08 13.9	+7.5
MTE	**Manteigas**	**95.50**	**338**	*e*PP	PP	02 12 05.6	+9.4
MTE				*e*SKS	**SKSac**	**02 18 45.6**	**+4.0**
MTE				*e*SS	**SS**	**02 25 50.4**	**+2.2**
MTE	**Manteigas**	**95.50**	**338**	*e*LQ	LQ	02 39 01.3	
MTE				*e*LR	LR	02 45 00.7	
	comp=Z,3µm,20.0s							
MTE	**Manteigas**	**95.50**	**338**	PFAKE		02 08 20.0	+14
MTE				LR	LR			
	comp=Z,4µm,20.0s							
FURI	**Furi**	**95.58**	**287**	PFAKE		02 08 20.0	+13
FURI				LR	LR			
	comp=Z,3µm,18.0s							
CNNC	**Cliffs of the**	**95.59**	**33**	PFAKE		02 08 20.0	+13
CNNC				LR	LR			
	comp=Z,2µm,21.0s							
PCAS	**Casmilo, Conde**	**96.09**	**339**	*e*PP	PP	02 12 02.9	+2.2
PCAS				*e*SKS	**SKSac**	**02 18 49.8**	**+5.2**
PCAS				*e*SS	SS	02 26 10.4	+14
TIGA	**Tifton**	**96.22**	**39**	PFAKE		02 08 20.0	+10
TIGA				LR	LR			
	comp=Z,2µm,20.0s							
PMRV	**Marv??o**	**96.36**	**338**	*e*PP	PP	02 12 08.7	+5.9
PMRV	**Marv??o**	**96.36**	**338**	*e*LR	LR	02 45 25.2	
	comp=Z,3µm,18.0s							
NHSC	**New Hope**	**96.42**	**36**	PFAKE		02 08 20.0	+9.4
NHSC				LR	LR			
	comp=Z,3µm,21.0s							
UNM	**Universidad Na**	**96.69**	**58**	PFAKE		02 08 20.0	+7.6
UNM				LR	LR			
	comp=Z,2µm,19.0s							
PMTG	**Montargil**	**96.93**	**338**	*e*PP	PP	02 12 08.4	+1.2
PMTG				*e*SKS	**SKSac**	**02 18 53.1**	**+4.1**
PMTG				*e*SS	**SS**	**02 26 15.0**	**+6.7**
PESTR	**Estremoz**	**96.94**	**338**	*e*PP	PP	02 12 12.7	+5.4
PESTR				*e*SKS	**SKSac**	**02 18 55.6**	**+6.5**
PESTR				*e*SS	**SS**	**02 26 13.3**	**+4.8**
PMAFR	**Mafra**	**97.33**	**339**	*e*PP	PP	02 12 16.8	+6.5
PMAFR				*e*SKS	**SKSac**	**02 18 54.3**	**+3.2**
PMAFR				*e*SS	SS	02 26 22.7	+8.7
PBAR	**Barrancos**	**97.42**	**337**	*e*SKS	SKSac	02 18 59.5	+8.0
PBAR				*e*SS	SS	02 26 22.9	+7.7
PNCL	**Nicolau / Gran**	**97.91**	**338**	*e*SKS	**SKSac**	**02 18 58.5**	**+4.5**
PNCL				*e*SS	**SS**	**02 26 27.8**	**+5.7**
PCVE	**Castro Verde**	**98.22**	**338**	*e*SKS	**SKSac**	**02 19 02.1**	**+6.5**
PCVE				*e*SS	SS	02 26 35.2	+8.8
PVAQ	**Vaqueiros**	**98.33**	**337**	*e*PP	PP	02 12 24.1	+6.1
PVAQ				*e*SKS	**SKSac**	**02 19 00.0**	**+3.8**
PVAQ				*e*SS	**SS**	**02 26 33.8**	**+5.7**
PVAQ	**Vaqueiros**	**98.33**	**337**	*e*LR	LR	02 45 07.6	
	comp=Z,5µm,18.0s							
RKT	**Rikitea**	**98.34**	**113**	*e*SKSac	**SKSac**	**02 18 53.5**	**-2.7**
	comp=Z,1µm,25.5s							
RKT				*e*SP	**SP**	**02 21 04.5**	**-6.5**
	comp=Z,659nm,28.2s							
RKT				*e*SS	SS	02 26 22.4	-8.6
	comp=Z,579nm,23.8s							
RKT	**Rikitea**	**98.34**	**113**	*e*LR	LR	02 40 04.6	
	comp=Z,2µm,22.8s,baz=308							
TLIG	**Tlapa**	**98.37**	**59**	PFAKE		02 08 30.0	+10
TLIG				LR	LR			
	comp=Z,1µm,19.0s							
PBDV	**Barranco-do-Ve**	**98.55**	**337**	*e*PP	PP	02 12 24.6	+5.0
PBDV				*e*SKS	**SKSac**	**02 19 00.3**	**+3.0**
PBDV				*e*SS	SS	02 26 40.7	+10
MORF	**Marmelete**	**98.69**	**338**	*e*SKS	**SKSac**	**02 19 02.0**	**+3.9**
MORF				*e*SS	SS	02 26 46.3	+13
PFVI	**Vila Bisbo**	**98.91**	**338**	*e*PP	PP	02 12 29.0	+6.6
PFVI				*e*SKS	**SKSac**	**02 19 04.2**	**+5.1**
PFVI				*e*SS	SS	02 26 49.1	+13
PFVI	**Vila Bisbo**	**98.91**	**338**	PFAKE		02 08 30.0	+8.3
PFVI				LR	LR			
	comp=Z,4µm,19.0s							
DWPF	**Disney Wildern**	**100.02**	**40**	PFAKE		02 08 40.0	+13
DWPF				LR	LR			
	comp=Z,3µm,19.0s							
RTC	**Rabat Centre**	**101.23**	**335**	PFAKE		02 08 40.0	+7.9
RTC				LR	LR			
	comp=Z,12µm,21.0s							
BBSR	**BB Station**	**103.03**	**24**	PFAKE		02 08 50.0	+10
BBSR				LR	LR			
	comp=Z,2µm,19.0s							
KMBO	**Kilima Mbogo**	**103.27**	**280**	Pdiff	**Pdif**	**02 08 42.5**	**+0.7**
	comp=Z,0.6nm,0.3s,baz=191,slow=3.4,SNR=3.1							
KMBO				PP	**PP**	**02 12 57.0**	**-0.1**
	comp=Z,0.6nm,0.2s,baz=23,slow=10.0,SNR=2.9							
KMBO	**Kilima Mbogo**	**103.27**	**280**	*e*P	**Pdif**	**02 08 40.4**	**-1.4**
KMBO						02 12 57.0		
KMBO				MLR	MLR			
	comp=Z,2µm,18.0s							
KMBO	**Kilima Mbogo**	**103.27**	**280**	*e*Pdif	**Pdif**	**02 08 40.4**	**-1.4**
KMBO				PP	**PP**	**02 12 57.0**	**-0.1**
KMBO				LR	LR			
	comp=Z,2µm,18.0s							
CCIG	**Comitan**	**103.43**	**55**	PFAKE		02 08 50.0	+7.6
CCIG				LR	LR			
	comp=Z,1µm,19.0s							
TAM	**Tamanrasset**	**106.13**	**320**	PFAKE		02 13 20.0	
TAM				LR	LR			
	comp=Z,2µm,20.0s							
MTDJ	**Mount Denham**	**110.22**	**42**	PFAKE		02 13 30.0	
MTDJ				LR	LR			
	comp=Z,2µm,19.0s							
GRTK	**Grand Turk**	**110.43**	**35**	PFAKE		02 13 30.0	
GRTK				LR	LR			
	comp=Z,2µm,20.0s							
JTS	**JuntasAbangare**	**112.47**	**53**	PFAKE		02 13 30.0	
JTS				LR	LR			
	comp=Z,1µm,19.0s							
SDDR	**Presa de Saban**	**112.58**	**36**	PFAKE		02 13 30.0	
SDDR				LR	LR			
	comp=Z,3µm,20.0s							
HDC	**Heredia**	**113.21**	**53**	PFAKE		02 13 30.0	
HDC				LR	LR			
	comp=Z,2µm,21.0s							
MPR	**Mayaguez**	**115.05**	**33**	PFAKE		02 13 30.0	+7.2
MPR				LR	LR			
	comp=Z,800nm,21.0s							
CBYP	**Canovanas**	**115.52**	**31**	PFAKE		02 13 40.0	+16
CBYP				LR	LR			
	comp=Z,1µm,20.0s							
SJG	**San Juan**	**115.54**	**32**	PFAKE		02 13 40.0	+16
SJG				LR	LR			
	comp=Z,1µm,20.0s							
HUMP	**Col San Antoni**	**115.64**	**31**	PFAKE		02 13 40.0	+16
HUMP				LR	LR			
	comp=Z,1µm,19.0s							
BCIP	**Isla Barro Col**	**116.41**	**49**	PFAKE		02 13 40.0	+14
BCIP				LR	LR			
	comp=Z,800nm,20.0s							
SMRT	**St. Maarten**	**116.78**	**29**	PFAKE		02 13 40.0	+14
SMRT				LR	LR			
	comp=Z,1µm,19.0s							
SABA	**Saba**	**117.11**	**29**	PFAKE		02 13 40.0	+13
SABA				LR	LR			
	comp=Z,2µm,21.0s							
SEUS	**St. Eustatius**	**117.33**	**29**	PFAKE		02 13 40.0	+13
SEUS				LR	LR			
	comp=Z,1µm,19.0s							
ANWB	**Willy Bob**	**117.60**	**28**	PFAKE		02 13 40.0	+12
ANWB				LR	LR			
	comp=Z,1µm,22.0s							
VNDA	**Vanda**	**118.11**	**176**	PKP	**PKPdf**	**02 13 26.6**	**-0.3**
	comp=Z,1.1nm,0.7s,baz=316,slow=3.8,SNR=6.8							
VNDA	**Vanda**	**118.11**	**176**	*e*PKPdf	**PKPdf**	**02 13 27.5**	**+0.6**
FDF	**Fort de France**	**120.54**	**28**	PFAKE		02 13 50.0	+16
FDF				LR	LR			
	comp=Z,1µm,20.0s							
SDV	**Santo Domingo**	**121.64**	**41**	PFAKE		02 13 50.0	+14
SDV				LR	LR			
	comp=Z,2µm,20.0s							
GRGR	**Grenville**	**122.74**	**30**	PFAKE		02 13 50.0	+12
GRGR				LR	LR			
	comp=Z,1µm,19.0s							
ROSC	**El Rosal**	**123.08**	**47**	PKP	**PKPdf**	**02 13 39.9**	**+1.0**
	comp=Z,2.0nm,0.5s,baz=340,slow=4.8,SNR=5.1							
ROSC	**El Rosal**	**123.08**	**47**	PKP	**PKPdf**	**02 13 39.9**	**+1.0**
ROSC				LR	LR			
	comp=Z,600nm,20.0s							
MAW	**Mawson**	**123.29**	**207**	PKP	**PKPdf**	**02 13 37.6**	**+0.6**
	comp=Z,2.7nm,0.7s,baz=101,slow=8.0,SNR=5.0							
DBIC	**Dimbokro**	**125.02**	**321**	PKP	**PKPdf**	**02 13 42.3**	**+0.2**
	comp=Z,3.5nm,0.8s,baz=349,slow=2.1,SNR=8.0							
SYO	**Syowa Base**	**131.96**	**208**	*e*pPKiKP	pPKiKP	02 14 01.0	0.0
SYO	**Syowa Base**	**131.96**	**208**	*e*PP	PP	02 16 18.4	+2.9
NNA	**Nana**	**134.52**	**63**	PFAKE		02 14 10.0	+10
NNA				LR	LR			
	comp=Z,4µm,19.0s							
PTGA	**Pitinga**	**135.08**	**35**	*e*PKPdf	**PKPdf**	**02 14 01.2**	**0.0**
PTGA				LR	LR			
	comp=Z,1µm,21.0s							
SAML	**Samuel**	**140.63**	**45**	*e*PKPdf	**PKPdf**	**02 14 11.1**	**-0.3**
SAML				LR	LR			
	comp=Z,600nm,18.0s							
NVL	**N'lazarevskaya**	**141.02**	**203**	*e*PKHKP	PKPpre	02 14 04.9	
LPAZ	**La Paz**	**143.44**	**58**	PKP	PKPbc	02 14 14.1	-0.1
	comp=Z,5.2nm,0.9s,baz=12,slow=7.2,SNR=14							
SNAA	**Sanae**	**144.43**	**197**	PKP	PKPbc	02 14 15.1	+0.1
SNAA	**Sanae**	**144.43**	**197**	*e*PKIKP	**PKPab**	**02 14 13.9**	**-0.8**
SNAA				MLR	MLR			
	comp=Z,70µm,20.0s							
SNAA	**Sanae**	**144.43**	**197**	*e*PKPdf	**PKPab**	**02 14 13.9**	**-0.8**
SNAA				LR	LR			
	comp=Z,70µm,20.0s							
PB11	**IPOC Station P**	**144.86**	**64**	*e*PKPdf	PKPbc	02 14 18.1	+0.1
PB11				LR	LR			
	comp=Z,2µm,18.0s							
RCBR	**Riachuelo**	**145.65**	**359**	*e*PKPdf	**PKPdf**	**02 14 18.6**	**-1.8**
PB01	**IPOC Station P**	**145.84**	**66**	*e*PKPdf	**PKPab**	**02 14 21.2**	**-0.2**
PB01				LR	LR			
	comp=Z,2µm,19.0s							
VNA2	**Neumayer--Watz**	**145.99**	**196**	PKP	**PKPdf**	**02 14 19.2**	**+0.1**
	baz=124,slow=2.7							
VNA3	**Neumayer Olymp**	**146.21**	**195**	PKP	**PKPdf**	**02 14 19.3**	**-0.1**
PB04	**IPOC Station P**	**146.22**	**68**	*e*PKPdf	**PKPab**	**02 14 22.6**	**-0.4**
VNA1	**Neumayer--Stat**	**146.38**	**196**	PKP	**PKPab**	**02 14 22.0**	**+0.1**
LVC	**Limon Verde**	**147.27**	**67**	PFAKE		02 14 30.0	+2.7
LVC				LR	LR			
	comp=Z,1µm,20.0s							
LCO	**Las Campanas**	**149.69**	**79**	*e*PKPbc	**PKPbc**	**02 14 32.2**	**+0.7**
LCO				LR	LR			
	comp=Z,2µm,21.0s							
HJA	**Humahuaca**	**150.10**	**64**	*i* P	**PKPbc**	**02 14 33.9**	**+1.1**
AZAP	**Zapla**	**151.00**	**65**	*i* P	**PKPbc**	**02 14 35.3**	**+0.5**
ROC1	**El Roble**	**151.30**	**86**	*e*PKPbc	**PKPbc**	**02 14 35.0**	**-0.2**
VCA	**Vinchina**	**151.40**	**76**	*i* P	**PKPbc**	**02 14 36.4**	**+0.9**
ALOL	**LOMAS DE OLMED**	**151.48**	**63**	*i* P	**PKPbc**	**02 14 36.1**	**+0.5**
FSA	**Cafayete**	**151.54**	**69**	*i* P	**PKPbc**	**02 14 36.8**	**+1.0**
AGUA	**GUANDACOL**	**151.58**	**78**	*i* P	**PKPbc**	**02 14 36.8**	**+1.0**
RTLS	**Leoncito**	**152.10**	**83**	*i* P	**PKPbc**	**02 14 37.5**	**+0.3**
RTLL	**Cerro Villicun**	**152.50**	**81**	*i* P	**PKPbc**	**02 14 37.9**	**+0.1**
RTCV	**Cerro Valdivia**	**152.70**	**82**	*i* P	**PKPbc**	**02 14 38.6**	**+0.5**
ASAL	**Salagasta**	**152.80**	**84**	*i* P	**PKPbc**	**02 14 39.0**	**+0.6**
AAGR	**Agrelo**	**153.01**	**85**	*i* P	**PKPbc**	**02 14 38.5**	**-0.4**
CYA	**Choya**	**153.02**	**73**	*i* P	**PKPbc**	**02 14 39.5**	**+0.6**
PLCA	**Paso Flores**	**154.03**	**102**	PKPbc	**PKPbc**	**02 14 41.1**	**+0.3**
	comp=Z,10nm,1.0s,baz=277,slow=4.0,SNR=3.1							
PLCA	**Paso Flores**	**154.03**	**102**	*e*PKIKP	**PKPbc**	**02 14 40.4**	**-0.4**
PLCA	**Paso Flores**	**154.03**	**102**	*e*PKPbc	**PKPbc**	**02 14 40.4**	**-0.4**
CPUP	**Villa Florida**	**157.61**	**58**	PKP	**PKPdf**	**02 14 37.9**	**+0.1**
	comp=Z,4.2nm,1.0s,baz=134,slow=5.2,SNR=2.9							
CPUP				PKPab	**PKPab**	**02 15 09.9**	**0.0**
	comp=Z,7.1nm,1.1s,baz=309,slow=4.4,SNR=5.1							
CPUP	**Villa Florida**	**157.61**	**58**	*e*PKIKP	**PKPdf**	**02 14 37.6**	**-0.2**
CPUP				*e*		02 15 08.7		
CPUP	**Villa Florida**	**157.61**	**58**	*e*PKPdf	**PKPdf**	**02 14 37.6**	**-0.2**
CPUP				*e*PKPab	**PKPab**	**02 15 08.7**	**-1.2**
TRQA	**Tornquist**	**159.95**	**92**	*e*PKPab	**PKPab**	**02 15 20.4**	**+0.5**

SJA 21 01:55:52.2±0.8, 28°13S×70°98W, h5km, ML2.4, MW3.6, Central Chile

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
LCO	**Las Campanas**	**0.91**	**165**	*i* P	Pb	01 56 10.7	0.0
LCO				*i* S	Sb	01 56 24.2	+0.9
VCA	**Vinchina**	**2.52**	**105**	*i* P	Pb	01 56 37.0	-1.0
VCA				IAML		01 57 20.2	
	comp=Z,52nm,0.4s						
RTLL	**Cerro Villicun**	**3.86**	**146**	*i* P	Pn	01 56 55.5	+3.2
RTLS	**Leoncito**	**3.94**	**159**	*i* P	Pn	01 56 57.1	+3.4
RTLS				*i* S	Sb	01 57 46.4	-4.0
AUSP	**Uspallata**	**4.31**	**162**	*i* P	Pn	01 57 02.2	+3.6
CYA	**Choya**	**4.58**	**95**	*i* P	Pn	01 57 04.8	+2.6
CYA				IAML		01 58 01.8	
	comp=Z,4.4nm,0.4s						
ASAL	**Salagasta**	**4.82**	**158**	*i* P	Pn	01 57 09.2	+3.7
FSA	**Cafayete**	**4.89**	**67**	IAML		01 58 03.8	
	comp=Z,0.8nm,0.7s						

SJA 21 02:00:37.1±0.8, 32°71S×70°27W, h105km±5km, ML2.4, MW4.0, Chile-Argentina border region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ROC1	**El Roble**	**0.68**	**246**	*i* P	Pn	02 00 56.0	+0.9
ROC1				*i* S	Sn	02 01 09.7	+1.0
AUSP	**Uspallata**	**0.89**	**58**	*i* P	Pn	02 00 58.3	+1.2
AUSP				*i* S	Sn	02 01 13.6	+1.5
ARCO	**CERRO ARCO**	**1.14**	**97**	*i* P	Pn	02 01 00.6	+1.0
ARCO				*i* S	Sn	02 01 17.9	+1.4
ARCO				IAML		02 01 22.3	
	comp=Z,42nm,0.3s						
ASAL	**Salagasta**	**1.22**	**85**	*i* P	Pn	02 01 01.6	+1.2
ASAL				*i* S	Sn	02 01 19.2	+1.2
RTLS	**Leoncito**	**1.23**	**43**	*i* P	Pn	02 01 02.1	+1.4
RTLS				*i* S	Sn	02 01 20.7	+2.2
AAGR	**Agrelo**	**1.27**	**108**	*i* P	Pn	02 01 02.2	+1.2
AAGR				*i* S	Sn	02 01 20.8	+1.7
RTCV	**Cerro Valdivia**	**1.69**	**61**	*i* P	Pn	02 01 07.1	+1.0
RTCV				*i* S	Sn	02 01 29.5	+1.5
RTLL	**Cerro Villicun**	**2.05**	**49**	*i* P	Pn	02 01 12.2	+1.5
ACAN	**Cantantal**	**2.64**	**81**	*i* P	Pn	02 01 18.7	+0.4
VCA	**Vinchina**	**4.34**	**25**	IAML		02 02 02.1	
	comp=Z,4.0nm,0.2s						

JMA 21 02:04:44.4±0.2, 40°34N×143°81E, h17km, M3.5, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MIYJ	**Miyakonagasawa**	**1.71**	**244**	P	Pn	02 05 14.2	+0.8
JANG	**Nango**	**1.75**	**272**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SONM	**Songino Array**	**9.33**	**342**	Pn	Pn	02 31 16.5	-0.3
	0.2nm,0.3s,baz=164,slow=13,SNR=13						
SONM				Sn	Sn	02 33 06.6	+4.1
	0.3nm,0.3s,baz=163,slow=22,SNR=3.6						
SONM				Lg	Lg	02 33 60.0	
	0.3nm,0.3s,baz=162,slow=29,SNR=4.1						
MKAR	**Makanchi Array**	**22.15**	**300**	P	P	02 33 57.2	-1.1
	2.2nm,0.9s,baz=101,slow=11,SNR=13						
CMAR	**Chiang Mai Arr**	**22.95**	**210**	P	P	02 34 07.9	+0.8
	1.1nm,0.3s,baz=17,slow=8.6,SNR=6.0						
KURBB	**Kurchatov Arra**	**25.41**	**308**	P	P	02 34 30.4	+0.4
	1.0nm,0.2s,baz=96,slow=9.4,SNR=8.2						
YKA	**Yellowknife Ar**	**72.43**	**20**	P	P	02 40 28.5	-0.2
	0.2nm,0.9s,baz=324,slow=4.1,SNR=3.0						

IDC 21 02:37:26.1±3.4, 8°24'S×119°55'E, h196km±30km, mb3.3/4, mb1 3.2/7, mb1mx3.0/50, mbtmp3.7/7, Error ellipse: s-maj=101.3km s-min=13.2km az=62.0, Flores region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KAPI	**Kappang**	**3.21**	**4**	P	Pn	02 38 18.2	+0.1
	4.4nm,0.3s,baz=191,slow=7.8,SNR=11						
FITZ	**Fitzroy Crossi**	**11.45**	**149**	P	Pn	02 40 05.6	+1.5
	0.1nm,0.3s,baz=340,slow=12,SNR=3.7						
FITZ				S	Sn	02 42 06.9	-4.9
	0.4nm,0.3s,baz=184,slow=21,SNR=7.5						
WRA	**Warramunga Arr**	**18.44**	**131**	P	P	02 41 26.4	-0.8
	0.3nm,0.3s,baz=305,slow=12,SNR=15						
ASAR	**Alice Springs**	**20.60**	**140**	P	P	02 41 50.6	+0.3
	0.7nm,0.3s,baz=309,slow=8.9,SNR=10						
STKA	**Stephens Creek**	**31.20**	**142**	P	P	02 43 27.5	+0.5
	0.6nm,0.3s,baz=333,slow=16,SNR=3.0						
MKAR	**Makanchi Array**	**64.04**	**332**	P	P	02 47 39.2	+0.3
	0.7nm,0.6s,baz=139,slow=7.8,SNR=6.5						
ZALV	**Zalesovo Beam**	**68.54**	**339**	P	P	02 48 06.4	-0.9
	0.9nm,0.5s,baz=141,slow=5.9,SNR=3.6						

*ISCJB **21** 02:40:43.3±0.5, 40°.83'N×0°.02×35°.50'E±0°.04, h8km±5km, Error ellipse: s-maj=4.7km s-min=3.9km az=32.1*
*CSEM **21** 02:40:43.5±0.2, 40°.84'N×35°.49'E, h10km, MD2.7, Error ellipse: s-maj=3.4km s-min=3.1km az=107.0*
*ISK **21** 02:40:43.0, 40°.84'N×35°.50'E, h5km, MD2.9*
*DDA **21** 02:40:43.1, 40°.82'N×35°.52'E, h7km, Md2.7*
ISC 21 02:40:43.5±1.0, 40°.83'N±0°.02×35°.50'E±0°.03, h9km±11km, n24, σ0°.35/42, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HAVZ	**Havza**	**0.30**	**34**	*i* P	**Pg**	**02 40 49.2**	**-0.2**
HAVZ				*i* S	**Sg**	**02 40 53.8**	**+0.4**
HAVZ	**Havza**	**0.30**	**34**	P	**Pg**	**02 40 49.2**	**-0.2**
HAVZ				S	**Sg**	**02 40 53.8**	**+0.4**
KVT	**Kavak**	**0.49**	**59**	*e*PG	**Pg**	**02 40 52.4**	**-0.6**
KVT				*e*SG	**Sg**	**02 40 59.8**	**+0.4**
KVT	**Kavak**	**0.49**	**59**	*e*Pg	**Pg**	**02 40 52.4**	**-0.6**
KVT				*e*Sg	**Sg**	**02 40 59.8**	**+0.4**
COAL	**Corum-Alaca**	**0.69**	**214**	*i* P	**Pg**	**02 40 56.5**	**-0.3**
COAL				*i* S	**Sb**	**02 41 07.3**	**-0.2**
COAL	**Corum-Alaca**	**0.69**	**214**	P	**Pg**	**02 40 56.5**	**-0.3**
COAL				S	**Sb**	**02 41 07.3**	**-0.2**
BOYT	**Boyabat**	**0.74**	**323**	*i* P	**Pg**	**02 40 57.9**	**+0.1**
BOYT				*i* S	**Sb**	**02 41 08.6**	**-0.3**
BOYT	**Boyabat**	**0.74**	**323**	P	**Pg**	**02 40 57.9**	**+0.1**
BOYT				S	**Sb**	**02 41 08.6**	**-0.3**
SAMS	**Samsun-Alacam**	**0.75**	**44**	*i* P	**Pg**	**02 40 57.6**	**-0.2**
SAMS				*i* S	**Sg**	**02 41 08.0**	**+0.4**
SAMS	**Samsun-Alacam**	**0.75**	**44**	P	**Pg**	**02 40 57.6**	**-0.2**
SAMS				S	**Sg**	**02 41 08.0**	**+0.4**
DIKM	**Dikmen**	**0.84**	**348**	*e*PG	**Pb**	**02 41 00.1**	**-0.1**
DIKM				*e*SG	**Sb**	**02 41 12.2**	**+0.5**
DIKM	**Dikmen**	**0.84**	**348**	*e*Pg	**Pb**	**02 41 00.1**	**-0.1**
DIKM				*e*Sg	**Sb**	**02 41 12.2**	**+0.5**
BYBT	**Boyabat**	**0.84**	**320**	*e*PG	**Pg**	**02 40 59.2**	**-0.5**
BYBT				*e*SG	**Sb**	**02 41 11.5**	**-0.3**
BYBT	**Boyabat**	**0.84**	**320**	*e*Pg	**Pg**	**02 40 59.2**	**-0.5**
BYBT				*e*Sg	**Sb**	**02 41 11.5**	**-0.3**
TOKA	**Tokat**	**0.90**	**124**	*i* P	**Pn**	**02 41 02.5**	**+0.1**
TOKA				*i* S	**Sg**	**02 41 12.6**	**0.0**
TOKA	**Tokat**	**0.90**	**124**	P	**Pn**	**02 41 02.5**	**+0.1**
TOKA				S	**Sg**	**02 41 12.6**	**0.0**
CORM	**Corum**	**0.93**	**226**	*e*PG	**Pg**	**02 41 01.4**	**+0.1**
CORM				*e*SG	**Sb**	**02 41 14.7**	**+0.5**
CORM	**Corum**	**0.93**	**226**	*e*Pg	**Pg**	**02 41 01.4**	**+0.1**
CORM				*e*Sg	**Sb**	**02 41 14.7**	**+0.5**
TOKT	**Tokat**	**0.95**	**122**	*e*PG	**Pb**	**02 41 02.0**	**-0.1**
TOKT	**Tokat**	**0.95**	**122**	*e*Pg	**Pb**	**02 41 02.0**	**-0.1**
TOS	**Tosya**	**1.14**	**281**	*e*PN	**Pg**	**02 41 04.8**	**-0.5**
TOS	**Tosya**	**1.14**	**281**	*e*Pn	**Pg**	**02 41 04.8**	**-0.5**
YOZ	**Yozgat**	**1.19**	**187**	*e*PN	**Pn**	**02 41 06.6**	**+0.1**
YOZ	**Yozgat**	**1.19**	**187**	*e*Pn	**Pn**	**02 41 06.6**	**+0.1**

*ISCJB **21** 02:41:55.7±0.7, 40°.31'N×0°.04×143°.83'E±0°.08, h16km, mb3.6/11, Error ellipse: s-maj=9.5km s-min=4.6km az=30.3*
*JMA **21** 02:41:57.3±0.2, 40°.34'N×143°.72'E, h26km, M3.6*
*IDC **21** 02:42:01.5±3.0, 40°.19'N×143°.76'E, h51km±26km, mb3.4/10, mb1 3.6/13, mb1mx3.4/45, mbtmp3.7/13, ML3.1/3, Error ellipse: s-maj=25.1km s-min=19.4km az=119.0*
ISC 21 02:41:57.4±0.8, 40°.33'N±0°.06×143°.76'E±0°.09, h16km, n34, σ0°.68/32, mb3.7/11, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JTH	**Tanohata**	**1.50**	**256**	P	**Pn**	**02 42 22.8**	**-0.9**
MIYJ	**Miyakonagasawa**	**1.67**	**244**	P	**Pn**	**02 42 25.6**	**-0.3**
JANG	**Nango**	**1.71**	**272**	P	**Pn**	**02 42 25.7**	**-0.9**
JEM	**Erimo**	**1.75**	**345**	P	**Pn**	**02 42 26.4**	**-0.6**
JKZ	**Kuzumaki**	**1.89**	**260**	P	**Pn**	**02 42 28.9**	**-0.2**
JKZ				*e*S	**Sn**	**02 42 52.1**	**-0.5**
OFUJ	**Ofunato**	**2.04**	**233**	P	**Pn**	**02 42 30.5**	**-0.5**
OFUJ				*e*S	**Sn**	**02 42 54.7**	**-1.4**
JOM	**Ohasama**	**2.08**	**247**	P	**Pn**	**02 42 31.6**	**0.0**
JNBK	**Urakawa-nobuka**	**2.09**	**339**	P	**Pn**	**02 42 31.5**	**-0.3**
JTM	**Tenmabayashi**	**2.10**	**283**	P	**Pn**	**02 42 32.1**	**+0.2**
JCH	**Churui**	**2.30**	**353**	P	**Pn**	**02 42 34.4**	**-0.3**
JCH				*e*S	**Sn**	**02 43 01.7**	**-1.0**
JOT	**Ohata**	**2.31**	**298**	P	**Pn**	**02 42 34.8**	**+0.1**
JAH	**Hinai**	**2.39**	**268**	P	**Pn**	**02 42 36.2**	**+0.3**
JMK	**Ichinoseki**	**2.39**	**236**	P	**Pn**	**02 42 35.8**	**-0.1**
JIO	**Ouri**	**2.65**	**226**	P	**Pn**	**02 42 38.2**	**-0.8**
JYK	**Kaneyama**	**2.98**	**243**	P	**Pn**	**02 42 44.4**	**+0.4**
ASAJ	**Asahikawa**	**3.88**	**348**	P	Pn	02 43 00.1	+3.7
	1.3nm,0.3s,baz=107,slow=33,SNR=3.0						
ASAJ				S	**Sn**	**02 43 41.0**	**-0.6**
	2.1nm,0.3s,baz=320,slow=21,SNR=4.5						
MJAR	**Matsushiro Arr**	**5.77**	**231**	P	**Pn**	**02 43 23.3**	**+1.0**
	1.2nm,0.3s,baz=40,slow=11,SNR=16						
MAT	**Matsushiro**	**5.77**	**231**	P	**Pn**	**02 43 23.2**	**+0.9**
USRK	**Ussuriysk Ar.**	**9.54**	**298**	P	Pn	02 44 17.6	+3.6
	0.5nm,0.3s,baz=107,slow=13,SNR=9.3						
SEY	**Seymchan**	**23.22**	**10**	P	**P**	**02 47 02.5**	**-0.9**
	0.5nm,0.4s,baz=150,slow=10,SNR=6.0						
SONM	**Songino Array**	**27.66**	**298**	P	**P**	**02 47 44.7**	**+0.3**
	0.4nm,0.4s,baz=81,slow=6.2,SNR=3.0						
H11N2	**WAKE ISLAND Hy**	**28.53**	**129**	T	T	03 18 56.9	
	SNR=7.9						
H11N3	**WAKE ISLAND Hy**	**28.55**	**129**	T	T	03 17 40.4	
	SNR=9.1						
H11S1	**WAKE ISLAND Hy**	**29.37**	**131**	T	T	03 18 48.6	
	baz=122,slow=74,SNR=3.3						
H11S3	**WAKE ISLAND Hy**	**29.38**	**131**	T	T	03 18 47.5	
	baz=323,slow=74,SNR=3.0						
ZALV	**Zalesovo Beam**	**41.14**	**310**	P	**P**	**02 49 41.2**	**+0.7**
	0.7nm,0.5s,baz=99,slow=7.5,SNR=4.1						
MKAR	**Makanchi Array**	**44.00**	**300**	P	**P**	**02 50 04.6**	**+0.7**
	0.9nm,0.7s,baz=73,slow=8.1,SNR=6.7						
ILAR	**Eielson Array**	**45.74**	**34**	P	**P**	**02 50 18.0**	**+0.5**
	0.4nm,0.7s,baz=277,slow=6.2,SNR=4.9						
INK	**Inuvik**	**50.62**	**28**	P	**P**	**02 50 56.0**	**+0.9**
	0.3nm,0.5s,baz=28,slow=6.3,SNR=2.7						
YKA	**Yellowknife Ar**	**60.04**	**32**	P	**P**	**02 52 03.3**	**+0.3**
	0.2nm,0.6s,baz=301,slow=6.0,SNR=6.0						
WRA	**Warramunga Arr**	**60.60**	**190**	P	**P**	**02 52 06.0**	**-1.3**
	0.3nm,0.5s,baz=8.5,slow=6.8,SNR=3.6						
FINES	**FINESS Array B**	**66.75**	**332**	P	**P**	**02 52 47.9**	**+0.4**
	2.5nm,1.0s,baz=57,slow=7.0,SNR=4.8						
NOA	**NORSAR Array B**	**71.85**	**338**	P	**P**	**02 53 19.3**	**+0.3**
	0.7nm,0.7s,baz=37,slow=6.0,SNR=3.3						
AKASG	**Malin Array Be**	**72.80**	**323**	P	**P**	**02 53 25.0**	**+0.1**
	0.6nm,0.5s,baz=47,slow=5.7,SNR=5.6						

*IDC **21** 02:45:11.3±2.3, 23°.89S×179°.82E, h437km±29km, mb3.5/7, mb1 3.6/9, mb1mx3.3/39, mbtmp4.4/9, Error ellipse: s-maj=37.8km s-min=22.6km az=61.0*
ISC 21 02:45:10.9±1.9, 23°.9S±0°.2×179°.5W±0°.3, h500km, n10, σ1°.24/10, mb4.4/7, South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**5.53**	**165**	P	**P**	**02 46 41.9**	**-0.7**
	47nm,0.3s,baz=73,slow=20,SNR=3.4						
RAO				S	**S**	**02 47 56.6**	**-1.0**
	17nm,0.3s,baz=188,slow=23,SNR=3.4						
URZ	**Urewera**	**14.61**	**191**	P	**P**	**02 48 18.5**	**+1.6**
	1.4nm,0.3s,baz=314,slow=1.7,SNR=6.0						
URZ				S	**S**	**02 50 49.7**	**-0.5**
	0.5nm,0.3s,baz=50,slow=23,SNR=4.6						
RPZ	**Rata Peaks**	**21.24**	**199**	P	**P**	**02 49 22.5**	**+1.9**
	9.9nm,1.0s,baz=301,slow=2.7,SNR=3.2						
CTA	**Charters Tower**	**31.92**	**270**	P	P	02 50 55.4	+0.4
	6.4nm,0.3s,baz=90,slow=12,SNR=18						
PMG	**Port Moresby**	**34.91**	**289**	P	P	02 51 20.8	+0.4
	8.8nm,0.7s,baz=136,slow=18,SNR=2.7						
STKA	**Stephens Creek**	**35.14**	**248**	P	**P**	**02 51 22.1**	**0.0**
	1.9nm,0.9s,baz=98,slow=14,SNR=2.7						
ASAR	**Alice Springs**	**42.48**	**260**	P	**P**	**02 52 21.4**	**-0.4**
	3.3nm,0.7s,baz=94,slow=7.9,SNR=30						
WRA	**Warramunga Arr**	**42.85**	**266**	P	**P**	**02 52 23.9**	**-0.9**
	4.4nm,0.3s,baz=96,slow=8.4,SNR=90						
JAY	**Jayapura**	**43.92**	**293**	P	**P**	**02 52 32.5**	**-0.6**
	0.3nm,0.4s,baz=42,slow=23,SNR=3.7						
BRTR	**Keskin Array B**	**147.93**	**307**	PKPbc	**PKPab**	**03 04 05.5**	**+1.2**
	0.8nm,0.6s,baz=83,slow=5.1,SNR=3.9						

JMA 21 02:57:00.2±0.2, 37°.08'N×141°.87'E, h18km±3km, M3.5, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**0.84**	**290**	P	Pb	02 57 16.0	-0.4
JFK				S	Sg	02 57 27.7	-0.2
JHO	**Hitachi**	**1.14**	**246**	P	Pn	02 57 20.7	-0.6
JFT	**Otama**	**1.30**	**290**	P	Pn	02 57 23.5	0.0
JFT				*e*S	Sb	02 57 40.7	+0.3
JIO	**Ouri**	**1.43**	**343**	P	Pn	02 57 25.8	+0.5
JOU	**Okura**	**1.60**	**324**	P	Pn	02 57 28.4	+0.8
MAT	**Matsushiro**	**2.99**	**261**	P	Pn	02 57 48.6	+1.9
MAT				*e*S	Sn	02 58 22.2	+0.1

*IDC **21** 02:58:49.1±0.9, 37°.44'N×140°.30E, h26km±6km, mb3.1/4, mb1 3.4/4, mb1mx3.2/42, mbtmp3.3/4, Error ellipse: s-maj=41.3km s-min=16.1km az=124.0*
*JMA **21** 02:58:50.2, 38°.24'N×138°.63E, h16km±1km, M3.7*
JMA Felt I J1.
ISC 21 02:58:47.8±0.8, 38°.29N±0°.06×138°.52E±0°.06, h20km±6km, n15, σ0°.65/21, mb3.5/5, 2C-4D, Near west coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JSD	**Sado**	**0.33**	**219**	⇑P	**Pn**	**02 58 57.6**	**+0.2**
JSD				*e*S	**Sn**	**02 59 02.4**	**-1.1**
JAW	**Awa shima**	**0.60**	**74**	⇓P	**Pn**	**02 59 00.5**	**-0.7**
JAW				S	**Sb**	**02 59 08.0**	**+0.3**
JIZZ	**Izumozaki**	**0.77**	**169**	⇑P	**Pn**	**02 59 04.1**	**+0.5**
JIZZ				S	**Sn**	**02 59 14.5**	**-0.1**
JNS	**Sasagawa**	**0.79**	**127**	⇓P	**Pb**	**02 59 02.9**	**+0.1**
JNS				S	**Sb**	**02 59 12.3**	**-0.8**
JYA	**Atsumi**	**0.99**	**72**	⇓P	**Pn**	**02 59 07.3**	**+0.8**
JYA				S	**Sn**	**02 59 19.9**	**0.0**
JHK	**Hiroka**	**1.11**	**159**	⇓P	**Pb**	**02 59 08.5**	**+0.1**
JHK				S	**Sb**	**02 59 22.2**	**-0.3**
MAT	**Matsushiro**	**1.76**	**188**	P	**Pb**	**02 59 19.2**	**-0.3**
MAT				S	**Sb**	**02 59 41.3**	**+0.1**
MJAR	**Matsushiro Arr**	**1.77**	**188**	Pn	**Pb**	**02 59 19.4**	**-0.1**
	23nm,0.3s,baz=56,slow=16,SNR=4.4						
MJAR				Sn	**Sb**	**02 59 42.3**	**+1.1**
	59nm,0.3s,baz=237,slow=27,SNR=21						
ILAR	**Eielson Array**	**49.67**	**33**	P	**P**	**03 07 36.8**	**-1.0**
	0.3nm,0.7s,baz=255,slow=5.8,SNR=4.3						
ILAR				pP	**sP**	**03 07 46.2**	**-0.5**
	0.5nm,0.8s,baz=266,slow=6.9,SNR=4.5						
WRA	**Warramunga Arr**	**58.06**	**185**	P	P	03 08 35.2	-4.3
	0.4nm,0.5s,baz=9.4,slow=7.5,SNR=5.0						
WRA				pP	pP	03 08 42.2	-3.8
	0.9nm,0.8s,baz=2.0,slow=7.4,SNR=3.8						
ASAR	**Alice Springs**	**61.78**	**185**	P	P	03 09 00.9	-4.1
	0.2nm,0.6s,baz=19,slow=5.9,SNR=2.9						
YKA	**Yellowknife Ar**	**63.87**	**30**	P	**P**	**03 09 19.4**	**+0.9**
	0.3nm,0.9s,baz=293,slow=7.0,SNR=3.8						
YKA				pP	**sP**	**03 09 28.0**	**+0.5**
	0.1nm,0.6s,baz=306,slow=6.8,SNR=3.2						
PDAR	**Pinedale Array**	**78.40**	**44**	pP	pP	03 10 56.4	+2.5
	0.2nm,0.5s,baz=307,slow=1.4,SNR=2.7						
TXAR	**Lajitas Array**	**91.14**	**51**	P	P	03 11 46.2	-5.3
	0.3nm,0.6s,baz=303,slow=3.6,SNR=5.5						
TXAR				pP	pP	03 11 56.6	-1.7
	0.2nm,0.8s,baz=305,slow=4.4,SNR=1.8						
LPAZ	**La Paz**	**147.93**	**54**	PKPbc	**PKPdf**	**03 18 29.8**	**+0.1**
	0.5nm,0.7s,baz=223,slow=11,SNR=2.1						

*ISCJB **21** 03:08:25.3±0.8, 48°.96N±0°.05×131°.94E±0°.07, h8km, mb3.5/2, Error ellipse: s-maj=7.1km s-min=6.1km az=39.2*
*IDC **21** 03:08:27.1±1.8, 48°.82N×131°.65E, h8km±13km, mb3.5/2, mb1 3.7/3, mb1mx3.2/54, mbtmp3.6/3, ML2.7/1, Error ellipse: s-maj=46.7km s-min=12.2km az=92.0*
*SKHL **21** 03:08:29.0±0.4, 48°.83N×131°.78E, h21km±3km, mb4.0/4*
ISC 21 03:08:26.5±0.8, 48°.82N±0°.04×131°.74E±0°.04, h8km, n11, σ2°.55/21, Priamurye-Northeastern China border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KLR	**Kul'dur**	**0.41**	**1**	Pg	**Pb**	**03 08 35.7**	**-0.2**
	139nm,0.3s,baz=163,slow=22,SNR=363						
KLR				Lg	Lg	03 08 41.0	
	1µm,0.3s,baz=181,slow=23,SNR=190						
KHBR	**Khabarovsk**	**2.23**	**98**	*e*Pn	**Pb**	**03 09 05.5**	**-1.4**
KHBR				*e*Pg	**Pg**	**03 09 07.9**	**-1.2**
KHBR				pPg	Pn	03 09 14.5	+11
KHBR				*e*Sg	**Sb**	**03 09 36.0**	**+1.4**
GRNR	**Gornyy**	**3.60**	**56**	*e*Pn	**Pn**	**03 09 24.2**	**+1.6**
GRNR				*e*Pg	**Pg**	**03 09 34.0**	**-1.5**
GRNR				AMB	AMB	03 09 34.8	
	70nm,0.5s						
GRNR				*e*Sg	**Sg**	**03 10 20.1**	**-2.1**
GRNR				A	A	03 10 26.1	
	156nm,0.5s						
EKMR	**Ekimchan**	**4.32**	**10**	*e*Pn	Pn	03 09 36.0	+3.5
EKMR				sPn	**Pb**	**03 09 45.2**	**+2.6**
EKMR				*e*Pg	**Pg**	**03 09 47.0**	**-2.2**
EKMR				AMB	AMB	03 09 53.5	
	12nm,0.5s						
EKMR				*e*Sg	**Sg**	**03 10 42.5**	**-2.7**
EKMR				A	A	03 10 49.1	
	35nm,0.5s						
EKMR				A	A	03 10 49.1	
	62nm,0.5s						
EKMR				A	A	03 10 49.1	
	28nm,0.5s						
USRK	**Ussuriysk Ar.**	**4.63**	**178**	Pn	**Pn**	**03 09 37.1**	**+0.5**
	3.2nm,0.3s,baz=358,slow=14,SNR=20						
USRK				Pg	**Pg**	**03 09 53.1**	**-1.9**
	2.7nm,0.3s,baz=350,slow=16,SNR=6.9						
USRK				Lg	Lg	03 10 51.7	
	3.8nm,0.3s,baz=356,slow=33,SNR=7.7						
ZEA	**Zeya**	**5.67**	**332**	*e*Sg	**Sg**	**03 11 25.0**	**-3.4**
ZEA				A	A	03 11 28.1	
	50nm,0.6s						
ZEA				A	A	03 11 28.1	
	39nm,0.6s						
BMKR	**Bomnak**	**6.17**	**344**	*e*Pn	**Pn**	**03 09 59.0**	**+1.2**
BMKR				sPn	**sPn**	**03 10 06.8**	**+6.0**
BMKR				*e*Sg	**Sg**	**03 11 40.2**	**-4.1**
BMKR				A	A	03 11 54.4	
	30nm,0.6s						
KROS	**Kirovskiy**	**6.35**	**334**	*e*Pn	**Pn**	**03 10 02.0**	**+1.6**
KROS				AMB	AMB	03 10 02.8	
	4.0nm,0.5s						
KROS				*e*Sg	**Sg**	**03 11 47.5**	**-2.8**
KROS				A	A	03 11 51.1	
	8.0nm,0.5s						
KROS				A	A	03 11 51.1	
	23nm,0.5s						
KROS				A	A	03 11 51.1	
	7.0nm,0.5s						
NKL	**Nikolayevsk**	**7.11**	**49**	*e*Pg	Pg	03 10 37.8	-4.8
NKL				*e*Sg	**Sg**	**03 12 12.7**	**-1.9**
ILAR	**Eielson Array**	**43.90**	**38**	P	**P**	**03 16 33.5**	**+0.4**
	0.3nm,0.9s,baz=289,slow=7.6,SNR=4.6						
FINES	**FINESS Array B**	**55.08**	**326**	P	**P**	**03 17 58.6**	**+0.3**
	1.5nm,0.9s,baz=34,slow=10,SNR=2.6						

*NIED **21** 03:08:00, 37°.20N×142°.40E, h23km, Mw4.9 Best double couple: M0 2.78000×10^16 NP1:φs282.00000°, δ22.00000°, λ-127.00000°. NP2:φs140.00000°, δ73.00000°, λ-77.00000°.*
*JMA **21** 03:08:32.5±0.2, 37°.19N×142°.41E, h13km±3km, M5.0*
JMA Felt II J1.
*ISCJB **21** 03:08:33.1±1.0, 37°.27N±0°.02×142°.30E±0°.02, h5km±6km, mb4.9/227, MS4.5/28, Error ellipse: s-maj=4.2km s-min=2.6km az=169.7*
*IDC **21** 03:08:36.4±3.0, 37°.23N×142°.25E, h17km±18km, mb4.6/39, mb1 4.7/45, mb1mx4.6/59, mbtmp4.7/45, ML4.5/5, MS4.3/26, Ms1 4.3/26, ms1mx4.2/47, Error ellipse: s-maj=12.5km s-min=9.9km az=120.0*
*GCMT **21** 03:08:37.5±0.4, 37°.31N×142°.22E, h15km, MW5.0/63, Moment Tensor Solution. s18,c20; s63,c80; Duration: 0 Moment tensor: Scale 10^16Nm; Mrr-1.34±.10; Mθθ1.12±.07; Mφφ0.22±.07; Mrθ-1.09±.27; Mrφ-0.58±.05; Mθφ4.20±.30; Best double couple: Mo 4.50800×10^16 NP1:φs162.00000°, δ83.00000°, λ-80.00000°. NP2: φs286.00000°, δ12.00000°, λ-146.00000°. Principal axes: T 4.1470, Plg38.0000°, Azm243.0000°; N 0.7220, Plg10.0000°, Azm341.0000°; P -4.8690, Plg51.0000°, Azm83.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
*NEIC **21** 03:08:37.5±1.1, 37°.27N×142°.25E, h24km±8km, mb5.1/169 Error ellipse: s-maj=4.0km s-min=2.8km az=143.0*
*BJI **21** 03:08:37.9, 37°.15N×142°.36E, h43km, mb4.7/49, mB5.3/36, Ms4.8/44, Ms7 4.7/40*
ISC 21 03:08:37.8±0.7, 37°.25N±0°.04×142°.27E±0°.04, h27km±4km, h27km:pP-P, n708, σ0°.91/718, mb5.0/231, MS4.4/28, 16C-16D, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**1.11**	**277**	⇓P	**Pn**	**03 08 55.1**	**-2.7**
JFK				S	**Sn**	**03 09 11.9**	**-0.4**
ONAJ	**Iwakimizuishiy**	**1.18**	**263**	P	**Pn**	**03 08 55.9**	**-2.8**
ONAJ				S	**Sn**	**03 09 13.5**	**-0.4**
JMM	**Marumori**	**1.32**	**298**	⇓P	**Pn**	**03 08 58.2**	**-2.4**
JMM				S	**Sn**	**03 09 17.2**	**-0.1**
JIO	**Ouri**	**1.41**	**329**	P	**Pn**	**03 08 59.5**	**-2.2**
JHO	**Hitachi**	**1.50**	**245**	P	**Pn**	**03 09 00.4**	**-2.6**
JHO				*e*S	**Sn**	**03 09 20.7**	**-1.0**
JFT	**Otama**	**1.56**	**281**	⇑P	**Pn**	**03 09 02.6**	**-1.2**
JFT				S	**Sn**	**03 09 24.3**	**+1.1**
JOU	**Okura**	**1.69**	**312**	P	**Pn**	**03 09 04.1**	**-1.5**
JOU				S	**Sn**	**03 09 25.8**	**-0.6**
JMK	**Ichinoseki**	**1.89**	**334**	P	**Pn**	**03 09 06.8**	**-1.6**
JMK				*e*S	**Sn**	**03 09 32.1**	**+0.8**
MJAR	**Matsushiro Arr**	**3.33**	**259**	Pn	**Pn**	**03 09 27.6**	**-0.5**
	53nm,0.3s,baz=93,slow=15,SNR=233						
MJAR				Sn	**Sb**	**03 10 13.8**	**-2.4**
	52nm,0.3s,baz=89,slow=20,SNR=7.6						
MJAR				LR	LR	03 10 53.1	
	comp=Z,6µm,19.7s,baz=80,slow=42						
MAJO	**Matsushiro**	**3.33**	**259**	*e*Pn	**Pn**	**03 09 28.9**	**+0.7**
MAT	**Matsushiro**	**3.33**	**259**	P	**Pn**	**03 09 27.9**	**-0.3**
MAT				*e*S	**Sb**	**03 10 13.1**	**-3.1**
MJB9	**Matsu-Tunnel**	**3.33**	**259**	*e*Pn	**Pn**	**03 09 29.3**	**+1.1**
JHJ2	**Mitsune**	**4.59**	**207**	*e*Pn	**Pn**	**03 09 44.9**	**-0.5**
JHJ2				*e*Sn	**Sn**	**03 10 33.9**	**-4.0**
JHJ	**Hachijo jima 2**	**4.59**	**207**	Pn	**Pn**	**03 09 43.3**	**-2.3**
	121nm,0.3s,baz=342,slow=20,SNR=43						
JHJ				Sn	**Sn**	**03 10 35.9**	**-2.1**
	228nm,0.3s,baz=246,slow=23,SNR=7.4						
JHJ				LR	LR	03 11 45.0	
	comp=Z,4µm,19.4s,baz=96,slow=41						
INU	**Inuyama**	**4.64**	**247**	*e*Pn	**Pn**	**03 09 47.7**	**+1.4**
ERM	**Erimo**	**4.81**	**8**	*e*Pn	**Pn**	**03 09 46.3**	**-2.2**
ERM				*e*Sn	**Sn**	**03 10 42.3**	**-1.0**
ASAJ	**Asahikawa**	**6.87**	**2**	Pn	**Pn**

BJI pmax pmax
comp=Z,21nm,1.4s
BJT Baijiatuau 20.55 286 *e*P **P 03 13 12.0 -2.3**
comp=Z,800nm,12.0s
YHNB Yeheng 21.81 241 *e*P **P 03 13 30.9 +2.8**
comp=Z,41nm,1.2s
MA2 Magadan 23.01 11 P **P 03 13 39.9 -0.5**
comp=Z,30nm,0.9s
MA2 LR LR 03 23 55.2
comp=Z,33nm,0.7s,baz=215,slow=9.3,SNR=26
HHC Hu-ho-hao-te 24.05 288 *e*P **P 03 13 50.9 0.0**
HHC S **S 03 18 04.3 -2.3**
HHC pmax pmax
comp=Z,332nm,18.1s,baz=200,slow=40
HHC pmax pmax
comp=Z,22nm,0.9s
HHC LR LR
comp=Z,740nm,8.1s
HHC LR LR
comp=Z,2μm,13.6s
HHC LR LR
comp=Z,2μm,14.8s
HHC LR LR
comp=Z,2μm,13.6s
WHN Wuhan 24.06 262 ⇓P **P 03 13 51.8 +0.9**
WHN pmax pmax
comp=Z,460nm,2.1s
YAK Yakutsk 26.02 346 P **P 03 14 07.3 -1.0**
comp=Z,36nm,0.4s,baz=154,slow=0.5,SNR=12
YAK LR LR 03 24 41.5
comp=Z,1μm,18.0s,baz=173,slow=37
YAK Yakutsk 26.02 346 *e*P **P 03 14 07.7 -0.6**
comp=Z,69nm,0.6s
SEY Seymchan 26.45 10 P **P 03 14 12.9 +0.7**
comp=Z,24nm,0.7s,baz=197,slow=6.8,SNR=63
H11N2 WAKE ISLAND Hy 27.68 122 T T 03 43 16.6
baz=315,slow=75,SNR=301
H11N1 WAKE ISLAND Hy 27.69 122 T T 03 43 23.4
baz=315,slow=75,SNR=682
H11N3 WAKE ISLAND Hy 27.70 122 T T 03 43 17.1
baz=315,slow=75,SNR=296
ULN Ulaanbaatar 27.80 304 *e*P **P 03 14 23.3 -1.5**
comp=Z,9.5nm,0.7s
ENH Enshi 28.03 265 *e*P **P 03 14 25.3 -1.5**
comp=Z,44nm,0.8s
SONA1 Songino Array 28.23 303 *e*P **P 03 14 28.4 -0.2**
SONM Songino Array 28.23 303 P **P 03 14 28.2 -0.4**
comp=Z,9.8nm,0.7s,baz=103,slow=9.0,SNR=42
SONM LR LR 03 25 34.6
comp=Z,441nm,20.6s,baz=136,slow=36
H11S1 WAKE ISLAND Hy 28.41 124 T T 03 44 11.2
baz=317,slow=76,SNR=577
H11S3 WAKE ISLAND Hy 28.41 124 T T 03 44 11.0
baz=317,slow=76,SNR=558
H11S2 WAKE ISLAND Hy 28.43 124 T T 03 44 12.1
baz=317,slow=76,SNR=570
TGY Tagaytay City 29.87 225 P **P 03 14 42.0 -1.2**
comp=Z,137nm,0.4s,baz=120,slow=15,SNR=3.9
LZH Lanzhou 30.70 280 *e*P P 03 14 54.6 +4.0
LZH pP sP 03 15 05.8 +4.0
LZH sP pP 03 15 12.0 +13
LZH PP **PP 03 15 56.0 -4.0**
LZH pmax pmax
comp=Z,32nm,1.3s
LZH pmax pmax
comp=Z,97nm,5.9s
LZH LR LR
comp=Z,600nm,13.3s
LZH LR LR
comp=Z,670nm,12.9s
LZH LR LR
comp=Z,880nm,16.3s
TLY Talaya 30.71 310 P **P 03 14 50.9 +0.6**
comp=Z,4.1nm,0.4s,baz=71,slow=6.1,SNR=3.3
GYA Guiyang 31.93 261 ⇑ *i*P **P 03 15 01.3 -0.2**
GYA pP sP 03 15 16.3 +3.7
GYA PP **PP 03 16 11.0 -2.7**
GYA PcP **PcP 03 17 54.3 +2.9**
GYA S **S 03 20 11.0 -0.1**
GYA sS sS 03 20 31.6 +7.5
GYA ScP **ScP 03 21 32.8 -0.2**
GYA SS **SnSn 03 22 05.5 +5.0**
GYA ScS **ScS 03 25 29.0 -2.7**
GYA pmax pmax
comp=Z,20nm,1.1s
GYA pmax pmax
comp=Z,200nm,7.8s
GYA LR LR
comp=Z,830nm,15.8s
GYA LR LR
comp=Z,670nm,14.3s
GYA LR LR
comp=Z,770nm,16.1s
CD2 Chengdu 32.35 270 P **P 03 15 05.0 -0.1**
CD2 pP sP 03 15 16.9 +0.7
CD2 PP **PP 03 16 18.6 +0.3**
CD2 S **S 03 20 16.6 -1.0**
CD2 sS sS 03 20 37.3 +6.7
CD2 pmax pmax
comp=Z,20nm,0.6s
CD2 pmax pmax
comp=Z,930nm,13.2s
CD2 LR LR
comp=Z,2μm,15.6s
CD2 LR LR
comp=Z,2μm,14.4s
GTA Gaotai 33.15 287 *e*P **P 03 15 13.1 +1.0**
GTA pP sP 03 15 25.1 +1.8
GTA sP pP 03 15 30.3 +10
GTA S **S 03 20 27.6 -2.4**
GTA sS sS 03 20 46.1 +3.1
GTA SS **SnSn 03 22 28.3 -1.7**
GTA pmax pmax
comp=Z,5.0nm,1.0s
GTA pmax pmax
comp=Z,700nm,8.6s
GTA LR LR
comp=Z,510nm,12.6s
GTA LR LR
comp=Z,760nm,14.3s
GTA LR LR
comp=Z,850nm,13.1s
BILL Bilibino 33.63 16 *e*P **P 03 15 15.0 -0.7**
comp=Z,38nm,1.3s
QIZ Qiongzhong 33.64 246 P P 03 15 19.5 +3.2
QIZ S **S 03 20 40.6 +3.0**
QIZ LR LR
comp=Z,360nm,12.0s
QIZ LR LR
comp=Z,220nm,13.1s
TIXI Tiksi 35.16 353 P **P 03 15 28.2 -0.7**
comp=Z,1.7nm,0.3s,baz=144,slow=11,SNR=4.5
KMI Kunming 35.67 262 P **P 03 15 36.6 +2.5**
KMI pmax pmax
comp=Z,36nm,1.0s
KMI pmax pmax
comp=Z,240nm,4.7s
KMI LR LR
comp=Z,660nm,18.9s
KMI LR LR
comp=Z,690nm,15.6s
KMI LR LR
comp=Z,850nm,20.6s
MYLDM Lahad Datu 38.61 220 *e*P **P 03 15 60.0 +1.2**
comp=Z,45nm,1.0s
PANO Nakornpanom 38.68 249 P P 03 16 06.4 +7.0
comp=Z,51nm,1.1s
SKNT Sakolnakorn 39.26 250 P P 03 16 08.9 +4.6
comp=Z,32nm,2.0s
JAY Jayapura 39.59 182 P **P 03 16 09.9 +2.9**
FAKI Fak Fak 41.03 195 *e*P **P 03 16 18.2 -0.7**
comp=Z,30nm,1.1s
CMAI Chiengmai2 41.29 258 P **P 03 16 23.6 +2.3**
comp=Z,11nm,1.4s,comp=Z,701nm
WMQ Urumqi 41.35 297 P **P 03 16 23.3 +1.8**
WMQ pP sP 03 16 35.8 +3.0
WMQ sP pP 03 16 40.0 +10
WMQ pmax pmax
comp=Z,8.0nm,1.0s
WMQ pmax pmax
comp=Z,130nm,3.6s
WMQ LR LR
comp=Z,530nm,15.8s
WMQ LR LR
comp=Z,270nm,15.8s
WMQ LR LR
comp=Z,220nm,17.8s

UTTA Uttaradit 41.39 254 P P 03 16 29.1 +7.2
comp=Z,3.2nm,0.9s
CMMT Chiang Mai 42.00 256 P P 03 16 35.3 +8.3
comp=Z,8.4nm,1.2s
CHTO Chiang Mai 42.00 256 P P 03 16 35.3 +8.3
comp=Z,35nm,1.3s
CMAR Chiang Mai Arr 42.21 256 P P **03 16 29.0 +0.3**
comp=Z,1.6nm,0.3s,baz=48,slow=6.3,SNR=5.2
CMAR LR LR 03 36 47.1
comp=Z,732nm,18.2s,baz=51,slow=40
ZAA0 Zalesovo Array 42.27 312 *e*P **P 03 16 28.1 -0.7**
ZALV Zalesovo Beam 42.27 312 P **P 03 16 28.0 -0.8**
comp=Z,2.3nm,0.4s,baz=86,slow=6.2,SNR=18
ZALV ScP **ScP 03 22 11.4 +0.5**
comp=Z,0.3nm,0.3s,baz=91,slow=6.2,SNR=3.6
CHBT CHBT 43.18 246 P P 03 16 41.6 +5.0
comp=Z,23nm,1.3s,comp=Z,3μm
NRIK Noril'sk 43.36 335 P **P 03 16 36.8 -0.5**
comp=Z,1.6nm,0.4s,baz=130,slow=3.8,SNR=6.8
MK01 Makanchi Array 44.58 302 *e*P **P 03 16 46.8 -0.7**
MK31 Makanchi Array 44.58 302 *e*P **P 03 16 47.4 -0.2**
MKAR Makanchi Array 44.58 302 P **P 03 16 47.1 -0.4**
comp=Z,3.8nm,0.7s,baz=83,slow=9.9,SNR=25
MKAR ScP **ScP 03 22 20.6 +0.1**
comp=Z,0.5nm,0.8s,baz=88,slow=6.5,SNR=3.1
MKAR LR LR 03 34 00.2
comp=Z,286nm,18.8s,baz=360,slow=34
MAKZ Makanchi 44.79 302 *e*P **P 03 16 49.4 +0.2**
comp=Z,12nm,0.9s
TT01 Tatalina 44.85 35 *e*P **P 03 16 48.8 -0.6**
TTA Tatalina 44.86 35 *e*P **P 03 16 49.0 -0.6**
comp=Z,6.1nm,1.0s
SVW2 Sparrevohn 44.94 37 *e*P **P 03 16 50.1 -0.1**
comp=Z,23nm,0.9s
RSO Redoubt South 46.31 38 *e*P **P 03 17 00.5 -0.7**
KURK Kurchatov 46.34 308 *e*P **P 03 17 00.7 -0.6**
comp=Z,26nm,0.7s
KDAK Kodiak Island 46.48 42 P P 03 17 17.2 +15
comp=Z,35nm,0.8s,baz=296,slow=4.9,SNR=18
KDAK Kodiak Island 46.48 42 *e*P **P 03 17 02.2 -0.1**
comp=Z,48nm,0.8s
PPLA Purkeypile 46.60 35 *e*P **P 03 17 04.2 +0.7**
comp=Z,49nm,1.4s
SPU Mount Spurr 46.65 37 *e*P **P 03 17 04.4 +0.7**
CAST Castle Rocks 46.67 34 *e*P **P 03 17 03.9 +0.1**
comp=Z,13nm,0.8s
KAPI Kappang 46.99 211 *e*P **P 03 17 07.3 +0.5**
comp=Z,42nm,1.0s
BPAW Bear Paw Mtn. 47.17 33 *e*P **P 03 17 08.4 +0.7**
comp=Z,46nm,1.9s
KTH Kantishna Hill 47.19 34 *e*P **P 03 17 08.0 +0.1**
comp=Z,32nm,1.0s
MLY Manley 47.31 32 *e*P **P 03 17 09.7 +0.9**
comp=Z,21nm,0.9s
RC01 Rabbit Creek A 47.78 37 *e*P **P 03 17 11.5 -0.9**
comp=Z,28nm,0.9s
PMR Palmer 48.05 37 *e*P **P 03 17 14.1 -0.4**
comp=Z,27nm,1.0s
MCK McKinley 48.08 34 *e*P **P 03 17 14.8 +0.1**
comp=Z,18nm,0.8s
RND Reindeer 48.12 34 *e*P **P 03 17 14.8 -0.3**
comp=Z,28nm,0.9s
KKN Kakani 48.34 276 *e*P **P 03 17 16.9 -0.6**
MDM Murphy Dome 48.37 32 *e*P **P 03 17 17.7 +0.7**
comp=Z,42nm,0.9s
TRTT Trang 48.41 244 P P 03 17 26.0 +8.2
comp=Z,15nm,1.4s
WRH Wood River Hil 48.44 33 *e*P **P 03 17 17.9 +0.5**
comp=Z,11nm,0.8s
COLA College 48.53 32 *e*P **P 03 17 19.1 +0.9**
comp=Z,20nm,0.8s
CCB Clear Creek Bu 48.56 33 *e*P **P 03 17 18.0 -0.4**
comp=Z,27nm,2.0s
GKN Gorkha 48.76 277 *e*P **P 03 17 20.5 -0.1**
comp=Z,103nm,1.0s
DHY Denali Highway 48.80 35 *e*P **P 03 17 20.4 -0.1**
comp=Z,9.3nm,0.8s
SCM Sheep Creek Mo 48.89 36 *e*P **P 03 17 20.1 -1.0**
comp=Z,33nm,0.9s
HDA Harding Lake 48.94 33 *e*P **P 03 17 21.3 0.0**
comp=Z,24nm,0.9s
IL1 Eielson Array 48.95 32 *e*P **P 03 17 20.4 -1.0**
ILAR Eielson Array 48.95 32 P **P 03 17 20.7 -0.7**
comp=Z,20nm,0.8s,baz=266,slow=6.3,SNR=218
ILB Eielson Array 48.95 32 *e*P **P 03 17 20.9 -0.5**
PKDT Phuket 49.34 245 P P 03 17 33.5 +8.5
comp=Z,34nm,1.2s
FYU Fort Yukon 49.58 30 *e*P **P 03 17 27.0 +0.8**
comp=Z,152nm,1.9s
KLU Klutina 49.59 37 *e*P **P 03 17 26.1 -0.4**
comp=Z,33nm,1.1s
PAX Paxson 49.67 35 *e*P **P 03 17 27.8 +0.7**
comp=Z,8.2nm,0.9s
KOLN Koldanda 49.68 277 *e*P **P 03 17 27.4 -0.4**
comp=Z,25nm,0.7s
DIV Divide 49.70 37 *e*P **P 03 17 28.3 +1.0**
comp=Z,44nm,1.0s
SOEI Soe 49.71 204 *e*P **P 03 17 29.1 +1.3**
comp=Z,69nm,1.0s
EYAK Cordova Ski Ar 49.77 38 *e*P **P 03 17 27.6 -0.1**
comp=Z,28nm,0.8s
PYUN Piuthan 50.02 278 *e*P **P 03 17 30.4 +0.1**
comp=Z,116nm,1.0s
TKM2 Tokmak 2 50.13 298 *e*P **P 03 17 31.4 +0.4**
comp=Z,37nm,1.4s
DOT Dot Lake 50.25 34 *e*P **P 03 17 31.2 -0.2**
comp=Z,31nm,0.8s
BMRM Bremner River 50.28 37 *e*P **P 03 17 32.3 +0.6**
comp=Z,31nm,0.9s
RAGM Ragged Mountai 50.31 38 *e*P **P 03 17 32.4 +0.4**
comp=Z,25nm,0.8s
MENT Mentasta 50.47 35 *e*P **P 03 17 34.1 +1.0**
comp=Z,16nm,0.8s
VOSK Vostochnaya 50.65 312 *e*P **P 03 17 34.2 -0.3**
comp=Z,11nm,1.0s
MTN Manton Dam 50.91 194 *e*P **P 03 17 36.4 -0.3**
comp=Z,27nm,1.0s
KSH Kashi 50.94 294 *e*P P 03 17 41.9 +4.8
KSH *ep*P sP 03 17 54.4 +5.9
KSH *e*PcP **PcP 03 18 57.3 +4.1**
KSH *e*ScP **ScP 03 22 48.6 +1.0**
KSH PcS **PcS 03 22 54.3 +3.5**
KSH S **S 03 24 55.8 +3.6**
KSH SS **SS 03 28 28.8 +1.9**
KSH pmax pmax
comp=Z,890nm,13.4s
KSH LR LR
comp=Z,290nm,11.1s
KSH LR LR
comp=Z,630nm,12.6s
KSH LR LR
comp=Z,1μm,14.7s
AAK Ala-Archa 50.99 298 *e*P **P 03 17 37.9 +0.4**
comp=Z,6.8nm,0.8s
BRVK Borovoye 50.99 312 *e*P **P 03 17 37.0 0.0**
comp=Z,6.0nm,0.8s
EGAK Eagle 51.40 32 *e*P **P 03 17 39.7 -0.2**
comp=Z,6.3nm,0.8s
EKS2 Erkin-Say 51.48 299 *e*P **P 03 17 41.1 0.0**
comp=Z,6.0nm,0.8s
ZRNK Zerenda 51.77 312 *e*P **P 03 17 42.9 0.0**
comp=Z,6.0nm,0.7s
PSI Prapat 52.49 240 *e*P **P 03 17 48.2 -0.6**
comp=Z,24nm,1.3s
SDSI Sungai Dareh 53.56 234 P P 03 18 03.5 +6.9
KKAR Karatay Array 53.61 300 *e*P **P 03 17 57.1 +0.4**
INK Inuvik 53.89 27 P **P 03 17 58.8 +0.5**
comp=Z,17nm,0.7s,baz=291,slow=6.5,SNR=98
INK Inuvik 53.89 27 *e*P **P 03 17 58.1 -0.1**
comp=Z,21nm,0.8s
LHSI Lahat 54.47 230 P P 03 18 10.0 +6.8
GSI Gunungsitoli 54.49 240 P **P 03 18 04.2 +0.8**
GSI Gunungsitoli 54.49 240 *e*P **P 03 18 02.8 -0.7**
comp=Z,103nm,1.2s
MDSI Maura Dua 54.59 229 P **P 03 18 03.8 -0.3**
MASI Maura Aman, Be 54.73 232 P P 03 18 14.5 +9.3
comp=Z,95nm,1.2s,comp=Z,6μm
ARU Arti 56.65 319 *e*P **P 03 18 18.4 0.0**
comp=Z,23nm,1.1s
FITZ Fitzroy Crossi 57.24 199 *e*P **P 03 18 23.3 +0.4**
comp=Z,25nm,1.3s
WB2 Warramunga Arr 57.37 189 *e*P **P 03 18 22.9 -0.9**
comp=Z,22nm,0.9s
WRA Warramunga Arr 57.37 189 P **P 03 18 22.9 -0.9**
comp=Z,9.3nm,0.7s,baz=7.2,slow=7.3,SNR=77
DLBC Dease Lake 58.04 38 P **P 03 18 29.2 +1.0**
comp=Z,13nm,0.9s,baz=292,slow=8.4,SNR=25

ABKAR Akbulak array 58.32 310 *e*P **P 03 18 29.9 -0.4**
HYB Hyderabad 58.89 269 *i* P **P 03 18 35.0 +0.3**
AKTO Aktyubinsk 59.04 312 P **P 03 18 34.2 -1.1**
comp=Z,2.3nm,0.6s,baz=74,slow=9.1,SNR=10
AS01 Alice Springs 61.09 189 *e*P **P 03 18 48.9 -0.6**
AS31 Alice Springs 61.09 189 *e*P **P 03 18 49.3 -0.3**
comp=Z,2.5nm,0.8s
ASAR Alice Springs 61.10 189 P **P 03 18 49.3 -0.3**
comp=Z,6.9nm,0.8s,baz=9.5,slow=6.0,SNR=67
ASAR LR LR 03 42 47.8
comp=Z,150nm,21.7s,baz=344,slow=34
RES Resolute Bay 62.22 15 *e*P **P 03 18 56.3 -0.3**
comp=Z,28nm,0.9s
YKW3 Yellowknife Ar 63.24 30 *e*P **P 03 19 03.3 -0.2**
comp=Z,58nm,1.7s
YKA Yellowknife Ar 63.28 30 P **P 03 19 03.5 -0.3**
comp=Z,7.1nm,0.8s,baz=302,slow=6.7,SNR=155
YKB5 Yellowknife Ar 63.28 30 *e*P **P 03 19 01.8 -1.9**
ARCES ARCESS Array B 64.04 340 P **P 03 19 08.6 -0.1**
comp=Z,5.7nm,0.9s,baz=54,slow=8.2,SNR=7.2
ARCES LR LR 03 51 10.3
comp=Z,269nm,19.1s,baz=33,slow=40
GEYT Alibeck 64.33 299 P **P 03 19 10.8 -0.3**
comp=Z,1.7nm,0.4s,baz=69,slow=8.1,SNR=4.2
DAG Danmarks Havn 65.62 355 ⇓ *i* P **P 03 19 18.1 -0.7**
comp=Z,10nm,1.0s
JCW Jim Creek 66.80 46 *e*P **P 03 19 27.6 +0.6**
G03D McMinnville, O 67.52 50 P **P 03 19 32.3 +0.8**
baz=301
LTY Liberty 68.01 47 *e*P **P 03 19 34.9 +0.2**
comp=Z,20nm,1.6s
ETW Entiat 68.03 46 *e*P **P 03 19 35.5 +0.6**
B08A Colville Reser 68.20 45 *e*P **P 03 19 36.0 +0.2**
comp=Z,15nm,1.3s
I03D Drain, OR 68.25 51 P **P 03 19 36.8 +0.7**
baz=301
OBN Obninsk 68.33 323 P **P 03 19 37.1 +0.7**
comp=Z,11nm,0.3s,baz=195,slow=23,SNR=5.2
H04A Detroit Lake 68.45 50 *e*P **P 03 19 37.0 -0.4**
comp=Z,36nm,1.3s
G05D Wamic, OR 68.68 49 P **P 03 19 39.6 +0.8**
baz=302
STKA Stephens Creek 68.77 181 P **P 03 19 39.9 +0.7**
comp=Z,2.9nm,0.8s,baz=319,slow=5.2,SNR=5.0
I04A Tendick Farm, 68.78 51 P **P 03 19 40.1 +0.6**
baz=302,SNR=8.0
L02D Cave Junction, 68.88 53 P **P 03 19 40.6 +0.4**
baz=302
FIA1 FINESS Array S 68.94 332 *e*P **P 03 19 39.6 -0.4**
comp=Z,25nm,0.9s
FINES FINESS Array B 68.94 332 P **P 03 19 40.0 -0.1**
comp=Z,14nm,0.8s,baz=56,slow=7.4,SNR=50
FINES LR LR 03 53 39.0
comp=Z,421nm,18.8s,baz=34,slow=39
I05D Terrebonne, OR 69.15 50 P **P 03 19 42.2 +0.4**
baz=302
NEW Newport 69.50 45 P **P 03 19 44.3 +0.4**
baz=303
NEW Newport 69.50 45 *e*P **P 03 19 43.2 -0.8**
comp=Z,30nm,1.6s
YBH Yreka Blue Hor 69.67 53 *e*P **P 03 19 46.6 +1.4**
comp=Z,21nm,1.3s
M02C Callahan 69.76 53 P **P 03 19 47.0 +1.3**
baz=302,SNR=5.6
J05D Fort Rock, OR 69.77 51 P **P 03 19 46.5 +0.7**
baz=302,SNR=13
K04D Chiloquin, OR 69.80 51 P **P 03 19 46.5 +0.5**
baz=302
N02D Trinity Center 70.08 53 P **P 03 19 48.7 +1.1**
baz=302
M04C Macdoel 70.20 52 P **P 03 19 49.2 +0.8**
baz=303,SNR=8.4
K05A Summer Lake 70.28 51 *e*P **P 03 19 50.2 +1.2**
comp=Z,42nm,1.1s
WDC Whiskeytown Da 70.40 54 *e*P **P 03 19 49.9 +0.4**
comp=Z,12nm,1.0s
SUMG Summit 70.47 0 *i* P **P 03 19 50.0 +0.1**
comp=Z,16nm,0.9s
SUMG Summit 70.47 0 *e*P **P 03 19 49.4 -0.4**
comp=Z,14nm,0.8s
WALA Waterton Lakes 70.82 43 *e*P **P 03 19 51.8 -0.3**
comp=Z,28nm,1.6s
O03D Paynes Creek 71.03 54 P **P 03 19 53.5 +0.1**
baz=303,SNR=5.6
BSMT Bassoo Peak 71.03 44 *e*P **P 03 19 53.5 0.0**
KVAR Kislovodsk Arr 71.27 311 P **P 03 19 55.2 +0.3**
comp=Z,8.2nm,0.7s,baz=162,slow=20,SNR=8.7
KVAR LR LR 03 55 22.3
comp=Z,273nm,19.1s,baz=42,slow=39
KBZ Khabaz 71.28 311 P **P 03 19 55.3 +0.6**
comp=Z,3.9nm,0.8s,baz=70,slow=4.9,SNR=9.3
KBZ LR LR 03 52 05.1
comp=Z,195nm,18.4s,baz=36,slow=37
KIV Kislovodsk 71.28 311 *e*P **P 03 19 54.4 -0.5**
comp=Z,28nm,1.0s
BMO Blue Mountains 71.28 48 *e*P **P 03 19 54.7 -0.2**
comp=Z,9.4nm,0.9s
JTMT Jette 71.37 44 *e*P **P 03 19 55.6 +0.1**
YBMT Yellow Bay 71.45 44 *e*P **P 03 19 56.5 +0.5**
WSAR Wadi Sarin 71.47 285 LR LR 03 56 35.5
comp=Z,187nm,18.1s,baz=114,slow=40
ORV Oroville 71.62 54 *e*P **P 03 19 57.1 +0.1**
comp=Z,13nm,1.1s
SWMT Swartz Lake 71.66 44 *e*P **P 03 19 57.5 +0.3**
WVOR Wild Horse Val 71.83 50 *e*P **P 03 19 59.0 +0.6**
comp=Z,32nm,1.6s
MSO Missoula 72.09 44 P **P 03 19 59.7 -0.1**
baz=306
MSO Missoula 72.09 44 *e*P **P 03 19 59.1 -0.7**
comp=Z,8.8nm,1.0s
GNI Garni 72.12 307 LR LR 03 55 22.1
comp=Z,156nm,18.1s,baz=72,slow=39
AFDM Forest Hills D 72.30 54 *e*P **P 03 19 59.0 -2.1**
comp=Z,14nm,1.3s
UOSS Minazif 72.39 288 *e*P **P 03 20 00.6 -1.2**
comp=Z,2.3nm,1.6s
CHMT Chamberlain Mo 72.42 44 *e*P **P 03 19 59.7 -2.2**
CAN Canberra 72.47 174 *e*P **P 03 20 02.7 +0.9**
comp=Z,17nm,1.1s
NACGM Naroch 72.92 327 *e* **P 03 20 04.0 -0.4**
FFC Flin Flon 73.16 33 *e*P **P 03 20 05.8 0.0**
comp=Z,38nm,0.9s
CMB Columbia Colle 73.19 55 *e*P **P 03 20 06.9 +0.5**
comp=Z,18nm,1.1s
FCC Fort Churchill 73.50 27 *e*P **P 03 20 07.3 -0.4**
comp=Z,61nm,1.4s
LRM Limekiln Ridge 73.52 45 *e*P **P 03 20 08.8 +0.4**
EGMT Eagleton 73.66 42 P **P 03 20 09.2 +0.2**
baz=308,SNR=6.8
DLMT Dillon 73.71 45 *e*P **P 03 20 10.2 +0.8**
comp=Z,18nm,0.9s
HLID Hailey 73.73 47 P **P 03 20 10.2 +0.5**
baz=306,SNR=12
HLID Hailey 73.73 47 *e*P **P 03 20 09.6 0.0**
comp=Z,9.1nm,1.0s
NC405 NORSAR Array S 74.04 337 *e*P **P 03 20 10.9 0.0**
NC303 NORSAR Array S 74.06 338 *e*P **P 03 20 11.3 +0.3**
BOZ Bozeman (W) 74.08 44 P **P 03 20 12.1 +0.4**
baz=307,SNR=19
BOZ Bozeman (W) 74.08 44 *e*P **P 03 20 11.3 -0.4**
comp=Z,17nm,0.9s
NC204 NORSAR Array S 74.20 338 *e*P **P 03 20 11.7 -0.2**
NB201 NORSAR Array S 74.22 338 *e*P **P 03 20 11.9 -0.1**
NB2 NORSAR Subarra 74.25 338 P **P 03 20 11.6 -0.6**
comp=Z,38nm,1.4s,baz=39,slow=6.2
NB2 NORSAR Subarra 74.25 338 P **P 03 20 11.6 -0.6**
baz=39,slow=6.2
NOA NORSAR Array B 74.25 338 P **P 03 20 11.9 -0.3**
comp=Z,7.7nm,0.9s,baz=39,slow=5.9,SNR=24
NOA LR LR 03 55 51.5
comp=Z,253nm,19.2s,baz=245,slow=38
NV01 Mina Array Sit 74.31 54 *e*P **P 03 20 13.1 -0.1**
NVAR Mina Array Bea 74.31 54 P **P 03 20 13.6 +0.4**
comp=Z,8.8nm,0.8s,baz=284,slow=6.4,SNR=37
NBO02 NORSAR Array S 74.35 338 *e*P **P 03 20 12.5 -0.2**
NC602 NORSAR Array S 74.39 337 *e*P **P 03 20 13.2 +0.2**
NBO00 NORSAR Array S 74.39 338 *e*P **P 03 20 12.3 -0.6**
NAO01 NORSAR Array S 74.50 338 *e*P **P 03 20 12.8 -0.8**
AKASG Malin Array Be 74.54 323 P **P 03 20 13.7 -0.3**
comp=Z,5.2nm,0.5s,baz=45,slow=6.4,SNR=21
AKASG LR LR 03 57 06.9
comp=Z,145nm,18.6s,baz=35,slow=39
AKBB Malin Array Si 74.54 323 *e*P **P 03 20 13.8 -0.1**
comp=Z,16nm,1.1s
KIEV Kiev 74.56 323 *e*P **P 03 20 12.9 -1.1**
comp=Z,14nm,1.0s
AK11 Malin Array Si 74.59 323 *e*P **P 03 20 13.8 -0.4**

QLMT **Earthquake Lak** 74.69 45 *eP* P 03 20 16.2 +1.0
ELK **Elko** 74.89 50 *eP* P 03 20 17.3 +0.8
comp=Z,6.9nm,1.0s
SMMC **Simmler** 74.99 57 P P 03 20 17.9 +0.9
baz=305
YMR **Madison River** 75.05 45 *eP* P 03 20 17.1 -0.3
comp=Z,11nm,0.8s
SUW **Suwalki** 75.07 328 *eP* P 03 20 16.8 -0.2
GCMT **Greycliff** 75.08 44 *eP* P 03 20 18.4 +1.0
YFT **Old Faithful** 75.26 45 *eP* P 03 20 20.4 +1.9
comp=Z,12nm,0.8s
PKM **Mcpherson Peak** 75.36 57 P P 03 20 20.1 +0.9
baz=305,SNR=6.1
H17A **Grant Village** 75.44 45 P P 03 20 21.8 +2.2
baz=308,SNR=33
H17A **Grant Village** 75.44 45 *eP* P 03 20 21.9 +2.2
comp=Z,29nm,0.9s
IMW **Indian Meadow** 75.54 46 *eP* P 03 20 21.5 +1.2
comp=Z,17nm,0.8s
SFJD **Kangerlussuaq** 75.61 5 *i* P P 03 20 19.5 -0.3
SFJD **Kangerlussuaq** 75.61 5 *eP* P 03 20 20.2 +0.4
comp=Z,16nm,1.0s
FXWY **Fox Creek** 75.65 46 *eP* P 03 20 21.9 +1.1
comp=Z,14nm,1.0s
RLMT **Red Lodge** 75.72 44 P P 03 20 21.9 +0.7
baz=309,SNR=9.7
RLMT **Red Lodge** 75.72 44 *eP* P 03 20 19.0 -2.2
comp=Z,32nm,1.5s
MOOW **Moose Ponds** 75.74 46 *eP* P 03 20 22.4 +1.1
comp=Z,18nm,1.2s
GRAC **Grapevine Rang** 75.75 54 P P 03 20 21.9 +0.6
baz=306,SNR=14
HVU **Hansel Valley** 75.76 48 *eP* P 03 20 21.6 +0.2
comp=Z,12nm,1.0s
ISA **Isabella, Lake** 75.80 56 P P 03 20 21.3 -0.4
baz=306
ARVC **Arvin** 75.88 57 P P 03 20 22.2 +0.2
baz=306
LOHW **Long Hollow** 75.91 46 *eP* P 03 20 22.2 -0.1
comp=Z,6.6nm,0.9s
SNOW **Snow King Moun** 75.91 46 *eP* P 03 20 23.4 +1.0
comp=Z,13nm,0.9s
REDW **Red Top Meadow** 75.92 46 *eP* P 03 20 22.9 +0.5
comp=Z,17nm,1.1s
R11A **Troy Canyon, C** 76.09 52 P P 03 20 23.7 +0.3
baz=307,SNR=21
R11A **Troy Canyon, C** 76.09 52 *eP* P 03 20 23.9 +0.5
comp=Z,16nm,1.1s
BGU **Big Grassy Mou** 76.13 49 *eP* P 03 20 23.5 0.0
comp=Z,7.0nm,1.0s
AHID **Auburn Hatcher** 76.14 47 *eP* P 03 20 24.1 +0.4
comp=Z,9.6nm,0.9s
MPMC **Manual Prospec** 76.22 55 P P 03 20 24.4 +0.2
baz=306,SNR=12
SPUT **South Promonto** 76.24 48 *eP* P 03 20 23.9 -0.2
comp=Z,27nm,1.7s
DGMT **Dagmar** 76.25 39 P P 03 20 23.5 -0.4
baz=311
DGMT **Dagmar** 76.25 39 *eP* P 03 20 23.6 -0.4
comp=Z,26nm,1.0s
LAO **LASA Array** 76.37 41 P P 03 20 25.2 +0.5
baz=310,SNR=7.8
LAO **LASA Array** 76.37 41 *eP* P 03 20 23.6 -1.0
comp=Z,23nm,0.9s
FURC **Furnace Creek,** 76.39 55 P P 03 20 25.2 +0.4
baz=306
A25A **Svangstu Ranch** 76.47 38 P P 03 20 25.0 -0.1
baz=312
TPNV **Topopah Spring** 76.50 54 P P 03 20 26.1 +0.4
baz=307,SNR=18
TPNV **Topopah Spring** 76.50 54 *eP* P 03 20 25.8 +0.1
comp=Z,24nm,1.1s
EDW2 **Edwards Air Fo** 76.58 56 P P 03 20 26.7 +0.6
baz=306,SNR=8.9
HWUT **Hardware Ranch** 76.58 48 *eP* P 03 20 26.2 +0.1
comp=Z,25nm,1.2s
SORM **Soroca** 76.66 321⇑ *iP* P 03 20 25.8 -0.3
DUG **Dugway, Tooele** 76.70 50 P P 03 20 27.3 +0.6
baz=308,SNR=17
DUG **Dugway, Tooele** 76.70 50 *eP* P 03 20 27.3 +0.6
comp=Z,18nm,1.0s
B25A **Knox Farm, Ray** 76.89 39 P P 03 20 27.6 +0.1
baz=312
TCUT **Toone Canyon** 76.98 48 *eP* P 03 20 28.5 0.0
comp=Z,119nm,2.0s
A26A **Wade Farm, Ken** 77.03 38 P P 03 20 28.3 0.0
baz=313,SNR=7.1
BW06 **Boulder Array** 77.03 46 P P 03 20 28.9 +0.2
baz=309,SNR=13
BW06 **Boulder Array** 77.03 46 *eP* P 03 20 27.5 -1.2
comp=Z,7.3nm,0.8s
PD31 **Pinedale Array** 77.03 46 *eP* P 03 20 28.2 -0.5
PDAR **Pinedale Array** 77.03 46 P P 03 20 28.6 -0.1
comp=Z,5.3nm,0.7s,baz=264,slow=2.7,SNR=58
CTU **Camp Tracy** 77.04 49 *eP* P 03 20 28.8 +0.1
comp=Z,9.7nm,1.0s
PSUT **Pine Spring** 77.07 51 *eP* P 03 20 28.9 0.0
comp=Z,14nm,1.0s
GSC **Goldstone, Bar** 77.12 55 P P 03 20 29.0 -0.1
baz=307
BFSC **Mount Baldy Ra** 77.18 57 P P 03 20 29.6 +0.1
baz=306
JLU **Jordanelle** 77.27 49 *eP* P 03 20 30.2 +0.1
comp=Z,11nm,1.0s
B26A **Jensen Ranch,** 77.28 38 P P 03 20 30.1 +0.3
baz=312
NLU **North Lily Min** 77.30 49 *eP* P 03 20 30.6 +0.4
comp=Z,10nm,1.0s
SCI2 **San Clemente I** 77.33 58 P P 03 20 30.4 +0.3
baz=306
D25A **Fairfield** 77.56 40 P P 03 20 31.3 -0.1
baz=312
BSD **Bornholm Skovb** 77.58 332⇓ *iP* P 03 20 30.7 -0.4
comp=Z,20nm,1.0s
HEC **Hector,Ludlow** 77.71 56 P P 03 20 32.9 +0.5
baz=307,SNR=5.0
C26A **Wahner Farm, P** 77.72 38 P P 03 20 32.4 +0.2
baz=313,SNR=7.3
LEOM **Leova** 77.81 320⇑ *iP* P 03 20 41.2 +8.6
MURC **Murrieta** 77.87 57 P P 03 20 33.2 -0.1
baz=307
A28A **Rude Farm, Bot** 77.87 37 P P 03 20 33.1 +0.1
baz=314,SNR=13
E25A **Miller Ranch,** 77.96 40 P P 03 20 33.7 +0.2
baz=312,SNR=7.0
D26A **Manning** 78.09 39 P P 03 20 34.2 -0.1
baz=313
C27A **Sayler Ranch,** 78.09 38 P P 03 20 34.1 -0.2
baz=313
MSU **Marysvale** 78.12 51 *eP* P 03 20 36.0 +1.1
B28A **Dugan Ranch, T** 78.15 37 P P 03 20 34.4 -0.1
baz=314,SNR=5.4
GMRC **Granite Mounta** 78.18 55 P P 03 20 35.5 +0.4
baz=307,SNR=6.2
TMUT **Trail Mountain** 78.23 49 *eP* P 03 20 35.6 0.0
comp=Z,28nm,1.6s
F25A **Bowman** 78.31 41 P P 03 20 35.5 -0.1
baz=312
KWP **Kalwaria Pacla** 78.35 325 *eP* P 03 20 36.1 +0.5
KWP **Kalwaria Pacla** 78.35 325⇑ *iP* P 03 20 36.6 +1.0
109C **Camp Elliot, M** 78.35 58 P P 03 20 36.2 +0.3
baz=307
PFO **Pinyon Flats O** 78.35 57 P P 03 20 36.1 +0.1
baz=307,SNR=5.1
PFO **Pinyon Flats O** 78.35 57 *eP* P 03 20 35.9 -0.2
comp=Z,12nm,1.1s
A29A **Manning Farm,** 78.36 36 P P 03 20 35.6 0.0
baz=314,SNR=18
LCMT **Little Creek M** 78.38 52 *eP* P 03 20 37.2 +1.0
comp=Z,21nm,1.1s
P17A **Butcher Ranch,** 78.40 49 *eP* P 03 20 36.5 +0.2
comp=Z,21nm,0.9s
MTPU **Mount Pierson** 78.41 51 *eP* P 03 20 37.9 +1.3
comp=Z,14nm,0.9s
BELC **Belle Mtn. Jos** 78.43 56 P P 03 20 36.2 -0.3
baz=307,SNR=5.8
E26A **Carlson Angus** 78.46 40 P P 03 20 36.1 -0.2
baz=313
BUR08 **Bucovina Ar. S** 78.55 322 *eP* P 03 20 37.4 +0.5
BURAR **Bucovina Array** 78.56 322⇓ *iP* P 03 20 36.9 0.0
P18A **Preston Nutter** 78.60 49 *eP* P 03 20 38.6 +1.1
comp=Z,15nm,1.1s
TESR **Tescani** 78.61 321⇓ *iP* P 03 20 36.8 -0.3
B29A **Wagenman Farm,** 78.62 37 P P 03 20 37.0 -0.1
baz=314
C28A **Hausauer Farms** 78.64 38 P P 03 20 37.2 0.0
baz=314
KNB **Kanab** 78.64 52 *eP* P 03 20 39.0 +1.3
comp=Z,48nm,1.4s
CFR **Carcaliu** 78.74 319⇑ *iP* P 03 20 37.8 0.0
SRU **San Rafael Swe** 78.76 49 *eP* P 03 20 38.8 +0.5
comp=Z,20nm,0.8s
F26A **Lodgepole** 78.77 40 P P 03 20 38.0 -0.1
baz=313
BAR **Barrett** 78.77 58 *eP* P 03 20 38.5 +0.3
comp=Z,9.9nm,0.9s
A30A **Hoffart Farm,** 78.78 36 P P 03 20 37.7 -0.3
baz=315,SNR=9.9
MONP2 **Monument Peak** 78.81 57 P P 03 20 38.6 -0.2
baz=307
K22A **Casper** 78.82 45 P P 03 20 38.2 -0.3
baz=311
K22A **Casper** 78.82 45 *eP* P 03 20 38.5 -0.1
comp=Z,9.3nm,1.0s
G25A **Newell** 78.83 41 P P 03 20 38.2 -0.2
baz=312
IRM **Iron Mountain** 78.90 56 P P 03 20 39.2 +0.3
baz=308
E27A **Carson** 78.94 39 P P 03 20 39.2 +0.2
baz=313
ULM **Lac du Bonnet** 78.95 34 P P 03 20 38.6 -0.3
comp=Z,6.8nm,0.7s,baz=315,slow=6.5,SNR=11
ULM **Lac du Bonnet** 78.95 34 *eP* P 03 20 38.6 -0.3
comp=Z,14nm,1.0s
BC3 **Big Chuckawall** 79.00 56 P P 03 20 39.8 +0.2
baz=308,SNR=6.4
VRI **Vrincioaia** 79.00 320⇑ *iP* P 03 20 39.9 +0.6
KOLS **Kolonicke sedl** 79.05 324 *eP* P 03 20 39.9 +0.4
KOLS *e* 03 20 48.9
PLOR **Plostina** 79.05 320⇑ *iP* P 03 20 39.2 -0.4
F27A **Lemmon** 79.09 40 P P 03 20 39.7 -0.1
baz=313
H25A **Fruitdale** 79.11 42 P P 03 20 39.5 -0.5
baz=312
B30A **Myrvik Farm, E** 79.11 36 P P 03 20 39.7 -0.2
baz=315,SNR=9.8
W13A **Hualapai Mount** 79.14 54 *eP* P 03 20 40.9 +0.3
comp=Z,10nm,1.3s
STHS **Stebnicka Huta** 79.17 325 *eP* P 03 20 41.1 +0.9
G26A **Maurine** 79.18 41 P P 03 20 40.4 0.0
baz=313,SNR=8.8
SWSC **Sam W. Stewart** 79.20 57 P P 03 20 40.4 -0.1
baz=308
RSSD **Black Hills** 79.22 42 P P 03 20 40.2 -0.5
baz=312
RSSD **Black Hills** 79.22 42 *eP* P 03 20 40.0 -0.8
comp=Z,8.7nm,0.9s
BR131 **Keskin Array S** 79.22 312 *eP* P 03 20 41.4 +0.6
BRTR **Keskin Array B** 79.22 312 P P 03 20 41.5 +0.7
comp=Z,3.6nm,1.1s,baz=222,slow=1.7,SNR=7.0
OJC **Ojcow** 79.24 327 *eP* P 03 20 40.8 +0.3
OJC **Ojcow** 79.24 327 *eP* P 03 20 40.8 +0.3
comp=Z,26nm,1.0s
U15A **North Rim** 79.34 52 *eP* P 03 20 41.1 -0.6
comp=Z,44nm,1.5s
ARCR **ARCALIA** 79.35 322⇑ *iP* P 03 20 42.5 +1.3
CRVS **Cervenica-Dubn** 79.44 325 *eP* P 03 20 42.3 +0.7
I25A **Rochford** 79.45 42 P P 03 20 41.6 -0.4
baz=312,SNR=6.0
B31A **Greenbush Farm** 79.45 36 P P 03 20 41.0 -0.6
baz=316
PDMCI **Parker Dam,Lak** 79.47 55 P P 03 20 42.0 0.0
baz=308
O20A **White River Ci** 79.47 47 P P 03 20 42.2 0.0
baz=310,SNR=9.1
O20A **White River Ci** 79.47 47 *eP* P 03 20 42.7 +0.5
comp=Z,12nm,0.9s
G27A **Dupree** 79.47 40 P P 03 20 41.1 -0.8
baz=313
H26A **Fairpoint** 79.55 41 P P 03 20 42.0 -0.3
baz=313
Y12C **Blythe** 79.55 56 P P 03 20 42.8 +0.4
baz=308
Y12C **Blythe** 79.55 56 *eP* P 03 20 43.4 +1.0
comp=Z,13nm,0.9s
C30A **Mose, Pekin** 79.57 37 P P 03 20 42.3 0.0
baz=315
NIE **Niedzica** 79.60 326 *eP* P 03 20 43.3 +0.8
DOPR **Dopca** 79.61 321⇓ *iP* P 03 20 33.1 -10
A32A **Rocking H Ranc** 79.63 35 P P 03 20 42.0 -0.6
baz=316,SNR=8.0
BR231 **Keskin MP Arra** 79.65 312 *eP* P 03 20 40.5 -2.5
MLR **Muntele Rosu** 79.66 320⇓ *iP* P 03 20 42.9 -0.1
MLR **Muntele Rosu** 79.66 320 *eP* P 03 20 42.7 -0.3
comp=Z,21nm,1.4s
F28A **Maughlin** 79.73 39 P P 03 20 42.9 -0.3
baz=314
GLA **Glamis** 79.78 56 P P 03 20 43.7 -0.1
baz=308
E29A **Napoleon** 79.80 38 P P 03 20 43.5 -0.2
baz=314
J25A **Sunshine Ranch** 79.83 43 P P 03 20 43.2 -0.8
baz=312
D30A **Buchanan** 79.86 37 P P 03 20 43.4 -0.5
baz=315,SNR=8.5
C31A **Landman Farms,** 79.86 36 P P 03 20 43.4 -0.5
baz=316,SNR=5.3
I26A **New Underwood** 79.90 42 P P 03 20 44.2 -0.1
baz=313,SNR=5.5
H27A **Howes** 79.91 41 P P 03 20 44.2 -0.1
baz=313,SNR=7.4
B32A **Ashes, Strandq** 79.99 35 P P 03 20 43.8 -0.8
baz=316,SNR=9.1
A33A **Warroad** 80.12 34 P P 03 20 44.8 -0.5
baz=317,SNR=14
VOIR 80.15 321⇓ *iP* P 03 20 44.0 -1.6
LANS **Liptovska Anna** 80.17 326 *eP* P 03 20 46.6 +1.0
LANS *e* 03 20 55.6
KECS **Kecovo** 80.19 325 *eP* P 03 20 45.9 +0.2
KECS *e* 03 20 56.1
G28A **Parade** 80.20 40 P P 03 20 45.8 -0.1
baz=314
E30A **Jud** 80.21 38 P P 03 20 45.5 -0.3
baz=315
F29A **Eureka** 80.23 39 P P 03 20 45.6 -0.3
baz=314
OKC **Ostrava-Krasne** 80.24 327 *eP* P 03 20 46.2 +0.3
J26A **Sides Ranch, S** 80.28 42 P P 03 20 46.2 -0.1
baz=313,SNR=5.3
KSP **Ksiaz** 80.28 329 *eP* P 03 20 46.5 +0.4
N23A **Red Feather La** 80.30 46 P P 03 20 47.2 +0.4
baz=311
N23A **Red Feather La** 80.30 46 *eP* P 03 20 47.6 +0.8
comp=Z,28nm,1.2s
I27A **Quinn** 80.30 41 P P 03 20 46.7 +0.3
baz=313,SNR=9.4
DRGR 80.36 323⇑ *iP* P 03 20 47.1 +0.4
AGMN **Agassiz Nation** 80.37 35 P P 03 20 45.9 -0.7
baz=317,SNR=9.5
AGMN **Agassiz Nation** 80.37 35 *eP* P 03 20 46.0 -0.7
comp=Z,18nm,1.1s
ARR **Arges** 80.41 321⇑ *iP* P 03 20 48.3 +1.3
H28A **Mission Ridge** 80.42 40 P P 03 20 46.9 -0.2
baz=314
Y14A **Wickenburg** 80.43 55 *eP* P 03 20 47.2 -0.1
comp=Z,59nm,0.9s
WUAZ **Wupatki** 80.49 53 P P 03 20 48.6 +0.8
baz=309,SNR=7.9
WUAZ **Wupatki** 80.49 53 *eP* P 03 20 47.9 +0.2
comp=Z,25nm,1.0s
B33A **Robert and Kas** 80.52 35 P P 03 20 46.7 -0.8
baz=317
MORC **Moravsky Berou** 80.55 327⇑ *iP* P 03 20 48.5 +0.9
MORC **Moravsky Berou** 80.55 327 *eP* P 03 20 46.9 -0.7
comp=Z,52nm,1.0s
F30A **Lea** 80.62 38 P P 03 20 48.2 +0.1
baz=315
DPC **Dobruska-Polom** 80.64 328 *eP* P 03 20 48.7 +0.6
KRLC **Kraliky** 80.65 328 *eP* P 03 20 48.5 +0.3
KRLC *epP* pP 03 20 56.3 -0.5
113A **Mohawk Valley,** 80.66 56 *eP* P 03 20 48.8 +0.3
comp=Z,16nm,1.1s
E31A **Nome** 80.67 37 P P 03 20 47.5 -0.8
baz=316,SNR=5.5
B34A **Aery, Baudette** 80.78 34 P P 03 20 48.0 -0.9
baz=318,SNR=7.7
LOT **Lotru** 80.79 321⇓ *iP* P 03 20 49.4 +0.3
C33A **Trail** 80.81 35 P P 03 20 48.5 -0.5
baz=317,SNR=6.6
I28A **Midland** 80.81 41 P P 03 20 49.1 -0.1
baz=314,SNR=10.0
H29A **Onida** 80.87 40 P P 03 20 49.1 -0.3
baz=314
PSZ **Piszkesteto** 80.88 325⇑ *iP* P 03 20 50.3 +0.8
PSZ **Piszkesteto** 80.88 325⇓ *eP* P 03 20 49.7 +0.2
comp=Z,22nm,1.2s
J27A **Elkhorn Farm,** 80.89 42 P P 03 20 49.6 0.0
baz=313,SNR=5.1
VYHS **Vyhne** 80.93 326 *eP* P 03 20 50.0 +0.3
VYHS *e* 03 20 57.7
F31A **Hecla** 80.99 38 P P 03 20 49.7 -0.3
baz=315
G30A **Faulkton** 81.06 39 P P 03 20 50.1 -0.3
baz=315,SNR=8.4
X16A **Lo Mia Camp, P** 81.14 53 *eP* P 03 20 52.0 +0.8
comp=Z,15nm,0.9s
J28A **Allard Ranch,** 81.18 41 P P 03 20 51.3 +0.1
baz=314,SNR=7.9
MVCO **Mesa Verde** 81.20 50 P P 03 20 52.1 +0.5
baz=310,SNR=13
MVCO **Mesa Verde** 81.20 50 *eP* P 03 20 52.2 +0.6
comp=Z,15nm,1.0s
BRG **Bergqiesshubel** 81.21 330 *eP* P 03 20 51.0 -0.1
comp=Z,10nm,1.1s
comp=N,473nm,14.8s
comp=E,416nm,21.1s
comp=Z,574nm,13.9s
ISCO **Idaho Springs** 81.21 46 P P 03 20 52.3 +0.6
baz=312,SNR=7.2
ISCO **Idaho Springs** 81.21 46 *eP* P 03 20 52.4 +0.6
comp=Z,4.9nm,0.9s
D33A **AnnSam, Waubun** 81.22 36 P P 03 20 50.4 -0.8
baz=317
PVCC **Panska Ves** 81.23 329 *eP* P 03 20 51.8 +0.6
PVCC *epP* pP 03 21 00.4 +0.7
CLL **Collm** 81.25 331⇓ *iP* P 03 20 50.8 -0.4
comp=Z,16nm,1.1s
CLL *i* 03 20 58.0
CLL *i* 03 21 01.8
CLL *i* 03 21 12.3
CLL LmH 03 58 00.0
comp=N,300nm,18.6s
CLL LmH 03 58 00.0
comp=E,300nm,19.6s
CLL **Collm** 81.25 331 *eP* P 03 20 50.4 -0.9
comp=E,19nm,1.1s
I29A **Vivian Onida** 81.25 40 P P 03 20 50.9 -0.6
baz=314,SNR=6.3
C34A **RKJ Ranch, Bem** 81.28 35 P P 03 20 51.0 -0.5
baz=317
B35A **Bob, Littlefor** 81.29 34 P P 03 20 50.7 -0.9
baz=318,SNR=9.5
VRAC **Vranov** 81.31 327 P P 03 20 52.5 +0.9
comp=E,5.2nm,0.7s,baz=58,slow=4.8,SNR=12
VRAC **Vranov** 81.31 327⇓ *iP* P 03 20 53.0 +1.3
G31A **Conde** 81.46 38 P P 03 20 52.4 -0.2
baz=316
D34A **Park Rapids** 81.56 36 P P 03 20 52.3 -0.8
baz=317,SNR=7.9
E33A **Westby DABS, E** 81.61 36 P P 03 20 53.0 -0.3
baz=317,SNR=6.8
GOPC **GO Pecny, Ondr** 81.61 329 *eP* P 03 20 53.6 +0.4
SUSD **Miller** 81.64 39 P P 03 20 53.2 -0.3
baz=315
PRU **Pruhonice** 81.65 329 *eP* P 03 20 53.9 +0.5
PRU *epP* pP 03 21 02.0 0.0
J29A **Okreek** 81.67 41 P P 03 20 52.9 -0.8
baz=314
C35A **Jirik Farms, M** 81.67 35 P P 03 20 52.7 -0.9
baz=318,SNR=11
BZS **Buzias** 81.73 322⇓ *iP* P 03 20 53.7 -0.2
I30A **Oacoma** 81.78 40 P P 03 20 53.9 -0.3
baz=315,SNR=7.7
W18A **Petrified Fore** 81.78 52 P P 03 20 55.5 +0.9
baz=310
G32A **Webster** 81.79 38 P P 03 20 53.9 -0.4
baz=316,SNR=7.2
TREC **Trest** 81.79 328 *eP* P 03 20 54.5 +0.3
TREC *epP* PcP 03 21 01.2 +1.3
214A **Organ Pipe Nat** 81.79 56 P P 03 20 55.1 +0.5
baz=309,SNR=7.8
S22A **4UR Ranch, Cre** 81.86 48 P P 03 20 56.0 +0.9
baz=311,SNR=18
S22A **4UR Ranch, Cre** 81.86 48 *eP* P 03 20 56.0 +0.9
comp=E,18nm,1.2s
H31A **Wolsey** 81.86 39 P P 03 20 54.2 -0.4
baz=315
ASF **Jabal al Asfar** 81.95 304 P P 03 20 56.0 +0.6
comp=E,0.7nm,0.3s,baz=209,slow=3.8,SNR=3.0
F33A **5 Mile Ranch,** 81.95 37 P P 03 20 55.0 -0.2
baz=317,SNR=11
E34A **Wadena** 82.00 36 P P 03 20 54.3 -1.0
baz=317
X18A **Snowflake** 82.02 53 *eP* P 03 20 56.6 +0.7
comp=E,7.7nm,0.9s
Q24A **Divide** 82.04 47 P P 03 20 54.8 -1.3
baz=312
D35A **Remer** 82.09 35 P P 03 20 55.0 -0.8
baz=318
C36A **Pine Crest Far** 82.14 34 P P 03 20 55.4 -0.7
baz=319
I31A **Royce, Wessing** 82.15 39 P P 03 20 55.6 -0.5
baz=316
J30A **Dallas** 82.16 40 P P 03 20 55.8 -0.4
baz=315
NKC **Novy Kostel** 82.31 330 *eP* P 03 20 57.1 +0.2
E35A **Pequot Lakes** 82.32 36 P P 03 20 56.2 -0.8
baz=318
G33A **Ortonville** 82.35 38 P P 03 20 56.8 -0.4
baz=317,SNR=9.8
H32A **Carlson Farm,** 82.36 39 P P 03 20 56.2 -1.1
baz=316
MMAI **Mount Meron Ar** 82.39 306 P P 03 20 58.2 +0.5
comp=E,0.5nm,0.3s,baz=337,slow=14,SNR=2.7
MMAI LR LR 04 00 54.9
comp=E,143nm,18.9s,baz=315,slow=38
D36A **Goodland** 82.43 35 P P 03 20 56.7 -0.9
baz=319
C37A **Embarrass** 82.45 34 P P 03 20 56.9 -0.8
baz=319,SNR=7.1
OGNE **Ogallala** 82.46 44 P P 03 20 58.2 +0.2
baz=314
F34A **Alexandria** 82.48 37 P P 03 20 57.2 -0.7
baz=317
K30A **Basset** 82.55 41 P P 03 20 57.6 -0.7
baz=315,SNR=6.3
J31A **Geddes** 82.57 40 P P 03 20 57.7 -0.7
baz=315
H33A **Prehn Over Nor** 82.58 38 P P 03 20 57.9 -0.6
baz=316,SNR=14
EYMN **Ely** 82.59 33 P P 03 20 57.8 -0.6
baz=320,SNR=7.7
EYMN **Ely** 82.59 33 *eP* P 03 20 57.8 -0.6
comp=E,21nm,1.0s
SDCO **Great Sand Dun** 82.64 48 P P 03 20 59.6 +0.4
baz=312,SNR=11
SDCO **Great Sand Dun** 82.64 48 *eP* P 03 20 59.9 +0.7
comp=E,7.3nm,1.0s
CONA **Conrad Observa** 82.67 327 *i* P P 03 20 59.5 +0.6
comp=E,9.0nm,1.1s,SNR=6.5
I32A **Karley and Nic** 82.69 39 P P 03 20 58.5 -0.6
baz=316
G34A **Benson** 82.71 37 P P 03 20 59.0 0.0
baz=317
PKSM **Moragy** 82.71 324⇑ *iP* P 03 20 57.2 -1.8
PKSM **Moragy** 82.71 324⇓ *eP* P 03 20 58.7 -0.3
KHC **Kasperske Hory** 82.72 329 *eP* P 03 20 59.3 +0.2
KHC *epP* pP 03 21 07.0 -0.7
KHC **Kasperske Hory** 82.72 329 *eP* P 03 20 59.1 +0.1
comp=E,4.1nm,0.9s
F35A **Swanville** 82.76 36 P P 03 20 58.4 -0.9
baz=318
D37A **Cotton** 82.78 34 P P 03 20 58.6 -0.8
baz=319
C38A **Sawbill Land.** 82.86 33 P P 03 20 58.9 -0.9
baz=320,SNR=12
E36A **McGregor** 82.88 35 P P 03 20 59.3 -0.7
baz=319,SNR=5.6
GEC2 **GERESS Array S** 82.89 329 *eP* P 03 21 00.1 +0.1
comp=E,4.7nm,0.7s
GERES **GERESS Array B** 82.89 329 P P 03 20 59.5 -0.5
comp=E,3.0nm,0.6s,baz=37,slow=5.9,SNR=31
GEA0 **GERESS Array S** 82.89 329 *eP* P 03 20 59.6 -0.4
TUC **Tucson** 82.90 55 P P 03 21 00.9 +0.5
baz=310
TUC **Tucson** 82.90 55 *eP* P 03 21 00.0 -0.4
comp=E,44nm,2.0s
J32A **Parkston** 82.97 40 P P 03 20 59.9 -0.5
baz=316
I33A **Coleman** 83.01 39 P P 03 21 00.2 -0.4
baz=316

K31A	O'Neill baz=316,SNR=7.7	83.03	41	P		P	03 21 00.3	-0.6
H34A	Spellman Lake, baz=317	83.06	38	P		P	03 21 00.4	-0.5
GRFO	Grafenberg comp=E,16nm,1.1s	83.22	330	*eP*		P	03 21 02.1	+0.5
G35A	Watkins baz=318	83.27	37	P		P	03 21 02.1	+0.1
C39A	Grand Marais baz=321	83.28	33	P		P	03 21 01.5	-0.4
L31A	Butterfield Fa baz=315,SNR=14	83.31	41	P		P	03 21 01.8	-0.5
ECSD	EROS Data Cent baz=317,SNR=12	83.33	39	P		P	03 21 01.9	-0.4
ECSD	EROS Data Cent comp=E,11nm,0.9s	83.33	39	*eP*		P	03 21 01.7	-0.6
J33A	Davis baz=316,SNR=5.3	83.45	39	P		P	03 21 02.3	-0.7
I34A	Hadley baz=317	83.48	38	P		P	03 21 02.6	-0.4
H35A	Sunnyside Ranc baz=318,SNR=18	83.49	37	P		P	03 21 03.1	0.0
L32A	Elgin baz=316	83.86	41	P		P	03 21 04.7	-0.5
LAZ	Ladron	83.87	51	*eP*		P	03 21 06.4	+0.9
ANMO	Albuquerque baz=312	83.93	50	P		P	03 21 06.4	+0.6
ANMO	Albuquerque comp=E,23nm,1.3s	83.93	50	*eP*		P	03 21 06.1	+0.3
K33A	Hardington baz=316	83.95	40	P		P	03 21 05.2	-0.3
PERS	Pernice	83.99	326	*eP*		P	03 21 05.6	-0.1
SOKA	Soboth comp=E,16nm,1.6s,SNR=11	84.00	327	*i* P		P	03 21 05.6	-0.2
H36A	Jessenland, He baz=318	84.02	37	P		P	03 21 05.9	+0.1
SPMN	Marine on St. baz=319	84.06	36	P		P	03 21 05.6	-0.4
SPMN	Marine on St. comp=E,24nm,1.5s	84.06	36	*eP*		P	03 21 05.8	-0.2
PPT	Papeete comp=E,154nm,20.2s,baz=324,slow=32	84.12	117	LR		LR	03 52 60.0	
BGNE	Belgrade baz=316	84.22	41	P		P	03 21 06.4	-0.6
LPM	Los Pinos Moun	84.24	51	*eP*		P	03 21 08.0	+0.6
J35A	Milford baz=318	84.29	38	P		P	03 21 06.8	-0.4
K34A	Le Mars baz=317,SNR=5.1	84.35	39	P		P	03 21 06.9	-0.7
BNM	Barren Site	84.35	51	*eP*		P	03 21 08.6	+0.6
I36A	Fitzsimmons Fa baz=318	84.39	37	P		P	03 21 07.5	-0.2
KBA	Koelnbreinsper comp=E,6.7nm,0.9s,SNR=6.0	84.42	328	*i* PcP		P	03 21 08.9	+0.9
LEGS	Legarje	84.43	326	*i* P		P	03 21 07.4	-0.5
319A	Douglas comp=E,28nm,1.0s	84.48	55	*eP*		P	03 21 09.4	+0.9
O31A	Woolen Ranch, baz=315	84.48	43	P		P	03 21 07.7	-0.6
H37A	Dierke Farm, C baz=319	84.49	36	P		P	03 21 08.3	+0.1
I37A	Lemond, Waseca baz=319,SNR=12	84.69	37	P		P	03 21 09.3	+0.1
121A	Cookes Peak, D baz=311,SNR=16	84.69	53	P		P	03 21 10.2	+0.6
L34A	Svendsen Farm, baz=317	84.73	40	P		P	03 21 08.9	-0.6
J36A	Seneca 1, Swea baz=318	84.75	38	P		P	03 21 08.7	-0.8
K35A	Storm Lake baz=318	84.75	39	P		P	03 21 08.8	-0.8
BOJS	Bojanci	84.80	326	*i* P		P	03 21 09.2	-0.5
EIL	Elat comp=E,176nm,18.4s,baz=352,slow=38	84.83	303	LR		LR	04 02 32.9	
HSIG	comp=E,16nm,1.1s	84.89	57	*eP*		P	03 21 11.2	+0.7
SCHQ	Schefferville comp=E,4.2nm,0.6s,baz=352,slow=5.7,SNR=12	84.94	16	P		P	03 21 10.6	+0.3
SCHQ				LR		LR	04 02 00.2	
SCHQ	comp=E,123nm,18.1s,baz=42,slow=38 Schefferville comp=E,62nm,1.8s	84.94	16	*eP*		P	03 21 10.6	+0.3
CWF	Charnwood Fore comp=E,20nm,1.3s	84.95	339	*eP*		P	03 21 10.2	-0.1
M34A	Aspy Farms, Fr baz=317	84.96	40	P		P	03 21 10.4	-0.3
L35A	Bielow Farm, R baz=318	85.05	39	P		P	03 21 10.4	-0.7
J37A	Redenius Farm, baz=319	85.14	37	P		P	03 21 11.2	-0.3
RETA	Reutte comp=E,9.8nm,0.9s,SNR=6.1	85.17	329	*i* PcP		P	03 21 11.7	0.0
I38A	Scanlan Farm, baz=319	85.18	36	P		P	03 21 11.0	-0.7
K36A	Gilmore City baz=318	85.20	38	P		P	03 21 11.3	-0.6
CBKS	Cedar Bluff baz=315	85.21	44	P		P	03 21 11.2	-0.8
PDG	Podgorica	85.22	321	⇓ *i* P		P	03 21 12.3	+0.4
P32A	Huiting Farm, baz=316,SNR=5.0	85.25	43	P		P	03 21 11.1	-1.1
M35A	Neola baz=317	85.44	40	P		P	03 21 12.8	-0.3
BFO	Black Forest comp=E,12nm,0.9s	85.45	331	*eP*		P	03 21 12.8	-0.2
N34A	Lincoln baz=317	85.49	41	P		P	03 21 12.3	-1.1
L36A	Harm Buss Farm baz=318	85.50	39	P		P	03 21 12.8	-0.6
K37A	Belmond baz=319,SNR=6.6	85.51	38	P		P	03 21 12.9	-0.4
FETA	Feichten comp=E,4.3nm,0.9s	85.55	329	*i* PcP		P	03 21 13.7	-0.1
J38A	Wedel Dairy, R baz=319	85.65	37	P		P	03 21 13.4	-0.7
DAVA	Damuels comp=E,11nm,0.9s,SNR=5.1	85.69	330	*i* PcP		P	03 21 14.5	+0.1
Q32A	Meitler Ranch, baz=316	85.73	43	P		P	03 21 13.9	-0.7
O34A	Beatrice baz=317	85.87	41	P		P	03 21 14.1	-1.1
M36A	Felix, Anita baz=318,SNR=5.1	85.91	39	P		P	03 21 14.9	-0.5
N35A	Tabor baz=318,SNR=5.4	85.92	40	P		P	03 21 15.1	-0.3
L37A	Phoenix Point, baz=319	85.93	38	P		P	03 21 14.7	-0.8
FUORN	Ofenpass-Fuorn comp=E,13nm,1.0s	86.07	329	*eP*		P	03 21 13.6	-2.8
DAVOX	Davos/Dischmat comp=E,2.3nm,0.8s,baz=82,slow=6.9,SNR=4.4	86.09	329	P		P	03 21 16.6	+0.2
Q33A	Connelly Farm, baz=316	86.12	43	P		P	03 21 15.4	-1.1
O35A	Humboldt baz=317	86.22	41	P		P	03 21 16.6	-0.3
P34A	Walnut Farm, R baz=317,SNR=5.9	86.26	42	P		P	03 21 16.2	-0.9
N36A	Muff Farm, Cla baz=318	86.30	40	P		P	03 21 17.1	-0.2
L38A	Oak Wood Farm, baz=319	86.31	38	P		P	03 21 16.9	-0.4
M37A	Trindle Farm, baz=318	86.32	39	P		P	03 21 17.3	-0.1
Q34A	Chapman baz=317	86.65	42	P		P	03 21 18.8	-0.3
KSU1	Kansas State U baz=317	86.70	42	P		P	03 21 18.9	-0.4
KSU1	Kansas State U comp=E,13nm,0.8s	86.70	42	*eP*		P	03 21 19.1	-0.3
P35A	Duane Minner, baz=317	86.70	41	P		P	03 21 18.9	-0.4
N37A	Lee Faris, Mou baz=318,SNR=5.9	86.72	39	P		P	03 21 19.2	-0.2
M38A	Pleasantville baz=319,SNR=5.6	86.74	38	P		P	03 21 19.3	-0.2
MNTX	Cornudas Mount baz=312,SNR=7.1	86.76	52	P		P	03 21 19.9	+0.1
MNTX	Cornudas Mount comp=E,4.9nm,1.0s	86.76	52	*eP*		P	03 21 18.9	-0.9
O36A	Bolckow baz=318	86.80	40	P		P	03 21 19.9	+0.1
T32A	Huddler Ranch, baz=316	86.82	44	P		P	03 21 19.8	-0.2
MSTX	Muleshoe baz=314	86.83	49	P		P	03 21 20.2	0.0
AMTX	Amarillo baz=314	86.85	48	P		P	03 21 20.4	+0.1
P36A	Good Intent, A	87.06	41	P		P	03 21 20.5	-0.6
Q35A	Mercer Eighty, baz=317	87.18	42	P		P	03 21 21.2	-0.4
N38A	Joes South For baz=319	87.19	39	P		P	03 21 21.5	-0.2
O37A	Wolven Farm, M baz=318	87.20	40	P		P	03 21 21.4	-0.3
S34A	Willow Spring baz=317	87.44	43	P		P	03 21 22.2	-0.8
R35A	Emporia Munici baz=317	87.48	42	P		P	03 21 23.0	-0.2
N39A	Derby Farms, D baz=319,SNR=5.3	87.49	38	P		P	03 21 22.8	-0.3
P37A	Lathrop baz=318	87.52	40	P		P	03 21 22.7	-0.6
O38A	Galt baz=319	87.57	39	P		P	03 21 23.5	-0.1
V32A	Arapaho baz=316	87.79	46	P		P	03 21 25.4	+0.7
U33A	Lingo Farm, Me baz=316	87.81	45	P		P	03 21 24.6	-0.2
R36A	Gordon, Harris baz=318	87.86	42	P		P	03 21 24.7	-0.2
S35A	Otter Creek Ra baz=317,SNR=5.9	87.89	43	P		P	03 21 24.9	-0.2
T34A	McClaskey Farm baz=317	87.89	44	P		P	03 21 24.6	-0.6
P38A	Dawn baz=319,SNR=5.7	87.92	40	P		P	03 21 24.9	-0.3
O39A	Kirksville baz=319	87.94	39	P		P	03 21 25.0	-0.3
W32A	Sentinel baz=316,SNR=5.6	88.10	46	P		P	03 21 26.5	+0.3
U34A	Anderson Ranch baz=316	88.13	44	P		P	03 21 26.3	+0.1
U34A	Anderson Ranch comp=E,33nm,1.4s	88.13	44	*eP*		P	03 21 26.2	-0.1
V33A	Lossen Ranch, baz=316	88.15	45	P		P	03 21 26.3	-0.1
R37A	Teagarden Farm baz=318	88.22	41	P		P	03 21 26.1	-0.6
T35A	Sooner Cattle baz=317	88.34	43	P		P	03 21 26.3	-0.9
O40A	La Belle baz=320,SNR=5.4	88.37	38	P		P	03 21 27.0	-0.3
W33A	Caddo, Fort Co baz=316	88.52	46	P		P	03 21 28.6	+0.4
V34A	Guthrie baz=317	88.57	45	P		P	03 21 28.2	-0.2
V34A	Guthrie comp=E,23nm,1.1s	88.57	45	*eP*		P	03 21 28.6	+0.3
X32A	Elmer baz=316	88.58	47	P		P	03 21 28.2	-0.2
T36A	Boggs Farm, Ca baz=318	88.58	43	P		P	03 21 28.2	-0.2
S37A	Fort Scott baz=318	88.63	42	P		P	03 21 28.3	-0.3
Q39A	Willow Grove F baz=319,SNR=10.0	88.64	40	P		P	03 21 28.1	-0.4
WMOK	Wichita Mounta comp=E,7.2nm,0.9s	88.64	46	*eP*		P	03 21 28.6	-0.2
P40A	Paris baz=320,SNR=9.0	88.74	39	P		P	03 21 28.5	-0.6
R38A	Fenwick Farm, baz=319	88.80	41	P		P	03 21 28.7	-0.7
W34A	Bridge Creek, baz=316	88.86	45	P		P	03 21 30.1	+0.3
T37A	Cheneyville 18 baz=318	89.05	42	P		P	03 21 30.3	-0.3
Q40A	Laux Farm, Aux baz=320	89.13	39	P		P	03 21 30.6	-0.3
U36A	Ologah baz=318	89.15	43	P		P	03 21 30.5	-0.5
R39A	Chumby, Stover baz=319	89.15	40	P		P	03 21 30.5	-0.6
S38A	Stockton baz=319	89.21	41	P		P	03 21 30.6	-0.7
Y33A	Hilltop Ranch, baz=316	89.25	47	P		P	03 21 31.1	-0.5
X34A	Smith Ranch, M baz=316	89.28	46	P		P	03 21 32.3	+0.6
W35A	Tecumseh baz=317	89.43	45	P		P	03 21 32.6	+0.2
TX31	Lajitas Ar. Si	89.45	53	*eP*		P	03 21 32.7	0.0
TXAR	Lajitas Array comp=E,4.4nm,0.8s,baz=302,slow=3.4,SNR=54	89.45	53	P		P	03 21 32.7	0.0
T38A	Diamond baz=318,SNR=6.8	89.45	42	P		P	03 21 31.9	-0.6
TUL1	Leonard baz=318	89.47	44	P		P	03 21 32.2	-0.4
S39A	Bolivar baz=319	89.47	41	P		P	03 21 31.7	-0.8
U37A	Salina baz=318	89.48	43	P		P	03 21 32.0	-0.6
V36A	Jenks baz=318	89.48	44	P		P	03 21 32.3	-0.3
R40A	Maddies Statio baz=320,SNR=6.4	89.57	40	P		P	03 21 32.4	-0.6
ABTX	Abilene, Hawle baz=315	89.64	48	P		P	03 21 33.3	-0.1
ABTX	Abilene, Hawle comp=E,7.5nm,0.9s	89.64	48	*eP*		P	03 21 33.4	-0.1
Z33A	Whitaker Ranch baz=316	89.69	47	P		P	03 21 33.2	-0.4
HPIG	comp=E,8.7nm,1.1s	89.78	56	*eP*		P	03 21 33.5	-0.9
U38A	Gravette baz=318,SNR=6.2	89.85	42	P		P	03 21 33.9	-0.5
V37A	Hulbert baz=318	89.85	43	P		P	03 21 34.0	-0.3
X35A	Drake baz=317	89.92	45	P		P	03 21 34.5	-0.2
T39A	Clever baz=319	89.95	41	P		P	03 21 34.6	-0.2
S40A	Lebanon baz=320	89.97	40	P		P	03 21 34.1	-0.8
133A	Hamilton Ranch baz=316	90.08	48	P		P	03 21 35.0	-0.6
Z34A	Collier Ranch, baz=316	90.12	47	P		P	03 21 35.2	-0.4
X36A	Centrahoma baz=317,SNR=6.0	90.14	45	P		P	03 21 35.4	-0.3
SADO	Sadowa comp=E,4.6nm,0.7s,baz=348,slow=5.2,SNR=2.8	90.19	28	P		P	03 21 35.0	-0.7
HHAR	Hobbs comp=E,25nm,1.9s	90.20	42	*eP*		P	03 21 34.2	-1.9
W37B	Quinton baz=318	90.24	44	P		P	03 21 35.9	-0.3
V38A	Canehill baz=318,SNR=8.0	90.26	43	P		P	03 21 36.0	-0.3
T40A	Mansfield baz=320	90.30	41	P		P	03 21 35.7	-0.7
U39A	Green Forest baz=319,SNR=7.4	90.37	42	P		P	03 21 36.2	-0.6
233A	Rising Star baz=316	90.51	48	P		P	03 21 37.1	-0.5
134A	White-Moore Ra baz=316	90.60	47	P		P	03 21 38.0	+0.1
Y36A	Durant baz=317	90.67	45	P		P	03 21 38.3	+0.1
X37A	Clayton baz=318	90.68	44	P		P	03 21 38.0	-0.2
V39A	Pettigrew baz=319,SNR=5.8	90.69	42	P		P	03 21 37.5	-0.9
U40A	Yellville baz=319,SNR=13	90.73	41	P		P	03 21 37.8	-0.6
W38A	Poteau baz=318	90.79	43	P		P	03 21 37.7	-1.1
X38A	Whitesboro baz=318,SNR=5.2	90.92	44	P		P	03 21 39.0	-0.3
333A	Richland Sprin baz=316,SNR=7.0	90.96	49	P		P	03 21 39.2	-0.4
234A	Clairette baz=316,SNR=6.7	90.97	48	P		P	03 21 39.9	+0.2
Y37A	Hugo baz=318	90.99	45	P		P	03 21 39.7	+0.1
135A	Vickery Place, baz=317	91.00	47	P		P	03 21 40.3	+0.6
Z36A	Blue Ridge baz=317	91.05	46	P		P	03 21 39.9	0.0
JCT	Junction City baz=315	91.06	50	P		P	03 21 39.8	-0.3
W39A	Magazine baz=319	91.10	43	P		P	03 21 39.7	-0.4
433A	Art baz=316	91.30	49	P		P	03 21 40.8	-0.4
WHTX	Lake Whitney, baz=317	91.38	47	P		P	03 21 41.6	+0.1
334A	Lometa baz=316	91.40	48	P		P	03 21 41.5	-0.2
X39A	Fountain Ranch baz=318,SNR=5.6	91.43	43	P		P	03 21 41.8	0.0
W40A	Ferguson Farm, baz=319	91.49	42	P		P	03 21 41.8	-0.2
136A	Ennis baz=317	91.57	46	P		P	03 21 42.0	-0.4
MIAR	Mount Ida baz=319,SNR=8.1	91.70	43	P		P	03 21 43.0	0.0
MIAR	Mount Ida comp=E,16nm,0.9s	91.70	43	*eP*		P	03 21 43.3	+0.4
434A	Burnet baz=316	91.75	49	P		P	03 21 42.5	-0.8
X201	Greenbrier Sit comp=E,12nm,0.9s	91.79	42	*eP*		P	03 21 41.7	-1.7
X301	Greenbrier Sit comp=E,20nm,1.6s	91.81	42	*eP*		P	03 21 42.0	-1.4
WHAR	Wooly Hollow comp=E,14nm,0.9s	91.83	42	*eP*		P	03 21 42.5	-1.1
Y39A	Lockesburg baz=318	91.87	44	P		P	03 21 43.3	-0.4
W41A	Tony Mavity, V baz=320	91.94	42	P		P	03 21 43.7	-0.3
W41B	Gary Mavity, V baz=320	91.94	42	P		P	03 21 43.6	-0.4
X40A	Basin Creek Fa baz=319	92.15	43	P		P	03 21 44.9	-0.1
633A	Saathoff Ranch baz=316	92.17	50	P		P	03 21 45.1	-0.2
336A	Riesel baz=317	92.18	47	P		P	03 21 44.9	-0.3
534A	Blanco baz=316	92.19	49	P		P	03 21 45.3	-0.1
832A	Faith Ranch, C baz=315	92.50	51	P		P	03 21 46.9	+0.1
N54A	Moraine State baz=328	93.08	31	P		P	03 21 48.9	-0.3
933A	Laredo baz=316	93.42	51	P		P	03 21 51.6	+0.6
636A	Smothers Creek baz=317	93.44	49	P		P	03 21 51.3	+0.2
438A	Sam Houston St baz=318	93.44	47	P		P	03 21 51.0	-0.1
ZAIG	Zacatecas comp=E,7.4nm,1.0s	94.66	57	*eP*		P	03 21 57.5	+0.3
TKL	Tuckaleechee C comp=E,3.6nm,0.8s,baz=146,slow=5.9,SNR=4.4	95.82	36	P		P	03 22 01.3	-0.6
ESDC	Sonseca Array comp=E,177nm,19.8s,baz=270,slow=38	97.40	334	LR		LR	04 09 36.8	
SYO	Syowa Base	128.70	207	⇑ *e* Pdiff		Pdif	03 24 26.4	-0.8
LPAZ	La Paz comp=E,17nm,0.9s,baz=342,slow=3.3,SNR=76	146.00	60	PKPbc		PKPbc	03 28 16.0	-0.3
LPAZ	La Paz	146.00	60	*e* PKPdf		PKPdf	03 28 15.6	+0.1
PB11	IPOC Station P	147.19	67	*e* PKPdf		PKPbc	03 28 18.0	-1.1
PB01	IPOC Station P	148.10	68	*e* PKPdf		PKPdf	03 28 19.1	+0.8
LCO	Las Campanas	151.31	83	*e* PKPbc		PKPbc	03 28 29.3	-0.1
ROC1	El Roble	152.53	91	*e* PKPbc		PKPbc	03 28 31.8	-0.3

SJA 21 03:34:55.6±0.3, 31°.67S×69°.81W, h104km±2km, ML2.4, MW4.1, San Juan Province

Code	Station Name	Δ°	AZ°	Phase	ID Op	ID ISC	Time h m s	Res ISC
RTLS	**Leoncito**	**0.45**	**106**	*i* P		Pn	03 35 13.1	+1.2
RTLS				*i* S		Sn	03 35 25.8	+1.8
AUSP	**Uspallata**	**0.66**	**147**	*i* P		Pn	03 35 14.6	+1.2
AUSP				*i* S		Sn	03 35 28.4	+1.7
RTCV	**Cerro Valdivia**	**1.10**	**100**	*i* P		Pn	03 35 18.4	+1.0
RTCV				*i* S		Sn	03 35 35.1	+1.2
RTLL	**Cerro Villicun**	**1.19**	**74**	*i* P		Pn	03 35 19.6	+1.1
RTLL				*i* S		Sn	03 35 37.0	+1.2
ASAL	**Salagasta**	**1.23**	**138**	*i* P		Pn	03 35 19.9	+0.9
ASAL				*i* S		Sn	03 35 38.1	+1.4
AMOG	**MOGNA**	**1.34**	**57**	*i* P		Pn	03 35 21.2	+1.0
AMOG				*i* S		Sn	03 35 40.3	+1.3
ARCO	**CERRO ARCO** comp=Z,14nm,0.7s	**1.38**	**148**	IAML			03 36 09.8	
VCA	**Vinchina**	**3.24**	**26**	*i* P		Pn	03 35 46.0	+1.2
VCA	comp=Z,24nm,0.2s			IAML			03 36 28.5	

ISCJB ***21*** *03:37:36.2±1.8, 38°.28N±0°.06×142°.1E±0°.1, h28km±9km, mb3.5/4, MS3.4/1, Error ellipse: s-maj=14.1km s-min=9.1km az=26.0*
IDC ***21*** *03:37:37.6±8.7, 38°.40N×142°.61E, h38km±62km, mb3.4/4, mb1 3.5/6, mb1mx3.2/57, mbtmp3.5/6, ML2.7/2, MS3.6/1, Ms1 3.6/1, ms1mx2.9/24, Error ellipse: s-maj=76.0km s-min=25.0km az=75.0*
JMA ***21*** *03:37:37.9±0.1, 38°.32N×142°.07E, h36km±1km, M3.9*
JMA Felt I J1.
ISC 21 03:37:36.9±3.5, 38°.28N±0°.07×142°.1E±0°.1, h23km±22km, n19, σ1°.19/18, mb3.6/4, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID Op	ID ISC	Time h m s	Res ISC
JIO	**Ouri**	**0.61**	**287**	P		**Pn**	**03 37 49.7**	**-0.5**
JIO				S		**Sb**	**03 37 57.8**	**+0.6**
OFUJ	**Ofunato**	**0.87**	**337**	P		**Pn**	**03 37 52.7**	**-0.9**
OFUJ				*e*S		**Sn**	**03 38 03.9**	**-1.7**
JMK	**Ichinoseki**	**0.96**	**314**	P		**Pn**	**03 37 54.6**	**-0.3**
JMK				S		**Sn**	**03 38 06.3**	**-1.6**
JMM	**Marumori**	**1.11**	**248**	P		**Pn**	**03 37 56.5**	**-0.5**
JMM				S		**Sn**	**03 38 10.6**	**-1.0**
JOU	**Okura**	**1.13**	**275**	P		**Pn**	**03 37 57.7**	**+0.4**
JOU				S		**Sn**	**03 38 11.9**	**-0.2**
JOM	**Ohasama**	**1.35**	**332**	P		**Pn**	**03 38 00.1**	**-0.2**
JOM				*e*S		**Sn**	**03 38 17.0**	**-0.4**
MJAR	**Matsushiro Arr** 1.1nm,0.3s,baz=2.3,slow=4.5,SNR=6.3	**3.55**	**242**	Pn		Pn	03 38 35.8	+5.2
MJAR						**Sb**	**03 39 20.5**	**-1.2**
USRK	**Ussuriysk Ar.** 1.6nm,0.3s,baz=82,slow=16,SNR=4.1	**9.64**	**311**	Pn		**Pn**	**03 39 56.7**	**+2.6**
YAK	**Yakutsk** 0.3nm,0.3s,baz=147,slow=40,SNR=3.8	**24.98**	**346**	LR		LR	03 54 13.6	
H11N2	**WAKE ISLAND Hy** comp=Z,127nm,19.8s,baz=342,slow=40	**28.35**	**124**	T		T	04 13 46.2	
H11N1	**WAKE ISLAND Hy** baz=316,slow=75,SNR=50	**28.36**	**124**	T		T	04 13 45.8	
H11N3	**WAKE ISLAND Hy** baz=316,slow=75,SNR=46	**28.37**	**124**	T		T	04 13 47.6	
H11S1	**WAKE ISLAND Hy** baz=316,slow=75,SNR=42	**29.11**	**126**	T		T	04 14 42.8	
H11S3	**WAKE ISLAND Hy** baz=318,slow=76,SNR=19	**29.11**	**126**	T		T	04 14 43.0	
H11S2	**WAKE ISLAND Hy** baz=318,slow=76,SNR=26	**29.13**	**126**	T		T	04 14 43.7	
ZALV	**Zalesovo Beam** 0.5nm,0.3s,baz=72,slow=6.2,SNR=3.0	**41.49**	**311**	P		**P**	**03 45 22.3**	**+0.5**
MKAR	**Makanchi Array** 0.1nm,0.3s,baz=87,slow=7.7,SNR=3.4	**43.93**	**301**	P		**P**	**03 45 43.6**	**+1.8**
KURBB	**Kurchatov Arra** 1.0nm,0.6s,baz=81,slow=8.2,SNR=7.9	**45.67**	**307**	P		**P**	**03 45 55.6**	**0.0**
WRA	**Warramunga Arr** 0.4nm,0.8s,baz=5.7,slow=7.2,SNR=3.2	**58.37**	**189**	P		**P**	**03 47 30.2**	**-0.2**

SOME ***21*** *03:38:59.1, 43°.08N×80°.57E, h5km*
KRNET ***21*** *03:38:59.7±0.1, 43°.24N×80°.56E, mb2.4*
ISC 21 03:38:57.1±1.8, 43°.11N±0°.05×80°.69E±0°.06, h2km±11km, n26, σ1°.52/52, 20C-1D, Kazakhstan-Xinjiang border region

Code	Station Name	Δ°	AZ°	Phase	ID Op	ID ISC	Time h m s	Res ISC
KTMS	**Ketmen** 76nm,0.1s	**0.42**	**324**	*eP*		**Pb**	**03 39 08.1**	**+0.8**
KTMS				*e*S		**Sb**	**03 39 14.6**	**+0.4**
SHLS	**Shalkode** 31nm,0.2s	**0.59**	**275**	*eP*		**Pg**	**03 39 09.6**	**+1.2**
SHLS				*e*S		**Sb**	**03 39 17.4**	**-1.8**
PDGK	**Podgornoye** baz=276	**0.91**	**285**	⇑ *i*P		**Pb**	**03 39 15.3**	**-0.2**
PDGK				⇑ *i*S		**Sg**	**03 39 26.6**	**+0.4**
PDGK	**Podgornoye** baz=263	**0.91**	**285**	⇑ *i*P		**Pb**	**03 39 15.3**	**-0.2**
PDGK				⇑ *i*S		**Sg**	**03 39 26.0**	**-0.2**

PDGK	**Podgornoye**	**0.91**	**285**	⇑P		**Pg**	**03 39 15.1**	**+0.6**
	3.2nm,0.3s							
PDGK				⇑S		**Sg**	**03 39 26.6**	**+0.4**
	8.2nm,0.3s							
UZB	**Uzynbulak**	**1.22**	**273**	*e*P		**Pg**	**03 39 20.5**	**0.0**
	7.6nm,0.2s							
UZB				*e*S		**Sg**	**03 39 35.9**	**-0.4**
	32nm,0.1s							
KPKS	**Kokpek**	**1.51**	**285**	*e*P		**Pn**	**03 39 25.6**	**+0.4**
	30nm,0.2s							
KPKS				*e*S		**Sb**	**03 39 44.9**	**-0.6**
	182nm,0.4s							
PRZ	**Przheval'sk**	**1.79**	**251**	⇑*i*P		**Pg**	**03 39 32.8**	**+1.3**
	baz=245							
PRZ				⇑*i*S		**Sg**	**03 39 56.6**	**+1.9**
	baz=245							
KURS	**Kuram**	**1.88**	**283**	*e*P		**Pn**	**03 39 30.6**	**+0.3**
	3.8nm,0.7s							
KURS				*e*S		**Sn**	**03 39 53.8**	**-0.7**
	16nm,0.5s							
MNBS	**Baschi**	**1.93**	**301**	*e*P		**Pb**	**03 39 32.5**	**-0.5**
	5.4nm,0.2s							
MNBS				*e*S		**Sb**	**03 39 56.1**	**-1.4**
	214nm,0.5s							
ANVS	**Anan'yevo**	**2.24**	**263**	⇑*i*P		**Pb**	**03 39 38.7**	**+0.3**
	baz=259							
ANVS				⇑*i*S		**Sg**	**03 40 08.0**	**-1.1**
	baz=259							
ARXS	**Arharly**	**2.35**	**299**	*e*P		**Pg**	**03 39 41.6**	**-0.6**
	2.5nm,0.4s							
ARXS				*e*S		**Sg**	**03 40 11.7**	**-1.0**
	90nm,0.4s							
KAPS	**Kapalarasan**	**2.38**	**337**	*e*P		**Pg**	**03 39 42.5**	**-0.2**
	3.8nm,0.1s							
KAPS				*e*S		**Sg**	**03 40 14.2**	**+0.7**
	23nm,0.2s							
KOTS	**Kotyrbulak**	**2.62**	**274**	*e*P		**Pb**	**03 39 45.2**	**+0.4**
KOTS				*e*S		**Sb**	**03 40 18.2**	**+0.7**
MDOK	**Medeo**	**2.67**	**272**	*e*P		**Pb**	**03 39 45.9**	**+0.3**
	3.1nm,0.2s							
MDOK				*e*S		**Sb**	**03 40 19.4**	**+0.6**
	16nm,0.6s							
TNSS	**Tian-Shan**	**2.74**	**270**	*e*P		**Pb**	**03 39 47.4**	**+0.3**
	1.4nm,0.5s							
TNSS				*e*S		**Sb**	**03 40 22.1**	**+0.8**
	41nm,0.6s							
KDJ	**Kajisay**	**2.77**	**251**	⇑*e*P		**Pb**	**03 39 47.0**	**-0.3**
	baz=247							
KDJ				⇑*i*S		**Sb**	**03 40 20.8**	**-0.9**
	baz=247							
CHKK	**Chushkaly**	**2.79**	**287**	*e*P		**Pb**	**03 39 47.6**	**0.0**
	3.1nm,0.5s							
CHKK				*e*S		**Sb**	**03 40 22.6**	**+0.3**
	18nm,0.3s							
KTBS	**Karatobe**	**2.98**	**283**	*e*P		**Pb**	**03 39 51.9**	**+1.0**
KTBS				*e*S		**Sb**	**03 40 29.5**	**+1.7**
IZV	**Izvestkoviy**	**2.99**	**270**	*e*P		**Pb**	**03 39 51.9**	**+0.8**
	1.7nm,0.4s							
IZV				*e*S		**Sb**	**03 40 29.7**	**+1.6**
	78nm,0.6s							
ULHL	**Ulahol**	**3.39**	**257**	⇑*i*P		**Pb**	**03 39 56.5**	**-1.5**
	baz=251							
ULHL				⇑*i*S		**Sb**	**03 40 38.0**	**-1.7**
	baz=251							
KST	**Kastek**	**3.46**	**271**	*e*P		**Pb**	**03 40 01.4**	**+2.2**
	4.1nm,0.6s							
KST				*e*S		**Sg**	**03 40 45.8**	**-2.5**
	25nm,0.5s							
BOOM	**Boomskoye usch**	**3.55**	**262**	⇑*i*P		**Pb**	**03 39 57.6**	**-3.0**
	baz=259							
BOOM				⇑*i*S		**Sn**	**03 40 38.5**	**+2.6**
	baz=259							
DGS	**Degeres**	**3.60**	**274**	*e*P		**Pb**	**03 40 03.2**	**+1.7**
	0.7nm,0.4s							
DGS				*e*S		**Sg**	**03 40 49.2**	**-3.5**
	18nm,0.7s							
TKM2	**Tokmak 2**	**3.74**	**269**	⇑*i*P		**Pb**	**03 40 00.9**	**-3.0**
	baz=264							
TKM2				⇑*i*S		**Sb**	**03 40 46.0**	**-3.7**
	baz=264							
MK31	**Makanchi Array**	**3.86**	**17**	⇑Pg		**Pg**	**03 40 12.3**	**+1.3**
	0.4nm,0.6s,baz=200,slow=14,SNR=5.5							
MK31				⇓Sn		**Sb**	**03 40 49.6**	**-3.4**
	0.5nm,0.6s,baz=200,slow=26,SNR=4.4							
MK31				⇑Lg		Lg	03 41 06.0	
	0.5nm,0.5s,baz=28,slow=30,SNR=4.2							

IDC ***21*** *03:42:36.8±0.7,35°.96N×69°.12E, h0km, mb4.1/25, mb1 4.2/29,mb1mx4.1/55, mbtmp4.1/29, ML3.9/4, MS3.7/3, Ms1 3.7/3, ms1mx3.1/49, Error ellipse: s-maj=14.3km s-min=11.5km az=1.0*

BJI ***21*** *03:42:37.5, 36°.29N×68°.94E, h12km, mb4.4/20, mB4.6/11, ML4.6/2, Ms4.1/10, Ms7 4.0/8*

ISCJB ***21*** *03:42:40.6±0.2, 36°.13N±0°.02×69°.17E±0°.03, h35km, mb4.1/46, MS3.9/3, Error ellipse: s-maj=3.9km s-min=2.9km az=158.8*

NEIC ***21*** *03:42:41.6±2.3, 36°.13N×69°.09E, h26km±17km, mb4.3/10, Error ellipse: s-maj=8.2km s-min=6.4km az=190.0*

MOS ***21*** *03:42:41.0±1.2, 36°.18N×69°.06E, h33km, mb4.4/33, Error ellipse: s-maj=7.9km s-min=4.7km az=81.7*

NNC ***21*** *03:42:43.8±1.6, 36°.25N×68°.74E, h105km±20km, mb4.0, mpv4.6, Error ellipse: s-maj=12.0km s-min=11.1km az=8.0*

ISC 21 03:42:41.9±0.4, 36°.08N±0°.03×69°.06E±0°.04, h35km, n154, σ1§96/165, mb4.2/46, MS4.0/3, 19C-14D, Hindu Kush region

Code	Station Name	Δ°	AZ°	Phase	Op	ID	Time h m s	Res ISC
KBL	**Kabul**	**1.54**	**180**		*e*PN	**Pn**	**03 43 08.3**	**+1.3**
KBL	**Kabul**	**1.54**	**180**		*e*Pn	**Pn**	**03 43 08.3**	**+1.3**
KBL					*e*Sn	**Sn**	**03 43 25.9**	**0.0**
CEP	**Cherat**	**3.25**	**133**	P		Pn	03 43 35.5	+5.0
CEP				S		Sn	03 44 19.0	+11
THW	**Thamme Wali**	**3.96**	**145**	P		Pn	03 43 43.8	+3.6
CHCP	**Chirah Chowk**	**4.22**	**124**	⇑P		Pn	03 43 48.3	+4.6
SARP	**Sargodha**	**5.12**	**143**	P		**Pn**	**03 43 58.5**	**+2.4**
SFK	**Sufi-Kurgan**	**5.26**	**40**	⇑P		Pn	03 44 01.0	+2.8
	28nm,0.4s							
SFK				⇑S		**Sn**	**03 45 01.6**	**+3.9**
	154nm,0.6s							
SFK	**Sufi-Kurgan**	**5.26**	**40**	PN		Pn	03 44 01.2	+3.0
SFK				S		**Sn**	**03 45 01.6**	**+3.9**
SFK				pmax		pmax		
	comp=Z,28nm,0.4s							
SFK				smax		smax		
	comp=N,154nm,0.6s							
KSH	**Kashi**	**6.46**	**56**	Pn		**Pn**	**03 44 12.5**	**-2.1**
KSH				Sn		**Sn**	**03 45 23.8**	**-3.3**
KSH				smax		smax		
	comp=N,250nm,0.6s							
KSH				smax		smax		
	comp=E,170nm,0.8s							
MNAS	**Manas**	**6.93**	**22**	⇓P		**Pn**	**03 44 22.3**	**+1.3**
	comp=E,12nm,0.3s							
MNAS				⇑S		**Sn**	**03 45 40.6**	**+1.9**
	comp=E,37nm,0.5s							
MNAS	**Manas**	**6.93**	**22**	PN		**Pn**	**03 44 22.3**	**+1.3**
MNAS				S		**Sn**	**03 45 40.6**	**+1.9**
MNAS				pmax		pmax		
	comp=Z,12nm,0.3s							
MNAS				smax		smax		
	comp=N,37nm,0.5s							
KK31	**Karatay Array**	**7.10**	**9**	P		**Pn**	**03 44 24.1**	**+0.9**
	comp=N,18nm,0.6s,baz=199,slow=14,SNR=173							
KK31				⇓S		**Sn**	**03 45 42.0**	**-0.7**
	comp=N,29nm,0.6s							
KK31	**Karatay Array**	**7.10**	**9**	*i* PN		**Pn**	**03 44 24.1**	**+0.9**
KK31				pmax		pmax		
	comp=Z,18nm,0.6s							
KKAR	**Karatay Array**	**7.10**	**9**	*e*PN		**Pn**	**03 44 23.7**	**+0.5**
KKAR	**Karatay Array**	**7.10**	**9**	*e*Pn		**Pn**	**03 44 23.7**	**+0.5**
KKAR				*e*S		**Sn**	**03 45 41.8**	**-0.9**
DHRM	**DHARAMSHALA**	**7.12**	**120**	*e*P		Pn	03 44 26.6	+2.9
DHRM				*e*S		**Sn**	**03 45 45.3**	**+1.9**
DHRM				IAML			03 46 24.4	
	comp=E,681nm,0.0s							
DHRM				IAML			03 46 25.5	
	comp=N,531nm,0.6s							
EKS2	**Erkin-Say**	**7.52**	**28**	*e*P		**Pn**	**03 44 30.5**	**+1.4**
EKS2				*e*S		**Sn**	**03 45 56.3**	**+3.2**
EKS2	**Erkin-Say**	**7.52**	**28**	*e*Pn		**Pn**	**03 44 30.5**	**+1.4**
EKS2				*e*S		**Sn**	**03 45 56.3**	**+3.2**
AAK	**Ala-Archa**	**7.78**	**31**	Pn		**Pn**	**03 44 34.2**	**+1.6**
	comp=N,11nm,0.3s,baz=186,slow=8.9,SNR=91							
AAK				Sn		**Sn**	**03 46 01.1**	**+1.5**
	comp=N,5.7nm,0.3s,baz=324,slow=23,SNR=7.3							
AAK	**Ala-Archa**	**7.78**	**31**	⇑P		**Pn**	**03 44 34.1**	**+1.4**
	comp=N,35nm,0.8s							
AAK				⇑S		**Sn**	**03 46 02.1**	**+2.5**
	comp=N,86nm,0.9s							
AAK	**Ala-Archa**	**7.78**	**31**	P		**Pn**	**03 44 34.1**	**+1.4**
AAK				S		**Sn**	**03 46 00.7**	**+1.1**
AAK				pmax		pmax		
	comp=Z,36nm,0.6s							
AAK				smax		smax		
	comp=N,86nm,0.9s							
SDNR	**Sundarnagar**	**8.02**	**123**	*e*P		**Pn**	**03 44 36.0**	**+0.1**
SDNR				*ex*		x	03 46 08.0	
SMLA	**Simla**	**8.37**	**124**	*i* P		**Pn**	**03 44 42.6**	**+1.9**
SMLA				*i* S		**Sn**	**03 46 11.2**	**-2.8**
SMLA				*e*S		**Sn**	**03 46 15.3**	**+1.2**
SMLA				IAML			03 46 22.1	
	comp=N,204nm,0.3s							
SMLA				IAML			03 46 22.4	
	comp=E,286nm,0.9s							
TKM2	**Tokmak 2**	**8.49**	**34**	⇑P		**Pn**	**03 44 43.5**	**+1.0**
	comp=E,22nm,0.6s							
TKM2				⇑S		**Sn**	**03 46 18.5**	**+1.3**
	comp=E,40nm,0.8s							
TKM2	**Tokmak 2**	**8.49**	**34**	P		**Pn**	**03 44 43.5**	**+1.0**
TKM2				S		**Sn**	**03 46 16.8**	**-0.4**
TKM2				pmax		pmax		
	comp=Z,22nm,0.6s							
TKM2				smax		smax		
	comp=N,40nm,0.8s							
TKM2	**Tokmak 2**	**8.49**	**34**	*e*Pn		**Pn**	**03 44 43.5**	**+1.0**
TKM2				*e*S		**Sn**	**03 46 15.9**	**-1.3**
GEYT	**Alibeck**	**8.95**	**285**	Pn		**Pn**	**03 44 46.0**	**-2.6**
	comp=N,6.6nm,0.3s,baz=102,slow=14,SNR=13							
GEYT				Sn		**Sn**	**03 46 26.9**	**-1.3**
	comp=N,4.8nm,0.3s,baz=144,slow=16,SNR=5.1							
GEYT				LR		LR	03 49 19.9	
	comp=N,377nm,18.2s,baz=300,slow=45							
RTK	**Rohtak**	**9.38**	**137**	*e*P		**Pn**	**03 44 54.9**	**+0.4**
RTK				*e*S		**Sn**	**03 46 35.0**	**-3.6**
DDI	**Dehra Dun**	**9.47**	**125**	*ex*		**Sn**	**03 46 43.3**	**+2.1**
KHET	**Khetri**	**9.82**	**143**	*e*P		**Pn**	**03 45 00.8**	**+0.2**
KHET				*e*S		**Sn**	**03 46 46.1**	**-3.5**
BHGR	**Bahadurgarh**	**9.93**	**136**	*e*P		**Pn**	**03 45 02.6**	**+0.5**
BHGR				*ex*		x	03 46 54.0	
NDI	**New Delhi**	**10.10**	**135**	*ex*		Pn	03 45 01.0	-3.4
NDI				*e*S		**Sn**	**03 46 51.5**	**-4.9**
KUDL	**Kundal**	**10.11**	**139**	*e*P		**Pn**	**03 45 04.0**	**-0.5**
KUDL				*e*S		**Sn**	**03 46 53.2**	**-3.6**
KUDL				IAML			03 46 60.0	
	comp=E,53nm,0.5s							
KUDL				IAML			03 47 01.8	
	comp=N,47nm,0.6s							
AYAN	**Aya Nagar**	**10.20**	**136**	*ex*		Pn	03 44 56.5	-9.2
AYAN				*ex*		x	03 46 43.6	
SONA	**Sohna**	**10.35**	**137**	*e*P		**Pn**	**03 45 08.0**	**+0.2**
SONA				*ex*		x	03 47 00.6	
SONA				IAML			03 47 07.8	
	comp=N,50nm,0.8s							
SONA				IAML			03 47 09.8	
	comp=E,90nm,0.3s							
LGTI	**Lohaghat**	**11.50**	**122**	*ex*		Pn	03 45 29.9	+6.3
LGTI				*ex*		x	03 47 35.1	
OTUK	**Ortayu**	**12.39**	**10**	⇑P		**Pn**	**03 45 34.5**	**-1.2**
	comp=E,12nm,1.1s							
OTUK				⇑S		**Sn**	**03 47 48.9**	**-3.5**
	comp=E,15nm,0.7s							
OTUK	**Ortayu**	**12.39**	**10**	P		**Pn**	**03 45 34.5**	**-1.2**
OTUK				S		Sn	03 47 46.1	-6.4
OTUK				pmax		pmax		
	comp=Z,12nm,1.1s							
OTUK				smax		smax		
	comp=N,15nm,0.7s							
PYUN	**Piuthan**	**14.23**	**120**	*e*P		**Pn**	**03 45 59.1**	**-2.0**
	comp=N,57nm,0.4s							
MAKZ	**Makanchi**	**14.42**	**38**	⇓P		**Pn**	**03 46 01.9**	**-1.6**
	comp=N,7.2nm,0.8s							
MAKZ	**Makanchi**	**14.42**	**38**	P		**Pn**	**03 46 01.8**	**-1.6**
MAKZ				pmax		pmax		
	comp=Z,7.0nm,0.8s							
MAKZ	**Makanchi**	**14.42**	**38**	*e*Pn		**Pn**	**03 46 01.9**	**-1.6**
MK01	**Makanchi Array**	**14.56**	**39**	*e*Pn		**Pn**	**03 46 03.1**	**-2.2**
MK31	**Makanchi Array**	**14.57**	**39**	⇓P		**Pn**	**03 46 04.5**	**-1.0**
	comp=Z,8.5nm,0.7s,baz=222,slow=11,SNR=39							
MK31	**Makanchi Array**	**14.57**	**39**	P		**Pn**	**03 46 03.4**	**-2.0**
MK31				pmax		pmax		
	comp=Z,9.0nm,0.7s							
MK31	**Makanchi Array**	**14.57**	**39**	*e*Pn		**Pn**	**03 46 05.2**	**-0.2**
MKAR	**Makanchi Array**	**14.57**	**39**	Pn		**Pn**	**03 46 03.1**	**-2.4**
	comp=Z,0.3nm,0.3s,baz=227,slow=12,SNR=20							
MKAR	**Makanchi Array**	**14.57**	**39**	*e*P		**Pn**	**03 46 05.3**	**-0.2**
MKAR	**Makanchi Array**	**14.57**	**39**	*e*Pn		**Pn**	**03 46 05.2**	**-0.2**
BHPL	**Bhopal**	**14.71**	**148**	*e*P		**Pn**	**03 46 06.1**	**-1.3**
BHPL				*ex*		x	03 48 38.8	
AB31	**Akbulak array**	**14.76**	**336**	⇑P		Pn	03 46 04.2	-3.6
	comp=Z,3.9nm,0.4s,baz=153,slow=13,SNR=192							
AB31				⇓S		Sn	03 48 42.1	-8.0
	comp=Z,5.3nm,0.5s,baz=246,slow=28,SNR=9.0							
AB31	**Akbulak array**	**14.76**	**336**	*e*P		Pn	03 46 04.2	-3.7
AB31				pmax		pmax		
	comp=Z,4.0nm,0.4s							
ABKAR	**Akbulak array**	**14.76**	**336**	*e*Pn		Pn	03 46 04.5	-3.4
ABKAR				*e*S		Sn	03 48 37.5	-13
KOLN	**Koldanda**	**14.86**	**120**	*e*P		**Pn**	**03 46 07.4**	**-2.2**
	comp=Z,49nm,0.7s							
GKN	**Gorkha**	**15.46**	**117**	*e*P		**Pn**	**03 46 15.1**	**-2.4**
	comp=Z,75nm,0.5s							
DMN	**Daman**	**16.03**	**117**	*e*P		**Pn**	**03 46 21.6**	**-3.3**
	comp=Z,86nm,0.8s							
KKN	**Kakani**	**16.05**	**116**	*e*P		**Pn**	**03 46 22.6**	**-2.5**
	comp=Z,106nm,0.6s							
KURBB	**Kurchatov Arra**	**16.06**	**22**	Pn		**Pn**	**03 46 21.1**	**-3.8**
	comp=Z,0.1nm,0.3s,baz=213,slow=12,SNR=8.5							
KURBB	**Kurchatov Arra**	**16.06**	**22**	⇑P		**Pn**	**03 46 20.8**	**-4.1**
	comp=Z,6.7nm,0.6s							
KURK	**Kurchatov**	**16.17**	**22**	⇓P		**Pn**	**03 46 22.6**	**-3.7**
	comp=Z,14nm,0.9s							
KURK	**Kurchatov**	**16.17**	**22**	P		**Pn**	**03 46 22.5**	**-3.7**
KURK				pmax		pmax		
	comp=Z,14nm,0.9s							
KURK	**Kurchatov**	**16.17**	**22**	*e*Pn		**Pn**	**03 46 22.1**	**-4.1**
	comp=Z,6.9nm,0.8s							
WMQ	**Urumqi**	**16.23**	**56**	P		**P**	**03 46 30.4**	**+0.5**
WMQ				S		**Sn**	**03 49 30.3**	**+4.4**
WMQ				pmax		pmax		
	comp=Z,11nm,0.8s							
WMQ				LR		LR		
	comp=Z,290nm,14.8s							
WMQ				LR		LR		
	comp=Z,250nm,12.2s							
PKIN	**Phulchoki**	**16.25**	**117**	*e*P		**Pn**	**03 46 25.2**	**-2.6**
	comp=Z,85nm,0.7s							
AKTO	**Aktyubinsk**	**16.42**	**334**	Pn		**Pn**	**03 46 27.8**	**-1.6**
	comp=Z,0.7nm,0.3s,baz=146,slow=13,SNR=13							
AKTO				Sn		**Sn**	**03 49 24.6**	**-5.8**
	comp=Z,0.5nm,0.3s,baz=333,slow=23,SNR=5.3							
AKTO	**Aktyubinsk**	**16.42**	**334**	⇓P		Pn	03 46 24.8	-4.6
	comp=Z,15nm,0.9s							
AKTO				⇑S		Sn	03 49 21.5	-8.9
	comp=Z,6.8nm,0.7s							
AKTO	**Aktyubinsk**	**16.42**	**334**	P		**Pn**	**03 46 27.1**	**-2.3**
AKTO				pmax		pmax		
	comp=Z,15nm,1.0s							
GUN	**Gumba**	**16.42**	**115**	*e*P		**Pn**	**03 46 27.4**	**-2.5**
	comp=Z,107nm,0.7s							
VOSK	**Vostochnaya**	**16.69**	**4**	⇓P		**Pn**	**03 46 30.3**	**-2.6**
	comp=Z,12nm,1.0s							
ZRNK	**Zerenda**	**16.86**	**360**	⇓P		**Pn**	**03 46 32.9**	**-2.2**
	comp=Z,11nm,0.8s							
ZRNK	**Zerenda**	**16.86**	**360**	P		**Pn**	**03 46 32.8**	**-2.2**
ZRNK				pmax		pmax		
	comp=Z,17nm,1.3s							
ZRNK	**Zerenda**	**16.86**	**360**	*e*Pn		**Pn**	**03 46 32.8**	**-2.2**
	comp=Z,9.3nm,0.8s							
BVA0	**Borovoye Array**	**16.96**	**3**	P		**Pn**	**03 46 33.4**	**-2.9**
	comp=Z,8.8nm,0.9s,baz=189,slow=10,SNR=28							
BVAR	**Borovoye Array**	**16.96**	**3**	P		**Pn**	**03 46 32.5**	**-3.8**
	comp=Z,1.4nm,0.3s,baz=161,slow=12,SNR=12							
BRVK	**Borovoye**	**17.00**	**3**	⇓*e*P		**Pn**	**03 46 35.4**	**-1.3**
BRVK				pmax		pmax		
	comp=Z,19nm,1.2s							
BRVK	**Borovoye**	**17.00**	**3**	*e*Pn		**Pn**	**03 46 35.0**	**-1.6**
	comp=Z,12nm,0.8s							
BRVK				*e*S		Sn	03 49 33.5	-11
CHKZ	**Chkalovo**	**17.63**	**3**	⇑P		**Pn**	**03 46 41.9**	**-2.6**
	comp=Z,4.9nm,0.8s							
CHKZ	**Chkalovo**	**17.63**	**3**	P		**Pn**	**03 46 41.9**	**-2.6**
CHKZ				pmax		pmax		
	comp=Z,5.0nm,0.8s							
GNI	**Garni**	**19.54**	**289**	P		**Pn**	**03 47 09.9**	**+1.9**
	comp=Z,0.7nm,0.3s,baz=358,slow=7.4,SNR=8.9							
GNI	**Garni**	**19.54**	**289**	*c iP*		**Pn**	**03 47 09.7**	**+1.7**
GNI				pmax		pmax		
	comp=Z,188nm,1.2s							
GNI	**Garni**	**19.54**	**289**	*e*P		**Pn**	**03 47 08.3**	**+0.3**
	comp=Z,25nm,0.9s							
LSA	**Lhasa**	**19.59**	**103**	*e*P		**Pn**	**03 47 09.8**	**+0.8**
LSA				pmax		pmax		
	comp=Z,32nm,0.7s							
LSA	**Lhasa**	**19.59**	**103**	*e*P		**Pn**	**03 47 09.8**	**+0.8**
	comp=Z,32nm,0.7s							
HYB	**Hyderabad**	**20.41**	**153**	*i* P		Pn	03 47 19.0	+0.7
ZEI	**Tsey**	**20.51**	**297**	*e*P		Pn	03 47 18.4	-1.0
ZEI				pmax		pmax		
	comp=Z,9.0nm,0.7s							
ZAA0	**Zalesovo Array**	**20.97**	**27**	*e*P		**P**	**03 47 21.4**	**-0.3**
ZALV	**Zalesovo Beam**	**20.97**	**27**	P		**P**	**03 47 21.6**	**-0.2**
	comp=Z,16nm,0.6s,baz=221,slow=10,SNR=56							
NVS	**Novosibirsk**	**21.15**	**23**	*e*P		**P**	**03 47 23.5**	**-0.2**
KBZ	**Khabaz**	**21.41**	**299**	P		**P**	**03 47 26.6**	**+0.1**
	comp=Z,3.4nm,0.7s,baz=117,slow=9.3,SNR=9.4							
NEY	**Neytrino**	**21.44**	**298**	⇑*e*P		**P**	**03 47 29.2**	**+2.1**
NEY				pmax		pmax		
	comp=Z,1.0nm,0.7s							
ARU	**Arti**	**21.56**	**344**	P		**P**	**03 47 30.4**	**+2.4**
	comp=Z,14nm,0.8s,baz=149,slow=5.1,SNR=7.7							
ARU	**Arti**	**21.56**	**344**	*d iP*		**P**	**03 47 28.3**	**+0.3**
ARU							03 47 45.3	
ARU				S		**S**	**03 51 24.8**	**-0.1**
ARU				pmax		pmax		
	comp=Z,10.0nm,1.0s							
ARU	**Arti**	**21.56**	**344**	*e*P		**P**	**03 47 28.5**	**+0.5**
	comp=Z,13nm,0.8s							
KVAR	**Kislovodsk Arr**	**21.60**	**299**	P		**P**	**03 47 29.2**	**+0.5**
	comp=Z,8.1nm,0.6s,baz=251,slow=4.9,SNR=6.3							
KIV	**Kislovodsk**	**21.61**	**299**	*e*P		**P**	**03 47 28.9**	**0.0**
KIV				pmax		pmax		
	comp=Z,11nm,0.7s							
KIV	**Kislovodsk**	**21.61**	**299**	*e*P		**P**	**03 47 28.8**	**0.0**
	comp=Z,13nm,0.7s							
SHL	**Shillong**	**22.18**	**112**	*e*P		**P**	**03 47 36.0**	**+0.8**
SHL				*ex*		x	03 51 30.0	
GTA	**Gaotai**	**24.49**	**73**	*e*P		**P**	**03 47 59.8**	**+1.9**
GTA				pP		pP	03 48 04.3	-3.6
GTA				sP		sP	03 48 07.8	-4.3
GTA				pmax		pmax		
	comp=Z,12nm,0.7s							
VSR	**Storozhevoye**	**26.16**	**315**	*e*P		**P**	**03 48 12.5**	**-0.2**
VSR				pmax		pmax		
	comp=Z,10.0nm,1.4s							
LPSR	**Galich'ya Gora**	**26.88**	**317**	*e*P		**P**	**03 48 22.5**	**+3.4**
LPSR				pmax		pmax		
	comp=Z,9.0nm,0.7s							
MOY	**Mondy**	**27.51**	**45**	*e*P		**P**	**03 48 28.1**	**+3.1**
LZH	**Lanzhou**	**28.02**	**80**	*e*P		**P**	**03 48 32.5**	**+2.7**
LZH				pP		sP	03 48 42.1	-2.0
LZH				sP		pP	03 48 46.0	+6.1
LZH				pmax		pmax		
	comp=Z,23nm,1.0s							
LZH				pmax		pmax		
	comp=Z,57nm,4.6s							
LZH				LR		LR		
	comp=Z,310nm,12.0s							
LZH				LR		LR		
	comp=Z,330nm,12.5s							
LZH				LR		LR		
	comp=Z,380nm,14.3s							
BRTR	**Keskin Array B**	**28.07**	**288**	P		**P**	**03 48 32.3**	**+2.1**
	comp=Z,1.0nm,0.7s,baz=113,slow=9.5,SNR=5.2							
ZAK	**Zakamensk**	**28.45**	**49**	*e*P		**P**	**03 48 35.1**	**+1.7**
ZAK				pmax		pmax		
	comp=Z,3.0nm,1.0s							
OBN	**Obninsk**	**29.25**	**321**	*i* P		**P**	**03 48 41.8**	**+1.5**
OBN				pmax		pmax		
	comp=Z,6.0nm,1.2s							
CD2	**Chengdu**	**29.29**	**90**	P		**P**	**03 48 40.9**	**-0.1**
CD2				pmax		pmax		
	comp=Z,1.0nm,0.5s							
SONM	**Songino Array**	**29.86**	**55**	P		**P**	**03 48 47.7**	**+1.7**
	comp=Z,2.1nm,0.9s,baz=275,slow=10.0,SNR=8.7							
ULN	**Ulaanbaatar**	**30.30**	**55**	⇓*e*P		**P**	**03 48 51.7**	**+1.8**
ULN				pmax		pmax		
	comp=Z,1.0nm,0.6s							
KMI	**Kunming**	**30.84**	**101**	P		**P**	**03 48 56.0**	**+1.1**
CMAR	**Chiang Mai Arr**	**31.66**	**116**	P		**P**	**03 49 03.9**	**+1.9**
	comp=Z,1.2nm,0.4s,baz=297,slow=8.2,SNR=9.7							
CMAR	**Chiang Mai Arr**	**31.66**	**116**	P		**P**	**03 49 03.9**	**+1.9**
CMAR				pmax		pmax		
	comp=Z,2.0nm,0.3s							
AKASG	**Malin Array Be**	**31.99**	**310**	P		**P**	**03 49 05.4**	**+0.8**
	comp=Z,1.6nm,0.5s,baz=87,slow=7.3,SNR=16							
KIEV	**Kiev**	**32.00**	**310**	⇓*e*P

BILL	**Bilibino**	**59.66**	**26**	*e*P		**P**		**03 52 43.9**	**+1.7**
BILL				pmax	pmax				
	comp=Z,2.0nm,0.9s								
DBIC	**Dimbokro**	**73.11**	**266**	P		**P**		**03 54 08.4**	**-0.6**
	comp=Z,3.4nm,1.0s,baz=28,slow=7.2,SNR=3.6								
INK	**Inuvik**	**74.56**	**9**	P		**P**		**03 54 17.7**	**+1.1**
	comp=Z,1.8nm,0.9s,baz=4.5,slow=6.4,SNR=6.4								
ILAR	**Eielson Array**	**75.60**	**15**	P		**P**		**03 54 22.9**	**+0.2**
	comp=Z,0.9nm,1.0s,baz=303,slow=4.2,SNR=6.6								
YKA	**Yellowknife Ar**	**81.72**	**2**	P		**P**		**03 54 56.8**	**+0.5**
	comp=Z,0.6nm,0.8s,baz=350,slow=5.6,SNR=14								
WRA	**Warramunga Arr**	**83.12**	**121**	P		**P**		**03 55 03.0**	**-1.3**
	comp=Z,1.1nm,0.7s,baz=324,slow=4.6,SNR=12								
WRA	**Warramunga Ar**	**83.12**	**121**	P		**P**		**03 55 03.0**	**-1.3**
WRA				pmax	pmax				
	comp=Z,1.0nm,0.7s								
WRAB	**Tennant Creek**	**83.12**	**121**	*e*P		**P**		**03 55 04.0**	**-0.3**
WRAB				pmax	pmax				
	comp=Z,1.0nm,0.6s								
WRAB	**Tennant Creek**	**83.12**	**121**	*e*P		**P**		**03 55 04.0**	**-0.3**
	comp=Z,0.8nm,0.6s								
ASAR	**Alice Springs**	**85.32**	**124**	P		**P**		**03 55 14.8**	**-0.7**
	comp=Z,1.3nm,0.6s,baz=311,slow=4.9,SNR=14								

*MEX **21** 03:50:30.7±0.6, 32.°79N×115.°20W, h28km±14km, MD3.8*
*ISCJB **21** 03:50:33.0±0.4, 32.°48N±0.°03×115.°50W±0.°03, h21km±4km, Error ellipse: s-maj=5.3km s-min=3.6km az=139.8*
*NEIC **21** 03:50:34.0, 32.°41N×115.°53W, h6km, ML2.9(PAS), ML3.0(ECX), After ECX.*
*ECX **21** 03:50:34.0±0.5, 32.°41N×115.°54W, h6km, MD3.0, ML3.2*
ISC 21 03:50:32.7±0.9, 32.°45N±0.°02×115.°54W±0.°02, h15km±7km, n29, σ0s95/48, 4C-8D, California-Baja California border region

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
CPBX	**Cerro Prieto**	**0.20**	**99**	⇓	*e*P		**Pg**	**03 50 37.5**	**+0.1**
CPBX				⇓	*e*P		**Pg**	**03 50 37.6**	**+0.3**
CPBX					*e*S		**Sg**	**03 50 40.8**	**+0.3**
CPBX				⇑	*e*			03 50 42.1	
CPBX					AML		AML	03 50 42.1	
	comp=N,11μm,0.3s								
CPBX				⇓	*e*			03 50 44.7	
CPBX					AML		AML	03 50 44.7	
	comp=E,11μm,0.3s								
CPBX					AML		AML	03 50 46.7	
	comp=E,23μm,0.4s								
CPBX				⇓	*e*			03 50 46.7	
CPBX					AML		AML	03 50 49.5	
	comp=N,10μm,0.5s								
CPBX				⇓	*e*			03 50 49.5	
CPBX	**Cerro Prieto**	**0.20**	**99**	*e*P			**Pg**	**03 50 37.4**	**+0.1**
CPBX				*i* S			**Sb**	**03 50 43.4**	**+1.8**
SGL	**Mount Signal**	**0.26**	**321**	*e*P			**Pg**	**03 50 37.6**	**-0.6**
MBIG	**Mexicali**	**0.29**	**98**	⇓	*e*P		**Pg**	**03 50 39.6**	**+0.8**
ERPC	**Ernies Place**	**0.31**	**340**	*e*P			**Pg**	**03 50 40.1**	**+0.8**
WESC	**Westside Schoo**	**0.35**	**332**	⇓	*e*P		**Pg**	**03 50 40.6**	**+0.7**
DREC	**Desert Rsrch C**	**0.36**	**12**	⇓	*e*P		**Pb**	**03 50 41.5**	**+0.7**
YUH	**Yuha Desert**	**0.38**	**301**	*e*P			**Pg**	**03 50 40.2**	**-0.3**
COK	**Cook Ranch**	**0.43**	**338**	*e*P			**Pg**	**03 50 42.2**	**+0.8**
RMX	**La Rumorosa**	**0.48**	**288**	*e*P			**Pg**	**03 50 41.8**	**-0.6**
RMX				*e*S			**Sg**	**03 50 48.6**	**-0.3**
SWSC	**Sam W. Stewart**	**0.54**	**336**	P			**Pg**	**03 50 43.6**	**+0.2**
	baz=160,SNR=37								
SWSC				S			**Sg**	**03 50 49.8**	**-0.9**
	baz=160								
GLA	**Glamis**	**0.85**	**45**	P			**Pg**	**03 50 48.4**	**-0.7**
	baz=222,SNR=8.6								
GLA				S			**Sg**	**03 50 59.0**	**-1.3**
	baz=222								
MONP2	**Monument Peak**	**0.87**	**301**	P			**Pg**	**03 50 49.4**	**-0.2**
	baz=125,SNR=48								
MONP2				S			**Sg**	**03 51 01.5**	**+0.5**
	baz=125								
CBX	**Cerro Bola**	**0.96**	**262**	*e*P			**Pb**	**03 50 51.0**	**-0.2**
CBX				AML			AML	03 51 09.7	
	comp=E,951nm,0.4s								
CBX	**Cerro Bola**	**0.96**	**262**	*e*P			**Pb**	**03 50 51.0**	**-0.2**
CBX				*e*S			**Sn**	**03 51 06.8**	**+1.5**
CBX	**Cerro Bola**	**0.96**	**262**	*e*P			**Pb**	**03 50 51.0**	**-0.2**
CBX				*e*S			**Sn**	**03 51 06.8**	**+1.5**
ECBX	**El Chinero**	**1.06**	**157**	⇓	*e*P		**Pb**	**03 50 51.8**	**-0.9**
ECBX				*e*S			**Sb**	**03 51 05.7**	**-0.6**
BC3	**Big Chuckawall**	**1.20**	**3**	P			**Pn**	**03 50 54.0**	**-1.1**
	baz=184,SNR=16								
BC3				S			**Sb**	**03 51 09.5**	**-1.2**
	baz=184								
109C	**Camp Elliot, M**	**1.39**	**289**	P			**Pn**	**03 50 57.6**	**0.0**
	baz=111,SNR=22								
109C				S			**Sn**	**03 51 16.1**	**+0.4**
	baz=111								
PFO	**Pinyon Flats O**	**1.39**	**326**	P			**Pn**	**03 50 56.9**	**-0.8**
	baz=148,SNR=12								
PFO				S			**Sn**	**03 51 14.8**	**-1.1**
	baz=148								
PFO	**Pinyon Flats O**	**1.39**	**326**	*e*Pn			**Pn**	**03 50 56.6**	**-1.1**
PFO				*e*S			**Sb**	**03 51 17.3**	**+1.1**
SPIG	**San Pedro Mart**	**1.40**	**178**	⇑	*e*P		**Pn**	**03 50 57.5**	**-0.5**
SPIG	**San Pedro Mart**	**1.40**	**178**	*e*P			**Pn**	**03 50 57.5**	**-0.5**
SPIG				*e*S			**Sg**	**03 51 17.4**	**-0.6**
SPIG	**San Pedro Mart**	**1.40**	**178**	*e*P			**Pn**	**03 50 57.5**	**-0.5**
SPIG				*e*S			**Sg**	**03 51 17.4**	**-0.6**
SPX	**San Pedro Mart**	**1.40**	**177**	⇑	*e*P		**Pn**	**03 50 57.5**	**-0.4**
SPX	**San Pedro Mart**	**1.40**	**177**	*e*P			**Pn**	**03 50 57.6**	**-0.4**
SPX				*e*S			**Sg**	**03 51 17.6**	**-0.4**
MURC	**Murrieta**	**1.81**	**310**	Pb			**Pb**	**03 51 05.8**	**+0.3**
	baz=131								
MURC				Sb			**Sb**	**03 51 29.6**	**+1.6**
	baz=131								
214A	**Organ Pipe Nat**	**2.36**	**101**	P			**Pn**	**03 51 09.8**	**-1.1**
	baz=281								
214A	**Organ Pipe Nat**	**2.36**	**101**	*e*Pn			**Pn**	**03 51 09.8**	**-1.1**
214A				*e*S			**Sb**	**03 51 46.8**	**+2.9**

*MEX **21** 04:11:15.9±0.9, 32.°70N×115.°32W, h30km±13km, MD3.9*
*ISCJB **21** 04:11:16.0±0.4, 32.°44N±0.°02×115.°51W±0.°02, h13km±3km, Error ellipse: s-maj=3.7km s-min=2.6km az=17.9*
*NEIC **21** 04:11:17.0, 32.°41N×115.°55W, h4km, MD3.9(MEX), ML3.9(ECX), ML4.0(PAS), After ECX.*
NEIC Felt [III] at Mexicali. Felt [IV] at Calexico and [II] at El Centro, California. Also felt at Brawley, El Cajon, Imperial, La Mesa, La Quinta, Poway and San Diego.
*ECX **21** 04:11:17.0±0.7, 32.°41N×115.°55W, h4km, MD3.9, ML4.1*
ISC 21 04:11:16.2±0.8, 32.°46N±0.°02×115.°55W±0.°02, h16km±6km, n61, σ1s56/96, 4C-11D, California-Baja California border region

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
CPBX	**Cerro Prieto**	**0.21**	**101**	⇓	*e*P		**Pg**	**04 11 20.7**	**-0.4**
CPBX					*e*S		**Sg**	**04 11 24.3**	**-0.2**
CPBX					AML		AML	04 11 30.2	
	comp=E,105μm,0.4s								
CPBX				⇓	*e*			04 11 30.2	
CPBX	**Cerro Prieto**	**0.21**	**101**	*e*P			**Pg**	**04 11 21.1**	**-0.1**
CPBX				*e*S			**Sb**	**04 11 26.2**	**+0.7**
SGL	**Mount Signal**	**0.24**	**322**	⇓	*i*P		**Pg**	**04 11 21.7**	**+0.1**
ERPC	**Ernies Place**	**0.30**	**342**	⇓	*i*P		**Pb**	**04 11 23.5**	**+0.2**
MBIG	**Mexicali**	**0.30**	**100**	⇓	*e*P		**Pg**	**04 11 22.9**	**+0.2**
MBIG	**Mexicali**	**0.30**	**100**	*e*P			**Pg**	**04 11 22.4**	**-0.2**
MBIG				*i* S			**Sg**	**04 11 26.6**	**-0.4**
WESC	**Westside Schoo**	**0.34**	**333**	⇓	*i*P		**Pb**	**04 11 23.9**	**0.0**
WESC				*e*S			**Sb**	**04 11 29.7**	**+0.7**
DREC	**Desert Rsrch C**	**0.36**	**14**	⇑	*e*P		**Pb**	**04 11 24.7**	**+0.5**
YUH	**Yuha Desert**	**0.37**	**301**	⇓	*i*P		**Pg**	**04 11 23.7**	**-0.1**
COK	**Cook Ranch**	**0.42**	**339**	*e*P			**Pb**	**04 11 25.5**	**+0.2**
RMX	**La Rumorosa**	**0.47**	**288**	⇓	*e*P		**Pg**	**04 11 25.1**	**-0.6**
RMX				*e*S			**Sg**	**04 11 31.9**	**-0.1**
SWSC	**Sam W. Stewart**	**0.53**	**337**	P			**Pb**	**04 11 27.0**	**-0.2**
	baz=158,SNR=243								
SWSC				S			**Sb**	**04 11 34.7**	**+0.1**
	baz=158								
EMSC	**East Mesa**	**0.55**	**60**	⇓	*i*P		**Pb**	**04 11 27.7**	**+0.1**
GLA	**Glamis**	**0.85**	**46**	P			**Pb**	**04 11 31.8**	**-0.9**
	baz=224,SNR=131								
GLA				S			**Sb**	**04 11 43.0**	**-0.9**
	baz=224								
MONP2	**Monument Peak**	**0.85**	**301**	P			**Pb**	**04 11 32.6**	**-0.2**
	baz=123,SNR=520								
MONP2				S			**Sg**	**04 11 44.5**	**+0.4**
	baz=123								
CBX	**Cerro Bola**	**0.95**	**262**	*e*P			**Pb**	**04 11 34.1**	**-0.3**
CBX				*e*S			**Sg**	**04 11 46.9**	**-0.4**
CBX				AML			AML	04 11 50.5	
	comp=E,6μm,0.6s								
CBX				⇑	*e*			04 11 50.5	
CBX	**Cerro Bola**	**0.95**	**262**	*e*P			**Pb**	**04 11 34.4**	**-0.1**
CBX				*e*S			**Sn**	**04 11 48.5**	**0.0**
CBX	**Cerro Bola**	**0.95**	**262**	*e*P			**Pb**	**04 11 34.4**	**-0.1**
CBX				*e*S			**Sn**	**04 11 48.5**	**0.0**
BAR	**Barrett**	**0.97**	**283**	⇓	*e*P		**Pb**	**04 11 34.5**	**-0.3**
BC3	**Big Chuckawall**	**1.20**	**4**	P			**Pn**	**04 11 37.4**	**-1.1**
	baz=184,SNR=158								
BC3				S			**Sb**	**04 11 52.7**	**-1.2**
	baz=184								
SDRC	**San Diego Road**	**1.21**	**284**	⇓	*e*P		**Pn**	**04 11 38.4**	**-0.1**
109C	**Camp Elliot, M**	**1.38**	**289**	P			**Pn**	**04 11 40.6**	**-0.2**
	baz=110,SNR=164								
109C				S			**Sb**	**04 11 59.2**	**+0.2**
	baz=110								
PFO	**Pinyon Flats O**	**1.38**	**327**	P			**Pn**	**04 11 40.1**	**-0.9**
	baz=147,SNR=159								
PFO				S			**Sn**	**04 11 57.6**	**-1.4**
	baz=147								
PFO	**Pinyon Flats O**	**1.38**	**327**	*e*Pn			**Pn**	**04 11 40.1**	**-0.9**
PFO				*e*S			**Sn**	**04 11 57.7**	**-1.3**
SPIG	**San Pedro Mart**	**1.41**	**177**	⇑	*e*P		**Pn**	**04 11 40.6**	**-1.0**
SPIG	**San Pedro Mart**	**1.41**	**177**	*e*P			**Pn**	**04 11 40.6**	**-1.0**
SPIG				*e*S			**Sg**	**04 12 01.1**	**-0.8**
SPIG	**San Pedro Mart**	**1.41**	**177**	*e*P			**Pn**	**04 11 40.6**	**-1.0**
SPIG				*e*S			**Sg**	**04 12 01.1**	**-0.8**
SPX	**San Pedro Mart**	**1.41**	**177**	⇑	*e*P		**Pn**	**04 11 40.6**	**-1.0**
SPX	**San Pedro Mart**	**1.41**	**177**	*e*P			**Pn**	**04 11 40.7**	**-0.9**
SPX				*e*S			**Sn**	**04 11 59.8**	**-0.3**
Y12C	**Blythe**	**1.55**	**34**	P			**Pn**	**04 11 42.3**	**-0.9**
	baz=213								
Y12C				S			**Sn**	**04 11 59.9**	**-3.1**
	baz=213								
BELC	**Belle Mtn. Jos**	**1.58**	**346**	P			**Pn**	**04 11 43.0**	**-0.8**
	baz=167,SNR=47								
BELC				S			**Sn**	**04 12 02.8**	**-1.3**
	baz=167								
IRM	**Iron Mountain**	**1.73**	**11**	P			**Pn**	**04 11 45.1**	**-0.7**
	baz=191,SNR=39								
MURC	**Murrieta**	**1.79**	**310**	P			**Pn**	**04 11 46.1**	**-0.5**
	baz=130,SNR=95								
MURC				Sb			**Sb**	**04 12 12.2**	**+1.3**
	baz=130								
BBRC	**Big Bear Solar**	**2.13**	**328**	Sb			**Sb**	**04 12 21.5**	**+0.5**
	baz=148								
PDMCI	**Parker Dam,Lak**	**2.19**	**32**	Sb			**Sb**	**04 12 23.0**	**+0.7**
	baz=212								
214A	**Organ Pipe Nat**	**2.38**	**101**	P			**Pn**	**04 11 52.9**	**-1.8**
	baz=282,SNR=13								
214A	**Organ Pipe Nat**	**2.38**	**101**	*e*Pn			**Pn**	**04 11 52.7**	**-1.9**
214A				*e*S			**Sb**	**04 12 28.9**	**+1.1**
NEE2	**Needles Airpor**	**2.43**	**18**	S			**Sn**	**04 12 22.8**	**-1.9**
	baz=198								
BFSC	**Mount Baldy Ra**	**2.50**	**316**	Pb			**Pb**	**04 12 00.8**	**-0.1**
	baz=136								
BFSC				Sb			**Sb**	**04 12 32.6**	**+1.0**
	baz=136								
CIS	**Catalina Islan**	**2.58**	**292**	P			**Pn**	**04 11 57.8**	**+0.4**
	baz=112,SNR=14								
CIS				Sb			**Sb**	**04 12 35.9**	**+2.1**
	baz=112								
Y14A	**Wickenburg**	**2.59**	**55**	*e*Pn			**Pn**	**04 11 58.0**	**+0.4**
FMP	**Fort Macarthur**	**2.62**	**299**	Pb			**Pb**	**04 12 02.5**	**-0.3**
	baz=119								
FMP				Sb			**Sb**	**04 12 36.7**	**+2.0**
	baz=119								
RRX	**Edison Barstow**	**2.69**	**334**	Sb			**Sg**	**04 12 41.0**	**-1.8**
	baz=154								
PASC	**Pasadena Art C**	**2.79**	**308**	*e*Pn			**Pb**	**04 12 05.5**	**-0.2**
PASC				*e*S			**Sb**	**04 12 42.3**	**+2.6**
DECC	**Green Verdugo**	**2.94**	**308**	Pb			**Pb**	**04 12 08.2**	**0.0**
	baz=128								
DECC				Sb			**Sb**	**04 12 46.9**	**+3.0**
	baz=128								
EDW2	**Edwards Air Fo**	**3.16**	**321**	Sb			**Sb**	**04 12 53.8**	**+3.4**
	baz=140								
BLG	**Laguna Peak, P**	**3.37**	**300**	Sb			**Sb**	**04 12 59.5**	**+3.1**
	baz=119								
OSI	**Osito Audit: C**	**3.41**	**310**	Sb			**Sb**	**04 13 01.0**	**+3.3**
	baz=129								
X16A	**Lo Mia Camp, P**	**3.95**	**59**	*e*Pn			**Pn**	**04 12 17.6**	**+1.1**
TUC	**Tucson**	**4.04**	**91**	*e*Pn			**Pn**	**04 12 20.5**	**+3.0**
TUC				*e*Pg			**Pg**	**04 12 33.7**	**+0.2**
TUC				*e*S			**Sg**	**04 13 22.1**	**-3.8**
DAC	**Darwin (Calif)**	**4.17**	**337**	*e*Pn			**Pn**	**04 12 20.1**	**+0.7**
DAC				*e*Pg			**Pg**	**04 12 34.0**	**-2.1**
DAC				*e*S			**Sg**	**04 13 28.1**	**-1.9**
WUAZ	**Wupatki**	**4.62**	**48**	*e*Pn			**Pn**	**04 12 28.2**	**+2.6**
WUAZ				*e*Pg			**Pg**	**04 12 44.6**	**-0.1**
WUAZ				*e*S			**Sn**	**04 13 22.3**	**+3.2**
U15A	**North Rim**	**4.79**	**33**	*e*Pn			**Pn**	**04 12 30.4**	**+2.4**
LCMT	**Little Creek M**	**4.92**	**22**	*e*Pn			**Pn**	**04 12 31.4**	**+1.7**
KNB	**Kanab**	**5.07**	**26**	*e*Pn			**Pn**	**04 12 34.0**	**+2.2**
X18A	**Snowflake**	**5.12**	**65**	*e*Pn			**Pn**	**04 12 33.5**	**+1.0**
W18A	**Petrified Fore**	**5.52**	**60**	*e*Pn			**Pn**	**04 12 39.6**	**+1.6**
W18A				*e*S			**Sg**	**04 14 18.9**	**+5.4**
R11A	**Troy Canyon, C**	**5.88**	**360**	*e*Pn			Pn	04 12 48.1	+5.2
	comp=E,7.8nm,0.8s								
R11A				*e*S			**Sg**	**04 14 23.4**	**-1.4**
121A	**Cookes Peak, D**	**6.56**	**87**	P			**Pn**	**04 12 51.8**	**-0.5**
	baz=271,SNR=8.2								
121A	**Cookes Peak, D**	**6.56**	**87**	*e*Pn			**Pn**	**04 12 52.5**	**+0.2**
	comp=E,5.9nm,0.6s								
121A				*e*S			**Sg**	**04 14 48.4**	**+1.6**
MVCO	**Mesa Verde**	**7.49**	**49**	*e*Pn			Pn	04 13 08.3	+3.3
MVCO				*e*S			**Sg**	**04 15 12.6**	**-3.9**

IDC 21 04:20:26.4±3.6, 4.°99S×153.°12E, h0km, mb3.7/5, mb1 3.9/6, mb1mx3.7/34, mbtmpg3.8/6, ML2.1/1, Error ellipse: s-maj=103.7km s-min=26.4km az=116.0, New Ireland region

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**7.37**	**233**		Pn		Pn	04 22 16.9	+1.6
	1.9nm,0.3s,baz=240,slow=10,SNR=1.7								
PMG					Sn		Sn	04 23 41.7	+2.0
	2.2nm,0.3s,baz=202,slow=15,SNR=2.5								
WRA	**Warramunga Arr**	**23.56**	**229**		P		P	04 25 37.6	-1.2
	1.1nm,0.6s,baz=53,slow=9.8,SNR=6.2								
ASAR	**Alice Springs**	**26.23**	**223**		P		P	04 26 04.4	+1.0
	0.4nm,0.6s,baz=56,slow=8.9,SNR=3.5								
FITZ	**Fitzroy Crossi**	**29.85**	**242**		P		P	04 26 35.0	-0.8
	2.0nm,0.6s,baz=81,slow=9.3,SNR=3.7								
SONM	**Songino Array**	**66.65**	**328**		P		P	04 31 20.0	+0.9
	0.3nm,0.4s,baz=152,slow=6.4,SNR=2.3								
ZALV	**Zalesovo Beam**	**81.49**	**326**		P		P	04 32 45.0	-0.6
	0.4nm,0.3s,baz=103,slow=6.2,SNR=2.1								

*ECX **21** 04:25:06.8±0.4, 31.°25N×115.°66W, h5km, MD3.5, ML3.7*
*MEX **21** 04:25:07.9±0.6, 31.°17N×115.°52W, h31km±24km, MD3.8*
ISC 21 04:25:05.0±0.9, 31.°30N±0.°03×115.°67W±0.°03, h15km±8km, n25, σ0s88/42, 3C-4D, Baja California

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
SPIG	**San Pedro Mart**	**0.31**	**146**	⇓	*e*P		**Pg**	**04 25 11.6**	**0.0**
SPIG					*e*S		**Sg**	**04 25 15.9**	**-0.2**
SPIG	**San Pedro Mart**	**0.31**	**146**	*e*P			**Pb**	**04 25 12.2**	**-0.1**
SPIG					*e*S		**Sg**	**04 25 16.1**	**0.0**
SPX	**San Pedro Mart**	**0.31**	**146**	⇓	*e*P		**Pb**	**04 25 12.1**	**-0.3**
SPX					*e*S		**Sg**	**04 25 15.8**	**-0.3**
SPX				⇓	*e*			04 25 17.1	
SPX					AML		AML	04 25 17.1	
	comp=E,7μm,0.3s								
ECBX	**El Chinero**	**0.55**	**72**	⇑	*e*P		**Pb**	**04 25 17.0**	**+0.7**
ECBX					*e*S		**Sb**	**04 25 24.7**	**+0.7**
ECBX					AML		AML	04 25 27.0	
	comp=N,5μm,0.2s								
ZAX	**El Zacaton**	**0.56**	**292**	⇑	*e*P		**Pb**	**04 25 17.1**	**+0.5**
ZAX					*e*S		**Sb**	**04 25 25.4**	**+0.9**
ZAX				⇑	*e*			04 25 28.9	
ZAX					AML		AML	04 25 28.9	
	comp=E,6μm,0.6s								
ECNX	**Esteban Cantu**	**0.87**	**294**		*e*P		**Pn**	**04 25 22.7**	**-0.1**
ECNX					*e*S		**Sn**	**04 25 34.8**	**-0.5**
PBX	**Punta Banda**	**1.01**	**296**		*e*P		**Pg**	**04 25 24.9**	**+0.4**
MBIG	**Mexicali**	**1.17**	**20**		*e*P		**Pn**	**04 25 26.7**	**-0.1**
MBIG					*e*S		**Sn**	**04 25 42.5**	**-0.1**
CBX	**Cerro Bola**	**1.32**	**320**	⇓	*e*P		**Pg**	**04 25 30.5**	**+0.1**
CBX					*e*S		**Sg**	**04 25 48.5**	**+0.8**
CBX					AML		AML	04 25 58.4	
	comp=E,1μm,0.5s								
CBX	**Cerro Bola**	**1.32**	**320**		*e*P		**Pg**	**04 25 30.8**	**+0.3**
CBX					*e*S		**Sg**	**04 25 47.9**	**+0.3**
SWSC	**Sam W. Stewart**	**1.64**	**356**	P			**Pg**	**04 25 37.2**	**+0.7**
	baz=173,SNR=66								
SWSC				S			**Sg**	**04 25 59.3**	**+1.5**
	baz=173								
MONP2	**Monument Peak**	**1.71**	**338**	P			**Pg**	**04 25 37.8**	**0.0**
	baz=156,SNR=101								
MONP2				S			**Sg**	**04 26 00.4**	**+0.3**
	baz=156								
GLA	**Glamis**	**1.89**	**22**	P			**Pb**	**04 25 38.3**	**-0.9**
	baz=198								
GLA				S			**Sb**	**04 26 03.1**	**+0.6**
	baz=198								
109C	**Camp Elliot, M**	**2.00**	**323**	P			**Pb**	**04 25 41.6**	**+0.5**
	baz=141,SNR=18								
109C				S			**Sg**	**04 26 08.1**	**-1.2**
	baz=141								
BC3	**Big Chuckawall**	**2.35**	**4**	P			**Pb**	**04 25 46.6**	**-0.6**
	baz=182								
PFO	**Pinyon Flats O**	**2.40**	**344**	P			**Pb**	**04 25 47.0**	**-0.9**
	baz=162,SNR=36								
PFO				Sb			**Sg**	**04 26 22.9**	**+0.9**
	baz=162								
214A	**Organ Pipe Nat**	**2.52**	**74**	P			**Pn**	**04 25 46.2**	**+0.8**
	baz=253,SNR=15								
214A				S			**Sn**	**04 26 15.6**	**-0.3**
	baz=253								
Y12C	**Blythe**	**2.63**	**21**	Pb			**Pg**	**04 25 54.6**	**-0.7**
	baz=199								
Y12C				Sb			**Sg**	**04 26 30.1**	**+0.7**
	baz=199								
MURC	**Murrieta**	**2.63**	**331**	S			**Sb**	**04 26 25.9**	**+1.8**
	baz=149								
BELC	**Belle Mtn. Jos**	**2.71**	**354**	P			**Pb**	**04 25 51.8**	**-1.4**
	baz=172,SNR=30								
BELC				Sb			**Sg**	**04 26 33.6**	**+1.6**
	baz=172								
IRM	**Iron Mountain**	**2.88**	**9**	P			**Pb**	**04 25 54.0**	**-2.1**
	baz=187								
SCI2	**San Clemente I**	**2.96**	**305**	S			**Sb**	**04 26 33.2**	**-0.3**
	baz=124								
CIS	**Catalina Islan**	**3.13**	**313**	S			**Sb**	**04 26 37.0**	**-1.2**
	baz=131								
BBRC	**Big Bear Solar**	**3.14**	**341**	Sb			**Sg**	**04 26 45.9**	**+0.1**
	baz=159								
RRX	**Edison Barstow**	**3.74**	**343**	Pb			**Pg**	**04 26 15.1**	**-1.6**
	baz=161								

*ISCJB **21** 04:28:11.6±0.6, 31.°33N±0.°05×115.°62W±0.°05, h5km±11km, Error ellipse: s-maj=8.2km s-min=6.2km az=24.5*
*ECX **21** 04:28:12.6±0.6, 31.°30N×115.°61W, h5km, MD2.5, ML2.7*
*MEX **21** 04:28:13.4±0.3, 31.°24N×115.°35W, h22km±23km, MD3.6*
ISC 21 04:28:10.1±1.5, 31.°30N±0.°04×115.°54W±0.°07, h8km±15km, n9, σ0s81/17, 5C-1D, Baja California

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
SPIG	**San Pedro Mart**	**0.27**	**166**	⇑	*e*P		**Pb**	**04 28 17.8**	**+0.5**
SPIG					*e*S		**Sb**	**04 28 22.0**	**-0.2**
SPIG	**San Pedro Mart**	**0.27**	**166**	*e*P			**Pb**	**04 28 18.3**	**+1.0**
SPIG					*i* S		**Sb**	**04 28 21.9**	**-0.2**
SPX	**San Pedro Mart**	**0.27**	**166**	⇓	*e*P		**Pb**	**04 28 18.3**	**+0.9**
SPX					*e*S		**Sb**	**04 28 21.9**	**-0.2**
SPX					AML		AML	04 28 23.1	
	comp=E,1μm,0.2s								
SPX					*e*			04 28 23.1	
ECBX	**El Chinero**	**0.45**	**68**	⇑	*e*P		**Pn**	**04 28 21.3**	**-1.6**
ECBX					*e*S		**Sb**	**04 28 28.6**	**+1.5**
ECBX					AML		AML	04 28 29.3	
	comp=E,261nm,0.3s								
ECBX				⇑	*e*			04 28 29.3	
ZAX	**El Zacaton**	**0.66**	**289**		*e*P		**Pg**	**04 28 23.2**	**+0.4**
ZAX					*e*S		**Sg**	**04 28 31.5**	**0.0**
ZAX					AML		AML	04 28 33.3	
	comp=N,321nm,0.7s								

MURC	**Murrieta**	**1.85**	**311**	Pg	**Pb**	**04 39 58.2**	**+0.8**
	baz=130								
MURC				Sb	**Sb**	**04 40 21.2**	**+0.9**
	baz=130								
BBRC	**Big Bear Solar**	**2.20**	**328**	Sb	**Sb**	**04 40 29.5**	**-1.1**
	baz=148								
PASC	**Pasadena Art C**	**2.85**	**309**	*e*Pn	Pn	04 40 02.1	-6.6
PASC				*e*S	**Sb**	**04 40 51.1**	**+2.1**
TUC	**Tucson**	**4.01**	**90**	*e*Pn	**Pn**	**04 40 25.3**	**+0.5**
TUC				*e*S	**Sg**	**04 41 29.4**	**-3.5**
WUAZ	**Wupatki**	**4.65**	**47**	*e*Pn	**Pn**	**04 40 36.0**	**+2.4**
121A	**Cookes Peak, D**	**6.54**	**87**	*e*Pn	**Pn**	**04 41 01.0**	**+1.4**
	comp=N,11nm,0.3s								
121A				*e*S	**Sn**	**04 42 12.4**	**-1.6**
MVCO	**Mesa Verde**	**7.52**	**48**	*e*Pn	**Pn**	**04 41 16.2**	**+3.1**

JMA 21 04:44:43.8, 36.99N×140.60E, h7km, M3.0, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.19**	**55**	P	Pg	04 44 48.0	+0.3
ONAJ				S	Sg	04 44 51.0	+0.6
JHO	**Hitachi**	**0.38**	**184**	P	Pg	04 44 51.1	-0.1
JFK	**Kawauchi**	**0.43**	**30**	P	Pg	04 44 52.3	0.0
JFK				S	Sg	04 44 58.5	+0.5
JFT	**Otama**	**0.57**	**338**	P	Pg	04 44 55.1	+0.3
JFT				S	Sg	04 45 02.8	+0.6
JYT	**Yasato**	**0.83**	**203**	S	Sg	04 45 10.0	-0.5
MAT	**Matsushiro**	**1.97**	**258**	P	Pn	04 45 18.6	+0.9
MAT				S	Sb	04 45 43.8	-1.0

*ISCJB **21** 04:46:10.0±0.3, 32.42N±0.02×115.46W±0.02, h24km±3km, Error ellipse: s-maj=3.9km s-min=2.8km az=36.0*
*MEX **21** 04:46:10.5±1.1, 32.59N×115.37W, h14km±22km, MD3.3*
*NEIC **21** 04:46:10.9, 32.41N×115.52W, h4km, MD3.7(ECX), ML3.5(PAS), After ECX.*
*ECX **21** 04:46:10.9±0.4, 32.41N×115.52W, h4km, ML3.7*

ISC 21 04:46:09.9±0.8, 32.41N±0.02×115.51W±0.02, h20km±5km, n44, σ1§61/74, 5C-6D, California-Baja California border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CPBX	**Cerro Prieto**	**0.18**	**87**	⇑*e*P	**Pg**	**04 46 14.4**	**-0.4**
CPBX				⇑*e*P	**Pg**	**04 46 14.4**	**-0.4**
CPBX				⇓*e*		04 46 19.4	
CPBX				AML	AML	04 46 19.4	
	comp=E,43μm,0.3s						
CPBX	**Cerro Prieto**	**0.18**	**87**	*e*P	**Pg**	**04 46 14.4**	**-0.4**
CPBX				*i* S	**Sb**	**04 46 18.7**	**+0.2**
MBIG	**Mexicali**	**0.27**	**90**	⇑*e*P	**Pb**	**04 46 16.2**	**+0.1**
MBIG	**Mexicali**	**0.27**	**90**	*e*P	**Pb**	**04 46 16.2**	**+0.1**
MBIG				*e*S	**Sb**	**04 46 18.8**	**-1.5**
WESC	**Westside Schoo**	**0.39**	**332**	⇓*e*P	**Pb**	**04 46 17.8**	**-0.4**
WESC				*e*S	**Sb**	**04 46 23.8**	**0.0**
DREC	**Desert Rsrch C**	**0.40**	**8**	⇓*e*P	**Pb**	**04 46 18.5**	**+0.2**
RMX	**La Rumorosa**	**0.52**	**292**	⇑*e*P	**Pb**	**04 46 19.1**	**-1.3**
RMX				*e*S	**Sb**	**04 46 26.1**	**-1.4**
SWSC	**Sam W. Stewart**	**0.59**	**336**	P	**Pb**	**04 46 20.9**	**-0.6**
	baz=160,SNR=28						
SWSC				S	**Sb**	**04 46 29.4**	**-0.1**
	baz=160						
GLA	**Glamis**	**0.86**	**42**	P	**Pb**	**04 46 25.5**	**-0.8**
	baz=221,SNR=8.9						
GLA				S	**Sb**	**04 46 37.0**	**-0.4**
	baz=221						
MONP2	**Monument Peak**	**0.91**	**302**	P	**Pb**	**04 46 26.6**	**-0.5**
	baz=126,SNR=92						
MONP2				S	**Sb**	**04 46 38.2**	**-0.6**
	baz=126						
CBX	**Cerro Bola**	**0.98**	**265**	⇑*e*P	**Pb**	**04 46 28.2**	**0.0**
CBX				*e*S	**Sn**	**04 46 41.4**	**-0.6**
CBX				AML	AML	04 46 44.4	
	comp=N,2μm,0.3s						
CBX	**Cerro Bola**	**0.98**	**265**	*e*P	**Pb**	**04 46 28.3**	**0.0**
CBX				*i* S	**Sn**	**04 46 41.7**	**-0.3**
CBX	**Cerro Bola**	**0.98**	**265**	*e*P	**Pb**	**04 46 28.3**	**0.0**
CBX				*i* S	**Sn**	**04 46 41.7**	**-0.3**
ECBX	**El Chinero**	**1.01**	**157**	⇓*e*P	**Pb**	**04 46 27.2**	**-1.6**
ECBX				*e*S	**Sb**	**04 46 41.1**	**-0.5**
ECBX				AML	AML	04 46 44.4	
	comp=N,2μm,0.3s						
BC3	**Big Chuckawall**	**1.24**	**2**	P	**Pn**	**04 46 31.2**	**-1.1**
	baz=184,SNR=14						
BC3				S	**Sn**	**04 46 46.6**	**-1.9**
	baz=184						
SPIG	**San Pedro Mart**	**1.36**	**178**	⇓*e*P	**Pb**	**04 46 34.4**	**-0.5**
SPIG	**San Pedro Mart**	**1.36**	**178**	*i* P	**Pb**	**04 46 34.4**	**-0.5**
SPIG				*i* S	**Sb**	**04 46 52.9**	**+0.9**
SPIG	**San Pedro Mart**	**1.36**	**178**	*i* P	**Pb**	**04 46 34.4**	**-0.5**
SPIG				*i* S	**Sb**	**04 46 52.9**	**+0.9**
SPX	**San Pedro Mart**	**1.36**	**178**	⇓*e*P	**Pb**	**04 46 34.4**	**-0.5**
SPX	**San Pedro Mart**	**1.36**	**178**	*e*P	**Pb**	**04 46 34.4**	**-0.5**
SPX				*e*S	**Sb**	**04 46 52.5**	**+0.5**
109C	**Camp Elliot, M**	**1.43**	**290**	P	**Pn**	**04 46 34.6**	**-0.1**
	baz=112,SNR=50						
109C				S	**Sb**	**04 46 53.4**	**-0.1**
	baz=112						
PFO	**Pinyon Flats O**	**1.44**	**327**	P	**Pn**	**04 46 34.0**	**-0.9**
	baz=148,SNR=16						
PFO				S	**Sn**	**04 46 52.2**	**-1.1**
	baz=148						
PFO	**Pinyon Flats O**	**1.44**	**327**	*e*Pn	**Pn**	**04 46 34.1**	**-0.9**
PFO				*e*S	**Sn**	**04 46 51.9**	**-1.5**
Y12C	**Blythe**	**1.57**	**32**	Pb	**Pb**	**04 46 37.6**	**-0.7**
	baz=212						
Y12C				Sb	**Sb**	**04 46 58.6**	**+0.8**
	baz=212						
BELC	**Belle Mtn. Jos**	**1.64**	**346**	P	**Pn**	**04 46 37.2**	**-0.6**
	baz=167,SNR=12						
BELC				S	**Sn**	**04 46 57.5**	**-0.8**
	baz=167						
IRM	**Iron Mountain**	**1.77**	**10**	P	**Pn**	**04 46 39.6**	**+0.1**
	baz=191,SNR=9.6						
MURC	**Murrieta**	**1.85**	**310**	P	**Pn**	**04 46 40.3**	**-0.1**
	baz=132,SNR=18						
MURC				Sb	**Sb**	**04 47 07.1**	**+1.4**
	baz=132						
BBRC	**Big Bear Solar**	**2.19**	**328**	Sb	**Sb**	**04 47 17.0**	**+1.2**
	baz=149						
214A	**Organ Pipe Nat**	**2.33**	**100**	P	**Pn**	**04 46 46.6**	**-0.7**
	baz=280						
214A				S	**Sn**	**04 47 14.4**	**-0.9**
	baz=280						
214A	**Organ Pipe Nat**	**2.33**	**100**	*e*Pn	**Pn**	**04 46 47.0**	**-0.3**
NEE2	**Needles Airpor**	**2.47**	**17**	S	**Sn**	**04 47 17.9**	**-0.7**
	baz=198						
BFSC	**Mount Baldy Ra**	**2.56**	**316**	Pb	**Pb**	**04 46 55.3**	**0.0**
	baz=136						
BFSC				Sb	**Sb**	**04 47 28.2**	**+1.9**
	baz=136						
CIS	**Catalina Islan**	**2.63**	**293**	Sb	**Sb**	**04 47 30.1**	**+1.7**
	baz=113						
FMP	**Fort Macarthur**	**2.67**	**300**	Pb	**Pb**	**04 46 56.6**	**-0.4**
	baz=120						
FMP				Sb	**Sb**	**04 47 31.6**	**+2.2**
	baz=120						
PASC	**Pasadena Art C**	**2.84**	**309**	*e*Pn	**Pb**	**04 46 58.0**	**-2.0**
PASC				*e*S	**Sb**	**04 47 36.3**	**+1.8**
DECC	**Green Verdugo**	**2.99**	**309**	Sb	**Sb**	**04 47 41.4**	**+2.7**
	baz=128						
EDW2	**Edwards Air Fo**	**3.22**	**321**	Pb	**Pb**	**04 47 07.5**	**+1.1**
	baz=140,SNR=10						
EDW2				Sb	**Sb**	**04 47 48.0**	**+2.7**
	baz=140						
BLG	**Laguna Peak, P**	**3.42**	**301**	Sb	**Sb**	**04 47 53.2**	**+2.1**
	baz=120						
OSI	**Osito Audit: C**	**3.47**	**310**	Sb	**Sb**	**04 47 54.8**	**+2.4**
	baz=130						
TUC	**Tucson**	**4.00**	**90**	*e*Pn	**Pn**	**04 47 11.7**	**+1.5**
TUC				*e*S	**Sb**	**04 48 15.6**	**+7.8**
ISA	**Isabella, Lake**	**4.07**	**324**	Sb	**Sb**	**04 48 13.9**	**+4.2**
	baz=143						
DAC	**Darwin (Calif)**	**4.22**	**337**	*e*Pn	**Pn**	**04 47 14.1**	**+0.7**
DAC				*e*Pg	Pb	04 47 28.3	+4.7
DAC				*e*S	**Sb**	**04 48 14.3**	**0.0**
WUAZ	**Wupatki**	**4.63**	**47**	*e*Pn	**Pn**	**04 47 21.5**	**+2.6**
WUAZ				*e*S	**Sb**	**04 48 21.9**	**-4.0**
121A	**Cookes Peak, D**	**6.53**	**87**	P	**Pn**	**04 47 46.0**	**+0.9**
	baz=270,SNR=6.0						

IDC 21 04:46:28.7±3.0, 34.83S×178.39E, h0km, mb3.6/2, mb1 3.8/3, mb1mx3.6/24, mbtmp3.5/3, ML3.2/1, MS3.4/1, Ms1 3.4/1, ms1mx2.7/24, Error ellipse: s-maj=65.6km s-min=42.6km az=84.0, South of Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
URZ	**Urewera**	**3.58**	**196**	Pn	Pn	04 47 23.8	-1.6
	2.0nm,0.3s,baz=279,slow=3.6,SNR=11						
URZ				Sn	Sb	04 48 16.0	-0.7
	3.5nm,0.3s,baz=274,slow=21,SNR=6.7						
DZM	**Mont Dzumac**	**16.47**	**317**	LR	LR	04 55 27.8	
	comp=Z,118nm,19.2s,baz=244,slow=33						
ASAR	**Alice Springs**	**40.09**	**274**	P	P	04 54 06.3	+0.2
	0.6nm,0.7s,baz=120,slow=7.4,SNR=4.9						
WRA	**Warramunga Arr**	**41.49**	**279**	P	P	04 54 17.4	-0.3
	0.8nm,0.8s,baz=115,slow=8.5,SNR=7.8						
FINES	**FINESS Array B**	**148.06**	**335**	PKPbc	PKPbc	05 06 15.1	-0.3
	0.3nm,0.5s,baz=64,slow=3.2,SNR=1.3						

PGC 21 04:51:47.0±0.3, 64.96N×139.36W, h1km, ML3.8/10, 99km northeast of Dawson, Yt Southern Yukon Territory, Canada, Southern Yukon Territory

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DAWY	**Dawson**	**0.89**	**181**	P	Pg	04 52 03.8	-0.3
DAWY				S	Sg	04 52 14.9	-0.8
DOT	**Dot Lake**	**2.44**	**240**	Pn	Pn	04 52 26.8	-1.2
DOT				Pg	Pb	04 52 31.5	-0.1
DOT				Sg	Sb	04 53 01.4	-0.7
BVCY	**Beaver Creek**	**2.64**	**195**	Pn	Pn	04 52 29.8	-0.9
BVCY				Pg	Pb	04 52 35.9	+0.8
BVCY				Sg	Sb	04 53 07.7	-0.2
YUK1	**Sand Pete Hill**	**2.86**	**191**	Pn	Pn	04 52 32.5	-1.4
YUK1				Pg	Pb	04 52 39.0	+0.1
YUK1				Sg	Sb	04 53 14.0	-0.4
YUK3	**Moose Creek**	**3.23**	**189**	Pn	Pn	04 52 38.2	-0.8
YUK3				Sn	Sn	04 53 14.7	-3.6
YUK3				Sg	Sb	04 53 24.3	-0.9
YUK2	**White River**	**3.25**	**193**	Pn	Pn	04 52 38.2	-1.1
YUK2				Sg	Sb	04 53 25.2	-0.4
PAX	**Paxson**	**3.35**	**236**	Pn	Pn	04 52 40.2	-0.4
PAX				Sn	Sn	04 53 19.0	-2.1
PAX				Sg	Sb	04 53 29.0	+0.5
YUK5	**Granite Creek**	**3.90**	**169**	Pn	Pn	04 52 47.4	-0.8
YUK5				Sn	Sn	04 53 31.7	-2.9
YUK5				Sg	Sb	04 53 46.5	+2.2
YUK6	**Outpost Mounta**	**4.05**	**173**	Pn	Pn	04 52 49.9	-0.5
YUK6				Sn	Sn	04 53 35.6	-2.9
YUK6				Sg	Sb	04 53 52.3	+3.4
INK	**Inuvik**	**4.09**	**32**	Pn	Pn	04 52 49.5	-1.1
INK				Sn	Sn	04 53 37.0	-1.9
CTGM	**Chitina Glacie**	**4.11**	**194**	Pn	Pn	04 52 51.0	0.0
CTGM				Sn	Sn	04 53 37.9	-1.8
CTGM				Sg	Sb	04 53 54.3	+4.0
BALM	**Baldy**	**4.16**	**200**	Pn	Pn	04 52 51.5	-0.3
BALM				Sn	Sn	04 53 39.6	-1.4
BALM				Sg	Sb	04 53 54.3	+2.4
HYT	**Haines Junctio**	**4.23**	**168**	Pn	Pn	04 52 52.0	-0.7
HYT				Pg	Pb	04 53 05.0	+2.7
HYT				Sn	Sn	04 53 39.1	-3.7
HYT				Sg	Sb	04 53 57.6	+3.7
YUK7	**Dusty Glacier**	**4.48**	**172**	Pn	Pn	04 52 55.9	-0.2
YUK7				Sn	Sn	04 53 45.8	-3.1
YUK7				Sg	Sg	04 54 05.8	-4.9
WHY	**Whitehorse**	**4.78**	**153**	Pn	Pn	04 52 58.6	-1.5
WHY				Sn	Sn	04 53 52.2	-3.9
WHY				Sg	Sg	04 54 16.6	-3.7
DIV	**Divide**	**4.82**	**220**	Pn	Pn	04 53 01.4	+0.6
DIV				Sg	Sb	04 54 15.0	+4.2
COLD	**Coldfoot**	**4.96**	**302**	Pn	Pn	04 53 02.9	+0.3
COLD				Sn	Sn	04 53 60.0	-0.6
PLBC	**Pleasant Camp**	**5.69**	**164**	Pn	Pn	04 53 12.4	-0.2
PLBC				Sg	Sb	04 54 42.4	+6.7
SMPN	**Simpson Lake**	**6.02**	**51**	Pn	Pn	04 53 15.5	-1.6
SMPN				Sn	Sn	04 54 23.0	-3.6
DLBC	**Dease Lake**	**7.89**	**142**	Pn	Pn	04 53 42.0	-0.9
DLBC				Sg	Sg	04 55 52.9	-7.3
DHRN	**Dharma Camp**	**8.34**	**67**	Pn	Pn	04 53 47.5	-1.4
DHRN				Sn	Sn	04 55 15.4	-8.2
FNBB	**Fort Nelson**	**9.79**	**121**	Pn	Pn	04 54 08.8	-0.1
FNBB				Sn	Sn	04 55 57.4	-1.9
FNBB				Sg	Sn	04 56 56.9	+58
HPLN	**Hepburn Lake,**	**10.00**	**71**	Pn	Pn	04 54 08.9	-2.7
KUKN	**Kugluktuk,NWT**	**10.11**	**63**	Pn	Pn	04 54 10.5	-2.7
KUKN				Sn	Sn	04 55 56.6	-10
YKR1	**Yellowknife Ar**	**11.07**	**92**	Pn	Pn	04 54 23.7	-2.5
YKR2	**Yellowknife Ar**	**11.09**	**92**	Pn	Pn	04 54 24.1	-2.4
YKR3	**Yellowknife Ar**	**11.11**	**92**	Pn	Pn	04 54 24.4	-2.3
YKR4	**Yellowknife Ar**	**11.13**	**92**	Pn	Pn	04 54 24.5	-2.5
YKR4				Sn	Sn	04 56 22.1	-10
YKR5	**Yellowknife Ar**	**11.15**	**91**	Pn	Pn	04 54 24.9	-2.5
YKB0	**Yellowknife Ar**	**11.17**	**91**	Pn	Pn	04 54 25.0	-2.6
YKR6	**Yellowknife Ar**	**11.17**	**91**	Pn	Pn	04 54 25.2	-2.5
YKB9	**Yellowknife Ar**	**11.18**	**91**	Pn	Pn	04 54 25.2	-2.5
YKW3	**Yellowknife Ar**	**11.18**	**91**	Pn	Pn	04 54 25.4	-2.3
YKW3				Sn	Sn	04 56 24.0	-9.2
YKB8	**Yellowknife Ar**	**11.19**	**91**	Pn	Pn	04 54 25.2	-2.6
YKR7	**Yellowknife Ar**	**11.19**	**91**	Pn	Pn	04 54 25.4	-2.4
YKB7	**Yellowknife Ar**	**11.19**	**91**	Pn	Pn	04 54 25.5	-2.4
YKB6	**Yellowknife Ar**	**11.20**	**91**	Pn	Pn	04 54 25.3	-2.8
YKR8	**Yellowknife Ar**	**11.21**	**91**	Pn	Pn	04 54 25.6	-2.6
YKB4	**Yellowknife Ar**	**11.22**	**91**	Pn	Pn	04 54 25.9	-2.5
YKB3	**Yellowknife Ar**	**11.23**	**92**	Pn	Pn	04 54 26.0	-2.4
YKB3				Sn	Sn	04 56 24.0	-10
YKR9	**Yellowknife Ar**	**11.23**	**91**	Pn	Pn	04 54 25.9	-2.6
YKB2	**Yellowknife Ar**	**11.24**	**92**	Pn	Pn	04 54 25.8	-2.8
YKB1	**Yellowknife Ar**	**11.25**	**92**	Pn	Pn	04 54 25.9	-2.8
YKB1				Sn	Sn	04 56 25.2	-10
SNLN	**Sandy Lake, NW**	**14.05**	**84**	Pn	Pn	04 54 25.2	-1.7
SNLN				Sn	Sn	04 57 31.1	-12
WHFN	**White Fish Lak**	**14.38**	**85**	Pn	Pn	04 55 08.8	-2.7
WHFN				Sn	Sn	04 57 37.6	-14
RES	**Resolute Bay**	**17.62**	**38**	Pn	Pn	04 55 48.3	-5.0

*NEIC **21** 04:52:30.3, 32.33N×115.53W, h4km, ML2.8(PAS), ML3.0(ECX), After ECX.*
*ECX **21** 04:52:30.3±0.4, 32.33N×115.53W, h4km±2km, MD3.0, ML3.2*
*MEX **21** 04:52:31.0±1.1, 32.53N×115.42W, h7km±971km, MD3.7*

ISC 21 04:52:29.9±1.2, 32.32N±0.03×115.55W±0.03, h2km±12km, n24, σ1§00/34, 9C-2D, California-Baja California border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CPBX	**Cerro Prieto**	**0.23**	**65**	⇑*e*P	**Pg**	**04 52 34.2**	**0.0**
CPBX				⇑*e*P	**Pg**	**04 52 34.3**	**0.0**
CPBX				*e*S	**Sg**	**04 52 37.4**	**+0.2**
CPBX				AML	AML	04 52 38.8	
	comp=E,20μm,0.2s						
CPBX				⇑*e*		04 52 38.8	
CPBX	**Cerro Prieto**	**0.23**	**65**	*e*P	**Pg**	**04 52 34.3**	**0.0**
CPBX				*i* S	**Sg**	**04 52 38.5**	**+1.3**
MBIG	**Mexicali**	**0.31**	**74**	*e*P	**Pg**	**04 52 35.9**	**+0.1**
MBIG				*i* S	**Sg**	**04 52 38.7**	**-1.1**
SGL	**Mount Signal**	**0.36**	**335**	⇓*i* P	**Pg**	**04 52 36.5**	**-0.2**
SGL	**Mount Signal**	**0.36**	**335**	*i* P	**Pg**	**04 52 36.5**	**-0.2**
ERPC	**Ernies Place**	**0.43**	**347**	*e*P	**Pg**	**04 52 38.1**	**-0.1**
YUH	**Yuha Desert**	**0.46**	**316**	⇑*i* P	**Pg**	**04 52 38.6**	**0.0**
WESC	**Westside Schoo**	**0.46**	**340**	⇓*e*P	**Pg**	**04 52 38.6**	**-0.2**
DREC	**Desert Rsrch C**	**0.49**	**10**	⇓*e*P	**Pg**	**04 52 38.9**	**-0.4**
RMX	**La Rumorosa**	**0.53**	**302**	⇓*e*P	**Pg**	**04 52 40.0**	**0.0**
COK	**Cook Ranch**	**0.55**	**344**	⇑*i* P	**Pg**	**04 52 40.1**	**-0.3**
EMSC	**East Mesa**	**0.63**	**49**	⇑*i* P	**Pg**	**04 52 41.3**	**-0.7**
ECBX	**El Chinero**	**0.94**	**153**	⇑*e*P	**Pg**	**04 52 47.9**	**-0.1**
ECBX				*e*S	**Sg**	**04 53 00.9**	**+0.7**
CBX	**Cerro Bola**	**0.95**	**270**	*e*P	**Pg**	**04 52 49.0**	**+1.0**
CBX				*e*S	**Sb**	**04 53 01.9**	**-0.1**
CBX				AML	AML	04 53 02.8	
	comp=N,600nm,0.3s						
CBX	**Cerro Bola**	**0.95**	**270**	*e*P	**Pg**	**04 52 49.0**	**+1.0**
CBX				*i* S	**Sb**	**04 53 02.0**	**-0.1**
CBX	**Cerro Bola**	**0.95**	**270**	*e*P	**Pg**	**04 52 49.0**	**+1.0**
CBX				*i* S	**Sb**	**04 53 02.0**	**-0.1**
SPIG	**San Pedro Mart**	**1.27**	**177**	*e*P	**Pg**	**04 52 52.6**	**-1.7**
SPIG	**San Pedro Mart**	**1.27**	**177**	*e*P	**Pg**	**04 52 54.3**	**0.0**
SPIG				*i* S	**Sb**	**04 53 12.5**	**+0.8**
SPIG	**San Pedro Mart**	**1.27**	**177**	*e*P	**Pg**	**04 52 54.3**	**0.0**
SPIG				*i* S	**Sb**	**04 53 12.5**	**+0.8**
SPX	**San Pedro Mart**	**1.27**	**177**	*e*P	**Pg**	**04 52 52.6**	**-1.7**
SPX	**San Pedro Mart**	**1.27**	**177**	*i* P	**Pg**	**04 52 54.4**	**+0.1**
SPX				*e*S	**Sn**	**04 53 13.1**	**+0.2**
PFO	**Pinyon Flats O**	**1.50**	**330**	*e*Pn	Pn	04 52 53.2	-4.6
PFO				*e*S	Sn	04 53 11.5	-6.5
214A	**Organ Pipe Nat**	**2.35**	**98**	*e*Pn	**Pn**	**04 53 08.0**	**-1.5**
TUC	**Tucson**	**4.03**	**89**	*e*Pn	Pn	04 53 28.6	-4.1
TUC				*e*S	**Sb**	**04 54 34.6**	**+3.7**

*SOME **21** 04:54:42.2, 39.62N×74.42E, h15km*
*KRNET **21** 04:54:42.6±0.1, 39.65N×74.35E, mb3.1*
*NNC **21** 04:54:43.0±2.5, 39.88N×74.42E, h0km, mb3.5, mpv3.1, Error ellipse: s-maj=21.3km s-min=8.6km az=160.0*

ISC 21 04:54:38.6±1.9, 39.63N±0.07×74.42E±0.04, h1km±13km, n30, σ1§28/54, 28C-12D, Southern Xinjiang

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SFK	**Sufi-Kurgan**	**0.80**	**299**	⇓*i* P	**Pn**	**04 54 57.0**	**-0.3**
	baz=300						
SFK				⇓*i* S	**Sn**	**04 55 08.0**	**-2.0**
	baz=300						
SFK	**Sufi-Kurgan**	**0.80**	**299**	⇓P	**Pn**	**04 54 56.9**	**-0.3**
	10nm,0.5s						
SFK				⇓S	**Sb**	**04 55 06.9**	**0.0**
	52nm,0.3s						
NRN	**Naryn**	**2.17**	**33**	⇑*i* P	**Pg**	**04 55 21.3**	**+1.1**
	baz=35						
NRN				⇑*i* S	**Sg**	**04 55 50.0**	**+1.7**
	baz=35						
KZA	**Kyzart**	**2.52**	**14**	⇑*i* P	**Pg**	**04 55 27.2**	**+0.2**
	baz=15						
KZA				⇑*i* S	**Sg**	**04 55 59.9**	**+0.1**
	baz=15						
AML	**Almayashu**	**2.56**	**348**	⇑*i* P	**Pg**	**04 55 28.3**	**+0.6**
	baz=349						
AML				⇑*i* S	**Sg**	**04 56 01.0**	**+0.1**
	baz=349						
TOKL	**Toktogul**	**2.59**	**333**	⇑*i* P	**Pb**	**04 55 26.7**	**+0.8**
	baz=334						
TOKL				⇑*i* S	**Sb**	**04 55 59.5**	**+1.3**
	baz=334						
UCH	**Uchtor**	**2.59**	**2**	⇑*i* P	**Pg**	**04 55 27.9**	**-0.5**
	baz=3.0						
UCH				⇑*i* S	**Sg**	**04 56 01.5**	**-0.6**
	baz=3.0						
BTK	**Batken**	**2.81**	**280**	⇓*e*P	**Pb**	**04 55 30.2**	**+0.6**
	baz=280						
BTK				⇓*e*S	**Sb**	**04 56 04.7**	**+0.3**
	baz=280						
ULHL	**Ulahol**	**2.95**	**27**	⇑*i* P	**Pg**	**04 55 35.8**	**+0.5**
	baz=28						
ULHL				⇑*i* S	**Sg**	**04 56 10.8**	**-2.8**
	baz=28						
AAK	**Ala-Archa**	**3.00**	**1**	⇑*i* P	**Pb**	**04 55 34.0**	**+1.1**
	baz=2.0						
AAK				⇑*i* S	**Sb**	**04 56 11.3**	**+1.2**
	baz=2.0						
AAK	**Ala-Archa**	**3.00**	**1**	⇑Pg	**Pg**	**04 55 34.5**	**-1.6**
	18nm,0.5s						
AAK				Lg	Lg	04 56 12.1	
	17nm,0.6s						
KBK	**Karagaybulak**	**3.05**	**7**	⇑*i* P	**Pb**	**04 55 34.8**	**+1.0**
	baz=8.0						
KBK				⇑*i* S	**Sb**	**04 56 12.9**	**+1.4**
	baz=8.0						
EKS2	**Erkin-Say**	**3.07**	**351**	⇑*i* P	**Pb**	**04 55 34.6**	**+0.5**
	baz=352						
EKS2				⇑*i* S	**Sb**	**04 56 13.3**	**+1.3**
	baz=352						
BOOM	**Boomskoye usch**	**3.08**	**21**	⇓*i* P	**Pb**	**04 55 34.7**	**+0.4**
	baz=22						
BOOM				⇓*i* S	**Sb**	**04 56 11.9**	**-0.5**
	baz=22						
MNAS	**Manas**	**3.20**	**334**	⇑*i* P	**Pb**	**04 55 37.4**	**+1.1**
	baz=335						
MNAS				⇑*i* S	**Sb**	**04 56 15.9**	**0.0**
	baz=335						
MNAS	**Manas**	**3.20**	**334**	⇓Pg	**Pb**	**04 55 37.9**	**+1.5**
	3.4nm,0.6s						
MNAS				⇓Lg	Lg	04 56 18.9	
MRKS	**Merke**	**3.24**	**344**	*e*P	**Pb**	**04 55 37.6**	**+0.6**
	6.4nm,0.3s						
MRKS				*e*S	**Sb**	**04 56 17.7**	**+0.8**
	16nm,0.6s						
KDJ	**Kajisay**	**3.26**	**39**	⇑*e*P	**Pb**	**04 55 36.9**	**-0.4**
	baz=40						
KDJ				⇑*e*S	**Sb**	**04 56 17.7**	**+0.1**
	baz=40						
TKM2	**Tokmak 2**	**3.41**	**15**	⇑*i* P	**Pb**	**04 55 39.9**	**0.0**
	baz=16						
TKM2				⇑*i* S	**Sb**	**04 56 19.1**	**-2.7**
	baz=16						
TKM2	**Tokmak 2**	**3.41**	**15**	⇑Pg	**Pb**	**04 55 40.1**	**+0.3**
	6.9nm,0.9s						
TKM2				⇓Lg	Lg	04 56 23.7	
	12nm,0.7s						
DGS	**Degeres**	**3.75**	**15**	*e*P	**

MJAR				Sn		Sb	04 58 05.3	+4.0
	3.7nm,0.3s,baz=95,slow=27,SNR=6.2							
MAT	Matsushiro	2.44	267	P		Pb	04 57 30.3	-1.4
MAT				eS		Sb	04 57 58.8	-2.6
MKAR	Makanchi Array	44.17	302	P		P	05 04 54.6	+0.2
	0.2nm,0.5s,baz=92,slow=8.7,SNR=2.3							
WRA	Warramunga Arr	56.72	188	P		P	05 06 28.8	-0.6
	0.7nm,1.0s,baz=4.7,slow=7.1,SNR=3.3							

*SKO **21** 04:56:55.5, 40°.93N×20°.51E, h15km, M1.7, ML2.0*
*ATH **21** 04:56:55.8, 40°.97N×20°.56E, h19km±1km, ML2.4/5, Error ellipse: s-maj=1.3km s-min=0.9km az=351.0*
*ISCJB **21** 04:56:57.0±0.6, 40°.96N±0°.02×20°.59E±0°.03, h9km±5km, Error ellipse: s-maj=4.1km s-min=3.6km az=35.8*
*CSEM **21** 04:56:56.6±0.1, 40°.93N×20°.57E, h2km, ML1.8, Error ellipse: s-maj=3.9km s-min=3.0km az=72.0*
*THE **21** 04:56:57.2, 40°.94N×20°.60E, h3km±1km, ML2.6/6, Error ellipse: s-maj=2.1km s-min=0.7km az=128.0*

ISC 21 04:56:56.7±0.9, **40°.96N**±0°.02×**20°.55E**±0°.02, **h14**km±8km, **n78**, σ0**95**/111, **3C-2D, Greece-Albania border region**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
OHR	**Ohrid**	**0.24**	**51**	⇓ *i*	Pg	**Pg**	**04 57 02.2**	**+0.2**
OHR				*i*	Sg	**Sb**	**04 57 07.6**	**+0.6**
OHR				e	Lg	Lg	04 57 07.7	
	comp=N,270nm,0.3s							
OHR				e	Lg	Lg	04 57 07.7	
	comp=E,494nm,0.5s							
OHR	**Ohrid**	**0.24**	**51**	⇓ *i*	Pg	**Pg**	**04 57 02.1**	**+0.2**
OHR				e	Lg	Lg	04 57 07.7	
	comp=E,494nm,0.5s							
BIA	**Bitola**	**0.59**	**84**	P		**Pg**	**04 57 08.0**	**-0.2**
BIA				S		**Sg**	**04 57 16.2**	**+0.2**
BIA	**Bitola**	**0.59**	**84**	⇑ *i*	Pg	**Pg**	**04 57 07.9**	**-0.3**
BIA				*i*	Sg	**Sb**	**04 57 17.1**	**+0.2**
BIA				e	Lg	Lg	04 57 17.5	
	comp=N,129nm,0.3s							
BIA				e	Lg	Lg	04 57 17.7	
	comp=E,164nm,0.3s							
BIA	**Bitola**	**0.59**	**84**	P		**Pg**	**04 57 08.0**	**-0.2**
BIA				S		**Sg**	**04 57 16.2**	**+0.2**
BIA				*i*	Sg	**Sb**	**04 57 17.1**	**+0.2**
BIA				e	Lg	Lg	04 57 17.4	
	comp=E,129nm,0.3s							
TIR	**Tirane**	**0.65**	**307**	*i*	PG	**Pg**	**04 57 09.5**	**+0.1**
TIR				*i*	SG	**Sb**	**04 57 20.3**	**+1.6**
TIR	**Tirane**	**0.65**	**307**	P		**Pg**	**04 57 08.4**	**-0.9**
TIR	**Tirane**	**0.65**	**307**	*i*	Pg	**Pg**	**04 57 09.5**	**+0.2**
	SNR=90							
TIR				S		**Sg**	**04 57 17.5**	**-0.4**
TIR				*i*	Sg	**Sb**	**04 57 20.3**	**+1.6**
	SNR=90							
TIR	**Tirane**	**0.65**	**307**	P		**Pg**	**04 57 07.6**	**-1.7**
TIR				S		**Sg**	**04 57 17.5**	**-0.4**
TIR				AML		AML	04 57 22.8	
	comp=N,627μm,0.5s							
TIR				AML		AML	04 57 23.3	
	comp=E,705μm,0.3s							
FNA	**Florina**	**0.65**	**105**	P		**Pg**	**04 57 08.9**	**-0.4**
FNA				S		**Sg**	**04 57 17.4**	**-0.5**
FNA	**Florina**	**0.65**	**105**	P		**Pg**	**04 57 09.3**	**-0.1**
FNA				S		**Sg**	**04 57 17.4**	**-0.5**
FNA	**Florina**	**0.65**	**105**	P		**Pg**	**04 57 09.3**	**-0.1**
FNA				S		**Sg**	**04 57 18.3**	**+0.3**
FNA				AML		AML	04 57 21.1	
	comp=N,3556μm,0.4s							
FNA				AML		AML	04 57 21.4	
	comp=E,2884μm,0.4s							
NEST	**Nestorio**	**0.66**	**145**	P		**Pg**	**04 57 08.5**	**-1.1**
NEST				S		**Sg**	**04 57 18.3**	**-0.1**
NEST	**Nestorio**	**0.66**	**145**	P		**Pg**	**04 57 08.5**	**-1.1**
NEST				S		**Sg**	**04 57 17.7**	**-0.7**
NEST	**Nestorio**	**0.66**	**145**	P		**Pg**	**04 57 07.9**	**-1.7**
NEST				S		**Sg**	**04 57 17.7**	**-0.7**
NEST				AML		AML	04 57 22.6	
	comp=E,670μm,0.3s							
NEST				AML		AML	04 57 22.6	
	comp=N,482μm,0.4s							
KZN	**Kozani**	**1.13**	**125**	P		**Pb**	**04 57 17.6**	**-0.5**
KZN				S		**Sn**	**04 57 34.0**	**+0.4**
KZN	**Kozani**	**1.13**	**125**	P		**Pb**	**04 57 17.6**	**-0.5**
KZN				S		**Sb**	**04 57 32.4**	**-0.3**
KPRO	**Kipourio**	**1.18**	**148**	P		**Pn**	**04 57 18.1**	**-0.7**
KPRO	**Kipourio**	**1.18**	**148**	P		**Pn**	**04 57 18.1**	**-0.7**
KPRO	**Kipourio**	**1.18**	**148**	P		**Pn**	**04 57 17.9**	**-0.9**
SKO	**Skopje**	**1.21**	**33**	⇑ *i*	Pg	**Pb**	**04 57 19.4**	**0.0**
SKO				*i*	Sg	**Sg**	**04 57 36.5**	**+0.7**
SKO				e	Lg	Lg	04 57 37.6	
	comp=N,10nm,0.3s							
SKO				e	Lg	Lg	04 57 37.9	
	comp=E,18nm,0.7s							
SKO	**Skopje**	**1.21**	**33**	⇑ *i*	Pg	**Pb**	**04 57 19.4**	**0.0**
SKO				*i*	Sg	**Sg**	**04 57 36.4**	**+0.7**
SKO				e	Lg	Lg	04 57 37.6	
	comp=E,10nm,0.3s							
SGD	**Sagiada**	**1.37**	**190**	P		**Pn**	**04 57 22.1**	**+0.8**
SGD				S		**Sg**	**04 57 41.9**	**+1.2**
SGD	**Sagiada**	**1.37**	**190**	P		**Pn**	**04 57 22.1**	**+0.8**
SGD				S		**Sg**	**04 57 41.1**	**+0.3**
SGD	**Sagiada**	**1.37**	**190**	P		**Pn**	**04 57 21.9**	**+0.6**
SGD				S		**Sg**	**04 57 41.1**	**+0.3**
KEK	**Kerkira**	**1.37**	**205**	P		**Pn**	**04 57 21.7**	**+0.3**
KEK				S		**Sg**	**04 57 42.0**	**+1.1**
KEK	**Kerkira**	**1.37**	**205**	P		**Pn**	**04 57 21.7**	**+0.3**
KEK				S		**Sg**	**04 57 42.0**	**+1.1**
GRG	**Griva**	**1.40**	**90**	P		**Pb**	**04 57 22.6**	**0.0**
GRG	**Griva**	**1.40**	**90**	P		**Pb**	**04 57 22.6**	**0.0**
GRG	**Griva**	**1.40**	**90**	P		**Pb**	**04 57 23.0**	**+0.4**
IGT	**Igoumenitsa**	**1.44**	**187**	P		**Pb**	**04 57 24.0**	**+0.8**
IGT	**Igoumenitsa**	**1.44**	**187**	P		**Pb**	**04 57 23.9**	**+0.8**
IGT				S		**Sg**	**04 57 43.3**	**+0.4**
IGT	**Igoumenitsa**	**1.44**	**187**	P		**Pb**	**04 57 23.9**	**+0.7**
IGT				S		**Sg**	**04 57 43.3**	**+0.4**
IGT				AML		AML	04 57 46.2	
	comp=E,633μm,0.6s							
IGT				AML		AML	04 57 47.2	
	comp=N,284μm,0.5s							
VAY	**Valandovo**	**1.57**	**76**	*i*	Pn	**Pb**	**04 57 25.4**	**-0.1**
VAY				*i*	Sg	**Sg**	**04 57 47.5**	**+0.4**
VAY				e	Lg	Lg	04 57 49.7	
	comp=N,55nm,0.8s							
VAY				e	Lg	Lg	04 57 50.0	
	comp=E,36nm,0.6s							
VAY	**Valandovo**	**1.57**	**76**	*i*	Pn	**Pb**	**04 57 25.3**	**-0.1**
VAY				*i*	Sg	**Sg**	**04 57 47.5**	**+0.4**
VAY				e	Lg	Lg	04 57 49.7	
	comp=E,55nm,0.8s							
GJIK	**Gjilan**	**1.64**	**23**	P		**Pb**	**04 57 26.7**	**0.0**
PEJK	**Peje**	**1.69**	**353**	P		**Pb**	**04 57 27.2**	**-0.4**
LIT	**Litokhoron**	**1.71**	**120**	P		**Pn**	**04 57 26.6**	**+0.6**
LIT	**Litokhoron**	**1.71**	**120**	P		**Pn**	**04 57 26.6**	**+0.6**
LIT	**Litokhoron**	**1.71**	**120**	P		**Pn**	**04 57 24.8**	**-1.2**
KNT	**Kendrikon**	**1.79**	**83**	P		**Pn**	**04 57 27.9**	**+0.9**
KNT				S		**Sb**	**04 57 50.6**	**-0.8**
KNT	**Kendrikon**	**1.79**	**83**	P		**Pn**	**04 57 28.0**	**+0.9**
KNT				S		**Sb**	**04 57 50.6**	**-0.8**
KNT	**Kendrikon**	**1.79**	**83**	P		**Pn**	**04 57 28.0**	**+1.0**
KNT				S		**Sn**	**04 57 50.4**	**+0.8**
KNT				AML		AML	04 57 57.8	
	comp=N,91μm,0.4s							
KNT				AML		AML	04 58 02.2	
	comp=E,85μm,0.6s							
THL	**Klokotos Trika**	**1.79**	**141**	P		**Pn**	**04 57 28.1**	**+1.0**
THL	**Klokotos Trika**	**1.79**	**141**	P		**Pn**	**04 57 28.1**	**+1.0**
THL				S		**Sb**	**04 57 51.0**	**-0.4**
DSL	**Palaion Diasel**	**1.87**	**167**	P		**Pb**	**04 57 30.0**	**-0.6**
DSL	**Palaion Diasel**	**1.87**	**167**	P		**Pb**	**04 57 30.0**	**-0.6**
DSL	**Palaion Diasel**	**1.87**	**167**	P		**Pb**	**04 57 30.7**	**+0.1**
HORT	**Hortiatis**	**1.97**	**100**	P		**Pn**	**04 57 29.3**	**-0.4**
HORT	**Hortiatis**	**1.97**	**100**	P		**Pn**	**04 57 29.3**	**-0.4**
BEY	**Berane**	**1.97**	**346**	P		**Pb**	**04 57 33.3**	**+0.9**
BARS	**Barje**	**2.08**	**27**	e	Pn	**Pn**	**04 57 32.6**	**+1.4**
LKD2	**Lefkada island**	**2.17**	**178**	P		**Pn**	**04 57 33.4**	**+1.0**
LKD2	**Lefkada island**	**2.17**	**178**	P		**Pn**	**04 57 33.4**	**+1.0**
LKD2	**Lefkada island**	**2.17**	**178**	P		**Pn**	**04 57 33.8**	**+1.4**
AGG	**Agios Georgios**	**2.37**	**144**	P		**Pn**	**04 57 35.0**	**-0.1**
AGG	**Agios Georgios**	**2.37**	**144**	P		**Pn**	**04 57 35.0**	**-0.1**
PDO	**Prodromos**	**2.41**	**168**	P		**Pn**	**04 57 36.1**	**+0.5**
PDO	**Prodromos**	**2.41**	**168**	P		**Pn**	**04 57 36.1**	**+0.5**
PVO	**Paravola**	**2.46**	**162**	P		**Pn**	**04 57 37.8**	**+1.5**
PVO	**Paravola**	**2.46**	**162**	P		**Pn**	**04 57 37.8**	**+1.5**
ANX	**Ano Chora**	**2.59**	**156**	P		**Pn**	**04 57 39.2**	**+1.0**
IVAS	**Ivanjica**	**2.63**	**354**	e	Pn	**Pb**	**04 57 42.3**	**-1.3**
EFP	**Efpalio**	**2.74**	**157**	P		**Pn**	**04 57 41.8**	**+1.7**
EFP	**Efpalio**	**2.74**	**157**	P		**Pn**	**04 57 41.8**	**+1.7**
VLS	**Valsamata**	**2.78**	**179**	P		**Pn**	**04 57 40.0**	**-0.8**
KALE	**Kalithea**	**2.84**	**154**	P		**Pn**	**04 57 43.8**	**+2.1**
KALE	**Kalithea**	**2.84**	**154**	P		**Pn**	**04 57 43.8**	**+2.1**
TRIZ	**Trizonia**	**2.84**	**155**	P		**Pb**	**04 57 47.2**	**0.0**
GRUS	**Gruza**	**2.93**	**2**	e	Pn	**Pb**	**04 57 46.4**	**-2.2**
LAKA	**Lakka**	**2.93**	**157**	P		**Pn**	**04 57 44.0**	**+1.2**
LAKA	**Lakka**	**2.93**	**157**	P		**Pn**	**04 57 44.0**	**+1.2**
BBLS	**Lazići**	**3.03**	**344**	e	Pn	**Pb**	**04 57 49.6**	**-0.7**
DIVS	**Divibare**	**3.16**	**353**	e	Pn	**Pn**	**04 57 47.8**	**+1.7**
KLV	**Kalavryta, Ach**	**3.16**	**156**	P		**Pn**	**04 57 48.2**	**+2.1**
KLV	**Kalavryta, Ach**	**3.16**	**156**	P		**Pn**	**04 57 48.2**	**+2.1**
NVLJ	**Novalja**	**5.52**	**313**	*i*	Pn	**Pn**	**04 58 17.3**	**-1.0**
NVLJ					Sn	**Sn**	**04 59 19.4**	**-2.1**
NVLJ	**Novalja**	**5.52**	**313**	*i*	Pn	**Pn**	**04 58 17.3**	**-1.0**

*IDC **21** 05:09:04.4±1.7, 12°.83N×86°.26W, h0km, mb3.5/3, mb1 3.9/5, mb1mx3.5/45, mbtmp3.6/5, ML3.5/2, Error ellipse: s-maj=77.9km s-min=25.9km az=57.0*
*ISCJB **21** 05:09:08.6±0.5, 11°.95N±0°.05×87°.13W±0°.05, h61km±9km, mb3.5/3, Error ellipse: s-maj=11.2km s-min=4.8km az=41.0*
*CASC **21** 05:09:09.0±1.6, 11°.92N×87°.14W, h52km±19km, MD4.1, ML3.8*

ISC 21 05:09:09.3±1.1, **11°.98N**±0°.06×**87°.12W**±0°.07, **h58**km±12km, **n28**, σ0**80**/37, **mb3.6**/3, **1C-1D, Near coast of Nicaragua**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
COPN	**Copaltepe**	**0.55**	**69**	⇑ *i*	P	**Pn**	**05 09 21.8**	**+0.1**
COPN				e	S	**Sn**	**05 09 31.0**	**+0.2**
TEL3	**Telica 3**	**0.65**	**25**	e	P	**Pn**	**05 09 22.8**	**0.0**
CNGN	**Cerro Negro**	**0.66**	**39**	⇓ e	P	**Pn**	**05 09 22.9**	**-0.2**
CNGN				e	S	**Sn**	**05 09 31.5**	**-1.5**
CNGN				AML		AML	05 09 36.1	
	comp=N,7μm,0.3s							
TELN	**Telica**	**0.68**	**25**	e	P	**Pn**	**05 09 23.3**	**0.0**
MOMN	**Momotombo**	**0.71**	**53**	e	P	**Pn**	**05 09 23.4**	**-0.1**
CRIN	**San Cristobal**	**0.72**	**6**	e	P	**Pn**	**05 09 23.8**	**0.0**
CRIN				AML		AML	05 09 37.9	
	comp=N,6μm,0.2s							
APYN	**Apoyeque**	**0.79**	**72**	e	P	**Pn**	**05 09 24.9**	**+0.3**
XAVN	**Gruta Xavier**	**0.79**	**78**	e	P	**Pn**	**05 09 24.9**	**+0.3**
CRUN	**El Crucero**	**0.80**	**90**	e	P	**Pn**	**05 09 24.7**	**-0.1**
TISN	**Laguna Tiscapa**	**0.85**	**79**	e	P	**Pn**	**05 09 25.5**	**+0.2**
MGAN	**Managua**	**0.87**	**79**	e	P	**Pn**	**05 09 25.7**	**+0.2**
MGAN				e	S	**Sn**	**05 09 38.3**	**+0.8**
MASN	**Masaya**	**0.95**	**90**	e	P	**Pn**	**05 09 27.0**	**+0.4**
MASN				e	S	**Sn**	**05 09 39.1**	**-0.4**
CSGN	**Cosiguina Volc**	**1.08**	**337**	e	P	**Pn**	**05 09 28.3**	**0.0**
CSGN				e	S	**Sn**	**05 09 42.5**	**0.0**
ESTN	**Estel**	**1.33**	**33**	e	P	**Pn**	**05 09 32.1**	**+0.4**
ESTN				e	S	**Sn**	**05 09 50.1**	**+1.5**
BOAB	**BOACO BROADBAN**	**1.50**	**72**	e	P	**Pn**	**05 09 33.8**	**0.0**
BOAB				e	S	**Sn**	**05 09 53.3**	**+0.9**
LCY	**Lacayo**	**1.83**	**321**	e	P	**Pn**	**05 09 38.9**	**+0.3**
PACA	**Pacayal**	**1.89**	**322**	e	P	**Pn**	**05 09 39.6**	**+0.3**
TECA	**Tecapa**	**2.02**	**318**	e	P	**Pn**	**05 09 41.2**	**+0.1**
LFRS	**El Faro**	**2.50**	**311**	e	P	**Pn**	**05 09 47.7**	**0.0**
LBRS	**Las Brisas**	**2.56**	**313**	e	P	**Pn**	**05 09 48.2**	**-0.3**
JTS	**JuntasAbangare**	**2.71**	**128**	Pn		**Pn**	**05 09 50.9**	**+0.5**
	comp=N,13nm,0.3s,baz=323,slow=16,SNR=53							
JTS				Sn		**Sn**	**05 10 21.9**	**-0.2**
	comp=N,31nm,0.3s,baz=303,slow=16,SNR=6.1							
JTS	**JuntasAbangare**	**2.71**	**128**	e	P	**Pn**	**05 09 50.7**	**+0.2**
JCR	**Jicaral**	**2.90**	**137**	e	P	**Pn**	**05 09 53.8**	**+0.8**
JCR				e	S	**Sn**	**05 10 25.2**	**-1.5**
URSC	**Urasca**	**3.92**	**123**	e	P	**Pn**	**05 10 08.6**	**+1.5**
CMIG	**Matias Romero**	**9.07**	**305**	Pn		**Pn**	**05 11 20.0**	**+2.4**
	comp=N,0.3nm,0.3s,baz=139,slow=8.7,SNR=5.0							
TXAR	**Lajitas Array**	**23.14**	**321**	P		**P**	**05 14 11.5**	**+0.8**
	comp=N,1.8nm,0.7s,baz=141,slow=9.4,SNR=23							
PDAR	**Pinedale Array**	**36.34**	**332**	P		**P**	**05 16 07.8**	**0.0**
	comp=N,0.6nm,0.6s,baz=127,slow=9.4,SNR=7.7							
YKA	**Yellowknife Ar**	**54.15**	**345**	P		**P**	**05 18 26.7**	**-1.5**
	comp=N,0.2nm,0.5s,baz=137,slow=7.7,SNR=7.7							

*NIED **21** 05:12:00, 37°.30N×142°.20E, h17km, Mw3.7 Best double couple: M0 3.48000×10^14 NP1:φ=257.00000°, δ36.00000°, λ=-129.00000°. NP2:φ=122.00000°, δ63.00000°, λ=-66.00000°.*
*IDC **21** 05:12:18.5±1.4, 37°.42N×142°.52E, h0km, mb3.4/6, mb1 3.6/7, mb1mx3.4/53, mbtmp3.4/7, ML3.4/1, MS3.7/2, Ms1 3.7/2, ms1mx2.8/38, Error ellipse: s-maj=34.6km s-min=24.3km az=153.0*
*JMA **21** 05:12:19.2±0.2, 37°.32N×142°.20E, h7km±2km, M3.9*
*ISCJB **21** 05:12:20.5±0.9, 37°.33N±0°.07×142°.24E±0°.06, h24km, mb3.5/6, Error ellipse: s-maj=9.6km s-min=7.2km az=163.9*

ISC 21 05:12:22.2±1.0, **37°.38N**±0°.07×**142°.18E**±0°.07, **h24**km, **n17**, σ1**39**/21, **mb3.5/6, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JFK	**Kawauchi**	**1.04**	**270**	P		**Pn**	**05 12 39.3**	**-2.0**
JFK				e	S	**Sb**	**05 12 53.0**	**-1.7**
ONAJ	**Iwakimizuishiy**	**1.13**	**256**	P		**Pn**	**05 12 40.4**	**-2.3**
JMM	**Marumori**	**1.20**	**294**	P		**Pn**	**05 12 42.4**	**-1.1**
JMM				e	S	**Sn**	**05 12 58.6**	**-0.4**
JIO	**Ouri**	**1.26**	**329**	P		**Pn**	**05 12 43.6**	**-0.7**
JFT	**Otama**	**1.47**	**276**	P		**Pn**	**05 12 46.8**	**-0.5**
JFT				e	S	**Sn**	**05 13 06.3**	**+0.6**
JHO	**Hitachi**	**1.50**	**240**	S		**Sn**	**05 13 06.0**	**-0.4**
JOU	**Okura**	**1.55**	**310**	P		**Pn**	**05 12 48.4**	**+0.1**
JOU				S		**Sb**	**05 13 09.1**	**-0.3**
MJAR	**Matsushiro Arr**	**3.29**	**256**	Pn		**Pn**	**05 13 13.5**	**+1.3**
	3.7nm,0.3s,baz=86,slow=17,SNR=9.9							
MJAR				Sn		**Sb**	**05 13 58.2**	**-1.2**
	3.8nm,0.3s,baz=89,slow=16,SNR=1.9							
MAT	**Matsushiro**	**3.29**	**256**	P		**Pn**	**05 13 13.4**	**+1.2**
MAT				eS		**Sn**	**05 13 51.1**	**+0.5**
JOW	**Kunigami**	**15.77**	**232**	LR		LR	05 21 55.6	
	comp=Z,1μm,21.4s,baz=116,slow=36							
PETK	**Petropavlovsk-**	**19.08**	**30**	LR		LR	05 24 25.6	
	comp=Z,49nm,20.1s,baz=191,slow=38							
SONM	**Songino Array**	**28.10**	**303**	P		**P**	**05 18 14.2**	**+2.0**
	0.3nm,0.4s,baz=96,slow=10,SNR=1.9							
MKAR	**Makanchi Array**	**44.45**	**302**	P		**P**	**05 20 33.1**	**+1.8**
	0.2nm,0.5s,baz=96,slow=7.7,SNR=2.6							
KURBB	**Kurchatov Arra**	**46.27**	**308**	P		**P**	**05 20 46.9**	**+1.3**
	0.6nm,0.5s,baz=81,slow=7.7,SNR=2.8							
ILAR	**Eielson Array**	**48.88**	**33**	P		**P**	**05 21 04.7**	**-0.9**
	0.4nm,0.8s,baz=266,slow=4.7,SNR=3.5							
WRA	**Warramunga Arr**	**57.49**	**189**	P		**P**	**05 22 10.2**	**+0.8**
	0.5nm,0.8s,baz=6.8,slow=7.0,SNR=2.3							
YKA	**Yellowknife Ar**	**63.20**	**30**	P		**P**	**05 22 45.8**	**-2.2**
	0.2nm,0.8s,baz=301,slow=6.4,SNR=3.2							

IDC 21 05:15:17.0±2.6, **54°.07N**×**86°.41E, h0**km, **mb1 3.0**/2, **mb1mx2.8**/53, **mbtmp3.0**/2, **ML2.8**/2, **Error ellipse: s-maj=22.3km s-min=14.4km az=47.0, Southwestern Siberia**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
I46RU	**ZALESOVO INFRA**	**0.94**	**263**	*i*		05 22 20.0	
	baz=83,slow=319,SNR=1.0						
ZALV	**Zalesovo Beam**	**0.94**	**263**	Pg	Pg	05 15 33.5	-1.6
	1.0nm,0.3s,baz=86,slow=17,SNR=12						
ZALV				Lg	Lg	05 15 49.0	
	1.2nm,0.3s,baz=45,slow=13,SNR=5.4						
KURBB	**Kurchatov Arra**	**5.93**	**238**	Pn	Pn	05 16 46.8	+0.8
	0.1nm,0.3s,baz=54,slow=13,SNR=7.1						
KURBB				Lg	Lg	05 18 25.7	
	0.1nm,0.3s,baz=57,slow=32,SNR=3.3						
MKAR	**Makanchi Array**	**7.74**	**201**	Pn	Pn	05 17 12.2	+1.4
	0.3nm,0.3s,baz=26,slow=12,SNR=8.6						

*IDC **21** 05:17:24.8±1.0, 38°.86N×22°.25E, h0km, mb3.5/9, mb1 3.6/11, mb1mx3.5/55, mbtmp3.5/11, ML3.4/2, Error ellipse: s-maj=21.0km s-min=20.1km az=4.0*
*ISCJB **21** 05:17:25.9±0.3, 38°.78N±0°.01×22°.21E±0°.02, h7km±2km, mb3.5/8, Error ellipse: s-maj=2.1km s-min=1.9km az=1.6*
*ATH **21** 05:17:25.9, 38°.76N×22°.21E, h23km, ML3.4/15, Error ellipse: s-maj=0.9km s-min=0.5km az=231.0*
*THE **21** 05:17:26.5, 38°.75N×22°.21E, h3km, ML3.6/23, Error ellipse: s-maj=0.6km s-min=0.3km az=187.0*
*CSEM **21** 05:17:26.3±0.1, 38°.75N×22°.23E, h5km, ML3.4, Error ellipse: s-maj=1.8km s-min=1.5km az=95.0*

ISC 21 05:17:26.1±0.8, **38°.75N**±0°.01×**22°.22E**±0°.01, **h12**km±6km, **n237**, σ0**88**/323, **mb3.4**/8, **14C-4D, Greece**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ANX	**Ano Chora**	**0.28**	**237**	P		**Pg**	**05 17 31.9**	**-0.1**
ANX				S		**Sg**	**05 17 36.0**	**+0.1**
ANX	**Ano Chora**	**0.28**	**237**	P		**Pg**	**05 17 31.7**	**-0.2**
ANX				S		**Sg**	**05 17 35.5**	**-0.4**
ANX	**Ano Chora**	**0.28**	**237**	S		**Sg**	**05 17 35.5**	**-0.4**
ANX				AML		AML	05 17 36.5	
	comp=N,69670μm,0.3s							
ANX				AML		AML	05 17 37.1	
	comp=E,70119μm,0.2s							
AGG	**Agios Georgios**	**0.29**	**17**	P		**Pg**	**05 17 32.3**	**+0.2**
AGG				S		**Sg**	**05 17 36.5**	**+0.4**
AGG	**Agios Georgios**	**0.29**	**17**	P		**Pg**	**05 17 32.3**	**+0.2**
AGG				S		**Sg**	**05 17 36.5**	**+0.4**
AGG				AML		AML	05 17 37.8	
	comp=E,65955μm,0.3s							
AGG				AML		AML	05 17 38.3	
	comp=N,40057μm,0.3s							
KALE	**Kalithea**	**0.36**	**190**	P		**Pg**	**05 17 33.4**	**0.0**
KALE				S		**Sg**	**05 17 37.9**	**-0.3**
KALE	**Kalithea**	**0.36**	**190**	P		**Pg**	**05 17 33.4**	**0.0**
KALE				S		**Sg**	**05 17 37.9**	**-0.3**
KALE	**Kalithea**	**0.36**	**190**	P		**Pg**	**05 17 33.0**	**-0.3**
KALE				S		**Sg**	**05 17 39.0**	**+0.7**
KALE				AML		AML	05 17 40.0	
	comp=E,23854μm,0.5s							
KALE				AML		AML	05 17 42.3	
	comp=N,27823μm,0.4s							
EVR	**Evrytania**	**0.36**	**298**	P		**Pg**	**05 17 33.2**	**-0.3**
EVR				S		**Sg**	**05 17 38.6**	**+0.2**
EVR	**Evrytania**	**0.36**	**298**	P		**Pg**	**05 17 33.0**	**-0.5**
EVR				S		**Sg**	**05 17 38.2**	**-0.2**
EVR	**Evrytania**	**0.36**	**298**	P		**Pg**	**05 17 33.0**	**-0.5**
EVR				S		**Sg**	**05 17 38.2**	**-0.2**
TRIZ	**Trizonia**	**0.40**	**197**	P		**Pg**	**05 17 33.6**	**-0.4**
TRIZ				S		**Sb**	**05 17 41.2**	**+0.2**
EFP	**Efpalio**	**0.40**	**218**	P		**Pg**	**05 17 34.2**	**+0.1**
EFP				S		**Sg**	**05 17 40.3**	**+0.8**
EFP	**Efpalio**	**0.40**	**218**	P		**Pg**	**05 17 33.8**	**-0.3**
EFP				S		**Sg**	**05 17 39.9**	**+0.4**
EFP	**Efpalio**	**0.40**	**218**	P		**Pg**	**05 17 33.8**	**-0.3**
EFP				S		**Sg**	**05 17 39.9**	**+0.4**
EFP				AML		AML	05 17 40.6	
	comp=E,57726μm,0.4s							
EFP				AML		AML	05 17 42.5	
	comp=N,54537μm,0.3s							
DSF	**Desfina**	**0.41**	**144**	P		**Pg**	**05 17 34.2**	**-0.1**
DSF				S		**Sg**	**05 17 40.7**	**+0.9**
DSF	**Desfina**	**0.41**	**144**	P		**Pg**	**05 17 34.2**	**-0.1**
DSF				S		**Sg**	**05 17 40.0**	**+0.1**
DSF	**Desfina**	**0.41**	**144**	P		**Pg**	**05 17 33.7**	**-0.6**
DSF				S		**Sg**	**05 17 40.0**	**+0.1**
RODI	**Rodini**	**0.49**	**211**	P		**Pg**	**05 17 35.5**	**-0.3**
RODI				S		**Sb**	**05 17 44.2**	**+0.4**
RODI	**Rodini**	**0.49**	**211**	P		**Pg**	**05 17 35.5**	**-0.3**
RODI				S		**Sb**	**05 17 44.2**	**+0.4**
LAKA	**Lakka**	**0.54**	**201**	P		**Pg**	**05 17 36.4**	**-0.3**
LAKA				S		**Sb**	**05 17 45.2**	**0.0**
LAKA	**Lakka**	**0.54**	**201**	P		**Pg**	**05 17 36.2**	**-0.3**
LAKA				S		**Sb**	**05 17 45.2**	**0.0**
LAKA	**Lakka**	**0.54**	**201**	P		**Pg**	**05 17 36.2**	**-0.4**
LAKA				S		**Sb**	**05 17 45.3**	**0.0**
LAKA				AML		AML	05 17 46.4	
	comp=N,4235μm,0.5s							
LAKA				AML		AML	05 17 49.8	
	comp=E,5115

RLS				AML	AML	05 17 58.2		
	comp=E,4986μm,0.3s							
LTK	**Loutraki**	**0.93**	**141**	P	**Pb**	**05 17 44.3**	**+0.2**	
LTK				S	**Sn**	**05 17 58.4**	**+0.2**	
LTK	**Loutraki**	**0.93**	**141**	P	**Pb**	**05 17 44.3**	**+0.2**	
LTK				S	**Sn**	**05 17 58.4**	**+0.2**	
LTK	**Loutraki**	**0.93**	**141**	P	**Pn**	**05 17 44.9**	**-0.1**	
LTK				S	**Sn**	**05 17 59.1**	**+0.9**	
LTK				AML	AML	05 18 00.6		
	comp=N,4324μm,0.5s							
LTK				AML	AML	05 18 03.6		
	comp=E,4656μm,0.4s							
DSL	**Palaion Diasel**	**0.96**	**294**	P	**Pg**	**05 17 43.8**	**-0.8**	
DSL	**Palaion Diasel**	**0.96**	**294**	P	**Pg**	**05 17 43.9**	**-0.7**	
DSL				S	**Sg**	**05 17 56.4**	**-0.7**	
DSL	**Palaion Diasel**	**0.96**	**294**	P	**Pg**	**05 17 43.9**	**-0.7**	
DSL				S	**Sg**	**05 17 56.4**	**-0.7**	
NEO	**Neokhori**	**0.96**	**54**	P	**Pb**	**05 17 45.0**	**+0.3**	
NEO				S	**Sn**	**05 17 58.7**	**-0.3**	
NEO	**Neokhori**	**0.96**	**54**	P	**Pb**	**05 17 45.0**	**+0.3**	
NEO				S	**Sn**	**05 17 58.7**	**-0.3**	
NEO	**Neokhori**	**0.96**	**54**	P	**Pn**	**05 17 45.2**	**-0.2**	
XOR	**Xorichti**	**0.98**	**50**	P	**Pg**	**05 17 44.3**	**-0.7**	
XOR				S	**Sb**	**05 17 58.7**	**+0.9**	
XOR	**Xorichti**	**0.98**	**50**	P	**Pg**	**05 17 44.8**	**-0.2**	
XOR				S	**Sb**	**05 17 58.7**	**+0.9**	
XOR	**Xorichti**	**0.98**	**50**	P	**Pg**	**05 17 44.8**	**-0.2**	
VIL2	**Platees**	**0.98**	**123**	P	**Pn**	**05 17 46.0**	**+0.3**	
VILL	**Villia**	**1.04**	**124**	P	**Pn**	**05 17 46.7**	**+0.3**	
VILL				S	**Sn**	**05 18 00.8**	**-0.1**	
VILL	**Villia**	**1.04**	**124**	P	**Pn**	**05 17 46.7**	**+0.3**	
VILL				S	**Sn**	**05 18 00.8**	**-0.1**	
SKIA	**Skiathos**	**1.06**	**66**	P	**Pn**	**05 17 46.9**	**+0.2**	
SKIA				S	**Sn**	**05 18 02.0**	**+0.6**	
SKIA	**Skiathos**	**1.06**	**66**	P	**Pn**	**05 17 46.9**	**+0.2**	
SKIA				S	**Sn**	**05 18 02.0**	**+0.6**	
SKIA	**Skiathos**	**1.06**	**66**	P	**Pn**	**05 17 47.9**	**+1.2**	
SKIA				S	**Sn**	**05 18 03.0**	**+1.6**	
SKIA				AML	AML	05 18 06.5		
	comp=E,1242μm,0.5s							
SKIA				AML	AML	05 18 06.6		
	comp=N,952μm,0.9s							
VTN	**Vitineika**	**1.16**	**225**	P	Pg	05 17 54.5	+6.1	
TRIP	**Tripoli**	**1.22**	**178**	P	**Pb**	**05 17 49.2**	**+0.1**	
TRIP				S	**Sb**	**05 18 04.3**	**-0.4**	
TRIP	**Tripoli**	**1.22**	**178**	P	**Pb**	**05 17 49.1**	**+0.1**	
TRIP				S	**Sb**	**05 18 04.3**	**-0.4**	
TRIP				AML	AML	05 18 11.1		
	comp=E,2456μm,0.6s							
TRIP				AML	AML	05 18 12.4		
	comp=N,2441μm,0.6s							
LKD2	**Lefkada island**	**1.22**	**273**	P	**Pb**	**05 17 49.2**	**0.0**	
LKD2	**Lefkada island**	**1.22**	**273**	P	**Pb**	**05 17 49.2**	**0.0**	
LKD2	**Lefkada island**	**1.22**	**273**	P	**Pb**	**05 17 49.1**	**+0.0**	
AMT	**Artemida-Makis**	**1.28**	**199**	P	**Pb**	**05 17 50.0**	**-0.1**	
AMT				S	**Sg**	**05 18 09.2**	**+1.9**	
AMT	**Artemida-Makis**	**1.28**	**199**	P	**Pb**	**05 17 50.0**	**-0.1**	
AMT				S	**Sg**	**05 18 09.2**	**+1.9**	
AMT	**Artemida-Makis**	**1.28**	**199**	P	**Pn**	**05 17 49.9**	**+0.1**	
KFL	**Anninata**	**1.29**	**241**	P	**Pb**	**05 17 50.4**	**+0.1**	
KFL				S	**Sg**	**05 18 09.0**	**+1.3**	
KFL	**Anninata**	**1.29**	**241**	P	**Pb**	**05 17 50.5**	**+0.1**	
KFL				S	**Sg**	**05 18 09.0**	**+1.3**	
KFL	**Anninata**	**1.29**	**241**	P	**Pb**	**05 17 50.5**	**+0.2**	
AOS	**Alonnisos**	**1.36**	**71**	P	**Pn**	**05 17 50.2**	**-0.7**	
AOS	**Alonnisos**	**1.36**	**71**	P	**Pn**	**05 17 50.2**	**-0.7**	
LIT	**Litokhoron**	**1.37**	**9**	P	**Pb**	**05 17 51.5**	**-0.2**	
LIT				S	**Sg**	**05 18 11.1**	**+0.8**	
LIT	**Litokhoron**	**1.37**	**9**	P	**Pb**	**05 17 51.5**	**-0.2**	
LIT				S	**Sg**	**05 18 11.1**	**+0.8**	
LIT	**Litokhoron**	**1.37**	**9**	P	**Pn**	**05 17 50.6**	**-0.4**	
KPRO	**Kipourio**	**1.38**	**331**	P	**Pn**	**05 17 51.2**	**+0.1**	
KPRO				S	**Sg**	**05 18 11.3**	**+0.8**	
KPRO	**Kipourio**	**1.38**	**331**	P	**Pn**	**05 17 51.3**	**+0.1**	
KPRO				S	**Sn**	**05 18 09.1**	**-0.2**	
KPRO	**Kipourio**	**1.38**	**331**	P	**Pn**	**05 17 51.3**	**+0.1**	
KPRO				S	**Sn**	**05 18 09.2**	**-0.2**	
VLX	**Vlachokerasia**	**1.38**	**175**	P	**Pg**	**05 17 52.5**	**-0.1**	
VLX				S	**Sg**	**05 18 12.1**	**+1.6**	
VLX	**Vlachokerasia**	**1.38**	**175**	P	**Pg**	**05 17 52.5**	**-0.1**	
VLX				S	**Sg**	**05 18 11.2**	**+0.7**	
VLX	**Vlachokerasia**	**1.38**	**175**	P	**Pg**	**05 17 52.6**	**0.0**	
VLX				S	**Sg**	**05 18 11.2**	**+0.7**	
VLX				AML	AML	05 18 16.1		
	comp=E,2606μm,0.4s							
VLX				AML	AML	05 18 18.4		
	comp=N,2444μm,0.5s							
EREA	**Eretria**	**1.38**	**103**	P	**Pb**	**05 17 51.9**	**+0.1**	
EREA	**Eretria**	**1.38**	**103**	P	**Pb**	**05 17 51.9**	**+0.1**	
JAN	**Janina**	**1.40**	**311**	P	**Pn**	**05 17 51.9**	**+0.4**	
JAN				S	**Sg**	**05 18 11.8**	**+0.6**	
JAN	**Janina**	**1.40**	**311**	P	**Pn**	**05 17 51.9**	**+0.4**	
JAN				S	**Sg**	**05 18 11.8**	**+0.6**	
VLS	**Valsamata**	**1.40**	**247**	P	**Pn**	**05 17 51.3**	**-0.1**	
VLS	**Valsamata**	**1.40**	**247**	P	**Pn**	**05 17 51.3**	**-0.1**	
ATH	**Athens Observa**	**1.41**	**123**	P	**Pb**	**05 17 52.6**	**+0.3**	
ATH				S	**Sg**	**05 18 11.5**	**+0.1**	
ATH	**Athens Observa**	**1.41**	**123**	P	**Pb**	**05 17 52.6**	**+0.3**	
ATH				S	**Sg**	**05 18 11.5**	**+0.1**	
ATHU	**Athens Univers**	**1.46**	**122**	P	**Pb**	**05 17 52.9**	**-0.2**	
ATHU	**Athens Univers**	**1.46**	**122**	P	**Pb**	**05 17 52.9**	**-0.2**	
PTL	**Penteli**	**1.47**	**118**	P	**Pg**	**05 17 54.0**	**-0.3**	
PTL	**Penteli**	**1.47**	**118**	P	**Pg**	**05 17 54.0**	**-0.3**	
DID	**Didima**	**1.48**	**147**	P	**Pb**	**05 17 53.1**	**-0.3**	
DID	**Didima**	**1.48**	**147**	P	**Pb**	**05 17 53.1**	**-0.3**	
DID	**Didima**	**1.48**	**147**	P	**Pn**	**05 17 53.0**	**+0.5**	
VLY	**Voula,Athens**	**1.53**	**125**	P	**Pb**	**05 17 54.0**	**-0.3**	
VLY				S	**Sg**	**05 18 15.8**	**+0.6**	
VLY	**Voula,Athens**	**1.53**	**125**	P	**Pb**	**05 17 54.2**	**-0.1**	
VLY				S	**Sg**	**05 18 15.8**	**+0.6**	
VLY	**Voula,Athens**	**1.53**	**125**	P	**Pb**	**05 17 54.2**	**-0.1**	
VLY				S	**Sg**	**05 18 15.8**	**+0.6**	
VLY				AML	AML	05 18 19.1		
	comp=N,2127μm,0.6s							
VLY				AML	AML	05 18 21.5		
	comp=E,2578μm,0.5s							
ZKS	**Zakynthos**	**1.54**	**228**	P	**Pb**	**05 17 54.8**	**+0.3**	
ZKS	**Zakynthos**	**1.54**	**228**	P	**Pb**	**05 17 54.8**	**+0.3**	
KRND	**KRANIDI**	**1.55**	**151**	P	**Pb**	**05 17 54.3**	**-0.3**	
KRND	**KRANIDI**	**1.55**	**151**	P	**Pb**	**05 17 54.3**	**-0.3**	
KRND	**KRANIDI**	**1.55**	**151**	P	**Pb**	**05 17 54.2**	**-0.4**	
ITM	**Ithomi**	**1.58**	**189**	P	**Pb**	**05 17 55.1**	**-0.1**	
ITM	**Ithomi**	**1.58**	**189**	P	**Pb**	**05 17 55.6**	**+0.3**	
ITM	**Ithomi**	**1.58**	**189**	P	**Pb**	**05 17 55.6**	**+0.3**	
KZN	**Kozani**	**1.60**	**348**	P	**Pn**	**05 17 54.9**	**+0.7**	
KZN	**Kozani**	**1.60**	**348**	P	**Pn**	**05 17 54.9**	**+0.7**	
PAIG	**Palíouri**	**1.64**	**43**	P	**Pn**	**05 17 53.5**	**-1.1**	
PAIG	**Palíouri**	**1.64**	**43**	P	**Pn**	**05 17 53.5**	**-1.1**	
IGT	**Igoumenitsa**	**1.67**	**299**	P	**Pn**	**05 17 55.6**	**+0.5**	
IGT	**Igoumenitsa**	**1.67**	**299**	P	**Pn**	**05 17 55.6**	**+0.5**	
IGT	**Igoumenitsa**	**1.67**	**299**	P	**Pg**	**05 17 58.5**	**+0.5**	
SGD	**Sagiada**	**1.77**	**300**	P	**Pb**	**05 17 59.1**	**+0.7**	
SGD	**Sagiada**	**1.77**	**300**	P	**Pb**	**05 17 59.1**	**+0.7**	
SGD	**Sagiada**	**1.77**	**300**	P	**Pg**	**05 18 00.9**	**+0.8**	
PLG	**Polygyros**	**1.88**	**30**	P	**Pn**	**05 17 57.9**	**-0.2**	
PLG	**Polygyros**	**1.88**	**30**	P	**Pn**	**05 17 57.9**	**-0.2**	
PYL	**PYLOS**	**1.89**	**192**	P	**Pn**	**05 17 58.6**	**+0.5**	
PYL	**PYLOS**	**1.89**	**192**	P	**Pn**	**05 17 58.6**	**+0.5**	
PYL	**PYLOS**	**1.89**	**192**	P	**Pg**	**05 18 01.9**	**-0.4**	
NEST	**Nestorio**	**1.90**	**332**	P	**Pb**	**05 17 59.8**	**-0.9**	
NEST	**Nestorio**	**1.90**	**332**	P	**Pb**	**05 17 59.8**	**-0.9**	
NEST	**Nestorio**	**1.90**	**332**	P	**Pb**	**05 18 00.9**	**+0.2**	
HORT	**Hortiatis**	**1.97**	**20**	P	**Pn**	**05 17 59.6**	**+0.3**	
HORT	**Hortiatis**	**1.97**	**20**	P	**Pn**	**05 17 59.6**	**+0.3**	
HORT	**Hortiatis**	**1.97**	**20**	P	**Pn**	**05 17 58.6**	**-0.7**	
THE	**Thessaloniki**	**1.97**	**17**	P	**Pn**	**05 17 58.6**	**-0.6**	
THE	**Thessaloniki**	**1.97**	**17**	P	**Pn**	**05 17 58.6**	**-0.6**	
OUR	**Ouranopolis**	**2.09**	**40**	P	**Pn**	**05 18 01.2**	**+0.3**	
OUR	**Ouranopolis**	**2.09**	**40**	P	**Pn**	**05 18 01.2**	**+0.3**	
OUR	**Ouranopolis**	**2.09**	**40**	P	**Pn**	**05 18 00.7**	**-0.2**	
VLI	**Veliai**	**2.10**	**164**	P	**Pn**	**05 18 01.7**	**+0.6**	
VLI	**Veliai**	**2.10**	**164**	P	**Pn**	**05 18 01.7**	**+0.6**	
VLI	**Veliai**	**2.10**	**164**	P	**Pn**	**05 18 00.9**	**-0.1**	
KEK	**Kerkira**	**2.11**	**298**	P	**Pb**	**05 18 03.4**	**-0.9**	
KEK	**Kerkira**	**2.11**	**298**	P	**Pb**	**05 18 03.4**	**-0.9**	
FNA	**Florina**	**2.14**	**343**	P	**Pn**	**05 18 02.6**	**+1.0**	
FNA	**Florina**	**2.14**	**343**	P	**Pn**	**05 18 02.6**	**+1.0**	
FNA	**Florina**	**2.14**	**343**	P	**Pn**	**05 18 03.0**	**+1.4**	
GRG	**Griva**	**2.21**	**4**	P	**Pn**	**05 18 03.5**	**+0.9**	
GRG	**Griva**	**2.21**	**4**	P	**Pn**	**05 18 03.5**	**+0.9**	
GRG	**Griva**	**2.21**	**4**	P	**Pn**	**05 18 03.5**	**+0.9**	
SOH	**Sokhos**	**2.25**	**22**	P	**Pn**	**05 18 03.5**	**+0.9**	
SOH	**Sokhos**	**2.25**	**22**	P	**Pn**	**05 18 04.0**	**+0.9**	
SOH	**Sokhos**	**2.25**	**22**	P	**Pn**	**05 18 04.1**	**+0.9**	
SOH	**Sokhos**	**2.25**	**22**	P	**Pn**	**05 18 04.1**	**+0.9**	
BIA	**Bitola**	**2.37**	**343**	*e*Pn	**Pn**	**05 18 06.5**	**+1.6**	
BIA				*e*Sn	**Sn**	**05 18 36.1**	**+2.1**	
BIA	**Bitola**	**2.37**	**343**	*e*Pn	**Pn**	**05 18 06.4**	**+1.6**	
BIA				*e*Sn	**Sn**	**05 18 36.0**	**+2.1**	
KNT	**Kendrikon**	**2.47**	**12**	P	**Pn**	**05 18 06.8**	**+0.7**	
KNT	**Kendrikon**	**2.47**	**12**	P	**Pn**	**05 18 06.9**	**+0.7**	
KNT	**Kendrikon**	**2.47**	**12**	P	**Pn**	**05 18 06.9**	**+0.7**	
KYTH	**Kithira**	**2.54**	**165**	P	**Pn**	**05 18 09.0**	**+1.8**	
KYTH	**Kithira**	**2.54**	**165**	P	**Pn**	**05 18 09.0**	**+1.8**	
LIA	**Limnos Island**	**2.57**	**62**	P	**Pn**	**05 18 06.6**	**-0.9**	
VAY	**Valandovo**	**2.59**	**6**	*i* Pn	**Pn**	**05 18 08.0**	**+0.2**	
VAY				*e*Sn	**Sn**	**05 18 36.5**	**-2.6**	
VAY	**Valandovo**	**2.59**	**6**	*i* Pn	**Pn**	**05 18 07.9**	**+0.2**	
VAY				*e*Sn	**Sn**	**05 18 36.4**	**-2.6**	
SRS	**Serrai**	**2.59**	**24**	P	**Pn**	**05 18 08.5**	**+0.7**	
SRS	**Serrai**	**2.59**	**24**	P	**Pn**	**05 18 08.5**	**+0.7**	
SRS	**Serrai**	**2.59**	**24**	P	**Pn**	**05 18 08.1**	**+0.3**	
OHR	**Ohrid**	**2.60**	**336**	*i* Pn	**Pn**	**05 18 09.8**	**+1.7**	
OHR				*e*Sn	**Sn**	**05 18 38.4**	**-1.2**	
OHR	**Ohrid**	**2.60**	**336**	*i* Pn	**Pn**	**05 18 09.7**	**+1.7**	
OHR				*e*Sn	**Sn**	**05 18 38.3**	**-1.2**	
KAVA	**Kavala**	**2.86**	**37**	P	**Pn**	**05 18 09.9**	**-1.5**	
NVR	**Nevrokopi**	**2.89**	**25**	P	**Pn**	**05 18 13.1**	**+1.2**	
NVR	**Nevrokopi**	**2.89**	**25**	P	**Pn**	**05 18 13.1**	**+1.2**	
CHOS	**Chios island**	**3.03**	**96**	P	**Pn**	**05 18 15.3**	**+1.4**	
CHOS	**Chios island**	**3.03**	**96**	P	**Pn**	**05 18 15.3**	**+1.4**	
SMTH	**Samothraki Isl**	**3.08**	**55**	P	**Pn**	**05 18 12.0**	**-2.6**	
TIR	**Tirane**	**3.17**	**326**	*i* P	**Pb**	**05 18 23.0**	**+1.0**	
SKO	**Skopje**	**3.28**	**350**	*i* Pn	**Pn**	**05 18 10.2**	**-7.0**	
ALN	**Alexandroupoli**	**3.65**	**53**	P	**Pn**	**05 18 20.2**	**-2.1**	
IDI	**Anoyia**	**4.06**	**147**	Pn	**Pn**	**05 18 29.5**	**+1.4**	
	comp=E,3.0nm,0.3s,baz=338,slow=17,SNR=7.8							
IDI				Sn	**Sn**	**05 19 14.1**	**-1.4**	
	comp=E,2.3nm,0.3s,baz=289,slow=20,SNR=2.4							
BARS	**Barje**	**4.08**	**356**	*e*Pn	**Pn**	**05 18 29.2**	**+1.0**	
TAR1	**Taranto**	**4.21**	**297**	*e*Pn	**Pn**	**05 18 32.9**	**+2.9**	
TIP	**Timpagrande**	**4.28**	**278**	*i*/P	**Pn**	**05 18 32.3**	**+1.2**	
TIP	**Timpagrande**	**4.28**	**278**	*i*/P	**Pn**	**05 18 32.3**	**+1.2**	
PDG	**Podgorica**	**4.32**	**329**	⇑/P	**Pn**	**05 18 34.5**	**+3.0**	
PDG	**Podgorica**	**4.32**	**329**	⇑/P	**Pn**	**05 18 34.5**	**+3.0**	
MATE	**Matera**	**4.66**	**296**	⇑/P	**Pn**	05 18 39.8	+3.6	
MATE	**Matera**	**4.66**	**296**	⇑/P	**Pn**	05 18 39.8	+3.6	
SG1	**Sgolgore (BA)**	**4.75**	**298**	*e*Pn	**Pn**	**05 18 38.9**	**+1.4**	
BOVS	**Bovan**	**4.90**	**356**	*e*Pn	**Pn**	**05 18 40.4**	**+0.9**	
IVAS	**Ivanjica**	**5.07**	**343**	*e*Pn	**Pn**	**05 18 43.1**	**+1.2**	
CDT	**Castel del Mon**	**5.13**	**299**	*e*Pn	**Pn**	**05 18 44.1**	**+1.4**	
GRUS	**Gruza**	**5.26**	**348**	*e*Pn	**Pn**	**05 18 45.6**	**+1.1**	
BBLS	**Lazići**	**5.54**	**338**	*e*Pn	**Pn**	**05 18 49.8**	**+1.5**	
DIVS	**Divibare**	**5.60**	**343**	*e*Pn	**Pn**	**05 18 50.5**	**+1.2**	
TRUS	**Trudelj**	**5.64**	**347**	*e*Pn	**Pn**	**05 18 51.1**	**+1.4**	
MS1	**Monte Sant'Ang**	**5.64**	**304**	*e*Pn	**Pn**	**05 18 50.5**	**+0.7**	
TEKS	**Tekeris**	**6.14**	**342**	*e*Pn	**Pn**	**05 18 57.8**	**+1.2**	
ARR	**Arges**	**6.86**	**14**	⇓/P	**Pn**	**05 19 07.5**	**+1.1**	
ARR	**Arges**	**6.86**	**14**	⇓/P	**Pn**	**05 19 07.5**	**+1.1**	
MLR	**Muntele Rosu**	**7.29**	**21**	⇑/P	Pn	05 19 19.5	+7.1	
PLOR	**Plostina**	**7.82**	**23**	⇑/P	**Pn**	**05 19 21.9**	**+2.2**	
PLOR	**Plostina**	**7.82**	**23**	⇑/P	**Pn**	**05 19 21.9**	**+2.2**	
VRI	**Vrincioaia**	**7.86**	**24**	⇑/P	**Pn**	**05 19 22.8**	**+2.6**	
VRI	**Vrincioaia**	**7.86**	**24**	⇑/P	**Pn**	**05 19 22.8**	**+2.6**	
PKSM	**Morągy**	**7.92**	**342**	⇑/P	**Pn**	**05 19 21.0**	**+0.1**	
PKSM	**Morągy**	**7.92**	**342**	⇑/P	**Pn**	**05 19 21.0**	**+0.1**	
NVLJ	**Novalja**	**8.00**	**319**	*e*Pn	**Pn**	**05 19 22.3**	**+0.2**	
NVLJ				Sn	**Sn**	**05 20 49.6**	**-2.8**	
NVLJ	**Novalja**	**8.00**	**319**	*e*Pn	**Pn**	**05 19 22.2**	**+0.2**	
BRTR	**Keskin Array B**	**8.92**	**80**	Pn	**Pn**	**05 19 37.5**	**+2.7**	
	comp=E,0.4nm,0.3s,baz=256,slow=13,SNR=8.3							
BURAR	**Bucovina Array**	**9.13**	**13**	⇑/P	**Pn**	**05 19 38.8**	**+1.1**	
BURAR	**Bucovina Array**	**9.13**	**13**	⇑/P	**Pn**	**05 19 38.8**	**+1.1**	
KECS	**Kecovo**	**9.81**	**353**	*e*	Pn	05 19 56.4	+9.5	
ESDC	**Sonseca Array**	**20.29**	**281**	P	Pn	05 22 04.0	+0.3	
	comp=E,0.6nm,0.7s,baz=76,slow=10,SNR=2.6							
HFS	**Hagfors**	**22.08**	**349**	P	**P**	**05 22 20.6**	**-0.1**	
	comp=E,0.6nm,0.5s,baz=150,slow=12,SNR=6.2							
FINES	**FINESS Array B**	**22.85**	**5**	P	**P**	**05 22 27.9**	**-1.0**	
	comp=E,0.5nm,0.5s,baz=169,slow=11,SNR=3.6							
NB2	**NORSAR Subarra**	**23.35**	**346**	P	**P**	**05 22 32.7**	**-1.4**	
	comp=Z,1.1nm,0.8s,baz=155,slow=10							
NB2	**NORSAR Subarra**	**23.35**	**346**	P	**P**	**05 22 32.7**	**-1.4**	
	comp=Z,1.1nm,0.8s,SNR=3.8							
NOA	**NORSAR Array B**	**23.35**	**346**	P	**P**	**05 22 33.8**	**-0.3**	
	comp=Z,0.3nm,0.6s,baz=167,slow=12,SNR=3.0							
EKA	**Eskdalemuir Ar**	**23.76**	**323**	P	**P**	**05 22 36.9**	**-1.2**	
	comp=Z,0.4nm,0.4s,baz=119,slow=8.7,SNR=7.0							
TORD	**Torodi Ar. Bea**	**31.32**	**221**	P	**P**	**05 23 47.3**	**+1.0**	
	comp=Z,0.5nm,0.5s,baz=39,slow=9.3,SNR=7.8							
MKAR	**Makanchi Array**	**43.87**	**59**	P	**P**	**05 25 32.2**	**0.0**	
	comp=Z,0.9nm,0.4s,baz=287,slow=6.9,SNR=9.3							
ZALV	**Zalesovo Beam**	**44.32**	**49**	P	**P**	**05 25 35.2**	**-0.4**	
	comp=Z,1.1nm,0.3s,baz=282,slow=7.1,SNR=2.9							
YKA	**Yellowknife Ar**	**73.31**	**341**	P	**P**	**05 28 56.7**	**-0.2**	
	comp=Z,0.2nm,0.5s,baz=36,slow=5.4,SNR=10							

NIED ***21*** *05:19:00,38˚.40N×142˚.20E,h38km,Mw3.7 Best double couple: M₀3.80000×10¹⁴ NP1:φ₅188.00000°,δ34.00000°, λ-69.00000°. NP2:φ₅343.00000°,δ58.00000°, λ-104.00000°.*

JMA 21 05:19:40.7±0.1,38˚.42N×142˚.15E,h30km±2km,M3.7, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**0.63**	**273**	P	Pb	05 19 53.1	-0.1
JIO				S	Sb	05 20 01.4	-0.4
OFUJ	**Ofunato**	**0.76**	**330**	P	Pn	05 19 54.9	-0.5
OFUJ				S	Sb	05 20 04.8	-0.6
JMK	**Ichinoseki**	**0.90**	**306**	P	Pn	05 19 57.3	0.0
JMK				S	Sn	05 20 09.2	-0.1
JOU	**Okura**	**1.17**	**268**	P	Pn	05 20 01.5	+0.5
JOU				S	Sn	05 20 16.5	+0.5
MIYJ	**Miyakonagasawa**	**1.18**	**348**	P	Pn	05 20 00.8	-0.4
MIYJ				S	Sn	05 20 15.3	-1.0
JMM	**Marumori**	**1.20**	**243**	P	Pn	05 20 01.3	-0.2
JOM	**Ohasama**	**1.25**	**328**	P	Pn	05 20 02.7	+0.6
JOM				S	Sn	05 20 18.2	+0.3
JYK	**Kaneyama**	**1.49**	**290**	P	Pn	05 20 06.4	+1.0
JRG	**Rokugo**	**1.53**	**310**	P	Pb	05 20 07.4	-1.1
JYS	**Shirataka**	**1.65**	**264**	P	Pn	05 20 08.3	+0.6

NIED ***21*** *05:42:00,39˚.80N×142˚.40E,h44km,Mw3.6 Best double couple: M₀3.19000×10¹⁴ NP1:φ₅191.00000°,δ23.00000°, λ85.00000°. NP2:φ₅17.00000°,δ67.00000°,λ92.00000°.*

JMA 21 05:42:14.6±0.1,39˚.75N×142˚.37E,h41km±1km,M3.6, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JTH	**Tanohata**	**0.43**	**296**	P	Pn	05 42 24.6	+0.1
JTH				S	Sn	05 42 31.4	-0.1
JKZ	**Kuzumaki**	**0.83**	**287**	P	Pn	05 42 30.1	+0.2
JKZ				S	Sn	05 42 41.2	+0.1
OFUJ	**Ofunato**	**0.86**	**219**	P	Pn	05 42 30.3	0.0
OFUJ				S	Sn	05 42 41.2	-0.5
JOM	**Ohasama**	**0.88**	**252**	P	Pn	05 42 30.8	+0.3
JOM				S	Sn	05 42 42.6	+0.5
JANG	**Nango**	**0.91**	**314**	P	Pn	05 42 30.6	-0.3
JMK	**Ichinoseki**	**1.20**	**229**	P	Pn	05 42 35.2	+0.4
JMK				S	Sn	05 42 50.2	+0.4
JRG	**Rokugo**	**1.39**	**256**	P	Pn	05 42 38.4	+0.9
JAH	**Hinai**	**1.40**	**289**	P	Pn	05 42 38.4	+0.7
JAH				S	Sn	05 42 56.7	+1.7
JTM	**Tenmabayashi**	**1.44**	**317**	P	Pn	05 42 38.8	+0.7
JTM				S	Sn	05 42 56.9	+1.1
JIO	**Ouri**	**1.52**	**212**	P	Pn	05 42 40.1	+0.9
JIO				S	Sn	05 42 58.4	+0.6
JYK	**Kaneyama**	**1.77**	**243**	P	Pn	05 42 43.4	+0.7
JOT	**Ohata**	**1.92**	**329**	P	Pn	05 42 46.1	+1.4

ISCJB ***21*** *05:52:48.3±0.6,35˚.9N±0˚.1×135˚.4E±0˚.1,h350km,mb3.0/2, Error ellipse: s-maj=17.9km s-min=13.4km az=17.5*
IDC ***21*** *05:52:48.4±1.3,35˚.82N×135˚.48E,h363km±21km,mb2.9/2, mb1 3.0/5,mb1mx2.7/37,mbtmp3.6/5, Error ellipse: s-maj=34.4km s-min=22.9km az=47.0*
JMA ***21*** *05:52:49.0±0.1,35˚.83N×135˚.46E,h347km±1km,M2.4*

ISC 21 05:52:48.1±1.0,35˚.8N±0˚.1×135˚.4E±0˚.1,h350km,n12, σ0ᵗ94/15,Western Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JKY	**Yasaka**	**0.32**	**237**	P	**Pn**	**05 53 32.9**	**+0.8**
JWT	**Wachi**	**0.52**	**183**	P	**Pn**	**05 53 33.1**	**+0.6**
JWT				S	**S**	**05 54 07.6**	**-0.4**
JFM	**Mihama**	**0.52**	**122**	P	**Pn**	**05 53 33.3**	**+0.8**
JFM				*e*S	**S**	**05 54 08.0**	**0.0**
JKSM	**Kasumi**	**0.67**	**251**	P	**Pn**	**05 53 33.5**	**+0.7**
JGM	**Miyama**	**1.05**	**95**	P	**Pn**	**05 53 34.6**	**+0.5**
JGM				*e*S	**S**	**05 54 11.1**	**+0.1**
JIE	**Ise**	**1.75**	**143**	P	**Pn**	**05 53 38.7**	**+0.9**
MJAR	**Matsushiro Arr**	**2.36**	**71**	P	**Pn**	**05 53 43.5**	**+1.5**
	0.8nm,0.3s,baz=265,slow=10,SNR=5.0						
TK02	**Tokai 2**	**2.66**	**134**	P	**Pn**	**05 53 45.7**	**+1.4**
KSRS	**Korea Array**	**6.26**	**287**	P	**Pn**	**05 54 23.2**	**+1.4**
	0.5nm,0.3s,baz=110,slow=12,SNR=5.5						
ASAJ	**Asahikawa**	**9.95**	**31**	P	**Pn**	**05 55 04.8**	**-0.5**
	2.4nm,0.3s,baz=242,slow=8.6,SNR=4.0						
MKAR	**Makanchi Array**	**40.70**	**303**	P	**P**	**05 59 55.1**	**-0.6**
	0.4nm,0.7s,baz=92,slow=7.3,SNR=3.5						
WRA	**Warramunga Arr**	**55.45**	**181**	P	**P**	**06 01 46.7**	**-0.9**
	0.7nm,0.5s,baz=357,slow=7.6,SNR=20						

ISCJB ***21*** *06:05:59.6±0.9,37˚.02N±0˚.04×140˚.97E±0˚.07,h10km±4km, mb3.6/6,Error ellipse: s-maj=9.6km s-min=5.9km az=14.9*
IDC ***21*** *06:05:59.7±1.1,37˚.01N×140˚.91E,h0km,mb3.5/6, mb1 3.7/7,mb1mx3.4/46,mbtmp3.5/7,ML3.5/1, Error ellipse: s-maj=25.8km s-min=22.0km az=89.0*
JMA ***21*** *06:06:01.6,37˚.05N×140˚.79E,h8km±1km,M3.4 Broadband fault plane solution: P waves. NP1: φ₅294.00000°,δ51.00000°,λ-105.00000°. NP2: φ₅138.00000°,δ41.00000°,

37nm,1.1s,baz=80,slow=37,SNR=24
KURK Kurchatov 5.86 238 ⇑Pn Pn 06 18 25.3 +0.7
2.2nm,0.5s
KURK ⇓Lg Lg 06 20 02.4
12nm,1.1s
KURBB Kurchatov Arra 5.96 237 Pn Pn 06 18 27.1 +1.0
0.5nm,0.3s,baz=54,slow=13,SNR=49
KURBB Lg Lg 06 20 04.2
0.0nm,0.3s,baz=59,slow=32,SNR=4.3
MK31 Makanchi Array 7.78 201 Pn Pn 06 18 51.5 +0.5
0.2nm,0.3s,baz=25,slow=13,SNR=15
MK31 Sn Sn 06 20 16.6 -3.2
0.4nm,0.6s,baz=241,slow=56,SNR=4.0
MK31 ⇓Lg Lg 06 20 58.6
1.4nm,0.8s,baz=26,slow=26,SNR=4.6
MKAR Makanchi Array 7.78 201 Pn Pn 06 18 52.1 +1.0
0.5nm,0.3s,baz=25,slow=13,SNR=16
MKAR Lg Lg 06 21 03.9
0.1nm,0.3s,baz=28,slow=29,SNR=7.4

*ISCJB **21** 06:38:59.8±1.1,73.°32N±0.°05×8.°2E±0.°3,h11km, Error ellipse: s-maj=13.6km s-min=6.9km az=5.8*
*IDC **21** 06:39:00.7±2.7,73.°24N×7.°64E,h0km,mb1 3.4/4, mb1mx3.0/62,mbtmp3.3/4,ML3.2/4, Error ellipse: s-maj=36.8km s-min=20.8km az=74.0*
*BER **21** 06:39:02.7±1.8,73.°36N×7.°28E,h10km,ML2.1*
ISC 21 06:39:01.3±1.8,73.°34N±0.°08×7.°9E±0.°1,h11km,n13, σ0=97/15,Greenland Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HSPB	**Hornsund (broa**	**4.16**	**24**	*e*P	**Pn**	**06 40 05.1**	**+0.5**
TRO	**Tromso**	**5.11**	**131**	*e*P	**Pn**	**06 40 19.2**	**+1.6**
SPITS	**Spitsbergen Ar**	**5.28**	**19**	Pn	**Pn**	**06 40 20.8**	**+0.7**
	baz=191,slow=15,SNR=2.6						
HOPEN	**Hopen**	**5.46**	**46**	*e*P	**Pn**	**06 40 22.6**	**+0.2**
HOPEN				*e*S	**Sn**	**06 41 24.2**	**-0.8**
LOF	**Lofoten**	**5.55**	**158**	*e*P	**Pn**	**06 40 23.1**	**-0.6**
LOF				IAML		06 41 22.0	
	comp=Z,4.2nm,0.6s						
HAMF	**Hammerfest**	**5.58**	**111**	*e*P	**Pn**	**06 40 24.8**	**+0.7**
ARCES	**ARCESS Array B**	**6.77**	**116**	Pn	**Pn**	**06 40 41.8**	**+1.4**
	comp=Z,0.8nm,0.3s,baz=321,slow=12,SNR=2.1						
ARCES				Sn	**Sn**	**06 41 56.2**	**-1.1**
	comp=Z,0.3nm,0.3s,baz=313,slow=20,SNR=0.9						
ARE0	**ARCESS Array S**	**6.77**	**116**	*e*P	**Pn**	**06 40 42.0**	**+1.6**
KEV	**Kevo**	**7.02**	**111**	*e*P	**Pn**	**06 40 44.4**	**+0.6**
KONS	**Konsvik**	**7.10**	**163**	*e*P	**Pn**	**06 40 45.2**	**+0.2**
KONS				IAML		06 42 01.9	
	comp=Z,3.0nm,0.7s						
MOR8	**Moi Rana**	**7.54**	**159**	*e*P	**Pn**	**06 40 50.9**	**-0.2**
MOR8				*e*S	Sn	06 42 08.8	-7.7
NOA	**NORSAR Array B**	**12.42**	**173**	Pn	**Pn**	**06 41 57.6**	**-0.2**
	comp=Z,0.1nm,0.3s,baz=325,slow=15,SNR=1.4						
FINES	**FINESS Array B**	**13.73**	**141**	Pn	**Pn**	**06 42 16.0**	**+0.4**
	comp=Z,0.1nm,0.3s,baz=340,slow=12,SNR=1.7						

*ISCJB **21** 06:40:14.2±0.5,19.°02N±0.°06×145.°5E±0.°2,h214km, mb3.7/14, Error ellipse: s-maj=23.3km s-min=8.0km az=5.3*
*IDC **21** 06:40:14.8±2.2,19.°02N×145.°59E,h206km±21km, mb3.6/14,mb1 3.8/15,mb1mx3.4/59,mbtmp4.2/15,MS3.6/2, Ms1 3.6/2,ms1mx2.5/52, Error ellipse: s-maj=19.8km s-min=10.9km az=95.0*
ISC 21 06:40:15.6±0.6,18.°99N±0.°08×145.°6E±0.°2,h214km,n18, σ0=68/19,mb4.0/14,Mariana Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GUMO	**Guam**	**5.41**	**187**	P	**Pn**	**06 41 36.6**	**+1.0**
	4.7nm,0.3s,baz=27,slow=20,SNR=1.7						
GUMO				S	**S**	**06 42 37.3**	**-1.4**
	11nm,0.3s,baz=146,slow=22,SNR=2.1						
KLR	**Kul'dur**	**32.16**	**343**	P	**P**	**06 46 23.1**	**+0.1**
	1.6nm,0.4s,baz=161,slow=5.5,SNR=6.9						
WRA	**Warramunga Arr**	**40.23**	**196**	P	**P**	**06 47 32.0**	**+0.4**
	3.7nm,0.5s,baz=16,slow=9.0,SNR=60						
WRA				PcP	**PcP**	**06 49 30.7**	**-0.6**
	0.9nm,0.5s,baz=16,slow=3.3,SNR=7.0						
FITZ	**Fitzroy Crossi**	**41.74**	**209**	P	**P**	**06 47 44.2**	**+0.3**
	3.7nm,0.2s,baz=30,slow=11,SNR=32						
ASAR	**Alice Springs**	**43.90**	**196**	P	**P**	**06 48 01.3**	**+0.1**
	1.4nm,0.5s,baz=12,slow=7.1,SNR=26						
ASAR				PcP	**PcP**	**06 49 42.9**	**-0.6**
	0.4nm,0.5s,baz=29,slow=2.8,SNR=4.3						
LEM	**Lembang**	**45.35**	**239**	LR	LR	07 08 55.4	
	comp=Z,52nm,19.9s,baz=216,slow=38						
DZM	**Mont Dzumac**	**45.63**	**152**	P	**P**	**06 48 15.3**	**+0.3**
	4.9nm,0.6s,baz=260,slow=5.4,SNR=8.7						
MKAR	**Makanchi Array**	**58.17**	**314**	P	**P**	**06 49 47.5**	**+0.3**
	0.3nm,0.6s,baz=88,slow=8.2,SNR=3.7						
RAO	**Raoul Island**	**59.51**	**143**	LR	LR	07 14 38.1	
	comp=Z,76nm,18.9s,baz=124,slow=35						
ILAR	**Eielson Array**	**63.44**	**26**	P	**P**	**06 50 21.4**	**-0.8**
	0.8nm,0.7s,baz=256,slow=5.4,SNR=7.9						
BVAR	**Borovoye Array**	**66.18**	**320**	P	**P**	**06 50 40.2**	**+0.1**
	1.2nm,0.4s,baz=89,slow=6.8,SNR=7.2						
INK	**Inuvik**	**69.16**	**23**	P	**P**	**06 50 58.6**	**+0.2**
	0.6nm,0.5s,baz=272,slow=7.1,SNR=5.4						
YKA	**Yellowknife Ar**	**77.79**	**28**	P	**P**	**06 51 48.8**	**0.0**
	0.8nm,0.6s,baz=289,slow=5.5,SNR=24						
ARCES	**ARCESS Array B**	**82.18**	**342**	P	**P**	**06 52 12.5**	**+0.3**
	2.4nm,0.8s,baz=81,slow=7.5,SNR=5.1						
NVAR	**Mina Array Bea**	**83.06**	**52**	P	**P**	**06 52 18.3**	**+0.6**
	1.9nm,0.7s,baz=267,slow=5.8,SNR=12						
FINES	**FINESS Array B**	**86.57**	**335**	P	**P**	**06 52 33.1**	**-1.2**
	0.8nm,0.3s,baz=77,slow=5.0,SNR=12						
PDAR	**Pinedale Array**	**87.71**	**45**	P	**P**	**06 52 39.8**	**-0.7**
	0.1nm,0.3s,baz=80,slow=1.1,SNR=3.0						
LPAZ	**La Paz**	**147.80**	**91**	PKPbc	**PKPbc**	**06 59 37.0**	**+0.2**
	1.2nm,0.7s,baz=272,slow=6.7,SNR=5.4						

IDC 21 06:41:12.3±2.3,54.°13N×86.°26E,h0km,mb1 3.2/2, mb1mx3.0/61,mbtmp3.2/2,ML2.8/2, Error ellipse: s-maj=18.2km s-min=11.5km az=60.0,Southwestern Siberia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
I46RU	**ZALESOVO INFRA**	**0.87**	**258**	*i*		06 48 00.0	
	baz=77,slow=318,SNR=9.7						
ZALV	**Zalesovo Beam**	**0.87**	**258**	Pg	Pg	06 41 27.9	-1.0
	4.8nm,0.3s,baz=73,slow=16,SNR=20						
ZALV				Lg	Lg	06 41 41.1	
	5.7nm,0.3s,baz=80,slow=30,SNR=23						
KURBB	**Kurchatov Arra**	**5.89**	**237**	Pn	Pn	06 42 41.7	+0.9
	0.1nm,0.3s,baz=54,slow=14,SNR=28						
KURBB				Lg	Lg	06 44 21.7	
	0.1nm,0.3s,baz=52,slow=34,SNR=5.2						
MKAR	**Makanchi Array**	**7.77**	**201**	Pn	Pn	06 43 07.6	+1.0
	0.4nm,0.3s,baz=23,slow=13,SNR=8.6						
MKAR				Lg	Lg	06 45 17.2	
	baz=24,slow=27,SNR=6.7						

*IDC **21** 06:45:44.5±3.8,36.°14N×142.°19E,h0km,mb3.4/2, mb1 3.5/3,mb1mx3.2/61,mbtmp3.3/3,ML3.4/1,MS2.5/1, Ms1 2.5/1,ms1mx2.0/34, Error ellipse: s-maj=98.0km s-min=37.5km az=52.0*
*ISCJB **21** 06:45:46.6±1.2,36.°19N±0.°05×142.°02E±0.°10,h19km, mb3.4/2, Error ellipse: s-maj=11.5km s-min=7.4km az=176.5*
*JMA **21** 06:45:48.5±0.2,36.°20N×141.°91E,h66km,M3.0*
ISC 21 06:45:47.5±1.5,36.°26N±0.°05×142.°0E±0.°1,h19km,n13, σ0=81/16,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**1.06**	**239**	P	**Pb**	**06 46 06.8**	**-0.4**
CHOJ				*e*S	**Sb**	**06 46 20.7**	**0.0**
JHO	**Hitachi**	**1.19**	**288**	P	**Pn**	**06 46 08.6**	**-0.5**
ONAJ	**Iwakimizuishiy**	**1.27**	**312**	P	**Pb**	**06 46 10.5**	**-0.3**
ONAJ				*e*S	**Sn**	**06 46 26.9**	**+0.1**
JFK	**Kawauchi**	**1.42**	**322**	P	**Pb**	**06 46 12.9**	**-0.4**
BSO1	**Boso 1**	**1.79**	**207**	P	**Pn**	**06 46 16.6**	**-0.3**
JFT	**Otama**	**1.82**	**314**	P	**Pb**	**06 46 19.3**	**-0.9**
JFT				*e*S	**Sb**	**06 46 42.4**	**-0.2**
JMM	**Marumori**	**1.87**	**330**	P	**Pb**	**06 46 19.9**	**-1.0**
JAG	**Ashikaga**	**2.04**	**275**	P	**Pn**	**06 46 21.0**	**+0.2**
MJAR	**Matsushiro Arr**	**3.05**	**276**	Pn	**Pn**	**06 46 35.4**	**+1.1**
	4.5nm,0.3s,baz=87,slow=9.6,SNR=33						
MAT	**Matsushiro**	**3.06**	**276**	P	**Pn**	**06 46 35.4**	**+0.6**
MAT				*e*S	**Sn**	**06 47 09.7**	**-1.1**
ASAJ	**Asahikawa**	**7.87**	**3**	LR	LR	06 51 06.0	
	comp=Z,31nm,18.7s,baz=141,slow=40						
MKAR	**Makanchi Array**	**44.92**	**303**	P	**P**	**06 54 02.6**	**+1.7**
	0.3nm,0.7s,baz=82,slow=8.7,SNR=4.4						
WRA	**Warramunga Arr**	**56.36**	**189**	P	**P**	**06 55 26.9**	**-0.5**
	0.6nm,1.1s,baz=16,slow=8.6,SNR=2.9						

*DDA **21** 06:50:59.2,37.°87N×27.°44E,h8km,Ml2.9*
*CSEM **21** 06:50:59.9±0.1,37.°87N×27.°45E,h2km,ML2.9, Error ellipse: s-maj=3.7km s-min=2.7km az=67.0*
*ISK **21** 06:50:59.6,37.°88N×27.°46E,h5km,MD2.8*
ISC 21 06:50:60.0±1.0,37.°86N±0.°02×27.°43E±0.°02,h6km±11km, n35,σ0=84/45,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GCAM	**G?zelcaml?**	**0.22**	**223**	*i* P	**Pg**	**06 51 04.3**	**0.0**
GCAM				*i* S	**Sg**	**06 51 07.5**	**+0.3**
GCAM	**G?zelcaml?**	**0.22**	**223**	P	**Pg**	**06 51 04.3**	**0.0**
GCAM				S	**Sg**	**06 51 07.5**	**+0.3**
AYDB	**Zeytinkoy-Aydi**	**0.38**	**77**	*e*PG	**Pg**	**06 51 07.0**	**-0.4**
AYDB				*e*SG	**Sg**	**06 51 12.2**	**-0.2**
AYDB	**Zeytinkoy-Aydi**	**0.38**	**77**	*e*Pg	**Pg**	**06 51 07.0**	**-0.4**
AYDB				*e*Sg	**Sg**	**06 51 12.2**	**-0.2**
AYDN	**Tasoluk**	**0.41**	**119**	*i* P	**Pg**	**06 51 07.8**	**-0.2**
AYDN				*i* S	**Sg**	**06 51 13.3**	**-0.1**
AYDN	**Tasoluk**	**0.41**	**119**	P	**Pg**	**06 51 07.8**	**-0.2**
AYDN				S	**Sg**	**06 51 13.3**	**-0.1**
IZM	**Izmir**	**0.55**	**347**	*e*PG	**Pg**	**06 51 10.4**	**-0.2**
IZM	**Izmir**	**0.55**	**347**	*e*Pg	**Pg**	**06 51 10.4**	**-0.2**
BLCB	**Balcova**	**0.60**	**330**	*e*PG	**Pg**	**06 51 11.3**	**-0.3**
BLCB	**Balcova**	**0.60**	**330**	*e*Pg	**Pg**	**06 51 11.3**	**-0.3**
BDRM	**Kayabasi**	**0.80**	**179**	*i* P	**Pg**	**06 51 15.0**	**-0.2**
BDRM				*i* S	**Sb**	**06 51 26.5**	**-0.7**
BDRM	**Kayabasi**	**0.80**	**179**	P	**Pg**	**06 51 15.0**	**-0.2**
BDRM				S	**Sb**	**06 51 26.5**	**-0.7**
BODT	**Bodrum**	**0.80**	**187**	*e*PG	**Pg**	**06 51 15.6**	**+0.2**
BODT	**Bodrum**	**0.80**	**187**	*e*Pg	**Pg**	**06 51 15.6**	**+0.2**
ZEY	**˙zmir**	**0.82**	**298**	*i* P	**Pg**	**06 51 15.5**	**-0.2**
ZEY				*i* S	**Sg**	**06 51 26.6**	**+0.2**
YER	**Yerkesik**	**1.00**	**136**	*e*PG	**Pb**	**06 51 19.3**	**-0.4**
YER	**Yerkesik**	**1.00**	**136**	*e*Pg	**Pb**	**06 51 19.3**	**-0.4**
AKS	**Akhisar**	**1.06**	**17**	*e*PG	**Pg**	**06 51 19.9**	**-0.5**
AKS	**Akhisar**	**1.06**	**17**	*e*Pg	**Pg**	**06 51 19.9**	**-0.5**
KULA	**Kula-Manisa**	**1.17**	**56**	*e*PN	**Pg**	**06 51 22.1**	**-0.4**
KULA	**Kula-Manisa**	**1.17**	**56**	*e*Pn	**Pg**	**06 51 22.1**	**-0.4**
CHOS	**Chios island**	**1.20**	**296**	*e*PN	**Pn**	**06 51 23.6**	**+0.2**
CHOS	**Chios island**	**1.20**	**296**	*e*Pn	**Pn**	**06 51 23.7**	**+0.2**
DKL	**Dikili**	**1.27**	**342**	*e*PN	**Pg**	**06 51 25.0**	**+0.5**
DKL	**Dikili**	**1.27**	**342**	*e*Pn	**Pg**	**06 51 25.0**	**+0.5**
DALY	**Dalyan (Mu˘la**	**1.43**	**136**	*e*PN	**Pn**	**06 51 26.2**	**-0.3**
DALY	**Dalyan (Mu˘la**	**1.43**	**136**	*e*Pn	**Pn**	**06 51 26.2**	**-0.3**
ARG	**Arkhangelos**	**1.73**	**161**	*e*PN	**Pb**	**06 51 32.2**	**-0.1**
ARG	**Arkhangelos**	**1.73**	**161**	*e*Pn	**Pb**	**06 51 32.2**	**-0.1**
GOLH	**Golhisar**	**1.81**	**110**	*i* P	**Pn**	**06 51 31.6**	**-0.2**
GOLH				*i* S	**Sg**	**06 52 03.0**	**+4.8**
GOLH	**Golhisar**	**1.81**	**110**	P	**Pn**	**06 51 31.6**	**-0.2**
SIGR	**SIGRI**	**1.82**	**318**	*e*PN	**Pb**	**06 51 33.5**	**-0.3**
SIGR	**SIGRI**	**1.82**	**318**	*e*Pn	**Pb**	**06 51 33.5**	**-0.3**
TVSB	**Tavsanli**	**2.25**	**45**	*e*PN	**Pn**	**06 51 38.6**	**+0.7**
TVSB	**Tavsanli**	**2.25**	**45**	*e*Pn	**Pn**	**06 51 38.6**	**+0.7**

*NIED **21** 06:57:00,37.°30N×142.°50E,h11km,Mw3.5 Best double couple: M0 2.29000×10^14 NP1:φs=37.00000°,δ41.00000°, λ-62.00000°. NP2:φs=182.00000°,δ54.00000°, λ-113.00000°.*
*ISCJB **21** 06:57:04.7±1.3,37.°29N±0.°06×142.°45E±0.°08,h21km, mb3.5/2, Error ellipse: s-maj=10.2km s-min=8.3km az=42.6*
*JMA **21** 06:57:05.2±0.2,37.°29N×142.°46E,h31km,M3.9*
*IDC **21** 06:57:07.0±3.1,36.°75N×141.°71E,h0km,mb3.4/2, mb1 3.4/3,mb1mx3.2/58,mbtmp3.2/3,ML2.7/1, Error ellipse: s-maj=73.1km s-min=35.4km az=56.0*
ISC 21 06:57:05.8±1.9,37.°31N±0.°09×142.°4E±0.°1,h21km,n17, σ0=92/13,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**1.21**	**273**	P	**Pb**	**06 57 27.4**	**-0.5**
JFK				*e*S	**Sn**	**06 57 43.7**	**+0.5**
ONAJ	**Iwakimizuishiy**	**1.29**	**261**	*e*S	**Sb**	**06 57 45.3**	**-0.1**
JMM	**Marumori**	**1.38**	**294**	P	**Pn**	**06 57 30.1**	**+0.3**
JIO	**Ouri**	**1.41**	**325**	P	**Pn**	**06 57 30.4**	**+0.3**
JIO				*e*S	**Sn**	**06 57 47.8**	**-0.3**
JHO	**Hitachi**	**1.62**	**245**	*e*S	**Sb**	**06 57 53.6**	**-1.2**
JFT	**Otama**	**1.65**	**278**	P	**Pn**	**06 57 32.8**	**-1.7**
JFT				*e*S	**Sn**	**06 57 54.3**	**+0.3**
JOU	**Okura**	**1.73**	**308**	P	**Pn**	**06 57 35.1**	**+0.6**
JOU				S	**Sn**	**06 57 56.2**	**+0.3**
MJAR	**Matsushiro Arr**	**3.44**	**258**	Pn	Pn	06 57 52.9	-5.1
	1.3nm,0.3s,baz=85,slow=17,SNR=5.7						
MAT	**Matsushiro**	**3.44**	**258**	P	Pn	06 57 52.1	-6.0
MAT				*e*S	**Sn**	**06 58 40.5**	**+2.3**
H11N2	**WAKE ISLAND Hy**	**27.63**	**123**	T	T	07 31 45.9	
	baz=315,slow=75,SNR=14						
H11N1	**WAKE ISLAND Hy**	**27.64**	**123**	T	T	07 31 44.0	
	baz=315,slow=75,SNR=13						
H11N3	**WAKE ISLAND Hy**	**27.65**	**123**	T	T	07 31 48.1	
	baz=315,slow=75,SNR=12						
H11S1	**WAKE ISLAND Hy**	**28.36**	**125**	T	T	07 32 40.4	
	baz=316,slow=76,SNR=14						
H11S3	**WAKE ISLAND Hy**	**28.37**	**125**	T	T	07 32 39.6	
	baz=316,slow=76,SNR=11						
H11S2	**WAKE ISLAND Hy**	**28.38**	**125**	T	T	07 32 40.9	
	baz=316,slow=76,SNR=10						
MKAR	**Makanchi Array**	**44.63**	**302**	P	P	07 05 19.9	+3.2
	0.5nm,0.7s,baz=82,slow=8.7,SNR=5.7						
WRA	**Warramunga Arr**	**57.45**	**189**	P	**P**	**07 06 53.1**	**+0.1**
	0.6nm,0.9s,baz=6.7,slow=6.8,SNR=4.7						

IDC 21 06:58:29.1±10.0,18.°99S×177.°80W,h607km±142km, mb2.8/4,mb1 3.3/5,mb1mx2.8/54,mbtmp3.8/5,Error ellipse: s-maj=77.3km s-min=32.1km az=7.0,Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
URZ	**Urewera**	**19.70**	**192**	P	P	07 02 19.5	-0.2
	0.8nm,0.3s,baz=12,slow=5.5,SNR=5.5						
WRA	**Warramunga Arr**	**45.02**	**261**	P	P	07 05 52.6	+0.2
	0.1nm,0.3s,baz=97,slow=6.8,SNR=7.3						
TXAR	**Lajitas Array**	**86.09**	**57**	P	P	07 10 09.0	+1.7
	1.0nm,0.7s,baz=219,slow=5.6,SNR=7.9						
PDAR	**Pinedale Array**	**87.74**	**43**	P	P	07 10 13.5	-1.5
	0.1nm,0.4s,baz=204,slow=3.3,SNR=3.8						
YKA	**Yellowknife Ar**	**95.07**	**25**	P	P	07 10 46.9	-0.9
	0.2nm,0.7s,baz=246,slow=4.3,SNR=4.0						
ARCES	**ARCESS Array B**	**127.48**	**350**	PKP	PKPdf	07 16 25.1	-0.4
	10nm,1.2s,baz=36,slow=5.1,SNR=4.2						

*NIED **21** 07:01:00,38.°70N×143.°10E,h14km,Mw4.2 Best double couple: M0 2.19000×10^15 NP1:φs=287.00000°,δ24.00000°, λ-9.00000°. NP2:φs=26.00000°,δ86.00000°,λ-114.00000°.*
*BJI **21** 07:01:08.4,38.°78N×143.°06E,h19km,mb4.8/51,mB4.7/32, Ms4.3/27,Ms7 4.2/26*
*JMA **21** 07:01:08.6±0.1,38.°72N×143.°05E,h14km±2km,M4.4*
JMA Felt I J1.
*IDC **21** 07:01:08.2±0.6,38.°78N×142.°97E,h0km,mb4.2/22, mb1 4.4/26,mb1mx4.2/56,mbtmp4.3/26,ML4.1/4,MS3.5/18, Ms1 3.6/18,ms1mx3.2/60, Error ellipse: s-maj=16.6km s-min=13.3km az=123.0*
*ISCJB **21** 07:01:08.5±1.0,38.°77N±0.°03×143.°11E±0.°03,h15km±6km, mb4.4/70,MS3.7/21, Error ellipse: s-maj=5.0km s-min=3.3km az=138.5*
*MOS **21** 07:01:11.4±1.0,38.°91N×143.°05E,h33km,mb4.7/42, Error ellipse: s-maj=8.2km s-min=5.2km az=100.3*
*NEIC **21** 07:01:13.2±1.5,38.°79N×143.°03E,h34km±10km,mb4.5/25, Error ellipse: s-maj=6.6km s-min=4.1km az=124.0*
ISC 21 07:01:10.1±0.7,38.°84N±0.°04×143.°09E±0.°04,h16km±4km, n192,σ1=948/207,mb4.6/73,MS3.7/21,6C-6D,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**1.14**	**283**	P	**Pb**	**07 01 29.7**	**-1.7**
OFUJ				S	**Sb**	**07 01 44.7**	**-1.3**
JIO	**Ouri**	**1.42**	**255**	P	**Pn**	**07 01 33.1**	**-2.2**
JIO				S	**Sn**	**07 01 50.7**	**-2.9**
JMK	**Ichinoseki**	**1.47**	**275**	P	**Pn**	**07 01 34.6**	**-1.3**
JMK				S	**Sn**	**07 01 53.7**	**-1.1**
JOM	**Ohasama**	**1.54**	**295**	P	**Pn**	**07 01 36.4**	**-0.5**
JOM				S	**Sb**	**07 01 56.7**	**-0.8**
JOU	**Okura**	**1.96**	**257**	P	**Pn**	**07 01 41.7**	**-1.1**
JANG	**Nango**	**1.96**	**322**	P	**Pn**	**07 01 42.7**	**-0.1**
JANG				*e*S	**Sb**	**07 02 08.8**	**-0.9**
JRG	**Rokugo**	**1.99**	**287**	P	**Pn**	**07 01 43.3**	**+0.1**
JMM	**Marumori**	**2.05**	**243**	P	**Pn**	**07 01 42.5**	**-1.5**
JMM				*e*S	**Sn**	**07 02 06.7**	**-2.5**
JYK	**Kaneyama**	**2.13**	**273**	P	**Pn**	**07 01 44.7**	**-0.5**
JFK	**Kawauchi**	**2.28**	**231**	P	**Pn**	**07 01 45.2**	**-2.0**
JFK				S	**Sn**	**07 02 11.7**	**-3.3**
ERM	**Erimo**	**3.18**	**1**	*i* P	**Pn**	**07 01 59.4**	**0.0**
ERM				pmax	pmax		
	comp=Z,245nm,1.7s						
ERM	**Erimo**	**3.18**	**1**	*e*Pn	**Pn**	**07 01 59.5**	**+0.1**
ERM				*e*Sn	**Sn**	**07 02 36.8**	**-0.2**
MJAR	**Matsushiro Arr**	**4.50**	**241**	Pn	**Pn**	**07 02 19.3**	**+1.6**
	comp=Z,20nm,0.3s,baz=52,slow=8.9,SNR=92						
MJAR				LR	LR	07 04 09.4	
	comp=Z,303nm,20.8s,baz=65,slow=41						
MAJO	**Matsushiro**	**4.50**	**241**	*e*P	**Pn**	**07 02 18.7**	**+1.0**
MAJO	**Matsushiro**	**4.50**	**241**	*e*Pn	**Pn**	**07 02 18.6**	**+0.9**
MAT	**Matsushiro**	**4.50**	**241**	P	**Pn**	**07 02 18.4**	**+0.7**
MAT				*e*S	**Sn**	**07 03 09.5**	**-0.2**
MJB9	**Matsu-Tunnel**	**4.50**	**241**	*e*Pn	**Pn**	**07 02 18.6**	**+0.9**
ASAJ	**Asahikawa**	**5.29**	**356**	Pn	**Pn**	**07 02 29.9**	**+1.4**
	comp=Z,5.1nm,0.3s,baz=222,slow=11,SNR=8.8						
ASAJ	**Asahikawa**	**5.29**	**356**	*e*Pn	**Pn**	**07 02 29.6**	**+1.1**
ASAJ				*e*Sn	**Sn**	**07 03 28.5**	**-0.6**
YUK	**Yuzh-Kuril'sk**	**5.60**	**21**	P	**Pn**	**07 02 33.1**	**+0.4**
YUK				*e*S	**Sn**	**07 03 32.7**	**-3.9**
YUK				pmax	pmax		
	comp=N,60nm,0.3s						
YUK				pmax	pmax		
	comp=Z,395nm,0.3s						
SHO	**Shikotan**	**5.76**	**28**	*e*P	**Pn**	**07 02 33.3**	**-1.7**
SHO				*e*S	**Sn**	**07 03 35.1**	**-5.6**
SHO				pmax	pmax		
	comp=Z,80nm,0.9s						
INU	**Inuyama**	**5.97**	**236**	*e*Pn	**Pn**	**07 02 38.7**	**+0.8**
JHJ2	**Mitsune**	**6.30**	**206**	*e*Pn	**Pn**	**07 02 40.7**	**-1.7**
JHJ2				*e*Sn	**Sn**	**07 03 54.2**	**+0.2**
JHJ	**Hachijo jima 2**	**6.30**	**206**	Pn	**Pn**	**07 02 40.3**	**-2.1**
	comp=Z,25nm,0.3s,baz=54,slow=21,SNR=5.0						
JHJ				Sn	**Sn**	**07 03 49.1**	**-5.0**
	comp=Z,123nm,0.3s,baz=229,slow=21,SNR=6.0						
KUR	**Kuril'sk**	**7.31**	**28**	*e*P	**Pn**	**07 02 55.8**	**-0.4**
KUR				*e*S	**Sn**	**07 04 13.6**	**-5.3**
KUR				pmax	pmax		
	comp=Z,49nm,0.6s						
YSS	**Yuzh-Sakhalins**	**8.12**	**358**	*e*P	**Pn**	**07 03 10.0**	**+2.7**
YSS				pmax	pmax		
	comp=Z,20nm,0.5s						
YSS	**Yuzh-Sakhalins**	**8.12**	**358**	*e*Pn	**Pn**	**07 03 10.6**	**+3.4**
USRK	**Ussuriysk Ar.**	**9.90**	**306**	Pn	**Pn**	**07 03 35.7**	**+4.0**
	comp=Z,1.5nm,0.3s,baz=116,slow=13,SNR=14						
USRK				LR	LR	07 07 10.8	
	comp=Z,422nm,18.8s,baz=136,slow=37						
JNU	**Nakatsue**	**11.42**	**244**	Pn	**Pn**	**07 03 52.8**	**+0.2**
	comp=Z,1.0nm,0.3s,baz=170,slow=3.4,SNR=8.2						
JNU				LR	LR	07 08 38.1	
	comp=Z,277nm,18.9s,baz=71,slow=40						
JNU	**Nakatsue**	**11.42**	**244**	*e*Pn	**Pn**	**07 03 52.8**	**+0.2**
JNU				*e*Sn	**Sn**	**07 06 00.4**	**+0.6**
MDJ	**Mudanjiang**	**11.62**	**304**	P	**Pn**	**07 03 53.9**	**-1.4**
MDJ				S	**Sn**	**07 06 01.6**	**-3.0**
MDJ				ScP	**ScP**	**07 13 16.3**	**-1.1**
MDJ				PcS	**PcS**	**07 13 19.9**	**+0.7**
MDJ				pmax	pmax		
	comp=Z,6.0nm,1.3s						
MDJ				pmax	pmax		
	comp=Z,43nm,3.2s						
MDJ				LR	LR		
	comp=Z,270nm,16.7s						
MDJ				LR	LR		
	comp=Z,410nm,16.7s						
MDJ				LR	LR		
	comp=Z,550nm,15.4s						
JCJ	**Chichijima**	**11.73**	**184**	Pn	**Pn**	**07 03 58.9**	**+2.0**
	comp=Z,14nm,0.3s,baz=246,slow=17,SNR=5.9						
KSRS	**Korea Array**	**12.03**	**268**	Pn	**Pn**	**07 04 02.7**	**+1.9**
	comp=Z,0.5nm,0.3s,baz=81,slow=13,SNR=11						
KSRS				LR	LR	07 08 21.7	
	comp=Z,248nm,18.6s,baz=72,slow=36						
KS15	**Wonju Array Si**	**12.06**	**268**

ULN	Ulaanbaatar	27.50	301	*e*P		P		07 06 56.6	+0.6
	comp=Z,11nm,1.0s								
SONA1	Songino Array	27.94	301	*e*P		P		07 07 00.1	+0.3
SONM	Songino Array	27.94	301	P		P		07 07 00.5	+0.7
	comp=Z,8.7nm,0.8s,baz=85,slow=8.1,SNR=29								
SONM	Songino Array	27.94	301	P		P		07 07 00.5	+0.7
SONM				pmax	pmax				
	comp=Z,8.0nm,0.8s								
H11N2	WAKE ISLAND Hy	28.03	126	T		T		07 36 20.0	
	baz=318,slow=75,SNR=686								
H11N1	WAKE ISLAND Hy	28.04	126	T		T		07 36 18.4	
	baz=318,slow=75,SNR=828								
H11N3	WAKE ISLAND Hy	28.05	126	T		T		07 36 14.8	
	baz=318,slow=75,SNR=705								
H11S1	WAKE ISLAND Hy	28.82	128	T		T		07 37 18.4	
	baz=7.0,slow=74,SNR=101								
H11S3	WAKE ISLAND Hy	28.82	128	T		T		07 37 56.4	
	SNR=124								
H11S2	WAKE ISLAND Hy	28.84	128	T		T		07 37 17.3	
	baz=323,slow=74,SNR=71								
ENH	Enshi	28.84	263	*e*P		P		07 07 06.7	-1.1
	comp=Z,27nm,0.8s								
TLY	Talaya	30.21	308	P		P		07 07 20.0	+0.3
	comp=Z,2.7nm,0.6s,baz=2.7,slow=3.5,SNR=6.0								
TLY				LR		LR		07 20 06.8	
	comp=Z,188nm,18.5s,baz=104,slow=38								
TLY	Talaya	30.21	308	*e*P		P		07 07 20.6	+0.9
TLY				pmax	pmax				
	comp=Z,4.0nm,0.7s								
TLY				MLR	MLR				
	comp=Z,231nm,16.0s								
TLY	Talaya	30.21	308	*e*P		P		07 07 20.1	+0.3
	comp=Z,11nm,1.2s								
ZAK	Zakamensk	30.25	306	*e*P		P		07 07 20.1	-0.1
ZAK				pmax	pmax				
	comp=Z,8.0nm,1.3s								
LZH	Lanzhou	31.11	277	*e*P		P		07 07 29.8	+1.7
LZH				pP	sP			07 07 36.5	+1.6
LZH				sP	pP			07 07 39.6	+6.7
LZH				PP	PnPn			07 08 31.5	+2.0
LZH				pmax	pmax				
	comp=Z,20nm,1.1s								
LZH				pmax	pmax				
	comp=Z,56nm,5.2s								
LZH				LR	LR				
	comp=Z,300nm,13.2s								
LZH				LR	LR				
	comp=Z,280nm,13.0s								
LZH				LR	LR				
	comp=Z,390nm,16.5s								
MOY	Mondy	31.84	308	*e*P		P		07 07 43.5	+9.3
BILL	Bilibino	31.93	16	*i* P		P		07 07 33.2	-1.5
BILL				pmax	pmax				
	comp=Z,5.0nm,1.1s								
BILL				MLR	MLR				
	comp=Z,54nm,17.0s								
BILL	Bilibino	31.93	16	*e*P		P		07 07 35.9	+1.2
	comp=Z,7.1nm,1.1s								
GYA	Guiyang	32.85	259	*e*P		P		07 07 44.8	+1.4
GYA				pmax	pmax				
	comp=Z,10.0nm,0.8s								
CD2	Chengdu	33.03	268	P		P		07 07 44.1	-0.7
CD2				pmax	pmax				
	comp=Z,1.0nm,0.5s								
GTA	Gaotai	33.34	285	*e*P		P		07 07 46.5	-1.1
GTA				pP	sP			07 07 53.5	-0.9
GTA				sP	pP			07 07 57.3	+4.9
GTA				S	S			07 13 07.4	-0.4
GTA				sS	sS			07 13 23.6	+7.8
GTA				pmax	pmax				
	comp=Z,10.0nm,0.8s								
GTA				pmax	pmax				
	comp=Z,55nm,5.7s								
GTA				LR	LR				
	comp=Z,130nm,15.4s								
GTA				LR	LR				
	comp=Z,220nm,15.4s								
GTA				LR	LR				
	comp=Z,330nm,15.4s								
TIXI	Tiksi	33.68	352	*e*P		P		07 07 49.2	-0.7
TIXI				pmax	pmax				
	comp=Z,2.0nm,1.0s								
KMI	Kunming	36.56	260	P		P		07 08 15.0	-0.6
KMI				pmax	pmax				
	comp=Z,26nm,0.5s								
KMI				pmax	pmax				
	comp=Z,68nm,4.1s								
KMI				LR	LR				
	comp=Z,47nm,4.7s								
KMI				LR	LR				
	comp=Z,100nm,4.5s								
KMI				LR	LR				
	comp=Z,97nm,5.1s								
WMQ	Urumqi	41.24	295	P		P		07 08 56.4	+2.0
WMQ				pP	sP			07 09 03.4	+2.1
WMQ				sP	pP			07 09 05.9	+6.6
WMQ				pmax	pmax				
	comp=Z,3.0nm,0.8s								
WMQ				pmax	pmax				
	comp=Z,35nm,5.2s								
WMQ				LR	LR				
	comp=Z,22nm,17.8s								
WMQ				LR	LR				
	comp=Z,44nm,22.4s								
ZAA0	Zalesovo Array	41.71	311	*e*P		P		07 08 58.4	+0.4
ZALV	Zalesovo Beam	41.71	311	P		P		07 08 58.3	+0.3
	comp=Z,6.3nm,0.6s,baz=96,slow=9.0,SNR=20								
ZALV				LR		LR		07 26 05.5	
	comp=Z,20nm,18.5s,baz=70,slow=36								
NRIK	Noril'sk	42.21	334	P		P		07 09 02.0	+0.1
	comp=Z,1.6nm,0.5s,baz=132,slow=6.3,SNR=4.9								
NRIK	Noril'sk	42.21	334	P		P		07 09 02.0	+0.1
NRIK				pmax	pmax				
	comp=Z,2.0nm,0.5s								
NVS	Novosibirsk	42.58	312	*e*P		P		07 09 04.9	-0.2
CMAR	Chiang Mai Arr	43.24	255	P		P		07 09 10.8	-0.1
	comp=Z,1.6nm,0.3s,baz=54,slow=6.0,SNR=4.0								
SVW2	Sparrevohn	43.29	38	*e*P		P		07 09 12.7	+1.9
	comp=Z,9.9nm,1.3s								
MK01	Makanchi Array	44.31	301	*e*P		P		07 09 19.2	0.0
MK31	Makanchi Array	44.31	301	*i* P		P		07 09 19.3	+0.1
MK31				pmax	pmax				
	comp=Z,8.0nm,0.9s								
MK31	Makanchi Array	44.31	301	*e*P		P		07 09 19.4	+0.1
MKAR	Makanchi Array	44.31	301	P		P		07 09 19.3	+0.1
	comp=Z,3.0nm,0.5s,baz=87,slow=11,SNR=40								
MKAR				LR		LR		07 28 29.8	
	comp=Z,73nm,20.1s,baz=79,slow=37								
KDAK	Kodiak Island	44.88	43	P		P		07 09 24.2	+0.7
	comp=Z,7.7nm,0.9s,baz=121,slow=4.8,SNR=3.6								
KTH	Kantishna Hill	45.51	35	*e*P		P		07 09 28.7	+0.1
	comp=Z,8.2nm,1.0s								
MLY	Manley	45.62	33	*e*P		P		07 09 27.1	-2.3
MLY				*ep*P		sP		07 09 35.6	-0.7
KURK	Kurchatov	45.89	307	P		P		07 09 31.5	-0.1
KURK				pmax	pmax				
	comp=Z,44nm,1.1s								
KURK	Kurchatov	45.89	307	*e*P		P		07 09 31.4	-0.3
	comp=Z,16nm,0.8s								
RND	Reindeer	46.44	35	*e*P		P		07 09 36.3	+0.3
RND	Reindeer	46.44	35	*e*P		P		07 09 36.3	+0.3
MDM	Murphy Dome	46.69	33	*e*P		P		07 09 39.8	+2.0
	comp=Z,5.8nm,0.9s								
PDGK	Podgornoye	47.13	297	P		P		07 09 41.2	-0.2
PDGK				pmax	pmax				
	comp=Z,7.0nm,0.6s								
ILAR	Eielson Array	47.26	33	P		P		07 09 43.5	+1.2
	comp=Z,1.0nm,0.7s,baz=259,slow=6.1,SNR=15								
ILB	Eielson Array	47.26	33	*e*P		P		07 09 43.3	+1.1
IL1	Eielson Array	47.26	33	*e*P		P		07 09 42.8	+0.5
KKN	Kakani	48.84	275	*e*P		P		07 09 55.0	-0.2
	comp=Z,30nm,0.5s								
PKIN	Phulchoki	48.85	275	*e*P		P		07 09 54.8	-0.5
	comp=Z,8.3nm,0.4s								
GKN	Gorkha	49.23	276	*e*P		P		07 09 58.0	-0.1
	comp=Z,28nm,0.8s								
TKM2	Tokmak 2	49.96	298	P		P		07 10 04.0	+0.4
TKM2				pmax	pmax				
	comp=Z,13nm,1.0s								
TKM2	Tokmak 2	49.96	298	*e*P		P		07 10 04.3	+0.8
	comp=Z,12nm,0.9s								
KOLN	Koldanda	50.15	276	*e*P		P		07 10 05.2	0.0
	comp=Z,16nm,0.6s								
BVA0	Borovoye Array	50.36	312	*i* P		P		07 10 05.9	-0.3
BVA0				pmax	pmax				
	comp=Z,10.0nm,1.5s								
BRVK	Borovoye	50.41	312	*i* P		P		07 10 06.6	0.0
BRVK				pmax	pmax				
	comp=Z,17nm,2.5s								
BRVK	Borovoye	50.41	312	*e*P		P		07 10 07.0	+0.4
	comp=Z,7.9nm,1.0s								
OTUK	Ortayu	50.46	305	P		P		07 10 06.7	-0.4
OTUK				pmax	pmax				
	comp=Z,5.0nm,0.9s								
PYUN	Piuhan	50.47	277	*e*P		P		07 10 07.7	+0.1
	comp=Z,66nm,0.8s								
FRU	Bishkek	50.67	298	*e*P		P		07 10 07.0	-1.7
AAK	Ala-Archa	50.82	298	LR		LR		07 33 37.8	
	comp=Z,57nm,18.2s,baz=72,slow=38								
AAK	Ala-Archa	50.82	298	P		P		07 10 09.8	-0.2
AAK				pmax	pmax				
	comp=Z,3.0nm,0.6s								
AAK	Ala-Archa	50.82	298	*e*P		P		07 10 10.1	+0.1
	comp=Z,3.6nm,0.8s								
KSH	Kashi	50.90	293	*e*P		P		07 10 14.8	+4.2
KSH				*es*P		sP		07 10 23.9	+6.3
KSH				S		S		07 17 28.8	+2.3
KSH				ScS		ScS		07 20 01.3	+0.4
KSH				pmax	pmax				
	comp=Z,130nm,4.9s								
KSH				LR	LR				
	comp=Z,300nm,10.1s								
KSH				LR	LR				
	comp=Z,260nm,11.9s								
EKS2	Erkin-Say	51.30	298	*e*P		P		07 10 13.8	+0.2
EKS2				pmax	pmax				
	comp=Z,4.0nm,0.6s								
EKS2	Erkin-Say	51.30	298	*e*P		P		07 10 13.8	+0.2
	comp=Z,4.4nm,0.6s								
INK	Inuvik	52.18	28	P		P		07 10 21.3	+1.7
	comp=Z,1.1nm,0.5s,baz=303,slow=6.9,SNR=21								
INK	Inuvik	52.18	28	*e*P		P		07 10 21.2	+1.7
INK				pmax	pmax				
	comp=Z,12nm,1.8s								
INK	Inuvik	52.18	28	*e*P		P		07 10 21.2	+1.7
	comp=Z,12nm,1.8s								
MNAS	Manas	52.25	298	P		P		07 10 20.9	+0.2
MNAS				pmax	pmax				
	comp=Z,9.0nm,0.6s								
KKAR	Karatay Array	53.38	299	*e*P		P		07 10 28.6	-0.3
KKAR				pmax	pmax				
	comp=Z,2.0nm,0.5s								
KKAR	Karatay Array	53.38	299	*e*P		P		07 10 28.6	-0.3
	comp=Z,1.9nm,0.5s								
ARU	Arti	55.90	318	LR		LR		07 35 34.7	
	comp=Z,289nm,20.5s,baz=68,slow=37								
ARU	Arti	55.90	318	*d* iP		P		07 10 47.2	+0.3
ARU								07 12 50.0	
ARU				S		S		07 18 33.0	-0.7
ARU				SS		SS		07 22 20.7	+1.8
ARU				pmax	pmax				
	comp=Z,17nm,1.2s								
ARU				MLR	MLR				
	comp=Z,170nm,17.0s								
ARU	Arti	55.90	318	*e*P		P		07 10 47.3	+0.3
	comp=Z,12nm,0.9s								
DLBC	Dease Lake	56.39	39	*e*P		P		07 10 51.3	+0.8
	comp=Z,1.6nm,0.8s								
AB31	Akbulak array	57.80	310	*i* P		P		07 11 00.4	-0.1
AB31				pmax	pmax				
	comp=Z,5.0nm,0.7s								
ABKAR	Akbulak array	57.80	310	*e*P		P		07 11 00.4	-0.1
	comp=Z,3.4nm,0.5s								
AKTO	Aktyubinsk	58.47	312	LR		LR		07 37 26.2	
	comp=Z,50nm,18.2s,baz=58,slow=37								
AKTO	Aktyubinsk	58.47	312	P		P		07 11 05.1	-0.1
AKTO				pmax	pmax				
	comp=Z,6.0nm,0.9s								
FITZ	Fitzroy Crossi	58.95	199	*e*P		P		07 11 08.5	-0.3
	comp=Z,2.1nm,0.7s								
WRAB	Tennant Creek	59.03	190	*e*P		P		07 11 09.2	-0.1
WRAB				pmax	pmax				
	comp=Z,11nm,0.9s								
WRAB	Tennant Creek	59.03	190	*e*P		P		07 11 07.6	-1.7
	comp=Z,2.5nm,0.6s								
WB2	Warramunga Arr	59.04	190	*e*P		P		07 11 09.2	-0.2
WRA	Warramunga Arr	59.04	190	P		P		07 11 07.8	-1.5
	comp=Z,2.9nm,0.6s,baz=7.6,slow=6.9,SNR=49								
RES	Resolute Bay	60.52	15	*e*P		P		07 11 19.7	+0.7
RES				pmax	pmax				
	comp=Z,3.0nm,0.7s								
RES	Resolute Bay	60.52	15	*e*P		P		07 11 19.7	+0.7
	comp=Z,3.1nm,0.7s								
YKA	Yellowknife Ar	61.58	31	P		P		07 11 26.9	+0.6
	comp=Z,0.2nm,0.5s,baz=299,slow=5.9,SNR=13								
TMCR	Tamitsa	61.80	331	*e*P		P		07 11 27.9	+0.1
AS01	Alice Springs	62.76	189	*e*P		P		07 11 35.9	+1.3
ASAR	Alice Springs	62.77	189	P		P		07 11 36.4	+1.7
	comp=Z,1.6nm,0.6s,baz=11,slow=6.5,SNR=9.3								
ARCES	ARCESS Array B	62.78	339	P		P		07 11 34.9	+0.6
	comp=Z,4.6nm,0.9s,baz=70,slow=7.9,SNR=4.9								
ARCES				LR		LR		07 41 15.8	
	comp=Z,27nm,19.2s,baz=22,slow=38								
GEYT	Alibeck	64.13	299	P		P		07 11 44.1	+0.4
	comp=Z,3.0nm,0.4s,baz=1.7,slow=4.9,SNR=5.9								
OBN	Obninsk	67.45	323	*e*P		P		07 12 04.1	-0.6
OBN				*i*				07 12 16.7	
OBN				pmax	pmax				
	comp=Z,8.0nm,1.0s								
FIA1	FINESS Array S	67.83	332	*e*P		P		07 12 07.1	0.0
FINES	FINESS Array B	67.84	332	P		P		07 12 07.4	+0.3
	comp=Z,3.1nm,0.7s,baz=94,slow=7.6,SNR=9.7								
FINES				LR		LR		07 44 08.8	
	comp=Z,79nm,18.2s,baz=18,slow=38								
SUMG	Summit	68.88	0	*e*P		P		07 12 15.4	+1.4
SUMG				pmax	pmax				
	comp=Z,3.0nm,0.6s								
SUMG	Summit	68.88	0	*e*P		P		07 12 15.4	+1.4
	comp=Z,2.8nm,0.6s								
KIV	Kislovodsk	70.73	311	*i* P		P		07 12 24.8	-0.7
KIV				*i*				07 12 37.3	
KIV				*i*				07 12 47.4	
KIV				*i*				07 15 03.9	
KIV				pmax	pmax				
	comp=Z,23nm,1.0s								
KBZ	Khabaz	70.73	311	P		P		07 12 26.0	+0.7
	comp=Z,4.7nm,0.9s,baz=232,slow=0.3,SNR=8.2								
FFC	Flin Flon	71.47	34	*e*P		P		07 12 28.8	-0.9
FFC				pmax	pmax				
	comp=Z,1.0nm,0.5s								
FFC	Flin Flon	71.47	34	*e*P		P		07 12 28.8	-0.9
	comp=Z,1.3nm,0.5s								
EGMT	Eagleton	72.05	42	*e*P		P		07 12 33.5	+0.1
	comp=Z,8.5nm,1.3s								
NVAR	Mina Array Bea	72.85	54	P		P		07 12 41.3	+2.8
	comp=Z,0.6nm,0.8s,baz=290,slow=10,SNR=3.1								
NB2	NORSAR Subarra	73.03	338	P		P		07 12 38.9	0.0
	comp=Z,1.2nm,0.6s,baz=39,slow=6.2								
NOA	NORSAR Array B	73.03	339	P		P		07 12 39.3	+0.3
	comp=Z,2.1nm,0.7s,baz=39,slow=5.9,SNR=9.8								
NOA				LR		LR		07 50 06.7	
	comp=Z,39nm,18.2s,baz=80,slow=40								
AKASG	Malin Array Be	73.68	323	P		P		07 12 42.8	-0.1
	comp=Z,2.7nm,0.6s,baz=44,slow=6.2,SNR=18								
KIEV	Kiev	73.69	323	*e*P		P		07 12 42.1	-0.8
KIEV				pmax	pmax				
	comp=Z,6.0nm,0.9s								
KIEV	Kiev	73.69	323	*e*P		P		07 12 42.8	-0.1
	comp=Z,2.4nm,0.5s								
KONO	Kongsberg	74.63	338	*i* P		P		07 12 48.2	-0.1
KONO				pmax	pmax				
	comp=Z,69nm,2.5s								
DUG	Dugway, Tooele	75.18	50	*e*P		P		07 12 53.7	+1.7
DUG				pmax	pmax				
	comp=Z,2.0nm,0.8s								
DUG	Dugway, Tooele	75.18	50	*e*P		P		07 12 53.7	+1.7
	comp=Z,2.0nm,0.8s								
PDAR	Pinedale Array	75.46	47	P		P		07 12 54.5	+0.8
	comp=Z,0.2nm,0.4s,baz=272,slow=1.1,SNR=4.7								
BUR08	Bucovina Ar. S	77.70	322	*e*P		P		07 13 07.1	+1.0
BURAR	Bucovina Array	77.71	322	*i* P		P		07 13 07.1	+0.9
BURAR	Bucovina Array	77.71	322	*i* P		P		07 13 07.1	+0.9
VRI	Vrincioaia	78.20	320	*i* P		P		07 13 11.0	+2.2
VRI	Vrincioaia	78.20	320	*i* P		P		07 13 11.0	+2.2
STHS	Stebnicka Huta	78.24	325	*e*P		P		07 13 10.2	+1.2
BRTR	Keskin Array B	78.64	312	LR		LR		07 53 37.8	
	comp=Z,23nm,19.0s,baz=84,slow=40								
MLR	Muntele Rosu	78.86	320	*i* P		P		07 13 13.5	+0.9
MLR	Muntele Rosu	78.86	320	*i* P		P		07 13 13.5	+0.9
VOIR		79.34	321	*i* P		P		07 13 16.7	+1.5
VOIR		79.34	321	*i* P		P		07 13 16.7	+1.5
ARR	Arges	79.59	321	*i* P		P		07 13 18.4	+1.9
DPC	Dobruska-Polom	79.63	329	*e*P		P		07 13 18.2	+1.6
DPC	Dobruska-Polom	79.63	329	*e*P		P		07 13 18.2	+1.6
BRG	Berggiesshubel	80.17	330	*e*P		P		07 13 20.2	+0.8
	comp=Z,5.7nm,1.1s								
BRG	Berggiesshubel	80.17	330	*e*P		P		07 13 20.2	+0.8
BRG				pmax	pmax				
	comp=Z,6.0nm,1.1s								
CLL	Collm	80.19	331	*e*P		P		07 13 20.0	+0.5
	comp=Z,7.0nm,1.0s								
CLL				*e*				07 13 25.0	
CLL				*e*				07 13 34.0	
CLL	Collm	80.19	331	*e*P		P		07 13 20.0	+0.5
CLL				*e*				07 13 25.0	
CLL				pmax	pmax				
	comp=Z,7.0nm,1.0s								
KHC	Kasperske Hory	81.69	329	*e*P		P		07 13 28.8	+1.1
KHC	Kasperske Hory	81.69	329	*e*P		P		07 13 28.8	+1.1
CONA	Conrad Observa	81.70	327	*i* P		P		07 13 29.2	+1.4
	comp=Z,4.2nm,1.1s								
GERES	GERESS Array B	81.87	329	LR		LR		07 53 00.3	
	comp=Z,51nm,19.1s,baz=1.5,slow=38								
ANMO	Albuquerque	82.42	51	*e*P		P		07 13 29.8	-2.1
ANMO				pmax	pmax				
	comp=Z,1.0nm,1.8s								
KBA	Koelnbreinsper	83.42	328	*i* P		P		07 13 37.5	+0.6
	comp=Z,4.1nm,0.8s								
RETA	Reutte	84.13	330	*i* PcP		P		07 13 41.6	+1.2
	comp=Z,6.4nm,1.0s								
PDG	Podgorica	84.39	322	*i* P		P		07 13 41.8	+0.2
FETA	Feichten	84.52	329	*i* PcP		P		07 13 43.4	+0.9
	comp=Z,3.4nm,0.8s								
DAVA	Damuels	84.64	330	*i* PcP		P		07 13 43.7	+0.6
	comp=Z,8.7nm,1.1s								

IDC 21 07:02:27.2±27.0, 15°.06S×174°.84W, h0km, mb4.5/4, mb1 4.6/4, mb1mx3.8/45, mbtmp4.5/4, Error ellipse: s-maj=497.8km s-min=161.2km az=69.0, Tonga Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CTA	Charters Tower	37.36	257	P	P	07 09 42.0	+0.1
	1.8nm,0.4s,baz=82,slow=9.6,SNR=6.7						
STKA	Stephens Creek	43.01	239	P	P	07 10 28.8	+0.1
	2.3nm,0.4s,baz=98,slow=11,SNR=8.5						
WRA	Warramunga Arr	48.57	257	P	P	07 11 12.5	-0.3
	1.3nm,0.2s,baz=84,slow=6.9,SNR=66						
ASAR	Alice Springs	48.89	252	P	P	07 11 15.1	-0.3
	13nm,0.5s,baz=86,slow=8.5,SNR=226						

*ISCJB **21** 07:02:54.2±0.3, 4°.12N±0°.04×76°.29W±0°.03, h161km±4km, mb3.6/6, Error ellipse: s-maj=7.0km s-min=4.4km az=139.6*

*IDC **21** 07:02:54.7±2.7, 4°.05N×76°.34W, h155km±20km, mb3.4/6, mb1 3.5/8, mb1mx3.2/36, mbtmp3.9/8, Error ellipse: s-maj=32.6km s-min=19.6km az=60.0*

*RSNC **21** 07:02:57.1±1.5, 4°.13N×76°.26W, h130km±10km, ML3.8*

ISC 21 07:02:54.6±0.8, 4°.15N±0°.05×76°.30W±0°.04, h153km±7km, n41, σ1s32/51, mb3.6/6, 2C-5D, Colombia

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MALC	Bahia Malaga	1.04	263	*i* iP	Pn	07 03 21.8	+1.7
MALC				*i*		07 03 23.7	
	comp=Z,489nm,0.6s						
TOLC	Tolima	1.07	66	*i* P	Pn	07 03 20.5	-0.2
GUYC	Guyana, Colomb	1.40	40	*e*P	Pn	07 03 24.2	+0.2
GUYC				*i*		07 03 26.2	
	comp=Z,1μm,0.6s						
GUYC				*e*S	Sn	07 03 45.0	-1.4
POPC	Popayan, Colom	1.64	193	*i* iP	Pn	07 03 26.1	-0.1
POPC				*e*S	Sn	07 03 48.8	-1.6
POPC				*i*		07 03 51.1	
	comp=Z,919nm,0.1s						
NORC	Norcasia	2.00	45	*i* P	Pn	07 03 30.2	+0.1
ROSC	El Rosal	2.09	71	P	Pn	07 03 33.0	+1.6
	comp=Z,13nm,0.3s,baz=312,slow=8.1,SNR=48						
ROSC				S	Sn	07 04 01.8	+2.2
	comp=Z,19nm,0.3s,baz=248,slow=24,SNR=33						
ROSC	El Rosal	2.09	71	*i* iP	Pn	07 03 33.0	+1.6
ROSC				*e*S	Sn	07 04 01.5	+1.9
ROSC				*i*		07 04 04.3	
	comp=Z,319nm,0.6s						
HELC	Santa Helena	2.17	21	*i* iP	Pn	07 03 32.5	+0.1
HELC				*i*		07 04 03.7	
	comp=Z,250nm,0.9s						
GRGC	Isla de Gorgon	2.18	239	*i* iP	Pn	07 03 32.1	0.0
SOLC	Bahia Solano	2.34	332	*i* P	Pn	07 03 34.9	+0.9
SOLC				*i*		07 03 35.5	
	comp=Z,220nm,0.1s						
SJAC	San Juan de Ar	2.50	110	*e*P	Pn	07 03 36.9	+0.8
SJAC				*e*S	Sn	07 04 06.5	-1.4
VILC	Villavicencio,	2.60	91	*e*P	Pn	07 03 38.4	+1.1
VILC				*e*S	Sn	07 04 11.0	+0.9
VILC				*i*		07 04 13.1	
	comp=Z,218nm,0.5s						
CHIC	Chingaza	2.60	79	*i* iP	Pn	07 03 38.9	+1.2
CHIC				*e*S	Sn	07 04 09.9	-0.8
FLOC	Florencia	2.63	166	*i* iP	Pn	07 03 37.4	-0.2
CRUC	La Cruz	2.64	194	*e*P	Pn	07 03 38.9	+0.8
DBBC	Dabeiba	2.85	2	*e*P	Pn	07 03 41.1	+0.6
TUMC	Tumaco	3.35	226	*e*P	Pn	07 03 46.6	0.0
TUMC				*e*S	Sn	07 04 26.9	+0.1
TUMC				*i*		07 04 33.4	
	comp=Z,230nm,0.6s						
CMBC	Cumbal	3.53	206	*e*P	Pn	07 03 50.5	+1.1
RUSC	La Rusia	3.64	61	*e*P	Pn	07 03 52.0	+1.1
RUSC				*e*S	Sn	07 04 34.0	-0.4
RUSC				*i*		07 04 37.7	
	comp=Z,109nm,1.0s						
BRRC	Barranca, Sant	3.91	41	*e*P	Pn	07 03 53.1	-0.8
BARC	Barichara	3.94	52	*e*P	Pn	07 03 56.0	+1.5
BARC				*i*		07 04 41.6	
	comp=Z,172nm,0.6s	

AMOG	**MOGNA**	**0.26**	**349**	*i* P		Pb	07 10 18.3	+0.4
AMOG				*i* S		Sn	07 10 23.5	-0.3
RTCV	**Cerro Valdivia**	**0.67**	**187**	*i* P		Pn	07 10 24.7	+0.2
RTCV				*i* S		Sn	07 10 35.2	+1.2
RTLS	**Leoncito**	**0.95**	**230**	*i* P		Pb	07 10 29.8	+0.7
AUSP	**Uspallata**	**1.31**	**218**	*i* P		Pb	07 10 35.7	+0.7
ASAL	**Salagasta**	**1.43**	**194**	*i* P		Pb	07 10 37.2	+0.1
ACAN	**Cantantal**	**1.51**	**136**	*i* P		Pb	07 10 38.0	-0.5
ARCO	**CERRO ARCO**	**1.70**	**194**	*i* P		Pb	07 10 40.7	-0.8
ARCO					IAML		07 11 07.6	
	comp=Z,13nm,0.2s							
AGUA	**GUANDACOL**	**1.70**	**358**	*i* P		Pb	07 10 40.8	-0.8
VCA	**Vinchina**	**2.46**	**5**	*i* P		Pb	07 10 51.9	-2.6
VCA					IAML		07 11 28.4	
	comp=Z,9.3nm,0.3s							
MRA	**San Martin**	**2.62**	**119**	*i* P		Pn	07 10 53.5	+2.2
MRA					IAML		07 11 40.8	
	comp=Z,10nm,0.5s							

IDC ***21*** *07:24:20.0±6.7, 1°.14S×99°.72E, h0km, mb3.5/6, mb1 3.6/6, mb1mx3.4/45, mbtmp3.5/6, MS2.9/1, Ms1 3.1/1, ms1mx2.5/38, Error ellipse: s-maj=354.1km s-min=18.7km az=53.0*

ISCJB ***21*** *07:24:25.0±1.3, 1°.38S±0°.06×99°.22E±0°.09, h25km, mb3.5/6, Error ellipse: s-maj=12.3km s-min=8.8km az=5.0*

DJA ***21*** *07:24:28.4±0.9, 1°S±3°×9°9E±°, h29km±11km, M4.0/9, MLv4.0/9*

ISC 21 07:24:22.9±0.9, **1°42S**±0°.05×**99°15E**±0°.07, **h25**km, **n22,** σ1¶**51**/18, **mb3.5/6, Southern Sumatera**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PDSI	**Padang**	**1.40**	**69**	P	**Pb**	**07 24 48.6**	**+0.2**
PDSI				S	**Sn**	**07 25 05.0**	**+0.4**
PPSI	**Pulau Pagai**	**1.59**	**147**	P	**Pb**	**07 24 52.3**	**+0.7**
PPSI				S	**Sb**	**07 25 12.9**	**+1.7**
MNSI	**Mandailing Nat**	**2.24**	**11**	P	**Pb**	**07 25 02.8**	**+0.1**
MNSI				S	**Sb**	**07 25 32.5**	**+2.5**
SDSI	**Sungai Dareh**	**2.32**	**78**	P	**Pn**	**07 25 01.4**	**+1.8**
SDSI				S	**Sn**	**07 25 27.7**	**+0.3**
BKNI	**Bangkinang**	**2.56**	**47**	P	**Pb**	**07 25 06.4**	**-1.8**
GSI	**Gunungsitoli**	**3.13**	**330**	P	**Pb**	**07 25 18.2**	**+0.3**
MASI	**Maura Aman, Be**	**3.53**	**119**	P	**Pn**	**07 25 17.6**	**+1.4**
MDSI	**Maura Dua**	**5.87**	**121**	P	Pn	07 25 55.8	+7.4
CMAR	**Chiang Mai Arr**	**19.75**	**359**	LR	LR	07 37 44.5	
	comp=Z,32nm,18.2s,baz=205,slow=41						
H08S2	**Diego Garcia H**	**27.27**	**256**	T	T	07 57 58.7	
	baz=77,slow=75,SNR=34						
H08S3	**Diego Garcia H**	**27.28**	**256**	T	T	07 57 59.2	
	baz=77,slow=75,SNR=44						
H08S1	**Diego Carcia H**	**27.29**	**256**	T	T	07 57 59.9	
	baz=77,slow=75,SNR=43						
FITZ	**Fitzroy Crossi**	**30.84**	**124**	P	**P**	**07 30 34.2**	**-3.0**
	0.9nm,0.8s,baz=294,slow=18,SNR=1.9						
H01W3	**Cape Leeuwin H**	**36.11**	**159**	T	T	08 09 09.2	
	baz=335,slow=76,SNR=7.5						
H01W2	**Cape Leeuwin H**	**36.12**	**159**	T	T	08 09 10.2	
	baz=335,slow=76,SNR=5.6						
H01W1	**Cape Leeuwin H**	**36.12**	**159**	T	T	08 09 10.3	
	baz=335,slow=76,SNR=7.1						
WRA	**Warramunga Arr**	**39.02**	**121**	P	**P**	**07 31 45.9**	**-2.0**
	0.4nm,0.8s,baz=299,slow=10,SNR=3.4						
ASAR	**Alice Springs**	**40.28**	**126**	P	**P**	**07 31 57.5**	**-0.8**
	0.3nm,0.7s,baz=297,slow=7.7,SNR=3.5						
MKAR	**Makanchi Array**	**50.25**	**345**	P	**P**	**07 33 17.9**	**+0.9**
	0.4nm,0.5s,baz=156,slow=9.1,SNR=7.3						
KURBB	**Kurchatov Arra**	**54.76**	**344**	P	**P**	**07 33 49.5**	**-0.8**
	0.2nm,0.6s,baz=148,slow=7.3,SNR=3.0						
ZALV	**Zalesovo Beam**	**56.45**	**350**	P	**P**	**07 34 02.1**	**-0.3**
	0.7nm,0.4s,baz=185,slow=7.4,SNR=4.6						
TXAR	**Lajitas Array**	**144.74**	**36**	PKP	**PKPdf**	**07 43 58.0**	**-0.4**
	0.2nm,0.4s,baz=318,slow=1.2,SNR=4.4						

DDA ***21*** *07:31:39.0, 37°.86N×27°.43E, h7km, Ml3.0*

THE ***21*** *07:31:39.8, 37°.84N×27°.45E, h4km±5km, ML2.7/2, Error ellipse: s-maj=5.3km s-min=0.9km az=227.0*

ISK ***21*** *07:31:39.6, 37°.90N×27°.48E, h2km, MD2.9, ML2.8*

CSEM ***21*** *07:31:40.2±0.1, 37°.87N×27°.46E, h2km, ML3.0, Error ellipse: s-maj=3.2km s-min=2.6km az=73.0*

ATH ***21*** *07:31:41.3, 37°.88N×27°.34E, h10km±3km, ML2.6/3, Error ellipse: s-maj=4.1km s-min=1.4km az=245.0*

ISC 21 07:31:39.9±1.1, **37°.87N**±0°.02×**27°.44E**±0°.02, **h2**km±12km, **n73,** σ0¶**72**/105, **Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GCAM	**G?zelcaml?**	**0.23**	**224**	*i* P	**Pg**	**07 31 44.1**	**-0.3**
GCAM				*i* S	**Sg**	**07 31 47.2**	**-0.2**
GCAM	**G?zelcaml?**	**0.23**	**224**	P	**Pg**	**07 31 44.1**	**-0.3**
GCAM				S	**Sg**	**07 31 47.2**	**-0.2**
AYDB	**Zeytinkoy-Aydi**	**0.37**	**77**	*e*PG	**Pg**	**07 31 47.0**	**+0.1**
AYDB				*e*SG	**Sg**	**07 31 52.4**	**+0.6**
AYDB	**Zeytinkoy-Aydi**	**0.37**	**77**	*e*Pg	**Pg**	**07 31 47.1**	**+0.1**
AYDB				*e*Sg	**Sg**	**07 31 52.4**	**+0.6**
AYDN	**Tasoluk**	**0.41**	**120**	*i* P	**Pg**	**07 31 47.7**	**0.0**
AYDN				*i* S	**Sg**	**07 31 53.0**	**0.0**
AYDN	**Tasoluk**	**0.41**	**120**	P	**Pg**	**07 31 47.7**	**0.0**
AYDN				S	**Sg**	**07 31 53.0**	**0.0**
SMG	**Samos**	**0.50**	**252**	P	**Pg**	**07 31 49.5**	**-0.1**
SMG				S	**Sg**	**07 31 56.9**	**+0.8**
SMG	**Samos**	**0.50**	**252**	P	**Pg**	**07 31 49.5**	**-0.1**
SMG				S	**Sg**	**07 31 56.9**	**+0.8**
SMG	**Samos**	**0.50**	**252**	P	**Pg**	**07 31 49.2**	**-0.4**
SMG				S	**Sg**	**07 31 56.0**	**-0.1**
SMG				AML	AML	07 32 01.4	
	comp=E,1769μm,0.3s						
SMG				AML	AML	07 32 01.6	
	comp=N,1694μm,0.3s						
IZM	**Izmir**	**0.55**	**345**	*e*PG	**Pg**	**07 31 50.2**	**-0.2**
IZM				*e*SG	**Sg**	**07 31 58.4**	**+0.8**
IZM	**Izmir**	**0.55**	**345**	*e*Pg	**Pg**	**07 31 50.2**	**-0.2**
IZM				*e*Sg	**Sg**	**07 31 58.4**	**+0.8**
BDRM	**Kayabasi**	**0.80**	**180**	*i* P	**Pg**	**07 31 53.9**	**-1.4**
BDRM				*i* S	**Sb**	**07 32 06.9**	**-1.0**
BDRM	**Kayabasi**	**0.80**	**180**	P	**Pg**	**07 31 53.9**	**-1.4**
BDRM				S	**Sb**	**07 32 06.9**	**-1.0**
BODT	**Bodrum**	**0.81**	**187**	*e*PG	**Pb**	**07 31 56.5**	**-0.3**
BODT	**Bodrum**	**0.81**	**187**	P	**Pg**	**07 31 54.7**	**-0.8**
BODT				S	**Sg**	**07 32 06.8**	**+0.8**
BODT	**Bodrum**	**0.81**	**187**	P	**Pg**	**07 31 54.7**	**-0.8**
BODT	**Bodrum**	**0.81**	**187**	*e*Pg	**Pb**	**07 31 56.5**	**-0.3**
BODT				S	**Sg**	**07 32 06.8**	**+0.8**
ZEY	**¨zmir**	**0.83**	**297**	*i* P	**Pg**	**07 31 54.9**	**-0.9**
ZEY				*i* S	**Sb**	**07 32 07.6**	**-1.0**
URLA	**Izmir**	**0.83**	**307**	*i* P	**Pg**	**07 31 56.0**	**+0.2**
URLA				*i* S	**Sb**	**07 32 07.7**	**-1.0**
URLA	**Izmir**	**0.83**	**307**	P	**Pg**	**07 31 56.0**	**+0.2**
URLA				S	**Sb**	**07 32 07.7**	**-1.0**
YER	**Yerkesik**	**0.99**	**137**	*e*PG	**Pg**	**07 31 59.4**	**+0.4**
YER	**Yerkesik**	**0.99**	**137**	P	**Pg**	**07 31 59.1**	**+0.1**
YER				S	**Sg**	**07 32 12.3**	**+0.5**
YER	**Yerkesik**	**0.99**	**137**	P	**Pg**	**07 31 59.1**	**+0.1**
YER	**Yerkesik**	**0.99**	**137**	*e*Pg	**Pg**	**07 31 59.4**	**+0.4**
YER				S	**Sg**	**07 32 12.3**	**+0.5**
AKHS	**Akhisar**	**1.05**	**16**	*i* P	**Pg**	**07 31 59.1**	**-1.0**
AKHS				*i* S	**Sg**	**07 32 14.0**	**+0.2**
AKHS	**Akhisar**	**1.05**	**16**	P	**Pg**	**07 31 59.1**	**-1.0**
AKHS				S	**Sg**	**07 32 14.0**	**+0.2**
AKS	**Akhisar**	**1.05**	**16**	*e*PG	**Pg**	**07 31 59.6**	**-0.5**
AKS	**Akhisar**	**1.05**	**16**	*e*Pg	**Pg**	**07 31 59.7**	**-0.5**
KULA	**Kula-Manisa**	**1.16**	**56**	*e*PN	**Pg**	**07 32 02.1**	**-0.1**
KULA	**Kula-Manisa**	**1.16**	**56**	P	**Pg**	**07 32 01.3**	**-0.9**
KULA				S	**Sg**	**07 32 17.4**	**+0.2**
KULA	**Kula-Manisa**	**1.16**	**56**	P	**Pg**	**07 32 01.3**	**-0.9**
KULA	**Kula-Manisa**	**1.16**	**56**	*e*Pn	**Pg**	**07 32 02.1**	**-0.1**
KULA				S	**Sg**	**07 32 17.4**	**+0.2**
CHOS	**Chios island**	**1.21**	**296**	*e*PN	**Pn**	**07 32 04.2**	**+0.3**
CHOS	**Chios island**	**1.21**	**296**	P	**Pg**	**07 32 02.6**	**-0.5**
CHOS				S	**Sb**	**07 32 20.0**	**+0.3**
CHOS	**Chios island**	**1.21**	**296**	P	**Pg**	**07 32 02.6**	**-0.5**
CHOS	**Chios island**	**1.21**	**296**	*e*Pn	**Pn**	**07 32 04.2**	**+0.3**
CHOS				S	**Sb**	**07 32 20.0**	**+0.3**
CHOS	**Chios island**	**1.21**	**296**	P	**Pg**	**07 32 02.5**	**-0.5**
CHOS				S	**Sb**	**07 32 19.9**	**+0.3**
CHOS				AML	AML	07 32 23.2	
	comp=E,479μm,0.4s						
CHOS				AML	AML	07 32 23.2	
	comp=N,459μm,0.5s						
DKL	**Dikili**	**1.27**	**341**	*e*PN	**Pg**	**07 32 04.3**	**0.0**
DKL	**Dikili**	**1.27**	**341**	*e*Pn	**Pg**	**07 32 04.3**	**0.0**
NIS1	**Nisyros Isl.**	**1.28**	**189**	*e*PN	**Pn**	**07 32 05.2**	**+0.4**
NIS1	**Nisyros Isl.**	**1.28**	**189**	*e*Pn	**Pn**	**07 32 05.3**	**+0.4**
NIS1	**Nisyros Isl.**	**1.28**	**189**	P	**Pn**	**07 32 05.7**	**+0.8**
NIS1	**Nisyros Isl.**	**1.28**	**189**	P	**Pn**	**07 32 05.7**	**+0.8**
DALY	**Dalyan (Mu¨la**	**1.43**	**137**	*e*PN	**Pg**	**07 32 07.4**	**+0.1**
DALY	**Dalyan (Mu¨la**	**1.43**	**137**	*e*Pn	**Pg**	**07 32 07.4**	**+0.1**
DEMI	**Demirci**	**1.54**	**40**	*i* P	**Pn**	**07 32 08.5**	**-0.1**
DEMI				*i* S	**Sg**	**07 32 26.5**	**-3.1**
DEMI	**Demirci**	**1.54**	**40**	P	**Pn**	**07 32 08.5**	**-0.1**
PRK	**Paraskevi**	**1.65**	**327**	P	**Pb**	**07 32 11.2**	**+0.1**
PRK				S	**Sg**	**07 32 32.8**	**-0.3**
PRK	**Paraskevi**	**1.65**	**327**	P	**Pb**	**07 32 11.2**	**+0.1**
PRK				S	**Sg**	**07 32 32.8**	**-0.3**
PRK				AML	AML	07 32 36.2	
	comp=E,652μm,0.9s						
PRK				AML	AML	07 32 44.2	
	comp=N,311μm,0.8s						
APE	**Apeiranthos**	**1.71**	**243**	*e*PN	**Pg**	**07 32 12.7**	**-0.1**
APE	**Apeiranthos**	**1.71**	**243**	*e*Pn	**Pg**	**07 32 12.7**	**-0.1**
FETY	**Fethiye**	**1.80**	**133**	*e*PN	**Pn**	**07 32 12.4**	**+0.4**
FETY	**Fethiye**	**1.80**	**133**	*e*Pn	**Pn**	**07 32 12.4**	**+0.4**
BALB	**Balikesir**	**1.80**	**11**	*e*PN	**Pn**	**07 32 12.3**	**+0.2**
BALB	**Balikesir**	**1.80**	**11**	*e*Pn	**Pn**	**07 32 12.3**	**+0.2**
SIGR	**SIGRI**	**1.83**	**318**	*e*PN	**Pb**	**07 32 13.8**	**-0.3**
SIGR	**SIGRI**	**1.83**	**318**	*e*Pn	**Pb**	**07 32 13.8**	**-0.3**
SIGR	**SIGRI**	**1.83**	**318**	P	**Pb**	**07 32 14.2**	**+0.1**
SIGR				S	**Sb**	**07 32 37.0**	**-0.4**
SIGR	**SIGRI**	**1.83**	**318**	P	**Pb**	**07 32 14.2**	**+0.1**
SIGR				S	**Sb**	**07 32 37.0**	**-0.4**
EZN	**Ezine**	**2.14**	**336**	*e*PN	**Pn**	**07 32 18.0**	**+1.3**
EZN	**Ezine**	**2.14**	**336**	*e*Pn	**Pn**	**07 32 18.0**	**+1.3**
ELL	**Elmali**	**2.27**	**119**	*e*PN	**Pn**	**07 32 19.2**	**+0.7**
ELL	**Elmali**	**2.27**	**119**	*e*Pn	**Pn**	**07 32 19.2**	**+0.7**
ORLT	**Orhaneli**	**2.46**	**27**	*e*PN	**Pn**	**07 32 21.6**	**+0.5**
ORLT	**Orhaneli**	**2.46**	**27**	*e*Pn	**Pn**	**07 32 21.6**	**+0.5**
GELI	**Tayfur-Gelibol**	**2.64**	**344**	*e*PN	**Pn**	**07 32 23.8**	**+0.3**
GELI	**Tayfur-Gelibol**	**2.64**	**344**	*e*Pn	**Pn**	**07 32 23.8**	**+0.3**
RKY	**Sarkoy-Tekirda**	**2.82**	**356**	*e*PN	**Pn**	**07 32 27.6**	**+1.4**
RKY	**Sarkoy-Tekirda**	**2.82**	**356**	*e*Pn	**Pn**	**07 32 27.6**	**+1.4**
ARMT	**Armutlu**	**2.91**	**22**	*e*PN	**Pn**	**07 32 28.9**	**+1.6**
ARMT	**Armutlu**	**2.91**	**22**	*e*Pn	**Pn**	**07 32 28.9**	**+1.6**
IZI	**Iznik**	**2.93**	**32**	*e*PN	**Pn**	**07 32 28.9**	**+1.2**
IZI	**Iznik**	**2.93**	**32**	*e*Pn	**Pn**	**07 32 28.9**	**+1.2**

MEX 21 07:44:33.0±0.5, **16°.04N×96°.28W, h5**km, **MD3.9, Oaxaca**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HUIG	**Huatulco**	**0.32**	**149**	*e*P	Pg	07 44 38.7	-0.5
HUIG				*e*S	Sg	07 44 44.1	+0.7
PANG	**Puerto Angel**	**0.42**	**207**	*e*P	Pg	07 44 41.0	-0.1
PANG				*e*S	Sg	07 44 46.5	0.0
VHO	**Vista Hermosa**	**1.11**	**337**	*e*P	Pg	07 44 51.4	-3.0
VHO				*e*S	Sg	07 45 06.8	-2.0
PNIG	**Pinotepa**	**1.81**	**281**	*e*P	Pn	07 45 01.0	-3.9
PNIG				*i* S	Sn	07 45 24.2	-4.0
PCIG		**2.96**	**96**	*e*P	Pn	07 45 17.7	-3.0
TGIG		**3.12**	**76**	*i* P	Pn	07 45 19.9	-3.0
TGIG				*e*S	Sn	07 45 58.2	-2.4

IDC ***21*** *07:45:30.5±1.8, 37°.06N×142°.26E, h0km, mb3.3/2, mb1 3.6/3, mb1mx3.2/66, mbtmp3.2/3, ML2.7/1, MS3.0/1, Ms1 3.0/1, ms1mx2.2/20, Error ellipse: s-maj=57.1km s-min=34.4km az=133.0*

ISCJB ***21*** *07:45:33.3±1.5, 37°.28N±0°.06×141°.91E±0°.08, h28km±8km, mb3.4/2, MS2.9/1, Error ellipse: s-maj=11.9km s-min=7.9km az=32.6*

JMA ***21*** *07:45:34.9±0.1, 37°.31N×141°.83E, h33km±3km, M3.2*

ISC 21 07:45:33.9±2.4, **37°.32N**±0°.07×**141°.88E**±0°.09, **h26**km±16km, **n12,** σ1¶**36**/19, **Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**0.80**	**274**	P	**Pn**	**07 45 49.4**	**-0.2**
JFK				S	**Sn**	**07 45 59.6**	**-1.1**
ONAJ	**Iwakimizuishiy**	**0.89**	**256**	P	**Pn**	**07 45 50.5**	**-0.3**
ONAJ				S	**Sn**	**07 46 01.3**	**-1.5**
JMM	**Marumori**	**1.02**	**303**	P	**Pn**	**07 45 52.6**	**+0.1**
JMM				S	**Sn**	**07 46 05.4**	**-0.6**
JIO	**Ouri**	**1.21**	**340**	P	**Pn**	**07 45 55.2**	**0.0**
JIO				S	**Sn**	**07 46 10.5**	**-0.2**
JFT	**Otama**	**1.24**	**280**	P	**Pb**	**07 45 56.6**	**-0.1**
JFT				S	**Sb**	**07 46 12.2**	**-0.1**
JHO	**Hitachi**	**1.26**	**236**	P	**Pn**	**07 45 55.7**	**-0.2**
JHO				S	**Sn**	**07 46 10.2**	**-1.8**
JOU	**Okura**	**1.42**	**318**	P	**Pb**	**07 45 59.5**	**-0.2**
MJAR	**Matsushiro Arr**	**3.04**	**256**	Pn	**Pn**	**07 46 22.9**	**+2.6**
	0.9nm,0.3s,baz=86,slow=15,SNR=3.1						
MJAR				Sn	**Sn**	**07 46 59.0**	**+3.1**
	0.8nm,0.3s,baz=154,slow=39,SNR=1.7						
MAT	**Matsushiro**	**3.04**	**256**	P	**Pn**	**07 46 21.7**	**+1.4**
MAT				*e*S	**Sn**	**07 46 55.2**	**-0.7**
SONM	**Songino Array**	**27.94**	**303**	LR	LR	08 04 19.3	
	comp=Z,28nm,19.0s,baz=34,slow=40						
ILAR	**Eielson Array**	**49.06**	**32**	P	**P**	**07 54 19.3**	**+0.8**
	0.2nm,0.7s,baz=273,slow=5.3,SNR=1.9						
WRA	**Warramunga Arr**	**57.39**	**188**	P	**P**	**07 55 19.3**	**-0.9**
	0.8nm,1.1s,baz=6.9,slow=7.4,SNR=2.4						

IDC 21 07:46:36.2±1.6, **35°.39N×143°.00E, h0**km, **mb3.2**/3, **mb1 3.5**/4, **mb1mx3.2**/68, **mbtmp3.2**/4, **ML2.9**/1, **Error ellipse: s-maj=39.2km s-min=36.9km az=99.0, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MJAR	**Matsushiro Arr**	**4.05**	**288**	Pn	Pn	07 47 39.7	+0.2
	0.8nm,0.3s,baz=92,slow=7.1,SNR=1.5						
MKAR	**Makanchi Array**	**46.09**	**304**	P	P	07 55 01.4	-0.5
	0.2nm,0.6s,baz=69,slow=7.9,SNR=2.5						
ILAR	**Eielson Array**	**50.21**	**32**	P	P	07 55 33.5	0.0
	0.3nm,0.6s,baz=261,slow=6.5,SNR=3.8						
WRA	**Warramunga Arr**	**55.64**	**190**	P	P	07 56 13.9	-0.1
	0.2nm,0.7s,baz=6.9,slow=7.2,SNR=1.4						

ISCJB ***21*** *07:47:12.7±0.3, 50°.08N±0°.02×18°.33E±0°.02, h0km, mb3.4/1, Error ellipse: s-maj=2.9km s-min=1.8km az=10.0*

IDC ***21*** *07:47:13.5±2.5, 49°.80N×18°.72E, h0km, mb3.1/1, mb1 3.4/7, mb1mx3.2/51, mbtmp3.3/7, ML3.1/5, Error ellipse: s-maj=42.7km s-min=9.3km az=135.0*

SIGU ***21*** *07:47:13.1±0.2, 50°.04N±0°.01×18°.40E±0°.01, h3km, mb3.0/10*

IPEC ***21*** *07:47:14.6±0.2, 50°.07N×18°.44E, h1km±3km, ML3.3/3, Error ellipse: s-maj=2.0km s-min=1.1km az=160.0*

CSEM ***21*** *07:47:14.3±0.2, 50°.08N×18°.38E, h1km, ML3.5/5, Error ellipse: s-maj=4.5km s-min=2.9km az=13.0*

PRU ***21*** *07:47:15.3, 50°.07N×18°.34E, h0km*

BGR ***21*** *07:47:15.1±0.3, 50°.09N×18°.42E, h1km, ML3.4/7, Error ellipse: s-maj=6.7km s-min=4.4km az=176.0*

VIE ***21*** *07:47:17.5±0.8, 49°.97N×18°.27E, h10km, mb2.5/6, ml3.5/6, Error ellipse: s-maj=8.2km s-min=5.0km az=152.0*

ISC 21 07:47:14.0±0.6, **50°.12N**±0°.02×**18°.41E**±0°.01, **h0**km, **n83,** σ1¶**17**/144, **1D, Poland**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAC	**Raciborz**	**0.14**	**256**	↓*i* Pg	**Pg**	**07 47 18.6**	**+1.9**
RAC				*e*Sg	**Sg**	**07 47 21.4**	**+2.8**
OKC	**Ostrava-Krasne**	**0.33**	**211**	*e*PG	**Pg**	**07 47 20.9**	**+0.7**
OKC				*e*SG	**Sg**	**07 47 25.4**	**+0.9**
	comp=Z,1μm,0.6s						
OKC	**Ostrava-Krasne**	**0.33**	**211**	Pg	**Pg**	**07 47 20.8**	**+0.5**
OKC				Sg	**Sg**	**07 47 25.7**	**+1.2**
OKC	**Ostrava-Krasne**	**0.33**	**211**	*e*Pg	**Pg**	**07 47 20.8**	**+0.5**
OKC				*e*Sg	**Sg**	**07 47 25.7**	**+1.2**
CHZP	**Chorzow**	**0.41**	**65**	*e*Pg	**Pb**	**07 47 23.5**	**-0.6**
CHZP				*e*Sg	**Sb**	**07 47 29.9**	**-1.0**
MORC	**Moravsky Berou**	**0.66**	**239**	*e*Pg	**Pg**	**07 47 26.9**	**+0.4**
	baz=63						
MORC				*e*Sg	**Sg**	**07 47 34.9**	**-0.1**
	836nm,0.7s,baz=63						
MORC	**Moravsky Berou**	**0.66**	**239**	*e*Pg	**Pg**	**07 47 27.1**	**+0.5**
MORC				*e*Sg	**Sg**	**07 47 36.2**	**+1.1**
OJC	**Ojcow**	**0.90**	**83**	*e*Pg	**Pg**	**07 47 31.5**	**+0.4**
OJC				*e*Sg	**Sb**	**07 47 44.3**	**-0.6**
OJC	**Ojcow**	**0.90**	**83**	*e*Pg	**Pg**	**07 47 31.7**	**+0.6**
OJC				*e*Sg	**Sb**	**07 47 44.7**	**-0.2**
KRLC	**Kraliky**	**1.05**	**268**	*e*PG	**Pg**	**07 47 34.0**	**-0.1**
KRLC				*e*SG	**Sg**	**07 47 47.7**	**0.0**
LANS	**Liptovska Anna**	**1.19**	**144**	*e*Pg	**Pg**	**07 47 36.8**	**+0.1**
LANS				*e*Sg	**Sb**	**07 47 52.8**	**-0.5**
LANS	**Liptovska Anna**	**1.19**	**144**	*e*PG	**Pg**	**07 47 36.8**	**+0.1**
LANS				*e*SG	**Sb**	**07 47 52.8**	**-0.5**
DPC	**Dobruska-Polom**	**1.36**	**281**	*e*PG	**Pg**	**07 47 38.6**	**-1.5**
DPC				*e*SG	**Sb**	**07 47 58.5**	**+0.2**
	comp=Z,288nm,0.4s						
DPC	**Dobruska-Polom**	**1.36**	**281**	Pn	**Pg**	**07 47 38.5**	**-1.5**
DPC				Sg	**Sn**	**07 47 59.2**	**+0.2**
DPC	**Dobruska-Polom**	**1.36**	**281**	*e*Pn	**Pg**	**07 47 38.5**	**-1.5**
DPC				*e*Sg	**Sn**	**07 47 59.2**	**+0.2**
NIE	**Niedzica**	**1.41**	**119**	*e*Pg	**Pb**	**07 47 41.4**	**+0.2**
NIE				*e*Sg	**Sn**	**07 48 01.2**	**+1.0**
NIE	**Niedzica**	**1.41**	**119**	*e*Pg	**Pb**	**07 47 41.4**	**+0.2**
NIE				*e*Sg	**Sn**	**07 48 01.2**	**+1.0**
VRAC	**Vranov**	**1.43**	**236**	Pg	**Pn**	**07 47 41.0**	**-0.3**
	21nm,0.3s,baz=60,slow=13,SNR=24						
VRAC				Lg	Lg	07 47 59.2	
	100nm,0.3s,baz=136,slow=15,SNR=27						
VRAC	**Vranov**	**1.43**	**236**	*e*Pg	**Pn**	**07 47 40.9**	**-0.3**
	baz=57						
VRAC				*e*Sg	**Sg**	**07 47 58.9**	**-1.0**
	317nm,0.5s,baz=57						
KSP	**Ksiaz**	**1.54**	**299**	*e*Pn	**Pn**	**07 47 42.7**	**+0.1**
KSP				*e*Pg	**Pg**	**07 47 44.9**	**+1.5**
KSP				*e*Sn	**Sn**	**07 48 04.2**	**+0.9**
KSP				*e*Sg	**Sn**	**07 48 05.2**	**+1.9**
KSP	**Ksiaz**	**1.54**	**299**	Pn	**Pn**	**07 47 42.8**	**+0.1**
KSP	**Ksiaz**	**1.54**	**299**	*e*Pn	**Pn**	**07 47 42.8**	**+0.1**
KSP				*e*Sg	**Sn**	**07 48 05.2**	**+1.9**
UPC	**Upice**	**1.59**	**285**	*e*PG	**Pn**	**07 47 43.5**	**+0.2**
UPC				*e*SG	**Sg**	**07 48 05.7**	**+0.8**
	comp=Z,80nm,0.5s						
VYHS	**Vyhne**	**1.65**	**170**	*e*Pg	**Pn**	**07 47 43.6**	**-0.6**
VYHS				*e*Sg	**Sn**	**07 48 06.1**	**0.0**
VYHS	**Vyhne**	**1.65**	**170**	*e*PG	**Pn**	**07 47 43.6**	**-0.6**
VYHS				*e*SG	**Sn**	**07 48 06.1**	**0.0**
VYHS				*e*LG	Lg	07 48 09.0	
KRUC	**Moravsky**	**1.69**	**232**	*e*Pg	**Pn**	**07 47 44.7**	**0.0**
	baz=52						
KRUC				*e*Sg	**Sn**	**07 48 06.7**	**-0.2**
	173nm,0.5s,baz=52						
SMOL	**Smolenice**	**1.73**	**202**	*e*Pg	**Pn**	**07 47 44.7**	**-0.6**
SMOL				*e*Sg	**Sn**	**07 48 07.3**	**-0.8**
SMOL	**Smolenice**	**1.73**	**202**	*e*PG	**Pn**	**07 47 44.7**	**-0.6**
SMOL				*e*SG	**Sn**	**07 48 07.2**	**-0.8**
STHS	**Stebnicka Huta**	**1.97**	**110**	*e*Pg	**Pg**	**07 47 52.3**	**+0.7**
STHS				*e*Sg	**Sg**	**07 48 19.2**	**+2.1**
STHS	**Stebnicka Huta**	**1.97**	**110**	*e*PG	**Pg**	**07 47 52.3**	**+0.7**
STHS				*e*SG	**Sg**	**07 48 19.2**	**+2.1**
STHS				*e*LG	Lg	07 48 24.7	
TREC	**Trest**	**2.07**	**248**	*e*PG	**Pb**	**07 47 51.7**	**-0.7**
TREC				*e*SG	**Sb**	**07 48 18.2**	**-0.5**
	comp=Z,141nm,0.5s						
KECS	**Kecovo**	**2.13**	**140**	*e*Pn	**Pn**	**07 47 51.2**	**+0.5**
KECS	**Kecovo**	**2.13**	**140**	*e*PN	**Pn**	**07 47 51.2**	**+0.5**
KECS				*e*PG	**Pg**	**07 47 56.6**	**+1.9**
KECS				*e*LG	Lg	07 48 30.3	
CRVS	**C

OBKA				*i* Sg		**Sg**	07 49 37.8	**+1.4**
	comp=Z,2.7nm,0.2s								
OBKA	**Obir**	**4.44**	**217**	Pn		**Pn**	**07 48 22.8**	**+0.3**
	comp=Z,0.2nm,0.1s								
HORU	**Horodok**	**5.28**	**97**	*e*Pn		**Pb**	**07 48 48.8**	**+1.7**
BSD	**Bornholm Skovb**	**5.44**	**338**	*i* P		**Pn**	**07 48 36.3**	**+0.1**
BSD				*e*S		**Sn**	**07 49 36.2**	**-3.2**
BSD	**Bornholm Skovb**	**5.44**	**338**	*i* P		**Pn**	**07 48 36.3**	**+0.1**
KMPD	**K-Podol'skiy**	**5.49**	**103**	*e*Pn		**Pb**	**07 48 52.3**	**+1.7**
NDNU	**Novodnistrovsk**	**6.05**	**101**	*e*Sn		**Sg**	**07 50 23.1**	**-5.0**
NDNU				Smn			07 50 23.9	
NDNU				Smn			07 50 23.9	
DAVOX	**Davos/Dischmat**	**6.58**	**243**	Pn		**Pn**	**07 48 53.6**	**+1.5**
	comp=Z,0.6nm,0.3s,baz=62,slow=18,SNR=3.6								
DAVOX				Lg		Lg	07 50 41.6		
	comp=Z,0.9nm,0.3s,baz=308,slow=21,SNR=7.6								
AKASG	**Malin Array Be**	**6.94**	**81**	Pg		Pg	07 49 22.0	-4.8	
	comp=Z,0.9nm,0.3s,baz=269,slow=15,SNR=8.4								
AKASG				Lg		Lg	07 50 52.2		
	comp=Z,1.1nm,0.3s,baz=270,slow=26,SNR=4.7								
HFS	**Hagfors**	**10.39**	**347**	Pn		**Pn**	**07 49 44.2**	**+0.2**
	comp=Z,0.2nm,0.3s,baz=184,slow=14,SNR=4.1								
NOA	**NORSAR Array B**	**11.67**	**342**	Pn		**Pn**	**07 49 58.8**	**-2.8**
	comp=Z,0.3nm,0.3s,baz=154,slow=14,SNR=5.2								
FINES	**FINESS Array B**	**12.13**	**18**	Pn		**Pn**	**07 50 05.4**	**-2.4**
	comp=Z,0.3nm,0.3s,baz=200,slow=12,SNR=9.5								
FINES				Sn		Sn	07 52 10.3	-13	
	comp=Z,0.2nm,0.3s,baz=185,slow=32,SNR=2.8								
ARCES	**ARCESS Array B**	**19.77**	**7**	Pn		**P**	**07 51 45.1**	**-0.2**
	comp=Z,0.5nm,0.4s,baz=193,slow=14,SNR=7.7								
YKA	**Yellowknife Ar**	**61.72**	**337**	P		**P**	**07 57 34.3**	**+0.9**
	comp=Z,0.2nm,0.9s,baz=31,slow=6.6,SNR=3.6								

IDC ***21*** *07:48:56.5±2.6, 37.°71N×140.°15E, h0km, mb3.2/2, mb1 3.4/2, mb1mx3.2/60, mbtmp3.2/2, Error ellipse: s-maj=47.1km s-min=37.4km az=111.0*
ISCJB ***21*** *07:48:57.4±0.5, 37.°77N±0.°02×140.°03E±0.°03, h8km±4km, mb3.2/2, Error ellipse: s-maj=4.2km s-min=3.8km az=141.9*
JMA ***21*** *07:48:57.7, 37.°77N×140.°02E, h9km±1km, M2.9*
ISC 21 07:48:57.8±1.1, 37.°76N±0.°03×140.°02E±0.°03, h6km±9km, n14, σ0s41/26, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
JFT	**Otama**	**0.35**	**134**	P		**Pg**	**07 49 04.9**	**+0.2**
JFT				S		**Sg**	**07 49 09.7**	**+0.4**
JFY	**Yanaizu**	**0.43**	**215**	P		**Pg**	**07 49 06.4**	**+0.2**
JFY				S		**Sg**	**07 49 12.1**	**+0.3**
JYS	**Shirataka**	**0.46**	**5**	P		**Pg**	**07 49 06.8**	**+0.1**
JYS				*e*S		**Sg**	**07 49 13.1**	**+0.4**
JNS	**Sasagawa**	**0.56**	**276**	P		**Pg**	**07 49 08.4**	**-0.1**
JNS				S		**Sg**	**07 49 15.7**	**-0.1**
JMM	**Marumori**	**0.62**	**80**	P		**Pg**	**07 49 09.6**	**-0.2**
JMM				S		**Sg**	**07 49 17.7**	**-0.2**
JFK	**Kawauchi**	**0.79**	**120**	P		**Pg**	**07 49 12.7**	**-0.3**
JFK				S		**Sg**	**07 49 22.9**	**-0.3**
JOU	**Okura**	**0.79**	**40**	P		**Pg**	**07 49 12.8**	**-0.2**
JOU				S		**Sg**	**07 49 23.1**	**-0.2**
JYA	**Atsumi**	**0.86**	**344**	P		**Pg**	**07 49 14.0**	**-0.4**
JYA				S		**Sg**	**07 49 25.7**	**+0.1**
JAW	**Awa shima**	**0.92**	**319**	P		**Pg**	**07 49 15.4**	**-0.1**
JAW				S		**Sg**	**07 49 27.7**	**+0.3**
JHK	**Hiroka**	**0.95**	**237**	P		**Pg**	**07 49 15.4**	**-0.6**
JHK				S		**Sg**	**07 49 27.5**	**-0.7**
MAT	**Matsushiro**	**1.89**	**230**	P		**Pg**	**07 49 31.1**	**+0.4**
MAT				*e*S		**Sn**	**07 49 55.6**	**+0.7**
MJAR	**Matsushiro Arr**	**1.89**	**230**	Pn		**Pn**	**07 49 30.9**	**+0.3**
	4.7nm,0.3s,baz=35,slow=15,SNR=14								
MJAR				Sn		**Sb**	**07 49 56.5**	**-0.1**
	6.0nm,0.3s,baz=209,slow=1.6,SNR=8.4								
MKAR	**Makanchi Array**	**42.79**	**301**	P		**P**	**07 56 56.6**	**+0.4**
	0.3nm,0.8s,baz=98,slow=7.6,SNR=2.7								
WRA	**Warramunga Arr**	**57.64**	**186**	P		**P**	**07 58 48.1**	**-0.8**
	0.3nm,0.8s,baz=1.9,slow=7.3,SNR=2.2								

IDC 21 07:53:39.2±4.1, 35.°76N×141.°70E, h0km, mb3.4/2, mb1 3.5/3, mb1mx3.2/46, mbtmp3.2/3, ML3.1/1, Error ellipse: s-maj=109.5km s-min=36.0km az=53.0, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
MJAR	**Matsushiro Arr**	**2.93**	**287**	Pn		Pn	07 54 24.9	-2.2
	2.7nm,0.3s,baz=104,slow=8.9,SNR=21								
MAT	**Matsushiro**	**2.94**	**287**	P		Pn	07 54 25.9	-1.2
MAT				*e*S		Sn	07 54 57.9	-5.2
MKAR	**Makanchi Array**	**45.00**	**303**	P		P	08 01 57.1	+0.7
	0.2nm,0.5s,baz=92,slow=10,SNR=2.3								
WRA	**Warramunga Arr**	**55.83**	**188**	P		P	08 03 18.3	-0.1
	0.3nm,1.0s,baz=20,slow=7.2,SNR=1.4								

IDC ***21*** *07:53:58.7±3.5, 35.°21S×179.°55W, h0km, mb3.7/2, mb1 4.0/3, mb1mx3.8/29, mbtmp3.7/3, ML3.4/1, Error ellipse: s-maj=80.8km s-min=38.2km az=121.0*
ISC 21 07:53:59.5±2.5, 35.°4S±0.°2×178.°9W±0.°3, h43km, n15, σ0s54/19, East of North Island

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
MXZ	**Matakaoa Point**	**3.12**	**226**	PN		**Pn**	**07 54 45.8**	**-0.4**
MXZ				SN		**Sn**	**07 55 21.8**	**-0.4**
WMGZ	**Waiomatatini S**	**3.24**	**222**	*e*PN		**Pn**	**07 54 48.3**	**+0.6**
PKGZ	**Pakihiroa**	**3.48**	**224**	*e*PN		**Pn**	**07 54 50.6**	**-0.5**
PUZ	**Puketiti**	**3.51**	**220**	PN		**Pn**	**07 54 51.7**	**+0.1**
PUZ				SN		**Sn**	**07 55 32.0**	**+0.2**
HAZ	**Te Kaha**	**3.56**	**228**	PN		**Pn**	**07 54 53.4**	**+1.2**
TWGZ	**Tauwhareparae**	**3.73**	**222**	*e*PN		**Pn**	**07 54 54.9**	**+0.3**
TKGZ	**Te Karaka**	**4.00**	**220**	*e*PN		**Pn**	**07 54 58.5**	**+0.3**
MWZ	**Matawai**	**4.10**	**224**	PN		**Pn**	**07 54 59.9**	**+0.2**
RIGZ	**Rimuhau**	**4.24**	**218**	*e*PN		**Pn**	**07 55 01.7**	**+0.1**
RAGZ	**Rawiri**	**4.27**	**223**	*e*PN		**Pn**	**07 55 02.2**	**+0.1**
URZ	**Urewera**	**4.29**	**227**	Pn		**Pn**	**07 55 01.7**	**-0.5**
	2.7nm,0.3s,baz=271,slow=2.9,SNR=4.0								
URZ				Sn		**Sn**	**07 55 51.0**	**0.0**
	2.6nm,0.3s,baz=168,slow=23,SNR=2.7								
URZ	**Urewera**	**4.29**	**227**	*e*PN		**Pn**	**07 55 02.3**	**0.0**
URZ				SN		**Sn**	**07 55 50.2**	**-0.8**
ASAR	**Alice Springs**	**42.36**	**273**	P		**P**	**08 01 50.5**	**+0.8**
	1.1nm,0.4s,baz=115,slow=7.9,SNR=10								
WRA	**Warramunga Arr**	**43.80**	**278**	P		**P**	**08 02 01.4**	**0.0**
	0.2nm,0.4s,baz=119,slow=7.6,SNR=3.3								
FINES	**FINESS Array B**	**149.52**	**336**	PKPbc		**PKPab**	**08 13 47.5**	**-0.8**
	2.7nm,1.2s,baz=75,slow=7.4,SNR=1.7								

NIED ***21*** *07:59:00, 38.°20N×142.°10E, h38km, Mw3.8 Best double couple: Mo5.21000×10^14 NP1:ϕs=114.00000°, δ8.00000°, λ27.00000°. NP2:ϕs=358.00000°, δ86.00000°, λ97.00000°.*
ISCJB ***21*** *07:59:37.6±1.2, 38.°15N±0.°05×142.°2E±0.°1, h45km±10km, mb3.6/11, Error ellipse: s-maj=15.7km s-min=6.1km az=23.8*
JMA ***21*** *07:59:37.9±0.2, 38.°17N×142.°14E, h41km±1km, M3.9*
IDC ***21*** *07:59:40.7±2.6, 38.°15N×142.°14E, h58km±23km, mb3.4/11, mb1 3.6/14, mb1mx3.5/35, mbtmp3.7/14, ML3.2/3, MS2.9/4, Ms1 2.9/4, ms1mx2.6/29, Error ellipse: s-maj=24.6km s-min=13.8km az=110.0*
ISC 21 07:59:37.4±2.0, 38.°14N±0.°05×142.°08E±0.°09, h29km±13km, n36, σ0s65/31, mb3.7/11, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
JIO	**Ouri**	**0.66**	**299**	P		**Pn**	**07 59 51.3**	**+0.5**
JIO				S		**Sn**	**08 00 00.5**	**+0.4**
OFUJ	**Ofunato**	**0.99**	**341**	P		**Pn**	**07 59 55.1**	**-0.3**
JMM	**Marumori**	**1.05**	**255**	P		**Pb**	**07 59 56.9**	**-0.1**
JMM				S		**Sb**	**08 00 10.8**	**+0.4**
JMK	**Ichinoseki**	**1.06**	**321**	P		**Pb**	**07 59 56.7**	**-0.4**
JMK				S		**Sb**	**08 00 10.6**	**+0.1**
JOU	**Okura**	**1.14**	**282**	P		**Pb**	**07 59 58.7**	**+0.2**
JFK	**Kawauchi**	**1.23**	**232**	P		**Pn**	**07 59 59.0**	**+0.4**
JFK				S		**Sn**	**08 00 14.2**	**-0.1**
MIYJ	**Miyakonagasawa**	**1.45**	**352**	P		**Pn**	**08 00 01.4**	**-0.3**
JFT	**Otama**	**1.51**	**246**	P		**Pb**	**08 00 04.5**	**-0.3**
JFT				S		**Sb**	**08 00 24.0**	**+0.4**
JYK	**Kaneyama**	**1.56**	**301**	P		**Pb**	**08 00 04.6**	**-1.0**
JYS	**Shirataka**	**1.59**	**274**	P		**Pb**	**08 00 05.4**	**-0.7**
JRG	**Rokugo**	**1.69**	**318**	P		**Pb**	**08 00 06.6**	**-1.2**
MJAR	**Matsushiro Arr**	**3.47**	**244**	P		Pn	08 00 33.3	+3.8
	3.5nm,0.3s,baz=66,slow=11,SNR=46								
MJAR					LR	LR	08 02 14.3		
	comp=Z,184nm,18.0s,baz=75,slow=44								
MAT	**Matsushiro**	**3.47**	**244**	P		Pb	08 00 34.2	-4.0
MAT				*e*S		**Sb**	**08 01 19.9**	**-0.1**
ASAJ	**Asahikawa**	**5.99**	**4**	P		**Pn**	**08 01 05.6**	**+1.6**
	0.9nm,0.3s,baz=218,slow=11,SNR=4.6								
ASAJ				S		**Sn**	**08 02 12.7**	**+1.2**
	1.1nm,0.3s,baz=308,slow=27,SNR=3.9								
USRK	**Ussuriysk Ar.**	**9.72**	**312**	P		Pn	08 01 59.9	+4.7
	0.5nm,0.3s,baz=124,slow=14,SNR=9.1								
JNU	**Nakatsue**	**10.40**	**245**	LR		LR	08 06 36.8		
	comp=Z,68nm,20.4s,baz=117,slow=40								
KSRS	**Korea Array**	**11.23**	**271**	LR		LR	08 06 25.3		
	comp=Z,35nm,18.1s,baz=70,slow=36								
KLR	**Kul'dur**	**13.36**	**329**	LR		LR	08 07 22.1		
	comp=Z,42nm,18.8s,baz=162,slow=34								
MA2	**Magadan**	**22.17**	**12**	P		**P**	**08 04 31.8**	**+1.0**
	1.9nm,0.4s,baz=124,slow=7.3,SNR=4.0								
SEY	**Seymchan**	**25.61**	**11**	P		**P**	**08 05 04.8**	**+0.9**
	0.4nm,0.3s,baz=264,slow=16,SNR=4.2								
H11N2	**WAKE ISLAND Hy**	**28.28**	**123**	T		T	08 35 10.0		
	SNR=85								
H11N1	**WAKE ISLAND Hy**	**28.29**	**123**	T		T	08 35 55.0		
	baz=198,slow=74,SNR=86								
H11N3	**WAKE ISLAND Hy**	**28.30**	**123**	T		T	08 35 35.7		
	baz=315,slow=74,SNR=81								
H11S1	**WAKE ISLAND Hy**	**29.04**	**125**	T		T	08 36 19.9		
	baz=318,slow=76,SNR=54								
H11S3	**WAKE ISLAND Hy**	**29.04**	**126**	T		T	08 36 46.4		
	baz=318,slow=76,SNR=67								
H11S2	**WAKE ISLAND Hy**	**29.06**	**125**	T		T	08 36 30.6		
	baz=318,slow=76,SNR=58								
ZALV	**Zalesovo Beam**	**41.57**	**311**	P		**P**	**08 07 22.6**	**+0.3**
	1.6nm,0.6s,baz=82,slow=7.8,SNR=8.8								
MKAR	**Makanchi Array**	**43.99**	**301**	P		**P**	**08 07 42.2**	**+0.1**
	0.6nm,0.5s,baz=83,slow=9.3,SNR=8.6								
ILAR	**Eielson Array**	**48.28**	**33**	P		**P**	**08 08 15.2**	**-0.3**
	0.6nm,0.8s,baz=270,slow=6.4,SNR=6.3								
WRA	**Warramunga Arr**	**58.23**	**189**	P		**P**	**08 09 28.3**	**-0.7**
	0.3nm,0.5s,baz=7.2,slow=7.1,SNR=13								
ASAR	**Alice Springs**	**61.95**	**188**	P		**P**	**08 09 54.8**	**+0.2**
	0.3nm,0.8s,baz=6.4,slow=4.7,SNR=4.5								
YKA	**Yellowknife Ar**	**62.59**	**31**	P		**P**	**08 09 58.2**	**-0.2**
	0.2nm,0.7s,baz=306,slow=7.1,SNR=5.9								
FINES	**FINESS Array B**	**68.09**	**332**	P		**P**	**08 10 33.7**	**-0.3**
	1.0nm,0.6s,baz=32,slow=11,SNR=6.5								
NOA	**NORSAR Array B**	**73.37**	**337**	P		**P**	**08 11 05.8**	**-0.5**
	0.6nm,0.6s,baz=38,slow=5.8,SNR=3.5								
PDAR	**Pinedale Array**	**76.52**	**46**	P		**P**	**08 11 24.5**	**-0.5**
	0.3nm,0.5s,baz=304,slow=0.9,SNR=4.8								
LPAZ	**La Paz**	**145.67**	**59**	PKPbc		**PKPbc**	**08 19 14.4**	**-0.1**
	0.6nm,0.6s,baz=2.7,slow=5.1,SNR=3.6								

ISCJB ***21*** *08:01:29.6±0.5, 37.°87N±0.°02×27.°45E±0.°03, h2km±6km, Error ellipse: s-maj=4.5km s-min=3.7km az=43.5*
DDA ***21*** *08:01:29.4, 37.°86N×27.°44E, h8km, Md2.9*
ISK ***21*** *08:01:29.1, 37.°92N×27.°47E, h5km, MD2.8, ML2.9*
CSEM ***21*** *08:01:30.0±0.1, 37.°89N×27.°45E, h2km, MD2.9, Error ellipse: s-maj=3.8km s-min=3.1km az=60.0*
ISC 21 08:01:29.7±0.9, 37.°87N±0.°02×27.°44E±0.°02, h12km±8km, n37, σ0s54/53, Turkey

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
GCAM	**G?zelcaml?**	**0.24**	**224**	*i* P		**Pg**	**08 01 34.5**	**-0.2**
GCAM				*i* S		**Sg**	**08 01 37.7**	**-0.4**
GCAM	**G?zelcaml?**	**0.24**	**224**	P		**Pg**	**08 01 34.5**	**-0.2**
GCAM				S		**Sg**	**08 01 37.7**	**-0.4**
AYDB	**Zeytinkoy-Aydi**	**0.36**	**78**	*e*PG		**Pg**	**08 01 36.7**	**-0.3**
AYDB				*e*SG		**Sg**	**08 01 42.9**	**+1.0**
AYDB	**Zeytinkoy-Aydi**	**0.36**	**78**	*e*Pg		**Pg**	**08 01 36.7**	**-0.3**
AYDB				*e*Sg		**Sg**	**08 01 42.9**	**+1.0**
AYDN	**Tasoluk**	**0.41**	**121**	*i* P		**Pg**	**08 01 38.0**	**+0.3**
AYDN				*i* S		**Sg**	**08 01 43.3**	**+0.2**
AYDN	**Tasoluk**	**0.41**	**121**	P		**Pg**	**08 01 38.0**	**+0.3**
AYDN				S		**Sg**	**08 01 43.3**	**+0.2**
IZM	**Izmir**	**0.54**	**345**	*e*PG		**Pg**	**08 01 40.1**	**-0.2**
IZM	**Izmir**	**0.54**	**345**	*e*Pg		**Pg**	**08 01 40.1**	**-0.2**
BLCB	**Balcova**	**0.60**	**328**	*e*PG		**Pg**	**08 01 41.0**	**-0.4**
BLCB	**Balcova**	**0.60**	**328**	*e*Pg		**Pg**	**08 01 41.0**	**-0.4**
BDRM	**Kayabasi**	**0.81**	**180**	*i* P		**Pg**	**08 01 45.1**	**-0.1**
BDRM				*i* S		**Sb**	**08 01 56.4**	**-0.2**
BDRM	**Kayabasi**	**0.81**	**180**	P		**Pg**	**08 01 45.1**	**-0.1**
BDRM				S		**Sb**	**08 01 56.4**	**-0.2**
BODT	**Bodrum**	**0.82**	**187**	*e*PG		**Pb**	**08 01 46.5**	**+0.7**
URLA	**Izmir**	**0.83**	**306**	*i* P		**Pg**	**08 01 45.7**	**0.0**
URLA				*i* S		**Sb**	**08 01 57.6**	**+0.4**
URLA	**Izmir**	**0.83**	**306**	P		**Pg**	**08 01 45.7**	**0.0**
URLA				S		**Sb**	**08 01 57.6**	**+0.4**
ZEY	**˜zmir**	**0.83**	**296**	*i* P		**Pg**	**08 01 45.8**	**+0.1**
ZEY				*i* S		**Sb**	**08 01 57.3**	**+0.2**
YER	**Yerkesik**	**0.99**	**138**	*e*PG		**Pn**	**08 01 49.9**	**+0.3**
YER	**Yerkesik**	**0.99**	**138**	*e*Pg		**Pn**	**08 01 49.9**	**+0.3**
AKHS	**Akhisar**	**1.05**	**16**	*i* P		**Pg**	**08 01 49.5**	**-0.3**
AKHS				*i* S		**Sg**	**08 02 03.4**	**0.0**
AKHS	**Akhisar**	**1.05**	**16**	P		**Pg**	**08 01 49.5**	**-0.3**
AKHS				S		**Sg**	**08 02 03.4**	**0.0**
AKS	**Akhisar**	**1.05**	**16**	*e*PG		**Pg**	**08 01 49.6**	**-0.2**
AKS	**Akhisar**	**1.05**	**16**	*e*Pg		**Pg**	**08 01 49.6**	**-0.2**
KULA	**Kula-Manisa**	**1.15**	**56**	*e*PN		**Pb**	**08 01 51.7**	**+0.1**
KULA	**Kula-Manisa**	**1.15**	**56**	*e*Pn		**Pb**	**08 01 51.7**	**+0.1**
CHOS	**Chios island**	**1.21**	**296**	*e*PN		**Pg**	**08 01 53.5**	**+0.6**
CHOS	**Chios island**	**1.21**	**296**	*e*Pn		**Pg**	**08 01 53.5**	**+0.6**
DKL	**Dikili**	**1.27**	**341**	*e*PN		**Pg**	**08 01 54.2**	**+0.1**
DKL	**Dikili**	**1.27**	**341**	*e*Pn		**Pg**	**08 01 54.2**	**+0.1**
TURN	**Turunc**	**1.36**	**137**	*i* P		**Pn**	**08 01 52.8**	**-1.7**
TURN				*i* S		**Sb**	**08 02 10.6**	**-1.9**
DALY	**Dalyan (Mu˘la**	**1.43**	**137**	*e*PN		**Pg**	**08 01 57.9**	**+0.8**
DALY	**Dalyan (Mu˘la**	**1.43**	**137**	*e*Pn		**Pg**	**08 01 57.9**	**+0.8**
DEMI	**Demirci**	**1.54**	**40**	*i* P		**Pb**	**08 01 58.7**	**+0.5**
DEMI				*i* S		**Sg**	**08 02 19.0**	**-0.2**
DEMI	**Demirci**	**1.54**	**40**	P		**Pb**	**08 01 58.7**	**+0.5**
DEMI				S		**Sg**	**08 02 19.0**	**-0.2**
APE	**Apeiranthos**	**1.72**	**243**	*e*PN		**Pg**	**08 02 02.4**	**-0.3**
APE	**Apeiranthos**	**1.72**	**243**	*e*Pn		**Pg**	**08 02 02.4**	**-0.3**
SIGR	**SIGRI**	**1.83**	**318**	*e*PN		**Pb**	**08 02 03.5**	**+0.4**
SIGR	**SIGRI**	**1.83**	**318**	*e*Pn		**Pb**	**08 02 03.5**	**+0.4**

CSEM ***21*** *08:01:39.9, 37.°68N×14.°05E, h37km, ML2.1/3*
ROM 21 08:01:39.9±0.1, 37.°68N×14.°05E, h37km±1km, MI2.1/3, Error ellipse: s-maj=2.6km s-min=1.9km az=70.0, Sicily

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
RESU	**Resuttano**	**0.03**	**173**	Pg		Pn	08 01 46.1	0.0
RESU				Sg		Sn	08 01 51.1	+0.7
RESU	**Resuttano**	**0.03**	**173**	Pg		Pn	08 01 46.1	0.0
RESU				Sg		Sn	08 01 51.1	+0.7
ALJA	**Alia**	**0.25**	**287**	Pg		Pn	08 01 47.4	-1.0
ALJA				Sg		Sn	08 01 53.6	-2.6
ALJA	**Alia**	**0.25**	**287**	Pg		Pn	08 01 47.4	-1.0
ALJA				Sg		Sn	08 01 53.6	-2.6
GIB	**Gibilmanna**	**0.31**	**356**	Pg		Pn	08 01 48.1	-0.2
GIB				Sg		Sn	08 01 55.2	-0.2
GIB	**Gibilmanna**	**0.31**	**356**	Pg		Pn	08 01 48.1	-0.2
GIB				Sg		Sn	08 01 55.2	-0.2
PLLN	**Pollina**	**0.32**	**13**	Pg		Pn	08 01 48.3	0.0
PLLN				Sg		Sn	08 01 55.3	0.0
PLLN	**Pollina**	**0.32**	**13**	Pg		Pn	08 01 48.3	0.0
PLLN				Sg		Sn	08 01 55.3	0.0
RAFF	**Raffo Rosso**	**0.52**	**151**	Pg		Pn	08 01 51.6	+0.8
	122nm,0.5s								
RAFF	**Raffo Rosso**	**0.52**	**151**	Pg		Pn	08 01 51.6	+0.8
	122nm,0.5s								
SOLUN	**Solunto**	**0.58**	**315**	Pg		Pn	08 01 52.1	+0.3
SOLUN				Sg		Sn	08 02 01.8	+1.7
SOLUN	**Solunto**	**0.58**	**315**	Pg		Pn	08 01 52.1	+0.3
SOLUN				Sg		Sn	08 02 01.8	+1.7
HVZN	**Vizzini**	**0.73**	**133**	Pg		Pn	08 01 54.2	+0.5
	39nm,0.4s								
HVZN	**Vizzini**	**0.73**	**133**	Pg		Pn	08 01 54.2	+0.5
	39nm,0.4s								
HLNI	**Lentini**	**0.73**	**116**	Pg		Pn	08 01 53.8	+0.1
HLNI				Sg		Sn	08 02 05.0	+1.4
	54nm,0.2s								
HLNI	**Lentini**	**0.73**	**116**	Pg		Pn	08 01 53.8	+0.1
HLNI				Sg		Sn	08 02 05.0	+1.4
	54nm,0.2s								
HAVL	**Avola**	**1.11**	**130**	Pg		Pn	08 01 59.9	+0.9
HAVL	**Avola**	**1.11**	**130**	Pg		Pn	08 01 59.9	+0.9

CSEM ***21*** *08:02:08.8, 37.°67N×14.°00E, h38km, MD2.7/18*
ROM 21 08:02:08.8±0.1, 37.°67N×14.°00E, h38km, Md2.7/18, MI2.8/20, 2C, Error ellipse: s-maj=3.2km s-min=1.1km az=40.0, Sicily

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
RESU	**Resuttano**	**0.05**	**119**	⇑*i*Pg		Pn	08 02 14.9	-0.2
RESU				Sg		Sn	08 02 20.6	+1.1
RESU	**Resuttano**	**0.05**	**119**	⇑*i*Pg		Pn	08 02 14.9	-0.2
RESU				Sg		Sn	08 02 20.6	+1.1
ALJA	**Alia**	**0.21**	**292**	Pg		Pn	08 02 16.5	-1.1
ALJA				Sg		Sn	08 02 22.5	-3.3
ALJA	**Alia**	**0.21**	**292**	Pg		Pn	08 02 16.5	-1.1
ALJA				Sg		Sn	08 02 22.5	-3.3
GIB	**Gibilmanna**	**0.32**	**4**	Pg		Pn	08 02 16.9	-0.4
GIB				Sg		Sn	08 02 24.1	-0.1
	1µm,0.5s								
GIB	**Gibilmanna**	**0.32**	**4**	Pg		Pn	08 02 16.9	-0.4
GIB				Sg		Sn	08 02 24.1	-0.1
	1µm,0.5s								
PLLN	**Pollina**	**0.34**	**20**	Pg		Pn	08 02 17.0	-0.4
PLLN				Sg		Sn	08 02 24.2	0.0
	1µm,0.6s								
PLLN	**Pollina**	**0.34**	**20**	Pg		Pn	08 02 17.0	-0.4
PLLN				Sg		Sn	08 02 24.2	0.0
	1µm,0.6s								
CAGR	**Agira**	**0.40**	**97**	Pg		Pn	08 02 19.0	+1.0
	332nm,0.5s								
CAGR	**Agira**	**0.40**	**97**	Pg		Pn	08 02 19.0	+1.0
	332nm,0.5s								
GALF	**Gagliano Caste**	**0.45**	**85**	Pg		Pn	08 02 19.3	+0.6
GALF	**Gagliano Caste**	**0.45**	**85**	Pg		Pn	08 02 19.3	+0.6
RAFF	**Raffo Rosso**	**0.53**	**147**	Pg		Pn	08 02 20.5	+0.5
	327nm,0.5s								
RAFF	**Raffo Rosso**	**0.53**	**147**	Pg		Pn	08 02 20.5	+0.5
	327nm,0.5s								
SOLUN	**Solunto**	**0.56**	**319**	Pg		Pn	08 02 20.8	+0.4
	254nm,0.7s								
SOLUN	**Solunto**	**0.56**	**319**	Pg		Pn	08 02 20.8	+0.4
	254nm,0.7s								
ECNV	**Catenanuova**	**0.57**	**97**	Pg		Pn	08 02 21.4	+0.8
	450nm,0.8s								
ECNV	**Catenanuova**	**0.57**	**97**	Pg		Pn	08 02 21.4	+0.8
	450nm,0.8s								
CORL	**Corleone**	**0.59**	**292**	Pg		Pn	08 02 22.4	+1.5
	80nm,0.5s								
CORL	**Corleone**	**0.59**	**292**	Pg		Pn	08 02 22.4	+1.5
	80nm,0.5s								
MNO	**Monte Soro**	**0.61**	**64**	Pg		Pn	08 02 21.5	+0.2
	34nm,0.1s								
MNO	**Monte Soro**	**0.61**	**64**	Pg		Pn	08 02 21.5	+0.2
	34nm,0.1s								
MPG	**Monte Pellegri**	**0.70**	**314**	Pg		Pn	08 02 23.4	+1.1
MPG	**Monte Pellegri**	**0.70**	**314**	Pg		Pn	08 02 23.4	+1.1
HVZN	**Vizzini**	**0.75**	**131**	Pg		Pn	08

KBK	**Karagaybulak**	**1.59**	**253**	⇓*i*P		**Pn**	**08 12 56.8**	**-0.2**
	baz=254							
KBK				⇓*i*S		**Sb**	**08 13 18.9**	**+0.5**
	baz=254							
KZA	**Kyzart**	**1.67**	**232**	⇑*i*P		**Pg**	**08 12 59.7**	**+0.2**
	baz=232							
KZA				⇑*i*S		**Sg**	**08 13 22.2**	**+1.1**
	baz=232							
PDGK	**Podgornoye**	**1.82**	**83**	⇑*i*P		**Pn**	**08 13 00.2**	**+0.3**
	baz=82							
PDGK				⇑*i*S		**Sb**	**08 13 24.8**	**-0.1**
	baz=82							
USP	**Ospenovka**	**1.84**	**275**	⇓*i*P		**Pn**	**08 13 00.4**	**+0.1**
	baz=276							
USP				⇓*i*S		**Sb**	**08 13 25.3**	**-0.3**
	baz=276							
AAK	**Ala-Archa**	**1.92**	**256**	⇑Pn		**Pb**	**08 13 03.0**	**-0.3**
	1.6nm,0.5s							
AAK				⇑Sn		**Sg**	**08 13 30.1**	**+1.1**
	11nm,0.8s							
KK31	**Karatay Array**	**4.76**	**272**	⇓Lg		Lg	08 15 00.5	
	0.7nm,0.5s,baz=79,slow=27,SNR=5.5							

MEX 21 08:17:07.4±0.3, 14.94N×93.28W, h16km±450km, MD3.6, Near coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
PCIG		**0.76**	**5**	*i* P		Pb	08 17 19.5	-2.8
PCIG				*e*S		Sg	08 17 29.6	-2.8
CCIG	**Comitan**	**1.73**	**39**	*e*P		Pn	08 17 33.3	-3.7

NIED ***21*** *08:18:00, 38.30N×142.20E, h20km, Mw4.9 Best double couple: M₀2.82000×10¹⁶ NP1:φ₈134.00000°, δ39.00000°, λ-103.00000°. NP2:φ₈330.00000°, δ52.00000°, λ-80.00000°.*

BJI ***21*** *08:18:10.5, 38.33N×142.34E, h28km, mb5.1/83, mB4.9/56, Ms4.9/87, Ms7 4.8/79*

ISCJB ***21*** *08:18:12.9±0.5, 38.32N±0.02×142.16E±0.02, h28km±3km, mb5.3/385, MS4.6/68, Error ellipse: s-maj=2.9km s-min=1.9km az=149.6*

IDC ***21*** *08:18:12.8±6.0, 38.28N×142.19E, h19km±38km, mb5.1/33, mb1 5.2/39, mb1mx5.1/44, mbtmp5.2/39, ML4.7/5, MS4.3/37, Ms1 4.3/37, ms1mx4.2/56, Error ellipse: s-maj=12.6km s-min=9.8km az=100.0*

MOS ***21*** *08:18:12.8±1.3, 38.28N×142.19E, h33km, mb5.6/121, MS4.3/21, Error ellipse: s-maj=4.9km s-min=3.1km az=96.3*

JMA ***21*** *08:18:13.0±0.1, 38.32N×142.23E, h31km±1km, M5.2 JMA Felt IV J1.*

GCMT ***21*** *08:18:16.1±0.2, 38.38N×142.10E, h25km, MW5.0/102, Moment Tensor Solution. s74,c104; s102,c156; Duration: 0 Moment tensor: Scale 10¹⁶Nm; Mrr-4.80±.13; Mθθ2.45±.09; Mφφ2.34±.09; Mrθ 0.17±.17; Mθφ-1.55±.06; Mφr-0.47±.19; Best double couple: M₀4.40000×10¹⁶ NP1:φ₈316.00000°, δ48.00000°, λ-87.00000°. NP2: φ₈132.00000°, δ42.00000°, λ-93.00000°. Principal axes: T 3.9690, Plg3.0000°, Azm44.0000°; N 0.8530, Plg2.0000°, Azm134.0000°; P -4.8320, Plg86.0000°, Azm261.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

NEIC ***21*** *08:18:16.1±0.4, 38.33N×142.09E, h40km±3km, mb5.3/247 Error ellipse: s-maj=3.0km s-min=2.0km az=139.0*

NEIC Recorded [4 JMA] in Miyagi.

ISC 21 08:18:13.6±0.4, 38.33N±0.03×142.20E±0.03, h25km±2km, h25km:pP-P,n1328,σ1.5/20/1409, mb5.4/392, MS4.7/69, 52C-55D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
JIO	**Ouri**	**0.68**	**280**	⇑P		**Pb**	**08 18 26.5**	**-0.3**
JIO				S		**Sb**	**08 18 35.9**	**0.0**
OFUJ	**Ofunato**	**0.85**	**331**	⇑P		**Pb**	**08 18 28.7**	**-1.1**
OFUJ				S		**Sb**	**08 18 40.1**	**-0.7**
JMK	**Ichinoseki**	**0.99**	**309**	⇓P		**Pn**	**08 18 31.2**	**-0.6**
JMK				S		**Sn**	**08 18 44.5**	**-0.4**
JMM	**Marumori**	**1.21**	**248**	⇑P		**Pn**	**08 18 33.6**	**-1.2**
JMM				S		**Sn**	**08 18 48.8**	**-1.6**
JOU	**Okura**	**1.21**	**272**	⇓P		**Pn**	**08 18 34.8**	**-0.1**
JOU				*e*S		**Sb**	**08 18 50.7**	**-0.4**
JOM	**Ohasama**	**1.34**	**328**	⇓P		**Pn**	**08 18 36.4**	**-0.3**
JOM				S		**Sb**	**08 18 54.1**	**-0.7**
JFK	**Kawauchi**	**1.43**	**228**	⇑P		**Pn**	**08 18 36.1**	**-1.8**
JFK				S		**Sn**	**08 18 52.8**	**-3.1**
MJAR	**Matsushiro Arr**	**3.65**	**242**	Pn		**Pn**	**08 19 09.3**	**+0.9**
	26nm,0.3s,baz=50,slow=9.2,SNR=74							
MJAR				Sn		**Sb**	**08 19 59.2**	**-2.0**
	38nm,0.3s,baz=68,slow=37,SNR=3.9							
MJAR				LR		LR	08 20 36.8	
	comp=Z,6μm,19.8s,baz=65,slow=40							
MAJO	**Matsushiro**	**3.65**	**242**	*c i*P		**Pn**	**08 19 09.2**	**+0.8**
MAJO	**Matsushiro**	**3.65**	**242**	*e*Pn		**Pn**	**08 19 09.6**	**+1.2**
MAJO				*e*Sn		**Sn**	**08 19 47.7**	**-3.0**
MAT	**Matsushiro**	**3.65**	**242**	P		**Pn**	**08 19 09.0**	**+0.6**
MAT				*e*S		**Sn**	**08 19 53.9**	**+3.2**
MJB9	**Matsu-Tunnel**	**3.65**	**242**	*e*Pn		**Pn**	**08 19 09.8**	**+1.4**
ERM	**Erimo**	**3.75**	**11**	*d i*P		**Pn**	**08 19 09.2**	**-0.5**
ERM				pmax		pmax		
	comp=Z,170nm,1.2s							
ERM	**Erimo**	**3.75**	**11**	*e*Pn		**Pn**	**08 19 09.8**	**0.0**
ERM				*e*Sn		**Sn**	**08 19 56.0**	**+3.0**
INU	**Inuyama**	**5.12**	**236**	*e*Pn		**Pn**	**08 19 30.8**	**+2.2**
JHJ2	**Mitsune**	**5.56**	**201**	*e*Pn		**Pn**	**08 19 34.7**	**+0.1**
JHJ2				*e*Sn		**Sn**	**08 20 36.6**	**-1.2**
JHJ	**Hachijo jima 2**	**5.56**	**201**	Pn		**Pn**	**08 19 34.0**	**-0.7**
	comp=Z,202nm,0.3s,baz=12,slow=7.4,SNR=17							
JHJ				Sn		**Sn**	**08 20 33.0**	**-4.8**
	comp=Z,154nm,0.3s,baz=261,slow=19,SNR=4.0							
JHJ				LR		LR	08 22 12.0	
	comp=Z,4μm,19.0s,baz=100,slow=44							
ASAJ	**Asahikawa**	**5.79**	**3**	Pn		**Pn**	**08 19 39.1**	**+1.4**
	comp=Z,16nm,0.3s,baz=220,slow=13,SNR=45							
ASAJ				Sn		**Sn**	**08 20 44.1**	**+0.9**
	comp=Z,20nm,0.3s,baz=24,slow=20,SNR=3.1							
ASAJ	**Asahikawa**	**5.79**	**3**	*e*Pn		**Pn**	**08 19 37.5**	**-0.2**
ASAJ				*e*Sn		**Sn**	**08 20 45.1**	**+1.9**
YUK	**Yuzh-Kuril'sk**	**6.33**	**25**	*e*P		**Pn**	**08 19 42.6**	**-2.6**
YUK				*e*S		**Sn**	**08 20 50.9**	**-5.7**
YUK				pmax		pmax		
	comp=Z,304nm,0.4s							
YUK				pmax		pmax		
	comp=N,229nm,0.7s							
YUK				pmax		pmax		
	comp=E,307nm,0.5s							
YUK				MLR		MLR		
	comp=Z,3μm,16.0s							
YUK				MLR		MLR		
	comp=N,3μm,10.0s							
SHO	**Shikotan**	**6.54**	**31**	*e*P		**Pn**	**08 19 44.8**	**-3.3**
SHO				pmax		pmax		
	comp=Z,169nm,0.5s							
SHO				pmax		pmax		
	comp=E,122nm,0.6s							
SHO				pmax		pmax		
	comp=N,85nm,0.5s							
KUR	**Kuril'sk**	**8.09**	**30**	P		**Pn**	**08 20 06.4**	**-2.9**
KUR				*e*S		**Sn**	**08 21 33.5**	**-6.3**
KUR				pmax		pmax		
	comp=Z,138nm,0.7s							
KUR				pmax		pmax		
	comp=N,83nm,0.4s							
KUR				pmax		pmax		
	comp=E,67nm,0.4s							
KUR				MLR		MLR		
	comp=Z,2μm,17.0s							
KUR				MLR		MLR		
	comp=N,2μm,12.0s							
YSS	**Yuzh-Sakhalins**	**8.62**	**3**	⇑*e*P		**Pn**	**08 20 17.8**	**+1.2**
YSS				*e*S		**Sn**	**08 21 53.9**	**+0.8**
YSS				pmax		pmax		
	comp=Z,50nm,0.8s							
YSS	**Yuzh-Sakhalins**	**8.62**	**3**	*e*Pn		**Pn**	**08 20 17.8**	**+1.2**
YSS				*e*Sn		**Sn**	**08 21 56.9**	**+3.9**
VLA	**Vladivostok**	**9.18**	**305**	*e*P		**Pn**	**08 20 25.9**	**+1.7**
VLA				pmax		pmax		
	comp=Z,129nm,1.0s							
MSHR	**Mys Shultsa**	**9.43**	**300**	*e*P		**Pn**	**08 20 28.6**	**+0.9**
USRK	**Ussuriysk Ar.**	**9.66**	**311**	Pn		**Pn**	**08 20 34.7**	**+3.8**
	comp=Z,1.7nm,0.3s,baz=124,slow=13,SNR=53							
USRK				LR		LR	08 24 11.1	
	comp=Z,3μm,18.1s,baz=117,slow=37							
JNU	**Nakatsue**	**10.57**	**244**	Pn		**Pn**	**08 20 46.6**	**+3.2**
	comp=Z,1.5nm,0.3s,baz=57,slow=9.4,SNR=27							
JNU				LR		LR	08 25 06.3	
	comp=Z,5μm,18.9s,baz=66,slow=39							
JNU	**Nakatsue**	**10.57**	**244**	*e*Pn		**Pn**	**08 20 46.8**	**+3.3**
UGL	**Uglegorsk**	**10.74**	**360**	P		**Pn**	**08 20 46.0**	**+0.4**
UGL				MLR		MLR		
	comp=N,2μm,17.0s							
UGL				MLR		MLR		
	comp=E,2μm,17.0s							
UGL				MLR		MLR		
	comp=Z,2μm,17.0s							
CBIJ	**Chichi jima**	**11.21**	**180**	*e*Pn		**Pn**	**08 20 50.2**	**-1.9**
JCJ	**Chichijima**	**11.21**	**180**	Pn		**Pn**	**08 20 49.4**	**-2.8**
	comp=Z,34nm,0.3s,baz=114,slow=20,SNR=13							
JCJ				Sn		Sn	08 22 44.1	-12
	baz=287,slow=20							
KSRS	**Korea Array**	**11.32**	**270**	Pn		**Pn**	**08 20 58.0**	**+4.4**
	comp=Z,0.7nm,0.3s,baz=77,slow=14,SNR=22							
KSRS				LR		LR	08 24 52.0	
	comp=Z,1μm,20.9s,baz=65,slow=35							
KSRS				PcP		**PcP**	**08 26 47.5**	**+0.5**
	comp=Z,0.2nm,0.3s,baz=53,slow=1.0,SNR=4.7							
KS01	**Wonju Array Si**	**11.34**	**270**	*e*Pn		Pn	08 20 59.1	+5.2
MDJ	**Mudanjiang**	**11.35**	**308**	P		**Pn**	**08 20 55.5**	**+1.5**
MDJ				S		**Sn**	**08 23 00.4**	**+0.5**
MDJ				ScP		**ScP**	**08 30 19.3**	**+1.4**
MDJ				PcS		**PcS**	**08 30 22.4**	**+1.7**
MDJ				pmax		pmax		
	comp=Z,25nm,1.3s							
MDJ				pmax		pmax		
	comp=Z,110nm,4.9s							
MDJ				LR		LR		
	comp=Z,2μm,16.4s							
MDJ				LR		LR		
	comp=Z,1μm,15.3s							
MDJ				LR		LR		
	comp=Z,2μm,17.4s							
MDJ	**Mudanjiang**	**11.35**	**308**	*e*Pn		**Pn**	**08 20 57.3**	**+3.3**
KS15	**Wonju Array Si**	**11.35**	**270**	*e*Pn		**Pn**	**08 20 58.5**	**+4.4**
HABR	**Khabarovsk**	**11.38**	**335**	*e*P		**Pn**	**08 20 52.7**	**-1.8**
HABR				*e*S		**Sn**	**08 22 58.6**	**-2.1**
HABR				pmax		pmax		
	comp=Z,9.0nm,0.8s							
HABR				MLR		MLR		
	comp=Z,1μm,12.0s							
TYV	**Tymovskoe**	**12.53**	**1**	*e*P		**Pn**	**08 21 09.5**	**-0.6**
TYV				*e*S		**Sn**	**08 23 25.0**	**-3.8**
TYV				pmax		pmax		
	comp=Z,48nm,1.0s							
TYV				smax		smax		
	comp=E,500nm,10.0s							
TYV				MLR		MLR		
	comp=N,2μm,16.0s							
TYV				MLR		MLR		
	comp=Z,3μm,16.0s							
KLR	**Kul'dur**	**13.24**	**329**	Pn		**Pn**	**08 21 20.2**	**+0.4**
	comp=Z,0.5nm,0.3s,baz=134,slow=13,SNR=26							
KLR				LR		LR	08 26 27.8	
	comp=Z,2μm,19.2s,baz=141,slow=37							
KLR	**Kul'dur**	**13.24**	**329**	*d* iP		**Pn**	**08 21 19.6**	**-0.2**
CN2	**Changchun**	**13.77**	**299**	*e*P		**P**	**08 21 31.3**	**-4.0**
CN2				*e*S		**Sn**	**08 24 06.3**	**+7.3**
CN2				pmax		pmax		
	comp=Z,10.0nm,0.7s							
CN2				pmax		pmax		
	comp=Z,200nm,6.0s							
CN2				LR		LR		
	comp=Z,2μm,14.0s							
CN2				LR		LR		
	comp=Z,1μm,14.0s							
CN2				LR		LR		
	comp=Z,2μm,13.0s							
SNY	**Shenyang**	**14.68**	**290**	⇑P		**P**	**08 21 46.8**	**+1.4**
SNY				S		**S**	**08 24 30.8**	**-8.9**
SNY				pmax		pmax		
	comp=Z,73nm,0.8s							
SNY				pmax		pmax		
	comp=Z,340nm,3.4s							
SNY				LR		LR		
	comp=N,2μm,12.2s							
SNY				LR		LR		
	comp=E,3μm,17.7s							
SNY				LR		LR		
	comp=Z,4μm,13.7s							
NKL	**Nikolayevsk**	**14.86**	**356**	*e*P		**Pn**	**08 21 39.0**	**-2.8**
NKL				*e*S		**Sn**	**08 24 25.0**	**-0.4**
NKL				pmax		pmax		
	comp=N,200nm,3.5s							
NKL				pmax		pmax		
	comp=Z,400nm,4.0s							
NKL				pmax		pmax		
	comp=N,26nm,1.0s							
NKL				pmax		pmax		
	comp=E,10.0nm,1.0s							
NKL				pmax		pmax		
	comp=Z,43nm,1.0s							
NKL				smax		smax		
	comp=E,450nm,10.0s							
NKL				MLR		MLR		
	comp=E,1μm,20.0s							
NKL				MLR		MLR		
	comp=N,1μm,17.0s							
NKL				MLR		MLR		
	comp=Z,2μm,17.0s							
SKR	**Severo-Kuril's**	**15.80**	**34**	*e*P		**Pn**	**08 21 53.6**	**-0.6**
SKR				S		**Sn**	**08 24 49.0**	**+0.5**
SKR				pmax		pmax		
	comp=Z,160nm,0.9s							
SKR				MLR		MLR		
	comp=N,2μm,14.0s							
SKR				MLR		MLR		
	comp=E,2μm,14.0s							
SKR				MLR		MLR		
	comp=Z,2μm,14.0s							
DL2	**Dalian**	**16.09**	**278**	P		**P**	**08 21 59.9**	**-1.3**
DL2				S		**Sn**	**08 24 53.4**	**-2.3**
DL2				pmax		pmax		
	comp=Z,160nm,0.9s							
DL2				pmax		pmax		
	comp=Z,540nm,9.1s							
DL2				LR		LR		
	comp=Z,1μm,13.5s							
DL2				LR		LR		
	comp=Z,1μm,13.8s							
DL2				LR		LR		
	comp=Z,2μm,15.4s							
JOW	**Kunigami**	**16.39**	**230**	Pn		**Pn**	**08 21 59.5**	**-2.4**
	baz=307,slow=20,SNR=1.5							
JOW	**Kunigami**	**16.39**	**230**	*e*Pn		**P**	**08 22 03.8**	**-0.7**
	comp=Z,73nm,1.2s							
PEA0	**Petropavlovsk-**	**18.25**	**31**	*e*P		**P**	**08 22 25.8**	**+0.9**
PETK	**Petropavlovsk-**	**18.25**	**31**	P		**Pn**	**08 22 21.9**	**-3.0**
	comp=Z,0.2nm,0.3s,baz=189,slow=11,SNR=3.8							
PETK				LR		LR	08 29 02.0	
	comp=Z,644nm,21.4s,baz=212,slow=36							
PEA1	**Petropavlovsk-**	**18.25**	**31**	*e*P		**Pn**	**08 22 21.9**	**-3.1**
PET	**Petropavlovsk**	**18.58**	**32**	*e*P		**Pn**	**08 22 30.0**	**+1.1**
PET				*e*S		**Sn**	**08 25 52.0**	**-3.8**
PET				pmax		pmax		
	comp=Z,87nm,1.2s							
PET				MLR		MLR		
	comp=Z,900nm,17.0s							
PET	**Petropavlovsk**	**18.58**	**32**	*e*P		**Pn**	**08 22 31.3**	**+2.4**
	comp=Z,80nm,1.0s							
SSE	**Sheshan**	**18.70**	**254**	⇑P		**Pn**	**08 22 31.1**	**+0.6**
SSE				S		**Sn**	**08 25 57.9**	**-1.1**
SSE				sS		**sS**	**08 26 07.8**	**-5.0**
SSE				pmax		pmax		
	comp=Z,100nm,1.0s							
SSE				pmax		pmax		
	comp=Z,230nm,11.0s							
SSE				LR		LR		
	comp=Z,160nm,16.0s							
SSE				LR		LR		
	comp=Z,940nm,16.0s							
SSE				LR		LR		
	comp=Z,1μm,16.0s							
HIA	**Hailar**	**19.48**	**311**	*e*P		**P**	**08 22 37.7**	**-0.7**
HIA				pmax		pmax		
	comp=Z,59nm,0.8s							
HIA	**Hailar**	**19.48**	**311**	*e*P		**P**	**08 22 37.7**	**-0.7**
	comp=Z,59nm,0.8s							
TIA	**Tai'an**	**20.06**	**272**	⇑P		**P**	**08 22 43.8**	**-1.1**
TIA				S		**S**	**08 26 23.8**	**-5.2**
TIA				pmax		pmax		
	comp=Z,70nm,1.0s							
TIA				pmax		pmax		
	comp=Z,360nm,6.0s							
TIA				LR		LR		
	comp=Z,850nm,12.5s							
TIA				LR		LR		
	comp=Z,2μm,14.2s							
TIA				LR		LR		
	comp=Z,2μm,13.1s							
NJ2	**Nanjing**	**20.06**	**259**	*e*P		Pn	08 22 49.3	+2.5
NJ2				pP		sP	08 22 55.0	0.0
NJ2				pmax		pmax		
	comp=Z,35nm,0.8s							
NJ2				pmax		pmax		
	comp=Z,1μm,6.2s							
NJ2				LR		LR		
	comp=Z,1μm,15.2s							
NJ2				LR		LR		
	comp=Z,2μm,17.9s							
NJ2				LR		LR		
	comp=Z,3μm,16.8s							
BJI	**Beijing**	**20.23**	**283**	P		**P**	**08 22 44.9**	**-1.8**
BJI				S		Sn	08 26 33.6	-2.1
BJI				pmax		pmax		
	comp=Z,24nm,1.3s							
BJI				pmax		pmax		
	comp=Z,140nm,3.5s							
BJI				LR		LR		
	comp=Z,1μm,13.4s							
BJI				LR		LR		
	comp=Z,1μm,15.0s							
BJT	**Baijiatuan**	**20.24**	**283**	*e*P		**P**	**08 22 45.3**	**-1.5**
BJT				pmax		pmax		
	comp=Z,36nm,0.8s							
BJT	**Baijiatuan**	**20.24**	**283**	*e*P		**P**	**08 22 45.3**	**-1.5**
	comp=Z,36nm,0.8s							
CLNS	**Chul'man**	**21.77**	**334**	*e*P		**P**	**08 23 02.3**	**-0.9**
CLNS				*e**PP		**sP**	**08 23 15.3**	**+1.9**
CLNS				*e*			08 23 26.2	
CLNS				*e*			08 26 57.3	
CLNS				*e*S		**S**	**08 27 01.3**	**-1.3**
CLNS				*e*SS		SnSn	08 27 48.4	+21
CLNS				pmax		pmax		
	comp=Z,39nm,1.0s							
CLNS				pmax		pmax		
	comp=E,16nm,0.9s							
CLNS				pmax		pmax		
	comp=N,31nm,1.0s							
CLNS				pmax		pmax		
	comp=N,24nm,0.9s							
CLNS				pmax		pmax		
	comp=Z,16nm,0.9s							
CLNS				pmax		pmax		
	comp=E,34nm,0.9s							
CLNS				smax		smax		
	comp=E,252nm,12.0s							
CLNS				smax		smax		
	comp=N,212nm,10.4s							
CLNS				pmax		pmax		
	comp=N,255nm,14.0s							
CLNS				pmax		pmax		
	comp=E,437nm,14.0s							
CLNS				MLR		MLR		
	comp=N,1μm,14.0s							
CLNS				MLR		MLR		
	comp=Z,2μm,15.0s							
CLNS				MLR		MLR		
	comp=E,781nm,13.0s							
MA2	**Magadan**	**21.95**	**12**	P		**P**	**08 23 05.7**	**+0.6**
	comp=E,102nm,0.8s,baz=216,slow=9.5,SNR=60							
MA2				LR		LR	08 31 22.2	
	comp=E,566nm,21.2s,baz=222,slow=36							
YHNB	**Yeheng**	**22.32**	**238**	*e*P		**P**	**08 23 07.9**	**-1.4**
	comp=E,46nm,0.7s							
NACB	**Ninganchiao**	**22.51**	**237**	*e*P		**P**	**08 23 10.8**	**-0.5**
	comp=E,41nm,0.7s							
SSLB	**Suanglung**	**23.20**	**237**	*e*P		**P**	**08 23 16.6**	**-1.9**
	comp=E,44nm,0.9s							
YULB	**Yu-li**	**23.24**	**236**	*e*P		**P**	**08 23 18.1**	**-0.9**
	comp=E,42nm,1.0s							
TIY	**Taiyuan**	**23.42**	**278**	*e*P		**P**	**08 23 21.5**	**+0.8**
TIY				S		**S**	**08 27 36.6**	**+4.2**
TIY				pmax		pmax		
	comp=E,57nm,0.6s							
TIY				LR		LR		
	comp=E,390nm,11.3s							
TIY				LR		LR		
	comp=E,1μm,14.2s							
TIY				LR		LR		
	comp=E,1μm,15.5s							
HHC	**Hu-ho-hao-te**	**23.69**	**286**	*e*P		**P**	**08 23 21.8**	**-1.5**
HHC				S		**S**	**08 27 31.9**	**-4.9**
HHC				SS		**SnSn**	**08 28 19.8**	**+4.7**
HHC				pmax		pmax		
	comp=E,46nm,0.9s							
HHC				pmax		pmax		
	comp=E,130nm,4.1s							
HHC				LR		LR		
	comp=E,1μm,13.7s							
HHC				LR		LR		
	comp=E,2μm,13.1s							
HHC				LR		LR		
	comp=E,2μm,14.3s							
TPUB	**Ta-pu**	**23.75**	**237**	*e*P		**P**	**08 23 22.8**	**-1.2**
	comp=E,97nm,0.9s							
TWG	**Pinlang**	**23.79**	**236**	*e*P		**P**	**08 23 23.4**	**-0.9**
	comp=E,452nm,0.9s							
QZH	**Quanzhou**	**24.05**	**243**	P		**P**	**08 23 27.0**	**+0.3**
QZH				S		**S**	**08 27 36.9**	**-5.6**
QZH				LR		LR		
	comp=E,1μm,16.4s							
QZH				LR		LR		
	comp=E,2μm,15.4s							
QZH				LR		LR		
	comp=E,2μm,14.4s							
WHN	**Wuhan**	**24.19**	**260**	P		**P**	**08 23 27.6**	**-0.3**
WHN				S		**S**	**08 27 38.6**	**-6.1**
WHN				pmax		pmax		
	comp=E,100nm,0.8s							
WHN				pmax		pmax		
	comp=E,450nm,13.6s							
WHN				LR		LR		
	comp=E,3μm,10.8s							
WHN				LR		LR		
	comp=E,2μm,14.2s							
WHN				LR		LR		
	comp=E,5μm,16.4s							
CIT	**Chita**	**24.20**	**314**	*e*P		**P**	**08 23 28.3**	**+0.3**
CIT				*e*			08 23 40.6	
CIT				*e*			08 24 15.7	
CIT				pmax		pmax		
	comp=Z,532nm,1.1s							
GUMO	**Guam**	**24.76**	**174**	P		**P**	**08 23 33.2**	**0.0**
	comp=Z,57nm,0.8s,baz=270,slow=4.0,SNR=3.0							
YAK	**Yakutsk**	**24.95**	**346**	P		**P**	**08 23 32.3**	**-2.3**
	comp=Z,74nm,0.6s,baz=328,slow=2.3,SNR=14							
YAK	**Yakutsk**	**24.95**	**346**	*e*P		**P**	**08 23 32.5**	**-2.1**
YAK				*e**PP		**pP**	**08 23 41.5**	**-0.5**
YAK				*e*PPP		PPP	08 24 11.8	
YAK				*e*S		**S**	**08 27 52.6**	**-3.8**
YAK				*e**SS		**sS**	**08 28 11.2**	**+2.6**
YAK				*e*SSS		SSS	08 29 17.8	
YAK				pmax		pmax		
	comp=Z,126nm,1.1s							
YAK				pmax		pmax		
	comp=E,28nm,1.1s							
YAK				pmax		pmax		
	comp=N,100nm,1.1s							
YAK				pmax		pmax		
	comp=Z,20nm,0.4s							
YAK				pmax		pmax		
	comp=N,108nm,1.1s							
YAK				pmax		pmax		
	comp=E,49nm,1.0s							
YAK				smax		smax		
	comp=E,183nm,1.6s							
YAK				smax		smax		
	comp=N,272nm,1.6s							
YAK				MLR		MLR		
	comp=N,1μm,18.0s							
YAK				MLR		MLR		
	comp=Z,1μm,18.0s							
YAK				MLR		MLR		
	comp=E,222nm,15.0s							
YAK	**Yakutsk**	**24.95**	**346**	*e*P		**P**	**08 23 33.6**	**-1.0**

SEY Seymchan 25.40 11 P **P** **08 23 40.4 +1.8**
comp=E,86nm,0.8s,baz=196,slow=6.3,SNR=235
SEY Seymchan 25.40 11*d* *i*P **P** **08 23 38.5 -0.1**
BOD Bodaibo 26.79 326 *e*P **P** **08 23 50.9 -0.3**
BOD pmax pmax
comp=Z,48nm,1.0s
XAN Xi'an 27.12 271 P **P** **08 23 53.8 -0.7**
XAN pP sP 08 24 04.3 -0.8
XAN sP pP 08 24 08.5 +6.5
XAN S **S** **08 28 28.9 -2.4**
XAN pmax pmax
comp=Z,45nm,0.7s
XAN pmax pmax
comp=Z,170nm,7.6s
XAN LR LR
comp=Z,870nm,14.6s
XAN LR LR
comp=Z,990nm,15.4s
XAN LR LR
comp=Z,2µm,13.1s
ULN Ulaanbaatar 27.17 302*d* *i*P **P** **08 23 54.7 -0.3**
ULN pmax pmax
comp=Z,41nm,1.0s
ULN Ulaanbaatar 27.17 302 *e*P **P** **08 23 55.4 +0.4**
comp=Z,37nm,1.0s
ULN Ulaanbaatar 27.17 302 P **P** **08 23 54.8 -0.2**
ULN Ulaanbaatar 27.17 302 P **P** **08 23 54.8 -0.2**
SONA1 Songino Array 27.60 302 *e*P **P** **08 23 58.6 -0.3**
SONA0 Songino Array 27.61 302 *e*P **P** **08 23 59.0 +0.1**
comp=Z,64nm,1.5s
SONA0 *e*PcP **PcP** **08 27 16.2 +0.3**
SONM Songino Array 27.61 302 P **P** **08 23 59.0 +0.1**
comp=Z,15nm,0.9s,baz=106,slow=8.3,SNR=42
SONM PcP **PcP** **08 27 16.2 +0.3**
comp=Z,5.0nm,0.8s,baz=139,slow=3.1,SNR=4.4
SONM LR LR 08 35 18.7
comp=Z,778nm,19.0s,baz=73,slow=37
ENH Enshi 28.09 263 *e*P **P** **08 24 02.6 -0.7**
comp=Z,291nm,1.0s
H11N2 WAKE ISLAND Hy 28.31 124 T T 08 54 41.3
baz=317,slow=75,SNR=4243
H11N1 WAKE ISLAND Hy 28.32 124 T T 08 54 40.9
baz=317,slow=75,SNR=7478
H11N3 WAKE ISLAND Hy 28.33 124 T T 08 54 42.7
baz=317,slow=75,SNR=4230
H11S1 WAKE ISLAND Hy 29.07 126 T T 08 55 15.9
baz=318,slow=76,SNR=2091
H11S3 WAKE ISLAND Hy 29.08 126 T T 08 55 16.1
baz=318,slow=76,SNR=2453
H11S2 WAKE ISLAND Hy 29.09 126 T T 08 55 17.2
baz=318,slow=76,SNR=2308
IRK Irkutsk 29.71 310 *e*P **P** **08 24 17.1 -0.3**
IRK pmax pmax
comp=Z,98nm,0.9s
TLY Talaya 29.98 309 P **P** **08 24 20.1 +0.3**
comp=Z,38nm,0.8s,baz=115,slow=5.1,SNR=37
TLY LR LR 08 36 57.5
comp=Z,1µm,18.4s,baz=100,slow=38
TLY Talaya 29.98 309*d* *i*P **P** **08 24 20.1 +0.3**
TLY *e* 08 25 21.1
TLY *e*S **S** **08 29 16.0 0.0**
TLY pmax pmax
comp=Z,52nm,0.9s
TLY MLR MLR
comp=Z,1µm,18.0s
TLY Talaya 29.98 309 *e*P **P** **08 24 20.4 +0.6**
TLY Talaya 29.98 309 P **P** **08 24 20.2 +0.4**
TLY Talaya 29.98 309 P **P** **08 24 20.2 +0.4**
ZAK Zakamensk 29.98 306 *e*P **P** **08 24 19.5 -0.4**
ZAK pmax pmax
comp=Z,59nm,1.0s
LZH Lanzhou 30.49 278 ⇑P **P** **08 24 25.3 +0.6**
LZH pP pP 08 24 33.5 +1.4
LZH sP sP 08 24 37.0 +1.8
LZH PP **PnPn** **08 25 25.3 +1.6**
LZH S **S** **08 29 23.3 -1.3**
LZH sS sS 08 29 36.5 -0.4
LZH pmax pmax
comp=Z,65nm,1.1s
LZH pmax pmax
comp=Z,160nm,4.6s
LZH LR LR
comp=Z,960nm,13.3s
LZH LR LR
comp=Z,2µm,13.0s
LZH LR LR
comp=Z,2µm,13.8s
MOY Mondy 31.60 308 *e*P **P** **08 24 34.5 +0.3**
MOY pmax pmax
comp=Z,35nm,1.6s
GYA Guiyang 32.07 259⇑ *i*P **P** **08 24 41.0 +2.4**
GYA pP sP 08 24 49.3 +0.1
GYA PP **PP** **08 25 48.0 -3.2**
GYA PcP **PcP** **08 27 29.3 +1.5**
GYA S **S** **08 29 49.5 +0.1**
GYA sS sS 08 30 03.3 +1.5
GYA ScP **ScP** **08 31 11.0 +1.4**
GYA SS **SnSn** **08 31 42.3 +2.4**
GYA ScS **ScS** **08 35 08.8 +0.3**
GYA pmax pmax
comp=Z,30nm,1.1s
GYA pmax pmax
comp=Z,220nm,7.8s
GYA LR LR
comp=Z,930nm,15.9s
GYA LR LR
comp=Z,870nm,14.8s
GYA LR LR
comp=Z,970nm,16.0s
CD2 Chengdu 32.32 269 P **P** **08 24 40.0 -0.6**
CD2 pP pP 08 24 48.3 +0.2
CD2 PP **PP** **08 25 53.3 -0.5**
CD2 S **S** **08 29 52.5 -0.5**
CD2 sS sS 08 30 06.5 +1.1
CD2 pmax pmax
comp=Z,80nm,0.8s
CD2 pmax pmax
comp=Z,150nm,4.7s
CD2 LR LR
comp=Z,1µm,16.8s
CD2 LR LR
comp=Z,1µm,15.3s
BILL Bilibino 32.60 17*d* *i*P **P** **08 24 42.8 +0.2**
BILL *i* 08 24 51.2
BILL *i* 08 25 51.0
BILL *i* 08 27 29.2
BILL *i*S **S** **08 29 58.5 +1.9**
BILL *i*SS **SnSn** **08 31 51.3 -0.4**
BILL pmax pmax
comp=Z,32nm,1.1s
BILL MLR MLR
comp=Z,402nm,18.0s
BILL Bilibino 32.60 17 *e*P **P** **08 24 42.9 +0.2**
comp=Z,42nm,1.2s
GTA Gaotai 32.80 285 *e*P **P** **08 24 45.4 +0.5**
GTA pP pP 08 24 52.6 +0.2
GTA sP sP 08 24 56.3 +0.8
GTA S **S** **08 30 02.1 +1.5**
GTA sS sS 08 30 14.8 +1.8
GTA SS **SnSn** **08 32 03.3 +5.9**
GTA pmax pmax
comp=Z,15nm,0.8s
GTA pmax pmax
comp=Z,170nm,6.4s
GTA LR LR
comp=Z,990nm,18.5s
GTA LR LR
comp=Z,1µm,17.1s
GTA LR LR
comp=Z,2µm,15.9s
QIZ Qiongzhong 34.04 245 P **P** **08 24 56.8 +1.1**
QIZ S **S** **08 30 24.9 +5.1**
QIZ LR LR
comp=Z,280nm,13.6s
QIZ LR LR
comp=Z,270nm,9.1s
TIXI Tiksi 34.08 353 P **P** **08 24 55.2 -0.3**
comp=Z,21nm,0.9s,baz=142,slow=7.3,SNR=24
TIXI Tiksi 34.08 353*d* *i*P **P** **08 24 55.0 -0.5**
TIXI pmax pmax
comp=Z,29nm,1.0s
TIXI Tiksi 34.08 353 *e*P **P** **08 24 55.4 0.0**
KMI Kunming 35.79 260 P **P** **08 25 11.1 +0.1**
KMI pP sP 08 25 20.0 -1.7
KMI PP **PnPn** **08 26 31.3 0.0**
KMI S **S** **08 30 46.4 -0.7**
KMI SS **SnSn** **08 33 08.3 -2.0**
KMI pmax pmax
comp=Z,42nm,1.0s
KMI pmax pmax
comp=Z,99nm,3.9s
KMI LR LR
comp=Z,820nm,16.2s
KMI LR LR
comp=Z,1µm,14.5s
KMI LR LR
comp=Z,1µm,16.2s
KRAR Krasnoyarsk 36.98 315 *e*P **P** **08 25 21.0 +0.5**
KRAR pmax pmax
comp=Z,116nm,1.1s
MYLDM Lahad Datu 39.41 219 ⇓P **P** **08 25 44.4 +3.0**
MYLDM Lahad Datu 39.41 219 *e*P **P** **08 25 43.8 +2.3**
comp=Z,45nm,0.9s
SKNT Sakolnakorn 39.60 248 P **P** **08 25 43.5 +0.4**
comp=Z,30nm,0.9s
SDKM Sandakan 39.68 221 ⇓P **P** **08 25 45.2 +1.5**
TNTI Ternate 39.79 204 P **P** **08 25 46.5 +1.9**
comp=Z,97nm,0.8s
SWI Sorong 40.29 197 P **P** **08 25 49.5 +0.8**
comp=Z,48nm,0.8s
CRAI Chiangrai 40.31 256 P **P** **08 25 50.2 +1.3**
comp=Z,46nm,1.0s
TSM Tawau 40.49 219 ⇑P **P** **08 25 51.1 +0.7**
GENI Genyem 40.77 183 P **P** **08 25 54.1 +1.5**
comp=Z,90nm,0.7s
WMQ Urumqi 40.83 296 P **P** **08 25 54.5 +1.4**
WMQ pP pP 08 26 01.9 +1.2
WMQ sP sP 08 26 07.4 +3.6
WMQ PP **PnPn** **08 27 34.0 +2.5**
WMQ PcP **PcP** **08 27 54.4 +0.8**
WMQ S **S** **08 32 04.3 +1.7**
WMQ ScS **ScS** **08 35 57.6 +1.2**
WMQ pmax pmax
comp=Z,120nm,0.8s
WMQ pmax pmax
comp=Z,180nm,4.0s
WMQ LR LR
comp=Z,380nm,13.8s
WMQ LR LR
comp=Z,210nm,13.8s
WMQ LR LR
comp=Z,170nm,15.6s
LBMI Labuha 41.08 203 P **P** **08 25 57.2 +2.0**
comp=Z,67nm,0.8s,comp=Z,2µm
ZAA0 Zalesovo Array 41.52 311 *e*P **P** **08 25 58.5 0.0**
ZAA1 Zalesovo Array 41.52 311 *e*P **P** **08 25 58.5 0.0**
ZAA1 *e*PcP **PcP** **08 27 55.6 0.0**
ZALV Zalesovo Beam 41.52 311 P **P** **08 25 58.5 0.0**
comp=Z,38nm,0.6s,baz=87,slow=7.5,SNR=158
ZALV PcP **PcP** **08 27 55.6 0.0**
comp=Z,20nm,0.8s,baz=95,slow=2.5,SNR=6.4
ZALV LR LR 08 43 53.2
comp=Z,812nm,18.6s,baz=68,slow=37
ZALV Zalesovo Beam 41.52 311 P **P** **08 25 58.5 0.0**
ZALV 08 27 55.6
ZALV pmax pmax
comp=Z,37nm,0.6s
ZALV pmax pmax
comp=Z,20nm,0.8s
ZALV MLR MLR
comp=Z,812nm,18.6s
UTTA Uttaradit 41.66 252 P **P** **08 26 00.7 +0.7**
comp=Z,11nm,1.0s
LAMP Lampang 41.88 254 P **P** **08 26 02.4 +0.5**
comp=Z,17nm,0.9s,comp=Z,310nm
MRSI Marisa 42.03 211 P **P** **08 26 03.8 +0.8**
comp=Z,96nm,1.2s,comp=Z,2µm
FAKI Fak Fak 42.07 195 P **P** **08 26 04.0 +0.7**
comp=Z,54nm,0.7s,comp=Z,577nm
PBKT Sadao Pong 42.08 251 P **P** **08 26 03.5 0.0**
comp=Z,28nm,1.1s,comp=Z,739nm
CMMT Chiang Mai 42.22 255 P **P** **08 26 04.6 -0.1**
comp=Z,42nm,0.9s,comp=Z,513nm
CHTO Chiang Mai 42.23 255 P **P** **08 26 04.7 0.0**
comp=Z,192nm,0.9s,comp=Z,2µm
CHTO Chiang Mai 42.23 255 *e*P **P** **08 26 04.9 +0.2**
CHTO pmax pmax
comp=Z,33nm,0.8s
CHTO Chiang Mai 42.23 255 *e*P **P** **08 26 04.9 +0.2**
comp=Z,33nm,0.8s
CHTO Chiang Mai 42.23 255 P **P** **08 26 04.7 0.0**
CHTO Chiang Mai 42.23 255 P **P** **08 26 04.7 0.0**
NRIK Noril'sk 42.36 335 P **P** **08 26 05.0 -0.1**
comp=Z,7.7nm,0.4s,baz=109,slow=8.3,SNR=30
NRIK LR LR 08 44 42.6
comp=Z,1µm,18.3s,baz=104,slow=38
NVS Novosibirsk 42.41 313 *e*P **P** **08 26 04.8 -0.9**
NVS *e* 08 27 49.3
NVS *e*S **S** **08 32 24.9 -0.7**
NVS pmax pmax
comp=Z,43nm,1.0s
NVS pmax pmax
comp=N,8.0nm,1.2s
NVS pmax pmax
comp=E,38nm,1.1s
NVS smax smax
comp=E,25nm,1.6s
CMAR Chiang Mai Arr 42.44 255 P **P** **08 26 06.7 +0.3**
comp=E,11nm,0.8s,baz=49,slow=4.5,SNR=38
CMAR PcP **PcP** **08 28 00.2 +1.0**
comp=E,3.6nm,0.4s,baz=18,slow=2.5,SNR=6.1
CMAR LR LR 08 45 08.7
comp=E,231nm,18.3s,baz=55,slow=38
CMAR Chiang Mai Arr 42.44 255 P **P** **08 26 06.7 +0.3**
CMAR 08 28 00.2
CMAR pmax pmax
comp=Z,15nm,0.9s
CMAR pmax pmax
comp=Z,4.0nm,0.4s
CMAR MLR MLR
comp=Z,231nm,18.3s
CM01 Chiang Mai Arr 42.45 255 *e*P **P** **08 26 06.7 +0.2**
LSA Lhasa 42.73 274 P **P** **08 26 10.4 +1.2**
LSA pmax pmax
comp=Z,25nm,1.0s
LSA Lhasa 42.73 274 *e*P **P** **08 26 10.8 +1.6**
LSA pmax pmax
comp=Z,41nm,0.8s
LSA Lhasa 42.73 274 *e*P **P** **08 26 10.8 +1.6**
comp=Z,41nm,0.8s
SANI Sanana 42.88 204 P **P** **08 26 11.3 +1.3**
comp=Z,113nm,0.9s,comp=Z,819nm
MSAI Masohi 43.26 200 P **P** **08 26 14.8 +1.8**
comp=Z,20nm,1.2s,comp=Z,884nm
MHMT Maesarieng 43.38 255 P **P** **08 26 14.6 +0.6**
comp=Z,52nm,0.8s,comp=Z,3µm
APSI Ampana 43.41 211 P **P** **08 26 14.3 +0.1**
comp=Z,182nm,1.2s,comp=Z,2µm
MK01 Makanchi Array 43.97 301 *e*P **P** **08 26 18.7 +0.2**
MK31 Makanchi Array 43.97 301 *i*P **P** **08 26 18.7 +0.1**
MK31 pmax pmax
comp=Z,47nm,0.8s
MK31 Makanchi Array 43.97 301 *e*P **P** **08 26 18.9 +0.3**
MK32 Makanchi Array 43.97 301 *e*P **P** **08 26 18.9 +0.3**
MKAR Makanchi Array 43.97 301 P **P** **08 26 18.9 +0.3**
comp=Z,43nm,0.9s,baz=83,slow=9.9,SNR=142
MKAR LR LR 08 45 16.3
comp=Z,296nm,18.6s,baz=82,slow=37
TT01 Tatalina 43.99 36 *e*P **P** **08 26 19.5 +1.1**
TTA Tatalina 44.00 35 *e*P **P** **08 26 19.6 +1.0**
TTA Tatalina 44.00 35 *e*P **P** **08 26 19.6 +1.0**
SHL Shillong 44.06 268 *i*P **P** **08 26 20.0 +0.3**
SHL *e*S **S** **08 32 50.0 -0.8**
SVW2 Sparrevohn 44.11 38 *e*P **P** **08 26 20.9 +1.4**
comp=Z,31nm,0.7s
BNDI Bandanaira 44.14 198 P **P** **08 26 21.6 +1.5**
comp=Z,213nm,1.1s
MAKZ Makanchi 44.18 301 P **P** **08 26 19.8 -0.4**
MAKZ pmax pmax
comp=Z,49nm,0.9s
MAKZ Makanchi 44.18 301 *e*P **P** **08 26 20.5 +0.3**
comp=Z,55nm,0.9s
SRDT SRDT 44.86 250 P **P** **08 26 26.9 +1.0**
comp=Z,107nm,1.2s,comp=Z,6µm
SBUM Sibu 45.03 225 *e*P **P** **08 26 27.8 +0.6**
comp=Z,14nm,0.9s
OHAK Old Harbor 45.38 44 *e*P **P** **08 26 29.9 +0.4**
comp=Z,58nm,1.3s
RSO Redoubt South 45.50 39 *e*P **P** **08 26 31.1 +0.4**
KURK Kurchatov 45.64 307 P **P** **08 26 31.4 -0.3**
KURK pmax pmax
comp=Z,432nm,1.0s
KURK Kurchatov 45.64 307 *e*P **P** **08 26 31.8 +0.2**
comp=Z,169nm,0.8s
KURK Kurchatov 45.64 307 P **P** **08 26 31.9 +0.2**
KURK Kurchatov 45.64 307 P **P** **08 26 31.9 +0.2**
KURK P **P** **08 26 31.9 +0.2**
KURBB Kurchatov Arra 45.71 307 P **P** **08 26 32.4 +0.1**
comp=Z,116nm,0.8s,baz=83,slow=8.3,SNR=580
KDAK Kodiak Island 45.72 43 P P 08 26 47.8 +16
comp=Z,27nm,0.8s,baz=272,slow=6.1,SNR=16
KDAK LR LR 08 45 33.8
comp=Z,376nm,21.1s,baz=248,slow=36
KDAK Kodiak Island 45.72 43 *i*P **P** **08 26 32.4 +0.2**
KDAK Kodiak Island 45.72 43 *e*P **P** **08 26 32.8 +0.6**
comp=Z,44nm,0.8s
PPLA Purkeypile 45.75 36 *e*P **P** **08 26 34.3 +1.8**
comp=Z,34nm,1.1s
BKB Balikpapan 45.79 217 P **P** **08 26 33.8 +0.6**
comp=Z,128nm,1.1s
CAST Castle Rocks 45.80 35 *e*P **P** **08 26 34.4 +1.6**
comp=Z,97nm,2.0s
SPU Mount Spurr 45.82 38 *e*P **P** **08 26 33.9 +0.8**
TTSI Tana Toraja 46.09 212 P **P** **08 26 37.3 +1.7**
comp=Z,26nm,1.0s
BPAW Bear Paw Mtn. 46.30 34 *e*P **P** **08 26 38.1 +1.4**
comp=Z,38nm,1.4s
KTH Kantishna Hill 46.32 35 *e*P **P** **08 26 38.3 +1.3**
comp=Z,48nm,1.0s
MLY Manley 46.42 33 *e*P **P** **08 26 39.2 +1.5**
comp=Z,34nm,1.1s
MTKI Muara Teweh, K 46.48 219 P **P** **08 26 40.4 +1.7**
comp=Z,111nm,1.1s,comp=Z,12µm
TRF Thorofare Moun 46.61 35 *e*P **P** **08 26 40.5 +1.2**
comp=Z,19nm,1.0s
COLD Coldfoot 46.71 30 *e*P **P** **08 26 41.1 +1.2**
comp=Z,10nm,0.8s
PDGK Podgornoye 46.74 297 P **P** **08 26 40.6 +0.2**
PDGK pmax pmax
comp=Z,53nm,1.1s
KSM Kuching 46.90 226 *e*P **P** **08 26 43.2 +1.2**
comp=Z,46nm,1.1s
SPSI Sidrap Palu 46.94 211 P **P** **08 26 42.7 +0.4**
comp=Z,56nm,1.0s
PMR Palmer 47.21 37 *e*P **P** **08 26 44.3 +0.4**
PMR pmax pmax
comp=Z,22nm,1.0s
PMR Palmer 47.21 37 *e*P **P** **08 26 44.2 +0.4**
comp=Z,22nm,1.0s
RND Reindeer 47.25 35 *e*P **P** **08 26 44.9 +0.6**
RND pmax pmax
comp=Z,36nm,1.0s
RND Reindeer 47.25 35 *e*P **P** **08 26 44.9 +0.6**
comp=Z,36nm,1.0s
STKI Sintang 47.41 224 P **P** **08 26 47.6 +1.6**
comp=Z,56nm,0.6s
MDM Murphy Dome 47.48 33 *e*P **P** **08 26 47.2 +1.2**
comp=Z,64nm,1.1s
WRH Wood River Hil 47.56 33 *e*P **P** **08 26 47.5 +1.0**
comp=Z,36nm,0.9s
COLA College 47.65 33*d* *i*P **P** **08 26 48.1 +0.9**
COLA pmax pmax
comp=Z,7.0nm,0.9s
COLA College 47.65 33 *e*P **P** **08 26 48.8 +1.6**
comp=Z,19nm,0.9s
GUN Gumba 47.66 275 *e*P **P** **08 26 48.6 +0.3**
comp=Z,525nm,0.9s
CCB Clear Creek Bu 47.67 33 *e*P **P** **08 26 48.3 +0.8**
comp=Z,15nm,1.0s
PMG Port Moresby 47.72 173⇑ *e*P **P** **08 26 48.6 +0.3**
PMG pmax pmax
comp=Z,90nm,1.2s
KAPI Kappang 47.90 211 LR LR 08 46 44.3
comp=Z,116nm,19.1s,baz=28,slow=36
KAPI Kappang 47.90 211 *e*P **P** **08 26 50.5 +0.8**
comp=Z,96nm,1.1s
KAPI Kappang 47.90 211 P **P** **08 26 50.4 +0.7**
KAPI Kappang 47.90 211 P **P** **08 26 50.4 +0.7**
KAPI P **P** **08 26 50.4 +0.7**
DHY Denali Highway 47.94 35 *e*P **P** **08 26 50.4 +0.6**
comp=Z,13nm,0.8s
SCM Sheep Creek Mo 48.05 37 *e*P **P** **08 26 51.7 +1.2**
SCM pmax pmax
comp=Z,33nm,1.0s
SCM Sheep Creek Mo 48.05 37 *e*P **P** **08 26 51.7 +1.2**
comp=Z,33nm,1.0s
HDA Harding Lake 48.05 33 *e*P **P** **08 26 51.0 +0.6**
comp=Z,27nm,1.0s
IL1 Eielson Array 48.06 33 *e*P **P** **08 26 50.7 +0.2**
ILAR Eielson Array 48.06 33 P **P** **08 26 50.8 +0.3**
comp=Z,12nm,0.8s,baz=267,slow=6.2,SNR=117
ILAR LR LR 08 49 30.8
comp=Z,131nm,18.5s,baz=294,slow=39
ILB Eielson Array 48.06 33 *e*P **P** **08 26 51.0 +0.5**
KKN Kakani 48.19 275 *e*P **P** **08 26 52.6 +0.4**
comp=Z,431nm,0.8s
PKIN Phulchoki 48.19 275 *e*P **P** **08 26 52.4 +0.1**
comp=Z,107nm,0.8s
DMN Daman 48.41 275 *e*P **P** **08 26 54.4 +0.4**
comp=Z,231nm,1.2s
GKN Gorkha 48.59 276 *e*P **P** **08 26 55.6 +0.3**
comp=Z,577nm,0.9s
FYU Fort Yukon 48.67 31 *e*P **P** **08 26 57.5 +2.4**
comp=Z,177nm,1.9s
SKLT Songkhla 48.68 241 P **P** **08 26 57.0 +1.2**
comp=Z,48nm,1.2s
BBKI Banjar Baru 48.69 218 P **P** **08 26 56.1 +0.2**
comp=Z,139nm,1.1s
SURT Suratani 48.70 245 P **P** **08 26 56.8 +0.8**
comp=Z,17nm,1.1s,comp=Z,246nm
KLU Klutina 48.75 37 *e*P **P** **08 26 57.2 +1.3**
comp=Z,22nm,1.0s
PAX Paxson 48.81 35 *e*P **P** **08 26 58.2 +1.8**
PAX pmax pmax
comp=Z,24nm,0.8s
PAX Paxson 48.81 35 *e*P **P** **08 26 58.2 +1.8**
comp=Z,24nm,0.8s
TRTT Trang 48.85 243 P **P** **08 26 57.8 +0.7**
comp=Z,42nm,1.0s
DIV Divide 48.86 38 *e*P **P** **08 26 58.1 +1.3**
comp=Z,31nm,1.0s
EYAK Cordova Ski Ar 48.95 39 *e*P **P** **08 26 58.6 +1.3**
comp=Z,39nm,1.2s
DOT Dot Lake 49.38 34 *e*P **P** **08 27 01.2 +0.5**
comp=Z,31nm,0.8s
BMRM Bremner River 49.45 38 *e*P **P** **08 27 02.5 +1.3**
comp=Z,25nm,0.8s
KOLN Koldanda 49.51 276 *e*P **P** **08 27 03.1 +0.7**
comp=Z,159nm,0.8s
TKM2 Tokmak 2 49.57 298 P **P** **08 27 03.4 +0.7**
TKM2 pmax pmax
comp=Z,80nm,1.1s
TKM2 Tokmak 2 49.57 298 *e*P **P** **08 27 03.6 +0.9**
comp=Z,71nm,0.9s
MENT Mentasta 49.61 35 *e*P **P** **08 27 04.2 +1.7**
comp=Z,20nm,0.9s
PKDT Phuket 49.77 244 P **P** **08 27 05.0 +0.9**
comp=Z,121nm,0.9s,comp=Z,2µm
PYUN Piuthan 49.83 277 *e*P **P** **08 27 05.5 +0.7**
comp=Z,844nm,1.0s
KULM Kulim 50.01 240 *e*P **P** **08 27 06.7 +0.6**
comp=Z,44nm,1.0s
BVA0 Borovoye Array 50.17 312 P **P** **08 27 07.2 +0.4**
BVA0 pmax pmax
comp=Z,36nm,1.1s
BVAR Borovoye Array 50.17 312 P **P** **08 27 07.0 +0.2**
comp=Z,16nm,0.7s,baz=77,slow=7.8,SNR=74
BVAR PcP **PcP** **08 28 26.4 +0.6**
comp=Z,21nm,0.6s,baz=84,slow=3.9,SNR=8.9
OTUK Ortayu 50.18 305 P **P** **08 27 07.1 +0.1**
OTUK pmax pmax
comp=Z,61nm,1.3s
BRVK Borovoye 50.23 312 P **P** **08 27 07.2 0.0**
BRVK pmax pmax
comp=Z,61nm,0.9s
BRVK Borovoye 50.23 312 *e*P **P** **08 27 07.5 +0.3**
comp=Z,38nm,0.9s
BRVK Borovoye 50.23 312 P **P** **08 27 07.5 +0.3**
BRVK Borovoye 50.23 312 P **P** **08 27 07.5 +0.3**
BRVK P **P** **08 27 07.5 +0.3**
FRU Bishkek 50.28 298 *e*P **P** **08 27 07.5 -0.3**
FRU *e* 08 28 32.5
FRU pmax pmax
comp=Z,70nm,1.8s
AAK Ala-Archa 50.44 298 P **P** **08 27 09.4 +0.2**
AAK pmax pmax
comp=Z,28nm,1.2s

AAK **Ala-Archa** 50.44 298 *e*P P 08 27 09.4 +0.2
comp=Z,18nm,0.9s
AAK **Ala-Archa** 50.44 298 P P 08 27 09.4 +0.2
AAK **Ala-Archa** 50.44 298 P P 08 27 09.4 +0.2
KSH **Kashi** 50.46 293 P P 08 27 13.8 +4.5
KSH *es*P sP 08 27 24.6 +4.5
KSH *e*ScP **ScP** 08 32 24.4 +2.8
KSH PcS **PcS** 08 32 27.4 +2.8
KSH S **S** 08 34 26.0 +4.4
KSH ScS **ScS** 08 36 57.1 -1.7
KSH pmax pmax
comp=Z,39nm,1.2s
KSH pmax pmax
comp=Z,150nm,5.1s
KSH LR LR
comp=Z,220nm,9.7s
KSH LR LR
comp=Z,740nm,13.3s
KSH LR LR
comp=Z,730nm,15.3s
EGAK **Eagle** 50.51 33 *e*P P 08 27 10.0 +0.8
comp=Z,14nm,1.1s
BALM **Baldy** 50.53 38 *e*P P 08 27 10.7 +1.2
BALM pmax pmax
comp=Z,28nm,1.2s
BALM **Baldy** 50.53 38 *e*P P 08 27 10.7 +1.2
comp=Z,28nm,1.2s
MYKOM **Kota Tinggi** 50.54 233 ⇑P P 08 27 11.2 +1.3
MYKOM **Kota Tinggi** 50.54 233 *e*P P 08 27 11.1 +1.2
comp=Z,30nm,0.9s
KGM **Kluang** 50.70 234 ⇑P P 08 27 12.6 +1.4
TPRI **Tanjung Pinang** 50.79 232 P P 08 27 13.5 +1.6
comp=Z,86nm,1.0s,comp=Z,34µm
FRIM **Kepong** 50.88 237 ⇑P P 08 27 13.5 +1.0
EKS2 **Erkin-Say** 50.92 298 *e*P P 08 27 13.1 +0.3
EKS2 pmax pmax
comp=Z,19nm,0.9s
EKS2 **Erkin-Say** 50.92 298 *e*P P 08 27 13.1 +0.3
comp=Z,19nm,0.9s
ZRNK **Zerenda** 51.00 312 P P 08 27 12.8 -0.2
ZRNK pmax pmax
comp=Z,66nm,1.1s
ZRNK **Zerenda** 51.00 312 *e*P P 08 27 13.5 +0.4
comp=Z,56nm,0.9s
LGTI **Lohaghat** 51.35 280 *e*P P 08 27 24.2 +8.3
DSRI **Dabo** 51.85 231 P P 08 27 21.2 +1.4
comp=Z,81nm,1.3s
MNAS **Manas** 51.87 298 P P 08 27 20.2 +0.3
MNAS pmax pmax
comp=Z,63nm,1.0s
MTN **Manton Dam** 51.95 194 *e*P P 08 27 20.3 -0.1
comp=Z,93nm,1.1s
COEN **Coen** 52.02 179 *e*P P 08 27 21.4 +0.4
comp=Z,48nm,0.9s
SFK **Sufi-Kurgan** 52.05 295 P P 08 27 21.9 +0.5
SFK pmax pmax
comp=Z,94nm,1.0s
PLAI **Plampang** 52.16 211 P P 08 27 21.4 -0.6
comp=Z,60nm,1.1s
PPBI **Pangkal Pinang** 52.26 228 P P 08 27 23.8 +1.0
comp=Z,37nm,1.3s,comp=Z,12µm
TWSI **Taliwang, Sumb** 52.45 212 P P 08 27 24.4 +0.2
comp=Z,44nm,1.0s
SRBI **Singaraja** 52.58 214 P P 08 27 37.4 +12
INK **Inuvik** 52.95 28 P P 08 27 28.1 +0.9
comp=Z,19nm,1.1s,baz=281,slow=7.3,SNR=29
INK LR LR 08 54 13.1
comp=Z,202nm,18.6s,baz=275,slow=41
INK **Inuvik** 52.95 28 *e*P P 08 27 28.1 +0.9
comp=Z,24nm,1.0s
PSI **Prapat** 53.00 239 *e*P P 08 27 28.9 +0.4
PSI pmax pmax
comp=Z,36nm,0.9s
PSI **Prapat** 53.00 239 *e*P P 08 27 28.9 +0.4
comp=Z,36nm,0.9s
KKAR **Karatay Array** 53.02 299 *e*P P 08 27 28.5 +0.2
KKAR **Karatay Array** 53.02 299 *e*P P 08 27 28.5 +0.2
KCSI **Kotacane, Aceh** 53.26 241 P P 08 27 29.5 -0.8
comp=Z,24nm,1.0s
BKNI **Bangkinang** 53.45 235 P P 08 27 33.1 +1.4
comp=Z,234nm,1.0s,comp=Z,7µm
THN **Thein Dam** 53.49 285 *e*P P 08 27 30.0 -1.8
MNSI **Mandailing Nat** 54.05 237 P P 08 27 36.1 +0.1
comp=Z,30nm,0.7s,comp=Z,8µm
NDI **New Delhi** 54.05 280 *e*P P 08 27 31.5 -4.5
SDSI **Sungai Dareh** 54.16 234 P P 08 27 37.7 +0.8
comp=Z,189nm,1.2s,comp=Z,45µm
SVE **Sverdlovsk** 54.59 318⇑ *e*P P 08 27 40.1 +0.6
SVE pmax pmax
comp=Z,141nm,1.0s
SVE MLR MLR
comp=Z,1µm,16.0s
UGM **Wanagama** 54.66 220 P P 08 27 40.0 -0.5
comp=Z,219nm,0.9s
PDSI **Padang** 54.76 235 P P 08 27 42.0 +0.7
comp=Z,11nm,1.2s,comp=Z,9µm
GSI **Gunungsitoli** 55.01 239 P P 08 27 43.7 +0.7
comp=Z,165nm,1.1s
LHSI **Lahat** 55.14 229 P P 08 27 44.8 +0.9
comp=Z,191nm,1.0s
KLI **Kotabumi** 55.18 227 P P 08 27 44.7 +0.5
comp=Z,139nm,1.1s,comp=Z,4µm
LEM **Lembang** 55.25 223 P P 08 27 50.9 +6.0
MDSI **Maura Dua** 55.27 228 P P 08 27 44.5 -0.4
comp=Z,110nm,1.1s,comp=Z,1µm
MASI **Maura Aman, Be** 55.37 231 P P 08 27 46.7 +1.0
comp=Z,166nm,1.2s,comp=Z,5µm
SOKR **Solikamsk** 55.68 322*d* *i*P P 08 27 45.6 -1.6
SOKR pmax pmax
comp=Z,46nm,1.0s
SOKR MLR MLR
comp=Z,369nm,17.0s
ARU **Arti** 55.81 318*d* *i*P P 08 27 48.2 -0.1
ARU 08 28 46.9
ARU 08 29 50.8
ARU S **S** 08 35 33.9 +0.3
ARU 08 37 31.1
ARU SS **SS** 08 39 12.4 -6.3
ARU pmax pmax
comp=Z,143nm,1.2s
ARU MLR MLR
comp=Z,1µm,18.0s
ARU **Arti** 55.81 318 *e*P P 08 27 48.6 +0.4
comp=Z,91nm,0.9s
KASI **Kota Agung** 55.93 227 P P 08 27 47.9 -1.7
comp=Z,57nm,1.0s
PPSI **Pulau Pagai** 56.47 234 P P 08 27 54.6 +1.1
comp=Z,155nm,1.3s
DLBC **Dease Lake** 57.22 39 LR LR 08 51 36.9
comp=Z,117nm,19.6s,baz=296,slow=35
DLBC **Dease Lake** 57.22 39 *e*P P 08 28 00.5 +2.2
comp=Z,21nm,1.0s
KBL **Kabul** 57.54 291 *e*P P 08 28 01.2 0.0
KBL pmax pmax
comp=Z,108nm,1.0s
KBL **Kabul** 57.54 291 *e*P P 08 28 01.2 0.0
comp=Z,108nm,1.0s
AB31 **Akbulak array** 57.59 310 P P 08 28 00.9 -0.1
AB31 pmax pmax
comp=Z,48nm,0.8s
ABKAR **Akbulak array** 57.59 310 *e*P P 08 28 01.1 +0.1
CTAO **Charters Tower** 58.24 176 *e*P P 08 28 05.6 -0.2
CTAO pmax pmax
comp=Z,11nm,1.0s
CTAO **Charters Tower** 58.24 176 *e*P P 08 28 05.6 -0.2
comp=Z,11nm,1.0s
FITZ **Fitzroy Crossi** 58.25 199 *e*P P 08 28 06.3 +0.4
comp=Z,49nm,1.2s
AKTO **Aktyubinsk** 58.28 312 P P 08 28 05.3 -0.6
AKTO pmax pmax
comp=Z,61nm,0.9s
WRAB **Tennant Creek** 58.42 189*d* *i*P P 08 28 06.5 -0.6
WRAB pmax pmax
comp=Z,215nm,1.2s
WRAB **Tennant Creek** 58.42 189 *e*P P 08 28 06.3 -0.8
comp=Z,54nm,0.8s
WB2 **Warramunga Arr** 58.43 189 *e*P P 08 28 06.4 -0.8
comp=Z,64nm,0.9s
WR1 **Warramunga Arr** 58.44 189 *e*P P 08 28 06.4 -0.7
comp=Z,58nm,0.9s
WRA **Warramunga Arr** 58.44 189 P P 08 28 06.4 -0.8
comp=Z,50nm,0.8s,baz=7.2,slow=7.0,SNR=218
WRA LR LR 08 52 57.7
comp=Z,142nm,21.1s,baz=210,slow=36
WRA PKP2bc 08 57 56.7
comp=Z,1.4nm,0.9s,baz=204,slow=1.5,SNR=6.0

HYB **Hyderabad** 58.87 268 *i* P P 08 28 10.5 0.0
HYB *e* 08 28 18.0
HSPB **Hornsund (broa** 60.31 348 *e*P P 08 28 19.3 -0.2
HSPB **Hornsund (broa** 60.31 348 *e*P P 08 28 20.9 +1.4
LVZ **Lovozero** 61.19 336 *i* P P 08 28 25.4 -0.2
LVZ pmax pmax
comp=Z,127nm,2.5s
RES **Resolute Bay** 61.19 15 P P 08 28 25.6 +0.2
comp=Z,17nm,0.8s,baz=310,slow=6.2,SNR=72
APA **Apatity** 61.76 336 ⇓ *i*P P 08 28 30.6 +1.1
APA pmax pmax
comp=Z,52nm,0.8s
APA MLR MLR
comp=Z,800nm,13.0s
TMCR **Tamitsa** 61.91 331 *e*P P 08 28 29.8 -0.7
TMCR pmax pmax
comp=Z,109nm,1.0s
AS01 **Alice Springs** 62.16 189 *e*P P 08 28 32.3 -0.3
AS31 **Alice Springs** 62.16 189 *e*P P 08 28 32.8 +0.1
comp=Z,9.3nm,0.9s
ASAR **Alice Springs** 62.16 189 P P 08 28 32.4 -0.3
comp=Z,23nm,0.8s,baz=10,slow=6.7,SNR=236
ASAR LR LR 08 53 25.8
comp=Z,148nm,21.9s,baz=359,slow=34
ASAR PKP2bc 08 57 47.4
comp=Z,1.1nm,0.8s,baz=172,slow=1.9,SNR=8.7
ASAR PKP2ab 08 57 56.7
comp=Z,2.1nm,0.9s,baz=175,slow=2.0,SNR=8.2
ASAR **Alice Springs** 62.16 189 P P 08 28 32.4 -0.3
ASAR pmax pmax
comp=Z,24nm,0.8s
YKW3 **Yellowknife Ar** 62.33 31 *e*P P 08 28 33.7 +0.4
comp=Z,17nm,0.9s
YKA **Yellowknife Ar** 62.37 31 P P 08 28 33.9 +0.3
comp=Z,7.3nm,0.8s,baz=300,slow=6.6,SNR=136
YKA PKPPKP P'P'df 08 57 37.4 -8.3
comp=Z,0.3nm,0.8s,baz=122,slow=2.2,SNR=5.9
YKA PKP2bc 08 57 49.5
comp=Z,0.8nm,1.0s,baz=118,slow=2.5,SNR=5.3
YKB5 **Yellowknife Ar** 62.37 31 *e*P P 08 28 33.4 -0.2
MBWA **Marble Bar** 62.83 204 *e*P P 08 28 36.8 -0.3
comp=Z,39nm,0.8s
ARA0 **ARCESS Array S** 63.00 339 *e*P P 08 28 38.4 +0.6
ARCES **ARCESS Array B** 63.00 339 P P 08 28 38.4 +0.6
comp=Z,29nm,1.0s,baz=57,slow=8.0,SNR=50
ARCES LR LR 09 02 05.9
comp=Z,211nm,18.8s,baz=31,slow=42
ARE0 **ARCESS Array S** 63.00 339 *e*P P 08 28 37.0 -0.7
GEYT **Alibeck** 63.76 299 P P 08 28 43.9 +0.6
comp=Z,42nm,0.8s,baz=29,slow=3.4,SNR=41
GEYT LR LR 08 58 16.2
comp=Z,342nm,19.2s,baz=50,slow=38
EIDS **Eidsvold** 63.91 171 *e*P P 08 28 45.0 +0.8
comp=Z,27nm,0.8s
KTK1 **Kautokeino** 63.96 339 *e*P P 08 28 44.9 +0.8
DAG **Danmarks Havn** 64.53 355 ⇓ *i*P P 08 28 47.6 -0.1
comp=Z,41nm,1.0s
TRO **Tromso** 64.69 341 *e*P P 08 28 49.2 +0.4
PGC **Sidney** 64.99 47 *e*P P 08 28 52.4 +1.3
comp=Z,40nm,0.8s
A04D **Lumni Island** 65.38 47 P P 08 28 54.8 +1.2
baz=301
NLWA **Neilton Lookou** 65.38 48 *e*P P 08 28 55.5 +1.8
comp=Z,59nm,0.8s
HDW **Hoodsport** 65.72 48 P P 08 28 58.0 +2.0
B05A **Bryant** 65.96 47 P P 08 28 58.8 +1.4
baz=301,SNR=10.0
E03A **Lebam** 65.99 49 *e*P P 08 28 59.5 +1.9
comp=Z,59nm,0.9s
B06A **Marblemount** 66.18 46 *e*P P 08 29 00.1 +1.3
comp=Z,54nm,0.8s
LCW **Lucas Creek** 66.44 48 P P 08 29 02.6 +2.1
D05A **Enumclaw** 66.58 48 *e*P P 08 29 03.6 +2.2
comp=Z,49nm,0.8s
MOS **Moscow** 66.58 323 *e*P P 08 29 00.4 -0.8
MOS pmax pmax
comp=Z,300nm,1.7s
MOS pmax pmax
comp=Z,148nm,1.3s
MOS MLR MLR
comp=Z,900nm,16.0s
C06D **Leavenworth** 66.83 47 P P 08 29 04.3 +1.3
baz=302
STEI **Steigen** 66.85 341 *e*P P 08 29 01.5 -1.2
G03D **McMinnville, O** 66.86 50 P P 08 29 03.5 +0.3
baz=302
TDL **Tradedollar La** 66.89 49 P P 08 29 05.4 +1.8
LON **Longmire** 66.92 48 *e*P P 08 29 04.8 +1.1
LON pmax pmax
comp=Z,19nm,1.2s
LON **Longmire** 66.92 48 *e*P P 08 29 04.8 +1.1
comp=Z,18nm,1.2s
F04A **Amboy** 66.99 49 *e*P P 08 29 05.7 +1.7
comp=Z,51nm,0.8s
VRH **Novokhopyorsk** 67.04 318 *e*P P 08 29 03.9 -0.3
VRH pmax pmax
comp=Z,70nm,0.6s
VRH MLR MLR
comp=Z,950nm,14.0s
TWW **Teanaway** 67.26 47 P P 08 29 07.8 +1.9
LTY **Liberty** 67.31 47 *e*P P 08 29 07.0 +0.8
comp=Z,28nm,0.6s
ETW **Entiat** 67.32 47 *e*P P 08 29 07.3 +1.1
TBM **Table Mountain** 67.40 47 *e*P P 08 29 08.2 +1.5
OBN **Obninsk** 67.43 323 *d* *i*P P 08 29 06.9 +0.3
OBN pmax pmax
comp=Z,80nm,1.1s
OBN MLR MLR
comp=Z,679nm,14.0s
B08A **Colville Reser** 67.48 46 *e*P P 08 29 08.1 +0.9
comp=Z,34nm,0.9s
WTV **Waterville** 67.48 46 *e*P P 08 29 08.2 +1.0
I03D **Drain, OR** 67.61 51 P P 08 29 09.6 +1.6
baz=302,SNR=7.2
LPSR **Galich'ya Gora** 67.71 320 *e*P P 08 29 08.3 -0.1
LPSR pmax pmax
comp=Z,60nm,0.7s
LPSR MLR MLR
comp=Z,870nm,18.0s
H04A **Detroit Lake** 67.79 50 *e*P P 08 29 10.5 +1.3
comp=Z,34nm,0.8s
SAW **Saint Andrews** 67.80 46 P P 08 29 10.1 +1.0
FIA1 **FINESS Array S** 67.96 332 *e*P P 08 29 10.1 +0.2
comp=Z,119nm,0.8s
FIA0 **FINESS Array S** 67.96 332 *e*P P 08 29 10.1 +0.2
FIA0 **FINESS Array S** 67.96 332 *e*P P 08 29 10.1 +0.2
FINES **FINESS Array B** 67.96 332 P P 08 29 10.1 +0.2
comp=Z,83nm,0.8s,baz=47,slow=8.4,SNR=244
FINES LR LR 09 01 07.5
comp=Z,343nm,18.2s,baz=18,slow=38
G05D **Wamic, OR** 68.01 49 P P 08 29 12.2 +1.7
baz=303
I04A **Tendick Farm,** 68.13 51 P P 08 29 12.3 +0.9
baz=303,SNR=9.2
L02D **Cave Junction,** 68.27 53 P P 08 29 12.3 +0.1
baz=302
MOR8 **Moi Rana** 68.36 340 *e*P P 08 29 11.1 -1.3
MOR8 IAmb IAmb 08 29 12.4
comp=Z,52nm,0.8s
MOR8 *e*pP **pP** 08 29 19.9 -0.5
VSR **Storozhevoye** 68.37 319 *e*P P 08 29 12.8 +0.2
VSR pmax pmax
comp=Z,70nm,0.5s
VSR MLR MLR
comp=Z,1µm,14.0s
C09A **Chrisman Ranch** 68.38 46 *e*P P 08 29 14.0 +1.2
comp=Z,58nm,0.8s
HUMO **Hull Mountain** 68.43 52 *e*P P 08 29 15.0 +1.7
comp=Z,14nm,0.9s
HAWA **Hanford** 68.43 47 *e*P P 08 29 14.7 +1.6
comp=Z,16nm,0.9s
I05D **Terrebonne, OR** 68.48 50 P P 08 29 14.6 +1.0
baz=303,SNR=5.3
NEW **Newport** 68.76 45 P P 08 29 16.1 +0.9
baz=304,SNR=21
NEW **Newport** 68.76 45 *e*P P 08 29 16.1 +0.9
NEW pmax pmax
comp=Z,37nm,0.8s
NEW **Newport** 68.76 45 *e*P P 08 29 16.1 +0.9
comp=Z,37nm,0.8s
KHMM **Horse Mountain** 68.88 54 *e*P P 08 29 18.3 +2.1
comp=Z,28nm,0.8s
ARMA **Armidale** 68.96 171 *e*P P 08 29 17.5 +1.0
comp=Z,22nm,0.9s
YBH **Yreka Blue Hor** 69.06 53 *e*P P 08 29 18.8 +1.6
YBH pmax pmax
comp=Z,17nm,0.8s
YBH **Yreka Blue Hor** 69.06 53 *e*P P 08 29 18.8 +1.6
comp=Z,18nm,0.8s
J05D **Fort Rock, OR** 69.12 51 P P 08 29 19.4 +1.7
baz=303,SNR=17
M02C **Callahan** 69.15 53 P P 08 29 19.6 +1.8
baz=303,SNR=9.0
K04D **Chiloquin, OR** 69.17 52 P P 08 29 19.0 +1.1
baz=303
SUMG **Summit** 69.39 0 *i*P P 08 29 19.8 +0.7
comp=Z,62nm,1.1s
SUMG **Summit** 69.39 0 *e*P P 08 29 20.0 +0.9
SUMG pmax pmax
comp=Z,65nm,1.1s
SUMG **Summit** 69.39 0 *e*P P 08 29 20.0 +0.9
comp=Z,65nm,1.1s
N02D **Trinity Center** 69.47 54 P P 08 29 21.2 +1.4
baz=303,SNR=6.0
M04C **Macdoel** 69.57 53 P P 08 29 21.7 +1.2
baz=304,SNR=14
K05A **Summer Lake** 69.64 51 *e*P P 08 29 22.8 +1.8
comp=Z,70nm,0.8s
VSU **Vasula** 69.65 330*d* *i*P P 08 29 20.9 +0.5
VSU pmax pmax
comp=Z,426nm,1.2s
GOF **Gofitskoye** 69.70 312 ⇓ *i*P P 08 29 21.6 +0.6
GOF pmax pmax
comp=Z,134nm,0.9s
WDC **Whiskeytown Da** 69.79 54 *e*P P 08 29 23.2 +1.5
WDC pmax pmax
comp=Z,19nm,0.9s
WDC **Whiskeytown Da** 69.79 54 *e*P P 08 29 23.2 +1.5
comp=Z,18nm,0.9s
STKA **Stephens Creek** 69.85 181 P P 08 29 22.0 +0.1
comp=Z,16nm,0.7s,baz=341,slow=7.6,SNR=27
STKA **Stephens Creek** 69.85 181 P P 08 29 22.0 +0.1
STKA pmax pmax
comp=Z,16nm,0.7s
STKA **Stephens Creek** 69.85 181 *e*P P 08 29 22.0 +0.1
comp=Z,5.0nm,0.9s
F10A **Beach Ranch, E** 70.00 47 *e*P P 08 29 24.1 +1.1
comp=Z,12nm,1.0s
WALA **Waterton Lakes** 70.06 43 *e*P P 08 29 24.3 +0.9
comp=Z,34nm,0.8s
BSMT **Bassoo Peak** 70.29 44 *e*P P 08 29 26.1 +1.2
O03D **Paynes Creek** 70.42 54 P P 08 29 26.1 +0.4
baz=304,SNR=8.5
BLMT **Blacktail Moun** 70.42 44 *e*P P 08 29 26.9 +1.2
ZEI **Tsey** 70.46 309 *e*P P 08 29 24.9 -1.1
ZEI pmax pmax
comp=Z,51nm,0.8s
KIV **Kislovodsk** 70.53 311 *i*P P 08 29 26.7 +0.4
SNR=37
KIV **Kislovodsk** 70.53 311 *d* *i*P P 08 29 27.0 +0.8
KIV *i* 08 29 38.9
KIV *i* 08 32 00.4
KIV *i* SS SS 08 43 13.2 +4.4
KIV pmax pmax
comp=Z,247nm,1.0s
KIV **Kislovodsk** 70.53 311 *e*P P 08 29 27.1 +0.8
comp=Z,190nm,0.9s
KIV **Kislovodsk** 70.53 311 P P 08 29 27.0 +0.8
SNR=46
KIV **Kislovodsk** 70.53 311 P P 08 29 27.0 +0.8
SNR=46
KIV P P 08 29 27.0 +0.8
SNR=46
KBZ **Khabaz** 70.53 311 P P 08 29 26.8 +0.7
comp=Z,69nm,0.9s,baz=60,slow=4.2,SNR=105
BMO **Blue Mountains** 70.59 48 *e*P P 08 29 28.0 +1.4
BMO pmax pmax
comp=Z,16nm,0.9s
BMO **Blue Mountains** 70.59 48 *e*P P 08 29 28.0 +1.4
comp=Z,16nm,0.9s
JTMT **Jette** 70.62 44 *e*P P 08 29 28.0 +1.2
YBMT **Yellow Bay** 70.70 44 *e*P P 08 29 28.3 +1.0
SCO **Scoresbysund** 70.88 354 *i*P P 08 29 28.8 +1.0
comp=Z,25nm,1.1s
NEY **Neytrino** 70.91 310 *e*P P 08 29 29.0 +0.3
NEY pmax pmax
comp=Z,7.0nm,0.8s
SWMT **Swartz Lake** 70.92 44 *e*P P 08 29 29.5 +0.9
BBOO **Buckleboo** 71.01 185 *e*P P 08 29 29.4 +0.4
comp=Z,44nm,0.8s
ORV **Oroville** 71.03 54 *e*P P 08 29 29.8 +0.5
ORV pmax pmax
comp=Z,15nm,0.6s
ORV **Oroville** 71.03 54 *e*P P 08 29 29.8 +0.5
comp=Z,15nm,0.6s
WVOR **Wild Horse Val** 71.18 51 *e*P P 08 29 31.3 +1.0
WVOR pmax pmax
comp=Z,22nm,0.9s
WVOR **Wild Horse Val** 71.18 51 *e*P P 08 29 31.3 +1.0
comp=Z,22nm,0.9s
MSO **Missoula** 71.35 45 P P 08 29 31.5 +0.3
baz=306,SNR=15
MSO **Missoula** 71.35 45 *e*P P 08 29 31.8 +0.5
comp=Z,21nm,0.9s
BANOM **Banah** 71.39 289 *i*P P 08 29 32.0 +0.4
SNR=29
BANOM **Banah** 71.39 289 P P 08 29 32.1 +0.4
BANOM **Banah** 71.39 289 P P 08 29 32.1 +0.4
GNI **Garni** 71.43 307 P P 08 29 33.0 +1.0
GNI **Garni** 71.43 307 *d* *i*P P 08 29 32.9 +1.0
GNI pmax pmax
comp=Z,308nm,1.2s
GNI **Garni** 71.43 307 *e*P P 08 29 33.5 +1.6
comp=Z,69nm,1.3s
AKH **Akhalkalaki** 71.49 308 ⇓ *i*P P 08 29 33.5 +1.2
CHVG **Ch'k'valeri** 71.60 310 ⇓ *i*P P 08 29 33.7 +1.0
IZAR **Zarasai** 71.65 328 *e*P P 08 29 33.3 +0.6
IZAR IAmb IAmb 08 29 34.2
comp=Z,27nm,0.8s
SMDO **Samad** 71.68 285 P P 08 29 34.5 +0.9
SNR=23
SMDO **Samad** 71.68 285 P P 08 29 34.5 +0.9
SNR=23
CHMT **Chamberlain Mo** 71.68 44 *e*P P 08 29 33.8 +0.5
AFDM **Forest Hills D** 71.71 55 *e*P P 08 29 34.5 +1.1
comp=Z,11nm,1.0s
IDID **Didziasalis** 71.73 327 *e*P P 08 29 33.8 +0.7
IDID IAmb IAmb 08 29 34.8
comp=Z,39nm,0.9s
TBLU **Trondheim** 71.76 339 *e*P P 08 29 33.1 -0.1
ISAL **Salakas** 71.82 328 *e*P P 08 29 34.4 +0.7
ISAL IAmb IAmb 08 29 35.4
comp=Z,71nm,1.0s
NACGM **Naroch** 71.98 327 *e*P P 08 29 34.0 -0.7
NACGM PM 08 29 35.0
comp=Z,0.9nm,0.8s
NACGM *e*LR LR 09 01 48.0
UOSS **Minazif** 72.01 288 *e*P P 08 29 35.7 +0.3
comp=Z,3.0nm,0.8s
JMDO **Jabal Madar** 72.03 285 P P 08 29 35.9 +0.3
SNR=23
JMDO **Jabal Madar** 72.03 285 P P 08 29 35.9 +0.3
SNR=23
HATD **Hatta, Dubai** 72.13 288 *i*P P 08 29 36.5 +0.4
SNR=23
HATD **Hatta, Dubai** 72.13 288 P P 08 29 36.6 +0.4
HATD **Hatta, Dubai** 72.13 288 P P 08 29 36.6 +0.4
HATD P P 08 29 36.6 +0.4
ASHO **Ashiyiah** 72.27 288 *i*P P 08 29 37.2 +0.2
SNR=20
ASHO **Ashiyiah** 72.27 288 P P 08 29 37.3 +0.3
SNR=16
ASHO **Ashiyiah** 72.27 288 P P 08 29 37.3 +0.3
SNR=16
ASHO P P 08 29 37.3 +0.3
SNR=16
FFC **Flin Flon** 72.28 33 *e*P P 08 29 36.9 +0.4
FFC pmax pmax
comp=Z,63nm,0.9s
FFC **Flin Flon** 72.28 33 *e*P P 08 29 36.9 +0.4
comp=Z,63nm,0.9s
MFID **Camas Ranch** 72.29 48 *e*P P 08 29 38.0 +1.0
comp=Z,21nm,0.8s
NAZ **Nazwa, Dubai** 72.39 288 *i*P P 08 29 37.8 +0.1
SNR=5.1
NAZ **Nazwa, Dubai** 72.39 288 P P 08 29 37.8 +0.1
SNR=10
NAZ **Nazwa, Dubai** 72.39 288 P P 08 29 37.8 +0.1
SNR=10
NAZ P P 08 29 37.8 +0.1
SNR=10
SOC **Sochi** 72.50 312 *e*P P 08 29 38.3 +0.3

SOC e*PP pP 08 29 47.0 +1.0
SOC e 08 32 16.8
SOC eS S 08 38 59.4 -1.2
SOC pmax pmax
comp=Z,73nm,0.8s
BSY Bisya 72.50 285 P P 08 29 38.8 +0.4
SNR=13
BSY Bisya 72.50 285 P P 08 29 38.8 +0.4
SNR=13
FCC Fort Churchill 72.56 27 eP P 08 29 38.5 +0.4
FCC pmax pmax
comp=Z,60nm,1.1s
FCC Fort Churchill 72.56 27 eP P 08 29 38.5 +0.4
comp=Z,60nm,1.1s
FAQ Al Faqa, Dubai 72.58 288 i P P 08 29 38.8 -0.1
SNR=6.2
FAQ Al Faqa, Dubai 72.58 288 P P 08 29 38.7 -0.1
SNR=12
FAQ Al Faqa, Dubai 72.58 288 P P 08 29 38.7 -0.1
SNR=12
FAQ P P 08 29 38.7 -0.1
SNR=12
HRY Holter Researc 72.58 44 eP P 08 29 40.0 +1.4
CMB Columbia Colle 72.61 55 eP P 08 29 39.7 +0.9
CMB pmax pmax
comp=Z,21nm,0.8s
CMB Columbia Colle 72.61 55 eP P 08 29 39.7 +0.9
comp=Z,20nm,0.8s
ARQ Araqi 72.68 286 P P 08 29 39.9 +0.4
SNR=21
ARQ Araqi 72.68 286 P P 08 29 39.9 +0.4
SNR=21
LRM Limekiln Ridge 72.78 45 eP P 08 29 40.8 +0.8
EGMT Eagleton 72.88 42 P P 08 29 41.2 +0.8
baz=309,SNR=28
EGMT Eagleton 72.88 42 eP P 08 29 41.0 +0.7
comp=Z,60nm,0.8s
DLMT Dillon 72.98 45 eP P 08 29 42.5 +1.4
comp=Z,30nm,0.8s
NC405 NORSAR Array S 73.02 337 eP P 08 29 41.3 +0.5
HLID Hailey 73.03 48 P P 08 29 42.4 +1.0
baz=307,SNR=15
HLID Hailey 73.03 48 eP P 08 29 42.6 +1.1
comp=Z,15nm,0.9s
NC303 NORSAR Array S 73.04 337 eP P 08 29 41.4 +0.5
ANN Anapa 73.08 314 eP P 08 29 41.2 -0.2
ANN e 08 29 56.2
ANN eS SKiKP 08 39 09.9 -2.1
ANN pmax pmax
comp=Z,87nm,1.2s
ANN MLR MLR
comp=Z,409nm,16.0s
HFS Hagfors 73.16 336 LR LR 09 04 51.6
comp=Z,644nm,18.3s,baz=31,slow=38
MCMT McKenzie Canyo 73.16 46 eP P 08 29 42.9 +0.6
NC204 NORSAR Array S 73.18 338 eP P 08 29 43.0 +1.2
NB201 NORSAR Array S 73.20 337 eP P 08 29 42.4 +0.5
BMN Battle Mountai 73.21 52 eP P 08 29 43.9 +1.4
BMN pmax pmax
comp=Z,28nm,0.7s
BMN Battle Mountai 73.21 52 eP P 08 29 43.9 +1.4
comp=Z,28nm,0.7s
NB2 NORSAR Subarra 73.23 337 P P 08 29 42.3 +0.2
comp=Z,68nm,0.9s,baz=38,slow=6.2
NB2 NORSAR Subarra 73.23 337 P P 08 29 42.3 +0.2
baz=38,slow=6.2
NB200 NORSAR Array S 73.23 337 eP P 08 29 42.3 +0.2
NOA NORSAR Array B 73.23 337 P P 08 29 42.3 +0.2
comp=Z,49nm,0.9s,baz=39,slow=5.9,SNR=163
NOA LR LR 09 04 26.7
comp=Z,364nm,21.3s,baz=30,slow=38
NBO02 NORSAR Array S 73.33 338 eP P 08 29 43.1 +0.4
BOZ Bozeman (W) 73.34 45 P P 08 29 44.2 +1.0
baz=308,SNR=14
BOZ Bozeman (W) 73.34 45 eP P 08 29 43.9 +0.7
BOZ pmax pmax
comp=Z,32nm,0.8s
BOZ Bozeman (W) 73.34 45 eP P 08 29 43.9 +0.7
comp=Z,32nm,0.8s
NBO00 NORSAR Array S 73.37 338 eP P 08 29 43.3 +0.4
NC602 NORSAR Array S 73.37 337 eP P 08 29 43.0 +0.1
NC602 NORSAR Array S 73.37 337 eP P 08 29 42.9 +0.1
NAO01 NORSAR Array S 73.48 337 eP P 08 29 43.6 +0.1
AKN Aaknes 73.52 340 eP P 08 29 44.8 +1.0
CAN Canberra 73.56 174 eP P 08 29 45.0 +0.8
CAN pmax pmax
comp=Z,25nm,1.1s
CAN Canberra 73.56 174 eP P 08 29 45.0 +0.8
comp=Z,25nm,1.1s
AKSG Malin Array Be 73.65 322 P P 08 29 44.5 -0.2
comp=Z,64nm,0.7s,baz=45,slow=6.0,SNR=186
AKSG PP PP 08 32 27.3 -1.2
comp=Z,2.8nm,0.8s,baz=43,slow=8.8,SNR=4.7
AKSG LR LR 09 02 55.4
comp=Z,176nm,20.1s,baz=65,slow=36
AKSG Malin Array Be 73.65 322 P P 08 29 44.5 -0.2
AKSG 08 32 27.3
AKSG pmax pmax
comp=Z,65nm,0.7s
AKSG pmax pmax
comp=Z,3.0nm,0.8s
AKSG MLR MLR
comp=Z,176nm,20.1s
AKBB Malin Array Si 73.65 322 eP P 08 29 44.1 -0.6
AKBB e 08 32 27.3
AKBB pmax pmax
comp=Z,86nm,0.8s
AKBB Malin Array Si 73.65 322 eP P 08 29 44.1 -0.6
comp=Z,86nm,0.8s
AKBB ePP PP 08 32 27.3 -1.2
KIEV Kiev 73.67 322 d iP P 08 29 44.5 -0.2
KIEV pmax pmax
comp=Z,80nm,0.9s
KIEV Kiev 73.67 322 eP P 08 29 44.6 -0.2
comp=Z,90nm,0.9s
AK11 Malin Array Si 73.69 322 eP P 08 29 44.8 -0.2
NV01 Mina Array Sit 73.71 54 eP P 08 29 46.7 +1.2
NVAR Mina Array Bea 73.71 54 P P 08 29 46.7 +1.2
comp=Z,13nm,0.9s,baz=285,slow=6.1,SNR=53
NVAR LR LR 08 56 30.4
comp=Z,110nm,21.0s,baz=278,slow=31
MLAC Mammoth, Mammo 73.84 55 P P 08 29 47.6 +1.2
baz=306
QLMT Earthquake Lak 73.96 45 eP P 08 29 48.3 +1.4
SUW Suwalki 74.13 328 eP P 08 29 47.5 +0.1
SUW Suwalki 74.13 328 eP P 08 29 47.5 +0.1
ELK Elko 74.23 50 eP P 08 29 49.8 +1.2
ELK pmax pmax
comp=Z,11nm,1.0s
ELK Elko 74.23 50 eP P 08 29 49.8 +1.2
comp=Z,11nm,1.0s
OSL Oslo 74.25 337 eP P 08 29 49.1 +1.2
YMR Madison River 74.32 45 eP P 08 29 50.3 +1.3
comp=Z,20nm,0.9s
GCMT Greycliff 74.33 44 eP P 08 29 50.1 +1.1
RCTC Rector, Farmer 74.36 56 P P 08 29 49.7 +0.7
baz=306
SMMC Simmler 74.44 57 P P 08 29 51.0 +1.4
baz=306
MCID Moose Creek 74.50 46 eP P 08 29 52.1 +2.0
YFT Old Faithful 74.53 45 eP P 08 29 53.3 +3.0
comp=Z,34nm,0.8s
SFJD Kangerlussuaq 74.54 5 i P P 08 29 50.1 +0.5
comp=Z,17nm,0.9s
SFJD Kangerlussuaq 74.54 5 eP P 08 29 50.0 +0.5
SFJD pmax pmax
comp=Z,19nm,0.9s
SFJD Kangerlussuaq 74.54 5 eP P 08 29 50.0 +0.5
comp=Z,19nm,0.9s
TIN Tinemaha, Big 74.57 55 P P 08 29 51.3 +0.9
baz=307
HYA Hoyanger 74.58 340 eP P 08 29 50.8 +0.9
NWAO Narrogin (SRO) 74.61 202 eP P 08 29 50.6 +0.3
NWAO pmax pmax
comp=Z,32nm,0.9s
NWAO Narrogin (SRO) 74.61 202 eP P 08 29 50.6 +0.3
comp=Z,32nm,0.9s
LKWY Lake 74.70 45 eP P 08 29 54.2 +2.9
LKWY pmax pmax
comp=Z,37nm,1.1s
LKWY Lake 74.70 45 eP P 08 29 54.2 +2.9
comp=Z,37nm,1.1s
H17A Grant Village 74.71 45 P P 08 29 53.9 +2.6
baz=309,SNR=33
H17A Grant Village 74.71 45 eP P 08 29 54.1 +2.8
comp=Z,72nm,0.9s

PKM Mcpherson Peak 74.81 58 P P 08 29 52.9 +0.9
baz=306,SNR=7.2
IMW Indian Meadow 74.82 46 eP P 08 29 53.8 +1.7
comp=Z,44nm,0.8s
KONO Kongsberg 74.83 337 eP P 08 29 51.7 +0.3
KONO Kongsberg 74.83 337 eP P 08 29 51.7 +0.3
KONO pmax pmax
comp=Z,31nm,1.0s
KONO Kongsberg 74.83 337 eP P 08 29 51.7 +0.3
comp=Z,31nm,1.0s
FLWY Flagg Ranch 74.83 46 eP P 08 29 54.1 +2.1
comp=Z,46nm,1.3s
SIM Simferopol' 74.84 316 eP P 08 29 52.0 +0.3
SIM pmax pmax
comp=Z,58nm,0.8s
RLMT Red Lodge 74.97 44 P P 08 29 54.1 +1.2
baz=310,SNR=20
RLMT Red Lodge 74.97 44 eP P 08 29 54.0 +1.2
comp=Z,47nm,1.5s
MOOW Moose Ponds 75.02 46 eP P 08 29 54.5 +1.5
comp=Z,29nm,0.9s
HVU Hansel Valley 75.08 48 eP P 08 29 54.8 +1.4
HVU pmax pmax
comp=Z,34nm,0.8s
HVU Hansel Valley 75.08 48 eP P 08 29 54.8 +1.4
comp=Z,34nm,0.8s
SBC Santa Barbara 75.15 58 P P 08 29 54.1 +0.4
baz=306
GRAC Grapevine Rang 75.16 55 P P 08 29 54.9 +1.1
baz=307,SNR=6.1
LOHW Long Hollow 75.18 46 eP P 08 29 55.5 +1.5
comp=Z,15nm,0.8s
SNOW Snow King Moun 75.19 46 eP P 08 29 55.7 +1.5
comp=Z,31nm,0.8s
REDW Red Top Meadow 75.20 46 eP P 08 29 55.5 +1.3
comp=Z,28nm,0.9s
ISA Isabella, Lake 75.24 56 P P 08 29 54.2 -0.1
baz=307
ISA Isabella, Lake 75.24 56 eP P 08 29 54.7 +0.4
ISA pmax pmax
comp=Z,13nm,0.8s
ISA Isabella, Lake 75.24 56 eP P 08 29 54.6 +0.4
comp=Z,13nm,0.8s
ARVC Arvin 75.32 57 P P 08 29 55.2 +0.5
baz=307,SNR=5.1
AHID Auburn Hatcher 75.43 47 eP P 08 29 56.5 +1.1
comp=Z,25nm,0.6s
DAC Darwin (Calif) 75.44 55 eP P 08 29 56.3 +0.7
DAC pmax pmax
comp=Z,14nm,0.8s
DAC Darwin (Calif) 75.44 55 eP P 08 29 56.3 +0.7
comp=Z,14nm,0.8s
BGU Big Grassy Mou 75.45 49 eP P 08 29 56.9 +1.3
comp=Z,16nm,0.9s
BER Bergen 75.46 339 eP P 08 29 56.1 +1.2
BER IAmb IAmb 08 29 57.0
comp=Z,48nm,0.9s
R11A Troy Canyon, C 75.47 53 P P 08 29 56.9 +1.1
baz=308,SNR=33
R11A Troy Canyon, C 75.47 53 eP P 08 29 56.8 +1.1
comp=Z,19nm,0.9s
ODD1 Odda 75.49 339 eP P 08 29 55.7 +0.5
SPUT South Promonto 75.56 49 eP P 08 29 57.5 +1.3
comp=Z,28nm,1.2s
LAO LASA Array 75.58 41 P P 08 29 57.0 +1.0
baz=311,SNR=12
LAO LASA Array 75.58 41 eP P 08 29 57.6 +1.5
comp=Z,93nm,0.9s
MPMC Manual Prospec 75.64 55 P P 08 29 57.4 +0.6
baz=307,SNR=19
A25A Svangstu Ranch 75.65 38 P P 08 29 57.0 +0.6
baz=313
OSI Osito Audit: C 75.70 57 P P 08 29 57.8 +0.8
baz=307
SORM Soroca 75.78 321 ⇑ iP P 08 29 57.4 +0.3
SORM Soroca 75.78 321 ⇑ P P 08 29 57.4 +0.3
FURC Furnace Creek, 75.80 55 P P 08 29 58.2 +0.8
baz=307,SNR=22
HWUT Hardware Ranch 75.89 48 eP P 08 29 59.4 +1.3
comp=Z,47nm,1.1s
TPNV Topopah Spring 75.90 54 P P 08 29 59.1 +0.9
baz=308,SNR=31
TPNV Topopah Spring 75.90 54 eP P 08 29 59.1 +0.9
TPNV pmax pmax
comp=Z,32nm,0.8s
TPNV Topopah Spring 75.90 54 eP P 08 29 59.1 +0.9
comp=Z,32nm,0.8s
BLS5 Blejo 75.94 338 eP P 08 29 58.7 +0.9
MOUT Mount Ogden 75.97 48 eP P 08 30 02.1 +3.4
SNCC San Nicolas Is 75.98 59 P P 08 29 59.1 +0.6
baz=307
EDW2 Edwards Air Fo 76.02 57 P P 08 29 59.4 +0.6
baz=307,SNR=14
DUG Dugway, Tooele 76.03 50 P P 08 30 00.0 +1.1
baz=309,SNR=31
DUG Dugway, Tooele 76.03 50 eP P 08 30 00.0 +1.1
DUG pmax pmax
comp=Z,36nm,0.8s
DUG Dugway, Tooele 76.03 50 eP P 08 30 00.0 +1.1
comp=Z,36nm,0.8s
B25A Knox Farm, Ray 76.08 39 P P 08 29 59.6 +0.7
baz=313
DECC Green Verdugo 76.17 57 P P 08 29 59.9 +0.3
baz=307
A26A Wade Farm, Ken 76.20 38 P P 08 30 00.4 +0.9
baz=313,SNR=10
HOMB Homborsund 76.28 337 eP P 08 29 58.4 -1.3
TCUT Toone Canyon 76.29 48 eP P 08 30 01.7 +1.3
comp=Z,43nm,0.8s
BW06 Boulder Array 76.31 46 P P 08 30 00.8 +0.3
baz=310,SNR=54
BW06 Boulder Array 76.31 46 eP P 08 30 00.9 +0.4
PD31 Pinedale Array 76.31 46 eP P 08 30 00.9 +0.4
PDAR Pinedale Array 76.31 46 P P 08 30 00.9 +0.4
comp=Z,12nm,0.6s,baz=262,slow=2.0,SNR=142
PDAR LR LR 09 01 32.4
comp=Z,73nm,20.4s,baz=330,slow=34
CTU Camp Tracy 76.36 49 eP P 08 30 02.1 +1.4
comp=Z,25nm,0.9s
MWC Mount Wilson 76.37 57 eP P 08 30 01.9 +0.9
MWC pmax pmax
comp=Z,14nm,0.8s
MWC Mount Wilson 76.37 57 eP P 08 30 01.9 +0.9
comp=Z,14nm,0.8s
C25A Freed Ranch, W 76.41 39 P P 08 30 01.5 +0.7
baz=313
PSUT Pine Spring 76.43 52 eP P 08 30 02.1 +0.9
comp=Z,24nm,0.9s
B26A Jensen Ranch, 76.46 38 P P 08 30 01.6 +0.6
baz=313
KMY Karmoy 76.47 339 eP P 08 30 02.1 +1.4
SHOC Shoshone, Teco 76.52 55 P P 08 30 01.9 +0.4
baz=308
A27A Ledoux Ranch, 76.54 37 P P 08 30 02.2 +0.8
baz=314,SNR=10.0
GSC Goldstone, Bar 76.54 56 P P 08 30 02.3 +0.5
baz=308,SNR=7.6
GSC Goldstone, Bar 76.54 56 eP P 08 30 02.9 +1.1
GSC pmax pmax
comp=Z,16nm,0.8s
GSC Goldstone, Bar 76.54 56 eP P 08 30 02.9 +1.1
comp=Z,16nm,0.8s
STAV Stavanger 76.57 338 eP P 08 30 02.4 +1.1
SFNV Sufian 76.57 306 eP P 08 30 03.0 +1.1
JLU Jordanelle 76.59 49 eP P 08 30 03.2 +1.1
comp=Z,32nm,1.2s
BSD Bornholm Skovb 76.60 332 ⇓ iP P 08 30 01.6 +0.1
comp=Z,93nm,0.9s
SNART Snartemo 76.62 337 eP P 08 30 02.2 +0.6
NLU North Lily Min 76.63 50 eP P 08 30 03.5 +1.2
comp=Z,24nm,0.9s
BFSC Mount Baldy Ra 76.63 57 P P 08 30 02.6 +0.2
baz=307,SNR=7.1
RRX Edison Barstow 76.68 56 P P 08 30 03.0 +0.5
baz=308
LVV L'vov 76.70 324 eP P 08 30 02.8 +0.5
LVV MLR MLR
comp=E,400nm,13.0s
LVV MLR MLR
comp=N,500nm,14.0s
LVV MLR MLR
comp=Z,500nm,14.0s
BEL Belsk 76.70 327 eP P 08 30 03.3 +1.1
BEL Belsk 76.70 327 eP P 08 30 03.3 +1.1
D25A Fairfield 76.76 40 P P 08 30 03.2 +0.5
baz=313,SNR=10
MPU Maple Canyon 76.85 49 eP P 08 30 04.8 +1.2

comp=Z,39nm,0.9s
C26A Wahner Farm, P 76.91 39 P P 08 30 04.5 +1.0
baz=314,SNR=13
B27A Peters Farms, 76.91 38 P P 08 30 04.3 +0.8
baz=314
TUQ Turquoise Moun 77.03 55 P P 08 30 05.2 +0.6
baz=308
A28A Rude Farm, Bot 77.03 37 P P 08 30 05.0 +0.7
baz=314,SNR=9.3
COP Copenhagen 77.05 333 ⇓ iP P 08 30 04.8 +0.7
comp=Z,59nm,1.0s
BBRC Big Bear Solar 77.10 57 P P 08 30 05.4 +0.2
baz=308
HEC Hector,Ludlow 77.14 56 P P 08 30 05.7 +0.5
baz=308
E25A Miller Ranch, 77.16 40 P P 08 30 05.8 +0.8
baz=313,SNR=5.8
C27A Sayler Ranch, 77.27 38 P P 08 30 06.3 +0.7
baz=314,SNR=8.1
D26A Manning 77.28 39 P P 08 30 06.2 +0.5
baz=313,SNR=7.2
B28A Dugan Ranch, T 77.31 37 P P 08 30 06.3 +0.5
baz=314,SNR=12
MURC Murrieta 77.32 57 P P 08 30 06.2 +0.1
baz=308
KWP Kalwaria Pacla 77.44 325 eP P 08 30 07.4 +1.0
KWP Kalwaria Pacla 77.44 325 ⇑ iP P 08 30 07.9 +1.5
KWP Kalwaria Pacla 77.44 325 eP P 08 30 07.4 +1.0
MSU Marysvale 77.47 51 eP P 08 30 08.7 +1.6
MSU Marysvale 77.47 51 eP P 08 30 08.7 +1.6
A29A Manning Farm, 77.51 36 P P 08 30 07.6 +0.8
baz=315,SNR=35
F25A Bowman 77.52 41 P P 08 30 07.5 +0.5
baz=313,SNR=5.6
TLCR 77.53 318 ⇓ iP P 08 30 08.0 +1.0
MUD Monsted U'grnd 77.54 335 ⇓ iP P 08 30 07.5 +0.7
comp=Z,41nm,1.0s
TMUT Trail Mountain 77.56 50 eP P 08 30 08.8 +1.1
comp=Z,56nm,1.5s
GMRC Granite Mounta 77.60 55 P P 08 30 08.6 +0.8
baz=308,SNR=6.5
E26A Carlson Angus 77.65 40 P P 08 30 08.1 +0.3
baz=314,SNR=7.7
BUR08 Bucovina Ar. S 77.67 322 eP P 08 30 08.6 +0.7
BURAR Bucovina Array 77.68 322 ⇓ iP P 08 30 08.6 +0.7
D27A Center 77.68 39 P P 08 30 08.6 +0.7
baz=314
P17A Butcher Ranch, 77.73 49 eP P 08 30 09.8 +1.3
comp=Z,52nm,0.8s
TESR Tescani 77.74 320 ⇑ iP P 08 30 09.1 +0.9
LCMT Little Creek M 77.76 52 eP P 08 30 10.0 +1.4
comp=Z,27nm,0.9s
MTPU Mount Pierson 77.76 51 eP P 08 30 11.0 +2.0
comp=Z,28nm,0.8s
B29A Wagenman Farm, 77.78 37 P P 08 30 08.9 +0.5
baz=315,SNR=8.1
PFO Pinyon Flats O 77.80 57 P P 08 30 09.3 +0.4
baz=308,SNR=5.2
PFO Pinyon Flats O 77.80 57 eP P 08 30 09.7 +0.8
PFO pmax pmax
comp=Z,20nm,1.0s
PFO Pinyon Flats O 77.80 57 eP P 08 30 09.7 +0.8
comp=Z,20nm,1.0s
C28A Hausauer Farms 77.81 38 P P 08 30 09.2 +0.6
baz=315
109C Camp Elliot, M 77.81 58 P P 08 30 09.3 +0.4
baz=308
BELC Belle Mtn. Jos 77.86 56 P P 08 30 09.6 +0.3
baz=308,SNR=5.7
CFR Carcaliu 77.89 319 ⇓ iP P 08 30 09.2 +0.2
P18A Preston Nutter 77.92 49 eP P 08 30 11.1 +1.4
comp=Z,65nm,1.4s
A30A Hoffart Farm, 77.93 36 P P 08 30 09.6 +0.4
baz=316,SNR=25
F26A Lodgepole 77.97 40 P P 08 30 09.8 +0.2
baz=313,SNR=9.7
PETR Petresti 77.98 320 ⇓ iP P 08 30 11.2 +1.7
KNB Kanab 78.02 52 eP P 08 30 11.9 +1.8
KNB pmax pmax
comp=Z,40nm,1.1s
KNB Kanab 78.02 52 eP P 08 30 11.9 +1.8
comp=Z,40nm,1.1s
G25A Newell 78.04 41 P P 08 30 10.4 +0.5
baz=313,SNR=5.6
ODBI Odobesti 78.05 320 ⇑ iP P 08 30 11.6 +1.7
ULM Lac du Bonnet 78.08 34 P P 08 30 09.9 -0.1
comp=Z,14nm,0.8s,baz=318,slow=7.4,SNR=19
ULM Lac du Bonnet 78.08 34 eP P 08 30 09.8 -0.1
comp=Z,38nm,0.9s
K22A Casper 78.08 45 P P 08 30 10.5 +0.1
baz=312,SNR=9.5
K22A Casper 78.08 45 eP P 08 30 11.2 +0.8
comp=Z,30nm,0.8s
SRU San Rafael Swe 78.09 49 eP P 08 30 11.5 +1.0
SRU pmax pmax
comp=Z,44nm,0.7s
SRU San Rafael Swe 78.09 49 eP P 08 30 11.5 +1.0
comp=Z,44nm,0.7s
D28A Regan 78.09 38 P P 08 30 10.8 +0.6
baz=314
E27A Carson 78.13 39 P P 08 30 10.9 +0.5
baz=314,SNR=8.1
KOLS Kolonicke sedl 78.14 324 eP P 08 30 10.8 +0.4
VRI Vrincioaia 78.14 320 ⇑ iP P 08 30 11.7 +1.3
PLOR Plostina 78.19 320 ⇑ iP P 08 30 11.9 +1.2
TIRR Tirgusor 78.23 318 ⇑ iP P 08 30 11.6 +0.7
TIRR Tirgusor 78.23 318 eP P 08 30 11.6 +0.7
TIRR pmax pmax
comp=Z,29nm,1.0s
TIRR Tirgusor 78.23 318 eP P 08 30 11.6 +0.7
comp=Z,29nm,1.0s
STHS Stebnicka Huta 78.26 325 eP P 08 30 12.3 +1.3
MONP2 Monument Peak 78.27 57 P P 08 30 12.0 +0.4
baz=308
B30A Myrvik Farm, E 78.27 36 P P 08 30 11.6 +0.5
baz=316,SNR=19
F27A Lemmon 78.29 40 P P 08 30 11.5 +0.2
baz=314,SNR=9.5
OJC Ojcow 78.31 326 eP P 08 30 12.0 +0.8
OJC Ojcow 78.31 326 eP P 08 30 12.1 +0.8
OJC Ojcow 78.31 326 eP P 08 30 12.2 +0.9
comp=Z,104nm,1.1s
IRM Iron Mountain 78.32 56 P P 08 30 12.2 +0.5
baz=309,SNR=13
HARR Harsova 78.33 318 ⇑ iP P 08 30 12.4 +1.0
H25A Fruitdale 78.33 42 P P 08 30 11.9 +0.3
baz=313,SNR=8.1
UZH Uzhgorod 78.34 324 eP P 08 30 11.0 -0.5
UZH e 08 30 23.2
UZH e 08 30 03.6
UZH eS S 08 40 01.0 -4.2
UZH eSS SS 08 45 10.2 +3.3
UZH MLR MLR
comp=N,2μm,16.0s
UZH MLR MLR
comp=E,1μm,16.0s
UZH MLR MLR
comp=Z,1μm,16.0s
G26A Maurine 78.39 41 P P 08 30 12.4 +0.5
baz=314
BC3 Big Chuckawall 78.43 56 P P 08 30 12.8 +0.4
baz=308,SNR=11
RSSD Black Hills 78.44 42 P P 08 30 12.7 +0.3
baz=313
RSSD Black Hills 78.44 42 eP P 08 30 12.8 +0.4
RSSD pmax pmax
comp=Z,37nm,1.0s
RSSD Black Hills 78.44 42 eP P 08 30 12.8 +0.4
comp=Z,37nm,1.0s
BR101 Keskin Array S 78.46 312 eP P 08 30 12.9 +0.4
BR101 ePP PP 08 33 06.8 -2.7
BR131 Keskin Array S 78.46 312 eP P 08 30 13.2 +0.7
BRTR Keskin Array B 78.46 312 P P 08 30 12.9 +0.4
comp=Z,14nm,1.0s,baz=99,slow=4.1,SNR=36
BRTR PP PP 08 33 06.8 -2.7
comp=Z,6.0nm,1.1s,baz=68,slow=6.8,SNR=4.7
BRTR LR LR 09 08 15.6
comp=Z,106nm,18.7s,baz=52,slow=38
BRTR Keskin Array B 78.46 312 i P P 08 30 12.8 +0.3
BRTR pmax pmax
comp=Z,15nm,1.0s
E28A Huff 78.46 39 P P 08 30 12.7 +0.5
baz=314,SNR=7.8
ARCR ARCALIA 78.47 322 ⇑ iP P 08 30 14.1 +1.9
CRVS Cervenica-Dubn 78.53 325 eP P 08 30 13.0 +0.5
W13A Hualapai Mount 78.55 54 eP P 08 30 14.3 +1.1

TRPA **Tarpa** 78.59 324⇓ *e*P P 08 30 14.0 +1.2
comp=Z,15nm,1.0s
B31A **Greenbush Farm** 78.60 36 P P 08 30 13.2 +0.3
baz=316,SNR=7.6
ABTO **Aybut** 78.61 283 P P 08 30 13.5 0.0
SNR=7.7
ABTO **Aybut** 78.61 283 P P 08 30 13.5 0.0
SNR=7.7
DRWC **Darouich** 78.62 308 *e*P P 08 30 14.5 +1.2
SWSC **Sam W. Stewart** 78.64 57 P P 08 30 13.5 +0.1
baz=308
D29A **Pettibone, Tap** 78.66 38 P P 08 30 13.1 -0.1
baz=315
G27A **Dupree** 78.67 40 P P 08 30 13.8 +0.3
baz=314,SNR=12
I25A **Rochford** 78.67 42 P P 08 30 13.9 +0.3
baz=313,SNR=7.9
NIE **Niedzica** 78.68 326 *e*P P 08 30 14.5 +1.2
NIE **Niedzica** 78.68 326 *e*P P 08 30 14.6 +1.2
U15A **North Rim** 78.72 52 *e*P P 08 30 14.8 +0.6
comp=Z,23nm,0.8s
C30A **Mose, Pekin** 78.73 37 P P 08 30 13.6 -0.1
baz=316,SNR=9.3
ISR **Istrita** 78.75 319⇑ *i*P P 08 30 15.6 +1.7
H26A **Fairpoint** 78.77 41 P P 08 30 14.2 +0.2
baz=314,SNR=7.1
O20A **White River Ci** 78.77 47 P P 08 30 14.9 +0.7
baz=311,SNR=12
O20A **White River Ci** 78.77 47 *e*P P 08 30 15.2 +0.9
comp=Z,35nm,0.9s
A32A **Rocking H Ranc** 78.77 35 P P 08 30 13.4 -0.5
baz=317,SNR=7.9
MSAB **Monastry St. A** 78.79 318⇑ *i*P P 08 30 14.9 +0.9
MLR **Muntele Rosu** 78.80 320⇓ *i*P P 08 30 14.6 +0.4
MLR **Muntele Rosu** 78.80 320 *e*P P 08 30 14.8 +0.6
MLR pmax pmax
comp=Z,42nm,1.2s
MLR **Muntele Rosu** 78.80 320 *e*P P 08 30 14.8 +0.6
comp=Z,42nm,1.2s
ANTO **Ankara** 78.86 312 *e*P P 08 30 15.5 +0.9
ANTO pmax pmax
comp=Z,46nm,0.9s
ANTO **Ankara** 78.86 312 *e*P P 08 30 15.5 +0.9
comp=Z,46nm,0.9s
PDMCI **Parker Dam,Lak** 78.88 55 P P 08 30 15.1 +0.4
baz=309,SNR=12
BR231 **Keskin MP Arra** 78.89 312 *e*P P 08 30 13.6 -1.2
F28A **McLaughlin** 78.92 39 P P 08 30 15.1 +0.4
baz=315,SNR=8.7
Y12C **Blythe** 78.98 56 P P 08 30 15.9 +0.7
baz=309,SNR=7.9
Y12C **Blythe** 78.98 56 *e*P P 08 30 16.5 +1.3
comp=Z,29nm,0.8s
E29A **Napoleon** 78.98 38 P P 08 30 15.2 +0.1
baz=315
C31A **Landman Farms,** 79.02 36 P P 08 30 15.5 +0.3
baz=316,SNR=11
D30A **Buchanan** 79.03 37 P P 08 30 15.4 +0.1
baz=316,SNR=15
SECR 79.05 320⇑ *i*P P 08 30 17.0 +1.5
J25A **Sunshine Ranch** 79.06 43 P P 08 30 15.2 -0.5
baz=313
CJR **Cluj-Napoca** 79.10 322⇑ *i*P P 08 30 16.8 +1.1
H27A **Howes** 79.12 41 P P 08 30 16.2 +0.3
baz=314,SNR=19
I26A **New Underwood** 79.12 42 P P 08 30 16.7 +0.7
baz=314,SNR=9.0
B32A **Ashes, Strandq** 79.13 35 P P 08 30 15.2 -0.6
baz=317,SNR=20
GLA **Glamis** 79.22 56 P P 08 30 17.0 +0.4
baz=309,SNR=5.7
GLA **Glamis** 79.22 56 *e*P P 08 30 18.0 +1.4
GLA pmax pmax
comp=Z,26nm,0.8s
GLA **Glamis** 79.22 56 *e*P P 08 30 18.0 +1.4
comp=Z,26nm,0.8s
LANS **Liptovska Anna** 79.24 326 *e*P P 08 30 18.0 +1.5
LANS *e*PP PP 08 33 12.1 -3.5
A33A **Warroad** 79.25 35 P P 08 30 16.2 -0.2
baz=318,SNR=11
KECS **Kecovo** 79.28 325 *e*P P 08 30 18.0 +1.4
KECS *e*PP PP 08 33 12.4 -3.4
VOIR 79.29 320⇑ *i*P P 08 30 17.9 +1.1
OKC **Ostrava-Krasne** 79.31 327 *e*P P 08 30 17.7 +1.0
OKC AMS AMS 09 08 20.0
comp=Z,600nm,15.1s
OKC **Ostrava-Krasne** 79.31 327 *e*P P 08 30 17.7 +1.0
OKC MLR MLR
comp=Z,600nm,15.1s
KSP **Ksiaz** 79.33 328 *e*P P 08 30 17.7 +0.9
KSP **Ksiaz** 79.33 328 *e*P P 08 30 17.8 +0.9
E30A **Jud** 79.39 38 P P 08 30 17.1 -0.1
baz=316
G28A **Parade** 79.40 40 P P 08 30 17.6 +0.2
baz=315
F29A **Eureka** 79.41 39 P P 08 30 17.6 +0.1
baz=315
MTUR **Matau** 79.43 320⇓ *i*P P 08 30 20.6 +3.0
MTUR **Matau** 79.43 320 ⇓P P 08 30 20.6 +3.0
DRGR 79.47 323⇑ *i*P P 08 30 18.8 +1.0
J26A **Sides Ranch, S** 79.50 42 P P 08 30 18.4 +0.3
baz=314,SNR=5.3
AGMN **Agassiz Nation** 79.51 35 P P 08 30 17.8 -0.1
baz=317,SNR=12
AGMN **Agassiz Nation** 79.51 35 *e*P P 08 30 17.6 -0.3
comp=Z,35nm,0.8s
I27A **Quinn** 79.52 41 P P 08 30 18.9 +0.8
baz=314,SNR=18
TNR **Turnu Rosu** 79.52 321 ⇓ *i*P sP 08 30 31.3 +2.2
TNR **Turnu Rosu** 79.52 321 ⇓P sP 08 30 31.3 +2.2
ARR **Arges** 79.54 321 ⇓ *i*P P 08 30 19.8 +1.6
C32A **Crookston** 79.55 36 P P 08 30 18.0 -0.1
baz=317
D31A **Mcclaflin, Tow** 79.56 37 P P 08 30 18.1 -0.1
baz=316
PHWY **Pilot Hill** 79.58 45 *e*P P 08 30 19.7 +0.9
comp=Z,67nm,1.8s
N23A **Red Feather La** 79.58 46 *e*P P 08 30 19.9 +1.2
comp=Z,58nm,0.9s
MORC **Moravsky Berou** 79.61 327 ⇓ *i*P P 08 30 19.2 +0.8
MORC **Moravsky Berou** 79.61 327 *e*P P 08 30 19.3 +0.8
MORC pmax pmax
comp=Z,188nm,1.0s
MORC **Moravsky Berou** 79.61 327 *e*P P 08 30 19.3 +0.8
comp=Z,188nm,1.0s
H28A **Mission Ridge** 79.63 40 P P 08 30 19.3 +0.6
baz=315,SNR=9.5
B33A **Robert and Kas** 79.66 35 P P 08 30 18.1 -0.6
baz=318,SNR=5.8
DPC **Dobruska-Polom** 79.69 328 *e*P P 08 30 20.1 +1.2
DPC *e*PP PP 08 33 16.1 -3.1
DPC AMS AMS 09 11 40.0
comp=Z,400nm,13.2s
DPC **Dobruska-Polom** 79.69 328 *e*P P 08 30 20.1 +1.2
DPC *e* 08 33 16.1
DPC MLR MLR
comp=Z,400nm,13.2s
UPC **Upice** 79.70 328 AMS AMS 09 11 30.0
comp=Z,500nm,15.7s
F30A **Leola** 79.80 39 P P 08 30 19.3 -0.3
baz=316
G29A **Hoven** 79.82 39 P P 08 30 19.9 +0.2
baz=315
D32A **Dogwood Acres,** 79.83 37 P P 08 30 19.7 0.0
baz=317
E31A **Nome** 79.84 37 P P 08 30 19.6 -0.1
baz=316,SNR=12
Y14A **Wickenburg** 79.84 55 *e*P P 08 30 20.9 +0.9
comp=Z,152nm,0.9s
BIDA **Albida** 79.86 307 *e*P P 08 30 20.9 +0.8
WUAZ **Wupatki** 79.87 53 P P 08 30 21.3 +1.0
baz=310,SNR=9.6
WUAZ **Wupatki** 79.87 53 *e*P P 08 30 21.6 +1.3
comp=Z,36nm,0.9s
LOT **Lotru** 79.92 321⇑ *i*P P 08 30 21.1 +0.8
B34A **Aery, Baudette** 79.92 34 P P 08 30 19.5 -0.6
baz=318,SNR=10.0
C33A **Trail** 79.95 36 P P 08 30 20.0 -0.2
baz=318,SNR=13
PSZ **Piszkesteto** 79.96 325⇑ *i*P P 08 30 21.8 +1.4
PSZ **Piszkesteto** 79.96 325⇓ *e*P P 08 30 21.4 +1.0
PSZ **Piszkesteto** 79.96 325 *e*P P 08 30 21.3 +0.8
PSZ pmax pmax
comp=Z,56nm,1.0s
PSZ **Piszkesteto** 79.96 325 *e*P P 08 30 21.2 +0.8
comp=Z,56nm,1.0s

VYHS **Vyhne** 80.01 326 *e*P P 08 30 21.5 +0.9
VYHS *e*PP PP 08 33 10.5 -11
I28A **Midland** 80.03 41 P P 08 30 21.4 +0.6
baz=315,SNR=21
DEV **Deva** 80.03 322⇓ *i*P P 08 30 21.9 +1.2
H29A **Onida** 80.07 40 P P 08 30 21.3 +0.2
baz=315,SNR=5.4
113A **Mohawk Valley,** 80.09 56 *e*P P 08 30 22.0 +0.7
comp=Z,19nm,0.9s
J27A **Elkhorn Farm,** 80.11 42 P P 08 30 21.9 +0.5
baz=314
SMCO **Snowmass** 80.13 48 *e*P P 08 30 23.3 +1.4
comp=Z,20nm,1.0s
F31A **Hecla** 80.16 38 P P 08 30 21.6 +0.1
baz=316,SNR=7.2
E32A **Braaten, Kindr** 80.20 37 P P 08 30 21.9 +0.3
baz=317
G30A **Faulkton** 80.25 39 P P 08 30 22.2 +0.2
baz=316,SNR=18
PVCC **Panska Ves** 80.27 329 *e*P P 08 30 23.0 +1.1
PVCC AMS AMS 09 08 50.0
comp=Z,600nm,15.8s
PVCC **Panska Ves** 80.27 329 *e*P P 08 30 23.0 +1.1
PVCC MLR MLR
comp=Z,600nm,15.8s
CLL **Collm** 80.28 330 ⇓ *i*P P 08 30 22.2 +0.2
comp=Z,60nm,1.0s
CLL *i* 08 30 30.2
CLL *e* 08 30 38.0
CLL *e*PS PnS 08 41 13.0 +0.9
CLL *e*SS SS 08 45 54.0 +18
CLL *e*SSS SSS 08 49 12.0
CLL **Collm** 80.28 330 ⇓ *i*P P 08 30 22.2 +0.2
CLL *i* 08 30 30.2
CLL pmax pmax
comp=Z,60nm,1.0s
CLL **Collm** 80.28 330 *e*P P 08 30 22.4 +0.4
comp=Z,60nm,0.9s
SZH **Strazhica** 80.35 318 P P 08 30 22.7 +0.2
VRAC **Vranov** 80.37 327 LR LR 09 09 02.0
comp=Z,291nm,18.7s,baz=18,slow=38
VRAC **Vranov** 80.37 327⇑ *i*P P 08 30 24.1 +1.6
D33A **AnnSam, Waubun** 80.37 36 P P 08 30 22.3 -0.3
baz=318,SNR=5.2
MARH **Ras Al Marh** 80.38 306 *e*P P 08 30 23.9 +0.6
J28A **Allard Ranch,** 80.39 41 P P 08 30 23.5 +0.7
baz=315,SNR=7.6
B35A **Bob, Littlefor** 80.42 34 P P 08 30 22.4 -0.4
baz=319,SNR=15
C34A **RKJ Ranch, Bem** 80.42 35 P P 08 30 22.5 -0.4
baz=318,SNR=9.3
I29A **Ivian Onida** 80.45 40 P P 08 30 23.6 +0.5
baz=315,SNR=9.9
ISCO **Idaho Springs** 80.50 46 P P 08 30 24.8 +1.0
baz=313,SNR=11
ISCO **Idaho Springs** 80.50 46 *e*P P 08 30 25.0 +1.2
ISCO pmax pmax
comp=Z,17nm,0.8s
ISCO **Idaho Springs** 80.50 46 *e*P P 08 30 25.0 +1.2
comp=Z,17nm,0.8s
MVCO **Mesa Verde** 80.53 50 P P 08 30 24.8 +0.9
baz=311,SNR=5.5
MVCO **Mesa Verde** 80.53 50 *e*P P 08 30 25.3 +1.3
comp=Z,26nm,0.9s
X16A **Lo Mia Camp, P** 80.53 54 *e*P P 08 30 25.2 +1.3
comp=Z,26nm,0.8s
G31A **Conde** 80.64 39 P P 08 30 24.2 +0.1
baz=316
GOPC **GO Pecny, Ondr** 80.66 329 *e*P P 08 30 25.1 +1.0
GOPC *e*PCP pP 08 30 32.1 -0.1
GOPC AMS AMS 09 11 50.0
comp=Z,500nm,12.6s
GOPC **GO Pecny, Ondr** 80.66 329 *e*P P 08 30 25.1 +1.0
GOPC *e* 08 30 32.1
GOPC MLR MLR
comp=Z,500nm,12.6s
BUD **Budapest** 80.68 325⇓ *e*P P 08 30 25.3 +1.1
F32A **Veblen** 80.70 38 P P 08 30 24.0 -0.4
baz=317,SNR=8.1
PRU **Pruhonice** 80.70 329 *e*P P 08 30 25.3 +1.0
PRU *e*PCP pP 08 30 32.6 +0.2
PRU AMS AMS 09 11 50.0
comp=Z,500nm,15.8s
PRU **Pruhonice** 80.70 329 *e*P P 08 30 25.3 +1.0
PRU *e* 08 30 32.6
PRU MLR MLR
comp=Z,500nm,15.8s
D34A **Park Rapids** 80.71 36 P P 08 30 23.9 -0.5
baz=318
E33A **Westby DABS, E** 80.77 36 P P 08 30 24.6 -0.1
baz=318,SNR=19
C35A **Jirik Farms, M** 80.80 35 P P 08 30 24.4 -0.5
baz=319,SNR=13
SUSD **Miller** 80.83 39 P P 08 30 25.1 0.0
baz=316
BZS **Buzias** 80.84 322 ⇓ *i*P P 08 30 25.2 +0.1
TREC **Trest** 80.85 328 AMS AMS 09 09 50.0
comp=Z,400nm,14.7s
J29A **Okreek** 80.88 41 P P 08 30 25.8 +0.3
baz=315,SNR=6.7
PKS7 **Kunszentmiklos** 80.94 325⇓ *e*P P 08 30 26.6 +1.0
G32A **Webster** 80.97 38 P P 08 30 26.2 +0.3
baz=317,SNR=9.7
I30A **Ooma** 80.97 40 P P 08 30 26.0 +0.1
baz=316,SNR=9.0
PKSG 81.03 325⇑ *e*P P 08 30 27.4 +1.3
H31A **Wolsey** 81.05 39 P P 08 30 25.9 -0.4
baz=316
CSKK **Cs˙tkako** 81.11 325⇑ *e*P P 08 30 27.7 +1.2
F33A **5 Mile Ranch,** 81.12 37 P P 08 30 26.5 -0.1
baz=317,SNR=16
E34A **Wadena** 81.15 36 P P 08 30 26.1 -0.6
baz=318,SNR=6.0
W18A **Petrified Fore** 81.15 52 P P 08 30 28.2 +1.0
baz=311,SNR=5.8
W18A **Petrified Fore** 81.15 52 *e*P P 08 30 28.4 +1.2
comp=Z,18nm,0.9s
S22A **4UR Ranch, Cre** 81.17 49 P P 08 30 28.7 +1.3
baz=312,SNR=18
S22A **4UR Ranch, Cre** 81.17 49 *e*P P 08 30 28.9 +1.5
comp=Z,27nm,0.9s
214A **Organ Pipe Nat** 81.23 56 P P 08 30 28.2 +0.7
baz=310,SNR=8.8
D35A **Remer** 81.23 35 P P 08 30 26.7 -0.5
baz=319,SNR=7.3
C36A **Pine Crest Far** 81.27 34 P P 08 30 27.1 -0.3
baz=319,SNR=11
PKST **T˙˙s** 81.29 325⇓ *e*P P 08 30 27.9 +0.4
Q24A **Divide** 81.33 47 P P 08 30 28.9 +0.6
baz=313,SNR=7.7
Q24A **Divide** 81.33 47 *e*P P 08 30 29.4 +1.1
comp=Z,18nm,0.9s
I31A **Royce, Wessing** 81.34 40 P P 08 30 28.1 +0.2
baz=316
NKC **Novy Kostel** 81.34 330 *e*P P 08 30 28.4 +0.7
NKC *ex* x 08 30 36.6
NKC AMS AMS 09 09 40.0
comp=Z,500nm,16.6s
NKC **Novy Kostel** 81.34 330 *e*P P 08 30 28.4 +0.7
NKC *e* 08 30 36.6
NKC MLR MLR
comp=Z,500nm,16.6s
J30A **Dallas** 81.36 41 P P 08 30 28.1 +0.1
baz=316,SNR=5.2
X18A **Snowflake** 81.40 53 *e*P P 08 30 29.6 +1.1
comp=Z,24nm,1.1s
MDVR **Moldovita** 81.41 322⇑ *i*P P 08 30 28.8 +0.6
E35A **Pequot Lakes** 81.47 36 P P 08 30 27.9 -0.5
baz=318,SNR=8.4
G33A **Ortonville** 81.52 38 P P 08 30 29.0 +0.3
baz=317,SNR=18
H32A **Carlson Farm,** 81.54 39 P P 08 30 28.6 -0.3
baz=317
D36A **Goodland** 81.56 35 P P 08 30 28.3 -0.6
baz=319,SNR=7.1
C37A **Embarrass** 81.58 34 P P 08 30 28.6 -0.4
baz=320,SNR=8.8
SOP **Sopron** 81.62 326⇓ *e*P P 08 30 30.3 +1.1
F34A **Alexandria** 81.64 37 P P 08 30 29.2 -0.1
baz=318,SNR=6.8
PKS9 **Tamasi** 81.69 325⇓ *e*P P 08 30 29.9 +0.3
OGNE **Ogallala** 81.70 44 P P 08 30 30.3 +0.4
baz=314
OGNE **Ogallala** 81.70 44 *e*P P 08 30 30.8 +0.8
comp=Z,56nm,1.0s
EYMN **Ely** 81.71 33 P P 08 30 29.5 -0.2
baz=320,SNR=7.8
EYMN **Ely** 81.71 33 *e*P P 08 30 30.0 +0.3
comp=Z,38nm,0.8s
CONA **Conrad Observa** 81.74 327 *i* P P 08 30 31.1 +1.2
comp=Z,15nm,0.9s,SNR=23
H33A **Prehn Over Nor** 81.75 38 P P 08 30 30.3 +0.3
baz=317,SNR=32
CSS **Mathiatis** 81.75 308 *e*P P 08 30 30.7 +0.5
comp=Z,8.0nm,0.9s
KHC **Kasperske Hory** 81.76 329 *e*P P 08 30 30.7 +0.7
KHC *e*PCP pP 08 30 38.1 0.0
KHC *e*PP PP 08 33 31.7 -4.7
KHC **Kasperske Hory** 81.76 329 *e*P P 08 30 30.7 +0.7
KHC pmax pmax
comp=Z,17nm,1.0s
KHC **Kasperske Hory** 81.76 329 *e*P P 08 30 30.6 +0.7
comp=Z,17nm,1.0s
K30A **Basset** 81.76 41 P P 08 30 30.5 +0.3
baz=316,SNR=8.8
J31A **Geddes** 81.77 40 P P 08 30 30.0 -0.1
baz=316
PGB **Panagyurishte** 81.78 319 P P 08 30 30.8 +0.6
PKSM **Moragy** 81.81 324⇑ *i*P P 08 30 30.6 +0.4
PKSM **Moragy** 81.81 324⇓ *e*P P 08 30 30.0 -0.2
G34A **Benson** 81.87 37 P P 08 30 30.8 +0.3
baz=318,SNR=17
I32A **Karley and Nic** 81.88 39 P P 08 30 30.5 -0.1
baz=317
D37A **Cotton** 81.90 34 P P 08 30 30.1 -0.6
baz=320
F35A **Swanville** 81.91 36 P P 08 30 30.5 -0.3
baz=318,SNR=6.2
GEC2 **GERESS Array S** 81.94 329 *e*P P 08 30 31.3 +0.3
GEC2 pmax pmax
comp=Z,20nm,1.0s
GEC2 **GERESS Array S** 81.94 329 *e*P P 08 30 31.3 +0.3
comp=Z,20nm,1.0s
GERES **GERESS Array B** 81.94 329 P P 08 30 31.2 +0.3
comp=Z,10nm,0.9s,baz=38,slow=5.0,SNR=61
GERES PP PP 08 33 32.7 -5.2
comp=Z,1.4nm,0.9s,baz=39,slow=8.6,SNR=4.2
GERES LR LR 09 09 59.7
comp=Z,332nm,18.9s,baz=29,slow=38
GEA0 **GERESS Array S** 81.94 329 *e*P P 08 30 31.1 +0.1
SDCO **Great Sand Dun** 81.95 48 P P 08 30 32.5 +0.9
baz=313,SNR=7.8
SDCO **Great Sand Dun** 81.95 48 *e*P P 08 30 32.5 +0.9
comp=Z,20nm,1.1s
C38A **Sawbill Land.** 81.98 33 P P 08 30 30.8 -0.3
baz=320,SNR=11
E36A **McGregor** 82.02 35 P P 08 30 31.1 -0.3
baz=319,SNR=14
RZN **Rozhen** 82.10 318 P P 08 30 33.0 +0.9
EKA **Eskdalemuir Ar** 82.11 341 LR LR 09 11 00.6
comp=Z,189nm,19.4s,baz=40,slow=39
ESK **Eskdalemuir** 82.14 341 *i* P P 08 30 33.3 +1.5
ESK **Eskdalemuir** 82.14 341 *e*P P 08 30 32.5 +0.7
comp=Z,17nm,0.9s
J32A **Parkston** 82.16 40 P P 08 30 32.2 0.0
baz=317,SNR=5.1
I33A **Coleman** 82.19 39 P P 08 30 32.4 +0.1
baz=317,SNR=5.4
H34A **Spellman Lake,** 82.23 38 P P 08 30 32.1 -0.4
baz=318
K31A **O'Neill** 82.24 41 P P 08 30 32.9 +0.2
baz=316,SNR=6.2
GRFO **Grafenberg** 82.26 330 *e*P P 08 30 33.5 +1.0
GRFO pmax pmax
comp=Z,58nm,1.0s
GRFO **Grafenberg** 82.26 330 *e*P P 08 30 33.5 +1.0
comp=Z,58nm,1.0s
TUC **Tucson** 82.31 55 P P 08 30 33.9 +0.7
baz=311
TUC **Tucson** 82.31 55 *e*P P 08 30 34.0 +0.7
TUC pmax pmax
comp=Z,12nm,0.9s
TUC **Tucson** 82.31 55 *e*P P 08 30 34.0 +0.7
comp=Z,12nm,0.9s
E37A **Wrenshall** 82.37 35 P P 08 30 32.3 -0.9
baz=320
C39A **Grand Marais** 82.39 33 P P 08 30 32.5 -0.8
baz=321
ARSA **Arzberg** 82.41 327 *i* P P 08 30 34.2 +0.8
comp=Z,16nm,1.1s,SNR=8.8
G35A **Watkins** 82.43 37 P P 08 30 33.8 +0.2
baz=319,SNR=7.2
MOA **Molln** 82.48 328 *i* P P 08 30 34.8 +1.0
comp=Z,23nm,1.6s,SNR=10
ECSD **EROS Data Cent** 82.51 39 P P 08 30 34.0 0.0
baz=317,SNR=29
ECSD **EROS Data Cent** 82.51 39 *e*P P 08 30 34.0 0.0
comp=Z,48nm,0.8s
L31A **Butterfield Fa** 82.52 41 P P 08 30 34.4 +0.3
baz=316,SNR=15
K32A **Verdigre** 82.61 40 P P 08 30 34.0 -0.5
baz=317
J33A **Davis** 82.64 39 P P 08 30 34.4 -0.3
baz=317,SNR=5.4
I34A **Hadley** 82.65 38 P P 08 30 34.7 0.0
baz=318
H35A **Sunnyside Ranc** 82.66 37 P P 08 30 35.2 +0.5
baz=318,SNR=26
MMB **Musomiste** 82.69 318 P P 08 30 35.3 +0.3
KSCO **Kaye Shedlock'** 82.72 45 P P 08 30 35.5 +0.1
baz=314
KSCO **Kaye Shedlock'** 82.72 45 *e*P P 08 30 36.3 +1.0
comp=Z,42nm,1.2s
G36A **St. Michael** 82.76 36 P P 08 30 35.0 -0.3
baz=319,SNR=5.1
KKB **Krupnik** 82.83 319 P P 08 30 36.4 +0.7
T25A **Trinidad** 83.00 48 P P 08 30 37.4 +0.5
baz=314
T25A **Trinidad** 83.00 48 *e*P P 08 30 38.1 +1.2
comp=Z,29nm,0.8s
M31A **Lambtecht Ranc** 83.05 42 P P 08 30 36.4 -0.4
baz=316,SNR=5.5
PERS **Pernice** 83.06 326⇓ *i*P P 08 30 37.1 +0.3
comp=Z,62nm,0.9s
SOKA **Soboth** 83.06 326 *i* P P 08 30 37.3 +0.4
comp=Z,18nm,0.8s,SNR=36
L32A **Elgin** 83.07 41 P P 08 30 36.8 -0.2
baz=317
K33A **Hardington** 83.14 40 P P 08 30 37.3 0.0
baz=317,SNR=5.4
J34A **George** 83.16 39 P P 08 30 37.2 -0.1
baz=318
H36A **Jessenland, He** 83.17 37 P P 08 30 38.1 +0.7
baz=319
SPMN **Marine on St.** 83.21 36 P P 08 30 36.9 -0.6
baz=320,SNR=6.4
SPMN **Marine on St.** 83.21 36 *e*P P 08 30 37.7 +0.2
comp=Z,26nm,0.9s
I35A **Creekview Farm** 83.21 38 P P 08 30 37.4 -0.3
baz=318,SNR=6.3
LAZ **Ladron** 83.22 51 *e*P P 08 30 39.6 +1.5
ANMO **Albuquerque** 83.27 50 P P 08 30 39.3 +1.0
baz=313
ANMO **Albuquerque** 83.27 50 *i* P P 08 30 37.5 -0.8
ANMO pmax pmax
comp=Z,18nm,1.0s
ANMO **Albuquerque** 83.27 50 *e*P P 08 30 39.3 +1.0
comp=Z,28nm,1.0s
L33A **Hoskins** 83.33 40 P P 08 30 38.2 0.0
baz=317
BEBN **Eben Emael** 83.39 334 P P 08 30 38.9 +0.6
comp=Z,10nm,1.2s
BEBN AP pP 08 30 47.4 +0.9
OBKA **Obir** 83.40 327 *i* P P 08 30 38.9 +0.2
comp=Z,5.5nm,0.8s,SNR=7.5
MEM **Membach** 83.43 334 P P 08 30 39.0 +0.4
comp=Z,17nm,1.4s
MEM AP pP 08 30 47.0 +0.3
BGNE **Belgrade** 83.43 41 P P 08 30 38.5 -0.3
baz=317,SNR=5.6
BGNE **Belgrade** 83.43 41 *e*P P 08 30 39.1 +0.2
comp=Z,116nm,0.8s
N31A **Bailey Ranch,** 83.43 42 P P 08 30 38.8 -0.1
baz=316
J35A **Milford** 83.47 38 P P 08 30 38.9 0.0
baz=318,SNR=6.1
KBA **Koelnbreinsper** 83.47 328 *i* P P 08 30 39.5 +0.4
comp=Z,4.6nm,0.7s,SNR=15
VAY **Valandovo** 83.49 319 *i* P P 08 30 39.7 +0.6
K34A **Le Mars** 83.54 39 P P 08 30 39.0 -0.3
baz=318,SNR=9.2
I36A **Fitzsimmons Fa** 83.55 37 P P 08 30 39.2 -0.1
baz=319,SNR=7.7

Y22D IRIS PASSCAL I 83.58 51 P P 08 30 39.3 -0.6
baz=312
LPM Los Pinos Moun 83.59 51 eP P 08 30 41.2 +1.2
SKO Skopje 83.59 320 i P P 08 30 40.8 +1.2
PLE Pljevlja 83.61 322⇑ iP P 08 30 40.4 +0.6
H37A Dierke Farm, C 83.64 36 P P 08 30 39.9 +0.1
baz=320,SNR=7.9
MYKA Terra Mystica 83.70 327 i P P 08 30 39.9 -0.2
comp=Z,6.7nm,0.7s,SNR=7.8
IVA Berane 83.70 321⇑ iP P 08 30 40.4 +0.1
BNM Barren Site 83.70 51 eP P 08 30 41.6 +0.9
O31A Woolen Ranch, 83.72 43 P P 08 30 40.1 -0.3
baz=316
LJU Ljubljana 83.78 326⇓ iP P 08 30 43.0 -0.2
M33A Taylor Creek F 83.80 41 P P 08 30 40.2 -0.5
baz=317,SNR=6.4
N32A Stulken Farm, 83.82 42 P P 08 30 40.3 -0.5
baz=317
BCLA Clavier 83.83 334 P P 08 30 40.8 +0.2
comp=Z,18nm,1.5s
BCLA AP pP 08 30 50.0 +1.1
I37A Lemond, Waseca 83.85 37 P P 08 30 41.3 +0.5
baz=319,SNR=15
PVY Plav 83.88 321⇑ iP P 08 30 41.3 +0.1
319A Douglas 83.89 55 eP P 08 30 42.5 +1.0
comp=Z,48nm,0.8s
SCHQ Schefferville 83.92 16 P P 08 30 41.1 +0.2
comp=Z,12nm,0.8s,baz=353,slow=6.7,SNR=16
SCHQ LR LR 09 09 19.2
comp=Z,183nm,21.7s,baz=354,slow=36
SCHQ Schefferville 83.92 16 eP P 08 30 41.2 +0.2
comp=Z,24nm,1.0s
J36A Seneca 1, Swea 83.92 38 P P 08 30 41.3 +0.1
baz=319,SNR=8.4
CWF Charnwood Fore 83.92 339 eP P 08 30 41.8 +0.8
comp=Z,17nm,0.8s
L34A Svendsen Farm, 83.93 40 P P 08 30 41.1 -0.3
baz=318
K35A Storm Lake 83.94 39 P P 08 30 41.1 -0.3
baz=318,SNR=5.6
UPM Unac-Piva 83.94 322⇑ iP P 08 30 40.7 -0.9
WTTA Wattenberg 84.03 329 i P P 08 30 41.9 -0.1
comp=Z,6.5nm,0.8s
121A Cookes Peak, D 84.07 53 P P 08 30 43.8 +1.4
baz=312,SNR=17
ABTA Abfaltersbach 84.08 328 i P P 08 30 42.0 -0.2
comp=Z,12nm,0.9s,SNR=6.9
JAVS Javornik 84.10 326⇓ iP P 08 30 41.5 -0.7
comp=Z,72nm,1.2s
SNF Seneffe 84.11 335 P P 08 30 42.5 +0.5
PMOR Pomariorio Ree 84.13 114 eT T 10 03 19.1
comp=Z,41nm,0.2s
LANF Langenberg 84.14 332 eP P 08 30 42.8 +0.5
COWI Conover 84.16 33 eP P 08 30 42.6 +0.1
comp=Z,20nm,0.8s
M34A Aspy Farms, Fr 84.17 40 P P 08 30 42.4 -0.1
baz=318
NKY Niksic 84.19 322⇑ iP P 08 30 41.4 -1.4
MOTA Moosalm 84.19 329 i PcP P 08 30 44.3 +1.6
comp=Z,13nm,0.8s,SNR=7.6
O32A Brockman Farm, 84.20 42 P P 08 30 41.7 -1.0
baz=317
RETA Reutte 84.21 329 i P P 08 30 43.3 +0.5
comp=Z,59nm,1.2s,SNR=26
L35A Bielow Farm, R 84.24 39 P P 08 30 42.4 -0.5
baz=318
NKME Niksic 84.24 322⇑ iP P 08 30 42.3 -0.7
N33A J Bar K, Exete 84.28 41 P P 08 30 42.6 -0.5
baz=317
J37A Redenius Farm, 84.31 37 P P 08 30 43.2 0.0
baz=319,SNR=12
I38A Scanlan Farm, 84.33 36 P P 08 30 43.0 -0.3
baz=320,SNR=9.8
PDG Podgorica 84.34 321⇑ iP P 08 30 44.1 +0.7
TTG Podgorica 84.34 321⇑ iP P 08 30 42.7 -0.7
HSIG 84.35 57 eP P 08 30 44.7 +1.0
comp=Z,22nm,1.0s
DOU Dourbes 84.35 334 P P 08 30 43.5 +0.2
comp=Z,9.4nm,1.3s
DOU AP pP 08 30 51.6 +0.1
BIA Bitola 84.35 319 eP P 08 30 43.6 +0.1
K36A Gilmore City 84.38 38 P P 08 30 43.7 +0.1
baz=319,SNR=10
CEME Cevo 84.42 322 eP P 08 30 43.1 -0.8
CBKS Cedar Bluff 84.46 44 P P 08 30 43.6 -0.5
baz=316,SNR=5.8
CBKS Cedar Bluff 84.46 44 eP P 08 30 44.3 +0.1
CBKS Cedar Bluff 84.46 44 eP P 08 30 44.2 +0.1
BFO Black Forest 84.47 331 i P P 08 30 44.5 +0.5
BFO Black Forest 84.47 331 eP P 08 30 44.4 +0.4
comp=Z,51nm,1.1s
P32A Huiting Farm, 84.49 43 P P 08 30 43.6 -0.7
baz=317,SNR=12
OHR Ohrid 84.55 320 i P P 08 30 44.7 +0.1
DRME Dracevica, Mon 84.56 321 eP P 08 30 44.2 -0.3
FETA Feichten 84.60 329 i P P 08 30 45.0 +0.2
comp=Z,8.5nm,0.8s,SNR=14
BUM Brajici-Budva 84.62 321 eP P 08 30 44.2 -0.7
M35A Neola 84.64 40 P P 08 30 45.2 +0.2
baz=318,SNR=9.7
PPT Papeete 84.66 117 LR LR 09 00 24.6
comp=Z,104nm,20.7s,baz=319,slow=30
PPT2 Papeete2 84.67 117 eLR LR 08 57 26.6
comp=Z,364nm,24.8s,baz=317
PPT2 Papeete2 84.67 117 eT T 10 03 59.1
comp=Z,6.2nm,0.3s
K37A Belmond 84.68 38 P P 08 30 45.1 0.0
baz=319,SNR=20
L36A Harm Buss Farm 84.68 39 P P 08 30 44.9 -0.3
baz=319,SNR=6.2
O33A Hebron 84.70 42 P P 08 30 44.5 -0.8
baz=317
N34A Lincoln 84.70 41 P P 08 30 44.6 -0.6
baz=318,SNR=6.3
ULC Ulcinj 84.70 321 eP P 08 30 45.0 -0.3
HCY Herceg Novi 84.70 322 eP P 08 30 44.4 -0.8
PAE Paea 84.72 117 eT T 10 04 01.6
comp=Z,1.3nm,0.3s
DAVA Damuels 84.72 330 i PcP P 08 30 45.9 +0.4
comp=Z,36nm,0.9s,SNR=16
J38A Wedel Dairy, R 84.81 37 P P 08 30 45.7 0.0
baz=320,SNR=8.8
TIAR Tiarei 84.81 117 eT T 10 04 08.4
comp=Z,5.9nm,0.3s
DSB Dublin 84.81 342 eP P 08 30 46.2 +0.7
comp=Z,32nm,1.0s
Q32A Meitler Ranch, 84.97 43 P P 08 30 46.3 -0.4
baz=317,SNR=7.7
ECH Echery 85.01 332 eP P 08 30 47.0 +0.3
O34A Beatrice 85.08 41 P P 08 30 46.6 -0.6
baz=318
M36A Felix, Anita 85.10 39 P P 08 30 47.5 +0.2
baz=319,SNR=8.5
P33A Williams Farm, 85.10 42 P P 08 30 46.9 -0.4
baz=317
L37A Phoenix Point, 85.11 38 P P 08 30 47.3 0.0
baz=319,SNR=5.8
FUORN Ofenpass-Fuorn 85.11 329 eP P 08 30 48.0 +0.5
comp=Z,65nm,1.0s
N35A Tabor 85.12 40 P P 08 30 47.7 +0.4
baz=318,SNR=10.0
K38A Parkersburg 85.19 37 P P 08 30 47.6 0.0
baz=320
R32A Long Quarter, 85.30 44 P P 08 30 47.8 -0.5
baz=317
MOF Molkenrain 85.32 331 eP P 08 30 48.4 0.0
Q33A Connelly Farm, 85.35 43 P P 08 30 48.4 -0.1
baz=317,SNR=10.0
O35A Humboldt 85.42 41 P P 08 30 48.6 -0.3
baz=318
P34A Walnut Farm, R 85.48 42 P P 08 30 48.7 -0.5
baz=318,SNR=10.0
L38A Oak Wood Farm, 85.48 38 P P 08 30 49.1 0.0
baz=320
N36A Muff Farm, Cla 85.50 40 P P 08 30 49.6 +0.3
baz=319
M37A Trindle Farm, 85.50 39 P P 08 30 49.9 +0.6
baz=319,SNR=5.0
SCIA State Center 85.53 38 eP P 08 30 50.5 +1.0
TUE Stuetta 85.60 329 eP P 08 30 50.1 +0.2
comp=Z,20nm,1.0s
S32A Newby Ranch, P 85.70 44 P P 08 30 50.3 0.0
baz=316
R33A Olander Ranch, 85.77 43 P P 08 30 50.7 0.0
baz=317
LOMF Lomont 85.85 331 eP P 08 30 51.4 +0.4
Q34A Chapman 85.88 42 P P 08 30 51.2 0.0
baz=318
TAOE Nuku Hiva Isla 85.88 105 eLR LR 08 57 59.7
comp=Z,312nm,24.2s
TAOE Nuku Hiva Isla 85.88 105 eT T 10 05 34.3
comp=Z,85nm,0.3s
P35A Duane Minner, 85.91 41 P P 08 30 50.6 -0.8
baz=316
N37A Lee Farris, Mou 85.92 39 P P 08 30 51.7 +0.3
baz=319,SNR=10
M38A Pleasantville 85.92 38 P P 08 30 51.5 +0.2
baz=320,SNR=5.5
KSU1 Kansas State U 85.92 42 P P 08 30 51.0 -0.4
baz=318
KSU1 Kansas State U 85.92 42 eP P 08 30 51.3 -0.1
MEH Mehetia 85.93 116 eT T 10 05 27.8
comp=Z,50nm,0.3s
O36A Bolckow 86.01 40 P P 08 30 52.0 +0.2
baz=319,SNR=6.1
T32A Huddler Ranch, 86.08 45 P P 08 30 52.5 +0.2
baz=316,SNR=7.8
MNTX Cornudas Mount 86.14 52 P P 08 30 52.8 +0.2
baz=313,SNR=14
MNTX Cornudas Mount 86.14 52 eP P 08 30 53.0 +0.4
comp=Z,13nm,0.8s
AMTX Amarillo 86.15 48 P P 08 30 53.4 +0.7
baz=315
AMTX Amarillo 86.15 48 eP P 08 30 53.7 +1.0
comp=Z,46nm,0.9s
MSTX Muleshoe 86.15 49 P P 08 30 53.1 +0.3
baz=315,SNR=7.1
MSTX Muleshoe 86.15 49 eP P 08 30 53.1 +0.3
comp=Z,28nm,1.2s
JFWS Jewell Farm 86.16 36 eP P 08 30 52.6 +0.1
JFWS Jewell Farm 86.16 36 eP P 08 30 52.6 +0.1
R34A Isabella, Hill 86.17 43 P P 08 30 52.5 -0.2
baz=317
P36A Good Intent, A 86.27 41 P P 08 30 53.2 +0.1
baz=319,SNR=12
S33A Kaszmaul Farm, 86.28 44 P P 08 30 53.3 +0.1
baz=317
LAST Lasithi 86.31 313⇑ iP P 08 30 54.5 +1.0
N38A Joes South For 86.37 39 P P 08 30 53.8 +0.2
baz=320,SNR=8.7
O37A Wolven Farm, M 86.39 40 P P 08 30 53.9 +0.2
baz=319,SNR=5.2
Q35A Mercer Eighty, 86.40 42 P P 08 30 53.9 +0.1
baz=317
SENIN Lac Senin/Sane 86.50 331 eP P 08 30 54.6 +0.3
comp=Z,11nm,0.8s
T33A Patterson Ranc 86.52 44 P P 08 30 53.9 -0.5
baz=317
IDI Anoyia 86.56 313 LR LR 09 15 17.2
comp=Z,93nm,18.6s,baz=82,slow=40
U32A Winter Ranch, 86.61 45 P P 08 30 55.0 +0.1
baz=316
Q36A Arnold C. Orve 86.62 41 P P 08 30 54.6 -0.3
baz=318
N39A Derby Farms, D 86.67 38 P P 08 30 55.1 +0.1
baz=320,SNR=10
S34A Willow Spring 86.69 43 P P 08 30 55.3 +0.1
baz=318
R35A Emporia Munici 86.71 42 P P 08 30 55.5 +0.2
baz=318,SNR=7.8
DYA Yadsworthy 86.72 339 eP P 08 30 55.9 +0.9
comp=Z,45nm,1.3s
P37A Lathrop 86.73 40 P P 08 30 55.3 0.0
baz=319,SNR=13
O38A Galt 86.76 39 P P 08 30 55.6 +0.1
baz=320
MATE Matera 86.94 322⇑ iP P 08 30 56.7 +0.4
V32A Arapaho 87.06 46 P P 08 30 57.7 +0.6
baz=316,SNR=5.7
U33A Lingo Farm, Me 87.07 45 P P 08 30 57.1 0.0
baz=317
R36A Gordon, Harris 87.08 42 P P 08 30 57.2 +0.1
baz=318,SNR=6.6
DAMY Dhamar 87.08 286 eP P 08 30 59.0 +1.2
comp=Z,54nm,1.1s
P38A Dawn 87.11 40 P P 08 30 57.4 +0.2
baz=320,SNR=11
O39A Kirksville 87.12 39 P P 08 30 57.5 +0.2
baz=320,SNR=7.1
S35A Otter Creek Ra 87.12 43 P P 08 30 57.4 +0.1
baz=318,SNR=21
T34A McClaskey Farm 87.14 44 P P 08 30 57.4 0.0
baz=318
Q37A Longview Farm, 87.21 41 P P 08 30 57.3 -0.4
baz=319
U34A Anderson Ranch 87.38 44 P P 08 30 58.7 +0.1
baz=317,SNR=6.8
U34A Anderson Ranch 87.38 44 eP P 08 30 59.6 +1.0
comp=Z,136nm,1.6s
W32A Seel 87.38 46 P P 08 30 59.3 +0.6
baz=316,SNR=11
V33A Lossen Ranch, 87.42 45 P P 08 30 58.4 -0.4
baz=317
R37A Teagarden Farm 87.44 41 P P 08 30 58.2 -0.6
baz=319
S36A Lake Cedric, C 87.48 42 P P 08 30 59.1 +0.1
baz=318,SNR=5.4
O40A La Belle 87.55 38 P P 08 30 59.4 +0.1
baz=321,SNR=12
Q38A Cooks Store, C 87.57 40 P P 08 30 59.4 0.0
baz=320,SNR=5.3
T35A Sooner Cattle 87.59 43 P P 08 30 59.7 +0.1
baz=318
W33A Caddo, Fort Co 87.80 46 P P 08 31 01.4 +0.7
baz=317,SNR=6.0
T36A Boggs Farm, Ca 87.82 43 P P 08 31 00.9 +0.2
baz=318,SNR=8.1
Q39A Willow Grove F 87.83 40 P P 08 31 00.7 0.0
baz=320,SNR=30
V34A Guthrie 87.83 45 P P 08 31 01.0 +0.2
baz=317,SNR=6.5
V34A Guthrie 87.83 45 eP P 08 31 01.6 +0.8
comp=Z,66nm,1.3s
S37A Fort Scott 87.85 42 P P 08 31 00.7 -0.1
baz=319,SNR=8.4
X32A Elmer 87.86 47 P P 08 31 01.2 +0.3
baz=316,SNR=11
U35A Pawnee 87.87 44 P P 08 31 01.1 +0.1
baz=318,SNR=5.8
P40A Paris 87.92 39 P P 08 31 01.5 +0.3
baz=320,SNR=17
WMOK Wichita Mounta 87.92 46 eP P 08 31 01.8 +0.6
WMOK pmax pmax
comp=Z,19nm,0.9s
WMOK Wichita Mounta 87.92 46 eP P 08 31 01.8 +0.6
comp=Z,19nm,0.9s
R38A Fenek Farm, 88.01 41 P P 08 31 00.9 -0.6
baz=319,SNR=7.4
TIP Timpagrande 88.04 321⇓ iP P 08 31 02.2 +0.4
TIP Timpagrande 88.04 321 eP P 08 31 02.1 +0.3
comp=Z,44nm,1.5s
W34A Bridge Creek, 88.13 45 P P 08 31 01.6 -0.6
baz=317
PLDF La Plantade 88.20 333 eP P 08 31 03.3 +0.9
X33A Lawton 88.22 46 P P 08 31 02.3 -0.4
baz=317
V35A Meyer Ranch, C 88.26 44 P P 08 31 02.9 +0.1
baz=318
T37A Cheneyville 18 88.28 42 P P 08 31 02.9 0.0
baz=319,SNR=11
AGO Saint Agoulin 88.31 333 eP P 08 31 03.9 +1.0
Q40A Laux Farm, Aux 88.32 39 P P 08 31 02.9 -0.2
baz=320,SNR=9.1
R39A Chumby, Stover 88.36 40 P P 08 31 03.0 -0.2
baz=320
U36A Oologah 88.39 43 P P 08 31 03.7 +0.3
baz=318
S38A Stockton 88.43 41 P P 08 31 03.2 -0.4
baz=319,SNR=5.3
SSB Saint Sauveur 88.45 332 eP P 08 31 04.2 +0.6
SSB pmax pmax
comp=Z,8.0nm,0.9s
SSB Saint Sauveur 88.45 332 eP P 08 31 04.2 +0.6
comp=Z,8.3nm,0.9s
Y33A Hilltop Ranch, 88.54 47 P P 08 31 04.3 +0.1
baz=317,SNR=5.6
X34A Smith Ranch, M 88.56 46 P P 08 31 04.7 +0.5
baz=317
PYM Petit Puy Mans 88.61 333 eP P 08 31 05.1 +0.7
T38A Diamond 88.68 42 P P 08 31 04.8 +0.1
baz=319
S39A Bolivar 88.69 41 P P 08 31 04.4 -0.4
baz=320,SNR=10
W35A Tecumseh 88.69 45 P P 08 31 05.2 +0.4
baz=318
U37A Salina 88.71 43 P P 08 31 05.3 +0.4
baz=319,SNR=5.9
TUL1 Leonard 88.72 44 P P 08 31 05.3 +0.4
baz=318
TUL1 Leonard 88.72 44 eP P 08 31 05.7 +0.7
comp=Z,32nm,1.1s
V36A Jenks 88.73 44 P P 08 31 05.5 +0.5
baz=318,SNR=6.4
R40A Maddies Statio 88.76 40 P P 08 31 05.0 -0.2
baz=320,SNR=13
LTX Lajitas 88.83 53 eP P 08 31 06.2 +0.4
LTX Lajitas 88.83 53 eP P 08 31 06.2 +0.4
TX31 Lajitas Ar. Si 88.83 53 eP P 08 31 06.1 +0.4
TXAR Lajitas Array 88.83 53 P P 08 31 06.2 +0.4
comp=Z,8.1nm,0.7s,baz=297,slow=3.3,SNR=111
ABTX Abilene, Hawle 88.95 48 P P 08 31 06.3 +0.1
baz=316,SNR=8.8
ABTX Abilene, Hawle 88.95 48 eP P 08 31 06.8 +0.6
comp=Z,31nm,0.9s
Z33A Whitaker Ranch 88.98 47 P P 08 31 06.4 +0.1
baz=317
W36A Wetumka 89.06 44 P P 08 31 06.7 +0.1
baz=318
Y34A Reagan Ranch, 89.07 46 P P 08 31 06.7 0.0
baz=317
V37A Hulbert 89.09 43 P P 08 31 06.7 0.0
baz=319,SNR=11
T39A Clever 89.16 41 P P 08 31 06.6 -0.4
baz=320
S40A Lebanon 89.18 40 P P 08 31 06.9 -0.2
baz=320,SNR=8.4
CEL Celeste 89.18 321 eP P 08 31 07.0 -0.1
comp=Z,34nm,0.9s
X35A Drake 89.19 45 P P 08 31 06.9 -0.3
baz=318,SNR=6.1
HPIG 89.21 56 eP P 08 31 08.5 +0.9
comp=Z,9.1nm,0.8s
133A Hamilton Ranch 89.39 48 P P 08 31 08.3 +0.1
baz=317,SNR=5.8
X36A Centrahoma 89.41 45 P P 08 31 08.5 +0.3
baz=318,SNR=9.9
Z34A Collier Ranch, 89.41 47 P P 08 31 08.1 -0.1
baz=317
HHAR Hobbs 89.43 42 eP P 08 31 08.6 +0.3
comp=Z,18nm,0.9s
W37B Quinton 89.49 44 P P 08 31 08.9 +0.4
baz=319
V38A Canehill 89.50 43 P P 08 31 09.0 +0.3
baz=319,SNR=12
SLM Saint Louis 89.50 38 eP P 08 31 09.1 +0.5
SLM pmax pmax
comp=Z,57nm,0.8s
SLM Saint Louis 89.50 38 eP P 08 31 09.1 +0.5
comp=Z,56nm,0.8s
T40A Mansfield 89.51 41 P P 08 31 08.2 -0.4
baz=320
Y35A Marietta 89.52 46 P P 08 31 08.7 0.0
baz=318
U39A Green Forest 89.60 42 P P 08 31 08.8 -0.3
baz=320,SNR=17
SFIN Lafayette 89.61 35 P P 08 31 09.5 +0.4
baz=324,SNR=5.9
Z35A Perchaven, San 89.81 46 P P 08 31 10.0 -0.1
baz=318,SNR=10
233A Rising Star 89.82 48 P P 08 31 10.6 +0.3
baz=317,SNR=13
134A White-Moore Ra 89.90 47 P P 08 31 10.8 +0.3
baz=317,SNR=5.8
V39A Pettigrew 89.92 42 P P 08 31 10.4 -0.2
baz=320,SNR=12
X37A Clayton 89.93 44 P P 08 31 10.8 +0.1
baz=319
Y36A Durant 89.94 45 P P 08 31 10.8 +0.1
baz=318,SNR=7.3
U40A Yellville 89.94 41 P P 08 31 10.9 +0.2
baz=320,SNR=23
W38A Poteau 90.04 43 P P 08 31 11.6 +0.5
baz=319,SNR=5.7
X38A Whitesboro 90.17 44 P P 08 31 12.1 +0.4
baz=319,SNR=6.1
Y37A Hugo 90.25 45 P P 08 31 12.3 +0.1
baz=318
333A Richland Sprin 90.28 49 P P 08 31 12.3 0.0
baz=317,SNR=17
234A Clairette 90.28 48 P P 08 31 12.7 +0.4
baz=317,SNR=18
135A Vickery Place, 90.29 47 P P 08 31 12.9 +0.5
baz=318
Z36A Blue Ridge 90.32 46 P P 08 31 12.6 +0.1
baz=318,SNR=7.8
W39A Magazine 90.34 43 P P 08 31 12.5 0.0
baz=320
V40A Witts Springs 90.38 42 P P 08 31 12.2 -0.6
baz=320
JCT Junction City 90.40 50 P P 08 31 13.1 +0.1
baz=316
JCT Junction City 90.40 50 eP P 08 31 13.5 +0.5
JCT pmax pmax
comp=Z,30nm,0.7s
JCT Junction City 90.40 50 eP P 08 31 13.5 +0.5
comp=Z,30nm,0.7s
OLIL Olney 90.46 37 eP P 08 31 14.0 +0.9
comp=Z,51nm,0.9s
433A Art 90.62 49 P P 08 31 14.1 +0.1
baz=317,SNR=8.0
X39A Fountain Ranch 90.68 43 P P 08 31 14.7 +0.6
baz=319,SNR=9.8
WHTX Lake Whitney, 90.68 47 P P 08 31 14.8 +0.6
baz=317,SNR=10
WHTX Lake Whitney, 90.68 47 eP P 08 31 14.8 +0.6
comp=Z,53nm,0.8s
334A Lometa 90.71 48 P P 08 31 14.5 +0.1
baz=317,SNR=21
W40A Ferguson Farm, 90.72 42 P P 08 31 14.3 0.0
baz=320,SNR=8.1
SIUC Southern Illin 90.72 38 eP P 08 31 15.2 +0.9
comp=Z,65nm,0.9s
Y38A Idabel 90.78 44 P P 08 31 14.5 -0.1
baz=319
Z37A Pogue Cattle C 90.83 45 P P 08 31 15.4 +0.5
baz=318,SNR=6.0
136A Ennis 90.86 46 P P 08 31 15.2 +0.3
baz=318
PBMO Poplar Bluff 90.86 40 eP P 08 31 15.7 +0.8
comp=Z,52nm,1.0s
MIAR Mount Ida 90.94 43 P P 08 31 15.9 +0.6
baz=320,SNR=8.3
H06N1 SOCORRO T-PHAS 90.97 65 T T 10 12 28.8
SNR=7.1
X201 Greenbrier Sit 91.01 42 eP P 08 31 15.9 +0.3
comp=Z,42nm,1.0s
X301 Greenbrier Sit 91.04 42 eP P 08 31 15.8 0.0
comp=Z,47nm,1.5s
WHAR Wooly Hollow 91.06 42 eP P 08 31 16.0 +0.1
comp=Z,46nm,0.9s
H06E1 SOCORRO T-PHAS 91.06 65 T T 10 12 39.2
SNR=7.0
434A Burnet 91.07 48 P P 08 31 15.8 -0.3
baz=317,SNR=6.2
Y39A Lockesburg 91.12 44 P P 08 31 16.4 +0.2
baz=319,SNR=6.0
Z38A Mt. Pleasant 91.15 45 P P 08 31 15.7 -0.7
baz=319
533A Kerrville 91.15 49 P P 08 31 16.6 +0.1
baz=317
W41A Tony Mavity, V 91.17 42 P P 08 31 16.1 -0.3
baz=320,SNR=7.8
W41B Gary Mavity, V 91.17 42 P P 08 31 16.2 -0.1
baz=320,SNR=7.9
236A Katherine and 91.21 47 P P 08 31 16.8 +0.1
baz=318
335A Moody 91.22 48 P P 08 31 16.5 -0.2
baz=317
X40A Basin Creek Fa 91.38 43 P P 08 31 17.5 +0.1
baz=320,SNR=5.7
MMNY Mt. Morris Dam 91.46 28 eP P 08 31 18.3 +0.7
comp=Z,61nm,0.9s
336A Riesel 91.48 47 P P 08 31 18.0 +0.1
baz=318
435B Jarrell 91.49 48 P P 08 31 18.1 +0.1
baz=317
633A Saathoff Ranch 91.51 50 P P 08 31 18.4 +0.3
baz=316,SNR=8.3
534A Blanco 91.51 49 P P 08 31 18.1 0.0
baz=317,SNR=12
138A Matatall Enter 91.53 45 P P 08 31 18.4 +0.2
baz=319
ACSO Alum Creek Sta 91.55 33 eP P 08 31 18.8 +0.8

	comp=Z,30nm,0.9s							
Z39A	**Irene McRaven,** baz=319	**91.60**	**44**	P		**P**	**08 31 18.0**	**-0.4**
237A	**Washetta, Mont** baz=318	**91.62**	**46**	P		**P**	**08 31 18.3**	**-0.2**
WCI	**Wyandotte Cave**	**91.71**	**36**	*e*P		**P**	**08 31 19.5**	**+0.6**
WCI				pmax		pmax		
	comp=Z,36nm,1.3s							
WCI	**Wyandotte Cave** comp=Z,36nm,1.3s	**91.71**	**36**	*e*P		**P**	**08 31 19.5**	**+0.6**
M54A	**Oil Creek Stat** baz=328	**91.84**	**30**	P		**P**	**08 31 19.2**	**-0.2**
832A	**Faith Ranch, C** baz=316	**91.86**	**51**	P		**P**	**08 31 20.0**	**+0.3**
436A	**Wall Ranch, Ga** baz=318	**91.96**	**48**	P		**P**	**08 31 20.8**	**+0.6**
733A	**Divot King Ran** baz=316	**91.97**	**51**	P		**P**	**08 31 20.5**	**+0.3**
238A	**Jacksonville** baz=319	**92.00**	**46**	P		**P**	**08 31 20.9**	**+0.6**
Z40A	**Long Farm, Mag** baz=320	**92.01**	**44**	P		**P**	**08 31 20.7**	**+0.4**
535A	**Dale** baz=317	**92.05**	**49**	P		**P**	**08 31 20.7**	**+0.1**
634A	**China Grove, S** baz=317	**92.06**	**50**	P		**P**	**08 31 21.1**	**+0.5**
337A	**Centerville** baz=318	**92.08**	**47**	P		**P**	**08 31 21.2**	**+0.5**
N54A	**Moraine State** baz=328	**92.17**	**31**	P		**P**	**08 31 20.9**	**0.0**
833A	**Chaparral WMA,** baz=316	**92.19**	**51**	P		**P**	**08 31 21.8**	**+0.5**
536A	**Bastrop** baz=318	**92.31**	**48**	P		**P**	**08 31 22.3**	**+0.5**
734A	**La Parita Cree** baz=317	**92.32**	**50**	P		**P**	**08 31 22.4**	**+0.5**
239A	**Gary** baz=319	**92.36**	**45**	P		**P**	**08 31 21.8**	**-0.1**
338A	**Crockett** baz=319	**92.38**	**46**	P		**P**	**08 31 21.2**	**-0.9**
140A	**Cam and Jess,** baz=320	**92.38**	**44**	P		**P**	**08 31 22.3**	**+0.2**
635A	**Leesville** baz=317	**92.40**	**49**	P		**P**	**08 31 22.6**	**+0.4**
Y42A	**Garnett, Star** baz=321	**92.44**	**42**	P		**P**	**08 31 22.7**	**+0.5**
WVT	**Waverly**	**92.66**	**38**	*e*P		**P**	**08 31 23.8**	**+0.5**
WVT				pmax		pmax		
	comp=Z,14nm,0.9s							
WVT	**Waverly** comp=Z,14nm,0.9s	**92.66**	**38**	*e*P		**P**	**08 31 23.8**	**+0.5**
438A	**Sam Houston St** baz=318	**92.74**	**47**	P		**P**	**08 31 24.2**	**+0.5**
537A	**Green Hill Far** baz=318	**92.75**	**48**	P		**P**	**08 31 24.3**	**+0.5**
636A	**Smothers Creek** baz=318	**92.75**	**49**	P		**P**	**08 31 24.3**	**+0.5**
735A	**Kenedy** baz=317	**92.77**	**50**	P		**P**	**08 31 24.9**	**+1.0**
933A	**Laredo** baz=316,SNR=7.0	**92.78**	**51**	P		**P**	**08 31 25.2**	**+1.3**
141A	**Papa Simpson,** baz=320	**92.78**	**44**	P		**P**	**08 31 24.5**	**+0.6**
834A	**Tilden** baz=317	**92.85**	**50**	P		**P**	**08 31 24.8**	**+0.5**
439A	**Center Grove,** baz=319	**93.11**	**46**	P		**P**	**08 31 25.9**	**+0.5**
538A	**Harpers Horsep** baz=318	**93.12**	**47**	P		**P**	**08 31 26.0**	**+0.5**
340A	**Bronson** baz=319	**93.13**	**45**	P		**P**	**08 31 25.3**	**-0.3**
736A	**Circle Diamond** baz=318	**93.13**	**49**	P		**P**	**08 31 25.5**	**-0.1**
OXF	**Oxford**	**93.15**	**40**	*e*P		**P**	**08 31 26.1**	**+0.6**
OXF	**Oxford**	**93.15**	**40**	*e*P		**P**	**08 31 26.1**	**+0.6**
Y44A	**Strider, Charl** baz=322	**93.17**	**41**	P		**P**	**08 31 25.8**	**+0.2**
835A	**Beeville** baz=317	**93.17**	**50**	P		**P**	**08 31 26.6**	**+0.9**
934A	**Benavides** baz=317	**93.25**	**51**	P		**P**	**08 31 26.9**	**+0.8**
O56A	**Blue Knob Stat** baz=329	**93.33**	**30**	P		**P**	**08 31 26.0**	**-0.4**
MCWV	**Mont Chateau**	**93.33**	**31**	*e*P		**P**	**08 31 27.4**	**+1.1**
034A	**Hebbronville** baz=317	**93.53**	**51**	P		**P**	**08 31 28.5**	**+1.0**
Y45A	**Yeager Farm, C** baz=322	**93.58**	**41**	P		**P**	**08 31 26.9**	**-0.7**
N59A	**State Game Lan** baz=331	**93.83**	**28**	P		**P**	**08 31 28.0**	**-0.6**
Y46A	**Houston** baz=322	**93.92**	**40**	P		**P**	**08 31 28.9**	**-0.2**
738A	**Farr-Stevens R** baz=318	**94.06**	**48**	P		**P**	**08 31 29.4**	**-0.4**
SWET	**Sewanee** comp=Z,7.2nm,0.9s	**94.31**	**38**	*e*P		**P**	**08 31 31.0**	**0.0**
TZTN	**Tazewell** comp=Z,56nm,1.4s	**94.34**	**35**	*e*P		**P**	**08 31 31.5**	**+0.5**
035Z	**Hargill** baz=317	**94.35**	**51**	P		**P**	**08 31 31.7**	**+0.5**
244A	**Avery, Jackson** baz=321	**94.41**	**43**	P		**P**	**08 31 31.4**	**0.0**
TKL	**Tuckaleechee C**	**94.97**	**36**	*e*P		**P**	**08 31 34.2**	**+0.3**
TKL				pmax		pmax		
	comp=Z,13nm,0.8s							
TKL	**Tuckaleechee C** comp=Z,13nm,0.8s	**94.97**	**36**	*e*P		**P**	**08 31 34.2**	**+0.3**
BLA	**Blacksburg**	**95.17**	**33**	*e*P		**P**	**08 31 37.5**	**+2.7**
BLA				pmax		pmax		
	comp=Z,20nm,0.9s							
BLA	**Blacksburg** comp=Z,20nm,0.9s	**95.17**	**33**	*e*P		**P**	**08 31 37.5**	**+2.7**
347A	**Saraland** baz=322	**96.04**	**42**	P		**P**	**08 31 39.0**	**+0.1**
ES19	**SONSECA Array**	**96.35**	**334**	*e*P		**P**	**08 31 40.5**	**+0.3**
ESDC	**Sonseca Array** comp=Z,1.8nm,0.8s,baz=14,slow=4.9,SNR=11	**96.40**	**334**	P		**P**	**08 31 40.3**	**-0.1**
ESDC				PP		**PP**	**08 35 34.0**	**+0.8**
	comp=Z,1.3nm,0.8s,baz=19,slow=8.0,SNR=4.9							
ESDC				LR		LR	09 20 02.7	
	comp=Z,297nm,19.1s,baz=45,slow=38							
RKT	**Rikitea** comp=Z,266nm,24.2s	**98.67**	**112**	*e*LR		LR	09 03 49.3	
KMBO	**Kilima Mbogo** comp=Z,0.9nm,0.4s,baz=34,slow=16,SNR=3.5	**102.41**	**278**	P		**Pdif**	**08 32 07.0**	**-0.9**
VNDA	**Vanda** comp=Z,1.7nm,1.0s,baz=320,slow=5.2,SNR=5.1	**116.22**	**175**	PKP		**PKPdf**	**08 36 52.0**	**-1.3**
VNDA	**Vanda**	**116.22**	**175**	PKIKP		**PKPdf**	**08 36 52.0**	**-1.3**
VNDA				pmax		pmax		
	comp=Z,2.0nm,1.0s							
TOA1	**Torodi Ar. Sit**	**116.84**	**316**	*e*PKPdf		**PKPdf**	**08 36 54.9**	**-1.5**
TOA1				*e*PP		**PP**	**08 38 01.9**	**-2.3**
TOA1				*e*PKKPbc		**PKKPbc**	**08 47 20.9**	**-0.2**
TOA0	**Torodi Ar. Sit**	**116.85**	**316**	*e*PKPdf		**PKPdf**	**08 36 55.3**	**-1.0**
TOA0				*e*PKPdf		**PKiKP**	**08 36 55.9**	**-0.5**
TORD	**Torodi Ar. Bea** comp=Z,2.0nm,1.0s,baz=14,slow=2.8,SNR=7.4	**116.85**	**316**	PKP		**PKPdf**	**08 36 54.9**	**-1.5**
TORD				PP		**PP**	**08 38 01.9**	**-2.3**
	comp=Z,4.2nm,0.9s,baz=42,slow=6.0,SNR=8.2							
TORD				PKKPbc		**PKKPbc**	**08 47 20.9**	**-0.2**
	comp=Z,1.6nm,1.1s,baz=260,slow=1.6,SNR=4.8							
MAW	**Mawson** comp=Z,1.7nm,0.5s,baz=276,slow=9.2,SNR=2.3	**120.98**	**206**	PKP		**PKPdf**	**08 37 02.2**	**-0.3**
MAW	**Mawson**	**120.98**	**206**	*e*PKIKP		**PKPdf**	**08 37 04.8**	**+2.2**
MAW	**Mawson**	**120.98**	**206**	*e*PKPdf		**PKPdf**	**08 37 04.8**	**+2.2**
OCAC	**Ocana**	**123.07**	**43**	*e*P		**PKPdf**	**08 37 08.0**	**-0.5**
GRMC	**Gramalote, San**	**123.78**	**43**	*e*P		**PKPdf**	**08 37 09.1**	**-0.8**
MALC	**Bahia Malaga**	**124.20**	**50**	*e*P		**PKPdf**	**08 37 08.0**	**-2.5**
RUSC	**La Rusia**	**125.14**	**45**	*e*P		**PKPdf**	**08 37 10.8**	**-2.1**
ROSC	**El Rosal** comp=Z,6.6nm,0.8s,baz=144,slow=2.7,SNR=6.1	**125.31**	**47**	PKP		**PKPdf**	**08 37 13.3**	**+0.2**
ROSC	**El Rosal**	**125.31**	**47**	*e*PKPdf		**PKPdf**	**08 37 13.9**	**+0.7**
DBIC	**Dimbokro** comp=Z,5.5nm,0.9s,baz=16,slow=2.5,SNR=4.8	**125.76**	**318**	PKP		**PKPdf**	**08 37 13.2**	**-0.3**
POPC	**Popayan, Colom**	**125.76**	**51**	*e*P		**PKPdf**	**08 37 11.9**	**-1.9**
CHIC	**Chingaza**	**125.82**	**46**	*e*P		**PKPdf**	**08 37 12.5**	**-1.6**
QSPA	**South Pole Qui**	**128.07**	**180**	*e*PKPdf		**PKPdf**	**08 37 16.3**	**0.0**
TSUM	**Tsumeb**	**128.62**	**275**	*e*PKPdf		**PKPdf**	**08 37 19.8**	**+0.9**
SYO	**Syowa Base**	**129.65**	**207**	*e*PP		PP	08 39 35.0	+4.5
PTGA	**Pitinga** comp=Z,5.1nm,0.7s,baz=319,slow=19,SNR=4.9	**137.40**	**34**	PKP		**PKPdf**	**08 37 34.2**	**-1.3**
SNAA	**Sanae**	**142.17**	**197**	PKP		PKPpre	08 37 37.3	
VNA2	**Neumayer--Watz** baz=110,slow=3.1	**143.74**	**196**	PKP		PKPab	08 37 42.5	+0.5
VNA3	**Neumayer Olymp**	**143.98**	**195**	PKP		PKPbc	08 37 43.4	-0.1
VNA1	**Neumayer--Stat**	**144.14**	**196**	PKP		PKPbc	08 37 44.3	+0.3
LPAZ	**La Paz**	**145.49**	**59**	PKPbc		**PKPdf**	**08 37 50.5**	**-0.1**
	comp=Z,28nm,0.8s,baz=330,slow=4.1,SNR=90							
RCBR	**Riachuelo** comp=Z,9.5nm,0.7s,baz=332,slow=5.7,SNR=5.5	**147.60**	**356**	PKPbc		**PKPbc**	**08 37 56.6**	**+0.4**
SIV	**San Ignacio** comp=Z,20nm,0.6s,baz=290,slow=2.4,SNR=34	**149.76**	**49**	PKPbc		**PKPbc**	**08 38 01.3**	**-0.4**
LCO	**Las Campanas**	**151.21**	**81**	*e*PKPbc		**PKPbc**	**08 38 05.7**	**+0.6**
HJA	**Humahuaca**	**152.03**	**65**	*i* P		**PKPbc**	**08 38 07.0**	**-0.2**
ROC1	**El Roble**	**152.57**	**89**	*i* P		**PKPbc**	**08 38 06.8**	**-1.3**
ROC1	**El Roble**	**152.57**	**89**	*e*PKPbc		**PKPbc**	**08 38 08.3**	**+0.2**
AZAP	**Zapla**	**152.90**	**67**	*i* P		**PKPbc**	**08 38 08.1**	**-0.9**
VCA	**Vinchina**	**153.01**	**78**	*i* P		**PKPbc**	**08 38 08.9**	**-0.2**
AGUA	**GUANDACOL**	**153.14**	**80**	*i* P		**PKPbc**	**08 38 09.2**	**-0.1**
ALOL	**LOMAS DE OLMED**	**153.42**	**65**	*i* P		**PKPbc**	**08 38 10.2**	**+0.3**
RTLS	**Leoncito**	**153.49**	**85**	*i* P		**PKPbc**	**08 38 09.4**	**-0.8**
RTLL	**Cerro Villicun**	**153.95**	**84**	*i* P		**PKPbc**	**08 38 11.2**	**+0.4**
ARCO	**CERRO ARCO**	**154.16**	**87**	*i* P		**PKPbc**	**08 38 11.2**	**-0.2**
AHML	**Horco Molle**	**154.19**	**72**	*i* P		**PKPdf**	**08 38 02.1**	**-1.2**
AVFE	**Valle Fertil**	**154.46**	**82**	*i* P		**PKPbc**	**08 38 11.5**	**-0.5**
PLCA	**Paso Flores** comp=Z,7.2nm,1.0s,baz=282,slow=3.3,SNR=6.8	**154.70**	**106**	PKPbc		**PKPbc**	**08 38 12.9**	**+0.7**
PLCA	**Paso Flores**	**154.70**	**106**	*e*PKPbc		**PKPbc**	**08 38 12.9**	**+0.7**
PLCA				*e*PKPab		**PKPab**	**08 38 29.5**	**+2.2**
CYA	**Choya**	**154.70**	**75**	*i* P		**PKPbc**	**08 38 12.0**	**-0.5**
TRQA	**Tornquist**	**161.00**	**97**	*e*PKPab		**PKPab**	**08 38 55.1**	**+0.6**

CASC 21 08:24:12.1±1.8, 11°39N×87°43W, h36km±999km, MD4.1, ML2.8, Near coast of Nicaragua

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
COPN	**Copaltepe**	**1.14**	**46**	*e*P	Pn	08 24 31.4	-0.1
CNGN	**Cerro Negro**	**1.31**	**33**	*e*P	Pn	08 24 33.4	-0.6
CNGN					AML	08 24 55.7	
	comp=E,86nm,0.4s						
XAVN	**Gruta Xavier**	**1.32**	**55**	*e*P	Pn	08 24 34.1	+0.1
MOMN	**Momotombo**	**1.33**	**40**	*e*P	Pn	08 24 34.6	+0.4
APYN	**Apoyeque**	**1.35**	**51**	*e*P	Pn	08 24 34.6	+0.1
CRIN	**San Cristobal**	**1.36**	**16**	*e*P	Pn	08 24 34.6	0.0
CRIN					AML	08 24 53.0	
	comp=N,404nm,0.4s						
TISN	**Laguna Tiscapa**	**1.36**	**56**	*e*P	Pn	08 24 34.9	+0.4
MGAN	**Managua**	**1.38**	**57**	*e*P	Pn	08 24 34.3	-0.6
MGAN				*e*S	Sn	08 24 53.4	+1.5
MGAN					AML	08 24 56.2	
	comp=N,26nm,0.3s						
CSGN	**Cosiguina Volc**	**1.58**	**355**	*e*P	Pn	08 24 36.6	-1.2
BOAB	**BOACO BROADBAN**	**2.02**	**58**	*e*P	Pn	08 24 43.0	-0.6
JCR	**Jicaral**	**2.74**	**124**	*e*P	Pn	08 24 53.6	0.0
JCR				*e*S	Sn	08 25 25.1	-0.5
QCR	**Quepos**	**3.75**	**121**	*e*P	Pn	08 25 08.9	+1.4
URSC	**Urasca**	**3.90**	**113**	*e*P	Pn	08 25 11.8	+2.0
URSC				*e*S	Sn	08 25 58.5	+4.1
BUS	**Buena Vista**	**4.04**	**116**	*e*P	Pn	08 25 13.8	+2.0
BUS				*e*S	Sn	08 25 59.7	+1.5

*ISCJB **21** 08:41:18.1±0.8, 9°86S±0°07×107°30E±0°06, h10km, mb3.9/7, MS4.5/1, Error ellipse: s-maj=10.7km s-min=7.2km az=37.4*
*DJA **21** 08:41:22.3±0.4, 10°S±4°×10°7E±°, h10km, M4.5/21, mB5.3/2, mb4.8/9, MLv4.4/21, Mw(mB)4.7/2*
*IDC **21** 08:41:38.5±2.2, 8°30S×109°18E, h114km±25km, mb3.5/6, mb1 3.6/8, mb1mx3.4/42, mbtmp3.9/8, MS3.7/2, Ms1 3.8/2, ms1mx2.9/38, Error ellipse: s-maj=94.3km s-min=17.2km az=48.0*

ISC 21 08:41:21.2±1.0, 9°71S±0°07×107°36E±0°08, h10km, n33, σ0s91/29, mb4.0/7, South of Jawa

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CISI	**Cisompet, Garu**	**2.19**	**12**	P	**Pn**	**08 41 58.4**	**+0.7**
CMJI	**Cimerak**	**2.19**	**29**	P	**Pn**	**08 41 57.8**	**0.0**
CMJI				S	**Sn**	**08 42 25.4**	**+0.4**
CNJI	**Cibinong**	**2.40**	**354**	P	**Pn**	**08 42 00.9**	**+0.4**
LEM	**Lembang**	**2.88**	**5**	P	**Pb**	**08 42 13.5**	**+0.7**
LEM	16nm,0.3s,baz=134,slow=11,SNR=25			S	**Sg**	**08 42 51.2**	**-2.5**
	20nm,0.3s,baz=344,slow=20,SNR=8.8						
LEM	**Lembang**	**2.88**	**5**	P	**Pn**	**08 42 07.4**	**+0.1**
CGJI	**Cibinong**	**3.49**	**332**	P	**Pn**	**08 42 15.6**	**0.0**
UGM	**Wanagama**	**3.60**	**61**	P	**Pn**	**08 42 17.3**	**+0.2**
WOJI	**Wonogiri, Jawa**	**3.98**	**62**	P	**Pn**	**08 42 23.1**	**+0.7**
PCJI	**Pacitan**	**4.06**	**69**	P	**Pn**	**08 42 24.0**	**+0.6**
NGJI	**Ngawi**	**4.67**	**60**	P	**Pn**	**08 42 32.0**	**+0.1**
PWJI	**Pagerwojo**	**4.70**	**69**	P	**Pn**	**08 42 31.4**	**-0.8**
MDSI	**Maura Dua** 11nm,0.9s,0.1nm	**6.08**	**328**	P	**Pn**	**08 42 51.7**	**+0.6**
GMJI	**Gumukmas** 65nm,1.0s,0.2nm	**6.18**	**77**	P	**Pn**	**08 42 53.4**	**+0.9**
JAGI	**Jajag, Banyuwa** 63nm,1.0s,0.2nm	**6.82**	**80**	P	**Pn**	**08 43 00.9**	**-0.5**
ABJI	**Asem Bagus** 118nm,0.9s,2μm0.4nm	**7.05**	**75**	P	**Pn**	**08 43 05.4**	**+0.8**
PLAI	**Plampang** 53nm,0.9s	**10.32**	**86**	P	**Pn**	**08 43 50.1**	**+0.7**
TTSI	**Tana Toraja** 22nm,1.1s,1μm	**14.03**	**63**	P	**Pn**	**08 44 41.5**	**+1.2**
SOEI	**Soe** 42nm,1.3s	**16.66**	**92**	P	**Pn**	**08 45 16.1**	**+0.9**
MRSI	**Marisa**	**17.69**	**56**	P	**Pn**	**08 45 28.8**	**+0.9**
FITZ	**Fitzroy Crossi** 0.1nm,0.3s,baz=309,slow=14,SNR=3.8	**19.59**	**117**	P	**P**	**08 45 49.5**	**-0.2**
FITZ				S	S	08 49 11.7	-19
	0.1nm,0.3s,baz=27,slow=18,SNR=2.4						
WRA	**Warramunga Arr** 1.1nm,0.9s,baz=288,slow=11,SNR=2.7	**27.95**	**114**	P	**P**	**08 47 10.3**	**-1.9**
ASAR	**Alice Springs** 0.4nm,0.6s,baz=296,slow=9.4,SNR=3.1	**28.89**	**122**	P	**P**	**08 47 19.0**	**-1.5**
H08S2	**Diego Garcia H** baz=84	**34.52**	**271**	T	T	09 26 16.6	
H08S3	**Diego Garcia H** baz=84	**34.53**	**271**	T	T	09 26 23.4	
H08S1	**Diego Carcia H** baz=84	**34.54**	**271**	T	T	09 26 24.3	
SONM	**Songino Array** 1.3nm,0.7s,baz=178,slow=8.3,SNR=7.7	**57.30**	**359**	P	**P**	**08 51 08.7**	**-0.5**
MKAR	**Makanchi Array** 2.0nm,0.7s,baz=141,slow=7.8,SNR=12	**60.54**	**340**	P	**P**	**08 51 32.0**	**+0.3**
TLY	**Talaya** comp=Z,337nm,20.9s,baz=282,slow=37	**61.22**	**357**	LR	LR	09 18 35.1	
KLR	**Kul'dur** 0.3nm,0.3s,baz=149,slow=12,SNR=1.9	**62.48**	**18**	P	P	08 51 37.0	-7.7
ZALV	**Zalesovo Beam** 0.3nm,0.3s,baz=130,slow=5.5,SNR=3.8	**66.23**	**346**	P	**P**	**08 52 09.1**	**-0.1**
NRIK	**Noril'sk** 2.0nm,0.5s,baz=147,slow=2.6,SNR=4.6	**80.06**	**353**	P	P	08 53 28.0	-2.7
YKA	**Yellowknife Ar** 0.3nm,0.7s,baz=340,slow=1.9,SNR=6.7	**119.26**	**21**	PKP	**PKPdf**	**09 00 10.3**	**0.0**
TXAR	**Lajitas Array** 1.4nm,0.9s,baz=258,slow=2.8,SNR=13	**145.02**	**52**	PKP	**PKPab**	**09 00 59.9**	**+0.9**

IDC 21 08:50:11.0±13.0, 36°05N×143°59E, h0km, mb3.5/2, mb1 3.6/3, mb1mx3.2/52, mbtmp3.4/3, ML2.9/1, Error ellipse: s-maj=314.2km s-min=46.9km az=36.0, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MJAR	**Matsushiro Arr** 0.6nm,0.3s,baz=94,slow=9,SNR=2.1	**4.37**	**278**	Pn	Pn	08 51 18.5	-0.2
MAT	**Matsushiro**	**4.37**	**278**	P	Pn	08 51 20.1	+1.4
MAT				S	Sn	08 52 05.6	-4.8
H11N2	**WAKE ISLAND Hy** baz=310,slow=75,SNR=6.2	**26.14**	**122**	T	T	09 23 38.1	
H11N1	**WAKE ISLAND Hy** baz=310,slow=75,SNR=7.1	**26.15**	**122**	T	T	09 23 35.9	
H11N3	**WAKE ISLAND Hy** baz=310,slow=75,SNR=8.0	**26.16**	**122**	T	T	09 23 39.1	
H11S1	**WAKE ISLAND Hy** baz=312,slow=75,SNR=14	**26.86**	**124**	T	T	09 24 28.0	
H11S3	**WAKE ISLAND Hy** baz=312,slow=75,SNR=10	**26.86**	**124**	T	T	09 24 27.8	
H11S2	**WAKE ISLAND Hy** baz=312,slow=75,SNR=8.7	**26.88**	**124**	T	T	09 24 28.0	
WRA	**Warramunga Arr** 0.5nm,0.6s,baz=10,slow=7.1,SNR=4.8	**56.37**	**190**	P	P	08 59 54.0	0.0
ASAR	**Alice Springs** 0.3nm,0.7s,baz=12,slow=14,SNR=4.1	**60.09**	**190**	P	P	09 00 19.9	-0.2

*ISCJB **21** 09:00:07.0±0.7, 64°71N±0°03×30°8E±0°1, h0km, Error ellipse: s-maj=7.0km s-min=4.0km az=176.8*

*IDC **21** 09:00:08.0±2.6, 64°60N×31°02E, h0km, mb1 2.8/4, mb1mx2.7/46, mbtmp2.7/4, ML2.4/4, Error ellipse: s-maj=37.4km s-min=8.6km az=103.0*
*CSEM **21** 09:00:08.3, 64°72N×30°83E, h0km, ML1.8, Mining explosion.*
*HEL **21** 09:00:08.3±0.2, 64°72N×30°83E, h0km, ML1.8, Explosion*

ISC 21 09:00:07.1±0.9, 64°73N±0°02×30°56E±0°05, h0km, n24, σ1s09/47, Finland-Karelia border region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
KU6	**Riekki**	**1.34**	**348**	*e*P	**Pg**	**09 00 32.5**	**-0.1**
KU6				*e*S	**Sb**	**09 00 50.7**	**+0.1**
KU6				MSG		09 00 53.5	
	comp=Z,11nm,0.1s						
KU6	**Riekki**	**1.34**	**348**	P	**Pg**	**09 00 32.5**	**-0.1**
KU6				S	**Sb**	**09 00 50.7**	**+0.1**
MSF	**Maaselka**	**1.36**	**332**	*e*P	**Pg**	**09 00 33.0**	**-0.1**
MSF				*e*S	**Sb**	**09 00 51.4**	**+0.1**
MSF	**Maaselka**	**1.36**	**332**	P	**Pg**	**09 00 32.9**	**-0.1**
MSF				S	**Sb**	**09 00 51.3**	**+0.1**
KJN	**Kajaani**	**1.41**	**244**	*e*P	**Pg**	**09 00 34.0**	**0.0**
KJN				*e*S	**Sn**	**09 00 54.4**	**+1.1**
KJN	**Kajaani**	**1.41**	**244**	P	**Pg**	**09 00 34.0**	**0.0**
KJN				S	**Sn**	**09 00 54.3**	**+1.1**
JOF	**Joensuu**	**1.84**	**170**	*e*P	**Pn**	**09 00 39.7**	**-0.2**
JOF				*e*SN	**Sb**	**09 01 05.3**	**+0.1**
JOF				MSG		09 01 06.1	
	comp=Z,8.7nm,0.1s						
JOF	**Joensuu**	**1.84**	**170**	P	**Pn**	**09 00 39.7**	**-0.2**
JOF				Sn	**Sb**	**09 01 05.3**	**+0.1**
OUL	**Oulu**	**2.04**	**282**	*e*P	**Pg**	**09 00 45.4**	**-0.6**
OUL				*e*SG	**Sg**	**09 01 13.9**	**+1.5**
OUL	**Oulu**	**2.04**	**282**	P	**Pg**	**09 00 45.4**	**-0.6**
OUL				Sg	**Sg**	**09 01 13.9**	**+1.5**
OUFX	**Oulainen**	**2.57**	**264**	*e*P	**Pb**	**09 00 53.1**	**-0.9**
OUFX				*e*SB	**Sg**	**09 01 28.6**	**-1.0**
OUFX	**Oulainen**	**2.57**	**264**	P	**Pb**	**09 00 53.1**	**-0.9**
OUFX				Sb	**Sg**	**09 01 28.5**	**-1.0**
RNF	**Rovaniemi**	**2.68**	**317**	*e*P	**Pb**	**09 00 53.6**	**-2.2**
RNF				*e*S	**Sb**	**09 01 29.4**	**+0.2**
RNF	**Rovaniemi**	**2.68**	**317**	P	**Pb**	**09 00 53.6**	**-2.2**
RNF				S	**Sb**	**09 01 29.3**	**+0.2**
TOF	**Tornio**	**2.95**	**300**	*e*P	**Pb**	**09 00 59.7**	**-0.9**
TOF				*e*S	**Sb**	**09 01 35.5**	**-1.6**
TOF	**Tornio**	**2.95**	**300**	P	**Pb**	**09 00 59.6**	**-0.9**
TOF				S	**Sb**	**09 01 35.4**	**-1.6**
VRF	**Varrio**	**3.06**	**353**	*e*P	**Pn**	**09 00 58.8**	**+2.2**
VRF				*e*SG	**Sg**	**09 01 43.3**	**-1.9**
VRF	**Varrio**	**3.06**	**353**	P	**Pn**	**09 00 58.8**	**+2.2**
VRF				Sg	**Sg**	**09 01 43.3**	**-1.9**
SGF	**Sodankyl**	**3.19**	**331**	*e*PB	**Pb**	**09 01 04.5**	**0.0**
SGF				*e*SB	**Sb**	**09 01 45.2**	**+1.3**
SGF	**Sodankyl**	**3.19**	**331**	Pb	**Pb**	**09 01 04.5**	**0.0**
SGF				Sb	**Sb**	**09 01 45.2**	**+1.3**
FINES	**FINESS Array B** comp=Z,0.1nm,0.3s,baz=36,slow=13,SNR=5.0	**3.88**	**214**	Pn	**Pn**	**09 01 08.3**	**+0.4**
FINES				Pg	**Pb**	**09 01 15.3**	**-1.0**
	comp=Z,0.4nm,0.3s,baz=35,slow=14,SNR=6.0						
FINES				Sn	**Sn**	**09 01 54.5**	**+0.4**
	comp=Z,0.2nm,0.3s,baz=38,slow=18,SNR=2.3						
FINES				Lg	Lg	09 02 07.2	
	comp=Z,1.0nm,0.3s,baz=33,slow=28,SNR=10						
ARCES	**ARCESS Array B** comp=Z,0.3nm,0.3s,baz=154,slow=14,SNR=41	**5.22**	**340**	Pn	**Pn**	**09 01 27.1**	**+0.8**
ARCES				Sn	**Sn**	**09 02 26.0**	**-1.1**
	comp=Z,0.2nm,0.3s,baz=158,slow=23,SNR=4.0						
ARCES				Lg	Lg	09 02 48.7	
	comp=Z,0.5nm,0.3s,baz=140,slow=36,SNR=4.8						
HFS	**Hagfors** comp=Z,0.1nm,0.3s,baz=45,slow=14,SNR=3.6	**9.07**	**247**	Pn	**Pn**	**09 02 19.2**	**+0.1**
HFS				Lg	Lg	09 04 46.0	
	comp=Z,0.1nm,0.3s,baz=49,slow=25,SNR=2.9						
NOA	**NORSAR Array B** comp=Z,0.1nm,0.3s,baz=64,slow=11,SNR=4.2	**9.57**	**256**	Pn	**Pn**	**09 02 25.9**	**-0.1**

IDC 21 09:01:37.0±2.8, 53°53N×88°04E, h0km, mb1 3.4/2, mb1mx3.1/46, mbtmp3.4/2, ML3.0/2, Error ellipse: s-maj=23.5km s-min=16.0km az=61.0, Southwestern Siberia

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
I46RU	**ZALESOVO INFRA** baz=99,slow=327,SNR=26	**1.96**	**284**	*i*		09 14 00.0	
ZALV	**Zalesovo Beam** 4.3nm,0.3s,baz=100,slow=14,SNR=44	**1.96**	**284**	Pn	Pn	09 02 10.8	-0.6
ZALV				Lg	Lg	09 02 38.1	
	6.2nm,0.3s,baz=102,slow=28,SNR=19						
KURBB	**Kurchatov Arra** 0.2nm,0.3s,baz=62,slow=14,SNR=7.9	**6.54**	**247**	Pn	Pn	09 03 14.9	+0.5
KURBB				Sn	Sn	09 04 30.8	+1.2
	0.1nm,0.3s,baz=64,slow=23,SNR=4.3						
KURBB				Lg	Lg	09 05 03.4	
	0.1nm,0.3s,baz=63,slow=30,SNR=7.5						
MKAR	**Mak

ANWZ Angora Road 14.80 197 SN S 09 17 31.1 -2.1
DZM Mont Dzumac 14.91 283 P Pn 09 14 52.2 +0.9
0.8nm,0.3s,baz=119,slow=18,SNR=9.1
BFZ Birch Farm 15.07 197 SN S 09 17 33.8 -5.2
MRZ Mangatainoka R 15.24 199 *e*PN **P 09 14 51.4 -3.0**
MRZ SN S 09 17 34.1 -8.4
KIW Kapiti Island 15.63 201 SN S 09 17 47.1 -3.3
DUWZ D'Urville Isla 15.91 203 *e*PN **P 09 15 00.4 -1.3**
DUWZ SN S 09 17 54.9 -1.1
QRZ Quartz Range 16.45 206 *e*PN **Pn 09 15 08.8 -0.5**
QRZ SN S 09 18 06.9 +0.2
NNZ Nelson 16.47 204 SN S 09 18 06.8 -0.2
THZ Tophouse 17.12 204 PN Pn 09 15 15.3 -1.8
THZ SN S 09 18 21.0 +0.8
THZ SN 09 18 21.3
KHZ Kahutara 17.47 202 PN Pn 09 15 19.1 -2.0
KHZ SN S 09 18 27.6 +0.5
DSZ Denniston Nort 17.52 206 SN S 09 18 29.8 +1.6
OXZ Oxford 18.79 203 SN S 09 18 53.5 +0.3
RPZ Rata Peaks 19.49 205 P Pn 09 15 48.3 +3.5
5.6nm,0.6s,baz=194,slow=4.2,SNR=5.7
RPZ S **S 09 19 10.8 +3.9**
11nm,0.6s,baz=319,slow=23,SNR=10
PPT Papeete 27.64 77 LR LR 09 26 56.5
comp=Z,40nm,18.5s,baz=324,slow=34
STKA Stephens Creek 35.68 251 P P 09 18 09.7 +3.1
2.1nm,0.4s,baz=100,slow=16,SNR=14
STKA PcP **PcP 09 20 32.8 +3.6**
3.2nm,0.5s,baz=96,slow=6.9,SNR=8.6
ASAR Alice Springs 43.56 263 P P 09 19 13.1 +1.3
2.8nm,0.4s,baz=94,slow=6.8,SNR=87
ASAR PcP **PP 09 20 56.7 -1.9**
1.3nm,1.0s,baz=118,slow=5.1,SNR=4.9
ASAR S **S 09 25 22.1 +0.3**
0.5nm,0.8s,baz=100,slow=16,SNR=4.3
WRAB Tennant Creek 44.18 268 *e*P **P 09 19 17.1 +0.5**
5.2nm,0.6s
WRA Warramunga Arr 44.19 268 P P 09 19 17.4 +0.7
3.2nm,0.5s,baz=102,slow=7.7,SNR=96
WRA PcP **PcP 09 20 57.9 +1.1**
1.6nm,0.9s,baz=105,slow=3.8,SNR=6.4
WRA LR LR 09 36 59.6
comp=Z,60nm,20.2s,baz=115,slow=35
VNDA Vanda 52.09 185 P P 09 20 23.3 +7.3
2.1nm,0.6s,baz=9.5,slow=7.1,SNR=18
GUMO Guam 53.75 313 *e*P **P 09 20 28.5 -0.4**
QSPA South Pole Qui 63.72 180 *e*P P 09 21 43.0 +6.1
48nm,0.7s
MJAR Matsushiro Arr 75.01 325 P P 09 22 44.8 -1.3
1.9nm,0.8s,baz=134,slow=7.0,SNR=6.0
MAW Mawson 76.10 200 P P 09 22 57.2 +5.5
10nm,0.6s,baz=136,slow=9.0,SNR=16
SYO Syowa Base 81.04 193‖ *e*P P 09 23 21.6 +3.0
SYO Syowa Base 81.04 193‖ *e*P P 09 23 25.0 +6.4
KSRS Korea Array 81.36 319 P P 09 23 21.1 +0.3
1.6nm,0.7s,baz=136,slow=5.3,SNR=6.7
KSAR Wonju Array Be 81.38 319 P P 09 23 21.1 +0.2
PETK Petropavlovsk- 81.95 345 P P 09 23 22.4 -1.1
4.3nm,0.6s,baz=103,slow=6.9,SNR=6.8
SNAA Sanae 82.16 178 P P 09 23 29.3 +4.8
VNA3 Neumayer Olymp 82.30 176 P P 09 23 29.9 +4.6
VNA2 Neumayer--Watz 82.74 177 P P 09 23 32.5 +5.1
baz=181,slow=3.7
VNA1 Neumayer--Stat 82.96 177 P P 09 23 33.6 +5.0
USRK Ussuriysk Ar. 83.87 326 P P 09 23 32.8 -0.7
1.4nm,0.5s,baz=132,slow=3.9,SNR=6.3
YBH Yreka Blue Hor 84.82 38 P P 09 23 37.2 -1.2
0.9nm,0.7s,baz=225,slow=7.1,SNR=5.3
PLCA Paso Flores 85.18 133 P P 09 23 44.3 +3.8
4.1nm,1.0s,baz=278,slow=5.1,SNR=5.8
NVAR Mina Array Bea 85.23 43 P P 09 23 41.0 +0.3
1.8nm,0.8s,baz=227,slow=9.3,SNR=5.9
SEY Seymchan 92.09 347 P P 09 24 11.2 -1.0
0.9nm,0.5s,baz=128,slow=7.5,SNR=6.0
PDAR Pinedale Array 93.16 43 P P 09 24 17.8 -0.2
0.7nm,0.7s,baz=205,slow=4.0,SNR=7.3
ILAR Eielson Array 94.00 13 P P 09 24 20.0 -1.0
0.4nm,0.9s,baz=213,slow=9.7,SNR=2.8
YKA Yellowknife Ar 101.78 25 PKKPbc PKKPbc 09 41 03.9 +0.7
0.1nm,0.8s,baz=46,slow=3.1,SNR=4.3
ZALV Zalesovo Beam 115.07 320 PKP PKPdf 09 29 43.4 +0.6
0.4nm,0.4s,baz=72,slow=4.7,SNR=2.4
MKAR Makanchi Array 115.22 312 PKKPbc PKKPbc 09 40 22.9 +2.9
0.4nm,0.4s,baz=267,slow=4.2,SNR=4.6
BOSA Boshof 120.97 204 PKP PKPdf 09 29 58.2 +2.9
1.9nm,0.5s,baz=16,slow=7.6,SNR=2.4
FRB Frobisher Bay 121.87 30 PKP PKPdf 09 29 55.9 +0.3
1.0nm,0.6s,baz=243,slow=4.5,SNR=3.2
ARU Arti 130.00 323 PKP PKPdf 09 30 12.5 +1.1
7.9nm,0.4s,baz=119,slow=3.3,SNR=9.2
GEYT Alibeck 131.84 298 SKPbc **SKiKP 09 33 23.0 -5.5**
1.5nm,0.4s,baz=172,slow=3.0,SNR=3.9
FINES FINESS Array B 141.39 342 PKhKP PKPpre 09 30 25.6
1.5nm,0.8s,baz=46,slow=5.5,SNR=5.4
FINES SKPbc **SKiKP 09 33 50.1 +2.8**
1.3nm,0.8s,baz=46,slow=4.0,SNR=4.3
NB2 NORSAR Subarra144.80 352 PKP PKPdf 09 30 37.6 -0.9
comp=Z,4.1nm,0.8s,baz=11,slow=3.4
NOA NORSAR Array B144.80 352 PKP PKPdf 09 30 37.7 -0.7
comp=Z,1.2nm,0.6s,baz=10,slow=2.3,SNR=17
HFS Hagfors 145.32 350 PKP PKPab 09 30 39.3 -0.9
comp=Z,5.9nm,0.5s,baz=67,slow=3.9,SNR=26
IZAR Zarasai 145.82 336 *e*P **PKPab 09 30 41.5 -0.7**
IZAR IAmb IAmb 09 30 43.2
comp=Z,23nm,0.6s
IDID Didziasalis 145.97 335 *e*P **PKPab 09 30 42.2 -0.5**
IDID IAmb IAmb 09 30 43.7
comp=Z,5.5nm,0.5s
ISAL Salakas 146.00 336 IAmb IAmb 09 30 43.9
comp=Z,7.6nm,0.7s
AKASG Malin Array Be 148.08 327 PKP PKPbc 09 30 44.1 -3.6
comp=Z,1.1nm,0.5s,baz=38,slow=3.6,SNR=5.3
AKASG PKPbc **PKiKP 09 30 47.8 -1.6**
comp=Z,3.3nm,0.6s,baz=46,slow=4.3,SNR=7.3
ASF Jabal al Asfar 149.19 289 PKPbc PKPab 09 30 53.0 -3.6
comp=Z,3.5nm,0.8s,baz=90,slow=3.2,SNR=4.6
MMAI Mount Meron Ar 150.41 291 PKPbc PKPab 09 30 56.8 -4.9
comp=Z,5.2nm,0.6s,baz=76,slow=7.0,SNR=7.5
BRTR Keskin Array B 150.57 305 PKPbc PKPbc 09 30 55.2 +0.8
comp=Z,1.7nm,0.6s,baz=132,slow=4.4,SNR=7.2
BRTR PKPab **PKPab 09 31 02.9 +0.7**
comp=Z,2.5nm,0.6s,baz=118,slow=3.8,SNR=9.4
EKA Eskdalemuir Ar 150.82 6 PKPbc PKPbc 09 30 52.5 -1.8
comp=Z,2.1nm,0.6s,baz=327,slow=1.2,SNR=9.5
EIL Elat 150.87 284 PKPbc PKPbc 09 30 57.4 +2.2
comp=Z,4.9nm,0.6s,baz=18,slow=4.5,SNR=4.5
GERES GERESS Array B 155.82 341 PKPab PKPab 09 31 23.6 -0.4
comp=Z,0.4nm,0.2s,baz=2.9,slow=7.9,SNR=2.6
DBIC Dimbokro 159.31 160 PKPab PKPab 09 31 44.3 +4.6
comp=Z,2.3nm,0.6s,baz=192,slow=9.3,SNR=4.6
TORD Torodi Ar. Bea 166.83 178 PKP PKPdf 09 31 10.1 +1.7
comp=Z,1.2nm,0.8s,baz=308,slow=0.9,SNR=7.3
TORD PKPab **PKPab 09 32 16.9 +4.3**
comp=Z,4.2nm,0.8s,baz=176,slow=4.1,SNR=17

SJA 21 09:14:02.3±0.4,31.84S×70.12W,h86km±3km,ML1.4, MW3.8,Chile-Argentina border region

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
RTLS	**Leoncito**	**0.70**	**87**	*i* P		Pn	09 14 20.1	+1.3
RTLS				*i* S		Sn	09 14 33.2	+2.2
AUSP	**Uspallata**	**0.73**	**122**	*i* P		Pn	09 14 20.3	+1.3
AUSP				*i* S		Sn	09 14 33.6	+2.1
ASAL	**Salagasta**	**1.32**	**125**	*i* P		Pn	09 14 26.8	+1.2
ASAL				*i* S		Sn	09 14 45.1	+1.8
RTCV	**Cerro Valdivia**	**1.34**	**91**	*i* P		Pn	09 14 27.0	+1.1
ARCO	**CERRO ARCO**	**1.42**	**135**	*i* P		Pn	09 14 28.2	+1.2
ARCO				*i* S		Sn	09 14 47.4	+1.8
ARCO				IAML			09 14 50.9	
	comp=Z,6.2nm,0.2s							
RTLL	**Cerro Villicun**	**1.49**	**70**	*i* P		Pn	09 14 29.4	+1.5
AVFE	**Valle Fertil**	**2.57**	**63**	*i* P		Pn	09 14 43.3	+1.3
AVFE				IAML			09 15 05.5	
	comp=Z,0.9nm,0.4s							

*DDA **21** 09:14:06.9,37.88N×27.45E,h7km,Md2.6,Suspected Mining explosion.*
*ISCJB **21** 09:14:07.2±0.4,37.89N±0.02×27.45E±0.03,h0km,Error ellipse: s-maj=3.5km s-min=2.9km az=162.8*
*CSEM **21** 09:14:07.6±0.1,37.89N×27.46E,h1km,MD2.6,Error ellipse: s-maj=3.6km s-min=2.6km az=77.0,Suspected Mining explosion.*

*ISK **21** 09:14:07.0,37.89N×27.42E,h8km,MD2.6*
ISC 21 09:14:06.8±0.8,37.93N±0.03×27.41E±0.03,h0km,n31, σ0s58/50,Turkey

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
GCAM	**G?zelcaml?**	**0.27**	**211**	*i* P		Pg	09 14 12.0	+0.1
GCAM				*i* S		Sg	09 14 15.1	-0.2
GCAM	**G?zelcaml?**	**0.27**	**211**	P		Pg	09 14 12.0	+0.1
GCAM				S		Sg	09 14 15.1	-0.2
AYDB	**Zeytinkoy-Aydi**	**0.38**	**87**	*e*PG		Pg	09 14 14.7	+0.5
AYDB				*e*SG		Sg	09 14 20.9	+1.8
AYDB	**Zeytinkoy-Aydi**	**0.38**	**87**	*e*Pg		Pg	09 14 14.7	+0.5
AYDB				*e*Sg		Sg	09 14 20.9	+1.8
AYDN	**Tasoluk**	**0.46**	**125**	*i* P		Pg	09 14 15.6	0.0
AYDN				*i* S		Sg	09 14 21.0	-0.5
AYDN	**Tasoluk**	**0.46**	**125**	P		Pg	09 14 15.6	0.0
AYDN				S		Sg	09 14 21.0	-0.5
IZM	**Izmir**	**0.48**	**346**	*e*PG		Pb	09 14 17.8	-0.5
IZM	**Izmir**	**0.48**	**346**	*e*Pg		Pb	09 14 17.8	-0.5
BLCB	**Balcova**	**0.54**	**328**	*e*PG		Pb	09 14 18.9	-0.3
BLCB				*e*SG		Sb	09 14 26.9	-0.6
BLCB	**Balcova**	**0.54**	**328**	*e*Pg		Pb	09 14 18.9	-0.3
BLCB				*e*Sg		Sb	09 14 26.9	-0.6
URLA	**Izmir**	**0.77**	**304**	*e*P		Pn	09 14 25.1	+0.1
URLA				*i* S		Sb	09 14 35.0	+0.8
URLA	**Izmir**	**0.77**	**304**	P		Pn	09 14 25.1	+0.1
URLA				S		Sb	09 14 35.0	+0.8
ZEY	**¯zmir**	**0.78**	**294**	*i* P		Pb	09 14 23.3	+0.1
ZEY				*i* S		Sb	09 14 34.4	+0.1
BDRM	**Kayabasi**	**0.86**	**178**	*i* P		Pg	09 14 22.9	-0.4
BDRM				*i* S		Sg	09 14 34.5	0.0
BDRM	**Kayabasi**	**0.86**	**178**	P		Pg	09 14 22.9	-0.4
BDRM				S		Sg	09 14 34.5	0.0
BODT	**Bodrum**	**0.87**	**185**	*e*PG		Pg	09 14 24.0	+0.6
BODT				*e*SG		Sg	09 14 35.1	+0.5
BODT	**Bodrum**	**0.87**	**185**	*e*Pg		Pg	09 14 24.0	+0.6
BODT				*e*Sg		Sg	09 14 35.1	+0.5
AKHS	**Akhisar**	**1.00**	**18**	*i* P		Pb	09 14 26.9	-0.2
AKHS				*i* S		Sb	09 14 40.3	-0.6
AKHS	**Akhisar**	**1.00**	**18**	P		Pb	09 14 26.9	-0.2
AKHS				S		Sb	09 14 40.3	-0.6
AKS	**Akhisar**	**1.00**	**18**	*e*PG		Pn	09 14 27.6	-0.5
AKS	**Akhisar**	**1.00**	**18**	*e*Pg		Pn	09 14 27.7	-0.5
YER	**Yerkesik**	**1.05**	**138**	*e*PG		Pg	09 14 27.2	+0.2
YER	**Yerkesik**	**1.05**	**138**	*e*Pg		Pg	09 14 27.2	+0.2
KULA	**Kula-Manisa**	**1.15**	**59**	*e*PN		Pb	09 14 29.7	+0.1
KULA	**Kula-Manisa**	**1.15**	**59**	*e*Pn		Pb	09 14 29.7	+0.1
DKL	**Dikili**	**1.21**	**341**	*e*PN		Pn	09 14 31.6	+0.6
DKL	**Dikili**	**1.21**	**341**	*e*Pn		Pn	09 14 31.6	+0.6
DALY	**Dalyan (Mu¨la**	**1.49**	**138**	*e*PN		Pn	09 14 34.5	-0.3
DALY	**Dalyan (Mu¨la**	**1.49**	**138**	*e*Pn		Pn	09 14 34.5	-0.3
DEMI	**Demirci**	**1.52**	**42**	*i* P		Pg	09 14 36.2	+0.3
DEMI				*i* S		Sg	09 14 54.6	-0.9
DEMI	**Demirci**	**1.52**	**42**	P		Pg	09 14 36.2	+0.3
DEMI				S		Sg	09 14 54.6	-0.9

*ISCJB **21** 09:18:01.2±0.3,12.54N±0.05×88.86W±0.05,h40km, mb4.5/74,MS3.9/14,Error ellipse: s-maj=9.0km s-min=3.0km az=44.5*
*BJI **21** 09:18:05.8,12.50N×88.90W,h83km,Ms4.6/2,Ms7 4.4/2*
*IDC **21** 09:18:06.1±2.6,12.78N×88.53W,h63km±23km,mb3.9/15, mb1 4.0/18,mb1mx3.7/56,mbtmp4.1/18,ML2.8/3,MS3.8/13, Ms1 3.8/13,ms1mx3.5/51,Error ellipse: s-maj=31.0km s-min=12.3km az=56.0*
*NEIC **21** 09:18:06.3±0.7,12.48N×88.86W,h76km±7km,mb4.5/70, Error ellipse: s-maj=9.4km s-min=4.7km az=46.0*
*CASC **21** 09:18:11.1±3.5,11.64N×88.49W,h0km±781km,MD4.6*
ISC 21 09:18:03.1±0.5,12.60N±0.08×88.84W±0.08,h40km,n422, σ1s16/412,mb4.5/74,MS3.9/14,2C,Off coast of central America

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
VCR	**Vista de Mar**	**3.99**	**128**	*e*P		Pn	09 19 01.7	-0.2
JTS	**JuntasAbangare**	**4.45**	**121**	P		Pn	09 19 09.8	+1.7
	2.8nm,0.3s,baz=121,slow=22,SNR=54							
JTS				S		Sn	09 19 58.4	-0.3
	3.5nm,0.3s,baz=170,slow=14,SNR=4.2							
JCR	**Jicaral**	**4.56**	**126**	*e*P		Pn	09 19 10.9	+1.2
JCR				*e*S		Sn	09 19 59.2	-2.4
CCIG	**Comitan**	**4.86**	**319**	*e*Pn		Pn	09 19 19.1	+5.2
HDC	**Heredia**	**5.30**	**119**	*e*Pn		Pn	09 19 23.6	+3.7
QCR	**Quepos**	**5.57**	**124**‖	*e*P		Pn	09 19 25.5	+2.0
QCR				*e*S		Sn	09 20 21.1	-5.2
URSC	**Urasca**	**5.67**	**119**	*e*P		Pn	09 19 28.9	+3.8
URSC				*e*S		Sn	09 20 27.6	-1.5
BUS	**Buena Vista**	**5.83**	**121**	*e*P		Pn	09 19 30.4	+2.9
BUS				*e*S		Sn	09 20 30.0	-3.4
BRU2	**Volcan**	**7.13**	**121**	*e*P		Pn	09 19 48.1	+3.1
BRU2				*e*S		Sn	09 20 56.9	-8.0
TBS2		**7.16**	**121**	*e*P		Pn	09 19 45.6	+0.2
TBS2				*e*S		Sn	09 21 04.1	-1.5
CMIG	**Matias Romero**	**7.35**	**308**	P		Pn	09 19 47.6	-0.4
	1.1nm,0.3s,baz=142,slow=9.2,SNR=25							
CMIG				S		Sn	09 21 08.0	-2.3
	0.2nm,0.3s,baz=16,slow=17,SNR=2.2							
TEIG	**Tepich**	**7.60**	**4**	P		Pn	09 19 49.7	-1.7
	0.2nm,0.3s,baz=90,slow=20,SNR=4.0							
TEIG				LR		LR	09 23 12.2	
	comp=Z,528nm,18.5s,baz=254,slow=41							
TEIG	**Tepich**	**7.60**	**4**	P		Pn	09 19 49.6	-1.7
TEIG				*e*Pn		Pn	09 19 57.6	+6.3
BCIP	**Isla Barro Col**	**9.47**	**110**	*e*Pn		Pn	09 20 19.9	+2.9
TLIG	**Tlapa**	**10.61**	**299**	*e*Pn		Pn	09 20 34.5	+1.8
MOTC	**Monteria, Cord**	**13.49**	**105**	*e*P		P	09 21 25.1	+4.6
HELC	**Santa Helena**	**14.59**	**115**‖	*e*P		P	09 21 33.0	-0.1
GUYC	**Guyana, Colomb**	**15.17**	**118**	*e*P		P	09 21 43.7	+4.0
NORC	**Norcasia**	**15.46**	**116**	*e*P		P	09 21 46.3	+3.9
POPC	**Popayan, Colom**	**15.65**	**129**	*e*P		P	09 21 46.3	+1.6
CMBC	**Cumbal**	**15.92**	**136**	*e*P		P	09 21 50.3	+2.3
OTAV	**Otavalo**	**16.03**	**139**	*e*Pn		Pn	09 21 46.3	+0.1
	13nm,1.4s							
OTAV	**Otavalo**	**16.03**	**139**	*e*P		P	09 21 49.0	-0.3
CRUC	**La Cruz**	**16.09**	**132**	*e*P		P	09 21 55.6	+5.8
ROSC	**El Rosal**	**16.28**	**117**	P		Pn	09 21 48.5	-0.9
	0.2nm,0.3s,baz=30,slow=20,SNR=2.0							
ZAIG	**Zacatecas**	**16.52**	**310**	*e*Pn		P	09 21 54.5	+0.1
	6.6nm,1.0s							
FLOC	**Florencia**	**17.05**	**129**	*e*P		P	09 22 02.3	+2.2
034A	**Hebbronville** baz=146	**17.10**	**329**	P		P	09 22 02.1	+1.7
VILC	**Villavicencio,**	**17.18**	**118**	*e*P		P	09 22 03.6	+1.9
934A	**Benavides** baz=147	**17.46**	**330**	P		P	09 22 05.4	+0.9
835A	**Beeville** baz=150	**17.72**	**333**	P		P	09 22 09.5	+2.1
933A	**Laredo** baz=145	**17.84**	**328**	P		P	09 22 09.5	+0.8
834A	**Tilden** baz=148,SNR=8.9	**17.91**	**331**	P		P	09 22 10.6	+1.2
736A	**Circle Diamond** baz=153	**17.98**	**336**	P		P	09 22 11.8	+1.5
637A	**Eagle Lake** baz=156	**18.14**	**339**	P		P	09 22 14.0	+2.0
735A	**Kenedy** baz=151	**18.20**	**334**	P		Pn	09 22 14.2	+1.4
443A	**Delano Plantat** baz=171	**18.28**	**352**	P		Pn	09 22 15.1	+1.4
HKT	**Hockley** 23nm,1.4s	**18.44**	**340**	*e*P		Pn	09 22 18.3	+2.7
636A	**Smothers Creek** baz=154,SNR=14	**18.45**	**337**	P		Pn	09 22 18.0	+2.2
833A	**Chaparral WMA,** baz=146,SNR=5.8	**18.49**	**329**	P		Pn	09 22 17.3	+1.0
734A	**La Parita Cree** baz=149	**18.53**	**332**	P		Pn	09 22 17.8	+1.1
635A	**Leesville** baz=152,SNR=5.2	**18.65**	**335**	P		Pn	09 22 19.5	+1.3
537A	**Green Hill Far** baz=157,SNR=10	**18.72**	**339**	P		Pn	09 22 20.3	+1.3
832A	**Faith Ranch, C** baz=144	**18.75**	**328**	P		Pn	09 22 19.3	-0.1
733A	**Divot King Ran** baz=147,SNR=22	**18.77**	**330**	P		Pn	09 22 19.6	0.0
344A	**Westbrook Farm** baz=174,SNR=11	**18.84**	**355**	P		Pn	09 22 26.3	+5.8
439A	**Center Grove,** baz=162	**18.91**	**344**	P		Pn	09 22 22.5	+1.1
342A	**Flagon Creek P** baz=170	**18.96**	**351**	P		Pn	09 22 23.6	+1.7
536A	**Bastrop** baz=155	**18.99**	**338**	P		Pn	09 22 23.5	+1.3
341A	**Kurthwood** baz=167	**19.06**	**349**	P		Pn	09 22 24.7	+1.6
535A	**Dale** baz=153	**19.14**	**336**	P		Pn	09 22 24.2	+0.1
340A	**Bronson** baz=165	**19.29**	**347**	P		Pn	09 22 26.4	+0.5
633A	**Saathoff Ranch** baz=148,SNR=19	**19.33**	**332**	P		P	09 22 24.8	-0.2
437A	**Phantom Ranch,** baz=158	**19.35**	**341**	P		Pn	09 22 26.5	-0.1
247A	**Quitman** baz=181,SNR=5.2	**19.36**	**1**	P		Pn	09 22 27.9	+1.2
TIGA	**Tifton** baz=196,SNR=6.7	**19.36**	**14**	P		Pn	09 22 28.4	+1.7
TIGA	**Tifton** 30nm,0.6s	**19.36**	**14**	*e*P		Pn	09 22 29.2	+2.6
245A	**Little AP, Sta** baz=177	**19.36**	**357**	P		Pn	09 22 28.4	+1.7
244A	**Avery, Jackson** baz=175,SNR=5.9	**19.42**	**355**	P		Pn	09 22 28.8	+1.3
248A	**Dixon Mills** baz=183	**19.43**	**3**	P		Pn	09 22 28.5	+1.0
534A	**Blanco** baz=151,SNR=11	**19.51**	**334**	P		P	09 22 27.7	+0.7
VBMS	**Vicksburg** 61nm,0.9s	**19.58**	**356**	*e*P		Pn	09 22 30.4	+1.1
338A	**Crockett** baz=161	**19.59**	**343**	P		Pn	09 22 29.1	-0.4
242A	**Grayson** baz=170,SNR=9.2	**19.61**	**352**	P		Pn	09 22 30.7	+1.1
241A	**Mo Tay, Goldon** baz=168,SNR=5.7	**19.69**	**350**	P		Pn	09 22 31.7	+1.1
533A	**Kerrville** baz=150,SNR=24	**19.79**	**333**	P		P	09 22 30.2	+0.1
NATX	**Nacogdoches** baz=163	**19.80**	**345**	P		Pn	09 22 31.7	-0.3
NATX	**Nacogdoches** 57nm,1.3s	**19.80**	**345**	*e*P		Pn	09 22 33.0	+1.0
435B	**Jarrell** baz=154,SNR=11	**19.82**	**337**	P		P	09 22 30.6	+0.2
146A	**Union** baz=179	**19.94**	**359**	P		Pn	09 22 33.7	+0.1
147A	**Livingston** baz=182	**19.98**	**1**	P		Pn	09 22 34.7	+0.6
336A	**Riesel** baz=157	**20.10**	**340**	P		P	09 22 33.1	-0.3
434A	**Burnet** baz=153,SNR=23	**20.11**	**336**	P		P	09 22 33.5	-0.1
335A	**Moody** baz=155,SNR=16	**20.21**	**338**	P		P	09 22 35.1	+0.5
141A	**Papa Simpson,** baz=169	**20.25**	**350**	P		P	09 22 36.1	+1.0
237A	**Washetta, Mont** baz=160	**20.34**	**343**	P		P	09 22 35.8	-0.2
433A	**Art** baz=150,SNR=24	**20.40**	**334**	P		P	09 22 36.6	-0.1
LRAL	**Lakeview Retre** 6.6nm,0.8s	**20.41**	**4**	*e*P		Pn	09 22 40.0	+1.0
JCT	**Junction City** baz=148	**20.48**	**332**	P		P	09 22 37.1	-0.6
JCT	**Junction City** 18nm,0.8s	**20.48**	**332**	*e*P		Pn	09 22 39.0	-0.9
334A	**Lometa** baz=153,SNR=23	**20.56**	**337**	P		P	09 22 38.7	+0.3
236A	**Katherine and** baz=158	**20.56**	**341**	P		P	09 22 38.4	0.0
333A	**Richland Sprin** baz=151,SNR=100	**20.85**	**335**	P		P	09 22 41.5	-0.1
WHTX	**Lake Whitney,** baz=156,SNR=9.9	**20.86**	**339**	P		P	09 22 42.2	+0.5
WHTX	**Lake Whitney,** 33nm,1.0s	**20.86**	**339**	*e*P		P	09 22 42.4	+0.8
Z40A	**Long Farm, Mag** baz=168	**20.98**	**349**	P		P	09 22 44.0	+1.1
136A	**Ennis** baz=159,SNR=7.5	**21.00**	**342**	P		P	09 22 43.7	+0.6
234A	**Clairette** baz=154	**21.12**	**338**	P		P	09 22 45.0	+0.5
Y45A	**Yeager Farm, C** baz=178	**21.18**	**358**	P		P	09 22 47.5	+2.5
Y46A	**Houston** baz=180	**21.18**	**360**	P		P	09 22 47.5	+2.4
Y47A	**UCPARC, Winfie** baz=183,SNR=18	**21.22**	**2**	P		P	09 22 48.2	+2.6
HPIG	10nm,1.0s	**21.27**	**315**	*e*P		P	09 22 47.6	+1.2
GOGA	**Godfrey** 13nm,0.6s	**21.29**	**12**	*e*P		P	09 22 49.2	+3.0
Y43A	**Makayla and Ka** baz=174	**21.30**	**355**	P		P	09 22 48.9	+2.6
Y44A	**Strider, Charl** baz=176	**21.30**	**357**	P		P	09 22 48.5	+2.2
Z38A	**Mt. Pleasant** baz=164	**21.31**	**346**	P		P	09 22 48.7	+2.3
Y42A	**Garnett, Star** baz=172	**21.31**	**353**	P		P	09 22 48.2	+1.8
Z37A	**Pogue Cattle C** baz=162	**21.42**	**344**	P		P	09 22 47.8	+0.2
233A	**Rising Star** baz=152,SNR=32	**21.42**	**336**	P		P	09 22 47.7	-0.1
134A	**White-Moore Ra** baz=155,SNR=6.8	**21.61**	**338**	P		P	09 22 49.8	+0.1
TXAR	**Lajitas Array** 7.4nm,0.7s,baz=145,slow=11,SNR=93	**21.61**	**323**	P		P	09 22 51.4	+1.5
TXAR	comp=Z,85nm,18.2s,baz=0.0,slow=42					LR	LR	09 33 22.4
TX31	**Lajitas Ar. Si**	**21.61**	**323**	*e*P		P	09 22 51.4	+1.5
TX31				*e*P		P	09 22 51.5	+1.6
TX31				*e*Sn		Sn	09 27 02.6	+5.3
Y40A	**Okolona** baz=168	**21.69**	**350**	P		P	09 22 51.5	+0.9
Z36A	**Blue Ridge** baz=160	**21.71**	**343**	P		P	09 22 51.1	+0.3
Y39A	**Lockesburg** baz=166	**21.77**	**348**	P		P	09 22 52.8	+1.4
OXF	**Oxford** 23nm,0.8s	**21.82**	**359**	*e*P		P	09 22 53.7	+1.8
Y38A	**Idabel** baz=165,SNR=5.6	**21.90**	**347**	P		P	09 22 54.0	+1.2
133A	**Hamilton Ranch** baz=153,SNR=30	**21.95**	**337**	P		P	09 22 53.2	-0.2
Z35A	**Perchaven, San** baz=158	**22.02**	**341**	P		P	09 22 54.2	+0.1
X40A	**Basin Creek Fa** baz=170	**22.09**	**351**	P		P	09 22 55.8	+1.0
H06E1	**SOCORRO T-PHAS** SNR=22	**22.12**	**289**	T		T	09 45 32.9	
Y37A	**Hugo** baz=162,SNR=8.8	**22.16**	**345**	P		P	09 22 58.0	+2.5
ABTX	**Abilene, Hawle** baz=151,SNR=13	**22.25**	**335**	P		P	09 22 56.9	+0.2
ABTX	**Abilene, Hawle** 13nm,0.8s	**22.25**	**335**	*e*P		P	09 22 56.4	-0.3
Y36A	**Durant** baz=161	**22.26**	**343**	P		P	09 22 57.6	+0.9
MIAR	**Mount Ida** baz=168,SNR=36	**22.26**	**350**	P		P	09 22 57.5	+0.8
MIAR	**Mount Ida** 46nm,0.8s	**22.26**	**350**	*e*P		P	09 22 57.8	+1.1
UALR	**University of** 25nm,0.9s	**22.30**	**352**	*e*P		P	09 22 58.9	+1.8
X39A	**Fountain Ranch** baz=166,SNR=11	**22.33**	**348**	P		P	09 22 59.2	+1.8
Y35A	**Marietta** baz=159	**22.48**	**342**	P		P	09 23 00.1	+1.1

baz=169,SNR=7.8
X201 **Greenbrier Sit** 22.81 353 eP P 09 23 04.6 +2.1
27nm,0.9s
X36A **Centrahoma** 22.91 344 P P 09 23 04.0 +0.5
baz=161
X35A **Drake** 22.93 343 P P 09 23 04.5 +0.8
baz=160,SNR=9.4
W39A **Magazine** 22.93 350 P P 09 23 05.3 +1.5
baz=168,SNR=21
W38A **Poteau** 22.95 348 P P 09 23 05.3 +1.3
baz=166,SNR=14
Y33A **Hilltop Ranch,** 23.10 339 P P 09 23 05.3 -0.2
baz=155
W37B **Quinton** 23.22 346 P P 09 23 07.9 +1.3
baz=164,SNR=16
LPIG **La Paz** 23.33 302 LR LR 09 33 18.6
comp=Z,346nm,19.1s,baz=180,slow=39
X34A **Smith Ranch, M** 23.37 341 P P 09 23 09.5 +1.3
baz=158,SNR=14
V40A **Witts Springs** 23.38 352 P P 09 23 10.0 +1.7
baz=170,SNR=34
TKL **Tuckaleechee C** 23.41 10 P P 09 23 09.1 +0.6
15nm,0.7s,baz=179,slow=12,SNR=24
TKL LR LR 09 33 25.2
comp=Z,167nm,18.1s,baz=190,slow=40
TKL **Tuckaleechee C** 23.41 10 eP P 09 23 10.2 +1.7
18nm,0.8s
W36A **Wetumka** 23.41 345 P P 09 23 08.7 +0.1
baz=162
WVT **Waverly** 23.44 2 eP P 09 23 09.8 +1.0
12nm,1.4s
KMSC **Kings Mountain** 23.45 16 P P 09 23 10.1 +1.3
baz=199
KMSC **Kings Mountain** 23.45 16 eP P 09 23 10.6 +1.7
7.8nm,0.6s
V39A **Pettigrew** 23.54 350 P P 09 23 11.2 +1.4
baz=168,SNR=21
X33A **Lawton** 23.54 340 P P 09 23 10.9 +1.1
baz=156,SNR=30
W35A **Tecumseh** 23.60 343 P P 09 23 11.4 +1.0
baz=160,SNR=5.8
V38A **Canehill** 23.70 349 P P 09 23 12.0 +0.7
baz=166
X32A **Elmer** 23.71 338 P P 09 23 12.2 +0.8
baz=154
PVMO **Portageville** 23.72 358 eP P 09 23 08.3 -3.1
228nm,0.5s
WMOK **Wichita Mounta** 23.81 339 eP P 09 23 12.4 0.0
19nm,1.3s
V37A **Hulbert** 23.87 347 P P 09 23 13.5 +0.7
baz=165,SNR=19
U40A **Yellville** 23.93 352 P P 09 23 14.1 +0.7
baz=170,SNR=16
W34A **Bridge Creek,** 23.94 342 P P 09 23 13.9 +0.3
baz=156,SNR=7.6
W34A **Bridge Creek,** 23.94 342 eP P 09 23 14.8 +1.2
44nm,0.9s
V36A **Jenks** 23.96 346 P P 09 23 14.0 +0.4
baz=163
HHAR **Hobbs** 24.02 350 eP P 09 23 15.8 +1.5
11nm,0.7s
TUL1 **Leonard** 24.04 346 P P 09 23 14.8 +0.4
baz=163,SNR=7.5
TUL1 **Leonard** 24.04 346 eP P 09 23 15.2 +0.8
18nm,0.8s
U39A **Green Forest** 24.04 351 P P 09 23 15.3 +0.8
baz=169,SNR=16
W33A **Caddo, Fort Co** 24.09 340 P P 09 23 15.1 +0.2
baz=157,SNR=6.9
V35A **Meyer Ranch, C** 24.16 344 P P 09 23 15.4 -0.2
baz=161,SNR=5.8
U38A **Gravette** 24.25 349 P P 09 23 16.3 -0.1
baz=167
TZTN **Tazewell** 24.31 10 eP P 09 23 17.4 +0.5
35nm,1.4s
W32A **Sentinel** 24.32 339 P P 09 23 17.1 0.0
baz=155,SNR=14
MNTX **Cornudas Mount** 24.35 324 P P 09 23 16.8 -0.6
baz=138,SNR=6.7
MNTX **Cornudas Mount** 24.35 324 eP P 09 23 17.5 +0.1
22nm,1.9s
U37A **Salina** 24.36 348 P P 09 23 17.8 +0.4
baz=165,SNR=20
V34A **Guthrie** 24.42 343 P P 09 23 18.1 +0.1
baz=159,SNR=12
V34A **Guthrie** 24.42 343 eP P 09 23 17.9 -0.1
30nm,0.8s
U36A **Oologah** 24.49 346 P P 09 23 18.3 -0.3
baz=164
V33A **Lossen Ranch,** 24.64 341 P P 09 23 20.5 +0.6
baz=158,SNR=6.7
T39A **Clever** 24.66 351 P P 09 23 22.5 +2.4
baz=170,SNR=38
T40A **Mansfield** 24.66 353 P P 09 23 21.8 +1.6
baz=172,SNR=24
U35A **Pawnee** 24.71 345 P P 09 23 21.0 +0.4
baz=162,SNR=8.8
MSTX **Muleshoe** 24.77 331 P P 09 23 21.2 0.0
baz=146,SNR=12
MSTX **Muleshoe** 24.77 331 eP P 09 23 21.0 -0.2
19nm,0.9s
V32A **Arapaho** 24.79 340 P P 09 23 22.5 +1.1
baz=156,SNR=5.2
T38A **Diamond** 24.82 350 P P 09 23 22.1 +0.5
baz=167
U34A **Anderson Ranch** 24.99 343 P P 09 23 23.2 +0.1
baz=160,SNR=6.6
U34A **Anderson Ranch** 24.99 343 eP P 09 23 23.1 0.0
25nm,0.7s
T37A **Cheneyville 18** 25.02 348 P P 09 23 23.6 +0.3
baz=166,SNR=16
AMTX **Amarillo** 25.05 334 P P 09 23 23.9 +0.1
baz=150
AMTX **Amarillo** 25.05 334 eP P 09 23 24.5 +0.7
34nm,1.3s
S40A **Lebanon** 25.11 353 P P 09 23 25.1 +1.0
baz=172,SNR=37
U33A **Lingo Farm, Me** 25.15 342 P P 09 23 24.3 -0.3
baz=158
T36A **Boggs Farm, Ca** 25.16 347 P P 09 23 24.8 +0.1
baz=164,SNR=14
T35A **Sooner Cattle** 25.17 345 P P 09 23 24.8 +0.1
baz=162
S39A **Bolivar** 25.30 352 P P 09 23 26.7 +0.7
baz=170,SNR=33
S38A **Stockton** 25.33 351 P P 09 23 26.9 +0.7
baz=168
U32A **Winter Ranch,** 25.38 341 P P 09 23 27.0 +0.3
baz=156
T34A **McClaskey Farm** 25.44 344 P P 09 23 27.3 +0.1
baz=161,SNR=9.2
S37A **Fort Scott** 25.62 349 P P 09 23 29.1 +0.3
baz=166,SNR=6.9
WCI **Wyandotte Cave** 25.62 5 eP P 09 23 29.1 +0.3
18nm,0.8s
S36A **Lake Cedric, C** 25.73 348 P P 09 23 29.9 0.0
baz=165,SNR=14
R40A **Maddies Statio** 25.76 354 P P 09 23 31.0 +0.9
baz=172,SNR=20
T33A **Patterson Ranc** 25.80 343 P P 09 23 30.5 +0.1
baz=159
S35A **Otter Creek Ra** 25.86 346 P P 09 23 31.8 +0.8
baz=163,SNR=7.1
R38A **Fenwick Farm,** 25.88 351 P P 09 23 31.7 +0.6
baz=169,SNR=7.6
R39A **Chumby, Stover** 25.88 352 P P 09 23 31.6 +0.5
baz=171
OLIL **Olney** 26.03 1 eP P 09 23 33.5 +1.0
9.8nm,0.6s
S34A **Willow Spring** 26.07 345 P P 09 23 32.5 -0.3
baz=162
T32A **Huddler Ranch,** 26.09 341 P P 09 23 32.4 -0.7
baz=157
R37A **Teagarden Farm** 26.16 349 P P 09 23 33.7 0.0
baz=167
S33A **Kaszmaul Farm,** 26.20 343 P P 09 23 34.2 +0.1
baz=160
HSIG 26.27 312 eP P 09 23 35.7 +0.9
6.6nm,1.4s
R36A **Gordon, Harris** 26.29 348 P P 09 23 35.1 +0.1
baz=165
Q40A **Laux Farm, Aux** 26.44 354 P P 09 23 36.6 +0.4
baz=173,SNR=7.2
S32A **Newby Ranch, P** 26.57 342 P P 09 23 36.9 -0.6
baz=158
Q39A **Willow Grove F** 26.59 353 P P 09 23 37.6 0.0
baz=171,SNR=8.6
Q38A **Cooks Store, C** 26.59 352 P P 09 23 37.3 -0.3
baz=170
Q37A **Longview Farm,** 26.64 350 P P 09 23 37.3 -0.7
baz=168
R34A **Isabella, Hill** 26.67 345 P P 09 23 38.2 -0.1
baz=162,SNR=5.9
R33A **Olander Ranch,** 26.86 344 P P 09 23 40.5 +0.4
baz=160
BNM **Barren Site** 26.87 326 eP P 09 23 43.1 +2.6
Q35A **Mercer Eighty,** 26.92 348 P P 09 23 40.0 -0.5
baz=164
P40A **Paris** 26.97 355 P P 09 23 41.0 0.0
baz=173,SNR=14
R32A **Long Quarter,** 27.18 343 P P 09 23 42.6 -0.3
baz=159
Q34A **Chapman** 27.18 346 P P 09 23 42.1 -0.8
baz=163
P38A **Dawn** 27.23 352 P P 09 23 43.5 +0.2
baz=170
KSU1 **Kansas State U** 27.28 347 P P 09 23 43.8 +0.1
baz=163
KSU1 **Kansas State U** 27.28 347 eP P 09 23 44.3 +0.6
16nm,0.8s
P37A **Lathrop** 27.32 351 P P 09 23 43.8 -0.3
baz=168
ANMO **Albuquerque** 27.38 327 P P 09 23 46.6 +1.7
0.6nm,0.8s,baz=137,slow=16,SNR=3.0
Q33A **Connelly Farm,** 27.47 345 P P 09 23 45.5 0.0
baz=161
P36A **Good Intent, A** 27.49 349 P P 09 23 45.2 -0.5
baz=167
O40A **La Belle** 27.54 355 P P 09 23 46.1 0.0
baz=174,SNR=5.4
P35A **Duane Minner,** 27.56 348 P P 09 23 46.6 +0.3
baz=165,SNR=10
Q32A **Meitler Ranch,** 27.66 344 P P 09 23 46.9 -0.3
baz=159
SFIN **Lafayette** 27.71 3 P P 09 23 46.9 -0.6
baz=184
O39A **Kirksville** 27.74 354 P P 09 23 47.9 +0.1
baz=172
P34A **Walnut Farm, R** 27.75 347 P P 09 23 48.7 +0.7
baz=163,SNR=9.6
CBKS **Cedar Bluff** 27.84 342 P P 09 23 48.4 -0.5
baz=157
TUC **Tucson** 28.11 318 P P 09 23 48.9 -2.5
baz=130
TUC **Tucson** 28.11 318 eP P 09 23 49.3 -2.1
5.8nm,1.1s
O35A **Humboldt** 28.25 349 P P 09 23 51.4 -1.0
baz=165
P32A **Huiting Farm,** 28.26 344 P P 09 23 53.0 +0.5
baz=160,SNR=7.0
O34A **Beatrice** 28.33 347 P P 09 23 53.7 +0.6
baz=164,SNR=6.7
N38A **Joes South For** 28.34 353 P P 09 23 53.7 +0.5
baz=171
N39A **Derby Farms, D** 28.35 354 P P 09 23 53.2 -0.1
baz=172
O33A **Hebron** 28.43 346 P P 09 23 54.7 +0.6
baz=162,SNR=6.3
N37A **Lee Faris, Mou** 28.44 351 P P 09 23 54.7 +0.5
baz=169
N36A **Muff Farm, Cla** 28.61 350 P P 09 23 55.9 +0.3
baz=168
N35A **Tabor** 28.78 349 P P 09 23 57.2 +0.1
baz=166
O32A **Brockman Farm,** 28.78 345 P P 09 23 57.5 +0.3
baz=161
N34A **Lincoln** 28.92 348 P P 09 23 58.6 +0.2
baz=164
M38A **Pleasantville** 28.96 353 P P 09 23 58.9 +0.2
baz=171
O31A **Woolen Ranch,** 28.96 343 P P 09 23 59.2 +0.4
baz=159
KSCO **Kaye Shedlock'** 29.01 337 P P 09 23 59.8 +0.5
baz=152
N33A **J Bar K, Exete** 29.03 346 P P 09 23 59.7 +0.3
baz=163
M37A **Trindle Farm,** 29.05 352 P P 09 23 59.9 +0.3
baz=170
M36A **Felix, Anita** 29.21 351 P P 09 24 00.7 -0.2
baz=168
N54A **Moraine State** 29.30 14 P P 09 24 02.0 +0.3
baz=198
M35A **Neola** 29.37 349 P P 09 24 02.4 0.0
baz=166
L38A **Oak Wood Farm,** 29.65 354 P P 09 24 04.6 -0.2
baz=172,SNR=5.2
L37A **Phoenix Point,** 29.72 353 P P 09 24 05.8 +0.3
baz=170
S22A **4UR Ranch, Cre** 29.75 330 P P 09 24 06.1 -0.1
baz=143
S22A **4UR Ranch, Cre** 29.75 330 eP P 09 24 06.5 +0.3
5.4nm,1.3s
M33A **Taylor Creek F** 29.77 347 P P 09 24 06.4 +0.4
baz=164
L36A **Harm Buss Farm** 29.82 351 P P 09 24 07.4 +1.0
baz=169
K38A **Parkersburg** 30.13 354 P P 09 24 09.0 0.0
baz=172
JFWS **Jewell Farm** 30.23 358 eP P 09 24 11.1 +1.1
22nm,1.2s
K36A **Gilmore City** 30.32 352 P P 09 24 10.5 -0.2
baz=169
K37A **Belmond** 30.34 353 P P 09 24 11.1 +0.2
baz=171
K35A **Storm Lake** 30.52 351 P P 09 24 11.7 -0.9
baz=168
K34A **Le Mars** 30.63 349 P P 09 24 13.3 -0.2
baz=166
K33A **Hardington** 30.72 348 P P 09 24 14.9 +0.5
baz=164
L31A **Butterfield Fa** 30.72 345 P P 09 24 15.1 +0.7
baz=161
J38A **Wedel Dairy, R** 30.77 355 P P 09 24 14.9 +0.2
baz=173,SNR=7.4
J37A **Redenius Farm,** 30.87 353 P P 09 24 16.0 +0.4
baz=171,SNR=7.8
ISCO **Idaho Springs** 30.88 334 P P 09 24 15.8 -0.3
baz=147
ISCO **Idaho Springs** 30.88 334 eP P 09 24 15.8 -0.3
2.4nm,0.9s
SMCO **Snowmass** 30.96 332 eP P 09 24 18.3 +1.3
4.6nm,1.1s
K32A **Verdigre** 30.98 347 P P 09 24 17.4 +0.8
baz=163,SNR=5.5
J36A **Seneca 1, Swea** 30.98 352 P P 09 24 16.5 -0.1
baz=170
K31A **O'Neill** 31.12 346 P P 09 24 17.7 -0.2
baz=161
K30A **Basset** 31.39 345 P P 09 24 20.4 +0.2
baz=160,SNR=5.0
J33A **Davis** 31.40 349 P P 09 24 20.9 +0.6
baz=165
I38A **Scanlan Farm,** 31.47 355 P P 09 24 21.0 +0.1
baz=174,SNR=11
I37A **Lemond, Waseca** 31.55 354 P P 09 24 21.7 +0.2
baz=173,SNR=7.3
I36A **Fitzsimmons Fa** 31.62 353 P P 09 24 22.2 0.0
baz=170
J32A **Parkston** 31.63 347 P P 09 24 22.5 +0.2
baz=163
ECSD **EROS Data Cent** 31.74 349 P P 09 24 23.2 -0.1
baz=166,SNR=5.8
ECSD **EROS Data Cent** 31.74 349 eP P 09 24 23.1 -0.1
11nm,1.2s
J30A **Dallas** 31.97 345 P P 09 24 25.5 +0.2
baz=160
H37A **Dierke Farm, C** 32.06 354 P P 09 24 26.2 +0.2
baz=173,SNR=10.0
H36A **Jessenland, He** 32.16 353 P P 09 24 27.5 +0.5
baz=171
J29A **Okreek** 32.26 344 P P 09 24 28.4 +0.5
baz=159,SNR=11
O20A **White River Ci** 32.32 332 P P 09 24 28.4 -0.3
baz=143
O20A **White River Ci** 32.32 332 eP P 09 24 28.8 +0.2
7.8nm,1.1s
H35A **Sunnyside Ranc** 32.39 352 P P 09 24 28.7 -0.3
baz=169,SNR=7.0
I30A **Oacoma** 32.51 346 P P 09 24 30.3 +0.3
baz=161
J28A **Allard Ranch,** 32.52 343 P P 09 24 29.3 -0.9
baz=157,SNR=5.2
H32A **Carlson Farm,** 32.63 349 P P 09 24 30.9 -0.3
baz=164
H33A **Prehn Over Nor** 32.68 350 P P 09 24 31.0 -0.5
baz=166
SPMN **Marine on St.** 32.69 355 P P 09 24 31.1 -0.4
baz=173,SNR=24
SPMN **Marine on St.** 32.69 355 eP P 09 24 31.1 -0.4
43nm,0.8s
G36A **St. Michael** 32.79 354 P P 09 24 32.7 +0.3
baz=171
H31A **Wolsey** 32.82 347 P P 09 24 32.6 -0.1
baz=163
I29A **Vivian Onida** 32.82 345 P P 09 24 33.2 +0.4
baz=159
G35A **Watkins** 32.86 353 P P 09 24 32.8 -0.3
baz=170
I28A **Midland** 33.03 344 P P 09 24 35.5 +0.8
baz=158,SNR=5.8
P17A **Butcher Ranch,** 33.03 328 eP P 09 24 35.9 +1.0
4.1nm,0.6s
G33A **Ortonville** 33.12 350 P P 09 24 34.9 -0.5
baz=166
SAML **Samuel** 33.29 129 eP P 09 24 37.4 +0.3
14nm,1.4s
I27A **Quinn** 33.35 343 P P 09 24 37.8 +0.4
baz=156
G32A **Webster** 33.37 349 P P 09 24 37.3 -0.3
baz=165
F36A **Milaca** 33.39 354 P P 09 24 37.6 0.0
baz=172,SNR=6.6
COWI **Conover** 33.39 360 eP P 09 24 37.5 -0.2
11nm,0.9s
F35A **Swanville** 33.50 353 P P 09 24 38.4 -0.3
baz=170,SNR=6.4
F34A **Alexandria** 33.53 352 P P 09 24 38.2 -0.7
baz=169
G30A **Faulkton** 33.59 347 P P 09 24 38.7 -0.7
baz=162
K22A **Casper** 33.64 336 P P 09 24 40.1 0.0
baz=148
F33A **5 Mile Ranch,** 33.73 351 P P 09 24 40.3 -0.3
baz=167,SNR=5.9
H27A **Howes** 33.87 343 P P 09 24 42.6 +0.6
baz=156,SNR=8.2
G28A **Parade** 33.97 345 P P 09 24 42.4 -0.3
baz=159
E37A **Wrenshall** 33.98 356 P P 09 24 43.0 +0.1
baz=174
E36A **McGregor** 34.01 355 P P 09 24 42.7 -0.4
baz=172,SNR=9.5
RSSD **Black Hills** 34.02 340 eP P 09 24 44.7 +1.3
7.4nm,0.8s
E35A **Pequot Lakes** 34.17 353 P P 09 24 44.1 -0.3
baz=170,SNR=6.9
E34A **Wadena** 34.22 352 P P 09 24 44.8 -0.1
baz=169,SNR=8.0
E33A **Westby DABS, E** 34.33 351 P P 09 24 44.9 -1.0
baz=168,SNR=5.5
G27A **Dupree** 34.52 344 P P 09 24 47.4 -0.1
baz=157,SNR=6.7
D37A **Cotton** 34.58 356 P P 09 24 47.4 -0.5
baz=174,SNR=19
TCUT **Toone Canyon** 34.60 329 eP P 09 24 46.9 -1.7
4.9nm,0.7s
G26A **Maurine** 34.63 343 P P 09 24 47.9 -0.7
baz=156
D35A **Remer** 34.65 354 P P 09 24 47.1 -1.5
baz=171
D36A **Goodland** 34.65 355 P P 09 24 47.7 -0.9
baz=173,SNR=7.6
F28A **McLaughlin** 34.66 345 P P 09 24 47.9 -0.8
baz=159
D33A **AnnSam, Waubun** 34.93 352 P P 09 24 50.6 -0.4
baz=168,SNR=9.1
F27A **Lemmon** 35.00 344 P P 09 24 50.3 -1.4
baz=157
PDAR **Pinedale Array** 35.01 333 P P 09 24 52.8 +0.8
0.7nm,0.8s,baz=108,slow=4.8,SNR=5.7
PDAR PcP PcP 09 27 24.1 +0.5
0.3nm,0.5s,baz=148,slow=5.3,SNR=3.9
HWUT **Hardware Ranch** 35.05 330 eP P 09 24 53.4 +1.0
10nm,1.7s
C38A **Sawbill Land.** 35.06 357 P P 09 24 51.3 -0.9
baz=176,SNR=5.3
C37A **Embarrass** 35.13 356 P P 09 24 51.4 -1.3
baz=174
F26A **Lodgepole** 35.16 343 P P 09 24 52.5 -0.6
baz=156
C36A **Pine Crest Far** 35.20 355 P P 09 24 53.6 +0.2
baz=173,SNR=7.7
C35A **Jirik Farms, M** 35.25 354 P P 09 24 53.6 -0.2
baz=171,SNR=11
EYMN **Ely** 35.30 357 P P 09 24 53.2 -1.0
baz=176,SNR=6.4
EYMN **Ely** 35.30 357 eP P 09 24 53.3 -1.0
14nm,0.8s
C34A **RKJ Ranch, Bem** 35.30 353 P P 09 24 52.5 -1.7
baz=170
D30A **Buchanan** 35.39 348 P P 09 24 54.8 -0.2
baz=163,SNR=6.7
D29A **Pettibone, Tap** 35.52 347 P P 09 24 56.2 +0.1
baz=162
AHID **Auburn Hatcher** 35.71 331 eP P 09 24 58.2 +0.2
4.5nm,0.8s
C31A **Landmon Farms,** 35.86 350 P P 09 24 58.3 -0.7
baz=165
B35A **Bob, Littlefor** 35.88 354 P P 09 24 58.6 -0.6
baz=172
C30A **Mose, Pekin** 35.91 349 P P 09 24 59.5 0.0
baz=164
B33A **Robert and Kas** 36.00 352 P P 09 24 59.2 -1.0
baz=169
REDW **Red Top Meadow** 36.06 332 eP P 09 25 01.8 +0.7
8.8nm,0.8s
AGMN **Agassiz Nation** 36.06 352 P P 09 25 00.6 -0.2
baz=168,SNR=12
AGMN **Agassiz Nation** 36.06 352 eP P 09 25 00.5 -0.3
12nm,0.8s
SNOW **Snow King Moun** 36.09 333 eP P 09 25 01.8 +0.4
9.5nm,0.8s
B34A **Aery, Baudette** 36.10 353 P P 09 25 00.7 -0.4
baz=170,SNR=7.0
LOHW **Long Hllow** 36.15 333 eP P 09 25 03.6 +1.8
3.8nm,0.7s
B32A **Ashes, Strandq** 36.25 351 P P 09 25 02.6 +0.2
baz=167,SNR=21
MOOW **Moose Ponds** 36.32 333 eP P 09 25 04.3 +1.1
2.2nm,0.8s
IMW **Indian Meadow** 36.52 333 eP P 09 25 04.7 -0.4
2.2nm,0.6s
FLWY **Flagg Ranch** 36.56 333 eP P 09 25 05.9 +0.6
2.2nm,0.7s
B30A **Myrvik Farm, E** 36.60 349 P P 09 25 03.9 -1.5
baz=164
A33A **Warroad** 36.63 353 P P 09 25 04.9 -0.7
baz=169,SNR=18
NVAR **Mina Array Bea** 36.70 320 P P 09 25 08.2 +1.6
1.1nm,0.8s,baz=127,slow=12,SNR=4.9
H17A **Grant Village** 36.75 334 P P 09 25 08.0 +1.0
A32A **Rocking H Ranc** 36.76 352 P P 09 25 05.8 -0.8
baz=168,SNR=7.6
RLMT **Red Lodge** 36.80 336 P P 09 25 06.2 -1.1
baz=146
RLMT **Red Lodge** 36.80 336 eP P 09 25 08.1 +0.8
5.6nm,1.0s
B29A **Wagenman Farm,** 36.81 348 P P 09 25 07.3 +0.2
baz=163
C26A **Wahner Farm, P** 36.82 345 P P 09 25 07.4 +0.1
baz=158
B28A **Dugan Ranch, T** 37.00 347 P P 09 25 09.3 +0.5
baz=161
LAO **LASA Array** 37.01 340 P P 09 25 09.0 +0.1
baz=151
LAO **LASA Array** 37.01 340 eP P 09 25 09.5 +0.6
6.3nm,0.8s
A30A **Hoffart Farm,** 37.07 350 P P 09 25 09.8 +0.5
baz=165
YMR **Madison River** 37.14 334 eP P 09 25 11.8 +1.5
5.4nm,0.9s
A29A **Manning Farm,** 37.22 349 P P 09 25 10.6 -0.1
baz=163,SNR=11
A26A **Wade Farm, Ken** 37.81 346 P P 09 25 15.9 +0.3
baz=159
HLID **Hailey** 37.91 329 P P 09 25 16.8 0.0
baz=137
DGMT **Dagmar** 37.97 343 eP P 09 25 18.1 +1.1
17nm,0.7s
ULM **Lac du Bonnet** 37.98 353 P P 09 25 15.9 -1.0
5.9nm,0.7s,baz=173,slow=9.4,SNR=8.9
ULM LR LR 09 42 33.0
comp=Z,193nm,20.4s,baz=198,slow=39
ULM **Lac du Bonnet** 37.98 353 eP P 09 25 16.1 -0.9
18nm,1.3s

MCMT	McKenzie Canyo	38.10	332	*e*P		P	09 25 18.8	+0.4	
A25A	Svangstu Ranch	38.11	345	P		P	09 25 19.2	+1.0	
	baz=157								
DLMT	Dillon	38.40	333	*e*P		P	09 25 21.8	+1.0	
	4.9nm,1.1s								
LRM	Limekiln Ridge	38.70	333	*e*P		P	09 25 24.8	+1.4	
EGMT	Eagleton	39.39	338	P		P	09 25 29.2	+0.2	
	baz=147								
EGMT	Eagleton	39.39	338	*e*P		P	09 25 30.4	+1.4	
	32nm,1.8s								
SIV	San Ignacio	39.52	135	P		P	09 25 30.1	-0.2	
	2.1nm,0.9s,baz=315,slow=8.6,SNR=3.8								
O03D	Paynes Creek	39.99	320	P		P	09 25 34.3	+0.2	
	baz=124								
MSO	Missoula	40.13	333	P		P	09 25 35.5	+0.3	
	baz=140								
MSO	Missoula	40.13	333	*e*P		P	09 25 35.4	+0.3	
	13nm,1.8s								
F10A	Beach Ranch, E	41.03	330	*e*P		P	09 25 45.0	+2.4	
	4.4nm,0.9s								
FFC	Flin Flon	43.27	349	*e*P		P	09 26 00.8	+0.1	
	4.7nm,0.8s								
SCHQ	Schefferville	45.53	18	P		P	09 26 17.9	-0.8	
	5.5nm,0.6s,baz=210,slow=6.5,SNR=18								
SCHQ	Schefferville	45.53	18	*e*P		P	09 26 18.4	-0.3	
	8.0nm,0.8s								
FRB	Frobisher Bay	53.03	11	P		P	09 27 14.3	-1.5	
	6.5nm,0.7s,baz=220,slow=9.1,SNR=18								
YKA	Yellowknife Ar	53.12	345	P		P	09 27 15.9	-0.5	
	2.0nm,0.7s,baz=140,slow=7.7,SNR=54								
YKA					PcP	PcP	09 28 24.8	+0.5	
	0.3nm,0.6s,baz=147,slow=3.7,SNR=5.2								
YKB5	Yellowknife Ar	53.12	345	*e*P		P	09 27 16.4	0.0	
YKW3	Yellowknife Ar	53.17	345	*e*P		P	09 27 16.9	+0.1	
DLBC	Dease Lake	55.19	335	P		P	09 27 33.2	+1.5	
	1.9nm,0.7s,baz=101,slow=16,SNR=5.5								
RKT	Rikitea	57.45	232	*e*T		T	10 29 34.2		
	1.2nm,0.3s								
RES	Resolute Bay	62.16	358	P		P	09 28 18.3	-1.5	
	1.2nm,0.7s,baz=172,slow=9.7,SNR=7.0								
INK	Inuvik	62.66	343	P		P	09 28 22.9	-0.3	
	1.9nm,0.7s,baz=103,slow=5.5,SNR=10								
INK					LR	LR	10 02 17.5		
	comp=Z,123nm,18.0s,baz=102,slow=42								
PMOR	Pomariorio Ree	64.58	247	*e*T		T	10 38 28.4		
	1.9nm,0.3s								
ILAR	Eielson Array	65.34	336	P		P	09 28 40.4	-0.5	
	1.0nm,1.0s,baz=132,slow=3.2,SNR=7.2								
ILAR					PP	PP	09 31 01.7	-3.2	
	0.3nm,0.9s,baz=117,slow=7.2,SNR=2.6								
TRF	Thorofare Moun	66.21	334	*e*P		P	09 28 46.5	-0.3	
PPT	Papeete	67.04	245	LR		LR	09 51 07.9		
	comp=Z,100nm,18.1s,baz=116,slow=29								
PPT2	Papeete2	67.05	245	*e*LR		LR	09 48 56.4		
	86nm,24.2s								
NOA	NORSAR Array B	83.89	29	LR		LR	10 03 58.3		
	comp=Z,36nm,21.5s,baz=260,slow=33								
ARCES	ARCESS Array B	86.48	19	LR		LR	10 08 35.2		
	comp=Z,29nm,19.7s,baz=270,slow=35								
FINES	FINESS Array B	90.43	26	LR		LR	10 09 39.1		
	comp=Z,47nm,21.4s,baz=345,slow=34								
TIXI	Tiksi	92.23	349	P		P	09 31 08.6	+0.2	
	1.0nm,0.4s,baz=97,slow=8.1,SNR=3.0								
VAE	Valguarnera	92.67	51	LR		LR	10 09 33.4		
	comp=Z,81nm,18.6s,baz=356,slow=34								
NRIK	Norilʹsk	98.23	1	LR		LR	10 17 28.5		
	comp=Z,72nm,20.8s,baz=324,slow=36								
HHC	Hu-ho-hao-te	123.56	341	*e*PKP		PKPdf	09 36 51.9	-4.9	
WMQ	Urumqi	123.76	3	*e*PKP		PKPdf	09 36 54.5	-2.5	
WMQ				LR		LR			
	comp=N,25nm,23.6s								
WMQ				LR		LR			
	comp=E,34nm,27.0s								
WMQ				LR		LR			
	comp=Z,47nm,20.2s								
LZH	Lanzhou	130.11	347	*e*PKP		PKPdf	09 37 06.8	-2.7	
LZH				sPKP			09 37 39.5		
LZH				LR		LR			
	comp=N,95nm,18.0s								
LZH				LR		LR			
	comp=E,100nm,18.2s								
LZH				LR		LR			
	comp=Z,160nm,20.1s								
CD2	Chengdu	135.07	345	PKP		PKPdf	09 37 14.9	-3.9	
WRA	Warramunga Arr	138.01	254	PKP		PKPdf	09 37 24.7	+0.3	
	0.7nm,1.1s,baz=86,slow=3.1,SNR=3.9								
ASAR	Alice Springs	138.07	249	PKhKP		PKPpre	09 37 22.0		
	0.3nm,0.8s,baz=34,slow=37,SNR=4.2								
ASAR				PKP		PKPdf	09 37 25.1	+0.6	
	0.3nm,0.7s,baz=293,slow=26,SNR=4.2								
FITZ	Fitzroy Crossi	146.34	256	PKPbc		PKPbc	09 37 40.9	+0.4	
	1.5nm,0.8s,baz=45,slow=7.1,SNR=2.8								
CMAR	Chiang Mai Arr	148.20	346	PKPbc		PKPdf	09 37 44.2	+1.8	
	3.7nm,0.8s,baz=340,slow=3.6,SNR=12								

MEX 21 09:22:00.6±0.3, 14°.96N×93°.25W, h68km±25km, MD3.6, Near coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PCIG		0.74	2	*e*P	Pn	09 22 14.7	-1.2
PCIG				*e*S	Sn	09 22 25.3	-1.8
TGIG		1.81	4	*i* P	Pn	09 22 28.4	-1.3

*ISCJB **21** 09:25:37.8±0.8, 50°.83N±0°.07×175°.26W±0°.07, h100km, mb3.3/5, Error ellipse: s-maj=10.2km s-min=5.9km az=172.4*
*IDC **21** 09:25:38.6±11.0, 52°.29N×175°.85W, h138km±105km, mb3.0/4, mb1 3.2/6, mb1mx2.9/77, mbtmp3.3/6, ML3.2/2, MS2.8/1, Ms1 2.8/1, ms1mx2.2/17, Error ellipse: s-maj=61.7km s-min=22.0km az=166.0*
*NEIC **21** 09:25:43.5, 52°.20N×175°.78W, h147km, MG3.6(AEIC), After AEIC.*

ISC 21 09:25:37.9±1.2, 50°.8N±0°.1×175°.37W±0°.05, h100km, n34, σ1§58/25, mb3.5/5, Andreanof Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ETKA	Kagalaska Isla	1.21	328	P	Pn	09 26 04.0	+3.4
GSCK	Great Sitkin C	1.27	337	P	**Pn**	**09 26 03.0**	**+1.6**
GSMY	Great Sitkin M	1.28	340	P	**Pn**	**09 26 02.6**	**+1.1**
GSTD	Great Sitkin T	1.31	338	P	**Pn**	**09 26 02.7**	**+0.8**
GSTD				S	**Sn**	**09 26 19.1**	**-0.9**
GSTR	Great Sitkin T	1.33	341	P	**Pn**	**09 26 02.8**	**+0.8**
GSTR				S	**Sn**	**09 26 19.8**	**-0.5**
ADAG	Mount Adagdak	1.38	326	P	**Pn**	**09 26 04.5**	**+1.9**
KINC	Kanaga Island	1.55	315	P	**Pn**	**09 26 05.9**	**+1.2**
KICM	Kanaga Island	1.57	314	P	**Pn**	**09 26 06.6**	**+1.6**
KOFP	Korovin Flat P	1.64	28	P	**Pn**	**09 26 07.9**	**+2.1**
KOKL	Mount Kliuchef	1.65	26	P	**Pn**	**09 26 07.5**	**+1.5**
KOKL				S	**Sn**	**09 26 27.2**	**-0.2**
KOWE	Korovin West	1.68	24	P	**Pn**	**09 26 07.1**	**+0.8**
KOSE	Korovin Southe	1.71	28	P	**Pn**	**09 26 08.1**	**+1.3**
TAPA	Tanaga Point A	1.82	303	P	**Pn**	**09 26 10.6**	**+2.5**
TAFP	Tanaga Falls P	1.95	304	P	**Pn**	**09 26 10.9**	**+1.1**
TAFP				S	**Sn**	**09 26 32.6**	**-1.6**
TANO	Tanaga North	2.03	303	P	**Pn**	**09 26 12.0**	**+1.2**
GAEA	Gareloi East	2.32	295	P	**Pn**	**09 26 15.9**	**+1.4**
GALAA	Gareloi Lava P	2.33	295	P	**Pn**	**09 26 16.6**	**+1.9**
NIKH	Nikolski High	4.56	60	P	**Pn**	**09 26 46.5**	**+2.0**
OKTU	Okmok Mt. Tuli	5.18	58	P	**Pn**	**09 26 53.8**	**+0.9**
UNV	Unalaska Valle	6.21	58	P	Pn	09 27 05.6	-1.2
UNV				S	Sn	09 28 11.4	-4.9
KDAK	Kodiak Island	14.95	54	P	P	09 29 09.0	+2.3
	0.7nm,0.3s,baz=149,slow=2.8,SNR=16						
KDAK				S	Sn	09 31 44.8	-3.5
	0.1nm,0.3s,baz=344,slow=17,SNR=1.1						
ILAR	Eielson Array	20.36	36	P	P	09 29 52.5	-13
	0.0nm,0.3s,baz=234,slow=12,SNR=1.7						
SEY	Seymchan	21.10	317	P	P	09 29 58.8	-15
	0.2nm,0.3s,baz=84,slow=18,SNR=4.5						
DLBC	Dease Lake	26.86	56	LR	LR	09 40 29.2	
	comp=Z,20nm,20.6s,baz=302,slow=34						
YKA	Yellowknife Ar	34.03	46	P	P	09 32 02.2	-10
	0.1nm,0.7s,baz=275,slow=8.6,SNR=2.5						
YKA					PcP	PcP	09 34 40.0	-7.1
	0.1nm,0.4s,baz=292,slow=3.5,SNR=4.2						
H11N2	WAKE ISLAND Hy	34.07	211	T	T	10 09 28.5	
	baz=18,slow=76,SNR=32						
H11N3	WAKE ISLAND Hy	34.08	211	T	T	10 09 28.4	
	baz=18,slow=76,SNR=31						
H11N1	WAKE ISLAND Hy	34.09	211	T	T	10 09 29.8	
	baz=18,slow=76,SNR=24						
H11S1	WAKE ISLAND Hy	35.28	210	T	T	10 10 57.5	
	baz=18,slow=76,SNR=14						
H11S2	WAKE ISLAND Hy	35.29	210	T	T	10 10 56.1	
	baz=18,slow=76,SNR=11						
H11S3	WAKE ISLAND Hy	35.29	210	T	T	10 10 59.0	
	baz=18,slow=76,SNR=10						
TXAR	Lajitas Array	56.58	83	P	P	09 35 08.2	-1.9
	0.4nm,0.5s,baz=299,slow=5.6,SNR=8.1						
TXAR				PcP	**PcP**	**09 36 02.4**	**-3.1**
	0.1nm,0.6s,baz=305,slow=3.2,SNR=1.7						
WRA	Warramunga Arr	83.18	227	P	**P**	**09 37 53.1**	**+0.4**
	0.3nm,0.5s,baz=31,slow=5.9,SNR=5.0						
ASAR	Alice Springs	86.60	225	P	**P**	**09 38 09.8**	**0.0**
	0.5nm,0.6s,baz=27,slow=5.0,SNR=9.5						

*IDC **21** 09:33:58.0±2.3, 37°.83N×144°.63E, h0km, mb3.1/2, mb1 3.3/4, mb1mx3.1/63, mbtmp3.2/4, ML3.1/2, Error ellipse: s-maj=58.7km s-min=35.4km az=78.0*
*JMA **21** 09:34:03.8±0.3, 37°.94N×144°.12E, h16km, M3.4*
ISC 21 09:33:59.5±3.5, 37°.85N±0°.08×144°.37E±0°.09, h7km±21km, n13, σ1§51/21, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	Ofunato	2.45	301	P	**Pn**	**09 34 40.9**	**+0.9**
OFUJ				S	**Sn**	**09 35 09.5**	**-0.7**
JIO	Ouri	2.46	285	P	**Pn**	**09 34 41.1**	**+1.1**
JIO				S	**Sn**	**09 35 08.7**	**-1.6**
JMK	Ichinoseki	2.71	295	P	**Pn**	**09 34 45.9**	**+2.4**
JMK				S	**Sn**	**09 35 15.6**	**-0.9**
JMM	Marumori	2.83	272	P	**Pn**	**09 34 46.2**	**+1.1**
JMM				S	**Sn**	**09 35 17.7**	**-1.8**
JOM	Ohasama	2.91	305	P	**Pn**	**09 34 47.9**	**+1.7**
JOM				S	**Sn**	**09 35 21.1**	**-0.3**
JOU	Okura	2.97	281	P	**Pn**	**09 34 49.3**	**+2.2**
JRG	Rokugo	3.31	299	P	**Pn**	**09 34 53.9**	**+2.1**
JRG				S	**Sn**	**09 35 32.0**	**+0.6**
JYK	Kaneyama	3.33	290	P	**Pn**	**09 34 53.5**	**+1.5**
JYK				S	**Sn**	**09 35 31.6**	**-0.2**
MJAR	Matsushiro Arr	5.09	257	Pn	**Pn**	**09 35 17.9**	**+1.7**
	0.8nm,0.3s,baz=89,slow=15,SNR=7.1						
MAT	Matsushiro	5.09	257	*e*S	**Sg**	**09 36 41.3**	**-1.6**
ASAJ	Asahikawa	6.41	348	Pn	**Pn**	**09 35 34.5**	**+0.3**
	0.4nm,0.3s,baz=198,slow=20,SNR=1.8						
ASAJ				Sn	**Sn**	**09 36 46.4**	**-1.3**
	0.1nm,0.3s,baz=25,slow=16,SNR=2.2						
WRA	Warramunga Arr	56.25	191	P	**P**	**09 43 54.1**	**-0.6**
	0.1nm,0.3s,baz=8.3,slow=6.9,SNR=6.3						
ASAR	Alice Springs	61.97	191	P	**P**	**09 44 20.1**	**-0.1**
	0.1nm,0.6s,baz=16,slow=8.7,SNR=1.2						

*DDA **21** 09:38:25.9, 37°.86N×27°.44E, h2km, Md3.1*
*ISK **21** 09:38:26.4, 37°.90N×27°.48E, h5km, MD3.1, ML3.0*
*ATH **21** 09:38:28.0, 37°.86N×27°.38E, h15km±2km, ML2.8/4, Error ellipse: s-maj=3.3km s-min=1.1km az=245.0*
*CSEM **21** 09:38:27.4±0.1, 37°.88N×27°.46E, h2km, MD3.1, Error ellipse: s-maj=3.1km s-min=2.6km az=86.0*
*THE **21** 09:38:27.1, 37°.84N×27°.43E, h4km±3km, ML3.0/3, Error ellipse: s-maj=3.1km s-min=0.7km az=206.0*
ISC 21 09:38:27.0±1.0, 37°.87N±0°.01×27°.45E±0°.01, h6km±9km, n103, σ0§97/148, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GCAM	G?zelcaml?	0.24	226	*i* P	**Pg**	**09 38 31.2**	**-0.6**
GCAM				*i* S	**Sg**	**09 38 34.6**	**-0.4**
GCAM	G?zelcaml?	0.24	226	P	**Pg**	**09 38 31.2**	**-0.6**
GCAM				S	**Sg**	**09 38 34.6**	**-0.4**
AYDB	Zeytinkoy-Aydi	0.35	77	*e*PG	**Pg**	**09 38 34.0**	**0.0**
AYDB				*e*SG	**Sg**	**09 38 39.9**	**+1.2**
AYDB	Zeytinkoy-Aydi	0.35	77	*e*Pg	**Pg**	**09 38 34.0**	**0.0**
AYDB				*e*Sg	**Sg**	**09 38 39.9**	**+1.2**
AYDN	Tasoluk	0.40	121	*i* P	**Pg**	**09 38 34.8**	**+0.1**
AYDN				*i* S	**Sg**	**09 38 40.3**	**+0.4**
AYDN	Tasoluk	0.40	121	P	**Pg**	**09 38 34.8**	**+0.1**
AYDN				S	**Sg**	**09 38 40.3**	**+0.4**
SMG	Samos	0.51	252	P	**Pg**	**09 38 36.5**	**-0.5**
SMG				S	**Sg**	**09 38 44.4**	**+0.7**
SMG	Samos	0.51	252	P	**Pg**	**09 38 36.5**	**-0.5**
SMG				S	**Sg**	**09 38 43.5**	**-0.1**
SMG	Samos	0.51	252	P	**Pg**	**09 38 36.0**	**-0.9**
SMG				S	**Sg**	**09 38 43.5**	**-0.1**
SMG				AML	AML	09 38 48.0	
	comp=N,2569μm,0.5s						
SMG				AML	AML	09 38 48.1	
	comp=E,1607μm,0.3s						
IZM	Izmir	0.55	344	*e*PG	**Pg**	**09 38 37.6**	**0.0**
IZM	Izmir	0.55	344	*e*Pg	**Pg**	**09 38 37.7**	**0.0**
BLCB	Balcova	0.61	328	*e*PG	**Pg**	**09 38 38.3**	**-0.5**
BLCB	Balcova	0.61	328	*e*Pg	**Pg**	**09 38 38.3**	**-0.5**
BDRM	Kayabasi	0.80	181	*i* P	**Pg**	**09 38 41.1**	**-1.3**
BDRM				*i* S	**Sg**	**09 38 53.5**	**+0.7**
BDRM	Kayabasi	0.80	181	P	**Pg**	**09 38 41.2**	**-1.3**
BDRM				S	**Sg**	**09 38 53.5**	**+0.7**
BODT	Bodrum	0.81	188	*e*PG	**Pg**	**09 38 43.8**	**+0.2**
BODT	Bodrum	0.81	188	P	**Pg**	**09 38 41.7**	**-0.9**
BODT				S	**Sg**	**09 38 53.5**	**+0.3**
BODT	Bodrum	0.81	188	P	**Pg**	**09 38 41.7**	**-0.9**
BODT	Bodrum	0.81	188	*e*Pg	**Pg**	**09 38 43.8**	**+0.2**
BODT				S	**Sg**	**09 38 53.5**	**+0.3**
URLA	Izmir	0.84	306	*i* P	**Pg**	**09 38 42.7**	**-0.4**
URLA				*i* S	**Sb**	**09 38 55.1**	**-0.4**
URLA	Izmir	0.84	306	P	**Pg**	**09 38 42.7**	**-0.4**
URLA				S	**Sb**	**09 38 55.1**	**-0.4**
ZEY	˜zmir	0.84	297	*i* P	**Pg**	**09 38 42.1**	**-1.0**
ZEY				*i* S	**Sg**	**09 38 53.4**	**-0.5**
YER	Yerkesik	0.98	138	*e*PG	**Pg**	**09 38 46.3**	**+0.3**
YER	Yerkesik	0.98	138	P	**Pg**	**09 38 46.1**	**+0.2**
YER				S	**Sb**	**09 39 00.2**	**+0.4**
YER	Yerkesik	0.98	138	*e*Pg	**Pg**	**09 38 46.3**	**+0.3**
YER				S	**Sb**	**09 39 00.2**	**+0.4**
AKHS	Akhisar	1.05	16	*i* P	**Pg**	**09 38 46.3**	**-0.9**
AKHS				*i* S	**Sg**	**09 39 00.5**	**-0.3**
AKHS	Akhisar	1.05	16	P	**Pg**	**09 38 46.3**	**-0.9**
AKHS				S	**Sg**	**09 39 00.5**	**-0.3**
AKS	Akhisar	1.05	16	*e*PG	**Pg**	**09 38 46.2**	**-0.9**
AKS	Akhisar	1.05	16	*e*Pg	**Pg**	**09 38 46.2**	**-0.9**
KULA	Kula-Manisa	1.15	55	*e*PN	**Pg**	**09 38 49.0**	**-0.1**
KULA	Kula-Manisa	1.15	55	P	**Pg**	**09 38 48.4**	**-0.7**
KULA				S	**Sg**	**09 39 02.5**	**-1.5**
KULA	Kula-Manisa	1.15	55	P	**Pg**	**09 38 48.4**	**-0.7**
KULA	Kula-Manisa	1.15	55	*e*Pn	**Pg**	**09 38 49.0**	**-0.1**
KULA				S	**Sg**	**09 39 02.5**	**-1.5**
CHOS	Chios island	1.22	296	*e*PN	**Pn**	**09 38 50.9**	**+0.2**
CHOS	Chios island	1.22	296	P	**Pg**	**09 38 49.9**	**-0.5**
CHOS				S	**Sb**	**09 39 06.6**	**0.0**
CHOS	Chios island	1.22	296	P	**Pb**	**09 38 50.7**	**+0.1**
CHOS				S	**Sb**	**09 39 06.6**	**0.0**
CHOS	Chios island	1.22	296	P	**Pb**	**09 38 50.6**	**+0.1**
CHOS				S	**Sn**	**09 39 07.4**	**-0.2**
CHOS				AML	AML	09 39 12.1	
	comp=E,1053μm,0.7s						
CHOS				AML	AML	09 39 12.1	
	comp=N,839μm,0.7s						
DKL	Dikili	1.28	340	*e*PN	**Pg**	**09 38 51.4**	**-0.1**
DKL	Dikili	1.28	340	*e*Pn	**Pg**	**09 38 51.4**	**-0.1**
NIS1	Nisyros Isl.	1.28	190	*e*PN	**Pn**	**09 38 52.8**	**+1.3**
NIS1	Nisyros Isl.	1.28	190	P	**Pb**	**09 38 51.7**	**+0.1**
NIS1	Nisyros Isl.	1.28	190	*e*Pn	**Pn**	**09 38 52.8**	**+1.3**
NIS1				S	**Sn**	**09 39 09.9**	**+0.8**
NIS1	Nisyros Isl.	1.28	190	P	**Pb**	**09 38 51.7**	**+0.1**
NIS1				S	**Sn**	**09 39 09.9**	**+0.8**
TURN	Turunc	1.35	137	*i* P	**Pn**	**09 38 49.8**	**-2.7**
TURN				*i* S	**Sg**	**09 39 07.2**	**-3.3**
UZP	Denizli	1.37	83	*i* P	**Pg**	**09 38 53.7**	**+0.4**
UZP				*i* S	**Sg**	**09 39 10.9**	**+0.2**
DALY	Dalyan (Muˆla	1.42	137	*e*PN	**Pg**	**09 38 54.3**	**0.0**
DALY	Dalyan (Muˆla	1.42	137	*e*Pn	**Pg**	**09 38 54.3**	**0.0**
DEMI	Demirci	1.54	40	*i* P	**Pn**	**09 38 55.4**	**+0.3**
DEMI				*i* S	**Sn**	**09 39 15.2**	**-0.2**
DEMI	Demirci	1.54	40	P	**Pn**	**09 38 55.4**	**+0.3**
DEMI				S	**Sn**	**09 39 15.2**	**-0.2**
AYVA	Ayvalik	1.56	338	*i* P	**Pn**	**09 38 55.2**	**-0.1**
AYVA				*i* S	**Sg**	**09 39 17.2**	**+0.1**
AYVA	Ayvalik	1.56	338	P	**Pn**	**09 38 55.2**	**-0.1**
AYVA				S	**Sg**	**09 39 17.2**	**+0.1**
PRK	Paraskevi	1.66	326	P	**Pn**	**09 38 56.1**	**-0.6**
PRK				S	**Sn**	**09 39 17.9**	**-0.4**
PRK	Paraskevi	1.66	326	P	**Pn**	**09 38 57.0**	**+0.3**
PRK				S	**Sg**	**09 39 19.9**	**-0.4**
PRK				AML	AML	09 39 23.2	
	comp=E,1097μm,0.8s						
PRK				AML	AML	09 39 24.6	
	comp=N,670μm,0.9s						
KHAL	Karahalli	1.68	72	*i* P	**Pn**	**09 38 55.6**	**-1.6**
KHAL				*i* S	**Sn**	**09 39 18.3**	**-0.8**
KHAL	Karahalli	1.68	72	P	**Pn**	**09 38 55.6**	**-1.6**
KHAL				S	**Sn**	**09 39 18.3**	**-0.8**
KHL	Karahalli	1.69	74	*e*PN	**Pn**	**09 38 58.0**	**+0.7**
KHL	Karahalli	1.69	74	*e*Pn	**Pn**	**09 38 58.0**	**+0.7**
APE	Apeiranthos	1.73	243	*e*PN	**Pb**	**09 38 59.3**	**+0.1**
APE	Apeiranthos	1.73	243	*e*Pn	**Pb**	**09 38 59.3**	**+0.1**
APE	Apeiranthos	1.73	243	P	**Pg**	**09 39 00.3**	**+0.2**
APE				S	**Sb**	**09 39 21.2**	**0.0**
APE	Apeiranthos	1.73	243	P	**Pg**	**09 39 00.3**	**+0.2**
APE				S	**Sb**	**09 39 21.2**	**0.0**
ARG	Arkhangelos	1.73	162	P	**Pg**	**09 39 00.5**	**+0.2**
ARG				S	**Sg**	**09 39 23.7**	**+0.9**
FETY	Fethiye	1.79	133	*e*PN	**Pb**	**09 39 00.0**	**-0.3**
FETY	Fethiye	1.79	133	*e*Pn	**Pb**	**09 39 00.0**	**-0.3**
BALB	Balikesir	1.80	11	*e*PN	**Pn**	**09 38 59.4**	**+0.8**
BALB	Balikesir	1.80	11	*e*Pn	**Pn**	**09 38 59.4**	**+0.8**
SIGR	SIGRI	1.84	317	*e*PN	**Pn**	**09 39 00.2**	**+1.2**
SIGR	SIGRI	1.84	317	P	**Pn**	**09 38 59.6**	**+0.5**
SIGR	SIGRI	1.84	317	P	**Pn**	**09 38 59.6**	**+0.5**
SIGR	SIGRI	1.84	317	*e*Pn	**Pn**	**09 39 00.3**	**+1.2**
SIGR				S	**Sb**	**09 39 23.9**	**-0.4**
SIGR	SIGRI	1.84	317	P	**Pb**	**09 39 01.5**	**+0.5**
SIGR				S	**Sb**	**09 39 23.9**	**-0.4**
SIGR				AML	AML	09 39 29.5	
	comp=N,353μm,0.6s						
SIGR				AML	AML	09 39 30.8	
	comp=E,310μm,0.6s						
DURS	Dursunbey	1.91	24	*i* P	**Pn**	**09 39 01.6**	**+1.3**
DURS				*i* S	**Sn**	**09 39 21.8**	**-2.7**
DURS	Dursunbey	1.91	24	P	**Pn**	**09 39 01.5**	**+1.3**
GDZ	Gediz	2.00	52	*i* P	**Pb**	**09 39 03.8**	**-0.2**
GDZ				*i* S	**Sg**	**09 39 33.6**	**+2.2**
GDZ	Gediz	2.00	52	P	**Pb**	**09 39 03.8**	**-0.2**
TVSB	Tavsanli	2.23	44	*e*PN	**Pn**	**09 39 06.2**	**+1.6**
TVSB	Tavsanli	2.23	44	*e*Pn	**Pn**	**09 39 06.2**	**+1.6**
KSL	Kastellorizon	2.42	135	P	**Pb**	**09 39 09.6**	**-1.4**
ORLT	Orhaneli	2.45	27	*e*PN	**Pn**	**09 39 08.9**	**+1.3**
ORLT	Orhaneli	2.45	27	*e*Pn	**Pn**	**09 39 08.9**	**+1.3**
EDC	Edincik	2.50	7	*e*PN	**Pn**	**09 39 10.1**	**+1.9**
EDC	Edincik	2.50	7	*e*Pn	**Pn**	**09 39 10.1**	**+1.9**
KCTX	Karacabey (Bur	2.50	16	*e*PN	**Pn**	**09 39 08.9**	**+0.7**
KCTX	Karacabey (Bur	2.50	16	*e*Pn	**Pn**	**09 39 08.9**	**+0.7**
GELI	Tayfur-Gelibol	2.64	344	*e*PN	**Pn**	**09 39 11.9**	**+1.8**
GELI	Tayfur-Gelibol	2.64	344	*e*Pn	**Pn**	**09 39 11.9**	**+1.8**
MRMT	Marmara Adasi	2.73	2	*e*PN	**Pn**	**09 39 13.5**	**+1.9**
MRMT	Marmara Adasi	2.73	2	*e*Pn	**Pn**	**09 39 13.5**	**+1.9**
RKY	Sarkoy-Tekirda	2.82	356	*e*PN	**Pn**	**09 39 13.8**	**+1.0**
RKY	Sarkoy-Tekirda	2.82	356	*e*Pn	**Pn**	**09 39 13.8**	**+1.0**
ERIK	Erikli-Kesan	2.89	346	*e*PN	**Pn**	**09 39 15.0**	**+1.3**
ERIK	Erikli-Kesan	2.89	346	*e*Pn	**Pn**	**09 39 15.0**	**+1.3**
ARMT	Armutlu	2.91	22	*e*PN	**Pn**	**09 39 14.7**	**+0.8**
ARMT	Armutlu	2.91	22	*e*Pn	**Pn**	**09 39 14.7**	**+0.8**
IZI	Iznik	2.92	32	*e*PN	**Pn**	**09 39 15.3**	**+1.1**
IZI	Iznik	2.92	32	*e*Pn	**Pn**	**09 39 15.3**	**+1.1**
CAVI	Cavuskoy	2.98	38	*e*PN	**Pn**	**09 39 16.5**	**+1.6**
CAVI	Cavuskoy	2.98	38	*e*Pn	**Pn**	**09 39 16.5**	**+1.6**
ENEZ	Enez	3.04	341	*e*PN	**Pn**	**09 39 17.1**	**+1.5**
ENEZ	Enez	3.04	341	*e*Pn	**Pn**	**09 39 17.1**	**+1.5**
ADVT	Abdulvahap	3.12	34	*e*PN	**Pn**	**09 39 18.6**	**+1.9**
ADVT	Abdulvahap	3.12	34	*e*Pn	**Pn**	**09 39 18.6**	**+1.9**

**IDC 21 09:42:57.0±1.8, 5°.93S×130°.38E, h0km, mb3.5/2, mb1 3.7/5, mb1mx3.5/51

MMAI	**Mount Meron Ar**	**65.60**	**45**	LR	LR	10 26 23.6			
	comp=Z,20nm,21.7s,baz=295,slow=35								
GERES	**GERESS Array B**	**65.70**	**20**	P	**P**	**09 58 50.0**	**+0.5**		
	0.2nm,0.3s,baz=183,slow=2.0,SNR=2.2								
GERES				LR	LR	10 28 16.8			
	comp=Z,71nm,18.1s,baz=236,slow=37								
VRAC	**Vranov**	**67.11**	**22**	LR	LR	10 27 54.6			
	comp=Z,45nm,18.6s,baz=176,slow=36								
BRTR	**Keskin Array B**	**68.41**	**38**	P	**P**	**09 59 07.8**	**+0.8**		
	1.1nm,0.8s,baz=189,slow=6.7,SNR=1.9								
BRTR				LR	LR	10 29 23.0			
	comp=Z,24nm,18.6s,baz=276,slow=36								
AKASG	**Malin Array Be**	**73.35**	**27**	P	**P**	**09 59 35.7**	**-0.9**		
	0.9nm,0.4s,baz=224,slow=5.7,SNR=1.6								
NOA	**NORSAR Array B**	**75.77**	**13**	P	**P**	**09 59 51.2**	**+0.8**		
	1.8nm,1.1s,baz=205,slow=6.0,SNR=4.3								
WSAR	**Wadi Sarin**	**79.92**	**64**	P	**P**	**10 00 14.8**	**+0.4**		
	3.7nm,0.9s,baz=57,slow=4.2,SNR=2.3								
FINES	**FINESS Array B**	**80.06**	**19**	P	**P**	**10 00 15.2**	**+0.9**		
	0.7nm,0.6s,baz=188,slow=18,SNR=1.6								
FINES				LR	LR	10 34 48.6			
	comp=Z,47nm,21.3s,baz=348,slow=35								
ARCES	**ARCESS Array B**	**86.14**	**13**	LR	LR	10 40 19.4			
	comp=Z,27nm,18.8s,baz=272,slow=36								
AKTO	**Aktyubinsk**	**88.58**	**38**	P	**P**	**10 00 57.7**	**-0.1**		
	0.3nm,0.2s,baz=94,slow=16,SNR=1.5								
TXAR	**Lajitas Array**	**94.88**	**299**	LR	LR	10 46 50.5			
	comp=Z,31nm,18.5s,baz=0.0,slow=37								
MJAR	**Matsushiro Arr**	**145.62**	**40**	PKPbc	**PKPdf**	**10 07 43.8**	**0.0**		
	0.8nm,0.6s,baz=284,slow=2.6,SNR=2.4								

*IDC **21** 09:49:32.8±0.6,5.°45S×151.°86E,h0km, mb4.4/20, mb1 4.6/20,mb1mx4.3/51, mbtmp4.4/20,MS3.5/11, Ms1 3.6/11,ms1mx3.4/36,Error ellipse: s-maj=21.9km s-min=14.3km az=100.0*

*BJI **21** 09:49:35.9,5.°84S×152.°56E,h62km, mb4.8/9, mB4.8/5, Ms4.8/4,Ms7 4.4/3*

*ISCJB **21** 09:49:37.8±0.3,5.°57S±0.°04×151.°90E±0.°06, h45km, mb4.5/40,MS3.8/12,Error ellipse: s-maj=9.0km s-min=5.4km az=27.3*

*NEIC **21** 09:49:40.3±0.8,5.°51S×151.°90E,h53km±7km, mb4.6/20, Error ellipse: s-maj=8.0km s-min=5.3km az=117.0*

*DJA **21** 09:49:40.0±5.1,5.°S±31.°×15.°2E±2.°4, h80km±25km, M4.9/10, mB5.1/1, mb4.5/10, MLv5.1/1, Mw(mB)4.4/1*

ISC 21 09:49:39.4±0.5,5.°58S±0.°05×151.°94E±0.°08, h45km, n73, σ1°10/66, mb4.4/40, MS3.6/12, New Britain region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
RABL	**Rabaul**	**1.40**	**9**	*e*Pn	**Pn**	**09 50 02.7**	**+0.3**
RABL				*e*Sn	**Sn**	**09 50 22.6**	**+2.8**
MANU	**Manus Island**	**5.75**	**307**	*e*Pn	Pn	09 51 07.9	+5.6
PMG	**Port Moresby**	**6.07**	**231**	Pn	**Pn**	**09 51 07.7**	**+1.0**
	12nm,0.3s,baz=44,slow=7.5,SNR=38						
PMG				Sn	**Sn**	**09 52 15.4**	**+0.5**
	5.3nm,0.3s,baz=49,slow=20,SNR=3.2						
PMG				LR	LR	09 52 37.5	
	comp=Z,95nm,19.5s,baz=20,slow=30						
PMG	**Port Moresby**	**6.07**	**231**	*e*Pn	**Pn**	**09 51 08.1**	**+1.4**
PMG				Sn	**Sn**	**09 52 15.4**	**+0.5**
HNR	**Honiara**	**8.82**	**116**	LR	LR	09 55 24.6	
	comp=Z,237nm,18.0s,baz=293,slow=39						
HNR	**Honiara**	**8.82**	**116**	*e*Pn	**Pn**	**09 51 45.8**	**+1.4**
JAY	**Jayapura**	**11.61**	**285**	LR	LR	09 56 23.1	
	comp=Z,17nm,18.5s,baz=154,slow=36						
CTA	**Charters Tower**	**15.44**	**200**	Pn	**P**	**09 53 18.5**	**+0.3**
	0.3nm,0.3s,baz=25,slow=14,SNR=8.3						
CTAO	**Charters Tower**	**15.44**	**200**	*e*Pn	**P**	**09 53 15.8**	**-2.4**
	8.4nm,0.9s						
EIDS	**Eidsvold**	**19.70**	**182**	*e*P	**Pn**	**09 54 05.8**	**-1.0**
	30nm,0.9s						
DZM	**Mont Dzumac**	**21.58**	**141**	P	**P**	**09 54 24.9**	**-0.6**
	6.0nm,0.6s,baz=336,slow=5.4,SNR=5.9						
MTN	**Manton Dam**	**21.75**	**249**	*e*P	**P**	**09 54 28.8**	**+1.5**
	27nm,0.4s						
WRAB	**Tennant Creek**	**22.27**	**229**	*e*P	**P**	**09 54 32.6**	**-0.3**
	26nm,0.8s						
WB2	**Warramunga Arr**	**22.28**	**229**	*e*P	**P**	**09 54 33.0**	**+0.1**
	24nm,0.7s						
WRA	**Warramunga Arr**	**22.29**	**229**	P	**P**	**09 54 32.4**	**-0.6**
	28nm,0.9s,baz=53,slow=9.7,SNR=55						
WRA				LR	LR	10 04 47.8	
	comp=Z,185nm,18.1s,baz=30,slow=41						
ARMA	**Armidale**	**24.71**	**181**	*e*P	**P**	**09 54 57.5**	**+1.0**
	11nm,0.9s						
AS01	**Alice Springs**	**24.96**	**222**	*e*P	**P**	**09 54 58.9**	**0.0**
AS31	**Alice Springs**	**25.00**	**222**	*e*P	**P**	**09 54 59.1**	**-0.1**
	10nm,0.8s						
ASAR	**Alice Springs**	**25.00**	**222**	P	**P**	**09 54 59.0**	**-0.2**
	29nm,0.8s,baz=56,slow=9.0,SNR=204						
ASAR				LR	LR	10 04 32.8	
	comp=Z,111nm,21.8s,baz=42,slow=36						
STKA	**Stephens Creek**	**27.90**	**199**	P	**P**	**09 55 25.2**	**+0.1**
	4.5nm,0.8s,baz=24,slow=12,SNR=8.5						
STKA				LR	LR	10 06 08.2	
	comp=Z,153nm,18.7s,baz=18,slow=36						
STKA	**Stephens Creek**	**27.90**	**199**	*e*P	**P**	**09 55 25.5**	**+0.3**
	1.8nm,1.0s						
FITZ	**Fitzroy Crossi**	**28.53**	**242**	P	**P**	**09 55 30.6**	**-0.4**
	14nm,0.7s,baz=76,slow=8.0,SNR=33						
FITZ	**Fitzroy Crossi**	**28.53**	**242**	*e*P	**P**	**09 55 30.6**	**-0.4**
	15nm,0.8s						
MBWA	**Marble Bar**	**34.84**	**241**	*e*P	**P**	**09 56 26.3**	**-0.1**
STKI	**Sintang**	**40.78**	**277**	P	P	09 57 12.5	-4.2
JNU	**Nakatsue**	**43.37**	**334**	P	**P**	**09 57 36.5**	**-1.0**
	6.5nm,0.8s,baz=252,slow=3.2,SNR=3.0						
MJAR	**Matsushiro Arr**	**43.83**	**344**	LR	LR	10 14 42.5	
	comp=Z,51nm,20.2s,baz=185,slow=35						
DSRI	**Dabo**	**47.54**	**274**	P	P	09 58 25.3	+14
KSRS	**Korea Array**	**48.31**	**334**	LR	LR	10 16 56.3	
	comp=Z,47nm,21.6s,baz=145,slow=34						
USRK	**Ussuriysk Ar.**	**52.71**	**342**	P	P	09 58 52.8	+3.3
	1.8nm,0.8s,baz=146,slow=8.0,SNR=4.0						
KLR	**Kul'dur**	**57.35**	**344**	P	**P**	**09 59 20.8**	**-2.2**
	1.1nm,0.7s,baz=146,slow=6.2,SNR=4.5						
CMAR	**Chiang Mai Arr**	**57.43**	**296**	P	**P**	**09 59 23.1**	**-1.0**
	0.7nm,0.4s,baz=146,slow=27,SNR=4.4						
CMAR				LR	LR	10 23 41.9	
	comp=Z,29nm,19.5s,baz=70,slow=36						
CD2	**Chengdu**	**58.59**	**311**	P	**P**	**09 59 32.3**	**+0.2**
CD2				pmax	pmax		
	comp=Z,1.0nm,0.5s						
PETK	**Petropavlovsk-**	**58.67**	**4**	P	**P**	**09 59 31.4**	**-0.7**
	1.6nm,0.5s,baz=165,slow=6.1,SNR=7.6						
PETK				LR	LR	10 21 21.8	
	comp=Z,40nm,19.4s,baz=188,slow=33						
HHC	**Hu-ho-hao-te**	**59.18**	**325**	*e*P	P	09 59 39.3	+3.3
HHC				pP	sP	09 59 52.3	-1.7
HHC				sP	pP	09 59 56.9	+8.1
HHC				pmax	pmax		
	comp=Z,17nm,0.8s						
HHC				pmax	pmax		
	comp=Z,110nm,6.3s						
HHC				LR	LR		
	comp=N,100nm,14.8s						
HHC				LR	LR		
	comp=E,340nm,14.8s						
HHC				LR	LR		
	comp=Z,88nm,16.0s						
LZH	**Lanzhou**	**61.19**	**317**	*e*P	**P**	**09 59 50.5**	**+0.6**
LZH				pP	sP	10 00 07.0	-1.0
LZH				sP	pP	10 00 14.6	+12
LZH				*e*PP	**PP**	**10 02 08.8**	**+3.6**
LZH				pmax	pmax		
	comp=Z,19nm,1.5s						
LZH				pmax	pmax		
	comp=Z,56nm,8.3s						
LZH				LR	LR		
	comp=N,200nm,15.0s						
LZH				LR	LR		
	comp=E,190nm,15.6s						
LZH				LR	LR		
	comp=Z,260nm,18.7s						
ULN	**Ulaanbaatar**	**66.20**	**329**	*e*P	**P**	**10 00 22.6**	**-0.2**
	3.1nm,0.8s						
SONM	**Songino Array**	**66.53**	**328**	P	**P**	**10 00 24.7**	**-0.1**
	3.4nm,0.5s,baz=144,slow=5.2,SNR=14						
SONA1	**Songino Array**	**66.53**	**328**	*e*P	**P**	**10 00 24.8**	**-0.1**
VNDA	**Vanda**	**72.09**	**178**	P	**P**	**10 00 59.1**	**+0.6**
	1.9nm,0.9s,baz=335,slow=7.9,SNR=6.6						
WMQ	**Urumqi**	**75.73**	**318**	*e*P	**P**	**10 01 22.0**	**+1.5**
WMQ				pmax	pmax		
	comp=Z,4.0nm,0.6s						
WMQ				pmax	pmax		
	comp=Z,55nm,4.8s						
WMQ				LR	LR		
	comp=N,35nm,23.0s						
WMQ				LR	LR		
	comp=E,100nm,24.0s						
MK01	**Makanchi Array**	**80.33**	**319**	*e*P	**P**	**10 01 45.8**	**-0.1**
MK31	**Makanchi Array**	**80.35**	**319**	*e*P	**P**	**10 01 46.2**	**+0.2**
MKAR	**Makanchi Array**	**80.35**	**319**	P	**P**	**10 01 45.9**	**-0.1**
	1.9nm,0.9s,baz=96,slow=6.7,SNR=9.8						
CAST	**Castle Rocks**	**80.55**	**22**	*e*P	**P**	**10 01 47.0**	**+0.3**
	3.2nm,0.7s						
KTH	**Kantishna Hill**	**81.06**	**22**	*e*P	**P**	**10 01 48.8**	**-0.7**
ZAA0	**Zalesovo Array**	**81.32**	**327**	*e*P	**P**	**10 01 49.4**	**-1.5**
ZALV	**Zalesovo Beam**	**81.32**	**327**	P	**P**	**10 01 49.4**	**-1.5**
	2.2nm,0.4s,baz=114,slow=6.1,SNR=10						
MCK	**McKinley**	**81.91**	**23**	*e*P	**P**	**10 01 53.9**	**0.0**
	16nm,1.4s						
MLY	**Manley**	**81.92**	**21**	*e*P	**P**	**10 01 54.3**	**+0.4**
	3.3nm,0.5s						
CCB	**Clear Creek Bu**	**82.80**	**22**	*e*P	**P**	**10 01 58.1**	**-0.3**
	2.9nm,0.9s						
TKM2	**Tokmak 2**	**83.85**	**314**	*e*P	**P**	**10 02 04.9**	**+0.2**
	2.4nm,0.6s						
KURK	**Kurchatov**	**83.85**	**322**	*e*P	**P**	**10 02 03.3**	**-0.9**
	9.3nm,1.3s						
KURBB	**Kurchatov Arra**	**83.88**	**322**	P	**P**	**10 02 03.2**	**-1.2**
	1.3nm,0.7s,baz=109,slow=4.2,SNR=10						
AAK	**Ala-Archa**	**84.58**	**314**	*e*P	**P**	**10 02 08.9**	**+0.5**
	3.8nm,1.0s						
EKS2	**Erkin-Say**	**85.10**	**314**	*e*P	**P**	**10 02 11.6**	**+0.6**
	12nm,1.3s						
NRIK	**Noril'sk**	**86.42**	**341**	P	**P**	**10 02 14.5**	**-2.2**
	1.3nm,0.3s,baz=153,slow=9.0,SNR=2.1						
DLBC	**Dease Lake**	**88.49**	**31**	*e*P	**P**	**10 02 28.7**	**+1.7**
	6.7nm,1.1s						
BVAR	**Borovoye Array**	**89.35**	**323**	P	**P**	**10 02 29.6**	**-1.4**
	0.9nm,0.5s,baz=72,slow=4.8,SNR=7.8						
INK	**Inuvik**	**89.49**	**21**	P	**P**	**10 02 31.2**	**-0.1**
	0.7nm,0.6s,baz=279,slow=3.6,SNR=6.0						
ARU	**Arti**	**96.48**	**326**	LR	LR	10 46 08.8	
	comp=Z,71nm,21.9s,baz=134,slow=35						
YKA	**Yellowknife Ar**	**96.51**	**28**	P	**P**	**10 03 04.2**	**+0.4**
	0.5nm,0.6s,baz=269,slow=4.7,SNR=18						
YKB5	**Yellowknife Ar**	**96.51**	**28**	*e*P	**P**	**10 03 03.4**	**-0.4**
MLI	**Malad Range**	**98.11**	**48**	*e*P	Pdif	10 03 15.4	+3.6
PDAR	**Pinedale Array**	**100.01**	**48**	P	**Pdif**	**10 03 20.6**	**+0.2**
	0.3nm,0.8s,baz=258,slow=3.6,SNR=3.0						
GERES	**GERESS Array B**	**124.26**	**328**	PKP	**PKPdf**	**10 08 33.7**	**+0.2**
	0.9nm,0.4s,baz=90,slow=1.3,SNR=9.1						
EKA	**Eskdalemuir Ar**	**126.52**	**343**	PKP	**PKPdf**	**10 08 39.7**	**+2.2**
	0.4nm,0.5s,baz=301,slow=28,SNR=3.1						
PTGA	**Pitinga**	**147.53**	**100**	PKPbc	**PKPab**	**10 09 20.7**	**-1.2**
	baz=284,slow=17						
TORD	**Torodi Ar. Bea**	**149.72**	**287**	PKPbc	**PKPbc**	**10 09 25.1**	**-0.3**
	3.2nm,0.5s,baz=82,slow=2.4,SNR=52						

IDC 21 09:53:27.7±3.2,54.°64N×86.°51E,h0km,mb1 3.1/2, mb1mx2.9/62,mbtmp3.1/2,ML2.8/2,Error ellipse: s-maj=24.6km s-min=16.0km az=47.0,Southwestern Siberia

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
I46RU	**ZALESOVO INFRA**	**1.21**	**236**	*i*		10 02 30.0	
	baz=55,slow=321,SNR=6.1						
ZALV	**Zalesovo Beam**	**1.21**	**236**	Pg	Pg	09 53 49.5	-1.4
	4.6nm,0.3s,baz=54,slow=16,SNR=27						
ZALV				Lg	Lg	09 54 07.8	
	4.1nm,0.3s,baz=54,slow=27,SNR=10						
KURBB	**Kurchatov Arra**	**6.30**	**234**	Pn	Pn	09 55 02.4	+0.5
	0.1nm,0.3s,baz=51,slow=14,SNR=7.9						
KURBB				Sn	Sn	09 56 14.5	0.0
	0.0nm,0.3s,baz=46,slow=22,SNR=1.8						
KURBB				Lg	Lg	09 56 45.2	
	0.1nm,0.3s,baz=50,slow=31,SNR=3.9						
MKAR	**Makanchi Array**	**8.29**	**201**	Pn	Pn	09 55 30.6	+1.4
	0.2nm,0.3s,baz=19,slow=13,SNR=4.6						
MKAR				Sn	Sn	09 57 02.4	-1.2
	0.1nm,0.3s,baz=29,slow=28,SNR=1.9						
MKAR				Lg	Lg	09 57 58.5	
	0.1nm,0.3s,baz=24,slow=27,SNR=1.8						

CASC 21 09:56:27.6±1.2,12.°47N×89.°02W,h19km±11km, MD3.5, ML2.9,Off coast of central America

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
TECA	**Tecapa**	**1.14**	**26**	*e*P	Pn	09 56 48.3	-0.5
LFRS	**El Faro**	**1.15**	**358**	*i* P	Pn	09 56 48.0	-0.8
LFRS				*e*S	Sb	09 57 03.7	+0.1
VSM	**San Miguel**	**1.20**	**37**	*e*P	Pb	09 56 49.8	-0.1
PACA	**Pacayal**	**1.21**	**34**	*e*P	Pn	09 56 49.5	-0.1
COLS	**Colinas**	**1.22**	**347**	*e*P	Pn	09 56 48.6	-1.2
SNET	**Serv Nac Est T**	**1.23**	**350**	*e*P	Pb	09 56 50.2	-0.2
SNET				AML	AML	09 57 10.9	
	comp=Z,443nm,0.2s						
LBRS	**Las Brisas**	**1.27**	**359**	*i* P	Pn	09 56 50.2	-0.2
LFU	**La Fuente**	**1.28**	**356**	*e*P	Pn	09 56 50.1	-0.4
LFU				*e*S	Sb	09 57 08.1	+0.8
BOQS	**Boqueron**	**1.29**	**349**	*e*P	Pn	09 56 50.1	-0.8
SBLS	**San Blas**	**1.49**	**337**	*e*P	Pn	09 56 53.8	+0.2
SNJE	**San Jose**	**1.51**	**338**	*e*P	Pn	09 56 53.5	-0.3
MONT	**Ecomontaæa**	**1.51**	**336**	*e*P	Pn	09 56 54.2	+0.2
CSGN	**Cosiguina Volc**	**1.51**	**70**	*e*P	Pn	09 56 53.5	-0.3
CSGN				*e*S	Sg	09 57 17.9	+1.3
RTR	**El Retiro**	**1.55**	**337**	*e*P	Pn	09 56 54.4	0.0
RBDL	**Robledal**	**1.76**	**338**	*e*P	Pn	09 56 57.5	+0.2
TEL3	**Telica 3**	**2.13**	**87**	*e*P	Pn	09 57 01.7	-0.5
CNGN	**Cerro Negro**	**2.27**	**89**	*e*P	Pn	09 57 03.2	-0.9
CNGN				AML	AML	09 57 36.8	
	comp=E,49nm,0.4s						
COPN	**Copaltepe**	**2.39**	**97**	AML	AML	09 57 42.4	
	comp=Z,76nm,0.4s						
MOMN	**Momotombo**	**2.42**	**91**	*e*P	Pn	09 57 05.6	-0.7
TISN	**Laguna Tiscapa**	**2.71**	**97**	*e*P	Pn	09 57 10.3	+0.1

*IDC **21** 09:57:47.1±1.2, 13.°06N×88.°53W,h0km, mb3.9/7, mb1 4.1/9, mb1mx3.7/46, mbtmp3.9/9, ML3.3/2, MS3.0/1, Ms1 3.0/1, ms1mx2.4/38, Error ellipse: s-maj=46.1km s-min=21.6km az=59.0*

ISC 21 09:57:55.1±1.0,13.°0N±0.°2×88.°4W±0.°2, h67km, n11, σ1°29/11, mb3.9/8, Off coast of central America

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JTS	**JuntasAbangare**	**4.28**	**128**	Pn	**Pn**	**09 58 57.1**	**-0.8**
	1.2nm,0.3s,baz=308,slow=19,SNR=4.5						
JTS				Sn	**Sn**	**09 59 46.1**	**-0.5**
	1.1nm,0.3s,baz=274,slow=17,SNR=1.8						
CMIG	**Matias Romero**	**7.51**	**304**	Pn	Pn	09 59 35.2	-6.8
	0.7nm,0.3s,baz=141,slow=8.6,SNR=12						
CMIG				Sn	Sn	10 00 51.8	-14
	0.3nm,0.3s,baz=153,slow=18,SNR=1.3						
TXAR	**Lajitas Array**	**21.60**	**321**	P	**P**	**10 02 38.7**	**-1.0**
	3.0nm,0.5s,baz=143,slow=11,SNR=49						
TKL	**Tuckaleechee C**	**22.95**	**10**	P	**P**	**10 02 56.2**	**+2.3**
	4.4nm,0.8s,baz=181,slow=12,SNR=6.4						
TKL				LR	LR	10 11 36.9	
	comp=Z,38nm,20.8s,baz=221,slow=36						
ULM	**Lac du Bonnet**	**37.67**	**352**	P	**P**	**10 05 02.5**	**-1.3**
	1.6nm,0.5s,baz=164,slow=11,SNR=2.0						
SCHQ	**Schefferville**	**45.03**	**17**	P	**P**	**10 06 04.9**	**+0.9**
	2.0nm,0.6s,baz=231,slow=12,SNR=2.3						
YKA	**Yellowknife Ar**	**52.87**	**345**	P	**P**	**10 07 03.0**	**-0.8**
	0.5nm,0.7s,baz=140,slow=7.7,SNR=11						
PLCA	**Paso Flores**	**55.94**	**164**	P	**P**	**10 07 27.5**	**+1.1**
	3.5nm,1.0s,baz=252,slow=14,SNR=3.0						
RES	**Resolute Bay**	**61.80**	**358**	P	**P**	**10 08 06.2**	**-0.4**
	0.6nm,0.7s,baz=258,slow=2.0,SNR=4.6						
INK	**Inuvik**	**62.43**	**343**	P	**P**	**10 08 10.6**	**-0.3**
	0.8nm,0.8s,baz=112,slow=3.4,SNR=3.4						
WRA	**Warramunga Arr**	**138.56**	**255**	PKP	**PKPdf**	**10 17 15.6**	**+1.4**
	0.3nm,0.6s,baz=81,slow=1.3,SNR=7.4						

*IDC **21** 10:00:33.2±0.9,37.°47N×144.°70E,h0km,mb3.9/7, mb1 4.1/9,mb1mx3.7/53,mbtmp3.9/9,ML3.7/2,MS2.6/3, Ms1 2.6/3,ms1mx2.4/44,Error ellipse: s-maj=25.7km s-min=19.8km az=104.0*

*ISCJB **21** 10:00:37.3±0.7,37.°73N±0.°04×144.°43E±0.°05, h33km, mb3.9/7, Error ellipse: s-maj=6.6km s-min=5.0km az=138.1*

*JMA **21** 10:00:37.6±0.2,37.°69N×144.°39E,h42km,M4.0*

ISC 21 10:00:38.6±0.9,37.°67N±0.°06×144.°48E±0.°07, h35km, n32, σ1°27/40, mb3.9/7, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**2.59**	**289**	P	**Pn**	**10 01 17.6**	**-0.5**
JIO				S	**Sn**	**10 01 47.0**	**-1.3**
OFUJ	**Ofunato**	**2.62**	**303**	P	**Pn**	**10 01 17.7**	**-0.8**
JMK	**Ichinoseki**	**2.87**	**298**	P	**Pn**	**10 01 21.5**	**-0.3**
JMK				S	**Sn**	**10 01 54.2**	**-0.9**
JFK	**Kawauchi**	**2.88**	**265**	P	**Pn**	**10 01 21.1**	**-1.0**
JFK				S	**Sn**	**10 01 54.3**	**-1.3**
JMM	**Marumori**	**2.93**	**275**	P	**Pn**	**10 01 21.4**	**-1.3**
JMM				S	**Sn**	**10 01 54.8**	**-1.8**
JTH	**Tanohata**	**3.05**	**319**	P	**Pn**	**10 01 23.9**	**-0.5**
JTH				S	**Sn**	**10 01 58.9**	**-0.8**
JOM	**Ohasama**	**3.08**	**307**	P	**Pn**	**10 01 24.7**	**-0.1**
JOM				S	**Sn**	**10 01 59.7**	**-0.7**
JOU	**Okura**	**3.10**	**284**	P	**Pn**	**10 01 25.1**	**+0.1**
JFT	**Otama**	**3.29**	**269**	S	**Sn**	**10 02 04.8**	**-0.9**
JYK	**Kaneyama**	**3.48**	**292**	P	**Pn**	**10 01 30.4**	**+0.2**
JYK				S	**Sn**	**10 02 10.0**	**-0.1**
JRG	**Rokugo**	**3.48**	**301**	P	**Pn**	**10 01 30.7**	**+0.5**
JANG	**Nango**	**3.56**	**320**	P	**Pn**	**10 01 30.6**	**-0.7**
JTM	**Tenmabayashi**	**4.09**	**321**	P	**Pn**	**10 01 39.4**	**+0.8**
JTM				S	**Sn**	**10 02 22.8**	**-2.4**
JRY	**Ryogami san**	**4.77**	**251**	P	**Pn**	**10 01 47.0**	**-1.0**
JRY				S	**Sn**	**10 02 38.2**	**-3.9**
JNBK	**Urakawa-nobuka**	**4.79**	**344**	P	**Pn**	**10 01 47.9**	**-0.4**
JNBK				S	**Sn**	**10 02 40.6**	**-2.0**
JKB	**Kayabe**	**4.98**	**329**	P	**Pn**	**10 01 51.1**	**+0.2**
JCH	**Churui**	**5.02**	**351**	P	**Pn**	**10 01 49.6**	**-1.7**
MJAR	**Matsushiro Arr**	**5.14**	**259**	Pn	**Pn**	**10 01 53.9**	**+0.8**
	2.4nm,0.3s,baz=90,slow=15,SNR=10						
MJAR				Sn	**Sn**	**10 02 51.7**	**+0.6**
	1.3nm,0.3s,baz=56,slow=24,SNR=6.4						
MAT	**Matsushiro**	**5.14**	**259**	P	**Pn**	**10 01 53.9**	**+0.8**
MAT				S	**Sn**	**10 02 50.7**	**-0.5**
JHJ	**Hachijo jima 2**	**5.94**	**222**	LR	LR	10 05 28.0	
	comp=Z,29nm,18.1s,baz=51,slow=50						
ASAJ	**Asahikawa**	**6.60**	**348**	Pn	**Pn**	**10 02 12.6**	**-0.5**
	1.5nm,0.3s,baz=210,slow=12,SNR=12						
ASAJ				Sn	**Sn**	**10 03 26.1**	**-0.9**
	0.7nm,0.3s,baz=150,slow=20,SNR=4.7						
ASAJ				LR	LR	10 05 35.5	
	comp=Z,32nm,18.7s,baz=167,slow=44						
USRK	**Ussuriysk Ar.**	**11.48**	**309**	LR	LR	10 08 06.4	
	comp=Z,71nm,18.7s,baz=81,slow=39						
H11N2	**WAKE ISLAND Hy**	**26.46**	**126**	T	T	10 33 46.5	
	baz=317,slow=74,SNR=34						
H11N1	**WAKE ISLAND Hy**	**26.47**	**126**	T	T	10 33 43.2	
	baz=317,slow=74,SNR=15						
H11N3	**WAKE ISLAND Hy**	**26.48**	**126**	T	T	10 33 44.7	
	baz=317,slow=74,SNR=22						
CMAR	**Chiang Mai Arr**	**44.02**	**257**	P	**P**	**10 08 44.5**	**+1.6**
	0.8nm,0.3s,baz=39,slow=7.0,SNR=4.1						
MKAR	**Makanchi Array**	**45.85**	**302**	P	**P**	**10 08 58.9**	**+1.6**
	1.9nm,0.3s,baz=76,slow=10,SNR=4.1						
KURBB	**Kurchatov Arra**	**47.54**	**308**	P	**P**	**10 09 11.7**	**+1.3**
	0.8nm,0.5s,baz=81,slow=7.8,SNR=9.2						
ILAR	**Eielson Array**	**47.65**	**33**	P	**P**	**10 09 11.6**	**+0.6**
	0.7nm,0.7s,baz=268,slow=6.6,SNR=8.2						
WRA	**Warramunga Arr**	**58.09**	**191**	P	**P**	**10 10 26.6**	**-1.9**
	4.4nm,0.5s,baz=11,slow=7.1,SNR=60						
ASAR	**Alice Springs**	**61.81**	**191**	P	**P**	**10 10 52.8**	**-1.2**
	0.7nm,0.4s,baz=7.1,slow=7.1,SNR=23						
PDAR	**Pinedale Array**	**75.46**	**47**	P	**P**	**10 12 19.9**	**+0.6**
	0.3nm,0.6s,baz=270,slow=1.5,SNR=4.2						

DHMR 21 10:01:27.3±1.2,12.°13N×43.°96E,h12km±20km, ML4.2, Western Arabian Peninsula

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
ADEN	**Aden**	**1.19**	**57**	*i* P	Pn	10 01 49.6	-0.2
ADEN				*i* S	Sg	10 02 05.8	-0.1
ADEN				AML	AML	10 02 14.8	
	comp=E,7µm,0.6s						
UDYN	**Al 'Udayn**	**1.83**	**0**	*i* P	Pb	10 02 00.0	-0.8
UDYN				*i* S	Sb	10 02 24.5	+0.7
DHBB	**Dhamar BB**	**2.47**	**10**	*i* P	Pb	10 02 09.9	-1.9
DHBB				*i* S	Sb	10 02

JANG	**Nango**	**1.78**	**331**	P	Pn	10 16 12.9 +1.1
JYK	**Kaneyama**	**1.80**	**274**	P	Pb	10 16 13.6 -1.2
JYS	**Shirataka**	**2.12**	**254**	P	Pb	10 16 18.5 -1.9
MAT	**Matsushiro**	**4.21**	**238**	P	Pn	10 16 48.8 +3.6
MAT				S	Sb	10 17 43.2 -3.0

*NIED **21** 10:18:00,37.20N×141.40E,h41km,Mw3.7 Best double couple: M♋3.81000×10^14 NP1:φ♋170.00000°,δ7.00000°, λ35.00000°. NP2:φ♋46.00000°,δ86.00000°,λ96.00000°.*
*ISCJB **21** 10:18:10.7±0.9,37.21N±0.04×141.52E±0.09,h46km±9km, mb3.6/6,Error ellipse: s-maj=12.4km s-min=5.9km az=20.6*
*JMA **21** 10:18:12.5±0.1,37.22N×141.38E,h48km±1km,M3.6*
JMA Felt I J1.
*IDC **21** 10:18:13.2±2.0,37.24N×141.35E,h47km±20km,mb3.4/6, mb1 3.6/9,mb1mx3.3/63,mbtmp3.7/9,ML3.6/3,Error ellipse: s-maj=26.3km s-min=15.3km az=108.0*

ISC 21 10:18:11.3±1.6,37.19N±0.05×141.51E±0.07,h33km±9km, n22,σ1♋08/25,mb3.7/6,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**0.54**	**289**	P	**Pb**	**10 18 22.8**	**+0.3**
JFK				S	**Sb**	**10 18 29.8**	**-0.4**
ONAJ	**Iwakimizuishiy**	**0.58**	**261**	P	**Pb**	**10 18 23.4**	**+0.2**
ONAJ				S	**Sb**	**10 18 30.8**	**-0.5**
JMM	**Marumori**	**0.88**	**320**	P	**Pn**	**10 18 27.4**	**-0.1**
JMM				S	**Sn**	**10 18 38.3**	**-0.9**
JHO	**Hitachi**	**0.95**	**233**	P	**Pn**	**10 18 28.2**	**-0.2**
JHO				S	**Sn**	**10 18 39.4**	**-1.5**
JFT	**Otama**	**0.99**	**290**	P	**Pn**	**10 18 29.5**	**+0.5**
JFT				S	**Sn**	**10 18 41.3**	**-0.6**
JIO	**Ouri**	**1.27**	**354**	P	**Pn**	**10 18 33.1**	**+0.3**
JIO				S	**Sn**	**10 18 47.7**	**-1.0**
MJAR	**Matsushiro Arr** 3.8nm,0.3s,baz=61,slow=13,SNR=15	**2.73**	**257**	P	**Pn**	**10 18 53.7**	**+0.9**
MAT	**Matsushiro**	**2.73**	**257**	P	**Pn**	**10 18 54.4**	**+1.5**
MAT				S	**Sn**	**10 19 27.3**	**+2.5**
JHJ	**Hachijo jima 2** 14nm,0.3s,baz=82,slow=19,SNR=4.4	**4.30**	**200**	P	**Pn**	**10 19 15.6**	**+1.1**
JHJ				S	**Sn**	**10 20 02.0**	**-1.5**
	20nm,0.3s,baz=90,slow=20,SNR=2.6						
ASAJ	**Asahikawa** 1.3nm,0.3s,baz=214,slow=11,SNR=9.4	**6.97**	**6**	P	**Pn**	**10 19 51.7**	**+0.6**
ASAJ				S	**Sn**	**10 21 10.1**	**+1.0**
	0.5nm,0.3s,baz=108,slow=20,SNR=3.5						
SONM	**Songino Array** 1.2nm,0.7s,baz=104,slow=9.6,SNR=4.3	**27.76**	**304**	P	**P**	**10 23 55.5**	**-1.6**
H11N2	**WAKE ISLAND Hy** baz=314,slow=75,SNR=54	**28.16**	**121**	T	T	10 53 45.2	
H11N1	**WAKE ISLAND Hy** baz=314,slow=75,SNR=14	**28.17**	**121**	T	T	10 53 47.0	
H11N3	**WAKE ISLAND Hy** baz=314,slow=75,SNR=13	**28.18**	**121**	T	T	10 53 46.7	
H11S1	**WAKE ISLAND Hy** baz=316,slow=76,SNR=21	**28.88**	**123**	T	T	10 54 39.9	
H11S3	**WAKE ISLAND Hy** baz=316,slow=76,SNR=7.8	**28.88**	**123**	T	T	10 54 37.1	
H11S2	**WAKE ISLAND Hy** baz=316,slow=76,SNR=16	**28.89**	**123**	T	T	10 54 42.9	
ZALV	**Zalesovo Beam** 1.5nm,0.5s,baz=95,slow=6.3,SNR=9.3	**41.87**	**312**	P	**P**	**10 25 57.4**	**-0.8**
MKAR	**Makanchi Array** 0.5nm,0.6s,baz=89,slow=8.0,SNR=4.8	**44.10**	**302**	P	**P**	**10 26 15.8**	**-0.6**
ILAR	**Eielson Array** 0.5nm,0.6s,baz=274,slow=8.6,SNR=6.3	**49.32**	**32**	P	**P**	**10 26 57.7**	**+0.8**
WRA	**Warramunga Arr** 0.4nm,0.5s,baz=6.9,slow=7.5,SNR=7.9	**57.23**	**188**	P	**P**	**10 27 55.6**	**+0.1**
YKA	**Yellowknife Ar** 0.2nm,0.8s,baz=304,slow=6.9,SNR=4.3	**63.63**	**30**	P	**P**	**10 28 39.4**	**+0.6**

*CSEM **21** 10:25:25.8±0.1,33.77N×35.94E,h2km,ML2.9,Error ellipse: s-maj=4.1km s-min=2.5km az=94.0*
*NSSC **21** 10:25:25.7±1.1,33.79N×35.98E,h0km±5km,ML1.6*
*GRAL **21** 10:25:26.5±0.3,33.76N×35.91E,h9km±12km,MD2.9*

ISC 21 10:25:25.4±0.9,33.77N±0.02×35.91E±0.04,h16km±10km, n17,σ0♋35/28,Jordan-Syria region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BHL	**Bhannes**	**0.25**	**303**	*e*P	**Pb**	**10 25 31.4**	**-0.2**
BHL	**Bhannes**	**0.25**	**303**	*e*P	**Pb**	**10 25 31.4**	**-0.2**
RCY	**Rachaya**	**0.28**	**192**	*e*P	**Pg**	**10 25 31.7**	**+0.1**
RCY				*e*S	**Sg**	**10 25 35.5**	**-0.2**
DQRL	**Deir Qamar**	**0.29**	**257**	*e*P	**Pb**	**10 25 32.0**	**-0.2**
DQRL				*e*S	**Sg**	**10 25 36.0**	**+0.1**
DQRL	**Deir Qamar**	**0.29**	**257**	*e*P	**Pb**	**10 25 32.0**	**-0.2**
DQRL				*e*S	**Sg**	**10 25 36.0**	**+0.1**
BRBR	**Barbar**	**0.36**	**174**	*e*P	**Pg**	**10 25 32.9**	**-0.1**
BRBR				*e*S	**Sb**	**10 25 39.1**	**+0.1**
BRBR	comp=N,117nm,0.3s			AML	AML	10 25 40.6	
BRBR	comp=E,87nm,0.3s			AML	AML	10 25 41.1	
BRBR	**Barbar**	**0.36**	**174**	*e*P	**Pg**	**10 25 32.9**	**-0.1**
BRBR	comp=E,87nm,0.3s			*e*S	**Sb**	**10 25 39.1**	**+0.1**
HWQ	**Hawqa**	**0.51**	**4**	*e*P	**Pb**	**10 25 35.9**	**-0.1**
HWQ	**Hawqa**	**0.51**	**4**	*e*P	**Pb**	**10 25 35.9**	**-0.1**
HAWK	**Haweek**	**0.86**	**29**	*e*P	**Pb**	**10 25 41.0**	**-1.0**
HAWK				*e*S	**Sb**	**10 25 53.2**	**-0.1**
HAWK	comp=N,25nm,0.5s			AML	AML	10 25 57.5	
HAWK	comp=E,19nm,0.6s			AML	AML	10 26 00.6	
HAWK	**Haweek**	**0.86**	**29**	*e*P	**Pb**	**10 25 41.0**	**-1.0**
HAWK	comp=E,19nm,0.6s			*e*S	**Sb**	**10 25 53.2**	**-0.1**
SALA	**Sala**	**1.26**	**146**	*e*P	**Pg**	**10 25 50.0**	**+0.2**
SALA				*e*S	**Sg**	**10 26 06.4**	**0.0**
SALA	comp=N,16nm,0.7s			AML	AML	10 26 09.7	
SALA	comp=E,2.3nm,0.5s			AML	AML	10 26 10.9	
SALA	**Sala**	**1.26**	**146**	*e*P	**Pg**	**10 25 50.0**	**+0.2**
SALA	comp=E,2.0nm,0.5s			*e*S	**Sg**	**10 26 06.4**	**0.0**
BIDA	**Albida**	**1.29**	**15**	*e*P	**Pg**	**10 25 50.7**	**+0.4**
BIDA				*e*S	**Sg**	**10 26 07.4**	**+0.3**
BIDA	comp=E,52nm,0.3s			AML	AML	10 26 14.2	
BIDA	comp=N,36nm,0.6s			AML	AML	10 26 15.1	
BIDA	**Albida**	**1.29**	**15**	*e*P	**Pg**	**10 25 50.7**	**+0.4**
BIDA	comp=N,36nm,0.6s			*e*S	**Sg**	**10 26 07.4**	**+0.3**
ZALF	**Zalf**	**1.47**	**125**	*e*P	**Pb**	**10 25 52.5**	**+0.2**
ZALF	**Zalf**	**1.47**	**125**	*e*P	**Pb**	**10 25 52.5**	**+0.2**

IDC 21 10:26:35.2±549.0,46.37N×48.66E,h0km,Error ellipse: s-maj=350.4km s-min=133.5km az=169.0, Ukraine-Moldova-Southwestern Russia region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
I43RU	**DUBNA INFRASON** baz=138,slow=324,SNR=1.3	**2.55**	**330**	*i*		11 38 58.6	
I26DE	**FREYUNG INFRAS** baz=83,slow=319,SNR=0.5	**23.56**	**289**	*i*		12 50 55.0	
I46RU	**ZALESOVO INFRA** baz=257,slow=308,SNR=3.9	**24.16**	**58**	*i*		12 56 05.7	

*NIED **21** 10:30:00,37.20N×143.40E,h5km,Mw4.2 Best double couple: M♋2.14000×10^15 NP1:φ♋26.00000°,δ23.00000°, λ-70.00000°. NP2:φ♋185.00000°,δ69.00000°, λ-98.00000°.*
*IDC **21** 10:30:29.6±0.6,37.16N×143.67E,h0km,mb4.1/23, mb1 4.3/31,mb1mx4.1/53,mbtmp4.1/31,ML3.9/6,MS3.2/9, Ms1 3.2/9,ms1mx2.8/61,Error ellipse: s-maj=15.0km s-min=11.8km az=116.0*
*JMA **21** 10:30:33.9±0.2,37.24N×143.43E,h49km,M4.3*
*MOS **21** 10:30:33.0±1.5,37.37N×143.62E,h33km,mb4.4/22,Error ellipse: s-maj=9.6km s-min=6.3km az=91.6*
*NEIC **21** 10:30:35.0±0.4,37.27N×143.57E,h35km,mb4.4/6,Error ellipse: s-maj=9.1km s-min=6.5km az=134.0*

ISC 21 10:30:31.1±1.3,37.27N±0.04×143.47E±0.05,h7km±7km, n95,σ1♋43/97,mb4.2/35,MS3.3/4,4C-1D,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**2.05**	**306**	P	**Pn**	**10 31 06.8**	**+0.8**
JIO				S	**Sn**	**10 31 31.1**	**-0.7**
JFK	**Kawauchi**	**2.07**	**273**	P	**Pn**	**10 31 06.8**	**+0.5**
JFK				S	**Sn**	**10 31 30.3**	**-2.1**
ONAJ	**Iwakimizuishiy**	**2.14**	**266**	P	**Pn**	**10 31 07.6**	**+0.3**
ONAJ				S	**Sn**	**10 31 32.8**	**-1.3**
JMM	**Marumori**	**2.21**	**286**	P	**Pn**	**10 31 08.7**	**+0.6**
JMM				S	**Sn**	**10 31 35.3**	**-0.4**
JHO	**Hitachi**	**2.42**	**255**	P	**Pn**	**10 31 11.0**	**0.0**
JHO				*e*S	**Sn**	**10 31 39.5**	**-1.3**
JMK	**Ichinoseki**	**2.44**	**314**	P	**Pn**	**10 31 12.1**	**+0.8**
JMK				S	**Sn**	**10 31 40.8**	**-0.6**
JFT	**Otama**	**2.51**	**277**	P	**Pn**	**10 31 14.0**	**+1.7**
JFT				S	**Sn**	**10 31 42.0**	**-1.1**
JOM	**Ohasama**	**2.79**	**323**	P	**Pn**	**10 31 17.5**	**+1.4**
JOM				S	**Sn**	**10 31 49.2**	**-0.7**
JYK	**Kaneyama**	**2.95**	**305**	P	**Pn**	**10 31 19.7**	**+1.3**
JYK				S	**Sn**	**10 31 53.5**	**-0.6**
BSO1	**Boso 1**	**3.31**	**218**	S	**Sn**	**10 32 01.0**	**-1.0**
JAG	**Ashikaga**	**3.33**	**256**	P	**Pn**	**10 31 24.4**	**+0.8**
JAG				S	**Sn**	**10 32 02.6**	**-0.8**
JNS	**Sasagawa**	**3.35**	**281**	P	**Pn**	**10 31 25.7**	**+1.9**
JANG	**Nango**	**3.45**	**334**	P	**Pn**	**10 31 26.5**	**+1.3**
JANG				S	**Sn**	**10 32 04.1**	**-2.3**
JAW	**Awa shima**	**3.54**	**291**	P	**Pn**	**10 31 28.7**	**+2.2**
JAW				S	**Sn**	**10 32 07.7**	**-0.9**
JRY	**Ryogami san**	**3.88**	**253**	P	**Pn**	**10 31 31.8**	**+0.6**
JRY				S	**Sn**	**10 32 14.8**	**-2.2**
JOD2	**Odawara 2**	**4.07**	**242**	P	**Pn**	**10 31 33.9**	**+0.2**
JSD	**Sado**	**4.20**	**282**	P	**Pn**	**10 31 37.1**	**+1.5**
MJAR	**Matsushiro Arr** 22nm,0.3s,baz=84,slow=16,SNR=191	**4.28**	**262**	Pn	**Pn**	**10 31 38.6**	**+2.0**
MJAR	comp=Z,219nm,18.4s,baz=90,slow=44			LR	LR	10 33 44.0	
MAJO	**Matsushiro**	**4.28**	**262**	*i* P	**Pn**	**10 31 39.0**	**+2.4**
MAJO	**Matsushiro**	**4.28**	**262**	*e*Pn	**Pn**	**10 31 39.1**	**+2.4**
MAT	**Matsushiro**	**4.28**	**262**	P	**Pn**	**10 31 39.0**	**+2.3**
JYN	**Shimob**	**4.35**	**247**	P	**Pn**	**10 31 38.8**	**+1.1**
JYN				S	**Sn**	**10 32 26.6**	**-2.1**
ERM	**Erimo**	**4.74**	**357**	*ce*P	**Pn**	**10 31 41.5**	**-1.4**
ERM	comp=Z,42nm,1.2s			pmax	pmax		
ERM	**Erimo**	**4.74**	**357**	*e*Pn	**Pn**	**10 31 42.1**	**-0.9**
JHJ	**Hachijo jima 2** comp=Z,24nm,0.3s,baz=333,slow=23,SNR=8.5	**5.13**	**217**	Pn	**Pn**	**10 31 47.9**	**-0.4**
JHJ	comp=Z,76nm,0.3s,baz=61,slow=21,SNR=5.5			Sn	**Sn**	**10 32 43.0**	**-4.7**
ASAJ	**Asahikawa** comp=Z,4.0nm,0.3s,baz=199,slow=11,SNR=27	**6.87**	**355**	Pn	**Pn**	**10 32 12.4**	**+0.2**
ASAJ	comp=Z,2.7nm,0.3s,baz=252,slow=30,SNR=6.8			Sn	**Sn**	**10 33 25.7**	**-4.8**
YUK	**Yuzh-Kuril'sk**	**6.99**	**14**	*e*P	Pn	10 32 10.9	-3.0
YUK				*e*S	Sn	10 33 24.0	-10
YUK	comp=Z,137nm,0.3s			pmax	pmax		
YUK	comp=E,19nm,0.1s			pmax	pmax		
YUK	comp=N,41nm,0.2s			pmax	pmax		
SHO	**Shikotan**	**7.07**	**20**	*e*P	Pn	10 32 10.4	-4.5
SHO				*e*S	Sn	10 33 23.9	-12
SHO	comp=Z,40nm,0.5s			pmax	pmax		
SHO	comp=E,48nm,0.6s			pmax	pmax		
SHO	comp=N,50nm,0.8s			pmax	pmax		
KUR	**Kuril'sk**	**8.61**	**21**	*e*P	**Pn**	**10 32 34.6**	**-1.4**
KUR				*e*S	Sn	10 34 04.3	-9.1
KUR	comp=Z,24nm,0.8s			pmax	pmax		
KUR	comp=N,16nm,0.4s			pmax	pmax		
KUR	comp=E,12nm,0.4s			pmax	pmax		
YSS	**Yuzh-Sakhalins**	**9.69**	**357**	*e*P	**Pn**	**10 32 53.0**	**+2.2**
YSS	comp=Z,22nm,1.3s			pmax	pmax		
YSS	**Yuzh-Sakhalins** comp=Z,17nm,0.8s	**9.69**	**357**	*e*Pn	**Pn**	**10 32 51.4**	**+0.6**
JNU	**Nakatsue** comp=Z,0.4nm,0.3s,baz=57,slow=10,SNR=10	**11.10**	**252**	Pn	**Pn**	**10 33 11.5**	**+1.2**
JNU	**Nakatsue** comp=Z,11nm,1.0s	**11.10**	**252**	*e*Pn	**Pn**	**10 33 11.5**	**+1.2**
JNU				Pn	**Pn**	**10 33 11.5**	**+1.2**
USRK	**Ussuriysk Ar.** comp=Z,0.4nm,0.3s,baz=122,slow=16,SNR=5.4	**11.12**	**312**	Pn	**Pn**	**10 33 12.7**	**+2.3**
USRK	comp=Z,108nm,18.2s,baz=130,slow=37			LR	LR	10 37 25.3	
KSRS	**Korea Array** comp=Z,0.5nm,0.3s,baz=88,slow=14,SNR=21	**12.38**	**276**	Pn	Pn	10 33 31.4	+3.8
KSRS	comp=Z,85nm,20.8s,baz=62,slow=36			LR	LR	10 37 58.9	
KSAR	**Wonju Array Be**	**12.41**	**276**	P	Pn	10 33 31.4	+3.4
KSAR	**Wonju Array Be**	**12.41**	**276**	Pn	Pn	10 33 31.4	+3.4
KLR	**Kul'dur** comp=Z,0.2nm,0.3s,baz=124,slow=13,SNR=8.1	**14.67**	**328**	Pn	**Pn**	**10 33 58.7**	**-0.1**
KLR	comp=Z,62nm,18.0s,baz=150,slow=39			LR	LR	10 40 05.4	
PETK	**Petropavlovsk-** comp=Z,0.1nm,0.3s,baz=307,slow=5.2,SNR=2.4	**18.68**	**28**	P	**P**	**10 34 47.9**	**-1.8**
PETK	comp=Z,32nm,21.5s,baz=218,slow=33			LR	LR	10 40 54.2	
MA2	**Magadan** comp=Z,2.1nm,0.4s,baz=208,slow=7.8,SNR=3.9	**22.81**	**10**	P	**P**	**10 35 34.8**	**+0.6**
SEY	**Seymchan** comp=Z,8.9nm,0.9s,baz=180,slow=6.9,SNR=34	**26.27**	**9**	*i* P	**P**	**10 36 07.2**	**+0.5**
SEY	**Seymchan**	**26.27**	**9**	*i* P	**P**	**10 36 07.8**	**+1.2**
H11N2	**WAKE ISLAND Hy** baz=316,slow=75	**26.89**	**124**	T	T	11 04 15.4	
H11N1	**WAKE ISLAND Hy** baz=316,slow=75	**26.90**	**124**	T	T	11 04 15.2	
H11N3	**WAKE ISLAND Hy** baz=316,slow=75	**26.91**	**124**	T	T	11 04 14.9	
H11S1	**WAKE ISLAND Hy** baz=322,slow=74	**27.64**	**126**	T	T	11 05 07.8	
H11S3	**WAKE ISLAND Hy** baz=322	**27.64**	**126**	T	T	11 05 13.8	
H11S2	**WAKE ISLAND Hy** baz=322,slow=74	**27.66**	**126**	T	T	11 05 13.5	
BOD	**Bodaibo** comp=Z,4.0nm,0.8s	**28.23**	**326**	*e*P	P	10 36 29.2	+4.9
BOD				pmax	pmax		
ULN	**Ulaanbaatar** comp=Z,1.0nm,0.4s	**28.59**	**303**	*i* P	**P**	**10 36 28.8**	**+0.9**
ULN				pmax	pmax		
ENH	**Enshi** comp=Z,4.4nm,0.6s	**28.99**	**266**	*e*P	**P**	**10 36 31.3**	**-0.1**
SONM	**Songino Array** comp=Z,4.8nm,0.7s,baz=105,slow=8.7,SNR=17	**29.02**	**303**	P	**P**	**10 36 33.2**	**+1.5**
ZAK	**Zakamensk** comp=Z,2.0nm,1.3s	**31.42**	**308**	*e*P	**P**	**10 36 54.4**	**+1.6**
ZAK				pmax	pmax		
TLY	**Talaya** comp=Z,67nm,21.3s,baz=106,slow=35	**31.43**	**310**	LR	LR	10 48 53.9	
BILL	**Bilibino**	**33.35**	**15**	*i* P	**P**	**10 37 08.0**	**-1.4**
BILL				*i*		10 37 19.3	
BILL	comp=Z,4.0nm,1.1s			pmax	pmax		
CMAR	**Chiang Mai Arr** comp=Z,0.3nm,0.3s,baz=61,slow=6.3,SNR=2.8	**43.15**	**257**	P	**P**	**10 38 32.0**	**-0.4**
CMAR	comp=Z,21nm,18.7s,baz=80,slow=38			LR	LR	10 57 32.4	
MKAR	**Makanchi Array** comp=Z,1.0nm,0.6s,baz=83,slow=9.9,SNR=7.9	**45.38**	**302**	P	**P**	**10 38 51.1**	**+1.0**
KDAK	**Kodiak Island**	**45.82**	**42**	*i* P	**P**	**10 38 53.3**	**0.0**
KURK	**Kurchatov**	**47.08**	**308**	*e*P	**P**	**10 39 02.5**	**-0.8**
KURK	comp=Z,10.0nm,0.6s			pmax	pmax		
KURK	**Kurchatov** comp=Z,10nm,0.6s	**47.08**	**308**	*e*P	**P**	**10 39 02.5**	**-0.8**
KURK				P	**pP**	**10 39 04.9**	**-0.6**
KURBB	**Kurchatov Arra** comp=Z,1.1nm,0.6s,baz=82,slow=7.9,SNR=12	**47.15**	**308**	P	**P**	**10 39 04.9**	**+1.1**
ILAR	**Eielson Array** comp=Z,2.8nm,0.8s,baz=265,slow=6.8,SNR=31	**48.41**	**32**	P	**P**	**10 39 13.4**	**0.0**
TKM2	**Tokmak 2**	**50.96**	**299**	*e*P	**P**	**10 39 35.2**	**+1.8**
TKM2	comp=Z,7.0nm,0.6s			pmax	pmax		
TKM2	**Tokmak 2** comp=Z,7.0nm,0.6s	**50.96**	**299**	*e*P	**P**	**10 39 35.2**	**+1.8**
BVAR	**Borovoye Array** comp=Z,0.3nm,0.4s,baz=68,slow=8.3,SNR=2.9	**51.62**	**313**	P	**P**	**10 39 40.0**	**+2.0**
BVAR	**Borovoye Array**	**51.62**	**313**	P	**P**	**10 39 40.0**	**+2.0**
AAK	**Ala-Archa** comp=Z,1.8nm,0.7s,baz=141,slow=5.8,SNR=5.1	**51.82**	**299**	P	P	10 39 44.1	+4.2
AAK	**Ala-Archa**	**51.82**	**299**	P	P	10 39 44.1	+4.2
AAK				*e*P	pP	10 39 44.3	+2.2
INK	**Inuvik** comp=Z,2.4nm,0.8s,baz=284,slow=5.9,SNR=8.9	**53.42**	**27**	P	**P**	**10 39 51.3**	**+0.2**
KKAR	**Karatay Array**	**54.42**	**301**	P	**P**	**10 39 58.2**	**-0.7**
KKAR	comp=Z,1.0nm,0.6s			pmax	pmax		
KKAR	**Karatay Array** comp=Z,1.5nm,0.6s	**54.42**	**301**	P	**P**	**10 39 58.2**	**-0.7**
ARU	**Arti** comp=Z,1.6nm,0.3s,baz=46,slow=1.7,SNR=3.9	**57.27**	**319**	P	**P**	**10 40 19.9**	**+0.9**
WRA	**Warramunga Arr** comp=Z,2.5nm,0.5s,baz=9.5,slow=7.3,SNR=11	**57.56**	**190**	P	**P**	**10 40 20.1**	**-1.3**
FITZ	**Fitzroy Crossi** comp=Z,1.6nm,0.7s,baz=350,slow=4.8,SNR=4.9	**57.59**	**200**	P	**P**	**10 40 21.1**	**-0.4**
ABKAR	**Akbulak array** comp=Z,1.7nm,0.6s	**59.04**	**311**	*e*P	**P**	**10 40 31.8**	**+0.3**
AKTO	**Aktyubinsk** comp=Z,0.6nm,0.3s,baz=71,slow=14,SNR=3.8	**59.73**	**312**	P	**P**	**10 40 36.4**	**+0.1**
AKTO				ScP	**ScP**	**10 45 26.0**	**+1.6**
ASAR	**Alice Springs** comp=Z,1.3nm,0.7s,baz=18,slow=8.0,SNR=16	**61.28**	**190**	P	**P**	**10 40 46.1**	**-0.9**
YKA	**Yellowknife Ar** comp=Z,0.2nm,0.7s,baz=300,slow=6.4,SNR=7.2	**62.77**	**31**	P	**P**	**10 40 56.6**	**0.0**
STKA	**Stephens Creek** comp=Z,3.2nm,1.0s,baz=358,slow=9.2,SNR=3.7	**68.81**	**182**	P	**P**	**10 41 34.5**	**-1.3**
FINES	**FINESS Array B** comp=Z,3.0nm,0.7s,baz=46,slow=8.2,SNR=11	**69.36**	**333**	P	**P**	**10 41 39.9**	**+0.9**
KIV	**Kislovodsk**	**71.98**	**312**	*e*P	**P**	**10 41 54.5**	**-0.9**
KIV				*e*		10 42 15.9	
KIV	comp=Z,7.0nm,1.0s			pmax	pmax		
KBZ	**Khabaz** comp=Z,1.5nm,0.7s,baz=97,slow=22,SNR=2.7	**71.98**	**311**	P	**P**	**10 41 56.6**	**+1.3**
NVAR	**Mina Array Bea** comp=Z,0.4nm,0.3s,baz=273,slow=5.3,SNR=4.1	**73.52**	**54**	P	**P**	**10 42 04.2**	**-0.7**
NB2	**NORSAR Subarra** comp=Z,1.0nm,0.6s,baz=38,slow=6.2	**74.59**	**338**	P	**P**	**10 42 10.9**	**+0.5**
NOA	**NORSAR Array B** comp=Z,1.8nm,0.7s,baz=38,slow=5.8,SNR=8.4	**74.59**	**338**	P	**P**	**10 42 11.0**	**+0.5**
NOA	comp=Z,2.0nm,0.7s			pmax	pmax		
H17A	**Grant Village** comp=Z,3.8nm,1.1s	**74.74**	**46**	*e*P	**P**	**10 42 12.7**	**+0.8**
AKASG	**Malin Array Be**	**75.10**	**323**	*ce*P	**P**	**10 42 15.0**	**+1.5**
AKASG	comp=Z,1.0nm,0.4s			pmax	pmax		
PDAR	**Pinedale Array** comp=Z,1.0nm,0.8s,baz=270,slow=3.0,SNR=9.0	**76.32**	**46**	P	**P**	**10 42 20.6**	**-0.4**
BRTR	**Keskin Array B** comp=Z,12nm,18.8s,baz=122,slow=39	**79.91**	**313**	LR	LR	11 22 32.5	
MMAI	**Mount Meron Ar** comp=Z,26nm,18.4s,baz=145,slow=38	**83.16**	**306**	LR	LR	11 22 49.3	
ANMO	**Albuquerque**	**83.17**	**51**	*ce*P	**P**	**10 42 59.4**	**+1.2**
ANMO	comp=Z,4.0nm,1.7s			pmax	pmax		
GERES	**GERESS Array B** comp=Z,0.2nm,0.3s,baz=45,slow=4.3,SNR=4.0	**83.36**	**329**	P	**P**	**10 42 59.7**	**+0.9**
BFO	**Black Forest**	**85.88**	**332**	*i* P	**P**	**10 43 13.2**	**+1.7**
TXAR	**Lajitas Array** comp=Z,1.4nm,0.7s,baz=301,slow=3.5,SNR=27	**88.67**	**54**	P	**P**	**10 43 25.2**	**-0.2**

IDC 21 10:41:32.7±565.0,51.88N×137.37E,h0km,Error ellipse: s-maj=197.4km s-min=151.1km az=20.0,Primorye

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
I45RU	**USSURIYSK INFR** baz=22,slow=329,SNR=4.8	**8.49**	**207**	*i*		11 33 40.0	
I44RU	**PETROPAVLOVSK** baz=272,slow=338,SNR=0.7	**12.46**	**76**	*i*		12 00 20.0	
I30JP	**ISUMI INFRASON** baz=356,slow=332,SNR=0.3	**16.70**	**172**	*i*		12 28 10.0	

*MAN **21** 10:53:03,8.69N×127.22E,h52km,mb4.8,ML3.7,MS3.8*
*BJI **21** 10:53:07.9,8.90N×126.70E,h54km,mb4.6/20,mB4.8/12, Ms4.6/8,Ms7 4.4/7*
*IDC **21** 10:53:11.3±2.5,8.60N×126.68E,h84km±24km,mb3.8/24, mb1 3.9/24,mb1mx3.8/50,mbtmp4.1/24,MS3.4/11, Ms1 3.4/11,ms1mx3.1/45,Error ellipse: s-maj=23.6km s-min=11.1km az=76.0*
*NEIC **21** 10:53:11.5±1.9,8.68N×126.65E,h83km±18km,mb4.6/6, Error ellipse: s-maj=18.6km s-min=9.3km az=66.0*
*DJA **21** 10:53:11.9±2.7,9°N±7°×12°6E±°,h26km±21km,M4.6/13, mb4.4/13,mB5.3/4,MLv4.7/1,Mw(mB)4.7/4*

ISC 21 10:53:05.4±0.7,8.77N±0.03×126.86E±0.06,h26km±4km, n78,σ1♋71/78,mb4.3/36,MS3.6/13,5C-2D,Mindanao

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BIPH	**Bislig**	**0.76**	**220**	*e*P	**Pn**	**10 53 20.0**	**-0.5**
BIPH				*i* S	**Sb**	**10 53 29.7**	**-0.2**
SCPH	**Surigao**	**1.69**	**307**	*e*P	**Pb**	**10 53 34.6**	**-1.2**
SCPH				*e*S	**Sb**	**10 53 55.9**	**-0.7**
MATI	**Mati**	**1.90**	**198**	*e*P	**Pn**	**10 53 35.5**	**-0.7**
MATI				*e*S	**Sn**	**10 53 57.6**	**-1.7**
BUKP	**Musuan**	**1.98**	**244**	*e*P	**Pb**	**10 53 40.0**	**-0.9**
BUKP				*e*S	**Sb**	**10 54 07.5**	**+2.2**
DAV	**Davao City (W)** 95nm,0.3s,baz=30,slow=7.2,SNR=15	**2.11**	**217**	P	**Pb**	**10 53 42.2**	**-0.8**
DAV	114nm,0.3s,baz=260,slow=21,SNR=4.2			S	**Sb**	**10 54 10.8**	**+2.1**
DAV	comp=Z,684nm,19.3s,baz=34,slow=36			LR	LR	10 54 19.0	
DMPH	**Davao City--Mi**	**2.14**	**219**	*e*P	**Pb**	**10 53 44.9**	**+1.3**
DMPH				*e*S	**Sb**	**10 54 14.1**	**+4.4**
CGP	**Cagayan de Oro**	**2.16**	**262**	*i* P	**Pb**	**10 53 42.5**	**-1.4**
CGP				*i* S	**Sb**	**10 54 11.8**	**+1.5**
KCP	**Kidapawan**	**2.47**	**225**	*e*P	**Pb**	**10 53 46.3**	**-3.0**
KCP				*i* S	Sn	10 54 03.5	-10
CTBH	**Cotabato--PC H**	**3.01**	**239**	*i* P	**Pn**	**10 53 53.8**	**+2.4**
CTBH				*i* S	**Sb**	**10 54 31.2**	**-3.4**
TBP	**Tagbilaran**	**3.10**	**288**	*i* P	**Pb**	**10 53 56.7**	**-3.1**
TBP				*i* S	**Sb**	**10 54 37.2**	**-0.1**
OCLP	**Ormoc**	**3.17**	**316**	*e*P	**Pn**	**10 53 56.5**	**+2.8**
PAGZ	**Pagadian**	**3.56**	**255**	*e*P	Pn	10 54 02.2	+3.2
GUIM	**Jordan**	**4

CM01				*e*pP	**sP**	**10 59 10.4**	**-1.5**
CMAR	**Chiang Mai Arr**	**28.75**	**293**	P	**P**	**10 59 01.1**	**-0.1**
	1.1nm,0.5s,baz=97,slow=7.4,SNR=8.0						
WRA	**Warramunga Arr**	**29.46**	**166**	P	**P**	**10 59 05.0**	**-2.4**
	0.5nm,0.6s,baz=344,slow=9.3,SNR=5.9						
CD2	**Chengdu**	**30.81**	**319**	P	**P**	**10 59 18.3**	**-1.0**
CD2				pmax	pmax		
	comp=Z,1.0nm,0.5s						
ASAR	**Alice Springs**	**32.96**	**168**	P	**P**	**10 59 36.6**	**-1.6**
	0.4nm,0.5s,baz=342,slow=7.4,SNR=14						
LZH	**Lanzhou**	**34.34**	**326**	*e*P	**P**	**10 59 50.0**	**-0.2**
LZH				pP	sP	11 00 01.5	+0.2
LZH				sP	pP	11 00 06.3	+8.2
LZH				PP	**PnPn**	**11 01 06.0**	**+0.9**
LZH				pmax	pmax		
	comp=Z,21nm,1.0s						
LZH				pmax	pmax		
	comp=Z,65nm,5.3s						
LZH				LR	LR		
	comp=N,250nm,13.5s						
LZH				LR	LR		
	comp=E,230nm,13.2s						
LZH				LR	LR		
	comp=Z,290nm,17.3s						
HHC	**Hu-ho-hao-te**	**34.72**	**339**	*e*P	**P**	**10 59 54.3**	**+0.9**
HHC				pmax	pmax		
	comp=Z,19nm,0.9s						
HHC				pmax	pmax		
	comp=Z,78nm,5.6s						
HHC				LR	LR		
	comp=N,690nm,13.6s						
HHC				LR	LR		
	comp=E,740nm,14.8s						
HHC				LR	LR		
	comp=Z,480nm,14.8s						
USRK	**Ussuriysk Ar.**	**35.58**	**6**	P	**P**	**11 00 02.2**	**+1.5**
	5.4nm,0.8s,baz=187,slow=9.2,SNR=8.6						
MDJ	**Mudanjiang**	**35.80**	**3**	P	**P**	**11 00 03.8**	**+1.3**
MDJ				pmax	pmax		
	comp=Z,5.0nm,0.9s						
ASAJ	**Asahikawa**	**37.79**	**19**	LR	LR	11 18 05.8	
	comp=Z,57nm,18.0s,baz=302,slow=39						
KLR	**Kul'dur**	**40.54**	**5**	P	**P**	**11 00 43.5**	**+1.2**
	1.1nm,0.5s,baz=172,slow=5.0,SNR=11						
SONM	**Songino Array**	**42.62**	**340**	P	**P**	**11 00 59.0**	**-0.7**
	1.0nm,0.7s,baz=123,slow=11,SNR=4.6						
STKA	**Stephens Creek**	**42.80**	**161**	P	**P**	**11 00 59.2**	**-1.8**
	2.1nm,0.8s,baz=312,slow=4.1,SNR=3.2						
TLY	**Talaya**	**46.84**	**340**	P	**P**	**11 01 32.2**	**-0.9**
	2.3nm,0.6s,baz=273,slow=13,SNR=3.7						
WMQ	**Urumqi**	**48.76**	**323**	*e*P	**P**	**11 01 48.8**	**+0.6**
WMQ				pmax	pmax		
	comp=Z,4.0nm,0.6s						
WMQ				pmax	pmax		
	comp=Z,39nm,4.2s						
WMQ				LR	LR		
	comp=N,42nm,23.4s						
WMQ				LR	LR		
	comp=E,56nm,22.0s						
PETK	**Petropavlovsk-**	**50.77**	**24**	LR	LR	11 27 03.4	
	comp=Z,26nm,18.0s,baz=214,slow=40						
MK01	**Makanchi Array**	**53.55**	**323**	*e*P	**P**	**11 02 23.4**	**-0.7**
MK31	**Makanchi Array**	**53.57**	**323**	*e*P	**P**	**11 02 24.0**	**-0.2**
MKAR	**Makanchi Array**	**53.57**	**323**	P	**P**	**11 02 23.9**	**-0.3**
	5.0nm,0.8s,baz=116,slow=8.4,SNR=35						
MKAR				LR	LR	11 28 41.9	
	comp=Z,30nm,18.7s,baz=159,slow=40						
ZAA0	**Zalesovo Array**	**56.22**	**332**	*e*P	**P**	**11 02 41.8**	**-1.3**
ZAA0				eP	**P**	**11 02 42.4**	**-0.7**
ZAA0				epP	**pP**	**11 02 52.2**	**+0.9**
ZAA0				epP	**pP**	**11 02 53.3**	**+1.9**
ZALV	**Zalesovo Beam**	**56.22**	**332**	P	**P**	**11 02 42.2**	**-0.9**
	1.4nm,0.5s,baz=120,slow=6.6,SNR=10						
AAK	**Ala-Archa**	**56.80**	**316**	LR	LR	11 28 38.5	
	comp=Z,62nm,21.6s,baz=64,slow=38						
KURK	**Kurchatov**	**57.63**	**326**	*e*P	**P**	**11 02 52.2**	**-1.0**
	14nm,0.9s						
KURBB	**Kurchatov Arra**	**57.63**	**326**	P	**P**	**11 02 52.8**	**-0.5**
	2.5nm,0.6s,baz=124,slow=7.0,SNR=26						
KKAR	**Karatay Array**	**59.72**	**315**	*e*P	**P**	**11 03 07.3**	**-0.7**
TIXI	**Tiksi**	**62.84**	**1**	P	**P**	**11 03 29.5**	**+1.0**
	6.3nm,0.7s,baz=173,slow=4.7,SNR=17						
TIXI				LR	LR	11 34 26.7	
	comp=Z,37nm,18.1s,baz=223,slow=39						
TIXI	**Tiksi**	**62.84**	**1**	*e*P	**P**	**11 03 29.1**	**+0.6**
	7.4nm,0.7s						
BRVK	**Borovoye**	**63.30**	**326**	*e*P	**P**	**11 03 31.7**	**-0.2**
	8.2nm,1.4s						
NRIK	**Noril'sk**	**65.61**	**346**	P	**P**	**11 03 47.5**	**+0.7**
	2.2nm,0.4s,baz=138,slow=6.1,SNR=4.4						
GEYT	**Alibeck**	**67.91**	**307**	P	**P**	**11 04 02.0**	**-0.1**
	2.8nm,0.3s,baz=151,slow=3.4,SNR=4.9						
GEYT				LR	LR	11 37 17.0	
	comp=Z,37nm,18.7s,baz=250,slow=39						
ABKAR	**Akbulak array**	**68.39**	**320**	*e*P	**P**	**11 04 04.0**	**-0.7**
AKTO	**Aktyubinsk**	**69.84**	**321**	P	**P**	**11 04 12.8**	**-1.0**
	1.5nm,0.7s,baz=98,slow=10,SNR=7.1						
ARU	**Arti**	**70.79**	**327**	P	**P**	**11 04 18.5**	**-1.0**
	2.4nm,0.4s,baz=134,slow=1.5,SNR=4.4						
ILAR	**Eielson Array**	**80.53**	**26**	P	**P**	**11 05 16.5**	**+1.3**
	0.4nm,0.6s,baz=260,slow=5.4,SNR=3.3						
INK	**Inuvik**	**85.46**	**22**	P	**P**	**11 05 40.3**	**-0.2**
	0.7nm,0.7s,baz=278,slow=6.4,SNR=3.1						
ARCES	**ARCESS Array B**	**85.80**	**340**	P	P	11 05 39.0	-3.3
	2.8nm,0.9s,baz=54,slow=6.3,SNR=3.9						
BRTR	**Keskin Array B**	**86.93**	**310**	P	**P**	**11 05 46.9**	**-1.7**
	0.6nm,0.7s,baz=67,slow=3.7,SNR=3.0						
FINES	**FINESS Array B**	**87.48**	**332**	P	**P**	**11 05 49.5**	**-1.0**
	0.5nm,0.5s,baz=72,slow=6.2,SNR=5.7						
AKASG	**Malin Array Be**	**88.09**	**321**	LR	LR	11 49 25.9	
	comp=Z,16nm,18.1s,baz=30,slow=38						
VNDA	**Vanda**	**88.37**	**173**	P	**P**	**11 05 53.6**	**-0.8**
	0.4nm,0.4s,baz=330,slow=4.3,SNR=3.4						
RES	**Resolute Bay**	**92.87**	**10**	*e*P	**P**	**11 06 16.9**	**+1.5**
	3.2nm,0.8s						
OJC	**Ojcow**	**94.03**	**322**	*e*P	P	11 06 27.1	+5.7
OJC				epP	sP	11 06 33.9	+0.9
NOA	**NORSAR Array B**	**94.36**	**334**	LR	LR	11 51 48.3	
	comp=Z,22nm,18.3s,baz=75,slow=37						
YKA	**Yellowknife Ar**	**94.89**	**24**	P	**P**	**11 06 25.3**	**+0.3**
	0.6nm,0.7s,baz=300,slow=4.4,SNR=19						
YKB5	**Yellowknife Ar**	**94.89**	**24**	*e*P	**P**	**11 06 26.1**	**+1.1**
YKB5				*e*pP	**sP**	**11 06 37.1**	**+0.4**

*ISCJB **21** 10:57:52.0±0.5,39.°11N±0.°03×29.°05E±0.°03,h3km±6km, Error ellipse: s-maj=4.6km s-min=3.9km az=153.8*
*ISK **21** 10:57:51.2,39.°11N×29.°06E,h10km,MD2.5*
*DDA **21** 10:57:52.1,39.°12N×29.°06E,h7km,Md2.5*
*CSEM **21** 10:57:52.2±0.1,39.°11N×29.°05E,h8km,MD2.5,Error ellipse: s-maj=3.2km s-min=3.1km az=6.0*

ISC 21 10:57:52.1±0.9,39.10N±0.°02×29.05E±0.°02,h13km±7km, n27,σ0s45/45,Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
DEMI	**Demirci**	**0.27**	**257**	*i* P		**Pg**	**10 57 57.9**	**+0.1**
DEMI				*i* S		**Sg**	**10 58 01.7**	**+0.1**
DEMI	**Demirci**	**0.27**	**257**	P		**Pg**	**10 57 57.9**	**+0.1**
DEMI				S		**Sg**	**10 58 01.7**	**+0.1**
GDZ	**Gediz**	**0.33**	**92**	*i* P		**Pg**	**10 57 59.0**	**+0.1**
GDZ				*i* S		**Sg**	**10 58 03.5**	**-0.1**
GDZ	**Gediz**	**0.33**	**92**	P		**Pg**	**10 57 59.0**	**+0.1**
GDZ				S		**Sg**	**10 58 03.5**	**-0.1**
TVSB	**Tavsanli**	**0.47**	**42**	*e*PG		**Pg**	**10 58 01.1**	**-0.2**
TVSB				*e*SG		**Sg**	**10 58 07.3**	**-0.4**
TVSB	**Tavsanli**	**0.47**	**42**	*e*Pg		**Pg**	**10 58 01.2**	**-0.2**
TVSB				*e*Sg		**Sg**	**10 58 07.3**	**-0.4**
KULA	**Kula-Manisa**	**0.66**	**208**	*e*PG		**Pg**	**10 58 04.5**	**-0.5**
KULA				*e*SG		**Sg**	**10 58 13.8**	**0.0**
KULA	**Kula-Manisa**	**0.66**	**208**	*e*Pg		**Pg**	**10 58 04.5**	**-0.5**
KULA				*e*Sg		**Sg**	**10 58 13.8**	**0.0**
DURS	**Dursunbey**	**0.67**	**318**	*i* P		**Pb**	**10 58 05.9**	**+0.2**
DURS				*i* S		**Sb**	**10 58 14.8**	**-0.1**
DURS	**Dursunbey**	**0.67**	**318**	P		**Pb**	**10 58 05.9**	**+0.2**
DURS				S		**Sb**	**10 58 14.8**	**-0.1**
KHAL	**Karahalli**	**0.81**	**155**	*i* P		**Pn**	**10 58 09.3**	**+0.1**
KHAL				*i* S		**Sb**	**10 58 18.9**	**0.0**
KHAL	**Karahalli**	**0.81**	**155**	P		**Pn**	**10 58 09.4**	**+0.1**
KHAL				S		**Sb**	**10 58 18.9**	**0.0**
KHL	**Karahalli**	**0.86**	**155**	*e*PG		**Pg**	**10 58 08.5**	**-0.3**
KHL	**Karahalli**	**0.86**	**155**	*e*Pg		**Pg**	**10 58 08.5**	**-0.3**
AKHS	**Akhisar**	**0.99**	**257**	*i* P		**Pn**	**10 58 12.0**	**+0.3**
AKHS				*i* S		**Sn**	**10 58 25.6**	**0.0**
AKHS	**Akhisar**	**0.99**	**257**	P		**Pn**	**10 58 12.0**	**+0.3**
AKHS				S		**Sn**	**10 58 25.6**	**0.0**
AKS	**Akhisar**	**0.99**	**257**	*e*PG		**Pg**	**10 58 11.3**	**+0.1**
AKS	**Akhisar**	**0.99**	**257**	*e*Pg		**Pg**	**10 58 11.3**	**+0.1**
ULDT	**Uludag**	**1.04**	**4**	*i* P		**Pb**	**10 58 12.0**	**0.0**
ULDT				*i* S		**Sb**	**10 58 25.4**	**-0.3**
ULDT	**Uludag**	**1.04**	**4**	P		**Pb**	**10 58 12.0**	**0.0**
ULDT				S		**Sb**	**10 58 25.4**	**-0.3**
BALB	**Balikesir**	**1.05**	**301**	*e*PG		**Pb**	**10 58 11.9**	**-0.3**
BALB	**Balikesir**	**1.05**	**301**	*e*Pg		**Pb**	**10 58 11.9**	**-0.3**
IGD	**Bursa**	**1.17**	**6**	*i* P		**Pb**	**10 58 13.8**	**-0.2**
IGD				*i* S		**Sb**	**10 58 29.2**	**+0.1**
GONE	**Gonen-Balikesi**	**1.42**	**312**	*e*PN		**Pn**	**10 58 17.4**	**-0.1**
GONE	**Gonen-Balikesi**	**1.42**	**312**	*e*Pn		**Pn**	**10 58 17.4**	**-0.1**
ESKT	**Eskisehir**	**1.46**	**73**	*i* P		**Pg**	**10 58 19.6**	**-0.5**
ESKT				*i* S		**Sg**	**10 58 41.4**	**+2.4**
SEYT	**Eskypehyr**	**1.46**	**73**	P		**Pg**	**10 58 19.6**	**-0.5**

SJA 21 10:58:43.2±0.4,31.°21S×68.°33W,h101km±1km,ML2.6, MW3.7,San Juan Province

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
RTLL	**Cerro Villicun**	**0.17**	**228**	*i* P		Pn	10 58 58.1	+0.5
RTLL				*i* S		Sn	10 59 08.8	+0.5
AMOG	**MOGNA**	**0.31**	**333**	*i* P		Pn	10 58 58.8	+0.6
SJA	**San Juan**	**0.37**	**212**	*i* P		Pn	10 58 59.0	+0.6
SJA				*i* S		Sn	10 59 10.8	+1.1
SJA				IAML			10 59 12.3	
	comp=Z,238nm,0.4s							
RTCV	**Cerro Valdivia**	**0.67**	**196**	*i* P		Pn	10 59 01.4	+0.8
RTCV				*i* S		Sn	10 59 14.9	+1.3
AVFE	**Valle Fertil**	**0.93**	**54**	*i* P		Pn	10 59 03.9	+0.8
AVFE				*i* S		Sn	10 59 19.3	+1.3
AVFE				IAML			10 59 19.7	
	comp=Z,75nm,0.3s							
RTLS	**Leoncito**	**1.01**	**235**	*i* P		Pn	10 59 05.5	+1.3
AUSP	**Uspallata**	**1.35**	**222**	*i* P		Pn	10 59 09.3	+1.3
ACAN	**Cantantal**	**1.44**	**138**	*i* P		Pn	10 59 09.6	+0.8
ACAN				*i* S		Sn	10 59 29.5	+1.3
ASAL	**Salagasta**	**1.44**	**197**	*i* P		Pn	10 59 09.9	+1.0
ARCO	**CERRO ARCO**	**1.70**	**197**	*i* P		Pn	10 59 13.2	+1.0
ARCO				IAML			10 59 37.5	
	comp=Z,43nm,0.2s							
AAGR	**Agrelo**	**1.91**	**193**	*i* P		Pn	10 59 16.0	+1.2
VCA	**Vinchina**	**2.47**	**2**	*i* P		Pn	10 59 23.5	+1.3
VCA				IAML			10 59 58.0	
	comp=Z,30nm,0.3s							

*IDC **21** 11:10:03.8±1.6,37.°75N×144.°94E,h0km,mb3.3/2, mb1 3.5/4,mb1mx3.2/58,mbtmp3.3/4,ML3.3/2,Error ellipse: s-maj=56.4km s-min=23.2km az=85.0*
*ISCJB **21** 11:10:07.3±0.9,37.°76N±0.°07×144.°64E±0.°07,h33km, mb4.0/3,Error ellipse: s-maj=10.2km s-min=7.4km az=24.8*
*JMA **21** 11:10:08.8±0.3,37.°82N×144.°53E,h33km,M3.5*

ISC 21 11:10:09.1±1.4,37.79N±0.°08×144.°67E±0.°09,h35km,n16, σ0s94/20,mb3.6/3,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
OFUJ	**Ofunato**	**2.69**	**300**	P		**Pn**	**11 10 49.9**	**0.0**
OFUJ				S		**Sn**	**11 11 19.9**	**-1.3**
JIO	**Ouri**	**2.71**	**285**	S		**Sn**	**11 11 20.3**	**-1.3**
JMM	**Marumori**	**3.07**	**273**	P		**Pn**	**11 10 53.9**	**-1.2**
JMM				S		**Sn**	**11 11 29.3**	**-1.4**
JOM	**Ohasama**	**3.14**	**304**	S		**Sn**	**11 11 32.5**	**+0.2**
JOU	**Okura**	**3.22**	**282**	S		**Sn**	**11 11 33.7**	**-0.5**
JRG	**Rokugo**	**3.55**	**298**	P		**Pn**	**11 11 03.1**	**+1.4**
JRG				eS		**Sn**	**11 11 42.4**	**0.0**
JANG	**Nango**	**3.57**	**317**	P		**Pn**	**11 11 02.2**	**+0.3**
JYK	**Kaneyama**	**3.58**	**290**	P		**Pn**	**11 11 03.1**	**+1.0**
JYK				S		**Sn**	**11 11 43.0**	**-0.1**
JNBK	**Urakawa-nobuka**	**4.72**	**342**	P		**Pn**	**11 11 17.9**	**+0.1**
JRY	**Ryogami san**	**4.95**	**251**	P		**Pn**	**11 11 21.0**	**0.0**
JKB	**Kayabe**	**4.96**	**327**	P		**Pn**	**11 11 22.0**	**+0.9**
MJAR	**Matsushiro Arr**	**5.31**	**258**	Pn		**Pn**	**11 11 27.0**	**+1.1**
	0.4nm,0.3s,baz=87,slow=15,SNR=4.3							
ASAJ	**Asahikawa**	**6.52**	**347**	Pn		**Pn**	**11 11 41.1**	**-1.3**
	0.9nm,0.3s,baz=185,slow=12,SNR=9.3							
YAK	**Yakutsk**	**25.99**	**344**	P		**P**	**11 15 39.2**	**+1.0**
	26nm,0.4s,baz=355,slow=2.8,SNR=6.2							
WRA	**Warramunga Arr**	**58.24**	**191**	P		**P**	**11 19 59.8**	**-0.3**
	0.2nm,0.4s,baz=8.4,slow=6.9,SNR=6.1							
ASAR	**Alice Springs**	**61.96**	**191**	P		**P**	**11 20 25.6**	**+0.2**
	0.2nm,0.7s,baz=3.6,slow=7.4,SNR=3.4							

*TAP **21** 11:16:21.0,24.°77N×122.°36E,h111km,ML3.3,C*
*JMA **21** 11:16:20.5±0.2,24.°76N×122.°33E,h112km±2km,M2.3*
*ISCJB **21** 11:16:21.4±0.6,24.°75N±0.°04×122.°38E±0.°02, h107km±5km,Error ellipse: s-maj=6.8km s-min=3.2km az=172.5*

ISC 21 11:16:21.9±1.6,24.74N±0.°06×122.37E±0.°03, h105km±10km,n41,σ0s59/71,1D,Taiwan region

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
EGS		**0.41**	**285**	*e*P		**Pn**	**11 16 37.4**	**-0.2**
	baz=274							
TWB1	**Santiao Chiao**	**0.44**	**308**	P		**Pn**	**11 16 37.6**	**-0.2**
	baz=299							
TWB1				*e*S		**Sn**	**11 16 49.7**	**0.0**
	baz=299							
TWC	**Suao**	**0.49**	**255**	*i* P		**Pn**	**11 16 37.9**	**-0.2**
	baz=250							
TWC				*e*S		**Sn**	**11 16 48.9**	**-1.4**
	baz=250							
JYNG	**Yonagunijimaku**	**0.60**	**118**	P		**Pn**	**11 16 38.9**	**0.0**
JYNG				S		**Sn**	**11 16 52.5**	**+0.9**
NWF	**Wu-fen Shan**	**0.63**	**302**	*i* P		**Pn**	**11 16 39.1**	**-0.1**
	baz=291							
NWF				*e*S		**Sn**	**11 16 51.4**	**-0.9**
	baz=291							
TWE	**Neicheng**	**0.64**	**269**	P		**Pn**	**11 16 39.2**	**0.0**
	baz=271							
TWE				S		**Sn**	**11 16 52.3**	**0.0**
	baz=271							
YOJ	**Yonaguni jima**	**0.65**	**115**	P		**Pn**	**11 16 39.2**	**-0.1**
YOJ				*e*S		**Sn**	**11 16 53.0**	**+0.7**
ENA	**Nanau**	**0.65**	**242**	P		**Pn**	**11 16 39.5**	**+0.2**
	baz=238							
ENA				*e*S		**Sn**	**11 16 52.8**	**+0.4**
	baz=238							
ENTT	**Nioudou**	**0.74**	**263**	P		**Pn**	**11 16 40.4**	**+0.3**
	baz=261							
ENTT				*e*S		**Sn**	**11 16 55.2**	**+1.4**
	baz=261							
TWA	**Mucha**	**0.75**	**289**	*e*P		**Pn**	**11 16 39.4**	**-0.8**
	baz=286							
TWY	**Chenhua**	**0.88**	**308**	P		**Pn**	**11 16 41.1**	**-0.3**
	baz=306							
NSK	**Sanguang**	**0.92**	**266**	P		**Pn**	**11 16 41.9**	**0.0**
	baz=270							
NSK				S		**Sn**	**11 16 57.0**	**0.0**
	baz=270							
PCYT	**Pengchaiyu**	**0.93**	**343**	*e*P		**Pn**	**11 16 42.2**	**+0.3**
	baz=337							
TWS1	**Kuangyinshan**	**0.94**	**293**	*e*P		**Pn**	**11 16 41.6**	**-0.4**
	baz=285							
NNS	**Nan Shan**	**0.95**	**252**	P		**Pn**	**11 16 42.5**	**+0.2**
	baz=245							
NNS				*e*S		**Sn**	**11 16 57.9**	**+0.2**
	baz=245							
TWD	**Chiawan**	**0.96**	**227**	*e*P		**Pn**	**11 16 41.9**	**-0.4**
	baz=222							
TWD				S		**Sn**	**11 16 57.6**	**0.0**
	baz=222							
NCU	**National Centr**	**1.10**	**282**	*e*P		**Pn**	**11 16 43.8**	**+0.1**
	baz=286							
NCU				*e*S		**Sn**	**11 17 00.9**	**+0.7**
	baz=286							
WHF	**Hehuan Shan**	**1.17**	**240**	*e*P		**Pn**	**11 16 45.0**	**0.0**
	baz=233							
TWT	**Tachien**	**1.19**	**246**	*e*P		**Pn**	**11 16 45.6**	**+0.7**
	baz=239							
TWT				*e*S		**Sn**	**11 17 02.8**	**+0.5**
	baz=239							
NSTT	**Nanjuang**	**1.25**	**265**	P		**Pn**	**11 16 45.2**	**-0.3**
	baz=263							
NSTT				*e*S		**Sn**	**11 17 02.9**	**-0.3**
	baz=263							
ESL	**Shilin**	**1.26**	**223**	*e*P		**Pn**	**11 16 45.4**	**-0.1**
	baz=228							
ESL				*e*S		**Sn**	**11 17 01.8**	**-1.6**
	baz=228							
IRIF	**Iriomote-Funau**	**1.30**	**108**	P		**Pn**	**11 16 45.6**	**-0.4**
IRIF				*e*S		**Sn**	**11 17 04.8**	**+0.5**
HATJ	**Hateruma jima**	**1.47**	**117**	P		**Pn**	**11 16 48.2**	**+0.2**
WDT	**Danda**	**1.49**	**229**	*e*P		**Pn**	**11 16 49.2**	**+0.6**
	baz=222							
WDT				*e*S		**Sn**	**11 17 08.2**	**-0.7**
	baz=222							
NSY	**Sanyi**	**1.50**	**258**	*e*P		**Pn**	**11 16 48.4**	**0.0**
	baz=256							
NSY				*e*S		**Sn**	**11 17 09.2**	**+0.6**
	baz=256							
TWQ1	**Liyutan**	**1.50**	**255**	*e*P		**Pn**	**11 16 47.9**	**-0.5**
	baz=253							
TWQ1				*e*S		**Sn**	**11 17 08.4**	**-0.2**
	baz=253							
EHY	**Hungye**	**1.56**	**218**	*e*P		**Pn**	**11 16 50.0**	**+0.9**
	baz=223							
JKRS	**Kuro-shima**	**1.57**	**108**	P		**Pn**	**11 16 49.3**	**0.0**
JKRS				S		**Sn**	**11 17 11.0**	**+0.9**
SMLT	**Sun Moon Lake**	**1.59**	**238**	*e*P		**Pn**	**11 16 50.2**	**+0.6**
	baz=232							
SMLT				*e*S		**Sn**	**11 17 11.4**	**+0.8**
	baz=232							
TYC	**Yuchr**	**1.61**	**239**	*e*P		**Pn**	**11 16 50.2**	**+0.5**
	baz=234							
TYC				*e*S		**Sn**	**11 17 11.6**	**+0.7**
	baz=234							
JIJ	**Ishigaki jima**	**1.66**	**103**	P		**Pn**	**11 16 49.8**	**-0.5**
JIJ				S		**Sn**	**11 17 11.4**	**-0.5**
TWF1	**Yuli**	**1.69**	**216**	*e*P		**Pn**	**11 16 50.2**	**-0.5**
	baz=221							
TWF1				*e*S		**Sn**	**11 17 11.2**	**-1.5**
	baz=221							
JISG	**Ishigakijimahi**	**1.77**	**94**	P		**Pn**	**11 16 51.4**	**-0.3**
JISG				*e*S		**Sn**	**11 17 14.0**	**-0.5**
YUS	**Yu-Shan**	**1.79**	**226**	*e*P		**Pn**	**11 16 53.1**	**+0.6**
	baz=218							
YUS				*e*S		**Sn**	**11 17 15.7**	**-0.1**
	baz=218							
ALS	**Alishan**	**1.88**	**230**	*e*P		**Pn**	**11 16 54.0**	**+0.5**
	baz=222							
ALS				*e*S		**Sn**	**11 17 18.5**	**+1.0**
	baz=222							
CHN5	**Tsauling**	**1.92**	**234**	*e*P		**Pn**	**11 16 54.0**	**+0.3**
	baz=241							
CHN5				*e*S		**Sn**	**11 17 18.5**	**+0.6**
	baz=241							
ELDTW	**Lidau**	**1.98**	**219**	*e*P		**Pn**	**11 16 53.8**	**-0.7**
	baz=214							
JTJ	**Tarama**	**2.12**	**92**	P		**Pn**	**11 16 56.0**	**-0.2**
JTJ				*e*S		**Sn**	**11 17 22.3**	**-0.2**
CHN4	**Tsaushan**	**2.13**	**230**	*e*P		**Pn**	**11 16 55.8**	**-0.6**
	baz=238							
CHN4				*e*S		**Sn**	**11 17 22.5**	**-0.2**
	baz=238							
TWG	**Pinlang**	**2.25**	**212**	*e*P		**Pn**	**11 16 57.5**	**-0.4**
	baz=210							
JOGS	**Gusukube**	**2.76**	**89**	P		**Pn**	**11 17 04.9**	**+0.4**

*ISCJB **21** 11:32:13.1±1.3,38.°85N±0.°06×141.°9E±0.°1,h55km±7km, mb3.5/3,Error ellipse: s-maj=20.0km s-min=7.6km az=21.6*
*JMA **21** 11:32:13.4±0.1,38.°81N×141.°93E,h50km±1km,M3.6*
JMA Felt I J1.
*IDC **21** 11:32:15.6±1.9,39.°41N×140.°84E,h0km,mb3.6/3, mb1 3.6/5,mb1mx3.3/41,mbtmp3.5/5,ML2.8/2,Error ellipse: s-maj=48.4km s-min=25.3km az=87.0*

ISC 21 11:32:14.0±1.8,38.86N±0.°06×141.9E±0.°1,h46km±10km, n18,σ1s03/17,mb3.6/3,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
OFUJ	**Ofunato**	**0.29**	**320**	P		**Pn**	**11 32 23.0**	**+0.2**
OFUJ				S		**Sn**	**11 32 29.6**	**+0.7**
JMK	**Ichinoseki**	**0.55**	**280**	P		**Pn**	**11 32 25.6**	**0.0**
JMK				S		**Sn**	**11 32 34.2**	**+0.3**
JIO	**Ouri**	**0.59**	**228**	P		**Pn**	**11 32 25.6**	**-0.6**
JIO				S		**Sn**	**11 32 33.7**	**-1.3**
JOM	**Ohasama**	**0.78**	**322**	P		**Pn**	**11 32 28.8**	**+0.1**
JOM				S		**Sn**	**11 32 39.7**	**+0.3**
JOU	**Okura**	**1.09**	**244**	P		**Pn**	**11 32 32.3**	**-0.6**
JOU				S		**Sn**	**11 32 46.2**	**-0.7**
JRG	**Rokugo**	**1.13**	**299**	P		**Pn**	**11 32 33.4**	**0.0**
MJAR	**Matsushiro Arr**	**3.73**	**233**	Pn		**Pn**	**11 33 11.8**	**+2.6**
	0.8nm,0.3s,baz=40,slow=11,SNR=11							
MAT	**Matsushiro**	**3.73**	**233**	P		**Pn**	**11 33 10.8**	**+1.6**
MAT				S		**Sn**	**11 33 52.3**	**+0.4**
ASAJ	**Asahikawa**	**5.28**	**5**	Pn		**Pn**	**11 33 30.5**	**+0.2**
	0.4nm,0.3s,baz=194,slow=17,SNR=5.9							
H11N2	**WAKE ISLAND Hy**	**28.80**	**124**	T		T	12 08 33.1	
	baz=317,slow=75,SNR=34							
H11N1	**WAKE ISLAND Hy**	**28.80**	**124**	T		T	12 08 33.3	
	baz=317,slow=75,SNR=57							
H11N3	**WAKE ISLAND Hy**	**28.81**	**124

JOT	**Ohata**	**5.39**	**233**	P	**Pn**	**12 03 21.6**	**-0.4**
JANG	**Nango**	**5.87**	**223**	P	**Pn**	**12 03 27.8**	**-0.4**
JANG				*e*S	**Sn**	**12 04 32.4**	**-3.1**
SKR	**Severo-Kuril's**	**8.63**	**44**	*e*P	**Pn**	**12 04 04.6**	**+0.4**
SKR				AMB	AMB	12 04 17.2	
	40nm,1.0s						

MAN 21 12:06:19.1, 18.54N×120.93E, h20km, mb4.2, ML3.0, MS2.7, 2C, Luzon

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PIP	**Pasuquin**	**0.36**	**234**	*i* P	Pb	12 06 27.3	+0.6
PIP				*e*S	Sb	12 06 33.6	+1.6
APYP	**Conner**	**0.74**	**156**	*e*P	Pb	12 06 33.7	+0.5
APYP				*e*S	Sn	12 06 45.1	+0.2
SIPP	**Brgy, Tapao**	**0.76**	**216**	*e*P	Pn	12 06 34.6	0.0
SIPP				*e*S	Sn	12 06 47.1	+1.7
ABRA	**Dolores**	**0.91**	**193**	*e*P	Pn	12 06 36.5	-0.1
ABRA				*e*S	Sn	12 06 50.0	+0.8
SGCP	**Mt. Cagua**	**1.10**	**105**	*e*P	Pn	12 06 39.2	-0.1
CAUP	**Cauayan**	**1.80**	**152**	*e*P	Pb	12 06 51.1	-0.2

JMA 21 12:16:46.0±0.1, 36.38N×141.61E, h26km±3km, M3.2, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHO	**Hitachi**	**0.87**	**286**	P	Pb	12 17 02.1	-0.4
JHO				S	Sb	12 17 13.9	+0.2
ONAJ	**Iwakimizuishiy**	**0.97**	**318**	P	Pn	12 17 03.0	-1.0
ONAJ				*e*S	Sb	12 17 16.7	0.0
JFK	**Kawauchi**	**1.15**	**329**	P	Pn	12 17 06.5	+0.1
JFK				S	Sn	12 17 21.4	+0.1
JFT	**Otama**	**1.53**	**318**	P	Pb	12 17 12.9	-0.7
JFT				S	Sb	12 17 32.4	-0.2
JMM	**Marumori**	**1.62**	**336**	P	Pn	12 17 13.7	+0.8
JMM				S	Sn	12 17 33.8	+0.9
MAT	**Matsushiro**	**2.75**	**274**	P	Pn	12 17 29.9	+1.5
MAT				S	Sn	12 17 57.5	-3.3

IDC 21 12:21:31.8±1.5, 5.60S×145.78E, h0km, mb3.6/3, mb1 4.0/6, mb1mx3.7/37, mbtmp3.9/6, ML2.9/2, Error ellipse: s-maj=41.8km s-min=24.0km az=116.0, Eastern New Guinea region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**4.02**	**160**	Pn	Pn	12 22 33.1	-1.6
	6.6nm,0.3s,baz=54,slow=5.4,SNR=29						
PMG				Sn	Sn	12 23 08.3	-14
	10nm,0.3s,baz=66,slow=22,SNR=14						
CTA	**Charters Tower**	**14.41**	**178**	Pn	Pn	12 24 58.8	+1.6
	1.2nm,0.3s,baz=356,slow=14,SNR=15						
WRA	**Warramunga Arr**	**18.08**	**217**	P	Pn	12 25 44.2	-0.5
	0.2nm,0.3s,baz=36,slow=12,SNR=11						
ASAR	**Alice Springs**	**21.29**	**211**	P	P	12 26 18.6	-1.5
	0.8nm,0.8s,baz=50,slow=9.4,SNR=8.2						
FITZ	**Fitzroy Crossi**	**23.26**	**236**	P	P	12 26 42.0	+0.8
	1.4nm,0.4s,baz=65,slow=11,SNR=7.3						
ILAR	**Eielson Array**	**85.60**	**23**	P	P	12 34 12.2	+0.4
	0.7nm,0.6s,baz=248,slow=5.1,SNR=14						

KRSC 21 12:26:04.1±3.0, 48.87N×158.08E, h19km±10km, ML3.7, East of Kuril Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SKR	**Severo-Kuril's**	**2.22**	**326**	*e*P	Pn	12 26 38.7	-1.1
SKR				*e*S	Sn	12 27 06.4	-0.2
PAU	**Pauzhetka**	**2.73**	**343**	*e*P	Pn	12 26 48.4	+1.6
PAU				*e*S	Sb	12 27 22.6	-2.6
ASAK	**Asacha**	**3.52**	**358**	*e*P	Pn	12 27 01.1	+3.3
RUS	**Russkaya**	**3.58**	**4**	*e*S	Sb	12 27 46.2	-3.5
KRMR	**Karymshinskiy**	**3.97**	**0**	*e*P	Pb	12 27 08.9	-4.4
DALK	**Dalny**	**4.19**	**6**	*e*P	Pn	12 27 10.6	+3.7
DALK				*e*S	Sn	12 28 01.0	+5.7
UGLR	**Uglovaya**	**4.37**	**6**	*e*P	Pn	12 27 13.6	+4.1
AVH	**Avacha**	**4.42**	**5**	*e*P	Pn	12 27 15.0	+4.8
SDLR	**Sedlovina**	**4.44**	**6**	*e*P	Pb	12 27 16.2	-5.4
KRER	**Koryakskii**	**4.46**	**5**	*e*P	Pn	12 27 15.8	+4.9
GNL	**Ganaly**	**4.83**	**359**	*e*P	Pb	12 27 22.4	-5.8
KBTR	**Krutoberegovo**	**7.90**	**20**	*e*P	Pn	12 28 01.9	+4.1

SJA 21 12:40:05.9±0.5, 28.98S×66.91W, h32km±2km, ML1.4, MW3.6, Catamarca Province

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CYA	**Choya**	**1.11**	**61**	*i* P	Pb	12 40 27.5	+0.9
CYA				*i* S	Sb	12 40 42.6	+1.8
CYA				IAML		12 40 45.4	
	comp=Z,6.8nm,0.4s						
AGUA	**GUANDACOL**	**1.47**	**250**	*i* P	Pb	12 40 32.4	-0.3
AGUA				*i* S	Sb	12 40 51.8	+0.7
AVFE	**Valle Fertil**	**1.74**	**196**	*i* P	Pb	12 40 36.2	-1.0
AVFE				*i* S	Sb	12 40 58.5	-0.3
AVFE				IAML		12 41 02.8	
	comp=Z,4.8nm,0.5s						

*PRE **21** 12:43:27.6±2.8, 21.35S×33.39E, h5km, ML4.2*
ISC 21 12:43:35.3±3.0, 21.6S±0.1×33.0E±0.1, h15km, n8, σ1§62/15, 2C, Mozambique

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MSNA	**Messina**	**2.85**	**254**	*e*P	**Pn**	**12 44 20.4**	**+0.1**
MSNA				*e*S	**Sb**	**12 45 02.0**	**+1.3**
MSNA				AML	AML	12 45 15.5	
	comp=Z,166nm,0.2s						
MATP	**Matopo**	**4.34**	**285**	*i* P	**Pn**	**12 44 40.5**	**-0.5**
MATP				*i*		12 44 40.5	
	baz=61,slow=12						
MATP				*i* S	**Sn**	**12 45 32.3**	**+0.9**
CNG	**Changalane**	**4.74**	**189**	*e*P	**Pn**	**12 44 46.8**	**+0.5**
CNG				*e*S	**Sn**	**12 45 43.5**	**+2.4**
CNG				AML	AML	12 46 17.6	
	comp=Z,46nm,0.6s						
POGA	**Pongola**	**5.90**	**192**	*e*P	Pn	12 44 59.8	-2.4
POGA				*e*S	**Sn**	**12 46 06.5**	**-3.0**
POGA				AML	AML	12 46 54.6	
	comp=Z,35nm,0.4s						
PRYS	**Parys**	**7.39**	**223**	*e*P	**Pn**	**12 45 22.7**	**-0.1**
PRYS				*e*S	**Sn**	**12 46 47.3**	**+0.8**
PRYS				AML	AML	12 47 40.1	
	comp=Z,20nm,0.7s						
SWZ	**Schweizer**	**8.93**	**230**	*e*P	**Pn**	**12 45 43.8**	**-0.1**
SWZ				*e*S	**Sn**	**12 47 24.1**	**-0.2**
SWZ				AML	AML	12 48 26.9	
	comp=Z,20nm,0.5s						
BOSA	**Boshof**	**9.90**	**223**	*i* P	**Pn**	**12 45 58.4**	**+1.2**
BOSA				*i*		12 45 58.4	
	baz=50,slow=14						
BOSA				*i* S	**Sn**	**12 47 48.2**	**+0.1**
UPI	**Upington**	**12.59**	**235**	*e*P	**Pn**	**12 46 34.5**	**+0.5**
UPI				*e*S	**Sn**	**12 48 50.9**	**-3.3**
UPI				AML	AML	12 50 31.0	
	comp=Z,9.0nm,0.7s						

*DDA **21** 12:46:21.1, 37.18N×37.10E, h7km, Md2.5*
*ISCJB **21** 12:46:22.2±0.8, 37.16N±0.04×37.05E±0.06, h7km, Error ellipse: s-maj=7.0km s-min=5.5km az=142.3*
ISC 21 12:46:22.4±1.1, 37.16N±0.04×36.99E±0.04, h7km, n5, σ0§89/9, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HCB	**Kahramanmara¯**	**0.20**	**341**	*i* P	**Pg**	**12 46 25.3**	**-1.1**
HCB				*i* S	**Sg**	**12 46 30.1**	**+1.0**
KAMA	**Osmaniye**	**0.26**	**277**	*i* P	**Pg**	**12 46 28.0**	**+0.5**
KAMA				*i* S	**Sb**	**12 46 33.6**	**-0.5**
KUZU	**Kuzuini**	**0.39**	**170**	*i* P	**Pg**	**12 46 29.0**	**-1.0**
KUZU				*i* S	**Sg**	**12 46 36.0**	**+0.9**
GZT	**Gaziantep**	**0.50**	**66**	*i* P	**Pb**	**12 46 33.4**	**-0.2**
GZT				*i* S	**Sb**	**12 46 41.1**	**0.0**
SIRT	**Sirnak**	**4.36**	**84**	*e*PG	**Pg**	**12 47 46.3**	**+0.5**
SIRT				*e*SG	Sn	12 47 49.2	-31

IDC 21 12:51:29.0±1.9, 14.42S×171.28E, h0km, mb3.9/4, mb1 4.1/5, mb1mx3.7/29, mbtmp3.8/5, ML3.6/1, MS3.2/2, Ms1 3.2/2, ms1mx2.8/36, Error ellipse: s-maj=84.6km s-min=25.5km az=137.0, Vanuatu Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**8.89**	**210**	Pn	Pn	12 53 38.3	-0.6
	0.6nm,0.3s,baz=111,slow=20,SNR=12						
DZM				LR	LR	12 56 43.7	
	comp=Z,79nm,19.4s,baz=41,slow=35						
PMG	**Port Moresby**	**24.11**	**279**	LR	LR	13 04 25.8	
	comp=Z,94nm,20.2s,baz=64,slow=32						
WRA	**Warramunga Arr**	**35.66**	**256**	P	P	12 58 28.6	-0.6
	0.4nm,0.6s,baz=87,slow=8.4,SNR=7.9						
ASAR	**Alice Springs**	**36.41**	**250**	P	P	12 58 36.0	+0.4
	3.5nm,0.8s,baz=77,slow=9.2,SNR=55						
ILAR	**Eielson Array**	**85.07**	**17**	P	P	13 04 07.0	+0.7
	0.6nm,0.7s,baz=235,slow=5.2,SNR=8.9						
YKA	**Yellowknife Ar**	**95.51**	**27**	P	P	13 04 54.3	-1.2
	0.2nm,0.8s,baz=255,slow=5.2,SNR=4.7						

*NIED **21** 13:03:00, 28.10N×128.10E, h5km, Mw4.0 Best double couple: M0 1.20000×10^15 NP1:ϕs 201.00000°, δ64.00000°, λ178.00000°. NP2:ϕs 292.00000°, δ88.00000°, λ26.00000°.*
JMA 21 13:03:46.3±0.4, 28.10N×128.06E, h9km±4km, M3.6, Ryukyu Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JTK	**Tokunoshima**	**0.85**	**111**	P	Pg	13 04 02.2	-0.4
JTK				S	Sg	13 04 13.9	+0.2
JOKE	**Okinoerabujima**	**0.86**	**148**	P	Pg	13 04 03.1	+0.2
JAMN	**Amaminishikomi**	**0.99**	**82**	P	Pg	13 04 04.9	-0.5
JAMN				S	Sg	13 04 18.5	+0.1
JIH	**Iheya**	**1.06**	**184**	P	Pg	13 04 06.1	-0.7
JIH				S	Sg	13 04 20.4	-0.2
JOW	**Kunigami**	**1.28**	**171**	P	Pn	13 04 09.6	-0.7
JOW				S	Sb	13 04 26.8	-0.3
JAM	**Amami Oshima**	**1.40**	**77**	P	Pn	13 04 12.1	+0.1
JAM				*e*S	Sb	13 04 29.7	-0.8
JTAJ	**Takarajima**	**1.45**	**43**	P	Pn	13 04 13.0	+0.3
JNTH	**Nagotoyohara**	**1.58**	**181**	P	Pn	13 04 14.8	+0.4
JNTH				*e*S	Sn	13 04 34.9	0.0
JAGN	**Aguni-jima**	**1.67**	**206**	P	Pn	13 04 16.3	+0.6
JZK	**Kikaishima**	**1.70**	**82**	P	Pb	13 04 17.7	-0.1
JJT2	**Tamagusuku 2**	**1.97**	**188**	P	Pn	13 04 21.1	+1.2
JKE	**Kume jima 2**	**2.10**	**213**	P	Pb	13 04 23.3	-1.3

*IDC **21** 13:14:15.2±0.8, 37.94N×144.79E, h0km, mb3.6/9, mb1 3.8/11, mb1mx3.6/40, mbtmp3.6/11, ML3.8/2, MS2.5/3, Ms1 2.5/3, ms1mx2.3/52, Error ellipse: s-maj=23.9km s-min=17.5km az=113.0*
*ISCJB **21** 13:14:19.0±0.6, 38.09N±0.05×144.60E±0.04, h33km, mb3.5/9, Error ellipse: s-maj=6.7km s-min=4.8km az=162.6*
*NEIC **21** 13:14:19.7±0.8, 37.99N×144.09E, h35km, mb4.3/1, Error ellipse: s-maj=20.6km s-min=11.4km az=116.0*
*JMA **21** 13:14:20.3±0.2, 38.08N×144.51E, h45km, M4.0*
ISC 21 13:14:20.9±0.8, 38.08N±0.06×144.62E±0.07, h35km, n36, σ1§10/39, mb3.6/9, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**2.52**	**294**	P	**Pn**	**13 14 58.9**	**-0.3**
OFUJ				S	**Sn**	**13 15 27.6**	**-1.1**
JIO	**Ouri**	**2.60**	**279**	P	**Pn**	**13 15 00.3**	**-0.1**
JIO				S	**Sn**	**13 15 29.5**	**-1.2**
JMK	**Ichinoseki**	**2.80**	**289**	P	**Pn**	**13 15 03.0**	**-0.2**
JMK				S	**Sn**	**13 15 34.6**	**-1.1**
JTH	**Tanohata**	**2.84**	**312**	P	**Pn**	**13 15 03.1**	**-0.5**
JTH				S	**Sn**	**13 15 34.7**	**-1.9**
JOM	**Ohasama**	**2.95**	**299**	P	**Pn**	**13 15 05.5**	**+0.3**
JOM				S	**Sn**	**13 15 39.1**	**-0.2**
JMM	**Marumori**	**3.03**	**267**	P	**Pn**	**13 15 05.7**	**-0.6**
JMM				S	**Sn**	**13 15 39.3**	**-2.0**
JOU	**Okura**	**3.12**	**276**	P	**Pn**	**13 15 06.7**	**-0.9**
JOU				S	**Sn**	**13 15 43.0**	**-0.7**
JRG	**Rokugo**	**3.38**	**294**	P	**Pn**	**13 15 11.8**	**+0.7**
JRG				S	**Sn**	**13 15 49.9**	**-0.1**
JFT	**Otama**	**3.44**	**262**	S	**Sn**	**13 15 50.6**	**-0.8**
JYK	**Kaneyama**	**3.44**	**285**	P	**Pn**	**13 15 12.2**	**+0.2**
JYK				*e*S	**Sn**	**13 15 50.5**	**-1.1**
JTM	**Tenmabayashi**	**3.85**	**316**	P	**Pn**	**13 15 17.6**	**0.0**
ERM	**Erimo**	**4.09**	**345**	*e*Pn	**Pn**	**13 15 19.5**	**-1.3**
JOT	**Ohata**	**4.29**	**321**	P	**Pn**	**13 15 24.3**	**+0.6**
JKB	**Kayabe**	**4.70**	**325**	P	**Pn**	**13 15 30.0**	**+0.8**
JRY	**Ryogami san**	**5.01**	**247**	P	**Pn**	**13 15 32.6**	**-1.0**
MJAR	**Matsushiro Arr**	**5.33**	**255**	Pn	**Pn**	**13 15 38.5**	**+0.5**
	1.7nm,0.3s,baz=84,slow=15,SNR=15						
MJAR				Sn	**Sn**	**13 16 40.3**	**+2.1**
	0.9nm,0.3s,baz=83,slow=30,SNR=4.5						
MJAR				LR	LR	13 18 12.7	
	comp=Z,29nm,19.5s,baz=120,slow=44						
MAJO	**Matsushiro**	**5.33**	**255**	*e*Pn	Pn	13 15 30.2	-7.8
MAJO				*e*Sn	**Sn**	**13 16 40.8**	**+2.6**
MAT	**Matsushiro**	**5.33**	**255**	P	**Pn**	**13 15 38.7**	**+0.7**
ASAJ	**Asahikawa**	**6.22**	**346**	Pn	**Pn**	**13 15 49.4**	**-0.8**
	2.3nm,0.3s,baz=187,slow=14,SNR=18						
ASAJ				Sn	**Sn**	**13 17 01.5**	**+1.5**
	1.4nm,0.3s,baz=103,slow=28,SNR=6.0						
JNU	**Nakatsue**	**12.22**	**250**	LR	LR	13 22 47.6	
	comp=Z,21nm,19.1s,baz=125,slow=42						
KSRS	**Korea Array**	**13.22**	**272**	LR	LR	13 22 50.8	
	comp=Z,26nm,18.6s,baz=176,slow=38						
SEY	**Seymchan**	**25.33**	**8**	P	**P**	**13 19 45.0**	**+1.0**
	1.2nm,0.6s,baz=336,slow=22,SNR=6.5						
H11N2	**WAKE ISLAND Hy**	**26.62**	**127**	T	T	13 46 09.0	
	baz=318,slow=75,SNR=16						
H11N1	**WAKE ISLAND Hy**	**26.63**	**127**	T	T	13 46 11.3	
	baz=318,slow=75,SNR=20						
H11N3	**WAKE ISLAND Hy**	**26.64**	**127**	T	T	13 46 13.7	
	baz=318,slow=75,SNR=15						
H11S1	**WAKE ISLAND Hy**	**27.41**	**129**	T	T	13 47 19.9	
	baz=320,slow=76,SNR=5.5						
H11S3	**WAKE ISLAND Hy**	**27.42**	**129**	T	T	13 47 17.3	
	baz=320,slow=76,SNR=3.7						
H11S2	**WAKE ISLAND Hy**	**27.43**	**129**	T	T	13 47 21.0	
	baz=320,slow=76,SNR=3.2						
ZALV	**Zalesovo Beam**	**43.11**	**312**	P	**P**	**13 22 18.5**	**+1.0**
	0.3nm,0.4s,baz=86,slow=6.1,SNR=3.1						
MKAR	**Makanchi Array**	**45.73**	**302**	P	**P**	**13 22 39.8**	**+1.2**
	0.5nm,0.7s,baz=99,slow=7.7,SNR=5.1						
ILAR	**Eielson Array**	**47.24**	**33**	P	**P**	**13 22 49.4**	**-0.7**
	0.4nm,0.8s,baz=272,slow=6.1,SNR=5.1						
WRA	**Warramunga Arr**	**58.52**	**191**	P	**P**	**13 24 11.7**	**-2.0**
	0.6nm,0.5s,baz=11,slow=7.0,SNR=9.2						
YKA	**Yellowknife Ar**	**61.61**	**31**	P	**P**	**13 24 34.5**	**+0.1**
	0.1nm,0.6s,baz=299,slow=6.8,SNR=3.5						
ASAR	**Alice Springs**	**62.24**	**191**	P	**P**	**13 24 38.5**	**-0.6**
	0.2nm,0.5s,baz=13,slow=8.6,SNR=3.0						
FINES	**FINESS Array B**	**69.06**	**333**	P	**P**	**13 25 23.0**	**+0.4**
	1.0nm,0.7s,baz=31,slow=11,SNR=2.9						
PDAR	**Pinedale Array**	**75.11**	**47**	P	**P**	**13 25 60.0**	**+0.4**
	0.4nm,0.5s,baz=282,slow=1.7,SNR=5.5						

JMA 21 13:17:55.9±0.1, 28.10N×128.07E, h20km±2km, M2.4, Ryukyu Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JTK	**Tokunoshima**	**0.84**	**112**	P	Pb	13 18 11.4	-0.4
JTK				S	Sb	13 18 22.5	-0.2
JOKE	**Okinoerabujima**	**0.86**	**149**	P	Pb	13 18 11.9	-0.2
JOKE				S	Sb	13 18 23.4	+0.2
JAMN	**Amaminishikomi**	**0.99**	**81**	P	Pb	13 18 14.1	-0.2
JAMN				S	Sb	13 18 27.4	+0.5
JIH	**Iheya**	**1.06**	**185**	P	Pb	13 18 15.3	-0.3
JIH				S	Sb	13 18 29.2	+0.1
JOW	**Kunigami**	**1.28**	**172**	P	Pn	13 18 18.5	-0.1
JOW				S	Sn	13 18 34.7	-0.4
JOW	**Kunigami**	**1.28**	**172**	*e*Pn	Pn	13 18 18.1	-0.5
	8.5nm,0.3s						
JAM	**Amami Oshima**	**1.39**	**77**	P	Pn	13 18 20.4	+0.3
JAM				*e*S	Sb	13 18 38.8	+0.3
JNTH	**Nagotoyohara**	**1.58**	**182**	P	Pn	13 18 23.3	+0.6
JNTH				*e*S	Sb	13 18 43.2	-0.6

*ISCJB **21** 13:20:21.0±1.0, 28.61S±0.10×20.45E±0.08, h10km, Error ellipse: s-maj=16.2km s-min=5.9km az=150.0*
*PRE **21** 13:20:21.1±1.3, 28.63S×20.48E, h5km, ML3.0*
ISC 21 13:20:21.8±1.3, 28.6S±0.1×20.44E±0.07, h10km, n4, σ1§08/8, South Africa

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
UPI	**Upington**	**0.75**	**72**	*e*P	**Pg**	**13 20 36.1**	**-0.3**
UPI				*e*S	**Sg**	**13 20 44.5**	**-1.8**
UPI				AML	AML	13 20 48.7	
	comp=Z,403nm,0.3s						
KOMG	**Komaggas**	**2.84**	**245**	*e*P	**Pn**	**13 21 07.9**	**+0.6**
KOMG				*e*S	**Sn**	**13 21 41.5**	**-0.2**
KOMG				AML	AML	13 21 49.1	
	comp=Z,56nm,0.4s						
CVNA	**Calvinia**	**2.93**	**191**	*e*P	**Pn**	**13 21 08.5**	**-0.1**
CVNA				*e*S	**Sn**	**13 21 43.9**	**0.0**
CVNA				AML	AML	13 21 50.5	
	comp=Z,136nm,0.7s						
BOSA	**Boshof**	**4.23**	**91**	*i* P	**Pn**	**13 21 27.9**	**+1.4**
BOSA				*i*		13 21 28.0	
	baz=48,slow=12						
BOSA				*i* S	**Sb**	**13 22 28.2**	**+0.6**

*ATH **21** 13:30:28.1, 40.96N×20.53E, h20km±2km, ML2.6/3, Error ellipse: s-maj=2.2km s-min=1.2km az=340.0*
*SKO **21** 13:30:28.1, 40.91N×20.50E, h15km, M2.0, ML2.4*
*TIR **21** 13:30:28.0, 40.93N×20.56E, h6km, ML3.1*
*CSEM **21** 13:30:29.1±0.1, 40.92N×20.53E, h2km, ML2.4, Error ellipse: s-maj=3.6km s-min=2.7km az=64.0*
*THE **21** 13:30:29.3, 40.93N×20.57E, h0km±1km, ML2.7/5, Error ellipse: s-maj=1.3km s-min=0.6km az=63.0*
ISC 21 13:30:29.0±1.1, 40.92N±0.02×20.52E±0.02, h4km±9km, n58, σ0§83/90, 2C-2D, Greece-Albania border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OHR	**Ohrid**	**0.29**	**47**	*i* Pg	**Pg**	**13 30 34.7**	**0.0**
OHR				*i* Sg	**Sg**	**13 30 40.1**	**+1.7**
OHR				*e*Lg	Lg	13 30 40.6	
	comp=E,434nm,0.4s						
OHR				*e*Lg	Lg	13 30 40.6	
	comp=N,359nm,0.3s						
OHR	**Ohrid**	**0.29**	**47**	*i* Pg	**Pg**	**13 30 34.6**	**0.0**
OHR				*i* Sg	**Sg**	**13 30 40.1**	**+1.7**
OHR				*e*Lg	Lg	13 30 40.5	
	comp=N,359nm,0.3s						
BIA	**Bitola**	**0.62**	**80**	P	**Pg**	**13 30 40.7**	**-0.1**
BIA				S	**Sg**	**13 30 48.8**	**-0.1**
BIA	**Bitola**	**0.62**	**80**	*i* Pg	**Pg**	**13 30 40.8**	**-0.1**
BIA				*i* Sg	**Sg**	**13 30 49.5**	**+0.6**
BIA				*e*Lg	Lg	13 30 50.4	
	comp=N,152nm,0.3s						
BIA				*e*Lg	Lg	13 30 50.4	
	comp=E,168nm,0.3s						
BIA	**Bitola**	**0.62**	**80**	*i* Pg	**Pg**	**13 30 40.8**	**-0.1**
BIA				S	**Sg**	**13 30 48.8**	**-0.1**
BIA				*i* Sg	**Sg**	**13 30 49.5**	**+0.6**
BIA				*e*Lg	Lg	13 30 50.3	
	comp=E,152nm,0.3s						
NEST	**Nestorio**	**0.64**	**141**	P	**Pg**	**13 30 40.9**	**-0.4**
NEST				S	**Sb**	**13 30 50.9**	**-1.3**
NEST	**Nestorio**	**0.64**	**141**	P	**Pg**	**13 30 40.9**	**-0.4**
NEST				S	**Sb**	**13 30 50.9**	**-1.3**
NEST	**Nestorio**	**0.64**	**141**	P	**Pg**	**13 30 40.4**	**-0.9**
NEST				S	**Sb**	**13 30 51.5**	**-0.7**
NEST				AML	AML	13 30 51.8	
	comp=N,570μm,0.3s						
NEST				AML	AML	13 30 55.1	
	comp=E,681μm,0.3s						
TIR	**Tirane**	**0.66**	**311**	*i* PG	**Pg**	**13 30 40.7**	**-0.9**
TIR				*i* SG	**Sb**	**13 30 51.7**	**-0.9**
TIR	**Tirane**	**0.66**	**311**	P	**Pg**	**13 30 40.0**	**-1.6**
TIR	**Tirane**	**0.66**	**311**	*i* Pg	**Pg**	**13 30 40.7**	**-0.9**
TIR				S	**Sg**	**13 30 50.3**	**+0.1**
TIR				*i* Sg	**Sb**	**13 30 51.7**	**-0.9**
TIR	**Tirane**	**0.66**	**311**	P	**Pg**	**13 30 40.0**	**-1.6**
TIR				S	**Sg**	**13 30 50.3**	**+0.1**
TIR				AML	AML	13 30 55.0	
	comp=N,1016μm,0.5s						
TIR				AML	AML	13 30 55.8	
	comp=E,956μm,0.3s						
FNA	**Florina**	**0.66**	**101**	P	**Pg**	**13 30 41.3**	**-0.4**
FNA				S	**Sg**	**13 30 51.0**	**+0.7**
FNA	**Florina**	**0.66**	**101**	P	**Pg**	**13 30 41.5**	**-0.2**
FNA				S	**Sg**	**13 30 51.0**	**+0.7**
FNA	**Florina**	**0.66**	**101**	P	**Pg**	**13 30 41.5**	**-0.2**
FNA				S	**Sg**	**13 30 51.2**	**+0.9**
FNA				AML	AML	13 30 52.8	
	comp=N,3262μm,0.3s						
FNA				AML	AML	13 30 54.0	
	comp=E,2907μm,0.5s						
KZN	**Kozani**	**1.13**	**122**	P	**Pg**	**13 30 50.1**	**-0.6**
KZN				S	**Sn**	**13 31 07.1**	**-0.6**
KZN	**Kozani**	**1.13**	**122**	P	**Pg**	**13 30 50.1**	**-0.6**
KZN				S	**Sn**	**13 31 07.1**	**-0.6**
KPRO	**Kipourio**	**1.16**	**146**	P	**Pg**	**13 30 50.6**	**-0.5**
KPRO				S	**Sn**	**13 31 07.8**	**-0.5**
KPRO	**Kipourio**	**1.16**	**146**	P	**Pg**	**13 30 50.6**	**-0.5**
KPRO				S	**Sn**	**13 31 07.8**	**-0.5**
KPRO	**Kipourio**	**1.16**	**146**	P	**Pg**	**13 30 49.9**	**-1.2**
SKO	**Skopje**	**1.26**	**33**	P	**Pg**	**13 30 53.0**	**-0.2**
SKO				S	**Sn**	**13 31 11.6**	**+0.7**
SKO	**Skopje**	**1.26**	**33**	P	**Pg**	**13 30 53.0**	**-0.2**
SKO				S	**Sn**	**13 31 11.6**	**+0.7**
JAN	**Janina**	**1.28**	**169**	P	**Pg**	**13 30 53.4**	**-0.2**
JAN	**Janina**	**1.28**	**169**	P	**Pg**	**13 30 53.4**	**-0.2**
SGD	**Sagiada**	**1.32**	**190**	P	**Pb**	**13 30 54.5**	**+0.2**
SGD				S	**Sn**	**13 31 13.8**	**+1.6**
SGD	**Sagiada**	**1.32**	**190**	P	**Pb**	**13 30 54.5**	**+0.2**
SGD				S	**Sn**	**13 31 13.8**	**+1.6**
SGD	**Sagiada**	**1.32**	**190**	P	**Pb**	**13 30 55.1**	**+0.8**
KEK	**Kerkira**	**1.32**	**205**	P	**Pn**	**13 30 54.1**	**-0.1**
KEK				S	**Sn**	**13 31 13.4**	**+1.1**
KEK	**Kerkira**	**1.32**	**205**	P	**Pn**	**13 30 54.1**	**-

λ121.00000°. NP2:φs0.00000°,δ68.00000°,λ76.00000°.
ISCJB **21** 13:37:00.9±0.3,35°.60N×0°.02×140°.43E±0°.01,h35km±3km, mb5.8/439,MS5.8/265,Error ellipse: s-maj=2.9km s-min=1.9km az=160.4
BJI **21** 13:37:00.5,35°.55N×140°.55E,h50km,mb5.8/73,mB5.9/75, Ms6.1/96,Ms7 6.0/89
JMA **21** 13:37:02.1±0.1,35°.68N×140°.69E,h46km±1km,M6.0 Broadband fault plane solution: P waves. NP1: φs4.00000°,δ68.00000°,λ85.00000°. NP2:φs198.00000°, δ22.00000°,λ103.00000°. Principal axes: T Plg66.0000°, Azm265.0000°; N Plg5.0000°, Azm6.0000°; P Plg23.0000°, Azm98.0000°;
NEIC **21** 13:37:03.0±0.0,35°.65N×140°.65E,h42km,Moment Tensor Solution. s75 Moment tensor: Scale 10^18Nm; Mrr1.23; Mθθ-0.17; Mφφ-1.06; Mrθ0.04; Mθφ-0.03; Mφr1.93; Best double couple: M0 2.30000×10^18 NP1:φs1.00000°, δ75.00000°,λ90.00000°. NP2:φs182.00000°,δ15.00000°, λ91.00000°. Principal axes: T 2.3300, Plg60.0000°, Azm271.0000°; N -0.1700, Plg0.0000°, Azm1.0000°; P -2.1600, Plg29.0000°, Azm91.0000°;
NEIC **21** 13:37:03.3±0.1,35°.56N×140°.31E,h43km,mb5.7/237, ME5.8,MS5.8/155,MW6.1,MW6.2,MW6.2 Error ellipse: s-maj=4.1km s-min=3.1km az=146.0,Moment Tensor Solution. s84 Moment tensor: Scale 10^18Nm; Mrr1.08; Mθθ0.15; Mφφ-1.23; Mrθ0.40; Mθφ-0.34; Mφr1.36; Best double couple: M0 1.90000×10^18 NP1:φs189.00000°, δ20.00000°,λ84.00000°. NP2:φs16.00000°,δ70.00000°, λ92.00000°. Principal axes: T 1.7400, Plg65.0000°, Azm289.0000°; N 0.2200, Plg2.0000°, Azm195.0000°; P -1.9700, Plg25.0000°, Azm104.0000°; Broadband fault plane solution: P waves. NP1:φs175.00000°,δ20.00000°, λ90.00000°. NP2:φs355.00000°,δ70.00000°,λ90.00000°. Principal axes: T Plg65.0000°, Azm265.0000°; N Plg0.0000°, Azm0.0000°; P Plg25.0000°, Azm85.0000°; Depth from synthetics of broadband displacement seismograms. Energy computed from BB mechanism.
NEIC Felt [IV] at Narita, Tokyo and Yokohama; [III] at Yokosuka. Felt widely in southeastern Honshu. Recorded [5L JMA] in Chiba.
IDC **21** 13:37:03.9±0.8,35°.62N×140°.50E,h52km±7km,mb5.3/50, mb1 5.4/54,mb1mx5.4/55,mbtmp5.6/54,MS5.7/55, Ms1 5.7/55,ms1mx5.6/65 Error ellipse: s-maj=10.3km s-min=7.9km az=72.0
GCMT **21** 13:37:03.3±0.1,35°.56N×140°.78E,h42km,MW6.2/135, Moment Tensor Solution. s129,c302; s135,c474; Duration: 3s0 Moment tensor: Scale 10^18Nm; Mrr1.81±.01; Mθθ0.09±.01; Mφφ-1.90±.01; Mrθ-0.17±.01; Mθφ-0.28±.01; Mφr1.42±.02; Best double couple: M0 2.36000×10^18 NP1:φs359.00000°,δ64.00000°, λ81.00000°. NP2:φs198.00000°,δ27.00000°,λ107.00000°. Principal axes: T 2.3210, Plg70.0000°, Azm251.0000°; N 0.0800, Plg8.0000°, Azm2.0000°; P -2.3990, Plg18.0000°, Azm95.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface/mantle waves, cutoff=50s.
NEIC **21** 13:37:20.8±0.0,35°.82N×140°.87E,h45km,Moment Tensor Solution. s73 Moment tensor: Scale 10^18Nm; Mrr1.75; Mθθ-0.11; Mφφ-1.64; Mrθ-0.01; Mθφ-0.31; Mφr1.49; Best double couple: M0 2.30000×10^18 NP1:φs198.00000°, δ25.00000°,λ103.00000°. NP2:φs4.00000°,δ65.00000°, λ84.00000°. Principal axes: T 2.3200, Plg69.0000°, Azm262.0000°; N -0.0800, Plg5.0000°, Azm6.0000°; P -2.2400, Plg20.0000°, Azm98.0000°;

ISC 21 13:37:03.1±0.3,35°.64N±0°.02×140°.55E±0°.03,h43km±2km, h43km:pP-P,n1793,σ1s72/1897,mb5.8/474,MS5.8/279, 82C-26D,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.26**	**76**	P			**Pn**	**13 37 09.7**	**-1.5**
CHOJ					*e*S		**Sn**	**13 37 15.3**	**-1.6**
JCN	**Nagara**	**0.36**	**232**	⇓P			**Pn**	**13 37 13.5**	**+1.2**
JCN				S			**Sn**	**13 37 22.7**	**+3.9**
I30JP	**ISUMI INFRASON**	**0.39**	**210**	P			**Pn**	**13 37 15.0**	**+2.4**
	baz=101,slow=24,SNR=9.0								
JYT	**Yasato**	**0.65**	**334**	P			**Pn**	**13 37 15.5**	**-0.5**
BSO4	**Boso 4**	**0.67**	**195**	⇓P			**Pn**	**13 37 16.6**	**+0.4**
BSO3	**Boso 3**	**0.84**	**182**	⇓P			**Pn**	**13 37 18.1**	**-0.1**
BSO1	**Boso 1**	**1.05**	**160**	⇑P			**Pn**	**13 37 20.0**	**-0.8**
JAG	**Ashikaga**	**1.19**	**312**	⇓P			**Pn**	**13 37 23.1**	**-0.1**
MJAR	**Matsushiro Arr**	**2.10**	**296**	P			**Pn**	**13 37 37.3**	**+1.5**
	392nm,0.3s,baz=100,slow=15,SNR=1115								
MJAR				LR			LR	13 38 41.1	
	comp=Z,321μm,21.7s,baz=125,slow=48								
MAJO	**Matsushiro**	**2.10**	**296**	*i* P			**Pn**	**13 37 33.4**	**-2.4**
MAJO	**Matsushiro**	**2.10**	**296**	*e*Pn			**Pn**	**13 37 38.2**	**+2.5**
MAJO				*e*Sn			**Sn**	**13 37 57.7**	**-3.0**
MAT	**Matsushiro**	**2.10**	**296**	P			**Pn**	**13 37 37.9**	**+2.1**
MAT				S			**Sn**	**13 38 05.6**	**+4.9**
MJB9	**Matsu-Tunnel**	**2.10**	**296**	*e*Pn			**Pn**	**13 37 37.9**	**+2.1**
JHJ	**Hachijo jima 2**	**2.60**	**194**	P			**Pn**	**13 37 42.4**	**-0.2**
	595nm,0.3s,baz=345,slow=19,SNR=57								
JHJ				S			**Sn**	**13 38 16.0**	**+3.1**
	6μm,0.3s,baz=238,slow=22,SNR=13								
JHJ				LR			LR	13 39 00.9	
	comp=Z,148μm,19.9s,baz=330,slow=46								
JHJ2	**Mitsune**	**2.60**	**194**	*e*Pn			**Pn**	**13 37 42.4**	**-0.2**
JHJ2				*e*Sn			**Sn**	**13 38 04.1**	**-8.8**
INU	**Inuyama**	**2.90**	**265**	*e*Pn			**Pn**	**13 37 49.5**	**+2.8**
ERM	**Erimo**	**6.68**	**17**	*ce*P			**Pn**	**13 38 37.3**	**-1.2**
ERM					pmax	pmax			
	comp=Z,480nm,0.8s								
ERM	**Erimo**	**6.68**	**17**	*e*Pn			**Pn**	**13 38 37.4**	**-1.2**
ERM				*e*Sn			**Sn**	**13 39 50.7**	**-2.6**
JNU	**Nakatsue**	**8.38**	**255**	P			**Pn**	**13 39 05.6**	**+3.5**
	comp=Z,4.4nm,0.3s,baz=72,slow=6.2,SNR=35								
JNU				LR			LR	13 42 54.4	
	comp=Z,217μm,18.3s,baz=62,slow=42								
JNU	**Nakatsue**	**8.38**	**255**	*e*Pn			**Pn**	**13 39 05.1**	**+3.1**
JNU				*e*Sn			**Sn**	**13 40 30.1**	**-5.3**
ASAJ	**Asahikawa**	**8.61**	**10**	P			**Pn**	**13 39 03.1**	**-1.9**
	comp=Z,19nm,0.3s,baz=215,slow=16,SNR=94								
ASAJ				S			**Sn**	**13 40 38.0**	**-2.7**
	comp=Z,95nm,0.3s,baz=127,slow=13,SNR=5.0								
ASAJ				LR			LR	13 43 13.5	
	comp=Z,37μm,21.8s,baz=196,slow=43								
ASAJ	**Asahikawa**	**8.61**	**10**	*e*Pn			**Pn**	**13 39 02.3**	**-2.7**
ASAJ				S			**Sn**	**13 40 38.0**	**-2.7**
ASAJ				*e*Sn			Sn	13 40 40.2	-0.5
CBIJ	**Chichi jima**	**8.63**	**170**	*e*Pn			**Pn**	**13 39 01.4**	**-4.1**
CBIJ				S			Sn	13 40 31.0	-11
CBIJ				*e*Sn			Sn	13 40 40.0	-1.6
JCJ	**Chichijima**	**8.63**	**170**	P			**Pn**	**13 39 02.7**	**-2.8**
JCJ				S			Sn	13 40 31.0	-11
	comp=Z,291nm,0.3s,baz=282,slow=21,SNR=5.8								
YUK	**Yuzh-Kuril'sk**	**9.32**	**24**	*e*P			**Pn**	**13 39 11.9**	**-2.9**
YUK					pmax	pmax			
	comp=E,359nm,0.5s								
YUK					pmax	pmax			
	comp=Z,2μm,0.5s								
YUK					pmax	pmax			
	comp=N,171nm,0.3s								
YUK					MLR	MLR			
	comp=Z,32μm,18.0s								
YUK					MLR	MLR			
	comp=N,33μm,17.0s								
YUK					MLR	MLR			
	comp=E,18μm,12.0s								
SHO	**Shikotan**	**9.53**	**29**	*e*P			**Pn**	**13 39 13.5**	**-4.1**
SHO					pmax	pmax			
	comp=Z,616nm,0.8s								
SHO					pmax	pmax			
	comp=N,118nm,0.6s								
SHO					pmax	pmax			
	comp=E,421nm,0.6s								
VLA	**Vladivostok**	**10.03**	**321**	*i* P			**Pn**	**13 39 23.1**	**-1.4**
MSHR	**Mys Shultsa**	**10.06**	**316**	*i* P			**Pn**	**13 39 22.7**	**-2.2**
KSRS	**Korea Array**	**10.32**	**284**	P			Pn	13 39 34.5	+6.0
	comp=E,6.3nm,0.3s,baz=98,slow=13,SNR=99								
KSRS				LR			LR	13 43 38.7	
	comp=E,101μm,20.6s,baz=106,slow=38								
KS01	**Wonju Array Si**	**10.35**	**284**	*e*Pn			**Pn**	**13 39 32.9**	**+4.0**
KS15	**Wonju Array Si**	**10.35**	**284**	*e*Pn			Pn	13 39 34.4	+5.5
KSAR	**Wonju Array Be**	**10.35**	**284**	P			Pn	13 39 34.5	+5.6
KSAR	**Wonju Array Be**	**10.35**	**284**	P			Pn	13 39 34.5	+5.6
USRK	**Ussuriysk Ar.**	**10.78**	**325**	P			**Pn**	**13 39 37.1**	**+2.4**
	comp=E,2.2nm,0.3s,baz=141,slow=14,SNR=69								
USRK				LR			LR	13 43 41.0	
	comp=E,60μm,18.4s,baz=133,slow=37								
KUR	**Kuril'sk**	**11.08**	**28**	*c i*P			**Pn**	**13 39 37.0**	**-1.8**
KUR				*i* S			**Sn**	**13 41 34.2**	**-7.0**
KUR					pmax	pmax			
	comp=Z,1μm,2.7s								
KUR					pmax	pmax			
	comp=Z,219nm,1.1s								
KUR					pmax	pmax			
	comp=N,75nm,0.6s								
KUR					pmax	pmax			
	comp=E,90nm,0.6s								
KUR					smax	smax			
	comp=N,604nm,1.1s								
KUR					smax	smax			
	comp=E,278nm,1.2s								
KUR					pmax	pmax			
	comp=E,3μm,3.0s								
KUR					pmax	pmax			
	comp=N,2μm,2.8s								
KUR					MLR	MLR			
	comp=N,14μm,22.0s								
KUR					MLR	MLR			
	comp=E,13μm,22.0s								
KUR					MLR	MLR			
	comp=Z,19μm,22.0s								
INCN	**Inchon**	**11.35**	**283**	Pn			**Pn**	**13 39 38.0**	**-4.6**
INCN	**Inchon**	**11.35**	**283**	P			Pn	13 39 49.0	+6.4
	SNR=20								
INCN				P			Pn	13 39 49.0	+6.4
	SNR=20								
INCN	**Inchon**	**11.35**	**283**	Pn			Pn	13 39 49.0	+6.4
	SNR=20								
YSS	**Yuzh-Sakhalins**	**11.42**	**8**	*e*P			**Pn**	**13 39 42.4**	**-1.1**
YSS				*e*S			**Sn**	**13 41 42.5**	**-7.1**
YSS					pmax	pmax			
	comp=Z,170nm,0.7s								
YSS					MLR	MLR			
	comp=Z,25μm,17.0s								
YSS					MLR	MLR			
	comp=E,38μm,15.0s								
YSS	**Yuzh-Sakhalins**	**11.42**	**8**	*e*Pn			**Pn**	**13 39 41.6**	**-1.9**
MDJ	**Mudanjiang**	**12.27**	**320**	P			**Pn**	**13 39 57.3**	**+2.3**
MDJ				S			**Sn**	**13 42 15.8**	**+5.5**
MDJ				PcS			**PcS**	**13 49 10.3**	**+1.3**
MDJ					pmax	pmax			
	comp=E,38nm,1.5s								
MDJ					pmax	pmax			
	comp=E,12μm,14.2s								
MDJ					LR	LR			
	comp=E,47μm,29.7s								
MDJ					LR	LR			
	comp=E,34μm,25.8s								
MDJ					LR	LR			
	comp=E,50μm,22.6s								
MDJ	**Mudanjiang**	**12.27**	**320**	*e*Pn			**Pn**	**13 39 59.4**	**+4.3**
	comp=E,845nm,1.4s								
HABR	**Khabarovsk**	**13.45**	**344**	*ce*P			**Pn**	**13 40 07.5**	**-3.7**
HABR				*e*S			**Sn**	**13 42 35.3**	**-3.8**
HABR					pmax	pmax			
	comp=N,27nm,1.1s								
HABR					pmax	pmax			
	comp=E,15nm,1.1s								
HABR					pmax	pmax			
	comp=Z,56nm,1.1s								
HABR					MLR	MLR			
	comp=Z,11μm,12.0s								
UGL	**Uglegorsk**	**13.47**	**4**	*e*P			**Pn**	**13 40 12.0**	**+0.5**
UGL					pmax	pmax			
	comp=Z,120nm,0.8s								
UGL					pmax	pmax			
	comp=N,800nm,6.0s								
UGL					pmax	pmax			
	comp=E,600nm,6.0s								
UGL					pmax	pmax			
	comp=Z,1μm,6.0s								
UGL					MLR	MLR			
	comp=Z,31μm,16.0s								
UGL					MLR	MLR			
	comp=N,31μm,18.0s								
UGL					MLR	MLR			
	comp=E,60μm,18.0s								
JOW	**Kunigami**	**13.68**	**233**	P			**Pn**	**13 40 17.6**	**+3.1**
	baz=92,slow=10,SNR=7.4								
JOW				LR			LR	13 45 22.3	
	comp=E,32μm,21.4s,baz=49,slow=37								
JOW	**Kunigami**	**13.68**	**233**	Pn			**Pn**	**13 40 11.2**	**-3.2**
CN2	**Changchun**	**14.18**	**310**	*e*P			**Pn**	**13 40 23.0**	**+1.9**
CN2				*es*P			sP	13 40 39.0	
CN2				*e*S			**Sn**	**13 43 02.0**	**+5.0**
CN2					pmax	pmax			
	comp=E,200nm,6.0s								
CN2					LR	LR			
	comp=E,35μm,18.0s								
CN2					LR	LR			
	comp=E,36μm,18.0s								
CN2					LR	LR			
	comp=E,9μm,19.0s								
SNY	**Shenyang**	**14.61**	**300**	⇑P			**Pn**	**13 40 27.9**	**+1.0**
SNY					pmax	pmax			
	comp=E,44nm,1.1s								
SNY					pmax	pmax			
	comp=E,5μm,6.6s								
SNY					LR	LR			
	comp=E,24μm,13.5s								
SNY					LR	LR			
	comp=E,38μm,20.7s								
SNY					LR	LR			
	comp=E,63μm,26.0s								
KLR	**Kul'dur**	**15.04**	**337**	P			**Pn**	**13 40 33.1**	**+0.6**
	comp=E,2.5nm,0.3s,baz=134,slow=11,SNR=34								
KLR				LR			LR	13 46 06.3	
	comp=E,39μm,21.2s,baz=152,slow=36								
KLR	**Kul'dur**	**15.04**	**337**	*i* P			**Pn**	**13 40 29.5**	**-3.0**
TYV	**Tymovskoe**	**15.29**	**5**	*e*P			**Pn**	**13 40 32.0**	**-3.8**
TYV					pmax	pmax			
	comp=E,165nm,0.8s								
TYV					pmax	pmax			
	comp=Z,326nm,0.8s								
TYV					pmax	pmax			
	comp=N,2μm,5.0s								
TYV					pmax	pmax			
	comp=Z,2μm,5.0s								
TYV					MLR	MLR			
	comp=E,40μm,18.0s								
TYV					MLR	MLR			
	comp=Z,46μm,16.0s								
DL2	**Dalian**	**15.41**	**288**	⇑*i* P			**P**	**13 40 41.0**	**-0.4**
DL2				S			**Sn**	**13 43 33.9**	**+6.9**
DL2					pmax	pmax			
	comp=Z,770nm,0.7s								
DL2					pmax	pmax			
	comp=Z,28μm,12.0s								
DL2					LR	LR			
	comp=Z,23μm,16.8s								
DL2					LR	LR			
	comp=Z,58μm,21.7s								
DL2					LR	LR			
	comp=Z,83μm,23.5s								
SSE	**Sheshan**	**16.80**	**260**	⇑P			**Pn**	**13 40 55.4**	**+0.3**
SSE				pP			**pP**	**13 41 06.3**	**-0.9**
SSE				S			**Sn**	**13 43 58.4**	**-2.3**
SSE				sS			**S**	**13 44 12.9**	**+3.1**
SSE					pmax	pmax			
	comp=Z,37nm,0.7s								
SSE					pmax	pmax			
	comp=Z,7μm,8.1s								
SSE					LR	LR			
	comp=Z,7μm,16.4s								
SSE					LR	LR			
	comp=Z,42μm,16.4s								
SSE					LR	LR			
	comp=Z,52μm,18.1s								
NKL	**Nikolayevsk**	**17.50**	**0**	*e*P			**Pn**	**13 40 58.0**	**-5.7**
NKL				*e*S			**Sn**	**13 44 08.0**	**-9.5**
NKL					pmax	pmax			
	comp=N,30nm,1.0s								
NKL					pmax	pmax			
	comp=E,24nm,1.0s								
NKL					pmax	pmax			
	comp=Z,82nm,1.0s								
NKL					pmax	pmax			
	comp=N,600nm,7.0s								
NKL					pmax	pmax			
	comp=Z,1μm,7.0s								
NKL					smax	smax			
	comp=E,500nm,10.0s								
NKL					MLR	MLR			
	comp=N,10μm,17.0s								
NKL					MLR	MLR			
	comp=E,10μm,17.0s								
NKL					MLR	MLR			
	comp=Z,18μm,17.0s								
OKH	**Okha**	**17.98**	**5**	*e*P			**P**	**13 41 11.8**	**+2.1**
OKH				*e*S			**Sn**	**13 44 22.0**	**-7.1**
OKH					pmax	pmax			
	comp=Z,3μm,6.0s								
OKH					smax	smax			
	comp=E,8μm,10.0s								
OKH					MLR	MLR			
	comp=Z,27μm,19.0s								
NJ2	**Nanjing**	**18.37**	**265**	*e*P			**Pn**	**13 41 14.4**	**-0.1**
NJ2					pmax	pmax			
	comp=Z,92nm,0.8s								
NJ2					pmax	pmax			
	comp=Z,6μm,7.8s								
NJ2					LR	LR			
	comp=Z,36μm,22.8s								
NJ2					LR	LR			
	comp=Z,59μm,21.7s								
NJ2					LR	LR			
	comp=Z,56μm,20.6s								
SKR	**Severo-Kuril's**	**18.78**	**32**	*e*P			**P**	**13 41 17.0**	**-1.5**
SKR				*i* S			**Sn**	**13 44 48.0**	**-0.3**
SKR					pmax	pmax			
	comp=N,110nm,0.7s								
SKR					pmax	pmax			
	comp=Z,200nm,0.7s								
SKR					pmax	pmax			
	comp=E,220nm,1.0s								
SKR					pmax	pmax			
	comp=E,4μm,8.0s								
SKR					pmax	pmax			
	comp=Z,5μm,8.0s								
SKR					pmax	pmax			
	comp=N,4μm,10.0s								
SKR					MLR	MLR			
	comp=Z,10μm,18.0s								
SKR					MLR	MLR			
	comp=N,8μm,16.0s								
SKR					MLR	MLR			
	comp=E,6μm,16.0s								
YOJ	**Yonaguni jima**	**18.80**	**238**	*e*P			**P**	**13 41 16.6**	**-2.3**
YOJ					pmax	pmax			
	comp=Z,280nm,0.8s								
YOJ	**Yonaguni jima**	**18.80**	**238**	*e*P			**P**	**13 41 16.6**	**-2.3**
	comp=Z,280nm,0.8s								
TIA	**Tai'an**	**18.98**	**279**	⇑P			**P**	**13 41 19.3**	**-1.5**
TIA				sP			**sP**	**13 41 38.3**	**+1.5**
TIA					pmax	pmax			
	comp=Z,440nm,1.2s								
TIA					pmax	pmax			
	comp=Z,7μm,9.0s								
TIA					LR	LR			
	comp=Z,35μm,18.7s								
TIA					LR	LR			
	comp=Z,39μm,21.4s								
TIA					LR	LR			
	comp=Z,70μm,26.0s								
TATO	**Taipei**	**19.56**	**242**	*e*P			P	13 41 19.6	-7.7
	comp=Z,649nm,1.5s								
BJI	**Beijing**	**19.73**	**290**	P			**P**	**13 41 28.8**	**-0.1**
BJI				S			**S**	**13 45 07.8**	**-1.1**
BJI					pmax	pmax			
	comp=Z,200nm,1.7s								
BJI					pmax	pmax			
	comp=Z,2μm,4.2s								
BJI					LR	LR			
	comp=Z,23μm,28.3s								
BJI					LR	LR			
	comp=Z,25μm,26.5s								
BJI					LR	LR			
	comp=Z,52μm,30.8s								
BJT	**Baijiatuau**	**19.73**	**290**	*e*P			**P**	**13 41 26.5**	**-2.5**
BJT					pmax	pmax			
	comp=Z,552nm,1.0s								
BJT	**Baijiatuau**	**19.73**	**290**	*e*P			**P**	**13 41 26.5**	**-2.5**
	comp=Z,552nm,1.0s								
YHNB	**Yeheng**	**19.83**	**242**	P			P	13 41 23.0	-7.3
	comp=Z,158nm,0.9s								
HIA	**Hailar**	**20.43**	**318**	*e*P			**P**	**13 41 34.0**	**-2.6**
HIA					pmax	pmax			
	comp=Z,110nm,0.8s								
HIA					MLR	MLR			
	comp=Z,32μm,19.0s								
HIA	**Hailar**	**20.43**	**318**	*e*P			**P**	**13 41 34.0**	**-2.6**
	comp=Z,110nm,0.8s								
HIA					LR	LR			
	comp=Z,32μm,19.0s								
SSLB	**Suanglung**	**20.68**	**240**	*e*P			**P**	**13 41 34.7**	**-4.7**
	comp=Z,128nm,0.9s								
SSLB					LR	LR			
	comp=Z,18μm,20.0s								
YULB	**Yu-li**	**20.69**	**239**	*e*P			**P**	**13 41 35.9**	**-3.6**
	comp=Z,108nm,0.8s								
YULB					LR	LR			
	comp=Z,19μm,21.0s								
TPUB	**Ta-pu**	**21.21**	**240**	*e*P			**P**	**13 41 41.5**	**-3.7**
	comp=Z,355nm,1.2s								
TPUB					LR	LR			
	comp=Z,23μm,20.0s								
TWG	**Pinlang**	**21.22**	**238**	*e*P			**P**	**13 41 42.4**	**-2.8**
	comp=Z,588nm,0.8s								
TWG					LR	LR			
	comp=Z,42μm,22.0s								
PEA0	**Petropavlovsk-**	**21.24**	**29**	*e*P			**P**	**13 41 45.3**	**+0.1**
PEA0B	**Petropavlovsk-**	**21.24**	**29**	*e*P			**P**	**13 41 44.8**	**-0.4**
	comp=Z,688nm,1.3s								
PEA0B					LR	LR			
	comp=Z,21μm,22.0s								
PETK	**Petropavlovsk-**	**21.24**	**29**	P			**P**	**13 41 46.0**	**+0.8**
	comp=Z,43nm,0.7s,baz=221,slow=5.7,SNR=36								
PETK					PcP		**PcP**	**13 45 50.4**	**+1.6**
	comp=Z,15nm,0.9s,baz=207,slow=0.9,SNR=4.3								
PETK					LR		LR	13 50 14.6	
	comp=Z,6μm,21.3s,baz=218,slow=37								
PETK	**Petropavlovsk-**	**21.24**	**29**	P			**P**	**13 41 46.0**	**+0.8**
PETK								13 45 50.4	
PETK					pmax	pmax			
	comp=Z,43nm,0.7s								
PETK					pmax	pmax			
	comp=Z,15nm,0.9s								
PETK					MLR	MLR			
	comp=Z,6μm,21.3s								
PET	**Petropavlovsk**	**21.57**	**31**	*d i*P			**P**	**13 41 50.1**	**+1.5**
PET				*i* S			**S**	**13 45 39.3**	**-5.8**
PET					pmax	pmax			
	comp=Z,2μm,8.6s								
PET					pmax	pmax			
	comp=Z,3μm,7.6s								
PET					pmax	pmax			
	comp=Z,444nm,1.1s								
PET					MLR	MLR			
	comp=Z,34μm,22.0s								
PET					MLR	MLR			
	comp=Z,24μm,22.0s								
PET	**Petropavlovsk**	**21.57**	**31**	*e*P			**P**	**13 41 46.8**	**-1.9**
	comp=Z,648nm,1.2s								
PET					LR	LR			
	comp=Z,31μm,22.0s								
QZH	**Quanzhou**	**21.71**	**247**	⇑*i*P			**P**	**13 41 43.5**	**-6.9**
QZH				S			**S**	**13 45 40.0**	**-8.4**
QZH				SS			**SnSn**	**13 46 14.3**	**-0.4**
QZH					pmax	pmax			
	comp=Z,340nm,0.8s								
QZH					pmax	pmax			
	comp=Z,4μm,7.0s								
QZH					LR	LR			
	comp=N,36μm,17.6s								
QZH					LR	LR			
	comp=E,28μm,13.1s								
QZH					LR	LR			
	comp=Z,85μm,24.8s								
GUMO	**Guam**	**22.30**	**169**	P			**P**	**13 41 56.8**	**0.0**
	comp=Z,376nm,0.8s,baz=167,slow=3.7,SNR=15								
GUMO	**Guam**	**22.30**	**169**	P			**P**	**13 41 55.6**	**-1.3**
GUMO					pmax	pmax			
	comp=Z,3μm,1.2s								
GUMO					MLR	MLR			
	comp=Z,19μm,20.0s								
GUMO	**Guam**	**22.30**	**169**	P			**P**	**13 41 55.6**	**-1.3**
	comp=Z,3μm,1.2s								

GUMO LR LR
comp=Z,19µm,20.0s
WHN Wuhan 22.50 264 P **P** **13 41 57.6 -1.4**
WHN S **S** **13 45 59.6 -3.4**
WHN pmax pmax
comp=Z,450nm,0.7s
WHN pmax pmax
comp=Z,10µm,7.9s
WHN LR LR
comp=Z,21µm,9.4s
WHN LR LR
comp=Z,89µm,15.8s
WHN LR LR
comp=Z,118µm,23.4s
TIY Taiyuan 22.61 284 *e*P **P** **13 41 57.4 -2.8**
TIY pmax pmax
comp=Z,71nm,0.8s
TIY pmax pmax
comp=Z,2µm,6.7s
TIY LR LR
comp=Z,12µm,18.4s
TIY LR LR
comp=Z,31µm,17.4s
TIY LR LR
comp=Z,47µm,23.7s
HHC Hu-ho-hao-te 23.30 292 *e*P **P** **13 42 04.9 -2.2**
HHC sP sP 13 42 22.6 -0.8
HHC S **S** **13 46 10.0 -6.5**
HHC SS **SnSn** **13 46 56.4 +2.9**
HHC pmax pmax
comp=Z,170nm,1.1s
HHC pmax pmax
comp=Z,3µm,8.5s
HHC LR LR
comp=Z,16µm,14.1s
HHC LR LR
comp=Z,13µm,14.8s
HHC LR LR
comp=Z,12µm,14.8s
CLNS Chul'man 23.69 338 *e*P **P** **13 42 09.5 -1.2**
CLNS *e* 13 45 55.4
CLNS *e*S **S** **13 46 20.9 -1.6**
CLNS *e*SS **SnSn** **13 47 10.5 +7.5**
CLNS pmax pmax
comp=Z,430nm,1.2s
CLNS pmax pmax
comp=E,142nm,1.1s
CLNS pmax pmax
comp=N,394nm,1.3s
CLNS pmax pmax
comp=Z,263nm,1.1s
CLNS pmax pmax
comp=N,250nm,1.1s
CLNS pmax pmax
comp=E,160nm,1.0s
CLNS smax smax
comp=N,8µm,10.4s
CLNS smax smax
comp=E,7µm,10.7s
CLNS pmax pmax
comp=N,11µm,25.0s
CLNS pmax pmax
comp=E,19µm,25.0s
CLNS MLR MLR
comp=E,15µm,16.0s
CLNS MLR MLR
comp=Z,16µm,19.0s
CLNS MLR MLR
comp=N,12µm,16.0s
BTO Baotou 24.46 291 *e*P **P** **13 42 15.8 -2.1**
MA2 Magadan 24.86 12 P **P** **13 42 21.0 -0.3**
comp=N,103nm,0.8s,baz=220,slow=8.1,SNR=49
MA2 LR LR 13 52 13.2
comp=N,14µm,21.4s,baz=216,slow=36
MA2 Magadan 24.86 12 P **P** **13 42 21.0 -0.3**
MA2 pmax pmax
comp=Z,103nm,0.8s
MA2 MLR MLR
comp=Z,14µm,21.5s
CIT Chita 25.23 319 *e*P **P** **13 42 22.6 -2.2**
CIT *e* 13 43 06.2
CIT pmax pmax
comp=Z,304nm,1.1s
XAN Xi'an 25.96 276 P **P** **13 42 29.6 -1.9**
XAN pP pP 13 42 39.0 -4.1
XAN sP sP 13 42 43.1 -5.2
XAN S **S** **13 46 55.6 -3.4**
XAN pmax pmax
comp=Z,390nm,0.9s
XAN pmax pmax
comp=Z,4µm,9.5s
XAN LR LR
comp=Z,26µm,16.9s
XAN LR LR
comp=Z,32µm,20.7s
XAN LR LR
comp=Z,38µm,22.5s
HKC Hong Kong Obse 26.53 247⇑ *i*P **P** **13 42 37.0 +0.2**
ENH Enshi 26.55 267 *e*P **P** **13 42 35.1 -1.7**
comp=Z,1µm,1.0s
ENH LR LR
comp=Z,39µm,22.0s
GZH Guangzhou 26.71 249⇑ *i*P **P** **13 42 31.3 -7.1**
GZH S S 13 46 58.3 -13
GZH pmax pmax
comp=Z,5µm,7.4s
MCO Taipa Grande 27.10 247 P **P** **13 42 46.0 +4.1**
YAK Yakutsk 27.29 349 P **P** **13 42 42.3 -0.8**
comp=Z,107nm,0.5s,baz=157,slow=2.0,SNR=67
YAK LR LR 13 53 32.4
comp=Z,24µm,22.0s,baz=164,slow=36
YAK Yakutsk 27.29 349 *e*P **P** **13 42 41.8 -1.3**
YAK *e**PP **pP** **13 42 51.8 -2.9**
YAK *e* 13 43 25.7
YAK *e*S **S** **13 47 14.9 -4.4**
YAK *e*SSS SSS 13 48 30.7
YAK pmax pmax
comp=E,46nm,1.1s
YAK pmax pmax
comp=Z,318nm,0.9s
YAK pmax pmax
comp=N,192nm,1.2s
YAK pmax pmax
comp=N,825nm,1.6s
YAK pmax pmax
comp=Z,181nm,0.8s
YAK pmax pmax
comp=E,221nm,1.0s
YAK smax smax
comp=N,2µm,3.9s
YAK smax smax
comp=E,911nm,2.5s
YAK MLR MLR
comp=N,22µm,22.0s
YAK MLR MLR
comp=Z,26µm,22.0s
YAK MLR MLR
comp=E,12µm,19.0s
YAK Yakutsk 27.29 349 *e*P **P** **13 42 42.0 -1.1**
comp=E,502nm,1.0s
ULN Ulaanbaatar 27.59 307 PFAKE 13 43 00.0 +14
ULN LR LR
comp=Z,26µm,22.0s
SONA1 Songino Array 28.01 306 *e*P **P** **13 42 48.8 -1.2**
SONM Songino Array 28.02 306 P **P** **13 42 49.3 -0.7**
comp=Z,57nm,0.6s,baz=108,slow=8.6,SNR=104
SONM ScP **ScP** **13 49 43.8 +2.5**
comp=Z,16nm,1.1s,baz=131,slow=4.1,SNR=9.0
SONM LR LR 13 54 22.8
comp=Z,25µm,19.3s,baz=107,slow=37
H11N2 WAKE ISLAND Hy 28.08 117 T T 14 12 04.3
baz=310,slow=75,SNR=1009
H11N1 WAKE ISLAND Hy 28.09 117 T T 14 12 03.0
baz=310,slow=75,SNR=165
H11N3 WAKE ISLAND Hy 28.10 117 T T 14 12 04.5
baz=310,slow=75,SNR=702
SEY Seymchan 28.29 11 P **P** **13 42 52.4 +0.3**
comp=Z,24nm,0.9s,baz=204,slow=6.4,SNR=27
SEY LR LR 13 55 04.7
comp=Z,16µm,19.0s,baz=187,slow=38
SEY Seymchan 28.29 11*c*eP **P** **13 42 52.0 -0.1**
BOD Bodaibo 28.36 330 *e*P **P** **13 42 52.1 -0.7**
BOD pmax pmax
comp=Z,112nm,1.0s
H11S1 WAKE ISLAND Hy 28.73 120 T T 14 12 51.7
baz=312,slow=75,SNR=545
H11S3 WAKE ISLAND Hy 28.73 120 T T 14 12 51.6
baz=312,slow=75,SNR=461
H11S2 WAKE ISLAND Hy 28.75 120 T T 14 12 47.1
baz=312,slow=75,SNR=258
LZH Lanzhou 29.64 282⇑ P **P** **13 43 04.0 -0.6**
LZH pP pP 13 43 15.0 -1.3
LZH sP sP 13 43 20.3 -1.2
LZH PP **PnPn** **13 44 00.3 -0.5**
LZH PcP **PcP** **13 46 09.3 +1.0**
LZH S **S** **13 47 54.3 -3.0**
LZH sS sS 13 48 13.0 -3.8
LZH SS **SnSn** **13 49 28.1 -0.5**
LZH pmax pmax
comp=Z,390nm,1.1s
LZH pmax pmax
comp=Z,2µm,7.0s
LZH LR LR
comp=Z,20µm,16.2s
LZH LR LR
comp=Z,24µm,16.0s
LZH LR LR
comp=Z,46µm,17.5s
GYA Guiyang 30.32 262⇑ *i*P **P** **13 43 08.6 -2.0**
GYA pP pP 13 43 24.3 +2.0
GYA PP **PnPn** **13 44 12.0 +2.2**
GYA PcP **PcP** **13 46 12.8 +2.7**
GYA S **S** **13 48 06.6 -1.4**
GYA sS sS 13 48 27.0 -0.5
GYA SS **ScP** **13 49 47.3 -1.7**
GYA ScS **ScS** **13 53 44.0 -1.2**
GYA pmax pmax
comp=Z,200nm,1.2s
GYA pmax pmax
comp=Z,1µm,7.7s
GYA LR LR
comp=Z,11µm,19.2s
GYA LR LR
comp=Z,17µm,15.7s
GYA LR LR
comp=Z,21µm,16.0s
IRK Irkutsk 30.54 314 *e*P **P** **13 43 11.5 -0.7**
IRK pmax pmax
comp=Z,125nm,2.7s
ZAK Zakamensk 30.61 310 *e*P **P** **13 43 12.2 -0.8**
ZAK pmax pmax
comp=Z,31nm,1.1s
ZAK pmax pmax
comp=Z,27nm,1.5s
TLY Talaya 30.74 313 P **P** **13 43 14.2 +0.1**
comp=Z,26nm,0.8s,baz=141,slow=2.8,SNR=20
TLY LR LR 13 55 35.1
comp=Z,16µm,20.6s,baz=107,slow=36
TLY Talaya 30.74 313*c* *i*P **P** **13 43 13.1 -0.9**
TLY *e* 13 44 26.5
TLY *e* 13 46 16.7
TLY *e*S **S** **13 48 09.5 -4.5**
TLY pmax pmax
comp=Z,86nm,1.0s
TLY MLR MLR
comp=Z,14µm,18.0s
TLY Talaya 30.74 313 *e*P **P** **13 43 12.2 -1.8**
comp=Z,76nm,1.0s
TLY Talaya 30.74 313 P **P** **13 43 14.9 +0.9**
SNR=35
TLY P **P** **13 43 14.9 +0.9**
SNR=35
TLY P **P** **13 43 14.9 +0.9**
SNR=35
TLY Talaya 30.74 313 P **P** **13 43 14.9 +0.9**
SNR=35
CD2 Chengdu 31.00 272 P **P** **13 43 14.6 -2.0**
CD2 sP pP 13 43 30.0 +1.8
CD2 S **S** **13 48 16.1 -2.4**
CD2 sS sS 13 48 36.3 -1.7
CD2 ScS **ScS** **13 53 46.8 -1.4**
CD2 pmax pmax
comp=Z,310nm,0.9s
CD2 pmax pmax
comp=Z,2µm,6.1s
CD2 LR LR
comp=Z,49µm,16.8s
CD2 LR LR
comp=Z,74µm,19.2s
DAV Davao City (W) 31.58 209 LR LR 13 54 18.8
comp=Z,14µm,21.4s,baz=60,slow=33
DAV Davao City (W) 31.58 209⇓ *e*P **P** **13 43 20.2 -1.5**
QIZ Qiongzhong 31.73 247 P **P** **13 43 23.3 +0.3**
QIZ pP **sP** **13 43 38.3 -1.5**
QIZ S **S** **13 48 29.3 -0.6**
QIZ pmax pmax
comp=Z,640nm,6.5s
QIZ LR LR
comp=Z,4µm,15.9s
QIZ LR LR
comp=Z,8µm,19.3s
MOY Mondy 32.33 312 *e*P **P** **13 43 28.5 +0.4**
MOY *e* 13 44 42.0
MOY pmax pmax
comp=Z,93nm,2.5s
GTA Gaotai 32.33 289 *e*P **P** **13 43 27.4 -0.9**
GTA pP pP 13 43 39.4 -0.6
GTA sP sP 13 43 44.4 -0.7
GTA PcP **PcP** **13 46 17.3 +1.9**
GTA S **S** **13 48 38.8 -0.5**
GTA sS sS 13 49 01.3 +2.5
GTA pmax pmax
comp=Z,2µm,6.7s
GTA LR LR
comp=Z,13µm,21.6s
GTA LR LR
comp=Z,19µm,21.6s
GTA LR LR
comp=Z,22µm,19.7s
KMI Kunming 34.08 263 P **P** **13 43 42.3 -1.4**
KMI pP pP 13 43 52.8 -2.7
KMI sP sP 13 43 58.3 -2.3
KMI PP **PnPn** **13 44 59.1 +1.0**
KMI S **S** **13 49 02.8 -4.0**
KMI sS sS 13 49 21.3 -5.1
KMI SS **SnSn** **13 51 17.3 +0.6**
KMI pmax pmax
comp=Z,150nm,1.2s
KMI pmax pmax
comp=Z,2µm,6.0s
KMI LR LR
comp=Z,16µm,22.9s
KMI LR LR
comp=Z,10µm,25.8s
KMI LR LR
comp=Z,26µm,25.8s
BILL Bilibino 35.55 16 *i*P **P** **13 43 54.7 -1.0**
BILL *i* 13 44 03.1
BILL *i* 13 44 12.6
BILL *i*S **S** **13 49 21.6 -6.5**
BILL pmax pmax
comp=Z,73nm,1.1s
BILL Bilibino 35.55 16 *e*P **P** **13 43 54.3 -1.4**
comp=Z,104nm,1.0s
BILL LR LR
comp=Z,16µm,22.0s
MIDW Midway 36.26 90 *e*P **P** **13 44 01.6 -0.5**
comp=Z,394nm,1.4s
MIDW LR LR
comp=Z,14µm,22.0s
MYLDM Lahad Datu 36.49 219⇓ P **P** **13 44 05.0 +0.8**
MYLDM Lahad Datu 36.49 219 *e*P **P** **13 44 03.0 -1.3**
comp=Z,86nm,0.9s
TIXI Tiksi 36.59 354 P **P** **13 44 03.5 -1.0**
comp=Z,60nm,0.7s,baz=148,slow=6.9,SNR=74
TIXI LR LR 14 01 01.3
comp=Z,16µm,18.3s,baz=158,slow=39
TIXI Tiksi 36.59 354*c* *i*P **P** **13 44 03.9 -0.6**
TIXI pmax pmax
comp=Z,88nm,1.0s
TIXI Tiksi 36.59 354 *e*P **P** **13 44 03.4 -1.0**
comp=Z,82nm,0.9s
SDKM Sandakan 36.79 221⇑ P **P** **13 44 07.2 +0.3**
TNTI Ternate 36.80 202 P **P** **13 44 07.3 +0.5**
comp=Z,272nm,0.8s,comp=Z,5µm
TNTI S **S** **13 49 41.5 -6.6**
comp=Z,272nm,0.8s,comp=Z,5µm
KKM Kota Kinabalu 36.99 223⇓ P **P** **13 44 08.5 -0.2**
KKM Kota Kinabalu 36.99 223 PFAKE 13 44 20.0 +11
KKM LR LR
comp=Z,11µm,20.0s
SWI Sorong 37.34 195 P **P** **13 44 11.4 0.0**
comp=Z,307nm,0.8s,comp=Z,4µm
SKNT Sakolnakorn 37.41 250 P **P** **13 44 11.7 -0.4**
comp=Z,95nm,1.1s,comp=Z,3µm
RKPI Ransiki, Papua 37.44 191 P **P** **13 44 12.6 +0.3**
comp=Z,327nm,0.8s,comp=Z,5µm
TSM Tawau 37.57 219⇑ P **P** **13 44 11.9 -1.5**
JAY Jayapura 37.96 180 P **P** **13 44 18.7 +2.0**
comp=Z,174nm,1.0s,comp=Z,2µm
KRAR Krasnoyarsk 38.00 318⇑ *e*P **P** **13 44 16.2 -0.4**
KRAR pmax pmax
comp=Z,196nm,0.9s
MANU Manus Island 38.03 169 *e*P **P** **13 44 21.0 +3.7**
comp=Z,89nm,1.4s
GENI Genyem 38.04 181 P **P** **13 44 18.1 +0.8**
comp=Z,570nm,1.1s,comp=Z,7µm
LBMI Labuha 38.09 201 P **P** **13 44 18.1 +0.3**
comp=Z,128nm,0.9s,comp=Z,3µm
CRAI Chiangrai 38.39 257 P **P** **13 44 20.8 +0.5**
comp=Z,100nm,1.1s,comp=Z,10µm
KHON Khomkaen 38.67 250 P **P** **13 44 22.8 +0.1**
comp=Z,44nm,0.9s
MRSI Marisa 39.04 210 P **P** **13 44 25.1 -0.7**
comp=Z,196nm,1.4s,comp=Z,3µm
MRSI S **S** **13 50 18.0 -4.0**
comp=Z,196nm,1.4s,comp=Z,3µm
FAKI Fak Fak 39.14 193 P **P** **13 44 26.8 +0.2**
comp=Z,365nm,1.1s,comp=Z,5µm
FAKI S **S** **13 50 17.8 -5.7**
comp=Z,365nm,1.1s,comp=Z,5µm
CMAI Chiengmai2 39.60 258 P **P** **13 44 31.1 +0.4**
comp=Z,98nm,1.8s,comp=Z,6µm
UTTA Uttaradit 39.61 254 P **P** **13 44 29.9 -0.6**
comp=Z,34nm,0.8s,comp=Z,284nm
SANI Sanana 39.89 203 P **P** **13 44 33.8 +0.9**
comp=Z,276nm,1.0s,comp=Z,4µm
LAMP Lampang 39.90 256 P **P** **13 44 32.8 -0.2**
comp=Z,23nm,0.9s,comp=Z,203nm
PBKT Sadao Pong 39.96 252 P **P** **13 44 32.0 -1.5**
comp=Z,146nm,1.4s,comp=Z,2µm
CMMT Chiang Mai 40.28 257 P **P** **13 44 35.2 -0.9**
comp=Z,71nm,1.4s,comp=Z,2µm
CHTO Chiang Mai 40.28 257 P **P** **13 44 35.3 -0.9**
comp=Z,297nm,0.9s,comp=Z,11µm
CHTO Chiang Mai 40.28 257 *e*P **P** **13 44 35.4 -0.8**
CHTO pmax pmax
comp=Z,74nm,1.1s
CHTO Chiang Mai 40.28 257 *e*P **P** **13 44 34.4 -1.8**
comp=Z,74nm,1.1s
CHTO LR LR
comp=Z,20µm,20.0s
CHTO Chiang Mai 40.28 257 P **P** **13 44 35.0 -1.1**
SNR=40
CHTO P **P** **13 44 35.0 -1.1**
SNR=40
CHTO P **P** **13 44 35.0 -1.1**
SNR=40
CHTO Chiang Mai 40.28 257 P **P** **13 44 35.0 -1.1**
SNR=40
MSAI Masohi 40.28 198 P **P** **13 44 36.6 +0.5**
comp=Z,62nm,1.2s,comp=Z,1µm
APSI Ampana 40.42 210 P **P** **13 44 36.7 -0.5**
comp=Z,391nm,1.1s,comp=Z,3µm
CM31 Chiang Mai Arr 40.48 256 *e*P **P** **13 44 37.5 -0.2**
CMAR Chiang Mai Arr 40.48 256 P **P** **13 44 37.1 -0.6**
comp=Z,8.8nm,0.7s,baz=46,slow=8.2,SNR=40
CMAR PcP **PcP** **13 46 42.6 +2.7**
comp=Z,19nm,1.1s,baz=49,slow=2.2,SNR=5.7
CMAR LR LR 14 03 08.7
comp=Z,21µm,18.8s,baz=66,slow=39
CM01 Chiang Mai Arr 40.49 256 *e*P **P** **13 44 36.6 -1.2**
NLAI Namlea 40.68 201 P **P** **13 44 41.9 +2.6**
comp=Z,172nm,1.1s,comp=Z,2µm
WMQ Urumqi 40.86 298 P **P** **13 44 41.6 +0.8**
WMQ pP pP 13 44 53.0 +0.3
WMQ sP sP 13 44 59.3 +1.5
WMQ PcP **PcP** **13 46 40.5 -0.3**
WMQ ScP **ScP** **13 50 27.3 +0.4**
WMQ S **S** **13 50 48.3 -0.8**
WMQ SS **SS** **13 53 45.3 -6.0**
WMQ ScS **ScS** **13 54 36.6 -5.4**
WMQ pmax pmax
comp=Z,170nm,1.0s
WMQ pmax pmax
comp=Z,2µm,6.2s
WMQ LR LR
comp=Z,6µm,15.6s
WMQ LR LR
comp=Z,5µm,22.6s
WMQ LR LR
comp=Z,8µm,27.8s
BTM Bintulu 41.08 224⇑ P **P** **13 44 41.9 -0.8**
RABL Rabaul 41.09 162 *e*P **P** **13 44 44.5 +1.7**
comp=Z,252nm,1.5s
BNDI Bandanaira 41.18 196 P **P** **13 44 44.2 +0.7**
comp=Z,943nm,1.3s,comp=Z,11µmcomp=Z,16µm
CHBT CHBT 41.27 246 P **P** **13 44 44.7 +0.4**
comp=Z,227nm,1.1s,comp=Z,3µm
MHMT Maesarieng 41.44 257 P **P** **13 44 46.0 +0.4**
comp=Z,45nm,1.5s,comp=Z,1µm
LSA Lhasa 41.66 276 P **P** **13 44 49.3 +1.4**
LSA S **S** **13 50 55.1 -6.8**
LSA pmax pmax
comp=Z,52nm,0.9s
LSA pmax pmax
comp=Z,3µm,7.6s
LSA LR LR
comp=Z,4µm,21.6s
LSA LR LR
comp=Z,12µm,21.6s
LSA LR LR
comp=Z,23µm,22.7s
LSA Lhasa 41.66 276 *e*P **P** **13 44 48.0 +0.1**
LSA pmax pmax
comp=Z,270nm,0.9s
LSA MLR MLR
comp=Z,20µm,20.0s
LSA Lhasa 41.66 276 *e*P **P** **13 44 48.0 +0.1**
comp=Z,270nm,0.9s
LSA LR LR
comp=Z,20µm,20.0s
UMPA Umpang Tak 41.82 253 P **P** **13 44 49.6 +0.8**
comp=Z,34nm,0.9s
SBUM Sibu 42.19 225 *e*P **P** **13 44 49.5 -2.3**
comp=Z,33nm,0.9s
PATY Pattaya 42.26 248 P **P** **13 44 53.8 +1.4**
comp=Z,18nm,0.9s,comp=Z,2µm
ZAA0 Zalesovo Array 42.35 314 *e*P **P** **13 44 52.2 -0.5**
ZALV Zalesovo Beam 42.35 314 P **P** **13 44 52.6 -0.1**
comp=Z,80nm,0.7s,baz=98,slow=7.2,SNR=130
ZALV LR LR 14 02 46.0
comp=Z,6µm,19.4s,baz=90,slow=36
SHL Shillong 42.71 270 *e*P **P** **13 44 54.0 -2.1**
SRDT SRDT 42.71 251 P **P** **13 44 56.0 -0.1**
comp=Z,214nm,1.4s,comp=Z,9µm
ZSN Zaisan 42.78 304⇑ *i*P **P** **13 44 54.4 -1.9**
comp=Z,2µm,1.1s
ZSN *e*S **S** **13 51 16.1 -1.1**
ZSN LR LR 14 02 20.0
comp=Z,6µm,15.9s
BKB Balikpapan 42.84 216 P **P** **13 44 57.8 +0.7**
comp=Z,166nm,1.3s,comp=Z,3µm
TTSI Tana Toraja 43.11 211 P **P** **13 44 59.9 +0.7**
comp=Z,38nm,0.9s,comp=Z,864nm
NVS Novosibirsk 43.31 315 *e*P **P** **13 45 00.8 +0.4**
NVS *e*S **S** **13 51 27.1 +2.4**
NVS pmax pmax
comp=N,112nm,1.2s
NVS pmax pmax
comp=Z,343nm,1.2s
NVS pmax pmax
comp=E,267nm,1.4s
NVS smax smax
comp=E,54nm,1.5s
NVS smax smax
comp=N,44nm,2.1s
SPSI Sidrap Palu 43.96 211 P **P** **13 45 04.2 -1.8**
comp=N,88nm,1.2s,comp=N,2µm
KSM Kuching 44.09 226⇑ P **P** **13 45 06.4 -0.7**
KSM Kuching 44.09 226 *e*P **P** **13 45 03.8 -3.3**
comp=N,60nm,0.7s
KSM LR LR
comp=Z,3µm,20.0s
NRIK Noril'sk 44.25 336 P **P** **13 45 07.3 -0.5**
comp=Z,208nm,1.0s,baz=112,slow=9.2,SNR=58
NRIK LR LR 14 04 32.7
comp=Z,14µm,19.6s,baz=112,slow=37
SAUI Saumlaki 44.26 193 P **P** **13 45 09.3 +0.9**

comp=Z,922nm,1.5s,comp=Z,14µm
SDPT Sand Point 44.27 45 P **P** **13 45 07.1 -1.0**
comp=Z,124nm,1.0s
MK01 Makanchi Array 44.28 303 *e*P **P** **13 45 07.7 -0.7**
MK31 Makanchi Array 44.28 303 *i* P **P** **13 45 08.5 +0.1**
MK31 pmax pmax
comp=Z,172nm,0.8s
MK31 Makanchi Array 44.28 303 *e*P **P** **13 45 08.5 +0.1**
MKAR Makanchi Array 44.28 303 P **P** **13 45 08.4 0.0**
comp=Z,77nm,0.6s,baz=87,slow=9.1,SNR=244
MKAR LR LR 14 04 17.4
comp=Z,17µm,19.4s,baz=89,slow=37
MKAR Makanchi Array 44.28 303 *i* P **P** **13 45 08.3 -0.1**
MKAR pmax pmax
comp=Z,77nm,0.6s
MKAR Makanchi Array 44.28 303 *e*P **P** **13 45 08.5 +0.1**
MAKZ Makanchi 44.49 303 P **P** **13 45 08.5 -1.6**
MAKZ pmax pmax
comp=Z,294nm,1.2s
MAKZ Makanchi 44.49 303 *e*P **P** **13 45 10.2 +0.1**
comp=Z,255nm,1.1s
STKI Sintang 44.56 224 P **P** **13 45 10.7 -0.2**
comp=Z,129nm,0.9s
KAPI Kappang 44.91 210 P **P** **13 45 13.0 -0.6**
comp=Z,108nm,0.9s,baz=17,slow=4.1,SNR=23
KAPI LR LR 14 03 26.8
comp=Z,2µm,19.9s,baz=15,slow=35
KAPI Kappang 44.91 210 *e*P **P** **13 45 11.4 -2.3**
comp=Z,144nm,1.0s
KAPI Kappang 44.91 210 P **P** **13 45 11.9 -1.7**
SNR=25
KAPI P **P** **13 45 11.9 -1.7**
SNR=25
KAPI Kappang 44.91 210 P **P** **13 45 11.9 -1.7**
SNR=25
PMG Port Moresby 45.24 171 P **P** **13 45 16.1 0.0**
comp=Z,35nm,1.1s,baz=354,slow=9.8,SNR=6.6
PMG LR LR 14 04 32.6
comp=Z,1µm,18.2s,baz=8.5,slow=36
PMG Port Moresby 45.24 171 *ce*P **P** **13 45 15.8 -0.4**
PMG pmax pmax
comp=Z,449nm,2.5s
PMG Port Moresby 45.24 171 *e*P **P** **13 45 15.4 -0.8**
comp=Z,119nm,1.0s
SEM Semipalatinsk 45.25 308⇑ *i*P **P** **13 45 15.3 -0.7**
comp=Z,1µm,1.1s
SEM *e*S **S** **13 51 52.7 -0.3**
SEM LR LR 14 03 31.3
comp=Z,7µm,18.0s
CHGN Chignik 45.45 43 *e*P **P** **13 45 18.6 +1.1**
BSSI Bau Bau, Buton 45.65 208 P **P** **13 45 20.5 +1.0**
comp=Z,86nm,1.2s,comp=Z,2µm
BBKI Banjar Baru 45.75 217 P **P** **13 45 21.2 +0.9**
comp=Z,154nm,1.3s,comp=Z,4µm
KURK Kurchatov 46.25 309 P **P** **13 45 23.6 -0.3**
KURK pmax pmax
comp=Z,1µm,1.0s
KURK Kurchatov 46.25 309 *e*P **P** **13 45 22.9 -1.0**
comp=Z,575nm,0.9s
KURK LR LR
comp=Z,23µm,22.0s
KURK Kurchatov 46.25 309 P **P** **13 45 24.3 +0.4**
SNR=294
KURK P **P** **13 45 24.3 +0.4**
SNR=294
KURK P **P** **13 45 24.3 +0.4**
SNR=294
KURK Kurchatov 46.25 309 P **P** **13 45 24.3 +0.4**
SNR=294
KURBB Kurchatov Arra 46.32 309 P **P** **13 45 23.9 -0.5**
comp=Z,334nm,0.8s,baz=84,slow=7.9,SNR=365
SURT Suratani 46.37 245 P **P** **13 45 25.2 0.0**
comp=Z,50nm,1.0s,comp=Z,764nm
TRTT Trang 46.45 243 P **P** **13 45 25.8 -0.1**
comp=Z,127nm,0.9s,comp=Z,2µm
SHLS Shalkode 46.58 299⇑ *i*P **P** **13 45 26.7 -0.2**
comp=Z,961nm,1.0s
SHLS *e*S **S** **13 52 13.2 +0.4**
SHLS LR LR 14 05 04.0
comp=Z,1µm,13.9s
PDGK Podgornoye 46.83 299 P **P** **13 45 28.7 +0.2**
PDGK pmax pmax
comp=Z,643nm,1.0s
TT01 Tatalina 46.95 34 *e*P **P** **13 45 30.7 +1.5**
TTA Tatalina 46.96 34 *e*P **P** **13 45 31.6 +2.2**
TTA pmax pmax
comp=Z,45nm,1.1s
TTA Tatalina 46.96 34 *e*P **P** **13 45 31.6 +2.2**
comp=Z,45nm,1.1s
SVW2 Sparrevohn 47.05 37 *e*P **P** **13 45 33.2 +3.2**
comp=Z,102nm,1.0s
PKIN Phulchoki 47.14 276 *e*P **P** **13 45 30.9 -0.6**
comp=Z,444nm,1.1s
KKN Kakani 47.15 277 *e*P **P** **13 45 31.2 -0.3**
comp=Z,447nm,1.0s
UZB Uzynbulak 47.20 299⇑ *i*P **P** **13 45 31.4 -0.2**
comp=Z,1µm,1.0s
UZB *e*S **S** **13 52 22.9 +1.4**
UZB LR LR 14 05 16.3
comp=Z,3µm,17.3s
MMRI Maumere 47.31 205 P **P** **13 45 32.8 +0.3**
comp=Z,227nm,0.9s,comp=Z,5µm
DMN Daman 47.36 277 *e*P **P** **13 45 33.0 -0.2**
comp=Z,226nm,0.9s
PKDT Phuket 47.41 245 P **P** **13 45 33.4 0.0**
comp=Z,131nm,0.7s,comp=Z,3µm
KULM Kulim 47.52 240 *e*P **P** **13 45 30.6 -3.7**
comp=Z,73nm,1.2s
KULM LR LR
comp=Z,8µm,20.0s
GKN Gorkha 47.58 277 *e*P **P** **13 45 34.7 -0.1**
comp=Z,1µm,1.1s
SOEI Soe 47.70 202 P **P** **13 45 35.2 -0.5**
comp=Z,727nm,1.1s,comp=Z,7µm
MYKOM Kota Tinggi 47.88 234⇓ P **P** **13 45 37.7 +0.7**
MYKOM Kota Tinggi 47.88 234 *e*P **P** **13 45 37.2 +0.2**
comp=Z,126nm,1.5s
JOHN Johnston Islan 48.05 100 PFAKE 13 45 50.0 +12
JOHN LR LR
comp=Z,734nm,20.0s
KGM Kluang 48.06 234⇓ P **P** **13 45 37.7 -0.7**
TPRI Tanjung Pinang 48.09 232 P **P** **13 45 40.3 +1.6**
comp=Z,108nm,1.1s,comp=Z,37µm
DGPR DIGLIPUR 48.23 255 *e*P **P** **13 45 39.7 -0.1**
DGPR IAmb IAmb 13 45 43.3
comp=Z,4µm,3.2s
OHAK Old Harbor 48.25 42 P **P** **13 45 36.5 -2.9**
comp=Z,140nm,1.3s
BATI Baumata 48.31 203 P **P** **13 45 41.4 +1.1**
comp=Z,185nm,0.7s,comp=Z,2µm
BOK Bokaro 48.38 271 *e*P **P** **13 45 40.0 -0.8**
BOK IAMs_20 IAMs_20 14 07 37.6
comp=Z,10µm,19.5s
HNR Honiara 48.42 154 P **P** **13 45 42.2 +1.1**
comp=Z,99nm,0.8s,baz=180,slow=4.5,SNR=6.9
HNR LR LR 14 04 53.8
comp=Z,6µm,21.9s,baz=325,slow=34
HNR Honiara 48.42 154 *e*P **P** **13 45 41.0 -0.1**
HNR Honiara 48.42 154 *e*P **P** **13 45 39.4 -1.8**
comp=Z,232nm,0.9s
RSO Redoubt South 48.43 37 *e*P **P** **13 45 43.3 +2.3**
CHKK Chushkaly 48.47 300⇑ *i*P **P** **13 45 41.4 0.0**
comp=Z,655nm,0.6s
KOLN Koldanda 48.51 277 *e*P **P** **13 45 42.0 -0.1**
comp=Z,430nm,0.9s
MDOK Medeo 48.60 299⇓ *i*P **P** **13 45 42.9 +0.4**
comp=Z,957nm,1.0s
MDOK *i* PP **PP** **13 47 35.2 -0.2**
MDOK *e*S **S** **13 52 42.5 +1.1**
MDOK LQ LQ 14 03 11.4
MDOK LR LR 14 06 06.5
comp=Z,7µm,19.8s
KDAK Kodiak Island 48.60 41 P P 13 45 58.1 +16
comp=Z,48nm,0.8s,baz=286,slow=3.0,SNR=16
KDAK Kodiak Island 48.60 41 *i* P **P** **13 45 43.5 +1.5**
KDAK Kodiak Island 48.60 41 *e*P **P** **13 45 42.4 +0.4**
comp=Z,176nm,1.0s
KDAK LR LR
comp=Z,13µm,22.0s
AAA Alma-Ata 48.65 299 *i* P **P** **13 45 40.7 -2.0**
AAA *i* S **S** **13 52 49.8 +8.0**
AAA pmax pmax
comp=Z,6µm,4.5s
AAA smax smax
comp=E,6µm,6.7s
AAA MLR MLR
comp=Z,22µm,11.0s

AAA Alma-Ata 48.65 299 *e*P **P** **13 45 43.2 +0.5**
comp=Z,986nm,1.2s
AAA LR LR 14 06 12.8
comp=Z,7µm,21.3s
PPLA Purkeypile 48.71 34 *e*P **P** **13 45 41.3 -1.7**
comp=Z,305nm,1.5s
SPU Mount Spurr 48.76 37 *e*P **P** **13 45 45.6 +2.3**
CAST Castle Rocks 48.77 34 *e*P **P** **13 45 46.1 +2.8**
comp=Z,199nm,1.7s
PYUN Piuthan 48.87 278 *e*P **P** **13 45 45.0 +0.2**
comp=Z,2µm,0.9s
KUU Kurty 48.93 300⇑ *i*P **P** **13 45 44.5 -0.3**
comp=Z,1µm,0.9s
KUU *e*S **S** **13 52 46.4 +0.6**
KUU LQ LQ 14 02 45.6
KUU LR LR 14 06 07.1
comp=Z,7µm,17.6s
MTN Manton Dam 49.04 192 *e*P **P** **13 45 44.7 -1.1**
comp=Z,494nm,1.1s
DSRI Dabo 49.13 231 P **P** **13 45 48.9 +2.3**
comp=Z,164nm,1.5s,comp=Z,6µm
PLAI Plampang 49.17 210 P **P** **13 45 46.2 -0.7**
comp=Z,143nm,1.1s,comp=Z,2µm
BPAW Bear Paw Mtn. 49.27 33 P **P** **13 45 46.2 -1.0**
comp=Z,34nm,0.8s
PBA Port Blair 49.28 253 *e*P P 13 45 47.6 -0.2
KTH Kantishna Hill 49.29 33 *e*P **P** **13 45 46.9 -0.4**
comp=Z,121nm,1.2s
BRLK Bradley Lake 49.38 38 *e*P **P** **13 45 48.2 +0.1**
comp=Z,74nm,1.0s
COEN Coen 49.39 177 *e*P **P** **13 45 47.4 -1.1**
comp=Z,186nm,1.0s
MLY Manley 49.40 31 *e*P **P** **13 45 49.3 +1.2**
comp=Z,105nm,1.1s
TWSI Taliwang, Sumb 49.47 211 P **P** **13 45 47.3 -1.8**
comp=Z,82nm,0.8s,comp=Z,2µm
PPBI Pangkal Pinang 49.48 228 P **P** **13 45 47.8 -1.5**
comp=Z,60nm,1.9s,comp=Z,2µm
TRF Thorofare Moun 49.57 33 *e*P **P** **13 45 49.5 -0.2**
comp=Z,124nm,1.4s
TKM2 Tokmak 2 49.69 299 P **P** **13 45 51.7 +0.8**
TKM2 pmax pmax
comp=Z,127nm,0.6s
TKM2 Tokmak 2 49.69 299 *e*P **P** **13 45 50.8 -0.1**
comp=Z,731nm,1.5s
TKM2 LR LR
comp=Z,27µm,20.0s
COLD Coldfoot 49.70 29 P **P** **13 45 50.8 +0.4**
comp=Z,55nm,1.2s
ABJI Asem Bagus 49.81 215 P **P** **13 45 50.7 -1.1**
comp=Z,142nm,1.1s,comp=Z,4µm
RC01 Rabbit Creek A 49.89 37 *e*P **P** **13 45 50.6 -1.2**
comp=Z,130nm,1.1s
SEW Seward 50.08 38 P **P** **13 45 52.8 -0.5**
comp=Z,316nm,1.6s
BRZS Berezniki 50.13 309 *i* P **P** **13 45 53.2 -0.6**
comp=Z,249nm,0.7s
BRZS *e*S **S** **13 53 02.8 +0.5**
BRZS LR LR 14 07 13.3
comp=Z,158nm,15.1s
PMR Palmer 50.16 36 *e*P **P** **13 45 54.5 +0.7**
PMR pmax pmax
comp=Z,99nm,1.1s
PMR Palmer 50.16 36 *e*P **P** **13 45 52.5 -1.3**
comp=Z,100nm,1.1s
MCK McKinley 50.17 33 P **P** **13 45 54.9 +0.9**
MCK pmax pmax
comp=Z,72nm,1.0s
MCK McKinley 50.17 33 P **P** **13 45 54.9 +0.9**
comp=Z,72nm,1.0s
LHMI Lhok Sumawe 50.22 243 P **P** **13 45 56.3 +1.4**
comp=Z,137nm,1.1s,comp=Z,5µmcomp=Z,27µm
RND Reindeer 50.22 34 *e*P **P** **13 45 54.1 -0.3**
RND pmax pmax
comp=Z,131nm,1.2s
RND Reindeer 50.22 34 *e*P **P** **13 45 54.1 -0.3**
comp=Z,131nm,1.2s
TSI Tuntungan 50.25 240 P **P** **13 45 57.5 +2.4**
comp=Z,120nm,0.9s,comp=Z,2µm
KSH Kashi 50.35 295 P **P** **13 45 59.6 +3.8**
KSH *e*pP sP 13 46 12.1 -1.0
KSH *e*sP pP 13 46 17.5 +9.5
KSH *e*ScP **ScP** **13 51 09.8 +3.5**
KSH S **S** **13 53 09.5 +3.7**
KSH ScS **ScS** **13 55 45.3 +1.9**
KSH pmax pmax
comp=Z,43nm,0.6s
KSH pmax pmax
comp=Z,3µm,6.6s
KSH LR LR
comp=Z,4µm,14.4s
KSH LR LR
comp=Z,8µm,15.1s
KSH LR LR
comp=Z,17µm,25.5s
FRU Bishkek 50.41 299 *e*P **P** **13 45 55.5 -0.6**
FRU *e*S **S** **13 53 09.5 +3.1**
FRU *e* 13 56 35.0
FRU pmax pmax
comp=Z,560nm,2.0s
FRU smax smax
comp=E,390nm,3.0s
FRU smax smax
comp=E,3µm,7.0s
MDM Murphy Dome 50.46 31 *e*P **P** **13 45 57.1 +0.9**
comp=E,182nm,1.0s
PSI Prapat 50.49 239 *e*P **P** **13 45 54.7 -2.4**
PSI pmax pmax
comp=Z,63nm,0.8s
PSI Prapat 50.49 239 *e*P **P** **13 45 54.7 -2.4**
comp=Z,63nm,0.8s
LGTI Lohaghat 50.53 281 *ex* P 13 46 05.9 +8.8
WRH Wood River Hil 50.53 32 *e*P **P** **13 45 58.0 +1.3**
comp=Z,98nm,1.2s
AAK Ala-Archa 50.55 299 P **P** **13 45 57.4 +0.1**
comp=Z,41nm,0.7s,baz=125,slow=4.2,SNR=49
AAK PKP2bc 14 16 57.6
comp=Z,0.7nm,0.4s,baz=185,slow=5.9,SNR=3.5
AAK Ala-Archa 50.55 299*c i*P **P** **13 45 57.3 -0.1**
AAK pmax pmax
comp=Z,121nm,0.8s
AAK Ala-Archa 50.55 299 *e*P **P** **13 45 57.5 +0.1**
comp=Z,154nm,1.0s
AAK ⇑*e*
AAK LR LR 14 16 57.6
comp=Z,27µm,21.0s
AAK Ala-Archa 50.55 299 P **P** **13 45 57.8 +0.5**
SNR=81
AAK P **P** **13 45 57.8 +0.5**
SNR=81
AAK Ala-Archa 50.55 299 P **P** **13 45 57.8 +0.5**
SNR=81
GMJI Gumukmas 50.60 216 P **P** **13 45 58.2 +0.5**
comp=Z,62nm,1.4s,comp=Z,2µm
COLA College 50.62 32⇑ *i*P **P** **13 45 59.1 +1.8**
COLA pmax pmax
comp=Z,77nm,1.1s
COLA MLR MLR
comp=Z,5µm,21.0s
COLA College 50.62 32 P **P** **13 45 56.1 -1.2**
comp=Z,128nm,1.1s
COLA LR LR
comp=Z,5µm,22.0s
CCB Clear Creek Bu 50.65 32 *e*P **P** **13 45 59.2 +1.7**
comp=Z,75nm,1.4s
OTUK Ortayu 50.69 307 P **P** **13 45 58.4 +0.3**
OTUK pmax pmax
comp=Z,217nm,0.8s
VOSK Vostochnaya 50.70 313 P **P** **13 45 57.8 -0.3**
VOSK pmax pmax
comp=Z,133nm,0.8s
CHKZ Chkalovo 50.76 314 P **P** **13 45 58.2 -0.3**
CHKZ pmax pmax
comp=Z,234nm,1.5s
KCSI Kotacane, Aceh 50.79 241 P **P** **13 45 58.7 -0.6**
comp=Z,36nm,0.8s,comp=Z,949nm
NGJI Ngawi 50.80 218 P **P** **13 46 00.2 +1.0**
comp=Z,135nm,1.0s
BKNI Bangkinang 50.83 235 P **P** **13 45 59.5 0.0**
comp=Z,294nm,0.9s,comp=Z,3µmcomp=Z,19µm
DHY Denali Highway 50.90 34 *e*P **P** **13 46 01.7 +2.1**
comp=Z,74nm,1.2s
SCM Sheep Creek Mo 51.00 36 *e*P **P** **13 46 01.7 +1.3**
SCM pmax pmax
comp=Z,102nm,0.8s
SCM Sheep Creek Mo 51.00 36 *e*P **P** **13 46 01.7 +1.3**
comp=Z,102nm,0.8s

BVA0 Borovoye Array 51.00 313 P **P** **13 45 59.1 -1.3**
BVA0 pmax pmax
comp=Z,79nm,0.8s
BVAR Borovoye Array 51.00 313 P **P** **13 46 00.0 -0.4**
comp=Z,91nm,0.8s,baz=78,slow=8.3,SNR=100
HDA Harding Lake 51.03 32 *e*P **P** **13 46 01.7 +1.2**
comp=Z,95nm,1.1s
ILAR Eielson Array 51.04 32 P **P** **13 46 00.6 +0.1**
comp=Z,38nm,0.8s,baz=268,slow=6.3,SNR=5.0
ILB Eielson Array 51.04 32 *e*P **P** **13 46 00.6 +0.1**
IL1 Eielson Array 51.04 32 *e*P **P** **13 45 59.9 -0.6**
EKS2 Erkin-Say 51.05 299 *e*P **P** **13 46 01.3 +0.2**
EKS2 pmax pmax
comp=Z,87nm,1.0s
EKS2 Erkin-Say 51.05 299 *e*P **P** **13 46 01.0 -0.1**
EKS2 LR LR
comp=Z,25µm,21.0s
SMRI Semarang 51.05 220 P **P** **13 46 00.6 -0.6**
comp=Z,149nm,0.9s,comp=Z,5µm
BRVK Borovoye 51.06 313*ce*P **P** **13 46 00.1 -0.7**
BRVK pmax pmax
comp=Z,155nm,1.0s
BRVK Borovoye 51.06 313 *e*P **P** **13 46 00.6 -0.2**
comp=Z,218nm,1.1s
BRVK LR LR
comp=Z,9µm,20.0s
BRVK Borovoye 51.06 313 P **P** **13 46 01.6 +0.8**
SNR=95
BRVK P **P** **13 46 01.6 +0.8**
SNR=95
BRVK Borovoye 51.06 313 P **P** **13 46 01.6 +0.8**
SNR=95
PWJI Pagerwojo 51.19 218 P **P** **13 46 02.9 +0.8**
comp=Z,369nm,0.7s,comp=Z,4µm
CMBY CAMPBELL BAY 51.27 248 *e*P **P** **13 46 02.2 -0.7**
CMBY IAmb IAmb 13 46 09.3
comp=Z,3µm,3.3s
TPTI 51.40 241 P **P** **13 46 06.2 +2.4**
comp=Z,52nm,1.2s,comp=Z,1µm
MNSI Mandailing Nat 51.47 237 P **P** **13 46 06.0 +1.7**
comp=Z,88nm,0.5s,comp=Z,2µm
WOJI Wonogiri, Jawa 51.47 219 P **P** **13 46 06.2 +1.9**
comp=Z,118nm,1.0s,comp=Z,5µm
SDSI Sungai Dareh 51.51 234 P **P** **13 46 05.0 +0.4**
comp=Z,97nm,0.9s,comp=Z,55µm
PCJI Pacitan 51.65 218 P **P** **13 46 08.2 +2.6**
comp=Z,119nm,0.8s,comp=Z,3µm
FYU Fort Yukon 51.66 29 *e*P **P** **13 46 07.0 +1.9**
comp=Z,892nm,2.0s
KLU Klutina 51.70 36 *e*P **P** **13 46 06.9 +1.4**
comp=Z,78nm,0.8s
UGM Wanagama 51.74 219 P **P** **13 46 05.8 -0.5**
comp=Z,438nm,1.2s,comp=Z,6µm
PAX Paxson 51.77 34 *e*P **P** **13 46 06.3 +0.2**
PAX pmax pmax
comp=Z,48nm,1.2s
PAX Paxson 51.77 34 *e*P **P** **13 46 06.3 +0.2**
comp=Z,48nm,1.2s
DIV Divide 51.80 36 *e*P **P** **13 46 05.8 -0.5**
comp=Z,129nm,1.0s
ZRNK Zerenda 51.84 313 P **P** **13 46 06.6 -0.1**
ZRNK pmax pmax
comp=Z,281nm,1.1s
EYAK Cordova Ski Ar 51.88 37 *e*P **P** **13 46 09.6 +2.8**
comp=Z,149nm,1.2s
DDI Dehra Dun 51.93 283 *e*P **P** **13 46 07.1 -0.6**
DDI *e*P **P** **13 46 08.3 +0.6**
MNAS Manas 52.00 299 P **P** **13 46 09.1 +0.9**
MNAS pmax pmax
comp=Z,349nm,1.1s
SFK Sufi-Kurgan 52.01 296 P **P** **13 46 08.9 +0.5**
SFK pmax pmax
comp=Z,292nm,1.0s
PDSI Padang 52.13 235 P **P** **13 46 08.7 -0.6**
comp=Z,23nm,0.8s,comp=Z,6µm
SMLA Simla 52.31 284 *i* P **P** **13 46 10.3 -0.2**
SDNR Sundarnagar 52.32 285 *e*P **P** **13 46 10.0 -0.6**
DOT Dot Lake 52.35 33 *e*P **P** **13 46 10.2 -0.1**
comp=Z,167nm,0.9s
LHSI Lahat 52.38 229 P **P** **13 46 10.8 -0.3**
comp=Z,223nm,1.1s,comp=Z,5µm
LEM Lembang 52.39 223 P **P** **13 46 13.4 +2.1**
comp=Z,3µm,0.7s,comp=Z,54µmcomp=Z,145µm
KLI Kotabumi 52.39 227 P **P** **13 46 09.9 -1.2**
comp=Z,283nm,1.2s,comp=Z,5µm
RAGM Ragged Mountai 52.43 37 *e*P **P** **13 46 09.5 -1.4**
comp=Z,156nm,1.0s
CHLP Challavanipeta 52.43 267 *e*P **P** **13 46 11.7 +0.2**
CHLP IAmb IAmb 13 46 15.0
comp=Z,336nm,1.5s
CHLP *e*S **S** **13 53 30.4 -4.3**
CHLP IVMs_BB IVMs_BB 14 09 22.1
comp=Z,6µm,23.2s
CBJI Citeko 52.48 224 P **P** **13 46 12.5 +0.7**
comp=Z,327nm,0.8s,comp=Z,15µm
GSI Gunungsitoli 52.49 239 P **P** **13 46 13.5 +1.6**
comp=Z,317nm,1.1s,comp=Z,6µm
MDSI Maura Dua 52.50 228 P **P** **13 46 12.9 +0.9**
comp=Z,185nm,1.5s,comp=Z,3µm
BLSI Bandar Lampung 52.56 226 P **P** **13 46 12.2 -0.2**
comp=Z,318nm,0.8s
DHRM DHARAMSHALA 52.56 286 *e*P **P** **13 46 11.7 -0.9**
MENT Mentasta 52.57 34 *e*P **P** **13 46 13.5 +1.5**
comp=Z,64nm,0.8s
MASI Maura Aman, Be 52.66 231 P **P** **13 46 12.0 -1.2**
comp=Z,425nm,1.0s,comp=Z,8µm
CISI Cisompet, Garu 52.88 222 P **P** **13 46 13.8 -1.0**
comp=Z,128nm,0.7s,comp=Z,2µm
THN Thein Dam 52.95 286 *e*P **P** **13 46 12.8 -2.3**
THN *ex* x 13 53 45.0
LWLI Liwa 52.99 228 P **P** **13 46 12.9 -2.8**
comp=Z,155nm,0.7s
KKR Kurukshetra 53.05 283 *e*P **P** **13 46 16.1 +0.2**
CNJI Cibinong 53.05 223 P **P** **13 46 17.5 +1.5**
comp=Z,110nm,1.0s,comp=Z,1µm
SKJI Sukabumi 53.13 224 P **P** **13 46 16.7 +0.1**
comp=Z,159nm,0.6s
KASI Kota Agung 53.13 227 P **P** **13 46 14.4 -2.2**
comp=Z,131nm,0.8s,comp=Z,2µm
KK31 Karatay Array 53.23 301 *i* P **P** **13 46 17.2 +0.1**
KK31 pmax pmax
comp=Z,223nm,1.0s
KKAR Karatay Array 53.23 301 *e*P **P** **13 46 16.6 -0.5**
KKAR Karatay Array 53.23 301 *e*P **P** **13 46 16.6 -0.5**
NDI New Delhi 53.26 282 *ex* P **P** **13 46 13.0 -4.5**
NDI *ex* **S** **13 53 42.0 -3.9**
CGJI Cibinong 53.30 225 P **P** **13 46 17.3 -0.6**
comp=Z,74nm,0.7s,comp=Z,1µm
AYAN Aya Nagar 53.42 281 *ex* P 13 46 08.9 -10
AYAN IAmb IAmb 13 46 11.7
comp=Z,85nm,0.8s
VIS Vishakhapatnam 53.43 266 *e*P **P** **13 46 18.5 -0.4**
BHGR Bahadurgarh 53.48 282 *e*P **P** **13 46 18.8 -0.3**
EGAK Eagle 53.49 31 P **P** **13 46 16.2 -2.5**
comp=Z,49nm,0.8s
EGAK LR LR
comp=Z,5µm,21.0s
SONA Sohna 53.55 281 *e*P **P** **13 46 21.2 +1.6**
PPSI Pulau Pagai 53.81 234 P **P** **13 46 22.5 +0.9**
comp=Z,200nm,1.4s,comp=Z,3µm
IUG Iuzhnay 53.85 300⇑ *i*P **P** **13 46 22.4 +0.5**
comp=Z,831nm,0.5s
IUG *e*S **S** **13 53 55.8 +1.9**
IUG LR LR 14 09 28.9
comp=Z,3µm,17.1s
KUDL Kundal 54.07 281 *e*P **P** **13 46 22.9 -0.5**
KUDL IAmb IAmb 13 46 27.0
comp=Z,111nm,0.9s
KHET Khetri 54.64 282 *e*P **P** **13 46 27.3 -0.4**
OPA Opana 54.88 87 *e*P **P** **13 46 29.2 -0.2**
OPA pmax pmax
comp=Z,377nm,1.2s
OPA Opana 54.88 87 *e*P **P** **13 46 29.2 -0.2**
comp=Z,376nm,1.2s
KIP Kipapa 55.00 87*ce*P **P** **13 46 31.7 +1.4**
KIP pmax pmax
comp=Z,1µm,1.7s
KIP Kipapa 55.00 87 *e*P **P** **13 46 28.4 -1.8**
comp=Z,306nm,1.4s
KIP LR LR
comp=Z,9µm,21.0s
PVM Polavaram 55.06 267 *e*P **P** **13 46 30.2 -0.5**
PVM IAmb IAmb 13 46 33.9
comp=Z,251nm,1.5s
PVM *e*S **S** **13 54 10.0 -0.3**
PVM IVMs_BB IVMs_BB 14 10 49.8

comp=Z,4μm,23.0s
BHPL Bhopal 55.51 275 *e*P **P 13 46 32.5 -1.5**
BHPL IAmb IAmb 13 46 35.8
comp=Z,96nm,1.2s
WRAB Tennant Creek 55.58 187*c i*P **P 13 46 33.5 -0.8**
WRAB pmax pmax
comp=Z,957nm,1.7s
WRAB MLR MLR
comp=Z,14μm,20.0s
WRAB Tennant Creek 55.58 187 *e*P **P 13 46 32.8 -1.5**
comp=Z,282nm,1.0s
WRAB LR LR
comp=Z,6μm,22.0s
WB2 Warramunga Arr 55.59 187 *e*P **P 13 46 32.8 -1.5**
comp=Z,285nm,1.0s
WRA Warramunga Arr 55.59 187 P **P 13 46 32.7 -1.7**
comp=Z,124nm,1.0s,baz=1.1,slow=7.4,SNR=218
WRA LR LR 14 09 42.5
comp=Z,6μm,21.8s,baz=10.0,slow=35
WRA PKP2bc 14 16 44.0
comp=Z,1.7nm,1.0s,baz=173,slow=2.0,SNR=5.2
WRA Warramunga Arr 55.59 187 P **P 13 46 32.7 -1.7**
WRA pmax pmax
comp=Z,127nm,1.0s
CTAO Charters Tower 55.69 174 *e*P **P 13 46 34.1 -1.0**
CTAO pmax pmax
comp=Z,68nm,1.1s
CTAO MLR MLR
comp=Z,3μm,20.0s
CTAO Charters Tower 55.69 174 *e*P **P 13 46 34.1 -1.0**
comp=Z,68nm,1.1s
CTAO LR LR
comp=Z,3μm,20.0s
SVE Sverdlovsk 55.73 319‖ *e*P **P 13 46 34.8 -0.2**
SVE *e*S **S 13 54 18.0 -0.4**
SVE *e* 13 56 16.3
SVE *e*SS **SS 13 58 06.9 +3.3**
SVE *e*SSS SSS 14 00 08.6
SVE pmax pmax
comp=Z,389nm,1.2s
SVE MLR MLR
comp=Z,14μm,17.0s
SVE MLR MLR
comp=E,9μm,16.0s
INK Inuvik 55.94 27 P **P 13 46 36.4 0.0**
comp=E,20nm,0.6s,baz=300,slow=5.6,SNR=39
INK LR LR 14 13 42.6
comp=E,2μm,19.3s,baz=262,slow=39
INK Inuvik 55.94 27 *e*P **P 13 46 36.3 0.0**
INK pmax pmax
comp=Z,84nm,1.0s
INK Inuvik 55.94 27 *e*P **P 13 46 36.3 0.0**
comp=Z,84nm,1.0s
RPR Rampur 56.13 270 *e*P **P 13 46 38.1 -0.3**
RPR IAmb IAmb 13 46 40.6
comp=Z,160nm,0.7s
RPR *e*S **S 13 54 20.8 -3.8**
RPR IVMs_BB IVMs_BB 14 13 09.3
comp=Z,3μm,18.9s
SRSP Sriramsagar 56.87 270 *e*P **P 13 46 42.6 -1.1**
SRSP IAmb IAmb 13 46 47.2
comp=Z,255nm,0.9s
SRSP *e*S **S 13 54 32.5 -1.9**
SRSP IVMs_BB IVMs_BB 14 13 22.4
comp=Z,3μm,17.6s
ARU Arti 56.95 319 P **P 13 46 43.3 -0.3**
comp=Z,112nm,0.3s,baz=81,slow=3.5,SNR=83
ARU LR LR 14 13 33.5
comp=Z,10μm,18.7s,baz=70,slow=38
ARU Arti 56.95 319*c i*P **P 13 46 43.1 -0.6**
ARU 13 47 35.6
ARU 13 48 47.9
ARU *e*S **S 13 54 35.7 +1.3**
ARU 13 56 26.5
ARU SS **SS 13 58 27.0 +4.3**
ARU pmax pmax
comp=Z,282nm,1.0s
ARU MLR MLR
comp=Z,12μm,18.0s
ARU Arti 56.95 319 *e*P **P 13 46 43.1 -0.6**
comp=Z,419nm,1.1s
SOKR Solikamsk 57.01 323*c i*P **P 13 46 41.8 -2.2**
SOKR S **S 13 54 33.5 -1.5**
SOKR pmax pmax
comp=Z,229nm,1.2s
SOKR MLR MLR
comp=Z,16μm,21.0s
FUNA Funafuti 57.06 133 PFAKE 13 47 00.0 +15
FUNA LR LR
comp=Z,11μm,20.0s
ADKI Addanki 57.15 266 *e*P **P 13 46 45.7 0.0**
ADKI IAmb IAmb 13 46 49.8
comp=Z,137nm,1.4s
ADKI *e*S **S 13 54 37.4 -0.7**
ADKI IVMs_BB IVMs_BB 14 12 15.4
comp=Z,5μm,23.7s
SKAG Skagway 57.22 37 *e*P **P 13 46 49.7 +4.2**
comp=Z,62nm,1.0s
KBL Kabul 57.27 291 *e*P **P 13 46 46.2 -0.4**
KBL pmax pmax
comp=Z,153nm,0.9s
KBL Kabul 57.27 291 *e*P **P 13 46 46.2 -0.4**
comp=Z,153nm,0.9s
NJS Nagarjunasagar 57.31 267 *e*P **P 13 46 45.8 -1.0**
NJS IAmb IAmb 13 46 50.4
comp=Z,89nm,1.0s
NJS *e*S **S 13 54 36.6 -3.6**
NJS IVMs_BB IVMs_BB 14 09 46.5
comp=Z,3μm,28.7s
HYB Hyderabad 57.47 269 *i* P **P 13 46 48.0 0.0**
comp=Z,250nm,1.0s
HYB *e* 13 47 04.0
HYB *e* 13 47 09.0
HYB *e*PcP **PcP 13 47 42.5 +1.2**
HYB *e*PP **PP 13 48 58.0 +2.2**
HYB *e* 13 50 34.0
HYB *e*S **S 13 54 44.0 +1.5**
HYB LR LR 14 13 30.0
comp=Z,18nm,20.0s
HYB Hyderabad 57.47 269 *e*P **P 13 46 47.1 -1.0**
HYB IAmb IAmb 13 46 50.0
HYBB Hyderabad (bro 57.47 269 *e*P **P 13 46 47.3 -0.8**
HYBB IAmb IAmb 13 46 50.0
comp=Z,139nm,0.7s
HYBB *e*S **S 13 54 40.0 -2.5**
HYBB IVMs_BB IVMs_BB 14 13 28.1
comp=Z,4μm,20.9s
POHA Pohakuloa 57.84 88 *e*P **P 13 46 50.3 -0.5**
comp=Z,965nm,1.9s
POHA LR LR
comp=Z,4μm,20.0s
SRLM Srisailam 57.89 267 *e*P **P 13 46 50.2 -0.7**
SRLM IAmb IAmb 13 46 54.2
comp=Z,119nm,1.1s
SRLM *e*S **S 13 54 44.2 -3.7**
SRLM IVMs_BB IVMs_BB 14 10 02.7
comp=Z,3μm,27.6s
MLOA Mauna Loa Obse 57.92 88 *e*P **P 13 46 51.9 +0.3**
RCLA Racherla 58.18 267 *e*P **P 13 46 52.0 -1.0**
RCLA IAmb IAmb 13 46 56.5
comp=Z,132nm,1.0s
RCLA *e*S **S 13 54 49.2 -2.5**
RCLA IVMs_BB IVMs_BB 14 12 44.1
comp=Z,4μm,23.7s
AB31 Akbulak array 58.31 311 *i* P **P 13 46 52.9 -0.5**
AB31 pmax pmax
comp=Z,30nm,0.5s
MDRS Chennai 58.43 263 *e*P **P 13 46 54.0 -0.7**
SKHT Srikalahasti 58.50 264 *e*P **P 13 46 55.0 -0.2**
SKHT IAmb IAmb 13 46 59.3
comp=Z,205nm,1.0s
SKHT *e*S **S 13 54 52.5 -3.3**
SKHT IVMs_BB IVMs_BB 14 12 39.5
comp=Z,3μm,25.8s
KLRI Killari 58.73 271 *e*P **P 13 46 55.7 -1.1**
KLRI IAmb IAmb 13 46 58.5
comp=Z,259nm,0.7s
KLRI *e*S **S 13 54 55.6 -3.3**
KLRI IVMs_BB IVMs_BB 14 14 27.6
comp=Z,4μm,18.0s
JASL Jaisalmer 59.06 283 *e*P **P 13 46 59.0 +0.1**
AKTO Aktyubinsk 59.09 312 P **P 13 46 58.1 -0.7**
comp=Z,44nm,0.8s,baz=77,slow=7.9,SNR=75
AKTO PKP2bc 14 16 36.5
comp=Z,0.5nm,0.3s,baz=178,slow=3.7,SNR=3.5
AS01 Alice Springs 59.31 187 *e*P **P 13 46 59.1 -1.5**
comp=Z,20nm,0.8s,baz=344,slow=7.4,SNR=21
STKA LR LR 14 17 54.0
comp=Z,4μm,20.5s,baz=356,slow=36
STKA Stephens Creek 67.17 179 *e*P **P 13 47 51.8 -0.6**
STKA pmax pmax
comp=Z,11nm,0.9s
STKA Stephens Creek 67.17 179 *e*P **P 13 47 51.8 -0.6**
comp=Z,11nm,0.9s
PGC Sidney 67.80 45 *e*P **P 13 47 59.8 +3.4**
comp=Z,83nm,1.2s
MOS Moscow 67.95 324 *e*P **P 13 47 57.5 +0.3**
MOS *e* 13 48 21.7
MOS *e* 13 50 26.6
MOS *i*S **S 13 56 52.8 +0.1**
MOS *e* 13 57 51.8
MOS pmax pmax
comp=Z,210nm,1.2s
MOS pmax pmax
comp=Z,2μm,4.4s
MOS pmax pmax
comp=N,1μm,4.5s
MOS pmax pmax
comp=E,2μm,6.7s
MOS smax smax
comp=N,2μm,4.7s
MOS smax smax
comp=E,600nm,3.8s
MOS MLR MLR
comp=E,1μm,15.0s
MOS MLR MLR
comp=Z,7μm,15.0s
MOS MLR MLR
comp=N,3μm,14.0s
VRH Novokhopyorsk 68.14 318 *e*P **P 13 47 57.8 -0.6**
VRH *e*S **S 13 56 53.2 -1.9**
VRH pmax pmax
comp=Z,110nm,0.6s
VRH pmax pmax
comp=Z,840nm,2.8s
VRH smax smax
comp=N,1μm,7.6s
VRH MLR MLR
comp=Z,8μm,15.0s
NLWA Neilton Lookou 68.17 47 *e*P **P 13 47 56.6 -2.2**
comp=Z,119nm,1.1s
NLWA LR LR
comp=Z,5μm,22.0s
A04D Lummi Island 68.20 45 P **P 13 47 59.8 +1.0**
baz=300
BBOO Buckleboo 68.23 184 *e*P **P 13 47 59.7 +0.6**
comp=Z,88nm,1.1s
E03A Lebam 68.77 47 *e*P **P 13 48 05.3 +2.9**
comp=Z,131nm,1.3s
B05A Bryant 68.78 45 P **P 13 48 02.7 +0.2**
baz=300
OBN Obninsk 68.79 323 P **P 13 48 00.8 -1.6**
comp=Z,78nm,0.8s,baz=71,slow=3.4,SNR=27
OBN LR LR 14 20 34.9
comp=Z,7μm,18.3s,baz=61,slow=38
OBN Obninsk 68.79 323*c i*P **P 13 48 02.8 +0.4**
OBN *i* 13 48 11.2
OBN *i* 13 48 26.0
OBN *e*S **S 13 56 58.3 -4.3**
OBN *i* SS **SS 14 01 23.6 -3.7**
OBN pmax pmax
comp=Z,103nm,0.9s
OBN MLR MLR
comp=Z,7μm,15.0s
OBN Obninsk 68.79 323 *e*P **P 13 48 02.2 -0.2**
comp=Z,194nm,1.2s
LPSR Galich'ya Gora 68.92 320 *e*P **P 13 48 04.3 +1.0**
LPSR *e*S **S 13 57 01.8 -2.5**
LPSR pmax pmax
comp=Z,110nm,0.8s
LPSR pmax pmax
comp=Z,170nm,1.0s
LPSR smax smax
comp=N,400nm,3.6s
LPSR MLR MLR
comp=Z,11μm,16.0s
STEI Steigen 68.95 341 *e*P **P 13 48 03.7 +0.5**
STEI IAmb IAmb 13 48 06.2
comp=Z,82nm,1.0s
B06A Marblemount 69.00 45 *e*P **P 13 48 06.2 +2.3**
comp=Z,91nm,1.1s
PUL Pulkovo 69.03 329 *i* P **P 13 48 03.3 -0.5**
PUL pmax pmax
comp=Z,101nm,0.5s
VORR Voronezh 69.26 319 *e*P **P 13 48 04.0 -1.4**
VORR pmax pmax
comp=Z,300nm,1.2s
F04D Rainier, OR 69.33 48 P **P 13 48 06.4 +0.4**
baz=300
D05A Enumclaw 69.38 46 *e*P **P 13 48 09.4 +3.2**
comp=Z,134nm,1.1s
KULLO Kullorsuaq 69.42 5 *i* P **P 13 48 05.4 -0.6**
comp=Z,207nm,1.1s
comp=Z,6μm,18.0s
VSR Storozhevoye 69.52 319 *e*P **P 13 48 06.5 -0.5**
VSR *e*S **S 13 57 09.4 -2.0**
VSR *e*SS **SS 14 01 36.7 -2.0**
VSR pmax pmax
comp=Z,130nm,0.8s
VSR pmax pmax
comp=Z,300nm,1.0s
VSR smax smax
comp=E,330nm,3.7s
VSR MLR MLR
comp=Z,7μm,14.0s
G03D McMinnville, O 69.61 49 P **P 13 48 08.5 +0.8**
baz=300
C06D Leavenworth 69.65 45 P **P 13 48 09.0 +1.1**
baz=301,SNR=8.4
LON Longmire 69.71 47 *e*P **P 13 48 10.6 +2.2**
LON pmax pmax
comp=Z,24nm,1.0s
LON Longmire 69.71 47 *e*P **P 13 48 10.6 +2.2**
comp=Z,24nm,1.0s
FIA1 FINESS Array S 69.72 332 *e*P **P 13 48 07.3 -0.7**
comp=Z,175nm,1.0s
FINES FINESS Array B 69.72 332 P **P 13 48 07.4 -0.7**
comp=Z,116nm,1.0s,baz=66,slow=5.7,SNR=85
FINES LR LR 14 20 58.2
comp=Z,8μm,18.0s,baz=47,slow=38
F04A Amboy 69.76 48 *e*P **P 13 48 10.9 +2.3**
comp=Z,70nm,0.9s
COR Corvallis 69.91 49 *e*P **P 13 48 12.8 +3.3**
COR pmax pmax
comp=Z,156nm,1.2s
COR Corvallis 69.91 49 *e*P **P 13 48 12.8 +3.3**
comp=Z,156nm,1.2s
B08A Colville Reser 70.31 44 *e*P **P 13 48 13.0 +0.9**
comp=Z,69nm,1.3s
I03D Drain, OR 70.33 50 P **P 13 48 13.1 +0.9**
baz=301,SNR=7.7
MOR8 Moi Rana 70.42 340 *e*P **P 13 48 11.0 -1.3**
MOR8 IAmb IAmb 13 48 14.2
comp=Z,239nm,1.1s
GOF Gofitskoye 70.50 312⇑ *e*P **P 13 48 12.9 -0.3**
GOF pmax pmax
comp=Z,232nm,1.2s
H04A Detroit Lake 70.54 49 *e*P **P 13 48 14.7 +1.2**
comp=Z,108nm,1.3s
KONS Konsvik 70.56 340 *e*P **P 13 48 14.0 +0.9**
KONS IAmb IAmb 13 48 16.1
comp=Z,139nm,1.2s
WSAR Wadi Sarin 70.56 285 P **P 13 48 14.0 +0.2**
comp=Z,39nm,0.9s,baz=94,slow=7.4,SNR=35
WSAR LR LR 14 21 55.0
comp=Z,4μm,21.8s,baz=96,slow=38
STOK Stokkvaagen 70.70 340 *e*P **P 13 48 15.8 +1.8**
G05D Wamic, OR 70.78 48 P **P 13 48 15.8 +0.8**
baz=302
BIDO Bidbid 70.81 286 P **P 13 48 15.1 -0.3**
SNR=26
BIDO Bidbid 70.81 286 P **P 13 48 15.1 -0.3**
SNR=26
I04A Tendick Farm, 70.86 50 P **P 13 48 16.1 +0.6**
baz=301
DGRG David-gareji 70.89 308 P **P 13 48 15.0 -0.8**
DGRG David-gareji 70.89 308 P **P 13 48 14.9 -0.8**
GUDG Gudauri 70.95 309 P **P 13 48 16.6 +0.4**
L02D Cave Junction, 70.96 51 P **P 13 48 17.5 +1.5**
baz=301,SNR=7.1
BANOM Banah 70.99 289 *i* P **P 13 48 16.6 +0.1**
SNR=49
BANOM Banah 70.99 289 P **P 13 48 16.8 +0.3**

SNR=32
BANOM P P 13 48 16.8 +0.3
SNR=32
BANOM Banah 70.99 289 P P 13 48 16.8 +0.3
SNR=32
CAN Canberra 71.04 173 *e*P P 13 48 16.4 0.0
CAN pmax pmax
comp=Z,123nm,1.3s
CAN MLR MLR
comp=Z,4µm,22.0s
CAN Canberra 71.04 173 *e*P P 13 48 16.4 0.0
comp=Z,123nm,1.3s
CAN LR LR
comp=Z,4µm,22.0s
SMDO Samad 71.11 285 P P 13 48 17.7 +0.4
SNR=46
SMDO Samad 71.11 285 P P 13 48 17.7 +0.4
SNR=46
HUMO Hull Mountain 71.14 51 *e*P P 13 48 19.8 +2.7
comp=Z,93nm,1.8s
ZEI Tsey 71.14 309 *e*P P 13 48 16.2 -1.2
ZEI *e*S S 13 57 29.3 -1.8
ZEI pmax pmax
comp=Z,479nm,1.5s
ZEI pmax pmax
comp=N,238nm,1.4s
ZEI pmax pmax
comp=E,312nm,1.3s
TBLG Delisi 71.16 308 P P 13 48 18.0 +0.7
TBLG Delisi 71.16 308 P P 13 48 17.9 +0.7
G06A Carlson Farm, 71.19 48 *e*P P 13 48 20.0 +2.5
comp=E,186nm,1.8s
C09A Chrisman Ranch 71.21 44 *e*P P 13 48 19.2 +1.7
comp=E,67nm,1.1s
KTRM Thompson Ridge 71.23 52 P P 13 48 20.2 +2.4
HAWA Hanford 71.24 46 *e*P P 13 48 19.5 +1.9
comp=E,61nm,1.3s
HAWA LR LR
comp=Z,3µm,21.0s
I05D Terrebonne, OR 71.24 49 P P 13 48 18.7 +0.9
baz=302
KBZ Khabaz 71.28 311 P P 13 48 18.4 +0.6
comp=Z,128nm,1.0s,baz=72,slow=3.2,SNR=76
KBZ LR LR 14 21 36.5
comp=Z,6µm,21.7s,baz=63,slow=38
KVAR Kislovodsk Arr 71.28 311 P P 13 48 18.4 +0.3
comp=Z,405nm,1.2s,baz=28,slow=2.8,SNR=65
KIV Kislovodsk 71.29 311 *i* P P 13 48 18.3 +0.1
SNR=38
KIV Kislovodsk 71.29 311 *c i*P P 13 48 18.0 -0.1
KIV *e* 13 48 36.6
KIV pmax pmax
comp=Z,396nm,1.1s
KIV MLR MLR
comp=Z,7µm,20.0s
KIV Kislovodsk 71.29 311 *e*P P 13 48 18.4 +0.3
comp=Z,784nm,1.4s
KIV LR LR
comp=Z,7µm,21.0s
KIV Kislovodsk 71.29 311 P P 13 48 18.7 +0.6
SNR=80
KIV P P 13 48 18.7 +0.6
SNR=80
KIV Kislovodsk 71.29 311 P P 13 48 18.7 +0.6
SNR=80
VSU Vasula 71.30 329 *ce*P P 13 48 17.6 -0.1
VSU pmax pmax
comp=Z,616nm,1.2s
JMIC Jan Mayen 71.39 350 LR LR 14 19 17.3
comp=Z,836nm,21.7s,baz=50,slow=36
HOQ Hoqain 71.41 286 P P 13 48 19.4 +0.3
SNR=28
HOQ Hoqain 71.41 286 P P 13 48 19.4 +0.3
SNR=28
JMDO Jabal Madar 71.42 285 P P 13 48 19.5 +0.3
SNR=39
JMDO Jabal Madar 71.42 285 P P 13 48 19.5 +0.3
SNR=39
ONI Oni 71.53 309 P P 13 48 19.8 +0.3
ONI Oni 71.53 309 P P 13 48 19.8 +0.3
KHMM Horse Mountain 71.54 53 *e*P P 13 48 22.9 +3.2
comp=Z,64nm,1.0s
UOSS Minazif 71.57 288 *e*P P 13 48 20.0 0.0
comp=Z,9.0nm,1.1s
NEW Newport 71.61 43 P P 13 48 20.6 +0.7
baz=303
NEW Newport 71.61 43 *e*P P 13 48 21.6 +1.7
NEW pmax pmax
comp=Z,68nm,1.1s
NEW MLR MLR
comp=Z,3µm,22.0s
NEW Newport 71.61 43 *e*P P 13 48 21.6 +1.7
comp=Z,68nm,1.1s
NEW LR LR
comp=Z,3µm,22.0s
NWAO Narrogin (SRO) 71.63 201 *e*P P 13 48 19.3 -0.6
NWAO pmax pmax
comp=Z,166nm,1.3s
NWAO MLR MLR
comp=Z,3µm,22.0s
NWAO Narrogin (SRO) 71.63 201 *e*P P 13 48 19.3 -0.6
comp=Z,166nm,1.3s
NWAO LR LR
comp=Z,3µm,22.0s
NWAO Narrogin (SRO) 71.63 201 P P 13 48 20.1 +0.2
SNR=7.3
NWAO P P 13 48 20.1 +0.2
SNR=7.3
NWAO Narrogin (SRO) 71.63 201 P P 13 48 20.1 +0.2
SNR=7.3
NEY Neytrino 71.64 310⇧ *i*P P 13 48 20.8 +0.5
NEY pmax pmax
comp=Z,32nm,1.1s
NEY MLR MLR
comp=Z,5µm,18.0s
HATD Hatta, Dubai 71.69 288 *i* P P 13 48 20.6 -0.1
SNR=77
HATD Hatta, Dubai 71.69 288 P P 13 48 21.5 +0.8
SNR=62
HATD P P 13 48 21.5 +0.8
SNR=62
HATD Hatta, Dubai 71.69 288 P P 13 48 21.5 +0.8
SNR=62
YBH Yreka Blue Hor 71.75 52 *e*P P 13 48 23.3 +2.4
YBH pmax pmax
comp=Z,106nm,1.5s
YBH Yreka Blue Hor 71.75 52 *e*P P 13 48 23.3 +2.4
comp=Z,106nm,1.5s
ASHO Ashiyiah 71.82 288 *i* P P 13 48 21.3 -0.2
SNR=79
ASHO Ashiyiah 71.82 288 P P 13 48 21.7 +0.2
SNR=58
ASHO P P 13 48 21.7 +0.2
SNR=58
ASHO Ashiyiah 71.82 288 P P 13 48 21.7 +0.2
SNR=58
M02C Callahan 71.83 52 P P 13 48 23.5 +2.0
baz=302,SNR=12
J05D Fort Rock, OR 71.86 50 P P 13 48 22.7 +1.1
baz=302
K04D Chiloquin, OR 71.88 50 P P 13 48 23.4 +1.6
baz=302
KMRM Mail Ridge 71.89 53 *e*P P 13 48 25.2 +3.4
comp=Z,52nm,1.0s
BSY Bisya 71.94 285 P P 13 48 22.4 +0.1
SNR=42
BSY Bisya 71.94 285 P P 13 48 22.4 +0.1
SNR=42
NAZ Nazwa, Dubai 71.97 288 *i* P P 13 48 22.8 +0.4
SNR=15
NAZ Nazwa, Dubai 71.97 288 P P 13 48 23.2 +0.8
SNR=21
NAZ P P 13 48 23.2 +0.8
SNR=21
NAZ Nazwa, Dubai 71.97 288 P P 13 48 23.2 +0.8
SNR=21
GNI Garni 71.98 307 P P 13 48 23.3 +0.9
comp=Z,169nm,1.2s,baz=172,slow=2.5,SNR=38
GNI LR LR 14 22 41.4
comp=Z,11µm,19.9s,baz=32,slow=38
GNI Garni 71.98 307 *i* P P 13 48 22.9 +0.5
SNR=22
GNI Garni 71.98 307 P P 13 48 23.9 +1.5
SNR=43
GNI P P 13 48 23.9 +1.5
SNR=43
SUMG Summit 72.07 360⇧ *i*P P 13 48 24.8 +2.1
comp=Z,113nm,1.2s

SUMG Summit 72.07 360 *e*P P 13 48 23.3 +0.6
SUMG pmax pmax
comp=Z,149nm,1.0s
SUMG Summit 72.07 360 *e*P P 13 48 23.3 +0.6
comp=Z,149nm,1.0s
AKH Akhalkalaki 72.12 308 P P 13 48 23.3 0.0
AKH Akhalkalaki 72.12 308 P P 13 48 23.3 0.0
FAQ Al Faqa, Dubai 72.15 288 *i* P P 13 48 24.3 +0.8
SNR=16
FAQ Al Faqa, Dubai 72.15 288 P P 13 48 23.4 0.0
SNR=33
FAQ P P 13 48 23.4 0.0
SNR=33
FAQ Al Faqa, Dubai 72.15 288 P P 13 48 23.4 0.0
SNR=33
N02D Trinity Center 72.15 52 P P 13 48 25.1 +1.8
baz=302,SNR=15
ARQ Araqi 72.16 286 P P 13 48 23.8 +0.2
SNR=59
ARQ Araqi 72.16 286 P P 13 48 23.8 +0.2
SNR=59
M04C Macdoel 72.28 51 P P 13 48 25.1 +1.0
baz=302
CHVG Ch'k'valeri 72.32 310 P P 13 48 24.1 -0.1
NSS Namsos 72.33 339 *e*P P 13 48 25.3 +1.5
NSS IAmb IAmb 13 48 26.8
comp=Z,63nm,0.9s
NSS IAMs_20 IAMs_20 14 23 05.4
comp=Z,9µm,20.2s
K05A Summer Lake 72.37 50 *e*P P 13 48 21.0 -3.7
comp=Z,105nm,1.0s
WDC Whiskeytown Da 72.46 52 *e*P P 13 48 27.0 +1.9
WDC pmax pmax
comp=Z,49nm,1.0s
WDC Whiskeytown Da 72.46 52 *e*P P 13 48 27.0 +1.9
comp=Z,49nm,1.0s
F10A Beach Ranch, E 72.81 46 *e*P P 13 48 29.4 +2.3
comp=Z,51nm,1.0s
WALA Waterton Lakes 72.94 42 *e*P P 13 48 29.5 +1.6
comp=Z,97nm,1.3s
O03D Paynes Creek 73.09 52 P P 13 48 29.7 +0.8
baz=303
BSMT Bassoo Peak 73.14 43 P P 13 48 31.0 +1.8
MOD Modoc Plateau 73.18 50 *e*P P 13 48 31.4 +1.9
comp=Z,42nm,1.1s
IZAR Zarasai 73.20 327 *e*P P 13 48 29.6 +0.5
IZAR IAmb IAmb 13 48 33.4
comp=Z,59nm,1.0s
MICGM Minsk 73.25 326⇧ *e*P P 13 48 30.0 +0.5
MICGM PM 13 48 33.0
comp=Z,0.4nm,1.0s
MICGM *e*PcP **sP** 13 48 50.0 +2.8
MICGM *e*PP **PP** 13 51 20.0 +7.5
MICGM *e*PPP PPP 13 53 23.0
MICGM *e*S **S** 13 57 55.0 +0.6
MICGM *e*PS PnS 13 58 50.0 +19
MICGM *e*SS SS 14 02 54.0 +18
MICGM *e*SSS SSS 14 06 15.0
MICGM *e*LQ LQ 14 12 06.0
MICGM *e*LR LR 14 18 08.0
MICGM LRM MLR 14 24 38.0
comp=E,8.1nm,15.0s
MICGM LRM MLR 14 24 40.0
comp=Z,14nm,14.0s
MNK Minsk 73.25 326⇧ *e*P P 13 48 30.0 +0.5
MNK *e* 13 48 50.0
MNK *e* 13 51 20.0
MNK *e*S **S** 13 57 55.0 +0.6
MNK *e*PS PnS 13 58 50.0 +19
MNK pmax pmax
comp=Z,400nm,1.0s
MNK MLR MLR
comp=E,8µm,15.0s
MNK MLR MLR
comp=Z,14µm,14.0s
IDID Didziasalis 73.26 327 *e*P P 13 48 30.0 +0.5
IDID IAmb IAmb 13 48 33.7
comp=Z,70nm,1.1s
BLMT Blacktail Moun 73.29 43 *e*P P 13 48 32.3 +2.2
SOC Sochi 73.31 312 *c i*P P 13 48 31.1 +1.1
SOC *e* 13 48 45.7
SOC *e* 13 51 12.5
SOC *e*PPP PPP 13 52 59.3
SOC *e*S **SKiKP** 13 57 58.2 +0.6
SOC *e* 13 58 36.8
SOC *e*SS **SS** 14 02 42.4 +5.3
SOC *e*SSS SSS 14 05 53.4
SOC pmax pmax
comp=Z,83nm,0.8s
SOC MLR MLR
comp=Z,6µm,18.0s
ISAL Salakas 73.37 327 *e*P P 13 48 30.6 +0.5
ISAL IAmb IAmb 13 48 34.5
comp=Z,121nm,1.1s
BMO Blue Mountains 73.39 47 *e*P P 13 48 32.5 +1.9
BMO pmax pmax
comp=Z,130nm,1.5s
BMO MLR MLR
comp=Z,2µm,21.0s
BMO Blue Mountains 73.39 47 *e*P P 13 48 32.5 +1.9
comp=Z,130nm,1.5s
BMO LR LR
comp=Z,2µm,21.0s
SCO Scoresbysund 73.42 354 *i* P P 13 48 31.5 +1.3
comp=Z,45nm,1.0s
comp=Z,3µm,17.0s
JTMT Jette 73.48 43 *e*P P 13 48 32.4 +1.2
NACGM Naroch 73.50 327 *e*P P 13 48 30.0 -0.9
NACGM *e*P P 13 48 30.0 -0.9
NACGM PM 13 48 34.0
comp=Z,0.3nm,0.8s
NACGM *e*PP **PP** 13 51 14.0 -0.6
NACGM *e*PPP PPP 13 53 02.0
NACGM *e*S **S** 13 57 56.0 -1.2
NACGM *e*PS PnS 13 58 13.0 -21
NACGM *e*SS **SS** 14 02 37.0 -2.4
NACGM *e*SSS SSS 14 06 44.0
NACGM *e*LQ LQ 14 12 28.0
NACGM *e*LR LR 14 18 20.0
NACGM LRM MLR 14 24 50.0
comp=Z,12nm,15.0s
YBMT Yellow Bay 73.57 43 *e*P P 13 48 33.5 +1.9
EATA Eleskirt 73.59 307 *i* P P 13 48 33.2 +1.0
ORV Oroville 73.69 53 *e*P P 13 48 33.6 +1.3
ORV pmax pmax
comp=Z,49nm,1.0s
ORV Oroville 73.69 53 *e*P P 13 48 33.6 +1.3
comp=Z,49nm,1.0s
SWMT Swartz Lake 73.78 43 *e*P P 13 48 33.9 +1.0
TBLU Trondheim 73.80 339 *e*P P 13 48 30.0 -2.6
TBLU IAMs_20 IAMs_20 14 23 43.3
comp=Z,10µm,19.1s
WVOR Wild Horse Val 73.92 49 *e*P P 13 48 35.8 +1.9
WVOR pmax pmax
comp=Z,56nm,1.1s
WVOR MLR MLR
comp=Z,3µm,22.0s
WVOR Wild Horse Val 73.92 49 *e*P P 13 48 35.8 +1.9
comp=Z,56nm,1.1s
WVOR LR LR
comp=Z,3µm,22.0s
ANN Anapa 73.99 314 *e*P P 13 48 33.6 -0.4
ANN *e* 13 48 47.5
ANN *e* 13 51 22.2
ANN *e*S **S** 13 58 02.6 -0.5
ANN pmax pmax
comp=N,56nm,1.3s
ANN pmax pmax
comp=Z,235nm,1.2s
ANN pmax pmax
comp=E,60nm,1.3s
ANN MLR MLR
comp=N,7µm,18.0s
ANN MLR MLR
comp=Z,5µm,18.0s
ANN MLR MLR
comp=E,4µm,18.0s
MSO Missoula 74.20 43 P P 13 48 36.3 +0.9
baz=306
MSO Missoula 74.20 43 *e*P P 13 48 36.8 +1.5
comp=E,52nm,1.1s
ERZM Erzurum 74.30 308 *i* P P 13 48 38.0 +1.8
AFDM Forest Hills D 74.36 53 *e*P P 13 48 38.0 +1.7
comp=E,46nm,1.3s
CHMT Chamberlain Mo 74.54 43 *e*P P 13 48 38.6 +1.1

KOPT Kop Dagi 74.79 308 *i* P P 13 48 41.1 +2.0
BNGL BINGOL 74.96 307 *i* P P 13 48 42.2 +2.1
AKASG Malin Array Be 74.97 322 P P 13 48 38.7 -0.8
comp=E,65nm,0.8s,baz=46,slow=6.4,SNR=98
AKASG LR LR 14 24 39.5
comp=E,21µm,18.8s,baz=50,slow=38
AKBB Malin Array Si 74.97 322 *e*P P 13 48 38.9 -0.7
AKBB pmax pmax
comp=Z,197nm,1.1s
AKBB Malin Array Si 74.97 322 *e*P P 13 48 38.9 -0.7
comp=Z,197nm,1.1s
KIEV Kiev 74.98 322 *c i*P P 13 48 38.9 -0.7
KIEV pmax pmax
comp=Z,199nm,1.2s
KIEV Kiev 74.98 322 *e*P P 13 48 38.6 -1.0
comp=Z,194nm,1.1s
KIEV LR LR
comp=Z,21µm,20.0s
NC405 NORSAR Array S 74.98 337 *e*P P 13 48 39.0 -0.4
NC303 NORSAR Array S 75.01 337 *e*P P 13 48 39.3 -0.3
AK11 Malin Array Si 75.01 322 *e*P P 13 48 38.9 -0.9
MFID Camas Ranch 75.08 47 *e*P P 13 48 41.5 +1.0
comp=Z,186nm,1.7s
ILULI Ilulissat 75.10 4 *i* P P 13 48 41.7 +1.7
comp=Z,131nm,1.2s
comp=Z,5µm,22.0s
MOL Molde 75.11 339 *e*P P 13 48 40.8 +0.6
NC204 NORSAR Array S 75.16 337 *e*P P 13 48 40.0 -0.6
NB201 NORSAR Array S 75.16 337 *e*P P 13 48 40.4 -0.1
NB2 NORSAR Subarra 75.20 337 P P 13 48 40.1 -0.7
comp=Z,169nm,1.0s,baz=40,slow=5.6
NB2 NORSAR Subarra 75.20 337 P P 13 48 40.1 -0.7
baz=40,slow=5.6
NOA NORSAR Array B 75.20 337 P P 13 48 40.2 -0.5
comp=Z,117nm,1.0s,baz=40,slow=5.7,SNR=107
NOA PP PP 13 51 30.6 +1.8
comp=Z,18nm,0.9s,baz=42,slow=8.6,SNR=4.3
NOA LR LR 14 24 39.3
comp=Z,9µm,20.3s,baz=45,slow=38
SAO San Andreas Ge 75.25 55 *e*P P 13 48 44.7 +3.2
SAO pmax pmax
comp=Z,27nm,1.0s
SAO San Andreas Ge 75.25 55 *e*P P 13 48 44.7 +3.2
comp=Z,27nm,1.0s
CMB Columbia Colle 75.25 54 *e*P P 13 48 43.3 +1.8
CMB pmax pmax
comp=Z,141nm,1.8s
CMB Columbia Colle 75.25 54 *e*P P 13 48 43.3 +1.8
comp=Z,141nm,1.8s
FFC Flin Flon 75.25 32 *e*P P 13 48 41.0 -0.1
FFC pmax pmax
comp=Z,78nm,1.0s
FFC MLR MLR
comp=Z,2µm,20.0s
FFC Flin Flon 75.25 32 *e*P P 13 48 41.0 -0.1
comp=Z,78nm,1.0s
FFC LR LR
comp=Z,2µm,20.0s
NBO02 NORSAR Array S 75.30 337 *e*P P 13 48 40.9 -0.5
NC602 NORSAR Array S 75.32 337 *e*P P 13 48 41.3 -0.1
NC602 IAmb IAmb 13 48 44.3
comp=Z,111nm,1.1s
NC602 IAMs_20 IAMs_20 14 24 24.3
comp=Z,15µm,19.6s
NC602 NORSAR Array S 75.32 337 *e*P P 13 48 41.0 -0.5
NBO00 NORSAR Array S 75.34 337 *e*P P 13 48 41.3 -0.3
NAO01 NORSAR Array S 75.45 337 *e*P P 13 48 41.8 -0.3
BTMN Batman 75.47 306 *i* P P 13 48 45.2 +2.4
RAO Raoul Island 75.47 143 LR LR 14 22 56.1
comp=Z,2µm,18.1s,baz=338,slow=36
KELT Kelkit 75.50 309 *i* P P 13 48 44.1 +1.0
FCC Fort Churchill 75.55 26 *e*P P 13 48 42.5 -0.3
FCC pmax pmax
comp=Z,119nm,1.1s
FCC Fort Churchill 75.55 26 *e*P P 13 48 42.5 -0.3
comp=Z,120nm,1.1s
AKN Aaknes 75.58 339 *e*P P 13 48 43.6 +0.7
AKN IAmb IAmb 13 48 46.6
comp=Z,138nm,1.0s
LRM Limekiln Ridge 75.63 44 *e*P P 13 48 44.6 +0.8
SUW Suwalki 75.68 327 *e*P P 13 48 45.2 +1.6
SUW *e*S **S** 13 58 21.9 +0.3
SUW LMZ LR 14 22 55.2
SUW Suwalki 75.68 327 *e*P P 13 48 45.2 +1.6
SUW *e*S **S** 13 58 21.9 +0.3
SUW MLR MLR
comp=Z,5µm,26.1s
SHAO Shalim 75.70 282 P P 13 48 46.1 +1.7
SNR=10
SHAO Shalim 75.70 282 P P 13 48 46.1 +1.7
SNR=10
EGMT Eagleton 75.78 41 P P 13 48 45.3 +0.9
baz=308
EGMT Eagleton 75.78 41 *e*P P 13 48 45.0 +0.7
comp=Z,366nm,1.4s
EGMT LR LR
comp=Z,4µm,21.0s
DLMT Dillon 75.82 44 *e*P P 13 48 46.7 +1.9
comp=Z,106nm,1.0s
SIM Simferopol' 75.83 315 *e*P P 13 48 45.0 +0.4
SIM *e*PPP PPP 13 53 30.0
SIM *e*S **S** 13 58 22.0 -1.6
SIM pmax pmax
comp=Z,129nm,0.9s
SIM MLR MLR
comp=Z,2µm,16.5s
HLID Hailey 75.83 46 P P 13 48 45.5 +0.6
baz=306
HLID Hailey 75.83 46 *e*P P 13 48 46.9 +2.0
comp=Z,45nm,1.3s
HLID LR LR
comp=Z,2µm,20.0s
TNCL Tunceli-Merkez 75.91 308 *i* P P 13 48 47.5 +2.2
MCMT McKenzie Canyo 75.99 45 *e*P P 13 48 47.4 +1.5
MARD Mardin 76.12 306 *i* P P 13 48 47.3 +0.8
BOZ Bozeman (W) 76.19 43 P P 13 48 47.9 +1.0
baz=307
BOZ Bozeman (W) 76.19 43 *e*P P 13 48 48.5 +1.6
BOZ pmax pmax
comp=Z,142nm,1.4s
BOZ MLR MLR
comp=Z,2µm,20.0s
BOZ Bozeman (W) 76.19 43 *e*P P 13 48 48.5 +1.6
comp=Z,142nm,1.4s
BOZ LR LR
comp=Z,2µm,20.0s
OSL Oslo 76.20 337 *e*P P 13 48 48.0 +1.6
BGMT Barton Gulch 76.21 44 *e*P P 13 48 49.0 +1.9
NV01 Mina Array Sit 76.38 52 *e*P P 13 48 48.4 +0.2
NVAR Mina Array Bea 76.38 52 P P 13 48 50.1 +2.0
comp=Z,27nm,0.7s,baz=293,slow=5.6,SNR=109
NVAR LR LR 14 18 33.0
comp=Z,3µm,20.1s,baz=298,slow=32
NV11 Mina Array Sit 76.48 52 *e*P P 13 48 50.5 +1.9
KEMA Kemaliye 76.49 309 *i* P P 13 48 49.2 +0.6
MLAC Mammoth, Mammo 76.49 53 P P 13 48 49.8 +1.0
baz=305
CUZAR Zara_SIVAS 76.59 310 *i* P P 13 48 51.4 +2.2
FOO Floro 76.60 340 *e*P P 13 48 49.5 +0.9
ELZG Elazig 76.62 308 *i* P P 13 48 52.2 +2.8
HYA Hoyanger 76.62 339 *e*P P 13 48 48.9 +0.1
KONO Kongsberg 76.78 337 *e*P P 13 48 50.6 +0.8
KONO *e*S **S** 13 58 35.4 +1.9
KONO Kongsberg 76.78 337 *e*P P 13 48 50.0 +0.3
KONO pmax pmax
comp=Z,447nm,1.0s
KONO Kongsberg 76.78 337 PFAKE 13 49 00.0 +10
KONO LR LR
comp=Z,9µm,19.0s
QLMT Earthquake Lak 76.80 44 *e*P P 13 48 52.6 +2.2
DGAR Diego Garcia 76.88 251 *e*P P 13 48 52.3 +1.3
DGAR pmax pmax
comp=Z,862nm,1.7s
DGAR MLR MLR
comp=Z,5µm,20.0s
DGAR Diego Garcia 76.88 251 *e*P P 13 48 52.3 +1.3
comp=Z,862nm,1.7s
DGAR LR LR
comp=Z,5µm,20.0s
OUZ Omahuta 76.94 153 *e*P P 13 48 50.3 -0.5
comp=Z,54nm,1.2s
RCTC Rector, Farmer 76.97 55 P P 13 48 52.4 +1.2
baz=305
ELK Elko 76.98 49 *e*P P 13 48 53.8 +2.3
ELK pmax pmax
comp=Z,46nm,1.1s

SMMC	Simmler	77.03	56	P		P		13 48 53.0	+1.4	
	baz=305									
SFNV	Sufian	77.06	306	*e*P		P		13 48 52.5	+0.7	
YMC	Maple Creek	77.08	44	*e*P		P		13 48 54.4	+2.4	
CUKAN	kangal_SIVAS	77.11	309	*i* P		P		13 48 52.8	+0.6	
SUE	Sulen	77.12	340	*e*P		P		13 48 53.7	+2.1	
SUE				IAmb		IAmb		13 48 55.3		
	comp=Z,78nm,1.0s									
YHH	Holmes Hill	77.15	44	*e*P		P		13 48 54.5	+2.0	
YMR	Madison River	77.16	44	*e*P		P		13 48 55.0	+2.5	
	comp=Z,132nm,1.4s									
HAVZ	Havza	77.17	311	*i* P		P		13 48 53.6	+1.3	
GCMT	Greycliff	77.20	42	*e*P		P		13 48 54.5	+2.0	
TIN	Tinemaha, Big	77.21	54	P		P		13 48 53.2	+0.4	
	baz=305									
SFJD	Kangerlussuaq	77.33	4	*i* P		P		13 48 52.5	-0.1	
	comp=Z,57nm,1.1s									
SFJD	Kangerlussuaq	77.33	4	*e*P		P		13 48 52.7	0.0	
SFJD				pmax		pmax				
	comp=Z,106nm,1.4s									
SFJD				MLR		MLR				
	comp=Z,3µm,21.0s									
SFJD	Kangerlussuaq	77.33	4	*e*P		P		13 48 52.7	0.0	
	comp=Z,106nm,1.4s									
SFJD				LR		LR				
	comp=Z,3µm,21.0s									
MCID	Moose Creek	77.33	44	*e*P		P		13 48 56.2	+2.8	
YFT	Old Faithful	77.37	44	*e*P		P		13 48 57.5	+3.8	
	comp=Z,52nm,0.9s									
PKM	Mcpherson Peak	77.39	56	P		P		13 48 54.9	+1.0	
	baz=305,SNR=16									
AKCD	Akcadag	77.41	308	*i* P		P		13 48 56.6	+2.7	
BOYT	Boyabat	77.46	312	*i* P		P		13 48 55.2	+1.2	
KIS	Kishinev	77.50	319	*e*P		P		13 48 56.0	+2.0	
KIS	Kishinev	77.50	319	*i* PcP		PcP		13 49 11.0	+6.8	
KIS	Kishinev	77.50	319	*e*PP		PP		13 51 50.0	+1.5	
KIS	Kishinev	77.50	319	*e*P		P		13 48 56.0	+2.0	
KIS				*i*				13 49 11.0		
KIS				*e*				13 51 50.0		
KIS				*e*S		S		13 58 40.0	-1.7	
KIS				*e*SS		SS		14 03 40.0	-0.3	
KIS				MLR		MLR				
	comp=N,9µm,16.0s									
KIS				MLR		MLR				
	comp=E,7µm,16.0s									
KIS				MLR		MLR				
	comp=Z,15µm,16.0s									
KIS				MLR		MLR				
	comp=Z,15µm,18.0s									
KIS	Kishinev	77.50	319	*e*SS		SS		14 03 40.0	-0.3	
ODD1	Odda	77.50	338	*e*P		P		13 48 54.5	+0.7	
ODD1				IAmb		IAmb		13 48 57.4		
	comp=Z,121nm,1.1s									
BER	Bergen	77.50	339	*e*P		P		13 48 54.2	+0.4	
BER				IAmb		IAmb		13 48 57.3		
	comp=Z,121nm,1.1s									
BER				*e*S		S		13 58 42.7	+1.4	
LKWY	Lake	77.54	44	*e*P		P		13 48 56.1	+1.4	
LKWY				pmax		pmax				
	comp=Z,69nm,1.0s									
LKWY				MLR		MLR				
	comp=Z,6µm,22.0s									
LKWY	Lake	77.54	44	*e*P		P		13 48 56.1	+1.4	
	comp=Z,68nm,1.0s									
LKWY				LR		LR				
	comp=Z,6µm,22.0s									
H17A	Grant Village	77.55	44	P		P		13 48 55.5	+0.8	
	baz=308									
H17A	Grant Village	77.55	44	*e*P		P		13 48 57.6	+2.9	
	comp=Z,119nm,1.0s									
IMW	Indian Meadow	77.65	45	*e*P		P		13 48 57.6	+2.3	
	comp=Z,81nm,1.0s									
FLWY	Flagg Ranch	77.67	44	*e*P		P		13 48 57.5	+2.2	
	comp=Z,128nm,1.3s									
SBC	Santa Barbara	77.71	56	P		P		13 48 56.5	+1.1	
	baz=305									
SURC	SANLIURFA_SURC	77.79	307	*i* P		P		13 48 56.4	+0.5	
GRAC	Grapevine Rang	77.81	53	P		P		13 48 56.6	+0.5	
	baz=306									
CUSAR	Sarkisla-SIVAS	77.82	310	*i* P		P		13 48 57.6	+1.5	
RLMT	Red Lodge	77.83	43	P		P		13 48 56.8	+0.6	
	baz=309									
RLMT	Red Lodge	77.83	43	*e*P		P		13 48 58.3	+2.1	
	comp=Z,182nm,1.5s									
RLMT				LR		LR				
	comp=Z,2µm,22.0s									
ISA	Isabella, Lake	77.85	55	P		P		13 48 58.0	+1.7	
	baz=305,SNR=7.6									
ISA	Isabella, Lake	77.85	55	*e*P		P		13 48 58.1	+1.8	
ISA				pmax		pmax				
	comp=Z,93nm,1.8s									
ISA	Isabella, Lake	77.85	55	*e*P		P		13 48 58.1	+1.8	
	comp=Z,93nm,1.8s									
HVU	Hansel Valley	77.86	47	*e*P		P		13 48 58.6	+2.3	
HVU				pmax		pmax				
	comp=Z,40nm,0.9s									
HVU	Hansel Valley	77.86	47	*e*P		P		13 48 58.6	+2.3	
	comp=Z,40nm,0.9s									
MNKR	ALMNKUR	77.89	306	*e*P		P		13 48 48.3	-8.1	
ARVC	Arvin	77.92	55	P		P		13 48 57.2	+0.6	
	baz=305									
ABTO	Aybut	77.92	283	P		P		13 48 56.1	-0.9	
	SNR=18									
ABTO	Aybut	77.92	283	P		P		13 48 56.1	-0.9	
	SNR=18									
BLS5	Blasjo	77.95	338	*e*P		P		13 48 57.1	+0.9	
BLS5				*e*S		S		13 58 46.9	+0.7	
BLS5				IAMs_20		IAMs_20		14 25 09.8		
	comp=Z,9µm,20.7s									
LOHW	Long Hollow	78.01	45	*e*P		P		13 48 59.5	+2.2	
	comp=Z,42nm,1.1s									
SNOW	Snow King Moun	78.02	45	*e*P		P		13 48 59.8	+2.5	
	comp=Z,47nm,1.0s									
SCZ2	Santa Cruz Isl	78.02	57	P		P		13 48 59.0	+1.8	
	baz=305									
REDW	Red Top Meadow	78.03	45	*e*P		P		13 49 00.1	+2.8	
	comp=Z,115nm,1.4s									
DAC	Darwin (Calif)	78.08	54	*e*P		P		13 48 59.1	+1.4	
DAC				pmax		pmax				
	comp=Z,22nm,1.0s									
DAC	Darwin (Calif)	78.08	54	*e*P		P		13 48 59.1	+1.4	
	comp=Z,22nm,1.0s									
LVV	L'vov	78.09	324	*e*P		P		13 48 57.6	+0.4	
LVV				*i*				13 49 16.0		
LVV				*e*				13 51 58.6		
LVV				*e*PPP		PPP		13 53 48.6		
LVV				*e*S		S		13 58 47.8	-0.2	
LVV				*i*				13 59 10.8		
LVV				*e*PS		PnS		13 59 44.0	+11	
LVV				*e*SS		SS		14 03 50.8	+1.7	
LVV				*e*SSS		SSS		14 07 04.0		
LVV				MLR		MLR				
	comp=N,4µm,15.0s									
LVV				MLR		MLR				
	comp=E,4µm,15.0s									
LVV				MLR		MLR				
	comp=Z,6µm,16.0s									
COAL	Corum-Alaca	78.10	311	*i* P		P		13 48 59.3	+1.7	
KSRV	Kasrt alli	78.12	306	*e*P		P		13 49 01.6	+3.9	
R11A	Troy Canyon, C	78.17	51	P		P		13 48 59.7	+1.5	
	baz=306									
GZT	Gaziantep	78.19	308	*i* P		P		13 49 00.1	+1.8	
HOMB	Homborsund	78.22	336	*e*P		P		13 48 58.3	+0.6	
HOMB				IAmb		IAmb		13 49 00.8		
	comp=Z,90nm,1.1s									
HOMB				IAMs_20		IAMs_20		14 25 50.5		
	comp=Z,11µm,20.0s									
HOMB				IVMs_BB		IVMs_BB		14 26 05.5		
	comp=Z,4µm,22.1s									
BGU	Big Grassy Mou	78.22	48	*e*P		P		13 49 00.5	+2.1	
	comp=Z,39nm,0.9s									
BEL	Belsk	78.22	327	*e*P		P		13 49 00.0	+2.1	
BEL				*e*S		S		13 58 41.3	-8.1	
BEL				LMZ		LR		14 23 32.6		
BEL	Belsk	78.22	327	*e*P		P		13 49 00.1	+2.1	
BEL				*e*S		S		13 58 41.3	-8.1	
BEL				MLR		MLR				
	comp=Z,6µm,26.0s									
AHID	Auburn Hatcher	78.25	46	*e*P		P		13 49 00.4	+1.9	
	comp=Z,47nm,1.2s									
AHID				LR		LR				
	comp=Z,4µm,22.0s									
MPMC	Manual Prospec	78.28	54	P		P		13 49 00.3	+1.5	
	baz=306,SNR=32									
OSI	Osito Audit: C	78.28	56	P		P		13 49 00.4	+1.7	
	baz=305									
OSI	Osito Audit: C	78.28	56	*e*P		P		13 49 01.9	+3.2	
	comp=Z,169nm,1.8s									
BSD	Bornholm Skovb	78.34	332	*i* P		P		13 48 57.7	-0.8	
	comp=Z,211nm,1.1s									
	comp=Z,7µm,19.0s									
SPUT	South Promonto	78.34	47	*e*P		P		13 49 02.6	+3.6	
	comp=Z,90nm,1.4s									
BLG	Laguna Peak, P	78.34	56	P		P		13 49 00.8	+1.8	
	baz=305									
DGMT	Dagmar	78.36	38	P		P		13 48 58.7	-0.1	
	baz=311									
DGMT	Dagmar	78.36	38	P		P		13 48 58.3	-0.5	
	comp=Z,164nm,1.2s									
DGMT				LR		LR				
	comp=Z,3µm,21.0s									
ILGA	Ilgaz	78.40	312	*i* P		P		13 49 00.7	+1.3	
TAU	Tasmania Unive	78.42	175	PFAKE				13 49 10.0	+11	
TAU				LR		LR				
	comp=Z,6µm,22.0s									
FURC	Furnace Creek,	78.45	53	P		P		13 49 01.0	+1.5	
	baz=306,SNR=8.3									
LAO	LASA Array	78.48	40	P		P		13 49 01.1	+1.6	
	baz=310									
LAO	LASA Array	78.48	40	*e*P		P		13 49 01.5	+1.9	
	comp=Z,151nm,1.3s									
LAO				LR		LR				
	comp=Z,3µm,22.0s									
KMY	Karmoy	78.48	338	*e*P		P		13 48 60.0	+0.8	
LRMC	Laurel Mtn Rad	78.48	55	P		P		13 49 00.3	+0.4	
	baz=306									
SNCC	San Nicolas Is	78.53	57	P		P		13 49 00.6	+0.7	
	baz=305									
TPNV	Topopah Spring	78.57	53	P		P		13 49 00.5	+0.2	
	baz=306									
TPNV	Topopah Spring	78.57	53	*e*P		P		13 49 02.1	+1.8	
TPNV				pmax		pmax				
	comp=Z,63nm,1.1s									
TPNV	Topopah Spring	78.57	53	*e*P		P		13 49 02.1	+1.8	
	comp=Z,63nm,1.1s									
STAV	Stavanger	78.57	338	*e*P		P		13 49 00.4	+0.7	
STAV				IAmb		IAmb		13 49 03.1		
	comp=Z,166nm,1.2s									
STAV				IVMs_BB		IVMs_BB		14 25 18.9		
	comp=Z,3µm,17.4s									
SNART	Snartemo	78.58	337	*e*P		P		13 49 00.9	+1.1	
SNART				IAmb		IAmb		13 49 03.2		
	comp=Z,92nm,0.9s									
A25A	Svangstu Ranch	78.59	37	P		P		13 49 01.6	+1.6	
	baz=312									
HCB	Kahramanmara~	78.62	308	*i* P		P		13 49 01.0	+0.5	
EDW2	Edwards Air Fo	78.62	55	P		P		13 49 02.4	+1.8	
	baz=306,SNR=22									
HWUT	Hardware Ranch	78.69	47	*e*P		P		13 49 03.0	+2.1	
	comp=Z,95nm,1.1s									
HWUT				LR		LR				
	comp=Z,3µm,22.0s									
DECC	Green Verdugo	78.76	56	P		P		13 49 01.9	+0.6	
	baz=306									
DUG	Dugway, Tooele	78.79	48	P		P		13 49 01.9	+0.4	
	baz=308									
DUG	Dugway, Tooele	78.79	48	*e*P		P		13 49 03.7	+2.2	
DUG				pmax		pmax				
	comp=Z,53nm,0.9s									
DUG	Dugway, Tooele	78.79	48	PFAKE				13 49 10.0	+8.5	
DUG				LR		LR				
	comp=Z,2µm,20.0s									
MCU	Monte Cristo P	78.81	47	*e*P		P		13 49 03.5	+1.8	
ANDN	Andirin	78.84	308	*i* P		P		13 49 03.2	+1.5	
COP	Copenhagen	78.85	333	*i* P		P		13 49 01.1	-0.2	
	comp=Z,124nm,1.0s									
	comp=Z,4µm,20.0s									
KUZU	Kuzuini	78.85	307	*i* P		P		13 49 04.1	+2.3	
KWP	Kalwaria Pacla	78.85	324	*e*P		P		13 49 01.7	+0.2	
KWP				*e*PP		PP		13 52 03.0	+3.3	
KWP				*e*S		S		13 58 55.4	-0.7	
KWP				LMZ		LR		14 25 01.9		
KWP	Kalwaria Pacla	78.85	324	⇑*i* P		P		13 49 02.5	+1.0	
KWP	Kalwaria Pacla	78.85	324	*e*P		P		13 49 01.7	+0.2	
KWP				*e*				13 52 03.0		
KWP				*e*S		S		13 58 55.5	-0.7	
KWP				MLR		MLR				
	comp=Z,6µm,23.9s									
CDAG	Cicekdag	78.86	311	*i* P		P		13 49 02.5	+0.7	
KAMA	Osmaniye	78.87	308	*i* P		P		13 49 03.4	+1.5	
PASC	Pasadena Art C	78.90	56	*e*P		P		13 49 05.0	+2.9	
	comp=Z,60nm,1.3s									
ELDT	Eldivan	78.91	312	*i* P		P		13 49 02.9	+0.7	
BORG	Borgarnes	78.93	352	*i* P		P		13 49 06.3	+4.7	
BORG	Borgarnes	78.93	352	PFAKE				13 49 10.0	+8.4	
BORG				LR		LR				
	comp=Z,3µm,20.0s									
BUR08	Bucovina Ar. S	78.96	321	*e*P		P		13 49 01.9	-0.3	
MWC	Mount Wilson	78.96	56	*e*P		P		13 49 05.0	+2.4	
MWC				pmax		pmax				
	comp=Z,111nm,1.4s									
MWC	Mount Wilson	78.96	56	*e*P		P		13 49 05.0	+2.4	
	comp=Z,111nm,1.4s									
BURAR	Bucovina Array	78.97	321	⇑*i* P		P		13 49 02.8	+0.5	
BURAR	Bucovina Array	78.97	321	⇑P		P		13 49 02.8	+0.5	
B25A	Knox Farm, Ray	79.01	38	P		P		13 49 02.3	-0.1	
	baz=312									
CFR	Carcaliu	79.02	318	⇓*i* P		P		13 49 02.5	+0.1	
CFR	Carcaliu	79.02	318	⇓P		P		13 49 02.5	+0.1	
TCUT	Toone Canyon	79.08	47	*e*P		P		13 49 05.9	+2.7	
	comp=Z,136nm,1.1s									
FMP	Fort Macarthur	79.10	56	P		P		13 49 02.6	-0.5	
	baz=306									
YEL1	Yell	79.12	342	*e*P		P		13 49 04.3	+1.6	
CTU	Camp Tracy	79.13	48	*e*P		P		13 49 05.9	+2.5	
	comp=Z,46nm,1.0s									
A26A	Wade Farm, Ken	79.14	37	P		P		13 49 02.3	-0.8	
	baz=313,SNR=7.5									
BW06	Boulder Array	79.14	45	P		P		13 49 03.7	+0.2	
	baz=309									
BW06	Boulder Array	79.14	45	*e*P		P		13 49 04.6	+1.1	
BW06				LR		LR				
	comp=Z,3µm,21.0s									
PD31	Pinedale Array	79.14	45	*e*P		P		13 49 04.6	+1.1	
PDAR	Pinedale Array	79.14	45	P		P		13 49 03.3	-0.2	
	comp=Z,12nm,0.6s,baz=292,slow=1.2,SNR=101									
PDAR				LR		LR		14 19 18.9		
	comp=Z,3µm,21.8s,baz=320,slow=32									
PSUT	Pine Spring	79.15	50	*e*P		P		13 49 05.8	+2.2	
	comp=Z,57nm,1.1s									
SHOC	Shoshone, Teco	79.17	54	P		P		13 49 03.5	0.0	
	baz=306									
GSC	Goldstone, Bar	79.17	54	P		P		13 49 03.5	0.0	
	baz=306,SNR=14									
GSC	Goldstone, Bar	79.17	54	*e*P		P		13 49 05.2	+1.6	
GSC				pmax		pmax				
	comp=Z,36nm,1.1s									
GSC	Goldstone, Bar	79.17	54	*e*P		P		13 49 05.2	+1.6	
	comp=Z,36nm,1.1s									
CIS	Catalina Islan	79.19	57	P		P		13 49 03.8	+0.1	
	baz=306									
DRWC	Darouich	79.20	307	*e*P		P		13 49 04.5	+0.8	
BFSC	Mount Baldy Ra	79.22	56	P		P		13 49 05.2	+1.2	
	baz=306,SNR=13									
BR131	Keskin Array S	79.25	311	*e*P		P		13 49 04.2	+0.1	
BRTR	Keskin Array B	79.25	311	P		P		13 49 04.0	0.0	
	comp=Z,80nm,0.9s,baz=86,slow=3.8,SNR=67									
BRTR				LR		LR		14 28 47.5		
	comp=Z,3µm,19.7s,baz=56,slow=39									
RRX	Edison Barstow	79.29	55	P		P		13 49 03.6	-0.6	
	baz=306									
TIRR	Tirgusor	79.33	318	*e*P		P		13 49 04.2	0.0	
TIRR				pmax		pmax				
	comp=Z,123nm,1.3s									
TIRR	Tirgusor	79.33	318	*e*P		P		13 49 04.2	0.0	
	comp=Z,123nm,1.3s									
C25A	Freed Ranch, W	79.33	38	P		P		13 49 04.8	+0.6	
	baz=312									
SCI2	San Clemente I	79.35	57	P		P		13 49 04.0	-0.5	
	baz=306									
JLU	Jordanelle	79.37	47	*e*P		P		13 49 07.2	+2.4	
	comp=Z,52nm,1.0s									
RGN	Rugen	79.37	332	*e*P		P		13 49 06.1	+1.9	
	comp=Z,477nm,1.4s									
NLU	North Lily Min	79.39	48	*e*P		P		13 49 06.9	+2.0	
	comp=Z,35nm,0.9s									
B26A	Jensen Ranch,	79.39	37	P		P		13 49 03.8	-0.8	
	baz=313									
MUD	Monsted U'grnd	79.42	335	*i* P		P		13 49 04.6	+0.2	
	comp=Z,163nm,1.2s									
	comp=Z,10µm,25.0s									
HARR	Harsova	79.45	318	⇑*i* P		P		13 49 05.3	+0.5	
HARR	Harsova	79.45	318	⇑P		P		13 49 05.3	+0.5	
A27A	Ledoux Ranch,	79.49	36	P		P		13 49 05.2	+0.2	
	baz=313									
AKO	Adana	79.49	309	*i* P		P		13 49 07.8	+2.6	
GRER		79.52	319	⇑*i* P		P		13 49 08.8	+3.6	
BCAM	Yenicaga	79.53	313	*i* P		P		13 49 07.3	+1.8	
KOLS	Kolonicke sedl	79.53	324	*e*P		P		13 49 05.5	+0.3	
KOLS				*e*				13 49 07.5		
KOLS				*e*S		S		13 59 01.0	-2.5	
MPU	Maple Canyon	79.62	48	*e*P		P		13 49 08.2	+2.1	
	comp=Z,86nm,1.2s									
TUQ	Turquoise Moun	79.67	54	P		P		13 49 05.6	-0.8	
	baz=307									
ANTO	Ankara	79.68	312	*e*P		P		13 49 06.8	+0.6	
ANTO				pmax		pmax				
	comp=Z,260nm,1.4s									
ANTO	Ankara	79.68	312	*e*P		P		13 49 06.8	+0.6	
	comp=Z,260nm,1.4s									
ANTO				LR		LR				
	comp=Z,65nm,21.0s									
D25A	Fairfield	79.68	39	P		P		13 49 05.3	-0.8	
	baz=312,SNR=8.8									
STHS	Stebnicka Huta	79.69	325	*e*P		P		13 49 06.9	+0.8	
STHS				*e*				13 49 09.8		
BBRC	Big Bear Solar	79.70	55	P		P		13 49 06.8	+0.1	
	baz=306									
BR231	Keskin MP Arra	79.70	312	*e*P		P		13 49 04.5	-1.9	
UZH	Uzhgorod	79.73	324	*e*P		P		13 49 03.2	-3.0	
UZH				*i*				13 49 10.4		
UZH				*i*				13 49 13.0		
UZH				*i* S		S		13 59 00.0	-5.5	
UZH				MLR		MLR				
	comp=N,8µm,18.0s									
UZH				MLR		MLR				
	comp=E,16µm,18.0s									
UZH				MLR		MLR				
	comp=Z,10µm,18.0s									
ARCR	ARCALIA	79.76	321	⇑*i* P		P		13 49 07.1	+0.6	
HEC	Hector,Ludlow	79.76	55	P		P		13 49 08.2	+1.4	
	baz=306,SNR=14									
BMR	Baia Mare	79.79	322	⇑*i* P		P		13 49 08.8	+2.2	
BMR	Baia Mare	79.79	322	⇑P		P		13 49 08.8	+2.2	
OJC	Ojcow	79.80	326	*e*P		P		13 49 06.5	-0.1	
OJC				*e*PP		PP		13 52 10.4	+2.8	
OJC				*e*S		S		13 59 01.8	-4.5	
OJC				*e*SS		SS		14 04 16.6	+1.9	
OJC				LMZ		LR		14 24 34.3		
OJC	Ojcow	79.80	326	*e*P		P		13 49 06.5	-0.1	
OJC				*e*				13 52 10.5		
OJC				*e*S		S		13 59 01.8	-4.5	
OJC				*e*SS		SS		14 04 16.6	+1.9	
OJC				MLR		MLR				
	comp=Z,6µm,25.1s									
OJC	Ojcow	79.80	326	*e*P		P		13 49 07.0	+0.3	
	comp=Z,464nm,1.4s									
AKSY	AKSARAY - Alti	79.83	310	*i* P		P		13 49 07.9	+0.8	
C26A	Wahner Farm, P	79.84	37	P		P		13 49 08.0	+1.0	
	baz=313,SNR=13									
B27A	Peters Farms,	79.85	37	P		P		13 49 07.2	+0.2	
	baz=313									
MURC	Murrieta	79.91	56	P		P		13 49 08.3	+0.7	
	baz=306,SNR=8.3									
YAYL	Yayladag	79.92	307	*i* P		P		13 49 08.8	+1.1	
ISR	Istrita	79.92	319	⇑*i* P		P		13 49 08.4	+1.0	
ISR	Istrita	79.92	319	⇑P		P		13 49 08.4	+1.0	
RAR	Rarotonga	79.92	125	LR		LR		14 18 29.7		
	comp=Z,6µm,20.9s,baz=312,slow=31									
CRVS	Cervenica-Dubn	79.94	324	*e*P		P		13 49 07.3	-0.1	
CRVS				*e*S		S		13 59 03.9	-3.9	
A28A	Rude Farm, Bot	79.98	36	P		P		13 49 07.2	-0.5	
	baz=314,SNR=9.7									
MLR	Muntele Rosu	79.99	320	*e*P		P		13 49 07.7	-0.2	
MLR				pmax		pmax				
	comp=Z,138nm,1.3s									
MLR	Muntele Rosu	79.99	320	*e*P		P		13 49 07.7	-0.2	
	comp=Z,138nm,1.3s									
KKUL	Konya-Kulu	80.03	311	*i* P		P		13 49 09.0	+0.7	
E25A	Miller Ranch,	80.07	39	P		P		13 49 09.0	+0.8	
	baz=312,SNR=10									
SLNF	Slenfeh	80.10	307	*e*P		P		13 49 10.3	+1.5	
NIE	Niedzica	80.13	325	*e*P		P		13 49 08.6	+0.1	
NIE				*e*PP		PP		13 52 14.6	+4.2	
NIE				*e*S		S		13 59 11.5	+1.7	
NIE				*e*SS		SS		14 04 31.6	+12	
NIE				LMZ		LR		14 27 26.7		
NIE	Niedzica	80.13	325	*e*P		P		13 49 08.7	+0.2	
NIE				*e*				13 52 14.6		
NIE				*e*S		S		13 59 11.6	+1.7	
NIE				MLR		MLR				
	comp=Z,5µm,20.0s									
C27A	Sayler Ranch,	80.21	37	P		P		13 49 10.1	+1.2	
	baz=313,SNR=9.5									
D26A	Manning	80.21	38	P		P		13 49 09.7	+0.8	
	baz=313,SNR=10									
MSU	Marysvale	80.21	49	*e*P		P		13 49 11.8	+2.5	
MSU	Marysvale	80.21	49	*e*P		P		13 49 11.8	+2.5	
GMRC	Granite Mounta	80.23	54	P		P		13 49 10.6	+1.2	
	baz=307,SNR=18									
B28A	Dugan Ranch, T	80.26	36	P		P		13 49 10.1	+0.9	
	baz=314,SNR=9.0									
TMUT	Trail Mountain	80.32	48	*e*P		P		13 49 12.2	+2.1	
	comp=Z,46nm,1.2s									
KERG	Konya-Eregli	80.35	309	*i* P		P		13 49 09.7	-0.3	
109C	Camp Elliot, M	80.38	56

OKC ePP **sP** **13 49 27.8 -2.1**
OKC esP **pP** **13 49 32.7 +7.7**
OKC ePP **PP** **13 52 19.5 +3.5**
OKC eS **S** **13 59 15.6 -1.4**
OKC AMS AMS 14 28 50.0
comp=Z,10µm,15.5s
OKC Ostrava-Krasne 80.82 326 eP **P** **13 49 12.9 +0.8**
OKC e 13 49 27.8
OKC e 13 52 19.5
OKC eS **S** **13 59 15.6 -1.4**
OKC MLR MLR
comp=Z,10µm,15.5s
MONP2 Monument Peak 80.84 56 P **P** **13 49 12.9 +0.1**
baz=307,SNR=24
SRU San Rafael Swe 80.85 48 eP **P** **13 49 13.9 +1.2**
SRU pmax pmax
comp=Z,54nm,0.8s
SRU San Rafael Swe 80.85 48 eP **P** **13 49 13.9 +1.2**
comp=Z,54nm,0.8s
F26A Lodgepole 80.89 39 P **P** **13 49 13.2 +0.6**
baz=313,SNR=13
A30A Hoffart Farm, 80.89 35 P **P** **13 49 12.9 +0.4**
baz=315,SNR=10.0
KIZK Mersin 80.91 308 *i* P **P** **13 49 14.6 +1.8**
KSP Ksiaz 80.91 328 eP **P** **13 49 12.7 +0.1**
KSP ePP **PP** **13 52 18.5 +1.7**
KSP eS **S** **13 59 17.8 -0.1**
KSP LMZ LR 14 28 01.1
KSP Ksiaz 80.91 328 eP **P** **13 49 12.7 +0.1**
KSP e 13 52 18.6
KSP eS **S** **13 59 17.9 0.0**
KSP MLR MLR
comp=Z,9µm,20.9s
KDHN Kadinhani 80.92 311 *i* P **P** **13 49 13.0 0.0**
NEE2 Needles Airpor 80.93 54 P **P** **13 49 13.6 +0.6**
baz=307
K22A Casper 80.93 43 P **P** **13 49 13.2 +0.1**
baz=311
K22A Casper 80.93 43 eP **P** **13 49 14.4 +1.3**
comp=Z,100nm,1.3s
G25A Newell 80.94 40 P **P** **13 49 13.2 +0.3**
baz=312,SNR=8.9
IRM Iron Mountain 80.95 54 P **P** **13 49 14.3 +1.2**
baz=307,SNR=16
MMU Miners Mountai 80.95 49 eP **P** **13 49 14.6 +1.2**
URZ Urewera 80.95 152 LR LR 14 21 57.3
comp=Z,3µm,21.9s,baz=341,slow=33
URZ Urewera 80.95 152 eP **P** **13 49 16.8 +4.1**
comp=Z,68nm,1.2s
D28A Regan 81.02 37 P **P** **13 49 14.2 +0.9**
baz=314
BC3 Big Chuckawall 81.04 55 P **P** **13 49 14.6 +0.8**
baz=307,SNR=32
ULM Lac du Bonnet 81.05 33 P **P** **13 49 13.6 +0.3**
comp=Z,25nm,0.8s,baz=321,slow=5.9,SNR=24
ULM LR LR 14 26 19.4
comp=Z,1µm,21.0s,baz=328,slow=36
ULM Lac du Bonnet 81.05 33 eP **P** **13 49 12.7 -0.6**
E27A Carson 81.05 38 P **P** **13 49 14.4 +0.9**
baz=313,SNR=8.9
ESKT Eskisehir 81.07 313 *i* P **P** **13 49 13.2 -0.6**
MORC Moravsky Berou 81.14 327 eP **P** **13 49 14.2 +0.3**
MORC pmax pmax
comp=Z,774nm,1.4s
MORC Moravsky Berou 81.14 327 eP **P** **13 49 14.2 +0.3**
comp=Z,774nm,1.4s
ISK Istanbul-Kandi 81.14 315 P **P** **13 49 13.9 -0.1**
LOT Lotru 81.16 321‖ *i* P **P** **13 49 11.1 -3.1**
F27A Lemmon 81.20 39 P **P** **13 49 14.7 +0.4**
baz=313,SNR=17
B30A Myrvik Farm, E 81.22 35 P **P** **13 49 14.5 +0.2**
baz=315,SNR=10
H25A Fruitdale 81.23 41 P **P** **13 49 14.6 +0.1**
baz=312,SNR=8.5
SWSC Sam W. Stewart 81.23 56 P **P** **13 49 15.3 +0.6**
baz=307,SNR=7.6
KMER Konya-Meram 81.23 310 *i* P **P** **13 49 16.0 +1.3**
KRLC Kraliky 81.26 327 eP **P** **13 49 14.3 -0.2**
KRLC epP **sP** **13 49 30.3 -2.0**
KRLC ePP **PP** **13 52 19.0 -0.7**
KRLC Kraliky 81.26 327 eP **P** **13 49 14.3 -0.2**
KRLC e 13 49 30.3
KRLC e 13 52 19.0
DPC Dobruska-Polom 81.26 328 eP **P** **13 49 14.8 +0.3**
DPC epP **sP** **13 49 30.6 -1.7**
DPC esP **pP** **13 49 34.2 +6.8**
DPC ePP **PP** **13 52 19.3 -0.4**
DPC eS **S** **13 59 22.5 +0.9**
DPC eSS **SS** **14 04 31.8 -4.7**
DPC AMS AMS 14 29 10.0
comp=Z,7µm,18.4s
DPC Dobruska-Polom 81.26 328 eP **P** **13 49 14.8 +0.3**
DPC e 13 49 30.6
DPC e 13 52 19.3
DPC eS **S** **13 59 22.5 +0.9**
DPC eSS **SS** **14 04 31.8 -4.7**
DPC MLR MLR
comp=Z,7µm,18.4s
UPC Upice 81.28 328 ePP PP 13 52 20.7 +0.9
UPC eS **S** **13 59 21.7 0.0**
UPC AMS AMS 14 29 50.0
comp=Z,8µm,13.9s
G26A Maurine 81.30 40 P **P** **13 49 15.2 +0.4**
baz=313,SNR=12
RSSD Black Hills 81.33 41 P **P** **13 49 15.2 0.0**
baz=312
RSSD Black Hills 81.33 41 eP **P** **13 49 16.2 +1.0**
RSSD pmax pmax
comp=Z,62nm,1.3s
RSSD Black Hills 81.33 41 eP **P** **13 49 16.2 +1.0**
comp=Z,62nm,1.3s
PSZ Piszkesteto 81.38 324⇑ eP **P** **13 49 15.1 -0.1**
PSZ Piszkesteto 81.38 324 eP **P** **13 49 15.8 +0.6**
PSZ pmax pmax
comp=Z,339nm,1.4s
PSZ MLR MLR
comp=Z,6µm,20.0s
PSZ Piszkesteto 81.38 324 eP **P** **13 49 15.8 +0.6**
comp=Z,339nm,1.4s
PSZ LR LR
comp=Z,6µm,20.0s
E28A Huff 81.39 38 P **P** **13 49 14.5 -0.8**
baz=314
A31A Linda, St. Vin 81.41 34 P **P** **13 49 14.5 -0.7**
baz=316
U15A North Rim 81.42 51 eP **P** **13 49 17.9 +1.9**
SZH Strazhica 81.47 318 P **P** **13 49 15.8 +0.1**
SZH Strazhica 81.47 318 P **P** **13 49 15.8 +0.1**
VYHS Vyhne 81.47 325 eP **P** **13 49 15.7 +0.1**
VYHS e 13 49 18.3
VYHS ePP **PP** **13 52 19.0 -2.4**
VYHS eS **S** **13 59 24.3 +0.5**
VYHS eL L 14 29 09.8
BKZ Black Stump Fm 81.50 153 eP **P** **13 49 18.4 +2.8**
comp=Z,50nm,0.9s
BOLV Bolvadin 81.51 312 *i* P **P** **13 49 16.8 +0.6**
PDMCI Parker Dam,Lak 81.52 54 P **P** **13 49 15.5 -0.6**
baz=308,SNR=8.5
B31A Greenbush Farm 81.56 35 P **P** **13 49 15.3 -0.7**
baz=316
I25A Rochford 81.56 41 P **P** **13 49 16.6 +0.2**
baz=312,SNR=19
O20A White River Ci 81.57 46 P **P** **13 49 17.0 +0.5**
baz=310,SNR=32
O20A White River Ci 81.57 46 eP **P** **13 49 18.1 +1.5**
comp=Z,53nm,0.9s
G27A Dupree 81.59 39 P **P** **13 49 16.6 +0.3**
baz=313,SNR=17
ERMK Ermenek 81.59 309 *i* P **P** **13 49 16.5 -0.2**
D29A Pettibone, Tap 81.59 37 P **P** **13 49 14.5 -1.8**
baz=315
Y12C Blythe 81.60 54 P **P** **13 49 17.4 +0.9**
baz=308,SNR=13
Y12C Blythe 81.60 54 eP **P** **13 49 18.0 +1.5**
comp=Z,47nm,0.9s
MLA1 Latheron 81.65 342 eP **P** **13 49 18.1 +1.7**
H26A Fairpoint 81.67 40 P **P** **13 49 16.6 -0.2**
baz=313
C30A Mose, Pekin 81.68 36 P **P** **13 49 16.6 -0.1**
baz=315,SNR=12
ASF Jabal al Asfar 81.70 304 P **P** **13 49 17.6 +0.4**
comp=Z,57nm,0.9s,baz=357,slow=3.9,SNR=44
A32A Rocking H Ranc 81.74 34 P **P** **13 49 17.0 0.0**
baz=316,SNR=12
GLA Glamis 81.82 55 P **P** **13 49 18.8 +1.0**
baz=307,SNR=24
GLA Glamis 81.82 55 eP **P** **13 49 19.8 +2.0**
GLA pmax pmax
comp=Z,65nm,0.8s
GLA Glamis 81.82 55 eP **P** **13 49 19.8 +2.0**
comp=Z,65nm,0.8s
F28A McLaughlin 81.84 38 P **P** **13 49 18.0 +0.4**
baz=314,SNR=8.7
PVCC Panska Ves 81.88 329 eP **P** **13 49 18.0 +0.3**
PVCC ePP **PP** **13 52 27.5 +2.7**
PVCC eS **S** **13 59 29.1 +1.2**
PVCC AMS AMS 14 28 20.0
comp=Z,8µm,18.6s
PVCC Panska Ves 81.88 329 eP **P** **13 49 18.0 +0.3**
PVCC e 13 52 27.5
PVCC eS **S** **13 59 29.1 +1.2**
PVCC MLR MLR
comp=Z,8µm,18.6s
PHNC Paralimni 81.89 307 P **P** **13 49 17.1 -0.9**
BRG Berggiesshubel 81.89 329 eP **P** **13 49 17.3 -0.4**
comp=Z,80nm,1.1s
BRG *i* 13 49 29.2
comp=Z,91nm,1.2s
BRG ePP **PP** **13 52 22.0 -2.8**
comp=Z,43nm,1.4s
BRG PP PP 13 52 25.0 +0.2
BRG S **S** **13 59 29.0 +1.0**
comp=N,8µm,15.8s
comp=E,4µm,17.0s
comp=Z,7µm,15.1s
BRG Berggiesshubel 81.89 329 eP **P** **13 49 17.3 -0.4**
BRG *i* 13 49 29.2
BRG 13 52 25.0
BRG S **S** **13 59 29.0 +1.0**
BRG pmax pmax
comp=Z,80nm,1.1s
BRG MLR MLR
comp=N,8µm,15.8s
BRG MLR MLR
comp=E,4µm,17.0s
BRG MLR MLR
comp=Z,7µm,15.1s
E29A Napoleon 81.92 37 P **P** **13 49 17.5 -0.5**
baz=315
J25A Sunshine Ranch 81.94 42 P **P** **13 49 17.8 -0.6**
baz=312
CLL Collm 81.95 330 *i* P **P** **13 49 17.5 -0.5**
comp=Z,181nm,1.1s
CLL *i* Pmax 13 49 19.2
comp=Z,181nm,1.1s
CLL ePlp 13 49 21.0
comp=Z,800nm,24.6s
CLL ePmax 13 49 24.0
CLL *i* 13 49 29.4
CLL *e* 13 49 33.0
CLL *i* 13 49 37.0
CLL ePP **PP** **13 52 26.0 +0.7**
CLL ePPP PPP 13 54 18.0
CLL eS **S** **13 59 30.0 +1.4**
CLL *e* 13 59 52.0
CLL eSS **SS** **14 04 48.0 +1.4**
CLL *e* 14 05 48.0
CLL eSSS SSS 14 08 18.0
CLL *e* 14 09 36.0
CLL eSSSS 14 11 06.0
CLL LmH 14 27 00.0
comp=N,5µm,19.4s
CLL LmH 14 27 00.0
comp=E,8µm,21.4s
CLL Lmax 14 30 00.0
CLL LmV 14 32 00.0
comp=Z,9µm,18.6s
CLL Collm 81.95 330 *i* P **P** **13 49 17.5 -0.5**
CLL *i* 13 49 29.4
CLL *e* 13 49 33.0
CLL eS **S** **13 59 30.0 +1.4**
CLL pmax pmax
comp=Z,181nm,1.1s
CLL MLR MLR
comp=Z,9µm,18.6s
CLL Collm 81.95 330 eP **P** **13 49 17.2 -0.8**
comp=Z,258nm,1.2s
EDRB Edirne 81.96 316 P **P** **13 49 18.6 +0.3**
D30A Buchanan 81.97 36 P **P** **13 49 18.5 +0.3**
baz=315,SNR=15
C31A Landman Farms, 81.97 35 P **P** **13 49 17.8 -0.5**
baz=316,SNR=9.3
I26A New Underwood 82.02 41 P **P** **13 49 19.3 +0.6**
baz=313,SNR=7.6
H27A Howes 82.02 40 P **P** **13 49 18.1 -0.5**
baz=313,SNR=9.2
BAGO Egridir - ISPA 82.07 311 *i* P **P** **13 49 19.1 +0.1**
B32A Ashes, Strandq 82.09 34 P **P** **13 49 18.8 -0.1**
baz=317,SNR=21
BUD Budapest 82.10 324⇑ eP **P** **13 49 19.7 +0.8**
SMOL Smolenice 82.11 326 eP **P** **13 49 19.9 +1.0**
BZS Buzias 82.14 322‖ *i* P **P** **13 49 19.2 0.0**
BZS Buzias 82.14 322 ⇑ P **P** **13 49 19.2 0.0**
MVH1 Achvaich 82.20 342 eP **P** **13 49 19.5 +0.3**
MMAI Mount Meron Ar 82.20 305 P **P** **13 49 20.1 +0.3**
comp=Z,136nm,1.2s,baz=44,slow=6.2,SNR=44
MMAI LR LR 14 29 11.3
comp=Z,9µm,21.5s,baz=50,slow=38
A33A Warroad 82.22 33 P **P** **13 49 19.4 -0.1**
baz=317,SNR=18
GOPC GO Pecny, Ondr 82.25 328 eP **P** **13 49 19.7 0.0**
GOPC epP **pP** **13 49 32.2 -0.4**
GOPC esP **sP** **13 49 35.5 -2.0**
GOPC ePP **PP** **13 52 31.4 +3.6**
GOPC eS **S** **13 59 32.6 +0.8**
GOPC eSS **SS** **14 04 48.8 -2.4**
GOPC AMS AMS 14 29 00.0
comp=Z,6µm,18.5s
GOPC GO Pecny, Ondr 82.25 328 eP **P** **13 49 19.7 0.0**
GOPC *e* 13 49 32.2
GOPC *e* 13 52 31.4
GOPC eS **S** **13 59 32.6 +0.8**
GOPC eSS **SS** **14 04 48.8 -2.4**
GOPC MLR MLR
comp=Z,6µm,18.5s
PRA Prague 82.28 328 ePP PP 13 52 31.2 +3.2
PRA eS **S** **13 59 33.2 +1.2**
PRA eSS **SS** **14 04 51.5 -0.1**
PRA AMS AMS 14 30 20.0
comp=Z,9µm,14.6s
PRU Pruhonice 82.30 328 eP **P** **13 49 19.6 -0.3**
PRU epP **pP** **13 49 31.5 -1.4**
PRU esP **sP** **13 49 35.6 -2.2**
PRU ePP **PP** **13 52 29.7 +1.5**
PRU eS **S** **13 59 33.2 +1.0**
PRU eSS **SS** **14 04 47.7 -4.2**
PRU AMS AMS 14 30 20.0
comp=Z,8µm,14.1s
PRU Pruhonice 82.30 328 eP **P** **13 49 19.6 -0.3**
PRU *e* 13 49 31.5
PRU *e* 13 49 35.6
PRU *e* 13 52 29.7
PRU eS **S** **13 59 33.2 +1.0**
PRU MLR MLR
comp=Z,8µm,14.1s
G28A Parade 82.32 39 P **P** **13 49 19.0 -1.2**
baz=314,SNR=5.9
E30A Jud 82.32 37 P **P** **13 49 20.4 +0.3**
baz=315,SNR=5.9
F29A Eureka 82.34 38 P **P** **13 49 19.8 -0.5**
baz=315,SNR=9.7
PKS7 Kunszentmiklos 82.35 324‖ eP **P** **13 49 20.9 +0.7**
CSS Mathiatis 82.36 308 P **P** **13 49 22.0 +1.4**
CSS Mathiatis 82.36 308 P **P** **13 49 20.6 0.0**
CSS Mathiatis 82.36 308 eP **P** **13 49 20.9 +0.4**
comp=Z,23nm,1.0s
CSS LR LR
comp=Z,1µm,22.0s
J26A Sides Ranch, S 82.39 41 P **P** **13 49 18.7 -2.0**
baz=313
TREC Trest 82.41 327 epP **pP** **13 49 36.3 +2.8**
TREC ePP **PP** **13 52 33.0 +3.9**
TREC eS **S** **13 59 34.8 +1.4**
TREC eSS **SS** **14 04 51.9 -1.6**
TREC AMS AMS 14 30 20.0
comp=Z,6µm,14.0s
N23A Red Feather La 82.41 45 P **P** **13 49 20.0 -1.0**
baz=311
MME1 Meikle Cairn 82.42 341 eP **P** **13 49 21.4 +1.0**
I27A Quinn 82.42 40 P **P** **13 49 18.8 -2.0**
baz=313
PKSG 82.47 325‖ eP **P** **13 49 21.3 +0.5**
PKS6 Bocsa 82.47 323‖ eP **P** **13 49 22.9 +2.0**
AGMN Agassiz Nation 82.47 34 P **P** **13 49 19.4 -1.5**
baz=317,SNR=12
AGMN Agassiz Nation 82.47 34 eP **P** **13 49 20.0 -0.9**
comp=Z,63nm,1.4s
AGMN LR LR
comp=Z,4µm,22.0s
D31A Mcclaflin, Tow 82.51 36 P **P** **13 49 20.9 -0.1**
baz=316
C32A Crookston 82.51 35 P **P** **13 49 20.9 -0.1**
baz=317
H28A Mission Ridge 82.54 39 P **P** **13 49 22.2 +0.9**
baz=314,SNR=14
WUAZ Wupatki 82.57 51 P **P** **13 49 22.9 +1.1**
baz=309,SNR=13
WUAZ Wupatki 82.57 51 PFAKE 13 49 30.0 +8.2
WUAZ LR LR
comp=Z,4µm,22.0s
MPEP Malo Peshtene 82.59 319 P **P** **13 49 21.5 -0.1**
MPEP Malo Peshtene 82.59 319 P **P** **13 49 21.5 -0.1**
B33A Robert and Kas 82.62 34 P **P** **13 49 20.8 -0.8**
baz=317
DRUM Mains of Drumt 82.64 341 eP **P** **13 49 22.9 +1.4**
DRUM AMB AMB 13 49 25.0
comp=Z,75nm,1.4s
DRUM AMS AMS 14 24 09.9
comp=Z,5µm,26.4s
MDO Dochfour 82.67 342 eP **P** **13 49 22.5 +0.8**
113A Mohawk Valley, 82.70 55 eP **P** **13 49 23.6 +1.2**
ALFC Alefka 82.71 308 P **P** **13 49 24.1 +1.7**
PKS2 Kecel 82.72 323‖ eP **P** **13 49 24.0 +1.9**
PKST T``s 82.73 325‖ eP **P** **13 49 24.0 +1.8**
F30A Leola 82.74 37 P **P** **13 49 22.5 +0.1**
baz=315,SNR=7.0
G29A Hoven 82.74 38 P **P** **13 49 20.4 -1.9**
baz=315
SNZO South Karori 82.75 155 PFAKE 13 49 30.0 +8.0
SNZO LR LR
comp=Z,3µm,19.0s
E31A Nome 82.78 36 P **P** **13 49 22.4 -0.1**
baz=316,SNR=10
D32A Dogwood Acres, 82.78 36 P **P** **13 49 20.6 -1.9**
baz=316
KAC Achnashellach 82.85 342 eP **P** **13 49 22.6 0.0**
B34A Aery, Baudette 82.89 33 P **P** **13 49 23.0 0.0**
baz=318,SNR=13
C33A Trail 82.91 34 P **P** **13 49 23.4 +0.3**
baz=317,SNR=7.6
PGB Panagyurishte 82.91 318 P **P** **13 49 24.0 +0.7**
PGB Panagyurishte 82.91 318 P **P** **13 49 24.0 +0.7**
I28A Midland 82.93 40 P **P** **13 49 24.2 +0.9**
baz=314,SNR=10
SMCO Snowmass 82.94 46 eP **P** **13 49 27.4 +3.4**
comp=Z,76nm,1.3s
AKMC Akamas 82.97 308 P **P** **13 49 24.4 +0.7**
ALN Alexandroupoli 82.98 316 P **P** **13 49 24.0 +0.4**
H29A Onida 82.99 39 P **P** **13 49 24.0 +0.4**
baz=314,SNR=12
NKC Novy Kostel 83.00 329 eP **P** **13 49 23.5 -0.1**
NKC epP **sP** **13 49 39.3 -2.1**
NKC ePP **PP** **13 52 37.2 +3.3**
NKC AMS AMS 14 30 00.0
comp=Z,8µm,16.6s
NKC Novy Kostel 83.00 329 eP **P** **13 49 23.5 -0.1**
NKC *e* 13 49 39.3
NKC *e* 13 52 37.2
NKC MLR MLR
comp=Z,8µm,16.6s
J27A Elkhorn Farm, 83.00 41 P **P** **13 49 24.6 +0.8**
baz=314,SNR=5.4
KULA Kula-Manisa 83.02 313 P **P** **13 49 23.2 -0.8**
ENEZ Enez 83.02 316 P **P** **13 49 24.7 +0.9**
PPCY Paphos 83.05 308 P **P** **13 49 25.3 +1.2**
KPL Plockton 83.08 342 eP **P** **13 49 24.2 +0.4**
KPL AMB AMB 13 49 27.1
comp=Z,150nm,1.1s
KPL AMS AMS 14 25 50.6
comp=Z,3µm,23.6s
F31A Hecla 83.10 37 P **P** **13 49 24.7 +0.5**
baz=316,SNR=13
PKS9 Tamasi 83.10 324‖ eP **P** **13 49 25.3 +1.2**
SOP Sopron 83.11 326‖ eP **P** **13 49 24.5 +0.3**
KSB Sheil Bridge 83.14 342 eP **P** **13 49 25.2 +1.1**
E32A Haaten, Kindr 83.15 36 P **P** **13 49 23.6 -0.8**
baz=316
G30A Faulkton 83.17 38 P **P** **13 49 25.2 +0.6**
baz=315,SNR=20
RZN Rozhen 83.19 317 P **P** **13 49 26.0 +1.0**
RZN Rozhen 83.19 317 P **P** **13 49 26.0 +1.0**
PKSM Moragy 83.20 324⇑ eP **P** **13 49 24.0 -0.6**
CONA Conrad Observa 83.25 326 *i* P **P** **13 49 25.3 +0.3**
comp=Z,112nm,1.2s,SNR=66
J28A Allard Ranch, 83.29 40 P **P** **13 49 24.5 -0.8**
baz=314
MVCO Mesa Verde 83.29 49 P **P** **13 49 26.7 +1.1**
baz=310,SNR=36
MVCO Mesa Verde 83.29 49 PFAKE 13 49 40.0 +14
MVCO LR LR
comp=Z,2µm,21.0s
ISCO Idaho Springs 83.32 45 P **P** **13 49 26.9 +1.1**
baz=312,SNR=22
ISCO Idaho Springs 83.32 45 eP **P** **13 49 27.5 +1.7**
ISCO pmax pmax
comp=Z,64nm,1.2s
ISCO Idaho Springs 83.32 45 PFAKE 13 49 40.0 +14
ISCO LR LR
comp=Z,2µm,20.0s
D33A AnnSam, Waubun 83.33 35 P **P** **13 49 24.5 -0.8**
baz=317
KHC Kasperske Hory 83.36 328 eP **P** **13 49 25.4 -0.1**
KHC epP **sP** **13 49 41.2 -2.2**
KHC ePP **PP** **13 52 36.6 -0.3**
KHC eS **S** **13 59 44.7 +1.6**
KHC ex x 14 05 00.6
KHC AMS AMS 14 30 40.0
comp=Z,8µm,15.6s
KHC Kasperske Hory 83.36 328 eP **P** **13 49 25.4 -0.1**
KHC pmax pmax
comp=Z,49nm,1.1s
KHC Kasperske Hory 83.36 328 eP **P** **13 49 25.4 -0.1**
comp=Z,48nm,1.1s
I29A Vivian Onida 83.36 39 P **P** **13 49 25.8 +0.2**
baz=314
C34A RKJ Ranch, Bem 83.38 34 P **P** **13 49 25.6 0.0**
baz=318
B35A Bob, Littlefor 83.39 33 P **P** **13 49 26.0 +0.4**
baz=318,SNR=14
GEC2 GERESS Array S 83.52 328 eP **P** **13 49 26.2 -0.2**
GEC2 pmax pmax
comp=Z,72nm,1.1s
GEC2 GERESS Array S 83.52 328 eP **P** **13 49 26.1 -0.2**
comp=Z,72nm,1.1s
GERES GERESS Array B 83.52 328 P **P** **13 49 25.8 -0.6**
comp=Z,35nm,1.0s,baz=43,slow=6.0,SNR=54
GERES PP **PP** **13 52 40.2 +1.8**
comp=Z,8.1nm,1.0s,baz=44,slow=8.0,SNR=4.9
GERES PKKPbc **PKKPbc** **14 07 48.5 +4.5**
comp=Z,0.6nm,0.7s,baz=242,slow=2.9,SNR=3.7
GERES LR LR 14 30 49.9
comp=Z,7µm,18.3s,baz=46,slow=39
GEA0 GERESS Array S 83.53 328 eP **P** **13 49 25.8 -0.7**
EZN Ezine 83.53 315 P **P** **13 49 28.6 +2.1**
SMTH Samothraki Isl 83.55 316 P **P** **13 49 27.1 +0.5**
G31A Conde 83.57 37 P **P** **13 49 26.6 0.0**
baz=316
F32A Veblen 83.64 36 P **P** **13 49 26.0 -1.0**
baz=316
D34A Park Rapids 83.67 35 P **P** **13 49 26.5 -0.6**
baz=318,SNR=9.7
OXZ Oxford 83.67 157 eP **P** **13 49 27.5 +0.7**
E33A Westby DABS, E 83.72 35 P **P** **13 49 27.0 -0.4**
baz=317,SNR=13
RPZ Rata Peaks 83.72 158 LR LR 14 24 09.3
comp=Z,896nm,21.0s,baz=338,slow=34
RPZ Rata Peaks 83.72 158 eP **P** **13 49 29.5 +2.5**
comp=Z,96nm,1.3s
SUSD Miller 83.76 38 P **P** **13 49 27.2 -0.4**
baz=315
C35A Jirik Farms, M 83.77 34 P **P** **13 49 27.0 -0.6**
baz=318,SNR=15
KAVA Kavala 83.77 317 P **P** **13 49 29.0 +1.3**
J29A Okreek 83.78 40 P **P** **13 49 27.9 +0.1**
baz=314,SNR=6.7

MMB	Musomiste	83.80	318		P		P	13 49 28.5	+0.6	
MMB	Musomiste	83.80	318		P		P	13 49 28.5	+0.6	
214A	Organ Pipe Nat	83.84	55		P		P	13 49 29.4	+1.2	
	baz=308,SNR=39									
214A	Organ Pipe Nat	83.84	55	*eP*			P	13 49 28.1	-0.2	
	comp=Z,573nm,1.4s									
W18A	Petrified Fore	83.86	51		P		P	13 49 29.8	+1.3	
	baz=310,SNR=7.4									
W18A	Petrified Fore	83.86	51	*eP*			P	13 49 30.7	+2.2	
	comp=Z,73nm,1.2s									
I30A	Oacoma	83.89	39		P		P	13 49 28.9	+0.6	
	baz=315,SNR=6.3									
NVR	Nevrokopi	83.89	317		P		P	13 49 28.3	-0.1	
G32A	Webster	83.90	37		P		P	13 49 28.7	+0.3	
	baz=316									
ARSA	Arzberg	83.90	326	*i*	PcP		P	13 49 30.2	+1.9	
	SNR=27									
GRFO	Grafenberg	83.92	330	*eP*			P	13 49 28.4	+0.1	
GRFO					pmax		pmax			
	comp=Z,207nm,1.1s									
GRFO	Grafenberg	83.92	330	*eP*			P	13 49 28.4	+0.1	
	comp=Z,207nm,1.1s									
S22A	4UR Ranch, Cre	83.95	47		P		P	13 49 30.2	+1.1	
	baz=311,SNR=114									
S22A	4UR Ranch, Cre	83.95	47	*eP*			P	13 49 30.6	+1.5	
KKB	Krupnik	83.97	318		P		P	13 49 28.1	-0.6	
KKB	Krupnik	83.97	318		P		P	13 49 28.1	-0.6	
H31A	Wolsey	83.97	38		P		P	13 49 28.5	-0.2	
	baz=316									
FETY	Fethiye	83.98	311		P		P	13 49 29.1	+0.2	
MOA	Mollin	84.02	327	*i*	P		P	13 49 29.3	+0.4	
	comp=Z,116nm,1.2s,SNR=44									
F33A	5 Mile Ranch,	84.06	36		P		P	13 49 29.4	+0.3	
	baz=317,SNR=37									
X18A	Snowflake	84.09	51	*eP*			P	13 49 31.5	+1.7	
E34A	Wadena	84.10	35		P		P	13 49 28.9	-0.4	
	baz=318									
LIA	Limnos Island	84.14	316		P		P	13 49 30.6	+1.1	
PGBU	Glenifferbraes	84.14	341	*eP*			P	13 49 29.7	+0.4	
PGBU						AMB	AMB	13 49 32.6		
	comp=Z,137nm,1.5s									
PGBU						AMS	AMS	14 23 52.9		
	comp=Z,4µm,27.6s									
YER	Yerkesik	84.14	312		P		P	13 49 30.6	+0.8	
Q24A	Divide	84.14	46		P		P	13 49 30.6	+0.6	
	baz=312,SNR=41									
Q24A	Divide	84.14	46	*eP*			P	13 49 31.0	+1.0	
D35A	Remer	84.20	34		P		P	13 49 29.8	0.0	
	baz=318,SNR=6.5									
SRS	Serrai	84.20	317		P		P	13 49 29.0	-0.9	
ESK	Eskdalemuir	84.23	340	*eP*			P	13 49 29.5	-0.2	
ESK						AMS	AMS	14 24 56.3		
	comp=Z,5µm,26.6s									
ESK	Eskdalemuir	84.23	340	*i*	P		P	13 49 31.9	+2.1	
ESK	Eskdalemuir	84.23	340	*eP*			P	13 49 29.6	-0.1	
	comp=Z,85nm,1.4s									
ESK						LR	LR			
	comp=Z,6µm,20.0s									
C36A	Pine Crest Far	84.24	33		P		P	13 49 29.7	-0.3	
	baz=319,SNR=18									
I31A	Royce, Wessing	84.26	38		P		P	13 49 29.2	-1.0	
	baz=316									
J30A	Dallas	84.27	39		P		P	13 49 29.8	-0.4	
	baz=315									
PMOR	Pomariorio Ree	84.27	113	*eT*			T	15 21 56.5		
	comp=Z,35nm,0.2s									
E35A	Pequot Lakes	84.43	35		P		P	13 49 30.1	-0.8	
	baz=318									
G33A	Ortonville	84.46	37		P		P	13 49 31.0	-0.1	
	baz=317,SNR=21									
H32A	Carlson Farm,	84.47	38		P		P	13 49 30.2	-1.0	
	baz=316									
OUR	Ouranopolis	84.52	317		P		P	13 49 31.0	-0.5	
D36A	Goodland	84.53	34		P		P	13 49 30.9	-0.5	
	baz=319,SNR=9.6									
SOH	Sokhos	84.53	317		P		P	13 49 31.9	+0.2	
EIL	Elat	84.55	303		P		P	13 49 31.7	-0.1	
	comp=Z,240nm,1.1s,baz=27,slow=2.2,SNR=51									
C37A	Embarrass	84.55	33		P		P	13 49 31.5	0.0	
	baz=320,SNR=13									
PERS	Pernice	84.55	326	*eP*			P	13 49 31.1	-0.5	
	comp=Z,338nm,1.2s									
PERS				*eS*			S	13 59 52.4	-2.8	
KNT	Kendrikon	84.55	318		P		P	13 49 31.0	-0.7	
SOKA	Soboth	84.56	326	*i*	P		P	13 49 30.8	-0.8	
	SNR=115									
OGNE	Ogallala	84.57	42		P		P	13 49 32.2	+0.3	
	baz=314,SNR=12									
OGNE	Ogallala	84.57	42	*eP*			P	13 49 33.1	+1.2	
	comp=Z,149nm,1.3s									
OGNE						LR	LR			
	comp=Z,3µm,20.0s									
F34A	Alexandria	84.59	36		P		P	13 49 31.8	0.0	
	baz=318,SNR=8.3									
VAY	Valandovo	84.62	318		P		P	13 49 31.5	-0.4	
VAY	Valandovo	84.62	318	*eP*			P	13 49 31.6	-0.4	
CHOS	Chios island	84.64	314		P		P	13 49 29.6	-2.7	
PPT	Papeete	84.64	116		LR		LR	14 20 30.1		
	comp=Z,8µm,21.5s,baz=305,slow=31									
PPT2	Papeete2	84.66	116	*eS*			S	13 59 57.1	+0.2	
	comp=Z,12µm,34.5s									
PPT2	Papeete2	84.66	116	*eLR*			LR	14 16 12.5		
	comp=Z,18µm,22.8s,baz=309									
PPT2	Papeete2	84.66	116	*eT*			T	15 22 27.0		
	comp=Z,12nm,0.3s									
K30A	Basset	84.67	40		P		P	13 49 32.8	+0.5	
	baz=315,SNR=20									
EYMN	Ely	84.68	32		P		P	13 49 32.3	+0.1	
	baz=320,SNR=20									
EYMN	Ely	84.68	32		PFAKE			13 49 40.0	+7.8	
EYMN					LR		LR			
	comp=Z,4µm,22.0s									
J31A	Geddes	84.68	39		P		P	13 49 32.5	+0.2	
	baz=316									
H33A	Prehn Over Nor	84.69	37		P		P	13 49 32.5	+0.2	
	baz=317,SNR=24									
PAE	Paea	84.70	116	*eT*			T	15 22 29.8		
	comp=Z,2.2nm,0.3s									
SDCO	Great Sand Dun	84.75	47		P		P	13 49 34.3	+1.2	
	baz=312,SNR=42									
SDCO	Great Sand Dun	84.75	47	*eP*			P	13 49 34.5	+1.4	
	comp=Z,105nm,1.3s									
SDCO						LR	LR			
	comp=Z,2µm,20.0s									
BBO1	Bothel	84.75	340	*eP*			P	13 49 32.7	+0.3	
BODT	Bodrum	84.78	312		P		P	13 49 35.5	+2.6	
SKO	Skopje	84.78	319		P		P	13 49 33.0	+0.2	
SKO	Skopje	84.78	319	*i*	P		P	13 49 33.2	+0.4	
PLG	Polygyros	84.79	317		P		P	13 49 32.0	-0.9	
I32A	Karley and Nic	84.80	38		P		P	13 49 32.3	-0.6	
	baz=316									
TIAR	Tiarei	84.81	116	*eT*			T	15 22 37.5		
	comp=Z,6.1nm,0.2s									
G34A	Benson	84.81	36		P		P	13 49 33.8	+0.8	
	baz=317									
HORT	Hortiatis	84.83	317		P		P	13 49 33.0	-0.2	
GMK	Mull of Kintyr	84.85	341	*eP*			P	13 49 34.2	+1.4	
F35A	Swanville	84.87	35		P		P	13 49 33.3	+0.1	
	baz=318,SNR=7.1									
D37A	Cotton	84.87	33		P		P	13 49 32.5	-0.7	
	baz=319									
THE	Thessaloniki	84.88	317		P		P	13 49 32.5	-0.8	
PLE	Pljevlja	84.89	321	⇑*i*	P		P	13 49 33.2	-0.3	
OBKA	Obir	84.90	326	*i*	P		P	13 49 32.8	-0.6	
	comp=Z,38nm,1.3s,SNR=16									
C38A	Sawbill Land.	84.95	32		P		P	13 49 32.9	-0.7	
	baz=320									
IVA	Berane	84.95	321	⇑*i*	P		P	13 49 33.7	-0.1	
TUC	Tucson	84.96	54		P		P	13 49 34.2	+0.2	
	baz=309									
TUC	Tucson	84.96	54	*eP*			P	13 49 35.5	+1.5	
TUC						pmax	pmax			
	comp=Z,60nm,1.3s									
TUC						MLR	MLR			
	comp=Z,7µm,22.0s									
TUC	Tucson	84.96	54	*eP*			P	13 49 35.5	+1.5	
	comp=Z,60nm,1.3s									
TUC						LR	LR			
	comp=Z,7µm,22.0s									
BLY	Banja Luka	84.96	323	⇑*i*	P		P	13 49 34.1	+0.4	
PAIG	Paliouri	84.97	316		P		P	13 49 33.0	-0.8	
E36A	McGregor	84.98	34		P		P	13 49 33.6	-0.1	
	baz=319,SNR=15									
KBA	Koelnbreinsper	85.02	327	*i*	P		P	13 49 33.0	-1.1	
	comp=Z,52nm,1.2s,SNR=27									
GAL1	Galloway	85.04	341	*eP*			P	13 49 34.0	+0.1	
GAL1						AMB	AMB	13 49 36.8		
	comp=Z,79nm,1.2s									
J32A	Parkston	85.08	39		P		P	13 49 34.3	0.0	
	baz=316									
PVY	Plav	85.12	320	⇑*i*	P		P	13 49 33.2	-1.5	
I33A	Coleman	85.12	38		P		P	13 49 34.9	+0.4	
	baz=317,SNR=7.0									
K31A	O'Neill	85.15	40		P		P	13 49 35.0	+0.4	
	baz=316,SNR=9.3									
H34A	Spellman Lake,	85.17	37		P		P	13 49 34.1	-0.6	
	baz=317									
BEBN	Eben Emael	85.20	333		P		P	13 49 35.4	+0.7	
	comp=Z,40nm,1.2s									
MYKA	Terra Mystica	85.22	326	*i*	P		P	13 49 33.1	-1.9	
	SNR=25									
UPM	Unac-Piva	85.22	321	*eP*			P	13 49 34.9	-0.4	
MEM	Membach	85.23	333		P		P	13 49 34.2	-0.6	
	comp=Z,72nm,1.2s									
LJU	Ljubljana	85.26	326	*eP*			P	13 49 34.9	-0.2	
LJU				*ePP*			PP	13 52 55.7	+3.2	
BOJS	Bojanci	85.33	325	*eP*			P	13 49 34.8	-0.7	
E37A	Wrenshall	85.33	34		P		P	13 49 35.0	-0.4	
	baz=320									
F36A	Milaca	85.35	35		P		P	13 49 35.3	-0.3	
	baz=319,SNR=9.0									
AOS	Alonnisos	85.37	316		P		P	13 49 37.9	+2.1	
C39A	Grand Marais	85.37	32		P		P	13 49 35.4	-0.3	
	baz=321									
G35A	Watkins	85.38	36		P		P	13 49 36.2	+0.5	
	baz=318,SNR=6.5									
L31A	Butterfield Fa	85.42	40		P		P	13 49 36.4	+0.3	
	baz=316,SNR=14									
ECSD	EROS Data Cent	85.44	38		P		P	13 49 36.3	+0.2	
	baz=317,SNR=45									
ECSD	EROS Data Cent	85.44	38	*eP*			P	13 49 35.5	-0.6	
	comp=Z,44nm,0.8s									
ECSD						LR	LR			
	comp=Z,3µm,22.0s									
NKY	Niksic	85.46	321	⇑*i*	P		P	13 49 35.3	-1.0	
STU	Stuttgart	85.47	330	*eP*			P	13 49 35.7	-0.4	
STU						pmax	pmax			
	comp=Z,194nm,1.0s									
STU	Stuttgart	85.47	330	*eP*			P	13 49 35.7	-0.4	
	comp=Z,194nm,1.0s									
CADS	Cadrg	85.48	326	*eP*			P	13 49 35.7	-0.6	
BIA	Bitola	85.51	319	*eP*			P	13 49 37.2	+0.7	
LIT	Litokhoron	85.51	317		P		P	13 49 29.6	-6.9	
NKME	Niksic	85.51	321	⇑*i*	P		P	13 49 36.1	-0.4	
K32A	Verdigre	85.53	39		P		P	13 49 36.3	-0.2	
	baz=316									
KSCO	Kaye Shedlock'	85.56	44		P		P	13 49 37.3	+0.4	
	baz=313,SNR=7.4									
KSCO	Kaye Shedlock'	85.56	44	*eP*			P	13 49 39.1	+2.1	
	comp=Z,173nm,1.2s									
J33A	Davis	85.56	38		P		P	13 49 36.9	+0.2	
	baz=317									
JAVS	Javornik	85.59	326	*i*	P		P	13 49 35.4	-1.5	
	comp=Z,328nm,1.3s									
JAVS				*ePP*			PP	13 52 56.6	+1.3	
JAVS				*eS*			S	13 59 58.5	-7.1	
I34A	Hadley	85.59	37		P		P	13 49 36.6	-0.3	
	baz=317									
PDG	Podgorica	85.60	321		P		P	13 49 36.9	0.0	
TTG	Podgorica	85.60	321	⇑*i*	P		P	13 49 36.6	-0.3	
H35A	Sunnyside Ranc	85.60	36		P		P	13 49 37.7	+0.9	
	baz=318,SNR=17									
SKIA	Skiathos	85.61	316		P		P	13 49 35.9	-1.1	
WTTA	Wattenberg	85.62	328	*i*	PcP		P	13 49 37.1	-0.1	
	comp=Z,35nm,1.4s,SNR=6.2									
XOR	Xorichti	85.62	316		P		P	13 49 36.4	-0.7	
BRY	Bratogost	85.63	321	⇑*i*	P		P	13 49 37.0	-0.2	
ABTA	Abtlersbach	85.64	327	*i*	P		P	13 49 35.8	-1.3	
	comp=Z,72nm,1.2s,SNR=23									
FNA	Florina	85.64	318		P		P	13 49 36.9	-0.3	
BCLA	Clavier	85.65	333		P		P	13 49 38.1	+1.1	
WIM	Isle of Man	85.67	340	*eP*			P	13 49 36.9	-0.1	
CEME	Cevo	85.69	321	⇑*i*	P		P	13 49 36.6	-0.8	
G36A	St. Michael	85.72	35		P		P	13 49 38.3	+0.9	
	baz=319									
OHR	Ohrid	85.72	319	*i*	P		P	13 49 37.8	+0.2	
KZN	Kozani	85.76	318		P		P	13 49 35.9	-1.9	
MOTA	Moosalm	85.79	328	*i*	PcP		P	13 49 38.8	+0.9	
	comp=Z,30nm,1.0s,SNR=12									
T25A	Trinidad	85.80	47		P		P	13 49 39.1	+0.8	
	baz=312,SNR=32									
T25A	Trinidad	85.80	47	*eP*			P	13 49 40.1	+1.8	
	comp=Z,146nm,1.1s									
DRME	Dracevica, Mon	85.81	320	⇑*i*	P		P	13 49 37.5	-0.4	
UDBI	Udbina	85.81	324		P		P	13 49 35.9	-2.1	
RETA	Reutte	85.83	328	*i*	P		P	13 49 37.2	-0.8	
	SNR=56									
APE	Apeiranthos	85.83	313		P		P	13 49 35.9	-2.3	
LANF	Langenberg	85.86	331	*eP*			P	13 49 38.7	+0.6	
TRI	Trieste	85.86	326	*eP*			P	13 49 35.5	-2.6	
TRI						pmax	pmax			
	comp=Z,115nm,1.3s									
TRI	Trieste	85.86	326	*eP*			P	13 49 35.5	-2.6	
	comp=Z,115nm,1.3s									
KARP	Karpathos	85.87	311		P		P	13 49 37.9	-0.5	
KARP	Karpathos	85.87	311	*eP*			P	13 49 40.3	+1.9	
	comp=Z,83nm,1.2s									
BUM	Brajici-Budva	85.88	321	⇑*i*	P		P	13 49 37.6	-0.8	
CWF	Charnwood Fore	85.92	338	*eP*			P	13 49 37.7	-0.6	
CWF						AMB	AMB	13 49 41.0		
	comp=Z,130nm,1.1s									
CWF						AMS	AMS	14 28 02.8		
	comp=Z,5µm,26.9s									
CWF	Charnwood Fore	85.92	338	*eP*			P	13 49 38.1	-0.2	
GMM	Mts of Mourne	85.93	341	*eP*			P	13 49 38.4	+0.2	
ULC	Ulcinj	85.94	320	⇑*i*	P		P	13 49 38.3	-0.3	
M31A	Lambtecht Ranc	85.94	41		P		P	13 49 39.0	+0.3	
	baz=316,SNR=8.6									
SNF	Seneffe	85.95	334		P		P	13 49 38.4	0.0	
WLF	Walferdange	85.95	332		P		P	13 49 40.3	+1.8	
	comp=Z,91nm,1.5s									
WLF	Walferdange	85.95	332	*eP*			P	13 49 38.6	+0.1	
WLF						pmax	pmax			
	comp=Z,121nm,1.1s									
WLF						MLR	MLR			
	comp=Z,6µm,20.0s									
WLF	Walferdange	85.95	332	*eP*			P	13 49 38.6	+0.1	
	comp=Z,121nm,1.1s									
WLF						LR	LR			
	comp=Z,6µm,20.0s									
MEH	Mehetia	85.95	115	*eT*			T	15 24 02.8		
	comp=Z,61nm,0.3s									
LAZ	Ladron	85.95	50	*eP*			P	13 49 41.0	+2.0	
HCY	Herceg Novi	85.98	321	⇑*i*	P		P	13 49 38.5	-0.3	
L32A	Elgin	85.98	40		P		P	13 49 39.2	+0.3	
	baz=316									
ANMO	Albuquerque	86.02	49		P		P	13 49 40.2	+0.8	
	baz=312									
ANMO	Albuquerque	86.02	49	*ceP*			P	13 49 40.7	+1.3	
ANMO						pmax	pmax			
	comp=Z,67nm,1.2s									
ANMO	Albuquerque	86.02	49	*eP*			P	13 49 41.3	+2.0	
	comp=Z,57nm,1.1s									
ANMO						LR	LR			
	comp=Z,3µm,22.0s									
TIR	Tirane	86.05	320		PFAKE			13 49 50.0	+11	
TIR						LR	LR			
	comp=Z,19µm,19.0s									
K33A	Hardington	86.06	39		P		P	13 49 39.9	+0.7	
	baz=317									
NEST	Nestorio	86.08	318		P		P	13 49 38.4	-1.0	
J34A	George	86.09	38		P		P	13 49 38.8	-0.5	
	baz=317									
H36A	Jessenland, He	86.12	36		P		P	13 49 40.3	+0.9	
	baz=319,SNR=13									
I35A	Creekview Farm	86.15	37		P		P	13 49 39.7	+0.1	
	baz=318									
SPMN	Marine on St.	86.17	35		P		P	13 49 39.8	+0.1	
	baz=319									
SPMN	Marine on St.	86.17	35	*eP*			P	13 49 40.8	+1.2	
BFO	Black Forest	86.17	330	*i*	P		P	13 49 39.2	-0.5	
BFO	Black Forest	86.17	330	*eP*			P	13 49 39.2	-0.5	
BFO						LR	LR			
	comp=Z,5µm,20.0s									
DOU	Dourbes	86.17	333		P		P	13 49 39.8	+0.2	
	comp=Z,42nm,1.5s									
FETA	Feichten	86.20	328	*i*	PcP		P	13 49 39.8	-0.2	
	comp=Z,52nm,1.1s,SNR=23									
NVLJ	Novalja	86.21	324		P		P	13 49 39.9	+0.1	
KPRO	Kipourio	86.23	318		P		P	13 49 41.3	+1.1	
WME	Myndd Eilian	86.23	340	*eP*			P	13 49 41.0	+1.2	
WPM1	Penmaenmawr	86.24	340	*eP*			P	13 49 41.2	+1.3	
L33A	Hoskins	86.24	39		P		P	13 49 40.2	+0.1	
	baz=316									
Y22D	IRIS PASSCAL I	86.30	50		P		P	13 49 41.8	+1.1	
	baz=311									
N31A	Bailey Ranch,	86.32	41		P		P	13 49 40.5	-0.1	
	baz=316									
LPM	Los Pinos Moun	86.33	50	*eP*			P	13 49 42.3	+1.4	
BGNE	Belgrade	86.33	40		P		P	13 49 41.0	+0.5	
	baz=316,SNR=15									
BGNE	Belgrade	86.33	40	*eP*			P	13 49 41.4	+0.8	
	comp=Z,229nm,1.1s									
AGG	Agios Georgios	86.34	317	*eP*			P	13 49 42.2	+1.5	
AGG						pmax	pmax			
	comp=Z,94nm,1.0s									
AGG	Agios Georgios	86.34	317	*eP*			P	13 49 42.2	+1.5	
	comp=Z,94nm,1.0s									
WLF1	Llynfaes	86.35	340	*eP*			P	13 49 40.6	+0.2	
WLF1						AMB	AMB	13 49 43.3		
	comp=Z,126nm,1.3s									
WLF1						AMS	AMS	14 31 42.6		
	comp=Z,5µm,19.4s									
DAVA	Damuels	86.36	329	*i*	P		P	13 49 40.1	-0.7	
	SNR=51									
FOEL	Foel Wylfa	86.36	339	*eP*			P	13 49 40.2	-0.3	
FOEL						AMB	AMB	13 49 43.6		
	comp=Z,189nm,1.2s									
FOEL						AMS	AMS	14 26 21.8		
	comp=Z,5µm,28.7s									
J35A	Milford	86.41	37		P		P	13 49 40.8	-0.1	
	baz=318									
YLL	Llanberis	86.42	340	*eP*			P	13 49 40.9	+0.2	
BNM	Barren Site	86.43	50	*eP*			P	13 49 42.9	+1.4	
K34A	Le Mars	86.46	38		P		P	13 49 41.3	+0.1	
	baz=317,SNR=13									
I36A	Fitzsimmons Fa	86.50	36		P		P	13 49 41.6	+0.3	
	baz=318									
TAOE	Nuku Hiva Isla	86.52	103	*eS*			S	14 00 12.4	-3.1	
	comp=Z,5µm,26.1s									
TAOE	Nuku Hiva Isla	86.52	103	*eLR*			LR	14 17 12.5		
	comp=Z,21µm,25.0s,baz=312									
DAMY	Dhamar	86.54	285	*eP*			P	13 49 44.1	+1.8	
	comp=Z,94nm,1.1s									
HLM1	Long Mynd	86.59	339	*eP*			P	13 49 41.2	-0.4	
HLM1						AMB	AMB	13 49 45.1		
	comp=Z,69nm,1.4s									
HLM1						AMS	AMS	14 27 11.2		
	comp=Z,7µm,27.7s									
H37A	Dierke Farm, C	86.60	35		P		P	13 49 42.2	+0.5	
	baz=319,SNR=9.8									
O31A	Woolen Ranch,	86.60	42		P		P	13 49 42.1	+0.2	
	baz=315,SNR=6.5									
YRE	Yr Eifl	86.63	340	*eP*			P	13 49 41.3	-0.4	
SKP1	Kophill	86.65	337	*eP*			P	13 49 42.5	+0.7	
M33A	Taylor Creek F	86.71	39		P		P	13 49 42.0	-0.4	
	baz=317,SNR=7.2									
FUORN	Ofenpass-Fuorn	86.72	328	*eP*			P	13 49 42.3	-0.3	
	comp=Z,136nm,1.0s									
N32A	Stulken Farm,	86.72	41		P		P	13 49 42.0	-0.5	
	baz=316									
JAN	Janina	86.72	318		P		P	13 49 43.5	+1.0	
ECH	Echery	86.73	331	*eP*			P	13 49 41.3	-1.1	
121A	Cookes Peak, D	86.76	52		P		P	13 49 44.4	+1.4	
	baz=311,SNR=19									
121A	Cookes Peak, D	86.76	52	*eP*			P	13 49 42.6	-0.5	
	comp=Z,88nm,1.3s									
I37A	Lemond, Waseca	86.80	36		P		P	13 49 43.2	+0.5	
	baz=319,SNR=43									
L34A	Svendsen Farm,	86.85	39		P		P	13 49 43.3	+0.2	
	baz=317,SNR=11									
J36A	Seneca 1, Swea	86.86	37		P		P	13 49 43.3	+0.2	
	baz=318,SNR=11									
SCHQ	Schefferville	86.86	15		P		P	13 49 42.7	-0.2	
	comp=Z,56nm,1.1s,baz=353,slow=5.8,SNR=14									
SCHQ						LR	LR	14 30 17.4		
	comp=Z,4µm,21.3s,baz=337,slow=37									
SCHQ	Schefferville	86.86	15	*eP*			P	13 49 43.0	+0.2	
K35A	Storm Lake	86.87	38		P		P	13 49 42.9	-0.3	
	baz=318									
ANX	Ano Chora	86.87	316		P		P	13 49 43.3	-0.1	
HSIG		86.92	56	*eP*			P	13 49 43.8	+0.1	
DSB	Dublin	86.93	341	*eP*			P	13 49 43.0	-0.2	
	comp=Z,40nm,0.9s									
DSL	Palaion Diasel	86.95	317		P		P	13 49 42.3	-1.4	
STRD	Stroud	87.02	338	*eP*			P	13 49 43.2	-0.5	
STRD						AMB	AMB	13 49 46.7		
	comp=Z,364nm,1.2s									
STRD						AMS	AMS	14 28 46.5		
	comp=Z,6µm,25.7s									
MOF	Molkenrain	87.03	331	*eP*			P	13 49 43.6	-0.4	
M34A	Aspy Farms, Fr	87.08	39		P		P	13 49 44.1	-0.1	
	baz=317,SNR=7.3									
MCH1	Michaelchurch	87.08	338	*eP*			P	13 49 43.8	-0.2	
MCH1						AMB	AMB	13 49 47.4		
	comp=Z,122nm,2.5s									
MCH1						A

O34A **Beatrice** 87.98 40 P P 13 49 48.3 -0.3
baz=317,SNR=11
P33A **Williams Farm,** 87.99 41 P P 13 49 48.4 -0.3
baz=316
M36A **Felix, Anita** 88.02 38 P P 13 49 48.8 +0.1
baz=318,SNR=16
N35A **Tabor** 88.03 39 P P 13 49 49.4 +0.6
baz=318,SNR=11
L37A **Phoenix Point,** 88.04 37 P P 13 49 49.0 +0.2
baz=319,SNR=12
K38A **Parkersburg** 88.13 36 P P 13 49 49.1 -0.1
baz=319
R32A **Long Quarter,** 88.16 42 P P 13 49 49.2 -0.3
baz=316
SENIN **Lac Senin/Sane** 88.17 330 eP P 13 49 50.3 +0.7
Q33A **Connelly Farm,** 88.23 42 P P 13 49 50.0 +0.2
baz=316,SNR=12
O35A **Humboldt** 88.33 40 P P 13 49 49.8 -0.4
baz=317,SNR=11
P34A **Walnut Farm, R** 88.37 41 P P 13 49 50.3 -0.2
baz=317,SNR=34
N36A **Muff Farm, Cla** 88.41 39 P P 13 49 50.9 +0.3
baz=318
L38A **Oak Wood Farm,** 88.42 37 P P 13 49 50.9 +0.3
baz=319,SNR=8.6
M37A **Trindle Farm,** 88.43 38 P P 13 49 51.4 +0.7
baz=319,SNR=8.4
SCIA **State Center** 88.47 37 PFAKE 13 50 00.0 +9.2
SCIA LR LR
comp=Z,4µm,22.0s
S32A **Newby Ranch, P** 88.55 43 P P 13 49 51.9 +0.6
baz=316,SNR=9.4
AQU **L'Aquila** 88.58 324 eP P 13 49 52.1 +0.7
AQU MLR MLR
comp=Z,13µm,19.0s
AQU **L'Aquila** 88.58 324 eP P 13 49 52.1 +0.7
AQU LR LR
comp=Z,13µm,19.0s
VLC **Villacollemand** 88.59 327 PFAKE 13 50 00.0 +8.6
VLC LR LR
comp=Z,3µm,19.0s
R33A **Olander Ranch,** 88.64 42 P P 13 49 52.3 +0.5
baz=316
DYA **Yadsworthy** 88.74 338 eP P 13 49 51.2 -0.7
DYA AMB AMB 13 49 55.3
comp=Z,87nm,1.4s
DYA AMS AMS 14 28 13.6
comp=Z,5µm,28.4s
DYA **Yadsworthy** 88.74 338 eP P 13 49 52.7 +0.8
Q34A **Chapman** 88.77 41 P P 13 49 52.6 +0.3
baz=317,SNR=15
KSU1 **Kansas State U** 88.81 41 P P 13 49 52.5 0.0
baz=317,SNR=7.6
KSU1 **Kansas State U** 88.81 41 eP P 13 49 54.0 +1.5
comp=Z,78nm,0.8s
KSU1 LR LR
comp=Z,2µm,20.0s
P35A **Duane Minner,** 88.81 40 P P 13 49 52.4 -0.1
baz=317
N37A **Lee Faris, Mou** 88.84 38 P P 13 49 52.8 +0.2
baz=318,SNR=15
MNTX **Cornudas Mount** 88.84 51 P P 13 49 53.0 +0.2
baz=312
MNTX **Cornudas Mount** 88.84 51 eP P 13 49 53.6 +0.8
MNTX LR LR
comp=Z,3µm,22.0s
M38A **Pleasantville** 88.85 37 P P 13 49 52.9 +0.3
baz=319,SNR=30
O36A **Bolckow** 88.92 39 P P 13 49 53.2 +0.2
baz=318,SNR=7.3
MSTX **Muleshoe** 88.92 48 P P 13 49 53.8 +0.5
baz=314,SNR=7.7
MSTX **Muleshoe** 88.92 48 eP P 13 49 54.5 +1.2
T32A **Huddler Ranch,** 88.93 43 P P 13 49 53.6 +0.5
baz=316,SNR=17
AMTX **Amarillo** 88.95 47 P P 13 49 53.0 -0.3
baz=314
AMTX **Amarillo** 88.95 47 eP P 13 49 55.1 +1.8
comp=Z,116nm,1.2s
R34A **Isabella, Hill** 89.05 42 P P 13 49 53.7 +0.1
baz=317,SNR=9.8
JFWS **Jewell Farm** 89.12 35 eP P 13 49 54.5 +0.7
JFWS pmax pmax
comp=Z,34nm,1.0s
JFWS MLR MLR
comp=Z,7µm,22.0s
JFWS **Jewell Farm** 89.12 35 eP P 13 49 54.5 +0.7
comp=Z,34nm,1.0s
JFWS LR LR
comp=Z,7µm,22.0s
S33A **Kaszmaul Farm,** 89.15 43 P P 13 49 54.0 -0.2
baz=316,SNR=10
CUC **Castrocucco** 89.15 321 eP P 13 49 52.3 -1.8
CUC LR LR
comp=Z,5µm,20.0s
P36A **Good Intent, A** 89.17 40 P P 13 49 54.6 +0.5
baz=318,SNR=6.3
TIP **Timpagrande** 89.26 320 P P 13 49 54.1 -0.6
TIP **Timpagrande** 89.26 320 eP P 13 49 54.2 -0.5
TIP LR LR
comp=Z,8µm,20.0s
JSA **Saint Aubin** 89.28 337 eP P 13 49 54.0 -0.4
JSA AMB AMB 13 49 57.2
comp=Z,95nm,1.2s
N38A **Joes South For** 89.30 38 P P 13 49 55.6 +0.8
baz=319,SNR=11
O37A **Wolven Farm, M** 89.31 39 P P 13 49 55.3 +0.5
baz=319,SNR=7.5
T33A **Patterson Ranc** 89.38 43 P P 13 49 55.7 +0.5
baz=316
U32A **Winter Ranch,** 89.45 44 P P 13 49 55.9 +0.3
baz=316
BNI **Bardonecchia** 89.48 329 PFAKE 13 50 10.0 +14
BNI LR LR
comp=Z,6µm,19.0s
Q36A **Arnold C. Orve** 89.52 40 P P 13 49 56.0 +0.1
baz=318
ATD **Arta Tunnel** 89.53 284 P P 13 49 57.2 +0.9
comp=Z,7,6nm,0.4s,baz=49,slow=4.6,SNR=6.9
S34A **Willow Spring** 89.56 42 P P 13 49 56.5 +0.5
baz=317,SNR=8.9
R35A **Emporia Munici** 89.60 41 P P 13 49 56.7 +0.5
baz=317,SNR=10
P37A **Lathrop** 89.64 39 P P 13 49 56.2 -0.2
baz=318,SNR=6.5
O38A **Galt** 89.69 38 P P 13 49 56.7 +0.1
baz=319
V32A **Arapaho** 89.90 45 P P 13 49 58.5 +0.8
baz=316,SNR=13
U33A **Lingo Farm, Me** 89.92 44 P P 13 49 58.1 +0.3
baz=316,SNR=8.2
PLDF **La Plantade** 89.96 332 eP P 13 49 59.6 +1.8
R36A **Gordon, Harris** 89.97 41 P P 13 49 58.4 +0.5
baz=318,SNR=9.5
S35A **Otter Creek Ra** 90.00 42 P P 13 49 58.8 +0.7
baz=317,SNR=11
T34A **McClaskey Farm** 90.01 43 P P 13 49 58.5 +0.3
baz=317,SNR=7.7
P38A **Dawn** 90.03 39 P P 13 49 58.6 +0.5
baz=319,SNR=7.5
O39A **Kirksville** 90.05 38 P P 13 49 59.1 +0.9
baz=320
AGO **Saint Agoulin** 90.08 332 eP P 13 49 59.1 +0.8
Q37A **Longview Farm,** 90.11 40 P P 13 49 58.9 +0.3
baz=318
SSB **Saint Sauveur** 90.17 331 eP P 13 49 59.7 +0.9
SSB **Saint Sauveur** 90.17 331 eP P 13 50 00.0 +1.2
SSB MLR MLR
comp=Z,5µm,19.0s
SSB **Saint Sauveur** 90.17 331 eP P 13 49 60.0 +1.2
SSB LR LR
comp=Z,5µm,19.0s
W32A **Sentinel** 90.21 45 P P 13 49 59.7 +0.6
baz=316,SNR=11
U34A **Anderson Ranch** 90.24 43 P P 13 50 00.2 +1.0
baz=316,SNR=18
U34A **Anderson Ranch** 90.24 43 eP P 13 50 00.8 +1.6
V33A **Lossen Ranch,** 90.26 44 P P 13 49 59.3 -0.1
baz=316
R37A **Teagarden Farm** 90.33 40 P P 13 49 59.9 +0.3
baz=318
S36A **Lake Cedric, C** 90.36 41 P P 13 50 00.5 +0.7
baz=318,SNR=7.4
PYM **Petit Puy Mans** 90.38 332 eP P 13 50 01.4 +1.6
CEL **Celeste** 90.39 320 eP P 13 50 00.0 0.0
CEL LR LR
comp=Z,10µm,19.0s

T35A **Sooner Cattle** 90.46 42 P P 13 50 01.1 +0.8
baz=317,SNR=6.8
Q38A **Cooks Store, C** 90.48 39 P P 13 50 00.7 +0.4
baz=319,SNR=12
LPIG **La Paz** 90.48 60 LR LR 14 22 07.9
comp=Z,2µm,21.7s,baz=309,slow=30
O40A **La Belle** 90.49 37 P P 13 50 01.2 +0.9
baz=320,SNR=18
W33A **Caddo, Fort Co** 90.63 45 P P 13 50 02.2 +1.1
baz=316,SNR=16
X32A **Elmer** 90.68 46 P P 13 50 02.1 +0.7
baz=315,SNR=18
V34A **Guthrie** 90.68 44 P P 13 50 01.9 +0.6
baz=316,SNR=11
V34A **Guthrie** 90.68 44 eP P 13 50 03.0 +1.7
T36A **Boggs Farm, Ca** 90.70 42 P P 13 50 01.9 +0.6
baz=318,SNR=5.7
LBL **Lubilhac** 90.72 331 eP P 13 50 03.3 +1.9
U35A **Pawnee** 90.73 43 P P 13 50 01.1 -0.5
baz=317
S37A **Fort Scott** 90.75 41 P P 13 50 01.3 -0.3
baz=318,SNR=12
Q39A **Willow Grove F** 90.75 39 P P 13 50 02.0 +0.4
baz=319,SNR=26
WMOK **Wichita Mounta** 90.75 45 eP P 13 50 02.2 +0.5
WMOK MLR MLR
comp=Z,2µm,20.0s
WMOK **Wichita Mounta** 90.75 45 eP P 13 50 02.2 +0.5
WMOK LR LR
comp=Z,2µm,20.0s
P40A **Paris** 90.85 38 P P 13 50 02.3 +0.3
baz=320,SNR=22
FRNF **Fournols** 90.85 332 eP P 13 50 03.9 +1.9
R38A **Fenwick Farm,** 90.91 40 P P 13 50 02.0 -0.3
baz=319,SNR=9.3
W34A **Bridge Creek,** 90.97 44 P P 13 50 03.6 +1.0
baz=316,SNR=11
W34A **Bridge Creek,** 90.97 44 eP P 13 50 05.1 +2.4
SLBS **Sierra La Lagu** 91.01 60 eP P 13 50 06.1 +3.0
X33A **Lawton** 91.05 45 P P 13 50 03.6 +0.5
baz=316
V35A **Meyer Ranch, C** 91.11 43 P P 13 50 03.4 +0.1
baz=317
T37A **Cheneyville 18** 91.17 41 P P 13 50 03.6 +0.1
baz=318
Q40A **Laux Farm, Aux** 91.24 38 P P 13 50 03.9 0.0
baz=320,SNR=12
U36A **Oologah** 91.27 42 P P 13 50 04.6 +0.6
baz=318,SNR=7.4
R39A **Chumby, Stover** 91.27 39 P P 13 50 04.1 +0.2
baz=319,SNR=22
S38A **Stockton** 91.33 40 P P 13 50 03.8 -0.5
baz=319
Y33A **Hilltop Ranch,** 91.36 46 P P 13 50 04.3 -0.1
baz=316,SNR=21
X34A **Smith Ranch, M** 91.39 45 P P 13 50 05.6 +1.0
baz=316,SNR=8.6
HDIL **Hopedale** 91.40 36 PFAKE 13 50 20.0 +15
HDIL LR LR
comp=Z,32µm,22.0s
TX31 **Lajitas Ar. Si** 91.52 52 eP P 13 50 06.0 +0.6
TXAR **Lajitas Array** 91.52 52 P P 13 50 06.6 +1.2
comp=Z,18nm,0.8s,baz=296,slow=3.3,SNR=82
TXAR PKKPbc **PKKPbc** 14 07 26.8 +2.5
comp=Z,0.5nm,0.6s,baz=152,slow=5.0,SNR=4.2
TXAR LR LR 14 26 12.9
comp=Z,4µm,20.8s,baz=0.0,slow=32
W35A **Tecumseh** 91.54 44 P P 13 50 06.2 +1.0
baz=317,SNR=8.6
T38A **Diamond** 91.57 41 P P 13 50 05.6 +0.2
baz=318,SNR=6.6
TUL1 **Leonard** 91.59 43 P P 13 50 06.1 +0.6
baz=318,SNR=8.0
TUL1 **Leonard** 91.59 43 eP P 13 50 07.5 +2.0
S39A **Bolivar** 91.59 40 P P 13 50 05.3 -0.2
baz=319,SNR=12
U37A **Salina** 91.59 42 P P 13 50 06.2 +0.7
baz=318,SNR=19
V36A **Jenks** 91.59 43 P P 13 50 06.1 +0.6
baz=317,SNR=9.5
R40A **Maddies Statio** 91.68 39 P P 13 50 06.3 +0.5
baz=320
ABTX **Abilene, Hawle** 91.74 47 P P 13 50 07.1 +0.8
baz=315,SNR=30
ABTX **Abilene, Hawle** 91.74 47 eP P 13 50 07.9 +1.6
Z33A **Whitaker Ranch** 91.79 46 P P 13 50 07.1 +0.6
baz=316,SNR=18
HPIG 91.83 55 eP P 13 50 08.8 +1.8
Y34A **Reagan Ranch,** 91.90 45 P P 13 50 07.8 +0.8
baz=316,SNR=14
W36A **Wetumka** 91.91 43 P P 13 50 07.5 +0.5
baz=317
U38A **Gravette** 91.96 41 P P 13 50 07.6 +0.4
baz=318,SNR=12
V37A **Hulbert** 91.96 42 P P 13 50 08.0 +0.8
baz=318,SNR=32
X35A **Drake** 92.03 44 P P 13 50 07.9 +0.3
baz=317,SNR=18
T39A **Clever** 92.06 40 P P 13 50 08.1 +0.5
baz=319
S40A **Lebanon** 92.09 39 P P 13 50 08.0 +0.3
baz=320
133A **Hamilton Ranch** 92.18 47 P P 13 50 08.9 +0.6
baz=316,SNR=15
Z34A **Collier Ranch,** 92.23 46 P P 13 50 09.3 +0.8
baz=316,SNR=11
SADO **Sadowa** 92.25 27 eP P 13 50 10.5 +2.1
X36A **Centrahoma** 92.25 44 P P 13 50 09.3 +0.7
baz=317
CLTB **Caltabellotta** 92.30 321 PFAKE 13 50 20.0 +11
CLTB LR LR
comp=Z,4µm,20.0s
Y35A **Marietta** 92.35 45 P P 13 50 09.8 +0.7
baz=317
W37B **Quinton** 92.35 43 P P 13 50 09.7 +0.7
baz=318
V38A **Canehill** 92.38 42 P P 13 50 09.2 0.0
baz=318,SNR=27
T40A **Mansfield** 92.42 40 P P 13 50 09.6 +0.2
baz=320
U39A **Green Forest** 92.49 41 P P 13 50 09.8 +0.1
baz=319,SNR=9.2
AAM **Ann Arbor** 92.53 31 PFAKE 13 50 20.0 +10
AAM LR LR
comp=Z,3µm,21.0s
SFIN **Lafayette** 92.57 34 P P 13 50 10.1 +0.2
baz=323
SFIN **Lafayette** 92.57 34 eP P 13 50 11.4 +1.4
233A **Rising Star** 92.61 47 P P 13 50 11.2 +0.8
baz=316,SNR=19
Z35A **Perchaven, San** 92.64 45 P P 13 50 11.0 +0.6
baz=317,SNR=14
LMQ **La Malbaie** 92.68 20 eP P 13 50 12.4 +2.1
134A **White-Moore Ra** 92.70 46 P P 13 50 11.7 +1.0
baz=316,SNR=15
VSL **Villasalto** 92.72 324 PFAKE 13 50 20.0 +9.3
VSL LR LR
comp=Z,7µm,19.0s
Y36A **Durant** 92.78 44 P P 13 50 11.2 +0.2
baz=317,SNR=11
X37A **Clayton** 92.79 43 P P 13 50 11.4 +0.3
baz=318
V39A **Pettigrew** 92.81 41 P P 13 50 11.2 0.0
baz=319,SNR=12
U40A **Yellville** 92.84 40 P P 13 50 11.9 +0.6
baz=319,SNR=5.7
W38A **Poteau** 92.91 42 P P 13 50 12.3 +0.7
baz=318,SNR=9.5
WDD **Wied Dalam** 92.91 319 PFAKE 13 50 20.0 +8.4
WDD LR LR
comp=Z,5µm,20.0s
LRDF **Laroque-de-Fa** 92.91 331 eP P 13 50 11.5 0.0
X38A **Whitesboro** 93.03 43 P P 13 50 12.6 +0.4
baz=318,SNR=21
333A **Richland Sprin** 93.05 48 P P 13 50 12.8 +0.5
baz=316,SNR=39
234A **Clairette** 93.08 47 P P 13 50 12.9 +0.5
baz=316,SNR=34
Y37A **Hugo** 93.10 44 P P 13 50 13.2 +0.7
baz=318
135A **Vickery Place,** 93.11 46 P P 13 50 13.0 +0.5
baz=316,SNR=5.9
JCT **Junction City** 93.15 49 P P 13 50 13.4 +0.5
baz=315
JCT **Junction City** 93.15 49 eP P 13 50 14.1 +1.2
JCT MLR MLR
comp=Z,4µm,22.0s

JCT **Junction City** 93.15 49 eP P 13 50 14.1 +1.2
JCT LR LR
comp=Z,4µm,22.0s
Z36A **Blue Ridge** 93.15 45 P P 13 50 13.2 +0.5
baz=317,SNR=11
SJAF **Saint Jean de** 93.16 330 eP P 13 50 13.4 +0.8
W39A **Magazine** 93.21 42 P P 13 50 12.9 -0.1
baz=319
FILF **Fillols** 93.22 330 eP P 13 50 13.1 +0.1
V40A **Witts Springs** 93.27 41 P P 13 50 13.1 -0.2
baz=319
CARF **Carcanieres** 93.27 331 eP P 13 50 13.3 0.0
433A **Art** 93.39 48 P P 13 50 14.3 +0.3
baz=316,SNR=13
OLIL **Olney** 93.40 36 eP P 13 50 15.8 +2.0
WHTX **Lake Whitney,** 93.49 46 P P 13 50 14.8 +0.5
baz=316,SNR=17
WHTX **Lake Whitney,** 93.49 46 eP P 13 50 15.2 +0.9
334A **Lometa** 93.50 47 P P 13 50 14.8 +0.4
baz=316,SNR=24
X39A **Fountain Ranch** 93.54 42 P P 13 50 15.3 +0.8
baz=318,SNR=10
VALF **Valcebollere** 93.57 331 eP P 13 50 14.6 -0.1
W40A **Ferguson Farm,** 93.60 41 P P 13 50 15.2 +0.5
baz=319
Y38A **Idabel** 93.64 43 P P 13 50 15.6 +0.7
baz=318
SIUC **Southern Illin** 93.66 37 eP P 13 50 16.8 +1.8
MELF **Melles** 93.67 332 eP P 13 50 16.9 +1.8
Z37A **Pogue Cattle C** 93.67 44 P P 13 50 15.0 -0.1
baz=318
136A **Ennis** 93.68 45 P P 13 50 15.1 -0.1
baz=317
MIAR **Mount Ida** 93.81 42 P P 13 50 16.2 +0.4
baz=319,SNR=6.6
MIAR **Mount Ida** 93.81 42 PFAKE 13 50 30.0 +14
MIAR LR LR
comp=Z,3µm,21.0s
434A **Burnet** 93.85 48 P P 13 50 16.2 +0.2
baz=316,SNR=11
533A **Kerrville** 93.91 49 P P 13 50 16.8 +0.5
baz=316
REYF **Montagne du Re** 93.94 332 eP P 13 50 17.9 +1.6
VIEF **Viey** 93.94 332 eP P 13 50 18.2 +1.9
DRLN **Deer Lake** 93.96 12 eP P 13 50 18.7 +2.6
Y39A **Lockesburg** 93.98 43 P P 13 50 16.8 +0.3
baz=318
LONY **Lake Ozonia** 93.99 24 eP P 13 50 18.7 +2.3
LONY LR LR
comp=Z,3µm,22.0s
Z38A **Mt. Pleasant** 93.99 44 P P 13 50 16.9 +0.3
baz=318
335A **Moody** 94.01 47 P P 13 50 17.1 +0.3
baz=316
236A **Katherine and** 94.02 46 P P 13 50 17.3 +0.5
baz=317
137A **Heron Place, G** 94.03 45 P P 13 50 17.9 +1.1
baz=317
W41A **Tony Mavity, V** 94.06 41 P P 13 50 17.7 +0.8
baz=320
W41B **Gary Mavity, V** 94.06 41 P P 13 50 17.5 +0.6
baz=320
LARF **Larrau** 94.19 333 eP P 13 50 18.2 +0.8
633A **Saathoff Ranch** 94.26 49 P P 13 50 17.0 -0.9
baz=315,SNR=8.3
X40A **Basin Creek Fa** 94.26 42 P P 13 50 16.5 -1.3
baz=319
435B **Jarrell** 94.28 47 P P 13 50 18.1 +0.1
baz=316
336A **Riesel** 94.28 46 P P 13 50 19.3 +1.3
baz=317
534A **Blanco** 94.28 48 P P 13 50 18.4 +0.3
baz=316,SNR=19
138A **Matatall Enter** 94.37 44 P P 13 50 17.8 -0.6
baz=318
Y40A **Okolona** 94.37 42 P P 13 50 18.6 +0.3
baz=319
237A **Washetta, Mont** 94.44 45 P P 13 50 16.4 -2.2
baz=317
Z39A **Irene McRaven,** 94.45 43 P P 13 50 18.4 -0.3
baz=318
MMNY **Mt. Morris Dam** 94.46 27 eP P 13 50 20.5 +1.9
ALLY **Alegheny Colle** 94.52 29 eP P 13 50 21.3 +2.4
ACSO **Alum Creek Sta** 94.52 32 eP P 13 50 21.2 +2.3
ACSO LR LR
comp=Z,3µm,21.0s
832A **Faith Ranch, C** 94.59 50 P P 13 50 20.1 +0.6
baz=315,SNR=5.4
WCI **Wyandotte Cave** 94.66 35 eP P 13 50 21.1 +1.4
WCI **Wyandotte Cave** 94.66 35 eP P 13 50 21.1 +1.4
NCB **Newcomb** 94.69 24 PFAKE 13 50 30.0 +10
NCB LR LR
comp=Z,4µm,20.0s
733A **Divot King Ran** 94.71 50 P P 13 50 20.9 +0.9
baz=315
139A **Bunkhouse Ranc** 94.75 44 P P 13 50 20.6 +0.5
baz=318
436A **Wall Ranch, Ga** 94.76 47 P P 13 50 20.9 +0.7
baz=317
634A **China Grove, S** 94.82 49 P P 13 50 20.8 +0.3
baz=316
535A **Dale** 94.83 48 P P 13 50 20.4 -0.1
baz=316
238A **Jacksonville** 94.83 45 P P 13 50 21.6 +1.1
baz=318
Z40A **Long Farm, Mag** 94.87 43 P P 13 50 20.5 -0.1
baz=319
337A **Centerville** 94.90 46 P P 13 50 22.1 +1.3
baz=317
833A **Chaparral WMA,** 94.92 50 P P 13 50 21.3 +0.3
baz=315
PKME **Peaks-Kenny Pk** 95.06 21 eP P 13 50 23.7 +2.4
PKME LR LR
comp=Z,4µm,22.0s
734A **La Parita Cree** 95.07 49 P P 13 50 21.2 -0.5
baz=316
536A **Bastrop** 95.10 47 P P 13 50 21.6 -0.1
baz=317
437A **Phantom Ranch,** 95.10 46 P P 13 50 20.3 -1.5
baz=317
N54A **Moraine State** 95.16 30 P P 13 50 22.3 +0.5
baz=328
635A **Leesville** 95.17 48 P P 13 50 21.0 -1.1
baz=316
239A **Gary** 95.19 44 P P 13 50 20.6 -1.5
baz=318
338A **Crockett** 95.20 45 P P 13 50 21.3 -0.9
baz=318
140A **Cam and Jess,** 95.24 43 P P 13 50 22.0 -0.3
baz=319
NATX **Nacogdoches** 95.28 45 P P 13 50 21.2 -1.3
baz=318
NATX **Nacogdoches** 95.28 45 PFAKE 13 50 30.0 +7.5
NATX LR LR
comp=Z,4µm,22.0s
Y42A **Garnett, Star** 95.32 41 P P 13 50 21.0 -1.7
baz=320
ACCN **Adirondack Com** 95.39 24 eP P 13 50 24.7 +1.8
933A **Laredo** 95.50 50 P P 13 50 21.4 -2.2
baz=315,SNR=9.7
735A **Kenedy** 95.53 49 P P 13 50 22.8 -0.9
baz=316
438A **Sam Houston St** 95.55 46 P P 13 50 22.5 -1.3
baz=318
240A **Hunter Patters** 95.58 44 P P 13 50 23.9 0.0
baz=319
834A **Tilden** 95.59 50 P P 13 50 23.1 -0.9
baz=316
WVT **Waverly** 95.59 37 eP P 13 50 24.8 +0.9
WVT **Waverly** 95.59 37 eP P 13 50 24.8 +0.9
BINY **Binghamton** 95.63 26 PFAKE 13 50 40.0 +16
BINY LR LR
comp=Z,5µm,20.0s
141A **Papa Simpson,** 95.64 43 P P 13 50 23.6 -0.5
baz=319
339A **Huntington** 95.65 45 P P 13 50 23.5 -0.7
baz=318
KEST **Kesra** 95.70 322 P P 13 50 25.7 +1.2
comp=Z,17nm,1.1s,baz=229,slow=1.6,SNR=5.4
KEST PP PP 13 54 17.7 +2.2
comp=Z,18nm,1.1s,baz=294,slow=8.4,SNR=5.2
KEST LR LR 14 38 46.8
comp=Z,5µm,18.5s,baz=346,slow=39
LMN **Caledonia Moun** 95.71 18 eP P 13 50 26.0 +1.7
Y43A **Makayla and Ka** 95.72 41 P P 13 50 25.9 +1.4
baz=320
835A **Beeville** 95.92 49 P P 13 50 27.0 +1.5

baz=316
HKT Hockley 95.92 47 *e*P **P 13 50 27.5 +2.1**
HKT Hockley 95.92 47 *e*P **P 13 50 27.5 +2.1**
340A Bronson 95.97 44 P **P 13 50 25.4 -0.3**
baz=318
934A Benavides 95.98 50 P **P 13 50 26.9 +1.1**
baz=316
637A Eagle Lake 96.00 47 P **P 13 50 25.6 -0.2**
baz=317,SNR=5.9
OXF Oxford 96.06 39 *e*P **P 13 50 27.3 +1.3**
OXF Oxford 96.06 39 *e*P **P 13 50 27.3 +1.3**
Y44A Strider, Charl 96.06 40 P **P 13 50 24.4 -1.7**
baz=321
241A Mo Tay, Goldon 96.07 43 P **P 13 50 26.1 0.0**
baz=319
142A Monroe 96.21 42 P **P 13 50 26.8 0.0**
baz=320
034A Hebbronville 96.26 50 P **P 13 50 27.5 +0.4**
baz=316,SNR=8.7
KSPA Keystone Colle 96.27 27 *e*P **P 13 50 28.7 +1.9**
SSPA Standing Stone 96.27 28 *e*P **P 13 50 29.2 +2.3**
O56A Blue Knob Stat 96.32 29 P **P 13 50 27.6 +0.5**
baz=329
KVTX Kingsville 96.41 50 PFAKE 13 50 40.0 +12
KVTX LR LR
comp=Z,3µm,20.0s
737A Port Lavaca 96.42 48 P **P 13 50 28.3 +0.6**
baz=317
440A Kirbyville 96.43 45 P **P 13 50 27.5 -0.3**
baz=318
341A Kurthwood 96.44 44 P **P 13 50 27.5 -0.3**
baz=319
Z44A Pea Ridge, Bel 96.47 41 P **P 13 50 27.6 -0.3**
baz=321
Y45A Yeager Farm, C 96.49 40 P **P 13 50 26.6 -1.4**
baz=321
ZAIG Zacatecas 96.70 56 *e*P **P 13 50 31.7 +2.2**
N59A State Game Lan 96.82 27 P **P 13 50 27.5 -1.9**
baz=331
Y46A Houston 96.83 40 P **P 13 50 29.5 0.0**
baz=322
144A Alexander Plac 96.97 41 P **P 13 50 29.5 -0.7**
baz=321
035Z Hargill 97.07 50 P Pdif 13 50 31.2 +0.4
baz=316
VBMS Vicksburg 97.24 42 P **P 13 50 31.1 -0.4**
baz=320
145A Houston Renfro 97.26 41 P Pdif 13 50 31.8 +0.2
baz=321
244A Avery, Jackson 97.28 42 P **P 13 50 31.3 -0.4**
baz=320
TZTN Tazewell 97.30 34 *e*P Pdif 13 50 33.8 +2.0
PBRG Braganca 97.30 336 *e*P **P 13 50 31.4 -0.2**
comp=Z,44nm,1.6s
PBRG Braganca 97.30 336 *e*PP PP 13 54 32.5 +5.0
442A Mamou 97.33 44 P **P 13 50 30.8 -1.0**
baz=319
Y47A UCPARC, Winfie 97.33 39 P **P 13 50 30.4 -1.4**
baz=322
343A Vidalia 97.35 43 P Pdif 13 50 32.3 +0.3
baz=320
443A Delano Plantat 97.65 43 P Pdif 13 50 34.3 +0.9
baz=320
PGAV Gavieira, Arco 97.66 337 *e*P Pdif 13 50 35.1 +1.8
PGAV Gavieira, Arco 97.66 337 *e*PP PP 13 54 34.2 +3.9
PGAV Gavieira, Arco 97.66 337 *e*LR LR 14 25 51.5
comp=Z,5µm,22.0s
PCAB Cabril 97.81 337 *e*P Pdif 13 50 35.2 +1.3
TKL Tuckaleechee C 97.92 35 *e*P Pdif 13 50 35.9 +1.4
TKL Tuckaleechee C 97.92 35 *e*P Pdif 13 50 35.9 +1.4
MVO Moncorvo 97.97 336 *e*P Pdif 13 50 36.1 +1.4
comp=Z,51nm,1.4s
MVO Moncorvo 97.97 336 *e*PP PP 13 54 36.9 +4.2
MVO *e*SKS **SKSac 14 01 16.9 +7.9**
MVO Moncorvo 97.97 336 *e*LQ LQ 14 19 55.4
MVO *e*LR LR 14 24 47.5
comp=Z,4µm,20.0s
RER Riviere de l'E 98.01 250 PFAKE 13 50 50.0 +15
RER LR LR
comp=Z,6µm,21.0s
BLA Blacksburg 98.14 32 PFAKE 13 50 50.0 +14
BLA LR LR
comp=Z,4µm,22.0s
246A Jackson Lee, B 98.14 41 P Pdif 13 50 36.1 +0.6
baz=321
ES19 SONSECA Array 98.17 333 *e*P **P 13 50 34.9 -0.7**
ESDC Sonseca Array 98.22 333 P **P 13 50 34.9 -0.9**
comp=Z,5.8nm,1.0s,baz=27,slow=3.4,SNR=20
ESDC PP **PP 13 54 37.1 +2.4**
comp=Z,7.1nm,0.9s,baz=23,slow=7.3,SNR=7.6
ESDC LR LR 14 40 33.2
comp=Z,3µm,18.8s,baz=15,slow=39
PAB San Pablo 98.47 333 *e*P Pdif 13 50 38.3 +1.3
PAB MLR MLR
comp=Z,4µm,20.0s
PAB San Pablo 98.47 333 *e*P Pdif 13 50 38.3 +1.3
PAB LR LR
comp=Z,4µm,20.0s
CBN Corbin Frederi 98.56 29 PFAKE 13 50 50.0 +13
CBN LR LR
comp=Z,2µm,21.0s
PVIS Viseu 98.66 336 *e*P Pdif 13 50 39.0 +1.2
MTE Manteigas 98.83 336 *e*P Pdif 13 50 38.9 +0.4
MTE Manteigas 98.83 336 *e*PP PP 13 54 44.0 +4.7
MTE Manteigas 98.83 336 *e*LQ LQ 14 20 22.0
MTE *e*LR LR 14 26 28.6
comp=Z,6µm,20.0s
MTE Manteigas 98.83 336 PFAKE 13 50 50.0 +11
MTE LR LR
comp=Z,6µm,20.0s
RKT Rikitea 98.88 112 *e*SKSac **SKSac 14 01 13.5 0.0**
comp=Z,2µm,33.0s
RKT *e*SP **SP 14 03 30.9 -0.9**
comp=Z,2µm,37.2s
RKT *e*SS **SS 14 08 56.2 +2.3**
comp=Z,3µm,32.8s
RKT Rikitea 98.88 112 *e*LR LR 14 22 51.5
comp=Z,16µm,26.8s,baz=307
PCBR Castelo Branco 99.31 336 *e*P **Pdif 13 50 41.8 +1.2**
PCAS Casmilo, Conde 99.46 336 *e*PP PP 13 54 47.9 +3.9
KMSC Kings Mountain 99.47 34 *e*Pdif **Pdif 13 50 43.4 +2.0**
PMRV Marv??o 99.65 335 *e*P **Pdif 13 50 43.1 +1.0**
PMRV Marv??o 99.65 335 *e*PP PP 13 54 48.6 +3.1
PMRV Marv??o 99.65 335 *e*LQ LQ 14 20 30.8
PMRV *e*LR LR 14 25 10.2
comp=Z,5µm,20.0s
GOGA Godfrey 99.90 36 PFAKE 13 51 00.0 +17
GOGA LR LR
comp=Z,3µm,22.0s
PESTR Estremoz 100.22 335 *e*P **Pdif 13 50 45.1 +0.4**
PESTR Estremoz 100.22 335 *e*PP PP 13 54 53.6 +3.8
PESTR Estremoz 100.22 335 *e*SS SS 14 09 35.8 +26
PMTG Montargil 100.26 336 *e*P **Pdif 13 50 41.0 -3.8**
PMTG Montargil 100.26 336 *e*PP PP 13 54 54.3 +4.3
PMTG *e*SKS 14 01 43.2
PBAR Barrancos 100.66 335 *e*PP PP 13 54 57.0 +3.9
PBAR Barrancos 100.66 335 *e*SS SS 14 09 42.5 +27
EVO Evora 100.67 335 *e*P **Pdif 13 50 44.7 -1.9**
EVO Evora 100.67 335 *e*PP PP 13 54 57.4 +4.2
PMAFR Mafra 100.71 337 *e*PP PP 13 54 57.6 +4.2
PMAFR Mafra 100.71 337 *e*SS SS 14 09 46.8 +30
LIS Lisbon 100.88 336 *e*PP PP 13 54 56.5 +1.7
LIS AMS AMS 14 38 56.2
comp=N,5µm,17.9s
CNNC Cliffs of the 100.89 31 PFAKE 13 51 00.0 +12
CNNC LR LR
comp=Z,4µm,22.0s
PBEJ Beja 101.08 335 *e*P **Pdif 13 50 50.2 +1.7**
PNCL Nicolau / Gran 101.22 336 *e*PP PP 13 54 59.4 +2.1
PNCL *e*SKS 14 01 34.7
PNCL *e*SS SS 14 09 52.7 +29
MESJ Messejana 101.36 335 *e*P **Pdif 13 50 50.6 +0.8**
MESJ *e*PP **PP 13 55 00.2 +1.8**
MESJ AMS AMS 14 40 57.6
comp=Z,5µm,17.0s
MESJ Messejana 101.36 335 *e*P **Pdif 13 50 49.8 +0.1**
MESJ Messejana 101.36 335 *e*PP PP 13 55 04.8 +6.4
MESJ Messejana 101.36 335 *e*P **Pdif 13 50 50.5 +0.8**
MESJ *e* 13 55 00.1
KMBO Kilima Mbogo 101.46 277 P **Pdif 13 50 51.4 +0.5**
comp=Z,0.9nm,0.3s,baz=70,slow=15,SNR=2.8
KMBO Kilima Mbogo 101.46 277 *i* P **Pdif 13 50 56.5 +5.6**
KMBO *i* 13 55 08.8
KMBO pmax pmax
comp=Z,1.0nm,0.4s
KMBO pmax pmax
comp=Z,1.0nm,0.4s
KMBO Kilima Mbogo 101.46 277 P **Pdif 13 50 51.4 +0.5**
KMBO LR LR
comp=Z,3µm,20.0s
PCVE Castro Verde 101.49 335 *e*P **Pdif 13 50 53.7 +3.4**
PCVE Castro Verde 101.49 335 *e*PP PP 13 55 04.4 +5.0
PVAQ Vaqueiros 101.58 335 *e*PP PP 13 55 01.1 +1.0
PVAQ Vaqueiros 101.58 335 *e*LQ LQ 14 21 30.6
PVAQ *e*LR LR 14 26 20.0
comp=Z,6µm,20.0s
NHSC New Hope 101.69 34 PFAKE 13 51 00.0 +8.7
NHSC LR LR
comp=Z,5µm,22.0s
PBDV Barranco-do-Ve 101.80 335 *e*PP PP 13 55 06.0 +4.2
MORF Marmelete 101.99 335 *e*P **Pdif 13 50 53.3 +0.6**
MORF *e*PP **PP 13 55 04.3 +1.1**
MORF AMS AMS 14 40 30.7
comp=E,4µm,26.9s
MORF Marmelete 101.99 335 *e*PP PP 13 55 06.4 +3.2
MORF Marmelete 101.99 335 *e*P **Pdif 13 50 53.2 +0.6**
MORF *e* 13 55 04.3
PFVI Vila Bisbo 102.21 335 *e*PP PP 13 55 06.7 +1.9
PTCN Pitcairn Islan 103.66 111 PFAKE 13 51 10.0 +10
PTCN LR LR
comp=Z,11µm,22.0s
RTC Rabat Centre 104.32 332 PFAKE 13 51 10.0 +7.0
RTC LR LR
comp=Z,14µm,21.0s
PAF Port-aux-Franc 105.05 220 PFAKE 13 51 20.0 +14
PAF LR LR
comp=Z,3µm,20.0s
CMLA Cha da Macela 105.83 349 PFAKE 13 55 30.0
CMLA LR LR
comp=Z,2µm,21.0s
TEIG Tepich 107.71 48 PFAKE 13 55 40.0
TEIG LR LR
comp=Z,979nm,21.0s
TAM Tamanrasset 107.96 317 PFAKE 13 55 40.0
TAM LR LR
comp=Z,2µm,20.0s
BBSR BB Station 108.32 22 PFAKE 13 55 40.0
BBSR LR LR
comp=Z,2µm,22.0s
PMOZ Porto Moniz, M 108.77 340 *e*LR LR 14 30 41.5
comp=Z,3µm,20.0s
VNDA Vanda 113.65 175 PKiKP **PKiKP 13 55 35.2 -0.2**
comp=Z,2.4nm,0.9s,baz=344,slow=3.3,SNR=7.2
SBA Scott Base 114.34 174 PFAKE 13 55 50.0 +13
SBA LR LR
comp=Z,2µm,20.0s
GTBY Guantanamo Bay 115.22 37 PFAKE 13 55 50.0 +10
GTBY LR LR
comp=Z,2µm,21.0s
MTDJ Mount Denham 115.40 40 PFAKE 13 55 50.0 +9.3
MTDJ LR LR
comp=Z,2µm,21.0s
GRTK Grand Turk 115.72 33 PFAKE 13 55 50.0 +8.9
GRTK LR LR
comp=Z,3µm,21.0s
LSZ Lusaka 116.81 270 PFAKE 13 56 00.0 +17
LSZ LR LR
comp=Z,4µm,20.0s
JTS JuntasAbangare 117.31 52 PFAKE 13 56 00.0 +16
JTS LR LR
comp=Z,2µm,21.0s
TORD Torodi Ar. Bea 117.80 314 PKP **PKPdf 13 55 44.0 -1.2**
comp=Z,11nm,1.0s,baz=10,slow=1.6,SNR=25
TORD PP **PP 13 57 03.1 +4.9**
comp=Z,14nm,1.1s,baz=3.3,slow=3.9,SNR=5.8
TORD PKKPbc **PKKPbc 14 06 05.3 +0.3**
comp=Z,1.6nm,0.8s,baz=215,slow=3.0,SNR=5.9
SDDR Presa de Saban 117.85 34 PFAKE 13 56 00.0 +15
SDDR LR LR
comp=Z,3µm,19.0s
RPN Rapa Nui 120.85 103 PFAKE 13 56 00.0 +9.3
RPN LR LR
comp=Z,2µm,21.0s
SJG San Juan 120.85 30 PFAKE 13 56 00.0 +9.0
SJG LR LR
comp=Z,2µm,22.0s
BCIP Isla Barro Col 121.38 49 PFAKE 13 56 00.0 +7.8
BCIP LR LR
comp=Z,1µm,21.0s
PAYG Puerto Ayora 121.41 65 PFAKE 13 56 00.0 +7.7
PAYG LR LR
comp=Z,4µm,22.0s
ANWB Willy Bob 122.91 26 PFAKE 13 56 10.0 +15
ANWB LR LR
comp=Z,2µm,22.0s
QSPA South Pole Qui 125.39 180 *e*PKPdf **PKPdf 13 55 59.1 +0.8**
QSPA LR LR
comp=Z,4µm,22.0s
BOSA Boshof 125.62 258 PKP **PKPdf 13 55 59.5 -0.5**
comp=Z,10nm,0.9s,baz=84,slow=2.7,SNR=6.5
FDF Fort de France 125.84 26 PFAKE 13 56 10.0 +9.2
FDF LR LR
comp=Z,3µm,22.0s
OCAC Ocana 125.93 43 *e*P **PKPdf 13 56 04.9 +3.7**
BRRC Barranca, Sant 126.64 44 *e*P **PKPdf 13 56 00.9 -1.4**
GRMC Gramalote, San 126.64 43 *e*P **PKPdf 13 56 00.9 -1.6**
CBRI Barrientos, No 126.65 43 *e*P **PKPdf 13 56 06.2 +3.7**
SYO Syowa Base 126.65 206 *i*/PKPdf **PKPdf 13 56 00.6 +0.1**
DBIC Dimbokro 126.81 315 PKP **PKPdf 13 56 01.8 -0.8**
comp=Z,33nm,1.1s,baz=38,slow=2.7,SNR=14
DBIC PP **PP 13 57 59.0 -0.2**
comp=Z,15nm,1.0s,baz=19,slow=9.7,SNR=3.9
SDV Santo Domingo 126.84 40 *e*PKPdf **PKPdf 13 56 04.1 +1.2**
SDV LR LR
comp=Z,2µm,19.0s
SDV Santo Domingo 126.84 40 *e*P **PKPdf 13 56 00.9 -2.0**
GUYC Guyana, Colomb 127.18 47 *e*P **PKPdf 13 56 04.9 +1.0**
NORC Norcasia 127.22 46 *e*P **PKPdf 13 56 00.9 -2.6**
TSUM Tsumeb 127.48 272 *e*PKPdf **PKPdf 13 56 04.1 +0.3**
TSUM LR LR
comp=Z,4µm,22.0s
BBGH Gun Hill 127.88 25 PFAKE 13 56 20.0 +15
BBGH LR LR
comp=Z,5µm,22.0s
RUSC La Rusia 127.98 44 *e*P PKPpre 13 55 59.5
GRGR Grenville 128.05 28 PFAKE 13 56 20.0 +15
GRGR LR LR
comp=Z,3µm,22.0s
ROSC El Rosal 128.12 46 PKP **PKPdf 13 56 07.0 +1.4**
comp=Z,28nm,1.1s,baz=70,slow=5.1,SNR=17
CHIC Chingaza 128.63 46 *e*P **PKPdf 13 56 05.0 -1.6**
VILC Villavicencio, 129.07 46 *e*P **PKPdf 13 56 06.2 -0.9**
OTAV Otavalo 129.09 54 *e*PKPdf **PKPdf 13 56 09.4 +1.9**
OTAV LR LR
comp=Z,3µm,22.0s
SUR Sutherland 130.62 255 PFAKE 13 56 20.0 +10
SUR LR LR
comp=Z,8µm,20.0s
NVL N'lazarevskaya 135.74 202 *e*PKHKP PKPpre 13 56 09.7
NVL *e*SS SS 14 17 16.9 +26
NVL MLR MLR
comp=Z,3µm,23.0s
NNA Nana 138.84 65 *i* PKIKP **PKPdf 13 56 28.7 +3.5**
NNA Nana 138.84 65 PFAKE 13 56 40.0 +15
NNA LR LR
comp=Z,3µm,21.0s
SNAA Sanae 139.22 197 PKP PKPpre 13 56 16.2
PTGA Pitinga 140.37 33 PKhKP PKPpre 13 56 21.2
comp=Z,11nm,0.8s,baz=356,slow=3.8,SNR=8.6
VNA2 Neumayer--Watz 140.79 196 PKP PKPpre 13 56 22.1
baz=76,slow=2.2
VNA3 Neumayer Olymp 141.04 195 PKP PKPpre 13 56 22.0
VNA1 Neumayer--Stat 141.19 196 PKP PKPpre 13 56 22.6
ASCN Ascension 144.12 314 PFAKE 13 56 50.0 +15
ASCN LR LR
comp=Z,2µm,19.0s
SAML Samuel 145.72 45 *e*PKPdf **PKPdf 13 56 36.7 -0.7**
SAML LR LR
comp=Z,2µm,22.0s
PMSA Palmer Station 147.30 161 PFAKE 13 56 50.0 +7.2
PMSA LR LR
comp=Z,3µm,22.0s
LPAZ La Paz 147.99 60 PKPbc **PKPbc 13 56 44.0 -1.0**
comp=Z,140nm,1.3s,baz=6.3,slow=3.6,SNR=39
LPAZ La Paz 147.99 60 PKIKP **PKPbc 13 56 44.0 -1.0**
LPAZ pmax pmax
comp=Z,140nm,1.3s
RCBR Riachuelo 150.15 353 PKPbc **PKPbc 13 56 47.7 -2.1**
comp=Z,116nm,1.0s,baz=329,slow=2.8,SNR=16
RCBR PKPab **PKPab 13 56 56.7 +0.9**
comp=Z,64nm,1.1s,baz=352,slow=2.7,SNR=8.8
RCBR Riachuelo 150.15 353 *e*PKPdf **PKPdf 13 56 45.1 +0.3**
RCBR PKPbc **PKPbc 13 56 47.7 -2.1**
RCBR PKPab **PKPab 13 56 56.7 +0.9**
RCBR LR LR
comp=Z,2µm,22.0s
LVC Limon Verde 151.29 71 *e*PKPdf **PKPdf 13 56 47.8 +1.2**
LVC *e*PKPbc **PKiKP 13 56 55.0 +1.8**
LVC LR LR
comp=Z,4µm,22.0s
SIV San Ignacio 152.51 50 PKP **PKPdf 13 56 48.1 -0.1**
comp=Z,6.8nm,0.9s,baz=36,slow=0.3,SNR=8.7
SIV PKPbc **PKiKP 13 56 56.0 +0.6**
comp=Z,36nm,1.0s,baz=320,slow=1.9,SNR=25
SIV PKPab **PKPab 13 57 03.8 -1.7**
comp=Z,39nm,0.9s,baz=333,slow=4.0,SNR=12
LCO Las Campanas 152.85 85 *e*PKPdf **PKPdf 13 56 50.3 +1.6**
LCO LR LR
comp=Z,3µm,21.0s
PLCA Paso Flores 155.11 111 PKP **PKPdf 13 56 51.5 +0.2**
comp=Z,7.7nm,1.1s,baz=275,slow=6.9,SNR=4.0
PLCA PKPab **PKPab 13 57 16.0 -0.1**
comp=Z,7.2nm,0.8s,baz=302,slow=6.4,SNR=4.7
TRIS Tristan da Cun 158.12 258 PFAKE 13 57 10.0 +15
TRIS LR LR
comp=Z,4µm,19.0s
EFI East Falkland 159.16 146 PFAKE 13 57 10.0 +14
EFI LR LR
comp=Z,3µm,19.0s
HOPE Hope Point 161.25 185 PFAKE 13 57 10.0 +12
HOPE LR LR
comp=Z,2µm,19.0s
TRQA Tornquist 161.81 104 *e*PKPdf **PKPdf 13 56 58.9 -0.4**
TRQA LR LR
comp=Z,8µm,22.0s
CPUP Villa Florida 162.10 64 PKP **PKPdf 13 57 01.1 +1.1**
comp=Z,14nm,1.2s,baz=28,slow=0.6,SNR=5.4
CPUP PKPab **PKPab 13 57 46.6 0.0**
comp=Z,8.6nm,1.1s,baz=296,slow=4.1,SNR=3.6
SPB Sao Paulo 166.14 32 PFAKE 13 57 10.0 +6.3
SPB LR LR
comp=Z,2µm,22.0s

WEL 21 13:43:38.0 0.3, 38°23S × 175°92E, h171 km ± 2km, ML 3.9/13, 25C-11D, Error ellipse: s-maj=1.6km s-min=1.6km az=90.0, North Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TLZ	**Tolley Road**	**0.32**	**251**	⇓PN	Pn	13 44 01.2	+0.1
KMRZ	**Kaimai**	**0.38**	**3**	PN	Pn	13 44 01.3	-0.1
PRRZ	**Plateau Road**	**0.46**	**126**	PN	Pn	13 44 01.7	+0.1
OPRZ	**Ohinepanea**	**0.63**	**53**	⇓PN	Pn	13 44 02.2	-0.2
OPRZ					SN	Sn	13 44 21.5	+0.5
RATZ	**Rangitukua**	**0.65**	**190**	PN	Pn	13 44 02.1	-0.4
MUGZ	**Murupara**	**0.71**	**110**	PN	Pn	13 44 02.6	-0.2
MRHZ	**Matea Rd**	**0.72**	**147**	PN	Pn	13 44 02.7	-0.2
RITZ	**Rihia Road**	**0.75**	**184**	⇓PN	Pn	13 44 03.4	+0.4
KATZ	**Kakaramea**	**0.76**	**193**	PN	Pn	13 44 03.4	+0.1
KRVZ	**Karewarewa**	**0.89**	**194**	PN	Pn	13 44 04.0	-0.1
TWVZ	**Taurewa**	**0.92**	**204**	PN	Pn	13 44 04.1	-0.2
WTVZ	**West Tongariro**	**0.92**	**196**	PN	Pn	13 44 04.2	-0.1
URZ	**Urewera**	**0.94**	**92**	PN	Pn	13 44 03.6	-0.7
URZ					SN	Sn	13 44 23.3	-1.3
URZ					AML	AML	13 44 23.7	
OTVZ	**Oturere**	**0.95**	**192**	⇑PN	Pn	13 44 04.7	+0.2
NGZ	**Ngauruhoe**	**0.98**	**195**	PN	Pn	13 44 04.7	0.0
BKZ	**Black Stump Fm**	**1.04**	**154**	⇑PN	Pn	13 44 04.9	-0.2
BKZ					SN	Sn	13 44 24.0	-2.1
BKZ					AML	AML	13 44 26.3	
FWVZ	**Far West T-bar**	**1.06**	**195**	PN	Pn	13 44 05.3	-0.2
WHVZ	**Whangaehu Hut**	**1.08**	**194**	PN	Pn	13 44 05.5	-0.2
TRVZ	**Turoa**	**1.11**	**195**	PN	Pn	13 44 06.0	+0.1
NMHZ	**Naumai**	**1.11**	**142**	PN	Pn	13 44 06.6	+0.9
WNVZ	**Wahianoa**	**1.12**	**193**	⇓PN	Pn	13 44 05.8	-0.1
RAHZ	**Arahi**	**1.14**	**127**	PN	Pn	13 44 06.6	+0.6
PKVZ	**Pokaka**	**1.15**	**203**	⇑PN	Pn	13 44 05.8	-0.2
MOVZ	**Moawhango**	**1.18**	**186**	⇑PN	Pn	13 44 05.8	-0.6
MTVZ	**Mangateitei**	**1.21**	**197**	PN	Pn	13 44 06.3	-0.2
RAGZ	**Rawiri**	**1.21**	**103**	PN	Pn	13 44 06.5	0.0
SNGZ	**Shannon Statio**	**1.24**	**117**	⇑PN	Pn	13 44 07.2	+0.4
KWHZ	**Kaweka Forest**	**1.26**	**162**	⇑PN	Pn	13 44 06.9	-0.1
BHHZ	**Black Hill Sta**	**1.26**	**175**	⇑PN	Pn	13 44 06.5	-0.6
MWZ	**Matawai**	**1.27**	**95**	PN	Pn	13 44 06.6	-0.5
MWZ					AML	AML	13 44 29.1	
MWZ					AML	AML	13 44 31.1	
MWZ					AML	AML	13 44 31.1	
MWZ					AML	AML	13 44 55.0	
MKAZ	**Moumakai**	**1.27**	**332**	PN	Pn	13 44 07.0	-0.1
MKAZ					SN	Sn	13 44 29.6	+0.1
VRZ	**Vera Road**	**1.27**	**225**	PN	Pn	13 44 07.1	+0.1
VRZ					SN	Sn	13 44 30.3	+0.8
ARHZ	**Aropaoanui**	**1.33**	**141**	PN	Pn	13 44 08.0	+0.5
ARHZ					SN	Sn	13 44 30.0	-0.5
WHHZ	**Waihua**	**1.33**	**130**	PN	Pn	13 44 08.3	+0.8
MCHZ	**McNeill Hill**	**1.36**	**154**	PN	Pn	13 44 08.4	+0.6
KRHZ	**Kereru**	**1.46**	**166**	⇑PN	Pn	13 44 08.6	-0.2
MHEZ	**Mangahewa**	**1.51**	**235**	⇓PN	Pn	13 44 10.0	+0.7
RIGZ	**Rimuhau**	**1.52**	**109**	PN	Pn	13 44 09.6	+0.2
TKGZ	**Te Karaka**	**1.53**	**98**	PN	Pn	13 44 09.0	+0.2
HAZ	**Te Kaha**	**1.55**	**73**	PN	Pn	13 44 08.8	+0.8
KNZ	**Kokohu**	**1.59**	**120**	PN	Pn	13 44 10.1	+0.2
KNZ					AML	AML	13 44 33.8	
KNZ					AML	AML	13 44 34.0	
TWGZ	**Tauwhareparae**	**1.62**	**89**	⇓PN	Pn	13 44 10.6	+0.1
TWGZ					SN	Sn	13 44 35.8	+0.3
WAZ	**Wanganui**	**1.69**	**205**	PN	Pn	13 44 10.8	-0.3
PRGZ	**Paritu Road**	**1.69**	**115**	PN	Pn	13 44 11.1	+0.1
CKHZ	**Cape Kidnapper**	**1.69**	**148**	⇑PN	Pn	13 44 11.3	+0.2
PNHZ	**Pukenui**	**1.70**	**173**	⇑PN	Pn	13 44 10.5	-0.6
LREZ	**Lake Rotokare**	**1.71**	**223**	⇑PN	Pn	13 44 11.5	+0.3
KAHZ	**Kahuranaki**	**1.73**	**155**	⇑PN	Pn	13 44 11.6	+0.1
PKGZ	**Pakihiroa**	**1.74**	**79**	⇑PN	Pn	13 44 11.6	0.0
NEZ	**North Egmont**	**1.76**	**233**	⇑PN	Pn	13 44 12.3	+0.3
PKE	**Pukeiti**	**1.79**	**237**	PN	Pn	13 44 12.5	+0.3
MHGZ	**Mahia Peninsul**	**1.81**	**121**	PN	Pn	13 44 12.5	+0.2
CNGZ	**Carnagh Statio**	**1.82**	**99**	⇓PN	Pn	13 44 12.9	+0.5
KHEZ	**Kahui Hut**	**1.83**	**234**	PN	Pn	13 44 12.9	+0.3
PUZ	**Puketiti**	**1.85**	**86**	PN	Pn	13 44 12.3	-0.5
PUZ					AML	AML	13 44 39.8	
PUZ					AML	AML	13 44 40.1	
WPHZ	**Waipukurau**	**1.88**	**168**	⇑PN	Pn	13 44 12.5	-0.6
PXZ	**Pawanui**	**1.94**	**158**	⇑PN	Pn	13 44 13.3	-0.4
PXZ					AML	AML	13 44 42.3	
PXZ					AML	AML	13 44 42.4	
PXZ					AML	AML	13 44 42.7	
PXZ					AML	AML	13 44 42.7	
MXZ	**Matakaoa Point**	**2.00**	**71**	PN	Pn	13 44 14.4	0.0
MXZ					AML	AML	13 44 15.7	
MXZ					AML	AML	13 44 45.3	
WMGZ	**Waiomatatini S**	**2.01**	**79**	⇑PN	Pn	13 44 14.4	-0.2
OHWZ	**Ohakea**	**2.03**	**193**	⇑PN	Pn	13 44 14.2	-0.4
DVHZ	**Dannevirke**	**2.08**	**175**	⇑PN	Pn	13 44 14.2	-1.1
POWZ	**Post Office Ro**	**2.16**	**183**	⇑PN	Pn	13 44 15.0	-1.2
ANWZ	**Angora Road**	**2.27**	**169**	⇑PN	Pn	13 44 16.0	-0.8
PRWZ	**Pori Road**	**2.32**	**179**	PN	Pn	13 44 16.9	-1.1
MRZ	**Mangatainoka R**	**2.44**	**186**	PN	Pn	13 44 17.7	-1.7
BFZ	**Birch Farm**	**2.46**	**174**	PN	Pn	13 44 18.2	-1.4
BFZ					AML	AML	13 44 52.1	
BFZ					AML	AML	13 44 52.9	
BFZ					AML	AML	13 44 53.0	
TIWZ	**Tintock**	**2.54**	**181**	PN	Pn	13 44 19.0	-1.7
TIWZ					AML	AML	13 44 51.9	
TIWZ					AML	AML	13 44 56.0	
OGWZ	**Otaki Gorge**	**2.65**	**192**	⇑PN	Pn	13 44 20.1	-1.8
HOWZ	**Holdsworth Sta**	**2.68**	**187**	PN	Pn	13 44 20.2	-2.1
KIW	**Kapiti Island**	**2.74**	**196**	PN	Pn	13 44 20.8	-2.2
TMWZ	**Te Maipa**	**2.87**	**180**	⇓PN	Pn	13 44 22.6	-2.0
MTW	**Mount Morrison**	**2.94**	**186**	⇓PN	Pn	13 44 23.0	-2.4
CAW	**Cannon Point**	**2.95**	**193**	PN	Pn	13 44 23.1	-2.4
CAW					AML	AML	13 45 02.5	
CAW					AML	AML	13 45 02.6	
DUWZ	**D'Urville Isla**	**3.00**	**210**	⇑PN	Pn	13 44 23.5	-2.6
TRWZ	**Traveller**	**3.17**	**183**	PN	Pn	13 44 25.9	-2.3
PAWZ	**Paruwai Farm**	**3.17**	**187**	⇑PN	Pn	13 44 25.5	-2.8
WEL	**Wellington**	**3.18**	**196**	PN	Pn	13 44 25.5	-2.8
MSWZ	**Moikau Station**	**3.22**	**189**	⇑PN	Pn	13 44 26.1	-2.8
MSWZ					AML	AML	13 45 05.0	
MSWZ					AML	AML	13 45 05.7	
TCW	**Tory Channel**	**3.23**	**203**	⇓PN	Pn	13 44 26.4	-2.6

TCW				AML	AML	13 45 06.6
TCW				AML	AML	13 45 07.4
BHW	**Barking Head**	**3.27**	**194**	PN	Pn	13 44 26.7 -2.9
PLWZ	**Palliser**	**3.37**	**188**	⫝̸PN	Pn	13 44 27.8 -3.0
TUWZ	**Tuamarina**	**3.54**	**205**	PN	Pn	13 44 29.7 -3.1
TUWZ				AML	AML	13 45 12.8
TUWZ				AML	AML	13 45 13.8
NNZ	**Nelson**	**3.57**	**212**	PN	Pn	13 44 30.1 -3.1
QRZ	**Quartz Range**	**3.69**	**224**	PN	Pn	13 44 31.3 -3.4
BSWZ	**Blackbirch Sta**	**3.82**	**204**	PN	Pn	13 44 33.2 -3.2
KHZ	**Kahutara**	**4.56**	**203**	PN	Pn	13 44 42.7 -3.2
DSZ	**Denniston Nort**	**4.72**	**221**	PN	Pn	13 44 43.7 -4.5
MQZ	**McQueen's Vall**	**6.00**	**203**	PN	Pn	13 44 59.3 -5.5

BJI ***21*** *13:47:08.9, 35˚.53N×140˚.89E, h47km, mb4.8/44, mB5.3/10, Ms5.3/14, Ms7 5.1/14*

MOS ***21*** *13:47:09.6±1.3, 35˚.77N×140˚.89E, h42km, mb4.8/35, Error ellipse: s-maj=8.5km s-min=5.5km az=101.3*

ISCJB ***21*** *13:47:10.5±0.4, 35˚.71N±0˚.03×140˚.82E±0˚.04, h50km±3km, mb4.6/63, MS4.6/4, Error ellipse: s-maj=6.1km s-min=5.0km az=28.3*

NEIC ***21*** *13:47:11.2±0.3, 35˚.71N×140˚.70E, h35km, mb5.1/11, Error ellipse: s-maj=7.4km s-min=5.7km az=139.0*

NEIC Recorded [3 JMA] in Chiba.

JMA ***21*** *13:47:11.1±0.1, 35˚.67N×140˚.74E, h45km±1km, M4.3 Broadband fault plane solution: P waves. NP1: φs215.00000°, δ62.00000°, λ-134.00000°. NP2: φs100.00000°, δ50.00000°, λ-37.00000°. Principal axes: T Plg7.0000°, Azm335.0000°; N Plg38.0000°, Azm239.0000°; P Plg51.0000°, Azm74.0000°;*

JMA Felt III J1.

IDC ***21*** *13:47:13.7±2.0, 35˚.69N×140˚.63E, h59km±18km, mb4.2/30, mb1 4.4/33, mb1mx4.2/57, mbtmp4.5/33 Error ellipse: s-maj=14.4km s-min=10.2km az=96.0*

ISC 21 13:47:11.3±0.7, 35.72N±0˚.05×140.84E±0˚.05, h40km±5km, n162, σ1§57/169, mb4.6/64, MS4.5/4, 2C-3D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CHOJ	**Chosi**	**0.03**	**134**	⫝̸P	**Pn**	**13 47 18.2**	**+0.5**
CHOJ				S	**Sn**	**13 47 23.7**	**+1.6**
JCN	**Nagara**	**0.60**	**240**	⫝̸P	**Pn**	**13 47 22.8**	**-0.5**
JCN				S	**Sn**	**13 47 32.0**	**+0.1**
KTR	**Katsuura**	**0.71**	**217**	⫝̸P	**Pn**	**13 47 23.7**	**-1.2**
JYT	**Yasato**	**0.72**	**314**	⫝̸P	**Pn**	**13 47 24.7**	**-0.4**
BSO4	**Boso 4**	**0.83**	**209**	P	**Pn**	**13 47 25.6**	**-0.9**
BSO3	**Boso 3**	**0.95**	**196**	P	**Pn**	**13 47 27.2**	**-0.8**
BSO1	**Boso 1**	**1.07**	**174**	P	**Pn**	**13 47 28.9**	**-0.4**
MJAR	**Matsushiro Arr**	**2.28**	**292**	P	**Pn**	**13 47 47.8**	**+1.4**
	128nm,0.3s,baz=98,slow=15,SNR=343						
MAJO	**Matsushiro**	**2.28**	**292**	*e*P	**Pn**	**13 47 47.5**	**+1.1**
MAJO				*e*		13 48 14.3	
MAJO	**Matsushiro**	**2.28**	**292**	*e*Pn	**Pn**	**13 47 47.5**	**+1.1**
MAJO				*e*Sn	**Sn**	**13 48 14.3**	**+1.0**
MJB9	**Matsu-Tunnel**	**2.28**	**292**	*e*Pn	**Pn**	**13 47 47.8**	**+1.3**
JHJ2	**Mitsune**	**2.74**	**198**	*e*Pn	**Pn**	**13 47 52.3**	**-0.4**
JHJ2				*e*Sn	**Sn**	**13 48 25.0**	**+0.5**
JHJ	**Hachijo jima 2**	**2.74**	**199**	P	**Pn**	**13 47 52.5**	**-0.2**
	96nm,0.3s,baz=344,slow=20,SNR=21						
INU	**Inuyama**	**3.14**	**264**	*e*Pn	**Pn**	**13 47 58.4**	**+0.2**
ERM	**Erimo**	**6.54**	**15**	*e*P	**Pn**	**13 48 44.4**	**-0.5**
ERM	**Erimo**	**6.54**	**15**	Pn	**Pn**	**13 48 44.2**	**-0.7**
ASAJ	**Asahikawa**	**8.49**	**9**	*e*Pn	Pn	13 49 06.9	-4.8
JNU	**Nakatsue**	**8.62**	**255**	P	**Pn**	**13 49 15.5**	**+1.9**
	1.0nm,0.3s,baz=42,slow=6.8,SNR=7.9						
JNU	**Nakatsue**	**8.62**	**255**	Pn	**Pn**	**13 49 10.9**	**-2.7**
YUK	**Yuzh-Kuril'sk**	**9.15**	**23**	*e*P	**Pn**	**13 49 18.2**	**-2.5**
YUK				pmax	pmax		
	comp=Z,128nm,0.9s						
YUK				pmax	pmax		
	comp=N,78nm,0.4s						
YUK				pmax	pmax		
	comp=E,84nm,1.0s						
SHO	**Shikotan**	**9.35**	**28**	*e*P	**Pn**	**13 49 21.9**	**-1.5**
VLA	**Vladivostok**	**10.12**	**320**	*e*P	**Pn**	**13 49 38.5**	**+4.6**
KSRS	**Korea Array**	**10.53**	**283**	P	**Pn**	**13 49 44.0**	**+4.5**
	comp=E,1.1nm,0.3s,baz=99,slow=14,SNR=27						
KSAR	**Wonju Array Be**	**10.56**	**283**	P	**Pn**	**13 49 44.0**	**+4.0**
KSAR	**Wonju Array Be**	**10.56**	**283**	P	**Pn**	**13 49 44.0**	**+4.0**
USRK	**Ussuriysk Ar.**	**10.85**	**324**	P	**Pn**	**13 49 46.5**	**+2.6**
	comp=E,1.2nm,0.3s,baz=132,slow=13,SNR=13						
KUR	**Kuril'sk**	**10.90**	**27**	*e*P	**Pn**	**13 49 46.0**	**+1.4**
KUR				*e*S	**Sn**	**13 51 38.4**	**-6.8**
KUR				pmax	pmax		
	comp=Z,15nm,0.8s						
KUR				smax	smax		
	comp=N,23nm,0.7s						
KUR				smax	smax		
	comp=E,17nm,0.7s						
YSS	**Yuzh-Sakhalins**	**11.31**	**7**	*e*P	**Pn**	**13 49 49.6**	**-0.7**
YSS	**Yuzh-Sakhalins**	**11.31**	**7**	*e*Pn	**Pn**	**13 49 49.6**	**-0.7**
MDJ	**Mudanjiang**	**12.35**	**319**	P	**Pn**	**13 50 03.8**	**-0.7**
MDJ				pmax	pmax		
	comp=E,9.0nm,1.2s						
MDJ				pmax	pmax		
	comp=E,3μm,3.4s						
CN2	**Changchun**	**14.31**	**309**	*e*P	**P**	**13 50 36.0**	**-1.5**
CN2				pmax	pmax		
	comp=E,10.0nm,0.9s						
KLR	**Kul'dur**	**15.05**	**337**	P	**Pn**	**13 50 39.0**	**-2.1**
	comp=E,0.7nm,0.3s,baz=169,slow=12,SNR=7.5						
TYV	**Tymovskoe**	**15.19**	**4**	*e*P	**Pn**	**13 50 41.0**	**-1.8**
TYV				pmax	pmax		
	comp=Z,31nm,0.8s						
NJ2	**Nanjing**	**18.61**	**265**	*e*P	**P**	**13 51 24.1**	**-1.1**
NJ2				pmax	pmax		
	comp=Z,13nm,0.7s						
PEA0	**Petropavlovsk-**	**21.06**	**29**	*e*P	**P**	**13 51 53.1**	**+1.4**
PETK	**Petropavlovsk-**	**21.06**	**29**	P	**P**	**13 51 54.2**	**+2.5**
	comp=Z,16nm,1.0s,baz=217,slow=8.7,SNR=6.9						
PET	**Petropavlovsk**	**21.38**	**30**	*e*P	**P**	**13 51 55.0**	**-0.1**
PET				pmax	pmax		
	comp=Z,25nm,1.1s						
WHN	**Wuhan**	**22.74**	**264**	P	**P**	**13 52 08.3**	**-1.6**
HHC	**Hu-ho-hao-te**	**23.48**	**291**	*e*P	**P**	**13 52 16.8**	**-0.6**
HHC				pmax	pmax		
	comp=Z,27nm,0.6s						
MA2	**Magadan**	**24.73**	**12**	P	**P**	**13 52 29.1**	**+0.5**
	comp=Z,12nm,0.7s,baz=213,slow=9.0,SNR=16						
ENH	**Enshi**	**26.78**	**267**	*e*P	**P**	**13 52 43.8**	**-3.7**
	comp=Z,32nm,0.6s						
YAK	**Yakutsk**	**27.25**	**349**	P	**P**	**13 52 50.2**	**-1.1**
	comp=Z,17nm,0.4s,baz=48,slow=1.6,SNR=5.9						
YAK	**Yakutsk**	**27.25**	**349**	*e*P	**P**	**13 52 51.6**	**+0.3**
YAK				pmax	pmax		
	comp=Z,22nm,1.0s						
YAK				pmax	pmax		
	comp=N,20nm,1.3s						
YAK				pmax	pmax		
	comp=E,11nm,1.6s						
YAK	**Yakutsk**	**27.25**	**349**	*e*P	**P**	**13 52 51.1**	**-0.2**
ULN	**Ulaanbaatar**	**27.73**	**306**	*i* P	**P**	**13 52 55.6**	**-0.4**
ULN				pmax	pmax		
	comp=Z,6.0nm,0.9s						
H11N2	**WAKE ISLAND Hy**	**27.91**	**118**	T	T	14 22 07.3	
	baz=310,slow=75,SNR=13						
H11N1	**WAKE ISLAND Hy**	**27.92**	**118**	T	T	14 22 06.7	
	baz=310,slow=75,SNR=20						
H11N3	**WAKE ISLAND Hy**	**27.93**	**118**	T	T	14 21 59.1	
	baz=310,slow=75,SNR=23						
SONM	**Songino Array**	**28.16**	**306**	P	**P**	**13 52 58.9**	**-0.9**
	comp=Z,5.4nm,0.7s,baz=103,slow=9.4,SNR=13						
SEY	**Seymchan**	**28.17**	**11**	P	**P**	**13 53 01.3**	**+1.8**
	comp=Z,4.3nm,0.6s,baz=199,slow=9.3,SNR=8.2						
SEY	**Seymchan**	**28.17**	**11**	*e*P	**P**	**13 53 00.5**	**+1.0**
H11S3	**WAKE ISLAND Hy**	**28.57**	**120**	T	T	14 22 48.5	
	baz=312,slow=75,SNR=34						
H11S1	**WAKE ISLAND Hy**	**28.57**	**120**	T	T	14 22 48.6	
	baz=312,slow=75,SNR=33						
H11S2	**WAKE ISLAND Hy**	**28.59**	**120**	T	T	14 22 49.6	
	baz=312,slow=75,SNR=34						
LZH	**Lanzhou**	**29.85**	**282**	*e*P	**P**	**13 53 15.8**	**+0.8**
LZH				pP	pP	13 53 28.0	+2.0
LZH				sP	sP	13 53 33.8	+3.0
LZH				PP	**PnPn**	**13 54 13.0**	**+1.1**
LZH				pmax	pmax		
	comp=Z,25nm,1.2s						
LZH				pmax	pmax		
	comp=Z,86nm,6.0s						
LZH				LR	LR		
	comp=Z,380nm,13.4s						
LZH				LR	LR		
	comp=Z,390nm,13.0s						
LZH				LR	LR		
	comp=Z,450nm,16.9s						
GYA	**Guiyang**	**30.56**	**262**	P	**P**	**13 53 23.0**	**+1.7**
GYA				pP	sP	13 53 35.3	-1.8
GYA				PP	**PnPn**	**13 54 22.8**	**+1.5**
GYA				PcP	**PcP**	**13 56 22.0**	**+2.6**
GYA				S	**S**	**13 58 19.6**	**-0.9**
GYA				sS	sS	13 58 40.6	+1.7
GYA				ScP	**ScP**	**13 59 59.3**	**+0.6**
GYA				SS	**SnSn**	**14 00 01.0**	**+1.6**
GYA				ScS	**ScS**	**14 03 52.4**	**-2.8**
GYA				pmax	pmax		
	comp=Z,20nm,1.1s						
GYA				pmax	pmax		
	comp=Z,120nm,5.8s						
GYA				LR	LR		
	comp=Z,530nm,15.8s						
GYA				LR	LR		
	comp=Z,470nm,15.9s						
GYA				LR	LR		
	comp=Z,500nm,16.2s						
CD2	**Chengdu**	**31.23**	**272**	P	**P**	**13 53 25.5**	**-1.6**
CD2				pmax	pmax		
	comp=Z,1.0nm,0.5s						
GTA	**Gaotai**	**32.52**	**289**	*e*P	**P**	**13 53 37.0**	**-1.5**
GTA				pmax	pmax		
	comp=Z,6.0nm,1.0s						
KMI	**Kunming**	**34.32**	**263**	P	**P**	**13 53 53.6**	**-0.7**
KMI				pmax	pmax		
	comp=Z,8.0nm,0.5s						
KMI				LR	LR		
	comp=Z,2μm,14.7s						
KMI				LR	LR		
	comp=Z,1μm,12.0s						
KMI				LR	LR		
	comp=Z,3μm,14.9s						
BILL	**Bilibino**	**35.41**	**16**	*i* P	**P**	**13 54 01.8**	**-1.2**
BILL				pmax	pmax		
	comp=Z,5.0nm,1.0s						
TIXI	**Tiksi**	**36.54**	**354**	P	**P**	**13 54 12.5**	**0.0**
	comp=Z,4.0nm,0.5s,baz=145,slow=7.6,SNR=6.8						
KRAR	**Krasnoyarsk**	**38.10**	**317**	*i* P	**P**	**13 54 25.4**	**-0.6**
KRAR				pmax	pmax		
	comp=Z,13nm,0.8s						
CMAR	**Chiang Mai Arr**	**40.72**	**256**	P	**P**	**13 54 46.6**	**-1.7**
	comp=Z,0.7nm,0.4s,baz=51,slow=7.0,SNR=5.5						
WMQ	**Urumqi**	**41.03**	**298**	P	**P**	**13 54 51.9**	**+1.2**
WMQ				pP	pP	13 55 04.0	+2.1
WMQ				sP	sP	13 55 09.1	+2.4
WMQ				pmax	pmax		
	comp=Z,9.0nm,0.8s						
WMQ				LR	LR		
	comp=Z,750nm,16.8s						
WMQ				LR	LR		
	comp=Z,500nm,19.4s						
WMQ				LR	LR		
	comp=Z,510nm,14.4s						
LSA	**Lhasa**	**41.88**	**276**	*e*P	**P**	**13 54 56.6**	**-1.6**
LSA	**Lhasa**	**41.88**	**276**	*e*P	**P**	**13 54 56.6**	**-1.6**
ZAA0	**Zalesovo Array**	**42.47**	**313**	*e*P	**P**	**13 55 01.9**	**-0.2**
ZALV	**Zalesovo Beam**	**42.47**	**313**	P	**P**	**13 55 02.0**	**-0.2**
	comp=Z,7.2nm,0.5s,baz=89,slow=6.3,SNR=21						
ZALV				PP	**PP**	**13 56 40.0**	**-0.9**
	comp=Z,2.8nm,0.5s,baz=90,slow=8.2,SNR=6.0						
ZALV				PcP	**PcP**	**13 56 51.1**	**-3.3**
	comp=Z,2.0nm,0.3s,baz=116,slow=3.2,SNR=5.8						
NVS	**Novosibirsk**	**43.42**	**315**	*e*P	**P**	**13 55 09.7**	**-0.1**
NVS				pmax	pmax		
	comp=Z,13nm,0.8s						
NVS				pmax	pmax		
	comp=E,7.0nm,0.8s						
NRIK	**Noril'sk**	**44.27**	**336**	P	**P**	**13 55 16.4**	**-0.1**
	comp=E,4.3nm,0.6s,baz=165,slow=12,SNR=3.2						
MK01	**Makanchi Array**	**44.43**	**303**	*e*P	**P**	**13 55 17.8**	**-0.4**
MK31	**Makanchi Array**	**44.43**	**303**	*e*P	**P**	**13 55 18.2**	**+0.1**
MK31	**Makanchi Array**	**44.43**	**303**	*e*P	**P**	**13 55 18.2**	**+0.1**
MKAR	**Makanchi Array**	**44.43**	**303**	P	**P**	**13 55 17.9**	**-0.3**
	comp=E,7.8nm,0.6s,baz=84,slow=9.4,SNR=42						
MKAR	**Makanchi Array**	**44.43**	**303**	*e*P	**P**	**13 55 18.2**	**+0.1**
MKAR	**Makanchi Array**	**44.43**	**303**	*e*P	**P**	**13 55 18.2**	**+0.1**
MAKZ	**Makanchi**	**44.64**	**303**	*e*P	**P**	**13 55 19.9**	**+0.1**
MAKZ				pmax	pmax		
	comp=Z,8.0nm,0.5s						
MAKZ	**Makanchi**	**44.64**	**303**	*e*P	**P**	**13 55 19.9**	**+0.1**
	comp=Z,8.4nm,0.5s						
KURK	**Kurchatov**	**46.38**	**309**	*e*P	**P**	**13 55 32.4**	**-1.1**
KURK				pmax	pmax		
	comp=Z,31nm,0.9s						
KURK	**Kurchatov**	**46.38**	**309**	*e*P	**P**	**13 55 32.4**	**-1.1**
	comp=Z,31nm,0.9s						
KURBB	**Kurchatov Arra**	**46.45**	**309**	P	**P**	**13 55 33.4**	**-0.6**
	comp=Z,9.4nm,0.4s,baz=81,slow=7.5,SNR=77						
PKIN	**Phulchoki**	**47.36**	**276**	*e*P	**P**	**13 55 40.2**	**-1.5**
	comp=Z,14nm,0.6s						
KKN	**Kakani**	**47.36**	**277**	*e*P	**P**	**13 55 41.0**	**-0.7**
	comp=Z,17nm,0.5s						
GKN	**Gorkha**	**47.80**	**277**	*e*P	**P**	**13 55 44.1**	**-0.9**
	comp=Z,35nm,0.5s						
KDAK	**Kodiak Island**	**48.39**	**41**	P	P	13 56 04.2	+15
	comp=Z,4.4nm,0.7s,baz=257,slow=6.5,SNR=4.7						
KOLN	**Koldanda**	**48.73**	**278**	*e*P	**P**	**13 55 51.4**	**-0.9**
	comp=Z,25nm,0.7s						
PYUN	**Piuthan**	**49.09**	**278**	*e*P	**P**	**13 55 54.2**	**-0.8**
	comp=Z,72nm,0.5s						
TKM2	**Tokmak 2**	**49.85**	**299**	*e*P	**P**	**13 56 00.2**	**-0.4**
TKM2				pmax	pmax		
	comp=Z,17nm,0.6s						
TKM2	**Tokmak 2**	**49.85**	**299**	*e*P	**P**	**13 56 00.2**	**-0.4**
	comp=Z,17nm,0.6s						
MDM	**Murphy Dome**	**50.27**	**32**	*e*P	**P**	**13 56 05.6**	**+2.3**
	comp=Z,8.3nm,0.7s						
COLA	**College**	**50.44**	**32**	*e*P	**P**	**13 56 03.0**	**-1.4**
COLA				pmax	pmax		
	comp=Z,4.0nm,0.9s						
KSH	**Kashi**	**50.52**	**295**	*e*P	**P**	**13 56 08.8**	**+3.1**
KSH				*e*sP	sP	13 56 26.8	+4.9
KSH				*e*PcP	**PcP**	**13 57 26.1**	**+2.9**
KSH				pmax	pmax		
	comp=Z,270nm,3.9s						
AAK	**Ala-Archa**	**50.71**	**299**	*e*P	**P**	**13 56 06.5**	**-0.6**
AAK				pmax	pmax		
	comp=Z,12nm,0.9s						
AAK	**Ala-Archa**	**50.71**	**299**	*e*P	**P**	**13 56 05.8**	**-1.4**
IL1	**Eielson Array**	**50.85**	**32**	*e*P	**P**	**13 56 08.8**	**+1.2**
ILAR	**Eielson Array**	**50.85**	**32**	P	**P**	**13 56 08.9**	**+1.3**
	comp=Z,3.7nm,0.8s,baz=265,slow=5.8,SNR=28						
ILAR	**Eielson Array**	**50.85**	**32**	P	**P**	**13 56 09.0**	**+1.3**
ILAR				pmax	pmax		
	comp=Z,4.0nm,0.8s						
ILB	**Eielson Array**	**50.85**	**32**	*e*P	**P**	**13 56 08.9**	**+1.3**
BVAR	**Borovoye Array**	**51.12**	**313**	P	**P**	**13 56 10.1**	**+0.3**
	comp=Z,5.4nm,0.5s,baz=80,slow=8.2,SNR=17						
BRVK	**Borovoye**	**51.17**	**313**	*e*P	**P**	**13 56 10.2**	**0.0**
BRVK				pmax	pmax		
	comp=Z,9.0nm,1.0s						
BRVK	**Borovoye**	**51.17**	**313**	*e*P	**P**	**13 56 08.3**	**-1.9**
	comp=Z,9.3nm,0.6s						
EKS2	**Erkin-Say**	**51.21**	**299**	*e*P	**P**	**13 56 09.1**	**-1.7**
EKS2	**Erkin-Say**	**51.21**	**299**	*e*P	**P**	**13 56 09.1**	**-1.7**
KKAR	**Karatay Array**	**53.39**	**301**	*e*P	**P**	**13 56 26.0**	**-0.8**
KKAR	**Karatay Array**	**53.39**	**301**	*e*P	**P**	**13 56 26.0**	**-0.8**
FITZ	**Fitzroy Crossi**	**55.43**	**198**	P	**P**	**13 56 41.7**	**-0.1**
	comp=Z,5.7nm,0.7s,baz=20,slow=8.7,SNR=13						
WRAB	**Tennant Creek**	**55.69**	**187**	*e*P	**P**	**13 56 44.2**	**+0.6**
WRAB				pmax	pmax		
	comp=Z,43nm,1.4s						
WRAB	**Tennant Creek**	**55.69**	**187**	*e*P	**P**	**13 56 44.2**	**+0.6**
	comp=Z,43nm,1.4s						
WRA	**Warramunga Arr**	**55.70**	**187**	P	**P**	**13 56 42.3**	**-1.4**
	comp=Z,4.4nm,0.5s,baz=0.9,slow=7.3,SNR=30						
INK	**Inuvik**	**55.77**	**27**	P	**P**	**13 56 45.4**	**+1.8**
	comp=Z,2.4nm,0.5s,baz=293,slow=6.1,SNR=12						
ARU	**Arti**	**57.04**	**319**	P	**P**	**13 56 52.8**	**-0.1**
	comp=Z,17nm,0.3s,baz=91,slow=8.5,SNR=40						
ARU	**Arti**	**57.04**	**319**	*c* *i*P	**P**	**13 56 52.6**	**-0.3**
ARU				S	**S**	**14 04 48.8**	**+4.4**
ARU				SS	**SS**	**14 08 35.8**	**+2.9**
ARU				pmax	pmax		
	comp=Z,18nm,0.7s						
ARU	**Arti**	**57.04**	**319**	*e*P	**P**	**13 56 52.3**	**-0.5**
	comp=Z,21nm,0.6s						
HYB	**Hyderabad**	**57.71**	**269**	*i* P	**P**	**13 56 58.0**	**-0.2**
HYB				*e*		13 57 10.0	
ABKAR	**Akbulak array**	**58.43**	**311**	*e*P	**P**	**13 57 01.8**	**-1.0**
ASAR	**Alice Springs**	**59.43**	**187**	P	**P**	**13 57 10.3**	**+0.4**
	comp=Z,1.0nm,0.7s,baz=19,slow=12,SNR=11						
RES	**Resolute Bay**	**63.98**	**14**	*e*P	**P**	**13 57 40.2**	**+0.3**
RES				pmax	pmax		
	comp=Z,4.0nm,0.8s						
RES	**Resolute Bay**	**63.98**	**14**	*e*P	**P**	**13 57 40.2**	**+0.3**
	comp=Z,4.1nm,0.8s						
GEYT	**Ailibeck**	**64.06**	**299**	P	**P**	**13 57 40.8**	**-0.4**
	comp=Z,1.5nm,0.5s,baz=25,slow=3.9,SNR=4.0						
ARCES	**ARCESS Array B**	**65.06**	**339**	P	**P**	**13 57 46.6**	**-0.5**
	comp=Z,3.2nm,0.7s,baz=46,slow=7.2,SNR=17						
YKA	**Yellowknife Ar**	**65.18**	**30**	P	**P**	**13 57 48.9**	**+1.0**
	comp=Z,1.1nm,0.7s,baz=302,slow=6.6,SNR=9.3						
YKB5	**Yellowknife Ar**	**65.18**	**30**	*e*P	**P**	**13 57 49.9**	**+2.0**
FINES	**FINESS Array B**	**69.76**	**332**	P	**P**	**13 58 16.7**	**-0.1**
	comp=Z,3.9nm,0.5s,baz=54,slow=6.4,SNR=30						
VSU	**Vasula**	**71.35**	**330**	*e*P	**P**	**13 58 25.1**	**-1.5**
VSU				pmax	pmax		
	comp=Z,25nm,1.0s						
KBZ	**Khabaz**	**71.40**	**311**	P	**P**	**13 58 27.6**	**+0.4**
	comp=Z,7.3nm,0.8s,baz=41,slow=1.9,SNR=8.9						
KIV	**Kislovodsk**	**71.41**	**311**	*i* P	**P**	**13 58 28.4**	**+1.0**
KIV				*i*		13 58 45.8	
KIV				pmax	pmax		
	comp=Z,13nm,0.8s						
KIV	**Kislovodsk**	**71.41**	**311**	*e*P	**P**	**13 58 26.9**	**-0.5**
	comp=Z,18nm,0.6s						
NEY	**Neytrino**	**71.76**	**310**	*e*P	**P**	**13 58 29.0**	**-0.6**
NEY				pmax	pmax		
	comp=Z,2.0nm,1.1s						
NWAO	**Narrogin (SRO)**	**71.78**	**201**	P	**P**	**13 58 30.7**	**+1.3**
	comp=Z,4.9nm,0.7s,baz=287,slow=0.6,SNR=2.6						
GNI	**Garni**	**72.11**	**307**	*e*P	**P**	**13 58 30.0**	**-1.8**
GNI				pmax	pmax		
	comp=Z,21nm,1.0s						
NC405	**NORSAR Array S**	**75.00**	**337**	*e*P	**P**	**13 58 48.7**	**+0.5**
AKASG	**Malin Array Be**	**75.05**	**322**	P	**P**	**13 58 47.8**	**-0.8**
	comp=Z,3.0nm,0.5s,baz=48,slow=6.3,SNR=4.5						
KIEV	**Kiev**	**75.06**	**322**	*e*P	**P**	**13 58 47.3**	**-1.3**
KIEV				pmax	pmax		
	comp=Z,5.0nm,0.8s						
NC204	**NORSAR Array S**	**75.17**	**338**	*e*P	**P**	**13 58 49.3**	**+0.1**
NB201	**NORSAR Array S**	**75.18**	**337**	*e*P	**P**	**13 58 49.7**	**+0.5**
NB2	**NORSAR Subarra**	**75.21**	**337**	P	**P**	**13 58 49.1**	**-0.3**
	comp=Z,6.4nm,0.8s,baz=42,slow=5.9						
NOA	**NORSAR Array B**	**75.21**	**337**	P	**P**	**13 58 49.3**	**-0.1**
	comp=Z,4.5nm,0.6s,baz=39,slow=5.7,SNR=24						
NBO00	**NORSAR Array S**	**75.36**	**337**	*e*P	**P**	**13 58 50.6**	**+0.4**
LRM	**Limekiln Ridge**	**75.41**	**44**	*e*P	**P**	**13 58 53.2**	**+2.1**
BOZ	**Bozeman (W)**	**75.98**	**44**	*e*P	**P**	**13 58 56.5**	**+2.2**
BOZ				pmax	pmax		
	comp=Z,7.0nm,1.0s						
BOZ	**Bozeman (W)**	**75.98**	**44**	*e*P	**P**	**13 58 56.5**	**+2.2**
	comp=Z,6.5nm,1.0s						
KIS	**Kishinev**	**77.59**	**319**	*e*PS	**P**	**13 59 02.0**	**-1.1**
KIS				LRM	MLR	14 25 56.0	
	comp=Z,9μm,16.0s						
PD31	**Pinedale Array**	**78.92**	**45**	*e*P	**P**	**13 59 12.4**	**+1.6**
PDAR	**Pinedale Array**	**78.92**	**45**	P	**P**	**13 59 12.1**	**+1.2**
	comp=Z,1.7nm,0.6s,baz=256,slow=2.4,SNR=14						
BR131	**Keskin Array S**	**79.37**	**311**	*e*P	**P**	**13 59 14.3**	**+1.0**
BRTR	**Keskin Array B**	**79.37**	**311**	P	**P**	**13 59 13.7**	**+0.4**
	comp=Z,2.5nm,0.8s,baz=112,slow=4.8,SNR=8.8						
BR231	**Keskin MP Arra**	**79.82**	**312**	*e*P	**P**	**13 59 14.0**	**-1.6**
CLL	**Collm**	**82.00**	**330**	*i* P	**P**	**13 59 27.2**	**+0.3**
	comp=Z,7.0nm,0.9s						
CLL	**Collm**	**82.00**	**330**	*i* P	**P**	**13 59 27.2**	**+0.3**
CLL				pmax	pmax		
	comp=Z,7.0nm,0.9s						
CONA	**Conrad Observa**	**83.31**	**326**	*i* P	**P**	**13 59 34.6**	**+0.7**
	comp=Z,2.8nm,0.9s						
KHC	**Kasperske Hory**	**83.41**	**328**	*e*P	**P**	**13 59 34.8**	**+0.5**
KHC	**Kasperske Hory**	**83.41**	**328**	*e*P	**P**	**13 59 34.8**	**+0.5**
GERES	**GERESS Array B**	**83.58**	**328**	P	**P**	**13 59 35.2**	**-0.1**
	comp=Z,0.5nm,0.3s,baz=37,slow=6.9,SNR=4.4						
ARSA	**Arzberg**	**83.97**	**326**	*i* P	**P**	**13 59 37.9**	**+0.7**
	comp=Z,2.2nm,0.6s						
SOKA	**Soboth**	**84.62**	**326**	*i* P	**P**	**13 59 40.8**	**+0.2**
	comp=Z,4.2nm,0.8s						
MYKA	**Terra Mystica**	**85.28**	**327**	*i* P	**P**	**13 59 43.4**	**-0.5**
	comp=Z,5.0nm,0.9s						
ANMO	**Albuquerque**	**85.79**	**49**	*e*P	**P**	**13 59 43.7**	**-3.1**
ANMO				pmax	pmax		
	comp=Z,2.0nm,1.0s						
MOTA	**Moosalm**	**85.84**	**328**	*i* sP	sP	14 00 00.4	-3.2
	comp=Z,2.2nm,0.5s						
RETA	**Reutte**	**85.88**	**329**	*i* PcP	**P**	**13 59 47.0**	**+0.1**
	comp=Z,3.0nm,0.6s						
**FETA

MAJO	**Matsushiro**	**2.14**	**293**	*e*Pn	**Pb**	**13 54 35.7**	**-1.6**
MAJO				*e*Sn	**Sn**	**13 54 57.6**	**-0.5**
MAT	**Matsushiro**	**2.14**	**293**	P	**Pb**	**13 54 35.5**	**-1.8**
MAT				S	**Sb**	**13 55 02.7**	**-0.7**
MJB9	**Matsu-Tunnel**	**2.14**	**293**	*e*Pn	**Pb**	**13 54 35.9**	**-1.5**
JHJ	**Hachijo jima 2**	**2.70**	**196**	P	**Pn**	**13 54 40.8**	**+0.4**
	187nm,0.3s,baz=13,slow=3.2,SNR=20						
JHJ				S	**Sn**	**13 55 12.6**	**+0.6**
	284nm,0.3s,baz=106,slow=23,SNR=8.2						
JHJ2	**Mitsune**	**2.70**	**195**	*e*Pn	**Pn**	**13 54 40.1**	**-0.3**
JHJ2				*e*Sn	**Sn**	**13 55 12.1**	**+0.1**
INU	**Inuyama**	**2.99**	**264**	*e*Pn	**Pn**	**13 54 46.9**	**+2.6**
ERM	**Erimo**	**6.57**	**17**	*ce*P	**Pn**	**13 55 34.5**	**+1.0**
ERM				pmax	pmax		
	comp=Z,79nm,1.7s						
ERM	**Erimo**	**6.57**	**17**	*e*Pn	**Pn**	**13 55 33.9**	**+0.3**
ERM				*e*Sn	**Sn**	**13 56 46.1**	**-1.2**
JNU	**Nakatsue**	**8.48**	**255**	P	Pn	13 56 03.8	+4.0
	comp=Z,1.0nm,0.3s,baz=91,slow=6.8,SNR=8.2						
JNU	**Nakatsue**	**8.48**	**255**	*e*Pn	**Pn**	**13 55 60.0**	**+0.1**
ASAJ	**Asahikawa**	**8.51**	**10**	P	**Pn**	**13 55 59.6**	**-0.5**
	comp=Z,2.3nm,0.3s,baz=231,slow=10,SNR=19						
ASAJ				S	**Sn**	**13 57 32.3**	**-2.6**
	comp=Z,1.8nm,0.3s,baz=186,slow=19,SNR=3.2						
ASAJ	**Asahikawa**	**8.51**	**10**	*e*Pn	**Pn**	**13 55 59.7**	**-0.4**
ASAJ				S	**Sn**	**13 57 32.3**	**-2.6**
ASAJ				*e*Sn	Sn	13 57 34.6	-0.3
CBIJ	**Chichi jima**	**8.71**	**171**	P	**Pn**	**13 56 00.8**	**-2.1**
JCJ	**Chichijima**	**8.71**	**171**	P	**Pn**	**13 56 00.8**	**-2.1**
	baz=309,slow=14						
YUK	**Yuzh-Kuril'sk**	**9.21**	**24**	P	**Pn**	**13 56 12.2**	**+2.6**
YUK				*e*S	**Sn**	**13 57 47.1**	**-5.0**
YUK				pmax	pmax		
	comp=Z,81nm,0.6s						
YUK				pmax	pmax		
	comp=E,54nm,0.5s						
YUK				pmax	pmax		
	comp=N,92nm,0.7s						
SHO	**Shikotan**	**9.41**	**28**	*e*P	**Pn**	**13 56 12.0**	**-0.5**
KSRS	**Korea Array**	**10.38**	**283**	P	Pn	13 56 31.9	+6.1
	comp=N,0.8nm,0.3s,baz=98,slow=14,SNR=22						
KSAR	**Wonju Array Be**	**10.41**	**283**	P	Pn	13 56 31.9	+5.7
KSAR	**Wonju Array Be**	**10.41**	**283**	P	Pn	13 56 31.9	+5.7
USRK	**Ussuriysk Ar.**	**10.75**	**324**	P	**Pn**	**13 56 33.9**	**+3.1**
	comp=N,0.7nm,0.3s,baz=131,slow=12,SNR=7.9						
KUR	**Kuril'sk**	**10.96**	**28**	P	Pn	13 56 37.6	+3.9
KUR				pmax	pmax		
	comp=Z,16nm,0.9s						
KUR				pmax	pmax		
	comp=N,659nm,6.1s						
KUR				pmax	pmax		
	comp=E,738nm,6.1s						
KUR				pmax	pmax		
	comp=N,12nm,0.7s						
KUR				pmax	pmax		
	comp=E,24nm,0.7s						
YSS	**Yuzh-Sakhalins**	**11.32**	**7**	P	**Pn**	**13 56 38.8**	**+0.2**
YSS	**Yuzh-Sakhalins**	**11.32**	**7**	Pn	**Pn**	**13 56 38.8**	**+0.2**
MDJ	**Mudanjiang**	**12.25**	**320**	P	**Pn**	**13 56 54.1**	**+2.8**
MDJ				pmax	pmax		
	comp=E,12nm,2.3s						
JOW	**Kunigami**	**13.80**	**233**	P	**P**	**13 57 18.4**	**-2.3**
	comp=E,0.9nm,0.3s,baz=7.6,slow=15,SNR=2.8						
KLR	**Kul'dur**	**14.99**	**337**	P	**Pn**	**13 57 25.6**	**-3.0**
	comp=E,0.2nm,0.3s,baz=153,slow=18,SNR=5.2						
KLR	**Kul'dur**	**14.99**	**337**	*i* P	**Pn**	**13 57 30.8**	**+2.2**
TYV	**Tymovskoe**	**15.20**	**5**	*e*P	**Pn**	**13 57 30.0**	**-1.3**
TYV				pmax	pmax		
	comp=Z,13nm,0.8s						
NKL	**Nikolayevsk**	**17.42**	**0**	*e*P	**Pn**	**13 57 56.0**	**-3.5**
YULB	**Yu-li**	**20.80**	**239**	*e*P	**P**	**13 58 34.1**	**-3.7**
PEA0	**Petropavlovsk-**	**21.12**	**29**	*e*P	**P**	**13 58 44.6**	**+3.5**
PETK	**Petropavlovsk-**	**21.12**	**29**	P	**P**	**13 58 40.9**	**-0.2**
	comp=Z,10nm,1.1s,baz=198,slow=2.3,SNR=5.4						
TPUB	**Ta-pu**	**21.33**	**240**	P	**P**	**13 58 39.1**	**-4.5**
	comp=Z,8.6nm,0.6s						
WHN	**Wuhan**	**22.59**	**264**	P	**P**	**13 58 56.4**	**-0.6**
HHC	**Hu-ho-hao-te**	**23.34**	**291**	*e*P	**P**	**13 59 04.8**	**+0.1**
HHC				pmax	pmax		
	comp=Z,22nm,0.9s						
HHC				pmax	pmax		
	comp=Z,1μm,8.1s						
MA2	**Magadan**	**24.75**	**12**	P	**P**	**13 59 18.6**	**+1.0**
	comp=Z,6.4nm,0.6s,baz=218,slow=11,SNR=16						
ENH	**Enshi**	**26.63**	**267**	*e*P	**P**	**13 59 33.0**	**-1.9**
	comp=Z,51nm,0.6s						
ULN	**Ulaanbaatar**	**27.61**	**306**	*ce*P	**P**	**13 59 45.8**	**+2.1**
ULN				pmax	pmax		
	comp=Z,3.0nm,0.8s						
SONA1	**Songino Array**	**28.03**	**306**	*e*P	**P**	**13 59 47.1**	**-0.3**
SONM	**Songino Array**	**28.03**	**306**	P	**P**	**13 59 46.9**	**-0.5**
	comp=Z,1.9nm,0.7s,baz=105,slow=8.4,SNR=9.4						
SEY	**Seymchan**	**28.19**	**11**	P	**P**	**13 59 49.7**	**+1.3**
	comp=Z,2.4nm,0.7s,baz=196,slow=7.3,SNR=3.6						
SEY	**Seymchan**	**28.19**	**11**	*i* P	P	13 59 53.0	+4.6
BOD	**Bodaibo**	**28.32**	**330**	*e*P	**P**	**13 59 49.5**	**-0.2**
BOD				pmax	pmax		
	comp=Z,5.0nm,1.0s						
H11S1	**WAKE ISLAND Hy**	**28.71**	**120**	T	T	14 29 45.9	
	baz=312,slow=75,SNR=12						
H11S3	**WAKE ISLAND Hy**	**28.71**	**120**	T	T	14 29 41.9	
	baz=312,slow=75,SNR=12						
H11S2	**WAKE ISLAND Hy**	**28.72**	**120**	T	T	14 29 53.3	
	baz=312,slow=75,SNR=11						
LZH	**Lanzhou**	**29.70**	**282**	*e*P	**P**	**14 00 03.3**	**+0.9**
LZH				pP	sP	14 00 16.8	+1.2
LZH				sP	pP	14 00 23.1	+11
LZH				PP	**PnPn**	**14 01 01.3**	**+3.1**
LZH				pmax	pmax		
	comp=Z,24nm,1.1s						
LZH				LR	LR		
	comp=Z,300nm,13.2s						
LZH				LR	LR		
	comp=Z,320nm,12.9s						
LZH				LR	LR		
	comp=Z,400nm,16.5s						
GYA	**Guiyang**	**30.41**	**262**	*e*P	**P**	**14 00 09.3**	**+0.6**
GYA				pmax	pmax		
	comp=Z,10.0nm,0.8s						
CD2	**Chengdu**	**31.08**	**272**	P	**P**	**14 00 12.8**	**-1.7**
CD2				pmax	pmax		
	comp=Z,1.0nm,0.5s						
GTA	**Gaotai**	**32.38**	**289**	*e*P	**P**	**14 00 27.0**	**+1.0**
GTA				pmax	pmax		
	comp=Z,11nm,0.7s						
KMI	**Kunming**	**34.17**	**263**	P	**P**	**14 00 42.8**	**+1.0**
KMI				pmax	pmax		
	comp=Z,9.0nm,0.5s						
BILL	**Bilibino**	**35.45**	**16**	*i* P	**P**	**14 00 52.3**	**+0.3**
BILL				*i*		14 01 03.9	
BILL				*i*		14 02 19.5	
BILL				*i*		14 03 21.1	
BILL				pmax	pmax		
	comp=Z,4.0nm,1.0s						
BILL	**Bilibino**	**35.45**	**16**	*e*P	**P**	**14 00 52.4**	**+0.3**
	comp=Z,30nm,2.0s						
TIXI	**Tiksi**	**36.51**	**354**	P	**P**	**14 01 01.2**	**+0.1**
	comp=Z,1.7nm,0.6s,baz=131,slow=4.9,SNR=8.5						
TIXI	**Tiksi**	**36.51**	**354**	*ce*P	**P**	**14 01 00.7**	**-0.4**
TIXI				pmax	pmax		
	comp=Z,4.0nm,1.2s						
CHTO	**Chiang Mai**	**40.38**	**257**	P	**P**	**14 01 33.1**	**-1.2**
CHTO				pmax	pmax		
	comp=Z,2.0nm,0.8s						
CHTO	**Chiang Mai**	**40.38**	**257**	P	**P**	**14 01 33.1**	**-1.2**
	comp=Z,2.4nm,0.8s						
CMAR	**Chiang Mai Arr**	**40.58**	**256**	P	**P**	**14 01 35.1**	**-0.8**
	comp=Z,1.0nm,0.4s,baz=46,slow=8.1,SNR=9.1						
WMQ	**Urumqi**	**40.89**	**298**	P	**P**	**14 01 38.9**	**+0.6**
WMQ				pP	sP	14 01 51.6	-0.1
WMQ				sP	pP	14 01 58.3	+10
WMQ				pmax	pmax		
	comp=Z,10.0nm,0.6s						
WMQ				LR	LR		
	comp=Z,950nm,14.6s						
WMQ				LR	LR		
	comp=Z,330nm,16.6s						
LSA	**Lhasa**	**41.73**	**276**	*e*P	**P**	**14 01 45.5**	**-0.3**
LSA	**Lhasa**	**41.73**	**276**	*e*P	**P**	**14 01 45.5**	**-0.3**
ZAA0	**Zalesovo Array**	**42.35**	**313**	*e*P	**P**	**14 01 50.4**	**+0.4**
ZALV	**Zalesovo Beam**	**42.35**	**313**	P	**P**	**14 01 50.4**	**+0.3**
	comp=Z,5.5nm,0.7s,baz=90,slow=6.3,SNR=24						
ZALV				PcP	**PcP**	**14 03 42.3**	**-0.6**
	comp=Z,1.3nm,0.4s,baz=103,slow=2.2,SNR=4.0						
NVS	**Novosibirsk**	**43.31**	**315**	*e*P	**P**	**14 01 58.0**	**+0.3**
NVS				pmax	pmax		
	comp=Z,11nm,1.2s						
NVS				pmax	pmax		
	comp=E,9.0nm,1.4s						
NRIK	**Noril'sk**	**44.20**	**336**	P	**P**	**14 02 05.2**	**+0.5**
	comp=E,2.4nm,0.5s,baz=91,slow=9.4,SNR=2.4						
MK01	**Makanchi Array**	**44.30**	**303**	*e*P	**P**	**14 02 05.5**	**-0.4**
MK31	**Makanchi Array**	**44.30**	**303**	*i* P	**P**	**14 02 05.7**	**-0.2**
MK31				pmax	pmax		
	comp=Z,5.0nm,0.6s						
MK31	**Makanchi Array**	**44.30**	**303**	*e*P	**P**	**14 02 06.2**	**+0.3**
MKAR	**Makanchi Array**	**44.30**	**303**	P	**P**	**14 02 06.2**	**+0.2**
	comp=Z,5.9nm,0.5s,baz=87,slow=9.6,SNR=72						
MAKZ	**Makanchi**	**44.51**	**303**	P	**P**	**14 02 07.8**	**+0.2**
MAKZ				pmax	pmax		
	comp=Z,5.0nm,0.6s						
MAKZ	**Makanchi**	**44.51**	**303**	*e*P	**P**	**14 02 08.0**	**+0.4**
	comp=Z,6.5nm,0.6s						
KAPI	**Kappang**	**45.03**	**210**	P	**P**	**14 02 11.8**	**-0.1**
	comp=Z,6.0nm,0.7s,baz=124,slow=7.7,SNR=3.6						
KURK	**Kurchatov**	**46.26**	**309**	P	**P**	**14 02 21.1**	**-0.2**
KURK				pmax	pmax		
	comp=Z,38nm,0.9s						
KURK	**Kurchatov**	**46.26**	**309**	*e*P	**P**	**14 02 20.5**	**-0.8**
	comp=Z,17nm,0.8s						
PDGK	**Podgornoye**	**46.85**	**299**	P	**P**	**14 02 26.1**	**0.0**
PDGK				pmax	pmax		
	comp=Z,10.0nm,0.6s						
PKIN	**Phulchoki**	**47.21**	**276**	*e*P	**P**	**14 02 28.0**	**-1.4**
	comp=Z,12nm,0.6s						
KKN	**Kakani**	**47.22**	**277**	*e*P	**P**	**14 02 28.9**	**-0.5**
	comp=Z,18nm,0.5s						
GKN	**Gorkha**	**47.65**	**277**	*e*P	**P**	**14 02 32.4**	**-0.3**
	comp=Z,25nm,0.4s						
KOLN	**Koldanda**	**48.58**	**277**	*e*P	**P**	**14 02 40.3**	**+0.4**
	comp=Z,14nm,0.5s						
PYUN	**Piuthan**	**48.94**	**278**	*e*P	**P**	**14 02 42.7**	**0.0**
	comp=Z,75nm,0.7s						
MTN	**Manton Dam**	**49.14**	**192**	*e*P	**P**	**14 02 43.2**	**-0.8**
	comp=Z,27nm,1.1s						
TKM2	**Tokmak 2**	**49.72**	**299**	P	**P**	**14 02 49.2**	**+0.7**
TKM2				pmax	pmax		
	comp=Z,13nm,0.7s						
TKM2	**Tokmak 2**	**49.72**	**299**	P	P	14 02 45.1	-3.3
	comp=Z,14nm,0.6s						
MDM	**Murphy Dome**	**50.34**	**32**	*e*P	**P**	**14 02 54.5**	**+1.8**
	comp=Z,4.8nm,0.8s						
KSH	**Kashi**	**50.38**	**295**	*e*P	P	14 02 57.4	+3.9
KSH				*es*P	sP	14 03 20.1	+13
KSH				S	**S**	**14 10 05.3**	**+0.6**
AAK	**Ala-Archa**	**50.58**	**299**	‖ *i* P	**P**	**14 02 53.8**	**-1.1**
AAK				pmax	pmax		
	comp=Z,6.0nm,1.2s						
AAK	**Ala-Archa**	**50.58**	**299**	*e*P	**P**	**14 02 55.5**	**+0.5**
	comp=Z,0.6nm,0.7s						
VOSK	**Vostochnaya**	**50.70**	**313**	P	**P**	**14 02 55.2**	**-0.3**
VOSK				pmax	pmax		
	comp=Z,11nm,1.2s						
OTUK	**Ortayu**	**50.70**	**307**	P	**P**	**14 02 55.8**	**+0.2**
OTUK				pmax	pmax		
	comp=Z,8.0nm,0.7s						
CHKZ	**Chkalovo**	**50.76**	**314**	P	**P**	**14 02 55.7**	**-0.2**
CHKZ				pmax	pmax		
	comp=Z,7.0nm,0.9s						
IL1	**Eielson Array**	**50.92**	**32**	*e*P	**P**	**14 02 57.6**	**+0.6**
ILAR	**Eielson Array**	**50.92**	**32**	P	**P**	**14 02 57.7**	**+0.7**
	comp=Z,1.6nm,0.7s,baz=267,slow=5.9,SNR=20						
ILB	**Eielson Array**	**50.92**	**32**	*e*P	**P**	**14 02 58.0**	**+1.0**
BVA0	**Borovoye Array**	**51.00**	**313**	*i* P	**P**	**14 02 57.8**	**0.0**
BVA0				pmax	pmax		
	comp=Z,3.0nm,0.6s						
BRVK	**Borovoye**	**51.06**	**313**	*ce*P	**P**	**14 02 58.0**	**-0.2**
BRVK				pmax	pmax		
	comp=Z,6.0nm,0.7s						
BRVK	**Borovoye**	**51.06**	**313**	*e*P	**P**	**14 02 56.8**	**-1.4**
	comp=Z,6.8nm,0.7s						
ZRNK	**Zerenda**	**51.84**	**313**	P	**P**	**14 03 04.2**	**+0.2**
ZRNK				pmax	pmax		
	comp=Z,8.0nm,0.7s						
MNAS	**Manas**	**52.03**	**299**	P	**P**	**14 03 06.3**	**+0.5**
MNAS				pmax	pmax		
	comp=Z,4.0nm,0.6s						
SFK	**Sufi-Kurgan**	**52.05**	**296**	P	**P**	**14 03 06.4**	**+0.3**
SFK				pmax	pmax		
	comp=Z,3.0nm,0.5s						
FITZ	**Fitzroy Crossi**	**55.40**	**197**	P	**P**	**14 03 29.8**	**-0.5**
	comp=Z,7.5nm,0.6s,baz=14,slow=7.4,SNR=27						
FITZ	**Fitzroy Crossi**	**55.40**	**197**	*e*P	P	14 03 26.8	-3.5
	comp=Z,9.1nm,0.7s						
WRAB	**Tennant Creek**	**55.68**	**187**	*e*P	**P**	**14 03 31.4**	**-1.0**
WRAB				pmax	pmax		
	comp=Z,8.0nm,0.7s						
WRAB	**Tennant Creek**	**55.68**	**187**	*e*P	**P**	**14 03 31.4**	**-1.0**
	comp=Z,7.6nm,0.7s						
WB2	**Warramunga Arr**	**55.69**	**187**	*e*P	**P**	**14 03 30.8**	**-1.7**
	comp=Z,10nm,0.9s						
WRA	**Warramunga Arr**	**55.69**	**187**	P	**P**	**14 03 30.6**	**-1.9**
	comp=Z,5.3nm,0.7s,baz=1.3,slow=7.5,SNR=40						
ARU	**Arti**	**56.93**	**319**	*c i* P	**P**	**14 03 41.0**	**0.0**
ARU						14 05 45.2	
ARU				S	**S**	**14 11 35.0**	**+2.4**
ARU				SS	**SS**	**14 15 18.0**	**-2.6**
ARU				pmax	pmax		
	comp=Z,12nm,0.7s						
ARU	**Arti**	**56.93**	**319**	*e*P	**P**	**14 03 40.4**	**-0.6**
	comp=Z,19nm,1.0s						
AB31	**Akbulak array**	**58.31**	**311**	P	**P**	**14 03 50.7**	**-0.1**
AB31				pmax	pmax		
	comp=Z,5.0nm,0.5s						
ABKAR	**Akbulak array**	**58.31**	**311**	*e*P	**P**	**14 03 50.1**	**-0.7**
AKTO	**Aktyubinsk**	**59.09**	**312**	P	**P**	**14 03 56.1**	**-0.1**
AKTO				pmax	pmax		
	comp=Z,5.0nm,0.8s						
AS01	**Alice Springs**	**59.41**	**187**	*e*P	**P**	**14 03 57.4**	**-1.2**
AS31	**Alice Springs**	**59.42**	**187**	*e*P	**P**	**14 03 58.3**	**-0.4**
	comp=Z,1.4nm,0.5s						
ASAR	**Alice Springs**	**59.42**	**187**	P	**P**	**14 03 57.5**	**-1.2**
	comp=Z,1.1nm,0.5s,baz=16,slow=10,SNR=41						
ASAR	**Alice Springs**	**59.42**	**187**	P	**P**	**14 03 57.5**	**-1.2**
ASAR				pmax	pmax		
	comp=Z,2.0nm,0.5s						
GEYT	**Alibeck**	**63.93**	**299**	P	**P**	**14 04 28.8**	**-0.4**
	comp=Z,1.8nm,0.6s,baz=42,slow=2.4,SNR=3.9						
RES	**Resolute Bay**	**64.01**	**14**	*e*P	**P**	**14 04 28.9**	**-0.1**
RES				pmax	pmax		
	comp=Z,5.0nm,1.0s						
RES	**Resolute Bay**	**64.01**	**14**	*e*P	**P**	**14 04 28.9**	**-0.1**
	comp=Z,4.7nm,1.0s						
ARCES	**ARCESS Array B**	**65.00**	**339**	P	**P**	**14 04 35.4**	**-0.2**
	comp=Z,1.8nm,0.7s,baz=64,slow=5.5,SNR=8.0						
YKA	**Yellowknife Ar**	**65.24**	**30**	P	**P**	**14 04 37.4**	**+0.2**
	comp=Z,0.6nm,0.7s,baz=303,slow=6.7,SNR=14						
STKA	**Stephens Creek**	**67.26**	**179**	P	**P**	**14 04 51.7**	**+1.3**
	comp=Z,2.4nm,0.7s,baz=331,slow=13,SNR=3.4						
FIA1	**FINESS Array S**	**69.68**	**332**	*e*P	**P**	**14 05 05.0**	**-0.2**
FINES	**FINESS Array B**	**69.68**	**332**	P	**P**	**14 05 05.1**	**-0.1**
	comp=Z,7.9nm,1.0s,baz=72,slow=6.3,SNR=17						
KBZ	**Khabaz**	**71.28**	**311**	P	**P**	**14 05 16.0**	**+0.7**
	comp=Z,4.4nm,0.8s,baz=31,slow=3.6,SNR=8.1						
KIV	**Kislovodsk**	**71.29**	**311**	*i* P	**P**	**14 05 15.5**	**-0.1**
KIV				*i*		14 05 24.0	
KIV				*i*		14 05 37.3	
KIV				pmax	pmax		
	comp=Z,11nm,0.9s						
NC405	**NORSAR Array S**	**74.93**	**337**	*e*P	**P**	**14 05 36.9**	**+0.2**
AKASG	**Malin Array Be**	**74.95**	**322**	P	**P**	**14 05 36.4**	**-0.5**
	comp=Z,3.4nm,0.6s,baz=47,slow=6.1,SNR=18						
KIEV	**Kiev**	**74.96**	**322**	*i* P	**P**	**14 05 35.9**	**-1.1**
KIEV				pmax	pmax		
	comp=Z,6.0nm,0.8s						
KIEV	**Kiev**	**74.96**	**322**	*e*P	**P**	**14 05 35.0**	**-2.0**
	comp=Z,5.5nm,0.7s						
HFS	**Hagfors**	**75.02**	**336**	P	**P**	**14 05 37.0**	**-0.1**
	comp=Z,2.6nm,0.5s,baz=90,slow=3.0,SNR=20						
NC204	**NORSAR Array S**	**75.11**	**337**	*e*P	**P**	**14 05 37.9**	**+0.1**
NB201	**NORSAR Array S**	**75.11**	**337**	*e*P	**P**	**14 05 38.1**	**+0.4**
NB2	**NORSAR Subarra**	**75.15**	**337**	P	**P**	**14 05 37.6**	**-0.3**
	comp=Z,3.6nm,0.6s,baz=41,slow=5.9						
NOA	**NORSAR Array B**	**75.15**	**337**	P	**P**	**14 05 37.9**	**0.0**
	comp=Z,3.7nm,0.6s,baz=40,slow=5.8,SNR=23						
NBO02	**NORSAR Array S**	**75.25**	**337**	*e*P	**P**	**14 05 38.9**	**+0.3**
LRM	**Limekiln Ridge**	**75.51**	**44**	*e*P	**P**	**14 05 42.5**	**+1.9**
NVAR	**Mina Array Bea**	**76.26**	**53**	P	**P**	**14 05 46.4**	**+1.4**
	comp=Z,0.8nm,0.7s,baz=267,slow=6.4,SNR=4.4						
PDAR	**Pinedale Array**	**79.02**	**45**	P	**P**	**14 06 00.4**	**+0.1**
	comp=Z,0.4nm,0.5s,baz=243,slow=2.5,SNR=5.2						
BR131	**Keskin Array S**	**79.25**	**311**	*e*P	**P**	**14 06 02.4**	**+0.9**
BRTR	**Keskin Array B**	**79.25**	**311**	P	**P**	**14 06 01.8**	**+0.2**
	comp=Z,2.4nm,0.8s,baz=105,slow=5.1,SNR=11						
BRTR	**Keskin Array B**	**79.25**	**311**	*i* P	**P**	**14 06 04.5**	**+3.0**
BRTR				pmax	pmax		
	comp=Z,2.0nm,0.8s						
BR231	**Keskin MP Arra**	**79.70**	**312**	*e*P	**P**	**14 06 02.4**	**-1.5**
CLL	**Collm**	**81.92**	**330**	*i* P	**P**	**14 06 15.1**	**-0.2**
	comp=Z,7.0nm,0.9s						
CLL	**Collm**	**81.92**	**330**	*i* P	**P**	**14 06 15.1**	**-0.2**
CLL				pmax	pmax		
	comp=Z,7.0nm,0.9s						
GERES	**GERESS Array B**	**83.49**	**328**	P	**P**	**14 06 22.2**	**-1.5**
	comp=Z,0.6nm,0.4s,baz=41,slow=4.3,SNR=4.7						
EKA	**Eskdalemuir Ar**	**84.15**	**340**	P	**P**	**14 06 27.1**	**+0.3**
	comp=Z,0.9nm,0.5s,baz=33,slow=4.8,SNR=6.7						
BFO	**Black Forest**	**86.13**	**330**	*i* P	**P**	**14 06 37.3**	**+0.3**
TXAR	**Lajitas Array**	**91.40**	**52**	P	**P**	**14 07 02.9**	**+0.5**
	comp=Z,0.3nm,0.7s,baz=309,slow=4.4,SNR=3.5						
MCWV	**Mont Chateau**	**96.20**	**30**	*e*P	**P**	**14 07 26.5**	**+2.4**
	comp=Z,7.7nm,0.4s						
SDV	**Santo Domingo**	**126.72**	**40**	PKP	**PKPdf**	**14 12 59.6**	**-0.7**
	comp=Z,1.7nm,0.4s,baz=336,slow=3.5,SNR=5.2						
SAML	**Samuel**	**145.60**	**45**	*e*PKPdf	**PKPbc**	**14 13 34.9**	**0.0**
LPAZ	**La Paz**	**147.88**	**60**	PKPbc	**PKPbc**	**14 13 42.0**	**-0.2**
	comp=Z,1.8nm,0.7s,baz=186,slow=4.6,SNR=6.3						
LPAZ	**La Paz**	**147.88**	**60**	PKP2	**PKPbc**	**14 13 42.0**	**-0.2**
LPAZ				pmax	pmax		
	comp=Z,2.0nm,0.7s						
LPAZ	**La Paz**	**147.88**	**60**	*e*PKPbc	**PKPbc**	**14 13 42.7**	**+0.5**

*ISCJB **21** 14:02:28.9±1.1, 28°.11N±0°.04×128°.05E±0°.06, h21km±8km, mb3.5/6, Error ellipse: s-maj=9.5km s-min=5.1km az=33.1*
*IDC **21** 14:02:28.1±1.0, 27°.82N×127°.58E, h0km, mb3.5/6, mb1 3.7/7, mb1mx3.4/59, mbtmp3.6/7, ML3.1/1, Error ellipse: s-maj=44.3km s-min=13.8km az=61.0*
*JMA **21** 14:02:28.4±0.2, 28°.11N×128°.06E, h13km±2km, M3.6*
ISC 21 14:02:27.9±1.8, 28°.08N±0°.05×128°.09E±0°.06, h6km±12km, n19, σ0°65/26, mb3.5/6, Ryukyu Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JTK	**Tokunoshima**	**0.82**	**111**	P	**Pb**	**14 02 44.4**	**-0.1**
JTK				S	**Sb**	**14 02 56.0**	**+0.2**
JOKE	**Okinoerabujima**	**0.83**	**149**	P	**Pb**	**14 02 45.0**	**+0.2**
JAMN	**Amaminishikomi**	**0.98**	**80**	P	**Pb**	**14 02 47.1**	**-0.1**
JAMN				S	**Sb**	**14 03 00.6**	**+0.3**
JIH	**Iheya**	**1.04**	**186**	P	**Pb**	**14 02 48.3**	**-0.1**
JIH				S	**Sb**	**14 03 02.4**	**+0.1**
JOW	**Kunigami**	**1.25**	**172**	Pn	**Pb**	**14 02 51.9**	**0.0**
	baz=342,slow=15						
JOW				Sn	**Sg**	**14 03 08.1**	**-0.1**
	78nm,0.3s,baz=186,slow=18,SNR=8.7						
JOW	**Kunigami**	**1.25**	**172**	P	**Pb**	**14 02 51.6**	**-0.3**
JOW				S	**Sb**	**14 03 08.4**	**+0.1**
JAM	**Amami Oshima**	**1.38**	**76**	P	**Pb**	**14 02 53.9**	**-0.2**
JAM				S	**Sb**	**14 03 12.0**	**0.0**
JTAJ	**Takarajima**	**1.45**	**42**	P	**Pn**	**14 02 54.3**	**-0.4**
JNTH	**Nagotoyohara**	**1.55**	**182**	P	**Pn**	**14 02 56.4**	**+0.3**
JNTH				S	**Sn**	**14 03 16.1**	**-0.4**
JAGN	**Aguni-jima**	**1.66**	**207**	P	**Pn**	**14 02 57.7**	**+0.1**
JAGN				*e*S	**Sg**	**14 03 21.2**	**-0.2**
JZK	**Kikaishima**	**1.68**	**81**	P	**Pg**	**14 03 00.3**	**+0.1**
JJT2	**Tamagusuku 2**	**1.95**	**189**	P	**Pb**	**14 03 03.3**	**-0.6**
JNU	**Nakatsue**	**5.57**	**25**	Pn	Pn	14 03 58.1	+6.7
	0.5nm,0.3s,baz=164,slow=8.3,SNR=11						
SONM	**Songino Array**	**25.95**	**325**	P	**P**	**14 08 03.6**	**+2.4**
	1.9nm,1.0s,baz=131,slow=9.2,SNR=9.6						
MKAR	**Makanchi Array**	**40.23**	**310**	P	**P**	**14 10 05.3**	**0.0**
	0.5nm,0.7s,baz=116,slow=7.3,SNR=3.7						
KURBB	**Kurchatov Arra**	**43.44**	**315**	P	**P**	**14 10 30.5**	**-1.0**
	0.5nm,0.7s,baz=103,slow=8.6,SNR=4.1						
WRA	**Warramunga Arr**	**48.12**	**172**	P	**P**	**14 11 08.8**	**+0.1**
	0.7nm,0.9s,baz=353,slow=8.3,SNR=4.1						
BVAR	**Borovoye Array**	**48.82**	**317**	P	**P**	**14 11 12.9**	**-1.0**

EGS					*e*S		**Sb**	**14 16 11.7**	**0.0**		
	baz=330										
ESL	**Shilin**	**1.10**	**264**	*e*P			**Pg**	**14 15 58.2**	**+0.2**		
	baz=257										
ESL					*e*S		**Sg**	**14 16 12.3**	**0.0**		
	baz=257										
ILA	**Ilan**	**1.15**	**316**	*e*P			**Pg**	**14 15 59.1**	**+0.2**		
	baz=311										
ILA					*e*S		**Sn**	**14 16 13.6**	**-0.2**		
	baz=311										
TWE	**Neicheng**	**1.17**	**312**	P			**Pg**	**14 15 59.3**	**0.0**		
	baz=307										
TWE					*e*S		**Sg**	**14 16 14.5**	**-0.1**		
	baz=307										
ENTT	**Nioudou**	**1.19**	**306**	P			**Pg**	**14 15 59.8**	**+0.1**		
	baz=301										
ENTT					*e*S		**Sn**	**14 16 14.8**	**-0.1**		
	baz=301										
TWB1	**Santiao Chiao**	**1.21**	**331**	*e*P			**Pn**	**14 15 58.5**	**-0.7**		
	baz=328										
TWB1					*e*S		**Sb**	**14 16 13.9**	**-1.0**		
	baz=328										
NNS	**Nan Shan**	**1.25**	**294**	*e*P			**Pg**	**14 16 00.7**	**-0.1**		
	baz=288										
NNS					*e*S		**Sn**	**14 16 16.4**	**-0.2**		
	baz=288										
WHF	**Hehuan Shan**	**1.26**	**279**	P			**Pg**	**14 16 01.2**	**+0.1**		
	baz=274										
WHF					*e*S		**Sn**	**14 16 17.2**	**0.0**		
	baz=274										
EHY	**Hungye**	**1.27**	**250**	*e*P			**Pg**	**14 16 01.5**	**+0.2**		
	baz=258										
EHY					*e*S		**Sn**	**14 16 17.4**	**+0.5**		
	baz=258										
JKRS	**Kuro-shima**	**1.30**	**77**	P			**Pg**	**14 16 01.7**	**0.0**		
TWF1	**Yuli**	**1.35**	**245**	*e*P			**Pg**	**14 16 02.8**	**0.0**		
	baz=239										
TWF1					*e*S		**Sg**	**14 16 20.2**	**-0.3**		
	baz=239										
TWT	**Tachien**	**1.36**	**283**	*e*P			**Pg**	**14 16 03.1**	**+0.1**		
	baz=269										
NWF	**Wu-fen Shan**	**1.36**	**326**	P			**Pn**	**14 16 01.1**	**-0.3**		
	baz=322										
NWF					*e*S		**Sn**	**14 16 18.2**	**-1.1**		
	baz=322										
NSK	**Sanguang**	**1.37**	**302**	*e*P			**Pb**	**14 16 02.2**	**0.0**		
	baz=286										
NSK					*e*S		**Sb**	**14 16 19.8**	**+0.2**		
	baz=286										
WDT	**Danda**	**1.38**	**263**	*e*P			**Pg**	**14 16 03.3**	**-0.1**		
	baz=257										
WDT					*e*S		**Sb**	**14 16 20.6**	**+0.5**		
	baz=257										
CHKT	**Chengkung**	**1.43**	**234**	*e*P			**Pb**	**14 16 03.4**	**+0.2**		
	baz=221										
CHKT					*e*S		**Sn**	**14 16 20.7**	**-0.2**		
	baz=221										
JIJ	**Ishigaki jima**	**1.45**	**73**	P			**Pb**	**14 16 03.1**	**-0.3**		
JIJ					S		**Sn**	**14 16 21.0**	**-0.2**		
SMLT	**Sun Moon Lake**	**1.58**	**268**	P			**Pb**	**14 16 06.5**	**+0.6**		
	baz=263										
YUS	**Yu-Shan**	**1.60**	**254**	*e*P			**Pb**	**14 16 06.7**	**+0.3**		
	baz=249										
YUS					*e*S		**Sb**	**14 16 26.4**	**-0.2**		
	baz=249										
TYC	**Yuchr**	**1.62**	**269**	P			**Pb**	**14 16 06.3**	**-0.1**		
	baz=264										
NSTT	**Nanjuang**	**1.64**	**295**	*e*P			**Pb**	**14 16 06.0**	**-0.6**		
	baz=291										
NSTT					*e*S		**Sn**	**14 16 25.9**	**+0.1**		
	baz=291										
ELDTW	**Lidau**	**1.66**	**243**	*e*P			**Pb**	**14 16 06.9**	**-0.2**		
	baz=239										
ELDTW					*e*S		**Sn**	**14 16 26.9**	**+0.3**		
	baz=239										
JISG	**Ishigakijimahi**	**1.67**	**67**	P			**Pn**	**14 16 06.0**	**+0.5**		
JISG					S		**Sn**	**14 16 27.1**	**+0.5**		
ALS	**Alishan**	**1.72**	**256**	*e*P			**Pb**	**14 16 08.8**	**+0.5**		
	baz=251										
ALS					*e*S		**Sb**	**14 16 29.6**	**-0.4**		
	baz=251										
TWQ1	**Liyutan**	**1.74**	**284**	*e*P			**Pb**	**14 16 08.2**	**-0.3**		
	baz=280										
TWQ1					*e*S		**Sb**	**14 16 29.8**	**-0.4**		
	baz=280										
TCU	**Taichung**	**1.79**	**277**	*e*P			**Pg**	**14 16 12.3**	**+1.0**		
	baz=272										
TWG	**Pinlang**	**1.81**	**232**	*e*P			**Pb**	**14 16 09.4**	**-0.3**		
	baz=240										
TWG					*e*S		**Sb**	**14 16 31.7**	**-0.6**		
	baz=240										
CHN5	**Tsauling**	**1.82**	**259**	*e*P			**Pb**	**14 16 10.4**	**+0.6**		
	baz=248										
CHN5					*e*S		**Sb**	**14 16 33.8**	**+1.3**		
	baz=248										
STYT	**Tauyuan**	**1.88**	**246**	*e*P			**Pb**	**14 16 10.1**	**-0.8**		
	baz=235										
STYT					*e*S		**Sb**	**14 16 34.0**	**-0.4**		
	baz=235										
CHN4	**Tsaushan**	**1.96**	**253**	*e*P			**Pb**	**14 16 12.3**	**+0.2**		
	baz=249										
CHN4					*e*S		**Sb**	**14 16 37.2**	**+0.8**		
	baz=249										
WTP	**Ta-pu**	**1.97**	**250**	*e*P			**Pb**	**14 16 13.5**	**+1.1**		
	baz=246										
WTP					*e*S		**Sg**	**14 16 38.9**	**-1.3**		
	baz=246										
ECL	**Taimali**	**2.04**	**229**	*e*P			**Pb**	**14 16 12.8**	**-0.7**		
	baz=236										
ECL					*e*S		**Sn**	**14 16 36.6**	**+0.8**		
	baz=236										
SGST	**Jiashian**	**2.06**	**246**	*e*P			**Pb**	**14 16 14.4**	**+0.4**		
	baz=233										
SGST					*e*S		**Sb**	**14 16 39.1**	**-0.4**		
	baz=233										
CHN1	**Nanshi**	**2.07**	**249**	*e*P			**Pb**	**14 16 15.1**	**+1.0**		
	baz=246										
CHN1					*e*S		**Sb**	**14 16 39.6**	**0.0**		
	baz=246										
TWK	**Hsinying**	**2.07**	**252**	*e*P			**Pb**	**14 16 13.4**	**-0.8**		
	baz=248										
TWK					*e*S		**Sb**	**14 16 40.2**	**+0.3**		
	baz=248										
LAY	**Lan-yu**	**2.14**	**208**	*e*P			**Pn**	**14 16 12.3**	**+0.2**		
	baz=204										
LAY					*e*S		**Sn**	**14 16 37.5**	**-0.9**		
	baz=204										
SSD	**Sandimen**	**2.19**	**237**	*e*P			**Pb**	**14 16 16.3**	**+0.2**		
	baz=229										
EAST	**Anshuo**	**2.26**	**227**	*e*P			**Pb**	**14 16 16.1**	**-1.2**		
	baz=231										
EAST					*e*S		**Sb**	**14 16 43.7**	**-1.4**		
	baz=231										

ISCJB ***21*** *14:18:29.7±0.3,36˚41N±0˙02×70˚67E±0˙03,h143km±4km, mb4.3/65, Error ellipse: s-maj=4.0km s-min=3.0km az=172.9*

NEIC ***21*** *14:18:30.8±0.6,36˚39N×70˚64E,h142km±6km,mb4.5/21, Error ellipse: s-maj=5.8km s-min=5.0km az=152.0*

MOS ***21*** *14:18:30.7±1.1,36˚45N×70˚66E,h153km, mb4.4/36, Error ellipse: s-maj=7.3km s-min=4.1km az=85.6*

BJI ***21*** *14:18:30.6,36˚50N×70˚57E,h147km,mb4.5/38,mB5.2/12*

IDC ***21*** *14:18:32.0±0.6,36˚33N×70˚61E,h155km±4km,mb3.9/27, mb1 4.1/32,mb1mx3.9/62,mbtmp4.5/32, Error ellipse: s-maj=10.5km s-min=8.4km az=5.0*

NNC ***21*** *14:18:34.1±1.6,36˚70N×70˚43E,h167km±18km, mb4.3, mpv5.2, Error ellipse: s-maj=15.2km s-min=11.4km az=46.0*

ISC 21 14:18:31.5±0.4,36˚40N±0˙04×70˚54E±0˙04,h151km±3km, h151km:pP-P,n237,σ2s12/274,mb4.3/65,19C-23D,Hindu Kush region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KBL	**Kabul**	**2.22**	**214**	*e*PN	**Pn**	**14 19 10.1**	**+0.5**
KBL	**Kabul**	**2.22**	**214**	*e*Pn	**Pn**	**14 19 10.1**	**+0.5**
CEP	**Cherat**	**2.81**	**156**	⇓P	**Pn**	**14 19 17.2**	**+0.5**
CHCP	**Chirah Chowk**	**3.54**	**140**	P	**Pn**	**14 19 26.2**	**+0.4**
THW	**Thamme Wali**	**3.74**	**164**	⇓P	**Pn**	**14 19 28.6**	**+0.2**
SFK	**Sufi-Kurgan**	**4.29**	**32**	⇑P	**Pn**	**14 19 36.2**	**+0.4**
	109nm,0.2s						
SFK				⇑S	**Sn**	**14 20 25.5**	**-0.4**
	508nm,0.2s						
SFK	**Sufi-Kurgan**	**4.29**	**32**	PN	**Pn**	**14 19 35.8**	**0.0**
SFK				S	**Sn**	**14 20 24.4**	**-1.5**
SFK				pmax	pmax		
	comp=Z,109nm,0.2s						
SFK				smax	smax		
	comp=N,508nm,0.2s						
SARP	**Sargodha**	**4.81**	**158**	⇓P	**Pn**	**14 19 41.6**	**-0.8**
KSH	**Kashi**	**5.30**	**52**	⇑*i*P	**Pn**	**14 19 44.6**	**-4.4**
KSH				*e*sP		14 20 18.4	
KSH				S	Sn	14 20 38.3	-11
KSH				pmax	pmax		
	comp=N,1μm,0.6s						
KSH				smax	smax		
	comp=N,3μm,0.8s						
KSH				smax	smax		
	comp=N,2μm,0.9s						
MNAS	**Manas**	**6.26**	**13**	⇓P	**Pn**	**14 20 01.1**	**-0.7**
	comp=N,125nm,0.6s						
MNAS				⇓S	**Sn**	**14 21 09.2**	**-3.3**
	comp=N,544nm,0.7s						
MNAS	**Manas**	**6.26**	**13**	PN	**Pn**	**14 20 01.0**	**-0.7**
MNAS				pmax	pmax		
	comp=Z,125nm,0.6s						
DHRM	**DHARAMSHALA**	**6.32**	**129**	*e*P	**Pn**	**14 20 01.3**	**-1.4**
DHRM				*e*S	**Sn**	**14 21 09.8**	**-4.2**
DHRM				IAML		14 21 11.7	
	comp=N,2μm,0.1s						
DHRM				IAML		14 21 12.4	
	comp=E,3μm,0.5s						
JWA	**Jwalamukhi**	**6.60**	**132**	*e*P	**Pn**	**14 20 05.0**	**-1.2**
JWA				*e*S	**Sn**	**14 21 14.0**	**-6.4**
KK31	**Karatay Array**	**6.69**	**360**	⇓P	**Pn**	**14 20 07.0**	**-0.4**
	comp=E,56nm,0.3s,baz=171,slow=12,SNR=505						
KK31				⇑S	**Sn**	**14 21 18.9**	**-3.6**
	comp=E,203nm,0.5s						
KK31	**Karatay Array**	**6.69**	**360**	PN	**Pn**	**14 20 07.1**	**-0.3**
KK31				pmax	pmax		
	comp=Z,56nm,0.4s						
KKAR	**Karatay Array**	**6.69**	**360**	*e*PN	**Pn**	**14 20 07.0**	**-0.3**
KKAR				pmax	pmax		
	comp=Z,121nm,0.3s						
KKAR	**Karatay Array**	**6.69**	**360**	*e*Pn	**Pn**	**14 20 07.0**	**-0.3**
	comp=Z,121nm,0.3s						
KKAR				*e*Sn	**Sn**	**14 21 19.3**	**-3.2**
EKS2	**Erkin-Say**	**6.73**	**21**	*e*PN	**Pn**	**14 20 07.5**	**-0.5**
EKS2	**Erkin-Say**	**6.73**	**21**	*e*Pn	**Pn**	**14 20 07.5**	**-0.5**
EKS2				*e*Sn	**Sn**	**14 21 18.4**	**-5.3**
AAK	**Ala-Archa**	**6.93**	**25**	P	**Pn**	**14 20 10.3**	**-0.3**
	comp=Z,30nm,0.3s,baz=189,slow=7.6,SNR=515						
AAK				S	**Sn**	**14 21 25.1**	**-3.4**
	comp=Z,26nm,0.3s,baz=348,slow=20,SNR=14						
AAK	**Ala-Archa**	**6.93**	**25**	⇑P	**Pn**	**14 20 10.4**	**-0.3**
	comp=Z,108nm,0.6s						
AAK				⇓S	**Sn**	**14 21 26.5**	**-2.1**
	comp=Z,545nm,1.0s						
AAK	**Ala-Archa**	**6.93**	**25**	*i* PN	**Pn**	**14 20 10.2**	**-0.5**
AAK				pmax	pmax		
	comp=Z,270nm,0.6s						
AAK	**Ala-Archa**	**6.93**	**25**	S	**Sn**	**14 21 25.1**	**-3.4**
AAK				*e*Sn	Sn	14 21 26.7	-1.8
AAK	**Ala-Archa**	**6.93**	**25**	Pn	**Pn**	**14 20 10.4**	**-0.3**
	SNR=53						
AAK	**Ala-Archa**	**6.93**	**25**	P	**Pn**	**14 20 10.4**	**-0.3**
	SNR=53						
FRU	**Bishkek**	**7.15**	**25**	*e*PN	**Pn**	**14 20 13.0**	**-0.5**
FRU				pmax	pmax		
	comp=Z,120nm,2.0s						
SDNR	**Sundarnagar**	**7.25**	**131**	*e*P	**Pn**	**14 20 13.7**	**-1.2**
SDNR				*e*S	**Sn**	**14 21 28.6**	**-7.4**
TKM2	**Tokmak 2**	**7.59**	**29**	⇑P	**Pn**	**14 20 18.7**	**-0.8**
	comp=Z,87nm,0.6s						
TKM2				⇑S	**Sn**	**14 21 43.4**	**-1.0**
	comp=Z,121nm,0.9s						
TKM2	**Tokmak 2**	**7.59**	**29**	PN	**Pn**	**14 20 18.8**	**-0.8**
TKM2				pmax	pmax		
	comp=Z,87nm,0.6s						
TKM2	**Tokmak 2**	**7.59**	**29**	*e*Pn	**Pn**	**14 20 18.5**	**-1.0**
TKM2				*e*Sn	**Sn**	**14 21 42.4**	**-1.9**
SMLA	**Simla**	**7.62**	**132**	*i* P	**Pn**	**14 20 17.7**	**-2.2**
SMLA				*i* S	**Sn**	**14 21 40.7**	**-4.3**
SMLA				*i* S	**Sn**	**14 21 41.0**	**-4.1**
SMLA				IAML		14 21 42.6	
	comp=N,556nm,0.3s						
SMLA				IAML		14 21 43.1	
	comp=E,655nm,0.4s						
KNDC	**Almaty**	**8.41**	**34**	⇓P	**Pn**	**14 20 30.0**	**-0.3**
	comp=E,94nm,0.9s						
AAA	**Alma-Ata**	**8.45**	**34**	*i* PN	**Pn**	**14 20 30.7**	**-0.1**
AAA				pmax	pmax		
	comp=Z,200nm,0.5s						
AAA				MLR	MLR		
	comp=Z,2μm,12.0s						
DDI	**Dehra Dun**	**8.73**	**132**	*e*P	**Pn**	**14 20 33.9**	**-0.9**
DDI				*e*S	**Sn**	**14 22 04.6**	**-7.2**
DDI				IAML		14 22 11.4	
	comp=N,477nm,0.6s						
DDI				IAML		14 22 14.8	
	comp=E,618nm,0.5s						
KHET	**Khetri**	**9.43**	**150**	*e*P	**Pn**	**14 20 40.3**	**-3.6**
KHET				*e*P	**Pn**	**14 20 40.3**	**-3.6**
KHET				*e*S	Sn	14 22 18.7	-10
KHET				IAML		14 22 23.4	
	comp=N,87nm,0.1s						
KHET				IAML		14 22 24.0	
	comp=E,138nm,0.5s						
NDI	**New Delhi**	**9.54**	**142**	*e*P	Pn	14 20 39.0	-6.4
NDI				*e*S	Sn	14 22 17.0	-14
KUDL	**Kundal**	**9.65**	**147**	*e*P	**Pn**	**14 20 44.3**	**-2.6**
KUDL				*e*P	**Pn**	**14 20 44.3**	**-2.6**
KUDL				*e*S	Sn	14 22 24.6	-9.2
KUDL				IAML		14 22 28.9	
	comp=N,93nm,0.3s						
KUDL				IAML		14 22 30.2	
	comp=E,105nm,0.3s						
PDGK	**Podgornoye**	**9.75**	**42**	⇑P	**Pn**	**14 20 46.6**	**-1.5**
	comp=E,45nm,0.9s						
PDGK	**Podgornoye**	**9.75**	**42**	P	**Pn**	**14 20 46.5**	**-1.5**
PDGK				pmax	pmax		
	comp=Z,45nm,0.9s						
SONA	**Sohna**	**9.83**	**144**	*e*S	Sn	14 22 28.2	-10
SONA				IAML		14 22 30.0	
	comp=N,105nm,0.7s						
SONA				IAML		14 22 31.1	
	comp=E,114nm,0.5s						
GEYT	**Alibeck**	**10.03**	**282**	P	**Pn**	**14 20 49.3**	**-2.6**
	comp=E,7.0nm,0.3s,baz=105,slow=11,SNR=58						
GEYT				S	**Sn**	**14 22 38.3**	**-4.6**
	comp=E,13nm,0.3s,baz=97,slow=12,SNR=9.5						
LGTI	**Lohaghat**	**10.70**	**128**	*ex*	**Pn**	**14 21 04.2**	**+3.5**
LGTI				*ex*	x	14 21 54.2	
OTUK	**Ortayu**	**11.91**	**6**	⇓P	**Pn**	**14 21 14.5**	**-2.0**
	comp=E,23nm,1.0s						
OTUK	**Ortayu**	**11.91**	**6**	P	**Pn**	**14 21 14.4**	**-2.0**
OTUK				pmax	pmax		
	comp=Z,23nm,1.0s						
PYUN	**Piuthan**	**13.39**	**125**	*e*P	**Pn**	**14 21 32.4**	**-3.5**
	comp=Z,73nm,0.4s						
PYUN				*e*S	Sn	14 23 51.4	-13
MAKZ	**Makanchi**	**13.45**	**36**	*e*P	**Pn**	**14 21 34.8**	**-1.5**
MAKZ	**Makanchi**	**13.45**	**36**	*e*Pn	**Pn**	**14 21 34.8**	**-1.5**
MK01	**Makanchi Array**	**13.58**	**37**	*e*Pn	**Pn**	**14 21 36.1**	**-1.7**
MK31	**Makanchi Array**	**13.59**	**37**	P	**Pn**	**14 21 36.7**	**-1.4**
	comp=Z,32nm,0.7s,baz=219,slow=11,SNR=290						
MK31	**Makanchi Array**	**13.59**	**37**	*i* P	**Pn**	**14 21 36.6**	**-1.4**
MK31				pmax	pmax		
	comp=Z,33nm,0.7s						
MK31	**Makanchi Array**	**13.59**	**37**	*e*Pn	**Pn**	**14 21 36.5**	**-1.6**
MKAR	**Makanchi Array**	**13.59**	**37**	P	**Pn**	**14 21 37.1**	**-1.0**
	comp=Z,0.7nm,0.3s,baz=224,slow=12,SNR=85						
MKAR				sP	sP	14 22 18.0	
	comp=Z,0.4nm,0.3s,baz=218,slow=12,SNR=5.0						
MKAR	**Makanchi Array**	**13.59**	**37**	*e*Pn	**Pn**	**14 21 36.5**	**-1.6**
MKAR				sP	sP	14 22 18.0	
KOLN	**Koldanda**	**14.02**	**124**	*e*P	**Pn**	**14 21 40.6**	**-3.2**
BHPL	**Bhopal**	**14.41**	**154**	*e*P	**Pn**	**14 21 45.3**	**-3.3**
BHPL				*ex*	x	14 24 14.9	
GKN	**Gorkha**	**14.57**	**121**	*e*P	**Pn**	**14 21 47.8**	**-2.9**
	comp=Z,136nm,0.4s						
AB31	**Akbulak array**	**14.99**	**332**	⇓P	**Pn**	**14 21 53.7**	**-1.8**
	comp=Z,7.2nm,0.3s						
AB31				⇓S	**Sn**	**14 24 33.8**	**-8.1**
	comp=Z,11nm,0.5s,baz=157,slow=24,SNR=7.6						
AB31	**Akbulak array**	**14.99**	**332**	P	**Pn**	**14 21 53.7**	**-1.8**
AB31				S	Sn	14 24 28.9	-13
AB31				pmax	pmax		
	comp=Z,7.0nm,0.4s						
AB31				smax	smax		
	comp=N,14nm,0.5s						
ABKAR	**Akbulak array**	**14.99**	**332**	*e*Pn	**Pn**	**14 21 53.6**	**-1.9**
WMQ	**Urumqi**	**15.06**	**55**	P	**Pn**	**14 21 56.0**	**-0.5**
WMQ				sP	sP	14 22 34.9	-8.3
WMQ				pmax	pmax		
	comp=N,8.0nm,1.0s						
WMQ				pmax	pmax		
	comp=N,310nm,7.2s						
WMQ				LR	LR		
	comp=N,430nm,11.4s						
WMQ				LR	LR		
	comp=N,390nm,12.8s						
WMQ				LR	LR		
	comp=N,380nm,20.2s						
KKN	**Kakani**	**15.15**	**120**	*e*P	**Pn**	**14 21 56.3**	**-1.6**
	comp=N,78nm,0.5s						
KURBB	**Kurchatov Arra**	**15.34**	**20**	P	**Pn**	**14 21 57.0**	**-2.8**
	comp=N,0.7nm,0.3s,baz=209,slow=10,SNR=60						
PKIN	**Phulchoki**	**15.36**	**121**	*e*P	**Pn**	**14 21 58.4**	**-2.2**
	comp=N,77nm,0.5s						
KURK	**Kurchatov**	**15.45**	**20**	⇑P	**Pn**	**14 22 01.5**	**+0.4**
	comp=N,72nm,0.8s						
KURK	**Kurchatov**	**15.45**	**20**	P	**Pn**	**14 22 01.5**	**+0.4**
KURK				pmax	pmax		
	comp=Z,72nm,0.8s						
KURK	**Kurchatov**	**15.45**	**20**	Pn	**Pn**	**14 21 55.9**	**-5.3**
	comp=Z,38nm,0.9s						
KURK	**Kurchatov**	**15.45**	**20**	Pn	**P**	**14 22 02.3**	**0.0**
	SNR=12						
KURK	**Kurchatov**	**15.45**	**20**	P	**P**	**14 22 02.3**	**0.0**
	SNR=12						
BANOM	**Banah**	**16.03**	**233**	Pn	**Pn**	**14 22 08.9**	**+0.3**
	SNR=10						
BANOM	**Banah**	**16.03**	**233**	P	**Pn**	**14 22 08.9**	**+0.3**
	SNR=10						
VOSK	**Vostochnaya**	**16.32**	**1**	⇓P	**Pn**	**14 22 10.3**	**-1.6**
	comp=Z,68nm,1.2s						
VOSK	**Vostochnaya**	**16.32**	**1**	P	**Pn**	**14 22 10.2**	**-1.6**
VOSK				pmax	pmax		
	comp=Z,68nm,1.2s						
ZRNK	**Zerenda**	**16.58**	**357**	⇓P	**P**	**14 22 13.8**	**-1.1**
	comp=Z,83nm,1.4s						
ZRNK	**Zerenda**	**16.58**	**357**	P	**P**	**14 22 13.8**	**-1.1**
ZRNK				pmax	pmax		
	comp=Z,83nm,1.5s						
BVA0	**Borovoye Array**	**16.62**	**360**	P	**P**	**14 22 13.8**	**-1.5**
	comp=Z,18nm,0.6s,baz=167,slow=12,SNR=140						
BVA0	**Borovoye Array**	**16.62**	**360**	*i* P	**P**	**14 22 13.7**	**-1.5**
BVA0				pmax	pmax		
	comp=Z,18nm,0.6s						
BVAR	**Borovoye Array**	**16.62**	**360**	P	**P**	**14 22 14.5**	**-0.8**
	comp=Z,7.3nm,0.3s,baz=171,slow=13,SNR=74						
BVAR				S	**S**	**14 25 15.2**	**-4.7**
	comp=Z,1.1nm,0.3s,baz=162,slow=20,SNR=4.1						
BRVK	**Borovoye**	**16.65**	**359**	P	**P**	**14 22 14.2**	**-1.4**
BRVK				pmax	pmax		
	comp=Z,33nm,0.7s						
BRVK	**Borovoye**	**16.65**	**359**	*e*P	**P**	**14 22 14.0**	**-1.6**
	comp=Z,29nm,0.9s						
BRVK	**Borovoye**	**16.65**	**359**	P	**P**	**14 22 14.9**	**-0.8**
	SNR=17						
BRVK	**Borovoye**	**16.65**	**359**	P	**P**	**14 22 14.9**	**-0.8**
	SNR=17						
WSAR	**Wadi Sarin**	**16.68**	**221**	P	**P**	**14 22 16.5**	**+0.3**
	comp=Z,1.7nm,0.3s,baz=68,slow=9.0,SNR=30						
AKTO	**Aktyubinsk**	**16.68**	**331**	P	**P**	**14 22 16.1**	**+0.1**
	comp=Z,7.4nm,0.3s,baz=138,slow=14,SNR=148						
AKTO				S	**S**	**14 25 16.4**	**-5.0**
	comp=Z,1.2nm,0.3s,baz=206,slow=23,SNR=6.7						
AKTO	**Aktyubinsk**	**16.68**	**331**	⇑P	**P**	**14 22 15.2**	**-0.7**
	comp=Z,41nm,0.6s						
AKTO	**Aktyubinsk**	**16.68**	**331**	P	**P**	**14 22 16.0**	**+0.1**
AKTO				S	**S**	**14 25 12.7**	**-8.7**
AKTO				pmax	pmax		
	comp=Z,41nm,0.6s						
AKTO				smax	smax		
	comp=N,34nm,0.7s						
UOSS	**Minazif**	**16.78**	**231**	*e*P	**P**	**14 22 17.2**	**-0.1**
	comp=N,2.2nm,0.8s						
HATD	**Hatta, Dubai**	**16.91**	**231**	P	**Pn**	**14 22 20.8**	**+1.5**
	SNR=10						
HATD	**Hatta, Dubai**	**16.91**	**231**	P	**Pn**	**14 22 20.8**	**+1.5**
	SNR=10						
ASHO	**Ashiyiah**	**17.06**	**231**	P	**Pn**	**14 22 22.5**	**+1.4**
	SNR=22						
ASHO	**Ashiyiah**	**17.06**	**231**	P	**Pn**	**14 22 22.5**	**+1.4**
	SNR=22						
NAZ	**Nazwa, Dubai**	**17.09**	**232**	P	**Pn**	**14 22 23.6**	**+2.2**
	SNR=13						
NAZ	**Nazwa, Dubai**	**17.09**	**232**	P	**Pn**	**14 22 23.6**	**+2.2**
	SNR=13						
SMDO	**Samad**	**17.14**	**223**	P	**Pn**	**14 22 22.8**	**+0.7**
	SNR=9.4						
SMDO	**Samad**	**17.14**	**223**	P	**Pn**	**14 22 22.8**	**+0.7**
	SNR=9.4						
CHKZ	**Chkalovo**	**17.27**	**0**	⇑P	**P**	**14 22 21.6**	**-0.8**
	comp=N,24nm,0.8s						
CHKZ	**Chkalovo**	**17.27**	**0**	P	**P**	**14 22 21.9**	**-0.5**
CHKZ				pmax	pmax		
	comp=Z,24nm,0.8s						
ARQ	**Araqi**	**17.78**	**227**	P	**Pn**	**14 22 30.3**	**+0.6**
	SNR=12						
ARQ	**Araqi**	**17.78**	**227**	P	**Pn**	**14 22 30.3**	**+0.6**
	SNR=12						
BSY	**Bisya**	**17.86**	**224**	P	**Pn**	**14 22 31.6**	**+1.0**
	SNR=12						
BSY	**Bisya**	**17.86**	**224**	P	**Pn**	**14 22 31.6**	**+1.0**
	SNR=12						
POO	**Poona**	**18.04**	**170**	*e*P	**P**	**14 22 30.0**	**-1.2**
LSA	**Lhasa**	**18.51**	**105**	P	**Pn**	**14 22 40.0**	**+1.3**
LSA				pmax	pmax		
	comp=Z,21nm,0.8s						
LSA	**Lhasa**	**18.51**	**105**	*e*P	**P**	**14 22 35.5**	**-1.2**
LSA				pmax	pmax		
	comp=Z,28nm,0.8s						
LSA	**Lhasa**	**18.51**	**105**	*e*P	**P**	**14 22 35.5**	**-1.2**
	comp=Z,28nm,0.8s						
ZAA0	**Zalesovo Array**	**20.16**	**

ARU	**Arti**	**21.60**	**342**	*eP*	**P**		**14 23 07.9**	**-1.3**
	comp=Z,38nm,0.9s								
ONI	**Oni**	**21.74**	**295**	P	P		14 23 19.9	+9.0
ONI	**Oni**	**21.74**	**295**	P	P		14 23 19.8	+8.9
KBZ	**Khabaz**	**22.31**	**298**	P	**P**		**14 23 18.3**	**+1.8**
	comp=Z,5.4nm,0.8s,baz=139,slow=7.8,SNR=9.0								
KBZ				sP	**sP**		**14 24 05.6**	**+2.8**
	comp=Z,7.9nm,0.7s,baz=110,slow=11,SNR=2.8								
NEY	**Neytrino**	**22.36**	**296**	⇃*iP*	**P**		**14 23 20.0**	**+2.8**
NEY				pmax	pmax				
	comp=Z,3.0nm,1.1s								
KVAR	**Kislovodsk Arr**	**22.50**	**298**	P	**P**		**14 23 21.3**	**+2.9**
	comp=Z,4.8nm,0.6s,baz=125,slow=6.3,SNR=3.6								
KIV	**Kislovodsk**	**22.50**	**298**	*i* P	**P**		**14 23 19.7**	**+1.2**
KIV				*i* *PP	**pP**		**14 23 45.5**	**-0.6**
KIV				pmax	pmax				
	comp=Z,8.0nm,0.9s								
GTA	**Gaotai**	**23.25**	**74**	*eP*	**P**		**14 23 27.3**	**+1.8**
GTA				pP	pP		14 23 56.0	+1.7
GTA				sP	sP		14 24 12.3	-0.8
GTA				pmax	pmax				
	comp=Z,6.0nm,1.4s								
ABTO	**Aybut**	**24.35**	**223**	P	**P**		**14 23 35.8**	**+0.2**
	SNR=11								
ABTO	**Aybut**	**24.35**	**223**	P	**P**		**14 23 35.8**	**+0.2**
	SNR=11								
SOKR	**Solikamsk**	**24.86**	**343**	⇑*iP*	**P**		**14 23 39.9**	**+0.3**
SOKR				pmax	pmax				
	comp=Z,31nm,1.6s								
VRH	**Novokhopyorsk**	**25.31**	**315**	*eP*	P		14 23 52.5	+8.7
VRH				pmax	pmax				
	comp=Z,10.0nm,1.8s								
ANN	**Anapa**	**26.35**	**299**	*eP*	**P**		**14 23 54.8**	**+1.5**
ANN				pmax	pmax				
	comp=Z,38nm,1.1s								
LZH	**Lanzhou**	**26.79**	**81**	⇑P	**P**		**14 24 00.1**	**+2.5**
LZH				pP	pP		14 24 30.3	+1.1
LZH				PP	**PnPn**		**14 24 51.0**	**+2.5**
LZH				pmax	pmax				
	comp=Z,25nm,1.1s								
LZH				pmax	pmax				
	comp=Z,93nm,4.9s								
VSR	**Storozhevoye**	**26.80**	**313**	*eP*	**P**		**14 23 56.3**	**-0.9**
VSR				pmax	pmax				
	comp=Z,10.0nm,1.3s								
ZAK	**Zakamensk**	**27.34**	**49**	*eP*	**P**		**14 24 03.0**	**+0.8**
ZAK				*e*			14 24 36.6		
ZAK				pmax	pmax				
	comp=Z,2.0nm,1.2s								
ZAK				pmax	pmax				
	comp=Z,5.0nm,1.2s								
CD2	**Chengdu**	**28.10**	**92**	P	**P**		**14 24 08.4**	**-0.8**
CD2				pmax	pmax				
	comp=Z,1.0nm,0.5s								
SONM	**Songino Array**	**28.70**	**55**	P	**P**		**14 24 15.5**	**+1.2**
	comp=Z,2.5nm,0.9s,baz=262,slow=9.0,SNR=17								
SONM				pP	**pP**		**14 24 48.8**	**+2.6**
	comp=Z,1.4nm,0.8s,baz=265,slow=9.7,SNR=2.9								
SONA1	**Songino Array**	**28.71**	**55**	*eP*	**P**		**14 24 15.3**	**+0.8**
BR131	**Keskin Array S**	**29.11**	**288**	*eP*	**P**		**14 24 20.0**	**+1.9**
BRTR	**Keskin Array B**	**29.11**	**288**	P	**P**		**14 24 19.6**	**+1.5**
	comp=Z,1.9nm,0.7s,baz=103,slow=9.2,SNR=9.7								
BRTR				pP	**pP**		**14 24 52.8**	**+2.8**
	comp=Z,1.0nm,0.7s,baz=104,slow=10,SNR=2.9								
ULN	**Ulaanbaatar**	**29.14**	**55**	*ceP*	**P**		**14 24 18.7**	**+0.4**
ULN				pmax	pmax				
	comp=Z,2.0nm,0.8s								
KMI	**Kunming**	**29.74**	**103**	P	**P**		**14 24 26.3**	**+2.4**
KMI				pmax	pmax				
	comp=Z,23nm,0.5s								
KMI				LR	LR				
	comp=Z,510nm,15.9s								
KMI				LR	LR				
	comp=Z,510nm,15.9s								
KMI				LR	LR				
	comp=Z,830nm,15.6s								
BR231	**Keskin MP Arra**	**29.76**	**288**	*eP*	**P**		**14 24 20.4**	**-3.4**
OBN	**Obninsk**	**29.77**	**320**	*i* P	**P**		**14 24 24.6**	**+1.1**
OBN				pmax	pmax				
	comp=Z,6.0nm,1.0s								
CHTO	**Chiang Mai**	**30.51**	**117**	*eP*	**P**		**14 24 29.6**	**-0.9**
CHTO				pmax	pmax				
	comp=Z,3.0nm,0.8s								
CHTO	**Chiang Mai**	**30.51**	**117**	*eP*	**P**		**14 24 29.6**	**-0.9**
	comp=Z,2.5nm,0.8s								
CMAR	**Chiang Mai Arr**	**30.74**	**118**	P	**P**		**14 24 32.6**	**+0.1**
	comp=Z,2.4nm,0.8s,baz=296,slow=7.9,SNR=16								
HHC	**Hu-ho-hao-te**	**32.15**	**69**	*eP*	**P**		**14 24 46.3**	**+1.5**
HHC				pP	pP		14 25 16.5	-0.4
HHC				sP	sP		14 25 33.8	-0.5
HHC				S	**S**		**14 29 49.0**	**+2.8**
HHC				pmax	pmax				
	comp=Z,25nm,1.0s								
HHC				pmax	pmax				
	comp=Z,460nm,8.9s								
GYA	**Guiyang**	**32.22**	**98**	*eP*	**P**		**14 24 48.0**	**+2.4**
GYA				pP	pP		14 25 19.0	+1.3
GYA				sP	sP		14 25 36.3	+1.2
GYA				PP	**PP**		**14 26 00.4**	**-0.9**
GYA				PcP	**PcP**		**14 27 32.3**	**+1.8**
GYA				S	**S**		**14 29 48.6**	**+0.9**
GYA				sS	sS		14 30 42.0	-2.1
GYA				ScP	**ScP**		**14 31 01.3**	**+1.4**
GYA				pmax	pmax				
	comp=Z,10.0nm,0.8s								
AKASG	**Malin Array Be**	**32.71**	**309**	P	**P**		**14 24 50.2**	**+0.8**
	comp=Z,1.5nm,0.3s,baz=81,slow=7.3,SNR=19								
KIEV	**Kiev**	**32.72**	**309**	*eP*	**P**		**14 24 48.9**	**-0.6**
KIEV				pmax	pmax				
	comp=Z,4.0nm,0.6s								
KIEV	**Kiev**	**32.72**	**309**	*eP*	**P**		**14 24 48.9**	**-0.6**
	comp=Z,3.6nm,0.6s								
AK11	**Malin Array Si**	**32.75**	**309**	*eP*	**P**		**14 24 50.4**	**+0.7**
PLOR	**Plostina**	**34.01**	**300**	⇑*iP*	**P**		**14 25 03.4**	**+2.7**
PLOR	**Plostina**	**34.01**	**300**	⇑P	**P**		**14 25 03.4**	**+2.7**
NRIK	**Noril'sk**	**34.29**	**11**	P	**P**		**14 25 04.2**	**+1.4**
	comp=Z,8.9nm,0.6s,baz=204,slow=6.8,SNR=17								
NRIK				sP	**sP**		**14 25 54.0**	**+1.4**
	comp=Z,9.4nm,0.8s,baz=197,slow=6.3,SNR=4.9								
MLR	**Muntele Rosu**	**34.50**	**299**	⇓*iP*	**P**		**14 25 08.3**	**+3.2**
MLR	**Muntele Rosu**	**34.50**	**299**	⇓P	**P**		**14 25 08.3**	**+3.2**
MLR	**Muntele Rosu**	**34.50**	**299**	*eP*	**P**		**14 25 08.0**	**+2.9**
	comp=Z,10nm,0.9s								
BURAR	**Bucovina Array**	**35.02**	**303**	⇓*iP*	**P**		**14 25 11.7**	**+2.2**
BURAR	**Bucovina Array**	**35.02**	**303**	⇓P	**P**		**14 25 11.7**	**+2.2**
ARR	**Arges**	**35.43**	**299**	*i* P	**P**		**14 25 15.1**	**+2.1**
BOD	**Bodaibo**	**35.66**	**39**	*eP*	**P**		**14 25 14.4**	**-0.3**
BOD				pmax	pmax				
	comp=Z,4.0nm,1.3s								
DRGR		**36.73**	**302**	⇓*iP*	**P**		**14 25 26.4**	**+2.4**
DRGR		**36.73**	**302**	⇓P	**P**		**14 25 26.4**	**+2.4**
KOLS	**Kolonicke sedl**	**37.02**	**305**	*eP*	**P**		**14 25 28.3**	**+1.9**
FIA1	**FINESS Array S**	**37.35**	**326**	*eP*	**P**		**14 25 29.9**	**+0.9**
FINES	**FINESS Array B**	**37.35**	**326**	P	**P**		**14 25 30.0**	**+1.0**
	comp=Z,4.5nm,0.6s,baz=116,slow=7.9,SNR=24								
FINES				pP	**pP**		**14 26 04.2**	**+2.5**
	comp=Z,1.9nm,0.7s,baz=114,slow=13,SNR=2.6								
FINES				sP	**sP**		**14 26 20.6**	**+1.6**
	comp=Z,3.1nm,0.8s,baz=128,slow=12,SNR=3.0								
STHS	**Stebnicka Huta**	**37.71**	**306**	*eP*	**P**		**14 25 33.8**	**+1.6**
DPC	**Dobruska-Polom**	**40.89**	**307**	*eP*	**P**		**14 26 00.8**	**+2.2**
DPC	**Dobruska-Polom**	**40.89**	**307**	*eP*	**P**		**14 26 00.8**	**+2.2**
ARCES	**ARCESS Array B**	**41.09**	**338**	P	**P**		**14 26 01.2**	**+1.3**
	comp=Z,7.0nm,0.7s,baz=109,slow=7.6,SNR=32								
ARCES				sP	**sP**		**14 26 51.1**	**+0.8**
	comp=Z,6.9nm,0.8s,baz=110,slow=7.0,SNR=6.0								
BRG	**Berggiesshubel**	**42.39**	**308**	*eP*	**P**		**14 26 12.5**	**+1.8**
	comp=Z,3.3nm,0.7s								
BRG	**Berggiesshubel**	**42.39**	**308**	*eP*	**P**		**14 26 12.5**	**+1.8**
BRG				pmax	pmax				
	comp=Z,3.0nm,0.7s								
PSI	**Prapat**	**42.47**	**135**	P	**P**		**14 26 12.1**	**+0.1**
	comp=Z,2.3nm,0.4s,baz=290,slow=11,SNR=3.5								
GERES	**GERESS Array B**	**42.68**	**305**	P	**P**		**14 26 14.2**	**+1.0**
	comp=Z,0.3nm,0.3s,baz=98,slow=9.7,SNR=4.1								
CLL	**Collm**	**42.96**	**309**	*eP*	**P**		**14 26 16.0**	**+0.7**
	comp=Z,4.0nm,0.8s								
CLL	**Collm**	**42.96**	**309**	*eP*	**P**		**14 26 16.0**	**+0.7**
CLL				pmax	pmax				
	comp=Z,4.0nm,0.8s								
NC405	**NORSAR Array S**	**44.00**	**323**	*eP*	**P**		**14 26 24.5**	**+1.0**
NC303	**NORSAR Array S**	**44.18**	**323**	*eP*	**P**		**14 26 25.9**	**+1.0**
NB201	**NORSAR Array S**	**44.20**	**323**	*eP*	**P**		**14 26 25.9**	**+0.8**
NB2	**NORSAR Subarra**	**44.23**	**323**	P	**P**		**14 26 25.7**	**+0.3**
	comp=Z,6.3nm,0.6s,baz=95,slow=7.9								
NOA	**NORSAR Array B**	**44.23**	**323**	P	**P**		**14 26 25.9**	**+0.6**
	comp=Z,5.7nm,0.6s,baz=97,slow=7.8,SNR=36								
NOA	**NORSAR Array B**	**44.23**	**323**	P	**P**		**14 26 26.0**	**+0.6**
NOA				pmax	pmax				
	comp=Z,6.0nm,0.6s								
YAK	**Yakutsk**	**44.26**	**35**	P	**P**		**14 26 25.8**	**+0.3**
	comp=Z,20nm,0.6s,baz=61,slow=1.8,SNR=8.2								
YAK	**Yakutsk**	**44.26**	**35**	*eP*	**P**		**14 26 25.6**	**+0.1**
YAK				pmax	pmax				
	comp=Z,18nm,0.9s								
YAK	**Yakutsk**	**44.26**	**35**	*eP*	**P**		**14 26 25.8**	**+0.3**
	comp=Z,21nm,0.6s								
NBO00	**NORSAR Array S**	**44.44**	**323**	*eP*	**P**		**14 26 27.8**	**+0.8**
NC204	**NORSAR Array S**	**44.47**	**323**	*eP*	**P**		**14 26 29.0**	**+1.7**
MDJ	**Mudanjiang**	**44.78**	**60**	P	**P**		**14 26 27.4**	**-2.5**
MDJ				pmax	pmax				
	comp=Z,9.0nm,2.0s								
MDJ				pmax	pmax				
	comp=Z,160nm,3.4s								
KONO	**Kongsberg**	**44.92**	**321**	*eP*	**P**		**14 26 30.8**	**0.0**
KONO				pmax	pmax				
	comp=Z,58nm,1.7s								
KSAR	**Wonju Array Be**	**45.24**	**71**	P	**P**		**14 26 33.6**	**0.0**
KSAR				*SP	**sP**		**14 27 26.7**	**+2.3**
KSAR	**Wonju Array Be**	**45.24**	**71**	P	**P**		**14 26 33.5**	**0.0**
KSAR				sP	**sP**		**14 27 26.7**	**+2.3**
KSRS	**Korea Array**	**45.27**	**71**	P	**P**		**14 26 33.5**	**-0.3**
	comp=Z,0.6nm,0.4s,baz=289,slow=6.3,SNR=4.7								
KSRS				sP	**sP**		**14 27 26.7**	**+2.1**
	comp=Z,2.7nm,0.9s,baz=282,slow=7.0,SNR=3.9								
KLR	**Kul'dur**	**45.50**	**54**	P	**P**		**14 26 36.1**	**+0.6**
	comp=Z,1.7nm,0.7s,baz=299,slow=6.0,SNR=5.0								
KLR	**Kul'dur**	**45.50**	**54**	*i* P	**P**		**14 26 35.5**	**0.0**
TIXI	**Tiksi**	**46.00**	**22**	*ceP*	**P**		**14 26 39.5**	**+0.4**
TIXI				pmax	pmax				
	comp=Z,36nm,1.0s								
KMBO	**Kilima Mbogo**	**48.49**	**227**	P	**P**		**14 27 00.1**	**+0.7**
	comp=Z,2.4nm,0.5s,baz=38,slow=12,SNR=8.8								
KMBO	**Kilima Mbogo**	**48.49**	**227**	*i* P			**14 27 01.7**	**+2.3**
KMBO				pmax	pmax				
	comp=Z,1.0nm,0.3s								
NKL	**Nikolayevsk**	**50.45**	**47**	*eP*	**P**		**14 27 14.0**	**+0.6**
NKL				pmax	pmax				
	comp=Z,12nm,0.9s								
YSS	**Yuzh-Sakhalins**	**53.19**	**55**	*eP*	**P**		**14 27 35.1**	**+1.3**
YSS				pmax	pmax				
	comp=Z,19nm,2.5s								
SEY	**Seymchan**	**54.71**	**34**	P	**P**		**14 27 45.2**	**+0.6**
	comp=Z,6.6nm,0.8s,baz=274,slow=8.4,SNR=23								
SEY	**Seymchan**	**54.71**	**34**	*ceP*	**P**		**14 27 44.9**	**+0.3**
BILL	**Bilibino**	**58.86**	**26**	*diP*	**P**		**14 28 14.9**	**+1.1**
BILL				*i* *PP	**pP**		**14 28 47.4**	**-1.8**
BILL				*i*			14 29 04.1		
BILL				*i*			14 30 24.8		
BILL				pmax	pmax				
	comp=Z,13nm,0.9s								
BILL	**Bilibino**	**58.86**	**26**	*eP*	**P**		**14 28 14.5**	**+0.7**
	comp=Z,11nm,0.9s								
SUMG	**Summit**	**61.03**	**341**	*eP*	**P**		**14 28 27.6**	**-1.4**
SUMG				pmax	pmax				
	comp=Z,9.0nm,1.1s								
SUMG	**Summit**	**61.03**	**341**	*eP*	**P**		**14 28 27.6**	**-1.4**
	comp=Z,8.5nm,1.1s								
TOA0	**Torodi Ar. Sit**	**65.34**	**268**	*eP*	**P**		**14 28 56.6**	**-1.1**
TORD	**Torodi Ar. Bea**	**65.34**	**268**	P	**P**		**14 28 56.5**	**-1.3**
	comp=Z,4.4nm,0.6s,baz=51,slow=5.9,SNR=36								
COLD	**Coldfoot**	**72.16**	**15**	*eP*	**P**		**14 29 40.4**	**+1.2**
	comp=Z,7.7nm,1.0s								
FYU	**Fort Yukon**	**73.75**	**14**	*eP*	**P**		**14 29 50.3**	**+1.8**
	comp=Z,9.3nm,0.8s								
MLY	**Manley**	**73.88**	**17**	*eP*	**P**		**14 29 50.2**	**+0.8**
	comp=Z,5.1nm,1.1s								
INK	**Inuvik**	**74.06**	**9**	P	**P**		**14 29 51.2**	**+1.0**
	comp=Z,5.5nm,0.8s,baz=3.3,slow=8.2,SNR=26								
INK	**Inuvik**	**74.06**	**9**	*eP*	**P**		**14 29 51.5**	**+1.3**
INK				pmax	pmax				
	comp=Z,9.0nm,1.0s								
INK	**Inuvik**	**74.06**	**9**	*eP*	**P**		**14 29 51.5**	**+1.3**
	comp=Z,8.9nm,1.0s								
COLA	**College**	**74.67**	**16**	*eP*	**P**		**14 29 52.8**	**-1.1**
COLA				pmax	pmax				
	comp=Z,11nm,0.8s								
COLA	**College**	**74.67**	**16**	*eP*	**P**		**14 29 52.8**	**-1.1**
	comp=Z,11nm,0.8s								
CAST	**Castle Rocks**	**74.89**	**18**	*eP*	**P**		**14 29 56.1**	**+0.9**
	comp=Z,11nm,0.9s								
IL1	**Eielson Array**	**74.97**	**16**	*eP*	**P**		**14 29 55.1**	**-0.5**
ILAR	**Eielson Array**	**74.97**	**16**	P	**P**		**14 29 55.0**	**-0.6**
	comp=Z,2.5nm,0.9s,baz=321,slow=4.6,SNR=22								
ILAR	**Eielson Array**	**74.97**	**16**	P	**P**		**14 29 55.0**	**-0.6**
ILAR				pmax	pmax				
	comp=Z,3.0nm,0.9s								
ILB	**Eielson Array**	**74.97**	**16**	*eP*	**P**		**14 29 56.0**	**+0.4**
KTH	**Kantishna Hill**	**75.07**	**18**	*eP*	**P**		**14 29 55.9**	**-0.4**
	comp=Z,13nm,1.2s								
RND	**Reindeer**	**75.70**	**17**	*eP*	**P**		**14 30 00.1**	**+0.2**
RND				pmax	pmax				
	comp=Z,5.0nm,0.8s								
RND	**Reindeer**	**75.70**	**17**	*eP*	**P**		**14 30 00.1**	**+0.2**
	comp=Z,5.0nm,0.8s								
DHY	**Denali Highway**	**76.33**	**17**	*eP*	**P**		**14 30 04.2**	**+0.6**
	comp=Z,5.0nm,0.7s								
PAX	**Paxson**	**76.85**	**16**	*eP*	**P**		**14 30 06.9**	**+0.5**
PAX				pmax	pmax				
	comp=Z,6.0nm,0.7s								
PAX	**Paxson**	**76.85**	**16**	*eP*	**P**		**14 30 06.9**	**+0.5**
	comp=Z,5.5nm,0.7s								
BOSA	**Boshof**	**77.43**	**220**	P	**P**		**14 30 10.2**	**+0.1**
	comp=Z,8.7nm,1.1s,baz=70,slow=6.8,SNR=4.2								
YKA	**Yellowknife Ar**	**81.36**	**2**	P	**P**		**14 30 30.6**	**-0.2**
	comp=Z,1.5nm,0.7s,baz=348,slow=5.3,SNR=33								
YKA				pP	**pP**		**14 31 09.0**	**+0.7**
	comp=Z,0.5nm,0.5s,baz=351,slow=5.6,SNR=2.2								
YKB5	**Yellowknife Ar**	**81.36**	**2**	*eP*	**P**		**14 30 31.1**	**+0.4**
WRA	**Warramunga Arr**	**82.26**	**122**	P	**P**		**14 30 34.6**	**-1.5**
	comp=Z,1.3nm,0.9s,baz=321,slow=5.1,SNR=9.7								
WRA	**Warramunga Arr**	**82.26**	**122**	*i* P	**P**		**14 30 36.0**	**-0.1**
WRA				pmax	pmax				
	comp=Z,1.0nm,0.9s								
ASAR	**Alice Springs**	**84.51**	**125**	P	**P**		**14 30 46.2**	**-1.4**
	comp=Z,1.0nm,0.7s,baz=308,slow=4.8,SNR=8.5								
CTA	**Charters Tower**	**90.84**	**114**	P	**P**		**14 31 17.0**	**-1.0**
	comp=Z,2.5nm,0.8s,baz=357,slow=19,SNR=3.5								
TXAR	**Lajitas Array**	**114.38**	**354**	PKP	PKPdf		14 36 54.3	+0.6
	comp=Z,0.1nm,0.4s,baz=108,slow=2.0,SNR=2.7								

*MAN **21** 14:20:23.8±72.2N×127.7±13.6E,h38km,mb5.0,ML3.9,MS4.0*
*IDC **21** 14:20:26.2±0.6,8.7±79.1N×126.7±72.2E,h37km±4km,mb3.9/22, mb1 4.0/23,mb1mx3.9/55,mbtmp4.1/23,ML4.3/1,MS4.3/1, Ms1 4.3/1,ms1mx3.2/45,Error ellipse: s-maj=20.8km s-min=11.2km az=74.0*
*NEIC **21** 14:20:28.7±1.7,8.68N×126.62E,h65km±16km,mb4.3/1, Error ellipse: s-maj=17.5km s-min=8.3km az=66.0*
ISC 21 14:20:24.6±0.6,8.80N±0.04×126.85E±0.06,h26km±3km, h26km:pP-P,n41,σ1°64/55,mb4.2/23,4C-3D,Mindanao

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time	Res
								h m s	ISC
BIPH	**Bislig**	**0.78**	**218**	⇓*eP*			**Pb**	**14 20 39.1**	**-0.4**
BIPH				*i* S			**Sb**	**14 20 48.8**	**-0.9**
SCPH	**Surigao**	**1.66**	**306**	⇓*eP*			**Pb**	**14 20 53.9**	**-0.5**
MATI	**Mati**	**1.94**	**198**	*eP*			**Pn**	**14 20 54.5**	**-1.3**
MATI				*eS*			**Sn**	**14 21 16.9**	**-2.4**
BUKP	**Musuan**	**1.99**	**243**	*eP*			**Pb**	**14 20 59.0**	**-1.1**
DAV	**Davao City (W)**	**2.13**	**216**	Pn			**Pn**	**14 21 00.4**	**+1.9**
	106nm,0.3s,baz=49,slow=4.7,SNR=35								
DAV				Sn			**Sb**	**14 21 32.7**	**+4.1**
	192nm,0.3s,baz=109,slow=23,SNR=13								
DAV	**Davao City (W)**	**2.13**	**216**	*ePn*			**Pn**	**14 20 58.7**	**+0.2**
DAV				Sn			**Sb**	**14 21 32.7**	**+4.1**
CGP	**Cagayan de Oro**	**2.16**	**261**	⇓*eP*			**Pb**	**14 21 01.6**	**-1.3**
CGP				*eS*			**Sb**	**14 21 30.5**	**+1.2**
DMPH	**Davao City--Mi**	**2.16**	**218**	⇓*eP*			**Pb**	**14 21 04.5**	**+1.5**
DMPH				*eS*			**Sb**	**14 21 33.7**	**+4.3**
KCP	**Kidapawan**	**2.49**	**224**	⇓*iP*			**Pn**	**14 21 05.3**	**+1.8**
KCP				*i* S			**Sn**	**14 21 31.5**	**-1.7**
CTBH	**Cotabato--PC H**	**3.02**	**239**	⇓*eP*			**Pn**	**14 21 12.9**	**+2.2**
CTBH				*i* S			**Sb**	**14 21 50.9**	**-3.2**
TBP	**Tagbilaran**	**3.08**	**287**	⇑*iP*			Pb	14 21 15.0	-3.6
TBP				*i* S			**Sb**	**14 21 56.7**	**+1.0**
OCLP	**Ormoc**	**3.14**	**316**	*eP*			Pb	14 21 15.6	-4.1
PAGZ	**Pagadian**	**3.56**	**255**	*eP*			**Pn**	**14 21 20.5**	**+2.4**
GUIM	**Jordan**	**4.57**	**294**	*eP*			**Pn**	**14 21 34.8**	**+2.7**
FITZ	**Fitzroy Crossi**	**26.76**	**183**	P			**P**	**14 26 03.1**	**+0.7**
	5.0nm,0.6s,baz=7.6,slow=7.0,SNR=18								
FITZ	**Fitzroy Crossi**	**26.76**	**183**	*eP*			**P**	**14 26 00.7**	**-1.7**
	6.6nm,0.7s								
KSAR	**Wonju Array Be**	**28.53**	**2**	P			**P**	**14 26 19.8**	**+1.8**
KSRS	**Korea Array**	**28.54**	**2**	P			**P**	**14 26 19.8**	**+1.7**
	1.8nm,0.9s,baz=181,slow=10.0,SNR=4.6								
CMAR	**Chiang Mai Arr**	**28.73**	**292**	P			**P**	**14 26 20.4**	**+0.3**
	0.6nm,0.4s,baz=114,slow=7.0,SNR=7.4								
WRA	**Warramunga Arr**	**29.50**	**166**	P			**P**	**14 26 27.4**	**+0.5**
	0.5nm,0.5s,baz=344,slow=9.3,SNR=6.7								
ASAR	**Alice Springs**	**33.00**	**168**	P			**P**	**14 26 56.5**	**-1.2**
	0.4nm,0.5s,baz=345,slow=7.1,SNR=10								
USRK	**Ussuriysk Ar.**	**35.55**	**6**	P			**P**	**14 27 19.6**	**+0.1**
	4.2nm,0.8s,baz=198,slow=8.7,SNR=6.2								
HNR	**Honiara**	**37.61**	**118**	P			**P**	**14 27 38.4**	**+0.9**
	20nm,0.3s,baz=195,slow=9.8,SNR=5.4								
HNR				LR			LR	14 42 16.4	
	comp=Z,419nm,20.9s,baz=294,slow=35								
KLR	**Kul'dur**	**40.50**	**5**	P			**P**	**14 28 02.1**	**+0.9**
	1.3nm,0.6s,baz=144,slow=5.5,SNR=3.5								
SONM	**Songino Array**	**42.58**	**340**	P			**P**	**14 28 17.9**	**-0.6**
	0.8nm,0.8s,baz=157,slow=9.4,SNR=3.5								
STKA	**Stephens Creek**	**42.84**	**161**	P			**P**	**14 28 20.9**	**+0.3**
	2.7nm,0.8s,baz=321,slow=8.9,SNR=3.9								
MKAR	**Makanchi Array**	**53.53**	**323**	P			**P**	**14 29 43.1**	**0.0**
	3.5nm,0.8s,baz=127,slow=7.7,SNR=11								
MKAR				pP			**sP**	**14 29 54.0**	**-0.3**
	7.9nm,0.8s,baz=121,slow=9.1,SNR=17								
MKAR				PcP			**PcP**	**14 30 49.6**	**-0.1**
	1.5nm,0.9s,baz=123,slow=5.3,SNR=3.0								
ZALV	**Zalesovo Beam**	**56.18**	**332**	P			**P**	**14 30 01.3**	**-0.8**
	2.2nm,0.8s,baz=100,slow=6.1,SNR=4.5								
ZALV				pP			**sP**	**14 30 12.2**	**-1.1**
	4.3nm,0.8s,baz=116,slow=7.1,SNR=8.3								
KURK	**Kurchatov**	**57.59**	**326**	P			**P**	**14 30 12.0**	**-0.1**
KURK				pP			**sP**	**14 30 22.8**	**-0.5**
KURBB	**Kurchatov Arra**	**57.60**	**326**	P			**P**	**14 30 12.0**	**-0.2**
	1.7nm,0.6s,baz=124,slow=6.9,SNR=6.7								
KURBB				pP			**sP**	**14 30 22.8**	**-0.6**
	5.8nm,0.8s,baz=125,slow=6.1,SNR=12								
BVAR	**Borovoye Array**	**63.19**	**326**	P			**P**	**14 30 49.6**	**-0.8**
	2.0nm,0.9s,baz=136,slow=13,SNR=5.0								
NRIK	**Noril'sk**	**65.57**	**346**	P			**P**	**14 31 06.1**	**+0.5**
	1.4nm,0.5s,baz=108,slow=8.5,SNR=3.9								
NRIK				pP			**sP**	**14 31 17.2**	**+0.3**
	4.2nm,0.6s,baz=119,slow=7.3,SNR=5.5								
GEYT	**Alibeck**	**67.88**	**307**	P			**P**	**14 31 20.9**	**-0.1**
	3.8nm,0.8s,baz=116,slow=3.4,SNR=8.3								
GEYT				pP			**sP**	**14 31 31.5**	**-0.9**
	3.8nm,0.8s,baz=110,slow=2.2,SNR=4.6								
AKTO	**Aktyubinsk**	**69.81**	**321**	P			**P**	**14 31 32.0**	**-0.8**
	1.3nm,0.5s,baz=28,slow=19,SNR=4.4								
ILAR	**Eielson Array**	**80.51**	**26**	P			**P**	**14 32 35.0**	**+0.9**
	0.5nm,0.9s,baz=242,slow=3.7,SNR=3.7								
ARCES	**ARCESS Array B**	**85.76**	**340**	P		

ASAJ	**Asahikawa**	**6.86**	**4**	Pn		**Pn**	**14 30 31.8**	**+0.4**	
	0.7nm,0.3s,baz=210,slow=15,SNR=9.6								
SEY	**Seymchan**	**26.48**	**11**	P		**P**	**14 34 29.0**	**+1.2**	
	0.5nm,0.5s,baz=90,slow=20,SNR=5.1								
MKAR	**Makanchi Array**	**44.31**	**302**	P		**P**	**14 37 00.3**	**-0.4**	
	0.2nm,0.5s,baz=83,slow=12,SNR=2.8								
ILAR	**Eielson Array**	**49.09**	**32**	P		**P**	**14 37 37.7**	**-0.1**	
	0.4nm,0.6s,baz=264,slow=7.4,SNR=4.8								
WRA	**Warramunga Arr**	**57.35**	**188**	P		**P**	**14 38 38.6**	**-0.4**	
	0.3nm,0.4s,baz=7.4,slow=7.5,SNR=5.0								

*IDC **21** 14:29:38.5±1.4,21°.80S×170°.05E, h0km, mb4.1/11, mb1 4.2/12, mb1mx4.0/33, mbtmp4.1/12, ML3.7/1, Error ellipse: s-maj=49.4km s-min=19.6km az=153.0*
*ISCJB **21** 14:29:43.7±0.7,21°.7S±0°.1×169°.70E±0°.08, h36km, mb4.0/11, Error ellipse: s-maj=19.4km s-min=10.1km az=167.9*

ISC 21 14:29:44.8±0.8,**21°.7S**±0°.2×**169°.8E**±0°.1,**h36**km,**n29,** σ1§**09**/**29**,**mb4.0**/**11**,**Southeast of Loyalty Islands**

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op		ISC	h m s	ISC
DZM	**Mont Dzumac**	**3.11**	**263**	Pn		**Pn**	**14 30 30.4**	**-1.1**
	7.9nm,0.3s,baz=130,slow=12,SNR=45							
DZM				Sn		**Sn**	**14 31 04.8**	**-2.6**
	67nm,0.3s,baz=209,slow=23,SNR=12							
CTA	**Charters Tower**	**22.03**	**270**	P		**P**	**14 34 37.9**	**+1.5**
	1.9nm,0.6s,baz=73,slow=11,SNR=3.8							
PMG	**Port Moresby**	**24.93**	**296**	P		**P**	**14 35 06.1**	**+1.2**
	11nm,0.8s,baz=354,slow=3.0,SNR=4.4							
STKA	**Stephens Creek**	**27.05**	**242**	P		**P**	**14 35 25.2**	**+1.3**
	1.0nm,0.4s,baz=81,slow=13,SNR=3.2							
ASAR	**Alice Springs**	**33.10**	**260**	P		**P**	**14 36 17.4**	**-0.1**
	0.7nm,0.8s,baz=72,slow=8.2,SNR=19							
WRA	**Warramunga Arr**	**33.12**	**266**	P		**P**	**14 36 18.0**	**+0.2**
	1.2nm,0.8s,baz=98,slow=8.2,SNR=5.0							
USRK	**Ussuriysk Ar.**	**74.14**	**333**	P		**P**	**14 41 18.2**	**+0.8**
	2.5nm,0.8s,baz=150,slow=5.8,SNR=4.3							
PETK	**Petropavlovsk-**	**75.23**	**353**	P		**P**	**14 41 23.6**	**+0.1**
	1.5nm,0.8s,baz=98,slow=6.1,SNR=6.6							
CMAR	**Chiang Mai Arr**	**79.97**	**294**	P		**P**	**14 41 53.0**	**+2.2**
	1.4nm,0.8s,baz=131,slow=4.1,SNR=9.9							
SNAA	**Sanae**	**86.74**	**182**	P		**P**	**14 42 24.9**	**+0.1**
VNA3	**Neumayer Olymp**	**87.31**	**180**	P		**P**	**14 42 27.6**	**0.0**
VNA2	**Neumayer--Watz**	**87.61**	**181**	P		**P**	**14 42 29.5**	**+0.5**
	baz=179,slow=4.4							
SONM	**Songino Array**	**89.48**	**323**	P		**P**	**14 42 38.5**	**+0.3**
	2.1nm,1.0s,baz=129,slow=4.5,SNR=10							
NVAR	**Mina Array Bea**	**90.05**	**48**	P		**P**	**14 42 39.3**	**-1.9**
	0.6nm,0.6s,baz=236,slow=6.4,SNR=4.3							
ILAR	**Eielson Array**	**92.42**	**17**	P		**P**	**14 42 49.1**	**-2.2**
	0.4nm,0.6s,baz=242,slow=5.1,SNR=8.4							
ARCES	**ARCESS Array B**	**127.56**	**345**	PKP		**PKPdf**	**14 48 45.0**	**-0.4**
	1.4nm,0.4s,baz=73,slow=1.9,SNR=23							
FINES	**FINESS Array B**	**133.04**	**337**	PKP		**PKPdf**	**14 48 54.7**	**-1.2**
	2.0nm,0.9s,baz=45,slow=3.0,SNR=6.7							
NOA	**NORSAR Array B**	**137.94**	**345**	PKP		**PKPdf**	**14 49 05.9**	**+0.7**
	0.4nm,0.6s,baz=37,slow=1.7,SNR=3.0							
DPC	**Dobruska-Polom**	**144.61**	**330**	*e*PKP		PKPbc	14 49 16.5	+0.2
DPC				*ex*		x	14 49 25.1	
PVCC	**Panska Ves**	**145.27**	**332**	*e*PKP		**PKPdf**	**14 49 18.5**	**-0.1**
BRG	**Berggiesshubel**	**145.28**	**333**	*e*P		**PKPab**	**14 49 18.4**	**-0.1**
	9.5nm,0.6s							
CLL	**Collm**	**145.34**	**334**	*i* P		**PKPbc**	**14 49 18.3**	**-0.2**
	comp=Z,14nm,1.2s							
CONA	**Conrad Observa**	**146.49**	**328**	*i* PKPab		**PKPab**	**14 49 23.2**	**0.0**
	comp=Z,7.3nm,1.2s							
KHC	**Kasperske Hory**	**146.73**	**331**	*e*PKP		**PKPbc**	**14 49 23.1**	**+0.2**
KHC				*ex*		x	14 49 33.1	
GERES	**GERESS Array B**	**146.88**	**331**	PKPbc		**PKPbc**	**14 49 23.6**	**+0.2**
	comp=Z,3.5nm,0.7s,baz=54,slow=3.4,SNR=27							
MOTA	**Moosalm**	**149.16**	**331**	*i* PKiKP		**PKiKP**	**14 49 31.3**	**+0.5**
	comp=Z,13nm,1.0s							
RETA	**Reutte**	**149.21**	**332**	*i* PKPbc		**PKPbc**	**14 49 30.2**	**+0.6**
FETA	**Feichten**	**149.57**	**331**	*i* PKPbc		**PKPbc**	**14 49 30.6**	**-0.1**
	comp=Z,12nm,1.1s							
DAVA	**Damuels**	**149.74**	**332**	*i* PKPbc		**PKPbc**	**14 49 30.8**	**-0.2**
	comp=Z,7.0nm,0.8s							

MAN 21 14:43:30,10°.45N×122°.88E, h32km, mb3.7, ML2.4, MS2.0, Panay

*NEIC **21** 14:45:35.4±1.1,9°.80N×84°.29W, h96km±8km, mb4.1/1, Error ellipse: s-maj=26.0km s-min=9.7km az=203.0*
NEIC Felt [III] in the Valle Central.
*IDC **21** 14:45:35.2±1.2, 10°.23N×84°.08W, h72km±16km, mb3.7/14, mb1 4.0/16, mb1mx3.8/36, mbtmp4.1/16, MS4.5/1, Ms1 4.5/1, ms1mx3.6/33, Error ellipse: s-maj=42.8km s-min=18.3km az=23.0*
*ISCJB **21** 14:45:36.2±0.3, 10°.17N±0°.05×84°.23W±0°.04, h97km±3km, mb3.9/15, Error ellipse: s-maj=9.4km s-min=4.0km az=33.6*
*CASC **21** 14:45:37.3±1.4, 10°.18N×84°.19W, h79km±6km, MD4.3, ML2.6, mb4.1(NEIC)*

ISC 21 14:45:36.9±0.6,**10°.16N**±0°.06×**84°.20W**±0°.05,**h87**km±5km, **n69,** σ1§**20**/**80**,**mb4.1**/**15**,**3C-2D**,**Costa Rica**

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op		ISC	h m s	ISC
CGA2	**Cerro Gallo 2**	**0.30**	**241**	*e*P		**Pn**	**14 45 49.6**	**-0.6**
CGA2				*e*S		**Sn**	**14 45 59.4**	**-0.7**
URSC	**Urasca**	**0.53**	**128**	⇑*i*P		**Pn**	**14 45 52.3**	**+0.5**
URSC				*e*S		**Sn**	**14 46 01.6**	**-1.2**
QCP	**Quepos**	**0.73**	**177**	⇑*e*P		**Pn**	**14 45 53.7**	**+0.1**
BUS	**Buena Vista**	**0.74**	**144**	⇑*i*P		**Pn**	**14 45 54.1**	**0.0**
BUS				*e*S		**Sn**	**14 46 07.7**	**+0.8**
JTS	**JuntasAbangare**	**0.75**	**280**	P		**Pn**	**14 45 53.3**	**-0.5**
	959nm,0.3s,baz=84,slow=3.2,SNR=3595							
JTS				S		**Sn**	**14 46 05.2**	**-1.1**
	1µm,0.3s,baz=328,slow=19,SNR=35							
JTS	**JuntasAbangare**	**0.75**	**280**	*e*P		**Pn**	**14 45 53.2**	**-0.5**
JTS	**JuntasAbangare**	**0.75**	**280**	*e*Pn		**Pn**	**14 45 53.2**	**-0.5**
JTS				*e*Sn		**Sn**	**14 46 05.6**	**-0.7**
JCR	**Jicaral**	**0.95**	**251**	⇓*i*P		**Pn**	**14 45 55.8**	**-0.1**
JCR				*e*S		**Sn**	**14 46 11.3**	**+1.1**
VCR	**Vista de Mar**	**1.41**	**269**	⇓*i*P		**Pn**	**14 46 01.2**	**-0.3**
VCR				*e*S		**Sn**	**14 46 21.6**	**+1.5**
ESPN	**Las Esperanzas**	**2.02**	**357**	*e*P		**Pn**	**14 46 09.8**	**+0.4**
ESPN				*e*S		**Sn**	**14 46 34.8**	**+0.7**
BOAB	**BOACO BROADBAN**	**2.69**	**328**	*e*P		**Pn**	**14 46 18.2**	**0.0**
MGAN	**Managua**	**2.82**	**315**	*e*P		**Pn**	**14 46 20.1**	**+0.1**
MGAN				*e*S		**Sn**	**14 46 53.8**	**+0.7**
	comp=N,26nm,0.9s							
MGAN				AML		AML	14 46 57.3	
	comp=N,26nm,0.9s							
CNGN	**Cerro Negro**	**3.38**	**314**	*e*P		**Pn**	**14 46 28.1**	**+0.5**
ESTN	**Estel**	**3.61**	**324**	*e*P		**Pn**	**14 46 31.2**	**+0.4**
CRIN	**San Cristobal**	**3.77**	**312**	*e*P		**Pn**	**14 46 33.7**	**+0.8**
CSGN	**Cosiguina Volc**	**4.32**	**311**	*e*P		**Pn**	**14 46 41.3**	**+1.0**
CSGN				*e*S		**Sn**	**14 47 30.4**	**+0.8**
BCIP	**Isla Barro Col**	**4.41**	**103**	*e*Pn		**Pn**	**14 46 40.7**	**-0.9**
ZANG	**Zanguenga, Cho**	**4.44**	**105**	*e*P		**Pn**	**14 46 43.3**	**+1.4**
TECA	**Tecapa**	**5.36**	**309**	*e*P		**Pn**	**14 46 57.1**	**+2.5**
LFRS	**El Faro**	**5.87**	**306**	*e*P		**Pn**	**14 47 04.0**	**+2.5**
LFRS				*e*S		**Sn**	**14 48 06.5**	**-1.1**
DBBC	**Dabeiba**	**8.49**	**111**	*e*P		**Pn**	**14 47 40.5**	**+3.1**
MOTC	**Monteria, Cord**	**8.53**	**99**	*e*P		**Pn**	**14 47 40.5**	**+2.7**
GUYC	**Guyana, Colomb**	**10.01**	**119**	*e*P		**Pn**	**14 48 00.2**	**+1.9**
BRRC	**Barranca, Sant**	**10.80**	**105**	*e*P		Pn	14 48 12.1	+3.4
OCAC	**Ocana**	**10.91**	**99**	*e*P		**Pn**	**14 48 10.4**	**+0.1**
GRMC	**Gramalote, San**	**11.52**	**101**	*e*P		**Pn**	**14 48 20.1**	**+1.5**
RUSC	**La Rusia**	**11.79**	**110**	*e*P		**Pn**	**14 48 25.1**	**+2.5**
CMIG	**Matias Romero**	**12.46**	**305**	P		**Pn**	**14 48 31.3**	**+0.3**
	comp=N,1.6nm,0.3s,baz=138,slow=8.9,SNR=16							
SDV	**Santo Domingo**	**13.44**	**94**	P		**Pn**	**14 48 43.6**	**-0.7**
	comp=N,1.2nm,0.3s,baz=249,slow=8.2,SNR=14							
SDV	**Santo Domingo**	**13.44**	**94**	P		**Pn**	**14 48 43.6**	**-0.7**
	comp=N,7.8nm,0.8s							
147A	**Livingston**	**22.72**	**351**	P		**P**	**14 50 34.3**	**+2.7**
	baz=170,SNR=5.2							
LRAL	**Lakeview Retre**	**22.91**	**354**	*e*P		**P**	**14 50 34.8**	**+1.3**
	comp=N,4.4nm,0.5s							
Y47A	**UCPARC, Winfie**	**23.87**	**352**	P		**P**	**14 50 45.1**	**+2.8**
	baz=171							
Y46A	**Houston**	**24.00**	**350**	P		**P**	**14 50 45.9**	**+2.5**
	baz=169							
TXAR	**Lajitas Array**	**26.37**	**319**	P		**P**	**14 51 06.9**	**+1.7**
	comp=N,0.9nm,0.5s,baz=136,slow=11,SNR=17							
TXAR				pP		**pP**	**14 51 24.6**	**-0.5**
	comp=N,1.3nm,0.7s,baz=137,slow=11,SNR=7.5							
S40A	**Lebanon**	**28.32**	**346**	P		**P**	**14 51 22.9**	**+0.5**
	baz=163,SNR=5.8							
R39A	**Chumby, Stover**	**29.13**	**346**	P		**P**	**14 51 29.7**	**+0.1**
	baz=162,SNR=5.1							
Q38A	**Cooks Store, C**	**29.89**	**345**	P		**P**	**14 51 36.2**	**-0.1**
	baz=162							
M38A	**Pleasantville**	**32.13**	**347**	P		**P**	**14 51 56.1**	**+0.1**
	baz=164							
M37A	**Trindle Farm,**	**32.31**	**346**	P		**P**	**14 51 57.7**	**+0.1**
	baz=162							
L38A	**Oak Wood Farm,**	**32.77**	**348**	P		**P**	**14 52 01.5**	**-0.1**
	baz=164							
H35A	**Sunnyside Ranc**	**35.62**	**347**	P		**P**	**14 52 24.8**	**-1.4**
	baz=162							
F36A	**Milaca**	**36.46**	**349**	P		**P**	**14 52 32.3**	**-1.1**
	baz=165,SNR=5.9							
D37A	**Cotton**	**37.53**	**351**	P		**P**	**14 52 42.0**	**-0.4**
	baz=167							
D35A	**Remer**	**37.73**	**349**	P		**P**	**14 52 43.3**	**-0.9**
	baz=164							
C37A	**Embarrass**	**38.05**	**351**	P		**P**	**14 52 46.6**	**-0.1**
	baz=167							
C36A	**Pine Crest Far**	**38.18**	**351**	P		**P**	**14 52 47.0**	**-0.9**
	baz=166							
B34A	**Aery, Baudette**	**39.20**	**349**	P		**P**	**14 52 55.3**	**-1.1**
	baz=164,SNR=5.9							
PDAR	**Pinedale Array**	**39.31**	**330**	P		**P**	**14 52 58.1**	**+0.4**
	comp=N,0.3nm,0.7s,baz=138,slow=12,SNR=3.9							
B32A	**Ashes, Strandq**	**39.49**	**347**	P		**P**	**14 52 57.1**	**-1.7**
	baz=161,SNR=8.5							
A33A	**Warroad**	**39.77**	**348**	P		**P**	**14 53 00.1**	**-1.0**
	baz=163,SNR=7.3							
A32A	**Rocking H Ranc**	**39.98**	**347**	P		**P**	**14 53 01.7**	**-1.2**
	baz=161,SNR=5.8							
ULM	**Lac du Bonnet**	**41.12**	**349**	P		**P**	**14 53 10.6**	**-1.6**
	comp=N,3.1nm,0.5s,baz=166,slow=11,SNR=6.2							
NVAR	**Mina Array Bea**	**41.52**	**318**	P		**P**	**14 53 16.5**	**+0.6**
	comp=N,0.6nm,0.6s,baz=127,slow=3.9,SNR=3.6							
SCHQ	**Schefferville**	**46.64**	**14**	P		**P**	**14 53 55.7**	**-0.6**
	comp=N,2.4nm,0.5s,baz=227,slow=18,SNR=3.1							
FRB	**Frobisher Bay**	**54.65**	**8**	LR		LR	15 18 42.6	
	comp=N,385nm,19.5s,baz=72,slow=36							
YKA	**Yellowknife Ar**	**56.67**	**344**	P		**P**	**14 55 10.0**	**-0.8**
	comp=N,0.7nm,0.5s,baz=140,slow=6.9,SNR=27							
YKA				pP		**pP**	**14 55 32.2**	**-0.4**
	comp=N,0.3nm,0.6s,baz=141,slow=6.9,SNR=2.5							
YKA				PcP		**PcP**	**14 56 06.2**	**+0.1**
	comp=N,0.3nm,0.6s,baz=141,slow=4.1,SNR=5.6							
INK	**Inuvik**	**66.34**	**342**	P		**P**	**14 56 16.1**	**+0.2**
	comp=N,2.0nm,0.6s,baz=104,slow=8.1,SNR=8.9							
ILAR	**Eielson Array**	**69.39**	**336**	P		**P**	**14 56 34.9**	**-0.3**
	comp=N,0.7nm,0.5s,baz=111,slow=4.8,SNR=23							
ESDC	**Sonseca Array**	**76.09**	**52**	P		**P**	**14 57 14.9**	**-0.5**
	comp=N,2.1nm,0.6s,baz=278,slow=5.5,SNR=14							
TORD	**Torodi Ar. Bea**	**83.78**	**78**	P		**P**	**14 57 57.1**	**-0.2**
	comp=N,0.4nm,0.6s,baz=294,slow=5.1,SNR=4.2							
NB2	**NORSAR Subarra**	**83.81**	**29**	P		**P**	**14 57 56.3**	**-0.2**
	comp=Z,1.6nm,0.6s,baz=279,slow=5.1							
NOA	**NORSAR Array B**	**83.81**	**29**	P		**P**	**14 57 56.8**	**+0.3**
	comp=Z,2.1nm,0.7s,baz=278,slow=4.8,SNR=12							
ARCES	**ARCESS Array B**	**87.29**	**19**	P		**P**	**14 58 11.8**	**-1.8**
	comp=Z,1.5nm,0.6s,baz=282,slow=3.5,SNR=8.4							
GERES	**GERESS Array B**	**87.58**	**41**	P		**P**	**14 58 14.6**	**-1.0**
	comp=Z,0.7nm,0.6s,baz=264,slow=5.4,SNR=5.5							
FINES	**FINESS Array B**	**90.59**	**27**	P		**P**	**14 58 27.9**	**-1.4**
	comp=Z,0.8nm,0.5s,baz=273,slow=3.2,SNR=8.7							
ASAR	**Alice Springs**	**141.29**	**245**	PKhKP		PKPpre	15 04 54.1	
	comp=Z,1.1nm,0.6s,baz=108,slow=3.3,SNR=29							
WRA	**Warramunga Arr**	**141.62**	**251**	PKhKP		PKPpre	15 04 54.7	
	comp=Z,0.9nm,0.5s,baz=94,slow=2.9,SNR=27							
CMAR	**Chiang Mai Arr**	**151.40**	**354**	PKP		**PKPdf**	**15 05 15.2**	**-0.3**
	comp=Z,0.3nm,0.5s,baz=320,slow=3.6,SNR=3.5							
CMAR				PKPbc		**PKPbc**	**15 05 21.1**	**-0.4**
	comp=Z,1.1nm,0.7s,baz=340,slow=3.0,SNR=11							

IDC 21 14:50:32.8±2.1,**37°.68N**×**143°.73E, h0**km,**mb3.3**/2, **mb1 3.4**/4,**mb1mx3.1**/41,**mbtmp3.2**/4,**ML3.2**/2,**MS3.4**/1, **Ms1 3.4**/1,**ms1mx2.8**/27,**Error ellipse: s-maj=56.7km s-min=33.8km az=85.0**,**Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op		ISC	h m s	ISC
MJAR	**Matsushiro Arr**	**4.56**	**257**	Pn		Pn	14 51 42.7	-0.2
	0.5nm,0.3s,baz=115,slow=8.2,SNR=5.7							
MAT	**Matsushiro**	**4.56**	**257**	P		Pn	14 51 41.0	-2.0
JHJ	**Hachijo jima 2**	**5.58**	**216**	LR		LR	14 54 08.8	
	comp=Z,333nm,20.4s,baz=21,slow=39							
ASAJ	**Asahikawa**	**6.49**	**353**	Pn		Pn	14 52 09.4	0.0
	0.9nm,0.3s,baz=50,slow=13,SNR=7.6							
WRA	**Warramunga Arr**	**57.39**	**190**	P		P	15 00 27.3	0.0
	0.3nm,0.4s,baz=8.7,slow=7.1,SNR=4.7							
ASAR	**Alice Springs**	**61.72**	**190**	P		P	15 00 52.7	-0.1
	0.4nm,0.9s,baz=359,slow=7.5,SNR=4.0							

SJA 21 14:51:47.0±0.5,**28°.61S**×**67°.60W, h125**km±3km,**ML2.8, MW3.6, La Rioja Province**

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op		ISC	h m s	ISC
VCA	**Vinchina**	**0.55**	**257**	*i* P		Pn	14 52 06.8	+0.8
VCA				*i* S		Sn	14 52 20.9	+0.6
VCA				IAML			14 52 24.3	
	comp=Z,384nm,0.3s							
AGUA	**GUANDACOL**	**1.17**	**222**	*i* P		Pn	14 52 12.1	+0.8
AGUA				*i* S		Sn	14 52 30.6	+0.9
CYA	**Choya**	**1.59**	**84**	*i* P		Pn	14 52 17.0	+1.1
CYA				*i* S		Sn	14 52 38.4	+0.5
CYA				IAML			14 52 39.8	
	comp=Z,42nm,0.4s							
AMOG	**MOGNA**	**2.44**	**198**	*i* P		Pn	14 52 27.3	+1.0
AMOG				*i* S		Sn	14 52 57.4	+0.8
RTLL	**Cerro Villicun**	**2.81**	**195**	*i* P		Pn	14 52 32.2	+1.1
RTLS	**Leoncito**	**3.50**	**204**	*i* P		Pn	14 52 41.7	+1.4

*IDC **21** 14:55:45.2±0.9,39°.01N×143°.52E, h0km, mb3.5/9, mb1 3.7/11, mb1mx3.6/44, mbtmp3.5/11, ML3.6/2, Error ellipse: s-maj=25.2km s-min=17.2km az=110.0*
*ISCJB **21** 14:55:46.6±0.6,39°.04N±0°.05×143°.50E±0°.06, h20km, mb3.4/9, Error ellipse: s-maj=7.6km s-min=6.6km az=146.0*
*JMA **21** 14:55:47.5±0.2,39°.06N×143°.39E, h17km±4km, M4.0*

ISC 21 14:55:48.8±0.9,**39°.10N**±0°.06×**143°.44E**±0°.08,**h20**km,**n33,** σ1§**39**/**31**,**mb3.4**/**9**,**Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op		ISC	h m s	ISC
OFUJ	**Ofunato**	**1.38**	**270**	P		**Pn**	**14 56 11.5**	**-1.4**
OFUJ				*e*S		**Sn**	**14 56 28.9**	**-1.7**
JTH	**Tanohata**	**1.48**	**305**	P		**Pn**	**14 56 12.9**	**-1.4**
JTH				*e*S		**Sn**	**14 56 32.4**	**-0.6**
JOM	**Ohasama**	**1.71**	**283**	P		**Pn**	**14 56 16.6**	**-0.8**
JOM				S		**Sn**	**14 56 38.0**	**-0.7**
JMK	**Ichinoseki**	**1.74**	**266**	P		**Pn**	**14 56 17.0**	**-0.8**
JIO	**Ouri**	**1.76**	**249**	P		**Pn**	**14 56 16.9**	**-1.2**
JANG	**Nango**	**1.95**	**311**	P		**Pn**	**14 56 21.1**	**+0.3**
JRG	**Rokugo**	**2.20**	**279**	P		**Pn**	**14 56 24.3**	**+0.1**
JOU	**Okura**	**2.29**	**252**	P		**Pn**	**14 56 25.1**	**-0.4**
JYK	**Kaneyama**	**2.41**	**267**	P		**Pn**	**14 56 26.7**	**-0.4**
JMM	**Marumori**	**2.42**	**240**	P		**Pn**	**14 56 26.2**	**-1.0**
JTM	**Tenmabayashi**	**2.48**	**313**	P		**Pn**	**14 56 28.0**	**-0.1**
JFT	**Otama**	**2.91**	**238**	P		**Pn**	**14 56 33.0**	**-1.0**
JOT	**Ohata**	**2.92**	**322**	P		**Pn**	**14 56 35.4**	**+1.3**
JKB	**Kayabe**	**3.33**	**327**	P		**Pn**	**14 56 40.6**	**+0.8**
JRY	**Ryogami san**	**4.74**	**231**	P		**Pn**	**14 56 58.7**	**-0.5**
MAT	**Matsushiro**	**4.87**	**240**	P		**Pn**	**14 57 02.1**	**+1.2**
MAT				*e*S		**Sn**	**14 58 02.1**	**+5.4**
MJAR	**Matsushiro Arr**	**4.87**	**240**	Pn		**Pn**	**14 57 00.8**	**-0.1**
	2.4nm,0.3s,baz=54,slow=11,SNR=19							
ASAJ	**Asahikawa**	**5.05**	**353**	Pn		**Pn**	**14 57 02.7**	**-0.7**
	2.0nm,0.3s,baz=221,slow=7.0,SNR=18							
SEY	**Seymchan**	**24.47**	**10**	P		**P**	**15 01 08.0**	**+1.8**
	0.8nm,0.4s,baz=188,slow=12,SNR=8.7							
H11N2	**WAKE ISLAND Hy**	**27.97**	**127**	T		T	15 30 49.1	
	baz=319,slow=73,SNR=54							
H11N1	**WAKE ISLAND Hy**	**27.98**	**127**	T		T	15 30 48.5	
	baz=319,slow=73,SNR=59							
H11N3	**WAKE ISLAND Hy**	**27.99**	**127**	T		T	15 30 54.5	
	baz=319,slow=73,SNR=55							
SONM	**Songino Array**	**28.04**	**300**	P		**P**	**15 01 39.7**	**+1.0**
	0.4nm,0.5s,baz=82,slow=7.8,SNR=3.7							
H11S1	**WAKE ISLAND Hy**	**28.77**	**129**	T		T	15 31 55.9	
	baz=321,slow=76,SNR=14							
H11S3	**WAKE ISLAND Hy**	**28.77**	**129**	T		T	15 31 57.8	
	baz=321,slow=76,SNR=10							
H11S2	**WAKE ISLAND Hy**	**28.79**	**129**	T		T	15 31 57.9	
	baz=321,slow=76,SNR=14							
ZALV	**Zalesovo Beam**	**41.74**	**311**	P		**P**	**15 03 36.0**	**-0.3**
	0.2nm,0.3s,baz=126,slow=7.3,SNR=2.6							
MKAR	**Makanchi Array**	**44.41**	**301**	P		**P**	**15 03 57.8**	**-0.2**
	0.2nm,0.7s,baz=101,slow=5.1,SNR=3.1							
ILAR	**Eielson Array**	**46.89**	**33**	P		**P**	**15 04 16.5**	**-0.9**
	0.6nm,0.6s,baz=249,slow=7.2,SNR=8.9							
INK	**Inuvik**	**51.82**	**28**	P		**P**	**15 04 54.8**	**-0.1**
	0.4nm,0.4s,baz=144,slow=7.3,SNR=3.8							
WRA	**Warramunga Arr**	**59.35**	**190**	P		**P**	**15 05 48.3**	**-1.2**
	0.7nm,0.5s,baz=8.0,slow=7.1,SNR=7.6							
YKA	**Yellowknife Ar**	**61.22**	**31**	P		**P**	**15 06 01.6**	**-0.2**
	0.1nm,0.5s,baz=303,slow=6.4,SNR=3.8							
ASAR	**Alice Springs**	**63.07**	**190**	P		**P**	**15 06 13.9**	**-0.8**
	0.2nm,0.8s,baz=18,slow=11,SNR=3.0							

*NIED **21** 15:06:00,35°.70N×140°.80E, h50km, Mw4.6 Best double couple: M0 1.01000×10^16 NP1:φs194.00000°, δ26.00000°, λ107.00000°. NP2:φs356.00000°, δ65.00000°, λ82.00000°.*
*BJI **21** 15:06:47.9,35°.59N×140°.76E, h40km, mb4.7/36, mB4.9/17, Ms4.5/8, Ms7 4.3/7*
*MOS **21** 15:06:48.2±1.0,35°.57N×140°.81E, h35km, mb4.8/39, Error ellipse: s-maj=8.7km s-min=5.4km az=107.4*
*NEIC **21** 15:06:51.0±0.5,35°.55N×140°.70E, h42km±4km, mb4.7/38, Error ellipse: s-maj=4.7km s-min=3.5km az=114.0*
NEIC Recorded [2 JMA] in Chiba and Ibaraki.
*ISCJB **21** 15:06:50.6±0.3,35°.59N±0°.03×140°.74E±0°.04, h55km±2km, mb4.5/74, MS4.3/4, Error ellipse: s-maj=5.8km s-min=4.3km az=16.4*
*JMA **21** 15:06:51.4±0.1,35°.68N×140°.74E, h47km±1km, M4.4 Broadband fault plane solution: P waves. NP1: φs3.00000°, δ68.00000°, λ86.00000°. NP2:φs193.00000°, δ22.00000°, λ99.00000°. Principal axes: T Plg67.0000°, Azm266.0000°; N Plg4.0000°, Azm4.0000°; P Plg23.0000°, Azm96.0000°;*
JMA Felt II J1.
*IDC **21** 15:06:52.3±1.7,35°.57N×140°.65E, h51km±15km, mb4.0/30, mb1 4.2/37, mb1mx4.1/65, mbtmp4.3/37, ML3.7/6, MS3.4/2, Ms1 3.4/2, ms1mx3.2/43 Error ellipse: s-maj=13.6km s-min=10.7km az=103.0*

ISC 21 15:06:51.3±0.5,**35°.64N**±0°.04×**140°.76E**±0°.05,**h46**km±4km, **n207,** σ1§**28**/**218**,**mb4.5**/74,**MS4.4**/4,**4C-8D**,**Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op		ISC	h m s	ISC
CHOJ	**Chosi**	**0.10**	**50**	⇑P		**Pn**	**15 06 58.9**	**+0.3**
CHOJ				*e*S		**Sn**	**15 07 04.3**	**+0.5**
I30JP	**ISUMI INFRASON**	**0.49**	**228**	P		**Pn**	**15 07 02.4**	**+0.2**
	baz=49,slow=9.0,SNR=1.9							
I30JP				S		**Sn**	**15 07 10.8**	**+0.9**
JCN	**Nagara**	**0.51**	**245**	⇓P		**Pn**	**15 07 03.3**	**+1.0**
KTR	**Katsuura**	**0.61**	**217**	⇓P		**Pn**	**15 07 04.1**	**+0.4**
KTR				*e*S		**Sn**	**15 07

comp=Z,840nm,14.8s
MA2 Magadan 24.83 12 P **P 15 12 09.7 +0.8**
comp=Z,6.4nm,0.6s,baz=230,slow=9.8,SNR=13
XAN Xi'an 26.13 276 P **P 15 12 20.1 -0.9**
XAN pP pP 15 12 32.3 -0.8
XAN sP sP 15 12 34.5 -4.1
XAN pmax pmax
comp=Z,13nm,0.6s
ENH Enshi 26.72 267 *eP* **P 15 12 24.6 -1.7**
comp=Z,38nm,0.6s
YAK Yakutsk 27.32 349 P **P 15 12 31.4 0.0**
comp=Z,7.8nm,0.4s,baz=323,slow=1.0,SNR=6.8
YAK Yakutsk 27.32 349 *eP* **P 15 12 31.0 -0.4**
YAK pmax pmax
comp=Z,11nm,0.8s
YAK pmax pmax
comp=E,4.0nm,0.7s
YAK pmax pmax
comp=N,13nm,1.0s
YAK Yakutsk 27.32 349 *eP* **P 15 12 31.4 0.0**
comp=N,18nm,0.6s
ULN Ulaanbaatar 27.73 307 *i* P **P 15 12 32.5 -2.9**
ULN pmax pmax
comp=Z,7.0nm,1.2s
ULN Ulaanbaatar 27.73 307 *eP* **P 15 12 35.4 -0.1**
comp=Z,4.1nm,0.7s
H11N2 WAKE ISLAND Hy 27.93 118 T T 15 41 35.5
baz=311,slow=75,SNR=114
H11N1 WAKE ISLAND Hy 27.93 118 T T 15 41 40.0
baz=311,slow=75,SNR=108
H11N3 WAKE ISLAND Hy 27.95 118 T T 15 41 40.8
baz=311,slow=75,SNR=105
SONA1 Songino Array 28.15 306 *eP* **P 15 12 38.6 -0.6**
SONA1 *e*ScP ScP 15 19 37.4 +8.1
SONA0 Songino Array 28.16 306 *eP* **P 15 12 38.9 -0.3**
comp=Z,4.2nm,0.7s
SONM Songino Array 28.16 306 P **P 15 12 38.9 -0.3**
comp=Z,3.8nm,0.7s,baz=97,slow=7.9,SNR=18
SEY Seymchan 28.26 11 P **P 15 12 41.1 +1.4**
comp=Z,2.4nm,0.7s,baz=167,slow=8.6,SNR=4.2
SEY Seymchan 28.26 11 *eP* **P 15 12 41.7 +2.0**
BOD Bodaibo 28.45 330 *eP* **P 15 12 41.4 -0.1**
BOD pmax pmax
comp=Z,6.0nm,0.9s
H11S3 WAKE ISLAND Hy 28.58 120 T T 15 42 33.6
baz=312,slow=75,SNR=134
H11S1 WAKE ISLAND Hy 28.58 120 T T 15 42 33.6
baz=312,slow=75,SNR=119
H11S2 WAKE ISLAND Hy 28.60 120 T T 15 42 33.3
baz=312,slow=75,SNR=91
GYA Guiyang 30.49 262 P **P 15 13 01.0 +1.0**
GYA pmax pmax
comp=Z,10.0nm,0.8s
ZAK Zakamensk 30.75 310 *eP* **P 15 13 02.0 -0.1**
ZAK pmax pmax
comp=Z,2.0nm,1.6s
BILL Bilibino 35.51 16 *i* P **P 15 13 44.2 +1.0**
BILL pmax pmax
comp=Z,2.0nm,1.0s
BILL Bilibino 35.51 16 *eP* **P 15 13 44.3 +1.0**
comp=Z,11nm,1.6s
TIXI Tiksi 36.61 354 P **P 15 13 52.9 +0.3**
comp=Z,2.7nm,0.7s,baz=144,slow=6.7,SNR=12
TIXI Tiksi 36.61 354 *eP* **P 15 13 52.5 -0.1**
comp=Z,2.8nm,0.8s
CHTO Chiang Mai 40.45 257 *eP* **P 15 14 23.6 -1.8**
CHTO pmax pmax
comp=Z,2.0nm,0.7s
CHTO Chiang Mai 40.45 257 *eP* **P 15 14 23.6 -1.8**
comp=Z,2.2nm,0.7s
CMAR Chiang Mai Arr 40.64 256 P **P 15 14 26.8 -0.3**
comp=Z,0.8nm,0.5s,baz=51,slow=6.8,SNR=7.8
CMAR PcP **PcP 15 16 28.2 0.0**
comp=Z,0.4nm,0.4s,baz=65,slow=1.2,SNR=5.4
WMQ Urumqi 41.02 298 P **P 15 14 30.9 +1.0**
WMQ pP pP 15 14 41.9 -0.5
WMQ sP sP 15 14 46.4 -1.5
WMQ pmax pmax
comp=Z,7.0nm,0.6s
WMQ LR LR
comp=Z,77nm,17.4s
WMQ LR LR
comp=Z,39nm,19.6s
WMQ LR LR
comp=Z,82nm,19.6s
LSA Lhasa 41.83 276 P **P 15 14 38.8 +1.6**
LSA pmax pmax
comp=Z,15nm,0.9s
LSA Lhasa 41.83 276 *eP* **P 15 14 38.5 +1.3**
LSA pmax pmax
comp=Z,13nm,1.0s
LSA Lhasa 41.83 276 *eP* **P 15 14 38.5 +1.3**
comp=Z,13nm,1.0s
ZAA0 Zalesovo Array 42.48 314 *eP* **P 15 14 41.2 -0.4**
ZAA1 Zalesovo Array 42.48 314 *eP* **P 15 14 42.1 +0.5**
ZAA1 *e*PcP **PcP 15 16 34.0 +0.3**
ZALV Zalesovo Beam 42.48 314 P **P 15 14 42.1 +0.5**
comp=Z,7.4nm,0.7s,baz=91,slow=6.9,SNR=40
ZALV PcP **PcP 15 16 34.0 +0.3**
comp=Z,1.5nm,0.4s,baz=111,slow=3.1,SNR=6.0
NVS Novosibirsk 43.44 315 ⇓ *iP* **P 15 14 50.1 +0.8**
NVS pmax pmax
comp=Z,13nm,1.1s
NVS pmax pmax
comp=E,7.0nm,0.8s
NRIK Noril'sk 44.32 336 P **P 15 14 56.8 +0.6**
comp=E,4.7nm,0.7s,baz=109,slow=12,SNR=12
NRIK PcP **PP 15 16 40.5 +0.5**
comp=E,0.8nm,0.4s,baz=99,slow=3.7,SNR=4.0
MK01 Makanchi Array 44.42 303 *eP* **P 15 14 57.7 +0.3**
MK31 Makanchi Array 44.43 303 *eP* **P 15 14 57.6 +0.1**
MK31 Makanchi Array 44.43 303 *eP* **P 15 14 57.6 +0.1**
MK32 Makanchi Array 44.43 303 *eP* **P 15 14 58.0 +0.5**
MKAR Makanchi Array 44.43 303 P **P 15 14 58.0 +0.5**
comp=E,7.2nm,0.7s,baz=87,slow=9.8,SNR=73
MKAR Makanchi Array 44.43 303 P **P 15 14 58.0 +0.5**
MKAR pmax pmax
comp=Z,7.0nm,0.7s
MKAR Makanchi Array 44.43 303 *eP* **P 15 14 57.8 +0.3**
MAKZ Makanchi 44.64 303 *eP* **P 15 14 59.2 0.0**
MAKZ pmax pmax
comp=Z,8.0nm,1.0s
MAKZ Makanchi 44.64 303 *eP* **P 15 14 59.2 0.0**
comp=Z,7.9nm,1.0s
KURK Kurchatov 46.39 309 *eP* **P 15 12 12.8 -0.1**
KURK pmax pmax
comp=Z,22nm,0.8s
KURK Kurchatov 46.39 309 *eP* **P 15 15 12.8 -0.1**
comp=Z,22nm,0.8s
PKIN Phulchoki 47.31 276 *eP* **P 15 15 20.4 -0.3**
comp=Z,7.7nm,0.5s
KKN Kakani 47.31 277 *eP* **P 15 15 20.8 +0.1**
comp=Z,16nm,0.5s
GKN Gorkha 47.75 277 *eP* **P 15 15 24.0 0.0**
comp=Z,28nm,0.7s
KOLN Koldanda 48.68 278 *eP* **P 15 15 31.5 +0.3**
comp=Z,17nm,0.7s
PYUN Piuthan 49.04 278 *eP* **P 15 15 34.4 +0.4**
comp=Z,83nm,0.7s
MTN Manton Dam 49.07 192 *eP* **P 15 15 33.6 -0.3**
comp=Z,22nm,1.1s
TKM2 Tokmak 2 49.84 299 *eP* **P 15 15 40.7 +0.8**
TKM2 pmax pmax
comp=Z,10.0nm,0.6s
TKM2 Tokmak 2 49.84 299 *eP* **P 15 15 40.7 +0.8**
comp=Z,10nm,0.6s
MDM Murphy Dome 50.38 31 *eP* **P 15 15 46.0 +2.6**
comp=Z,20nm,1.7s
KSH Kashi 50.50 295 P P 15 15 49.5 +4.6
KSH *e*ScP **ScP 15 20 49.3 -5.3**
KSH PcS **PcS 15 21 02.0 +2.2**
KSH S **S 15 22 54.4 -1.3**
KSH ScS **ScS 15 25 26.4 -5.6**
KSH pmax pmax
comp=Z,130nm,9.0s
KSH LR LR
comp=Z,170nm,5.9s
KSH LR LR
comp=Z,140nm,9.8s
KSH LR LR
comp=Z,230nm,12.5s
PSI Prapat 50.63 240 P **P 15 15 44.6 -1.5**
comp=Z,4.2nm,0.6s,baz=111,slow=2.3,SNR=6.9
PSI Prapat 50.63 240 *eP* **P 15 15 44.8 -1.3**
PSI pmax pmax
comp=Z,5.0nm,0.6s
PSI Prapat 50.63 240 *eP* **P 15 15 44.8 -1.3**
comp=Z,4.7nm,0.6s
AAK Ala-Archa 50.70 299 *eP* **P 15 15 47.0 +0.6**
AAK pmax pmax
comp=Z,5.0nm,0.9s
AAK Ala-Archa 50.70 299 *eP* **P 15 15 46.6 +0.3**
comp=Z,4.1nm,0.8s
AAK *e*PcP **PcP 15 17 03.3 +0.2**
VOSK Vostochnaya 50.83 313 *eP* **P 15 15 46.8 -0.2**
VOSK pmax pmax
comp=Z,9.0nm,0.8s
VOSK Vostochnaya 50.83 313 *eP* **P 15 15 46.8 -0.2**
comp=Z,9.3nm,0.8s
ILAR Eielson Array 50.95 32 P **P 15 15 48.4 +0.7**
comp=Z,1.1nm,0.8s,baz=272,slow=6.5,SNR=14
ILB Eielson Array 50.95 32 *eP* **P 15 15 49.4 +1.7**
BRVK Borovoye 51.19 313 *i* P **P 15 15 50.5 +0.9**
BRVK pmax pmax
comp=Z,9.0nm,0.8s
BRVK Borovoye 51.19 313 *eP* **P 15 15 49.5 -0.2**
comp=Z,8.8nm,0.9s
ZRNK Zerenda 51.97 313 *eP* **P 15 15 55.6 +0.1**
ZRNK pmax pmax
comp=Z,10.0nm,0.8s
ZRNK Zerenda 51.97 313 *eP* **P 15 15 55.6 +0.1**
comp=Z,10nm,0.8s
KKAR Karatay Array 53.38 301 *eP* **P 15 16 06.5 +0.4**
KKAR Karatay Array 53.38 301 *eP* **P 15 16 06.5 +0.4**
WRAB Tennant Creek 55.60 187 *eP* **P 15 16 21.8 -0.5**
WRAB pmax pmax
comp=Z,10.0nm,0.9s
WRAB Tennant Creek 55.60 187 *eP* **P 15 16 21.8 -0.5**
comp=Z,9.9nm,0.9s
WB2 Warramunga Arr 55.61 187 *eP* **P 15 16 22.2 -0.2**
comp=Z,61nm,1.9s
WR1 Warramunga Arr 55.61 187 *eP* **P 15 16 22.1 -0.2**
comp=Z,11nm,0.9s
WRA Warramunga Arr 55.61 187 P **P 15 16 22.1 -0.2**
comp=Z,3.9nm,0.4s,baz=1.1,slow=7.7,SNR=48
SVE Sverdlovsk 55.85 319 *eP* **P 15 16 24.7 +1.0**
SVE pmax pmax
comp=Z,17nm,0.9s
INK Inuvik 55.87 27 P **P 15 16 25.7 +2.0**
comp=Z,1.1nm,0.6s,baz=290,slow=4.6,SNR=5.3
INK Inuvik 55.87 27 *eP* **P 15 16 25.4 +1.8**
comp=Z,4.9nm,1.3s
ARU Arti 57.06 319 *c iP* **P 15 16 32.6 +0.2**
ARU *PP **sP 15 16 48.8 -1.9**
ARU S S 15 24 14.9 -8.7
ARU pmax pmax
comp=Z,21nm,0.8s
ARU Arti 57.06 319 *eP* **P 15 16 32.6 +0.2**
comp=Z,31nm,1.1s
HYB Hyderabad 57.64 269 *i* P **P 15 16 37.0 -0.1**
ABKAR Akbulak array 58.44 311 *eP* **P 15 16 42.2 0.0**
AS01 Alice Springs 59.33 187 *eP* **P 15 16 48.4 -0.2**
AS31 Alice Springs 59.34 187 *eP* **P 15 16 49.3 +0.8**
comp=Z,1.4nm,0.4s
ASAR Alice Springs 59.34 187 P **P 15 16 48.7 +0.1**
comp=Z,1.6nm,0.5s,baz=18,slow=10.0,SNR=36
MBWA Marble Bar 59.90 203 *eP* **P 15 16 52.2 -0.3**
comp=Z,0.4nm,0.6s
GEYT Alibeck 64.05 299 P **P 15 17 20.9 +0.5**
comp=Z,1.2nm,0.4s,baz=64,slow=3.4,SNR=5.6
RES Resolute Bay 64.08 14 P **P 15 17 20.5 +0.6**
comp=Z,2.9nm,0.6s,baz=294,slow=7.7,SNR=7.1
RES Resolute Bay 64.08 14 *eP* **P 15 17 20.9 +1.0**
RES pmax pmax
comp=Z,6.0nm,1.1s
RES Resolute Bay 64.08 14 *eP* **P 15 17 20.9 +1.0**
comp=Z,5.8nm,1.1s
ARA0 ARCESS Array S 65.12 339 *eP* **P 15 17 27.6 +0.8**
ARCES ARCESS Array B 65.12 339 P **P 15 17 27.6 +0.8**
comp=Z,2.2nm,0.7s,baz=52,slow=8.3,SNR=10
YKA Yellowknife Ar 65.28 30 P **P 15 17 29.2 +1.3**
comp=Z,0.5nm,0.7s,baz=303,slow=6.8,SNR=13
YKB5 Yellowknife Ar 65.28 30 *eP* **P 15 17 28.7 +0.9**
VRH Novokhopyorsk 68.26 318 *eP* **P 15 17 46.2 -0.8**
VRH pmax pmax
comp=Z,9.0nm,0.6s
LPSR Galich'ya Gora 69.03 320 *eP* **P 15 17 51.8 0.0**
LPSR pmax pmax
comp=Z,10.0nm,0.7s
VSR Storozhevoye 69.64 319 *eP* **P 15 17 55.0 -0.6**
VSR pmax pmax
comp=Z,10.0nm,0.9s
FIA1 FINESS Array S 69.80 332 *eP* **P 15 17 56.6 +0.1**
FIA0 FINESS Array S 69.80 332 *eP* **P 15 17 56.8 +0.4**
FIA0 FINESS Array S 69.80 332 *eP* **P 15 17 56.8 +0.4**
FINES FINESS Array B 69.80 332 P **P 15 17 56.8 +0.4**
comp=Z,4.3nm,0.7s,baz=51,slow=7.1,SNR=18
FINES FINESS Array B 69.80 332 *i* P **P 15 17 56.7 +0.3**
FINES pmax pmax
comp=Z,4.0nm,0.7s
VSU Vasula 71.39 330 *eP* **P 15 18 07.0 +0.9**
VSU pmax pmax
comp=Z,22nm,1.0s
KBZ Khabaz 71.41 311 P **P 15 18 07.2 +0.6**
comp=Z,7.3nm,0.9s,baz=308,slow=1.2,SNR=12
KIV Kislovodsk 71.42 311 ⇓ *iP* **P 15 18 07.8 +1.0**
KIV pmax pmax
comp=Z,17nm,1.0s
KIV Kislovodsk 71.42 311 *eP* **P 15 18 07.5 +0.7**
comp=Z,16nm,0.8s
UOSS Minazif 71.73 288 *eP* **P 15 18 09.3 +0.5**
comp=Z,0.7nm,1.2s
GNI Garni 72.12 307 *eP* **P 15 18 12.3 +1.2**
GNI pmax pmax
comp=Z,36nm,1.1s
NC405 NORSAR Array S 75.05 337 *eP* **P 15 18 28.0 +0.2**
AKASG Malin Array Be 75.08 322 P **P 15 18 28.1 +0.1**
comp=Z,3.4nm,0.6s,baz=48,slow=6.2,SNR=21
KIEV Kiev 75.09 322 *eP* **P 15 18 28.3 +0.2**
KIEV Kiev 75.09 322 *eP* **P 15 18 28.1 +0.1**
comp=Z,7.2nm,0.8s
HFS Hagfors 75.14 336 P **P 15 18 29.1 +0.8**
comp=Z,2.1nm,0.4s,baz=104,slow=3.0,SNR=5.4
NC204 NORSAR Array S 75.23 337 *eP* **P 15 18 29.1 +0.3**
NB201 NORSAR Array S 75.23 337 *eP* **P 15 18 29.6 +0.8**
NB2 NORSAR Subarra 75.27 337 P **P 15 18 29.3 +0.3**
comp=Z,3.3nm,0.5s,baz=41,slow=5.9
NB200 NORSAR Array S 75.27 337 *eP* **P 15 18 29.6 +0.6**
NOA NORSAR Array B 75.27 337 P **P 15 18 29.6 +0.6**
comp=Z,6.3nm,0.8s,baz=39,slow=5.7,SNR=25
NOA NORSAR Array B 75.27 337 P **P 15 18 29.7 +0.6**
NOA pmax pmax
comp=Z,5.0nm,0.7s
NBO02 NORSAR Array S 75.37 337 *eP* **P 15 18 30.1 +0.5**
NBO00 NORSAR Array S 75.41 337 *eP* **P 15 18 30.6 +0.8**
NVAR Mina Array Bea 76.25 53 P **P 15 18 36.7 +1.4**
comp=Z,0.5nm,0.6s,baz=350,slow=4.6,SNR=2.6
FRB Frobisher Bay 78.25 13 P **P 15 18 46.8 +1.1**
comp=Z,1.9nm,0.6s,baz=269,slow=4.5,SNR=4.0
BW06 Boulder Array 79.02 45 *eP* **P 15 18 51.6 +1.0**
PD31 Pinedale Array 79.02 45 *eP* **P 15 18 51.9 +1.2**
PDAR Pinedale Array 79.02 45 P **P 15 18 52.1 +1.5**
comp=Z,0.5nm,0.5s,baz=292,slow=1.5,SNR=7.0
BUR08 Buovina Ar. S 79.07 322 *eP* **P 15 18 50.9 +0.3**
BR101 Keskin Array S 79.38 311 *eP* **P 15 18 53.1 +0.5**
BR131 Keskin Array S 79.38 311 *eP* **P 15 18 52.7 +0.1**
BRTR Keskin Array B 79.38 311 P **P 15 18 53.1 +0.5**
comp=Z,2.8nm,0.8s,baz=118,slow=4.9,SNR=12
BRTR Keskin Array B 79.38 311 *i* P **P 15 18 54.0 +1.4**
BRTR pmax pmax
comp=Z,3.0nm,0.8s
STHS Stebnicka Huta 79.79 325 *e* P 15 18 59.5 +5.0
BR231 Keskin MP Arra 79.83 312 *eP* **P 15 18 54.2 -0.8**
CRVS Cervenica-Dubn 80.05 324 *eP* **P 15 18 56.5 +0.6**
MTPU Mont Pierson 80.37 50 *eP* **P 15 18 59.3 +1.1**
comp=Z,8.4nm,0.7s
DPC Dobruska-Polom 81.36 328 *eP* **P 15 19 04.0 +1.1**
DPC *e*pP **pP 15 19 17.1 +0.6**
DPC Dobruska-Polom 81.36 328 *eP* **P 15 19 04.0 +1.1**
DPC *e* 15 19 17.1
VYHS Vyhne 81.57 325 *eP* **P 15 19 05.4 +1.4**
BRG Berggiesshubel 81.98 329 *eP* **P 15 19 06.8 +0.7**
comp=Z,3.7nm,0.8s
BRG Berggiesshubel 81.98 329 *eP* **P 15 19 06.8 +0.7**
BRG pmax pmax
comp=Z,4.0nm,0.8s
CLL Collm 82.04 330 ⇑ *iP* **P 15 19 06.7 +0.3**
comp=Z,9.0nm,0.9s
CLL LmV 16 00 00.0
comp=Z,300nm,21.2s
CLL Collm 82.04 330 ⇑ *iP* **P 15 19 06.7 +0.3**
CLL pmax pmax
comp=Z,9.0nm,0.9s
CLL MLR MLR
comp=Z,300nm,21.2s
CLL Collm 82.04 330 *eP* **P 15 19 06.5 +0.1**
comp=Z,9.5nm,0.9s
KHC Kasperske Hory 83.45 328 *eP* **P 15 19 14.7 +0.9**
KHC *e*pP **pP 15 19 26.7 -0.8**
KHC Kasperske Hory 83.45 328 *eP* **P 15 19 14.7 +0.9**
KHC *e* 15 19 26.7
KHC Kasperske Hory 83.45 328 *eP* **P 15 19 14.0 +0.2**
comp=Z,1.9nm,1.0s
GERES GERESS Array B 83.62 328 P **P 15 19 15.2 +0.4**
comp=Z,0.9nm,0.6s,baz=35,slow=4.9,SNR=9.5
GEA0 GERESS Array S 83.62 328 *eP* **P 15 19 15.0 +0.2**
ANMO Albuquerque 85.89 49 *eP* P 15 19 35.2 +8.6
ANMO pmax pmax
comp=Z,2.0nm,1.1s
BFO Black Forest 86.26 330 *eP* **P 15 19 28.2 +0.3**
BFO pmax pmax
comp=Z,6.0nm,0.8s
BFO Black Forest 86.26 330 *eP* **P 15 19 28.2 +0.3**
comp=Z,5.8nm,0.8s
WMOK Wichita Mounta 90.63 45 *eP* **P 15 19 46.4 -2.5**
WMOK pmax pmax
comp=Z,4.0nm,1.0s
WMOK Wichita Mounta 90.63 45 *eP* **P 15 19 46.4 -2.5**
comp=Z,3.6nm,1.0s
LTX Lajitas 91.39 52 *eP* **P 15 19 54.2 +1.5**
LTX Lajitas 91.39 52 *eP* **P 15 19 54.2 +1.5**
TXAR Lajitas Array 91.39 52 P **P 15 19 54.2 +1.5**
comp=Z,0.3nm,0.6s,baz=315,slow=3.9,SNR=4.3
LPAZ La Paz 147.84 61 PKPbc **PKPbc 15 26 33.4 +1.0**
comp=Z,2.0nm,0.7s,baz=9.5,slow=6.1,SNR=4.4

JMA 21 15:14:42.1±0.3, 37.25N×142.28E, h0km, M3.8, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JFK	**Kawauchi**	**1.13**	**276**	P	Pg	15 15 03.6	-0.1
JFK				S	Sb	15 15 20.4	+0.7
ONAJ	**Iwakimizuishiy**	**1.19**	**263**	P	Pn	15 15 06.2	+0.1
ONAJ				S	Sb	15 15 22.0	+0.4
JMM	**Marumori**	**1.33**	**298**	P	Pg	15 15 06.7	-0.9
JIO	**Ouri**	**1.41**	**329**	P	Pn	15 15 08.8	-0.2
JHO	**Hitachi**	**1.51**	**246**	P	Pn	15 15 10.3	-0.1
JFT	**Otama**	**1.57**	**280**	P	Pn	15 15 11.0	-0.3
JOU	**Okura**	**1.70**	**312**	P	Pb	15 15 14.4	+0.2

IDC 21 15:16:02.2±2.1, 11.39N×92.69E, h0km, mb3.5/3, mb1 3.6/4, mb1mx3.3/45, mbtmp3.5/4, ML3.8/1, Error ellipse: s-maj=67.5km s-min=27.7km az=64.0, Andaman Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CMAR	**Chiang Mai Arr**	**9.26**	**40**	Pn	Pn	15 18 16.6	-0.5
	0.3nm,0.3s,baz=236,slow=14,SNR=12						
MKAR	**Makanchi Array**	**36.37**	**348**	P	P	15 23 08.8	+0.8
	0.3nm,0.7s,baz=147,slow=7.3,SNR=3.7						
ZALV	**Zalesovo Beam**	**42.91**	**353**	P	P	15 24 02.1	-0.3
	0.6nm,0.3s,baz=162,slow=9.0,SNR=4.4						
ASAR	**Alice Springs**	**53.27**	**131**	P	P	15 25 22.8	-0.4
	0.4nm,0.9s,baz=313,slow=7.3,SNR=3.2						

*ISCJB **21** 15:18:52.5±0.4, 82.72N±0.06×6.1W±0.5, h10km, mb3.9/13, MS3.8/1, Error ellipse: s-maj=10.1km s-min=7.9km az=40.3*
*IDC **21** 15:18:52.5±0.9, 82.79N×5.93W, h0km, mb3.5/8, mb1 3.7/9, mb1mx3.4/54, mbtmp3.5/9, ML3.3/1, MS3.8/1, Ms1 3.8/1, ms1mx3.1/43, Error ellipse: s-maj=27.4km s-min=19.1km az=36.0*
*CSEM **21** 15:18:54.1, 82.71N×6.22W, h10km, mb4.2/7*
*NEIC **21** 15:18:54.1±0.5, 82.71N×6.22W, h10km, mb4.2/7, Error ellipse: s-maj=10.3km s-min=8.4km az=211.0*

ISC 21 15:18:54.1±0.6, 82.62N±0.09×5.84W±0.07, h10km, n58, σ1s54/57, mb3.9/13, North of Svalbard

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
KBS	**Kingsbay**	**4.65**	**133**	*e*Pn	**Pn**	**15 20 05.5**	**+1.3**
KBS				*e*Sn	**Sn**	**15 20 54.8**	**-3.4**
KBS	**Kingsbay**	**4.65**	**133**	*e*Pn	**Pn**	**15 20 05.5**	**+1.3**
KBS				*e*Sn	**Sn**	**15 20 54.8**	**-3.4**
SUMG	**Summit**	**11.94**	**232**	*e*Pn	**Pn**	**15 21 42.5**	**-1.9**
SUMG	**Summit**	**11.94**	**232**	*e*Pn	**Pn**	**15 21 42.5**	**-1.9**
KEV	**Kevo**	**14.67**	**132**	*e*Pn	**P**	**15 22 24.6**	**-2.9**
KEV	**Kevo**	**14.67**	**132**	*e*Pn	**P**	**15 22 24.6**	**-2.9**
ARA0	**ARCESS Array S**	**14.74**	**134**	*e*Pn	**Pn**	**15 22 21.5**	**-0.7**
ARA0	**ARCESS Array S**	**14.74**	**134**	*e*Pn	**Pn**	**15 22 21.5**	**-0.7**
ARCES	**ARCESS Array B**	**14.74**	**134**	Pn	**Pn**	**15 22 21.5**	**-0.7**
	0.2nm,0.3s,baz=345,slow=8.8,SNR=8.0						
ARE0	**ARCESS Array S**	**14.74**	**134**	*e*Pn	**Pn**	**15 22 23.3**	**+1.1**
ARE0	**ARCESS Array S**	**14.74**	**134**	*e*Pn	**Pn**	**15 22 23.3**	**+1.1**
RES	**Resolute Bay**	**16.96**	**294**	Pn	Pn	15 22 43.5	-7.5
	0.3nm,0.3s,baz=71,slow=5.8,SNR=15						
RES	**Resolute Bay**	**16.96**	**294**	*e*Pn	Pn	15 22 44.1	-6.8
	3.3nm,0.9s						
BORG	**Borgarnes**	**18.34**	**201**	*e*P	**P**	**15 23 10.5**	**+2.4**
	382nm,1.9s						
BORG	**Borgarnes**	**18.34**	**201**	*e*P	**P**	**15 23 10.5**	**+2.4**
	382nm,1.9s						
INK	**Inuvik**	**26.98**	**320**	P	**P**	**15 24 35.0**	**-0.3**
	0.6nm,0.7s,baz=7.1,slow=8.1,SNR=3.5						
INK	**Inuvik**	**26.98**	**320**	*e*P	**P**	**15 24 34.3**	**-1.0**
	13nm,1.9s						
INK	**Inuvik**	**26.98**	**320**	*e*P	**P**	**15 24 34.3**	**-1.0**
	13nm,1.9s						
YKA	**Yellowknife Ar**	**30.80**	**301**	P	**P**	**15 25 07.4**	**-1.9**
	0.2nm,0.7s,baz=14,slow=8.5,SNR=3.1						
IL1	**Eielson Array**	**31.48**	**329**	*e*P	**P**	**15 25 16.2**	**+0.9**
IL1	**Eielson Array**	**31.48**	**329**	*e*P	**P**	**15 25 16.2**	**+0.9**
ILB	**Eielson Array**	**31.48**	**329**	*e*P	**P**	**15 25 13.8**	**-1.5**
ILB	**Eielson Array**	**31.48**	**329**	*e*P	**P**	**15 25 13.8**	**-1.5**
GERES	**GERESS Array B**	**34.42**	**157**	P	**P**	**15 25 43.5**	**+2.4**
	0.2nm,0.3s,baz=83,slow=5.9,SNR=3.7						
GEA0	**GERESS Array S**	**34.42**	**157**	*e*P	**P**	**15 25 42.9**	**+1.7**
GEA0	**GERESS Array S**	**34.42**	**157**	*e*P	**P**	**15 25 42.9**	**+1.7**
ZRNK	**Zerenda**	**35.91**	**95**	*e*P	**P**	**15 25 55.3**	**+1.5**
	3.3nm,1.6s						
ZRNK	**Zerenda**	**35.91**	**95**	*e*P	**P**	**15 25 55.3**	**+1.5**
	3.3nm,1.6s						
ZAA1	**Zalesovo Array**	**36.97**	**79**	*e*P	**P**	**15 26 03.3**	**+0.5**
ZAA1	**Zalesovo Array**	**36.97**	**79**	*e*P	**P**	**15 26 03.3**	**+0.5**
ZAA0	**Zalesovo Array**	**36.97**	**79**	*e*P	**P**	**15 26 04.1**	**+1.2**
ZAA0	**Zalesovo Array**	**36.97**	**79**	*e*P	**P**	**15 26 04.1**	**+1.2**
ZALV	**Zalesovo Beam**	**36.97**	**79**	P	**P**	**15 26 03.3**	**+0.4**
	1.1nm,0.8s,baz=322,slow=9.4,SNR=4.4						
ABKAR	**Akbulak array**	**38.38**	**106**	*e*P	**P**	**15 26 17.9**	**+3.0**
ABKAR	**Akbulak array**	**38.38**	**106**	*e*P	**P**	**15 26 17.9**	**+3.0**
MAKZ	**Makanchi**	**43.61**	**84**	*e*P	**P**	**15 26 57.6**	**-0.4**
	2.8nm,1.1s						
MAKZ	**Makanchi**	**43.61**	**84**	*e*P	**P**	**15 26 57.6**	**-0.4**
	2.8nm,1.1s						
MK31	**Makanchi Array**	**43.66**	**84**	*e*P	**P**	**15 26 57.8**	**-0.6**
MK31	**Makanchi Array**	**43.66**	**84**	*e*P	**P**	**15 26 57.8**	**-0.6**
MK32	**Makanchi Array**	**43.66**	**84**	*e*P	**P**	**15 26 57.9**	**-0.5**
MK32	**Makanchi Array**	**43.66**	**84**	*e*P	**P**	**15 26 57.9**	**-0.5**
MKAR	**Makanchi Array**	**43.66**	**84**	P	**P**	**15 26 57.9**	**-0.5**
	0.1nm,0.3s,baz=351,slow=6.8,SNR=4.3						
MKAR	**Makanchi Array**	**43.66**	**84**	*e*P	**P**	**15 26 57.6**	**-0.8**
MKAR	**Makanchi Array**	**43.66**	**84**	*e*P	**P**	**15 26 57.6**	**-0.8**
MK01	**Makanchi Array**	**43.69**	**84**	*e*P	**P**	**15 26 59.0**	**+0.4**
MK01	**Makanchi Array**	**43.69**	**84**	*e*P	**P**	**15 26 59.0**	**+0.4**
PETK	**Petropavlovsk-**	**44.25**	**14**	LR	LR	15 45 03.2	
	comp=Z,123nm,20.2s,baz=13,slow=36						
SONA1	**Songino Array**	**45.58**	**61**	*e*P	**P**	**15 27 13.5**	**-0.3**
SONA1	**Songino Array**	**45.58**	**61**	*e*P	**P**	**15 27 13.5**	**-0.3**
SONA0	**Songino Array**	**45.59**	**61**	*e*P	**P**	**15 27 14.5**	**+0.6**
	6.1nm,1.8s						
SONA0	**Songino Array**	**45.59**	**61**	*e*P	**P**	**15 27 14.5**	**+0.6**
	6.1nm,1.8s						
SONM	**Songino Array**	**45.59**	**61**	P	**P**	**15 27 14.5**	**+0.7**
	0.7nm,0.8s,baz=349,slow=6.6,SNR=4.3						
ALLY	**Alegheny Colle**	**46.94**	**261**	*e*P	**P**	**15 27 25.1**	**+0.7**
	46nm,0.6s						
ALLY	**Alegheny Colle**	**46.94**	**261**	*e*P	**P**	**15 27 25.1**	**+0.7**
	46nm,0.6s						
TOA1	**Torodi Ar. Sit**	**69.57**	**172**	*e*P	**P**	**15 30 04.0**	**+1.2**
	12nm,1.6s						

TOA1	**Torodi Ar. Sit**	**69.57**	**172**	*e*P		**P**	**15 30 04.0**	**+1.2**
	12nm,1.6s							
TORD	**Torodi Ar. Bea**	**69.57**	**172**	P		**P**	**15 30 04.0**	**+1.2**
	0.3nm,0.6s,baz=344,slow=4.8,SNR=4.1							
CMAR	**Chiang Mai Arr**	**73.70**	**73**	P		**P**	**15 30 25.9**	**-1.8**
	0.9nm,0.8s,baz=349,slow=6.3,SNR=6.9							

IDC ***21*** *15:20:34.4±5.1,35°.87N×141°.22E,h0km,mb3.2/2, mb1 3.4/3,mb1mx3.1/44,mbtmp3.1/3,ML2.9/1,Error ellipse: s-maj=119.9km s-min=35.6km az=44.0*

ISCJB ***21*** *15:20:41.1±0.9,35°.74N±0°.06×140°.8E±0°.1,h57km±6km, mb3.3/2,Error ellipse: s-maj=14.1km s-min=10.0km az=164.9*

JMA ***21*** *15:20:41.5±0.2,35°.73N×140°.70E,h50km±2km,M2.7*

ISC 21 15:20:42.2±1.2,35°.73N±0°.05×140°.74E±0°.08,h48km±9km, n12,σ0§90/15,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.10**	**107**	P	**Pn**	**15 20 49.4**	**-0.5**
CHOJ				*e*S	**Sn**	**15 20 56.0**	**+0.7**
JCN	**Nagara**	**0.54**	**234**	P	**Pn**	**15 20 53.8**	**0.0**
JCN				S	**Sn**	**15 21 03.0**	**+0.8**
JYT	**Yasato**	**0.66**	**318**	P	**Pn**	**15 20 54.6**	**-0.8**
JYT				*e*S	**Sn**	**15 21 04.1**	**-0.8**
BSO4	**Boso 4**	**0.81**	**204**	P	**Pn**	**15 20 57.3**	**0.0**
JHO	**Hitachi**	**0.89**	**351**	P	**Pn**	**15 20 58.4**	**0.0**
JAG	**Ashikaga**	**1.25**	**304**	P	**Pn**	**15 21 02.6**	**-0.7**
JOD2	**Odawara 2**	**1.43**	**251**	P	**Pn**	**15 21 05.4**	**-0.3**
JIM2	**Oshima 3**	**1.47**	**227**	P	**Pn**	**15 21 04.8**	**-1.6**
MJAR	**Matsushiro Arr**	**2.20**	**292**	Pn	**Pn**	**15 21 16.6**	**+0.3**
	2.6nm,0.3s,baz=100,slow=14,SNR=20						
MAT	**Matsushiro**	**2.20**	**292**	P	**Pn**	**15 21 17.7**	**+1.4**
MAT				S	Sn	15 21 48.0	+5.6
WRA	**Warramunga Arr**	**55.70**	**187**	P	**P**	**15 30 13.2**	**-0.6**
	0.2nm,0.4s,baz=1.7,slow=7.5,SNR=6.0						
ASAR	**Alice Springs**	**59.43**	**187**	P	**P**	**15 30 40.8**	**+0.8**
	0.2nm,0.8s,baz=20,slow=10,SNR=4.3						

ISCJB ***21*** *15:20:47.8±0.6,19°.52S±0°.04×63°.57W±0°.07,h10km, mb3.6/2,Error ellipse: s-maj=9.2km s-min=6.0km az=11.6*

IDC ***21*** *15:20:47.5±1.6,19°.57S×63°.61W,h0km,mb3.7/2, mb1 3.9/5,mb1mx3.6/36,mbtmp3.7/5,ML3.8/3,Error ellipse: s-maj=25.3km s-min=22.4km az=12.0*

ISC 21 15:20:49.2±1.0,19°.54S±0°.06×63°.60W±0°.07,h10km,n10, σ0§78/11,Southern Bolivia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
YJA	**Yavi**	**3.17**	**214**	*i* P	Pb	15 21 40.9	-5.1
YJA				IAML		15 22 30.9	
	comp=Z,52nm,0.3s						
HJA	**Humahuaca**	**4.02**	**204**	*i* P	**Pn**	**15 21 52.2**	**+1.0**
HJA				IAML		15 23 01.3	
	comp=Z,41nm,0.3s						
SIV	**San Ignacio**	**4.27**	**35**	Pn	**Pn**	**15 21 54.7**	**+0.2**
	comp=Z,5.4nm,0.3s,baz=228,slow=13,SNR=62						
SIV				Sn	**Sn**	**15 22 44.7**	**+0.3**
	comp=Z,5.5nm,0.3s,baz=130,slow=21,SNR=7.4						
SIV				Lg	Lg	15 23 04.9	
	comp=Z,4.2nm,0.3s,baz=317,slow=23,SNR=3.8						
ASTB	**Santa Barbara**	**4.46**	**190**	*i* P	**Pn**	**15 21 57.6**	**+0.6**
ASTB				*i* S	**Sn**	**15 22 49.2**	**+0.1**
AZAP	**Zapla**	**4.86**	**196**	*i* P	Pn	15 22 03.7	+1.1
LPAZ	**La Paz**	**5.39**	**306**	*i* P	**Pn**	**15 22 10.5**	**+0.2**
LPAZ	**La Paz**	**5.39**	**306**	Pn	**Pn**	**15 22 11.6**	**+1.3**
	comp=Z,2.7nm,0.3s,baz=130,slow=6.3,SNR=66						
LPAZ				Pg	Pg	15 22 27.2	-5.5
	comp=Z,2.9nm,0.3s,baz=129,slow=14,SNR=16						
LPAZ				Sn	**Sn**	**15 23 12.1**	**-0.7**
	comp=Z,1.6nm,0.3s,baz=294,slow=7.9,SNR=4.8						
CPUP	**Villa Florida**	**8.89**	**141**	Pn	**Pn**	**15 22 57.3**	**-0.5**
	comp=Z,0.2nm,0.3s,baz=322,slow=18,SNR=2.8						
CPUP				Lg	Lg	15 25 39.2	
	comp=Z,0.4nm,0.3s,baz=257,slow=8.7,SNR=4.5						
TORD	**Torodi Ar. Bea**	**72.01**	**69**	P	**P**	**15 32 14.0**	**+0.2**
	comp=Z,0.6nm,0.8s,baz=243,slow=5.9,SNR=3.9						
YKA	**Yellowknife Ar**	**91.09**	**339**	P	**P**	**15 33 52.6**	**-1.0**
	comp=Z,0.2nm,0.5s,baz=125,slow=4.4,SNR=3.9						

CSEM ***21*** *15:24:33.9±0.2,40°.90N×20°.57E,h5km,ML2.0,Error ellipse: s-maj=4.7km s-min=3.8km az=61.0*

TIR ***21*** *15:24:33.4,40°.93N×20°.56E,h4km,ML2.6*

SKO ***21*** *15:24:34.8,40°.95N×20°.58E,h13km,M1.6,ML2.0*

ATH ***21*** *15:24:35.5,40°.82N×20°.71E,h27km±2km,ML2.3/2,Error ellipse: s-maj=4.3km s-min=1.2km az=130.0*

ISC 21 15:24:33.5±1.2,40°.93N±0°.03×20°.57E±0°.03,h8km±10km, n30,σ0§76/41,2C-2D,Greece-Albania border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OHR	**Ohrid**	**0.25**	**43**	⇓*i* Pg	**Pg**	**15 24 39.6**	**+0.9**
OHR				*i* Sg	**Sb**	**15 24 45.0**	**-0.1**
OHR				*e*Lg	Lg	15 24 45.1	
	comp=N,434nm,0.7s						
OHR				*e*Lg	Lg	15 24 45.1	
	comp=E,489nm,0.6s						
OHR	**Ohrid**	**0.25**	**43**	⇓*i* Pg	**Pg**	**15 24 39.5**	**+0.9**
OHR				*i* Sg	**Sb**	**15 24 44.9**	**-0.1**
OHR				*e*Lg	Lg	15 24 45.1	
	comp=E,489nm,0.6s						
BIA	**Bitola**	**0.58**	**81**	⇑*i* Pg	**Pg**	**15 24 45.2**	**+0.4**
BIA				*i* Sg	**Sb**	**15 24 54.5**	**+0.1**
BIA				*e*Lg	Lg	15 24 55.7	
	comp=E,92nm,0.3s						
BIA				*e*Lg	Lg	15 24 55.8	
	comp=N,98nm,0.4s						
BIA	**Bitola**	**0.58**	**81**	⇑*i* Pg	**Pg**	**15 24 45.1**	**+0.4**
BIA				*i* Sg	**Sb**	**15 24 54.5**	**+0.1**
BIA				*e*Lg	Lg	15 24 55.7	
	comp=N,98nm,0.4s						
FNA	**Florina**	**0.63**	**103**	P	**Pg**	**15 24 46.2**	**+0.5**
FNA				S	**Sg**	**15 24 54.2**	**+0.3**
FNA	**Florina**	**0.63**	**103**	P	**Pg**	**15 24 46.2**	**+0.5**
FNA				S	**Sg**	**15 24 54.2**	**+0.3**
FNA				AML	AML	15 24 58.5	
	comp=N,2118μm,0.4s						
FNA				AML	AML	15 24 58.8	
	comp=E,2028μm,0.4s						
NEST	**Nestorio**	**0.63**	**144**	P	**Pg**	**15 24 45.8**	**+0.1**
NEST				S	**Sg**	**15 24 52.3**	**-1.6**
NEST	**Nestorio**	**0.63**	**144**	P	**Pg**	**15 24 45.8**	**+0.1**
NEST				S	**Sg**	**15 24 52.3**	**-1.6**
NEST				AML	AML	15 24 60.0	
	comp=E,389μm,0.3s						
NEST				AML	AML	15 25 03.1	
	comp=N,255μm,0.5s						
TIR	**Tirane**	**0.68**	**309**	*i* PG	**Pg**	**15 24 46.4**	**-0.2**
TIR	**Tirane**	**0.68**	**309**	*i* Pg	**Pg**	**15 24 46.4**	**-0.2**
KZN	**Kozani**	**1.10**	**124**	P	**Pb**	**15 24 54.7**	**-0.2**
KZN				S	**Sb**	**15 25 08.2**	**-1.3**
SGD	**Sagiada**	**1.34**	**191**	P	**Pn**	**15 24 59.0**	**+0.5**
SGD	**Sagiada**	**1.34**	**191**	P	**Pn**	**15 24 59.0**	**+0.5**
GRG	**Griva**	**1.39**	**88**	P	**Pn**	**15 24 59.5**	**+0.2**
GRG	**Griva**	**1.39**	**88**	P	**Pn**	**15 24 59.5**	**+0.2**
IGT	**Igoumenitsa**	**1.41**	**187**	P	**Pn**	**15 25 00.3**	**+0.9**
IGT				S	**Sn**	**15 25 18.6**	**+0.5**
IGT	**Igoumenitsa**	**1.41**	**187**	P	**Pn**	**15 25 00.3**	**+0.9**
IGT				S	**Sn**	**15 25 18.6**	**+0.5**
LIT	**Litokhoron**	**1.68**	**119**	P	**Pn**	**15 25 03.0**	**-0.3**
LIT	**Litokhoron**	**1.68**	**119**	P	**Pn**	**15 25 03.0**	**-0.3**
THL	**Klokotos Trika**	**1.75**	**140**	P	**Pb**	**15 25 05.9**	**0.0**
KNT	**Kendrikon**	**1.78**	**82**	P	**Pn**	**15 25 05.0**	**+0.4**
KNT	**Kendrikon**	**1.78**	**82**	P	**Pn**	**15 25 05.0**	**+0.4**
DSL	**Palaion Diasel**	**1.84**	**167**	P	**Pn**	**15 25 05.8**	**+0.4**
DSL	**Palaion Diasel**	**1.84**	**167**	P	**Pn**	**15 25 05.8**	**+0.4**
BARS	**Barje**	**2.10**	**26**	*e*Pn	**Pn**	**15 25 06.7**	**-2.4**
AGG	**Agios Georgios**	**2.33**	**144**	P	**Pn**	**15 25 12.2**	**0.0**
AGG	**Agios Georgios**	**2.33**	**144**	P	**Pn**	**15 25 12.2**	**0.0**
DIVS	**Divibare**	**3.20**	**353**	*e*Pn	**Pn**	**15 25 23.9**	**-0.3**
UDBI	**Udbina**	**5.05**	**317**	*i* Pn	**Pn**	**15 25 50.6**	**+1.0**
UDBI	**Udbina**	**5.05**	**317**	*i* Pn	**Pn**	**15 25 50.5**	**+1.0**

IDC 21 15:31:31.3±2.3,6°.38S×129°.57E,h0km,mb3.6/1, mb1 3.9/4,mb1mx3.5/30,mbtmp3.7/4,ML3.7/3,MS3.1/1, Ms1 3.1/1,ms1mx2.4/46,Error ellipse: s-maj=108.3km s-min=27.4km az=76.0,Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KAPI	**Kappang**	**9.87**	**277**	LR	LR	15 38 17.1	
	comp=Z,108nm,20.4s,baz=312,slow=41						
FITZ	**Fitzroy Crossi**	**12.27**	**198**	Pn	Pn	15 34 28.1	+0.8
	0.3nm,0.3s,baz=24,slow=11,SNR=11						
FITZ				Sn	Sn	15 36 32.8	-12
	0.1nm,0.3s,baz=106,slow=19,SNR=2.5						
WRA	**Warramunga Arr**	**14.26**	**161**	Pn	Pn	15 34 54.1	-0.5
	0.3nm,0.3s,baz=334,slow=13,SNR=19						
WRA				Sn	Sn	15 37 20.2	-13
	0.6nm,0.3s,baz=347,slow=22,SNR=12						
ASAR	**Alice Springs**	**17.69**	**167**	P	Pn	15 35 39.0	-0.3
	0.3nm,0.3s,baz=342,slow=9.6,SNR=54						
ASAR				S	Sn	15 38 46.5	-11
	0.1nm,0.3s,baz=347,slow=26,SNR=6.6						
MKAR	**Makanchi Array**	**67.48**	**327**	P	P	15 42 29.1	0.0
	0.3nm,0.4s,baz=114,slow=6.5,SNR=3.3						

IDC ***21*** *15:36:00.2±0.6,2°.45S×139°.02E,h0km,mb4.0/13, mb1 4.2/16,mb1mx4.1/37,mbtmp4.1/16,ML4.2/3,MS3.7/2, Ms1 3.7/2,ms1mx3.0/51,Error ellipse: s-maj=14.5km s-min=11.7km az=20.0*

ISCJB ***21*** *15:36:04.0±0.2,2°.53S±0°.04×138°.95E±0°.03,h37km, mb4.4/30,MS3.9/3,Error ellipse: s-maj=5.3km s-min=4.8km az=0.4*

NEIC ***21*** *15:36:04.1±2.4,2°.47S×138°.99E,h27km±17km,mb4.5/22, Error ellipse: s-maj=6.6km s-min=6.5km az=60.0*

DJA ***21*** *15:36:05.0±0.3,2°.5S×13°.9E±°,h10km,M4.5/13, mb4.7/13,mB4.9/5,MLv4.5/5,Mw(mB)4.2/5,Mwp5.8/1*

ISC 21 15:36:05.8±0.5,2°.57S±0°.06×139°.00E±0°.06,h37km,n67, σ1§24/71,mb4.5/29,MS3.8/3,Irian Jaya

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GENI	**Genyem**	**1.17**	**91**	P	**Pn**	**15 36 24.5**	**-1.1**
GENI				S	**Sn**	**15 36 41.7**	**+1.4**
JAY	**Jayapura**	**1.70**	**88**	Pg	**Pn**	**15 36 31.9**	**-1.1**
	3.8nm,0.3s,baz=217,slow=22,SNR=150						
JAY				LR	LR	15 36 44.4	
	comp=Z,6.2nm,20.8s,baz=162,slow=26						
JAY				Lg	Lg	15 36 53.0	
	4.4nm,0.3s,baz=48,slow=23,SNR=7.7						
JAY	**Jayapura**	**1.70**	**88**	P	**Pn**	**15 36 32.7**	**-0.4**
JAY				S	**Sn**	**15 36 53.6**	**0.0**
FAKI	**Fak Fak**	**6.75**	**267**	P	**Pn**	**15 37 43.2**	**+0.7**
	50nm,0.8s,850nm0.3nm						
SWI	**Sorong**	**7.92**	**282**	P	**Pn**	**15 37 59.7**	**+1.2**
	29nm,1.1s,570nm0.1nm						
PMG	**Port Moresby**	**10.58**	**130**	Pn	Pn	15 38 39.8	+4.8
	0.7nm,0.3s,baz=355,slow=8.8,SNR=6.2						
PMG				LR	LR	15 44 19.4	
	comp=Z,333nm,19.1s,baz=288,slow=47						
PMG	**Port Moresby**	**10.58**	**130**	*e*Pn	Pn	15 38 41.7	+6.7
NLAI	**Namlea**	**11.90**	**266**	P	**Pn**	**15 38 54.0**	**+0.9**
	62nm,0.9s,552nm19μm						
COEN	**Coen**	**12.05**	**160**	*e*Pn	**Pn**	**15 38 56.3**	**+1.2**
MTN	**Manton Dam**	**12.84**	**217**	*e*Pn	**Pn**	**15 39 06.1**	**+0.2**
SANI	**Sanana**	**13.01**	**272**	P	**Pn**	**15 39 09.4**	**+1.1**
	31nm,0.7s						
SOEI	**Soe**	**16.29**	**243**	P	**P**	**15 39 57.4**	**+2.7**
	93nm,1.2s						
BATI	**Baumata**	**17.02**	**243**	P	**P**	**15 40 02.3**	**-0.4**
	4.1nm,0.3s,baz=283,slow=24,SNR=12						
APSI	**Ampana**	**17.42**	**275**	P	**P**	**15 40 09.2**	**+2.1**
	35nm,0.9s						
WRAB	**Tennant Creek**	**17.85**	**194**	*e*P	**P**	**15 40 12.1**	**+0.2**
	14nm,0.8s						
WRAB				*e*Sn	Sn	15 43 19.8	-10
WB2	**Warramunga Arr**	**17.86**	**194**	*e*P	**P**	**15 40 12.1**	**+0.1**
	16nm,0.9s						
WB2				*e*Sn	Sn	15 43 19.5	-10
WR1	**Warramunga Arr**	**17.86**	**194**	*e*Pn	**Pn**	**15 40 10.9**	**-0.6**
	24nm,1.2s						
WR1				*e*Sn	Sn	15 43 19.8	-10
WRA	**Warramunga Arr**	**17.86**	**194**	P	**Pn**	**15 40 10.9**	**-0.6**
	1.2nm,0.3s,baz=16,slow=12,SNR=24						
WRA				S	Sn	15 43 19.8	-10
	0.3nm,0.3s,baz=11,slow=21,SNR=5.2						
CTA	**Charters Tower**	**18.80**	**158**	P	**P**	**15 40 22.6**	**+0.3**
	0.1nm,0.3s,baz=356,slow=19,SNR=2.2						
FITZ	**Fitzroy Crossi**	**20.25**	**219**	P	**P**	**15 40 38.3**	**+0.2**
	1.9nm,0.6s,baz=62,slow=14,SNR=4.9						
FITZ				S	**S**	**15 44 17.4**	**-6.0**
	8.3nm,0.7s,baz=193,slow=18,SNR=8.5						
FITZ				LR	LR	15 49 24.7	
	comp=Z,255nm,18.8s,baz=48,slow=40						
FITZ	**Fitzroy Crossi**	**20.25**	**219**	*e*P	**P**	**15 40 37.8**	**-0.4**
	8.2nm,1.0s						
FITZ				*e*S	S	15 44 15.2	-8.3
AS01	**Alice Springs**	**21.54**	**193**	*e*P	**P**	**15 40 52.1**	**+0.1**
AS31	**Alice Springs**	**21.55**	**193**	*e*P	**P**	**15 40 52.1**	**0.0**
	4.7nm,0.6s						
ASAR	**Alice Springs**	**21.55**	**193**	P	**P**	**15 40 52.2**	**+0.1**
	2.8nm,0.6s,baz=22,slow=10,SNR=31						
ASAR				S	**S**	**15 44 47.3**	**-1.9**
	5.0nm,0.8s,baz=14,slow=27,SNR=9.3						
MYLDM	**Lahad Datu**	**21.88**	**291**	*e*P	**P**	**15 40 55.6**	**-0.1**
	39nm,1.4s						
EIDS	**Eidsvold**	**25.48**	**154**	*e*P	**P**	**15 41 33.0**	**+2.3**
	22nm,1.2s						
STKA	**Stephens Creek**	**29.26**	**175**	P	**P**	**15 42 04.2**	**-0.3**
	1.6nm,0.6s,baz=351,slow=5.7,SNR=4.6						
STKA	**Stephens Creek**	**29.26**	**175**	*e*P	**P**	**15 42 04.6**	**+0.1**
	6.1nm,1.9s						
CMAR	**Chiang Mai Arr**	**44.62**	**300**	P	**P**	**15 44 14.7**	**-0.4**
	0.6nm,0.7s,baz=120,slow=5.8,SNR=6.0						
CMAR				PcP	**PcP**	**15 45 57.2**	**-0.3**
	0.3nm,0.5s,baz=145,slow=3.3,SNR=4.1						
HHC	**Hu-ho-hao-te**	**49.94**	**333**	*e*P	**P**	**15 44 58.0**	**+1.8**
HHC				pP	sP	15 45 11.8	+0.3
HHC				sP	pP	15 45 16.1	+9.0
HHC				S	**S**	**15 52 04.3**	**+0.1**
HHC				pmax	pmax		
	comp=Z,15nm,0.7s						
HHC				pmax	pmax		
	comp=Z,170nm,8.3s						
HHC				LR	LR		
	comp=N,120nm,14.8s						
HHC				LR	LR		
	comp=E,130nm,14.8s						
HHC				LR	LR		
	comp=Z,130nm,14.8s						
KLR	**Kul'dur**	**51.97**	**354**	P	**P**	**15 45 09.8**	**-1.4**
	comp=Z,0.8nm,0.8s,baz=222,slow=12,SNR=3.1						
SONA0	**Songino Array**	**57.71**	**335**	*e*P	**P**	**15 45 51.8**	**-1.1**
	comp=Z,7.1nm,1.9s						
SONM	**Songino Array**	**57.71**	**335**	P	**P**	**15 45 51.8**	**-1.1**
	comp=Z,0.3nm,0.6s,baz=171,slow=5.0,SNR=3.1						
WMQ	**Urumqi**	**65.08**	**321**	*e*P	**P**	**15 46 43.3**	**+0.5**
WMQ				pmax	pmax		
	comp=Z,4.0nm,0.5s						
WMQ				LR	LR		
	comp=N,95nm,27.4s						
WMQ				LR	LR		
	comp=E,78nm,26.6s						
WMQ				LR	LR		
	comp=Z,60nm,24.0s						
MK01	**Makanchi Array**	**69.83**	**322**	*e*P	**P**	**15 47 11.7**	**-1.0**
MK31	**Makanchi Array**	**69.85**	**322**	*e*P	**P**	**15 47 12.9**	**0.0**
MK32	**Makanchi Array**	**69.85**	**322**	*e*P	**P**	**15 47 12.8**	**0.0**
MKAR	**Makanchi Array**	**69.85**	**322**	P	**P**	**15 47 12.8**	**0.0**
	comp=Z,22.2nm,0.5s,baz=115,slow=7.8,SNR=22						
MKAR	**Makanchi Array**	**69.85**	**322**	*e*P	**P**	**15 47 12.5**	**-0.4**
ZAA0	**Zalesovo Array**	**71.96**	**330**	*e*P	**P**	**15 47 23.6**	**-1.8**
ZALV	**Zalesovo Beam**	**71.96**	**330**	P	**P**	**15 47 24.4**	**-1.1**
	comp=Z,1.2nm,0.5s,baz=103,slow=6.4,SNR=7.8						
ZAA1	**Zalesovo Array**	**71.96**	**330**	*e*P	**P**	**15 47 24.4**	**-1.1**
KURK	**Kurchatov**	**73.76**	**325**	*e*P	**P**	**15 47 35.6**	**-0.6**
	comp=Z,9.2nm,1.4s						
VNDA	**Vanda**	**75.90**	**175**	P	**P**	**15 47 49.1**	**+1.0**
	comp=Z,3.2nm,0.6s,baz=330,slow=6.3,SNR=20						
VNDA	**Vanda**	**75.90**	**175**	*e*P	**P**	**15 47 49.4**	**+1.3**
	comp=Z,3.0nm,0.7s						
VOSK	**Vostochnaya**	**78.92**	**325**	*e*P	**P**	**15 48 03.5**	**-2.0**
	comp=Z,6.9nm,1.5s						
BRVK	**Borovoye**	**79.43**	**325**	*e*P	**P**	**15 48 07.7**	**-0.5**
	comp=Z,3.6nm,0.6s						
NRIK	**Noril'sk**	**79.66**	**344**	P	**P**	**15 48 09.3**	**+0.2**
	comp=Z,2.5nm,0.8s,baz=105,slow=5.6,SNR=5.5						
ZRNK	**Zerenda**	**80.13**	**325**	*e*P	**P**	**15 48 11.2**	**-0.8**
	comp=Z,4.7nm,1.1s						
TT01	**Tatalina**	**81.14**	**25**	*e*P	**P**	**15 48 17.4**	**+0.1**
TTA	**Tatalina**	**81.16**	**25**	*e*P	**P**	**15 48 17.3**	**-0.1**
	comp=Z,5.2nm,0.9s						
MLY	**Manley**	**84.09**	**24**	*e*P	**P**	**15 48 32.5**	**-0.1**
	comp=Z,8.4nm,1.4s						
GEYT	**Alibeck**	**84.38**	**308**	P	**P**	**15 48 34.8**	**+0.1**
	comp=Z,1.0nm,0.5s,baz=88,slow=9.1,SNR=3.3						
MCK	**McKinley**	**84.43**	**25**	*e*P	**P**	**15 48 33.3**	**-1.0**
	comp=Z,16nm,1.7s						
SCM	**Sheep Creek Mo**	**84.60**	**27**	*e*P	**P**	**15 48 35.3**	**0.0**
	comp=Z,26nm,1.4s						
ABKAR	**Akbulak array**	**84.80**	**320**	*e*P	**P**	**15 48 35.7**	**-0.8**
DHY	**Denali Highway**	**84.92**	**26**	*e*P	**P**	**15 48 36.3**	**-0.6**
	comp=Z,6.0nm,0.9s						
WRH	**Wood River Hil**	**85.00**	**25**	*e*P	**P**	**15 48 36.2**	**-1.0**
	comp=Z,6.3nm,1.0s						
CCB	**Clear Creek Bu**	**85.17**	**24**	*e*P	**P**	**15 48 36.9**	**-1.1**
	comp=Z,5.7nm,0.9s						
IL1	**Eielson Array**	**85.58**	**24**	*e*P	**P**	**15 48 38.1**	**-1.9**
ILAR	**Eielson Array**	**85.58**	**24**	P	**P**	**15 48 38.4**	**-1.7**
	comp=Z,3.4nm,0.9s,baz=261,slow=4.6,SNR=37						
ILB	**Eielson Array**	**85.58**	**24**	*e*P	**P**	**15 48 38.6**	**-1.4**
DOT	**Dot Lake**	**86.50**	**26**	*e*P	**P**	**15 48 44.8**	**+0.2**
	comp=Z,10.0nm,1.0s						
QSPA	**South Pole Qui**	**87.38**	**180**	*e*P	**P**	**15 48 49.5**	**+0.4**
EGAK	**Eagle**	**87.97**	**25**	*e*P	**P**	**15 48 51.5**	**-0.2**
YKA	**Yellowknife Ar**	**99.81**	**27**	P	**Pdif**	**15 49 46.6**	**+0.6**
	comp=Z,0.1nm,0.4s,baz=283,slow=5.6,SNR=3.5						
LPAZ	**La Paz**	**147.29**	**126**	PKPbc	**PKPbc**	**15 55 47.7**	**+0.4**
	comp=Z,1.5nm,0.7s,baz=178,slow=1.2,SNR=5.9						

IDC ***21*** *15:46:34.5±0.8,37°.91N×144°.77E,h0km,mb3.7/9, mb1 3.9/11,mb1mx3.6/56,mbtmp3.7/11,ML3.7/2,Error ellipse: s-maj=24.5km s-min=17.6km az=115.0*

ISCJB ***21*** *15:46:38.0±0.6,38°.12N±0°.04×144°.62E±0°.04,h33km, mb3.7/9,Error ellipse: s-maj=5.8km s-min=4.7km az=144.3*

JMA ***21*** *15:46:39.1±0.2,38°.08N×144°.53E,h40km,M4.2*

ISC 21 15:46:39.9±0.8,38°.08N±0°.05×144°.64E±0°.07,h35km,n32, σ1§67/44,mb3.7/9,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**2.54**	**294**	P	**Pn**	**15 47 18.1**	**-0.5**
OFUJ				S	**Sn**	**15 47 47.2**	**-1.0**
JIO	**Ouri**	**2.62**	**279**	P	**Pn**	**15 47 19.1**	**-0.6**
JIO				S	**Sn**	**15 47 48.7**	**-1.5**
MIYJ	**Miyakonagasawa**	**2.67**	**305**	P	**Pn**	**15 47 19.7**	**-0.6**
MIYJ				S	**Sn**	**15 47 50.1**	**-1.3**
JMK	**Ichinoseki**	**2.82**	**289**	P	**Pn**	**15 47 22.4**	**-0.1**
JMK				*e*S	**Sn**	**15 47 54.5**	**-0.8**
JOM	**Ohasama**	**2.97**	**299**	P	**Pn**	**15 47 24.7**	**+0.2**
JOM				S	**Sn**	**15 47 58.3**	**-0.5**
JANG	**Nango**	**3.34**	**314**	P	**Pn**	**15 47 29.6**	**0.0**
JANG				*e*S	**Sn**	**15 48 06.3**	**-1.8**
JFT	**Otama**	**3.46**	**262**	S	**Sn**	**15 48 09.9**	**-1.0**
JYK	**Kaneyama**	**3.46**	**285**	P	**Pn**	**15 47 31.9**	**+0.6**
JYK				S	**Sn**	**15 48 11.2**	**+0.1**
JOT	**Ohata**	**4.31**	**321**	P	**Pn**	**15 47 44.0**	**+1.1**
JCH	**Churui**	**4.64**	**348**	P	**Pn**	**15 47 46.4**	**-1.0**
JCH				S	**Sn**	**15 48 37.0**	**-3.0**
JKB	**Kayabe**	**4.71**	**325**	P	**Pn**	**15 47 49.2**	**+0.8**
JKB				*e*S	**Sn**	**15 48 38.5**	**-3.3**
JRY	**Ryogami san**	**5.03**	**248**	P	**Pn**	**15 47 52.0**	**-0.9**
JRY				S	**Sn**	**15 48 45.9**	**-3.9**
JOD2	**Odawara 2**	**5.27**	**240**	P	**Pn**	**15 47 55.5**	**-0.7**
JOD2				*e*S	**Sn**	**15 48 50.9**	**-4.8**
MJAR	**Matsushiro Arr**	**5.35**	**255**	Pn	**Pn**	**15 47 57.0**	**-0.3**
	2.5nm,0.3s,baz=85,slow=15,SNR=17						
MJAR				Sn	**Sn**	**15 48 58.0**	**+0.4**
	1.2nm,0.3s,baz=310,slow=33,SNR=4.6						
NEM2	**Nemuro 2**	**5.35**	**9**	P	Pn	15 47 53.8	-3.4
NEM2				*e*S	Sn	15 48 50.0	-7.6
MAT	**Matsushiro**	**5.35**	**255**	P	**Pn**	**15 47 58.3**	**+1.0**
MAT				S	**Sn**	**15 48 58.3**	**+0.6**
JOSM	**Okushiri--Mats**	**5.63**	**317**	P	**Pn**	**15 48 01.8**	**+0.7**
JTKR	**Abashiri--Toko**	**5.92**	**355**	P	**Pn**	**15 48 03.5**	**-1.5**
JTKR				S	**Sn**	**15 49 06.9**	**-4.6**
JHR	**Hokuryu**	**6.08**	**340**	P	**Pn**	**15 48 07.8**	**+0.6**
JHR				*e*S	**Sn**	**15 49 15.0**	**-0.5**
ASAJ	**Asahikawa**	**6.23**	**346**	Pn	**Pn**	**15 48 09.0**	**-0.3**
	1.6nm,0.3s,baz=200,slow=11,SNR=17						
ASAJ				Sn	**

RAGZ	**Rawiri**	**3.29**	201	PN		**Pn**	15 56 40.0	+1.8	
RAGZ	**Rawiri**	**3.29**	201	Pn		**Pn**	15 56 40.0	+1.8	
RIGZ	**Rimuhau**	**3.40**	195	PN		**Pn**	15 56 40.8	+1.4	
MUGZ	**Murupara**	**3.49**	209	PN		**Pn**	15 56 41.9	+1.6	
MUGZ				SN		**S**	15 57 28.1	+0.7	
SNGZ	**Shannon Statio**	**3.57**	200	PN		**Pn**	15 56 43.1	+1.8	
SNGZ	**Shannon Statio**	**3.57**	200	Pn		**Pn**	15 56 43.1	+1.8	
PRGZ	**Paritu Road**	**3.58**	193	PN		**Pn**	15 56 43.0	+1.6	
PRGZ	**Paritu Road**	**3.58**	193	Pn		**Pn**	15 56 43.0	+1.6	
PRRZ	**Plateau Road**	**3.66**	212	⇓PN		**Pn**	15 56 44.7	+2.4	
PRRZ	**Plateau Road**	**3.66**	212	Pn		**Pn**	15 56 44.7	+2.4	
KNZ	**Kokohu**	**3.72**	195	PN		**Pn**	15 56 44.2	+1.4	
KNZ	**Kokohu**	**3.72**	195	*e*Pn		**Pn**	15 56 44.2	+1.4	
ALRZ	**Allen Road**	**3.74**	212	PN		**Pn**	15 56 45.2	+2.1	
ALRZ	**Allen Road**	**3.74**	212	Pn		**Pn**	15 56 45.2	+2.1	
RAHZ	**Arahi**	**3.77**	202	PN		**Pn**	15 56 45.2	+1.7	
RAHZ	**Arahi**	**3.77**	202	Pn		**Pn**	15 56 45.2	+1.7	
MHGZ	**Mahia Peninsul**	**3.80**	192	PN		**Pn**	15 56 45.7	+1.9	
MHGZ	**Mahia Peninsul**	**3.80**	192	Pn		**Pn**	15 56 45.7	+1.9	
WHHZ	**Waihua**	**3.88**	199	PN		**Pn**	15 56 46.6	+1.9	
MRHZ	**Matea Rd**	**3.94**	209	PN		**Pn**	15 56 46.8	+1.4	
NMHZ	**Naumai**	**4.03**	204	PN		**Pn**	15 56 48.4	+2.0	
NMHZ	**Naumai**	**4.03**	204	Pn		**Pn**	15 56 48.4	+2.0	
ARHZ	**Aropaoanui**	**4.12**	201	PN		**Pn**	15 56 49.5	+2.1	
ARHZ	**Aropaoanui**	**4.12**	201	Pn		**Pn**	15 56 49.5	+2.1	
BKZ	**Black Stump Fm**	**4.20**	206	PN		**Pn**	15 56 50.2	+1.8	
BKZ	**Black Stump Fm**	**4.20**	206	*e*Pn		**Pn**	15 56 50.0	+1.7	
OUZ	**Omahuta**	**4.33**	271	*e*Pn		**Pn**	15 56 50.6	+0.7	
MCHZ	**McNeill Hill**	**4.38**	203	PN		**Pn**	15 56 52.7	+2.4	
MCHZ	**McNeill Hill**	**4.38**	203	Pn		**Pn**	15 56 52.8	+2.4	
KWHZ	**Kaweka Forest**	**4.45**	205	PN		**Pn**	15 56 52.9	+1.6	
BHHZ	**Black Hill Sta**	**4.64**	205	PN		**Pn**	15 56 55.1	+1.6	
BHHZ	**Black Hill Sta**	**4.64**	208	Pn		**Pn**	15 56 55.1	+1.6	
KAHZ	**Kahuranaki**	**4.65**	200	PN		**Pn**	15 56 55.3	+1.8	
KAHZ	**Kahuranaki**	**4.65**	200	Pn		**Pn**	15 56 55.3	+1.8	
KRHZ	**Kereru**	**4.66**	205	PN		**Pn**	15 56 55.0	+1.2	
MOVZ	**Moawhango**	**4.70**	211	PN		**Pn**	15 56 56.0	+1.8	
MOVZ	**Moawhango**	**4.70**	211	Pn		**Pn**	15 56 56.0	+1.8	
WNVZ	**Wahianoa**	**4.70**	213	PN		**Pn**	15 56 56.5	+2.1	
WNVZ	**Wahianoa**	**4.70**	213	Pn		**Pn**	15 56 56.5	+2.1	
MTVZ	**Mangateitei**	**4.80**	214	PN		Pn	15 56 58.6	+3.2	
MTVZ	**Mangateitei**	**4.80**	214	Pn		Pn	15 56 58.6	+3.2	
PXZ	**Pawanui**	**4.87**	199	PN		**Pn**	15 56 57.5	+1.4	
PXZ				AML		AML	15 57 60.0		
PXZ				AML		AML	15 58 00.7		
PXZ				AML		AML	15 58 00.8		
PXZ				AML		AML	15 58 03.1		
PXZ	**Pawanui**	**4.87**	199	Pn		**Pn**	15 56 57.5	+1.4	
PXZ				*e*S		**S**	15 58 00.0	+3.9	
PNHZ	**Pukenui**	**4.96**	205	PN		**Pn**	15 56 58.7	+1.4	
PNHZ	**Pukenui**	**4.96**	205	Pn		**Pn**	15 56 58.7	+1.4	
WPHZ	**Waipukurau**	**5.02**	202	PN		**Pn**	15 57 00.4	+2.4	
PRHZ	**Porangahau**	**5.15**	200	PN		**Pn**	15 57 01.1	+1.5	
PRHZ	**Porangahau**	**5.15**	200	Pn		**Pn**	15 57 01.1	+1.5	
WAZ	**Wanganui**	**5.32**	215	PN		**Pn**	15 57 04.2	+2.6	
WAZ	**Wanganui**	**5.32**	215	Pn		**Pn**	15 57 04.2	+2.6	
DVHZ	**Dannevirke**	**5.32**	203	PN		**Pn**	15 57 02.7	+1.0	
DVHZ	**Dannevirke**	**5.32**	203	Pn		**Pn**	15 57 02.7	+1.0	
ANWZ	**Angora Road**	**5.38**	200	PN		**Pn**	15 57 03.7	+1.4	
POWZ	**Post Office Ro**	**5.54**	206	PN		**Pn**	15 57 06.4	+2.2	
POWZ	**Post Office Ro**	**5.54**	206	Pn		**Pn**	15 57 06.4	+2.2	
PRWZ	**Pori Road**	**5.62**	203	PN		**Pn**	15 57 07.2	+2.0	
PRWZ	**Pori Road**	**5.62**	203	Pn		**Pn**	15 57 06.8	+1.7	
BFZ	**Birch Farm**	**5.65**	201	PN		**Pn**	15 57 07.1	+1.6	
BFZ	**Birch Farm**	**5.65**	201	Pn		**Pn**	15 57 07.1	+1.6	
BFZ				*e*S		**S**	15 58 11.0	-2.1	
MRZ	**Mangatainoka R**	**5.84**	206	PN		**Pn**	15 57 09.9	+0.9	
MRZ	**Mangatainoka R**	**5.84**	206	Pn		**Pn**	15 57 08.9	+0.9	
TIWZ	**Tintock**	**5.84**	203	PN		**Pn**	15 57 09.5	+1.5	
TIWZ				AML		AML	15 58 21.1		
TIWZ	**Tintock**	**5.84**	203	Pn		**Pn**	15 57 09.5	+1.5	
HOWZ	**Holdsworth Sta**	**6.08**	205	PN		**Pn**	15 57 11.5	+0.7	
HOWZ	**Holdsworth Sta**	**6.08**	205	Pn		**Pn**	15 57 11.5	+0.7	
OGWZ	**Otaki Gorge**	**6.13**	207	PN		**Pn**	15 57 12.6	+1.2	
OGWZ	**Otaki Gorge**	**6.13**	207	Pn		**Pn**	15 57 12.6	+1.2	
KIW	**Kapiti Island**	**6.27**	209	PN		**Pn**	15 57 14.2	+1.1	
KIW	**Kapiti Island**	**6.27**	209	Pn		**Pn**	15 57 14.2	+1.1	
MTW	**Mount Morrison**	**6.31**	204	PN		**Pn**	15 57 15.1	+1.4	
MTW	**Mount Morrison**	**6.31**	204	Pn		**Pn**	15 57 15.1	+1.4	
CAW	**Cannon Point**	**6.42**	207	PN		**Pn**	15 57 15.9	+0.9	
CAW	**Cannon Point**	**6.42**	207	*e*Pn		**Pn**	15 57 15.9	+0.9	
TRWZ	**Traveller**	**6.47**	202	PN		**Pn**	15 57 17.2	+1.6	
TRWZ	**Traveller**	**6.47**	202	Pn		**Pn**	15 57 17.2	+1.6	
DUWZ	**D'Urville Isla**	**6.64**	215	PN		**Pn**	15 57 18.7	+0.9	
DUWZ	**D'Urville Isla**	**6.64**	215	Pn		**Pn**	15 57 18.8	+0.9	
WEL	**Wellington**	**6.69**	208	PN		**Pn**	15 57 19.4	+1.2	
WEL	**Wellington**	**6.69**	208	Pn		**Pn**	15 57 19.4	+1.2	
SNZO	**South Karori**	**6.73**	208	*e*Pn		**Pn**	15 57 21.0	+2.2	
SNZO				*e*S		**S**	15 58 34.7	-2.6	
PLWZ	**Palliser**	**6.76**	204	PN		**Pn**	15 57 20.3	+1.0	
PLWZ	**Palliser**	**6.76**	204	Pn		**Pn**	15 57 20.3	+1.0	
TCW	**Tory Channel**	**6.82**	211	PN		**Pn**	15 57 20.8	+0.9	
TCW	**Tory Channel**	**6.82**	211	Pn		**Pn**	15 57 20.8	+0.9	
TUWZ	**Tuamarina**	**7.14**	211	PN		**Pn**	15 57 24.6	+0.7	
TUWZ	**Tuamarina**	**7.14**	211	Pn		**Pn**	15 57 24.6	+0.7	
NNZ	**Nelson**	**7.22**	215	PN		**Pn**	15 57 24.9	0.0	
NNZ	**Nelson**	**7.22**	215	Pn		**Pn**	15 57 24.9	0.0	
QRZ	**Quartz Range**	**7.36**	221	PN		**Pn**	15 57 27.4	+0.8	
KHZ	**Kahutara**	**8.13**	209	PN		**Pn**	15 57 38.0	+1.8	
KHZ	**Kahutara**	**8.13**	209	*e*Pn		**Pn**	15 57 37.6	+1.4	
KHZ				*e*S		**S**	15 59 07.7	-1.4	
LTZ	**Lake Taylor**	**8.97**	213	PN		**Pn**	15 57 48.7	+2.0	
LTZ	**Lake Taylor**	**8.97**	213	Pn		**Pn**	15 57 44.0	-2.7	
OXZ	**Oxford**	**9.51**	212	PN		**Pn**	15 57 54.3	+1.0	
OXZ	**Oxford**	**9.51**	212	*e*Pn		**Pn**	15 57 53.9	+0.5	
OXZ				*e*S		**S**	15 59 36.6	-4.1	
MQZ	**McQueen's Vall**	**9.57**	208	PN		**Pn**	15 57 54.8	+0.7	
MQZ	**McQueen's Vall**	**9.57**	208	*e*Pn		**Pn**	15 57 54.8	+0.7	
ASAR	**Alice Springs**	**40.54**	274	P		P	16 03 08.7	+14	
	0.2nm,0.4s,baz=114,slow=8.0,SNR=15								
WRA	**Warramunga Arr**	**42.00**	279	P		P	16 03 19.7	+13	
	0.3nm,0.4s,baz=118,slow=7.8,SNR=12								
FINES	**FINESS Array B**	**148.78**	335	PKPbc		PKPab	16 15 07.2	+6.7	
	0.8nm,0.6s,baz=31,slow=4.3,SNR=7.9								

*IDC **21** 16:01:07.5±1.9,28.°79S×177.°45W,h0km,mb4.1/3, mb1 4.2/3,mb1mx3.8/29,mbtmp4.1/3,Error ellipse: s-maj=58.7km s-min=18.1km az=123.0*

*NEIC **21** 16:01:11.6±3.1,29.°31S×177.°12W,h48km±19km,mb4.7/15, Error ellipse: s-maj=35.4km s-min=17.0km az=74.0*

*ISCJB **21** 16:01:12.1±1.8,29.°42S±0.°10×177.°3W±0.°2, h57km, mb4.5/9, Error ellipse: s-maj=28.5km s-min=9.7km az=158.2*

ISC 21 16:01:14.5±1.2,29.°45S±0.°09×177.°5W±0.°2,h57km,n30, σ1§59/32,mb4.4/9,2C,Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**0.42**	298	Pn	**Pn**	**16 01 23.5**	**-1.9**
	2µm,0.3s,baz=108,slow=5.4,SNR=144						
RAO				Sn	**Sn**	**16 01 34.6**	**+1.3**
	5µm,0.3s,baz=90,slow=20,SNR=40						
RAO	**Raoul Island**	**0.42**	298	*e*Pn	**Pn**	**16 01 23.5**	**-1.9**
RAO				*e*Sn	**Sn**	**16 01 30.8**	**-2.5**
OUZ	**Omahuta**	**9.47**	230	*e*Pn	Pn	16 03 34.9	+6.7
URZ	**Urewera**	**9.86**	206	*e*Pn	**Pn**	**16 03 35.1**	**+1.6**
URZ				*e*Sn	**Sn**	**16 05 19.1**	**-3.6**
BKZ	**Black Stump Fm**	**10.89**	206	*e*Pn	**Pn**	**16 03 49.9**	**+2.3**
KHZ	**Kahutara**	**14.82**	207	*e*Pn	**Pn**	**16 04 40.9**	**+0.2**
	44nm,1.2s						
OXZ	**Oxford**	**16.19**	208	*e*Pn	**Pn**	**16 04 58.6**	**+0.4**
	101nm,1.9s						
MQZ	**McQueen's Vall**	**16.26**	206	*e*Pn	**Pn**	**16 04 57.8**	**-1.2**
	89nm,1.4s						
RPZ	**Rata Peaks**	**16.92**	210	*e*Pn	**Pn**	**16 05 06.2**	**-1.2**
	133nm,1.9s						
FOZ	**Fox Glacier**	**17.33**	212	*e*Pn	**Pn**	**16 05 12.6**	**+0.1**
	47nm,1.2s						
ODZ	**Otahua Downs**	**18.17**	208	*e*P	**Pn**	**16 05 23.0**	**+0.3**
	68nm,1.5s						
WKZ	**Wanaka**	**18.70**	211	*e*P	**Pn**	**16 05 29.1**	**0.0**
	60nm,1.2s						
WHZ	**Wether Hill Ro**	**20.00**	211	*e*P	**Pn**	**16 05 45.6**	**+1.2**
	136nm,2.0s						
TAU	**Tasmania Unive**	**31.17**	235	*e*P	**P**	**16 07 29.7**	**+1.6**
	188nm,1.8s						
STKA	**Stephens Creek**	**35.12**	256	P	**P**	**16 08 04.8**	**+2.2**
	2.0nm,0.5s,baz=96,slow=10,SNR=6.1						
STKA	**Stephens Creek**	**35.12**	256	*e*P	**P**	**16 08 05.0**	**+2.3**
	6.8nm,1.9s						
BBOO	**Buckleboo**	**39.65**	253	*e*P	**P**	**16 08 42.0**	**+1.1**
	75nm,1.7s						
AS01	**Alice Springs**	**43.56**	266	*e*P	**P**	**16 09 13.0**	**-0.1**
AS31	**Alice Springs**	**43.60**	266	*e*P	**P**	**16 09 13.6**	**+0.1**
	4.0nm,1.9s						
ASAR	**Alice Springs**	**43.60**	266	P	**P**	**16 09 14.0**	**+0.6**
	1.3nm,0.7s,baz=100,slow=8.1,SNR=22						
ASAR				PcP	**PcP**	**16 11 03.6**	**+3.4**
	0.4nm,0.5s,baz=112,slow=4.0,SNR=5.0						
WB2	**Warramunga Arr**	**44.50**	271	*e*P	**P**	**16 09 21.4**	**+0.8**
	11nm,1.4s						
WRAB	**Tennant Creek**	**44.50**	271	*e*P	**P**	**16 09 19.8**	**-0.8**
	26nm,1.8s						
WR1	**Warramunga Arr**	**44.51**	271	*e*P	**P**	**16 09 21.2**	**+0.5**
	29nm,1.9s						
WRA	**Warramunga Arr**	**44.51**	271	P	**P**	**16 09 21.2**	**+0.5**
	0.8nm,0.3s,baz=110,slow=8.1,SNR=36						
SYO	**Syowa Base**	**78.13**	193	*e*P	**P**	**16 13 06.0**	**-1.1**
SYO	**Syowa Base**	**78.13**	193⇑	*e*pP	pP	16 13 19.5	-3.6
FINES	**FINESS Array B**	**144.40**	341	PKP	**PKPab**	**16 20 41.1**	**-0.7**
	0.9nm,0.5s,baz=65,slow=3.8,SNR=7.5						
NB2	**NORSAR Subarra**	**147.88**	352	PKP	**PKPbc**	**16 20 51.6**	**-1.0**
	comp=Z,0.7nm,0.6s,baz=16,slow=3.2						
NOA	**NORSAR Array B**	**147.88**	352	PKPbc	**PKPbc**	**16 20 51.9**	**-0.7**
	comp=Z,0.5nm,0.5s,baz=14,slow=4.5,SNR=3.3						
AKASG	**Malin Array Be**	**150.80**	324	PKPbc	**PKPbc**	**16 20 58.8**	**-1.3**
	comp=Z,0.8nm,0.5s,baz=46,slow=3.1,SNR=5.9						

JMA 21 16:10:04.8±0.1,39.°00N×142.°37E,h37km±2km,M2.6, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**0.55**	279	P	Pn	16 10 16.2	-0.1
OFUJ				S	Sn	16 10 24.1	-0.1
MIYJ	**Miyakonagasawa**	**0.72**	324	P	Pn	16 10 18.2	-0.2
MIYJ				S	Sn	16 10 27.5	-0.7
JMK	**Ichinoseki**	**0.90**	267	P	Pn	16 10 21.3	+0.4
JMK				S	Sn	16 10 33.1	+0.5
JOM	**Ohasama**	**0.96**	300	P	Pn	16 10 22.4	+0.7
JOM				S	Sn	16 10 34.2	0.0
JIO	**Ouri**	**0.97**	236	P	Pn	16 10 21.8	0.0
JIO				S	Sn	16 10 33.9	-0.4
JKZ	**Kuzumaki**	**1.27**	321	P	Pn	16 10 27.1	+1.1
JANG	**Nango**	**1.52**	335	P	Pn	16 10 30.5	+1.1

NEIC 21 16:11:09.0,15.°93S×74.°76W,h35km,ML4.2(ARE),After ARE.,Near coast of Peru

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
NNA	**Nana**	**4.41**	332	*e*Pn	Pn	16 12 18.3	+4.7
NNA				*e*Sn	Sn	16 13 12.1	+8.3
LVC	**Limon Verde**	**8.64**	141	*e*Pn	Pn	16 13 15.6	+3.7
	21nm,0.8s						
LVC				*e*Sn	Sn	16 14 48.5	+0.2
SAML	**Samuel**	**13.26**	60	*e*Pn	Pn	16 14 11.3	-3.6
	3.2nm,0.7s						
LCO	**Las Campanas**	**13.55**	165	*e*Pn	Pn	16 14 18.7	-0.3

*NIED **21** 16:11:00,37.°50N×141.°50E,h53km,Mw5.6 Best double couple: M0 2.68000×10^17 NP1:φs183.00000°,δ24.00000°, λ72.00000°. NP2:φs22.00000°,δ67.00000°,λ98.00000°.*

*BJI **21** 16:11:12.7,37.°42N×141.°50E,h38km,mb5.5/83,mB5.4/65, Ms5.3/95,Ms7 5.2/89*

*MOS **21** 16:11:14.1±0.9,37.°56N×141.°34E,h33km,mb5.8/115, MS5.2/43,Error ellipse: s-maj=6.0km s-min=3.7km az=98.5*

*ISCJB **21** 16:11:16.7±0.3,37.°57N±0.°02×141.°29E±0.°02,h52km±2km, mb5.6/402,MS5.2/88,Error ellipse: s-maj=2.8km s-min=1.8km az=155.8*

*JMA **21** 16:11:16.9±0.1,37.°51N×141.°45E,h48km±1km,M5.6 Broadband fault plane solution: P waves. NP1: φs33.00000°,δ56.00000°,λ98.00000°. NP2:φs198.00000°, δ35.00000°,λ78.00000°. Principal axes: T Plg77.0000°, Azm330.0000°; N Plg7.0000°, Azm208.0000°; P Plg11.0000°, Azm117.0000°;*

JMA Felt IV J1.

*IDC **21** 16:11:17.9±0.5,37.°54N×141.°32E,h53km±4km,mb5.2/37, mb1 5.2/46,mb1mx5.2/50,mbtmp5.4/46,MS4.9/38, Ms1 4.9/38,ms1mx4.9/42 Error ellipse: s-maj=10.1km s-min=8.3km az=112.0*

*GCMT **21** 16:11:18.5±0.1,37.°55N×141.°49E,h54km,MW5.6/126, Moment Tensor Solution. s111,c214; s126,c286; Duration: 1§6 Moment tensor: Scale 10^17Nm; Mrr2.74±.04; Mθθ-0.30±.03; Mφφ-2.43±.03; Mrθ0.78±.03; Mθφ-0.85±.03; Mφr1.88±.03; Best double couple: M0 3.40800×10^17 NP1:φs21.00000°,δ63.00000°, λ92.00000°. NP2:φs198.00000°,δ27.00000°,λ87.00000°. Principal axes: T 3.4150, Plg72.0000°, Azm295.0000°; N -0.0070, Plg1.0000°, Azm200.0000°; P -3.4000, Plg18.0000°, Azm110.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface/mantle waves, cutoff=50s.*

*NEIC **21** 16:11:18.0±0.0,37.°55N×141.°22E,h56km,Moment Tensor Solution. s12 Moment tensor: Scale 10^17Nm; Mrr1.37; Mθθ-0.45; Mφφ-0.92; Mrθ1.51; Mθφ-1.02; Mφr1.82; Best double couple: M0 2.80000×10^17 NP1:φs40.00000°, δ73.00000°,λ91.00000°. NP2:φs217.00000°,δ17.00000°, λ87.00000°. Principal axes: T 2.6500, Plg61.0000°, Azm310.0000°; N 0.3600, Plg0.0000°, Azm219.0000°; P -3.0100, Plg28.0000°, Azm128.0000°;*

*NEIC **21** 16:11:18.4±0.4,37.°55N×141.°22E,h56km±3km,mb5.5/258, MW5.7,MW5.6 Error ellipse: s-maj=3.0km s-min=2.1km az=138.0,Moment Tensor Solution. s45 Moment tensor: Scale 10^17Nm; Mrr3.75; Mθθ-0.56; Mφφ-3.19; Mrθ0.82; Mθφ-0.93; Mφr2.07; Best double couple: M0 4.30000×10^17 NP1:φs196.00000°,δ29.00000°,λ87.00000°. NP2: φs20.00000°,δ61.00000°,λ92.00000°. Principal axes: T 4.3800, Plg74.0000°, Azm294.0000°; N -0.2700, Plg2.0000°, Azm199.0000°; P -4.1100, Plg16.0000°, Azm108.0000°;*

NEIC Felt at Ichinoseki, Sakado, Sendai, Tokyo and Yokohama. Recorded [4 JMA] in Fukushima and Miyagi.

ISC 21 16:11:17.0±0.3,37.°53N±0.°03×141.°36E±0.°03,h47km±2km, h46km:pP-P,n1525,σ1§38/1664,mb5.6/429,MS5.2/92, 119C-41D,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**0.42**	247	⇓P	**Pn**	**16 11 27.8**	**+0.6**
JFK				S	**Sn**	**16 11 35.3**	**+0.9**
JMM	**Marumori**	**0.56**	307	⇓P	**Pn**	**16 11 29.8**	**+0.9**
JMM				S	**Sn**	**16 11 39.0**	**+1.6**
ONAJ	**Iwakimizuishiy**	**0.62**	227	⇓P	**Pn**	**16 11 30.0**	**+0.3**
ONAJ				S	**Sn**	**16 11 39.1**	**+0.3**
JFT	**Otama**	**0.82**	269	⇓P	**Pn**	**16 11 33.7**	**+1.5**
JFT				S	**Sn**	**16 11 45.6**	**+2.3**
JIO	**Ouri**	**0.92**	359	⇓P	**Pn**	**16 11 33.9**	**+0.3**
JIO				S	**Sn**	**16 11 45.9**	**+0.1**
JOU	**Okura**	**1.00**	327	⇓P	**Pn**	**16 11 35.3**	**+0.6**
JYS	**Shirataka**	**1.24**	304	⇓P	**Pn**	**16 11 39.0**	**+1.1**
I30JP	**ISUMI INFRASON**	**2.37**	201	P	**Pn**	**16 11 57.0**	**+3.5**
	baz=29,slow=12,SNR=0.9						
I30JP				S	**Sn**	**16 12 25.1**	**+3.7**
MJAR	**Matsushiro Arr**	**2.71**	250	P	**Pn**	**16 11 59.5**	**+1.4**
	199nm,0.3s,baz=46,slow=11,SNR=1261						
MJAR				LR	LR	16 13 21.6	
	comp=Z,48µm,19.5s,baz=55,slow=46						
MAJO	**Matsushiro**	**2.71**	250	*d*P	**Pn**	**16 11 59.9**	**+1.8**
MAJO	**Matsushiro**	**2.71**	250	*e*Pn	**Pn**	**16 12 00.3**	**+2.2**
MAT	**Matsushiro**	**2.71**	250	P	**Pn**	**16 12 00.1**	**+2.0**
MAT				S	**Sn**	**16 12 36.4**	**+6.7**
MJB9	**Matsu-Tunnel**	**2.71**	250	*e*Pn	**Pn**	**16 12 00.4**	**+2.3**
INU	**Inuyama**	**4.13**	239	*e*Pn	**Pn**	**16 12 19.8**	**+2.3**
JHJ2	**Mitsune**	**4.59**	196	*e*Pn	**Pn**	**16 12 24.0**	**+0.2**
JHJ2				*e*Sn	**Sn**	**16 13 14.4**	**-1.5**
JHJ	**Hachijo jima 2**	**4.59**	197	P	**Pn**	**16 12 24.3**	**+0.5**
	284nm,0.3s,baz=345,slow=20,SNR=27						
JHJ				S	**Sn**	**16 13 15.3**	**-0.5**
	2µm,0.3s,baz=233,slow=20,SNR=9.9						
ERM	**Erimo**	**4.69**	17	*e*P	**Pn**	**16 12 25.1**	**-0.1**
ERM				pmax	pmax		
	comp=Z,289nm,1.0s						
ERM	**Erimo**	**4.69**	17	*e*Pn	**Pn**	**16 12 25.0**	**-0.2**
ERM				*e*Sn	**Sn**	**16 13 18.6**	**+0.4**
ASAJ	**Asahikawa**	**6.65**	8	P	**Pn**	**16 12 51.5**	**-0.6**
	comp=Z,23nm,0.3s,baz=224,slow=9.4,SNR=113						
ASAJ				S	**Sn**	**16 14 05.3**	**-1.1**
	comp=Z,34nm,0.3s,baz=39,slow=33,SNR=3.9						
ASAJ	**Asahikawa**	**6.65**	8	*e*P	**Pn**	**16 12 51.2**	**-0.9**
ASAJ				*e*Sn	**Sn**	**16 14 05.0**	**-1.4**
YUK	**Yuzh-Kuril'sk**	**7.34**	26	*e*P	**Pn**	**16 13 01.9**	**+0.4**
YUK				*e*S	**Sn**	**16 14 19.8**	**-3.6**
YUK				pmax	pmax		
	comp=Z,665nm,0.2s						
YUK				pmax	pmax		
	comp=N,363nm,0.4s						
YUK				pmax	pmax		
	comp=E,139nm,0.2s						
YUK				MLR	MLR		
	comp=Z,4µm,17.0s						
YUK				MLR	MLR		
	comp=N,6µm,15.0s						
SHO	**Shikotan**	**7.57**	32	*e*P	**Pn**	**16 13 02.2**	**-2.5**
SHO				*e*S	**Sn**	**16 14 21.0**	**-8.1**
SHO				pmax	pmax		
	comp=Z,197nm,0.5s						
SHO				pmax	pmax		
	comp=E,97nm,0.4s						
SHO				pmax	pmax		
	comp=N,61nm,0.5s						
KUR	**Kuril'sk**	**9.11**	30	*d*P	**Pn**	**16 13 25.5**	**-0.3**
KUR				*e*S	**Sn**	**16 15 01.8**	**-5.1**
KUR				pmax	pmax		
	comp=Z,83nm,0.8s						
KUR				pmax	pmax		
	comp=N,31nm,0.5s						
KUR				pmax	pmax		
	comp=E,56nm,0.5s						
KUR				pmax	pmax		
	comp=Z,485nm,4.7s						
KUR				smax	smax		
	comp=E,348nm,0.5s						
KUR				smax	smax		
	comp=N,160nm,0.5s						
KUR				pmax	pmax		
	comp=N,677nm,2.7s						
KUR				pmax	pmax		
	comp=E,1µm,2.7s						
KUR				MLR	MLR		
	comp=N,2µm,17.0s						
KUR				MLR	MLR		
	comp=E,2µm,17.0s						
KUR				MLR	MLR		
	comp=Z,2µm,17.0s						
VLA	**Vladivostok**	**9.14**	311	*i* P	**Pn**	**16 13 27.8**	**+1.6**
MSHR	**Mys Shultsa**	**9.31**	306	*i* P	**Pn**	**16 13 30.8**	**+2.3**
YSS	**Yuzh-Sakhalins**	**9.47**	6	⇓*i* P	**Pn**	**16 13 30.5**	**-0.2**
YSS				*e*S	**Sn**	**16 15 11.9**	**-3.9**
YSS				pmax	pmax		
	comp=Z,80nm,0.5s						
YSS				MLR	MLR		
	comp=Z,3µm,11.0s						
YSS				MLR	MLR		
	comp=E,2µm,16.0s						
YSS	**Yuzh-Sakhalins**	**9.47**	6	*e*Pn	**Pn**	**16 13 30.3**	**-0.4**
JNU	**Nakatsue**	**9.63**	246	P	**Pn**	**16 13 34.7**	**+1.7**
	comp=E,9.5nm,0.3s,baz=73,slow=4.7,SNR=46						
JNU				LR	LR	16 17 44.3	
	comp=E,17µm,20.7s,baz=58,slow=40						
JNU	**Nakatsue**	**9.63**	246	*e*Pn	**Pn**	**16 13 36.2**	**+3.2**
USRK	**Ussuriysk Ar.**	**9.73**	316	P	**Pn**	**16 13 36.4**	**+2.1**
	comp=E,24nm,0.3s,baz=130,slow=14,SNR=153						
USRK				LR	LR	16 17 09.9	
	comp=E,16µm,19.1s,baz=128,slow=36						
CBIJ	**Chichi jima**	**10.43**	176	*e*Pn	**Pn**	**16 13 40.1**	**-3.8**
CBIJ				*e*Sn	Sn	16 15 27.8	-12
JCJ	**Chichijima**	**10.43**	176	S	**Sn**	**16 15 31.4**	**-8.0**
	comp=E,164nm,0.3s,baz=290,slow=22,SNR=7.7						
KSRS	**Korea Array**	**10.68**	274	P	**Pn**	**16 13 49.6**	**+2.3**
	comp=E,13nm,0.3s,baz=91,slow=13,SNR=184						
KSRS				LR	LR	16 17 41.4	
	comp=E,10µm,20.8s,baz=68,slow=36						
KS01	**Wonju Array Si**

DL2 pmax pmax
comp=Z,620nm,0.6s
DL2 pmax pmax
comp=Z,3μm,11.1s
DL2 LR LR
comp=Z,6μm,18.7s
DL2 LR LR
comp=Z,8μm,19.6s
NKL Nikolayevsk 15.63 358 *i* P **Pn 16 14 51.0 -2.9**
NKL *e*S **Sn 16 17 40.0 -5.8**
NKL pmax pmax
comp=N,24nm,1.0s
NKL pmax pmax
comp=Z,43nm,1.0s
NKL pmax pmax
comp=N,500nm,4.0s
NKL pmax pmax
comp=Z,500nm,4.0s
NKL smax smax
comp=E,600nm,12.0s
NKL MLR MLR
comp=E,4μm,22.0s
NKL MLR MLR
comp=N,2μm,15.0s
NKL MLR MLR
comp=Z,3μm,15.0s
OKH Okha 16.06 3 *e*P **Pn 16 15 00.0 +0.6**
OKH *e*S **Sn 16 17 54.0 -2.2**
OKH pmax pmax
comp=Z,1μm,4.0s
OKH smax smax
comp=E,1μm,9.0s
OKH MLR MLR
comp=Z,2μm,14.0s
SKR Severo-Kuril's 16.84 34 *e*P **Pn 16 15 06.7 -2.6**
SKR S **Sn 16 18 11.8 -3.5**
SKR pmax pmax
comp=E,220nm,1.0s
SKR pmax pmax
comp=Z,270nm,1.0s
SKR MLR MLR
comp=N,3μm,16.0s
SKR MLR MLR
comp=E,3μm,16.0s
SKR MLR MLR
comp=Z,3μm,16.0s
SSE Sheshan 17.85 255 ⇑P **Pn 16 15 20.8 -1.0**
SSE pP **pP 16 15 28.4 -4.6**
SSE S **Sn 16 18 37.8 -2.1**
SSE sS **S 16 18 52.8 +8.1**
SSE pmax pmax
comp=Z,38nm,0.6s
SSE pmax pmax
comp=Z,880nm,7.4s
SSE LR LR
comp=Z,5μm,21.9s
SSE LR LR
comp=Z,3μm,21.9s
SSE LR LR
comp=Z,5μm,22.9s
NJ2 Nanjing 19.26 260 *e*P **P 16 15 37.0 -0.6**
NJ2 sP **pP 16 15 47.3 -1.3**
NJ2 S **S 16 19 09.9 -3.3**
NJ2 pmax pmax
comp=Z,60nm,0.8s
NJ2 pmax pmax
comp=Z,1μm,11.1s
NJ2 LR LR
comp=Z,5μm,22.2s
NJ2 LR LR
comp=Z,4μm,26.0s
NJ2 LR LR
comp=Z,6μm,25.5s
PEA0 Petropavlovsk- 19.28 31 *e*P **P 16 15 38.3 +0.6**
PEA0B Petropavlovsk- 19.28 31 *e*P **Pn 16 15 38.7 -0.3**
comp=Z,289nm,1.8s
PETK Petropavlovsk- 19.28 31 P **P 16 15 38.5 +0.9**
comp=Z,0.8nm,0.3s,baz=215,slow=5.2,SNR=22
PETK LR LR 16 22 47.7
comp=Z,2μm,21.9s,baz=218,slow=36
PETK Petropavlovsk- 19.28 31 P **P 16 15 38.5 +0.9**
PETK pmax pmax
comp=Z,1.0nm,0.3s
PETK MLR MLR
comp=Z,2μm,21.9s
PEA1 Petropavlovsk- 19.28 31 *e*P **P 16 15 38.5 +0.8**
TIA Tai'an 19.43 273 ⇑P **P 16 15 33.8 -5.6**
TIA pP **sP 16 15 54.9 -1.4**
TIA S **S 16 19 12.5 -4.1**
TIA pmax pmax
comp=Z,570nm,1.1s
TIA pmax pmax
comp=Z,1μm,9.0s
TIA LR LR
comp=N,3μm,17.2s
TIA LR LR
comp=E,5μm,15.5s
TIA LR LR
comp=Z,6μm,15.5s
HIA Hailar 19.53 314 *e*P **P 16 15 38.4 -2.1**
HIA pmax pmax
comp=Z,63nm,0.8s
HIA Hailar 19.53 314 *e*P **P 16 15 38.4 -2.1**
comp=Z,63nm,0.8s
PET Petropavlovsk 19.62 32 *e*P **P 16 15 41.7 +0.4**
PET *e*S **S 16 19 15.4 -4.6**
PET pmax pmax
comp=Z,700nm,7.3s
PET pmax pmax
comp=Z,105nm,1.1s
PET MLR MLR
comp=Z,3μm,19.0s
PET Petropavlovsk 19.62 32 *e*P **Pn 16 15 42.9 -0.1**
comp=Z,88nm,1.0s
BJI Beijing 19.78 285 P **P 16 15 41.6 -1.6**
BJI S **S 16 19 23.8 +0.4**
BJI LR LR
comp=Z,3μm,15.5s
BJI LR LR
comp=Z,3μm,22.4s
BJI LR LR
comp=Z,6μm,31.8s
BJT Baijiatuau 19.79 285 *e*P **P 16 15 40.3 -3.0**
BJT pmax pmax
comp=Z,411nm,1.2s
BJT Baijiatuau 19.79 285 *e*P **P 16 15 40.3 -3.0**
comp=Z,411nm,1.2s
YOJ Yonaguni jima 20.38 235 *e*P **P 16 15 46.7 -3.1**
YOJ pmax pmax
comp=Z,72nm,0.7s
YOJ Yonaguni jima 20.38 235 *e*P **P 16 15 46.7 -3.1**
comp=Z,72nm,0.7s
TATO Taipei 21.05 239 *e*P **P 16 15 56.3 -0.7**
comp=Z,119nm,0.7s
YHNB Yeheng 21.33 239 *e*P **P 16 15 57.5 -2.6**
comp=Z,108nm,0.6s
NACB Ninganchiao 21.51 237 *e*P **P 16 15 58.3 -3.7**
comp=Z,63nm,0.5s
SSLB Suanglung 22.21 238 *e*P **P 16 16 05.6 -3.9**
comp=Z,68nm,0.6s
CLNS Chul'man 22.21 336 *e*P **P 16 16 08.2 -1.1**
CLNS *e**PP **pP 16 16 22.0 +1.5**
CLNS *e* 16 19 59.7
CLNS *e*S **S 16 20 09.1 -1.8**
CLNS *e*SS **SnSn 16 20 42.5 +1.9**
CLNS pmax pmax
comp=N,139nm,1.3s
CLNS pmax pmax
comp=Z,168nm,1.2s
CLNS pmax pmax
comp=E,45nm,0.7s
CLNS smax smax
comp=E,782nm,12.1s
CLNS smax smax
comp=N,2μm,11.2s
CLNS pmax pmax
comp=N,828nm,12.0s
CLNS pmax pmax
comp=E,2μm,15.0s
CLNS MLR MLR
comp=E,2μm,16.0s
CLNS MLR MLR
comp=Z,4μm,17.0s
CLNS MLR MLR
comp=N,2μm,13.0s
YULB Yu-li 22.25 236 *e*P **P 16 16 05.8 -4.2**
comp=N,69nm,0.9s
YULB *e*S **S 16 20 06.8 -5.1**
TPUB Ta-pu 22.75 237 *e*P **P 16 16 11.0 -4.3**
comp=N,176nm,0.7s
TPUB *e*S **S 16 20 14.7 -6.2**
TWG Pinlang 22.79 236 *e*P **P 16 16 11.9 -3.8**
comp=N,946nm,1.0s
MA2 Magadan 22.88 12 P **P 16 16 15.9 -0.4**
comp=N,102nm,0.8s,baz=220,slow=9.0,SNR=59
MA2 LR LR 16 25 06.3
comp=N,1μm,21.5s,baz=218,slow=36
TIY Taiyuan 22.88 279 *e*P **P 16 16 14.6 -2.0**
TIY S **S 16 20 16.9 -6.0**
TIY SS **SnSn 16 21 08.9 +12**
TIY pmax pmax
comp=N,240nm,0.8s
TIY LR LR
comp=N,710nm,11.8s
TIY LR LR
comp=N,4μm,12.7s
TIY LR LR
comp=N,5μm,13.9s
QZH Quanzhou 23.09 244 ⇑*i*P **P 16 16 12.5 -6.3**
QZH S **S 16 20 20.3 -6.2**
QZH pmax pmax
comp=N,260nm,1.1s
QZH pmax pmax
comp=N,1μm,9.6s
QZH LR LR
comp=N,2μm,15.0s
QZH LR LR
comp=N,6μm,18.2s
QZH LR LR
comp=N,9μm,20.8s
HHC Hu-ho-hao-te 23.28 287 *e*P **P 16 16 18.6 -2.0**
HHC sP pP 16 16 32.5 +0.4
HHC PP **PnPn 16 16 49.0 +1.2**
HHC S **S 16 20 24.0 -5.6**
HHC SS **SnSn 16 21 09.9 +2.9**
HHC pmax pmax
comp=N,93nm,0.9s
HHC pmax pmax
comp=N,490nm,4.6s
HHC LR LR
comp=N,6μm,14.8s
HHC LR LR
comp=N,5μm,16.0s
HHC LR LR
comp=N,6μm,15.8s
WHN Wuhan 23.40 261 P **P 16 16 21.1 -0.6**
WHN S **S 16 20 25.8 -5.5**
WHN pmax pmax
comp=N,400nm,0.8s
WHN pmax pmax
comp=N,2μm,7.2s
WHN LR LR
comp=N,4μm,15.3s
WHN LR LR
comp=N,7μm,15.8s
WHN LR LR
comp=N,18μm,33.4s
GUMO Guam 24.05 172 LR LR 16 26 28.6
comp=N,943nm,20.8s,baz=22,slow=38
GUMO Guam 24.05 172 *e*P **P 16 16 26.1 -1.7**
GUMO pmax pmax
comp=Z,467nm,1.3s
GUMO Guam 24.05 172 *e*P **P 16 16 26.1 -1.7**
comp=Z,467nm,1.3s
CIT Chita 24.30 316 *e*P **P 16 16 26.2 -3.7**
CIT *e* 16 16 41.0
CIT *e* 16 16 57.0
CIT *e*S **S 16 20 50.6 +5.0**
CIT pmax pmax
comp=Z,390nm,1.3s
BTO Baotou 24.46 287 *e*P **P 16 16 29.8 -1.8**
YAK Yakutsk 25.58 347 P **P 16 16 40.3 -1.0**
comp=Z,338nm,0.6s,baz=351,slow=2.7,SNR=146
YAK S **S 16 21 04.2 -1.5**
comp=Z,23nm,0.8s,baz=232,slow=23,SNR=5.8
YAK LR LR 16 27 12.3
comp=Z,5μm,18.7s,baz=162,slow=37
YAK Yakutsk 25.58 347*c i*P **P 16 16 40.9 -0.4**
YAK *e* 16 17 17.4
YAK *e*S **S 16 21 01.1 -4.6**
YAK pmax pmax
comp=N,149nm,1.0s
YAK pmax pmax
comp=E,46nm,0.9s
YAK pmax pmax
comp=Z,396nm,0.8s
YAK pmax pmax
comp=N,30nm,0.5s
YAK pmax pmax
comp=Z,69nm,0.5s
YAK smax smax
comp=E,351nm,1.5s
YAK smax smax
comp=N,272nm,1.5s
YAK MLR MLR
comp=E,1μm,18.0s
YAK MLR MLR
comp=Z,5μm,20.0s
YAK MLR MLR
comp=N,3μm,17.0s
YAK Yakutsk 25.58 347 *e*P **P 16 16 40.4 -0.9**
comp=N,472nm,0.7s
YAK *e*S **S 16 21 04.3 -1.3**
SEY Seymchan 26.31 11 P **P 16 16 48.8 +0.8**
comp=N,114nm,1.0s,baz=210,slow=7.4,SNR=73
SEY LR LR 16 29 14.2
comp=N,2μm,19.1s,baz=152,slow=41
SEY Seymchan 26.31 11*c e*P **P 16 16 49.0 +1.0**
XAN Xi'an 26.48 272 P **P 16 16 49.3 -0.5**
XAN pP pP 16 16 59.1 -3.0
XAN sP sP 16 17 05.5 -2.2
XAN S **S 16 21 16.3 -4.3**
XAN pmax pmax
comp=N,110nm,0.7s
XAN pmax pmax
comp=N,670nm,13.0s
XAN LR LR
comp=N,2μm,21.3s
XAN LR LR
comp=N,2μm,19.8s
XAN LR LR
comp=N,2μm,20.5s
BOD Bodaibo 27.09 327 ⇑*i*P **P 16 16 55.0 0.0**
BOD pmax pmax
comp=Z,116nm,0.8s
ENH Enshi 27.34 264 *e*P **P 16 16 56.6 -1.1**
comp=Z,625nm,0.9s
SONA1 Songino Array 27.48 303 *e*P **P 16 16 57.8 -1.0**
SONA0 Songino Array 27.48 303 *e*P **P 16 16 58.2 -0.6**
comp=Z,123nm,0.8s
SONA0 *e*PcP **PcP 16 20 15.2 -0.9**
SONM Songino Array 27.48 303 P **P 16 16 58.2 -0.6**
comp=Z,128nm,0.7s,baz=103,slow=8.6,SNR=406
SONM PcP **PcP 16 20 15.2 -0.9**
comp=Z,3.8nm,0.5s,baz=115,slow=2.1,SNR=4.6
SONM LR LR 16 28 20.7
comp=Z,3μm,18.3s,baz=100,slow=37
SONM Songino Array 27.48 303 P **P 16 16 58.2 -0.6**
SONM 16 20 15.2
SONM pmax pmax
comp=Z,127nm,0.7s
SONM MLR MLR
comp=Z,3μm,18.3s
HKC Hong Kong Obse 27.90 245 P **P 16 17 05.0 +2.4**
H11N2 WAKE ISLAND Hy 28.44 122 T T 16 47 23.4
baz=315,slow=75,SNR=3477
H11N1 WAKE ISLAND Hy 28.45 122 T T 16 47 24.1
baz=315,slow=75,SNR=900
H11N3 WAKE ISLAND Hy 28.45 122 T T 16 47 25.8
baz=315,slow=75,SNR=1144
MCO Taipa Grande 28.46 245 P **P 16 17 09.0 +1.4**
H11S1 WAKE ISLAND Hy 29.16 124 T T 16 48 19.9
SNR=959
H11S3 WAKE ISLAND Hy 29.16 124 T T 16 48 12.7
baz=254,slow=74,SNR=643
H11S2 WAKE ISLAND Hy 29.18 124 T T 16 47 41.8
baz=314,slow=74,SNR=609
LQP Lukban 29.24 222 *e*P **P 16 17 15.1 +0.3**
TGY Tagaytay City 29.57 223 P **P 16 17 17.5 -0.1**
comp=Z,507nm,0.9s,baz=342,slow=5.8,SNR=14
TGY LR LR 16 28 28.6
comp=Z,683nm,21.4s,baz=358,slow=35
BOAC Boac 29.62 221 *e*P **P 16 17 18.3 +0.4**
IRK Irkutsk 29.74 312 *e*P **P 16 17 17.8 -0.9**
IRK pmax pmax
comp=Z,74nm,1.1s
ZAK Zakamensk 29.93 308 *e*P **P 16 17 20.3 -0.3**
ZAK pmax pmax
comp=Z,47nm,1.3s
LZH Lanzhou 29.95 279 ⇑P **P 16 17 21.1 +0.2**
LZH pP pP 16 17 32.0 -1.2
LZH sP sP 16 17 36.0 -2.8
LZH PP **PnPn 16 18 20.0 +1.3**
LZH PcP **PcP 16 20 23.5 +0.9**
LZH S **S 16 22 12.0 -3.4**
LZH sS sS 16 22 31.3 -4.8
LZH SS **SnSn 16 23 50.0 +0.1**
LZH pmax pmax
comp=Z,140nm,1.3s
LZH pmax pmax
comp=Z,520nm,7.0s
LZH LR LR
comp=Z,1μm,12.5s
LZH LR LR
comp=Z,4μm,14.0s
LZH LR LR
comp=Z,6μm,17.0s
TLY Talaya 29.98 310 P **P 16 17 20.9 0.0**
comp=Z,50nm,0.7s,baz=135,slow=4.8,SNR=34
TLY Talaya 29.98 310*c i*P **P 16 17 20.3 -0.6**
TLY *e* 16 20 22.0
TLY *e*S **S 16 22 14.7 -0.6**
TLY pmax pmax
comp=Z,65nm,0.8s
TLY MLR MLR
comp=Z,5μm,20.0s
TLY Talaya 29.98 310 *e*P **P 16 17 20.4 -0.4**
comp=Z,59nm,0.8s
TLY Talaya 29.98 310 P **P 16 17 21.1 +0.2**
SNR=20
TLY P **P 16 17 21.1 +0.2**
SNR=20
TLY Talaya 29.98 310 P **P 16 17 21.1 +0.2**
SNR=20
GYA Guiyang 31.27 259 ⇑*i*P **P 16 17 31.5 -1.1**
GYA PP **PnPn 16 18 38.4 +2.4**
GYA PcP **PcP 16 20 28.0 +1.9**
GYA S **S 16 22 32.8 -3.4**
GYA SS **SnSn 16 24 24.5 +2.4**
GYA ScS **ScS 16 28 01.3 -1.6**
GYA pmax pmax
comp=Z,400nm,1.0s
GYA pmax pmax
comp=Z,280nm,6.2s
GYA LR LR
comp=Z,2μm,17.8s
GYA LR LR
comp=Z,2μm,19.9s
GYA LR LR
comp=Z,4μm,22.8s
MOY Mondy 31.59 310 *e*P **P 16 17 34.8 -0.4**
MOY pmax pmax
comp=Z,68nm,1.1s
CD2 Chengdu 31.64 269 P **P 16 17 34.3 -1.4**
CD2 sP pP 16 17 49.3 +1.2
CD2 PP **PP 16 18 45.9 -1.8**
CD2 S **S 16 22 37.0 -4.7**
CD2 sS sS 16 22 58.5 -3.9
CD2 pmax pmax
comp=Z,250nm,0.8s
CD2 pmax pmax
comp=Z,520nm,7.8s
CD2 LR LR
comp=Z,3μm,19.2s
CD2 LR LR
comp=Z,4μm,16.8s
GUIM Jordan 31.67 217 *e*P **P 16 17 35.4 -0.7**
BUSP Coron 31.71 222 *e*P **P 16 17 36.1 -0.3**
CUYO Cuyo Island 32.25 220 *e*P **P 16 17 41.4 +0.2**
GTA Gaotai 32.38 286 *e*P **P 16 17 41.8 -0.5**
GTA pP pP 16 17 51.3 -3.3
GTA sP sP 16 17 55.4 -4.8
GTA PcP **PcP 16 20 29.8 +0.8**
GTA S **S 16 22 53.3 0.0**
GTA sS sS 16 23 07.9 -6.2
GTA SS **SnSn 16 24 48.4 -0.5**
GTA pmax pmax
comp=Z,40nm,0.9s
GTA pmax pmax
comp=Z,490nm,6.4s
GTA LR LR
comp=Z,2μm,19.0s
GTA LR LR
comp=Z,3μm,20.2s
GTA LR LR
comp=Z,3μm,18.5s
ENPP El Nido 32.79 223 *e*P **P 16 17 45.5 -0.4**
QIZ Qiongzhong 33.10 245 P **P 16 17 50.3 +1.7**
QIZ S **S 16 23 07.5 +3.0**
QIZ pmax pmax
comp=Z,40nm,1.2s
QIZ LR LR
comp=Z,1μm,17.0s
QIZ LR LR
comp=Z,630nm,23.5s
DAV Davao City (W) 33.55 209 *e*P **P 16 17 50.5 -2.0**
comp=Z,94nm,0.4s
BILL Bilibino 33.56 17*c i*P **P 16 17 51.5 -0.6**
BILL *i* 16 18 01.6
BILL *i* 16 19 02.4
BILL *i* 16 20 31.5
BILL *i* SS SS 16 25 21.7 -15
BILL pmax pmax
comp=Z,15nm,1.5s
BILL MLR MLR
comp=Z,1μm,20.0s
BILL Bilibino 33.56 17 *e*P **P 16 17 51.2 -0.8**
comp=Z,59nm,1.5s
TIXI Tiksi 34.79 353 P **P 16 18 02.4 -0.3**
comp=Z,39nm,0.8s,baz=140,slow=5.8,SNR=129
TIXI LR LR 16 33 27.9
comp=Z,2μm,18.4s,baz=162,slow=38
TIXI Tiksi 34.79 353*c i*P **P 16 18 02.1 -0.6**
TIXI pmax pmax
comp=Z,56nm,1.0s
TIXI Tiksi 34.79 353 *e*P **P 16 18 02.0 -0.7**
comp=Z,58nm,1.1s
KMI Kunming 35.00 261 P **P 16 18 05.1 -0.2**
KMI pP pP 16 18 15.3 -2.4
KMI sP sP 16 18 20.6 -2.7
KMI PP **PnPn 16 19 18.3 -5.0**
KMI S **S 16 23 33.5 -0.8**
KMI sS sS 16 23 50.8 -4.3
KMI SS **SnSn 16 25 46.8 -6.0**
KMI pmax pmax
comp=Z,400nm,0.9s
KMI pmax pmax
comp=Z,560nm,3.1s
KMI LR LR
comp=Z,2μm,21.1s
KMI LR LR
comp=Z,2μm,26.2s
KMI LR LR
comp=Z,4μm,26.5s
KRAR Krasnoyarsk 37.08 316 *i* P **P 16 18 22.5 +0.1**
KRAR pmax pmax
comp=Z,119nm,0.9s
KDM Kudat 37.76 222 ⇑P **P 16 18 30.4 +1.8**
PANO Nakornpanom 38.12 248 P **P 16 18 32.6 +1.0**
comp=Z,88nm,1.2s,comp=Z,2μm
MYLDM Lahad Datu 38.37 219 *e*P **P 16 18 36.3 +2.5**
comp=Z,220nm,1.2s
SDKM Sandakan 38.64 221 ⇓P **P 16 18 37.9 +1.9**
TNTI Ternate 38.79 203 P **P 16 18 39.0 +1.8**
comp=Z,172nm,1.9s,comp=Z,4μm
KKM Kota Kinabalu 38.82 222 ⇑P **P 16 18 39.4 +1.8**
KKM Kota Kinabalu 38.82 222 *e*P **P 16 18 39.0 +1.4**
comp=Z,110nm,1.2s
SWI Sorong 39.33 196 P **P 16 18 45.4 +3.7**
comp=Z,78nm,0.9s,comp=Z,2μm
TSM Tawau 39.45 219 ⇑P **P 16 18 44.3 +1.6**
CRAI Chiangrai 39.46 256 P **P 16 18 44.3 +1.4**
comp=Z,82nm,0.9s,comp=Z,2μm
JAY Jayapura 39.85 181 P **P 16 18 44.8 -1.3**
GENI Genyem 39.94 182 P P 16 18 52.9 +6.1
comp=Z,236nm,1.2s,comp=Z,3μm
KHON Khomkaen 39.95 249 P **P 16 18 47.6 +0.7**
comp=Z,63nm,0.9s,comp=Z,1μm

LBMI Labuha 40.09 202 P **P** **16 18 49.7 +1.7**
comp=Z,107nm,1.7s,comp=Z,3µm
WMQ Urumqi 40.58 296 P **P** **16 18 53.3 +1.3**
WMQ PP **PnPn** **16 20 29.8 -0.4**
WMQ PcP **PcP** **16 20 53.3 -0.1**
WMQ S **S** **16 24 58.4 +0.2**
WMQ SS **SS** **16 27 51.0 -8.1**
WMQ pmax pmax
comp=Z,160nm,0.8s
WMQ pmax pmax
comp=Z,740nm,4.4s
WMQ LR LR
comp=Z,950nm,18.8s
WMQ LR LR
comp=Z,860nm,25.8s
WMQ LR LR
comp=Z,2µm,25.8s
CMAI Chiengmai2 40.66 256 P **P** **16 18 53.5 +0.5**
comp=Z,69nm,1.2s
UTTA Uttaradit 40.78 252 P **P** **16 18 54.0 +0.2**
comp=Z,25nm,0.8s,comp=Z,178nm
MRSI Marisa 41.00 210 P **P** **16 18 56.7 +1.2**
comp=Z,141nm,1.1s,comp=Z,2µm
LAMP Lampang 41.02 254 P **P** **16 18 56.2 +0.4**
comp=Z,25nm,0.8s,comp=Z,193nm
FAKI Fak Fak 41.12 194 P **P** **16 18 58.1 +1.5**
comp=Z,67nm,0.8s,comp=Z,1µm
PBKT Sadao Pong 41.19 251 P **P** **16 18 57.4 +0.3**
comp=Z,67nm,1.2s,comp=Z,1µm
CMMT Chiang Mai 41.38 255 P **P** **16 18 58.6 -0.1**
comp=Z,51nm,0.9s,comp=Z,986nm
CHTO Chiang Mai 41.38 255 P **P** **16 18 58.7 0.0**
comp=Z,225nm,0.9s,comp=Z,4µm
CHTO Chiang Mai 41.38 255 *e*P **P** **16 18 58.7 0.0**
CHTO pmax pmax
comp=Z,32nm,0.7s
CHTO Chiang Mai 41.38 255 *e*P **P** **16 18 58.8 0.0**
comp=Z,32nm,0.7s
CHTO Chiang Mai 41.38 255 P **P** **16 18 58.8 +0.1**
SNR=24
CHTO P **P** **16 18 58.8 +0.1**
SNR=24
CHTO Chiang Mai 41.38 255 P **P** **16 18 58.8 +0.1**
SNR=24
ZAA0 Zalesovo Array 41.55 312 *e*P **P** **16 18 59.5 -0.2**
ZAA1 Zalesovo Array 41.55 312 *e*P **P** **16 18 59.6 -0.1**
ZAA1 *e*PcP **PcP** **16 20 56.0 -0.3**
ZALV Zalesovo Beam 41.55 312 P **P** **16 18 59.6 -0.1**
comp=Z,122nm,0.7s,baz=88,slow=7.1,SNR=455
ZALV PcP **PcP** **16 20 56.0 -0.3**
comp=Z,19nm,0.6s,baz=79,slow=1.8,SNR=5.2
ZALV LR LR 16 36 60.0
comp=Z,4µm,18.0s,baz=72,slow=37
CM31 Chiang Mai Arr 41.59 255 *e*P **P** **16 19 00.9 +0.5**
CM31 *e*PcP **PcP** **16 20 57.9 +0.9**
CMAR Chiang Mai Arr 41.59 255 P **P** **16 19 00.8 +0.4**
comp=Z,8.9nm,0.6s,baz=42,slow=9.1,SNR=68
CMAR PcP **PcP** **16 20 57.9 +0.9**
comp=Z,7.7nm,0.9s,baz=42,slow=3.5,SNR=4.7
CMAR ScP **ScP** **16 24 42.7 -0.5**
comp=Z,2.4nm,1.1s,baz=21,slow=3.5,SNR=5.4
CMAR LR LR 16 37 21.1
comp=Z,1µm,20.1s,baz=54,slow=38
CM01 Chiang Mai Arr 41.60 255 *e*P **P** **16 19 00.2 -0.4**
SANI Sanana 41.88 203 P **P** **16 19 05.0 +2.2**
comp=Z,108nm,0.9s,comp=Z,2µm
LSA Lhasa 42.13 275 P **P** **16 19 06.3 +1.0**
LSA pmax pmax
comp=Z,45nm,1.6s
LSA Lhasa 42.13 275 *e*P **P** **16 19 05.9 +0.6**
LSA pmax pmax
comp=Z,91nm,1.0s
LSA Lhasa 42.13 275 *e*P **P** **16 19 05.9 +0.6**
comp=Z,91nm,1.0s
MSAI Masohi 42.28 199 P **P** **16 19 09.8 +3.8**
comp=Z,36nm,1.1s,comp=Z,694nm
ZSN Zaisan 42.30 302 ⇑ *i*P **P** **16 19 04.2 -1.8**
comp=Z,4µm,0.5s
ZSN *e*S **S** **16 25 20.2 -3.2**
ZSN LR LR 16 36 56.7
comp=Z,404nm,10.6s
APSI Ampana 42.38 210 P **P** **16 19 07.1 +0.3**
comp=Z,193nm,1.3s,comp=Z,2µm
NVS Novosibirsk 42.47 313 *e*P **P** **16 19 07.8 +0.6**
NVS *e*S **S** **16 25 27.2 +1.6**
NVS *e*SSS SSS 16 29 19.5
NVS pmax pmax
comp=E,135nm,1.1s
NVS pmax pmax
comp=Z,214nm,1.1s
NVS pmax pmax
comp=N,35nm,1.5s
NVS smax smax
comp=E,34nm,1.8s
MHMT Maesarieng 42.53 255 P **P** **16 19 08.9 +0.8**
comp=E,51nm,1.0s,comp=E,863nm
CHBT CHBT 42.65 245 P **P** **16 19 09.8 +0.7**
comp=E,197nm,0.9s
NLAI Namlea 42.67 201 P **P** **16 19 13.7 +4.5**
comp=E,78nm,0.8s
RABL Rabaul 42.71 164 *e*P **P** **16 19 11.1 +1.5**
comp=E,54nm,1.0s
NRIK Noril'sk 42.80 335 P **P** **16 19 09.2 -0.4**
comp=E,11nm,0.4s,baz=103,slow=8.4,SNR=37
NRIK LR LR 16 38 09.1
comp=E,2µm,19.2s,baz=110,slow=38
BTM Bintulu 42.89 224 ⇑P **P** **16 19 11.8 +0.8**
UMPA Umpang Tak 43.00 252 P **P** **16 19 13.6 +1.6**
comp=E,45nm,0.9s,comp=E,944nm
BNDI Bandanaira 43.18 197 P **P** **16 19 16.3 +3.0**
comp=E,364nm,1.1s,comp=E,4µm
SHL Shillong 43.38 269 *e*P **P** **16 19 15.0 -0.1**
SHL *i*S **S** **16 25 40.0 0.0**
PATY Pattaya 43.60 247 P **P** **16 19 18.2 +1.5**
comp=E,17nm,0.9s,comp=E,3µm
MK01 Makanchi Array 43.82 302 *e*P **P** **16 19 18.5 +0.2**
MK31 Makanchi Array 43.82 302 *i*P **P** **16 19 18.2 -0.1**
MK31 pmax pmax
comp=Z,299nm,1.0s
MK31 Makanchi Array 43.82 302 *e*P **P** **16 19 18.3 -0.1**
MK32 Makanchi Array 43.82 302 *e*P **P** **16 19 18.4 +0.1**
MKAR Makanchi Array 43.82 302 P **P** **16 19 18.4 +0.1**
comp=Z,228nm,0.9s,baz=83,slow=9.9,SNR=801
MKAR LR LR 16 38 53.0
comp=Z,1µm,18.6s,baz=82,slow=38
MKAR Makanchi Array 43.82 302 P **P** **16 19 18.4 +0.1**
MKAR pmax pmax
comp=Z,230nm,0.9s
MKAR MLR MLR
comp=Z,1µm,18.6s
SRDT SRDT 43.96 250 P **P** **16 19 20.4 +0.7**
comp=Z,284nm,1.2s,comp=Z,12µm
SBUM Sibu 43.99 224 ⇓P **P** **16 19 21.3 +1.4**
SBUM Sibu 43.99 224 *e*P **P** **16 19 20.1 +0.2**
comp=Z,34nm,0.9s
MAKZ Makanchi 44.03 302 *i*P **P** **16 19 20.0 0.0**
MAKZ pmax pmax
comp=Z,190nm,0.7s
MAKZ Makanchi 44.03 302 *e*P **P** **16 19 20.2 +0.3**
comp=Z,262nm,1.1s
SEM Semipalatinsk 44.61 307 ⇑ *i*P **P** **16 19 24.1 -0.4**
comp=Z,2µm,1.2s
SEM *e*S **S** **16 25 56.9 -0.2**
SEM LR LR 16 37 33.6
comp=Z,2µm,17.0s
BKB Balikpapan 44.75 216 P **P** **16 19 27.6 +1.7**
comp=Z,225nm,0.9s,comp=Z,3µm
TT01 Tatalina 45.03 35 *e*P **P** **16 19 29.1 +1.5**
TTA Tatalina 45.04 35 *e*P **P** **16 19 29.5 +1.7**
TTA pmax pmax
comp=Z,26nm,1.2s
TTA Tatalina 45.04 35 *e*P **P** **16 19 29.2 +1.4**
comp=Z,26nm,1.2s
SVW2 Sparrevohn 45.15 38 *e*P **P** **16 19 30.7 +2.0**
comp=Z,57nm,1.1s
MTKI Muara Teweh, K 45.44 219 P **P** **16 19 34.1 +2.7**
comp=Z,159nm,0.7s,comp=Z,9µm
KURK Kurchatov 45.60 308 P **P** **16 19 32.0 -0.3**
KURK pmax pmax
comp=Z,733nm,0.8s
KURK Kurchatov 45.60 308 *e*P **P** **16 19 32.4 +0.1**
comp=Z,312nm,0.7s
KURK Kurchatov 45.60 308 P **P** **16 19 32.2 -0.1**
SNR=166
KURK P **P** **16 19 32.2 -0.1**
SNR=166
KURK Kurchatov 45.60 308 P **P** **16 19 32.2 -0.1**
SNR=166
KURBB Kurchatov Arra 45.67 308 P **P** **16 19 32.7 -0.2**
comp=Z,203nm,0.7s,baz=84,slow=8.2,SNR=674
KSM Kuching 45.87 226 *e*P **P** **16 19 35.7 +0.9**
comp=Z,58nm,0.8s
SPSI Sidrap Palu 45.91 211 P **P** **16 19 37.4 +2.3**
comp=Z,55nm,1.2s,comp=Z,769nm
SHLS Shalkode 46.28 297 ⇑ *i*P **P** **16 19 38.1 0.0**
comp=Z,833nm,0.6s
SHLS *e*S **S** **16 26 22.1 +0.4**
SHLS LR LR 16 39 34.5
comp=Z,547nm,13.5s
STKI Sintang 46.37 224 P **P** **16 19 39.5 +0.7**
comp=Z,75nm,1.2s,comp=Z,5µm
OHAK Old Harbor 46.42 43 *e*P **P** **16 19 39.1 +0.5**
comp=Z,60nm,0.9s
PDGK Podgornoye 46.51 297 P **P** **16 19 39.1 -0.5**
PDGK pmax pmax
comp=Z,81nm,0.5s
RSO Redoubt South 46.54 39 *e*P **P** **16 19 41.6 +1.8**
KDAK Kodiak Island 46.76 42 *i*P **P** **16 19 41.6 +0.3**
KDAK Kodiak Island 46.76 42 *e*P **P** **16 19 41.9 +0.6**
comp=Z,124nm,0.9s
PPLA Purkeypile 46.79 35 *e*P **P** **16 19 43.5 +1.8**
comp=Z,193nm,1.8s
CAST Castle Rocks 46.84 34 *e*P **P** **16 19 43.2 +1.3**
comp=Z,42nm,1.2s
SPU Mount Spurr 46.86 38 *e*P **P** **16 19 43.2 +1.0**
KAPI Kappang 46.87 210 *e*P **P** **16 19 43.5 +0.9**
comp=Z,210nm,1.3s
UZB Uzynbulak 46.89 297 ⇑ *i*P **P** **16 19 42.7 -0.1**
comp=Z,656nm,0.9s
UZB *e*S **S** **16 26 30.7 +0.4**
UZB LR LR 16 39 41.1
comp=Z,919nm,14.5s
PMG Port Moresby 47.00 172 *e*P **P** **16 19 45.0 +1.4**
PMG pmax pmax
comp=Z,41nm,1.0s
PMG Port Moresby 47.00 172 *e*P **P** **16 19 45.0 +1.4**
comp=Z,41nm,1.0s
GUN Gumba 47.07 275 *e*P **P** **16 19 46.2 +1.6**
comp=Z,390nm,0.5s
KTGM Kuala Trenggan 47.33 237 ⇑P **P** **16 19 47.8 +1.5**
BPAW Bear Paw Mtn. 47.33 34 *e*P **P** **16 19 47.1 +1.3**
comp=Z,23nm,1.0s
KTH Kantishna Hill 47.36 34 *e*P **P** **16 19 47.5 +1.4**
comp=Z,114nm,1.4s
MLY Manley 47.45 32 *e*P **P** **16 19 48.0 +1.3**
comp=Z,34nm,1.0s
BRLK Bradley Lake 47.50 39 *e*P **P** **16 19 49.0 +1.8**
comp=Z,87nm,1.4s
KKN Kakani 47.60 275 *e*P **P** **16 19 48.9 +0.3**
comp=Z,591nm,0.8s
PKIN Phulchoki 47.60 275 *e*P **P** **16 19 48.8 +0.1**
comp=Z,99nm,0.5s
TRF Thorofare Moun 47.65 34 *e*P **P** **16 19 49.7 +1.3**
comp=Z,29nm,0.8s
BBKI Banjar Baru 47.65 217 P **P** **16 19 49.4 +0.7**
comp=Z,152nm,1.1s,comp=Z,2µm
SKLT Songkhla 47.71 241 P **P** **16 19 50.6 +1.4**
comp=Z,99nm,1.1s,comp=Z,1µm
COLD Coldfoot 47.74 29 *e*P **P** **16 19 50.4 +1.6**
comp=Z,16nm,1.0s
SURT Suratani 47.76 245 P **P** **16 19 50.6 +1.0**
comp=Z,51nm,1.1s,comp=Z,598nm
TRTT Trang 47.89 243 P **P** **16 19 51.7 +1.0**
comp=Z,109nm,1.0s,comp=Z,1µm
RC01 Rabbit Creek A 47.99 38 *e*P **P** **16 19 51.6 +0.7**
comp=Z,72nm,1.0s
GKN Gorkha 48.01 276 *e*P **P** **16 19 51.9 +0.2**
comp=Z,808nm,1.0s
CHKK Chushkaly 48.11 299 ⇑ *i*P **P** **16 19 52.7 +0.6**
comp=Z,1µm,0.6s
SEW Seward 48.20 39 *e*P **P** **16 19 54.6 +2.1**
comp=Z,67nm,1.0s
MCK McKinley 48.24 34 *e*P **P** **16 19 53.9 +1.1**
MCK pmax pmax
comp=Z,53nm,1.2s
MCK McKinley 48.24 34 *e*P **P** **16 19 53.6 +0.8**
comp=Z,53nm,1.3s
PMR Palmer 48.25 37 *e*P **P** **16 19 53.3 +0.5**
PMR pmax pmax
comp=Z,62nm,1.1s
PMR Palmer 48.25 37 *e*P **P** **16 19 53.3 +0.5**
comp=Z,62nm,1.1s
MDOK Medeo 48.27 298 ⇓ *i*P **P** **16 19 54.0 +0.4**
comp=Z,1µm,0.8s
MDOK *e*S **S** **16 26 51.7 +1.7**
MDOK LR LR 16 40 18.7
comp=Z,2µm,20.1s
RND Reindeer 48.29 34 *e*P **P** **16 19 53.8 +0.6**
RND *e* 16 21 19.5
RND pmax pmax
comp=Z,70nm,1.1s
RND Reindeer 48.29 34 *e*P **P** **16 19 53.8 +0.6**
comp=Z,70nm,1.1s
RND *e*PcP **PcP** **16 21 19.5 +0.1**
AAA Alma-Ata 48.31 298 *i*P **P** **16 19 55.1 +1.4**
AAA *i*S **S** **16 26 50.3 -0.1**
AAA pmax pmax
comp=Z,300nm,0.9s
AAA smax smax
comp=E,1µm,9.1s
AAA MLR MLR
comp=Z,6µm,13.0s
MDM Murphy Dome 48.52 32 *e*P **P** **16 19 56.2 +1.3**
comp=Z,71nm,1.0s
KUU Kurty 48.56 299 ⇑ *i*P **P** **16 19 55.4 -0.2**
comp=Z,2µm,0.8s
KUU *i*S **S** **16 26 55.0 +1.2**
KUU LR LR 16 40 19.3
comp=Z,1µm,15.6s
WRH Wood River Hil 48.59 33 *e*P **P** **16 19 56.1 +0.7**
comp=Z,29nm,1.0s
PBKI Pangkalan Bun 48.59 221 P **P** **16 19 56.9 +0.9**
COLA College 48.68 32 *c i*P **P** **16 19 57.6 +1.5**
COLA pmax pmax
comp=Z,48nm,2.0s
CCB Clear Creek Bu 48.71 33 *e*P **P** **16 19 56.9 +0.6**
comp=Z,87nm,1.7s
PKDT Phuket 48.82 244 P **P** **16 19 58.9 +1.1**
comp=Z,206nm,1.1s,comp=Z,2µm
KOLN Koldanda 48.94 276 *e*P **P** **16 19 59.1 +0.2**
comp=Z,351nm,0.8s
DHY Denali Highway 48.98 35 *e*P **P** **16 19 59.1 +0.5**
comp=Z,29nm,1.1s
BOK Bokaro 49.00 270 *e*P **P** **16 19 59.0 -0.1**
BOK IAmb IAmb 16 19 59.3
KULM Kulim 49.03 239 ⇑P **P** **16 20 00.9 +1.4**
KULM Kulim 49.03 239 *e*P **P** **16 19 59.9 +0.5**
comp=Z,76nm,1.1s
HDA Harding Lake 49.09 33 *e*P **P** **16 19 59.8 +0.5**
comp=Z,50nm,1.2s
SCM Sheep Creek Mo 49.09 36 *e*P **P** **16 20 00.7 +1.3**
SCM pmax pmax
comp=Z,43nm,0.8s
SCM Sheep Creek Mo 49.09 36 *e*P **P** **16 20 00.5 +1.1**
comp=Z,43nm,0.8s
ILAR Eielson Array 49.10 33 P **P** **16 19 59.5 +0.1**
comp=Z,13nm,0.5s,baz=265,slow=5.8,SNR=196
ILAR pP **pP** **16 20 13.8 +1.5**
comp=Z,29nm,0.9s,baz=269,slow=5.7,SNR=17
ILB Eielson Array 49.10 33 *e*P **P** **16 19 59.5 +0.1**
IL1 Eielson Array 49.10 33 *e*P **P** **16 19 59.5 +0.2**
PYUN Piuthan 49.27 277 *e*P **P** **16 20 01.8 +0.4**
comp=Z,2µm,1.0s
TKM2 Tokmak 2 49.36 298 P **P** **16 20 02.9 +0.9**
TKM2 pmax pmax
comp=Z,161nm,0.6s
TKM2 Tokmak 2 49.36 298 *e*P **P** **16 20 02.9 +0.9**
comp=Z,198nm,0.6s
DGPR DIGLIPUR 49.37 254 *e*P **P** **16 20 01.6 -0.4**
BRZS Berezniki 49.47 308 ⇑ *i*P **P** **16 20 02.5 +0.1**
comp=Z,324nm,0.7s
BRZS *e*S **S** **16 27 07.2 +0.8**
MYKOM Kota Tinggi 49.52 233 ⇑P **P** **16 20 04.2 +1.0**
MYKOM Kota Tinggi 49.52 233 *e*P **P** **16 20 03.5 +0.3**
comp=Z,49nm,1.1s
KGM Kluang 49.69 234 ⇓P **P** **16 20 05.6 +1.2**
FYU Fort Yukon 49.70 30 *e*P **P** **16 20 05.8 +2.0**
comp=Z,260nm,1.8s
KLU Klutina 49.79 37 *e*P **P** **16 20 05.8 +1.1**
comp=Z,49nm,1.0s
PAX Paxson 49.85 35 *e*P **P** **16 20 07.4 +2.2**
PAX pmax pmax
comp=Z,18nm,1.0s
PAX Paxson 49.85 35 *e*P **P** **16 20 06.9 +1.7**
comp=Z,18nm,1.0s
DIV Divide 49.91 37 *e*P **P** **16 20 07.2 +1.6**
comp=Z,104nm,1.1s
VOSK Vostochnaya 49.92 312 P **P** **16 20 05.5 -0.3**
VOSK pmax pmax
comp=Z,129nm,0.8s
VOSK Vostochnaya 49.92 312 *e*P **P** **16 20 05.5 -0.3**
comp=Z,146nm,0.9s
CHKZ Chkalovo 49.95 313 P **P** **16 20 05.7 -0.2**
CHKZ pmax pmax
comp=Z,78nm,0.7s
EYAK Cordova Ski Ar 49.99 38 *e*P **P** **16 20 07.8 +1.6**
comp=Z,75nm,1.0s
FRU Bishkek 50.07 298 *i*P **P** **16 20 07.5 +0.3**
FRU *e* 16 20 26.0
FRU *e* 16 22 01.0
FRU pmax pmax
comp=Z,170nm,1.8s
OTUK Ortayu 50.10 306 P **P** **16 20 07.6 +0.3**
OTUK pmax pmax
comp=Z,108nm,0.6s
KSH Kashi 50.17 294 P **P** **16 20 12.4 +4.4**
KSH *es*P sP 16 20 26.1 -0.3
KSH *e*ScP **ScP** **16 25 22.3 +3.6**
KSH PcS **PcS** **16 25 27.0 +3.0**
KSH S **S** **16 27 22.3 +5.7**
KSH ScS **ScS** **16 29 57.3 +2.0**
KSH SS **SS** **16 30 50.6 +0.6**
KSH pmax pmax
comp=Z,61nm,0.8s
KSH pmax pmax
comp=Z,610nm,5.6s
KSH LR LR
comp=Z,3µm,14.9s
KSH LR LR
comp=Z,1µm,14.8s
KSH LR LR
comp=Z,4µm,16.2s
BVA0 Borovoye Array 50.21 312 P **P** **16 20 07.9 -0.1**
BVA0 pmax pmax
comp=Z,58nm,0.8s
BVAR Borovoye Array 50.21 312 P **P** **16 20 07.9 -0.1**
comp=Z,38nm,0.5s,baz=75,slow=7.9,SNR=250
BVAR PcP **PcP** **16 21 26.9 +0.3**
comp=Z,19nm,0.6s,baz=118,slow=2.9,SNR=4.0
AAK Ala-Archa 50.22 298 P **P** **16 20 09.0 +0.5**
comp=Z,113nm,0.9s,baz=106,slow=5.4,SNR=197
AAK Ala-Archa 50.22 298 P **P** **16 20 08.7 +0.2**
AAK pmax pmax
comp=Z,81nm,0.7s
AAK Ala-Archa 50.22 298 *e*P **P** **16 20 08.6 +0.2**
comp=Z,94nm,0.7s
AAK Ala-Archa 50.22 298 P **P** **16 20 08.9 +0.5**
SNR=44
AAK P **P** **16 20 08.9 +0.5**
SNR=44
AAK Ala-Archa 50.22 298 P **P** **16 20 08.9 +0.5**
SNR=44
BRVK Borovoye 50.27 312 *c i*P **P** **16 20 08.5 +0.1**
BRVK pmax pmax
comp=Z,88nm,0.8s
BRVK Borovoye 50.27 312 *e*P **P** **16 20 08.5 +0.1**
comp=Z,104nm,1.0s
BRVK *e*PcP **PcP** **16 21 26.0 -0.7**
BRVK Borovoye 50.27 312 P **P** **16 20 08.5 +0.1**
SNR=46
BRVK P **P** **16 20 08.5 +0.1**
SNR=46
BRVK Borovoye 50.27 312 P **P** **16 20 08.5 +0.1**
SNR=46
DOT Dot Lake 50.41 34 *e*P **P** **16 20 09.7 +0.3**
comp=Z,68nm,0.8s
PBA Port Blair 50.46 252 *e*P P 16 20 11.1 +0.8
BMRM Bremner River 50.49 37 *e*P **P** **16 20 11.4 +1.4**
comp=Z,67nm,1.0s
MENT Mentasta 50.65 35 *e*P **P** **16 20 12.7 +1.5**
comp=Z,76nm,1.2s
EKS2 Erkin-Say 50.72 298 *e*P **P** **16 20 12.1 0.0**
EKS2 *e* 16 21 29.3
EKS2 pmax pmax
comp=Z,94nm,0.7s
EKS2 Erkin-Say 50.72 298 *e*P **P** **16 20 12.1 0.0**
comp=Z,94nm,0.7s
EKS2 *e*PcP **PcP** **16 21 29.3 +0.6**
LGTI Lohaghat 50.83 280 *ex* P 16 20 22.0 +9.1
MTN Manton Dam 51.02 193 *e*P **P** **16 20 13.9 -0.5**
comp=Z,194nm,1.4s
ZRNK Zerenda 51.04 312 P **P** **16 20 14.1 -0.2**
ZRNK pmax pmax
comp=Z,105nm,0.8s
ZRNK Zerenda 51.04 312 *e*P **P** **16 20 14.0 -0.2**
comp=Z,161nm,1.1s
ZRNK *e*PcP **PcP** **16 21 29.4 -0.3**
COEN Coen 51.24 178 *e*P **P** **16 20 17.0 +0.9**
comp=Z,99nm,1.1s
EGAK Eagle 51.54 32 *e*P **P** **16 20 18.1 +0.4**
comp=Z,35nm,1.2s
BALM Baldy 51.57 37 *e*P **P** **16 20 19.0 +0.8**
BALM pmax pmax
comp=Z,37nm,1.0s
BALM Baldy 51.57 37 *e*P **P** **16 20 19.0 +0.8**
comp=Z,37nm,1.0s
MNAS Manas 51.66 298 P **P** **16 20 20.2 +1.0**
MNAS pmax pmax
comp=Z,147nm,0.7s
SFK Sufi-Kurgan 51.79 295 P **P** **16 20 20.6 +0.3**
SFK pmax pmax
comp=Z,201nm,1.2s
PSI Prapat 52.02 239 *e*P **P** **16 20 22.4 +0.3**
PSI pmax pmax
comp=Z,67nm,0.9s
PSI Prapat 52.02 239 *e*P **P** **16 20 22.2 +0.1**
comp=Z,67nm,0.9s
DDI Dehra Dun 52.16 282 *e*P **P** **16 20 21.8 -1.2**
SDNR Sundarnagar 52.49 284 *e*P **P** **16 20 25.0 -0.4**
SMLA Simla 52.50 283 *i*P **P** **16 20 25.2 -0.1**
CMBY CAMPBELL BAY 52.60 247 *e*P **P** **16 20 25.8 -0.5**
DHRM DHARAMSHALA 52.69 285 *e*P **P** **16 20 25.5 -1.6**
KK31 Karatay Array 52.84 300 *i*P **P** **16 20 27.9 +0.1**
KK31 pmax pmax
comp=Z,113nm,0.9s
KKAR Karatay Array 52.84 300 *e*P **P** **16 20 27.8 0.0**
KKAR Karatay Array 52.84 300 *e*P **P** **16 20 27.6 -0.3**
CHLP Challavanipeta 53.21 266 *e*P **P** **16 20 31.3 +0.5**
CHLP IAmb IAmb 16 20 32.8
comp=Z,60nm,0.8s
CHLP *e*S **S** **16 27 57.1 -1.5**
CHLP IVMs_BB IVMs_BB 16 42 29.6
comp=Z,499nm,25.5s
KKR Kurukshetra 53.28 282 *e*P **P** **16 20 31.3 +0.1**
IUG Iuzhnay 53.50 299 ⇑ *i*P **P** **16 20 33.6 +0.8**
comp=Z,3µm,1.1s
IUG *e*S **S** **16 28 03.9 +1.6**
IUG LR LR 16 43 51.4
comp=Z,916nm,17.2s
NDI New Delhi 53.54 281 *ex* P 16 20 27.0 -6.1
AYAN Aya Nagar 53.70 280 *ex* P 16 20 25.1 -9.2
BHGR Bahadurgarh 53.76 281 *e*P **P** **16 20 34.6 -0.1**
INK Inuvik 53.96 27 *e*P **P** **16 20 36.4 +0.8**
INK pmax pmax
comp=Z,26nm,0.6s
INK Inuvik 53.96 27 *e*P **P** **16 20 36.4 +0.8**
comp=Z,26nm,0.6s
VIS Vishakhapatnam 54.22 265 *e*P **P** **16 20 38.0 -0.2**
KUDL Kundal 54.36 280 *e*P **P** **16 20 38.5 -0.6**
KUDL IAmb IAmb 16 20 39.9
comp=Z,59nm,0.7s
SVE Sverdlovsk 54.75 318 *d i*P **P** **16 20 41.9 +0.4**
SVE *e*S **S** **16 28 15.2 -3.2**
SVE pmax pmax
comp=Z,289nm,1.1s
SVE MLR MLR
comp=Z,4µm,17.0s
KHET Khetri 54.92 281 *e*P **P** **16 20 42.9 -0.3**
KHET IAmb IAmb 16 20 44.8
comp=Z,77nm,0.9s
SKAG Skagway 55.33 38 *e*P **P** **16 20 46.7 +1.1**
PVM Polavaram 55.83 266 *e*P **P** **16 20 50.0 +0.1**
PVM IAmb IAmb 16 20 50.9
comp=Z,48nm,0.8s
PVM *e*S **S** **16 28 33.7 -0.2**
PVM IVMs_BB IVMs_BB 16 42 43.2
comp=Z,438nm,28.8s
SOKR Solikamsk 55.91 322 *c i*P **P** **16 20 48.2 -1.5**
SOKR pmax pmax

	comp=Z,143nm,1.2s										
SOKR					MLR	MLR					
	comp=Z,2µm,19.0s										
ARU	**Arti**	**55.96**	**318**	P		**P**	**16**	**20**	**50.2**	**0.0**
	comp=Z,96nm,0.5s,baz=79,slow=4.2,SNR=179										
ARU	**Arti**	**55.96**	**318**	*c*	*i* P	**P**	**16**	**20**	**50.0**	**-0.2**
ARU							16	21	46.0		
ARU							16	22	52.2		
ARU					S	**S**	**16**	**28**	**37.3**	**+2.7**
ARU					SS	**SS**	**16**	**32**	**19.8**	**-0.7**
ARU					pmax	pmax					
	comp=Z,372nm,1.2s										
ARU					MLR	MLR					
	comp=Z,3µm,17.0s										
ARU	**Arti**	**55.96**	**318**	*e*	P	**P**	**16**	**20**	**50.1**	**-0.2**
	comp=Z,415nm,1.2s										
BHPL	**Bhopal**	**55.99**	**275**	*e*	P	**P**	**16**	**20**	**49.8**	**-1.2**
BHPL					IAmb	IAmb	16	20	51.7		
	comp=Z,93nm,1.0s										
RPR	**Rampur**	**56.80**	**269**	*e*	P	**P**	**16**	**20**	**56.8**	**+0.1**
RPR					IAmb	IAmb	16	20	57.5		
	comp=Z,122nm,0.6s										
RPR				*e*	S	**S**	**16**	**28**	**45.3**	**-1.4**
RPR					IVMs_BB	IVMs_BB	16	47	43.1		
	comp=Z,430nm,21.9s										
KBL	**Kabul**	**57.20**	**291**	*e*	P	**P**	**16**	**20**	**59.6**	**-0.1**
KBL					pmax	pmax					
	comp=Z,190nm,1.0s										
KBL	**Kabul**	**57.20**	**291**	*e*	P	**P**	**16**	**20**	**59.2**	**-0.4**
	comp=Z,191nm,1.0s										
FITZ	**Fitzroy Crossi**	**57.28**	**198**	*e*	P	**P**	**16**	**21**	**00.4**	**+0.5**
	comp=Z,204nm,1.9s										
CTAO	**Charters Tower**	**57.49**	**175**	*e*	P	**P**	**16**	**21**	**01.3**	**-0.1**
CTAO					pmax	pmax					
	comp=Z,143nm,1.8s										
CTAO	**Charters Tower**	**57.49**	**175**	*e*	P	**P**	**16**	**21**	**01.3**	**-0.1**
	comp=Z,143nm,1.8s										
SRSP	**Sriramsagar**	**57.52**	**270**	*e*	P	**P**	**16**	**21**	**00.7**	**-1.2**
SRSP					IAmb	IAmb	16	21	02.9		
	comp=Z,234nm,1.0s										
SRSP				*e*	S	**S**	**16**	**28**	**54.8**	**-1.4**
SRSP					IVMs_BB	IVMs_BB	16	47	55.2		
	comp=Z,435nm,19.8s										
WRAB	**Tennant Creek**	**57.54**	**188**	*ce*	P	**P**	**16**	**21**	**01.2**	**-0.5**
WRAB					pmax	pmax					
	comp=Z,219nm,1.9s										
WRAB	**Tennant Creek**	**57.54**	**188**	*e*	P	**P**	**16**	**21**	**01.0**	**-0.7**
	comp=Z,81nm,1.0s										
WB2	**Warramunga Arr**	**57.55**	**188**	*e*	P	**P**	**16**	**21**	**01.7**	**0.0**
WR1	**Warramunga Arr**	**57.55**	**188**	*e*	P	**P**	**16**	**21**	**01.0**	**-0.8**
WRA	**Warramunga Arr**	**57.55**	**188**		P	**P**	**16**	**21**	**01.0**	**-0.8**
	comp=Z,32nm,0.5s,baz=5.4,slow=7.3,SNR=434										
WRA					pP	**pP**	**16**	**21**	**15.9**	**+0.9**
	comp=Z,32nm,0.7s,baz=4.1,slow=7.3,SNR=10										
WRA					LR	LR	16	45	15.5		
	comp=Z,516nm,20.4s,baz=345,slow=35										
WRA					PKP2bc		16	51	01.4		
	comp=Z,0.5nm,0.7s,baz=202,slow=2.3,SNR=5.7										
AB31	**Akbulak array**	**57.59**	**310**		P	**P**	**16**	**21**	**01.6**	**-0.3**
AB31					pmax	pmax					
	comp=Z,83nm,0.6s										
ABKAR	**Akbulak array**	**57.59**	**310**	*e*	P	**P**	**16**	**21**	**01.3**	**-0.6**
ADKI	**Addanki**	**57.93**	**266**	*e*	P	**P**	**16**	**21**	**05.2**	**+0.5**
ADKI					IAmb	IAmb	16	21	06.0		
	comp=Z,44nm,1.0s										
ADKI				*e*	S	**S**	**16**	**29**	**02.3**	**+0.8**
ADKI					IVMs_BB	IVMs_BB	16	43	37.1		
	comp=Z,498nm,36.3s										
NJS	**Nagarjunasagar**	**58.06**	**267**	*e*	P	**P**	**16**	**21**	**05.5**	**-0.1**
NJS					IAmb	IAmb	16	21	06.8		
	comp=Z,60nm,1.1s										
NJS				*e*	S	**S**	**16**	**29**	**02.3**	**-1.0**
NJS					IVMs_BB	IVMs_BB	16	44	35.2		
	comp=Z,342nm,31.7s										
HYB	**Hyderabad**	**58.18**	**268**	*i*	P	**P**	**16**	**21**	**06.5**	**0.0**
	comp=Z,170nm,1.0s										
HYB				*e*	S	**S**	**16**	**29**	**04.0**	**-0.9**
HYB	**Hyderabad**	**58.18**	**268**	*e*	P	**P**	**16**	**21**	**05.2**	**-1.3**
HYBB	**Hyderabad (bro**	**58.18**	**268**	*e*	P	**P**	**16**	**21**	**06.6**	**+0.1**
HYBB					IAmb	IAmb	16	21	07.4		
	comp=Z,143nm,1.1s										
HYBB				*e*	S	**S**	**16**	**29**	**02.8**	**-2.1**
HYBB					IVMs_BB	IVMs_BB	16	48	21.3		
	comp=Z,350nm,17.0s										
DLBC	**Dease Lake**	**58.26**	**38**	*e*	P	**P**	**16**	**21**	**08.5**	**+1.9**
	comp=Z,72nm,1.4s										
AKTO	**Aktyubinsk**	**58.31**	**312**		P	**P**	**16**	**21**	**06.4**	**-0.6**
	comp=Z,95nm,0.8s,baz=67,slow=6.6,SNR=177										
SRLM	**Srisailam**	**58.64**	**267**	*e*	P	**P**	**16**	**21**	**09.0**	**-0.7**
SRLM					IAmb	IAmb	16	21	10.7		
	comp=Z,70nm,1.0s										
SRLM				*e*	S	**S**	**16**	**29**	**11.6**	**+0.7**
SRLM					IVMs_BB	IVMs_BB	16	46	12.4		
	comp=Z,346nm,25.1s										
RCLA	**Racherla**	**58.95**	**266**	*e*	P	**P**	**16**	**21**	**11.5**	**-0.4**
RCLA					IAmb	IAmb	16	21	13.1		
	comp=Z,93nm,1.0s										
RCLA				*e*	S	**S**	**16**	**29**	**12.4**	**-2.6**
RCLA					IVMs_BB	IVMs_BB	16	46	21.4		
	comp=Z,477nm,24.5s										
MDRS	**Chennai**	**59.30**	**263**	*e*	P	**P**	**16**	**21**	**14.7**	**+0.5**
SKHT	**Srikalahasti**	**59.34**	**264**	*e*	P	**P**	**16**	**21**	**15.1**	**+0.6**
SKHT					IAmb	IAmb	16	21	16.3		
	comp=Z,86nm,0.9s										
SKHT				*e*	S	**S**	**16**	**29**	**18.4**	**-1.4**
SKHT					IVMs_BB	IVMs_BB	16	42	29.8		
	comp=Z,338nm,45.7s										
KLRI	**Killari**	**59.38**	**270**	*e*	P	**P**	**16**	**21**	**14.2**	**-0.7**
KLRI					IAmb	IAmb	16	21	15.3		
	comp=Z,220nm,0.8s										
KLRI				*e*	S	**S**	**16**	**29**	**17.0**	**-3.4**
KLRI					IVMs_BB	IVMs_BB	16	48	46.4		
	comp=Z,556nm,27.2s										
HOPEN	**Hopen**	**59.55**	**346**	*e*	P	**P**	**16**	**21**	**16.0**	**+1.0**
KBS	**Kingsbay**	**60.16**	**350**	*e*	P	**P**	**16**	**21**	**20.6**	**+1.4**
KBS					IAmb	IAmb	16	21	21.2		
	comp=Z,74nm,0.9s										
KBS	**Kingsbay**	**60.16**	**350**	*e*	P	**P**	**16**	**21**	**20.7**	**+1.4**
KBS					pmax	pmax					
	comp=Z,74nm,0.9s										
KBS	**Kingsbay**	**60.16**	**350**	*e*	P	**P**	**16**	**21**	**20.0**	**+0.7**
	comp=Z,74nm,0.9s										
URV	**Uravakonda**	**60.59**	**267**	*e*	P	**P**	**16**	**21**	**22.5**	**-0.7**
URV					IAmb	IAmb	16	21	24.1		
	comp=Z,90nm,1.1s										
URV				*e*	S	**S**	**16**	**29**	**35.4**	**-0.6**
URV					IVMs_BB	IVMs_BB	16	45	28.6		
	comp=Z,448nm,28.0s										
HSPB	**Hornsund (broa**	**60.95**	**348**	*e*	P	**P**	**16**	**21**	**25.3**	**+0.7**
HSPB				*e*	S	**S**	**16**	**29**	**42.8**	**+3.8**
HSPB	**Hornsund (broa**	**60.95**	**348**	*e*	P	**P**	**16**	**21**	**25.6**	**+0.9**
AS01	**Alice Springs**	**61.27**	**188**	*e*	P	**P**	**16**	**21**	**27.1**	**-0.4**
AS31	**Alice Springs**	**61.27**	**188**	*e*	P	**P**	**16**	**21**	**27.0**	**-0.5**
	comp=Z,8.3nm,0.9s										
ASAR	**Alice Springs**	**61.27**	**188**		P	**P**	**16**	**21**	**27.1**	**-0.3**
	comp=Z,8.4nm,0.6s,baz=15,slow=6.7,SNR=142										
ASAR					pP	**pP**	**16**	**21**	**42.4**	**+1.6**
	comp=Z,18nm,0.8s,baz=9.7,slow=7.5,SNR=12										
ASAR					LR	LR	16	47	31.1		
	comp=Z,516nm,21.1s,baz=354,slow=36										
ASAR					PKP2bc		16	50	49.4		
	comp=Z,1.5nm,0.9s,baz=177,slow=1.9,SNR=8.8										
POO	**Poona**	**61.31**	**272**	*e*	P	**P**	**16**	**21**	**26.8**	**-1.2**
LVZ	**Lovozero**	**61.64**	**336**	*ce*	P	**P**	**16**	**21**	**29.3**	**-0.2**
LVZ					pmax	pmax					
	comp=Z,84nm,0.9s										
LVZ	**Lovozero**	**61.64**	**336**	*e*	P	**P**	**16**	**21**	**29.4**	**-0.1**
	comp=Z,65nm,0.9s										
MBWA	**Marble Bar**	**61.83**	**203**	*e*	P	**P**	**16**	**21**	**30.6**	**-0.6**
	comp=Z,108nm,1.4s										
MBWA	**Marble Bar**	**61.83**	**203**		P	**P**	**16**	**21**	**31.1**	**-0.2**
	SNR=5.2										
MBWA	**Marble Bar**	**61.83**	**203**		P	**P**	**16**	**21**	**31.1**	**-0.2**
	SNR=5.2										
BHJ	**Bhuj**	**62.12**	**279**	*e*	P	**P**	**16**	**21**	**32.7**	**-0.7**
RES	**Resolute Bay**	**62.13**	**14**	*e*	P	**P**	**16**	**21**	**32.5**	**-0.1**
RES	**Resolute Bay**	**62.13**	**14**	*e*	P	**P**	**16**	**21**	**32.2**	**-0.4**
APA	**Apatity**	**62.22**	**336**	⇓	*i* P	**P**	**16**	**21**	**34.8**	**+1.5**
APA					pmax	pmax					
	comp=Z,91nm,1.0s										
APA					MLR	MLR					
	comp=Z,2µm,18.0s										
TMCR	**Tamitsa**	**62.29**	**331**	*e*	P	**P**	**16**	**21**	**34.0**	**+0.2**
TMCR					pmax	pmax					
	comp=Z,181nm,1.3s										
KEV	**Kevo**	**62.97**	**339**	*e*	P	**P**	**16**	**21**	**38.6**	**+0.3**
GOA	**Goa**	**63.01**	**269**	*e*	P	**P**	**16**	**21**	**38.9**	**-0.4**
EIDS	**Eidsvold**	**63.23**	**170**	*e*	P	**P**	**16**	**21**	**41.0**	**+0.5**
	comp=Z,132nm,1.5s										
HAMF	**Hammerfest**	**63.34**	**341**	*e*	P	**P**	**16**	**21**	**40.5**	**-0.2**
HAMF				*e*	S	**S**	**16**	**30**	**11.3**	**+2.2**
HAMF				*e*	SS	**SS**	**16**	**34**	**19.3**	**+3.9**
YKW3	**Yellowknife Ar**	**63.36**	**30**	*e*	P	**P**	**16**	**21**	**40.9**	**-0.1**
	comp=Z,103nm,2.0s										
YKA	**Yellowknife Ar**	**63.40**	**30**		P	**P**	**16**	**21**	**41.1**	**-0.1**
	comp=Z,7.8nm,0.6s,baz=303,slow=6.7,SNR=172										
YKA					pP	**pP**	**16**	**21**	**56.0**	**+1.4**
	comp=Z,8.7nm,0.7s,baz=304,slow=6.7,SNR=12										
YKA					PKP2bc		16	50	39.8		
	comp=Z,0.9nm,1.0s,baz=111,slow=2.7,SNR=5.1										
YKB5	**Yellowknife Ar**	**63.40**	**30**	*e*	P	**P**	**16**	**21**	**40.6**	**-0.6**
ARA0	**ARCESS Array S**	**63.52**	**339**	*e*	P	**P**	**16**	**21**	**41.9**	**-0.1**
ARCES	**ARCESS Array B**	**63.52**	**339**		P	**P**	**16**	**21**	**42.4**	**+0.4**
	comp=Z,43nm,0.8s,baz=56,slow=7.4,SNR=84										
ARCES					LR	LR	16	53	09.5		
	comp=Z,738nm,18.6s,baz=50,slow=40										
ARE0	**ARCESS Array S**	**63.52**	**339**	*e*	P	**P**	**16**	**21**	**40.6**	**-1.3**
ARE0				*e*	S	**S**	**16**	**30**	**12.1**	**+0.6**
ARE0				*e*	SS	**SS**	**16**	**34**	**21.9**	**+3.5**
ARE0	**ARCESS Array S**	**63.52**	**339**	*e*	P	**P**	**16**	**21**	**42.1**	**+0.2**
	comp=Z,84nm,1.0s										
GEYT	**Alibeck**	**63.56**	**299**		P	**P**	**16**	**21**	**43.0**	**+0.2**
	comp=Z,143nm,0.9s,baz=33,slow=3.5,SNR=229										
GEYT					LR	LR	16	51	58.1		
	comp=Z,1µm,18.1s,baz=70,slow=38										
KTK1	**Kautokeino**	**64.48**	**339**	*e*	P	**P**	**16**	**21**	**48.8**	**+0.5**
KTK1					IAmb	IAmb	16	21	49.5		
	comp=Z,93nm,0.9s										
TRO	**Tromso**	**65.23**	**341**	*e*	P	**P**	**16**	**21**	**53.4**	**+0.3**
TRO				*e*	S	**S**	**16**	**30**	**35.6**	**+3.0**
DAG	**Danmarks Havn**	**65.28**	**355**	⇑	*i* P	**P**	**16**	**21**	**53.5**	**+0.2**
	comp=Z,43nm,0.7s										
NLWA	**Neilton Lookou**	**66.41**	**48**	*e*	P	**P**	**16**	**22**	**03.4**	**+2.2**
	comp=Z,130nm,1.3s										
A04D	**Lummi Island**	**66.41**	**46**		P	**P**	**16**	**22**	**02.5**	**+1.5**
	baz=300										
MOS	**Moscow**	**66.83**	**323**	*e*	P	**P**	**16**	**22**	**01.7**	**-1.9**
MOS				*e*			16	22	33.2		
MOS				*e*			16	24	29.6		
MOS				*e*	S	S	16	30	42.2	-10	
MOS					pmax	pmax					
	comp=Z,500nm,1.7s										
MOS					pmax	pmax					
	comp=Z,295nm,1.5s										
MOS					pmax	pmax					
	comp=N,153nm,1.4s										
MOS					pmax	pmax					
	comp=E,122nm,1.5s										
B05A	**Bryant**	**67.00**	**46**		P	**P**	**16**	**22**	**05.4**	**+0.6**
	baz=301,SNR=5.6										
VRH	**Novokhopyorsk**	**67.19**	**318**	*e*	P	**P**	**16**	**22**	**05.4**	**-0.5**
VRH				*e*	S	**S**	**16**	**30**	**51.7**	**-5.1**
VRH					pmax	pmax					
	comp=Z,150nm,0.6s										
VRH					pmax	pmax					
	comp=Z,40nm,0.3s										
VRH					smax	smax					
	comp=E,270nm,5.0s										
VRH					MLR	MLR					
	comp=Z,3µm,16.0s										
F04D	**Rainier, OR**	**67.58**	**49**		P	**P**	**16**	**22**	**10.3**	**+1.7**
	baz=301										
OBN	**Obninsk**	**67.68**	**323**		P	**P**	**16**	**22**	**09.0**	**0.0**
	comp=Z,76nm,0.6s,baz=43,slow=2.9,SNR=50										
OBN	**Obninsk**	**67.68**	**323**	*c*	*i* P	**P**	**16**	**22**	**08.9**	**0.0**
OBN					*i*		16	22	22.5		
OBN					*i*		16	22	37.4		
OBN					*i*		16	24	38.0		
OBN					pmax	pmax					
	comp=Z,162nm,1.2s										
OBN					MLR	MLR					
	comp=Z,940nm,16.0s										
OBN	**Obninsk**	**67.68**	**323**	*e*	P	**P**	**16**	**22**	**08.7**	**-0.3**
	comp=Z,468nm,1.6s										
PUL	**Pulkovo**	**67.75**	**329**	⇓	*i* P	**P**	**16**	**22**	**10.3**	**+1.0**
PUL					pmax	pmax					
	comp=Z,80nm,0.5s										
C06D	**Leavenworth**	**67.86**	**46**		P	**P**	**16**	**22**	**11.9**	**+1.6**
	baz=302										
G03D	**McMinnville, O**	**67.89**	**49**		P	**P**	**16**	**22**	**12.2**	**+1.7**
	baz=302										
LPSR	**Galich'ya Gora**	**67.90**	**320**	*e*	P	**P**	**16**	**22**	**10.2**	**-0.2**
LPSR					pmax	pmax					
	comp=Z,200nm,0.9s										
LPSR					pmax	pmax					
	comp=Z,30nm,0.4s										
LPSR					MLR	MLR					
	comp=Z,3µm,18.0s										
LON	**Longmire**	**67.95**	**47**	*e*	P	**P**	**16**	**22**	**12.0**	**+1.1**
LON					pmax	pmax					
	comp=Z,23nm,1.3s										
LON	**Longmire**	**67.95**	**47**	*e*	P	**P**	**16**	**22**	**11.5**	**+0.6**
	comp=Z,23nm,1.3s										
LTY	**Liberty**	**68.34**	**47**	*e*	P	**P**	**16**	**22**	**14.4**	**+1.0**
	comp=Z,68nm,1.4s										
FIA1	**FINESS Array S**	**68.36**	**332**	*e*	P	**P**	**16**	**22**	**12.9**	**-0.3**
FIA0	**FINESS Array S**	**68.36**	**332**	*e*	P	**P**	**16**	**22**	**12.9**	**-0.2**
FIA0	**FINESS Array S**	**68.36**	**332**	*e*	P	**P**	**16**	**22**	**12.9**	**-0.2**
FINES	**FINESS Array B**	**68.36**	**332**		P	**P**	**16**	**22**	**12.9**	**-0.2**
	comp=Z,73nm,0.6s,baz=47,slow=8.4,SNR=219										
FINES					LR	LR	16	54	29.1		
	comp=Z,3µm,18.8s,baz=50,slow=38										
FINES	**FINESS Array B**	**68.36**	**332**		P	**P**	**16**	**22**	**12.9**	**-0.2**
FINES					pmax	pmax					
	comp=Z,72nm,0.6s										
FINES					MLR	MLR					
	comp=Z,3µm,18.8s										
B08A	**Colville Reser**	**68.51**	**45**	*e*	P	**P**	**16**	**22**	**15.2**	**+0.8**
	comp=Z,56nm,1.2s										
VSR	**Storozhevoye**	**68.53**	**319**	*e*	P	**P**	**16**	**22**	**14.0**	**-0.4**
VSR				*e*	S	**S**	**16**	**31**	**07.9**	**-5.1**
VSR					pmax	pmax					
	comp=Z,250nm,1.0s										
VSR					pmax	pmax					
	comp=Z,40nm,0.3s										
VSR					smax	smax					
	comp=N,270nm,5.0s										
VSR					MLR	MLR					
	comp=Z,3µm,16.0s										
I03D	**Drain, OR**	**68.62**	**51**		P	**P**	**16**	**22**	**16.2**	**+1.1**
	baz=302,SNR=6.4										
H04A	**Detroit Lake**	**68.81**	**49**	*e*	P	**P**	**16**	**22**	**17.7**	**+1.4**
	comp=Z,73nm,1.1s										
MOR8	**Moi Rana**	**68.89**	**340**	*e*	P	**P**	**16**	**22**	**15.1**	**-1.3**
MOR8					IAmb	IAmb	16	22	16.1		
	comp=Z,124nm,0.9s										
G05D	**Wamic, OR**	**69.04**	**49**		P	**P**	**16**	**22**	**18.9**	**+1.1**
	baz=303										
STKA	**Stephens Creek**	**69.05**	**180**		P	**P**	**16**	**22**	**17.6**	**-0.1**
	comp=Z,7.2nm,0.6s,baz=346,slow=7.0,SNR=30										
STKA					LR	LR	16	51	33.0		
	comp=Z,659nm,21.7s,baz=4.7,slow=35										
STKA	**Stephens Creek**	**69.05**	**180**	*e*	P	**P**	**16**	**22**	**18.3**	**+0.6**
STKA					pmax	pmax					
	comp=Z,7.0nm,1.0s										
STKA	**Stephens Creek**	**69.05**	**180**	*e*	P	**P**	**16**	**22**	**18.3**	**+0.6**
	comp=Z,7.4nm,1.0s										
I04A	**Tendick Farm,**	**69.15**	**50**		P	**P**	**16**	**22**	**19.3**	**+0.9**
	baz=302,SNR=7.2										
L02D	**Cave Junction,**	**69.28**	**52**		P	**P**	**16**	**22**	**20.8**	**+1.5**
	baz=302										
C09A	**Chrisman Ranch**	**69.41**	**45**	*e*	P	**P**	**16**	**22**	**21.1**	**+1.0**
	comp=Z,44nm,1.0s										
G06A	**Carlson Farm,**	**69.45**	**48**	*e*	P	**P**	**16**	**22**	**21.6**	**+1.3**
	comp=Z,78nm,1.4s										
HUMO	**Hull Mountain**	**69.45**	**52**	*e*	P	**P**	**16**	**22**	**22.2**	**+1.9**
	comp=Z,43nm,1.5s										
D08A	**Wollman Farm,**	**69.45**	**46**	*e*	P	**P**	**16**	**22**	**21.3**	**+1.0**
	comp=Z,34nm,1.0s										
I05D	**Terrebonne, OR**	**69.51**	**49**		P	**P**	**16**	**22**	**22.2**	**+1.5**
	baz=303										
GOF	**Gofitskoye**	**69.73**	**312**	⇑	*i* P	**P**	**16**	**22**	**22.0**	**0.0**
GOF					*e*S	**S**	**16**	**31**	**34.4**	**+7.0**
GOF					pmax	pmax					
	comp=Z,209nm,1.0s										
NEW	**Newport**	**69.80**	**44**		P	**P**	**16**	**22**	**23.4**	**+0.9**
	baz=304										
NEW	**Newport**	**69.80**	**44**	*e*	P	**P**	**16**	**22**	**23.6**	**+1.1**
NEW					pmax	pmax					
	comp=Z,47nm,1.1s										
NEW	**Newport**	**69.80**	**44**	*e*	P	**P**	**16**	**22**	**23.5**	**+1.1**
	comp=Z,47nm,1.1s										
KHMM	**Horse Mountain**	**69.89**	**54**	*e*	P	**P**	**16**	**22**	**24.4**	**+1.2**
	comp=Z,62nm,1.2s										
VSU	**Vasula**	**70.01**	**329**	*c*	*i* P	**P**	**16**	**22**	**23.3**	**-0.1**
VSU					pmax	pmax					
	comp=Z,476nm,1.2s										
YBH	**Yreka Blue Hor**	**70.07**	**52**	*e*	P	**P**	**16**	**22**	**26.1**	**+1.8**
YBH					pmax	pmax					
	comp=Z,45nm,1.2s										
YBH	**Yreka Blue Hor**	**70.07**	**52**	*e*	P	**P**	**16**	**22**	**26.1**	**+1.8**
	comp=Z,45nm,1.2s										
J05D	**Fort Rock, OR**	**70.14**	**50**		P	**P**	**16**	**22**	**26.3**	**+1.6**
	baz=303,SNR=6.1										
BBOO	**Buckleboo**	**70.15**	**185**	*e*	P	**P**	**16**	**22**	**24.7**	**+0.2**
	comp=Z,115nm,1.2s										
M02C	**Callahan**	**70.17**	**53**		P	**P**	**16**	**22**	**26.0**	**+1.2**
	baz=303										
K04D	**Chiloquin, OR**	**70.19**	**51**		P	**P**	**16**	**22**	**26.2**	**+1.3**
	baz=303										
SUMG	**Summit**	**70.19**	**360**	⇑	*i* P	**P**	**16**	**22**	**25.7**	**+0.9**
	comp=Z,45nm,0.9s										
SUMG	**Summit**	**70.19**	**360**	*e*	P	**P**	**16**	**22**	**25.6**	**+0.8**
SUMG					pmax	pmax					
	comp=Z,63nm,1.1s										
SUMG	**Summit**	**70.19**	**360**	*e*	P	**P**	**16**	**22**	**25.6**	**+0.8**
	comp=Z,63nm,1.1s										
DGRG	**David-gareji**	**70.27**	**307**		P	**P**	**16**	**22**	**26.1**	**+0.6**
DGRG	**David-gareji**	**70.27**	**307**		P	**P**	**16**	**22**	**26.0**	**+0.6**
GUDG	**Gudauri**	**70.28**	**309**		P	**P**	**16**	**22**	**26.6**	**+1.0**
ZEI	**Tsey**	**70.45**	**309**	*e*	P	**P**	**16**	**22**	**26.2**	**-0.5**
ZEI					pmax	pmax					
	comp=Z,479nm,1.5s										
N02D	**Trinity Center**	**70.49**	**53**		P	**P**	**16**	**22**	**28.4**	**+1.6**
	baz=303										
TBLG	**Delisi**	**70.51**	**308**		P	**P**	**16**	**22**	**28.9**	**+2.0**
TBLG	**Delisi**	**70.51**	**308**		P	**P**	**16**	**22**	**28.8**	**+2.0**
KBZ	**Khabaz**	**70.55**	**310**		P	**P**	**16**	**22**	**27.4**	**+0.4**
	comp=Z,96nm,0.9s,baz=76,slow=5.3,SNR=112										
KBZ					LR	LR	16	58	16.8		
	comp=Z,1µm,18.5s,baz=54,slow=40										
KIV	**Kislovodsk**	**70.55**	**311**	*i*	P	**P**	**16**	**22**	**27.6**	**+0.5**
	SNR=84										
KIV	**Kislovodsk**	**70.55**	**311**	*c*	*i* P	**P**	**16**	**22**	**27.4**	**+0.2**
KIV					*i*		16	22	47.1		
KIV					pmax	pmax					
	comp=Z,479nm,1.2s										
KIV					MLR	MLR					
	comp=Z,1µm,19.0s										
KIV	**Kislovodsk**	**70.55**	**311**	*e*	P	**P**	**16**	**22**	**27.8**	**+0.6**
	comp=Z,297nm,0.9s										
KIV	**Kislovodsk**	**70.55**	**311**		P	**P**	**16**	**22**	**27.6**	**+0.5**
	SNR=62										
KIV					P	**P**	**16**	**22**	**27.6**	**+0.5**
	SNR=62										
KIV	**Kislovodsk**	**70.55**	**311**		P	**P**	**16**	**22**	**27.6**	**+0.5**
	SNR=62										
M04C	**Macdoel**	**70.59**	**52**		P	**P**	**16**	**22**	**28.7**	**+1.2**
	baz=303,SNR=6.4										
K05A	**Summer Lake**	**70.66**	**51**	*e*	P	**P**	**16**	**22**	**29.8**	**+1.9**
	comp=Z,91nm,1.0s										
NSS	**Namsos**	**70.81**	**339**	*e*	P	**P**	**16**	**22**	**28.1**	**-0.1**
WDC	**Whiskeytown Da**	**70.81**	**53**	*e*	P	**P**	**16**	**22**	**30.5**	**+1.9**
WDC					pmax	pmax					
	comp=Z,42nm,1.2s										
WDC	**Whiskeytown Da**	**70.81**	**53**	*e*	P	**P**	**16**	**22**	**30.4**	**+1.7**
	comp=Z,42nm,1.3s

MICGM PM 16 22 38.0
comp=Z,0.4nm,1.2s
MICGM eS S 16 31 54.0 0.0
MICGM eLR LR 16 53 30.0
MICGM LRM MLR 16 57 26.0
comp=Z,5.1nm,12.0s
MNK Minsk 72.06 326⇑ *i*P P 16 22 36.0 +0.1
MNK eS S 16 31 54.0 0.0
MNK pmax pmax
comp=Z,380nm,1.2s
MNK MLR MLR
comp=Z,5μm,12.0s
ISAL Salakas 72.14 327 eP P 16 22 36.9 +0.5
ISAL IAmb IAmb 16 22 38.5
comp=Z,108nm,1.1s
FAQ Al Faqa, Dubai 72.19 288 *i* P P 16 22 37.0 -0.2
SNR=55
FAQ Al Faqa, Dubai 72.19 288 P P 16 22 37.2 -0.1
SNR=34
FAQ P P 16 22 37.2 -0.1
SNR=34
FAQ Al Faqa, Dubai 72.19 288 P P 16 22 37.2 -0.1
SNR=34
WVOR Wild Horse Val 72.20 50 eP P 16 22 38.7 +1.5
WVOR pmax pmax
comp=Z,65nm,1.3s
WVOR Wild Horse Val 72.20 50 eP P 16 22 38.7 +1.5
comp=Z,65nm,1.3s
ARQ Araqi 72.26 286 P P 16 22 38.0 +0.3
SNR=47
ARQ Araqi 72.26 286 P P 16 22 38.0 +0.3
SNR=47
TBLU Trondheim 72.27 339 eP P 16 22 36.1 -0.9
NACGM Naroch 72.29 327 eP P 16 22 36.0 -1.3
NACGM PM 16 22 38.0
comp=Z,0.6nm,1.0s
NACGM eLQ LQ 16 49 44.0
NACGM eLR LR 16 55 32.0
MSO Missoula 72.39 44 P P 16 22 38.7 +0.5
baz=306
MSO Missoula 72.39 44 eP P 16 22 39.0 +0.8
comp=Z,43nm,1.3s
SOC Sochi 72.54 312*c* *i*P P 16 22 39.1 +0.1
SOC ePPP PPP 16 26 59.0
SOC eS S 16 31 59.1 -0.8
SOC *e* 16 32 51.9
SOC eSS SS 16 36 42.6 +4.0
SOC pmax pmax
comp=Z,74nm,0.8s
SOC MLR MLR
comp=Z,2μm,20.0s
ARTV Artvin 72.57 309 *i* P P 16 22 39.5 0.0
DAGI Agillar 72.64 309 *i* P P 16 22 41.0 +1.3
DBOC Borcka 72.64 309 *i* P P 16 22 39.8 +0.1
AFDM Forest Hills D 72.72 54 eP P 16 22 41.2 +1.0
comp=Z,36nm,1.3s
CHMT Chamberlain Mo 72.72 44 eP P 16 22 40.8 +0.5
CAN Canberra 72.83 173 eP P 16 22 41.7 +1.1
CAN pmax pmax
comp=Z,115nm,1.2s
CAN Canberra 72.83 173 eP P 16 22 41.7 +1.1
comp=Z,115nm,1.2s
EATA Eleskirt 72.97 307 *i* P P 16 22 43.0 +1.0
ANN Anapa 73.16 314 eP P 16 22 42.4 -0.2
ANN *e* 16 23 00.7
ANN *e* 16 25 27.3
ANN eS SKiKP 16 32 10.6 +0.2
ANN *e* 16 33 01.5
ANN pmax pmax
comp=Z,142nm,1.3s
ANN MLR MLR
comp=N,2μm,17.0s
ANN MLR MLR
comp=Z,1μm,17.0s
ANN MLR MLR
comp=E,558nm,17.0s
HOMI Horasan 73.23 308 *i* P P 16 22 44.6 +1.2
FFC Flin Flon 73.31 33 eP P 16 22 43.4 +0.1
FFC pmax pmax
comp=Z,26nm,0.8s
FFC Flin Flon 73.31 33 eP P 16 22 43.4 +0.1
comp=Z,26nm,0.8s
MFID Camas Ranch 73.32 48 eP P 16 22 44.8 +1.0
comp=Z,43nm,1.0s
NC405 NORSAR Array S 73.50 337 eP P 16 22 44.3 -0.1
NC303 NORSAR Array S 73.52 337 eP P 16 22 44.7 +0.2
FCC Fort Churchill 73.58 27 eP P 16 22 44.8 0.0
FCC pmax pmax
comp=Z,60nm,1.3s
FCC Fort Churchill 73.58 27 eP P 16 22 44.8 0.0
comp=Z,60nm,1.3s
MOL Molde 73.58 340 eP P 16 22 45.4 +0.7
MOL IAmb IAmb 16 22 46.3
comp=Z,47nm,0.8s
EKAR Karacoban 73.59 307 *i* P P 16 22 47.1 +1.5
CMB Columbia Colle 73.61 55 eP P 16 22 46.7 +1.2
CMB pmax pmax
comp=Z,52nm,1.1s
CMB Columbia Colle 73.61 55 eP P 16 22 46.7 +1.2
comp=Z,52nm,1.1s
NWAO Narrogin (SRO) 73.62 201 eP P 16 22 45.6 +0.3
NWAO e*SP pP 16 23 00.2 +1.4
NWAO pmax pmax
comp=Z,21nm,0.9s
NWAO Narrogin (SRO) 73.62 201 eP P 16 22 45.5 +0.2
comp=Z,21nm,0.9s
HRY Holter Researc 73.62 43 eP P 16 22 45.3 -0.2
NC204 NORSAR Array S 73.67 338 eP P 16 22 45.1 -0.3
NB201 NORSAR Array S 73.68 337 eP P 16 22 45.4 -0.1
NB2 NORSAR Subarra 73.71 337 P P 16 22 45.4 -0.2
comp=Z,69nm,0.8s,baz=39,slow=6.2
NB2 NORSAR Subarra 73.71 337 P P 16 22 45.4 -0.2
baz=39,slow=6.2
NB200 NORSAR Array S 73.71 337 eP P 16 22 45.5 -0.2
NOA NORSAR Array B 73.71 337 P P 16 22 45.5 -0.2
comp=Z,51nm,0.8s,baz=40,slow=5.9,SNR=226
NOA LR LR 16 58 43.7
comp=Z,2μm,19.4s,baz=35,slow=39
NBO02 NORSAR Array S 73.82 337 eP P 16 22 46.5 +0.2
LRM Limekiln Ridge 73.82 44 eP P 16 22 47.8 +0.9
NC602 NORSAR Array S 73.85 337 eP P 16 22 45.5 -0.9
NC602 NORSAR Array S 73.85 337 eP P 16 22 46.2 -0.2
NBO00 NORSAR Array S 73.86 337 eP P 16 22 46.3 -0.2
AKASG Malin Array Be 73.88 322 P P 16 22 46.3 -0.5
comp=Z,39nm,0.5s,baz=46,slow=6.4,SNR=270
AKASG LR LR 16 58 20.9
comp=Z,2μm,18.1s,baz=55,slow=38
AKBB Malin Array Si 73.88 322 eP P 16 22 46.4 -0.4
AKBB pmax pmax
comp=Z,140nm,1.0s
AKBB Malin Array Si 73.88 322 eP P 16 22 46.3 -0.5
comp=Z,136nm,1.0s
KIEV Kiev 73.89 322*c* *i*P P 16 22 46.6 -0.2
KIEV pmax pmax
comp=Z,138nm,1.0s
KIEV Kiev 73.89 322 eP P 16 22 46.3 -0.5
comp=Z,135nm,1.0s
AK11 Malin Array Si 73.92 322 eP P 16 22 46.8 -0.2
EGMT Eagleton 73.92 41 P P 16 22 47.7 +0.5
baz=309
EGMT Eagleton 73.92 41 eP P 16 22 47.9 +0.7
comp=Z,118nm,1.4s
WAKR Walker 73.95 54 eP P 16 22 49.2 +1.5
NAO01 NORSAR Array S 73.97 337 eP P 16 22 47.0 -0.1
DLMT Dillon 74.02 45 eP P 16 22 48.9 +1.0
comp=Z,46nm,1.0s
AKN Aaknes 74.05 340 eP P 16 22 48.1 +0.6
AKN IAmb IAmb 16 22 49.3
comp=Z,61nm,1.1s
HLID Hailey 74.06 47 P P 16 22 49.2 +1.0
baz=307
HLID Hailey 74.06 47 eP P 16 22 49.6 +1.4
comp=Z,37nm,1.2s
MCMT McKenzie Canyo 74.20 45 eP P 16 22 49.6 +0.5
BOZ Bozeman (W) 74.38 44 P P 16 22 50.8 +0.8
baz=308
BOZ Bozeman (W) 74.38 44 eP P 16 22 51.2 +1.2
BOZ pmax pmax
comp=Z,67nm,1.3s
BOZ Bozeman (W) 74.38 44 eP P 16 22 50.9 +0.9
comp=Z,67nm,1.3s
SUW Suwalki 74.45 327 eP P 16 22 49.0 -1.0
SUW LMZ LR 16 58 19.0
SUW Suwalki 74.45 327 eP P 16 22 49.0 -1.0
SUW MLR MLR
comp=Z,2μm,19.3s
NV01 Mina Array Sit 74.72 53 eP P 16 22 53.3 +1.1
NVAR Mina Array Bea 74.72 53 P P 16 22 53.2 +1.0
comp=Z,5.7nm,0.6s,baz=297,slow=5.9,SNR=32
NVAR pP pP 16 23 08.0 +2.3
comp=Z,24nm,0.9s,baz=293,slow=4.7,SNR=20
NVAR LR LR 16 49 31.4
comp=Z,391nm,21.8s,baz=288,slow=31
OSL Oslo 74.73 337 eP P 16 22 52.0 +0.5
KELT Kelkit 74.83 309 *i* P P 16 22 53.1 +0.4
MLAC Mammoth, Mammo 74.85 54 P P 16 22 54.3 +1.4
baz=306
SIM Simferopol' 74.95 315*c* *i*P P 16 22 53.0 -0.1
SIM eS S 16 32 30.0 +3.0
SIM pmax pmax
comp=Z,84nm,0.7s
SIM MLR MLR
comp=Z,610nm,16.8s
DPD Davis Peak 74.96 57 eP P 16 22 50.0 -3.3
DPD ePcP PcP 16 22 54.6 -12
QLMT Earthquake Lak 75.00 45 eP P 16 22 55.0 +1.3
HYA Hoyanger 75.09 339 eP P 16 22 53.9 +0.3
HYA IAmb IAmb 16 22 55.1
comp=Z,94nm,1.0s
ELK Elko 75.26 50 eP P 16 22 56.9 +1.6
ELK pmax pmax
comp=Z,27nm,1.2s
ELK Elko 75.26 50 eP P 16 22 56.7 +1.4
comp=Z,27nm,1.3s
KLNR Kaliningrad 75.28 329 *i* P P 16 22 54.8 0.0
KLNR pmax pmax
comp=Z,167nm,1.1s
KONO Kongsberg 75.31 337 eP P 16 22 55.1 +0.2
KONO eS S 16 32 31.8 +1.4
KONO Kongsberg 75.31 337 eP P 16 22 55.1 +0.2
KONO pmax pmax
comp=Z,30nm,0.9s
KONO Kongsberg 75.31 337 eP P 16 22 55.0 +0.1
comp=Z,30nm,0.9s
YMR Madison River 75.36 45 eP P 16 22 57.2 +1.5
comp=Z,50nm,1.2s
GCMT Greycliff 75.37 43 eP P 16 22 56.5 +0.8
SFJD Kangerlussuaq 75.39 5 *i* P P 16 22 55.6 +0.4
SFJD Kangerlussuaq 75.39 5 eP P 16 22 55.6 +0.4
SFJD pmax pmax
comp=Z,34nm,1.2s
SFJD Kangerlussuaq 75.39 5 eP P 16 22 55.5 +0.4
comp=Z,34nm,1.3s
SMMC Simmler 75.44 57 P P 16 22 57.6 +1.4
baz=306
YFT Old Faithful 75.56 45 eP P 16 22 59.0 +2.1
comp=Z,58nm,1.1s
TIN Timenaha, Big 75.58 54 P P 16 22 58.4 +1.4
baz=306
SUE Sulen 75.58 340 eP P 16 22 57.2 +0.9
H17A Grant Village 75.74 45 P P 16 23 00.0 +2.0
baz=309
H17A Grant Village 75.74 45 eP P 16 23 00.8 +2.7
comp=Z,58nm,0.9s
PKM Mcpherson Peak 75.81 57 P P 16 22 59.8 +1.4
baz=306
IMW Indian Meadow 75.85 45 eP P 16 23 00.4 +1.7
comp=Z,90nm,1.4s
FLWY Flagg Ranch 75.87 45 eP P 16 23 00.5 +1.8
comp=Z,130nm,1.5s
SHAO Shalim 75.95 282 P P 16 22 59.4 +0.1
SNR=7.0
SHAO Shalim 75.95 282 P P 16 22 59.4 +0.1
SNR=7.0
BER Bergen 75.98 339 eP P 16 22 59.4 +0.8
SORM Soroca 75.98 321⇓ *i*P P 16 22 58.5 -0.4
SORM Soroca 75.98 321⇑ P P 16 22 58.5 -0.4
ODD1 Odda 75.99 338 eP P 16 22 59.6 +0.8
ODD1 IAmb IAmb 16 23 00.5
comp=Z,46nm,0.9s
RLMT Red Lodge 76.01 43 P P 16 23 00.4 +0.9
baz=310
RLMT Red Lodge 76.01 43 eP P 16 23 00.3 +0.9
comp=Z,51nm,1.3s
ERBA Erbaa 76.03 311 *i* P P 16 23 00.1 +0.6
MOOW Moose Ponds 76.05 45 eP P 16 23 01.2 +1.4
comp=Z,50nm,1.3s
HVU Hansel Valley 76.11 48 eP P 16 23 00.6 +0.6
HVU pmax pmax
comp=Z,34nm,1.0s
HVU Hansel Valley 76.11 48 eP P 16 23 00.6 +0.6
comp=Z,34nm,1.0s
SBC Santa Barbara 76.14 57 P P 16 23 01.8 +1.8
baz=306
GRAC Grapevine Rang 76.17 54 P P 16 23 00.3 0.0
baz=307
LOHW Long Hollow 76.22 45 eP P 16 23 00.7 0.0
comp=Z,25nm,1.1s
REDW Red Top Meadow 76.24 46 eP P 16 23 02.2 +1.4
comp=Z,58nm,1.3s
ISA Isabella, Lake 76.24 56 P P 16 23 00.7 0.0
baz=306
ISA Isabella, Lake 76.24 56 eP P 16 23 01.5 +0.8
ISA pmax pmax
comp=Z,29nm,1.2s
ISA Isabella, Lake 76.24 56 eP P 16 23 01.2 +0.5
comp=Z,29nm,1.3s
ARVC Arvin 76.32 56 P P 16 23 02.0 +0.8
baz=306
HAVZ Havza 76.41 311 *i* P P 16 23 01.9 +0.3
CUKAN kangal_SIVAS 76.43 309 *i* P P 16 23 02.9 +1.0
BLS5 Blasjo 76.44 338 eP P 16 23 02.0 +0.7
DAC Darwin (Calif) 76.45 55 eP P 16 23 02.9 +0.8
DAC pmax pmax
comp=Z,36nm,1.1s
DAC Darwin (Calif) 76.45 55 eP P 16 23 02.9 +0.8
comp=Z,36nm,1.1s
AHID Auburn Hatcher 76.47 46 eP P 16 23 03.4 +1.3
comp=Z,24nm,0.9s
DGMT Dagmar 76.47 39 P P 16 23 02.3 +0.5
baz=312
DGMT Dagmar 76.47 39 eP P 16 23 02.5 +0.7
comp=Z,61nm,1.0s
BGU Big Grassy Mou 76.48 49 eP P 16 23 03.8 +1.6
comp=Z,25nm,1.1s
R11A Troy Canyon, C 76.49 52 P P 16 23 02.9 +0.7
baz=307
R11A Troy Canyon, C 76.49 52 eP P 16 23 03.5 +1.3
comp=Z,51nm,1.1s
KIS Kishinev 76.49 319 eP P 16 23 02.0 +0.2
comp=Z,200nm,1.0s
KIS Kishinev 76.49 319 ePPP PPP 16 27 50.0
KIS LRM MLR 16 59 36.0
comp=Z,4μm,18.0s
KIS Kishinev 76.49 319 eP P 16 23 02.0 +0.2
KIS *e* 16 26 02.0
KIS ePPP PPP 16 27 50.0
KIS *e* 16 32 48.0
KIS *e* 16 33 10.0
KIS pmax pmax
comp=Z,200nm,1.0s
KIS MLR MLR
comp=N,2μm,16.0s
KIS MLR MLR
comp=E,2μm,16.0s
KIS MLR MLR
comp=Z,4μm,16.0s
SFNV Sufian 76.50 306 eP P 16 23 03.0 +0.8
SPUT South Promonto 76.59 48 eP P 16 23 03.6 +0.9
comp=Z,46nm,1.3s
RAO Raoul Island 76.61 144 LR LR 16 50 32.0
comp=Z,758nm,21.5s,baz=9.0,slow=31
LAO LASA Array 76.62 41 P P 16 23 03.3 +0.6
baz=311
LAO LASA Array 76.62 41 eP P 16 23 04.1 +1.4
comp=Z,127nm,1.4s
MPMC Manual Prospec 76.65 55 P P 16 23 03.9 +0.7
baz=307
BOYT Boyabat 76.68 312 *i* P P 16 23 03.3 +0.2
A25A Svangstu Ranch 76.69 38 P P 16 23 04.0 +1.0
baz=313
OSI Osito Audit: C 76.69 57 P P 16 23 04.2 +0.9
baz=307
HOMB Homborsund 76.75 337 eP P 16 23 03.0 -0.1
AKCD Akcadag 76.76 308 *i* P P 16 23 04.6 +0.8
BLG Laguna Peak, P 76.77 57 P P 16 23 04.3 +0.6
baz=307
FURC Furnace Creek, 76.81 54 P P 16 23 04.5 +0.7
baz=307
LRMC Laurel Mtn Rad 76.87 55 P P 16 23 05.4 +1.0
baz=307
TPNV Topopah Spring 76.91 53 P P 16 23 05.4 +0.7
baz=307
TPNV Topopah Spring 76.91 53 eP P 16 23 05.8 +1.2
TPNV pmax pmax
comp=Z,73nm,1.1s
TPNV Topopah Spring 76.91 53 eP P 16 23 05.8 +1.2
comp=Z,73nm,1.1s
HWUT Hardware Ranch 76.92 47 eP P 16 23 06.1 +1.5
comp=Z,96nm,1.3s
LVV L'vov 76.96 324⇓ *i*P P 16 23 04.2 -0.2
LVV *e* 16 23 23.0
LVV *e* 16 25 59.6
LVV ePPP PPP 16 27 48.4
LVV eS S 16 32 47.0 -1.9
LVV *e* 16 33 17.0
LVV ePS PnS 16 33 48.4 +16
LVV MLR MLR
comp=N,1μm,15.0s
LVV MLR MLR
comp=E,1μm,15.0s
LVV MLR MLR
comp=Z,2μm,16.0s
SNCC San Nicolas Is 76.97 58 P P 16 23 05.8 +1.0
baz=306
KMY Karmoy 76.97 339 eP P 16 23 05.2 +0.9
KMY IAmb IAmb 16 23 06.0
comp=Z,39nm,1.0s
BSD Bornholm Skovb 76.99 332⇑ *i*P P 16 23 04.5 0.0
comp=Z,115nm,1.1s
comp=Z,1μm,22.0s
IAS Iasi 77.01 320⇑ *i*P P 16 23 05.0 +0.3
IAS Iasi 77.01 320 ⇑P P 16 23 05.0 +0.3
BEL Belsk 77.01 327 eP P 16 23 05.6 +0.9
BEL LMZ LR 16 59 38.5
BEL Belsk 77.01 327⇑ eP P 16 23 05.7 +1.0
BEL MLR MLR
comp=Z,2μm,18.1s
EDW2 Edwards Air Fo 77.02 56 P P 16 23 05.8 +0.6
baz=307
DUG Dugway, Tooele 77.06 49 P P 16 23 06.6 +1.2
baz=308
DUG Dugway, Tooele 77.06 49 eP P 16 23 06.8 +1.4
DUG pmax pmax
comp=Z,45nm,1.0s
DUG Dugway, Tooele 77.06 49 eP P 16 23 06.9 +1.4
comp=Z,45nm,1.0s
STAV Stavanger 77.07 338 eP P 16 23 04.3 -0.5
SNART Snartemo 77.10 337 eP P 16 23 05.2 +0.1
B25A Knox Farm, Ray 77.12 38 P P 16 23 06.2 +0.7
baz=313
LEOM Leova 77.13 319⇑ *i*P P 16 23 05.9 +0.5
LEOM Leova 77.13 319 ⇑P P 16 23 05.9 +0.5
BORG Borgarnes 77.15 352 *i* P P 16 23 02.4 -2.8
DECC Green Verdugo 77.17 57 P P 16 23 06.9 +0.9
baz=307
SURC SANLIURFA_SURC 77.19 307 *i* P P 16 23 07.3 +1.3
A26A Wade Farm, Ken 77.24 37 P P 16 23 06.3 +0.2
baz=313
BW06 Boulder Array 77.35 46 P P 16 23 07.6 +0.5
baz=310
BW06 Boulder Array 77.35 46 eP P 16 23 07.3 +0.2
PD31 Pinedale Array 77.35 46 eP P 16 23 07.3 +0.2
PDAR Pinedale Array 77.35 46 P P 16 23 07.5 +0.4
comp=Z,6.7nm,0.5s,baz=271,slow=1.3,SNR=95
PDAR pP **pP** 16 23 22.6 +1.8
comp=Z,13nm,0.9s,baz=252,slow=1.4,SNR=9.6
PDAR LR LR 16 53 34.5
comp=Z,307nm,21.3s,baz=327,slow=33
MWC Mount Wilson 77.37 57 eP P 16 23 08.2 +0.9
MWC pmax pmax
comp=Z,53nm,1.3s
MWC Mount Wilson 77.37 57 eP P 16 23 08.2 +0.9
comp=Z,53nm,1.3s
CTU Camp Tracy 77.39 48 eP P 16 23 08.5 +1.2
comp=Z,29nm,1.0s
C25A Freed Ranch, W 77.45 39 P P 16 23 08.0 +0.7
baz=313
PSUT Pine Spring 77.45 51 eP P 16 23 08.9 +1.2
comp=Z,48nm,1.2s
COP Copenhagen 77.47 333⇑ *i*P P 16 23 07.6 +0.5
comp=Z,910nm,18.0s
B26A Jensen Ranch, 77.50 38 P P 16 23 08.4 +0.8
baz=313
FMP Fort Macarthur 77.52 57 P P 16 23 08.0 +0.1
baz=307
SHOC Shoshone, Teco 77.53 54 P P 16 23 08.8 +0.9
baz=308
GSC Goldstone, Bar 77.55 55 P P 16 23 09.0 +0.8
baz=307
GSC Goldstone, Bar 77.55 55 eP P 16 23 09.4 +1.3
GSC pmax pmax
comp=Z,32nm,1.0s
GSC Goldstone, Bar 77.55 55 eP P 16 23 09.4 +1.3
comp=Z,32nm,1.0s
GZT Gaziantep 77.56 308 *i* P P 16 23 09.2 +0.9
PRAR RASCA 77.57 321⇓ *i*P P 16 23 08.1 +0.2
A27A Ledoux Ranch, 77.58 37 P P 16 23 08.6 +0.6
baz=314
ILGA Ilgaz 77.61 312 *i* P P 16 23 09.3 +0.8
JLU Jordanelle 77.62 48 eP P 16 23 10.0 +1.4
comp=Z,61nm,1.4s
CIS Catalina Islan 77.62 57 P P 16 23 08.2 -0.3
baz=307
BFSC Mount Baldy Ra 77.62 56 P P 16 23 09.7 +1.0
baz=307
NLU North Lily Min 77.65 49 eP P 16 23 10.3 +1.5
comp=Z,52nm,1.4s
RRX Edison Barstow 77.68 56 P P 16 23 09.2 +0.4
baz=307
77.69 318⇓ *i*P P 16 23 08.6 0.0
TLCR 77.69 318 ⇓P P 16 23 08.6 0.0
KWP Kalwaria Pacla 77.70 324 eP P 16 23 09.0 +0.4
KWP LMZ LR 17 00 56.3
KWP Kalwaria Pacla 77.70 324⇑ *i*P P 16 23 09.8 +1.2
KWP Kalwaria Pacla 77.70 324 ⇑P P 16 23 09.8 +1.2
SCI2 San Clemente I 77.78 58 P P 16 23 09.2 -0.1
baz=307
D25A Fairfield 77.80 39 P P 16 23 10.1 +0.8
baz=313
MPU Maple Canyon 77.88 49 eP P 16 23 11.5 +1.4
comp=Z,43nm,1.1s
BUR08 Bucovina Ar. S 77.89 322 eP P 16 23 10.2 +0.3
BURAR Bucovina Array 77.90 322⇓ *i*P P 16 23 10.6 +0.7
BURAR Bucovina Array 77.90 322 ⇓P P 16 23 10.6 +0.7
TESR Tescani 77.93 320⇓ *i*P P 16 23 10.2 +0.3
C26A Wahner Farm, P 77.95 38 P P 16 23 10.4 +0.4
baz=314
B27A Peters Farms, 77.95 37 P P 16 23 10.6 +0.5
baz=314
MUD Monsted U'grnd 77.99 335 *i* P P 16 23 10.5 +0.5
comp=Z,84nm,1.2s
comp=Z,2μm,17.0s
RGN Rugen 78.02 332 eP P 16 23 11.0 +0.7
comp=Z,225nm,1.5s
TUQ Turquoise Moun 78.04 55 P P 16 23 11.3 +0.4
baz=308
CFR Carcaliu 78.05 318⇑ *i*P P 16 23 10.9 +0.3
CFR Carcaliu 78.05 318 ⇑P P 16 23 10.9 +0.3
A28A Rude Farm, Bot 78.08 36 P P 16 23 11.3 +0.6
baz=315
BBRC Big Bear Solar 78.10 56 P P 16 23 11.6 +0.2
baz=308
CDAG Cicekdag 78.12 311 *i* P P 16 23 11.3 0.0
HEC Hector,Ludlow 78.14 55 P P 16 23 12.0 +0.6
baz=308
ABTO Aybut 78.14 283 P P 16 23 11.1 -0.6
SNR=14
ABTO Aybut 78.14 283 P P 16 23 11.1 -0.6
SNR=14
ANDN Andirin 78.19 308 *i* P P 16 23 12.5 +0.8
E25A Miller Ranch, 78.20 40 P P 16 23 11.9 +0.3
baz=313
ODBI Odobesti 78.22 319⇑ *i*P P 16 23 14.0 +2.4
C27A Sayler Ranch, 78.31 38 P P 16 23 12.9 +0.9
baz=314
MURC Murrieta 78.32 57 P P 16 23 13.0 +0.7
baz=308
VRI Vrincioaia 78.32 320⇑ *i*P P 16 23 13.2 +1.0
VRI Vrincioaia 78.32 320 ⇑P P 16 23 13.2 +1.0
D26A Manning 78.33 39 P P 16 23 13.2 +1.0
baz=313
OUZ Omahuta 78.33 154 eP P 16 23 14.2 +2.2
comp=Z,88nm,1.6s
AVNS Nevsehir-Avano 78.34 310 *i* P P 16 23 12.6 0.0
B28A Dugan Ranch, T 78.35 37 P P 16 23 13.3 +1.0
baz=315

PLOR Plostina 78.37 320⇑ iP P 16 23 13.4 +0.9
PLOR Plostina 78.37 320 ⇑P P 16 23 13.4 +0.9
TIRR Tirgusor 78.38 318⇓ iP P 16 23 12.8 +0.3
TIRR Tirgusor 78.38 318 eP P 16 23 12.8 +0.3
TIRR pmax pmax
comp=Z,42nm,1.0s
TIRR Tirgusor 78.38 318 eP P 16 23 12.7 +0.3
comp=Z,42nm,1.0s
KOLS Kolonicke sedl 78.40 324 eP P 16 23 12.7 +0.2
KOLS eL L 17 00 59.9
HARR Harsova 78.48 318⇑ iP P 16 23 13.6 +0.6
HARR Harsova 78.48 318 ⇑P P 16 23 13.6 +0.6
BR101 Keskin Array S 78.49 311 eP P 16 23 13.7 +0.3
BR131 Keskin Array S 78.49 311 eP P 16 23 13.6 +0.2
BRTR Keskin Array B 78.49 311 P P 16 23 13.7 +0.2
comp=Z,23nm,0.9s,baz=97,slow=4.0,SNR=78
BRTR LR LR 17 02 37.6
comp=Z,486nm,18.9s,baz=48,slow=39
MSU Marysvale 78.49 50 eP P 16 23 15.8 +2.3
MSU Marysvale 78.49 50 eP P 16 23 15.1 +1.6
GRER 78.52 319⇑ iP P 16 23 15.5 +2.3
STHS Stebnicka Huta 78.53 325 eP P 16 23 14.2 +1.0
A29A Manning Farm, 78.55 36 P P 16 23 14.1 +0.7
baz=315
F25A Bowman 78.56 40 P P 16 23 14.1 +0.6
baz=313
DRWC Darouich 78.58 307 eP P 16 23 14.4 +0.6
TMUT Trail Mountain 78.59 49 eP P 16 23 15.6 +1.5
comp=Z,57nm,1.5s
UZH Uzhgorod 78.60 324⇓ iP P 16 23 13.2 -0.4
UZH e 16 23 23.6
UZH e 16 23 30.6
UZH eS S 16 33 02.2 -4.5
UZH MLR MLR
comp=N,4μm,16.0s
UZH MLR MLR
comp=E,2μm,16.0s
UZH MLR MLR
comp=Z,3μm,16.0s
GMRC Granite Mounta 78.61 55 P P 16 23 15.2 +1.1
baz=308
OJC Ojcow 78.61 326 eP P 16 23 13.9 +0.3
OJC LMZ LR 17 00 49.4
OJC Ojcow 78.61 326⇑ eP P 16 23 14.0 +0.3
OJC MLR MLR
comp=Z,2μm,18.1s
OJC Ojcow 78.61 326 eP P 16 23 13.7 +0.1
comp=Z,123nm,1.0s
ARCR ARCALIA 78.69 322⇓ iP P 16 23 15.7 +1.6
E26A Carlson Angus 78.69 39 P P 16 23 14.8 +0.6
baz=314
BMR Baia Mare 78.70 322⇑ iP P 16 23 15.3 +1.1
BMR Baia Mare 78.70 322 ⇑P P 16 23 15.3 +1.1
D27A Center 78.72 38 P P 16 23 15.0 +0.6
baz=314
BCAM Yenicaga 78.72 313 iP P 16 23 15.1 +0.6
P17A Butcher Ranch, 78.75 49 eP P 16 23 15.9 +1.0
comp=Z,70nm,1.1s
LCMT Little Creek M 78.77 52 eP P 16 23 16.5 +1.6
comp=Z,60nm,1.2s
MTPU Mount Pierson 78.78 51 eP P 16 23 15.2 0.0
comp=Z,41nm,1.1s
PFO Pinyon Flats O 78.80 56 P P 16 23 15.8 +0.7
baz=308
PFO Pinyon Flats O 78.80 56 eP P 16 23 17.0 +1.9
PFO e*PP pP 16 23 31.3 +2.5
PFO Pinyon Flats O 78.80 56 eP P 16 23 16.6 +1.4
comp=Z,72nm,1.4s
CRVS Cervenica-Dubn 78.80 324 eP P 16 23 15.1 +0.4
109C Camp Elliot, M 78.81 57 P P 16 23 15.9 +0.9
baz=308
B29A Wagenman Farm, 78.82 36 P P 16 23 15.6 +0.7
baz=315
AKO Adana 78.82 309 iP P 16 23 15.4 +0.4
C28A Hausauer Farms 78.85 37 P P 16 23 16.2 +1.1
baz=315
BELC Belle Mtn. Jos 78.86 56 P P 16 23 15.9 +0.4
baz=308
ANTO Ankara 78.90 312 eP P 16 23 16.0 +0.4
ANTO pmax pmax
comp=Z,74nm,1.0s
ANTO Ankara 78.90 312 eP P 16 23 15.9 +0.4
comp=Z,74nm,1.0s
ISR Istrita 78.92 319⇑ iP P 16 23 16.8 +1.3
ISR Istrita 78.92 319 ⇑P P 16 23 16.8 +1.3
BR231 Keskin MP Arra 78.93 312 eP P 16 23 14.2 -1.6
MSAB Monastry St. A 78.94 318⇓ iP P 16 23 16.5 +1.0
P18A Preston Nutter 78.95 48 eP P 16 23 17.1 +1.0
comp=Z,113nm,1.6s
NIE Niedzica 78.96 325 eP P 16 23 16.5 +0.9
NIE LMZ LR 17 01 57.5
NIE Niedzica 78.96 325⇑ eP P 16 23 16.5 +0.9
NIE MLR MLR
comp=Z,1μm,18.2s
A30A Hoffart Farm, 78.97 35 P P 16 23 16.3 +0.6
baz=316
MLR Muntele Rosu 78.98 320⇓ iP P 16 23 16.4 +0.5
MLR Muntele Rosu 78.98 320 eP P 16 23 16.1 +0.2
MLR pmax pmax
comp=Z,104nm,1.4s
MLR Muntele Rosu 78.98 320 eP P 16 23 16.1 +0.2
comp=Z,104nm,1.4s
F26A Lodgepole 79.02 40 P P 16 23 16.6 +0.6
baz=314
KNB Kanab 79.03 52 eP P 16 23 18.0 +1.5
KNB pmax pmax
comp=Z,107nm,1.4s
KNB Kanab 79.03 52 eP P 16 23 18.0 +1.5
comp=Z,107nm,1.4s
BTCH Batrach 79.07 307 eP P 16 23 14.8 -1.7
G25A Newell 79.08 41 P P 16 23 16.6 +0.2
baz=313
YURE YUREGIR 79.10 308 iP P 16 23 17.7 +1.1
ULM Lac du Bonnet 79.11 33 P P 16 23 16.3 -0.1
comp=Z,11nm,0.8s,baz=302,slow=3.6,SNR=9.7
ULM LR LR 16 59 26.2
comp=Z,274nm,21.0s,baz=352,slow=36
ULM Lac du Bonnet 79.11 33 eP P 16 23 16.2 -0.2
comp=Z,24nm,0.9s
SRU San Rafael Swe 79.11 49 eP P 16 23 17.9 +1.0
SRU pmax pmax
comp=Z,45nm,0.9s
SRU San Rafael Swe 79.11 49 eP P 16 23 17.3 +0.4
comp=Z,45nm,0.9s
K22A Casper 79.12 44 P P 16 23 17.4 +0.6
baz=312
K22A Casper 79.12 44 eP P 16 23 16.4 -0.5
comp=Z,76nm,1.4s
D28A Regan 79.13 38 P P 16 23 17.2 +0.6
baz=315
MDND Maddock 79.14 37 P P 16 23 16.8 +0.2
baz=315
MDND Maddock 79.14 37 eP P 16 23 16.6 0.0
comp=Z,290nm,1.8s
E27A Carson 79.17 39 P P 16 23 17.7 +0.8
baz=314
BAR Barrett 79.22 57 eP P 16 23 18.8 +1.4
comp=Z,24nm,0.6s
SECR 79.23 319⇑ iP P 16 23 18.4 +1.3
MMU Miners Mountai 79.23 50 eP P 16 23 18.9 +1.3
MONP2 Monument Peak 79.26 57 P P 16 23 18.6 +0.8
baz=308
KKUL Konya-Kulu 79.28 311 iP P 16 23 17.9 +0.3
NEE2 Needles Airpor 79.29 54 P P 16 23 18.6 +0.9
baz=308
YAYL Yayladag 79.30 307 iP P 16 23 17.6 -0.2
B30A Myrvik Farm, E 79.31 36 P P 16 23 18.2 +0.7
baz=316
CJR Cluj-Napoca 79.32 322⇑ iP P 16 23 19.0 +1.3
CJR Cluj-Napoca 79.32 322 ⇑P P 16 23 19.0 +1.3
IRM Iron Mountain 79.33 55 P P 16 23 19.0 +1.1
baz=308
F27A Lemmon 79.33 39 P P 16 23 18.4 +0.7
baz=314
SULR 79.37 319⇑ iP P 16 23 18.8 +0.9
RAC Raciborz 79.41 327 eP P 16 23 19.1 +1.1
RAC MLR MLR
comp=Z,2μm,17.1s
BC3 Big Chuckawall 79.43 56 P P 16 23 19.1 +0.6
baz=308
G26A Maurine 79.43 40 P P 16 23 18.8 +0.5
baz=314
VOIR 79.48 320⇓ iP P 16 23 19.1 +0.5
VOIR 79.48 320 ⇓P P 16 23 19.1 +0.5
RSSD Black Hills 79.48 42 P P 16 23 19.1 +0.3
baz=313
RSSD Black Hills 79.48 42 eP P 16 23 19.3 +0.5
RSSD pmax pmax
comp=Z,47nm,1.4s
RSSD Black Hills 79.48 42 eP P 16 23 19.0 +0.1
comp=Z,47nm,1.4s
SLNF Slenfeh 79.50 307 eP P 16 23 17.1 -1.8
E28A Huff 79.50 38 P P 16 23 19.0 +0.4
baz=315
LANS Liptovska Anna 79.53 325 eP P 16 23 20.2 +1.5
DED Mersin 79.54 309 iP P 16 23 18.4 -0.6
KECS Kecovo 79.55 325 eP P 16 23 18.9 +0.1
W13A Hualapai Mount 79.56 54 eP P 16 23 20.3 +0.9
comp=Z,33nm,1.3s
OKC Ostrava-Krasne 79.61 327 eP P 16 23 19.3 +0.2
OKC epP pP 16 23 33.6 +0.8
OKC ePP PP 16 26 21.3 +1.7
OKC AMS AMS 17 01 40.0
comp=Z,2μm,16.0s
OKC Ostrava-Krasne 79.61 327 eP P 16 23 19.3 +0.2
OKC e 16 23 33.6
OKC e 16 26 21.3
OKC MLR MLR
comp=Z,2μm,16.0s
SWSC Sam W. Stewart 79.64 56 P P 16 23 20.5 +1.0
baz=308
B31A Greenbush Farm 79.64 35 P P 16 23 19.4 +0.1
baz=316
KSP Ksiaz 79.66 328 eP P 16 23 19.7 +0.3
KSP LMZ LR 17 01 19.8
KSP Ksiaz 79.66 328⇑ eP P 16 23 19.7 +0.3
KSP MLR MLR
comp=Z,2μm,20.6s
KERG Konya-Eregli 79.67 309 iP P 16 23 20.1 +0.2
D29A Pettibone, Tap 79.70 37 P P 16 23 20.1 +0.5
baz=315
DRGR 79.70 322⇑ iP P 16 23 20.5 +0.8
DRGR 79.70 322 ⇑P P 16 23 20.5 +0.8
I25A Rochford 79.71 42 P P 16 23 20.5 +0.4
baz=313
G27A Dupree 79.72 40 P P 16 23 20.4 +0.6
baz=314
U15A North Rim 79.73 52 eP P 16 23 21.6 +1.3
comp=Z,65nm,1.2s
ARR Arges 79.74 320⇑ iP P 16 23 21.4 +1.4
C30A Mose, Pekin 79.77 36 P P 16 23 20.4 +0.4
baz=316
BIDA Albida 79.80 306 eP P 16 23 17.7 -2.8
O20A White River Ci 79.80 47 P P 16 23 21.2 +0.6
baz=311
O20A White River Ci 79.80 47 eP P 16 23 21.5 +1.0
comp=Z,40nm,1.2s
H26A Fairpoint 79.81 41 P P 16 23 21.2 +0.8
baz=314
A32A Rocking H Ranc 79.81 35 P P 16 23 20.1 -0.1
baz=317
PDMCI Parker Dam,Lak 79.89 55 P P 16 23 21.8 +0.9
baz=309
MORC Moravsky Berou 79.92 327⇓ iP P 16 23 21.7 +0.8
MORC Moravsky Berou 79.92 327 eP P 16 23 21.7 +0.8
MORC pmax pmax
comp=Z,340nm,1.1s
MORC Moravsky Berou 79.92 327 eP P 16 23 21.3 +0.4
comp=Z,340nm,1.1s
F28A McLaughlin 79.96 39 P P 16 23 21.7 +0.6
baz=315
Y12C Blythe 79.98 55 P P 16 23 22.5 +1.1
baz=309
Y12C Blythe 79.98 55 eP P 16 23 22.3 +0.9
comp=Z,58nm,1.3s
DPC Dobruska-Polom 80.02 328 eP P 16 23 22.0 +0.6
DPC ex x 16 26 12.9
DPC eS S 16 33 23.2 +1.4
DPC AMS AMS 17 02 00.0
comp=Z,2μm,16.8s
DPC Dobruska-Polom 80.02 328 eP P 16 23 22.0 +0.6
DPC eS S 16 33 23.2 +1.4
DPC MLR MLR
comp=Z,2μm,16.8s
E29A Napoleon 80.02 38 P P 16 23 21.8 +0.3
baz=315
KRLC Kraliky 80.03 327 eP P 16 23 21.8 +0.4
KRLC Kraliky 80.03 327 eP P 16 23 21.8 +0.4
UPC Upice 80.03 328 eS S 16 33 20.7 -1.1
UPC AMS AMS 17 01 40.0
comp=Z,2μm,16.5s
C31A Landman Farms, 80.06 36 P P 16 23 21.4 -0.1
baz=316
D30A Buchanan 80.07 37 P P 16 23 22.1 +0.5
baz=316
J25A Sunshine Ranch 80.11 42 P P 16 23 22.3 +0.3
baz=313
LOT Lotru 80.12 321⇑ iP P 16 23 22.7 +0.6
HUMR Humele 80.14 319⇑ iP P 16 23 21.8 -0.3
H27A Howes 80.16 40 P P 16 23 22.4 +0.2
baz=314
I26A New Underwood 80.17 41 P P 16 23 22.8 +0.4
baz=314
B32A Ashes, Strandq 80.17 35 P P 16 23 22.0 -0.1
baz=317
GLA Glamis 80.22 56 P P 16 23 24.0 +1.3
baz=309
GLA Glamis 80.22 56 eP P 16 23 23.5 +0.7
GLA pmax pmax
comp=Z,56nm,0.4s
GLA Glamis 80.22 56 eP P 16 23 23.5 +0.7
comp=Z,56nm,0.4s
PSZ Piszkesteto 80.23 324⇑ iP P 16 23 22.9 +0.3
PSZ Piszkesteto 80.23 324 ⇑P P 16 23 22.9 +0.3
PSZ Piszkesteto 80.23 324 eP P 16 23 23.1 +0.5
comp=Z,137nm,1.2s
DEV Deva 80.25 321⇑ iP P 16 23 23.5 +0.9
DEV Deva 80.25 321 ⇑P P 16 23 23.5 +0.9
A33A Warroad 80.29 34 P P 16 23 22.8 0.0
baz=318,SNR=12
VYHS Vyhne 80.30 325 eP P 16 23 23.4 +0.5
VYHS ePP PP 16 26 22.2 -3.1
VYHS eL L 17 02 17.8
MARH Ras Al Marh 80.31 305 eP P 16 23 14.2 -9.4
PV09 Paradox Valley 80.34 49 eP P 16 23 25.0 +1.4
E30A Jud 80.43 37 P P 16 23 23.9 +0.3
baz=316
G28A Parade 80.44 39 P P 16 23 24.2 +0.5
baz=315
F29A Eureka 80.45 38 P P 16 23 24.0 +0.2
baz=315
PV10 Paradox Valley 80.48 49 eP P 16 23 25.8 +1.4
RAR Rarotonga 80.48 126 LR LR 16 51 52.2
comp=Z,1μm,19.8s,baz=304,slow=30
J26A Sides Ranch, S 80.55 42 P P 16 23 24.4 +0.1
baz=314
AGMN Agassiz Nation 80.55 35 P P 16 23 23.4 -0.8
baz=318
AGMN Agassiz Nation 80.55 35 eP P 16 23 23.7 -0.5
comp=Z,20nm,0.8s
I27A Quinn 80.56 41 P P 16 23 24.6 +0.2
baz=314
SIRR Siria 80.58 322⇓ iP P 16 23 25.2 +0.8
C32A Crookston 80.59 35 P P 16 23 23.8 -0.6
baz=317
D31A Mcclaflin, Tow 80.60 36 P P 16 23 24.2 -0.3
baz=316
MVH1 Achvaich 80.61 342 eP P 16 23 24.5 +0.3
BRG Berggiesshubel 80.61 329 iP P 16 23 24.9 +0.5
comp=Z,68nm,1.2s
BRG Berggiesshubel 80.61 329 S S 16 33 25.0 -2.8
comp=N,706nm,15.3s
comp=Z,2μm,15.5s
comp=Z,2μm,14.4s
BRG Berggiesshubel 80.61 329 iP P 16 23 24.9 +0.5
BRG S S 16 33 25.0 -2.8
BRG pmax pmax
comp=Z,68nm,1.2s
BRG MLR MLR
comp=N,706nm,15.3s
BRG MLR MLR
comp=E,2μm,15.5s
BRG MLR MLR
comp=Z,2μm,14.4s
N23A Red Feather La 80.61 45 P P 16 23 26.1 +1.1
baz=312
N23A Red Feather La 80.61 45 eP P 16 23 26.2 +1.1
comp=Z,97nm,1.4s
PVCC Panska Ves 80.61 329 eP P 16 23 25.0 +0.5
PVCC epP sP 16 23 41.7 -1.8
PVCC ePP PP 16 26 26.0 -1.8
PVCC AMS AMS 17 02 20.0
comp=Z,2μm,16.3s
PVCC Panska Ves 80.61 329 eP P 16 23 25.0 +0.5
PVCC e 16 23 41.7
PVCC e 16 26 26.0
PVCC MLR MLR
comp=Z,2μm,16.3s
PV05 Paradox Valley 80.63 49 eP P 16 23 26.2 +1.0
CLL Collm 80.65 330⇑ iP P 16 23 24.5 -0.1
comp=Z,91nm,1.1s
CLL ePmax 16 23 26.0
CLL ePP PP 16 26 20.0 -8.1
CLL eS S 16 33 33.0 +4.8
CLL ePS PnS 16 34 16.0 -2.5
CLL ePPS PPS 16 34 36.0
CLL eSS SS 16 38 42.0 +1.6
CLL eSSS SSS 16 42 12.0
CLL eSSSS 16 46 00.0
CLL Lmax 17 01 00.0
CLL Lm MLR 17 03 00.0
comp=N,1μm,19.1s
CLL Lm MLR 17 03 00.0
comp=E,700nm,18.7s
CLL Lm MLR 17 03 00.0
comp=Z,1μm,18.5s
CLL Collm 80.65 330⇑ iP P 16 23 24.5 -0.1
CLL eS S 16 33 33.0 +4.8
CLL pmax pmax
comp=Z,91nm,1.1s
CLL MLR MLR
comp=Z,1μm,18.5s
CLL Collm 80.65 330 eP P 16 23 24.6 -0.1
comp=Z,96nm,1.0s
H28A Mission Ridge 80.67 40 P P 16 23 25.2 +0.2
baz=315
VRAC Vranov 80.68 327⇓ iP P 16 23 26.0 +1.1
VRAC Vranov 80.68 327 ⇓P P 16 23 26.0 +1.1
B33A Robert and Kas 80.69 35 P P 16 23 24.5 -0.5
baz=318
TOTH TOTAH 80.76 305 eP P 16 23 21.5 -4.2
F30A Leola 80.85 38 P P 16 23 25.6 -0.3
baz=316
Y14A Wickenburg 80.85 54 eP P 16 23 27.3 +1.1
comp=Z,197nm,1.1s
ULDT Uludag 80.85 314 iP P 16 23 26.6 +0.4
G29A Hoven 80.86 39 P P 16 23 26.1 +0.1
baz=315
D32A Dogwood Acres, 80.87 36 P P 16 23 25.8 -0.1
baz=317
E31A Nome 80.88 37 P P 16 23 25.9 -0.1
baz=316
WUAZ Wupatki 80.89 52 P P 16 23 27.5 +1.0
baz=310
WUAZ Wupatki 80.89 52 eP P 16 23 26.9 +0.4
comp=Z,61nm,1.2s
SMOL Smolenice 80.91 326 eP P 16 23 27.1 +1.0
PV01 Paradox Valley 80.91 49 eP P 16 23 27.7 +1.0
B34A Aery, Baudette 80.95 34 P P 16 23 26.5 +0.1
baz=318
C33A Trail 80.99 35 P P 16 23 26.2 -0.4
baz=318
GOPC GO Pecny, Ondr 80.99 328 eP P 16 23 26.8 +0.2
GOPC eS S 16 33 32.4 +0.4
GOPC AMS AMS 17 02 20.0
comp=Z,2μm,18.7s
GOPC GO Pecny, Ondr 80.99 328 eP P 16 23 26.8 +0.2
GOPC eS S 16 33 32.4 +0.4
GOPC MLR MLR
comp=Z,2μm,18.7s
PRA Prague 81.02 329 AMS AMS 17 02 20.0
comp=Z,2μm,18.3s
PRU Pruhonice 81.04 328 eP P 16 23 27.1 +0.3
PRU epP sP 16 23 44.0 -1.8
PRU ePP PP 16 26 28.8 -2.5
PRU eS S 16 33 30.9 -1.5
PRU AMS AMS 17 02 20.0
comp=Z,2μm,17.3s
PRU Pruhonice 81.04 328 eP P 16 23 27.1 +0.3
PRU e 16 23 44.0
PRU e 16 26 28.8
PRU eS S 16 33 30.9 -1.5
PRU MLR MLR
comp=Z,2μm,17.3s
BRBR Barbar 81.04 305 eP P 16 23 22.9 -4.4
I28A Midland 81.07 40 P P 16 23 27.8 +0.7
baz=315
BZS Buzias 81.07 322⇓ iP P 16 23 27.3 +0.3
BZS Buzias 81.07 322 ⇓P P 16 23 27.3 +0.3
113A Mohawk Valley, 81.09 56 eP P 16 23 28.1 +0.8
comp=Z,47nm,1.3s
H29A Onida 81.11 39 P P 16 23 27.9 +0.6
baz=315
J27A Elkhorn Farm, 81.15 41 P P 16 23 28.3 +0.7
baz=314
SMCO Snowmass 81.17 47 eP P 16 23 29.1 +1.0
comp=Z,42nm,1.4s
TREC Trest 81.17 328 eP P 16 23 27.9 +0.4
TREC epP sP 16 23 44.8 -1.7
TREC AMS AMS 17 02 40.0
comp=Z,2μm,17.2s
TREC Trest 81.17 328 eP P 16 23 27.9 +0.4
TREC e 16 23 44.8
TREC MLR MLR
comp=Z,2μm,17.2s
F31A Hecla 81.20 38 P P 16 23 28.0 +0.2
baz=316
E32A Braaten, Kindr 81.24 36 P P 16 23 27.8 -0.1
baz=317
KAC Achnashellach 81.25 343 eP P 16 23 28.4 +0.6
PHNC Paralimni 81.26 308 P P 16 23 27.6 -0.6
G30A Faulkton 81.29 39 P P 16 23 28.3 +0.1
baz=316
BAGO Egridir - ISPA 81.31 312 iP P 16 23 28.4 -0.1
GDZ Gediz 81.35 313 iP P 16 23 28.9 0.0
D33A AnnSam, Waubun 81.41 35 P P 16 23 28.4 -0.4
baz=318
J28A Allard Ranch, 81.44 41 P P 16 23 29.9 +0.8
baz=315
B35A Bob, Littlefor 81.46 34 P P 16 23 29.2 +0.2
baz=319,SNR=9.3
C34A RKJ Ranch, Bem 81.46 35 P P 16 23 29.2 +0.1
baz=318
KPL Plockton 81.48 343 eP P 16 23 29.7 +0.8
KPL AMB AMB 16 23 31.1
comp=Z,81nm,1.2s
I29A Vivian Onida 81.50 40 P P 16 23 29.2 -0.2
baz=315
TCHB Talchebab 81.50 305 eP P 16 23 26.3 -3.3
ISCO Idaho Springs 81.53 46 P P 16 23 31.0 +1.0
baz=312
ISCO Idaho Springs 81.53 46 eP P 16 23 31.4 +1.4
ISCO pmax pmax
comp=Z,58nm,1.7s
ISCO Idaho Springs 81.53 46 eP P 16 23 31.4 +1.4
comp=Z,58nm,1.7s
EDU Dundee 81.54 341 eP P 16 23 29.6 +0.3
X16A Lo Mia Camp, P 81.55 53 eP P 16 23 31.5 +1.5
comp=Z,48nm,1.2s
MVCO Mesa Verde 81.56 49 P P 16 23 31.1 +1.0
baz=311
MVCO Mesa Verde 81.56 49 eP P 16 23 30.7 +0.6
comp=Z,55nm,1.2s
MDVR Moldovita 81.62 321⇓ iP P 16 23 30.3 +0.3
MAMC Mammari 81.66 308 P P 16 23 29.9 -0.5
G31A Conde 81.68 38 P P 16 23 30.5 +0.2
baz=316
NKC Novy Kostel 81.71 330 eP P 16 23 30.7 +0.4
NKC epP pP 16 23 45.7 +1.6
NKC AMS AMS 17 03 20.0
comp=Z,2μm,16.5s
NKC Novy Kostel 81.71 330 eP P 16 23 30.7 +0.4
NKC e 16 23 45.7
NKC MLR MLR
comp=Z,2μm,16.5s
CSS Mathiatis 81.73 308 P P 16 23 30.1 -0.6
CSS Mathiatis 81.73 308 eP P 16 23 30.5 -0.2
comp=Z,9.4nm,0.7s
F32A Veblen 81.74 37 P P 16 23 30.4 -0.1
baz=317
D34A Park Rapids 81.75 35 P P 16 23 30.2 -0.4
baz=318,SNR=5.2
E33A Westby DABS, E 81.81 36 P P 16 23 31.0 +0.1
baz=318
C35A Jirik Farms, M 81.84 34 P P 16 23 30.5 -0.5
baz=319,SNR=8.7

SUSD	Miller	81.88	39	P		P	16 23 31.3	0.0
	baz=316							
J29A	Okreek	81.92	40	P		P	16 23 31.1	-0.5
	baz=315							
BALY	Balya	81.98	315	*i*	P	P	16 23 31.9	-0.1
G32A	Webster	82.01	38	P		P	16 23 32.1	+0.1
	baz=317							
I30A	Oacoma	82.02	40	P		P	16 23 31.5	-0.7
	baz=316							
CONA	Conrad Observa	82.04	326	*i*	P	P	16 23 32.4	+0.2
	comp=Z,77nm,1.5s,SNR=21							
ALFC	Alefka	82.06	308		P	P	16 23 32.7	+0.2
PKSM	Moragy	82.06	324⇑	*i*	P	P	16 23 32.3	+0.1
PKSM	Moragy	82.06	324	⇑	P	P	16 23 32.3	+0.1
H31A	Wolsey	82.09	39	P		P	16 23 32.1	-0.4
	baz=316							
KHC	Kasperske Hory	82.10	328	*e*	P	P	16 23 32.6	+0.1
KHC				*e*	S	S	16 33 44.8	+1.3
KHC					AMS	AMS	17 03 00.0	
	comp=Z,2µm,16.8s							
KHC	Kasperske Hory	82.10	328	*e*	P	P	16 23 32.6	+0.1
KHC				*e*	S	S	16 33 44.8	+1.3
KHC					MLR	MLR		
	comp=Z,2µm,16.8s							
KHC	Kasperske Hory	82.10	328	*e*	P	P	16 23 32.9	+0.5
	comp=Z,29nm,1.1s							
SZAC	Souni	82.14	308		P	P	16 23 32.7	-0.2
F33A	5 Mile Ranch,	82.16	37	P		P	16 23 32.9	+0.1
	baz=318							
W18A	Petrified Fore	82.17	52	P		P	16 23 34.0	+0.8
	baz=311							
E34A	Wadena	82.19	36	P		P	16 23 33.1	+0.2
	baz=318							
EAB	Aberfoyle	82.20	341	*e*	P	P	16 23 33.1	+0.3
S22A	4UR Ranch, Cre	82.20	48	P		P	16 23 34.9	+1.3
	baz=312							
S22A	4UR Ranch, Cre	82.20	48	*e*	P	P	16 23 34.8	+1.3
	comp=Z,43nm,1.3s							
KULA	Kula-Manisa	82.21	313		P	P	16 23 33.0	-0.3
KORT	Korkueli	82.22	311	*i*	P	P	16 23 32.8	-0.6
214A	Organ Pipe Nat	82.23	56	P		P	16 23 34.1	+0.6
	baz=310							
GEC2	GERESS Array S	82.27	328	*e*	P	P	16 23 33.4	0.0
GEC2					pmax	pmax		
	comp=Z,44nm,1.3s							
GEC2	GERESS Array S	82.27	328	*e*	P	P	16 23 33.4	0.0
	comp=Z,44nm,1.3s							
GERES	GERESS Array B	82.27	328		P	P	16 23 33.4	0.0
	comp=Z,9.2nm,0.6s,baz=36,slow=5.0,SNR=99							
GERES					LR	LR	17 03 38.5	
	comp=Z,2µm,18.1s,baz=32,slow=38							
D35A	Remer	82.27	35	P		P	16 23 32.2	-1.2
	baz=319							
GEA0	GERESS Array S	82.28	328	*e*	P	P	16 23 33.2	-0.3
C36A	Pine Crest Far	82.30	34	P		P	16 23 33.7	+0.2
	baz=320,SNR=8.6							
AKMC	Akamas	82.31	308		P	P	16 23 33.1	-0.7
Q24A	Divide	82.36	46	P		P	16 23 34.9	+0.5
	baz=313							
Q24A	Divide	82.36	46	*e*	P	P	16 23 34.8	+0.5
	comp=Z,24nm,1.4s							
I31A	Royce, Wessing	82.38	39	P		P	16 23 34.1	+0.1
	baz=316							
PPCY	Paphos	82.39	308		P	P	16 23 34.1	-0.1
J30A	Dallas	82.40	40	P		P	16 23 34.0	-0.2
	baz=316							
X18A	Snowflake	82.42	52	*e*	P	P	16 23 35.2	+0.7
	comp=Z,70nm,1.5s							
E35A	Pequot Lakes	82.51	35	P		P	16 23 34.3	-0.3
	baz=319							
G33A	Ortonville	82.56	37	P		P	16 23 35.0	+0.1
	baz=318							
PGBU	Glenifferbraes	82.57	341⇑	*e*	P	P	16 23 34.4	-0.3
PGBU					AMB	AMB	16 23 36.1	
	comp=Z,64nm,1.3s							
H32A	Carlson Farm,	82.58	38	P		P	16 23 34.5	-0.5
	baz=317							
D36A	Goodland	82.60	34	P		P	16 23 34.6	-0.4
	baz=319,SNR=5.3							
C37A	Embarrass	82.61	33	P		P	16 23 34.8	-0.3
	baz=320,SNR=9.4							
GRFO	Grafenberg	82.62	330	*e*	P	P	16 23 35.6	+0.5
GRFO					pmax	pmax		
	comp=Z,150nm,1.3s							
GRFO	Grafenberg	82.62	330	*e*	P	P	16 23 35.8	+0.7
	comp=Z,149nm,1.3s							
EZN	Ezine	82.66	315	P		P	16 23 35.3	-0.1
ESK	Eskdalemuir	82.68	340	*e*	P	P	16 23 35.5	+0.2
ESK					AMS	AMS	17 03 11.8	
	comp=Z,1µm,18.1s							
ESK	Eskdalemuir	82.68	340	*i*	P	P	16 23 36.1	+0.8
ESK	Eskdalemuir	82.68	340	*e*	P	P	16 23 35.7	+0.4
	comp=Z,19nm,0.9s							
F34A	Alexandria	82.68	36	P		P	16 23 35.5	0.0
	baz=318							
EYMN	Ely	82.74	33	P		P	16 23 35.6	-0.2
	baz=320,SNR=9.6							
EYMN	Ely	82.74	33	*e*	P	P	16 23 35.5	-0.2
	comp=Z,23nm,0.8s							
OGNE	Ogallala	82.74	43	P		P	16 23 35.6	-0.5
	baz=314							
ECK	Cauldkaine Hil	82.78	340⇑	*e*	P	P	16 23 36.1	+0.3
H33A	Prehn Over Nor	82.79	38	P		P	16 23 36.5	+0.3
	baz=317							
MOA	Molln	82.80	327	*i*	P	P	16 23 36.5	+0.4
	comp=Z,54nm,1.5s,SNR=25							
K30A	Basset	82.81	41	P		P	16 23 36.5	+0.2
	baz=316							
J31A	Geddes	82.81	40	P		P	16 23 36.0	-0.3
	baz=316							
KAVA	Kavala	82.84	317		P	P	16 23 36.8	+0.4
G34A	Benson	82.91	37	P		P	16 23 36.4	-0.3
	baz=318							
I32A	Karley and Nic	82.92	38	P		P	16 23 36.6	-0.2
	baz=317							
D37A	Cotton	82.94	34	P		P	16 23 36.1	-0.7
	baz=320							
NVR	Nevrokopi	82.94	318		P	P	16 23 36.9	-0.1
F35A	Swanville	82.95	36	P		P	16 23 36.9	0.0
	baz=319							
SDCO	Great Sand Dun	82.98	47	P		P	16 23 38.3	+0.7
	baz=313							
SDCO	Great Sand Dun	82.98	47	*e*	P	P	16 23 36.5	-1.1
	comp=Z,37nm,1.4s							
KOGS	Kog	82.99	325	*e*	P	P	16 23 36.9	-0.2
	comp=Z,153nm,1.4s							
C38A	Sawbill Land.	83.01	33	P		P	16 23 37.0	-0.2
	baz=321,SNR=10							
E36A	McGregor	83.06	35	P		P	16 23 37.5	+0.1
	baz=319,SNR=8.0							
PRK	Paraskevi	83.08	315		P	P	16 23 37.0	-0.7
J32A	Parkston	83.20	39	P		P	16 23 37.7	-0.5
	baz=317							
BBO1	Bothel	83.20	340⇑	*e*	P	P	16 23 38.2	+0.2
FETY	Fethiye	83.23	311		P	P	16 23 37.8	-0.7
I33A	Coleman	83.23	38	P		P	16 23 38.1	-0.3
	baz=317							
LIA	Limnos Island	83.24	316		P	P	16 23 37.8	-0.7
AYDN	Tasoluk	83.25	313	*i*	P	P	16 23 39.7	+1.1
KSL	Kastellorizon	83.25	311		P	P	16 23 36.8	-1.8
SRS	Serrai	83.25	318		P	P	16 23 38.4	-0.2
GMK	Mull of Kintyr	83.27	342⇑	*e*	P	P	16 23 38.9	+0.6
H34A	Spellman Lake,	83.27	37	P		P	16 23 38.8	+0.2
	baz=318							
K31A	O'Neill	83.28	40	P		P	16 23 38.9	+0.2
	baz=316							
KESW	Keswick, Cumbr	83.30	340⇑	*e*	P	P	16 23 39.2	+0.7
TUC	Tucson	83.32	54	P		P	16 23 40.2	+1.0
	baz=311							
TUC	Tucson	83.32	54	*e*	P	P	16 23 40.0	+0.8
TUC					pmax	pmax		
	comp=Z,44nm,1.4s							
TUC	Tucson	83.32	54	*e*	P	P	16 23 40.0	+0.8
	comp=Z,44nm,1.4s							
SIGR	SIGRI	83.34	315		P	P	16 23 39.3	+0.3
PERS	Pernice	83.36	326	*e*	P	P	16 23 39.0	-0.1
	comp=Z,191nm,1.3s							
SOKA	Soboth	83.36	326	*i*	P	P	16 23 39.0	-0.1
	comp=Z,97nm,1.2s,SNR=99							
YER	Yerkesik	83.36	312		P	P	16 23 39.3	0.0
E37A	Wrenshall	83.40	34	P		P	16 23 38.5	-0.7
	baz=320							
C39A	Grand Marais	83.42	32	P		P	16 23 38.7	-0.6
	baz=321							
F36A	Milaca	83.43	35	P		P	16 23 39.0	-0.4
	baz=319							
G35A	Watkins	83.47	36	P		P	16 23 39.8	+0.2
	baz=319							
GAL1	Galloway	83.47	341⇑	*e*	P	P	16 23 39.7	+0.3
ECSD	EROS Data Cent	83.55	38	P		P	16 23 40.0	0.0
	baz=318							
ECSD	EROS Data Cent	83.55	38	*e*	P	P	16 23 39.9	-0.2
	comp=Z,109nm,1.8s							
L31A	Butterfield Fa	83.56	40	P		P	16 23 40.1	-0.1
	baz=316							
KNT	Kendrikon	83.59	318		P	P	16 23 39.8	-0.5
GCAM	G?zelcaml?	83.59	313	*i*	P	P	16 23 39.5	-0.8
OUR	Ouranopolis	83.59	317		P	P	16 23 39.2	-1.1
VAY	Valandovo	83.65	318		P	P	16 23 40.4	-0.2
VAY	Valandovo	83.65	318	*i*	P	P	16 23 40.9	+0.3
K32A	Verdigre	83.66	40	P		P	16 23 40.2	-0.4
	baz=317							
J33A	Davis	83.68	39	P		P	16 23 40.6	-0.2
	baz=317							
I34A	Hadley	83.69	38	P		P	16 23 41.2	+0.4
	baz=318							
H35A	Sunnyside Ranc	83.70	37	P		P	16 23 41.3	+0.6
	baz=319,SNR=11							
OBKA	Obir	83.70	326	*i*	P	P	16 23 41.1	+0.2
	comp=Z,17nm,0.9s,SNR=12							
KSCO	Kaye Shedlock'	83.76	45	P		P	16 23 41.7	+0.4
	baz=314							
SKO	Skopje	83.78	319		P	P	16 23 41.9	+0.7
SKO	Skopje	83.78	319	*i*	P	P	16 23 42.3	+1.1
KBA	Koelnbreinsper	83.79	327	*i*	P	P	16 23 41.2	-0.2
	comp=Z,39nm,0.9s,SNR=23							
G36A	St. Michael	83.80	36	P		P	16 23 41.1	-0.2
	baz=319							
BEBN	Eben Emael	83.81	334		P	P	16 23 41.2	0.0
BLY	Banja Luka	83.84	324⇑	*i*	P	P	16 23 41.9	+0.4
MEM	Membach	83.85	333	P		P	16 23 41.6	+0.2
	comp=Z,26nm,1.6s							
PLG	Polygyros	83.86	317		P	P	16 23 41.7	0.0
HORT	Hortiatis	83.88	318		P	P	16 23 41.1	-0.8
BDRM	Kayabasi	83.90	313	*i*	P	P	16 23 42.0	0.0
MYKA	Terra Mystica	84.01	327	*i*	P	P	16 23 42.1	-0.3
	comp=Z,28nm,0.8s,SNR=17							
T25A	Trinidad	84.03	47	P		P	16 23 43.7	+0.8
	baz=313							
T25A	Trinidad	84.03	47	*e*	P	P	16 23 43.9	+1.0
	comp=Z,80nm,1.4s							
PAIG	Paliouri	84.04	317		P	P	16 23 42.4	-0.2
LJU	Ljubljana	84.07	326	*i*	P	P	16 23 42.3	-0.4
M31A	Lambtecht Ranc	84.09	41	P		P	16 23 43.2	+0.3
	baz=316							
WIM	Isle of Man	84.11	341⇑	*e*	P	P	16 23 42.6	0.0
L32A	Elgin	84.11	40	P		P	16 23 42.9	-0.1
	baz=317							
STU	Stuttgart	84.16	330	*e*	P	P	16 23 43.4	+0.4
STU					pmax	pmax		
	comp=Z,120nm,1.3s							
STU	Stuttgart	84.16	330	*e*	P	P	16 23 42.9	-0.1
	comp=Z,121nm,1.3s							
BOJS	Bojanci	84.16	325	*e*	P	P	16 23 42.5	-0.6
K33A	Hardington	84.19	39	P		P	16 23 43.2	-0.2
	baz=317							
J34A	George	84.20	38	P		P	16 23 43.1	-0.3
	baz=318							
H36A	Jessenland, He	84.21	36	P		P	16 23 43.4	0.0
	baz=319							
LAZ	Ladron	84.25	51	*e*	P	P	16 23 45.5	+1.5
SPMN	Marine on St.	84.25	35	P		P	16 23 43.5	-0.1
	baz=320							
SPMN	Marine on St.	84.25	35	*e*	P	P	16 23 43.4	-0.1
	comp=Z,80nm,1.8s							
I35A	Creekview Farm	84.25	37	P		P	16 23 43.7	+0.1
	baz=318							
BCLA	Clavier	84.26	334	P		P	16 23 43.4	-0.1
	comp=Z,32nm,1.5s							
CADS	Cadrg	84.28	326	*e*	P	P	16 23 42.6	-1.2
ANMO	Albuquerque	84.30	50	P		P	16 23 45.7	+1.4
	baz=312							
ANMO	Albuquerque	84.30	50	*i*	P	P	16 23 45.6	+1.3
ANMO					pmax	pmax		
	comp=Z,12nm,1.0s							
ANMO	Albuquerque	84.30	50	*e*	P	P	16 23 45.4	+1.2
	comp=Z,64nm,1.4s							
GMM	Mts of Mourne	84.36	341⇑	*e*	P	P	16 23 44.3	+0.4
L33A	Hoskins	84.37	40	P		P	16 23 44.3	+0.1
	baz=317							
WTTA	Wattenberg	84.37	328	*i*	P	P	16 23 44.3	0.0
	comp=Z,25nm,1.4s,SNR=6.8							
JAVS	Javornik	84.39	326	*i*	P	P	16 23 43.2	-1.2
ABTA	Abfaltersbach	84.41	327	*i*	P	P	16 23 43.4	-1.1
	comp=Z,29nm,1.2s,SNR=16							
PMOR	Pomariorio Ree	84.41	114	*e*	T	T	17 56 37.7	
	comp=Z,56nm,0.2s							
CWF	Charnwood Fore	84.42	338	*e*	P	P	16 23 44.5	+0.2
	comp=Z,135nm,1.7s							
BGNE	Belgrade	84.47	41	P		P	16 23 44.8	-0.1
	baz=317							
N31A	Bailey Ranch,	84.47	41	P		P	16 23 44.5	-0.3
	baz=316							
J35A	Milford	84.51	38	P		P	16 23 44.6	-0.3
	baz=318							
BIA	Bitola	84.52	319	*i*	P	P	16 23 44.8	-0.3
LANF	Langenberg	84.52	331⇑	*e*	P	P	16 23 44.9	0.0
MOTA	Moosalm	84.53	329	*i*	PcP	P	16 23 45.6	+0.5
	comp=Z,14nm,0.6s,SNR=17							
SNF	Seneffe	84.54	334	P		P	16 23 44.9	0.0
PDG	Podgorica	84.55	321⇑	*i*	P	P	16 23 45.6	+0.5
PDG	Podgorica	84.55	321	P		P	16 23 44.4	-0.7
RETA	Reutte	84.56	329	*i*	P	P	16 23 45.2	+0.1
	comp=Z,80nm,1.2s,SNR=45							
LIT	Litokhoron	84.56	318		P	P	16 23 44.5	-0.8
K34A	Le Mars	84.58	39	P		P	16 23 45.0	-0.3
	baz=318							
WLF	Walferdange	84.58	333	P		P	16 23 45.6	+0.5
	comp=Z,58nm,2.0s							
WLF	Walferdange	84.58	333	*e*	P	P	16 23 45.3	+0.2
WLF					pmax	pmax		
	comp=Z,106nm,1.5s							
WLF	Walferdange	84.58	333	*e*	P	P	16 23 45.3	+0.2
	comp=Z,106nm,1.5s							
I36A	Fitzsimmons Fa	84.59	37	P		P	16 23 45.7	+0.3
	baz=319							
Y22D	IRIS PASSCAL I	84.60	51	P		P	16 23 46.6	+0.9
	baz=312							
LPM	Los Pinos Moun	84.62	50	*e*	P	P	16 23 46.5	+0.6
FNA	Florina	84.67	319		P	P	16 23 45.4	-0.4
UDBI	Udbina	84.67	324		P	P	16 23 45.4	-0.4
H37A	Dierke Farm, C	84.68	36	P		P	16 23 46.1	+0.3
	baz=320							
WPM1	Penmaenmawr	84.70	340⇑	*e*	P	P	16 23 45.8	+0.1
XOR	Xorichti	84.71	317	P		P	16 23 44.4	-1.6
BNM	Barren Site	84.73	51	*e*	P	P	16 23 47.5	+1.0
OHR	Ohrid	84.73	319	*i*	P	P	16 23 46.2	+0.1
O31A	Woolen Ranch,	84.76	42	P		P	16 23 45.7	-0.6
	baz=316							
DOU	Dourbes	84.78	334	P		P	16 23 46.0	-0.1
	comp=Z,24nm,1.8s							
KZN	Kozani	84.80	318	P		P	16 23 45.9	-0.6
FOEL	Foel Wylfa	84.83	339⇑	*e*	P	P	16 23 47.0	+0.6
FOEL					AMS	AMS	16 59 19.3	
	comp=Z,1µm,28.3s							
M33A	Taylor Creek F	84.84	40	P		P	16 23 46.4	-0.3
	baz=317							
BFO	Black Forest	84.85	331	*i*	P	P	16 23 46.9	+0.3
BFO	Black Forest	84.85	331	*e*	P	P	16 23 46.5	0.0
	comp=Z,111nm,1.2s							
N32A	Stulken Farm,	84.86	41	P		P	16 23 46.0	-0.8
	baz=317							
SCHQ	Schefferville	84.87	16	P		P	16 23 47.0	+0.4
	comp=Z,6.5nm,0.7s,baz=0.8,slow=7.0,SNR=11							
SCHQ					LR	LR	17 03 44.6	
	comp=Z,600nm,20.7s,baz=338,slow=37							
SCHQ	Schefferville	84.87	16	*e*	P	P	16 23 46.9	+0.4
	comp=Z,63nm,1.6s							
YLL	Llanberis	84.88	340⇑	*e*	P	P	16 23 47.0	+0.4
I37A	Lemond, Waseca	84.89	36	P		P	16 23 46.8	-0.1
	baz=320,SNR=9.9							
PPT	Papeete	84.89	117		LR	LR	16 56 36.6	
	comp=Z,729nm,20.5s,baz=304,slow=32							
319A	Douglas	84.90	54	*e*	P	P	16 23 48.4	+1.1
	comp=Z,74nm,1.3s							
PPT2	Papeete2	84.90	117	*e*	S	S	16 34 14.7	+2.2
	comp=Z,491nm,26.5s							
PPT2	Papeete2	84.90	117	*e*	LR	LR	16 50 31.2	
	comp=Z,4µm,29.8s,baz=316							
FETA	Feichten	84.94	329	*i*	P	P	16 23 47.1	-0.1
	comp=Z,34nm,1.1s,SNR=19							
PAE	Paea	84.95	117	*e*	T	T	17 57 16.7	
	comp=Z,2.7nm,0.3s							
J36A	Seneca 1, Swea	84.96	37	P		P	16 23 47.3	+0.1
	baz=319							
L34A	Svendsen Farm,	84.97	39	P		P	16 23 47.5	+0.2
	baz=318							
K35A	Storm Lake	84.98	38	P		P	16 23 47.1	-0.2
	baz=318							
TIR	Tirane	85.04	320⇑	*i*	P	P	16 23 48.1	+0.5
TIR	Tirane	85.04	320	⇑	P	P	16 23 48.1	+0.5
TIR	Tirane	85.04	320	*e*	P	P	16 23 47.5	-0.1
	comp=Z,145nm,1.3s							
TIAR	Tiarei	85.05	116	*e*	T	T	17 57 24.4	
	comp=Z,8.4nm,0.3s							
NVLJ	Novalja	85.05	325	P		P	16 23 46.5	-1.1
HLM1	Long Mynd	85.07	339	*e*	P	P	16 23 47.5	0.0
HLM1					AMS	AMS	17 00 36.5	
	comp=Z,1µm,27.1s							
DAVA	Damuels	85.08	329	*i*	PcP	P	16 23 48.5	+0.6
	comp=Z,80nm,1.2s,SNR=24							
121A	Cookes Peak, D	85.09	52	P		P	16 23 49.4	+1.1
	baz=312							
YRE	Yr Eifl	85.09	340⇑	*e*	P	P	16 23 47.6	0.0
NEST	Nestorio	85.10	319	P		P	16 23 46.5	-1.6
KARP	Karpathos	85.11	312	*e*	P	P	16 23 47.6	-0.5
	comp=Z,48nm,1.0s							
COWI	Conover	85.19	33	*e*	P	P	16 23 48.0	-0.3
	comp=Z,82nm,1.8s							
M34A	Aspy Farms, Fr	85.21	40	P		P	16 23 48.4	0.0
	baz=318							
O32A	Brockman Farm,	85.24	41	P		P	16 23 48.0	-0.7
	baz=317							
L35A	Bielow Farm, R	85.28	39	P		P	16 23 48.5	-0.3
	baz=318							
LKR	Lokris	85.32	316	P		P	16 23 47.9	-1.2
N33A	J Bar K, Exete	85.32	41	P		P	16 23 48.4	-0.7
	baz=317							
HSIG		85.34	57	*e*	P	P	16 23 50.0	+0.7
	comp=Z,47nm,1.3s							
J37A	Redenius Farm,	85.35	37	P		P	16 23 49.6	+0.4
	baz=320							
DSB	Dublin	85.36	341	*e*	P	P	16 23 49.1	+0.1
	comp=Z,28nm,0.9s							
I38A	Scanlan Farm,	85.37	36	P		P	16 23 49.5	+0.3
	baz=320							
ECH	Echery	85.40	331⇑	*e*	P	P	16 23 49.4	+0.1
AGG	Agios Georgios	85.42	317	*e*	P	P	16 23 48.9	-0.7
AGG					pmax	pmax		
	comp=Z,100nm,1.2s							
AGG	Agios Georgios	85.42	317	*e*	P	P	16 23 48.5	-1.1
	comp=Z,105nm,1.3s							
K36A	Gilmore City	85.42	38	P		P	16 23 49.7	+0.2
	baz=319							
FUORN	Ofenpass-Fuorn	85.45	329	*e*	P	P	16 23 49.8	-0.1
	comp=Z,115nm,1.2s							
CBKS	Cedar Bluff	85.50	43	P		P	16 23 49.5	-0.6
	baz=316							
STRD	Stroud	85.52	338⇑	*e*	P	P	16 23 49.9	+0.1
STRD					AMB	AMB	16 23 50.9	
	comp=Z,163nm,1.1s							
STRD					AMS	AMS	17 03 30.5	
	comp=Z,2µm,18.9s							
P32A	Huiting Farm,	85.53	42	P		P	16 23 49.5	-0.7
	baz=317							
HMNX	Herstmonceux	85.55	336	*e*	P	P	16 23 50.6	+0.7
HMNX					AMB	AMB	16 23 51.4	
	comp=Z,173nm,0.9s							
HMNX					AMS	AMS	17 01 51.8	
	comp=Z,1µm,17.5s							
MCH1	Michaelchurch	85.57	339	*e*	P	P	16 23 50.1	+0.1
MCH1					AMB	AMB	16 23 51.1	
	comp=Z,69nm,1.1s							
MCH1					AMS	AMS	17 00 40.3	
	comp=Z,1µm,24.2s							
LBZ	Lake Benmore	85.61	160	*e*	P	P	16 23 49.7	-0.3
	comp=Z,169nm,1.4s							
WOL	Wolverton	85.64	338	*e*	P	P	16 23 50.3	-0.1
WOL					AMB	AMB	16 23 51.1	
	comp=Z,87nm,1.3s							
WOL					AMS	AMS	17 04 00.2	
	comp=Z,1µm,19.1s							
MONM	Monmouth	85.65	339	*e*	P	P	16 23 50.5	+0.1
MONM					AMB	AMB	16 23 51.5	
	comp=Z,95nm,1.1s							
MONM					AMS	AMS	17 01 22.9	
	comp=Z,1µm,31.7s							
M35A	Neola	85.68	39	P		P	16 23 51.4	+0.6
	baz=318							
MOF	Molkenrain	85.71	331⇑	*e*	P	P	16 23 50.6	-0.3
K37A	Belmond	85.72	37	P		P	16 23 50.9	-0.1
	baz=319,SNR=6.5							
L36A	Harm Buss Farm	85.72	38	P		P	16 23 50.8	-0.2
	baz=319							
O33A	Hebron	85.74	41	P		P	16 23 50.4	-0.8
	baz=317							
N34A	Lincoln	85.74	40	P		P	16 23 50.8	-0.3
	baz=318							
DSF	Desfina	85.75	316	P		P	16 23 49.3	-2.0
JAN	Janina	85.76	318	P		P	16 23 50.9	-0.4
LPW	Lampeter	85.77	339	*e*	P	P	16 23 51.3	+0.3
LPW					AMB	AMB	16 23 52.1	
	comp=Z,81nm,1.2s							
J38A	Wedel Dairy, R	85.85	36	P		P	16 23 50.8	-0.8
	baz=320							
TUE	Stuetta	85.95	329	*e*	P	P	16 23 52.2	-0.2
	comp=Z,93nm,1.6s							
ANX	Ano Chora	85.95	317		P	P	16 23 51.7	-0.6
DSL	Palaion Diasel	86.01	318		P	P	16 23 51.8	-0.7
Q32A	Meitler Ranch,	86.01	43	P		P	16 23 52.2	-0.3
	baz=317							
O34A	Beatrice	86.12	41	P		P	16 23 52.3	-0.8
	baz=318							
IGT	Igoumenitsa	86.12	318		P	P	16 23 52.0	-1.0
M36A	Felix, Anita	86.14	39	P		P	16 23 53.2	+0.1
	baz=319							
P33A	Williams Farm,	86.14	42	P		P	16 23 52.8	-0.4
	baz=317							
L37A	Phoenix Point,	86.15	38	P		P	16 23 52.8	-0.3
	baz=319							
N35A	Tabor	86.16	40	P		P	16 23 53.4	+0.2
	baz=318							
MEH	Mehetia	86.17	116	*e*	T	T	17 58 48.7	
	comp=Z,94nm,0.3s							
LAKA

baz=318
N37A **Lee Faris, Mou** 86.96 39 P P 16 23 57.4 +0.3
baz=319
M38A **Pleasantville** 86.96 38 P P 16 23 57.5 +0.4
baz=320,SNR=6.1
KSU1 **Kansas State U** 86.96 41 P P 16 23 57.1 0.0
baz=318
ITM **Ithomi** 86.97 316 P P 16 23 52.0 -5.2
O36A **Bolckow** 87.05 40 P P 16 23 57.6 +0.1
baz=319
T32A **Huddler Ranch,** 87.12 44 P P 16 23 58.3 +0.3
baz=316
MNTX **Cornudas Mount** 87.15 52 P P 16 23 58.6 +0.3
baz=313
MNTX **Cornudas Mount** 87.15 52 *e*P P 16 23 58.4 +0.1
comp=Z,28nm,1.4s
MATE **Matera** 87.16 321 *i*P P 16 23 57.8 -0.2
MSTX **Muleshoe** 87.18 48 P P 16 23 58.9 +0.4
baz=314
MSTX **Muleshoe** 87.18 48 *e*P P 16 23 59.6 +1.1
comp=Z,42nm,1.4s
AMTX **Amarillo** 87.19 47 P P 16 23 59.6 +1.2
baz=315
AMTX **Amarillo** 87.19 47 *e*P P 16 23 59.3 +0.8
comp=Z,29nm,0.8s
JFWS **Jewell Farm** 87.20 35 *e*P P 16 23 58.2 0.0
JFWS *e**PP **pP** 16 24 13.3 +1.2
JFWS **Jewell Farm** 87.20 35 *e*P P 16 23 57.9 -0.3
comp=Z,22nm,0.8s
R34A **Isabella, Hill** 87.21 42 P P 16 23 58.8 +0.3
baz=317
DYA **Yadsworthy** 87.23 339 *e*P P 16 23 58.2 0.0
comp=Z,23nm,0.7s
P36A **Good Intent, A** 87.31 40 P P 16 23 59.0 +0.2
baz=319
S33A **Kaszmaul Farm,** 87.32 43 P P 16 23 58.9 0.0
baz=317
N38A **Joes South For** 87.41 38 P P 16 23 59.5 +0.2
baz=320
O37A **Wolven Farm, M** 87.44 39 P P 16 23 59.9 +0.5
baz=319
AQU **L'Aquila** 87.44 324 *e*P P 16 24 00.1 +0.6
AQU pmax pmax
comp=Z,41nm,0.9s
AQU **L'Aquila** 87.44 324 *e*P P 16 24 00.1 +0.6
comp=Z,41nm,0.9s
T33A **Patterson Ranc** 87.56 44 P P 16 24 00.1 0.0
baz=317
U32A **Winter Ranch,** 87.65 45 P P 16 24 01.0 +0.5
baz=316
Q36A **Arnold C. Orve** 87.67 41 P P 16 24 00.5 0.0
baz=318
S34A **Willow Spring** 87.72 43 P P 16 24 01.0 +0.1
baz=318
JQE **Queens East** 87.75 337 *e*P P 16 24 00.4 -0.3
R35A **Emporia Munici** 87.75 42 P P 16 24 01.1 +0.1
baz=319
P37A **Lathrop** 87.77 40 P P 16 24 01.4 +0.3
baz=319
JSA **Saint Aubin** 87.80 337 *e*P P 16 24 00.8 -0.2
JSA AMB AMB 16 24 01.8
comp=Z,68nm,1.2s
O38A **Galt** 87.81 39 P P 16 24 01.9 +0.7
baz=320
CUC **Castrocucco** 88.10 321 *e*P P 16 24 01.2 -1.4
comp=Z,20nm,1.3s
V32A **Arapaho** 88.10 45 P P 16 24 03.4 +0.7
baz=316
U33A **Lingo Farm, Me** 88.11 44 P P 16 24 03.2 +0.5
baz=317
R36A **Gordon, Harris** 88.12 41 P P 16 24 02.9 +0.2
baz=318
P38A **Dawn** 88.15 39 P P 16 24 03.1 +0.2
baz=320,SNR=6.3
S35A **Otter Creek Ra** 88.16 42 P P 16 24 03.7 +0.7
baz=318
O39A **Kirksville** 88.17 38 P P 16 24 03.3 +0.4
baz=320
T34A **McClaskey Farm** 88.18 43 P P 16 24 03.4 +0.3
baz=318
TIP **Timpagrande** 88.24 320 ⇑*i*P P 16 24 03.5 +0.1
TIP **Timpagrande** 88.24 320 P P 16 24 03.0 -0.4
TIP **Timpagrande** 88.24 320 *e*P P 16 24 03.3 0.0
comp=Z,84nm,1.6s
Q37A **Longview Farm,** 88.25 40 P P 16 24 03.2 -0.2
baz=319
W32A **Sentinel** 88.42 46 P P 16 24 05.2 +1.0
baz=316
U34A **Anderson Ranch** 88.42 44 P P 16 24 04.9 +0.7
baz=317
V33A **Lossen Ranch,** 88.45 45 P P 16 24 04.6 +0.2
baz=317
R37A **Teagarden Farm** 88.48 41 P P 16 24 04.3 -0.2
baz=319
S36A **Lake Cedric, C** 88.52 42 P P 16 24 04.5 -0.2
baz=318
O40A **La Belle** 88.59 38 P P 16 24 05.4 +0.4
baz=321
PLDF **La Plantade** 88.61 332 *e*P P 16 24 05.9 +0.9
Q38A **Cooks Store, C** 88.61 40 P P 16 24 05.1 +0.1
baz=320
T35A **Sooner Cattle** 88.63 43 P P 16 24 05.6 +0.4
baz=318
AGO **Saint Agoulin** 88.72 332 *e*P P 16 24 07.0 +1.6
W33A **Caddo, Fort Co** 88.84 45 P P 16 24 07.5 +1.3
baz=317
SSB **Saint Sauveur** 88.84 331 *e*P P 16 24 06.3 +0.2
SSB pmax pmax
comp=Z,40nm,1.6s
SSB **Saint Sauveur** 88.84 331 *e*P P 16 24 06.1 +0.1
comp=Z,40nm,1.6s
T36A **Boggs Farm, Ca** 88.86 42 P P 16 24 06.5 +0.2
baz=318
V34A **Guthrie** 88.87 44 P P 16 24 06.9 +0.6
baz=317
V34A **Guthrie** 88.87 44 *e*P P 16 24 07.2 +0.8
comp=Z,84nm,1.4s
Q39A **Willow Grove F** 88.87 39 P P 16 24 06.6 +0.3
baz=320,SNR=10.0
S37A **Fort Scott** 88.89 41 P P 16 24 06.2 -0.2
baz=319
X32A **Elmer** 88.90 46 P P 16 24 06.7 +0.2
baz=316
U35A **Pawnee** 88.91 43 P P 16 24 07.1 +0.6
baz=318
WMOK **Wichita Mounta** 88.96 46 *e*P P 16 24 07.4 +0.6
WMOK pmax pmax
comp=Z,45nm,1.4s
WMOK **Wichita Mounta** 88.96 46 *e*P P 16 24 07.2 +0.4
comp=Z,46nm,1.4s
P40A **Paris** 88.97 38 P P 16 24 07.1 +0.4
baz=320,SNR=8.8
R38A **Fenwick Farm,** 89.05 40 P P 16 24 07.1 0.0
baz=319
W34A **Bridge Creek,** 89.17 45 P P 16 24 08.7 +1.0
baz=317
X33A **Lawton** 89.26 46 P P 16 24 08.5 +0.4
baz=317
V35A **Meyer Ranch, C** 89.30 44 P P 16 24 08.3 0.0
baz=318
T37A **Cheneyville 18** 89.32 42 P P 16 24 08.5 +0.1
baz=319
Q40A **Laux Farm, Aux** 89.36 39 P P 16 24 07.9 -0.7
baz=320
LBL **Lubilhac** 89.37 332 *e*P P 16 24 10.0 +1.4
CEL **Celeste** 89.38 320 *e*P P 16 24 07.5 -1.2
comp=Z,72nm,1.0s
R39A **Chumby, Stover** 89.40 40 P P 16 24 08.8 +0.1
baz=320,SNR=6.0
U36A **Oologah** 89.43 43 P P 16 24 09.0 +0.1
baz=318
S38A **Stockton** 89.47 41 P P 16 24 08.7 -0.4
baz=319
Y33A **Hilltop Ranch,** 89.58 46 P P 16 24 09.8 +0.1
baz=317
X34A **Smith Ranch, M** 89.59 45 P P 16 24 10.3 +0.6
baz=317
T38A **Diamond** 89.72 41 P P 16 24 10.2 -0.1
baz=319,SNR=7.0
W35A **Tecumseh** 89.73 44 P P 16 24 10.2 -0.2
baz=318
S39A **Bolivar** 89.73 40 P P 16 24 09.7 -0.6
baz=320
U37A **Salina** 89.75 42 P P 16 24 10.0 -0.4
baz=319
TUL1 **Leonard** 89.76 43 P P 16 24 10.3 -0.2
baz=318
TUL1 **Leonard** 89.76 43 *e*P P 16 24 10.7 +0.2
comp=Z,47nm,1.4s
V36A **Jenks** 89.77 43 P P 16 24 10.4 -0.2
baz=318
R40A **Maddies Statio** 89.81 39 P P 16 24 10.7 +0.1
baz=320,SNR=8.1
LTX **Lajitas** 89.85 52 *e*P P 16 24 11.7 +0.5
LTX **Lajitas** 89.85 52 *e*P P 16 24 11.7 +0.5
LTX *e*PKKPdf **PKKPbc** 16 41 44.0 +2.3
TX31 **Lajitas Ar. Si** 89.85 52 *e*P P 16 24 11.4 +0.3
TXAR **Lajitas Array** 89.85 52 P P 16 24 11.7 +0.5
comp=Z,8.7nm,0.5s,baz=301,slow=3.1,SNR=176
TXAR PKKPbc **PKKPbc** 16 41 44.0 +2.3
comp=Z,0.2nm,0.6s,baz=144,slow=4.7,SNR=3.7
TXAR LR LR 16 58 36.6
comp=Z,361nm,21.9s,baz=0.0,slow=32
ABTX **Abilene, Hawle** 89.98 48 P P 16 24 12.3 +0.7
baz=316
ABTX **Abilene, Hawle** 89.98 48 *e*P P 16 24 12.1 +0.5
comp=Z,62nm,1.4s
Z33A **Whitaker Ranch** 90.02 47 P P 16 24 12.2 +0.5
baz=317,SNR=7.5
W36A **Wetumka** 90.09 44 P P 16 24 12.5 +0.5
baz=318
Y34A **Reagan Ranch,** 90.11 46 P P 16 24 12.4 +0.2
baz=317
U38A **Gravette** 90.12 42 P P 16 24 12.3 +0.2
baz=319
V37A **Hulbut** 90.13 43 P P 16 24 11.9 -0.3
baz=319,SNR=6.7
T39A **Clever** 90.20 41 P P 16 24 12.5 -0.1
baz=320
HPIG 90.21 55 *e*P P 16 24 13.4 +0.4
comp=Z,22nm,1.3s
S40A **Lebanon** 90.22 40 P P 16 24 12.8 +0.2
baz=320
X35A **Drake** 90.22 45 P P 16 24 12.8 +0.1
baz=318,SNR=6.2
133A **Hamilton Ranch** 90.42 47 P P 16 24 13.9 +0.2
baz=317
Z34A **Collier Ranch,** 90.44 46 P P 16 24 14.1 +0.3
baz=317
X36A **Centrahoma** 90.44 44 P P 16 24 14.0 +0.3
baz=318,SNR=6.2
HHAR **Hobbs** 90.47 42 *e*P P 16 24 13.7 -0.1
comp=Z,25nm,1.2s
W37B **Quinton** 90.53 43 P P 16 24 14.3 +0.2
baz=318,SNR=7.6
V38A **Canehill** 90.54 42 P P 16 24 13.9 -0.2
baz=319,SNR=11
Y35A **Marietta** 90.55 45 P P 16 24 14.7 +0.5
baz=318
T40A **Mansfield** 90.55 40 P P 16 24 14.1 -0.1
baz=320
U39A **Green Forest** 90.64 41 P P 16 24 14.1 -0.5
baz=320,SNR=12
SFIN **Lafayette** 90.65 35 P P 16 24 14.8 +0.3
baz=324
SFIN **Lafayette** 90.65 35 *e*P P 16 24 14.4 -0.1
comp=Z,118nm,2.0s
Z35A **Perchaven, San** 90.85 46 P P 16 24 15.1 -0.5
baz=318,SNR=5.8
233A **Rising Star** 90.85 48 P P 16 24 15.7 0.0
baz=317,SNR=5.4
134A **White-Moore Ra** 90.93 47 P P 16 24 16.2 +0.2
baz=317
V39A **Pettigrew** 90.96 42 P P 16 24 15.8 -0.4
baz=320
X37A **Clayton** 90.97 44 P P 16 24 16.5 +0.3
baz=319,SNR=5.3
Y36A **Durant** 90.98 45 P P 16 24 16.2 0.0
baz=318
U40A **Yellville** 90.99 41 P P 16 24 16.0 -0.2
baz=320,SNR=12
W38A **Poteau** 91.08 43 P P 16 24 17.1 +0.5
baz=319
X38A **Whitesboro** 91.21 43 P P 16 24 17.3 +0.1
baz=319,SNR=5.9
Y37A **Hugo** 91.29 44 P P 16 24 17.5 -0.2
baz=318
333A **Richland Sprin** 91.30 48 P P 16 24 17.9 +0.1
baz=316,SNR=6.4
234A **Clairette** 91.31 47 P P 16 24 17.5 -0.3
baz=317,SNR=6.7
135A **Vickery Place,** 91.33 46 P P 16 24 18.1 +0.2
baz=317
Z36A **Blue Ridge** 91.36 45 P P 16 24 18.1 +0.1
baz=318
W39A **Magazine** 91.38 42 P P 16 24 18.4 +0.4
baz=320
JCT **Junction City** 91.42 49 P P 16 24 18.1 -0.3
baz=316,SNR=6.4
JCT **Junction City** 91.42 49 *e*P P 16 24 18.6 +0.2
JCT *e**PP **pP** 16 24 34.4 +2.1
JCT **Junction City** 91.42 49 *e*P P 16 24 18.4 +0.1
comp=Z,16nm,0.8s
V40A **Witts Springs** 91.42 41 P P 16 24 18.4 +0.1
baz=320
433A **Art** 91.65 49 P P 16 24 19.0 -0.4
baz=316
WHTX **Lake Whitney,** 91.71 47 P P 16 24 20.5 +0.8
baz=317
WHTX **Lake Whitney,** 91.71 47 *e*P P 16 24 20.4 +0.8
comp=Z,129nm,1.5s
X39A **Fountain Ranch** 91.72 43 P P 16 24 20.2 +0.5
baz=319,SNR=7.6
334A **Lometa** 91.74 48 P P 16 24 19.9 +0.1
baz=317,SNR=13
W40A **Ferguson Farm,** 91.76 42 P P 16 24 20.2 +0.4
baz=320
Y38A **Idabel** 91.82 44 P P 16 24 20.9 +0.8
baz=319
Z37A **Pogue Cattle C** 91.87 45 P P 16 24 20.3 0.0
baz=318
136A **Ennis** 91.89 46 P P 16 24 20.3 -0.1
baz=318
MIAR **Mount Ida** 91.98 43 P P 16 24 20.5 -0.3
baz=320,SNR=12
MIAR **Mount Ida** 91.98 43 *e*P P 16 24 21.6 +0.8
MIAR pmax pmax
comp=Z,69nm,1.5s
MIAR **Mount Ida** 91.98 43 *e*P P 16 24 21.2 +0.4
comp=Z,69nm,1.5s
H06E1 **SOCORRO T-PHAS** 92.01 65 T T 18 06 19.1
SNR=14
X201 **Greenbrier Sit** 92.06 41 *e*P P 16 24 21.7 +0.5
comp=Z,17nm,0.9s
X301 **Greenbrier Sit** 92.08 41 *e*P P 16 24 21.7 +0.4
comp=Z,45nm,1.5s
434A **Burnet** 92.10 48 P P 16 24 21.7 +0.2
baz=317
WHAR **Wooly Hollow** 92.10 41 *e*P P 16 24 21.1 -0.3
comp=Z,26nm,0.9s
Y39A **Lockesburg** 92.16 43 P P 16 24 22.1 +0.5
baz=319
533A **Kerrville** 92.18 49 P P 16 24 21.8 0.0
baz=316
Z38A **Mt. Pleasant** 92.19 44 P P 16 24 22.0 +0.2
baz=319
W41A **Tony Mavity, V** 92.21 41 P P 16 24 21.3 -0.6
baz=320
W41B **Gary Mavity, V** 92.21 41 P P 16 24 21.6 -0.2
baz=320
137A **Heron Place, G** 92.24 45 P P 16 24 22.0 0.0
baz=318
236A **Katherine and** 92.24 46 P P 16 24 22.0 0.0
baz=318
335A **Moody** 92.25 47 P P 16 24 22.2 +0.1
baz=317
X40A **Bain Creek Fa** 92.42 42 P P 16 24 23.3 +0.4
baz=320
336A **Riesel** 92.51 47 P P 16 24 23.7 +0.4
baz=318
633A **Saathoff Ranch** 92.53 49 P P 16 24 23.1 -0.4
baz=316
534A **Blanco** 92.54 49 P P 16 24 24.2 +0.7
baz=317
Y40A **Okolona** 92.54 43 P P 16 24 23.5 +0.1
baz=320
138A **Matatall Enter** 92.57 45 P P 16 24 24.3 +0.7
baz=319
Z39A **Irene McRaven,** 92.63 44 P P 16 24 24.4 +0.6
baz=319
237A **Washetta, Mont** 92.65 46 P P 16 24 24.8 +0.8
baz=318
832A **Faith Ranch, C** 92.89 51 P P 16 24 26.1 +1.0
baz=316
139A **Bunkhouse Ranc** 92.94 44 P P 16 24 25.6 +0.3
baz=319
436A **Wall Ranch, Ga** 92.99 47 P P 16 24 25.8 +0.2
baz=318
733A **Divot King Ran** 92.99 50 P P 16 24 25.9 +0.3
baz=316
238A **Jacksonville** 93.04 45 P P 16 24 25.0 -0.7
baz=319
Z40A **Long Farm, Mag** 93.05 43 P P 16 24 26.4 +0.7
baz=320
535A **Dale** 93.08 48 P P 16 24 26.6 +0.6
baz=317
634A **China Grove, S** 93.08 49 P P 16 24 26.8 +0.7
baz=317
337A **Centerville** 93.11 46 P P 16 24 27.6 +1.5
baz=318
N54A **Moraine State** 93.20 30 P P 16 24 27.0 +0.6
baz=328
833A **Chaparral WMA,** 93.21 50 P P 16 24 27.5 +0.9
baz=316
437A **Phantom Ranch,** 93.33 47 P P 16 24 28.1 +1.0
baz=318
536A **Bastrop** 93.34 48 P P 16 24 28.0 +0.9
baz=318
734A **La Parita Cree** 93.35 50 P P 16 24 28.2 +1.0
baz=317
239A **Gary** 93.39 45 P P 16 24 27.8 +0.4
baz=319
338A **Crockett** 93.41 46 P P 16 24 28.1 +0.6
baz=318
140A **Cam and Jess,** 93.42 44 P P 16 24 28.3 +0.8
baz=320
635A **Leesville** 93.43 49 P P 16 24 28.1 +0.5
baz=317
Y42A **Garnett, Star** 93.48 42 P P 16 24 28.4 +0.7
baz=321
NATX **Nacogdoches** 93.48 45 P P 16 24 28.0 +0.2
baz=319
438A **Sam Houston St** 93.77 46 P P 16 24 29.2 +0.1
baz=318
240A **Hunter Patters** 93.77 44 P P 16 24 29.7 +0.6
baz=319
537A **Green Hill Far** 93.78 47 P P 16 24 29.2 0.0
baz=318
636A **Smothers Creek** 93.78 48 P P 16 24 30.6 +1.4
baz=318
735A **Kenedy** 93.79 49 P P 16 24 30.2 +1.0
baz=317
933A **Laredo** 93.80 51 P P 16 24 30.3 +1.0
baz=316
141A **Papa Simpson,** 93.82 43 P P 16 24 30.1 +0.8
baz=320
339A **Huntington** 93.86 45 P P 16 24 28.8 -0.7
baz=319
Y43A **Makayla and Ka** 93.87 41 P P 16 24 30.2 +0.6
baz=321
340A **Bronson** 94.17 45 P P 16 24 30.9 -0.1
baz=319
FURI **Furi** 94.55 285 *e*P P 16 24 34.5 +1.2
comp=Z,36nm,0.9s
KEST **Kesra** 94.61 323 P P 16 24 31.8 -1.2
comp=Z,11nm,1.0s,baz=349,slow=5.9,SNR=5.2
KEST LR LR 17 10 53.9
comp=Z,853nm,20.7s,baz=0.5,slow=38
KEST **Kesra** 94.61 323 *e*P P 16 24 32.5 -0.5
comp=Z,28nm,1.3s
ZAIG **Zacatecas** 95.11 56 *e*P P 16 24 35.9 +0.1
comp=Z,33nm,1.4s
145A **Houston Renfro** 95.41 41 P P 16 24 37.1 +0.5
baz=322
343A **Vidalia** 95.53 43 P P 16 24 38.4 +1.2
baz=321
PBRG **Braganca** 95.84 337 *e*P P 16 24 38.5 0.0
245A **Little AP, Sta** 95.88 42 P P 16 24 40.5 +1.8
baz=322
PGAV **Gavieira, Arco** 96.17 338 *e*P P 16 24 39.8 -0.2
PGAV **Gavieira, Arco** 96.17 338 *e*PP PP 16 28 36.9 +4.6
PGAV **Gavieira, Arco** 96.17 338 *e*LR LR 16 58 21.9
comp=Z,761nm,22.0s
MVO **Moncorvo** 96.51 337 *e*P P 16 24 41.9 +0.3
MVO **Moncorvo** 96.51 337 *e*LR LR 16 59 16.4
comp=Z,1µm,22.0s
247A **Quitman** 96.53 41 P P 16 24 41.5 -0.2
baz=322
ESDC **Sonseca Array** 96.83 334 P P 16 24 42.1 -0.9
comp=Z,1.1nm,0.6s,baz=12,slow=4.4,SNR=9.7
ESDC PP PP 16 28 24.2 -13
comp=Z,1.5nm,0.9s,baz=16,slow=6.8,SNR=4.6
ESDC LR LR 17 13 00.8
comp=Z,1µm,20.6s,baz=40,slow=38
MTE **Manteigas** 97.37 337 *e*P P 16 24 45.4 -0.1
MTE **Manteigas** 97.37 337 *e*LR LR 16 59 57.8
comp=Z,1µm,22.0s
448A **Bay Minette** 97.81 41 P P 16 24 46.0 -1.5
baz=323
PCAS **Casmilo, Conde** 97.99 337 *e*PP PP 16 28 49.5 +3.3
PMRV **Marv??o** 98.20 336 *e*PP PP 16 28 51.3 +3.3
PMRV **Marv??o** 98.20 336 *e*LR LR 16 58 17.6
comp=Z,1µm,22.0s
PESTR **Estremoz** 98.78 336 *e*PP PP 16 28 57.6 +5.2
PMTG **Montargil** 98.80 337 *e*PP PP 16 28 53.2 +0.7
RKT **Rikitea** 98.98 112 *e*SKSac **SKSac** 16 35 28.4 +1.3
comp=Z,467nm,30.5s
RKT *e*SP **SP** 16 37 43.7 -2.3
comp=Z,556nm,40.5s
RKT **Rikitea** 98.98 112 *e*LR LR 16 56 55.0
comp=Z,2µm,26.5s,baz=307
PNCL **Nicolau / Gran** 99.77 336 *e*PP PP 16 29 06.3 +6.5
PCVE **Castro Verde** 100.05 336 *e*PP PP 16 29 03.2 +1.2
PVAQ **Vaqueiros** 100.15 335 *e*PP PP 16 29 08.2 +5.4
PVAQ **Vaqueiros** 100.15 335 *e*LR LR 16 59 02.4
comp=Z,1µm,20.0s
KMBO **Kilima Mbogo** 101.87 278 P **Pdif** 16 25 05.1 -1.1
comp=Z,0.6nm,0.3s,baz=35,slow=6.5,SNR=3.6
KMBO PP **PP** 16 29 15.3 -2.2
comp=Z,3.9nm,1.1s,baz=39,slow=6.5,SNR=4.4
LBTB **Lobatse** 124.66 263 *e*PKIKP **PKPdf** 16 30 11.5 -0.2
LBTB **Lobatse** 124.66 263 *e*PKPdf **PKPdf** 16 30 11.4 -0.2
DBIC **Dimbokro** 125.90 317 PKP **PKPdf** 16 30 13.7 -0.6
comp=Z,6.6nm,0.6s,baz=6.3,slow=3.2,SNR=16
DBIC PP **PP** 16 32 03.2 -3.5
comp=Z,9.4nm,0.9s,baz=27,slow=10,SNR=5.2
DBIC **Dimbokro** 125.90 317 *e*PKPdf **PKPdf** 16 30 13.5 -0.8
TIC **Toumodi** 126.01 317 *e*PKP1 **PKPdf** 16 30 13.7 -0.9
KIC **Kosan Boka** 126.10 317 *e*PKP1 **PKPdf** 16 30 13.9 -0.8
comp=Z,29nm,1.1s
LIC **Lamto** 126.36 317 *e*PKP1 **PKPdf** 16 30 14.5 -0.7
comp=Z,133nm,2.3s
BOSA **Boshof** 126.63 260 PKP **PKPdf** 16 30 14.8 -0.6
comp=Z,5.5nm,0.8s,baz=75,slow=1.4,SNR=8.0
QSPA **South Pole Qui** 127.27 180 *e*PKPdf **PKPdf** 16 30 14.4 -0.9
PTGA **Pitinga** 138.43 33 *e*PKPdf **PKPdf** 16 30 37.6 -0.3
SNAA **Sanae** 141.21 197 PKP PKPpre 16 30 34.9
SNAA **Sanae** 141.21 197 *e*PKHKP PKPpre 16 30 34.6
SNAA **Sanae** 141.21 197 *e*PKPpre PKPpre 16 30 35.0
VNA2 **Neumayer--Watz** 142.78 196 PKP **PKPdf** 16 30 40.8 -3.2
baz=130,slow=3.5
VNA3 **Neumayer Olymp** 143.03 195 PKP PKPab 16 30 40.6 +0.8
VNA1 **Neumayer--Stat** 143.18 196 PKP PKPbc 16 30 41.3 -0.5
SAML **Samuel** 143.92 44 *e*PKPdf PKPab 16 30 45.0 +0.1
LPAZ **La Paz** 146.47 59 PKPbc **PKPbc** 16 30 54.2 0.0
comp=Z,20nm,0.5s,baz=340,slow=2.2,SNR=111
LPAZ **La Paz** 146.47 59 *e*PKPdf **PKPbc** 16 30 53.7 -0.5
PB11 **IPOC Station P** 147.73 65 *e*PKPdf **PKPdf** 16 30 55.0 +0.8
RCBR **Riachuelo** 148.35 355 *e*PKPbc **PKPbc** 16 30 58.6 -0.1
PB01 **IPOC Station P** 148.66 67 *e*PKPbc **PKPbc** 16 30 59.8 +0.3
SIV **San Ignacio** 150.79 49 PKP **PKPdf** 16 30 59.7 +0.6
comp=Z,10.0nm,0.5s,baz=314,slow=7.0,SNR=4.9
SIV PKPbc **PKiKP** 16 31 05.4 0.0
comp=Z,12nm,0.6s,baz=318,slow=1.1,SNR=19
LCO **Las Campanas** 151.98 82 *e*PKPbc **PKPbc** 16 31 07.4 0.0
PLCA **Paso Flores** 155.11 107 PKPbc PKPdf 16 31 14.2 +9.4
comp=Z,3.1nm,0.9s,baz=240,slow=5.8,SNR=3.3
PLCA PKPab **PKPab** 16 31 31.0 +1.4
comp=Z,3.7nm,0.8s,baz=360,slow=1.4,SNR=5.3
CPUP **Villa Florida** 160.64 60 PKPab **PKPab** 16 31 54.8 +1.1
comp=Z,4.5nm,1.1s,baz=299,slow=2.5,SNR=3.8

ISC 21 16:14:26.9±1.2,**51.41N**±0.05×**16.06E**±0.03,**h0**km,**n15,**
σ**0.99**/36,**Poland**

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time	Res
								h m s	ISC
KSP	**Ksiaz**	**0.58**	**165**	*i* Pg		**Pg**		**16 14 38.2**	**+0.2**
KSP				*e*Sg		**Sg**		**16 14 46.6**	**+1.1**
UPC	**Upice**	**0.90**	**182**	*e*PG		**Pb**		**16 14 44.8**	**-0.5**
UPC				*e*SG		**Sb**		**16 14 57.6**	**-0.3**

comp=Z,56nm,0.5s

DPC	**Dobruska-Polom**	**1.07 171**	*i* PG	**Pg**	**16 14 47.0**	**-0.4**
DPC			*e*SG	**Sg**	**16 15 01.6**	**+0.4**
	comp=Z,15nm,0.3s					
PVCC	**Panska Ves**	**1.29 228**	*e*PG	**Pg**	**16 14 51.4**	**-0.1**
PVCC			*e*SG	**Sn**	**16 15 10.6**	**+0.6**
	comp=Z,57nm,0.2s					
KRLC	**Kraliky**	**1.41 161**	*e*PG	**Pn**	**16 14 52.5**	**-1.3**
KRLC			*e*SG	**Sg**	**16 15 11.2**	**-0.9**
BRG	**Berggiesshubel**	**1.43 249**	PN	**Pn**	**16 14 52.8**	**-1.3**
BRG			PG	**Pb**	**16 14 54.4**	**-0.1**
BRG			SG	**Sn**	**16 15 14.3**	**+0.7**
	27nm,0.3s					
GOPC	**GO Pecny, Ondr**	**1.70 209**	*e*PG	**Pb**	**16 14 58.6**	**-0.4**
GOPC			*e*SG	**Sg**	**16 15 22.5**	**+1.1**
	comp=Z,6.6nm,0.3s					
PRU	**Pruhonice**	**1.71 215**	*e*PN	**Pn**	**16 14 57.9**	**-0.1**
PRU			*e*PG	**Pb**	**16 14 58.9**	**-0.3**
PRU			*e*SG	**Sg**	**16 15 23.5**	**+1.6**
	comp=Z,8.6nm,0.3s					
CLL	**Collm**	**1.92 268**	*e*Pg	**Pn**	**16 15 01.0**	**+0.2**
CLL			*e*Sg	**Sg**	**16 15 28.0**	**-0.4**
	comp=Z,11nm,0.4s					
OKC	**Ostrava-Krasne**	**2.06 139**	*e*PG	**Pb**	**16 15 04.6**	**-0.5**
OKC			*e*SG	**Sb**	**16 15 30.5**	**-0.7**
	comp=Z,14nm,0.5s					
TREC	**Trest**	**2.14 190**	*e*PN	**Pn**	**16 15 04.3**	**+0.4**
TREC			*e*PG	**Pb**	**16 15 06.8**	**+0.2**
TREC			*e*SG	**Sg**	**16 15 36.0**	**+0.3**
	comp=Z,10.0nm,0.3s					
NKC	**Novy Kostel**	**2.57 244**	*e*PN	**Pn**	**16 15 09.3**	**-0.5**
NKC			*e*PG	**Pg**	**16 15 15.7**	**-0.4**
NKC			*e*SG	**Sg**	**16 15 50.9**	**+1.4**
	comp=Z,19nm,0.3s					
OJC	**Ojcow**	**2.65 115**	*e*Pg	**Pb**	**16 15 15.8**	**+0.5**
OJC			*e*Sg	**Sg**	**16 15 50.3**	**-1.8**
KHC	**Kasperske Hory**	**2.78 216**	*e*PN	**Pn**	**16 15 12.5**	**-0.1**
KHC			*e*PG	**Pb**	**16 15 18.3**	**+0.9**
KHC			*e*SN	**Sn**	**16 15 46.3**	**-0.6**
KHC			*e*SG	**Sg**	**16 15 55.9**	**-0.1**
	comp=Z,6.9nm,0.5s					
STHS	**Stebnicka Huta**	**3.87 119**	*e*PG	**Pg**	**16 15 41.3**	**+0.3**
STHS			*e*SG	**Sg**	**16 16 34.7**	**+3.6**
STHS			*e*LG	Lg	16 16 42.2	

JMA 21 16:15:16.6, 36.96N×140.58E, h8km±1km, M4.3, 5C, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.23**	**51**	⇑P	Pg	16 15 21.4	+0.2
ONAJ				S	Sg	16 15 24.8	+0.6
JHO	**Hitachi**	**0.35**	**181**	⇑P	Pg	16 15 23.4	0.0
JHO				S	Sg	16 15 28.4	+0.4
JFK	**Kawauchi**	**0.47**	**30**	⇑P	Pg	16 15 25.7	0.0
JFK				S	Sg	16 15 32.2	+0.3
JSB	**Shiboa**	**0.53**	**271**	⇑P	Sb	16 15 27.6	-0.6
JSB				S	Sb	16 15 35.3	-0.7
JFT	**Otama**	**0.59**	**341**	⇑P	Pg	16 15 28.2	+0.2
MAT	**Matsushiro**	**1.95**	**258**	P	Pb	16 15 51.3	-1.1
MAT				S	Sb	16 16 17.0	+0.1

IDC ***21*** *16:31:23.9±0.7, 40.36N×143.76E, h0km, mb4.0/19, mb1 4.1/25, mb1mx4.0/42, mbtmp4.0/25, ML3.4/5, MS4.2/1, Ms1 4.2/1, ms1mx3.1/52, Error ellipse: s-maj=17.4km s-min=14.0km az=119.0*

JMA ***21*** *16:31:23.4±0.2, 40.42N×143.79E, h0km, M4.3*

ISCJB ***21*** *16:31:24.4±0.4, 40.40N±0.03×143.87E±0.05, h16km, mb4.3/45, MS4.2/4, Error ellipse: s-maj=6.3km s-min=3.7km az=29.2*

NEIC ***21*** *16:31:25.3±2.5, 40.39N×143.74E, h8km±15km, mb4.6/13, Error ellipse: s-maj=9.2km s-min=4.9km az=117.0*

MOS ***21*** *16:31:26.9±1.1, 40.44N×143.79E, h33km, mb4.6/26, Error ellipse: s-maj=9.3km s-min=5.5km az=96.2*

BJI ***21*** *16:31:30.1, 40.33N×143.08E, h25km, mb4.6/35, mB5.1/16, Ms4.4/10, Ms7 4.3/9*

ISC 21 16:31:26.1±0.5, 40.39N±0.05×143.89E±0.06, h16km, n121, σ1§43/124, mb4.5/45, MS4.3/4, 6C, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JTH	**Tanohata**	**1.62**	**255**	P	**Pn**	**16 31 52.1**	**-1.9**
ERM	**Erimo**	**1.72**	**341**	*e*P	**Pn**	**16 31 53.7**	**-1.6**
ERM	**Erimo**	**1.72**	**341**	*e*Pn	**Pn**	**16 31 54.3**	**-1.0**
JEM	**Erimo**	**1.72**	**341**	P	**Pn**	**16 31 54.2**	**-1.1**
MIYJ	**Miyakonagasawa**	**1.79**	**244**	P	**Pn**	**16 31 55.3**	**-1.0**
JANG	**Nango**	**1.82**	**270**	P	**Pn**	**16 31 54.9**	**-1.8**
JKZ	**Kuzumaki**	**2.00**	**259**	P	**Pn**	**16 31 58.3**	**-1.0**
JNBK	**Urakawa-nobuka**	**2.08**	**336**	P	**Pn**	**16 31 59.5**	**-0.8**
JNBK				*e*S	**Sn**	**16 32 25.4**	**-0.4**
OFUJ	**Ofunato**	**2.16**	**233**	P	**Pn**	**16 32 00.5**	**-0.8**
JTM	**Tenmabayashi**	**2.19**	**281**	P	**Pn**	**16 32 00.9**	**-0.9**
JOM	**Ohasama**	**2.20**	**246**	P	**Pn**	**16 32 01.3**	**-0.6**
JCH	**Churui**	**2.26**	**350**	P	**Pn**	**16 32 02.0**	**-0.8**
JCH				S	**Sn**	**16 32 28.2**	**-2.1**
JOT	**Ohata**	**2.38**	**296**	P	**Pn**	**16 32 03.3**	**-1.0**
JAH	**Hinai**	**2.50**	**266**	P	**Pn**	**16 32 05.7**	**-0.4**
JMK	**Ichinoseki**	**2.51**	**236**	P	**Pn**	**16 32 05.7**	**-0.5**
JKB	**Kayabe**	**2.63**	**306**	P	**Pn**	**16 32 07.2**	**-0.6**
JKB				S	**Sn**	**16 32 38.1**	**-1.3**
JRG	**Rokugo**	**2.70**	**250**	P	**Pn**	**16 32 09.0**	**+0.2**
JIO	**Ouri**	**2.76**	**226**	P	**Pn**	**16 32 09.3**	**-0.3**
JYK	**Kaneyama**	**3.10**	**243**	P	**Pn**	**16 32 14.1**	**-0.2**
ASAJ	**Asahikawa**	**3.85**	**346**	Pn	**Pn**	**16 32 24.6**	**0.0**
	2.2nm,0.3s,baz=210,slow=22,SNR=19						
ASAJ				Sn	**Sn**	**16 33 12.8**	**+3.4**
	5.8nm,0.3s,baz=319,slow=7.4,SNR=5.8						
YUK	**Yuzh-Kuril'sk**	**3.93**	**21**	*e*P	**Pn**	**16 32 24.9**	**-0.8**
YUK				*e*S	**Sn**	**16 33 07.8**	**-3.6**
YUK				pmax	pmax		
	comp=N,76nm,0.2s						
YUK				pmax	pmax		
	comp=Z,228nm,0.2s						
YUK				pmax	pmax		
	comp=E,39nm,0.1s						
SHO	**Shikotan**	**4.11**	**31**	*e*P	**Pn**	**16 32 27.0**	**-1.2**
SHO				*e*S	**Sn**	**16 33 10.5**	**-5.3**
SHO				pmax	pmax		
	comp=E,17nm,0.3s						
SHO				pmax	pmax		
	comp=Z,51nm,0.3s						
SHO				pmax	pmax		
	comp=N,17nm,0.2s						
KUR	**Kuril'sk**	**5.66**	**30**	*e*P	**Pn**	**16 32 49.6**	**+0.2**
KUR				*e*S	**Sn**	**16 33 50.8**	**-3.2**
KUR				pmax	pmax		
	comp=Z,186nm,2.5s						
KUR				pmax	pmax		
	comp=Z,76nm,0.4s						
KUR				pmax	pmax		
	comp=E,30nm,0.3s						
KUR				pmax	pmax		
	comp=N,14nm,0.2s						
KUR				smax	smax		
	comp=N,95nm,0.3s						
KUR				smax	smax		
	comp=E,32nm,0.3s						
KUR				pmax	pmax		
	comp=N,315nm,3.2s						
KUR				pmax	pmax		
	comp=E,258nm,3.2s						
MJAR	**Matsushiro Arr**	**5.88**	**231**	Pn	**Pn**	**16 32 52.4**	**-0.3**
	comp=E,3.0nm,0.3s,baz=30,slow=12,SNR=46						
MAJO	**Matsushiro**	**5.89**	**231**	*i* P	**Pn**	**16 32 53.9**	**+1.3**
MAJO	**Matsushiro**	**5.89**	**231**	*e*Pn	**Pn**	**16 32 53.5**	**+0.8**
MAT	**Matsushiro**	**5.89**	**231**	P	**Pn**	**16 32 52.4**	**-0.2**
MAT				*e*S	**Sb**	**16 34 13.5**	**-5.1**
YSS	**Yuzh-Sakhalins**	**6.62**	**353**	⇑P	**Pn**	**16 33 03.6**	**+1.0**
YSS				*e*		16 34 15.4	
YSS	**Yuzh-Sakhalins**	**6.62**	**353**	*e*Pn	**Pn**	**16 33 02.6**	**0.0**
USRK	**Ussuriysk Ar.**	**9.61**	**297**	Pn	**Pn**	**16 33 43.9**	**+0.3**
	comp=E,0.5nm,0.3s,baz=101,slow=14,SNR=15						
TYV	**Tymovskoe**	**10.51**	**356**	*e*P	**Pn**	**16 33 56.0**	**0.0**
MDJ	**Mudanjiang**	**11.37**	**297**	P	Pn	16 34 03.8	-4.0
MDJ				S	Sn	16 36 03.1	-11
MDJ				pmax	pmax		
	comp=E,9.0nm,2.5s						
MDJ				pmax	pmax		
	comp=E,210nm,4.5s						
MDJ				LR	LR		
	comp=E,210nm,4.6s						
MDJ				LR	LR		
	comp=E,270nm,8.2s						
MDJ				LR	LR		
	comp=E,780nm,14.3s						
MDJ	**Mudanjiang**	**11.37**	**297**	*e*Pn	Pn	16 34 02.7	-5.1
KLR	**Kul'dur**	**12.34**	**320**	Pn	**Pn**	**16 34 20.1**	**-0.8**
	comp=E,0.1nm,0.3s,baz=127,slow=13,SNR=7.8						
JNU	**Nakatsue**	**12.70**	**239**	Pn	**Pn**	**16 34 24.1**	**-2.0**
	comp=E,0.3nm,0.3s,baz=211,slow=11,SNR=7.4						
JNU	**Nakatsue**	**12.70**	**239**	*e*Pn	**Pn**	**16 34 23.6**	**-2.4**
KSRS	**Korea Array**	**12.78**	**262**	Pn	**Pn**	**16 34 26.4**	**-0.6**
	baz=71,slow=12,SNR=2.1						
KSAR	**Wonju Array Be**	**12.81**	**262**	P	**Pn**	**16 34 26.4**	**-1.1**
KSAR	**Wonju Array Be**	**12.81**	**262**	Pn	**Pn**	**16 34 26.4**	**-1.1**
NKL	**Nikolayevsk**	**12.95**	**351**	*e*P	**Pn**	**16 34 29.0**	**-0.3**
NKL				pmax	pmax		
	comp=E,10.0nm,1.0s						
SEY	**Seymchan**	**23.14**	**10**	P	**P**	**16 36 30.1**	**-1.2**
	comp=Z,5.2nm,0.8s,baz=186,slow=7.3,SNR=12						
SEY	**Seymchan**	**23.14**	**10**	*ce*P	**P**	**16 36 29.8**	**-1.5**
YAK	**Yakutsk**	**23.32**	**343**	P	**P**	**16 36 31.9**	**-1.2**
	comp=Z,9.5nm,0.8s,baz=349,slow=2.3,SNR=7.0						
YAK	**Yakutsk**	**23.32**	**343**	*e*P	**P**	**16 36 32.7**	**-0.4**
YAK				*e**PP	**sP**	**16 36 39.0**	**-0.9**
YAK				*e*S	S	16 40 36.2	-8.7
YAK				*e**SS	**sS**	**16 40 48.4**	**-4.5**
YAK				*e*SSS	SSS	16 41 19.3	
YAK				pmax	pmax		
	comp=N,3.0nm,1.1s						
YAK				pmax	pmax		
	comp=E,3.0nm,1.4s						
YAK				pmax	pmax		
	comp=Z,12nm,0.9s						
YAK				smax	smax		
	comp=N,47nm,1.9s						
YAK				smax	smax		
	comp=E,81nm,2.9s						
CIT	**Chita**	**23.82**	**309**	*e*P	**P**	**16 36 34.8**	**-3.4**
HHC	**Hu-ho-hao-te**	**24.48**	**282**	*e*P	**P**	**16 36 42.8**	**-1.6**
HHC				sP	sP	16 36 55.9	+4.6
HHC				S	S	16 40 52.8	-11
HHC				pmax	pmax		
	comp=E,29nm,0.9s						
HHC				pmax	pmax		
	comp=E,470nm,11.7s						
HHC				LR	LR		
	comp=E,660nm,13.6s						
HHC				LR	LR		
	comp=E,650nm,12.9s						
HHC				LR	LR		
	comp=E,650nm,14.8s						
BOD	**Bodaibo**	**25.89**	**322**	*e*P	**P**	**16 36 55.9**	**-1.1**
BOD				pmax	pmax		
	comp=Z,18nm,1.1s						
ULN	**Ulaanbaatar**	**27.28**	**298**	*ce*P	**P**	**16 37 10.2**	**+0.4**
ULN				pmax	pmax		
	comp=Z,15nm,2.5s						
SONA0	**Songino Array**	**27.72**	**298**	*e*P	**P**	**16 37 12.6**	**-1.1**
	comp=Z,3.6nm,0.9s						
SONM	**Songino Array**	**27.72**	**298**	P	**P**	**16 37 12.6**	**-1.1**
	comp=Z,2.7nm,0.9s,baz=78,slow=7.8,SNR=13						
H11N2	**WAKE ISLAND Hy**	**28.49**	**129**	T	T	17 07 13.6	
	baz=322,slow=74,SNR=7.5						
H11N1	**WAKE ISLAND Hy**	**28.50**	**130**	T	T	17 07 16.6	
	baz=322,slow=74,SNR=2.0						
H11N3	**WAKE ISLAND Hy**	**28.51**	**129**	T	T	17 07 22.2	
	baz=322,slow=74,SNR=3.7						
H11S1	**WAKE ISLAND Hy**	**29.33**	**131**	T	T	17 08 21.5	
	baz=360,slow=74,SNR=5.5						
H11S2	**WAKE ISLAND Hy**	**29.35**	**131**	T	T	17 08 20.9	
	baz=330,slow=74,SNR=1.4						
IRK	**Irkutsk**	**29.45**	**307**	*e*P	**P**	**16 37 29.9**	**+1.0**
IRK				pmax	pmax		
	comp=Z,23nm,1.3s						
ENH	**Enshi**	**29.67**	**261**	*e*P	**P**	**16 37 30.1**	**-1.0**
	comp=Z,26nm,1.4s						
TLY	**Talaya**	**29.77**	**306**	P	**P**	**16 37 32.0**	**+0.2**
	comp=Z,4.5nm,0.8s,baz=114,slow=4.8,SNR=5.7						
TLY	**Talaya**	**29.77**	**306**	*e*P	**P**	**16 37 33.8**	**+2.0**
TLY				pmax	pmax		
	comp=Z,9.0nm,1.1s						
ZAK	**Zakamensk**	**29.89**	**303**	*e*P	P	16 37 42.7	+10
ZAK				pmax	pmax		
	comp=Z,4.0nm,1.3s						
BILL	**Bilibino**	**30.27**	**17**	*i* P	**P**	**16 37 36.0**	**+0.1**
BILL				*i*		16 37 45.9	
BILL				pmax	pmax		
	comp=Z,6.0nm,1.0s						
BILL	**Bilibino**	**30.27**	**17**	*e*P	**P**	**16 37 37.0**	**+1.1**
	comp=Z,7.1nm,0.9s						
MOY	**Moody**	**31.41**	**306**	*e*P	P	16 37 49.4	+3.0
TIXI	**Tiksi**	**32.24**	**351**	*ce*P	**P**	**16 37 53.2**	**0.0**
TIXI				pmax	pmax		
	comp=Z,6.0nm,2.5s						
GTA	**Gaotai**	**33.57**	**283**	*e*P	**P**	**16 38 05.4**	**0.0**
GTA				pP	sP	16 38 12.8	+0.5
GTA				sP	pP	16 38 15.5	+5.2
GTA				pmax	pmax		
	comp=Z,12nm,1.1s						
GYA	**Guiyang**	**33.78**	**257**	*e*P	**P**	**16 38 07.8**	**+0.5**
GYA				pmax	pmax		
	comp=Z,10.0nm,0.8s						
WMQ	**Urumqi**	**41.16**	**294**	*e*P	**P**	**16 39 10.1**	**+0.5**
WMQ				pP	sP	16 39 17.8	+1.2
WMQ				sP	pP	16 39 20.3	+5.7
WMQ				pmax	pmax		
	comp=Z,7.0nm,0.6s						
WMQ				LR	LR		
	comp=Z,74nm,18.4s						
WMQ				LR	LR		
	comp=Z,46nm,18.4s						
WMQ				LR	LR		
	comp=Z,120nm,18.4s						
ZAA1	**Zalesovo Array**	**41.18**	**310**	*e*P	**P**	**16 39 09.6**	**+0.1**
ZALV	**Zalesovo Beam**	**41.18**	**310**	P	**P**	**16 39 09.6**	**+0.1**
	comp=Z,3.9nm,0.7s,baz=88,slow=7.4,SNR=17						
NVS	**Novosibirsk**	**42.01**	**311**	*e*P	**P**	**16 39 16.2**	**-0.1**
NVS				pmax	pmax		
	comp=Z,14nm,1.5s						
NVS				pmax	pmax		
	comp=E,12nm,1.8s						
LSA	**Lhasa**	**43.91**	**273**	*e*P	**P**	**16 39 34.9**	**+2.3**
LSA				pmax	pmax		
	comp=Z,9.0nm,1.1s						
LSA	**Lhasa**	**43.91**	**273**	*e*P	**P**	**16 39 34.9**	**+2.3**
	comp=Z,9.4nm,1.1s						
CHTO	**Chiang Mai**	**44.03**	**254**	*e*P	**P**	**16 39 33.1**	**0.0**
CHTO				pmax	pmax		
	comp=Z,11nm,1.6s						
CHTO	**Chiang Mai**	**44.03**	**254**	*e*P	**P**	**16 39 33.1**	**0.0**
	comp=Z,11nm,1.6s						
MK32	**Makanchi Array**	**44.07**	**300**	*e*P	**P**	**16 39 33.2**	**0.0**
MKAR	**Makanchi Array**	**44.07**	**300**	P	**P**	**16 39 33.2**	**0.0**
	comp=Z,5.7nm,0.8s,baz=82,slow=9.4,SNR=43						
CMAR	**Chiang Mai Arr**	**44.26**	**254**	P	**P**	**16 39 34.8**	**-0.2**
	comp=Z,0.4nm,0.4s,baz=50,slow=6.9,SNR=5.6						
KURK	**Kurchatov**	**45.47**	**306**	*e*P	**P**	**16 39 43.6**	**-0.6**
KURK				pmax	pmax		
	comp=Z,9.0nm,0.9s						
KURK	**Kurchatov**	**45.47**	**306**	*e*P	**P**	**16 39 43.6**	**-0.6**
	comp=Z,9.4nm,0.9s						
ILAR	**Eielson Array**	**45.63**	**34**	P	**P**	**16 39 47.0**	**+1.7**
	comp=Z,0.6nm,0.7s,baz=262,slow=6.6,SNR=8.8						
EGAK	**Eagle**	**48.07**	**34**	*e*P	P	16 40 13.1	+8.7
	comp=Z,4.3nm,0.8s						
VOSK	**Vostochnaya**	**49.55**	**310**	*e*P	**P**	**16 40 15.9**	**0.0**
VOSK				pmax	pmax		
	comp=Z,9.0nm,1.0s						
VOSK	**Vostochnaya**	**49.55**	**310**	*e*P	**P**	**16 40 15.9**	**0.0**
	comp=Z,9.1nm,1.0s						
TKM2	**Tokmak 2**	**49.80**	**297**	*e*P	**P**	**16 40 18.3**	**+0.1**
TKM2				pmax	pmax		
	comp=Z,11nm,1.0s						
TKM2	**Tokmak 2**	**49.80**	**297**	*e*P	**P**	**16 40 18.3**	**+0.1**
	comp=Z,11nm,1.0s						
BRVK	**Borovoye**	**49.86**	**311**	*ce*P	**P**	**16 40 18.3**	**+0.1**
BRVK				pmax	pmax		
	comp=Z,14nm,2.5s						
INK	**Inuvik**	**50.52**	**29**	P	**P**	**16 40 24.2**	**+1.2**
	comp=Z,0.8nm,0.8s,baz=284,slow=4.2,SNR=3.4						
INK	**Inuvik**	**50.52**	**29**	*e*P	**P**	**16 40 24.9**	**+1.9**
	comp=Z,3.6nm,1.0s						
AAK	**Ala-Archa**	**50.66**	**297**	*e*P	**P**	**16 40 24.1**	**-0.6**
AAK				pmax	pmax		
	comp=Z,6.0nm,1.4s						
AAK	**Ala-Archa**	**50.66**	**297**	*e*P	**P**	**16 40 24.1**	**-0.6**
	comp=Z,6.0nm,1.4s						
KSH	**Kashi**	**50.87**	**292**	*e*P	P	16 40 30.1	+3.9
KSH				*e*pP	sP	16 40 36.8	+3.5
KSH				*e*sP	pP	16 40 39.8	+8.5
KSH				S	**S**	**16 47 45.5**	**+3.6**
KSH				ScS	**ScS**	**16 50 16.8**	**+0.3**
KSH				SS	**SS**	**16 51 17.8**	**+1.5**
KSH				pmax	pmax		
	comp=Z,310nm,9.3s						
KSH				LR	LR		
	comp=Z,290nm,10.5s						
KSH				LR	LR		
	comp=Z,110nm,5.7s						
KSH				LR	LR		
	comp=Z,290nm,14.0s						
ARU	**Arti**	**55.17**	**318**	LR	LR	17 06 38.5	
	comp=Z,210nm,18.4s,baz=53,slow=38						
ARU	**Arti**	**55.17**	**318**	*c* i P	**P**	**16 40 57.3**	**-0.2**
ARU						16 42 57.5	
ARU				S	**S**	**16 48 40.2**	**+0.5**
ARU				SS	**SS**	**16 52 22.4**	**-0.8**
ARU				pmax	pmax		
	comp=Z,11nm,1.7s						
ABKAR	**Akbulak array**	**57.29**	**309**	*e*P	**P**	**16 41 12.7**	**-0.2**
RES	**Resolute Bay**	**58.87**	**15**	*e*P	**P**	**16 41 24.6**	**+1.2**
RES				pmax	pmax		
	comp=Z,4.0nm,0.8s						
RES	**Resolute Bay**	**58.87**	**15**	*e*P	**P**	**16 41 24.6**	**+1.2**
	comp=Z,3.8nm,0.8s						
YKA	**Yellowknife Ar**	**59.94**	**32**	P	**P**	**16 41 31.7**	**+0.7**
	comp=Z,0.2nm,0.6s,baz=305,slow=6.7,SNR=4.7						
YKB5	**Yellowknife Ar**	**59.94**	**32**	*e*P	**P**	**16 41 32.3**	**+1.3**
WR1	**Warramunga Arr**	**60.67**	**190**	*e*P	**P**	**16 41 35.5**	**-1.0**
	comp=Z,18nm,1.6s						
WRA	**Warramunga Arr**	**60.67**	**190**	P	**P**	**16 41 35.5**	**-1.0**
	comp=Z,0.5nm,0.4s,baz=8.3,slow=7.0,SNR=8.8						
GEYT	**Alibeck**	**63.92**	**299**	P	**P**	**16 41 57.8**	**-0.5**
	comp=Z,2.8nm,1.0s,baz=73,slow=5.0,SNR=3.9						
ASAR	**Alice Springs**	**64.40**	**190**	P	**P**	**16 42 01.3**	**0.0**
	comp=Z,0.2nm,0.4s,baz=3.9,slow=6.1,SNR=6.3						
OBN	**Obninsk**	**66.57**	**323**	*e*P	**P**	**16 42 14.8**	**-0.3**
OBN				pmax	pmax		
	comp=Z,6.0nm,1.4s						
FIA0	**FINESS Array S**	**66.75**	**332**	*e*P	**P**	**16 42 16.2**	**+0.1**
FIA0	**FINESS Array S**	**66.75**	**332**	*e*P	**P**	**16 42 16.2**	**+0.1**
FINES	**FINESS Array B**	**66.75**	**332**	P	**P**	**16 42 16.2**	**+0.1**
	comp=Z,3.1nm,0.8s,baz=54,slow=9.7,SNR=10						
KIV	**Kislovodsk**	**70.17**	**311**	*i* P	**P**	**16 42 39.3**	**+1.3**
KIV				pmax	pmax		
	comp=Z,9.0nm,1.2s						
KBZ	**Khabaz**	**70.19**	**311**	P	**P**	**16 42 37.5**	**-0.4**
	comp=Z,3.3nm,0.9s,baz=72,slow=4.1,SNR=5.6						
NB2	**NORSAR Subarra**	**71.83**	**338**	P	**P**	**16 42 47.6**	**-0.1**
	comp=Z,1.0nm,0.8s,baz=37,slow=6.2						
NB200	**NORSAR Array S**	**71.83**	**338**	*e*P	**P**	**16 42 48.0**	**+0.3**
NOA	**NORSAR Array B**	**71.83**	**338**	P	**P**	**16 42 48.0**	**+0.3**
	comp=Z,1.9nm,0.8s,baz=38,slow=6.0,SNR=8.7						
AKASG	**Malin Array Be**	**72.82**	**323**	P	**P**	**16 42 53.5**	**-0.1**
	comp=Z,3.1nm,0.8s,baz=43,slow=6.2,SNR=10.0						
AKASG	**Malin Array Be**	**72.82**	**323**	P	**P**	**16 42 53.6**	**-0.1**
AKASG				pmax	pmax		
	comp=Z,2.0nm,0.7s						
PDAR	**Pinedale Array**	**73.95**	**47**	P	**P**	**16 43 03.0**	**+2.2**
	comp=Z,0.3nm,0.7s,baz=153,slow=2.6,SNR=2.8						
BORG	**Borgarnes**	**74.56**	**353**	*i* P	P	16 43 11.5	+7.9
DPC	**Dobruska-Polom**	**78.63**	**329**	*e*P	**P**	**16 43 28.2**	**+1.2**
DPC	**Dobruska-Polom**	**78.63**	**329**	*e*P	**P**	**16 43 28.2**	**+1.2**
KHC	**Kasperske Hory**	**80.67**	**329**	*e*P	**P**	**16 43 38.9**	**+0.8**
KHC				*e*PCP	**sP**	**16 43 47.6**	**+2.3**
KHC	**Kasperske Hory**	**80.67**	**329**	*e*P	**P**	**16 43 38.9**	**+0.8**
KHC				*e*		16 43 47.6	
GERES	**GERESS Array B**	**80.86**	**329**	P	**P**	**16 43 39.8**	**+0.6**
	comp=Z,0.6nm,0.6s,baz=26,slow=3.4,SNR=5.6						
BFO	**Black Forest**	**83.30**	**332**	*i* P	**P**	**16 43 53.8**	**+1.9**

IDC ***21*** *16:39:49.2±2.4, 37.84N×144.88E, h0km, mb3.4/3, mb1 3.5/5, mb1mx3.2/43, mbtmp3.4/5, ML3.5/2, Error ellipse: s-maj=60.8km s-min=29.1km az=79.0*

JMA ***21*** *16:39:54.9±0.2, 38.11N×144.51E, h30km, M3.8*

ISC 21 16:39:54.4±1.4, 38.05N±0.07×144.74E±0.09, h35km, n20, σ1§59/31, mb3.5/3, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
OFUJ	**Ofunato**	**2.62**	**294**	P	**Pn**	**16 40 33.9**	**-0.3**
JIO	**Ouri**	**2.70**	**280**	P	**Pn**	**16 40 35.0**	**-0.3**
JIO				S	**Sn**	**16 41 04.8**	**-1.9**
JMK	**Ichinoseki**	**2.90**	**289**	P	**Pn**	**16 40 38.1**	**0.0**
JTH	**Tanohata**	**2.93**	**311**	P	**Pn**	**16 40 38.2**	**-0.2**
JOM	**Ohasama**	**3.05**	**299**	P	**Pn**	**16 40 40.4**	**+0.3**
JOM				S	**Sn**	**16 41 15.0**	**-0.3**
JMM	**Marumori**	**3.12**	**268**	S	**Sn**	**16 41 14.7**	**-2.5**
JOU	**Okura**	**3.22**	**277**	P	**Pn**	**16 40 43.2**	**+0.6**
JOU				S	**Sn**	**16 41 18.5**	**-1.2**
JANG	**Nango**	**3.42**	**314**	P	**Pn**	**16 40 45.2**	**0.0**
JANG				*e*S	**Sn**	**16 41 22.5**	**-1.9**
JRG	**Rokugo**	**3.48**	**294**	P	**Pn**	**16 40 47.0**	**+0.9**
JRG				*e*S	**Sn**	**16 41 26.1**	**+0.1**
JFT	**Otama**	**3.53**	**263**	S	**Sn**	**16 41 25.6**	**-1.6**
JYK	**Kaneyama**	**3.54**	**286**	P	**Pn**	**16 40 47.7**	**+0.8**
JYK				*e*S	**Sn**	**16 41 27.9**	**+0.3**
JTM	**Tenmabayashi**	**3.94**	**315**	P	**Pn**	**16 40 54.0**	**+1.6**
JTM				S	**Sn**	**16 41 34.7**	**-2.8**
JNBK	**Urakawa-nobuka**	**4.49**	**341**	P	**Pn**	**16 41 00.3**	**+0.3**
JNB

SONM	**Songino Array**	**93.72**	**319**	P	**P**	**16 57 32.6**	**0.0**
	0.2nm,0.6s,baz=165,slow=6.0,SNR=2.4							
YKA	**Yellowknife Ar**	**94.58**	**25**	P	**P**	**16 57 35.3**	**-0.7**
	0.2nm,0.4s,baz=237,slow=4.2,SNR=5.7							
MKAR	**Makanchi Array**	**109.29**	**314**	PKiKP	**PKiKP**	**17 02 41.0**	**-1.0**
	0.2nm,0.3s,baz=112,slow=1.6,SNR=3.2							
KURBB	**Kurchatov Arra**	**112.05**	**318**	PKiKP	**PKiKP**	**17 02 46.2**	**-0.8**
	0.4nm,0.9s,baz=101,slow=2.3,SNR=6.6							
ARCES	**ARCESS Array B**	**126.56**	**350**	PKP	**PKPdf**	**17 03 13.2**	**-1.2**
	1.4nm,0.8s,baz=163,slow=1.3,SNR=5.4							
FINES	**FINESS Array B**	**133.43**	**344**	PKP	**PKPdf**	**17 03 26.8**	**-0.7**
	0.5nm,0.5s,baz=46,slow=8.2,SNR=5.9							
BRTR	**Keskin Array B**	**144.94**	**315**	PKP	PKPbc	17 03 49.4	-0.7
	0.8nm,0.5s,baz=86,slow=3.9,SNR=5.9							
CLL	**Collm**	**145.71**	**347**	*i*P	**PKPbc**	**17 03 51.6**	**-0.1**
	comp=Z,7.0nm,0.6s							
DPC	**Dobruska-Polom**	**145.78**	**343**	*e*P	**PKPab**	**17 03 52.6**	**-1.2**
BRG	**Berggiesshubel**	**145.91**	**346**	*e*P	**PKPbc**	**17 03 52.4**	**+0.2**
	comp=Z,3.4nm,0.6s							
KHC	**Kasperske Hory**	**147.62**	**345**	*e*P	**PKPbc**	**17 03 57.3**	**+0.3**
KHC				*ex*	x	17 04 01.3		
GERES	**GERESS Array B**	**147.85**	**345**	PKPbc	**PKPbc**	**17 03 56.2**	**-1.4**
	comp=Z,2.2nm,0.7s,baz=26,slow=3.2,SNR=16							
CONA	**Conrad Observa**	**148.10**	**342**	*i* PKPbc	**PKPbc**	**17 03 59.2**	**+0.9**
	comp=Z,3.6nm,1.1s							
KBA	**Koelnbreinsper**	**149.58**	**344**	*i* PKPdf	**PKPbc**	**17 04 01.0**	**-1.1**
	comp=Z,2.9nm,0.6s							
RETA	**Reutte**	**149.80**	**348**	*i* PKiKP	**PKiKP**	**17 04 05.4**	**+2.3**
	comp=Z,3.3nm,1.0s							
ABTA	**Abfaltersbach**	**150.10**	**345**	*i* PKPbc	**PKPbc**	**17 04 02.4**	**-0.7**
	comp=Z,3.4nm,0.6s							
FETA	**Feichten**	**150.25**	**347**	*i* PKPbc	**PKPbc**	**17 04 03.7**	**+0.1**
	comp=Z,3.5nm,0.8s							

CSEM ***21*** *16:53:08.6±0.2,38.66N×23.44E,h20km,ML1.6,Error ellipse: s-maj=5.6km s-min=4.6km az=108.0*

ATH 21 16:53:08.4,38.65N×23.42E,h26km±3km,ML1.6/1,Error ellipse: s-maj=3.8km s-min=1.0km az=340.0,Greece

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SMIA	**Simia**	**0.28**	**325**	P	Pb	16 53 15.9	+0.6
SMIA				S	Sb	16 53 20.4	+0.3
SMIA	**Simia**	**0.28**	**325**	P	Pb	16 53 15.9	+0.5
SMIA				S	Sb	16 53 20.4	+0.4
SMIA				AML	AML	16 53 20.6	
	comp=E,268μm,0.3s						
SMIA				AML	AML	16 53 21.3	
	comp=N,301μm,0.3s						
LKR	**Lokris**	**0.33**	**271**	P	Pb	16 53 15.4	-0.6
LKR				S	Sb	16 53 21.1	0.0
LKR	**Lokris**	**0.33**	**271**	P	Pb	16 53 15.4	-0.5
LKR				S	Sb	16 53 21.1	0.0
VIL2	**Platees**	**0.45**	**195**	P	Pn	16 53 19.3	0.0
VIL2				S	Sn	16 53 26.5	0.0
EREA	**Eretria**	**0.46**	**119**	P	Pb	16 53 18.0	-0.1
EREA				S	Sb	16 53 25.0	+0.4
EREA	**Eretria**	**0.46**	**119**	P	Pb	16 53 18.0	-0.1
EREA				S	Sb	16 53 25.0	+0.4
VILL	**Villia**	**0.49**	**190**	P	Pn	16 53 19.3	-0.5
VILL				S	Sn	16 53 26.5	-1.0
SKIA	**Skiathos**	**0.52**	**4**	P	Pb	16 53 19.6	+0.6
SKIA				S	Sn	16 53 27.5	-0.7
SKIA	**Skiathos**	**0.52**	**4**	P	Pn	16 53 19.6	-0.6
SKIA				S	Sb	16 53 27.5	-0.7
AOS	**Alonnisos**	**0.63**	**34**	P	Pb	16 53 19.8	-1.1
AOS	**Alonnisos**	**0.63**	**34**	P	Pb	16 53 19.8	-1.1
LTK	**Loutraki**	**0.72**	**210**	P	Pn	16 53 22.7	-0.2
LTK				S	Sn	16 53 33.6	+0.5
LTK	**Loutraki**	**0.72**	**210**	P	Pn	16 53 22.7	-0.2
LTK				S	Sn	16 53 33.6	+0.5
DSF	**Desfina**	**0.74**	**252**	P	Pb	16 53 22.4	-0.3
DSF	**Desfina**	**0.74**	**252**	P	Pb	16 53 22.4	-0.3
AGG	**Agios Georgios**	**0.93**	**294**	P	Pb	16 53 26.6	+0.7
AGG	**Agios Georgios**	**0.93**	**294**	P	Pb	16 53 26.6	+0.7

MAN 21 17:04:35,8.69N×127.21E,h19km,mb4.6,ML3.4,MS3.4, 1C-1D,Philippine Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BIPH	**Bislig**	**0.97**	**239**	*e*P	Pg	17 04 54.5	+0.5
BIPH				*i* S	Sb	17 05 04.0	-1.8
MATI	**Mati**	**1.97**	**209**	*e*P	Pn	17 05 07.1	-0.3
MATI				*e*S	Sb	17 05 33.2	-1.3
SCPH	**Surigao**	**2.01**	**303**	*e*P	Pb	17 05 09.5	-1.5
BUKP	**Musuan**	**2.27**	**249**	*e*P	Pb	17 05 13.9	-1.5
PAGZ	**Pagadian**	**3.88**	**258**	*e*P	Pn	17 05 36.0	+2.4

ISK ***21*** *17:10:09.8,40.70N×27.37E,h12km,ML2.4*
ISCJB ***21*** *17:10:10.0±0.5,40.69N±0.04×27.37E±0.03,h12km±4km, Error ellipse: s-maj=6.4km s-min=3.7km az=4.0*
DDA ***21*** *17:10:10.2,40.69N×27.38E,h7km,Md2.6*
CSEM ***21*** *17:10:10.3±0.1,40.70N×27.37E,h10km,ML2.4,Error ellipse: s-maj=2.6km s-min=1.6km az=7.0*

ISC 21 17:10:10.0±0.9,40.70N±0.03×27.37E±0.02,h13km±6km, n26,σ0.825/44,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SART	**Tekirdag**	**0.14**	**265**	*i* P	**Pg**	**17 10 13.8**	**+0.1**
SART				*i* S	**Sg**	**17 10 16.2**	**0.0**
SART	**Tekirdag**	**0.14**	**265**	P	**Pg**	**17 10 13.8**	**+0.1**
SART				S	**Sg**	**17 10 16.2**	**0.0**
RKY	**Sarkoy-Tekirda**	**0.15**	**264**	*e*PG	**Pg**	**17 10 13.7**	**0.0**
RKY				*e*SG	**Sg**	**17 10 16.4**	**+0.1**
RKY	**Sarkoy-Tekirda**	**0.15**	**264**	*e*Pg	**Pg**	**17 10 13.7**	**0.0**
RKY				*e*Sg	**Sg**	**17 10 16.4**	**+0.1**
MRMT	**Marmara Adasi**	**0.20**	**120**	*e*PG	**Pg**	**17 10 14.7**	**+0.2**
MRMT				*e*SG	**Sg**	**17 10 17.3**	**-0.3**
MRMT	**Marmara Adasi**	**0.20**	**120**	*e*Pg	**Pg**	**17 10 14.7**	**+0.2**
MRMT				*e*Sg	**Sg**	**17 10 17.3**	**-0.3**
TKR	**Tekirdag**	**0.31**	**24**	*e*PG	**Pg**	**17 10 16.5**	**0.0**
TKR				*e*SG	**Sb**	**17 10 22.2**	**-0.2**
TKR	**Tekirdag**	**0.31**	**24**	*e*Pg	**Pg**	**17 10 16.5**	**0.0**
TKR				*e*Sg	**Sb**	**17 10 22.3**	**-0.2**
EDC	**Edincik**	**0.52**	**133**	*e*PG	**Pg**	**17 10 20.5**	**+0.3**
EDC				*e*SG	**Sb**	**17 10 28.2**	**-0.2**
EDC	**Edincik**	**0.52**	**133**	*e*Pg	**Pg**	**17 10 20.5**	**+0.3**
EDC				*e*Sg	**Sb**	**17 10 28.2**	**-0.2**
KESN	**Edirne-Kesan**	**0.54**	**283**	*i* P	**Pb**	**17 10 21.4**	**-0.1**
KESN				*i* S	**Sg**	**17 10 28.2**	**+0.3**
KESN	**Edirne-Kesan**	**0.54**	**283**	P	**Pb**	**17 10 21.4**	**-0.1**
KESN				S	**Sg**	**17 10 28.2**	**+0.3**
ERIK	**Erikli-Kesan**	**0.65**	**267**	*e*PG	**Pb**	**17 10 23.3**	**0.0**
ERIK	**Erikli-Kesan**	**0.65**	**267**	*e*Pg	**Pb**	**17 10 23.3**	**0.0**
GELI	**Tayfur-Gelibol**	**0.75**	**246**	*e*PG	**Pb**	**17 10 25.1**	**+0.2**
GELI	**Tayfur-Gelibol**	**0.75**	**246**	*e*Pg	**Pb**	**17 10 25.1**	**+0.2**
KCTX	**Karacabey (Bur**	**0.87**	**120**	*e*PG	**Pg**	**17 10 26.8**	**-0.1**
KCTX	**Karacabey (Bur**	**0.87**	**120**	*e*Pg	**Pg**	**17 10 26.8**	**-0.1**
ENEZ	**Enez**	**0.93**	**272**	*e*PG	**Pb**	**17 10 28.2**	**+0.3**
ENEZ	**Enez**	**0.93**	**272**	*e*Pg	**Pb**	**17 10 28.2**	**+0.3**
CTKS	**Kestanelik-??a**	**1.01**	**58**	*e*PG	**Pb**	**17 10 29.4**	**0.0**
CTKS				*e*SG	**Sn**	**17 10 44.1**	**+0.1**
CTKS	**Kestanelik-??a**	**1.01**	**58**	*e*Pg	**Pb**	**17 10 29.4**	**0.0**
CTKS				*e*Sg	**Sn**	**17 10 44.1**	**+0.1**
ALN	**Alexandroupoli**	**1.02**	**281**	*e*PG	**Pg**	**17 10 29.8**	**0.0**
ALN				*e*SG	**Sn**	**17 10 43.8**	**-0.5**
ALN	**Alexandroupoli**	**1.02**	**281**	*e*Pg	**Pg**	**17 10 29.8**	**0.0**
ALN				*e*Sg	**Sn**	**17 10 43.8**	**-0.5**
EDRB	**Edirne**	**1.24**	**338**	*e*PN	**Pg**	**17 10 33.7**	**-0.1**
EDRB				*e*SN	**Sg**	**17 10 50.6**	**+0.7**
EDRB	**Edirne**	**1.24**	**338**	*e*Pn	**Pg**	**17 10 33.7**	**-0.1**
EDRB				*e*Sn	**Sg**	**17 10 50.6**	**+0.7**

ATH ***21*** *17:19:51.0,36.71N×21.46E,h21km±1km,ML3.0/6,Error ellipse: s-maj=2.9km s-min=1.3km az=34.0*
CSEM ***21*** *17:19:51.6±0.6,36.73N×21.42E,h10km,ML3.0,Error ellipse: s-maj=12.5km s-min=6.6km az=33.0*
THE ***21*** *17:19:51.9,36.79N×21.41E,h3km±1km,ML3.1/9,Error ellipse: s-maj=1.7km s-min=0.8km az=47.0*
IDC ***21*** *17:19:51.3±2.8,37.21N×21.82E,h0km,mb3.4/5, mb1 3.5/6,mb1mx3.2/44,mbtmp3.4/6,ML2.4/1,MS3.1/1, Ms1 3.1/1,ms1mx2.5/31,Error ellipse: s-maj=65.3km s-min=26.3km az=43.0*

ISC 21 17:19:52.4±1.1,36.79N±0.04×21.45E±0.03,h18km±2km, n82,σ0.890/110,mb3.5/5,Southern Greece

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PYL	**PYLOS**	**0.26**	**65**	P	**Pg**	**17 19 57.2**	**-1.0**
PYL				S	**Sb**	**17 20 02.2**	**-0.1**
PYL	**PYLOS**	**0.26**	**65**	P	**Pg**	**17 19 56.8**	**-1.4**
PYL				S	**Sb**	**17 20 02.1**	**-0.2**
PYL	**PYLOS**	**0.26**	**65**	P	**Pg**	**17 19 56.8**	**-1.4**
PYL				S	**Sb**	**17 20 02.1**	**-0.2**
PYL				AML	AML	17 20 04.5	
	comp=E,10072μm,0.5s						
PYL				AML	AML	17 20 06.6	
	comp=N,5182μm,0.4s						
ITM	**Ithomi**	**0.55**	**44**	P	**Pb**	**17 20 03.0**	**-0.4**
ITM				S	**Sb**	**17 20 10.5**	**-0.4**
ITM	**Ithomi**	**0.55**	**44**	P	**Pb**	**17 20 02.7**	**-0.7**
ITM				S	**Sb**	**17 20 10.5**	**-0.4**
ITM	**Ithomi**	**0.55**	**44**	P	**Pb**	**17 20 02.7**	**-0.7**
ITM				S	**Sg**	**17 20 12.1**	**+1.3**
ITM				AML	AML	17 20 13.8	
	comp=N,1946μm,0.4s						
ITM				AML	AML	17 20 18.4	
	comp=E,2060μm,0.4s						
AMT	**Artemida-Makis**	**0.77**	**15**	P	**Pb**	**17 20 06.5**	**-0.8**
AMT				S	**Sb**	**17 20 17.9**	**+0.4**
AMT	**Artemida-Makis**	**0.77**	**15**	P	**Pb**	**17 20 07.2**	**-0.1**
AMT				S	**Sb**	**17 20 17.9**	**+0.4**
AMT	**Artemida-Makis**	**0.77**	**15**	P	**Pb**	**17 20 07.2**	**-0.1**
AMT				S	**Sn**	**17 20 19.9**	**+0.3**
AMT				AML	AML	17 20 27.4	
	comp=N,3692μm,0.4s						
AMT				AML	AML	17 20 28.4	
	comp=E,2911μm,0.6s						
VLX	**Vlachokerasia**	**0.94**	**52**	P	**Pb**	**17 20 09.7**	**-0.5**
VLX				S	**Sn**	**17 20 24.7**	**+0.8**
VLX	**Vlachokerasia**	**0.94**	**52**	P	**Pb**	**17 20 10.0**	**-0.2**
VLX				S	**Sn**	**17 20 24.7**	**+0.8**
VLX	**Vlachokerasia**	**0.94**	**52**	P	**Pb**	**17 20 10.0**	**-0.2**
VLX				S	**Sb**	**17 20 22.1**	**-0.4**
VLX				AML	AML	17 20 37.2	
	comp=E,2174μm,0.6s						
VLX				AML	AML	17 20 37.9	
	comp=N,2082μm,0.6s						
ZKS	**Zakynthos**	**1.05**	**330**	P	**Pb**	**17 20 11.4**	**-0.6**
ZKS	**Zakynthos**	**1.05**	**330**	P	**Pb**	**17 20 11.4**	**-0.6**
ZKS				S	**Sg**	**17 20 28.3**	**+1.6**
ZKS				AML	AML	17 20 38.4	
	comp=N,2892μm,0.3s						
ZKS				AML	AML	17 20 42.9	
	comp=E,2939μm,0.8s						
VTN	**Vitineika**	**1.15**	**349**	P	**Pn**	**17 20 12.2**	**-1.3**
VTN				S	**Sg**	**17 20 29.6**	**-0.1**
VTN	**Vitineika**	**1.15**	**349**	P	**Pn**	**17 20 12.2**	**-1.3**
VTN				S	**Sg**	**17 20 29.6**	**-0.1**
DRO	**Drossia**	**1.18**	**10**	P	**Pn**	**17 20 14.1**	**+0.1**
DRO				S	**Sg**	**17 20 31.6**	**+0.8**
DRO	**Drossia**	**1.18**	**10**	P	**Pn**	**17 20 14.1**	**+0.1**
DRO				S	**Sg**	**17 20 31.6**	**+0.8**
DRO	**Drossia**	**1.18**	**10**	P	**Pn**	**17 20 13.6**	**-0.4**
VLI	**Veliai**	**1.20**	**93**	P	**Pn**	**17 20 14.1**	**0.0**
VLI				S	**Sg**	**17 20 32.7**	**+1.6**
VLI	**Veliai**	**1.20**	**93**	P	**Pn**	**17 20 14.2**	**+0.1**
VLI				S	**Sg**	**17 20 32.1**	**+1.0**
VLI	**Veliai**	**1.20**	**93**	P	**Pn**	**17 20 14.2**	**+0.1**
VLI				S	**Sg**	**17 20 32.1**	**+1.0**
VLI				AML	AML	17 20 35.2	
	comp=E,887μm,1.0s						
VLI				AML	AML	17 20 36.2	
	comp=N,765μm,0.7s						
RLS	**Riolos of Patr**	**1.27**	**1**	P	**Pg**	**17 20 18.2**	**+1.3**
GUR	**Goura**	**1.35**	**31**	P	**Pn**	**17 20 17.1**	**+0.7**
GUR				S	**Sg**	**17 20 36.2**	**+0.1**
GUR	**Goura**	**1.35**	**31**	P	**Pn**	**17 20 17.1**	**+0.7**
GUR				S	**Sg**	**17 20 36.2**	**+0.1**
KYTH	**Kithira**	**1.37**	**111**	P	**Pb**	**17 20 17.9**	**+0.4**
KYTH				S	**Sg**	**17 20 37.5**	**+0.7**
KYTH	**Kithira**	**1.37**	**111**	P	**Pn**	**17 20 17.2**	**+0.6**
KYTH				S	**Sg**	**17 20 37.5**	**+0.7**
KYTH	**Kithira**	**1.37**	**111**	P	**Pn**	**17 20 17.2**	**+0.6**
KLV	**Kalavryta, Ach**	**1.37**	**24**	P	**Pn**	**17 20 17.1**	**+0.4**
KLV				S	**Sb**	**17 20 36.5**	**+1.7**
KLV	**Kalavryta, Ach**	**1.37**	**24**	P	**Pn**	**17 20 17.1**	**+0.4**
KLV				S	**Sb**	**17 20 36.5**	**+1.7**
KLV	**Kalavryta, Ach**	**1.37**	**24**	P	**Pn**	**17 20 16.2**	**-0.5**
AXS	**Araxos**	**1.41**	**358**	P	**Pg**	**17 20 19.9**	**+0.4**
AXS	**Araxos**	**1.41**	**358**	P	**Pg**	**17 20 19.9**	**+0.4**
KFL	**Anninata**	**1.42**	**338**	P	**Pb**	**17 20 18.1**	**-0.2**
KFL				S	**Sb**	**17 20 36.7**	**+0.6**
KFL	**Anninata**	**1.42**	**338**	P	**Pn**	**17 20 17.5**	**+0.2**
KFL				S	**Sb**	**17 20 36.7**	**+0.6**
KFL	**Anninata**	**1.42**	**338**	P	**Pn**	**17 20 17.5**	**+0.2**
KRND	**KRANIDI**	**1.48**	**66**	P	**Pn**	**17 20 19.1**	**+1.0**
KRND	**KRANIDI**	**1.48**	**66**	P	**Pn**	**17 20 19.1**	**+1.0**
KRND	**KRANIDI**	**1.48**	**66**	P	**Pn**	**17 20 19.1**	**+1.0**
LAKA	**Lakka**	**1.51**	**16**	P	**Pg**	**17 20 21.5**	**0.0**
LAKA	**Lakka**	**1.51**	**16**	P	**Pg**	**17 20 21.6**	**0.0**
VLS	**Valsamata**	**1.55**	**334**	P	**Pn**	**17 20 19.7**	**+0.7**
VLS				S	**Sb**	**17 20 40.9**	**+1.1**
VLS	**Valsamata**	**1.55**	**334**	P	**Pn**	**17 20 19.7**	**+0.7**
VLS				S	**Sb**	**17 20 40.9**	**+1.1**
DID	**Didima**	**1.60**	**63**	P	**Pn**	**17 20 21.0**	**+1.4**
DID	**Didima**	**1.60**	**63**	P	**Pn**	**17 20 21.0**	**+1.3**
DID	**Didima**	**1.60**	**63**	P	**Pb**	**17 20 21.2**	**-0.1**
TRIZ	**Trizonia**	**1.65**	**17**	P	**Pn**	**17 20 21.6**	**+1.2**
KALE	**Kalithea**	**1.69**	**19**	P	**Pg**	**17 20 24.6**	**-0.4**
KALE	**Kalithea**	**1.69**	**19**	P	**Pg**	**17 20 24.6**	**-0.4**
LTK	**Loutraki**	**1.73**	**44**	P	**Pb**	**17 20 23.2**	**-0.3**
LTK	**Loutraki**	**1.73**	**44**	P	**Pb**	**17 20 23.2**	**-0.3**
PDO	**Prodromos**	**1.82**	**353**	P	**Pb**	**17 20 24.8**	**-0.4**
PDO	**Prodromos**	**1.82**	**353**	P	**Pb**	**17 20 24.8**	**-0.4**
DSF	**Desfina**	**1.83**	**27**	P	**Pn**	**17 20 24.6**	**+1.6**
DSF	**Desfina**	**1.83**	**27**	P	**Pn**	**17 20 24.6**	**+1.6**
DSF	**Desfina**	**1.83**	**27**	P	**Pb**	**17 20 24.9**	**-0.5**
PROD	**Prodromos**	**1.87**	**38**	P	**Pn**	**17 20 24.0**	**+0.6**
PROD	**Prodromos**	**1.87**	**38**	P	**Pn**	**17 20 24.0**	**+0.6**
VILL	**Villia**	**2.02**	**47**	P	**Pb**	**17 20 28.4**	**-0.2**
VIL2	**Platees**	**2.03**	**45**	P	**Pb**	**17 20 28.4**	**-0.2**
EVR	**Evrytania**	**2.15**	**7**	P	**Pn**	**17 20 28.6**	**+1.3**
EVR	**Evrytania**	**2.15**	**7**	P	**Pn**	**17 20 28.6**	**+1.3**
VLY	**Voula,Athens**	**2.15**	**60**	P	**Pn**	**17 20 27.4**	**+0.1**
VLY	**Voula,Athens**	**2.15**	**60**	P	**Pn**	**17 20 27.4**	**+0.1**
ATHU	**Athens Univers**	**2.20**	**57**	P	**Pn**	**17 20 28.3**	**+0.3**
ATHU	**Athens Univers**	**2.20**	**57**	P	**Pn**	**17 20 28.3**	**+0.3**
PTL	**Penteli**	**2.30**	**56**	P	**Pn**	**17 20 28.7**	**-0.6**
PTL	**Penteli**	**2.30**	**56**	P	**Pn**	**17 20 28.7**	**-0.6**
AGG	**Agios Georgios**	**2.34**	**17**	P	**Pb**	**17 20 33.3**	**-0.7**
AGG	**Agios Georgios**	**2.34**	**17**	P	**Pb**	**17 20 33.3**	**-0.7**
DSL	**Palaion Diasel**	**2.36**	**353**	P	**Pb**	**17 20 32.7**	**-1.7**
DSL	**Palaion Diasel**	**2.36**	**353**	P	**Pb**	**17 20 32.6**	**-1.7**
THL	**Klokotos Trika**	**2.81**	**9**	P	**Pn**	**17 20 38.4**	**+2.1**
IDI	**Anoyia**	**3.16**	**117**	Pn	**Pn**	**17 20 42.6**	**+1.3**
	comp=N,0.4nm,0.3s,baz=313,slow=19,SNR=2.1						
KVAR	**Kislovodsk Ar**	**17.67**	**60**	LR	LR	17 30 52.4	
	comp=N,65nm,20.8s,baz=1.5,slow=38						
HFS	**Hagfors**	**23.89**	**350**	P	**P**	**17 25 02.9**	**-1.7**
	comp=N,1.1nm,0.5s,baz=159,slow=9.5,SNR=7.8						
FINES	**FINESS Array B**	**24.85**	**5**	P	**P**	**17 25 12.6**	**-0.9**
	comp=N,0.6nm,0.6s,baz=166,slow=9.8,SNR=8.8						
EKA	**Eskdalemuir Ar**	**24.99**	**326**	P	**P**	**17 25 14.9**	**+0.1**
	comp=N,0.2nm,0.4s,baz=49,slow=11,SNR=3.0						
NB2	**NORSAR Subarra**	**25.13**	**348**	P	**P**	**17 25 14.5**	**-1.5**
	comp=Z,0.6nm,0.6s,baz=156,slow=9.3						
NB2	**NORSAR Subarra**	**25.13**	**348**	P	**P**	**17 25 14.5**	**-1.5**
	comp=Z,0.6nm,0.6s,SNR=4.5						
NOA	**NORSAR Array B**	**25.13**	**348**	P	**P**	**17 25 13.4**	**-2.6**
	comp=Z,0.9nm,0.7s,baz=157,slow=8.8,SNR=5.1						
ZALV	**Zalesovo Beam**	**46.08**	**47**	P	P	17 28 12.0	-2.9
	comp=Z,0.4nm,0.4s,baz=286,slow=10,SNR=2.9						

ISCJB ***21*** *17:28:38.2±1.0,39.70N±0.04×142.1E±0.1,h53km±6km, mb3.5/2,Error ellipse: s-maj=16.0km s-min=7.1km az=6.5*
JMA ***21*** *17:28:38.8±0.1,39.68N×142.13E,h48km±1km,M3.5*
JMA Felt I J1.
IDC ***21*** *17:28:40.7±3.5,40.19N×140.92E,h0km,mb3.6/2, mb1 3.4/4,mb1mx3.2/35,mbtmp3.5/4,ML3.0/2,MS3.1/1, Ms1 3.1/1,ms1mx2.5/47,Error ellipse: s-maj=71.5km s-min=32.1km az=111.0*

ISC 21 17:28:38.8±1.5,39.67N±0.05×142.1E±0.1,h48km±9km, n16,σ0.848/20,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MIYJ	**Miyakonagasawa**	**0.24**	**248**	P	**Pn**	**17 28 47.3**	**+0.1**
MIYJ				S	**Sn**	**17 28 53.2**	**+0.1**
JTH	**Tanohata**	**0.33**	**325**	P	**Pn**	**17 28 48.0**	**0.0**
JTH				S	**Sn**	**17 28 54.4**	**-0.1**
JOM	**Ohasama**	**0.66**	**253**	P	**Pn**	**17 28 52.3**	**+0.4**
JOM				S	**Sn**	**17 29 02.0**	**+0.6**
JKZ	**Kuzumaki**	**0.68**	**298**	P	**Pn**	**17 28 52.4**	**+0.2**
JKZ				S	**Sn**	**17 29 01.9**	**0.0**
OFUJ	**Ofunato**	**0.68**	**210**	P	**Pn**	**17 28 52.1**	**-0.1**
JANG	**Nango**	**0.84**	**327**	P	**Pn**	**17 28 54.1**	**-0.2**
JANG				S	**Sn**	**17 29 04.9**	**-0.7**
JMK	**Ichinoseki**	**1.00**	**224**	P	**Pn**	**17 28 56.5**	**+0.1**
JMK				S	**Sn**	**17 29 09.7**	**+0.4**
JRG	**Rokugo**	**1.18**	**257**	P	**Pn**	**17 28 59.1**	**+0.3**
JAH	**Hinai**	**1.25**	**295**	P	**Pn**	**17 29 00.3**	**+0.5**
JIO	**Ouri**	**1.35**	**206**	P	**Pn**	**17 29 01.2**	**0.0**
JTM	**Tenmabayashi**	**1.37**	**325**	P	**Pn**	**17 29 01.6**	**+0.1**
MJAR	**Matsushiro Arr**	**4.38**	**226**	Pn	Pn	17 29 46.3	+3.5
	1.0nm,0.3s,baz=31,slow=13,SNR=12						
ASAJ	**Asahikawa**	**4.46**	**5**	Pn	**Pn**	**17 29 45.0**	**+1.2**
	0.7nm,0.3s,baz=199,slow=13,SNR=12						
JNU	**Nakatsue**	**11.16**	**238**	LR	LR	17 35 42.7	
	comp=Z,104nm,18.3s,baz=317,slow=39						
ZALV	**Zalesovo Beam**	**40.59**	**310**	P	**P**	**17 36 12.7**	**-0.8**
	0.7nm,0.5s,baz=88,slow=8.3,SNR=4.0						
MKAR	**Makanchi Array**	**43.23**	**300**	P	**P**	**17 36 35.1**	**-0.1**
	0.4nm,0.6s,baz=82,slow=9.4,SNR=5.3						

IDC ***21*** *17:46:29.3±1.4,37.91N×144.78E,h0km,mb3.4/3, mb1 3.6/5,mb1mx3.3/45,mbtmp3.4/5,ML3.2/2,MS2.7/1, Ms1 2.7/1,ms1mx2.3/33,Error ellipse: s-maj=36.1km s-min=27.1km az=112.0*
ISCJB ***21*** *17:46:33.1±0.9,38.08N±0.06×144.61E±0.06,h33km, mb3.3/3,Error ellipse: s-maj=8.7km s-min=6.1km az=148.5*
JMA ***21*** *17:46:34.6±0.3,38.09N×144.49E,h34km,M3.9*

ISC 21 17:46:34.2±1.2,38.07N±0.07×144.69E±0.08,h35km,n22, σ1.940/29,mb3.4/3,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**2.57**	**294**	P	**Pn**	**17 47 13.1**	**-0.2**
JIO	**Ouri**	**2.66**	**279**	P	**Pn**	**17 47 14.6**	**+0.2**
JIO				S	**Sn**	**17 47 43.7**	**-1.7**
JTH	**Tanohata**	**2.89**	**311**	P	**Pn**	**17 47 17.6**	**0.0**
JOM	**Ohasama**	**3.00**	**299**	P	**Pn**	**17 47 20.0**	**+0.8**
JOM				S	**Sn**	**17 47 53.8**	**-0.2**
JMM	**Marumori**	**3.08**	**267**	P	**Pn**	**17 47 20.0**	**-0.3**
JMM				S	**Sn**	**17 47 53.7**	**-2.3**
JFK	**Kawauchi**	**3.10**	**258**	S	**Sn**	**17 47 54.0**	**-2.5**
JOU	**Okura**	**3.18**	**277**	P	**Pn**	**17 47 22.8**	**+1.1**
JOU				S	**Sn**	**17 47 57.8**	**-0.7**
JANG	**Nango**	**3.37**	**314**	P	**Pn**	**17 47 24.9**	**+0.6**
JRG	**Rokugo**	**3.44**	**294**	P	**Pn**	**17 47 26.3**	**+1.1**
JRG				S	**Sn**	**17 48 05.1**	**+0.4**
JFT	**Otama**	**3.49**	**262**	S	**Sn**	**17 48 04.9**	**-1.1**
JYK	**Kaneyama**	**3.50**	**285**	P	**Pn**	**17 47 26.6**	**+0.5**
JYK				S	**Sn**	**17 48 06.2**	**-0.1**
JTM	**Tenmabayashi**	**3.90**	**315**	*e*S	**Sn**	**17 48 14.1**	**-2.0**
JNBK	**Urakawa-nobuka**	**4.46**	**341**	P	**Pn**	**17 47 40.1**	**+0.8**
JNBK				S	**Sn**	**17 48 28.3**	**-1.6**
JCH	**Churui**	**4.65**	**348**	P	**Pn**	**17 47 41.3**	**-0.6**
JCH				*e*S	**Sn**	**17 48 30.6**	**-4.0**
JKB	**Kayabe**	**4.74**	**325**	P	**Pn**

*IDC **21** 18:06:38.1±0.8, 7°.26N×126°.34E, h0km, mb3.9/8, mb1 4.0/8, mb1mx3.7/38, mbtmp3.9/8, MS3.3/3, Ms1 3.3/3, ms1mx2.6/50, Error ellipse: s-maj=16.9km s-min=10.4km az=174.0*

*NEIC **21** 18:06:42.0±3.4, 7°.21N×126°.17E, h25km±25km, mb4.1/2, Error ellipse: s-maj=33.9km s-min=10.5km az=77.0*

*MAN **21** 18:06:42, 7°.27N×125°.96E, h36km, mb4.7, ML3.6, MS3.6*

*ISCJB **21** 18:06:43.4±0.5, 7°.19N±0°.05×125°.91E±0°.04, h55km±5km, mb3.8/9, MS3.3/3, Error ellipse: s-maj=7.9km s-min=6.6km az=24.3*

ISC 21 18:06:44.5±0.9, **7°.20N**±0°.05×**125°.89E**±0°.04, **h47**km±8km, **n24**, σ1⁰**01**/26, **mb3.8**/9, **MS3.5**/3, **3C-3D**, **Mindanao**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
DAV	**Davao City (W)**	**0.34**	**248**	**Pg**	**Pn**	**18 06 54.1**	**+0.3**
	352nm,0.3s,baz=49,slow=2.7,SNR=104						
DAV				Lg	Lg	18 07 03.0	
	734nm,0.3s,baz=246,slow=19,SNR=65						
DAV				LR	LR	18 07 25.1	
	comp=Z,690nm,18.6s,baz=344,slow=61						
DAV	**Davao City (W)**	**0.34**	**248**	*eP*	**Pn**	**18 06 53.8**	**0.0**
DAV				Pg		18 06 54.1	
DAV				Lg	Lg	18 07 03.0	
DMPH	**Davao City--Mi**	**0.40**	**253**⇑	*eP*	Pn	18 07 07.0	+13
MATI	**Mati**	**0.44**	**125**	*eP*	**Pn**	**18 06 54.2**	**-0.7**
MATI				*eS*	**Sn**	**18 07 01.8**	**-0.5**
KCP	**Kidapawan**	**0.82**	**257**⇓	*eP*	**Pn**	**18 06 59.6**	**-0.2**
KCP				*i* S	**Sn**	**18 07 12.0**	**+1.0**
BUKP	**Musuan**	**1.07**	**309**	*eP*	**Pn**	**18 07 02.3**	**-0.9**
BUKP				*eS*	**Sn**	**18 07 15.9**	**-1.0**
BIPH	**Bislig**	**1.08**	**25**⇓	*iP*	**Pn**	**18 07 04.4**	**+1.0**
BIPH				*i* S	**Sn**	**18 07 17.8**	**+0.6**
CTBH	**Cotabato--PC H**	**1.64**	**271**⇓	*eP*	**Pn**	**18 07 10.6**	**-1.5**
CTBH				*i* S	**Sn**	**18 07 31.0**	**+0.3**
CGP	**Cagayan de Oro**	**1.72**	**316**⇑	*eP*	**Pn**	**18 07 10.6**	**-1.5**
CGP				*eS*	Sn	18 07 40.0	+7.0
PAGZ	**Pagadian**	**2.57**	**285**	*eP*	**Pn**	**18 07 24.1**	**+0.4**
TBP	**Tagbilaran**	**3.19**	**321**⇑	*iP*	**Pn**	**18 07 30.8**	**-1.4**
OCLP	**Ormoc**	**4.03**	**342**	*eP*	**Pn**	**18 07 43.3**	**-0.5**
FITZ	**Fitzroy Crossi**	**25.14**	**181**	P	**P**	**18 12 04.8**	**-0.6**
	2.4nm,0.7s,baz=359,slow=5.3,SNR=7.9						
PMG	**Port Moresby**	**26.85**	**128**	LR	LR	18 25 16.5	
	comp=Z,24nm,18.3s,baz=302,slow=42						
WRAB	**Tennant Creek**	**28.22**	**163**	*eP*	**P**	**18 12 32.9**	**-0.2**
	3.9nm,1.0s						
WRA	**Warramunga Arr**	**28.22**	**163**	P	**P**	**18 12 32.3**	**-0.9**
	0.7nm,0.5s,baz=344,slow=9.4,SNR=13						
ASAR	**Alice Springs**	**31.66**	**166**	P	**P**	**18 13 02.8**	**-0.8**
	0.8nm,0.4s,baz=344,slow=7.1,SNR=38						
ASAR				PcP	**PcP**	**18 15 54.7**	**-0.2**
	0.3nm,0.7s,baz=351,slow=2.7,SNR=4.8						
STKA	**Stephens Creek**	**41.65**	**160**	P	**P**	**18 14 28.8**	**+0.4**
	1.9nm,0.5s,baz=326,slow=9.4,SNR=6.5						
MKAR	**Makanchi Array**	**54.26**	**324**	P	**P**	**18 16 07.3**	**+1.4**
	0.4nm,0.6s,baz=122,slow=8.0,SNR=8.2						
ZALV	**Zalesovo Beam**	**57.14**	**332**	P	**P**	**18 16 28.9**	**+2.6**
	0.3nm,0.4s,baz=143,slow=7.5,SNR=2.7						
AKTO	**Aktyubinsk**	**70.45**	**321**	LR	LR	18 51 46.9	
	comp=Z,40nm,18.6s,baz=234,slow=38						
FINES	**FINESS Array B**	**88.40**	**332**	P	**P**	**18 19 31.4**	**+0.1**
	0.4nm,0.4s,baz=72,slow=6.2,SNR=4.7						
NOA	**NORSAR Array B**	**95.33**	**334**	LR	LR	19 06 24.0	
	comp=Z,14nm,18.4s,baz=205,slow=38						
YKA	**Yellowknife Ar**	**96.70**	**24**	P	**P**	**18 20 08.2**	**-1.4**
	0.2nm,0.6s,baz=298,slow=4.3,SNR=4.2						

*TIF **21** 18:06:50.8, 42°.53N×43°.60E, h12km±1km*

*CSEM **21** 18:06:52.3±0.3, 42°.48N×43°.47E, h2km, ML2.0, Error ellipse: s-maj=8.2km s-min=6.4km az=130.0*

*DDA **21** 18:06:52.0, 41°.99N×43°.87E, h7km, Md2.8*

ISC 21 18:06:51.6±1.0, **42°.45N**±0°.05×**43°.46E**±0°.04, **h8**km±11km, **n13**, σ0⁰**22**/25, **Western Caucasus**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
ONI	**Oni**	**0.14**	**357**	P	**Pg**	**18 06 54.5**	**-0.1**
ONI				S	**Sg**	**18 06 56.9**	**+0.2**
AKH	**Akhalkalaki**	**1.04**	**179**	P	**Pn**	**18 07 12.6**	**0.0**
AKH				S	**Sn**	**18 07 27.4**	**-0.1**
AKH	**Akhalkalaki**	**1.04**	**179**	P	**Pn**	**18 07 12.6**	**0.0**
AKH				S	**Sn**	**18 07 27.4**	**-0.1**
CHVG	**Ch'k'valeri**	**1.05**	**285**	P	**Sn**	**18 07 27.3**	**-0.2**
EPOS	**Posof**	**1.09**	**210**	*i* P	**Pb**	**18 07 12.8**	**0.0**
EPOS				*i* S	**Sn**	**18 07 29.1**	**+0.4**
EPOS	**Posof**	**1.09**	**210**	P	**Pb**	**18 07 12.8**	**0.0**
EPOS				S	**Sn**	**18 07 29.1**	**+0.4**
ARTV	**Artvin**	**1.71**	**223**	*i* P	**Pb**	**18 07 23.6**	**+0.3**
ARTV				*i* S	**Sg**	**18 07 46.7**	**+0.2**
ARTV	**Artvin**	**1.71**	**223**	P	**Pb**	**18 07 23.6**	**+0.3**
ARTV				S	**Sg**	**18 07 46.7**	**+0.2**
DGRG	**David-gareji**	**1.74**	**124**	P	**Pb**	**18 07 23.9**	**+0.1**
DGRG				S	**Sg**	**18 07 47.5**	**-0.1**
DGRG	**David-gareji**	**1.74**	**124**	P	**Pb**	**18 07 23.9**	**+0.1**
DGRG				S	**Sg**	**18 07 47.5**	**-0.1**
DAGI	**Agillar**	**1.80**	**221**	*i* P	**Pb**	**18 07 24.6**	**-0.1**
DAGI				*i* S	**Sg**	**18 07 49.6**	**+0.3**
DBAD	**Bademkaya**	**1.95**	**223**	*i* P	**Pb**	**18 07 27.3**	**-0.1**
DBAD				*i* S	**Sg**	**18 07 53.9**	**-0.3**
DBAD	**Bademkaya**	**1.95**	**223**	P	**Pb**	**18 07 27.3**	**-0.1**
DBAD				S	**Sg**	**18 07 53.9**	**-0.3**

*ISCJB **21** 18:09:45.1±0.5, 37°.02N±0°.03×140°.61E±0°.04, h9km±5km, mb3.4/2, Error ellipse: s-maj=6.3km s-min=4.4km az=33.9*

*IDC **21** 18:09:45.0±1.8, 36°.99N×140°.62E, h0km, mb3.3/2, mb1 3.6/3, mb1mx3.2/49, mbtmp3.4/3, ML3.2/1, Error ellipse: s-maj=32.4km s-min=30.2km az=150.0*

*JMA **21** 18:09:45.2, 37°.02N×140°.58E, h6km±1km, M3.3 Broadband fault plane solution: P waves. NP1: φs293.00000°, δ70.00000°, λ-106.00000°. NP2: φs152.00000°, δ25.00000°, λ-54.00000°. Principal axes: T Plg23.0000°, Azm35.0000°; N Plg15.0000°, Azm299.0000°; P Plg62.0000°, Azm179.0000°;*

JMA Felt II J1.

ISC 21 18:09:45.3±1.1, **37°.02N**±0°.03×**140°.57E**±0°.04, **h5**km±11km, **n18**, σ0⁰**77**/21, **7C**, **Eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.20**	**65**	⇑P	**Pg**	**18 09 49.3**	**0.0**
ONAJ				S	**Sg**	**18 09 52.3**	**+0.4**
JHO	**Hitachi**	**0.41**	**180**	⇑P	**Pg**	**18 09 53.0**	**-0.1**
JHO				S	**Sg**	**18 09 58.5**	**+0.1**
JFK	**Kawauchi**	**0.42**	**35**	⇑P	**Pg**	**18 09 53.4**	**-0.1**
JFK				S	**Sg**	**18 09 59.3**	**+0.2**
JSB	**Shiboa**	**0.52**	**265**	⇑P	**Pb**	**18 09 56.3**	**-0.7**
JSB				S	**Sb**	**18 10 03.7**	**-1.1**
JFT	**Otama**	**0.53**	**340**	⇑P	**Pg**	**18 09 55.8**	**+0.2**
JFT				S	**Sg**	**18 10 03.2**	**+0.6**
JFY	**Yanaizu**	**0.79**	**300**	⇑P	**Pg**	**18 10 00.6**	**+0.1**
JFY				S	**Sg**	**18 10 11.1**	**+0.2**
JMM	**Marumori**	**0.87**	**12**	⇑P	**Pg**	**18 10 01.2**	**-0.7**
JMM				S	**Sg**	**18 10 13.1**	**-0.1**
MJAR	**Matsushiro Arr**	**1.96**	**257**	Pn	**Pn**	**18 10 19.6**	**+0.5**
	7.6nm,0.3s,baz=78,slow=15,SNR=38						
MJAR				Sn	**Sb**	**18 10 45.8**	**-0.3**
	12nm,0.3s,baz=95,slow=25,SNR=20						
MAT	**Matsushiro**	**1.96**	**257**	P	**Pn**	**18 10 19.9**	**+0.8**
MAT				S	**Sb**	**18 10 46.2**	**+0.1**
ASAJ	**Asahikawa**	**7.26**	**12**	Pn	**Pn**	**18 11 32.2**	**+0.3**
	0.4nm,0.3s,baz=214,slow=11,SNR=4.8						
H11N2	**WAKE ISLAND Hy**	**28.72**	**120**	T	T	18 45 29.3	
	baz=313,slow=75,SNR=9.4						
H11N1	**WAKE ISLAND Hy**	**28.73**	**120**	T	T	18 45 33.2	
	baz=313,slow=75,SNR=21						
H11N3	**WAKE ISLAND Hy**	**28.74**	**120**	T	T	18 45 31.0	
	baz=313,slow=75,SNR=14						
H11S1	**WAKE ISLAND Hy**	**29.42**	**122**	T	T	18 46 23.8	
	baz=314,slow=76,SNR=44						
H11S3	**WAKE ISLAND Hy**	**29.42**	**122**	T	T	18 46 23.5	
	baz=314,slow=76,SNR=31						
H11S2	**WAKE ISLAND Hy**	**29.44**	**122**	T	T	18 46 24.7	
	baz=314,slow=76,SNR=22						
WRA	**Warramunga Arr**	**56.96**	**187**	P	**P**	**18 19 30.1**	**-1.6**
	0.5nm,0.7s,baz=4.4,slow=7.4,SNR=4.6						
ASAR	**Alice Springs**	**60.68**	**187**	P	**P**	**18 19 59.5**	**+1.9**
	0.1nm,0.7s,baz=3.9,slow=4.1,SNR=3.0						

JMA 21 18:10:46.0±0.2, **28°.11N**×**128°.07E**, **h17**km±3km, **M2.4**, **Ryukyu Islands**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JTK	**Tokunoshima**	**0.84**	**112**	P	Pb	18 11 01.7	-0.5
JTK				S	Sb	18 11 12.9	-0.3
JOKE	**Okinoerabujima**	**0.87**	**149**	P	Pb	18 11 02.4	-0.2
JOKE				S	Sb	18 11 13.9	-0.1
JAMN	**Amaminishikomi**	**0.98**	**82**	P	Pb	18 11 04.2	-0.4
JAMN				S	Sb	18 11 17.3	0.0
JIH	**Iheya**	**1.07**	**185**	P	Pb	18 11 05.5	-0.6
JIH				S	Sb	18 11 19.4	-0.5
JOW	**Kunigami**	**1.29**	**172**	P	Pn	18 11 08.9	-0.3
JOW				S	Sb	18 11 24.9	-1.1
JOW	**Kunigami**	**1.29**	**172**	*eP*	Pn	18 11 08.9	-0.3
	7.2nm,0.6s						
JAM	**Amami Oshima**	**1.39**	**77**	P	Pb	18 11 11.4	-0.1
JAM				*eS*	Sb	18 11 29.8	+0.9

MEX 21 18:13:00.8±0.3, **17°.37N**×**101°.00W**, **h9**km±11km, **MD3.6**, **Near coast of Guerrero**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
ZIIG	**Zihuatanejo**	**0.50**	**298**	*i* P	Pg	18 13 09.8	-0.7
ZIIG				*eS*	Sg	18 13 17.1	+0.1
CAIG	**El Cayaco**	**0.77**	**115**	*i* P	Pg	18 13 13.9	-1.8
CAIG				*i* S	Sg	18 13 23.3	-2.5
ARIG	**Puente Sto Nin**	**1.10**	**35**	*eP*	Pg	18 13 18.6	-3.3
ARIG				*eS*	Sg	18 13 32.4	-3.9
MEIG	**Mezcala**	**1.43**	**67**	*eP*	Pn	18 13 23.2	-3.8
MEIG				*eS*	Sn	18 13 41.1	-4.9

DJA 21 18:18:11.6±0.9, **3°.S**±3°×**13°.0E**±°, **h17**km±12km, **M3.9**/10, **mb4.5**/1, **MLv3.5**/10, **Seram**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
MSAI	**Masohi**	**1.03**	**240**	P	Pb	18 18 29.2	-1.8
MSAI				S	Sb	18 18 44.6	+0.3
BNDI	**Bandanaira**	**1.69**	**177**	P	Pn	18 18 40.0	-0.4
BNDI				S	Sn	18 19 01.8	+0.1
SWI	**Sorong**	**2.42**	**37**	P	Pn	18 18 49.8	-0.6
SWI				S	Sn	18 19 21.4	+1.8
FAKI	**Fak Fak**	**2.43**	**92**	P	Pn	18 18 49.0	-1.5
FAKI				S	Sn	18 19 19.4	-0.5
NLAI	**Namlea**	**2.75**	**261**	P	Pn	18 18 54.2	-0.7
LBMI	**Labuha**	**3.17**	**313**	P	Pn	18 19 00.1	-0.7
SANI	**Sanana**	**3.90**	**281**	P	Pn	18 19 09.9	-0.9
SANI				S	Sn	18 19 54.3	-2.0
APSI	**Ampana**	**8.38**	**283**	P	Pn	18 20 12.2	-0.2

GUC 21 18:19:57.1±0.3, **38°.67S**×**74°.11W**, **h25**km±15km, **ML3.6**, **Off coast of central Chile**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
CCHI	**Chillan**	**2.62**	**39**	*eP*	Pn	18 20 40.5	+2.7
CCHI				*i* S	Sb	18 21 13.5	-1.7
COCH	**Cobquecura**	**2.75**	**23**	*eS*	Sb	18 21 16.5	-2.2
COCH				IAML		18 21 25.1	
	comp=E,236nm,1.4s						

MAN 21 18:20:35, 13°.24N×122°.50E, h17km, **mb4.6, ML3.5, MS3.4, 2C-1D, Luzon**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
AUQP	**San Andres**	**0.19**	**64**	*eP*	Pb	18 20 41.4	+1.3
GQP	**Guinayangan**	**0.67**	**356**⇑	*iP*	Pn	18 20 49.2	-0.5
GQP				*i* S	Sn	18 21 00.7	+0.9
BOAC	**Boac**	**0.67**	**289**	*eP*	Pg	18 20 48.2	-0.1
LQP	**Lukban**	**1.27**	**313**⇑	*eP*	Pn	18 20 58.4	+0.2
SJMP	**San Jose**	**1.55**	**240**	*eP*	Pn	18 21 02.2	+0.4
SJMP				*eS*	Sb	18 21 22.8	+0.1
TGY	**Tagaytay City**	**1.74**	**300**⇓	*eP*	Pb	18 21 07.3	+0.7

ISC 21 18:26:12.4±1.5, **51°.57N**±0°.06×**15°.99E**±0°.03, **h8**km±13km, **n14**, σ0⁰**84**/33, **Poland**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
KSP	**Ksiaz**	**0.75**	**165**	*ePg*	**Pg**	**18 26 26.6**	**-0.2**
KSP				*eSg*	**Sg**	**18 26 37.1**	**+0.5**
UPC	**Upice**	**1.06**	**179**	*ePG*	**Pb**	**18 26 33.5**	**+0.5**
UPC				*eSG*	**Sb**	**18 26 47.8**	**+0.8**
	comp=Z,41nm,0.4s						
DPC	**Dobruska-Polom**	**1.24**	**170**	*ePG*	**Pb**	**18 26 35.8**	**-0.2**
DPC				*eSG*	**Sg**	**18 26 52.0**	**-0.2**
	comp=Z,15nm,0.3s						
PVCC	**Panska Ves**	**1.38**	**221**	*ePG*	**Pg**	**18 26 38.9**	**+0.2**
PVCC				*eSG*	**Sg**	**18 26 57.5**	**+1.0**
	comp=Z,43nm,0.2s						
BRG	**Berggiesshubel**	**1.46**	**242**	PG	**Pb**	**18 26 40.2**	**+0.4**
BRG				SG	**Sg**	**18 27 00.0**	**+0.7**
	21nm,0.4s						
KRLC	**Kraliky**	**1.58**	**161**	*ePG*	**Pb**	**18 26 41.9**	**+0.1**
KRLC				*eSG*	**Sb**	**18 27 02.1**	**+0.2**
GOPC	**GO Pecny, Ondr**	**1.82**	**205**	*ePN*	**Pn**	**18 26 45.0**	**+1.0**
GOPC				*ePG*	**Pg**	**18 26 47.0**	**-0.3**
GOPC				*eSG*	**Sg**	**18 27 11.1**	**+0.1**
	comp=Z,7.0nm,0.2s						
PRU	**Pruhonice**	**1.83**	**211**	*ePN*	**Pn**	**18 26 44.4**	**+0.4**
PRU				*ePG*	**Pb**	**18 26 46.4**	**+0.4**
PRU				*eSG*	**Sg**	**18 27 11.1**	**0.0**
	comp=Z,10nm,0.3s						
CLL	**Collm**	**1.89**	**263**	*i* Pn	**Pn**	**18 26 44.4**	**-0.4**
CLL				*ePg*	**Pb**	**18 26 47.0**	**0.0**
CLL				*eSg*	**Sg**	**18 27 13.0**	**+0.1**
	comp=Z,9.0nm,0.8s						
NKC	**Novy Kostel**	**2.61**	**241**	*ePN*	**Pn**	**18 26 55.8**	**+1.0**
NKC				*ePG*	**Pg**	**18 27 02.5**	**+0.2**
NKC				*eSG*	**Sg**	**18 27 36.9**	**+0.7**
	comp=Z,12nm,0.4s						
OJC	**Ojcow**	**2.77**	**118**	*ePg*	**Pg**	**18 27 04.4**	**-0.9**
OJC				*eSg*	**Sg**	**18 27 40.3**	**-0.8**
KHC	**Kasperske Hory**	**2.89**	**213**	*ePN*	**Pn**	**18 26 59.0**	**+0.4**
KHC				*ePG*	**Pg**	**18 27 06.0**	**-1.7**
KHC				*eSN*	**Sb**	**18 27 36.5**	**-3.1**
KHC				*eSG*	**Sg**	**18 27 44.4**	**-0.7**
	comp=Z,3.9nm,0.3s						
LANS	**Liptovska Anna**	**3.29**	**136**	*eSG*	**Sg**	**18 27 58.2**	**+0.2**
STHS	**Stebnicka Huta**	**3.99**	**121**	*ePG*	**Pg**	**18 27 29.2**	**+0.5**
STHS				*eSG*	**Sg**	**18 28 20.6**	**+0.3**
STHS				*eLG*	Lg	18 28 33.0	

*IDC **21** 18:36:32.2±2.8, 33°.12S×178°.95W, h0km, mb3.9/2, mb1 4.2/3, mb1mx3.7/42, mbtmp3.9/3, ML3.9/1, MS3.6/2, Ms1 3.6/2, ms1mx2.9/35, Error ellipse: s-maj=66.2km s-min=43.8km az=123.0*

*ISCJB **21** 18:36:36.3±1.4, 33°.42S±0°.07×178°.9W±0°.2, h45km, mb3.7/2, MS3.6/2, Error ellipse: s-maj=25.2km s-min=9.4km az=10.9*

ISC 21 18:36:37.6±2.0, **33°.39S**±0°.10×**178°.8W**±0°.2, **h45**km, **n26**, σ1⁰**25**/28, **South of Kermadec Islands**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
MXZ	**Matakaoa Point**	**4.78**	**209**	*ePN*	**Pn**	**18 37 47.4**	**+0.3**
MXZ				*eSN*	**Sn**	**18 38 40.2**	**-1.0**
WMGZ	**Waiomatatini S**	**4.96**	**206**	PN	**Pn**	**18 37 52.3**	**+2.7**
WMGZ				SN	**Sn**	**18 38 45.8**	**+0.1**
PKGZ	**Pakihiroa**	**5.15**	**209**	PN	**Pn**	**18 37 52.8**	**+0.5**
HAZ	**Te Kaha**	**5.17**	**212**	*ePN*	**Pn**	**18 37 54.1**	**+1.8**
HAZ				SN	**Sn**	**18 38 52.5**	**+1.9**
PUZ	**Puketiti**	**5.24**	**206**	PN	Pn	18 37 50.8	-2.7
TWGZ	**Tauwhareparae**	**5.44**	**208**	PN	**Pn**	**18 37 57.0**	**+0.8**
TWGZ				SN	**Sn**	**18 38 59.3**	**+1.7**
CNGZ	**Carnagh Statio**	**5.63**	**205**	PN	**Pn**	**18 37 59.3**	**+0.6**
MWZ	**Matawai**	**5.76**	**210**	PN	**Pn**	**18 38 01.3**	**+0.7**
URZ	**Urewera**	**5.88**	**213**	Pn	**Pn**	**18 38 02.6**	**+0.4**
	3.1nm,0.3s,baz=65,slow=2.1,SNR=14						
URZ				Sn	**Sn**	**18 39 06.6**	**-1.7**
	10nm,0.3s,baz=151,slow=18,SNR=8.5						
URZ	**Urewera**	**5.88**	**213**	PN	**Pn**	**18 38 01.4**	**-0.8**
URZ				SN	**Sn**	**18 39 06.9**	**-1.3**
RAGZ	**Rawiri**	**5.94**	**210**	PN	**Pn**	**18 38 04.8**	**+1.7**
RIGZ	**Rimuhau**	**5.99**	**207**	PN	**Pn**	**18 38 03.3**	**-0.3**
MUGZ	**Murupara**	**6.21**	**214**	*ePN*	**Pn**	**18 38 06.1**	**-0.7**
SNGZ	**Shannon Statio**	**6.22**	**209**	PN	**Pn**	**18 38 07.2**	**+0.4**
KNZ	**Kokohu**	**6.30**	**206**	*ePN*	**Pn**	**18 38 08.5**	**+0.6**
OUZ	**Omahuta**	**6.54**	**252**	PN	**Pn**	**18 38 12.3**	**+1.0**
NMHZ	**Naumai**	**6.71**	**211**	PN	**Pn**	**18 38 14.5**	**+0.9**
BKZ	**Black Stump Fm**	**6.90**	**212**	PN	**Pn**	**18 38 15.9**	**-0.3**
KWHZ	**Kaweka Forest**	**7.14**	**211**	*ePN*	**Pn**	**18 38 17.4**	**-2.2**
KAHZ	**Kahuranaki**	**7.27**	**207**	PN	**Pn**	**18 38 19.6**	**-1.7**
MRZ	**Mangatainoka R**	**8.53**	**210**	PN	Pn	18 38 35.6	-2.9
MRZ				SN	Sn	18 40 05.7	-7.7
DUWZ	**D'Urville Isla**	**9.40**	**216**	*ePN*	Pn	18 38 46.5	-4.0
PMG	**Port Moresby**	**39.37**	**299**	LR	LR	18 57 49.9	
	comp=Z,80nm,21.5s,baz=180,slow=33						
ASAR	**Alice Springs**	**42.36**	**271**	P	**P**	**18 44 27.1**	**-0.4**
	0.7nm,0.4s,baz=109,slow=7.4,SNR=55						
WRA	**Warramunga Arr**	**43.62**	**276**	P	**P**	**18 44 37.5**	**-0.3**
	0.7nm,0.4s,baz=116,slow=7.7,SNR=24						
WRA				LR	LR	19 02 25.7	
	comp=Z,92nm,19.3s,baz=165,slow=36						
FINES	**FINESS Array B**	**147.68**	**338**	PKPbc	**PKPbc**	**18 56 16.4**	**0.0**
	1.0nm,0.5s,baz=64,slow=4.8,SNR=11						

*SJA **21** 18:40:45.9±0.3, 27°.31S×70°.19W, h309km±5km, ML3.5, MW4.2*

*ISCJB **21** 18:40:50.1±1.1, 27°.79S±0°.03×71°.1W±0°.1, h10km, Error ellipse: s-maj=13.4km s-min=4.3km az=8.8*

*GUC **21** 18:40:51.4±0.6, 27°.83S×70°.98W, h39km±4km, ML3.6*

ISC 21 18:40:48.5±1.6, **27°.72S**±0°.04×**71°.13W**±0°.09, **h10**km, **n16**, σ1⁰**80**/19, **3C-1D**, **Near coast of northern Chile**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
CDCH	**Caldera**	**0.71**	**23**	*eP*	**Pn**	**18 41 05.8**	**+1.2**
CDCH				*i* S	**Sn**	**18 41 14.8**	**-0.7**
CPCH	**Copiapo**	**0.78**	**63**⇑	*iP*	**Pn**	**18 41 05.9**	**+0.3**
CPCH				*i* S	**Sb**	**18 41 15.9**	**+1.1**
VACH	**Vallenar**	**0.91**	**159**⇓	*iP*	**Pn**	**18 41 07.3**	**-0.2**
VACH				*i* S	**Sb**	**18 41 18.4**	**-0.3**
LCO	**Las Campanas**	**1.34**	**164**⇑	*iP*	**Pb**	**18 41 13.2**	**-0.8**
LCO				*i* S	**Sb**	**18 41 29.7**	**-1.5**
TLL	**Tololo Astrono**	**2.46**	**173**⇑	*iP*	**Pn**	**18 41 29.2**	**+0.3**
TLL				*eS*	**Sn**	**18 41 57.6**	**-1.5**
TLL				IAML		18 42 15.3	
	comp=N,392nm,0.6s						
VCA	**Vinchina**	**2.77**	**112**	*i* P	**Pb**	**18 41 35.7**	**-2.5**
VCA				*i* S	**Sb**	**18 42 13.0**	**+0.6**
VCA				IAML		18 42 17.2	
	comp=Z,90nm,0.2s						
AGUA	**GUANDACOL**	**2.91**	**128**	*i* P	**Pb**	**18 41 39.2**	**-1.4**
AMOG	**MOGNA**	**3.95**	**145**	*i* P	Pn	18 41 52.1	+2.8
RTLL	**Cerro Villicun**	**4.28**	**148**	*i* P	**Pn**	**18 41 56.3**	**+2.5**
RTLL				*i* S	**Sn**	**18 42 47.9**	**+4.1**
AVFE	**Valle Fertil**	**4.35**	**133**	*i* P	**Pn**	**18 41 54.5**	**-0.3**
AVFE				*i* S	**Sn**	**18 42 45.1**	**-0.4**
AVFE				IAML		18 42 53.2	
	comp=Z,32nm,0.4s						
RTLS	**Leoncito**	**4.37**	**159**	*i* P	Pb	18 41 59.9	-5.6
RTCV	**Cerro Valdivia**	**4.70**	**152**	*i* P	**Pn**	**18 42 01.9**	**+2.4**
CYA	**Choya**	**4.76**	**100**	*i* P	Pn	18 41 53.6	-6.8
CYA				IAML		18 42 54.5	
	comp=Z,7.7nm,0.4s						
AHML	**Horco Molle**	**5.24**	**81**	*i* P	Pn	18 41 57.0	-10
ASAL	**Salagasta**	**5.25**	**158**	*i* P	**Pn**	**18 42 09.3**	**+2.2**
ARCO	**CERRO ARCO**	**5.45**	**160**	IAML		18 43 58.7	
	comp=Z,74nm,0.1s						

*IDC **21** 18:43:55.5±1.7, 31°.56N×104°.72E, h0km, mb3.2/3, mb1 3.4/4, mb1mx3.1/60, mbtmp3.2/4, ML3.4/1, MS3.2/1, Ms1 3.2/1, ms1mx2.4/23, Error ellipse: s-maj=74.3km s-min=29.3km az=55.0*

*ISCJB **21** 18:43:58.6±1.0, 31°.21N±0°.06×103°.47E±0°.09, h16km, mb3.2/3, MS3.2/1, Error ellipse: s-maj=12.1km s-min=8.0km az=154.1*

*BJI **21** 18:43:58.2, 30°.89N×103°.23E, h20km, ML3.5/14, Ms3.3/1, Ms7 3.0/1*

ISC 21 18:43:58.8±0.9, **31°.11N**±0°.05×**103°.50E**±0°.07, **h16**km, **n9**, σ2⁰**66**/14, **mb3.5**/3, **Sichuan**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
CD2	**Chengdu**	**0.30**	**132**	Pg	**Pb**	**18 44 06.3**	**+0.4**
CD2				Sg	**Sn**	**18 44 12.8**	**-2.0**
CD2				smax	smax		
	comp=N,7μm,0.7s						
CD2				smax	smax		
	comp=E,6μm,0.7s						
GYA	**Guiyang**	**5.40**	**148**	Pn	**Pn**	**18 45 20.8**	**+1.9**
GYA				Sn	**Sn**	**18 46 17.4**	**-3.5**
GYA				Sg	**Sb**	**18 46 42.8**	**+5.1**
GYA				sm

URZ	**Urewera**	**22.43**	**201**	P	**P**	**18 57 30.2**	**+0.2**
	11nm,0.4s,baz=308,slow=4.7,SNR=19						
HNR	**Honiara**	**27.48**	**283**	LR	LR	19 07 36.3	
	comp=Z,65nm,21.0s,baz=115,slow=33						
STKA	**Stephens Creek**	**43.36**	**242**	P	**P**	**19 00 33.1**	**-0.5**
	1.2nm,0.5s,baz=97,slow=9.2,SNR=4.1						
WRA	**Warramunga Arr**	**49.77**	**258**	P	**P**	**19 01 22.9**	**-1.2**
	1.2nm,0.6s,baz=95,slow=6.0,SNR=31						
ASAR	**Alice Springs**	**49.86**	**254**	P	**P**	**19 01 24.1**	**-0.6**
	11nm,0.7s,baz=88,slow=8.7,SNR=277						
NVAR	**Mina Array Bea**	**75.63**	**41**	P	**P**	**19 04 16.8**	**+0.5**
	0.5nm,0.5s,baz=234,slow=5.4,SNR=3.1						
PDAR	**Pinedale Array**	**83.56**	**42**	P	P	19 04 56.9	-2.6
	0.5nm,0.8s,baz=251,slow=4.5,SNR=4.1						
ILAR	**Eielson Array**	**84.42**	**11**	P	**P**	**19 05 00.7**	**-2.3**
	0.5nm,0.9s,baz=220,slow=6.7,SNR=5.2						
CMAR	**Chiang Mai Arr**	**93.63**	**288**	P	**P**	**19 05 49.5**	**+1.6**
	0.7nm,0.9s,baz=109,slow=3.0,SNR=5.0						
SONM	**Songino Array**	**96.66**	**318**	P	**P**	**19 06 02.6**	**+1.4**
	0.2nm,0.6s,baz=72,slow=4.7,SNR=2.3						
KMBO	**Kilima Mbogo**	**144.92**	**241**	PKP	**PKPdf**	**19 12 10.1**	**+0.7**
	1.1nm,0.4s,baz=72,slow=5.7,SNR=5.1						
DPC	**Dobruska-Polom**	**146.38**	**349**	*eP*	**PKPbc**	**19 12 12.0**	**+0.2**
KHC	**Kasperske Hory**	**148.00**	**352**	*eP*	**PKPbc**	**19 12 16.5**	**+0.2**
BRTR	**Keskin Array B**	**148.00**	**319**	PKPbc	**PKPbc**	**19 12 17.0**	**+0.2**
	1.9nm,0.9s,baz=85,slow=2.4,SNR=5.9						
GERES	**GERESS Array B**	**148.26**	**352**	PKPbc	**PKPbc**	**19 12 16.4**	**-0.7**
	0.5nm,0.6s,baz=32,slow=3.5,SNR=5.7						

NIED ***21*** *18:57:00.40˚.40N×143˚.70E, h14km, Mw3.6 Best double couple: M0 2.53000×10^14 NP1:φs 141.00000°, δ40.00000°, λ22.00000°. NP2:φs 34.00000°, δ76.00000°, λ128.00000°.*

JMA 21 18:57:58.7±0.2, 40˚.43N×143˚.75E, h0km, M3.6, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JTH	**Tanohata**	**1.53**	**252**	P	Pn	18 58 27.0	-0.2
JEM	**Erimo**	**1.65**	**344**	P	Pn	18 58 29.3	+0.4
JANG	**Nango**	**1.71**	**269**	P	Pn	18 58 29.8	+0.1
MIYJ	**Miyakonagasawa**	**1.71**	**241**	P	Pn	18 58 30.2	+0.5
JKZ	**Kuzumaki**	**1.91**	**257**	P	Pn	18 58 33.1	+0.6
JNBK	**Urakawa-nobuka**	**2.00**	**338**	P	Pn	18 58 34.4	+0.7
JNBK				S	Sb	18 59 00.9	-0.3
JTM	**Tenmabayashi**	**2.07**	**281**	P	Pn	18 58 35.9	+1.2
OFUJ	**Ofunato**	**2.10**	**231**	P	Pn	18 58 35.4	+0.4
JCH	**Churui**	**2.20**	**353**	P	Pn	18 58 36.7	+0.2
JCH				S	Sn	18 59 02.5	-1.9
JOT	**Ohata**	**2.26**	**296**	P	Pn	18 58 38.4	+1.1
JAH	**Hinai**	**2.39**	**265**	P	Pn	18 58 40.6	+1.5
JKB	**Kayabe**	**2.52**	**306**	P	Pn	18 58 42.3	+1.5
JRG	**Rokugo**	**2.61**	**248**	P	Pn	18 58 44.0	+1.9
JIO	**Ouri**	**2.71**	**224**	P	Pn	18 58 44.2	+0.7
JYK	**Kaneyama**	**3.02**	**241**	P	Pn	18 58 49.1	+1.3

DHMR ***21*** *19:07:07.9±1.2, 11˚.67N×42˚.85E, h13km±15km, ML4.4*
ISCJB ***21*** *19:07:11.0±0.5, 11˚.61N±0˚.06×42˚.86E±0˚.06, h20km±4km, mb3.7/5, MS3.1/3, Error ellipse: s-maj=10.9km s-min=7.2km az=137.3*
IDC ***21*** *19:07:10.5±22.0, 11˚.62N×43˚.01E, h0km, mb3.7/5, mb1 3.8/5, mb1mx3.4/43, mbtmp3.7/5, MS3.2/3, Ms1 3.2/3, ms1mx2.8/43, Error ellipse: s-maj=487.8km s-min=67.7km az=54.0*
ARO ***21*** *19:07:12.1, 11˚.6N±0˚.2×42˚.9E±0˚.2, h4km, ML4.6*

ISC 21 19:07:11.7±0.9, 11˚.63N±0˚.05×42˚.87E±0˚.04, h12km±6km, n22, σ0s98/26, mb3.9/5, MS2.9/3, 1D, Ethiopia

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ATD	**Arta Tunnel**	**0.10**	**194**	*eP*	**Pg**	**19 07 14.7**	**+0.1**
ATD				*eS*	**Sg**	**19 07 16.8**	**0.0**
ARO	**Arta Observato**	**0.11**	**194**	*eP*	**Pg**	**19 07 14.8**	**+0.1**
ARO				*eS*	**Sg**	**19 07 17.0**	**+0.1**
TDD	**Tadjoura Ara**	**0.17**	**11**	*eP*	**Pg**	**19 07 16.0**	**+0.4**
SGH	**Sud-Ghoubbet**	**0.31**	**231**	*eP*	**Pg**	**19 07 18.3**	**+0.4**
MCAD	**Moucha**	**0.35**	**73**	*eP*	**Pg**	**19 07 18.8**	**+0.1**
ATA	**Atar**	**0.37**	**119**	*eP*	**Pg**	**19 07 19.3**	**+0.2**
LDLD	**Lac de Lave**	**0.37**	**263**	*eP*	**Pg**	**19 07 19.1**	**0.0**
OBO	**Obock**	**0.54**	**49**	*eP*	**Pg**	**19 07 22.2**	**-0.1**
GBR	**Grand-Bara**	**0.62**	**220**	*eP*	**Pg**	**19 07 23.4**	**-0.4**
ADEN	**Aden**	**2.35**	**61**	*i* P	**Pn**	**19 07 48.7**	**-1.5**
ADEN				*i* S	**Sn**	**19 08 19.7**	**+0.6**
ADEN				AML	AML	19 08 32.6	
	comp=N,2μm,0.5s						
UDYN	**Al 'Udayn**	**2.56**	**25**	⇓*i* P	**Pn**	**19 07 51.1**	**-2.0**
UDYN				*i* S	**Sn**	**19 08 25.8**	**+1.6**
DHBB	**Dhamar BB**	**3.27**	**27**	*i* P	**Pn**	**19 08 02.1**	**-1.0**
DHBB				*i* S	**Sn**	**19 08 44.2**	**+1.9**
HAJJ	**Hajjah**	**4.10**	**10**	*i* P	**Pn**	**19 08 12.3**	**-2.2**
HAJJ				*i* S	**Sn**	**19 09 02.3**	**-0.3**
HAJJ				AML	AML	19 09 25.5	
	comp=Z,2μm,0.7s						
FURI	**Furi**	**4.94**	**237**	P	Pb	19 08 34.1	-4.3
FURI				S	**Sb**	**19 09 38.7**	**+0.7**
FURI	**Furi**	**4.94**	**237**	P	Pb	19 08 34.0	-4.5
FURI				S	**Sb**	**19 09 38.7**	**+0.7**
MMAI	**Mount Meron Ar**	**22.36**	**343**	LR	LR	19 19 32.2	
	comp=Z,44nm,20.8s,baz=240,slow=33						
GNI	**Garni**	**28.45**	**3**	LR	LR	19 24 58.1	
	comp=Z,25nm,18.5s,baz=154,slow=38						
BVAR	**Borovoye Array**	**46.80**	**23**	P	**P**	**19 15 41.9**	**+0.8**
	comp=Z,1.1nm,0.7s,baz=216,slow=7.1,SNR=8.3						
MKAR	**Makanchi Array**	**48.27**	**36**	P	**P**	**19 15 52.9**	**+0.1**
	comp=Z,1.0nm,0.8s,baz=227,slow=6.4,SNR=10						
ZALV	**Zalesovo Beam**	**53.68**	**29**	P	**P**	**19 16 32.8**	**-0.4**
	comp=Z,1.0nm,0.5s,baz=239,slow=7.5,SNR=6.2						
ZALV				LR	LR	19 42 54.4	
	comp=Z,48nm,18.1s,baz=65,slow=40						
CMAR	**Chiang Mai Arr**	**54.40**	**76**	P	**P**	**19 16 39.0**	**-0.1**
	comp=Z,0.2nm,0.6s,baz=276,slow=9.0,SNR=4.1						
SONM	**Songino Array**	**63.75**	**42**	P	**P**	**19 17 43.8**	**+0.2**
	comp=Z,0.7nm,0.9s,baz=256,slow=6.6,SNR=5.0						

CASC 21 19:28:13.2±1.6, 12˚.71N×88˚.61W, h45km±154km, MD3.6, ML3.2, Off coast of central America

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
LCY	**Lacayo**	**0.77**	**24**	*eP*	Pn	19 28 28.3	+0.5
VSM	**San Miguel**	**0.78**	**25**	*eP*	Pn	19 28 28.8	+0.7
VSM				*eS*	Sn	19 28 40.5	+1.5
TECA	**Tecapa**	**0.78**	**8**	*eP*	Pn	19 28 28.1	0.0
TECA				*eS*	Sn	19 28 39.2	+0.3
PACA	**Pacayal**	**0.80**	**20**	*eP*	Pn	19 28 28.6	+0.3
CNCH	**Conchagua**	**0.94**	**53**	*eP*	Pn	19 28 30.0	-0.1
LFRS	**El Faro**	**1.00**	**334**	*eP*	Pn	19 28 31.0	-0.1
LFRS				*eS*	Sn	19 28 43.6	-0.5
CSGN	**Cosiguina Volc**	**1.06**	**76**	*eP*	Pn	19 28 31.3	-0.4
SNET	**Serv Nac Est T**	**1.14**	**328**	AML	AML	19 28 50.4	
	comp=Z,305nm,0.2s						
SBLS	**San Blas**	**1.49**	**319**	*eP*	Pn	19 28 39.2	+1.5
CRIN	**San Cristobal**	**1.52**	**90**	*eP*	Pn	19 28 38.6	+0.6
CRIN				*eS*	Sn	19 28 57.8	+1.0
CRIN				AML	AML	19 29 00.6	
	comp=E,580nm,0.3s						
TEL3	**Telica 3**	**1.73**	**94**	*eP*	Pn	19 28 41.2	+0.3
TELN	**Telica**	**1.74**	**93**	*eP*	Pn	19 28 40.5	-0.5
CNGN	**Cerro Negro**	**1.88**	**96**	*eP*	Pn	19 28 42.2	-0.7
COPN	**Copaltepe**	**2.04**	**105**	*eP*	Pn	19 28 44.8	-0.3
MOMN	**Momotombo**	**2.05**	**98**	*eP*	Pn	19 28 45.0	-0.2
ESTN	**Estel**	**2.22**	**80**	*eP*	Pn	19 28 47.8	+0.2
APYN	**Apoyeque**	**2.26**	**102**	*eP*	Pn	19 28 48.0	-0.1

MAN 21 19:32:10,10˚.33N×125˚.70E, h16km, mb4.4, ML3.2, MS3.1, 1C-1D, Leyte

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SCPH	**Surigao**	**0.58**	**201**	⇓*eP*	Pb	19 32 22.5	+0.6
SCPH				*eS*	Sn	19 32 34.2	+1.3
OCLP	**Ormoc**	**1.29**	**304**	*eP*	Pn	19 32 33.5	+0.1
TBP	**Tagbilaran**	**1.92**	**251**	⇑*eP*	Pb	19 32 43.8	-0.9
BUKP	**Musuan**	**2.52**	**195**	*eP*	Pn	19 32 51.8	+1.5
BUKP				*eS*	Sn	19 33 23.1	+2.4
GUIM	**Jordan**	**3.08**	**276**	*eP*	Pn	19 32 58.9	+0.9
MATI	**Mati**	**3.41**	**171**	*eP*	Pn	19 33 04.4	+1.9

IDC ***21*** *19:43:06.7±1.4, 26˚.84S×176˚.16W, h0km, mb4.2/5, mb1 4.4/6, mb1mx4.0/32, mbtmp4.2/6, ML4.6/1, MS3.4/7, Ms1 3.4/7, ms1mx3.1/38, Error ellipse: s-maj=52.7km s-min=28.2km az=133.0*
NEIC ***21*** *19:43:12.0±1.0, 26˚.84S×176˚.18W, h35km, mb4.4/2, Error ellipse: s-maj=32.0km s-min=16.8km az=124.0*

ISC 21 19:43:11.4±1.3, 26˚.9S±0˚.2×176˚.1W±0˚.3, h31km, n25, σ1s19/19, mb4.2/7, MS3.5/4, South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
RAO	**Raoul Island**	**2.82**	**213**	Pn	**Pn**	**19 43 55.7**	**+1.4**
	88nm,0.3s,baz=73,slow=10,SNR=9.7						
RAO				Sn	**Sb**	**19 44 34.0**	**-1.1**
	45nm,0.3s,baz=17,slow=19,SNR=4.3						
URZ	**Urewera**	**12.67**	**205**	LR	LR	19 50 20.7	
	comp=Z,135nm,20.0s,baz=11,slow=34						
RAR	**Rarotonga**	**15.98**	**73**	LR	LR	19 51 13.1	
	comp=Z,72nm,20.6s,baz=273,slow=30						
DZM	**Mont Dzumac**	**16.57**	**283**	LR	LR	19 52 00.7	
	comp=Z,118nm,19.8s,baz=56,slow=32						
PPT	**Papeete**	**26.24**	**75**	LR	LR	19 58 59.6	
	comp=Z,50nm,18.1s,baz=192,slow=36						
CTAO	**Charters Tower**	**35.05**	**273**	*eP*	**P**	**19 50 01.5**	**-0.2**
	1.8nm,0.6s						
STKA	**Stephens Creek**	**36.99**	**252**	LR	LR	20 03 26.5	
	comp=Z,68nm,19.4s,baz=35,slow=33						
ASAR	**Alice Springs**	**45.06**	**263**	P	**P**	**19 51 23.6**	**-1.0**
	1.1nm,0.7s,baz=94,slow=6.5,SNR=31						
ASAR				LR	LR	20 08 24.4	
	comp=Z,58nm,18.1s,baz=136,slow=34						
WRAB	**Tennant Creek**	**45.73**	**268**	*eP*	**P**	**19 51 29.4**	**-0.6**
	7.5nm,0.9s						
WRA	**Warramunga Arr**	**45.74**	**268**	P	**P**	**19 51 29.0**	**-1.0**
	6.5nm,0.7s,baz=107,slow=7.6,SNR=33						
LEM	**Lembang**	**74.69**	**270**	LR	LR	20 28 55.9	
	comp=Z,110nm,19.2s,slow=37						
MJAR	**Matsushiro Arr**	**76.36**	**324**	P	**P**	**19 54 57.1**	**-0.4**
	1.9nm,1.0s,baz=164,slow=5.4,SNR=3.1						
KSRS	**Korea Array**	**92.79**	**318**	P	**P**	**19 55 34.5**	**+2.1**
	1.3nm,0.8s,baz=128,slow=4.0,SNR=3.2						
KSAR	**Wonju Array Be**	**82.81**	**318**	P	**P**	**19 55 34.5**	**+2.0**
CMAR	**Chiang Mai Arr**	**93.82**	**289**	P	**P**	**19 56 27.8**	**+1.8**
	1.2nm,0.9s,baz=140,slow=2.7,SNR=8.2						
NRIK	**Noril'sk**	**117.10**	**337**	PKP	**PKPdf**	**20 01 52.4**	**0.0**
	3.2nm,0.5s,baz=108,slow=3.8,SNR=4.0						
KURK	**Kurchatov**	**119.78**	**315**	PKP	**PKPdf**	**20 01 56.9**	**-1.2**
KURBB	**Kurchatov Arra**	**119.83**	**315**	PKP	**PKPdf**	**20 01 56.9**	**-1.3**
	0.7nm,1.0s,baz=100,slow=2.3,SNR=5.1						
BVAR	**Borovoye Array**	**125.00**	**317**	PKP	**PKPdf**	**20 02 08.1**	**0.0**
	1.2nm,0.9s,baz=72,slow=0.5,SNR=5.4						
FINES	**FINESS Array B**	**142.37**	**343**	PKhKP	PKPpre	20 02 35.6	
	1.5nm,1.0s,baz=106,slow=4.9,SNR=4.5						
NB2	**NORSAR Subarra**	**145.51**	**354**	PKP	**PKPbc**	**20 02 45.2**	**-0.8**
	comp=Z,7.7nm,1.1s,baz=13,slow=2.6						
NOA	**NORSAR Array B**	**145.51**	**354**	PKPbc	**PKPab**	**20 02 45.5**	**-0.7**
	comp=Z,4.7nm,1.0s,baz=14,slow=2.4,SNR=11						
HFS	**Hagfors**	**146.10**	**351**	PKPbc	**PKPbc**	**20 02 47.2**	**-0.6**
	comp=Z,3.2nm,0.8s,baz=29,slow=3.4,SNR=6.8						
AKASG	**Malin Array Be**	**149.37**	**328**	PKPbc	**PKPbc**	**20 02 56.4**	**-0.5**
	comp=Z,0.5nm,0.4s,baz=40,slow=3.2,SNR=7.3						
BRTR	**Keskin Array B**	**152.16**	**305**	PKPbc	**PKPbc**	**20 03 03.6**	**-0.5**
	comp=Z,1.5nm,1.0s,baz=43,slow=2.8,SNR=5.5						

MEX 21 19:47:24.5±0.6, 15˚.59N×95˚.45W, h16km±14km, MD3.9, Near coast of Oaxaca

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
HUIG	**Huatulco**	**0.66**	**286**	*eP*	Pg	19 47 35.3	-2.1
HUIG				*eS*	Sg	19 47 42.9	-3.3
VHO	**Vista Hermosa**	**1.92**	**320**	*eP*	Pn	19 47 53.5	-3.3
VHO				*eS*	Sn	19 48 16.0	-4.8
PCIG		**2.16**	**87**	*eP*	Pn	19 47 55.8	-4.0
PCIG				*i* S	Sn	19 48 21.6	-4.6
PNIG	**Pinotepa**	**2.69**	**288**	*i* P	Pn	19 48 04.4	-2.8
PNIG				*i* S	Sn	19 48 35.4	-4.2

IDC ***21*** *19:49:53.9±1.4, 2˚.01N×96˚.12E, h0km, mb3.8/8, mb1 3.8/10, mb1mx3.6/50, mbtmp3.8/10, ML3.5/2, Error ellipse: s-maj=44.0km s-min=19.7km az=47.0*
DJA ***21*** *19:49:55.8±1.0, 2˚.N±4˚×9˚.6E±˚, h58km±17km, M4.0/7, mb4.5/1, MLv3.8/7*
NEIC ***21*** *19:50:00.4±5.5, 2˚.12N×96˚.31E, h44km±43km, mb4.3/3, Error ellipse: s-maj=59.1km s-min=10.3km az=57.0*

ISC 21 19:49:58.6±0.8, 2˚.17N±0˚.06×96˚.30E±0˚.08, h27km, n26, σ1s39/25, mb4.0/11, Northern Sumatera

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
TPTI		**1.40**	**39**	P	**Pn**	**19 50 21.6**	**-0.7**
TPTI				S	**Sb**	**19 50 43.3**	**+1.9**
GSI	**Gunungsitoli**	**1.54**	**124**	P	**Pb**	**19 50 25.6**	**-0.8**
GSI				S	**Sb**	**19 50 49.6**	**+4.1**
KCSI	**Kotacane, Aceh**	**1.99**	**48**	P	**Pn**	**19 50 31.2**	**+0.7**
KCSI				S	**Sb**	**19 50 59.0**	**+0.4**
TSI	**Tuntungan**	**2.62**	**60**	P	**Pn**	**19 50 40.3**	**+1.1**
TSI				S	**Sb**	**19 51 15.4**	**-1.3**
PSI	**Prapat**	**2.70**	**76**	Pn	**Pn**	**19 50 41.1**	**+0.8**
	2.4nm,0.3s,baz=318,slow=16,SNR=6.8						
MNSI	**Mandailing Nat**	**3.55**	**113**	P	**Pn**	**19 50 52.5**	**+0.5**
MNSI				S	**Sb**	**19 51 39.9**	**-3.5**
KULM	**Kulim**	**5.33**	**54**	*eP*	**Pn**	**19 51 17.2**	**+0.7**
	29nm,0.8s						
CMAR	**Chiang Mai Arr**	**16.39**	**9**	Pn	**P**	**19 53 49.2**	**-0.4**
	0.1nm,0.3s,baz=198,slow=11,SNR=17						
H08S2	**Diego Garcia H**	**25.67**	**247**	T	T	20 21 52.7	
	baz=68,slow=76,SNR=198						
H08S3	**Diego Garcia H**	**25.68**	**247**	T	T	20 21 59.0	
	baz=68,slow=76,SNR=224						
H08S1	**Diego Garcia H**	**25.69**	**247**	T	T	20 22 00.1	
	baz=68,slow=76,SNR=183						
LSA	**Lhasa**	**27.82**	**350**	*eP*	**P**	**19 55 46.9**	**+0.7**
	2.5nm,0.8s						
H01W3	**Cape Leeuwin H**	**40.48**	**157**	T	T	20 40 32.5	
	baz=333,slow=76,SNR=36						
H01W2	**Cape Leeuwin H**	**40.49**	**157**	T	T	20 40 34.1	
	baz=333,slow=76,SNR=35						
H01W1	**Cape Leeuwin H**	**40.49**	**157**	T	T	20 40 36.9	
	baz=333,slow=76,SNR=33						
WRA	**Warramunga Arr**	**43.31**	**122**	P	**P**	**19 57 58.4**	**-0.1**
	0.3nm,0.5s,baz=301,slow=9.3,SNR=4.5						
ASAR	**Alice Springs**	**44.69**	**127**	P	**P**	**19 58 09.3**	**-0.3**
	0.2nm,0.6s,baz=295,slow=8.1,SNR=4.0						
MKAR	**Makanchi Array**	**46.09**	**347**	P	**P**	**19 58 20.7**	**+0.3**
	1.2nm,0.5s,baz=159,slow=8.2,SNR=11						
SONM	**Songino Array**	**46.32**	**9**	P	**P**	**19 58 22.4**	**+0.2**
	0.5nm,0.4s,baz=188,slow=9.9,SNR=5.7						
GEYT	**Alibeck**	**49.90**	**320**	P	**P**	**19 58 49.0**	**-1.0**
	0.7nm,0.3s,baz=149,slow=5.9,SNR=3.8						
KURK	**Kurchatov**	**50.63**	**346**	*eP*	**P**	**19 58 54.0**	**-1.2**
	16nm,0.8s						
ZALV	**Zalesovo Beam**	**52.47**	**351**	P	**P**	**19 59 09.4**	**+0.5**
	3.4nm,0.5s,baz=176,slow=7.3,SNR=23						
BVAR	**Borovoye Array**	**55.05**	**341**	P	**P**	**19 59 27.6**	**-0.2**
	0.7nm,0.4s,baz=156,slow=7.4,SNR=6.5						
BRVK	**Borovoye**	**55.11**	**341**	*eP*	**P**	**19 59 28.2**	**0.0**
ABKAR	**Akbulak array**	**56.24**	**332**	*eP*	**P**	**19 59 36.6**	**+0.1**
	1.6nm,0.7s						
FINES	**FINESS Array B**	**78.73**	**333**	P	**P**	**20 01 58.8**	**+0.4**
	0.4nm,0.6s,baz=126,slow=8.8,SNR=2.2						

KRNET ***21*** *19:53:19.4±0.1, 40˚.28N×71˚.22E, h17km, mb2.8*
ISCJB ***21*** *19:53:20.3±0.6, 40˚.23N±0˚.04×71˚.23E±0˚.04, h10km, Error ellipse: s-maj=6.1km s-min=4.2km az=163.1*
NNC ***21*** *19:53:20.4±2.8, 40˚.24N×71˚.28E, h0km, mb3.3, mpv3.0, Error ellipse: s-maj=24.1km s-min=13.2km az=49.0*
SOME ***21*** *19:53:23.0, 40˚.52N×71˚.38E, h5km*

ISC 21 19:53:19.7±0.8, 40˚.30N±0˚.03×71˚.31E±0˚.03, h10km, n24, σ1s86/45, 25C-10D, Tajikistan

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
BTK	**Batken**	**0.45**	**237**	⇓*i* P	**Pg**	**19 53 27.0**	**-1.5**
	baz=235						
BTK				⇓*i* S	**Sg**	**19 53 32.4**	**-2.1**
	baz=235						
OHH	**Osh**	**1.15**	**78**	⇑*i* P	**Pn**	**19 53 42.7**	**+0.8**
	baz=78						
OHH				⇑*i* S	**Sn**	**19 53 59.1**	**+1.4**
	baz=78						
ARK	**Arkit**	**1.57**	**18**	⇓*i* P	**Pg**	**19 53 49.6**	**-0.3**
	baz=21						
ARK				⇓*i* S	**Sg**	**19 54 10.4**	**+0.1**
	baz=21						
SFK	**Sufi-Kurgan**	**1.71**	**99**	⇑*i* P	**Pb**	**19 53 51.7**	**+0.4**
	baz=98						
SFK				⇑*i* S	**Sg**	**19 54 15.5**	**+0.9**
	baz=98						
SFK	**Sufi-Kurgan**	**1.71**	**99**	⇑P	**Pg**	**19 53 52.4**	**-0.1**
	3.2nm,0.4s						
SFK				⇑S	**Sg**	**19 54 14.9**	**+0.3**
IUG	**Iuzhnay**	**2.08**	**333**	*eP*	**Pb**	**19 53 57.7**	**+0.1**
	117nm,0.3s						
IUG				*eS*	**Sb**	**19 54 23.2**	**-0.3**
	298nm,0.5s						
MNAS	**Manas**	**2.36**	**22**	⇑*i* P	**Pn**	**19 54 00.4**	**+1.7**
	baz=23						
MNAS				⇑*i* S	**Sb**	**19 54 31.7**	**+0.1**
	baz=23						
MNAS	**Manas**	**2.36**	**22**	⇑Pn	**Pn**	**19 54 00.4**	**+1.7**
	0.8nm,0.4s						
MNAS				⇓Pg	**Pg**	**19 54 04.0**	**-1.0**
	10nm,0.3s						
MNAS				⇑Sn	**Sg**	**19 54 35.3**	**-0.3**
	31nm,0.6s						
MNAS				⇑Lg	Lg	19 54 40.8	
	38nm,0.5s						
CHM	**Chimkent**	**2.39**	**328**	*eP*	**Pg**	**19 54 05.2**	**-0.2**
	35nm,0.3s						
CHM				*eS*	**Sg**	**19 54 37.0**	**+0.5**
	228nm,0.3s						
AML	**Almayashu**	**2.56**	**44**	⇑*i* P	**Pn**	**19 54 03.2**	**+1.5**
	baz=44						
AML				⇑*i* S	**Sb**	**19 54 35.8**	**-1.9**
	baz=44						
DZA	**Taraz**	**2.59**	**0**	*eP*	**Pb**	**19 54 05.5**	**-0.7**
	47nm,0.5s						
DZA				*eS*	**Sb**	**19 54 36.7**	**-1.3**
	95nm,0.2s						
BRLS	**Borolday**	**2.77**	**334**	*eP*	**Pb**	**19 54 10.2**	**+1.0**
	0.9nm,0.3s						
BRLS				*eS*	**Sb**	**19 54 45.5**	**+2.3**
	35nm,0.3s						
MRKS	**Merke**	**2.83**	**30**	*eP*	**Pb**	**19 54 11.7**	**+1.3**
	41nm,0.3s						
MRKS				⇑*i* S	**Sg**	**19 54 48.2**	**-2.4**
	54nm,0.5s						
KK31	**Karatay Array**	**2.86**	**348**	⇑Pn	**Pn**	**19 54 06.8**	**+1.4**
	0.4nm,0.2s,baz=157,slow=12,SNR=144						
KK31				⇑Pg	**Pb**	**19 54 12.2**	**+1.3**
	8.6nm,0.5s,baz=170,slow=17						
KK31				⇑Lg	Lg	19 54 50.2	
	11nm,0.3s,baz=158,slow=30,SNR=11						
UCH	**Uchtor**	**3.09**	**50**	⇓*i* P	**Pn**	**19 54 11.6**	**+2.7**
	baz=51						
UCH				⇓*i* S	**Sn**	**19 54 49.1**	**+3.0**
	baz=51						
AAK	**Ala-Archa**	**3.34**	**45**	⇑*i* P	Pb	19 54 15.8	-3.3
	baz=45						
AAK				⇑*i* S	**Sb**	**19 54 59.8**	**0.0**
	baz=45						
AAK	**Ala-Archa**	**3.34**	**45**	⇑Pn	**Pn**	**19 54 14.7**	**+2.6**
	1.0nm,0.3s						
AAK				⇑Pg	**Pg**	**19 54 21.9**	**-1.7**
	8.3nm,0.7s						
AAK				⇑Lg	Lg	19 55 09.1	
	5.9nm,0.4s						
NRN	**Naryn**	**3.73**	**71**	⇓*e*P	**Pn**	**19 54 19.6**	**+1.9**
	baz=71						
NRN				⇓*i*S	**Sn**	**19 55 04.5**	**+2.7**
	baz=71						
TKM2	**Tokmak 2**	**4.14**	**49**	⇑Pn	**Pn**	**19 54 25.7**	**+2.5**
	2.0nm,0.5s						
TKM2				⇓Pg	**Pg**	**19 54 36.4**	**-2.6**
	2.6nm,0.3s						
TKM2				⇑Lg	Lg	19 55 32.3	
	6.3nm,0.4s						
BMNS	**Besmoynak**	**4.30**	**48**	*eP*	**Pg**	**19 54 39.4**	**-2.7**
	13nm,0.5s						
BMNS				*eS*	**Sg**	**19 55 35.3**	**-2.5**
	24nm,0.7s						
DGS	**Degeres**	**4.44**	**47**	*eP*	**Pg**	**19 54 41.8**	**-3.1**
	6.6nm,0.3s						
DGS				*eS*	**Sg**	**19 55 39.7**	**-2.7**
	8.2nm,0.5s						
MDOK	**Medeo**	**5.16**	**54**	*eP*	Pb	19 54 54.1	+4.0
	2.3nm,0.6s						
MDOK				*eS*	**Sg**	**19 56

FINES	**FINES Array B**	**47.67**	**328**	P		**P**		**20 02 46.1**	**+0.1**
	comp=E,1.0nm,0.7s,baz=116,slow=6.5,SNR=5.2								
ARCES	**ARCESS Array B**	**50.55**	**338**	P		**P**		**20 03 08.8**	**+0.7**
	comp=E,2.2nm,0.7s,baz=100,slow=7.4,SNR=5.2								
HFS	**Hagfors**	**53.43**	**325**	P		**P**		**20 03 28.4**	**-1.2**
	comp=E,0.6nm,0.6s,baz=94,slow=5.8,SNR=3.1								
GERES	**GERESS Array B**	**53.60**	**311**	P		**P**		**20 03 31.3**	**+0.1**
	comp=E,0.2nm,0.3s,baz=69,slow=5.6,SNR=3.1								
ESDC	**Sonseca Array**	**68.02**	**304**	P		**P**		**20 05 09.4**	**-0.1**
	comp=E,0.3nm,0.6s,baz=68,slow=5.6,SNR=3.6								
WRA	**Warramunga Arr**	**71.35**	**127**	P		**P**		**20 05 29.2**	**-0.9**
	comp=E,0.6nm,0.5s,baz=321,slow=6.0,SNR=7.8								
ASAR	**Alice Springs**	**73.58**	**130**	P		**P**		**20 05 42.1**	**-1.2**
	comp=E,0.5nm,0.8s,baz=317,slow=6.1,SNR=6.3								
YKA	**Yellowknife Ar**	**87.31**	**7**	P		**P**		**20 06 55.8**	**-0.7**
	comp=E,0.1nm,0.4s,baz=343,slow=5.7,SNR=3.2								
TXAR	**Lajitas Array**	**121.15**	**5**	PKP		**PKPdf**		**20 13 03.5**	**+0.2**
	comp=E,0.1nm,0.5s,baz=149,slow=1.9,SNR=4.1								

IDC 21 19:59:34.2±6.3, 39.03N×110.63E, h0km, mb3.1/2, mb1 3.3/3, mb1mx3.0/68, mbtmp3.1/3, Error ellipse: s-maj=132.8km s-min=31.8km az=85.0, Western Nei Mongol

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
SONM	**Songino Array**	**9.33**	**342**	Pn		Pn	20 01 50.5	+0.5
	baz=158,slow=12,SNR=4.2							
MKAR	**Makanchi Array**	**22.07**	**300**	P		P	20 04 30.5	-0.2
	0.5nm,0.8s,baz=97,slow=12,SNR=4.1							
CMAR	**Chiang Mai Arr**	**22.87**	**210**	P		P	20 04 39.3	0.0
	0.9nm,0.8s,baz=12,slow=8.9,SNR=8.7							

*GUC **21** 20:04:45.3±0.4, 32.67S×71.10W, h6km±1km, ML2.0*
*ISCJB **21** 20:04:47.5±1.0, 32.74S±0.04×71.17W±0.07, h4km±7km, Error ellipse: s-maj=9.8km s-min=6.8km az=171.8*
*SJA **21** 20:04:48.4±1.1, 32.82S×70.96W, h11km, ML2.3, MW3.5*
ISC 21 20:04:46.6±1.4, 32.70S±0.04×71.10W±0.06, h17km±9km, n15, σ0s76/19, 1C, Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
ROCH	**El Roble**	**0.29**	**165**	*e*P		**Pg**	**20 04 52.8**	**-0.2**
ROCH				*i* S		**Sg**	**20 04 58.4**	**+1.1**
ROCH				IAML			20 05 02.2	
	comp=N,464nm,0.6s							
ROC1	**El Roble**	**0.29**	**166**	*i* P		**Pg**	**20 04 52.3**	**-0.7**
IHA	**Instituto Hidr**	**0.56**	**234**	*e*P		**Pg**	**20 04 57.1**	**-0.6**
PEL	**Peldehue**	**0.57**	**142**	⇑*i*P		**Pb**	**20 04 57.6**	**-0.6**
PEL				*i* S		**Sb**	**20 05 06.8**	**+0.8**
PEL				IAML			20 05 08.2	
	comp=N,164nm,0.9s							
RCDM	**Rinconada Maip**	**0.83**	**163**	*e*P		**Pb**	**20 05 02.4**	**-0.2**
RCDM				*i* S		**Sn**	**20 05 15.6**	**+0.1**
CLCH	**Cerro Calan**	**0.84**	**146**	*e*P		**Pb**	**20 05 03.0**	**+0.1**
CLCH				*i* S		**Sn**	**20 05 16.0**	**+0.1**
CLCH				IAML			20 05 24.0	
	comp=E,118nm,0.5s							
AUSP	**Uspallata**	**1.52**	**72**	*i* P		**Pg**	**20 05 15.7**	**-0.3**
AUSP				*i* S		**Sg**	**20 05 36.3**	**+0.4**
RTLS	**Leoncito**	**1.77**	**60**	*i* P		**Pg**	**20 05 21.0**	**+0.3**
ASAL	**Salagasta**	**1.92**	**87**	*i* P		**Pg**	**20 05 22.2**	**-1.2**
AAGR	**Agrelo**	**1.95**	**102**	*i* P		**Pg**	**20 05 22.7**	**-1.4**
RTCV	**Cerro Valdivia**	**2.32**	**70**	*i* P		**Pb**	**20 05 28.2**	**+0.1**
RTLL	**Cerro Villicun**	**2.61**	**59**	*i* P		**Pb**	**20 05 32.4**	**-0.6**
RTLL				*i* S		**Sb**	**20 06 05.9**	**+1.0**
AMOG	**MOGNA**	**2.83**	**52**	*i* P		**Pb**	**20 05 36.3**	**-0.5**
AVFE	**Valle Fertil**	**3.71**	**58**	*i* P		Pn	20 05 48.2	+4.9
AVFE				IAML			20 06 46.9	
	comp=Z,5.3nm,0.5s							
AGUA	**GUANDACOL**	**3.90**	**36**	*i* P		Pb	20 05 52.0	-3.0

IDC 21 20:05:01.5±28.0, 20.26S×175.45W, h0km, mb3.6/4, mb1 3.8/4, mb1mx3.5/46, mbtmp3.6/4, Error ellipse: s-maj=517.5km s-min=154.6km az=75.0, Tonga Islands

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
CTA	**Charters Tower**	**35.89**	**263**	P		P	20 12 04.9	+1.3
	0.6nm,0.4s,baz=100,slow=11							
STKA	**Stephens Creek**	**40.04**	**244**	P		P	20 12 37.3	-1.3
	1.1nm,0.8s,baz=54,slow=8.9,SNR=3.3							
ASAR	**Alice Springs**	**46.90**	**256**	P		P	20 13 33.9	-0.2
	0.2nm,0.3s,baz=90,slow=8.4,SNR=9.5							
WRA	**Warramunga Arr**	**47.00**	**261**	P		P	20 13 34.5	-0.4
	0.1nm,0.3s,baz=95,slow=8.0,SNR=13							

*ISCJB **21** 20:05:39.8±1.7, 15.28S±0.7×174.34W±0.5, h33km, mb3.9/5, Error ellipse: s-maj=115.4km s-min=10.1km az=147.6*
*IDC **21** 20:05:46.6±3.3, 15.73S×174.36W, h75km±33km, mb3.5/5, mb1 3.8/6, mb1mx3.4/48, mbtmp3.9/6, Error ellipse: s-maj=112.7km s-min=20.7km az=144.0*
ISC 21 20:05:41.7±1.8, 15.28S±0.7×174.34W±0.5, h35km, n7, σ0s48/9, mb3.8/5, Tonga Islands

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
AFI	**Afiamalu**	**3.05**	**53**	P		Pn	20 06 33.6	+6.1
	24nm,0.3s,baz=234,slow=3.4,SNR=10							
AFI				S		**Sn**	**20 07 03.3**	**+0.4**
	80nm,0.3s,baz=38,slow=22,SNR=15							
STKA	**Stephens Creek**	**43.11**	**240**	P		**P**	**20 13 39.0**	**+0.3**
	2.6nm,0.8s,baz=84,slow=10,SNR=4.0							
WRA	**Warramunga Arr**	**48.92**	**257**	P		**P**	**20 14 24.9**	**+0.2**
	0.4nm,0.4s,baz=94,slow=6.9,SNR=9.2							
WRA				PcP		**PcP**	**20 15 49.0**	**+0.2**
	0.1nm,0.4s,baz=95,slow=3.4,SNR=3.1							
ASAR	**Alice Springs**	**49.18**	**252**	P		**P**	**20 14 26.3**	**-0.4**
	1.6nm,0.5s,baz=88,slow=8.0,SNR=41							
ASAR				PcP		**PcP**	**20 15 50.2**	**+0.5**
	0.2nm,0.5s,baz=92,slow=3.8,SNR=2.7							
ILAR	**Eielson Array**	**82.96**	**11**	P		**P**	**20 18 02.7**	**0.0**
	0.4nm,0.6s,baz=212,slow=5.0,SNR=6.2							
PDAR	**Pinedale Array**	**83.11**	**42**	P		**P**	**20 18 03.5**	**-0.8**
	0.4nm,0.6s,baz=48,slow=2.2,SNR=4.8							
BRTR	**Keskin Array B**	**145.88**	**320**	PKPbc		**PKPbc**	**20 25 17.9**	**0.0**
	0.9nm,0.8s,baz=37,slow=0.7,SNR=5.0							

MEX 21 20:09:45.1±0.3, 13.78N×91.62W, h16km±60km, MD3.9, Near coast of Guatemala

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
PCIG		**2.46**	**321**	*i* P		Pn	20 10 21.6	-2.9
PCIG				*i* S		Sn	20 10 49.9	-4.3
CCIG	**Comitan**	**2.54**	**349**	*e*P		Pn	20 10 23.4	-2.4
TGIG		**3.31**	**334**	*e*P		Pn	20 10 33.8	-2.5

SJA 21 20:12:20.6±0.3, 31.37S×68.63W, h97km±1km, ML2.5, MW3.9, San Juan Province

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
RTLL	**Cerro Villicun**	**0.14**	**72**	*i* P		Pn	20 12 35.0	+0.7
RTLL				*i* S		Sn	20 12 45.4	+0.9
AMOG	**MOGNA**	**0.45**	**15**	*i* P		Pn	20 12 36.5	+0.7
AMOG				*i* S		Sn	20 12 48.0	+0.9
RTCV	**Cerro Valdivia**	**0.49**	**172**	*i* P		Pn	20 12 36.8	+0.6
RTCV				*i* S		Sn	20 12 48.7	+1.1
RTLS	**Leoncito**	**0.71**	**233**	*i* P		Pn	20 12 39.3	+1.1
RTLS				*i* S		Sn	20 12 53.3	+1.9
AUSP	**Uspallata**	**1.07**	**217**	*i* P		Pn	20 12 43.2	+1.3
ASAL	**Salagasta**	**1.23**	**188**	*i* P		Pn	20 12 44.4	+0.9
ASAL				*i* S		Sn	20 13 02.3	+1.5
AVFE	**Valle Fertil**	**1.23**	**55**	*i* P		Pn	20 12 44.4	+0.9
AVFE				IAML			20 14 12.5	
	comp=Z,16nm,0.2s							
AGUA	**GUANDACOL**	**1.88**	**4**	*i* P		Pn	20 12 52.8	+1.2
VCA	**Vinchina**	**2.65**	**8**	*i* P		Pn	20 13 03.2	+1.4
VCA				IAML			20 13 35.2	
	comp=Z,58nm,0.2s							

MAN 21 20:17:52, 8.56N×124.73E, h25km, mb3.9, ML2.6, MS2.3, 1C, Mindanao

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
CGP	**Cagayan de Oro**	**0.11**	**196**	⇑*i*P		Pb	20 17 56.0	-0.8
CGP				*i* S		Sb	20 17 58.4	-1.6
BUKP	**Musuan**	**0.76**	**154**	*e*P		Pn	20 18 07.4	+0.2
BUKP				*e*S		Sn	20 18 18.4	+0.5
TBP	**Tagbilaran**	**1.41**	**323**	*e*P		Pn	20 18 15.6	-0.5
PAGZ	**Pagadian**	**1.51**	**242**	*e*P		Pn	20 18 17.9	+0.4
PAGZ				*e*S		Sn	20 18 30.4	-5.9

IDC 21 20:26:35.2±27.0, 19.60S×174.39W, h0km, mb4.0/4, mb1 4.1/4, mb1mx3.6/45, mbtmp4.0/4, Error ellipse: s-maj=493.6km s-min=157.1km az=74.0, Tonga Islands

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
CTA	**Charters Tower**	**36.97**	**262**	P		P	20 33 46.9	+0.4
	1.5nm,0.6s,baz=108,slow=10,SNR=3.4							
STKA	**Stephens Creek**	**41.23**	**244**	P		P	20 34 22.2	+0.1
	1.9nm,0.9s,baz=79,slow=10,SNR=3.6							
ASAR	**Alice Springs**	**48.03**	**255**	P		P	20 35 16.4	-0.2
	1.4nm,0.5s,baz=99,slow=8.3,SNR=48							
WRA	**Warramunga Arr**	**48.09**	**260**	P		P	20 35 16.5	-0.6
	0.4nm,0.4s,baz=98,slow=7.5,SNR=13							

*NIED **21** 20:28:00, 36.60N×141.40E, h35km, Mw4.5 Best double couple: M0 7.47000×10^15 NP1:φ=184.00000°, δ=11.00000°, λ=89.00000°. NP2:φ=4.00000°, δ=79.00000°, λ=90.00000°.*
*BJI **21** 20:28:38.6, 36.63N×141.28E, h6km, mb4.7/39, mB4.8/23, Ms4.2/19, Ms7 4.1/15*
*ISCJB **21** 20:28:39.2±0.9, 36.59N±0.03×141.71E±0.04, h20km±6km, mb4.4/61, MS3.7/24, Error ellipse: s-maj=6.4km s-min=4.4km az=36.1*
*MOS **21** 20:28:41.5±1.4, 36.66N×141.68E, h35km, mb4.6/42, Error ellipse: s-maj=8.3km s-min=5.6km az=98.9*
*NEIC **21** 20:28:43.4±2.0, 36.57N×141.56E, h34km±14km, mb4.6/14, Error ellipse: s-maj=8.5km s-min=6.3km az=130.0*
*JMA **21** 20:28:43.3±0.1, 36.61N×141.41E, h46km±2km, M4.5*
JMA Felt II J1.
*IDC **21** 20:28:44.1±2.4, 36.58N×141.50E, h38km±21km, mb4.0/25, mb1 4.2/30, mb1mx4.0/56, mbtmp4.3/30, ML4.0/5, MS3.7/29, Ms1 3.7/29, ms1mx3.5/47, Error ellipse: s-maj=14.8km s-min=12.0km az=106.0*
ISC 21 20:28:40.8±0.8, 36.60N±0.04×141.59E±0.05, h15km±4km, n148, σ1s18/136, mb4.4/61, MS3.8/24, 2C-5D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.81**	**308**	P		**Pg**	**20 28 56.7**	**+0.1**
ONAJ				S		**Sb**	**20 29 06.5**	**-1.0**
JHO	**Hitachi**	**0.82**	**271**	P		**Pg**	**20 28 56.5**	**-0.3**
JHO				*e*S		**Sb**	**20 29 06.2**	**-1.6**
JFK	**Kawauchi**	**0.96**	**323**	P		**Pb**	**20 28 59.0**	**-0.1**
JYT	**Yasato**	**1.19**	**252**	P		**Pn**	**20 29 01.8**	**-1.1**
JFT	**Otama**	**1.36**	**313**	P		**Pb**	**20 29 05.7**	**-0.3**
JMM	**Marumori**	**1.42**	**333**	P		**Pn**	**20 29 05.9**	**-0.1**
JMM				S		**Sn**	**20 29 23.3**	**-1.1**
JFY	**Yanaizu**	**1.71**	**299**	P		**Pb**	**20 29 10.8**	**-1.2**
JAG	**Ashikaga**	**1.73**	**265**	P		**Pn**	**20 29 10.0**	**-0.4**
MJAR	**Matsushiro Arr**	**2.73**	**270**	Pn		**Pn**	**20 29 24.6**	**+0.5**
	98nm,0.3s,baz=94,slow=9.6,SNR=588							
MJAR				Sn		**Sn**	**20 29 58.3**	**+1.5**
	35nm,0.3s,baz=71,slow=23,SNR=6.2							
MJAR				LR		LR	20 30 36.6	
	comp=Z,2μm,21.7s,baz=110,slow=43							
MAJO	**Matsushiro**	**2.73**	**270**	*d*iP		**Pn**	**20 29 24.9**	**+0.8**
MAJO	**Matsushiro**	**2.73**	**270**	*e*P		**Pn**	**20 29 25.2**	**+1.1**
MAT	**Matsushiro**	**2.73**	**270**	P		**Pn**	**20 29 25.2**	**+1.1**
MAT				S		**Sb**	**20 29 59.4**	**-3.2**
JHJ	**Hachijo jima 2**	**3.78**	**204**	Pn		**Pn**	**20 29 39.9**	**+1.3**
	48nm,0.3s,baz=122,slow=23,SNR=18							
JHJ				Sn		**Sn**	**20 30 22.2**	**-0.6**
	147nm,0.3s,baz=73,slow=19,SNR=7.8							
JHJ				LR		LR	20 31 23.4	
	comp=Z,463nm,21.2s,baz=98,slow=43							
ERM	**Erimo**	**5.54**	**12**	*ce*P		**Pn**	**20 30 02.8**	**+0.1**
ERM				pmax		pmax		
	comp=Z,14nm,0.6s							
ERM	**Erimo**	**5.54**	**12**	*e*P		**Pn**	**20 30 02.5**	**-0.2**
	comp=Z,29nm,0.6s							
ASAJ	**Asahikawa**	**7.55**	**6**	Pn		**Pn**	**20 30 30.8**	**+0.6**
	comp=Z,1.3nm,0.3s,baz=219,slow=11,SNR=17							
ASAJ				Sn		**Sn**	**20 31 54.3**	**-1.2**
	comp=Z,1.9nm,0.3s,baz=221,slow=20,SNR=3.5							
ASAJ				LR		LR	20 34 22.9	
	comp=Z,305nm,19.1s,baz=184,slow=45							
ASAJ	**Asahikawa**	**7.55**	**6**	*e*P		**Pn**	**20 30 31.1**	**+0.8**
	comp=Z,6.9nm,0.6s							
ASAJ				Sn		**Sn**	**20 31 54.3**	**-1.2**
YUK	**Yuzh-Kuril'sk**	**8.11**	**22**	*e*P		**Pn**	**20 30 36.3**	**-1.6**
YUK				*i* S		**Sn**	**20 32 05.5**	**-3.8**
YUK				smax		smax		
	comp=N,288nm,0.4s							
YUK				smax		smax		
	comp=E,138nm,0.5s							
SHO	**Shikotan**	**8.29**	**27**	*e*P		**Pn**	**20 30 40.4**	**0.0**
JNU	**Nakatsue**	**9.46**	**252**	Pn		**Pn**	**20 30 58.9**	**+2.2**
	comp=E,0.6nm,0.3s,baz=58,slow=12,SNR=11							
JNU				LR		LR	20 34 51.4	
	comp=E,511nm,19.5s,baz=78,slow=39							
JNU	**Nakatsue**	**9.46**	**252**	*e*P		**Pn**	**20 30 59.3**	**+2.6**
	comp=E,19nm,1.0s							
CBIJ	**Chichi jima**	**9.49**	**177**	Pn		**Pn**	**20 30 56.0**	**-1.0**
CBIJ				Sn		Sn	20 32 32.6	-11
JCJ	**Chichijima**	**9.49**	**177**	Pn		**Pn**	**20 30 56.0**	**-1.0**
	comp=E,10nm,0.3s,baz=6.4,slow=22,SNR=7.1							
JCJ				Sn		Sn	20 32 32.6	-11
	baz=53,slow=20							
KUR	**Kuril'sk**	**9.84**	**27**	P		**Pn**	**20 31 01.3**	**-0.4**
KUR				*e*S		Sn	20 32 45.2	-6.7
KUR				pmax		pmax		
	comp=Z,18nm,1.0s							
KUR				smax		smax		
	comp=N,29nm,0.5s							
KUR				smax		smax		
	comp=E,21nm,0.5s							
KUR				pmax		pmax		
	comp=N,215nm,2.5s							
YSS	**Yuzh-Sakhalins**	**10.38**	**4**	⇓*e*P		**Pn**	**20 31 10.0**	**+0.9**
YSS	**Yuzh-Sakhalins**	**10.38**	**4**	*e*P		**Pn**	**20 31 06.9**	**-2.2**
USRK	**Ussuriysk Ar.**	**10.54**	**319**	Pn		Pn	20 31 17.1	+5.8
	comp=N,1.7nm,0.3s,baz=131,slow=12,SNR=47							
USRK				LR		LR	20 35 10.1	
	comp=N,494nm,18.1s,baz=124,slow=37							
KSRS	**Korea Array**	**10.96**	**279**	Pn		Pn	20 31 22.4	+5.3
	comp=N,0.5nm,0.3s,baz=92,slow=13,SNR=24							
KSRS				LR		LR	20 35 27.7	
	comp=N,551nm,19.1s,baz=82,slow=37							
KSAR	**Wonju Array Be**	**10.99**	**278**	P		Pn	20 31 22.5	+5.0
KSAR	**Wonju Array Be**	**10.99**	**278**	Pn		Pn	20 31 22.4	+4.9
TYV	**Tymovskoe**	**14.28**	**3**	*e*P		**P**	**20 32 09.8**	**+0.3**
TYV				pmax		pmax		
	comp=Z,11nm,0.8s							
KLR	**Kul'dur**	**14.52**	**333**	Pn		**P**	**20 32 10.5**	**-1.7**
	comp=Z,0.2nm,0.3s,baz=137,slow=13,SNR=11							
KLR				LR		LR	20 37 29.9	
	comp=Z,191nm,19.9s,baz=150,slow=36							
KLR	**Kul'dur**	**14.52**	**333**	*e*P		**Pn**	**20 32 08.6**	**+2.9**
NKL	**Nikolayevsk**	**16.56**	**358**	*e*P		**Pn**	**20 32 29.0**	**-3.3**
NKL				MLR		MLR		
	comp=E,450nm,16.0s							
NKL				MLR		MLR		
	comp=Z,300nm,13.0s							
PETK	**Petropavlovsk-**	**19.99**	**29**	LR		LR	20 40 26.1	
	comp=Z,142nm,21.8s,baz=217,slow=35							
PET	**Petropavlovsk**	**20.31**	**31**	*e*P		**P**	**20 33 15.3**	**-0.8**
PET				pmax		pmax		
	comp=Z,38nm,1.7s							
GUMO	**Guam**	**23.10**	**172**	LR		LR	20 46 34.0	
	comp=Z,35nm,18.5s,baz=28,slow=46							
WHN	**Wuhan**	**23.45**	**263**	⇓P		**P**	**20 33 48.8**	**-0.8**
WHN				S		S	20 37 54.5	-8.0
WHN				pmax		pmax		
	comp=Z,40nm,0.9s							
WHN				LR		LR		
	comp=Z,650nm,16.7s							
WHN				LR		LR		
	comp=Z,980nm,15.9s							
WHN				LR		LR		
	comp=Z,800nm,19.3s							
MA2	**Magadan**	**23.75**	**12**	P		**P**	**20 33 52.6**	**+0.3**
	comp=Z,6.3nm,0.6s,baz=218,slow=12,SNR=4.6							
MA2				LR		LR	20 43 59.2	
	comp=Z,88nm,19.6s,baz=254,slow=38							
YAK	**Yakutsk**	**26.52**	**347**	P		**P**	**20 34 18.1**	**+0.6**
	comp=Z,14nm,0.5s,baz=249,slow=0.2,SNR=6.5							
YAK				LR		LR	20 46 31.9	
	comp=Z,119nm,18.3s,baz=156,slow=40							
YAK	**Yakutsk**	**26.52**	**347**	*e*P		**P**	**20 34 17.6**	**+0.1**
YAK				*e*			20 38 49.2	
YAK				pmax		pmax		
	comp=N,8.0nm,1.0s							
YAK				pmax		pmax		
	comp=Z,16nm,0.9s							
YAK	**Yakutsk**	**26.52**	**347**	*e*P		**P**	**20 34 18.3**	**+0.8**
	comp=Z,40nm,0.8s							
SEY	**Seymchan**	**27.19**	**11**	P		**P**	**20 34 23.6**	**+0.1**
	comp=Z,2.9nm,0.7s,baz=200,slow=6.3,SNR=13							
ENH	**Enshi**	**27.44**	**266**	*e*P		**P**	**20 34 24.9**	**-1.3**
	comp=Z,20nm,0.6s							
ULN	**Ulaanbaatar**	**27.72**	**305**	*ce*P		**P**	**20 34 27.3**	**-1.4**
ULN				pmax		pmax		
	comp=Z,11nm,1.2s							
ULN	**Ulaanbaatar**	**27.72**	**305**	*e*P		**P**	**20 34 28.0**	**-0.7**
	comp=Z,5.2nm,0.7s							
H11N2	**WAKE ISLAND Hy**	**27.80**	**120**	T		T	21 03 50.1	
	baz=313,slow=75,SNR=563							
H11N1	**WAKE ISLAND Hy**	**27.81**	**120**	T		T	21 03 47.3	
	baz=313,slow=75,SNR=526							
H11N3	**WAKE ISLAND Hy**	**27.82**	**120**	T		T	21 03 48.0	
	baz=313,slow=75,SNR=457							
BOD	**Bodaibo**	**27.97**	**328**	*e*P		**P**	**20 34 29.8**	**-0.8**
BOD				pmax		pmax		
	comp=Z,5.0nm,1.1s							
SONM	**Songino Array**	**28.15**	**305**	P		**P**	**20 34 31.6**	**-0.9**
	comp=Z,7.9nm,0.9s,baz=108,slow=6.3,SNR=51							
SONM				LR		LR	20 46 10.2	
	comp=Z,87nm,18.3s,baz=93,slow=37							
H11S1	**WAKE ISLAND Hy**	**28.50**	**122**	T		T	21 04 40.6	
	baz=315,slow=76,SNR=227							
H11S3	**WAKE ISLAND Hy**	**28.50**	**123**	T		T	21 04 48.5	
	baz=315,slow=76,SNR=182							
H11S2	**WAKE ISLAND Hy**	**28.52**	**122**	T		T	21 04 49.6	
	baz=315,slow=76,SNR=188							
TLY	**Talaya**	**30.73**	**311**	LR		LR	20 48 00.3	
	comp=Z,138nm,18.9s,baz=108,slow=38							
TLY	**Talaya**	**30.73**	**311**	*e*P		**P**	**20 34 56.9**	**+1.8**
TLY				pmax		pmax		
	comp=Z,5.0nm,1.5s							
TLY				MLR		MLR		
	comp=Z,154nm,13.0s							
GYA	**Guiyang**	**31.29**	**261**	⇓*i*P		**P**	**20 34 58.8**	**-1.7**
GYA				pmax		pmax		
	comp=Z,20nm,0.8s							
GTA	**Gaotai**	**32.83**	**288**	*e*P		**P**	**20 35 13.8**	**-0.1**
GTA				pP		pP	20 35 18.6	+0.2
GTA				sP		sP	20 35 21.4	+1.1
GTA				pmax		pmax		
	comp=Z,4.0nm,0.8s							
BILL	**Bilibino**	**34.40**	**16**	*i* P		P	20 35 23.9	-3.2
BILL				pmax		pmax		
	comp=Z,1.0nm,1.2s							
BILL				MLR		MLR		
	comp=Z,83nm,18.0s							
TIXI	**Tiksi**	**35.74**	**353**	P		**P**	**20 35 38.8**	**+0.3**
	comp=Z,1.1nm,0.3s,baz=160,slow=7.0,SNR=4.0							
TIXI	**Tiksi**	**35.74**	**353**	*e*P		**P**	**20 35 40.5**	**+2.0**
	comp=Z,6.9nm,1.1s							
SKNT	**Sakolnakorn**	**38.53**	**250**	P		**P**	**20 36 03.5**	**+0.6**
	comp=Z,15nm,1.3s							
CRAI	**Chiangrai**	**39.42**	**257**	P		**P**	**20 36 11.6**	**+1.2**
	comp=Z,65nm,1.1s,comp=Z,8μm							
UTTA	**Uttaradit**	**40.69**	**254**	P		**P**	**20 36 20.9**	**+0.1**
	comp=Z,2.6nm,0.9s							
PBKT	**Sadao Pong**	**41.06**	**252**	P		**P**	**20 36 23.6**	**-0.3**
	comp=Z,14nm,0.9s							
WMQ	**Urumqi**	**41.17**	**297**	P		**P**	**20 36 25.1**	**+0.5**
WMQ				pP		pP	20 36 29.8	+0.6
WMQ				sP		sP	20 36 33.3	+2.3
WMQ				pmax		pmax		
	comp=Z,21nm,0.6s							
WMQ				pmax		pmax		
	comp=Z,160nm,3.5s							
WMQ				LR		LR		
	comp=Z,76nm,13.2s							
WMQ				LR		LR		
	comp=Z,89nm,10.7s							
WMQ				LR		LR		
	comp=Z,130nm,11.6s							
CMMT	**Chiang Mai**	**41.33**	**256**	P		**P**	**20 36 26.1**	**0.0**
	comp=Z,4.3nm,1.1s							
CHTO	**Chiang Mai**	**41.33**	**256**	P		**P**	**20 36 26.2**	**+0.1**
	comp=Z,48nm,0.9s							
CHTO	**Chiang Mai**	**41.33**	**256**	*e*P		**P**	**20 36 25.0**	**-1.2**
CHTO				pmax		pmax		
	comp=Z,3.0nm,0.9s							
CHTO	**Chiang Mai**	**41.33**	**256**	*e*P		**P**	**20 36 24.9**	**-1.2**
	comp=Z,3.2nm,0.9s							
CMAR	**Chiang Mai Arr**	**41.53**	**256**	P		**P**	**20 36 27.4**	**-0.4**
	comp=Z,1.7nm,0.9s,baz=46,slow=5.3,SNR=14							
CMAR				LR		LR	20 56 10.8	
	comp=Z,159nm,18.0s,baz=64,slow=40							
CMAR	**Chiang Mai Arr**	**41.53**	**256**	*i* P		**P**	**20 36 27.6**	**-0.2**
CMAR				pmax		pmax		
	comp=Z,2.0nm,0.8s							
ZALV	**Zalesovo Beam**	**42.31**	**313**	P		**P**	**20 36 33.5**	**-0.3**
	comp=Z,3.7nm,0.5s,baz=96,slow=7

AAK				pmax	pmax		
	comp=Z,4.0nm,0.8s						
AAK	**Ala-Archa**	**50.82**	**299**	*eP*	**P**	**20 37 40.6**	**-0.3**
	comp=Z,4.3nm,0.8s						
BRVK	**Borovoye**	**51.03**	**313**	*i* P	**P**	**20 37 42.1**	**+0.1**
BRVK				pmax	pmax		
	comp=Z,3.0nm,0.9s						
EKS2	**Erkin-Say**	**51.32**	**299**	*eP*	**P**	**20 37 42.3**	**-2.3**
EKS2				pmax	pmax		
	comp=Z,5.0nm,0.7s						
EKS2	**Erkin-Say**	**51.32**	**299**	*eP*	**P**	**20 37 42.2**	**-2.3**
	comp=Z,4.6nm,0.7s						
ZRNK	**Zerenda**	**51.81**	**313**	*i* P	**P**	**20 37 46.8**	**-1.1**
ZRNK				pmax	pmax		
	comp=Z,6.0nm,0.7s						
KKAR	**Karatay Array**	**53.47**	**300**	*eP*	**P**	**20 37 59.9**	**-0.5**
KKAR				pmax	pmax		
	comp=Z,8.0nm,0.9s						
KKAR	**Karatay Array**	**53.47**	**300**	*eP*	**P**	**20 37 59.9**	**-0.5**
	comp=Z,8.3nm,0.9s						
INK	**Inuvik**	**54.71**	**27**	P	**P**	**20 38 09.7**	**+0.8**
	comp=Z,2.4nm,0.8s,baz=274,slow=7.8,SNR=9.8						
INK	**Inuvik**	**54.71**	**27**	P	**P**	**20 38 09.7**	**+0.8**
INK				pmax	pmax		
	comp=Z,3.0nm,0.9s						
SVE	**Sverdlovsk**	**55.57**	**319**	*eP*	**P**	**20 38 16.0**	**+0.6**
WRA	**Warramunga Arr**	**56.65**	**188**	P	**P**	**20 38 22.7**	**-0.8**
	comp=Z,2.6nm,0.9s,baz=6.3,slow=7.4,SNR=16						
ARU	**Arti**	**56.78**	**319**	*d iP*	**P**	**20 38 23.7**	**-0.3**
ARU						20 40 31.0	
ARU				S	**S**	**20 46 19.1**	**+2.7**
ARU				SS	**SS**	**20 50 06.0**	**+2.2**
ARU				pmax	pmax		
	comp=Z,8.0nm,1.2s						
ARU	**Arti**	**56.78**	**319**	*eP*	**P**	**20 38 23.4**	**-0.6**
	comp=Z,6.8nm,0.8s						
ABKAR	**Akbulak array**	**58.33**	**310**	*eP*	**P**	**20 38 33.9**	**-1.2**
	comp=Z,4.3nm,0.6s						
HYB	**Hyderabad**	**58.34**	**269**	*i* P	P	20 38 45.0	+9.4
ASAR	**Alice Springs**	**60.38**	**188**	P	**P**	**20 38 49.0**	**-0.5**
	comp=Z,1.7nm,0.8s,baz=17,slow=8.4,SNR=19						
ASAR	**Alice Springs**	**60.38**	**188**	P	**P**	**20 38 49.0**	**-0.5**
ASAR				pmax	pmax		
	comp=Z,2.0nm,0.8s						
DZM	**Mont Dzumac**	**62.90**	**154**	LR	LR	21 04 27.3	
	comp=Z,92nm,18.9s,baz=73,slow=34						
YKA	**Yellowknife Ar**	**64.11**	**30**	P	**P**	**20 39 14.3**	**+0.3**
	comp=Z,1.2nm,0.8s,baz=301,slow=6.8,SNR=27						
GEYT	**Alibeck**	**64.17**	**299**	P	**P**	**20 39 15.3**	**+0.4**
	comp=Z,1.2nm,0.6s,baz=45,slow=4.4,SNR=3.6						
GEYT				LR	LR	21 08 59.6	
	comp=Z,50nm,19.7s,baz=30,slow=38						
ARCES	**ARCESS Array B**	**64.45**	**340**	P	**P**	**20 39 15.9**	**-0.3**
	comp=Z,2.8nm,0.9s,baz=39,slow=4.8,SNR=3.7						
ARCES				LR	LR	21 13 42.8	
	comp=Z,51nm,20.3s,baz=42,slow=42						
FINES	**FINESS Array B**	**69.27**	**332**	P	**P**	**20 39 46.5**	**-0.3**
	comp=Z,1.5nm,0.7s,baz=58,slow=8.9,SNR=7.4						
KBZ	**Khabaz**	**71.29**	**311**	P	**P**	**20 40 00.8**	**+1.2**
	comp=Z,4.7nm,1.2s,baz=37,slow=5.1,SNR=3.6						
KBZ				LR	LR	21 15 51.9	
	comp=Z,73nm,18.4s,baz=78,slow=40						
KIV	**Kislovodsk**	**71.30**	**311**	*eP*	**P**	**20 39 58.6**	**-1.2**
KIV				pmax	pmax		
	comp=Z,5.0nm,1.0s						
ANN	**Anapa**	**73.94**	**314**	*eP*	P	20 40 06.0	-9.3
ANN				pmax	pmax		
	comp=Z,43nm,1.5s						
FFC	**Flin Flon**	**73.99**	**33**	*eP*	**P**	**20 40 16.1**	**+0.6**
FFC				pmax	pmax		
	comp=Z,7.0nm,1.1s						
FFC	**Flin Flon**	**73.99**	**33**	*eP*	**P**	**20 40 16.1**	**+0.6**
	comp=Z,7.3nm,1.1s						
NB2	**NORSAR Subarra**	**74.64**	**337**	P	**P**	**20 40 19.0**	**-0.2**
	comp=Z,2.3nm,0.8s,baz=39,slow=6.2						
NOA	**NORSAR Array B**	**74.64**	**337**	P	**P**	**20 40 18.8**	**-0.4**
	comp=Z,2.1nm,0.8s,baz=39,slow=5.8,SNR=13						
NOA				LR	LR	21 16 30.4	
	comp=Z,52nm,19.2s,baz=30,slow=38						
AKASG	**Malin Array Be**	**74.73**	**322**	P	**P**	**20 40 19.2**	**-0.7**
	comp=Z,2.1nm,0.5s,baz=46,slow=5.9,SNR=11						
AKASG				LR	LR	21 16 12.0	
	comp=Z,95nm,18.1s,baz=15,slow=38						
NVAR	**Mina Array Bea**	**75.13**	**53**	P	**P**	**20 40 23.6**	**+0.9**
	comp=Z,1.7nm,0.7s,baz=300,slow=6.6,SNR=7.7						
PDAR	**Pinedale Array**	**77.87**	**45**	P	**P**	**20 40 38.8**	**+0.6**
	comp=Z,0.5nm,0.6s,baz=270,slow=1.6,SNR=5.8						
BRTR	**Keskin Array B**	**79.25**	**312**	P	**P**	**20 40 45.4**	**-0.3**
	comp=Z,0.9nm,0.8s,baz=71,slow=5.4,SNR=5.7						
BRTR				LR	LR	21 20 02.6	
	comp=Z,25nm,18.5s,baz=78,slow=39						
BRTR	**Keskin Array B**	**79.25**	**312**	*i* P	**P**	**20 40 48.7**	**+3.0**
BRTR				pmax	pmax		
	comp=Z,2.0nm,0.9s						
DPC	**Dobruska-Polom**	**80.90**	**328**	*eP*	**P**	**20 40 54.5**	**+0.2**
DPC				*epP*	**sP**	**20 41 02.0**	**+1.1**
DPC	**Dobruska-Polom**	**80.90**	**328**	*eP*	**P**	**20 40 54.5**	**+0.2**
DPC				*e*		20 41 02.0	
BRG	**Berggiesshubel**	**81.50**	**330**	*eP*	P	20 41 01.7	+4.3
	comp=Z,5.1nm,1.3s						
BRG	**Berggiesshubel**	**81.50**	**330**	*eP*	P	20 41 01.7	+4.3
BRG				pmax	pmax		
	comp=Z,5.0nm,1.3s						
CLL	**Collm**	**81.54**	**330**	*i* P	**P**	**20 40 57.1**	**-0.5**
	comp=Z,4.0nm,1.1s						
CLL				*e*		20 41 08.0	
CLL	**Collm**	**81.54**	**330**	*i* P	**P**	**20 40 57.1**	**-0.5**
CLL				*e*		20 41 08.0	
CLL				pmax	pmax		
	comp=Z,4.0nm,1.1s						
KHC	**Kasperske Hory**	**82.99**	**329**	*eP*	**P**	**20 41 06.7**	**+1.4**
KHC				*epP*	**sP**	**20 41 12.4**	**+0.5**
KHC	**Kasperske Hory**	**82.99**	**329**	*eP*	**P**	**20 41 06.7**	**+1.4**
KHC				*e*		20 41 12.4	
GERES	**GERESS Array B**	**83.16**	**328**	P	**P**	**20 41 05.5**	**-0.8**
	comp=Z,0.4nm,0.6s,baz=30,slow=6.2,SNR=4.6						
GERES				LR	LR	21 23 03.2	
	comp=Z,49nm,18.1s,baz=40,slow=39						
PMOR	**Pomariorio Ree**	**83.87**	**114**	*eT*	T	22 13 43.5	
	comp=Z,4.4nm,0.2s						
PPT	**Papeete**	**84.31**	**117**	LR	LR	21 12 44.9	
	comp=Z,75nm,21.9s,baz=347,slow=31						
PPT2	**Papeete2**	**84.32**	**117**	*e*LR	LR	21 07 51.9	
	comp=Z,103nm,21.5s						
TXAR	**Lajitas Array**	**90.27**	**52**	P	**P**	**20 41 41.8**	**+0.4**
	comp=Z,0.9nm,0.9s,baz=180,slow=0.4,SNR=7.7						
TXAR				LR	LR	21 16 08.9	
	comp=Z,40nm,21.9s,baz=0.0,slow=32						
KEST	**Kesra**	**95.45**	**323**	LR	LR	21 31 02.4	
	comp=Z,40nm,19.0s,baz=262,slow=39						
LPAZ	**La Paz**	**146.78**	**60**	PKPbc	**PKPbc**	**20 48 23.4**	**-0.1**
	comp=Z,2.6nm,0.6s,baz=30,slow=4.7,SNR=13						

*IDC **21** 20:36:53.1±6.6, 40.°30N×143.°59E, h0km, mb3.4/3, mb1 3.3/6, mb1mx3.2/46, mbtmp3.3/6, ML2.5/2, Error ellipse: s-maj=113.8km s-min=32.9km az=106.0*

ISC 21 20:36:53.7±3.3, 40.°2N±0.°1×143.°8E±0.°3, h16km, n6, σ1°65°/7, mb3.5/3, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time	Res
								h m s	ISC
ASAJ	**Asahikawa**	**3.97**	**348**	Pn		**Pn**		**20 37 52.2**	**-1.7**
	0.5nm,0.3s,baz=172,slow=18,SNR=5.3								
ASAJ				Sn		**Sn**		**20 38 40.2**	**+0.1**
	0.7nm,0.3s,baz=18,slow=20,SNR=3.7								
MJAR	**Matsushiro Ar**	**5.71**	**231**	Pn		**Pn**		**20 38 16.6**	**-1.2**
	baz=38,slow=12,SNR=3.6								
USRK	**Ussuriysk Ar.**	**9.58**	**298**	Pn		**Pn**		**20 39 10.0**	**-0.9**
	0.1nm,0.3s,baz=104,slow=12,SNR=3.2								
SONM	**Songino Array**	**27.70**	**298**	P		**P**		**20 42 42.0**	**+0.9**
	0.2nm,0.5s,baz=94,slow=8.0,SNR=2.7								
ZALV	**Zalesovo Beam**	**41.19**	**310**	P		**P**		**20 44 39.5**	**+2.2**
	0.5nm,0.5s,baz=77,slow=6.4,SNR=3.5								
MKAR	**Makanchi Array**	**44.05**	**300**	P		**P**		**20 45 00.6**	**0.0**
	0.2nm,0.2s,baz=77,slow=9.0,SNR=3.7								

*NIED **21** 20:37:00, 40.°30N×143.°60E, h5km, Mw3.6 Best double couple: M₀2.87000×10¹⁴ NP1:φs241.00000°, δ76.00000°, λ178.00000°. NP2:φs331.00000°, δ88.00000°, λ14.00000°.*
*JMA **21** 20:37:50.3±0.3, 40.°33N×143.°62E, h3km±4km, M3.8*
*IDC **21** 20:37:53.8±2.9, 40.°12N×143.°88E, h45km±27km, mb3.2/7, mb1 3.4/10, mb1mx3.3/46, mbtmp3.5/10, ML3.1/3, Error ellipse: s-maj=27.3km s-min=20.7km az=113.0*

ISC 21 20:37:49.4±3.5, 40.°25N±0.°06×143.°75E±0.°07, h8km±22km, n27, σ1°64/30, mb3.4/7, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time	Res
								h m s	ISC
JTH	**Tanohata**	**1.48**	**258**	P		**Pn**		**20 38 16.5**	**+0.2**
JTH				S		**Sn**		**20 38 34.3**	**-1.5**
MIYJ	**Miyakonagasawa**	**1.63**	**246**	P		**Pb**		**20 38 19.2**	**-0.5**
MIYJ				*e*S		**Sb**		**20 38 40.1**	**-0.3**
JANG	**Nango**	**1.71**	**275**	P		**Pn**		**20 38 19.5**	**0.0**
JANG				*e*S		**Sn**		**20 38 40.7**	**-0.9**
JKZ	**Kuzumaki**	**1.88**	**263**	P		**Pn**		**20 38 22.6**	**+0.8**
OFUJ	**Ofunato**	**1.99**	**235**	P		**Pn**		**20 38 24.2**	**+0.9**
JOM	**Ohasama**	**2.05**	**248**	P		**Pb**		**20 38 25.6**	**-1.2**
JTM	**Tenmabayashi**	**2.12**	**286**	S		**Sn**		**20 38 51.9**	**+0.4**
JOT	**Ohata**	**2.34**	**300**	P		**Pn**		**20 38 28.6**	**+0.5**
JOT				S		**Sn**		**20 38 56.6**	**-0.5**
JMK	**Ichinoseki**	**2.35**	**237**	P		**Pn**		**20 38 29.7**	**+1.5**
JCH	**Churui**	**2.38**	**353**	*e*S		**Sn**		**20 38 54.8**	**-3.2**
JAH	**Hinai**	**2.39**	**270**	P		**Pn**		**20 38 30.3**	**+1.5**
JRG	**Rokugo**	**2.55**	**251**	P		**Pb**		**20 38 33.3**	**-2.0**
JRG				*e*S		**Sn**		**20 39 03.9**	**+1.7**
JYK	**Kaneyama**	**2.94**	**244**	P		**Pn**		**20 38 38.4**	**+2.0**
ASAJ	**Asahikawa**	**3.96**	**348**	P		**Pn**		**20 38 52.2**	**+1.8**
	1.4nm,0.3s,baz=166,slow=17,SNR=6.8								
ASAJ				S		**Sn**		**20 39 37.4**	**+0.4**
	2.0nm,0.3s,baz=170,slow=17,SNR=3.1								
MAT	**Matsushiro**	**5.71**	**231**	P		**Pn**		**20 39 16.9**	**+2.4**
MJAR	**Matsushiro Arr**	**5.71**	**231**	P		**Pn**		**20 39 16.9**	**+2.3**
	0.8nm,0.3s,baz=39,slow=12,SNR=7.3								
USRK	**Ussuriysk Ar.**	**9.57**	**298**	P		**Pn**		**20 40 11.5**	**+4.1**
	0.6nm,0.3s,baz=96,slow=15,SNR=13								
SONM	**Songino Array**	**27.69**	**298**	P		**P**		**20 43 39.1**	**+1.2**
	0.3nm,0.4s,baz=96,slow=7.4,SNR=4.0								
H11N2	**WAKE ISLAND Hy**	**28.49**	**129**	T		T		21 13 23.3	
	baz=321,slow=76,SNR=8.0								
H11N1	**WAKE ISLAND Hy**	**28.50**	**129**	T		T		21 13 27.0	
	baz=321,slow=76,SNR=5.6								
H11N3	**WAKE ISLAND Hy**	**28.50**	**129**	T		T		21 13 24.6	
	baz=321,slow=76,SNR=6.7								
ZALV	**Zalesovo Beam**	**41.19**	**310**	P		**P**		**20 45 34.9**	**+0.8**
	0.3nm,0.4s,baz=90,slow=10,SNR=2.5								
MKAR	**Makanchi Array**	**44.04**	**300**	P		**P**		**20 45 57.7**	**+0.3**
	0.7nm,0.6s,baz=86,slow=7.9,SNR=5.6								
ILAR	**Eielson Array**	**45.80**	**34**	P		**P**		**20 46 11.4**	**+0.2**
	0.3nm,0.7s,baz=298,slow=6.0,SNR=3.0								
YKA	**Yellowknife Ar**	**60.11**	**32**	P		**P**		**20 47 56.6**	**-0.2**
	0.1nm,0.7s,baz=282,slow=6.3,SNR=3.3								
WRA	**Warramunga Arr**	**60.52**	**190**	P		**P**		**20 47 58.0**	**-2.0**
	0.3nm,0.6s,baz=8.8,slow=7.0,SNR=3.4								
FINES	**FINESS Array B**	**66.82**	**332**	P		**P**		**20 48 41.1**	**0.0**
	0.9nm,0.8s,baz=28,slow=6.3,SNR=3.9								

IDC 21 20:40:06.8±5.2, 15.°75S×167.°95E, h218km±54km, mb3.3/5, mb1 3.4/6, mb1mx3.1/42, mbtmp3.8/6, Error ellipse: s-maj=55.3km s-min=42.4km az=136.0, Vanuatu Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time	Res
								h m s	ISC
DZM	**Mont Dzumac**	**6.44**	**193**	P		P	Pn	20 41 40.4	+0.3
	2.2nm,0.3s,baz=141,slow=17,SNR=20								
DZM				S		S		20 42 53.5	-0.8
	0.4nm,0.3s,baz=141,slow=24,SNR=5.7								
CTA	**Charters Tower**	**21.08**	**255**	P		P		20 44 35.9	+1.4
	1.4nm,0.5s,baz=78,slow=12,SNR=4.5								
STKA	**Stephens Creek**	**28.85**	**232**	P		P		20 45 46.4	+1.3
	1.0nm,0.4s,baz=57,slow=10.0,SNR=7.8								
WRA	**Warramunga Arr**	**32.23**	**258**	P		P		20 46 13.3	-1.7
	0.4nm,0.4s,baz=82,slow=7.2,SNR=8.1								
ASAR	**Alice Springs**	**32.94**	**251**	P		P		20 46 20.4	-0.7
	1.1nm,0.7s,baz=76,slow=9.0,SNR=31								
SONM	**Songino Array**	**83.70**	**323**	P		P		20 52 11.4	+0.1
	0.7nm,0.7s,baz=139,slow=5.7,SNR=6.0								

IDC 21 20:42:16.4±3.3, 56.°36S×146.°71E, h0km, mb3.7/3, mb1 3.9/3, mb1mx3.6/33, mbtmp3.7/3, Error ellipse: s-maj=220.6km s-min=46.9km az=85.0, West of Macquarie Island

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time	Res
								h m s	ISC
STKA	**Stephens Creek**	**24.74**	**350**	P		P		20 47 39.7	+0.4
	2.2nm,0.7s,baz=176,slow=14,SNR=5.7								
ASAR	**Alice Springs**	**33.98**	**339**	P		P		20 49 01.6	+0.1
	0.5nm,0.8s,baz=170,slow=9.8,SNR=4.9								
WRA	**Warramunga Arr**	**37.52**	**341**	P		P		20 49 31.3	-0.6
	0.7nm,0.7s,baz=165,slow=7.6,SNR=6.6								
FINES	**FINESS Array B**	**149.87**	**305**	PKPbc		PKPbc		21 02 06.6	-0.3
	1.4nm,1.0s,baz=320,slow=5.8,SNR=3.1								
ARCES	**ARCESS Array B**	**151.54**	**321**	PKPbc		PKPbc		21 02 10.4	-0.3
	3.7nm,1.0s,baz=116,slow=2.1,SNR=7.2								

*ISK **21** 20:46:28.8, 37.°50N×42.°81E, h5km, MD2.6*
*DDA **21** 20:46:29.2, 37.°34N×42.°80E, h6km, Md2.8*
*CSEM **21** 20:46:30.3±0.2, 37.°44N×42.°80E, h2km, MD2.6, Error ellipse: s-maj=7.4km s-min=3.2km az=3.0*

ISC 21 20:46:28.2±1.5, 37.°31N±0.°07×42.°85E±0.°03, h4km±12km, n17, σ0°43/33, Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time	Res
								h m s	ISC
SIRT	**Sirnak**	**0.38**	**300**	*e*PG		**Pg**		**20 46 35.5**	**-0.1**
SIRT				*e*SG		**Sg**		**20 46 40.5**	**-0.1**
SIRT	**Sirnak**	**0.38**	**300**	*e*Pg		**Pg**		**20 46 35.5**	**-0.1**
SIRT				*e*Sg		**Sg**		**20 46 40.5**	**-0.1**
SIRN	**S¨–rnak**	**0.40**	**298**	*i* P		**Pg**		**20 46 36.3**	**+0.4**
SIRN				*i* S		**Sg**		**20 46 40.5**	**-0.6**
SIRN	**S¨–rnak**	**0.40**	**298**	P		**Pg**		**20 46 36.3**	**+0.4**
SIRN				S		**Sg**		**20 46 40.5**	**-0.6**
CUKT	**Cukurca**	**0.61**	**96**	*e*PG		**Pn**		**20 46 43.3**	**-0.5**
CUKT				*e*SG		**Sn**		**20 46 53.8**	**-0.3**
CUKT	**Cukurca**	**0.61**	**96**	*e*Pg		**Pn**		**20 46 43.3**	**-0.5**
CUKT				*e*Sg		**Sn**		**20 46 53.8**	**-0.3**
HAKT	**HAKKARI**	**0.72**	**70**	*i* P		**Pb**		**20 46 44.0**	**+0.4**
HAKT				*i* S		**Sb**		**20 46 54.9**	**+0.9**
HAKT	**HAKKARI**	**0.72**	**70**	P		**Pb**		**20 46 44.0**	**+0.4**
HAKT				S		**Sb**		**20 46 54.9**	**+0.9**
GEVA	**Gevas**	**1.01**	**9**	*i* P		**Pg**		**20 46 47.1**	**-0.6**
GEVA				*i* S		**Sg**		**20 47 00.9**	**+0.1**
GEVA	**Gevas**	**1.01**	**9**	P		**Pg**		**20 46 47.1**	**-0.6**
GEVA				S		**Sg**		**20 47 00.9**	**+0.1**
BTMN	**Batman**	**1.38**	**295**	*i* P		**Pg**		**20 46 54.9**	**+0.1**
BTMN				*i* S		**Sn**		**20 47 13.2**	**-0.1**
BTMN	**Batman**	**1.38**	**295**	P		**Pg**		**20 46 54.9**	**+0.1**
BTMN				S		**Sn**		**20 47 13.2**	**-0.1**
MARD	**Mardin**	**1.65**	**271**	*i* P		**Pb**		**20 46 59.5**	**+0.1**
MARD				*i* S		**Sg**		**20 47 21.8**	**+0.4**
MAZI	**Mazidag**	**1.92**	**275**	*e*PN		**Pb**		**20 47 03.7**	**-0.2**
MAZI				*e*SN		**Sb**		**20 47 28.8**	**+0.5**
MAZI	**Mazidag**	**1.92**	**275**	*e*Pn		**Pb**		**20 47 03.7**	**-0.2**
MAZI				*e*Sn		**Sb**		**20 47 28.8**	**+0.5**
EKAR	**Karacoban**	**2.04**	**343**	*i* P		**Pg**		**20 47 07.6**	**+0.2**
EKAR				*i* S		**Sg**		**20 47 34.1**	**+0.3**
EKAR	**Karacoban**	**2.04**	**343**	P		**Pg**		**20 47 07.6**	**+0.2**

MAN 21 20:47:12, 18.°47N×120.°96E, h21km, mb4.2, ML3.0, MS2.8, 1D, Luzon

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time	Res
								h m s	ISC
PIP	**Pasuquin**	**0.36**	**246**	*i* P		P		20 47 21.5	-0.5
APYP	**Conner**	**0.66**	**156**	*e*P		Pb		20 47 25.5	+0.5
APYP				*e*S		Sb		20 47 34.7	+1.0
ABRA	**Dolores**	**0.85**	**196**	*e*P		Pn		20 47 29.3	+0.5
ABRA				*e*S		Sn		20 47 41.6	+0.9
SGCP	**Mt. Cagua**	**1.05**	**102**	*e*P		Pn		20 47 31.7	+0.2
CAUP	**Cauayan**	**1.73**	**151**	*e*P		Pb		20 47 44.2	+1.1

*IDC **21** 20:48:27.4±0.7, 20.°65N×121.°99E, h0km, mb4.0/19, mb1 4.1/21, mb1mx4.0/50, mbtmp4.1/21, ML4.3/2, MS3.1/5, Ms1 3.1/5, ms1mx2.7/49, Error ellipse: s-maj=22.2km s-min=15.3km az=74.0*
*JMA **21** 20:48:28.4±0.4, 20.°99N×122.°04E, h0km, M4.4*
*NEIC **21** 20:48:29.1±0.5, 20.°75N×122.°09E, h10km, mb4.8/6, Error ellipse: s-maj=12.1km s-min=8.4km az=84.0*
*ISCJB **21** 20:48:30.7±0.3, 20.°80N±0.°03×122.°23E±0.°05, h35km, mb4.1/26, MS3.0/4, Error ellipse: s-maj=7.2km s-min=2.9km az=21.3*

*MAN **21** 20:48:31, 20.°47N×122.°27E, h2km, mb4.8, ML3.7, MS3.7*

ISC 21 20:48:32.8±0.5, 20.°77N±0.°04×122.°17E±0.°07, h35km, n61, σ1°33/59, mb4.1/26, MS3.2/4, Philippine Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time	Res
								h m s	ISC
TWG	**Pinlang**	**2.29**	**334**	*eP*		Pn		20 49 04.5	-3.6
SGCP	**Mt. Cagua**	**2.51**	**183**	*eP*		**Pn**		**20 49 09.9**	**-1.3**
SGCP				*e*S		**Sn**		**20 49 38.6**	**-2.0**
YULB	**Yu-li**	**2.74**	**343**	*eP*		Pn		20 49 11.4	-2.9
TPUB	**Ta-pu**	**2.90**	**331**	*eP*		**Pn**		**20 49 16.5**	**0.0**
APYP	**Conner**	**3.02**	**197**	*eP*		**Pn**		**20 49 17.2**	**-0.9**
APYP				*e*S		**Sn**		**20 49 52.6**	**-0.5**
SSLB	**Suanglung**	**3.21**	**340**	*eP*		**Pn**		**20 49 19.3**	**-1.6**
ABRA	**Dolores**	**3.39**	**204**	*eP*		Pn		20 49 23.8	+0.6
NACB	**Ninganchiao**	**3.43**	**351**	*eP*		Pn		20 49 21.2	-2.7
HATJ	**Hateruma jima**	**3.61**	**24**	P		**Pn**		**20 49 25.5**	**-0.7**
HATJ				*e*S		**Sn**		**20 50 05.7**	**-1.9**
JYNG	**Yonagunijimaku**	**3.74**	**11**	P		**Pn**		**20 49 27.2**	**-0.8**
JYNG				S		**Sn**		**20 50 08.7**	**-2.1**
YOJ	**Yonaguni jima**	**3.76**	**12**	P		**Pn**		**20 49 29.3**	**+1.0**
YOJ				*e*S		**Sn**		**20 50 09.7**	**-1.7**
YOJ	**Yonaguni jima**	**3.76**	**12**	*eP*		**Pn**		**20 49 27.0**	**-1.3**
CAUP	**Cauayan**	**3.81**	**185**	*eP*		Pn		20 49 30.6	+1.5
IRIF	**Iriomote-Funau**	**3.83**	**22**	P		**Pn**		**20 49 28.5**	**-0.9**
IRIF				*e*S		**Sn**		**20 50 11.5**	**-1.7**
JKRS	**Kuro-shima**	**3.85**	**26**	P		**Pn**		**20 49 29.1**	**-0.5**
JKRS				*e*S		**Sn**		**20 50 12.8**	**-0.8**
YHNB	**Yeheng**	**3.96**	**349**	*eP*		**Pn**		**20 49 30.1**	**-0.9**
JIJ	**Ishigaki jima**	**4.02**	**27**	P		**Pn**		**20 49 30.5**	**-1.4**
JIJ				*e*S		**Sn**		**20 50 14.8**	**-3.0**
JISG	**Ishigakijimahi**	**4.29**	**27**	P		**Pn**		**20 49 34.4**	**-1.2**
JTJ	**Tarama**	**4.51**	**31**	P		**Pn**		**20 49 39.2**	**+0.5**
JTJ				S		**Sn**		**20 50 27.6**	**-2.3**
JIRB	**Irabujima**	**4.90**	**34**	P		**Pn**		**20 49 43.2**	**-0.8**
JIRB				*e*S		**Sn**		**20 50 37.0**	**-2.6**
JOGS	**Gusukube**	**4.97**	**36**	P		**Pn**		**20 49 45.4**	**+0.4**
JOGS				*e*S		**Sn**		**20 50 40.7**	**-0.6**
JIKM	**Ikemajima**	**5.02**	**34**	P		**Pn**		**20 49 45.8**	**+0.2**
JIKM				*e*S		**Sn**		**20 50 41.2**	**-1.2**
JOW	**Kunigami**	**8.23**	**42**	Pn		**Pn**		**20 50 29.1**	**-0.6**
	11nm,0.3s,baz=199,slow=13,SNR=38								
JOW				Sn		Sn		20 51 50.0	-11
	1.8nm,0.3s,baz=122,slow=27,SNR=2.8								
KSAR	**Wonju Array Be**	**17.35**	**15**	P		**Pn**		**20 52 33.6**	**+1.5**
KSRS	**Korea Array**	**17.37**	**16**	P		**Pn**		**20 52 33.6**	**+1.3**
	0.4nm,0.3s,baz=199,slow=12,SNR=9.7								
KSRS				LR		LR		20 59 12.9	
	comp=Z,52nm,18.1s,baz=210,slow=37								
CMAR	**Chiang Mai Arr**	**22.00**	**268**	P		**P**		**20 53 25.4**	**+1.3**
	1.0nm,0.6s,baz=72,slow=9.6,SNR=8.8								
GUMO	**Guam**	**22.81**	**105**	LR		LR		21 02 52.7	
	comp=Z,12nm,18.9s,baz=310,slow=38								
USRK	**Ussuriysk Ar.**	**24.76**	**17**	P		**P**		**20 53 54.1**	**+3.1**
	4.0nm,0.9s,baz=189,slow=8.3,SNR=5.4								
LSA	**Lhasa**	**29.36**	**294**	*eP*		**P**		**20 54 34.0**	**+0.7**
	2.8nm,0.8s								
KLR	**Kul'dur**	**29.42**	**13**	P		**P**		**20 54 35.7**	**+2.8**
	3.6nm,0.8s,baz=235,slow=6.9,SNR=14								
SONM	**Songino Array**	**29.86**	**338**	P		**P**		**20 54 36.2**	**-0.8**
	1.7nm,0.7s,baz=161,slow=9.5,SNR=20								
YSS	**Yuzh-Sakhalins**	**31.03**	**28**	*eP*		**P**		**20 54 48.5**	**+1.3**
	7.3nm,0.6s								
TLY	**Talaya**	**34.08**	**339**	LR		LR	

JMM	**Marumori**	**1.05**	**249**	P		**Pn**	**20 55 27.4**	**-0.4**
JMM				S		**Sn**	**20 55 40.3**	**-1.3**
JOU	**Okura**	**1.09**	**276**	P		**Pn**	**20 55 28.2**	**0.0**
JOU				S		**Sn**	**20 55 41.3**	**-1.1**
JFK	**Kawauchi**	**1.27**	**227**	P		**Pn**	**20 55 31.1**	**+0.3**
JFK				S		**Sn**	**20 55 46.6**	**-0.3**
JOM	**Ohasama**	**1.35**	**335**	P		**Pn**	**20 55 32.6**	**+0.8**
JOM				S		**Sn**	**20 55 49.0**	**+0.3**
JYK	**Kaneyama**	**1.47**	**297**	P		**Pn**	**20 55 33.4**	**0.0**
JYK				S		**Sn**	**20 55 51.2**	**-0.4**
JFT	**Otama**	**1.53**	**242**	P		**Pn**	**20 55 34.3**	**+0.1**
JFT				S		**Sn**	**20 55 52.1**	**-0.9**
JYS	**Shirataka**	**1.55**	**270**	P		**Pn**	**20 55 34.5**	**0.0**
JYS				S		**Sn**	**20 55 52.8**	**-0.8**
JRG	**Rokugo**	**1.58**	**317**	P		**Pn**	**20 55 35.5**	**+0.6**
MJAR	**Matsushiro Arr**	**3.49**	**242**	P		**Pn**	**20 56 02.2**	**+1.2**
	1.0nm,0.3s,baz=54,slow=10,SNR=3.3							
MAT	**Matsushiro**	**3.49**	**242**	P		**Pn**	**20 56 02.3**	**+1.3**
MAT				*e*S		**Sn**	**20 56 44.1**	**+3.0**
ASAJ	**Asahikawa**	**5.88**	**4**	P		**Pn**	**20 56 33.8**	**+0.2**
	0.7nm,0.3s,baz=190,slow=14,SNR=6.7							
ASAJ				S		**Sn**	**20 57 38.0**	**-1.5**
	0.7nm,0.3s,baz=300,slow=33,SNR=3.8							
USRK	**Ussuriysk Ar.**	**9.62**	**311**	P		**Pn**	**20 57 25.7**	**+0.9**
	0.5nm,0.3s,baz=126,slow=14,SNR=10							
SONM	**Songino Array**	**27.54**	**302**	P		**P**	**21 00 51.6**	**+1.0**
	0.5nm,0.5s,baz=109,slow=8.7,SNR=6.4							
ZALV	**Zalesovo Beam**	**41.47**	**311**	P		**P**	**21 02 49.5**	**-0.7**
	1.1nm,0.5s,baz=94,slow=7.8,SNR=8.2							
MKAR	**Makanchi Array**	**43.90**	**301**	P		**P**	**21 03 10.1**	**+0.1**
	1.4nm,0.7s,baz=87,slow=9.6,SNR=15							
KURBB	**Kurchatov Arra**	**45.65**	**307**	P		**P**	**21 03 23.0**	**-0.9**
	1.0nm,0.4s,baz=81,slow=8.0,SNR=16							
WRA	**Warramunga Arr**	**58.33**	**199**	P		**P**	**21 04 57.8**	**-0.5**
	1.0nm,0.4s,baz=6.1,slow=7.0,SNR=23							
ASAR	**Alice Springs**	**62.06**	**188**	P		**P**	**21 05 23.6**	**-0.2**
	0.5nm,0.7s,baz=360,slow=5.1,SNR=12							
FINES	**FINESS Array B**	**67.97**	**332**	P		**P**	**21 06 01.6**	**-0.1**
	1.2nm,0.9s,baz=27,slow=9.5,SNR=2.6							

*CSEM **21** 21:00:11.8±0.3,45°.70N×21°.40E,h2km,ML1.5,Error ellipse: s-maj=6.8km s-min=4.8km az=131.0*
*BEO **21** 21:00:13.6±0.5,45°.60N×21°.41E,h0km,M1.5/4*
BUC 21 21:00:11.2±0.4,45°.71N×21°.38E,h11km±4km,MD2.3/2, 11C-9D,Error ellipse: s-maj=4.4km s-min=2.8km az=28.0,Romania

Code	Station Name	Δ°	AZ°	Phase ID			Time		Res
				Op		ISC	h	m s	ISC
TIM	**Timisoara**	**0.11**	**285**	⇑	*i*P	Pg	21 00	14.2	+0.1
TIM					S	Sg	21 00	17.2	+1.1
TIM	**Timisoara**	**0.11**	**285**	⇑	*i*P	Pg	21 00	14.2	+0.1
TIM					*i* S	Sg	21 00	17.2	+1.1
TIM	**Timisoara**	**0.11**	**285**	⇑	*i*P	Pg	21 00	14.2	+0.1
TIM					S	Sg	21 00	17.2	+1.1
BZS	**Buzias**	**0.19**	**118**	⇑	*i*P	Pg	21 00	15.6	+0.3
BZS					S	Sg	21 00	18.8	+0.6
BZS	**Buzias**	**0.19**	**118**	⇑	*i*P	Pg	21 00	15.6	+0.3
BZS					*i* S	Sg	21 00	18.8	+0.6
BZS	**Buzias**	**0.19**	**118**		*e*Pg	Pg	21 00	15.5	+0.2
BZS					*e*Sg	Sg	21 00	18.9	+0.7
BZS	**Buzias**	**0.19**	**118**		*e*Pg	Pg	21 00	15.5	+0.2
BZS					S	Sg	21 00	18.8	+0.6
BANR	**Banloc**	**0.37**	**208**	⇑	*i*P	Pg	21 00	18.9	+0.4
BANR	**Banloc**	**0.37**	**208**		S	Sb	21 00	25.4	0.0
BANR	**Banloc**	**0.37**	**208**	⇑	*i*P	Pg	21 00	18.9	+0.4
BANR					*i* S	Sb	21 00	25.4	0.0
BANR	**Banloc**	**0.37**	**208**	⇑	*i*P	Pg	21 00	18.9	+0.4
BANR					S	Sb	21 00	25.4	0.0
SIRR	**Siria**	**0.59**	**19**	⇓	*i*P	Pb	21 00	23.5	-0.1
SIRR	**Siria**	**0.59**	**19**	⇓	*i*P	Pb	21 00	23.5	-0.1
SIRR					*i* S	Sb	21 00	32.1	0.0
SIRR	**Siria**	**0.59**	**19**	⇓	*i*P	Pb	21 00	23.5	-0.1
SIRR					S	Sb	21 00	32.1	0.0
MDVR	**Moldovita**	**0.96**	**165**	⇓	*i*P	Pg	21 00	29.4	-0.2
MDVR	**Moldovita**	**0.96**	**165**	⇓	*i*P	Pg	21 00	29.4	-0.2
MDVR					*i* S	Sb	21 00	43.3	+0.8
MDVR	**Moldovita**	**0.96**	**165**	⇓	*i*P	Pg	21 00	29.4	-0.2
MDVR					S	Sb	21 00	43.3	+0.8
GZR	**Gura Zlata**	**1.03**	**107**		*e*Pg	Pb	21 00	31.4	+0.3
GZR					*e*Sg	Sg	21 00	44.5	0.0
GZR	**Gura Zlata**	**1.03**	**107**		*e*Pg	Pb	21 00	31.4	+0.3
GZR					*e*Sg	Sg	21 00	44.5	0.0
DEV	**Deva**	**1.08**	**80**	⇓	*i*P	Pn	21 00	32.7	+0.4
DEV	**Deva**	**1.08**	**80**	⇓	*i*P	Pn	21 00	32.7	+0.4
DEV					*i* S	Sn	21 00	47.0	-0.3
DEV	**Deva**	**1.08**	**80**	⇓	*i*P	Pn	21 00	32.7	+0.4
FGSL	**Fruska Gora**	**1.23**	**244**		*e*Pg	Pb	21 00	34.6	+0.1
FGSL					*e*Sg	Sn	21 00	51.1	+0.1
FRGS	**Fruska Gora**	**1.23**	**244**		*e*Pg	Pb	21 00	34.6	+0.1
FRGS					*e*Sg	Sn	21 00	51.1	+0.1
KUBS	**Kucevo**	**1.31**	**171**		*e*Pg	Pn	21 00	34.0	-1.5
KUBS					*e*Sg	Sb	21 00	50.3	-2.4
KUBS	**Kucevo**	**1.31**	**171**		*e*Pg	Pn	21 00	34.0	-1.5
KUBS					*e*Sg	Sb	21 00	50.3	-2.4
DRGR		**1.43**	**40**	⇑	*i*P	Pb	21 00	37.6	-0.3
DRGR		**1.43**	**40**	⇑	*i*P	Pb	21 00	37.6	-0.3
DRGR					*i* S	Sg	21 00	56.8	-0.3
DRGR		**1.43**	**40**	⇑	*i*P	Pb	21 00	37.6	-0.3
DRGR					S	Sg	21 00	56.8	-0.3
LOT	**Lotru**	**1.70**	**98**		S	Sg	21 01	05.2	-0.7
LOT	**Lotru**	**1.70**	**98**		*i* S	Sg	21 01	05.2	-0.7
LOT	**Lotru**	**1.70**	**98**		S	Sg	21 01	05.2	-0.7
GRUS	**Gruza**	**1.88**	**195**		*e*Pn	Pg	21 00	47.1	-0.1
GRUS					*e*Sn	Sg	21 01	10.9	-0.6
GRUS	**Gruza**	**1.88**	**195**		*e*Pn	Pg	21 00	47.1	-0.1
GRUS					*e*Sn	Sg	21 01	10.9	-0.6
DIVS	**Divibare**	**1.89**	**212**		*e*Pn	Pb	21 00	46.4	+0.7
DIVS					*e*Sn	Sg	21 01	10.8	-1.0
DIVS	**Divibare**	**1.89**	**212**		*e*Pn	Pb	21 00	46.4	+0.7
DIVS					*e*Sn	Sg	21 01	10.8	-1.0
BBLS	**Lazići**	**2.31**	**218**		*e*Sg	Sg	21 01	24.3	-1.3
BBLS	**Lazići**	**2.31**	**218**		*e*Sg	Sg	21 01	24.3	-1.3
ZAPS	**Zavoj**	**2.59**	**159**		*e*Sg	Sg	21 01	33.0	-1.5

MEX 21 21:07:36.5±0.5,15°.54N×93°.64W,h90km±6km,MD3.7, Near coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase ID			Time		Res
				Op		ISC	h	m s	ISC
PCIG		**0.43**	**68**		*e*P	Pn	21 07	49.5	-1.1
PCIG					*e*S	Sn	21 07	59.4	-1.8
TGIG		**1.32**	**22**		*i*P	Pn	21 07	58.9	-1.2
TGIG					*i* S	Sn	21 08	16.3	-1.6

*DDA **21** 21:18:47.2,37°.81N×29°.24E,h5km,Md2.9*
*CSEM **21** 21:18:48.3±0.2,37°.82N×29°.22E,h8km,MD2.8,Error ellipse: s-maj=5.1km s-min=3.6km az=106.0*
*ISK **21** 21:18:48.0,37°.82N×29°.24E,h6km,MD2.8*
ISC 21 21:18:48.8±1.0,37°.83N±0°.02×29°.24E±0°.03,h10km±7km, n32,σ1°.06/50,Turkey

Code	Station Name	Δ°	AZ°	Phase ID			Time		Res
				Op		ISC	h	m s	ISC
DENT	**Denizli**	**0.18**	**244**		*e*PG	**Pg**	**21 18**	**52.4**	**-0.2**
DENT	**Denizli**	**0.18**	**244**		*e*Pg	**Pg**	**21 18**	**52.4**	**-0.2**
UZP	**Denizli**	**0.20**	**346**		*i* P	**Pg**	**21 18**	**52.4**	**-0.7**
UZP					*i* S	**Sg**	**21 18**	**56.6**	**+0.5**
KHL	**Karahalli**	**0.54**	**25**		*e*PG	**Pg**	**21 18**	**58.8**	**-0.5**
KHL					*e*SG	**Sb**	**21 19**	**08.0**	**-0.2**
KHL	**Karahalli**	**0.54**	**25**		*e*Pg	**Pg**	**21 18**	**58.8**	**-0.5**
KHL					*e*Sg	**Sb**	**21 19**	**08.0**	**-0.2**
KHAL	**Karahalli**	**0.57**	**21**		*i* P	**Pg**	**21 18**	**59.1**	**-0.9**
KHAL					*i* S	**Sb**	**21 19**	**08.5**	**-0.7**
KHAL	**Karahalli**	**0.57**	**21**		P	**Pg**	**21 18**	**59.1**	**-0.9**
KHAL					S	**Sb**	**21 19**	**08.5**	**-0.7**
KULA	**Kula-Manisa**	**0.82**	**326**		*e*PG	**Pg**	**21 19**	**04.1**	**-0.4**
KULA					*e*SG	**Sb**	**21 19**	**16.4**	**+0.2**
KULA	**Kula-Manisa**	**0.82**	**326**		*e*Pg	**Pg**	**21 19**	**04.1**	**-0.4**
KULA					*e*Sg	**Sb**	**21 19**	**16.5**	**+0.2**
YER	**Yerkesik**	**1.03**	**228**		*e*PG	**Pg**	**21 19**	**07.6**	**-1.0**
YER	**Yerkesik**	**1.03**	**228**		*e*Pg	**Pg**	**21 19**	**07.6**	**-1.0**
AYDB	**Zeytinkoy-Aydi**	**1.07**	**276**		*e*PG	**Pg**	**21 19**	**08.5**	**-0.9**
AYDB					*e*SG	**Sn**	**21 19**	**24.5**	**-0.5**
AYDB	**Zeytinkoy-Aydi**	**1.07**	**276**		*e*Pg	**Pg**	**21 19**	**08.5**	**-0.9**
AYDB					*e*Sg	**Sn**	**21 19**	**24.5**	**-0.5**
TURN	**Turunc**	**1.08**	**208**		*i* P	**Pn**	**21 19**	**12.0**	**+2.0**
TURN					*i* S	Sn	21 19	31.9	+6.8
TURN	**Turunc**	**1.08**	**208**		P	**Pn**	**21 19**	**12.0**	**+2.0**
AYDN	**Tasoluk**	**1.09**	**261**		*i* P	**Pg**	**21 19**	**08.2**	**-1.5**
AYDN					*i* S	**Sb**	**21 19**	**23.8**	**-0.2**
AYDN	**Tasoluk**	**1.09**	**261**		P	**Pg**	**21 19**	**08.2**	**-1.5**
AYDN					S	**Sb**	**21 19**	**23.8**	**-0.2**
DALY	**Dalyan (Mu¨la**	**1.12**	**205**		*e*PN	**Pb**	**21 19**	**09.8**	**-0.4**
DALY					*e*SN	**Sn**	**21 19**	**25.6**	**-0.2**
DALY	**Dalyan (Mu¨la**	**1.12**	**205**		*e*Pn	**Pb**	**21 19**	**09.8**	**-0.4**
DALY					*e*Sn	**Sn**	**21 19**	**25.6**	**-0.2**
FETY	**Fethiye**	**1.20**	**186**		*e*PN	**Pb**	**21 19**	**10.6**	**-1.1**
FETY	**Fethiye**	**1.20**	**186**		*e*Pn	**Pb**	**21 19**	**10.6**	**-1.1**
ELL	**Elmali**	**1.21**	**153**		*e*PN	**Pn**	**21 19**	**11.6**	**-0.2**
ELL	**Elmali**	**1.21**	**153**		*e*Pn	**Pn**	**21 19**	**11.6**	**-0.2**
KORT	**Korkueli**	**1.22**	**133**		*i* P	Pb	21 19	03.0	-9.0
KORT					*i* S	**Sn**	**21 19**	**28.8**	**+0.2**
GDZ	**Gediz**	**1.27**	**9**		*i* P	**Pn**	**21 19**	**11.5**	**-1.2**
GDZ					*i* S	**Sn**	**21 19**	**32.3**	**+2.4**
GDZ	**Gediz**	**1.27**	**9**		P	**Pn**	**21 19**	**11.5**	**-1.2**
GDZ					S	**Sn**	**21 19**	**32.3**	**+2.4**
DEMI	**Demirci**	**1.27**	**341**		*i* P	**Pn**	**21 19**	**12.6**	**-0.2**
DEMI					*i* S	**Sn**	**21 19**	**31.1**	**+1.2**
DEMI	**Demirci**	**1.27**	**341**		P	**Pn**	**21 19**	**12.6**	**-0.2**
DEMI					S	**Sn**	**21 19**	**31.1**	**+1.2**
TVSB	**Tavsanli**	**1.62**	**6**		*e*PN	**Pn**	**21 19**	**18.1**	**+0.5**
TVSB	**Tavsanli**	**1.62**	**6**		*e*Pn	**Pn**	**21 19**	**18.1**	**+0.5**
AKAS	**Kas**	**1.62**	**169**		*i* P	**Pg**	**21 19**	**18.9**	**-1.0**
AKAS					*i* S	**Sg**	**21 19**	**43.9**	**+2.8**
AKAS	**Kas**	**1.62**	**169**		P	**Pg**	**21 19**	**18.9**	**-1.0**

*ISCJB **21** 21:22:18.4±0.8,36°.66N±0°.04×140°.77E±0°.05,h12km±4km, mb3.5/14,Error ellipse: s-maj=7.9km s-min=5.2km az=37.5*
*IDC **21** 21:22:18.4±0.8,36°.71N×140°.67E,h0km,mb3.6/14, mb1 3.8/15,mb1mx3.6/61,mbtmp3.6/15,ML3.3/1,Error ellipse: s-maj=19.9km s-min=18.5km az=154.0*
*JMA **21** 21:22:20.1,36°.71N×140°.65E,h5km±1km,M3.4*
JMA Felt II J1.
ISC 21 21:22:19.9±1.0,36°.71N±0°.04×140°.62E±0°.06,h9km±6km, n29,σ0°.58/30,mb3.6/14,5C,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID			Time		Res
				Op		ISC	h	m s	ISC
JHO	**Hitachi**	**0.11**	**202**	⇑	P	**Pg**	**21 22**	**22.5**	**+0.1**
JHO					S	**Sg**	**21 22**	**24.4**	**+0.1**
ONAJ	**Iwakimizuishiy**	**0.42**	**20**	⇑	P	**Pg**	**21 22**	**28.1**	**+0.1**
ONAJ					S	**Sg**	**21 22**	**33.8**	**+0.2**
JYT	**Yasato**	**0.59**	**216**	⇑	P	**Pg**	**21 22**	**31.6**	**+0.3**
JSB	**Shiboa**	**0.62**	**295**		P	**Pb**	**21 22**	**33.1**	**+0.3**
JSB					S	**Sb**	**21 22**	**42.3**	**+0.7**
JFK	**Kawauchi**	**0.69**	**17**	⇑	P	**Pg**	**21 22**	**32.9**	**-0.2**
JFK					S	**Sg**	**21 22**	**42.2**	**+0.1**
JFT	**Otama**	**0.84**	**344**	⇑	P	**Pg**	**21 22**	**36.2**	**+0.2**
JFT					S	**Sb**	**21 22**	**47.6**	**-0.4**
MJAR	**Matsushiro Arr**	**1.95**	**266**		Pn	**Pb**	**21 22**	**54.5**	**-1.0**
	14nm,0.3s,baz=87,slow=11,SNR=79								
MJAR					Sn	**Sb**	**21 23**	**19.8**	**-0.1**
	17nm,0.3s,baz=57,slow=23,SNR=24								
MAT	**Matsushiro**	**1.95**	**266**		P	**Pb**	**21 22**	**54.6**	**-0.9**
MAT					S	**Sb**	**21 23**	**20.2**	**+0.3**
ASAJ	**Asahikawa**	**7.55**	**11**		Pn	**Pn**	**21 24**	**10.2**	**+0.1**
	0.5nm,0.3s,baz=203,slow=13,SNR=4.3								
SONM	**Songino Array**	**27.44**	**305**		P	**P**	**21 28**	**05.3**	**-0.7**
	0.9nm,0.7s,baz=106,slow=8.8,SNR=9.3								
H11N2	**WAKE ISLAND Hy**	**28.54**	**119**		T	T	21 57	58.7	
	baz=312,slow=75,SNR=237								
H11N1	**WAKE ISLAND Hy**	**28.55**	**119**		T	T	21 57	59.3	
	baz=312,slow=75,SNR=250								
H11N3	**WAKE ISLAND Hy**	**28.56**	**119**		T	T	21 58	00.1	
	baz=312,slow=75,SNR=317								
H11S1	**WAKE ISLAND Hy**	**29.23**	**121**		T	T	21 58	50.2	
	baz=314,slow=75,SNR=513								
H11S3	**WAKE ISLAND Hy**	**29.23**	**121**		T	T	21 58	50.2	
	baz=314,slow=75,SNR=330								
H11S2	**WAKE ISLAND Hy**	**29.24**	**121**		T	T	21 58	51.4	
	baz=314,slow=75,SNR=285								
ZALV	**Zalesovo Beam**	**41.66**	**313**		P	**P**	**21 30**	**08.8**	**+0.4**
	1.3nm,0.5s,baz=100,slow=7.1,SNR=8.3								
MKAR	**Makanchi Array**	**43.75**	**302**		P	**P**	**21 30**	**26.3**	**+0.8**
	0.2nm,0.3s,baz=90,slow=9.7,SNR=5.2								
ILAR	**Eielson Array**	**50.11**	**32**		P	**P**	**21 31**	**14.9**	**0.0**
	0.2nm,0.5s,baz=267,slow=5.4,SNR=3.1								
BVAR	**Borovoye Array**	**50.32**	**312**		P	**P**	**21 31**	**16.6**	**-0.1**
	0.5nm,0.7s,baz=89,slow=8.8,SNR=4.1								
WRA	**Warramunga Arr**	**56.66**	**187**		P	**P**	**21 32**	**03.0**	**-0.5**
	0.5nm,0.5s,baz=2.8,slow=7.3,SNR=6.6								
ASAR	**Alice Springs**	**60.38**	**187**		P	**P**	**21 32**	**29.2**	**-0.2**
	0.5nm,0.8s,baz=9.7,slow=7.3,SNR=5.4								
YKA	**Yellowknife Ar**	**64.41**	**30**		P	**P**	**21 32**	**54.7**	**-1.2**
	0.1nm,0.6s,baz=298,slow=6.7,SNR=3.9								
FINES	**FINESS Array B**	**68.80**	**332**		P	**P**	**21 33**	**23.3**	**-0.7**
	1.5nm,0.8s,baz=8.9,slow=9.8,SNR=4.6								
AKASG	**Malin Array Be**	**74.16**	**322**		P	**P**	**21 33**	**56.2**	**-0.3**
	0.3nm,0.4s,baz=48,slow=5.9,SNR=4.5								
NOA	**NORSAR Array B**	**74.24**	**337**		P	**P**	**21 33**	**57.3**	**+0.4**
	0.4nm,0.6s,baz=39,slow=5.9,SNR=3.6								
PDAR	**Pinedale Array**	**78.35**	**45**		P	**P**	**21 34**	**21.7**	**+0.9**
	0.4nm,0.9s,baz=292,slow=4.8,SNR=2.6								
GERES	**GERESS Array B**	**82.65**	**328**		P	**P**	**21 34**	**43.6**	**0.0**
	0.3nm,0.5s,baz=39,slow=6.3,SNR=3.3								
TXAR	**Lajitas Array**	**90.82**	**52**		P	**P**	**21 35**	**25.2**	**+1.2**
	0.2nm,0.5s,baz=308,slow=4.4,SNR=2.6								

IDC 21 21:22:28.2±2.5,4°.37S×143°.94E,h0km,mb3.5/2, mb1 3.5/3,mb1mx3.2/40,mbtmp3.4/3,ML2.8/2,Error ellipse: s-maj=54.7km s-min=28.4km az=81.0,New Guinea

Code	Station Name	Δ°	AZ°	Phase ID			Time		Res
				Op		ISC	h	m s	ISC
JAY	**Jayapura**	**3.72**	**300**		Pn	Pn	21 23	28.1	+1.1
	0.2nm,0.3s,baz=125,slow=21,SNR=7.5								
JAY					Sn	Sn	21 24	12.1	+0.5
	0.1nm,0.3s,baz=231,slow=19,SNR=2.7								
WRA	**Warramunga Arr**	**18.09**	**210**		P	Pn	21 26	39.6	-1.5
	0.1nm,0.3s,baz=27,slow=13,SNR=4.0								
ASAR	**Alice Springs**	**21.49**	**206**		P	P	21 27	19.6	+0.9
	0.6nm,0.9s,baz=31,slow=11,SNR=3.5								
ZALV	**Zalesovo Beam**	**76.03**	**328**		P	P	21 34	17.1	-0.2
	1.5nm,0.7s,baz=106,slow=4.7,SNR=5.8								

SJA 21 21:23:14.5±0.4,32°.13S×68°.60W,h110km±3km,ML1.7, MW3.5,Mendoza Province

Code	Station Name	Δ°	AZ°	Phase ID			Time		Res
				Op		ISC	h	m s	ISC
RTCV	**Cerro Valdivia**	**0.27**	**10**		*i* P	Pn	21 23	31.0	+0.8
RTCV					*i* S	Sn	21 23	42.6	+0.7
ASAL	**Salagasta**	**0.50**	**204**		*i* P	Pn	21 23	32.1	+0.6
ASAL					*i* S	Sn	21 23	45.4	+1.2
AUSP	**Uspallata**	**0.68**	**262**		*i* P	Pn	21 23	34.2	+1.3
AUSP					*i* S	Sn	21 23	48.4	+1.6
RTLS	**Leoncito**	**0.68**	**299**		*i* P	Pn	21 23	34.2	+1.2
RTLL	**Cerro Villicun**	**0.81**	**7**		*i* P	Pn	21 23	34.5	+0.6
RTLL					*i* S	Sn	21 23	49.4	+1.0
AAGR	**Agrelo**	**0.97**	**192**		*i* P	Pn	21 23	36.2	+0.7
AVFE	**Valle Fertil**	**1.76**	**34**		*i* P	Pn	21 23	45.7	+1.1
AVFE					IAML		21 24	08.9	
	comp=Z,6.0nm,0.2s								

*IDC **21** 21:23:38.3±1.7,33°.34N×52°.18E,h0km,mb3.4/7, mb1 3.7/8,mb1mx3.4/48,mbtmp3.4/8,ML3.6/1,MS3.2/1, Ms1 3.2/1,ms1mx2.2/41,Error ellipse: s-maj=42.2km s-min=24.3km az=22.0*
*ISCJB **21** 21:23:40.7±0.3,33°.50N±0°.02×52°.35E±0°.03,h10km, mb3.3/7,MS3.2/1,Error ellipse: s-maj=4.2km s-min=3.3km az=166.8*
*THR **21** 21:23:40.6±1.0,33°.54N×52°.36E,h14km±11km,ML3.7*
*CSEM **21** 21:23:41.6±0.2,33°.48N×52°.38E,h10km,ML4.0,Error ellipse: s-maj=5.5km s-min=3.9km az=79.0*
*TEH **21** 21:23:41.3,33°.55N×52°.39E,h2km,ML4.0*
ISC 21 21:23:41.7±0.8,33°.52N±0°.03×52°.36E±0°.03,h10km,n59, σ0°.79/51,mb3.4/7,Northern and central Iran

Code	Station Name	Δ°	AZ°	Phase ID			Time		Res
				Op		ISC	h	m s	ISC
IZEF	**Zefreh**	**0.63**	**182**		*e*Pg	**Pg**	**21 23**	**53.1**	**-0.8**
IZEF					*e*Sg	**Sg**	**21 24**	**02.6**	**+0.5**
IZEF					*e*AMB	AMB	21 24	04.0	
	comp=Z,32μm,0.0s								
IZEF	**Zefreh**	**0.63**	**182**		*e*Pg	**Pg**	**21 23**	**53.1**	**-0.8**
IZEF					*e*Sg	**Sg**	**21 24**	**02.6**	**+0.5**
IKLH	**Kolahrood**	**0.68**	**253**		*e*Pg	**Pg**	**21 23**	**54.0**	**-0.9**
IKLH					*e*AMB	AMB	21 24	05.1	
	comp=Z,20μm,0.1s								
IKLH	**Kolahrood**	**0.68**	**253**		*e*Pg	**Pg**	**21 23**	**54.0**	**-0.9**
QAM	**Ghamsar**	**0.80**	**287**		*e*Pg	Pg	21 23	55.9	-1.2
QAM					*e*Sg	**Sg**	**21 24**	**07.0**	**-0.6**
QAM					*e*AMB	AMB	21 24	15.2	
	comp=Z,47μm,0.1s								
NASN	**Na'in**	**0.82**	**152**		*e*Pg	**Pg**	**21 23**	**56.8**	**-0.6**
NASN					*e*Sg	**Sg**	**21 24**	**08.3**	**+0.2**
NASN					AML	AML	21 24	09.0	
	comp=N,6μm,0.2s								
NASN					AML	AML	21 24	09.1	
	comp=E,6μm,0.2s								
NASN	**Na'in**	**0.82**	**152**		*e*Pg	**Pg**	**21 23**	**56.8**	**-0.6**
NASN					*e*Sg	**Sg**	**21 24**	**08.3**	**+0.2**
IGAR	**Gharneh**	**1.15**	**193**		*e*AMB	AMB	21 24	03.8	
	comp=Z,11μm,0.1s								
IGAR					*e*Pg	**Pg**	**21 24**	**03.0**	**-0.7**
GHVR	**GHOM**	**1.30**	**318**		*e*Pg	Pn	21 24	05.1	-0.9
GHVR					AML	AML	21 24	32.3	
	comp=N,817nm,0.4s								
GHVR					AML	AML	21 24	36.3	
	comp=E,1μm,0.6s								
IPIR	**Pirpir**	**1.49**	**236**		*e*Sg	**Sn**	**21 24**	**28.6**	**+0.2**
IPIR					*e*Pn	**Pn**	**21 24**	**09.2**	**+0.5**
IPIR					*e*AMB	AMB	21 24	31.5	
	comp=Z,15μm,0.2s								
IVRN	**Varamin**	**1.56**	**341**		*e*AMB	AMB	21 24	32.0	
	comp=Z,48μm,0.1s								
IVRN					*e*Pn	Pn	21 24	09.2	-0.3
IRAM	**Ramesheh**	**1.71**	**179**		*e*Pg	**Pn**	**21 24**	**12.1**	**+0.4**
IRAM					*e*AMB	AMB	21 24	13.2	
	comp=Z,4μm,0.1s								
IRAM	**Ramesheh**	**1.71**	**179**		*e*Pg	**Pn**	**21 24**	**12.1**	**+0.4**
ILAS	**Lasjerd**	**1.92**	**15**		*e*Pn	Pn	21 24	14.6	-0.1
ILAS					*e*AMB	AMB	21 24	44.8	
	comp=E,40μm,0.1s								
ILAS	**Lasjerd**	**1.92**	**15**		*e*Pn	Pn	21 24	14.6	-0.1
KHMZ	**Khomeyn**	**2.01**	**277**		*e*Pg	**Pn**	**21 24**	**17.0**	**+1.2**
KHMZ					AML	AML	21 24	54.5	
	comp=N,321nm,0.5s								
KHMZ	**Khomeyn**	**2.01**	**277**		*e*Pn	**Pn**	**21 24**	**17.2**	**+1.3**
IDMV	**Damavand**	**2.07**	**353**		*e*Pn	**Pn**	**21 24**	**16.8**	**+0.1**
IDMV					*e*AMB	AMB	21 24	47.7	
	comp=Z,17μm,0.1s								
IDMV	**Damavand**	**2.07**	**353**		*e*Pn	**Pn**	**21 24**	**16.8**	**+0.1**
IFIR	**Firoozkooh**	**2

USRK	**Ussuriysk Ar.**	**10.85**	**315**	LR	LR	21 30 46.5
	comp=Z,135nm,18.1s,baz=108,slow=35					
KSRS	**Korea Array**	**11.79**	**277**	Pn	**Pn**	**21 27 10.9 +2.6**
	0.1nm,0.3s,baz=90,slow=13,SNR=6.7					
KSRS				LR	LR	21 31 28.7
	comp=Z,236nm,18.2s,baz=118,slow=36					
KSAR	**Wonju Array Be**	**11.82**	**277**	Pn	**Pn**	**21 27 10.9 +2.2**
KLR	**Kul'dur**	**14.58**	**330**	LR	LR	21 33 19.4
	comp=Z,137nm,19.0s,baz=142,slow=37					
MA2	**Magadan**	**23.18**	**10**	LR	LR	21 39 25.3
	comp=Z,76nm,18.4s,baz=197,slow=39					
GUMO	**Guam**	**23.40**	**175**	LR	LR	21 37 22.9
	comp=Z,26nm,21.8s,baz=340,slow=34					
ULN	**Ulaanbaatar**	**28.22**	**304**	*eP*	**P**	**21 30 13.4 +0.1**
	3.1nm,1.0s					
ENH	**Enshi**	**28.35**	**266**	*eP*	**P**	**21 30 14.1 -0.4**
	1.6nm,0.3s					
SONM	**Songino Array**	**28.65**	**304**	P	**P**	**21 30 17.7 +0.6**
	4.3nm,1.0s,baz=100,slow=9.1,SNR=22					
GTA	**Gaotai**	**33.55**	**287**	*eP*	**P**	**21 31 01.8 +1.4**
GTA				pP	sP	21 31 06.3 +2.0
GTA				sP	pP	21 31 09.3 +6.2
GTA				pmax	pmax	
	comp=Z,4.0nm,1.0s					
ZALV	**Zalesovo Beam**	**42.69**	**312**	P	**P**	**21 32 17.2 +0.2**
	comp=Z,1.1nm,0.5s,baz=90,slow=8.6,SNR=6.2					
MKAR	**Makanchi Array**	**45.00**	**302**	P	**P**	**21 32 35.3 -0.5**
	comp=Z,1.3nm,0.8s,baz=87,slow=9.1,SNR=11					
MKAR				LR	LR	21 51 29.6
	comp=Z,29nm,19.5s,baz=52,slow=36					
KURK	**Kurchatov**	**46.75**	**308**	*eP*	**P**	**21 32 49.1 -0.4**
	comp=Z,2.3nm,0.6s					
ILAR	**Eielson Array**	**48.97**	**32**	P	**P**	**21 33 06.2 -0.2**
	comp=Z,0.4nm,0.8s,baz=257,slow=7.3,SNR=5.0					
INK	**Inuvik**	**53.94**	**27**	LR	LR	21 57 41.0
	comp=Z,28nm,21.1s,baz=309,slow=37					
ARU	**Arti**	**57.06**	**319**	LR	LR	22 00 26.2
	comp=Z,69nm,19.0s,baz=348,slow=38					
WRA	**Warramunga Arr**	**57.19**	**189**	P	**P**	**21 34 06.1 -1.4**
	comp=Z,0.6nm,0.7s,baz=8.6,slow=7.0,SNR=4.3					
ARCES	**ARCESS Array B**	**64.38**	**340**	LR	LR	22 08 38.0
	comp=Z,42nm,20.8s,baz=32,slow=41					
FINES	**FINESS Array B**	**69.31**	**333**	P	**P**	**21 35 28.0 +0.5**
	comp=Z,0.7nm,0.7s,baz=38,slow=7.0,SNR=2.9					
NOA	**NORSAR Array B**	**74.60**	**338**	P	**P**	**21 35 59.0 -0.2**
	comp=Z,0.4nm,0.7s,baz=38,slow=5.8,SNR=2.7					
NOA				LR	LR	22 12 51.6
	comp=Z,30nm,18.5s,baz=350,slow=39					
AKASG	**Malin Array Be**	**74.94**	**323**	P	**P**	**21 36 01.1 -0.2**
	comp=Z,0.2nm,0.2s,baz=46,slow=6.7,SNR=4.4					

NIED ***21*** *21:28:00,36.70N×140.60E,h5km,Mw3.5 Best double couple: M₀2.02000×10¹⁴ NP1:φs298.00000°,δ26.00000°, λ-89.00000°. NP2:φs117.00000°,δ64.00000°, λ-90.00000°.*

IDC ***21*** *21:28:43.9±1.3,36.74N×140.89E,h0km,mb3.7/11, mb1 3.8/12,mb1mx3.6/54,mbtmp3.7/12,ML3.7/1,Error ellipse: s-maj=40.6km s-min=20.7km az=70.0*

ISCJB ***21*** *21:28:44.7±0.9,36.66N±0.03×140.78E±0.05,h12km±4km, mb3.7/11,Error ellipse: s-maj=7.8km s-min=5.2km az=24.3*

JMA ***21*** *21:28:46.3,36.71N×140.65E,h5km±1km,M3.6 Broadband fault plane solution: P waves. NP1: φs282.00000°,δ54.00000°,λ-99.00000°. NP2: φs116.00000°,δ37.00000°,λ-78.00000°. Principal axes: T Plg8.0000°, Azm18.0000°; N Plg7.0000°, Azm287.0000°; P Plg79.0000°, Azm157.0000°;*

JMA Felt II J1.

ISC 21 21:28:45.3±1.4,36.72N±0.05×140.72E±0.06,h5km±9km, n29,σ0s56/29,mb3.7/11,5C,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JHO	**Hitachi**	**0.16**	**227**	⇑P	**Pg**	**21 28 48.9**	**+0.3**
JHO				S	**Sg**	**21 28 50.7**	**0.0**
ONAJ	**Iwakimizuishiy**	**0.39**	**10**	⇑P	**Pb**	**21 28 54.4**	**-0.3**
JYT	**Yasato**	**0.65**	**221**	⇑P	**Pg**	**21 28 57.9**	**+0.1**
JFK	**Kawauchi**	**0.66**	**11**	⇑P	**Pb**	**21 28 59.2**	**-0.1**
JFK				S	**Sb**	**21 29 08.4**	**-0.3**
JSB	**Shiboa**	**0.69**	**291**	P	**Pb**	**21 28 59.4**	**-0.4**
JFT	**Otama**	**0.85**	**339**	⇑P	**Pb**	**21 29 02.5**	**-0.1**
JFT				S	**Sb**	**21 29 13.9**	**-0.4**
JAG	**Ashikaga**	**1.06**	**254**	P	**Pg**	**21 29 04.9**	**-0.7**
JAG				S	**Sg**	**21 29 19.2**	**-0.2**
JFY	**Yanaizu**	**1.06**	**310**	P	**Pb**	**21 29 05.9**	**-0.3**
JFY				S	**Sg**	**21 29 19.4**	**0.0**
MJAR	**Matsushiro Arr**	**2.03**	**266**	Pn	**Pn**	**21 29 20.6**	**+0.5**
	23nm,0.3s,baz=83,slow=15,SNR=74						
MJAR				Sn	**Sn**	**21 29 45.5**	**-0.3**
	25nm,0.3s,baz=40,slow=44,SNR=16						
MAT	**Matsushiro**	**2.03**	**266**	P	**Pn**	**21 29 20.6**	**+0.5**
MAT				S	**Sn**	**21 29 46.6**	**+0.7**
JHJ	**Hachijo jima 2**	**3.67**	**192**	Sn	**Sn**	**21 30 25.8**	**-0.6**
USRK	**Ussuriysk Ar.**	**10.00**	**321**	Pn	Pn	21 31 15.5	+6.0
	0.1nm,0.3s,baz=149,slow=4.1,SNR=3.6						
SONM	**Songino Array**	**27.50**	**305**	P	**P**	**21 34 32.5**	**-0.2**
	1.0nm,0.7s,baz=93,slow=7.9,SNR=7.3						
H11N2	**WAKE ISLAND Hy**	**28.47**	**119**	T	T	22 04 24.9	
	baz=312,slow=75,SNR=149						
H11N1	**WAKE ISLAND Hy**	**28.48**	**119**	T	T	22 04 25.5	
	baz=312,slow=75,SNR=210						
H11N3	**WAKE ISLAND Hy**	**28.49**	**119**	T	T	22 04 26.2	
	baz=312,slow=75,SNR=200						
H11S1	**WAKE ISLAND Hy**	**29.17**	**121**	T	T	22 05 17.3	
	baz=314,slow=76,SNR=446						
H11S3	**WAKE ISLAND Hy**	**29.17**	**121**	T	T	22 05 17.3	
	baz=314,slow=76,SNR=221						
H11S2	**WAKE ISLAND Hy**	**29.18**	**121**	T	T	22 05 18.5	
	baz=314,slow=76,SNR=330						
TLY	**Talaya**	**30.12**	**312**	P	**P**	**21 34 57.8**	**+2.0**
	1.6nm,0.5s,baz=298,slow=10,SNR=3.2						
ZALV	**Zalesovo Beam**	**41.71**	**313**	P	**P**	**21 36 34.8**	**-0.1**
	1.4nm,0.6s,baz=90,slow=8.1,SNR=6.6						
MKAR	**Makanchi Array**	**43.81**	**302**	P	**P**	**21 36 52.2**	**+0.1**
	0.2nm,0.3s,baz=100,slow=6.8,SNR=4.0						
BVAR	**Borovoye Array**	**50.37**	**312**	P	**P**	**21 37 43.2**	**+0.1**
	0.6nm,0.6s,baz=87,slow=7.4,SNR=4.2						
WRA	**Warramunga Arr**	**56.68**	**187**	P	**P**	**21 38 29.2**	**-0.5**
	0.7nm,0.7s,baz=4.6,slow=7.4,SNR=7.4						
ASAR	**Alice Springs**	**60.41**	**187**	P	**P**	**21 38 55.6**	**-0.1**
	0.3nm,0.6s,baz=16,slow=7.7,SNR=4.5						
FINES	**FINESS Array B**	**68.83**	**332**	P	**P**	**21 39 49.6**	**-0.6**
	0.7nm,0.7s,baz=73,slow=4.7,SNR=3.9						
AKASG	**Malin Array Be**	**74.20**	**322**	P	**P**	**21 40 23.0**	**+0.1**
	0.3nm,0.4s,baz=46,slow=6.6,SNR=4.0						
NOA	**NORSAR Array B**	**74.26**	**337**	P	**P**	**21 40 22.6**	**-0.4**
	0.4nm,0.7s,baz=40,slow=5.9,SNR=3.1						
GERES	**GERESS Array B**	**82.68**	**328**	P	**P**	**21 41 09.7**	**-0.2**
	0.2nm,0.3s,baz=45,slow=5.7,SNR=3.0						

SJA 21 21:33:08.2±0.5,27.32S×66.43W,h60km±31km,ML2.0, MW3.9,Catamarca Province

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
AHML	**Horco Molle**	**1.11**	**62**	*i* P	Pn	21 33 29.0	+1.3
AHML				*i* P	Pn	21 33 29.1	+1.3
CYA	**Choya**	**1.25**	**154**	*i* P	Pn	21 33 31.1	+1.5
CYA				*i* S	Sn	21 33 47.5	+1.9
CYA				IAML		21 33 53.0	
	comp=Z,13nm,0.3s						
FSA	**Cafayete**	**1.27**	**19**	*i* P	Pn	21 33 31.3	+1.3
FSA				*i* S	Sn	21 33 48.8	+2.6
FSA				IAML		21 33 49.4	
	comp=Z,25nm,0.3s						
VCA	**Vinchina**	**2.11**	**228**	*i* P	Pn	21 33 43.4	+2.1
VCA				IAML		21 34 13.7	
	comp=Z,20nm,0.3s						
AGUA	**GUANDACOL**	**2.82**	**220**	*i* P	Pn	21 33 53.1	+2.1

IDC ***21*** *21:33:41.4±1.4,36.64N×140.69E,h0km,mb3.6/6, mb1 3.7/7,mb1mx3.4/54,mbtmp3.6/7,ML3.4/1,MS3.6/2, Ms1 3.7/2,ms1mx2.6/48,Error ellipse: s-maj=31.9km s-min=20.8km az=65.0*

JMA ***21*** *21:33:43.3,36.71N×140.65E,h5km±1km,M3.3*

JMA Felt II J1.

ISC 21 21:33:43.1±1.1,36.72N±0.05×140.52E±0.06,h6km±9km, n19,σ0s85/14,mb3.6/6,2C,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JHO	**Hitachi**	**0.12**	**159**	⇑P	**Pg**	**21 33 45.7**	**+0.1**
JHO				S	**Sg**	**21 33 47.5**	**+0.2**
ONAJ	**Iwakimizuishiy**	**0.44**	**31**	⇑P	**Pg**	**21 33 51.4**	**-0.4**
ONAJ				*eS*	**Sg**	**21 33 57.1**	**-0.5**
JAG	**Ashikaga**	**0.91**	**251**	S	**Sn**	**21 34 16.6**	**+0.8**
MJAR	**Matsushiro Arr**	**1.86**	**265**	Pn	**Pb**	**21 34 17.2**	**-0.4**
	19nm,0.3s,baz=81,slow=15,SNR=58						
MJAR				Sn	**Sg**	**21 34 42.7**	**-0.4**
	30nm,0.3s,baz=54,slow=23,SNR=22						
ASAJ	**Asahikawa**	**7.56**	**11**	Pn	**Pn**	**21 35 35.3**	**+1.5**
	0.6nm,0.3s,baz=200,slow=12,SNR=4.6						
SONM	**Songino Array**	**27.37**	**305**	P	**P**	**21 39 29.3**	**+0.2**
	0.7nm,0.7s,baz=100,slow=8.9,SNR=3.7						
H11N2	**WAKE ISLAND Hy**	**28.61**	**119**	T	T	22 09 21.4	
	baz=312,slow=75,SNR=146						
H11N1	**WAKE ISLAND Hy**	**28.62**	**119**	T	T	22 09 21.9	
	baz=312,slow=75,SNR=141						
H11N3	**WAKE ISLAND Hy**	**28.63**	**119**	T	T	22 09 22.8	
	baz=312,slow=75,SNR=160						
H11S1	**WAKE ISLAND Hy**	**29.30**	**121**	T	T	22 10 12.4	
	baz=314,slow=75,SNR=348						
H11S3	**WAKE ISLAND Hy**	**29.30**	**121**	T	T	22 10 14.1	
	baz=314,slow=75,SNR=261						
H11S2	**WAKE ISLAND Hy**	**29.32**	**121**	T	T	22 10 16.2	
	baz=314,slow=75,SNR=234						
CMAR	**Chiang Mai Arr**	**40.72**	**255**	LR	LR	21 57 50.4	
	comp=Z,74nm,19.6s,baz=178,slow=36						
ZALV	**Zalesovo Beam**	**41.60**	**313**	P	**P**	**21 41 31.7**	**+0.1**
	0.8nm,0.5s,baz=90,slow=6.5,SNR=4.5						
MKAR	**Makanchi Array**	**43.68**	**302**	P	**P**	**21 41 49.3**	**+0.6**
	0.1nm,0.3s,baz=85,slow=8.4,SNR=3.7						
KURBB	**Kurchatov Arra**	**45.63**	**308**	P	**P**	**21 42 04.0**	**-0.2**
	1.0nm,0.6s,baz=85,slow=7.7,SNR=18						
WRA	**Warramunga Arr**	**56.66**	**187**	P	**P**	**21 43 25.8**	**-1.4**
	0.5nm,0.7s,baz=5.2,slow=7.4,SNR=9.3						
ASAR	**Alice Springs**	**60.38**	**187**	P	**P**	**21 43 52.2**	**-1.0**
	0.3nm,0.8s,baz=5.3,slow=5.7,SNR=5.0						
EIL	**Elat**	**83.94**	**303**	LR	LR	22 26 09.4	
	comp=Z,28nm,18.6s,baz=133,slow=37						

JMA 21 21:35:55.1±0.3,35.95N×141.16E,h19km±4km,M2.9, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CHOJ	**Chosi**	**0.35**	**225**	P	Pg	21 36 02.1	-0.4
CHOJ				*eS*	Sb	21 36 07.8	-0.1
JHO	**Hitachi**	**0.81**	**324**	P	Pb	21 36 10.3	-0.3
MAT	**Matsushiro**	**2.46**	**285**	P	Pn	21 36 34.6	+0.4
MAT				*eS*	Sn	21 37 00.3	-3.4

DJA 21 21:51:42.6±0.5,8.S±4.°×10.7E±.°,h40km±6km,M3.9/14, MLv3.9/14,Jawa

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CNJI	**Cibinong**	**0.49**	**66**	P	Pn	21 51 54.0	+0.8
CNJI				S	Sn	21 52 02.5	+1.9
SKJI	**Sukabumi**	**0.52**	**346**	P	Pn	21 51 55.1	+1.5
CISI	**Cisompet, Garu**	**1.13**	**92**	P	Pn	21 52 02.0	0.0
CISI				S	Sn	21 52 15.2	-1.1
LEM	**Lembang**	**1.15**	**54**	P	Pn	21 52 02.7	+0.3
LEM				S	Sn	21 52 17.6	+0.6
CGJI	**Cibinong**	**1.32**	**312**	P	Pn	21 52 05.5	+0.9
CGJI				S	Sn	21 52 21.2	+0.1
TNG	**Tangerang**	**1.33**	**359**	P	Pn	21 52 04.3	-0.4
TNG				P	Pn	21 52 04.6	-0.1
TNG				S	Sn	21 52 20.9	-0.3
TNG				S	Sn	21 52 22.1	+0.9
SBJI	**Serang**	**1.48**	**338**	P	Pn	21 52 08.3	+1.5
SBJI				S	Sn	21 52 24.6	-0.4
CMJI	**Cimerak**	**1.77**	**99**	P	Pn	21 52 10.8	0.0
CMJI				S	Sn	21 52 30.4	-1.8
JCJI	**Jatiwangi**	**1.88**	**57**	P	Pn	21 52 10.2	-2.0
JCJI				S	Sn	21 52 32.9	-1.8
KASI	**Kota Agung**	**2.93**	**312**	P	Pn	21 52 25.7	-1.0
KASI				S	Sn	21 53 00.6	-0.1
KLI	**Kotabumi**	**3.19**	**325**	P	Pn	21 52 29.7	-0.6

IDC 21 21:52:11.1±2.2,7.07S×129.05E,h0km,mb3.4/1, mb1 3.6/3,mb1mx3.4/23,mbtmp3.4/3,ML3.6/2,Error ellipse: s-maj=137.2km s-min=32.6km az=67.0,Banda Sea

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
WRA	**Warramunga Arr**	**13.79**	**159**	Pn	Pn	21 55 26.1	-1.9
	0.3nm,0.3s,baz=341,slow=13,SNR=20						
WRA				Sn	Sn	21 57 50.5	-12
	0.8nm,0.3s,baz=332,slow=25,SNR=11						
ASAR	**Alice Springs**	**17.14**	**165**	Pn	P	21 56 14.0	-0.1
	0.3nm,0.3s,baz=340,slow=9.3,SNR=18						
ASAR				Sn	Sn	21 59 14.5	-9.3
	0.2nm,0.3s,baz=348,slow=26,SNR=5.4						
MKAR	**Makanchi Array**	**67.77**	**327**	P	P	22 03 10.8	0.0
	0.2nm,0.3s,baz=114,slow=7.5,SNR=4.6						

NNC 21 22:00:24.6±2.4,37.05N×70.35E,h0km,mb3.7,mpv3.4, 5C-3D,Error ellipse: s-maj=19.7km s-min=15.9km az=154.0,Afghanistan-Tajikistan border region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SFK	**Sufi-Kurgan**	**3.85**	**39**	⇑P	Pn	22 01 25.3	-0.1
	3.4nm,0.5s						
SFK				⇑S	Sn	22 02 13.5	+2.0
	5.8nm,0.3s						
MNAS	**Manas**	**5.67**	**16**	⇓P	Pn	22 01 51.0	+0.7
	2.5nm,0.5s						
MNAS				⇑S	Sn	22 02 57.4	+1.1
	12nm,0.7s						
KK31	**Karatay Array**	**6.04**	**1**	P	Pn	22 01 56.7	+1.4
	1.7nm,0.5s,baz=185,slow=12,SNR=55						
KK31				⇓S	Sn	22 03 06.7	+1.5
	4.8nm,0.6s,baz=179,slow=20,SNR=13						
AAK	**Ala-Archa**	**6.42**	**28**	⇓P	Pn	22 01 59.2	-1.3
	1.1nm,0.3s						
AAK				⇑S	Sn	22 03 14.4	-0.3
	2.2nm,0.4s						
AB31	**Akbulak array**	**14.35**	**331**	⇑P	Pn	22 03 47.9	-1.0
	0.3nm,0.5s,baz=147,slow=12,SNR=8.9						

IDC 21 22:00:37.3±1.6,0.54N×123.94E,h0km,mb3.5/3, mb1 3.7/3,mb1mx3.3/31,mbtmp3.6/3,Error ellipse: s-maj=84.3km s-min=28.6km az=69.0,Minahassa Peninsula, Sulawesi

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
WRA	**Warramunga Arr**	**22.76**	**154**	P	P	22 05 41.6	+0.1
	0.5nm,0.7s,baz=332,slow=12,SNR=4.7						
USRK	**Ussuriysk Ar.**	**44.06**	**8**	P	P	22 08 46.8	-0.2
	0.8nm,0.4s,baz=190,slow=7.1,SNR=5.5						
MKAR	**Makanchi Array**	**58.66**	**328**	P	P	22 10 36.5	-0.1
	0.4nm,0.4s,baz=126,slow=7.4,SNR=7.2						

ISCJB ***21*** *22:02:04.3±1.0,5.56N±0.07×82.84W±0.09,h33km,Error ellipse: s-maj=15.2km s-min=4.6km az=143.3*

CASC ***21*** *22:02:07.2±1.3,5.69N×82.75W,h35km±999km,MD4.3*

ISC 21 22:02:06.3±1.5,5.5N±0.1×82.9W±0.1,h35km,n14, σ1s06/18,South of Panama

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
BRU2	**Volcan**	**3.23**	**3**	*eP*	**Pn**	**22 02 53.5**	**-1.3**
BRU2				*eS*	**Sn**	**22 03 30.5**	**-1.7**
TBS2		**3.24**	**4**	*eP*	**Pn**	**22 02 54.7**	**-0.1**
TBS2				*eS*	**Sn**	**22 03 30.4**	**-1.8**
AZU	**Azuero**	**3.41**	**49**	*eP*	Pn	22 02 45.4	-12
AZU				*eS*	Sn	22 03 22.3	-14
BUS	**Buena Vista**	**4.08**	**348**	*eS*	**Sn**	**22 03 53.6**	**+0.1**
URSC	**Urasca**	**4.36**	**348**	*eP*	**Pn**	**22 03 10.9**	**+0.6**
URSC				*eS*	**Sn**	**22 03 59.6**	**-0.4**
JCR	**Jicaral**	**4.82**	**333**	*eP*	**Pn**	**22 03 17.3**	**+0.7**
JCR				*eS*	**Sn**	**22 04 11.4**	**+0.1**
VCR	**Vista de Mar**	**5.32**	**329**	*eP*	**Pn**	**22 03 23.6**	**+0.2**
VCR				*eS*	**Sn**	**22 04 23.1**	**-0.3**
POPC	**Popayan, Colom**	**6.86**	**116**	*eP*	**Pn**	**22 03 43.3**	**-1.4**
CRUC	**La Cruz**	**7.10**	**124**	*eP*	**Pn**	**22 03 48.4**	**+0.2**
GUYC	**Guyana, Colomb**	**7.45**	**92**	*eP*	**Pn**	**22 03 54.6**	**+1.5**
TOLC	**Tolima**	**7.58**	**97**	*eP*	**Pn**	**22 03 55.4**	**+0.8**
MOTC	**Monteria, Cord**	**7.83**	**65**	*eP*	**Pn**	**22 03 58.5**	**+0.7**
PRAC	**Prado**	**8.16**	**103**	*eP*	**Pn**	**22 04 03.6**	**+1.2**
FLOC	**Florencia**	**8.20**	**118**	*eP*	**Pn**	**22 04 01.9**	**-1.1**

NNC ***21*** *22:09:55.3±1.1,39.61N×73.95E,h0km±6km,mb2.7, mpv2.4,Error ellipse: s-maj=15.7km s-min=6.8km az=49.0*

KRNET ***21*** *22:09:56.8±0.1,39.76N×74.01E,mb1.7*

ISC 21 22:09:53.7±2.2,39.5N±0.1×74.14E±0.06,h28km,n8, σ2s69/14,6C-12D,Southern Xinjiang

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SFK	**Sufi-Kurgan**	**0.70**	**315**	⇓*i*P	**Pb**	**22 10 05.7**	**-1.8**
	baz=303						
SFK				⇓*i*S	**Sb**	**22 10 13.0**	**-3.9**
	baz=303						
SFK	**Sufi-Kurgan**	**0.70**	**315**	⇓P	**Pb**	**22 10 05.7**	**-1.8**
	2.7nm,0.2s						
SFK				⇑S	**Sb**	**22 10 13.2**	**-3.7**
	39nm,0.2s						
OHH	**Osh**	**1.45**	**314**	⇓*e*P	**Pb**	**22 10 20.9**	**+0.8**
	baz=310						
OHH				⇓*i*S	**Sb**	**22 10 37.7**	**-0.5**
	baz=310						
BTK	**Batken**	**2.62**	**283**	⇑*e*P	**Pb**	**22 10 41.5**	**+1.5**
	baz=278						
BTK				⇑*e*S	**Sb**	**22 11 13.1**	**+1.4**
	baz=278						
AAK	**Ala-Archa**	**3.12**	**5**	⇑Pg	**Pb**	**22 10 51.8**	**+3.1**
	0.8nm,0.5s						
AAK				⇓Lg	Lg	22 11 31.0	
	2.4nm,0.6s						
MNAS	**Manas**	**3.22**	**338**	⇓Pg	**Pb**	**22 10 52.5**	**+2.2**
	0.9nm,0.7s						
MNAS				⇓Lg	Lg	22 11 32.0	
	1.9nm,0.5s						
KK31	**Karatay Array**	**4.51**	**324**	⇓Pg	**Pb**	**22 11 14.5**	**+2.4**
	0.2nm,0.3s,baz=162,slow=16,SNR=3.0						
KK31				⇓Sn	**Sn**	**22 11 55.0**	**+3.4**
	0.3nm,0.4s,baz=140,slow=20						
KK31				⇑Lg	Lg	22 12 12.4	
	0.3nm,0.3s,baz=131,slow=31						
PDGK	**Podgornoye**	**5.53**	**45**	⇓Pn	**Pn**	**22 11 12.5**	**-1.7**
	1.0nm,0.4s						
PDGK				⇓Sn	**Sb**	**22 12 33.5**	**-1.9**
	2.3nm,0.6s						
PDGK				⇑Lg	Lg	22 13 13.4	
	3.7nm,0.8s						

CSEM ***21*** *22:15:25.8±0.1,42.96N×15.60E,h2km,ML2.4,Error ellipse: s-maj=3.5km s-min=3.0km az=145.0*

BEO ***21*** *22:15:25.8±0.8,42.79N×15.54E,h0km,M2.6/6*

ROM ***21*** *22:15:26.3±0.2,42.97N×15.63E,h10km,MI2.4/20,Error ellipse: s-maj=3.4km s-min=2.3km az=59.0*

VIE ***21*** *22:15:26.1±0.7,42.95N×15.66E,h10km,mb2.4/9,ml2.6/9, Error ellipse: s-maj=9.5km s-min=5.1km az=93.0*

PRU ***21*** *22:15:26.6,42.95N×15.69E,h5km*

ISC 21 22:15:26.5±1.6,42.93N±0.03×15.51E±0.04,h9km±14km, n108,σ0s91/137,Adriatic Sea

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
FRES	**Fresagrandinar**	**1.14**	**213**	Pn	**Pg**	**22 15 49.7**	**+1.4**
	117nm,0.3s						
FRES	**Fresagrandinar**	**1.14**	**213**	Pn	**Pg**	**22 15 49.7**	**+1.4**
	117nm,0.3s						
SGRT	**San Giovanni R**	**1.19**	**172**	Pn	**Pn**	**22 15 48.9**	**-0.4**
SGRT	**San Giovanni R**	**1.19**	**172**	Pn	**Pn**	**22 15 48.9**	**-0.4**
MSAG	**Monte S. Angel**	**1.25**	**166**	Pn	**Pn**	**22 15 49.5**	**-0.7**
MSAG	**Monte S. Angel**	**1.25**	**166**	Pn	**Pn**	**22 15 49.5**	**-0.7**
CIGN	**Sant'Elia a Pi**	**1.35**	**200**	Pn	**Pg**	**22 15 52.3**	**-0.1**
	48nm,0.7s						
CIGN	**Sant'Elia a Pi**	**1.35**	**200**	Pn	**Pg**	**22 15 52.3**	**-0.1**
	48nm,0.7s						
TRIV	**Trivento**	**1.36**	**212**	Pn	**Pg**	**22 15 53.2**	**+0.6**
	66nm,0.5s						
TRIV	**Trivento**	**1.36**	**212**	Pn	**Pg**	**22 15 53.2**	**+0.6**
	66nm,0.5s						
TERO	**Teramo**	**1.44**	**258**	Pn	**Pg**	**22 15 54.1**	**+0.1**
	24nm,0.4s						
TERO	**Teramo**	**1.44**	**258**	Pn	**Pg**	**22 15 54.1**	**+0.1**
	24nm,0.4s						
GATE	**Gambatesa**	**1.48**	**198**	Pn	**Pb**	**22 15 54.1**	**-0.1**
	50nm,0.7s						
GATE	**Gambatesa**	**1.48**	**198**	Pn	**Pb**	**22 15 54.1**	**-0.1**
	50nm,0.7s						
INTR	**Introdacqua**	**1.50**	**233**	Pn	**Pg**	**22 15 54.9**	**-0.3**
	83nm,0.8s						
INTR	**Introdacqua**	**1.50**	**233**	Pn	**Pg**	**22 15 54.9**	**-0.3**
	83nm,0.8s						
BSSO	**Busso**	**1.54**	**207**	Pn	**Pg**	**22 15 56.3**	**+0.3**
	41nm,0.5s						
BSSO	**Busso**	**1.54**	**207**	Pn	**Pg**	**22 15 56.3**	**+0.3**
	41nm,0.5s						
FAGN	**Fagnano**	**1.57**	**246**	Pn	**Pb**	**22 15 55.2**	**-0.5**
	72nm,0.5s						
FAGN	**Fagnano**	**1.57**	**246**	Pn	**Pb**	**22 15 55.2**	**-0.5**
	72nm,0.5s						
MIDA	**Miranda**	**1.59**	**216**	Pn	**Pb**	**22 15 55.4**	**-0.6**
	53nm,0.7s						
MIDA	**Miranda**	**1.59**	**216**	Pn	**Pb**	**22 15 55.4**	**-0.6**
	53nm,0.7s						
CAMP	**Campotosto**	**1.60**	**257**	Pn	**Pg**	**22 15 56.6**	**-0.5**
	13nm,0.6s						
CAMP	**Campotosto**	**1.60**	**257**	Pn	**Pg**	**22 15 56.6**	**-0.5**

	62nm,0.9s								
SGTA	**Sant Agata di**	**1.79**	**184**	Pn		**Pn**	**22 15 57.9**	**+0.3**
	48nm,0.6s								
SGTA	**Sant Agata di**	**1.79**	**184**	Pn		**Pn**	**22 15 57.9**	**+0.3**
	48nm,0.6s								
POFI	**Posta Fibreno**	**1.80**	**228**	Pn		**Pb**	**22 15 59.0**	**-0.6**
POFI	**Posta Fibreno**	**1.80**	**228**	Pn		**Pb**	**22 15 59.0**	**-0.6**
TREB	**Trebinje**	**2.10**	**95**	*e*Pn		**Pn**	**22 16 00.4**	**-1.4**
TREB				*e*Sn		**Sn**	**22 16 27.8**	**-0.2**
TREB	**Trebinje**	**2.10**	**95**	*e*Pn		**Pn**	**22 16 00.4**	**-1.4**
TREB				*e*Sn		**Sn**	**22 16 27.8**	**-0.2**
BLY	**Banja Luka**	**2.19**	**33**	Pn		**Pn**	**22 16 02.4**	**-0.5**
BLY	**Banja Luka**	**2.19**	**33**	*e*Pn		**Pn**	**22 16 04.1**	**+1.2**
BLY				*e*Sn		**Sb**	**22 16 34.3**	**+1.0**
BLY	**Banja Luka**	**2.19**	**33**	Pn		**Pn**	**22 16 02.4**	**-0.5**
BRY	**Bratogost**	**2.23**	**90**	*e*Pn		**Pn**	**22 16 02.7**	**-0.9**
HCY	**Herceg Novi**	**2.25**	**101**	*e*Pn		**Pn**	**22 16 02.4**	**-1.4**
UPM	**Unac-Piva**	**2.50**	**83**	*e*Pn		**Pn**	**22 16 07.7**	**+0.2**
BOJS	**Bojanci**	**2.58**	**356**	*i* Pn		**Pn**	**22 16 08.4**	**0.0**
BOJS				*i* Sn		**Sb**	**22 16 43.8**	**-0.9**
BOJS	**Bojanci**	**2.58**	**356**	*i* Pn		**Pn**	**22 16 08.4**	**0.0**
BOJS				*i* Sn		**Sb**	**22 16 43.8**	**-0.9**
TAR1	**Taranto**	**2.74**	**150**	*e*Pn		**Pn**	**22 16 09.7**	**-0.9**
HAPS	**Han Pijesak,BI**	**2.76**	**64**	*e*Pn		**Pn**	**22 16 08.7**	**-2.2**
PDG	**Podgorica**	**2.81**	**99**	*e*Pn		**Pn**	**22 16 11.5**	**+0.1**
PDG				*e*Sn		**Sn**	**22 16 46.1**	**+0.8**
PDG	**Podgorica**	**2.81**	**99**	*e*Pn		**Pn**	**22 16 11.5**	**+0.1**
PDG				*e*Sn		**Sn**	**22 16 46.1**	**+0.8**
DRME	**Dracevica, Mon**	**2.81**	**104**	*e*Pn		**Pn**	**22 16 10.2**	**-1.4**
CRES	**Cresnjev**	**2.90**	**359**	*e*Pn		**Pn**	**22 16 12.1**	**-0.6**
VISS	**Visnje**	**2.92**	**351**	*i* Pn		**Pn**	**22 16 13.0**	**0.0**
VISS				*i* Sn		**Sn**	**22 16 49.2**	**+1.1**
VISS	**Visnje**	**2.92**	**351**	*i* Pn		**Pn**	**22 16 13.0**	**0.0**
VISS				*i* Sn		**Sn**	**22 16 49.2**	**+1.1**
CEY	**Cerknica**	**2.92**	**345**	*e*Pn		**Pn**	**22 16 12.6**	**-0.4**
BBLS	**Lazići**	**2.99**	**70**	*e*Pn		**Pn**	**22 16 15.0**	**+1.0**
BBLS				*e*Sn		**Sn**	**22 16 52.0**	**+2.0**
BBLS	**Lazići**	**2.99**	**70**	*e*Pn		**Pn**	**22 16 15.0**	**+1.0**
BBLS				*e*Sn		**Sn**	**22 16 52.0**	**+2.0**
JAVS	**Javornik**	**3.14**	**341**	*i* Pn		**Pn**	**22 16 16.0**	**-0.2**
JAVS				*i* Sn		**Sn**	**22 16 55.7**	**+1.9**
JAVS	**Javornik**	**3.14**	**341**	*i* Pn		**Pn**	**22 16 16.0**	**-0.2**
JAVS				*i* Sn		**Sn**	**22 16 55.7**	**+1.9**
SJES	**Sjenica**	**3.29**	**83**	*e*Pn		**Pn**	**22 16 10.0**	**+0.8**
SJES				*e*Sn		**Sn**	**22 16 58.8**	**+1.4**
TEKS	**Tekeris**	**3.33**	**60**	*e*Pn		**Pn**	**22 16 19.4**	**+0.7**
TEKS	**Tekeris**	**3.33**	**60**	*e*Pn		**Pn**	**22 16 19.4**	**+0.7**
IVAS	**Ivanjica**	**3.45**	**78**	*e*Pn		**Pn**	**22 16 21.1**	**+0.7**
IVAS	**Ivanjica**	**3.45**	**78**	*e*Pn		**Pn**	**22 16 21.1**	**+0.7**
DIVS	**Divibare**	**3.46**	**69**	*e*Pn		**Pn**	**22 16 21.5**	**+0.9**
DIVS				*e*Sn		**Sn**	**22 17 03.3**	**+1.6**
DIVS	**Divibare**	**3.46**	**69**	*e*Pn		**Pn**	**22 16 21.5**	**+0.9**
DIVS				*e*Sn		**Sn**	**22 17 03.3**	**+1.6**
OBKA	**Obir**	**3.65**	**349**	*i* Pn		**Pn**	**22 16 22.6**	**-0.5**
OBKA				*i* Sn		**Sn**	**22 17 06.3**	**0.0**
OBKA	**Obir**	**3.65**	**349**	Pn		**Pn**	**22 16 22.6**	**-0.5**
OBKA				Sn		**Sn**	**22 17 06.3**	**0.0**
PERS	**Pernice**	**3.72**	**356**	*i* Pn		**Pn**	**22 16 24.0**	**0.0**
PERS	**Pernice**	**3.72**	**356**	*i* Pn		**Pn**	**22 16 24.0**	**0.0**
SOKA	**Soboth**	**3.77**	**355**	*i* Pn		**Pn**	**22 16 24.1**	**-0.6**
	0.5nm,0.5s								
SOKA	**Soboth**	**3.77**	**355**	Pn		**Pn**	**22 16 24.1**	**-0.6**
	0.5nm,0.5s								
TRUS	**Trudelj**	**3.79**	**68**	*e*Pn		**Pn**	**22 16 25.3**	**+0.4**
TRUS	**Trudelj**	**3.79**	**68**	*e*Pn		**Pn**	**22 16 25.3**	**+0.4**
GRUS	**Gruza**	**3.91**	**74**	*e*Pn		**Pn**	**22 16 27.7**	**+1.0**
GRUS	**Gruza**	**3.91**	**74**	*e*Pn		**Pn**	**22 16 27.7**	**+1.0**
ARSA	**Arzberg**	**4.32**	**0**	*i* Pn		**Pn**	**22 16 31.0**	**-1.3**
	0.5nm,0.5s								
ARSA				*i* Sn		**Sn**	**22 17 23.7**	**+0.9**
ARSA	**Arzberg**	**4.32**	**0**	Pn		**Pn**	**22 16 31.0**	**-1.3**
	0.5nm,0.5s								
ARSA				Sn		**Sn**	**22 17 23.7**	**+0.9**
ABTA	**Abfaltersbach**	**4.37**	**332**	*i* Pn		**Pn**	**22 16 33.2**	**+0.1**
	1.0nm,0.4s								
ABTA	**Abfaltersbach**	**4.37**	**332**	Pn		**Pn**	**22 16 33.2**	**+0.1**
	1.0nm,0.4s								
KBA	**Koelnbreinsper**	**4.42**	**340**	*i* Pn		**Pn**	**22 16 34.3**	**+0.4**
	1.3nm,0.5s								
KBA	**Koelnbreinsper**	**4.42**	**340**	Pn		**Pn**	**22 16 34.3**	**+0.4**
	1.3nm,0.5s								
BARS	**Barje**	**4.63**	**89**	*e*Pn		**Pn**	**22 16 36.6**	**0.0**
BARS	**Barje**	**4.63**	**89**	*e*Pn		**Pn**	**22 16 36.6**	**0.0**
MOA	**Molln**	**5.00**	**350**	*i* Pn		**Pn**	**22 16 41.8**	**+0.2**
	1.4nm,0.5s								
MOA				*i* Sn		**Sn**	**22 17 39.1**	**-0.4**
	1.8nm,0.5s								
MOA	**Molln**	**5.00**	**350**	Pn		**Pn**	**22 16 41.8**	**+0.2**
	1.4nm,0.5s								
MOA				Sn		**Sn**	**22 17 39.1**	**-0.4**
	1.8nm,0.5s								
KHC	**Kasperske Hory**	**6.35**	**348**	*e*PN		**Pn**	**22 17 00.4**	**+0.2**
KHC				*ex*		x	22 17 08.7	
KHC				*e*SN		**Sn**	**22 18 10.6**	**-2.1**
KHC				*ex*		x	22 18 24.1	

*MOS **21** 22:18:43.4±2.2,48°.90N×156°.57E,h6km,mb4.2/1,Error ellipse: s-maj=83.6km s-min=10.5km az=81.7*

KRSC 21 22:18:43.5±2.6,48°.90N×156°.57E,h6km±5km,ML4.1,
East of Kuril Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SKR	**Severo-Kuril's**	**1.81**	**351**	*e*P	Pn	22 19 13.9	-1.2
SKR				*e*S	Sn	22 19 36.0	-2.3
SKR	**Severo-Kuril's**	**1.81**	**351**	*e*PN	Pn	22 19 12.9	-2.2
SKR				*e*S	Sn	22 19 35.7	-2.6
SKR				pmax	pmax		
	comp=N,30nm,0.4s						
SKR				pmax	pmax		
	comp=Z,80nm,0.4s						
SKR				smax	smax		
	comp=E,200nm,0.4s						
SKR				smax	smax		
	comp=N,260nm,0.2s						
ASAK	**Asacha**	**3.58**	**13**	*e*P	Pn	22 19 43.4	+3.8
MTVR	**Mutnovka**	**3.73**	**15**	*e*P	Pb	22 19 46.2	-3.5
MTVR				*e*S	Sb	22 20 30.9	-4.3
RUS	**Russkaya**	**3.74**	**19**	*e*P	Pn	22 19 44.5	+2.8
RUS				*e*S	Sn	22 20 30.0	+4.0
RUS	**Russkaya**	**3.74**	**19**	PN	Pn	22 19 44.5	+2.8
RUS				S	Sn	22 20 30.0	+4.0
KRMR	**Karymshinskiy**	**4.05**	**14**	*e*P	Pb	22 19 50.7	-4.5
KRMR				*e*S	Sb	22 20 40.3	-4.1
KRMR	**Karymshinskiy**	**4.05**	**14**	PN	Pb	22 19 50.7	-4.5
KRMR				S	Sb	22 20 40.3	-4.1
DALK	**Dalny**	**4.36**	**18**	*e*P	Pn	22 19 53.9	+3.8
DALK				*e*S	Sn	22 20 47.1	+6.0
UGLR	**Uglovaya**	**4.54**	**17**	*e*P	Pn	22 19 56.9	+4.2
AVH	**Avacha**	**4.58**	**17**	*e*P	Pn	22 19 57.3	+4.1
AVH				*e*S	Sb	22 20 53.6	-5.9
AVH	**Avacha**	**4.58**	**17**	PN	Pn	22 19 57.3	+4.1
AVH				S	Sb	22 20 53.6	-5.9
SMAR	**Somma**	**4.59**	**17**	*e*P	Pn	22 19 58.3	+4.8
SMAR	**Somma**	**4.59**	**17**	PN	Pn	22 19 58.3	+4.8
KRER	**Koryakskii**	**4.62**	**16**	*e*P	Pn	22 19 58.1	+4.2
SDLR	**Sedlovina**	**4.62**	**18**	*e*P	Pn	22 19 57.1	+3.3
SDLR	**Sedlovina**	**4.62**	**18**	PN	Pn	22 19 57.1	+3.3
NLC	**Nalytchevo**	**4.62**	**21**	*e*S	Sn	22 20 51.4	+3.8
KRX	**Arik**	**4.65**	**16**	*e*P	Pn	22 19 58.8	+4.5
KRX				*e*S	Sn	22 20 54.0	+5.4
GNL	**Ganaly**	**4.88**	**10**	*e*P	Pn	22 20 00.3	+2.9
GNL	**Ganaly**	**4.88**	**10**	PN	Pn	22 20 00.3	+2.9
KBTR	**Krutoberegovo**	**8.24**	**25**	*e*P	Pn	22 20 47.1	+3.6
KBTR	**Krutoberegovo**	**8.24**	**25**	PN	Pn	22 20 47.1	+3.6

*DDA **21** 22:23:16.1,36°.08N×35°.69E,h7km,Md3.0*
*NSSC **21** 22:23:17.3±0.6,36°.17N×35°.74E,h3km±3km,ML2.2*
*ISCJB **21** 22:23:18.1±0.5,36°.15N±0°.02×35°.77E±0°.02,h13km±3km, Error ellipse: s-maj=3.7km s-min=2.8km az=43.4*
*CSEM **21** 22:23:18.0±0.1,36°.12N×35°.78E,h15km,MD3.0, Error ellipse: s-maj=3.3km s-min=2.4km az=46.0*
*ISK **21** 22:23:18.2,36°.16N×35°.78E,h18km,MD3.0*

ISC 21 22:23:17.5±0.9,36°.15N±0°.02×35°.77E±0°.02,h15km±8km,
n51,σ0°60/97,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
YAYL	**Yayladag**	**0.30**	**112**	*i* P	**Pg**	**22 23 23.3**	**-0.5**
YAYL				*i* S	**Sb**	**22 23 28.8**	**-0.5**
YAYL	**Yayladag**	**0.30**	**112**	P	**Pg**	**22 23 23.3**	**-0.5**
YAYL				S	**Sb**	**22 23 28.8**	**-0.5**
ARNB	**Al Arnab**	**0.33**	**150**	*e*P	**Pg**	**22 23 24.5**	**+0.2**
ARNB				*e*S	**Sb**	**22 23 30.1**	**-0.1**
ARNB				AML	AML	22 23 32.3	
	comp=E,65nm,0.5s						
ARNB				AML	AML	22 23 32.6	
	comp=N,135nm,0.3s						
ARNB	**Al Arnab**	**0.33**	**150**	*e*P	**Pg**	**22 23 24.5**	**+0.2**
ARNB				*e*S	**Sb**	**22 23 30.1**	**-0.1**
	comp=N,135nm,0.3s						
TAHT	**Tahtakopru-Hat**	**0.41**	**56**	*e*PG	**Pb**	**22 23 27.2**	**+0.8**
TAHT				*e*SG	**Sb**	**22 23 32.3**	**-0.2**
TAHT	**Tahtakopru-Hat**	**0.41**	**56**	*e*Pg	**Pb**	**22 23 27.2**	**+0.8**
TAHT				*e*Sg	**Sb**	**22 23 32.3**	**-0.2**
KRTS	**Karatas**	**0.53**	**324**	*e*PG	**Pb**	**22 23 29.1**	**+0.7**
KRTS				*e*SG	**Sb**	**22 23 37.2**	**+1.2**
KRTS	**Karatas**	**0.53**	**324**	*e*Pg	**Pb**	**22 23 29.2**	**+0.7**
KRTS				*e*Sg	**Sb**	**22 23 37.2**	**+1.2**
BTCH	**Batrach**	**0.57**	**101**	*e*P	**Pb**	**22 23 29.3**	**+0.1**
BTCH				*e*S	**Sb**	**22 23 37.6**	**+0.4**
BTCH				AML	AML	22 23 39.4	
	comp=E,199nm,0.2s						
BTCH				AML	AML	22 23 39.8	
	comp=N,300nm,0.3s						
BTCH	**Batrach**	**0.57**	**101**	*e*P	**Pb**	**22 23 29.3**	**+0.1**
BTCH				*e*S	**Sb**	**22 23 37.6**	**+0.4**
	comp=N,300nm,0.3s						
SLNF	**Slenfeh**	**0.66**	**146**	*e*P	**Pg**	**22 23 30.6**	**0.0**
SLNF				*e*S	**Sb**	**22 23 40.3**	**+0.4**
SLNF				AML	AML	22 23 46.5	
	comp=N,181nm,0.3s						
SLNF				AML	AML	22 23 46.6	
	comp=E,268nm,0.4s						
SLNF	**Slenfeh**	**0.66**	**146**	*e*P	**Pg**	**22 23 30.5**	**0.0**
SLNF				*e*S	**Sb**	**22 23 40.3**	**+0.4**
	comp=E,268nm,0.4s						
YURE	**YUREGIR**	**0.69**	**351**	*i* P	**Pg**	**22 23 30.3**	**-0.7**
YURE				*i* S	**Sn**	**22 23 42.3**	**-0.9**
YURE	**YUREGIR**	**0.69**	**351**	P	**Pg**	**22 23 30.3**	**-0.7**
YURE				S	**Sn**	**22 23 42.3**	**-0.9**
WRDH	**Warideh**	**0.82**	**140**	*e*P	**Pb**	**22 23 33.8**	**+0.3**
WRDH	**Warideh**	**0.82**	**140**	*e*P	**Pb**	**22 23 33.8**	**+0.3**
CEYT	**Ceyhan**	**0.86**	**359**	*e*PG	**Pn**	**22 23 35.6**	**+0.5**
CEYT				*e*SG	**Sn**	**22 23 47.2**	**-0.1**
CEYT	**Ceyhan**	**0.86**	**359**	*e*Pg	**Pn**	**22 23 35.6**	**+0.5**
CEYT				*e*Sg	**Sn**	**22 23 47.3**	**-0.1**
DRWC	**Darouich**	**0.87**	**57**	*e*P	**Pb**	**22 23 34.4**	**+0.1**
DRWC				*e*S	**Sb**	**22 23 46.2**	**+0.5**
DRWC				AML	AML	22 23 48.8	
	comp=N,62nm,0.3s						
DRWC				AML	AML	22 23 49.0	
	comp=E,57nm,0.5s						
DRWC	**Darouich**	**0.87**	**57**	*e*P	**Pb**	**22 23 34.4**	**+0.1**
DRWC				*e*S	**Sb**	**22 23 46.2**	**+0.5**
	comp=E,57nm,0.5s						
DED	**Mersin**	**1.13**	**317**	*i* P	**Pb**	**22 23 37.6**	**-1.1**
DED				*i* S	**Sb**	**22 23 53.5**	**+0.3**
BIDA	**Albida**	**1.22**	**158**	*e*P	**Pn**	**22 23 40.0**	**0.0**
BIDA				*e*S	**Sg**	**22 23 56.9**	**0.0**
BIDA				AML	AML	22 23 59.2	
	comp=E,187nm,0.3s						
BIDA				AML	AML	22 24 01.1	
	comp=N,100nm,0.3s						
BIDA	**Albida**	**1.22**	**158**	*e*P	**Pn**	**22 23 40.0**	**0.0**
BIDA				*e*S	**Sg**	**22 23 56.8**	**0.0**
	comp=N,100nm,0.3s						
KUZU	**Kuzuini**	**1.23**	**59**	*i* P	**Pb**	**22 23 40.4**	**0.0**
KUZU				*i* S	**Sg**	**22 23 57.0**	**-0.2**
KUZU	**Kuzuini**	**1.23**	**59**	P	**Pb**	**22 23 40.4**	**0.0**
KUZU				S	**Sg**	**22 23 57.0**	**-0.2**
MERS	**Mersin**	**1.23**	**306**	*e*PN	**Pb**	**22 23 40.5**	**0.0**
MERS				*e*SN	**Sg**	**22 23 57.9**	**+0.5**
MERS	**Mersin**	**1.23**	**306**	*e*Pn	**Pb**	**22 23 40.6**	**0.0**
MERS				*e*Sn	**Sg**	**22 23 57.9**	**+0.5**
KARA	**Karaisali**	**1.25**	**333**	*e*PN	**Pb**	**22 23 40.9**	**+0.1**
KARA				*e*SN	**Sg**	**22 23 58.8**	**+0.8**
KARA	**Karaisali**	**1.25**	**333**	*e*Pn	**Pb**	**22 23 40.9**	**+0.1**
KARA				*e*Sn	**Sg**	**22 23 58.8**	**+0.8**
KAMA	**Osmaniye**	**1.27**	**35**	*i* P	**Pn**	**22 23 40.7**	**-0.1**
KAMA				*i* S	**Sb**	**22 23 56.3**	**-1.0**
KOZT	**Kozan**	**1.33**	**2**	*e*PN	**Pn**	**22 23 41.8**	**+0.2**
KOZT				*e*SN	**Sn**	**22 23 59.7**	**+0.6**
KOZT	**Kozan**	**1.33**	**2**	*e*Pn	**Pn**	**22 23 41.8**	**+0.2**
KOZT				*e*Sn	**Sn**	**22 23 59.7**	**+0.6**
KIZK	**Mersin**	**1.35**	**285**	*i* P	**Pn**	**22 23 41.9**	**+0.1**
KIZK				*i* S	**Sn**	**22 23 59.0**	**-0.5**
KIZK	**Mersin**	**1.35**	**285**	P	**Pn**	**22 23 41.9**	**+0.1**
KIZK				S	**Sn**	**22 23 59.0**	**-0.5**
GULE	**Gulek**	**1.39**	**325**	*i* P	**Pg**	**22 23 44.1**	**-0.1**
GULE				*i* S	**Sn**	**22 24 00.4**	**-0.2**
GULE	**Gulek**	**1.39**	**325**	P	**Pg**	**22 23 44.1**	**-0.1**
GULE				S	**Sn**	**22 24 00.4**	**-0.2**
ANDN	**Andirin**	**1.50**	**18**	*i* P	**Pg**	**22 23 45.8**	**-0.7**
ANDN				*i* S	**Sb**	**22 24 04.0**	**-0.1**
ANDN	**Andirin**	**1.50**	**18**	P	**Pg**	**22 23 45.8**	**-0.7**
ANDN				S	**Sb**	**22 24 04.0**	**-0.1**
HCB	**Kahramanmara¯**	**1.51**	**37**	*i* P	**Pb**	**22 23 45.5**	**+0.4**
HCB				*i* S	**Sn**	**22 24 02.6**	**-0.8**
GAZ	**Gaziantep**	**1.55**	**48**	*e*PN	**Pb**	**22 23 45.4**	**-0.5**
GAZ				*e*SN	**Sb**	**22 24 05.5**	**+0.2**
GAZ	**Gaziantep**	**1.55**	**48**	*e*Pn	**Pb**	**22 23 45.4**	**-0.5**
GAZ				*e*Sn	**Sb**	**22 24 05.5**	**+0.2**
KMRS	**Kahramanmaras**	**1.63**	**33**	*e*PN	**Pb**	**22 23 46.9**	**-0.4**
KMRS				*e*SN	**Sb**	**22 24 07.7**	**-0.1**
KMRS	**Kahramanmaras**	**1.63**	**33**	*e*Pn	**Pb**	**22 23 46.9**	**-0.4**
KMRS				*e*Sn	**Sb**	**22 24 07.7**	**-0.1**
IKL	**Isikli**	**1.69**	**274**	*e*PN	**Pb**	**22 23 48.0**	**-0.2**
IKL	**Isikli**	**1.69**	**274**	*e*Pn	**Pb**	**22 23 48.0**	**-0.2**
KERG	**Konya-Eregli**	**1.83**	**314**	*i* P	**Pn**	**22 23 49.0**	**+0.5**
KERG				*i* S	**Sb**	**22 24 13.6**	**+0.1**
KERG	**Konya-Eregli**	**1.83**	**314**	P	**Pn**	**22 23 49.0**	**+0.5**
KERG				S	**Sb**	**22 24 13.6**	**+0.1**
GZT	**Gaziantep**	**1.88**	**50**	*i* P	**Pg**	**22 23 53.5**	**-0.1**
GZT				*i* S	**Sg**	**22 24 17.7**	**-0.4**
ERMK	**Ermenek**	**2.36**	**283**	*i* P	**Pb**	**22 23 58.0**	**-1.8**
ERMK				*i* S	**Sb**	**22 24 30.2**	**+1.5**
ERMK	**Ermenek**	**2.36**	**283**	P	**Pb**	**22 23 58.0**	**-1.8**
SURC	**SANLIURFA_SURC**	**2.41**	**71**	*i* P	**Pb**	**22 24 01.4**	**+0.9**
SURC				*i* S	**Sb**	**22 24 32.1**	**+2.1**

*NIED **21** 22:24:00,37°.20N×143°.50E,h5km,Mw3.6 Best double couple: M₀2.58000×10¹⁴ NP1:φs28.00000°,δ33.00000°, λ-109.00000°. NP2:φs231.00000°,δ59.00000°, λ-78.00000°.*
*IDC **21** 22:24:29.5±1.3,37°.01N×143°.89E,h0km,mb3.7/7, mb1 3.8/10,mb1mx3.5/49,mbtmp3.7/10,ML3.5/3, Error ellipse: s-maj=31.5km s-min=24.4km az=111.0*
*ISCJB **21** 22:24:34.0±1.0,37°.20N±0°.09×143°.57E±0°.07,h33km, mb3.6/7,Error ellipse: s-maj=12.5km s-min=7.4km az=169.1*
*JMA **21** 22:24:34.2±0.2,37°.23N×143°.50E,h25km,MS3.7*

ISC 21 22:24:35.2±1.1,37°.25N±0°.08×143°.65E±0°.08,h35km,n17,
σ1°58/21,mb3.5/7,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**2.18**	**304**	P	**Pn**	**22 25 08.8**	**-0.2**
JIO				S	**Sn**	**22 25 34.2**	**-0.6**
ONAJ	**Iwakimizuishiy**	**2.28**	**267**	P	**Pn**	**22 25 09.5**	**-0.9**
JMM	**Marumori**	**2.35**	**286**	P	**Pn**	**22 25 11.1**	**-0.2**
JMM				*e*S	**Sn**	**22 25 37.9**	**-1.1**
JMK	**Ichinoseki**	**2.56**	**312**	P	**Pn**	**22 25 14.3**	**+0.1**
JOU	**Okura**	**2.61**	**296**	*e*S	**Sn**	**22 25 45.1**	**-0.4**
MJAR	**Matsushiro Arr**	**4.42**	**262**	Pn	**Pn**	**22 25 39.8**	**0.0**
	2.5nm,0.3s,baz=84,slow=15,SNR=19						
MJAR				Sn	**Sn**	**22 26 29.4**	**-0.6**
	0.4nm,0.3s,baz=75,slow=26,SNR=3.7						
MAT	**Matsushiro**	**4.42**	**262**	P	**Pn**	**22 25 40.6**	**+0.8**
MAT				S	**Sn**	**22 26 27.2**	**-2.8**
ASAJ	**Asahikawa**	**6.91**	**354**	Pn	**Pn**	**22 26 13.5**	**-0.4**
	1.5nm,0.3s,baz=9.7,slow=5.2,SNR=5.9						
ASAJ				Sn	**Sn**	**22 27 26.8**	**-4.4**
	0.4nm,0.3s,baz=17,slow=20,SNR=2.4						
KLR	**Kul'dur**	**14.76**	**328**	Pn	**Pn**	**22 28 01.9**	**+0.6**
	0.1nm,0.3s,baz=136,slow=16,SNR=3.1						
SEY	**Seymchan**	**26.27**	**9**	P	**P**	**22 30 08.8**	**+1.9**
	0.9nm,0.3s,baz=200,slow=12,SNR=5.2						
SONM	**Songino Array**	**29.15**	**303**	P	P	22 30 36.7	+3.6
	0.8nm,0.7s,baz=102,slow=7.4,SNR=6.3						
MKAR	**Makanchi Array**	**45.52**	**302**	P	**P**	**22 32 52.2**	**+1.0**
	0.1nm,0.3s,baz=80,slow=7.6,SNR=4.4						
ILAR	**Eielson Array**	**48.35**	**32**	P	**P**	**22 33 13.6**	**+0.5**
	0.3nm,0.7s,baz=242,slow=7.0,SNR=4.7						
WRA	**Warramunga Arr**	**57.56**	**190**	P	**P**	**22 34 19.1**	**-2.3**
	0.2nm,0.5s,baz=8.3,slow=7.1,SNR=4.7						
FINES	**FINESS Array B**	**69.44**	**333**	P	**P**	**22 35 40.7**	**+1.2**
	1.4nm,0.7s,baz=32,slow=7.5,SNR=5.2						
NB2	**NORSAR Subarra**	**74.66**	**338**	P	**P**	**22 36 11.4**	**+0.6**
	comp=Z,1.0nm,0.7s,baz=40,slow=6.2						
NOA	**NORSAR Array B**	**74.66**	**338**	P	**P**	**22 36 11.8**	**+1.1**
	comp=Z,0.9nm,0.8s,baz=39,slow=6.1,SNR=4.1						

*DDA **21** 22:30:01.5,37°.80N×29°.25E,h7km,Md2.6*
*ISK **21** 22:30:02.8,37°.89N×29°.28E,h12km,MD2.7*
*ISCJB **21** 22:30:03.6±0.8,37°.86N±0°.03×29°.25E±0°.06,h11km±4km, Error ellipse: s-maj=8.3km s-min=5.0km az=20.7*
*CSEM **21** 22:30:03.4±0.4,37°.88N×29°.23E,h15km,MD2.7, Error ellipse: s-maj=9.6km s-min=5.7km az=114.0*

ISC 21 22:30:03.7±1.0,37°.87N±0°.03×29°.23E±0°.04,h16km±7km,
n17,σ1°20/33,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
UZP	**Denizli**	**0.17**	**344**	*i* P	**Pg**	**22 30 06.9**	**-1.2**
UZP				*i* S	**Sg**	**22 30 10.9**	**-0.1**
DENT	**Denizli**	**0.20**	**234**	*e*PG	**Pg**	**22 30 08.2**	**-0.1**
DENT				*e*SG	**Sg**	**22 30 12.7**	**+1.2**
DENT	**Denizli**	**0.20**	**234**	*e*Pg	**Pg**	**22 30 08.2**	**-0.1**
DENT				*e*Sg	**Sg**	**22 30 12.7**	**+1.2**
KHAL	**Karahalli**	**0.54**	**22**	*i* P	**Pg**	**22 30 13.2**	**-1.3**
KHAL				*i* S	**Sb**	**22 30 23.4**	**+0.9**
KHAL	**Karahalli**	**0.54**	**22**	P	**Pg**	**22 30 13.2**	**-1.3**
KHAL				S	**Sb**	**22 30 23.5**	**+0.9**
KULA	**Kula-Manisa**	**0.79**	**325**	*e*PG	**Pb**	**22 30 18.4**	**-0.7**
KULA				*e*SG	**Sg**	**22 30 30.4**	**+0.9**
KULA	**Kula-Manisa**	**0.79**	**325**	*e*Pg	**Pb**	**22 30 18.4**	**-0.7**
KULA				*e*Sg	**Sg**	**22 30 30.4**	**+0.9**
AYDB	**Zeytinkoy-Aydi**	**1.06**	**275**	*e*PN	**Pb**	**22 30 23.8**	**0.0**
AYDB				*e*SN	**Sg**	**22 30 39.9**	**+1.7**
AYDB	**Zeytinkoy-Aydi**	**1.06**	**275**	*e*Pn	**Pb**	**22 30 23.8**	**0.0**
AYDB				*e*Sn	**Sg**	**22 30 39.9**	**+1.7**
AYDN	**Tasoluk**	**1.09**	**259**	*i* P	**Pb**	**22 30 22.6**	**-1.7**
AYDN				*i* S	**Sb**	**22 30 38.1**	**-0.2**
AYDN	**Tasoluk**	**1.09**	**259**	P	**Pb**	**22 30 22.6**	**-1.7**
AYDN				S	**Sb**	**22 30 38.1**	**-0.2**
GDZ	**Gediz**	**1.23**	**9**	*i* P	**Pn**	**22 30 25.9**	**-0.6**
GDZ				*i* S	**Sg**	**22 30 47.2**	**+3.6**
GDZ	**Gediz**	**1.23**	**9**	P	**Pn**	**22 30 25.9**	**-0.6**
FETY	**Fethiye**	**1.24**	**186**	*e*PN	**Pn**	**22 30 26.7**	**+0.3**
FETY				*e*SN	**Sg**	**22 30 44.5**	**+0.8**
FETY	**Fethiye**	**1.24**	**186**	*e*Pn	**Pn**	**22 30 26.7**	**+0.3**
FETY				*e*Sn	**Sg**	**22 30 44.5**	**+0.8**
DEMI	**Demirci**	**1.24**	**341**	*i* P	**Pb**	**22 30 26.9**	**+0.1**
DEMI				*i* S	**Sg**	**22 30 45.1**	**+1.2**
DEMI	**Demirci**	**1.24**	**341**	P	**Pb**	**

MSVF **Nonsavu** 10.52 327 *e*P Pn 22 33 48.4 -0.2
MSVF **Nonsavu** 10.52 327 *e*Pn Pn 22 33 48.4 -0.2
MXZ **Matakaoa Point** 11.79 203 *e*Pn Pn 22 34 04.0 -1.9
OUZ **Omahuta** 12.26 224 *e*Pn Pn 22 34 12.0 -0.3
BFZ **Birch Farm** 15.30 203 *e*Pn Pn 22 34 53.2 -0.3
176nm,1.9s
RAR **Rarotonga** 15.84 73 *e*P P 22 35 03.4 -0.7
RAR pmax pmax
comp=Z,56nm,1.0s
RAR **Rarotonga** 15.84 73 *e*Pn P 22 35 03.4 -0.7
comp=Z,56nm,1.0s
RPZ **Rata Peaks** 19.90 208 LR LR 22 42 45.4
comp=Z,262nm,20.6s,baz=277,slow=35
PPT2 **Papeete2** 26.09 75 *e*LQ LQ 22 41 48.6
comp=Z,934nm,24.0s
PPT2 *e*LR LR 22 43 02.6
comp=Z,1μm,26.5s
PPT **Papeete** 26.10 75 LR LR 22 46 03.1
comp=Z,285nm,18.1s,baz=217,slow=34
PPT **Papeete** 26.10 75 *e*P P 22 36 50.7 -0.4
PPT **Papeete** 26.10 75 *e*P P 22 36 50.7 -0.4
EIDS **Eidsvold** 29.54 265 *e*P P 22 37 21.9 +0.1
comp=Z,17nm,1.1s
CTA **Charters Tower** 35.15 273 P P 22 38 09.6 -1.4
comp=Z,4.6nm,0.7s,baz=105,slow=13,SNR=7.2
CTAO **Charters Tower** 35.15 273 *e*P P 22 38 10.5 -0.5
CTAO pmax pmax
comp=Z,31nm,1.7s
CTAO **Charters Tower** 35.15 273 *e*P P 22 38 10.5 -0.5
comp=Z,31nm,1.7s
STKA **Stephens Creek** 37.13 252 P P 22 38 26.5 -1.3
comp=Z,2.4nm,0.9s,baz=112,slow=11,SNR=3.2
STKA LR LR 22 53 11.2
comp=Z,441nm,18.0s,baz=65,slow=36
RKT **Rikitea** 37.29 94 *e*LR LR 22 48 17.4
comp=Z,640nm,28.2s
TAOE **Nuku Hiva Isla** 38.33 69 *e*LR LR 22 48 26.5
comp=Z,566nm,28.1s
AS01 **Alice Springs** 45.13 262 *e*P P 22 39 31.3 -2.5
AS31 **Alice Springs** 45.17 262 *e*P P 22 39 32.7 -1.4
comp=Z,2.0nm,1.0s
ASAR **Alice Springs** 45.17 262 P P 22 39 32.0 -2.1
comp=Z,1.7nm,0.6s,baz=94,slow=7.2,SNR=18
ASAR LR LR 22 58 46.5
comp=Z,203nm,18.0s,baz=112,slow=37
ASAR **Alice Springs** 45.17 262 P P 22 39 32.0 -2.1
ASAR pmax pmax
comp=Z,3.0nm,1.0s
ASAR MLR MLR
comp=Z,203nm,18.0s
WB2 **Warramunga Arr** 45.83 268 *e*P P 22 39 37.4 -1.9
comp=Z,10nm,0.7s
WRAB **Tennant Creek** 45.84 268 *ce*P P 22 39 37.0 -2.3
WRAB pmax pmax
comp=Z,20nm,0.7s
WRAB **Tennant Creek** 45.84 268 *e*P P 22 39 38.0 -1.3
comp=Z,8.8nm,0.8s
WRA **Warramunga Arr** 45.84 268 P P 22 39 36.8 -2.6
comp=Z,7.6nm,0.7s,baz=107,slow=7.6,SNR=41
WRA LR LR 22 57 44.7
comp=Z,102nm,19.9s,baz=120,slow=35
KIP **Kipapa** 50.97 22 *ce*P P 22 40 17.1 -1.6
KIP pmax pmax
comp=Z,457nm,1.7s
SBA **Scott Base** 51.79 185 *e*P P 22 40 26.5 +2.3
SBA pmax pmax
comp=Z,37nm,1.4s
SBA **Scott Base** 51.79 185 *e*P P 22 40 26.5 +2.3
comp=Z,37nm,1.4s
VNDA **Vanda** 51.89 186 P P 22 40 25.3 +0.4
comp=Z,3.0nm,1.1s,baz=5.5,slow=9.1,SNR=5.8
VNDA LR LR 23 02 33.2
comp=Z,63nm,18.0s,baz=14,slow=36
VNDA **Vanda** 51.89 186 *e*P P 22 40 26.0 +1.1
VNDA pmax pmax
comp=Z,16nm,1.5s
VNDA **Vanda** 51.89 186 *e*P P 22 40 26.0 +1.1
comp=Z,16nm,1.5s
FITZ **Fitzroy Crossi** 54.21 266 *e*P P 22 40 42.7 -0.3
comp=Z,4.9nm,0.9s
GUMO **Guam** 55.24 312 LR LR 23 02 03.0
comp=Z,114nm,21.7s,baz=136,slow=34
QSPA **South Pole Qui** 63.34 180 *e*P P 22 41 46.2 +0.3
comp=Z,121nm,1.1s
MIR **Mirnyy** 66.15 206 *i* P P 22 42 04.0 +0.1
MIR pmax pmax
comp=Z,4.0nm,1.5s
MJAR **Matsushiro Arr** 76.29 324 LR LR 23 12 02.6
comp=Z,63nm,21.5s,baz=110,slow=32
JNU **Nakatsue** 78.05 317 LR LR 23 11 22.8
comp=Z,128nm,21.2s,baz=122,slow=31
SYO **Syowa Base** 81.04 192 *e*P P 22 43 30.8 -0.5
SNAA **Sanae** 81.73 178 *e*P P 22 43 35.1 0.0
SNAA pmax pmax
comp=Z,1μm,1.5s
SNAA **Sanae** 81.73 178 *e*P P 22 43 35.1 0.0
comp=Z,1μm,1.5s
YSS **Yuzh-Sakhalins** 82.27 333 *e*P P 22 43 39.0 +1.1
YSS pmax pmax
comp=Z,29nm,1.7s
EDW2 **Edwards Air Fo** 82.28 45 P P 22 43 39.0 +0.5
baz=230
ISA **Isabella, Lake** 82.49 44 P P 22 43 40.3 +0.9
baz=230
ISA **Isabella, Lake** 82.49 44 *e*P P 22 43 40.4 +0.9
ISA pmax pmax
comp=Z,27nm,1.5s
ISA **Isabella, Lake** 82.49 44 *e*P P 22 43 40.4 +0.9
comp=Z,27nm,1.5s
KSRS **Korea Array** 82.75 318 P P 22 43 41.0 +0.4
comp=Z,1.3nm,0.6s,baz=135,slow=5.3,SNR=5.6
KSRS LR LR 23 14 03.7
comp=Z,30nm,20.8s,baz=132,slow=31
KSRS **Korea Array** 82.75 318 P P 22 43 41.1 +0.4
KSRS pmax pmax
comp=Z,2.0nm,0.7s
KSRS MLR MLR
comp=Z,31nm,20.8s
PETK **Petropavlovsk-** 82.75 344 P P 22 43 40.0 -0.4
comp=Z,2.4nm,0.7s,baz=131,slow=7.7,SNR=3.6
PETK LR LR 23 18 12.1
comp=Z,40nm,19.8s,baz=232,slow=34
PETK **Petropavlovsk-** 82.75 344 P P 22 43 40.0 -0.4
PETK pmax pmax
comp=Z,2.0nm,0.7s
PETK MLR MLR
comp=Z,40nm,19.8s
KSAR **Wonju Array Be** 82.76 318 P P 22 43 41.1 +0.3
KSAR **Wonju Array Ba** 82.76 318 P P 22 43 41.0 +0.3
CMB **Columbia Colle** 82.89 41 *e*P P 22 43 42.3 +0.8
CMB pmax pmax
comp=Z,12nm,1.2s
CMB **Columbia Colle** 82.89 41 *e*P P 22 43 42.3 +0.8
comp=Z,12nm,1.2s
BELC **Belle Mtn. Jos** 83.00 46 P P 22 43 43.3 +1.0
baz=231
AFDM **Forest Hills D** 83.16 40 *e*P P 22 43 44.5 +1.6
comp=Z,15nm,1.5s
CWC **Cottonwood Cre** 83.23 43 P P 22 43 44.6 +1.1
baz=230
ORV **Oroville** 83.27 39 *e*P P 22 43 44.2 +0.8
ORV pmax pmax
comp=Z,19nm,1.5s
ORV **Oroville** 83.27 39 *e*P P 22 43 44.2 +0.8
comp=Z,18nm,1.5s
MPMC **Manual Prospec** 83.35 44 P P 22 43 45.0 +0.9
baz=230
WDC **Whiskeytown Da** 83.39 38 *e*P P 22 43 45.2 +1.2
WDC pmax pmax
comp=Z,24nm,1.4s
WDC **Whiskeytown Da** 83.39 38 *e*P P 22 43 45.2 +1.2
comp=Z,24nm,1.4s
HSIG 83.46 53 *e*P P 22 43 44.9 +0.3
comp=Z,22nm,1.6s
N02D **Trinity Center** 83.57 38 P P 22 43 46.5 +1.5
baz=226
O03D **Paynes Creek** 83.61 39 P P 22 43 45.6 +0.4
baz=227
PLCA **Paso Flores** 83.70 133 LR LR 23 15 45.2
comp=Z,95nm,20.5s,baz=242,slow=32
GMRC **Granite Mounta** 83.71 46 P P 22 43 46.4 +0.5
baz=231
WAKR **Walker** 83.76 41 *e*P P 22 43 47.7 +1.5
M02C **Callahan** 83.78 37 P P 22 43 47.4 +1.3
baz=226
214A **Organ Pipe Nat** 83.88 50 P P 22 43 47.1 +0.4
baz=233

214A **Organ Pipe Nat** 83.88 50 *e*P P 22 43 48.1 +1.4
comp=Z,102nm,1.8s
L02D **Cave Junction,** 83.91 36 P P 22 43 48.1 +1.5
baz=226
GRAC **Grapevine Rang** 84.03 43 P P 22 43 48.5 +1.1
baz=230
YBH **Yreka Blue Hor** 84.09 37 P P 22 43 48.4 +0.8
comp=Z,4.4nm,1.0s,baz=146,slow=3.8,SNR=6.0
YBH **Yreka Blue Hor** 84.09 37 *e*P P 22 43 49.0 +1.3
YBH pmax pmax
comp=Z,23nm,1.6s
YBH **Yreka Blue Hor** 84.09 37 *e*P P 22 43 49.0 +1.3
comp=Z,23nm,1.6s
NV01 **Mina Array Sit** 84.38 42 *e*P P 22 43 49.7 +0.3
NVAR **Mina Array Bea** 84.38 42 P P 22 43 50.0 +0.6
comp=Z,2.8nm,0.8s,baz=222,slow=8.6,SNR=11
NVAR LR LR 23 17 11.4
comp=Z,140nm,18.0s,baz=262,slow=33
NV11 **Mina Array Sit** 84.47 42 *e*P P 22 43 50.8 +1.0
comp=Z,24nm,1.4s
HUMO **Hull Mountain** 84.57 36 *e*P P 22 43 50.7 +0.8
comp=Z,24nm,1.4s
M04C **Macdoel** 84.60 38 P P 22 43 51.5 +1.2
baz=227
TPNV **Topopah Spring** 84.69 44 P P 22 43 51.9 +1.0
baz=231
TPNV **Topopah Spring** 84.69 44 *e*P P 22 43 52.1 +1.2
TPNV pmax pmax
comp=Z,33nm,1.6s
TPNV **Topopah Spring** 84.69 44 *e*P P 22 43 52.1 +1.2
comp=Z,33nm,1.6s
Y14A **Wickenburg** 84.93 48 *e*P P 22 43 53.1 +1.1
comp=Z,114nm,1.8s
W13A **Hualapai Mount** 85.05 47 *e*P P 22 43 54.1 +1.3
USRK **Ussuriysk Ar.** 85.12 325 P P 22 43 52.4 -0.2
comp=Z,2.8nm,0.8s,baz=101,slow=7.5,SNR=6.4
USRK LR LR 23 20 01.1
comp=Z,58nm,18.1s,baz=145,slow=34
NJ2 **Nanjing** 85.24 309 *e*P P 22 43 55.3 +1.8
NJ2 pmax pmax
comp=Z,18nm,0.7s
TUC **Tucson** 85.47 50 P P 22 43 55.7 +0.8
baz=234
TUC **Tucson** 85.47 50 *e*P P 22 43 56.3 +1.5
TUC pmax pmax
comp=Z,36nm,1.6s
TUC **Tucson** 85.47 50 *e*P P 22 43 56.3 +1.5
comp=Z,36nm,1.6s
MOD **Modoc Plateau** 85.53 38 *e*P P 22 43 55.9 +0.9
comp=Z,19nm,1.4s
I04A **Tendick Farm,** 85.68 36 P P 22 43 56.0 +0.5
baz=226
K05A **Summer Lake** 85.76 37 *e*P P 22 43 57.4 +1.2
comp=Z,48nm,1.5s
J05D **Fort Rock, OR** 85.95 37 P P 22 43 58.0 +0.9
baz=227
R11A **Troy Canyon, C** 85.98 43 P P 22 43 57.6 +0.2
baz=231
R11A **Troy Canyon, C** 85.98 43 *e*P P 22 43 58.7 +1.4
comp=Z,10nm,1.6s
319A **Douglas** 85.99 52 *e*P P 22 43 58.9 +1.4
comp=Z,14nm,1.0s
X16A **Lo Mia Camp, P** 86.25 48 *e*P P 22 44 00.4 +1.6
comp=Z,22nm,1.5s
BMN **Battle Mountai** 86.31 41 *e*P P 22 44 00.7 +1.8
BMN pmax pmax
comp=Z,18nm,0.6s
BMN **Battle Mountai** 86.31 41 *e*P P 22 44 00.7 +1.8
comp=Z,18nm,0.6s
ZAIG **Zacatecas** 86.41 62 *e*P P 22 44 00.3 +0.4
comp=Z,22nm,1.8s
H04A **Detroit Lake** 86.41 35 *e*P P 22 43 59.8 +0.7
comp=Z,21nm,1.4s
MDJ **Mudanjiang** 86.64 324 P P 22 44 00.9 +0.7
MDJ pP pP 22 44 10.4 +0.3
MDJ sP sP 22 44 14.3 +0.6
MDJ S S 22 54 35.9 +0.9
MDJ sS sS 22 54 51.5 +0.1
MDJ pmax pmax
comp=Z,15nm,1.6s
MDJ pmax pmax
comp=Z,110nm,3.6s
PSI **Prapat** 86.83 275 *e*P P 22 44 00.9 -1.1
PSI pmax pmax
comp=Z,12nm,1.2s
PSI **Prapat** 86.83 275 *e*P P 22 44 00.9 -1.1
comp=Z,12nm,1.2s
U15A **North Rim** 86.88 46 *e*P P 22 44 05.0 +3.0
comp=Z,9.7nm,0.9s
121A **Cookes Peak, D** 87.69 52 *e*P P 22 44 07.5 +1.7
comp=Z,23nm,1.7s
NKL **Nikolayevsk** 88.02 336 *e*P P 22 44 07.0 +0.4
NKL pmax pmax
comp=Z,46nm,1.5s
MSU **Marysvale** 88.19 45 *e*P P 22 44 09.7 +1.6
MSU **Marysvale** 88.19 45 *e*P P 22 44 09.7 +1.6
CN2 **Changchun** 88.32 322 *e*P P 22 44 11.8 +3.5
KLR **Kul'dur** 88.80 323 P P 22 44 10.7 +0.3
comp=Z,1.4nm,0.6s,baz=75,slow=4.5,SNR=6.9
KLR **Kul'dur** 88.80 329 *i* P P 22 44 09.4 -1.0
B05A **Bryant** 88.93 33 P P 22 44 11.8 +0.8
baz=226
HAWA **Hanford** 88.94 35 *e*P P 22 44 12.8 +1.6
comp=Z,35nm,1.4s
MNTX **Cornudas Mount** 88.94 54 P P 22 44 12.5 +0.9
baz=238
MNTX **Cornudas Mount** 88.94 54 *e*P P 22 44 13.0 +1.4
comp=Z,19nm,1.8s
TX31 **Lajitas Ar. Si** 88.95 56 *e*P P 22 44 12.5 +0.8
TXAR **Lajitas Array** 88.95 56 P P 22 44 12.1 +0.4
comp=Z,3.4nm,1.1s,baz=222,slow=4.9,SNR=18
TXAR LR LR 23 18 32.1
comp=Z,61nm,18.0s,baz=0.0,slow=32
LAZ **Ladron** 89.17 50 *e*P P 22 44 13.8 +1.0
D08A **Wollman Farm,** 89.70 35 *e*P P 22 44 15.9 +1.2
comp=Z,20nm,1.0s
SPU **Mount Spurr** 89.76 11 *e*P P 22 44 14.7 0.0
HLID **Hailey** 89.91 40 P P 22 44 16.9 +0.9
baz=232
HLID **Hailey** 89.91 40 *e*P P 22 44 16.9 +0.9
comp=Z,4.9nm,1.1s
ANMO **Albuquerque** 89.94 50 P P 22 44 17.0 +0.5
baz=237
ANMO **Albuquerque** 89.94 50 *ce*P P 22 44 16.2 -0.2
ANMO pmax pmax
comp=Z,12nm,1.5s
ANMO **Albuquerque** 89.94 50 *e*P P 22 44 16.9 +0.5
comp=Z,17nm,1.5s
MA2 **Magadan** 90.27 344 *e*P P 22 44 15.1 -1.9
B08A **Colville Reser** 90.35 34 *e*P P 22 44 18.1 +0.3
comp=Z,9.3nm,1.1s
C09A **Chrisman Ranch** 90.52 35 *e*P P 22 44 19.3 +0.8
comp=Z,13nm,0.9s
TT01 **Tatalina** 90.76 9 *e*P P 22 44 20.2 +0.9
TTA **Tatalina** 90.79 9 *e*P P 22 44 20.4 +0.9
TTA pmax pmax
comp=Z,11nm,1.4s
TTA **Tatalina** 90.79 9 *e*P P 22 44 20.4 +0.9
comp=Z,11nm,1.4s
ENH **Enshi** 91.01 304 *e*P P 22 44 22.3 +1.0
comp=Z,38nm,1.3s
SCM **Sheep Creek Mo** 91.26 13 *e*P P 22 44 22.5 +0.8
SCM pmax pmax
comp=Z,59nm,1.7s
SCM **Sheep Creek Mo** 91.26 13 *e*P P 22 44 22.5 +0.8
comp=Z,59nm,1.7s
GYA **Guiyang** 91.28 299 P P 22 44 24.0 +1.3
GYA pP sP 22 44 35.3 -0.9
GYA PP PP 22 48 04.3 +3.8
GYA SKS SKSac 22 54 52.0 -1.1
GYA S S 22 55 18.8 -0.8
GYA sS sS 22 55 36.6 +0.4
GYA pmax pmax
comp=Z,20nm,1.0s
GYA pmax pmax
comp=Z,120nm,7.2s
034A **Hebbronville** 91.60 61 P P 22 44 24.7 +0.7
baz=241
REDW **Red Top Meadow** 91.86 41 *e*P P 22 44 26.5 +1.3
comp=Z,18nm,1.4s
FXWY **Fox Creek** 91.92 41 *e*P P 22 44 26.9 +1.4
comp=Z,9.9nm,1.4s
IMW **Indian Meadow** 92.13 41 *e*P P 22 44 27.8 +1.3
comp=Z,2.3nm,0.9s
MOOW **Moose Ponds** 92.15 41 *e*P P 22 44 27.8 +1.3
comp=Z,17nm,1.8s
LOHW **Long Hollow** 92.16 41 *e*P P 22 44 27.2 +0.7
comp=Z,15nm,1.5s
MSO **Missoula** 92.18 37 P P 22 44 27.3 +0.9
baz=232
MSO **Missoula** 92.18 37 *e*P P 22 44 27.6 +1.2
comp=Z,14nm,1.5s
BW06 **Boulder Array** 92.30 43 P P 22 44 27.6 +0.4
baz=235
BW06 **Boulder Array** 92.30 43 *e*P P 22 44 27.8 +0.6
PDAR **Pinedale Array** 92.30 43 P P 22 44 26.9 -0.3
comp=Z,1.3nm,1.0s,baz=204,slow=3.3,SNR=7.3
PDAR LR LR 23 22 51.8
comp=Z,86nm,18.1s,baz=242,slow=34
FLWY **Flagg Ranch** 92.37 41 *e*P P 22 44 28.6 +1.2
comp=Z,24nm,1.5s
DHY **Denali Highway** 92.38 13 *e*P P 22 44 29.0 +2.1
comp=Z,10nm,1.4s
RND **Reindeer** 92.40 12 *e*P P 22 44 27.9 +1.0
RND pmax pmax
comp=Z,9.0nm,1.1s
RND **Reindeer** 92.40 12 *e*P P 22 44 27.9 +1.0
comp=Z,9.2nm,1.1s
YMR **Madison River** 92.56 40 *e*P P 22 44 31.2 +2.9
comp=Z,19nm,1.3s
CHMT **Chamberlain Mo** 92.61 38 *e*P P 22 44 29.3 +0.8
H17A **Grant Village** 92.63 41 *e*P P 22 44 31.2 +2.5
comp=Z,4.4nm,1.1s
NNA **Nana** 92.71 105 LR LR 23 19 44.5
comp=Z,86nm,18.6s,baz=238,slow=31
BOZ **Bozeman (W)** 92.75 39 P P 22 44 29.7 +0.6
baz=234
BOZ **Bozeman (W)** 92.75 39 *e*P P 22 44 30.0 +0.9
BOZ pmax pmax
comp=Z,12nm,1.1s
BOZ **Bozeman (W)** 92.75 39 *e*P P 22 44 30.0 +0.9
comp=Z,12nm,1.1s
SEY **Seymchan** 92.85 346 P P 22 44 28.0 -0.9
comp=Z,1.1nm,0.3s,baz=168,slow=5.6,SNR=6.1
SEY **Seymchan** 92.85 346 *ce*P P 22 44 28.9 0.0
433A **Art** 93.09 57 P P 22 44 30.7 -0.1
baz=241
WRH **Wood River Hil** 93.51 12 *e*P P 22 44 32.0 +0.1
comp=Z,9.0nm,1.1s
ATAH **Atahualpa** 93.59 100 LR LR 23 20 01.8
comp=Z,168nm,18.9s,baz=238,slow=31
CCB **Clear Creek Bu** 93.72 12 *e*P P 22 44 32.9 0.0
comp=Z,3.9nm,0.9s
434A **Burnet** 93.73 57 P P 22 44 33.9 +0.1
baz=241
KMI **Kunming** 93.75 296 P P 22 44 36.0 +1.7
KMI pmax pmax
comp=Z,5.0nm,0.7s
KMI pmax pmax
comp=Z,76nm,5.4s
KMI LR LR
comp=Z,69nm,5.6s
KMI LR LR
comp=Z,69nm,5.3s
KMI LR LR
comp=Z,72nm,5.8s
RLMT **Red Lodge** 93.81 41 P P 22 44 34.8 +0.7
baz=236
CM01 **Chiang Mai Arr** 93.83 289 *e*P P 22 44 35.3 +0.8
CMAR **Chiang Mai Arr** 93.86 289 P P 22 44 35.9 +1.2
comp=Z,1.0nm,0.3s,baz=144,slow=3.2,SNR=9.9
CMAR LR LR 23 27 51.3
comp=Z,23nm,18.2s,baz=184,slow=36
MDM **Murphy Dome** 93.93 11 *e*P P 22 44 33.8 -0.1
comp=Z,5.5nm,1.2s
GCMT **Greycliff** 93.96 40 *e*P P 22 44 36.3 +1.6
ILAR **Eielson Array** 94.00 12 P P 22 44 34.1 -0.1
comp=Z,1.2nm,0.7s,baz=221,slow=5.2,SNR=12
ILB **Eielson Array** 94.00 12 *e*P P 22 44 34.6 +0.4
IL1 **Eielson Array** 94.00 12 *e*P P 22 44 34.2 0.0
334A **Lometa** 94.01 57 P P 22 44 34.7 -0.4
baz=241
CHTO **Chiang Mai** 94.02 289 *e*P P 22 44 37.1 +1.7
CHTO pmax pmax
comp=Z,21nm,1.6s
CHTO **Chiang Mai** 94.02 289 *e*P P 22 44 37.1 +1.7
comp=Z,21nm,1.6s
HHC **Hu-ho-hao-te** 94.97 313 S SKSac 22 55 08.8 -4.0
HHC pmax pmax
comp=Z,20nm,0.8s
HHC pmax pmax
comp=Z,78nm,6.1s
HHC LR LR
comp=N,140nm,14.7s
HHC LR LR
comp=E,530nm,14.8s
HHC LR LR
comp=Z,52nm,14.1s
BILL **Bilibino** 95.42 353 *i* P P 22 44 40.2 -0.4
BILL pmax pmax
comp=Z,4.0nm,1.4s
BILL MLR MLR
comp=Z,86nm,19.0s
CD2 **Chengdu** 95.64 302 P P 22 44 42.4 -0.2
CD2 pmax pmax
comp=Z,1.0nm,0.5s
RSSD **Black Hills** 96.40 44 P P 22 44 45.8 -0.2
baz=239
RSSD **Black Hills** 96.40 44 *e*P P 22 44 46.7 +0.7
RSSD pmax pmax
comp=Z,16nm,1.5s
RSSD **Black Hills** 96.40 44 *e*P P 22 44 46.7 +0.7
comp=Z,16nm,1.5s
I25A **Rochford** 96.54 44 P P 22 44 46.9 +0.3
baz=239
J26A **Sides Ranch, S** 96.59 45 P P 22 44 46.8 +0.2
baz=239
LZH **Lanzhou** 97.95 306 *e*P Pdif 22 44 54.0 +0.8
LZH pP sP 22 45 05.1 -1.6
LZH sP pP 22 45 09.0 +5.9
LZH PP PP 22 48 56.5 +4.1
LZH pmax pmax
comp=Z,18nm,1.5s
LZH pmax pmax
comp=Z,96nm,5.3s
LZH LR LR
comp=Z,200nm,17.0s
LZH LR LR
comp=Z,220nm,16.9s
LZH LR LR
comp=Z,250nm,19.7s
LPAZ **La Paz** 98.00 113 LR LR 23 23 49.3
comp=Z,48nm,18.1s,baz=188,slow=32
WMQ **Urumqi** 112.31 309 *e*PKP PKiKP 22 49 52.3 -0.3
ZALV **Zalesovo Beam** 116.44 319 PKP PKPdf 22 49 58.9 -1.1
comp=Z,0.9nm,0.6s,baz=153,slow=1.0,SNR=6.9
ZALV **Zalesovo Beam** 116.44 319 PKIKP PKPdf 22 49 59.0 -1.1
MK01 **Makanchi Array** 116.71 311 *e*PKPdf PKPdf 22 49 59.8 -1.1
MK31 **Makanchi Array** 116.72 311 *e*PKIKP PKPdf 22 50 00.2 -0.7
MK31 **Makanchi Array** 116.72 311 *e*PKPdf PKPdf 22 50 00.2 -0.7
MKAR **Makanchi Array** 116.72 311 PKP PKPdf 22 49 59.5 -1.4
comp=Z,0.8nm,0.6s,baz=79,slow=2.6,SNR=9.3
MKAR **Makanchi Array** 116.72 311 *e*PKPdf PKPdf 22 50 00.2 -0.7
MAKZ **Makanchi** 116.94 311 *e*PKIKP PKPdf 22 50 00.5 -0.8
MAKZ **Makanchi** 116.94 311 *e*PKPdf PKPdf 22 50 00.5 -0.8
KURK **Kurchatov** 119.74 315 *e*PKIKP PKPdf 22 50 05.2 -1.3
KURK **Kurchatov** 119.74 315 *e*PKPdf PKPdf 22 50 05.2 -1.3
KSH **Kashi** 119.83 302 *e*PKP PKPdf 22 50 10.0 +2.8
KSH PKS PKSdf 22 53 45.4 +1.4
KSH SKS SKSdf 22 57 16.8 -0.4
KSH SKKS SKKSac 22 58 29.8 +0.9
KSH AMB AMB
comp=Z,49nm,5.5s
KSH LR LR
comp=Z,96nm,5.5s
KSH LR LR
comp=Z,98nm,6.7s
KSH LR LR
comp=Z,140nm,6.1s
KBL **Kabul** 124.32 295 *e*PKIKP PKPdf 22 50 17.0 +0.8
KBL **Kabul** 124.32 295 *e*PKPdf PKPdf 22 50 17.0 +0.8
KKAR **Karatay Array** 124.44 305 *e*PKIKP PKPdf 22 50 15.5 -0.4
KKAR *e* 22 50 25.5
KKAR **Karatay Array** 124.44 305 *e*PKPdf PKPdf 22 50 15.5 -0.4
KKAR *ep*PKPdf pPKPdf 22 50 25.5 -0.5
VOSK **Vostochnaya** 124.60 317 *e*PKIKP PKPdf 22 50 15.4 -0.4
VOSK **Vostochnaya** 124.60 317 *e*PKPdf PKPdf 22 50 15.4 -0.4
BRVK **Borovoye** 125.02 318 *ci*PKIKP PKPdf 22 50 15.2 -1.4
BRVK pmax pmax
comp=Z,10.0nm,1.7s
BRVK **Borovoye** 125.02 318 *e*PKPdf PKPdf 22 50 16.3 -0.3
ZRNK **Zerenda** 125.79 317 *e*PKIKP PKPdf 22 50 17.6 -0.5
ZRNK **Zerenda** 125.79 317 *e*PKPdf PKPdf 22 50 17.6 -0.5

ARU	**Arti**	**131.31**	**323**	PKIKP	**PKPdf**	**22 50 26.7**	**-1.8**
ARU	**Arti**	**131.31**	**323**	*e*PKPdf	**PKPdf**	**22 50 29.4**	**+0.9**
GEYT	**Alibeck**	**133.49**	**298**	PKP	**PKPdf**	**22 50 33.6**	**+0.4**
	comp=Z,1.3nm,0.6s,baz=84,slow=1.8,SNR=5.2						
ARCES	**ARCESS Array B**	**135.37**	**349**	PKP	**PKPdf**	**22 50 34.3**	**-1.5**
	comp=Z,3.7nm,0.7s,baz=64,slow=2.8,SNR=7.5						
FINES	**FINESS Array B**	**142.25**	**343**	PKhKP	PKPpre	22 50 43.4	
	comp=Z,1.0nm,0.7s,baz=92,slow=5.7,SNR=4.2						
FINES	**FINESS Array B**	**142.25**	**343**	*e*PKIKP	**PKPdf**	**22 50 51.2**	**+2.7**
FINES				pmax	pmax		
	comp=Z,2.0nm,0.7s						
VRH	**Novokhopyorsk**	**142.45**	**321**	*e*PKIKP	**PKPdf**	**22 50 48.0**	**-1.2**
VRH				pmax	pmax		
	comp=Z,4.0nm,0.5s						
OBN	**Obninsk**	**143.06**	**329**	*i* PKIKP	PKPbc	22 50 48.4	+1.4
OBN				pmax	pmax		
	comp=Z,7.0nm,1.1s						
LPSR	**Galich'ya Gora**	**143.30**	**324**	*e*PKHKP	PKPpre	22 50 43.0	
LPSR				pmax	pmax		
	comp=Z,7.0nm,1.7s						
VSR	**Storozhevoye**	**143.87**	**322**	*e*PKHKP	PKPpre	22 50 47.5	
VSR				pmax	pmax		
	comp=Z,9.0nm,1.0s						
KIV	**Kislovodsk**	**144.44**	**309**	*i* PKIKP	**PKPab**	**22 50 49.2**	**-2.2**
KIV				pmax	pmax		
	comp=Z,5.0nm,1.1s						
AKH	**Akhalkalaki**	**144.47**	**305**	⇓*i* P	PKPbc	22 50 52.5	+0.6
NB2	**NORSAR Subarra**	**145.37**	**354**	PKP	**PKPbc**	**22 50 53.6**	**-0.4**
	comp=Z,100nm,1.7s,baz=17,slow=3.8						
NB2	**NORSAR Subarra**	**145.37**	**354**	PKP	**PKPbc**	**22 50 53.6**	**-0.4**
	baz=17,slow=3.8						
NOA	**NORSAR Array B**	**145.37**	**354**	PKPbc	**PKPbc**	**22 50 53.7**	**-0.3**
	comp=Z,11nm,0.9s,baz=8.9,slow=2.5,SNR=32						
IZAR	**Zarasai**	**146.84**	**337**	*e*P	**PKPbc**	**22 50 58.0**	**-0.5**
IZAR				IAmb	IAmb	22 51 00.2	
	comp=Z,11nm,1.1s						
KONO	**Kongsberg**	**146.89**	**355**	*e*PKP2	**PKPbc**	**22 50 58.7**	**+0.2**
KONO	**Kongsberg**	**146.89**	**355**	*e*PKPdf	**PKPbc**	**22 50 58.7**	**+0.2**
IDID	**Didziasalis**	**147.00**	**336**	*e*P	**PKPbc**	**22 50 58.5**	**-0.5**
IDID				IAmb	IAmb	22 51 03.8	
	comp=Z,9.3nm,0.9s						
ANN	**Anapa**	**147.72**	**313**	*i* PKIKP	**PKPdf**	**22 50 59.2**	**+0.7**
ANN				pmax	pmax		
	comp=Z,49nm,1.1s						
SUW	**Suwalki**	**149.29**	**338**	*e*PKP	**PKPbc**	**22 51 05.0**	**-0.1**
SUW	**Suwalki**	**149.29**	**338**	*e*PKP2	**PKPbc**	**22 51 05.0**	**-0.1**
AKASG	**Malin Array Be**	**149.30**	**328**	PKPbc	**PKPbc**	**22 51 04.7**	**-0.5**
	comp=Z,3.9nm,0.7s,baz=41,slow=3.0,SNR=26						
AKASG	**Malin Array Be**	**149.30**	**328**	*c* iPKP2	**PKPbc**	**22 51 04.3**	**-0.9**
AKASG				pmax	pmax		
	comp=Z,4.0nm,0.7s						
KIEV	**Kiev**	**149.31**	**328**	*e*PKP2	**PKPbc**	**22 51 04.7**	**-0.5**
KIEV	**Kiev**	**149.31**	**328**	*e*PKPbc	**PKPbc**	**22 51 04.7**	**-0.5**
SIM	**Simferopol'**	**149.81**	**315**	*e*PKP2	**PKPbc**	**22 51 07.0**	**+0.3**
SIM				pmax	pmax		
	comp=Z,10.0nm,0.8s						
MUD	**Monsted U'grnd**	**150.09**	**354**	*i* P	**PKPbc**	**22 51 07.7**	**+0.8**
	comp=Z,37nm,1.2s						
COP	**Copenhagen**	**150.45**	**350**	*i* P	**PKPbc**	**22 51 08.3**	**+0.5**
BSD	**Bornholm Skovb**	**150.56**	**347**	*i* P	**PKPbc**	**22 51 07.9**	**-0.2**
	comp=Z,39nm,1.2s						
SORM	**Soroca**	**151.40**	**325**	⇑*i* P	**PKPbc**	**22 51 10.1**	**-0.2**
SORM	**Soroca**	**151.40**	**325**	⇑PKIKP	**PKPbc**	**22 51 10.1**	**-0.2**
BRTR	**Keskin Array B**	**152.16**	**305**	PKPbc	**PKPbc**	**22 51 12.2**	**-0.3**
	comp=Z,1.6nm,0.8s,baz=116,slow=3.4,SNR=9.1						
BRTR	**Keskin Array B**	**152.16**	**305**	*c* iPKIKP	**PKPbc**	**22 51 12.1**	**-0.4**
BRTR				pmax	pmax		
	comp=Z,2.0nm,0.9s						
LVV	**L'vov**	**152.27**	**331**	*e*PKIKP	**PKPbc**	**22 51 12.4**	**+0.1**
KWP	**Kalwaria Pacla**	**152.97**	**333**	⇓*i* P	**PKPbc**	**22 51 13.9**	**+0.1**
KWP	**Kalwaria Pacla**	**152.97**	**333**	⇓PKIKP	**PKPbc**	**22 51 13.9**	**+0.1**
KOLS	**Kolonicke sedl**	**153.69**	**332**	*e*PKP	**PKPdf**	**22 51 08.5**	**+0.9**
KOLS				*e*		22 51 16.8	
STHS	**Stebnicka Huta**	**153.73**	**334**	*e*PKP	**PKPbc**	**22 51 16.8**	**+1.3**
UZH	**Uzhgorod**	**153.91**	**332**	*e*PKIKP	**PKPbc**	**22 51 14.8**	**-1.1**
UZH				*e*		22 51 29.6	
CRVS	**Cervenica-Dubn**	**154.05**	**333**	*e*PKP	**PKPdf**	**22 51 08.9**	**+0.8**
CRVS				*e*		22 51 17.5	
CLL	**Collm**	**154.53**	**347**	*e*PKPdf	**PKPdf**	**22 51 08.0**	**-0.7**
	comp=Z,7.0nm,1.5s						
CLL				*i* PKPbc	**PKPbc**	**22 51 16.9**	**-0.2**
	comp=Z,17nm,1.5s						
CLL				*e*PKPab	**PKPab**	**22 51 31.0**	**-0.7**
	comp=Z,11nm,1.3s						
CLL				*e*		22 51 41.0	
CLL	**Collm**	**154.53**	**347**	*e*PKIKP	**PKPdf**	**22 51 08.0**	**-0.7**
CLL				*i*		22 51 16.9	
CLL				*e*		22 51 31.0	
CLL				pmax	pmax		
	comp=Z,7.0nm,1.5s						
DPC	**Dobruska-Polom**	**154.60**	**341**	*e*PKPDF	**PKPdf**	**22 51 09.5**	**+0.6**
DPC				⇑*e*PKP	**PKPbc**	**22 51 17.2**	**-0.2**
DPC				*e*PKPAB	**PKPab**	**22 51 32.1**	**0.0**
DPC				*ex*	x	22 51 38.4	
DPC	**Dobruska-Polom**	**154.60**	**341**	*e*PKIKP	**PKPdf**	**22 51 09.5**	**+0.6**
DPC				*e*		22 51 32.1	
BRG	**Berggiesshubel**	**154.74**	**345**	*e*PKP	**PKPdf**	**22 51 08.8**	**-0.2**
	comp=Z,24nm,1.8s						
BRG				*e*		22 51 18.2	
	comp=Z,24nm,1.7s						
BRG	**Berggiesshubel**	**154.74**	**345**	*e*PKIKP	**PKPdf**	**22 51 08.8**	**-0.2**
BRG				*e*		22 51 18.2	
BRG				pmax	pmax		
	comp=Z,24nm,1.8s						
VYHS	**Vyhne**	**155.40**	**336**	*e*PKP	**PKPab**	**22 51 35.8**	**+0.3**
KHC	**Kasperske Hory**	**156.45**	**344**	*e*PKPDF	**PKPdf**	**22 51 11.4**	**0.0**
KHC				*ep*PKP	**pPKPdf**	**22 51 20.8**	**-0.9**
KHC				*e*PKPAB	**PKPab**	**22 51 40.9**	**+0.9**
KHC	**Kasperske Hory**	**156.45**	**344**	*e*PKIKP	**PKPdf**	**22 51 11.4**	**0.0**
KHC				*e*		22 51 20.8	
CONA	**Conrad Observa**	**156.90**	**339**	*i* PKPab	**PKPab**	**22 51 43.2**	**+1.2**
	comp=Z,12nm,1.8s						
PKSM	**Moragy**	**157.35**	**333**	⇓*i* P	**PKPdf**	**22 51 10.7**	**-1.9**
PKSM	**Moragy**	**157.35**	**333**	⇓PKIKP	**PKPdf**	**22 51 10.7**	**-1.9**
MOA	**Molln**	**157.44**	**342**	*i* PKPab	**PKPab**	**22 51 44.6**	**+0.3**
	comp=Z,5.4nm,1.1s						
ARSA	**Arzberg**	**157.60**	**339**	*i* PKPab	**PKPab**	**22 51 45.5**	**+0.5**
	comp=Z,5.9nm,1.4s						
SOKA	**Soboth**	**158.27**	**339**	*i* PKPab	**PKPab**	**22 51 48.2**	**+0.2**
	comp=Z,8.5nm,1.5s						
KBA	**Koelnbreinsper**	**158.40**	**342**	*i* PKPab	**PKPab**	**22 51 49.9**	**+1.3**
	comp=Z,9.7nm,1.7s						
RETA	**Reutte**	**158.62**	**347**	*i* PKPab	**PKPab**	**22 51 49.1**	**-0.4**
	comp=Z,5.0nm,1.4s						
ABTA	**Abfaltersbach**	**158.93**	**343**	*i* PKPab	**PKPab**	**22 51 51.5**	**+0.7**
	comp=Z,4.8nm,1.2s						
ESDC	**Sonseca Array**	**165.51**	**25**	PKPab	**PKPab**	**22 52 18.4**	**-1.5**
	comp=Z,0.9nm,0.8s,baz=318,slow=5.1,SNR=5.7						

*ATH **21** 22:36:49.9,41.°21N×22.°86E,h14km±2km, ML2.1/5, Error ellipse: s-maj=2.1km s-min=1.0km az=332.0*
*SKO **21** 22:36:49.3,41.°06N×22.°83E,h15km, M1.7, ML1.9*
*ISCJB **21** 22:36:50.3±0.4, 41.°18N±0.°03×22.°86E±0.°04, h10km±3km, Error ellipse: s-maj=5.6km s-min=4.0km az=37.7*
*CSEM **21** 22:36:51.2±0.3, 41.°13N×22.°88E, h20km, ML2.1, Error ellipse: s-maj=6.9km s-min=6.0km az=43.0*
*BEO **21** 22:36:51.9±1.4, 41.°14N×22.°41E, h0km, M1.6/3*

ISC 21 22:36:50.7±0.8, 41.°16N±0.°02×22.°85E±0.°02, h11km±5km, n35, σ0'84/52, 1C, Northwestern Balkan Peninsula

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
KNT	**Kendrikon**	**0.04**	**83**	P		**Pg**		**22 36 53.0**	**+0.2**
KNT				S		**Sg**		**22 36 54.3**	**+0.1**
KNT	**Kendrikon**	**0.04**	**83**	P		**Pg**		**22 36 53.0**	**+0.2**
KNT				S		**Sg**		**22 36 54.4**	**+0.1**
KNT				AML		AML		22 36 54.5	
	comp=E,14169μm,0.1s								
KNT				AML		AML		22 36 54.5	
	comp=N,7960μm,0.1s								
VAY	**Valandovo**	**0.27**	**308**	*i* Pg		**Pg**		**22 36 54.8**	**-1.4**
VAY				⇑*i* Sg		**Sg**		**22 36 58.8**	**-1.1**
VAY				*e*Lg		Lg		22 36 58.8	
	comp=E,259nm,0.2s								
VAY				*e*Lg		Lg		22 36 58.9	
	comp=N,364nm,0.3s								
VAY	**Valandovo**	**0.27**	**308**	*e*Pg		**Pg**		**22 36 55.2**	**-1.0**
VAY				*e*Sg		**Sg**		**22 36 58.6**	**-1.3**
VAY	**Valandovo**	**0.27**	**308**	*i* Pg		**Pg**		**22 36 54.8**	**-1.4**
VAY				*e*Lg		Lg		22 36 58.8	
	comp=N,364nm,0.3s								
GRG	**Griva**	**0.40**	**240**	P		**Pg**		**22 36 58.3**	**-0.3**
GRG				S		**Sg**		**22 37 04.5**	**+0.7**
GRG	**Griva**	**0.40**	**240**	P		**Pg**		**22 36 58.3**	**-0.3**
GRG				S		**Sg**		**22 37 04.5**	**+0.7**
GRG				AML		AML		22 37 05.3	
	comp=E,785μm,0.2s								
GRG				AML		AML		22 37 05.6	
	comp=N,1030μm,0.2s								
SOH	**Sokhos**	**0.51**	**131**	P		**Pg**		**22 37 00.7**	**+0.1**
SOH				S		**Sg**		**22 37 08.0**	**+0.7**
SOH	**Sokhos**	**0.51**	**131**	P		**Pg**		**22 37 00.7**	**+0.1**
SOH				S		**Sg**		**22 37 08.0**	**+0.7**
SOH				AML		AML		22 37 10.7	
	comp=N,389μm,0.1s								
SOH				AML		AML		22 37 12.3	
	comp=E,572μm,0.1s								
THE	**Thessaloniki**	**0.53**	**171**	P		**Pg**		**22 37 01.5**	**+0.4**
THE				S		**Sb**		**22 37 09.9**	**+0.2**
THE	**Thessaloniki**	**0.53**	**171**	P		**Pg**		**22 37 01.5**	**+0.4**
THE				S		**Sb**		**22 37 09.9**	**+0.2**
THE				AML		AML		22 37 10.5	
	comp=E,278μm,0.2s								
THE				AML		AML		22 37 11.9	
	comp=N,266μm,0.2s								
SRS	**Serrai**	**0.56**	**94**	P		**Pg**		**22 37 01.1**	**-0.6**
SRS				S		**Sg**		**22 37 08.0**	**-1.1**
SRS	**Serrai**	**0.56**	**94**	P		**Pg**		**22 37 01.1**	**-0.6**
SRS				S		**Sg**		**22 37 08.0**	**-1.1**
SRS				AML		AML		22 37 09.8	
	comp=E,233μm,0.1s								
SRS				AML		AML		22 37 11.1	
	comp=N,200μm,0.1s								
HORT	**Hortiatis**	**0.59**	**161**	P		**Pb**		**22 37 02.8**	**-0.3**
HORT	**Hortiatis**	**0.59**	**161**	P		**Pb**		**22 37 02.8**	**-0.3**
NVR	**Nevrokopi**	**0.79**	**75**	P		**Pg**		**22 37 05.1**	**-0.8**
PLG	**Polygyros**	**0.90**	**150**	P		**Pb**		**22 37 07.7**	**-0.7**
PLG	**Polygyros**	**0.90**	**150**	P		**Pb**		**22 37 07.7**	**-0.7**
LIT	**Litokhoron**	**1.09**	**195**	P		**Pb**		**22 37 10.6**	**-1.0**
LIT	**Litokhoron**	**1.09**	**195**	P		**Pb**		**22 37 10.6**	**-1.0**
FNA	**Florina**	**1.18**	**252**	P		**Pn**		**22 37 12.6**	**-0.6**
FNA	**Florina**	**1.18**	**252**	P		**Pn**		**22 37 12.6**	**-0.6**
OUR	**Ouranopolis**	**1.19**	**133**	P		**Pn**		**22 37 12.9**	**-0.4**
OUR	**Ouranopolis**	**1.19**	**133**	P		**Pn**		**22 37 12.9**	**-0.4**
KAVA	**Kavala**	**1.27**	**97**	P		**Pn**		**22 37 13.3**	**-1.1**
KAVA	**Kavala**	**1.27**	**97**	P		**Pn**		**22 37 13.3**	**-1.1**
PAIG	**Paliouri**	**1.38**	**153**	P		**Pn**		**22 37 16.0**	**0.0**
PAIG	**Paliouri**	**1.38**	**153**	P		**Pn**		**22 37 16.0**	**0.0**
BARS	**Barje**	**1.83**	**335**	*e*Pn		**Pn**		**22 37 22.3**	**+0.2**
BARS				*e*Sn		**Sn**		**22 37 45.5**	**+0.2**
BARS	**Barje**	**1.83**	**335**	*e*Pn		**Pn**		**22 37 22.3**	**+0.2**
BARS				*e*Sn		**Sn**		**22 37 45.5**	**+0.2**
ZAPS	**Zavoj**	**2.12**	**356**	*e*Pn		**Pb**		**22 37 29.5**	**+0.3**
ZAPS				*e*Sn		**Sb**		**22 37 57.0**	**+1.4**
KUBS	**Kucevo**	**3.37**	**345**	*e*Pn		**Pn**		**22 37 45.3**	**+2.0**
KUBS				*e*Sn		**Sn**		**22 38 24.0**	**+0.8**
KUBS	**Kucevo**	**3.37**	**345**	*e*Pn		**Pn**		**22 37 45.3**	**+2.0**
KUBS				*e*Sn		**Sn**		**22 38 24.0**	**+0.8**
STON	**Ston**	**4.20**	**296**	*e*Pg		**Pn**		**22 37 55.5**	**+0.8**
STON	**Ston**	**4.20**	**296**	*e*Pg		**Pn**		**22 37 55.5**	**+0.8**

*IDC **21** 22:41:21.6±5.2, 35.°73N×141.°36E, h0km, mb3.4/2, mb1 3.3/4, mb1mx3.1/46, mbtmp3.4/4, ML3.3/2, Error ellipse: s-maj=97.5km s-min=36.3km az=83.0*
*ISCJB **21** 22:41:28.0±1.2, 35.°68N±0.°05×140.°9E±0.°1, h33km, mb3.1/2, Error ellipse: s-maj=13.9km s-min=6.5km az=164.2*
*JMA **21** 22:41:29.9±0.1, 35.°70N×140.°69E, h43km±1km, M2.8*

ISC 21 22:41:28.1±1.5, 35.°69N±0.°05×141.°0E±0.°1, h33km, n11, σ1'00/14, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.10**	**277**	P		Pb		22 41 36.9	+3.1
JCN	**Nagara**	**0.69**	**247**	P		**Pb**		**22 41 41.4**	**-0.3**
JYT	**Yasato**	**0.83**	**310**	P		**Pn**		**22 41 42.8**	**-0.6**
JYT				*e*S		**Sn**		**22 41 52.4**	**-2.1**
BSO3	**Boso 3**	**0.96**	**203**	P		**Pb**		**22 41 46.4**	**+0.3**
JHO	**Hitachi**	**0.97**	**340**	P		**Pb**		**22 41 46.5**	**0.0**
JOD2	**Odawara 2**	**1.60**	**255**	P		**Pn**		**22 41 53.2**	**-0.8**
MJAR	**Matsushiro Arr**	**2.40**	**292**	Pn		**Pn**		**22 42 05.3**	**+0.3**
	6.3nm,0.3s,baz=99,slow=14,SNR=32								
MJAR				Sn		**Sn**		**22 42 34.6**	**+1.4**
	3.0nm,0.3s,baz=120,slow=27,SNR=6.4								
MAT	**Matsushiro**	**2.40**	**292**	P		**Pn**		**22 42 05.6**	**+0.6**
MAT				*e*S		**Sn**		**22 42 33.2**	**0.0**
JHJ	**Hachijo jima 2**	**2.75**	**201**	Pn		**Pn**		**22 42 09.1**	**-0.7**
	9.8nm,0.3s,baz=0.0,slow=16,SNR=3.3								
JHJ				Sn		**Sn**		**22 42 42.0**	**+0.1**
	29nm,0.3s,baz=28,slow=17,SNR=3.0								
SONM	**Songino Array**	**28.27**	**306**	P		**P**		**22 47 19.7**	**+1.5**
	0.2nm,0.5s,baz=94,slow=11,SNR=2.3								
MKAR	**Makanchi Array**	**44.54**	**303**	P		**P**		**22 49 35.8**	**-0.8**
	0.1nm,0.3s,baz=83,slow=8.9,SNR=3.4								

PRU 21 22:49:28.7,50.°26N×18.°77E, h0km, 2D, Poland

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
CHZP	**Chorzow**	**0.15**	**78**	⇓*e*Pg		Pg		22 49 31.1	-0.4
CHZP				⇓*e*Sg		Sg		22 49 33.3	-0.1
OJC	**Ojcow**	**0.66**	**93**	*e*Pg		Pg		22 49 40.5	-0.9
OJC				*e*Sg		Sg		22 49 49.4	-0.5
LANS	**Liptovska Anna**	**1.20**	**158**	*e*PG		Pg		22 49 51.0	-0.7
LANS				*e*SG		Sg		22 50 06.7	-0.5
KRLC	**Kraliky**	**1.29**	**263**	*e*PG		Pg		22 49 52.7	-0.7
DPC	**Dobruska-Polom**	**1.57**	**274**	*e*PG		Pn		22 49 57.5	-0.4
DPC				*e*SG		Sn		22 50 18.8	-0.2
	comp=Z,0.9nm,0.2s								

*NIED **21** 22:50:00, 37.°30N×143.°80E, h5km, Mw3.8 Best double couple: M0 5.20000×10^14 NP1:ϕs=26.00000°, δ25.00000°, λ-119.00000°. NP2:ϕs=237.00000°, δ68.00000°, λ-77.00000°*
*IDC **21** 22:50:15.9±1.1, 37.°02N×144.°07E, h0km, mb3.8/7, mb1 4.0/9, mb1mx3.6/43, mbtmp3.8/9, ML3.9/2, MS2.7/3, Ms1 2.7/3, ms1mx2.4/47, Error ellipse: s-maj=27.5km s-min=19.8km az=102.0*
*ISCJB **21** 22:50:19.2±0.7, 37.°25N±0.°05×143.°89E±0.°05, h33km, mb3.8/8, Error ellipse: s-maj=7.2km s-min=5.5km az=151.9*
*JMA **21** 22:50:20.5±0.2, 37.°27N×143.°80E, h65km, M3.8*
*NEIC **21** 22:50:20.9±0.9, 37.°20N×144.°01E, h35km, mb4.2/1, Error ellipse: s-maj=18.1km s-min=11.8km az=118.0*

ISC 21 22:50:21.3±1.0, 37.°29N±0.°06×143.°92E±0.°08, h35km, n25, σ1'33/33, mb3.7/8, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**2.34**	**301**	P		**Pn**		**22 50 56.7**	**-0.6**
JIO				S		**Sn**		**22 51 23.9**	**-0.9**
JFK	**Kawauchi**	**2.43**	**273**	S		**Sn**		**22 51 25.2**	**-1.8**
ONAJ	**Iwakimizuishiy**	**2.50**	**267**	P		**Pn**		**22 50 58.6**	**-0.9**
ONAJ				S		**Sn**		**22 51 26.6**	**-2.2**
OFUJ	**Ofunato**	**2.52**	**316**	P		**Pn**		**22 50 58.9**	**-0.8**
OFUJ				S		**Sn**		**22 51 27.8**	**-1.4**
JMM	**Marumori**	**2.55**	**284**	P		**Pn**		**22 50 59.5**	**-0.6**
JMM				S		**Sn**		**22 51 28.6**	**-1.3**
JMK	**Ichinoseki**	**2.70**	**309**	P		**Pn**		**22 51 01.8**	**-0.4**
JHO	**Hitachi**	**2.77**	**257**	P		**Pn**		**22 51 01.7**	**-1.5**
JOM	**Ohasama**	**3.00**	**317**	P		**Pn**		**22 51 06.1**	**-0.3**
JOM				S		**Sn**		**22 51 40.5**	**-0.6**
JANG	**Nango**	**3.61**	**329**	P		**Pn**		**22 51 14.5**	**-0.2**
JAG	**Ashikaga**	**3.68**	**258**	P		**Pn**		**22 51 14.8**	**-1.0**
JAG				S		**Sn**		**22 51 55.8**	**-2.1**
MJAR	**Matsushiro Arr**	**4.63**	**262**	Pn		**Pn**		**22 51 28.8**	**0.0**
	4.6nm,0.3s,baz=87,slow=15,SNR=31								
MJAR				Sn		**Sn**		**22 52 21.9**	**+0.4**
	2.3nm,0.3s,baz=92,slow=27,SNR=5.2								
MJAR				LR		LR		22 53 25.7	
	comp=Z,61nm,19.9s,baz=130,slow=40								
MAJO	**Matsushiro**	**4.63**	**262**	*e*Pn		**Pn**		**22 51 29.3**	**+0.5**
MAJO				*e*Sn		**Sn**		**22 52 22.3**	**+0.8**
MAT	**Matsushiro**	**4.63**	**262**	P		**Pn**		**22 51 29.6**	**+0.7**
MAT				S		**Sn**		**22 52 21.8**	**+0.3**
ERM	**Erimo**	**4.76**	**353**	*e*Pn		**Pn**		**22 51 29.6**	**-0.8**
JHJ	**Hachijo jima 2**	**5.36**	**220**	Pn		Pn		22 51 35.1	-3.7
	16nm,0.3s,baz=100,slow=21,SNR=9.0								
JHJ				Sn		Sn		22 52 30.6	-8.7
	13nm,0.3s,baz=66,slow=20,SNR=2.0								
ASAJ	**Asahikawa**	**6.89**	**352**	Pn		**Pn**		**22 51 59.1**	**-0.7**
	1.9nm,0.3s,baz=176,slow=11,SNR=7.1								
ASAJ				Sn		**Sn**		**22 53 13.9**	**-3.1**
	baz=52,slow=19,SNR=3.7								
ASAJ				LR		LR		22 55 32.5	
	comp=Z,38nm,18.0s,baz=296,slow=44								
KLR	**Kul'dur**	**14.84**	**327**	LR		LR		22 59 35.2	
	comp=Z,56nm,19.0s,baz=34,slow=37								
SEY	**Seymchan**	**26.19**	**9**	P		**P**		**22 55 54.2**	**+1.9**
	0.5nm,0.3s,baz=203,slow=12,SNR=4.0								
SONM	**Songino Array**	**29.31**	**303**	P		**P**		**22 56 22.5**	**+2.0**
	0.4nm,0.7s,baz=98,slow=10,SNR=2.1								
CMAR	**Chiang Mai Arr**	**43.50**	**257**	P		**P**		**22 58 21.2**	**-0.3**
	0.6nm,0.3s,baz=39,slow=7.3,SNR=4.1								
MKAR	**Makanchi Array**	**45.67**	**302**	P		**P**		**22 58 40.0**	**+1.4**
	0.2nm,0.2s,baz=80,slow=9.5,SNR=2.7								
KURK	**Kurchatov**	**47.35**	**308**	*e*P		**P**		**22 58 52.3**	**+0.8**
	1.3nm,0.5s								
ILAR	**Eielson Array**	**48.21**	**33**	P		**P**		**22 58 58.9**	**+0.9**
	0.6nm,1.0s,baz=271,slow=8.5,SNR=4.5								
WRA	**Warramunga Arr**	**57.63**	**191**	P		**P**		**23 00 06.0**	**-2.0**
	1.9nm,0.6s,baz=12,slow=7.4,SNR=12								
ASAR	**Alice Springs**	**61.36**	**190**	P		**P**		**23 00 32.0**	**-1.7**
	0.9nm,0.8s,baz=13,slow=7.7,SNR=10.0								

SJA 21 22:54:20.7±0.4, 31.°79S×68.°32W, h106km±2km, ML2.9, MW4.2, San Juan Province

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
RTCV	**Cerro Valdivia**	**0.20**	**250**	*i* P		Pn		22 54 36.5	+0.8
RTCV				*i* S		Sn		22 54 47.6	+0.7
RTLL	**Cerro Villicun**	**0.48**	**344**	*i* P		Pn		22 54 37.9	+0.8
RTLL				*i* S		Sn		22 54 50.3	+0.9
RTLS	**Leoncito**	**0.83**	**269**	*i* P		Pn		22 54 41.5	+1.2
AMOG	**MOGNA**	**0.87**	**350**	*i* P		Pn		22 54 41.1	+0.7
AMOG				*i* S		Sn		22 54 56.3	+1.2
ASAL	**Salagasta**	**0.91**	**209**	*i* P		Pn		22 54 41.8	+1.0
ASAL				*i* S		Sn		22 54 57.2	+1.3
AUSP	**Uspallata**	**1.00**	**244**	*i* P		Pn		22 54 43.1	+1.2
ACAN	**Cantantal**	**1.07**	**117**	*i* P		Pn		22 54 43.3	+0.9
ARCO	**CERRO ARCO**	**1.17**	**206**	*i* P		Pn		22 54 44.4	+0.8
ARCO				IAML				22 55 02.9	
	comp=Z,238nm,0.3s								
AVFE	**Valle Fertil**	**1.35**	**33**	*i* P		Pn		22 54 46.5	+0.8
AVFE				IAML				22 55 08.3	
	comp=Z,72nm,0.4s								
AAGR	**Agrelo**	**1.36**	**198**	*i* P		Pn		22 54 46.6	+0.9

*ISCJB **21** 22:55:40.4±1.2, 37.°07N±0.°07×141.°61E±0.°09, h35km, mb3.5/3, Error ellipse: s-maj=10.8km s-min=9.5km az=8.8*
*IDC **21** 22:55:47.3±5.3, 37.°24N×141.°30E, h87km±43km, mb3.1/3, mb1 3.3/5, mb1mx3.0/46, mbtmp3.4/5, Error ellipse: s-maj=46.3km s-min=23.9km az=83.0*
*JMA **21** 22:55:48.4, 37.°15N×140.°86E, h7km±1km, M2.8*
JMA Felt I J1.

ISC 21 22:55:43.2±1.6, 37.°16N±0.°07×141.°4E±0.°1, h35km, n13, σ2'74/18, mb3.5/3, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**0.46**	**297**	P		**Pn**		**22 55 53.0**	**-0.3**
ONAJ	**Iwakimizuishiy**	**0.48**	**263**	P		**Pn**		**22 55 50.1**	**-3.5**
ONAJ				S		Sn		22 55 51.3	-9.5
JMM	**Marumori**	**0.85**	**326**	S		**Sn**		**22 56 12.1**	**+2.2**
JHO	**Hitachi**	**0.86**	**230**	P		**Pn**		**22 55 59.5**	**+0.

	0.9nm,0.3s,baz=74,slow=9.6,SNR=32					
JHJ	**Hachijo jima 2** comp=Z,44nm,21.8s,baz=322,slow=31	**53.83**	**331**	LR	LR	23 29 01.2

IDC ***21*** *23:10:18.7±0.6,2.42S×139.04E, h0km, mb4.2/14, mb1 4.4/17, mb1mx4.2/38, mbtmp4.3/17, ML4.3/3, MS3.5/7, Ms1 3.6/7, ms1mx3.1/37, Error ellipse: s-maj=13.9km s-min=11.5km az=28.0*
ISCJB ***21*** *23:10:22.3±0.3,2.84S±0.04×138.95E±0.03, h10km, mb4.9/50, MS3.9/6, Error ellipse: s-maj=5.3km s-min=4.3km az=10.8*
DJA ***21*** *23:10:23.1±0.3,2.2S±5.5×13.9E±°, h10km, M4.8/16, mB5.0/2, mb4.8/16, MLv4.8/4, Mw(mB)4.3/2*
NEIC ***21*** *23:10:32.3±0.7,3.03S×138.75E, h74km±7km, mb5.0/31, Error ellipse: s-maj=4.9km s-min=4.2km az=70.0*
BJI ***21*** *23:10:34.6,2.43S×138.64E, h65km, mb4.6/16, mB4.8/12, Ms4.8/5, Ms7 4.7/5*

ISC 21 23:10:20.1±0.4,2.47S±0.06×139.04E±0.04, h10km, n86, σ1°51/54, mb4.8/50, MS4.0/6, Near north coast of Irian Jaya

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
GENI	**Genyem**	**1.13**	**96**	P	**Pn**	**23 10 42.9**	**+0.9**
GENI				S	**Sn**	**23 10 59.3**	**+1.7**
JAY	**Jayapura** 16nm,0.3s,baz=204,slow=22,SNR=201	**1.66**	**92**	Pg	**Pb**	**23 10 49.2**	**-1.6**
JAY	28nm,0.3s,baz=81,slow=24,SNR=12			Lg	Lg	23 11 11.2	
JAY	**Jayapura**	**1.66**	**92**	P	**Pb**	**23 10 49.6**	**-1.3**
JAY				S	**Sg**	**23 11 13.9**	**+0.3**
MMPI	**Merauke** 532nm,0.8s,2.7nm	**6.11**	**167**	P	Pn	23 11 53.2	+2.7
FAKI	**Fak Fak** 54nm,0.9s,726nm0.2nm	**6.80**	**266**	P	**Pn**	**23 12 01.4**	**+1.3**
MANU	**Manus Island**	**8.33**	**87**	*e*Pn	Pb	23 12 35.6	-8.9
MSAI	**Masohi** 16nm,0.7s	**10.14**	**265**	P	Pn	23 12 49.9	+4.0
PMG	**Port Moresby** 1.4nm,0.3s,baz=312,slow=7.2,SNR=6.2	**10.61**	**131**	Pn	Pn	23 12 57.3	+4.9
PMG	comp=Z,352nm,18.2s,baz=90,slow=47			LR	LR	23 18 37.5	
PMG	**Port Moresby**	**10.61**	**131**	*e*Pn	Pn	23 12 59.6	+7.2
NLAI	**Namlea** 80nm,0.9s,742nm	**11.95**	**266**	P	Pn	23 13 13.1	+2.3
COEN	**Coen**	**12.12**	**161**	*e*Pn	Pn	23 13 16.1	+3.0
MTN	**Manton Dam**	**12.95**	**217**	*e*Pn	**Pn**	**23 13 24.2**	**-0.2**
SANI	**Sanana** 33nm,0.8s	**13.05**	**272**	P	**Pn**	**23 13 27.4**	**+1.6**
SGSI	**Sangihe** 856nm,1.0s	**14.83**	**294**	P	**Pn**	**23 13 51.0**	**+0.9**
SOEI	**Soe** 102nm,1.0s	**16.37**	**243**	P	**P**	**23 14 14.2**	**+0.9**
GUMO	**Guam** comp=Z,62nm,18.2s,baz=204,slow=36	**16.97**	**20**	LR	LR	23 20 36.9	
GUMO	**Guam** 203nm,1.4s	**16.97**	**20**	*e*Pn	P	23 14 31.8	+12
BATI	**Baumata** 4.2nm,0.3s,baz=127,slow=24,SNR=9.5	**17.10**	**243**	P	**P**	**23 14 21.6**	**+0.4**
WRAB	**Tennant Creek** 16nm,0.7s	**17.95**	**194**	*e*Pn	**P**	**23 14 29.6**	**-1.1**
WB2	**Warramunga Arr** 13nm,0.6s	**17.96**	**194**	*e*Pn	**P**	**23 14 30.0**	**-0.7**
WB2				*e*Sn	Sn	23 17 39.0	-12
WRA	**Warramunga Arr** 1.2nm,0.3s,baz=17,slow=12,SNR=27	**17.97**	**194**	P	**P**	**23 14 29.9**	**-0.8**
WRA	0.6nm,0.3s,baz=6.8,slow=23,SNR=6.6			S	Sn	23 17 39.0	-12
CTA	**Charters Tower** 0.1nm,0.3s,baz=323,slow=5.1,SNR=2.4	**18.88**	**159**	P	**Pn**	**23 14 41.5**	**+0.1**
CTAO	**Charters Tower** 7.7nm,1.0s	**18.88**	**159**	*e*P	**P**	**23 14 42.5**	**+1.1**
KAPI	**Kappang** comp=Z,84nm,18.6s,baz=98,slow=42	**19.41**	**262**	LR	LR	23 23 59.7	
FITZ	**Fitzroy Crossi** 2.3nm,0.7s,baz=26,slow=8.0,SNR=4.0	**20.35**	**219**	P	**P**	**23 14 56.5**	**-0.4**
FITZ	10nm,0.7s,baz=194,slow=16,SNR=6.4			S	S	23 18 34.2	-11
FITZ	comp=Z,122nm,21.2s,baz=34,slow=40			LR	LR	23 23 59.9	
FITZ	**Fitzroy Crossi** 6.4nm,0.8s	**20.35**	**219**	*e*P	**P**	**23 14 56.9**	**0.0**
FITZ				*e*S	S	23 18 35.0	-10
AS01	**Alice Springs**	**21.64**	**193**	*e*P	**P**	**23 15 10.1**	**-0.7**
AS31	**Alice Springs** 5.2nm,0.6s	**21.65**	**193**	*e*P	**P**	**23 15 10.7**	**-0.3**
ASAR	**Alice Springs** 4.2nm,0.7s,baz=22,slow=10,SNR=39	**21.65**	**193**	P	**P**	**23 15 10.8**	**-0.2**
ASAR	5.4nm,0.8s,baz=14,slow=27,SNR=8.6			S	**S**	**23 19 05.8**	**-5.2**
MYLDM	**Lahad Datu** 24nm,1.2s	**21.88**	**290**	*e*P	P	23 15 19.5	+6.0
BBKI	**Banjar Baru** 47nm,1.0s	**24.19**	**267**	P	**P**	**23 15 37.0**	**-0.1**
KKM	**Kota Kinabalu** 19nm,1.2s	**24.31**	**290**	*e*P	P	23 15 42.5	+4.2
EIDS	**Eidsvold** 15nm,0.8s	**25.55**	**154**	*e*P	**P**	**23 15 51.5**	**+2.2**
MBWA	**Marble Bar** 26nm,1.4s	**26.44**	**224**	*e*P	**P**	**23 15 57.6**	**+0.1**
SBUM	**Sibu** 6.1nm,1.1s	**27.26**	**280**	*e*P	P	23 16 08.5	+3.6
KSM	**Kuching** 19nm,1.4s	**28.99**	**277**	*e*P	P	23 16 23.3	+2.9
STKA	**Stephens Creek** 2.5nm,0.6s,baz=340,slow=10,SNR=7.9	**29.35**	**176**	P	**P**	**23 16 24.2**	**+0.9**
STKA	comp=Z,234nm,19.6s,baz=7.2,slow=39			LR	LR	23 29 20.6	
STKA	**Stephens Creek** 6.2nm,1.8s	**29.35**	**176**	*e*P	**P**	**23 16 23.9**	**+0.6**
TWG	**Pinlang** 191nm,1.6s	**30.64**	**326**	*e*P	P	23 16 42.6	+7.7
SSLB	**Suanglung** 34nm,1.8s	**31.48**	**327**	*e*P	P	23 16 50.4	+8.1
CAN	**Canberra** 26nm,1.3s	**33.97**	**165**	*e*P	**P**	**23 17 04.8**	**+0.8**
TARA	**Tarawa** 113nm,1.0s	**34.08**	**84**	*e*P	P	23 17 12.9	+7.7
LHI	**Lord Howe Isla** 359nm,1.8s	**34.52**	**149**	*e*P	P	23 17 11.4	+2.6
JHJ2	**Mitsune** 215nm,1.0s	**35.39**	**1**	*e*P	P	23 17 26.3	+10
MYKOM	**Kota Tinggi** 27nm,1.6s	**35.44**	**277**	*e*P	P	23 17 19.0	+2.1
INU	**Inuyama** 19nm,1.4s	**37.67**	**357**	*e*P	P	23 17 45.5	+10
MJAR	**Matsushiro Arr** 0.7nm,0.5s,baz=178,slow=8.9,SNR=2.8	**38.82**	**359**	P	**P**	**23 17 44.4**	**-0.9**
KULM	**Kulim** 8.5nm,1.1s	**39.12**	**281**	*e*P	P	23 17 51.9	+3.7
NJ2	**Nanjing**	**39.31**	**332**	*e*P	P	23 17 54.1	+4.6
NJ2	comp=Z,10.0nm,0.5s			pmax	pmax		
FUNA	**Funafuti** 70nm,1.1s	**40.40**	**100**	*e*P	P	23 18 04.8	+6.0
KS15	**Wonju Array Si**	**41.04**	**346**	*e*P	P	23 18 11.9	+8.1
GYA	**Guiyang**	**42.49**	**315**	*e*P	P	23 18 23.3	+7.3
GYA				pP	sP	23 18 42.0	+22
GYA				sP	pP	23 18 51.3	+32
GYA				PP	**PcP**	**23 20 06.0**	**-2.9**
GYA				ScP	**ScP**	**23 23 56.6**	**-3.3**
GYA				S	**S**	**23 24 41.4**	**+3.0**
GYA	comp=Z,10.0nm,1.0s			pmax	pmax		
COCO	**West Island** 139nm,1.1s	**42.90**	**255**	*e*P	**P**	**23 18 19.1**	**-0.2**
ERM	**Erimo** 69nm,1.7s	**44.43**	**4**	*e*P	P	23 18 40.8	+10
CM01	**Chiang Mai Arr**	**44.58**	**299**	*e*P	P	23 18 36.1	+3.2
CMAR	**Chiang Mai Arr** 0.7nm,0.4s,baz=109,slow=7.6,SNR=4.5	**44.61**	**299**	P	**P**	**23 18 32.7**	**-0.3**
KMI	**Kunming**	**44.62**	**310**	P	P	23 18 40.1	+6.8
KMI	comp=Z,9.0nm,0.5s			pmax	pmax		
KMI	comp=Z,66nm,4.5s			pmax	pmax		
CHTO	**Chiang Mai** 3.5nm,1.3s	**44.75**	**300**	*e*P	P	23 18 37.4	+3.2
CD2	**Chengdu**	**47.23**	**317**	P	P	23 18 59.8	+6.2
CD2	comp=Z,20nm,0.4s			pmax	pmax		
MDJ	**Mudanjiang**	**47.63**	**351**	P	P	23 19 04.0	+7.6
MDJ	comp=Z,6.0nm,1.1s			pmax	pmax		
MDJ	comp=Z,32nm,4.0s			pmax	pmax		
THZ	**Tophouse** 137nm,2.0s	**49.53**	**147**	*e*P	**P**	**23 19 12.3**	**+1.1**
MLZ	**Mavora Lakes** 96nm,1.6s	**49.77**	**153**	*e*P	**P**	**23 19 14.3**	**+1.4**
PYZ	**Puysegur Point** 438nm,1.9s	**49.77**	**155**	*e*P	**P**	**23 19 14.6**	**+1.7**
HHC	**Hu-ho-hao-te**	**49.87**	**333**	*e*P	P	23 19 23.4	+10
HHC				sP	sP	23 19 51.0	+33
HHC				S	S	23 26 29.4	+5.4
HHC	comp=Z,15nm,0.7s			pmax	pmax		
HHC	comp=Z,120nm,7.2s			pmax	pmax		
HHC	comp=N,160nm,14.8s			LR	LR		
HHC	comp=E,350nm,14.8s			LR	LR		
HHC	comp=Z,100nm,15.6s			LR	LR		
RPZ	**Rata Peaks** 84nm,1.6s	**49.93**	**150**	*e*P	**P**	**23 19 16.0**	**+1.8**
WHZ	**Wether Hill Ro** 162nm,1.9s	**50.10**	**154**	*e*P	P	23 19 17.6	+2.1
OXZ	**Oxford** 79nm,1.7s	**50.15**	**149**	*e*P	**P**	**23 19 17.8**	**+1.9**
LZH	**Lanzhou**	**50.49**	**323**	*e*P	P	23 19 30.0	+11
LZH				pP	sP	23 19 48.8	+26
LZH				PP	PP	23 21 28.1	+14
LZH	comp=Z,21nm,1.3s			pmax	pmax		
LZH	comp=Z,83nm,7.2s			pmax	pmax		
LZH	comp=N,330nm,14.2s			LR	LR		
LZH	comp=E,350nm,15.0s			LR	LR		
LZH	comp=Z,410nm,18.5s			LR	LR		
MIDW	**Midway** 43nm,0.6s	**51.79**	**51**	*e*P	P	23 19 37.1	+8.7
KLR	**Kul'dur** 1.3nm,0.7s,baz=191,slow=1.0,SNR=6.5	**51.88**	**354**	P	**P**	**23 19 28.7**	**0.0**
SONM	**Songino Array** 0.6nm,0.7s,baz=155,slow=8.7,SNR=4.5	**57.64**	**335**	P	**P**	**23 20 11.3**	**+0.5**
SONM	comp=Z,25nm,19.6s,baz=162,slow=37			LR	LR	23 45 48.6	
PET	**Petropavlovsk** 60nm,1.7s	**57.70**	**14**	*e*P	P	23 20 19.6	+8.8
WMQ	**Urumqi**	**65.03**	**321**	*e*P	P	23 21 08.0	+7.2
WMQ	comp=Z,4.0nm,0.6s			pmax	pmax		
WMQ	comp=Z,98nm,5.2s			pmax	pmax		
MKAR	**Makanchi Array** 2.6nm,0.5s,baz=104,slow=8.5,SNR=36	**69.80**	**322**	P	**P**	**23 21 31.4**	**+0.5**
KSH	**Kashi**	**71.16**	**313**	*e*P	P	23 21 47.8	+8.3
KSH				*e*pP	PcP	23 22 07.8	+8.2
KSH				*e*sP	sP	23 22 16.3	+32
KSH				S	**S**	**23 30 58.0**	**+1.3**
KSH				SKS	**SKSac**	**23 31 39.1**	**-3.7**
KSH				SS	SS	23 35 36.3	+5.7
KSH	comp=Z,110nm,4.7s			pmax	pmax		
KSH	comp=N,110nm,4.3s			LR	LR		
KSH	comp=E,93nm,4.7s			LR	LR		
KSH	comp=Z,150nm,6.2s			LR	LR		
ZALV	**Zalesovo Beam** 2.0nm,0.6s,baz=114,slow=5.4,SNR=11	**71.89**	**330**	P	**P**	**23 21 42.6**	**-0.8**
VNDA	**Vanda** 5.3nm,0.7s,baz=324,slow=6.7,SNR=34	**75.99**	**175**	P	**P**	**23 22 07.5**	**+0.5**
VNDA	comp=Z,87nm,18.9s,baz=353,slow=36			LR	LR	23 55 57.6	
BVAR	**Borovoye Array** 4.1nm,0.6s,baz=109,slow=7.6,SNR=37	**79.31**	**325**	P	**P**	**23 22 26.1**	**+0.1**
NRIK	**Noril'sk** 4.7nm,0.8s,baz=111,slow=6.1,SNR=7.8	**79.58**	**344**	P	**P**	**23 22 27.2**	**+0.1**
ILAR	**Eielson Array** 5.9nm,0.7s,baz=260,slow=4.6,SNR=60	**85.47**	**24**	P	**P**	**23 22 57.1**	**-0.9**
QSPA	**South Pole Qui** 118nm,1.5s	**87.48**	**180**	*e*P	**P**	**23 23 07.2**	**-0.8**
NMTM	**Middletown**	**98.18**	**51**	*e*P	Pdif	23 24 05.1	+7.2
YKA	**Yellowknife Ar** 0.2nm,0.6s,baz=282,slow=5.3,SNR=4.1	**99.70**	**27**	P	**Pdif**	**23 24 03.1**	**-0.9**
NVAR	**Mina Array Bea** 0.3nm,0.5s,baz=270,slow=6.9,SNR=2.6	**101.44**	**51**	P	**Pdif**	**23 24 12.7**	**0.0**
LPAZ	**La Paz** 1.9nm,0.9s,baz=144,slow=6.3,SNR=7.0	**147.32**	**126**	PKPbc	**PKPab**	**23 30 06.2**	**-1.5**
LPAZ	**La Paz**	**147.32**	**126**	*e*PKPdf	**PKPab**	**23 30 08.5**	**+0.9**

IDC ***21*** *23:15:43.8±1.5,32.60S×71.54W, h0km, mb1 3.8/4, mb1mx3.6/25, mbtmp3.6/4, ML3.3/4, Error ellipse: s-maj=73.9km s-min=31.2km az=104.0*
SJA ***21*** *23:15:46.7±0.4,32.29S×71.85W, h13km±6km, ML3.7, MW4.5*
GUC ***21*** *23:15:47.9±0.4,32.27S×71.79W, h27km±20km, ML3.8*

ISC 21 23:15:53.5±1.2,32.25S±0.05×71.1W±0.1, h57km±11km, n26, σ2°36/21, 2D, Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
ROCH	**El Roble**	**0.72**	**173**	↓*i* P	**Pn**	**23 16 05.6**	**-2.6**
ROCH				*i* S	**Sn**	**23 16 19.2**	**+0.5**
ROCH	comp=N,5μm,0.3s			IAML		23 16 20.6	
ROC1	**El Roble**	**0.73**	**173**	*i* P	**Pn**	**23 16 05.8**	**-2.4**
ROC1				*i* S	**Sn**	**23 16 20.0**	**+1.2**
PEL	**Peldehue**	**0.96**	**158**	↓*i* P	**Pn**	**23 16 10.3**	**-0.7**
PEL				*i* S	**Sn**	**23 16 27.4**	**+3.5**
PEL	comp=N,3μm,0.3s			IAML		23 16 31.9	
CLCH	**Cerro Calan**	**1.24**	**157**	*e*P	**Pn**	**23 16 14.4**	**-0.3**
CLCH				*i* S	**Sn**	**23 16 34.9**	**+4.3**
CLCH	comp=E,3μm,0.6s			IAML		23 16 38.0	
ANTU	**Antumapu**	**1.38**	**163**	*e*P	**Pn**	**23 16 16.1**	**-0.4**
ANTU				*i* S	**Sn**	**23 16 36.8**	**+3.1**
ANTU	comp=N,2μm,0.6s			IAML		23 16 44.6	
AUSP	**Uspallata**	**1.47**	**89**	*i* P	Pn	23 16 24.4	+6.4
RTLS	**Leoncito**	**1.62**	**74**	*i* P	Pn	23 16 26.2	+6.3
ARCO	**CERRO ARCO**	**1.94**	**108**	*i* P	Pn	23 16 30.3	+6.0
ARCO	comp=Z,308nm,0.5s			IAML		23 17 13.2	
ASAL	**Salagasta**	**1.96**	**100**	*i* P	Pn	23 16 30.6	+6.1
TLL	**Tololo Astrono**	**2.10**	**8**	*e*P	**Pn**	**23 16 26.0**	**-0.5**
TLL				*e*S	**Sn**	**23 16 55.0**	**+3.5**
AAGR	**Agrelo**	**2.11**	**114**	*i* P	Pn	23 16 32.3	+5.8
RTCV	**Cerro Valdivia**	**2.23**	**81**	*i* P	Pn	23 16 34.3	+6.3
SJA	**San Juan**	**2.30**	**72**	*i* P	Pn	23 16 35.4	+6.4
SJA	comp=Z,236nm,0.6s			IAML		23 17 33.7	
RTLL	**Cerro Villicun**	**2.44**	**68**	*i* P	Pn	23 16 37.1	+6.2
ACAN	**Cantantal**	**3.33**	**91**	*i* P	Pn	23 16 49.9	+6.7
AVFE	**Valle Fertil**	**3.51**	**64**	*i* P	Pn	23 16 52.6	+6.9
AVFE	comp=Z,142nm,0.6s			IAML		23 17 56.1	
AGUA	**GUANDACOL**	**3.57**	**40**	*i* P	Pn	23 16 51.5	+5.0
PLCA	**Paso Flores** comp=Z,0.0nm,0.3s,baz=5.3,slow=13,SNR=2.2	**8.48**	**177**	Pn	Pn	23 17 42.0	-12
CPUP	**Villa Florida** comp=Z,0.1nm,0.3s,baz=241,slow=13,SNR=2.9	**13.40**	**67**	Pn	**Pn**	**23 19 02.5**	**+1.6**
CPUP	comp=Z,0.1nm,0.3s,baz=258,slow=14,SNR=1.8			Sn	**Sn**	**23 21 23.4**	**-4.8**
LPAZ	**La Paz** comp=Z,0.0nm,0.3s,baz=159,slow=7.8,SNR=3.9	**16.12**	**10**	Pn	**Pn**	**23 19 36.9**	**-0.2**
SIV	**San Ignacio** comp=Z,0.1nm,0.3s,baz=212,slow=9.5,SNR=2.7	**18.59**	**32**	P	**Pn**	**23 20 06.3**	**-0.6**
BVAR	**Borovoye Array** comp=Z,0.5nm,0.3s,baz=303,slow=1.5,SNR=9.5	**145.47**	**42**	PKPbc	**PKPab**	**23 35 24.6**	**-0.4**
AAK	**Ala-Archa** comp=Z,1.3nm,0.6s,baz=288,slow=3.2,SNR=7.0	**150.98**	**59**	PKPbc	**PKPbc**	**23 35 40.4**	**+0.5**
KURBB	**Kurchatov Arra** comp=Z,1.0nm,0.5s,baz=304,slow=2.9,SNR=17	**151.07**	**42**	PKPbc	**PKPbc**	**23 35 39.1**	**-0.6**
ZALV	**Zalesovo Beam** comp=Z,1.0nm,0.5s,baz=296,slow=4.0,SNR=6.4	**152.34**	**31**	PKPbc	**PKPbc**	**23 35 41.8**	**-0.7**
MKAR	**Makanchi Array** comp=Z,0.4nm,0.6s,baz=312,slow=3.3,SNR=2.6	**155.03**	**47**	PKPab	**PKPab**	**23 36 04.6**	**+0.3**

MAN 21 23:16:20,13.87N×120.56E, h124km, mb4.9, ML3.8, MS3.8, Mindoro

MEX 21 23:19:54.6±0.3,16.41N×98.32W, h44km±6km, MD3.7, Near coast of Guerrero

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
PNIG	**Pinotepa**	**0.18**	**96**	*e*P	Pn	23 20 00.9	-1.4
PNIG				*e*S	Sn	23 20 05.8	-1.8
ACX	**Acapulco**	**1.54**	**287**	*e*P	Pn	23 20 24.9	+5.2
ACX				*i* S	Sn	23 20 36.3	-2.3
VHO	**Vista Hermosa**	**1.66**	**66**	*i* P	Pn	23 20 19.8	-1.6
VHO				*i* S	Sn	23 20 39.4	-2.2
CAIG	**El Cayaco**	**1.97**	**289**	*e*P	Pn	23 20 23.9	-1.6

WEL 21 23:22:20.9±0.5,37.61S×178.29E, h46km±3km, ML3.8/4, 8C-3D, Error ellipse: s-maj=3.4km s-min=2.8km az=90.0, Off east coast of North Island

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
MXZ	**Matakaoa Point**	**0.05**	**18**	PN	Pn	23 22 28.0	-0.1
MXZ				SN	Sn	23 22 32.5	-0.7
MXZ				AML	AML	23 22 33.6	
MXZ				AML	AML	23 22 33.8	
MXZ				AML	AML	23 22 33.9	
WMGZ	**Waiomatatini S**	**0.23**	**154**	↑PN	Pn	23 22 29.3	+0.2
WMGZ				SN	Sn	23 22 36.0	+1.2
PKGZ	**Pakihiroa**	**0.33**	**211**	↑PN	Pn	23 22 29.0	-1.0
HAZ	**Te Kaha**	**0.43**	**250**	↓PN	Pn	23 22 30.5	-0.5
HAZ				SN	Sn	23 22 37.8	-0.4
PUZ	**Puketiti**	**0.46**	**183**	↑PN	Pn	23 22 31.4	-0.1
PUZ				AML	AML	23 22 40.7	
PUZ				AML	AML	23 22 40.9	
TWGZ	**Tauwhareparae**	**0.62**	**203**	↑PN	Pn	23 22 33.7	+0.2
CNGZ	**Carnagh Statio**	**0.88**	**184**	PN	Pn	23 22 36.0	-0.8
WIZ	**White Island**	**0.88**	**275**	PN	Pn	23 22 36.7	-0.2
TKGZ	**Te Karaka**	**0.90**	**203**	PN	Pn	23 22 37.0	-0.1
MWZ	**Matawai**	**0.94**	**219**	↓PN	Pn	23 22 37.9	+0.1
MWZ				AML	AML	23 22 52.2	
MWZ				AML	AML	23 22 53.2	
MWZ				AML	AML	23 22 53.4	
RAGZ	**Rawiri**	**1.12**	**218**	PN	Pn	23 22 40.4	+0.2
URZ	**Urewera**	**1.14**	**235**	PN	Pn	23 22 40.3	0.0
URZ				AML	AML	23 22 56.0	
URZ				AML	AML	23 22 56.8	
RIGZ	**Rimuhau**	**1.17**	**201**	PN	Pn	23 22 40.5	-0.4
EDRZ	**Edgecumbe**	**1.32**	**247**	PN	Pn	23 22 43.0	0.0
PRGZ	**Paritu Road**	**1.35**	**194**	PN	Pn	23 22 42.4	-1.0
SNGZ	**Shannon Statio**	**1.39**	**212**	PN	Pn	23 22 43.9	+0.1
OPRZ	**Ohinepanea**	**1.39**	**260**	PN	Pn	23 22 43.3	-0.6
MUGZ	**Murupara**	**1.48**	**234**	PN	Pn	23 22 45.2	+0.1
KNZ	**Kokohu**	**1.49**	**199**	PN	Pn	23 22 44.0	-1.2
TARZ	**Mount Tarawera**	**1.54**	**246**	PN	Pn	23 22 46.3	+0.2
MHGZ	**Mahia Peninsul**	**1.57**	**191**	PN	Pn	23 22 45.4	-0.9
RAHZ	**Arahi**	**1.61**	**216**	PN	Pn	23 22 47.2	+0.3
WHHZ	**Waihua**	**1.68**	**209**	PN	Pn	23 22 47.9	0.0
MRHZ	**Matea Rd**	**1.91**	**230**	PN	Pn	23 22 51.4	+0.3
ARHZ	**Aropaoanui**	**1.94**	**211**	PN	Pn	23 22 51.2	-0.1
BKZ	**Black Stump Fm**	**2.10**	**222**	PN	Pn	23 22 53.7	+0.1
KUZ	**Kuaotunu**	**2.22**	**292**	↑PN	Pn	23 22 54.8	-0.4
KWHZ	**Kaweka Forest**	**2.33**	**218**	PN	Pn	23 22 56.2	-0.5
KAHZ	**Kahuranaki**	**2.44**	**206**	PN	Pn	23 22 56.7	-1.6
KRHZ	**Kereru**	**2.53**	**216**	PN	Pn	23 22 58.3	-1.2
MKAZ	**Moumakai**	**2.54**	**280**	↑PN	Pn	23 22 59.5	-0.1
KRVZ	**Karewarewa**	**2.56**	**234**	↑PN	Pn	23 23 00.2	+0.3
BHHZ	**Black Hill Sta**	**2.56**	**222**	PN	Pn	23 22 59.6	-0.3
OTVZ	**Oturere**	**2.58**	**232**	PN	Pn	23 23 00.5	+0.2
GRZ	**Great Barrier**	**2.64**	**300**	PN	Pn	23 23 01.4	+0.4
PXZ	**Pawanui**	**2.66**	**204**	PN	Pn	23 22 58.9	-2.3
MOVZ	**Moawhango**	**2.68**	**227**	PN	Pn	23 23 01.0	-0.6
WHVZ	**Whangaehu Hut**	**2.70**	**231**	PN	Pn	23 23 01.7	-0.2
FWVZ	**Far West T-bar**	**2.70**	**232**	PN	Pn	23 23 02.0	-0.1
WNVZ	**Wahianoa**	**2.72**	**230**	↑PN	Pn	23 23 02.1	-0.2
ETAZ	**East Tamaki Re**	**2.76**	**283**	PN	Pn	23 23 02.9	+0.3
PNHZ	**Pukenui**	**2.82**	**215**	PN	Pn	23 23 01.7	-1.8
MTVZ	**Mangateitei**	**2.83**	**230**	PN	Pn	23 23 03.5	-0.2
PRHZ	**Porangahau**	**2.95**	**205**	PN	Pn	23 23 02.8	-2.4
WAZ	**Wanganui**	**3.36**	**229**	PN	Pn	23 23 10.9	+0.1
PRWZ	**Pori Road**	**3.45**	**211**	*e*PN	Pn	23 23 09.8	-2.3
HOWZ	**Holdsworth Sta**	**3.93**	**212**	PN	Pn	23 23 14.8	-3.8
TMWZ	**Te Maipa**	**3.96**	**207**	PN	Pn	23 23 15.4	-3.7
OGWZ	**Otaki Gorge**	**4.01**	**216**	PN	Pn	23 23 16.6	-3.3
MTW	**Mount Morrison**	**4.15**	**210**	PN	Pn	23 23 17.5	-4.2
KIW	**Kapiti Island**	**4.17**	**218**	PN	Pn	23 23 18.8	-3.2
DUWZ	**D'Urville Isla**	**4.65**	**225**	↓PN	Pn	23 23 25.6	-3.0
THZ	**Tophouse**	**5.87**	**223**	PN	Pn	23 23 41.2	-4.2
CTZ	**Chatham Island**	**7.24**	**149**	PN	Pn	23 24 03.0	-1.0

IDC ***21*** *23:23:49.9±3.9,35.84N×78.09E, h0km, mb3.6/2, mb1 3.5/5, mb1mx3.3/49, mbtmp3.5/5, ML3.1/3, Error ellipse: s-maj=56.7km s-min=47.6km az=180.0*
ISCJB ***21*** *23:23:53.6±1.1,35.54N±0.06×79.3E±0.3, h100km, mb3.4/2, Error ellipse: s-maj=30.7km s-min=6.9km az=168.4*

ISC 21 23:23:55.4±1.3,35.56N±0.09×79.5E±0.3, h100km, n11, σ1°60/11, Kashmir-Xizang border region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
PYUN	**Piuthan** 35nm,0.5s	**8.00**	**157**	*e*P	**Pn**	**23 25 50.9**	**+1.8**
KOLN	**Koldanda** 8.0nm,0.4s	**8.51**	**155**	*e*P	**Pn**	**23 25 55.1**	**-0.9**
GKN	**Gorkha** 7.4nm,0.3s	**8.70**	**149**	*e*P	**Pn**	**23 26 00.2**	**+1.6**
KKN	**Kakani** 5.9nm,0.4s	**9.17**	**146**	*e*P	**Pn**	**23 26 04.8**	**-0.2**
GUN	**Gumba**	**9.35**	**143**	*e*P	**Pn**	**23 26 07.7**	**+0.1**
PKIN	**Phulchoki** 5.7nm,0.6s	**9.40**	**146**	*e*P	**Pn**	**23 26 05.2**	**-3.0**
MKAR	**Makanchi Array** 0.2nm,0.3s,baz=194,slow=12,SNR=8.2	**11.42**	**10**	Pn	**Pn**	**23 26 35.7**	**+0.5**
MKAR	0.1nm,0.3s,baz=202,slow=23,SNR=5.3			Sn	**Sn**	**23 28 41.0**	**+0.4**
BVAR	**Borovoye Array** 0.1nm,0.3s,baz=151,slow=13,SNR=5.0	**18.62**	**343**	P	**P**	**23 28 03.1**	**-1.7**
ZALV	**Zalesovo Beam** 0.1nm,0.3s,baz=200,slow=12,SNR=2.5	**18.76**	**10**	P	**Pn**	**23 28 09.0**	**+1.2**
SONM	**Songino Array** 0.2nm,0.4s,baz=258,slow=7.4,SNR=3.9	**23.39**	**50**	P	P	23 29 07.6	+12
ARCES	**ARCESS Array B** 2.2nm,0.8s,baz=102,slow=8.7,SNR=4.5	**44.73**	**336**	P	**P**	**23 31 58.2**	**+0.1**

**IDC 21 23:45:53.1±19.0, 17.43S×179.20W, h563km±187km, mb3.3/3, mb1 3.4/3, mb1mx2.9/31, mbtmp4.2/3

Moment tensor: Scale 10^{15}Nm; M_{rr}0.00; $M_{\theta\theta}$-1.80; $M_{\phi\phi}$1.80; $M_{r\theta}$-0.32; $M_{r\phi}$1.04; $M_{\theta\phi}$-0.18; Best double couple: M_o2.10000×10^{15} NP1:ϕ_s150.00000°, δ80.00000°, λ-180.00000°. NP2:ϕ_s60.00000°, δ90.00000°, λ-10.00000°. Principal axes: T 2.1100, Plg7.0000°, Azm105.0000°; N 0.0000, Plg80.0000°, Azm240.0000°; P -2.1100, Plg7.0000°, Azm15.0000°;

*PGC **22** 00:06:04.3±0.1,63°.88N×131°.39W,h10km,ML4.9/12, Mw4.1,273km Wsw of Norman Wells, Nt Southern Yukon Territory, Canada*

ISC 22 00:06:02.2±0.4,63°.95N±0°.03×130°.97W±0°.03,h9km,n180, σ2s03/222,mb4.2/31,MS3.3/9,Southern Yukon Territory

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DAWY	**Dawson**	**3.71**	**276**	Pn	**Pn**	**00 06 58.7**	**-1.0**
DAWY				Pg	**Pb**	**00 07 07.3**	**-0.6**
DAWY				Sn	**Sn**	**00 07 38.5**	**-4.9**
DAWY				Sg	**Sb**	**00 07 53.1**	**+0.2**
DAWY	**Dawson**	**3.71**	**276**	Pn	**Pn**	**00 06 58.7**	**-1.0**
DAWY				Pg	**Pb**	**00 07 07.3**	**-0.6**
DAWY				Sn	**Sn**	**00 07 38.5**	**-4.9**
DAWY				Sg	**Sb**	**00 07 53.1**	**+0.2**
WHY	**Whitehorse**	**3.77**	**211**	Pn	**Pn**	**00 06 59.9**	**-0.7**
WHY				Pg	**Pb**	**00 07 09.7**	**+0.8**
WHY				Sg	**Sb**	**00 07 55.1**	**+0.5**
WHY	**Whitehorse**	**3.77**	**211**	Pn	**Pn**	**00 06 59.9**	**-0.7**
WHY				Pg	**Pb**	**00 07 09.7**	**+0.8**
WHY				Sg	**Sb**	**00 07 55.1**	**+0.5**
YUK5	**Granite Creek**	**4.26**	**232**	Pn	**Pn**	**00 07 06.7**	**-0.6**
YUK5				Pg	**Pb**	**00 07 18.1**	**+0.8**
YUK5				Sn	**Sn**	**00 07 52.4**	**-4.7**
YUK5				Sg	**Sb**	**00 08 10.0**	**+1.2**
YUK5	**Granite Creek**	**4.26**	**232**	Pn	**Pn**	**00 07 06.7**	**-0.6**
YUK5				Pg	**Pb**	**00 07 18.1**	**+0.8**
YUK5				Sn	**Sn**	**00 07 52.4**	**-4.7**
YUK5				Sg	**Sb**	**00 08 10.0**	**+1.2**
HYT	**Haines Junctio**	**4.36**	**227**	Pn	**Pn**	**00 07 08.3**	**-0.4**
HYT				Sn	**Sn**	**00 07 54.1**	**-5.6**
HYT				Sg	**Sb**	**00 08 14.7**	**+2.9**
HYT	**Haines Junctio**	**4.36**	**227**	Pn	**Pn**	**00 07 08.3**	**-0.4**
HYT				Sn	**Sn**	**00 07 54.1**	**-5.6**
HYT				Sg	**Sb**	**00 08 14.7**	**+2.9**
INK	**Inuvik**	**4.50**	**348**	Pn	**Pn**	**00 07 10.9**	**+0.4**
	11nm,0.3s,baz=164,slow=15,SNR=103						
INK				Sn	**Sn**	**00 08 00.9**	**-1.8**
	17nm,0.3s,baz=140,slow=15,SNR=4.1						
INK				Lg	Lg	00 08 19.9	
	24nm,0.3s,baz=76,slow=8.9,SNR=4.5						
INK				LR	LR	00 09 16.7	
	comp=Z,147nm,20.4s,baz=180,slow=46						
INK	**Inuvik**	**4.50**	**348**	Pn	**Pn**	**00 07 10.8**	**+0.4**
INK				Sn	**Sn**	**00 08 00.9**	**-1.8**
EGAK	**Eagle**	**4.50**	**285**	*e*Pn	**Pn**	**00 07 10.2**	**-0.3**
YUK6	**Outpost Mounta**	**4.57**	**232**	Sg	**Sb**	**00 08 20.3**	**+2.6**
SMPN	**Simpson Lake**	**4.63**	**20**	Pn	**Pn**	**00 07 13.4**	**+1.3**
SMPN				Sn	**Sn**	**00 08 07.8**	**+1.9**
YUK1	**Sand Pete Hill**	**4.71**	**252**	Pn	**Pn**	**00 07 11.9**	**-1.6**
YUK1				Sn	**Sn**	**00 08 02.6**	**-5.6**
YUK1	**Sand Pete Hill**	**4.71**	**252**	Pn	**Pn**	**00 07 11.9**	**-1.6**
YUK1				Sn	**Sn**	**00 08 02.6**	**-5.6**
BVCY	**Beaver Creek**	**4.74**	**256**	Pn	**Pn**	**00 07 13.0**	**-0.7**
BVCY				Sg	**Sb**	**00 08 24.6**	**+2.2**
BVCY	**Beaver Creek**	**4.74**	**256**	Pn	**Pn**	**00 07 13.0**	**-0.7**
BVCY				Sg	**Sb**	**00 08 24.6**	**+2.2**
YUK7	**Dusty Glacier**	**4.79**	**228**	Pn	**Pn**	**00 07 14.3**	**-0.4**
YUK7				Sn	**Sn**	**00 08 05.6**	**-4.8**
YUK7				Sg	**Sb**	**00 08 26.5**	**+2.3**
YUK7	**Dusty Glacier**	**4.79**	**228**	Pn	**Pn**	**00 07 14.3**	**-0.4**
YUK7				Sn	**Sn**	**00 08 05.6**	**-4.8**
YUK7				Sg	**Sb**	**00 08 26.5**	**+2.3**
YUK3	**Moose Creek**	**4.86**	**248**	Pn	**Pn**	**00 07 14.5**	**-1.1**
YUK3				Sg	**Sb**	**00 08 27.7**	**+1.6**
YUK3	**Moose Creek**	**4.86**	**248**	Pn	**Pn**	**00 07 14.5**	**-1.1**
YUK3				Sg	**Sb**	**00 08 27.7**	**+1.6**
SKAG	**Skagway**	**4.96**	**207**	*e*Pn	**Pn**	**00 07 16.7**	**0.0**
YUK2	**White River**	**5.01**	**249**	Pn	**Pn**	**00 07 16.5**	**-1.1**
YUK2				Sg	**Sb**	**00 08 32.5**	**+2.2**
YUK2	**White River**	**5.01**	**249**	Pn	**Pn**	**00 07 16.5**	**-1.1**
YUK2				Sg	**Sb**	**00 08 32.5**	**+2.2**
PLBC	**Pleasant Camp**	**5.18**	**212**	Pn	**Pn**	**00 07 19.6**	**-0.3**
PLBC				Pg	**Pb**	**00 07 34.7**	**+1.8**
PLBC				Sg	**Sb**	**00 08 39.1**	**+3.9**
PLBC	**Pleasant Camp**	**5.18**	**212**	Pn	**Pn**	**00 07 19.6**	**-0.3**
PLBC				Pg	**Pb**	**00 07 34.7**	**+1.8**
PLBC				Sg	**Sb**	**00 08 39.1**	**+3.9**
DLBC	**Dease Lake**	**5.55**	**175**	Pn	**Pn**	**00 07 25.6**	**+0.7**
	45nm,0.3s,baz=7.6,slow=13,SNR=203						
DLBC				Sn	**Sn**	**00 08 28.7**	**-0.1**
	35nm,0.3s,baz=169,slow=17,SNR=5.8						
DLBC				Lg	Lg	00 08 53.3	
	62nm,0.3s,baz=107,slow=22,SNR=12						
DLBC				LR	LR	00 10 00.7	
	comp=Z,78nm,21.0s,baz=276,slow=42						
DLBC	**Dease Lake**	**5.55**	**175**	Pn	**Pn**	**00 07 25.6**	**+0.7**
DLBC				Sn	**Sn**	**00 08 26.3**	**-2.5**
DLBC				Sg	**Sg**	**00 08 54.7**	**-5.5**
CTGM	**Chitina Glacie**	**5.66**	**243**	Pn	**Pn**	**00 07 26.1**	**-0.5**
CTGM				Sg	**Sb**	**00 08 53.2**	**+4.2**
DOT	**Dot Lake**	**5.81**	**273**	Pn	**Pn**	**00 07 27.2**	**-1.2**
DOT				Pg	**Pb**	**00 07 45.7**	**+2.1**
DOT	**Dot Lake**	**5.81**	**273**	*e*Pn	**Pn**	**00 07 27.8**	**-0.7**
MENT	**Mentasta**	**5.81**	**266**	*e*Pn	**Pn**	**00 07 27.4**	**-1.0**
BALM	**Baldy**	**6.02**	**246**	Pn	**Pn**	**00 07 31.3**	**-0.1**
BALM				Sg	**Sb**	**00 09 05.3**	**+5.9**
FNBB	**Fort Nelson**	**6.35**	**139**	Pn	**Pn**	**00 07 37.3**	**+1.4**
FNBB				Sg	**Sg**	**00 09 23.8**	**-1.9**
FNBB	**Fort Nelson**	**6.35**	**139**	Pn	**Pn**	**00 07 37.3**	**+1.4**
FNBB				Sg	**Sg**	**00 09 23.8**	**-1.9**
FYU	**Fort Yukon**	**6.53**	**300**	*e*Pn	**Pn**	**00 07 38.1**	**-0.2**
PAX	**Paxson**	**6.57**	**268**	Pn	**Pn**	**00 07 37.2**	**-1.1**
PAX				Pg	**Pb**	**00 07 57.7**	**+1.1**
PAX				Sn	Sn	00 08 46.3	-7.7
PAX				Sg	**Sb**	**00 09 20.0**	**+4.9**
PAX	**Paxson**	**6.57**	**268**	*e*Pn	**Pn**	**00 07 38.6**	**-0.4**
IL1	**Eielson Array**	**6.95**	**284**	*e*Pn	Pn	00 07 40.4	-3.8
ILAR	**Eielson Array**	**6.95**	**284**	Pn	Pn	00 07 35.4	-8.8
	1.2nm,0.3s,baz=270,slow=18,SNR=14						
ILAR				Lg	Lg	00 09 34.6	
	6.2nm,0.3s,baz=86,slow=27,SNR=6.3						
BMRM	**Bremner River**	**6.99**	**251**	*e*Pn	**Pn**	**00 07 45.5**	**+0.8**
HDA	**Harding Lake**	**6.99**	**281**	*e*Pn	**Pn**	**00 07 43.7**	**-1.0**
KLU	**Klutina**	**7.29**	**257**	*e*Pn	**Pn**	**00 07 49.8**	**+1.0**
COLA	**College**	**7.37**	**285**	*e*Pn	**Pn**	**00 07 50.6**	**+0.9**
	54nm,0.9s						
DHY	**Denali Highway**	**7.38**	**271**	*e*Pn	**Pn**	**00 07 50.3**	**+0.1**
DIV	**Divide**	**7.40**	**254**	Pn	**Pn**	**00 07 50.2**	**-0.1**
DIV	**Divide**	**7.40**	**254**	*e*Pn	**Pn**	**00 07 51.4**	**+1.1**
WRH	**Wood River Hil**	**7.48**	**282**	*e*Pn	**Pn**	**00 07 51.2**	**-0.2**
YKW3	**Yellowknife Ar**	**7.51**	**93**	Pn	**Pn**	**00 07 53.9**	**+2.2**
YKW3				Sn	**Sn**	**00 09 16.3**	**-0.5**
YKW3	**Yellowknife Ar**	**7.51**	**93**	*e*Pn	**Pn**	**00 07 53.1**	**+1.4**
MDM	**Murphy Dome**	**7.53**	**285**	*e*Pn	**Pn**	**00 07 52.2**	**+0.2**
YKA	**Yellowknife Ar**	**7.54**	**94**	Pn	**Pn**	**00 07 52.6**	**+0.6**
	8.9nm,0.3s,baz=282,slow=13,SNR=319						
YKA				Sn	**Sn**	**00 09 16.1**	**-1.4**
	9.1nm,0.3s,baz=289,slow=23,SNR=11						
YKA				Lg	Lg	00 10 03.8	
	3.5nm,0.3s,baz=290,slow=28,SNR=5.0						
YKB5	**Yellowknife Ar**	**7.54**	**94**	*e*Pn	**Pn**	**00 07 52.2**	**+0.2**
KUKN	**Kugluktuk,NWT**	**7.57**	**52**	Sn	**Sn**	**00 09 15.1**	**-3.2**
WRAK	**Wrangell Islan**	**7.58**	**186**	*e*Pn	**Pn**	**00 07 53.0**	**+0.3**
EYAK	**Cordova Ski Ar**	**7.69**	**250**	*e*Pn	**Pn**	**00 07 55.8**	**+1.6**
SCM	**Sheep Creek Mo**	**7.76**	**262**	*e*Pn	**Pn**	**00 07 56.7**	**+1.4**
MCK	**McKinley**	**7.94**	**277**	*e*Pn	**Pn**	**00 07 57.7**	**+0.1**
RND	**Reindeer**	**7.96**	**274**	*e*Pn	**Pn**	**00 07 58.3**	**+0.2**
CRAG	**Craig**	**8.57**	**188**	*e*Pn	**Pn**	**00 08 06.9**	**+0.6**
TRF	**Thorofare Moun**	**8.59**	**275**	*e*Pn	**Pn**	**00 08 06.7**	**+0.1**
MLY	**Manley**	**8.59**	**286**	*e*Pn	**Pn**	**00 08 06.2**	**-0.4**
COLD	**Coldfoot**	**8.60**	**301**	Pn	**Pn**	**00 08 07.1**	**+0.5**
COLD	**Coldfoot**	**8.60**	**301**	*e*Pn	**Pn**	**00 08 07.3**	**+0.7**
HILA	**High Level**	**8.62**	**122**	Pn	**Pn**	**00 08 07.3**	**+0.4**
HILA	**High Level**	**8.62**	**122**	Pn	**Pn**	**00 08 07.3**	**+0.4**
PMR	**Palmer**	**8.65**	**262**	*e*Pn	**Pn**	**00 08 09.0**	**+1.7**
BPAW	**Bear Paw Mtn.**	**8.78**	**280**	*e*Pn	**Pn**	**00 08 08.2**	**-0.9**
KTH	**Kantishna Hill**	**8.84**	**276**	*e*Pn	**Pn**	**00 08 09.9**	**-0.2**
RC01	**Rabbit Creek A**	**9.12**	**260**	*e*Pn	**Pn**	**00 08 15.4**	**+1.5**
CAST	**Castle Rocks**	**9.38**	**276**	*e*Pn	**Pn**	**00 08 18.0**	**+0.6**
PPLA	**Purkeypile**	**9.55**	**273**	*e*Pn	**Pn**	**00 08 21.3**	**+1.4**
FSMA	**Fort Smith**	**9.83**	**105**	Pn	**Pn**	**00 08 24.8**	**+1.2**
FSMA				Sn	Sn	00 10 07.5	-6.5
SPU	**Mount Spurr**	**10.10**	**264**	*e*Pn	**Pn**	**00 08 29.3**	**+2.1**
SNLN	**Sandy Lake, NW**	**10.52**	**86**	Pn	**Pn**	**00 08 33.9**	**+1.0**
SNLN				Sn	Sn	00 10 23.3	-7.4
SNLN	**Sandy Lake, NW**	**10.52**	**86**	Pn	**Pn**	**00 08 34.0**	**+1.1**
SNLN				Sn	Sn	00 10 23.3	-7.4
WAPA	**Wapiti River**	**10.59**	**141**	Pn	**Pn**	**00 08 34.4**	**+0.4**
WAPA	**Wapiti River**	**10.59**	**141**	Pn	**Pn**	**00 08 34.4**	**+0.4**
HOM	**Homer**	**10.66**	**256**	*e*Pn	**Pn**	**00 08 36.2**	**+1.4**
VIB	**Van Inlet**	**10.76**	**185**	Pn	**Pn**	**00 08 35.5**	**-0.8**
DIB	**Dawson Inlet,**	**10.80**	**185**	Pn	**Pn**	**00 08 38.5**	**+1.6**
WHFN	**White Fish Lak**	**10.83**	**87**	Pn	**Pn**	**00 08 38.0**	**+0.8**
WHFN				Sn	**Sn**	**00 10 35.3**	**-3.1**
TTA	**Tatalina**	**11.23**	**276**	*e*Pn	**Pn**	**00 08 43.2**	**+0.4**
TT01	**Tatalina**	**11.24**	**276**	*e*Pn	**Pn**	**00 08 43.3**	**+0.5**
SVW2	**Sparrevohn**	**11.69**	**267**	*e*Pn	**Pn**	**00 08 50.5**	**+1.6**
BBB	**Bella Bella**	**11.89**	**171**	Lg	Lg	00 12 14.0	
	0.2nm,0.3s,baz=79,slow=19,SNR=2.7						
MNB	**Mounoet Dainar**	**13.49**	**145**	Pn	**Pn**	**00 09 15.0**	**+1.2**
EDM	**Edmonton**	**14.08**	**132**	Pn	**Pn**	**00 09 20.8**	**-0.8**
YBKN	**Baker Lake, Hu**	**15.15**	**73**	Pn	**Pn**	**00 09 34.0**	**-2.1**
CHGN	**Chignik**	**15.56**	**253**	*e*Pn	**Pn**	**00 09 43.2**	**+1.8**
PRDA	**Priddis**	**15.82**	**138**	Pn	**Pn**	**00 09 43.3**	**-1.7**
BULN	**Bullion Camp,**	**15.91**	**64**	Pn	**Pn**	**00 09 44.3**	**-1.7**
SMLN	**Simpson Lake,**	**16.16**	**56**	Pn	**Pn**	**00 09 45.9**	**-3.2**
RES	**Resolute Bay**	**16.30**	**34**	Pn	**Pn**	**00 09 48.6**	**-2.2**
	1.5nm,0.3s,baz=244,slow=12,SNR=91						
RES				Sn	Sn	00 12 41.0	-11
	0.9nm,0.3s,baz=147,slow=22,SNR=6.2						
RES				Lg	Lg	00 14 34.5	
	0.4nm,0.3s,baz=324,slow=14,SNR=2.6						
RES				LR	LR	00 16 36.4	
	comp=Z,37nm,20.9s,baz=284,slow=39						
RES	**Resolute Bay**	**16.30**	**34**	Pn	**Pn**	**00 09 48.7**	**-2.2**
RES	**Resolute Bay**	**16.30**	**34**	*e*Pn	**Pn**	**00 09 48.5**	**-2.3**
	17nm,0.7s						
RES				Sn	Sn	00 12 41.0	-11
JCW	**Jim Creek**	**16.55**	**158**	*e*Pn	**Pn**	**00 09 54.8**	**+0.5**
B08A	**Colville Reser**	**16.87**	**152**	*e*Pn	**Pn**	**00 09 59.4**	**+1.1**
	9.8nm,1.4s						
KUGN	**Kugaaruk Camp,**	**16.89**	**58**	Pn	**Pn**	**00 09 55.3**	**-3.1**
MCMN	**McManaman Lake**	**17.02**	**75**	Pn	**Pn**	**00 09 58.0**	**-2.0**
ARVN	**Arviat, NU**	**17.11**	**83**	Pn	**Pn**	**00 09 58.9**	**-2.2**
FFC	**Flin Flon**	**17.28**	**109**	*e*Pn	**Pn**	**00 10 00.1**	**-3.2**
	16nm,0.8s						
NEW	**Newport**	**17.45**	**148**	P	**P**	**00 10 07.9**	**+1.1**
	0.1nm,0.3s,baz=326,slow=11,SNR=2.9						
NEW				Lg	Lg	00 15 10.8	
	0.2nm,0.3s,baz=343,slow=5.8,SNR=4.0						
NEW				LR	LR	00 17 20.3	
	comp=Z,93nm,18.0s,baz=335,slow=38						
NEW	**Newport**	**17.45**	**148**	*e*Pn	**Pn**	**00 10 06.3**	**+0.7**
WALA	**Waterton Lakes**	**17.55**	**140**	Pn	**Pn**	**00 10 07.3**	**+0.4**
WALA	**Waterton Lakes**	**17.55**	**140**	*e*Pn	**Pn**	**00 10 07.4**	**+0.5**
	6.2nm,0.8s						
RAYA	**Raymond Albert**	**17.61**	**137**	Pn	**Pn**	**00 10 06.9**	**-0.8**
C09A	**Chrisman Ranch**	**17.62**	**151**	*e*Pn	**P**	**00 10 08.9**	**+0.2**
	4.6nm,0.9s						
LTY	**Liberty**	**17.67**	**156**	*e*Pn	**Pn**	**00 10 08.7**	**+0.4**
	8.1nm,1.2s						
D08A	**Wollman Farm,**	**18.19**	**153**	*e*Pn	**P**	**00 10 16.1**	**+1.1**
	3.8nm,0.8s						
FCC	**Fort Churchill**	**18.23**	**89**	*e*Pn	**P**	**00 10 15.4**	**+0.2**
	12nm,0.8s						
BLMT	**Blacktail Moun**	**18.38**	**142**	*e*P	**P**	**00 10 19.3**	**+2.0**
BSMT	**Bassoo Peak**	**18.41**	**144**	*e*P	**Pn**	**00 10 18.8**	**+1.2**
VALT	**Mount Saint He**	**18.44**	**160**	*e*P	**Pn**	**00 10 22.4**	**+4.5**
YBMT	**Yellow Bay**	**18.61**	**142**	*e*P	**Pn**	**00 10 21.0**	**+1.1**
JTMT	**Jette**	**18.64**	**143**	*e*P	**Pn**	**00 10 21.6**	**+1.2**
F04A	**Amboy**	**18.68**	**161**	*e*P	**P**	**00 10 20.3**	**0.0**
	13nm,0.9s						
HAWA	**Hanford**	**18.71**	**155**	*e*P	**P**	**00 10 20.6**	**-0.1**
	7.1nm,1.1s						
SWMT	**Swartz Lake**	**18.93**	**142**	*e*P	**Pn**	**00 10 24.8**	**+0.9**
MSO	**Missoula**	**19.58**	**143**	P	**Pn**	**00 10 33.6**	**+2.0**
	baz=337						
MSO	**Missoula**	**19.58**	**143**	*e*P	**Pn**	**00 10 31.2**	**-0.3**
	11nm,1.2s						
G06A	**Carlson Farm,**	**19.64**	**158**	*e*P	**P**	**00 10 31.3**	**+0.4**
	9.3nm,1.0s						
CHMT	**Chamberlain Mo**	**19.68**	**142**	*e*P	**Pn**	**00 10 32.6**	**-0.4**
GIFN	**Gifford Fjord,**	**19.70**	**51**	Pn	**Pn**	**00 10 32.9**	**+0.1**
EGMT	**Eagleton**	**19.72**	**134**	P	**Pn**	**00 10 34.2**	**+1.0**
	baz=331						
EGMT	**Eagleton**	**19.72**	**134**	*e*P	**Pn**	**00 10 33.0**	**-0.3**
	15nm,0.8s						
ILON	**Igloolik, Nuna**	**19.72**	**53**	Pn	**Pn**	**00 10 33.1**	**+0.2**
ILON	**Igloolik, Nuna**	**19.72**	**53**	Pn	**Pn**	**00 10 33.1**	**+0.2**
G08A	**Pilot Rock**	**19.88**	**154**	*e*P	**P**	**00 10 33.6**	**0.0**
	0.9nm,0.6s						
LYMT	**Lyon Mountain**	**19.90**	**140**	Pn	**Pn**	**00 10 36.9**	**+1.3**
EUNU	**Eureka**	**20.24**	**21**	Pn	Pn	00 10 39.1	0.0
EUNU	**Eureka**	**20.24**	**21**	Pn	Pn	00 10 39.1	0.0
DGMT	**Dagmar**	**21.25**	**124**	P	**P**	**00 10 53.0**	**+4.7**
	baz=326						
DGMT	**Dagmar**	**21.25**	**124**	*e*P	**P**	**00 10 49.3**	**+1.0**
	20nm,0.9s						
BOZ	**Bozeman (W)**	**21.30**	**140**	P	**P**	**00 10 52.9**	**+3.9**
	baz=336						
A26A	**Wade Farm, Ken**	**21.70**	**120**	P	**P**	**00 10 56.2**	**+3.1**
	baz=324						
YBH	**Yreka Blue Hor**	**22.77**	**164**	LR	LR	00 19 54.5	
	comp=Z,121nm,20.3s,baz=338,slow=36						
ULM	**Lac du Bonnet**	**23.09**	**110**	P	**P**	**00 11 08.9**	**+1.0**
	0.9nm,0.3s,baz=307,slow=9.6,SNR=2.6						
ULM				S	**S**	**00 15 16.9**	**-1.9**
	1.7nm,0.5s,baz=187,slow=8.1,SNR=2.8						
ULM				LR	LR	00 20 24.8	
	comp=Z,65nm,19.4s,baz=334,slow=37						
EPLO	**Experimental L**	**24.43**	**108**	Pn	**P**	**00 11 23.0**	**+2.1**
EPLO	**Experimental L**	**24.43**	**108**	Pn	**P**	**00 11 23.0**	**+2.1**
PDAR	**Pinedale Array**	**24.53**	**140**	P	**P**	**00 11 24.6**	**+2.6**
	0.3nm,0.5s,baz=10,slow=5.5,SNR=1.9						
BILL	**Bilibino**	**24.86**	**307**	*e*P	**P**	**00 11 23.9**	**-0.6**
	4.1nm,0.7s						
SOLO	**Sioux Lookout**	**24.86**	**106**	Pn	**P**	**00 11 27.3**	**+2.6**
SOLO	**Sioux Lookout**	**24.86**	**106**	Pn	**P**	**00 11 27.3**	**+2.6**
BMN	**Battle Mountai**	**24.90**	**154**	*e*P	**P**	**00 11 25.4**	**+0.1**
	3.8nm,1.0s						
ORV	**Oroville**	**25.07**	**163**	*e*P	**P**	**00 11 26.7**	**+0.1**
	6.1nm,1.5s						
INUQ	**Inukjuak**	**25.39**	**78**	Pn	**P**	**00 11 31.4**	**+2.1**
INUQ	**Inukjuak**	**25.39**	**78**	Pn	**P**	**00 11 31.4**	**+2.1**
NSHM	**Saint Helena R**	**25.95**	**165**	*e*P	**P**	**00 11 39.0**	**+4.3**
FRB	**Frobisher Bay**	**26.55**	**62**	P	**P**	**00 11 42.4**	**+2.6**
	3.1nm,0.8s,baz=290,slow=8.6,SNR=4.3						
NVAR	**Mina Array Bea**	**26.65**	**157**	P	**P**	**00 11 44.9**	**+3.6**
	0.6nm,0.5s,baz=321,slow=8.1,SNR=2.7						
CMB	**Columbia Colle**	**26.71**	**161**	*e*P	**P**	**00 11 41.9**	**+0.2**
	6.9nm,1.5s						
TMUT	**Trail Mountain**	**27.32**	**145**	*e*P	**P**	**00 11 47.1**	**-0.3**
	6.6nm,1.0s						
O20A	**White River Ci**	**27.34**	**140**	*e*P	**P**	**00 11 47.4**	**0.0**
	16nm,1.7s						
SRU	**San Rafael Swe**	**27.68**	**144**	*e*P	**P**	**00 11 50.5**	**+0.1**
	6.8nm,0.8s						
SAO	**San Andreas Ge**	**27.82**	**163**	*e*P	**P**	**00 11 52.0**	**+0.5**
	9.1nm,0.9s						
ECSD	**EROS Data Cent**	**28.08**	**120**	*e*P	**P**	**00 11 53.5**	**-0.3**
	3.3nm,0.9s						
SPMN	**Marine on St.**	**28.34**	**113**	*e*P	**P**	**00 11 56.8**	**+0.7**
	3.9nm,0.8s						
LCMT	**Little Creek M**	**29.02**	**150**	*e*P	**P**	**00 12 01.9**	**-0.5**
	7.1nm,1.4s						
LCMT				*e*ScP	**ScP**	**00 18 45.3**	**-6.4**
GSC	**Goldstone, Bar**	**29.96**	**156**	*e*P	**P**	**00 12 08.9**	**-1.7**
	12nm,1.4s						
S22A	**4UR Ranch, Cre**	**29.96**	**140**	*e*P	**P**	**00 12 10.0**	**-0.8**
	8.5nm,1.6s						
JFWS	**Jewell Farm**	**31.29**	**113**	*e*P	**P**	**00 12 21.2**	**-1.0**
	32nm,1.8s						
PFO	**Pinyon Flats O**	**31.67**	**157**	*e*P	**P**	**00 12 25.3**	**-0.4**
	4.1nm,1.0s						
SUMG	**Summit**	**31.82**	**35**	*e*P	**P**	**00 12 26.5**	**-0.5**
	7.8nm,1.2s						
Y12C	**Blythe**	**31.89**	**153**	*e*P	**P**	**00 12 27.7**	**+0.1**
	5.0nm,1.0s						
PETK	**Petropavlovsk-**	**36.77**	**287**	LR	LR	00 29 21.4	
	comp=Z,34nm,18.1s,baz=94,slow=39						
TXAR	**Lajitas Array**	**38.75**	**140**	P	**P**	**00 13 29.5**	**+2.8**
	0.5nm,0.8s,baz=356,slow=5.1,SNR=3.5						
TXAR				LR	LR	00 32 26.0	
	comp=Z,40nm,19.8s,baz=0.0,slow=40						
NOA	**NORSAR Array B**	**52.12**	**22**	LR	LR	00 39 17.3	
	comp=Z,16nm,18.4s,baz=330,slow=38						
FINES	**FINESS Array B**	**53.74**	**13**	P	**P**	**00 15 22.4**	**-1.6**
	2.5nm,1.0s,baz=1.9,slow=4.2,SNR=3.1						
FINES				LR	LR	00 44 44.5	
	comp=Z,25nm,18.3s,baz=277,slow=43						
ZALV	**Zalesovo Beam**	**59.20**	**336**	P	P	00 15 57.6	-5.4
	0.3nm,0.4s,baz=345,slow=4.5,SNR=2.7						
SONM	**Songino Array**	**59.83**	**319**	LR	LR	00 45 10.4	
	comp=Z,49nm,18.5s,baz=335,slow=40						
HHC	**Hu-ho-hao-te**	**64.53**	**312**	*e*P	**P**	**00 16 39.1**	**0.0**
HHC				sP	sP	00 16 46.9	+3.8
AKASG	**Malin Array Be**	**64.64**	**14**	P	**P**	**00 16 39.0**	**-0.6**
	0.1nm,0.3s,baz=354,slow=6.6,SNR=2.9						
MKAR	**Makanchi Array**	**66.53**	**336**	P	**P**	**00 16 53.4**	**+1.5**
	0.1nm,0.3s,baz=30,slow=4.7,SNR=3.0						
ABKAR	**Akbulak array**	**66.81**	**352**	*e*P	**P**	**00 16 54.8**	**+1.2**
	0.6nm,0.6s						
WMQ	**Urumqi**	**68.31**	**331**	*e*P	**P**	**00 17 05.5**	**+2.2**
WMQ				pmax	pmax		
	comp=Z,2.0nm,0.6s						
EKS2	**Erkin-Say**	**71.94**	**341**	*e*P	**P**	**00 17 27.1**	**+1.5**
	2.9nm,0.9s						
CD2	**Chengdu**	**76.14**	**314**	P	**P**	**00 17 48.6**	**-1.7**
CD2				pmax	pmax		
	comp=Z,1.0nm,0.5s						
CMAR	**Chiang Mai Arr**	**89.29**	**313**	LR	LR	01 01 38.7	
	comp=Z,18nm,19.0s,baz=135,slow=38						
WSAR	**Wadi Sarin**	**92.78**	**351**	LR	LR	01 05 36.1	
	comp=Z,20nm,18.3s,slow=39						

*IDC **22** 00:07:02.9±7.1,37°.67N×142°.31E,h0km,mb3.8/3, mb1 3.8/4,mb1mx3.4/43,mbtmp3.8/4,ML2.3/1,Error ellipse: s-maj=132.2km s-min=49.1km az=159.0*

*ISCJB **22** 00:07:27.5±0.7,39°.41N±0°.04×141°.3E±0°.1,h99km±4km, mb3.6/3,Error ellipse: s-maj=13.7km s-min=6.3km az=5.7*

*JMA **22** 00:07:28.6,39°.43N×141°.19E,h92km±1km,M3.1*

ISC 22 00:07:28.1±1.1,39°.41N±0°.05×141°.29E±0°.09,h95km±8km, n13,σ0s90/22,mb3.8/3,Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JOM	**Ohasama**	**0.07**	**1**	P	**Pn**	**00 07 41.4**	**0.0**
JOM				*e*S	**Sn**	**00 07 51.3**	**0.0**
JMK	**Ichinoseki**	**0.46**	**187**	P	**Pn**	**00 07 43.4**	**+0.4**
JMK				*e*S	**Sn**	**00 07 54.1**	**-0.1**
**JRG

comp=Z,9.8nm,0.6s,baz=210,slow=6.2,SNR=6.6
MAW Mawson 76.07 164 P **P 00 20 06.3 +0.6**
comp=Z,1.2nm,0.4s,baz=188,slow=7.9,SNR=3.6
MAW LR LR 00 52 59.0
comp=Z,47nm,19.9s,baz=242,slow=35
PHWY Pilot Hill 78.32 335 *e*P **P 00 20 17.7 -1.2**
comp=Z,8.4nm,1.0s
HWUT Hardware Ranch 80.98 331 *e*P **P 00 20 33.4 +0.1**
comp=Z,2.2nm,0.7s
PDAR Pinedale Array 81.14 333 P **P 00 20 33.8 -0.3**
comp=Z,0.5nm,0.7s,baz=162,slow=6.2,SNR=4.6
BOSA Boshof 81.25 118 P **P 00 20 34.0 -1.1**
comp=Z,3.0nm,0.8s,baz=92,slow=2.2,SNR=4.2
NVAR Mina Array Bea 81.52 325 P **P 00 20 37.0 +0.8**
comp=Z,0.3nm,0.3s,baz=119,slow=7.3,SNR=4.2
URZ Urewera 85.98 227 LR LR 00 47 47.7
comp=Z,42nm,21.4s,baz=183,slow=28
LSZ Lusaka 90.48 108 *e*P **P 00 21 19.5 -1.6**
comp=Z,2.5nm,0.8s
ASAR Alice Springs 120.47 207 PKP PKPdf 00 27 17.1 +6.4
comp=Z,0.5nm,0.7s,baz=117,slow=1.3,SNR=3.0
ASAR pPKP pPKPdf 00 27 21.5 +1.3
comp=Z,0.5nm,0.7s,baz=112,slow=1.4,SNR=4.3
WRA Warramunga Arr 123.62 210 pPKP pPKPdf 00 27 27.9 +1.6
comp=Z,1.9nm,0.6s,baz=169,slow=1.6,SNR=2.5
H11S2 WAKE ISLAND Hyd 126.07 271 T T 02 46 08.1
baz=116,slow=75,SNR=175
H11S1 WAKE ISLAND Hyd 126.08 271 T T 02 46 09.0
baz=116,slow=75,SNR=169
H11S3 WAKE ISLAND Hyd 126.09 271 T T 02 46 09.4
baz=116,slow=75,SNR=161
H11N3 WAKE ISLAND Hyd 126.40 273 T T 02 46 32.2
baz=116,slow=75,SNR=48
H11N1 WAKE ISLAND Hyd 126.42 273 T T 02 46 37.6
baz=116,slow=75,SNR=14
H11N2 WAKE ISLAND Hyd 126.42 273 T T 02 46 38.3
baz=116,slow=75,SNR=68
AAK Ala-Archa 150.66 57 *e*PKPbc **PKPbc 00 28 11.4 +0.7**
AAK *e*PKPab **PKPab 00 28 17.6 -0.1**
PSI Prapat 150.69 161 PKPbc **PKPbc 00 28 10.2 -1.4**
comp=Z,2.2nm,0.5s,baz=188,slow=10,SNR=4.4
PSI pPKPbc **pPKPbc 00 28 22.2 +1.1**
comp=Z,5.5nm,0.7s,baz=268,slow=1.6,SNR=3.2
ZALV Zalesovo Beam 151.41 30 PKPbc **PKPbc 00 28 11.3 -0.5**
comp=Z,2.4nm,0.6s,baz=274,slow=2.9,SNR=15
ZALV pPKPbc **pPKPbc 00 28 23.4 +2.1**
comp=Z,5.4nm,0.7s,baz=300,slow=3.0,SNR=12
MKAR Makanchi Array 154.41 44 PKPbc **PKPbc 00 28 17.8 -1.0**
comp=Z,0.1nm,0.2s,baz=307,slow=0.7,SNR=3.6
MKAR pPKPbc **pPKPbc 00 28 30.6 +2.2**
comp=Z,0.8nm,0.7s,baz=303,slow=3.0,SNR=3.4
CMAR Chiang Mai Arr 164.98 143 PKPab **PKPab 00 29 18.4 -1.3**
comp=Z,0.9nm,0.4s,baz=191,slow=7.0,SNR=5.5

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*ISCJB **22** 00:10:14.8±0.4, 37.°61N±0.°02×2.°42W±0.°02, h5km±2km, Error ellipse: s-maj=3.8km s-min=2.2km az=160.8*
*MDD **22** 00:10:15.6±0.3, 37.°42N×2.°29W, h0km, mbLg3.0/35, Error ellipse: s-maj=2.6km s-min=2.3km az=128.0, PRXIMO*
MDD EMS: III INTENSIDAD MAXIMA.
*CSEM **22** 00:10:15.3±0.1, 37.°47N×2.°34W, h5km, ML3.6/43, Error ellipse: s-maj=2.8km s-min=1.7km az=156.0*
*SFS **22** 00:10:15.0, 37.°42N×2.°29W, h0km, ML3.0*
*INMG **22** 00:10:15.8±1.6, 37.°41N×2.°28W, h6km±3km, ML3.1, Error ellipse: s-maj=2.2km s-min=1.9km az=127.0*
*IGIL **22** 00:10:15.9, 37.°42N×2.°30W, h0km*
*LDG **22** 00:10:16.3±0.1, 37.°38N×2.°27W, h2km, Ml3.0/6, Error ellipse: s-maj=2.8km s-min=1.9km az=146.0*

ISC 22 00:10:14.6±1.1**, 37.°47N**±0.°03×**2.°33W**±0.°02**, h5**km±9km**, n202, σ1§23/340, 4C-4D, Spain**

Code	Station Name	Δ°	AZ°	Phase	Op	ID ISC	Time h m s	Res ISC
EHUE	**Huescar**	**0.40**	**328**	⇓Pg		**Pb**	**00 10 23.3**	**-0.9**
	63nm,0.1s,SNR=18							
EHUE				Lg		Lg	00 10 31.6	
	192nm,0.1s,SNR=19							
EHUE	**Huescar**	**0.40**	**328**	Pg		**Pb**	**00 10 23.3**	**-0.9**
	63nm,0.1s,SNR=18							
EHUE				Lg		Lg	00 10 31.6	
	192nm,0.1s,SNR=19							
ENIJ	**Nijar**	**0.51**	**169**	⇓Pg		**Pg**	**00 10 24.1**	**-0.3**
	472nm,0.1s,SNR=18							
ENIJ				Lg		Lg	00 10 29.7	
	10μm,0.3s,SNR=7.9							
ENIJ	**Nijar**	**0.51**	**169**	Pg		**Pg**	**00 10 24.1**	**-0.3**
	472nm,0.1s,SNR=18							
ENIJ				Lg		Lg	00 10 29.7	
	10μm,0.3s,SNR=7.9							
GORA	**Gorafe**	**0.57**	**271**	Pg		**Pg**	**00 10 26.1**	**+0.6**
	37nm,0.1s,SNR=7.9							
GORA				Lg		Lg	00 10 36.6	
	988nm,0.2s,SNR=7.9							
GORA	**Gorafe**	**0.57**	**271**	Pg		**Pg**	**00 10 26.1**	**+0.6**
	37nm,0.1s,SNR=7.9							
GORA				Lg		Lg	00 10 36.6	
	988nm,0.2s,SNR=7.9							
SESP	**Santiago Espad**	**0.67**	**345**	⇓Pg		**Pb**	**00 10 28.5**	**-0.3**
	33nm,0.1s,SNR=18							
SESP				Lg		Lg	00 10 39.2	
	345nm,0.2s,SNR=7.9							
SESP	**Santiago Espad**	**0.67**	**345**	Pg		**Pb**	**00 10 28.5**	**-0.3**
	33nm,0.1s,SNR=18							
SESP				Lg		Lg	00 10 39.2	
	345nm,0.2s,SNR=7.9							
EBER	**Berja**	**0.73**	**218**	⇑Pg		**Pg**	**00 10 28.7**	**+0.1**
	313nm,0.2s,SNR=18							
EBER				Lg		Lg	00 10 39.3	
	644nm,0.2s							
EBER	**Berja**	**0.73**	**218**	Pg		**Pg**	**00 10 28.7**	**+0.1**
	313nm,0.2s,SNR=18							
EBER				Lg		Lg	00 10 39.3	
	644nm,0.2s							
EQUE	**Quentar**	**0.93**	**253**	⇑Pg		**Pg**	**00 10 32.5**	**+0.2**
	24nm,0.2s,SNR=18							
EQUE				Lg		Lg	00 10 45.0	
	42nm,0.1s,SNR=7.9							
EQUE	**Quentar**	**0.93**	**253**	Pg		**Pg**	**00 10 32.5**	**+0.2**
	24nm,0.2s,SNR=18							
EQUE				Lg		Lg	00 10 45.0	
	42nm,0.1s,SNR=7.9							
EMUR	**La Murta**	**0.94**	**67**	⇑Pg		**Pg**	**00 10 32.1**	**-0.5**
	771nm,0.3s,SNR=18							
EMUR				Lg		Lg	00 10 46.0	
	688nm,0.7s							
EMUR	**La Murta**	**0.94**	**67**	Pg		**Pg**	**00 10 32.1**	**-0.5**
	771nm,0.3s,SNR=18							
EMUR				Lg		Lg	00 10 46.0	
	688nm,0.7s							
ECOG	**Cogollos-Vega**	**1.01**	**259**	Pg		**Pg**	**00 10 34.0**	**+0.1**
	16nm,0.3s,SNR=46							
ECOG				Lg		Lg	00 10 50.4	
	135nm,0.3s							
ECOG	**Cogollos-Vega**	**1.01**	**259**	Pg		**Pg**	**00 10 34.0**	**+0.1**
	16nm,0.3s,SNR=46							
ECOG				Lg		Lg	00 10 50.4	
	135nm,0.3s							
CART	**Cartagena**	**1.06**	**84**	⇑Pg		**Pg**	**00 10 34.2**	**-0.7**
CART				Lg		Lg	00 10 48.1	
CART	**Cartagena**	**1.06**	**84**	*i* P		**Pg**	**00 10 34.2**	**-0.7**
CART				*e*S		**Sg**	**00 10 48.1**	**-0.6**
SELV	**Sierra Elvira**	**1.14**	**259**	Pg		**Pg**	**00 10 36.4**	**-0.1**
	5.2nm,0.2s,SNR=7.9							
SELV				Lg		Lg	00 10 55.5	
	50nm,0.2s,SNR=7.9							
SELV	**Sierra Elvira**	**1.14**	**259**	Pg		**Pg**	**00 10 36.4**	**-0.1**
	5.2nm,0.2s,SNR=7.9							
SELV				Lg		Lg	00 10 55.5	
	50nm,0.2s,SNR=7.9							
ETOB	**Tobarra**	**1.32**	**28**	Pn		**Pg**	**00 10 40.4**	**+0.5**
	1.6nm,0.1s,SNR=7.9							
ETOB				Pg		**Pb**	**00 10 41.1**	**+1.2**
	84nm,0.2s,SNR=405							
ETOB				Lg		Lg	00 10 59.7	
	120nm,0.1s							
ETOB	**Tobarra**	**1.32**	**28**	Pn		**Pg**	**00 10 40.4**	**+0.5**
	1.6nm,0.1s,SNR=7.9							
EGOR	**Sierra Gorda,**	**1.47**	**256**	Pn		**Pb**	**00 10 42.2**	**-0.2**
	5.8nm,0.3s,SNR=7.9							
EGOR				Lg		Lg	00 11 06.4	
	78nm,0.3s,SNR=7.9							
EGOR	**Sierra Gorda,**	**1.47**	**256**	Pn		**Pb**	**00 10 42.2**	**-0.2**
	5.8nm,0.3s,SNR=7.9							
EGOR				Lg		Lg	00 11 06.4	
	78nm,0.3s,SNR=7.9							
EALB	**Alboran**	**1.63**	**201**	Lg		Lg	00 11 03.6	
	20nm,0.2s,SNR=4.0							
EALB	**Alboran**	**1.63**	**201**	Lg		Lg	00 11 03.6	
	20nm,0.2s,SNR=4.0							
AFON	**Font Roja**	**1.84**	**49**	Pn		**Pn**	**00 10 47.1**	**+0.1**
	0.1nm,0.1s,SNR=4.0							
AFON				Lg		Lg	00 11 14.8	
	12nm,0.3s,SNR=7.9							
AFON	**Font Roja**	**1.84**	**49**	Pn		**Pn**	**00 10 47.1**	**+0.1**
	0.1nm,0.1s,SNR=4.0							
AFON				Lg		Lg	00 11 14.9	
	12nm,0.3s,SNR=7.9							
EADA	**Adamuz**	**1.91**	**292**	⇓Pn		**Pn**	**00 10 48.5**	**+0.7**
	9.8nm,0.2s,SNR=18							
EADA				Sn		**Sb**	**00 11 13.5**	**-0.6**
	18nm,0.1s,SNR=4.6							
EADA				Lg		Lg	00 11 19.7	
	241nm,0.3s,SNR=12							
EADA	**Adamuz**	**1.91**	**292**	Pn		**Pn**	**00 10 48.5**	**+0.7**
	9.8nm,0.2s,SNR=18							
EADA				Sn		**Sb**	**00 11 13.5**	**-0.6**
	18nm,0.1s,SNR=4.6							
EADA				Lg		Lg	00 11 19.7	
	241nm,0.3s,SNR=12							
EMIJ	**Mijas**	**2.16**	**246**	Pn		**Pb**	**00 10 52.4**	**-1.7**
	0.7nm,0.2s,SNR=14							
EMIJ				Lg		Lg	00 11 25.5	
	27nm,0.3s							
EMIJ	**Mijas**	**2.16**	**246**	Pn		**Pb**	**00 10 52.4**	**-1.7**
	0.7nm,0.2s,SNR=14							
EMIJ				Lg		Lg	00 11 25.5	
	27nm,0.3s							
LIJA	**Lijar**	**2.52**	**258**	Pg		**Pb**	**00 10 59.0**	**-1.3**
LIJA				Lg		Lg	00 11 32.0	
LIJA	**Lijar**	**2.52**	**258**	*i* P		**Pb**	**00 10 59.0**	**-1.3**
LIJA				*e*S		**Sb**	**00 11 32.0**	**+0.3**
ECAB	**El Cabril**	**2.52**	**285**	Pn		**Pn**	**00 10 56.6**	**+0.4**
	31nm,0.3s,SNR=243							
ECAB				Sn		**Sn**	**00 11 28.7**	**+1.4**
	24nm,0.2s,SNR=20							
ECAB				Lg		Lg	00 11 36.4	
	56nm,0.3s,SNR=14							
ECAB	**El Cabril**	**2.52**	**285**	Pn		**Pn**	**00 10 56.6**	**+0.4**
	31nm,0.3s,SNR=243							
ECAB				Sn		**Sn**	**00 11 28.7**	**+1.4**
	24nm,0.2s,SNR=20							
ECAB				Lg		Lg	00 11 36.3	
	56nm,0.3s,SNR=14							
ESDC	**Sonseca Array**	**2.54**	**330**	Pn		**Pn**	**00 10 56.6**	**+0.1**
	3.7nm,0.1s,baz=145,slow=12,SNR=61							
ESDC				Pg		**Pg**	**00 11 03.6**	**+0.3**
	65nm,0.2s,baz=150,slow=17,SNR=7.1							
ESDC				Sn		**Sn**	**00 11 28.2**	**+0.3**
	12nm,0.2s,baz=146,slow=22,SNR=13							
ESDC				Lg		Lg	00 11 38.0	
	29nm,0.2s,baz=142,slow=28,SNR=32							
ESDC	**Sonseca Array**	**2.54**	**330**	Pn		**Pn**	**00 10 56.6**	**+0.1**
	3.7nm,0.1s,SNR=61							
ESDC	**Sonseca Array**	**2.54**	**330**	Pg		**Pg**	**00 11 03.6**	**+0.3**
	65nm,0.2s,baz=150,slow=7.1							
ESDC				Sn		**Sn**	**00 11 28.2**	**+0.3**
	12nm,0.2s,SNR=13							
ESDC				Lg		Lg	00 11 38.0	
	29nm,0.2s,SNR=32							
EJIF	**Jimena Fronter**	**2.71**	**249**	Pg		**Pg**	**00 11 07.5**	**+0.9**
	6.1nm,0.4s,SNR=7.9							
EJIF				Lg		Lg	00 11 44.2	
	3.5nm,0.2s,SNR=4.0							
EJIF	**Jimena Fronter**	**2.71**	**249**	Pg		**Pg**	**00 11 07.5**	**+0.9**
	6.1nm,0.4s,SNR=7.9							
EJIF				Lg		Lg	00 11 44.2	
	3.5nm,0.2s,SNR=4.0							
ESPR	**Espera**	**2.88**	**259**	Pn		**Pb**	**00 11 06.0**	**-0.4**
	2.0nm,0.1s,SNR=4.0							
ESPR				Lg		Lg	00 11 44.8	
	14nm,0.2s,SNR=4.0							
ESPR	**Espera**	**2.88**	**259**	Lg		Lg	00 11 44.8	
	14nm,0.2s,SNR=4.0							
EMOS	**Mosqueruela**	**3.23**	**26**	Pn		**Pn**	**00 11 06.7**	**+0.6**
	0.5nm,0.3s,SNR=7.9							
EMOS				Pg		**Pg**	**00 11 16.6**	**+0.2**
	5.6nm,0.4s,SNR=13							
EMOS				Sn		**Sn**	**00 11 46.7**	**+1.8**
	3.6nm,0.3s,SNR=7.9							
EMOS				Lg		Lg	00 11 57.4	
	8.1nm,0.4s,SNR=7.9							
EMOS	**Mosqueruela**	**3.23**	**26**	Pn		**Pn**	**00 11 06.7**	**+0.6**
	0.5nm,0.3s,SNR=7.9							
EMOS	**Mosqueruela**	**3.23**	**26**	Pg		**Pg**	**00 11 16.6**	**+0.2**
	5.6nm,0.4s,SNR=13							
EMOS				Sn		**Sn**	**00 11 46.7**	**+1.8**
	3.6nm,0.3s,SNR=7.9							
EMOS				Lg		Lg	00 11 57.4	
	8.1nm,0.4s,SNR=7.9							
EMIN	**Mina Concepcio**	**3.46**	**276**	Pn		**Pn**	**00 11 09.5**	**+0.4**
	1.8nm,0.2s,SNR=57							
EMIN				Sn		**Sn**	**00 11 50.5**	**+0.1**
	6.2nm,0.2s,SNR=7.9							
EMIN				Lg		Lg	00 12 05.1	
	16nm,0.3s,SNR=6.4							
EMIN	**Mina Concepcio**	**3.46**	**276**	Pn		**Pn**	**00 11 09.5**	**+0.4**
	1.8nm,0.2s,SNR=57							
EMIN				Sn		**Sn**	**00 11 50.5**	**+0.1**
	6.2nm,0.2s,SNR=7.9							
EMIN				Lg		Lg	00 12 05.1	
	16nm,0.3s,SNR=6.4							
GUD	**Guadarrama**	**3.47**	**336**	Pn		**Pn**	**00 11 10.2**	**+0.9**
	0.3nm,0.2s,SNR=12							
GUD				Pg		**Pg**	**00 11 21.4**	**+0.4**
	6.1nm,0.2s,SNR=20							
GUD				Sn		**Sn**	**00 11 51.0**	**+0.2**
	6.2nm,0.2s,SNR=7.9							
GUD				Lg		Lg	00 12 04.4	
	38nm,0.4s							
GUD	**Guadarrama**	**3.47**	**336**	Pn		**Pn**	**00 11 10.2**	**+0.9**
	0.3nm,0.2s,SNR=12							
GUD	**Guadarrama**	**3.47**	**336**	Pg		**Pg**	**00 11 21.4**	**+0.4**
	6.1nm,0.2s,SNR=20							
GUD				Sn		**Sn**	**00 11 51.0**	**+0.2**
	6.2nm,0.2s,SNR=7.9							
GUD				Lg		Lg	00 12 04.4	
	38nm,0.4s							
PBAR	**Barrancos**	**3.80**	**282**	*e*Pn		**Pn**	**00 11 14.3**	**+0.6**
PBAR				*e*Sn		**Sn**	**00 11 58.8**	**+0.1**
PBAR				*e*Sg		**Sg**	**00 12 18.1**	**+1.6**
PBAR				A		A	00 12 27.0	
	59nm,0.4s							
PBAR	**Barrancos**	**3.80**	**282**	Pn		**Pn**	**00 11 14.3**	**+0.6**
PBAR				Sn		**Sn**	**00 11 58.8**	**+0.1**
PBAR				Lg		Lg	00 12 18.1	
	59nm,0.4s							
PBAR	**Barrancos**	**3.80**	**282**	Pn		**Pn**	**00 11 14.3**	**+0.6**
PBAR				Sn		**Sn**	**00 11 58.8**	**+0.1**
PBAR				*e*Sg		**Sg**	**00 12 18.1**	**+1.6**
	59nm,0.4s							
EPLA	**Plasencia**	**3.91**	**313**	Pn		**Pn**	**00 11 16.0**	**+0.7**
	1.9nm,0.3s,SNR=7.9							
EPLA				Pg		**Pg**	**00 11 28.9**	**-0.5**
	2.5nm,0.1s,SNR=6.9							
EPLA				Sn		**Sn**	**00 12 02.1**	**+0.5**
	6.4nm,0.2s,SNR=7.9							
EPLA				Lg		Lg	00 12 18.3	
	14nm,0.2s,SNR=9.7							
EPLA	**Plasencia**	**3.91**	**313**	Pn		**Pn**	**00 11 16.0**	**+0.7**
	1.9nm,0.3s,SNR=7.9							
EPLA	**Plasencia**	**3.91**	**313**	Pg		**Pg**	**00 11 29.0**	**-0.5**
	2.5nm,0.1s,SNR=6.9							
EPLA				Sn		**Sn**	**00 12 02.1**	**+0.5**
	6.4nm,0.2s,SNR=7.9							
EPLA				Lg		Lg	00 12 18.3	
	14nm,0.2s,SNR=9.7							
EBAD	**Badajoz**	**3.91**	**291**	Pn		**Pn**	**00 11 15.4**	**+0.2**
	0.8nm,0.1s,SNR=14							
EBAD				Sn		**Sn**	**00 12 02.2**	**+0.7**
	30nm,0.2s,SNR=10							
EBAD				Lg		Lg	00 12 20.4	
	49nm,0.2s,SNR=5.1							
EBAD	**Badajoz**	**3.91**	**291**	Pn		**Pn**	**00 11 15.4**	**+0.2**
	0.8nm,0.1s,SNR=14							
EBAD				Sn		**Sn**	**00 12 02.2**	**+0.7**
	30nm,0.2s,SNR=10							
EBAD				Lg		Lg	00 12 20.4	
	49nm,0.2s,SNR=5.1							
ERTA	**Horta de San J**	**4.04**	**30**	Pn		**Pn**	**00 11 17.4**	**+0.3**
	0.3nm,0.1s,SNR=9.1							
ERTA				Sn		**Sn**	**00 12 05.5**	**+0.7**
	2.4nm,0.3s,SNR=7.9							
ERTA				Lg		Lg	00 12 22.3	
	10.0nm,0.4s							
ERTA	**Horta de San J**	**4.04**	**30**	Pn		**Pn**	**00 11 17.4**	**+0.3**
	0.3nm,0.1s,SNR=9.1							
ERTA				Sn		**Sn**	**00 12 05.5**	**+0.7**
	2.4nm,0.3s,SNR=7.9							
ERTA				Lg		Lg	00 12 22.3	
	10.0nm,0.4s							
EGRO	**El Granado**	**4.10**	**272**	Pn		**Pn**	**00 11 18.1**	**+0.3**
	3.9nm,0.3s,SNR=12							
EGRO				Sn		**Sn**	**00 12 05.3**	**-0.9**
	13nm,0.3s,SNR=7.9							
EGRO				Lg		Lg	00 12 27.6	
	23nm,0.5s							
EGRO	**El Granado**	**4.10**	**272**	Pn		**Pn**	**00 11 18.1**	**+0.3**
	3.9nm,0.3s,SNR=12							
EGRO				Sn		**Sn**	**00 12 05.3**	**-0.9**
	13nm,0.3s,SNR=7.9							
EGRO				Lg		Lg	00 12 27.6	
	23nm,0.5s							
PVAQ	**Vaqueiros**	**4.29**	**271**	*e*Pn		**Pn**	**00 11 20.7**	**+0.2**
PVAQ				*e*Sn		**Sn**	**00 12 10.9**	**0.0**
PVAQ				A		A	00 12 12.2	
	15nm,0.3s							
PVAQ	**Vaqueiros**	**4.29**	**271**	Pn		**Pn**	**00 11 20.7**	**+0.2**
PVAQ				Sn		**Sn**	**00 12 10.9**	**0.0**
	15nm,0.3s							
PVAQ	**Vaqueiros**	**4.29**	**271**	Pn		**Pn**	**00 11 20.7**	**+0.2**
PVAQ				*e*Sn		**Sn**	**00 12 10.9**	**0.0**
	15nm,0.3s							
PESTR	**Estremoz**	**4.37**	**290**	*e*Pn		**Pn**	**00 11 22.0**	**+0.4**
PESTR				*e*Sn		**Sn**	**00 12 12.8**	**-0.2**
PESTR				*e*Sg		**Sg**	**00 12 38.1**	**+3.0**
PESTR				A		A	00 12 44.9	
	34nm,0.7s							
PESTR	**Estremoz**	**4.37**	**290**	Pn		**Pn**	**00 11 22.0**	**+0.4**
PESTR				Sn		**Sn**	**00 12 12.8**	**-0.2**
PESTR				Lg		Lg	00 12 38.1	
	34nm,0.7s							
PESTR	**Estremoz**	**4.37**	**290**	Pn		**Pn**	**00 11 22.0**	**+0.4**
PESTR				Sn		**Sn**	**00 12 12.8**	**-0.2**
PESTR				*e*Sg		**Sg**	**00 12 38.1**	**+3.0**
	34nm,0.7s							
PBEJ	**Beja**	**4.42**	**279**	*e*Pn		**Pn**	**00 11 23.1**	**+0.8**
PBEJ				*e*Sn		**Sn**	**00 12 14.2**	**0.0**
PBEJ				A		A	00 12 15.3	
	12nm,0.3s							
PBEJ	**Beja**	**4.42**	**279**	Pn		**Pn**	**00 11 23.1**	**+0.8**
PBEJ				Sn		**Sn**	**00 12 14.2**	**0.0**
	6.2nm,0.3s							
PBEJ	**Beja**	**4.42**	**279**	Pn		**Pn**	**00 11 23.1**	**+0.8**
PBEJ				*e*Sn		**Sn**	**00 12 14.2**	**0.0**
	12nm,0.3s							
PMRV	**Marv??o**	**4.43**	**298**	*e*Pn		**Pn**	**00 11 23.6**	**+1.2**
PMRV				*e*Sn		**Sn**	**00 12 14.8**	**+0.5**
PMRV				A		A	00 12 43.8	
	48nm,0.5s							
PMRV	**Marv??o**	**4.43**	**298**	Pn		**Pn**	**00 11 23.6**	**+1.2**
PMRV				Sn		**Sn**	**00 12 14.8**	**+0.5**
	48nm,0.5s							
PMRV	**Marv??o**	**4.43**	**298**	Pn		**Pn**	**00 11 23.6**	**+1.2**
PMRV				*e*Sn		**Sn**	**00 12 14.8**	**+0.5**
	48nm,0.5s							
PBDV	**Barranco-do-Ve**	**4.47**	**269**	*e*Pn		**Pn**	**00 11 23.6**	**+0.6**
PBDV				*e*Sn		**Sn**	**00 12 15.9**	**+0.5**
PBDV				A		A	00 12 17.9	
	9.3nm,0.2s							
PBDV	**Barranco-do-Ve**	**4.47**	**269**	Pn		**Pn**	**00 11 23.6**	**+0.6**
PBDV				Sn		**Sn**	**00 12 15.9**	**+0.5**
	9.3nm,0.2s							
PBDV	**Barranco-do-Ve**	**4.47**	**269**	Pn		**Pn**	**00 11 23.6**	**+0.6**
PBDV				*e*Sn		**Sn**	**00 12 15.9**	**+0.5**
	9.3nm,0.2s							
ESAC	**San Caprasio**	**4.48**	**18**	Pn		**Pn**	**00 11 25.8**	**+2.7**
	4.8nm,0.3s,SNR=7.9							
ESAC				Pg		Pg	00 11 43.7	+3.4
	5.6nm,0.2s,SNR=7.9							
ESAC	**San Caprasio**	**4.48**	**18**	Pn		**Pn**	**00 11 25.8**	**+2.7**
	4.8nm,0.3s,SNR=7.9							
PCVE	**Castro Verde**	**4.54**	**274**	*e*Pn		**Pn**	**00 11 24.7**	**+0.8**
PCVE				*e*Sn		**Sn**	**00 12 16.8**	**-0.3**
PCVE				A		A	00 12 56.4	
	14nm,0.6s							
PCVE	**Castro Verde**	**4.54**	**274**	Pn		**Pn**	**00 11 24.7**	**+0.8**
PCVE				Sn		**Sn**	**00 12 16.8**	**-0.3**
	14nm,0.6s							
PCVE	**Castro Verde**	**4.54**	**274**	Pn		**Pn**	**00 11 24.7**	**+0.8**
PCVE				*e*Sn		**Sn**	**00 12 16.8**	**-0.3**
	14nm,0.6s							
EVO	**Evora**	**4.61**	**285**	*e*Pn		**Pn**	**00 11 25.9**	**+1.0**
EVO				*e*Sn		**Sn**	**00 12 18.6**	**-0.2**
EVO				A		A	00 12 51.6	
	23nm,0.4s							
EVO	**Evora**	**4.61**	**285**	Pn		**Pn**	**00 11 25.9**	**+1.0**
EVO				Sn		**Sn**	**00 12 18.6**	**-0.2**
	23nm,0.4s							
EVO	**Evora**	**4.61**	**285**	Pn		**Pn**	**00 11 25.9**	**+1.0**
EVO				*e*Sn		**Sn**	**00 12 18.6**	**-0.2**
	23nm,0.4s							
ETOS	**Mallorca**	**4.63**	**59**	Pn		**Pn**	**00 11 24.9**	**-0.3**
	1.5nm,0.3s,SNR=7.9							
ETOS				Sn		**Sn**	**00 12 14.7**	**-4.6**
	0.4nm,0.2s,SNR=4.0							
ETOS	**Mallorca**	**4.63**	**59**	Pn		**Pn**	**00 11 24.9**	**-0.3**
	1.5nm,0.3s,SNR=7.9							
PCBR	**Castelo Branco**	**4.67**	**302**	*e*Pn		**Pn**	**00 11 26.7**	**+1.0**
PCBR				*e*Sn		**Sn**	**00 12 19.1**	**-1.2**
PCBR				A		A	00 12 51.1	
	22nm,0.8s							
PCBR	**Castelo Branco**	**4.67**	**302**	Pn		**Pn**	**00 11 26.7**	**+1.0**
PCBR				Sn		**Sn**	**00 12 19.1**	**-1.2**
	11nm,0.8s							
PCBR	**Castelo Branco**	**4.67**	**302**	Pn		**Pn**	**00 11 26.7**	**+1.0**
PCBR				*e*Sn		**Sn**	**00 12 19.1**	**-1.2**
	22n

MORF	**Marmelete**	**5.04**	**270**	*e*Pn	**Pn**	**00 11 31.5**	**+0.7**
MORF				*e*Sn	**Sn**	**00 12 28.8**	**-0.6**
MORF				A	A	00 12 30.5	
	16nm,0.2s						
MORF	**Marmelete**	**5.04**	**270**	Pn	**Pn**	**00 11 31.5**	**+0.7**
MORF				Sn	**Sn**	**00 12 28.8**	**-0.6**
	16nm,0.2s						
MORF	**Marmelete**	**5.04**	**270**	Pn	**Pn**	**00 11 31.5**	**+0.7**
MORF				*e*Sn	**Sn**	**00 12 28.8**	**-0.6**
	16nm,0.2s						
PTEO	**Sao Teotonio**	**5.09**	**273**	*e*Pn	**Pn**	**00 11 32.8**	**+1.4**
PTEO				*e*Sn	**Sn**	**00 12 30.1**	**-0.4**
PTEO				A	A	00 13 05.5	
	16nm,0.7s						
PTEO	**Sao Teotonio**	**5.09**	**273**	Pn	**Pn**	**00 11 32.8**	**+1.4**
PTEO				Sn	**Sn**	**00 12 30.1**	**-0.4**
	8.1nm,0.7s						
PTEO	**Sao Teotonio**	**5.09**	**273**	Pn	**Pn**	**00 11 32.8**	**+1.4**
PTEO				*e*Sn	**Sn**	**00 12 30.1**	**-0.4**
	16nm,0.7s						
MVO	**Moncorvo**	**5.18**	**317**	*e*Pn	**Pn**	**00 11 33.9**	**+1.1**
MVO				*e*Sn	**Sn**	**00 12 32.3**	**-0.7**
MVO				*e*Sg	**Sg**	**00 13 00.7**	**-0.3**
MVO				A	A	00 13 06.6	
	17nm,0.8s						
MVO	**Moncorvo**	**5.18**	**317**	Pn	**Pn**	**00 11 33.3**	**+0.5**
	5.2nm,0.2s,SNR=7.9						
MVO				Sn	**Sn**	**00 12 32.1**	**-0.9**
	6.0nm,0.2s,SNR=7.9						
MVO				Lg	Lg	00 13 00.6	
	15nm,0.4s,SNR=7.9						
MVO	**Moncorvo**	**5.18**	**317**	Pn	**Pn**	**00 11 33.3**	**+0.5**
	5.2nm,0.2s,SNR=7.9						
MVO				*e*Sn	**Sn**	**00 12 32.3**	**-0.7**
MVO				Lg	Lg	00 13 00.6	
	15nm,0.4s,SNR=7.9						
MVO				*e*Sg	**Sg**	**00 13 00.7**	**-0.3**
	17nm,0.8s						
PFVI	**Vila Bisbo**	**5.19**	**268**	*e*Pn	**Pn**	**00 11 33.9**	**+1.0**
PFVI				*e*Sn	**Sn**	**00 12 31.9**	**-1.2**
PFVI				A	A	00 12 39.2	
	17nm,0.6s						
PFVI	**Vila Bisbo**	**5.19**	**268**	Pn	**Pn**	**00 11 34.0**	**+1.2**
	1.1nm,0.1s,SNR=7.9						
PFVI				Sn	**Sn**	**00 12 32.0**	**-1.2**
	14nm,0.2s,SNR=7.9						
PFVI	**Vila Bisbo**	**5.19**	**268**	*e*Pn	**Pn**	**00 11 33.9**	**+1.0**
PFVI				Sn	**Sn**	**00 12 32.0**	**-1.2**
	14nm,0.2s,SNR=7.9						
PTOM	**Tomar**	**5.23**	**296**	*e*Pn	**Pn**	**00 11 34.6**	**+1.3**
PTOM				*e*Sn	**Sn**	**00 12 33.9**	**-0.1**
PTOM				A	A	00 13 12.1	
	31nm,0.5s						
PTOM	**Tomar**	**5.23**	**296**	Pn	**Pn**	**00 11 34.6**	**+1.3**
PTOM				Sn	**Sn**	**00 12 33.9**	**-0.1**
	16nm,0.5s						
PTOM	**Tomar**	**5.23**	**296**	Pn	**Pn**	**00 11 34.6**	**+1.3**
PTOM				*e*Sn	**Sn**	**00 12 33.9**	**-0.1**
	31nm,0.5s						
EARA	**Aranguren**	**5.32**	**6**	Lg	Lg	00 13 05.6	
	3.9nm,0.3s,SNR=7.9						
EARA	**Aranguren**	**5.32**	**6**	Lg	Lg	00 13 05.6	
	3.9nm,0.3s,SNR=7.9						
PVIS	**Viseu**	**5.41**	**308**	*e*Pn	**Pn**	**00 11 36.8**	**+0.9**
PVIS				*e*Sn	**Sn**	**00 12 37.9**	**-0.6**
PVIS				A	A	00 13 16.7	
	14nm,0.8s						
PVIS	**Viseu**	**5.41**	**308**	Pn	**Pn**	**00 11 36.8**	**+0.9**
PVIS				Sn	**Sn**	**00 12 37.9**	**-0.6**
	7.2nm,0.8s						
PVIS	**Viseu**	**5.41**	**308**	Pn	**Pn**	**00 11 36.8**	**+0.9**
PVIS				*e*Sn	**Sn**	**00 12 37.9**	**-0.6**
	14nm,0.8s						
IELO	**Elcoad**	**5.43**	**9**	Pn	**Pn**	**00 11 38.9**	**+2.8**
	1.1nm,0.2s,SNR=7.9						
IELO				Sn	**Sn**	**00 12 38.7**	**-0.3**
	2.2nm,0.4s,SNR=7.9						
IELO				Lg	Lg	00 13 09.2	
	5.2nm,0.4s,SNR=7.9						
IELO	**Elcoad**	**5.43**	**9**	Pn	**Pn**	**00 11 38.9**	**+2.8**
	1.1nm,0.2s,SNR=7.9						
IELO				Sn	**Sn**	**00 12 38.7**	**-0.3**
	2.2nm,0.4s,SNR=7.9						
IELO				Lg	Lg	00 13 09.1	
	5.2nm,0.4s,SNR=7.9						
PCAS	**Casmilo, Conde**	**5.47**	**300**	*e*Pn	**Pn**	**00 11 37.9**	**+1.3**
PCAS				*e*Sn	**Sn**	**00 12 39.0**	**-0.9**
PCAS				*e*Sg	**Sg**	**00 13 10.7**	**+0.6**
PCAS				A	A	00 13 17.7	
	38nm,0.7s						
PCAS	**Casmilo, Conde**	**5.47**	**300**	*e*Pn	**Pn**	**00 11 37.9**	**+1.3**
PCAS				*e*Sn	**Sn**	**00 12 39.0**	**-0.9**
PCAS				*e*Sg	**Sg**	**00 13 10.7**	**+0.6**
	38nm,0.7s						
PBRG	**Braganca**	**5.50**	**323**	*e*Pn	**Pn**	**00 11 38.4**	**+1.2**
PBRG				*e*Sn	**Sn**	**00 12 39.6**	**-1.3**
PBRG				A	A	00 13 20.6	
	16nm,0.5s						
PBRG	**Braganca**	**5.50**	**323**	Pn	**Pn**	**00 11 38.4**	**+1.2**
PBRG				Sn	**Sn**	**00 12 39.6**	**-1.3**
	8.1nm,0.5s						
PBRG	**Braganca**	**5.50**	**323**	Pn	**Pn**	**00 11 38.4**	**+1.2**
PBRG				*e*Sn	**Sn**	**00 12 39.6**	**-1.3**
	16nm,0.5s						
CSOR	**Sort**	**5.57**	**27**	Pn	**Pn**	**00 11 39.7**	**+1.5**
	2.6nm,0.3s,SNR=12						
CSOR				Sn	**Sn**	**00 12 41.6**	**-1.0**
	2.4nm,0.4s,SNR=7.9						
CSOR				Lg	Lg	00 13 10.6	
	1.9nm,0.3s						
CSOR	**Sort**	**5.57**	**27**	Pn	**Pn**	**00 11 39.7**	**+1.5**
	2.6nm,0.3s,SNR=12						
CSOR				Sn	**Sn**	**00 12 41.6**	**-1.0**
	2.4nm,0.4s,SNR=7.9						
CSOR				Lg	Lg	00 13 10.6	
	1.9nm,0.3s						
ETSF	**Etsaut**	**5.58**	**13**	*e*Pn	**Pn**	**00 11 40.4**	**+2.1**
ETSF				*e*Sg	**Sg**	**00 13 13.6**	**-0.3**
	5.1nm,0.5s						
ETSF	**Etsaut**	**5.58**	**13**	Pn	**Pn**	**00 11 40.4**	**+2.1**
ETSF				Lg	Lg	00 13 13.6	
	2.6nm,0.5s						
ETSF	**Etsaut**	**5.58**	**13**	Pn	**Pn**	**00 11 40.4**	**+2.1**
ETSF				*e*Sg	**Sg**	**00 13 13.6**	**-0.3**
	2.5nm,0.5s						
ECAL	**Calabor**	**5.61**	**324**	Pn	**Pn**	**00 11 39.2**	**+0.6**
	0.9nm,0.2s,SNR=6.9						
ECAL				Sn	**Sn**	**00 12 41.8**	**-1.7**
	2.0nm,0.3s,SNR=7.9						
ECAL				Lg	Lg	00 13 16.2	
	10nm,0.3s,SNR=5.8						
ECAL	**Calabor**	**5.61**	**324**	Pn	**Pn**	**00 11 39.2**	**+0.6**
	0.9nm,0.2s,SNR=6.9						
ECAL				Sn	**Sn**	**00 12 41.8**	**-1.7**
	2.0nm,0.3s,SNR=7.9						
ECAL				Lg	Lg	00 13 16.2	
	10nm,0.3s,SNR=5.8						
PVRL	**Vila Real**	**5.64**	**314**	*e*Pn	**Pn**	**00 11 40.3**	**+1.2**
PVRL				*e*Sn	**Sn**	**00 12 44.9**	**+0.6**
PVRL				*e*Sg	**Sg**	**00 13 14.8**	**-0.9**
PVRL				A	A	00 13 24.6	
	15nm,0.6s						
PVRL	**Vila Real**	**5.64**	**314**	Pn	**Pn**	**00 11 40.3**	**+1.2**
PVRL				Sn	**Sn**	**00 12 44.9**	**+0.6**
PVRL				Lg	Lg	00 13 14.8	
	7.7nm,0.6s						
PVRL	**Vila Real**	**5.64**	**314**	Pn	**Pn**	**00 11 40.3**	**+1.2**
PVRL				Sn	**Sn**	**00 12 44.9**	**+0.6**
PVRL				*e*Sg	**Sg**	**00 13 14.8**	**-0.9**
	15nm,0.6s						
CFON	**Fontmartina**	**5.64**	**39**	Pn	**Pn**	**00 11 40.0**	**+0.8**
	1.2nm,0.2s,SNR=7.9						
CFON	**Fontmartina**	**5.64**	**39**	Pn	**Pn**	**00 11 40.0**	**+0.8**
	1.2nm,0.2s,SNR=7.9						
PMAFR	**Mafra**	**5.67**	**287**	*e*Pn	**Pn**	**00 11 40.5**	**+1.0**
PMAFR				*e*Sn	**Sn**	**00 12 44.4**	**-0.6**
PMAFR				A	A	00 13 30.3	
	23nm,0.7s						
PMAFR	**Mafra**	**5.67**	**287**	Pn	**Pn**	**00 11 40.1**	**+0.6**
	6.1nm,0.2s,SNR=11						
PMAFR				Sn	**Sn**	**00 12 42.6**	**-2.4**
	2.5nm,0.3s,SNR=7.0						
PMAFR				Lg	Lg	00 13 18.3	
	10nm,0.2s						
PMAFR	**Mafra**	**5.67**	**287**	Pn	**Pn**	**00 11 40.1**	**+0.6**
	6.1nm,0.2s,SNR=11						

PMAFR				*e*Sn	**Sn**	**00 12 44.4**	**-0.6**
	23nm,0.7s						
PMAFR				Lg	Lg	00 13 18.3	
	10nm,0.2s						
SJPF	**Ste Jean**	**5.70**	**8**	*e*Pn	**Pn**	**00 11 42.4**	**+2.6**
SJPF				*e*Sg	**Sg**	**00 13 17.1**	**-0.3**
	4.1nm,0.4s						
SJPF	**Ste Jean**	**5.70**	**8**	Pn	**Pn**	**00 11 42.4**	**+2.6**
SJPF				Lg	Lg	00 13 17.1	
	2.0nm,0.4s						
SJPF	**Ste Jean**	**5.70**	**8**	Pn	**Pn**	**00 11 42.4**	**+2.6**
SJPF				*e*Sg	**Sg**	**00 13 17.1**	**-0.3**
	2.0nm,0.4s						
ATE	**Arette**	**5.74**	**12**	Pn	**Pn**	**00 11 42.7**	**+2.3**
	0.3nm,0.3s,SNR=7.9						
ATE				Sn	**Sn**	**00 12 45.7**	**-1.0**
	0.9nm,0.3s,SNR=7.9						
ATE				Lg	Lg	00 13 21.0	
	1.8nm,0.3s,SNR=7.9						
ATE	**Arette**	**5.74**	**12**	Pn	**Pn**	**00 11 42.7**	**+2.3**
	0.3nm,0.3s,SNR=7.9						
ATE				Sn	**Sn**	**00 12 45.7**	**-1.0**
	0.9nm,0.3s,SNR=7.9						
ATE				Lg	Lg	00 13 21.0	
	1.8nm,0.3s,SNR=7.9						
EALK	**Alkurruntz**	**5.77**	**6**	Pn	**Pn**	**00 11 43.5**	**+2.6**
	2.9nm,0.3s,SNR=4.0						
EALK				Sn	**Sn**	**00 12 46.9**	**-0.6**
	7.1nm,0.3s,SNR=7.9						
EALK				Lg	Lg	00 13 20.3	
	12nm,0.3s,SNR=7.9						
EALK	**Alkurruntz**	**5.77**	**6**	Pn	**Pn**	**00 11 43.5**	**+2.6**
	2.9nm,0.3s,SNR=4.0						
EALK				Sn	**Sn**	**00 12 46.9**	**-0.6**
	7.1nm,0.3s,SNR=7.9						
EALK				Lg	Lg	00 13 20.3	
	12nm,0.3s,SNR=7.9						
ELAN	**Lanestosa**	**5.81**	**352**	Pn	**Pn**	**00 11 43.0**	**+1.6**
	1.0nm,0.2s,SNR=10.0						
ELAN				Sn	**Sn**	**00 12 46.0**	**-2.4**
	1.5nm,0.1s,SNR=7.9						
ELAN				Lg	Lg	00 13 20.8	
	3.5nm,0.3s						
ELAN	**Lanestosa**	**5.81**	**352**	Pn	**Pn**	**00 11 43.0**	**+1.6**
	1.0nm,0.2s,SNR=10.0						
ELAN				Lg	Lg	00 13 20.8	
	3.5nm,0.3s						
EPF	**Esparros**	**5.91**	**19**	*e*Pn	**Pn**	**00 11 44.7**	**+1.9**
EPF				*e*Sg	**Sg**	**00 13 23.7**	**-0.7**
	3.1nm,0.3s						
EPF	**Esparros**	**5.91**	**19**	Pn	**Pn**	**00 11 44.7**	**+1.9**
EPF				Lg	Lg	00 13 23.7	
	1.6nm,0.3s						
EPF	**Esparros**	**5.91**	**19**	Pn	**Pn**	**00 11 44.7**	**+1.9**
EPF				*e*Sg	**Sg**	**00 13 23.7**	**-0.7**
	1.5nm,0.3s						
CLLI	**Llivia**	**5.99**	**32**	Pn	**Pn**	**00 11 45.4**	**+1.4**
	0.1nm,0.2s,SNR=7.9						
CLLI	**Llivia**	**5.99**	**32**	Pn	**Pn**	**00 11 45.3**	**+1.4**
	0.1nm,0.2s,SNR=7.9						
PTO	**Porto**	**6.09**	**309**	*e*Pn	**Pn**	**00 11 46.5**	**+1.4**
PTO	**Porto**	**6.09**	**309**	Pn	**Pn**	**00 11 46.5**	**+1.4**
PTO	**Porto**	**6.09**	**309**	Pn	**Pn**	**00 11 46.5**	**+1.4**
PCAB	**Cabril**	**6.10**	**316**	*e*Pn	**Pn**	**00 11 46.7**	**+1.3**
PCAB				*e*Sn	**Sn**	**00 12 54.7**	**-0.9**
PCAB				*e*Sg	**Sg**	**00 13 30.9**	**+0.4**
PCAB				A	A	00 13 37.4	
	14nm,0.6s						
PCAB	**Cabril**	**6.10**	**316**	Pn	**Pn**	**00 11 46.7**	**+1.3**
PCAB				Sn	**Sn**	**00 12 54.7**	**-0.9**
PCAB				Lg	Lg	00 13 30.9	
	6.9nm,0.6s						
PCAB	**Cabril**	**6.10**	**316**	Pn	**Pn**	**00 11 46.7**	**+1.3**
PCAB				Sn	**Sn**	**00 12 54.7**	**-0.9**
PCAB				*e*Sg	**Sg**	**00 13 30.9**	**+0.4**
	14nm,0.6s						
EARI	**Arriondas**	**6.22**	**340**	Pn	**Pn**	**00 11 48.5**	**+1.5**
	0.5nm,0.3s,SNR=7.2						
EARI				Sn	**Sn**	**00 12 55.0**	**-3.5**
	0.9nm,0.3s,SNR=4.9						
EARI				Lg	Lg	00 13 33.6	
	2.8nm,0.3s,SNR=5.8						
EARI	**Arriondas**	**6.22**	**340**	Pn	**Pn**	**00 11 48.5**	**+1.5**
	0.5nm,0.3s,SNR=7.2						
EARI				Lg	Lg	00 13 33.6	
	2.8nm,0.3s,SNR=5.8						
ELOB	**Lobios**	**6.23**	**317**	Pn	**Pn**	**00 11 47.7**	**+0.5**
	0.2nm,0.1s,SNR=11						
ELOB				Sn	**Sn**	**00 12 56.2**	**-2.6**
	1.4nm,0.2s,SNR=7.9						
ELOB				Lg	Lg	00 13 35.1	
	2.5nm,0.3s						
ELOB	**Lobios**	**6.23**	**317**	Pn	**Pn**	**00 11 47.7**	**+0.5**
	0.2nm,0.1s,SNR=11						
ELOB				Sn	**Sn**	**00 12 56.2**	**-2.6**
	1.4nm,0.2s,SNR=7.9						
ELOB				Lg	Lg	00 13 35.1	
	2.5nm,0.3s						
PGAV	**Gavieira, Arco**	**6.41**	**316**	*e*Pn	**Pn**	**00 11 50.7**	**+1.0**
PGAV				*e*Sn	**Sn**	**00 13 02.0**	**-1.2**
PGAV				A	A	00 13 45.5	
	14nm,0.7s						
PGAV	**Gavieira, Arco**	**6.41**	**316**	*e*Pn	**Pn**	**00 11 50.7**	**+1.0**
PGAV				*e*Sn	**Sn**	**00 13 02.0**	**-1.2**
	14nm,0.7s						
MTLF	**Montolieu**	**6.81**	**29**	*e*Pn	**Pn**	**00 11 55.5**	**+0.4**
MTLF				*e*Sn	**Sn**	**00 13 09.8**	**-3.1**
	0.8nm,0.3s						
MTLF	**Montolieu**	**6.81**	**29**	Pn	**Pn**	**00 11 55.5**	**+0.4**
MTLF				Sn	**Sn**	**00 13 09.8**	**-3.1**
	0.4nm,0.3s						
MTLF	**Montolieu**	**6.81**	**29**	Pn	**Pn**	**00 11 55.5**	**+0.4**
EPON	**Pontenova**	**6.91**	**329**	Pn	**Pn**	**00 11 57.2**	**+0.8**
	0.2nm,0.2s,SNR=7.9						
EPON				Sn	**Sn**	**00 12 12.5**	**-2.8**
	1.0nm,0.3s,SNR=7.9						
EPON				Lg	Lg	00 13 52.8	
	3.2nm,0.4s,SNR=5.0						
EPON	**Pontenova**	**6.91**	**329**	Pn	**Pn**	**00 11 57.2**	**+0.8**
	0.2nm,0.2s,SNR=7.9						
EPON				Lg	Lg	00 13 52.8	
	3.2nm,0.4s,SNR=5.0						
EAGO	**Agolada(Pontev**	**6.91**	**322**	Pn	**Pn**	**00 11 57.4**	**+0.9**
	0.1nm,0.1s,SNR=7.9						
EAGO				Sn	**Sn**	**00 13 13.1**	**-2.4**
	1.5nm,0.4s,SNR=7.9						
EAGO				Lg	Lg	00 13 56.5	
	2.7nm,0.4s,SNR=7.9						
EAGO	**Agolada(Pontev**	**6.91**	**322**	Pn	**Pn**	**00 11 57.4**	**+0.9**
	0.1nm,0.1s,SNR=7.9						
EAGO				Sn	**Sn**	**00 13 13.1**	**-2.4**
	1.5nm,0.4s,SNR=7.9						
EAGO				Lg	Lg	00 13 56.5	
	2.7nm,0.4s,SNR=7.9						
EMAZ	**Mazaricos**	**7.47**	**319**	Pn	**Pn**	**00 12 05.4**	**+1.3**
	0.2nm,0.1s,SNR=7.9						
EMAZ				Sn	**Sn**	**00 13 25.8**	**-3.3**
	0.3nm,0.1s,SNR=7.9						
EMAZ				Lg	Lg	00 14 14.1	
	2.6nm,0.4s,SNR=7.9						
EMAZ	**Mazaricos**	**7.47**	**319**	Pn	**Pn**	**00 12 05.4**	**+1.3**
	0.2nm,0.1s,SNR=7.9						
EMAZ				Lg	Lg	00 14 14.1	
	2.6nm,0.4s,SNR=7.9						
AVF	**Avril sur Loir**	**10.22**	**23**	*e*Pn	**Pn**	**00 12 41.9**	**+0.1**
AVF	**Avril sur Loir**	**10.22**	**23**	Pn	**Pn**	**00 12 41.9**	**+0.1**
AVF	**Avril sur Loir**	**10.22**	**23**	Pn	**Pn**	**00 12 41.9**	**+0.1**
SMF	**Signal de Mont**	**10.24**	**25**	*e*Pn	**Pn**	**00 12 42.5**	**+0.4**
SMF	**Signal de Mont**	**10.24**	**25**	Pn	**Pn**	**00 12 42.5**	**+0.4**
SMF	**Signal de Mont**	**10.24**	**25**	Pn	**Pn**	**00 12 42.5**	**+0.4**
QUIF	**Quistinic**	**10.46**	**357**	*e*Pn	**Pn**	**00 12 45.7**	**+0.7**
QUIF				*e*Sn	**Sn**	**00 14 37.6**	**-4.8**
	1.2nm,0.3s						
QUIF	**Quistinic**	**10.46**	**357**	Pn	**Pn**	**00 12 45.7**	**+0.7**
QUIF				Sn	**Sn**	**00 14 37.6**	**-4.8**
	0.6nm,0.3s						
QUIF	**Quistinic**	**10.46**	**357**	Pn	**Pn**	**00 12 45.7**	**+0.7**
SGMF	**Saint Gilles**	**10.78**	**359**	*e*Pn	**Pn**	**00 12 49.9**	**+0.5**
SGMF	**Saint Gilles**	**10.78**	**359**	Pn	**Pn**	**00 12 49.9**	**+0.5**
SGMF	**Saint Gilles**	**10.78**	**359**	Pn	**Pn**	**00 12 49.9**	**+0.5**
ROSF	**Rostrenen**	**10.88**	**357**	*e*Pn	**Pn**	**00 12 51.4**	**+0.6**
ROSF	**Rostrenen**	**10.88**	**357**	Pn	**Pn**	**00 12 51.4**	**+0.6**
ROSF	**Rostrenen**	**10.88**	**357**	Pn	**Pn**	**00 12 51.4**	**+0.6**
STON	**Ston**	**16.22**	**64**	Sg	**Sn**	**00 17 05.1**	**+2.0**
STON	**Ston**	**16.22**	**64**	Sg	**Sn**	**00 17 05.2**	**+2.0**

IDC 22 00:18:54.3±1.1,0.96N×122.56E,h0km,mb3.6/4, mb1 3.8/5,mb1mx3.6/30,mbtmp3.7/5,ML4.0/1,Error ellipse: s-maj=117.1km s-min=19.2km az=67.0, Minahassa Peninsula, Sulawesi

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**19.18**	**171**	P	P	00 23 19.8	+0.1
	0.3nm,0.3s,baz=10,slow=9.4,SNR=9.0						
WRA	**Warramunga Arr**	**23.77**	**152**	P	P	00 24 08.9	+0.2
	2.5nm,0.7s,baz=331,slow=10,SNR=8.5						
ASAR	**Alice Springs**	**26.85**	**156**	P	P	00 24 36.6	-0.2
	0.4nm,0.4s,baz=342,slow=14,SNR=16						
SONM	**Songino Array**	**48.75**	**346**	P	P	00 27 42.0	+1.0
	0.6nm,0.8s,baz=167,slow=7.6,SNR=5.2						
MKAR	**Makanchi Array**	**57.57**	**328**	P	P	00 28 45.0	-0.9
	0.3nm,0.3s,baz=126,slow=8.6,SNR=8.6						

MAN 22 00:19:01,16.03N×119.96E,h35km,mb4.0,ML2.8,MS2.5, 1C,Luzon

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SCZP	**Santa Cruz**	**0.25**	**190**	*e*P	Pn	00 19 10.7	+2.3
SCZP				*e*S	Sn	00 19 16.1	+2.7
BOLP	**Bolinao**	**0.36**	**353**	*e*P	Pn	00 19 11.9	+2.3
BOLP				*e*S	Sn	00 19 17.4	+1.8
BCPH	**Baguio City Da**	**0.69**	**59**	*i*P	Pn	00 19 17.7	+3.2
BCPH				*i* S	Sn	00 19 26.6	+2.5

*IDC **22** 00:28:51.6±3.1,35.69N×141.36E,h0km,mb3.4/3, mb1 3.5/4,mb1mx3.2/36,mbtmp3.3/4,ML3.0/1,Error ellipse: s-maj=96.0km s-min=28.4km az=60.0*
*ISCJB **22** 00:28:53.1±1.5,35.7N±0.2×141.4E±0.1,h25km,mb3.4/3, Error ellipse: s-maj=31.2km s-min=14.6km az=10.2*
*JMA **22** 00:28:54.9±0.3,35.86N×141.28E,h25km,3km,M3.1*
ISC 22 00:28:55.4±1.8,35.7N±0.2×141.3E±0.1,h25km,n5, σ0.36/6,mb3.4/3,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.34**	**271**	P	**Pb**	**00 29 02.9**	**-0.2**
CHOJ				S	**Sb**	**00 29 08.7**	**+0.4**
MJAR	**Matsushiro Arr**	**2.63**	**290**	Pn	**Pn**	**00 29 36.0**	**-0.3**
	2.9nm,0.3s,baz=94,slow=14,SNR=7.5						
ZALV	**Zalesovo Beam**	**42.75**	**313**	P	**P**	**00 36 50.6**	**+0.2**
	0.3nm,0.2s,baz=84,slow=5.9,SNR=2.5						
MKAR	**Makanchi Array**	**44.75**	**303**	P	**P**	**00 37 07.0**	**+0.3**
	0.2nm,0.4s,baz=84,slow=8.0,SNR=5.0						
WRA	**Warramunga Arr**	**55.72**	**188**	P	**P**	**00 38 30.0**	**0.0**
	0.3nm,0.8s,baz=4.0,slow=7.5,SNR=4.8						

*ISCJB **22** 00:29:05.7±0.8,55.7S±0.1×27.7W±0.3,h10km,mb4.6/6, Error ellipse: s-maj=26.6km s-min=17.5km az=155.2*
*IDC **22** 00:29:05.8±0.9,55.70S×27.61W,h0km,mb4.1/2, mb1 4.1/2,mb1mx3.8/19,mbtmp4.1/2,Error ellipse: s-maj=68.1km s-min=31.5km az=99.0*
*NEIC **22** 00:29:11.0±0.4,55.67S×27.75W,h35km,mb4.3/3,Error ellipse: s-maj=19.1km s-min=12.7km az=62.0*
ISC 22 00:29:07.2±0.7,55.7S±0.2×27.8W±0.2,h10km,n13, σ0.79/13,mb4.4/6,South Sandwich Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SNAA	**Sanae**	**19.21**	**156**	*e*P	**Pn**	**00 33 32.0**	**+0.2**
VNDA	**Vanda**	**46.93**	**183**	P	**P**	**00 37 37.9**	**+0.7**
	1.1nm,0.7s,baz=179,slow=7.6,SNR=7.3						
NNA	**Nana**	**57.80**	**299**	*e*P	**P**	**00 38 58.9**	**+0.3**
	4.6nm,0.3s						
LSZ	**Lusaka**	**58.53**	**70**	*e*P	**P**	**00 39 04.0**	**+0.1**
	2.6nm,0.9s						
DBIC	**Dimbokro**	**64.96**	**25**	P	**P**	**00 39 48.1**	**+1.1**
	3.0nm,0.8s,baz=243,slow=4.5,SNR=3.2						
OTAV	**Otavalo**	**69.19**	**304**	*e*P	**P**	**00 40 14.6**	**+0.1**
	0.5nm,0.5s						
COCO	**West Island**	**98.13**	**126**	*e*P	**P**	**00 42 43.9**	**-0.3**
	70nm,0.4s						
FINES	**FINESS Array B**	**124.20**	**28**	PKP	**PKPdf**	**00 48 03.4**	**-1.1**
	0.6nm,0.5s,baz=243,slow=2.1,SNR=6.1						
ARCES	**ARCESS Array B**	**130.72**	**22**	PKP	**PKPdf**	**00 48 16.3**	**-0.5**
	3.5nm,1.0s,baz=194,slow=3.3,SNR=3.6						
YKA	**Yellowknife Ar**	**135.69**	**318**	PKP	**PKPdf**	**00 48 24.7**	**-1.5**
	0.3nm,0.6s,baz=129,slow=2.3,SNR=12						
INK	**Inuvik**	**145.32**	**321**	PKPbc	**PKPab**	**00 48 43.6**	**+0.1**
	1.8nm,0.6s,baz=102,slow=3.0,SNR=8.6						
ILAR	**Eielson Array**	**149.63**	**312**	PKPbc	**PKPbc**	**00 48 55.4**	**0.0**
	9.0nm,0.8s,baz=128,slow=2.9,SNR=27						
SONM	**Songino Array**	**151.02**	**86**	PKPbc	**PKPbc**	**00 48 58.6**	**-0.8**
	2.0nm,0.4s,baz=217,slow=3.6,SNR=16						

*SKO **22** 00:30:22.2,41.01N×19.84E,h40km*
*CSEM **22** 00:30:23.9±0.3,41.01N×19.90E,h20km,ML2.0,Error ellipse: s-maj=10.1km s-min=6.3km az=52.0*
*TIR **22** 00:30:41.0,40.91N×19.95E,h2km,ML2.6*
ATH 22 00:30:23.0,40.93N×19.93E,h13km,2km,ML2.0/3,Error ellipse: s-maj=2.5km s-min=1.0km az=59.0,Albania

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TIR	**Tirane**	**0.42**	**354**	*i* Pg	Pg

NVLJ Sn Sn 00 32 36.0 -4.2

PRU 22 00:33:10.1, 49°.84N × 18°.42E, h0 km, 1D, Czech and Slovak Republics

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OKC	**Ostrava-Krasne**	**0.18**	**269**	⇓*i* PG	Pg	00 33 13.6	+0.1
OKC				*e*SG	Sg	00 33 16.6	+0.8
	comp=Z,14nm,0.4s						
DPC	**Dobruska-Polom**	**1.44**	**292**	*e*PG	Pn	00 33 36.3	-1.2
DPC				*e*SG	Sg	00 33 56.5	0.0

IDC 22 00:40:42.6 ± 1.6, 30°.94S × 179°.02W, h0 km, mb3.7/3, mb1 4.0/4, mb1mx3.8/25, mbtmp3.7/4, ML3.5/1, MS3.7/3, Ms1 3.7/3, ms1mx3.0/33, Error ellipse: s-maj=52.1km s-min=32.7km az=153.0, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
URZ	**Urewera**	**7.97**	**203**	Pn	Pn	00 42 39.1	-0.6
	0.7nm,0.3s,baz=132,slow=12,SNR=4.6						
URZ				Sn	Sn	00 44 05.6	-4.9
	0.2nm,0.3s,baz=342,slow=20,SNR=2.9						
DZM	**Mont Dzumac**	**15.71**	**301**	LR	LR	00 49 07.0	
	comp=Z,106nm,18.8s,baz=59,slow=32						
ASAR	**Alice Springs**	**42.21**	**268**	P	P	00 48 37.7	+0.1
	0.5nm,0.7s,baz=108,slow=6.4,SNR=5.3						
WRA	**Warramunga Arr**	**43.24**	**273**	P	P	00 48 46.2	+0.3
	1.5nm,0.7s,baz=113,slow=7.8,SNR=4.2						
GUMO	**Guam**	**56.25**	**316**	LR	LR	01 13 16.7	
	comp=Z,97nm,19.4s,baz=299,slow=35						
MJAR	**Matsushiro Arr**	**78.19**	**326**	LR	LR	01 19 35.5	
	comp=Z,98nm,21.6s,baz=105,slow=30						
TXAR	**Lajitas Array**	**93.42**	**58**	P	P	00 54 01.0	+0.8
	0.1nm,0.3s,baz=224,slow=3.8,SNR=2.5						
FINES	**FINESS Array B**	**145.34**	**339**	PKPbc	PKPbc	01 00 18.9	-2.6
	1.4nm,0.9s,baz=44,slow=11,SNR=3.8						

NIED ***22*** *00:46:00, 38°.00N × 142°.00E, h62 km, Mw4.2 Best double couple: M₀1.91000×10¹⁵ NP1:φ₈34.00000°, δ6.00000°, λ-39.00000°. NP2:φ₈163.00000°, δ86.00000°, λ-95.00000°.*

JMA 22 00:46:18.6 ± 0.2, 38°.04N × 141°.98E, h44 km ± 2 km, M3.5, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**0.65**	**310**	P	Pn	00 46 31.6	+0.2
JIO				S	Sn	00 46 40.5	-0.1
JMM	**Marumori**	**0.95**	**260**	P	Pn	00 46 35.6	0.0
JMM				S	Sn	00 46 47.0	-1.0
OFUJ	**Ofunato**	**1.07**	**347**	P	Pn	00 46 37.1	0.0
JOU	**Okura**	**1.09**	**288**	P	Pn	00 46 38.3	+0.9
JOU				S	Sn	00 46 52.1	+0.8
JMK	**Ichinoseki**	**1.09**	**327**	P	Pn	00 46 37.9	+0.5
JFK	**Kawauchi**	**1.10**	**233**	P	Pn	00 46 37.4	-0.3
JFK				S	Sn	00 46 50.6	-1.2
JFT	**Otama**	**1.40**	**249**	P	Pn	00 46 43.1	+1.4
JOM	**Ohasama**	**1.53**	**340**	P	Pn	00 46 44.4	+1.0
MIYJ	**Miyakonagasawa**	**1.54**	**355**	P	Pn	00 46 43.5	-0.1
MIYJ				S	Sn	00 47 01.8	-0.6
JYK	**Kaneyama**	**1.54**	**305**	P	Pn	00 46 44.7	+1.0
JKZ	**Kuzumaki**	**2.01**	**346**	P	Pn	00 46 51.5	+1.5

BUC ***22*** *00:49:38.3 ± 1.3, 45°.17N × 23°.63E, h5 km ± 10 km, MD2.5/2, Error ellipse: s-maj=10.7km s-min=5.1km az=0.0*
CSEM ***22*** *00:49:39.5 ± 0.2, 45°.23N × 23°.58E, h2 km, ML1.8, Error ellipse: s-maj=5.1km s-min=3.4km az=157.0*
BEO ***22*** *00:49:43.3 ± 0.7, 45°.28N × 23°.32E, h8 km ± 3 km, M1.8/5*

ISC 22 00:49:39.7 ± 1.0, 45°.23N ± 0°.03 × 23°.59E ± 0°.02, h10 km ± 8 km, n37, σ0°69/59, 12C-15D, Romania

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LOT	**Lotru**	**0.25**	**30**	⇑*i* P	Pg	00 49 44.8	-0.2
LOT				S	Sg	00 49 49.1	+0.6
LOT	**Lotru**	**0.25**	**30**	⇑*i* P	Pg	00 49 44.8	-0.2
LOT				*i* S	Sg	00 49 49.1	+0.6
LOT	**Lotru**	**0.25**	**30**	⇑*i* P	Pg	00 49 44.8	-0.2
LOT				S	Sg	00 49 49.1	+0.6
GZR	**Gura Zlata**	**0.60**	**286**	*e*Pg	Pg	00 49 50.5	-0.8
GZR	**Gura Zlata**	**0.60**	**286**	*e*Pg	Pg	00 49 50.5	-0.8
ARR	**Arges**	**0.75**	**79**	⇓*i* P	Pg	00 49 53.1	-1.1
ARR	**Arges**	**0.75**	**79**	⇓*i* P	Pg	00 49 53.1	-1.1
ARR				*i* S	Sg	00 50 04.1	+0.1
ARR	**Arges**	**0.75**	**79**	⇓*i* P	Pg	00 49 53.1	-1.1
ARR				S	Sg	00 50 04.1	+0.1
DEV	**Deva**	**0.81**	**324**	⇓*i* P	Pg	00 49 54.8	-0.6
DEV	**Deva**	**0.81**	**324**	⇓*i* P	Pg	00 49 54.8	-0.6
DEV	**Deva**	**0.81**	**324**	⇓*i* P	Pg	00 49 54.8	-0.6
DJES	**Djerdap**	**0.94**	**234**	*e*Pg	Pb	00 49 58.2	0.0
DJES				*e*Sg	Sg	00 50 10.4	+0.2
VOIR		**1.05**	**78**	⇓*i* P	Pg	00 49 58.9	-1.0
VOIR		**1.05**	**78**	⇓*i* P	Pg	00 49 58.9	-1.0
VOIR				*i* S	Sn	00 50 15.6	+0.3
VOIR		**1.05**	**78**	⇓*i* P	Pg	00 49 58.9	-1.0
VOIR				S	Sn	00 50 15.6	+0.3
MDVR	**Moldovita**	**1.40**	**252**	⇑*i* P	Pn	00 50 05.5	+0.1
MDVR	**Moldovita**	**1.40**	**252**	⇑*i* P	Pn	00 50 05.5	+0.1
MDVR				*i* S	Sg	00 50 25.1	+0.2
MDVR	**Moldovita**	**1.40**	**252**	⇑*i* P	Pn	00 50 05.5	+0.1
MDVR				S	Sg	00 50 25.1	+0.2
BZS	**Buzias**	**1.44**	**286**	⇓*i* P	Pn	00 50 05.8	0.0
BZS	**Buzias**	**1.44**	**286**	⇓*i* P	Pn	00 50 05.8	0.0
BZS				*i* S	Sb	00 50 25.0	0.0
BZS	**Buzias**	**1.44**	**286**	*e*Pg	Pn	00 50 05.9	+0.1
BZS				*e*Sg	Sn	00 50 23.8	-1.0
BZS	**Buzias**	**1.44**	**286**	⇓*i* P	Pn	00 50 05.8	0.0
BZS				*e*Sg	Sn	00 50 23.8	-1.0
BZS				S	Sb	00 50 25.0	0.0
CJR	**Cluj-Napoca**	**1.48**	**0**	⇓*i* P	Pb	00 50 07.3	-0.1
CJR	**Cluj-Napoca**	**1.48**	**0**	⇓*i* P	Pb	00 50 07.3	-0.1
CJR				*i* S	Sg	00 50 28.9	+1.4
CJR	**Cluj-Napoca**	**1.48**	**0**	⇓*i* P	Pb	00 50 07.3	-0.1
CJR				S	Sg	00 50 28.9	+1.4
KUBS	**Kucevo**	**1.59**	**240**	*e*Pg	Pn	00 50 07.9	0.0
KUBS				*e*Sg	Sn	00 50 28.1	-0.3
DRGR		**1.68**	**339**	⇑*i* P	Pb	00 50 10.4	-0.3
DRGR		**1.68**	**339**	⇑*i* P	Pb	00 50 10.4	-0.3
DRGR		**1.68**	**339**	*e*Pn	Pb	00 50 10.8	+0.1
DRGR				*e*Sg	Sb	00 50 32.3	+0.4
DRGR		**1.68**	**339**	⇑*i* P	Pb	00 50 10.4	-0.3
DRGR		**1.68**	**339**	*e*Pn	Pb	00 50 10.8	+0.1
DRGR				*e*Sg	Sb	00 50 32.3	+0.4
SIRR	**Siria**	**1.71**	**308**	⇑*i* P	Pb	00 50 10.7	-0.4
SIRR	**Siria**	**1.71**	**308**	⇑*i* P	Pb	00 50 10.7	-0.4
SIRR	**Siria**	**1.71**	**308**	⇑*i* P	Pb	00 50 10.7	-0.4
ZAPS	**Zavoj**	**2.07**	**200**	*e*Pn	Pg	00 50 19.5	+0.1
ZAPS				*e*Sn	Sb	00 50 43.3	+0.1
GRUS	**Gruza**	**2.45**	**238**	*e*Pn	Pb	00 50 23.2	-0.6
GRUS				*e*Sn	Sn	00 50 50.5	+0.8
BARS	**Barje**	**2.73**	**209**	*e*Pn	Pb	00 50 28.5	-0.1
BARS				*e*Sn	Sn	00 50 59.2	+2.6

ISCJB ***22*** *00:53:37.5 ± 1.0, 24°.5N ± 0°.2 × 94°.6E ± 0°.3, h100 km, mb3.7/9, Error ellipse: s-maj=44.0km s-min=13.0km az=153.5*
IDC ***22*** *00:53:39.9 ± 3.7, 24°.51N × 94°.73E, h103 km ± 35 km, mb3.4/8, mb1 3.5/9, mb1mx3.2/47, mbtmp3.7/9, Error ellipse: s-maj=44.1km s-min=16.9km az=63.0*

ISC 22 00:53:39.4 ± 1.2, 24°.5N ± 0°.2 × 94°.7E ± 0°.4, h100 km, n10, σ0°69/10, mb3.8/9, Myanmar-India border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CMAR	**Chiang Mai Arr**	**7.19**	**146**	P	Pn	00 55 21.9	0.0
	0.7nm,0.3s,baz=318,slow=13,SNR=6.6						
MKAR	**Makanchi Array**	**24.37**	**339**	P	P	00 58 48.4	+0.3
	0.4nm,0.6s,baz=164,slow=8.1,SNR=4.7						
SONM	**Songino Array**	**25.06**	**19**	P	P	00 58 55.0	+0.5
	1.0nm,0.7s,baz=195,slow=8.9,SNR=7.8						
KURBB	**Kurchatov Arra**	**28.93**	**338**	P	P	00 59 29.5	+0.6
	0.1nm,0.4s,baz=147,slow=8.7,SNR=2.4						
TIXI	**Tiksi**	**50.95**	**13**	P	P	01 02 29.8	-0.4
	5.1nm,0.3s,baz=217,slow=4.7,SNR=16						
FINES	**FINESS Array B**	**58.59**	**328**	P	P	01 03 24.6	-0.9
	0.7nm,0.9s,baz=96,slow=9.9,SNR=2.7						
ARCES	**ARCESS Array B**	**60.01**	**338**	P	P	01 03 36.2	+1.0
	2.8nm,0.9s,baz=92,slow=7.3,SNR=3.7						
ASAR	**Alice Springs**	**61.13**	**139**	P	P	01 03 43.8	+0.4
	0.5nm,0.3s,baz=318,slow=6.6,SNR=20						
INK	**Inuvik**	**80.95**	**16**	P	P	01 05 41.7	-0.7
	0.7nm,0.4s,baz=321,slow=6.5,SNR=4.1						
YKA	**Yellowknife Ar**	**90.20**	**13**	P	P	01 06 28.1	-0.2
	0.1nm,0.4s,baz=334,slow=5.4,SNR=8.1						

JMA 22 00:55:08.0 ± 0.3, 37°.65N × 142°.66E, h1 km, M3.6, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**1.31**	**308**	P	Pg	00 55 32.6	-0.5
JIO				*e*S	Sg	00 55 50.2	+0.1
JFK	**Kawauchi**	**1.45**	**259**	P	Pn	00 55 35.2	-0.2
JFK				S	Sn	00 55 55.1	+0.1
JMM	**Marumori**	**1.50**	**279**	P	Pn	00 55 35.6	-0.4
JMM				S	Sb	00 55 55.7	-0.3
JOU	**Okura**	**1.73**	**295**	P	Pn	00 55 39.6	+0.3
JFT	**Otama**	**1.85**	**267**	P	Pb	00 55 42.4	-0.2
JFT				S	Sg	00 56 07.1	-0.4
JHO	**Hitachi**	**1.97**	**239**	P	Pn	00 55 42.4	-0.1

NIED ***22*** *00:58:00, 44°.50N × 149°.50E, h23 km, Mw3.8 Best double couple: M₀5.42000×10¹⁴ NP1:φ₈189.00000°, δ30.00000°, λ58.00000°. NP2:φ₈45.00000°, δ65.00000°, λ107.00000°.*
MOS ***22*** *00:58:02.6 ± 1.0, 44°.27N × 149°.70E, h41 km, mb4.1/5, Error ellipse: s-maj=14.4km s-min=12.4km az=120.9*
JMA ***22*** *00:58:03.2 ± 0.6, 44°.51N × 149°.53E, h30 km, M4.0*
SKHL ***22*** *00:58:03.0 ± 0.2, 44°.19N × 149°.77E, h49 km ± 5 km, mb4.4/2*
IDC ***22*** *00:58:20.6 ± 3.5, 45°.02N × 148°.91E, h138 km ± 30 km, mb3.3/10, mb1 3.4/11, mb1mx3.2/39, mbtmp3.7/11, MS3.1/2, Ms1 3.1/2, ms1mx2.6/21, Error ellipse: s-maj=65.9km s-min=19.7km az=164.0*

ISC 22 00:58:00.6 ± 3.4, 44°.15N ± 0°.08 × 149°.65E ± 0°.08, h13 km ± 21 km, n51, σ1°38/59, mb3.7/11, 1D, Kuril Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KUR	**Kuril'sk**	**1.67**	**311**	*e*P	Pn	00 58 29.6	+0.1
KUR				AMB	AMB	00 58 30.3	
	90nm,0.6s						
KUR				AMB	AMB	00 58 30.3	
	70nm,0.6s						
KUR				AMB	AMB	00 58 30.3	
	220nm,0.6s						
KUR				*i* S	Sn	00 58 49.4	-1.3
KUR				A	A	00 58 54.1	
	430nm,0.3s						
KUR				A	A	00 58 54.1	
	180nm,0.3s						
KUR	**Kuril'sk**	**1.67**	**311**	*d i* PN	Pn	00 58 29.6	+0.1
KUR				*e*S	Sn	00 58 49.8	-0.9
KUR				pmax	pmax		
	comp=N,94nm,0.6s						
KUR				pmax	pmax		
	comp=E,65nm,0.6s						
KUR				pmax	pmax		
	comp=Z,224nm,0.6s						
KUR				smax	smax		
	comp=N,428nm,0.4s						
KUR				smax	smax		
	comp=E,181nm,0.2s						
SHO	**Shikotan**	**2.05**	**263**	*i* P	Pn	00 58 35.8	+1.1
SHO				AMB	AMB	00 58 36.8	
	comp=E,40nm,0.2s						
SHO				*i* S	Sn	00 59 00.5	+0.4
SHO				A	A	00 59 08.5	
	comp=E,180nm,0.4s						
SHO				A	A	00 59 08.5	
	comp=E,260nm,0.4s						
SHO	**Shikotan**	**2.05**	**263**	*i* PN	Pn	00 58 35.8	+1.1
SHO				*i* S	Sn	00 59 00.5	+0.4
SHO				pmax	pmax		
	comp=Z,40nm,0.2s						
SHO				smax	smax		
	comp=N,180nm,0.4s						
SHO				smax	smax		
	comp=E,260nm,0.4s						
YUK	**Yuzh-Kuril'sk**	**2.73**	**269**	*e*P	Pn	00 58 45.7	+1.7
YUK				*e*S	Sn	00 59 17.7	+0.9
YUK				A	A	00 59 22.3	
	comp=E,180nm,0.4s						
YUK				A	A	00 59 22.3	
	comp=E,100nm,0.4s						
YUK	**Yuzh-Kuril'sk**	**2.73**	**269**	*e*PN	Pn	00 58 45.7	+1.7
YUK				*e*S	Sn	00 59 17.7	+0.9
YUK				smax	smax		
	comp=N,180nm,0.3s						
YUK				smax	smax		
	comp=E,100nm,0.4s						
NEM2	**Nemuro 2**	**2.93**	**256**	P	Pn	00 58 47.2	+0.4
NEM2				*e*S	Sn	00 59 19.4	-2.5
JRA	**Rausu**	**3.27**	**268**	P	Pn	00 58 53.4	+2.0
JNK	**Nakash**	**3.61**	**263**	P	Pn	00 58 57.1	+1.0
JAK	**Akkeshi**	**3.78**	**254**	P	Pn	00 58 58.9	+0.5
JAK				*e*S	Sn	00 59 40.4	-2.3
JTKR	**Abashiri--Toko**	**4.14**	**270**	P	Pn	00 59 05.5	+2.1
JAR	**Ashorobuto**	**4.34**	**261**	P	Pn	00 59 07.9	+1.7
JMP	**Maruseppu**	**4.53**	**270**	P	Pn	00 59 11.2	+2.4
JCH	**Churui**	**4.83**	**254**	P	Pn	00 59 13.8	+0.9
MYR	**Moyori**	**5.01**	**250**	*e*P	Pn	00 59 17.2	+1.9
MYR				*e*S	Sn	01 00 11.8	-1.2
ASAJ	**Asahikawa**	**5.08**	**272**	P	Pb	00 59 27.9	-1.3
	comp=E,1.1nm,0.3s,baz=90,slow=20,SNR=3.8						
ERM	**Erimo**	**5.21**	**248**	*e*P	Pn	00 59 21.2	+3.1
ERM	**Erimo**	**5.21**	**248**	*i* PN	Pn	00 59 21.2	+3.1
JNBK	**Urakawa-nobuka**	**5.37**	**252**	P	Pn	00 59 22.1	+1.8
JBT2	**Biratori 2**	**5.47**	**258**	P	Pn	00 59 22.6	+0.8
YSS	**Yuzh-Sakhalins**	**5.59**	**303**	*e*P	Pn	00 59 26.1	+2.7
YSS	**Yuzh-Sakhalins**	**5.59**	**303**	*e*PN	Pn	00 59 26.1	+2.7
JNB	**Noboribetsu**	**6.50**	**258**	P	Pn	00 59 37.5	+1.7
SKR	**Severo-Kuril's**	**7.87**	**32**	*e*P	Pn	00 59 54.0	-0.6
SKR	**Severo-Kuril's**	**7.87**	**32**	*i* PN	Pn	00 59 54.0	-0.6
USRK	**Ussuriysk Ar.**	**12.68**	**276**	P	P	01 01 12.5	+0.7
	comp=E,0.1nm,0.3s,baz=92,slow=14,SNR=3.3						
KLR	**Kul'dur**	**13.29**	**299**	*i* PN	Pn	01 01 00.6	-8.1
MA2	**Magadan**	**15.47**	**2**	*e*P	Pn	01 01 37.6	-0.6
MA2	**Magadan**	**15.47**	**2**	*i* P	Pn	01 01 37.6	-0.6
KSRS	**Korea Array**	**17.73**	**255**	LR	LR	01 08 24.8	
	comp=E,41nm,19.5s,baz=16,slow=34						
SONM	**Songino Array**	**25.98**	**293**	P	P	01 04 08.7	0.0
	comp=E,0.3nm,0.5s,baz=99,slow=8.3,SNR=2.9						
SONM				LR	LR	01 17 28.0	
	comp=E,49nm,18.5s,baz=220,slow=39						
ILAR	**Eielson Array**	**40.10**	**37**	P	P	01 05 40.3	+4.9
	comp=E,0.3nm,0.8s,baz=264,slow=8.1,SNR=2.7						
MKAR	**Makanchi Array**	**45.99**	**298**	P	P	01 06 23.7	+0.4
	comp=E,1.6nm,0.8s,baz=72,slow=8.1,SNR=18						
MKAR				PcP	PcP	01 08 00.8	+1.0
	comp=E,0.3nm,0.7s,baz=57,slow=5.3,SNR=2.7						
MKAR	**Makanchi Array**	**45.99**	**298**	*e*P	P	01 06 23.4	+0.1
MKAR	**Makanchi Array**	**45.99**	**298**	*e*P	P	01 06 23.4	+0.1
MKAR				pmax	pmax		
	comp=Z,2.0nm,0.8s						
KURK	**Kurchatov**	**46.80**	**304**	*e*P	P	01 06 28.9	-0.6
KURK	**Kurchatov**	**46.80**	**304**	P	P	01 06 28.9	-0.6
KURK						01 08 03.2	
KURK				pmax	pmax		
	comp=Z,1.0nm,0.7s						
KURBB	**Kurchatov Arra**	**46.88**	**304**	P	P	01 06 28.9	-1.3
	comp=Z,0.5nm,0.7s,baz=72,slow=8.3,SNR=3.8						
KURBB				PcP	PcP	01 08 03.2	+0.4
	comp=Z,0.3nm,0.7s,baz=66,slow=3.4,SNR=4.8						
AAK	**Ala-Archa**	**52.80**	**296**	*e*P	P	01 07 16.0	+0.4
	comp=Z,0.4nm,0.4s,baz=173,slow=7.2,SNR=5.1						
AAK	**Ala-Archa**	**52.80**	**296**	*e*P	P	01 07 16.0	+0.4
AAK	**Ala-Archa**	**52.80**	**296**	P	P	01 07 16.0	+0.4
AAK				pmax	pmax		
	comp=Z,1.0nm,0.6s						
YKA	**Yellowknife Ar**	**54.46**	**35**	P	P	01 07 28.9	+1.8
	comp=Z,0.2nm,0.7s,baz=298,slow=6.4,SNR=5.3						
FINES	**FINESS Array B**	**65.33**	**334**	P	P	01 08 40.4	-1.5
	comp=Z,0.8nm,0.5s,baz=25,slow=5.0,SNR=8.7						
NB2	**NORSAR Subarra**	**69.87**	**340**	P	P	01 09 09.5	-1.1
	comp=Z,0.9nm,0.8s,baz=29,slow=6.2						
NOA	**NORSAR Array B**	**69.87**	**340**	P	P	01 09 09.4	-1.1
	comp=Z,1.5nm,0.8s,baz=31,slow=6.2,SNR=8.0						
NOA	**NORSAR Array B**	**69.87**	**340**	*e*P	P	01 09 10.3	-0.3
NOA	**NORSAR Array B**	**69.87**	**340**	*e*P	P	01 09 10.3	-0.3
NOA				pmax	pmax		
	comp=Z,2.0nm,0.8s						
AKASG	**Malin Array Be**	**72.31**	**325**	P	P	01 09 25.1	-0.4
	comp=Z,0.3nm,0.4s,baz=38,slow=5.5,SNR=5.5						
GERES	**GERESS Array B**	**79.67**	**332**	P	P	01 10 06.7	-0.9
	comp=Z,0.4nm,0.6s,baz=46,slow=3.9,SNR=4.8						
GERES	**GERESS Array B**	**79.67**	**332**	*e*P	P	01 10 07.7	0.0
GERES	**GERESS Array B**	**79.67**	**332**	*e*P	P	01 10 07.7	0.0

ISCJB ***22*** *01:10:49.0 ± 0.8, 36°.64N ± 0°.03 × 21°.33E ± 0°.03, h1 km ± 5 km, mb3.4/5, Error ellipse: s-maj=4.9km s-min=3.5km az=32.6*
CSEM ***22*** *01:10:49.9 ± 0.2, 36°.66N × 21°.35E, h2 km, ML3.3, Error ellipse: s-maj=5.2km s-min=3.2km az=33.0*
ATH ***22*** *01:10:50.9, 36°.70N × 21°.44E, h18 km, ML3.3/13, Error ellipse: s-maj=1.7km s-min=0.8km az=46.0*
THE ***22*** *01:10:50.7, 36°.68N × 21°.42E, h0 km ± 1 km, ML3.4/13, Error ellipse: s-maj=1.3km s-min=0.6km az=215.0*
IDC ***22*** *01:10:56.6 ± 9.0, 37°.73N × 22°.18E, h0 km, mb3.4/5, mb1 3.5/5, mb1mx3.3/46, mbtmp3.5/5, Error ellipse: s-maj=172.9km s-min=38.8km az=32.0*

ISC 22 01:10:50.0 ± 1.3, 36°.66N ± 0°.03 × 21°.37E ± 0°.03, h8 km ± 8 km, n142, σ1°01/188, mb3.5/5, Southern Greece

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PYL	**PYLOS**	**0.38**	**52**	P	Pg	01 10 57.3	-0.2
PYL				S	Sg	01 11 02.7	+0.2
PYL	**PYLOS**	**0.38**	**52**	P	Pg	01 10 57.9	+0.4
PYL				S	Sg	01 11 02.5	0.0
PYL	**PYLOS**	**0.38**	**52**	P	Pg	01 10 57.9	+0.4
PYL				S	Sg	01 11 02.5	0.0
PYL				AML	AML	01 11 03.7	
	comp=N,12567μm,0.3s						
PYL				AML	AML	01 11 04.9	
	comp=E,11166μm,0.3s						
ITM	**Ithomi**	**0.68**	**41**	P	Pg	01 11 03.0	-0.2
ITM				S	Sg	01 11 12.4	+0.2
ITM	**Ithomi**	**0.68**	**41**	P	Pg	01 11 03.7	+0.5
ITM				S	Sg	01 11 12.4	+0.2
ITM	**Ithomi**	**0.68**	**41**	P	Pg	01 11 03.7	+0.5
ITM				S	Sg	01 11 11.5	-0.7
ITM				AML	AML	01 11 14.7	
	comp=N,4933μm,0.4s						
ITM				AML	AML	01 11 19.1	
	comp=E,4168μm,0.3s						
AMT	**Artemida-Makis**	**0.91**	**17**	P	Pg	01 11 07.0	-0.5
AMT				S	Sb	01 11 20.7	+0.3
AMT	**Artemida-Makis**	**0.91**	**17**	P	Pg	01 11 07.5	0.0
AMT				S	Sg	01 11 19.9	+0.5
AMT	**Artemida-Makis**	**0.91**	**17**	P	Pg	01 11 07.5	0.0
AMT				S	Sg	01 11 19.9	+0.5
AMT				AML	AML	01 11 26.9	
	comp=N,7429μm,0.6s						
AMT				AML	AML	01 11 28.9	
	comp=E,9141μm,0.4s						
VLX	**Vlachokerasia**	**1.07**	**49**	P	Pg	01 11 10.1	-0.6
VLX				S	Sg	01 11 24.4	-0.3
VLX	**Vlachokerasia**	**1.07**	**49**	P	Pg	01 11 10.4	-0.3
VLX				S	Sg	01 11 24.4	-0.3
VLX	**Vlachokerasia**	**1.07**	**49**	P	Pg	01 11 10.4	-0.3
VLX				S	Sg	01 11 24.4	-0.3
VLX				AML	AML	01 11 33.4	
	comp=E,4923μm,0.6s						
VLX				AML	AML	01 11 35.5	
	comp=N,2834μm,0.6s						
ZKS	**Zakynthos**	**1.13**	**336**	P	Pg	01 11 12.0	+0.2
ZKS				S	Sb	01 11 28.2	+1.4
ZKS	**Zakynthos**	**1.13**	**336**	P	Pg	01 11 12.0	+0.2
ZKS				S	Sb	01 11 28.2	+1.4
ZKS				AML	AML	01 11 40.2	
	comp=N,6064μm,0.4s						
ZKS				AML	AML	01 11 43.4	
	comp=E,6857μm,0.6s						
VTN	**Vitineika**	**1.26**	**353**	P	Pg	01 11 11.8	-2.4
VTN	**Vitineika**	**1.26**	**353**	P	Pg	01 11 11.8	-2.4
VLI	**Veliai**	**1.26**	**87**	P	Pg	01 11 13.9	-0.4
VLI				S	Sn	01 11 31.7	+0.6
VLI	**Veliai**	**1.26**	**87**	P	Pb	01 11 14.4	+0.3
VLI				S	Sg	01 11 30.3	-0.3
VLI	**Veliai**	**1.26**	**87**	P	Pb	01 11 14.4	+0.3
VLI				S	Sg	01 11 30.3	-0.3
VLI				AML	AML	01 11 35.4	
	comp=E,1669μm,0.6s						
VLI				AML	AML	01 11 36.5	
	comp=N,2547μm,0.7s						
DRO	**Drossia**	**1.32**	**12**	P	Pg	01 11 14.1	-1.2
DRO				S	Sn	01 11 33.8	+1.3
DRO	**Drossia**	**1.32**	**12**	P	Pg	01 11 14.1	-1.2
DRO				S	Sg	01 11 31.8	-0.6
DRO	**Drossia**	**1.32**	**12**	P	Pg	01 11 14.1	-1.2
DRO				S	Sg	01 11 31.8	-0.6
DRO				AML	AML	01 11 42.1	
	comp=N,3131μm,0.6s						
DRO				AML	AML	01 11 49.0	
	comp=E,5952μm,0.5s						
RLS	**Riolos of Patr**	**1.40**	**3**	P	Pn	01 11 16.1	+0.3
RLS				S	Sn	01 11 36.8	+2.4
RLS	**Riolos of Patr**	**1.40**	**3**	P	Pn	01 11 16.5	+0.7
RLS				S	Sn	01 11 35.5	+1.1
RLS	**Riolos of Patr**	**1.40**	**3**	S	Sn	01 11 35.5	+1.1
RLS				AML	AML	01 11 46.3	
	comp=E,1220μm,1.0s						
RLS				AML	AML

THAL				S	Sn	01 11 43.3	+1.0	
THAL	**Thalero**	**1.72**	**37**	P	**Pb**	**01 11 22.3**	**+0.5**	
THAL				S	Sn	01 11 43.3	+1.0	
THAL				AML	AML	01 11 57.3		
	comp=N,2379µm,0.4s							
THAL				AML	AML	01 11 58.7		
	comp=E,3539µm,0.8s							
ANKY	**Antikythira Is**	**1.75**	**116**	P	**Pn**	**01 11 20.9**	**+0.2**	
ANKY	**Antikythira Is**	**1.75**	**116**	P	**Pn**	**01 11 21.8**	**+1.1**	
ANKY				S	**Sb**	**01 11 45.4**	**+0.8**	
ANKY	**Antikythira Is**	**1.75**	**116**	P	**Pn**	**01 11 21.8**	**+1.1**	
ANKY				S	**Sb**	**01 11 45.4**	**+0.8**	
TRIZ	**Trizonia**	**1.79**	**18**	P	**Pn**	**01 11 22.6**	**+1.4**	
KALE	**Kalithea**	**1.83**	**19**	P	**Pn**	**01 11 22.3**	**+0.4**	
KALE	**Kalithea**	**1.83**	**19**	P	**Pn**	**01 11 23.2**	**+1.3**	
KALE	**Kalithea**	**1.83**	**19**	P	**Pn**	**01 11 23.2**	**+1.3**	
SERG	**Sergoula**	**1.83**	**17**	P	**Pn**	**01 11 22.8**	**+1.0**	
SERG	**Sergoula**	**1.83**	**17**	P	**Pn**	**01 11 22.8**	**+1.0**	
LTK	**Loutraki**	**1.86**	**43**	P	**Pn**	**01 11 23.0**	**+0.7**	
LTK				S	**Sn**	**01 11 47.8**	**+1.8**	
LTK	**Loutraki**	**1.86**	**43**	P	**Pn**	**01 11 23.0**	**+0.7**	
LTK				S	**Sn**	**01 11 47.8**	**+1.8**	
LTK	**Loutraki**	**1.86**	**43**	P	**Pb**	**01 11 23.9**	**-0.4**	
PDO	**Prodromos**	**1.94**	**356**	P	**Pn**	**01 11 24.7**	**+1.4**	
PDO	**Prodromos**	**1.94**	**356**	P	**Pn**	**01 11 24.7**	**+1.4**	
PDO	**Prodromos**	**1.94**	**356**	P	**Pb**	**01 11 25.2**	**-0.4**	
PVO	**Paravola**	**1.96**	**4**	P	**Pb**	**01 11 25.7**	**-0.2**	
PVO	**Paravola**	**1.96**	**4**	P	**Pb**	**01 11 25.7**	**-0.2**	
ANX	**Ano Chora**	**1.98**	**13**	P	**Pn**	**01 11 24.6**	**+0.7**	
ANX	**Ano Chora**	**1.98**	**13**	P	**Pn**	**01 11 24.6**	**+0.7**	
PROD	**Prodromos**	**2.01**	**37**	P	**Pn**	**01 11 24.4**	**+0.1**	
PROD	**Prodromos**	**2.01**	**37**	P	**Pn**	**01 11 24.4**	**+0.1**	
VILL	**Villia**	**2.15**	**45**	P	**Pn**	**01 11 26.6**	**+0.3**	
VILL				S	**Sn**	**01 11 54.8**	**+1.5**	
VILL	**Villia**	**2.15**	**45**	P	**Pn**	**01 11 27.4**	**+1.1**	
VILL				S	**Sn**	**01 11 54.3**	**+1.0**	
VIL2	**Platees**	**2.16**	**44**	P	**Pn**	**01 11 27.4**	**+1.0**	
VIL2				S	**Sn**	**01 11 54.3**	**+0.9**	
VIL2				AML	AML	01 12 08.0		
	comp=E,440µm,0.7s							
VIL2				AML	AML	01 12 11.2		
	comp=N,1116µm,0.8s							
LKD2	**Lefkada island**	**2.20**	**345**	P	**Pn**	**01 11 27.4**	**+0.5**	
LKD2	**Lefkada island**	**2.20**	**345**	P	**Pn**	**01 11 27.4**	**+0.5**	
LKD2	**Lefkada island**	**2.20**	**345**	P	**Pb**	**01 11 29.5**	**-0.5**	
VLY	**Voula,Athens**	**2.27**	**58**	P	**Pn**	**01 11 27.7**	**-0.1**	
VLY	**Voula,Athens**	**2.27**	**58**	P	**Pn**	**01 11 27.7**	**-0.1**	
EVR	**Evrytania**	**2.28**	**9**	P	**Pn**	**01 11 29.8**	**+1.8**	
EVR	**Evrytania**	**2.28**	**9**	P	**Pn**	**01 11 29.8**	**+1.8**	
ATHU	**Athens Univers**	**2.33**	**55**	P	**Pn**	**01 11 28.8**	**+0.2**	
ATHU	**Athens Univers**	**2.33**	**55**	P	**Pn**	**01 11 28.8**	**+0.2**	
ATHU	**Athens Univers**	**2.33**	**55**	P	**Pn**	**01 11 28.5**	**-0.1**	
LKR	**Lokris**	**2.37**	**33**	P	**Pn**	**01 11 30.2**	**+1.0**	
LKR	**Lokris**	**2.37**	**33**	P	**Pn**	**01 11 30.2**	**+1.0**	
LKR	**Lokris**	**2.37**	**33**	P	**Pn**	**01 11 31.2**	**+2.0**	
PTL	**Penteli**	**2.42**	**54**	P	**Pn**	**01 11 30.1**	**+0.1**	
PTL	**Penteli**	**2.42**	**54**	P	**Pn**	**01 11 30.3**	**+0.3**	
PTL	**Penteli**	**2.42**	**54**	P	**Pn**	**01 11 30.3**	**+0.3**	
IMMV	**Iera Moni Meta**	**2.43**	**119**	P	**Pn**	**01 11 30.9**	**+0.8**	
IMMV	**Iera Moni Meta**	**2.43**	**119**	P	**Pn**	**01 11 30.9**	**+0.8**	
IMMV	**Iera Moni Meta**	**2.43**	**119**	P	**Pn**	**01 11 31.4**	**+1.3**	
AGG	**Agios Georgios**	**2.48**	**18**	P	**Pn**	**01 11 32.0**	**+1.3**	
AGG	**Agios Georgios**	**2.48**	**18**	P	**Pn**	**01 11 32.0**	**+1.3**	
AGG	**Agios Georgios**	**2.48**	**18**	P	**Pn**	**01 11 32.8**	**+2.1**	
DSL	**Palaion Diasel**	**2.48**	**355**	P	**Pn**	**01 11 33.2**	**+2.5**	
DSL	**Palaion Diasel**	**2.48**	**355**	P	**Pn**	**01 11 33.1**	**+2.5**	
VAM	**Vamos**	**2.62**	**118**	P	**Pn**	**01 11 33.1**	**+0.5**	
VAM	**Vamos**	**2.62**	**118**	P	**Pn**	**01 11 33.1**	**+0.5**	
EREA	**Eretria**	**2.69**	**49**	P	**Pn**	**01 11 34.2**	**+0.6**	
EREA	**Eretria**	**2.69**	**49**	P	**Pn**	**01 11 34.2**	**+0.6**	
THL	**Klokotos Trika**	**2.94**	**10**	P	**Pn**	**01 11 38.5**	**+1.4**	
THL	**Klokotos Trika**	**2.94**	**10**	P	**Pn**	**01 11 38.5**	**+1.4**	
IGT	**Igoumenitsa**	**2.98**	**344**	P	**Pn**	**01 11 38.4**	**+0.8**	
IGT	**Igoumenitsa**	**2.98**	**344**	P	**Pn**	**01 11 38.4**	**+0.8**	
SKIA	**Skiathos**	**3.00**	**33**	P	**Pn**	**01 11 39.4**	**+1.5**	
SKIA	**Skiathos**	**3.00**	**33**	P	**Pn**	**01 11 39.4**	**+1.5**	
JAN	**Janina**	**3.02**	**352**	P	**Pn**	**01 11 39.5**	**+1.4**	
XOR	**Xorichti**	**3.06**	**28**	P	**Pn**	**01 11 39.6**	**+0.9**	
XOR	**Xorichti**	**3.06**	**28**	P	**Pn**	**01 11 39.6**	**+0.9**	
IDI	**Anoyia**	**3.17**	**115**	P	**Pn**	**01 11 42.1**	**+1.9**	
IDI	**Anoyia**	**3.17**	**115**	P	**Pn**	**01 11 42.1**	**+1.9**	
AOS	**Alonnisos**	**3.20**	**38**	P	**Pn**	**01 11 42.3**	**+1.7**	
AOS	**Alonnisos**	**3.20**	**38**	P	**Pn**	**01 11 42.3**	**+1.7**	
KPRO	**Kipourio**	**3.29**	**360**	P	**Pn**	**01 11 44.0**	**+2.1**	
KPRO	**Kipourio**	**3.29**	**360**	P	**Pn**	**01 11 44.0**	**+2.1**	
KNT	**Kendrikon**	**4.65**	**14**	P	**Pn**	**01 12 01.2**	**+0.7**	
KNT	**Kendrikon**	**4.65**	**14**	P	**Pn**	**01 12 01.2**	**+0.7**	
TAR1	**Taranto**	**5.01**	**322**	*e*Pn	**Pn**	**01 12 06.5**	**+1.0**	
SG1	**Sgolgore (BA)**	**5.55**	**320**	*e*Pn	**Pn**	**01 12 13.6**	**+0.6**	
BAI	**Bari**	**5.65**	**323**	*e*Pn	**Pn**	**01 12 14.6**	**+0.3**	
CDT	**Castel del Mon**	**5.94**	**320**	*e*Pn	**Pn**	**01 12 19.1**	**+0.8**	
BARS	**Barje**	**6.16**	**3**	*e*Pn	**Pn**	**01 12 21.2**	**0.0**	
MS1	**Monte Sant'Ang**	**6.56**	**322**	*e*Pn	**Pn**	**01 12 26.9**	**0.0**	
SJES	**Sjenica**	**6.68**	**351**	*e*Pn	**Pn**	**01 12 27.9**	**-0.6**	
STN	**Ston**	**6.81**	**337**	*i* Pn	**Pn**	**01 12 28.7**	**-1.6**	
STON				Sn	Sn	01 13 41.8	-6.2	
IVAS	**Ivanjica**	**6.97**	**353**	*e*Pn	**Pn**	**01 12 32.0**	**-0.4**	
GRUS	**Gruza**	**7.24**	**356**	*e*Pn	**Pn**	**01 12 35.0**	**-1.0**	
DIVS	**Divibare**	**7.50**	**352**	*e*Pn	**Pn**	**01 12 38.4**	**-1.4**	
UDBI	**Udbina**	**8.94**	**333**	*e*Pn	**Pn**	**01 13 00.2**	**+0.8**	
FINES	**FINESS Array B**	**24.98**	**5**	P	**P**	**01 16 12.3**	**-1.6**	
	comp=N,0.6nm,0.5s,baz=170,slow=12,SNR=11							
NB2	**NORSAR Subarra**	**25.23**	**348**	P	**P**	**01 16 15.0**	**-1.2**	
	comp=Z,0.6nm,0.6s,baz=159,slow=10							
NB2	**NORSAR Subarra**	**25.23**	**348**	P	**P**	**01 16 15.0**	**-1.2**	
	comp=Z,0.6nm,0.6s,SNR=5.8							
NOA	**NORSAR Array B**	**25.23**	**348**	P	**P**	**01 16 15.3**	**-0.9**	
	comp=Z,0.8nm,0.7s,baz=158,slow=9.2,SNR=7.2							
KURBB	**Kurchatov Arra**	**42.60**	**52**	P	**P**	**01 18 44.5**	**-1.9**	
	comp=Z,0.5nm,0.6s,baz=282,slow=8.7,SNR=6.1							
MKAR	**Makanchi Array**	**45.54**	**57**	P	**P**	**01 19 09.3**	**-0.8**	
	comp=Z,0.3nm,0.6s,baz=269,slow=9.9,SNR=3.3							
ZALV	**Zalesovo Beam**	**46.21**	**47**	P	P	01 19 12.9	-2.4	
	comp=Z,0.4nm,0.5s,baz=265,slow=10.0,SNR=2.8							

*IDC **22** 01:13:54.0±0.9, 20°.74N×122°.20E, h0km, mb3.8/10, mb1 3.9/10, mb1mx3.6/51, mbtmp3.9/10, Error ellipse: s-maj=31.7km s-min=19.1km az=62.0*
*NEIC **22** 01:13:55.5±0.5, 20°.73N×122°.18E, h10km, mb4.2/2, Error ellipse: s-maj=16.5km s-min=10.7km az=62.0*
*ISCJB **22** 01:13:57.9±0.7, 20°.7N±0°.1×122°.1E±0°.2, h40km, mb3.8/11, Error ellipse: s-maj=24.9km s-min=14.8km az=152.4*
ISC 22 01:13:59.7±0.8, 20°.7N±0°.1×122°.1E±0°.2, h40km, n19, σ0s43/13, mb3.7/11, Philippine Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CMAR	**Chiang Mai Arr**	**21.96**	**268**	P	**P**	**01 18 50.3**	**+0.1**
	1.0nm,0.4s,baz=65,slow=8.3,SNR=4.9						
SONM	**Songino Array**	**29.89**	**338**	P	**P**	**01 20 03.4**	**-0.3**
	0.7nm,0.7s,baz=158,slow=9.3,SNR=5.1						
MKAR	**Makanchi Array**	**41.46**	**318**	P	**P**	**01 21 43.3**	**+0.6**
	1.1nm,0.6s,baz=111,slow=9.7,SNR=14						
H11N1	**WAKE ISLAND Hy**	**41.92**	**83**	T	T	02 06 40.4	
	baz=282,slow=75,SNR=51						
H11N2	**WAKE ISLAND Hy**	**41.92**	**83**	T	T	02 06 41.1	
	baz=282,slow=75,SNR=60						
H11N3	**WAKE ISLAND Hy**	**41.94**	**83**	T	T	02 06 46.1	
	baz=282,slow=75,SNR=57						
H11S3	**WAKE ISLAND Hy**	**41.94**	**85**	T	T	02 06 43.0	
	baz=281,slow=75,SNR=206						
H11S1	**WAKE ISLAND Hy**	**41.95**	**85**	T	T	02 06 41.7	
	baz=281,slow=75,SNR=209						
H11S2	**WAKE ISLAND Hy**	**41.96**	**85**	T	T	02 06 44.6	
	baz=281,slow=75,SNR=163						
ZALV	**Zalesovo Beam**	**43.63**	**329**	P	**P**	**01 22 00.3**	**+0.2**
	1.7nm,0.5s,baz=114,slow=7.2,SNR=9.2						
KURK	**Kurchatov**	**45.32**	**322**	P	**P**	**01 22 14.2**	**+0.5**
KURBB	**Kurchatov Arra**	**45.34**	**322**	P	**P**	**01 22 14.2**	**+0.4**
	2.8nm,0.8s,baz=118,slow=7.5,SNR=28						
ASAR	**Alice Springs**	**45.59**	**165**	P	**P**	**01 22 16.2**	**+0.1**
	0.2nm,0.7s,baz=335,slow=6.1,SNR=3.6						
STKA	**Stephens Creek**	**55.52**	**160**	P	**P**	**01 23 30.7**	**-0.2**
	1.5nm,0.5s,baz=288,slow=6.4,SNR=2.9						
ARU	**Arti**	**58.40**	**324**	P	**P**	**01 23 50.4**	**-0.7**
	4.0nm,0.5s,baz=59,slow=4.8,SNR=7.2						
ARU	**Arti**	**58.40**	**324**	*e*P	**P**	**01 23 50.5**	**-0.5**
	1.8nm,0.5s						
ILAR	**Eielson Array**	**71.89**	**27**	P	**P**	**01 25 18.4**	**0.0**
	0.2nm,0.6s,baz=280,slow=5.4,SNR=3.2						
CSS	**Mathiatis**	**77.48**	**303**	*e*P	**P**	**01 25 51.3**	**-0.1**
	0.8nm,0.6s						
YKA	**Yellowknife Ar**	**85.81**	**23**	P	**P**	**01 26 35.1**	**+0.4**
	0.4nm,0.7s,baz=310,slow=4.6,SNR=13						

*IDC **22** 01:15:18.6±3.5, 6°.45S×100°.27E, h0km, mb3.8/5, mb1 3.9/5, mb1mx3.5/47, mbtmp3.8/5, Error ellipse: s-maj=102.9km s-min=59.7km az=53.0*
*NEIC **22** 01:15:23.2±1.9, 6°.50S×100°.19E, h35km, mb4.2/3, Error ellipse: s-maj=41.8km s-min=23.2km az=185.0*
*DJA **22** 01:15:25.5±0.8, 6°.5±5°×10°.1E±°, h25km, M4.2/8, MLv4.2/8*
ISC 22 01:15:26.0±1.4, 6°.0S±0°.1×100°.48E±0°.08, h35km, n15, σ0s99/20, mb4.1/7, Southwest of Sumatera

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MNAI	**Manna**	**2.96**	**56**	P	**Pn**	**01 16 10.4**	**-0.2**
MNAI				S	**Sn**	**01 16 43.8**	**-1.1**
PPSI	**Pulau Pagai**	**3.26**	**352**	P	**Pn**	**01 16 13.4**	**-1.3**
PPSI				S	**Sn**	**01 16 52.1**	**-0.2**
LWLI	**Liwa**	**3.69**	**75**	P	**Pn**	**01 16 19.7**	**-1.1**
MDSI	**Maura Dua**	**3.98**	**68**	P	**Pn**	**01 16 24.4**	**-0.2**
MDSI				S	**Sn**	**01 17 09.3**	**-0.8**
KASI	**Kota Agung**	**4.02**	**83**	P	**Pn**	**01 16 24.2**	**-1.0**
KASI				S	**Sn**	**01 17 11.0**	**-0.1**
PDSI	**Padang**	**5.06**	**360**	P	**Pn**	**01 16 38.4**	**-1.2**
PDSI				S	**Sn**	**01 17 37.0**	**+0.1**
KKM	**Kota Kinabalu**	**19.75**	**53**	*e*P	**Pn**	**01 19 56.0**	**+1.1**
	6.2nm,0.5s						
CMAR	**Chiang Mai Arr**	**24.36**	**356**	P	**P**	**01 20 42.5**	**+1.5**
	0.6nm,0.3s,baz=189,slow=9.7,SNR=4.8						
SONM	**Songino Array**	**53.87**	**5**	P	**P**	**01 24 47.4**	**+1.6**
	1.5nm,0.7s,baz=186,slow=9.1,SNR=6.5						
MKAR	**Makanchi Array**	**55.00**	**345**	P	**P**	**01 24 54.1**	**+0.2**
	0.5nm,0.7s,baz=153,slow=8.4,SNR=5.4						
KURBB	**Kurchatov Arra**	**59.51**	**344**	P	**P**	**01 25 25.8**	**+0.1**
	0.5nm,0.6s,baz=170,slow=6.6,SNR=7.9						
KURK	**Kurchatov**	**59.57**	**344**	*e*P	**P**	**01 25 25.2**	**-0.9**
	2.1nm,0.7s						
KLR	**Kul'dur**	**61.40**	**23**	P	**P**	**01 25 39.1**	**+0.6**
	1.2nm,0.7s,baz=270,slow=10,SNR=4.3						
ARU	**Arti**	**71.06**	**337**	*e*P	**P**	**01 26 39.3**	**-1.1**
	1.7nm,0.7s						
TXAR	**Lajitas Array**	**147.47**	**42**	PKPbc	**PKPbc**	**01 35 06.2**	**-1.1**
	0.3nm,0.6s,baz=305,slow=3.2,SNR=4.3						

*NIED **22** 01:17:00, 36°.50N×140°.60E, h59km, Mw4.3 Best double couple: M0 3.27000×10^15 NP1:ϕs179.00000°, δ21.00000°, λ72.00000°. NP2:ϕs18.00000°, δ70.00000°, λ97.00000°.*
*ISCJB **22** 01:17:29.8±0.5, 36°.42N±0°.04×140°.72E±0°.07, h62km±3km, mb4.0/24, Error ellipse: s-maj=9.3km s-min=6.1km az=12.8*
*JMA **22** 01:17:31.4±0.1, 36°.45N×140°.60E, h56km±1km, M4.1 Broadband fault plane solution: P waves. NP1: ϕs12.00000°, δ64.00000°, λ96.00000°. NP2:ϕs179.00000°, δ26.00000°, λ78.00000°. Principal axes: T Plg70.0000°, Azm294.0000°; N Plg5.0000°, Azm190.0000°; P Plg19.0000°, Azm98.0000°;*
JMA Felt II J1.
*IDC **22** 01:17:32.4±1.8, 36°.39N×140°.50E, h68km±16km, mb3.7/22, mb1 3.9/25, mb1mx3.7/52, mbtmp4.0/25, MS3.2/10, Ms1 3.2/10, ms1mx3.0/42 Error ellipse: s-maj=19.0km s-min=10.2km az=77.0*
ISC 22 01:17:31.1±0.8, 36°.46N±0°.05×140°.69E±0°.07, h56km±6km, n51, σ1s06/47, mb4.1/24, MS3.3/7, 3C-5D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHO	**Hitachi**	**0.18**	**328**	⇑P	**Pn**	**01 17 40.1**	**+0.1**
JHO				S	**Sn**	**01 17 45.9**	**-0.5**
JYT	**Yasato**	**0.46**	**240**	⇓P	**Pn**	**01 17 42.1**	**-0.1**
JYT				S	**Sn**	**01 17 49.4**	**-0.9**
ONAJ	**Iwakimizuishiy**	**0.65**	**8**	⇑P	**Pn**	**01 17 44.5**	**0.0**
ONAJ				S	**Sn**	**01 17 53.9**	**-0.4**
JSB	**Shiboa**	**0.80**	**310**	P	**Pn**	**01 17 46.2**	**-0.2**
JSB				S	**Sn**	**01 17 57.1**	**-0.5**
JAG	**Ashikaga**	**0.99**	**268**	⇓P	**Pn**	**01 17 48.6**	**-0.3**
JFT	**Otama**	**1.09**	**345**	⇓P	**Pn**	**01 17 50.4**	**+0.2**
JFT				S	**Sn**	**01 18 04.3**	**-0.2**
JKT	**Katashina**	**1.20**	**285**	⇓P	**Pn**	**01 17 51.5**	**-0.2**
JFY	**Yanaizu**	**1.23**	**321**	⇓P	**Pn**	**01 17 52.2**	**+0.1**
MJAR	**Matsushiro Arr**	**2.00**	**273**	P	**Pn**	**01 18 02.3**	**-0.2**
	42nm,0.3s,baz=95,slow=9.2,SNR=345						
MAT	**Matsushiro**	**2.00**	**273**	P	**Pn**	**01 18 03.0**	**+0.5**
MAT				eS	**Sn**	**01 18 27.6**	**+1.2**
JHJ	**Hachijo jima 2**	**3.41**	**193**	P	**Pn**	**01 18 23.0**	**+1.2**
	41nm,0.3s,baz=260,slow=22,SNR=5.6						
JHJ				S	**Sn**	**01 18 59.2**	**-1.7**
	46nm,0.3s,baz=342,slow=20,SNR=3.5						
JHJ				LR	LR	01 19 47.8	
	comp=Z,154nm,21.0s,baz=296,slow=41						
ASAJ	**Asahikawa**	**7.79**	**10**	P	**Pn**	**01 19 19.0**	**-2.7**
	1.5nm,0.3s,baz=192,slow=24,SNR=5.9						
ASAJ				S	**Sn**	**01 20 46.5**	**-1.9**
	0.4nm,0.3s,baz=195,slow=20,SNR=2.6						
JCJ	**Chichijima**	**9.42**	**172**	P	Pn	01 19 37.8	-6.3
	3.7nm,0.3s,baz=287,slow=19,SNR=2.3						
JCJ				S	Sn	01 21 18.4	-10
	baz=344,slow=20						
USRK	**Ussuriysk Ar.**	**10.19**	**322**	P	**Pn**	**01 19 56.5**	**+2.0**
	0.2nm,0.3s,baz=135,slow=15,SNR=6.3						
USRK				LR	LR	01 23 45.3	
	comp=Z,85nm,18.9s,baz=95,slow=37						
KSRS	**Korea Array**	**10.26**	**279**	P	Pn	01 19 59.1	+3.5
	0.2nm,0.3s,baz=98,slow=13,SNR=7.9						
KLR	**Kul'dur**	**14.34**	**336**	P	**Pn**	**01 20 51.2**	**+0.3**
	0.1nm,0.3s,baz=157,slow=13,SNR=2.5						
KLR				LR	LR	01 26 17.3	
	comp=Z,36nm,20.4s,baz=94,slow=37						
PETK	**Petropavlovsk-**	**20.48**	**30**	LR	LR	01 29 49.0	
	comp=Z,23nm,20.8s,baz=225,slow=36						
SEY	**Seymchan**	**27.47**	**12**	P	**P**	**01 23 15.4**	**+3.9**
	1.6nm,0.6s,baz=226,slow=8.7,SNR=7.1						
SONM	**Songino Array**	**27.63**	**30**	P	**P**	**01 23 12.6**	**-0.7**
	1.2nm,0.8s,baz=112,slow=8.8,SNR=9.1						
SONM				LR	LR	01 33 31.4	
	comp=Z,59nm,20.0s,baz=60,slow=35						
H11N2	**WAKE ISLAND Hy**	**28.37**	**119**	T	T	01 52 48.7	
	baz=312,slow=75,SNR=69						
H11N1	**WAKE ISLAND Hy**	**28.38**	**119**	T	T	01 53 02.6	
	baz=312,slow=75,SNR=66						
H11N3	**WAKE ISLAND Hy**	**28.39**	**119**	T	T	01 52 50.1	
	baz=312,slow=75,SNR=68						
H11S1	**WAKE ISLAND Hy**	**29.05**	**121**	T	T	01 53 46.3	
	baz=314,slow=76,SNR=222						
H11S3	**WAKE ISLAND Hy**	**29.05**	**121**	T	T	01 53 40.4	
	baz=314,slow=76,SNR=172						
H11S2	**WAKE ISLAND Hy**	**29.07**	**121**	T	T	01 54 00.8	
	baz=314,slow=76,SNR=184						
CMAR	**Chiang Mai Arr**	**40.79**	**255**	LR	LR	01 43 16.2	
	comp=Z,29nm,18.2s,baz=115,slow=38						
ZALV	**Zalesovo Beam**	**41.87**	**313**	P	**P**	**01 25 15.8**	**+0.2**
	3.3nm,0.6s,baz=91,slow=7.0,SNR=19						
MKAR	**Makanchi Array**	**43.93**	**302**	P	**P**	**01 25 32.3**	**0.0**
	2.5nm,0.9s,baz=83,slow=9.9,SNR=17						
MKAR				LR	LR	01 43 09.8	
	comp=Z,47nm,21.1s,baz=74,slow=35						
KURBB	**Kurchatov Arra**	**45.90**	**308**	P	**P**	**01 25 47.2**	**-0.6**
	1.1nm,0.4s,baz=83,slow=8.1,SNR=13						
ILAR	**Eielson Array**	**50.29**	**32**	P	**P**	**01 26 22.8**	**+1.2**
	1.1nm,0.7s,baz=271,slow=6.7,SNR=14						
INK	**Inuvik**	**55.16**	**27**	P	**P**	**01 26 58.4**	**+1.0**
	1.1nm,0.8s,baz=285,slow=7.3,SNR=7.3						
FITZ	**Fitzroy Crossi**	**56.10**	**197**	P	**P**	**01 27 04.6**	**0.0**
	2.3nm,0.8s,baz=7.9,slow=3.2,SNR=5.7						
WRA	**Warramunga Arr**	**56.41**	**187**	P	**P**	**01 27 06.6**	**-0.3**
	1.8nm,0.6s,baz=4.0,slow=7.6,SNR=13						
AKTO	**Aktyubinsk**	**58.62**	**312**	P	**P**	**01 27 20.9**	**-1.3**
	1.0nm,0.6s,baz=76,slow=8.3,SNR=4.3						
ASAR	**Alice Springs**	**60.14**	**187**	P	**P**	**01 27 33.1**	**+0.2**
	1.2nm,0.8s,baz=7.0,slow=5.9,SNR=11						
GEYT	**Alibeck**	**63.60**	**299**	P	**P**	**01 27 55.2**	**-1.0**
	0.8nm,0.4s,baz=69,slow=7.9,SNR=3.5						
ARCES	**ARCESS Array B**	**64.33**	**339**	P	**P**	**01 28 00.5**	**+0.2**
	3.8nm,1.0s,baz=48,slow=7.3,SNR=2.8						
YKA	**Yellowknife Ar**	**64.60**	**30**	P	**P**	**01 28 03.1**	**+0.9**
	0.3nm,0.7s,baz=305,slow=6.5,SNR=5.6						
AFI	**Afiamalu**	**67.22**	**129**	LR	LR	01 51 56.8	
	comp=Z,52nm,21.7s,baz=312,slow=31						
FINES	**FINESS Array B**	**69.05**	**332**	P	**P**	**01 28 30.2**	**-0.2**
	4.2nm,0.9s,baz=59,slow=7.4,SNR=10						
WSAR	**Wadi Sarin**	**70.45**	**285**	LR	LR	02 02 54.6	
	comp=Z,26nm,18.1s,slow=39						
KBZ	**Khabaz**	**70.83**	**310**	P	**P**	**01 28 41.5**	**-0.3**
	2.9nm,1.0s,baz=14,slow=7.9,SNR=5.0						
HFS	**Hagfors**	**74.37**	**335**	P	**P**	**01 29 02.0**	**-0.5**
	1.3nm,0.7s,baz=53,slow=5.7,SNR=5.3						
AKASG	**Malin Array Be**	**74.39**	**322**	P	**P**	**01 29 02.5**	**-0.2**
	1.5nm,0.5s,baz=47,slow=6.0,SNR=14						
NB2	**NORSAR Subarra**	**74.49**	**337**	P	**P**	**01 29 03.2**	**0.0**
	comp=Z,4.3nm,0.9s,baz=40,slow=5.9						
NOA	**NORSAR Array B**	**74.49**	**337**	P	**P**	**01 29 03.1**	**0.0**
	comp=Z,3.0nm,0.8s,baz=39,slow=5.8,SNR=17						
NOA				LR	LR	02 04 58.6	
	comp=Z,14nm,18.2s,baz=295,slow=38						
BRTR	**Keskin Array B**	**78.79**	**311**	P	**P**	**01 29 27.2**	**-0.8**
	comp=Z,1.3nm,0.9s,baz=112,slow=3.3,SNR=6.9						
CLL	**Colln**	**81.30**	**330**	P/P	**P**	**01 29 41.0**	**-0.1**
	comp=Z,4.0nm,0.9s						
GERES	**GERESS Array B**	**82.89**	**328**	P	**P**	**01 29 48.1**	**-1.6**
	comp=Z,0.3nm,0.4s,baz=35,slow=4.9,SNR=6.0						
EKA	**Eskdalemuir Ar**	**83.48**	**340**	P	**P**	**01 29 52.2**	**-0.2**
	comp=Z,0.1nm,0.4s,baz=7.6,slow=6.4,SNR=3.8						
TXAR	**Lajitas Array**	**90.94**	**52**	P	**P**	**01 30 29.4**	**+0.3**
	comp=Z,0.4nm,0.9s,baz=316,slow=3.5,SNR=3.6						

*THE **22** 01:20:24.8, 38°.39N×23°.64E, h1km±1km, ML3.9/39, Error ellipse: s-maj=1.2km s-min=0.5km az=69.0*
*ATH **22** 01:20:24.5, 38°.37N×23°.62E, h22km, ML3.9/14, Error ellipse: s-maj=0.9km s-min=0.6km az=160.0*
*CSEM **22** 01:20:24.7±0.1, 38°.40N×23°.65E, h2km, ML3.9, Error ellipse: s-maj=1.7km s-min=1.6km az=16.0*
*ISCJB **22** 01:20:24.1±0.3, 38°.42N±0°.01×23°.68E±0°.01, h6km±2km, mb3.6/10, MS3.1/3, Error ellipse: s-maj=1.8km s-min=1.7km az=164.1*
*IDC **22** 01:20:24.1±0.9, 38°.40N×23°.60E, h0km, mb3.7/10, mb1 3.8/15, mb1mx3.7/51, mbtmp3.7/15, ML3.0/5, MS3.0/6, Ms1 3.1/6, ms1mx2.7/54, Error ellipse: s-maj=20.6km s-min=14.7km az=165.0*
*ISK **22** 01:20:25.1, 38°.52N×23°.76E, h5km, ML3.6*
*DDA **22** 01:20:32.8, 38°.70N×24°.51E, h15km, Md3.8*
ISC 22 01:20:25.3±0.9, 38°.40N±0°.01×23°.64E±0°.01, h10km±6km, n387, σ1s09/502, mb3.7/10, MS3.1/3, 34C-8D, Greece

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
EREA	**Eretria**	**0.23**	**84**	P	**Pg**	**01 20 29.5**	**-0.6**
EREA				S	**Sg**	**01 20 32.6**	**-0.8**
EREA	**Eretria**	**0.23**	**84**	P	**Pg**	**01 20 29.5**	**-0.6**
EREA				S	**Sg**	**01 20 32.6**	**-0.8**
EREA	**Eretria**	**0.23**	**84**	P	**Pg**	**01 20 31.4**	**+1.2**
EREA				S	**Sg**	**01 20 35.1

DSF				S	Sb	01 20 54.4	+0.2	
DSF	**Desfina**	**0.87**	**271**	P	Pg	01 20 40.5	-1.6	
DSF				S	Sg	01 20 53.4	0.0	
DSF	**Desfina**	**0.87**	**271**	P	Pg	01 20 40.3	-1.7	
DSF				S	Sg	01 20 53.4	0.0	
DSF				AML	AML	01 20 57.0		
	comp=E,16461µm,0.4s							
DSF				AML	AML	01 20 57.5		
	comp=N,10844µm,0.2s							
DID	**Didima**	**0.94**	**200**	P	Pg	01 20 42.1	-1.3	
DID				S	Sg	01 20 56.3	+0.1	
DID	**Didima**	**0.94**	**200**	P	Pg	01 20 42.7	-0.7	
DID				S	Sg	01 20 56.3	+0.1	
DID	**Didima**	**0.94**	**200**	P	Pg	01 20 42.7	-0.7	
DID				S	Sg	01 20 54.1	-1.6	
DID				AML	AML	01 20 57.1		
	comp=N,15872µm,0.2s							
DID				AML	AML	01 20 59.6		
	comp=E,29585µm,0.3s							
NEO	**Neokhori**	**0.96**	**341**	P	Pb	01 20 43.7	-0.4	
NEO				S	Sb	01 20 57.1	+0.2	
NEO	**Neokhori**	**0.96**	**341**	P	Pb	01 20 43.7	-0.4	
NEO				S	Sb	01 20 57.1	+0.2	
NEO	**Neokhori**	**0.96**	**341**	P	Pb	01 20 44.3	+0.2	
XOR	**Xorichti**	**1.03**	**340**	P	Pb	01 20 44.2	-0.9	
XOR				S	Sb	01 20 58.9	+0.1	
XOR	**Xorichti**	**1.03**	**340**	P	Pb	01 20 45.1	-0.1	
XOR				S	Sb	01 20 58.9	+0.1	
XOR	**Xorichti**	**1.03**	**340**	P	Pb	01 20 45.1	-0.1	
KRND	**KRANIDI**	**1.08**	**201**	P	Pg	01 20 44.6	-1.5	
KRND				S	Sb	01 21 00.4	+0.2	
KRND	**KRANIDI**	**1.08**	**201**	P	Pg	01 20 45.0	-1.1	
KRND				S	Sb	01 21 00.4	+0.2	
KRND	**KRANIDI**	**1.08**	**201**	P	Pg	01 20 45.0	-1.1	
KRND				S	Sg	01 20 58.5	-1.6	
GUR	**Goura**	**1.12**	**246**	P	Pg	01 20 45.4	-1.4	
GUR	**Goura**	**1.12**	**246**	P	Pg	01 20 45.4	-1.4	
FYTO	**Fytoko, Volos**	**1.15**	**332**	P	Pb	01 20 47.0	-0.2	
FYTO				S	Sb	01 21 02.6	+0.4	
FYTO	**Fytoko, Volos**	**1.15**	**332**	P	Pb	01 20 47.0	-0.2	
FYTO				S	Sb	01 21 02.6	+0.4	
KALE	**Kalithea**	**1.18**	**270**	P	Pg	01 20 45.9	-2.0	
KALE				S	Sn	01 21 04.7	+0.8	
KALE	**Kalithea**	**1.18**	**270**	P	Pg	01 20 45.9	-2.0	
KALE				S	Sn	01 21 04.7	+0.8	
KALE	**Kalithea**	**1.18**	**270**	P	Pg	01 20 45.8	-2.1	
AGG	**Agios Georgios**	**1.20**	**302**	*e*PN	Pn	01 20 48.7	+0.6	
AGG				*e*SN	Sn	01 21 06.1	+1.7	
AGG	**Agios Georgios**	**1.20**	**302**	P	Pg	01 20 46.7	-1.6	
AGG				S	Sb	01 21 04.8	+1.2	
AGG	**Agios Georgios**	**1.20**	**302**	P	Pg	01 20 47.0	-1.3	
AGG	**Agios Georgios**	**1.20**	**302**	*e*Pn	Pn	01 20 48.7	+0.6	
AGG				S	Sb	01 21 04.8	+1.2	
AGG				*e*Sn	Sn	01 21 06.1	+1.7	
AGG	**Agios Georgios**	**1.20**	**302**	P	Pg	01 20 47.0	-1.3	
KLV	**Kalavryta, Ach**	**1.22**	**254**	P	Pg	01 20 46.9	-1.8	
KLV				S	Sg	01 21 03.8	-0.8	
KLV	**Kalavryta, Ach**	**1.22**	**254**	P	Pg	01 20 46.9	-1.8	
KLV				S	Sg	01 21 03.8	-0.8	
KLV	**Kalavryta, Ach**	**1.22**	**254**	P	Pg	01 20 46.9	-1.8	
KLV				S	Sg	01 21 03.8	-0.8	
KLV				AML	AML	01 21 05.1		
	comp=N,3158µm,0.6s							
KLV				AML	AML	01 21 06.4		
	comp=E,3924µm,0.6s							
TRIZ	**Trizonia**	**1.23**	**269**	P	Pg	01 20 46.7	-2.2	
SERG	**Sergoula**	**1.24**	**271**	P	Pg	01 20 47.1	-2.0	
SERG				S	Sn	01 21 06.3	+0.8	
SERG	**Sergoula**	**1.24**	**271**	P	Pg	01 20 47.1	-2.0	
SERG				S	Sn	01 21 06.3	+0.8	
LAKA	**Lakka**	**1.31**	**264**	P	Pg	01 20 48.9	-1.6	
LAKA				S	Sn	01 21 08.4	+1.1	
LAKA	**Lakka**	**1.31**	**264**	P	Pg	01 20 48.9	-1.6	
LAKA				S	Sn	01 21 08.4	+1.1	
LAKA	**Lakka**	**1.31**	**264**	P	Pg	01 20 48.6	-1.9	
EFP	**Efpalio**	**1.36**	**272**	P	Pn	01 20 50.2	-0.1	
EFP				S	Sn	01 21 09.8	+1.5	
EFP	**Efpalio**	**1.36**	**272**	P	Pn	01 20 50.2	-0.1	
EFP				S	Sn	01 21 09.8	+1.5	
ANX	**Ano Chora**	**1.36**	**279**	P	Pg	01 20 49.4	-2.0	
ANX				S	Sn	01 21 10.0	+1.5	
ANX	**Ano Chora**	**1.36**	**279**	P	Pg	01 20 49.4	-2.0	
ANX				S	Sn	01 21 10.0	+1.5	
RODI	**Rodini**	**1.37**	**268**	P	Pg	01 20 51.0	-0.6	
RODI	**Rodini**	**1.37**	**268**	P	Pg	01 20 51.0	-0.6	
TRIP	**Tripoli**	**1.38**	**232**	P	Pn	01 20 50.9	+0.2	
TRIP	**Tripoli**	**1.38**	**232**	P	Pn	01 20 50.9	+0.2	
VLX	**Vlachokerasia**	**1.43**	**225**	P	Pn	01 20 50.9	-0.4	
VLX				S	Sg	01 21 10.5	-0.7	
VLX	**Vlachokerasia**	**1.43**	**225**	P	Pn	01 20 50.9	-0.4	
VLX				S	Sg	01 21 10.5	-0.7	
VLX	**Vlachokerasia**	**1.43**	**225**	P	Pn	01 20 50.8	-0.4	
EVR	**Evrytania**	**1.52**	**291**	P	Pn	01 20 52.1	-0.5	
EVR				S	Sn	01 21 13.4	+0.9	
EVR	**Evrytania**	**1.52**	**291**	P	Pn	01 20 53.0	+0.4	
EVR				S	Sn	01 21 13.4	+0.9	
EVR	**Evrytania**	**1.52**	**291**	P	Pn	01 20 53.0	+0.4	
EVR				S	Sn	01 21 13.5	+0.9	
EVR				AML	AML	01 21 21.4		
	comp=N,1569µm,0.6s							
PAIG	**Paliouri**	**1.53**	**1**	P	Pn	01 20 52.2	-0.4	
PAIG	**Paliouri**	**1.53**	**1**	P	Pn	01 20 52.2	-0.4	
PAIG	**Paliouri**	**1.53**	**1**	P	Pn	01 20 51.4	-1.3	
DRO	**Drossia**	**1.58**	**254**	P	Pn	01 20 53.1	-0.2	
DRO	**Drossia**	**1.58**	**254**	P	Pn	01 20 53.7	+0.4	
DRO	**Drossia**	**1.58**	**254**	P	Pn	01 20 53.7	+0.4	
PVO	**Paravola**	**1.67**	**278**	P	Pn	01 20 55.0	+0.4	
PVO				S	Sg	01 21 18.3	-0.7	
PVO	**Paravola**	**1.67**	**278**	P	Pn	01 20 55.0	+0.4	
PVO				S	Sg	01 21 18.3	-0.7	
PVO	**Paravola**	**1.67**	**278**	P	Pn	01 20 55.2	+0.7	
THL	**Klokotos Trika**	**1.72**	**313**	P	Pn	01 20 55.4	+0.2	
THL	**Klokotos Trika**	**1.72**	**313**	P	Pn	01 20 55.5	+0.2	
RLS	**Riolos of Patr**	**1.74**	**260**	P	Pn	01 20 55.2	-0.3	
RLS				S	Sb	01 21 20.1	+0.9	
RLS	**Riolos of Patr**	**1.74**	**260**	P	Pn	01 20 55.8	+0.3	
RLS				S	Sb	01 21 20.1	+0.9	
AMT	**Artemida-Makis**	**1.75**	**241**	P	Pn	01 20 55.7	0.0	
AMT				S	Sb	01 21 20.0	+0.5	
AMT	**Artemida-Makis**	**1.75**	**241**	P	Pn	01 20 55.7	0.0	
AMT				S	Sb	01 21 20.0	+0.5	
VLI	**Veliai**	**1.76**	**199**	P	Pn	01 20 55.1	-0.7	
VLI				S	Sb	01 21 20.6	+0.7	
VLI	**Veliai**	**1.76**	**199**	P	Pn	01 20 55.1	-0.7	
VLI				S	Sb	01 21 20.6	+0.7	
VLI	**Veliai**	**1.76**	**199**	P	Pn	01 20 55.0	-0.9	
MHLO	**Agia Marina, M**	**1.81**	**160**	P	Pn	01 20 56.0	-0.5	
MHLO				S	Sb	01 21 21.1	0.0	
MHLO	**Agia Marina, M**	**1.81**	**160**	P	Pn	01 20 56.0	-0.5	
MHLO				S	Sb	01 21 21.1	0.0	
ITM	**Ithomi**	**1.82**	**229**	P	Pn	01 20 57.0	+0.4	
ITM				S	Sn	01 21 20.8	+1.1	
ITM	**Ithomi**	**1.82**	**229**	P	Pn	01 20 57.0	+0.4	
ITM				S	Sn	01 21 20.8	+1.1	
ITM	**Ithomi**	**1.82**	**229**	P	Pn	01 20 57.4	+0.8	
CHOS	**Chios island**	**1.90**	**90**	*e*PN	Pn	01 20 57.7	-0.1	
CHOS	**Chios island**	**1.90**	**90**	P	Pn	01 20 57.7	-0.1	
CHOS				S	Sb	01 21 23.7	-0.2	
CHOS	**Chios island**	**1.90**	**90**	P	Pn	01 20 57.9	+0.1	
CHOS				S	Sb	01 21 23.7	-0.2	
CHOS	**Chios island**	**1.90**	**90**	P	Pn	01 20 57.9	+0.1	
SIGR	**SIGRI**	**1.92**	**64**	*e*PN	Pn	01 20 57.2	-0.7	
SIGR	**SIGRI**	**1.92**	**64**	P	Pn	01 20 57.3	-0.7	
SIGR	**SIGRI**	**1.92**	**64**	P	Pn	01 20 57.3	-0.7	
SIGR	**SIGRI**	**1.92**	**64**	P	Pn	01 20 56.8	-1.2	
LIT	**Litokhoron**	**1.92**	**333**	P	Pn	01 20 58.1	0.0	
LIT	**Litokhoron**	**1.92**	**333**	P	Pn	01 20 58.1	0.0	
LIT	**Litokhoron**	**1.92**	**333**	P	Pn	01 20 57.8	-0.3	
LIA	**Limnos Island**	**1.92**	**38**	P	Pn	01 20 57.4	-0.6	
LIA	**Limnos Island**	**1.92**	**38**	P	Pn	01 20 57.4	-0.6	
PDO	**Prodromos**	**1.94**	**277**	P	Pn	01 20 59.3	+1.1	
PDO				S	Sn	01 21 24.2	+1.6	
PDO	**Prodromos**	**1.94**	**277**	P	Pn	01 20 59.3	+1.1	
PDO				S	Sn	01 21 24.2	+1.6	
OUR	**Ouranopolis**	**1.96**	**8**	*e*PN	Pn	01 20 57.9	-0.6	
OUR	**Ouranopolis**	**1.96**	**8**	P	Pn	01 20 58.3	-0.2	
OUR	**Ouranopolis**	**1.96**	**8**	*e*Pn	Pn	01 20 57.9	-0.6	
OUR	**Ouranopolis**	**1.96**	**8**	P	Pn	01 20 58.3	-0.2	
PLG	**Polygyros**	**1.98**	**356**	P	Pn	01 20 58.2	-0.7	
PLG	**Polygyros**	**1.98**	**356**	P	Pn	01 20 58.2	-0.7	
PLG	**Polygyros**	**1.98**	**356**	P	Pn	01 20 58.1	-0.7	
APE	**Apeiranthos**	**2.00**	**131**	*e*PN	Pb	01 21 00.6	-1.2	
APE	**Apeiranthos**	**2.00**	**131**	P	Pn	01 20 58.8	-0.4	
APE	**Apeiranthos**	**2.00**	**131**	P	Pn	01 20 59.2	0.0	
APE	**Apeiranthos**	**2.00**	**131**	*e*Pn	Pb	01 21 00.6	-1.2	
APE	**Apeiranthos**	**2.00**	**131**	P	Pn	01 20 59.2	0.0	
DSL	**Palaion Diasel**	**2.12**	**291**	P	Pn	01 21 01.8	+1.0	
DSL				S	Sb	01 21 30.1	0.0	
DSL	**Palaion Diasel**	**2.12**	**291**	P	Pn	01 21 01.8	+1.0	
DSL				S	Sb	01 21 30.1	0.0	
PYL	**PYLOS**	**2.12**	**226**	P	Pn	01 21 00.8	0.0	
PYL				S	Sn	01 21 28.5	+1.3	
PYL	**PYLOS**	**2.12**	**226**	P	Pn	01 21 00.8	0.0	
PYL				S	Sn	01 21 28.5	+1.3	
PRK	**Paraskevi**	**2.23**	**67**	P	Pn	01 21 00.8	-1.4	
PRK	**Paraskevi**	**2.23**	**67**	P	Pn	01 21 00.8	-1.4	
HORT	**Hortiatis**	**2.24**	**349**	*e*PN	Pn	01 21 02.6	+0.1	
HORT	**Hortiatis**	**2.24**	**349**	P	Pn	01 21 02.6	+0.1	
HORT	**Hortiatis**	**2.24**	**349**	P	Pn	01 21 02.6	+0.1	
HORT	**Hortiatis**	**2.24**	**349**	P	Pn	01 21 02.6	+0.1	
ZEY	**˜zmir**	**2.26**	**93**	*i* P	Pn	01 21 03.0	+0.3	
ZEY				*i* S	Sg	01 21 39.3	+1.4	
THE	**Thessaloniki**	**2.29**	**347**	P	Pn	01 21 02.7	-0.4	
THE	**Thessaloniki**	**2.29**	**347**	P	Pn	01 21 02.7	-0.4	
URLA	**Izmir**	**2.33**	**90**	*i* P	Pn	01 21 02.3	-1.3	
URLA	**Izmir**	**2.33**	**90**	P	Pn	01 21 02.3	-1.3	
KPRO	**Kipourio**	**2.35**	**312**	P	Pn	01 21 04.6	+0.5	
KPRO	**Kipourio**	**2.35**	**312**	P	Pn	01 21 04.6	+0.5	
ZKS	**Zakynthos**	**2.36**	**254**	P	Pb	01 21 06.8	-1.0	
ZKS	**Zakynthos**	**2.36**	**254**	P	Pb	01 21 06.8	-1.0	
LKD2	**Lefkada island**	**2.37**	**280**	P	Pn	01 21 06.3	+2.1	
LKD2	**Lefkada island**	**2.37**	**280**	P	Pn	01 21 06.3	+2.1	
BOZC	**Bozcaada**	**2.37**	**52**	*i* P	Pn	01 21 03.5	-0.7	
BOZC				*i* S	Sg	01 21 40.7	-0.8	
KZN	**Kozani**	**2.39**	**323**	P	Pn	01 21 04.9	+0.3	
KZN	**Kozani**	**2.39**	**323**	P	Pn	01 21 04.9	+0.3	
VLS	**Valsamata**	**2.41**	**266**	P	Pn	01 21 06.1	+1.4	
VLS				S	Sn	01 21 36.4	+2.2	
VLS	**Valsamata**	**2.41**	**266**	P	Pn	01 21 06.1	+1.4	
VLS				S	Sn	01 21 36.4	+2.2	
THR3	**Thira Island,**	**2.43**	**144**	P	Pn	01 21 04.7	-0.3	
THR3	**Thira Island,**	**2.43**	**144**	P	Pn	01 21 04.7	-0.3	
SOH	**Sokhos**	**2.43**	**355**	P	Pn	01 21 05.4	+0.3	
SOH	**Sokhos**	**2.43**	**355**	P	Pn	01 21 05.4	+0.3	
THR6	**Thira Island,**	**2.47**	**145**	P	Pn	01 21 06.0	+0.4	
THR6	**Thira Island,**	**2.47**	**145**	P	Pn	01 21 06.0	+0.4	
JAN	**Janina**	**2.51**	**301**	P	Pn	01 21 07.5	+1.4	
JAN	**Janina**	**2.51**	**301**	P	Pn	01 21 07.0	+0.9	
EZN	**Ezine**	**2.53**	**55**	*e*PN	Pn	01 21 06.5	+0.1	
EZN	**Ezine**	**2.53**	**55**	*e*Pn	Pn	01 21 06.5	+0.1	
ANKY	**Antikythira Is**	**2.54**	**186**	P	Pn	01 21 06.2	-0.2	
ANKY	**Antikythira Is**	**2.54**	**186**	P	Pn	01 21 06.3	-0.2	
ANKY	**Antikythira Is**	**2.54**	**186**	P	Pn	01 21 06.3	-0.2	
AYVA	**Ayvalik**	**2.55**	**68**	*i* P	Pn	01 21 06.5	-0.2	
AYVA				*i* S	Sg	01 21 47.3	0.0	
AYVA	**Ayvalik**	**2.55**	**68**	P	Pn	01 21 06.5	-0.2	
SMG	**Samos**	**2.62**	**104**	P	Pn	01 21 07.9	+0.3	
SMG	**Samos**	**2.62**	**104**	P	Pn	01 21 07.9	+0.3	
DKL	**Dikili**	**2.65**	**74**	*e*PN	Pn	01 21 07.8	-0.1	
DKL	**Dikili**	**2.65**	**74**	*e*Pn	Pn	01 21 07.8	-0.1	
BLCB	**Balcova**	**2.68**	**89**	*e*PN	Pn	01 21 08.8	+0.4	
BLCB	**Balcova**	**2.68**	**89**	*e*Pn	Pn	01 21 08.8	+0.4	
KAVA	**Kavala**	**2.69**	**14**	P	Pn	01 21 07.9	-0.6	
KAVA	**Kavala**	**2.69**	**14**	P	Pn	01 21 07.9	-0.6	
SRS	**Serrai**	**2.72**	**359**	P	Pn	01 21 08.7	-0.3	
SRS	**Serrai**	**2.72**	**359**	P	Pn	01 21 08.7	-0.3	
GRG	**Griva**	**2.73**	**340**	*e*PN	Pn	01 21 09.7	+0.5	
GRG	**Griva**	**2.73**	**340**	P	Pn	01 21 08.9	-0.3	
GRG	**Griva**	**2.73**	**340**	P	Pn	01 21 08.9	-0.3	
GRG	**Griva**	**2.73**	**340**	*e*Pn	Pn	01 21 09.7	+0.5	
IGT	**Igoumenitsa**	**2.81**	**295**	*e*PN	Pn	01 21 12.8	+2.5	
IGT	**Igoumenitsa**	**2.81**	**295**	P	Pn	01 21 12.1	+1.8	
IGT	**Igoumenitsa**	**2.81**	**295**	P	Pn	01 21 12.1	+1.8	
IGT	**Igoumenitsa**	**2.81**	**295**	*e*Pn	Pn	01 21 12.8	+2.5	
KNT	**Kendrikon**	**2.82**	**349**	*e*PN	Pn	01 21 10.8	+0.5	
KNT	**Kendrikon**	**2.82**	**349**	P	Pn	01 21 10.9	+0.5	
KNT	**Kendrikon**	**2.82**	**349**	P	Pn	01 21 10.9	+0.5	
NEST	**Nestorio**	**2.84**	**316**	P	Pn	01 21 12.2	+1.4	
NEST				S	Sn	01 21 47.1	+2.0	
NEST	**Nestorio**	**2.84**	**316**	P	Pn	01 21 12.2	+1.4	
NEST				S	Sn	01 21 47.1	+2.0	
SGD	**Sagiada**	**2.92**	**296**	P	Pn	01 21 13.4	+1.7	
SGD	**Sagiada**	**2.92**	**296**	P	Pn	01 21 13.4	+1.7	
IMMV	**Iera Moni Meta**	**2.94**	**174**	P	Pn	01 21 12.4	+0.4	
IMMV	**Iera Moni Meta**	**2.94**	**174**	P	Pn	01 21 12.4	+0.4	
FNA	**Florina**	**2.96**	**325**	*e*PN	Pn	01 21 13.3	+1.0	
FNA	**Florina**	**2.96**	**325**	P	Pn	01 21 13.6	+1.3	
FNA	**Florina**	**2.96**	**325**	*e*Pn	Pn	01 21 13.3	+1.0	
FNA	**Florina**	**2.96**	**325**	P	Pn	01 21 13.6	+1.3	
NVR	**Nevrokopi**	**2.96**	**3**	P	Pn	01 21 11.9	-0.4	
NVR	**Nevrokopi**	**2.96**	**3**	P	Pn	01 21 11.9	-0.4	
GELI	**Tayfur-Gelibol**	**2.97**	**47**	*e*PN	Pn	01 21 12.0	-0.4	
GELI	**Tayfur-Gelibol**	**2.97**	**47**	*e*Pn	Pn	01 21 12.0	-0.4	
VAM	**Vamos**	**3.02**	**171**	P	Pn	01 21 13.7	+0.6	
VAY	**Valandovo**	**3.04**	**345**	*e*Pn	Pn	01 21 12.4	-1.0	
VAY				*e*Sn	Sn	01 21 49.4	-0.3	
VAY	**Valandovo**	**3.04**	**345**	*e*Pn	Pn	01 21 12.3	-1.0	
VAY				*e*Sn	Sn	01 21 49.4	-0.3	
ENEZ	**Enez**	**3.04**	**39**	*e*PN	Pn	01 21 13.1	-0.3	
ENEZ	**Enez**	**3.04**	**39**	P	Pn	01 21 13.1	-0.3	
ENEZ	**Enez**	**3.04**	**39**	P	Pn	01 21 13.1	-0.3	
ALN	**Alexandroupoli**	**3.12**	**36**	*e*PN	Pn	01 21 13.4	-1.0	
ALN	**Alexandroupoli**	**3.12**	**36**	P	Pn	01 21 13.7	-0.7	
ALN	**Alexandroupoli**	**3.12**	**36**	*e*Pn	Pn	01 21 13.4	-1.0	
ALN	**Alexandroupoli**	**3.12**	**36**	P	Pn	01 21 13.7	-0.7	
BIA	**Bitola**	**3.17**	**326**	*i* Pn	Pn	01 21 14.7	-0.6	
BIA				*e*Sn	Sn	01 21 53.3	+0.2	
BIA	**Bitola**	**3.17**	**326**	*i* Pn	Pn	01 21 14.6	-0.6	
BIA				*e*Sn	Sn	01 21 53.3	+0.2	
ERIK	**Erikli-Kesan**	**3.18**	**43**	*e*PN	Pn	01 21 15.7	+0.4	
ERIK	**Erikli-Kesan**	**3.18**	**43**	*e*Pn	Pn	01 21 15.7	+0.4	
BODT	**Bodrum**	**3.20**	**113**	*e*PN	Pn	01 21 16.9	+1.2	
BODT	**Bodrum**	**3.20**	**113**	*e*Pn	Pn	01 21 16.9	+1.2	
IDI	**Anoyia**	**3.26**	**162**	Pn	Pn	01 21 16.5	0.0	
	comp=N,7.7nm,0.3s,baz=184,slow=8.3,SNR=50							
IDI				Sn	Sn	01 21 54.4	-1.0	
	comp=N,13nm,0.3s,baz=31,slow=13,SNR=5.7							
IDI				LR	LR	01 22 10.8		
	comp=N,46nm,21.8s,baz=333,slow=33							
IDI	**Anoyia**	**3.26**	**162**	P	Pn	01 21 16.8	+0.3	
IDI	**Anoyia**	**3.26**	**162**	P	Pn	01 21 16.8	+0.3	
KEK	**Kerkira**	**3.26**	**295**	P	Pn	01 21 18.3	+1.8	
KEK				S	Sn	01 21 56.6	+1.2	
KEK	**Kerkira**	**3.26**	**295**	P	Pn	01 21 18.3	+1.8	
KEK				S	Sn	01 21 56.6	+1.2	
BDRM	**Kayabasi**	**3.30**	**113**	*i* P	Pn	01 21 17.5	+0.5	
BDRM	**Kayabasi**	**3.30**	**113**	P	Pn	01 21 17.5	+0.5	
KESN	**Edirne-Kesan**	**3.38**	**43**	*i* P	Pn	01 21 17.5	-0.9	
KESN	**Edirne-Kesan**	**3.38**	**43**	P	Pn	01 21 17.5	-0.9	
AYDB	**Zeytinkoy-Aydi**	**3.38**	**96**	*e*PN	Pn	01 21 19.5	+1.2	
AYDB	**Zeytinkoy-Aydi**	**3.38**	**96**	*e*Pn	Pn	01 21 19.5	+1.2	
OHR	**Ohrid**	**3.48**	**322**	*i* Pn	Pn	01 21 21.6	+2.0	
OHR				*e*Sn	Sn	01 22 00.2	-0.7	
OHR	**Ohrid**	**3.48**	**322**	*i* Pn	Pn	01 21 21.6	+2.0	
OHR				*e*Sn	Sn	01 22 00.1	-0.7	
SIVA	**Sivas**	**3.50**	**164**	P	Pn	01 21 19.9	+0.2	
SIVA	**Sivas**	**3.50**	**164**	P	Pn	01 21 19.9	+0.2	
BALB	**Balikesir**	**3.53**	**68**	*e*PN	Pn	01 21 20.3	+0.2	
BALB	**Balikesir**	**3.53**	**68**	*e*Pn	Pn	01 21 20.3	+0.2	
MRMT	**Marmara Adasi**	**3.77**	**53**	*e*PN	Pn	01 21 23.4	-0.2	
MRMT	**Marmara Adasi**	**3.77**	**53**	*e*Pn	Pn	01 21 23.4	-0.2	
EDC	**Edincik**	**3.81**	**58**	*e*PN	Pn	01 21 24.3	+0.3	
EDC	**Edincik**	**3.81**	**58**	*e*Pn	Pn	01 21 24.3	+0.3	
YER	**Yerkesik**	**3.89**	**107**	*e*PN	Pn	01 21 26.8	+1.6	
YER	**Yerkesik**	**3.89**	**107**	*e*Pn	Pn	01 21 26.8	+1.6	
KULA	**Kula-Manisa**	**3.95**	**87**	*e*PN	Pn	01 21 26.8	+0.9	
KULA	**Kula-Manisa**	**3.95**	**87**	*e*Pn	Pn	01 21 26.8	+0.9	
DURS	**Dursunbey**	**3.96**	**71**	*i* P	Pn	01 21 27.0	+0.9	
DURS	**Dursunbey**	**3.96**	**71**	P	Pn	01 21 27.0	+0.9	
KARP	**Karpathos**	**4.01**	**134**	*e*PN	Pn	01 21 29.4	+2.7	
KARP	**Karpathos**	**4.01**	**134**	*e*Pn	Pn	01 21 29.4	+2.7	
KCTX	**Karacabey (Bur**	**4.11**	**61**	*e*PN	Pn	01 21 28.4	+0.3	
KCTX	**Karacabey (Bur**	**4.11**	**61**	*e*Pn	Pn	01 21 28.4	+0.3	
CRLT	**Corlu**	**4.18**	**48**	*e*PN	Pn	01 21 29.5	+0.5	
CRLT	**Corlu**	**4.18**	**48**	*e*Pn	Pn	01 21 29.5	+0.5	
EDRB	**Edirne**	**4.19**	**34**	*e*PN	Pn	01 21 28.7	-0.5	
EDRB	**Edirne**	**4.19**	**34**	*e*Pn	Pn	01 21 28.7	-0.5	
TURN	**Turunc**	**4.23**	**110**	*i* P	Pn	01 21 27.3	-2.4	
TURN	**Turunc**	**4.23**	**110**	P	Pn	01 21 27.3	-2.4	
MDNY	**Mudanya-Bursa**	**4.52**	**63**	*e*PN	Pn	01 21 34.0	+0.3	
MDNY	**Mudanya-Bursa**	**4.52**	**63**	*e*Pn	Pn	01 21 34.0	+0.3	
ULDT	**Uludag**	**4.61**	**66**	*i* P	Pn	01 21 35.5	+0.3	
ULDT	**Uludag**	**4.61**	**66**	P	Pn	01 21 35.5	+0.3	
BARS	**Barje**	**4.63**	**343**	*e*Pn	Pn	01 21 36.2	+1.0	
TVSB	**Tavsanli**	**4.66**	**75**	*e*PN	Pn	01 21 36.6	+0.8	
TVSB	**Tavsanli**	**4.66**	**75**	*e*Pn	Pn	01 21 36.6	+0.8	
FETY	**Fethiye**	**4.67**	**110**	*e*PN	Pn	01 21 38.0	+2.1	
FETY	**Fethiye**	**4.67**	**110**	*e*Pn	Pn	01 21 38.0	+2.1	
IGD	**Bursa**	**4.70**	**65**	*i* P	Pn	01 21 36.0	-0.3	
CTKS	**Kestanelik-??a**	**4.70**	**51**	*e*PN	Pn	01 21 35.9	-0.3	
CTKS	**Kestanelik-??a**	**4.70**	**51**	*e*Pn	Pn	01 21 35.9	-0.3	
BGKT	**Bogazkoy**	**4.84**	**53**	*e*PN	Pn	01 21 38.7	+0.6	
BGKT	**Bogazkoy**	**4.84**	**53**	*e*Pn	Pn	01 21 38.7	+0.6	
DRME	**Dracevica, Mon**	**5.09**	**319**	⇑*i* Pn	Pn	01 21 43.8	+2.2	
PDG	**Podgorica**	**5.24**	**322**	⇑*i* P	Pn	01 21 45.4	+1.8	
PDG	**Podgorica**	**5.24**	**322**	⇑*i* P	Pn	01 21 45.4	+1.8	
PDG	**Podgorica**	**5.24**	**322**	*e*Pn	Pn	01 21 45.8	+2.2	
ELL	**Elmali**	**5.25**	**106**	*e*PN	Pn	01 21 46.0	+2.1	
ELL	**Elmali**	**5.25**	**106**	*e*Pn	Pn	01 21 46.0	+2.1	
TAR1	**Taranto**	**5.36**	**295**	*e*Pn	Pn	01 21 45.9	+0.7	
TIP	**Timpagrande**	**5.43**	**280**	⇑*i* P	Pn	01 21 47.3	+1.0	
TIP	**Timpagrande**	**5.43**	**280**	⇑*i* P	Pn	01 21 47.3	+1.0	
TIP				S	Sn	01 22 48.0	-0.9	
BOLS	**Boljevac**	**5.58**	**347**	*e*Pn	Pn	01 21 48.8	+0.6	

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**2.55**	**280**	P	Pn	01 22 48.5	+1.3
JIO				*eS*	Sn	01 23 18.1	+1.1
JMK	**Ichinoseki**	**2.76**	**290**	P	Pn	01 22 51.7	+1.6
JOM	**Ohasama**	**2.92**	**300**	P	Pn	01 22 54.0	+1.8
JOM				*eS*	Sn	01 23 27.9	+1.9
JMM	**Marumori**	**2.98**	**268**	P	Pn	01 22 54.2	+1.2
JMM				S	Sn	01 23 28.3	+0.9
JFK	**Kawauchi**	**2.99**	**258**	*eS*	Sn	01 23 27.8	-0.1
JOU	**Okura**	**3.08**	**277**	P	Pn	01 22 56.3	+1.9
JOU				*eS*	Sn	01 23 32.0	+2.0
JANG	**Nango**	**3.31**	**315**	P	Pn	01 22 58.8	+1.3
JANG				S	Sn	01 23 36.0	+0.4
JRG	**Rokugo**	**3.34**	**295**	P	Pn	01 23 00.3	+2.2
JRG				*eS*	Sn	01 23 38.6	+2.1
JFT	**Otama**	**3.38**	**262**	S	Sn	01 23 39.4	+2.0
JYK	**Kaneyama**	**3.40**	**286**	P	Pn	01 23 01.1	+2.3
JYK				S	Sn	01 23 41.1	+3.2
JTM	**Tenmabayashi**	**3.84**	**316**	P	Pn	01 23 06.5	+1.7
JTM				*eS*	Sn	01 23 48.7	0.0
JOT	**Ohata**	**4.29**	**322**	P	Pn	01 23 13.0	+2.1
JOT				*eS*	Sn	01 23 59.0	-0.6
JNBK	**Urakawa-nobuka**	**4.44**	**343**	P	Pn	01 23 14.0	+0.9
JNBK				*eS*	Sn	01 24 03.3	-0.2
JCH	**Churui**	**4.65**	**349**	P	Pn	01 23 15.8	-0.1
JKB	**Kayabe**	**4.69**	**326**	P	Pn	01 23 18.5	+2.0
JRY	**Ryogami san**	**4.95**	**248**	P	Pn	01 23 21.3	+1.1
JRY				S	Sn	01 24 15.0	-1.2
MAT	**Matsushiro**	**5.28**	**255**	P	Pn	01 23 27.4	+2.8
MAT				*eS*	Sn	01 24 30.0	+5.9

TRN ***22*** *01:25:39.0, 17°.63N×63°.04W, h176km, MD3.4*
IDC ***22*** *01:25:38.7±2.9, 17°.65N×63°.19W, h133km±37km, mb3.4/3, mb1 3.8/3, mb1mx3.1/41, mbtmp3.8/3, Error ellipse: s-maj=38.2km s-min=34.7km az=64.0*
ISCJB ***22*** *01:25:40.2±0.7, 17°.58N±0°.08×63°.1W±0°.1, h170km±6km, mb3.6/3, Error ellipse: s-maj=21.6km s-min=8.7km az=152.9*

ISC 22 01:25:41.0±1.0, **17°.52N**±0°.09×**63°.1W**±0°.1, **h166**km±8km, **n23**, σ0**88**/29, **mb3.4**/3, **2C-6D, Leeward Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SMRT	**St. Maarten**	**0.52**	**1**	⇑*iP*	**Pn**	**01 26 04.5**	**+0.2**
SMRT				*eS*	**Sn**	**01 26 21.4**	**-0.9**
MLYT	**Lee's Yard**	**1.17**	**133**	*eP*	**Pn**	**01 26 09.1**	**+0.4**
MLYT				*eS*	**Sn**	**01 26 31.7**	**+1.7**
ANWB	**Willy Bob**	**1.25**	**83**	⇑*iP*	**Pn**	**01 26 09.9**	**+0.6**
ANWB				*eS*	**Sn**	**01 26 31.2**	**+0.1**
BPA	**Boggy Peak**	**1.27**	**112**	*eP*	**Pn**	**01 26 09.7**	**+0.1**
BPA				*eS*	**Sn**	**01 26 31.2**	**-0.4**
LZG	**Guadaloupe-1**	**1.86**	**137**	⇓*eP*	**Pn**	**01 26 15.8**	**+0.2**
SEG	**Port Louis**	**1.88**	**126**	*eP*	**Pn**	**01 26 15.9**	**+0.2**
MLG	**Mont-d'or**	**1.96**	**138**	⇓*iP*	**Pn**	**01 26 16.9**	**+0.1**
SSG	**Sans Toucher**	**1.96**	**136**	⇓*iP*	**Pn**	**01 26 16.9**	**0.0**
SCG	**Saint Claude**	**2.00**	**138**	⇓*iP*	**Pn**	**01 26 17.3**	**+0.1**
HMG	**Houelmont**	**2.03**	**139**	*eP*	**Pn**	**01 26 17.2**	**-0.3**
PHG	**Guadaloupe-2**	**2.04**	**137**	⇓*iP*	**Pn**	**01 26 18.0**	**+0.3**
H05N1	**Guadeloupe/Mar**	**2.28**	**121**	P	**Pn**	**01 26 19.8**	**-0.6**
H05N1				S	**Sn**	**01 26 48.6**	**-2.3**
MGG	**Marie-Galante**	**2.33**	**133**	⇓*iP*	**Pn**	**01 26 21.1**	**+0.2**
BBL	**Barber's Block**	**2.52**	**142**	*eP*	**Pn**	**01 26 23.0**	**-0.2**
PCM	**Pelee Case Pet**	**3.24**	**146**	*eP*	**Pn**	**01 26 30.4**	**-1.6**
CXM	**Morne La Croix**	**3.27**	**145**	*eP*	**Pn**	**01 26 32.3**	**-0.2**
GBMF	**Grand Be**	**3.28**	**145**	*eP*	**Pn**	**01 26 33.6**	**+1.0**
FDF	**Fort de France**	**3.34**	**146**	*eP*	**Pn**	**01 26 34.2**	**+0.8**
MVM	**Montagne Vaucl**	**3.63**	**144**	*eP*	**Pn**	**01 26 38.4**	**+1.4**
H05S1	**Guadeloupe/Mar**	**3.77**	**145**	P	**Pn**	**01 26 39.0**	**+0.3**
H05S1				S	**Sn**	**01 27 23.4**	**-0.2**
PDAR	**Pinedale Array**	**46.66**	**313**	P	**P**	**01 33 52.4**	**-0.8**
	0.4nm,0.5s,baz=115,slow=10,SNR=4.7						
YKA	**Yellowknife Ar**	**57.27**	**334**	P	**P**	**01 35 10.4**	**-0.5**
	0.3nm,0.5s,baz=106,slow=7.3,SNR=9.2						
ARCES	**ARCESS Array B**	**73.24**	**22**	P	**P**	**01 36 55.0**	**+1.3**
	6.4nm,1.1s,baz=260,slow=5.4,SNR=2.8						

ISCJB ***22*** *01:30:26.6±1.5, 6°.30N×0°.05×124°.67E±0°.05, h13km±9km, mb3.6/6, MS3.2/7, Error ellipse: s-maj=8.7km s-min=7.7km az=142.3*
IDC ***22*** *01:30:26.3±1.0, 6°.30N×124°.66E, h0km, mb3.6/6, mb1 3.7/6, mb1mx3.5/52, mbtmp3.6/6, MS3.2/8, Ms1 3.2/8, ms1mx2.9/41, Error ellipse: s-maj=25.7km s-min=19.0km az=107.0*
MAN ***22*** *01:30:27, 6°.32N×124°.65E, h13km, mb4.8, ML3.7, MS3.7*

ISC 22 01:30:26.7±2.0, **6°.32N**±0°.07×**124°.64E**±0°.05, **h5**km±12km, **n22**, σ1**30**/20, **mb3.8**/6, **MS3.2**/7, **2C-2D, Mindanao**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KCP	**Kidapawan**	**0.82**	**33**	⇑*iP*	**Pg**	**01 30 42.2**	**-0.3**
KCP				*i* S	**Sg**	**01 30 52.9**	**-0.3**
CTBH	**Cotabato--PC H**	**0.97**	**337**	⇓*iP*	**Pg**	**01 30 45.8**	**+0.3**
CTBH				*i* S	**Sb**	**01 30 58.9**	**-0.4**
DMPH	**Davao City--Mi**	**1.15**	**49**	⇑*eP*	**Pn**	**01 31 51.8**	**+2.2**
DMPH				*eS*	**Sn**	**01 31 07.4**	**+1.7**
DAV	**Davao City (W)**	**1.20**	**51**	Pg	**Pg**	**01 30 49.5**	**-0.2**
	116nm,0.3s,baz=119,slow=5.1,SNR=13						
BUKP	**Musuan**	**1.60**	**15**	*eP*	**Pn**	**01 30 54.7**	**-1.2**
MATI	**Mati**	**1.73**	**69**	*eP*	**Pn**	**01 30 56.5**	**-1.0**
MATI				*eS*	**Sn**	**01 31 17.6**	**-2.3**
PAGZ	**Pagadian**	**1.96**	**321**	*eP*	**Pn**	**01 31 01.1**	**+0.3**
PAGZ				*eS*	**Sn**	**01 31 23.4**	**-2.3**
CGP	**Cagayan de Oro**	**2.12**	**2**	⇓*eP*	**Pn**	**01 31 03.6**	**+0.7**
CGP				*eS*	**Sn**	**01 31 30.2**	**+0.5**
KAPI	**Kappang**	**12.27**	**204**	LR	LR	01 38 22.3	
	comp=Z,119nm,18.9s,baz=12,slow=39						
GUMO	**Guam**	**21.18**	**69**	LR	LR	01 44 28.7	
	comp=Z,19nm,18.3s,baz=128,slow=40						
LEM	**Lembang**	**21.42**	**233**	LR	LR	01 44 00.3	
	comp=Z,151nm,18.1s,baz=200,slow=38						
FITZ	**Fitzroy Crossi**	**24.29**	**178**	P	**P**	**01 35 45.6**	**+0.3**
	1.0nm,0.5s,baz=357,slow=6.1,SNR=6.5						
KSRS	**Korea Array**	**31.13**	**5**	LR	LR	01 48 49.7	
	comp=Z,32nm,20.4s,baz=171,slow=35						
ASAR	**Alice Springs**	**31.15**	**163**	P	**P**	**01 36 46.9**	**+0.1**
	0.3nm,0.5s,baz=348,slow=7.7,SNR=6.1						
USRK	**Ussuriysk Ar.**	**38.28**	**9**	LR	LR	01 53 17.9	
	comp=Z,50nm,21.3s,baz=135,slow=36						
ASAJ	**Asahikawa**	**40.81**	**20**	LR	LR	01 54 20.7	
	comp=Z,33nm,21.5s,baz=244,slow=35						
TLY	**Talaya**	**48.44**	**343**	LR	LR	02 01 22.5	
	comp=Z,29nm,20.1s,baz=182,slow=38						
MKAR	**Makanchi Array**	**54.25**	**325**	P	**P**	**01 39 55.6**	**+1.8**
	0.8nm,0.7s,baz=121,slow=8.4,SNR=8.4						
AAK	**Ala-Archa**	**57.05**	**318**	LR	LR	02 06 22.8	
	comp=Z,44nm,18.4s,baz=206,slow=38						
ZALV	**Zalesovo Beam**	**57.35**	**333**	P	**P**	**01 40 16.0**	**+0.1**
	0.5nm,0.5s,baz=95,slow=7.2,SNR=3.2						
ILAR	**Eielson Array**	**83.68**	**26**	P	**P**	**01 42 56.7**	**+0.4**
	0.2nm,0.8s,baz=252,slow=5.6,SNR=2.9						
FINES	**FINESS Array B**	**88.58**	**332**	P	**P**	**01 43 19.4**	**-1.1**
	0.4nm,0.6s,baz=352,slow=4.0,SNR=3.5						

NIED ***22*** *01:39:00, 36°.90N×142°.40E, h8km, Mw3.8 Best double couple: M0=4.93000×10^14 NP1:φs=79.00000°, δ=66.00000°, λ=15.00000°. NP2:φs=342.00000°, δ=76.00000°, λ=155.00000°.*
ISCJB ***22*** *01:39:21.9±0.8, 36°.90N±0°.07×142°.50E±0°.07, h9km, mb3.6/7, MS3.5/1, Error ellipse: s-maj=10.2km s-min=7.2km az=27.9*
IDC ***22*** *01:39:22.4±0.9, 36°.83N×142°.48E, h0km, mb3.6/7, mb1 3.7/8, mb1mx3.5/50, mbtmp3.5/8, ML3.3/1, MS2.9/3, Ms1 3.0/3, ms1mx2.5/41, Error ellipse: s-maj=24.8km s-min=21.3km az=94.0*
JMA ***22*** *01:39:23.9±0.2, 36°.88N×142°.38E, h17km±4km, M3.7*

ISC 22 01:39:24.0±1.0, **36°.91N**±0°.07×**142°.32E**±0°.07, **h9**km, **n16**, σ1**90**/18, **mb3.6**/7, **Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**1.24**	**292**	P	**Pn**	**01 39 47.0**	**-0.6**
JFK				*eS*	**Sg**	**01 40 03.9**	**-0.1**
JHO	**Hitachi**	**1.44**	**259**	P	**Pn**	**01 39 50.3**	**+0.1**
JMM	**Marumori**	**1.55**	**309**	P	**Pb**	**01 39 52.2**	**-0.6**
JMM				*eS*	**Sb**	**01 40 12.6**	**+0.1**
JFT	**Otama**	**1.70**	**292**	*eS*	**Sb**	**01 40 17.1**	**+0.3**
JIO	**Ouri**	**1.73**	**334**	P	**Pn**	**01 39 54.6**	**+0.4**
JIO				*eS*	**Sn**	**01 40 16.2**	**-0.1**
MJAR	**Matsushiro Arr**	**3.32**	**265**	Pn	**Pn**	**01 40 18.3**	**+2.1**
	3.2nm,0.3s,baz=81,slow=11,SNR=16						
MJAR				LR	LR	01 41 45.8	
	comp=Z,118nm,18.8s,baz=95,slow=42						
MAT	**Matsushiro**	**3.32**	**265**	P	**Pn**	**01 40 17.7**	**+1.5**
MAT				*eS*	**Sb**	**01 41 01.8**	**-1.9**
ASAJ	**Asahikawa**	**7.21**	**2**	LR	LR	01 44 33.9	
	comp=Z,52nm,19.2s,baz=40,slow=43						
SONM	**Songino Array**	**28.46**	**304**	P	**P**	**01 45 20.1**	**+0.8**
	2.5nm,0.8s,baz=102,slow=8.9,SNR=20						
ZALV	**Zalesovo Beam**	**42.53**	**312**	P	**P**	**01 47 20.3**	**+0.6**
	1.6nm,0.7s,baz=97,slow=6.0,SNR=7.1						
MKAR	**Makanchi Array**	**44.80**	**302**	P	**P**	**01 47 38.6**	**+0.5**
	1.1nm,0.8s,baz=93,slow=8.5,SNR=6.4						
ILAR	**Eielson Array**	**49.21**	**32**	P	**P**	**01 48 11.3**	**-0.9**
	0.2nm,0.7s,baz=294,slow=4.5,SNR=2.9						
WRA	**Warramunga Arr**	**57.04**	**189**	P	**P**	**01 49 09.6**	**-0.7**
	0.5nm,0.8s,baz=4.2,slow=7.3,SNR=2.3						
ASAR	**Alice Springs**	**60.77**	**189**	P	**P**	**01 49 35.5**	**-0.7**
	0.2nm,0.7s,baz=0.8,slow=6.5,SNR=3.7						
YKA	**Yellowknife Ar**	**63.55**	**30**	P	**P**	**01 49 55.0**	**+0.5**
	0.2nm,0.9s,baz=299,slow=6.7,SNR=3.6						
TXAR	**Lajitas Array**	**89.62**	**53**	LR	LR	02 27 22.8	
	comp=Z,21nm,21.3s,baz=0.0,slow=32						

ISCJB ***22*** *01:57:00.7±1.7, 37°.05N±0°.03×140°.76E±0°.05, h13km±12km, mb3.6/6, Error ellipse: s-maj=6.9km s-min=4.0km az=27.0*
JMA ***22*** *01:57:01.3, 37°.07N×140°.66E, h6km±1km, M3.2 Broadband fault plane solution: P waves. NP1: φs=10.00000°, δ=47.00000°, λ=-113.00000°. NP2: φs=222.00000°, δ=47.00000°, λ=-67.00000°. Principal axes: T Plg=0.0000°, Azm=116.0000°; N Plg=17.0000°, Azm=26.0000°; P Plg=73.0000°, Azm=206.0000°;*
JMA Felt I J1.
IDC ***22*** *01:57:08.5±3.5, 36°.96N×140°.48E, h61km±31km, mb3.3/6, mb1 3.5/7, mb1mx3.2/43, mbtmp3.6/7, ML2.1/1 Error ellipse: s-maj=31.9km s-min=19.2km az=84.0*

ISC 22 01:57:00.7±1.2, **37°.02N**±0°.05×**140°.67E**±0°.04, **h5**km±9km, **n24**, σ0**53**/27, **mb3.5**/6, **6C-1D, Eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.13**	**53**	⇑P	**Pg**	**01 57 03.8**	**+0.5**
ONAJ				S	**Sg**	**01 57 05.4**	**+0.3**
JFK	**Kawauchi**	**0.38**	**25**	P	**Pg**	**01 57 08.0**	**-0.1**
JFK				S	**Sg**	**01 57 12.9**	**-0.1**
JHO	**Hitachi**	**0.42**	**191**	⇑P	**Pb**	**01 57 10.2**	**-0.4**
JHO				S	**Sb**	**01 57 16.6**	**-0.7**
JFT	**Otama**	**0.56**	**332**	⇑P	**Pg**	**01 57 11.7**	**+0.2**
JFT				S	**Sg**	**01 57 18.8**	**0.0**
JSB	**Shiboa**	**0.60**	**265**	⇑P	**Pb**	**01 57 13.8**	**0.0**
JSB				S	**Sb**	**01 57 22.6**	**0.0**
JMM	**Marumori**	**0.85**	**7**	⇑P	**Pg**	**01 57 16.3**	**-0.7**
JMM				S	**Sg**	**01 57 27.3**	**-0.7**
JFY	**Yanaizu**	**0.86**	**297**	⇑P	**Pg**	**01 57 17.5**	**+0.3**
JFY				S	**Sg**	**01 57 28.4**	**0.0**
JYT	**Yasato**	**0.88**	**206**	⇓P	**Pb**	**01 57 18.5**	**0.0**
JYT				S	**Sb**	**01 57 30.4**	**-0.2**
MJAR	**Matsushiro Arr**	**2.03**	**257**	P	**Pb**	**01 57 37.2**	**-0.9**
	11nm,0.3s,baz=79,slow=16,SNR=43						
MJAR				S	**Sb**	**01 58 04.0**	**+0.2**
	21nm,0.3s,baz=251,slow=24,SNR=14						
MAT	**Matsushiro**	**2.03**	**257**	P	**Pb**	**01 57 37.3**	**-0.9**
MAT				S	**Sb**	**01 58 04.7**	**+0.9**
USRK	**Ussuriysk Ar.**	**9.74**	**320**	P	Pn	01 59 26.9	+5.5
	0.2nm,0.3s,baz=132,slow=14,SNR=3.8						
SONM	**Songino Array**	**27.30**	**304**	P	**P**	**02 02 46.4**	**+0.1**
	0.5nm,0.7s,baz=103,slow=8.2,SNR=3.8						
H11N2	**WAKE ISLAND Hy**	**28.66**	**120**	T	T	02 32 44.6	
	baz=313,slow=75,SNR=28						
H11N1	**WAKE ISLAND Hy**	**28.66**	**120**	T	T	02 32 45.2	
	baz=313,slow=75,SNR=28						
H11N3	**WAKE ISLAND Hy**	**28.68**	**120**	T	T	02 32 46.0	
	baz=313,slow=75,SNR=21						
H11S1	**WAKE ISLAND Hy**	**29.36**	**122**	T	T	02 33 39.8	
	baz=314,slow=75,SNR=44						
H11S3	**WAKE ISLAND Hy**	**29.36**	**122**	T	T	02 33 39.9	
	baz=314,slow=75,SNR=45						
H11S2	**WAKE ISLAND Hy**	**29.37**	**122**	T	T	02 33 40.0	
	baz=314,slow=75,SNR=32						
MKAR	**Makanchi Array**	**43.62**	**302**	P	**P**	**02 05 06.4**	**+0.3**
	0.3nm,0.6s,baz=90,slow=8.7,SNR=3.2						
KURBB	**Kurchatov Arra**	**45.54**	**308**	P	**P**	**02 05 20.6**	**-0.7**
	0.5nm,0.7s,baz=84,slow=7.7,SNR=6.5						
ILAR	**Eielson Array**	**49.82**	**32**	P	**P**	**02 05 55.4**	**+1.1**
	0.3nm,0.8s,baz=280,slow=6.3,SNR=3.8						
WRA	**Warramunga Arr**	**56.97**	**187**	P	**P**	**02 06 47.0**	**-0.3**
	1.9nm,0.6s,baz=4.2,slow=7.3,SNR=9.9						
ASAR	**Alice Springs**	**60.70**	**187**	P	**P**	**02 07 13.2**	**0.0**
	0.5nm,0.6s,baz=16,slow=9.0,SNR=10						
LPAZ	**La Paz**	**147.21**	**59**	PKPbc	**PKPbc**	**02 16 46.2**	**-0.2**
	0.6nm,0.8s,baz=11,slow=4.1,SNR=3.8						

IDC ***22*** *01:57:26.8±1.2, 29°.95N×81°.16E, h0km, mb3.7/9, mb1 3.8/12, mb1mx3.6/50, mbtmp3.7/12, ML3.8/3, MS3.9/2, Ms1 3.9/2, ms1mx2.6/50, Error ellipse: s-maj=36.6km s-min=19.1km az=50.0*
ISCJB ***22*** *01:57:30.1±1.0, 30°.1N±0°.1×81°.4E±0°.2, h33km, mb3.7/8, MS3.8/2, Error ellipse: s-maj=31.2km s-min=13.1km az=145.5*

ISC 22 01:57:31.9±1.2, **30°.1N**±0°.2×**81°.3E**±0°.2, **h33**km, **n15**, σ1**23**/13, **mb3.6**/8, **Xizang**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AAK	**Ala-Archa**	**13.67**	**338**	Pn	**Pn**	**02 00 43.4**	**-0.1**
	0.2nm,0.3s,baz=94,slow=11,SNR=3.6						
MKAR	**Makanchi Array**	**16.72**	**2**	Pn	**Pn**	**02 01 22.6**	**-1.0**
	0.1nm,0.3s,baz=184,slow=13,SNR=3.9						
CMAR	**Chiang Mai Arr**	**19.81**	**122**	P	**P**	**02 01 59.1**	**-0.6**
	0.5nm,0.3s,baz=307,slow=10,SNR=4.9						
KURBB	**Kurchatov Arra**	**20.64**	**355**	P	**P**	**02 02 07.1**	**-1.4**
	3.6nm,0.8s,baz=179,slow=9.8,SNR=22						
ZALV	**Zalesovo Beam**	**24.01**	**5**	P	**P**	**02 02 42.9**	**-0.5**
	1.3nm,0.4s,baz=197,slow=6.0,SNR=7.4						
SONM	**Songino Array**	**26.22**	**40**	P	**P**	**02 03 06.4**	**+2.6**
	1.5nm,0.9s,baz=232,slow=9.0,SNR=9.0						
PSI	**Prapat**	**31.87**	**145**	LR	LR	02 18 07.0	
	comp=Z,192nm,18.6s,baz=215,slow=39						
USRK	**Ussuriysk Ar.**	**42.19**	**56**	LR	LR	02 25 33.8	
	comp=Z,122nm,18.7s,baz=177,slow=40						
AKASG	**Malin Array Be**	**43.63**	**313**	P	**P**	**02 05 33.4**	**+0.4**
	0.2nm,0.2s,baz=81,slow=7.3,SNR=7.0						
FINES	**FINESS Array B**	**47.55**	**328**	P	**P**	**02 06 05.4**	**+1.6**
	2.3nm,0.5s,baz=108,slow=8.3,SNR=25						
ARCES	**ARCESS Array B**	**50.34**	**338**	P	**P**	**02 06 25.8**	**+0.6**
	1.9nm,0.7s,baz=108,slow=8.6,SNR=6.3						
NB2	**NORSAR Subarra**	**54.59**	**326**	P	**P**	**02 06 57.7**	**+0.9**
	comp=Z,0.9nm,0.7s,baz=89,slow=7.4						
NOA	**NORSAR Array B**	**54.59**	**326**	P	**P**	**02 06 55.9**	**-0.9**
	comp=Z,0.1nm,0.3s,baz=86,slow=5.8,SNR=3.8						
ASAR	**Alice Springs**	**73.55**	**131**	P	**P**	**02 09 01.7**	**0.0**
	comp=Z,0.4nm,0.7s,baz=310,slow=6.1,SNR=4.2						
YKA	**Yellowknife Ar**	**86.89**	**7**	P	**P**	**02 10 12.2**	**-0.8**
	comp=Z,0.1nm,0.6s,baz=340,slow=5.2,SNR=3.9						

IDC ***22*** *01:58:53.0±10.0, 36°.02N×141°.36E, h0km, mb3.6/2, mb1 3.6/3, mb1mx3.2/39, mbtmp3.5/3, ML3.3/1, MS2.6/2, Ms1 2.6/2, ms1mx2.2/49, Error ellipse: s-maj=195.3km s-min=87.5km az=158.0*
ISCJB ***22*** *01:58:59.7±1.2, 35°.98N±0°.06×140°.9E±0°.1, h31km, mb3.3/2, Error ellipse: s-maj=14.0km s-min=7.0km az=159.8*
JMA ***22*** *01:59:00.2±0.1, 35°.90N×140°.83E, h41km±1km, M2.9*

ISC 22 01:58:59.7±1.5, **35°.96N**±0°.07×**141°.0E**±0°.1, **h31**km, **n9**, σ0**75**/12, **Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.27**	**198**	P	**Pn**	**01 59 07.3**	**-0.2**
CHOJ				S	**Sn**	**01 59 13.0**	**+0.4**
JYT	**Yasato**	**0.68**	**293**	P	**Pn**	**01 59 12.3**	**-0.8**
JYT				S	**Sb**	**01 59 21.0**	**-1.1**
JHO	**Hitachi**	**0.72**	**334**	P	**Pb**	**01 59 14.2**	**+0.4**
JHO				*eS*	**Sn**	**01 59 24.1**	**+0.4**
JAG	**Ashikaga**	**1.30**	**291**	P	**Pn**	**01 59 21.1**	**-0.6**
MJAR	**Matsushiro Arr**	**2.30**	**285**	Pn	**Pn**	**01 59 35.8**	**+0.3**
	5.4nm,0.3s,baz=97,slow=8.8,SNR=14						
MJAR				LR	LR	02 00 36.2	
	comp=Z,89nm,20.8s,baz=110,slow=40						
MAT	**Matsushiro**	**2.30**	**285**	P	**Pn**	**01 59 36.0**	**+0.5**
MAT				*eS*	**Sn**	**02 00 03.9**	**+1.2**
JNU	**Nakatsue**	**8.79**	**254**	LR	LR	02 04 44.8	
	comp=Z,55nm,19.5s,baz=117,slow=39						
SONM	**Songino Array**	**28.10**	**306**	P	**P**	**02 04 49.0**	**+0.4**
	0.2nm,0.4s,baz=108,slow=7.9,SNR=2.6						
MKAR	**Makanchi Array**	**44.39**	**303**	P	**P**	**02 07 06.5**	**-0.7**
	0.8nm,0.6s,baz=88,slow=9.7,SNR=7.0						

MEX 22 02:01:15.3±0.3, **14°.59N**×**93°.27W**, **h16**km±48km, **MD3.7, Near coast of Chiapas**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PCIG		**1.10**	**3**	*eP*	Pb	02 01 32.5	-3.6
PCIG				*i* S	Sb	02 01 45.5	-4.7
CCIG	**Comitan**	**2.00**	**33**	*i* P	Pn	02 01 45.6	-3.1
CCIG				*eS*	Sn	02 02 08.9	-4.6
TGIG		**2.18**	**4**	*i* P	Pn	02 01 47.3	-3.6
TGIG				*eS*	Sn	02 02 13.5	-4.2

IDC 22 02:04:41.8±443.0, **3°.41N**×**129°.69W**, **h0**km, **Error ellipse: s-maj=284.9km s-min=174.5km az=80.0, North Pacific Ocean**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
I21FR	**MARQUESAS ISLA**	**16.05**	**220**	*i*		03 45 50.0	
	baz=42,slow=314,SNR=2.1						
I13CL	**EASTER ISLAND**	**36.15**	**148**	*i*		05 46 00.0	
	baz=323,slow=326,SNR=0.9						
I56US	**NEWPORT INFRAS**	**45.97**	**12**	*i*		06 45 30.0	
	baz=197,slow=333,SNR=1.9						

ISCJB ***22*** *02:19:27.4±0.7, 39°.69N±0°.05×143°.56E±0°.07, h11km, mb3.7/12, MS3.2/1, Error ellipse: s-maj=9.9km s-min=4.9km az=41.7*
JMA ***22*** *02:19:27.2±0.3, 39°.69N×143°.67E, h30km, M4.0*
IDC ***22*** *02:19:32.1±6.6, 39°.73N×143°.44E, h29km±47km, mb3.7/13, mb1 3.8/16, mb1mx3.6/51, mbtmp3.8/16, ML3.0/3, MS3.2/1, Ms1 3.2/1, ms1mx2.3/50, Error ellipse: s-maj=25.8km s-min=17.9km az=116.0*

ISC 22 02:19:29.3±0.9, **39°.72N**±0°.06×**143°.39E**±0°.08, **h11**km, **n35**, σ1**97**/29, **mb3.8**/12, **Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JANG	**Nango**	**1.58**	**295**	P	**Pn**	**02 19 56.4**	**-0.8**
JOM	**Ohasama**	**1.64**	**262**	P	**Pb**	**02 19 58.4**	**-1.1**
JOM				S	**Sb**	**02 20 20.8**	**+0.7**
JMK	**Ichinoseki**	**1.85**	**246**	P	**Pb**	**02 20 00.6**	**-2.5**
JTM	**Tenmabayashi**	**2.07**	**302**	P	**Pn**	**02 20 04.8**	**+0.8**
JRG	**Rokugo**	**2.15**	**262**	P	**Pb**	**02 20 05.8**	**-2.5**
JAH	**Hinai**	**2.16**	**283**	P	**Pn**	**02 20 06.2**	**+0.9**
JOT	**Ohata**	**2.43**	**314**	P	**Pb**	**02 20 11.3**	**-1.8**
JYK	**Kaneyama**	**2.48**	**252**	P	**Pn**	**02 20 10.1**	**+0.4**
JYK				*eS*	**Sn**	**02 20 41.4**	**+1.5**
JOU	**Okura**	**2.51**	**238**	P	**Pn**	**02 20 09.8**	**-0.4**
JOU				*eS*	**Sn**	**02 20 41.2**	**+0.4**
JNBK	**Urakawa-nobuka**	**2.60**	**350**	P	**Pn**	**02 20 12.6**	**+1.3**
ASAJ	**Asahikawa**	**4.43**	**353**	Pn	**Pn**	**02 20 35.5**	**-1.0**
	0.5nm,0.3s,baz=98,slow=7.1,SNR=4.6						
ASAJ				Sn	**Sn**	**02 21 28.4**	**+0.4**
	1.2nm,0.3s,baz=98,slow=18,SNR=4.0						
MJAR	**Matsushiro Arr**	**5.17**	**234**	Pn	Pn	02 20 47.8	+1.2
	1.3nm,0.3s,baz=36,slow=12,SNR=24						
MAT	**Matsushiro**	**5.17**	**234**	P	**Pn**	**02 20 47.7**	**+1.0**
MAT				*eS*	Sn	02 21 52.0	+5.7
USRK	**Ussuriysk Ar.**	**9.59**	**301**	Pn	Pn	02 21 50.9	+3.5
	0.2nm,0.3s,baz=102,slow=12,SNR=5.0						
KLR	**Kul'dur**	**12.61**	**323**	Pn	Pn	02 22 31.4	+2.9
	0.1nm,0.3s,baz=323,slow=20,SNR=2.5						
MA2	**Magadan**	**20.42**	**11**	P	Pn	02 24 06.8	-1.5
	4.1nm,

UGM	**Wanagama**	**8.00**	**99**	P		**Pn**	**02 21 46.0**	**-1.9**
	148nm,1.7s							
MNSI	**Mandailing Nat**	**8.04**	**338**	P		**Pn**	02 21 46.0	-2.5
	11nm,0.8s,2μm							
PCJI	**Pacitan**	**8.68**	**100**	P		**Pn**	02 21 56.3	-0.9
	59nm,1.2s							
PWJI	**Pagerwojo**	**9.27**	**99**	P		**Pn**	02 22 04.3	-1.0
KAPI	**Kappang**	**17.20**	**85**	LR		LR	02 31 48.1	
	comp=Z,48nm,18.7s,baz=270,slow=42							
FITZ	**Fitzroy Crossi**	**25.18**	**119**	P		**P**	**02 25 18.2**	**+1.3**
	2.9nm,0.8s,baz=267,slow=3.8,SNR=5.5							
CMAR	**Chiang Mai Arr**	**25.28**	**352**	P		**P**	**02 25 17.8**	**0.0**
	5.2nm,0.6s,baz=179,slow=9.3,SNR=20							
H08S2	**Diego Garcia H**	**29.83**	**266**	T		T	02 57 32.2	
	baz=96,slow=74,SNR=70							
H08S3	**Diego Garcia H**	**29.84**	**266**	T		T	02 57 47.2	
	baz=96,slow=74,SNR=31							
H08S1	**Diego Garcia H**	**29.85**	**266**	T		T	02 57 14.2	
	baz=96,SNR=38							
H01W3	**Cape Leeuwin H**	**29.98**	**161**	T		T	02 57 54.8	
	baz=339,slow=76,SNR=9.9							
H01W2	**Cape Leeuwin H**	**29.99**	**161**	T		T	02 58 00.6	
	baz=339,slow=76,SNR=12							
H01W1	**Cape Leeuwin H**	**30.00**	**161**	T		T	02 57 56.5	
	baz=339,slow=76,SNR=8.2							
WRA	**Warramunga Arr**	**33.52**	**116**	P		**P**	**02 26 31.7**	**+0.6**
	2.4nm,0.7s,baz=287,slow=11,SNR=11							
WRAB	**Tennant Creek**	**33.53**	**116**	*eP*		**P**	**02 26 31.4**	**+0.2**
	3.4nm,0.7s							
ASAR	**Alice Springs**	**34.50**	**123**	P		**P**	**02 26 39.5**	**0.0**
	0.6nm,0.8s,baz=311,slow=9.1,SNR=7.4							
STKA	**Stephens Creek**	**44.16**	**130**	P		**P**	**02 27 59.9**	**-0.1**
	2.2nm,0.6s,baz=296,slow=9.3,SNR=4.5							
KSAR	**Wonju Array Be**	**49.91**	**26**	P		**P**	**02 28 45.0**	**+0.2**
KSRS	**Korea Array**	**49.94**	**26**	P		**P**	**02 28 45.0**	**0.0**
	1.9nm,0.5s,baz=222,slow=7.4,SNR=8.3							
SONM	**Songino Array**	**54.44**	**3**	P		**P**	**02 29 19.6**	**+1.1**
	1.1nm,0.6s,baz=178,slow=9.2,SNR=8.6							
TKM2	**Tokmak 2**	**55.16**	**336**	*eP*		**P**	**02 29 22.5**	**-1.4**
	1.9nm,0.5s							
MKAR	**Makanchi Array**	**56.25**	**343**	P		**P**	**02 29 32.5**	**+1.0**
	1.5nm,0.5s,baz=149,slow=8.2,SNR=13							
USRK	**Ussuriysk Ar.**	**57.23**	**25**	P		**P**	**02 29 38.8**	**+0.3**
	2.8nm,0.6s,baz=213,slow=5.2,SNR=7.5							
KLR	**Kul'dur**	**61.29**	**21**	P		**P**	**02 30 06.1**	**-0.3**
	1.0nm,0.5s,baz=256,slow=7.9,SNR=5.1							
ZALV	**Zalesovo Beam**	**62.27**	**348**	P		**P**	**02 30 12.7**	**-0.2**
	2.6nm,0.6s,baz=182,slow=5.0,SNR=16							
ABKAR	**Akbulak array**	**66.98**	**331**	*eP*		**P**	**02 30 42.9**	**-0.9**
	2.7nm,0.8s							
FINES	**FINESS Array B**	**89.46**	**332**	P		**P**	**02 32 48.3**	**+0.5**
	0.5nm,0.5s,baz=90,slow=5.7,SNR=3.7							
TXAR	**Lajitas Array**	**146.59**	**44**	PKPbc		**PKPab**	**02 39 34.8**	**+0.4**
	0.3nm,0.5s,baz=228,slow=1.1,SNR=4.1							

NIED **22** *02:21:00,26.°30N×142.°60E,h53km,Mw4.3 Best double couple: M₀3.60000×10¹⁵ NP1:φ₀16.00000°,δ34.00000°, λ127.00000°. NP2:φ₀154.00000°,δ64.00000°,λ68.00000°.*

IDC 22 02:21:21.6±1.2, 26.°23N×141.°81E, h0km, mb4.0/3, mb1 4.2/3, mb1mx3.5/44, mbtmp4.0/3, Error ellipse: s-maj=67.1km s-min=18.4km az=108.0, Bonin Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JCJ	**Chichijima**	**0.92**	**21**	Pn	Pn	02 21 42.7	+1.0
	baz=294,slow=20						
JCJ				Sn	Sn	02 21 55.3	-0.4
	138nm,0.3s,baz=270,slow=20,SNR=25						
WRA	**Warramunga Arr**	**46.47**	**190**	P	P	02 29 50.5	-0.1
	4.2nm,0.7s,baz=9.5,slow=8.5,SNR=11						
YKA	**Yellowknife Ar**	**73.05**	**28**	P	P	02 32 52.6	-0.5
	0.2nm,0.5s,baz=295,slow=6.3,SNR=5.4						
FINES	**FINESS Array B**	**78.57**	**334**	P	P	02 33 24.8	+0.1
	0.7nm,0.4s,baz=77,slow=5.3,SNR=11						

NIED **22** *02:25:00,38.°70N×143.°70E,h8km,Mw3.7 Best double couple: M₀3.47000×10¹⁴ NP1:φ₀346.00000°,δ44.00000°, λ-172.00000°. NP2:φ₀250.00000°,δ84.00000°, λ-46.00000°.*

IDC **22** *02:25:41.3±3.0,38.°42N×144.°15E,h0km,mb3.4/2, mb1 3.7/3,mb1mx3.3/37,mbtmp3.4/3,ML3.5/1,Error ellipse: s-maj=72.5km s-min=36.8km az=61.0*

ISCJB **22** *02:25:45.2±1.4,38.°69N±0.°06×143.°74E±0.°10, h57km±20km,mb3.5/2, Error ellipse: s-maj=13.3km s-min=9.7km az=17.8*

JMA **22** *02:25:45.2±0.2,38.°71N×143.°68E,h31km,M3.8*

ISC 22 02:25:45.9±3.2, 38.°72N±0.°08×143.°8E±0.°2, h42km±36km, n15,σ0°74/21, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**1.93**	**263**	P	**Pn**	**02 26 15.9**	**-0.3**
JIO				S	**Sn**	**02 26 37.5**	**-1.8**
JMK	**Ichinoseki**	**2.02**	**277**	P	**Pn**	**02 26 17.3**	**-0.1**
JMK				S	**Sn**	**02 26 40.9**	**-0.6**
JOM	**Ohasama**	**2.09**	**292**	P	**Pn**	**02 26 18.2**	**-0.1**
JOM				S	**Sn**	**02 26 43.3**	**+0.2**
JANG	**Nango**	**2.41**	**314**	P	**Pn**	**02 26 22.9**	**+0.1**
JOU	**Okura**	**2.48**	**263**	P	**Pn**	**02 26 24.0**	**+0.2**
JOU				S	**Sn**	**02 26 52.2**	**-0.6**
JMM	**Marumori**	**2.51**	**251**	P	**Pn**	**02 26 24.0**	**-0.2**
JMM				S	Sn	02 26 51.1	-2.4
JRG	**Rokugo**	**2.55**	**286**	P	**Pn**	**02 26 25.2**	**+0.5**
JRG				*eS*	**Sn**	**02 26 55.6**	**+1.1**
JFK	**Kawauchi**	**2.67**	**240**	P	Pn	02 26 25.5	-0.9
JYK	**Kaneyama**	**2.69**	**275**	P	**Pn**	**02 26 27.1**	**+0.5**
JTM	**Tenmabayashi**	**2.94**	**315**	P	**Pn**	**02 26 30.2**	**+0.1**
JTM				S	**Sn**	**02 27 03.7**	**-0.5**
JFT	**Otama**	**2.98**	**247**	P	**Pn**	**02 26 30.8**	**+0.2**
JFT				S	**Sn**	**02 27 04.9**	**-0.2**
MJAR	**Matsushiro Arr**	**4.94**	**246**	Pn	**Pn**	**02 26 58.6**	**+1.1**
	1.8nm,0.3s,baz=67,slow=12,SNR=6.8						
MAT	**Matsuhiro**	**4.94**	**246**	P	**Pn**	**02 26 58.4**	**+0.8**
MAT				*eS*	**Sn**	**02 27 54.5**	**+1.1**
MKAR	**Makanchi Array**	**44.84**	**301**	P	P	02 34 00.1	+4.3
	0.1nm,0.3s,baz=66,slow=6.2,SNR=2.2						
WRA	**Warramunga Arr**	**59.02**	**190**	P	**P**	**02 35 41.2**	**-0.3**
	0.4nm,0.3s,baz=11,slow=7.2,SNR=2.7						

NIED **22** *02:33:00,39.°70N×143.°50E,h17km,Mw3.8 Best double couple: M₀5.43000×10¹⁴ NP1:φ₀194.00000°,δ27.00000°, λ62.00000°. NP2:φ₀44.00000°,δ67.00000°,λ103.00000°.*

IDC **22** *02:33:48.8±1.2,39.°53N×143.°45E,h0km,mb3.6/8, mb1 3.7/9,mb1mx3.5/41,mbtmp3.6/9,ML3.0/1,Error ellipse: s-maj=30.8km s-min=22.5km az=112.0*

JMA **22** *02:33:51.3±0.4,39.°69N×143.°53E,h24km,M3.9*

ISC 22 02:33:50.8±4.0, 39.°65N±0.°06×143.°42E±0.°08, h10km±24km, n20,σ0°94/25, mb3.6/8, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JANG	**Nango**	**1.63**	**297**	P	**Pn**	**02 34 19.2**	**-0.3**
JKZ	**Kuzumaki**	**1.64**	**282**	P	**Pb**	**02 34 20.8**	**-0.4**
JKZ				*eS*	**Sb**	**02 34 41.8**	**-0.1**
JOM	**Ohasama**	**1.65**	**264**	P	**Pb**	**02 34 21.0**	**-0.3**
JOM				S	**Sb**	**02 34 42.6**	**+0.5**
JMK	**Ichinoseki**	**1.84**	**248**	P	**Pn**	**02 34 23.4**	**+1.0**
JMK				*eS*	**Sn**	**02 34 45.9**	**+0.2**
JIO	**Ouri**	**2.00**	**234**	P	**Pn**	**02 34 25.0**	**+0.3**
JIO				*eS*	**Sn**	**02 34 48.7**	**-1.1**
JTM	**Tenmabayashi**	**2.12**	**303**	P	**Pn**	**02 34 27.5**	**+1.2**
JTM				S	**Sb**	**02 34 55.2**	**-0.6**
JRG	**Rokugo**	**2.17**	**264**	P	**Pb**	**02 34 29.0**	**-1.1**
JAH	**Hinai**	**2.20**	**285**	P	**Pn**	**02 34 28.4**	**+1.0**
JEM	**Erimo**	**2.37**	**355**	S	**Sn**	**02 34 57.2**	**-1.6**
MJAR	**Matsushiro Arr**	**5.15**	**235**	Pn	**Pn**	**02 35 06.9**	**-1.1**
	0.5nm,0.3s,baz=46,slow=8.7,SNR=6.0						
MAT	**Matsushiro**	**5.15**	**235**	P	**Pn**	**02 35 09.9**	**+2.0**
MAT				*eS*	Sb	02 36 15.5	-7.3
SEY	**Seymchan**	**23.93**	**10**	P	**P**	**02 39 04.8**	**+0.2**
	2.6nm,0.9s,baz=203,slow=8.9,SNR=6.8						
SONM	**Songino Array**	**27.75**	**299**	P	**P**	**02 39 40.6**	**+1.0**
	0.7nm,0.8s,baz=96,slow=9.3,SNR=4.5						
ZALV	**Zalesovo Beam**	**41.37**	**310**	P	**P**	**02 41 36.5**	**-0.3**
	0.9nm,0.5s,baz=93,slow=7.2,SNR=3.3						
MKAR	**Makanchi Array**	**44.11**	**300**	P	**P**	**02 41 59.7**	**+0.6**
	0.7nm,0.8s,baz=93,slow=7.3,SNR=5.1						
ILAR	**Eielson Array**	**46.45**	**34**	P	**P**	**02 42 18.3**	**+0.9**
	0.3nm,0.8s,baz=253,slow=5.6,SNR=3.2						
WRA	**Warramunga Arr**	**59.89**	**190**	P	**P**	**02 43 55.3**	**-1.4**
	0.4nm,0.8s,baz=6.7,slow=6.9,SNR=2.9						
FINES	**FINESS Array B**	**67.23**	**332**	P	**P**	**02 44 45.2**	**+0.3**
	0.8nm,0.7s,baz=38,slow=7.0,SNR=2.5						
NB2	**NORSAR Subarra**	**72.37**	**338**	P	**P**	**02 45 16.7**	**+0.1**
	comp=Z,0.4nm,0.7s,baz=37,slow=6.2						
NOA	**NORSAR Array B**	**72.37**	**338**	P	**P**	**02 45 16.7**	**+0.1**
	comp=Z,0.6nm,0.7s,baz=38,slow=6.0,SNR=4.1						

ISCJB **22** *02:38:20.7±1.6,37.°39N±0.°05×142.°73E±0.°04, h10km±10km,mb4.2/41,MS3.5/7,Error ellipse: s-maj=8.1km s-min=4.7km az=160.2*

IDC **22** *02:38:20.7±0.7,37.°28N×142.°72E,h0km,mb4.1/19, mb1 4.2/23,mb1mx4.1/48,mbtmp4.1/23,ML3.8/3,MS3.4/9, Ms1 3.4/9,ms1mx3.1/45,Error ellipse: s-maj=18.4km s-min=16.1km az=114.0*

JMA **22** *02:38:21.7±0.2,37.°37N×142.°55E,h2km±3km,M4.5*

NEIC **22** *02:38:26.2±0.4,37.°41N×142.°71E,h35km,mb4.4/12,Error ellipse: s-maj=9.3km s-min=5.9km az=140.0*

MOS **22** *02:38:26.2±0.9,37.°71N×142.°56E,h35km,mb4.5/29,Error ellipse: s-maj=9.8km s-min=6.3km az=106.4*

ISC 22 02:38:22.0±2.0, 37.°36N±0.°06×142.°53E±0.°06, h8km±11km, n100,σ1°18/87, mb4.3/41, MS3.6/7, 6C-3D, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**1.32**	**271**	P	**Pb**	**02 38 46.9**	**-0.1**
JFK				S	**Sg**	**02 39 05.4**	**+0.9**
ONAJ	**Iwakimizuishiy**	**1.41**	**260**	P	**Pg**	**02 38 48.9**	**-0.1**
ONAJ				S	**Sb**	**02 39 07.0**	**+0.4**
JIO	**Ouri**	**1.44**	**320**	P	**Pb**	**02 38 48.5**	**-0.6**
JIO				S	**Sg**	**02 39 08.6**	**+0.3**
JMM	**Marumori**	**1.47**	**291**	P	**Pn**	**02 38 48.8**	**0.0**
JMM				*eS*	**Sg**	**02 39 09.1**	**-0.2**
JHO	**Hitachi**	**1.74**	**245**	P	**Pb**	**02 38 53.3**	**-0.8**
JHO				S	**Sb**	**02 39 15.7**	**-0.4**
JFT	**Otama**	**1.76**	**276**	P	**Pb**	**02 38 53.7**	**-0.7**
JFT				S	**Sg**	**02 39 17.7**	**-0.7**
JOU	**Okura**	**1.79**	**305**	P	**Pb**	**02 38 53.9**	**-1.1**
JOU				S	**Sg**	**02 39 18.7**	**-0.8**
MJAR	**Matsushiro Arr**	**3.56**	**258**	Pn	Pn	02 39 20.7	+3.2
	4.2nm,0.3s,baz=88,slow=14,SNR=19						
MAJO	**Matsushiro**	**3.56**	**258**	*eP*	Pb	02 39 21.9	-3.3
MAJO	**Matsushiro**	**3.56**	**258**	*ePn*	Pb	02 39 21.6	-3.6
MAT	**Matsushiro**	**3.56**	**258**	P	**Pb**	**02 39 22.2**	**-3.0**
MAT				*eS*	**Sb**	**02 40 06.0**	**-2.5**
ERM	**Erimo**	**4.68**	**6**	*eP*	**Pn**	**02 39 31.4**	**-1.4**
ERM	**Erimo**	**4.68**	**6**	*ePn*	**Pn**	**02 39 31.6**	**-1.2**
JHJ	**Hachijo jima 2**	**4.79**	**209**	LR	LR	02 41 17.8	
	comp=Z,140nm,20.4s,baz=60,slow=37						
ASAJ	**Asahikawa**	**6.75**	**0**	Pn	**Pn**	**02 40 01.3**	**-0.1**
	3.7nm,0.3s,baz=204,slow=8.9,SNR=10						
SHO	**Shikotan**	**7.28**	**25**	*i* P	**Pn**	**02 40 06.0**	**-2.6**
SHO				*i* S	Sn	02 41 22.6	-8.8
SHO				smax	smax		
	comp=E,62nm,0.3s						
SHO				smax	smax		
	comp=N,150nm,0.5s						
KUR	**Kuril'sk**	**8.83**	**25**	*eP*	Pn	02 40 23.8	-6.0
KUR				*eS*	Sn	02 42 02.0	-7.5
KUR				smax	smax		
	comp=N,14nm,0.5s						
KUR				smax	smax		
	comp=E,21nm,0.5s						
YSS	**Yuzh-Sakhalins**	**9.59**	**1**	*eP*	**Pn**	**02 40 38.4**	**-1.9**
YSS				MLR	MLR		
	comp=Z,200nm,11.0s						
VLA	**Vladivostok**	**9.97**	**309**	*eP*	Pn	02 40 40.3	-5.1
VLA				pmax	pmax		
	comp=Z,21nm,1.0s						
CBIJ	**Chichi jima**	**10.23**	**182**	Pn	Pn	02 40 45.1	-4.0
JCJ	**Chichijima**	**10.23**	**182**	Pn	Pn	02 40 45.1	-4.0
	baz=292,slow=18						
JNU	**Nakatsue**	**10.42**	**250**	*ePn*	Pn	02 40 55.7	+3.9
USRK	**Ussuriysk Ar.**	**10.51**	**314**	Pn	Pn	02 40 56.6	+3.7
	comp=Z,0.2nm,0.3s,baz=106,slow=15,SNR=6.1						
USRK				LR	LR	02 44 51.2	
	comp=Z,326nm,18.1s,baz=119,slow=37						
KSRS	**Korea Array**	**11.62**	**275**	Pn	Pn	02 41 13.5	+5.4
	comp=Z,0.2nm,0.3s,baz=94,slow=14,SNR=4.3						
KSRS				LR	LR	02 45 18.6	
	comp=Z,175nm,18.9s,baz=92,slow=35						
KSAR	**Wonju Array Be**	**11.65**	**275**	P	Pn	02 41 13.5	+5.0
KSAR	**Wonju Array Be**	**11.65**	**275**	Pn	Pn	02 41 13.5	+5.0
KLR	**Kul'dur**	**14.21**	**330**	Pn	**Pn**	**02 41 43.7**	**+0.3**
	comp=Z,0.1nm,0.3s,baz=145,slow=14,SNR=3.8						
KLR				LR	LR	02 47 21.1	
	comp=Z,197nm,18.1s,baz=122,slow=38						
NKL	**Nikolayevsk**	**15.85**	**356**	*eP*	**Pn**	**02 42 03.0**	**-2.2**
NKL				MLR	MLR		
	comp=Z,350nm,16.0s						
MA2	**Magadan**	**22.86**	**11**	P	**P**	**02 43 25.7**	**+0.2**
	comp=Z,3.3nm,0.2s,baz=194,slow=17,SNR=4.5						
GUMO	**Guam**	**23.76**	**174**	LR	LR	02 51 34.0	
	comp=Z,36nm,21.4s,baz=56,slow=34						
YAK	**Yakutsk**	**25.96**	**346**	*i* P	**P**	**02 43 54.7**	**+0.1**
YAK				pmax	pmax		
	comp=Z,24nm,0.8s						
SEY	**Seymchan**	**26.31**	**10**	P	**P**	**02 43 59.1**	**+1.3**
	comp=Z,5.0nm,0.6s,baz=188,slow=8.6,SNR=17						
SEY	**Seymchan**	**26.31**	**10**	*i* P	**P**	**02 43 58.1**	**+0.3**
H11N2	**WAKE ISLAND Hy**	**27.56**	**123**	T	T	03 12 52.6	
	baz=315,slow=75,SNR=115						
H11N1	**WAKE ISLAND Hy**	**27.57**	**123**	T	T	03 12 56.1	
	baz=315,slow=75,SNR=72						
H11N3	**WAKE ISLAND Hy**	**27.58**	**123**	T	T	03 12 56.6	
	baz=315,slow=75,SNR=81						
BOD	**Bodaibo**	**27.74**	**327**	*eP*	**P**	**02 44 10.6**	**-0.1**
BOD				pmax	pmax		
	comp=Z,7.0nm,1.1s						
ULN	**Ulaanbaatar**	**27.92**	**303**	*i* P	**P**	**02 44 12.1**	**-0.5**
ULN				pmax	pmax		
	comp=Z,4.0nm,1.2s						
ULN	**Ulaanbaatar**	**27.92**	**303**	*eP*	**P**	**02 44 13.8**	**+1.2**
	comp=Z,2.5nm,0.6s						
ENH	**Enshi**	**28.25**	**265**	*eP*	**P**	**02 44 15.9**	**+0.3**
	comp=Z,11nm,0.7s						
H11S1	**WAKE ISLAND Hy**	**28.30**	**125**	T	T	03 13 53.7	
	baz=317,slow=76,SNR=75						
H11S3	**WAKE ISLAND Hy**	**28.30**	**125**	T	T	03 13 53.7	
	baz=317,slow=76,SNR=70						
H11S2	**WAKE ISLAND Hy**	**28.31**	**125**	T	T	03 13 52.1	
	baz=317,slow=76,SNR=64						
SONM	**Songino Array**	**28.35**	**303**	P	**P**	**02 44 18.0**	**+1.6**
	comp=Z,6.0nm,0.8s,baz=97,slow=8.7,SNR=36						
ZAK	**Zakamensk**	**30.77**	**308**	*eP*	**P**	**02 44 38.6**	**+0.7**
ZAK				pmax	pmax		
	comp=Z,5.0nm,1.2s						
BILL	**Bilibino**	**33.47**	**16**	*eP*	P	02 45 03.8	+2.6
BILL				*e**PP	sP	02 45 14.0	+9.3
BILL				*e*		02 45 22.5	
BILL						02 46 15.0	
BILL				pmax	pmax		
	comp=Z,2.0nm,0.9s						
BILL				MLR	MLR		
	comp=Z,106nm,20.0s						
ZALV	**Zalesovo Beam**	**42.36**	**312**	P	**P**	**02 46 17.2**	**+0.9**
	comp=Z,3.5nm,0.8s,baz=78,slow=6.7,SNR=13						
ZALV				LR	LR	03 04 33.2	
	comp=Z,80nm,18.0s,baz=72,slow=37						
NVS	**Novosibirsk**	**43.27**	**313**	*eP*	**P**	**02 46 24.6**	**+0.9**
MKAR	**Makanchi Array**	**44.70**	**302**	*ePn*	**P**	**02 46 36.3**	**+0.9**
	comp=Z,2.4nm,0.8s,baz=87,slow=9.8,SNR=22						
MKAR	**Makanchi Array**	**44.70**	**302**	*ePn*	**P**	**02 46 36.5**	**+1.1**
MKAR				pmax	pmax		
	comp=Z,2.0nm,0.8s						
KURK	**Kurchatov**	**46.44**	**308**	*eP*	**P**	**02 46 49.7**	**+0.7**
KURK				pmax	pmax		
	comp=Z,16nm,0.7s						
KURK	**Kurchatov**	**46.44**	**308**	*eP*	**P**	**02 46 49.7**	**+0.7**
	comp=Z,16nm,0.7s						
ILAR	**Eielson Array**	**48.74**	**33**	P	**P**	**02 47 06.8**	**+0.1**
	comp=Z,1.0nm,0.7s,baz=256,slow=6.1,SNR=15						
TKM2	**Tokmak 2**	**50.26**	**298**	*eP*	**P**	**02 47 20.3**	**+1.4**
TKM2				pmax	pmax		
	comp=Z,6.0nm,0.8s						
TKM2	**Tokmak 2**	**50.26**	**298**	*eP*	**P**	**02 47 20.3**	**+1.4**
	comp=Z,5.8nm,0.8s						
BRVK	**Borovoye**	**51.07**	**312**	*i* P	**P**	**02 47 24.9**	**+0.3**
BRVK				pmax	pmax		
	comp=Z,3.0nm,1.7s						
BRVK	**Borovoye**	**51.07**	**312**	*eP*	**P**	**02 47 25.2**	**+0.6**
	comp=Z,7.6nm,1.3s						
AAK	**Ala-Archa**	**51.12**	**298**	*eP*	**P**	**02 47 25.7**	**+0.3**
AAK				pmax	pmax		
	comp=Z,4.0nm,0.9s						
AAK	**Ala-Archa**	**51.12**	**298**	*eP*	**P**	**02 47 26.4**	**+1.0**
	comp=Z,3.9nm,1.0s						
EKS2	**Erkin-Say**	**51.62**	**299**	*eP*	**P**	**02 47 29.9**	**+0.9**
EKS2				pmax	pmax		
	comp=Z,11nm,1.5s						
EKS2	**Erkin-Say**	**51.62**	**299**	*eP*	**P**	**02 47 29.9**	**+0.9**
	comp=Z,11nm,1.5s						
INK	**Inuvik**	**53.69**	**27**	P	**P**	**02 47 43.9**	**+0.1**
	comp=Z,0.4nm,0.5s,baz=27,slow=3.0,SNR=4.5						
KKAR	**Karatay Array**	**53.74**	**300**	*eP*	**P**	**02 47 44.9**	**+0.3**
KKAR				pmax	pmax		
	comp=Z,1.0nm,0.6s						
KKAR	**Karatay Array**	**53.74**	**300**	*eP*	**P**	**02 47 44.9**	**+0.3**
	comp=Z,1.1nm,0.6s						
ARU	**Arti**	**56.71**	**319**	*d iP*	**P**	**02 48 06.3**	**+0.5**
ARU				S	**S**	**02 55 53.2**	**-5.1**
ARU				SS	SS	02 59 34.5	-11
ARU				pmax	pmax		
	comp=Z,11nm,1.7s						
ARU	**Arti**	**56.71**	**319**	*eP*	**P**	**02 48 06.2**	**+0.5**
	comp=Z,2.7nm,0.8s						
WRA	**Warramunga Arr**	**57.51**	**189**	P	**P**	**02 48 11.1**	**-0.7**
	comp=Z,2.4nm,0.8s,baz=76,slow=16,SNR=5.6						
ABKAR	**Akbulak array**	**58.41**	**310**	*eP*	**P**	**02 48 18.0**	**+0.2**
	comp=Z,2.8nm,0.6s						
ASAR	**Alice Springs**	**61.24**	**189**	P	**P**	**02 48 37.0**	**-0.5**
	comp=Z,1.1nm,0.7s,baz=12,slow=6.4,SNR=11						
YKA	**Yellowknife Ar**	**63.08**	**31**	P	**P**	**02 48 49.2**	**-0.2**
	comp=Z,0.2nm,0.7s,baz=306,slow=6.8,SNR=6.1						
ARCES	**ARCESS Array B**	**64.01**	**340**	P	**P**	**02 48 55.8**	**+0.3**
	comp=Z,2.3nm,0.8s,baz=35,slow=8.9,SNR=4.9						
GEYT	**Alibeck**	**64.46**	**299**	P	**P**	**02 49 00.1**	**+1.1**
	comp=Z,2.1nm,0.7s,baz=46,slow=6.4,SNR=4.6						
VRH	**Novokhopyorsk**	**67.94**	**318**	*eP*	**P**	**02 49 19.9**	**-1.1**
VRH				pmax	pmax		
	comp=Z,9.0nm,0.5s						
LPSR	**Galich'ya Gora**	**68.62**	**320**	*eP*	**P**	**02 49 25.0**	**-0.3**
LPSR				pmax	pmax		
	comp=Z,5.0nm,0.7s						
STKA	**Stephens Creek**	**68.88**	**181**	LR	LR	03 26 34.0	
	comp=Z,19nm,18.4s,baz=24,slow=42						
FINES	**FINESS Array B**	**68.94**	**333**	P	**P**	**02 49 27.8**	**+0.6**
	comp=Z,4.4nm,0.7s,baz=46,slow=8.2,SNR=22						
FINES				LR	LR	03 23 53.4	
	comp=Z,58nm,19.1s,baz=34,slow=40						
FINES	**FINESS Array B**	**68.94**	**333**	*i* P	**P**	**02 49 27.7**	**+0.6**
FINES				pmax	pmax		
	comp=Z,5.0nm,0.6s						
VSR	**Storozhevoye**	**69.28**	**319**	*eP*	**P**	**02 49 29.0**	**-0.4**
VSR				pmax	pmax		
	comp=Z,5.0nm,0.7s						
ZEI	**Tsey**	**71.28**	**310**	*eP*	**P**	**02 49 41.6**	**-0.5**
ZEI				pmax	pmax		
	comp=Z,3.0nm,0.6s						
KBZ	**Khabaz**	**71.37**	**311**	P	**P**	**02 49 43.5**	**+1.2**
	comp=Z,5.4nm,0.8s,baz=62,slow=4.7,SNR=15						
KIV	**Kislovodsk**	**71.37**	**311**	*eP*	**P**	**02 49 44.4**	**+1.9**
KIV				*e*		02 49 56.8	
KIV				pmax	pmax		
	comp=Z,12nm,0.8s						
KIV				MLR	MLR		
	comp=Z,33nm,16.0s						
NEY	**Neytrino**	**71.74**	**311**	*eP*	**P**	**02 49 45.9**	**+1.0**
NEY				pmax	pmax		
	comp=Z,1.0nm,0.9s						
FFC	**Flin Flon**	**72.95**	**33**	*eP*	**P**	**02 49 51.6**	**0.0**
FFC				pmax	pmax		
	comp=Z,1.0nm,0.8s						
FFC	**Flin Flon**	**72.95**	**33**	*eP*	**P**	**02 49 51.6**	**0.0**
	comp=Z,1.4nm,0.8s						
NB2	**NORSAR Subarra**	**74.23**	**338**	P	**P**	**02 49 59.2**	**+0.1**
	comp=Z,2.0nm,0.7s,baz=39,slow=6.2						
NOA	**NORSAR Array B**	**74.23**	**338**	P	**P**	**02 49 59.9**	**+0.7**
	comp=Z,2.0nm,0.7s,baz=39,slow=5.9,SNR=13						
NOA				LR	LR	03 25 08.1	
	comp=Z,33nm,21.3s,baz=40,slow=38						
AKASG	**Malin Array Be**	**74.59**	**323**	P	**P**	**02 50 01.6**	**+0.3**
	comp=Z,2.8nm,0.6s,baz=46,slow=6.1,SNR=16						
KIEV	**Kiev**	**74.60**	**323**	*eP*	**P**	**02 50 01.5**	**+0.2**
KIEV				pmax	pmax		
	comp=Z,2.0nm,0.6s						
KIEV	**Kiev**	**74.60**	**323**	*eP*	**P**	**02 50 01.5**	**+0.2**
	comp=Z,1.6nm,0.6s

RTCV	Cerro Valdivia	3.98	44	*i* P	Pn	02 58 37.9	+1.0		
SJA	San Juan	4.23	41	*i* P	Pn	02 58 41.0	+0.8		
SJA				IAML		02 59 55.1			
	comp=Z,264nm,0.5s								
RTLL	Cerro Villicun	4.43	40	*i* P	Pn	02 58 44.0	+1.0		
ACAN	Cantantal	4.59	58	*i* P	Pn	02 58 45.1	-0.1		
AMOG	MOGNA	4.73	37	*i* P	Pn	02 58 47.5	+0.4		
AVFE	Valle Fertil	5.50	43	*i* P	Pn	02 58 57.3	-0.4		
AVFE				IAML		03 00 08.9			
	comp=Z,190nm,0.6s								
MRA	San Martin	5.60	67	*i* P	Pn	02 58 58.5	-0.6		
LCO	Las Campanas	5.82	10	*e*Pn	Pn	02 59 00.7	-1.5		
LCO				*e*Sn	Sn	03 00 05.9	-1.9		
PLCA	Paso Flores	6.04	171	P	Pn	02 59 07.3	+2.2		
	comp=Z,5.9nm,0.3s,baz=360,slow=11,SNR=52								
PLCA	Paso Flores	6.04	171	*e*Pn	Pn	02 59 07.5	+2.4		
TRQA	Tornquist	8.57	115	*e*Pn	Pn	02 59 39.2	-0.6		
LVC	Limon Verde	12.38	13	*e*Pn	Pn	03 00 29.5	-2.7		
	comp=Z,6.0nm,0.6s								
LVC				*e*Lg	Lg	03 03 28.2			
CHRN	Cochrane	12.48	182	*e*Pn	Pn	03 00 34.2	+1.1		
CPUP	Villa Florida	15.03	60	P	Pn	03 01 07.5	-0.1		
	comp=Z,0.2nm,0.3s,baz=245,slow=12,SNR=6.2								
CPUP				LR	LR	03 07 36.4			
	comp=Z,227nm,20.5s,baz=232,slow=40								
LPAZ	La Paz	18.70	11	P	Pn	03 01 54.6	+0.5		
	comp=Z,0.6nm,0.3s,baz=180,slow=7.1,SNR=30								
LPAZ	La Paz	18.70	11	*e*P	Pn	03 01 54.7	+0.7		
	comp=Z,7.8nm,0.8s								
USHA	Ushuaia	20.20	174	P	P	03 02 09.1	+0.3		
	comp=Z,35nm,0.8s,baz=2.9,slow=8.8,SNR=9.1								
SIV	San Ignacio	21.04	30	P	P	03 02 16.5	-1.6		
	comp=Z,18nm,0.7s,baz=219,slow=11,SNR=57								
NNA	Nana	23.14	347	LR	LR	03 10 23.1			
	comp=Z,49nm,18.7s,baz=156,slow=33								
SPB	Sao Paulo	23.96	69	*e*P	P	03 02 45.3	-2.8		
	comp=Z,26nm,1.1s								
SAML	Samuel	26.89	19	*e*P	P	03 03 13.2	-1.5		
	comp=Z,3.7nm,0.8s								
PMSA	Palmer Station	30.41	173	LR	LR	03 15 26.6			
	comp=Z,113nm,19.1s,baz=24,slow=35								
OTAV	Otavalo	35.37	348	*e*P	P	03 04 31.0	+1.1		
	comp=Z,1.8nm,0.6s								
OTAV	Otavalo	35.37	348	*e*P	P	03 04 30.0	0.0		
PTGA	Pitinga	35.62	21	P	P	03 04 30.3	-1.3		
	comp=Z,22nm,0.8s,baz=202,slow=10,SNR=31								
CRUC	La Cruz	36.47	351	*e*P	P	03 04 41.8	+2.6		
SJAC	San Juan de Ar	37.89	357	*e*P	P	03 04 50.5	-0.4		
ROSC	El Rosal	39.47	356	P	P	03 05 07.3	+2.9		
	comp=Z,6.8nm,0.6s,baz=159,slow=23,SNR=5.7								
ROSC	El Rosal	39.47	356	*e*P	P	03 05 05.1	+0.6		
ROSC				*e*pP	pP	03 05 08.2	-9.0		
NORC	Norcasia	40.22	355	*e*P	P	03 05 10.1	-0.2		
RUSC	La Rusia	40.46	358	*e*P	P	03 05 12.7	-0.2		
HELC	Santa Helena	40.89	354	*e*P	P	03 05 17.3	+1.1		
MOTC	Monteria, Cord	43.46	354	*e*P	P	03 05 35.3	-1.4		
RCBR	Riachuelo	43.89	57	P	P	03 05 39.2	-1.1		
	comp=Z,3.2nm,0.5s,baz=228,slow=10,SNR=8.7								
RCBR	Riachuelo	43.89	57	*e*P	P	03 05 39.3	-1.0		
SNAA	Sanae	50.80	158	*e*P	P	03 06 33.2	-0.2		
	comp=Z,452nm,1.0s								
TXAR	Lajitas Aray	70.50	331	P	P	03 08 48.9	+0.9		
	comp=Z,0.8nm,0.5s,baz=157,slow=8.8,SNR=11								
TXAR				pP	pP	03 09 02.0	+0.3		
	comp=Z,1.2nm,0.5s,baz=160,slow=8.4,SNR=10.0								
TX31	Lajitas Ar. Si	70.50	331	*e*P	P	03 08 49.0	+1.0		
TX31				*e*pP	pP	03 09 01.7	0.0		
SWET	Sewanee	70.86	348	*e*P	P	03 08 50.0	0.0		
	comp=Z,4.3nm,1.0s								
WVT	Waverly	72.10	346	*e*P	P	03 08 56.7	-0.6		
	comp=Z,18nm,0.6s								
X301	Greenbrier Sit	72.25	342	*e*P	P	03 08 58.8	+0.5		
	comp=Z,6.3nm,0.7s								
MAW	Mawson	72.39	163	P	P	03 08 59.1	+0.3		
	comp=Z,9nm,0.7s,baz=270,slow=14,SNR=3.6								
MNTX	Cornudas Mount	73.27	331	*e*P	P	03 09 04.5	0.0		
	comp=Z,2.7nm,0.9s								
MNTX				*e*pP	pP	03 09 17.6	-0.7		
HHAR	Hobbs	73.64	342	*e*P	P	03 09 06.6	+0.1		
	comp=Z,4.2nm,0.6s								
MSTX	Muleshoe	74.28	334	*e*P	P	03 09 10.1	-0.3		
	comp=Z,26nm,1.8s								
MSTX				*e*pP	pP	03 09 23.8	-0.5		
LIC	Lamto	74.84	71	*e*P	P	03 09 12.9	-1.1		
	comp=Z,62nm,1.8s								
TIC	Toumodi	75.10	71	*e*P	P	03 09 14.4	-1.2		
KIC	Kosan Boka	75.14	71	*e*P	P	03 09 14.8	-1.0		
	comp=Z,59nm,1.0s								
DBIC	Dimbokro	75.25	71	P	P	03 09 15.5	-0.9		
	comp=Z,7.2nm,0.6s,baz=209,slow=4.4,SNR=17								
DBIC				pP	pP	03 09 30.4	+0.2		
	comp=Z,3.6nm,0.7s,baz=199,slow=3.1,SNR=2.4								
DBIC				LR	LR	03 39 40.7			
	comp=Z,28nm,20.1s,baz=99,slow=34								
ACSO	Alum Creek Sta	75.34	351	*e*P	P	03 09 16.0	-0.2		
	comp=Z,13nm,0.8s								
T25A	Trinidad	77.70	334	*e*P	P	03 09 30.9	+0.9		
T25A				*e*pP	pP	03 09 45.0	+1.1		
X16A	Lo Mia Camp, P	78.18	327	*e*P	P	03 09 33.8	+1.1		
	comp=Z,5.2nm,1.3s								
TSUM	Tsumeb	78.82	106	*e*P	P	03 09 35.9	-0.7		
	comp=Z,7.2nm,1.1s								
BOSA	Boshof	79.55	117	P	P	03 09 40.0	-0.4		
	comp=Z,14nm,0.8s,baz=241,slow=3.2,SNR=28								
BOSA				LR	LR	03 42 48.8			
	comp=Z,15nm,19.8s,baz=200,slow=34								
SMCO	Snowmass	80.45	333	*e*P	P	03 09 46.0	+0.8		
	comp=Z,4.0nm,1.0s								
SMCO				*e*pP	pP	03 09 59.6	+0.5		
ECSD	EROS Data Cent	81.33	342	*e*P	P	03 09 49.3	-0.1		
	comp=Z,6.2nm,0.8s								
LBTB	Lobatse	81.81	115	*e*P	P	03 09 52.1	-0.5		
	comp=Z,72nm,1.9s								
P18A	Preston Nutter	82.10	331	*e*P	P	03 09 55.3	+1.5		
	comp=Z,28nm,1.9s								
PSUT	Pine Spring	82.69	328	*e*P	P	03 09 58.5	+1.7		
	comp=Z,2.1nm,0.9s								
R11A	Troy Canyon, C	83.30	327	*e*P	P	03 10 01.5	+1.5		
R11A				*e*pP	pP	03 10 15.2	+1.2		
BW06	Boulder Array	84.53	333	*e*P	P	03 10 06.4	+0.2		
BW06				*e*pP	pP	03 10 21.9	+1.7		
PDAR	Pinedale Array	84.53	333	P	P	03 10 06.5	+0.3		
	comp=Z,0.7nm,0.8s,baz=130,slow=8.0,SNR=6.4								
PDAR				pP	pP	03 10 20.4	+0.2		
	comp=Z,0.6nm,0.6s,baz=151,slow=3.4,SNR=4.9								
NVAR	Mina Array Bea	84.62	325	P	P	03 10 08.3	+1.6		
	comp=Z,0.7nm,0.7s,baz=153,slow=5.3,SNR=4.7								
NVAR				pP	pP	03 10 21.7	+0.9		
	comp=Z,1.0nm,0.7s,baz=153,slow=6.8,SNR=4.2								
FLWY	Flagg Ranch	86.09	333	*e*P	P	03 10 15.0	+1.1		
	comp=Z,4.8nm,0.8s								
FLWY				*e*pP	pP	03 10 27.8	-0.1		
RLMT	Red Lodge	86.46	334	*e*P	P	03 10 16.3	+0.6		
	comp=Z,2.5nm,0.6s								
YMR	Madison River	86.69	333	*e*P	P	03 10 18.7	+1.8		
	comp=Z,4.7nm,0.8s								
HLID	Hailey	87.10	330	*e*P	P	03 10 20.3	+1.5		
	comp=Z,2.2nm,1.0s								
ULM	Lac du Bonnet	87.29	345	P	P	03 10 18.3	-1.0		
	comp=Z,3.5nm,0.8s,baz=159,slow=3.6,SNR=4.8								
LSZ	Lusaka	89.39	108	*e*P	P	03 10 30.6	+0.2		
	comp=Z,3.4nm,0.9s								
TAM	Tamanrasset	92.98	64	*e*P	P	03 10 46.0	-0.8		
	comp=Z,2.3nm,1.2s								
YKA	Yellowknife Ar	102.84	341	P	Pdif	03 11 29.7	-0.4		
	comp=Z,0.2nm,0.8s,baz=138,slow=4.0,SNR=3.9								
WRA	Warramunga Arr	120.18	209	PKP	PKPdf	03 16 23.6	-0.9		
	comp=Z,0.3nm,0.5s,baz=155,slow=1.6,SNR=2.6								
WRA				pPKP	pPKPdf	03 16 37.6	-1.5		
	comp=Z,0.4nm,0.4s,baz=156,slow=1.6,SNR=2.0								
BRTR	Keskin Array B	122.04	61	PKP	PKPdf	03 16 27.1	-0.3		
	comp=Z,1.0nm,0.8s,baz=181,slow=3.9,SNR=6.4								
H11N3	WAKE ISLAND Hy	126.38	270	T	T	05 35 32.9			
	baz=115,slow=78,SNR=17								
H11N1	WAKE ISLAND Hy	126.39	270	T	T	05 35 35.4			
	baz=115,slow=78,SNR=30								
H11N2	WAKE ISLAND Hy	126.39	270	T	T	05 35 35.4			
	baz=115,slow=78,SNR=21								
GNI	Garni	130.29	64	*e*PKPdf	PKPdf	03 16 43.7	+0.5		
ABKAR	Akbulak array	142.00	53	*e*PKPpre	PKPpre	03 16 58.5			
ZRNK	Zerenda	146.94	44	*e*PKPdf	PKPdf	03 17 13.9	+1.0		
PSI	Prapat	147.05	163	PKPbc	PKPdf	03 17 15.0	+0.5		
	comp=Z,6.3nm,0.6s,baz=192,slow=7.5,SNR=12								
PSI	Prapat	147.05	163	*e*PKPdf	PKPdf	03 17 15.2	+0.7		
BVAR	Borovoye Array	147.71	44	PKPbc	PKPbc	03 17 17.2	+0.1		
	comp=Z,4.3nm,0.8s,baz=298,slow=3.2,SNR=15								
BVAR				pPKPbc	pPKPbc	03 17 31.6	0.0		
	comp=Z,2.9nm,0.6s,baz=258,slow=4.4,SNR=6.6								
KKAR	Karatay Array	149.74	63	*e*PKPbc	PKPbc	03 17 22.2	-0.4		
KULM	Kulim	149.85	165	*e*PKPbc	PKPbc	03 17 23.2	-0.5		
EKS2	Erkin-Say	152.16	63	*e*PKPbc	PKPbc	03 17 28.0	-0.4		
AAK	Ala-Archa	152.69	63	*e*PKPbc	PKPbc	03 17 30.0	+0.3		
KURK	Kurchatov	153.30	44	*e*PKPbc	PKPbc	03 17 30.0	-0.5		
TKM2	Tokmak 2	153.47	62	*e*PKPbc	PKPbc	03 17 31.5	+0.1		
KSH	Kashi	153.96	70	*e*PKPbc	PKPdf	03 17 26.1	+1.7		
KSH				*e*pPKP	pPKPdf	03 17 36.9	-2.2		
KSH				PKS	PKSdf	03 20 58.9	+0.1		
KSH				*e*PP	PP	03 21 24.4	+3.1		
KSH				SKKS		03 28 07.1			
KSH				AMB	AMB				
	comp=Z,84nm,4.5s								
ZALV	Zalesovo Beam	154.77	33	PKPbc	PKPbc	03 17 33.0	-0.5		
	comp=Z,1.0nm,0.7s,baz=302,slow=2.8,SNR=5.0								
ZALV				PKPab	PKPab	03 17 47.8	-0.9		
	comp=Z,1.4nm,0.6s,baz=303,slow=8.1,SNR=4.0								
MKAR	Makanchi Array	157.11	51	PKPab	PKPab	03 17 58.3	-0.8		
	comp=Z,1.3nm,0.8s,baz=305,slow=4.3,SNR=8.8								
WMQ	Urumqi	161.78	54	*e*PKP	PKPdf	03 17 32.9	-0.9		
NJ2	Nanjing	170.69	256	*e*PKP	PKPdf	03 17 42.1	+1.0		
HHC	Hu-ho-hao-te	173.37	337	*e*PKP	PKPdf	03 17 43.4	+1.2		
CD2	Chengdu	174.64	135	PKP	PKPdf	03 17 41.9	-1.0		
LZH	Lanzhou	176.21	68	*e*PKP	PKPdf	03 17 41.8	-1.5		
LZH				pPKP	pPKPdf	03 17 56.3	-1.7		
LZH				sPKP		03 18 01.5			
LZH				LR	LR				
	comp=Z,100nm,18.0s								
LZH				LR	LR				
	comp=Z,97nm,18.1s								
LZH				LR	LR				
	comp=Z,140nm,20.3s								

NIED **22** *03:03:00, 37.°10N×140.°70E, h5km, Mw3.7 Best double couple: M₀3.99000×10¹⁴ NP1:φ=190.00000°, δ31.00000°, λ=-120.00000°. NP2:φ=44.00000°, δ63.00000°, λ=-73.00000°.*

IDC **22** *03:03:49.9±0.8, 37.°06N×140.°70E, h0km, mb3.7/13, mb1 3.9/15, mb1mx3.8/41, mbtmp3.7/15, ML3.5/2, MS2.9/5, Ms1 2.9/5, ms1mx2.5/67, Error ellipse: s-maj=21.5km s-min=16.4km az=112.0*

ISCJB **22** *03:03:50.9±0.9, 37.°07N±0.°03×140.°82E±0.°05, h15km±5km, mb3.7/13, MS3.9/1, Error ellipse: s-maj=6.6km s-min=4.2km az=12.3*

JMA **22** *03:03:51.3, 37.°09N×140.°71E, h7km±1km, M3.9 Broadband fault plane solution: P waves. NP1: φ±2.00000°, δ54.00000°, λ-97.00000°. NP2:φ=194.00000°, δ36.00000°, λ-80.00000°. Principal axes: T Plg9.0000°, Azm97.0000°; N Plg6.0000°, Azm6.0000°; P Plg79.0000°, Azm243.0000°;*

JMA Felt II J1.

ISC 22 03:03:51.3±0.8, 37.°08N±0.°03×140.°73E±0.°04, h8km±5km, n35, σ0.°56/34, mb3.7/13, 6C-1D, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
ONAJ	Iwakimizuishiy	0.06	70	⇑P		Pg	03 03 53.2	0.0
ONAJ				S		Sg	03 03 54.6	-0.1
JFK	Kawauchi	0.31	23	⇑P		Pg	03 03 57.4	0.0
JFK				S		Sg	03 04 01.8	+0.2
JHO	Hitachi	0.48	195	⇑P		Pg	03 04 00.7	0.0
JHO				S		Sg	03 04 07.6	+0.6
JFT	Otama	0.54	325	⇑P		Pg	03 04 01.7	0.0
JFT				S		Sg	03 04 09.0	+0.3
JSB	Shiboa	0.65	260	⇑P		Pb	03 04 04.5	-0.4
JSB				S		Sg	03 04 12.8	+0.4
JMM	Marumori	0.79	4	⇑P		Pg	03 04 06.0	-0.4
JMM				S		Sg	03 04 16.6	-0.1
JFY	Yanaizu	0.88	292	⇑P		Pg	03 04 08.0	-0.1
JFY				S		Sg	03 04 19.2	-0.3
JYT	Yasato	0.95	207	P		Pg	03 04 09.0	-0.6
JYT				S		Sg	03 04 21.6	-0.3
MJAR	Matsushiro Arr	2.09	256	Pn		Pn	03 04 27.4	+0.8
	13nm,0.3s,baz=77,slow=14,SNR=58							
MJAR				LR		LR	03 05 31.4	
	comp=Z,115nm,18.3s,baz=75,slow=50							
MAT	Matsushiro	2.09	256	P		Pn	03 04 27.5	+0.9
MAT				S		Sb	03 04 55.8	+0.3
JHJ	Hachijo jima 2	4.03	191	Sn		Sn	03 05 40.3	-0.2
	18nm,0.3s,baz=252,slow=19,SNR=2.8							
ASAJ	Asahikawa	7.17	11	Pn		Pn	03 05 36.4	0.0
	0.8nm,0.3s,baz=189,slow=12,SNR=5.6							
USRK	Ussuriysk Ar.	9.72	320	Pn		Pn	03 06 16.4	+5.0
	0.3nm,0.3s,baz=154,slow=13,SNR=10							
USRK				LR		LR	03 09 45.6	
	comp=Z,60nm,19.1s,baz=70,slow=36							
KSRS	Korea Array	10.21	276	Pn		Pn	03 06 23.9	+5.9
	0.2nm,0.3s,baz=85,slow=14,SNR=4.1							
KSRS				LR		LR	03 09 56.2	
	comp=Z,47nm,18.5s,baz=112,slow=36							
KLR	Kul'dur	13.78	335	Pn		P	03 07 11.2	-4.2
	0.1nm,0.3s,baz=145,slow=14,SNR=4.6							
KLR				LR		LR	03 11 54.1	
	comp=Z,33nm,19.0s,baz=158,slow=35							
SEY	Seymchan	26.85	12	P		P	03 09 31.4	-0.6
	1.0nm,0.6s,baz=193,slow=15,SNR=5.0							
SONM	Songino Array	27.30	304	P		P	03 09 36.2	-0.1
	0.9nm,0.8s,baz=115,slow=9.5,SNR=5.1							
H11N2	WAKE ISLAND Hy	28.65	120	T		T	03 39 37.2	
	baz=313,slow=75,SNR=88							
H11N1	WAKE ISLAND Hy	28.65	120	T		T	03 39 39.3	
	baz=313,slow=75,SNR=71							
H11N3	WAKE ISLAND Hy	28.66	120	T		T	03 39 35.4	
	baz=313,slow=75,SNR=78							
H11S1	WAKE ISLAND Hy	29.35	122	T		T	03 40 31.4	
	baz=314,slow=76,SNR=156							
H11S3	WAKE ISLAND Hy	29.35	122	T		T	03 40 31.6	
	baz=314,slow=76,SNR=75							
H11S2	WAKE ISLAND Hy	29.36	122	T		T	03 40 32.7	
	baz=314,slow=76,SNR=66							
ZALV	Zalesovo Beam	41.48	312	P		P	03 11 38.0	-0.4
	0.6nm,0.4s,baz=86,slow=5.9,SNR=5.8							
MKAR	Makanchi Array	43.63	302	P		P	03 11 55.9	-0.1
	0.5nm,0.6s,baz=87,slow=10,SNR=4.9							
ILAR	Eielson Array	49.75	32	P		P	03 12 44.4	+0.7
	0.6nm,0.8s,baz=273,slow=5.7,SNR=7.6							
INK	Inuvik	54.60	27	P		P	03 13 20.4	+0.7
	0.3nm,0.5s,baz=274,slow=3.7,SNR=2.5							
WRA	Warramunga Arr	57.03	187	P		P	03 13 37.1	-0.5
	2.1nm,0.5s,baz=5.0,slow=7.5,SNR=13							
ASAR	Alice Springs	60.76	187	P		P	03 14 03.0	-0.5
	0.7nm,0.6s,baz=16,slow=6.6,SNR=11							
YKA	Yellowknife Ar	64.04	30	P		P	03 14 24.4	-0.7
	0.2nm,0.7s,baz=303,slow=6.8,SNR=5.0							
FINES	FINESS Array B	68.52	332	P		P	03 14 53.6	-0.1
	1.1nm,0.7s,baz=41,slow=6.1,SNR=5.0							
AKASG	Malin Array Be	73.92	322	P		P	03 15 25.7	-0.9
	0.5nm,0.5s,baz=44,slow=5.1,SNR=5.8							
NOA	NORSAR Array B	73.93	337	P		P	03 15 27.5	+0.9
	0.6nm,0.8s,baz=42,slow=5.9,SNR=3.0							
NVAR	Mina Array Bea	75.40	53	P		P	03 15 37.2	+1.4
	0.6nm,0.6s,baz=287,slow=3.7,SNR=3.8							
KEST	Kesra	94.65	322	LR		LR	04 06 24.3	
	comp=Z,36nm,18.1s,baz=294,slow=40							

WEL 22 03:05:29.8±0.4, 39.°03S×175.°03E, h201km±3km, ML3.9/17, 34C-14D, Error ellipse: s-maj=2.0km s-min=2.0km az=0.0, North Island

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
VRZ	Vera Road	0.23	246	⇑P		Pn	03 05 55.6	-0.6
VRZ				S		S	03 06 15.6	-1.3
TWVZ	Taurewa	0.32	97	⇑P		Pn	03 05 56.2	-0.4
TWVZ				S		S	03 06 15.9	-1.6
WTVZ	West Tongariro	0.45	101	P		Pn	03 05 56.8	-0.2
WTVZ				S		S	03 06 16.9	-1.2
FWVZ	Far West T-bar	0.47	119	⇑P		Pn	03 05 57.0	-0.2
NGZ	Ngauruhoe	0.47	108	P		Pn	03 05 56.9	-0.2
KRVZ	Karewarewa	0.48	98	P		Pn	03 05 56.9	-0.2
TRVZ	Turoa	0.49	123	⇑P		Pn	03 05 57.0	-0.2
MTVZ	Mangateitei	0.49	136	P		Pn	03 05 56.9	-0.1
WHVZ	Whangaehu Hut	0.51	120	⇑P		Pn	03 05 57.2	-0.1
OTVZ	Oturere	0.52	105	P		Pn	03 05 57.2	-0.1
KATZ	Kakaramea	0.53	84	P		Pn	03 05 56.9	-0.4
WNVZ	Wahianoa	0.53	124	P		Pn	03 05 57.1	-0.2
HIZ	Hauiti	0.54	346	⇑P		Pn	03 05 56.4	-0.8
TUVZ	Tukino	0.54	116	P		Pn	03 05 57.3	0.0
MOVZ	Moawhango	0.68	124	⇑P		Pn	03 05 57.4	-0.5
WAZ	Wanganui	0.72	182	⇑P		Pn	03 05 58.2	+0.2
PREZ	Palmer Road	0.74	245	⇑P		Pn	03 05 58.0	-0.1
NEZ	North Egmont	0.76	251	⇑P		Pn	03 05 58.2	-0.1
KHEZ	Kahui Hut	0.83	251	⇓P		Pn	03 05 58.5	-0.1
BHHZ	Black Hill Sta	0.93	120	⇑P		Pn	03 05 58.8	-0.4
MRHZ	Matea Rd	1.10	80	P		Pn	03 05 59.5	-0.9
BKZ	Black Stump Fm	1.15	97	⇓P		Pn	03 06 00.3	-0.5
BKZ					AML	AML	03 06 25.0	
BKZ					AML	AML	03 06 25.4	
KWHZ	Kaweka Forest	1.15	110	P		Pn	03 06 00.9	+0.1
OHWZ	Ohakea	1.19	169	⇑P		Pn	03 06 01.5	+0.5
KRHZ	Kereru	1.21	121	P		Pn	03 06 01.1	0.0
TSZ	Takapari Road	1.25	145	⇑P		Pn	03 06 01.6	0.0
TSZ					AML	AML	03 06 25.2	
TSZ					AML	AML	03 06 25.4	
PNHZ	Pukenui	1.27	134	P		Pn	03 06 01.6	0.0
MCHZ	McNeill Hill	1.36	108	P		Pn	03 06 03.0	+0.6
NMHZ	Naumai	1.39	93	⇓P		Pn	03 06 03.1	+0.4
MUGZ	Murupara	1.47	68	P		Pn	03 06 02.1	-1.3
POWZ	Post Office Ro	1.47	157	P		Pn	03 06 03.0	-0.3
WPHZ	Waipukurau	1.50	134	⇑P		Pn	03 06 03.7	+0.1
DVHZ	Dannevirke	1.54	146	⇑P		Pn	03 06 03.7	-0.2
ARHZ	Aropaoanui	1.55	99	P		Pn	03 06 04.1	+0.1
RAHZ	Arahi	1.61	87	⇓P		Pn	03 06 04.4	-0.2
KAHZ	Kahuranaki	1.62	119	⇓P		Pn	03 06 05.0	+0.3
MRZ	Mangatainoka R	1.68	165	⇑P		Pn	03 06 04.7	-0.5
PRWZ	Pori Road	1.69	155	⇑P		Pn	03 06 05.2	-0.1
CKHZ	Cape Kidnapper	1.71	112	P		Pn	03 06 05.8	+0.3
WHHZ	Waihua	1.72	92	P		Pn	03 06 05.1	-0.5
PXZ	Pawanui	1.74	126	P		Pn	03 06 05.7	0.0
PXZ					AML	AML	03 06 32.8	
PXZ					AML	AML	03 06 32.8	
PXZ					AML	AML	03 06 34.3	
PXZ					AML	AML	03 06 34.4	
PRHZ	Porangahau	1.75	135	P		Pn	03 06 05.9	0.0
OGWZ	Otaki Gorge	1.79	176	⇑P		Pn	03 06 05.9	-0.3
URZ	Urewera	1.81	65	⇓P		Pn	03 06 04.8	-1.6
URZ					AML	AML	03 06 34.4	
URZ					AML	AML	03 06 35.7	
ANWZ	Angora Road	1.81	142	⇑P		Pn	03 06 06.5	0.0
SNGZ	Shannon Statio	1.82	83	⇓P		Pn	03 06 06.1	-0.5
KIW	Kapiti Island	1.83	183	⇑P		Pn	03 06 05.9	-0.7
KIW					AML	AML	03 06 34.3	
TIWZ	Tintock	1.86	159	⇑P		Pn	03 06 06.5	-0.5
TIWZ					AML	AML	03 06 35.1	
TIWZ					AML	AML	03 06 35.7	
BFZ	Birch Farm	1.90	151	⇑P		Pn	03 06 06.8	-0.5
BFZ					AML	AML	03 06 37.1	
BFZ					AML	AML	03 06 37.8	
HOWZ	Holdsworth Sta	1.90	169	⇑P		Pn	03 06 06.7	-0.7
RAGZ	Rawiri	1.94	75	⇓P		Pn	03 06 06.9	-1.0
DUWZ	D'Urville Isla	1.96	205	⇑P		Pn	03 06 07.0	-0.9
CAW	Cannon Point	2.07	179	⇑P		Pn	03 06 08.4	-0.7
CAW					AML	AML	03 06 39.5	
CAW					AML	AML	03 06 39.9	
MWZ	Matawai	2.08	71	⇓P		Pn	03 06 07.9	-1.3
MWZ					AML	AML	03 06 38.7	
MWZ					AML	AML	03 06 39.0	
CPWZ	Castlepoint	2.08	155	P		Pn	03 06 09.1	-0.1
MTW	Mount Morrison	2.15	170	P		Pn	03 06

couple: M_S4.56000×10^{15} NP1:ϕ_S198.00000°, δ18.00000°, λ85.00000°. NP2:ϕ_S23.00000°, δ73.00000°, λ91.00000°.

BJI ***22*** *03:12:48.7, 38.49N×142.17E, h32km, mb4.8/47, mB4.8/28, Ms4.4/17, Ms7 4.1/19*

MOS ***22*** *03:12:51.8±0.9, 38.50N×141.77E, h36km, mb4.8/49, Error ellipse: s-maj=9.8km s-min=5.1km az=106.6*

ISCJB ***22*** *03:12:53.7±0.4, 38.55N±0.03×141.88E±0.04, h52km±3km, mb4.5/93, MS3.6/15, Error ellipse: s-maj=6.2km s-min=3.8km az=31.8*

NEIC ***22*** *03:12:54.2±0.4, 38.50N×141.76E, h41km±3km, mb4.7/39, Error ellipse: s-maj=4.1km s-min=3.2km az=130.0*

JMA ***22*** *03:12:55.3±0.1, 38.53N×141.81E, h50km±1km, M4.4*

JMA Felt II J1.

IDC ***22*** *03:12:56.9±1.8, 38.52N×141.75E, h65km±15km, mb4.1/28, mb1 4.2/34, mb1mx4.1/53, mbtmp4.4/34, MS3.4/16, Ms1 3.4/16, ms1mx3.2/52, Error ellipse: s-maj=13.6km s-min=10.4km az=116.0*

ISC 22 03:12:54.5±0.8, 38°53N±0'.04×141°91E±0'.04, h48km±6km, n263, σ1§15/269, mb4.6/93, MS3.7/16, 21C-8D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
JIO	**Ouri**	**0.45**	**261**	P			**Pn**	**03 13 05.2**	**+0.2**
JIO				S			**Sn**	**03 13 11.9**	**-0.5**
JMK	**Ichinoseki**	**0.69**	**309**	P			**Pn**	**03 13 08.2**	**+0.2**
JMK				S			**Sn**	**03 13 17.3**	**-0.5**
JOU	**Okura**	**0.99**	**261**	P			**Pn**	**03 13 11.9**	**-0.2**
JOU				S			**Sn**	**03 13 24.2**	**-0.8**
JOM	**Ohasama**	**1.06**	**333**	P			**Pn**	**03 13 13.5**	**+0.5**
JMM	**Marumori**	**1.10**	**234**	P			**Pn**	**03 13 13.2**	**-0.3**
JMM				S			**Sn**	**03 13 26.4**	**-1.2**
JYK	**Kaneyama**	**1.27**	**288**	P			**Pn**	**03 13 16.0**	**+0.1**
JRG	**Rokugo**	**1.32**	**312**	P			**Pn**	**03 13 16.7**	**+0.1**
JFK	**Kawauchi**	**1.42**	**216**	P			**Pn**	**03 13 17.9**	**0.0**
JFK				S			**Sn**	**03 13 34.6**	**-0.8**
JYS	**Shirataka**	**1.48**	**259**	P			**Pn**	**03 13 18.9**	**+0.2**
MJAR	**Matsushiro Arr**	**3.54**	**237**	P			**Pn**	**03 13 48.8**	**+1.7**
	19nm,0.3s,baz=36,slow=13,SNR=125								
MJAR				LR			LR	03 15 22.9	
	comp=Z,448nm,21.1s,baz=55,slow=43								
MAJO	**Matsushiro**	**3.55**	**237**	*d*	*i*	P	**Pn**	**03 13 48.6**	**+1.5**
MAJO	**Matsushiro**	**3.55**	**237**		*e*	Pn	**Pn**	**03 13 48.8**	**+1.7**
MAT	**Matsushiro**	**3.55**	**237**			P	**Pn**	**03 13 48.7**	**+1.6**
MAT						S	**Sn**	**03 14 28.9**	**+1.1**
MJB9	**Matsu-Tunnel**	**3.55**	**237**		*e*	Pn	**Pn**	**03 13 48.9**	**+1.8**
ERM	**Erimo**	**3.61**	**15**		*e*	P	**Pn**	**03 13 48.2**	**+0.2**
ERM	**Erimo**	**3.61**	**15**		*e*	Pn	**Pn**	**03 13 48.6**	**+0.7**
ERM					*e*	Sn	**Sn**	**03 14 27.4**	**-2.0**
INU	**Inuyama**	**5.04**	**233**		*e*	Pn	**Pn**	**03 14 10.1**	**+2.5**
ASAJ	**Asahikawa**	**5.61**	**5**			P	**Pn**	**03 14 16.2**	**+0.9**
	4.8nm,0.3s,baz=240,slow=8.1,SNR=19								
ASAJ						S	**Sn**	**03 15 17.8**	**-0.7**
	3.1nm,0.3s,baz=190,slow=11,SNR=2.7								
ASAJ	**Asahikawa**	**5.61**	**5**		*e*	Pn	**Pn**	**03 14 15.4**	**+0.1**
ASAJ						S	**Sn**	**03 15 17.8**	**-0.7**
JHJ	**Hachijo jima 2**	**5.66**	**198**			P	**Pn**	**03 14 16.9**	**+0.7**
	18nm,0.3s,baz=329,slow=22,SNR=9.9								
JHJ						S	**Sn**	**03 15 16.0**	**-3.9**
	28nm,0.3s,baz=38,slow=19,SNR=3.6								
JHJ				LR			LR	03 16 43.7	
	comp=Z,169nm,18.1s,baz=82,slow=40								
YUK	**Yuzh-Kuril'sk**	**6.26**	**27**		*e*	P	**Pn**	**03 14 23.2**	**-1.0**
YUK					*i*	S	**Sn**	**03 15 31.3**	**-3.0**
YUK				pmax		pmax			
	comp=E,61nm,0.3s								
YUK				pmax		pmax			
	comp=Z,110nm,0.3s								
YUK				pmax		pmax			
	comp=N,31nm,0.2s								
YUK				smax		smax			
	comp=N,454nm,0.6s								
YUK				smax		smax			
	comp=E,581nm,0.6s								
SHO	**Shikotan**	**6.50**	**33**		*e*	P	**Pn**	**03 14 27.3**	**-0.3**
SHO					*i*	S	Sn	03 15 35.1	-5.2
SHO				smax		smax			
	comp=E,158nm,0.2s								
SHO				smax		smax			
	comp=N,383nm,0.4s								
KUR	**Kuril'sk**	**8.04**	**32**	P			Pn	03 14 45.5	-3.1
KUR					*e*	S	**Sn**	**03 16 14.3**	**-3.8**
KUR				smax		smax			
	comp=N,40nm,0.4s								
KUR				smax		smax			
	comp=E,49nm,0.4s								
YSS	**Yuzh-Sakhalins**	**8.45**	**4**		*e*	P	**Pn**	**03 14 54.6**	**+0.4**
YSS					*e*	S	**Sn**	**03 16 26.1**	**-2.0**
YSS				pmax		pmax			
	comp=Z,30nm,1.1s								
VLA	**Vladivostok**	**8.88**	**304**		*e*	P	**Pn**	**03 14 58.7**	**-1.4**
USRK	**Ussuriysk Ar.**	**9.37**	**310**			P	**Pn**	**03 15 09.4**	**+2.7**
	comp=Z,2.5nm,0.3s,baz=124,slow=13,SNR=21								
USRK				LR			LR	03 18 34.0	
	comp=Z,250nm,19.7s,baz=131,slow=36								
JNU	**Nakatsue**	**10.45**	**242**			P	**Pn**	**03 15 23.4**	**+1.7**
	comp=Z,1.1nm,0.3s,baz=78,slow=2.5,SNR=8.9								
JNU				LR			LR	03 19 44.0	
	comp=Z,281nm,21.4s,baz=101,slow=39								
JNU	**Nakatsue**	**10.45**	**242**		*e*	Pn	**Pn**	**03 15 20.1**	**-1.6**
MDJ	**Mudanjiang**	**11.05**	**307**			P	**Pn**	**03 15 29.3**	**-0.5**
MDJ						S	**Sn**	**03 17 30.4**	**-1.5**
MDJ				pmax		pmax			
	comp=Z,14nm,1.1s								
MDJ				pmax		pmax			
	comp=Z,180nm,4.1s								
MDJ	**Mudanjiang**	**11.05**	**307**		*e*	Pn	**Pn**	**03 15 27.7**	**-2.1**
	comp=Z,45nm,1.3s								
KSRS	**Korea Array**	**11.09**	**269**			P	Pn	03 15 33.9	+3.4
	comp=Z,1.0nm,0.3s,baz=81,slow=14,SNR=20								
KSRS				LR			LR	03 19 26.4	
	comp=Z,156nm,19.8s,baz=85,slow=35								
KS15	**Wonju Array Si**	**11.12**	**269**		*e*	Pn	Pn	03 15 34.9	+4.0
KSAR	**Wonju Array Be**	**11.12**	**269**			P	Pn	03 15 33.9	+3.0
KSAR	**Wonju Array Be**	**11.12**	**269**			P	Pn	03 15 33.9	+3.0
CBIJ	**Chichi jima**	**11.40**	**179**		*e*	Pn	**Pn**	**03 15 35.3**	**+0.6**
JCJ	**Chichijima**	**11.40**	**179**			P	**Pn**	**03 15 33.3**	**-1.4**
	comp=Z,3.2nm,0.3s,baz=282,slow=20,SNR=4.0								
KLR	**Kul'dur**	**12.96**	**329**			P	**Pn**	**03 15 56.9**	**+1.1**
	comp=Z,0.2nm,0.3s,baz=159,slow=13,SNR=5.0								
KLR				LR			LR	03 21 00.7	
	comp=Z,152nm,18.5s,baz=134,slow=38								
CN2	**Changchun**	**13.47**	**298**		*e*	P	**Pn**	**03 16 04.3**	**+1.4**
NKL	**Nikolayevsk**	**14.65**	**357**		*e*	P	Pn	03 16 14.0	-4.7
PETK	**Petropavlovsk-**	**18.21**	**32**	LR			LR	03 23 46.1	
	comp=Z,45nm,21.4s,baz=232,slow=36								
NJ2	**Nanjing**	**19.87**	**258**		*e*	P	**Pn**	**03 17 22.4**	**-1.2**
NJ2				pmax		pmax			
	comp=Z,19nm,0.5s								
BJI	**Beijing**	**19.96**	**282**			P	**P**	**03 17 22.1**	**-0.5**
MA2	**Magadan**	**21.82**	**12**			P	**P**	**03 17 43.4**	**+1.0**
	comp=Z,10.0nm,0.6s,baz=213,slow=7.8,SNR=12								
MA2				LR			LR	03 26 51.7	
	comp=Z,51nm,19.3s,baz=241,slow=38								
YHNB	**Yeheng**	**22.22**	**238**		*e*	P	**P**	**03 17 46.0**	**-1.1**
	comp=Z,13nm,0.6s								
HHC	**Hu-ho-hao-te**	**23.41**	**285**		*e*	P	**P**	**03 17 57.6**	**-1.7**
HHC						S	**S**	**03 22 04.3**	**-4.8**
HHC						SS	**SnSn**	**03 22 52.3**	**+4.6**
HHC				pmax		pmax			
	comp=Z,24nm,0.9s								
HHC				pmax		pmax			
	comp=Z,68nm,4.1s								
HHC				LR			LR		
	comp=Z,1μm,12.6s								
HHC				LR			LR		
	comp=Z,2μm,11.7s								
HHC				LR			LR		
	comp=Z,1μm,13.4s								
TPUB	**Ta-pu**	**23.66**	**236**		*e*	P	**P**	**03 18 01.3**	**-0.3**
	comp=Z,25nm,0.9s								
WHN	**Wuhan**	**24.00**	**259**		*e*	P	**P**	**03 18 04.1**	**-0.6**
YAK	**Yakutsk**	**24.71**	**346**	LR			LR	03 30 06.5	
	comp=Z,18nm,18.9s,baz=196,slow=42								
YAK	**Yakutsk**	**24.71**	**346**		*e*	P	**P**	**03 18 11.0**	**+0.1**
YAK					*e*			03 18 43.8	
YAK					*e*	S	**S**	**03 22 29.8**	**+0.6**
YAK					*e*	SS	**SnSn**	**03 23 23.2**	**+4.3**
YAK				pmax		pmax			
	comp=Z,29nm,1.0s								
YAK				pmax		pmax			
	comp=N,20nm,1.3s								
YAK				pmax		pmax			
	comp=E,7.0nm,1.1s								
YAK				pmax		pmax			
	comp=Z,16nm,0.6s								
YAK				pmax		pmax			
	comp=N,4.0nm,0.6s								
YAK				pmax		pmax			
	comp=E,9.0nm,0.7s								
YAK				smax		smax			
	comp=E,38nm,2.2s								
YAK				smax		smax			
	comp=N,53nm,2.5s								
SEY	**Seymchan**	**25.25**	**11**	P			**P**	**03 18 17.4**	**+1.6**
	comp=N,15nm,1.0s,baz=196,slow=6.0,SNR=26								
SEY	**Seymchan**	**25.25**	**11**		*i*	P	**P**	**03 18 16.9**	**+1.1**
ULN	**Ulaanbaatar**	**26.88**	**302**		*i*	P	**P**	**03 18 29.2**	**-1.7**
ULN				pmax		pmax			
	comp=Z,9.0nm,1.2s								
ULN	**Ulaanbaatar**	**26.88**	**302**		*e*	P	**P**	**03 18 30.8**	**-0.1**
	comp=Z,23nm,1.7s								
SONA1	**Songino Array**	**27.31**	**301**		*e*	P	**P**	**03 18 33.7**	**-1.0**
SONM	**Songino Array**	**27.31**	**301**			P	**P**	**03 18 34.0**	**-0.8**
	comp=Z,2.5nm,0.7s,baz=111,slow=8.4,SNR=14								
SONM				PcP			**PcP**	**03 21 53.4**	**+0.2**
	comp=Z,0.8nm,0.5s,baz=153,slow=3.4,SNR=4.4								
ENH	**Enshi**	**27.88**	**263**		*e*	P	**P**	**03 18 38.6**	**-1.3**
	comp=Z,62nm,0.8s								
H11N2	**WAKE ISLAND Hy**	**28.61**	**124**	T			T	03 49 05.1	
	baz=316,slow=75,SNR=3095								
H11N1	**WAKE ISLAND Hy**	**28.62**	**124**	T			T	03 49 05.9	
	baz=316,slow=75,SNR=3444								
H11N3	**WAKE ISLAND Hy**	**28.63**	**124**	T			T	03 49 06.4	
	baz=316,slow=75,SNR=2905								
H11S1	**WAKE ISLAND Hy**	**29.38**	**126**	T			T	03 50 01.8	
	baz=318,slow=76,SNR=815								
H11S3	**WAKE ISLAND Hy**	**29.38**	**126**	T			T	03 50 01.9	
	baz=318,slow=76,SNR=1088								
H11S2	**WAKE ISLAND Hy**	**29.39**	**126**	T			T	03 50 03.0	
	baz=318,slow=76,SNR=865								
TLY	**Talaya**	**29.68**	**309**			P	**P**	**03 18 56.2**	**+0.6**
	comp=Z,1.8nm,0.4s,baz=353,slow=2.1,SNR=5.0								
TLY	**Talaya**	**29.68**	**309**		*e*	P	**P**	**03 18 56.0**	**+0.3**
TLY				pmax		pmax			
	comp=Z,3.0nm,0.7s								
TLY				MLR		MLR			
	comp=Z,77nm,20.0s								
TLY	**Talaya**	**29.68**	**309**		*e*	P	**P**	**03 18 55.9**	**+0.3**
	comp=Z,5.0nm,0.9s								
ZAK	**Zakamensk**	**29.68**	**306**		*e*	P	**P**	**03 18 55.1**	**-0.7**
ZAK				pmax		pmax			
	comp=Z,4.0nm,1.3s								
LZH	**Lanzhou**	**30.23**	**277**		*e*	P	**P**	**03 19 00.0**	**-0.9**
LZH						pP	pP	03 19 09.6	-3.8
LZH						sP	sP	03 19 13.5	-5.5
LZH						PP	**PnPn**	**03 19 58.3**	**-1.6**
LZH				pmax		pmax			
	comp=Z,23nm,1.0s								
LZH				pmax		pmax			
	comp=Z,76nm,5.3s								
LZH				LR		LR			
	comp=Z,340nm,12.7s								
LZH				LR		LR			
	comp=Z,350nm,13.0s								
LZH				LR		LR			
	comp=Z,420nm,16.5s								
GYA	**Guiyang**	**31.88**	**258**		*e*	P	**P**	**03 19 16.8**	**+1.4**
GYA				pmax		pmax			
	comp=Z,10.0nm,0.8s								
CD2	**Chengdu**	**32.09**	**268**			P	**P**	**03 19 15.6**	**-1.5**
BILL	**Bilibino**	**32.49**	**17**		*e*	P	**P**	**03 19 21.4**	**+1.3**
BILL					*e*			03 19 31.8	
BILL								03 20 31.0	
BILL					*e*			03 22 07.6	
BILL				pmax		pmax			
	comp=Z,2.0nm,0.6s								
BILL	**Bilibino**	**32.49**	**17**		*e*	P	**P**	**03 19 20.6**	**+0.5**
GTA	**Gaotai**	**32.53**	**285**		*e*	P	**P**	**03 19 21.9**	**+0.9**
GTA						pP	pP	03 19 31.1	-2.4
GTA						sP	sP	03 19 35.4	-3.8
GTA						PcP	**PcP**	**03 22 08.3**	**+1.5**
GTA						S	**S**	**03 24 32.3**	**-0.7**
GTA						sS	sS	03 24 46.9	-7.1
GTA				pmax		pmax			
	comp=Z,5.0nm,1.0s								
GTA				pmax		pmax			
	comp=Z,98nm,5.7s								
GTA				LR		LR			
	comp=Z,110nm,11.9s								
GTA				LR		LR			
	comp=Z,180nm,19.2s								
GTA				LR		LR			
	comp=Z,150nm,14.7s								
TIXI	**Tiksi**	**33.86**	**353**			P	**P**	**03 19 32.0**	**-0.1**
	comp=Z,2.2nm,0.4s,baz=128,slow=3.9,SNR=3.9								
TIXI	**Tiksi**	**33.86**	**353**		*ce*	P	**P**	**03 19 30.8**	**-1.2**
TIXI				pmax		pmax			
	comp=Z,8.0nm,2.5s								
KMI	**Kunming**	**35.59**	**260**			P	**P**	**03 19 48.4**	**+0.6**
KMI				pmax		pmax			
	comp=Z,26nm,0.6s								
KMI				pmax		pmax			
	comp=Z,97nm,5.2s								
KRAR	**Krasnoyarsk**	**36.68**	**315**		*e*	P	**P**	**03 19 55.3**	**-1.1**
KRAR				pmax		pmax			
	comp=Z,18nm,1.0s								
WMQ	**Urumqi**	**40.54**	**295**			P	**P**	**03 20 29.4**	**+0.3**
WMQ						pP	pP	03 20 39.3	-2.5
WMQ						sP	sP	03 20 43.3	-4.1
WMQ				pmax		pmax			
	comp=Z,19nm,0.6s								
WMQ				pmax		pmax			
	comp=Z,56nm,4.2s								
ZAA0	**Zalesovo Array**	**41.22**	**311**		*e*	P	**P**	**03 20 34.1**	**-0.3**
ZALV	**Zalesovo Beam**	**41.22**	**311**			P	**P**	**03 20 34.4**	**0.0**
	comp=Z,7.7nm,0.5s,baz=90,slow=6.9,SNR=30								
ZALV				PcP			**PcP**	**03 22 32.5**	**0.0**
	comp=Z,3.0nm,0.5s,baz=100,slow=3.0,SNR=6.9								
CHTO	**Chiang Mai**	**42.05**	**255**		*e*	P	P	03 20 51.0	+9.3
CHTO	**Chiang Mai**	**42.05**	**255**		*e*	pP	pP	03 20 51.0	-3.5
NRIK	**Noril'sk**	**42.09**	**335**			P	**P**	**03 20 41.1**	**-0.2**
	comp=Z,3.2nm,0.5s,baz=131,slow=12,SNR=5.1								
NRIK				LR			LR	03 39 15.4	
	comp=Z,105nm,18.4s,baz=107,slow=38								
NVS	**Novosibirsk**	**42.11**	**313**		*e*	P	**P**	**03 20 41.2**	**-0.5**
NVS				pmax		pmax			
	comp=Z,14nm,0.9s								
NVS				pmax		pmax			
	comp=E,11nm,1.1s								
CMAR	**Chiang Mai Arr**	**42.27**	**254**			P	**P**	**03 20 43.6**	**+0.2**
	comp=E,0.9nm,0.4s,baz=41,slow=8.4,SNR=3.8								
CMAR	**Chiang Mai Arr**	**42.27**	**254**			P	**P**	**03 20 43.6**	**+0.2**
CMAR				pmax		pmax			
	comp=Z,2.0nm,0.4s								
MK01	**Makanchi Array**	**43.67**	**301**		*e*	P	**P**	**03 20 54.1**	**-0.4**
MK31	**Makanchi Array**	**43.68**	**301**		*e*	P	**P**	**03 20 54.5**	**-0.1**
MK31	**Makanchi Array**	**43.68**	**301**		*e*	P	**P**	**03 20 54.5**	**-0.1**
MKAR	**Makanchi Array**	**43.68**	**301**			P	**P**	**03 20 54.4**	**-0.1**
	comp=Z,9.8nm,0.9s,baz=83,slow=9.9,SNR=51								
MKAR				LR			LR	03 39 04.3	
	comp=Z,43nm,21.0s,baz=34,slow=36								
MAKZ	**Makanchi**	**43.88**	**301**		*e*	P	**P**	**03 20 56.0**	**-0.2**
MAKZ				pmax		pmax			
	comp=Z,9.0nm,0.8s								
MAKZ	**Makanchi**	**43.88**	**301**		*e*	P	**P**	**03 20 56.0**	**-0.2**
	comp=Z,8.7nm,0.8s								
KURK	**Kurchatov**	**45.34**	**307**		*e*	P	**P**	**03 21 07.4**	**-0.3**
KURK				pmax		pmax			
	comp=Z,39nm,0.7s								
KURK	**Kurchatov**	**45.34**	**307**		*e*	P	**P**	**03 21 07.4**	**-0.3**
	comp=Z,39nm,0.7s								
SEW	**Seward**	**47.16**	**40**		*e*	P	**P**	**03 21 22.0**	**+0.2**
	comp=Z,53nm,1.5s								
GUN	**Gumba**	**47.41**	**275**		*e*	P	**P**	**03 21 24.8**	**+0.1**
	comp=Z,63nm,0.8s								
KKN	**Kakani**	**47.94**	**275**		*e*	P	**P**	**03 21 28.9**	**+0.3**
	comp=Z,55nm,0.7s								
PKIN	**Phulchoki**	**47.95**	**274**		*e*	P	**P**	**03 21 28.3**	**-0.5**
	comp=Z,13nm,0.5s								
ILAR	**Eielson Array**	**48.03**	**33**			P	**P**	**03 21 29.6**	**+1.1**
	comp=Z,1.5nm,0.8s,baz=266,slow=6.1,SNR=19								
ILB	**Eielson Array**	**48.03**	**33**		*e*	P	**P**	**03 21 30.0**	**+1.4**
DMN	**Daman**	**48.16**	**275**		*e*	P	**P**	**03 21 29.9**	**-0.5**
	comp=Z,20nm,0.7s								
GKN	**Gorkha**	**48.34**	**275**		*e*	P	**P**	**03 21 31.5**	**-0.2**
	comp=Z,68nm,1.1s								
KOLN	**Koldanda**	**49.26**	**276**		*e*	P	**P**	**03 21 38.7**	**-0.1**
	comp=Z,22nm,0.7s								
TKM2	**Tokmak 2**	**49.28**	**297**		*e*	P	**P**	**03 21 39.2**	**+0.4**
TKM2				pmax		pmax			
	comp=Z,14nm,0.9s								
TKM2	**Tokmak 2**	**49.28**	**297**		*e*	P	**P**	**03 21 39.2**	**+0.4**
	comp=Z,14nm,0.9s								
DOT	**Dot Lake**	**49.35**	**34**		*e*	P	**P**	**03 21 39.8**	**+1.0**
	comp=Z,7.4nm,1.0s								
PYUN	**Piuthan**	**49.58**	**276**		*e*	P	**P**	**03 21 41.2**	**0.0**
	comp=Z,83nm,1.0s								
BVAR	**Borovoye Array**	**49.87**	**311**			P	**P**	**03 21 42.6**	**-0.2**
	comp=Z,3.9nm,0.5s,baz=74,slow=7.0,SNR=18								
BVAR						PcP	**PcP**	**03 23 02.2**	**-0.5**
KULM	**Kulim**	**49.91**	**239**		*e*	P	**P**	**03 21 43.1**	**-0.4**
	comp=Z,7.3nm,0.8s								
BRVK	**Borovoye**	**49.92**	**312**		*c*	*i* P	**P**	**03 21 42.4**	**-0.8**
BRVK				pmax		pmax			
	comp=Z,3.0nm,0.6s								
BRVK	**Borovoye**	**49.92**	**312**		*e*	P	**P**	**03 21 43.1**	**-0.1**
	comp=Z,7.7nm,0.9s								
FRU	**Bishkek**	**49.99**	**298**		*e*	P	P	03 22 00.0	+16
AAK	**Ala-Archa**	**50.14**	**297**		*c*	*i* P	**P**	**03 21 44.9**	**-0.3**
AAK				pmax		pmax			
	comp=Z,6.0nm,0.9s								
AAK	**Ala-Archa**	**50.14**	**297**		*e*	P	**P**	**03 21 45.0**	**-0.3**
	comp=Z,4.9nm,1.1s								
KSH	**Kashi**	**50.17**	**293**	P			P	03 21 49.9	+4.5
KSH					*es*	P	sP	03 22 04.4	+0.3
KSH				PcS			**PcS**	**03 27 04.3**	**+2.9**
KSH				S			S	03 28 59.3	+5.3
KSH				ScS			**ScS**	**03 31 35.5**	**+2.9**
KSH				pmax		pmax			
	comp=Z,66nm,5.5s								
KSH				LR			LR		
	comp=Z,210nm,11.9s								
KSH				LR			LR		
	comp=Z,68nm,4.3s								
KSH				LR			LR		
	comp=Z,150nm,5.3s								
IPM	**Ipoh**	**50.26**	**238**		*e*	P	**P**	**03 21 46.3**	**+0.1**
	comp=Z,14nm,0.7s								
HNR	**Honiara**	**50.59**	**157**	LR			LR	03 41 04.2	
	comp=Z,52nm,19.2s,baz=333,slow=33								
EKS2	**Erkin-Say**	**50.63**	**298**		*e*	P	**P**	**03 21 49.0**	**+0.1**
EKS2				pmax		pmax			
	comp=Z,4.0nm,0.8s								
EKS2	**Erkin-Say**	**50.63**	**298**		*e*	P	**P**	**03 21 49.0**	**+0.1**
	comp=Z,3.9nm,0.8s								
ZRNK	**Zerenda**	**50.70**	**312**		*e*	P	**P**	**03 21 49.0**	**-0.1**
ZRNK				pmax		pmax			
	comp=Z,8.0nm,0.8s								
ZRNK	**Zerenda**	**50.70**	**312**		*e*	P	**P**	**03 21 49.0**	**-0.1**
	comp=Z,7.9nm,0.8s								
KKAR	**Karatay Array**	**52.73**	**299**		*e*	P	**P**	**03 22 04.3**	**-0.1**
KKAR				pmax		pmax			
	comp=Z,9.0nm,0.8s								
KKAR	**Karatay Array**	**52.73**	**299**		*e*	P	**P**	**03 22 04.3**	**-0.1**
	comp=Z,8.5nm,0.8s								
INK	**Inuvik**	**52.88**	**28**			P	**P**	**03 22 06.5**	**+1.3**
	comp=Z,1.7nm,0.5s,baz=302,slow=6.7,SNR=18								
INK	**Inuvik**	**52.88**	**28**		*e*	P	**P**	**03 22 06.4**	**+1.3**
INK				pmax		pmax			
	comp=Z,4.0nm,0.8s								
INK	**Inuvik**	**52.88**	**28**		*e*	P	**P**	**03 22 06.4**	**+1.3**
	comp=Z,4.4nm,0.8s								
PSI	**Prapat**	**52.90**	**239**			P	**P**	**03 22 06.1**	**+0.1**
	comp=Z,7.5nm,0.7s,baz=21,slow=5.0,SNR=10								
SVE	**Sverdlovsk**	**54.30**	**318**		*e*	P	**P**	**03 22 15.3**	**-0.3**
SVE				pmax		pmax			
	comp=Z,20nm,0.9s								
ARU	**Arti**	**55.51**	**318**		*c*	*i* P	**P**	**03 22 24.0**	**-0.4**
ARU								03 23 23.0	
ARU						S	**S**	**03 30 07.2**	**+1.2**
ARU						SS	**SS**	**03 33 47.3**	**-3.4**
ARU				pmax		pmax			
	comp=Z,21nm,1.0s								
ARU	**Arti**	**55.51**	**318**		*e*	P	**P**	**03 22 24.3**	**-0.1**
	comp=Z,28nm,1.2s								
ABKAR	**Akbulak array**	**57.29**	**310**		*e*	P	**P**	**03 22 36.6**	**-0.6**
	comp=Z,10nm,0.7s								
WRAB	**Tennant Creek**	**58.58**	**188**		*e*	P	**P**	**03 22 45.6**	**-0.9**
WRAB				pmax		pmax			
	comp=Z,6.0nm,1.0s								
WRAB	**Tennant Creek**	**58.58**	**188**		*e*	P	**P**	**03 22 45.5**	**-0.9**
	comp=Z,6.3nm,1.0s								
WRA	**Warramunga Arr**	**58.59**	**188**			P	**P**	**03 22 46.2**	**-0.3**
	comp=Z,4.7nm,0.8s,baz=6.0,slow=7.3,SNR=21								
RES	**Resolute Bay**	**61.06**	**15**		*e*	P	**P**	**03 23 03.4**	**+0.6**
RES				pmax		pmax			
	comp=Z,3.0nm,0.8s								
RES	**Resolute Bay**	**61.06**	**15**		*e*	P	**P**	**03 23 03.4**	**+0.6**
	comp=Z,2.9nm,0.8s								
AS01	**Alice Springs**	**62.31**	**188**		*e*	P	**P**	**03 23 11.9**	**0.0**
ASAR	**Alice Springs**	**62.32**	**188**			P	**P**	**03 23 12.1**	**+0.1**
	comp=Z,1.7nm,0.7s,baz=11,slow=5.2,SNR=19								
YKA	**Yellowknife Ar**	**62.33**	**31**			P

	comp=Z,17nm,1.0s								
HFS	**Hagfors**	**72.89**	**336**	LR		LR		03 59 15.1	
	comp=Z,70nm,21.0s,baz=22,slow=38								
NC204	**NORSAR Array S**	**72.91**	**338**	*e*P		**P**		**03 24 18.7**	**+0.3**
NB201	**NORSAR Array S**	**72.93**	**337**	*e*P		**P**		**03 24 18.8**	**+0.3**
NB2	**NORSAR Subarra**	**72.97**	**337**	P		**P**		**03 24 18.3**	**-0.4**
	comp=Z,6.2nm,0.7s,baz=38,slow=6.2								
NOA	**NORSAR Array B**	**72.97**	**337**	P		**P**		**03 24 18.6**	**-0.1**
	comp=Z,7.5nm,0.9s,baz=38,slow=5.9,SNR=34								
NBO02	**NORSAR Array S**	**73.06**	**337**	*e*P		**P**		**03 24 19.2**	**0.0**
NBO00	**NORSAR Array S**	**73.10**	**337**	*e*P		**P**		**03 24 19.8**	**+0.3**
AKASG	**Malin Array Be**	**73.36**	**322**	P		**P**		**03 24 20.6**	**-0.5**
	comp=Z,3.2nm,0.5s,baz=45,slow=6.5,SNR=24								
KIEV	**Kiev**	**73.37**	**322**	*e*P		**P**		**03 24 20.3**	**-0.9**
KIEV				pmax		pmax			
	comp=Z,7.0nm,0.9s								
KIEV	**Kiev**	**73.37**	**322**	*e*P		**P**		**03 24 20.8**	**-0.4**
	comp=Z,8.3nm,0.9s								
AK11	**Malin Array Si**	**73.40**	**322**	*e*P		**P**		**03 24 21.1**	**-0.3**
NVAR	**Mina Array Bea**	**73.79**	**54**	P		**P**		**03 24 25.5**	**+1.3**
	comp=Z,0.2nm,0.3s,baz=282,slow=4.5,SNR=3.1								
KLNR	**Kaliningrad**	**74.65**	**329**	*e*P		**P**		**03 24 27.6**	**-0.9**
KLNR				pmax		pmax			
	comp=Z,12nm,1.0s								
H17A	**Grant Village**	**74.74**	**45**	*e*P		**P**		**03 24 32.2**	**+2.6**
	comp=Z,3.1nm,0.9s								
SORM	**Soroca**	**75.49**	**321**	⇑*i*P		**P**		**03 24 33.0**	**-0.5**
SORM	**Soroca**	**75.49**	**321**	⇑P		**P**		**03 24 33.0**	**-0.5**
R11A	**Troy Canyon, C**	**75.54**	**52**	*e*P		**P**		**03 24 34.8**	**+0.5**
	comp=Z,1.1nm,0.9s								
BSD	**Bornholm Skovb**	**76.32**	**332**	*i* P		**P**		**03 24 38.0**	**-0.1**
	comp=Z,12nm,1.0s								
BW06	**Boulder Array**	**76.34**	**46**	*e*P		**P**		**03 24 39.7**	**+0.9**
PD31	**Pinedale Array**	**76.34**	**46**	*e*P		**P**		**03 24 40.2**	**+1.4**
PDAR	**Pinedale Array**	**76.34**	**46**	P		**P**		**03 24 40.1**	**+1.3**
	comp=Z,1.2nm,0.7s,baz=281,slow=1.6,SNR=11								
KWP	**Kalwaria Pacla**	**77.15**	**324**	⇑*i*P		**P**		**03 24 44.2**	**+1.3**
KWP	**Kalwaria Pacla**	**77.15**	**324**	⇑P		**P**		**03 24 44.2**	**+1.3**
BUR08	**Bucovina Ar. S**	**77.37**	**322**	*e*P		**P**		**03 24 44.9**	**+0.5**
BURAR	**Bucovina Array**	**77.39**	**322**	⇑*i*P		**P**		**03 24 44.6**	**+0.2**
BURAR	**Bucovina Array**	**77.39**	**322**	⇑P		**P**		**03 24 44.6**	**+0.2**
TESR	**Tescani**	**77.44**	**320**	⇓*i*P		**P**		**03 24 44.5**	**-0.1**
CFR	**Carcaliu**	**77.59**	**318**	⇓*i*P		**P**		**03 24 45.3**	**-0.1**
CFR	**Carcaliu**	**77.59**	**318**	⇓P		**P**		**03 24 45.3**	**-0.1**
VRI	**Vrincioaia**	**77.84**	**320**	⇑*i*P		**P**		**03 24 47.9**	**+1.0**
VRI	**Vrincioaia**	**77.84**	**320**	⇑P		**P**		**03 24 47.9**	**+1.0**
KOLS	**Kolnicke sedl**	**77.85**	**324**	*e*P		**P**		**03 24 47.6**	**+0.8**
STHS	**Stebnicka Huta**	**77.97**	**325**	*e*P		**P**		**03 24 48.0**	**+0.5**
OJC	**Ojcow**	**78.02**	**326**	*e*P		**P**		**03 24 47.9**	**+0.1**
OJC	**Ojcow**	**78.02**	**326**	*e*P		**P**		**03 24 47.9**	**+0.1**
SRU	**San Rafael Swe**	**78.14**	**49**	*e*P		**P**		**03 24 50.3**	**+1.4**
SRU				pmax		pmax			
	comp=Z,3.0nm,0.8s								
SRU	**San Rafael Swe**	**78.14**	**49**	*e*P		**P**		**03 24 50.3**	**+1.4**
	comp=Z,3.3nm,0.8s								
BRTR	**Keskin Array B**	**78.16**	**312**	P		**P**		**03 24 48.8**	**-0.2**
	comp=Z,1.1nm,0.5s,baz=58,slow=3.3,SNR=12								
NIE	**Niedzica**	**78.39**	**325**	*e*P		**P**		**03 24 50.8**	**+0.9**
NIE	**Niedzica**	**78.39**	**325**	*e*P		**P**		**03 24 50.8**	**+0.9**
MSAB	**Monastry St. A**	**78.49**	**318**	⇑*i*P		**P**		**03 24 50.0**	**-0.5**
BR231	**Keskin MP Arra**	**78.59**	**312**	*e*P		**P**		**03 24 49.5**	**-1.8**
LANS	**Liptovska Anna**	**78.95**	**326**	*e*P		**P**		**03 24 54.3**	**+1.3**
KECS	**Kecovo**	**78.99**	**325**	*e*P		**P**		**03 24 56.2**	**+3.1**
KSP	**Ksiaz**	**79.04**	**328**	*e*P		**P**		**03 24 54.3**	**+0.9**
KSP	**Ksiaz**	**79.04**	**328**	*e*P		**P**		**03 24 54.4**	**+1.0**
ARR	**Arges**	**79.25**	**320**	⇑*i*P		**P**		**03 24 56.6**	**+1.9**
MORC	**Moravsky Berou**	**79.33**	**327**	⇑*i*P		**P**		**03 24 55.4**	**+0.4**
MORC	**Moravsky Berou**	**79.33**	**327**	⇑P		**P**		**03 24 55.4**	**+0.4**
MORC	**Moravsky Berou**	**79.33**	**327**	*e*P		**P**		**03 24 55.2**	**+0.2**
	comp=Z,20nm,0.9s								
DPC	**Dobruska-Polom**	**79.41**	**328**	*e*P		**P**		**03 24 56.2**	**+0.8**
DPC	**Dobruska-Polom**	**79.41**	**328**	*e*P		**P**		**03 24 56.2**	**+0.8**
KRLC	**Kraliky**	**79.42**	**328**	*e*P		**P**		**03 24 56.0**	**+0.5**
KRLC	**Kraliky**	**79.42**	**328**	*e*P		**P**		**03 24 56.0**	**+0.5**
PSZ	**Piszkesteto**	**79.67**	**325**	*e*P		**P**		**03 24 56.6**	**-0.4**
PSZ				pmax		pmax			
	comp=Z,6.0nm,1.0s								
PSZ	**Piszkesteto**	**79.67**	**325**	*e*P		**P**		**03 24 56.6**	**-0.4**
	comp=Z,6.0nm,1.0s								
VYHS	**Vyhne**	**79.72**	**325**	*e*P		**P**		**03 24 57.7**	**+0.5**
BRG	**Berggiesshubel**	**79.97**	**330**	*e*P		**P**		**03 24 58.6**	**+0.2**
	comp=Z,3.1nm,0.8s								
BRG	**Berggiesshubel**	**79.97**	**330**	*e*P		**P**		**03 24 58.6**	**+0.2**
BRG				pmax		pmax			
	comp=Z,3.0nm,0.8s								
CLL	**Collm**	**80.00**	**330**	⇑*i*P		**P**		**03 24 58.4**	**-0.1**
	comp=Z,6.0nm,0.8s								
CLL	**Collm**	**80.00**	**330**	⇑*i*P		**P**		**03 24 58.4**	**-0.1**
CLL				pmax		pmax			
	comp=Z,6.0nm,0.8s								
CLL	**Collm**	**80.00**	**330**	*e*P		**P**		**03 24 58.5**	**-0.1**
	comp=Z,7.6nm,0.8s								
VRAC	**Vranov**	**80.08**	**327**	LR		LR		04 02 31.2	
	comp=Z,30nm,18.4s,baz=162,slow=37								
VRAC	**Vranov**	**80.08**	**327**	⇑*i*P		**P**		**03 24 59.9**	**+0.8**
VRAC	**Vranov**	**80.08**	**327**	⇑P		**P**		**03 24 59.9**	**+0.8**
PRU	**Pruhonice**	**80.42**	**329**	*e*P		**P**		**03 25 01.5**	**+0.7**
PRU	**Pruhonice**	**80.42**	**329**	*e*P		**P**		**03 25 01.5**	**+0.7**
ISCO	**Idaho Springs**	**80.53**	**46**	*e*P		**P**		**03 25 02.9**	**+0.8**
ISCO	**Idaho Springs**	**80.53**	**46**	*e*P		**P**		**03 25 02.9**	**+0.8**
BZS	**Buzias**	**80.55**	**322**	⇓*i*P		**P**		**03 25 01.4**	**-0.2**
BZS	**Buzias**	**80.55**	**322**	⇓P		**P**		**03 25 01.4**	**-0.2**
NKC	**Novy Kostel**	**81.06**	**330**	*e*P		**P**		**03 25 05.3**	**+1.0**
NKC	**Novy Kostel**	**81.06**	**330**	*e*P		**P**		**03 25 05.3**	**+1.0**
CONA	**Conrad Observa**	**81.45**	**327**	*i* P		**P**		**03 25 07.5**	**+0.9**
	comp=Z,1.7nm,0.5s,SNR=5.4								
KHC	**Kasperske Hory**	**81.48**	**329**	*e*P		**P**		**03 25 06.9**	**+0.3**
KHC	**Kasperske Hory**	**81.48**	**329**	*e*P		**P**		**03 25 06.2**	**-0.4**
KHC				pmax		pmax			
	comp=Z,2.0nm,0.8s								
KHC	**Kasperske Hory**	**81.48**	**329**	*e*P		**P**		**03 25 06.2**	**-0.4**
	comp=Z,1.8nm,0.8s								
GEC2	**GERESS Array S**	**81.65**	**328**	*e*P		**P**		**03 25 07.9**	**+0.3**
GEC2				pmax		pmax			
	comp=Z,4.0nm,1.1s								
GEC2	**GERESS Array S**	**81.65**	**328**	*e*P		**P**		**03 25 07.9**	**+0.3**
	comp=Z,3.8nm,1.1s								
GERES	**GERESS Array B**	**81.65**	**328**	P		**P**		**03 25 07.5**	**-0.1**
	comp=Z,1.6nm,0.6s,baz=41,slow=6.0,SNR=17								
GERES				LR		LR		04 03 41.5	
	comp=Z,64nm,21.0s,baz=56,slow=37								
GEA0	**GERESS Array S**	**81.66**	**328**	*e*P		**P**		**03 25 07.3**	**-0.3**
GRFO	**Grafenberg**	**81.98**	**330**	*e*P		**P**		**03 25 10.2**	**+1.0**
GRFO				pmax		pmax			
	comp=Z,7.0nm,0.8s								
GRFO	**Grafenberg**	**81.98**	**330**	*e*P		**P**		**03 25 10.2**	**+1.0**
	comp=Z,6.6nm,0.8s								
SOKA	**Soboth**	**82.78**	**326**	*i* P		**P**		**03 25 13.7**	**+0.2**
	comp=Z,2.4nm,0.5s,SNR=6.5								
KBA	**Koelnbreinsper**	**83.19**	**327**	*i* P		**P**		**03 25 16.4**	**+0.7**
	comp=Z,2.1nm,0.4s								
MYKA	**Terra Mystica**	**83.41**	**327**	*i* P		**P**		**03 25 16.1**	**-0.6**
SCHQ	**Schefferville**	**83.80**	**16**	P		**P**		**03 25 18.8**	**+0.3**
	comp=Z,2.7nm,0.9s,baz=344,slow=7.4,SNR=3.3								
ABTA	**Abfaltersbach**	**83.80**	**328**	*i* P		**P**		**03 25 18.4**	**-0.4**
	comp=Z,0.7nm,0.3s								
MOTA	**Moosalm**	**83.90**	**329**	*i* P		**P**		**03 25 19.1**	**-0.3**
RETA	**Reutte**	**83.93**	**329**	*i* P		**P**		**03 25 19.6**	**+0.2**
	comp=Z,3.9nm,0.6s,SNR=5.7								
BFO	**Black Forest**	**84.19**	**331**	*i* P		**P**		**03 25 21.4**	**+0.7**
BFO	**Black Forest**	**84.19**	**331**	*e*P		**P**		**03 25 20.7**	**0.0**
	comp=Z,8.6nm,1.0s								
FETA	**Feichten**	**84.32**	**329**	*i* P		**P**		**03 25 21.5**	**+0.1**
	comp=Z,3.2nm,0.8s								
DAVA	**Damuels**	**84.44**	**329**	*i* P		**P**		**03 25 22.2**	**+0.1**
	comp=Z,6.9nm,0.9s								
FUORN	**Ofenpass-Fuorn**	**84.83**	**329**	*e*P		**P**		**03 25 24.5**	**+0.3**
	comp=Z,11nm,0.8s								
TX31	**Lajitas Ar. Si**	**88.90**	**53**	*e*P		**P**		**03 25 45.3**	**+1.2**
TXAR	**Lajitas Array**	**88.90**	**53**	P		**P**		**03 25 45.6**	**+1.5**
	comp=Z,0.7nm,0.7s,baz=298,slow=3.1,SNR=8.2								
H06S1	**SOCORRO T**	**91.20**	**65**	T		T		05 08 28.0	
	SNR=13								
SAML	**Samuel**	**142.91**	**44**	*e*PKPdf		**PKPdf**		**03 32 24.0**	**+0.6**
LPAZ	**La Paz**	**145.59**	**58**	PKPbc		**PKPdf**		**03 32 29.4**	**+0.7**
	comp=Z,3.2nm,0.8s,baz=22,slow=7.5,SNR=17								

NIED ***22*** *03:17:00, 37.00N×140.60E, h5km, Mw3.8 Best double couple: M₀4.86000×10¹⁴ NP1:φs33.00000°, δ30.00000°, λ-134.00000°. NP2:φs262.00000°, δ69.00000°, λ-68.00000°.*

IDC ***22*** *03:17:48.8±0.7, 36.85N×140.53E, h0km, mb3.7/11, mb1 4.0/11, mb1mx3.7/49, mbtmp3.7/11, Error ellipse: s-maj=21.7km s-min=18.1km az=127.0*

ISCJB ***22*** *03:17:49.5±0.5, 36.94N±0.03×140.64E±0.05, h13km±4km, mb3.7/11, Error ellipse: s-maj=6.9km s-min=3.9km az=24.0*

JMA ***22*** *03:17:49.8, 36.96N×140.59E, h7km±1km, M3.8 Broadband fault plane solution: P waves. NP1: φs29.00000°, δ49.00000°, λ-111.00000°. NP2: φs240.00000°, δ45.00000°, λ-67.00000°. Principal axes: T Plg2.0000°, Azm134.0000°; N Plg16.0000°, Azm43.0000°; P Plg74.0000°, Azm231.0000°;*

JMA Felt I J1.

ISC 22 03:17:49.8±1.1, 36.96N±0.03×140.57E±0.04, h5km±7km, n28, σ0965/32, mb3.6/11, 6C-1D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.23**	**51**	⇓P		**Pg**		**03 17 54.4**	**0.0**
ONAJ				S		**Sg**		**03 17 57.7**	**+0.2**
JHO	**Hitachi**	**0.34**	**180**	⇑P		**Pg**		**03 17 56.6**	**+0.1**
JHO				S		**Sg**		**03 18 01.3**	**+0.3**
JFK	**Kawauchi**	**0.48**	**31**	⇑P		**Pg**		**03 17 58.7**	**-0.3**
JFK				S		**Sg**		**03 18 05.2**	**-0.1**
JSB	**Shiboa**	**0.52**	**272**	⇑P		**Pb**		**03 18 01.0**	**-0.5**
JSB				S		**Sb**		**03 18 08.7**	**-0.6**
JFT	**Otama**	**0.59**	**342**	⇑P		**Pg**		**03 18 01.5**	**+0.3**
JFT				S		**Sg**		**03 18 09.8**	**+0.9**
JYT	**Yasato**	**0.79**	**203**	P		**Pg**		**03 18 04.8**	**-0.1**
JYT				S		**Sg**		**03 18 15.2**	**+0.1**
JFY	**Yanaizu**	**0.82**	**303**	⇑P		**Pg**		**03 18 05.7**	**0.0**
JFY				S		**Sg**		**03 18 16.7**	**+0.3**
JMM	**Marumori**	**0.93**	**11**	⇑P		**Pg**		**03 18 06.8**	**-0.8**
JMM				S		**Sg**		**03 18 19.2**	**-0.4**
MJAR	**Matsushiro Arr**	**1.94**	**258**	Pn		**Pn**		**03 18 23.8**	**+0.3**
	39nm,0.3s,baz=82,slow=15,SNR=42								
MJAR				Sn		**Sn**		**03 18 48.4**	**+0.1**
	19nm,0.3s,baz=93,slow=15,SNR=4.8								
MAT	**Matsushiro**	**1.94**	**258**	P		**Pn**		**03 18 24.2**	**+0.7**
MAT				S		**Sb**		**03 18 49.7**	**-0.6**
SONM	**Songino Array**	**27.27**	**304**	P		**P**		**03 23 34.7**	**-0.5**
	0.8nm,0.5s,baz=100,slow=10.0,SNR=4.2								
H11N2	**WAKE ISLAND Hy**	**28.69**	**120**	T		T		03 53 34.8	
	baz=313,slow=75,SNR=46								
H11N1	**WAKE ISLAND Hy**	**28.70**	**120**	T		T		03 53 34.6	
	baz=313,slow=75,SNR=70								
H11N3	**WAKE ISLAND Hy**	**28.71**	**120**	T		T		03 53 35.3	
	baz=313,slow=75,SNR=66								
H11S1	**WAKE ISLAND Hy**	**29.39**	**122**	T		T		03 54 27.2	
	baz=314,slow=76,SNR=96								
H11S3	**WAKE ISLAND Hy**	**29.39**	**122**	T		T		03 54 28.2	
	baz=314,slow=76,SNR=111								
H11S2	**WAKE ISLAND Hy**	**29.41**	**122**	T		T		03 54 26.5	
	baz=314,slow=76,SNR=96								
ILAR	**Eielson Array**	**49.92**	**32**	P		**P**		**03 26 45.4**	**+1.3**
	0.3nm,0.6s,baz=269,slow=5.6,SNR=5.1								
WRA	**Warramunga Arr**	**56.90**	**187**	P		**P**		**03 27 34.2**	**-1.6**
	2.0nm,0.7s,baz=5.2,slow=7.5,SNR=10								
ASAR	**Alice Springs**	**60.62**	**187**	P		**P**		**03 28 00.6**	**-1.1**
	1.1nm,0.7s,baz=8.5,slow=7.1,SNR=9.8								
ARCES	**ARCESS Array B**	**63.83**	**339**	P		**P**		**03 28 22.5**	**-0.3**
	3.5nm,0.9s,baz=44,slow=7.9,SNR=3.6								
YKA	**Yellowknife Ar**	**64.21**	**30**	P		**P**		**03 28 25.6**	**+0.3**
	0.2nm,0.7s,baz=306,slow=6.7,SNR=4.4								
FINES	**FINESS Array B**	**68.57**	**332**	P		**P**		**03 28 53.8**	**+0.6**
	0.6nm,0.6s,baz=129,slow=5.2,SNR=4.5								
NOA	**NORSAR Array B**	**74.00**	**337**	P		**P**		**03 29 26.0**	**-0.1**
	0.5nm,0.5s,baz=38,slow=5.6,SNR=2.8								
PDAR	**Pinedale Array**	**78.20**	**45**	P		**P**		**03 29 51.7**	**+1.0**
	0.3nm,0.7s,baz=328,slow=5.3,SNR=3.9								
GERES	**GERESS Array B**	**82.42**	**328**	P		**P**		**03 30 12.4**	**-0.7**
	0.2nm,0.4s,baz=32,slow=5.8,SNR=6.0								
TXAR	**Lajitas Array**	**90.70**	**52**	P		**P**		**03 30 54.6**	**+0.5**
	0.2nm,0.7s,baz=321,slow=1.3,SNR=2.3								
LPAZ	**La Paz**	**147.31**	**59**	PKPbc		**PKPbc**		**03 37 35.4**	**-0.4**
	0.6nm,0.4s,baz=284,slow=2.4,SNR=5.3								

JMA ***22*** *03:29:29.9±0.1, 28.09N×128.03E, h17km±2km, M3.2*

ISCJB ***22*** *03:29:30.9±1.4, 28.05N±0.06×128.06E±0.07, h21km±10km, mb3.4/4, MS3.0/2, Error ellipse: s-maj=13.1km s-min=5.4km az=40.3*

IDC ***22*** *03:29:31.3±1.3, 27.85N×127.99E, h0km, mb3.4/4, mb1 3.6/5, mb1mx3.3/66, mbtmp3.5/5, ML3.3/1, MS3.0/4, Ms1 3.0/4, ms1mx2.6/36, Error ellipse: s-maj=53.2km s-min=21.1km az=72.0*

ISC 22 03:29:30.6±2.0, 28.00N±0.05×128.14E±0.06, h3km±14km, n18, σ1921/20, mb3.4/4, Ryukyu Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
JOKE	**Okinoerabujima**	**0.74**	**149**	P		**Pb**		**03 29 46.3**	**+0.2**
JOKE				*e*S		**Sb**		**03 29 57.5**	**+0.9**
JTK	**Tokunoshima**	**0.75**	**106**	P		**Pb**		**03 29 46.0**	**-0.2**
JTK				S		**Sb**		**03 29 57.7**	**+0.9**
JAMN	**Amaminishikomi**	**0.95**	**75**	P		**Pg**		**03 29 48.9**	**+0.2**
JAMN				S		**Sb**		**03 30 02.5**	**0.0**
JIH	**Iheya**	**0.97**	**189**	P		**Pg**		**03 29 49.3**	**+0.1**
JIH				S		**Sb**		**03 30 03.4**	**+0.2**
JOW	**Kunigami**	**1.17**	**174**	P		**Pg**		**03 29 52.9**	**-0.1**
JOW				*e*S		**Sb**		**03 30 09.4**	**+0.5**
JAM	**Amami Oshima**	**1.36**	**72**	P		**Pn**		**03 29 55.4**	**-1.0**
JAM				*e*S		**Sb**		**03 30 14.4**	**+0.1**
JNTH	**Nagotoyohara**	**1.48**	**184**	P		**Pn**		**03 29 57.2**	**-0.8**
JTAJ	**Takarajima**	**1.48**	**39**	P		**Pn**		**03 29 55.9**	**-2.2**
JAGN	**Aguni-jima**	**1.61**	**210**	P		**Pn**		**03 29 58.5**	**-1.4**
JAGN				*e*S		**Sn**		**03 30 18.6**	**-2.6**
JNU	**Nakatsue**	**5.63**	**24**	Pn		Pn		03 30 59.6	+4.5
	0.9nm,0.3s,baz=172,slow=5.6,SNR=6.9								
KSRS	**Korea Array**	**9.43**	**359**	LR		LR		03 35 25.9	
	comp=Z,68nm,18.1s,baz=161,slow=37								
ASAJ	**Asahikawa**	**19.83**	**32**	LR		LR		03 42 43.5	
	comp=Z,43nm,18.1s,baz=236,slow=40								
SONM	**Songino Array**	**26.04**	**325**	P		**P**		**03 35 05.5**	**+0.4**
	0.3nm,0.5s,baz=121,slow=8.7,SNR=2.6								
PETK	**Petropavlovsk-**	**33.25**	**33**	LR		LR		03 49 27.8	
	comp=Z,17nm,19.6s,baz=166,slow=36								
MKAR	**Makanchi Array**	**40.31**	**310**	P		**P**		**03 37 11.5**	**+2.3**
	0.7nm,0.7s,baz=100,slow=9.8,SNR=6.0								
NRIK	**Noril'sk**	**47.55**	**342**	LR		LR		04 00 32.3	
	comp=Z,28nm,18.1s,baz=113,slow=39								
WRA	**Warramunga Arr**	**48.03**	**172**	P		**P**		**03 38 10.7**	**-0.4**
	0.6nm,0.8s,baz=352,slow=8.1,SNR=2.7								
ASAR	**Alice Springs**	**51.66**	**173**	P		**P**		**03 38 39.5**	**+0.7**
	0.2nm,0.7s,baz=1.0,slow=10,SNR=3.9								

IDC ***22*** *03:31:49.1±2.7, 43.33N×126.98W, h0km, mb3.3/3, mb1 3.7/6, mb1mx3.4/61, mbtmp3.4/6, ML3.8/3, MS3.1/9, Ms1 3.2/9, ms1mx3.0/17, Error ellipse: s-maj=38.5km s-min=19.7km az=49.0*

ISCJB ***22*** *03:31:50.9±0.8, 43.50N±0.04×127.01W±0.08, h14km, mb3.6/7, MS3.1/5, Error ellipse: s-maj=9.0km s-min=4.8km az=160.9*

NEIC ***22*** *03:31:55.7±0.8, 43.58N×126.63W, h10km, mb3.9/7, Error ellipse: s-maj=9.9km s-min=4.4km az=76.0*

ISC 22 03:31:54.4±1.2, 43.49N±0.06×126.88W±0.10, h14km, n78, σ1929/76, mb3.9/7, MS3.1/5, 1C, Off coast of Oregon

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
RNO	**Roman Nose**	**2.32**	**78**	⇑P		**Pn**		**03 32 30.3**	**-1.9**
I03D	**Drain, OR**	**2.58**	**84**	P		**Pn**		**03 32 33.7**	**-2.0**
	baz=268,SNR=25								
I03D				S		**Sn**		**03 33 07.8**	**+1.0**
	baz=268								
UMPQ	**Umpqua Communi**	**2.60**	**93**	P		**Pn**		**03 32 34.4**	**-1.6**
DBO	**Dodson Butte**	**2.68**	**97**	*e*Pn		**Pn**		**03 32 35.0**	**-2.3**
L02D	**Cave Junction,**	**2.75**	**118**	P		Pn		03 32 35.4	-2.8
	baz=304,SNR=17								
L02D				S		**Sn**		**03 33 11.4**	**+0.1**
	baz=304								
HSO	**Harness Mounta**	**2.76**	**88**	*e*Pn		**Pn**		**03 32 36.7**	**-1.6**
COR	**Corvallis**	**2.81**	**66**	*e*Pn		**Pn**		**03 32 38.1**	**-0.8**
HUMO	**Hull Mountain**	**3.01**	**106**	*e*Pn		**Pn**		**03 32 39.4**	**-2.3**
G03D	**McMinnville, O**	**3.12**	**55**	P		**Pn**		**03 32 41.5**	**-1.7**
	baz=237,SNR=157								
G03D				S		**Sn**		**03 33 21.7**	**+1.5**
	baz=237								
TCBU	**Trout Butte**	**3.14**	**75**	*e*Pn		**Pg**		**03 32 54.0**	**-0.7**
I04A	**Tendick Farm,**	**3.26**	**83**	P		**Pn**		**03 32 44.3**	**-0.9**
	baz=267,SNR=85								
F03A	**Seaside**	**3.40**	**43**	*e*Pn		**Pn**		**03 32 45.5**	**-1.6**
YBH	**Yreka Blue Hor**	**3.54**	**118**	Pn		**Pn**		**03 32 46.6**	**-2.5**
	1.2nm,0.3s,baz=293,slow=14,SNR=18								
YBH				Sn		**Sn**		**03 33 32.3**	**+1.4**
	0.8nm,0.3s,baz=118,slow=17,SNR=3.0								
YBH	**Yreka Blue Hor**	**3.54**	**118**	*e*Pn		**Pn**		**03 32 48.4**	**-0.7**
YBH				Sn		**Sn**		**03 33 32.2**	**+1.4**
H04A	**Detroit Lake**	**3.59**	**69**	*e*Pn		**Pn**		**03 32 49.0**	**-0.7**
G04A	**Mulino**	**3.60**	**60**	*e*Pn		**Pn**		**03 32 49.4**	**-0.4**
WIFE	**Three Sisters-**	**3.71**	**79**	*e*Pn		**Pn**		**03 32 51.1**	**-0.4**
F04D	**Rainier, OR**	**3.79**	**45**	P		**Pn**		**03 32 51.0**	**-1.4**
	baz=227,SNR=5.6								
F04D				S		**Sn**		**03 33 38.1**	**+1.5**
	baz=227								
K04D	**Chiloquin, OR**	**3.86**	**101**	P		**Pn**		**03 32 52.1**	**-1.3**
	baz=287,SNR=10								
E03A	**Lebam**	**3.86**	**36**	*e*Pn		**Pn**		**03 32 51.4**	**-1.9**
F04A	**Amboy**	**4.01**	**51**	*e*Pn		**Pn**		**03 32 55.0**	**-0.5**
I05D	**Terrebonne, OR**	**4.09**	**76**	P		**Pn**		**03 32 55.6**	**-1.0**
	baz=260,SNR=8.6								
J05D	**Fort Rock, OR**	**4.12**	**91**	P		**Pn**		**03 32 55.6**	**-1.5**
	baz=276,SNR=21								
SHW	**Mount Saint He**	**4.27**	**49**	*e*Pn		**Pn**		**03 32 58.9**	**-0.2**
VALT	**Mount Saint He**	**4.31**	**49**	*e*Pn		**Pn**		**03 32 59.4**	**-0.3**
G05D	**Wamic, OR**	**4.36**	**64**	P		**Pn**		**03 32 59.7**	**-0.5**
	baz=248,SNR=11								
TDL	**Tradedollar La**	**4.38**	**48**	P		**Pn**		**03 33 00.0**	**-0.6**
NLWA	**Neilton Lookou**	**4.44**	**27**	*e*Pn		**Pn**		**03 32 59.7**	**-1.7**
G06A	**Carlson Farm,**	**4.81**	**67**	*e*Pn		**Pn**		**03 33 05.9**	**-0.5**
LON	**Longmire**	**4.85**	**46**	*e*Pn		**Pn**		**03 33 06.8**	**-0.2**
OBSR	**Observation Ro**	**4.95**	**45**	*e*Pn		**Pn**		**03 33 08.0**	**-0.6**
GNW	**Green Mountain**	**4.98**	**34**	*e*Pn		**Pn**		**03 33 07.0**	**-1.7**
C05A	**Tolt Reservoir**	**5.57**	**39**	*e*Pn		**Pn**		**03 33 16.3**	**-0.5**
ORV	**Oroville**	**5.63**	**132**	*e*Pn		**Pn**		**03 33 20.4**	**+2.7**
LTY	**Liberty**	**5.78**	**47**	*e*Pn		**Pn**		**03 33 19.7**	**0.0**
B05A	**Bryant**	**5.83**	**33**	P		**Pn**		**03 33 18.9**	**-1.4**
	baz=216,SNR=14								
RSW	**Rattlesnake Hi**	**5.94**	**58**	*e*Pn		**Pn**		**03 33 22.0**	**0.0**

*DJA **22** 03:34:20.1±0.3,9˚S±3˚×11˚0E±˚, h10km, M4.3/25, mB5.0/1, mb4.4/4, MLv4.3/25, Mw(mB)4.3/1*
*NEIC **22** 03:34:22.2±1.2,9.22S×110.41E, h60km±10km, mb4.2/6, Error ellipse: s-maj=16.6km s-min=7.4km az=217.0*
ISC 22 03:34:19.5±0.8,9.34S±0.08×110.38E±0.07,h35km,n41,σ1s67/42,mb4.3/17,South of Jawa

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PCJI	**Pacitan**	**1.39**	**35**	P	**Pn**	**03 34 40.9**	**-1.4**
PCJI				S	**Sn**	**03 35 02.0**	**+2.6**
UGM	**Wanagama**	**1.43**	**6**	P	**Pn**	**03 34 43.1**	**+0.2**
UGM				S	**Sn**	**03 35 01.4**	**+0.9**
WOJI	**Wonogiri, Jawa**	**1.59**	**20**	P	**Pn**	**03 34 44.8**	**-0.3**
WOJI				S	**Sn**	**03 35 04.1**	**-0.3**
PWJI	**Pagerwojo**	**1.93**	**47**	P	**Pn**	**03 34 49.1**	**-0.6**
PWJI				S	**Sn**	**03 35 12.5**	**-0.2**
NGJI	**Ngawi**	**2.23**	**29**	P	**Pn**	**03 34 57.6**	**+3.6**
CMJI	**Cimerak**	**2.46**	**309**	P	**Pn**	**03 34 57.9**	**+0.8**
TBJI	**Tambak Boyo**	**2.90**	**30**	P	**Pn**	**03 35 05.1**	**+2.0**
CISI	**Cisompet, Garu**	**3.10**	**305**	P	**Pn**	**03 35 08.1**	**+2.2**
GMJI	**Gumukmas**	**3.21**	**71**	P	**Pn**	**03 35 08.8**	**+1.4**
LEM	**Lembang**	**3.70**	**312**	Pn	**Pn**	**03 35 15.9**	**+1.6**
	1.7nm,0.3s,baz=143,slow=20,SNR=2.1						
LEM				Sn	Sn	03 36 11.9	+15
	4.6nm,0.3s,baz=16,slow=18,SNR=4.2						
LEM	**Lembang**	**3.70**	**312**	P	**Pn**	**03 35 18.6**	**+4.2**
CNJI	**Cibinong**	**3.80**	**302**	P	**Pn**	**03 35 17.7**	**+2.2**
JAGI	**Jajag, Banyuwa**	**3.83**	**77**	P	**Pn**	**03 35 18.4**	**+2.5**
ABJI	**Asem Bagus**	**4.11**	**68**	P	**Pn**	**03 35 22.6**	**+2.8**
SRBI	**Singaraja**	**4.94**	**76**	P	**Pn**	**03 35 33.8**	**+2.6**
CGJI	**Cibinong**	**5.37**	**300**	P	**Pn**	**03 35 38.1**	**+0.9**
	34nm,1.0s,0.2nm						
TWSI	**Taliwang, Sumb**	**6.45**	**85**	P	**Pn**	**03 35 53.6**	**+1.6**
	24nm,0.6s,0.2nm						
PLAI	**Plampang**	**7.32**	**87**	P	**Pn**	**03 36 05.5**	**+1.5**
	61nm,0.8s,0.2nm						
BBKI	**Banjar Baru**	**7.33**	**37**	P	Pn	03 36 09.5	+5.4
MDSI	**Maura Dua**	**7.82**	**308**	P	Pn	03 36 16.2	+5.4
KAPI	**Kappang**	**10.24**	**66**	Pn	**Pn**	**03 36 46.4**	**+2.3**
	0.3nm,0.3s,baz=267,slow=14,SNR=3.7						
KAPI				LR	LR	03 40 49.5	
	comp=Z,70nm,20.0s,baz=294,slow=39						
WRA	**Warramunga Arr**	**25.43**	**117**	P	**P**	**03 39 44.9**	**+0.7**
	3.5nm,0.7s,baz=291,slow=11,SNR=12						
WRAB	**Tennant Creek**	**25.43**	**117**	*eP*	**P**	**03 39 44.8**	**+0.6**
	3.0nm,0.8s						
ASAR	**Alice Springs**	**26.61**	**125**	P	**P**	**03 39 56.1**	**+1.3**
	0.8nm,0.6s,baz=300,slow=9.4,SNR=18						
CMAR	**Chiang Mai Arr**	**29.84**	**338**	LR	LR	03 52 51.8	
	comp=Z,137nm,18.9s,baz=175,slow=38						
STKA	**Stephens Creek**	**36.60**	**132**	P	**P**	**03 41 22.1**	**-0.4**
	3.4nm,1.0s,baz=280,slow=4.9,SNR=3.2						
KSAR	**Wonju Array Be**	**49.34**	**18**	P	**P**	**03 43 05.1**	**-0.3**
KSRS	**Korea Array**	**49.37**	**18**	P	**P**	**03 43 05.1**	**-0.4**
	2.3nm,0.8s,baz=205,slow=8.0,SNR=6.5						
MJAR	**Matsushiro Arr**	**52.61**	**28**	P	**P**	**03 43 27.6**	**-2.4**
	3.3nm,0.8s,baz=209,slow=7.5,SNR=7.3						
USRK	**Ussuriysk Ar.**	**56.78**	**18**	P	**P**	**03 43 58.6**	**-1.4**
	3.8nm,0.8s,baz=177,slow=3.0,SNR=6.2						
SONM	**Songino Array**	**57.03**	**357**	P	**P**	**03 44 01.1**	**-0.9**
	1.2nm,0.6s,baz=177,slow=8.8,SNR=8.5						
TKM2	**Tokmak 2**	**60.92**	**331**	*eP*	**P**	**03 44 28.6**	**-0.5**
	0.9nm,0.4s						
MKAR	**Makanchi Array**	**61.25**	**338**	P	**P**	**03 44 30.4**	**-0.6**
	1.6nm,0.6s,baz=149,slow=7.6,SNR=20						
KLR	**Kul'dur**	**61.27**	**16**	P	**P**	**03 44 29.8**	**-1.3**
	2.6nm,0.6s,baz=197,slow=6.4,SNR=9.2						
EKS2	**Erkin-Say**	**61.60**	**330**	*eP*	**P**	**03 44 32.9**	**-0.7**
	2.3nm,0.8s						
KURK	**Kurchatov**	**65.86**	**338**	*eP*	**P**	**03 45 00.5**	**-0.9**
	6.3nm,0.8s						
ZALV	**Zalesovo Beam**	**66.66**	**344**	P	**P**	**03 45 05.5**	**-0.9**
	2.4nm,0.4s,baz=153,slow=4.2,SNR=7.8						
BRVK	**Borovoye**	**70.91**	**336**	*eP*	**P**	**03 45 32.2**	**-0.7**
	1.5nm,0.4s						
ABKAR	**Akbulak array**	**73.14**	**328**	*eP*	**P**	**03 45 45.9**	**-0.4**
	1.8nm,0.6s						
BRTR	**Keskin Array B**	**85.88**	**311**	P	**P**	**03 46 56.9**	**+0.8**
	0.8nm,0.8s,baz=134,slow=7.1,SNR=4.1						
YKA	**Yellowknife Ar**	**117.83**	**22**	PKP	**PKPdf**	**03 53 02.1**	**+0.2**
	0.1nm,0.7s,baz=336,slow=1.9,SNR=4.3						

*ATH **22** 03:36:30.8,36˚69N×21˚42E, h14km±1km, ML3.4/14, Error ellipse: s-maj=2.0km s-min=0.9km az=49.0*
*CSEM **22** 03:36:30.0±0.3,36˚67N×21˚34E, h2km, ML3.5, Error ellipse: s-maj=5.6km s-min=3.4km az=28.0*
*THE **22** 03:36:31.0, 36˚71N×21˚42E, h0km±1km, ML3.5/13, Error ellipse: s-maj=1.7km s-min=0.8km az=231.0*
ISC 22 03:36:30.6±1.2,36.69N±0.03×21.40E±0.03,h7km±9km,n138,σ0s80/186,Southern Greece

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PYL	**PYLOS**	**0.35**	**53**	P	**Pg**	**03 36 37.5**	**+0.1**
PYL				S	**Sg**	**03 36 42.5**	**+0.5**
PYL	**PYLOS**	**0.35**	**53**	P	**Pg**	**03 36 37.7**	**+0.3**
PYL				S	**Sg**	**03 36 42.5**	**+0.5**
PYL	**PYLOS**	**0.35**	**53**	P	**Pg**	**03 36 37.7**	**+0.3**
PYL				S	**Sg**	**03 36 42.4**	**+0.5**
PYL				AML	AML	03 36 43.5	
	comp=E,16426μm,0.4s						
PYL				AML	AML	03 36 45.6	
	comp=N,12104μm,0.5s						
ITM	**Ithomi**	**0.65**	**41**	P	**Pg**	**03 36 42.8**	**-0.4**
ITM				S	**Sg**	**03 36 51.9**	**+0.3**
ITM	**Ithomi**	**0.65**	**41**	P	**Pg**	**03 36 43.2**	**0.0**
ITM				S	**Sg**	**03 36 51.9**	**+0.3**
ITM	**Ithomi**	**0.65**	**41**	P	**Pg**	**03 36 43.2**	**0.0**
ITM				S	**Sb**	**03 36 53.1**	**-0.4**
ITM				AML	AML	03 36 53.5	
	comp=N,8284μm,0.5s						
ITM				AML	AML	03 36 55.1	
	comp=E,7428μm,0.6s						
AMT	**Artemida-Makis**	**0.88**	**16**	P	**Pg**	**03 36 46.8**	**-0.8**
AMT				S	**Sb**	**03 37 00.3**	**+0.1**
AMT	**Artemida-Makis**	**0.88**	**16**	P	**Pg**	**03 36 47.9**	**+0.3**
AMT				S	**Sb**	**03 37 00.2**	**+0.1**
AMT	**Artemida-Makis**	**0.88**	**16**	P	**Pg**	**03 36 47.9**	**+0.3**
AMT				S	**Sb**	**03 37 00.2**	**+0.1**
AMT				AML	AML	03 37 04.2	
	comp=N,9917μm,0.5s						
AMT				AML	AML	03 37 05.7	
	comp=E,8792μm,0.3s						
VLX	**Vlachokerasia**	**1.04**	**49**	P	**Pg**	**03 36 49.8**	**-0.8**
VLX				S	**Sg**	**03 37 04.2**	**+0.1**
VLX	**Vlachokerasia**	**1.04**	**49**	P	**Pg**	**03 36 50.0**	**-0.6**
VLX				S	**Sg**	**03 37 04.4**	**+0.3**
VLX	**Vlachokerasia**	**1.04**	**49**	P	**Pg**	**03 36 50.0**	**-0.6**
VLX				S	**Sg**	**03 37 04.4**	**+0.3**
VLX				AML	AML	03 37 08.6	
	comp=N,4960μm,0.6s						
VLX				AML	AML	03 37 13.4	
	comp=E,5822μm,0.4s						
TRIP	**Tripoli**	**1.09**	**39**	P	**Pg**	**03 36 50.8**	**-0.8**
TRIP				S	**Sb**	**03 37 06.6**	**+0.3**
TRIP	**Tripoli**	**1.09**	**39**	P	**Pg**	**03 36 50.8**	**-0.8**
TRIP				S	**Sb**	**03 37 06.6**	**+0.3**
TRIP				AML	AML	03 37 11.3	
	comp=N,3236μm,0.6s						
TRIP				AML	AML	03 37 15.5	
	comp=E,4323μm,0.8s						
ZKS	**Zakynthos**	**1.12**	**334**	P	**Pg**	**03 36 52.6**	**+0.4**
ZKS				S	**Sg**	**03 37 07.2**	**+0.5**
ZKS	**Zakynthos**	**1.12**	**334**	P	**Pg**	**03 36 52.6**	**+0.4**
ZKS				S	**Sg**	**03 37 07.2**	**+0.5**
VLI	**Veliai**	**1.24**	**88**	P	**Pg**	**03 36 53.5**	**-0.9**
VLI				S	**Sn**	**03 37 11.6**	**+0.4**
VLI	**Veliai**	**1.24**	**88**	P	**Pn**	**03 36 54.7**	**+0.4**
VLI				S	**Sn**	**03 37 11.6**	**+0.4**
VLI	**Veliai**	**1.24**	**88**	P	**Pn**	**03 36 54.7**	**+0.4**
VLI				S	**Sb**	**03 37 10.5**	**+0.1**
VLI				AML	AML	03 37 15.3	
	comp=E,2569μm,0.9s						
VLI				AML	AML	03 37 16.5	
	comp=N,3521μm,0.7s						
DRO	**Drossia**	**1.29**	**11**	P	**Pg**	**03 36 54.0**	**-1.3**
DRO				S	**Sn**	**03 37 13.6**	**+1.1**
DRO	**Drossia**	**1.29**	**11**	P	**Pg**	**03 36 54.2**	**-1.1**
DRO				S	**Sn**	**03 37 13.1**	**+0.6**
DRO	**Drossia**	**1.29**	**11**	P	**Pg**	**03 36 54.2**	**-1.1**
DRO				S	**Sn**	**03 37 13.1**	**+0.6**
DRO				AML	AML	03 37 26.1	
	comp=N,3966μm,0.4s						
DRO				AML	AML	03 37 28.9	
	comp=E,7334μm,0.5s						
RLS	**Riolos of Patr**	**1.37**	**2**	P	**Pn**	**03 36 55.7**	**-0.4**
RLS				S	**Sn**	**03 37 16.1**	**+1.6**
RLS	**Riolos of Patr**	**1.37**	**2**	P	**Pn**	**03 36 56.1**	**0.0**
RLS				S	**Sg**	**03 37 14.5**	**-0.2**
RLS	**Riolos of Patr**	**1.37**	**2**	S	**Sg**	**03 37 14.5**	**-0.2**
RLS				AML	AML	03 37 26.0	
	comp=E,1544μm,0.6s						
RLS				AML	AML	03 37 27.5	
	comp=N,1862μm,0.8s						
KYTH	**Kithira**	**1.38**	**107**	P	**Pb**	**03 36 57.2**	**+0.4**
KYTH				S	**Sn**	**03 37 16.3**	**+1.5**
KYTH	**Kithira**	**1.38**	**107**	P	**Pb**	**03 36 57.1**	**+0.4**
KYTH				S	**Sn**	**03 37 16.3**	**+1.5**
KYTH	**Kithira**	**1.38**	**107**	P	**Pb**	**03 36 57.1**	**+0.4**
GUR	**Goura**	**1.46**	**31**	P	**Pn**	**03 36 57.0**	**-0.4**
GUR	**Goura**	**1.46**	**31**	P	**Pn**	**03 36 57.0**	**-0.4**
KLV	**Kalavryta, Ach**	**1.48**	**24**	P	**Pn**	**03 36 57.0**	**-0.7**
KLV				S	**Sn**	**03 37 18.5**	**+1.2**
KLV	**Kalavryta, Ach**	**1.48**	**24**	P	**Pn**	**03 36 57.9**	**+0.2**
KLV				S	**Sn**	**03 37 18.5**	**+1.2**
KLV	**Kalavryta, Ach**	**1.48**	**24**	P	**Pn**	**03 36 57.9**	**+0.2**
KLV				S	**Sn**	**03 37 18.8**	**+1.5**
KLV				AML	AML	03 37 29.3	
	comp=E,1985μm,0.7s						
KLV				AML	AML	03 37 38.1	
	comp=N,884μm,1.1s						
KFL	**Anninata**	**1.50**	**341**	P	**Pn**	**03 36 57.7**	**-0.2**
KFL				S	**Sb**	**03 37 18.8**	**+0.8**
KFL	**Anninata**	**1.50**	**341**	P	**Pn**	**03 36 57.7**	**-0.2**
KFL				S	**Sb**	**03 37 18.8**	**+0.8**
KFL	**Anninata**	**1.50**	**341**	P	**Pn**	**03 36 58.3**	**+0.4**
KRND	**KRANIDI**	**1.56**	**63**	P	**Pn**	**03 36 59.1**	**+0.3**
KRND				S	**Sg**	**03 37 21.0**	**+0.1**
KRND	**KRANIDI**	**1.56**	**63**	P	**Pn**	**03 36 59.1**	**+0.3**
KRND				S	**Sg**	**03 37 21.0**	**+0.1**
KRND	**KRANIDI**	**1.56**	**63**	P	**Pn**	**03 36 59.1**	**+0.3**
LAKA	**Lakka**	**1.62**	**16**	P	**Pn**	**03 36 59.8**	**+0.2**
LAKA				S	**Sg**	**03 37 22.4**	**-0.2**
LAKA	**Lakka**	**1.62**	**16**	P	**Pn**	**03 36 59.8**	**+0.2**
LAKA				S	**Sg**	**03 37 22.4**	**-0.2**
LAKA	**Lakka**	**1.62**	**16**	P	**Pb**	**03 37 00.7**	**-0.1**
VLS	**Valsamata**	**1.62**	**337**	P	**Pn**	**03 36 59.3**	**-0.3**
VLS	**Valsamata**	**1.62**	**337**	P	**Pn**	**03 36 59.3**	**-0.3**
VLS				S	**Sg**	**03 37 23.2**	**+0.5**
DID	**Didima**	**1.68**	**60**	P	**Pn**	**03 37 00.0**	**-0.5**
DID				S	**Sb**	**03 37 23.8**	**+0.5**
DID	**Didima**	**1.68**	**60**	P	**Pn**	**03 37 00.6**	**+0.2**
DID				S	**Sb**	**03 37 23.8**	**+0.5**
DID	**Didima**	**1.68**	**60**	P	**Pn**	**03 37 00.6**	**+0.2**
THAL	**Thalero**	**1.68**	**36**	P	**Pn**	**03 37 01.4**	**+1.0**
THAL	**Thalero**	**1.68**	**36**	P	**Pn**	**03 37 01.4**	**+1.0**
THAL				S	**Sg**	**03 37 24.1**	**-0.6**
THAL	**Thalero**	**1.68**	**36**	P	**Pn**	**03 37 01.8**	**-0.1**
THAL				S	**Sg**	**03 37 24.1**	**-0.6**
THAL				AML	AML	03 37 36.7	
	comp=N,2821μm,0.6s						
THAL				AML	AML	03 37 44.2	
	comp=E,5700μm,0.6s						
ANKY	**Antikythira Is**	**1.74**	**117**	P	**Pn**	**03 37 01.9**	**+0.7**
ANKY				S	**Sg**	**03 37 25.9**	**-0.7**
ANKY	**Antikythira Is**	**1.74**	**117**	P	**Pn**	**03 37 01.9**	**+0.7**
ANKY				S	**Sg**	**03 37 25.9**	**-0.7**
ANKY	**Antikythira Is**	**1.74**	**117**	P	**Pb**	**03 37 03.1**	**+0.2**
ANKY				S	**Sg**	**03 37 26.7**	**+0.1**
ANKY				AML	AML	03 37 44.6	
	comp=E,1339μm,1.1s						
ANKY				AML	AML	03 37 47.8	
	comp=N,1271μm,0.8s						
TRIZ	**Trizonia**	**1.76**	**18**	P	**Pb**	**03 37 03.8**	**+0.6**
KALE	**Kalithea**	**1.80**	**19**	P	**Pn**	**03 37 02.6**	**+0.5**
KALE	**Kalithea**	**1.80**	**19**	P	**Pn**	**03 37 02.6**	**+0.5**
KALE				S	**Sb**	**03 37 27.4**	**+0.7**
KALE	**Kalithea**	**1.80**	**19**	P	**Pb**	**03 37 03.8**	**-0.2**
KALE				S	**Sb**	**03 37 27.4**	**+0.7**
KALE				AML	AML	03 37 41.6	
	comp=E,1340μm,0.7s						
KALE				AML	AML	03 37 47.8	
	comp=N,1157μm,0.8s						
SERG	**Sergoula**	**1.80**	**17**	P	**Pn**	**03 37 03.0**	**+0.9**
SERG	**Sergoula**	**1.80**	**17**	P	**Pn**	**03 37 03.0**	**+0.9**
LTK	**Loutraki**	**1.83**	**43**	P	**Pn**	**03 37 02.1**	**-0.3**
LTK	**Loutraki**	**1.83**	**43**	P	**Pn**	**03 37 03.8**	**+1.3**
LTK	**Loutraki**	**1.83**	**43**	P	**Pn**	**03 37 03.8**	**+1.3**
PDO	**Prodromos**	**1.92**	**355**	P	**Pb**	**03 37 05.5**	**-0.4**
PDO	**Prodromos**	**1.92**	**355**	P	**Pn**	**03 37 04.8**	**+1.2**
PDO				S	**Sb**	**03 37 31.3**	**+1.3**
PDO	**Prodromos**	**1.92**	**355**	P	**Pn**	**03 37 04.8**	**+1.2**
PDO				S	**Sb**	**03 37 31.3**	**+1.3**
PDO				AML	AML	03 37 51.0	
	comp=E,2048μm,0.7s						
PDO				AML	AML	03 37 53.5	
	comp=N,1442μm,0.8s						
PVO	**Paravola**	**1.93**	**3**	P	**Pb**	**03 37 06.5**	**+0.4**
PVO	**Paravola**	**1.93**	**3**	P	**Pb**	**03 37 06.5**	**+0.4**
DSF	**Desfina**	**1.94**	**27**	P	**Pn**	**03 37 04.4**	**+0.4**
DSF	**Desfina**	**1.94**	**27**	P	**Pn**	**03 37 04.4**	**+0.4**
DSF	**Desfina**	**1.94**	**27**	P	**Pn**	**03 37 04.1**	**+0.1**
ANX	**Ano Chora**	**1.95**	**12**	P	**Pn**	**03 37 04.8**	**+0.6**
ANX	**Ano Chora**	**1.95**	**12**	P	**Pn**	**03 37 04.8**	**+0.6**
ANX	**Ano Chora**	**1.95**	**12**	P	**Pb**	**03 37 06.4**	**0.0**
PROD	**Prodromos**	**1.97**	**37**	P	**Pn**	**03 37 04.2**	**-0.2**
PROD	**Prodromos**	**1.97**	**37**	P	**Pn**	**03 37 04.2**	**-0.2**
VILL	**Villia**	**2.12**	**45**	P	**Pn**	**03 37 05.9**	**-0.6**
VILL	**Villia**	**2.12**	**45**	P	**Pn**	**03 37 07.7**	**+1.2**
VIL2	**Platees**	**2.13**	**44**	P	**Pn**	**03 37 07.7**	**+1.1**
LKD2	**Lefkada island**	**2.18**	**345**	P	**Pn**	**03 37 08.7**	**+1.4**
LKD2	**Lefkada island**	**2.18**	**345**	P	**Pn**	**03 37 08.7**	**+1.4**
LKD2				S	**Sb**	**03 37 37.8**	**+0.2**
LKD2	**Lefkada island**	**2.18**	**345**	P	**Pn**	**03 37 39.8**	**-0.6**
LKD2				S	**Sb**	**03 37 37.8**	**+0.2**
LKD2				AML	AML	03 37 50.5	
	comp=E,878μm,0.5s						
LKD2				AML	AML	03 38 10.0	
	comp=N,768μm,0.7s						
VLY	**Voula,Athens**	**2.24**	**58**	P	**Pn**	**03 37 07.8**	**-0.3**
VLY	**Voula,Athens**	**2.24**	**58**	P	**Pn**	**03 37 07.8**	**-0.3**
EVR	**Evrytania**	**2.25**	**8**	P	**Pn**	**03 37 10.1**	**+1.8**
EVR	**Evrytania**	**2.25**	**8**	P	**Pn**	**03 37 10.1**	**+1.8**
EVR	**Evrytania**	**2.25**	**8**	P	**Pn**	**03 37 10.7**	**-0.9**
ATHU	**Athens Univers**	**2.29**	**55**	P	**Pn**	**03 37 08.5**	**-0.3**
ATHU	**Athens Univers**	**2.29**	**55**	P	**Pn**	**03 37 08.5**	**-0.3**
LKR	**Lokris**	**2.34**	**32**	P	**Pn**	**03 37 10.2**	**+0.8**
LKR	**Lokris**	**2.34**	**32**	P	**Pn**	**03 37 10.2**	**+0.8**
PTL	**Penteli**	**2.39**	**55**	P	**Pn**	**03 37 10.3**	**+0.1**
PTL	**Penteli**	**2.39**	**55**	P	**Pn**	**03 37 10.3**	**+0.1**
MHLO	**Agia Marina, M**	**2.41**	**89**	P	**Pn**	**03 37 10.7**	**+0.2**
MHLO	**Agia Marina, M**	**2.41**	**89**	P	**Pn**	**03 37 10.7**	**+0.2**
IMMV	**Iera Moni Meta**	**2.42**	**120**	P	**Pn**	**03 37 12.4**	**+1.8**
IMMV	**Iera Moni Meta**	**2.42**	**120**	P	**Pn**	**03 37 12.4**	**+1.8**
AGG	**Agios Georgios**	**2.44**	**17**	P	**Pn**	**03 37 11.2**	**+0.2**
AGG	**Agios Georgios**	**2.44**	**17**	P	**Pn**	**03 37 11.2**	**+0.2**
AGG	**Agios Georgios**	**2.44**	**17**	P	**Pn**	**03 37 12.8**	**+1.8**
DSL	**Palaion Diasel**	**2.45**	**355**	P	**Pn**	**03 37 12.1**	**+1.0**
DSL	**Palaion Diasel**	**2.45**	**355**	P	**Pn**	**03 37 12.1**	**+1.0**
DSL	**Palaion Diasel**	**2.45**	**355**	P	**Pn**	**03 37 12.3**	**+1.3**
VAM	**Vamos**	**2.60**	**119**	P	**Pn**	**03 37 14.1**	**+1.0**
VAM	**Vamos**	**2.60**	**119**	P	**Pn**	**03 37 14.1**	**+1.0**
SMIA	**Simia**	**2.62**	**33**	P	**Pn**	**03 37 13.9**	**+0.6**
SMIA	**Simia**	**2.62**	**33**	P	**Pn**	**03 37 13.8**	**+0.6**
THL	**Klokotos Trika**	**2.91**	**9**	P	**Pn**	**03 37 18.3**	**+1.0**
THL	**Klokotos Trika**	**2.91**	**9**	P	**Pn**	**03 37 17.8**	**+0.5**
IGT	**Igoumenitsa**	**2.96**	**344**	P	**Pn**	**03 37 18.2**	**+0.2**
IGT	**Igoumenitsa**	**2.96**	**344**	P	**Pn**	**03 37 18.2**	**+0.2**
SGD	**Sagiada**	**3.06**	**343**	P	**Pn**	**03 37 19.5**	**+0.1**
SGD	**Sagiada**	**3.06**	**343**	P	**Pn**	**03 37 19.5**	**+0.1**
KPRO	**Kipourio**	**3.26**	**360**	P	**Pn**	**03 37 23.9**	**+1.7**
KPRO	**Kipourio**	**3.26**	**360**	P	**Pn**	**03 37 23.9**	**+1.7**
KEK	**Kerkira**	**3.27**	**338**	P	**Pn**	**03 37 22.6**	**+0.3**
KEK	**Kerkira**	**3.27**	**338**	P	**Pn**	**03 37 22.6**	**+0.3**
NEST	**Nestorio**	**3.73**	**356**	P	**Pn**	**03 37 30.3**	**+1.6**
NEST	**Nestorio**	**3.73**	**356**	P	**Pn**	**03 37 30.3**	**+1.6**
FNA	**Florina**	**4.09**	**360**	P	**Pn**	**03 37 33.6**	**0.0**
FNA	**Florina**	**4.09**	**360**	P	**Pn**	**03 37 33.6**	**0.0**
TAR1	**Taranto**	**5.01**	**321**	*e*Pn	**Pn**	**03 37 46.2**	**+0.1**
SG1	**Sgolgore (BA)**	**5.55**	**320**	*e*Pn	**Pn**	**03 37 53.5**	**-0.1**
BAI	**Bari**	**5.65**	**323**	*e*Pn	**Pn**	**03 37 54.4**	**-0.5**
CDT	**Castel del Mon**	**5.94**	**319**	*e*Pn	**Pn**	**03 37 58.7**	**-0.2**
BARS	**Barje**	**6.13**	**3**	*e*Pn	**Pn**	**03 38 00.3**	**-1.3**
MS1	**Monte Sant'Ang**	**6.56**	**321**	*e*Pn	**Pn**	**03 38 06.9**	**-0.6**
STON	**Ston**	**6.80**	**336**	*i* Pn	**Pn**	**03 38 08.3**	**-2.4**
STON				Sn	Sn	03 39 22.2	-6.1
STON	**Ston**	**6.80**	**336**	*i* Pn	Pn	03 38 08.3	-2.4
STON				Sn	Sn	03 39 22.2	-6.1
IVAS	**Ivanjica**	**6.95**	**352**	*e*Pn	**Pn**	**03 38 12.2**	**-0.6**
GRUS	**Guza**	**7.21**	**356**	*e*Pn	**Pn**	**03 38 14.8**	**-1.6**
DIVS	**Divibare**	**7.48**	**352**	*e*Pn	**Pn**	**03 38 18.3**	**-1.9**
TEKS	**Tekeris**	**7.98**	**350**	*e*Pn	**Pn**	**03 38 25.7**	**-1.3**
UDBI	**Udbina**	**8.93**	**333**	*e*Pn	**Pn**	**03 38 40.4**	**+0.5**
UDBI				Sn	Sn	03 40 15.3	-5.4
UDBI	**Udbina**	**8.93**	**333**	*e*Pn	**Pn**	**03 38 40.4**	**+0.5**
UDBI				Sn	Sn	03 40 15.2	-5.5
NVLJ	**Novalja**	**9.30**	**330**	*e*Pn	**Pn**	**03 38 44.3**	**-0.7**
NVLJ				Sn	Sn	03 40 23.5	-6.3
NVLJ	**Novalja**	**9.30**	**330**	*e*Pn	**Pn**	**03 38 44.3**	**-0.7**
NVLJ				Sn	Sn	03 40 23.4	-6.3
NB2	**NORSAR Subarra**	**25.22**	**348**	P	**P**	**03 41 55.1**	**-1.6**
	comp=Z,2.1nm,1.1s,baz=158,slow=9.3						
NB2	**NORSAR Subarra**	**25.22**	**348**	P	**P**	**03 41 55.1**	**-1.6**
	comp=Z,2.1nm,1.1s,SNR=4.4						

*NIED **22** 03:37:00,38˚40N×141˚60E, h35km, Mw3.7 Best double couple: M0=4.44000×10^14 NP1:φs=292.00000°, δ=44.00000°, λ=-32.00000°. NP2:φs=47.00000°, δ=68.00000°, λ=-129.00000°.*
*ISCJB **22** 03:37:41.8±0.7,38˚36N±0.04×141˚70E±0.08, h61km±6km, mb3.5/8, Error ellipse: s-maj=11.2km s-min=5.5km az=16.4*
*JMA **22** 03:37:42.8,38˚38N×141˚65E, h56km±1km, M3.8*
JMA Felt I J1.
*IDC **22** 03:37:42.8±3.8,38˚28N×141˚81E, h57km±36km, mb3.2/8, mb1 3.5/10, mb1mx3.3/52, mbtmp3.5/10, ML2.8/2, MS2.6/2, Ms1 2.6/2, ms1mx2.2/19, Error ellipse: s-maj=28.9km s-min=19.2km az=103.0*
ISC 22 03:37:42.0±1.2,38.34N±0.04×141.78E±0.09,h49km±10km,n25,σ0s89/34,mb3.5/8,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**0.35**	**289**	P	**Pn**	**03 37 52.2**	**+0.6**
JIO				S	**Sn**	**03 37 58.8**	**+0.4**
JMK	**Ichinoseki**	**0.75**	**325**	P	**Pn**	**03 37 56.6**	**+0.2**
JMK				S	**Sn**	**03 38 06.4**	**-0.4**
JOU	**Okura**	**0.87**	**272**	P	**Pn**	**03 37 57.9**	**-0.2**
JOU				S	**Sn**	**03 38 08.9**	**-0.9**
JMM	**Marumori**	**0.91**	**239**	P	**Pn**	**03 37 58.5**	**0.0**
JMM				S	**Sn**	**03 38 09.8**	**-0.7**
JOM	**Ohasama**	**1.19**	**342**	P	**Pn**	**03 38 02.6**	**+0.2**
JOM				S	**Sn**	**03 38 17.1**	**-0.4**
JFK	**Kawauchi**	**1.21**	**217**	P	**Pn**	**03 38 03.1**	**+0.6**
JFK				S	**Sn**	**03 38 18.2**	**+0.4**
JYK	**Kaneyama**	**1.25**	**298**	P	**Pn**	**03 38 03.0**	**-0.1**
JYK				*e*S	**Sn**	**03 38 17.8**	**-1.1**
JYS	**Shirataka**	**1.35**	**266**	P	**Pn**	**03 38 04.6**	**+0.1**
JYS				S	**Sn**	**03 38 20.7**	**-0.6**
JRG	**Rokugo**	**1.38**	**320**	P	**Pn**	**03 38 05.0**	**+0.1**
JRG				S	**Sn**	**03 38 22.0**	**-0.1**
JFT	**Otama**	**1.40**	**235**	P	**Pn**	**03 38 05.9**	**+0.7**
JFT				S	**Sn**	**03 38 22.3**	**-0.3**
MJAR	**Matsushiro Arr**	**3.36**	**239**	P	**Pn**	**03 38 34.1**	**+2.1**
	2.9nm,0

ellipse: s-maj=2.9km s-min=2.3km az=175.0
*THE **22** 03:55:14.1,36°.88N×29°.35E,h1$^{km}_{\pm}$1km,ML3.9/7,Error*
ellipse: s-maj=1.8km s-min=1.2km az=65.0
ISC 22 03:55:13.8±1.1,**36°.92N**±0°.02×**29°.31E**±0°.02,**h4**$^{km}_{\pm}$8km,
n282,σ1^{s}09/322,**mb3.8**/10,**MS2.9**/5,**13C-6D,Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FETY	**Fethiye**	**0.34**	**213**	*e*PG	**Pg**	**03 55 19.7**	**-0.6**
FETY				*e*SG	**Sg**	**03 55 25.8**	**+0.9**
FETY	**Fethiye**	**0.34**	**213**	P	**Pg**	**03 55 19.8**	**-0.6**
FETY				S	**Sg**	**03 55 25.7**	**+0.9**
FETY	**Fethiye**	**0.34**	**213**	P	**Pg**	**03 55 19.8**	**-0.6**
FETY				S	**Sg**	**03 55 25.7**	**+0.9**
FETY	**Fethiye**	**0.34**	**213**	P	**Pg**	**03 55 19.8**	**-0.6**
FETY				S	**Sg**	**03 55 25.7**	**+0.9**
ELL	**Elmali**	**0.51**	**110**	*e*PG	**Pg**	**03 55 23.5**	**-0.1**
ELL	**Elmali**	**0.51**	**110**	*e*Pg	**Pg**	**03 55 23.5**	**-0.1**
DALY	**Dalyan (Mu˘la**	**0.54**	**259**	*e*PG	**Pg**	**03 55 23.5**	**-0.6**
DALY	**Dalyan (Mu˘la**	**0.54**	**259**	*e*Pg	**Pg**	**03 55 23.5**	**-0.6**
TURN	**Turunc**	**0.57**	**265**	*i* P	**Pn**	**03 55 29.2**	**+0.6**
TURN	**Turunc**	**0.57**	**265**	P	**Pn**	**03 55 29.2**	**+0.6**
AKAS	**Kas**	**0.73**	**161**	*i* P	**Pg**	**03 55 27.0**	**-0.7**
AKAS				*i* S	**Sb**	**03 55 44.0**	**-0.4**
AKAS				*i* S	**Sn**	**03 55 41.1**	**-1.4**
AKAS	**Kas**	**0.73**	**161**	P	**Pg**	**03 55 27.0**	**-0.7**
AKAS				S	**Sb**	**03 55 39.0**	**-0.4**
KSL	**Kastellorizon**	**0.80**	**164**	P	**Pg**	**03 55 28.3**	**-0.8**
KSL				S	**Sb**	**03 55 41.2**	**-0.2**
KSL	**Kastellorizon**	**0.80**	**164**	P	**Pg**	**03 55 28.5**	**-0.7**
KSL				S	**Sb**	**03 55 40.9**	**-0.4**
KSL				AML	AML	03 55 49.3	
	comp=N,5069μm,1.4s						
KSL				AML	AML	03 55 53.9	
	comp=E,4626μm,0.5s						
KSL	**Kastellorizon**	**0.80**	**164**	P	**Pg**	**03 55 28.3**	**-0.8**
KSL				S	**Sb**	**03 55 41.2**	**-0.2**
KORT	**Korkueli**	**0.83**	**84**	*i* P	**Pg**	**03 55 28.2**	**-1.6**
KORT				*i* S	**Sb**	**03 55 44.0**	**+1.5**
KORT	**Korkueli**	**0.83**	**84**	P	**Pg**	**03 55 28.2**	**-1.6**
KORT				S	**Sb**	**03 55 44.0**	**+1.5**
YER	**Yerkesik**	**0.85**	**285**	*e*PG	**Pg**	**03 55 29.4**	**-0.7**
YER	**Yerkesik**	**0.85**	**285**	P	**Pg**	**03 55 29.9**	**-0.2**
YER				S	**Sn**	**03 55 45.2**	**-0.3**
YER	**Yerkesik**	**0.85**	**285**	*e*Pg	**Pg**	**03 55 29.4**	**-0.7**
YER	**Yerkesik**	**0.85**	**285**	P	**Pg**	**03 55 29.9**	**-0.2**
YER	**Yerkesik**	**0.85**	**285**	*e*P	**Pg**	**03 55 28.9**	**-1.2**
DENT	**Denizli**	**0.86**	**345**	*e*PG	**Pg**	**03 55 29.1**	**-1.2**
DENT	**Denizli**	**0.86**	**345**	*e*Pg	**Pg**	**03 55 29.1**	**-1.2**
UZP	**Denizli**	**1.11**	**354**	*i* P	**Pg**	**03 55 33.8**	**-1.3**
BCK	**Bucak**	**1.15**	**62**	*e*PN	**Pg**	**03 55 34.9**	**-1.0**
BCK	**Bucak**	**1.15**	**62**	*e*Pn	**Pg**	**03 55 34.9**	**-1.0**
ARG	**Arkhangelos**	**1.19**	**234**	P	**Pg**	**03 55 34.8**	**-1.7**
ARG				S	**Sn**	**03 55 53.5**	**-0.2**
ARG	**Arkhangelos**	**1.19**	**234**	P	**Pg**	**03 55 34.9**	**-1.6**
ARG				S	**Sb**	**03 55 52.5**	**0.0**
AYDN	**Tasoluk**	**1.36**	**303**	*i* P	**Pg**	**03 55 39.1**	**-0.8**
AYDN	**Tasoluk**	**1.36**	**303**	P	**Pg**	**03 55 39.1**	**-0.8**
KHL	**Karahalli**	**1.41**	**7**	*e*PN	**Pn**	**03 55 39.9**	**-0.4**
KHL	**Karahalli**	**1.41**	**7**	*e*Pn	**Pn**	**03 55 39.9**	**-0.4**
KHAL	**Karahalli**	**1.45**	**6**	*i* P	**Pn**	**03 55 39.4**	**-1.5**
KHAL	**Karahalli**	**1.45**	**6**	P	**Pn**	**03 55 39.4**	**-1.5**
BDRM	**Kayabasi**	**1.50**	**276**	*i* P	**Pn**	**03 55 41.4**	**-0.1**
BDRM				*i* S	**Sg**	**03 56 02.4**	**+0.3**
BDRM	**Kayabasi**	**1.50**	**276**	P	**Pn**	**03 55 41.4**	**-0.1**
BDRM				S	**Sg**	**03 56 02.4**	**+0.3**
AYDB	**Zeytinkoy-Aydi**	**1.53**	**313**	*e*PN	**Pn**	**03 55 41.3**	**-0.6**
AYDB	**Zeytinkoy-Aydi**	**1.53**	**313**	*e*Pn	**Pn**	**03 55 41.3**	**-0.6**
BAGO	**Egridir - ISPA**	**1.59**	**47**	*i* P	**Pb**	**03 55 43.4**	**-0.3**
BODT	**Bodrum**	**1.61**	**276**	*e*PN	**Pn**	**03 55 42.6**	**-0.3**
BODT	**Bodrum**	**1.61**	**276**	P	**Pn**	**03 55 43.2**	**+0.3**
BODT				S	**Sb**	**03 56 04.8**	**+0.1**
BODT	**Bodrum**	**1.61**	**276**	*e*Pn	**Pn**	**03 55 42.6**	**-0.3**
BODT	**Bodrum**	**1.61**	**276**	P	**Pn**	**03 55 43.2**	**+0.3**
BODT				S	**Sb**	**03 56 04.8**	**+0.1**
KULA	**Kula-Manisa**	**1.67**	**342**	*e*PN	**Pn**	**03 55 43.5**	**-0.4**
KULA	**Kula-Manisa**	**1.67**	**342**	P	**Pn**	**03 55 43.3**	**-0.6**
KULA				S	**Sb**	**03 56 06.2**	**-0.4**
KULA	**Kula-Manisa**	**1.67**	**342**	*e*Pn	**Pn**	**03 55 43.5**	**-0.4**
KULA				S	**Sb**	**03 56 06.2**	**-0.4**
NIS1	**Nisyros Isl.**	**1.74**	**260**	*e*PN	**Pn**	**03 55 45.3**	**+0.5**
NIS1	**Nisyros Isl.**	**1.74**	**260**	P	**Pn**	**03 55 45.5**	**+0.7**
NIS1				S	**Sn**	**03 56 08.1**	**+0.7**
NIS1	**Nisyros Isl.**	**1.74**	**260**	*e*Pn	**Pn**	**03 55 45.3**	**+0.5**
NIS1				S	**Sn**	**03 56 08.1**	**+0.7**
NIS1	**Nisyros Isl.**	**1.74**	**260**	P	**Pb**	**03 55 45.8**	**-0.6**
NIS1				S	**Sg**	**03 56 10.0**	**+0.2**
NIS1				AML	AML	03 56 18.7	
	comp=N,7096μm,0.6s						
NIS1				AML	AML	03 56 23.8	
	comp=E,10080μm,0.6s						
NISR	**Nisiros**	**1.78**	**261**	P	**Pb**	**03 55 46.8**	**-0.1**
NISR	**Nisiros**	**1.78**	**261**	P	**Pb**	**03 55 46.8**	**-0.1**
GCAM	**G?zelcaml?**	**1.83**	**296**	*i* P	**Pn**	**03 55 46.1**	**+0.1**
GCAM				*i* S	**Sn**	**03 56 10.2**	**+0.6**
GCAM	**G?zelcaml?**	**1.83**	**296**	P	**Pn**	**03 55 46.1**	**+0.1**
GCAM				S	**Sn**	**03 56 10.2**	**+0.6**
SMG	**Samos**	**2.12**	**292**	P	**Pn**	**03 55 49.9**	**-0.1**
SMG				S	**Sn**	**03 56 17.1**	**+0.3**
SMG	**Samos**	**2.12**	**292**	P	**Pn**	**03 55 49.9**	**-0.1**
SMG				S	**Sn**	**03 56 17.1**	**+0.3**
SMG	**Samos**	**2.12**	**292**	P	**Pn**	**03 55 49.8**	**-0.1**
SMG				S	**Sn**	**03 56 16.5**	**-0.3**
SMG				AML	AML	03 56 17.6	
	comp=N,2307μm,0.4s						
SMG				AML	AML	03 56 19.9	
	comp=E,1478μm,0.4s						
GDZ	**Gediz**	**2.17**	**3**	*i* P	**Pn**	**03 55 50.7**	**0.0**
GDZ	**Gediz**	**2.17**	**3**	P	**Pn**	**03 55 50.7**	**0.0**
DEMI	**Demirci**	**2.17**	**348**	*i* P	**Pn**	**03 55 50.4**	**-0.3**
DEMI	**Demirci**	**2.17**	**348**	P	**Pn**	**03 55 50.4**	**-0.3**
IZM	**Izmir**	**2.19**	**313**	*e*PN	**Pn**	**03 55 51.1**	**+0.1**
IZM	**Izmir**	**2.19**	**313**	*e*Pn	**Pn**	**03 55 51.1**	**+0.1**
BOLV	**Bolvadin**	**2.21**	**35**	*i* P	**Pn**	**03 55 52.2**	**+0.8**
BOLV	**Bolvadin**	**2.21**	**35**	P	**Pn**	**03 55 52.2**	**+0.8**
KARP	**Karpathos**	**2.21**	**232**	*e*PN	**Pn**	**03 55 51.4**	**+0.1**
KARP	**Karpathos**	**2.21**	**232**	P	**Pn**	**03 55 51.8**	**+0.5**
KARP				S	**Sn**	**03 56 19.2**	**+0.1**
KARP	**Karpathos**	**2.21**	**232**	*e*Pn	**Pn**	**03 55 51.4**	**+0.1**
KARP	**Karpathos**	**2.21**	**232**	P	**Pn**	**03 55 51.8**	**+0.5**
KARP				S	**Sn**	**03 56 19.2**	**+0.1**
KARP	**Karpathos**	**2.21**	**232**	P	**Pn**	**03 55 51.6**	**+0.4**
KARP				S	**Sn**	**03 56 20.8**	**+1.6**
KARP				AML	AML	03 56 35.5	
	comp=E,2413μm,0.7s						
KARP				AML	AML	03 56 38.5	
	comp=N,2175μm,0.6s						
AKHS	**Akhisar**	**2.29**	**329**	*i* P	**Pn**	**03 55 52.1**	**-0.2**
AKHS	**Akhisar**	**2.29**	**329**	P	**Pn**	**03 55 52.1**	**-0.2**
AKS	**Akhisar**	**2.29**	**329**	*e*PN	**Pn**	**03 55 52.2**	**-0.1**
AKS	**Akhisar**	**2.29**	**329**	*e*Pn	**Pn**	**03 55 52.2**	**-0.1**
BLCB	**Balcova**	**2.32**	**310**	*e*PN	**Pn**	**03 55 52.4**	**-0.3**
BLCB	**Balcova**	**2.32**	**310**	*e*Pn	**Pn**	**03 55 52.4**	**-0.3**
TVSB	**Tavsanli**	**2.53**	**3**	*e*PN	**Pn**	**03 55 55.6**	**-0.1**
TVSB	**Tavsanli**	**2.53**	**3**	*e*Pn	**Pn**	**03 55 55.6**	**-0.1**
AUKIR	**K¨-rka- Seyitg**	**2.54**	**22**	*i* P	**Pn**	**03 55 56.6**	**+0.8**
AUKIR	**K¨-rka- Seyitg**	**2.54**	**22**	P	**Pn**	**03 55 56.6**	**+0.8**
KMER	**Konya-Meram**	**2.58**	**70**	*i* P	**Pn**	**03 55 58.2**	**+1.8**
KMER	**Konya-Meram**	**2.58**	**70**	P	**Pn**	**03 55 58.2**	**+1.8**
ZEY	**¨zmir**	**2.59**	**301**	*i* P	**Pn**	**03 55 56.4**	**0.0**
KONT	**Konya--Tatoy**	**2.63**	**66**	*e*PN	**Pn**	**03 55 58.0**	**+1.0**
KONT	**Konya--Tatoy**	**2.63**	**66**	*e*Pn	**Pn**	**03 55 58.0**	**+1.0**
KDHN	**Kadinhani**	**2.74**	**53**	*i* P	**Pn**	**03 55 59.5**	**+1.0**
KDHN	**Kadinhani**	**2.74**	**53**	P	**Pn**	**03 55 59.5**	**+1.0**
LADK	**Ladik-KONYA**	**2.74**	**61**	*e*PN	**Pn**	**03 55 59.6**	**+1.0**
LADK	**Ladik-KONYA**	**2.74**	**61**	*e*Pn	**Pn**	**03 55 59.6**	**+1.0**
DURS	**Dursunbey**	**2.75**	**346**	*i* P	**Pn**	**03 55 58.2**	**-0.6**
DURS	**Dursunbey**	**2.75**	**346**	P	**Pn**	**03 55 58.2**	**-0.6**
ESKT	**Eskisehir**	**2.86**	**25**	*i* P	**Pn**	**03 56 00.3**	**0.0**
SEYT	**Eskypehyr**	**2.86**	**25**	P	**Pn**	**03 56 00.3**	**0.0**
DKL	**Dikili**	**2.87**	**319**	*e*PN	**Pn**	**03 56 00.6**	**+0.4**
DKL	**Dikili**	**2.87**	**319**	*e*Pn	**Pn**	**03 56 00.6**	**+0.4**
ERMK	**Ermenek**	**2.90**	**94**	*i* P	**Pb**	**03 56 05.0**	**-1.2**
ERMK	**Ermenek**	**2.90**	**94**	P	**Pb**	**03 56 05.0**	**-1.2**
BALB	**Balikesir**	**2.94**	**338**	*e*PN	**Pn**	**03 56 01.7**	**+0.5**
BALB	**Balikesir**	**2.94**	**338**	*e*Pn	**Pn**	**03 56 01.7**	**+0.5**
CHOS	**Chios island**	**2.97**	**300**	P	**Pn**	**03 56 01.8**	**+0.1**
CHOS	**Chios island**	**2.97**	**300**	P	**Pn**	**03 56 01.8**	**+0.1**
CHOS	**Chios island**	**2.97**	**300**	P	**Pn**	**03 56 03.1**	**+1.4**
APE	**Apeiranthos**	**3.03**	**274**	*e*Pn	**Pn**	**03 56 02.9**	**+0.4**
APE	**Apeiranthos**	**3.03**	**274**	*i*P	**Pn**	**03 56 03.8**	**+1.2**
APE	**Apeiranthos**	**3.03**	**274**	*e*Pn	**Pn**	**03 56 02.9**	**+0.4**
APE	**Apeiranthos**	**3.03**	**274**	P	**Pn**	**03 56 03.7**	**+1.2**
APE				S	**Sn**	**03 56 40.3**	**+1.0**
APE	**Apeiranthos**	**3.03**	**274**	P	**Pn**	**03 56 03.7**	**+1.2**
APE				AML	AML	03 56 41.2	
	comp=N,615μm,0.4s						
APE				AML	AML	03 56 43.6	
	comp=E,719μm,0.7s						
SVRH	**Sivrihisar-ESK**	**3.06**	**34**	*e*PN	**Pn**	**03 56 03.9**	**+0.9**
SVRH	**Sivrihisar-ESK**	**3.06**	**34**	*e*Pn	**Pn**	**03 56 03.9**	**+0.9**
BORA	**Eskisehir**	**3.09**	**17**	*i* P	**Pn**	**03 56 04.0**	**+0.7**
BORA	**Eskisehir**	**3.09**	**17**	P	**Pn**	**03 56 04.0**	**+0.7**
ZKR	**Zakros**	**3.09**	**235**	P	**Pn**	**03 56 03.4**	**+0.1**
ZKR				S	**Sn**	**03 56 40.1**	**-0.6**
ZKR	**Zakros**	**3.09**	**235**	P	**Pn**	**03 56 03.4**	**+0.1**
ZKR				S	**Sn**	**03 56 40.1**	**-0.6**
ZKR	**Zakros**	**3.09**	**235**	P	**Pn**	**03 56 04.5**	**+1.2**
ZKR				S	**Sn**	**03 56 42.9**	**+2.3**
ZKR				AML	AML	03 56 44.7	
	comp=N,1106μm,0.7s						
ZKR				AML	AML	03 57 07.0	
	comp=E,790μm,1.3s						
AKMC	**Akamas**	**3.09**	**127**	P	**Pn**	**03 56 05.0**	**+1.7**
BALY	**Balya**	**3.11**	**335**	*i* P	**Pn**	**03 56 04.1**	**+0.4**
BALY	**Balya**	**3.11**	**335**	P	**Pn**	**03 56 04.1**	**+0.4**
AYVA	**Ayvalik**	**3.15**	**320**	*i* P	**Pn**	**03 56 03.9**	**-0.3**
AYVA	**Ayvalik**	**3.15**	**320**	P	**Pn**	**03 56 03.9**	**-0.3**
PPCY	**Paphos**	**3.19**	**129**	P	**Pn**	**03 56 05.3**	**+0.6**
ALFC	**Alefka**	**3.19**	**122**	P	**Pn**	**03 56 06.3**	**+1.6**
ULDT	**Uludag**	**3.22**	**358**	*i* P	**Pn**	**03 56 06.0**	**+0.7**
ULDT	**Uludag**	**3.22**	**358**	P	**Pn**	**03 56 06.0**	**+0.7**
THR5	**Thira Island,**	**3.23**	**262**	*e*PN	**Pn**	**03 56 05.6**	**+0.4**
THR5	**Thira Island,**	**3.23**	**262**	*e*Pn	**Pn**	**03 56 05.6**	**+0.4**
PRK	**Paraskevi**	**3.34**	**315**	P	**Pn**	**03 56 07.4**	**+0.7**
PRK	**Paraskevi**	**3.34**	**315**	P	**Pn**	**03 56 07.5**	**+0.7**
IGD	**Bursa**	**3.34**	**359**	*i* P	**Pn**	**03 56 05.5**	**-1.2**
GONE	**Gonen-Balikesi**	**3.37**	**338**	*e*PN	**Pn**	**03 56 07.7**	**+0.5**
GONE	**Gonen-Balikesi**	**3.37**	**338**	*e*Pn	**Pn**	**03 56 07.7**	**+0.5**
AUMIH	**MIHALICIK**	**3.40**	**29**	*i* P	**Pn**	**03 56 08.4**	**+0.7**
AUMIH	**MIHALICIK**	**3.40**	**29**	P	**Pn**	**03 56 08.4**	**+0.7**
IZI	**Iznik**	**3.41**	**2**	*e*PN	**Pn**	**03 56 09.0**	**+1.2**
IZI	**Iznik**	**3.41**	**2**	*e*Pn	**Pn**	**03 56 09.0**	**+1.2**
LEF	**Lefka**	**3.41**	**121**	*e*PN	**Pn**	**03 56 08.0**	**+0.3**
LEF	**Lefka**	**3.41**	**121**	*e*Pn	**Pn**	**03 56 08.0**	**+0.3**
KCTX	**Karacabey (Bur**	**3.42**	**348**	*e*PN	**Pn**	**03 56 07.9**	**0.0**
KCTX	**Karacabey (Bur**	**3.42**	**348**	*e*Pn	**Pn**	**03 56 07.9**	**0.0**
NPS	**Neapolis**	**3.42**	**242**	P	**Pn**	**03 56 08.2**	**+0.3**
NPS				S	**Sn**	**03 56 49.0**	**+0.1**
NPS	**Neapolis**	**3.42**	**242**	P	**Pn**	**03 56 08.2**	**+0.3**
NPS				S	**Sn**	**03 56 49.0**	**+0.1**
NPS	**Neapolis**	**3.42**	**242**	P	**Pn**	**03 56 08.2**	**+0.3**
NPS				S	**Sn**	**03 56 49.6**	**+0.7**
NPS				AML	AML	03 56 54.8	
	comp=E,849μm,1.3s						
NPS				AML	AML	03 56 56.2	
	comp=N,855μm,0.5s						
ADVT	**Abdulvahap**	**3.52**	**5**	*e*PN	**Pn**	**03 56 10.3**	**+1.1**
ADVT	**Abdulvahap**	**3.52**	**5**	*e*Pn	**Pn**	**03 56 10.3**	**+1.1**
SIGR	**SIGRI**	**3.56**	**311**	*e*PN	**Pn**	**03 56 10.5**	**+0.7**
SIGR	**SIGRI**	**3.56**	**311**	P	**Pn**	**03 56 10.4**	**+0.7**
SIGR	**SIGRI**	**3.56**	**311**	P	**Pn**	**03 56 10.4**	**+0.7**
LAST	**Lasithi**	**3.57**	**242**	*i*P	**Pn**	**03 56 11.6**	**+1.6**
LAST	**Lasithi**	**3.57**	**242**	S	**Sn**	**03 56 54.3**	**+1.7**
LAST	**Lasithi**	**3.57**	**242**	P	**Pn**	**03 56 10.5**	**+0.5**
LAST				S	**Sn**	**03 56 52.4**	**-0.2**
LAST	**Lasithi**	**3.57**	**242**	P	**Pn**	**03 56 10.5**	**+0.5**
LAST				S	**Sn**	**03 56 52.4**	**-0.2**
LAST	**Lasithi**	**3.57**	**242**	P	**Pn**	**03 56 11.0**	**+1.0**
IKL	**Isikli**	**3.58**	**100**	*e*PN	**Pn**	**03 56 11.6**	**+1.5**
IKL	**Isikli**	**3.58**	**100**	*e*Pn	**Pn**	**03 56 11.6**	**+1.5**
EDC	**Edincik**	**3.60**	**342**	*e*PN	**Pn**	**03 56 10.3**	**0.0**
EDC	**Edincik**	**3.60**	**342**	*e*Pn	**Pn**	**03 56 10.3**	**0.0**
MAMC	**Mammari**	**3.62**	**118**	P	**Pn**	**03 56 11.8**	**+1.3**
SZAC	**Souni**	**3.62**	**126**	P	**Pn**	**03 56 12.1**	**+1.5**
GULT	**Gulveren**	**3.63**	**15**	*e*PN	**Pn**	**03 56 11.9**	**+1.1**
GULT	**Gulveren**	**3.63**	**15**	*e*Pn	**Pn**	**03 56 11.9**	**+1.1**
YESY	**Yesilyurt**	**3.63**	**75**	*e*PN	**Pn**	**03 56 12.6**	**+1.7**
YESY	**Yesilyurt**	**3.63**	**75**	*e*Pn	**Pn**	**03 56 12.6**	**+1.7**
EZN	**Ezine**	**3.73**	**322**	*e*PN	**Pn**	**03 56 12.3**	**+0.2**
EZN	**Ezine**	**3.73**	**322**	*e*Pn	**Pn**	**03 56 12.3**	**+0.2**
LFK	**Lefkose**	**3.79**	**114**	*e*PN	**Pn**	**03 56 14.5**	**+1.5**
LFK	**Lefkose**	**3.79**	**114**	*e*Pn	**Pn**	**03 56 14.5**	**+1.5**
CSS	**Mathiatis**	**3.80**	**120**	P	**Pn**	**03 56 15.3**	**+2.2**
CSS	**Mathiatis**	**3.80**	**120**	P	**Pn**	**03 56 11.8**	**-1.3**
CSS				S	**Sn**	**03 56 56.6**	**-1.6**
CSS	**Mathiatis**	**3.80**	**120**	P	**Pn**	**03 56 11.8**	**-1.3**
CSS	**Mathiatis**	**3.80**	**120**	*e*Pn	**Pn**	**03 56 14.2**	**+1.1**
CSS	**Mathiatis**	**3.80**	**120**	*e*Pn	**Pn**	**03 56 14.2**	**+1.1**
MDUB	**Mudurnu**	**3.84**	**22**	*e*PN	**Pn**	**03 56 14.9**	**+1.2**
MDUB	**Mudurnu**	**3.84**	**22**	*e*Pn	**Pn**	**03 56 14.9**	**+1.2**
KERG	**Konya-Eregli**	**3.88**	**81**	*i* P	**Pn**	**03 56 16.7**	**+2.5**
KERG	**Konya-Eregli**	**3.88**	**81**	P	**Pn**	**03 56 16.7**	**+2.5**
AFSR	**Af˘ar-Bala (A**	**3.89**	**48**	*e*PN	**Pn**	**03 56 15.6**	**+1.2**
AFSR	**Af˘ar-Bala (A**	**3.89**	**48**	*e*Pn	**Pn**	**03 56 15.6**	**+1.2**
HRT	**Hereke**	**3.90**	**4**	*e*PN	**Pn**	**03 56 15.7**	**+1.2**
HRT	**Hereke**	**3.90**	**4**	*e*Pn	**Pn**	**03 56 15.7**	**+1.2**
KIZK	**Mersin**	**3.91**	**95**	*i* P	Pn	03 56 18.0	+3.5
KIZK	**Mersin**	**3.91**	**95**	P	Pn	03 56 18.0	+3.5
MRMT	**Marmara Adasi**	**3.91**	**340**	*e*PN	**Pn**	**03 56 14.6**	**-0.1**
MRMT	**Marmara Adasi**	**3.91**	**340**	*e*Pn	**Pn**	**03 56 14.6**	**-0.1**
SERE	**Sereflikochisa**	**3.92**	**58**	*e*PN	**Pn**	**03 56 16.1**	**+1.3**
SERE	**Sereflikochisa**	**3.92**	**58**	*e*Pn	**Pn**	**03 56 16.1**	**+1.3**
IDI	**Anoyia**	**3.93**	**247**	Pn	**Pn**	**03 56 16.4**	**+1.4**
	comp=N,5.7nm,0.3s,baz=63,slow=17,SNR=32						
IDI				Sn	**Sn**	**03 57 01.7**	**+0.1**
	comp=N,8.1nm,0.3s,baz=329,slow=18,SNR=3.9						
IDI				LR	LR	03 58 03.2	
	comp=N,188nm,19.8s,baz=91,slow=42						
IDI	**Anoyia**	**3.93**	**247**	*i*P	**Pn**	**03 56 16.3**	**+1.4**
IDI	**Anoyia**	**3.93**	**247**	P	**Pn**	**03 56 15.6**	**+0.6**
IDI	**Anoyia**	**3.93**	**247**	P	**Pn**	**03 56 15.6**	**+0.6**
IDI	**Anoyia**	**3.93**	**247**	Pn	**Pn**	**03 56 16.4**	**+1.4**
IDI				Sn	**Sn**	**03 57 01.7**	**+0.1**
IDI				S	Sb	03 57 02.1	-10
IDI	**Anoyia**	**3.93**	**247**	P	**Pn**	**03 56 16.2**	**+1.2**
IDI				AML	AML	03 57 04.4	
	comp=E,242μm,0.5s						
IDI				AML	AML	03 57 11.1	
	comp=N,410μm,1.0s						
SIVA	**Sivas**	**4.12**	**244**	*i*P	**Pn**	**03 56 19.9**	**+2.5**
SIVA	**Sivas**	**4.12**	**244**	P	**Pn**	**03 56 19.0**	**+1.6**
SIVA				S	**Sn**	**03 57 06.0**	**0.0**
SIVA	**Sivas**	**4.12**	**244**	P	**Pn**	**03 56 19.0**	**+1.6**
GELI	**Tayfur-Gelibol**	**4.12**	**328**	*e*PN	**Pn**	**03 56 18.4**	**+0.9**
GELI	**Tayfur-Gelibol**	**4.12**	**328**	*e*Pn	**Pn**	**03 56 18.4**	**+0.9**
GULA	**Gulagac**	**4.16**	**69**	*e*PN	**Pn**	**03 56 19.5**	**+1.4**
GULA	**Gulagac**	**4.16**	**69**	*e*Pn	**Pn**	**03 56 19.5**	**+1.4**
EREN	**Erenkoy**	**4.17**	**108**	*e*PN	**Pn**	**03 56 20.4**	**+2.3**
EREN	**Erenkoy**	**4.17**	**108**	*e*Pn	**Pn**	**03 56 20.4**	**+2.3**
MERS	**Mersin**	**4.18**	**89**	*e*PN	**Pn**	**03 56 19.8**	**+1.5**
MERS	**Mersin**	**4.18**	**89**	*e*Pn	**Pn**	**03 56 19.8**	**+1.5**
PHNC	**Paralimni**	**4.28**	**115**	P	**Pn**	**03 56 22.8**	**+3.2**
LIA	**Limnos Island**	**4.40**	**314**	P	**Pn**	**03 56 21.7**	**+0.4**
VAM	**Vamos**	**4.40**	**251**	P	**Pn**	**03 56 23.9**	**+2.5**
BRTR	**Keskin Array B**	**4.41**	**49**	Pn	**Pn**	**03 56 21.5**	**0.0**
	comp=N,1.4nm,0.3s,baz=231,slow=16,SNR=31						
BRTR				Sn	**Sn**	**03 57 14.8**	**+1.4**
	comp=N,1.1nm,0.3s,baz=217,slow=26,SNR=8.1						
ENEZ	**Enez**	**4.54**	**328**	P	**Pn**	**03 56 23.5**	**+0.3**
ENEZ				S	**Sn**	**03 57 17.5**	**+1.2**
ENEZ	**Enez**	**4.54**	**328**	P	**Pn**	**03 56 23.5**	**+0.3**
ENEZ				S	**Sn**	**03 57 17.5**	**+1.2**
IMMV	**Iera Moni Meta**	**4.55**	**253**	P	**Pn**	**03 56 24.3**	**+0.9**
IMMV	**Iera Moni Meta**	**4.55**	**253**	P	**Pn**	**03 56 24.3**	**+0.9**
SMTH	**Samothraki Isl**	**4.62**	**321**	P	**Pn**	**03 56 23.5**	**-0.8**
SMTH	**Samothraki Isl**	**4.62**	**321**	P	**Pn**	**03 56 23.5**	**-0.8**
ALN	**Alexandroupoli**	**4.72**	**328**	P	**Pn**	**03 56 26.1**	**+0.5**
ALN	**Alexandroupoli**	**4.72**	**328**	P	**Pn**	**03 56 26.1**	**+0.5**
BTCH	**Batrach**	**5.83**	**97**	*e*P	**Pn**	**03 56 41.8**	**+0.8**
DRWC	**Darouich**	**5.91**	**91**	*e*P	**Pn**	**03 56 43.1**	**+0.9**
BIDA	**Albida**	**5.99**	**106**	*e*P	**Pn**	**03 56 43.8**	**+0.5**
ANX	**Ano Chora**	**6.09**	**288**	P	**Pn**	**03 56 46.3**	**+1.7**
ANX	**Ano Chora**	**6.09**	**288**	P	**Pn**	**03 56 46.3**	**+1.7**
MMAI	**Mount Meron Ar**	**6.34**	**126**	Pn	**Pn**	**03 56 47.1**	**-0.9**
	comp=N,5.2nm,0.3s,baz=313,slow=11,SNR=16						
AJLJ	**Ajlon**	**7.00**	**129**	*e*P	**Pn**	**03 56 58.1**	**+1.0**
MSAB	**Monastry St. A**	**7.25**	**351**	*i*P	**Pn**	**03 57 02.6**	**+2.2**
MSAB	**Monastry St. A**	**7.25**	**351**	*i*P	**Pn**	**03 57 02.6**	**+2.2**
TIRR	**Tirgusor**	**7.56**	**355**	*i*P	**Pn**	**03 57 05.5**	**+0.8**
TIRR	**Tirgusor**	**7.56**	**355**	*i*P	**Pn**	**03 57 05.5**	**+0.8**
WALJ	**Wala**	**7.58**	**133**	*e*P	**Pn**	**03 57 05.3**	**+0.3**
KARJ		**7.82**	**136**	*e*P	Pn	03 56 59.8	-8.5
CFR	**Carcaliu**	**8.30**	**354**	*i*P	**Pn**	**03 57 16.2**	**+1.4**
CFR	**Carcaliu**	**8.30**	**354**	*i*P	**Pn**	**03 57 16.2**	**+1.4**
AQBJ	**Aqaba**	**8.63**	**145**	*e*P	**Pn**	**03 57 18.2**	**-1.2**
EIL	**Elat**	**8.63**	**145**	Pn	**Pn**	**03 57 17.9**	**-1.6**
	comp=N,1.9nm,0.3s,baz=327,slow=6.5,SNR=13						
EIL				Sn	Sn	03 58 51.2	-6.0
	comp=N,1.7nm,0.3s,baz=79,slow=8.6,SNR=6.2						
BYRJ	**Bayer**	**8.66**	**134**	*e*P	**Pn**	**03 57 21.3**	**+1.4**
MLR	**Muntele Rosu**	**8.93**	**345**	*i*P	**Pn**	**03 57 25.8**	**+2.2**
MLR	**Muntele Rosu**	**8.93**	**345**	*i*P	**Pn**	**03 57 25.8**	**+2.

mb1 3.5/4, mb1mx3.3/54, mbtmp3.3/4, ML3.2/1, MS2.7/2, Ms1 2.7/2, ms1mx2.4/29, Error ellipse: s-maj=123.9km s-min=25.9km az=55.0
JMA ***22*** *04:42:48.7±0.2, 35°.71N×140°.95E, h10km±1km, M3.8*
JMA Felt II J1.

ISC 22 04:42:47.7±1.5**, 35°.71N**±0°.06×**141°.00E**±0°.09**, h12**km±7km**, n14**, σ0§39/16**, mb3.3**/3**, 3C, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CHOJ	**Chosi**	**0.12**	**267**	⇑P	**Pg**	**04 42 50.9**	**+0.2**
CHOJ				S	**Sg**	**04 42 52.6**	**-0.3**
JCN	**Nagara**	**0.71**	**246**	⇑P	**Pb**	**04 43 02.7**	**+0.7**
JCN				S	**Sn**	**04 43 13.8**	**-0.7**
JYT	**Yasato**	**0.84**	**309**	P	**Pg**	**04 43 03.7**	**-0.1**
JYT				S	**Sg**	**04 43 14.3**	**-0.5**
BSO4	**Boso 4**	**0.90**	**217**	P	**Pn**	**04 43 05.9**	**-0.1**
JHO	**Hitachi**	**0.97**	**339**	S	**Sg**	**04 43 18.6**	**-0.3**
BSO3	**Boso 3**	**0.99**	**204**	⇑P	**Pn**	**04 43 07.2**	**+0.1**
BSO1	**Boso 1**	**1.05**	**181**	P	**Pb**	**04 43 07.4**	**-0.1**
MJAR	**Matsushiro Arr**	**2.41**	**291**	Pn	**Pn**	**04 43 27.1**	**+0.1**
	5.2nm,0.3s,baz=93,slow=14,SNR=20						
MAT	**Matsushiro**	**2.41**	**291**	P	**Pn**	**04 43 27.3**	**+0.3**
MAT				*e*S	**Sb**	**04 44 00.5**	**-0.2**
JNU	**Nakatsue**	**8.76**	**256**	LR	LR	04 48 41.5	
	comp=Z,69nm,19.6s,baz=125,slow=40						
KSRS	**Korea Array**	**10.66**	**283**	LR	LR	04 49 12.3	
	comp=Z,30nm,18.9s,baz=160,slow=36						
MKAR	**Makanchi Array**	**44.55**	**303**	P	**P**	**04 50 59.3**	**0.0**
	0.1nm,0.3s,baz=90,slow=9.0,SNR=3.5						
WRA	**Warramunga Arr**	**55.70**	**188**	P	**P**	**04 52 24.0**	**0.0**
	0.4nm,0.7s,baz=4.6,slow=7.8,SNR=4.3						
ASAR	**Alice Springs**	**59.43**	**188**	P	**P**	**04 52 50.8**	**+0.5**
	0.1nm,0.4s,baz=17,slow=11,SNR=3.8						

IDC 22 04:50:01.3±6.4**, 14°.60S**×**175°.62W, h0**km**, mb3.8**/2**, mb1 4.0**/2**, mb1mx3.5**/30**, mbtmp3.8**/2**, MS3.5**/3**, Ms1 3.5**/3**, ms1mx3.0**/35**, Error ellipse: s-maj=338.3km s-min=49.8km az=144.0, Samoa Islands region**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
AFI	**Afiamalu**	**3.78**	**80**	LR	LR	04 52 07.4	
	comp=Z,22nm,18.2s,baz=210,slow=33						
URZ	**Urewera**	**24.43**	**194**	LR	LR	05 03 36.0	
	comp=Z,160nm,18.4s,baz=50,slow=33						
HNR	**Honiara**	**24.44**	**279**	LR	LR	05 03 11.5	
	comp=Z,146nm,21.2s,baz=132,slow=32						
PPT	**Papeete**	**25.19**	**100**	LR	LR	05 02 36.6	
	comp=Z,58nm,20.3s,baz=134,slow=30						
WRA	**Warramunga Arr**	**47.95**	**256**	P	P	04 58 41.9	-0.2
	0.8nm,1.0s,baz=93,slow=9.3,SNR=5.8						
ASAR	**Alice Springs**	**48.33**	**251**	P	P	04 58 45.0	-0.1
	1.7nm,0.8s,baz=84,slow=8.2,SNR=28						
BRTR	**Keskin Array B**	**144.18**	**320**	PKP	PKPdf	05 09 40.1	+0.4
	1.1nm,0.9s,baz=116,slow=3.4,SNR=4.1						
GERES	**GERESS Array B**	**145.00**	**349**	PKPbc	PKPab	05 09 38.8	-1.3
	0.3nm,0.6s,baz=48,slow=1.5,SNR=3.4						

IDC ***22*** *05:06:33.3±6.4, 36°.30N×71°.01E, h158km±50km, mb3.1/5, mb1 3.2/9, mb1mx2.9/51, mbtmp3.6/9, Error ellipse: s-maj=57.2km s-min=24.7km az=41.0*
NNC ***22*** *05:06:38.9±10.0, 36°.89N×70°.60E, h161km±224km, mb2.7, mpv3.5, Error ellipse: s-maj=110.7km s-min=80.5km az=24.0*

ISC 22 05:06:36.2±2.2**, 36°.7N**±0°.2×**70°.8E**±0°.2**, h150**km**, n12**, σ1§10/12**, mb3.0**/4**, 5C, Hindu Kush region**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MNAS	**Manas**	**5.93**	**13**	⇑P	**Pn**	**05 08 02.5**	**+0.5**
	1.7nm,0.3s						
MNAS				⇑S	**Sn**	**05 09 08.9**	**-0.2**
	7.1nm,0.4s						
KK31	**Karatay Array**	**6.39**	**358**	⇑P	**Pn**	**05 08 08.7**	**+0.7**
	1.5nm,0.3s,baz=173,slow=12,SNR=3.2						
KK31				⇑S	**Sn**	**05 09 19.3**	**-0.7**
	2.3nm,0.5s,baz=181,slow=24,SNR=3.2						
AAK	**Ala-Archa**	**6.58**	**25**	P	**Pn**	**05 08 11.6**	**+0.9**
	0.7nm,0.3s,baz=183,slow=9.3,SNR=4.4						
MKAR	**Makanchi Array**	**13.24**	**37**	P	**Pn**	**05 09 38.0**	**-0.3**
	0.1nm,0.3s,baz=204,slow=8.8,SNR=2.7						
AB31	**Akbulak array**	**14.81**	**331**	⇑P	**Pn**	**05 09 57.2**	**-0.8**
	0.6nm,0.5s,baz=151,slow=12,SNR=13						
BVAR	**Borovoye Array**	**16.32**	**359**	P	**P**	**05 10 18.2**	**+1.5**
	0.2nm,0.3s,baz=177,slow=10.0,SNR=2.3						
AKTO	**Aktyubinsk**	**16.51**	**330**	P	**P**	**05 10 21.0**	**+2.1**
	0.2nm,0.3s,baz=166,slow=9.1,SNR=4.0						
ZALV	**Zalesovo Beam**	**19.81**	**25**	P	**P**	**05 10 54.2**	**-0.6**
	1.7nm,0.6s,baz=226,slow=11,SNR=6.4						
ARCES	**ARCESS Array B**	**40.88**	**338**	P	**P**	**05 14 03.2**	**+0.2**
	2.4nm,0.9s,baz=114,slow=9.0,SNR=3.5						
NOA	**NORSAR Array B**	**44.10**	**323**	P	**P**	**05 14 28.3**	**-0.9**
	0.4nm,0.7s,baz=97,slow=7.7,SNR=3.7						
YKA	**Yellowknife Ar**	**81.05**	**3**	P	P	05 18 32.2	-1.8
	0.1nm,0.5s,baz=351,slow=5.5,SNR=9.5						
WRA	**Warramunga Arr**	**82.26**	**122**	P	P	05 18 35.2	-5.8
	0.2nm,0.8s,baz=323,slow=5.2,SNR=3.0						

IDC ***22*** *05:12:47.0±0.4, 37°.92S×73°.92W, h0km, mb4.8/19, mb1 4.9/22, mb1mx4.8/32, mbtmp4.8/22, ML4.6/3, MS4.8/9, Ms1 4.7/9, ms1mx4.6/15, Error ellipse: s-maj=19.0km s-min=10.5km az=65.0*
NEIC ***22*** *05:12:48.0, 37°.91S×73°.90W, h19km, mb5.2/172, MS4.9/133, MW5.6, ML5.3(GUC), Moment Tensor Solution. s16 Moment tensor: Scale 10¹⁷Nm; Mrr1.96; Mθθ-0.12; Mφφ-1.84; Mrθ-0.70; Mθφ0.48; Mφr-1.71; Best double couple: Mo2.70000×10¹⁷ NP1:φs188.00000°, δ67.00000°, λ108.00000°. NP2:φs329.00000°, δ29.00000°, λ54.00000°. Principal axes: T 2.8500, Plg64.0000°, Azm127.0000°; N -0.3300, Plg16.0000°, Azm1.0000°; P -2.5200, Plg20.0000°, Azm265.0000°; After GUC.*
NEIC Felt [IV] at Lebu and Tirua; [III] at Arauco, Coronel, Hualqui and Talcahuano; [II] at Angol, Concepcion and Tome.
BJI ***22*** *05:12:48.2, 37°.27S×73°.75W, h19km, mB5.2/18, Ms5.3/15, Ms7 5.2/15*
ISCJB ***22*** *05:12:48.5±0.1, 37°.88S±0°.02×73°.74W±0°.04, h18km, mb5.2/181, MS5.0/152, Error ellipse: s-maj=4.4km s-min=3.3km az=6.5*
GCMT ***22*** *05:12:48.0±0.1, 38°.10S×74°.31W, h14km, MW5.3/103, Moment Tensor Solution. s78,c103; s103,c190; Duration: 1§1 Moment tensor: Scale 10¹⁷Nm; Mrr0.74±.02; Mθθ-0.01±.01; Mφφ-0.73±.02; Mrθ-0.03±.03; Mθφ-0.00±.01; Mφr-0.97±.06; Best double couple: Mo1.22400×10¹⁷ NP1:φs182.00000°, δ71.00000°, λ91.00000°. NP2:φs359.00000°, δ19.00000°, λ88.00000°. Principal axes: T 1.2300, Plg64.0000°, Azm93.0000°; N -0.0100, Plg1.0000°, Azm1.0000°; P -1.2190, Plg26.0000°, Azm271.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface/mantle waves, cutoff=50s.*
GUC ***22*** *05:12:48.5±0.4, 37°.91S×73°.91W, h19km±12km, ML5.3*
MOS ***22*** *05:12:51.6±1.2, 37°.88S×73°.78W, h33km, mb5.3/52, MS4.9/28, Error ellipse: s-maj=17.1km s-min=7.1km az=105.1*

ISC 22 05:12:49.8±0.2**, 37°.87S**±0°.03×**73°.78W**±0°.05**, h18**km**, n890, σ1§19/831, mb5.2**/181**, MS5.0**/153**, 14C-2D, Near coast of central Chile**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PSCH	**Puerto Saavedr**	**0.98**	**162**	*i* P	**Pb**	**05 13 05.4**	**-2.9**
PSCH				*i* S	**Sb**	**05 13 17.8**	**-3.1**
PSCH				IAML		05 13 24.7	
	comp=N,218μm,0.5s						
CCHI	**Chillan**	**1.85**	**48**	*i* P	**Pn**	**05 13 20.6**	**-0.1**
CCHI				*i* S	**Sb**	**05 13 45.3**	**-0.8**
CCHI				IAML		05 14 12.6	
	comp=N,35μm,0.8s						
COCH	**Cobquecura**	**1.91**	**25**	*i* P	**Pn**	**05 13 21.1**	**-0.3**
COCH				*i* S	**Sn**	**05 13 46.1**	**+1.1**
COCH				IAML		05 14 03.0	
	comp=E,25μm,1.3s						
CHPI	**Pichilemu**	**3.76**	**23**	*i* P	**Pn**	**05 13 47.0**	**+0.2**
PLCA	**Paso Flores**	**3.80**	**140**	*i* P	**Pn**	**05 13 43.8**	**-3.8**
PLCA				*i* S	**Sb**	**05 14 41.5**	**-0.7**
PLCA	**Paso Flores**	**3.80**	**140**	Pn	**Pn**	**05 13 48.6**	**+1.0**
	comp=E,3.0nm,0.3s,baz=325,slow=9.5,SNR=58						
PLCA				Pg	**Pb**	**05 13 55.4**	**-1.1**
	comp=E,20nm,0.3s,baz=337,slow=16,SNR=45						
PLCA				Sn	**Sn**	**05 14 36.1**	**+4.2**
	comp=E,22nm,0.3s,baz=4.6,slow=10,SNR=3.2						
PLCA				Lg	Lg	05 14 51.2	
	comp=E,52nm,0.3s,baz=249,slow=13,SNR=7.4						
PLCA	**Paso Flores**	**3.80**	**140**	*e*P	**Pn**	**05 13 48.9**	**+1.3**
ROC1	**El Roble**	**5.38**	**26**	*i* P	**Pn**	**05 14 08.9**	**-0.5**
ROC1				*i* S	**Sb**	**05 15 28.3**	**+0.6**
ROC1	**El Roble**	**5.38**	**26**	*e*Pn	**Pn**	**05 14 09.7**	**+0.3**
AAGR	**Agrelo**	**6.25**	**42**	*i* P	**Pn**	**05 14 23.6**	**+2.3**
ARCO	**CERRO ARCO**	**6.39**	**40**	*i* P	**Pn**	**05 14 25.1**	**+1.8**
ARCO				IAML		05 16 27.4	
	comp=Z,128nm,0.8s						
ASAL	**Salagasta**	**6.64**	**39**	*i* P	**Pn**	**05 14 27.4**	**+0.8**
ASAL				*i* S	**Sb**	**05 15 59.5**	**-4.4**
AUSP	**Uspallata**	**6.68**	**34**	*i* P	**Pn**	**05 14 28.6**	**+1.2**
AUSP				*i* S	**Sb**	**05 15 59.1**	**-6.2**
RTLS	**Leoncito**	**7.09**	**33**	*i* P	**Pn**	**05 14 33.0**	**+0.1**
RTLS				*i* S	Sb	05 16 07.6	-9.3
RTCV	**Cerro Valdivia**	**7.38**	**37**	*i* P	**Pn**	**05 14 37.3**	**+0.6**
RTCV				*i* S	Sb	05 16 13.6	-11
SJA	**San Juan**	**7.64**	**36**	*i* P	**Pn**	**05 14 40.6**	**+0.2**
SJA				IAML		05 17 05.5	
	comp=Z,112nm,0.8s						
ACAN	**Cantantal**	**7.77**	**46**	*i* P	**Pn**	**05 14 43.8**	**+1.8**
ACAN				*i* S	Sb	05 16 22.8	-13
RTLL	**Cerro Villicun**	**7.85**	**35**	*i* P	**Pn**	**05 14 43.1**	**-0.1**
RTLL				*i* S	Sn	05 16 23.5	+12
AMOG	**MOGNA**	**8.18**	**34**	*i* P	**Pn**	**05 14 46.5**	**-1.2**
AMOG				*i* S	Sn	05 16 29.2	+10
AVFE	**Valle Fertil**	**8.89**	**38**	*i* P	**Pn**	**05 14 55.7**	**-1.8**
AVFE				*i* S	Sn	05 16 46.6	+9.3
AVFE				IAML		05 17 20.7	
	comp=Z,34nm,0.7s						
LCO	**Las Campanas**	**9.20**	**17**	*e*Pn	**Pn**	**05 15 00.8**	**-1.1**
TRQA	**Tornquist**	**9.32**	**95**	*e*Pn	**Pn**	**05 15 05.7**	**+2.3**
CHRN	**Cochrane**	**9.42**	**175**	*e*Pn	**Pn**	**05 15 04.2**	**-0.3**
AGUA	**GUANDACOL**	**9.45**	**29**	*i* P	**Pn**	**05 15 01.6**	**-3.5**
AGUA				*i* S	**Sn**	**05 16 55.4**	**+4.5**
VCA	**Vinchina**	**10.23**	**29**	*i* P	Pn	05 15 10.2	-5.7
VCA				IAML		05 18 04.6	
	comp=Z,64nm,0.7s						
CYA	**Choya**	**11.53**	**38**	*i* P	**Pn**	**05 15 29.0**	**-4.6**
CYA				IAML		05 19 17.3	
	comp=Z,18nm,0.8s						
LPA	**La Plata**	**13.11**	**82**	*ce*P	Pn	05 15 50.0	-5.1
LPA				pP	P	05 15 58.0	-7.2
LPA				PP	**PbPb**	**05 16 35.0**	**-3.1**
LPA				S	**Sn**	**05 18 17.0**	**-3.4**
LPA				sS	S	05 18 28.0	-17
LPA				SCS	**ScS**	**05 28 28.0**	**-7.4**
AHML	**Horco Molle**	**13.15**	**35**	*i* P	Pn	05 15 48.8	-6.9
AHML				*i* P	Pn	05 15 48.8	-6.9
FSA	**Cafayete**	**13.45**	**32**	*i* P	Pn	05 15 51.3	-8.7
FSA				*i* S	**Sn**	**05 18 23.3**	**-5.9**
FSA				IAML		05 19 12.9	
	comp=Z,5.3nm,0.8s						
PB10	**IPOC Station P**	**14.57**	**12**	*e*Pn	**Pn**	**05 16 16.1**	**+1.0**
AZAP	**Zapla**	**15.50**	**31**	*i* P	Pn	05 16 17.9	-10
LVC	**Limon Verde**	**15.77**	**17**	*e*P	**Pn**	**05 16 31.2**	**-0.3**
	comp=Z,120nm,1.3s						
PB04	**IPOC Station P**	**15.79**	**12**	*e*Pn	**Pn**	**05 16 33.0**	**+1.4**
	comp=Z,501nm,1.3s						
ASTB	**Santa Barbara**	**16.00**	**33**	*i* P	Pn	05 16 23.5	-11
HJA	**Humahuaca**	**16.28**	**29**	*i* P	Pn	05 16 27.1	-11
ALOL	**LOMAS DE OLMED**	**16.32**	**34**	*i* P	Pn	05 16 28.3	-10
PB01	**IPOC Station P**	**17.17**	**14**	*e*Pn	**Pn**	**05 16 48.2**	**-0.8**
	comp=Z,422nm,1.7s						
YJA	**Yavi**	**17.18**	**27**	*i* P	Pn	05 16 38.8	-11
USHA	**Ushuaia**	**17.36**	**170**	P	**Pn**	**05 16 50.7**	**-0.2**
	comp=E,16nm,0.3s,baz=326,slow=10,SNR=9.7						
USHA				LR	LR	05 24 40.1	
	comp=Z,47μm,19.7s,baz=324,slow=41						
EFI	**East Falkland**	**17.70**	**146**	*ce*P	**Pn**	**05 16 55.3**	**+0.1**
EFI				pmax	pmax		
	comp=Z,218nm,1.7s						
EFI	**East Falkland**	**17.70**	**146**	*e*Pn	**P**	**05 16 55.9**	**-0.1**
	comp=Z,703nm,1.8s						
CPUP	**Villa Florida**	**18.04**	**55**	P	**P**	**05 16 60.0**	**0.0**
	comp=Z,0.6nm,0.3s,baz=210,slow=10,SNR=11						
CPUP				LR	LR	05 24 34.4	
	comp=Z,2μm,21.0s,baz=232,slow=39						
CPUP	**Villa Florida**	**18.04**	**55**	*e*P	**P**	**05 17 00.6**	**+0.6**
CPUP	**Villa Florida**	**18.04**	**55**	*e*Pn	**P**	**05 17 00.6**	**+0.6**
PB11	**IPOC Station P**	**18.40**	**12**	*e*Pn	**Pn**	**05 17 04.8**	**+0.6**
	comp=Z,302nm,1.0s						
LPAZ	**La Paz**	**22.07**	**15**	P	**P**	**05 17 46.3**	**+1.8**
	comp=Z,22nm,1.0s,baz=187,slow=8.8,SNR=45						
LPAZ	**La Paz**	**22.07**	**15**	*e*P	**P**	**05 17 46.0**	**+1.5**
LPAZ	**La Paz**	**22.07**	**15**	*e*P	**P**	**05 17 46.9**	**+2.4**
	comp=Z,226nm,1.4s						
SIV	**San Ignacio**	**24.51**	**31**	P	**P**	**05 18 08.9**	**+0.6**
	comp=Z,28nm,1.1s,baz=228,slow=12,SNR=36						
NNA	**Nana**	**25.92**	**353**	*ce*P	**P**	**05 18 23.5**	**+2.5**
NNA				pmax	pmax		
	comp=Z,116nm,1.7s						
NNA	**Nana**	**25.92**	**353**	*e*P	**P**	**05 18 21.5**	**+0.4**
	comp=Z,166nm,1.4s						
NNA				LR	LR		
	comp=Z,605nm,21.0s						
SPB	**Sao Paulo**	**26.63**	**65**	*e*P	**P**	**05 18 26.9**	**-0.6**
	comp=Z,127nm,1.0s						
SPB				LR	LR		
	comp=Z,2μm,21.0s						
PMSA	**Palmer Station**	**27.55**	**171**	LR	LR	05 30 09.3	
	comp=Z,4μm,18.6s,baz=337,slow=38						
HOPE	**Hope Point**	**30.19**	**135**	PFAKE		05 19 10.0	+11
HOPE				LR	LR		
	comp=Z,2μm,20.0s						
SAML	**Samuel**	**30.34**	**21**	*e*P	**P**	**05 19 01.3**	**+0.8**
	comp=Z,40nm,1.4s						
SAML				LR	LR		
	comp=Z,4μm,19.0s						
ATAH	**Atahualpa**	**30.88**	**351**	P	**P**	**05 19 07.1**	**+1.4**
	comp=Z,2.8nm,0.4s,baz=128,slow=18,SNR=6.0						
OTAV	**Otavalo**	**38.16**	**352**	*e*P	**P**	**05 20 10.9**	**+2.2**
	comp=Z,63nm,1.4s						
OTAV				LR	LR		
	comp=Z,1μm,19.0s						
OTAV	**Otavalo**	**38.16**	**352**	*e*P	**P**	**05 20 08.5**	**-0.2**
CMBC	**Cumbal**	**38.80**	**354**	*e*P	**P**	**05 20 17.0**	**+2.9**
PTGA	**Pitinga**	**39.08**	**22**	*e*P	**P**	**05 20 15.8**	**-0.2**
	comp=Z,57nm,1.4s						
FLOC	**Florencia**	**39.29**	**357**	*e*P	**P**	**05 20 18.7**	**+1.0**
CRUC	**La Cruz**	**39.35**	**355**	*e*P	**P**	**05 20 19.3**	**+0.7**
POPC	**Popayan, Colom**	**40.29**	**356**	*e*P	**P**	**05 20 26.1**	**-0.2**
GRGC	**Isla de Gorgon**	**40.87**	**353**	*e*P	**P**	**05 20 30.6**	**-0.2**
SJAC	**San Juan de Ar**	**40.93**	**360**	*e*P	**P**	**05 20 31.7**	**+0.3**
PRAC	**Prado**	**41.38**	**358**	*e*P	**P**	**05 20 36.8**	**+1.8**
VILC	**Villavicencio,**	**41.77**	**0**	*e*P	**P**	**05 20 39.1**	**+0.8**
TOLC	**Tolima**	**42.26**	**358**	*e*P	**P**	**05 20 43.6**	**+1.0**
ROSC	**El Rosal**	**42.49**	**359**	P	**P**	**05 20 48.5**	**+3.9**
	comp=Z,7.3nm,0.8s,baz=237,slow=4.5,SNR=9.0						
ROSC	**El Rosal**	**42.49**	**359**	*e*P	**P**	**05 20 45.5**	**+1.0**
	comp=Z,12nm,0.9s						
GUYC	**Guyana, Colomb**	**42.90**	**358**	*e*P	**P**	**05 20 48.1**	**+0.2**
YOPC	**Yopal, Colombi**	**43.02**	**2**	*e*P	**P**	**05 20 48.7**	**+0.2**
NORC	**Norcasia**	**43.22**	**358**	*e*P	**P**	**05 20 50.4**	**+0.4**
RUSC	**La Rusia**	**43.54**	**1**	*e*P	**P**	**05 20 52.7**	**-0.4**
HELC	**Santa Helena**	**43.86**	**357**	*e*P	**P**	**05 20 54.4**	**-1.2**
DBBC	**Dabeiba**	**44.71**	**357**	*e*P	**P**	**05 21 03.4**	**+1.4**
BRRC	**Barranca, Sant**	**44.74**	**0**	*e*P	**P**	**05 21 01.2**	**-1.0**
GRMC	**Gramalote, San**	**45.36**	**1**	*e*P	**P**	**05 21 04.0**	**-3.3**
OCAC	**Ocana**	**45.87**	**1**	*e*P	**P**	**05 21 09.1**	**-2.2**
VNA3	**Neumayer Olymp**	**46.36**	**156**	P	**P**	**05 21 14.6**	**+0.2**
MOTC	**Monteria, Cord**	**46.44**	**357**	*e*P	**P**	**05 21 15.3**	**-0.3**
SDV	**Santo Domingo**	**46.60**	**4**	PFAKE		05 21 30.0	+13
SDV				LR	LR		
	comp=Z,2μm,19.0s						
VNA1	**Neumayer--Stat**	**46.72**	**155**	P	**P**	**05 21 18.5**	**+1.3**
RCBR	**Riachuelo**	**46.91**	**57**	P	**P**	**05 21 20.8**	**+1.3**
	comp=Z,35nm,1.1s,baz=200,slow=9.4,SNR=13						
RCBR	**Riachuelo**	**46.91**	**57**	*e*P	**P**	**05 21 21.5**	**+2.0**
	comp=Z,225nm,1.6s						
RCBR				LR	LR		
	comp=Z,1μm,22.0s						
VNA2	**Neumayer--Watz**	**47.04**	**156**	P	**P**	**05 21 17.9**	**-1.9**
	baz=287,slow=9.2						
BCIP	**Isla Barro Col**	**47.13**	**352**	*e*P	**P**	**05 21 21.4**	**+0.4**
	comp=Z,46nm,1.3s						
BCIP				LR	LR		
	comp=Z,653nm,21.0s						
SNAA	**Sanae**	**48.58**	**156**	P	**P**	**05 21 31.6**	**-0.1**
SNAA	**Sanae**	**48.58**	**156**	*c*P	**P**	**05 21 31.0**	**-0.8**
SNAA				pmax	pmax		
	comp=Z,5μm,1.3s						
SNAA	**Sanae**	**48.58**	**156**	*e*P	**P**	**05 21 31.4**	**-0.4**
	comp=Z,5μm,1.3s						
JTS	**JuntasAbangare**	**49.03**	**345**	P	**P**	**05 21 35.1**	**-0.6**
	comp=Z,12nm,1.1s,baz=174,slow=5.0,SNR=5.5						
JTS	**JuntasAbangare**	**49.03**	**345**	*ce*P	**P**	**05 21 36.4**	**+0.6**
JTS				pmax	pmax		
	comp=Z,40nm,1.3s						
JTS	**JuntasAbangare**	**49.03**	**345**	*e*P	**P**	**05 21 38.0**	**+2.2**
	comp=Z,38nm,1.5s						
JTS				LR	LR		
	comp=Z,854nm,21.0s						
URIC	**Uribia, Colomb**	**49.34**	**2**	*e*P	**P**	**05 21 34.5**	**-3.5**
GRGR	**Grenville**	**51.02**	**15**	*e*P	**P**	**05 21 52.0**	**+1.2**
	comp=Z,130nm,0.9s						
GRGR				LR	LR		
	comp=Z,1μm,20.0s						
SVB	**Belmont**	**52.21**	**16**	*e*P	**P**	**05 21 59.8**	**+0.1**
	comp=Z,60nm,0.9s						
QSPA	**South Pole Qui**	**52.38**	**180**	*e*P	**P**	**05 21 59.4**	**-1.3**
	comp=Z,162nm,1.2s						
QSPA				LR	LR		
	comp=Z,958nm,20.0s						
BBGH	**Gun Hill**	**52.47**	**18**	PFAKE		05 22 10.0	+8.4
BBGH				LR	LR		
	comp=Z,3μm,22.0s						
TGUH	**Tegucigalpa,Un**	**53.18**	**344**	*e*P	**P**	**05 22 07.7**	**+0.9**
	comp=Z,39nm,1.2s						
NVL	**N'lazarevskaya**	**53.36**	**156**	*e*P	**P**	**05 22 07.4**	**-0.2**
NVL				*e*S	**S**	**05 29 34.8**	**-3.5**
NVL				MLR	MLR		
	comp=Z,2μm,24.0s						
FDF	**Fort de France**	**53.65**	**15**	PFAKE		05 22 20.0	+10
FDF				LR	LR		
	comp=Z,1μm,20.0s						
RKT	**Rikitea**	**53.86**	**267**	*e*S	**S**	**05 29 42.8**	**-3.5**
	comp=Z,715nm,26.0s						
RKT				*e*LR	LR	05 37 46.4	
	comp=Z,15μm,31.0s						
RKT	**Rikitea**	**53.86**	**267**	*e*T	T	06 19 51.1	
	comp=Z,1.4nm,0.2s						
GDHS	**Morne Mazeau,**	**55.02**	**14**	*e*P	**P**	**05 22 19.0**	**-1.4**
	comp=Z,51nm,1.1s						
MTDJ	**Mount Denham**	**55.91**	**356**	PFAKE		05 22 40.0	+13
MTDJ				LR	LR		
	comp=Z,623nm,21.0s						
CELP	**Cerrillos**	**56.05**	**8**	*e*P	**P**	**05 22 26.8**	**-0.9**
MPR	**Mayaguez**	**56.13**	**8**	*e*P	**P**	**05 22 30.0**	**+1.8**
	comp=Z,49nm,1.5s						
SJG	**San Juan**	**56.14**	**9**	P	**P**	**05 22 27.5**	**-0.7**
	baz=194,slow=6.4						
SJG	**San Juan**	**56.14**	**9**	*e*P	**P**	**05 22 27.9**	**-0.4**
SJG				pmax	pmax		
	comp=Z,24nm,1.1s						
SJG				MLR	MLR		
	comp=Z,1μm,19.0s						
SJG	**San Juan**	**56.14**	**9**	*e*P	**P**	**05 22 27.9**	**-0.4**
	comp=Z,24nm,1.1s						
SJG				LR	LR		
	comp=Z,1μm,19.0s						
SDD	**Santo Domingo**	**56.14**	**4**	*e*P	**P**	**05 22 26.6**	**-1.7**
	comp=Z,123nm,1.2s						
MTP	**Monte Pirata**	**56.20**	**9**	*e*P	**P**	**05 22 26.5**	**-2.2**
	comp=Z,27nm,1.3s						
HUMP	**Col San Antoni**	**56.21**	**9**	*e*P	**P**	**05 22 27.5**	**-1.2**
	comp=Z,30nm,1.4s						
CBYP	**Canovanas**	**56.33**	**9**	*e*P	**P**	**05 22 29.0**	**-0.8**
	comp=Z,52nm,1.2s						
ANWB	**Willy Bob**	**56.38**	**14**	PFAKE		05 22 40.0	+10
ANWB				LR	LR		
	comp=E,854nm,20.0s						
SDDR	**Presa de Saban**	**56.59**	**3**	PFAKE		05 22 40.0	+8.4
SDDR				LR	LR		
	comp=Z,1μm,19.0s						
GTBY	**Guantanamo Bay**	**57.50**	**359**	PFAKE		05 22 50.0	+12
GTBY				LR	LR		
	comp=Z,662nm,19.0s						
CMIG	**Matias Romero**	**58.16**	**336**	P	**P**	**05 22 42.7**	**+0.1**
	comp=Z,2.0nm,0.9s,baz=217,slow=10,SNR=2.8						
SBA	**Scott Base**	**59.01**	**192**	*e*P	**P**	**05 22 49.7**	**+1.8**
SBA				pmax	pmax		
	comp=Z,85nm,2.0s						
SBA				MLR	MLR		
	comp=Z,1μm,19.0s						
SBA	**Scott Base**	**59.01**	**192**	*e*P	**P**	**05 22 49.7**	**+1.8**
	comp=Z,85nm,2.0s						
SBA				LR	LR		
	comp=Z,1μm,19.0s						
GRTK	**Grand Turk**	**59.11**	**3**	PFAKE		05 23 00.0	+11
GRTK				LR	LR		
	comp=Z,734nm,20.0s						
TEIG	**Tepich**	**59.37**	**344**	P	**P**	**05 22 51.6**

baz=162
248A Dixon Mills 70.81 347 P P 05 24 06.0 +1.0
baz=168
NHSC New Hope 70.86 354 PFAKE 05 24 20.0 +15
NHSC LR LR
comp=Z,542nm,21.0s
247A Quitman 70.92 347 P P 05 24 07.1 +1.3
baz=168
536A Bastrop 71.01 339 P P 05 24 07.7 +1.3
baz=161
342A Flagon Creek P 71.03 343 P P 05 24 07.7 +1.3
baz=165
HPIG 71.06 330 *e*P P 05 24 07.7 +0.6
comp=Z,39nm,1.5s
633A Saathoff Ranch 71.07 337 P P 05 24 07.2 +0.4
baz=159,SNR=11
535A Dale 71.11 338 P P 05 24 08.1 +1.1
baz=160
245A Little AP, Sta 71.15 346 P P 05 24 08.5 +1.3
baz=167
341A Kurthwood 71.19 343 P P 05 24 08.3 +0.9
baz=164
534A Blanco 71.38 338 P P 05 24 09.1 +0.4
baz=160
147A Livingston 71.47 347 P P 05 24 09.9 +0.8
baz=168
GOGA Godfrey 71.49 351 *e*P P 05 24 09.4 +0.2
GOGA pmax pmax
comp=Z,18nm,1.0s
GOGA MLR MLR
comp=Z,414nm,20.0s
GOGA Godfrey 71.49 351 *e*P P 05 24 09.3 +0.2
comp=Z,18nm,1.0s
GOGA LR LR
comp=Z,414nm,20.0s
146A Union 71.57 346 P P 05 24 10.4 +0.7
baz=168
533A Kerrville 71.59 337 P P 05 24 10.8 +0.9
baz=159
LRAL Lakeview Retre 71.61 348 *e*P P 05 24 09.9 0.0
comp=Z,25nm,1.1s
242A Grayson 71.65 344 P P 05 24 11.6 +1.4
baz=165
145A Houston Renfro 71.71 346 P P 05 24 12.1 +1.6
baz=167
338A Crockett 71.74 341 P P 05 24 12.5 +1.8
baz=162
241A Mo Tay, Goldon 71.79 343 P P 05 24 12.5 +1.6
baz=164
435B Jarrell 71.83 339 P P 05 24 12.5 +1.2
baz=161
337A Centerville 71.86 340 P P 05 24 13.1 +1.6
baz=162
NATX Nacogdoches 71.96 341 P P 05 24 13.1 +1.0
baz=163
NATX Nacogdoches 71.96 341 *e*P P 05 24 12.6 +0.5
comp=Z,72nm,1.4s
NATX LR LR
comp=Z,362nm,20.0s
240A Hunter Patters 72.00 342 P P 05 24 13.3 +1.0
baz=164
434A Burnet 72.06 338 P P 05 24 12.9 +0.2
baz=160,SNR=10
142A Monroe 72.07 344 P P 05 24 13.4 +0.7
baz=165
143A Socs Landing, 72.11 344 P P 05 24 13.8 +1.0
baz=166
336A Riesel 72.19 339 P P 05 24 13.5 +0.1
baz=161,SNR=6.7
JCT Junction City 72.21 337 P P 05 24 13.8 +0.1
baz=159,SNR=8.0
JCT Junction City 72.21 337 *e*P P 05 24 14.4 +0.7
JCT pmax pmax
comp=Z,47nm,1.2s
JCT Junction City 72.21 337 *e*P P 05 24 14.4 +0.7
comp=Z,47nm,1.2s
433A Art 72.25 337 P P 05 24 13.5 -0.3
baz=159,SNR=15
Z44A Pea Ridge, Bel 72.46 345 P P 05 24 16.0 +1.0
baz=166
TXAR Lajitas Array 72.47 333 P P 05 24 16.1 +0.8
comp=Z,6.1nm,0.9s,baz=148,slow=7.4,SNR=32
TXAR LR LR 05 51 09.5
comp=Z,387nm,18.2s,baz=0.0,slow=32
TX31 Lajitas Ar. Si 72.47 333 *e*P P 05 24 15.8 +0.5
237A Washetta, Mont 72.48 340 P P 05 24 16.3 +1.1
baz=162
334A Lometa 72.53 338 P P 05 24 15.3 -0.2
baz=160,SNR=12
Y47A UCPARC, Winfie 72.59 348 P P 05 24 16.4 +0.6
baz=168
236A Katherine and 72.68 340 P P 05 24 16.7 +0.4
baz=162
333A Richland Sprin 72.75 338 P P 05 24 16.6 -0.2
baz=160,SNR=9.4
Y46A Houston 72.75 347 P P 05 24 16.8 +0.1
baz=168
CNNC Cliffs of the 72.84 356 PFAKE 05 24 30.0 +13
CNNC LR LR
comp=Z,521nm,20.0s
Y45A Yeager Farm, C 72.86 346 P P 05 24 18.2 +0.8
baz=167
WHTX Lake Whitney, 72.92 339 P P 05 24 18.6 +0.8
baz=161
WHTX Lake Whitney, 72.92 339 *e*P P 05 24 18.6 +0.8
comp=Z,37nm,1.1s
KMSC Kings Mountain 72.98 354 P P 05 24 18.3 +0.2
baz=174
KMSC Kings Mountain 72.98 354 *e*P P 05 24 17.6 -0.5
comp=Z,32nm,1.4s
137A Heron Place, G 73.03 341 P P 05 24 19.5 +1.0
baz=162
Y44A Strider, Charl 73.08 346 P P 05 24 19.8 +1.1
baz=167
136A Ennis 73.12 340 P P 05 24 19.6 +0.6
baz=162
234A Clairette 73.13 339 P P 05 24 19.0 0.0
baz=160,SNR=9.3
Y43A Makayla and Ka 73.17 345 P P 05 24 19.7 +0.5
baz=166
CCAR Cane Creek 73.36 344 *e*P P 05 24 21.1 +0.8
comp=Z,78nm,1.4s
233A Rising Star 73.37 338 P P 05 24 20.2 -0.3
baz=160,SNR=11
135A Vickery Place, 73.44 339 P P 05 24 21.5 +0.6
baz=161
Z38A Mt. Pleasant 73.46 342 P P 05 24 21.9 +1.0
baz=163
OXF Oxford 73.46 347 *e*P P 05 24 21.3 +0.4
OXF pmax pmax
comp=Z,31nm,1.1s
OXF Oxford 73.46 347 *e*P P 05 24 21.3 +0.4
comp=Z,31nm,1.1s
SWET Sewanee 73.58 350 *e*P P 05 24 21.9 +0.2
comp=Z,17nm,1.0s
CPCT Cooper Cave 73.63 351 *e*P P 05 24 22.2 +0.3
comp=Z,16nm,1.1s
134A White-Moore Ra 73.65 339 P P 05 24 21.8 -0.3
baz=160,SNR=6.9
TKL Tuckaleechee C 73.74 352 P P 05 24 21.6 -1.0
comp=Z,10nm,1.0s,baz=177,slow=8.8,SNR=6.4
TKL Tuckaleechee C 73.74 352 *e*P P 05 24 22.0 -0.6
TKL pmax pmax
comp=Z,28nm,1.2s
TKL Tuckaleechee C 73.74 352 *e*P P 05 24 21.9 -0.6
comp=Z,28nm,1.2s
Y40A Okolona 73.78 343 P P 05 24 23.4 +0.6
baz=164
Z36A Blue Ridge 73.85 340 P P 05 24 23.6 +0.4
baz=162
Y39A Lockesburg 73.90 343 P P 05 24 23.7 +0.2
baz=164
133A Hamilton Ranch 73.93 338 P P 05 24 23.4 -0.3
baz=160,SNR=13
Y38A Idabel 74.04 342 P P 05 24 24.8 +0.4
baz=163
Z35A Perchaven, San 74.13 340 P P 05 24 25.3 +0.4
baz=161
X40A Basin Creek Fa 74.13 344 P P 05 24 25.4 +0.6
baz=165
ABTX Abilene, Hawle 74.16 338 P P 05 24 25.1 0.0
baz=159,SNR=8.4
ABTX Abilene, Hawle 74.16 338 *e*P P 05 24 25.7 +0.6
comp=Z,55nm,1.3s
SRIG Santa Rosalia 74.20 325 *e*P P 05 24 26.7 +1.3
comp=Z,16nm,1.0s
SUR Sutherland 74.21 119 P P 05 24 26.7 +0.8
comp=Z,1.2nm,1.0s,baz=244,slow=7.2,SNR=3.3
SUR Sutherland 74.21 119 P P 05 24 26.7 +0.8
SUR LR LR
comp=Z,2μm,19.0s
RAR Rarotonga 74.25 255 *e*P P 05 24 26.5 +0.5
RAR pmax pmax
comp=Z,186nm,1.6s
RAR Rarotonga 74.25 255 *e*P P 05 24 26.5 +0.5
comp=Z,186nm,1.6s
UALR University of 74.30 344 *e*P P 05 24 25.6 -0.2
comp=Z,9.1nm,0.9s
Y37A Hugo 74.31 341 P P 05 24 26.3 +0.4
baz=162
Z34A Collier Ranch, 74.35 339 P P 05 24 26.4 +0.2
baz=161
MIAR Mount Ida 74.36 343 P P 05 24 26.6 +0.4
baz=164
MIAR Mount Ida 74.36 343 *e*P P 05 24 26.4 +0.2
MIAR pmax pmax
comp=Z,29nm,1.4s
MIAR MLR MLR
comp=Z,264nm,19.0s
MIAR Mount Ida 74.36 343 *e*P P 05 24 26.4 +0.2
comp=Z,29nm,1.4s
MIAR LR LR
comp=Z,264nm,19.0s
Y36A Durant 74.41 341 P P 05 24 27.1 +0.7
baz=162
X39A Fountain Ranch 74.45 343 P P 05 24 27.3 +0.5
baz=164
Z33A Whitaker Ranch 74.52 338 P P 05 24 27.2 +0.1
baz=160,SNR=9.9
TZTN Tazewell 74.59 352 *e*P P 05 24 28.0 +0.5
comp=Z,40nm,1.4s
Y35A Marietta 74.61 340 P P 05 24 28.7 +1.0
baz=161
W41A Tony Mavity, V 74.67 344 P P 05 24 28.5 +0.6
baz=165
W41B Gary Mavity, V 74.67 344 P P 05 24 28.3 +0.4
baz=165
X301 Greenbrier Sit 74.76 344 *e*P P 05 24 28.6 +0.1
comp=Z,31nm,1.1s
WVT Waverly 74.77 348 *e*P P 05 24 28.1 -0.4
WVT pmax pmax
comp=Z,29nm,1.1s
WVT Waverly 74.77 348 *e*P P 05 24 28.1 -0.4
comp=Z,29nm,1.1s
X38A Whitesboro 74.77 342 P P 05 24 28.6 +0.1
baz=163,SNR=9.8
WHAR Wooly Hollow 74.79 344 *e*P P 05 24 28.3 -0.3
comp=Z,37nm,1.2s
X201 Greenbrier Sit 74.81 344 *e*P P 05 24 29.1 +0.3
comp=Z,32nm,1.1s
X37A Clayton 74.83 342 P P 05 24 28.7 -0.2
baz=163
Y34A Reagan Ranch, 74.86 340 P P 05 24 28.9 -0.2
baz=161,SNR=7.2
W40A Ferguson Farm, 74.86 344 P P 05 24 29.5 +0.5
baz=164
BLA Blacksburg 74.96 355 PFAKE 05 24 40.0 +10
BLA LR LR
comp=Z,393nm,21.0s
VWCC Virginia Weste 74.96 355 *e*P P 05 24 30.2 +0.5
W39A Magazine 75.03 343 P P 05 24 30.5 +0.5
baz=164
X36A Centrahoma 75.06 341 P P 05 24 29.8 -0.5
baz=162,SNR=14
X35A Drake 75.06 340 P P 05 24 29.9 -0.4
baz=161,SNR=8.7
W38A Poteau 75.08 343 P P 05 24 30.8 +0.4
baz=163
HSIG 75.09 327 *e*P P 05 24 30.9 +0.3
comp=Z,33nm,1.4s
UTMT University of 75.15 347 *e*P P 05 24 30.8 +0.1
comp=Z,49nm,0.3s
Y33A Hilltop Ranch, 75.15 339 P P 05 24 30.5 -0.3
baz=160,SNR=5.5
CLNB Carlsbad 75.20 334 *e*P P 05 24 32.5 +1.2
MNTX Cornudas Mount 75.23 332 P P 05 24 30.7 -0.7
baz=155,SNR=8.3
MNTX Cornudas Mount 75.23 332 *e*P P 05 24 30.9 -0.4
comp=Z,7.5nm,1.1s
MNTX LR LR
comp=Z,380nm,19.0s
JSRW J. Sargeant Re 75.28 357 *e*P P 05 24 32.4 +1.0
PVMO Portageville 75.37 347 *e*P P 05 24 31.6 -0.3
comp=Z,224nm,0.3s
W37B Quinton 75.37 342 P P 05 24 32.2 +0.2
baz=163
V40A Witts Springs 75.40 344 P P 05 24 32.2 0.0
baz=165
X34A Smith Ranch, M 75.48 340 P P 05 24 32.6 -0.1
baz=161,SNR=11
W36A Wetumka 75.57 341 P P 05 24 32.4 -0.7
baz=162
V39A Petigrew 75.61 343 P P 05 24 33.3 -0.1
baz=164
X33A Lawton 75.61 339 P P 05 24 33.2 -0.3
baz=160
PARMO Parma 75.62 347 *e*P P 05 24 33.5 +0.1
comp=Z,67μm,0.7s
X32A Elmer 75.73 338 P P 05 24 33.7 -0.4
baz=160,SNR=8.6
W35A Tecumseh 75.75 341 P P 05 24 33.2 -1.0
baz=162,SNR=6.9
CBN Corbin Frederi 75.77 357 *e*P P 05 24 35.1 +0.9
comp=Z,18nm,0.8s
CBN LR LR
comp=Z,510nm,20.0s
V38A Canehill 75.81 343 P P 05 24 34.5 -0.1
baz=164
WMOK Wichita Mounta 75.88 339 *e*P P 05 24 35.1 +0.1
WMOK pmax pmax
comp=Z,24nm,1.2s
WMOK MLR MLR
comp=Z,278nm,20.0s
WMOK Wichita Mounta 75.88 339 *e*P P 05 24 35.1 +0.1
comp=Z,24nm,1.2s
WMOK LR LR
comp=Z,278nm,20.0s
U40A Yellville 75.94 344 P P 05 24 34.7 -0.6
baz=165
V37A Hulbert 76.00 342 P P 05 24 35.4 -0.2
baz=163,SNR=9.1
W34A Bridge Creek, 76.06 340 P P 05 24 35.7 -0.4
baz=161,SNR=6.1
W34A Bridge Creek, 76.06 340 *e*P P 05 24 36.6 +0.5
comp=Z,41nm,1.1s
U39A Green Forest 76.10 344 P P 05 24 35.7 -0.4
baz=164,SNR=7.0
HHAR Hobbs 76.10 343 *e*P P 05 24 36.3 +0.1
comp=Z,24nm,1.4s
V36A Jenks 76.11 342 P P 05 24 36.0 -0.2
baz=162,SNR=20
W33A Caddo, Fort Co 76.18 339 P P 05 24 37.2 +0.5
baz=160,SNR=23
TUL1 Leonard 76.19 342 P P 05 24 36.4 -0.3
baz=162,SNR=16
TUL1 Leonard 76.19 342 *e*P P 05 24 36.5 -0.2
comp=Z,55nm,1.1s
V35A Meyer Ranch, C 76.31 341 P P 05 24 37.1 -0.3
baz=162,SNR=13
U38A Gravette 76.36 343 P P 05 24 37.2 -0.4
baz=164,SNR=5.6
W32A Sentinel 76.37 339 P P 05 24 37.9 +0.1
baz=160,SNR=33
MSTX Muleshoe 76.39 336 P P 05 24 37.9 -0.1
baz=157
MSTX Muleshoe 76.39 336 *e*P P 05 24 38.3 +0.2
comp=Z,44nm,1.3s
319A Douglas 76.44 329 *e*P P 05 24 40.0 +1.6
comp=Z,42nm,1.3s
U37A Salina 76.50 342 P P 05 24 37.9 -0.6
baz=163,SNR=6.5
USIN University of 76.54 349 *e*P P 05 24 38.0 -0.6
comp=Z,36nm,1.0s
SIUC Southern Illin 76.55 347 *e*P P 05 24 38.3 -0.3
comp=Z,49nm,1.5s
V34A Guthrie 76.56 340 P P 05 24 38.7 -0.1
baz=161,SNR=12
V34A Guthrie 76.56 340 *e*P P 05 24 39.0 +0.2
comp=Z,38nm,1.0s
T40A Mansfield 76.63 345 P P 05 24 38.7 -0.4
baz=165
U36A Oologah 76.63 342 P P 05 24 38.8 -0.4
baz=162,SNR=5.6
T39A Clever 76.69 344 P P 05 24 39.2 -0.3
baz=164
V33A Lossen Ranch, 76.76 340 P P 05 24 39.7 -0.3
baz=160,SNR=14
U35A Pawnee 76.86 341 P P 05 24 40.5 0.0
baz=162,SNR=20
V32A Arapaho 76.87 339 P P 05 24 40.6 0.0
baz=160,SNR=7.6
121A Cookes Peak, D 76.88 331 P P 05 24 41.4 +0.5
baz=153,SNR=6.1
121A Cookes Peak, D 76.88 331 *e*P P 05 24 40.8 -0.1
comp=Z,31nm,1.6s
AMTX Amarillo 76.88 337 P P 05 24 41.1 +0.3
baz=158
AMTX Amarillo 76.88 337 *e*P P 05 24 41.5 +0.8
comp=Z,82nm,1.4s
T38A Diamond 76.91 343 P P 05 24 40.5 -0.2
baz=164,SNR=12
S40A Lebanon 77.06 345 P P 05 24 41.5 0.0
baz=165,SNR=12
T37A Cheneyville 18 77.13 343 P P 05 24 41.4 -0.6
baz=163,SNR=7.6
U34A Anderson Ranch 77.13 341 P P 05 24 42.1 0.0
baz=161,SNR=9.6
U34A Anderson Ranch 77.13 341 *e*P P 05 24 42.5 +0.4
comp=Z,27nm,1.0s
U33A Lingo Farm, Me 77.28 340 P P 05 24 42.6 -0.2
baz=161
T36A Boggs Farm, Ca 77.30 342 P P 05 24 42.9 -0.1
baz=162,SNR=13
S39A Bolivar 77.32 344 P P 05 24 42.6 -0.4
baz=164,SNR=7.6
T35A Sooner Cattle 77.32 341 P P 05 24 43.0 -0.1
baz=162,SNR=13
LIC Lamto 77.33 72 *e*P P 05 24 44.5 +0.8
comp=Z,122nm,1.7s
S38A Stockton 77.39 344 P P 05 24 43.1 -0.3
baz=164,SNR=15
U32A Winter Ranch, 77.48 339 P P 05 24 44.1 +0.1
baz=160,SNR=6.7
BLO Bloomington 77.56 350 *e*P P 05 24 44.4 +0.1
BLO pmax pmax
comp=Z,22nm,1.0s
BLO Bloomington 77.56 350 *e*P P 05 24 44.4 +0.1
comp=Z,22nm,1.0s
T34A McClaskey Farm 77.60 341 P P 05 24 44.4 -0.2
baz=161,SNR=14
TIC Toumodi 77.61 71 *e*P P 05 24 45.9 +0.6
SLM Saint Louis 77.62 347 *e*P P 05 24 45.0 +0.3
SLM pmax pmax
comp=Z,48nm,1.1s
SLM Saint Louis 77.62 347 *e*P P 05 24 45.0 +0.3
comp=Z,48nm,1.1s
KIC Kosan Boka 77.64 72 *e*P P 05 24 46.2 +0.8
comp=Z,224nm,1.4s
R40A Maddies Statio 77.68 345 P P 05 24 44.5 -0.5
baz=165,SNR=11
S37A Fort Scott 77.72 343 P P 05 24 44.8 -0.4
baz=163,SNR=5.6
DBIC Dimbokro 77.75 72 P P 05 24 47.0 +1.0
comp=Z,29nm,1.1s,baz=204,slow=5.2,SNR=18
DBIC LR LR 05 57 36.5
comp=Z,699nm,18.1s,baz=221,slow=34
DBIC Dimbokro 77.75 72 *e*P P 05 24 47.4 +1.4
DBIC pmax pmax
comp=Z,74nm,1.3s
DBIC Dimbokro 77.75 72 *e*P P 05 24 47.4 +1.4
comp=Z,74nm,1.3s
R39A Chumby, Stover 77.86 345 P P 05 24 45.5 -0.5
baz=165,SNR=12
S36A Lake Cedric, C 77.87 342 P P 05 24 45.5 -0.6
baz=163,SNR=12
TUC Tucson 77.88 329 P P 05 24 47.3 +0.9
baz=151
TUC Tucson 77.88 329 *e*P P 05 24 47.6 +1.2
TUC pmax pmax
comp=Z,24nm,1.3s
TUC MLR MLR
comp=Z,371nm,20.0s
TUC Tucson 77.88 329 *e*P P 05 24 47.6 +1.2
comp=Z,24nm,1.3s
TUC LR LR
comp=Z,371nm,20.0s
O56A Blue Knob Stat 77.88 356 P P 05 24 46.5 +0.3
baz=176
BNM Barren Site 77.89 333 *e*P P 05 24 48.0 +1.4
R38A Fenwick Farm, 77.92 344 P P 05 24 45.8 -0.5
baz=164,SNR=5.5
T33A Patterson Ranc 77.93 340 P P 05 24 45.9 -0.6
baz=161,SNR=9.7
S35A Otter Creek Ra 78.00 342 P P 05 24 46.6 -0.2
baz=162,SNR=8.8
LPM Los Pinos Moun 78.03 333 *e*P P 05 24 48.7 +1.4
ACSO Alum Creek Sta 78.18 353 *e*P P 05 24 47.9 +0.2
comp=Z,35nm,1.0s
ACSO LR LR
comp=Z,481nm,20.0s
S34A Willow Spring 78.22 341 P P 05 24 48.1 0.0
baz=162
R37A Teagarden Farm 78.25 343 P P 05 24 47.6 -0.6
baz=163,SNR=5.6
LAZ Ladron 78.30 332 *e*P P 05 24 50.5 +1.6
Q40A Laux Farm, Aux 78.32 346 P P 05 24 48.0 -0.5
baz=166,SNR=17
S33A Kaszmaul Farm, 78.35 341 P P 05 24 49.2 +0.4
baz=161
R36A Gordon, Harris 78.42 343 P P 05 24 49.9 +0.8
baz=163
214A Organ Pipe Nat 78.43 327 P P 05 24 50.8 +1.4
baz=150
214A Organ Pipe Nat 78.43 327 *e*P P 05 24 50.1 +0.7
comp=Z,148nm,1.4s
N59A State Game Lan 78.43 358 P P 05 24 49.9 +0.7
baz=178
ANMO Albuquerque 78.54 333 P P 05 24 50.8 +0.7
comp=Z,55nm,1.1s,baz=163,slow=7.4,SNR=33
ANMO Albuquerque 78.54 333 P P 05 24 50.9 +0.7
baz=154
ANMO Albuquerque 78.54 333 *ce*P P 05 24 50.1 0.0
ANMO pmax pmax
comp=Z,24nm,1.2s
ANMO Albuquerque 78.54 333 *e*P P 05 24 51.0 +0.8
comp=Z,35nm,1.3s
ANMO LR LR
comp=Z,317nm,19.0s
Q39A Willow Grove F 78.55 345 P P 05 24 49.3 -0.5
baz=165,SNR=9.9
R35A Emporia Munici 78.58 342 P P 05 24 50.0 -0.1
baz=162
Q38A Cooks Store, C 78.60 344 P P 05 24 49.8 -0.3
baz=164,SNR=11
N54A Moraine State 78.66 355 P P 05 24 50.5 +0.1
baz=175
S32A Newby Ranch, P 78.70 340 P P 05 24 50.5 -0.3
baz=160,SNR=9.1
Q37A Longview Farm, 78.70 344 P P 05 24 50.6 -0.1
baz=164
R34A Isabella, Hill 78.82 341 P P 05 24 51.6 +0.3
baz=161,SNR=9.3
SFIN Lafayette 78.82 350 *e*P P 05 24 51.2 -0.1
comp=Z,73nm,1.9s
P40A Paris 78.83 346 P P 05 24 51.2 -0.1
baz=166,SNR=31
Q36A Arnold C. Orve 79.01 343 P P 05 24 52.7 +0.3
baz=163
R33A Olander Ranch, 79.02 341 P P 05 24 52.8 +0.4
baz=161
Q35A Mercer Eighty, 79.05 342 P P 05 24 52.7 0.0
baz=162
M54A Oil Creek Stat 79.18 356 P P 05 24 53.4 +0.1
baz=175
P38A Dawn 79.22 345 P P 05 24 53.1 -0.4
baz=164,SNR=21
R32A Long Quarter, 79.31 340 P P 05 24 54.2 +0.1
baz=160,SNR=12
HDIL Hopedale 79.33 348 P P 05 24 54.0 -0.1
baz=168
HDIL Hopedale 79.33 348 *e*P P 05 24 54.1 +0.1
comp=Z,33nm,0.9s
HDIL LR LR
comp=Z,465nm,20.0s
Q34A Chapman 79.33 342 P P 05 24 53.8 -0.3
baz=162,SNR=11
P37A Lathrop 79.36 344 P P 05 24 54.0 -0.3
baz=164
O40A La Belle 79.37 346 P P 05 24 53.9 -0.4
baz=166,SNR=9.4
KSU1 Kansas State U 79.42 342 P P 05 24 54.8 +0.2
baz=162
KSU1 Kansas State U 79.42 342 *e*P P 05 24 54.5 -0.1
comp=Z,19nm,0.8s

KSU1 LR LR
comp=Z,307nm,20.0s
X18A Snowflake 79.48 330 eP P 05 24 56.8 +1.5
comp=Z,12nm,1.1s
TSUM Tsumeb 79.51 106 eP P 05 24 57.2 +1.2
comp=Z,55nm,1.8s
TSUM LR LR
comp=Z,863nm,19.0s
BOSA Boshof 79.52 118 P P 05 24 55.6 -0.2
comp=Z,26nm,1.1s,baz=224,slow=6.4,SNR=8.3
BOSA LR LR 06 00 24.3
comp=Z,241nm,18.1s,baz=222,slow=36
BOSA Boshof 79.52 118 eP P 05 24 56.2 +0.3
comp=Z,49nm,1.2s
113A Mohawk Valley, 79.54 327 eP P 05 24 57.0 +1.6
comp=Z,18nm,1.4s
P36A Good Intent, A 79.58 343 P P 05 24 55.3 -0.2
baz=163
O39A Kirksville 79.63 346 P P 05 24 55.2 -0.5
baz=165,SNR=9.9
Q33A Connelly Farm, 79.63 341 P P 05 24 55.5 -0.2
baz=161,SNR=5.3
P35A Duane Minner, 79.68 343 P P 05 24 55.4 -0.7
baz=162,SNR=6.9
O38A Galt 79.69 345 P P 05 24 55.7 -0.3
baz=164
BINY Binghamton 79.71 358 PFAKE 05 25 10.0 +14
BINY LR LR
comp=Z,492nm,19.0s
Q32A Meitler Ranch, 79.81 341 P P 05 24 57.1 +0.4
baz=160
T25A Trinidad 79.82 336 P P 05 24 58.3 +1.1
baz=156,SNR=15
T25A Trinidad 79.82 336 eP P 05 24 58.7 +1.6
comp=Z,70nm,1.3s
O37A Wolven Farm, M 79.87 344 P P 05 24 56.4 -0.7
baz=164,SNR=7.8
P34A Walnut Farm, R 79.89 342 P P 05 24 57.2 0.0
baz=162,SNR=8.9
W18A Petrified Fore 79.91 331 P P 05 24 59.1 +1.4
baz=152
W18A Petrified Fore 79.91 331 eP P 05 24 59.3 +1.7
comp=Z,36nm,1.3s
CBKS Cedar Bluff 79.96 340 P P 05 24 58.1 +0.4
baz=160
CBKS Cedar Bluff 79.96 340 eP P 05 24 58.6 +1.0
CBKS pmax pmax
comp=Z,26nm,0.8s
CBKS MLR MLR
comp=Z,276nm,19.0s
CBKS Cedar Bluff 79.96 340 eP P 05 24 58.6 +1.0
CBKS
comp=Z,26nm,0.8s
CBKS LR LR
comp=Z,276nm,19.0s
X16A Lo Mia Camp, P 79.98 329 eP P 05 24 59.7 +1.7
comp=Z,22nm,1.1s
P33A Williams Farm, 80.01 341 P P 05 24 57.9 +0.1
baz=161
O36A Bolckow 80.02 344 P P 05 24 57.6 -0.2
baz=163
Y14A Wickenburg 80.21 328 eP P 05 25 00.8 +1.6
comp=Z,40nm,0.6s
N39A Derby Farms, D 80.22 346 P P 05 24 59.0 +0.1
baz=165
GLA Glamis 80.24 326 eP P 05 25 00.7 +1.4
GLA pmax pmax
comp=Z,22nm,1.1s
GLA Glamis 80.24 326 eP P 05 25 00.7 +1.4
comp=Z,22nm,1.1s
N38A Joes South For 80.28 345 P P 05 24 58.8 -0.4
baz=165,SNR=13
AAM Ann Arbor 80.30 353 PFAKE 05 25 10.0 +11
AAM LR LR
comp=Z,461nm,19.0s
MMNY Mt. Morris Dam 80.31 357 eP P 05 25 00.0 +0.7
comp=Z,71nm,1.4s
O35A Humboldt 80.36 343 P P 05 24 59.9 +0.2
baz=163
P32A Huiting Farm, 80.41 341 P P 05 25 00.2 +0.2
baz=160,SNR=7.5
N37A Lee Faris, Mou 80.45 344 P P 05 25 00.4 +0.2
baz=164
O34A Beatrice 80.47 342 P P 05 25 00.5 +0.3
baz=162
O33A Hebron 80.58 342 P P 05 25 01.5 +0.6
baz=161
N36A Muff Farm, Cla 80.67 344 P P 05 25 01.8 +0.4
baz=163
Y12C Blythe 80.70 327 P P 05 25 03.2 +1.6
baz=149
Y12C Blythe 80.70 327 eP P 05 25 03.8 +2.1
comp=Z,34nm,1.3s
SDCO Great Sand Dun 80.73 335 P P 05 25 02.5 +0.4
baz=155,SNR=15
SDCO Great Sand Dun 80.73 335 eP P 05 25 03.2 +1.0
comp=Z,8.9nm,1.0s
SDCO LR LR
comp=Z,316nm,19.0s
BAR Barrett 80.76 324 eP P 05 25 02.8 +0.7
comp=Z,18nm,1.2s
N35A Tabor 80.87 343 P P 05 25 02.4 0.0
baz=163
ACCN Adirondack Com 80.87 0 eP P 05 25 03.5 +1.1
comp=Z,27nm,1.1s
M38A Pleasantville 80.88 345 P P 05 25 01.8 -0.7
baz=165,SNR=7.0
WUAZ Wupatki 80.91 330 P P 05 25 04.1 +1.2
baz=151
WUAZ Wupatki 80.91 330 eP P 05 25 04.9 +2.0
comp=Z,19nm,1.1s
WUAZ LR LR
comp=Z,452nm,19.0s
O32A Brockman Farm, 80.93 341 P P 05 25 02.8 0.0
baz=161,SNR=6.3
KSCO Kaye Shedlock' 80.97 338 P P 05 25 04.2 +1.0
baz=157
KSCO Kaye Shedlock' 80.97 338 eP P 05 25 04.6 +1.4
comp=Z,48nm,1.2s
PDMCI Parker Dam,Lak 81.01 327 P P 05 25 04.6 +1.3
baz=149
BC3 Big Chuckawall 81.03 326 P P 05 25 05.1 +1.5
baz=148
M37A Trindle Farm, 81.04 345 P P 05 25 03.1 -0.2
baz=164,SNR=7.6
N34A Lincoln 81.04 343 P P 05 25 03.1 -0.2
baz=162,SNR=8.9
O31A Woolen Ranch, 81.10 340 P P 05 25 04.2 +0.5
baz=160
S22A 4UR Ranch, Cre 81.19 334 P P 05 25 05.5 +1.0
baz=154,SNR=8.9
S22A 4UR Ranch, Cre 81.19 334 eP P 05 25 06.0 +1.4
comp=Z,19nm,1.2s
MVCO Mesa Verde 81.30 333 P P 05 25 05.7 +0.7
baz=153,SNR=8.7
MVCO Mesa Verde 81.30 333 eP P 05 25 06.5 +1.4
comp=Z,24nm,1.3s
MVCO LR LR
comp=Z,461nm,19.0s
SCIA State Center 81.35 345 eP P 05 25 05.0 0.0
comp=Z,33nm,1.1s
SCIA LR LR
comp=Z,354nm,20.0s
N32A Stulken Farm, 81.41 341 P P 05 25 06.0 +0.7
baz=161
PFO Pinyon Flats O 81.44 325 P P 05 25 06.4 +0.6
comp=Z,9.7nm,1.0s,baz=153,slow=4.0,SNR=7.2
PFO Pinyon Flats O 81.44 325 eP P 05 25 07.9 +2.1
PFO pmax pmax
comp=Z,29nm,1.2s
PFO MLR MLR
comp=Z,635nm,19.0s
PFO Pinyon Flats O 81.44 325 eP P 05 25 07.9 +2.1
comp=Z,29nm,1.2s
PFO LR LR
comp=Z,635nm,19.0s
NCB Newcomb 81.46 360 PFAKE 05 25 20.0 +15
NCB LR LR
comp=Z,1µm,19.0s
MDV Middlebury 81.49 0 eP P 05 25 06.3 +0.7
L38A Oak Wood Farm, 81.53 346 P P 05 25 06.1 +0.2
baz=165
W13A Hualapai Mount 81.58 328 eP P 05 25 08.3 +1.8
comp=Z,12nm,1.1s
L37A Phoenix Point, 81.67 345 P P 05 25 06.9 +0.3
baz=164
M34A Aspy Farms, Fr 81.69 343 P P 05 25 06.7 -0.1
baz=162
Q24A Divide 81.72 336 P P 05 25 07.9 +0.5
baz=156,SNR=12
Q24A Divide 81.72 336 eP P 05 25 08.3 +1.0
comp=Z,37nm,1.3s
MURC Murrieta 81.77 325 P P 05 25 08.7 +1.3
baz=147
JFWS Jewell Farm 81.79 348 eP P 05 25 07.4 +0.2
JFWS pmax pmax
comp=Z,31nm,1.3s
JFWS MLR MLR
comp=Z,521nm,20.0s
JFWS Jewell Farm 81.79 348 eP P 05 25 07.3 +0.2
comp=Z,31nm,1.3s
JFWS LR LR
comp=Z,521nm,20.0s
L36A Harm Buss Farm 81.84 344 P P 05 25 07.6 0.0
baz=164
M33A Taylor Creek F 81.90 342 P P 05 25 08.3 +0.4
baz=162
LBTB Lobatse 81.95 115 eP P 05 25 09.2 +0.3
LBTB pmax pmax
comp=Z,95nm,1.5s
LBTB Lobatse 81.95 115 eP P 05 25 09.2 +0.3
comp=Z,95nm,1.5s
K38A Parkersburg 81.98 346 P P 05 25 08.2 -0.1
baz=165
BGNE Belgrade 81.98 342 P P 05 25 08.5 +0.2
baz=161
BGNE Belgrade 81.98 342 eP P 05 25 08.9 +0.6
comp=Z,39nm,0.9s
L35A Bielow Farm, R 82.04 344 P P 05 25 09.2 +0.7
baz=163
U15A North Rim 82.06 330 eP P 05 25 11.1 +1.9
comp=Z,36nm,1.5s
GMRC Granite Mounta 82.08 326 P P 05 25 10.1 +1.0
baz=148
L34A Svendsen Farm, 82.09 343 P P 05 25 09.2 +0.4
baz=162
LONY Lake Ozonia 82.11 359 eP P 05 25 09.8 +0.9
comp=Z,29nm,1.1s
LONY LR LR
comp=Z,582nm,20.0s
M31A Lambtecht Ranc 82.13 341 P P 05 25 09.6 +0.4
baz=160,SNR=5.6
PV01 Paradox Valley 82.15 333 eP P 05 25 10.9 +1.4
K37A Belmond 82.27 345 P P 05 25 09.9 +0.2
baz=164
PV05 Paradox Valley 82.29 333 eP P 05 25 11.6 +1.4
K36A Gilmore City 82.31 345 P P 05 25 10.4 +0.4
baz=164
FRNY Flat Rock 82.32 0 eP P 05 25 10.9 +0.9
comp=Z,23nm,1.0s
SADO Sadowa 82.40 356 P P 05 25 09.8 -0.6
comp=Z,15nm,1.1s,baz=211,slow=1.8,SNR=7.7
SADO Sadowa 82.40 356 eP P 05 25 09.9 -0.4
comp=Z,29nm,1.2s
PV04 Paradox Valley 82.50 333 eP P 05 25 11.5 +0.2
BFSC Mount Baldy Ra 82.52 325 P P 05 25 12.5 +1.1
baz=147
SMCO Snowmass 82.52 335 eP P 05 25 13.2 +1.5
comp=Z,36nm,1.3s
PV10 Paradox Valley 82.53 333 eP P 05 25 12.6 +1.1
K35A Storm Lake 82.55 344 P P 05 25 11.4 +0.1
baz=163
J38A Wedel Dairy, R 82.57 346 P P 05 25 11.3 -0.1
baz=165
OGNE Ogilala 82.58 339 eP P 05 25 12.4 +0.8
comp=Z,27nm,0.8s
OGNE LR LR
comp=Z,471nm,19.0s
ISCO Idaho Springs 82.63 336 P P 05 25 12.6 +0.5
baz=155,SNR=9.0
ISCO Idaho Springs 82.63 336 eP P 05 25 13.1 +1.0
ISCO pmax pmax
comp=Z,15nm,1.2s
ISCO MLR MLR
comp=Z,197nm,19.0s
ISCO Idaho Springs 82.63 336 eP P 05 25 13.1 +1.0
comp=Z,15nm,1.2s
ISCO LR LR
comp=Z,197nm,19.0s
MWC Mount Wilson 82.69 324 eP P 05 25 13.8 +1.4
MWC pmax pmax
comp=Z,21nm,1.2s
MWC Mount Wilson 82.69 324 eP P 05 25 13.8 +1.4
comp=Z,21nm,1.2s
K34A Le Mars 82.71 344 P P 05 25 12.7 +0.6
baz=162
TUQ Turquoise Moun 82.74 326 P P 05 25 13.7 +1.1
baz=148
J37A Redenius Farm, 82.77 346 P P 05 25 12.3 -0.1
baz=164
KNB Kanab 82.79 329 eP P 05 25 14.6 +1.8
KNB pmax pmax
comp=Z,43nm,1.3s
KNB Kanab 82.79 329 eP P 05 25 14.6 +1.8
comp=Z,43nm,1.3s
K33A Hardington 82.84 343 P P 05 25 13.1 +0.4
baz=162
PKME Peaks-Kenny Pk 82.85 3 PFAKE 05 25 20.0 +7.3
PKME LR LR
comp=Z,649nm,19.0s
L31A Butterfield Fa 82.88 342 P P 05 25 13.5 +0.6
baz=160,SNR=15
J36A Seneca 1, Swea 82.95 345 P P 05 25 13.8 +0.5
baz=164
LCMT Little Creek M 82.95 329 eP P 05 25 15.1 +1.5
comp=Z,13nm,1.3s
GSC Goldstone, Bar 83.02 326 eP P 05 25 15.9 +2.0
GSC pmax pmax
comp=Z,21nm,1.3s
GSC Goldstone, Bar 83.02 326 eP P 05 25 15.9 +2.0
comp=Z,21nm,1.3s
EDW2 Edwards Air Fo 83.20 325 P P 05 25 15.5 +0.7
baz=146
I38A Scanlan Farm, 83.24 347 P P 05 25 14.5 -0.3
baz=166,SNR=7.0
J34A George 83.25 344 P P 05 25 14.8 0.0
baz=163,SNR=6.0
K31A O'Neill 83.28 342 P P 05 25 15.1 +0.1
baz=160,SNR=13
I37A Lemond, Waseca 83.42 346 P P 05 25 15.5 -0.2
baz=165,SNR=7.6
MTPU Mount Pierson 83.42 330 eP P 05 25 17.7 +1.4
comp=Z,22nm,1.4s
J33A Davis 83.51 343 P P 05 25 16.0 -0.1
baz=162,SNR=5.4
K30A Basset 83.54 341 P P 05 25 16.5 0.0
baz=160,SNR=13
I36A Fitzsimmons Fa 83.54 345 P P 05 25 16.5 +0.2
baz=164
LRMC Laurel Mtn Rad 83.56 325 P P 05 25 17.6 +0.8
baz=147
SRU San Rafael Swe 83.72 332 eP P 05 25 18.5 +0.9
SRU pmax pmax
comp=Z,13nm,0.9s
SRU San Rafael Swe 83.72 332 eP P 05 25 18.5 +0.9
comp=Z,12nm,0.9s
N23A Red Feather La 83.73 336 P P 05 25 18.0 +0.3
baz=155,SNR=9.3
N23A Red Feather La 83.73 336 eP P 05 25 18.6 +0.8
comp=Z,18nm,1.2s
DWU Dry Willow Pea 83.80 330 eP P 05 25 17.7 -0.4
O20A White River Ci 83.81 334 P P 05 25 18.3 +0.2
baz=153,SNR=7.5
O20A White River Ci 83.81 334 eP P 05 25 19.0 +1.0
comp=Z,62nm,1.9s
ECSD EROS Data Cent 83.82 344 P P 05 25 17.5 -0.3
baz=162,SNR=41
ECSD EROS Data Cent 83.82 344 eP P 05 25 17.7 -0.1
comp=Z,40nm,0.8s
ECSD LR LR
comp=Z,330nm,19.0s
MSU Marysvale 83.83 331 eP P 05 25 19.8 +1.6
MSU Marysvale 83.83 331 eP P 05 25 19.8 +1.6
H37A Dierke Farm, C 83.87 346 P P 05 25 18.2 +0.2
baz=165
J31A Geddes 83.90 342 P P 05 25 18.8 +0.6
baz=160
MPMC Manual Prospec 83.95 326 P P 05 25 19.8 +0.9
baz=147
FURC Furnace Creek, 84.02 326 P P 05 25 20.6 +1.7
baz=147
PKM Mcpherson Peak 84.05 323 P P 05 25 21.0 +1.6
baz=145
H36A Jessenland, He 84.06 346 P P 05 25 18.8 -0.2
baz=164,SNR=5.3
ISA Isabella, Lake 84.07 325 P P 05 25 20.7 +1.4
baz=146
ISA Isabella, Lake 84.07 325 eP P 05 25 21.4 +2.1
ISA pmax pmax
comp=Z,20nm,1.3s
ISA Isabella, Lake 84.07 325 eP P 05 25 21.4 +2.1
comp=Z,20nm,1.3s
P18A Preston Nutter 84.07 333 eP P 05 25 20.9 +1.3
comp=Z,67nm,1.4s
J30A Dallas 84.12 341 P P 05 25 20.1 +0.8
baz=160
P17A Butcher Ranch, 84.12 332 eP P 05 25 20.6 +1.0
comp=Z,22nm,1.1s
TMUT Trail Mountain 84.14 332 eP P 05 25 21.2 +1.3
comp=Z,18nm,1.0s
TPNV Topopah Spring 84.16 327 P P 05 25 21.4 +1.6
baz=148
TPNV Topopah Spring 84.16 327 eP P 05 25 21.8 +1.9
TPNV pmax pmax
comp=Z,15nm,1.1s
TPNV Topopah Spring 84.16 327 eP P 05 25 21.8 +1.9
comp=Z,15nm,1.1s
I33A Coleman 84.16 344 P P 05 25 20.5 +1.0
baz=162
DAC Darwin (Calif) 84.18 326 eP P 05 25 21.8 +1.8
DAC pmax pmax
comp=Z,17nm,1.1s
DAC Darwin (Calif) 84.18 326 eP P 05 25 21.8 +1.8
comp=Z,17nm,1.1s
I32A Karley and Nic 84.29 343 P P 05 25 20.6 +0.5
baz=162
H35A Sunnyside Ranc 84.36 345 P P 05 25 20.4 -0.1
baz=164,SNR=12
J29A Okreek 84.41 341 P P 05 25 20.7 -0.1
baz=159,SNR=13
SPMN Marine on St. 84.47 347 P P 05 25 20.9 -0.1
baz=165
SPMN Marine on St. 84.47 347 eP P 05 25 20.8 -0.2
comp=Z,18nm,1.1s
PSUT Pine Spring 84.51 330 eP P 05 25 23.3 +1.6
comp=Z,11nm,1.0s
H34A Spellman Lake, 84.53 344 P P 05 25 22.1 +0.8
baz=163
CWC Cottonwood Cre 84.53 326 P P 05 25 22.2 +0.4
baz=146
I30A Oacoma 84.66 342 P P 05 25 22.6 +0.6
baz=160
G36A St. Michael 84.66 346 P P 05 25 22.3 +0.3
baz=164
J28A Allard Ranch, 84.66 340 P P 05 25 22.5 +0.4
baz=159,SNR=7.2
J27A Elkhorn Farm, 84.71 340 P P 05 25 23.9 +1.4
baz=158
COWI Conover 84.72 349 eP P 05 25 22.5 +0.2
comp=Z,45nm,1.7s
COWI LR LR
comp=Z,405nm,20.0s
H33A Prehn Over Nor 84.75 344 P P 05 25 22.4 0.0
baz=162,SNR=9.1
G35A Watkins 84.79 345 P P 05 25 23.0 +0.4
baz=164
MPU Maple Canyon 84.93 332 eP P 05 25 25.1 +1.3
comp=Z,13nm,1.0s
I29A Vivian Onida 84.98 341 P P 05 25 24.2 +0.5
baz=159
NLU North Lily Min 85.04 331 eP P 05 25 25.7 +1.4
comp=Z,21nm,1.3s
G34A Benson 85.05 345 P P 05 25 24.2 +0.3
baz=163
R11A Troy Canyon, C 85.06 328 P P 05 25 25.3 +0.9
baz=148
R11A Troy Canyon, C 85.06 328 eP P 05 25 25.9 +1.5
comp=Z,20nm,1.3s
J26A Sides Ranch, S 85.07 339 P P 05 25 24.4 +0.2
baz=157,SNR=8.1
LMQ La Malbaie 85.09 2 eP P 05 25 24.8 +0.7
comp=Z,49nm,1.1s
I28A Midland 85.18 341 P P 05 25 24.8 +0.1
baz=159,SNR=16
F36A Milaca 85.22 346 P P 05 25 24.4 -0.4
baz=165,SNR=14
J25A Sunshine Ranch 85.35 339 P P 05 25 25.8 +0.1
baz=157,SNR=8.4
JLU Jordanelle 85.37 332 eP P 05 25 27.1 +1.1
comp=Z,7.1nm,0.8s
F35A Swanville 85.42 346 P P 05 25 26.2 +0.4
baz=164
I27A Quinn 85.48 340 P P 05 25 26.2 0.0
baz=158,SNR=7.1
F34A Alexandria 85.50 345 P P 05 25 26.7 +0.5
baz=163
K22A Casper 85.50 336 P P 05 25 26.6 +0.1
baz=155,SNR=7.8
K22A Casper 85.50 336 eP P 05 25 27.3 +0.8
comp=Z,40nm,1.3s
H29A Onida 85.52 341 P P 05 25 27.3 +0.9
baz=160
DUG Dugway, Tooele 85.53 331 P P 05 25 27.6 +0.9
baz=150
DUG Dugway, Tooele 85.53 331 eP P 05 25 28.0 +1.3
DUG pmax pmax
comp=Z,41nm,1.4s
DUG MLR MLR
comp=Z,260nm,19.0s
DUG Dugway, Tooele 85.53 331 eP P 05 25 28.0 +1.3
comp=Z,41nm,1.4s
DUG LR LR
comp=Z,260nm,19.0s
CTU Camp Tracy 85.56 332 eP P 05 25 27.0 +0.1
comp=Z,16nm,1.6s
I26A New Underwood 85.67 339 P P 05 25 27.9 +0.7
baz=158
G30A Faulkton 85.73 342 P P 05 25 28.2 +0.8
baz=160
F33A 5 Mile Ranch, 85.75 344 P P 05 25 27.7 +0.2
baz=162
H28A Mission Ridge 85.77 341 P P 05 25 28.4 +0.8
baz=159
E36A McGregor 85.81 347 P P 05 25 27.3 -0.4
baz=165,SNR=12
TCUT Toone Canyon 85.81 332 eP P 05 25 29.3 +1.2
comp=Z,79nm,1.5s
I25A Rochford 85.91 339 P P 05 25 28.6 +0.2
baz=157,SNR=8.3
H27A Howes 86.01 340 P P 05 25 28.6 -0.3
baz=158,SNR=8.6
E35A Pequot Lakes 86.06 346 P P 05 25 29.2 +0.2
baz=164
RSSD Black Hills 86.08 339 P P 05 25 30.0 +0.6
baz=157
RSSD Black Hills 86.08 339 eP P 05 25 29.7 +0.3
RSSD pmax pmax
comp=Z,10.0nm,0.9s
RSSD Black Hills 86.08 339 eP P 05 25 29.7 +0.3
comp=Z,10.0nm,0.9s
G28A Parade 86.12 341 P P 05 25 30.1 +0.8
baz=159
F31A Hecla 86.21 343 P P 05 25 30.3 +0.6
baz=161
NV11 Mina Array Sit 86.22 327 eP P 05 25 31.6 +1.4
comp=Z,10nm,1.4s
NV01 Mina Array Sit 86.28 327 eP P 05 25 31.4 +0.9
NVAR Mina Array Bea 86.28 327 P P 05 25 32.0 +1.4
comp=Z,2.2nm,0.8s,baz=152,slow=6.0,SNR=14
NVAR LR LR 05 56 55.4
comp=Z,138nm,20.9s,baz=103,slow=31
HWUT Hardware Ranch 86.29 333 eP P 05 25 31.3 +0.8
comp=Z,37nm,1.2s
HWUT LR LR
comp=Z,456nm,19.0s
E33A Westby DABS, E 86.33 345 P P 05 25 30.5 +0.2
baz=163
F30A Leola 86.36 343 P P 05 25 31.0 +0.5
baz=160
H25A Fruitdale 86.42 339 P P 05 25 30.8 -0.1
baz=157,SNR=8.6
D36A Goodland 86.42 347 P P 05 25 31.3 +0.6
baz=165
D35A Remer 86.50 346 P P 05 25 30.9 -0.1
baz=164,SNR=12
C39A Grand Marais 86.55 349 P P 05 25 31.3 0.0
baz=167
F29A Eureka 86.56 342 P P 05 25 31.7 +0.3
baz=160
BW06 Boulder Array 86.60 334 P P 05 25 32.0 0.0
baz=153
BW06 Boulder Array 86.60 334 eP P 05 25 32.3 +0.3
comp=Z,11nm,1.1s
BW06 LR LR
comp=Z,419nm,19.0s

PD31 **Pinedale Array** 86.60 334 *e*P P 05 25 32.2 +0.2
PDAR **Pinedale Array** 86.60 334 P P 05 25 32.2 +0.2
comp=Z,4.4nm,0.8s,baz=151,slow=4.2,SNR=29
C38A **Sawbill Land.** 86.63 348 P P 05 25 31.6 -0.1
baz=166
G27A **Dupree** 86.66 341 P P 05 25 31.7 -0.3
baz=158,SNR=10
D34A **Park Rapids** 86.72 346 P P 05 25 32.2 0.0
baz=163
G26A **Maurine** 86.76 340 P P 05 25 32.2 -0.3
baz=158,SNR=15
E31A **Nome** 86.78 344 P P 05 25 33.0 +0.4
baz=161
F28A **McLaughlin** 86.81 341 P P 05 25 33.1 +0.4
baz=159
WAKR **Walker** 86.85 326 *e*P P 05 25 34.7 +1.4
EYMN **Ely** 86.88 348 P P 05 25 32.5 -0.5
baz=166
EYMN **Ely** 86.88 348 *e*P P 05 25 33.7 +0.7
comp=Z,16nm,1.3s
EYMN LR LR
comp=Z,288nm,20.0s
HVU **Hansel Valley** 86.89 332 *e*P P 05 25 34.1 +0.8
HVU pmax pmax
comp=Z,19nm,1.2s
HVU **Hansel Valley** 86.89 332 *e*P P 05 25 34.1 +0.8
comp=Z,19nm,1.2s
CMB **Columbia Colle** 86.89 325 *e*P P 05 25 34.2 +0.9
CMB pmax pmax
comp=Z,12nm,1.3s
CMB **Columbia Colle** 86.89 325 *e*P P 05 25 34.2 +0.9
comp=Z,12nm,1.3s
G25A **Newell** 86.89 340 P P 05 25 32.6 -0.6
baz=157,SNR=11
D33A **AnnSam, Waubun** 86.90 345 P P 05 25 33.7 +0.6
baz=163
C36A **Pine Crest Far** 86.93 347 P P 05 25 33.4 +0.2
baz=165
ELK **Elko** 86.95 330 *e*P P 05 25 34.8 +1.0
ELK pmax pmax
comp=Z,15nm,1.3s
ELK **Elko** 86.95 330 *e*P P 05 25 34.8 +1.0
comp=Z,15nm,1.3s
C35A **Jirik Farms, M** 87.08 346 P P 05 25 33.6 -0.3
baz=164,SNR=7.9
AHID **Auburn Hatcher** 87.14 333 *e*P P 05 25 35.1 +0.6
comp=Z,16nm,1.2s
AHID LR LR
comp=Z,423nm,20.0s
F27A **Lemmon** 87.15 341 P P 05 25 34.2 -0.2
baz=158,SNR=11
E29A **Napoleon** 87.20 342 P P 05 25 34.5 -0.1
baz=160
C34A **RKJ Ranch, Bem** 87.20 346 P P 05 25 34.5 0.0
baz=164
D31A **Mcclaflin, Tow** 87.21 344 P P 05 25 34.6 +0.1
baz=161
F26A **Lodgepole** 87.30 340 P P 05 25 35.3 +0.2
baz=158
E28A **Huff** 87.46 342 P P 05 25 35.9 +0.1
baz=159
C33A **Trail** 87.48 345 P P 05 25 36.0 +0.2
baz=163
D30A **Buchanan** 87.50 343 P P 05 25 36.1 +0.2
baz=161
E27A **Carson** 87.55 341 P P 05 25 36.5 +0.2
baz=158
REDW **Red Top Meadow** 87.57 334 *e*P P 05 25 37.1 +0.4
comp=Z,18nm,1.2s
F25A **Bowman** 87.58 340 P P 05 25 36.7 +0.3
baz=157
SNOW **Snow King Moun** 87.63 334 *e*P P 05 25 37.8 +0.7
comp=Z,26nm,1.4s
D29A **Pettibone, Tap** 87.65 343 P P 05 25 36.3 -0.4
baz=160,SNR=7.7
B35A **Bob, Littlefor** 87.67 347 P P 05 25 36.2 -0.5
baz=164,SNR=7.3
LOHW **Long Hollow** 87.71 334 *e*P P 05 25 37.8 +0.4
comp=Z,6.0nm,0.9s
E26A **Carlson Angus** 87.82 341 P P 05 25 37.1 -0.4
baz=158,SNR=9.2
MOOW **Moose Ponds** 87.88 334 *e*P P 05 25 38.6 +0.5
comp=Z,15nm,1.8s
AFDM **Forest Hills D** 87.90 325 *e*P P 05 25 39.9 +1.8
comp=Z,13nm,1.4s
C31A **Landman Farms,** 87.92 344 P P 05 25 37.6 -0.3
baz=161,SNR=6.4
B33A **Robert and Kas** 87.93 346 P P 05 25 38.2 +0.2
baz=163
B34A **Aery, Baudette** 87.96 346 P P 05 25 38.3 +0.2
baz=164
C30A **Mose, Pekin** 88.00 344 P P 05 25 38.5 +0.1
baz=161,SNR=9.5
D28A **Regan** 88.01 342 P P 05 25 38.8 +0.3
baz=159
AGMN **Agassiz Nation** 88.01 345 P P 05 25 38.1 -0.3
baz=163,SNR=9.8
AGMN **Agassiz Nation** 88.01 345 *e*P P 05 25 38.6 +0.2
comp=Z,27nm,1.2s
AGMN LR LR
comp=Z,435nm,20.0s
IMW **Indian Meadow** 88.07 334 *e*P P 05 25 40.0 +0.8
comp=Z,9.5nm,0.8s
E25A **Miller Ranch,** 88.09 340 P P 05 25 38.8 -0.1
baz=157
FLWY **Flagg Ranch** 88.15 334 *e*P P 05 25 40.5 +1.0
comp=Z,15nm,0.9s
D27A **Center** 88.17 341 P P 05 25 39.4 +0.2
baz=158
B32A **Ashes, Strandq** 88.24 345 P P 05 25 38.9 -0.6
baz=162,SNR=8.1
D26A **Manning** 88.33 341 P P 05 25 40.0 +0.1
baz=158,SNR=10
C28A **Hausauer Farms** 88.45 342 P P 05 25 40.7 +0.2
baz=159
LKWY **Lake** 88.48 335 PFAKE 05 25 50.0 +9.0
LKWY LR LR
comp=Z,547nm,19.0s
B31A **Greenbush Farm** 88.50 344 P P 05 25 40.8 +0.2
baz=162
YFT **Old Faithful** 88.53 334 *e*P P 05 25 42.6 +1.4
comp=Z,11nm,1.0s
A33A **Warroad** 88.53 346 P P 05 25 40.7 -0.1
baz=163,SNR=12
RLMT **Red Lodge** 88.59 336 P P 05 25 41.4 -0.1
baz=153
RLMT **Red Lodge** 88.59 336 *e*P P 05 25 41.9 +0.4
comp=Z,8.1nm,1.0s
RLMT LR LR
comp=Z,346nm,20.0s
ORV **Oroville** 88.63 325 *e*P P 05 25 43.4 +1.9
ORV pmax pmax
comp=Z,18nm,1.4s
ORV **Oroville** 88.63 325 *e*P P 05 25 43.4 +1.9
comp=Z,18nm,1.4s
D25A **Fairfield** 88.67 340 P P 05 25 41.9 +0.3
baz=157
B30A **Myrvik Farm, E** 88.67 344 P P 05 25 41.3 -0.2
baz=161,SNR=16
C27A **Sayler Ranch,** 88.72 342 P P 05 25 41.8 0.0
baz=159,SNR=6.5
A32A **Rocking H Ranc** 88.73 345 P P 05 25 41.8 +0.1
baz=162
YMR **Madison River** 88.76 334 *e*P P 05 25 43.9 +1.5
comp=Z,14nm,1.0s
B29A **Wagenman Farm,** 88.92 343 P P 05 25 42.3 -0.4
baz=160,SNR=8.7
C26A **Wahner Farm, P** 88.98 341 P P 05 25 43.1 +0.1
baz=158
HLID **Hailey** 89.03 332 P P 05 25 44.8 +1.2
baz=149
HLID **Hailey** 89.03 332 *e*P P 05 25 45.0 +1.4
comp=Z,22nm,1.4s
HLID LR LR
comp=Z,264nm,19.0s
LAO **LASA Array** 89.06 338 PFAKE 05 25 50.0 +6.5
LAO LR LR
comp=Z,108nm,22.0s
QLMT **Earthquake Lak** 89.06 334 *e*P P 05 25 45.4 +1.7
A30A **Hoffart Farm,** 89.13 344 P P 05 25 43.8 +0.1
baz=161
B28A **Dugan Ranch, T** 89.13 343 P P 05 25 43.6 -0.1
baz=159,SNR=8.9
A29A **Manning Farm,** 89.32 344 P P 05 25 44.0 -0.5
baz=160,SNR=17
MFID **Camas Ranch** 89.45 331 *e*P P 05 25 46.6 +1.2
comp=Z,14nm,1.3s
A28A **Rude Farm, Bot** 89.54 343 P P 05 25 45.7 +0.1
baz=160
MCMT **McKenzie Canyo** 89.55 333 *e*P P 05 25 47.5 +1.5
WVOR **Wild Horse Val** 89.75 329 *e*P P 05 25 48.1 +1.2
WVOR pmax pmax
comp=Z,13nm,1.3s
WVOR MLR MLR
comp=Z,260nm,19.0s
WVOR **Wild Horse Val** 89.75 329 *e*P P 05 25 48.1 +1.2
comp=Z,13nm,1.3s
WVOR LR LR
comp=Z,260nm,19.0s
A27A **Ledoux Ranch,** 89.81 342 P P 05 25 47.0 +0.1
baz=159
BOZ **Bozeman (W)** 89.84 335 *e*P P 05 25 47.8 +0.5
BOZ pmax pmax
comp=Z,7.0nm,1.4s
BOZ MLR MLR
comp=Z,273nm,20.0s
BOZ **Bozeman (W)** 89.84 335 *e*P P 05 25 47.8 +0.5
comp=Z,7.0nm,1.4s
BOZ LR LR
comp=Z,273nm,20.0s
ULM **Lac du Bonnet** 89.88 346 P P 05 25 46.4 -0.7
comp=Z,4.2nm,0.8s,baz=170,slow=2.5,SNR=7.4
ULM **Lac du Bonnet** 89.88 346 P P 05 25 46.4 -0.7
ULM pmax pmax
comp=Z,5.0nm,0.9s
ULM **Lac du Bonnet** 89.88 346 *e*P P 05 25 47.0 0.0
comp=Z,20nm,1.3s
LSZ **Lusaka** 89.91 109 *e*P P 05 25 50.4 +2.0
LSZ pmax pmax
comp=Z,36nm,1.4s
LSZ MLR MLR
comp=Z,689nm,21.0s
LSZ **Lusaka** 89.91 109 *e*P P 05 25 50.4 +2.0
comp=Z,36nm,1.4s
LSZ LR LR
comp=Z,689nm,21.0s
DLMT **Dillon** 89.93 334 *e*P P 05 25 49.7 +2.1
comp=Z,13nm,1.3s
A26A **Wade Farm, Ken** 89.96 342 P P 05 25 47.9 +0.3
baz=158
MOD **Modoc Plateau** 90.01 327 *e*P P 05 25 49.2 +1.1
comp=Z,18nm,1.5s
DGMT **Dagmar** 90.12 340 P P 05 25 48.7 +0.4
baz=157
DGMT **Dagmar** 90.12 340 PFAKE 05 26 00.0 +12
DGMT LR LR
comp=Z,351nm,19.0s
A25A **Svangstu Ranch** 90.27 341 P P 05 25 49.3 +0.3
baz=157
LRM **Limekiln Ridge** 90.28 334 *e*P P 05 25 50.8 +1.3
N02D **Trinity Center** 90.32 325 P P 05 25 50.1 +0.5
baz=144
M04C **Macdoel** 90.58 326 P P 05 25 51.9 +1.1
baz=144
M02C **Callahan** 90.72 325 P P 05 25 52.8 +1.4
baz=144
K05A **Summer Lake** 90.94 327 *e*P P 05 25 54.1 +1.6
comp=Z,36nm,1.8s
BMO **Blue Mountains** 91.23 331 PFAKE 05 26 00.0 +6.3
BMO LR LR
comp=Z,230nm,22.0s
EGMT **Eagleton** 91.32 337 PFAKE 05 26 00.0 +6.0
EGMT LR LR
comp=Z,159nm,19.0s
CHMT **Chamberlain Mo** 91.50 334 *e*P P 05 25 56.2 +1.1
J05D **Fort Rock, OR** 91.54 327 P P 05 25 56.3 +1.1
baz=144
F10A **Beach Ranch, E** 92.14 331 *e*P P 05 25 58.6 +0.7
comp=Z,17nm,1.4s
SWMT **Swartz Lake** 92.27 334 *e*P P 05 25 59.3 +0.8
I05D **Terrebonne, OR** 92.44 328 P P 05 26 00.4 +1.1
baz=144
BLMT **Blacktail Moun** 92.83 334 *e*P P 05 26 01.7 +0.6
BSMT **Bassoo Peak** 92.84 334 *e*P P 05 26 02.1 +0.9
HAWA **Hanford** 93.38 330 PFAKE 05 26 10.0 +6.5
HAWA LR LR
comp=Z,308nm,19.0s
WALA **Waterton Lakes** 93.58 335 *e*P P 05 26 05.3 +0.8
comp=Z,9.4nm,1.0s
NEW **Newport** 94.02 333 PFAKE 05 26 20.0 +14
NEW LR LR
comp=Z,384nm,19.0s
RTC **Rabat Centre** 94.73 50 PFAKE 05 26 20.0 +10
RTC LR LR
comp=Z,4μm,19.0s
FFC **Flin Flon** 95.35 344 PFAKE 05 26 20.0 +7.7
FFC LR LR
comp=Z,627nm,19.0s
TAM **Tamanrasset** 95.73 66 *e*P P 05 26 15.4 +0.3
TAM pmax pmax
comp=Z,15nm,1.3s
TAM MLR MLR
comp=Z,591nm,20.0s
TAM **Tamanrasset** 95.73 66 *e*P P 05 26 15.4 +0.3
comp=Z,15nm,1.3s
TAM LR LR
comp=Z,591nm,20.0s
NLWA **Neilton Lookou** 95.94 328 PFAKE 05 26 20.0 +4.8
NLWA LR LR
comp=Z,433nm,19.0s
CAN **Canberra** 97.08 214 PFAKE 05 26 30.0 +8.9
CAN LR LR
comp=Z,507nm,19.0s
FUNA **Funafuti** 98.00 253 PFAKE 05 26 30.0 +4.6
FUNA LR LR
comp=Z,9μm,19.0s
MTE **Manteigas** 98.69 45 PFAKE 05 26 40.0 +12
MTE LR LR
comp=Z,935nm,20.0s
PAB **San Pablo** 99.94 47 PFAKE 05 26 40.0 +6.5
PAB LR LR
comp=Z,1μm,20.0s
KMBO **Kilima Mbogo** 105.79 104 PFAKE 05 31 20.0
KMBO LR LR
comp=Z,604nm,19.0s
WRAK **Wrangell Islan** 106.19 330 PFAKE 05 31 20.0
WRAK LR LR
comp=Z,288nm,19.0s
VSL **Villasalto** 108.32 54 PFAKE 05 31 30.0
VSL LR LR
comp=Z,573nm,20.0s
SSB **Saint Sauveur** 108.65 47 PFAKE 05 31 30.0
SSB LR LR
comp=Z,619nm,21.0s
WDD **Wied Dalam** 109.73 60 PFAKE 05 31 30.0
WDD LR LR
comp=Z,1μm,19.0s
BNI **Bardonecchia** 109.77 48 PFAKE 05 31 30.0
BNI LR LR
comp=Z,934nm,19.0s
CLTB **Caltabellotta** 109.77 57 PFAKE 05 31 30.0
CLTB LR LR
comp=Z,449nm,21.0s
ESK **Eskdalemuir** 110.56 35 PFAKE 05 31 30.0
ESK LR LR
comp=Z,633nm,19.0s
CTAO **Charters Tower** 111.15 220 PFAKE 05 31 30.0
CTAO LR LR
comp=Z,370nm,20.0s
HNR **Honiara** 111.25 239 PFAKE 05 31 30.0
HNR LR LR
comp=Z,149nm,19.0s
VLC **Villacollemand** 111.50 50 PFAKE 05 31 30.0
VLC LR LR
comp=Z,309nm,20.0s
CEL **Celeste** 111.93 58 PFAKE 05 31 30.0
CEL LR LR
comp=Z,700nm,19.0s
WLF **Walferdange** 112.01 44 PFAKE 05 31 30.0
WLF LR LR
comp=Z,885nm,21.0s
TUE **Stuetta** 112.11 48 PFAKE 05 31 30.0
TUE LR LR
comp=Z,862nm,20.0s
AQU **L'Aquila** 112.42 53 PFAKE 05 31 30.0
AQU LR LR
comp=Z,606nm,19.0s
BFO **Black Forest** 112.50 46 PFAKE 05 31 30.0
BFO LR LR
comp=Z,496nm,20.0s
CUC **Castrocucco** 112.77 56 PFAKE 05 31 40.0
CUC LR LR
comp=Z,434nm,19.0s
TIP **Timpagrande** 112.98 58 PFAKE 05 31 40.0
TIP LR LR
comp=Z,828nm,21.0s
ASAR **Alice Springs** 113.49 208 PKiKP **PKiKP** **05 31 26.3 -0.9**
comp=Z,0.5nm,0.9s,baz=154,slow=3.0,SNR=3.5
ASAR PKKPbc **PKKPbc** **05 42 10.9 +0.5**
comp=Z,0.4nm,0.8s,baz=346,slow=3.3,SNR=4.2
EGAK **Eagle** 114.95 334 PFAKE 05 31 40.0 +11
EGAK LR LR
comp=Z,293nm,19.0s
KDAK **Kodiak Island** 115.71 324 PFAKE 05 31 40.0 +10
KDAK LR LR
comp=Z,347nm,19.0s
NKC **Novy Kostel** 115.79 45 *e*PKKP **PKKPdf** **05 42 24.4 -4.2**
NKC AMS AMS 06 18 10.0
comp=Z,800nm,20.9s
GEA0 **GERESS Array S** 115.84 47 *e*PKPdf **PKPdf** **05 31 30.8 -0.1**
GERES **GERESS Array B** 115.84 47 PKP **PKPdf** **05 31 31.2 +0.3**
comp=Z,0.8nm,0.7s,baz=194,slow=2.2,SNR=8.8
KHC **Kasperske Hory** 115.91 47 *e*PS PS 05 42 22.8 +6.3
KHC AMS AMS 06 20 30.0
comp=Z,400nm,16.3s
TIR **Tirane** 116.11 57 PFAKE 05 31 40.0 +8.5
TIR LR LR
comp=Z,652nm,20.0s
CLL **Collm** 116.61 45 *e*PP PP 05 32 40.0 -0.4
CLL *e* 05 34 40.0
CLL *e*PPP PPP 05 35 19.0
CLL *e*SKKSac SKKSac 05 39 53.0 +13
CLL *e*Sdif **Sdif** **05 40 33.0 +7.7**
CLL *e*PS **PKKPdf** **05 42 25.0 -2.0**
CLL *e*PPS PPS 05 43 43.0
CLL *e* 05 47 53.0
CLL *e*SS **SS** **05 48 40.0 -5.4**
CLL *e*SSS SSS 05 53 12.0
CLL *e*SSSS 05 56 36.0
CLL Lm MLR 06 20 00.0
comp=N,200nm,20.4s
CLL Lm MLR 06 20 00.0
comp=E,500nm,20.5s
CLL Lm MLR 06 20 00.0
comp=Z,700nm,20.1s
WRA **Warramunga Arr** 116.71 210 PKP **PKPdf** **05 31 32.1 -1.3**
comp=Z,0.6nm,0.7s,baz=136,slow=2.3,SNR=4.0
WRAB **Tennant Creek** 116.71 210 PFAKE 05 31 40.0 +6.5
WRAB LR LR
comp=Z,830nm,22.0s
PRU **Pruhonice** 116.87 46 *e*PS PS 05 42 31.6 +6.6
PRU AMS AMS 06 24 10.0
comp=Z,400nm,18.6s
BRG **Berggiesshubel** 116.94 45 *e*P **PKPdf** **05 31 33.7 +0.9**
comp=Z,2.3nm,0.9s
BRG *e* 05 32 39.6
comp=Z,3.4nm,1.2s
BRG **Berggiesshubel** 116.94 45 *e*PKiKP **PKPdf** **05 31 33.7 +0.9**
BRG pmax pmax
comp=Z,3.0nm,1.2s
GOPC **GO Pecny, Ondr** 116.97 46 *e*PS PS 05 42 32.1 +6.0
GOPC AMS AMS 06 24 10.0
comp=Z,500nm,17.0s
ILAR **Eielson Array** 116.98 333 PKP **PKPdf** **05 31 31.2 -1.3**
comp=Z,0.6nm,0.8s,baz=135,slow=1.1,SNR=5.1
TREC **Trest** 117.09 47 AMS AMS 06 22 30.0
comp=Z,500nm,17.3s
PVCC **Panska Ves** 117.13 46 AMS AMS 06 21 40.0
comp=Z,500nm,20.8s
COLA **College** 117.39 332 *i* PKiKP **PKPdf** **05 31 33.4 +0.2**
COLA **College** 117.39 332 PFAKE 05 31 40.0 +6.8
COLA LR LR
comp=Z,246nm,19.0s
SANT **Santorini** 117.61 64 PFAKE 05 31 40.0 +5.4
SANT LR LR
comp=Z,367nm,20.0s
DPC **Dobruska-Polom** 118.05 47 AMS AMS 06 24 50.0
comp=Z,400nm,16.5s
KONO **Kongsberg** 118.70 35 PFAKE 05 31 50.0 +14
KONO LR LR
comp=Z,569nm,20.0s
OKC **Ostrava-Krasne** 118.89 48 AMS AMS 06 28 30.0
comp=Z,400nm,16.1s
PSZ **Piszkesteto** 119.11 50 PFAKE 05 31 50.0 +13
PSZ LR LR
comp=Z,448nm,20.0s
PMG **Port Moresby** 119.38 228 PFAKE 05 31 50.0 +11
PMG LR LR
comp=Z,335nm,22.0s
MBWA **Marble Bar** 119.93 195 PFAKE 05 31 50.0 +10
MBWA LR LR
comp=Z,328nm,19.0s
DRGR 120.37 52 ⇓ *i*P **PKPdf** **05 31 39.0 -0.6**
FITZ **Fitzroy Crossi** 121.41 202 PKP **PKPdf** **05 31 41.1 -1.4**
comp=Z,2.4nm,0.9s,baz=180,slow=3.0,SNR=3.8
FITZ **Fitzroy Crossi** 121.41 202 *e*PKPdf **PKPdf** **05 31 41.9 -0.6**
KWP **Kalwaria Pacla** 121.50 49 ⇑ *i*P **PKPdf** **05 31 42.3 +0.7**
MLR **Muntele Rosu** 121.91 55 ⇑ *i*P **PKPdf** **05 31 41.5 -1.2**
MLR **Muntele Rosu** 121.91 55 *e*PKiKP **PKPdf** **05 31 43.9 +1.2**
MLR **Muntele Rosu** 121.91 55 *e*PKPdf **PKPdf** **05 31 43.9 +1.2**
BURAR **Bucovina Array** 122.27 52 ⇓ *i*P **PKPdf** **05 31 44.1 +0.8**
CSS **Mathiatis** 122.68 69 PFAKE 05 31 50.0 +5.6
CSS LR LR
comp=Z,53nm,20.0s
BR231 **Keskin MP Arra** 124.31 63 *e*PKPdf **PKPdf** **05 31 48.0 +0.5**
ANTO **Ankara** 124.34 63 PFAKE 05 32 00.0 +13
ANTO LR LR
comp=Z,95nm,22.0s
BR131 **Keskin Array S** 124.88 64 *e*PKPdf **PKPdf** **05 31 49.0 +0.4**
BRTR **Keskin Array B** 124.88 64 PKP **PKPdf** **05 31 49.1 +0.5**
comp=Z,1.8nm,0.7s,baz=214,slow=3.0,SNR=7.9
AK11 **Malin Array Si** 125.76 50 *e*PKPdf **PKPdf** **05 31 48.4 -1.4**
KIEV **Kiev** 125.79 50 PFAKE 05 32 00.0 +10
KIEV LR LR
comp=Z,396nm,20.0s
AKASG **Malin Array Be** 125.80 50 PKP **PKPdf** **05 31 49.0 -0.8**
comp=Z,0.3nm,0.4s,baz=268,slow=2.4,SNR=10
AKASG **Malin Array Be** 125.80 50 PKiKP **PKPdf** **05 31 49.0 -0.8**
AKASG pmax pmax
comp=Z,1.0nm,0.7s
KEV **Kevo** 128.65 26 PFAKE 05 32 00.0 +5.3
KEV LR LR
comp=Z,373nm,19.0s
OBN **Obninsk** 131.18 46 ⇑ *e*PKiKP **PKPdf** **05 32 02.0 +2.1**
OBN *i* 05 32 08.0
OBN *e* 05 32 14.3
OBN *i* 05 34 19.0
OBN 05 39 11.0
OBN *i* SS SS 05 52 08.0 +19
OBN *e*SSS SSS 05 56 35.7
OBN pmax pmax
comp=Z,14nm,0.4s
OBN MLR MLR
comp=Z,612nm,19.0s
OBN **Obninsk** 131.18 46 PFAKE 05 32 10.0 +10
OBN LR LR
comp=Z,637nm,20.0s
LVZ **Lovozero** 131.34 29 PFAKE 05 32 10.0 +10
LVZ LR LR
comp=Z,482nm,22.0s
KIV **Kislovodsk** 132.65 62 ⇑ *i*PKiKP **PKPdf** **05 32 04.6 +1.4**
KIV *e* 05 32 12.8
KIV *e* 05 32 19.8
KIV *i* 05 34 32.0
KIV PPP PPP 05 37 18.0
KIV *e*SS SS 05 52 29.9 +22
KIV *e*SSS SSS 05 57 00.4
KIV pmax pmax
comp=Z,14nm,1.5s
KIV pmax pmax
comp=Z,13nm,1.3s
KIV **Kislovodsk** 132.65 62 PFAKE 05 32 10.0 +6.8
KIV LR LR
comp=Z,181nm,21.0s
GNI **Garni** 133.02 67 PFAKE 05 32 10.0 +5.9
GNI LR LR
comp=Z,339nm,20.0s
KAPI **Kappang** 135.52 199 PFAKE 05 32 20.0 +11
KAPI LR LR
comp=Z,208nm,21.0s
BILL **Bilibino** 135.64 332 PFAKE 05 32 20.0 +12
BILL LR LR
comp=Z,294nm,21.0s
PET **Petropavlovsk** 141.13 310 PFAKE 05 32 30.0 +12
PET LR LR
comp=Z,222nm,19.0s
PEA0 **Petropavlovsk-** 141.71 310 *e*PKPdf **PKPdf** **05 32 20.4 +0.9**
PETK **Petropavlovsk-** 141.71 310 PKP **PKPdf** **05 32 20.1 +0.6**
comp=Z,4.3nm,0.8s,baz=93,slow=5.9,SNR=5.1

PETK	**Petropavlovsk-**	**141.71**	**310**		PKIKP	**PKPdf**	**05 32 20.1**	**+0.6**
PETK					pmax	pmax			
	comp=Z,5.0nm,0.8s								
GEYT	**Alibeck**	**142.38**	**75**		PKhKP	PKPpre	05 32 17.4		
	comp=Z,2.3nm,0.5s,baz=242,slow=3.1,SNR=3.3								
SEY	**Seymchan**	**142.59**	**327**	*i*	PKIKP	**PKPdf**	**05 32 17.2**	**-3.6**
ARU	**Arti**	**143.55**	**44**	*i*	PKIKP	PKPbc	05 32 20.2	+0.1
ARU					MLR	MLR			
	comp=Z,545nm,20.0s								
ARU	**Arti**	**143.55**	**44**	*e*	PKPpre	PKPpre	05 32 19.8		
ARU					LR	LR			
	comp=Z,561nm,20.0s								
KSM	**Kuching**	**143.59**	**187**	*e*	PKPpre	PKPpre	05 32 20.8		
KSM					LR	LR			
	comp=Z,319nm,20.0s								
MYKOM	**Kota Tinggi**	**144.03**	**176**	*e*	PKPdf	**PKPab**	**05 32 22.4**	**+0.2**
TIXI	**Tiksi**	**144.21**	**348**	‖ *i*	PKHKP	**PKPab**	**05 32 20.2**	**-1.0**
TIXI	**Tiksi**	**144.21**	**348**	*e*	PKPdf	**PKPab**	**05 32 19.8**	**-1.4**
TIXI					LR	LR			
	comp=Z,205nm,20.0s								
SBUM	**Sibu**	**144.32**	**190**	*e*	PKPdf	**PKPab**	**05 32 22.8**	**-0.6**
MA2	**Magadan**	**144.41**	**322**		PKP	PKPbc	05 32 22.5	-0.1
	comp=Z,6.4nm,0.4s,baz=98,slow=3.6,SNR=12								
PSI	**Prapat**	**144.47**	**167**		PKP	**PKPab**	**05 32 23.4**	**-0.6**
	comp=Z,20nm,0.7s,baz=195,slow=6.2,SNR=41								
PSI	**Prapat**	**144.47**	**167**	*e*	PKPdf	**PKPab**	**05 32 22.6**	**-1.4**
SVE	**Sverdlovsk**	**144.60**	**43**	*e*	PKIKP	PKPbc	05 32 23.9	+0.6
SVE					pmax	pmax			
	comp=Z,52nm,1.6s								
DAV	**Davao City (W)**	**144.67**	**215**		PFAKE		05 32 40.0	+14	
DAV					LR	LR			
	comp=Z,326nm,19.0s								
ABKAR	**Akbulak array**	**145.10**	**56**	*e*	PKPbc	**PKPbc**	**05 32 25.1**	**0.0**
MYLDM	**Lahad Datu**	**145.59**	**202**	*e*	PKPdf	**PKPab**	**05 32 28.0**	**+0.1**
POO	**Poona**	**145.82**	**115**	*e*	P	**PKPdf**	**05 32 26.0**	**-1.8**
IPM	**Ipoh**	**146.43**	**171**	*e*	PKPdf	**PKPdf**	**05 32 29.6**	**+0.6**
NRIK	**Noril'sk**	**146.89**	**12**		PKPbc	**PKPbc**	**05 32 29.9**	**-0.1**
	comp=Z,9.9nm,0.7s,baz=16,slow=1.5,SNR=20								
KKM	**Kota Kinabalu**	**147.04**	**198**	*e*	PKPdf	**PKPdf**	**05 32 31.2**	**+1.1**
KULM	**Kulim**	**147.18**	**170**	*e*	PKPdf	**PKPdf**	**05 32 31.3**	**+1.0**
KULM					LR	LR			
	comp=Z,471nm,20.0s								
HYB	**Hyderabad**	**148.33**	**122**	*i*	PKP	**PKPbc**	**05 32 35.5**	**0.0**
SHO	**Shikotan**	**148.94**	**294**	*e*	PKHKP	PKPpre	05 32 30.3		
KBL	**Kabul**	**149.95**	**85**	*e*	PKPdf	**PKPdf**	**05 32 34.3**	**-0.1**
KBL				*e*	PKPbc	**PKPbc**	**05 32 39.4**	**+0.1**
ZRNK	**Zerenda**	**150.23**	**47**	*e*	PKIKP	**PKPdf**	**05 32 34.5**	**+0.6**
ZRNK				*e*			05 32 39.7		
ZRNK	**Zerenda**	**150.23**	**47**	*e*	PKPdf	**PKPdf**	**05 32 34.5**	**+0.6**
ZRNK				*e*	PKPbc	**PKiKP**	**05 32 39.7**	**-0.2**
BRVK	**Borovoye**	**150.94**	**47**	*e*	PKIKP	**PKPbc**	**05 32 41.3**	**+0.5**
BRVK					MLR	MLR			
	comp=Z,647nm,19.0s								
BRVK	**Borovoye**	**150.94**	**47**	*e*	PKPbc	**PKPbc**	**05 32 41.3**	**+0.5**
BRVK					LR	LR			
	comp=Z,647nm,19.0s								
TYV	**Tymovskoe**	**151.21**	**309**	*e*	PKIKP	**PKPbc**	**05 32 41.2**	**-0.2**
ERM	**Erimo**	**151.52**	**290**	*c i*	PKIKP	**PKPbc**	**05 32 41.7**	**-0.8**
ERM					pmax	pmax			
	comp=Z,77nm,1.7s								
ERM	**Erimo**	**151.52**	**290**		PFAKE		05 32 50.0	-1.0	
ERM					LR	LR			
	comp=Z,366nm,20.0s								
YSS	**Yuzh-Sakhalins**	**151.75**	**300**	*e*	PKIKP	**PKPbc**	**05 32 42.5**	**-0.3**
YSS				*e*			05 32 52.7		
YSS	**Yuzh-Sakhalins**	**151.75**	**300**		PFAKE		05 32 50.0	-1.8	
YSS					LR	LR			
	comp=Z,85nm,19.0s								
NKL	**Nikolayevsk**	**151.76**	**314**	*e*	PKIKP	**PKPbc**	**05 32 41.5**	**-1.1**
NKL					pmax	pmax			
	comp=Z,40nm,1.0s								
YAK	**Yakutsk**	**151.80**	**337**	*e*	PKIKP	**PKPbc**	**05 32 41.4**	**-1.1**
YAK				*e*	*PP	**PKPab**	**05 32 52.1**	**+0.6**
YAK					pmax	pmax			
	comp=Z,30nm,1.1s								
YAK					pmax	pmax			
	comp=N,7.0nm,1.3s								
YAK					pmax	pmax			
	comp=E,14nm,1.6s								
YAK					pmax	pmax			
	comp=Z,9.0nm,0.4s								
YAK					pmax	pmax			
	comp=N,3.0nm,0.6s								
YAK					pmax	pmax			
	comp=E,4.0nm,0.6s								
YAK	**Yakutsk**	**151.80**	**337**	*e*	PKPbc	**PKPbc**	**05 32 42.5**	**0.0**
YAK					LR	LR			
	comp=Z,198nm,21.0s								
KKAR	**Karatay Array**	**152.48**	**68**	*e*	PKIKP	**PKPdf**	**05 32 37.7**	**-0.1**
KKAR				*e*			05 32 45.1		
KKAR				*e*			05 32 55.5		
KKAR	**Karatay Array**	**152.48**	**68**	*e*	PKPdf	**PKPdf**	**05 32 37.7**	**-0.1**
KKAR				*e*	PKPbc	**PKiKP**	**05 32 45.1**	**+0.2**
KKAR				*e*	PKPab	**PKPab**	**05 32 55.5**	**+0.4**
MAJO	**Matsushiro**	**154.55**	**277**	*e*	PKIKP	**PKPdf**	**05 32 41.2**	**+0.3**
MAJO					MLR	MLR			
	comp=Z,468nm,20.0s								
MAJO	**Matsushiro**	**154.55**	**277**	*e*	PKPdf	**PKPdf**	**05 32 41.2**	**+0.3**
MAJO					LR	LR			
	comp=Z,468nm,20.0s								
EKS2	**Erkin-Say**	**154.88**	**69**	*e*	PKIKP	**PKPdf**	**05 32 42.2**	**+0.9**
EKS2				*e*			05 33 04.4		
EKS2					MLR	MLR			
	comp=Z,415nm,20.0s								
EKS2	**Erkin-Say**	**154.88**	**69**	*e*	PKPdf	**PKPdf**	**05 32 42.2**	**+0.9**
EKS2				*e*	PKPab	**PKPab**	**05 33 04.4**	**-1.0**
EKS2					LR	LR			
	comp=Z,415nm,20.0s								
AAK	**Ala-Archa**	**155.41**	**69**	*c i*	PKIKP	**PKPdf**	**05 32 43.0**	**+0.9**
AAK					pmax	pmax			
	comp=Z,31nm,2.5s								
AAK	**Ala-Archa**	**155.41**	**69**	*e*	PKPdf	**PKPdf**	**05 32 42.8**	**+0.7**
AAK				*e*	PKPbc	PKPbc	05 32 52.5		
AAK				*e*	PKPab	**PKPab**	**05 33 08.7**	**+1.0**
AAK					LR	LR			
	comp=Z,385nm,21.0s								
FRU	**Bishkek**	**155.49**	**68**	*e*	PKIKP	**PKPdf**	**05 32 42.0**	**0.0**
FRU				*i*			05 33 09.0		
FRU				*i*			05 36 44.0		
TKM2	**Tokmak 2**	**156.21**	**68**	*e*	PKIKP	**PKPdf**	**05 32 43.6**	**+0.4**
TKM2				*e*			05 33 11.4		
TKM2					MLR	MLR			
	comp=Z,270nm,20.0s								
TKM2	**Tokmak 2**	**156.21**	**68**	*e*	PKPdf	**PKPdf**	**05 32 43.6**	**+0.4**
TKM2				*e*	PKPab	**PKPab**	**05 33 11.4**	**+0.2**
TKM2					LR	LR			
	comp=Z,270nm,20.0s								
KSH	**Kashi**	**156.38**	**77**	*e*	PKP	**PKPdf**	**05 32 43.6**	**+0.1**
KSH					PKS	**PKSdf**	**05 36 16.6**	**-0.8**
KSH					SKS	**SKSdf**	**05 39 44.1**	**-4.7**
KSH					AMB	AMB			
	comp=Z,210nm,3.7s								
KSH					LR	LR			
	comp=Z,170nm,9.2s								
KSH					LR	LR			
	comp=Z,140nm,9.6s								
KSH					LR	LR			
	comp=Z,210nm,16.4s								
KURK	**Kurchatov**	**156.59**	**48**	*e*	PKIKP	**PKPdf**	**05 32 42.7**	**-0.5**
KURK					MLR	MLR			
	comp=Z,625nm,19.0s								
KURK	**Kurchatov**	**156.59**	**48**	*e*	PKPdf	**PKPdf**	**05 32 42.7**	**-0.5**
KURK					LR	LR			
	comp=Z,625nm,19.0s								
NVS	**Novosibirsk**	**156.94**	**35**	*e*	PKIKP	**PKPdf**	**05 32 44.0**	**+0.6**
ZAA0	**Zalesovo Array**	**158.22**	**36**	*e*	PKPdf	**PKPdf**	**05 32 44.4**	**-0.7**
ZAA0				*e*	PKPab	**PKPab**	**05 33 19.6**	**+0.4**
ZALV	**Zalesovo Beam**	**158.22**	**36**		PKP	**PKPdf**	**05 32 44.2**	**-0.8**
	comp=Z,1.1nm,0.5s,baz=270,slow=3.0,SNR=8.5								
ZALV					PKPab	**PKPab**	**05 33 20.4**	**+1.3**	
	comp=Z,7.5nm,0.7s,baz=299,slow=6.1,SNR=13								
ZALV	**Zalesovo Beam**	**158.22**	**36**		PKIKP	**PKPdf**	**05 32 44.3**	**-0.8**
ZALV							05 33 20.4		
ZALV					pmax	pmax			
	comp=Z,3.0nm,0.9s								
ZALV					pmax	pmax			
	comp=Z,8.0nm,0.7s								
BOD	**Bodaibo**	**159.39**	**348**	*e*	PKP2	**PKPab**	**05 33 22.6**	**-1.5**
BOD					pmax	pmax			
	comp=Z,6.0nm,1.3s								
CM01	**Chiang Mai Arr**	**159.61**	**160**	*e*	PKPdf	**PKPdf**	**05 32 48.0**	**+0.1**
CM01				*e*	PKPab	**PKPab**	**05 33 24.4**	**-1.6**
CM31	**Chiang Mai Arr**	**159.64**	**160**	*e*	PKPdf	**PKPdf**	**05 32 48.1**	**+0.2**
CMAR	**Chiang Mai Arr**	**159.64**	**160**		PKP	**PKPdf**	**05 32 47.5**	**-0.4**
	comp=Z,0.8nm,0.4s,baz=242,slow=1.9,SNR=6.8								
CMAR					PKPab	**PKPab**	**05 33 24.8**	**-1.4**
	comp=Z,0.9nm,0.3s,baz=221,slow=4.0,SNR=9.3								
CHTO	**Chiang Mai**	**159.98**	**159**		PFAKE		05 33 00.0	+12	
CHTO					LR	LR			
	comp=Z,336nm,19.0s								
MAKZ	**Makanchi**	**160.04**	**56**	*e*	PKIKP	**PKPdf**	**05 32 47.4**	**-0.1**
MAKZ				*e*			05 33 27.6		
MAKZ	**Makanchi**	**160.04**	**56**	*e*	PKPdf	**PKPdf**	**05 32 47.4**	**-0.1**
MAKZ				*e*	PKPab	**PKPab**	**05 33 27.6**	**+0.2**
MK31	**Makanchi Array**	**160.25**	**56**	*e*	PKIKP	**PKPdf**	**05 32 47.5**	**-0.2**
MK31				*e*			05 33 28.4		
MK31	**Makanchi Array**	**160.25**	**56**	*e*	PKPdf	**PKPdf**	**05 32 47.5**	**-0.2**
MK31				*e*	PKPab	**PKPab**	**05 33 28.4**	**+0.1**
MKAR	**Makanchi Array**	**160.25**	**56**		PKP	**PKPdf**	**05 32 47.8**	**0.0**
	comp=Z,2.2nm,0.9s,baz=318,slow=1.6,SNR=16								
MKAR					PKPab	**PKPab**	**05 33 28.3**	**0.0**	
	comp=Z,4.1nm,0.8s,baz=294,slow=4.1,SNR=16								
MKAR					PP	**PP**	**05 37 08.6**	**-2.4**	
	comp=Z,1.3nm,1.0s,baz=298,slow=2.6,SNR=4.3								
MK01	**Makanchi Array**	**160.26**	**56**	*e*	PKPdf	**PKPdf**	**05 32 46.6**	**-1.2**
MK01				*e*	PKPab	**PKPab**	**05 33 28.4**	**+0.1**
MDJ	**Mudanjiang**	**161.21**	**298**		PFAKE		05 33 00.0	+11	
MDJ					LR	LR			
	comp=Z,349nm,19.0s								
YHNB	**Yeheng**	**161.57**	**229**		PFAKE		05 33 00.0	+10	
YHNB					LR	LR			
	comp=Z,220nm,19.0s								
TATO	**Taipei**	**161.73**	**230**		PFAKE		05 33 00.0	+10	
TATO					LR	LR			
	comp=Z,265nm,20.0s								
INCN	**Inchon**	**163.83**	**275**		PFAKE		05 33 00.0	+8.3	
INCN					LR	LR			
	comp=Z,278nm,19.0s								
WMQ	**Urumqi**	**164.78**	**61**		PKP	**PKPdf**	**05 32 50.9**	**-1.5**
WMQ					PKPab	**PKPab**	**05 33 49.9**	**+1.5**
WMQ					PP	**PP**	**05 37 36.1**	**+0.9**
WMQ					AMB	AMB			
	comp=Z,63nm,10.8s								
HIA	**Hailar**	**165.00**	**324**		PFAKE		05 33 00.0	+7.6	
HIA					LR	LR			
	comp=Z,274nm,20.0s								
LSA	**Lhasa**	**165.07**	**119**	*e*	PKIKP	**PKPdf**	**05 32 52.9**	**-0.7**
LSA				*e*			05 33 51.3		
LSA					MLR	MLR			
	comp=Z,355nm,20.0s								
LSA	**Lhasa**	**165.07**	**119**	*e*	PKPdf	**PKPdf**	**05 32 52.9**	**-0.7**
LSA				*e*	PKPab	**PKPab**	**05 33 51.3**	**+0.8**
LSA					LR	LR			
	comp=Z,355nm,20.0s								
TLY	**Talaya**	**166.07**	**7**	*e*	PKP2	**PKPab**	**05 33 54.5**	**+0.9**
TLY					MLR	MLR			
	comp=Z,295nm,19.0s								
TLY	**Talaya**	**166.07**	**7**	*e*	PKPab	**PKPab**	**05 33 54.5**	**+0.9**
TLY					LR	LR			
	comp=Z,295nm,19.0s								
KMI	**Kunming**	**166.96**	**166**		PKP	**PKPdf**	**05 32 54.8**	**-0.1**
ZAK	**Zakamensk**	**167.31**	**9**	*e*	PKP2	**PKPab**	**05 34 00.0**	**+0.8**
ZAK					pmax	pmax			
	comp=Z,7.0nm,1.4s								
GYA	**Guiyang**	**168.62**	**182**	*e*	PKP	**PKPdf**	**05 32 56.3**	**+0.4**
GYA					PKPab	**PKPab**	**05 34 08.0**	**+2.5**
GYA					PKS	**PKSdf**	**05 36 27.4**	**-1.3**
GYA					PP	**PP**	**05 37 58.6**	**+4.9**
GYA					AMB	AMB			
	comp=Z,130nm,8.4s								
ULN	**Ulaanbaatar**	**169.99**	**357**	*e*	PKP2	**PKPab**	**05 34 12.3**	**+1.1**
ULN					MLR	MLR			
	comp=Z,296nm,20.0s								
ULN	**Ulaanbaatar**	**169.99**	**357**	*e*	PKPab	**PKPab**	**05 34 12.3**	**+1.1**
ULN					LR	LR			
	comp=Z,296nm,20.0s								
SONA1	**Songino Array**	**170.03**	**359**	*e*	PKPab	**PKPab**	**05 34 11.6**	**+0.3**
SONM	**Songino Array**	**170.04**	**359**		PKP	**PKPdf**	**05 32 56.1**	**0.0**
	comp=Z,0.4nm,0.5s,baz=338,slow=3.1,SNR=5.0								
SONM					PKPab	**PKPab**	**05 34 12.2**	**+0.9**	
	comp=Z,4.3nm,1.1s,baz=347,slow=2.4,SNR=12								
SONM					PP	**PP**	**05 38 03.5**	**+2.5**	
	comp=Z,0.5nm,0.5s,baz=343,slow=4.5,SNR=5.1								
ENH	**Enshi**	**171.95**	**201**		PFAKE		05 33 10.0	+12	
ENH					LR	LR			
	comp=Z,279nm,19.0s								
BJT	**Baijiatuan**	**171.96**	**289**		PFAKE		05 33 10.0	+13	
BJT					LR	LR			
	comp=Z,496nm,22.0s								
CD2	**Chengdu**	**172.77**	**163**		PKP	**PKPdf**	**05 32 57.3**	**-0.6**
GTA	**Gaotai**	**174.75**	**71**	*e*	PKP	**PKPdf**	**05 32 58.9**	**+0.4**
GTA					PP	**PP**	**05 38 26.5**	**+0.8**
GTA					SKS	**SKSdf**	**05 39 59.3**	**-1.4**
GTA					SKKS	**SKKSac**	**05 45 10.0**	**-0.9**
GTA					SS	**SS**	**05 59 46.5**	**-1.2**
GTA					AMB	AMB			
	comp=Z,270nm,7.4s								
GTA					LR	LR			
	comp=Z,94nm,17.1s								
GTA					LR	LR			
	comp=Z,180nm,17.3s								
GTA					LR	LR			
	comp=Z,290nm,21.4s								
HHC	**Hu-ho-hao-te**	**174.90**	**307**	*e*	PKP	**PKPdf**	**05 32 58.1**	**-0.4**
HHC					PP	**PP**	**05 38 26.4**	**+0.5**
HHC					AMB	AMB			
	comp=Z,69nm,9.9s								
HHC					LR	LR			
	comp=Z,220nm,22.1s								
HHC					LR	LR			
	comp=Z,340nm,21.5s								
HHC					LR	LR			
	comp=Z,260nm,20.5s								
LZH	**Lanzhou**	**177.40**	**132**	*e*	PKP	**PKPdf**	**05 33 00.0**	**+0.8**
LZH					pPKP	pPKPdf	05 33 06.5	+1.1	
LZH					sPKP		05 33 08.8		
LZH					PP	**PP**	**05 38 41.0**	**+3.3**
LZH					SKKS		05 45 23.4		
LZH				*e*	SS	**SS**	**06 00 10.0**	**-1.9**
LZH					AMB	AMB			
	comp=Z,210nm,7.0s								
LZH					LR	LR			
	comp=Z,440nm,18.3s								
LZH					LR	LR			
	comp=Z,650nm,19.0s								
LZH					LR	LR			
	comp=Z,700nm,20.1s								

*ISCJB **22** 05:15:55.7±0.5, 32°.00N±0°.02×114°.98W±0°.04, h28km±4km, Error ellipse: s-maj=5.4km s-min=3.9km az=164.1*
*NEIC **22** 05:15:57.9, 31°.97N×115°.14W, h9km, ML3.1(ECX), ML3.2(PAS), After ECX.*
*ECX **22** 05:15:57.9±0.5, 31°.97N×115°.14W, h9km, MD3.1, ML3.3*
*MEX **22** 05:15:58.3±1.0, 32°.04N×114°.98W, h20km±999km, MD3.7*
ISC 22 05:15:55.1±1.1, 32°.02N±0°.02×115°.05W±0°.03, h19km±3km, n31, σ0°88/50, 3C-4D, California-Baja California border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MBIG	**Mexicali**	**0.41**	**343**	‖ *e* P	**Pn**	**05 16 05.4**	**-0.6**
MBIG	**Mexicali**	**0.41**	**343**	*e* P	**Pn**	**05 16 05.4**	**-0.6**
MBIG	**Mexicali**	**0.41**	**343**	*e* P	**Pn**	**05 16 05.3**	**-0.6**
MBIG				*e* S	**Sb**	**05 16 10.5**	**+0.8**
CPBX	**Cerro Prieto**	**0.45**	**332**	‖ *e* P	**Pn**	**05 16 06.2**	**-0.4**
CPBX				*e* P	**Pn**	**05 16 06.2**	**-0.4**
CPBX				*e* S	**Sn**	**05 16 13.2**	**-1.1**
CPBX				⇓ *e*		05 16 14.5	
CPBX				AML	AML	05 16 14.5	
	comp=N,11μm,0.2s						
CPBX	**Cerro Prieto**	**0.45**	**332**	*e* P	**Pn**	**05 16 06.1**	**-0.4**
CPBX				*e* S	**Sb**	**05 16 11.4**	**+0.5**
ECBX	**El Chinero**	**0.54**	**180**	‖ *e* P	**Pg**	**05 16 06.5**	**+0.5**
ECBX				*e* S	**Sb**	**05 16 13.8**	**+0.5**
DREC	**Desert Rsrch C**	**0.85**	**337**	*e* P	**Pn**	**05 16 13.1**	**+1.0**
DREC	**Desert Rsrch C**	**0.85**	**337**	*e* P	**Pn**	**05 16 13.1**	**+1.0**
WESC	**Westside Schoo**	**0.94**	**322**	‖ *e* P	**Pg**	**05 16 14.3**	**+1.0**
WESC	**Westside Schoo**	**0.94**	**322**	*e* P	**Pg**	**05 16 14.3**	**+1.0**
SPIG	**San Pedro Mart**	**1.03**	**200**	‖ *e* P	**Pb**	**05 16 14.8**	**+0.3**
SPIG	**San Pedro Mart**	**1.03**	**200**	*e* P	**Pb**	**05 16 14.8**	**+0.3**
SPIG				*e* S	**Sb**	**05 16 27.5**	**-0.3**
SPIG	**San Pedro Mart**	**1.03**	**200**	*e* P	**Pn**	**05 16 15.0**	**+0.2**
SPIG				*e* S	**Sb**	**05 16 27.5**	**-0.3**
SPX	**San Pedro Mart**	**1.03**	**200**	‖ *e* P	**Pn**	**05 16 15.0**	**+0.2**
SPX	**San Pedro Mart**	**1.03**	**200**	*e* P	**Pn**	**05 16 15.0**	**+0.2**
SPX				*e* S	**Sn**	**05 16 28.7**	**-0.2**
RMX	**La Rumorosa**	**1.05**	**304**	*e* P	**Pg**	**05 16 15.5**	**0.0**
RMX				*e* S	**Sg**	**05 16 29.3**	**+0.1**
RMX				AML	AML	05 16 30.6	
	comp=N,466nm,0.2s						
RMX				AML	AML	05 16 30.6	
	comp=E,706nm,0.2s						
RMX	**La Rumorosa**	**1.05**	**304**	*e* P	**Pg**	**05 16 15.5**	**0.0**
RMX				*e* S	**Sg**	**05 16 29.3**	**+0.1**
GLA	**Glamis**	**1.05**	**10**	P	**Pb**	**05 16 14.4**	**-0.3**
	baz=194						
GLA				S	**Sg**	**05 16 29.1**	**-0.3**
	baz=194						
SWSC	**Sam W. Stewart**	**1.11**	**326**	P	**Pn**	**05 16 15.3**	**-0.4**
	baz=150						
CBX	**Cerro Bola**	**1.40**	**283**	*e* P	**Pb**	**05 16 20.7**	**0.0**
CBX				*e* S	**Sn**	**05 16 37.7**	**0.0**
CBX	**Cerro Bola**	**1.40**	**283**	*e* P	**Pb**	**05 16 20.7**	**0.0**
CBX				*e* S	**Sn**	**05 16 37.7**	**0.0**
MONP2	**Monument Peak**	**1.45**	**307**	P	**Pg**	**05 16 23.0**	**0.0**
	baz=130						
MONP2				S	**Sg**	**05 16 41.9**	**0.0**
	baz=130						
BC3	**Big Chuckawall**	**1.67**	**348**	P	**Pn**	**05 16 23.5**	**+0.1**
	baz=171						
BC3				S	**Sn**	**05 16 44.0**	**-0.4**
	baz=171						
214A	**Organ Pipe Nat**	**1.91**	**91**	Pb	**Pn**	**05 16 26.1**	**-0.6**
	baz=271						
214A				S	**Sn**	**05 16 47.8**	**-2.3**
	baz=271						
214A	**Organ Pipe Nat**	**1.91**	**91**	*e* Pn	**Pn**	**05 16 26.1**	**-0.6**
214A				*e* Sn	**Sn**	**05 16 49.3**	**-0.8**
109C	**Camp Elliot, M**	**1.94**	**297**	Sb	**Sg**	**05 16 56.2**	**-1.4**
	baz=118						
PFO	**Pinyon Flats O**	**1.98**	**324**	*e* Pn	**Pn**	**05 16 27.9**	**+0.2**
IRM	**Iron Mountain**	**2.14**	**358**	Sb	**Sg**	**05 17 02.9**	**-1.1**
	baz=180						
MURC	**Murrieta**	**2.40**	**312**	Sb	**Sg**	**05 17 11.4**	**-0.9**
	baz=133						
TUC	**Tucson**	**3.63**	**84**	*e* Pn	**Pn**	**05 16 52.3**	**+1.8**
TUC				*e* Pg	**Pg**	**05 17 05.8**	**+1.0**
TUC				*e* Sg	**Sg**	**05 17 49.8**	**-2.0**
WUAZ	**Wupatki**	**4.65**	**40**	*e* Pn	**Pn**	**05 17 07.2**	**+2.8**

*ISCJB **22** 05:17:53.8±0.5, 9°.40S±0°.05×110°.39E±0°.03, h33km, mb4.2/13, MS3.9/3, Error ellipse: s-maj=7.5km s-min=4.3km az=16.8*
*DJA **22** 05:17:54.9±0.3, 9°.3S±3°×11°.0E±°, h10km, M4.7/33, mb4.7/11, mB6.0/3, MLv4.5/33, Mw(mB)5.7/3*
*NEIC **22** 05:18:02.8±1.0, 9°.17S×110°.62E, h106km±9km, mb4.0/5, Error ellipse: s-maj=17.6km s-min=7.9km az=214.0*
*IDC **22** 05:18:06.0±1.1, 9°.12S×110°.50E, h133km±6km, mb3.8/9, mb1 3.9/10, mb1mx3.6/36, mbtmp4.2/10, MS3.2/6, Ms1 3.2/6, ms1mx3.0/39, Error ellipse: s-maj=35.9km s-min=14.4km az=48.0*
ISC 22 05:17:55.1±0.7, 9°.36S±0°.08×110°.41E±0°.07, h35km, n52, σ1°59/47, mb4.3/13, MS3.5/3, South of Jawa

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PCJI	**Pacitan**	**1.39**	**33**	P	**Pn**	**05 18 16.4**	**-1.5**
UGM	**Wanagama**	**1.44**	**5**	P	**Pn**	**05 18 18.3**	**-0.5**
WOJI	**Wonogiri, Jawa**	**1.60**	**19**	P	**Pn**	**05 18 20.5**	**-0.3**
WOJI				S	**Sn**	**05 18 42.2**	**+2.0**
PWJI	**Pagerwojo**	**1.92**	**46**	P	**Pn**	**05 18 24.7**	**-0.6**
NGJI	**Ngawi**	**2.24**	**28**	P	Pn	05 18 32.8	+3.1
CMJI	**Cimerak**	**2.49**	**309**	P	**Pn**	**05 18 32.8**	**-0.3**
TBJI	**Tambak Boyo**	**2.90**	**30**	P	**Pn**	**05 18 39.9**	**+1.1**
CISI	**Cisompet, Garu**	**3.13**	**305**	P	**Pn**	**05 18 42.6**	**+0.6**
GMJI	**Gumukmas**	**3.19**	**70**	P	**Pn**	**05 18 44.3**	**+1.5**
LEM	**Lembang**	**3.73**	**312**	P	Pn	05 18 59.5	+9.0
	9.9nm,0.3s,baz=122,slow=12,SNR=14						
LEM				S	Sn	05 19 45.2	+12
	14nm,0.3s,baz=280,slow=22,SNR=4.5						
LEM				LR	LR	05 20 34.3	
	comp=Z,180nm,18.2s,baz=164,slow=41						
LEM	**Lembang**	**3.73**	**312**	P	Pn	05 18 57.6	+7.2
JAGI	**Jajag, Banyuwa**	**3.81**	**77**	P	**Pn**	**05 18 52.5**	**+1.2**
CNJI	**Cibinong**	**3.83**	**302**	P	**Pn**	**05 18 53.2**	**+1.6**
ABJI	**Asem Bagus**	**4.09**	**68**	P	**Pn**	**05 18 57.7**	**+2.5**
SKJI	**Sukabumi**	**4.47**	**301**	P	**Pn**	**05 19 02.8**	**+2.4**
DNP	**Denpasar**	**4.79**	**82**	P	**Pn**	**05 19 06.8**	**+2.0**
TNG	**Tangerang**	**4.89**	**310**	P	**Pn**	**05 19 08.1**	**+1.9**
SRBI	**Singaraja**	**4.92**	**75**	P	**Pn**	**05 19 08.3**	**+1.7**
SBJI	**Serang**	**5.32**	**307**	P	**Pn**	**05 19 13.8**	**+1.7**
	70nm,0.7s,0.4nm						
CGJI	**Cibinong**	**5

CSEM 22 05:29:35.8, 42°.95N × 12°.89E, h10 km, MD1.6/4
ROM 22 05:29:35.8±0.1, 42°.95N×12°.89E, h10 km, Md1.6/4, Ml1.6/1, Error ellipse: s-maj=1.3km s-min=0.9km az=40.0, Central Italy

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CESI	**CESI - Serrava**	**0.05**	**8**	Pg	Pg	05 29 38.4	+0.4
CESI				Sg	Sg	05 29 40.0	+0.4
	59nm,0.1s						
CESI	**CESI - Serrava**	**0.05**	**8**	Pg	Pg	05 29 38.4	+0.4
CESI				Sg	Sg	05 29 40.0	+0.4
	59nm,0.1s						
FDMO	**Fiordimonte**	**0.17**	**59**	Pg	Pg	05 29 40.2	+0.7
FDMO				Sg	Sg	05 29 43.1	+1.1
FDMO	**Fiordimonte**	**0.17**	**59**	Pg	Pg	05 29 40.2	+0.7
FDMO				Sg	Sg	05 29 43.1	+1.1
NRCA	**Norcia**	**0.20**	**126**	Pg	Pg	05 29 40.8	+0.7
NRCA				Sg	Sg	05 29 44.4	+1.4
	84nm,0.1s						
NRCA	**Norcia**	**0.20**	**126**	Pg	Pg	05 29 40.8	+0.7
NRCA				Sg	Sg	05 29 44.4	+1.4
	84nm,0.1s						
LNSS	**Leonessa**	**0.36**	**163**	Pg	Pg	05 29 43.4	+0.3
LNSS				Sg	Sb	05 29 49.3	-0.9
LNSS	**Leonessa**	**0.36**	**163**	Pg	Pg	05 29 43.4	+0.3
LNSS				Sg	Sb	05 29 49.3	-0.9

NIED 22 05:31:00, 39°.60N × 143°.40E, h14 km, Mw3.5 Best double couple: M0≥2.15000×10^14 NP1:φs=173.00000°, δ57.00000°, λ-11.00000°. NP2:φs=269.00000°, δ81.00000°, λ-146.00000°.
JMA 22 05:31:17.9±0.4, 39°.57N × 143°.44E, h22 km, M3.7, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JOM	**Ohasama**	**1.66**	**267**	P	Pn	05 31 46.4	+0.7
JOM				eS	Sb	05 32 07.5	-0.8
JANG	**Nango**	**1.68**	**299**	P	Pb	05 31 47.2	-1.0
JANG				eS	Sn	05 32 07.4	+0.5
JMK	**Ichinoseki**	**1.83**	**251**	eS	Sn	05 32 10.9	+0.4
JIO	**Ouri**	**1.97**	**236**	P	Pn	05 31 50.2	+0.2
JRG	**Rokugo**	**2.18**	**266**	eS	Sb	05 32 22.9	-0.3
JTM	**Tenmabayashi**	**2.19**	**305**	P	Pn	05 31 53.3	+0.4
JTM				eS	Sb	05 32 22.3	-1.1
JYK	**Kaneyama**	**2.48**	**256**	P	Pb	05 31 59.6	-2.1
JNBK	**Urakawa-nobuka**	**2.76**	**349**	P	Pn	05 32 02.1	+1.3
JNBK				eS	Sn	05 32 34.1	+0.7
JKB	**Kayabe**	**2.95**	**322**	P	Pb	05 32 06.9	-2.8

ISK 22 05:43:30.4, 38°.96N × 29°.88E, h5 km, ML3.6
DDA 22 05:43:30.7, 38°.98N × 29°.83E, h21 km, MI3.9
ISCJB 22 05:43:30.8±0.5, 38°.98N±0°.02×29°.85E±0°.02, h1 km±4km, mb3.2/3, Error ellipse: s-maj=2.9km s-min=2.6km az=30.1
IDC 22 05:43:30.1±1.5, 39°.11N × 29°.78E, h0 km, mb3.2/3, mb1 3.4/6, mb1mx3.2/39, mbtmp3.3/6, ML3.3/3, Error ellipse: s-maj=29.5km s-min=20.3km az=177.0
CSEM 22 05:43:31.6±0.1, 38°.97N × 29°.85E, h2 km, ML3.9, Error ellipse: s-maj=2.2km s-min=2.0km az=129.0
THE 22 05:43:34.7, 38°.96N × 29°.57E, h3 km±2km, ML3.8/1, Error ellipse: s-maj=2.2km s-min=0.9km az=241.0
ISC 22 05:43:31.2±1.0, 38°.99N±0°.02×29°.83E±0°.02, h8 km±8km, n219, σ1°18/235, mb3.2/3, 10C-6D, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GDZ	**Gediz**	**0.29**	**290**	*i* P	**Pg**	**05 43 36.7**	**-0.3**
GDZ	**Gediz**	**0.29**	**290**	P	**Pg**	**05 43 36.7**	**-0.3**
TVSB	**Tavsanli**	**0.55**	**328**	*e*PG	**Pb**	**05 43 43.0**	**-0.1**
TVSB	**Tavsanli**	**0.55**	**328**	*e*Pg	**Pb**	**05 43 43.0**	**-0.1**
AUKIR	**K¯rka- Seyitg**	**0.61**	**62**	*i* P	**Pg**	**05 43 43.6**	**+0.5**
AUKIR	**K¯rka- Seyitg**	**0.61**	**62**	P	**Pg**	**05 43 43.6**	**+0.5**
KHAL	**Karahalli**	**0.67**	**204**	*i* P	**Pg**	**05 43 44.0**	**-0.1**
KHAL				*i* S	**Sg**	**05 43 53.1**	**+0.2**
KHAL	**Karahalli**	**0.67**	**204**	S	**Sg**	**05 43 53.1**	**+0.2**
KHL	**Karahalli**	**0.71**	**200**	*e*PG	**Pg**	**05 43 44.9**	**+0.1**
KHL				*e*SG	**Sg**	**05 43 54.9**	**+0.9**
KHL	**Karahalli**	**0.71**	**200**	*e*Pg	**Pg**	**05 43 44.9**	**+0.1**
KHL				*e*Sg	**Sg**	**05 43 54.9**	**+0.9**
DEMI	**Demirci**	**0.87**	**274**	*i* P	**Pg**	**05 43 48.0**	**0.0**
DEMI				*i* S	**Sg**	**05 43 59.4**	**0.0**
DEMI	**Demirci**	**0.87**	**274**	P	**Pg**	**05 43 48.0**	**0.0**
DEMI				S	**Sg**	**05 43 59.3**	**0.0**
BOLV	**Bolvadin**	**0.91**	**107**	*i* P	**Pg**	**05 43 48.0**	**-0.7**
BOLV	**Bolvadin**	**0.91**	**107**	P	**Pg**	**05 43 48.0**	**-0.7**
ESKT	**Eskisehir**	**0.95**	**56**	*i* P	**Pg**	**05 43 48.6**	**-0.8**
SEYT	**Eskypehyr**	**0.95**	**56**	P	**Pg**	**05 43 48.7**	**-0.8**
BORA	**Eskisehir**	**1.01**	**28**	*i* P	**Pg**	**05 43 49.9**	**-0.7**
BORA	**Eskisehir**	**1.01**	**28**	P	**Pg**	**05 43 49.9**	**-0.7**
KULA	**Kula-Manisa**	**1.03**	**243**	*e*PG	**Pg**	**05 43 50.9**	**-0.1**
KULA	**Kula-Manisa**	**1.03**	**243**	P	**Pg**	**05 43 50.7**	**-0.3**
KULA				S	**Sg**	**05 44 00.5**	**-0.9**
KULA	**Kula-Manisa**	**1.03**	**243**	*e*Pg	**Pg**	**05 43 50.9**	**-0.1**
KULA				S	**Sg**	**05 44 03.5**	**-0.9**
UZP	**Denizli**	**1.09**	**209**	*i* P	**Pg**	**05 43 51.6**	**-0.4**
UZP				*i* S	**Sg**	**05 44 05.7**	**-0.5**
CAVI	**Cavuskoy**	**1.21**	**0**	*e*PN	**Pg**	**05 43 55.0**	**+0.5**
CAVI	**Cavuskoy**	**1.21**	**0**	*e*Pn	**Pg**	**05 43 55.0**	**+0.5**
DURS	**Dursunbey**	**1.22**	**301**	*i* P	**Pb**	**05 43 54.5**	**-0.1**
DURS	**Dursunbey**	**1.22**	**301**	P	**Pb**	**05 43 54.5**	**-0.1**
BAGO	**Egridir - ISPA**	**1.25**	**143**	*i* P	**Pb**	**05 43 54.8**	**-0.2**
ULDT	**Uludag**	**1.27**	**335**	*i* P	**Pn**	**05 43 55.8**	**+0.3**
ULDT	**Uludag**	**1.27**	**335**	P	**Pn**	**05 43 55.8**	**+0.3**
ORLT	**Orhaneli**	**1.28**	**326**	*e*PN	**Pg**	**05 43 56.7**	**+0.9**
ORLT	**Orhaneli**	**1.28**	**326**	*e*Pn	**Pg**	**05 43 56.7**	**+0.9**
GPA	**Golpazari**	**1.35**	**16**	*e*PN	**Pn**	**05 43 57.0**	**+0.6**
GPA	**Golpazari**	**1.35**	**16**	*e*Pn	**Pn**	**05 43 57.0**	**+0.6**
IGD	**Bursa**	**1.36**	**339**	*i* P	**Pn**	**05 43 56.5**	**-0.1**
IZI	**Iznik**	**1.38**	**348**	*e*PN	**Pg**	**05 43 58.3**	**+0.7**
IZI	**Iznik**	**1.38**	**348**	*e*Pn	**Pg**	**05 43 58.3**	**+0.7**
DENT	**Denizli**	**1.38**	**207**	*e*PN	**Pb**	**05 43 57.3**	**0.0**
DENT	**Denizli**	**1.38**	**207**	*e*Pn	**Pb**	**05 43 57.3**	**0.0**
SVRH	**Sivrihisar-ESK**	**1.39**	**70**	*e*PN	**Pn**	**05 43 57.6**	**+0.6**
SVRH	**Sivrihisar-ESK**	**1.39**	**70**	*e*Pn	**Pn**	**05 43 57.6**	**+0.6**
AUSIV	**SIVRIHISAR**	**1.40**	**71**	*i* P	**Pn**	**05 43 56.9**	**-0.2**
AUSIV	**SIVRIHISAR**	**1.40**	**71**	P	**Pn**	**05 43 56.9**	**-0.2**
ADVT	**Abdulvahap**	**1.45**	**357**	*e*PN	**Pb**	**05 43 59.1**	**+0.7**
ADVT	**Abdulvahap**	**1.45**	**357**	*e*Pn	**Pb**	**05 43 59.1**	**+0.7**
GEMT	**Gemlik**	**1.53**	**341**	*e*PN	**Pg**	**05 44 00.7**	**+0.1**
GEMT	**Gemlik**	**1.53**	**341**	*e*Pn	**Pg**	**05 44 00.6**	**+0.1**
GULT	**Gulveren**	**1.54**	**20**	*e*PN	**Pb**	**05 44 00.2**	**+0.3**
GULT	**Gulveren**	**1.54**	**20**	*e*Pn	**Pb**	**05 44 00.2**	**+0.3**
MDNY	**Mudanya-Bursa**	**1.56**	**332**	*e*PN	**Pb**	**05 44 00.9**	**+0.6**
MDNY	**Mudanya-Bursa**	**1.56**	**332**	*e*Pn	**Pb**	**05 44 00.9**	**+0.6**
AKHS	**Akhisar**	**1.58**	**267**	*i* P	**Pn**	**05 43 59.7**	**+0.2**
AKHS				*i* S	**Sb**	**05 44 21.1**	**+0.2**
AKHS	**Akhisar**	**1.58**	**267**	P	**Pn**	**05 43 59.7**	**+0.2**
AKHS				S	**Sb**	**05 44 21.0**	**+0.2**
AKS	**Akhisar**	**1.58**	**267**	*e*PN	**Pb**	**05 44 00.9**	**+0.3**
AKS	**Akhisar**	**1.58**	**267**	*e*Pn	**Pb**	**05 44 01.0**	**+0.3**
BCK	**Bucak**	**1.64**	**158**	*e*PN	**Pn**	**05 44 00.9**	**+0.6**
BCK	**Bucak**	**1.64**	**158**	*e*Pn	**Pn**	**05 44 01.0**	**+0.6**
BALB	**Balikesir**	**1.65**	**294**	*e*PN	**Pb**	**05 44 02.4**	**+0.6**
BALB	**Balikesir**	**1.65**	**294**	*e*Pn	**Pb**	**05 44 02.4**	**+0.6**
KCTX	**Karacabey (Bur**	**1.71**	**319**	*e*PN	**Pb**	**05 44 03.5**	**+0.6**
KCTX	**Karacabey (Bur**	**1.71**	**319**	*e*Pn	**Pb**	**05 44 03.5**	**+0.6**
SPNC	**Sapanca-Adapaz**	**1.73**	**12**	*e*PN	**Pb**	**05 44 03.2**	**-0.1**
SPNC	**Sapanca-Adapaz**	**1.73**	**12**	*e*Pn	**Pb**	**05 44 03.2**	**-0.1**
ARMT	**Armutlu**	**1.75**	**335**	*e*PN	**Pb**	**05 44 03.6**	**+0.1**
ARMT	**Armutlu**	**1.75**	**335**	*e*Pn	**Pb**	**05 44 03.6**	**+0.1**
MDUB	**Mudurnu**	**1.82**	**35**	*e*PN	**Pn**	**05 44 04.0**	**+1.1**
MDUB	**Mudurnu**	**1.82**	**35**	*e*Pn	**Pn**	**05 44 04.0**	**+1.1**
BTAS	**Taskesti**	**1.82**	**29**	*i* P	**Pn**	**05 44 04.2**	**+1.4**
BTAS	**Taskesti**	**1.82**	**29**	P	**Pn**	**05 44 04.2**	**+1.4**
HRT	**Hereke**	**1.84**	**356**	*e*PN	**Pb**	**05 44 04.6**	**-0.5**
HRT	**Hereke**	**1.84**	**356**	*e*Pn	**Pb**	**05 44 04.6**	**-0.5**
KDHN	**Kadinhani**	**1.84**	**104**	*i* P	**Pn**	**05 44 03.8**	**+0.5**
KDHN	**Kadinhani**	**1.84**	**104**	P	**Pn**	**05 44 03.8**	**+0.5**
AYDB	**Zeytinkoy-Aydi**	**1.85**	**236**	*e*PN	**Pb**	**05 44 04.7**	**-0.5**
AYDB	**Zeytinkoy-Aydi**	**1.85**	**236**	*e*Pn	**Pb**	**05 44 04.7**	**-0.5**
BALY	**Balya**	**1.87**	**294**	*i* P	**Pn**	**05 44 04.3**	**+0.7**
BALY	**Balya**	**1.87**	**294**	P	**Pn**	**05 44 04.3**	**+0.7**
BUY	**Buyukada**	**1.94**	**344**	*i* P	**Pn**	**05 44 05.0**	**+0.5**
BUY	**Buyukada**	**1.94**	**344**	P	**Pn**	**05 44 05.0**	**+0.5**
GONE	**Gonen-Balikesi**	**1.97**	**303**	*e*PN	**Pb**	**05 44 06.8**	**-0.5**
GONE	**Gonen-Balikesi**	**1.97**	**303**	*e*Pn	**Pb**	**05 44 06.8**	**-0.5**
SAHE	**Sakarya_HENDEK**	**2.02**	**23**	*i* P	**Pn**	**05 44 06.0**	**+0.4**
SAHE	**Sakarya_HENDEK**	**2.02**	**23**	P	**Pn**	**05 44 06.0**	**+0.4**
KORT	**Korkueli**	**2.02**	**168**	*i* P	**Pn**	**05 44 06.2**	**+0.4**
KORT	**Korkueli**	**2.02**	**168**	P	**Pn**	**05 44 06.2**	**+0.4**
AYDN	**Tasoluk**	**2.03**	**230**	*i* P	**Pn**	**05 44 06.4**	**+0.6**
AYDN	**Tasoluk**	**2.03**	**230**	P	**Pn**	**05 44 06.4**	**+0.6**
EDC	**Edincik**	**2.04**	**312**	*e*PN	**Pb**	**05 44 07.9**	**-0.6**
EDC	**Edincik**	**2.04**	**312**	*e*Pn	**Pb**	**05 44 07.9**	**-0.6**
IZM	**Izmir**	**2.10**	**254**	*e*PN	**Pb**	**05 44 08.4**	**-1.1**
IZM	**Izmir**	**2.10**	**254**	*e*Pn	**Pb**	**05 44 08.4**	**-1.1**
KAND	**Kocaeli-Kandir**	**2.12**	**7**	*i* P	**Pn**	**05 44 07.3**	**+0.4**
KAND	**Kocaeli-Kandir**	**2.12**	**7**	P	**Pn**	**05 44 07.3**	**+0.4**
LADK	**Ladik-KONYA**	**2.13**	**111**	*e*PN	**Pn**	**05 44 07.5**	**+0.3**
LADK	**Ladik-KONYA**	**2.13**	**111**	*e*Pn	**Pn**	**05 44 07.5**	**+0.3**
ISK	**Istanbul-Kandi**	**2.16**	**344**	*e*PN	**Pb**	**05 44 09.5**	**-1.0**
ISK	**Istanbul-Kandi**	**2.16**	**344**	P	**Pb**	**05 44 09.8**	**-0.7**
ISK				S	**Sb**	**05 44 36.8**	**-0.6**
ISK	**Istanbul-Kandi**	**2.16**	**344**	*e*PN	**Pb**	**05 44 09.5**	**-1.0**
ISK	**Istanbul-Kandi**	**2.16**	**344**	P	**Pb**	**05 44 09.8**	**-0.7**
ISK				S	**Sb**	**05 44 36.8**	**-0.6**
SILT	**Sile**	**2.17**	**356**	*e*PN	**Pn**	**05 44 09.4**	**+1.8**
SILT	**Sile**	**2.17**	**356**	*e*Pn	**Pn**	**05 44 09.4**	**+1.8**
YER	**Yerkesik**	**2.22**	**214**	*e*PN	**Pn**	**05 44 09.8**	**+1.5**
YER	**Yerkesik**	**2.22**	**214**	P	**Pn**	**05 44 08.9**	**+0.6**
YER	**Yerkesik**	**2.22**	**214**	P	**Pn**	**05 44 08.9**	**+0.6**
YER	**Yerkesik**	**2.22**	**214**	*e*Pn	**Pn**	**05 44 09.8**	**+1.5**
ELL	**Elmali**	**2.24**	**178**	*e*PN	**Pn**	**05 44 09.7**	**+1.0**
ELL	**Elmali**	**2.24**	**178**	*e*Pn	**Pn**	**05 44 09.7**	**+1.0**
KONT	**Konya--Tatoy**	**2.24**	**117**	*e*PN	**Pn**	**05 44 09.4**	**+0.8**
KONT	**Konya--Tatoy**	**2.24**	**117**	*e*Pn	**Pn**	**05 44 09.4**	**+0.8**
BLCB	**Balcova**	**2.27**	**255**	*e*PN	**Pn**	**05 44 10.7**	**+1.8**
BLCB	**Balcova**	**2.27**	**255**	*e*Pn	**Pn**	**05 44 10.7**	**+1.8**
DKL	**Dikili**	**2.28**	**273**	*e*PN	**Pb**	**05 44 11.3**	**-1.3**
DKL	**Dikili**	**2.28**	**273**	*e*Pn	**Pb**	**05 44 11.3**	**-1.3**
KMER	**Konya-Meram**	**2.33**	**121**	*i* P	**Pn**	**05 44 10.9**	**+0.9**
KMER	**Konya-Meram**	**2.33**	**121**	P	**Pn**	**05 44 10.9**	**+0.9**
BGKT	**Bogazkoy**	**2.34**	**340**	*e*PN	**Pn**	**05 44 12.0**	**+2.1**
BGKT	**Bogazkoy**	**2.34**	**340**	*e*Pn	**Pn**	**05 44 12.0**	**+2.1**
KLYT	**Kilyos**	**2.34**	**345**	*e*PN	**Pb**	**05 44 12.3**	**-1.3**
KLYT	**Kilyos**	**2.34**	**345**	*e*Pn	**Pb**	**05 44 12.3**	**-1.3**
DALY	**Dalyan (Mu¯la**	**2.36**	**204**	*e*PN	**Pn**	**05 44 11.6**	**+1.4**
DALY	**Dalyan (Mu¯la**	**2.36**	**204**	*e*Pn	**Pn**	**05 44 11.6**	**+1.4**
MRMT	**Marmara Adasi**	**2.36**	**314**	*e*PN	**Pb**	**05 44 12.6**	**-1.4**
MRMT	**Marmara Adasi**	**2.36**	**314**	*e*Pn	**Pb**	**05 44 12.6**	**-1.4**
GCAM	**G?zelcaml?**	**2.42**	**239**	*i* P	**Pg**	**05 44 16.7**	**-0.7**
CHBY	**Cihanbeyli**	**2.42**	**99**	*e*PN	**Pn**	**05 44 12.1**	**+0.9**
CHBY	**Cihanbeyli**	**2.42**	**99**	*e*Pn	**Pn**	**05 44 12.1**	**+0.9**
FETY	**Fethiye**	**2.42**	**194**	*e*PN	**Pn**	**05 44 12.6**	**+1.5**
FETY	**Fethiye**	**2.42**	**194**	P	**Pn**	**05 44 12.7**	**+1.6**
FETY				S	**Sn**	**05 44 42.9**	**+1.9**
FETY	**Fethiye**	**2.42**	**194**	*e*Pn	**Pn**	**05 44 12.6**	**+1.5**
FETY				S	**Sn**	**05 44 42.9**	**+1.9**
AYVA	**Ayvalik**	**2.46**	**278**	*i* P	**Pb**	**05 44 17.2**	**+1.5**
CTKS	**Kestanelik-??a**	**2.47**	**336**	*e*PN	**Pn**	**05 44 13.8**	**+2.1**
CTKS	**Kestanelik-??a**	**2.47**	**336**	*e*Pn	**Pn**	**05 44 13.8**	**+2.1**
BCAM	**Yenicaga**	**2.51**	**43**	*i* P	**Pn**	**05 44 14.5**	**+2.2**
BCAM	**Yenicaga**	**2.51**	**43**	P	**Pn**	**05 44 14.5**	**+2.2**
AFSR	**Af¯ar-Bala (A**	**2.56**	**79**	*e*PN	**Pn**	**05 44 13.9**	**+0.9**
AFSR	**Af¯ar-Bala (A**	**2.56**	**79**	*e*Pn	**Pn**	**05 44 13.9**	**+0.9**
URLA	**Izmir**	**2.61**	**257**	*i* P	**Pg**	**05 44 21.0**	**-0.2**
KDZE	**Karadeniz Ereo**	**2.63**	**27**	*e*PN	**Pn**	**05 44 15.7**	**+1.8**
KDZE	**Karadeniz Ereo**	**2.63**	**27**	*e*Pn	**Pn**	**05 44 15.7**	**+1.8**
RKY	**Sarkoy-Tekirda**	**2.66**	**311**	*e*PN	**Pn**	**05 44 16.6**	**+2.3**
RKY	**Sarkoy-Tekirda**	**2.66**	**311**	*e*Pn	**Pn**	**05 44 16.7**	**+2.3**
TKR	**Tekirdag**	**2.67**	**311**	*e*PN	**Pn**	**05 44 16.7**	**+2.3**
TKR	**Tekirdag**	**2.67**	**311**	*e*Pn	**Pn**	**05 44 16.7**	**+2.3**
SMG	**Samos**	**2.68**	**242**	P	**Pn**	**05 44 14.1**	**-0.5**
SMG	**Samos**	**2.68**	**242**	P	**Pn**	**05 44 14.1**	**-0.5**
BDRM	**Kayabasi**	**2.69**	**225**	*i* P	**Pb**	**05 44 20.7**	**+1.1**
ZEY	**¯zmir**	**2.71**	**255**	*i* P	**Pg**	**05 44 22.2**	**-0.9**
CTYL	**Yalikoy Yolu**	**2.75**	**335**	*e*PN	**Pn**	**05 44 17.9**	**+2.4**
CTYL	**Yalikoy Yolu**	**2.75**	**335**	*e*Pn	**Pn**	**05 44 18.0**	**+2.4**
BODT	**Bodrum**	**2.77**	**227**	*e*PN	**Pn**	**05 44 17.9**	**+2.0**
BODT	**Bodrum**	**2.77**	**227**	P	**Pn**	**05 44 15.8**	**-0.1**
BODT	**Bodrum**	**2.77**	**227**	P	**Pn**	**05 44 15.8**	**-0.1**
BODT	**Bodrum**	**2.77**	**227**	*e*Pn	**Pn**	**05 44 17.9**	**+2.0**
PRK	**Paraskevi**	**2.78**	**276**	P	**Pn**	**05 44 16.6**	**+0.6**
PRK				S	**Sn**	**05 44 47.5**	**-2.3**
PRK	**Paraskevi**	**2.78**	**276**	P	**Pn**	**05 44 16.6**	**+0.6**
KSL	**Kastellorizon**	**2.84**	**184**	P	**Pn**	**05 44 18.4**	**+1.6**
EZN	**Ezine**	**2.84**	**288**	*e*PN	**Pn**	**05 44 19.3**	**+2.5**
EZN	**Ezine**	**2.84**	**288**	*e*Pn	**Pn**	**05 44 19.3**	**+2.5**
GELI	**Tayfur-Gelibol**	**2.95**	**300**	*e*PN	**Pn**	**05 44 20.8**	**+2.5**
GELI	**Tayfur-Gelibol**	**2.95**	**300**	*e*Pn	**Pn**	**05 44 20.8**	**+2.5**
CHOS	**Chios island**	**3.02**	**260**	*e*PN	**Pn**	**05 44 21.4**	**+2.1**
CHOS	**Chios island**	**3.02**	**260**	*e*Pn	**Pn**	**05 44 21.4**	**+2.1**
BRTR	**Keskin Array B**	**3.04**	**75**	Pn	**Pn**	**05 44 20.8**	**+1.0**
	1.3nm,0.3s,baz=246,slow=13,SNR=26						
BRTR				Pg	**Pg**	**05 44 28.1**	**-1.3**
	7.8nm,0.3s,baz=247,slow=17,SNR=33						
BRTR				Lg	Lg	05 45 11.0	
	5.8nm,0.3s,baz=250,slow=25,SNR=9.1						
BOZC	**Bozcaada**	**3.05**	**287**	*i* P	**Pn**	**05 44 20.4**	**+0.6**
ERIK	**Erikli-Kesan**	**3.06**	**304**	*e*PN	**Pn**	**05 44 22.4**	**+2.6**
ERIK	**Erikli-Kesan**	**3.06**	**304**	*e*Pn	**Pn**	**05 44 22.4**	**+2.6**
SIGR	**SIGRI**	**3.10**	**275**	*e*PN	**Pn**	**05 44 22.9**	**+2.5**
SIGR	**SIGRI**	**3.10**	**275**	P	**Pn**	**05 44 20.9**	**+0.5**
SIGR	**SIGRI**	**3.10**	**275**	P	**Pn**	**05 44 20.9**	**+0.5**
SIGR	**SIGRI**	**3.10**	**275**	*e*Pn	**Pn**	**05 44 22.9**	**+2.5**
SAFT	**Safranbolu**	**3.14**	**43**	*e*PN	**Pn**	**05 44 22.6**	**+1.7**
SAFT	**Safranbolu**	**3.14**	**43**	*e*Pn	**Pn**	**05 44 22.7**	**+1.7**
YESY	**Yesilyurt**	**3.30**	**110**	*e*PN	**Pn**	**05 44 24.5**	**+1.3**
YESY	**Yesilyurt**	**3.30**	**110**	*e*Pn	**Pn**	**05 44 24.5**	**+1.3**
ENEZ	**Enez**	**3.33**	**303**	P	**Pn**	**05 44 24.4**	**+0.9**
ENEZ	**Enez**	**3.33**	**303**	P	**Pn**	**05 44 24.4**	**+0.9**
CANT	**Cankiri**	**3.33**	**60**	*e*PN	**Pn**	**05 44 25.4**	**+1.7**
ALN	**Alexandroupoli**	**3.48**	**304**	P	**Pn**	**05 44 26.0**	**+0.4**
ALN	**Alexandroupoli**	**3.48**	**304**	P	**Pn**	**05 44 26.0**	**+0.4**
GULA	**Gulagac**	**3.50**	**99**	*e*PN	**Pn**	**05 44 27.5**	**+1.4**
GULA	**Gulagac**	**3.50**	**99**	*e*Pn	**Pn**	**05 44 27.5**	**+1.4**
SMTH	**Samothraki Isl**	**3.63**	**295**	P	**Pn**	**05 44 27.9**	**+0.1**
SMTH	**Samothraki Isl**	**3.63**	**295**	P	**Pn**	**05 44 27.9**	**+0.1**
EDRB	**Edirne**	**3.70**	**321**	P	**Pn**	**05 44 29.6**	**+0.9**
EDRB	**Edirne**	**3.70**	**321**	P	**Pn**	**05 44 29.6**	**+0.9**
LIA	**Limnos Island**	**3.71**	**286**	P	**Pn**	**05 44 29.5**	**+0.7**
LIA	**Limnos Island**	**3.71**	**286**	P	**Pn**	**05 44 29.5**	**+0.7**
NIG	**Nigde**	**3.85**	**102**	*e*PN	**Pn**	**05 44 32.4**	**+1.5**
NIG	**Nigde**	**3.85**	**102**	*e*Pn	**Pn**	**05 44 32.4**	**+1.5**
CORM	**Corum**	**3.89**	**71**	*e*PN	**Pn**	**05 44 33.2**	**+1.8**
CORM	**Corum**	**3.89**	**71**	*e*Pn	**Pn**	**05 44 33.2**	**+1.8**
KARP	**Karpathos**	**4.04**	**213**	*e*PN	**Pn**	**05 44 35.8**	**+2.4**
KARP	**Karpathos**	**4.04**	**213**	*e*Pn	**Pn**	**05 44 35.8**	**+2.4**
IKL	**Isikli**	**4.11**	**131**	*e*PN	**Pn**	**05 44 36.2**	**+1.9**
IKL	**Isikli**	**4.11**	**131**	*e*Pn	**Pn**	**05 44 36.2**	**+1.9**
JMB	**Yambol**	**4.26**	**326**	P	**Pn**	**05 44 37.8**	**+1.4**
KDZ	**Kurdzhali**	**4.30**	**310**	P	**Pn**	**05 44 38.1**	**+1.2**
RZN	**Rozhen**	**4.75**	**306**	P	**Pn**	**05 44 44.3**	**+1.0**
MSAB	**Monastry St. A**	**5.32**	**344**	*i*P	**Pn**	**05 44 51.7**	**+0.9**
MSAB	**Monastry St. A**	**5.32**	**344**	*i*P	**Pn**	**05 44 51.7**	**+0.9**
MMB	**Musomiste**	**5.34**	**301**	P	**Pn**	**05 44 55.6**	**+4.3**
IDI	**Amoyia**	**5.49**	**228**	Pn	**Pn**	**05 44 54.3**	**+2.1**
	1.1nm,0.3s,baz=50,slow=15,SNR=6.6						
TIRR	**Tirgusor**	**5.57**	**349**	*i*P	**Pn**	**05 44 54.5**	**+0.2**
TIRR	**Tirgusor**	**5.57**	**349**	*i*P	**Pn**	**05 44 54.5**	**+0.2**
CFR	**Carcaliu**	**6.31**	**349**	*i*P	**Pn**	**05 45 04.8**	**+0.3**
CFR	**Carcaliu**	**6.31**	**349**	*i*P	**Pn**	**05 45 04.8**	**+0.3**
MLR	**Muntele Rosu**	**7.11**	**337**	*i*P	**Pn**	**05 45 17.4**	**+1.8**
MLR	**Muntele Rosu**	**7.11**	**337**	*i*P	**Pn**	**05 45 17.4**	**+1.8**
VRI	**Vrincioaia**	**7.25**	**343**	*i*P	**Pn**	**05 45 18.7**	**+1.3**
VRI	**Vrincioaia**	**7.25**	**343**	*i*P	**Pn**	**05 45 18.7**	**+1.3**
PLOR	**Plostina**	**7.25**	**342**	*i*P	**Pn**	**05 45 18.4**	**+0.9**
PLOR	**Plostina**	**7.25**	**342**	*i*P	**Pn**	**05 45 18.4**	**+0.9**
VOIR		**7.36**	**333**	*i*P	**Pn**	**05 45 20.6**	**+1.7**
VOIR		**7.36**	**333**	*i*P	**Pn**	**05 45 20.6**	**+1.7**
MMAI	**Mount Meron Ar**	**7.47**	**141**	Pn	**Pn**	**05 45 20.9**	**+0.3**
	1.3nm,0.3s,baz=316,slow=12,SNR=2.6						
SORM	**Soroca**	**9.21**	**354**	*i*P	**Pn**	**05 45 44.3**	**+0.1**
SORM	**Soroca**	**9.21**	**354**	*i*P	**Pn**	**05 45 44.3**	**+0.1**
FINES	**FINESS Array B**	**22.60**	**355**	P	**P**	**05 48 31.1**	**-0.9**
	0.3nm,0.4s,baz=165,slow=15,SNR=3.9						
MKAR	**Makanchi Array**	**38.59**	**61**	P	**P**	**05 50 55.2**	**+0.6**
	0.4nm,0.7s,baz=280,slow=7.3,SNR=3.8						
YKA	**Yellowknife Ar**	**74.89**	**344**	P	**P**	**05 55 10.6**	**-1.5**
	0.2nm,0.8s,baz=33,slow=5.3,SNR=4.1						

IDC 22 06:01:49.0±1.5, 21°.85N × 92°.49E, h0 km, mb3.8/5, mb1 4.0/6, mb1mx3.5/58, mbtmp3.8/6, ML4.3/1, MS3.4/1, Ms1 3.4/1, ms1mx2.7/50, Error ellipse: s-maj=108.6km s-min=18.3km az=54.0
ISCJB 22 06:01:54.3±1.2, 22°.1N±0°.2×92°.9E±0°.3, h50 km, mb3.9/5, MS3.4/1, Error ellipse: s-maj=45.1km s-min=9.6km az=151.0
ISC 22 06:01:56.5±1.4, 22°.1N±0°.2×92°.9E±0°.3, h50 km, n8, σ0s53/7, mb4.0/5, India-Bangladesh border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SHL	**Shillong**	**3.57**	**345**	*i* PN	Pn	06 02 54.2	+4.6
SHL				*i* SN	**S

JOU				*e*S	**Sb**	**06 07 17.6**	**-0.3**
JYK	**Kaneyama**	**1.99**	**265**	P	**Pb**	**06 06 54.8**	**-1.0**
JAH	**Hinai**	**2.05**	**302**	P	**Pb**	**06 06 55.7**	**-1.1**
JTM	**Tenmabayashi**	**2.18**	**320**	P	**Pb**	**06 06 58.0**	**-1.1**
MJAR	**Matsushiro Arr**	**4.52**	**237**	Pn	Pn	06 07 31.1	+3.3
	0.6nm,0.3s,baz=40,slow=13,SNR=4.6						
ASAJ	**Asahikawa**	**5.00**	**357**	Pn	Pb	06 07 42.3	-4.8
	1.8nm,0.3s,baz=265,slow=15,SNR=5.1						
USRK	**Ussuriysk Ar.**	**9.61**	**305**	Pn	Pn	06 08 42.4	+4.8
	0.1nm,0.3s,baz=114,slow=13,SNR=2.5						
USRK				LR	LR	06 11 52.1	
	comp=Z,67nm,21.0s,baz=205,slow=38						
H11N2	**WAKE ISLAND Hy**	**28.32**	**126**	T	T	06 42 51.8	
	baz=323,slow=75						
H11N1	**WAKE ISLAND Hy**	**28.33**	**126**	T	T	06 42 53.4	
	baz=323						
H11N3	**WAKE ISLAND Hy**	**28.34**	**126**	T	T	06 42 55.4	
	baz=323,slow=75						
H11S1	**WAKE ISLAND Hy**	**29.11**	**128**	T	T	06 43 49.0	
	baz=323						
H11S3	**WAKE ISLAND Hy**	**29.11**	**128**	T	T	06 43 55.3	
	baz=323						
H11S2	**WAKE ISLAND Hy**	**29.13**	**128**	T	T	06 43 57.0	
	baz=323						
ZALV	**Zalesovo Beam**	**41.41**	**311**	P	**P**	**06 14 05.1**	**-0.3**
	0.6nm,0.4s,baz=96,slow=8.9,SNR=2.4						
MKAR	**Makanchi Array**	**44.04**	**301**	P	**P**	**06 14 27.8**	**+0.9**
	0.6nm,0.7s,baz=83,slow=9.9,SNR=4.6						
KURBB	**Kurchatov Arra**	**45.67**	**307**	P	**P**	**06 14 40.1**	**+0.3**
	1.2nm,0.6s,baz=82,slow=8.3,SNR=8.1						
ILAR	**Eielson Array**	**47.11**	**33**	P	P	06 14 58.7	+7.8
	0.3nm,0.8s,baz=287,slow=7.2,SNR=3.6						
WRA	**Warramunga Arr**	**59.30**	**189**	P	P	06 16 31.3	+10
	0.4nm,0.5s,baz=7.1,slow=6.9,SNR=5.2						

ISCJB ***22*** *06:10:42.9±0.6,38.°99N±0.°03×29.°85E±0.°04, h4km±6km, Error ellipse: s-maj=5.7km s-min=4.4km az=43.3*
DDA ***22*** *06:10:42.7,38.°97N×29.°85E, h7km, Md2.6*
CSEM ***22*** *06:10:43.0±0.1,38.°99N×29.°86E, h5km, MD2.6, Error ellipse: s-maj=3.3km s-min=2.4km az=125.0*
ISK ***22*** *06:10:43.1,38.°99N×29.°77E, h9km, MD2.6*
ISC 22 06:10:42.9±1.1, 38.°99N±0.°02×29.°87E±0.°03, h8km±10km, n26, σ0°36/44, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GDZ	**Gediz**	**0.32**	**288**	*i* P	**Pg**	**06 10 49.4**	**+0.1**
GDZ				*i* S	**Sg**	**06 10 53.9**	**+0.3**
GDZ	**Gediz**	**0.32**	**288**	P	**Pg**	**06 10 49.4**	**+0.1**
GDZ				S	**Sg**	**06 10 53.9**	**+0.3**
TVSB	**Tavsanli**	**0.56**	**325**	*e*PG	**Pg**	**06 10 53.6**	**-0.2**
TVSB				*e*SG	**Sg**	**06 11 01.1**	**0.0**
TVSB	**Tavsanli**	**0.56**	**325**	*e*Pg	**Pg**	**06 10 53.6**	**-0.2**
TVSB				*e*Sg	**Sg**	**06 11 01.1**	**0.0**
AUKIR	**K¨–rka- Seyitg**	**0.59**	**60**	*i* P	**Pg**	**06 10 53.8**	**-0.5**
AUKIR				*i* S	**Sb**	**06 11 04.1**	**0.0**
AUKIR	**K¨–rka- Seyitg**	**0.59**	**60**	P	**Pg**	**06 10 53.8**	**-0.5**
AUKIR				S	**Sb**	**06 11 04.1**	**0.0**
KHAL	**Karahalli**	**0.69**	**206**	*i* P	**Pg**	**06 10 56.2**	**+0.1**
KHAL				*i* S	**Sb**	**06 11 06.5**	**-0.4**
KHAL	**Karahalli**	**0.69**	**206**	P	**Pg**	**06 10 56.2**	**+0.1**
KHAL				S	**Sb**	**06 11 06.5**	**-0.4**
KHL	**Karahalli**	**0.72**	**202**	*e*PG	**Pg**	**06 10 57.0**	**+0.2**
KHL				*e*SG	**Sg**	**06 11 06.9**	**+0.8**
KHL	**Karahalli**	**0.72**	**202**	*e*Pg	**Pg**	**06 10 57.0**	**+0.2**
KHL				*e*Sg	**Sg**	**06 11 06.9**	**+0.8**
DEMI	**Demirci**	**0.90**	**274**	*i* P	**Pg**	**06 11 00.3**	**0.0**
DEMI				*i* S	**Sg**	**06 11 11.6**	**-0.4**
DEMI	**Demirci**	**0.90**	**274**	P	**Pg**	**06 11 00.3**	**0.0**
DEMI				S	**Sg**	**06 11 11.6**	**-0.4**
BORA	**Eskisehir**	**1.00**	**27**	*i* P	**Pg**	**06 11 02.1**	**+0.1**
BORA	**Eskisehir**	**1.00**	**27**	P	**Pg**	**06 11 02.2**	**+0.1**
KULA	**Kula-Manisa**	**1.06**	**244**	*e*PG	**Pg**	**06 11 02.5**	**-0.7**
KULA				*e*SG	**Sg**	**06 11 16.7**	**-0.3**
KULA	**Kula-Manisa**	**1.06**	**244**	*e*Pg	**Pg**	**06 11 02.6**	**-0.7**
KULA				*e*Sg	**Sg**	**06 11 16.7**	**-0.3**
DURS	**Dursunbey**	**1.25**	**300**	*i* P	**Pg**	**06 11 07.1**	**+0.3**
DURS				*i* S	**Sn**	**06 11 24.3**	**+0.5**
DURS	**Dursunbey**	**1.25**	**300**	P	**Pg**	**06 11 07.1**	**+0.3**
DURS				S	**Sn**	**06 11 24.3**	**+0.5**
ORLT	**Orhaneli**	**1.30**	**325**	*e*PN	**Pn**	**06 11 07.0**	**-0.4**
ORLT	**Orhaneli**	**1.30**	**325**	*e*Pn	**Pn**	**06 11 07.1**	**-0.4**
IZI	**Iznik**	**1.38**	**347**	*e*PN	**Pb**	**06 11 08.9**	**-0.2**
IZI				*e*SN	**Sg**	**06 11 27.5**	**+0.2**
IZI	**Iznik**	**1.38**	**347**	*e*Pn	**Pb**	**06 11 08.9**	**-0.2**
IZI				*e*Sn	**Sg**	**06 11 27.5**	**+0.2**
GULT	**Gulveren**	**1.52**	**19**	*e*PN	**Pb**	**06 11 11.5**	**0.0**
GULT	**Gulveren**	**1.52**	**19**	*e*Pn	**Pb**	**06 11 11.5**	**0.0**
ARMT	**Armutlu**	**1.76**	**334**	*e*PN	**Pn**	**06 11 14.0**	**+0.3**
ARMT	**Armutlu**	**1.76**	**334**	*e*Pn	**Pn**	**06 11 14.0**	**+0.3**

ISCJB ***22*** *06:15:05.3±0.3,34.°26N±0.°03×26.°88E±0.°03, h24km, Error ellipse: s-maj=5.0km s-min=2.8km az=29.4*
GII ***22*** *06:15:05.0±0.0,34.°28N×26.°84E, h5km, MD3.5/1*
ATH ***22*** *06:15:06.5,34.°23N×26.°58E, h25km±3km, ML2.8/3, Error ellipse: s-maj=5.7km s-min=2.0km az=355.0*
CSEM ***22*** *06:15:06.0±0.2,34.°40N×26.°88E, h15km, ML2.8, Error ellipse: s-maj=8.1km s-min=3.9km az=29.0*
HLW ***22*** *06:15:12.9,34.°00N×26.°75E, h31km±27km, Md3.8, Ml2.8*
ISC 22 06:15:06.0±0.9, 34.°37N±0.°04×26.°81E±0.°03, h24km, n57, σ1°65/77, Crete

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ZKR	**Zakros**	**0.89**	**327**	P	**Pn**	**06 15 24.5**	**+1.4**
ZKR				S	**Sn**	**06 15 37.1**	**+1.8**
ZKR	**Zakros**	**0.89**	**327**	P	**Pn**	**06 15 24.5**	**+1.4**
ZKR				S	**Sn**	**06 15 37.1**	**+1.8**
ZKR				AML	AML	06 15 43.7	
	comp=E,1760μm,0.6s						
ZKR				AML	AML	06 15 45.0	
	comp=N,1353μm,0.9s						
KARP	**Karpathos**	**1.21**	**14**	P	Pb	06 15 32.6	+4.3
KARP				AML	AML	06 16 09.7	
	comp=E,421μm,0.4s						
KARP				AML	AML	06 16 10.8	
	comp=N,529μm,0.3s						
NPS	**Neapolis**	**1.33**	**313**	P	**Pb**	**06 15 31.5**	**+1.2**
NPS	**Neapolis**	**1.33**	**313**	P	**Pb**	**06 15 31.4**	**+1.2**
NPS				AML	AML	06 15 57.1	
	comp=N,407μm,0.5s						
NPS				AML	AML	06 15 58.9	
	comp=E,864μm,0.6s						
LAST	**Lasithi**	**1.35**	**306**	P	**Pn**	**06 15 30.8**	**+1.3**
LAST				S	**Sn**	**06 15 48.4**	**+1.7**
LAST	**Lasithi**	**1.35**	**306**	P	**Pn**	**06 15 30.8**	**+1.3**
SIVA	**Sivas**	**1.77**	**292**	P	**Pn**	**06 15 36.4**	**+1.3**
SIVA	**Sivas**	**1.77**	**292**	P	**Pn**	**06 15 36.4**	**+1.3**
IDI	**Anoyia**	**1.83**	**301**	P	**Pn**	**06 15 37.3**	**+1.3**
IDI	**Anoyia**	**1.83**	**301**	P	**Pn**	**06 15 37.3**	**+1.3**
GVD	**Gavdhos**	**2.30**	**283**	P	**Pn**	**06 15 42.9**	**+0.6**
GVD	**Gavdhos**	**2.30**	**283**	P	**Pn**	**06 15 42.9**	**+0.6**
VAM	**Vamos**	**2.38**	**297**	P	**Pn**	**06 15 44.2**	**+0.6**
IMMV	**Iera Moni Meta**	**2.57**	**296**	P	**Pn**	**06 15 48.0**	**+1.9**
IMMV	**Iera Moni Meta**	**2.57**	**296**	P	**Pn**	**06 15 48.0**	**+1.9**
KSL	**Kastellorizon**	**2.88**	**51**	P	**Pb**	**06 15 55.6**	**-1.1**
TURN	**Turunc**	**2.90**	**30**	*i* P	**Pb**	**06 15 54.8**	**-2.1**
TURN				*i* S	**Sn**	**06 16 25.2**	**+0.6**
TURN	**Turunc**	**2.90**	**30**	P	**Pb**	**06 15 54.8**	**-2.1**
TURN				S	**Sn**	**06 16 25.2**	**+0.6**
AKAS	**Kas**	**2.95**	**50**	*i* P	**Pb**	**06 15 58.4**	**+0.5**
AKAS				*i* S	**Sb**	**06 16 32.6**	**-0.9**
SLUM	**Salum**	**3.17**	**206**	P	**Pn**	**06 15 55.2**	**+0.9**
	baz=208						
SLUM				AMP		06 16 00.0	
	comp=E,30μm,0.2s,logA/T=5.2,baz=208						
SLUM				S	**Sn**	**06 16 27.9**	**-3.4**
	baz=208						
SLUM	**Salum**	**3.17**	**206**	P	**Pn**	**06 15 55.2**	**+0.9**
SLUM				S	**Sn**	**06 16 27.9**	**-3.4**
HMAT	**Matruh**	**3.27**	**176**	P	**Pn**	**06 15 57.2**	**+1.5**
	baz=174						
HMAT				AMP		06 16 00.0	
	comp=E,40μm,0.4s,logA/T=5.0,baz=174						
HMAT				S	**Sn**	**06 16 29.8**	**-4.1**
	baz=174						
HMAT	**Matruh**	**3.27**	**176**	P	**Pn**	**06 15 57.2**	**+1.5**
KORT	**Korkueli**	**3.90**	**47**	*i* S	**Sb**	**06 16 57.4**	**-3.5**
SWA2		**5.24**	**193**	P	**Pn**	**06 16 23.6**	**+0.8**
	baz=194						
SWA2				AMP		06 17 00.0	
	comp=N,20μm,0.2s,logA/T=4.9,baz=194						
SWA2		**5.24**	**193**	P	**Pn**	**06 16 23.6**	**+0.8**
CSS	**Mathiatis**	**5.41**	**82**	Pn	**Pn**	**06 16 23.2**	**-1.9**
CSS				Sn	**Sn**	**06 17 28.2**	**+1.6**
CSS	**Mathiatis**	**5.41**	**82**	Pn	**Pn**	**06 16 23.2**	**-1.9**
CSS				Sn	**Sn**	**06 17 28.2**	**+1.6**
HNAT	**Natroun**	**5.72**	**145**	P	**Pn**	**06 16 32.4**	**+3.0**
	baz=141						
HNAT	**Natroun**	**5.72**	**145**	P	**Pn**	**06 16 32.4**	**+3.0**
HSAF	**As Saff**	**6.21**	**138**	P	Pn	06 16 39.7	+3.5
	baz=135						
GLL	**Jalalah**	**6.33**	**138**	P	**Pn**	**06 16 40.8**	**+3.0**
	baz=134						
GLL	**Jalalah**	**6.33**	**138**	P	**Pn**	**06 16 40.8**	**+3.0**
SUZ	**Suez**	**6.81**	**130**	P	Pn	06 16 48.4	+4.0
	baz=127						
MMA0B	**Mount Meron ar**	**7.29**	**98**	Sn	**Sn**	**06 18 15.1**	**+2.1**
MMA0B	**Mount Meron ar**	**7.29**	**98**	Sn	**Sn**	**06 18 15.1**	**+2.1**
HFRF	**Wahat Farafira**	**7.31**	**169**	P	**Pn**	**06 16 53.4**	**+2.2**
	baz=168						
HFRF				AMP		06 18 00.0	
	comp=N,10μm,0.1s,logA/T=5.0,baz=168						
HFRF	**Wahat Farafira**	**7.31**	**169**	P	**Pn**	**06 16 53.4**	**+2.2**
AMAZ	**Amatzia**	**7.37**	**110**	Sn	**Sn**	**06 18 16.0**	**+0.9**
AMAZ	**Amatzia**	**7.37**	**110**	Sn	**Sn**	**06 18 16.0**	**+0.9**
REVI	**Revivim**	**7.44**	**114**	Sn	**Sn**	**06 18 18.0**	**+1.2**
REVI	**Revivim**	**7.44**	**114**	Sn	**Sn**	**06 18 18.0**	**+1.2**
MMLI	**Mount Malkishu**	**7.45**	**103**	Pn	**Pn**	**06 16 52.2**	**-1.0**
MMLI				Sn	**Sn**	**06 18 17.8**	**+0.8**
MMLI	**Mount Malkishu**	**7.45**	**103**	Pn	**Pn**	**06 16 52.2**	**-1.0**
MMLI				Sn	**Sn**	**06 18 17.8**	**+0.8**
HMDT	**Nahal Hemdat**	**7.59**	**104**	Pn	**Pn**	**06 16 54.8**	**-0.3**
HMDT				Sn	**Sn**	**06 18 21.8**	**+1.4**
HMDT	**Nahal Hemdat**	**7.59**	**104**	Pn	**Pn**	**06 16 54.8**	**-0.3**
HMDT				Sn	**Sn**	**06 18 21.8**	**+1.4**
DSI	**Dead Sea**	**7.72**	**109**	Pn	**Pn**	**06 16 56.1**	**-0.8**
DSI				Sn	**Sn**	**06 18 25.5**	**+1.9**
DSI	**Dead Sea**	**7.72**	**109**	Pn	**Pn**	**06 16 56.1**	**-0.8**
DSI				Sn	**Sn**	**06 18 25.5**	**+1.9**
MZDA	**Masada**	**7.81**	**111**	Sn	**Sn**	**06 18 27.1**	**+1.3**
MZDA	**Masada**	**7.81**	**111**	Sn	**Sn**	**06 18 27.1**	**+1.3**
PRNI	**Paran**	**8.00**	**118**	Pn	**Pn**	**06 17 00.8**	**0.0**
PRNI				Sn	**Sn**	**06 18 31.3**	**+0.7**
PRNI	**Paran**	**8.00**	**118**	Pn	**Pn**	**06 17 00.8**	**0.0**
PRNI				Sn	**Sn**	**06 18 31.3**	**+0.7**
MBRI	**Mt Berech**	**8.25**	**121**	Pn	**Pn**	**06 17 04.4**	**+0.2**
MBRI				Sn	**Sn**	**06 18 36.9**	**+0.2**
MBRI	**Mt Berech**	**8.25**	**121**	Pn	**Pn**	**06 17 04.4**	**+0.2**
MBRI				Sn	**Sn**	**06 18 36.9**	**+0.2**
EIL	**Elat**	**8.35**	**122**	Pn	**Pn**	**06 17 05.4**	**-0.1**
EIL				Sn	**Sn**	**06 18 40.2**	**+1.2**
EIL	**Elat**	**8.35**	**122**	Pn	**Pn**	**06 17 05.4**	**-0.1**
EIL				Sn	**Sn**	**06 18 40.2**	**+1.2**

IDC 22 06:23:16.8±1.4, 7.°12S×124.°65E, h0km, mb4.0/3, mb1 3.8/6, mb1mx3.6/39, mbtmp3.7/6, ML3.2/3, Error ellipse: s-maj=49.3km s-min=24.2km az=64.0, Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KAPI	**Kappang**	**5.30**	**293**	Pn	Pn	06 24 38.7	+1.4
	0.9nm,0.3s,baz=143,slow=10,SNR=2.5						
KAPI				Sn		06 25 35.5	-3.6
	2.1nm,0.3s,baz=241,slow=17,SNR=5.6						
FITZ	**Fitzroy Crossi**	**10.96**	**175**	Pn	Pn	06 25 54.6	-0.5
	0.1nm,0.3s,baz=358,slow=9.7,SNR=5.6						
FITZ				Sn	Sn	06 27 51.0	-7.4
	0.3nm,0.3s,baz=351,slow=19,SNR=3.6						
WRA	**Warramunga Arr**	**15.84**	**145**	Pn	Pn	06 26 58.1	-3.2
	0.1nm,0.3s,baz=318,slow=13,SNR=5.4						
WRA				Sn	Sn	06 29 46.2	-11
	0.1nm,0.3s,baz=315,slow=24,SNR=3.4						
ASAR	**Alice Springs**	**18.70**	**153**	P	Pn	06 27 37.5	+0.2
	0.1nm,0.3s,baz=321,slow=10,SNR=7.7						
ASAR				S	Sn	06 30 55.4	-12
	0.1nm,0.3s,baz=312,slow=20,SNR=4.1						
CMAR	**Chiang Mai Arr**	**35.90**	**315**	P	P	06 30 19.5	+0.4
	0.6nm,0.3s,baz=149,slow=11,SNR=4.1						
USRK	**Ussuriysk Ar.**	**51.51**	**7**	P	P	06 32 24.6	+0.4
	1.3nm,0.5s,baz=184,slow=6.4,SNR=4.3						
MKAR	**Makanchi Array**	**65.52**	**329**	P	P	06 34 01.0	-1.0
	0.7nm,0.6s,baz=138,slow=7.2,SNR=8.3						

NIED ***22*** *06:30:00,38.°50N×143.°60E, h17km, Mw3.8 Best double couple: M0 6.18000×10^14 NP1:φs335.00000°,δ71.00000°, λ170.00000°. NP2:φs69.00000°,δ80.00000°,λ20.00000°.*
IDC ***22*** *06:30:16.3±0.8,38.°25N×143.°97E, h0km, mb3.5/12, mb1 3.8/15, mb1mx3.6/43, mbtmp3.6/15, ML4.1/2, Error ellipse: s-maj=23.0km s-min=17.4km az=116.0*
ISCJB ***22*** *06:30:17.7±0.6,38.°47N±0.°05×143.°73E±0.°06, h15km, mb3.5/12, Error ellipse: s-maj=8.0km s-min=5.0km az=139.8*
JMA ***22*** *06:30:20.3±0.2,38.°48N×143.°64E, h37km, M3.7*
ISC 22 06:30:20.4±1.1, 38.°54N±0.°07×143.°65E±0.°09, h15km, n32, σ1°25/29, mb3.6/12, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MIYJ	**Miyakonagasawa**	**1.76**	**307**	P	**Pn**	**06 30 49.7**	**-0.7**
MIYJ				*e*S	**Sn**	**06 31 11.7**	**-0.9**
JIO	**Ouri**	**1.81**	**268**	P	**Pn**	**06 30 49.9**	**-1.1**
JIO				*e*S	**Sn**	**06 31 11.7**	**-2.0**
JMK	**Ichinoseki**	**1.95**	**283**	P	**Pn**	**06 30 52.3**	**-0.6**
JOM	**Ohasama**	**2.06**	**298**	P	**Pn**	**06 30 54.4**	**-0.1**
JYK	**Kaneyama**	**2.60**	**279**	P	**Pn**	**06 31 02.0**	**0.0**
JFT	**Otama**	**2.81**	**250**	P	**Pn**	**06 31 04.1**	**-0.7**
JFT				S	**Sn**	**06 31 37.1**	**-1.3**
JAW	**Awa shima**	**3.46**	**270**	P	**Pn**	**06 31 13.7**	**0.0**
JNBK	**Urakawa-nobuka**	**3.80**	**350**	P	**Pn**	**06 31 18.6**	**+0.2**
JNBK				S	**Sn**	**06 32 02.3**	**-0.5**
JAG	**Ashikaga**	**3.95**	**239**	P	**Pn**	**06 31 19.4**	**-1.1**
JCH	**Churui**	**4.08**	**357**	P	**Pn**	**06 31 21.4**	**-0.8**
JCH				S	**Sn**	**06 32 07.1**	**-2.6**
MJAR	**Matsushiro Arr**	**4.76**	**247**	Pn	**Pn**	**06 31 31.4**	**-0.3**
	5.3nm,0.3s,baz=57,slow=12,SNR=25						
MAT	**Matsushiro**	**4.76**	**247**	P	**Pn**	**06 31 31.9**	**+0.2**
MAT				*e*S	**Sn**	**06 32 25.7**	**-0.9**
ASAJ	**Asahikawa**	**5.63**	**352**	Pn	**Pn**	**06 31 44.0**	**+0.5**
	4.9nm,0.3s,baz=199,slow=17,SNR=9.3						
ASAJ				Sn	**Sn**	**06 32 45.7**	**-2.2**
	2.2nm,0.3s,baz=27,slow=24,SNR=7.5						
USRK	**Ussuriysk Ar.**	**10.43**	**307**	Pn	**Pn**	**06 32 52.2**	**+2.9**
	0.3nm,0.3s,baz=103,slow=15,SNR=4.5						
MA2	**Magadan**	**21.54**	**10**	P	**P**	**06 35 09.2**	**+0.3**
	1.7nm,0.3s,baz=228,slow=18,SNR=3.4						
SEY	**Seymchan**	**25.00**	**9**	P	**P**	**06 35 43.9**	**+0.6**
	2.9nm,0.7s,baz=187,slow=6.2,SNR=11						
H11N2	**WAKE ISLAND Hy**	**27.50**	**126**	T	T	07 04 49.5	
	baz=318,slow=75,SNR=6.6						
H11N1	**WAKE ISLAND Hy**	**27.51**	**126**	T	T	07 04 51.6	
	baz=318,slow=75,SNR=4.8						
H11N3	**WAKE ISLAND Hy**	**27.52**	**126**	T	T	07 04 43.7	
	baz=318,slow=75,SNR=5.5						
H11S1	**WAKE ISLAND Hy**	**28.29**	**128**	T	T	07 05 50.2	
	baz=320						
H11S3	**WAKE ISLAND Hy**	**28.29**	**128**	T	T	07 05 51.3	
	baz=320						
H11S2	**WAKE ISLAND Hy**	**28.31**	**128**	T	T	07 05 56.4	
	baz=320						
SONM	**Songino Array**	**28.47**	**301**	P	**P**	**06 36 16.2**	**+1.2**
	0.8nm,0.5s,baz=90,slow=8.9,SNR=3.4						
ZALV	**Zalesovo Beam**	**42.24**	**311**	P	**P**	**06 38 15.0**	**+2.3**
	0.6nm,0.5s,baz=90,slow=6.1,SNR=2.7						
MKAR	**Makanchi Array**	**44.84**	**301**	P	**P**	**06 38 33.6**	**-0.3**
	0.2nm,0.3s,baz=92,slow=7.6,SNR=2.8						
ILAR	**Eielson Array**	**47.27**	**33**	P	**P**	**06 38 52.8**	**+0.1**
	0.3nm,0.8s,baz=258,slow=6.4,SNR=3.3						
INK	**Inuvik**	**52.24**	**28**	P	**P**	**06 39 29.8**	**-0.6**
	0.3nm,0.4s,baz=278,slow=1.8						
WRA	**Warramunga Arr**	**58.82**	**190**	P	P	06 40 14.8	-3.5
	0.8nm,0.6s,baz=9.9,slow=7.3,SNR=8.0						
YKA	**Yellowknife Ar**	**61.61**	**31**	P	**P**	**06 40 36.1**	**-0.8**
	0.1nm,0.6s,baz=303,slow=6.4,SNR=5.8						
ASAR	**Alice Springs**	**62.55**	**190**	P	P	06 40 40.5	-3.2
	0.1nm,0.6s,baz=12,slow=6.6,SNR=3.3						
PDAR	**Pinedale Array**	**75.35**	**47**	P	P	06 42 01.4	-2.1
	0.2nm,0.6s,baz=259,slow=1.8,SNR=3.0						
TXAR	**Lajitas Array**	**87.80**	**54**	P	P	06 43 06.4	-2.9
	0.1nm,0.6s,baz=309,slow=4.5,SNR=3.1						

NIED ***22*** *06:35:00,35.°50N×140.°20E, h26km, Mw4.1 Best double couple: M0 1.34000×10^15 NP1:φs268.00000°,δ64.00000°, λ156.00000°. NP2:φs9.00000°,δ69.00000°,λ28.00000°.*
IDC ***22*** *06:35:18.8±0.6,35.°37N×140.°09E, h0km, mb3.8/15, mb1 4.0/18, mb1mx3.9/56, mbtmp3.9/18, ML3.3/2, MS3.1/2, Ms1 3.1/2, ms1mx2.7/48, Error ellipse: s-maj=19.8km s-min=12.9km az=81.0*
ISCJB ***22*** *06:35:22.6±0.3,35.°41N±0.°03×140.°13E±0.°05, h37km±3km, mb4.0/24, Error ellipse: s-maj=7.1km s-min=4.5km az=151.6*
JMA ***22*** *06:35:22.7±0.1,35.°50N×140.°14E, h24km±2km, M4.1 Broadband fault plane solution: P waves. NP1: φs198.00000°,δ87.00000°,λ-24.00000°. NP2: φs289.00000°,δ66.00000°,λ-177.00000°. Principal axes: T Plg15.0000°, Azm246.0000°; N Plg65.0000°, Azm12.0000°; P Plg19.0000°, Azm151.0000°;*
JMA Felt III J1.
NEIC ***22*** *06:35:25.0±0.6,35.°31N×140.°04E, h44km±6km, mb4.3/9 Error ellipse: s-maj=7.9km s-min=5.6km az=86.0*
NEIC Recorded [3 JMA] in Chiba.
ISC 22 06:35:22.8±0.8, 35.°47N±0.°04×140.°10E±0.°04, h26km±5km, n57, σ1°92/52, mb4.1/24, 2C-7D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JCN	**Nagara**	**0.10**	**121**	⇑P	**Pb**	**06 35 27.3**	**-0.2**
JCN				S	**Sb**	**06 35 31.4**	**+0.7**
TOK	**Tokyo**	**0.35**	**308**	⇓P	**Pb**	**06 35 31.1**	**+0.4**
TOK				S	**Sn**	**06 35 37.9**	**-0.6**
KTR	**Katsuura**	**0.36**	**151**	P	**Pb**	**06 35 30.6**	**-0.3**
KTR				S	**Sn**	**06 35 37.9**	**-0.8**
BSO4	**Boso 4**	**0.51**	**158**	⇓P	**Pb**	**06 35 33.6**	**+0.3**
BSO3	**Boso 3**	**0.74**	**153**	⇓P	**Pb**	**06 35 37.0**	**0.0**
JYT	**Yasato**	**0.76**	**6**	⇓P	**Pb**	**06 35 36.1**	**-1.4**
JYT				S	**Sb**	**06 35 46.2**	**-1.3**
JOD2	**Odawara 2**	**0.85**	**256**	⇑P	**Pb**	**06 35 38.7**	**-0.3**
JIM2	**Oshima 3**	**0.93**	**216**	⇓P	**Pn**	**06 35 39.2**	**-1.1**
BSO1	**Boso 1**	**1.08**	**138**	⇓P	**Pn**	**06 35 40.8**	**-1.1**
JAG	**Ashikaga**	**1.09**	**331**	⇓P	**Pn**	**06 35 41.7**	**-0.8**
JRY	**Ryogami san**	**1.12**	**300**	P	**Pn**	**06 35 42.0**	**-0.5**
JRY				S	**Sn**	**06 35 57.5**	**0.0**
MJAR	**Matsushiro Arr**	**1.87**	**306**	Pn	**Pn**	**06 35 54.3**	**+1.1**
	27nm,0.3s,baz=136,slow=14,SNR=100						
MJAR				Sn	**Sb**	**06 36 18.1**	**-1.2**
	31nm,0.3s,baz=127,slow=14,SNR=12						
MAJO	**Matsushiro**	**1.87**	**306**	*e*Pn	**Pb**	**06 35 55.0**	**-1.4**
MAT	**Matsushiro**	**1.87**	**306**	P	**Pn**	**06 35 54.7**	**+1.4**
MAT				S	**Sb**	**06 36 20.3**	**+0.9**
JHJ	**Hachijo jima 2**	**2.36**	**187**	Pn	Pn	06 35 56.9	-3.0
	81nm,0.3s,baz=240,slow=20,SNR=2.6						
JHJ				Sn	**Sn**	**06 36 27.9**	**0.0**
	124nm,0.3s,baz=66,slow=21,SNR=6.8						
JHJ2	**Mitsune**	**2.36**	**186**	*e*Pn	**Pn**	**06 35 59.7**	**-0.3**
ERM	**Erimo**	**6.96**	**19**	*e*Pn	Pn	06 37 06.6	+3.5
ERM				*e*Sn	Sn	06 38 28.4	+7.0
JNU	**Nakatsue**	**7.98**	**256**	Pn	**Pn**	**06 37 17.2**	**0.0**
	0.2nm,0.3s,baz=32,slow=19,SNR=1.8						
JNU				LR	LR	06 40 06.7	
	comp=Z,82nm,20.6s,baz=112,slow=36						
CBIJ	**Chichi jima**	**8.53**	**167**	Pn	**Pn**	**06 37 22.0**	**-2.8**
JCJ	**Chichijima**	**8.53**	**167**	Pn	**Pn**	**06 37 22.0**	**-2.8**
	baz=287,slow=18						
ASAJ	**Asahikawa**	**8.85**	**12**	Pn	Pn	06 37 33.9	+4.9
	0.8nm,0.3s,baz=118,slow=18,SNR=2.9						
KSRS	**Korea Array**	**10.01**	**285**	Pn	Pn	06 37 48.7	+3.8
	0.3nm,0.3s,baz=99,slow=14,SNR=3.6						
KSRS				LR	LR	06 41 08.7	
	comp=Z,159nm,21.3s,baz=114,slow=35						
KSAR	**Wonju Array Be**	**10.04**

IDC ***22*** *06:41:52.1±1.6, 3°.54S×146°.98E, h0km, mb3.8/5, mb1 4.1/6, mb1mx3.7/41, mbtmp3.9/6, ML1.7/1, MS3.5/5, Ms1 3.5/5, ms1mx3.2/31, Error ellipse: s-maj=58.3km s-min=24.1km az=108.0*

ISCJB ***22*** *06:41:54.4±1.2, 3°.6S±0°.1×146°.9E±0°.2, h25km, mb3.6/4, MS3.5/4, Error ellipse: s-maj=34.6km s-min=16.8km az=8.0*

ISC 22 06:41:56.1±1.3,**3°.5S**±0°.1×**147°.0E**±0°.3,**h25**km,**n12, σ0ˢ77/6, mb3.8/4, MS3.5/4, Bismarck Sea**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
PMG	**Port Moresby**	**5.84**	**178**	Pn	**Pn**	**06 43 21.6**	**+0.4**
	1.2nm,0.3s,baz=346,slow=8.3,SNR=4.5						
HNR	**Honiara**	**14.18**	**115**	LR	LR	06 50 54.7	
	comp=Z,80nm,18.3s,baz=280,slow=38						
WRA	**Warramunga Arr**	**20.43**	**216**	P	**P**	**06 46 31.0**	**-0.8**
	9.0nm,0.8s,baz=39,slow=11,SNR=18						
ASAR	**Alice Springs**	**23.65**	**211**	P	**P**	**06 47 05.3**	**-0.4**
	2.7nm,0.8s,baz=47,slow=9.6,SNR=19						
ASAR				LR	LR	06 57 09.3	
	comp=Z,155nm,19.7s,baz=342,slow=39						
DAV	**Davao City (W)**	**23.79**	**296**	LR	LR	06 55 34.2	
	comp=Z,111nm,20.4s,baz=357,slow=34						
FITZ	**Fitzroy Crossi**	**25.40**	**234**	P	**P**	**06 47 21.6**	**-0.2**
	2.5nm,0.8s,baz=62,slow=6.7,SNR=4.8						
FITZ				LR	LR	06 58 32.2	
	comp=Z,115nm,18.6s,baz=44,slow=39						
DZM	**Mont Dzumac**	**26.41**	**136**	LR	LR	06 56 46.5	
	comp=Z,187nm,18.5s,baz=246,slow=34						
H11S3	**WAKE ISLAND Hy**	**29.28**	**41**	T	T	07 18 26.0	
	baz=223,slow=75,SNR=9.5						
H11S2	**WAKE ISLAND Hy**	**29.29**	**41**	T	T	07 18 16.7	
	baz=223,slow=75,SNR=11						
H11S1	**WAKE ISLAND Hy**	**29.30**	**41**	T	T	07 18 28.3	
	baz=223,slow=75,SNR=8.6						
MKAR	**Makanchi Array**	**75.58**	**320**	P	**P**	**06 53 39.6**	**+0.7**
	0.1nm,0.3s,baz=98,slow=5.4,SNR=3.6						
ILAR	**Eielson Array**	**83.25**	**23**	P	**P**	**06 54 19.7**	**-0.5**
	0.5nm,0.8s,baz=238,slow=6.0,SNR=3.8						

IDC 22 06:46:55.4±7.5,**6.77S**×**115.12E**,**h545**km±89km,**mb2.8**/6, **mb1 2.9**/6,**mb1mx2.7**/48,**mbtmp3.7**/6,**Error ellipse: s-maj=125.0km s-min=19.0km az=61.0, Bali Sea**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
WRA	**Warramunga Arr**	**22.79**	**127**	P	P	06 51 17.3	+0.3
	0.5nm,0.9s,baz=296,slow=8.2,SNR=5.0						
ASAR	**Alice Springs**	**24.65**	**135**	P	P	06 51 34.0	+0.5
	0.4nm,0.4s,baz=308,slow=7.7,SNR=13						
ASAR				PcP	PcP	06 54 52.4	+0.1
	0.2nm,0.7s,baz=295,slow=1.6,SNR=3.1						
STKA	**Stephens Creek**	**35.13**	**139**	P	P	06 53 01.9	-1.7
	1.3nm,0.6s,baz=302,slow=9.5,SNR=3.5						
SONM	**Songino Array**	**54.91**	**353**	P	P	06 55 34.8	-0.3
	0.9nm,0.6s,baz=170,slow=8.8,SNR=2.9						
MKAR	**Makanchi Array**	**60.78**	**335**	P	P	06 56 15.1	+0.4
	0.6nm,0.3s,baz=148,slow=7.5,SNR=11						
ZALV	**Zalesovo Beam**	**65.65**	**341**	P	P	06 56 44.9	-0.9
	0.7nm,0.4s,baz=134,slow=6.0,SNR=2.9						

IDC 22 06:52:08.2±2.4,**33°.20N**×**141°.10E**,**h0**km,**mb3.4**/2, **mb1 3.6**/3,**mb1mx3.2**/43,**mbtmp3.4**/3,**ML3.2**/1,**Error ellipse: s-maj=44.4km s-min=24.1km az=30.0, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JHJ	**Hachijo jima 2**	**1.10**	**266**	Pn	Pn	06 52 31.6	+0.7
	128nm,0.3s,baz=225,slow=18,SNR=5.5						
JHJ				Sn	Sb	06 52 45.7	+0.7
	115nm,0.3s,baz=115,slow=23,SNR=9.3						
MJAR	**Matsushiro Arr**	**4.09**	**325**	Pn	Pn	06 53 10.9	-1.1
	1.5nm,0.3s,baz=151,slow=12,SNR=8.4						
H11N2	**WAKE ISLAND Hy**	**26.62**	**114**	T	T	07 24 44.5	
	baz=314						
H11N1	**WAKE ISLAND Hy**	**26.63**	**114**	T	T	07 24 41.5	
	baz=314						
H11N3	**WAKE ISLAND Hy**	**26.64**	**114**	T	T	07 24 44.0	
	baz=314						
H11S3	**WAKE ISLAND Hy**	**27.19**	**116**	T	T	07 25 36.4	
	baz=304						
H11S1	**WAKE ISLAND Hy**	**27.20**	**116**	T	T	07 25 37.4	
	baz=304						
H11S2	**WAKE ISLAND Hy**	**27.21**	**116**	T	T	07 25 38.7	
	baz=304						
WRA	**Warramunga Arr**	**53.23**	**188**	P	P	07 01 28.1	-0.3
	0.4nm,0.4s,baz=6.1,slow=7.6,SNR=4.6						
ASAR	**Alice Springs**	**56.96**	**188**	P	P	07 01 55.3	-0.1
	0.1nm,0.3s,baz=3.4,slow=7.4,SNR=4.7						

IDC ***22*** *06:54:59.6±1.4, 35°.48N×141°.06E, h0km, mb3.4/3, mb1 3.6/4, mb1mx3.3/42, mbtmp3.3/4, ML2.8/1, MS3.5/1, Ms1 3.5/1, ms1mx2.6/30, Error ellipse: s-maj=35.5km s-min=32.7km az=57.0*

ISCJB ***22*** *06:55:01.8±1.1, 35°.55N±0°.07×141°.28E±0°.10, h25km, mb3.4/3, MS3.4/1, Error ellipse: s-maj=12.5km s-min=9.4km az=141.1*

JMA ***22*** *06:55:04.1±0.1, 35°.61N×141°.07E, h31km±1km, M2.7*

ISC 22 06:55:03.1±1.2,**35°.54N**±0°.07×**141°.2E**±0°.1,**h25**km,**n16, σ1ˢ30/11, mb3.5/3, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
CHOJ	**Chosi**	**0.33**	**300**	P	**Pb**	**06 55 10.3**	**-0.2**
CHOJ				S	**Sb**	**06 55 14.6**	**-1.0**
BSO4	**Boso 4**	**0.90**	**233**	P	**Pn**	**06 55 20.0**	**0.0**
BSO3	**Boso 3**	**0.93**	**218**	P	**Pn**	**06 55 20.4**	**+0.1**
JHO	**Hitachi**	**1.19**	**334**	P	**Pn**	**06 55 23.8**	**-0.3**
MJAR	**Matsushiro Arr**	**2.63**	**293**	Pn	**Pn**	**06 55 43.8**	**-0.1**
	2.0nm,0.3s,baz=98,slow=9.1,SNR=11						
MAT	**Matsushiro**	**2.63**	**293**	P	**Pn**	**06 55 45.5**	**+1.5**
MAT				*e*S	**Sn**	**06 56 16.9**	**+1.8**
H11N2	**WAKE ISLAND Hy**	**27.56**	**118**	T	T	07 29 50.7	
	baz=311,slow=75,SNR=8.6						
H11N1	**WAKE ISLAND Hy**	**27.57**	**118**	T	T	07 29 53.0	
	baz=311,slow=75,SNR=8.2						
H11N3	**WAKE ISLAND Hy**	**27.58**	**118**	T	T	07 29 51.1	
	baz=311,slow=75,SNR=10						
TGY	**Tagaytay City**	**28.07**	**226**	LR	LR	07 09 36.2	
	comp=Z,107nm,20.7s,baz=355,slow=31						
H11S1	**WAKE ISLAND Hy**	**28.22**	**120**	T	T	07 30 38.6	
	baz=312,slow=75,SNR=14						
H11S3	**WAKE ISLAND Hy**	**28.22**	**120**	T	T	07 30 39.9	
	baz=312,slow=75,SNR=8.3						
H11S2	**WAKE ISLAND Hy**	**28.24**	**120**	T	T	07 30 42.0	
	baz=312,slow=75,SNR=8.7						
MKAR	**Makanchi Array**	**44.78**	**303**	P	**P**	**07 03 12.6**	**-2.1**
	0.5nm,0.7s,baz=85,slow=9.4,SNR=3.5						
WRA	**Warramunga Arr**	**55.56**	**188**	P	**P**	**07 04 36.5**	**0.0**
	0.4nm,0.8s,baz=5.0,slow=8.9,SNR=4.3						
YKA	**Yellowknife Ar**	**65.19**	**30**	P	**P**	**07 05 43.3**	**+1.5**
	0.3nm,0.9s,baz=295,slow=7.2,SNR=4.1						

DDA ***22*** *07:20:21.1, 37°.01N×29°.23E, h7km, Md2.7*

ISK ***22*** *07:20:21.2, 36°.85N×29°.32E, h22km, MD2.5*

CSEM ***22*** *07:20:22.4±0.2, 36°.87N×29°.31E, h10km, MD2.5, Error ellipse: s-maj=5.1km s-min=3.2km az=15.0*

ISC 22 07:20:22.2±1.2,**36°.85N**±0°.04×**29°.30E**±0°.03,**h21**km±2km, **n17,σ1ˢ08/26, Turkey**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
FETY	**Fethiye**	**0.28**	**219**	*e*PG	**Pb**	**07 20 28.2**	**-0.4**
FETY				*e*SG	**Sb**	**07 20 33.2**	**+0.2**
FETY	**Fethiye**	**0.28**	**219**	*e*Pg	**Pb**	**07 20 28.2**	**-0.4**
FETY				*e*Sg	**Sb**	**07 20 33.2**	**+0.2**
ELL	**Elmali**	**0.50**	**101**	*e*PG	**Pb**	**07 20 31.5**	**-0.8**
ELL				*e*SG	**Sb**	**07 20 39.1**	**-0.1**
ELL	**Elmali**	**0.50**	**101**	*e*Pg	**Pb**	**07 20 31.5**	**-0.8**
ELL				*e*Sg	**Sb**	**07 20 39.1**	**-0.1**
DALY	**Dalyan (Muˇla**	**0.52**	**267**	*e*PG	**Pb**	**07 20 32.5**	**-0.1**
DALY				*e*SG	**Sn**	**07 20 40.7**	**-1.9**
DALY	**Dalyan (Muˇla**	**0.52**	**267**	*e*Pg	**Pb**	**07 20 32.5**	**-0.1**
DALY				*e*Sg	**Sn**	**07 20 40.7**	**-1.9**
TURN	**Turunc**	**0.56**	**273**	*i* P	Pn	07 20 37.7	+2.8
TURN				*i* S	Sn	07 20 48.9	+5.3
TURN	**Turunc**	**0.56**	**273**	P	Pn	07 20 37.7	+2.8
AKAS	**Kas**	**0.66**	**158**	*i* P	**Pn**	**07 20 36.2**	**-0.3**
AKAS				*i* S	**Sn**	**07 20 50.0**	**+3.6**
AKAS	**Kas**	**0.66**	**158**	P	**Pn**	**07 20 36.2**	**-0.3**
KORT	**Korkueli**	**0.85**	**80**	*i* P	Pb	07 20 32.0	-6.4
KORT				*i* S	**Sn**	**07 20 51.4**	**+0.3**
YER	**Yerkesik**	**0.86**	**290**	*e*PG	**Pn**	**07 20 38.6**	**-0.6**
YER				*e*SG	**Sn**	**07 20 51.4**	**+0.2**
YER	**Yerkesik**	**0.86**	**290**	*e*Pg	**Pn**	**07 20 38.6**	**-0.6**
YER				*e*Sg	**Sn**	**07 20 51.4**	**+0.2**
AYDN	**Tasoluk**	**1.39**	**306**	*i* P	**Pb**	**07 20 48.2**	**+0.7**
AYDN				*i* S	**Sb**	**07 21 05.8**	**+0.9**
AYDN	**Tasoluk**	**1.39**	**306**	P	**Pb**	**07 20 48.2**	**+0.7**
AYDN				S	**Sb**	**07 21 05.8**	**+0.9**
KHAL	**Karahalli**	**1.53**	**6**	*i* S	**Sb**	**07 21 09.1**	**+0.3**
KHAL	**Karahalli**	**1.53**	**6**	S	**Sb**	**07 21 09.1**	**+0.3**

ISCJB ***22*** *07:24:54.1±1.5, 14°.78N±0°.07×93°.71W±0°.07, h33km±15km, mb3.5/4, MS3.3/1, Error ellipse: s-maj=14.8km s-min=8.8km az=43.4*

MEX ***22*** *07:24:56.8±0.9, 14°.76N×93°.65W, h20km±102km, MD4.0*

NEIC ***22*** *07:24:56.8, 14°.76N×93°.65W, h20km, MD4.0(MEX), After MEX.*

IDC ***22*** *07:24:58.0±4.4, 15°.04N×93°.62W, h37km±34km, mb3.4/4, mb1 3.8/8, mb1mx3.5/44, mbtmp3.6/8, ML3.5/4, MS3.4/1, Ms1 3.4/1, ms1mx2.7/18, Error ellipse: s-maj=47.7km s-min=26.1km az=32.0*

ISC 22 07:24:55.4±2.6,**14°.90N**±0°.10×**93°.63W**±0°.07,**h26**km±16km, **n17,σ1ˢ37/26, mb3.6/4, Near coast of Chiapas**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
PCIG		**0.90**	**27**	*e*P	**Pn**	**07 25 12.4**	**+0.1**
PCIG				*e*S	**Sb**	**07 25 25.1**	**+1.2**
PCIG		**0.90**	**27**	*e*P	**Pn**	**07 25 12.4**	**+0.1**
PCIG				*e*S	**Sb**	**07 25 25.1**	**+1.2**
THIG		**1.32**	**89**	*e*P	**Pn**	**07 25 17.4**	**-0.8**
THIG				*e*S	**Sn**	**07 25 32.8**	**-2.2**
THIG		**1.32**	**89**	*e*P	**Pn**	**07 25 17.4**	**-0.8**
THIG				*e*S	**Sn**	**07 25 32.8**	**-2.2**
TGIG		**1.93**	**15**	*e*P	**Pn**	**07 25 28.5**	**+1.9**
TGIG				*e*S	**Sb**	**07 25 52.3**	**-1.4**
TGIG		**1.93**	**15**	*e*P	**Pn**	**07 25 28.5**	**+1.9**
TGIG				*e*S	**Sb**	**07 25 52.3**	**-1.4**
CCIG	**Comitan**	**1.99**	**46**	*e*P	**Pb**	**07 25 30.4**	**-0.7**
CCIG				*e*S	**Sb**	**07 25 55.9**	**+0.3**
CCIG	**Comitan**	**1.99**	**46**	*e*P	**Pb**	**07 25 30.4**	**-0.7**
CCIG				*e*S	**Sb**	**07 25 55.9**	**+0.3**
CMIG	**Matias Romero**	**2.49**	**331**	Pn	**Pn**	**07 25 32.8**	**-1.4**
	11nm,0.3s,baz=151,slow=9.6,SNR=124						
CMIG				Sn	**Sn**	**07 26 03.5**	**-0.3**
	22nm,0.3s,baz=264,slow=21,SNR=9.6						
TEIG	**Tepich**	**7.36**	**43**	Pn	**Pn**	**07 26 42.5**	**+1.3**
	3.0nm,0.3s,baz=89,slow=24,SNR=37						
TEIG				Sn	**Sn**	**07 28 03.2**	**-0.7**
	2.4nm,0.3s,baz=52,slow=19,SNR=2.6						
JTS	**JuntasAbangare**	**9.63**	**117**	Pn	**Pn**	**07 27 14.9**	**+2.4**
	0.1nm,0.3s,baz=211,slow=19,SNR=2.5						
TXAR	**Lajitas Array**	**17.09**	**329**	Pn	**P**	**07 28 55.5**	**+1.2**
	0.0nm,0.3s,baz=146,slow=12,SNR=5.6						
PFO	**Pinyon Flats O**	**27.82**	**316**	LR	LR	07 41 21.2	
	comp=Z,71nm,19.0s,baz=336,slow=36						
PDAR	**Pinedale Array**	**30.96**	**337**	P	**P**	**07 31 11.3**	**+0.6**
	0.2nm,0.6s,baz=143,slow=6.6,SNR=2.5						
NVAR	**Mina Array Bea**	**31.98**	**322**	P	**P**	**07 31 21.5**	**+1.7**
	0.6nm,0.7s,baz=138,slow=8.4,SNR=3.0						
YKA	**Yellowknife Ar**	**49.80**	**347**	P	**P**	**07 33 45.2**	**-0.5**
	1.0nm,0.7s,baz=152,slow=7.3,SNR=22						
ILAR	**Eielson Array**	**61.40**	**337**	P	**P**	**07 35 08.4**	**-0.6**
	0.3nm,0.7s,baz=169,slow=5.4,SNR=5.2						

ISCJB ***22*** *07:31:52.2±0.4, 6°.59N±0°.04×72°.81W±0°.04, h204km±4km, mb3.0/3, Error ellipse: s-maj=8.4km s-min=4.2km az=34.8*

FUNV ***22*** *07:31:52.9, 6°.63N×72°.80W, h222km, MW2.9*

IDC ***22*** *07:31:53.0±0.7, 6°.60N×72°.75W, h206km±7km, mb2.8/3, mb1 3.2/5, mb1mx2.9/33, mbtmp3.4/5, Error ellipse: s-maj=23.6km s-min=8.2km az=129.0*

RSNC ***22*** *07:31:54.9±1.1, 6°.57N×72°.92W, h189km±5km, ML3.3*

ISC 22 07:31:52.6±0.8,**6°.61N**±0°.04×**72°.81W**±0°.05,**h205**km±5km, **n36,σ1ˢ23/54, mb2.9/3, 1C-3D, Northern Colombia**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
BARC	**Barichara**	**0.37**	**268**	*i* P	**Pn**	**07 32 19.7**	**-0.4**
BARC				*e*S	**S**	**07 32 39.6**	**-1.9**
BTLC	**Betulia, Santa**	**0.55**	**305**	*i* P	**Pn**	**07 32 21.9**	**+1.2**
GIRC	**Giron, Santand**	**0.60**	**321**	*i* P	**Pn**	**07 32 20.6**	**-0.3**
GIRC				*e*S	**S**	**07 32 40.6**	**-2.3**
PAMC	**Pamplona, Colo**	**0.74**	**9**	*i* P	**Pn**	**07 32 22.3**	**+0.4**
PAMC				*i*		07 32 22.7	
	comp=Z,115nm,0.3s						
PAMC				*e*S	**S**	**07 32 43.5**	**-1.2**
RUSC	**La Rusia**	**0.76**	**201**	⇓*i* P	**Pn**	**07 32 22.1**	**+0.1**
RUSC				*e*S	**S**	**07 32 43.3**	**-1.5**
RUSC				*i*		07 32 45.2	
	comp=Z,360nm,0.3s						
BRRC	**Barranca, Sant**	**1.02**	**299**	⇓*i* P	**Pn**	**07 32 22.7**	**-0.3**
BRRC				*e*S	**S**	**07 32 45.0**	**-1.5**
BRRC				*i*		07 32 47.7	
	comp=Z,145nm,0.2s						
CBRI	**Barrientos, No**	**1.10**	**1**	*i* P	**Pn**	**07 32 24.5**	**+0.7**
CBRI				*e*S	**S**	**07 32 47.8**	**-0.2**
GRMC	**Gramalote, San**	**1.10**	**1**	*i* P	**Pn**	**07 32 25.5**	**+1.7**
GRMC				*e*S	**S**	**07 32 49.4**	**+1.4**
GRMC				*i*		07 32 54.0	
	comp=Z,155nm,0.3s						
GUEC	**Guerrero, Nort**	**1.22**	**355**	*e*P	**Pn**	**07 32 25.6**	**+0.8**
YOPC	**Yopal, Colombi**	**1.30**	**163**	*i* P	**Pn**	**07 32 26.0**	**+0.8**
YOPC				*e*S	**S**	**07 32 49.0**	**-1.3**
CAPV	**Capacho**	**1.35**	**22**	*e*P	**Pn**	**07 32 26.4**	**+0.7**
CAPV				*e*S	**S**	**07 32 51.4**	**+0.1**
OCAC	**Ocana**	**1.70**	**343**	*i* P	**Pn**	**07 32 28.9**	**+0.2**
OCAC				*i*		07 33 01.7	
	comp=Z,119nm,0.5s						
CHIC	**Chingaza**	**2.17**	**205**	⇓*i* P	**Pn**	**07 32 33.9**	**+0.3**
CHIC				*i*		07 32 34.7	
	comp=Z,133nm,0.7s						
CHIC				*e*S	**S**	**07 33 04.5**	**-0.6**
NORC	**Norcasia**	**2.29**	**243**	*e*P	**Pn**	**07 32 33.9**	**-0.6**
NORC				*e*S	**S**	**07 33 04.3**	**-2.5**
ROSC	**El Rosal**	**2.31**	**221**	P	**Pn**	**07 32 36.0**	**+0.9**
	comp=Z,6.2nm,0.3s,baz=306,slow=5.7,SNR=24						
ROSC				S	**S**	**07 33 09.8**	**+2.1**
	comp=Z,9.0nm,0.3s,baz=5.1,slow=22,SNR=9.4						
ROSC	**El Rosal**	**2.31**	**221**	*e*P	**Pn**	**07 32 35.7**	**+0.6**
SOCV	**Socops**	**2.56**	**49**	*e*P	**Pn**	**07 32 37.7**	**+0.2**
SOCV				*e*S	**S**	**07 33 10.7**	**-1.3**
VILC	**Villavicencio,**	**2.63**	**200**	*e*P	**Pn**	**07 32 38.1**	**-0.2**
VILC				*e*S	**S**	**07 33 11.9**	**-1.7**
HELC	**Santa Helena**	**2.73**	**261**	*e*P	**Pn**	**07 32 40.2**	**+0.5**
HELC				*i*		07 32 41.5	
	comp=Z,68nm,0.4s						
HELC				*e*S	**S**	**07 33 13.6**	**-2.3**
GUYC	**Guyana, Colomb**	**2.91**	**242**	*e*P	**Pn**	**07 32 42.6**	**+0.8**
GUYC				*i*		07 33 25.9	
	comp=Z,85nm,0.5s						
SDV	**Santo Domingo**	**3.13**	**43**	P	**Pn**	**07 32 45.0**	**+0.8**
	comp=Z,10nm,0.3s,baz=277,slow=8.1,SNR=3.7						
SDV				S	**S**	**07 33 24.5**	**+0.4**
	comp=Z,16nm,0.3s,baz=18,slow=13,SNR=13						
TOLC	**Tolima**	**3.20**	**231**	*e*P	**Pn**	**07 32 45.5**	**+0.2**
DBBC	**Dabeiba**	**3.40**	**277**	*i* P	**Pn**	**07 32 47.1**	**-0.1**
SJAC	**San Juan de Ar**	**3.50**	**199**	⇓*i* P	**Pn**	**07 32 48.2**	**-0.4**
SJAC				*i*		07 32 48.6	
	comp=Z,115nm,0.5s						
PRAC	**Prado**	**3.54**	**216**	*e*P	**Pn**	**07 32 48.6**	**-0.3**
PRAC				*e*S	**S**	**07 33 30.9**	**-1.7**
VIRV	**Villa del Rosa**	**3.89**	**6**	*e*P	**Pn**	**07 32 52.8**	**-0.5**
VIRV				*e*S	**S**	**07 33 37.1**	**-3.4**
SANV	**Sanarito**	**4.34**	**48**	*e*P	**Pn**	**07 32 58.8**	**-0.1**
CURV	**Curarigua**	**4.41**	**40**	*e*P	**Pn**	**07 32 58.8**	**-0.9**
TEPV	**Terepaima**	**4.90**	**47**	*e*P	**Pn**	**07 33 05.8**	**-0.1**
BAUV	**El Baul**	**5.27**	**64**	*e*P	**Pn**	**07 33 09.4**	**-1.2**
MAPV	**Macapo**	**5.37**	**53**	*e*P	**Pn**	**07 33 10.4**	**-1.5**
LPAZ	**La Paz**	**23.21**	**169**	P	**P**	**07 36 43.2**	**+0.9**
	comp=Z,0.8nm,0.6s,baz=342,slow=3.2,SNR=7.1						
TXAR	**Lajitas Array**	**36.83**	**312**	P	**P**	**07 38 43.0**	**+1.7**
	comp=Z,0.2nm,0.7s,baz=142,slow=9.2,SNR=2.5						
YKA	**Yellowknife Ar**	**63.57**	**340**	P	**P**	**07 42 01.8**	**+0.7**
	comp=Z,0.1nm,0.5s,baz=132,slow=6.4,SNR=6.6						
ASAR	**Alice Springs**	**149.23**	**234**	PKPbc	**PKPbc**	**07 51 16.4**	**-1.4**
	comp=Z,0.1nm,0.5s,baz=110,slow=3.9,SNR=3.3						
WRA	**Warramunga Arr**	**150.50**	**241**	PKPbc	**PKPbc**	**07 51 20.5**	**-0.5**
	comp=Z,0.1nm,0.4s,baz=103,slow=3.0,SNR=3.9						

IDC ***22*** *07:33:34.3±1.5, 37°.39N×143°.43E, h0km, mb3.2/3, mb1 3.5/5, mb1mx3.3/42, mbtmp3.3/5, ML3.3/2, Error ellipse: s-maj=48.2km s-min=27.0km az=121.0*

ISCJB ***22*** *07:33:38.9±1.4, 37°.49N±0°.06×143°.17E±0°.10, h54km±17km, mb3.3/3, Error ellipse: s-maj=14.5km s-min=7.8km az=29.1*

JMA ***22*** *07:33:38.4±0.2, 37°.50N×143°.17E, h38km, M3.4*

ISC 22 07:33:41.4±2.2,**37°.55N**±0°.08×**143°.0E**±0°.1,**h55**km±25km, **n19,σ1ˢ39/21, mb3.4/3, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**1.59**	**305**	P	**Pn**	**07 34 07.1**	**-0.1**
JIO				S	**Sn**	**07 34 28.1**	**+1.4**
JFK	**Kawauchi**	**1.71**	**264**	P	Pn	07 34 08.5	-0.3
JFK				S	**Sn**	**07 34 30.3**	**+0.7**
JMM	**Marumori**	**1.79**	**281**	P	Pn	07 34 09.7	-0.1
JMM				*e*S	**Sn**	**07 34 33.0**	**+1.6**
ONAJ	**Iwakimizuishiy**	**1.82**	**256**	*e*S	**Sn**	**07 34 32.8**	**+0.5**
OFUJ	**Ofunato**	**1.86**	**326**	P	Pn	07 34 10.0	-0.8
OFUJ				*e*S	**Sn**	**07 34 33.4**	**+0.3**
JMK	**Ichinoseki**	**1.98**	**315**	P	**Pn**	**07 34 12.7**	**+0.1**
JMK				*e*S	**Sn**	**07 34 37.5**	**+1.2**
JOU	**Okura**	**2.02**	**294**	P	**Pn**	**07 34 13.8**	**+0.7**
JFT	**Otama**	**2.12**	**270**	P	**Pn**	**07 34 15.1**	**+0.6**
JFT				*e*S	**Sn**	**07 34 42.2**	**+2.5**
JOM	**Ohasama**	**2.34**	**326**	P	**Pn**	**07 34 19.9**	**+2.4**
JAG	**Ashikaga**	**3.06**	**250**	P	**Pn**	**07 34 27.6**	**+0.3**
JAG				S	**Sn**	**07 35 05.1**	**+2.5**
JRY	**Ryogami san**	**3.63**	**246**	P	**Pn**	**07 34 35.1**	**-0.1**
JRY				S	**Sn**	**07 35 16.4**	**-0.4**
MJAR	**Matsushiro Arr**	**3.97**	**257**	Pn	**Pn**	**07 34 41.1**	**+1.3**
	1.4nm,0.3s,baz=82,slow=14,SNR=8.7						
ASAJ	**Asahikawa**	**6.57**	**357**	Pn	**Pn**	**07 35 13.5**	**-1.7**
	0.6nm,0.3s,baz=270,slow=20,SNR=2.9						
H11N2	**WAKE ISLAND Hy**	**27.35**	**124**	T	T	08 07 38.6	
	baz=313						
H11N1	**WAKE ISLAND Hy**	**27.36**	**124**	T	T	08 07 38.8	
	baz=313						
H11N3	**WAKE ISLAND Hy**	**27.37**	**124**	T	T	08 07 46.2	
	baz=313						
ILAR	**Eielson Array**	**48.38**	**33**	P	**P**	**07 42 18.3**	**+1.0**
	0.3nm,0.7s,baz=263,slow=7.8,SNR=4.3						
WRA	**Warramunga Arr**	**57.76**	**190**	P	**P**	**07 43 25.9**	**-0.9**
	0.4nm,0.9s,baz=11,slow=7.2,SNR=2.9						
YKA	**Yellowknife Ar**	**62.72**	**31**	P	**P**	**07 43 59.8**	**-0.4**
	0.1nm,0.7s,baz=306,slow=8.6,SNR=2.5						

IDC ***22*** *07:50:38.9±0.9, 40°.07N×24°.74E, h0km, mb3.7/11, mb1 3.9/17, mb1mx3.8/38, mbtmp3.8/17, ML3.6/6, MS3.4/14, Ms1 3.4/14, ms1mx3.1/56, Error ellipse: s-maj=18.4km s-min=13.1km az=23.0*

NEIC ***22*** *07:50:39.9, 40°.12N×24°.89E, h26km, mb4.3/5, ML4.2(THE), ML4.4(ATH), After ATH.*

NEIC Felt at Drama, Greece.

ISCJB ***22*** *07:50:39.8±0.4, 40°.13N±0°.01×24°.86E±0°.01, h8km±3km, mb3.9/18, MS3.5/11, Error ellipse: s-maj=1.8km s-min=1.5km az=7.4*

ATH ***22*** *07:50:39.9, 40°.11N×24°.90E, h27km, ML4.3/12, Error ellipse: s-maj=1.0km s-min=0.7km az=49.0*

ISK ***22*** *07:50:40.9, 40°.08N×24°.94E, h7km, ML4.4*

SOF ***22*** *07:50:40.9, 40°.24N×24°.90E, h4km, MD4.1*

THE ***22*** *07:50:40.9, 40°.11N×24°.89E, h11km, ML4.2/32, Error ellipse: s-maj=1.0km s-min=0.5km az=36.0*

BJI ***22*** *07:50:41.9, 40°.10N×24°.90E, h26km, mb4.7/2, mB4.7/3, Ms4.8/2, Ms7 4.7/2*

CSEM ***22*** *07:50:41.0±0.1, 40°.11N×24°.85E, h10km, mb4.2/7, Error ellipse: s-maj=2.1km s-min=1.7km az=10.0*

MOS ***22*** *07:50:42.2±1.2, 40°.21N×24°.92E, h33km, mb4.4/3, Error ellipse: s-maj=5.6km s-min=4.6km az=84.0*

DDA ***22*** *07:50:44.8, 40°.20N×25°.30E, h40km, Ml4.0*

ISC 22 07:50:40.7±0.9,**40°.11N**±0°.01×**24°.88E**±0°.01,**h7**km±6km, **n556,σ1ˢ08/677, mb3.9/18, MS3.6/11, 29C-11D, Aegean Sea**

| Code | Station Name | Δ° | AZ° | Phase

ENEZ	Enez	1.16	57	P	Pg	07 51 01.5	-1.4
ENEZ	Enez	1.16	57	ePn	Pg	07 51 02.6	-0.3
ENEZ				S	Sg	07 51 17.7	-0.2
ENEZ				eSn	Sn	07 51 19.1	-0.3
SIGR	SIGRI	1.17	140	ePN	Pg	07 51 02.9	-0.2
SIGR	SIGRI	1.17	140	P	Pg	07 51 02.8	-0.3
SIGR				S	Sb	07 51 18.7	+0.1
SIGR	SIGRI	1.17	140	ePn	Pg	07 51 02.9	-0.2
SIGR	SIGRI	1.17	140	P	Pg	07 51 03.2	0.0
SIGR				S	Sg	07 51 18.0	-0.3
SIGR	SIGRI	1.17	140	P	Pg	07 51 03.2	0.0
SIGR				S	Sg	07 51 18.0	-0.3
SIGR				AML	AML	07 51 20.7	
	comp=E,38929μm,0.6s						
SIGR				AML	AML	07 51 22.0	
	comp=N,60098μm,0.5s						
SIGR	SIGRI	1.17	140	P	Pg	07 51 02.8	-0.3
SIGR				S	Sb	07 51 18.7	+0.1
ALN	Alexandroupoli	1.19	48	ePN	Pn	07 51 03.7	-0.1
ALN	Alexandroupoli	1.19	48	P	Pg	07 51 01.8	-1.7
ALN				S	Sg	07 51 18.9	0.0
ALN	Alexandroupoli	1.19	48	P	Pg	07 51 01.8	-1.7
ALN				S	Sg	07 51 18.9	0.0
ALN	Alexandroupoli	1.19	48	P	Pg	07 51 01.8	-1.7
ALN	Alexandroupoli	1.19	48	ePn	Pn	07 51 03.7	-0.1
ALN				S	Sg	07 51 18.5	-0.4
ALN	Alexandroupoli	1.19	48	P	Pg	07 51 01.8	-1.7
ALN				S	Sg	07 51 18.5	-0.4
ALN				AML	AML	07 51 20.5	
	comp=N,16650μm,0.5s						
ALN				AML	AML	07 51 21.3	
	comp=E,25437μm,0.6s						
ALN	Alexandroupoli	1.19	48	P	Pg	07 51 01.8	-1.7
ALN				S	Sg	07 51 18.9	0.0
AOS	Alonnisos	1.22	220	P	Pg	07 51 02.4	-1.6
AOS				S	Sn	07 51 20.6	-0.3
AOS	Alonnisos	1.22	220	P	Pg	07 51 03.0	-1.0
AOS				S	Sg	07 51 19.7	-0.1
AOS	Alonnisos	1.22	220	P	Pg	07 51 03.0	-1.0
AOS				S	Sg	07 51 19.7	-0.1
AOS				AML	AML	07 51 25.1	
	comp=N,15639μm,0.6s						
AOS				AML	AML	07 51 26.9	
	comp=E,26629μm,0.6s						
AOS	Alonnisos	1.22	220	P	Pg	07 51 02.4	-1.6
AOS				S	Sn	07 51 20.6	-0.3
GELI	Tayfur-Gelibol	1.25	76	ePN	Pn	07 51 04.5	-0.2
GELI	Tayfur-Gelibol	1.25	76	ePn	Pn	07 51 04.5	-0.2
ERIK	Erikli-Kesan	1.37	65	ePN	Pn	07 51 06.2	0.0
ERIK	Erikli-Kesan	1.37	65	ePn	Pn	07 51 06.2	0.0
SOH	Sokhos	1.37	302	P	Pn	07 51 05.2	-1.1
SOH				S	Sb	07 51 23.4	-1.0
SOH	Sokhos	1.37	302	P	Pn	07 51 05.2	-1.1
SOH				S	Sb	07 51 23.4	-1.0
SOH	Sokhos	1.37	302	P	Pn	07 51 05.6	-0.7
SOH				S	Sb	07 51 23.5	-1.0
SOH	Sokhos	1.37	302	P	Pn	07 51 05.6	-0.7
SOH				S	Sb	07 51 23.5	-0.9
SOH				AML	AML	07 51 27.2	
	comp=E,35795μm,0.6s						
SOH				AML	AML	07 51 27.9	
	comp=N,26606μm,0.6s						
SOH	Sokhos	1.37	302	P	Pn	07 51 05.2	-1.1
SOH				S	Sb	07 51 23.4	-0.9
PRK	Paraskevi	1.38	128	P	Pn	07 51 05.6	-0.8
PRK				S	Sb	07 51 23.6	-1.0
PRK	Paraskevi	1.38	128	P	Pn	07 51 05.6	-0.8
PRK				S	Sb	07 51 23.6	-1.0
PRK	Paraskevi	1.38	128	P	Pn	07 51 06.4	0.0
PRK				S	Sb	07 51 23.4	-1.2
PRK	Paraskevi	1.38	128	P	Pn	07 51 06.4	0.0
PRK				S	Sb	07 51 23.4	-1.2
PRK				AML	AML	07 51 27.1	
	comp=N,53590μm,0.6s						
PRK				AML	AML	07 51 28.8	
	comp=E,72038μm,0.7s						
PRK	Paraskevi	1.38	128	P	Pn	07 51 05.6	-0.8
PRK				S	Sb	07 51 23.6	-1.0
SRS	Serrai	1.41	316	P	Pn	07 51 05.3	-1.6
SRS				S	Sb	07 51 23.9	-1.7
SRS	Serrai	1.41	316	P	Pn	07 51 05.3	-1.6
SRS				S	Sb	07 51 23.9	-1.7
SRS	Serrai	1.41	316	P	Pn	07 51 05.5	-1.4
SRS				S	Sb	07 51 24.3	-1.2
SRS	Serrai	1.41	316	P	Pn	07 51 05.5	-1.4
SRS				S	Sb	07 51 24.3	-1.2
SRS				AML	AML	07 51 27.4	
	comp=E,37046μm,0.6s						
SRS				AML	AML	07 51 30.6	
	comp=N,13887μm,0.8s						
SRS	Serrai	1.41	316	P	Pn	07 51 05.3	-1.6
SRS				S	Sb	07 51 23.9	-1.7
SKIA	Skiathos	1.44	230	P	Pn	07 51 06.0	-1.3
SKIA				S	Sn	07 51 25.8	-0.7
SKIA	Skiathos	1.44	230	P	Pn	07 51 06.1	-1.3
SKIA				S	Sn	07 51 25.9	-0.7
SKIA	Skiathos	1.44	230	P	Pn	07 51 06.1	-1.2
SKIA				S	Sn	07 51 25.9	-0.7
SKIA				AML	AML	07 51 31.6	
	comp=N,24627μm,0.6s						
SKIA				AML	AML	07 51 32.4	
	comp=E,28145μm,0.6s						
HORT	Hortiatis	1.45	290	P	Pn	07 51 06.3	-1.2
HORT				S	Sb	07 51 25.7	-1.1
HORT	Hortiatis	1.45	290	P	Pn	07 51 06.4	-1.0
HORT				S	Sb	07 51 25.7	-1.1
HORT	Hortiatis	1.45	290	P	Pn	07 51 06.5	-1.0
HORT	Hortiatis	1.45	290	P	Pn	07 51 06.3	-1.2
HORT				S	Sb	07 51 25.7	-1.1
NVR	Nevrokopi	1.46	328	P	Pn	07 51 06.4	-1.2
NVR				S	Sn	07 51 26.7	-0.4
NVR	Nevrokopi	1.46	328	P	Pn	07 51 06.7	-0.9
NVR				S	Sn	07 51 26.7	-0.4
NVR	Nevrokopi	1.46	328	P	Pn	07 51 06.4	-1.2
NVR				S	Sn	07 51 26.7	-0.4
XOR	Xorichti	1.50	241	P	Pn	07 51 06.5	-1.6
XOR				S	Sn	07 51 26.3	-1.7
XOR	Xorichti	1.50	241	P	Pn	07 51 06.5	-1.6
XOR				S	Sn	07 51 27.4	-0.6
XOR	Xorichti	1.50	241	P	Pn	07 51 06.5	-1.6
XOR				S	Sn	07 51 27.4	-0.6
XOR				AML	AML	07 51 36.5	
	comp=E,4159μm,0.7s						
XOR				AML	AML	07 51 39.5	
	comp=N,3998μm,0.8s						
XOR	Xorichti	1.50	241	P	Pn	07 51 06.5	-1.6
XOR				S	Sn	07 51 26.3	-1.7
NEO	Neokhori	1.51	238	P	Pn	07 51 06.8	-1.5
NEO				S	Sb	07 51 28.6	+0.1
NEO	Neokhori	1.51	238	P	Pn	07 51 06.8	-1.5
NEO				S	Sb	07 51 28.6	+0.1
NEO	Neokhori	1.51	238	P	Pn	07 51 06.8	-1.5
NEO	Neokhori	1.51	238	P	Pn	07 51 06.8	-1.5
NEO				S	Sb	07 51 28.6	+0.1
KESN	Edirne-Kesan	1.55	62	iP	Pn	07 51 07.2	-1.9
KESN	Edirne-Kesan	1.55	62	P	Pn	07 51 07.2	-1.9
THE	Thessaloniki	1.56	290	P	Pn	07 51 07.8	-1.1
THE				S	Sn	07 51 28.5	-0.8
THE	Thessaloniki	1.56	290	P	Pn	07 51 07.8	-1.1
THE				S	Sn	07 51 28.5	-0.8
THE	Thessaloniki	1.56	290	P	Pn	07 51 07.9	-0.9
THE				S	Sn	07 51 28.5	-0.8
THE	Thessaloniki	1.56	290	P	Pn	07 51 07.9	-0.9
THE	Thessaloniki	1.56	290	P	Pn	07 51 07.8	-1.1
THE				S	Sn	07 51 28.5	-0.8
RZN	Rozhen	1.58	355	iP	Pn	07 51 08.6	-0.8
RZN				Pg	Pb	07 51 10.7	+0.2
KDZ	Kurdzhali	1.59	15	iP	Pn	07 51 07.5	-1.9
KDZ				Pg	Pb	07 51 09.7	-0.8
AYVA	Ayvalik	1.61	119	iP	Pn	07 51 09.6	0.0
AYVA				iS	Sn	07 51 29.2	-1.4
AYVA	Ayvalik	1.61	119	P	Pn	07 51 09.6	0.0
AYVA				S	Sn	07 51 29.2	-1.4
FYTO	Fytoko, Volos	1.65	246	P	Pn	07 51 08.4	-1.8
FYTO				S	Sn	07 51 30.2	-1.5
FYTO	Fytoko, Volos	1.65	246	P	Pn	07 51 08.4	-1.8
FYTO				S	Sn	07 51 30.2	-1.5
FYTO	Fytoko, Volos	1.65	246	P	Pn	07 51 08.4	-1.8
FYTO				S	Sn	07 51 30.2	-1.5
MMB	Musomiste	1.72	330	P	Pn	07 51 10.1	-1.1
SMIA	Simia	1.78	227	P	Pn	07 51 10.7	-1.3

SMIA				S	Sn	07 51 35.4	+0.4
SMIA	Simia	1.78	227	P	Pn	07 51 10.9	-1.1
SMIA				S	Sn	07 51 35.4	+0.4
SMIA	Simia	1.78	227	P	Pn	07 51 10.9	-1.1
LIT	Litokhoron	1.83	271	P	Pn	07 51 11.5	-1.3
LIT	Litokhoron	1.83	271	P	Pn	07 51 11.5	-1.3
LIT	Litokhoron	1.83	271	P	Pn	07 51 11.4	-1.3
LIT	Litokhoron	1.83	271	P	Pn	07 51 11.4	-1.3
LIT	Litokhoron	1.83	271	P	Pn	07 51 11.5	-1.3
EREA	Eretria	1.84	204	P	Pn	07 51 12.6	-0.2
EREA	Eretria	1.84	204	P	Pn	07 51 12.6	-0.2
KNT	Kendrikon	1.84	306	P	Pn	07 51 12.2	-0.6
KNT				S	Sn	07 51 35.9	-0.5
KNT	Kendrikon	1.84	306	P	Pn	07 51 12.2	-0.6
KNT				S	Sn	07 51 35.9	-0.5
KNT	Kendrikon	1.84	306	P	Pn	07 51 12.6	-0.2
KNT				S	Sn	07 51 34.8	-1.6
KNT	Kendrikon	1.84	306	P	Pn	07 51 12.6	-0.2
KNT				S	Sn	07 51 34.8	-1.6
KNT				AML	AML	07 51 41.4	
	comp=E,5865μm,0.5s						
KNT				AML	AML	07 51 41.9	
	comp=N,7531μm,0.5s						
KNT	Kendrikon	1.84	306	P	Pn	07 51 12.2	-0.6
KNT				S	Sn	07 51 35.9	-0.5
RKY	Sarkoy-Tekirda	1.85	71	ePN	Pn	07 51 13.3	+0.5
RKY	Sarkoy-Tekirda	1.85	71	ePn	Pn	07 51 13.4	+0.5
KRBG	Karabiga-Canak	1.87	80	ePN	Pn	07 51 13.6	+0.4
KRBG	Karabiga-Canak	1.87	80	ePn	Pn	07 51 13.6	+0.4
DKL	Dikili	1.88	123	ePN	Pn	07 51 13.4	+0.2
DKL	Dikili	1.88	123	ePn	Pn	07 51 13.4	+0.2
CHOS	Chios island	1.94	152	ePN	Pn	07 51 14.7	+0.4
CHOS	Chios island	1.94	152	P	Pn	07 51 13.3	-1.0
CHOS				S	Sn	07 51 37.6	-1.4
CHOS	Chios island	1.94	152	P	Pn	07 51 13.4	-0.9
CHOS	Chios island	1.94	152	ePn	Pn	07 51 14.7	+0.4
CHOS				S	Sn	07 51 37.6	-1.4
CHOS	Chios island	1.94	152	P	Pn	07 51 13.4	-0.9
CHOS	Chios island	1.94	152	P	Pn	07 51 13.3	-1.0
CHOS				S	Sn	07 51 37.6	-1.4
PLD	Plovdiv	2.00	356	P	Pn	07 51 14.9	-0.1
PLD				Pg	Pg	07 51 18.8	-0.3
DIM	Dimitrovgrad	2.00	14	P	Pn	07 51 14.2	-0.8
KNL	Bal¯–kesir	2.03	85	iP	Pn	07 51 16.4	+1.0
LKR	Lokris	2.06	226	P	Pn	07 51 14.9	-0.9
LKR				S	Sn	07 51 41.6	-0.2
LKR	Lokris	2.06	226	P	Pn	07 51 15.2	-0.6
LKR				S	Sn	07 51 41.6	-0.2
LKR	Lokris	2.06	226	P	Pn	07 51 15.2	-0.6
LKR	Lokris	2.06	226	P	Pn	07 51 14.9	-0.9
LKR				S	Sn	07 51 41.6	-0.2
GRG	Griva	2.07	295	P	Pn	07 51 15.2	-0.8
GRG				S	Sn	07 51 42.4	+0.3
GRG	Griva	2.07	295	P	Pn	07 51 15.2	-0.8
GRG				S	Sn	07 51 42.4	+0.3
GRG	Griva	2.07	295	P	Pn	07 51 15.5	-0.5
GRG				S	Sn	07 51 42.4	+0.3
GRG	Griva	2.07	295	P	Pn	07 51 15.5	-0.5
GRG	Griva	2.07	295	P	Pn	07 51 15.2	-0.8
GRG				S	Sn	07 51 42.4	+0.3
KARY	Karystos	2.10	190	P	Pn	07 51 15.3	-1.1
KARY	Karystos	2.10	190	P	Pn	07 51 15.3	-1.1
MRMT	Marmara Adasi	2.13	76	ePN	Pn	07 51 17.2	+0.4
MRMT	Marmara Adasi	2.13	76	ePn	Pn	07 51 17.3	+0.4
VAY	Valandovo	2.13	305	P	Pn	07 51 16.3	-0.5
VAY				S	Sn	07 51 44.1	+0.5
VAY	Valandovo	2.13	305	iPn	Pn	07 51 16.7	-0.1
VAY				eSn	Sg	07 51 49.5	+0.2
VAY	Valandovo	2.13	305	P	Pn	07 51 16.3	-0.5
VAY				S	Sn	07 51 44.1	+0.5
VAY	Valandovo	2.13	305	P	Pn	07 51 16.3	-0.5
VAY	Valandovo	2.13	305	iPn	Pn	07 51 16.7	-0.1
VAY				S	Sn	07 51 44.1	+0.5
VAY	Valandovo	2.13	305	P	Pn	07 51 16.3	-0.5
VAY				S	Sn	07 51 44.1	+0.5
BALY	Balya	2.14	99	iP	Pn	07 51 16.6	-0.3
BALY	Balya	2.14	99	P	Pn	07 51 16.6	-0.3
PTL	Penteli	2.20	201	P	Pn	07 51 16.6	-1.2
PTL				S	Sn	07 51 44.3	-1.1
PTL	Penteli	2.20	201	P	Pn	07 51 16.6	-1.2
PTL				S	Sn	07 51 44.3	-1.1
PTL	Penteli	2.20	201	P	Pn	07 51 16.6	-1.2
PTL				S	Sn	07 51 44.3	-1.1
TKR	Tekirdag	2.21	66	ePN	Pn	07 51 18.8	+1.0
TKR	Tekirdag	2.21	66	ePn	Pn	07 51 18.8	+1.0
KKB	Krupnik	2.22	323	P	Pn	07 51 17.5	-0.6
EDRB	Edirne	2.24	38	ePN	Pn	07 51 19.2	+1.0
EDRB	Edirne	2.24	38	P	Pn	07 51 16.4	-1.8
EDRB				S	Sn	07 51 46.4	+0.3
EDRB	Edirne	2.24	38	P	Pn	07 51 16.4	-1.8
EDRB	Edirne	2.24	38	ePn	Pn	07 51 19.3	+1.0
EDRB				S	Sn	07 51 46.4	+0.3
EDRB	Edirne	2.24	38	P	Pn	07 51 16.4	-1.8
EDRB				S	Sn	07 51 46.4	+0.3
AGG	Agios Georgios	2.25	242	P	Pn	07 51 17.6	-0.9
AGG	Agios Georgios	2.25	242	eP	Pn	07 51 17.9	-0.6
AGG	Agios Georgios	2.25	242	P	Pn	07 51 17.6	-0.9
AGG	Agios Georgios	2.25	242	ePn	Pn	07 51 17.9	-0.6
AGG	Agios Georgios	2.25	242	P	Pn	07 51 17.6	-0.9
AGG	Agios Georgios	2.25	242	ePn	Pn	07 51 17.9	-0.6
VIL2	Platees	2.27	214	P	Pn	07 51 18.0	-0.7
THL	Klokotos Trika	2.27	257	P	Pn	07 51 18.1	-0.6
THL	Klokotos Trika	2.27	257	P	Pn	07 51 18.1	-0.6
VILL	Villia	2.29	213	P	Pn	07 51 17.8	-1.3
VILL	Villia	2.29	213	P	Pn	07 51 18.0	-1.1
EDC	Edincik	2.29	83	ePN	Pn	07 51 19.8	+0.8
EDC	Edincik	2.29	83	ePn	Pn	07 51 19.8	+0.8
ATHU	Athens Univers	2.30	202	P	Pn	07 51 17.7	-1.5
ATHU				S	Sn	07 51 48.2	+0.4
ATHU	Athens Univers	2.30	202	P	Pn	07 51 17.7	-1.5
ATHU				S	Sn	07 51 48.2	+0.4
ATHU	Athens Univers	2.30	202	P	Pn	07 51 17.7	-1.5
ATHU				S	Sn	07 51 48.2	+0.4
ATH	Athens Observa	2.32	203	P	Pn	07 51 18.4	-0.9
ATH				S	Sn	07 51 46.9	-1.2
ATH	Athens Observa	2.32	203	P	Pn	07 51 18.4	-0.9
ATH				S	Sn	07 51 46.9	-1.2
ATH	Athens Observa	2.32	203	P	Pn	07 51 18.8	-0.5
ATH				S	Sn	07 51 46.9	-1.2
ATH	Athens Observa	2.32	203	P	Pn	07 51 18.4	-0.9
ATH				S	Sn	07 51 46.9	-1.2
BALB	Balikesir	2.35	101	ePN	Pn	07 51 20.5	+0.7
BALB	Balikesir	2.35	101	ePn	Pn	07 51 20.5	+0.7
KZN	Kozani	2.39	276	P	Pn	07 51 20.3	-0.1
KZN				S	Sn	07 51 49.0	-1.1
KZN	Kozani	2.39	276	P	Pn	07 51 20.3	-0.1
KZN				S	Sn	07 51 49.0	-1.1
KZN	Kozani	2.39	276	P	Pn	07 51 20.4	0.0
KZN				S	Sn	07 51 49.0	-1.1
KZN	Kozani	2.39	276	P	Pn	07 51 20.3	-0.1
KZN				S	Sn	07 51 49.0	-1.1
CRLT	Corlu	2.40	64	ePN	Pn	07 51 21.2	+0.7
CRLT	Corlu	2.40	64	ePn	Pn	07 51 21.2	+0.7
BLCB	Balcova	2.40	135	ePN	Pn	07 51 20.6	+0.1
BLCB	Balcova	2.40	135	ePn	Pn	07 51 20.6	+0.1
VLY	Voula,Athens	2.41	201	P	Pn	07 51 19.5	-1.0
VLY	Voula,Athens	2.41	201	P	Pn	07 51 19.6	-1.0
VLY	Voula,Athens	2.41	201	P	Pn	07 51 19.6	-1.0
VLY	Voula,Athens	2.41	201	P	Pn	07 51 19.5	-1.0
DSF	Desfina	2.49	228	P	Pn	07 51 20.7	-1.1
DSF				S	Sn	07 51 51.8	-0.7
DSF	Desfina	2.49	228	P	Pn	07 51 20.7	-1.1
DSF				S	Sn	07 51 51.8	-0.7
DSF	Desfina	2.49	228	P	Pn	07 51 20.7	-1.1
DSF				S	Sn	07 51 51.8	-0.7
PGB	Panagyurishte	2.50	348	P	Pn	07 51 21.2	-0.7
PGB				Pg	Pb	07 51 26.7	+0.7
PHSR	Pinarhisar	2.52	52	ePN	Pn	07 51 23.1	+1.0
PHSR	Pinarhisar	2.52	52	ePn	Pn	07 51 23.1	+1.0
IZM	Izmir	2.52	132	ePN	Pn	07 51 22.3	+0.2
IZM	Izmir	2.52	132	ePn	Pn	07 51 22.3	+0.2
LTK	Loutraki	2.56	216	P	Pn	07 51 21.8	-0.9
LTK	Loutraki	2.56	216	P	Pn	07 51 22.0	-0.7
LTK	Loutraki	2.56	216	P	Pn	07 51 22.0	-0.7
LTK	Loutraki	2.56	216	P	Pn	07 51 21.8	-0.9
AKHS	Akhisar	2.58	117	iP	Pn	07 51 22.9	-0.1
AKHS	Akhisar	2.58	117	P	Pn	07 51 22.9	-0.1
AKS	Akhisar	2.58	117	ePN	Pn	07 51 23.6	+0.6
AKS	Akhisar	2.58	117	ePn	Pn	07 51 23.6	+0.6

EVR	Evrytania	2.66	244	P	Pn	07 51 23.8	-0.3
EVR	Evrytania	2.66	244	P	Pn	07 51 24.3	+0.1
EVR	Evrytania	2.66	244	P	Pn	07 51 24.3	+0.1
EVR	Evrytania	2.66	244	P	Pn	07 51 23.8	-0.3
KCTX	Karacabey (Bur	2.67	86	ePN	Pn	07 51 24.8	+0.6
KCTX	Karacabey (Bur	2.67	86	ePn	Pn	07 51 24.8	+0.6
JMB	Yambol	2.68	28	P	Pb	07 51 30.3	+1.2
KPRO	Kipourio	2.71	268	P	Pn	07 51 24.4	-0.4
KPRO	Kipourio	2.71	268	P	Pn	07 51 25.0	+0.2
KPRO	Kipourio	2.71	268	P	Pn	07 51 25.0	+0.2
KALE	Kalithea	2.73	232	P	Pn	07 51 23.0	-2.1
KALE	Kalithea	2.73	232	P	Pn	07 51 23.0	-2.1
KALE	Kalithea	2.73	232	P	Pn	07 51 23.0	-2.1
ANX	Ano Chora	2.75	238	P	Pn	07 51 24.4	-1.0
ANX	Ano Chora	2.75	238	P	Pn	07 51 24.4	-1.0
FNA	Florina	2.76	285	P	Pn	07 51 25.4	-0.1
FNA	Florina	2.76	285	P	Pn	07 51 25.4	-0.1
FNA	Florina	2.76	285	P	Pn	07 51 26.1	+0.6
FNA	Florina	2.76	285	P	Pn	07 51 26.1	+0.6
FNA	Florina	2.76	285	P	Pn	07 51 25.4	-0.1
SERG	Sergoula	2.77	233	P	Pn	07 51 25.1	-0.5
SERG				S	Sn	07 51 58.5	-0.8
SERG	Sergoula	2.77	233	P	Pn	07 51 25.1	-0.5
SERG				S	Sn	07 51 58.5	-0.8
SMG	Samos	2.84	147	P	Pn	07 51 26.3	-0.3
SMG				S	Sn	07 52 01.1	+0.1
SMG	Samos	2.84	147	P	Pn	07 51 26.8	+0.3
SMG				S	Sn	07 52 01.1	+0.1
SMG	Samos	2.84	147	P	Pn	07 51 26.8	+0.3
SMG	Samos	2.84	147	P	Pn	07 51 26.3	-0.3
BIA	Bitola	2.86	290	iPn	Pn	07 51 27.1	+0.2
BIA	Bitola	2.86	290	iPn	Pn	07 51 27.1	+0.2
DID	Didima	2.90	207	P	Pn	07 51 26.3	-1.1
DID	Didima	2.90	207	P	Pn	07 51 26.5	-0.9
DID	Didima	2.90	207	P	Pn	07 51 26.5	-0.9
DID	Didima	2.90	207	P	Pn	07 51 26.3	-1.1
CTYL	Yalikoy Yolu	2.92	61	ePN	Pn	07 51 29.0	+1.3
CTYL	Yalikoy Yolu	2.92	61	ePn	Pn	07 51 29.0	+1.3
NEST	Nestorio	2.95	277	P	Pn	07 51 28.4	+0.3
NEST	Nestorio	2.95	277	P	Pn	07 51 28.7	+0.5
NEST	Nestorio	2.95	277	P	Pn	07 51 28.7	+0.5
NEST	Nestorio	2.95	277	P	Pn	07 51 28.4	+0.3
KLV	Kalavryta, Ach	2.96	227	P	Pn	07 51 27.7	-0.6
KLV	Kalavryta, Ach	2.96	227	P	Pn	07 51 27.5	-0.8
KLV	Kalavryta, Ach	2.96	227	P	Pn	07 51 27.5	-0.8
KLV	Kalavryta, Ach	2.96	227	P	Pn	07 51 27.7	-0.6
CTKS	Kestanelik-??a	2.98	67	ePN	Pn	07 51 29.8	+1.4
CTKS	Kestanelik-??a	2.98	67	ePn	Pn	07 51 29.8	+1.4
KRND	KRANIDI	3.04	207	P	Pn	07 51 27.9	-1.4
KRND	KRANIDI	3.04	207	P	Pn	07 51 28.2	-1.1
KRND	KRANIDI	3.04	207	P	Pn	07 51 28.2	-1.1
MDNY	Mudanya-Bursa	3.07	84	ePN	Pn	07 51 30.6	+0.8
MDNY	Mudanya-Bursa	3.07	84	ePn	Pn	07 51 30.6	+0.8
ARMT	Armutlu	3.08	80	ePN	Pn	07 51 30.8	+1.0
ARMT	Armutlu	3.08	80	ePn	Pn	07 51 30.8	+1.0
APE	Apeiranthos	3.08	170⇑	iP	Pn	07 51 29.1	-0.7
APE	Apeiranthos	3.08	170⇓	eP	Pn	07 51 28.7	-1.1
APE	Apeiranthos	3.08	170	P	Pn	07 51 28.7	-1.1
APE	Apeiranthos	3.08	170	P	Pn	07 51 28.7	-1.1
ORLT	Orhaneli	3.08	90	ePN	Pn	07 51 30.6	+0.7
ORLT	Orhaneli	3.08	90	ePn	Pn	07 51 30.6	+0.7
DSL	Palaion Diasel	3.08	253	P	Pn	07 51 30.2	+0.3
DSL	Palaion Diasel	3.08	253	P	Pn	07 51 30.2	+0.3
DSL	Palaion Diasel	3.08	253	P	Pn	07 51 30.2	+0.3
PVL	Pavlikeni	3.12	6	P	Pn	07 51 28.9	-1.5
BGKT	Bogazkoy	3.15	69	ePN	Pn	07 51 31.8	+1.1
BGKT	Bogazkoy	3.15	69	ePn	Pn	07 51 31.8	+1.1
AYDB	Zeytinkoy-Aydi	3.19	132	ePN	Pn	07 51 32.1	+0.7
AYDB	Zeytinkoy-Aydi	3.19	132	ePn	Pn	07 51 32.1	+0.7
SKO	Skopje	3.20	307	iPn	Pn	07 51 31.7	+0.2
SKO	Skopje	3.20	307	iPn	Pn	07 51 31.7	+0.2
PDO	Prodromos	3.24	243	P	Pn	07 51 32.9	+0.9
PDO	Prodromos	3.24	243	P	Pn	07 51 32.9	+0.9
SZH	Strazhica	3.25	14	P	Pn	07 51 31.9	-0.3
OHR	Ohrid	3.27	289	iPn	Pn	07 51 32.8	+0.4
OHR	Ohrid	3.27	289	iPn	Pn	07 51 32.8	+0.4
GEMT	Gemlik	3.31	83	ePN	Pn	07 51 34.0	+1.1
GEMT	Gemlik	3.31	83	ePn	Pn	07 51 34.1	+1.1
ISK	Istanbul-Kandi	3.32	72	ePN	Pn	07 51 34.4	+1.2
ISK	Istanbul-Kandi	3.32	72	ePn	Pn	07 51 34.4	+1.2
KULA	Kula-Manisa	3.33	117	ePN	Pn	07 51 34.1	+0.7
KULA	Kula-Manisa	3.33	117	P	Pn	07 51 33.4	0.0
KULA				S	Sn	07 52 13.2	-0.2
KULA	Kula-Manisa	3.33	117	P	Pn	07 51 33.4	0.0
KULA	Kula-Manisa	3.33	117	ePn	Pn	07 51 34.1	+0.7
KULA				S	Sn	07 52 13.2	-0.2
KULA	Kula-Manisa	3.33	117	P	Pn	07 51 33.4	0.0
KULA				S	Sn	07 52 13.2	-0.2
MPEP	Malo Peshtene	3.36	346	P	Pn	07 51 33.7	+0.1
MPEP				Pg	Pg	07 51 45.1	+0.1
VLX	Vlachokerasia	3.36	216	P	Pn	07 51 33.7	-0.1
VLX	Vlachokerasia	3.36	216	P	Pn	07 51 33.7	-0.1
VLX	Vlachokerasia	3.36	216	P	Pn	07 51 33.7	-0.1
IZI	Iznik	3.52	85	ePN	Pn	07 51 37.2	+1.2
IZI	Iznik	3.52	85	ePn	Pn	07 51 37.2	+1.2
LKD2	Lefkada island	3.53	249	P	Pn	07 51 36.5	+0.5
LKD2				S	Sn	07 52 18.9	+0.9
LKD2	Lefkada island	3.53	249	P	Pn	07 51 35.9	-0.1
LKD2				S	Sn	07 52 18.9	+0.9
LKD2	Lefkada island	3.53	249	P	Pn	07 51 35.9	-0.1
LKD2	Lefkada island	3.53	249	P	Pn	07 51 36.5	+0.5
LKD2				S	Sn	07 52 18.9	+0.9
IGT	Igoumenitsa	3.55	262	P	Pn	07 51 38.2	+1.9
IGT	Igoumenitsa	3.55	262	P	Pn	07 51 38.2	+1.9
IGT	Igoumenitsa	3.55	262	P	Pn	07 51 34.6	-1.7
IGT	Igoumenitsa	3.55	262	P	Pn	07 51 34.6	-1.7
IGT	Igoumenitsa	3.55	262	P	Pn	07 51 38.2	+1.9
BARS	Barje	3.55	321	ePn	Pn	07 51 36.2	-0.2
BODT	Bodrum	3.59	147	ePN	Pn	07 51 37.6	+0.8
BODT	Bodrum	3.59	147	P	Pn	07 51 36.5	-0.3
BODT	Bodrum	3.59	147	P	Pn	07 51 36.5	-0.3
BODT	Bodrum	3.59	147	ePn	Pn	07 51 37.6	+0.8
BODT	Bodrum	3.59	147	P	Pn	07 51 36.5	-0.3
TVSB	Tavsanli	3.59	99	ePN	Pn	07 51 37.9	+0.9
TVSB	Tavsanli	3.59	99	ePn	Pn	07 51 37.9	+0.9
SGD	Sagiada	3.61	264	P	Pn	07 51 39.1	+2.0
SGD	Sagiada	3.61	264	P	Pn	07 51 39.1	+2.0
PRD	Provadia	3.62	31	P	Pn	07 51 36.1	-1.1
VLI	Veliai	3.71	205	P	Pn	07 51 37.4	-1.1
VLI	Veliai	3.71	205	P	Pn	07 51 37.3	-1.3
VLI	Veliai	3.71	205	P	Pn	07 51 37.3	-1.3
VLI	Veliai	3.71	205	P	Pn	07 51 37.4	-1.1
HRT	Hereke	3.72	77	ePN	Pn	07 51 40.0	+1.3
HRT	Hereke	3.72	77	ePn	Pn	07 51 40.0	+1.3
ADVT	Abdulvahap	3.73	83	ePN	Pn	07 51 40.2	+1.5
ADVT	Abdulvahap	3.73	83	ePn	Pn	07 51 40.2	+1.5
SILT	Sile	3.77	72	ePN	Pn	07 51 40.7	+1.4
SILT	Sile	3.77	72	ePn	Pn	07 51 40.7	+1.4
CAVI	Cavuskoy	3.80	87	ePN	Pn	07 51 41.0	+1.2
CAVI	Cavuskoy	3.80	87	ePn	Pn	07 51 41.0	+1.2
YER	Yerkesik	3.99	137	ePN	Pn	07 51 43.2	+0.8
YER	Yerkesik	3.99	137	P	Pn	07 51 42.6	+0.2
YER	Yerkesik	3.99	137	P	Pn	07 51 42.6	+0.2
YER	Yerkesik	3.99	137	P	Pn	07 51 42.6	+0.2
YER	Yerkesik	3.99	137	ePn	Pn	07 51 43.2	+0.8
YER	Yerkesik	3.99	137	P	Pn	07 51 42.6	+0.2
DENT	Denizli	4.00	125	ePN	Pn	07 51 43.7	+1.2
DENT	Denizli	4.00	125	ePn	Pn	07 51 43.7	+1.2
TIR	Tirane	4.01	290⇑	iP	Pn	07 51 42.6	0.0
TIR	Tirane	4.01	290	eP	Pn	07 51 45.3	+2.7
TIR	Tirane	4.01	290⇑	iP	Pn	07 51 42.6	0.0
TIR	Tirane	4.01	290	ePn	Pn	07 51 45.3	+2.7
TIR	Tirane	4.01	290	ePn	Pn	07 51 45.3	+2.7
KHL	Karahalli	4.02	115	ePN	Pn	07 51 44.3	+1.5
KHL	Karahalli	4.02	115	ePn	Pn	07 51 44.3	+1.5
GPA	Golpazari	4.16	86	ePN	Pn	07 51 46.5	+1.8
GPA	Golpazari	4.16	86	ePn	Pn	07 51 46.5	+1.8
SPNC	Sapanca-Adapaz	4.18	80	ePN	Pn	07 51 46.8	+1.8
SPNC	Sapanca-Adapaz	4.18	80	ePn	Pn	07 51 46.8	+1.8
BOVS	Bovan	4.25	327	ePn	Pn	07 51 46.1	+0.2
BOLS	Boljevac	4.31	331	ePn	Pn	07 51 45.3	-1.5
GULT	Gulveren	4.32	84	ePN	Pn	07 51 48.4	+1.4
GULT	Gulveren	4.32	84	ePn	Pn	07 51 48.4	+1.4
DALY	Dalyan (Mu¯la	4.42	137	ePN	Pn	07 51 49.7	+1.5
DALY	Dalyan (Mu¯la	4.42	137	ePn	Pn	07 51 49.7	+1.5
MSAB	Monastry St. A	4.54	28⇑	iP	Pn	07 51 49.1	-0.8
MSAB	Monastry St. A	4.54	28⇑	iP	Pn	07 51 49.1	-0.8
DRME	Dracevica, Mon	4.78	298⇓	iPn	Pn	07 51 55.2	+2.0
FETY	Fethiye	4.79	135	ePN	Pn	07 51 55.0	+1.6
FETY	Fethiye	4.79	135	ePn	Pn	07 51 55.0	+1.6

IDI	Anoyia	4.81	180	Pn		Pn	07 51 52.9	-0.8	
	comp=N,2.0nm,0.3s,baz=358,slow=18,SNR=9.8								
IDI	Anoyia	4.81	180	*e*Pn		Pn	07 51 53.6	-0.1	
IDI	Anoyia	4.81	180	*e*Pn		Pn	07 51 53.6	-0.1	
PDG	Podgorica	4.83	301	⇓*i*P		Pn	07 51 53.4	-0.5	
PDG	Podgorica	4.83	301	⇓*i*P		Pn	07 51 53.4	-0.5	
PDG	Podgorica	4.83	301	*e*Pn		Pn	07 51 55.5	+1.6	
GRUS	Gruza	4.89	322	*e*Pn		Pn	07 51 54.2	-0.5	
KARP	Karpathos	4.90	158	*e*Pn		Pn	07 51 55.1	+0.3	
KARP	Karpathos	4.90	158	*e*Pn		Pn	07 51 55.1	+0.3	
KUBS	Kucevo	4.92	332	*e*Pn		Pn	07 51 54.2	-0.9	
IVAS	Ivanjica	4.95	316	*e*Pn		Pn	07 51 55.4	-0.2	
LAST	Lasithi	4.96	174	*e*Pn		Pn	07 51 58.4	+2.6	
LAST	Lasithi	4.96	174	*e*Pn		Pn	07 51 58.4	+2.6	
TIRR	Tirgusor	5.07	30	*e*P		Pn	07 51 56.8	-0.4	
TIRR				*e*			07 52 53.4		
TIRR	Tirgusor	5.07	30	*e*P		Pn	07 51 56.8	-0.4	
TIRR				*e*S		Sn	07 52 53.4	-2.7	
TIRR	Tirgusor	5.07	30	*e*Pn		Pn	07 51 56.8	-0.4	
TIRR				*e*Sn		Sn	07 52 53.4	-2.7	
MTUR	Matau	5.12	1	⇑*i*P		Pn	07 51 58.0	+0.1	
MTUR	Matau	5.12	1	⇑*i*P		Pn	07 51 58.0	+0.1	
ISR	Istrita	5.16	13	⇑*i*P		Pn	07 51 59.0	+0.6	
ISR	Istrita	5.16	13	*e*P		Pn	07 51 59.3	+0.9	
ISR	Istrita	5.16	13	⇑*i*P		Pn	07 51 59.0	+0.6	
ELL	Elmali	5.18	129	*e*PN		Pn	07 52 00.4	+1.6	
ELL	Elmali	5.18	129	*e*Pn		Pn	07 52 00.4	+1.6	
MDVR	Moldovita	5.22	334	⇑*i*P		Pn	07 51 58.6	-0.8	
MDVR	Moldovita	5.22	334	⇑*i*P		Pn	07 51 58.6	-0.8	
ARR	Arges	5.26	358	⇓*i*P		Pn	07 51 59.3	-0.5	
ARR	Arges	5.26	358	⇓*i*P		Pn	07 51 59.3	-0.5	
TRUS	Trudelj	5.29	322	*e*Pn		Pn	07 51 54.8	-5.4	
VOIR		5.33	1	⇑*i*P		Pn	07 52 00.2	-0.6	
VOIR		5.33	1	⇑*i*P		Pn	07 52 00.2	-0.6	
HCY	Herceg Novi	5.35	298	*e*Pn		Pn	07 52 02.3	+1.3	
LOT	Lotru	5.40	352	⇑*i*P		Pn	07 52 01.1	-0.7	
MLR	Muntele Rosu	5.44	8	⇑*i*P		Pn	07 52 02.8	+0.4	
MLR	Muntele Rosu	5.44	8	*e*P		Pn	07 52 02.7	+0.4	
MLR	Muntele Rosu	5.44	8	⇑*i*P		Pn	07 52 02.8	+0.4	
MLR	Muntele Rosu	5.44	8	*e*Pn		Pn	07 52 02.7	+0.3	
UPM	Unac-Piva	5.44	307	*e*Pn		Pn	07 52 03.7	+1.2	
GZR	Gura Zlata	5.50	344	⇑*i*P		Pn	07 52 02.3	-0.9	
BRY	Bratogost	5.52	302	*e*Pn		Pn	07 52 05.3	+1.8	
BBLS	Lazići	5.54	314	*e*Pn		Pn	07 52 03.3	-0.5	
TREB	Trebinje	5.56	300	*e*Pn		Pn	07 52 05.6	+1.7	
VRI	Vrincioaia	5.91	13	⇓*i*P		Pn	07 52 09.6	+0.8	
HAPS	Han Pijesak,BI	5.94	314	*e*Pn		Pn	07 52 09.2	0.0	
TEKS	Tekeris	5.95	320	*e*Pn		Pn	07 52 08.1	-1.2	
BZS	Buzias	6.00	338	⇑*i*P		Pn	07 52 09.3	-0.7	
MDB	Medias	6.04	357	⇑*i*P		Pn	07 52 11.4	+0.9	
STON	Ston	6.06	299	*e*Pn		Pn	07 52 10.6	-0.1	
ANTO	Ankara	6.08	90	*e*P		Pn	07 52 14.6	+3.5	
ANTO	Ankara	6.08	90	*e*Pn		Pn	07 52 14.6	+3.4	
MATE	Matera	6.27	278	⇑*i*P		Pn	07 52 13.3	-0.3	
TIP	Timpagrande	6.34	264	⇑*i*P		Pn	07 52 14.7	0.0	
TIP	Timpagrande	6.34	264	S		Sn	07 53 24.9	-2.5	
TIP	Timpagrande	6.34	264	*e*Pn		Pn	07 52 15.3	+0.6	
TESR	Tescani	6.53	11	⇓*i*P		Pn	07 52 17.7	+0.5	
SIRR	Siria	6.59	340	⇑*i*P		Pn	07 52 17.7	-0.4	
BR131	Keskin Array S	6.74	90	*e*Pn		Pn	07 52 20.4	+0.1	
BRTR	Keskin Array B	6.74	90	Pn		Pn	07 52 20.1	-0.2	
	comp=N,2.3nm,0.3s,baz=264,slow=12,SNR=42								
BRTR				Sn		Sn	07 53 33.8	-3.6	
	baz=265,slow=13,SNR=2.4								
BRTR				Lg		Lg	07 54 18.4		
	comp=N,0.3nm,0.3s,baz=270,slow=22,SNR=4.4								
BRTR				LR		LR	07 55 00.2		
	comp=N,130nm,21.4s,baz=264,slow=38								
DRGR		6.86	347	⇑*i*P		Pn	07 52 21.5	-0.4	
CUC	Castrocucco	6.96	272	*e*Pn		Pn	07 52 24.4	+1.3	
CEL	Celeste	7.22	258	*e*Pn		Pn	07 52 27.0	+0.2	
BLY	Banja Luka	7.34	312	⇑*i*P		Pn	07 52 29.5	+1.1	
BLY	Banja Luka	7.34	312	*e*Pn		Pn	07 52 26.3	-2.1	
KIS	Kishinev	7.46	21	*e*P		Pn	07 52 30.0	+0.1	
KIS	Kishinev	7.46	21	*e*P		Pn	07 52 30.0	+0.1	
KIS	Kishinev	7.46	21	*e*P		Pn	07 52 30.0	+0.1	
BURAR	Bucovina Array	7.51	2	⇑*i*P		Pn	07 52 31.1	+0.4	
BUR08	Bucovina Ar. S	7.54	2	*e*Pn		Pn	07 52 31.5	+0.3	
PKSM	Moragy	7.62	325	⇑*i*P		Pn	07 52 32.9	+0.8	
PKSM	Moragy	7.62	325	*e*Pn		Pn	07 52 33.0	+0.8	
SEV	Sevastopol'	7.87	53	*e*P		Pn	07 52 35.3	-0.3	
SEV				*e*S		Sn	07 53 55.7	-9.3	
SEV				pmax		pmax			
	comp=Z,3.0nm,0.4s								
SEV				smax		smax			
	comp=N,23nm,0.5s								
SEV				smax		smax			
	comp=E,10.0nm,0.5s								
SIM	Simferopol'	8.36	52	*e*P		Pn	07 52 50.2	+7.9	
SIM				pmax		pmax			
	comp=Z,19nm,0.7s								
SIM				MLR		MLR			
	comp=Z,220nm,18.0s								
SORM	Soroca	8.40	16	⇑*i*P		Pn	07 52 41.5	-1.4	
VAE	Valguarnera	8.59	256	Pn		Pn	07 52 48.0	+2.5	
	comp=Z,1.2nm,0.3s,baz=114,slow=20,SNR=2.0								
PSZ	Piszkesteto	8.59	337	*e*P		Pn	07 52 47.3	+1.7	
PSZ				pmax		pmax			
	comp=Z,6.0nm,0.8s								
PSZ	Piszkesteto	8.59	337	*e*Pn		Pn	07 52 47.3	+1.7	
	comp=Z,5.7nm,0.8s								
SUDU	Sudak	8.87	54	*e*P		Pn	07 52 51.0	+1.7	
SUDU				*e*S		Sn	07 54 22.2	-7.2	
SUDU				pmax		pmax			
	comp=Z,9.0nm,0.4s								
SUDU				smax		smax			
	comp=N,38nm,0.9s								
SUDU				smax		smax			
	comp=E,10.0nm,0.8s								
KECS	Kecovo	8.95	341	*e*PN		Pn	07 52 53.1	+2.8	
KECS				*e*LG		Lg	07 55 43.3		
CRES	Cresnjev	8.96	313	*e*Pn		Pn	07 52 51.6	+1.0	
KOLS	Kolonicke sedl	9.02	349	*e*PN		Pn	07 52 52.9	+1.6	
KOLS	Kolonicke sedl	9.02	349	*e*SG		Sn	07 55 30.3	+57	
CRVS	Cervenica-Dubn	9.12	346	*e*PN		Pn	07 52 58.3	+5.5	
CRVS	Cervenica-Dubn	9.12	346	*e*SG		Sn	07 55 34.2	+58	
VYHS	Vyhne	9.43	335	*e*PN		Pn	07 52 58.2	+1.1	
CLTB	Caltabellotta	9.45	258	*e*Pn		Pn	07 52 58.4	+1.1	
CEY	Cerknica	9.51	310	*e*Pn		Pn	07 52 56.8	-1.3	
STHS	Stebnicka Huta	9.66	346	*e*PN		Pn	07 53 05.2	+5.1	
STHS	Stebnicka Huta	9.66	346	*e*SG		Sn	07 55 47.8	+59	
SOKA	Soboth	9.72	316	*i* Pn		Pn	07 53 01.5	+0.5	
	comp=E,2.0nm,0.7s								
SOKA	Soboth	9.72	316	P		Pn	07 53 01.5	+0.5	
	comp=E,2.0nm,0.7s								
OBKA	Obir	9.88	314	*i* P		Pn	07 53 11.9	+8.7	
	comp=E,2.4nm,0.5s								
ANN	Anapa	10.39	59	*e*P		Pn	07 53 06.1	-4.0	
ANN				*e*S		Sn	07 55 04.4	-2.4	
ANN				pmax		pmax			
	comp=Z,51nm,1.1s								
ESPY	Espiye-Giresun	10.57	81	*e*PG			08 06 57.0		
MOA	Molln	10.87	319	*i* Pn		Pn	07 53 15.7	-1.1	
MOA	Molln	10.87	319	P		Pn	07 53 15.7	-1.1	
KBA	Koelnbreinsper	10.88	314	*i* P		Pn	07 53 20.4	+3.4	
	comp=Z,2.0nm,0.6s								
VRAC	Vranov	10.92	330	LR		LR	07 57 39.4		
	comp=Z,151nm,20.1s,baz=143,slow=39								
AK11	Malin Array Si	10.99	14	*e*Pn		Pn	07 53 16.1	-2.2	
KIEV	Kiev	11.01	15	⇑*i*P		Pn	07 53 17.1	-1.5	
KIEV	Kiev	11.01	15	*e*Pn		Pn	07 53 16.9	-1.8	
AKASG	Malin Array Be	11.02	15	Pn		Pn	07 53 16.8	-2.0	
	comp=Z,3.5nm,0.3s,baz=204,slow=12,SNR=16								
AKBB	Malin Array Si	11.02	15	*e*P		Pn	07 53 17.3	-1.5	
AKBB	Malin Array Si	11.02	15	*e*Pn		Pn	07 53 17.3	-1.5	
MMAI	Mount Meron Ar	11.03	127	Pn		Pn	07 53 18.0	-1.0	
	comp=Z,2.1nm,0.3s,baz=303,slow=14,SNR=4.5								
MMAI				LR		LR	07 58 26.4		
	comp=Z,125nm,18.2s,baz=305,slow=42								
GUMT	Gumushane	11.16	83	*e*PG			08 06 49.2		
ABTA	Abfaltersbach	11.17	310	*i* Pn		Pn	07 53 21.9	+1.0	
	comp=Z,4.3nm,0.9s								
ABTA	Abfaltersbach	11.17	310	P		Pn	07 53 21.9	+1.0	
	comp=Z,4.3nm,0.9s								
BAYT	Ayd¨–ntepe-Bay	11.67	84	PG			08 06 45.4		
BAYT				SG			08 06 52.7		
WTTA	Wattenberg	11.95	311	*e*P		Pn	07 53 35.8	+4.1	
	comp=Z,2.3nm,0.4s								
WATA	Walderalm	12.03	311	*i* P		Pn	07 53 35.8	+3.1	
	comp=Z,2.4nm,0.5s								
FETA	Feichten	12.36	309	*i* P		Pn	07 53 38.6	+1.3	
	comp=Z,1.8nm,0.8s								
FETA	Feichten	12.36	309	P		Pn	07 53 38.6	+1.3	
	comp=Z,1.8nm,0.8s								
FUORN	Ofenpass-Fuorn	12.46	306	*e*Pn		Pn	07 53 39.0	+0.2	
ASF	Jabal al Asfar	12.52	125	Pn		Pn	07 53 44.7	+5.2	
	comp=Z,0.1nm,0.3s,baz=152,slow=15,SNR=2.7								
DAVOX	Davos/Dischmat	12.77	306	Pn		Pn	07 53 42.3	-0.6	
	comp=Z,0.3nm,0.3s,baz=158,slow=17,SNR=3.0								
DAVOX				LR		LR	07 59 26.9		
	comp=Z,150nm,18.4s,baz=111,slow=42								
KEST	Kesra	13.02	255	Pn		Pn	07 53 41.7	-4.5	
	comp=Z,0.1nm,0.3s,baz=150,slow=20,SNR=2.5								
KEST	Kesra	13.02	255	*e*Pn		Pn	07 53 47.0	+0.8	
NEY	Neytrino	13.70	71	⇓*e*P		Pn	07 53 54.7	-0.8	
KIV	Kislovodsk	13.78	68	P		Pn	07 53 58.0	+1.4	
KIV				pmax		pmax			
	comp=Z,4.0nm,0.6s								
KIV				MLR		MLR			
	comp=Z,63nm,17.0s								
KBZ	Khabaz	13.89	69	Pn		P	07 54 08.8	+2.5	
	comp=Z,0.1nm,0.3s,baz=325,slow=12,SNR=3.5								
CLL	Collm	13.92	328	*e*P		Pn	07 53 48.0	-10	
CLL				*e*			07 54 08.0		
CLL	Collm	13.92	328	*e*P		Pn	07 53 48.0	-10	
KLNR	Kaliningrad	14.84	349	*e*P		Pn	07 54 07.9	-2.9	
KLNR				pmax		pmax			
	comp=Z,15nm,0.3s								
VSR	Storozhevoye	14.91	37	*e*P		Pn	07 54 09.4	-2.4	
VSR				pmax		pmax			
	comp=Z,4.0nm,0.5s								
LPSR	Galich'ya Gora	15.78	33	*e*P		Pn	07 54 21.3	-2.0	
LPSR				pmax		pmax			
	comp=Z,3.0nm,0.6s								
VRH	Novokhopyorsk	16.13	41	*e*P		Pn	07 54 24.9	-3.0	
VRH				pmax		pmax			
	comp=Z,20nm,1.2s								
OBN	Obninsk	16.92	24	⇑*e*P		Pn	07 54 36.3	-1.5	
OBN				pmax		pmax			
	comp=Z,6.0nm,0.4s								
OBN				MLR		MLR			
	comp=Z,109nm,17.0s								
MOS	Moscow	17.77	24	*e*P		Pn	07 54 47.6	-0.8	
MOS				pmax		pmax			
	comp=Z,35nm,1.0s								
MOS	Moscow	17.77	24	*e*P		Pn	07 54 47.6	-0.8	
	comp=Z,35nm,1.0s								
VSU	Vasula	18.41	3	⇓*e*P		Pn	07 54 52.5	-3.8	
VSU				pmax		pmax			
	comp=Z,24nm,0.8s								
HFS	Hagfors	21.23	344	P		P	07 55 25.0	-2.1	
	comp=Z,0.9nm,0.7s,baz=182,slow=8.9,SNR=6.3								
HFS				LR		LR	08 03 39.2		
	comp=Z,69nm,20.2s,baz=158,slow=37								
HFS	Hagfors	21.23	344	P		P	07 55 25.0	-2.1	
HFS	Hagfors	21.23	344	P		P	07 55 25.0	-2.1	
FINES	FINESS Array B	21.38	2	P		P	07 55 27.8	-0.7	
	comp=Z,1.3nm,0.8s,baz=150,slow=13,SNR=6.0								
FINES				LR		LR	08 04 35.0		
	comp=Z,305nm,18.2s,baz=184,slow=39								
FIA1	FINESS Array S	21.38	2	*e*P		P	07 55 28.4	-0.2	
FIA1	FINESS Array S	21.38	2	*e*P		P	07 55 28.4	-0.2	
KONO	Kongsberg	21.80	339	*e*P		P	07 55 33.4	+0.3	
KONO				pmax		pmax			
	comp=Z,41nm,1.9s								
KONO	Kongsberg	21.80	339	*e*P		P	07 55 33.4	+0.3	
	comp=Z,41nm,1.9s								
KONO	Kongsberg	21.80	339	*e*P		P	07 55 33.4	+0.3	
	comp=Z,41nm,1.9s								
ESDC	Sonseca Array	22.10	278	P		P	07 55 34.1	-2.5	
	comp=Z,0.4nm,0.5s,baz=74,slow=10,SNR=5.9								
ESLA	Sonseca Array	22.10	278	*e*P		P	07 55 36.4	-0.2	
	comp=Z,13nm,1.3s								
ESLA	Sonseca Array	22.10	278	*e*P		P	07 55 36.4	-0.2	
	comp=Z,13nm,1.3s								
NC602	NORSAR Array S	22.25	343	*e*P		P	07 55 36.1	-1.8	
NC602	NORSAR Array S	22.25	343	*e*P		P	07 55 36.1	-1.8	
NAO01	NORSAR Array S	22.50	342	*e*P		P	07 55 39.2	-1.4	
NAO01	NORSAR Array S	22.50	342	*e*P		P	07 55 39.2	-1.4	
NC405	NORSAR Array S	22.54	343	*e*P		P	07 55 39.9	-1.2	
NC405	NORSAR Array S	22.54	343	*e*P		P	07 55 39.9	-1.2	
NB201	NORSAR Array S	22.58	343	*e*P		P	07 55 40.3	-1.2	
NB201	NORSAR Array S	22.58	343	*e*P		P	07 55 40.3	-1.2	
NB2	NORSAR Subarra	22.59	343	P		P	07 55 40.1	-1.6	
	comp=Z,4.7nm,0.7s,baz=158,slow=11								
NB2	NORSAR Subarra	22.59	343	P		P	07 55 40.1	-1.6	
	comp=Z,4.7nm,0.7s,SNR=3.2								
NOA	NORSAR Array B	22.59	343	P		P	07 55 40.3	-1.3	
	comp=Z,2.7nm,0.7s,baz=156,slow=10,SNR=10								
NOA				LR		LR	08 06 08.3		
	comp=Z,49nm,21.7s,baz=150,slow=41								
DYA	Yadsworthy	22.62	307	*e*P		P	07 55 40.2	-1.8	
	comp=Z,56nm,1.5s								
DYA	Yadsworthy	22.62	307	*e*P		P	07 55 40.2	-1.8	
	comp=Z,56nm,1.5s								
NBO02	NORSAR Array S	22.68	342	*e*P		P	07 55 41.8	-0.8	
NBO02	NORSAR Array S	22.68	342	*e*P		P	07 55 41.8	-0.8	
NBO00	NORSAR Array S	22.68	342	*e*P		P	07 55 41.1	-1.1	
NBO00	NORSAR Array S	22.68	342	*e*P		P	07 55 41.5	-1.1	
NC204	NORSAR Array S	22.90	342	*e*P		P	07 55 44.6	-0.4	
NC204	NORSAR Array S	22.90	342	*e*P		P	07 55 44.6	-0.4	
EKA	Eskdalemuir Ar	24.02	319	P		P	07 55 54.9	-1.1	
	comp=Z,3.1nm,1.0s,baz=112,slow=11,SNR=3.7								
AKTK	Aktyubinsk	25.30	55	P		P	07 56 09.5	+1.7	
AKTO	Aktyubinsk	25.30	55	P		P	07 56 09.5	+1.7	
	comp=Z,2.7nm,1.1s,baz=260,slow=10,SNR=4.8								
AKTO				LR		LR	08 09 32.6		
	comp=Z,58nm,18.2s,baz=254,slow=45								
GEYT	Alibeck	25.83	84	P		P	07 56 14.2	+1.4	
	comp=Z,1.3nm,0.6s,baz=287,slow=19,SNR=2.5								
ABKAR	Akbulak array	26.35	58	*e*P		P	07 56 18.2	+0.9	
	comp=Z,3.0nm,1.0s								
ABKAR	Akbulak array	26.35	58	*e*P		P	07 56 18.2	+0.9	
	comp=Z,3.0nm,1.0s								
ARU	Arti	27.36	42	LR		LR	08 07 30.9		
	comp=Z,31nm,20.2s,baz=231,slow=37								
ARU	Arti	27.36	42	*d i* P		P	07 56 26.2	-0.1	
ARU							07 57 05.7		
ARU				S		S	08 01 07.4	+1.1	
ARU				SS		SnSn	08 02 16.9	+2.2	
ARU				pmax		pmax			
	comp=Z,7.0nm,2.5s								
ARU	Arti	27.36	42	*i* P		P	07 56 26.2	-0.1	
	comp=Z,7.0nm,2.5s								
ARCES	ARCESS Array B	29.49	0	LR		LR	08 09 26.7		
	comp=Z,135nm,18.4s,baz=214,slow=38								
ZRNK	Zerenda	32.43	52	*e*P		P	07 57 12.4	+1.1	
ZRNK				pmax		pmax			
	comp=Z,4.0nm,1.1s								
ZRNK	Zerenda	32.43	52	*e*P		P	07 57 12.4	+1.1	
	comp=Z,3.8nm,1.1s								
ZRNK	Zerenda	32.43	52	*e*P		P	07 57 12.3	+1.1	
	comp=Z,3.8nm,1.1s								
KKAR	Karatay Array	33.93	70	*e*P		P	07 57 20.9	-3.6	
KKAR	Karatay Array	33.93	70	*e*P		P	07 57 20.9	-3.6	
MKAR	Makanchi Array	41.40	61	P		P	07 58 28.1	+0.5	
	comp=Z,1.7nm,0.7s,baz=276,slow=6.5,SNR=14								
MK01	Makanchi Array	41.41	61	*e*P		P	07 58 29.6	+1.9	
MK01	Makanchi Array	41.41	61	*e*P		P	07 58 29.6	+1.9	
ZALV	Zalesovo Beam	41.87	50	P		P	07 58 32.1	+0.8	
	comp=Z,0.8nm,0.6s,baz=287,slow=7.4,SNR=3.4								
NRIK	Noril'sk	43.54	27	LR		LR	08 18 18.4		
	comp=Z,77nm,19.5s,baz=70,slow=38								
TLY	Talaya	53.47	49	LR		LR	08 24 20.2		
	comp=Z,36nm,20.6s,baz=290,slow=38								
LZH	Lanzhou	60.31	66	*e*P		P	08 00 51.0	+0.6	
LZH				*e*PP		PP	08 03 06.3	+3.2	
LZH				pmax		pmax			
	comp=Z,19nm,1.4s								
LZH				pmax		pmax			
	comp=Z,52nm,8.6s								
HHC	Hu-ho-hao-te	63.14	58	*e*P		P	08 01 11.3	+2.0	
HHC				S		S	08 09 39.6	-1.3	
HHC				SS		SS	08 13 47.8	+1.6	
HHC				pmax		pmax			
	comp=Z,58nm,6.3s								
HHC				LR		LR			
	comp=Z,120nm,12.3s								
HHC				LR		LR			
	comp=Z,140nm,12.7s								
HHC				LR		LR			
	comp=Z,130nm,12.8s								
CMAR	Chiang Mai Arr	66.31	85	P		P	08 01 28.8	-1.4	
	comp=Z,0.7nm,0.3s,baz=297,slow=7.9,SNR=2.6								
BOSA	Boshof	68.37	180	LR		LR	08 35 26.8		
	comp=Z,43nm,19.9s,baz=27,slow=39								
YKA	Yellowknife Ar	72.69	342	P		P	08 02 09.0	+0.1	
	comp=Z,0.6nm,0.8s,baz=33,slow=5.6,SNR=13								
YKA	Yellowknife Ar	72.69	342	P		P	08 02 09.0	+0.1	
YKA	Yellowknife Ar	72.69	342	P		P	08 02 09.0	+0.1	
USRK	Ussuriysk Ar.	73.53	46	LR		LR	08 36 17.0		
	comp=Z,92nm,18.9s,baz=152,slow=37								
ASAR	Alice Springs	119.03	98	PKP		PKPdf	08 09 29.8	-0.7	
	comp=Z,0.3nm,0.7s,baz=307,slow=1.8,SNR=3.0								

MEX 22 07:56:31.5±0.5, 15.36N×94.13W, h40km±33km, MD3.9, Near coast of Oaxaca

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PCIG		0.94	69	*e*P	Pn	07 56 46.6	-1.7
PCIG				*e*S	Sn	07 56 58.3	-2.3
TGIG		1.71	35	*e*P	Pn	07 56 57.1	-1.8
TGIG				*e*S	Sn	07 57 16.6	-2.9
THIG		1.86	104	*e*P	Pn	07 56 59.4	-1.5
CCIG	Comitan	2.13	64	*e*P	Pn	07 57 03.6	-1.1
CCIG				*i* S	Sn	07 57 28.0	-2.0

*BKK **22** 08:13:04.9±9.0, 24.7°N±59.9°×9.4°E±5.4°, h238km±31km, M4.6/7, mB4.6/5, mb4.2/7, MLv5.2/5, Mw(mB)3.9/5*
*IDC **22** 08:13:09.9±0.7, 23.90°N×96.03°E, h0km, mb3.9/18, mb1 4.0/19, mb1mx3.9/59, mbtmp3.9/19, ML3.8/1, MS3.5/9, Ms1 3.5/9, ms1mx3.1/54, Error ellipse: s-maj=27.4km s-min=12.3km az=60.0*
*ISCJB **22** 08:13:10.2±0.3, 23.94N±0.06°×96.13E±0.08, h10km, mb3.9/23, MS3.5/8, Error ellipse: s-maj=12.2km s-min=5.1km az=141.4*
*NEIC **22** 08:13:16.3±1.0, 23.86N×96.07E, h47km±11km, mb4.3/7, Error ellipse: s-maj=17.0km s-min=6.6km az=56.0*
ISC 22 08:13:11.6±0.5, 23.90N±0.07°×96.2E±0.1, h10km, n42, σ1§59/40, mb4.0/23, MS3.6/8, Myanmar

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SHL	Shillong	4.23	294	*e*P	Pn	08 14 16.0	-0.3
SHL				*e*S	Sn	08 15 05.0	-0.9
CMAI	Chiengmai2	4.77	145	P	Pn	08 14 25.5	+1.8
CRAI	Chiangrai	5.34	132	P	Pb	08 14 39.4	-5.8
	32nm,0.8s,506nm0.5nm						
CHTO	Chiang Mai	5.68	152	P	Pn	08 14 39.9	+3.7
	157nm,0.7s,2µm4.4nm						
CHTO	Chiang Mai	5.68	152	*e*Pn	Pn	08 14 38.7	+2.5
	26nm,0.6s						
CHTO				*e*Sg	Sg	08 16 15.1	+0.9
CMMT	Chiang Mai	5.69	152	P	Pn	08 14 40.0	+3.8
	41nm,0.8s,888nm1.0nm						
CMMT				S	Sg	08 16 12.3	-1.9
	41nm,0.8s,888nm1.0nm						
MHMT	Maesarieng	5.92	163	P	Pn	08 14 44.2	+4.7
MHMT				S	Sg	08 16 22.5	+0.6
CMAR	Chiang Mai Arr	6.00	154	Pn	Pn	08 14 41.2	+0.7
	0.7nm,0.3s,baz=332,slow=14,SNR=5.7						
CMAR				Pg	Pg	08 15 04.3	-2.3
	3.2nm,0.3s,baz=324,slow=16,SNR=15						
CMAR				Lg	Lg	08 16 21.9	
	4.4nm,0.3s,baz=321,slow=27,SNR=5.6						
CMAR				LR	LR	08 16 51.7	
	comp=Z,171nm,21.7s,baz=338,slow=37						
LAMP	Lampang	6.25	148	P	Pn	08 14 45.5	+1.6
	19nm,0.7s,0.3nm					

YUK				*i* S		**Sn**	**08 21 08.4**	**-0.1**
YUK				A	A		08 21 10.8	
	260nm,0.3s							
YUK				A	A		08 21 10.8	
	590nm,0.3s							
JTKR	**Abashiri--Toko**	**1.24**	**319**	P		**Pn**	**08 20 54.8**	**+0.1**
JTKR				*e*S		**Sn**	**08 21 10.7**	**+0.4**
JCH	**Churui**	**1.30**	**252**	P		**Pn**	**08 20 55.1**	**-0.3**
JCH				*e*S		**Sn**	**08 21 10.8**	**-0.9**
SHO	**Shikotan**	**1.55**	**57**	*e*P		**Pn**	**08 20 58.2**	**-0.7**
SHO				AMB	AMB		08 20 59.1	
	30nm,0.2s							
SHO				*e*S		**Sn**	**08 21 16.1**	**-1.8**
SHO				A	A		08 21 20.1	
	160nm,0.2s							
SHO				A	A		08 21 20.1	
	250nm,0.2s							
KUR	**Kuril'sk**	**3.00**	**42**	*e*P		**Pn**	**08 21 20.5**	**+1.9**
KUR				AMB	AMB		08 21 21.6	
	20nm,0.2s							
KUR				*e*S		**Sn**	**08 21 54.6**	**+1.3**
KUR				A	A		08 21 56.9	
	200nm,0.5s							
KUR				A	A		08 21 56.9	
	100nm,0.5s							
YSS	**Yuzh-Sakhalins**	**4.24**	**338**	*e*P		Pn	08 21 39.2	+3.6

MEX 22 08:20:37.0±0.3, 17°34N×101°27W, h28km±137km, MD3.5, Near coast of Guerrero

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ZIIG	**Zihuatanejo**	**0.33**	**325**	*e*P	Pb	08 20 43.2	-1.5
ZIIG				*i* S	Sb	08 20 48.3	-1.6
ARIG	**Puente Sto Nin**	**1.28**	**43**	*e*P	Pn	08 20 56.8	-2.3
ARIG				*i* S	Sn	08 21 11.9	-3.5
MEIG	**Mezcala**	**1.68**	**69**	*e*P	Pn	08 21 02.5	-2.1

MAN 22 08:29:19, 7°15N×124°08E, h11km, mb3.9, ML2.7, MS2.4, 1D, Mindanao

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CTBH	**Cotabato--PC H**	**0.18**	**65**	*i*P	Pb	08 29 24.2	-0.1
CTBH				*i* S	Sg	08 29 27.0	+1.3
PAGZ	**Pagadian**	**0.98**	**315**	*e*P	Pb	08 29 38.1	0.0
PAGZ				*e*S	Sn	08 29 52.9	+0.2
BUKP	**Musuan**	**1.22**	**53**	*e*P	Pn	08 29 41.4	-0.6
BUKP				*e*S	Sn	08 29 59.5	+0.9

NIED ***22*** *08:42:00, 37°.40N×141°.80E, h17km, Mw3.8 Best double couple: M₀6.04000×10¹⁴ NP1:φ₁121.00000°, δ48.00000°, λ178.00000°. NP2:φ₂212.00000°, δ89.00000°, λ42.00000°.*
BJI ***22*** *08:42:35.0, 37°.04N×142°.36E, h13km, mb4.6/12, mB4.7/8, Ms4.5/3, Ms7 4.2/3*
IDC ***22*** *08:42:39.5±0.7, 37°.34N×141°.78E, h0km, mb3.8/14, mb1 4.0/18, mb1mx3.9/41, mbtmp3.9/18, ML4.0/3, MS2.9/5, Ms1 2.9/5, ms1mx2.5/54, Error ellipse: s-maj=22.5km s-min=13.8km az=106.0*
ISCJB ***22*** *08:42:40.5±1.0, 37°.34N±0°.03×141°.90E±0°.06, h22km±6km, mb4.2/29, MS3.2/4, Error ellipse: s-maj=8.0km s-min=4.6km az=25.6*
NEIC ***22*** *08:42:40.8±2.3, 37°.28N×141°.90E, h12km±14km, mb4.6/8, Error ellipse: s-maj=9.3km s-min=5.1km az=125.0*
MOS ***22*** *08:42:42.6±1.2, 37°.41N×141°.79E, h33km, mb4.3/13, Error ellipse: s-maj=13.2km s-min=7.4km az=83.8*
JMA ***22*** *08:42:43.6±0.2, 37°.40N×141°.77E, h31km±3km, M4.1*
JMA Felt II J1.

ISC 22 08:42:40.6±1.5, 37°38N±0°.04×141°88E±0°.05, h11km±9km, n86, σ1§62/91, mb4.1/29, MS3.3/4, 2C-2D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**0.80**	**270**	P	**Pn**	**08 42 57.3**	**-0.5**
JFK				S	**Sb**	**08 43 06.5**	**-0.8**
ONAJ	**Iwakimizuishiy**	**0.90**	**253**	P	**Pn**	**08 42 58.7**	**-0.5**
ONAJ				S	**Sg**	**08 43 09.3**	**-0.5**
JMM	**Marumori**	**0.99**	**300**	P	**Pn**	**08 43 00.1**	**-0.3**
JMM				S	**Sg**	**08 43 11.7**	**-0.8**
JIO	**Ouri**	**1.15**	**339**	P	**Pb**	**08 43 02.7**	**+0.2**
JIO				S	**Sb**	**08 43 15.9**	**-1.6**
JFT	**Otama**	**1.23**	**277**	P	**Pg**	**08 43 04.4**	**+0.1**
JFT				S	**Sb**	**08 43 19.0**	**-0.8**
JOU	**Okura**	**1.38**	**316**	P	**Pb**	**08 43 06.2**	**-0.1**
JOU				S	**Sn**	**08 43 22.9**	**-1.0**
MJAR	**Matsushiro Arr**	**3.05**	**255**	Pn	**Pn**	**08 43 28.5**	**-0.3**
	8.2nm,0.3s,baz=55,slow=26,SNR=39						
MJAR				Sn	**Sb**	**08 44 10.2**	**-1.9**
	17nm,0.3s,baz=95,slow=19,SNR=7.7						
MAJO	**Matsushiro**	**3.05**	**255**	*e*P	**Pn**	**08 43 29.1**	**+0.3**
MAJO	**Matsushiro**	**3.05**	**255**	*e*Pn	**Pn**	**08 43 29.1**	**+0.3**
MAT	**Matsushiro**	**3.05**	**255**	P	**Pn**	**08 43 28.7**	**-0.1**
MJB9	**Matsu-Tunnel**	**3.06**	**255**	*e*Pn	**Pn**	**08 43 29.1**	**+0.3**
INU	**Inuyama**	**4.41**	**244**	*e*Pn	**Pn**	**08 43 47.8**	**+0.4**
JHJ2	**Mitsune**	**4.58**	**202**	*e*Pn	**Pn**	**08 43 47.2**	**-2.4**
JHJ	**Hachijo jima 2**	**4.58**	**203**	Pn	**Pn**	**08 43 50.8**	**+1.0**
	22nm,0.3s,baz=323,slow=24,SNR=10.0						
JHJ				Sn	**Sn**	**08 44 41.6**	**-1.4**
	43nm,0.3s,baz=273,slow=20,SNR=7.7						
ERM	**Erimo**	**4.74**	**12**	*e*P	**Pn**	**08 43 53.4**	**+1.5**
ERM	**Erimo**	**4.74**	**12**	*e*Pn	**Pn**	**08 43 53.4**	**+1.5**
ASAJ	**Asahikawa**	**6.75**	**4**	Pn	**Pn**	**08 44 20.9**	**+1.3**
	4.2nm,0.3s,baz=198,slow=11,SNR=24						
ASAJ				Sn	**Sn**	**08 45 36.7**	**+0.3**
	0.5nm,0.3s,baz=54,slow=19,SNR=3.6						
SHO	**Shikotan**	**7.50**	**29**	*i* P	**Pn**	**08 44 29.9**	**+0.1**
SHO				*i* S	**Sn**	**08 45 47.5**	**-7.3**
SHO				smax	smax			
	comp=N,78nm,0.5s							
SHO				smax	smax			
	comp=E,89nm,0.3s							
KUR	**Kuril'sk**	**9.05**	**28**	P	**Pn**	**08 44 52.7**	**+1.7**
KUR				*e*S	**Sn**	**08 46 27.0**	**-5.8**
YSS	**Yuzh-Sakhalins**	**9.59**	**4**	*e*P	**Pn**	**08 45 00.6**	**+2.1**
YSS				pmax	pmax			
	comp=Z,10.0nm,0.7s							
YSS	**Yuzh-Sakhalins**	**9.59**	**4**	*e*Pn	**Pn**	**08 45 00.5**	**+2.1**
USRK	**Ussuriysk Ar.**	**10.13**	**315**	Pn	**Pn**	**08 45 07.5**	**+1.6**
	comp=Z,0.3nm,0.3s,baz=121,slow=14,SNR=6.6						
KSRS	**Korea Array**	**11.10**	**275**	LR	LR	08 49 18.4	
	comp=Z,53nm,19.6s,baz=82,slow=36						
KLR	**Kul'dur**	**13.94**	**331**	Pn	**P**	**08 46 06.7**	**+0.6**
	comp=Z,0.2nm,0.3s,baz=147,slow=14,SNR=4.3						
KLR				LR	LR	08 51 13.7	
	comp=Z,47nm,19.8s,baz=134,slow=37						
CN2	**Changchun**	**14.03**	**302**	*e*P	**P**	**08 46 03.3**	**-3.8**
JOW	**Kunigami**	**15.58**	**231**	*e*Pn	**Pn**	**08 46 19.8**	**-0.3**
	comp=Z,68nm,1.5s						
PEA0	**Petropavlovsk-**	**19.21**	**30**	*e*P	**P**	**08 47 01.0**	**-3.3**
NJ2	**Nanjing**	**19.64**	**261**	*e*P	**P**	**08 47 08.8**	**-0.4**
NJ2				pmax	pmax			
	comp=Z,15nm,0.6s							
MA2	**Magadan**	**22.94**	**12**	P	**P**	**08 47 45.7**	**+1.2**
	comp=Z,3.1nm,0.7s,baz=188,slow=11,SNR=3.9						
HHC	**Hu-ho-hao-te**	**23.71**	**288**	*e*P	**P**	**08 47 52.6**	**0.0**
HHC				pmax	pmax			
	comp=Z,15nm,0.8s							
HHC				pmax	pmax			
	comp=Z,70nm,4.3s							
WHN	**Wuhan**	**23.77**	**261**	P	**P**	**08 47 51.3**	**-1.8**
GUMO	**Guam**	**23.84**	**173**	LR	LR	08 57 00.5	
	comp=Z,7.1nm,21.3s,baz=44,slow=36						
YAK	**Yakutsk**	**25.82**	**347**	*e*P	**P**	**08 48 11.7**	**+0.2**
YAK				pmax	pmax			
	comp=Z,19nm,0.7s							
YAK	**Yakutsk**	**25.82**	**347**	*e*P	**P**	**08 48 11.7**	**+0.2**
	comp=Z,19nm,0.7s							
SEY	**Seymchan**	**26.38**	**11**	P	**P**	**08 48 17.9**	**+1.3**
	comp=Z,1.7nm,0.6s,baz=185,slow=5.1,SNR=8.4							
SEY	**Seymchan**	**26.38**	**11**	*e*P	**P**	**08 48 19.8**	**+3.2**
BOD	**Bodaibo**	**27.44**	**327**	*e*P	**P**	**08 48 24.1**	**-2.0**
BOD				pmax	pmax			
	comp=Z,3.0nm,1.3s							
H11N2	**WAKE ISLAND Hy**	**28.01**	**122**	T	T	09 17 56.2		
	baz=315,slow=75,SNR=308							
H11N1	**WAKE ISLAND Hy**	**28.02**	**122**	T	T	09 18 02.4		
	baz=315,slow=75,SNR=358							
H11N3	**WAKE ISLAND Hy**	**28.03**	**122**	T	T	09 18 03.1		
	baz=315,slow=75,SNR=289							
H11S1	**WAKE ISLAND Hy**	**28.74**	**124**	T	T	09 18 54.6		
	baz=316,slow=76,SNR=218							
H11S3	**WAKE ISLAND Hy**	**28.74**	**124**	T	T	09 18 54.1		
	baz=316,slow=76,SNR=212							
H11S2	**WAKE ISLAND Hy**	**28.76**	**124**	T	T	09 18 55.2		
	baz=316,slow=76,SNR=198							
ZAK	**Zakamensk**	**30.35**	**308**	*e*P	**P**	**08 48 52.3**	**+0.1**
ZAK				pmax	pmax			
	comp=Z,2.0nm,1.3s							
LZH	**Lanzhou**	**30.37**	**279**	*e*P	**P**	**08 48 52.3**	**-0.4**
LZH				pP	sP	08 48 58.0	+0.4
LZH				sP	pP	08 49 01.3	+5.1
LZH				PP	**PnPn**	**08 49 52.5**	**+1.7**
LZH				pmax	pmax			
	comp=Z,24nm,1.1s							
LZH				pmax	pmax			
	comp=Z,63nm,5.6s							
LZH				LR	LR			
	comp=Z,330nm,12.9s							
LZH				LR	LR			
	comp=Z,350nm,13.2s							
LZH				LR	LR			
	comp=Z,400nm,16.8s							
GYA	**Guiyang**	**31.64**	**260**	*e*P	**P**	**08 49 03.6**	**-0.3**
GYA				pmax	pmax			
	comp=Z,10.0nm,0.8s							
CD2	**Chengdu**	**32.04**	**270**	P	**P**	**08 49 05.9**	**-1.4**
CD2				pmax	pmax			
	comp=Z,1.0nm,0.5s							
KMI	**Kunming**	**35.38**	**261**	P	**P**	**08 49 37.5**	**+0.9**
KMI				pmax	pmax			
	comp=Z,12nm,0.8s							
KMI				pmax	pmax			
	comp=Z,100nm,5.5s							
AKUT	**Akutan**	**39.19**	**48**	*e*P	**P**	**08 50 06.2**	**-2.0**
	comp=Z,328nm,1.6s							
WMQ	**Urumqi**	**41.02**	**297**	*e*P	**P**	**08 50 25.0**	**+1.3**
WMQ				pmax	pmax			
	comp=Z,6.0nm,0.6s							
WMQ				pmax	pmax			
	comp=Z,31nm,4.0s							
ZAA0	**Zalesovo Array**	**41.96**	**312**	*e*P	**P**	**08 50 31.2**	**0.0**
ZALV	**Zalesovo Beam**	**41.96**	**312**	P	**P**	**08 50 31.1**	**-0.1**
	comp=Z,1.3nm,0.5s,baz=100,slow=8.1,SNR=6.1							
NRIK	**Noril'sk**	**43.11**	**335**	LR	LR	09 09 47.5		
	comp=Z,32nm,18.8s,baz=150,slow=38							
MK01	**Makanchi Array**	**44.25**	**302**	*e*P	**P**	**08 50 49.9**	**0.0**
MK31	**Makanchi Array**	**44.25**	**302**	*e*P	**P**	**08 50 50.4**	**+0.5**
MK31	**Makanchi Array**	**44.25**	**302**	*e*P	**P**	**08 50 50.4**	**+0.5**
MKAR	**Makanchi Array**	**44.25**	**302**	P	**P**	**08 50 50.3**	**+0.4**
	comp=Z,1.8nm,0.7s,baz=86,slow=10,SNR=16							
MKAR	**Makanchi Array**	**44.25**	**302**	*c*e*P*	**P**	**08 50 50.2**	**+0.3**
MKAR				pmax	pmax			
	comp=Z,2.0nm,0.6s							
CCB	**Clear Creek Bu**	**48.62**	**33**	*e*P	**P**	**08 51 23.9**	**0.0**
	comp=Z,7.4nm,1.6s							
ILAR	**Eielson Array**	**49.01**	**33**	P	**P**	**08 51 27.8**	**+0.9**
	comp=Z,0.5nm,0.7s,baz=272,slow=7.0,SNR=6.4							
TKM2	**Tokmak 2**	**49.79**	**298**	*e*P	**P**	**08 51 34.6**	**+1.1**
TKM2				pmax	pmax			
	comp=Z,2.0nm,0.7s							
TKM2	**Tokmak 2**	**49.79**	**298**	*e*P	**P**	**08 51 34.6**	**+1.1**
	comp=Z,2.2nm,0.7s							
AAK	**Ala-Archa**	**50.65**	**298**	*e*P	**P**	**08 51 40.5**	**+0.6**
AAK				pmax	pmax			
	comp=Z,1.0nm,0.8s							
AAK	**Ala-Archa**	**50.65**	**298**	*e*P	**P**	**08 51 40.5**	**+0.6**
	comp=Z,1.2nm,0.8s							
INK	**Inuvik**	**53.91**	**27**	P	**P**	**08 52 05.3**	**+1.8**
	comp=Z,0.4nm,0.6s,baz=292,slow=5.5,SNR=3.7							
ARU	**Arti**	**56.35**	**318**	*d* i*P*	**P**	**08 52 21.5**	**+0.2**
ARU						08 54 24.1		
ARU				S	**S**	**09 00 13.2**	**+1.9**
ARU				SS	**SS**	**09 03 54.5**	**-3.1**
ARU				pmax	pmax			
	comp=Z,6.0nm,1.0s							
ARU	**Arti**	**56.35**	**318**	*e*P	**P**	**08 52 21.6**	**+0.2**
	comp=Z,4.7nm,0.7s							
WRA	**Warramunga Arr**	**57.45**	**188**	P	**P**	**08 52 29.7**	**+0.2**
	comp=Z,0.6nm,0.5s,baz=6.3,slow=7.2,SNR=16							
ABKAR	**Akbulak array**	**58.00**	**310**	*e*P	**P**	**08 52 33.2**	**+0.1**
ASAR	**Alice Springs**	**61.18**	**188**	P	**P**	**08 52 55.3**	**+0.1**
	comp=Z,0.3nm,0.8s,baz=9.9,slow=5.9,SNR=3.8							
RES	**Resolute Bay**	**62.18**	**15**	P	**P**	**08 53 02.1**	**+0.7**
	comp=Z,0.8nm,0.5s,baz=308,slow=7.4,SNR=7.7							
RES	**Resolute Bay**	**62.18**	**15**	*e*P	**P**	**08 53 02.0**	**+0.7**
RES				pmax	pmax			
	comp=Z,5.0nm,1.5s							
RES	**Resolute Bay**	**62.18**	**15**	*e*P	**P**	**08 53 02.0**	**+0.6**
	comp=Z,4.6nm,1.5s							
YKA	**Yellowknife Ar**	**63.33**	**30**	P	**P**	**08 53 10.9**	**+1.8**
	comp=Z,0.2nm,0.6s,baz=305,slow=6.8,SNR=4.9							
ARCES	**ARCESS Array B**	**63.81**	**339**	P	**P**	**08 53 13.2**	**+0.9**
	comp=Z,5.1nm,1.1s,baz=57,slow=6.6,SNR=3.2							
FIA1	**FINESS Array S**	**68.68**	**332**	*e*P	**P**	**08 53 44.0**	**+0.4**
	comp=Z,44nm,2.0s							
FINES	**FINESS Array B**	**68.68**	**332**	P	**P**	**08 53 43.8**	**+0.2**
	comp=Z,2.0nm,0.6s,baz=44,slow=8.5,SNR=8.3							
NC204	**NORSAR Array S**	**73.97**	**338**	*e*P	**P**	**08 54 16.6**	**+0.9**
NB201	**NORSAR Array S**	**73.98**	**337**	*e*P	**P**	**08 54 16.4**	**+0.7**
NB2	**NORSAR Subarra**	**74.01**	**337**	P	**P**	**08 54 16.1**	**+0.2**
	comp=Z,1.2nm,0.7s,baz=42,slow=6.2							
NOA	**NORSAR Array B**	**74.01**	**337**	P	**P**	**08 54 16.4**	**+0.5**
	comp=Z,1.0nm,0.6s,baz=40,slow=5.9,SNR=7.2							
NOA				LR	LR	09 29 21.8		
	comp=Z,17nm,21.7s,baz=300,slow=38							
NBO02	**NORSAR Array S**	**74.11**	**338**	*e*P	**P**	**08 54 17.6**	**+1.1**
GCMT	**Greycliff**	**75.20**	**43**	*e*P	**P**	**08 54 22.5**	**-0.7**
CLL	**Collm**	**80.98**	**330**	*e*(P)	**P**	**08 54 57.0**	**+2.0**
CLL	**Collm**	**80.98**	**330**	*e*P	**P**	**08 54 57.0**	**+2.0**
TXAR	**Lajitas Array**	**89.62**	**53**	P	**P**	**08 55 40.5**	**+1.8**
	comp=Z,0.1nm,0.4s,baz=357,slow=28,SNR=4.1							

IDC ***22*** *08:51:09.3±0.9, 19°.88N×142°.83E, h0km, mb3.9/5, mb1 4.1/6, mb1mx3.6/62, mbtmp3.9/6, ML3.7/1, Error ellipse: s-maj=36.7km s-min=20.4km az=103.0*
ISCJB ***22*** *08:51:12.6±0.9, 19°.8N±0°.1×142°.9E±0°.2, h33km, mb3.7/5, Error ellipse: s-maj=30.4km s-min=17.2km az=175.4*

ISC 22 08:51:14.7±1.0, 19°.8N±0°.1×142°.9E±0°.2, h35km, n6, σ0§95/6, mb3.7/5, Mariana Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GUMO	**Guam**	**6.50**	**163**	Pn	**Pn**	**08 52 48.3**	**+0.4**
	1.6nm,0.3s,baz=0.0,slow=20,SNR=2.0						
GUMO				Sn	Sn	08 53 48.6	-12
	7.3nm,0.3s,baz=345,slow=20,SNR=3.2						
WRA	**Warramunga Arr**	**40.42**	**192**	P	**P**	**08 58 49.7**	**0.0**
	1.7nm,0.6s,baz=360,slow=8.5,SNR=36						
CMAR	**Chiang Mai Arr**	**41.45**	**276**	P	**P**	**08 58 58.6**	**+0.3**
	0.9nm,0.3s,baz=108,slow=11,SNR=3.3						
ASAR	**Alice Springs**	**44.12**	**192**	P	**P**	**08 59 18.9**	**-0.9**
	0.5nm,0.4s,baz=8.2,slow=7.8,SNR=14						
INK	**Inuvik**	**69.37**	**23**	P	**P**	**09 02 19.3**	**+0.8**
	0.6nm,0.8s,baz=248,slow=2.9,SNR=2.8						
YKA	**Yellowknife Ar**	**78.22**	**28**	P	**P**	**09 03 09.5**	**-0.9**
	0.3nm,0.5s,baz=286,slow=5.3,SNR=9.2						

ISCJB ***22*** *08:52:02.5±1.7, 38°.38N±0°.06×142°.2E±0°.1, h28km±9km, mb3.4/2, Error ellipse: s-maj=14.8km s-min=9.5km az=2.1*
JMA ***22*** *08:52:03.8±0.1, 38°.40N×142°.17E, h34km±1km, M3.8*
JMA Felt I J1.
IDC ***22*** *08:52:03.1±2.5, 37°.77N×142°.66E, h0km, mb3.4/2, mb1 3.5/3, mb1mx3.2/61, mbtmp3.2/3, ML2.5/1, MS2.5/1, Ms1 2.5/1, ms1mx2.0/35, Error ellipse: s-maj=48.5km s-min=37.2km az=50.0*

ISC 22 08:52:01.2±2.8, 38°38N±0°.05×142°2E±0°.1, h11km±17km, n12, σ1§10/16, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**0.69**	**276**	P	**Pn**	**08 52 16.5**	**-0.3**
JIO				S	**Sb**	**08 52 25.1**	**+0.5**
OFUJ	**Ofunato**	**0.82**	**329**	P	**Pn**	**08 52 18.4**	**-0.2**
OFUJ				S	**Sb**	**08 52 28.5**	**0.0**
JMK	**Ichinoseki**	**0.97**	**306**	P	**Pn**	**08 52 20.7**	**0.0**
JMK				S	**Sb**	**08 52 32.9**	**+0.2**
JOU	**Okura**	**1.22**	**270**	P	**Pg**	**08 52 24.7**	**0.0**
JOU				S	**Sb**	**08 52 39.8**	**-0.3**
JMM	**Marumori**	**1.24**	**246**	P	**Pn**	**08 52 24.2**	**-0.2**
JOM	**Ohasama**	**1.31**	**327**	P	**Pb**	**08 52 25.9**	**+0.2**
JOM				S	**Sb**	**08 52 42.2**	**-0.3**
JFK	**Kawauchi**	**1.47**	**227**	P	**Pn**	**08 52 27.4**	**-0.2**
MJAR	**Matsushiro Arr**	**3.68**	**241**	Pn	**Pn**	**08 53 01.4**	**+3.4**
	0.4nm,0.3s,baz=64,slow=12,SNR=3.8						
MJAR				Sn	**Sb**	**08 53 49.5**	**-1.3**
	0.5nm,0.3s,baz=165,slow=37,SNR=2.5						
MAT	**Matsushiro**	**3.68**	**241**	P	**Pb**	**08 53 05.4**	**-0.8**
ASAJ	**Asahikawa**	**5.74**	**3**	LR	LR	08 56 07.0	
	comp=Z,38nm,19.6s,baz=346,slow=38						
MKAR	**Makanchi Array**	**43.96**	**301**	P	P	09 00 16.7	+8.6
	0.2nm,0.3s,baz=93,slow=8.8,SNR=3.4						
WRA	**Warramunga Arr**	**58.48**	**189**	P	**P**	**09 01 57.0**	**-0.2**
	0.2nm,0.4s,baz=5.7,slow=7.3,SNR=4.7						

KRSC 22 09:09:11.9±1.4, 49°.40N×156°.87E, h16km±24km, ML3.7, Kuril Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SKR	**Severo-Kuril's**	**1.38**	**340**	*e*P	Pn	09 09 36.4	-0.1
SKR				*e*S	Sn	09 09 52.6	-1.8
PAU	**Pauzhetka**	**2.07**	**359**	*e*P	Pb	09 09 48.2	-1.0
PAU				*e*S	Sb	09 10 13.8	-0.9
ASAK	**Asacha**	**3.06**	**12**	*e*P	Pb	09 10 03.4	-2.7
RUS	**Russkaya**	**3.21**	**18**	*e*P	Pn	09 10 04.5	+2.7
RUS				*e*S	Sn	09 10 43.5	+3.8
DALK	**Dalny**	**3.83**	**17**	*e*P	Pn	09 10 13.5	+3.3
DALK				*e*S	Sn	09 10 59.5	+4.7
UGLR	**Uglovaya**	**4.01**	**17**	*e*P	Pn	09 10 16.6	+3.8
AVH	**Avacha**	**4.05**	**16**	*e*P	Pn	09 10 18.0	+4.7
SMAR	**Somma**	**4.06**	**17**	*e*P	Pn	09 10 17.4	+3.8
SDLR	**Sedlovina**	**4.09**	**17**	*e*P	Pn	09 10 17.5	+3.6
GNL	**Ganaly**	**4.36**	**8**	*e*P	Pn	09 10 21.5	+3.9
MKZ	**Mys Kozlova**	**5.98**	**28**	*e*P	Pn	09 10 44.2	+4.5
KBTR	**Krutoberegovo**	**7.71**	**26**	P	Pn	09 11 08.3	+4.8

NIED ***22*** *09:26:00, 37°.40N×141°.70E, h32km, Mw3.6 Best double couple: M₀2.44000×10¹⁴ NP1:φ₁324.00000°, δ45.00000°, λ163.00000°. NP2:φ₂66.00000°, δ78.00000°, λ46.00000°.*
IDC ***22*** *09:26:50.9±0.9, 37°.42N×141°.75E, h0km, mb3.6/11, mb1 3.8/14, mb1mx3.6/48, mbtmp3.7/14, ML3.3/3, Error ellipse: s-maj=23.0km s-min=18.6km az=139.0*
JMA ***22*** *09:26:54.0±0.1, 37°.44N×141°.67E, h30km±2km, M3.9*

ISC 22 09:26:51.6±1.9, 37°42N±0°.04×141°76E±0°.06, h6km±11km, n30, σ1§11/36, mb3.7/11, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**0.71**	**266**	P	**Pb**	**09 27 06.4**	**+0.1**
JFK				S	**Sg**	**09 27 14.6**	**+0.2**
ONAJ	**Iwakimizuishiy**	**0.83**	**248**	P	**Pg**	**09 27 08.3**	**+0.8**
ONAJ				*e*S	**Sg**	**09 27 17.9**	**-0.4**
JMM	**Marumori**	**0.89**	**300**	P	**Pg**	**09 27 09.0**	**+0.4**
JMM				S	**Sg**	**09 27 19.4**	**-0.7**
JIO	**Ouri**	**1.08**	**343**	P	**Pb**	**09 27 12.3**	**-0.4**
JIO				S	**Sb**	**09 27 25.0**	**-2.1**
JFT	**Otama**	**1.14**	**275**	P	**Pb**	**09 27 13.6**	**-0.1**
JFT				S	**Sb**	**09 27 27.2**	**-1.5**
JHO	**Hitachi**	**1.25**	**230**	P	**Pn**	**09 27 14.6**	**-1.0**
JHO				S	**Sb**	**09 27 28.9**	**-3.0**
JOU	**Okura**	**1.28**	**318**	P	**Pn**	**09 27 15.9**	**-0.2**
JOU				S	**Sb**	**09 27 31.3**	**-1.6**
JYS	**Shirataka**	**1.56**	**301**	P	**Pn**	**09 27 20.4**	**+0.5**
JYS				S	**Sn**	**09 27 40.0**	**-0.5**
MJAR	**Matsushiro Arr**	**2.98**	**254**	Pn	**Pn**	**09 27 40.6**	**+1.3**
	2.7nm,0.3s,baz=150,slow=18,SNR=19						
MJAR				Sn	**Sn**	**09 28 16.5**	**+1.1**
	7.6nm,0.3s,baz=137,slow=31,SNR=7.4						
MAT	**Matsushiro**	**2.98**	**254**	P	**Pn**	**09 27 40.2**	**+0.8**
MAT				S	**Sn**	**09 28 16.3**	**+0.9**
JHJ	**Hachijo jima 2**	**4.59**	**201**	Pn	**Pn**	**09 28 00.0**	**-1.5**
	8.4nm,0.3s,baz=336,slow=20,SNR=4.3						
JHJ				Sn	**Sn**	**09 28 53.8**	**-1.3**
	4.5nm,0.3s,baz=73,slow=19,SNR=3.2						
ASAJ	**Asahikawa**	**6.72**	**5**	Pn	**Pn**	**09 28 30.8**	**+0.1**
	0.4nm,0.3s,baz=194,slow=19,SNR=5.4						
ASAJ				Sn	**Sn**	**09 29 45.7**	**-1.9**
	0.1nm,0.3s,baz=151,slow=19,SNR=1.7						
SONM	**Songino Array**	**27.80**	**303**	P	**P**	**09 32 42.7**	**+1.2**
	0.8nm,0.5s,baz=98,slow=11,SNR=2.9						
H11N2	**WAKE ISLAND Hy**	**28.11**	**122**	T	T	10 02 09.9	
	baz=314,slow=75,SNR=132						
H11N1	**WAKE ISLAND Hy**	**28.12**	**122**	T	T	10 02 10.5	
	baz=314,slow=75,SNR=101						
H11N3	**WAKE ISLAND Hy**	**28.13**	**122**	T	T	10 02 11.2	
	baz=314,slow=75,SNR=84						
H11S1	**WAKE ISLAND Hy**	**28.84**	**124**	T	T	10 03 03.6	
	baz=316,slow=76,SNR=98						
H11S3	**WAKE ISLAND Hy**	**28.84**	**124**	T	T	10 03 03.1	
	baz=316,slow=76,SNR=69						
H11S2	**WAKE ISLAND Hy**	**28.86**	**124**	T	T	10 03 04.2	
	baz=316,slow=76,SNR=66						

RMX				*e*S		**Sb**	**09 46 57.9**	**-0.5**
CBX	**Cerro Bola**	**1.02**	**259**⇑	*e*P		**Pn**	**09 47 00.3**	**+0.2**
CBX				AML		AML	09 47 16.5	
	comp=N,104nm,0.3s							
CBX	**Cerro Bola**	**1.02**	**259**	*e*P		**Pb**	**09 47 00.1**	**+0.1**
CBX				*i* S		**Sb**	**09 47 13.0**	**+0.1**
ECBX	**El Chinero**	**1.10**	**160**⇑	*e*P		**Pb**	**09 47 01.6**	**+0.5**
ECBX				*e*S		**Sb**	**09 47 15.4**	**+0.4**
ECBX				AML		AML	09 47 16.1	
	comp=E,125nm,0.2s							
SPIG	**San Pedro Mart**	**1.46**	**179**⇓	*e*P		**Pn**	**09 47 06.7**	**+0.3**
SPIG	**San Pedro Mart**	**1.46**	**179**	*e*P		**Pn**	**09 47 06.7**	**+0.3**
SPIG				*e*S		**Sn**	**09 47 24.3**	**-0.7**
SPX	**San Pedro Mart**	**1.46**	**179**⇓	*e*P		**Pn**	**09 47 06.7**	**+0.3**

*KRSC **22** 09:46:47.6±3.6, 50.°07N×158.°02E, h16km±40km, ML4.3*
*MOS **22** 09:46:50.0±1.6, 50.°08N×157.°37E, h54km, mb4.1/1, Error ellipse: s-maj=26.4km s-min=6.4km az=82.3*
*IDC **22** 09:46:55.5±3.7, 50.°22N×156.°97E, h79km±31km, mb3.1/6, mb1 3.4/8, mb1mx3.2/45, mbtmp3.5/8, Error ellipse: s-maj=35.6km s-min=24.9km az=126.0*

ISC 22 09:46:46.7±3.8, 50.°00N±0.°08×157.°44E±0.°06, h8km±24km, n42, σ1°66/49, mb3.6/6, East of Kuril Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SKR	**Severo-Kuril's**	**1.09**	**310**	*e*P	**Pn**	**09 47 09.0**	**+0.8**
SKR				*e*S	**Sn**	**09 47 23.9**	**+0.5**
SKR	**Severo-Kuril's**	**1.09**	**310**	*e*PN	**Pb**	**09 47 07.6**	**-0.1**
SKR				*i* S	**Sb**	**09 47 18.5**	**-3.6**
SKR				pmax	pmax		
	comp=N,450nm,0.3s						
SKR				pmax	pmax		
	comp=E,590nm,0.3s						
SKR				pmax	pmax		
	comp=Z,1μm,0.3s						
SKR				smax	smax		
	comp=N,2μm,0.3s						
SKR				smax	smax		
	comp=E,2μm,0.3s						
ASAK	**Asacha**	**2.41**	**7**	*e*P	**Pn**	**09 47 27.6**	**+1.2**
RUS	**Russkaya**	**2.53**	**15**	*e*P	**Pn**	**09 47 28.5**	**+0.5**
RUS				*e*S	**Sn**	**09 47 58.3**	**-0.6**
RUS	**Russkaya**	**2.53**	**15**	PN	**Pn**	**09 47 28.5**	**+0.5**
RUS				S	**Sn**	**09 47 58.3**	**-0.6**
MTVR	**Mutnovka**	**2.53**	**10**	*e*P	**Pn**	**09 47 29.3**	**+1.1**
MTVR				*e*S	**Sn**	**09 47 59.1**	**-0.1**
KRMR	**Karymshinskiy**	**2.87**	**8**	*e*P	**Pn**	**09 47 34.7**	**+2.1**
KRMR				*e*S	**Sn**	**09 48 09.1**	**+1.8**
KRMR	**Karymshinskiy**	**2.87**	**8**	PN	**Pn**	**09 47 34.7**	**+2.1**
KRMR				S	**Sn**	**09 48 09.1**	**+1.8**
PETK	**Petropavlovsk-**	**3.12**	**3**	P	**Pn**	**09 47 38.7**	**+2.6**
	comp=E,3.3nm,0.3s,baz=312,slow=27,SNR=88						
PETK				S	**Sn**	**09 48 14.7**	**+1.2**
	comp=E,2.5nm,0.3s,baz=162,slow=15,SNR=5.2						
PET	**Petropavlovsk**	**3.12**	**14**	*e*PN	**Pn**	**09 47 37.9**	**+1.8**
PET				*e*S	**Sn**	**09 48 14.3**	**+0.7**
PET				pmax	pmax		
	comp=Z,30nm,0.3s						
PET				smax	smax		
	comp=N,224nm,0.6s						
PET				smax	smax		
	comp=E,265nm,0.5s						
DALK	**Dalny**	**3.15**	**15**	*e*P	**Pn**	**09 47 37.5**	**+1.1**
DALK				*e*S	**Sn**	**09 48 14.4**	**+0.3**
UGLR	**Uglovaya**	**3.33**	**14**	*e*P	**Pn**	**09 47 41.2**	**+2.1**
AVH	**Avacha**	**3.37**	**13**	*e*P	**Pn**	**09 47 42.0**	**+2.4**
AVH	**Avacha**	**3.37**	**13**	PN	**Pn**	**09 47 42.0**	**+2.4**
SMAR	**Somma**	**3.38**	**14**	*e*P	**Pn**	**09 47 41.8**	**+2.0**
SMAR	**Somma**	**3.38**	**14**	PN	**Pn**	**09 47 41.8**	**+2.0**
KOK	**Koryaka**	**3.38**	**12**	*e*P	**Pn**	**09 47 41.8**	**+2.0**
KOK	**Koryaka**	**3.38**	**12**	PN	**Pn**	**09 47 41.8**	**+2.0**
NLC	**Nalytchevo**	**3.39**	**20**	*e*S	**Sn**	**09 48 18.5**	**-1.7**
SDLR	**Sedlovina**	**3.41**	**15**	*e*P	**Pn**	**09 47 41.2**	**+1.1**
SDLR	**Sedlovina**	**3.41**	**15**	PN	**Pn**	**09 47 41.2**	**+1.1**
KRER	**Koryakskii**	**3.41**	**13**	*e*P	**Pn**	**09 47 42.7**	**+2.4**
KRX	**Arik**	**3.45**	**12**	*e*P	**Pn**	**09 47 42.4**	**+1.6**
GNL	**Ganaly**	**3.72**	**5**	*e*P	**Pn**	**09 47 46.6**	**+2.2**
GNL	**Ganaly**	**3.72**	**5**	PN	**Pn**	**09 47 46.6**	**+2.2**
MKZ	**Mys Kozlova**	**5.27**	**28**	*e*P	**Pn**	**09 48 05.6**	**0.0**
MKZ	**Mys Kozlova**	**5.27**	**28**	PN	**Pn**	**09 48 05.6**	**0.0**
KBTR	**Krutoberegovo**	**7.01**	**25**	*e*P	**Pn**	**09 48 30.1**	**+0.6**
KBTR	**Krutoberegovo**	**7.01**	**25**	PN	**Pn**	**09 48 30.1**	**+0.6**
BKI	**Bering**	**7.36**	**42**	*e*P	**Pn**	**09 48 33.6**	**-0.6**
BKI				*e*S	Sn	09 49 49.8	-8.0
BKI	**Bering**	**7.36**	**42**	PN	**Pn**	**09 48 33.6**	**-0.6**
MA2	**Magadan**	**10.34**	**341**	P	**Pn**	**09 49 16.8**	**+1.7**
	comp=E,0.9nm,0.3s,baz=156,slow=12,SNR=4.2						
H11S1	**WAKE ISLAND Hy**	**32.28**	**163**	T	T	10 27 43.8	
	baz=347,slow=76,SNR=13						
H11S3	**WAKE ISLAND Hy**	**32.29**	**163**	T	T	10 27 45.7	
	baz=347,slow=76,SNR=15						
H11S2	**WAKE ISLAND Hy**	**32.30**	**163**	T	T	10 27 44.9	
	baz=347,slow=76,SNR=12						
YKA	**Yellowknife Ar**	**46.59**	**40**	P	**P**	**09 55 15.2**	**+0.7**
	comp=E,0.3nm,0.8s,baz=297,slow=7.7,SNR=6.0						
PDAR	**Pinedale Array**	**60.53**	**58**	P	**P**	**09 56 58.8**	**+1.4**
	comp=E,0.4nm,0.8s,baz=228,slow=4.7,SNR=3.0						
FINES	**FINESS Array B**	**62.29**	**336**	P	**P**	**09 57 06.4**	**-2.2**
	comp=E,0.6nm,0.5s,baz=49,slow=6.1,SNR=3.5						
NOA	**NORSAR Array B**	**66.03**	**343**	P	**P**	**09 57 31.0**	**-2.3**
	comp=E,0.2nm,0.4s,baz=24,slow=6.8,SNR=2.8						
NOA	**NORSAR Array B**	**66.03**	**343**	P	**P**	**09 57 31.0**	**-2.3**
TXAR	**Lajitas Array**	**73.43**	**64**	P	**P**	**09 58 19.7**	**+0.2**
	comp=E,0.3nm,0.6s,baz=303,slow=5.3,SNR=4.1						
ASAR	**Alice Springs**	**76.26**	**202**	P	**P**	**09 58 36.2**	**+0.7**
	comp=E,0.2nm,0.8s,baz=9.9,slow=7.5,SNR=2.9						

*DJA **22** 09:47:01.8±0.9, 5.°N±5.°×97.°7E±.°, h13km±3km, M4.7/13, mb4.5/3, mB5.5/3, MLv4.7/13, Mw(mB)4.9/3*
*ISCJB **22** 09:47:06.1±0.4, 5.°23N±0.°05×97.°03E±0.°06, h33km, mb4.1/16, MS3.4/3, Error ellipse: s-maj=8.8km s-min=6.1km az=143.6*
*NEIC **22** 09:47:10.1±1.8, 5.°03N×97.°10E, h59km±15km, mb4.2/4, Error ellipse: s-maj=22.7km s-min=10.8km az=67.0*
*IDC **22** 09:47:10.8±3.1, 4.°97N×97.°04E, h67km±27km, mb3.9/13, mb1 4.0/16, mb1mx3.6/57, mbtmp4.2/16, ML4.2/3, MS3.3/4, Ms1 3.4/4, ms1mx2.8/43, Error ellipse: s-maj=30.1km s-min=13.8km az=68.0*

ISC 22 09:47:07.7±0.6, 5.°23N±0.°07×97.°00E±0.°07, h35km, n36, σ1°78/35, mb4.3/16, MS3.4/3, Northern Sumatera

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
LHMI	**Lhok Sumawe**	**0.06**	**269**	P	Pn	09 47 10.1	-3.4
LHMI				*e*S	**Sn**	**09 47 14.5**	**-3.0**
KCSI	**Kotacane, Aceh**	**1.86**	**156**	P	**Pn**	**09 47 37.3**	**+0.2**
TPTI		**1.96**	**175**	P	**Pn**	**09 47 38.1**	**-0.4**
TSI	**Tuntungan**	**2.32**	**138**	P	**Pn**	**09 47 46.2**	**+2.8**
PSI	**Prapat**	**3.08**	**141**	P	**Pn**	**09 47 55.3**	**+1.3**
	5.7nm,0.3s,baz=325,slow=13,SNR=15						
PSI				S	Sn	09 48 41.5	+12
	32nm,0.3s,baz=256,slow=23,SNR=6.7						
KULM	**Kulim**	**3.63**	**89**	*e*Pn	**Pn**	**09 48 00.5**	**-0.9**
GSI	**Gunungsitoli**	**3.94**	**172**	P	**Pn**	**09 48 04.9**	**-0.8**
IPM	**Ipoh**	**4.08**	**100**	*e*Pn	**Pn**	**09 48 05.9**	**-1.7**
IPM				*e*Sn	**Sn**	**09 48 52.8**	**-1.4**
MNSI	**Mandailing Nat**	**5.10**	**150**	P	**Pn**	**09 48 23.3**	**+1.6**
	47nm,0.6s,2μm0.5nm						
BKNI	**Bangkinang**	**6.32**	**140**	P	**Pn**	**09 48 40.9**	**+2.4**
	68nm,0.8s,2μm0.6nm						
PDSI	**Padang**	**7.01**	**150**	P	**Pn**	**09 48 49.4**	**+1.4**
CMAR	**Chiang Mai Arr**	**13.28**	**8**	P	**P**	**09 50 20.4**	**-2.8**
	0.7nm,0.3s,baz=194,slow=11,SNR=3.7						
CMAR				LR	LR	09 55 02.3	
	comp=Z,98nm,18.6s,baz=208,slow=35						
KSM	**Kuching**	**13.79**	**105**	*e*Pn	**Pn**	**09 50 21.7**	**+0.8**
LEM	**Lembang**	**15.99**	**138**	P	**Pn**	**09 50 51.0**	**+0.7**
	2.9nm,0.3s,baz=335,slow=19,SNR=3.1						
KKM	**Kota Kinabalu**	**19.14**	**87**	*e*P	**Pn**	**09 51 29.8**	**+0.6**
	12nm,0.9s						
FITZ	**Fitzroy Crossi**	**36.54**	**130**	*e*P	**P**	**09 54 07.2**	**-3.1**
	4.8nm,0.9s						
KSAR	**Wonju Array Be**	**42.68**	**37**	P	**P**	**09 55 02.7**	**+1.5**
KSRS	**Korea Array**	**42.72**	**37**	P	**P**	**09 55 02.7**	**+1.3**
	1.4nm,0.7s,baz=220,slow=8.7,SNR=4.7						
SONM	**Songino Array**	**43.21**	**9**	P	**P**	**09 55 05.8**	**+0.3**
	1.1nm,0.5s,baz=297,slow=9.8,SNR=3.7						
MKAR	**Makanchi Array**	**43.31**	**345**	P	**P**	**09 55 07.9**	**+1.7**
	1.8nm,0.6s,baz=158,slow=8.3,SNR=9.5						

WRA	**Warramunga Arr**	**44.42**	**125**	P		**P**	**09 55 13.0**	**-2.5**
	2.1nm,0.7s,baz=303,slow=9.2,SNR=36							
WRA				PcP		**PcP**	**09 56 57.7**	**-1.2**
	0.3nm,0.5s,baz=317,slow=2.7,SNR=5.1							
WRAB	**Tennant Creek**	**44.42**	**125**	*e*P		**P**	**09 55 13.4**	**-2.1**
	2.5nm,0.5s							
ASAR	**Alice Springs**	**46.05**	**130**	P		**P**	**09 55 26.2**	**-2.2**
	0.6nm,0.5s,baz=301,slow=7.6,SNR=14							
GEYT	**Alibeck**	**48.05**	**318**	LR		LR	10 19 26.2	
	comp=Z,32nm,18.4s,baz=165,slow=40							
ZALV	**Zalesovo Beam**	**49.58**	**351**	P		**P**	**09 55 57.1**	**+1.9**
	1.4nm,0.4s,baz=169,slow=8.6,SNR=3.8							
ATD	**Arta Tunnel**	**53.88**	**280**	LR		LR	10 15 34.0	
	comp=Z,32nm,20.9s,baz=18,slow=32							
ABKAR	**Akbulak array**	**53.91**	**331**	*e*P		**P**	**09 56 27.0**	**-0.6**
	0.2nm,0.4s							
STKA	**Stephens Creek**	**56.23**	**134**	P		**P**	**09 56 42.9**	**-1.8**
	1.4nm,0.6s,baz=312,slow=9.1,SNR=6.8							
NRIK	**Noril'sk**	**64.32**	**356**	P		**P**	**09 57 42.0**	**+2.6**
	1.7nm,0.4s,baz=162,slow=13,SNR=3.7							
MA2	**Magadan**	**67.82**	**26**	P		**P**	**09 58 03.6**	**+1.6**
	3.3nm,0.6s,baz=199,slow=7.9,SNR=3.7							
TIXI	**Tiksi**	**69.28**	**10**	P		**P**	**09 58 11.9**	**+1.0**
	3.9nm,0.8s,baz=197,slow=2.6,SNR=6.4							
SEY	**Seymchan**	**70.16**	**24**	P		**P**	**09 58 17.9**	**+1.4**
	3.0nm,0.8s,baz=240,slow=7.0,SNR=9.9							
FINES	**FINESS Array B**	**76.36**	**332**	P		**P**	**09 58 52.0**	**-1.1**
	3.0nm,1.1s,baz=90,slow=6.9,SNR=2.8							
BOSA	**Boshof**	**76.64**	**239**	P		**P**	**09 58 55.5**	**0.0**
	4.1nm,1.0s,baz=63,slow=6.8,SNR=3.7							
ARCES	**ARCESS Array B**	**78.70**	**340**	LR		LR	10 37 21.3	
	comp=Z,17nm,18.9s,baz=52,slow=38							
TXAR	**Lajitas Array**	**140.31**	**29**	PKP		**PKPdf**	**10 06 35.3**	**+1.4**
	0.2nm,0.6s,baz=307,slow=3.3,SNR=2.6							

*SKHL **22** 09:53:38.2±0.5, 48.°43N×153.°53E, h152km±7km, mb4.7/5, msh5.0/3*
*MOS **22** 09:53:38.2±1.4, 48.°54N×153.°51E, h163km, mb4.0/1, Error ellipse: s-maj=13.4km s-min=5.8km az=62.1*
*KRSC **22** 09:53:40.1±1.7, 48.°32N×154.°83E, h190km±20km, ML4.0*
*IDC **22** 09:53:41.5±2.1, 48.°58N×153.°37E, h173km±20km, mb3.1/11, mb1 3.4/16, mb1mx3.3/53, mbtmp3.7/16, MS3.1/2, Ms1 3.1/2, ms1mx2.5/12, Error ellipse: s-maj=22.2km s-min=11.4km az=135.0*

ISC 22 09:53:37.7±0.6, 48.°60N±0.°07×153.°41E±0.°06, h132km, n79, σ2°09/80, mb3.4/11, 2C-2D, Kuril Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SKR	**Severo-Kuril's**	**2.73**	**39**	*e*P	**Pn**	**09 54 24.0**	**+3.2**
SKR				*e*S	**Sn**	**09 54 57.2**	**+3.2**
SKR	**Severo-Kuril's**	**2.73**	**39**	*i* P	**Pn**	**09 54 23.9**	**+3.2**
SKR				AMB	AMB	09 54 24.6	
	110nm,0.5s						
SKR				*i* S	**Sn**	**09 54 59.9**	**+5.9**
SKR				A	A	09 55 01.5	
	110nm,0.2s						
SKR				A	A	09 55 01.5	
	120nm,0.2s						
SKR	**Severo-Kuril's**	**2.73**	**39**	*e*PN	**Pn**	**09 54 22.0**	**+1.2**
SKR				*e*		09 54 59.5	
SKR				pmax	pmax		
	comp=N,80nm,0.5s						
SKR				pmax	pmax		
	comp=Z,90nm,0.5s						
PAU	**Pauzhetka**	**3.61**	**36**	*e*P	**Pn**	**09 54 34.9**	**+2.6**
PAU	**Pauzhetka**	**3.61**	**36**	*e*P	**Pn**	**09 54 34.9**	**+2.6**
PAU	**Pauzhetka**	**3.61**	**36**	PN	**Pn**	**09 54 34.9**	**+2.6**
ASAK	**Asacha**	**4.75**	**35**	*e*P	**Pn**	**09 54 50.3**	**+2.9**
RUS	**Russkaya**	**5.03**	**38**	*e*P	**Pn**	**09 54 51.9**	**+0.8**
RUS				*e*S	**Sn**	**09 55 46.3**	**-2.0**
RUS	**Russkaya**	**5.03**	**38**	*e*P	**Pn**	**09 54 51.9**	**+0.8**
RUS	**Russkaya**	**5.03**	**38**	PN	**Pn**	**09 54 51.9**	**+0.8**
RUS				S	**Sn**	**09 55 46.3**	**-2.0**
KUR	**Kuril'sk**	**5.08**	**230**	*e*P	**Pn**	**09 54 54.1**	**+2.3**
KUR				AMB	AMB	09 54 59.5	
	comp=Z,30nm,0.4s						
KUR				*e*S	**Sn**	**09 55 53.4**	**+3.9**
KUR				A	A	09 56 04.6	
	comp=Z,30nm,0.5s						
KUR	**Kuril'sk**	**5.08**	**230**	*e*PN	**Pn**	**09 54 54.8**	**+3.0**
KUR				pmax	pmax		
	comp=Z,30nm,0.4s						
KUR				pmax	pmax		
	comp=N,25nm,0.1s						
KUR				pmax	pmax		
	comp=E,18nm,0.0s						
KRMR	**Karymshinskiy**	**5.19**	**34**	*e*P	**Pn**	**09 54 55.8**	**+2.6**
KRMR				*e*S	**Sn**	**09 55 52.8**	**+0.8**
KRMR	**Karymshinskiy**	**5.19**	**34**	PN	**Pn**	**09 54 55.8**	**+2.6**
KRMR				S	**Sn**	**09 55 52.8**	**+0.8**
PETK	**Petropavlovsk-**	**5.27**	**29**	P	Pn	09 54 57.9	+3.6
	comp=E,0.7nm,0.3s,baz=221,slow=13,SNR=22						
PET	**Petropavlovsk**	**5.54**	**35**	*e*P	**Pn**	**09 55 01.0**	**+3.1**
PET				AMB	AMB	09 55 07.0	
	comp=E,10.0nm,0.5s						
PET				*e*S	**Sn**	**09 56 05.2**	**+4.8**
PET				A	A	09 56 07.4	
	comp=E,20nm,0.4s						
PET	**Petropavlovsk**	**5.54**	**35**	*e*PN	**Pn**	**09 55 01.0**	**+3.1**
PET				*e*S	**Sn**	**09 56 05.2**	**+4.8**
PET				pmax	pmax		
	comp=Z,10.0nm,0.5s						
PET				smax	smax		
	comp=N,20nm,0.4s						
DALK	**Dalny**	**5.58**	**35**	*e*P	**Pn**	**09 55 00.0**	**+1.5**
DALK				*e*S	**Sn**	**09 56 00.7**	**-0.7**
UGLR	**Uglovaya**	**5.74**	**35**	*e*P	**Pn**	**09 55 03.0**	**+2.2**
AVH	**Avacha**	**5.76**	**34**	*e*P	Pn	09 55 04.3	+3.4
AVH	**Avacha**	**5.76**	**34**	*e*P	Pn	09 55 04.3	+3.4
AVH	**Avacha**	**5.76**	**34**	PN	Pn	09 55 04.3	+3.4
SMAR	**Somma**	**5.78**	**34**	*e*P	**Pn**	**09 55 04.0**	**+2.6**
SMAR	**Somma**	**5.78**	**34**	PN	**Pn**	**09 55 04.0**	**+2.6**
SDLR	**Sedlovina**	**5.82**	**34**	*e*P	**Pn**	**09 55 03.5**	**+1.7**
SDLR	**Sedlovina**	**5.82**	**34**	PN	**Pn**	**09 55 03.5**	**+1.7**
GNL	**Ganaly**	**5.84**	**27**	*e*P	**Pn**	**09 55 04.7**	**+2.6**
GNL	**Ganaly**	**5.84**	**27**	PN	**Pn**	**09 55 04.7**	**+2.6**
NLC	**Nalytchevo**	**5.92**	**37**	*e*S	**Sn**	**09 56 05.1**	**-4.5**
SHO	**Shikotan**	**6.57**	**226**	*e*P	**Pn**	**09 55 11.4**	**-0.5**
SHO				AMB	AMB	09 55 12.4	
	comp=N,20nm,0.3s						
SHO				AMB	AMB	09 55 12.4	
	comp=N,10.0nm,0.3s						
SHO				AMB	AMB	09 55 12.4	
	comp=N,40nm,0.3s						
SHO				*i* S	**Sn**	**09 56 25.2**	**-0.3**
SHO	**Shikotan**	**6.57**	**226**	*e*PN	**Pn**	**09 55 11.3**	**-0.6**
SHO				*i* S	**Sn**	**09 56 24.4**	**-1.1**
SHO				pmax	pmax		
	comp=N,16nm,0.3s						
SHO				pmax	pmax		
	comp=Z,37nm,0.3s						
SHO				pmax	pmax		
	comp=E,10.0nm,0.2s						
YUK	**Yuzh-Kuril'sk**	**6.94**	**232**	*e*P	**Pn**	**09 55 18.5**	**+1.7**
YUK				AMB	AMB	09 55 19.9	
	comp=E,90nm,0.6s						
YUK				*e*S	**Sn**	**09 56 36.1**	**+1.8**
YUK	**Yuzh-Kuril'sk**	**6.94**	**232**	*c* PN	**Pn**	**09 55 18.8**	**+2.0**
YUK				*e*S	**Sn**	**09 56 34.3**	**0.0**
YUK				pmax	pmax		
	comp=N,47nm,0.6s						
YUK				pmax	pmax		
	comp=Z,90nm,0.6s						
YUK				pmax	pmax		
	comp=E,62nm,0.3s						
TYV	**Tymovskoe**	**7.33**	**292**	*e*P	**Pn**	**09 55 24.9**	**+2.9**
TYV	**Tymovskoe**	**7.33**	**292**	*e*PN	**Pn**	**09 55 24.9**	**+2.9**
MKZ	**Mys Kozlova**	**7.90**	**38**	*e*P	**Pn**	**09 55 29.2**	**-0.4**
MKZ	**Mys Kozlova**	**7.90**	**38**	PN	**Pn**	**09 55 29.2**	**-0.4**
JKA	**Kamikawa-asahi**	**8.72**	**243**	*e*P	Pn	09 55 44.2	+3.5
ASAJ	**Asahikawa**	**8.72**	**243**	P	Pn	09 55 44.2	+3.5
	comp=E,1.8nm,0.3s,baz=69,slow=13,SNR=17						
KBTR	**Krutoberegovo**	**9.54**	**33**	*e*P	**Pn**	**09 55 50.9**	**-0.7**
KBTR	**Krutoberegovo**	**9.54**	**33**	PN	**Pn**	**09 55 50.9**	**-0.7**
ERM	**Erimo**	**9.77**	**231**	*e*P	**Pn**	**09 55 54.3**	**-0.5**
ERM	**Erimo**	**9.77**	**231**	*i* PN	**Pn**	**09 55 54.3**	**-0.5**
BKI	**Bering**	**10.19**	**45**	*e*S	Sn	09 57 41.1	-11
HABR	**Khabarovsk**	**12.17**	**276**	*e*P	**Pn**	**09 56 26.6**	**0.0**
HABR	**Khabarovsk**	**12.17**	**276**	*e*PN	**Pn**	**09 56 26.6**	**0.0**
HABR				*e*S	**Sn**	**09 58 42.3**	**+1.6**
HABR				pmax	pmax		
	comp=E,16nm,1.1s						
HABR				pmax	pmax		
	comp=Z,11nm,1.4s						
HABR				pmax	pmax		
	comp=N,15nm,1.4s						
KLR	**Kul'dur**	**14.25**	**281**	P	**P**	**09 56 57.2**	**+0.5**
	comp=N,0.2nm,0.3s,baz=79,slow=10,SNR=4.9						
KLR	**Kul'dur**	**14.25**	**281**	*e*P	**Pn**	**09 56 55.7**	**+2.3**
USRK	**Ussuriysk Ar.**	**15.41**	**261**	P	**P**	**09 57 11.1**	**+1.6**
	comp=N,0.1nm,0.3s,baz=66,slow=13,SNR=4.2						
MAJO	**Matsushiro**	**16.41**	**228**	*e*P	**Pn**	**09 57 20.1**	**-0.2**
MAJO	**Matsushiro**	**16.41**	**228**	*de*P	**Pn**	**09 57 20.1**	**-0.2**
MAJO				pmax	pmax		
	comp=Z,19nm,0.6s						
MJAR	**Matsushiro Arr**	**16.41**	**228**	P	**Pn**	**09 57 20.2**	**-0.2**
	comp=Z,0.3nm,0.3s,baz=25,slow=13,SNR=6.2						
MJAR				LR	LR	10 04 20.6	
	comp=Z,26nm,21.4s,baz=35,slow=39						
BILL	**Bilibino**	**20.54**	**14**	*e*P	**P**	**09 58 07.1**	**+1.7**
BILL	**Bilibino**	**20.54**	**14**⇓	*e*P	**P**	**09 58 03.7**	**-1.7**
BILL				*e*		09 58 53.1	
KSRS	**Korea Array**	**21.61**	**248**	P	**P**	**09 58 17.6**	**+0.6**
	comp=Z,1.0nm,0.6s,baz=52,slow=9.4,SNR=2.9						
H11N2	**WAKE ISLAND Hy**	**30.79**	**155**	T	T	10 31 44.2	
	baz=341,slow=75,SNR=7.0						
H11N1	**WAKE ISLAND Hy**	**30.80**	**155**	T	T	10 31 43.6	
	baz=341,slow=75,SNR=6.9						
H11N3	**WAKE ISLAND Hy**	**30.81**	**155**	T	T	10 31 49.5	
	baz=341,slow=75,SNR=6.2						
H11S1	**WAKE ISLAND Hy**	**31.90**	**156**	T	T	10 33 16.2	
	baz=344,slow=76,SNR=29						
H11S3	**WAKE ISLAND Hy**	**31.91**	**156**	T	T	10 33 22.2	
	baz=344,slow=76,SNR=35						
H11S2	**WAKE ISLAND Hy**	**31.92**	**156**	T	T	10 33 22.5	
	baz=344,slow=76,SNR=28						
ILAR	**Eielson Array**	**34.99**	**40**	P	**P**	**10 00 16.7**	**-0.1**
	comp=Z,0.3nm,0.4s,baz=266,slow=5.0,SNR=6.3						
ILAR	**Eielson Array**	**34.99**	**40**	*e*P	**P**	**10 00 17.2**	**+0.3**
ILAR	**Eielson Array**	**34.99**	**40**	*e*P	**P**	**10 00 17.2**	**+0.3**
INK	**Inuvik**	**39.99**	**34**	LR	LR	10 18 01.5	
	comp=Z,52nm,18.5s,baz=68,slow=36						
YKA	**Yellowknife Ar**	**49.33**	**38**	P	**P**	**10 02 13.1**	**+0.2**
	comp=Z,0.6nm,0.8s,baz=297,slow=7.3,SNR=8.0						
NVAR	**Mina Array Bea**	**61.41**	**63**	P	**P**	**10 03 39.8**	**-0.2**
	comp=Z,0.2nm,0.4s,baz=291,slow=7.6,SNR=3.0						
FINES	**FINESS Array B**	**62.45**	**334**	P	**P**	**10 03 45.1**	**-1.2**
	comp=Z,0.7nm,0.4s,baz=40,slow=15,SNR=4.7						
PDAR	**Pinedale Array**	**63.50**	**55**	P	**P**	**10 03 54.1**	**+0.3**
	comp=Z,0.6nm,0.8s,baz=243,slow=0.3,SNR=5.6						
NOA	**NORSAR Array B**	**66.54**	**341**	P	**P**	**10 04 12.0**	**-1.0**
	comp=Z,0.3nm,0.5s,baz=26,slow=6.4,SNR=3.3						
NOA	**NORSAR Array B**	**66.54**	**341**	P	**P**	**10 04 12.0**	**-1.0**
WRA	**Warramunga Arr**	**70.33**	**199**	P	**P**	**10 04 35.1**	**-1.8**
	comp=Z,0.9nm,0.9s,baz=21,slow=6.9,SNR=6.5						
WRA	**Warramunga Arr**	**70.33**	**199**	*e*P	**P**	**10 04 34.7**	**-2.2**
ASAR	**Alice Springs**	**74.03**	**199**	P	**P**	**10 04 58.2**	**-0.6**
	comp=Z,0.5nm,0.6s,baz=10,slow=5.5,SNR=14						
CLL	**Collm**	**74.86**	**336**	*e*P	**P**	**10 05 03.0**	**-0.4**
CLL	**Collm**	**74.86**	**336**	*i* P	**P**	**10 05 03.0**	**-0.4**
CLL				*e*sP	sP	10 05 58.0	+7.8
CLL	**Collm**	**74.86**	**336**	*i* P	**P**	**10 05 03.0**	**-0.4**
TXAR	**Lajitas Array**	**76.41**	**61**	P	**P**	**10 05 12.0**	**-0.8**
	comp=Z,0.4nm,0.5s,baz=305,slow=5.1,SNR=7.7						
GERES	**GERESS Array B**	**76.88**	**334**	P	**P**	**10 05 14.3**	**-0.8**
	comp=Z,0.3nm,0.6s,baz=46,slow=7.0,SNR=2.8						

ISC 22 09:58:33.2±2.7, 50.°2N±0.°1×19.°1E±0.°1, h0km, n5, σ0°61/9, Poland

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC

	2.9nm,0.3s,baz=84,slow=16,SNR=18							
MJAR				Sn	**Sb**	**10 01 22.6**	**-0.1**	
	2.2nm,0.3s,baz=81,slow=28,SNR=8.5							
SONM	**Songino Array**	**27.30**	**305**	LR	LR	10 16 00.6		
	comp=Z,91nm,21.3s,baz=299,slow=34							
NRIK	**Noril'sk**	**43.15**	**336**	LR	LR	10 27 47.4		
	comp=Z,32nm,18.5s,baz=132,slow=38							
WRA	**Warramunga Arr**	**56.76**	**187**	P	P	10 10 13.1	+3.6	
	0.7nm,0.7s,baz=12,slow=7.4,SNR=4.9							
ASAR	**Alice Springs**	**60.49**	**187**	P	**P**	**10 10 36.0**	**+0.5**	
	0.2nm,0.8s,baz=18,slow=9.3,SNR=2.5							

NEIC ***22*** *10:01:12.3±1.0,31˚.19S×179˚.05W,h35km,mb4.5/3,Error ellipse: s-maj=24.1km s-min=18.4km az=102.0*
IDC ***22*** *10:01:17.9±8.5,31˚.47S×179˚.07W,h88km±86km,mb3.8/5, mb1 4.0/6,mb1mx3.6/30,mbtmp4.2/6,ML4.2/1,Error ellipse: s-maj=70.0km s-min=37.7km az=171.0*

ISC 22 10:01:16.9±1.6,31˚.5S±0˚.1×178˚.7W±0˚.3,h100km,n13, σ1°74/14,mb4.2/7,Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
URZ	**Urewera**	**7.55**	**206**	P	**Pn**	**10 03 03.0**	**-1.3**
	3.9nm,0.3s,baz=296,slow=1.5,SNR=10.0						
URZ				S	**Sn**	**10 04 29.6**	**+1.3**
	1.1nm,0.3s,baz=319,slow=20,SNR=2.3						
URZ	**Urewera**	**7.55**	**206**	*e*Pn	**Pn**	**10 03 02.7**	**-1.6**
	32nm,0.6s						
URZ				*e*Sn	**Sn**	**10 04 30.9**	**+2.5**
CTA	**Charters Tower**	**33.37**	**281**	P	**P**	**10 07 47.3**	**+1.5**
	2.0nm,1.0s,baz=101,slow=16,SNR=1.9						
STKA	**Stephens Creek**	**33.62**	**259**	P	**P**	**10 07 46.2**	**-1.7**
	5.3nm,1.1s,baz=113,slow=13,SNR=2.6						
ASAR	**Alice Springs**	**42.43**	**268**	P	**P**	**10 09 01.5**	**-0.5**
	1.1nm,0.8s,baz=106,slow=7.4,SNR=4.3						
WRAB	**Tennant Creek**	**43.51**	**274**	*e*P	**P**	**10 09 10.1**	**-0.6**
	2.6nm,0.8s						
WRA	**Warramunga Arr**	**43.51**	**274**	P	**P**	**10 09 10.2**	**-0.5**
	2.9nm,0.7s,baz=114,slow=7.7,SNR=7.6						
FITZ	**Fitzroy Crossi**	**51.73**	**271**	*e*P	**P**	**10 10 14.3**	**0.0**
	4.4nm,0.8s						
QSPA	**South Pole Qui**	**58.62**	**180**	*e*P	P	10 11 08.1	+4.8
	12nm,0.8s						
ILAR	**Eielson Array**	**99.14**	**13**	P	**Pdif**	**10 14 48.9**	**+2.7**
	0.3nm,0.6s,baz=213,slow=6.5,SNR=2.6						
FINES	**FINESS Array B**	**145.94**	**339**	PKPbc	**PKPbc**	**10 20 44.8**	**+0.6**
	1.3nm,0.7s,baz=54,slow=3.3,SNR=3.3						
NOA	**NORSAR Array B**	**149.73**	**350**	PKPab	**PKPab**	**10 21 01.9**	**+1.9**
	0.4nm,0.5s,baz=13,slow=4.1,SNR=3.2						
BRG	**Berggiesshubel**	**158.47**	**338**	*e*P	**PKPdf**	**10 21 00.2**	**-1.9**
	3.6nm,1.2s						

IDC 22 10:07:46.7±698.0,46˚.90N×48˚.70E,h0km,Error ellipse: s-maj=235.6km s-min=154.3km az=42.0, Ukraine-Moldova-Southwestern Russia region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
I31KZ	**AKTYUBINSK INF**	**7.11**	**57**	*i*		10 51 41.5	
	baz=244,slow=324						
I43RU	**DUBNA INFRASON**	**12.12**	**328**	*i*		11 25 10.0	
	baz=140,slow=319,SNR=0.6						
I18DK	**QAANAAQ INFRAS**	**50.20**	**345**	*i*		15 34 10.0	
	baz=52,slow=337,SNR=1.0						

IDC 22 10:08:08.7±48.0,13˚.41S×166˚.90E,h0km,mb4.2/3, mb1 4.4/3,mb1mx3.7/39,mbtmp4.2/3,Error ellipse: s-maj=816.1km s-min=104.7km az=64.0,Vanuatu Islands

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
STKA	**Stephens Creek**	**29.60**	**227**	P	P	10 14 15.4	-0.3
	0.7nm,0.5s,baz=38,slow=7.2,SNR=6.0						
WRA	**Warramunga Arr**	**31.82**	**254**	P	P	10 14 35.5	0.0
	1.7nm,0.3s,baz=84,slow=8.6,SNR=57						
ASAR	**Alice Springs**	**32.83**	**247**	P	P	10 14 44.5	+0.1
	2.7nm,0.5s,baz=74,slow=9.8,SNR=94						

DDA ***22*** *10:15:22.3,38˚.70N×29˚.31E,h7km,Ml2.6*
CSEM ***22*** *10:15:22.5±0.1,38˚.70N×29˚.30E,h8km,ML2.6,Error ellipse: s-maj=3.6km s-min=2.8km az=103.0*
ISK ***22*** *10:15:23.4,38˚.80N×29˚.16E,h9km,MD2.0*

ISC 22 10:15:21.9±1.1,38.71N±0˚.03×29˚.35E±0˚.04,h8km±11km, n18,σ0°51/29,Turkey

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
KHAL	**Karahalli**	**0.36**	**162**	*i* P	**Pg**	**10 15 29.5**	**+0.6**
KHAL				*i* S	**Sb**	**10 15 35.4**	**-1.0**
KHAL	**Karahalli**	**0.36**	**162**	P	**Pg**	**10 15 29.5**	**+0.6**
KHAL				S	**Sb**	**10 15 35.4**	**-1.0**
GDZ	**Gediz**	**0.39**	**15**	*i* P	**Pg**	**10 15 30.1**	**+0.4**
GDZ				*i* S	**Sb**	**10 15 36.9**	**-0.5**
GDZ	**Gediz**	**0.39**	**15**	P	**Pg**	**10 15 30.0**	**+0.4**
GDZ				S	**Sb**	**10 15 36.9**	**-0.5**
KULA	**Kula-Manisa**	**0.57**	**250**	*e*PG	**Pg**	**10 15 33.2**	**+0.2**
KULA				*e*SG	**Sg**	**10 15 40.4**	**-0.1**
KULA	**Kula-Manisa**	**0.57**	**250**	*e*Pg	**Pg**	**10 15 33.2**	**+0.2**
KULA				*e*Sg	**Sg**	**10 15 40.4**	**-0.1**
DEMI	**Demirci**	**0.59**	**304**	*i* P	**Pg**	**10 15 33.5**	**+0.1**
DEMI				*i* S	**Sg**	**10 15 40.8**	**-0.4**
DEMI	**Demirci**	**0.59**	**304**	P	**Pg**	**10 15 33.5**	**+0.1**
DEMI				S	**Sg**	**10 15 40.8**	**-0.4**
TVSB	**Tavsanli**	**0.74**	**7**	*e*PG	**Pb**	**10 15 37.2**	**+0.1**
TVSB				*e*SG	**Sb**	**10 15 47.3**	**-0.2**
TVSB	**Tavsanli**	**0.74**	**7**	*e*Pg	**Pb**	**10 15 37.2**	**+0.1**
TVSB				*e*Sg	**Sb**	**10 15 47.3**	**-0.2**
DURS	**Dursunbey**	**1.12**	**323**	*i* P	**Pn**	**10 15 43.9**	**0.0**
DURS				*i* S	**Sn**	**10 16 01.1**	**+1.5**
DURS	**Dursunbey**	**1.12**	**323**	P	**Pn**	**10 15 43.9**	**0.0**
ORLT	**Orhaneli**	**1.38**	**345**	*e*PN	**Pb**	**10 15 47.8**	**-0.1**
ORLT	**Orhaneli**	**1.38**	**345**	*e*Pn	**Pb**	**10 15 47.8**	**-0.1**
CAVI	**Cavuskoy**	**1.54**	**14**	*e*PN	**Pg**	**10 15 51.2**	**-0.2**
CAVI	**Cavuskoy**	**1.54**	**14**	*e*Pn	**Pg**	**10 15 51.2**	**-0.2**
IZI	**Iznik**	**1.63**	**3**	*e*PN	**Pb**	**10 15 52.0**	**-0.2**
IZI	**Iznik**	**1.63**	**3**	*e*Pn	**Pb**	**10 15 52.0**	**-0.2**

JMA 22 10:17:54.6±0.3,37˚.07N×142˚.52E,h24km,M3.5,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JFK	**Kawauchi**	**1.35**	**283**	P	Pb	10 18 18.7	-0.5
JFK				*e*S	Sn	10 18 35.5	+0.4
ONAJ	**Iwakimizuishiy**	**1.38**	**272**	P	Pn	10 18 18.9	+0.5
JMM	**Marumori**	**1.59**	**301**	P	Pn	10 18 20.8	-0.4
JMM				S	Sn	10 18 41.8	+0.8
JIO	**Ouri**	**1.67**	**326**	P	Pn	10 18 22.6	+0.3
JFT	**Otama**	**1.80**	**285**	P	Pn	10 18 24.6	+0.5
JFT				*e*S	Sb	10 18 48.1	-0.8
JOU	**Okura**	**1.96**	**312**	P	Pn	10 18 27.4	+1.1
JOU				*e*S	Sn	10 18 51.7	+1.5
JMK	**Ichinoseki**	**2.14**	**332**	P	Pn	10 18 30.6	+1.8
JYS	**Shirataka**	**2.26**	**301**	P	Pn	10 18 31.9	+1.4
JYS				S	Sb	10 19 01.5	-0.8
JFY	**Yanaizu**	**2.27**	**279**	P	Pn	10 18 31.9	+1.3
JFY				*e*S	Sb	10 19 00.4	-2.2
JYK	**Kaneyama**	**2.51**	**318**	P	Pn	10 18 35.3	+1.4
MAT	**Matsushiro**	**3.50**	**263**	P	Pn	10 18 50.3	+2.8
MAT				*e*S	Sn	10 19 31.2	+3.0

NIED ***22*** *10:28:00,38˚.60N×144˚.50E,h11km,Mw4.4 Best double couple: M0 4.12000×10^15 NP1:φs158.00000°,δ52.00000°, λ-146.00000°. NP2:φs46.00000°,δ63.00000°, λ-43.00000°.*
IDC ***22*** *10:28:12.6±0.5,38˚.47N×144˚.79E,h0km,mb4.5/24, mb1 4.7/32,mb1mx4.7/43,mbtmp4.6/32,ML4.3/8,MS3.3/15, Ms1 3.3/15,ms1mx3.2/43,Error ellipse: s-maj=14.4km s-min=11.1km az=109.0*
ISCJB ***22*** *10:28:14.3±1.0,38˚.57N±0˚.03×144˚.61E±0˚.03,h16km±7km, mb4.6/124,MS3.8/17,Error ellipse: s-maj=4.7km s-min=3.3km az=166.1*
BJI ***22*** *10:28:15.7,38˚.69N×144˚.53E,h10km,mb4.8/54,mB4.8/39, Ms4.2/33,Ms7 4.1/31*
NEIC ***22*** *10:28:16.8±1.3,38˚.49N×144˚.66E,h24km±9km,mb4.7/62,*

2011 APR

Error ellipse: s-maj=5.2km s-min=3.4km az=134.0
MOS ***22*** *10:28:17.4±1.0,38˚.75N×144˚.62E,h33km,mb4.8/58,Error ellipse: s-maj=7.4km s-min=4.7km az=104.9*
JMA ***22*** *10:28:17.0±0.2,38˚.57N×144˚.53E,h39km,M4.6*

ISC 22 10:28:16.9±0.6,38˚.53N±0˚.04×144˚.78E±0˚.04,h28km±3km, h27km:pP-P,n320,σ1°92/356,mb4.7/130,MS3.8/17, 9C-20D,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
OFUJ	**Ofunato**	**2.49**	**284**	P	**Pn**	**10 28 53.7**	**-1.9**
OFUJ				S	**Sn**	**10 29 21.1**	**-4.0**
MIYJ	**Miyakonagasawa**	**2.53**	**295**	P	**Pn**	**10 28 54.1**	**-2.1**
MIYJ				S	**Sn**	**10 29 21.7**	**-4.4**
JMK	**Ichinoseki**	**2.82**	**280**	P	**Pn**	**10 28 58.5**	**-1.6**
JOM	**Ohasama**	**2.88**	**290**	P	**Pn**	**10 28 59.4**	**-1.5**
JOM				S	**Sn**	**10 29 30.6**	**-4.0**
JANG	**Nango**	**3.13**	**307**	P	**Pn**	**10 29 01.9**	**-2.5**
JANG				*e*S	**Sn**	**10 29 37.0**	**-3.8**
JYK	**Kaneyama**	**3.48**	**278**	P	**Pn**	**10 29 07.8**	**-1.4**
JYK				S	**Sn**	**10 29 45.6**	**-3.9**
JFT	**Otama**	**3.65**	**255**	P	**Pn**	**10 29 10.3**	**-1.3**
JFT				S	**Sn**	**10 29 50.2**	**-3.5**
ERM	**Erimo**	**3.70**	**341**	*de*P	**Pn**	**10 29 10.7**	**-1.4**
ERM	**Erimo**	**3.70**	**341**	*e*Pn	**Pn**	**10 29 10.8**	**-1.4**
ERM				*e*Sn	**Sn**	**10 29 52.5**	**-2.3**
JOT	**Ohata**	**4.04**	**316**	P	**Pn**	**10 29 15.4**	**-1.5**
JCH	**Churui**	**4.22**	**346**	P	**Pn**	**10 29 17.5**	**-1.9**
JCH				S	**Sn**	**10 30 03.0**	**-4.7**
JKB	**Kayabe**	**4.41**	**321**	P	**Pn**	**10 29 21.6**	**-0.4**
NEM2	**Nemuro 2**	**4.89**	**8**	P	**Pn**	**10 29 25.6**	**-2.9**
SHO	**Shikotan**	**5.55**	**16**	*i* P	**Pn**	**10 29 34.3**	**-3.4**
SHO				*i* S	**Sn**	**10 30 33.8**	**-6.8**
SHO				pmax	pmax		
	comp=E,169nm,0.4s						
SHO				pmax	pmax		
	comp=Z,188nm,0.4s						
SHO				pmax	pmax		
	comp=N,77nm,0.3s						
SHO				smax	smax		
	comp=N,1μm,0.4s						
SHO				smax	smax		
	comp=E,2μm,0.4s						
YUK	**Yuzh-Kuril'sk**	**5.56**	**8**	*i* P	**Pn**	**10 29 35.1**	**-2.7**
YUK				*i* S	**Sn**	**10 30 33.8**	**-6.9**
YUK				pmax	pmax		
	comp=Z,498nm,0.2s						
YUK				pmax	pmax		
	comp=N,59nm,0.1s						
YUK				pmax	pmax		
	comp=E,187nm,0.1s						
YUK				smax	smax		
	comp=N,1μm,0.5s						
YUK				smax	smax		
	comp=E,3μm,0.5s						
MJAR	**Matsushiro Arr**	**5.59**	**251**	Pn	**Pn**	**10 29 37.2**	**-1.0**
	comp=E,30nm,0.3s,baz=61,slow=11,SNR=598						
MJAR				Sn	**Sn**	**10 30 38.6**	**-2.9**
	comp=E,1.8nm,0.3s,baz=78,slow=14,SNR=3.0						
MJAR				LR	LR	10 31 45.1	
	comp=E,118nm,21.1s,baz=80,slow=38						
MAJO	**Matsushiro**	**5.59**	**251**	*c* P	**Pn**	**10 29 37.4**	**-0.8**
MAJO	**Matsushiro**	**5.59**	**251**	*e*Pn	**Pn**	**10 29 37.5**	**-0.8**
MAJO				*e*Sn	**Sn**	**10 30 38.5**	**-3.0**
MAT	**Matsushiro**	**5.59**	**251**	P	**Pn**	**10 29 37.4**	**-0.8**
MAT				S	**Sn**	**10 30 35.9**	**-5.6**
MJB9	**Matsu-Tunnel**	**5.59**	**251**	*e*Pn	**Pn**	**10 29 37.5**	**-0.7**
JHR	**Hokuryu**	**5.70**	**337**	P	**Pn**	**10 29 39.8**	**+0.1**
JHR				S	**Sn**	**10 30 41.4**	**-2.7**
ASAJ	**Asahikawa**	**5.82**	**344**	Pn	**Pn**	**10 29 40.3**	**-1.0**
	comp=E,30nm,0.3s,baz=201,slow=16,SNR=153						
ASAJ				Sn	**Sn**	**10 30 43.2**	**-3.9**
	comp=E,12nm,0.3s,baz=26,slow=26,SNR=8.6						
ASAJ				LR	LR	10 31 51.4	
	comp=E,267nm,21.4s,baz=168,slow=37						
ASAJ	**Asahikawa**	**5.82**	**344**	*e*Pn	**Pn**	**10 29 40.1**	**-1.3**
ASAJ				*e*Sn	**Sn**	**10 30 43.7**	**-3.4**
JHJ2	**Mitsune**	**6.74**	**218**	P	**Pn**	**10 29 50.8**	**-3.3**
JHJ2	**Mitsune**	**6.74**	**218**	*e*Pn	**Pn**	**10 29 50.8**	**-3.3**
JHJ2				*e*Sn	**Sn**	**10 31 02.5**	**-7.4**
JHJ	**Hachijo jima 2**	**6.75**	**218**	Pn	**Pn**	**10 29 50.9**	**-3.3**
	comp=E,138nm,0.3s,baz=333,slow=22,SNR=37						
JHJ				Sn	**Sn**	**10 31 01.4**	**-8.8**
	comp=E,79nm,0.3s,baz=88,slow=22,SNR=8.4						
JHJ				LR	LR	10 33 13.8	
	comp=E,144nm,18.5s,baz=62,slow=45						
INU	**Inuyama**	**6.98**	**245**	*e*Pn	**Pn**	**10 29 56.7**	**-0.6**
KUR	**Kuril'sk**	**7.08**	**18**	⇑*i*P	**Pn**	**10 29 56.2**	**-2.5**
KUR				*i* S	**Sn**	**10 31 11.4**	**-6.8**
KUR				pmax	pmax		
	comp=Z,43nm,0.1s						
KUR				pmax	pmax		
	comp=Z,273nm,3.8s						
KUR				smax	smax		
	comp=N,171nm,0.4s						
KUR				smax	smax		
	comp=E,228nm,0.4s						
KUR				smax	smax		
	comp=N,427nm,2.8s						
KUR				smax	smax		
	comp=E,305nm,2.8s						
JWK2	**Keihoku**	**7.11**	**343**	P	**Pn**	**10 29 59.9**	**+0.8**
YSS	**Yuzh-Sakhalins**	**8.55**	**351**	⇑*e*P	**Pn**	**10 30 18.4**	**-0.4**
YSS				*e*S	**Sn**	**10 31 45.8**	**-8.5**
YSS				pmax	pmax		
	comp=Z,30nm,0.4s						
YSS				MLR	MLR		
	comp=Z,300nm,13.0s						
YSS				MLR	MLR		
	comp=N,300nm,18.0s						
YSS				MLR	MLR		
	comp=E,300nm,17.0s						
YSS	**Yuzh-Sakhalins**	**8.55**	**351**	*e*Pn	**Pn**	**10 30 18.4**	**-0.4**
VLA	**Vladivostok**	**10.79**	**299**	⇓*i*P	**Pn**	**10 30 50.3**	**+0.8**
VLA				pmax	pmax		
	comp=Z,97nm,0.7s						
MSHR	**Mys Shultsa**	**11.12**	**296**	⇓*e*P	**Pn**	**10 30 54.2**	**+0.1**
USRK	**Ussuriysk Ar.**	**11.15**	**305**	Pn	**Pn**	**10 30 54.1**	**-0.3**
	comp=Z,3.1nm,0.3s,baz=108,slow=13,SNR=76						
USRK				LR	LR	10 34 50.8	
	comp=Z,153nm,19.7s,baz=102,slow=36						
CBIJ	**Chichi jima**	**11.61**	**192**	*e*Pn	Pn	10 30 56.1	-4.6
CBIJ					Sn	10 32 58.5	-11
JCJ	**Chichijima**	**11.61**	**192**	Pn	Pn	10 30 55.2	-5.6
	comp=Z,7.4nm,0.3s,baz=284,slow=23,SNR=5.5						
JCJ				Sn	Sn	10 32 58.5	-11
	comp=Z,6.5nm,0.3s,baz=354,slow=14,SNR=3.6						
HABR	**Khabarovsk**	**12.18**	**328**	*ce*P	**Pn**	**10 31 06.9**	**-1.6**
HABR				*e*S	**Sn**	**10 33 23.1**	**-0.2**
HABR				pmax	pmax		
	comp=N,30nm,1.4s						
HABR				pmax	pmax		
	comp=E,29nm,1.4s						
HABR				pmax	pmax		
	comp=Z,53nm,1.4s						
HABR				MLR	MLR		
	comp=Z,115nm,15.0s						
TYV	**Tymovskoe**	**12.42**	**354**	*e*P	**Pn**	**10 31 11.8**	**0.0**
TYV				pmax	pmax		
	comp=Z,11nm,0.8s						
JNU	**Nakatsue**	**12.50**	**249**	Pn	**Pn**	**10 31 11.4**	**-1.6**
	comp=Z,0.6nm,0.3s,baz=67,slow=12,SNR=10						
JNU				LR	LR	10 37 09.5	
	comp=Z,114nm,18.8s,baz=110,slow=43						
JNU	**Nakatsue**	**12.50**	**249**	*e*Pn	**Pn**	**10 31 11.6**	**-1.4**
MDJ	**Mudanjiang**	**12.89**	**303**	P	**Pn**	**10 31 17.8**	**-0.4**
MDJ				S	**Sn**	**10 33 40.5**	**-0.1**
MDJ				pmax	pmax		
	comp=Z,77nm,1.0s						
MDJ				pmax	pmax		
	comp=Z,440nm,4.2s						
MDJ	**Mudanjiang**	**12.89**	**303**	*e*Pn	**Pn**	**10 31 17.5**	**-0.7**
	comp=Z,99nm,1.1s						
KSRS	**Korea Array**	**13.34**	**271**	Pn	**Pn**	**10 31 24.3**	**-0.1**
	comp=Z,0.9nm,0.3s,baz=77,slow=14,SNR=20						
KSRS				LR	LR	10 36 14.1	
	comp=Z,182nm,18.1s,baz=68,slow=36						
KS01	**Wonju Array Si**	**13.36**	**271**	*e*Pn	**Pn**	**10 31 22.6**	**-2.1**
KS15	**Wonju Array Si**	**13.38**	**271**	*e*Pn	**Pn**	**10 31 25.4**	**+0.5**
KSAR	**Wonju Array Be**	**13.38**	**271**	P	**Pn**	**10 31 24.3**	**-0.5**
KSAR	**Wonju Array Be**	**13.38**	**271**	Pn	**Pn**	**10 31 24.3**	**-0.5**
KLR	**Kul'dur**	**14.21**	**323**	Pn	**Pn**	**10 31 34.1**	**-2.2**
	comp=Z,0.6nm,0.3s,baz=133,slow=12,SNR=19						
KLR				LR	LR	10 38 26.3	
	comp=Z,109nm,18.1s,baz=142,slow=43						
SKR	**Severo-Kuril's**	**14.57**	**30**	*e*P	**P**	**10 31 45.0**	**-2.2**
SKR				pmax	pmax		
	comp=Z,180nm,0.7s						
NKL	**Nikolayevsk**	**14.89**	**350**	*e*P	**Pn**	**10 31 42.3**	**-3.1**
CN2	**Changchun**	**15.47**	**296**	*e*P	**Pn**	**10 31 54.3**	**+1.2**
CN2				*es*P	pP	10 32 04.3	-0.5
CN2				*e*S	**Sn**	**10 34 44.8**	**+1.2**
CN2				pmax	pmax		
	comp=Z,10.0nm,0.7s						
CN2				pmax	pmax		
	comp=Z,200nm,3.0s						
CN2				LR	LR		
	comp=Z,300nm,18.0s						
CN2				LR	LR		
	comp=Z,300nm,18.0s						
CN2				LR	LR		
	comp=Z,300nm,17.0s						
PEA0	**Petropavlovsk-**	**17.09**	**27**	*e*Pn	**P**	**10 32 16.4**	**+1.1**
PEA0B	**Petropavlovsk-**	**17.09**	**27**	*e*P	**P**	**10 32 17.1**	**+1.8**
	comp=Z,50nm,1.1s						
PETK	**Petropavlovsk-**	**17.09**	**27**	P	**P**	**10 32 16.7**	**+1.4**
	comp=Z,0.6nm,0.3s,baz=219,slow=9.6,SNR=20						
PETK				LR	LR	10 40 18.1	
	comp=Z,92nm,18.7s,baz=215,slow=42						
DL2	**Dalian**	**18.07**	**278**	P	**Pn**	**10 32 23.8**	**-2.0**
DL2				pmax	pmax		
	comp=Z,37nm,1.0s						
JOW	**Kunigami**	**18.11**	**235**	P	**Pn**	**10 32 26.1**	**-0.4**
	comp=Z,1.2nm,0.3s,baz=44,slow=10,SNR=4.9						
JOW				LR	LR	10 39 20.7	
	comp=Z,86nm,20.4s,baz=98,slow=37						
HIA	**Hailar**	**20.90**	**309**	*e*P	**P**	**10 32 56.0**	**-0.9**
HIA				pmax	pmax		
	comp=E,18nm,0.8s						
HIA	**Hailar**	**20.90**	**309**	*e*P	**P**	**10 32 56.0**	**-0.9**
	comp=E,18nm,0.8s						
MA2	**Magadan**	**21.41**	**8**	P	**P**	**10 33 02.7**	**+0.4**
	comp=Z,13nm,0.7s,baz=205,slow=11,SNR=15						
MA2				LR	LR	10 42 19.7	
	comp=Z,51nm,18.6s,baz=210,slow=40						
TIA	**Tai'an**	**22.07**	**273**	*e*P	**P**	**10 33 09.1**	**-0.6**
TIA				pmax	pmax		
	comp=Z,40nm,0.9s						
NJ2	**Nanjing**	**22.09**	**261**	*e*P	**P**	**10 33 15.8**	**+6.0**
NJ2				pmax	pmax		
	comp=Z,16nm,1.1s						
BJI	**Beijing**	**22.16**	**283**	P	**P**	**10 33 09.9**	**-0.6**
BJI				S	**S**	**10 37 12.8**	**-0.2**
BJI				pmax	pmax		
	comp=Z,15nm,0.8s						
BJI				pmax	pmax		
	comp=Z,72nm,3.8s						
BJI				LR	LR		
	comp=Z,210nm,19.4s						
BJI				LR	LR		
	comp=Z,250nm,15.4s						
BJT	**Baijiatuau**	**22.16**	**283**	*e*P	**P**	**10 33 07.8**	**-2.8**
BJT				pmax	pmax		
	comp=Z,15nm,0.7s						
BJT	**Baijiatuau**	**22.16**	**283**	*e*P	**P**	**10 33 07.8**	**-2.8**
	comp=Z,15nm,0.7s						
CLNS	**Chul'man**	**22.54**	**331**	*e*P	**P**	**10 33 10.2**	**-4.3**
CLNS				pmax	pmax		
	comp=E,10.0nm,0.8s						
CLNS				pmax	pmax		
	comp=N,18nm,0.9s						
CLNS				pmax	pmax		
	comp=Z,17nm,0.8s						
GUMO	**Guam**	**24.84**	**180**	LR	LR	10 41 43.9	
	comp=Z,52nm,21.7s,baz=26,slow=33						
SEY	**Seymchan**	**24.87**	**8**	P	**P**	**10 33 38.3**	**+1.5**
	comp=Z,38nm,0.8s,baz=182,slow=6.4,SNR=156						
YAK	**Yakutsk**	**25.30**	**343**	P	**P**	**10 33 41.6**	**+0.8**
	comp=Z,81nm,0.6s,baz=166,slow=0.4,SNR=20						
YAK	**Yakutsk**	**25.30**	**343**	*e*P	**P**	**10 33 41.0**	**+0.3**
YAK				*e*		10 37 11.3	
YAK				*e*S	**S**	**10 38 08.8**	**+4.0**
YAK				*e**SS	**sS**	**10 38 20.6**	**+2.4**
YAK				pmax	pmax		
	comp=Z,65nm,0.8s						
YAK				pmax	pmax		
	comp=N,32nm,1.1s						
YAK				pmax	pmax		
	comp=E,11nm,1.2s						
YAK				pmax	pmax		
	comp=Z,22nm,0.7s						
YAK				pmax	pmax		
	comp=N,9.0nm,0.8s						
YAK				pmax	pmax		
	comp=E,4.0nm,0.4s						
YAK				smax	smax		
	comp=N,139nm,3.0s						
YAK				smax	smax		
	comp=E,102nm,4.7s						
YAK				MLR	MLR		
	comp=Z,82nm,16.0s						
YAK				MLR	MLR		
	comp=N,141nm,22.0s						
YAK				MLR	MLR		
	comp=E,125nm,21.0s						
YAK	**Yakutsk**	**25.30**	**343**	*e*P	**P**	**10 33 41.4**	**+0.6**
	comp=E,88nm,0.8s						
TPUB	**Ta-pu**	**25.58**	**241**	*e*P	**P**	**10 33 44.6**	**+0.9**
	comp=E,5.3nm,0.4s						
HHC	**Hu-ho-hao-te**	**25.58**	**286**	*e*P	**P**	**10 33 44.3**	**+0.6**
HHC				sP	sP	10 33 54.3	-0.9
HHC				S	**S**	**10 38 07.8**	**-2.1**
HHC				SS	**SnSn**	**10 39 04.1**	**-0.4**
HHC				pmax	pmax		
	comp=E,27nm,0.9s						
HHC				pmax	pmax		
	comp=E,130nm,5.3s						
HHC				LR	LR		
	comp=E,380nm,12.7s						
HHC				LR	LR		
	comp=E,590nm,10.3s						
HHC				LR	LR		
	comp=E,520nm,13.8s						
WHN	**Wuhan**	**26.21**	**262**	*e*P	**P**	**10 33 51.9**	**+2.5**
WHN				S	**S**	**10 38 25.8**	**+6.0**
WHN				LR	LR		
	comp=E,970nm,17.0s						
H11N2	**WAKE ISLAND Hy**	**26.79**	**128**	T	T	11 01 57.3	
	baz=320,slow=75,SNR=13						
H11N1	**WAKE ISLAND Hy**	**26.80**	**128**	T	T	11 01 56.0	
	baz=320,slow=75,SNR=12						
H11N3	**WAKE ISLAND Hy**	**26.81**	**128**	T	T

BILL pmax pmax
comp=Z,49nm,1.7s
BILL MLR MLR
comp=Z,65nm,17.0s
BILL Bilibino 31.86 15 *e*P **P 10 34 39.4 +0.2**
comp=Z,23nm,0.9s
LZH Lanzhou 32.46 279 *e*P **P 10 34 47.4 +2.3**
LZH pP pP 10 34 54.6 +1.3
LZH sP sP 10 34 58.1 +1.4
LZH PP **PnPn 10 35 55.0 +2.5**
LZH pmax pmax
comp=Z,25nm,1.2s
LZH pmax pmax
comp=Z,72nm,6.0s
LZH LR LR
comp=Z,330nm,13.2s
LZH LR LR
comp=Z,350nm,13.5s
LZH LR LR
comp=Z,380nm,17.0s
GYA Guiyang 34.10 261 P **P 10 35 00.3 +1.0**
GYA pmax pmax
comp=Z,10.0nm,0.8s
TIXI Tiksi 34.18 351*d i*P **P 10 34 59.0 -0.3**
TIXI pmax pmax
comp=Z,11nm,0.8s
TIXI Tiksi 34.18 351 *e*P **P 10 34 58.9 -0.5**
comp=Z,10nm,0.7s
CD2 Chengdu 34.34 270 P **P 10 35 00.1 -1.2**
CD2 pmax pmax
comp=Z,1.0nm,0.5s
GTA Gaotai 34.70 286 *e*P **P 10 35 06.5 +2.1**
GTA pP pP 10 35 13.8 +1.1
GTA sP sP 10 35 17.4 +1.4
GTA S **S 10 40 34.5 +1.8**
GTA sS sS 10 40 46.4 +0.1
GTA SS **SnSn 10 42 48.8 +2.4**
GTA pmax pmax
comp=Z,8.0nm,0.7s
GTA pmax pmax
comp=Z,79nm,6.2s
GTA LR LR
comp=Z,120nm,13.1s
GTA LR LR
comp=Z,270nm,16.6s
GTA LR LR
comp=Z,300nm,15.0s
KMI Kunming 37.82 262 P **P 10 35 32.0 +0.7**
KMI pmax pmax
comp=Z,12nm,0.5s
KMI pmax pmax
comp=Z,68nm,4.7s
KRAR Krasnoyarsk 38.28 314 P **P 10 35 35.0 +0.4**
CRAI Chiangrai 42.32 257 P P 10 36 18.2 +10
comp=Z,14nm,1.0s,comp=Z,2µm
WMQ Urumqi 42.56 296 *e*P **P 10 36 12.0 +1.7**
ZALV Zalesovo Beam 42.91 311 P **P 10 36 13.2 +0.4**
comp=Z,1.1nm,0.4s,baz=88,slow=7.7,SNR=5.5
ZALV PcP **PcP 10 38 03.2 +0.1**
comp=Z,5.4nm,0.5s,baz=89,slow=3.4,SNR=10.0
ZALV Zalesovo Beam 42.91 311 *i* P **P 10 36 13.1 +0.3**
ZALV pmax pmax
comp=Z,1.0nm,0.4s
NRIK Noril'sk 43.06 334 P **P 10 36 13.9 +0.1**
comp=Z,3.9nm,0.6s,baz=107,slow=15,SNR=6.4
NRIK LR LR 10 56 22.6
comp=Z,93nm,18.8s,baz=110,slow=39
NRIK Noril'sk 43.06 334 P **P 10 36 14.0 +0.1**
NRIK pmax pmax
comp=Z,4.0nm,0.6s
NRIK MLR MLR
comp=Z,93nm,18.8s
NVS Novosibirsk 43.76 313 *i* P P 10 36 30.1 +10
KDAK Kodiak Island 44.20 43 *i* P **P 10 36 23.2 +0.1**
CMAR Chiang Mai Arr 44.45 257 P **P 10 36 26.7 +1.0**
comp=Z,0.6nm,0.3s,baz=50,slow=7.1,SNR=4.6
CMAR PcP **PP 10 38 10.4 +0.8**
comp=Z,0.4nm,0.3s,baz=27,slow=2.2,SNR=3.8
MLY Manley 45.16 33 *e*P **P 10 36 32.3 +1.4**
comp=Z,5.5nm,0.9s
MK01 Makanchi Array 45.60 301 *e*P **P 10 36 34.4 -0.2**
MK31 Makanchi Array 45.60 301 *e*P **P 10 36 34.9 +0.3**
MK31 Makanchi Array 45.60 301 *e*P **P 10 36 34.9 +0.3**
MKAR Makanchi Array 45.60 301 P **P 10 36 34.6 0.0**
comp=Z,2.5nm,0.7s,baz=86,slow=9.6,SNR=24
MKAR LR LR 10 56 29.4
comp=Z,65nm,18.1s,baz=66,slow=37
MAKZ Makanchi 45.81 302 *e*P **P 10 36 36.5 +0.3**
MAKZ pmax pmax
comp=Z,10.0nm,1.0s
MAKZ Makanchi 45.81 302 *e*P **P 10 36 36.5 +0.3**
comp=Z,9.9nm,1.0s
RND Reindeer 45.94 35 *e*P **P 10 36 37.3 +0.3**
RND pmax pmax
comp=Z,38nm,1.9s
RND Reindeer 45.94 35 *e*P **P 10 36 37.3 +0.3**
comp=Z,38nm,1.9s
MDM Murphy Dome 46.22 33 *e*P **P 10 36 40.4 +1.2**
comp=Z,7.7nm,0.9s
COLA College 46.38 33 P **P 10 36 41.0 +0.6**
COLA pmax pmax
comp=Z,9.0nm,2.1s
ILAR Eielson Array 46.80 33 P **P 10 36 43.8 +0.2**
comp=Z,3.9nm,0.8s,baz=263,slow=6.4,SNR=41
ILB Eielson Array 46.80 33 *e*P **P 10 36 43.9 +0.2**
IL1 Eielson Array 46.80 33 *e*P **P 10 36 42.9 -0.8**
KURK Kurchatov 47.12 307 *e*P **P 10 36 46.4 0.0**
KURK pmax pmax
comp=Z,22nm,0.8s
KURK Kurchatov 47.12 307 *e*P **P 10 36 46.4 0.0**
comp=Z,22nm,0.8s
KKN Kakani 50.18 276 *e*P **P 10 37 09.6 -0.9**
comp=Z,25nm,0.6s
GKN Gorkha 50.58 277 *e*P **P 10 37 13.8 +0.4**
comp=Z,28nm,0.7s
TKM2 Tokmak 2 51.27 298 *e*P **P 10 37 19.1 +0.6**
TKM2 pmax pmax
comp=Z,9.0nm,0.6s
TKM2 Tokmak 2 51.27 298 *e*P **P 10 37 19.1 +0.6**
comp=Z,9.1nm,0.6s
KOLN Koldanda 51.50 277 *e*P **P 10 37 20.8 +0.4**
comp=Z,29nm,0.9s
BRVK Borovoye 51.60 312 *e*P **P 10 37 20.8 +0.2**
BRVK pmax pmax
comp=Z,5.0nm,0.6s
BRVK Borovoye 51.60 312 *e*P **P 10 37 20.8 +0.2**
comp=Z,5.4nm,0.6s
PYUN Piuthan 51.81 278 *e*P **P 10 37 23.7 +0.9**
comp=Z,68nm,0.8s
FRU Bishkek 51.97 299 *e*P **P 10 37 25.0 +1.4**
AAK Ala-Archa 52.13 298‖ *e*P **P 10 37 24.9 0.0**
AAK pmax pmax
comp=Z,6.0nm,1.0s
AAK Ala-Archa 52.13 298 *e*P **P 10 37 28.4 +3.5**
comp=Z,3.7nm,0.5s
KSH Kashi 52.23 294 *e*P P 10 37 33.3 +7.7
KSH *e*pP sP 10 37 41.3 +3.8
KSH PcS **PcS 10 42 40.1 +4.8**
KSH S S 10 44 59.9 +11
KSH pmax pmax
comp=Z,87nm,5.2s
KSH LR LR
comp=Z,100nm,6.2s
KSH LR LR
comp=Z,110nm,5.2s
KSH LR LR
comp=Z,120nm,5.2s
ZRNK Zerenda 52.37 312 *e*P **P 10 37 26.6 +0.3**
ZRNK pmax pmax
comp=Z,14nm,0.6s
ZRNK Zerenda 52.37 312 *e*P **P 10 37 26.6 +0.3**
comp=Z,14nm,0.6s
EKS2 Erkin-Say 52.61 299 *e*P **P 10 37 28.5 +0.1**
EKS2 pmax pmax
comp=Z,5.0nm,0.7s
EKS2 Erkin-Say 52.61 299 *e*P **P 10 37 28.4 +0.1**
comp=Z,5.3nm,0.7s
MTN Manton Dam 52.67 197 *e*P **P 10 37 27.9 -1.0**
comp=Z,30nm,1.2s
KKAR Karatay Array 54.68 300 *e*P **P 10 37 43.2 -0.2**
KKAR pmax pmax
comp=Z,1.0nm,0.3s
KKAR Karatay Array 54.68 300 *e*P **P 10 37 43.2 -0.2**
comp=Z,0.7nm,0.3s
LEM Lembang 56.81 226 LR LR 11 02 28.5
comp=Z,69nm,18.8s,slow=36

ARU Arti 57.01 319*d i*P **P 10 37 59.7 -0.1**
ARU 10 38 51.6
ARU 10 40 06.4
ARU S **S 10 45 55.4 +3.2**
ARU SS **SS 10 49 45.3 +4.9**
ARU pmax pmax
comp=Z,22nm,1.7s
ARU Arti 57.01 319 *e*P **P 10 37 59.8 0.0**
comp=Z,7.7nm,0.6s
CTA Charters Tower 58.32 178 P **P 10 38 09.9 +0.5**
baz=16,slow=12
WRAB Tennant Creek 58.97 191‖ *i*P **P 10 38 12.6 -1.3**
WRAB pmax pmax
comp=Z,39nm,0.8s
WRAB Tennant Creek 58.97 191 *e*P **P 10 38 12.8 -1.1**
comp=Z,13nm,0.7s
WRA Warramunga Arr 58.98 191 P **P 10 38 12.7 -1.3**
comp=Z,13nm,0.7s,baz=9.8,slow=7.0,SNR=100
WRA Warramunga Arr 58.98 191 *i* P **P 10 38 12.6 -1.4**
WRA pmax pmax
comp=Z,13nm,0.7s
ABKAR Akbulak array 59.01 310 *e*P **P 10 38 14.0 0.0**
comp=Z,3.4nm,0.6s
FITZ Fitzroy Crossi 59.12 201 *e*P **P 10 38 14.8 -0.2**
comp=Z,4.8nm,0.8s
RES Resolute Bay 60.47 15 *e*P **P 10 38 23.5 -0.1**
RES pmax pmax
comp=Z,4.0nm,0.8s
RES Resolute Bay 60.47 15 *e*P **P 10 38 23.5 -0.1**
comp=Z,4.5nm,0.8s
YKW3 Yellowknife Ar 61.12 31 *e*P **P 10 38 28.2 -0.1**
YKA Yellowknife Ar 61.16 31 P **P 10 38 28.5 0.0**
comp=Z,2.8nm,0.7s,baz=301,slow=6.3,SNR=16
YKB5 Yellowknife Ar 61.16 31 *e*P **P 10 38 27.3 -1.2**
AS01 Alice Springs 62.69 191 *e*P **P 10 38 37.6 -1.6**
AS31 Alice Springs 62.70 191 *e*P **P 10 38 38.8 -0.5**
TMCR Tamitsa 62.70 332 *e*P **P 10 38 39.0 +0.2**
TMCR pmax pmax
comp=Z,22nm,0.9s
ASAR Alice Springs 62.70 191 P **P 10 38 38.5 -0.8**
comp=Z,5.0nm,0.8s,baz=14,slow=7.1,SNR=74
ARCES ARCESS Array B 63.52 340 P **P 10 38 44.3 +0.1**
comp=Z,6.5nm,0.9s,baz=55,slow=7.9,SNR=3.0
KLMR Klimovskoe 63.90 328 *e*P **P 10 38 43.3 -3.5**
KLMR *e*SP **pP 10 38 57.0 +1.5**
KLMR *e* 10 41 02.8
KLMR pmax pmax
comp=Z,15nm,1.6s
DAG Danmarks Havn 64.50 356 *i* P **P 10 38 50.1 -0.4**
comp=Z,12nm,1.1s
GEYT Alibeck 65.43 300 P **P 10 38 57.4 +0.2**
comp=Z,1.5nm,0.4s,baz=204,slow=6.5,SNR=3.9
B08A Colville Reser 65.89 47 *e*P **P 10 39 01.0 +1.0**
H04A Detroit Lake 66.10 51 *e*P **P 10 39 02.9 +1.4**
C09A Chrisman Ranch 66.78 47 *e*P **P 10 39 06.8 +1.1**
NEW Newport 67.19 46 *e*P **P 10 39 09.1 +0.8**
NEW pmax pmax
comp=Z,5.0nm,0.9s
NEW Newport 67.19 46 *e*P **P 10 39 09.1 +0.8**
comp=Z,5.3nm,0.9s
MOS Moscow 67.62 324 *e*P **P 10 39 07.6 -3.2**
K05A Summer Lake 67.93 52 *e*P **P 10 39 14.9 +1.6**
VRH Novokhopyorsk 68.24 319 *e*P **P 10 39 13.2 -1.6**
VRH pmax pmax
comp=Z,9.0nm,0.3s
OBN Obninsk 68.47 324‖ *e*P **P 10 39 16.1 -0.1**
OBN *i* 10 39 28.3
OBN *e* 10 39 42.1
OBN *e* 10 41 56.3
OBN SS SS 10 52 45.0 +5.9
OBN pmax pmax
comp=Z,26nm,1.7s
OBN MLR MLR
comp=Z,61nm,16.0s
WALA Waterton Lakes 68.53 44 *e*P **P 10 39 17.6 +0.8**
comp=Z,7.1nm,1.0s
FIA1 FINESS Array S 68.71 333 *e*P **P 10 39 17.8 +0.2**
FINES FINESS Array B 68.71 333 P **P 10 39 17.6 0.0**
comp=Z,11nm,0.7s,baz=46,slow=8.2,SNR=40
LPSR Galich'ya Gora 68.84 321 *e*P **P 10 39 15.5 -3.1**
LPSR pmax pmax
comp=Z,10.0nm,1.0s
JTMT Jette 69.06 45 *e*P **P 10 39 21.2 +1.0**
YBMT Yellow Bay 69.15 45 *e*P **P 10 39 22.0 +1.2**
SUMG Summit 69.17 1 *i* P **P 10 39 21.5 +0.8**
comp=Z,8.4nm,0.8s
SUMG Summit 69.17 1 *e*P **P 10 39 21.6 +0.8**
SUMG pmax pmax
comp=Z,5.0nm,0.6s
SUMG Summit 69.17 1 *e*P **P 10 39 21.6 +0.8**
comp=Z,5.4nm,0.6s
SWMT Swartz Lake 69.36 45 *e*P **P 10 39 23.1 +1.0**
WVOR Wild Horse Val 69.48 52 *e*P **P 10 39 23.7 +0.8**
WVOR pmax pmax
comp=Z,3.0nm,0.7s
WVOR Wild Horse Val 69.48 52 *e*P **P 10 39 23.7 +0.8**
comp=Z,2.9nm,0.7s
VSR Storozhevoye 69.54 320 *e*P **P 10 39 22.2 -0.7**
VSR pmax pmax
comp=Z,7.0nm,0.5s
MSO Missoula 69.78 46 *e*P **P 10 39 25.0 +0.4**
STKA Stephens Creek 70.11 183 P **P 10 39 26.2 -0.3**
comp=Z,1.9nm,0.4s,baz=325,slow=10,SNR=5.1
VSU Vasula 70.49 331‖ *e*P **P 10 39 28.4 -0.2**
VSU pmax pmax
comp=Z,77nm,2.5s
MFID Camas Ranch 70.64 50 *e*P **P 10 39 30.8 +0.8**
comp=Z,2.4nm,0.5s
CMB Columbia Colle 70.83 56 *e*P **P 10 39 32.4 +1.3**
CMB pmax pmax
comp=Z,17nm,0.6s
CMB Columbia Colle 70.83 56 *e*P **P 10 39 32.4 +1.3**
comp=Z,17nm,0.6s
FFC Flin Flon 70.99 34 *e*P **P 10 39 32.1 +0.3**
FFC pmax pmax
comp=Z,8.0nm,0.7s
FFC Flin Flon 70.99 34 *e*P **P 10 39 32.1 +0.3**
comp=Z,8.4nm,0.7s
LRM Limekiln Ridge 71.20 46 *e*P **P 10 39 34.5 +1.0**
EGMT Eagleton 71.37 43 *e*P **P 10 39 35.0 +0.7**
comp=Z,10nm,0.9s
DLMT Dillon 71.39 47 *e*P **P 10 39 35.8 +1.2**
comp=Z,2.2nm,0.3s
HLID Hailey 71.39 49 *e*P **P 10 39 35.7 +1.1**
comp=Z,3.1nm,0.8s
BMN Battle Mountai 71.49 53 *e*P **P 10 39 36.4 +1.1**
BMN pmax pmax
comp=Z,6.0nm,0.6s
BMN Battle Mountai 71.49 53 *e*P **P 10 39 36.4 +1.1**
comp=Z,5.8nm,0.6s
BOZ Bozeman (W) 71.77 46 *e*P **P 10 39 37.9 +1.1**
BOZ pmax pmax
comp=Z,4.0nm,0.7s
BOZ Bozeman (W) 71.77 46 *e*P **P 10 39 37.9 +1.1**
comp=Z,4.4nm,0.7s
ZEI Tsey 71.89 310 *e*P **P 10 39 36.6 -1.0**
ZEI pmax pmax
comp=Z,6.0nm,0.6s
KIV Kislovodsk 71.92 312*c i*P **P 10 39 39.0 +1.3**
KIV *e* 10 39 51.6
KIV *e* 10 39 55.2
KIV *e*S **S 10 49 00.5 +3.6**
KIV pmax pmax
comp=Z,18nm,0.8s
KIV MLR MLR
comp=Z,58nm,18.0s
KBZ Khabaz 71.93 312 P **P 10 39 38.5 +0.9**
comp=Z,7.8nm,0.8s,baz=94,slow=3.6,SNR=22
NVAR Mina Array Bea 71.95 55 P **P 10 39 39.3 +1.1**
comp=Z,4.8nm,0.8s,baz=285,slow=6.3,SNR=38
NEY Neytrino 72.31 311 P **P 10 39 41.0 +0.8**
NEY pmax pmax
comp=Z,1.0nm,0.7s
H17A Grant Village 73.12 46 *e*P **P 10 39 46.6 +1.5**
comp=Z,13nm,1.1s
IMW Indian Meadow 73.22 47 *e*P **P 10 39 47.5 +1.9**
FLWY Flagg Ranch 73.24 47 *e*P **P 10 39 48.0 +2.2**
RLMT Red Lodge 73.41 45 *e*P **P 10 39 48.0 +1.3**
MOOW Moose Ponds 73.42 47 *e*P **P 10 39 48.0 +1.2**
comp=Z,4.1nm,0.8s
LOHW Long Hollow 73.58 47 *e*P **P 10 39 49.5 +1.7**
SNOW Snow King Moun 73.59 47 *e*P **P 10 39 49.5 +1.6**
comp=Z,5.3nm,0.8s
REDW Red Top Meadow 73.59 47 *e*P **P 10 39 48.8 +1.0**
comp=Z,7.2nm,1.1s

DAC Darwin (Calif) 73.66 57 *e*P **P 10 39 49.1 +0.8**
DAC Darwin (Calif) 73.66 57 *e*P **P 10 39 49.1 +0.8**
R11A Troy Canyon, C 73.73 54 *e*P **P 10 39 49.4 +0.7**
comp=Z,5.3nm,1.1s
NB2 NORSAR Subarra 73.81 338 P **P 10 39 47.8 -0.7**
comp=Z,3.5nm,0.8s,baz=38,slow=6.2
NOA NORSAR Array B 73.81 338 P **P 10 39 48.1 -0.4**
comp=Z,2.9nm,0.8s,baz=39,slow=5.8,SNR=16
NOA LR LR 11 16 00.1
comp=Z,36nm,21.1s,baz=25,slow=39
AHID Auburn Hatcher 73.81 48 *e*P **P 10 39 49.9 +0.8**
comp=Z,3.1nm,0.6s
TPNV Topopah Spring 74.14 55 *e*P **P 10 39 52.0 +0.9**
TPNV Topopah Spring 74.14 55 *e*P **P 10 39 52.0 +0.9**
HWUT Hardware Ranch 74.25 49 *e*P **P 10 39 52.5 +0.9**
comp=Z,6.7nm,1.0s
DUG Dugway, Tooele 74.35 51 *e*P **P 10 39 53.0 +0.8**
DUG pmax pmax
comp=Z,6.0nm,0.7s
DUG Dugway, Tooele 74.35 51 *e*P **P 10 39 53.0 +0.8**
comp=Z,6.3nm,0.7s
ANN Anapa 74.39 315 *e*P **P 10 39 48.8 -3.3**
ANN *e**PP **pP 10 39 59.4 -1.5**
ANN *e* 10 42 35.0
ANN *e*S **SKiKP 10 49 17.5 +0.9**
ANN *e*SS **SS 10 54 03.4 -6.8**
ANN pmax pmax
comp=Z,61nm,1.1s
TCUT Toone Canyon 74.64 50 *e*P **P 10 39 55.6 +1.6**
CTU Camp Tracy 74.69 50 *e*P **P 10 39 55.9 +1.7**
BW06 Boulder Array 74.71 47 *e*P **P 10 39 54.7 +0.4**
PD31 Pinedale Array 74.71 47 *e*P **P 10 39 54.4 0.0**
PDAR Pinedale Array 74.71 47 P **P 10 39 54.6 +0.3**
comp=Z,3.5nm,0.8s,baz=267,slow=2.0,SNR=32
PSUT Pine Spring 74.71 53 *e*P **P 10 39 55.8 +1.3**
AKASG Malin Array Be 74.72 324 P **P 10 39 53.6 -0.3**
comp=Z,3.3nm,0.6s,baz=45,slow=6.1,SNR=13
AKASG Malin Array Be 74.72 324 *i* P **P 10 39 53.5 -0.3**
AKASG pmax pmax
comp=Z,4.0nm,0.7s
KIEV Kiev 74.73 324‖ *e*P **P 10 39 53.7 -0.3**
KIEV pmax pmax
comp=Z,6.0nm,0.8s
KIEV Kiev 74.73 324 *e*P **P 10 39 53.2 -0.8**
JLU Jordanelle 74.93 50 *e*P **P 10 39 57.2 +1.5**
NLU North Lily Min 74.95 51 *e*P **P 10 39 57.1 +1.4**
MSU Marysvale 75.77 52 *e*P **P 10 40 02.3 +1.8**
MSU Marysvale 75.77 52 *e*P **P 10 40 02.3 +1.8**
LCMT Little Creek M 76.02 54 *e*P **P 10 40 03.5 +1.7**
MTPU Mount Pierson 76.05 52 *e*P **P 10 40 03.9 +1.6**
P17A Butcher Ranch, 76.06 51 *e*P **P 10 40 03.3 +1.2**
P18A Preston Nutter 76.26 50 *e*P **P 10 40 04.7 +1.3**
KNB Kanab 76.28 54 *e*P **P 10 40 05.3 +1.9**
KNB Kanab 76.28 54 *e*P **P 10 40 05.2 +1.9**
SRU San Rafael Swe 76.41 51 *e*P **P 10 40 05.0 +0.9**
SRU San Rafael Swe 76.41 51 *e*P **P 10 40 05.0 +0.9**
ULM Lac du Bonnet 76.77 35 P **P 10 40 05.6 -0.1**
comp=Z,5.5nm,0.9s,baz=320,slow=8.5,SNR=5.0
O20A White River Ci 77.13 49 *e*P **P 10 40 08.2 +0.1**
comp=Z,7.1nm,1.0s
PV04 Paradox Valley 77.85 50 *e*P **P 10 40 13.3 +1.2**
WUAZ Wupatki 78.13 54 *e*P **P 10 40 15.0 +1.2**
comp=Z,7.7nm,0.9s
AGMN Agassiz Nation 78.17 36 *e*P **P 10 40 12.9 -0.7**
comp=Z,6.0nm,0.7s
PV01 Paradox Valley 78.21 51 *e*P **P 10 40 15.4 +1.1**
comp=Z,758nm,1.1s
KWP Kalwaria Pacla 78.43 326 *e*P **P 10 40 15.8 +0.8**
KWP Kalwaria Pacla 78.43 326‖ *i*P **P 10 40 15.3 +0.3**
KWP Kalwaria Pacla 78.43 326‖ P **P 10 40 15.3 +0.3**
SMCO Snowmass 78.50 49 *e*P **P 10 40 17.0 +1.0**
comp=Z,4.2nm,0.9s
BURAR Bucovina Array 78.76 323‖ *i*P **P 10 40 16.6 -0.3**
BURAR Bucovina Array 78.76 323‖ P **P 10 40 16.6 -0.3**
MVCO Mesa Verde 78.85 51 *e*P **P 10 40 18.5 +0.7**
comp=Z,7.6nm,1.0s
ISCO Idaho Springs 78.89 48 *e*P **P 10 40 19.2 +1.1**
ISCO pmax pmax
comp=Z,8.0nm,1.4s
ISCO Idaho Springs 78.89 48 *e*P **P 10 40 19.2 +1.1**
comp=Z,8.0nm,1.4s
KOLS Kolonicke sedl 79.14 326 *e*P **P 10 40 19.1 +0.2**
STHS Stebnicka Huta 79.23 326 *e*P **P 10 40 20.7 +1.3**
OJC Ojcow 79.25 328 *e*P **P 10 40 20.0 +0.6**
OJC Ojcow 79.25 328 *e*P **P 10 40 20.0 +0.6**
CRVS Cervenica-Dubn 79.52 326 *e*P **P 10 40 21.6 +0.6**
NIE Niedzica 79.64 327 *e*P **P 10 40 22.4 +0.8**
NIE Niedzica 79.64 327 *e*P **P 10 40 22.5 +0.8**
BRTR Keskin Array B 79.82 313 P **P 10 40 23.1 +0.2**
comp=Z,0.9nm,0.6s,baz=48,slow=1.8,SNR=5.1
KSP Ksiaz 80.20 330 *e*P **P 10 40 25.1 +0.5**
KSP Ksiaz 80.20 330 *e*P **P 10 40 25.2 +0.6**
LANS Liptovska Anna 80.20 327 *e*P **P 10 40 23.6 -1.1**
SDCO Great Sand Dun 80.31 49 *e*P **P 10 40 26.7 +0.9**
comp=Z,2.6nm,0.9s
VOIR 80.41 322⇑ *i*P **P 10 40 27.0 +1.1**
VOIR 80.41 322⇑ P **P 10 40 27.0 +1.1**
DPC Dobruska-Polom 80.57 329 *e*P **P 10 40 27.7 +1.1**
DPC *e*sP **sP 10 40 39.5 +0.7**
DPC Dobruska-Polom 80.57 329 *e*P **P 10 40 27.7 +1.1**
DPC *e* 10 40 39.5
ARR Arges 80.66 322‖ *i*P **P 10 40 28.6 +1.4**
VYHS Vyhne 80.97 327 *e*P **P 10 40 29.2 +0.4**
BRG Berggiesshubel 81.08 331 *e*P **P 10 40 29.4 +0.1**
comp=Z,4.0nm,0.9s
BRG Berggiesshubel 81.08 331 *e*P **P 10 40 29.4 +0.1**
BRG pmax pmax
comp=Z,4.0nm,0.9s
CLL Collm 81.09 332‖ *i*P **P 10 40 29.0 -0.3**
comp=Z,9.0nm,1.0s
CLL *i* 10 40 40.7
CLL *e* 10 40 49.0
CLL Collm 81.09 332‖ *i*P **P 10 40 29.0 -0.3**
CLL *i* 10 40 40.7
CLL pmax pmax
comp=Z,9.0nm,1.0s
GZR Gura Zlata 81.53 323‖ *i*P **P 10 40 31.7 -0.2**
GZR Gura Zlata 81.53 323‖ P **P 10 40 31.7 -0.2**
ANMO Albuquerque 81.58 52 *i*P **P 10 40 33.7 +1.2**
ANMO pmax pmax
comp=Z,8.0nm,1.2s
ANMO Albuquerque 81.58 52 *e*P **P 10 40 33.3 +0.8**
comp=Z,6.8nm,1.1s
BGNE Belgrade 81.94 43 *e*P **P 10 40 33.6 -0.5**
comp=Z,37nm,1.0s
121A Cookes Peak, D 82.33 54 *e*P **P 10 40 37.9 +1.4**
comp=Z,11nm,1.2s
KHC Kasperske Hory 82.62 330 *e*P **P 10 40 37.7 +0.2**
KHC *e*sP **sP 10 40 49.9 +0.2**
KHC Kasperske Hory 82.62 330 *e*P **P 10 40 37.7 +0.2**
KHC *e* 10 40 49.9
KHC Kasperske Hory 82.62 330 *e*P **P 10 40 37.6 +0.2**
comp=Z,1.5nm,0.7s
CONA Conrad Observa 82.66 328 *i* P **P 10 40 38.9 +1.1**
comp=Z,3.2nm,1.0s
VAH Vaihoa 82.73 116 *e*T T 10 40 24.2
comp=Z,102nm,0.3s
GERES GERESS Array B 82.80 330 P **P 10 40 38.3 -0.2**
comp=Z,1.5nm,0.7s,baz=34,slow=5.1,SNR=18
SCHQ Schefferville 83.13 18 P **P 10 40 39.9 -0.1**
comp=Z,7.0nm,0.8s,baz=18,slow=5.0,SNR=3.6
ARSA Arzberg 83.34 328 *i* P **P 10 40 41.9 +0.6**
comp=Z,1.5nm,0.6s
MOA Molln 83.38 329 *i* PcP **P 10 40 42.6 +1.2**
comp=Z,3.7nm,1.1s
SOKA Soboth 84.00 328 *i* P **P 10 40 44.7 0.0**
comp=Z,5.4nm,0.6s
OBKA Obir 84.33 328 *i* P **P 10 40 42.7 -3.7**
comp=Z,3.8nm,1.1s
KBA Koelnbreinsper 84.37 329 *i* PcP **P 10 40 47.5 +0.8**
comp=Z,3.9nm,0.9s
MNTX Cornudas Mount 84.41 54 *e*P **P 10 40 47.6 +0.6**
comp=Z,6.5nm,1.2s
AMTX Amarillo 84.51 49 *e*P **P 10 40 48.7 +1.1**
comp=Z,16nm,1.0s
MYKA Terra Mystica 84.61 329 *i* P **P 10 40 47.5 -0.3**
comp=Z,2.7nm,0.5s
WTTA Wattenberg 84.90 330 *i* PcP **P 10 40 49.7 +0.3**
comp=Z,3.8nm,0.8s
ABTA Abfaltersbach 84.97 329 *e*P **P 10 40 47.3 -2.3**
comp=Z,1.8nm,0.5s
MOTA Moosalm 85.04 330 *e*PcP **P 10 40 51.3 +1.2**
comp=Z,4.4nm,0.6s
RETA Reutte 85.05 331 *i* PcP **P 10 40 50.4 +0.4**
comp=Z,9.4nm,0.6s

BFO	**Black Forest**	**85.26**	**333**	*i* P		**P**	**10 40 51.6**	**+0.6**
BFO	**Black Forest**	**85.26**	**333**	*e*P		**P**	**10 40 50.9**	**0.0**
	comp=Z,15nm,1.4s							
FETA	**Feichten**	**85.45**	**330**	*i* PcP		**P**	**10 40 52.3**	**+0.2**
	comp=Z,6.0nm,0.7s							
DAVA	**Damuels**	**85.56**	**331**	*i* P		**P**	**10 40 52.5**	**-0.2**
	comp=Z,11nm,0.9s							
V34A	**Guthrie**	**86.26**	**46**	*e*P		**P**	**10 40 56.5**	**+0.3**
	comp=Z,14nm,0.8s							
WMOK	**Wichita Mounta**	**86.31**	**48**	*e*P		**P**	**10 40 56.5**	**0.0**
WMOK				pmax	pmax			
	comp=Z,7.0nm,1.0s							
WMOK	**Wichita Mounta**	**86.31**	**48**	*e*P		**P**	**10 40 56.5**	**0.0**
	comp=Z,6.6nm,1.0s							
TXAR	**Lajitas Array**	**87.09**	**54**	P		**P**	**10 41 00.6**	**+0.1**
	comp=Z,1.4nm,0.7s,baz=307,slow=3.1,SNR=23							
DBIC	**Dimbokro**	**126.92**	**321**	PKP		**PKPdf**	**10 47 18.2**	**-0.5**
	comp=Z,3.3nm,0.9s,baz=0.0,slow=0.0,SNR=3.2							
LPAZ	**La Paz**	**143.64**	**62**	PKP	PKPbc		10 47 47.6	-0.1
	comp=Z,1.0nm,0.6s,baz=193,slow=3.5,SNR=5.3							
LVC	**Limon Verde**	**147.16**	**71**	*e*PKPdf		**PKPdf**	**10 47 56.3**	**+0.4**
LVC				*e*PKPbc		**PKPbc**	**10 47 57.7**	**-0.5**
LVC				*e*PKPab		**PKiKP**	**10 48 00.7**	**+0.1**

IDC 22 10:38:51.3±1.8, 14°.85S×176°.34W, h0km, mb3.9/6, mb1 4.2/6, mb1mx3.8/26, mbtmp3.8/6, Error ellipse: s-maj=116.6km s-min=24.2km az=154.0, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
WRA	**Warramunga Arr**	**47.21**	**256**	P	P	10 47 26.3	-0.1
	1.8nm,1.1s,baz=91,slow=7.7,SNR=7.9						
ASAR	**Alice Springs**	**47.59**	**251**	P	P	10 47 29.4	0.0
	1.7nm,0.6s,baz=83,slow=7.9,SNR=42						
NVAR	**Mina Array Bea**	**75.85**	**43**	P	P	10 50 40.8	+0.9
	0.5nm,0.8s,baz=224,slow=12,SNR=3.4						
TXAR	**Lajitas Array**	**82.68**	**57**	P	P	10 51 17.7	+0.4
	0.5nm,0.9s,baz=214,slow=4.2,SNR=4.2						
PDAR	**Pinedale Array**	**83.77**	**43**	P	P	10 51 21.8	-1.0
	0.1nm,0.4s,baz=232,slow=4.9,SNR=3.5						
SONM	**Songino Array**	**92.55**	**319**	P	P	10 52 04.9	+0.1
	0.8nm,0.5s,baz=130,slow=7.8,SNR=3.8						
BRTR	**Keskin Array B**	**143.91**	**319**	PKP	PKPab	10 58 26.5	+0.2
	1.5nm,0.9s,baz=90,slow=4.9,SNR=6.9						

IDC 22 10:56:20.9±4.1, 50°.46S×115°.86E, h0km, mb3.6/2, mb1 3.9/2, mb1mx3.6/37, mbtmp3.6/2, Error ellipse: s-maj=464.7km s-min=41.4km az=115.0, Western Indian-Antarctic Ridge

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
H01W2	**Cape Leeuwin H**	**15.61**	**355**	T	T	11 15 27.5	
	baz=177,slow=74,SNR=44						
H01W1	**Cape Leeuwin H**	**15.61**	**355**	T	T	11 15 26.4	
	baz=177,slow=74,SNR=41						
H01W3	**Cape Leeuwin H**	**15.62**	**355**	T	T	11 15 27.5	
	baz=177,slow=74,SNR=37						
ASAR	**Alice Springs**	**30.21**	**34**	P	P	11 02 33.1	0.0
	0.6nm,1.1s,baz=204,slow=8.2,SNR=4.1						
WRA	**Warramunga Arr**	**33.80**	**32**	P	P	11 03 04.3	-0.2
	1.0nm,0.7s,baz=202,slow=8.6,SNR=6.7						
SJG	**San Juan**	**147.68**	**176**	PKPbc	PKPbc	11 16 06.5	-0.8
	1.8nm,0.3s,baz=148,slow=3.9,SNR=3.0						
YKA	**Yellowknife Ar**	**150.47**	**47**	PKPbc	PKPbc	11 16 12.8	-0.1
	0.4nm,0.7s,baz=276,slow=2.2,SNR=9.4						

*BKK **22** 11:03:01.8±1.2, 21°.N±6°.×10°.0E±1°.2, h10km, M4.4/4, MLv4.4/4*
*ISCJB **22** 11:03:03.6±1.2, 20°.75N±0°.07×99°.94E±0°.06, h10km, Error ellipse: s-maj=12.4km s-min=4.5km az=144.7*
*PLV **22** 11:03:16.6±4.1, 22°.66N×100°.85E, h13km±999km, ML3.5*
ISC 22 11:03:04.7±2.0, 20°.6N±0°.1×99°.97E±0°.07, h10km, n9, σ0s72/12, Myanmar

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CRAI	**Chiangrai**	**0.55**	**135**	P	**Pn**	**11 03 17.5**	**-1.1**
CRAI				S	**Sb**	**11 03 24.8**	**+0.5**
CMMT	**Chiang Mai**	**2.04**	**208**	P	**Pn**	**11 03 38.7**	**-0.4**
CMMT				S	**Sb**	**11 04 07.5**	**+0.2**
CHTO	**Chiang Mai**	**2.04**	**208**	P	**Pn**	**11 03 38.7**	**-0.5**
CHTO				S	**Sb**	**11 04 07.6**	**+0.3**
LAMP	**Lampang**	**2.11**	**189**	P	**Pn**	**11 03 40.3**	**+0.2**
LAMP				S	**Sb**	**11 04 09.6**	**+0.2**
DBV	**Dienbien**	**2.96**	**74**	*e*Pg	Pg	11 04 04.9	+3.4
DBV				*e*Sg	**Sg**	**11 04 41.5**	**+1.6**
DBV				AML	AML	11 04 44.1	
	comp=E,407nm,0.5s						
MHMT	**Maesarieng**	**3.10**	**219**	P	**Pn**	**11 03 53.4**	**-0.3**
MLVB	**It Ong**	**3.29**	**64**	*e*Sg	Sg	11 05 10.1	+20
TGV	**Tuan Giao**	**3.37**	**73**	*e*Pg	Pg	11 04 12.4	+3.1
TGV				*e*Sg	**Sg**	**11 04 52.8**	**-0.1**
TGV				AML	AML	11 04 57.9	
	comp=N,115nm,0.5s						
TTVN	**Tram Tau**	**4.19**	**78**	*e*Sg	**Sg**	**11 05 19.1**	**-0.3**

*IDC **22** 11:11:44.6±1.2, 37°.70N×144°.10E, h0km, mb3.3/4, mb1 3.6/7, mb1mx3.3/54, mbtmp3.5/7, ML3.2/3, MS3.3/2, Ms1 3.3/2, ms1mx2.3/28, Error ellipse: s-maj=34.6km s-min=22.1km az=102.0*
*ISCJB **22** 11:11:46.5±1.0, 37°.8N±0°.1×143°.8E±0°.2, h33km, mb3.4/4, MS3.2/1, Error ellipse: s-maj=23.7km s-min=12.6km az=22.6*
ISC 22 11:11:49.1±1.1, 37°.7N±0°.1×144°.0E±0°.2, h35km, n12, σ2s23/7, mb3.4/4, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MJAR	**Matsushiro Arr**	**4.75**	**258**	Pn	**Pn**	**11 12 56.5**	**-1.8**
	0.8nm,0.3s,baz=75,slow=14,SNR=4.3						
JHJ	**Hachijo jima 2**	**5.72**	**218**	Pn	**Pn**	**11 13 09.5**	**-2.0**
	5.1nm,0.3s,baz=66,slow=20,SNR=2.5						
JHJ				Sn	Sn	11 14 06.7	-9.3
	10nm,0.3s,baz=60,slow=20,SNR=2.8						
ASAJ	**Asahikawa**	**6.48**	**351**	Pn	**Pn**	**11 13 20.4**	**-1.5**
	0.4nm,0.3s,baz=232,slow=18,SNR=4.3						
ASAJ				Sn	Sn	11 14 25.8	-8.9
	0.3nm,0.3s,baz=209,slow=18,SNR=2.2						
JCJ	**Chichijima**	**10.69**	**189**	LR	LR	11 19 33.3	
	comp=Z,144nm,19.1s,baz=212,slow=44						
H11N2	**WAKE ISLAND Hy**	**26.81**	**126**	T	T	11 46 00.4	
	baz=317,SNR=5.4						
H11N1	**WAKE ISLAND Hy**	**26.82**	**126**	T	T	11 45 58.0	
	baz=317						
H11N3	**WAKE ISLAND Hy**	**26.83**	**126**	T	T	11 46 01.6	
	baz=317						
SONM	**Songino Array**	**29.12**	**302**	LR	LR	11 30 24.2	
	comp=Z,58nm,18.3s,baz=260,slow=38						
MKAR	**Makanchi Array**	**45.49**	**302**	P	**P**	**11 20 07.5**	**+2.6**
	0.1nm,0.2s,baz=73,slow=9.7,SNR=2.2						
ILAR	**Eielson Array**	**47.83**	**33**	P	**P**	**11 20 22.4**	**-0.5**
	0.5nm,0.9s,baz=248,slow=6.0,SNR=5.4						
WRA	**Warramunga Arr**	**58.06**	**191**	P	**P**	**11 21 39.3**	**+0.5**
	0.3nm,0.7s,baz=11,slow=7.2,SNR=3.5						
ASAR	**Alice Springs**	**61.78**	**190**	P	**P**	**11 22 05.9**	**+1.6**
	0.2nm,0.8s,baz=1.4,slow=7.4,SNR=3.3						

*MDD **22** 11:13:18.4±3.3, 37°.78N×19°.93W, h0km, mb4.6/4, Error ellipse: s-maj=34.8km s-min=15.9km az=115.0, PRXIMO SIN SOLUCIN*
*CSEM **22** 11:13:22.7±0.5, 37°.66N×19°.40W, h10km, ML3.8/18, Error ellipse: s-maj=10.0km s-min=5.0km az=129.0*
*INMG **22** 11:13:22.1±3.4, 37°.86N×20°.29W, h10km, ML3.3, Error ellipse: s-maj=20.2km s-min=7.4km az=162.0*
ISC 22 11:13:15.8±2.4, 37°.98N±0°.08×19°.8W±0°.1, h10km, n76, σ1s49/76, Azores-Cape St. Vincent Ridge

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
BART	**Pico Bartolome**	**4.25**	**269**	*e*S	Sn	11 15 01.4	-9.1
BART				A	A	11 15 02.7	
	21nm,0.3s						
PSMN	**Pico do Norte,**	**4.30**	**258**	*e*P	Pg	11 14 50.5	+12
PSMN				*e*S	Sn	11 14 55.6	-16
PSMN				A	A	11 14 58.4	
	42nm,0.2s						
PSMA	**Santa Maria**	**4.35**	**259**	*e*P	Pg	11 14 51.0	+12
PSMA				*e*S	Sn	11 14 56.8	-16
PSMA				A	A	11 14 57.8	
	37nm,0.2s						
PMOZ	**Porto Moniz, M**	**5.57**	**157**	*e*Pn	**Pn**	**11 14 39.9**	**+1.1**
PMOZ	**Porto Moniz, M**	**5.57**	**157**	P	**Pn**	**11 14 39.7**	**+0.9**
	33nm,0.2s,SNR=7.9						
PMOZ				S	**Sn**	**11 15 37.4**	**-5.5**
	148nm,0.8s,SNR=7.9						
PMOZ	**Porto Moniz, M**	**5.57**	**157**	P	**Pn**	**11 14 39.7**	**+0.9**
	33nm,0.2s,SNR=7.9						
PMOZ	**Porto Moniz, M**	**5.57**	**157**	*e*Pn	**Pn**	**11 14 39.9**	**+1.1**
PMOZ				S	**Sn**	**11 15 37.4**	**-5.5**
	148nm,0.8s,SNR=7.9						
PMAR	**Madeira**	**5.75**	**155**	*e*Pn	**Pn**	**11 14 42.5**	**+1.1**
PMAR				*e*Sn	Sn	11 15 38.9	-8.7
PMAR				A	A	11 15 44.8	
	26nm,0.2s						
PMAR	**Madeira**	**5.75**	**155**	*e*Pn	**Pn**	**11 14 42.5**	**+1.1**
PMAR				*e*Sn	Sn	11 15 38.9	-8.7
	26nm,0.2s						
FUL	**Funchal**	**5.83**	**155**	*e*Pn	**Pn**	**11 14 43.4**	**+1.1**
FUL	**Funchal**	**5.83**	**155**	*e*Pn	**Pn**	**11 14 43.4**	**+1.1**
PMAFR	**Mafra**	**8.31**	**80**	*e*Pn	Pn	11 15 23.7	+7.4
PMAFR				*e*Sn	**Sn**	**11 16 52.0**	**+1.8**
PMAFR				A	A	11 17 01.9	
	17nm,0.6s						
PMAFR	**Mafra**	**8.31**	**80**	*e*Pn	Pn	11 15 23.7	+7.4
PMAFR				S	**Sn**	**11 16 51.7**	**+1.5**
	20nm,0.5s,SNR=9.0						
PMAFR				*e*Sn	**Sn**	**11 16 52.0**	**+1.8**
	17nm,0.6s						
PFVI	**Vila Bisbo**	**8.75**	**92**	*e*Sn	**Sn**	**11 17 02.6**	**+1.4**
PFVI	**Vila Bisbo**	**8.75**	**92**	*e*Sn	**Sn**	**11 17 02.6**	**+1.4**
MORF	**Marmelete**	**8.87**	**91**	*e*Sn	**Sn**	**11 17 04.9**	**+0.8**
MORF				A	A	11 17 09.0	
	4.6nm,0.1s						
MORF	**Marmelete**	**8.87**	**91**	*e*Sn	**Sn**	**11 17 04.9**	**+0.8**
	4.6nm,0.1s						
PNCL	**Nicolau / Gran**	**8.89**	**86**	*e*Sn	**Sn**	**11 17 05.1**	**+0.5**
PNCL				A	A	11 17 09.2	
	8.8nm,0.7s						
PNCL	**Nicolau / Gran**	**8.89**	**86**	*e*Sn	**Sn**	**11 17 05.1**	**+0.5**
	8.8nm,0.7s						
PCAS	**Casmilo, Conde**	**9.04**	**73**	*e*Sn	**Sn**	**11 17 09.6**	**+1.5**
PCAS				A	A	11 17 17.7	
	4.1nm,0.6s						
PCAS	**Casmilo, Conde**	**9.04**	**73**	*e*Sn	**Sn**	**11 17 09.6**	**+1.5**
	4.1nm,0.6s						
PMTG	**Montargil**	**9.13**	**80**	*e*Pn	Pn	11 15 33.4	+5.7
PMTG				*e*Sn	**Sn**	**11 17 10.7**	**+0.2**
PMTG				A	A	11 17 20.5	
	3.1nm,0.6s						
PMTG	**Montargil**	**9.13**	**80**	*e*Pn	Pn	11 15 33.4	+5.7
PMTG				*e*Sn	**Sn**	**11 17 10.7**	**+0.2**
	3.1nm,0.6s						
MESJ	**Messejana**	**9.15**	**87**	*e*Sn	**Sn**	**11 17 10.6**	**-0.4**
MESJ				A	A	11 17 17.4	
	5.7nm,0.5s						
MESJ	**Messejana**	**9.15**	**87**	*e*Sn	**Sn**	**11 17 10.6**	**-0.4**
	5.7nm,0.5s						
EVO	**Evora**	**9.29**	**83**	*e*Sn	**Sn**	**11 17 14.8**	**+0.5**
EVO				A	A	11 17 23.9	
	4.2nm,0.6s						
EVO	**Evora**	**9.29**	**83**	*e*Sn	**Sn**	**11 17 14.8**	**+0.5**
	4.2nm,0.6s						
PCVE	**Castro Verde**	**9.31**	**89**	*e*Sn	**Sn**	**11 17 14.8**	**-0.1**
PCVE				A	A	11 17 19.4	
	4.6nm,0.8s						
PCVE	**Castro Verde**	**9.31**	**89**	*e*Sn	**Sn**	**11 17 14.8**	**-0.1**
	4.6nm,0.8s						
PBEJ	**Beja**	**9.42**	**86**	*e*Sn	**Sn**	**11 17 17.7**	**+0.2**
PBEJ				A	A	11 17 21.4	
	3.1nm,0.5s						
PBEJ	**Beja**	**9.42**	**86**	*e*Sn	**Sn**	**11 17 17.7**	**+0.2**
	3.1nm,0.5s						
PBDV	**Barranco-do-Ve**	**9.45**	**91**	*e*Sn	**Sn**	**11 17 17.3**	**-0.9**
PBDV				A	A	11 17 23.9	
	5.7nm,0.6s						
PBDV	**Barranco-do-Ve**	**9.45**	**91**	*e*Sn	**Sn**	**11 17 17.3**	**-0.9**
	5.7nm,0.6s						
PVAQ	**Vaqueiros**	**9.59**	**90**	*e*Sn	**Sn**	**11 17 20.3**	**-1.5**
PVAQ				A	A	11 17 35.7	
	4.1nm,0.9s						
PVAQ	**Vaqueiros**	**9.59**	**90**	*e*Sn	**Sn**	**11 17 20.3**	**-1.5**
	4.1nm,0.9s						
PVIS	**Viseu**	**9.62**	**70**	*e*Sn	**Sn**	**11 17 24.5**	**+2.1**
PVIS				A	A	11 17 38.9	
	3.8nm,0.6s						
PVIS	**Viseu**	**9.62**	**70**	*e*Sn	**Sn**	**11 17 24.5**	**+2.1**
	3.8nm,0.6s						
EMAZ	**Mazaricos**	**9.62**	**56**	P	Pn	11 15 39.3	+5.0
	2.9nm,0.2s,SNR=7.9						
EMAZ				S	**Sn**	**11 17 21.7**	**-0.8**
	2.7nm,0.1s,SNR=7.9						
EMAZ	**Mazaricos**	**9.62**	**56**	P	Pn	11 15 39.3	+5.0
	2.9nm,0.2s,SNR=7.9						
EMAZ				S	**Sn**	**11 17 21.7**	**-0.8**
	2.7nm,0.1s,SNR=7.9						
PESTR	**Estremoz**	**9.62**	**81**	*e*Sn	**Sn**	**11 17 24.3**	**+1.8**
PESTR				A	A	11 17 42.9	
	2.5nm,0.6s						
PESTR	**Estremoz**	**9.62**	**81**	*e*Sn	**Sn**	**11 17 24.3**	**+1.8**
	2.5nm,0.6s						
PGAV	**Gavieira, Arco**	**9.70**	**62**	*e*Sn	**Sn**	**11 17 24.1**	**-0.5**
PGAV				A	A	11 17 29.0	
	6.7nm,0.4s						
PGAV	**Gavieira, Arco**	**9.70**	**62**	*e*Sn	**Sn**	**11 17 24.1**	**-0.5**
	6.7nm,0.4s						
EGRO	**El Granado**	**9.76**	**89**	S	Sn	11 17 24.6	-1.4
	3.2nm,0.2s,SNR=7.9						
EGRO	**El Granado**	**9.76**	**89**	S	**Sn**	**11 17 24.6**	**-1.4**
	3.2nm,0.2s,SNR=7.9						
PCBR	**Castelo Branco**	**9.78**	**75**	*e*Sn	**Sn**	**11 17 27.3**	**+0.9**
PCBR				A	A	11 17 35.2	
	2.5nm,0.3s						
PCBR	**Castelo Branco**	**9.78**	**75**	*e*Sn	**Sn**	**11 17 27.3**	**+0.9**
	2.5nm,0.3s						
PCAB	**Cabril**	**9.79**	**64**	*e*Sn	**Sn**	**11 17 27.9**	**+1.3**
PCAB				A	A	11 17 31.5	
	3.7nm,0.6s						
PCAB	**Cabril**	**9.79**	**64**	*e*Sn	**Sn**	**11 17 27.9**	**+1.3**
	3.7nm,0.6s						
PMRV	**Marv??o**	**9.80**	**78**	*e*Sn	**Sn**	**11 17 27.9**	**+0.9**
PMRV				A	A	11 17 35.5	
	3.6nm,0.5s						
PMRV	**Marv??o**	**9.80**	**78**	*e*Sn	**Sn**	**11 17 27.9**	**+0.9**
	3.6nm,0.5s						
ELOB	**Lobios**	**9.81**	**63**	P	Pn	11 15 42.6	+5.5
	0.6nm,0.2s,SNR=7.9						
ELOB				S	**Sn**	**11 17 25.9**	**-1.4**
	0.8nm,0.1s,SNR=9.8						
ELOB	**Lobios**	**9.81**	**63**	P	Pn	11 15 42.6	+5.5
	0.6nm,0.2s,SNR=7.9						
ELOB				S	**Sn**	**11 17 25.9**	**-1.4**
	0.8nm,0.1s,SNR=9.8						
PVRL	**Vila Real**	**9.88**	**67**	*e*Sn	**Sn**	**11 17 28.8**	**-0.2**
PVRL	**Vila Real**	**9.88**	**67**	*e*Sn	**Sn**	**11 17 28.8**	**-0.2**
PBAR	**Barrancos**	**10.06**	**85**	*e*Sn	**Sn**	**11 17 32.5**	**-0.8**
PBAR				A	A	11 17 36.1	
	6.0nm,0.6s						
PBAR	**Barrancos**	**10.06**	**85**	*e*Sn	**Sn**	**11 17 32.5**	**-0.8**
	6.0nm,0.6s						
EBAD	**Badajoz**	**10.07**	**82**	S	**Sn**	**11 17 34.4**	**+0.9**
	1.8nm,0.1s,SNR=4.8						
EBAD	**Badajoz**	**10.07**	**82**	S	**Sn**	**11 17 34.4**	**+0.9**
	1.8nm,0.1s,SNR=4.8						
EAGO	**Agolada(Pontev**	**10.14**	**58**	P	Pn	11 15 47.7	+6.2
	3.5nm,0.5s,SNR=7.9						
EAGO				S	**Sn**	**11 17 33.9**	**-1.4**
	0.8nm,0.1s,SNR=7.9						
EAGO	**Agolada(Pontev**	**10.14**	**58**	P	Pn	11 15 47.7	+6.2
	3.5nm,0.5s,SNR=7.9						
EAGO				S	**Sn**	**11 17 33.9**	**-1.4**
	0.8nm,0.1s,SNR=7.9						
MVO	**Moncorvo**	**10.36**	**68**	*e*Sn	**Sn**	**11 17 40.8**	**+0.2**
MVO				A	A	11 17 44.1	
	4.2nm,0.7s						
MVO	**Moncorvo**	**10.36**	**68**	S	**Sn**	**11 17 39.5**	**-1.1**
	0.9nm,0.1s,SNR=7.9						
MVO	**Moncorvo**	**10.36**	**68**	S	**Sn**	**11 17 39.5**	**-1.1**
	0.9nm,0.1s,SNR=7.9						
MVO				*e*Sn	Sn	11 17 40.8	+0.2
	4.2nm,0.7s						
EMIN	**Mina Concepcio**	**10.38**	**87**	S	**Sn**	**11 17 39.9**	**-1.2**
	1.1nm,0.2s,SNR=6.6						
EMIN	**Mina Concepcio**	**10.38**	**87**	S	**Sn**	**11 17 39.9**	**-1.2**
	1.1nm,0.2s,SNR=6.6						
ECAL	**Calabor**	**10.78**	**64**	S	**Sn**	**11 17 49.7**	**-1.2**
	0.7nm,0.2s,SNR=9.9						
ECAL	**Calabor**	**10.78**	**64**	S	**Sn**	**11 17 49.7**	**-1.2**
	0.7nm,0.2s,SNR=9.9						
EPON	**Pontenova**	**10.99**	**57**	P	Pn	11 15 58.2	+5.2
	1.3nm,0.3s,SNR=7.9						
EPON				S	**Sn**	**11 17 54.3**	**-1.7**
	2.4nm,0.3s,SNR=5.6						
EPON	**Pontenova**	**10.99**	**57**	P	Pn	11 15 58.2	+5.1
	1.3nm,0.3s,SNR=7.9						
EPON				S	**Sn**	**11 17 54.3**	**-1.7**
	2.4nm,0.3s,SNR=5.6						
ECAB	**El Cabril**	**11.34**	**85**	S	**Sn**	**11 18 03.4**	**-1.4**
	0.3nm,0.2s,SNR=9.2						
ECAB	**El Cabril**	**11.34**	**85**	S	**Sn**	**11 18 03.4**	**-1.4**
	0.3nm,0.2s,SNR=9.2						
EADA	**Adamuz**	**12.00**	**84**	S	**Sn**	**11 18 18.7**	**-2.1**
	0.4nm,0.3s,SNR=7.9						
EADA	**Adamuz**	**12.00**	**84**	S	**Sn**	**11 18 18.7**	**-2.1**
	0.4nm,0.3s,SNR=7.9						
EARI	**Arriondas**	**12.28**	**60**	S	**Sn**	**11 18 27.1**	**-0.7**
	0.1nm,0.2s,SNR=7.9						
EARI	**Arriondas**	**12.28**	**60**	S	**Sn**	**11 18 27.1**	**-0.7**
	0.1nm,0.2s,SNR=7.9						

*ISCJB **22** 11:21:02.9±0.5, 15°.0S±0°.1×176°.09W±0°.07, h10km, mb4.0/11, MS3.9/9, Error ellipse: s-maj=18.9km s-min=7.9km az=161.1*
*IDC **22** 11:21:03.2±1.1, 14°.89S×176°.21W, h0km, mb3.9/8, mb1 4.2/9, mb1mx3.9/42, mbtmp3.9/9, ML3.8/1, MS3.8/11, Ms1 3.8/11, ms1mx3.7/22, Error ellipse: s-maj=74.5km s-min=18.8km az=154.0*
*NEIC **22** 11:21:04.9±0.6, 14°.84S×176°.22W, h10km, mb4.5/2, Error ellipse: s-maj=19.8km s-min=12.6km az=149.0*
ISC 22 11:21:04.3±0.7, 14°.9S±0°.1×176°.09W±0°.08, h10km, n28, σ0s87/17, mb4.1/11, MS3.9/9, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
AFI	**Afiamalu**	**4.29**	**77**	Pn	**Pn**	**11 22 09.3**	**-0.6**
	4.8nm,0.3s,baz=239,slow=9.2,SNR=5.3						
AFI				Sn	**Sn**	**11 22 59.3**	**-0.8**
	7.6nm,0.3s,baz=207,slow=18,SNR=7.0						
AFI				LR	LR	11 23 33.5	
	comp=Z,938nm,19.8s,baz=242,slow=34						
AFI	**Afiamalu**	**4.29**	**77**	*e*Pn	**Pn**	**11 22 10.9**	**+1.1**
AFI				*e*Sn	**Sn**	**11 22 59.3**	**-0.8**
RAO	**Raoul Island**	**14.37**	**186**	*e*Pn	**Pn**	**11 24 28.1**	**+0.1**
DZM	**Mont Dzumac**	**18.02**	**244**	LR	LR	11 30 56.3	
	comp=Z,326nm,19.2s,baz=59,slow=33						
URZ	**Urewera**	**24.02**	**193**	LR	LR	11 34 14.4	
	comp=Z,455nm,21.9s,baz=48,slow=33						
HNR	**Honiara**	**24.04**	**280**	LR	LR	11 34 10.1	
	comp=Z,682nm,21.7s,baz=124,slow=33						
PPT	**Papeete**	**25.59**	**100**	LR	LR	11 34 18.5	
	comp=Z,164nm,19.4s,baz=272,slow=31						
PPT2	**Papeete2**	**25.59**	**100**	*e*LQ	LQ	11 31 44.7	
PPT2	467nm,27.0s			*e*LR	LR	11 32 51.8	
	705nm,27.0s						
PMG	**Port Moresby**	**36.31**	**274**	*e*P	**P**	**11 28 09.2**	**+0.7**
	1.9nm,0.5s						
H11N3	**WAKE ISLAND Hy**	**38.26**	**334**	T	T	12 09 00.3	
	baz=152,slow=76,SNR=4.2						
H11N1	**WAKE ISLAND Hy**	**38.27**	**334**	T	T	12 09 02.0	
	baz=152,slow=76,SNR=8.7						
H11N2	**WAKE ISLAND Hy**	**38.28**	**334**	T	T	12 09 00.0	
	baz=152,slow=76,SNR=5.8						
RKT	**Rikitea**	**39.61**	**108**	*e*LR	LR	11 39 23.4	
	456nm,28.2s						
STKA	**Stephens Creek**	**42.05**	**239**	P	**P**	**11 28 56.5**	**+0.1**
	2.0nm,0.9s,baz=48,slow=12,SNR=2.5						
WRAB	**Tennant Creek**	**47.42**	**257**	*e*P	**P**	**11 29 38.6**	**-0.9**
	9.3nm,1.2s						
WRA	**Warramunga Arr**	**47.43**	**257**	P	**P**	**11 29 38.6**	**-0.9**
	2.4nm,1.0s,baz=89,slow=8.3,SNR=11						
WRA				LR	LR	11 47 46.1	
	comp=Z,301nm,20.6s,baz=85,slow=34						
ASAR	**Alice Springs**	**47.80**	**251**	P	**P**	**11 29 42.0**	**-0.4**
	3.3nm,0.6s,baz=84,slow=8.1,SNR=47						
VNDA	**Vanda**	**63.61**	**185**	P	P	11 31 38.9	+3.9
	3.5nm,1.2s,baz=4.4,slow=5.1,SNR=4.3						
VNDA				LR	LR	11 56 13.3	
	comp=Z,320nm,18.9s,baz=18,slow=33						
LPIG	**La Paz**	**75.01**	**60**	LR	LR	11 56 55.0	
	comp=Z,68nm,21.2s,baz=210,slow=29						
NVAR	**Mina Array Bea**	**75.73**	**43**	P	P	11 32 53.5	+2.9
	1.6nm,1.0s,baz=228,slow=11,SNR=4.0						
ILAR	**Eielson Array**	**82.49**	**12**	P	**P**	**11 33 27.1**	**+0.4**
	0.3nm,0.8s,baz=237,slow=8.4,SNR=3.2						
TXAR	**Lajitas Array**	**82.51**	**57**	P	**P**	**11 33 29.6**	**+1.8**
	1.5nm,1.1s,baz=220,slow=5.7,SNR=6.9						
TXAR				LR	LR	12 01 55.1	
	comp=Z,45nm,20.8s,baz=0.0,slow=30						
PDAR	**Pinedale Array**	**83.66**	**43**	P	**P**	**11 33 33.4**	**-0.2**
	0.8nm,0.9s,baz=224,slow=4.1,SNR=5.4			

comp=Z,98nm,21.6s,slow=32
ILAR Eielson Array 84.09 22 P P 11 44 29.4 -0.5
0.4nm,1.0s,baz=251,slow=4.7,SNR=3.2

*DDA **22** 11:33:57.7, 37.75N×38.02E, h7km, Ml2.8*
*CSEM **22** 11:33:57.0±0.2, 37.72N×38.05E, h2km, ML2.8, Error ellipse: s-maj=4.8km s-min=3.8km az=146.0*
*ISK **22** 11:33:57.2, 37.58N×38.05E, h13km, MD2.6*
ISC 22 11:33:57.2±1.3, 37.66N±0.04×38.04E±0.03, h8km±11km, n17, σ1§35/27, Turkey

Code	Station Name	Δ°	AZ°	Phase	Op	ID	Time	Res
						ISC	h m s	ISC
AKCD	**Akcadag**	**0.64**	**352**	*i* P		**Pg**	11 34 07.7	-2.0
AKCD				*i* S		**Sg**	**11 34 17.9**	**-0.2**
AKCD	**Akcadag**	**0.64**	**352**	P		Pg	11 34 07.7	-2.0
AKCD				S		**Sg**	**11 34 17.9**	**-0.2**
URFA	**Urfa**	**0.66**	**109**	*e*PG		**Pb**	**11 34 09.8**	**-1.1**
URFA				*e*SG		**Sb**	**11 34 19.1**	**-1.1**
URFA	**Urfa**	**0.66**	**109**	*e*Pg		**Pb**	**11 34 09.9**	**-1.1**
URFA				*e*Sg		**Sb**	**11 34 19.1**	**-1.1**
GAZ	**Gaziantep**	**0.82**	**234**	*e*PG		**Pb**	**11 34 12.8**	**-0.9**
GAZ				*e*SG		**Sb**	**11 34 24.2**	**-0.8**
GAZ	**Gaziantep**	**0.82**	**234**	*e*Pg		**Pb**	**11 34 12.8**	**-0.9**
GAZ				*e*Sg		**Sb**	**11 34 24.2**	**-0.8**
SURC	**SANLIURFA_SURC**	**0.90**	**150**	*i* P		**Pn**	**11 34 15.5**	**-0.7**
SURC				*i* S		**Sn**	**11 34 31.5**	**+2.1**
SURC	**SANLIURFA_SURC**	**0.90**	**150**	P		**Pn**	**11 34 15.5**	**-0.7**
KMRS	**Kahramanmaras**	**0.92**	**261**	*e*PG		**Pb**	**11 34 15.3**	**-0.1**
KMRS				*e*SG		**Sn**	**11 34 28.5**	**-1.3**
KMRS	**Kahramanmaras**	**0.92**	**261**	*e*Pg		**Pb**	**11 34 15.3**	**-0.1**
KMRS				*e*Sg		**Sn**	**11 34 28.5**	**-1.3**
ELZG	**Elazig**	**1.12**	**41**	*i* P		**Pb**	**11 34 17.9**	**-1.0**
ELZG				*i* S		**Sb**	**11 34 34.9**	**+1.2**
ELZG	**Elazig**	**1.12**	**41**	P		**Pb**	**11 34 17.9**	**-1.0**
KUZU	**Kuzuini**	**1.18**	**221**	*i* P		**Pg**	**11 34 20.9**	**+1.1**
KUZU				*i* S		**Sn**	**11 34 39.9**	**+3.7**
KUZU	**Kuzuini**	**1.18**	**221**	P		**Pg**	**11 34 20.9**	**+1.1**
KAMA	**Osmaniye**	**1.19**	**247**	*i* P		**Pg**	**11 34 20.5**	**+0.3**
KAMA				*i* S		**Sn**	**11 34 38.9**	**+2.2**
SVRC	**Sivrice-ELAZID**	**1.23**	**54**	*e*PN		**Pb**	**11 34 21.3**	**+0.5**
SVRC	**Sivrice-ELAZID**	**1.23**	**54**	*e*Pn		**Pb**	**11 34 21.3**	**+0.5**

JMA 22 11:49:50.2±0.1, 36.95N×141.12E, h49km±1km, M3.0, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	Op	ID	Time	Res
						ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.30**	**301**	P		Pn	11 49 59.1	-0.2
ONAJ				S		Sn	11 50 05.4	-0.4
JFK	**Kawauchi**	**0.46**	**335**	P		Pn	11 50 00.6	-0.4
JFK				S		Sn	11 50 07.9	-0.8
JHO	**Hitachi**	**0.56**	**233**	P		Pn	11 50 01.7	-0.4
JHO				S		Sn	11 50 09.9	-0.7
JFT	**Otama**	**0.84**	**312**	P		Pn	11 50 06.6	+0.8
JFT				S		Sn	11 50 18.3	+1.1
JMM	**Marumori**	**0.95**	**344**	P		Pn	11 50 06.9	-0.3
JMM				S		Sn	11 50 19.0	-0.7
JOU	**Okura**	**1.46**	**346**	P		Pn	11 50 14.5	+0.3
JIO	**Ouri**	**1.51**	**7**	P		Pn	11 50 14.6	-0.2
MAT	**Matsushiro**	**2.38**	**261**	P		Pn	11 50 27.7	+1.0
MAT				S		Sn	11 50 58.5	+3.9

*IDC **22** 11:53:56.6±2.9, 20.21S×175.86W, h147km±27km, mb3.5/9, mb1 3.8/11, mb1mx3.6/29, mbtmp4.0/11, Error ellipse: s-maj=35.8km s-min=14.9km az=139.0*
ISC 22 11:53:56.4±0.7, 20.2S±0.1×175.6W±0.1, h150km, n15, σ2§17/17, mb3.7/9, Tonga Islands

Code	Station Name	Δ°	AZ°	Phase	Op	ID	Time	Res
						ISC	h m s	ISC
AFI	**Afiamalu**	**7.26**	**30**	P		**Pn**	**11 55 41.6**	**+1.5**
	9.5nm,0.3s,baz=192,slow=2.1,SNR=26							
AFI				S		**Sn**	**11 56 55.7**	**-5.7**
	19nm,0.3s,baz=228,slow=23,SNR=8.7							
RAO	**Raoul Island**	**9.22**	**193**	S		**Sn**	**11 57 46.5**	**-1.8**
	53nm,0.3s,baz=252,slow=23,SNR=3.7							
DZM	**Mont Dzumac**	**16.89**	**261**	P		**Pn**	**11 57 47.2**	**+3.1**
	2.2nm,0.3s,baz=78,slow=19,SNR=32							
URZ	**Urewera**	**19.05**	**198**	P		**P**	**11 58 07.4**	**+0.5**
	0.9nm,0.3s,baz=269,slow=4.2,SNR=11							
URZ				S		S	12 01 22.2	-13
	1.1nm,0.3s,baz=69,slow=23,SNR=11							
STKA	**Stephens Creek**	**39.97**	**244**	P		**P**	**12 01 14.6**	**-1.7**
	1.2nm,0.5s,baz=94,slow=10,SNR=4.9							
ASAR	**Alice Springs**	**46.81**	**256**	P		**P**	**12 02 09.6**	**-1.8**
	1.4nm,0.5s,baz=94,slow=8.0,SNR=57							
ASAR				PcP		**PcP**	**12 03 41.2**	**-0.9**
	1.8nm,0.7s,baz=104,slow=3.9,SNR=15							
WRA	**Warramunga Arr**	**46.91**	**261**	P		**P**	**12 02 10.2**	**-2.0**
	1.2nm,0.4s,baz=94,slow=6.7,SNR=74							
WRA				PcP		**PcP**	**12 03 41.5**	**-0.9**
	1.1nm,0.7s,baz=100,slow=3.2,SNR=5.8							
PETK	**Petropavlovsk-**	**76.64**	**344**	P		**P**	**12 05 31.0**	**+0.7**
	1.0nm,0.7s,baz=119,slow=7.3,SNR=3.5							
NVAR	**Mina Array Bea**	**79.28**	**42**	P		**P**	**12 05 46.9**	**+1.4**
	0.5nm,0.5s,baz=220,slow=7.4,SNR=6.4							
TXAR	**Lajitas Array**	**84.99**	**56**	P		**P**	**12 06 17.1**	**+1.8**
	0.1nm,0.5s,baz=211,slow=7.0,SNR=3.9							
ILAR	**Eielson Array**	**87.58**	**12**	P		**P**	**12 06 27.8**	**+0.8**
	0.3nm,0.8s,baz=225,slow=5.0,SNR=3.6							
CMAR	**Chiang Mai Arr**	**92.20**	**289**	P		**P**	**12 06 49.8**	**+0.2**
	0.3nm,0.3s,baz=112,slow=3.2,SNR=4.7							
YKA	**Yellowknife Ar**	**95.33**	**24**	P		**P**	**12 07 03.5**	**+0.5**
	0.1nm,0.6s,baz=236,slow=5.1,SNR=3.6							
AKASG	**Malin Array Be**	**143.86**	**333**	PKP		PKPbc	12 13 11.3	-0.5
	0.9nm,0.4s,baz=34,slow=3.6,SNR=4.2							
BRTR	**Keskin Array B**	**148.34**	**314**	PKPbc		**PKPbc**	**12 13 25.1**	**-0.3**
	1.0nm,0.4s,baz=135,slow=4.5,SNR=6.1							

*ISCJB **22** 11:55:05.4±0.4, 24.15N±0.03×122.24E±0.02, h22km±5km, Error ellipse: s-maj=4.7km s-min=2.6km az=156.1*
*TAP **22** 11:55:05.3, 24.19N×122.20E, h18km, ML2.9, D*
*JMA **22** 11:55:05.3±0.1, 24.08N×122.21E, h39km±3km, M1.8*
ISC 22 11:55:03.1±1.1, 24.09N±0.03×122.27E±0.02, h12km±9km, n36, σ0§49/63, 2C, Taiwan region

Code	Station Name	Δ°	AZ°	Phase	Op	ID	Time	Res
						ISC	h m s	ISC
ENA	**Nanau**	**0.59**	**305**	⇑*i* P		**Pb**	**11 55 15.5**	**+0.1**
	baz=299							
ENA				*e*S		**Sg**	**11 55 22.8**	**+0.5**
	baz=299							
TWD	**Chiawan**	**0.62**	**269**	*e*P		**Pb**	**11 55 16.8**	**+0.9**
	baz=259							
TWD				*e*S		**Sb**	**11 55 25.4**	**+0.9**
	baz=259							
TWC	**Suao**	**0.64**	**323**	⇑*i* P		**Pg**	**11 55 15.9**	**+0.3**
	baz=323							
TWC				*e*S		**Sg**	**11 55 23.1**	**-0.9**
	baz=323							
JYNG	**Yonagunijimaku**	**0.71**	**60**	P		**Pn**	**11 55 19.6**	**+0.6**
JYNG				S		**Sn**	**11 55 29.3**	**-0.6**
YOJ	**Yonaguni jima**	**0.77**	**61**	P		**Pn**	**11 55 20.8**	**+1.0**
YOJ				S		**Sn**	**11 55 31.0**	**-0.3**
EGS		**0.81**	**338**	P		**Pb**	**11 55 19.2**	**+0.1**
	baz=340							
EGS				*e*S		**Sg**	**11 55 29.3**	**0.0**
	baz=340							
ESL	**Shilin**	**0.82**	**250**	P		**Pn**	**11 55 20.7**	**+0.3**
	baz=241							
ESL				*e*S		**Sn**	**11 55 32.3**	**-0.3**
	baz=241							
ILA	**Ilan**	**0.82**	**325**	*e*P		**Pb**	**11 55 19.7**	**+0.4**
	baz=324							
ILA				*e*S		**Sg**	**11 55 29.9**	**+0.2**
	baz=324							
TWE	**Neicheng**	**0.83**	**319**	P		**Pb**	**11 55 19.6**	**+0.1**
	baz=318							
TWE				*e*S		**Sg**	**11 55 29.3**	**-0.8**
	baz=318							
ENTT	**Nioudou**	**0.84**	**310**	*i* P		**Pb**	**11 55 20.0**	**+0.3**
	baz=307							
ENTT				*e*S		**Sg**	**11 55 30.1**	**-0.3**
	baz=307							
NNS	**Nan Shan**	**0.89**	**293**	P		**Pn**	**11 55 21.4**	**-0.2**
	baz=288							
NNS				S		**Sb**	**11 55 32.7**	**+0.2**
	baz=288							
WHF	**Hehuan Shan**	**0.92**	**273**	P		**Pn**	**11 55 22.3**	**0.0**
	baz=267							
WHF				*e*S		**Sb**	**11 55 34.4**	**+0.7**
	baz=267							
TWB1	**Santiao Chiao**	**0.95**	**344**	P		**Pb**	**11 55 21.8**	**+0.4**
	baz=347							
TWB1				*e*S		**Sg**	**11 55 32.9**	**-0.8**
	baz=347							
NSK	**Sanguang**	**1.01**	**305**	P		**Pn**	**11 55 23.4**	**+0.1**
	baz=302							
NSK				*e*S		**Sg**	**11 55 35.6**	**-0.3**
	baz=302							
EHY	**Hungye**	**1.05**	**236**	*e*P		**Pn**	**11 55 24.1**	**+0.5**
	baz=229							
NWF	**Wu-fen Shan**	**1.07**	**335**	*i* P		**Pn**	**11 55 24.0**	**-0.1**
	baz=336							
NWF				*e*S		**Sg**	**11 55 36.8**	**-0.9**
	baz=336							
TWA	**Mucha**	**1.08**	**325**	*e*P		**Pg**	**11 55 23.9**	**0.0**
	baz=324							
WDT	**Danda**	**1.09**	**252**	P		**Pn**	**11 55 25.1**	**+0.5**
	baz=246							
WDT				*e*S		**Sn**	**11 55 39.4**	**-0.4**
	baz=246							
TWF1	**Yuli**	**1.16**	**231**	*e*P		**Pg**	**11 55 25.7**	**+0.3**
	baz=224							
TWF1				*e*S		**Sg**	**11 55 40.8**	**+0.3**
	baz=224							
SMLT	**Sun Moon Lake**	**1.27**	**261**	*e*P		**Pg**	**11 55 27.7**	**+0.1**
	baz=255							
NSTT	**Nanjuang**	**1.28**	**295**	*e*P		**Pg**	**11 55 27.8**	**+0.1**
	baz=292							
NSTT				*e*S		**Sb**	**11 55 43.1**	**-0.4**
	baz=292							
CHKT	**Chengkung**	**1.29**	**220**	*e*P		**Pn**	**11 55 27.1**	**+0.1**
	baz=215							
CHKT				*e*S		**Sb**	**11 55 42.4**	**-1.6**
	baz=215							
TYC	**Yuchr**	**1.31**	**262**	P		**Pb**	**11 55 27.9**	**+0.3**
	baz=257							
TYC				*e*S		**Sb**	**11 55 43.9**	**-0.5**
	baz=257							
YUS	**Yu-Shan**	**1.35**	**244**	*e*S		**Sb**	**11 55 46.2**	**+0.1**
	baz=238							
IRIF	**Iriomote-Funau**	**1.35**	**79**	P		**Pg**	**11 55 28.9**	**-0.2**
IRIF				S		**Sg**	**11 55 46.7**	**0.0**
TWQ1	**Liyutan**	**1.39**	**281**	*e*P		**Pb**	**11 55 29.1**	**0.0**
	baz=276							
ALS	**Alishan**	**1.46**	**247**	P		**Pg**	**11 55 31.4**	**+0.2**
	baz=242							
ALS				S		**Sb**	**11 55 49.5**	**+0.3**
	baz=242							
CHN5	**Tsauling**	**1.54**	**252**	*e*P		**Pb**	**11 55 31.8**	**+0.1**
	baz=247							
CHN5				*e*S		**Sb**	**11 55 51.4**	**+0.2**
	baz=247							
JKRS	**Kuro-shima**	**1.59**	**84**	P		**Pg**	**11 55 33.9**	**+0.2**
STYT	**Tauyuan**	**1.67**	**237**	*e*P		**Pb**	**11 55 34.0**	**+0.1**
	baz=232							
STYT				*e*S		**Sb**	**11 55 55.2**	**+0.3**
	baz=232							
CHN4	**Tsaushan**	**1.71**	**245**	*e*S		**Sg**	**11 55 57.2**	**-0.8**
	baz=240							
JIJ	**Ishigaki jima**	**1.73**	**81**	P		**Pb**	**11 55 35.0**	**+0.2**
JIJ				S		**Sb**	**11 55 56.1**	**-0.4**
TWK	**Hsinying**	**1.83**	**244**	*e*S		**Sb**	**11 55 58.7**	**-0.8**
	baz=239							
CHN1	**Nanshi**	**1.84**	**241**	*e*P		**Pb**	**11 55 36.6**	**-0.1**
	baz=237							
CHN1				*e*S		**Sb**	**11 55 59.2**	**-0.5**
	baz=237							
JISG	**Ishigakijimahi**	**1.92**	**75**	P		**Pb**	**11 55 37.8**	**-0.3**
JISG				S		**Sn**	**11 56 00.3**	**+0.5**
SSD	**Sandimen**	**2.02**	**229**	*e*P		**Pb**	**11 55 39.3**	**-0.4**
	baz=224							

JMA 22 12:00:30.7, 37.03N×140.77E, h10km±1km, M2.9, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	Op	ID	Time	Res
						ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.07**	**18**	P		Pg	12 00 33.0	-0.1
ONAJ				*e*S		Sg	12 00 34.3	-0.5
JFK	**Kawauchi**	**0.35**	**14**	P		Pg	12 00 37.6	0.0
JHO	**Hitachi**	**0.45**	**201**	P		Pg	12 00 39.3	-0.2
JHO				*e*S		Sg	12 00 45.3	-0.1
JFT	**Otama**	**0.60**	**325**	P		Pg	12 00 42.5	+0.2
JFT				*e*S		Sg	12 00 50.6	+0.4
MAT	**Matsushiro**	**2.11**	**257**	P		Pn	12 01 07.6	+1.5
MAT				S		Sb	12 01 35.1	-0.3

IDC 22 12:00:48.0±2.6, 53.49N×87.62E, h0km, mb1 3.4/2, mb1mx3.1/42, mbtmp3.4/2, ML3.2/2, Error ellipse: s-maj=22.4km s-min=13.7km az=61.0, Southwestern Siberia

Code	Station Name	Δ°	AZ°	Phase	Op	ID	Time	Res
						ISC	h m s	ISC
I46RU	**ZALESOVO INFRA**	**1.73**	**286**	*i*			12 12 15.3	
	baz=100,slow=327,SNR=2.9							
ZALV	**Zalesovo Beam**	**1.73**	**286**	Pg		Pn	12 01 18.5	-0.7
	9.5nm,0.3s,baz=102,slow=13,SNR=82							
ZALV				Lg		Lg	12 01 43.0	
	7.5nm,0.3s,baz=103,slow=28,SNR=12							
KURBB	**Kurchatov Arra**	**6.30**	**247**	Pn		Pn	12 02 23.0	+1.0
	0.3nm,0.3s,baz=63,slow=14,SNR=17							
KURBB				Sn		Sn	12 03 33.4	-1.3
	0.0nm,0.3s,baz=53,slow=20,SNR=2.9							
KURBB				Lg		Lg	12 04 08.4	
	0.1nm,0.3s,baz=62,slow=34,SNR=7.5							
MKAR	**Makanchi Array**	**7.53**	**209**	Pn		Pn	12 02 40.5	+1.6
	0.6nm,0.3s,baz=28,slow=14,SNR=22							
MKAR				Sn		Sn	12 04 03.0	-2.0
	0.2nm,0.3s,baz=30,slow=22,SNR=6.6							
MKAR				Lg		Lg	12 04 47.1	
	0.1nm,0.3s,baz=30,slow=33,SNR=3.4							

IDC 22 12:27:29.0±49.0, 16.60S×175.59W, h0km, mb4.0/3, mb1 4.2/3, mb1mx3.7/25, mbtmp4.0/3, Error ellipse: s-maj=919.6km s-min=163.2km az=79.0, Tonga Islands

Code	Station Name	Δ°	AZ°	Phase	Op	ID	Time	Res
						ISC	h m s	ISC
STKA	**Stephens Creek**	**41.61**	**241**	P		P	12 35 19.9	+0.8
	1.0nm,0.5s,baz=90,slow=9.6,SNR=6.9							
WRA	**Warramunga Arr**	**47.52**	**258**	P		P	12 36 06.0	-0.4
	0.3nm,0.4s,baz=96,slow=8.1,SNR=23							
ASAR	**Alice Springs**	**47.74**	**253**	P		P	12 36 07.5	-0.6
	4.0nm,0.6s,baz=88,slow=8.4,SNR=109							

*ISCJB **22** 12:33:16.6±0.5, 37.15N±0.03×37.11E±0.03, h4km±6km, Error ellipse: s-maj=4.7km s-min=4.5km az=178.9*
*DDA **22** 12:33:16.3, 37.16N×37.09E, h7km, Md2.9*
*ISK **22** 12:33:16.0, 37.18N×37.14E, h5km, MD2.7*
*CSEM **22** 12:33:16.5±0.2, 37.15N×37.13E, h8km, MD2.7, Error ellipse: s-maj=4.2km s-min=4.0km az=110.0*
ISC 22 12:33:16.0±1.2, 37.11N±0.03×37.11E±0.02, h2km±10km, n27, σ0§68/42, Turkey

Code	Station Name	Δ°	AZ°	Phase	Op	ID	Time	Res
						ISC	h m s	ISC
GAZ	**Gaziantep**	**0.10**	**53**	PG		**Pg**	**12 33 17.7**	**-0.2**
GAZ	**Gaziantep**	**0.10**	**53**	*i* Pg		**Pg**	**12 33 17.7**	**-0.2**
HCB	**Kahramanmara¯**	**0.28**	**325**	*i* P		**Pg**	**12 33 20.9**	**-0.5**
HCB				*i* S		**Sg**	**12 33 24.4**	**-0.7**
KUZU	**Kuzuini**	**0.34**	**185**	*i* P		**Pb**	**12 33 24.2**	**-0.6**
KUZU				*i* S		**Sb**	**12 33 30.6**	**0.0**
KUZU	**Kuzuini**	**0.34**	**185**	P		**Pb**	**12 33 24.2**	**-0.6**
KUZU				S		**Sb**	**12 33 30.6**	**0.0**
KAMA	**Osmaniye**	**0.36**	**282**	*i* P		**Pg**	**12 33 23.1**	**+0.1**
KAMA				*i* S		**Sg**	**12 33 29.3**	**+1.6**
KMRS	**Kahramanmaras**	**0.43**	**337**	*e*PG		**Pg**	**12 33 23.9**	**-0.3**
KMRS				*e*SG		**Sg**	**12 33 29.9**	**+0.1**
KMRS	**Kahramanmaras**	**0.43**	**337**	*e*Pg		**Pg**	**12 33 23.9**	**-0.3**
KMRS				*e*Sg		**Sg**	**12 33 29.9**	**+0.1**
GZT	**Gaziantep**	**0.44**	**56**	*i* P		**Pg**	**12 33 24.3**	**-0.1**
GZT				*i* S		**Sb**	**12 33 36.8**	**+3.3**
ANDN	**Andirin**	**0.77**	**308**	*i* P		**Pb**	**12 33 32.1**	**-0.1**
ANDN				*i* S		**Sb**	**12 33 43.5**	**+0.4**
ANDN	**Andirin**	**0.77**	**308**	P		**Pb**	**12 33 32.1**	**-0.1**
ANDN				S		**Sb**	**12 33 43.5**	**+0.4**
TAHT	**Tahtakopru-Hat**	**1.04**	**226**	*e*PN		**Pn**	**12 33 37.8**	**+0.1**
TAHT	**Tahtakopru-Hat**	**1.04**	**226**	*e*Pn		**Pn**	**12 33 37.8**	**+0.1**
KOZT	**Kozan**	**1.09**	**290**	*e*PN		**Pb**	**12 33 37.4**	**-0.2**
KOZT	**Kozan**	**1.09**	**290**	*e*Pn		**Pb**	**12 33 37.4**	**-0.2**
CEYT	**Ceyhan**	**1.09**	**265**	*e*PN		**Pn**	**12 33 38.1**	**-0.2**
CEYT	**Ceyhan**	**1.09**	**265**	*e*Pn		**Pn**	**12 33 38.1**	**-0.2**
SURC	**SANLIURFA_SURC**	**1.23**	**100**	*i* P		**Pb**	**12 33 39.9**	**0.0**
SURC				*i* S		**Sn**	**12 33 57.2**	**-0.1**
SURC	**SANLIURFA_SURC**	**1.23**	**100**	P		**Pb**	**12 33 39.9**	**0.0**
SURC				S		**Sn**	**12 33 57.2**	**-0.1**
AKCD	**Akcadag**	**1.34**	**28**	*i* P		**Pg**	**12 33 41.5**	**-0.3**
AKCD				*i* S		**Sn**	**12 34 00.1**	**-0.4**
AKCD	**Akcadag**	**1.34**	**28**	P		**Pg**	**12 33 41.5**	**-0.3**
AKCD				S		**Sn**	**12 34 00.1**	**-0.4**
YAYL	**Yayladag**	**1.34**	**217**	*i* P		**Pb**	**12 33 42.1**	**+0.1**
YAYL				*i* S		**Sn**	**12 34 00.4**	**0.0**
YAYL	**Yayladag**	**1.34**	**217**	P		**Pb**	**12 33 42.1**	**+0.1**
YAYL				S		**Sn**	**12 34 00.4**	**0.0**
URFA	**Urfa**	**1.40**	**76**	*e*PN		**Pn**	**12 33 42.2**	**-0.5**
URFA	**Urfa**	**1.40**	**76**	*e*Pn		**Pn**	**12 33 42.2**	**-0.5**
DARE	**Darende-Malaty**	**1.49**	**11**	*e*PN		**Pn**	**12 33 43.1**	**-0.7**
DARE	**Darende-Malaty**	**1.49**	**11**	*e*Pn		**Pn**	**12 33 43.1**	**-0.7**

*ISCJB **22** 12:38:33.8±0.8, 36.95N±0.05×140.71E±0.06, h17km±8km, mb3.4/2, Error ellipse: s-maj=9.7km s-min=7.4km az=145.0*
*JMA **22** 12:38:34.3, 36.97N×140.60E, h6km±1km, M3.3 Broadband fault plane solution: P waves. NP1: φs=66.00000°, δ53.00000°, λ-105.00000°. NP2: φs=271.00000°, δ39.00000°, λ-71.00000°. Principal axes: T Plg7.0000°, Azm167.0000°; N Plg12.0000°, Azm76.0000°; P Plg76.0000°, Azm287.0000°;*
JMA Felt I J1.
*IDC **22** 12:38:34.4±2.8, 36.72N×140.64E, h0km, mb3.3/2, mb1 3.6/2, mb1mx3.1/42, mbtmp3.3/2 Error ellipse: s-maj=49.7km s-min=28.2km az=31.0*
ISC 22 12:38:33.1±2.1, 36.91N±0.09×140.58E±0.05, h0km±22km, n15, σ0§43/15, 4C-1D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	Op	ID	Time	Res
						ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.26**	**43**	⇑P		**Pg**	**12 38 38.5**	**+0.4**
ONAJ				S		**Sg**	**12 38 41.5**	**0.0**
JHO	**Hitachi**	**0.30**	**181**	⇑P		**Pb**	**12 38 41.3**	**0.0**
JFK	**Kawauchi**	**0.51**	**27**	⇑P		**Pg**	**12 38 42.9**	**-0.1**
JFK				*e*S		**Sg**	**12 38 49.1**	**-0.6**
JSB	**Shiboa**	**0.53**	**277**	⇓P		**Pb**	**12 38 45.6**	**+0.3**
JSB				*e*S		**Sb**	**12 38 53.4**	**-0.1**
JFT	**Otama**	**0.64**	**343**	⇑P		**Pg**	**12 38 45.7**	**+0.4**
JFT				S		**Sg**	**12 38 53.6**	**0.0**
MJAR	**Matsushiro Arr**	**1.94**	**260**	Pn		**Pb**	**12 39 08.7**	**-0.5**
	4.9nm,0.3s,baz=81,slow=15,SNR=28							
MJAR				Sn		**Sb**	**12 39 33.6**	**-0.4**
	9.9nm,0.3s,baz=84,slow=26,SNR=13							
MAT	**Matsushiro**	**1.94**	**260**	P		**Pb**	**12 39 08.7**	**-0.6**
MAT				S		**Sb**	**12 39 34.7**	**+0.7**
H11N2	**WAKE ISLAND Hy**	**28.66**	**119**	T		T	13 14 16.4	
	baz=313,slow=75,SNR=18							
H11N1	**WAKE ISLAND Hy**	**28.67**	**119**	T		T	13 14 19.1	
	baz=313,slow=75,SNR=11							
H11N3	**WAKE ISLAND Hy**	**28.68**	**119**	T		T	13 14 18.9	
	baz=313,slow=75,SNR=12							
H11S1	**WAKE ISLAND Hy**	**29.36**	**122**	T		T	13 15 10.6	
	baz=314,slow=76,SNR=43							
H11S3	**WAKE ISLAND Hy**	**29.36**	**122**	T		T	13 15 12.3	
	baz=314,slow=76,SNR=34							
H11S2	**WAKE ISLAND Hy**	**29.38**	**122**	T		T	13 15 11.1	
	baz=314,slow=76,SNR=25							
WRA	**Warramunga Arr**	**56.85**	**187**	P		**P**	**12 48 19.2**	**-0.2**
	0.4nm,0.7s,baz=7,slow=8.1,SNR=6.2							
ASAR	**Alice Springs**	**60.58**	**187**	P		**P**	**12 48 45.7**	**+0.3**
	0.2nm,0.8s,baz=12,slow=7.7,SNR=3.7							

*IDC **22** 12:42:20.7±1.0, 35.63N×141.51E, h0km, mb3.5/7, mb1 3.6/8, mb1mx3.5/43, mbtmp3.4/8, ML3.2/1, MS3.2/1, Ms1 3.2/1, ms1mx2.2/36, Error ellipse: s-maj=28.9km s-min=23.1km az=87.0*
*ISCJB **22** 12:42:23.1±0.7, 35.74N±0.07×141.50E±0.06, h26km, mb3.5/7, Error ellipse: s-maj=10.0km s-min=7.3km az=18.0*
*JMA **22** 12:42:23.9±0.2, 35.77N×141.43E, h20km±3km, M3.2*
ISC 22 12:42:24.9±0.9, 35.79N±0.08×141.43E±0.07, h26km, n22, σ1§23/18, mb3.5/7, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	Op	ID	Time	Res
						ISC	h m s	ISC
CHOJ	**Chosi**	**0.47**	**259**	P		**Pb**	**12 42 30.2**	**-1.5**
CHOJ				S		**Sb**	**12 42 40.0**	**-1.3**
JCN	**Nagara**	**1.07**	**250**	P		**Pb**	**12 42 45.2**	**+0.5**
JHO	**Hitachi**	**1.07**	**320**	*e*S		**Sb**	**12 42 58.5**	**+0.1**
JYT	**Yasato**	**1.09**	**294**	P		**Pn**	**12 42 43.8**	**-0.7**
JYT				*e*S		**Sn**	**12 42 58.4**	**-0.3**
BSO3	**Boso 3**	**1.24**	**217**	P		**Pn**	**12 42 46.5**	**+0.2**
MJAR	**Matsushiro Arr**	**2.71**	**287**	Pn		**Pn**	**12 43 06.7**	**-0.1**
	3.5nm,0.3s,baz=99,slow=8.9,SNR=13							
MAT	**Matsushiro**	**2.71**	**287**	P		**Pn**	**12 43 08.2**	**+1.4**
MAT				*e*S		**Sn**	**12 43 40.0**	**+1.2**
ASAJ	**Asahikawa**	**8.36**	**6**	Pn		**Pn**	**12 44 21.9**	**-2.5**
	0.9nm,0.3s,baz=197,slow

baz=72,slow=76,SNR=129
H01W3 Cape Leeuwin H 38.86 158 T T 13 50 16.2
baz=331
H01W2 Cape Leeuwin H 38.87 158 T T 13 50 16.3
baz=331
H01W1 Cape Leeuwin H 38.88 158 T T 13 50 17.1
baz=331
WRA Warramunga Arr 41.84 122 P **P 13 09 24.3 -0.4**
0.2nm,0.6s,baz=299,slow=8.7,SNR=3.3
ASAR Alice Springs 43.16 127 P **P 13 09 35.3 -0.2**
0.1nm,0.5s,baz=296,slow=7.6,SNR=5.4
AAK Ala-Archa 46.38 337 LR LR 13 32 43.4
comp=Z,15nm,18.3s,baz=219,slow=40
MKAR Makanchi Array 47.65 346 P **P 13 10 12.3 +1.7**
0.4nm,0.4s,baz=160,slow=8.6,SNR=5.7
ZALV Zalesovo Beam 53.98 351 P **P 13 10 57.8 -0.3**
0.5nm,0.6s,baz=167,slow=7.2,SNR=3.4

*ISCJB **22** 13:11:53.9±0.8, 36°.95N±0°.03×21°.06E±0°.03, h5km±5km, mb3.7/8, MS4.2/1, Error ellipse: s-maj=5.5km s-min=2.8km az=43.4*
*IDC **22** 13:11:53.8±2.1, 37°.18N×21°.31E, h0km, mb3.4/6, mb1 3.5/9, mb1mx3.4/53, mbtmp3.4/9, ML3.2/3, MS3.2/2, Ms1 3.2/2, ms1mx2.3/52, Error ellipse: s-maj=44.6km s-min=19.2km az=39.0*
*ATH **22** 13:11:55.0, 37°.00N×21°.13E, h22km, ML3.3/10, Error ellipse: s-maj=1.7km s-min=0.7km az=43.0*
*THE **22** 13:11:55.8, 37°.01N×21°.15E, h0km±1km, ML3.5/13, Error ellipse: s-maj=1.8km s-min=0.7km az=236.0*
*CSEM **22** 13:11:55.9±0.2, 37°.03N×21°.16E, h5km, ML3.5, Error ellipse: s-maj=5.1km s-min=2.5km az=45.0*
ISC 22 13:11:55.1±1.2, **37°.02N**±0°.03×**21°.16E**±0°.03, **h11**km±8km, **n20**, **4**, σ**1**§**39**/245, **mb3.6**/8, **Southern Greece**

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op	ISC		h m s	ISC
PYL	**PYLOS**	**0.49**	**105**	P	**Pg**		**13 12 05.0**	**+0.4**
PYL				S	**Sb**		**13 12 13.0**	**+0.1**
PYL	**PYLOS**	**0.49**	**105**	P	**Pg**		**13 12 05.0**	**+0.4**
PYL				S	**Sb**		**13 12 13.0**	**+0.1**
PYL	**PYLOS**	**0.49**	**105**	P	**Pg**		**13 12 05.2**	**+0.5**
PYL				S	**Sb**		**13 12 13.0**	**+0.1**
PYL				AML	AML		13 12 14.1	
	comp=E,10417μm,0.5s							
PYL				AML	AML		13 12 15.9	
	comp=N,8145μm,0.5s							
AMT	**Artemida-Makis**	**0.68**	**41**	P	**Pg**		**13 12 08.4**	**+0.2**
AMT				S	**Sb**		**13 12 19.1**	**+0.7**
AMT	**Artemida-Makis**	**0.68**	**41**	P	**Pb**		**13 12 08.9**	**-0.1**
AMT				S	**Sb**		**13 12 19.1**	**+0.7**
AMT	**Artemida-Makis**	**0.68**	**41**	P	**Pb**		**13 12 08.9**	**-0.1**
AMT				S	**Sb**		**13 12 19.4**	**+1.0**
AMT				AML	AML		13 12 23.1	
	comp=N,16876μm,0.8s							
AMT				AML	AML		13 12 25.1	
	comp=E,16427μm,0.5s							
ZKS	**Zakynthos**	**0.74**	**337**	P	**Pb**		**13 12 10.9**	**+0.8**
ZKS				S	**Sg**		**13 12 19.8**	**+0.7**
ZKS	**Zakynthos**	**0.74**	**337**	P	**Pb**		**13 12 10.9**	**+0.8**
ZKS				S	**Sg**		**13 12 19.8**	**+0.7**
ZKS				AML	AML		13 12 25.6	
	comp=N,13688μm,0.5s							
ZKS				AML	AML		13 12 26.3	
	comp=E,14700μm,0.8s							
VTN	**Vitineika**	**0.90**	**2**	P	**Pg**		**13 12 10.0**	**-2.4**
VTN				S	**Sg**		**13 12 22.0**	**-2.1**
TRIP	**Tripoli**	**1.02**	**60**	P	**Pb**		**13 12 15.2**	**+0.3**
TRIP	**Tripoli**	**1.02**	**60**	P	**Pb**		**13 12 15.2**	**+0.3**
DRO	**Drossia**	**1.03**	**25**	P	**Pg**		**13 12 14.8**	**-0.2**
DRO	**Drossia**	**1.03**	**25**	P	**Pg**		**13 12 14.8**	**-0.2**
DRO	**Drossia**	**1.03**	**25**	P	**Pg**		**13 12 14.6**	**-0.4**
VLX	**Vlachokerasia**	**1.04**	**70**	P	**Pg**		**13 12 15.1**	**0.0**
VLX				S	**Sb**		**13 12 30.7**	**+1.8**
VLX	**Vlachokerasia**	**1.04**	**70**	P	**Pb**		**13 12 15.5**	**+0.3**
VLX				S	**Sb**		**13 12 30.4**	**+1.5**
VLX	**Vlachokerasia**	**1.04**	**70**	P	**Pb**		**13 12 15.5**	**+0.3**
VLX				S	**Sb**		**13 12 30.4**	**+1.5**
VLX				AML	AML		13 12 35.9	
	comp=N,5561μm,0.7s							
VLX				AML	AML		13 12 36.7	
	comp=E,6363μm,0.5s							
RLS	**Riolos of Patr**	**1.06**	**13**	P	**Pg**		**13 12 15.5**	**-0.1**
RLS	**Riolos of Patr**	**1.06**	**13**	P	**Pb**		**13 12 16.0**	**+0.4**
KFL	**Anninata**	**1.13**	**345**	P	**Pg**		**13 12 16.3**	**-0.5**
KFL				S	**Sn**		**13 12 34.1**	**+1.7**
KFL	**Anninata**	**1.13**	**345**	P	**Pg**		**13 12 16.3**	**-0.5**
KFL				S	**Sb**		**13 12 32.8**	**+1.4**
KFL	**Anninata**	**1.13**	**345**	P	**Pg**		**13 12 16.2**	**-0.6**
KFL				S	**Sb**		**13 12 32.8**	**+1.4**
AXS	**Araxos**	**1.19**	**8**	P	**Pg**		**13 12 17.9**	**-0.1**
AXS	**Araxos**	**1.19**	**8**	P	**Pg**		**13 12 17.9**	**-0.1**
AXS	**Araxos**	**1.19**	**8**	P	**Pg**		**13 12 17.2**	**-0.8**
VLS	**Valsamata**	**1.24**	**339**	P	**Pg**		**13 12 18.5**	**-0.5**
VLS				S	**Sn**		**13 12 37.2**	**+2.0**
VLS	**Valsamata**	**1.24**	**339**	P	**Pg**		**13 12 18.5**	**-0.5**
VLS				S	**Sn**		**13 12 36.9**	**+1.7**
KLV	**Kalavryta, Ach**	**1.29**	**37**	P	**Pg**		**13 12 19.5**	**-0.5**
KLV				S	**Sn**		**13 12 39.7**	**+3.1**
KLV	**Kalavryta, Ach**	**1.29**	**37**	P	**Pg**		**13 12 19.5**	**-0.5**
KLV	**Kalavryta, Ach**	**1.29**	**37**	P	**Pg**		**13 12 18.9**	**-1.1**
UPR	**University Cam**	**1.36**	**21**	P	**Pg**		**13 12 20.4**	**-0.8**
UPR	**University Cam**	**1.36**	**21**	P	**Pg**		**13 12 20.4**	**-0.8**
LAKA	**Lakka**	**1.38**	**28**	P	**Pn**		**13 12 21.1**	**+0.7**
LAKA				S	**Sn**		**13 12 43.0**	**+4.2**
LAKA	**Lakka**	**1.38**	**28**	P	**Pn**		**13 12 21.1**	**+0.7**
LAKA	**Lakka**	**1.38**	**28**	P	**Pn**		**13 12 20.4**	**-0.1**
RODI	**Rodini**	**1.43**	**24**	P	**Pg**		**13 12 22.8**	**+0.2**
RODI	**Rodini**	**1.43**	**24**	P	**Pg**		**13 12 22.8**	**+0.2**
VLI	**Veliai**	**1.46**	**101**	P	**Pb**		**13 12 22.9**	**+0.6**
VLI				S	**Sn**		**13 12 43.1**	**+2.5**
VLI	**Veliai**	**1.46**	**101**	P	**Pb**		**13 12 22.9**	**+0.6**
VLI				S	**Sn**		**13 12 42.2**	**+1.6**
VLI	**Veliai**	**1.46**	**101**	P	**Pg**		**13 12 23.6**	**+0.4**
VLI				S	**Sn**		**13 12 42.1**	**+1.6**
VLI				AML	AML		13 12 51.0	
	comp=N,1687μm,0.6s							
VLI				AML	AML		13 12 52.1	
	comp=E,2422μm,0.8s							
EFP	**Efpalio**	**1.53**	**23**	P	**Pg**		**13 12 24.6**	**+0.2**
EFP	**Efpalio**	**1.53**	**23**	P	**Pg**		**13 12 24.6**	**+0.2**
TRIZ	**Trizonia**	**1.53**	**28**	P	**Pb**		**13 12 23.8**	**+0.3**
SERG	**Sergoula**	**1.56**	**27**	P	**Pn**		**13 12 24.1**	**+1.2**
SERG	**Sergoula**	**1.56**	**27**	P	**Pn**		**13 12 24.1**	**+1.2**
THAL	**Thalero**	**1.57**	**49**	P	**Pb**		**13 12 24.9**	**+0.7**
THAL	**Thalero**	**1.57**	**49**	P	**Pb**		**13 12 24.9**	**+0.7**
THAL	**Thalero**	**1.57**	**49**	P	**Pg**		**13 12 25.3**	**0.0**
KALE	**Kalithea**	**1.58**	**29**	P	**Pn**		**13 12 24.0**	**+0.9**
KALE	**Kalithea**	**1.58**	**29**	P	**Pn**		**13 12 24.2**	**+1.1**
KALE	**Kalithea**	**1.58**	**29**	P	**Pn**		**13 12 24.2**	**+1.1**
PDO	**Prodromos**	**1.58**	**1**	P	**Pn**		**13 12 24.3**	**+1.2**
PDO				S	**Sg**		**13 12 46.6**	**+0.7**
PDO	**Prodromos**	**1.58**	**1**	P	**Pn**		**13 12 24.3**	**+1.2**
PDO				S	**Sn**		**13 12 44.9**	**+1.4**
PDO	**Prodromos**	**1.58**	**1**	P	**Pb**		**13 12 24.9**	**+0.6**
PDO				S	**Sn**		**13 12 44.9**	**+1.4**
PDO				AML	AML		13 12 59.6	
	comp=N,1623μm,0.5s							
PDO				AML	AML		13 13 04.2	
	comp=E,1686μm,0.6s							
PVO	**Paravola**	**1.62**	**10**	P	**Pb**		**13 12 25.8**	**+0.7**
PVO	**Paravola**	**1.62**	**10**	P	**Pn**		**13 12 25.1**	**+1.4**
PVO	**Paravola**	**1.62**	**10**	P	**Pn**		**13 12 25.1**	**+1.4**
KRND	**KRANIDI**	**1.63**	**77**	P	**Pb**		**13 12 25.5**	**+0.2**
KRND				S	**Sg**		**13 12 48.2**	**+0.5**
KRND	**KRANIDI**	**1.63**	**77**	P	**Pn**		**13 12 24.9**	**+1.1**
KRND				S	**Sg**		**13 12 48.2**	**+0.5**
KRND	**KRANIDI**	**1.63**	**77**	P	**Pn**		**13 12 24.9**	**+1.1**
KYTH	**Kithira**	**1.68**	**115**	P	**Pb**		**13 12 26.9**	**+0.5**
KYTH				S	**Sg**		**13 12 49.9**	**+0.7**
KYTH	**Kithira**	**1.68**	**115**	P	**Pb**		**13 12 26.6**	**+0.5**
KYTH				S	**Sn**		**13 12 47.0**	**+0.9**
KYTH	**Kithira**	**1.68**	**115**	P	**Pn**		**13 12 25.2**	**+0.6**
ANX	**Ano Chora**	**1.68**	**21**	P	**Pb**		**13 12 27.0**	**+0.8**
ANX	**Ano Chora**	**1.68**	**21**	P	**Pb**		**13 12 27.0**	**+0.8**
DID	**Didima**	**1.73**	**73**	P	**Pn**		**13 12 26.2**	**+1.0**
DID				S	**Sg**		**13 12 50.2**	**-0.6**
DID	**Didima**	**1.73**	**73**	P	**Pn**		**13 12 26.6**	**+1.4**
DID				S	**Sg**		**13 12 50.2**	**-0.6**
DID	**Didima**	**1.73**	**73**	P	**Pn**		**13 12 26.6**	**+1.4**
LTK	**Loutraki**	**1.75**	**55**	P	**Pn**		**13 12 27.1**	**+1.6**
LTK	**Loutraki**	**1.75**	**55**	P	**Pn**		**13 12 27.1**	**+1.6**
LTK	**Loutraki**	**1.75**	**55**	P	**Pb**		**13 12 28.0**	**+0.6**
DSF	**Desfina**	**1.76**	**38**	P	**Pb**		**13 12 27.6**	**0.0**
DSF	**Desfina**	**1.76**	**38**	P	**Pb**		**13 12 27.6**	**0.0**
DSF	**Desfina**	**1.76**	**38**	P	**Pb**		**13 12 28.3**	**+0.7**
LKD2	**Lefkada island**	**1.81**	**348**	P	**Pn**		**13 12 27.4**	**+1.1**
LKD2				S	**Sb**		**13 12 52.0**	**+1.0**
LKD2	**Lefkada island**	**1.81**	**348**	P	**Pn**		**13 12 27.4**	**+1.1**
LKD2				S	**Sn**		**13 12 50.5**	**+1.2**
LKD2	**Lefkada island**	**1.81**	**348**	P	**Pn**		**13 12 28.2**	**+1.8**
LKD2				S	**Sn**		**13 12 50.5**	**+1.2**
LKD2				AML	AML		13 13 05.2	
	comp=E,911μm,0.9s							
LKD2				AML	AML		13 13 10.9	
	comp=N,1401μm,0.8s							
PROD	**Prodromos**	**1.86**	**48**	P	**Pb**		**13 12 29.2**	**+0.1**
PROD	**Prodromos**	**1.86**	**48**	P	**Pb**		**13 12 29.2**	**+0.1**
EVR	**Evrytania**	**1.96**	**15**	P	**Pb**		**13 12 32.1**	**+1.1**
EVR	**Evrytania**	**1.96**	**15**	P	**Pn**		**13 12 29.5**	**+1.0**
EVR	**Evrytania**	**1.96**	**15**	P	**Pn**		**13 12 29.5**	**+1.0**
VIL2	**Platees**	**2.06**	**54**	P	**Pn**		**13 12 30.4**	**+0.8**
VILL	**Villia**	**2.06**	**56**	P	**Pn**		**13 12 30.5**	**+0.7**
ANKY	**Antikythira Is**	**2.08**	**123**	P	**Pn**		**13 12 31.5**	**+1.5**
ANKY				S	**Sb**		**13 12 58.7**	**0.0**
ANKY	**Antikythira Is**	**2.08**	**123**	P	**Pn**		**13 12 31.4**	**+1.5**
ANKY				S	**Sn**		**13 12 58.3**	**+2.5**
ANKY	**Antikythira Is**	**2.08**	**123**	P	**Pn**		**13 12 31.4**	**+1.5**
ANKY				S	**Sn**		**13 12 58.3**	**+2.5**
ANKY				AML	AML		13 13 13.6	
	comp=N,826μm,0.5s							
ANKY				AML	AML		13 13 23.3	
	comp=E,924μm,0.8s							
DSL	**Palaion Diasel**	**2.11**	**359**	P	**Pn**		**13 12 32.5**	**+2.0**
DSL	**Palaion Diasel**	**2.11**	**359**	P	**Pn**		**13 12 31.2**	**+0.7**
DSL	**Palaion Diasel**	**2.11**	**359**	P	**Pn**		**13 12 31.2**	**+0.7**
LKR	**Lokris**	**2.19**	**41**	P	**Pn**		**13 12 33.2**	**+1.7**
LKR	**Lokris**	**2.19**	**41**	P	**Pn**		**13 12 33.1**	**+1.6**
LKR	**Lokris**	**2.19**	**41**	P	**Pn**		**13 12 33.1**	**+1.6**
AGG	**Agios Georgios**	**2.20**	**25**	P	**Pn**		**13 12 32.9**	**+1.2**
AGG	**Agios Georgios**	**2.20**	**25**	P	**Pn**		**13 12 32.9**	**+1.2**
AGG	**Agios Georgios**	**2.20**	**25**	P	**Pb**		**13 12 34.5**	**-0.6**
ATH	**Athens Observa**	**2.25**	**64**	P	**Pn**		**13 12 32.6**	**+0.3**
VLY	**Voula,Athens**	**2.26**	**68**	P	**Pn**		**13 12 33.2**	**+0.7**
VLY	**Voula,Athens**	**2.26**	**68**	P	**Pn**		**13 12 33.2**	**+0.7**
VLY	**Voula,Athens**	**2.26**	**68**	P	**Pn**		**13 12 32.7**	**+0.3**
ATHU	**Athens Univers**	**2.29**	**65**	P	**Pn**		**13 12 33.7**	**+0.7**
ATHU	**Athens Univers**	**2.29**	**65**	P	**Pn**		**13 12 33.7**	**+0.7**
ATHU	**Athens Univers**	**2.29**	**65**	P	**Pn**		**13 12 32.6**	**-0.4**
PTL	**Penteli**	**2.39**	**64**	P	**Pn**		**13 12 35.1**	**+0.9**
PTL	**Penteli**	**2.39**	**64**	P	**Pn**		**13 12 35.1**	**+0.9**
PTL	**Penteli**	**2.39**	**64**	P	**Pn**		**13 12 34.7**	**+0.4**
SMIA	**Simia**	**2.47**	**41**	P	**Pn**		**13 12 37.4**	**+2.1**
SMIA	**Simia**	**2.47**	**41**	P	**Pn**		**13 12 37.4**	**+2.1**
IGT	**Igoumenitsa**	**2.59**	**346**	P	**Pn**		**13 12 38.6**	**+1.6**
IGT	**Igoumenitsa**	**2.59**	**346**	P	**Pn**		**13 12 38.6**	**+1.6**
IGT	**Igoumenitsa**	**2.59**	**346**	P	**Pn**		**13 12 38.7**	**+1.7**
EREA	**Eretria**	**2.61**	**57**	P	**Pn**		**13 12 38.2**	**+0.9**
EREA	**Eretria**	**2.61**	**57**	P	**Pn**		**13 12 38.2**	**+0.9**
MHLO	**Agia Marina, M**	**2.62**	**96**	P	**Pn**		**13 12 38.9**	**+1.4**
MHLO	**Agia Marina, M**	**2.62**	**96**	P	**Pn**		**13 12 38.9**	**+1.4**
MHLO	**Agia Marina, M**	**2.62**	**96**	P	**Pn**		**13 12 38.9**	**+1.4**
THL	**Klokotos Trika**	**2.63**	**15**	P	**Pn**		**13 12 39.3**	**+1.8**
THL	**Klokotos Trika**	**2.63**	**15**	P	**Pn**		**13 12 39.3**	**+1.8**
JAN	**Janina**	**2.64**	**355**	P	**Pn**		**13 12 40.7**	**+2.9**
SGD	**Sagiada**	**2.69**	**345**	P	**Pn**		**13 12 39.3**	**+0.9**
SGD	**Sagiada**	**2.69**	**345**	P	**Pn**		**13 12 39.3**	**+0.9**
IMMV	**Iera Moni Meta**	**2.76**	**123**	P	**Pn**		**13 12 41.5**	**+2.1**
IMMV	**Iera Moni Meta**	**2.76**	**123**	P	**Pn**		**13 12 41.5**	**+2.1**
FYTO	**Fytoko, Volos**	**2.77**	**30**	P	**Pn**		**13 12 41.0**	**+1.5**
FYTO	**Fytoko, Volos**	**2.77**	**30**	P	**Pn**		**13 12 41.0**	**+1.5**
NEO	**Neokhori**	**2.81**	**35**	P	**Pn**		**13 12 41.7**	**+1.7**
NEO	**Neokhori**	**2.81**	**35**	P	**Pn**		**13 12 41.7**	**+1.7**
NEO	**Neokhori**	**2.81**	**35**	P	**Pn**		**13 12 42.0**	**+2.0**
SKIA	**Skiathos**	**2.81**	**40**	P	**Pn**		**13 12 40.7**	**+0.6**
SKIA	**Skiathos**	**2.81**	**40**	P	**Pn**		**13 12 40.7**	**+0.6**
XOR	**Xorichti**	**2.84**	**34**	P	**Pn**		**13 12 42.1**	**+1.6**
XOR	**Xorichti**	**2.84**	**34**	P	**Pn**		**13 12 42.1**	**+1.6**
XOR	**Xorichti**	**2.84**	**34**	P	**Pn**		**13 12 43.0**	**+2.5**
KEK	**Kerkira**	**2.89**	**339**	P	**Pn**		**13 12 43.0**	**+1.8**
KEK	**Kerkira**	**2.89**	**339**	P	**Pn**		**13 12 42.4**	**+1.2**
KEK				S	**Sn**		**13 13 18.6**	**+2.6**
KPRO	**Kipourio**	**2.94**	**3**	P	**Pn**		**13 12 44.9**	**+3.1**
KPRO	**Kipourio**	**2.94**	**3**	P	**Pn**		**13 12 44.5**	**+2.7**
KPRO	**Kipourio**	**2.94**	**3**	P	**Pn**		**13 12 44.5**	**+2.7**
VAM	**Vamos**	**2.94**	**122**	P	**Pn**		**13 12 43.1**	**+1.3**
AOS	**Alonnisos**	**3.04**	**44**	P	**Pn**		**13 12 44.7**	**+1.5**
AOS	**Alonnisos**	**3.04**	**44**	P	**Pn**		**13 12 44.2**	**+1.1**
AOS	**Alonnisos**	**3.04**	**44**	P	**Pn**		**13 12 44.2**	**+1.1**
GVD	**Gavdhos**	**3.22**	**132**	P	**Pn**		**13 12 48.7**	**+3.0**
GVD				S	**Sn**		**13 13 24.1**	**0.0**
GVD	**Gavdhos**	**3.22**	**132**	P	**Pn**		**13 12 48.7**	**+3.0**
GVD				S	**Sn**		**13 13 24.1**	**0.0**
GVD				AML	AML		13 13 30.4	
	comp=N,300μm,0.4s							
GVD				AML	AML		13 13 33.0	
	comp=E,235μm,0.4s							
LIT	**Litokhoron**	**3.25**	**18**	P	**Pn**		**13 12 49.2**	**+3.1**
LIT	**Litokhoron**	**3.25**	**18**	P	**Pn**		**13 12 49.2**	**+3.1**
KZN	**Kozani**	**3.32**	**8**	P	**Pn**		**13 12 49.2**	**+2.1**
NEST	**Nestorio**	**3.39**	**359**	P	**Pn**		**13 12 51.1**	**+2.9**
NEST	**Nestorio**	**3.39**	**359**	P	**Pn**		**13 12 51.0**	**+2.9**
NEST	**Nestorio**	**3.39**	**359**	P	**Pn**		**13 12 51.0**	**+2.9**
IDI	**Anoyia**	**3.48**	**119**	Pn	**Pn**		**13 12 50.4**	**+1.1**
	comp=E,0.4nm,0.3s,baz=282,slow=19,SNR=2.8							
IDI				Sn	**Sn**		**13 13 30.3**	**-0.3**
	comp=E,5.9nm,0.3s,baz=312,slow=14,SNR=7.6							
IDI				LR	LR		13 13 58.8	
	comp=E,34nm,18.0s,baz=274,slow=36							
IDI	**Anoyia**	**3.48**	**119**	P	**Pn**		**13 12 49.5**	**+0.2**
IDI				S	**Sn**		**13 13 32.0**	**+1.4**
IDI	**Anoyia**	**3.48**	**119**	P	**Pn**		**13 12 49.5**	**+0.2**
IDI				S	**Sn**		**13 13 32.0**	**+1.4**
IDI				AML	AML		13 13 40.9	
	comp=E,100μm,0.7s							
IDI				AML	AML		13 13 41.2	
	comp=N,152μm,0.5s							
APE	**Apeiranthos**	**3.50**	**88**	P	**Pn**		**13 12 50.6**	**+1.0**
APE	**Apeiranthos**	**3.50**	**88**	P	**Pn**		**13 12 50.6**	**+1.0**
PAIG	**Paliouri**	**3.51**	**34**	P	**Pn**		**13 12 50.8**	**+1.1**
PAIG	**Paliouri**	**3.51**	**34**	P	**Pn**		**13 12 50.8**	**+1.1**
FNA	**Florina**	**3.76**	**3**	P	**Pn**		**13 12 53.9**	**+0.7**
FNA	**Florina**	**3.76**	**3**	P	**Pn**		**13 12 53.9**	**+0.7**
FNA	**Florina**	**3.76**	**3**	P	**Pn**		**13 12 55.9**	**+2.7**
PLG	**Polygyros**	**3.80**	**27**	P	**Pn**		**13 12 54.8**	**+1.2**
PLG	**Polygyros**	**3.80**	**27**	P	**Pn**		**13 12 54.8**	**+1.2**
HORT	**Hortiatis**	**3.88**	**22**	P	**Pn**		**13 12 55.7**	**+0.9**
HORT	**Hortiatis**	**3.88**	**22**	P	**Pn**		**13 12 55.7**	**+0.9**
LAST	**Lasithi**	**3.96**	**117**	P	**Pn**		**13 12 58.3**	**+2.3**
LAST	**Lasithi**	**3.96**	**117**	P	**Pn**		**13 12 58.3**	**+2.3**
OUR	**Ouranopolis**	**3.98**	**33**	P	**Pn**		**13 12 57.3**	**+1.2**
OUR	**Ouranopolis**	**3.98**	**33**	P	**Pn**		**13 12 57.3**	**+1.2**
TIP	**Timpagrande**	**4.08**	**303**	P	**Pn**		**13 12 58.8**	**+1.2**
TIP	**Timpagrande**	**4.08**	**303**	P	**Pn**		**13 12 58.8**	**+1.2**
CHOS	**Chios island**	**4.12**	**69**	P	**Pn**		**13 12 58.1**	**0.0**
CHOS	**Chios island**	**4.12**	**69**	P	**Pn**		**13 12 58.1**	**0.0**
SOH	**Sokhos**	**4.17**	**24**	P	**Pn**		**13 13 01.2**	**+2.5**
SOH	**Sokhos**	**4.17**	**24**	P	**Pn**		**13 13 01.2**	**+2.5**
KNT	**Kendrikon**	**4.35**	**18**	P	**Pn**		**13 13 03.3**	**+2.1**
KNT	**Kendrikon**	**4.35**	**18**	P	**Pn**		**13 13 03.4**	**+2.1**
SRS	**Serrai**	**4.51**	**24**	P	**Pn**		**13 13 04.9**	**+1.5**
SRS	**Serrai**	**4.51**	**24**	P	**Pn**		**13 13 04.9**	**+1.5**
TAR1	**Taranto**	**4.63**	**320**	*e*Pn	**Pn**		**13 13 06.1**	**+1.1**
KAVA	**Kavala**	**4.75**	**32**	P	**Pn**		**13 13 06.1**	**-0.6**
KAVA	**Kavala**	**4.75**	**32**	P	**Pn**		**13 13 06.1**	**-0.6**
NVR	**Nevrokopi**	**4.81**	**25**	P	**Pn**		**13 13 08.8**	**+1.3**
NOCI	**Noci**	**4.93**	**321**	P	**Pn**		**13 13 09.2**	**0.0**
NOCI	**Noci**	**4.93**	**321**	P	**Pn**		**13 13 09.2**	**0.0**
CUC	**Castrocucco**	**5.13**	**307**	P	**Pn**		**13 13 14.9**	**+2.9**
CUC	**Castrocucco**	**5.13**	**307**	P	**Pn**		**13 13 14.9**	**+2.9**
BARS	**Barje**	**5.81**	**5**	*e*Pn	**Pn**		**13 13 22.2**	**+0.9**
IVAS	**Ivanjica**	**6.59**	**354**	*e*Pn	**Pn**		**13 13 32.4**	**+0.3**
GRUS	**Gruza**	**6.87**	**357**	*e*Pn	**Pn**		**13 13 35.3**	**-0.5**
BBLS	**Lazići**	**6.97**	**350**	*e*Pn	Pn		**13 13 40.5**	**+3.3**
DIVS	**Divibare**	**7.13**	**353**	*e*Pn	**Pn**		**13 13 38.9**	**-0.5**
GERES	**GERESS Array B**	**13.01**	**338**	Pn	**Pn**		**13 14 59.6**	**-0.3**
	comp=N,0.1nm,0.3s,baz=149,slow=14,SNR=3.1							
AKASG	**Malin Array Be**	**14.85**	**20**	Pn	**Pn**		**13 15 22.9**	**-2.1**
	comp=N,0.4nm,0.3s,baz=206,slow=12,SNR=3.1							
HFS	**Hagfors**	**23.62**	**351**	P	**P**		**13 17 04.7**	**-1.3**
	comp=N,1.1nm,0.5s,baz=159,slow=13,SNR=11							
FINES	**FINESS Array B**	**24.64**	**6**	P	**P**		**13 17 14.7**	**-0.8**
	comp=N,0.9nm,0.5s,baz=173,slow=11,SNR=8.9							
EKA	**Eskdalemuir Ar**	**24.66**	**326**	P	**P**		**13 17 16.2**	**+0.4**
	comp=N,0.4nm,0.5s,baz=122,slow=13,SNR=4.1							
NB2	**NORSAR Subarra**	**24.85**	**348**	P	**P**		**13 17 16.4**	**-1.0**
	comp=Z,0.8nm,0.7s,baz=158,slow=9.3							
NB2	**NORSAR Subarra**	**24.85**	**348**	P	**P**		**13 17 16.4**	**-1.0**
	comp=Z,0.8nm,0.7s,SNR=4.6							
NOA	**NORSAR Array B**	**24.85**	**348**	P	**P**		**13 17 16.0**	**-1.5**
	comp=Z,0.4nm,0.6s,baz=157,slow=9.1,SNR=5.4							
ARCES	**ARCESS Array B**	**32.66**	**3**	P	**P**		**13 18 25.4**	**-1.4**
	comp=Z,7.9nm,1.1s,baz=186,slow=9.8,SNR=6.3							
KURBB	**Kurchatov Arra**	**42.52**	**53**	P	**P**		**13 19 48.9**	**-1.5**
	comp=Z,5.0nm,0.2s,baz=274,slow=9.0,SNR=5.6							
MKAR	**Makanchi Array**	**45.49**	**58**	P	**P**		**13 20 12.7**	**-1.7**
	comp=Z,0.2nm,0.4s,baz=274,slow=9.0,SNR=2.7							
YKA	**Yellowknife Ar**	**74.65**	**340**	P	**P**		**13 23 33.9**	**-0.3**
	comp=Z,0.1nm,0.6s,baz=36,slow=5.3,SNR=4.6							
LEM	**Lembang**	**91.25**	**98**	LR	LR		14 12 27.2	
	comp=Z,100nm,20.6s,baz=233,slow=40							

JMA 22 13:18:07.9, 37°.05N×140°.79E, h9km±1km, M2.5, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op	ISC		h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.05**	**7**	P	Pg		13 18 09.7	-0.2
ONAJ				*e*S	Sg		13 18 10.8	-0.5
JFK	**Kawauchi**	**0.32**	**12**	P	Pg		13 18 14.4	+0.1
JFK				S	Sg		13 18 19.1	+0.4
JHO	**Hitachi**	**0.47**	**202**	P	Pg		13 18 16.9	-0.2
JHO				*e*S	Sg		13 18 23.4	+0.1
JFT	**Otama**	**0.59**	**322**	P	Pg		13 18 19.6	+0.2
JFT				*e*S	Sg		13 18 27.9	+0.8
MAT	**Matsushiro**	**2.13**	**257**	P	Pb		13 18 45.4	-1.3
MAT				S	Sb		13 19 12.9	-0.4

*NIED **22** 13:23:00, 35°.60N×140°.60E, h59km, Mw3.9 Best double couple: M0 7.57000×10^14 NP1: φ205.00000°, δ15.00000°, λ98.00000°. NP2: φ 17.00000°, δ75.00000°, λ88.00000°.*
*IDC **22** 13:23:48.9±2.2, 35°.75N×141°.15E, h0km, mb3.5/4, mb1 3.7/7, mb1mx3.4/46, mbtmp3.7/7, ML4.0/3, MS2.6/4, Ms1 2.6/4, ms1mx2.4/34, Error ellipse: s-maj=61.4km s-min=19.4km az=

ELOV	Elorza	3.57	87	*e*P	Pn	13 33 40.2	+1.4
PRAC	Prado	3.59	210	*e*P	Pn	13 33 39.3	+0.2
VIRV	Villa del Rosa	3.70	10	*e*P	Pn	13 33 41.1	+0.6
VIRV				*e*S	Sn	13 34 20.4	-4.4
CURV	Curarigua	4.41	44	*e*P	Pn	13 33 50.8	+1.1
TEPV	Terepaima	4.94	51	*e*P	Pn	13 33 57.7	+1.1
BAUV	El Baul	5.41	67	*e*P	Pn	13 34 03.7	+1.0
MONV	Montecano	5.94	31	*e*P	Pn	13 34 10.4	+0.8

IDC **22** *13:43:35.2±0.7, 37.59N×144.54E, h0km, mb3.7/14, mb1 4.0/17, mb1mx3.8/38, mbtmp3.7/17, ML4.0/3, MS2.9/8, Ms1 2.9/8, ms1mx2.6/51, Error ellipse: s-maj=21.3km s-min=14.5km az=128.0*

JMA **22** *13:43:39.8±0.2, 37.82N×144.27E, h42km, M4.2*

ISC 22 13:43:40.8±2.8, 37.86N±0.05×144.32E±0.06, h29km±20km, n49, σ0.86/46, mb3.6/14, MS2.9/5, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	Ofunato	2.41	301	P	Pn	13 44 18.0	-0.3
OFUJ				*e*S	Sn	13 44 46.8	0.0
JIO	Ouri	2.41	285	P	Pn	13 44 17.7	-0.6
JIO				*e*S	Sn	13 44 46.1	-0.8
JMK	Ichinoseki	2.67	295	P	Pn	13 44 21.8	0.0
JMK				*e*S	Sn	13 44 53.4	+0.3
JFK	Kawauchi	2.78	261	P	Pn	13 44 21.9	-1.5
JFK				S	Sn	13 44 53.1	-2.9
JMM	Marumori	2.79	271	P	Pn	13 44 22.4	-1.1
JMM				S	Sn	13 44 54.1	-2.1
JTH	Tanohata	2.82	318	P	Pn	13 44 23.7	-0.2
JTH				*e*S	Sn	13 44 56.1	-0.9
JOM	Ohasama	2.86	305	P	Pn	13 44 25.0	+0.5
JOM				*e*S	Sn	13 44 57.7	-0.3
JOU	Okura	2.93	281	P	Pn	13 44 25.6	+0.2
JOU				*e*S	Sn	13 44 59.2	-0.4
JFT	Otama	3.18	265	P	Pn	13 44 28.6	-0.3
JFT				*e*S	Sn	13 45 04.5	-1.3
JYK	Kaneyama	3.29	290	P	Pn	13 44 30.6	+0.3
JYK				*e*S	Sn	13 45 07.6	-0.8
JANG	Nango	3.32	320	*e*S	Sn	13 45 08.4	-0.9
JTM	Tenmabayashi	3.86	320	*e*S	Sn	13 45 21.1	-1.4
JOT	Ohata	4.33	325	P	Pn	13 44 45.3	+0.7
JOT				S	Sn	13 45 32.2	-1.9
JNBK	Urakawa-nobuka	4.57	345	P	Pn	13 44 47.8	-0.2
JNBK				S	Sn	13 45 39.2	-0.9
JRY	Ryogami san	4.71	249	P	Pn	13 44 48.0	-2.0
JRY				*e*S	Sn	13 45 39.0	-4.7
JKB	Kayabe	4.75	329	P	Pn	13 44 51.3	+0.9
JKB				S	Sn	13 45 42.2	-2.2
JCH	Churui	4.80	352	P	Pn	13 44 50.0	-1.1
JCH				S	Sn	13 45 42.6	-3.2
MJAR	Matsushiro Arr	5.05	257	P	Pn	13 44 54.8	+0.2
	2.1nm,0.3s,baz=89,slow=15,SNR=15						
MJAR				Sn	Sn	13 45 53.1	+1.0
	0.9nm,0.3s,baz=85,slow=12,SNR=4.5						
MAT	Matsushiro	5.05	257	P	Pn	13 44 54.6	-0.1
MAT				S	Sn	13 45 52.2	+0.1
JHJ	Hachijo jima 2	6.01	219	Pn	Pn	13 45 02.6	-5.2
	17nm,0.3s,baz=340,slow=22,SNR=31						
JHJ				Sn	Sn	13 46 04.8	-11
	26nm,0.3s,baz=90,slow=20,SNR=3.6						
JHJ				LR	LR	13 48 35.7	
	comp=Z,39nm,18.6s,baz=92,slow=51						
ASAJ	Asahikawa	6.38	349	Pn	Pn	13 45 13.1	+0.2
	3.3nm,0.3s,baz=209,slow=18,SNR=34						
ASAJ				Sn	Sn	13 46 23.5	-1.2
	2.7nm,0.3s,baz=148,slow=19,SNR=4.3						
JCJ	Chichijima	10.89	190	Pn	Pn	13 46 04.9	-10
	baz=344,slow=20						
JCJ				Sn	Sn	13 47 56.5	-19
	4.9nm,0.3s,baz=24,slow=19,SNR=6.3						
KSRS	Korea Array	13.00	273	LR	LR	13 51 26.7	
	comp=Z,36nm,18.5s,baz=220,slow=36						
KLR	Kul'dur	14.54	325	LR	LR	13 52 13.4	
	comp=Z,43nm,20.1s,baz=200,slow=35						
GUMO	Guam	24.18	179	LR	LR	13 57 27.3	
	comp=Z,22nm,19.7s,baz=22,slow=35						
SEY	Seymchan	25.58	9	P	P	13 49 07.9	+0.9
	0.4nm,0.5s,baz=179,slow=5.8,SNR=3.7						
YAK	Yakutsk	25.84	344	LR	LR	13 59 22.2	
	comp=Z,30nm,18.5s,baz=166,slow=36						
H11N2	WAKE ISLAND Hy	26.68	126	T	T	14 16 43.8	
	baz=318,slow=74,SNR=14						
H11N1	WAKE ISLAND Hy	26.69	126	T	T	14 16 46.6	
	baz=318,slow=74,SNR=9.6						
H11N3	WAKE ISLAND Hy	26.70	126	T	T	14 16 45.2	
	baz=318,slow=74,SNR=9.1						
H11S1	WAKE ISLAND Hy	27.46	128	T	T	14 17 38.9	
	baz=319						
H11S3	WAKE ISLAND Hy	27.46	128	T	T	14 17 38.6	
	baz=319						
H11S2	WAKE ISLAND Hy	27.48	128	T	T	14 17 41.5	
	baz=319						
TIXI	Tiksi	34.78	351	LR	LR	14 06 45.3	
	comp=Z,20nm,19.0s,baz=188,slow=40						
ZALV	Zalesovo Beam	43.08	312	P	P	13 51 38.4	+0.5
	0.4nm,0.3s,baz=101,slow=7.5,SNR=2.7						
ZALV				PcP	PcP	13 53 27.2	-0.2
	0.6nm,0.4s,baz=100,slow=4.1,SNR=3.3						
CMAR	Chiang Mai Arr	43.94	257	P	P	13 51 46.3	+1.0
	0.4nm,0.4s,baz=47,slow=6.7,SNR=5.5						
MKAR	Makanchi Array	45.64	302	P	P	13 51 60.0	+1.4
	0.9nm,0.8s,baz=82,slow=10.0,SNR=7.4						
ILAR	Eielson Array	47.55	33	P	P	13 52 13.0	-0.3
	1.1nm,0.7s,baz=258,slow=6.6,SNR=13						
INK	Inuvik	52.59	28	P	P	13 52 51.7	+0.3
	0.9nm,0.6s,baz=345,slow=4.7,SNR=5.6						
ARU	Arti	57.27	319	LR	LR	14 18 28.7	
	comp=Z,23nm,20.9s,baz=250,slow=36						
WRA	Warramunga Arr	58.26	191	P	P	13 53 29.5	-3.2
	1.7nm,0.7s,baz=12,slow=7.3,SNR=18						
AKTO	Aktyubinsk	59.83	312	LR	LR	14 19 57.5	
	comp=Z,17nm,19.0s,slow=36						
YKA	Yellowknife Ar	61.92	31	P	P	13 53 57.1	-0.2
	0.3nm,0.8s,baz=301,slow=7.1,SNR=4.3						
ASAR	Alice Springs	61.98	191	P	P	13 53 55.2	-3.0
	0.4nm,0.7s,baz=15,slow=11,SNR=8.1						
NVAR	Mina Array Bea	72.63	55	P	P	13 55 05.4	-0.6
	0.6nm,0.6s,baz=292,slow=6.5,SNR=4.0						
NOA	NORSAR Array B	74.29	338	P	P	13 55 15.4	+0.4
	0.3nm,0.6s,baz=44,slow=5.5,SNR=3.3						
AKASG	Malin Array Be	75.03	323	P	P	13 55 19.8	+0.3
	0.1nm,0.2s,baz=46,slow=6.0,SNR=5.0						
PDAR	Pinedale Array	75.42	47	P	P	13 55 21.7	-0.5
	0.2nm,0.5s,baz=270,slow=2.7,SNR=3.1						
TXAR	Lajitas Array	87.77	54	P	P	13 56 26.7	-0.7
	0.2nm,0.5s,baz=260,slow=5.0,SNR=2.8						

JMA 22 13:48:08.7±0.1, 38.41N×142.14E, h37km±1km, M3.5, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	Ouri	0.62	274	P	Pn	13 48 21.0	-0.1
JIO				S	Sn	13 48 29.4	-0.4
OFUJ	Ofunato	0.76	331	P	Pn	13 48 22.8	-0.1
OFUJ				S	Sn	13 48 33.0	-0.2
JMK	Ichinoseki	0.90	307	P	Pn	13 48 25.1	+0.3
JMK				*e*S	Sn	13 48 36.7	+0.1
JOU	Okura	1.16	268	P	Pn	13 48 29.0	+0.6
JOU				S	Sn	13 48 44.0	+1.0
MIYJ	Miyakonagasawa	1.19	348	P	Pn	13 48 28.8	0.0
MIYJ				S	Sn	13 48 43.4	-0.3
JMM	Marumori	1.19	243	P	Pn	13 48 28.6	-0.2
JMM				*e*S	Sn	13 48 43.8	+0.1
JOM	Ohasama	1.25	328	P	Pn	13 48 30.5	+0.9
JOM				S	Sn	13 48 45.8	+0.6
JFK	Kawauchi	1.45	224	P	Pn	13 48 31.8	-0.5
JYK	Kaneyama	1.48	291	P	Pn	13 48 33.7	+0.9
JRG	Rokugo	1.53	310	P	Pn	13 48 34.9	+1.4
JYS	Shirataka	1.64	264	P	Pn	13 48 35.8	+0.8
JFT	Otama	1.68	239	P	Pn	13 48 36.4	+0.9
JFT				*e*S	Sn	13 48 57.4	+1.6
JKZ	Kuzumaki	1.69	338	P	Pn	13 48 37.3	+1.6
JKZ				*e*S	Sn	13 48 57.5	+1.3

IDC **22** *13:59:04.4±1.1, 19.17N×121.71E, h0km, mb3.4/5, mb1 3.6/5, mb1mx3.3/58, mbtmp3.4/5, MS2.9/1, Ms1 2.9/1, ms1mx2.3/28, Error ellipse: s-maj=73.2km s-min=20.8km az=65.0*

ISCJB **22** *13:59:07.1±0.8, 19.36N±0.05×121.16E±0.09, h10km, mb3.3/5, Error ellipse: s-maj=12.3km s-min=7.1km az=162.7*

MAN **22** *13:59:08, 19.37N×121.19E, h21km, mb5.2, ML4.2, MS4.4*

ISC 22 13:59:07.9±1.1, 19.35N±0.07×121.21E±0.10, h10km, n21, σ1.9 33/16, mb3.4/5, 2C, Philippine Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SGCP	Mt. Cagua	1.36	144	*e*P	Pn	13 59 32.2	-0.6
SGCP				*e*S	Sb	13 59 50.9	+0.1
APYP	Conner	1.48	179	*e*P	Pn	13 59 33.4	-1.2
APYP				*e*S	Sn	13 59 53.4	-0.6
SIPP	Brgy, Tapao	1.59	207	*e*P	Pn	13 59 36.0	-0.1
SIPP				*e*S	Sn	13 59 50.9	-5.9
CVP	Callao Caves	1.74	161	*e*P	Pn	13 59 37.8	-0.3
ABRA	Dolores	1.76	196	*e*P	Pn	13 59 37.4	-1.0
CAUP	Cauayan	2.46	166	*e*P	Pn	13 59 50.4	+2.2
CAUP				*e*S	Sb	14 00 24.1	+1.4
BCPH	Baguio City Da	3.02	192	*i* P	Pn	13 59 54.4	-1.5
BCPH				*i* S	Sn	14 00 31.9	-0.3
BOLP	Bolinao	3.21	203	*e*P	Pn	13 59 59.0	+0.7
SCZP	Santa Cruz	3.77	199	*e*P	Pn	14 00 06.0	0.0
TGY	Tagaytay City	5.23	183	LR	LR	14 02 14.8	
	comp=Z,132nm,19.2s,baz=222,slow=37						
WRA	Warramunga Arr	41.12	161	P	P	14 06 47.2	-5.1
	0.3nm,0.4s,baz=343,slow=9.1,SNR=7.9						
MKAR	Makanchi Array	41.92	320	P	P	14 06 59.3	+0.6
	0.1nm,0.3s,baz=113,slow=9.6,SNR=2.8						
H11S3	WAKE ISLAND Hy	42.93	83	T	T	14 52 40.7	
	baz=275,slow=75,SNR=7.3						
H11S1	WAKE ISLAND Hy	42.94	83	T	T	14 52 41.1	
	baz=275,slow=75,SNR=5.4						
H11S2	WAKE ISLAND Hy	42.95	83	T	T	14 52 41.7	
	baz=275,slow=75,SNR=5.4						
H11N1	WAKE ISLAND Hy	42.95	82	T	T	14 52 41.1	
	baz=277,slow=75,SNR=40						
H11N2	WAKE ISLAND Hy	42.95	82	T	T	14 52 41.1	
	baz=277,slow=75,SNR=38						
H11N3	WAKE ISLAND Hy	42.97	82	T	T	14 52 42.0	
	baz=277,slow=75,SNR=21						
ASAR	Alice Springs	44.51	163	P	P	14 07 15.8	-4.0
	0.2nm,0.4s,baz=341,slow=7.0,SNR=8.8						
KURBB	Kurchatov Arra	45.89	323	P	P	14 07 32.8	+2.4
	0.3nm,0.7s,baz=127,slow=6.9,SNR=3.3						
YKA	Yellowknife Ar	87.39	23	P	P	14 11 53.1	-2.0
	0.2nm,0.6s,baz=311,slow=4.8,SNR=5.3						

NIED **22** *14:07:00, 28.10N×128.10E, h5km, Mw4.3 Best double couple: M0 2.85000×10^15 NP1:φs 292.00000°, δ26.00000°, λ-14.00000°. NP2:φs 35.00000°, δ84.00000°, λ-115.00000°.*

IDC **22** *14:07:52.4±1.1, 27.81N×127.50E, h0km, mb3.6/4, mb1 3.7/5, mb1mx3.4/58, mbtmp3.6/5, ML2.9/1, MS3.2/11, Ms1 3.3/11, ms1mx3.1/34, Error ellipse: s-maj=46.8km s-min=15.2km az=57.0*

ISCJB **22** *14:07:53.2±1.1, 28.10N±0.04×128.05E±0.06, h21km±8km, mb3.5/4, MS3.3/8, Error ellipse: s-maj=9.5km s-min=5.3km az=31.8*

JMA **22** *14:07:53.4±0.2, 28.08N×128.07E, h17km±3km, M4.0*

ISC 22 14:07:52.9±1.8, 28.07N±0.05×128.08E±0.06, h12km±12km, n27, σ0.46/23, mb3.5/4, MS3.4/8, Ryukyu Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JTK	Tokunoshima	0.82	110	P	Pg	14 08 08.8	0.0
JTK				*e*S	Sb	14 08 19.8	-0.3
JOKE	Okinoerabujima	0.83	148	P	Pb	14 08 09.1	-0.1
JOKE				*e*S	Sb	14 08 20.4	+0.1
JAMN	Amaminishikomi	0.99	80	P	Pb	14 08 11.5	-0.3
JAMN				*e*S	Sb	14 08 24.8	0.0
JIH	Iheya	1.03	185	P	Pb	14 08 12.5	-0.2
JIH				*e*S	Sg	14 08 26.6	+0.3
JOW	Kunigami	1.24	172	Pn	Pn	14 08 16.1	0.0
	157nm,0.3s,baz=337,slow=14,SNR=130						
JOW				Sn	Sb	14 08 32.1	-0.2
	83nm,0.3s,baz=156,slow=24,SNR=21						
JOW	Kunigami	1.24	172	P	Pn	14 08 15.8	-0.2
JOW				S	Sb	14 08 32.3	+0.1
JAM	Amami Oshima	1.39	75	P	Pn	14 08 18.2	+0.1
JAM				*e*S	Sn	14 08 36.1	-0.2
JTAJ	Takarajima	1.47	42	P	Pb	14 08 19.9	-0.1
JNTH	Nagotoyohara	1.54	182	P	Pn	14 08 20.4	+0.2
JNTH				*e*S	Sb	14 08 40.6	-0.3
JAGN	Aguni-jima	1.65	207	P	Pn	14 08 21.9	+0.3
JJT2	Tamagusuku 2	1.94	189	P	Pb	14 08 27.4	-0.7
JNU	Nakatsue	5.59	25	Pn	Pb	14 09 24.1	-6.2
	0.3nm,0.3s,baz=198,slow=20,SNR=2.7						
KSRS	Korea Array	9.36	359	LR	LR	14 13 48.4	
	comp=Z,184nm,18.4s,baz=170,slow=37						
JHJ	Hachijo jima 2	11.27	61	LR	LR	14 14 25.7	
	comp=Z,47nm,19.3s,baz=86,slow=33						
MJAR	Matsushiro Arr	12.03	43	LR	LR	14 15 36.1	
	comp=Z,54nm,21.1s,baz=225,slow=37						
GUMO	Guam	21.27	129	LR	LR	14 19 41.2	
	comp=Z,58nm,19.5s,baz=324,slow=33						
SONM	Songino Array	25.95	325	P	P	14 13 25.6	+0.4
	0.9nm,0.7s,baz=140,slow=9.1,SNR=3.6						
CMAR	Chiang Mai Arr	28.36	257	LR	LR	14 26 06.1	
	comp=Z,28nm,18.5s,baz=170,slow=39						
PETK	Petropavlovsk-	33.22	33	LR	LR	14 27 00.0	
	comp=Z,36nm,21.6s,baz=174,slow=34						
MKAR	Makanchi Array	40.23	310	P	P	14 15 28.0	-1.3
	0.5nm,0.6s,baz=105,slow=8.9,SNR=6.7						
PMG	Port Moresby	41.58	151	LR	LR	14 30 16.8	
	comp=Z,58nm,19.5s,baz=18,slow=32						
KURBB	Kurchatov Arra	43.44	315	P	P	14 15 55.9	+0.4
	0.5nm,0.6s,baz=102,slow=9.0,SNR=4.4						
NRIK	Noril'sk	47.47	342	LR	LR	14 38 02.3	
	comp=Z,52nm,21.2s,baz=132,slow=38						
WRA	Warramunga Arr	48.11	172	P	P	14 16 33.4	+0.7
	0.6nm,0.7s,baz=353,slow=8.2,SNR=8.4						
GEYT	Alibeck	58.27	299	LR	LR	14 44 17.9	
	comp=Z,32nm,21.9s,baz=185,slow=38						
FINES	FINESS Array B	71.20	330	LR	LR	14 53 10.0	
	comp=Z,30nm,18.5s,baz=36,slow=38						
NOA	NORSAR Array B	77.61	334	LR	LR	14 57 27.3	
	comp=Z,23nm,18.1s,baz=230,slow=38						

ISCJB **22** *14:08:36.8±0.7, 6.78N±0.05×73.03W±0.06, h158km±6km, Error ellipse: s-maj=11.6km s-min=5.1km az=41.6*

FUNV **22** *14:08:38.0, 6.83N×73.10W, h167km, MW2.6*

RSNC **22** *14:08:39.3±1.1, 6.76N×73.07W, h143km±7km, ML2.4*

ISC 22 14:08:36.5±1.5, 6.80N±0.05×73.04W±0.06, h161km±8km, n22, σ1.28/33, 1C, Northern Colombia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BARC	Barichara	0.25	214	*i* P	Pn	14 08 58.4	-0.3
BARC				*e*S	Sn	14 09 13.5	-2.0
BARC				*i*		14 09 14.7	
	comp=Z,64nm,0.3s						
BTLC	Betulia, Santa	0.25	298	*e*P	Pn	14 08 59.6	+1.0
GIRC	Giron, Santand	0.32	331	*e*P	Pn	14 08 59.7	+1.0
PAMC	Pamplona, Colo	0.64	32	*e*P	Pn	14 09 01.3	+0.9
PAMC				*e*S	Sn	14 09 18.6	-0.2
BRRC	Barranca, Sant	0.73	295	*e*P	Pn	14 09 00.4	-0.1
BRRC				*e*S	Sn	14 09 17.4	-1.4
BRRC				*i*		14 09 18.0	
	comp=Z,58nm,0.1s						
RUSC	La Rusia	0.90	183	*e*P	Pn	14 09 02.2	-0.1
RUSC				*e*S	Sn	14 09 20.5	-1.4
RUSC				*i*		14 09 22.2	
	comp=Z,22nm,0.4s						
GRMC	Gramalote, San	0.94	14	*i* P	Pn	14 09 04.5	+2.3
GRMC				*i*		14 09 05.9	
	comp=Z,46nm,0.2s						
GRMC				*e*S	Sn	14 09 24.2	+2.3
CBRI	Barrientos, No	0.94	15	*e*P	Pn	14 09 03.2	+1.0
CBRI				*e*S	Sn	14 09 21.1	-0.9
CBRI				*i*		14 09 23.7	
	comp=Z,52nm,0.3s						
CAPV	Capacho	1.28	34	*i* P	Pn	14 09 06.4	+1.3
CAPV				*e*S	Sn	14 09 27.8	+0.7
OCAC	Ocana	1.46	349	*e*P	Pn	14 09 06.9	+0.2
NORC	Norcasia	2.19	236	*e*S	Sn	14 09 42.7	-1.4
NORC				*i*		14 09 47.8	
	comp=Z,3.0nm,0.2s						
CHIC	Chingaza	2.26	198	*e*P	Pn	14 09 16.8	+1.0
CHIC				*e*S	Sn	14 09 45.4	-0.8
CHIC				*i*		14 09 52.3	
	comp=Z,8.0nm,0.4s						
HELC	Santa Helena	2.54	256	*e*P	Pn	14 09 20.5	+1.4
HELC				*e*S	Sn	14 09 52.8	+0.8
HELC				*i*		14 09 57.1	
	comp=Z,7.2nm,0.4s						
SOCV	Socops	2.62	56	*e*P	Pn	14 09 20.9	+1.1
SOCV				*e*S	Sn	14 09 52.2	-1.0
GUYC	Guyana, Colomb	2.81	236	*e*P	Pn	14 09 23.5	+1.0
GUYC				*i*		14 10 06.2	
	comp=Z,19nm,0.3s						
PRAC	Prado	3.57	211	*e*P	Pn	14 09 32.7	+1.0
PRAC				*i*		14 09 35.1	
	comp=Z,35nm,0.2s						
VIRV	Villa del Rosa	3.73	10	*e*P	Pn	14 09 33.3	-0.4
VIRV				*e*S	Sn	14 10 15.3	-2.9
QARV	Quebrada Arrib	4.20	36	*e*P	Pn	14 09 40.0	+0.2
CURV	Curarigua	4.41	43	*e*P	Pn	14 09 43.6	+1.0
TEPV	Terepaima	4.94	50	*e*P	Pn	14 09 50.6	+1.2
BAUV	El Baul	5.39	66	*e*P	Pn	14 09 55.4	+0.1
MONV	Montecano	5.95	30	*e*P	Pn	14 10 02.2	-0.5

SJA 22 14:10:02.4±0.5, 31.49S×69.40W, h100km±3km, ML1.7, MW3.7, San Juan Province

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RTLS	Leoncito	0.33	164	*i* P	Pn	14 10 18.5	+0.9
RTLS				*i* S	Sn	14 10 30.8	+1.9
RTLL	Cerro Villicun	0.81	79	*i* P	Pn	14 10 21.8	+0.9
RTLL				*i* S	Sn	14 10 35.8	+0.9
RTCV	Cerro Valdivia	0.83	117	*i* P	Pn	14 10 21.8	+0.6
RTCV				*i* S	Sn	14 10 36.5	+1.3
AMOG	MOGNA	0.95	55	*i* P	Pn	14 10 23.1	+0.6
AMOG				*i* S	Sn	14 10 38.6	+1.1
ASAL	Salagasta	1.20	156	*i* P	Pn	14 10 26.1	+0.8
ASAL				*i* S	Sn	14 10 43.8	+1.3
AVFE	Valle Fertil	1.86	64	*i* P	Pn	14 10 34.9	+1.6
AVFE				*i* S	Sn	14 10 58.3	+1.4
AVFE				IAML		14 11 02.3	
	comp=Z,3.4nm,0.3s						
AGUA	GUANDACOL	2.14	22	*i* P	Pn	14 10 38.1	+1.1
VCA	Vinchina	2.93	21	IAML		14 11 27.6	
	comp=Z,3.7nm,0.4s						

MDD **22** *14:11:22.3±2.3, 32.32N×7.74W, h0km, mb4.2/6, Error ellipse: s-maj=26.3km s-min=19.9km az=101.0, PRXIMO*

IGIL **22** *14:11:24.5, 32.26N×7.65W, h25km*

INMG **22** *14:11:24.1±0.9, 32.46N×7.57W, h0km, ML2.7, Error ellipse: s-maj=8.9km s-min=4.7km az=86.0*

CSEM **22** *14:11:26.6±0.4, 32.63N×7.66W, h10km, ML2.7, Error ellipse: s-maj=9.1km s-min=7.1km az=101.0*

ISC 22 14:11:28.6±3.6, 32.7N±0.2×7.62W±0.08, h10km, n65, σ1.05/111, Morocco

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ESPR	Espera	4.37	19	P	Pn	14 12 35.0	-0.1
	1.5nm,0.2s,SNR=4.0						
ESPR				S	Sb	14 13 38.1	-0.3
	3.8nm,0.1s,SNR=7.9						
ESPR	Espera	4.37	19	P	Pn	14 12 35.0	-0.1
	1.5nm,0.2s,SNR=4.0						
EMIJ	Mijas	4.49	31	S	Sn	14 13 30.1	+1.2
	0.4nm,0.2s,SNR=7.9						
EMIJ	Mijas	4.49	31	S	Sn	14 13 30.1	+1.2
	0.4nm,0.2s,SNR=7.9						
PFVI	Vila Bisbo	4.50	348	*e*Pn	Pn	14 12 36.0	-0.8
PFVI	Vila Bisbo	4.50	348	P	Pn	14 12 34.9	-1.9
	1.8nm,0.1s,SNR=7.9						
PFVI	Vila Bisbo	4.50	348	P	Pn	14 12 34.9	-1.9
	1.8nm,0.1s,SNR=7.9						
PFVI	Vila Bisbo	4.50	348	*e*Pn	Pn	14 12 36.0	-0.8
PBDV	Barranco-do-Ve	4.50	357	*e*Pn	Pn	14 12 36.6	-0.3
PBDV				*e*Sn	Sn	14 13 32.4	+3.0
PBDV	Barranco-do-Ve	4.50	357	P	Pn	14 12 36.6	-0.3
PBDV				S	Sn	14 13 32.4	+3.0
PBDV	Barranco-do-Ve	4.50	357	P	Pn	14 12 36.6	-0.3
PBDV				S	Sn	14 13 32.4	+3.0
MORF	Marmelete	4.64	350	*e*P	Pn	14 12 37.7	-1.1
MORF	Marmelete	4.64	350	*e*Pn	Pn	14 12 37.9	-0.9
MORF				*e*Sn	Sn	14 13 34.2	+1.5
MORF				A	A	14 13 36.7	
	4.6nm,0.3s						
MORF	Marmelete	4.64	350	P	Pn	14 12 37.9	-0.9
MORF				S	Sn	14 13 34.2	+1.5
	4.6nm,0.3s						
MORF	Marmelete	4.64	350	P	Pn	14 12 37.9	-0.9
MORF				S	Sn	14 13 34.2	+1.5
	4.6nm,0.3s						
PVAQ	Vaqueiros	4.66	359	*e*Pn	Pn	14 12 38.5	-0.5
PVAQ				*e*Sn	Sn	14 13 34.5	+1.3
PVAQ				A	A	14 13 35.8	
	7.2nm,0.7s						
PVAQ	Vaqueiros	4.66	359	P	Pn	14 12 38.5	-0.5
PVAQ				S	Sn	14 13 34.5	+1.3
	7.2nm,0.7s						
PVAQ	Vaqueiros	4.66	359	P	Pn	14 12 38.5	-0.5
PVAQ				S	Sn	14 13 34.5	+1.3
	7.2nm,0.7s						
EGRO	El Granado	4.79	1	S	Sn	14 13 36.1	-0.3
	5.3nm,0.3s,SNR=7.9						
EGRO	El Granado	4.79	1	S	Sn	14 13 36.1	-0.3
	5.3nm,0.3s,SNR=7.9						
PTEO	Sao Teotonio	4.88	350	*e*Pn	Pn	14 12 41.3	-0.8
PTEO				*e*Sn	Sn	14 13 39.9	+1.2
PTEO	Sao Teotonio	4.88	350	P	Pn	14 12 41.3	-0.8
PTEO				S	Sn	14 13 39.9	+1.2
PTEO	Sao Teotonio	4.88

ECAB	**El Cabril**	**5.62**	**18**	P	**Pn**	**14 12 51.8**	**-0.5**
	0.7nm,0.2s,SNR=12							
ECAB				S	**Sn**	**14 13 57.1**	**+0.1**
	2.4nm,0.3s,SNR=8.3							
ECAB	**El Cabril**	**5.62**	**18**	P	**Pn**	**14 12 51.8**	**-0.5**
	0.7nm,0.2s,SNR=12							
ECAB				S	**Sn**	**14 13 57.1**	**+0.1**
	2.4nm,0.3s,SNR=8.3							
EBER	**Berja**	**5.69**	**42**	S	**Sn**	**14 14 01.2**	**+2.3**
	1.8nm,0.3s,SNR=4.0							
EBER	**Berja**	**5.69**	**42**	S	**Sn**	**14 14 01.2**	**+2.3**
	1.8nm,0.3s,SNR=4.0							
EVO	**Evora**	**5.79**	**357**	*e*Pn	**Pn**	**14 12 54.2**	**-0.4**
EVO				*e*Sn	**Sn**	**14 14 02.2**	**+1.1**
EVO	**Evora**	**5.79**	**357**	P	**Pn**	**14 12 54.2**	**-0.4**
EVO				S	**Sn**	**14 14 02.2**	**+1.1**
EVO	**Evora**	**5.79**	**357**	P	**Pn**	**14 12 54.2**	**-0.4**
EVO				S	**Sn**	**14 14 02.2**	**+1.1**
EADA	**Adamuz**	**5.96**	**24**	P	**Pn**	**14 12 56.6**	**-0.4**
	1.4nm,0.2s,SNR=7.9							
EADA				S	**Sn**	**14 14 03.8**	**-1.6**
	0.5nm,0.2s,SNR=7.9							
EADA	**Adamuz**	**5.96**	**24**	P	**Pn**	**14 12 56.6**	**-0.4**
	1.4nm,0.2s,SNR=7.9							
EADA				S	**Sn**	**14 14 03.8**	**-1.6**
	0.5nm,0.2s,SNR=7.9							
EBAD	**Badajoz**	**6.03**	**5**	P	**Pn**	**14 12 56.9**	**-1.0**
	1.1nm,0.2s,SNR=7.1							
EBAD				S	**Sn**	**14 14 05.4**	**-1.5**
	1.0nm,0.2s,SNR=7.9							
EBAD	**Badajoz**	**6.03**	**5**	P	**Pn**	**14 12 56.9**	**-1.0**
	1.1nm,0.2s,SNR=7.1							
EBAD				S	**Sn**	**14 14 05.4**	**-1.5**
	1.0nm,0.2s,SNR=7.9							
PESTR	**Estremoz**	**6.12**	**0**	*e*Pn	**Pn**	**14 12 58.6**	**-0.5**
PESTR				*e*Sn	**Sn**	**14 14 09.7**	**+0.5**
PESTR	**Estremoz**	**6.12**	**0**	P	**Pn**	**14 12 58.6**	**-0.5**
PESTR				S	**Sn**	**14 14 09.7**	**+0.5**
PESTR	**Estremoz**	**6.12**	**0**	P	**Pn**	**14 12 58.6**	**-0.5**
PESTR				S	**Sn**	**14 14 09.7**	**+0.5**
PMTG	**Montargil**	**6.34**	**356**	*e*Pn	**Pn**	**14 13 01.3**	**-0.8**
PMTG				*e*Sn	**Sn**	**14 14 14.1**	**-0.5**
PMTG	**Montargil**	**6.34**	**356**	*e*Pn	**Pn**	**14 13 01.3**	**-0.8**
PMTG				*e*Sn	**Sn**	**14 14 14.1**	**-0.5**
PMAFR	**Mafra**	**6.35**	**348**	*e*Pn	**Pn**	**14 13 02.7**	**+0.4**
PMAFR	**Mafra**	**6.35**	**348**	P	**Pn**	**14 13 01.4**	**-0.9**
	2.8nm,0.2s,SNR=7.9							
PMAFR	**Mafra**	**6.35**	**348**	P	**Pn**	**14 13 01.4**	**-0.9**
	2.8nm,0.2s,SNR=7.9							
PMAFR	**Mafra**	**6.35**	**348**	*e*Pn	**Pn**	**14 13 02.7**	**+0.4**
PMRV	**Marv??o**	**6.68**	**2**	*e*Pn	**Pn**	**14 13 06.2**	**-0.6**
PMRV				*e*Sn	**Sn**	**14 14 21.9**	**-1.2**
PMRV	**Marv??o**	**6.68**	**2**	P	**Pn**	**14 13 06.2**	**-0.6**
PMRV				S	**Sn**	**14 14 21.9**	**-1.2**
PMRV	**Marv??o**	**6.68**	**2**	P	**Pn**	**14 13 06.2**	**-0.6**
PMRV				S	**Sn**	**14 14 21.9**	**-1.2**
PCBR	**Castelo Branco**	**7.09**	**1**	*e*Pn	**Pn**	**14 13 11.8**	**-0.6**
PCBR	**Castelo Branco**	**7.09**	**1**	P	**Pn**	**14 13 11.8**	**-0.6**
PCBR	**Castelo Branco**	**7.09**	**1**	P	**Pn**	**14 13 11.8**	**-0.6**

NIED ***22*** *14:16:00,28.˚10N×128.˚00E,h5km,Mw3.8 Best double couple: M₀5.72000×10¹⁴ NP1:φs=36.00000°,δ51.00000°, λ=-163.00000°. NP2:φs=295.00000°,δ77.00000°, λ=-40.00000°.*

JMA 22 14:16:03.4±0.2,28.˚10N×128.˚05E,h15km±3km,M3.5, Ryukyu Islands

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JTK	**Tokunoshima**	**0.86**	**111**	P	**Pb**	**14 16 13.5**	**-0.5**
JTK				*e*S	Sb	14 16 30.7	-0.6
JOKE	**Okinoerabujima**	**0.87**	**148**	P	Pb	14 16 19.9	-0.3
JOKE				*e*S	Sb	14 16 31.3	-0.3
JAMN	**Amaminishikomi**	**1.00**	**82**	P	Pb	14 16 22.0	-0.5
JAMN				*e*S	Sb	14 16 35.3	-0.2
JIH	**Iheya**	**1.06**	**184**	P	Pb	14 16 23.0	-0.5
JIH				*e*S	Sb	14 16 37.3	+0.1
JOW	**Kunigami**	**1.28**	**171**	P	Pn	14 16 26.5	-0.2
JOW				*e*S	Sb	14 16 43.2	-0.2
JAM	**Amami Oshima**	**1.41**	**77**	P	Pn	14 16 28.8	+0.3
JAM				*e*S	Sn	14 16 46.9	+0.1
JTAJ	**Takarajima**	**1.46**	**44**	P	Pn	14 16 29.2	0.0
JTAJ				*e*S	Sb	14 16 48.8	+0.2
JNTH	**Nagotoyohara**	**1.58**	**181**	P	Pn	14 16 31.1	+0.3
JNTH				S	Sn	14 16 51.2	+0.3
JAGN	**Aguni-jima**	**1.67**	**206**	P	Pn	14 16 32.1	0.0
JZK	**Kikaishima**	**1.71**	**82**	P	Pb	14 16 34.5	0.0
JJT2	**Tamagusuku 2**	**1.97**	**188**	P	Pb	14 16 37.9	-1.1

CSEM ***22*** *14:18:08.8±0.3,38.˚98N×34.˚96E,h2km,MD2.8,Error ellipse: s-maj=6.9km s-min=5.8km az=158.0*
DDA ***22*** *14:18:08.7,39.˚00N×34.˚95E,h7km,Md2.8*
ISK ***22*** *14:18:08.0,38.˚94N×34.˚93E,h5km,MD2.8*

ISC 22 14:18:08.5±1.2,38.˚99N±0.˚03×34.˚96E±0.˚03,h4km±11km, n17,σ0°81/28,Turkey

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
AVNS	**Nevsehir-Avano**	**0.20**	**206**	*i* P	**Pg**	**14 18 12.4**	**0.0**
AVNS				*i* S	Sg	14 18 23.3	+8.3
AVNS	**Nevsehir-Avano**	**0.20**	**206**	P	**Pg**	**14 18 12.4**	**0.0**
CDAG	**Cicekdag**	**0.78**	**325**	*i* P	**Pg**	**14 18 22.6**	**-1.0**
CDAG				*i* S	**Sg**	**14 18 33.8**	**0.0**
CDAG	**Cicekdag**	**0.78**	**325**	P	**Pg**	**14 18 22.6**	**-1.0**
CDAG				S	**Sg**	**14 18 33.8**	**0.0**
AKSY	**AKSARAY - Alti**	**0.99**	**251**	*e*P	**Pb**	**14 18 28.2**	**-0.2**
AKSY				*i* S	**Sn**	**14 18 42.9**	**-1.0**
AKSY	**AKSARAY - Alti**	**0.99**	**251**	P	**Pb**	**14 18 28.2**	**-0.2**
AKSY				S	**Sn**	**14 18 42.9**	**-1.0**
CUSAR	**Sarkisla-SIVAS**	**1.09**	**66**	*i* P	**Pg**	**14 18 29.4**	**0.0**
CUSAR				*i* S	**Sn**	**14 18 45.5**	**-0.9**
CUSAR	**Sarkisla-SIVAS**	**1.09**	**66**	P	**Pg**	**14 18 29.4**	**0.0**
CUSAR				S	**Sn**	**14 18 45.5**	**-0.9**
CORM	**Corum**	**1.22**	**348**	*e*PN	**Pn**	**14 18 33.1**	**+0.6**
CORM				*e*SN	**Sn**	**14 18 51.5**	**+2.0**
COAL	**Corum-Alaca**	**1.27**	**1**	*i* P	**Pn**	**14 18 32.9**	**-0.3**
COAL				*i* S	**Sn**	**14 18 51.9**	**+1.2**
COAL	**Corum-Alaca**	**1.27**	**1**	P	**Pn**	**14 18 32.9**	**-0.3**
COAL				S	**Sn**	**14 18 51.9**	**+1.2**
AFSR	**Afar-Bala (A**	**1.54**	**288**	*e*PN	**Pg**	**14 18 37.4**	**-0.2**
AFSR				*e*SN	**Sg**	**14 18 59.0**	**+1.1**
AFSR	**Afar-Bala (A**	**1.54**	**288**	*e*Pn	**Pb**	**14 18 37.4**	**-0.2**
AFSR				*e*Sn	**Sg**	**14 18 59.0**	**+1.1**
KOZT	**Kozan**	**1.65**	**155**	*e*PN	**Pn**	**14 18 38.6**	**+0.3**
KOZT	**Kozan**	**1.65**	**155**	*e*Pn	**Pn**	**14 18 38.6**	**+0.3**
SVSK	**Karacayir**	**1.83**	**59**	*e*PN	**Pb**	**14 18 42.3**	**-0.3**
SVSK	**Karacayir**	**1.83**	**59**	*e*Pn	**Pb**	**14 18 42.3**	**-0.3**

IDC ***22*** *14:18:38.2±7.5,31.˚61S×69.˚08W,h62km±59km,mb2.8/1, mb1 3.6/3,mb1mx3.3/30,mbtmp3.5/3,ML3.7/2,Error ellipse: s-maj=62.0km s-min=40.9km az=44.0*
SJA ***22*** *14:18:43.9±1.0,31.˚27S×69.˚17W,h116km±4km,ML3.7, MW3.6*
ISCJB ***22*** *14:18:44.4±0.6,31.˚27S±0.˚06×69.˚14W±0.˚08,h120km±7km, mb2.8/1,Error ellipse: s-maj=12.8km s-min=6.6km az=36.8*

ISC 22 14:18:44.9±0.8,31.˚26S±0.˚06×69.˚17W±0.˚07,h116km±7km, n21,σ0°53/31,San Juan Province

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
RTLS	**Leoncito**	**0.55**	**192**	*i* P	**Pn**	**14 18 03.1**	**+0.1**
RTLS				*i* S	**Sn**	**14 19 17.8**	**+1.0**
SJA	**San Juan**	**0.58**	**117**	*i* P	**Pn**	**14 19 02.8**	**-0.2**
SJA				*i* S	**Sn**	**14 19 16.8**	**+0.1**
SJA				IAML		14 19 18.1	
	comp=Z,2μm,0.2s						
RTLL	**Cerro Villicun**	**0.59**	**97**	*i* P	**Pn**	**14 19 02.8**	**-0.3**
RTLL				*i* S	**Sn**	**14 19 17.0**	**+0.2**
RTCV	**Cerro Valdivia**	**0.80**	**138**	*i* P	**Pn**	**14 19 04.7**	**0.0**
RTCV				*i* S	**Sn**	**14 19 19.7**	**-0.1**
AUSP	**Uspallata**	**0.98**	**191**	*i* P	**Pn**	**14 19 07.0**	**+0.3**
AUSP				*i* S	**Sn**	**14 19 22.9**	**-0.3**
ASAL	**Salagasta**	**1.35**	**168**	*i* P	**Pn**	**14 19 11.0**	**+0.5**
ASAL				*i* S	**Sn**	**14 19 29.5**	**-0.4**
AVFE	**Valle Fertil**	**1.59**	**68**	*i* P	**Pn**	**14 19 13.1**	**0.0**
AVFE				*i* S	**Sn**	**14 19 34.3**	**-0.3**
AVFE				IAML		14 19 34.5	
	comp=Z,1μm,0.3s						
ARCO	**CERRO ARCO**	**1.59**	**173**	*i* P	**Pn**	**14 19 13.3**	**+0.1**
ARCO				*i* S	**Sn**	**14 19 34.8**	**-0.1**
ARCO				IAML		14 19 39.6	
	comp=Z,376nm,0.3s						
AAGR	**Agrelo**	**1.84**	**171**	*i* P	**Pn**	**14 19 16.8**	**+0.5**
AAGR				*i* S	**Sn**	**14 19 40.0**	**-0.2**
ACAN	**Cantantal**	**1.96**	**121**	*i* P	**Pn**	**14 19 18.1**	**+0.4**
ROC1	**El Roble**	**2.32**	**222**	*i* P	**Pn**	**14 19 22.0**	**-0.4**
ROC1				*i* S	**Sn**	**14 19 51.0**	**-0.2**
VCA	**Vinchina**	**2.65**	**19**	*i* P	**Pn**	**14 19 27.0**	**+0.3**
VCA				IAML		14 20 02.7	
	comp=Z,321nm,0.6s						
MRA	**San Martin**	**3.15**	**112**	*i* P	**Pn**	**14 19 33.3**	**+0.1**
CPUP	**Villa Florida**	**11.48**	**68**	P	Pn	14 21 20.5	-4.9
	comp=Z,0.1nm,0.3s,baz=304,slow=6.9,SNR=2.9						
LPAZ	**La Paz**	**14.94**	**4**	P	**Pn**	**14 22 10.2**	**-0.6**
	comp=Z,0.1nm,0.3s,baz=176,slow=9.5,SNR=5.8						
TXAR	**Lajitas Array**	**68.62**	**328**	P	**P**	**14 29 37.1**	**+1.5**
	comp=Z,0.1nm,0.6s,baz=158,slow=5.6,SNR=2.3						
ASAR	**Alice Springs**	**121.08**	**205**	PKP	**PKPdf**	**14 37 23.2**	**-1.3**
	comp=Z,0.3nm,0.6s,baz=141,slow=1.8,SNR=7.3						
WRA	**Warramunga Arr**	**124.31**	**207**	PKP	**PKPdf**	**14 37 30.1**	**-0.7**
	comp=Z,0.8nm,0.5s,baz=156,slow=1.8,SNR=21						
KURBB	**Kurchatov Arra**	**149.22**	**42**	PKPbc	**PKPbc**	**14 38 19.8**	**+0.4**
	comp=Z,0.3nm,0.6s,baz=306,slow=4.3,SNR=3.7						
ZALV	**Zalesovo Beam**	**150.62**	**32**	PKPbc	**PKPbc**	**14 38 22.6**	**-0.1**
	comp=Z,0.9nm,0.3s,baz=304,slow=3.3,SNR=5.4						
MKAR	**Makanchi Array**	**153.13**	**47**	PKPbc	**PKPbc**	**14 38 28.7**	**0.0**
	comp=Z,0.1nm,0.3s,baz=279,slow=3.6,SNR=3.2						
MKAR				PKPab	**PKPab**	**14 38 40.6**	**-0.2**
	comp=Z,0.2nm,0.3s,baz=285,slow=2.8,SNR=2.3						

JMA ***22*** *14:20:32.5±0.1,28.˚10N×128.˚04E,h20km±2km,M3.1*
ISCJB ***22*** *14:20:33.2±1.4,28.˚07N±0.˚05×128.˚07E±0.˚07,h23km±8km, mb3.1/3,Error ellipse: s-maj=12.7km s-min=6.2km az=37.1*
IDC ***22*** *14:20:36.4±7.9,27.˚17N×126.˚56E,h0km,mb3.2/3, mb1 3.4/3,mb1mx3.2/37,mbtmp3.2/3,Error ellipse: s-maj=419.4km s-min=27.3km az=60.0*

ISC 22 14:20:33.8±1.7,27.˚99N±0.˚06×128.˚21E±0.˚08,h15km±10km, n10,σ0°42/17,mb3.2/3,Ryukyu Islands

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JTK	**Tokunoshima**	**0.69**	**107**	P	**Pn**	**14 20 48.4**	**-0.6**
JTK				*e*S	**Sn**	**14 20 59.7**	**+0.3**
JOKE	**Okinoerabujima**	**0.71**	**153**	P	**Pn**	**14 20 48.8**	**-0.5**
JOKE				*e*S	**Sn**	**14 21 00.2**	**+0.3**
JAMN	**Amaminishikomi**	**0.89**	**74**	P	**Pg**	**14 20 51.1**	**+0.2**
JAMN				S	**Sn**	**14 21 04.4**	**+0.1**
JIH	**Iheya**	**0.98**	**193**	P	**Pb**	**14 20 51.7**	**-0.8**
JIH				S	**Sg**	**14 21 05.8**	**+0.2**
JOW	**Kunigami**	**1.16**	**177**	P	**Pn**	**14 20 55.2**	**-0.3**
JOW				*e*S	**Sg**	**14 21 11.8**	**+0.6**
JAM	**Amami Oshima**	**1.30**	**71**	P	**Pn**	**14 20 57.4**	**0.0**
JAM				*e*S	**Sg**	**14 21 15.6**	**0.0**
JNTH	**Nagotoyohara**	**1.48**	**187**	P	**Pn**	**14 20 59.8**	**-0.1**
JNTH				*e*S	**Sn**	**14 21 19.3**	**+0.3**
MKAR	**Makanchi Array**	**40.37**	**310**	P	**P**	**14 28 11.1**	**0.0**
	0.2nm,0.3s,baz=108,slow=9.4,SNR=2.8						
WRA	**Warramunga Arr**	**48.02**	**172**	P	**P**	**14 29 12.5**	**0.0**
	0.2nm,0.6s,baz=352,slow=8.4,SNR=2.9						
ASAR	**Alice Springs**	**51.65**	**173**	P	**P**	**14 29 40.7**	**+0.6**
	0.1nm,0.7s,baz=357,slow=8.6,SNR=3.1						

ISCJB ***22*** *14:33:31.5±0.5,33.˚77N±0.˚02×35.˚78E±0.˚03,h0km±5km, Error ellipse: s-maj=4.7km s-min=3.4km az=147.9*
CSEM ***22*** *14:33:31.6±0.2,33.˚76N×35.˚77E,h2km,ML2.7,Error ellipse: s-maj=4.0km s-min=2.7km az=71.0*
GRAL ***22*** *14:33:31.8±0.3,33.˚78N×35.˚80E,h0km±28km,MD2.7*
NSSC ***22*** *14:33:31.6±1.7,33.˚76N×35.˚81E,h0km±4km,ML1.9*

ISC 22 14:33:31.5±1.0,33.˚78N±0.˚02×35.˚80E±0.˚03,h4km±11km, n27,σ0°48/51,Jordan-Syria region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
BHL	**Bhannes**	**0.17**	**317**	*e*P	**Pg**	**14 33 34.9**	**-0.1**
BHL				*e*S	**Sg**	**14 33 37.1**	**-0.2**
BHL	**Bhannes**	**0.17**	**317**	*e*P	**Pg**	**14 33 34.9**	**-0.1**
BHL				*e*S	**Sg**	**14 33 37.1**	**-0.2**
DQRL	**Deir Qamar**	**0.20**	**250**	*e*P	**Pg**	**14 33 35.5**	**0.0**
DQRL				*e*S	**Sg**	**14 33 38.2**	**+0.1**
DQRL	**Deir Qamar**	**0.20**	**250**	*e*P	**Pg**	**14 33 35.5**	**0.0**
DQRL				*e*S	**Sg**	**14 33 38.2**	**+0.1**
BEYL	**Beirut**	**0.27**	**291**	*e*P	**Pg**	**14 33 36.7**	**-0.1**
BEYL	**Beirut**	**0.27**	**291**	*e*P	**Pg**	**14 33 36.7**	**-0.1**
RCY	**Rachaya**	**0.28**	**173**	*e*P	**Pg**	**14 33 37.0**	**0.0**
BRBR	**Barbar**	**0.39**	**160**	*e*P	**Pg**	**14 33 39.2**	**+0.2**
BRBR				*e*S	**Sg**	**14 33 44.6**	**+0.6**
BRBR				AML	AML	14 33 48.1	
	comp=E,47nm,0.5s						
BRBR				AML	AML	14 33 48.6	
	comp=N,130nm,0.3s						
BRBR	**Barbar**	**0.39**	**160**	*e*P	**Pg**	**14 33 39.2**	**+0.2**
BRBR				*e*S	**Sg**	**14 33 44.6**	**+0.6**
	comp=N,130nm,0.3s						
QASN	**Qassioun**	**0.47**	**121**	*e*P	**Pg**	**14 33 39.4**	**-1.2**
QASN				*e*S	**Sg**	**14 33 46.8**	**+0.2**
QASN				AML	AML	14 33 51.1	
	comp=N,55nm,0.3s						
QASN				AML	AML	14 33 55.1	
	comp=E,212nm,0.4s						
QASN	**Qassioun**	**0.47**	**121**	*e*P	**Pg**	**14 33 39.3**	**-1.2**
QASN				*e*S	**Sg**	**14 33 46.8**	**+0.2**
	comp=E,213nm,0.4s						
MARH	**Ras Al Marh**	**0.62**	**66**	*e*P	**Pg**	**14 33 44.1**	**+0.6**
MARH				*e*S	**Sb**	**14 33 54.1**	**-0.2**
MARH				AML	AML	14 34 00.4	
	comp=N,91nm,0.4s						
MARH				AML	AML	14 34 02.8	
	comp=E,112nm,0.5s						
MARH	**Ras Al Marh**	**0.62**	**66**	*e*P	**Pg**	**14 33 44.1**	**+0.6**
MARH				*e*S	**Sb**	**14 33 54.2**	**-0.2**
	comp=E,112nm,0.5s						
TOTH	**TOTAH**	**0.67**	**128**	*e*P	**Pb**	**14 33 45.5**	**-0.3**
TOTH				*e*S	**Sb**	**14 33 54.8**	**-0.7**
TOTH				AML	AML	14 34 07.1	
	comp=E,32nm,0.7s						
TOTH				AML	AML	14 34 10.3	
	comp=N,14nm,0.5s						
TOTH	**TOTAH**	**0.67**	**128**	*e*P	**Pb**	**14 33 45.5**	**-0.3**
TOTH				*e*S	**Sb**	**14 33 54.8**	**-0.7**
	comp=N,15nm,0.5s						
HAWK	**Haweek**	**0.90**	**34**	*e*P	**Pg**	**14 33 48.6**	**-0.2**
HAWK				*e*S	**Sb**	**14 34 02.1**	**-0.1**
HAWK				AML	AML	14 34 10.7	
	comp=E,27nm,0.4s						
HAWK				AML	AML	14 34 12.4	
	comp=N,19nm,0.5s						
HAWK	**Haweek**	**0.90**	**34**	*e*P	**Pg**	**14 33 48.6**	**-0.2**
HAWK				*e*S	**Sb**	**14 34 02.1**	**-0.1**
	comp=N,19nm,0.5s						
BIDA	**Albida**	**1.31**	**19**	*e*P	**Pb**	**14 33 57.2**	**+0.4**
BIDA				*e*S	**Sn**	**14 34 15.0**	**+0.3**
BIDA				AML	AML	14 34 20.8	
	comp=N,43nm,0.4s						
BIDA				AML	AML	14 34 25.0	
	comp=E,70nm,0.5s						
BIDA	**Albida**	**1.31**	**19**	*e*P	**Pb**	**14 33 57.2**	**+0.4**
BIDA				*e*S	**Sn**	**14 34 15.0**	**+0.3**
	comp=E,70nm,0.5s						
SALA	**Sala**	**1.32**	**143**	*e*P	**Pg**	**14 33 56.9**	**+0.1**
SALA				*e*S	**Sb**	**14 34 14.3**	**-0.1**
SALA	**Sala**	**1.32**	**143**	*e*P	**Pg**	**14 33 56.9**	**+0.1**
SALA				*e*S	**Sb**	**14 34 14.3**	**-0.1**
ZALF	**Zalf**	**1.54**	**123**	*e*P	**Pb**	**14 34 00.6**	**-0.1**
ZALF				*e*S	**Sb**	**14 34 20.6**	**0.0**
ZALF	**Zalf**	**1.54**	**123**	*e*P	**Pb**	**14 34 00.6**	**-0.1**
ZALF				*e*S	**Sb**	**14 34 20.6**	**0.0**
WRDH	**Warideh**	**1.80**	**16**	*e*P	**Pb**	**14 34 04.7**	**-0.4**
WRDH				*e*S	**Sb**	**14 34 28.5**	**+0.4**
WRDH				AML	AML	14 34 34.3	
	comp=N,34nm,0.4s						
WRDH				AML	AML	14 34 38.7	
	comp=E,22nm,0.6s						
WRDH	**Warideh**	**1.80**	**16**	*e*P	**Pb**	**14 34 04.7**	**-0.4**
WRDH				*e*S	**Sb**	**14 34 28.5**	**+0.4**
	comp=E,22nm,0.6s						
ARNB	**Al Arnab**	**2.08**	**4**	*e*P	**Pn**	**14 34 07.6**	**+0.2**
ARNB				*e*S	**Sb**	**14 34 35.0**	**-1.3**
ARNB				AML	AML	14 34 39.6	
	comp=E,13nm,0.6s						
ARNB				AML	AML	14 34 47.5	
	comp=N,15nm,0.5s						
ARNB	**Al Arnab**	**2.08**	**4**	*e*P	**Pn**	**14 34 07.6**	**+0.2**
ARNB				*e*S	**Sb**	**14 34 35.0**	**-1.3**
	comp=N,15nm,0.5s						

PRE ***22*** *14:38:11.8±1.4,23.˚82S×28.˚67E,h5km,ML2.9*
ISCJB ***22*** *14:38:13.4±0.8,23.˚97S±0.˚05×28.˚94E±0.˚07,h10km,Error ellipse: s-maj=9.9km s-min=5.8km az=26.4*

ISC 22 14:38:08.7±0.9,24.˚00S±0.˚04×29.˚04E±0.˚05,h10km,n8, σ1°51/16,South Africa

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
MSNA	**Messina**	**1.87**	**29**	*e*P	**Pg**	**14 38 43.9**	**-0.7**
MSNA				*e*S	**Sg**	**14 39 09.5**	**+0.5**
MSNA				AML	AML	14 39 14.2	
	comp=Z,25nm,0.2s						
KLOF	**Kloof**	**2.68**	**209**	*e*P	**Pb**	**14 38 57.2**	**+0.3**
KLOF				*e*S	**Sb**	**14 39 30.3**	**+0.4**
KLOF				AML	AML	14 39 34.9	
	comp=Z,740nm,0.1s						
PRYS	**Parys**	**3.29**	**207**	*e*P	**Pb**	**14 39 05.5**	**-1.8**
PRYS				*e*S	**Sb**	**14 39 43.8**	**-3.6**
PRYS				AML	AML	14 40 06.2	
	comp=Z,6.2nm,0.6s						
MATP	**Matopo**	**3.59**	**352**	*i* P	**Pb**	**14 39 12.2**	**-0.1**
MATP				*i*		14 39 12.4	
	baz=151,slow=12						
MATP				*i* S	**Sg**	**14 40 03.0**	**-1.0**
CNG	**Changalane**	**3.65**	**129**	*e*P	**Pb**	**14 39 12.5**	**-0.9**
CNG				*e*S	**Sb**	**14 39 57.0**	**-0.8**
CNG				AML	AML	14 40 51.3	
	comp=Z,44nm,0.7s						
POGA	**Pongola**	**4.08**	**146**	*e*P	**Pb**	**14 39 20.3**	**-0.4**
POGA				*e*S	**Sb**	**14 40 11.8**	**+1.7**
POGA				AML	AML	14 41 00.7	
	comp=Z,15nm,0.5s						
SWZ	**Schweizer**	**4.62**	**226**	*e*P	**Pn**	**14 39 21.0**	**+2.4**
SWZ				*e*S	**Sn**	**14 40 12.1**	**-0.3**
SWZ				AML	AML	14 40 35.6	
	comp=Z,6.5nm,0.6s						
BOSA	**Boshof**	**5.72**	**216**	*i* P	**Pb**	**14 39 49.5**	**+0.9**
BOSA				*i*		14 39 49.6	
	baz=88,slow=16						
BOSA				*i* S	**Sg**	**14 41 11.8**	**-0.5**

IDC ***22*** *14:43:25.5±0.6,15.˚66N×46.˚58W,h0km,mb4.1/15, mb1 4.3/16,mb1mx4.0/39,mbtmp4.1/16,ML4.0/1,MS3.6/10, Ms1 3.6/10,ms1mx3.4/27,Error ellipse: s-maj=20.8km s-min=14.9km az=140.0*
ISCJB ***22*** *14:43:26.2±0.5,15.˚7N±0.˚1×46.˚69W±0.˚08,h17km, mb4.1/17,MS3.6/10,Error ellipse: s-maj=16.1km s-min=9.4km az=150.2*
NEIC ***22*** *14:43:26.9±0.5,15.˚67N×46.˚66W,h10km,mb4.1/1,Error ellipse: s-maj=15.9km s-min=9.5km az=150.0*

ISC 22 14:43:28.1±0.6,15.˚6N±0.˚1×46.˚66W±0.˚10,h17km,n34, σ1°13/22,mb4.3/17,MS3.6/10,Northern Mid-Atlantic Ridge

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
H05S1	**Guadeloupe/Mar**	**13.74**	**267**	T	T	15 00 31.0	
	SNR=16						
H05N1	**Guadeloupe/Mar**	**13.86**	**275**	T	T	15 00 37.3	
	SNR=7.7						
GRGR	**Grenville**	**14.96**	**258**	*e*Pn	**Pn**	**14 46 58.2**	**-0.8**
SJG	**San Juan**	**18.81**	**280**	P	**P**	**14 47 46.7**	**-0.4**
	0.4nm,0.3s,baz=78,slow=17,SNR=4.6						
SJG	**San Juan**	**18.81**	**280**	*e*P	**P**	**14 47 46.3**	**-0.8**
	13nm,1.0s						
PTGA	**Pitinga**	**20.90**	**220**	P	Pn	14 48 10.8	-1.6
	8.4nm,0.7s,baz=30,slow=13,SNR=8.4						
OTAV	**Otavalo**	**34.91**	**247**	*e*P	**P**	**14 50 18.7**	**-1.0**
	17nm,1.4s						
LPAZ	**La Paz**	**38.14**	**215**	P	**P**	**14 50 48.8**	**+1.4**
	4.0nm,0.7s,baz=16,slow=6.8,SNR=17						
LPAZ				LR	LR	15 05 35.9	
	comp=Z,81nm,21.6s,baz=48,slow=35						
H10N3	**ASCENSION HYDR**	**39.48**	**124**	T	T	15 32 47.8	
	baz=306,slow=75,SNR=38						
H10N2	**ASCENSION HYDR**	**39.48**	**124**	T	T	15 32 45.5	
	baz=306,slow=75,SNR=35						
H10N1	**ASCENSION HYDR**	**39.50**	**124**	T	T	15 32 48.9	
	baz=306,slow=75,SNR=32						
H10S3	**ASCENSION HYDR**	**40.01**	**125**	T	T	15 33 29.7	
	baz=308,slow=75,SNR=38						
H10S1	**ASCENSION HYDR**	**40.02**	**125**	T	T	15 33 30.3	
	baz=308,slow=75,SNR=

YER	Yerkesik	0.09	204	*e*Pg	Pg	14 47 34.9	-0.3
YER				*e*Sg	Sg	14 47 38.2	+0.4
TURN	Turunc	0.41	147	*i* P	Pn	14 47 41.7	-0.3
TURN				*i* S	Sn	14 47 49.9	+0.9
TURN	Turunc	0.41	147	P	Pn	14 47 41.7	-0.3
TURN				S	Sn	14 47 49.9	+0.9
AYDN	Tasoluk	0.57	321	*i* P	Pg	14 47 43.0	+0.3
AYDN				*i* S	Sg	14 47 50.0	-0.4
AYDN	Tasoluk	0.57	321	P	Pg	14 47 43.0	+0.3
AYDN				S	Sg	14 47 50.0	-0.4
BDRM	Kayabasi	0.72	258	*i* P	Pb	14 47 43.8	-1.3
BDRM				*i* S	Sg	14 47 56.1	+0.9
BDRM	Kayabasi	0.72	258	P	Pb	14 47 43.8	-1.3
BDRM				S	Sg	14 47 56.1	+0.9
AYDB	Zeytinkoy-Aydi	0.81	335	*e*PG	Pg	14 47 47.4	+0.3
AYDB				*e*SG	Sn	14 47 59.8	+0.7
AYDB	Zeytinkoy-Aydi	0.81	335	*e*Pg	Pg	14 47 47.4	+0.3
AYDB				*e*Sg	Sn	14 47 59.8	+0.7
BODT	Bodrum	0.83	260	*e*PG	Pg	14 47 47.5	0.0
BODT				*e*SG	Sn	14 48 00.2	+0.7
BODT	Bodrum	0.83	260	*e*Pg	Pg	14 47 47.5	0.0
BODT				*e*Sg	Sn	14 48 00.2	+0.7
FETY	Fethiye	0.84	134	*e*PG	Pb	14 47 46.3	-0.8
FETY	Fethiye	0.84	134	*e*Pg	Pb	14 47 46.3	-0.8

KRSC 22 14:49:31.3±2.1, 50.66N×157.87E, h80km±25km, ML3.7, Kuril Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PAU	Pauzhetka	1.04	321	*e*P	Pn	14 49 52.3	+1.4
PAU				*e*S	Sn	14 50 06.4	+0.9
SKR	Severo-Kuril's	1.11	272	*i* P	Pn	14 49 52.7	+1.0
SKR				*e*S	Sn	14 50 06.4	-0.6
ASAK	Asacha	1.72	1	*e*P	Pn	14 50 01.9	+2.3
ASAK				*e*S	Sn	14 50 23.2	+2.2
RUS	Russkaya	1.82	13	*e*P	Pn	14 50 03.3	+2.6
RUS				*e*S	Sn	14 50 24.7	+1.6
MTVR	Mutnovka	1.83	6	*e*P	Pn	14 50 03.6	+2.5
MTVR				*e*S	Sn	14 50 26.0	+2.3
KRMR	Karymshinskiy	2.18	4	*e*P	Pn	14 50 08.6	+3.1
KRMR				*e*S	Sn	14 50 33.6	+2.0
APC	Apacha	2.31	349	*e*P	Pn	14 50 09.1	+1.9
PET	Petropavlovsk	2.41	11	*e*P	Pn	14 50 11.6	+2.9
PET				*e*S	Sn	14 50 39.4	+2.1
DALK	Dalny	2.43	13	*e*P	Pn	14 50 12.0	+3.1
DALK				*e*S	Sn	14 50 39.6	+1.8
UGLR	Uglovaya	2.62	13	*e*P	Pn	14 50 14.9	+3.4
AVH	Avacha	2.66	11	*e*P	Pn	14 50 15.7	+3.6
AVH				*e*S	Sn	14 50 46.5	+3.1
SMAR	Somma	2.67	12	*e*P	Pn	14 50 15.4	+3.1
NLC	Nalytchevo	2.67	19	*e*P	Pn	14 50 14.1	+2.0
NLC				*e*S	Sn	14 50 43.4	-0.1
KRER	Koryakskii	2.70	11	*e*P	Pn	14 50 16.1	+3.4
KRX	Arik	2.74	10	*e*P	Pn	14 50 16.7	+3.5
GNL	Ganaly	3.04	1	*e*P	Pn	14 50 19.3	+2.1
MKZ	Mys Kozlova	4.55	30	*e*P	Pn	14 50 40.2	+2.6
KBTR	Krutoberegovo	6.29	26	*e*P	Pn	14 51 03.8	+2.5
BKI	Bering	6.68	44	*e*P	Pn	14 51 10.1	+3.5
BKI				*e*S	Sn	14 52 19.0	-2.2

MEX 22 14:52:00.3±0.4, 13.92N×92.01W, h11km±424km, MD3.7, Off coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PCIG		2.12	327	*e*P	Pn	14 52 32.1	-3.6
PCIG				*i* S	Sn	14 52 57.6	-4.4
TGIG		3.03	339	*e*P	Pn	14 52 45.9	-2.4
TGIG				*i* S	Sn	14 53 21.0	-3.7

ISCJB 22 14:52:57.8±0.7, 37.23N±0.04×28.22E±0.05, h8km±10km, Error ellipse: s-maj=7.1km s-min=5.1km az=43.2
CSEM 22 14:52:57.6±0.2, 37.22N×28.26E, h10km, MD2.6, Error ellipse: s-maj=5.5km s-min=4.2km az=63.0
ISK 22 14:52:57.1, 37.20N×28.22E, h12km, MD2.6
DDA 22 14:52:57.8, 37.26N×28.23E, h7km, Md2.2

ISC 22 14:52:57.3±0.9, 37.21N±0.03×28.20E±0.04, h10km±7km, n14, σ0.946/26, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
YER	Yerkesik	0.10	137	*e*PG	Pg	14 52 59.9	-0.1
YER				*e*SG	Sg	14 53 02.0	+0.2
YER	Yerkesik	0.10	137	*e*Pg	Pg	14 52 59.9	-0.1
YER				*e*Sg	Sg	14 53 02.1	+0.2
TURN	Turunc	0.47	136	*i* P	Pg	14 53 06.4	0.0
TURN				*i* S	Sb	14 53 15.3	+0.7
TURN	Turunc	0.47	136	P	Pg	14 53 06.4	0.0
TURN				S	Sb	14 53 15.3	+0.7
AYDN	Tasoluk	0.52	331	*i* P	Pg	14 53 07.3	-0.1
AYDN				*i* S	Sg	14 53 14.9	+0.6
AYDN	Tasoluk	0.52	331	P	Pg	14 53 07.3	-0.1
AYDN				S	Sg	14 53 14.9	+0.6
BDRM	Kayabasi	0.62	257	*i* P	Pn	14 53 11.7	-0.5
BDRM				*i* S	Sb	14 53 19.6	+0.6
BDRM	Kayabasi	0.62	257	P	Pn	14 53 11.7	-0.5
BDRM				S	Sb	14 53 19.6	+0.6
BODT	Bodrum	0.72	259	*e*PG	Pb	14 53 11.8	-0.3
BODT				*e*SG	Sb	14 53 22.5	+0.5
BODT	Bodrum	0.72	259	*e*Pg	Pb	14 53 11.8	-0.3
BODT				*e*Sg	Sb	14 53 22.5	+0.5
AYDB	Zeytinkoy-Aydi	0.78	342	*e*PG	Pb	14 53 12.8	-0.3
AYDB				*e*SG	Sb	14 53 24.2	+0.5
AYDB	Zeytinkoy-Aydi	0.78	342	*e*Pg	Pb	14 53 12.8	-0.3
AYDB				*e*Sg	Sb	14 53 24.2	+0.5
KULA	Kula-Manisa	1.35	16	*e*PN	Pb	14 53 22.5	-0.4
KULA	Kula-Manisa	1.35	16	*e*Pn	Pb	14 53 22.5	-0.4

ISCJB 22 14:55:49.7±0.6, 18.62S±0.07×169.1E±0.1, h201km, mb3.8/13, Error ellipse: s-maj=13.8km s-min=9.3km az=11.8
IDC 22 14:55:53.5±2.4, 18.61S×169.05E, h225km±23km, mb3.6/14, mb1 3.7/16, mb1mx3.5/39, mbtmp4.2/16, Error ellipse: s-maj=18.0km s-min=13.9km az=61.0

ISC 22 14:55:51.0±0.7, 18.61S±0.08×169.2E±0.1, h201km, n22, σ1.906/23, mb3.7/13, Vanuatu Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	Mont Dzumac	4.27	216	P	Pn	14 56 58.2	+1.9
	30nm,0.3s,baz=251,slow=13,SNR=227						
DZM				S	S	14 57 45.1	-2.0
	0.5nm,0.3s,baz=105,slow=22,SNR=1.5						
HNR	Honiara	12.76	314	P	Pn	14 58 46.4	+0.8
	1.6nm,0.3s,baz=218,slow=17,SNR=2.5						
URZ	Urewera	20.77	162	P	P	15 00 18.1	+1.7
	9.0nm,0.4s,baz=276,slow=3.5,SNR=30						
CTA	Charters Tower	21.65	262	P	P	15 00 26.3	+0.5
	2.6nm,1.0s,baz=76,slow=12,SNR=2.9						
RPZ	Rata Peaks	25.08	177	P	P	15 00 57.9	+0.9
	9.7nm,0.7s,baz=45,slow=5.7,SNR=2.8						
WRA	Warramunga Arr	32.85	262	P	P	15 02 04.8	-1.2
	0.2nm,0.4s,baz=88,slow=8.5,SNR=9.1						
ASAR	Alice Springs	33.20	255	P	P	15 02 08.6	-0.4
	1.5nm,0.3s,baz=82,slow=8.5,SNR=122						
FITZ	Fitzroy Crossi	41.22	264	P	P	15 03 16.2	-0.3
	1.1nm,0.6s,baz=76,slow=4.2,SNR=4.8						
VNDA	Vanda	59.05	182	P	P	15 05 29.4	0.0
	1.3nm,1.1s,baz=8.0,slow=8.5,SNR=3.5						
ASAJ	Asahikawa	66.99	340	P	P	15 06 22.8	+0.8
	4.6nm,0.8s,baz=188,slow=14,SNR=3.6						
PETK	Petropavlovsk-	72.11	353	P	P	15 06 53.6	+0.5
	6.3nm,0.8s,baz=130,slow=5.8,SNR=18						
KLR	Kul'dur	75.27	336	P	P	15 07 12.1	+0.5
	1.2nm,0.8s,baz=144,slow=3.7,SNR=3.7						
MAW	Mawson	78.98	202	P	P	15 07 32.0	0.0
	2.6nm,0.7s,baz=42,slow=6.6,SNR=3.6						
SONM	Songino Array	86.67	323	P	P	15 08 11.6	-0.4
	1.0nm,0.6s,baz=148,slow=7.4,SNR=6.8						
NVAR	Mina Array Bea	88.45	49	P	P	15 08 21.0	+0.2
	0.3nm,0.7s,baz=239,slow=6.2,SNR=3.1						
ILAR	Eielson Array	89.66	17	P	P	15 08 23.8	-1.8
	0.5nm,0.5s,baz=234,slow=5.0,SNR=9.0						
SNAA	Sanae	89.78	183	P	P	15 08 25.5	-0.8
VNA3	Neumayer Olymp	90.37	180	P	P	15 08 28.0	-1.0
VNA2	Neumayer--Watz	90.66	181	P	P	15 08 29.7	-0.6
	baz=177,slow=4.0						

YKA	Yellowknife Ar	100.16	27	P	Pdif	15 09 12.6	-0.8
	0.3nm,0.6s,baz=255,slow=4.8,SNR=7.4						
MKAR	Makanchi Array	101.23	316	P	Pdif	15 09 19.2	+0.6
	0.1nm,0.3s,baz=90,slow=5.8,SNR=2.9						
GERES	GERESS Array B	143.90	332	PKP	PKPab	15 14 59.1	-0.9
	0.3nm,0.5s,baz=349,slow=3.2,SNR=3.5						

IDC 22 15:00:00.9±1.0, 2.26N×126.12E, h0km, mb4.0/7, mb1 4.2/7, mb1mx3.8/39, mbtmp4.0/7, MS2.9/1, Ms1 2.9/1, ms1mx2.5/50, Error ellipse: s-maj=107.1km s-min=12.1km az=70.0
ISCJB 22 15:00:06.7±0.7, 2.47N±0.06×126.45E±0.10, h55km, mb4.1/6, Error ellipse: s-maj=14.8km s-min=6.7km az=153.9
DJA 22 15:00:06.4±0.4, 2°N±4°×12°6E±°, h10km, M4.1/8, mB4.8/1, mb4.3/4, MLv4.0/8, Mw(mB)4.0/1

ISC 22 15:00:08.2±0.8, 2.51N±0.08×126.51E±0.10, h55km, n16, σ1.981/20, mb4.2/6, Northern Moluca Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SGSI	Sangihe	1.52	320	P	Pn	15 00 31.9	-1.2
SGSI				S	Sn	15 00 51.2	-0.7
TNTI	Ternate	1.93	153	P	Pn	15 00 38.2	-0.4
LBMI	Labuha	3.28	162	P	Pn	15 00 58.0	+0.8
SANI	Sanana	4.56	187	P	Pn	15 01 14.0	-0.7
MRSI	Marisa	4.99	246	P	Pn	15 01 19.4	-1.2
NLAI	Namlea	5.74	174	P	Pn	15 01 30.1	-0.8
	18nm,0.6s,0.2nm						
TTSI	Tana Toraja	8.67	231	P	Pn	15 02 13.4	+2.4
SPSI	Sidrap Palu	9.31	226	P	Pn	15 02 19.7	-0.1
KAPI	Kappang	10.07	222	LR	LR	15 06 26.9	
	comp=Z,69nm,21.1s,baz=36,slow=40						
FITZ	Fitzroy Crossi	20.50	182	P	P	15 04 39.3	-2.5
	1.6nm,0.6s,baz=16,slow=7.9,SNR=10						
WRA	Warramunga Arr	23.60	161	P	P	15 05 12.6	-1.7
	5.6nm,0.6s,baz=342,slow=10,SNR=25						
WRA				S	S	15 09 24.6	-0.2
	0.7nm,0.8s,baz=337,slow=20,SNR=4.0						
ASAR	Alice Springs	27.00	165	P	P	15 05 44.9	-0.3
	0.8nm,0.3s,baz=347,slow=7.7,SNR=21						
ASAR				PcP	PcP	15 09 06.9	+1.1
	0.3nm,0.4s,baz=349,slow=2.2,SNR=4.9						
ASAR				S	S	15 10 23.9	+5.0
	0.4nm,0.8s,baz=349,slow=18,SNR=2.7						
STKA	Stephens Creek	37.08	158	P	P	15 07 13.4	+0.2
	1.3nm,0.3s,baz=341,slow=7.1,SNR=9.3						
SONM	Songino Array	48.38	342	P	P	15 08 47.0	+2.2
	0.6nm,0.7s,baz=158,slow=8.2,SNR=3.2						
MKAR	Makanchi Array	58.43	326	P	P	15 09 56.7	-1.7
	1.2nm,0.4s,baz=122,slow=7.8,SNR=25						
MKAR				PcP	PcP	15 10 49.2	+0.6
	0.4nm,0.6s,baz=130,slow=3.8,SNR=4.1						
FINES	FINESS Array B	92.80	332	P	P	15 13 14.4	-0.2
	1.4nm,0.9s,baz=57,slow=7.0,SNR=4.0						

ISK 22 15:00:16.4, 38.23N×38.27E, h2km, MD2.8
ISCJB 22 15:00:17.5±0.7, 38.26N±0.03×38.30E±0.03, h2km±6km, Error ellipse: s-maj=4.6km s-min=4.2km az=154.0
CSEM 22 15:00:17.4±0.2, 38.25N×38.31E, h8km, MD2.7, Error ellipse: s-maj=5.0km s-min=4.3km az=39.0
DDA 22 15:00:17.6, 38.27N×38.27E, h14km, Md2.7

ISC 22 15:00:17.9±1.1, 38.25N±0.03×38.28E±0.02, h8km±10km, n30, σ0.954/46, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AKCD	Akcadag	0.28	280	*i* P	Pg	15 00 23.2	-0.4
AKCD				*i* S	Sg	15 00 28.4	+1.0
AKCD	Akcadag	0.28	280	P	Pg	15 00 23.2	-0.4
AKCD				S	Sg	15 00 28.4	+1.0
ELZG	Elazig	0.61	65	*i* P	Pg	15 00 29.4	-0.3
ELZG				*i* S	Sb	15 00 39.1	-0.5
ELZG	Elazig	0.61	65	P	Pg	15 00 29.4	-0.3
ELZG				S	Sb	15 00 39.1	-0.5
DARE	Darende-Malaty	0.70	298	*e*PG	Pg	15 00 30.9	-0.5
DARE				*e*SG	Sb	15 00 41.7	-0.6
DARE	Darende-Malaty	0.70	298	*e*Pg	Pg	15 00 31.0	-0.5
DARE				*e*Sg	Sb	15 00 41.7	-0.6
SVRC	Sivrice-ELAZID	0.82	80	*e*PG	Pg	15 00 34.3	-0.4
URFA	Urfa	0.91	152	*e*PG	Pg	15 00 34.5	-0.8
URFA	Urfa	0.91	152	*e*Pg	Pg	15 00 34.6	-0.8
KEMA	Kemaliye	1.03	9	*i* P	Pg	15 00 36.6	-1.1
KEMA				*i* S	Sb	15 00 51.9	+0.1
KEMA	Kemaliye	1.03	9	P	Pg	15 00 36.7	-1.1
KEMA				S	Sb	15 00 51.9	+0.1
GZT	Gaziantep	1.05	213	*i* P	Pb	15 00 38.6	+0.2
GZT				*i* S	Sn	15 00 54.6	+0.7
PTK	Pertek	1.08	53	*e*PN	Pg	15 00 38.3	-0.4
PTK	Pertek	1.08	53	*e*Pn	Pg	15 00 38.3	-0.4
CUKAN	kangal_SIVAS	1.24	330	*i* P	Pg	15 00 41.4	-0.4
CUKAN				*i* S	Sb	15 00 57.9	-0.1
CUKAN	kangal_SIVAS	1.24	330	P	Pg	15 00 41.4	-0.4
CUKAN				S	Sb	15 00 57.8	-0.1
KMRS	Kahramanmaras	1.32	236	*e*PN	Pn	15 00 42.2	-0.4
KMRS	Kahramanmaras	1.32	236	*e*Pn	Pn	15 00 42.2	-0.4
GAZ	Gaziantep	1.37	219	*e*PN	Pn	15 00 43.0	-0.2
GAZ	Gaziantep	1.37	219	*e*Pn	Pn	15 00 43.0	-0.2
SURC	SANLIURFA_SURC	1.39	169	*i* P	Pg	15 00 44.4	-0.1
SURC				*i* S	Sg	15 01 03.1	+0.5
SURC	SANLIURFA_SURC	1.39	169	P	Pg	15 00 44.4	-0.1
SURC				S	Sg	15 01 03.1	+0.5
HCB	Kahramanmara¯	1.41	231	*i* P	Pn	15 00 43.8	-0.1
HCB				*i* S	Sg	15 01 04.0	+0.7
KAMA	Osmaniye	1.66	231	*i* P	Pn	15 00 47.7	+0.4
ANDN	Andirin	1.67	247	*i* P	Pn	15 00 47.5	0.0
ANDN				*i* S	Sg	15 01 10.9	-0.6
ANDN	Andirin	1.67	247	P	Pn	15 00 47.5	0.0
ANDN				S	Sg	15 01 10.9	-0.6
MAZI	Mazidag	1.89	114	*e*PN	Pn	15 00 50.7	+0.2
MAZI	Mazidag	1.89	114	*e*Pn	Pn	15 00 50.7	+0.2
SVSK	Karacayir	1.94	330	*e*PN	Pn	15 00 51.7	+0.6
SVSK	Karacayir	1.94	330	*e*Pn	Pn	15 00 51.7	+0.6

IDC 22 15:14:00.4±7.9, 7.56S×129.45E, h399km±103km, mb2.9/1, mb1 2.5/4, mb1mx2.4/34, mbtmp3.3/4, Error ellipse: s-maj=69.4km s-min=43.5km az=48.0, Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	Fitzroy Crossi	11.12	199	P	P	15 16 29.7	-0.7
	0.1nm,0.3s,baz=38,slow=13,SNR=3.2						
FITZ				S	S	15 18 36.0	+1.8
	0.2nm,0.3s,baz=276,slow=18,SNR=5.1						
WRA	Warramunga Arr	13.19	159	P	P	15 16 51.3	-1.9
	0.2nm,0.3s,baz=349,slow=11,SNR=14						
WRA				S	S	15 19 15.6	-0.6
	0.3nm,0.3s,baz=330,slow=23,SNR=8.8						
ASAR	Alice Springs	16.58	166	P	P	15 17 31.9	+2.0
	0.1nm,0.3s,baz=346,slow=11,SNR=8.3						
MKAR	Makanchi Array	68.39	327	P	P	15 24 20.5	0.0
	0.3nm,0.4s,baz=123,slow=7.8,SNR=5.8						

ISCJB 22 15:17:59.5±0.6, 37.47N±0.05×35.89E±0.03, h3km±7km, Error ellipse: s-maj=7.9km s-min=4.6km az=174.8
CSEM 22 15:17:59.4±0.4, 37.49N×35.86E, h5km, MD2.4, Error ellipse: s-maj=10.6km s-min=5.7km az=164.0
ISK 22 15:17:59.2, 37.48N×35.79E, h5km, MD2.4
DDA 22 15:17:59.0, 37.58N×35.89E, h7km, Md2.5

ISC 22 15:17:59.3±0.9, 37.47N±0.04×35.86E±0.03, h7km±5km, n19, σ0.995/32, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KOZT	Kozan	0.03	288	*e*PG	Pg	15 18 00.6	0.0
KOZT				*e*SG	Sg	15 18 01.6	0.0
KOZT	Kozan	0.03	288	*e*Pg	Pg	15 18 00.6	0.0
KOZT				*e*Sg	Sg	15 18 01.6	0.0
AKO	Adana	0.33	268	*i* P	Pb	15 18 06.1	-1.4
AKO				*i* S	Sb	15 18 13.2	+0.2
ANDN	Andirin	0.40	74	*i* P	Pg	15 18 05.8	-1.3
ANDN				*i* S	Sg	15 18 12.8	+0.5
ANDN	Andirin	0.40	74	P	Pg	15 18 05.8	-1.3
ANDN				S	Sg	15 18 12.9	+0.5
CEYT	Ceyhan	0.47	191	*e*PG	Pg	15 18 08.7	+0.3
CEYT				*e*SG	Sb	15 18 16.0	-1.0
CEYT	Ceyhan	0.47	191	*e*Pg	Pg	15 18 08.7	+0.3
CEYT				*e*Sg	Sb	15 18 16.0	-1.0
YURE	YUREGIR	0.67	196	*i* P	Pb	15 18 13.2	-0.2
YURE				*i* S	Sn	15 18 26.3	+0.3
YURE	YUREGIR	0.67	196	P	Pb	15 18 13.2	-0.2
YURE				S	Sn	15 18 26.3	+0.3
KARA	Karaisali	0.68	252	*e*PG	Pg	15 18 11.9	-0.4
KARA				*e*SG	Sb	15 18 21.1	-1.9
KARA	Karaisali	0.68	252	*e*Pg	Pg	15 18 11.9	-0.4
KARA				*e*Sg	Sb	15 18 21.1	-1.9
KMRS	Kahramanmaras	0.83	87	*e*PG	Pb	15 18 16.7	+0.6
KMRS	Kahramanmaras	0.83	87	*e*Pg	Pb	15 18 16.7	+0.6
TAHT	Tahtakopru-Hat	1.12	166	*e*PN	Pn	15 18 21.9	+0.4
TAHT	Tahtakopru-Hat	1.12	166	*e*Pn	Pn	15 18 21.9	+0.4
MERS	Mersin	1.23	241	*e*PN	Pb	15 18 22.3	-0.6
MERS	Mersin	1.23	241	*e*Pn	Pb	15 18 22.3	-0.6
KERG	Konya-Eregli	1.38	268	*i* P	Pb	15 18 26.6	+1.1
KERG				*i* S	Sn	15 18 45.4	+1.6
KERG	Konya-Eregli	1.38	268	P	Pb	15 18 26.6	+1.1
KERG				S	Sn	15 18 45.4	+1.6

IDC 22 15:18:17.2±5.7, 32.58S×139.26E, h0km, mb1 3.1/3, mb1mx3.0/41, mbtmp2.8/3, ML2.8/2, Error ellipse: s-maj=66.5km s-min=19.5km az=9.0, Near coast of South Australia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
STKA	Stephens Creek	2.10	71	Pn	Pn	15 18 53.6	0.0
	2.0nm,0.3s,baz=233,slow=14,SNR=40						
STKA				Lg	Lg	15 19 23.6	
	11nm,0.3s,baz=330,slow=18,SNR=21						
ASAR	Alice Springs	10.06	331	Pn	Pn	15 20 43.5	+0.5
	0.1nm,0.3s,baz=152,slow=12,SNR=6.3						
ASAR				Sn	Sn	15 22 37.2	+0.5
	0.1nm,0.3s,baz=155,slow=22,SNR=5.8						
WRA	Warramunga Arr	13.34	340	Pn	Pn	15 21 28.8	+0.9
	baz=156,slow=13,SNR=2.4						
WRA				Sn	Sn	15 23 55.8	-1.1
	0.0nm,0.3s,baz=168,slow=24,SNR=3.4						

KRSC 22 15:23:35.5±1.0, 52.69N×159.74E, h60km±15km, ML3.6, Off east coast of Kamchatka Peninsula

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
NLC	Nalytchevo	0.54	333	*i* P	Pn	15 23 49.4	+1.6
NLC				*e*S	Sn	15 23 58.0	+1.3
DALK	Dalny	0.69	300	*i* P	Pn	15 23 50.7	+1.2
DALK				*e*S	Sn	15 23 59.8	0.0
PET	Petropavlovsk	0.74	297	*i* P	Pn	15 23 51.4	+1.3
PET				*e*S	Sn	15 24 01.0	+0.1
UGLR	Uglovaya	0.76	313	*i* P	Pn	15 23 52.4	+1.9
UGLR				*e*S	Sn	15 24 03.0	+1.4
SDLR	Sedlovina	0.78	319	*i* P	Pn	15 23 52.5	+1.7
SDLR				*e*S	Sn	15 24 03.3	+1.2
RUS	Russkaya	0.80	251	*e*P	Pn	15 23 52.0	+1.2
RUS				*e*S	Sn	15 24 02.7	+0.2
SMAR	Somma	0.81	315	*e*P	Pn	15 23 52.7	+1.5
AVH	Avacha	0.84	314	*i* P	Pn	15 23 53.5	+2.1
AVH				*e*S	Sn	15 24 05.0	+1.8
KRX	Arik	0.94	316	*e*P	Pn	15 23 54.6	+1.8
KRX				*e*S	Sn	15 24 06.7	+1.1
MTVR	Mutnovka	0.97	258	*i* P	Pn	15 23 55.1	+1.8
MTVR				*e*S	Sn	15 24 07.6	+1.2
KRMR	Karymshinskiy	0.99	279	*i* P	Pn	15 23 54.5	+1.2
KRMR				*e*S	Sn	15 24 06.5	0.0
ASAK	Asacha	1.17	255	*e*P	Pn	15 23 58.1	+2.4
ASAK				*e*S	Sn	15 24 13.0	+2.1
GNL	Ganaly	1.48	314	*i* P	Pn	15 24 02.4	+2.5
GNL				*i* S	Sn	15 24 20.4	+2.1
APC	Apacha	1.59	279	*e*P	Pn	15 24 03.7	+2.5
APC				*e*S	Sn	15 24 24.4	+3.7
PAU	Pauzhetka	2.19	237	*e*P	Pn	15 24 12.4	+3.0
MKZ	Mys Kozlova	2.21	32	*e*P	Pn	15 24 12.1	+2.4
SKR	Severo-Kuril's	3.02	230	*e*S	Sn	15 24 58.0	+2.2
KBTR	Krutoberegovo	3.95	26	*e*P	Pn	15 24 37.6	+4.1
BKI	Bering	4.46	53	*e*P	Pn	15 24 43.9	+3.5
BKI				*e*S	Sn	15 25 31.2	+0.3

ISCJB 22 15:24:57.0±1.0, 1.2S±0.1×135.14E±0.05, h33km, mb4.0/4, Error ellipse: s-maj=15.0km s-min=7.1km az=7.5
IDC 22 15:24:57.2±1.8, 1.37S×135.19E, h0km, mb4.0/4, mb1 4.3/7, mb1mx4.0/47, mbtmp4.2/7, ML4.3/3, Error ellipse: s-maj=36.4km s-min=21.6km az=42.0
DJA 22 15:25:00.4±1.2, 1°S±6°×13°5E±°, h25km±7km, M4.7/10, mb4.7/7, mB5.1/3, MLv4.7/10, Mw(mB)4.4/3
NEIC 22 15:25:02.2±1.3, 1.47S×135.22E, h35km, mb4.0/2, Error ellipse: s-maj=21.0km s-min=17.6km az=189.0

ISC 22 15:24:59.2±1.7, 1.1S±0.2×135.10E±0.09, h35km, n19, σ0.999/20, mb4.2/4, Irian Jaya region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RKPI	Ransiki, Papua	1.00	247	P	Pn	15 25 15.4	-1.3
RKPI				S	Sn	15 25 29.7	+0.1
KMPI	Kaimana, Papua	2.89	209	P	Pn	15 25 44.1	+1.4
FAKI	Fak Fak	3.37	238	P	Pn	15 25 49.4	+0.1
FAKI				S	Sn	15 26 27.7	-0.3
SIJI	Sorong	3.84	274	Pn	Pn	15 25 57.1	+1.4
	18nm,0.3s,baz=225,slow=1.4,SNR=3.4						
SWI	Sorong	3.84	274	P	Pn	15 25 56.6	+0.8
JAY	Jayapura	5.78

Mθθ3.78±.12; Mφφ3.17±.12; Mrθ-0.55±.30; Mθφ2.84±.07; Mφr0.86±.32; Best double couple: M0 6.70400×10^16 NP1:φs221.00000°,δ46.00000°,λ-100.00000°. NP2: φs55.00000°,δ45.00000°,λ-79.00000°. Principal axes: T 6.3330, Plg1.0000°, Azm318.0000°; N 0.7500, Plg7.0000°, Azm228.0000°; P -7.0740, Plg83.0000°, Azm54.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.

*MOS **22** 15:25:19.5±0.9, 37.°64N×140.°96E, h33km, mb5.7/126, MS4.6/49 Error ellipse: s-maj=5.6km s-min=3.6km az=101.1*

ISC 22 15:25:17.5±0.4**, 37.°21N**±0.°03×**141.°05E**±0.°03**, h25**km±2km**, h25**km**:pP-P, n1454,** σ**1.°30**/1513**, mb5.5**/421**, MS4.6**/157**, 45C-102D, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	Kawauchi	0.21	319	⇑P	Pb	15 25 23.0	-0.4
JFK				S	Sb	15 25 28.1	+0.7
ONAJ	Iwakimizuishiy	0.23	242	⇑P	Pb	15 25 23.0	-0.6
ONAJ				eS	Sb	15 25 28.0	+0.3
JFT	Otama	0.65	299	⇑P	Pn	15 25 31.1	0.0
JFT				S	Sn	15 25 41.6	+1.1
JMM	Marumori	0.69	343	⇑P	Pb	15 25 30.3	-0.6
JMM				S	Sn	15 25 41.1	-0.4
JHO	Hitachi	0.71	213	⇓P	Pb	15 25 29.6	-1.6
I30JP	ISUMI INFRASON	1.99	198	Pn	Pn	15 25 49.5	0.0
	baz=30,slow=15						
I30JP				Sn	Sn	15 26 13.2	-0.4
	baz=16,slow=23						
I30JP				i		15 40 20.0	
	baz=16,slow=327,SNR=0.5						
MJAR	Matsushiro Arr	2.37	255	Pn	Pn	15 25 56.2	+1.3
	82nm,0.3s,baz=82,slow=14,SNR=451						
MJAR				Lg	Lg	15 26 30.4	
	376nm,0.3s,baz=85,slow=22,SNR=11						
MAJO	Matsushiro	2.37	255	d iP	Pb	15 25 57.4	-2.2
MAJO	Matsushiro	2.37	255	ePn	Pb	15 25 57.3	-2.2
MAJO				eSn	Sn	15 26 18.1	-5.0
MAT	Matsushiro	2.37	255	P	Pb	15 25 57.2	-2.4
MAT				S	Sb	15 26 29.5	+1.1
MJB9	Matsu-Tunnel	2.38	255	ePn	Pb	15 25 57.3	-2.3
INU	Inuyama	3.75	242	ePn	Pn	15 26 15.6	+1.9
JHJ	Hachijo jima 2	4.21	195	Pn	Pn	15 26 20.4	+0.3
	162nm,0.3s,baz=78,slow=10,SNR=40						
JHJ				Sn	Sn	15 27 08.7	+0.3
	416nm,0.3s,baz=87,slow=21,SNR=8.4						
JHJ2	Mitsune	4.21	194	ePn	Pn	15 26 19.3	-0.8
JHJ2				eSn	Sn	15 27 04.7	-3.7
ERM	Erimo	5.07	18	ceP	Pn	15 26 30.6	-1.2
ERM				pmax	pmax		
	comp=Z,337nm,0.8s						
ERM	Erimo	5.07	18	ePn	Pn	15 26 30.7	-1.1
ERM				eSn	Sn	15 27 30.9	+1.4
ASAJ	Asahikawa	7.00	9	Pn	Pn	15 26 57.9	-0.5
	comp=Z,12nm,0.3s,baz=223,slow=10,SNR=69						
ASAJ				Sn	Sn	15 28 19.1	+1.9
	comp=Z,13nm,0.3s,baz=216,slow=19,SNR=3.4						
ASAJ	Asahikawa	7.00	9	ePn	Pn	15 26 57.5	-0.8
ASAJ				eSn	Sn	15 28 17.0	-0.2
ASAJ				Sn	Sn	15 28 19.1	+1.9
YUK	Yuzh-Kuril'sk	7.74	27	d iP	Pn	15 27 05.4	-3.1
YUK				i S	Sn	15 28 28.1	-7.1
YUK				pmax	pmax		
	comp=Z,542nm,0.6s						
YUK				pmax	pmax		
	comp=N,431nm,0.4s						
YUK				pmax	pmax		
	comp=E,169nm,0.6s						
YUK				MLR	MLR		
	comp=Z,3μm,13.0s						
YUK				MLR	MLR		
	comp=N,2μm,12.0s						
YUK				MLR	MLR		
	comp=E,2μm,14.0s						
SHO	Shikotan	7.98	32	d iP	Pn	15 27 07.6	-4.1
SHO				i S	Sn	15 28 33.0	-8.1
SHO				pmax	pmax		
	comp=Z,323nm,0.5s						
SHO				pmax	pmax		
	comp=N,108nm,0.4s						
SHO				pmax	pmax		
	comp=E,60nm,0.2s						
VLA	Vladivostok	9.17	313	d iP	Pn	15 27 33.6	+5.6
JNU	Nakatsue	9.27	247	Pn	Pn	15 27 30.8	+1.3
	comp=E,1.4nm,0.3s,baz=25,slow=5.1,SNR=10						
JNU				LR	LR	15 31 27.9	
	comp=E,3μm,18.4s,baz=60,slow=40						
JNU	Nakatsue	9.27	247	ePn	Pn	15 27 29.2	-0.4
KUR	Kuril'sk	9.52	30	c iP	Pn	15 27 30.3	-2.6
KUR				i S	Sn	15 29 12.0	-6.9
KUR				pmax	pmax		
	comp=Z,108nm,0.7s						
KUR				pmax	pmax		
	comp=N,33nm,0.3s						
KUR				pmax	pmax		
	comp=E,60nm,0.7s						
KUR				pmax	pmax		
	comp=Z,351nm,4.9s						
KUR				smax	smax		
	comp=N,186nm,0.6s						
KUR				smax	smax		
	comp=E,82nm,0.6s						
KUR				smax	smax		
	comp=N,729nm,2.6s						
KUR				smax	smax		
	comp=E,521nm,2.6s						
KUR				MLR	MLR		
	comp=N,766nm,10.0s						
KUR				MLR	MLR		
	comp=E,1μm,10.0s						
KUR				MLR	MLR		
	comp=Z,1μm,10.0s						
USRK	Ussuriysk Ar.	9.80	318	Pn	Pn	15 27 38.6	+1.9
	comp=Z,5.2nm,0.3s,baz=130,slow=13,SNR=149						
USRK				LR	LR	15 31 16.9	
	comp=Z,2μm,21.4s,baz=149,slow=37						
YSS	Yuzh-Sakhalins	9.82	7	⇑iP	Pn	15 27 36.2	-0.8
YSS				eS	Sn	15 29 17.1	-9.3
YSS				pmax	pmax		
	comp=Z,40nm,0.9s						
YSS				MLR	MLR		
	comp=Z,4μm,13.0s						
YSS				MLR	MLR		
	comp=N,3μm,12.0s						
YSS				MLR	MLR		
	comp=E,2μm,13.0s						
YSS	Yuzh-Sakhalins	9.82	7	ePn	Pn	15 27 35.6	-1.4
CBIJ	Chichi jima	10.13	174	ePn	Pn	15 27 36.4	-5.0
CBIJ				Sn	Sn	15 29 23.8	-10
JCJ	Chichijima	10.13	174	Pn	Pn	15 27 37.2	-4.1
	comp=E,69nm,0.3s,baz=105,slow=21,SNR=26						
JCJ				Sn	Sn	15 29 23.8	-10
	baz=247,slow=17						
JCJ				LR	LR	15 31 54.0	
	comp=E,2μm,20.3s,baz=9.5,slow=40						
KSRS	Korea Array	10.46	275	Pn	Pn	15 27 48.3	+2.5
	comp=E,1.7nm,0.3s,baz=91,slow=13,SNR=95						
KSRS				LR	LR	15 31 22.2	
	comp=E,1μm,20.0s,baz=84,slow=35						
KS01	Wonju Array Si	10.48	275	ePn	Pn	15 27 48.0	+2.0
KS15	Wonju Array Si	10.49	275	ePn	Pn	15 27 48.6	+2.4
KSAR	Wonju Array Be	10.49	275	P	Pn	15 27 48.3	+2.1
KSAR	Wonju Array Be	10.49	275	Pn	Pn	15 27 48.3	+2.1
MDJ	Mudanjiang	11.39	314	P	Pn	15 28 00.8	+2.3
MDJ				S	Sn	15 30 06.1	+1.2
MDJ				pmax	pmax		
	comp=E,22nm,1.4s						
MDJ				pmax	pmax		
	comp=E,1μm,6.9s						
MDJ				LR	LR		
	comp=E,3μm,12.7s						
MDJ				LR	LR		
	comp=E,1μm,12.1s						
MDJ				LR	LR		
	comp=E,3μm,13.8s						
MDJ	Mudanjiang	11.39	314	Pn	Pn	15 27 58.1	-0.4
	comp=E,135nm,0.9s						
INCN	Inchon	11.48	276	Pn	Pn	15 28 02.9	+3.0
	comp=E,332nm,1.6s						
UGL	Uglegorsk	11.89	3	eP	Pn	15 28 04.8	-0.5
UGL				e		15 30 18.0	
UGL				pmax	pmax		
	comp=Z,400nm,5.0s						
UGL				pmax	pmax		
	comp=Z,98nm,0.9s						
UGL				MLR	MLR		
	comp=Z,5μm,14.0s						
UGL				MLR	MLR		
	comp=N,4μm,15.0s						
UGL				MLR	MLR		
	comp=E,4μm,13.0s						
HABR	Khabarovsk	12.08	341	dP	Pn	15 28 04.1	-3.8
HABR				eS	Sn	15 30 14.5	-7.3
HABR				pmax	pmax		
	comp=Z,22nm,1.6s						
HABR				MLR	MLR		
	comp=Z,2μm,13.0s						
CN2	Changchun	13.57	304	eP	Pn	15 28 30.3	+2.1
CN2				esP	P	15 28 42.3	+5.3
CN2				eS	Sn	15 30 58.9	+0.8
CN2				pmax	pmax		
	comp=Z,10.0nm,0.7s						
CN2				pmax	pmax		
	comp=Z,200nm,3.0s						
CN2				LR	LR		
	comp=Z,3μm,13.0s						
CN2				LR	LR		
	comp=Z,4μm,13.0s						
CN2				LR	LR		
	comp=Z,3μm,15.0s						
TYV	Tymovskoe	13.70	4	eP	Pn	15 28 29.0	-1.0
TYV				pmax	pmax		
	comp=Z,1μm,3.0s						
TYV				pmax	pmax		
	comp=E,68nm,0.8s						
TYV				pmax	pmax		
	comp=Z,110nm,0.8s						
TYV				MLR	MLR		
	comp=E,6μm,13.0s						
TYV				MLR	MLR		
	comp=Z,7μm,11.0s						
KLR	Kul'dur	13.78	334	Pn	Pn	15 28 31.9	+0.7
	comp=Z,0.5nm,0.3s,baz=127,slow=14,SNR=14						
KLR				LR	LR	15 33 53.9	
	comp=Z,1μm,20.9s,baz=146,slow=38						
SNY	Shenyang	14.25	294	⇑P	Pn	15 28 40.8	+3.2
SNY				pP	P	15 28 48.1	+3.5
SNY				sP		15 28 53.1	
SNY				pmax	pmax		
	comp=Z,26nm,1.4s						
SNY				pmax	pmax		
	comp=Z,970nm,9.3s						
SNY				LR	LR		
	comp=Z,4μm,11.0s						
SNY				LR	LR		
	comp=Z,8μm,13.6s						
SNY				LR	LR		
	comp=Z,12μm,12.3s						
JOW	Kunigami	14.96	230	ePn	Pn	15 28 46.8	-0.5
DL2	Dalian	15.39	282	P	P	15 28 56.3	-1.1
DL2				S	Sn	15 31 48.3	+5.6
DL2				pmax	pmax		
	comp=Z,59nm,0.8s						
DL2				pmax	pmax		
	comp=Z,430nm,4.1s						
DL2				LR	LR		
	comp=Z,3μm,13.7s						
DL2				LR	LR		
	comp=Z,5μm,12.8s						
NKL	Nikolayevsk	15.95	359	eP	Pn	15 28 55.0	-5.0
NKL				eS	Sn	15 31 54.0	-1.8
NKL				pmax	pmax		
	comp=N,28nm,1.1s						
NKL				pmax	pmax		
	comp=E,17nm,1.1s						
NKL				pmax	pmax		
	comp=Z,55nm,1.1s						
NKL				smax	smax		
	comp=E,500nm,12.0s						
NKL				MLR	MLR		
	comp=N,4μm,13.0s						
NKL				MLR	MLR		
	comp=E,3μm,13.0s						
OKH	Okha	16.40	4	eP	Pn	15 29 03.8	-1.9
OKH				eS	Sn	15 32 04.0	-2.8
OKH				MLR	MLR		
	comp=Z,4μm,13.0s						
SKR	Severo-Kuril's	17.25	34	eP	Pn	15 29 12.9	-3.6
SKR				eS	Sn	15 32 30.0	+2.5
SKR				pmax	pmax		
	comp=N,180nm,1.0s						
SKR				pmax	pmax		
	comp=E,180nm,1.0s						
SKR				pmax	pmax		
	comp=Z,220nm,1.0s						
SKR				MLR	MLR		
	comp=N,2μm,16.0s						
SKR				MLR	MLR		
	comp=E,3μm,16.0s						
SKR				MLR	MLR		
	comp=Z,2μm,16.0s						
SSE	Sheshan	17.52	255	P	Pn	15 29 19.6	-0.4
SSE				S	S	15 32 40.8	-1.1
SSE				pmax	pmax		
	comp=Z,48nm,0.6s						
SSE				pmax	pmax		
	comp=Z,280nm,4.1s						
SSE				LR	LR		
	comp=Z,3μm,14.5s						
SSE				LR	LR		
	comp=Z,2μm,14.7s						
SSE				LR	LR		
	comp=Z,4μm,12.9s						
NJ2	Nanjing	18.96	261	eP	P	15 29 36.4	-0.4
NJ2				pP	pP	15 29 42.6	-1.1
NJ2				S	Sn	15 33 08.8	-0.4
NJ2				sS	sS	15 33 21.9	-0.1
NJ2				pmax	pmax		
	comp=Z,41nm,0.7s						
NJ2				pmax	pmax		
	comp=Z,350nm,4.2s						
NJ2				LR	LR		
	comp=Z,3μm,8.1s						
NJ2				LR	LR		
	comp=Z,2μm,9.8s						
NJ2				LR	LR		
	comp=Z,3μm,9.8s						
TIA	Tai'an	19.20	274	⇑P	P	15 29 39.4	-0.1
TIA				pmax	pmax		
	comp=Z,50nm,1.1s						
TIA				pmax	pmax		
	comp=Z,510nm,10.0s						
TIA				LR	LR		
	comp=Z,1μm,15.5s						
TIA				LR	LR		
	comp=Z,3μm,13.0s						
TIA				LR	LR		
	comp=Z,3μm,13.7s						
HIA	Hailar	19.57	315	eP	P	15 29 41.5	-2.0
HIA				pmax	pmax		
	comp=Z,26nm,0.8s						
HIA	Hailar	19.57	315	eP	P	15 29 41.5	-2.0
	comp=Z,26nm,0.8s						
BJI	Beijing	19.62	286	P	P	15 29 44.0	0.0
BJI				S	S	15 33 21.6	-2.4
BJI				pmax	pmax		
	comp=Z,310nm,4.6s						
BJI				LR	LR		
	comp=Z,880nm,14.5s						
BJI				LR	LR		
	comp=Z,2μm,14.8s						
BJI				LR	LR		
	comp=Z,840nm,14.8s						
BJT	Baijiatuau	19.63	286	P	P	15 29 41.4	-2.7
BJT				pmax	pmax		
	comp=Z,50nm,0.8s						
BJT	Baijiatuau	19.63	286	P	P	15 29 41.4	-2.7
	comp=Z,50nm,0.8s						
PEA0	Petropavlovsk-	19.69	31	eP	P	15 29 43.5	-1.1
PEA0B	Petropavlovsk-	19.69	31	eP	P	15 29 43.3	-1.3
	comp=Z,78nm,0.9s						
PETK	Petropavlovsk-	19.69	31	P	P	15 29 43.8	-0.8
	comp=Z,0.6nm,0.3s,baz=208,slow=5.8,SNR=40						
PETK				PcP	PcP	15 34 03.6	+0.8
	comp=Z,0.0nm,0.3s,baz=142,slow=5.1,SNR=4.4						
PETK				LR	LR	15 36 49.9	
	comp=Z,522nm,20.8s,baz=217,slow=35						
PET	Petropavlovsk	20.02	32	⇓iP	P	15 29 48.3	+0.1
PET				pmax	pmax		
	comp=Z,125nm,1.2s						
PET				pmax	pmax		
	comp=Z,600nm,13.9s						
PET				pmax	pmax		
	comp=Z,1μm,4.6s						
PET				MLR	MLR		
	comp=Z,900nm,16.0s						
PET				MLR	MLR		
	comp=Z,1μm,14.0s						
PET	Petropavlovsk	20.02	32	eP	P	15 29 47.6	-0.6
	comp=Z,135nm,1.0s						
PET				LR	LR		
	comp=Z,969nm,20.0s						
YHNB	Yeheng	20.95	239	PFAKE		15 30 10.0	+8.8
YHNB				LR	LR		
	comp=Z,500nm,18.0s						
NACB	Ninganchiao	21.13	238	PFAKE		15 30 10.0	+10
NACB				LR	LR		
	comp=Z,600nm,20.0s						
SSLB	Suanglung	21.82	238	PFAKE		15 30 20.0	+12
SSLB				LR	LR		
	comp=Z,500nm,21.0s						
YULB	Yu-li	21.86	237	eP	P	15 30 05.3	-3.0
	comp=Z,17nm,0.9s						
YULB				LR	LR		
	comp=Z,400nm,19.0s						
TPUB	Ta-pu	22.37	237	eP	P	15 30 10.2	-3.6
	comp=Z,30nm,0.8s						
TPUB				LR	LR		
	comp=Z,700nm,22.0s						
CLNS	Chul'man	22.41	336	eP	P	15 30 12.0	-2.0
CLNS				e*PP	sP	15 30 23.1	-1.1
CLNS				e		15 30 32.4	
CLNS				eS	S	15 34 10.3	-8.3
CLNS				e		15 34 11.5	
CLNS				pmax	pmax		
	comp=N,32nm,1.0s						
CLNS				pmax	pmax		
	comp=Z,47nm,1.0s						
CLNS				pmax	pmax		
	comp=E,13nm,0.8s						
CLNS				pmax	pmax		
	comp=Z,25nm,0.8s						
CLNS				pmax	pmax		
	comp=N,22nm,0.8s						
CLNS				pmax	pmax		
	comp=E,25nm,0.9s						
CLNS				smax	smax		
	comp=E,146nm,11.5s						
CLNS				smax	smax		
	comp=N,291nm,9.7s						
CLNS				MLR	MLR		
	comp=N,3μm,15.0s						
CLNS				MLR	MLR		
	comp=Z,3μm,13.0s						
CLNS				MLR	MLR		
	comp=E,665nm,8.0s						
TIY	Taiyuan	22.69	280	eP	P	15 30 15.8	-1.4
TIY				PP	PnPn	15 30 49.5	+8.3
TIY				S	S	15 34 17.5	-6.5
TIY				LR	LR		
	comp=E,690nm,13.5s						
TIY				LR	LR		
	comp=E,4μm,12.9s						
TIY				LR	LR		
	comp=E,5μm,12.9s						
QZH	Quanzhou	22.73	244	⇑iP	P	15 30 15.6	-2.0
QZH				S	S	15 34 19.6	-5.1
QZH				LR	LR		
	comp=E,2μm,11.4s						
QZH				LR	LR		
	comp=E,2μm,11.2s						
QZH				LR	LR		
	comp=E,3μm,11.6s						
WHN	Wuhan	23.10	261	P	P	15 30 20.4	-1.0
WHN				S	S	15 34 28.0	-3.0
WHN				LR	LR		
	comp=E,5μm,11.9s						
WHN				LR	LR		
	comp=E,6μm,11.0s						
WHN				LR	LR		
	comp=E,9μm,12.9s						
HHC	Hu-ho-hao-te	23.14	288	eP	P	15 30 19.6	-2.3
HHC				PP	PnPn	15 30 54.6	+7.2
HHC				S	S	15 34 28.9	-3.0
HHC				pmax	pmax		
	comp=E,21nm,0.7s						
HHC				pmax	pmax		
	comp=E,210nm,4.4s						
HHC				LR	LR		
	comp=E,3μm,11.2s						
HHC				LR	LR		
	comp=E,3μm,10.4s						
HHC				LR	LR		
	comp=E,2μm,10.6s						
MA2	Magadan	23.25	13	P	P	15 30 22.0	-0.6
	comp=E,118nm,0.8s,baz=221,slow=9.2,SNR=69						
MA2	Magadan	23.25	13	P	P	15 30 22.0	-0.6
MA2				LR	LR		
	comp=Z,13nm,20.0s						
GUMO	Guam	23.77	171	P	P	15 30 26.8	-1.2
	comp=Z,79nm,0.9s,baz=50,slow=4.0,SNR=4.3						
GUMO	Guam	23.77	171	eP	P	15 30 23.2	-4.8
GUMO				pmax	pmax		
	comp=Z,442nm,1.2s						
GUMO	Guam	23.77	171	eP	P	15 30 23.2	-4.8
	comp=Z,442nm,1.2s						
BTO	Baotou	24.32	288	eP	P	15 30 32.5	-0.7
CIT	Chita	24.35	316	eP	P	15 30 29.8	-3.5
CIT				e		15 30 41.3	
CIT				e		15 31 16.6	
CIT				pmax	pmax		
	comp=Z,181nm,1.4s						
YAK	Yakutsk	25.84	348	P	P	15 30 46.4	-0.2
	comp=Z,238nm,0.8s,baz=347,slow=2.9,SNR=74						
YAK				LR	LR	15 41 16.4	
	comp=Z,1μm,18.7s,baz=168,slow=37						
YAK	Yakutsk	25.84	348	d iP	P	15 30 45.6	-0.9
YAK				e*PP	pP	15 30 54.8	+0.8
YAK				e		15 31 20.6	
YAK				e		15 34 15.4	
YAK				eS	S	15 35 09.5	-4.9
YAK				eSS	SnSn	15 36 09.4	-1.7
YAK				pmax	pmax		
	comp=Z,368nm,1.1s						
YAK				pmax	pmax		
	comp=N,89nm,1.0s						
YAK				pmax	pmax		
	comp=E,33nm,1.2s						
YAK				pmax	pmax		
	comp=Z,84nm,0.9s						
YAK				pmax	pmax		
	comp=N,82nm,1.1s						
YAK				pmax	pmax		
	comp=E,64nm,1.4s						
YAK				smax	smax		
	comp=N,400nm,2.5s						
YAK				smax	smax		
	comp=E,266nm,1.7s						
YAK				MLR	MLR		
	comp=Z,2μm,12.0s						
YAK				MLR	MLR		
	comp=N,2μm,14.0s						
YAK				MLR	MLR		
	comp=E,2μm,12.0s						
YAK	Yakutsk	25.84	348	eP	P	15 30 45.4	-1.2
	comp=E,296nm,0.9s						
XAN	Xi'an	26.24	273	P	P	15 30 48.6	-2.0
XAN				pP	pP	15 30 58.4	+0.4
XAN				sP	sP	15 31 06.5	+5.3
XAN				S	S	15 35 18.5	-3.0
XAN				pmax	pmax		
	comp=E,27nm,0.8s						
XAN				pmax	pmax		
	comp=E,63nm,3.4s						
XAN				LR	LR		
	comp=E,2μm,13.9s						
XAN				LR	LR		
	comp=E,2μm,11.3s						
XAN				LR	LR		
	comp=E,2μm,10.4s						
SEY	Seymchan	26.68	12	P	P	15 30 55.2	+1.0
	comp=E,135nm,1.1s,baz=204,slow=7.4,SNR=80						
SEY	Seymchan	26.68	12	⇓eP	P	15 30 55.0	+0.9
ULN	Ulaanbaatar	27.02	304	deP	P	15 30 57.1	-0.5
ULN				pmax	pmax		
	comp=Z,33nm,0.6s						

ULN	**Ulaanbaatar**	**27.02 304**	*e*P		**P**	**15 30 57.1**	**-0.5**	
	comp=Z,37nm,0.7s							
ULN			LR		LR			
	comp=Z,286nm,22.0s							
ULN	**Ulaanbaatar**	**27.02 304**	P		**P**	**15 30 56.9**	**-0.7**	
	SNR=18							
ULN	**Ulaanbaatar**	**27.02 304**	P		**P**	**15 30 56.9**	**-0.7**	
	SNR=18							
ENH	**Enshi**	**27.06 265**	*e*P		**P**	**15 30 57.2**	**-0.8**	
	comp=Z,51nm,0.8s							
ENH			LR		LR			
	comp=Z,1μm,19.0s							
BOD	**Bodaibo**	**27.23 328**⇑	*i*P		**P**	**15 30 58.6**	**-0.5**	
BOD			pmax		pmax			
	comp=Z,53nm,1.2s							
SONA1	**Songino Array**	**27.44 304**	*e*P		**P**	**15 31 00.8**	**-0.6**	
SONM	**Songino Array**	**27.45 304**	P		**P**	**15 31 01.3**	**-0.1**	
	comp=Z,32nm,0.7s,baz=105,slow=7.5,SNR=97							
SONM			PcP		**PcP**	**15 34 20.5**	**+1.0**	
	comp=Z,5.4nm,0.6s,baz=112,slow=2.5,SNR=8.7							
SONM			LR		LR	15 41 52.4		
	comp=Z,157nm,19.1s,baz=68,slow=36							
GZH	**Guangzhou**	**27.66 247**	P		**P**	**15 31 01.1**	**-2.3**	
GZH			S		**S**	**15 35 37.4**	**-6.5**	
GZH			pmax		pmax			
	comp=Z,480nm,8.6s							
H11N2	**WAKE ISLAND Hy**	**28.49 121**	T		T	16 01 28.2		
	SNR=6519							
H11N1	**WAKE ISLAND Hy**	**28.49 121**	T		T	16 01 28.6		
	baz=313,slow=74,SNR=5153							
H11N3	**WAKE ISLAND Hy**	**28.50 121**	T		T	16 01 31.7		
	baz=200,slow=74,SNR=7484							
H11S1	**WAKE ISLAND Hy**	**29.20 123**	T		T	16 02 22.4		
	baz=317,slow=76,SNR=3817							
H11S3	**WAKE ISLAND Hy**	**29.20 123**	T		T	16 02 23.0		
	baz=317,slow=76,SNR=4319							
H11S2	**WAKE ISLAND Hy**	**29.21 123**	T		T	16 02 24.3		
	baz=317,slow=76,SNR=5299							
LZH	**Lanzhou**	**29.75 279**	*e*P		**P**	**15 31 21.8**	**-0.3**	
LZH			pP		sP	15 31 32.6	-0.1	
LZH			sP		pP	15 31 36.5	+6.9	
LZH			PP		**PnPn**	**15 32 19.3**	**+1.5**	
LZH			S		**S**	**15 36 14.3**	**-2.7**	
LZH			sS		sS	15 36 30.4	+1.0	
LZH			SS		**SnSn**	**15 37 48.0**	**+0.7**	
LZH			pmax		pmax			
	comp=Z,100nm,1.2s							
LZH			pmax		pmax			
	comp=Z,400nm,5.3s							
LZH			LR		LR			
	comp=Z,2μm,13.1s							
LZH			LR		LR			
	comp=Z,2μm,13.5s							
LZH			LR		LR			
	comp=Z,3μm,14.2s							
IRK	**Irkutsk**	**29.77 312**	*e*P		**P**	**15 31 21.9**	**+0.1**	
IRK			pmax		pmax			
	comp=Z,35nm,1.9s							
ZAK	**Zakamensk**	**29.93 308**	*e*P		**P**	**15 31 22.6**	**-0.9**	
ZAK			*e*			15 34 22.0		
ZAK			pmax		pmax			
	comp=Z,25nm,1.0s							
ZAK			pmax		pmax			
	comp=Z,8.0nm,1.4s							
TLY	**Talaya**	**30.00 311**	P		**P**	**15 31 25.3**	**+1.4**	
	comp=Z,11nm,0.6s,baz=132,slow=6.1,SNR=21							
TLY			PcP		**PcP**	**15 34 27.0**	**+1.4**	
	comp=Z,6.6nm,0.6s,baz=249,slow=2.9,SNR=3.8							
TLY	**Talaya**	**30.00 311**	*e*P		**P**	**15 31 24.3**	**+0.4**	
TLY			*e*			15 32 29.4		
TLY			*e*S		**S**	**15 36 20.7**	**+0.5**	
TLY			pmax		pmax			
	comp=Z,47nm,1.3s							
TLY			MLR		MLR			
	comp=Z,1μm,13.0s							
TLY	**Talaya**	**30.00 311**	*e*P		**P**	**15 31 24.1**	**+0.1**	
	comp=Z,49nm,1.2s							
TLY			PcP		**PcP**	**15 34 27.0**	**+1.4**	
TLY			LR		LR			
	comp=Z,1μm,19.0s							
TLY	**Talaya**	**30.00 311**	P		**P**	**15 31 25.1**	**+1.2**	
	SNR=14							
TLY	**Talaya**	**30.00 311**	P		**P**	**15 31 25.1**	**+1.2**	
	SNR=14							
GYA	**Guiyang**	**30.96 260**⇓	*i*P		**P**	**15 31 31.9**	**-0.9**	
GYA			pP		sP	15 31 44.3	+0.8	
GYA			PP		**PnPn**	**15 32 37.0**	**+3.1**	
GYA			PcP		**PcP**	**15 34 30.6**	**+1.9**	
GYA			S		**S**	**15 36 32.4**	**-3.6**	
GYA			sS		sS	15 36 52.8	+4.4	
GYA			SS		**SnSn**	**15 38 19.8**	**+2.8**	
GYA			ScS		**ScS**	**15 42 04.5**	**-2.5**	
GYA			pmax		pmax			
	comp=Z,30nm,0.9s							
GYA			pmax		pmax			
	comp=Z,140nm,5.2s							
GYA			LR		LR			
	comp=Z,2μm,17.6s							
GYA			LR		LR			
	comp=Z,2μm,19.0s							
GYA			LR		LR			
	comp=Z,2μm,18.4s							
CD2	**Chengdu**	**31.38 270**	P		**P**	**15 31 35.4**	**-1.0**	
CD2			pP		sP	15 31 45.5	-1.5	
CD2			S		**S**	**15 36 40.4**	**-2.0**	
CD2			sS		sS	15 36 57.8	+3.0	
CD2			pmax		pmax			
	comp=Z,20nm,0.5s							
CD2			pmax		pmax			
	comp=Z,240nm,6.4s							
CD2			LR		LR			
	comp=Z,2μm,13.2s							
CD2			LR		LR			
	comp=Z,2μm,12.0s							
MOY	**Mondy**	**31.60 310**	*e*P		**P**	**15 31 38.6**	**+0.4**	
MOY			pmax		pmax			
	comp=Z,19nm,1.6s							
GTA	**Gaotai**	**32.23 287**	*e*P		**P**	**15 31 43.3**	**-0.6**	
GTA			pP		pP	15 31 52.3	+0.9	
GTA			sP		sP	15 31 56.9	+2.3	
GTA			PcP		**PcP**	**15 34 33.3**	**+1.3**	
GTA			S		**S**	**15 36 52.8**	**-2.9**	
GTA			sS		sS	15 37 08.0	-0.1	
GTA			SS		**SnSn**	**15 38 48.8**	**+1.2**	
GTA			pmax		pmax			
	comp=Z,99nm,6.4s							
GTA			LR		LR			
	comp=Z,1μm,12.6s							
GTA			LR		LR			
	comp=Z,1μm,14.3s							
GTA			LR		LR			
	comp=Z,1μm,14.3s							
QIZ	**Qiongzhong**	**32.74 245**	P		**P**	**15 31 46.4**	**-1.9**	
QIZ			S		**S**	**15 37 08.8**	**+5.3**	
QIZ			LR		LR			
	comp=Z,380nm,17.2s							
QIZ			LR		LR			
	comp=Z,490nm,16.7s							
DAV	**Davao City (W)**	**33.14 209**	P		**P**	**15 31 51.9**	**+0.1**	
	comp=Z,30nm,0.3s,baz=28,slow=6.4,SNR=4.2							
DAV	**Davao City (W)**	**33.14 209**	P		**P**	**15 31 51.9**	**+0.1**	
DAV			LR		LR			
	comp=Z,561nm,19.0s							
BILL	**Bilibino**	**33.94 17***d*	*i*P		**P**	**15 31 57.7**	**-0.6**	
BILL			*i*			15 32 02.8		
BILL			*e*			15 33 25.2		
BILL			*e*			15 34 37.6		
BILL			pmax		pmax			
	comp=Z,44nm,1.7s							
BILL			MLR		MLR			
	comp=Z,709nm,16.0s							
BILL	**Bilibino**	**33.94 17**	*e*P		**P**	**15 31 57.9**	**-0.4**	
	comp=Z,34nm,1.1s							
BILL			LR		LR			
	comp=Z,686nm,19.0s							
KMI	**Kunming**	**34.70 261**	P		**P**	**15 32 05.6**	**0.0**	
KMI			pP		sP	15 32 17.3	+1.0	
KMI			sP		pP	15 32 21.9	+8.7	
KMI			PP		**PP**	**15 33 24.9**	**+0.5**	
KMI			S		**S**	**15 37 29.8**	**-4.5**	
KMI			sS		sS	15 37 51.3	+4.5	
KMI			SS		**SnSn**	**15 39 44.9**	**-3.0**	
KMI			pmax		pmax			
	comp=Z,38nm,1.3s							
KMI			pmax		pmax			
	comp=Z,170nm,4.2s							
KMI			LR		LR			
	comp=Z,1μm,11.9s							
KMI			LR		LR			
	comp=Z,2μm,12.7s							
KMI			LR		LR			
	comp=Z,2μm,12.2s							
TIXI	**Tiksi**	**35.08 353**	P		**P**	**15 32 07.7**	**-0.4**	
	comp=Z,8.8nm,0.7s,baz=144,slow=6.8,SNR=53							
TIXI	**Tiksi**	**35.08 353***d*	*i*P		**P**	**15 32 07.5**	**-0.6**	
TIXI			pmax		pmax			
	comp=Z,16nm,1.0s							
TIXI			MLR		MLR			
	comp=Z,2μm,14.0s							
TIXI	**Tiksi**	**35.08 353**	*e*P		**P**	**15 32 07.2**	**-0.8**	
	comp=Z,15nm,0.8s							
TIXI			LR		LR			
	comp=Z,496nm,22.0s							
KRAR	**Krasnoyarsk**	**37.14 316**⇑	*i*P		**P**	**15 32 26.6**	**+0.8**	
KRAR			pmax		pmax			
	comp=Z,96nm,1.5s							
MYLDM	**Lahad Datu**	**37.96 218**	*e*P		**P**	**15 32 33.7**	**+0.5**	
	comp=Z,73nm,1.1s							
SDKM	**Sandakan**	**38.23 221**	⇑P		**P**	**15 32 36.9**	**+1.3**	
SKNT	**Sakolnakorn**	**38.34 248**	P		**P**	**15 32 36.8**	**+0.4**	
	comp=Z,53nm,1.1s							
TNTI	**Ternate**	**38.40 202**	P		**P**	**15 32 37.2**	**+0.3**	
	comp=Z,176nm,1.6s,comp=Z,3μm							
KKM	**Kota Kinabalu**	**38.41 222**	PFAKE			15 32 50.0	+13	
KKM			LR		LR			
	comp=Z,415nm,20.0s							
SWI	**Sorong**	**38.95 196**	P		**P**	**15 32 41.3**	**-0.2**	
	comp=Z,55nm,1.1s,comp=Z,1μm							
TSM	**Tawau**	**39.04 219**	⇓P		**P**	**15 32 43.5**	**+1.2**	
CRAI	**Chiangrai**	**39.14 256**	P		**P**	**15 32 44.6**	**+1.4**	
	comp=Z,18nm,1.3s,comp=Z,647nm							
KHON	**Khomkaen**	**39.60 249**	P		**P**	**15 32 47.5**	**+0.5**	
	comp=Z,23nm,1.0s							
GENI	**Genyem**	**39.61 181**	P		**P**	**15 32 48.2**	**+1.2**	
	comp=Z,132nm,1.2s,comp=Z,2μm							
LBMI	**Labuha**	**39.69 202**	P		**P**	**15 32 48.9**	**+1.2**	
	comp=Z,97nm,2.0s,comp=Z,2μm							
CMAI	**Chiengmai2**	**40.34 257**	P		**P**	**15 32 53.9**	**+0.6**	
	comp=Z,17nm,1.3s,comp=Z,406nm							
UTTA	**Uttaradit**	**40.45 253**	P		**P**	**15 32 54.5**	**+0.5**	
	comp=Z,5.8nm,1.0s							
WMQ	**Urumqi**	**40.50 297**	P		**P**	**15 32 55.5**	**+1.2**	
WMQ			pP		sP	15 33 06.5	+1.4	
WMQ			sP		pP	15 33 09.3	+7.3	
WMQ			PcP		**PcP**	**15 34 57.1**	**+0.6**	
WMQ			S		**S**	**15 39 02.1**	**+0.4**	
WMQ			sS		sS	15 39 15.4	+1.1	
WMQ			SS		**SS**	**15 41 57.8**	**-3.6**	
WMQ			pmax		pmax			
	comp=Z,40nm,1.0s							
WMQ			pmax		pmax			
	comp=Z,210nm,3.6s							
WMQ			LR		LR			
	comp=Z,670nm,16.6s							
WMQ			LR		LR			
	comp=Z,770nm,12.4s							
WMQ			LR		LR			
	comp=Z,230nm,18.0s							
MRSI	**Marisa**	**40.59 210**	P		**P**	**15 32 55.8**	**+0.6**	
	comp=Z,176nm,1.3s,comp=Z,2μm							
LAMP	**Lampang**	**40.69 254**	P		P	15 33 00.9	+4.8	
FAKI	**Fak Fak**	**40.75 194**	P		**P**	**15 32 56.1**	**-0.4**	
	comp=Z,54nm,1.0s,comp=Z,803nm							
PBKT	**Sadao Pong**	**40.84 251**	P		**P**	**15 32 57.5**	**+0.2**	
	comp=Z,29nm,1.5s							
CMMT	**Chiang Mai**	**41.05 255**	P		**P**	**15 32 59.1**	**+0.1**	
	comp=Z,10nm,1.6s,comp=Z,429nm							
CHTO	**Chiang Mai**	**41.05 255**	P		**P**	**15 32 59.1**	**+0.1**	
	comp=Z,47nm,1.7s							
CHTO	**Chiang Mai**	**41.05 255**	*e*P		**P**	**15 32 59.1**	**+0.1**	
CHTO			pmax		pmax			
	comp=Z,56nm,1.9s							
CHTO			MLR		MLR			
	comp=Z,782nm,20.0s							
CHTO	**Chiang Mai**	**41.05 255**	*e*P		**P**	**15 32 59.1**	**+0.1**	
	comp=Z,56nm,1.9s							
CHTO			LR		LR			
	comp=Z,782nm,20.0s							
CHTO	**Chiang Mai**	**41.05 255**	P		**P**	**15 32 58.7**	**-0.4**	
	SNR=7.9							
CHTO	**Chiang Mai**	**41.05 255**	P		**P**	**15 32 58.7**	**-0.4**	
	SNR=7.9							
CHTO			P		**P**	**15 32 58.7**	**-0.4**	
	SNR=7.9							
CM31	**Chiang Mai Arr**	**41.26 255**	*e*P		**P**	**15 33 01.4**	**+0.7**	
CMAR	**Chiang Mai Arr**	**41.26 255**	P		**P**	**15 33 00.8**	**+0.1**	
	comp=Z,3.7nm,0.8s,baz=44,slow=7.5,SNR=28							
CMAR			PcP		**PcP**	**15 35 00.8**	**+1.6**	
	comp=Z,9.7nm,1.0s,baz=18,slow=2.5,SNR=13							
CMAR			LR		LR	15 51 38.2		
	comp=Z,600nm,20.1s,baz=46,slow=38							
CM01	**Chiang Mai Arr**	**41.27 255**	*e*P		**P**	**15 33 00.8**	**0.0**	
SANI	**Sanana**	**41.49 203**	P		**P**	**15 33 04.3**	**+1.8**	
	comp=Z,92nm,1.4s,comp=Z,1μm							
ZAA0	**Zalesovo Array**	**41.58 312**	*e*P		**P**	**15 33 03.1**	**+0.1**	
ZALV	**Zalesovo Beam**	**41.58 312**	P		**P**	**15 33 03.1**	**+0.2**	
	comp=Z,86nm,0.7s,baz=92,slow=6.6,SNR=354							
ZALV			PcP		**PcP**	**15 35 00.2**	**+0.5**	
	comp=Z,20nm,0.7s,baz=110,slow=2.9,SNR=7.3							
ZALV			LR		LR	15 49 41.5		
	comp=Z,230nm,19.1s,baz=72,slow=35							
MSAI	**Masohi**	**41.89 198**	P		**P**	**15 33 08.3**	**+2.4**	
	comp=Z,22nm,1.5s							
LSA	**Lhasa**	**41.90 275**	P		**P**	**15 33 07.8**	**+1.3**	
LSA			pmax		pmax			
	comp=Z,39nm,1.1s							
LSA	**Lhasa**	**41.90 275**	*e*P		**P**	**15 33 06.7**	**+0.2**	
LSA			pmax		pmax			
	comp=Z,87nm,1.4s							
LSA			MLR		MLR			
	comp=Z,145nm,21.0s							
LSA	**Lhasa**	**41.90 275**	*e*P		**P**	**15 33 06.7**	**+0.2**	
	comp=Z,87nm,1.4s							
LSA			LR		LR			
	comp=Z,145nm,21.0s							
MHMT	**Maesarieng**	**42.20 255**	P		**P**	**15 33 09.7**	**+1.3**	
	comp=Z,12nm,1.0s,comp=Z,236nm							
ZSN	**Zaisan**	**42.26 303**⇓	*i*P		**P**	**15 33 07.6**	**-1.1**	
	comp=Z,1μm,0.9s							
ZSN			*e*S		**S**	**15 39 25.4**	**-2.2**	
ZSN			LRM		MLR	15 52 49.1		
	comp=Z,867nm,11.8s							
NLAI	**Namlea**	**42.28 201**	P		**P**	**15 33 09.5**	**+0.5**	
	comp=Z,52nm,2.1s,comp=Z,1μm							
NVS	**Novosibirsk**	**42.51 314**⇓	*i*P		**P**	**15 33 11.0**	**+0.5**	
NVS			*e*			15 33 25.2		
NVS			*i*			15 35 03.3		
NVS			*e*S		**S**	**15 39 33.1**	**+2.1**	
NVS			pmax		pmax			
	comp=Z,133nm,1.1s							
NVS			pmax		pmax			
	comp=N,14nm,0.7s							
NVS			pmax		pmax			
	comp=E,86nm,1.2s							
NVS			pmax		pmax			
	comp=Z,15nm,0.7s							
NVS			pmax		pmax			
	comp=N,6.0nm,0.4s							
NVS			smax		smax			
	comp=N,1.0nm,0.2s							
NVS			smax		smax			
	comp=E,6.0nm,0.5s							
BNDI	**Bandanaira**	**42.80 196**	P		**P**	**15 33 13.8**	**+0.6**	
	comp=E,236nm,1.2s,comp=E,2μm							
NRIK	**Noril'sk**	**42.99 335**	P		**P**	**15 33 14.0**	**-0.2**	
	comp=E,11nm,0.6s,baz=109,slow=8.7,SNR=26							
NRIK			PcP		**PcP**	**15 35 05.0**	**+0.9**	
	comp=E,18nm,0.9s,baz=141,slow=1.7,SNR=5.6							
NRIK			LR		LR	15 52 43.9		
	comp=E,892nm,20.7s,baz=98,slow=38							
SHL	**Shillong**	**43.12 269**	*e*P		**P**	**15 33 18.5**	**+2.5**	
SHL			*e*S		S	15 39 31.0	-10	
SBUM	**Sibu**	**43.58 224**	*e*P		**P**	**15 33 18.5**	**-1.1**	
	comp=E,46nm,1.2s							
SRDT	**SRDT**	**43.61 250**	P		**P**	**15 33 20.8**	**+0.9**	
	comp=E,80nm,1.3s							
MK01	**Makanchi Array**	**43.78 302**	*e*P		**P**	**15 33 21.2**	**+0.3**	
MK31	**Makanchi Array**	**43.78 302**	P		**P**	**15 33 21.4**	**+0.4**	
MK31			pmax		pmax			
	comp=E,81nm,0.8s							
MK31	**Makanchi Array**	**43.78 302**	*e*P		**P**	**15 33 21.6**	**+0.6**	
MKAR	**Makanchi Array**	**43.78 302**	P		**P**	**15 33 21.4**	**+0.5**	
	comp=Z,62nm,0.8s,baz=89,slow=9.8,SNR=543							
MKAR			LR		LR	15 52 15.5		
	comp=Z,256nm,19.1s,baz=90,slow=37							
MKAR	**Makanchi Array**	**43.78 302**	*e*P		**P**	**15 33 21.6**	**+0.6**	
MAKZ	**Makanchi**	**43.99 302**	P		**P**	**15 33 23.2**	**+0.6**	
MAKZ			pmax		pmax			
	comp=Z,86nm,0.9s							
MAKZ	**Makanchi**	**43.99 302**	*e*P		**P**	**15 33 23.3**	**+0.7**	
	comp=Z,82nm,0.8s							
BKB	**Balikpapan**	**44.34 216**	P		**P**	**15 33 26.8**	**+1.1**	
	comp=Z,162nm,1.1s,comp=Z,2μm							
SEM	**Semipalatinsk**	**44.60 307**⇓	*i*P		**P**	**15 33 27.8**	**+0.3**	
	comp=Z,957nm,1.1s							
SEM			*e*S		**S**	**15 40 01.4**	**-0.3**	
SEM			LR		LR	15 52 08.7		
	comp=Z,1μm,14.8s							
TT01	**Tatalina**	**45.44 35**	*e*P		**P**	**15 33 33.9**	**-0.1**	
TTA	**Tatalina**	**45.45 35**	*e*P		**P**	**15 33 33.8**	**-0.3**	
TTA			pmax		pmax			
	comp=Z,19nm,1.0s							
TTA	**Tatalina**	**45.45 35**	*e*P		**P**	**15 33 33.8**	**-0.3**	
	comp=Z,19nm,1.0s							
KSM	**Kuching**	**45.46 226**	⇓P		**P**	**15 33 36.0**	**+1.3**	
KSM	**Kuching**	**45.46 226**	*e*P		**P**	**15 33 35.6**	**+1.0**	
	comp=Z,62nm,1.0s							
KSM			LR		LR			
	comp=Z,231nm,19.0s							
SPSI	**Sidrap Palu**	**45.50 211**	P		**P**	**15 33 34.9**	**0.0**	
	comp=Z,43nm,1.3s,comp=Z,690nm							
SVW2	**Sparrevohn**	**45.56 37**	*e*P		**P**	**15 33 35.1**	**+0.2**	
	comp=Z,64nm,1.0s							
KURK	**Kurchatov**	**45.60 308**	P		**P**	**15 33 35.7**	**+0.4**	
KURK			pmax		pmax			
	comp=Z,525nm,0.9s							
KURK	**Kurchatov**	**45.60 308**	*e*P		**P**	**15 33 35.4**	**0.0**	
	comp=Z,227nm,0.8s							
KURK			PcP		**PcP**	**15 35 13.8**	**+0.5**	
KURK			LR		LR			
	comp=Z,836nm,22.0s							
KURK	**Kurchatov**	**45.60 308**	P		**P**	**15 33 35.6**	**+0.2**	
	SNR=89							
KURK	**Kurchatov**	**45.60 308**	P		**P**	**15 33 35.6**	**+0.2**	
	SNR=89							
KURBB	**Kurchatov Arra**	**45.66 308**	P		**P**	**15 33 36.2**	**+0.3**	
	comp=Z,142nm,0.8s,baz=83,slow=8.4,SNR=886							
KURBB			PcP		**PcP**	**15 35 13.8**	**+0.2**	
	comp=Z,9.6nm,0.8s,baz=83,slow=5.0,SNR=4.4							
SAUI	**Saumlaki**	**45.87 194**	P		**P**	**15 33 39.1**	**+1.3**	
	comp=Z,203nm,1.3s							
STKI	**Sintang**	**45.97 223**	P		**P**	**15 33 38.6**	**0.0**	
	comp=Z,64nm,1.2s							
SHLS	**Shalkode**	**46.20 297**⇓	*i*P		**P**	**15 33 41.1**	**+0.6**	
	comp=Z,655nm,1.0s							
SHLS			*e*S		**S**	**15 40 25.3**	**-0.2**	
SHLS			LR		LR	15 53 53.5		
	comp=Z,994nm,13.5s							
PDGK	**Podgornoye**	**46.44 298**	P		**P**	**15 33 42.7**	**+0.7**	
PDGK			pmax		pmax			
	comp=Z,166nm,1.0s							
KAPI	**Kappang**	**46.47 210**	P		**P**	**15 33 43.6**	**+1.1**	
	comp=Z,53nm,1.2s,baz=35,slow=8.0,SNR=23							
KAPI	**Kappang**	**46.47 210**	*e*P		**P**	**15 33 39.2**	**-3.3**	
	comp=Z,268nm,1.5s							
KAPI			LR		LR			
	comp=Z,208nm,20.0s							
KAPI	**Kappang**	**46.47 210**	P		**P**	**15 33 42.8**	**+0.3**	
	SNR=17							
KAPI	**Kappang**	**46.47 210**	P		**P**	**15 33 42.8**	**+0.3**	
	SNR=17							
KAPI			P		**P**	**15 33 42.8**	**+0.3**	
	SNR=17							
PMG	**Port Moresby**	**46.72 172**	PcP		**PcP**	**15 35 17.4**	**-0.3**	
	comp=Z,14nm,0.8s,baz=6.6,slow=6.8,SNR=4.3							
PMG	**Port Moresby**	**46.72 172**	PcP		**PcP**	**15 35 17.4**	**-0.3**	
PMG			LR		LR			
	comp=Z,323nm,19.0s							
UZB	**Uzynbulak**	**46.81 298**⇓	*i*P		**P**	**15 33 45.8**	**+0.6**	
	comp=Z,782nm,1.2s							
UZB			*e*S		**S**	**15 40 34.2**	**+0.1**	
UZB			LRM		MLR	15 55 32.2		
	comp=Z,734nm,12.7s							
OHAK	**Old Harbor**	**46.83 43**	*e*P		**P**	**15 33 44.6**	**-0.2**	
	comp=Z,119nm,1.4s							
RSO	**Redoubt South**	**46.95 38**	*e*P		**P**	**15 33 43.3**	**-2.7**	
KDAK	**Kodiak Island**	**47.16 42**	P		P	15 34 02.7	+15	
	comp=Z,62nm,0.8s,baz=290,slow=2.9,SNR=22							
KDAK	**Kodiak Island**	**47.16 42**	*i*P		**P**	**15 33 47.5**	**0.0**	
KDAK	**Kodiak Island**	**47.16 42**	*e*P		**P**	**15 33 45.6**	**-1.9**	
	comp=Z,73nm,0.8s							
PPLA	**Purkeypile**	**47.19 35**	*e*P		**P**	**15 33 49.3**	**+1.4**	
	comp=Z,43nm,1.0s							
BBKI	**Banjar Baru**	**47.24 217**	P		**P**	**15 33 48.1**	**-0.5**	
	comp=Z,108nm,1.4s,comp=Z,2μm							
CAST	**Castle Rocks**	**47.25 34**	*e*P		**P**	**15 33 47.6**	**-0.5**	
	comp=Z,32nm,0.8s							
SPU	**Mount Spurr**	**47.27 37**	*e*P		**P**	**15 33 48.3**	**-0.1**	
KKN	**Kakani**	**47.38 275**	*e*P		**P**	**15 33 50.6**	**+0.7**	
	comp=Z,140nm,0.8s							
PKIN	**Phulchoki**	**47.38 275**	*e*P		**P**	**15 33 50.9**	**+0.9**	
	comp=Z,41nm,0.7s							
SURT	**Suratani**	**47.39 245**	P		**P**	**15 33 50.7**	**+0.9**	
	comp=Z,26nm,1.1s,comp=Z,245nm							
TRTT	**Trang**	**47.52 243**	P		**P**	**15 33 51.6**	**+0.8**	
	comp=Z,52nm,0.9s,comp=Z,617nm							
BPAW	**Bear Paw Mtn.**	**47.74 33**	*e*P		**P**	**15 33 51.6**	**-0.4**	
	comp=Z,152nm,1.9s							
KTH	**Kantishna Hill**	**47.77 34**	*e*P		**P**	**15 33 51.3**	**-1.0**	
	comp=Z,66nm,0.9s							
GKN	**Gorkha**	**47.80 276**	*e*P		**P**	**15 33 53.8**	**+0.7**	
	comp=Z,396nm,1.1s							
MLY	**Manley**	**47.86 32**	*e*P		**P**	**15 33 52.8**	**-0.1**	
	comp=Z,45nm,1.0s							
CHKK	**Chushkaly**	**48.05 299**⇓	*i*P		**P**	**15 33 55.2**	**+0.5**	
	comp=Z,667nm,1.2s							
TRF	**Thorofare Moun**	**48.05 34**	*e*P		**P**	**15 33 54.8**	**+0.2**	
	comp=Z,39nm,0.8s							
COLD	**Coldfoot**	**48.14 29**	*e*P		**P**	**15 33 56.2**	**+1.2**	
	comp=Z,66nm,1.6s							
MDOK	**Medeo**	**48.20 298**⇑	*i*P		**P**	**15 33 57.1**	**+1.1**	
	comp=Z,564nm,1.3s							
MDOK			*e*S		**S**	**15 40 53.0**	**-0.9**	
MDOK			LR		LR	15 54 47.0		
	comp=Z,943nm,12.8s							
AAA	**Alma-Ata**	**48.24 298**	*e*P		**P**	**15 33 58.0**	**+1.8**	
AAA			*e*S		**S**	**15 40 54.4**	**+0.2**	
AAA			pmax		pmax			
	comp=Z,400nm,2.4s							
AAA			smax		smax			
	comp=E,400nm,6.7s							
AAA			MLR		MLR			
	comp=Z,2μm,15.0s							
RC01	**Rabbit Creek A**	**48.40 37**	*e*P		**P**	**15 33 56.5**	**-0.6**	
	comp=Z,63nm,

IPM **Ipoh** 48.98 238 ⇑P P 15 34 03.0 +0.8
IPM **Ipoh** 48.98 238 *e*P P 15 34 01.7 -0.5
comp=Z,50nm,1.1s
WRH **Wood River Hil** 49.00 33 *e*P P 15 34 00.6 -1.1
comp=Z,45nm,1.0s
PYUN **Piuthan** 49.06 277 *e*P P 15 34 03.7 +0.8
comp=Z,491nm,1.1s
COLA **College** 49.09 32 *d i*P P 15 34 03.1 +0.8
COLA pmax pmax
comp=Z,106nm,2.1s
CCB **Clear Creek Bu** 49.12 33 *e*P P 15 34 00.8 -1.7
comp=Z,48nm,1.5s
MYKOM **Kota Tinggi** 49.13 233 ⇑P P 15 34 04.4 +1.2
TKM2 **Tokmak 2** 49.29 298 P P 15 34 05.8 +1.3
TKM2 pmax pmax
comp=Z,81nm,0.9s
TKM2 **Tokmak 2** 49.29 298 *e*P P 15 34 05.7 +1.2
comp=Z,75nm,0.8s
TKM2 LR LR
comp=Z,670nm,19.0s
TPRI **Tanjung Pinang** 49.37 232 P P 15 34 05.8 +0.7
comp=Z,54nm,1.1s,comp=Z,3µm
BRZS **Berezniki** 49.47 308⇑ *e*P P 15 34 06.0 +0.5
comp=Z,74nm,0.6s
SCM **Sheep Creek Mo** 49.50 36 *e*P P 15 34 06.6 +1.0
SCM pmax pmax
comp=Z,50nm,0.8s
SCM **Sheep Creek Mo** 49.50 36 *e*P P 15 34 06.6 +1.0
comp=Z,50nm,0.8s
ILAR **Eielson Array** 49.50 32 P P 15 34 05.8 +0.3
comp=Z,34nm,0.7s,baz=270,slow=6.4,SNR=350
ILAR LR LR 15 56 57.8
comp=Z,269nm,19.3s,baz=296,slow=38
ILB **Eielson Array** 49.50 32 *e*P P 15 34 05.7 +0.3
IL1 **Eielson Array** 49.51 32 *e*P P 15 34 03.9 -1.6
HNR **Honiara** 49.66 155 PFAKE 15 34 20.0 +13
HNR LR LR
comp=Z,482nm,19.0s
CHKZ **Chkalovo** 49.98 313 P P 15 34 09.1 -0.1
CHKZ pmax pmax
comp=Z,64nm,0.9s
FRU **Bishkek** 50.01 298 *i* P P 15 34 10.0 +0.3
FRU *e*S S 15 41 20.0 +1.1
FRU pmax pmax
comp=Z,140nm,1.8s
FRU MLR MLR
comp=E,2µm,15.0s
KSH **Kashi** 50.07 294 P P 15 34 14.9 +4.6
KSH *e*pP sP 15 34 24.9 +3.7
KSH *e*sP pP 15 34 28.8 +11
KSH *e*PP **PP** **15 36 11.3 +6.0**
KSH PcS **PcS** **15 39 28.6 +1.7**
KSH S **S** **15 41 23.3 +3.2**
KSH ScS **ScS** **15 44 01.6 +1.5**
KSH pmax pmax
comp=E,37nm,1.0s
KSH pmax pmax
comp=E,190nm,3.2s
KSH LR LR
comp=E,1µm,11.9s
KSH LR LR
comp=E,860nm,12.5s
KSH LR LR
comp=E,2µm,12.3s
OTUK **Ortayu** 50.09 306 P P 15 34 10.8 +0.6
OTUK pmax pmax
comp=Z,66nm,1.0s
FYU **Fort Yukon** 50.10 30 *e*P P 15 34 12.1 +2.1
comp=Z,266nm,1.7s
AAK **Ala-Archa** 50.15 298 P P 15 34 11.7 +0.7
comp=Z,21nm,0.8s,baz=108,slow=4.7,SNR=61
AAK **Ala-Archa** 50.15 298 P P 15 34 11.6 +0.7
AAK pmax pmax
comp=Z,36nm,1.1s
AAK **Ala-Archa** 50.15 298 *e*P P 15 34 11.7 +0.7
comp=Z,27nm,0.9s
AAK LR LR
comp=Z,674nm,20.0s
AAK **Ala-Archa** 50.15 298 P P 15 34 11.6 +0.7
SNR=24
AAK **Ala-Archa** 50.15 298 P P 15 34 11.6 +0.7
SNR=24
KLU **Klutina** 50.20 37 *e*P P 15 34 12.0 +1.1
comp=Z,33nm,0.9s
BVA0 **Borovoye Array** 50.24 312 *i* P P 15 34 11.5 +0.2
BVA0 pmax pmax
comp=Z,54nm,1.5s
PAX **Paxson** 50.26 35 *e*P P 15 34 12.7 +1.3
PAX pmax pmax
comp=Z,25nm,1.0s
PAX **Paxson** 50.26 35 *e*P P 15 34 12.7 +1.3
comp=Z,25nm,1.0s
BRVK **Borovoye** 50.30 312 *d i*P P 15 34 12.1 +0.4
BRVK pmax pmax
comp=Z,57nm,1.2s
BRVK **Borovoye** 50.30 312 *e*P P 15 34 11.7 0.0
comp=Z,41nm,0.9s
BRVK LR LR
comp=Z,416nm,21.0s
BRVK **Borovoye** 50.30 312 P P 15 34 12.1 +0.4
SNR=27
BRVK **Borovoye** 50.30 312 P P 15 34 12.1 +0.4
SNR=27
DIV **Divide** 50.31 37 *e*P P 15 34 13.0 +1.3
comp=Z,82nm,1.1s
EKS2 **Erkin-Say** 50.65 298 *e*P P 15 34 15.4 +0.8
EKS2 pmax pmax
comp=Z,25nm,0.8s
EKS2 MLR MLR
comp=Z,804nm,19.0s
EKS2 **Erkin-Say** 50.65 298 *e*P P 15 34 15.4 +0.8
comp=Z,25nm,0.8s
EKS2 LR LR
comp=Z,804nm,19.0s
MTN **Manton Dam** 50.65 193 *e*P P 15 34 14.2 -0.4
comp=Z,110nm,1.4s
DOT **Dot Lake** 50.82 34 *e*P P 15 34 15.9 +0.4
comp=Z,63nm,0.8s
BMRM **Bremner River** 50.90 37 *e*P P 15 34 17.4 +1.2
comp=Z,51nm,1.0s
COEN **Coen** 50.93 177 *e*P P 15 34 17.3 +0.5
comp=Z,57nm,1.3s
RAGM **Ragged Mountai** 50.95 38 *e*P P 15 34 19.2 +2.7
comp=Z,718nm,0.6s
MENT **Mentasta** 51.06 35 *e*P P 15 34 18.7 +1.3
comp=Z,47nm,0.9s
ZRNK **Zerenda** 51.07 312 P P 15 34 18.1 +0.6
ZRNK pmax pmax
comp=Z,81nm,1.0s
ZRNK **Zerenda** 51.07 312 *e*P P 15 34 18.2 +0.7
comp=Z,70nm,1.0s
MNAS **Manas** 51.59 299 P P 15 34 22.7 +0.9
MNAS pmax pmax
comp=Z,48nm,1.0s
PSI **Prapat** 51.63 239 P P 15 34 22.0 -0.3
comp=Z,6.6nm,0.3s,baz=9.0,slow=5.0,SNR=19
PSI PcP **PcP** 15 35 36.6 +0.8
comp=Z,12nm,0.8s,baz=243,slow=5.7,SNR=4.7
PSI **Prapat** 51.63 239 *e*P P 15 34 22.2 -0.2
comp=Z,28nm,1.0s
PSI PcP **PcP** 15 35 36.6 +0.8
SFK **Sufi-Kurgan** 51.70 295 P P 15 34 23.5 +0.8
SFK pmax pmax
comp=Z,74nm,0.9s
EGAK **Eagle** 51.95 32 *e*P P 15 34 24.4 +0.5
comp=Z,26nm,0.9s
EGAK LR LR
comp=Z,313nm,21.0s
KK31 **Karatay Array** 52.79 300 *i* P P 15 34 31.0 +0.5
KK31 pmax pmax
comp=Z,15nm,0.7s
KKAR **Karatay Array** 52.79 300 *e*P P 15 34 31.0 +0.5
KKAR **Karatay Array** 52.79 300 *e*P P 15 34 31.0 +0.5
CHLP **Challavanipeta** 52.94 266 *e*P P 15 34 32.6 +0.8
CHLP IAmb IAmb 15 34 34.1
comp=Z,53nm,1.0s
NDI **New Delhi** 53.35 281 *e*P P 15 34 32.0 -2.8
IUG **luzhnay** 53.44 299 ⇓ *i*P P 15 34 36.4 +1.0
comp=Z,680nm,1.2s
IUG LR LR 15 58 08.3
comp=Z,523nm,14.5s
LEM **Lembang** 53.80 223 P P 15 34 44.0 +5.6
comp=Z,75nm,0.9s,baz=34,slow=7.7,SNR=16
INK **Inuvik** 54.37 27 P P 15 34 42.6 +1.0
comp=Z,26nm,0.9s,baz=279,slow=8.6,SNR=71
INK **Inuvik** 54.37 27 *e*P P 15 34 42.5 +0.9
INK pmax pmax
comp=Z,51nm,1.0s
INK **Inuvik** 54.37 27 *e*P P 15 34 42.5 +0.9
comp=Z,50nm,1.0s
OPA **Opana** 54.42 88 *e*P P 15 34 44.7 +2.0
OPA pmax pmax
comp=Z,158nm,1.2s
OPA **Opana** 54.42 88 *e*P P 15 34 44.6 +2.0
comp=Z,158nm,1.2s
SVE **Sverdlovsk** 54.83 318 *c i*P P 15 34 45.9 +0.8
SVE pmax pmax
comp=Z,125nm,1.1s
SVE MLR MLR
comp=Z,1µm,15.0s
PVM **Polavaram** 55.56 266 *e*P P 15 34 50.9 0.0
PVM IAmb IAmb 15 34 52.4
comp=Z,28nm,1.0s
SKAG **Skagway** 55.74 38 *e*P P 15 34 54.0 +2.3
comp=Z,55nm,1.4s
SOKR **Solikamsk** 56.01 322 *d i*P P 15 34 52.2 -1.4
SOKR pmax pmax
comp=Z,57nm,1.0s
ARU **Arti** 56.04 318 *d i*P P 15 34 54.2 +0.4
ARU 15 35 49.7
ARU 15 36 59.1
ARU PPP PPP 15 38 15.5
ARU S **S** **15 42 40.9 +0.3**
ARU 15 44 41.4
ARU SS **SS** **15 46 20.2 -6.1**
ARU pmax pmax
comp=Z,139nm,1.0s
ARU MLR MLR
comp=Z,902nm,15.0s
ARU **Arti** 56.04 318 *e*P P 15 34 54.3 +0.4
comp=Z,107nm,0.9s
ARU LR LR
comp=Z,585nm,20.0s
RPR **Rampur** 56.55 269 *e*P P 15 34 58.4 +0.4
RPR IAmb IAmb 15 34 59.5
comp=Z,292nm,2.3s
FITZ **Fitzroy Crossi** 56.90 198 P P 15 35 00.7 +0.4
comp=Z,12nm,0.9s,baz=3.9,slow=10,SNR=12
FITZ **Fitzroy Crossi** 56.90 198 *e*P P 15 35 00.7 +0.4
comp=Z,56nm,1.5s
KBL **Kabul** 57.08 291 *e*P P 15 35 01.9 0.0
KBL pmax pmax
comp=Z,71nm,1.3s
KBL **Kabul** 57.08 291 *e*P P 15 35 01.9 0.0
comp=Z,71nm,1.3s
WRAB **Tennant Creek** 57.18 188 *d i*P P 15 35 01.8 -0.5
WRAB pmax pmax
comp=Z,106nm,1.1s
WRAB **Tennant Creek** 57.18 188 *e*P P 15 35 02.0 -0.4
comp=Z,36nm,1.0s
WRAB LR LR
comp=Z,389nm,20.0s
WRA **Warramunga Arr** 57.19 188 P P 15 35 01.5 -0.9
comp=Z,24nm,0.9s,baz=4.1,slow=7.4,SNR=62
WRA LR LR 15 59 48.4
comp=Z,133nm,18.0s,baz=125,slow=36
WRA PKP2bc 16 05 04.3
comp=Z,1.5nm,0.9s,baz=199,slow=2.1,SNR=6.1
CTA **Charters Tower** 57.20 174 P P 15 35 01.7 -0.7
comp=Z,4.0nm,0.8s,baz=339,slow=11,SNR=5.6
CTAO **Charters Tower** 57.20 174 *e*P P 15 35 01.7 -0.7
CTAO pmax pmax
comp=Z,18nm,1.4s
CTAO **Charters Tower** 57.20 174 *e*P P 15 35 01.7 -0.7
comp=Z,18nm,1.4s
SRSP **Sriramsagar** 57.27 270 *e*P P 15 35 03.0 -0.2
SRSP IAmb IAmb 15 35 04.5
comp=Z,60nm,1.0s
POHA **Pohakuloa** 57.40 89 *e*P P 15 35 05.8 +1.5
comp=Z,151nm,1.2s
MLOA **Mauna Loa Obse** 57.48 89 *e*P P 15 35 06.9 +1.8
AB31 **Akbulak array** 57.60 310 *i* P P 15 35 05.0 -0.1
AB31 pmax pmax
comp=Z,33nm,0.9s
ABKAR **Akbulak array** 57.60 310 *e*P P 15 35 05.4 +0.3
ADKI **Addanki** 57.66 266 *e*P P 15 35 06.0 +0.1
ADKI IAmb IAmb 15 35 08.0
comp=Z,93nm,2.0s
NJS **Nagarjunasagar** 57.79 267 *e*P P 15 35 06.7 -0.2
NJS IAmb IAmb 15 35 07.7
comp=Z,27nm,1.2s
HYB **Hyderabad** 57.92 268 *i* P P 15 35 08.0 +0.2
HYBB **Hyderabad (bro** 57.92 268 *e*P P 15 35 07.5 -0.2
HYBB IAmb IAmb 15 35 08.6
comp=Z,25nm,0.9s
AKTO **Aktyubinsk** 58.34 312 P P 15 35 09.4 -0.9
AKTO pmax pmax
comp=Z,35nm,0.9s
SRLM **Srisailam** 58.37 267 *e*P P 15 35 11.3 +0.4
SRLM IAmb IAmb 15 35 12.2
comp=Z,25nm,1.0s
DLBC **Dease Lake** 58.67 38 *e*P P 15 35 14.7 +2.1
comp=Z,48nm,1.1s
RCLA **Racherla** 58.68 266 *e*P P 15 35 13.4 +0.3
RCLA IAmb IAmb 15 35 14.1
comp=Z,28nm,1.0s
SKHT **Srikalahasti** 59.05 264 *e*P P 15 35 16.7 +1.1
SKHT IAmb IAmb 15 35 17.8
comp=Z,37nm,0.8s
KLRI **Killari** 59.12 270 *e*P P 15 35 16.0 -0.2
KLRI IAmb IAmb 15 35 17.1
comp=Z,58nm,0.8s
SPA0 **Spitsbergen Ar** 60.30 349 *e*P P 15 35 24.8 +1.4
URV **Uravakonda** 60.32 267 *e*P P 15 35 24.3 -0.1
URV IAmb IAmb 15 35 25.2
comp=Z,24nm,1.1s
KBS **Kingsbay** 60.44 350 *e*P P 15 35 26.1 +1.8
KBS **Kingsbay** 60.44 350 *e*P P 15 35 25.9 +1.6
KBS pmax pmax
comp=Z,102nm,0.8s
KBS **Kingsbay** 60.44 350 *e*P P 15 35 25.9 +1.6
comp=Z,102nm,0.8s
AS01 **Alice Springs** 60.91 187 *e*P P 15 35 27.6 -0.6
AS31 **Alice Springs** 60.92 187 *e*P P 15 35 28.2 -0.1
comp=Z,4.1nm,0.6s
ASAR **Alice Springs** 60.92 187 P P 15 35 27.8 -0.5
comp=Z,8.7nm,0.8s,baz=9.1,slow=6.0,SNR=36
ASAR LR LR 16 02 01.6
comp=Z,138nm,18.1s,baz=8.0,slow=36
ASAR PKP2bc 16 04 57.1
comp=Z,2.8nm,1.0s,baz=172,slow=2.2,SNR=12
HSPB **Hornsund (broa** 61.22 348 *e*P P 15 35 30.8 +1.2
HSPB IAmb IAmb 15 35 32.2
comp=Z,201nm,1.0s
MBWA **Marble Bar** 61.43 203 *e*P P 15 35 32.0 +0.3
comp=Z,43nm,1.1s
LVZ **Lovozero** 61.83 336 *ce*P P 15 35 34.4 +0.4
LVZ pmax pmax
comp=Z,58nm,1.1s
LVZ **Lovozero** 61.83 336 *e*P P 15 35 34.2 +0.3
comp=Z,94nm,1.4s
LVZ LR LR
comp=Z,495nm,20.0s
APA **Apatity** 62.41 336 ⇑ *i*P P 15 35 37.6 -0.2
APA pmax pmax
comp=Z,75nm,1.0s
APA MLR MLR
comp=Z,1µm,13.0s
TMCR **Tamitsa** 62.45 331 *e*P P 15 35 37.9 -0.2
TMCR pmax pmax
comp=Z,96nm,0.9s
RES **Resolute Bay** 62.51 14 *e*P P 15 35 38.6 +0.3
RES pmax pmax
comp=Z,45nm,0.9s
RES **Resolute Bay** 62.51 14 *e*P P 15 35 38.6 +0.3
comp=Z,45nm,0.9s
EIDS **Eidsvold** 62.95 170 *e*P P 15 35 42.4 +0.6
comp=Z,24nm,1.3s
KEV **Kevo** 63.18 339 *e*P P 15 35 43.6 +0.8
KEV **Kevo** 63.18 339 *e*P P 15 35 43.0 +0.2
KEV pmax pmax
comp=Z,43nm,0.8s
KEV MLR MLR
comp=Z,401nm,19.0s
KEV **Kevo** 63.18 339 *e*P P 15 35 43.0 +0.2
comp=Z,44nm,0.8s
KEV LR LR
comp=Z,401nm,19.0s
KLMR **Klimovskoe** 63.45 328 *e*P P 15 35 42.8 -2.0
KLMR *e* 15 38 02.6
KLMR *e*SS SS 15 48 22.8 +0.5
KLMR pmax pmax
comp=Z,78nm,0.8s
GEYT **Alibeck** 63.50 299 P P 15 35 46.4 +0.8
comp=Z,52nm,0.9s,baz=31,slow=3.5,SNR=89
DZM **Mont Dzumac** 63.63 154 P P 15 35 47.1 +0.6
comp=Z,54nm,1.1s,baz=33,slow=9.0,SNR=15
ARA0 **ARCESS Array S** 63.73 339 *e*P P 15 35 47.1 +0.6
ARCES **ARCESS Array B** 63.73 339 P P 15 35 47.2 +0.7
comp=Z,34nm,0.8s,baz=48,slow=7.6,SNR=27
ARCES LR LR 16 07 15.0
comp=Z,248nm,18.2s,baz=38,slow=40
ARE0 **ARCESS Array S** 63.73 339 *e*P P 15 35 47.2 +0.7
ARE0 **ARCESS Array S** 63.73 339 *e*P P 15 35 47.4 +0.8
comp=Z,68nm,1.0s
YKW3 **Yellowknife Ar** 63.77 30 *e*P P 15 35 47.1 +0.3
comp=Z,35nm,1.3s
YKA **Yellowknife Ar** 63.80 30 P P 15 35 47.3 +0.3
comp=Z,12nm,1.0s,baz=301,slow=6.6,SNR=114
YKA PKPPKP P'P'df 16 04 35.3 -12
comp=Z,0.9nm,1.1s,baz=128,slow=2.7,SNR=4.0
YKB5 **Yellowknife Ar** 63.80 30 *e*P P 15 35 45.4 -1.6
KTK1 **Kautokeino** 64.69 339 ⇓ *i*P P 15 35 53.4 +0.6
KTK1 IAmb IAmb 15 35 54.9
comp=Z,75nm,0.9s
TRO **Tromso** 65.46 341 *e*P P 15 35 57.6 -0.1
DAG **Danmarks Havn** 65.58 355 ⇓ *i*P P 15 35 58.8 +0.4
comp=Z,108nm,0.9s
NLWA **Neilton Lookou** 66.81 47 *e*P P 15 36 09.1 +2.2
comp=Z,77nm,1.3s
A04D **Lummi Island** 66.82 46 P P 15 36 08.0 +1.2
baz=300
MOS **Moscow** 66.94 323 *e*P P 15 36 05.6 -1.9
MOS pmax pmax
comp=Z,300nm,1.6s
MOS pmax pmax
comp=Z,189nm,1.1s
MOS MLR MLR
comp=Z,700nm,14.0s
VRH **Novokhopyorsk** 67.26 318 *e*P P 15 36 09.0 -0.6
VRH pmax pmax
comp=Z,120nm,0.7s
VRH MLR MLR
comp=Z,1µm,14.0s
B05A **Bryant** 67.40 46 P P 15 36 11.4 +0.9
baz=301
E03A **Lebam** 67.42 48 *e*P P 15 36 12.8 +2.1
comp=Z,50nm,1.0s
STEI **Steigen** 67.61 341 *e*P P 15 36 12.0 +0.5
STEI IAmb IAmb 15 36 13.1
comp=Z,43nm,0.7s
B06A **Marblemount** 67.62 45 *e*P P 15 36 13.2 +1.3
comp=Z,40nm,1.2s
F03A **Seaside** 67.74 49 *e*P P 15 36 16.2 +3.4
comp=Z,94nm,1.4s
OBN **Obninsk** 67.78 323 *d i*P P 15 36 13.0 +0.2
OBN *e**PP **pP** **15 36 18.0 -2.8**
OBN *e* 15 36 27.5
OBN *e* 15 36 44.2
OBN *e* 15 38 40.4
OBN *i* S S **15 45 11.9 +3.0**
OBN pmax pmax
comp=Z,79nm,0.8s
OBN MLR MLR
comp=Z,707nm,15.0s
OBN **Obninsk** 67.78 323 *e*P P 15 36 13.2 +0.4
comp=Z,70nm,0.8s
OBN LR LR
comp=Z,554nm,21.0s
KULLO **Kullorsuaq** 67.83 5 ⇓ *i*P P 15 36 12.8 0.0
comp=Z,43nm,1.1s
PUL **Pulkovo** 67.89 329 ⇑ *i*P P 15 36 14.5 +1.1
PUL pmax pmax
comp=Z,115nm,0.5s
KMOR **Kings Mountain** 67.93 49 P P 15 36 15.8 +1.7
LPSR **Galich'ya Gora** 67.98 320 *e*P P 15 36 14.1 0.0
LPSR pmax pmax
comp=Z,110nm,0.8s
LPSR MLR MLR
comp=Z,920nm,16.0s
F04D **Rainier, OR** 67.99 48 P P 15 36 15.7 +1.4
baz=301
C06D **Leavenworth** 68.27 46 P P 15 36 17.1 +1.1
baz=302
G03D **McMinnville, O** 68.29 49 P P 15 36 17.2 +1.0
baz=301
TDL **Tradedollar La** 68.32 48 P P 15 36 18.1 +1.5
LON **Longmire** 68.35 47 *e*P P 15 36 17.5 +0.8
LON pmax pmax
comp=Z,12nm,1.2s
LON **Longmire** 68.35 47 *e*P P 15 36 17.5 +0.8
comp=Z,12nm,1.2s
F04A **Amboy** 68.42 48 *e*P P 15 36 18.6 +1.6
comp=Z,40nm,0.8s
FIA1 **FINESS Array S** 68.52 332 *e*P P 15 36 17.7 +0.3
FINES **FINESS Array B** 68.53 332 P P 15 36 17.8 +0.4
comp=Z,74nm,0.8s,baz=60,slow=7.5,SNR=220
FINES LR LR 16 11 37.5
comp=Z,414nm,18.6s,baz=18,slow=41
COR **Corvallis** 68.59 50 *e*P P 15 36 20.5 +2.4
COR pmax pmax
comp=Z,55nm,0.9s
COR **Corvallis** 68.59 50 *e*P P 15 36 20.5 +2.4
comp=Z,55nm,0.9s
VSR **Storozhevoye** 68.61 319 *e*P P 15 36 18.0 -0.1
VSR pmax pmax
comp=Z,130nm,0.8s
VSR MLR MLR
comp=Z,1µm,16.0s
STKA **Stephens Creek** 68.73 180 P P 15 36 19.4 +0.5
comp=Z,8.6nm,0.9s,baz=348,slow=8.5,SNR=9.2
STKA LR LR 16 05 43.0
comp=Z,223nm,21.2s,baz=11,slow=35
STKA **Stephens Creek** 68.73 180 *e*P P 15 36 19.3 +0.5
comp=Z,3.6nm,1.1s
LTY **Liberty** 68.75 46 *e*P P 15 36 19.9 +0.7
comp=Z,71nm,1.9s
B08A **Colville Reser** 68.92 45 *e*P P 15 36 21.1 +0.9
comp=Z,60nm,1.5s
I03D **Drain, OR** 69.02 51 P P 15 36 22.3 +1.5
baz=302,SNR=12
MOR8 **Moi Rana** 69.10 340 ⇓ *i*P P 15 36 20.1 -0.8
MOR8 IAmb IAmb 15 36 21.4
comp=Z,102nm,0.9s
H04A **Detroit Lake** 69.21 49 P P 15 36 22.9 +0.9
KONS **Konsvik** 69.22 340 *e*P P 15 36 21.8 +0.2
KONS IAmb IAmb 15 36 23.4
comp=Z,25nm,0.8s
VFP **Flag Point** 69.31 48 P P 15 36 24.1 +1.3
STOK **Stokkvaagen** 69.37 340 *e*P P 15 36 21.8 -0.8
G05D **Wamic, OR** 69.44 48 P P 15 36 24.4 +0.9
baz=302
I04A **Tendick Farm,** 69.55 50 P P 15 36 25.1 +0.9
baz=302,SNR=15
L02D **Cave Junction,** 69.68 52 P P 15 36 26.2 +1.2
baz=302
GOF **Gofitskoye** 69.76 312 ⇑ *i*P P 15 36 26.0 +0.6
GOF pmax pmax
comp=Z,164nm,0.9s
BBOO **Buckleboo** 69.81 184 *e*P P 15 36 26.5 +0.9
comp=Z,100nm,1.8s
C09A **Chrisman Ranch** 69.82 45 *e*P P 15 36 26.5 +0.8
comp=Z,119nm,1.7s
HUMO **Hull Mountain** 69.84 51 *e*P P 15 36 27.8 +1.8
comp=Z,37nm,1.7s
G06A **Carlson Farm,** 69.85 48 *e*P P 15 36 26.3 +0.3
comp=Z,80nm,1.5s
D08A **Wollman Farm,** 69.86 46 *e*P P 15 36 26.8 +0.9
comp=Z,22nm,1.0s
HAWA **Hanford** 69.87 47 *e*P P 15 36 27.2 +1.2
comp=Z,16nm,0.9s
I05D **Terrebonne, OR** 69.91 49 P P 15 36 27.5 +1.2
baz=303,SNR=6.2
VSU **Vasula** 70.16 329 *d i*P P 15 36 28.1 +0.6
VSU pmax pmax
comp=Z,293nm,1.0s
NEW **Newport** 70.21 44 P P 15 36 28.8 +0.6
baz=304,SNR=14
NEW **Newport** 70.21 44 *e*P P 15 36 29.0 +0.9
NEW pmax pmax
comp=Z,75nm,1.6s
NEW MLR MLR
comp=Z,149nm,19.0s
NEW **Newport** 70.21 44 *e*P P 15 36 29.0 +0.9
comp=Z,75nm,1.6s
NEW LR LR
comp=Z,149nm,19.0s
KHMM **Horse Mountain** 70.28 53 *e*P P 15 36 31.1 +2.2
comp=Z,87nm,1.6s

GUDG Gudauri 70.28 309 P P 15 36 30.6 +1.7
ZEI Tsey 70.46 309 eP P 15 36 29.4 -0.6
ZEI pmax pmax
comp=Z,73nm,0.8s
YBH Yreka Blue Hor 70.47 52 eP P 15 36 31.2 +1.3
YBH pmax pmax
comp=Z,40nm,1.4s
YBH Yreka Blue Hor 70.47 52 eP P 15 36 31.2 +1.3
comp=Z,40nm,1.4s
SUMG Summit 70.51 360⇓ iP P 15 36 31.2 +1.2
comp=Z,105nm,1.0s
SUMG Summit 70.51 360 eP P 15 36 31.0 +1.0
SUMG pmax pmax
comp=Z,130nm,1.1s
SUMG Summit 70.51 360 eP P 15 36 31.0 +1.0
comp=Z,130nm,1.1s
TBLG Delisi 70.51 308 P P 15 36 32.6 +2.5
TBLG Delisi 70.51 308 P P 15 36 32.5 +2.5
J05D Fort Rock, OR 70.55 50 P P 15 36 31.7 +1.3
baz=303,SNR=20
M02C Callahan 70.56 53 P P 15 36 32.0 +1.5
baz=303,SNR=8.9
KBZ Khabaz 70.57 310 P P 15 36 31.1 +0.8
comp=Z,72nm,0.8s,baz=59,slow=5.4,SNR=171
KIV Kislovodsk 70.57 311 iP P 15 36 31.4 +0.9
SNR=49
KIV Kislovodsk 70.57 311 diP P 15 36 31.2 +0.7
KIV i *SP pP 15 36 37.7 -0.9
KIV i 15 36 49.5
KIV SS SS 15 50 09.0 -4.4
KIV pmax pmax
comp=Z,225nm,0.9s
KIV MLR MLR
comp=Z,398nm,16.0s
KIV Kislovodsk 70.57 311 eP P 15 36 31.4 +0.9
comp=Z,195nm,0.9s
KIV LR LR
comp=Z,288nm,20.0s
KIV Kislovodsk 70.57 311 P P 15 36 31.4 +0.9
SNR=49
KIV Kislovodsk 70.57 311 P P 15 36 31.4 +0.9
SNR=49
K04D Chiloquin, OR 70.58 51 P P 15 36 31.7 +1.1
baz=303
BIDO Bidbid 70.78 285 P P 15 36 32.5 +0.5
SNR=20
BIDO Bidbid 70.78 285 P P 15 36 32.5 +0.5
SNR=20
ONI Oni 70.85 309 P P 15 36 33.4 +1.3
ONI Oni 70.85 309 P P 15 36 33.4 +1.3
BANOM Banah 70.88 288 iP P 15 36 33.7 +1.1
SNR=43
BANOM Banah 70.88 288 P P 15 36 33.4 +0.9
SNR=24
BANOM Banah 70.88 288 P P 15 36 33.4 +0.9
SNR=24
N02D Trinity Center 70.88 53 P P 15 36 33.8 +1.4
baz=303,SNR=7.7
NEY Neytrino 70.94 310⇓ eP P 15 36 33.7 +0.9
NEY pmax pmax
comp=Z,10.0nm,0.8s
M04C Macdoel 70.99 52 P P 15 36 34.3 +1.2
baz=303,SNR=16
K05A Summer Lake 71.06 50 eP P 15 36 35.2 +1.6
comp=Z,91nm,1.3s
SMDO Samad 71.09 285 P P 15 36 34.6 +0.6
SNR=18
SMDO Samad 71.09 285 P P 15 36 34.6 +0.6
SNR=18
WDC Whiskeytown Da 71.20 53 eP P 15 36 35.4 +1.2
WDC pmax pmax
comp=Z,31nm,1.4s
WDC Whiskeytown Da 71.20 53 eP P 15 36 35.4 +1.2
comp=Z,31nm,1.4s
GNI Garni 71.37 306 iP P 15 36 36.5 +1.1
SNR=8.1
GNI Garni 71.37 306 diP P 15 36 36.8 +1.3
GNI pmax pmax
comp=Z,159nm,1.3s
GNI Garni 71.37 306 eP P 15 36 37.3 +1.8
comp=Z,170nm,1.0s
GNI LR LR
comp=Z,247nm,19.0s
HOQ Hoqain 71.37 286 P P 15 36 36.2 +0.7
SNR=17
HOQ Hoqain 71.37 286 P P 15 36 36.2 +0.7
SNR=17
F10A Beach Ranch, E 71.43 46 eP P 15 36 36.9 +1.2
comp=Z,28nm,1.4s
AKH Akhalkalaki 71.47 308 P P 15 36 37.7 +1.5
AKH Akhalkalaki 71.47 308⇑ iP P 15 36 37.8 +1.7
AKH Akhalkalaki 71.47 308 P P 15 36 37.6 +1.5
UOSS Minazif 71.48 288 eP P 15 36 37.0 +0.9
comp=Z,4.3nm,0.9s
WALA Waterton Lakes 71.50 42 eP P 15 36 37.1 +1.0
comp=Z,84nm,1.5s
HATD Hatta, Dubai 71.60 287 iP P 15 36 37.7 +0.8
SNR=31
HATD Hatta, Dubai 71.60 287 P P 15 36 37.7 +0.8
SNR=21
HATD Hatta, Dubai 71.60 287 P P 15 36 37.7 +0.8
SNR=21
HATD P P 15 36 37.7 +0.8
SNR=21
CHVG Ch'k'valeri 71.62 310 P P 15 36 37.5 +0.8
CHVG Ch'k'valeri 71.62 310⇑ iP P 15 36 38.0 +1.3
ASHO Ashiyiah 71.73 287 iP P 15 36 38.4 +0.7
SNR=26
ASHO Ashiyiah 71.73 287 P P 15 36 38.4 +0.7
SNR=16
ASHO Ashiyiah 71.73 287 P P 15 36 38.4 +0.7
SNR=16
BSMT Bassoo Peak 71.73 43 eP P 15 36 38.6 +1.1
O03D Paynes Creek 71.83 53 P P 15 36 38.5 +0.4
baz=304,SNR=14
NAZ Nazwa, Dubai 71.87 288 iP P 15 36 39.1 +0.6
SNR=6.3
NAZ Nazwa, Dubai 71.87 288 P P 15 36 38.9 +0.4
SNR=7.4
NAZ Nazwa, Dubai 71.87 288 P P 15 36 38.9 +0.4
SNR=7.4
NAZ P P 15 36 38.9 +0.4
SNR=7.4
BLMT Blacktail Moun 71.87 43 eP P 15 36 39.7 +1.3
MOD Modoc Plateau 71.88 51 eP P 15 36 39.6 +1.1
comp=Z,54nm,1.7s
SCO Scoresbysund 71.91 354⇓ iP P 15 36 39.2 +1.2
comp=Z,56nm,1.0s
BMO Blue Mountains 72.03 47 eP P 15 36 40.3 +1.0
BMO pmax pmax
comp=Z,33nm,1.1s
BMO Blue Mountains 72.03 47 eP P 15 36 40.3 +1.0
comp=Z,33nm,1.1s
FAQ Al Faqa, Dubai 72.05 288 iP P 15 36 40.0 +0.4
SNR=14
FAQ Al Faqa, Dubai 72.05 288 P P 15 36 39.9 +0.4
SNR=7.7
FAQ Al Faqa, Dubai 72.05 288 P P 15 36 39.9 +0.4
SNR=7.7
JTMT Jette 72.07 43 eP P 15 36 40.7 +1.2
IZAR Zarasai 72.11 327 eP P 15 36 40.3 +0.9
IZAR IAmb IAmb 15 36 41.1
comp=Z,22nm,0.7s
ARQ Araqi 72.11 286 P P 15 36 40.9 +0.9
SNR=28
ARQ Araqi 72.11 286 P P 15 36 40.9 +0.9
SNR=28
YBMT Yellow Bay 72.15 43 eP P 15 36 41.1 +1.1
IDID Didziasalis 72.17 327 eP P 15 36 40.8 +1.0
IDID IAmb IAmb 15 36 41.6
comp=Z,35nm,0.9s
MICGM Minsk 72.19 326 eP P 15 36 40.0 +0.1
MICGM PM 15 36 41.0
comp=Z,0.2nm,1.0s
MICGM eLR LR 16 10 52.0
MNK Minsk 72.19 326 eP P 15 36 40.0 +0.1
MNK pmax pmax
comp=Z,240nm,1.0s
ISAL Salakas 72.27 327 eP P 15 36 41.4 +1.0
ISAL IAmb IAmb 15 36 42.3
comp=Z,55nm,0.9s
SWMT Swartz Lake 72.36 43 eP P 15 36 42.2 +0.9
NACGM Naroch 72.42 326 eP P 15 36 42.0 +0.7
NACGM PM 15 36 43.0
comp=Z,0.2nm,0.8s
NACGM eLR LR 16 11 18.0

ORV Oroville 72.43 54 eP P 15 36 42.1 +0.5
ORV pmax pmax
comp=Z,69nm,1.8s
ORV Oroville 72.43 54 eP P 15 36 42.1 +0.5
comp=Z,69nm,1.8s
TBLU Trondheim 72.48 339 eP P 15 36 41.2 -0.3
SOC Sochi 72.56 312 diP P 15 36 42.7 +0.4
SOC e 15 39 29.7
SOC ePPP PPP 15 41 00.4
SOC eS S 15 46 04.7 -0.6
SOC eSS SS 15 50 48.6 +4.9
SOC pmax pmax
comp=Z,74nm,0.9s
ARTV Artvin 72.58 309 iP P 15 36 43.8 +1.0
WVOR Wild Horse Val 72.61 50 eP P 15 36 43.9 +1.1
WVOR pmax pmax
comp=Z,62nm,1.6s
WVOR Wild Horse Val 72.61 50 eP P 15 36 43.9 +1.1
comp=Z,62nm,1.6s
DAGI Agillar 72.64 309 iP P 15 36 44.3 +1.3
DBOC Borcka 72.65 309 iP P 15 36 44.3 +1.3
MSO Missoula 72.80 44 P P 15 36 44.1 +0.3
baz=306,SNR=13
MSO Missoula 72.80 44 eP P 15 36 44.5 +0.7
comp=Z,36nm,1.3s
DBAD Bademkaya 72.81 309 iP P 15 36 45.1 +1.1
EATA Eleskirt 72.97 307 iP P 15 36 47.2 +2.0
AFDM Forest Hills D 73.11 54 eP P 15 36 46.9 +1.2
comp=Z,18nm,1.3s
CHMT Chamberlain Mo 73.13 44 eP P 15 36 46.5 +0.6
ANN Anapa 73.20 314 eP P 15 36 43.5 -2.6
ANN e*PP pP 15 36 53.1 -1.1
ANN eS S 15 46 07.0 -5.5
ANN pmax pmax
comp=Z,101nm,1.1s
ILULI Ilulissat 73.51 4 iP P 15 36 47.6 +0.1
comp=Z,75nm,1.5s
EKAR Karacoban 73.58 307 iP P 15 36 50.5 +1.7
NC405 NORSAR Array S 73.70 337 eP P 15 36 49.5 +0.8
FFC Flin Flon 73.72 33 eP P 15 36 49.3 +0.3
FFC pmax pmax
comp=Z,63nm,1.0s
FFC MLR MLR
comp=Z,212nm,20.0s
FFC Flin Flon 73.72 33 eP P 15 36 49.3 +0.3
comp=Z,63nm,1.0s
FFC LR LR
comp=Z,212nm,20.0s
NC303 NORSAR Array S 73.72 337 eP P 15 36 49.6 +0.8
MFID Camas Ranch 73.72 48 eP P 15 36 50.6 +1.2
comp=Z,121nm,1.8s
MOL Molde 73.79 340 eP P 15 36 49.7 +0.5
MOL IAmb IAmb 15 36 50.6
comp=Z,53nm,1.0s
NC204 NORSAR Array S 73.87 337 eP P 15 36 50.1 +0.2
NB201 NORSAR Array S 73.88 337 eP P 15 36 50.5 +0.6
NB2 NORSAR Subarra 73.91 337 P P 15 36 50.4 +0.3
comp=Z,83nm,1.0s,baz=39,slow=6.2
NB2 NORSAR Subarra 73.91 337 P P 15 36 50.4 +0.3
baz=39,slow=6.2
NOA NORSAR Array B 73.91 337 P P 15 36 50.5 +0.5
comp=Z,43nm,0.9s,baz=39,slow=5.8,SNR=156
NOA LR LR 16 12 28.2
comp=Z,480nm,19.4s,baz=45,slow=38
FCC Fort Churchill 73.98 26 eP P 15 36 50.6 +0.2
FCC pmax pmax
comp=Z,95nm,1.1s
FCC Fort Churchill 73.98 26 eP P 15 36 50.6 +0.2
comp=Z,95nm,1.1s
AKASG Malin Array Be 73.98 322 P P 15 36 50.8 +0.2
comp=Z,52nm,0.6s,baz=46,slow=6.2,SNR=203
AKASG LR LR 16 10 43.5
comp=Z,266nm,19.1s,baz=50,slow=37
AKASG Malin Array Be 73.98 322 P P 15 36 50.8 +0.2
AKASG pmax pmax
comp=Z,56nm,0.6s
AKASG MLR MLR
comp=Z,266nm,19.1s
AKBB Malin Array Si 73.98 322 eP P 15 36 50.9 +0.3
AKBB pmax pmax
comp=Z,65nm,0.7s
AKBB Malin Array Si 73.98 322 eP P 15 36 50.9 +0.3
comp=Z,65nm,0.7s
KIEV Kiev 73.99 322 diP P 15 36 50.7 +0.1
KIEV pmax pmax
comp=Z,74nm,0.8s
KIEV Kiev 73.99 322 eP P 15 36 50.9 +0.3
comp=Z,65nm,0.7s
KIEV LR LR
comp=Z,395nm,19.0s
CMB Columbia Colle 74.00 54 eP P 15 36 52.2 +1.1
CMB pmax pmax
comp=Z,42nm,1.4s
CMB Columbia Colle 74.00 54 eP P 15 36 52.2 +1.1
comp=Z,42nm,1.4s
NBO02 NORSAR Array S 74.02 337 eP P 15 36 50.9 +0.2
AK11 Malin Array Si 74.02 322 eP P 15 36 50.8 0.0
NC602 NORSAR Array S 74.05 337 eP P 15 36 49.7 -1.1
NC602 NORSAR Array S 74.05 337 eP P 15 36 50.9 +0.1
NBO00 NORSAR Array S 74.06 337 eP P 15 36 51.4 +0.5
NAO01 NORSAR Array S 74.17 337 eP P 15 36 51.9 +0.4
LRM Limekiln Ridge 74.23 44 eP P 15 36 53.4 +1.0
AKN Aaknes 74.26 339⇓ iP P 15 36 52.9 +0.9
AKN IAmb IAmb 15 36 54.6
comp=Z,65nm,1.2s
EGMT Eagleton 74.33 41 P P 15 36 53.6 +0.8
baz=309,SNR=22
EGMT Eagleton 74.33 41 eP P 15 36 53.7 +0.9
comp=Z,95nm,1.3s
EGMT LR LR
comp=Z,177nm,20.0s
WAKR Walker 74.35 53 eP P 15 36 54.5 +1.3
DLMT Dillon 74.42 45 eP P 15 36 54.3 +0.9
comp=Z,43nm,0.9s
HLID Hailey 74.47 47 P P 15 36 55.0 +1.2
baz=307,SNR=18
HLID Hailey 74.47 47 eP P 15 36 55.0 +1.2
comp=Z,31nm,1.4s
HLID LR LR
comp=Z,132nm,20.0s
SUW Suwalki 74.58 327 eP P 15 36 54.1 +0.1
SUW Suwalki 74.58 327 eP P 15 36 54.1 +0.1
MCMT McKenzie Canyo 74.61 45 eP P 15 36 55.5 +0.8
BMN Battle Mountai 74.63 51 eP P 15 36 56.2 +1.4
BMN pmax pmax
comp=Z,85nm,1.7s
BMN Battle Mountai 74.63 51 eP P 15 36 56.2 +1.4
comp=Z,85nm,1.7s
BOZ Bozeman (W) 74.79 44 P P 15 36 56.7 +1.1
baz=308,SNR=27
BOZ Bozeman (W) 74.79 44 eP P 15 36 56.7 +1.1
BOZ pmax pmax
comp=Z,37nm,1.0s
BOZ MLR MLR
comp=Z,177nm,20.0s
BOZ Bozeman (W) 74.79 44 eP P 15 36 56.7 +1.1
comp=Z,37nm,1.0s
BOZ LR LR
comp=Z,177nm,20.0s
KELT Kelkit 74.83 309 iP P 15 36 56.9 +0.9
OSL Oslo 74.92 337 eP P 15 36 56.7 +0.9
OSL IAmb IAmb 15 36 58.0
comp=Z,60nm,1.0s
GRSN GIRESUNGRSN 74.98 310 iP P 15 36 56.5 -0.2
SIM Simferopol' 75.00 315 deP P 15 36 57.2 +0.6
SIM pmax pmax
comp=Z,66nm,0.9s
SIM MLR MLR
comp=Z,240nm,16.0s
NV01 Mina Array Sit 75.12 53 eP P 15 36 58.0 +0.3
NVAR Mina Array Bea 75.12 53 P P 15 36 58.9 +1.2
comp=Z,12nm,0.8s,baz=284,slow=6.0,SNR=93
ORDU Ordu-Boztepe 75.20 310 iP P 15 36 58.1 +0.3
NV11 Mina Array Sit 75.21 53 eP P 15 36 59.4 +1.2
comp=Z,81nm,1.9s
MLAC Mammoth, Mammo 75.24 54 P P 15 36 59.4 +1.0
baz=306
FOO Floro 75.27 340 eP P 15 36 58.1 +0.3
HYA Hoyanger 75.31 339 eP P 15 36 58.4 +0.3
HYA IAmb IAmb 15 37 00.4
comp=Z,83nm,1.0s
QLMT Earthquake Lak 75.40 45 eP P 15 37 00.4 +1.2
KLNR Kaliningrad 75.43 329 iP P 15 36 58.9 +0.1
KLNR pmax pmax
comp=Z,192nm,1.4s

KONO Kongsberg 75.50 337 eP P 15 36 59.9 +0.7
KONO pmax pmax
comp=Z,26nm,0.9s
KONO MLR MLR
comp=Z,589nm,20.0s
KONO Kongsberg 75.50 337 eP P 15 36 59.9 +0.7
comp=Z,26nm,0.9s
KONO LR LR
comp=Z,589nm,20.0s
ELK Elko 75.66 50 eP P 15 37 02.1 +1.3
ELK pmax pmax
comp=Z,9.0nm,0.9s
ELK Elko 75.66 50 eP P 15 37 02.1 +1.3
comp=Z,9.5nm,0.9s
SFJD Kangerlussuaq 75.74 5 P P 15 37 01.2 +0.8
comp=Z,16nm,0.9s,baz=338,slow=7.7,SNR=6.6
SFJD Kangerlussuaq 75.74 5 iP P 15 37 01.2 +0.8
comp=Z,44nm,1.2s
SFJD Kangerlussuaq 75.74 5 eP P 15 37 01.3 +0.9
SFJD pmax pmax
comp=Z,40nm,1.1s
SFJD Kangerlussuaq 75.74 5 eP P 15 37 01.3 +0.9
comp=Z,40nm,1.1s
RCTC Rector, Farmer 75.75 55 P P 15 37 01.9 +0.8
baz=306
YMR Madison River 75.76 44 eP P 15 37 03.0 +1.7
comp=Z,111nm,1.7s
SUE Sulen 75.80 340 eP P 15 37 00.9 +0.1
SMMC Simmler 75.83 56 P P 15 37 02.6 +1.0
baz=306
KEMA Kemaliye 75.83 309 iP P 15 37 02.7 +1.1
TIN Tinemaha, Big 75.97 54 P P 15 37 03.5 +1.0
baz=306
YFT Old Faithful 75.97 45 eP P 15 37 05.7 +3.2
comp=Z,50nm,1.4s
SORM Soroca 76.07 320⇑ iP P 15 37 03.0 +0.3
LKWY Lake 76.14 44 eP P 15 37 03.5 0.0
LKWY pmax pmax
comp=Z,35nm,1.1s
LKWY MLR MLR
comp=Z,293nm,19.0s
LKWY Lake 76.14 44 eP P 15 37 03.5 0.0
comp=Z,35nm,1.1s
LKWY LR LR
comp=Z,293nm,19.0s
H17A Grant Village 76.15 44 P P 15 37 06.4 +2.8
baz=309,SNR=27
H17A Grant Village 76.15 44 eP P 15 37 04.1 +0.5
comp=Z,72nm,1.1s
BER Bergen 76.19 339 eP P 15 37 02.3 -0.8
PKM Mcpherson Peak 76.19 57 P P 15 37 05.1 +1.2
baz=306,SNR=5.2
ODD1 Odda 76.20 338 eP P 15 37 04.5 +1.2
ODD1 IAmb IAmb 15 37 05.7
comp=Z,51nm,1.0s
IMW Indian Meadow 76.26 45 eP P 15 37 06.0 +1.8
comp=Z,29nm,1.0s
FLWY Flagg Ranch 76.28 45 eP P 15 37 02.6 -1.6
comp=Z,141nm,1.1s
RLMT Red Lodge 76.42 43 P P 15 37 06.1 +1.1
baz=310,SNR=10
RLMT Red Lodge 76.42 43 eP P 15 37 05.7 +0.7
comp=Z,65nm,1.5s
RLMT LR LR
comp=Z,157nm,19.0s
CUKAN kangal_SIVAS 76.44 309 iP P 15 37 06.1 +1.0
HAVZ Havza 76.44 311 iP P 15 37 06.2 +1.3
MOOW Moose Ponds 76.46 45 eP P 15 37 05.1 -0.2
comp=Z,51nm,1.4s
HVU Hansel Valley 76.51 48 eP P 15 37 07.0 +1.5
HVU pmax pmax
comp=Z,19nm,1.0s
HVU Hansel Valley 76.51 48 eP P 15 37 07.0 +1.5
comp=Z,18nm,1.0s
SBC Santa Barbara 76.52 57 P P 15 37 05.0 -0.5
baz=306
GRAC Grapevine Rang 76.56 54 P P 15 37 06.9 +1.2
baz=307,SNR=14
KIS Kishinev 76.57 319 eP P 15 37 06.0 +0.5
KIS LRM MLR 16 13 50.0
comp=Z,2μm,18.0s
KIS Kishinev 76.57 319 eP P 15 37 06.0 +0.5
KIS e 15 37 20.0
KIS MLR MLR
comp=N,2μm,16.0s
KIS MLR MLR
comp=E,1μm,16.0s
KIS MLR MLR
comp=Z,2μm,16.0s
KIS MLR MLR
comp=Z,2μm,18.0s
LOHW Long Hollow 76.62 45 eP P 15 37 06.2 -0.1
comp=Z,13nm,1.0s
ISA Isabella, Lake 76.63 55 P P 15 37 06.0 -0.2
baz=306
ISA Isabella, Lake 76.63 55 eP P 15 37 06.6 +0.4
ISA pmax pmax
comp=Z,11nm,1.0s
ISA Isabella, Lake 76.63 55 eP P 15 37 06.6 +0.4
comp=Z,11nm,1.0s
SNOW Snow King Moun 76.63 45 eP P 15 37 08.4 +2.1
comp=Z,26nm,1.0s
REDW Red Top Meadow 76.64 45 eP P 15 37 07.7 +1.4
comp=Z,46nm,1.3s
BLS5 Blasjo 76.65 338 eP P 15 37 05.1 -0.7
BLS5 IAmb IAmb 15 37 08.4
comp=Z,52nm,1.1s
ARVC Arvin 76.71 56 P P 15 37 07.0 +0.4
baz=306
BOYT Boyabat 76.71 312 iP P 15 37 08.0 +1.5
AKCD Akcadag 76.77 308 iP P 15 37 08.5 +1.5
SCZ2 Santa Cruz Isl 76.84 57 P P 15 37 07.7 +0.4
baz=306
DAC Darwin (Calif) 76.84 54 eP P 15 37 06.7 -0.9
DAC pmax pmax
comp=Z,17nm,1.1s
DAC Darwin (Calif) 76.84 54 eP P 15 37 06.7 -0.9
comp=Z,17nm,1.1s
AHID Auburn Hatcher 76.87 46 eP P 15 37 08.7 +1.1
comp=Z,60nm,1.6s
AHID LR LR
comp=Z,232nm,20.0s
BGU Big Grassy Mou 76.88 48 eP P 15 37 09.0 +1.4
comp=Z,11nm,1.0s
DGMT Dagmar 76.88 38 P P 15 37 08.0 +0.7
baz=312,SNR=6.9
DGMT Dagmar 76.88 38 eP P 15 37 08.0 +0.7
comp=Z,126nm,1.3s
R11A Troy Canyon, C 76.88 52 P P 15 37 08.8 +1.1
baz=307,SNR=43
R11A Troy Canyon, C 76.88 52 eP P 15 37 08.5 +0.7
comp=Z,119nm,1.9s
HOMB Homborsund 76.94 336 eP P 15 37 06.5 -0.9
LAO LASA Array 77.03 41 P P 15 37 09.0 +0.8
baz=311,SNR=7.0
LAO LASA Array 77.03 41 eP P 15 37 09.6 +1.3
comp=Z,106nm,1.3s
LAO LR LR
comp=Z,238nm,19.0s
MPMC Manual Prospec 77.04 55 P P 15 37 09.3 +0.6
baz=307,SNR=17
LVV L'vov 77.07 324 eP P 15 37 07.8 -0.5
LVV MLR MLR
comp=N,400nm,15.0s
LVV MLR MLR
comp=E,600nm,15.0s
LVV MLR MLR
comp=Z,800nm,15.0s
OSI Osito Audit: C 77.08 56 P P 15 37 09.7 +1.0
baz=306
OSI Osito Audit: C 77.08 56 eP P 15 37 11.8 +3.1
comp=Z,26nm,1.0s
A25A Svangstu Ranch 77.10 38 P P 15 37 09.5 +0.9
baz=313
CUSAR Sarkisla-SIVAS 77.13 310 iP P 15 37 10.1 +1.1
BEL Belsk 77.14 327 eP P 15 37 09.8 +1.2
BEL Belsk 77.14 327 eP P 15 37 09.9 +1.3
BLG Laguna Peak, P 77.15 57 P P 15 37 09.5 +0.4
baz=306
BSD Bornholm Skovb 77.15 332⇓ iP P 15 37 08.9 +0.3
comp=Z,92nm,1.1s
KMY Karmoy 77.18 338 eP P 15 37 09.9 +1.2
FURC Furnace Creek, 77.20 54 P P 15 37 10.3 +1.1
baz=307,SNR=8.7
LRMC Laurel Mtn Rad 77.26 55 P P 15 37 10.2 +0.4
baz=307,SNR=9.9
STAV Stavanger 77.27 338 eP P 15 37 10.2 +0.9

SNART **Snartemo** 77.30 337 *e*P P 15 37 10.4 +1.0
TPNV **Topopah Spring** 77.31 53 P P 15 37 10.8 +0.7
baz=307,SNR=22
TPNV **Topopah Spring** 77.31 53 *e*P P 15 37 11.1 +1.0
TPNV pmax pmax
comp=Z,24nm,0.9s
TPNV **Topopah Spring** 77.31 53 *e*P P 15 37 11.1 +1.0
comp=Z,24nm,0.9s
HWUT **Hardware Ranch** 77.33 47 *e*P P 15 37 11.3 +1.2
comp=Z,65nm,1.4s
SNCC **San Nicolas Is** 77.35 58 P P 15 37 11.1 +0.9
baz=306
COAL **Corum-Alaca** 77.38 311 *i* P P 15 37 11.3 +0.9
EDW2 **Edwards Air Fo** 77.41 56 P P 15 37 11.5 +1.0
baz=307,SNR=10
BORG **Borgarnes** 77.44 352 P P 15 37 11.8 +1.7
comp=Z,41nm,0.9s,baz=74,slow=1.6,SNR=4.3
DUG **Dugway, Tooele** 77.46 49 P P 15 37 12.1 +1.2
baz=308,SNR=15
DUG **Dugway, Tooele** 77.46 49 *e*P P 15 37 12.3 +1.4
DUG pmax pmax
comp=Z,93nm,1.7s
DUG MLR MLR
comp=Z,159nm,21.0s
DUG **Dugway, Tooele** 77.46 49 *e*P P 15 37 12.3 +1.4
comp=Z,93nm,1.7s
DUG LR LR
comp=Z,159nm,21.0s
B25A **Knox Farm, Ray** 77.53 38 P P 15 37 11.9 +0.9
baz=313
DECC **Green Verdugo** 77.56 56 P P 15 37 12.1 +0.8
baz=307
GZT **Gaziantep** 77.56 307 *i* P P 15 37 13.2 +1.7
COP **Copenhagen** 77.64 333⇓*i*P P 15 37 12.2 +0.9
comp=Z,38nm,0.9s
ILGA **Ilgaz** 77.64 312 *i* P P 15 37 13.9 +1.9
A26A **Wade Farm, Ken** 77.65 37 P P 15 37 12.3 +0.7
baz=313,SNR=17
TCUT **Toone Canyon** 77.72 47 *e*P P 15 37 13.8 +1.3
comp=Z,205nm,1.8s
BW06 **Boulder Array** 77.75 45 P P 15 37 12.9 +0.3
baz=310,SNR=9.3
BW06 **Boulder Array** 77.75 45 P P 15 37 11.8 -0.8
comp=Z,33nm,1.2s
BW06 LR LR
comp=Z,77nm,19.0s
PDAR **Pinedale Array** 77.75 45 P P 15 37 13.5 +0.9
comp=Z,6.6nm,0.6s,baz=242,slow=1.9,SNR=24
MWC **Mount Wilson** 77.76 56 *e*P P 15 37 14.3 +1.6
MWC pmax pmax
comp=Z,77nm,1.7s
MWC **Mount Wilson** 77.76 56 *e*P P 15 37 14.3 +1.6
comp=Z,76nm,1.7s
TLCR 77.76 318⇓*i*P P 15 37 12.7 +0.5
CTU **Camp Tracy** 77.79 48 *e*P P 15 37 14.3 +1.5
comp=Z,14nm,0.9s
KWP **Kalwaria Pacla** 77.82 324 *e*P P 15 37 13.9 +1.4
KWP **Kalwaria Pacla** 77.82 324 *e*P P 15 37 13.9 +1.4
PSUT **Pine Spring** 77.85 51 *e*P P 15 37 14.4 +1.2
comp=Z,95nm,1.8s
C25A **Freed Ranch, W** 77.86 38 P P 15 37 13.6 +0.8
baz=313
FMP **Fort Macarthur** 77.90 57 P P 15 37 13.7 +0.5
baz=307
B26A **Jensen Ranch,** 77.91 38 P P 15 37 14.0 +0.9
baz=313,SNR=6.0
SHOC **Shoshone, Teco** 77.92 54 P P 15 37 14.3 +1.0
baz=307
GSC **Goldstone, Bar** 77.94 55 P P 15 37 14.4 +0.9
baz=307
GSC **Goldstone, Bar** 77.94 55 *e*P P 15 37 14.4 +0.9
GSC pmax pmax
comp=Z,9.0nm,0.9s
GSC **Goldstone, Bar** 77.94 55 *e*P P 15 37 14.4 +0.9
comp=Z,9.4nm,0.9s
ABTO **Aybut** 77.97 283 P P 15 37 13.7 -0.2
SNR=7.0
HCB **Kahramanmara˜** 77.98 308 *i* P P 15 37 14.8 +1.2
BUR08 **Bucovina Ar. S** 77.98 322 *e*P P 15 37 14.5 +0.9
BURAR **Bucovina Array** 77.99 321⇓*i*P P 15 37 14.3 +0.6
CIS **Catalina Islan** 78.01 57 P P 15 37 14.5 +0.6
baz=307
BFSC **Mount Baldy Ra** 78.01 56 P P 15 37 14.3 +0.2
baz=307
TESR **Tescani** 78.01 320⇑*i*P P 15 37 14.3 +0.6
JLU **Jordanelle** 78.02 48 *e*P P 15 37 15.7 +1.5
comp=Z,28nm,1.3s
NLU **North Lily Min** 78.05 49 *e*P P 15 37 15.9 +1.6
comp=Z,5nm,0.9s
RRX **Edison Barstow** 78.07 55 P P 15 37 14.9 +0.7
baz=307
CFR **Carcaliu** 78.12 318⇑*i*P P 15 37 14.4 +0.2
CDAG **Cicekdag** 78.14 311 *i* P P 15 37 15.4 +0.7
SCI2 **San Clemente I** 78.17 58 P P 15 37 14.8 +0.1
baz=307
MUD **Monsted U'grnd** 78.17 335⇓*i*P P 15 37 15.3 +1.0
comp=Z,52nm,1.1s
ANDN **Andirin** 78.19 308 *i* P P 15 37 16.2 +1.2
D25A **Fairfield** 78.21 39 P P 15 37 15.4 +0.6
baz=313
PETR **Petresti** 78.24 319⇓*i*P P 15 37 15.6 +0.7
ODBI **Odobesti** 78.30 319⇑*i*P P 15 37 17.0 +1.7
C26A **Wahner Farm, P** 78.36 38 P P 15 37 16.2 +0.7
baz=314,SNR=8.4
B27A **Peters Farms,** 78.36 37 P P 15 37 16.0 +0.4
baz=314
VRI **Vrincioaia** 78.41 319⇑*i*P P 15 37 17.3 +1.4
TUQ **Turquoise Moun** 78.43 54 P P 15 37 17.3 +1.0
baz=308,SNR=18
TIRR **Tirgusor** 78.45 318⇑*i*P P 15 37 16.5 +0.4
TIRR **Tirgusor** 78.45 318 *e*P P 15 37 16.7 +0.6
TIRR pmax pmax
comp=Z,21nm,0.9s
TIRR **Tirgusor** 78.45 318 *e*P P 15 37 16.6 +0.6
comp=Z,21nm,0.9s
PLOR **Plostina** 78.46 319⇓*i*P P 15 37 17.0 +0.8
A28A **Rude Farm, Bot** 78.48 36 P P 15 37 17.0 +0.8
baz=314,SNR=30
BBRC **Big Bear Solar** 78.49 56 P P 15 37 17.3 +0.5
baz=307
KOLS **Kolonicke sedl** 78.51 324 *e*P P 15 37 17.0 +0.6
KOLS *e*L L 16 15 21.5
BR131 **Keskin Array S** 78.52 311 *e*P P 15 37 17.4 +0.5
BRTR **Keskin Array B** 78.52 311 P P 15 37 17.3 +0.5
comp=Z,18nm,0.9s,baz=94,slow=4.1,SNR=68
BRTR PP PP 15 40 14.1 +0.1
comp=Z,3.2nm,0.9s,baz=75,slow=6.5,SNR=5.4
BRTR **Keskin Array B** 78.52 311 *i* P P 15 37 17.2 +0.5
BRTR pmax pmax
comp=Z,19nm,0.9s
HEC **Hector Ludlow** 78.53 55 P P 15 37 17.6 +0.8
baz=306,SNR=6.6
HARR **Harsova** 78.56 318⇑*i*P P 15 37 17.7 +1.0
GRER 78.60 319⇑*i*P P 15 37 18.7 +1.8
E25A **Miller Ranch,** 78.61 39 P P 15 37 17.7 +0.6
baz=313,SNR=7.6
STHS **Stebnicka Huta** 78.65 325 *e*P P 15 37 18.6 +1.5
MURC **Murrieta** 78.70 56 P P 15 37 18.2 +0.5
baz=307
UZH **Uzhgorod** 78.71 324⇑*i*P P 15 37 17.4 0.0
UZH *i* 15 37 23.9
UZH *e* 15 37 32.8
UZH *e*S S 15 47 11.6 -1.5
UZH MLR MLR
comp=N,2µm,14.0s
UZH MLR MLR
comp=E,2µm,14.0s
UZH MLR MLR
comp=Z,1µm,14.0s
C27A **Sayler Ranch,** 78.72 38 P P 15 37 18.4 +0.8
baz=314,SNR=9.4
D26A **Manning** 78.73 39 P P 15 37 18.3 +0.7
baz=313,SNR=6.1
OJC **Ojcow** 78.73 326 *e*P P 15 37 18.6 +1.0
OJC **Ojcow** 78.73 326 *e*P P 15 37 18.6 +1.0
OJC **Ojcow** 78.73 326 *e*P P 15 37 18.6 +1.0
comp=Z,120nm,1.1s
B28A **Dugan Ranch, T** 78.76 37 P P 15 37 18.4 +0.7
baz=314,SNR=10
MSU **Marysvale** 78.89 50 *e*P P 15 37 20.5 +1.6
MSU **Marysvale** 78.89 50 *e*P P 15 37 20.5 +1.6
CRVS **Cervenica-Dubn** 78.91 324 *e*P P 15 37 19.3 +0.7
ANTO **Ankara** 78.93 312 *e*P P 15 37 20.0 +1.0
ANTO pmax pmax
comp=Z,35nm,0.8s
ANTO MLR MLR
comp=Z,17nm,20.0s
ANTO **Ankara** 78.93 312 *e*P P 15 37 20.0 +1.0
comp=Z,35nm,0.8s
ANTO LR LR
comp=Z,17nm,20.0s
TRPA **Tarpa** 78.95 323⇓*e*P P 15 37 20.0 +1.3
A29A **Manning Farm,** 78.96 36 P P 15 37 19.5 +0.7
baz=315,SNR=38
BR231 **Keskin MP Arra** 78.96 312 *e*P P 15 37 17.9 -1.2
F25A **Bowman** 78.97 40 P P 15 37 19.3 +0.2
baz=313
TMUT **Trail Mountain** 78.99 49 *e*P P 15 37 21.1 +1.5
comp=Z,26nm,1.2s
GMRC **Granite Mounta** 79.00 55 P P 15 37 20.4 +1.0
baz=308,SNR=9.0
ISR **Istrita** 79.00 319⇑*i*P P 15 37 21.0 +1.8
MLR **Muntele Rosu** 79.06 320⇓*i*P P 15 37 20.2 +0.6
MLR **Muntele Rosu** 79.06 320 *e*P P 15 37 20.2 +0.6
MLR pmax pmax
comp=Z,28nm,1.1s
MLR **Muntele Rosu** 79.06 320 *e*P P 15 37 20.2 +0.6
comp=Z,28nm,1.1s
NIE **Niedzica** 79.08 325 *e*P P 15 37 20.9 +1.4
NIE **Niedzica** 79.08 325 *e*P P 15 37 21.0 +1.4
E26A **Carlson Angus** 79.10 39 P P 15 37 20.0 +0.3
baz=313,SNR=5.8
D27A **Center** 79.13 38 P P 15 37 20.6 +0.8
baz=314
P17A **Butcher Ranch,** 79.16 48 *e*P P 15 37 21.6 +1.3
comp=Z,99nm,1.5s
LCMT **Little Creek M** 79.17 52 *e*P P 15 37 21.8 +1.4
comp=Z,105nm,1.9s
MTPU **Mount Pierson** 79.19 50 *e*P P 15 37 22.4 +1.6
comp=Z,135nm,1.9s
PFO **Pinyon Flats O** 79.19 56 P P 15 37 21.1 +0.6
baz=308,SNR=6.2
PFO **Pinyon Flats O** 79.19 56 *e*P P 15 37 21.6 +1.1
PFO pmax pmax
comp=Z,109nm,1.9s
PFO MLR MLR
comp=Z,234nm,20.0s
PFO **Pinyon Flats O** 79.19 56 *e*P P 15 37 21.6 +1.1
comp=Z,109nm,1.9s
PFO LR LR
comp=Z,234nm,20.0s
109C **Camp Elliot, M** 79.19 57 P P 15 37 20.8 +0.4
baz=308
B29A **Wagenman Farm,** 79.23 36 P P 15 37 20.6 +0.3
baz=315,SNR=25
BELC **Belle Mtn. Jos** 79.25 55 P P 15 37 21.2 +0.3
baz=308
C28A **Hausauer Farms** 79.26 37 P P 15 37 21.3 +0.8
baz=315
YAYL **Yayladag** 79.29 307 *i* P P 15 37 21.5 +0.4
KKUL **Konya-Kulu** 79.30 311 *i* P P 15 37 22.5 +1.5
P18A **Preston Nutter** 79.35 48 *e*P P 15 37 22.9 +1.4
comp=Z,55nm,1.3s
A30A **Hoffart Farm,** 79.38 35 P P 15 37 22.0 +0.9
baz=316,SNR=56
F26A **Lodgepole** 79.42 40 P P 15 37 22.0 +0.5
baz=313
KNB **Kanab** 79.43 51 *e*P P 15 37 23.5 +1.6
KNB pmax pmax
comp=Z,116nm,1.6s
KNB **Kanab** 79.43 51 *e*P P 15 37 23.5 +1.6
comp=Z,116nm,1.6s
PKCU **Pink Cliffs** 79.48 51 *e*P P 15 37 24.9 +2.6
comp=Z,15nm,0.9s
G25A **Newell** 79.49 40 P P 15 37 21.8 -0.1
baz=313
SRU **San Rafael Swe** 79.52 49 *e*P P 15 37 23.5 +1.2
SRU pmax pmax
comp=Z,78nm,1.5s
SRU **San Rafael Swe** 79.52 49 *e*P P 15 37 23.4 +1.2
comp=Z,78nm,1.5s
ULM **Lac du Bonnet** 79.52 33 P P 15 37 21.8 -0.1
comp=Z,32nm,1.0s,baz=313,slow=6.5,SNR=25
ULM **Lac du Bonnet** 79.52 33 *e*P P 15 37 21.8 -0.1
comp=Z,61nm,1.1s
K22A **Casper** 79.53 44 P P 15 37 22.3 0.0
baz=312
D28A **Regan** 79.54 38 P P 15 37 22.7 +0.6
baz=315,SNR=6.0
VOIR 79.56 320⇑*i*P P 15 37 23.5 +1.2
E27A **Carson** 79.58 39 P P 15 37 22.8 +0.5
baz=314
BAR **Barrett** 79.61 57 *e*P P 15 37 23.5 +0.8
comp=Z,31nm,1.2s
MMU **Miners Mountai** 79.63 50 *e*P P 15 37 24.5 +1.4
MONP2 **Monument Peak** 79.65 57 P P 15 37 23.7 +0.5
baz=308,SNR=7.4
LANS **Liptovska Anna** 79.65 325 *e*P P 15 37 24.2 +1.5
KECS **Kecovo** 79.67 324 *e*P P 15 37 23.2 +0.5
KERG **Konya-Eregli** 79.67 309 *i* P P 15 37 23.3 +0.2
NEE2 **Needles Airpor** 79.68 54 P P 15 37 23.7 +0.6
baz=308
B30A **Myrvik Farm, E** 79.72 36 P P 15 37 23.4 +0.4
baz=316,SNR=55
IRM **Iron Mountain** 79.72 55 P P 15 37 24.0 +0.7
baz=308,SNR=8.4
F27A **Lemmon** 79.74 39 P P 15 37 23.6 +0.4
baz=314,SNR=6.3
OKC **Ostrava-Krasne** 79.74 326⇓*i*P P 15 37 24.1 +1.0
OKC AMS AMS 16 16 40.0
comp=Z,500nm,10.1s
OKC **Ostrava-Krasne** 79.74 326⇓*i*P P 15 37 24.1 +1.0
OKC MLR MLR
comp=Z,500nm,10.1s
H25A **Fruitdale** 79.78 41 P P 15 37 23.6 +0.1
baz=313,SNR=5.1
DRGR 79.80 322⇓*i*P P 15 37 24.5 +1.0
KSP **Ksiaz** 79.80 328 *e*P P 15 37 24.4 +1.0
KSP **Ksiaz** 79.80 328 *e*P P 15 37 24.4 +1.0
BC3 **Big Chuckawall** 79.82 55 P P 15 37 24.7 +0.7
baz=308,SNR=8.4
ARR **Arges** 79.82 320⇑*i*P P 15 37 25.1 +1.4
G26A **Maurine** 79.84 40 P P 15 37 24.3 +0.5
baz=314,SNR=6.1
RSSD **Black Hills** 79.89 42 P P 15 37 24.5 +0.2
baz=313
E28A **Huff** 79.91 38 P P 15 37 24.4 +0.3
baz=315
W13A **Hualapai Mount** 79.95 54 *e*P P 15 37 25.7 +0.9
SWSC **Sam W. Stewart** 80.03 56 P P 15 37 25.3 +0.4
baz=308
B31A **Greenbush Farm** 80.05 35 P P 15 37 25.2 +0.4
baz=316,SNR=14
MORC **Moravsky Berou** 80.05 327⇑*i*P P 15 37 25.5 +0.7
MORC **Moravsky Berou** 80.05 327 *e*P P 15 37 25.9 +1.1
MORC pmax pmax
comp=Z,229nm,1.0s
MORC **Moravsky Berou** 80.05 327 *e*P P 15 37 25.9 +1.1
comp=Z,229nm,1.0s
D29A **Pettibone, Tap** 80.11 37 P P 15 37 25.2 0.0
baz=315,SNR=7.7
I25A **Rochford** 80.12 41 P P 15 37 24.8 -0.7
baz=313
G27A **Dupree** 80.12 40 P P 15 37 25.7 +0.4
baz=314
U15A **North Rim** 80.13 52 *e*P P 15 37 27.2 +1.4
comp=Z,22nm,0.9s
DPC **Dobruska-Polom** 80.16 328⇓*i*P P 15 37 26.7 +1.3
DPC *e*pP PcP 15 37 33.1 +0.5
DPC AMS AMS 16 17 20.0
comp=Z,900nm,13.6s
DPC **Dobruska-Polom** 80.16 328⇓*i*P P 15 37 26.7 +1.3
DPC *e* 15 37 33.1
DPC MLR MLR
comp=Z,900nm,13.6s
KRLC **Kraliky** 80.16 327⇓*i*P P 15 37 26.5 +1.1
KRLC **Kraliky** 80.16 327⇓*i*P P 15 37 26.5 +1.1
UPC **Upice** 80.17 328⇓*e*pP pP 15 37 32.6 -1.0
UPC AMS AMS 16 17 10.0
comp=Z,1µm,12.9s
UPC **Upice** 80.17 328 *e*P P 15 37 32.6 +7.2
UPC MLR MLR
comp=Z,1µm,12.9s
C30A **Mose, Pekin** 80.18 36 P P 15 37 25.7 +0.2
baz=316,SNR=13
KDHN **Kadinhani** 80.20 311 *i* P P 15 37 27.0 +1.1
O20A **White River Ci** 80.20 47 P P 15 37 26.5 +0.5
baz=311,SNR=6.5
O20A **White River Ci** 80.20 47 *e*P P 15 37 27.1 +1.1
comp=Z,27nm,1.0s
LOT **Lotru** 80.21 321⇓*i*P P 15 37 26.8 +1.0
H26A **Fairpoint** 80.22 41 P P 15 37 26.1 +0.2
baz=314
A32A **Rocking H Ranc** 80.22 34 P P 15 37 25.6 -0.1
baz=317,SNR=20
KIZK **Mersin** 80.25 309 *i* P P 15 37 26.8 +0.7
PDMCI **Parker Dam,Lak** 80.28 54 P P 15 37 26.9 +0.6
baz=309,SNR=12
PSZ **Piszkesteto** 80.35 324⇓*i*P P 15 37 27.6 +1.2
PSZ **Piszkesteto** 80.35 324⇓*e*P P 15 37 27.7 +1.2
PSZ **Piszkesteto** 80.35 324 *e*P P 15 37 27.7 +1.2
PSZ pmax pmax
comp=Z,70nm,1.0s
PSZ MLR MLR
comp=Z,168nm,21.0s
PSZ **Piszkesteto** 80.35 324 *e*P P 15 37 27.7 +1.2
comp=Z,70nm,1.0s
PSZ LR LR
comp=Z,168nm,21.0s
F28A **McLaughlin** 80.37 39 P P 15 37 27.2 +0.6
baz=315,SNR=10
Y12C **Blythe** 80.37 55 P P 15 37 27.7 +0.9
baz=308,SNR=5.7
Y12C **Blythe** 80.37 55 *e*P P 15 37 28.2 +1.4
comp=Z,31nm,1.3s
VYHS **Vyhne** 80.42 325 *e*P P 15 37 27.7 +0.9
VYHS *e*L L 16 16 51.5
E29A **Napoleon** 80.43 38 P P 15 37 26.9 0.0
baz=315
C31A **Landman Farms,** 80.47 36 P P 15 37 26.9 -0.1
baz=316
D30A **Buchanan** 80.47 37 P P 15 37 27.3 +0.2
baz=316,SNR=13
KMER **Konya-Meram** 80.53 310 *i* P P 15 37 28.1 +0.4
H27A **Howes** 80.57 40 P P 15 37 27.9 +0.3
baz=314,SNR=6.3
I26A **New Underwood** 80.57 41 P P 15 37 27.9 +0.1
baz=314
B32A **Ashes, Strandq** 80.58 35 P P 15 37 27.4 -0.2
baz=317,SNR=12
GLA **Glamis** 80.61 56 P P 15 37 28.8 +0.7
baz=308,SNR=7.9
GLA **Glamis** 80.61 56 *e*P P 15 37 29.3 +1.2
GLA pmax pmax
comp=Z,27nm,1.0s
GLA **Glamis** 80.61 56 *e*P P 15 37 29.3 +1.2
comp=Z,27nm,1.0s
SIRR **Siria** 80.68 322⇑*i*P P 15 37 29.0 +0.8
A33A **Warroad** 80.70 34 P P 15 37 28.1 -0.1
baz=318,SNR=30
PV09 **Paradox Valley** 80.74 48 *e*P P 15 37 30.4 +1.3
BRG **Berggiesshubel** 80.75 329 *i* P P 15 37 29.3 +0.8
comp=Z,40nm,1.0s
comp=N,578nm,13.0s
comp=E,377nm,14.3s
comp=Z,923nm,14.4s
BRG **Berggiesshubel** 80.75 329 *i* P P 15 37 29.3 +0.8
BRG pmax pmax
comp=Z,40nm,1.0s
BRG MLR MLR
comp=N,578nm,13.0s
BRG MLR MLR
comp=E,377nm,14.3s
BRG MLR MLR
comp=Z,923nm,14.4s
PVCC **Panska Ves** 80.76 329⇓*i*P P 15 37 29.9 +1.4
PVCC AMS AMS 16 16 30.0
comp=Z,700nm,15.0s
PVCC **Panska Ves** 80.76 329⇓*i*P P 15 37 29.9 +1.4
PVCC MLR MLR
comp=Z,700nm,15.0s
CLL **Collm** 80.80 330⇓*i*P P 15 37 29.2 +0.5
comp=Z,83nm,1.1s
CLL *e*Pmax 15 37 30.0
CLL *e*S S 15 47 30.0 -5.1
CLL *e*PS PnS 15 48 30.0 +7.4
CLL *e*SS SS 15 52 48.0 +0.5
CLL *e*SSS SSS 15 56 24.0
CLL *e* 15 57 18.0
CLL Lmax 16 18 00.0
CLL **Collm** 80.80 330 *e*P P 15 37 29.2 +0.5
CLL pmax pmax
comp=Z,82nm,1.0s
CLL **Collm** 80.80 330 *e*P P 15 37 29.2 +0.5
comp=Z,82nm,1.0s
VRAC **Vranov** 80.82 327⇓*i*P P 15 37 30.2 +1.3
E30A **Jud** 80.83 37 P P 15 37 29.3 +0.3
baz=316,SNR=6.2
G28A **Parade** 80.85 39 P P 15 37 29.6 +0.4
baz=315
F29A **Eureka** 80.86 38 P P 15 37 29.7 +0.5
baz=315,SNR=6.3
PV10 **Paradox Valley** 80.88 48 *e*P P 15 37 31.4 +1.6
ULDT **Uludag** 80.89 314 *i* P P 15 37 31.4 +1.7
PV04 **Paradox Valley** 80.95 48 *e*P P 15 37 30.0 0.0
J26A **Sides Ranch, S** 80.95 42 P P 15 37 29.7 -0.2
baz=314
AGMN **Agassiz Nation** 80.96 35 P P 15 37 29.2 -0.5
baz=318,SNR=20
AGMN **Agassiz Nation** 80.96 35 *e*P P 15 37 29.4 -0.2
comp=Z,54nm,1.1s
AGMN LR LR
comp=Z,202nm,20.0s
I27A **Quinn** 80.97 41 P P 15 37 30.7 +0.9
baz=314
C32A **Crookston** 81.00 35 P P 15 37 29.9 0.0
baz=317
D31A **Mcclaflin, Tow** 81.01 36 P P 15 37 30.1 +0.2
baz=316,SNR=8.8
N23A **Red Feather La** 81.02 45 P P 15 37 31.7 +1.3
baz=312,SNR=5.2
N23A **Red Feather La** 81.02 45 *e*P P 15 37 32.2 +1.7
comp=Z,74nm,1.2s
PV05 **Paradox Valley** 81.03 49 *e*P P 15 37 31.9 +1.3
SMOL **Smolenice** 81.04 326 *e*P P 15 37 31.7 +1.6
BUD **Budapest** 81.07 324⇓*e*P P 15 37 31.6 +1.4
H28A **Mission Ridge** 81.08 40 P P 15 37 30.9 +0.5
baz=315,SNR=11
B33A **Robert and Kas** 81.10 34 P P 15 37 30.3 -0.1
baz=318,SNR=7.1
GOPC **GO Pecny, Ondr** 81.14 328⇓*i*P P 15 37 31.4 +0.8
GOPC *e*pP PcP 15 37 37.8 +0.9
GOPC AMS AMS 16 18 20.0
comp=Z,1µm,12.5s
GOPC **GO Pecny, Ondr** 81.14 328⇓*i*P P 15 37 31.4 +0.8
GOPC *e* 15 37 37.8
GOPC MLR MLR
comp=Z,1µm,12.5s
BZS **Buzias** 81.17 322⇑*i*P P 15 37 31.0 +0.2
PRU **Pruhonice** 81.18 328⇓*i*P P 15 37 31.9 +1.1
PRU *e*pP sP 15 37 42.0 0.0
PRU AMS AMS 16 17 50.0
comp=Z,1µm,13.6s
PRU **Pruhonice** 81.18 328⇓*i*P P 15 37 31.9 +1.1
PRU *e* 15 37 42.0
PRU MLR MLR
comp=Z,1µm,13.6s
F30A **Leola** 81.25 38 P P 15 37 31.2 -0.1
baz=316
G29A **Hoven** 81.27 39 P P 15 37 31.3 -0.1
baz=315
D32A **Dogwood Acres,** 81.28 36 P P 15 37 31.0 -0.3
baz=317,SNR=6.7
WUAZ **Wupatki** 81.28 52 P P 15 37 32.8 +1.0
baz=310,SNR=15
WUAZ **Wupatki** 81.28 52 *e*P P 15 37 33.1 +1.3
comp=Z,30nm,1.0s
WUAZ LR LR
comp=Z,177nm,20.0s
E31A **Nome** 81.28 37 P P 15 37 31.7 +0.3
baz=316,SNR=9.5
TREC **Trest** 81.31 327 ⇓AMS AMS 16 18 00.0
comp=Z,800nm,14.4s
PV01 **Paradox Valley** 81.31 48 *e*P P 15 37 33.1 +1.1
PKS7 **Kunszentmiklos** 81.32 324⇓*e*P P 15 37 33.2 +1.6
B34A **Aery, Baudette** 81.36 34 P P 15 37 31.3 -0.5
baz=318,SNR=18
GDZ **Gediz** 81.39 313 *i* P P 15 37 33.4 +1.1
C33A **Trail** 81.40 35 P P 15 37 31.9 -0.1
baz=318,SNR=7.3
PKSG 81.43 325⇓*e*P P 15 37 32.8 +0.7
PKS6 **Bocsa** 81.46 324⇓*e*P P 15 37 33.0 +0.7
I28A **Midland** 81.47 40 P P 15 37 33.0 +0.5
baz=315,SNR=7.8
113A **Mohawk Valley,** 81.48 55 *e*P P 15 37 33.6 +0.9
CSKK **Cs˙‡kako** 81.51 325⇓*e*P P 15 37 33.8 +1.2
H29A **Onida** 81.52 39 P P 15 37 32.9 +0.1
baz=315,SNR=7.1

J27A **Elkhorn Farm,** 81.56 41 P P 15 37 33.6 +0.6
baz=314
SMCO **Snowmass** 81.57 47 *e*P P 15 37 34.6 +1.1
comp=Z,42nm,1.4s
F31A **Hecla** 81.61 37 P P 15 37 33.2 0.0
baz=316,SNR=6.2
E32A **Braaten, Kindr** 81.65 36 P P 15 37 33.0 -0.3
baz=317
MPEP **Malo Peshtene** 81.68 319 *i* P P 15 37 34.9 +1.3
PKST **T"s** 81.69 325⇓ *e*P P 15 37 34.1 +0.5
G30A **Faulkton** 81.70 38 P P 15 37 33.8 +0.1
baz=316,SNR=16
MDVR **Moldovita** 81.71 321⇓ *i*P P 15 37 34.1 +0.3
CSS **Mathiatis** 81.73 308 P P 15 37 34.0 0.0
CSS **Mathiatis** 81.73 308 *e*P P 15 37 34.4 +0.4
comp=Z,9.3nm,0.7s
CSS LR LR
comp=Z,48nm,21.0s
D33A **AnnSam, Waubun** 81.82 35 P P 15 37 34.0 -0.3
baz=318,SNR=7.3
KESN **Edirne-Kesan** 81.83 316 *i* P P 15 37 35.8 +0.9
J28A **Allard Ranch,** 81.84 41 P P 15 37 34.7 +0.2
baz=315
NKC **Novy Kostel** 81.86 330⇓ *i*P P 15 37 34.9 +0.5
NKC AMS AMS 16 17 20.0
comp=Z,1μm,14.0s
NKC **Novy Kostel** 81.86 330⇓ *i*P P 15 37 34.9 +0.5
NKC MLR MLR
comp=Z,1μm,14.0s
KHAL **Karahalli** 81.86 312 *i* P P 15 37 35.0 +0.3
B35A **Bob, Littlefor** 81.86 33 P P 15 37 34.3 -0.1
baz=319,SNR=24
C34A **RKJ Ranch, Bem** 81.87 34 P P 15 37 34.2 -0.3
baz=318
I29A **Vivian Onida** 81.90 40 P P 15 37 35.3 +0.5
baz=315
ISCO **Idaho Springs** 81.94 46 P P 15 37 36.4 +1.0
baz=312
ISCO **Idaho Springs** 81.94 46 PFAKE 15 37 50.0 +15
ISCO LR LR
comp=Z,130nm,19.0s
X16A **Lo Mia Camp, P** 81.94 53 *e*P P 15 37 36.8 +1.4
comp=Z,17nm,0.9s
MVCO **Mesa Verde** 81.96 49 P P 15 37 36.6 +1.1
baz=311,SNR=12
MVCO **Mesa Verde** 81.96 49 *e*P P 15 37 36.6 +1.1
comp=Z,98nm,1.7s
MVCO LR LR
comp=Z,187nm,20.0s
KDZ **Kurdzhali** 81.96 317 *i* P P 15 37 37.0 +1.9
SOP **Sopron** 82.05 326⇓ *e*P P 15 37 36.8 +1.4
PKS9 **Tamasi** 82.07 324⇓ *e*P P 15 37 36.0 +0.4
G31A **Conde** 82.09 38 P P 15 37 36.0 +0.3
baz=316
URZ **Urewera** 82.14 152 P P 15 37 34.7 -1.0
comp=Z,13nm,0.9s,baz=45,slow=6.3,SNR=4.3
F32A **Veblen** 82.15 37 P P 15 37 35.6 -0.4
baz=317
D34A **Park Rapids** 82.16 35 P P 15 37 35.8 -0.3
baz=318,SNR=12
CONA **Conrad Observa** 82.17 326 *i* P P 15 37 37.6 +1.4
comp=Z,36nm,1.0s,SNR=34
PKSM **Morągy** 82.18 324⇑ *i*P P 15 37 36.1 0.0
PKSM **Morągy** 82.18 324⇓ *e*P P 15 37 36.7 +0.6
E33A **Westby DABS, E** 82.21 36 P P 15 37 36.6 +0.3
baz=318,SNR=11
KHC **Kasperske Hory** 82.24 328⇓ *i*P P 15 37 37.4 +0.9
KHC *e*pP PcP 15 37 43.3 +1.5
KHC AMS AMS 16 18 30.0
comp=Z,1μm,13.4s
KHC **Kasperske Hory** 82.24 328⇓ *i*P P 15 37 37.4 +0.9
KHC *e* 15 37 43.3
KHC MLR MLR
comp=Z,1μm,13.4s
KHC **Kasperske Hory** 82.24 328 *e*P P 15 37 37.1 +0.7
comp=Z,36nm,1.3s
KORT **Korkueli** 82.25 311 *i* P P 15 37 37.1 +0.3
C35A **Jirik Farms, M** 82.25 34 P P 15 37 36.0 -0.5
baz=319,SNR=23
SUSD **Miller** 82.28 39 P P 15 37 36.8 0.0
baz=316
RZN **Rozhen** 82.32 317 *i* P P 15 37 38.9 +1.7
J29A **Okreek** 82.33 40 P P 15 37 37.2 +0.1
baz=315
GEC2 **GERESS Array S** 82.41 328 *e*P P 15 37 37.9 +0.5
GEC2 pmax pmax
comp=Z,54nm,1.4s
GEC2 **GERESS Array S** 82.41 328 *e*P P 15 37 37.9 +0.5
comp=Z,54nm,1.4s
GERES **GERESS Array B** 82.41 328 P P 15 37 37.9 +0.5
comp=Z,13nm,0.7s,baz=38,slow=5.8,SNR=96
GERES PP PP 15 40 47.3 +1.5
comp=Z,1.2nm,0.7s,baz=32,slow=7.8,SNR=4.0
GERES PKKPbc PKKPbc 15 56 04.6 +1.3
comp=Z,0.3nm,0.7s,baz=316,slow=3.7,SNR=4.6
GERES LR LR 16 18 04.9
comp=Z,316nm,18.1s,baz=26,slow=38
GERES **GERESS Array B** 82.41 328 P P 15 37 37.9 +0.5
GERES 15 40 47.3
GERES pmax pmax
comp=Z,14nm,0.7s
GERES pmax pmax
comp=Z,1.0nm,0.7s
GERES MLR MLR
comp=Z,316nm,18.1s
G32A **Webster** 82.42 37 P P 15 37 37.8 +0.4
baz=317
GEA0 **GERESS Array S** 82.42 328 *e*P P 15 37 37.1 -0.3
I30A **Oacoma** 82.43 39 P P 15 37 37.6 +0.1
baz=316,SNR=6.2
H31A **Wolsey** 82.50 38 P P 15 37 37.6 -0.2
baz=316
W18A **Petrified Fore** 82.56 51 P P 15 37 39.4 +0.8
baz=311
F33A **5 Mile Ranch,** 82.57 36 P P 15 37 38.3 +0.1
baz=318,SNR=19
E34A **Wadena** 82.59 35 P P 15 37 38.4 +0.1
baz=318
S22A **4UR Ranch, Cre** 82.61 48 P P 15 37 40.2 +1.2
baz=312,SNR=24
S22A **4UR Ranch, Cre** 82.61 48 *e*P P 15 37 40.5 +1.5
comp=Z,29nm,1.1s
214A **Organ Pipe Nat** 82.62 55 P P 15 37 39.6 +0.8
baz=310,SNR=8.4
214A **Organ Pipe Nat** 82.62 55 *e*P P 15 37 36.6 -2.1
comp=Z,221nm,1.6s
D35A **Remer** 82.68 34 P P 15 37 38.2 -0.5
baz=319,SNR=7.1
C36A **Pine Crest Far** 82.71 33 P P 15 37 38.5 -0.4
baz=320,SNR=20
Q24A **Divide** 82.77 46 P P 15 37 40.3 +0.6
baz=313,SNR=6.1
Q24A **Divide** 82.77 46 *e*P P 15 37 41.0 +1.2
comp=Z,13nm,0.9s
GRFO **Grafenberg** 82.78 330 *e*P P 15 37 40.2 +1.0
GRFO pmax pmax
comp=Z,88nm,1.1s
GRFO **Grafenberg** 82.78 330 *e*P P 15 37 40.2 +1.0
comp=Z,88nm,1.1s
I31A **Royce, Wessing** 82.79 39 P P 15 37 39.8 +0.4
baz=316
J30A **Dallas** 82.81 40 P P 15 37 39.9 +0.4
baz=316,SNR=5.9
ARSA **Arzberg** 82.83 326 *i* P P 15 37 40.5 +0.9
comp=Z,21nm,1.0s,SNR=17
BEHE **Becsehely** 82.85 325⇓ *e*P P 15 37 40.5 +0.8
ESK **Eskdalemuir** 82.90 340 *i* P P 15 37 41.2 +1.5
ESK **Eskdalemuir** 82.90 340 *e*P P 15 37 40.8 +1.1
comp=Z,31nm,1.1s
KAVA **Kavala** 82.91 317 P P 15 37 40.4 +0.4
KAVA **Kavala** 82.91 317 P P 15 37 40.4 +0.4
E35A **Pequot Lakes** 82.91 35 P P 15 37 39.2 -0.8
baz=319,SNR=5.1
MMB **Musomiste** 82.92 318 *i* P P 15 37 41.5 +1.4
MOA **Molln** 82.93 327 *i* P P 15 37 41.0 +0.9
comp=Z,40nm,1.3s,SNR=16
G33A **Ortonville** 82.97 37 P P 15 37 40.7 +0.4
baz=317,SNR=16
H32A **Carlson Farm,** 82.99 38 P P 15 37 40.6 +0.1
baz=317
D36A **Goodland** 83.01 34 P P 15 37 40.1 -0.4
baz=319,SNR=9.7
C37A **Embarrass** 83.02 33 P P 15 37 40.3 -0.2
baz=320,SNR=27
KKB **Krupnik** 83.07 318 *i* P P 15 37 42.5 +1.6
F34A **Alexandria** 83.09 36 P P 15 37 40.5 -0.4
baz=318

EYMN **Ely** 83.15 33 P P 15 37 41.1 0.0
baz=320,SNR=25
EYMN **Ely** 83.15 33 *e*P P 15 37 41.4 +0.2
comp=Z,70nm,1.0s
OGNE **Ogallala** 83.15 43 P P 15 37 42.1 +0.7
baz=314
OGNE **Ogallala** 83.15 43 PFAKE 15 37 50.0 +8.6
OGNE LR LR
comp=Z,415nm,20.0s
H33A **Prehn Over Nor** 83.20 37 P P 15 37 41.9 +0.3
baz=317,SNR=28
AKAS **Kas** 83.20 311 *i* P P 15 37 41.4 -0.4
K30A **Basset** 83.21 40 P P 15 37 42.1 +0.5
baz=316
J31A **Geddes** 83.22 39 P P 15 37 41.6 0.0
baz=316
AYDN **Tasoluk** 83.28 313 *i* P P 15 37 43.4 +1.3
G34A **Benson** 83.32 36 P P 15 37 42.2 +0.1
baz=318,SNR=8.6
SRS **Serrai** 83.32 318 P P 15 37 42.2 0.0
SRS **Serrai** 83.32 318 P P 15 37 42.2 0.0
SRS **Serrai** 83.32 318 P P 15 37 42.2 0.0
I32A **Karley and Nic** 83.33 38 P P 15 37 42.4 +0.2
baz=317
D37A **Cotton** 83.35 34 P P 15 37 41.7 -0.5
baz=320,SNR=8.1
F35A **Swanville** 83.36 35 P P 15 37 42.2 -0.1
baz=319
SDCO **Great Sand Dun** 83.39 47 P P 15 37 43.9 +1.0
baz=313,SNR=28
SDCO **Great Sand Dun** 83.39 47 *e*P P 15 37 44.0 +1.0
comp=Z,28nm,1.3s
SDCO LR LR
comp=Z,146nm,19.0s
YER **Yerkesik** 83.39 312 P P 15 37 41.5 -1.2
YER **Yerkesik** 83.39 312 P P 15 37 41.5 -1.2
YER **Yerkesik** 83.39 312 P P 15 37 41.5 -1.2
C38A **Sawbill Land.** 83.42 33 P P 15 37 42.4 -0.2
baz=321,SNR=32
E36A **McGregor** 83.47 34 P P 15 37 42.7 -0.1
baz=319,SNR=17
PERS **Pernice** 83.48 326 *i* P P 15 37 43.4 +0.5
SOKA **Soboth** 83.49 326 *i* P P 15 37 43.7 +0.6
comp=Z,71nm,1.0s,SNR=59
J32A **Parkston** 83.61 39 P P 15 37 43.5 -0.1
baz=317
I33A **Coleman** 83.64 38 P P 15 37 43.8 0.0
baz=317
KNT **Kendrikon** 83.66 318 P P 15 37 44.0 +0.1
KNT **Kendrikon** 83.66 318 P P 15 37 44.0 +0.1
KNT **Kendrikon** 83.66 318 P P 15 37 44.0 +0.1
H34A **Spellman Lake,** 83.68 37 P P 15 37 44.1 +0.1
baz=318
K31A **O'Neill** 83.69 40 P P 15 37 44.1 0.0
baz=316,SNR=6.4
TUC **Tucson** 83.71 54 P P 15 37 45.4 +1.0
baz=310
TUC **Tucson** 83.71 54 *e*P P 15 37 45.3 +0.9
TUC pmax pmax
comp=Z,78nm,1.8s
TUC MLR MLR
comp=Z,152nm,19.0s
TUC **Tucson** 83.71 54 *e*P P 15 37 45.3 +0.9
comp=Z,78nm,1.8s
TUC LR LR
comp=Z,152nm,19.0s
VAY **Valandovo** 83.72 318 P P 15 37 44.7 +0.5
VAY **Valandovo** 83.72 318 *i* P P 15 37 45.1 +0.9
VAY **Valandovo** 83.72 318 P P 15 37 44.7 +0.5
VAY **Valandovo** 83.72 318 P P 15 37 44.7 +0.5
GOLS **Golise** 83.73 325 *i* P P 15 37 44.5 +0.3
E37A **Wrenshall** 83.81 34 P P 15 37 43.8 -0.8
baz=320
C39A **Grand Marais** 83.83 32 P P 15 37 44.2 -0.4
baz=321,SNR=9.8
OBKA **Obir** 83.83 326 *i* P P 15 37 43.9 -0.9
comp=Z,14nm,1.0s,SNR=5.7
F36A **Milaca** 83.84 35 P P 15 37 44.1 -0.6
baz=319,SNR=6.5
SKO **Skopje** 83.86 319 P P 15 37 46.0 +1.1
SKO **Skopje** 83.86 319 *i* P P 15 37 46.3 +1.4
SKO **Skopje** 83.86 319 P P 15 37 46.0 +1.1
SKO **Skopje** 83.86 319 P P 15 37 46.0 +1.1
G35A **Watkins** 83.88 36 P P 15 37 45.5 +0.5
baz=319,SNR=5.8
PLE **Pljevlja** 83.92 321⇓ *i*P P 15 37 45.7 +0.3
PLG **Polygyros** 83.92 317 P P 15 37 45.5 +0.2
PLG **Polygyros** 83.92 317 P P 15 37 45.5 +0.2
PLG **Polygyros** 83.92 317 P P 15 37 45.5 +0.2
KBA **Koelnbreinsper** 83.92 327 *i* P P 15 37 45.8 +0.5
comp=Z,26nm,0.9s,SNR=18
BDRM **Kayabasi** 83.94 313 *i* P P 15 37 46.0 +0.6
BLY **Banja Luka** 83.95 323⇑ *i*P P 15 37 45.5 +0.2
HORT **Hortiatis** 83.95 317 P P 15 37 44.1 -1.4
HORT **Hortiatis** 83.95 317 P P 15 37 44.1 -1.4
ECSD **EROS Data Cent** 83.96 38 P P 15 37 45.4 0.0
baz=317,SNR=27
ECSD **EROS Data Cent** 83.96 38 *e*P P 15 37 45.5 +0.1
comp=Z,50nm,1.1s
ECSD LR LR
comp=Z,216nm,19.0s
L31A **Butterfield Fa** 83.97 40 P P 15 37 45.8 +0.2
baz=316,SNR=11
BEBN **Eben Emael** 83.99 333 P P 15 37 45.8 +0.4
IVA **Berane** 84.00 321⇓ *i*P P 15 37 45.0 -0.7
MEM **Membach** 84.02 333 P P 15 37 45.7 +0.1
comp=Z,19nm,1.3s
K32A **Verdigre** 84.06 39 P P 15 37 45.9 -0.1
baz=317
GRG **Griva** 84.07 318 P P 15 37 46.1 0.0
GRG **Griva** 84.07 318 P P 15 37 46.1 0.0
GRG **Griva** 84.07 318 P P 15 37 46.1 0.0
J33A **Davis** 84.09 38 P P 15 37 46.2 +0.1
baz=317,SNR=6.6
I34A **Hadley** 84.10 37 P P 15 37 46.1 0.0
baz=318
H35A **Sunnyside Ranc** 84.11 36 P P 15 37 46.6 +0.5
baz=318,SNR=32
PAIG **Paliouri** 84.11 317 P P 15 37 45.6 -0.6
PAIG **Paliouri** 84.11 317 P P 15 37 45.6 -0.6
PAIG **Paliouri** 84.11 317 P P 15 37 45.6 -0.6
MYKA **Terra Mystica** 84.14 327 *i* P P 15 37 46.4 +0.1
comp=Z,22nm,0.9s,SNR=12
KSCO **Kaye Shedlock'** 84.17 45 P P 15 37 46.9 +0.1
baz=314
PVY **Plav** 84.17 321 *e*P P 15 37 46.1 -0.6
G36A **St. Michael** 84.21 35 P P 15 37 46.9 +0.2
baz=319
VISS **Visnje** 84.24 325 *i* P P 15 37 46.7 -0.1
UPM **Unac-Piva** 84.25 322⇓ *i*P P 15 37 46.7 -0.5
BOJS **Bojanci** 84.28 325 *i* P P 15 37 47.2 +0.2
STU **Stuttgart** 84.31 330 *e*P P 15 37 47.3 +0.2
STU pmax pmax
comp=Z,82nm,1.1s
STU **Stuttgart** 84.31 330 *e*P P 15 37 47.3 +0.2
comp=Z,82nm,1.1s
BCLA **Clavier** 84.43 333 P P 15 37 47.7 +0.1
comp=Z,22nm,1.6s
T25A **Trinidad** 84.43 47 P P 15 37 49.2 +0.9
baz=313,SNR=17
T25A **Trinidad** 84.43 47 *e*P P 15 37 49.4 +1.1
comp=Z,53nm,1.0s
WATA **Walderalm** 84.48 328 *i* P P 15 37 48.7 +0.5
comp=Z,7.0nm,0.7s
NKY **Niksic** 84.50 321⇓ *i*P P 15 37 48.1 -0.2
M31A **Lambtecht Ranc** 84.50 41 P P 15 37 48.1 -0.2
baz=316
WTTA **Wattenberg** 84.51 328 *i* PcP P 15 37 48.9 +0.5
comp=Z,18nm,1.4s
PMOR **Pomariorio Ree** 84.52 113 *e*T T 17 10 20.3
comp=Z,36nm,0.2s
JAVS **Javornik** 84.52 326 *i* P P 15 37 47.8 -0.6
L32A **Elgin** 84.52 40 P P 15 37 48.4 +0.1
baz=317
ABTA **Abfaltersbach** 84.54 327 *i* P P 15 37 47.8 -0.6
comp=Z,26nm,1.2s,SNR=10.0
NKME **Niksic** 84.55 321⇓ *i*P P 15 37 48.5 0.0
K33A **Hardington** 84.59 39 P P 15 37 48.8 +0.1
baz=317
BIA **Bitola** 84.60 319 *e*P P 15 37 48.6 -0.2
J34A **George** 84.61 38 P P 15 37 48.7 0.0
baz=318
H36A **Jessenland, He** 84.62 36 P P 15 37 49.4 +0.6
baz=319,SNR=8.8
CWF **Charnwood Fore** 84.63 338 *e*P P 15 37 49.2 +0.7
comp=Z,128nm,1.6s

LIT **Litokhoron** 84.63 317 P P 15 37 48.8 -0.1
LIT **Litokhoron** 84.63 317 P P 15 37 48.8 -0.1
LIT **Litokhoron** 84.63 317 P P 15 37 48.8 -0.1
LAZ **Ladron** 84.64 50 *e*P P 15 37 50.7 +1.4
PDG **Podgorica** 84.64 321⇓ *i*P P 15 37 49.5 +0.6
PDG **Podgorica** 84.64 321 P P 15 37 49.4 +0.6
TTG **Podgorica** 84.64 321⇓ *i*P P 15 37 49.1 +0.2
TTG **Podgorica** 84.64 321 P P 15 37 49.4 +0.6
TTG **Podgorica** 84.64 321 P P 15 37 49.4 +0.6
SPMN **Marine on St.** 84.65 35 P P 15 37 48.9 0.0
baz=320,SNR=7.5
SPMN **Marine on St.** 84.65 35 *e*P P 15 37 49.1 +0.2
comp=Z,34nm,1.0s
BRY **Bratogost** 84.66 322⇓ *i*P P 15 37 48.5 -0.6
I35A **Creekview Farm** 84.66 37 P P 15 37 48.8 -0.1
baz=318
MOTA **Moosalm** 84.67 328 *i* PcP P 15 37 50.5 +1.4
comp=Z,20nm,0.9s,SNR=11
LANF **Langenberg** 84.69 331 *e*P P 15 37 49.7 +0.7
ANMO **Albuquerque** 84.70 50 P P 15 37 50.3 +0.7
baz=312
ANMO **Albuquerque** 84.70 50 *d i*P P 15 37 50.7 +1.1
ANMO pmax pmax
comp=Z,39nm,1.2s
ANMO **Albuquerque** 84.70 50 *e*P P 15 37 50.7 +1.1
comp=Z,40nm,1.2s
ANMO LR LR
comp=Z,156nm,20.0s
RETA **Reutte** 84.70 329 *i* PcP P 15 37 49.9 +0.7
comp=Z,46nm,0.9s,SNR=23
SNF **Seneffe** 84.72 334 P P 15 37 49.8 +0.7
CEME **Cevo** 84.73 321⇓ *i*P P 15 37 49.5 +0.1
FNA **Florina** 84.74 319 P P 15 37 49.4 -0.1
FNA **Florina** 84.74 319 P P 15 37 49.4 -0.1
FNA **Florina** 84.74 319 P P 15 37 49.4 -0.1
WLF **Walferdange** 84.75 332 P P 15 37 49.9 +0.7
comp=Z,41nm,2.1s
WLF **Walferdange** 84.75 332 *e*P P 15 37 50.0 +0.7
WLF pmax pmax
comp=Z,164nm,2.0s
WLF MLR MLR
comp=Z,316nm,19.0s
WLF **Walferdange** 84.75 332 *e*P P 15 37 50.0 +0.7
comp=Z,164nm,2.0s
WLF LR LR
comp=Z,316nm,19.0s
XOR **Xorichti** 84.77 317 P P 15 37 48.1 -1.5
XOR **Xorichti** 84.77 317 P P 15 37 48.1 -1.5
L33A **Hoskins** 84.78 39 P P 15 37 49.5 -0.1
baz=317
OHR **Ohrid** 84.81 319 *i* P P 15 37 50.1 +0.2
DRME **Dracevica, Mon** 84.86 321⇓ *i*P P 15 37 50.0 0.0
FYTO **Fytoko, Volos** 84.88 317 P P 15 37 49.1 -1.0
FYTO **Fytoko, Volos** 84.88 317 P P 15 37 49.1 -1.0
BGNE **Belgrade** 84.88 40 P P 15 37 49.8 -0.4
baz=317,SNR=7.1
BGNE **Belgrade** 84.88 40 *e*P P 15 37 50.6 +0.4
comp=Z,101nm,1.1s
N31A **Bailey Ranch,** 84.88 41 P P 15 37 50.2 0.0
baz=316
J35A **Milford** 84.92 38 P P 15 37 49.9 -0.4
baz=318
BUM **Brajici-Budva** 84.92 321⇓ *i*P P 15 37 50.5 +0.1
DOU **Dourbes** 84.96 334 P P 15 37 50.4 +0.1
comp=Z,13nm,1.5s
OXZ **Oxford** 84.96 158 *e*P P 15 37 53.1 +3.0
comp=Z,52nm,1.1s
PPT **Papeete** 84.97 116 LR LR 16 11 25.1
comp=Z,116nm,19.1s,baz=328,slow=33
PPT2 **Papeete2** 84.99 116 *e*S S 15 48 16.1 -2.5
comp=Z,93nm,24.8s
PPT2 **Papeete2** 84.99 116 *e*LR LR 16 04 03.8
comp=Z,672nm,33.5s
PPT2 **Papeete2** 84.99 116 *e*T T 17 10 58.8
comp=Z,8.1nm,0.3s
K34A **Le Mars** 84.99 38 P P 15 37 50.4 -0.3
baz=318,SNR=5.4
ULC **Ulcinj** 84.99 320⇓ *i*P P 15 37 50.8 +0.1
Y22D **IRIS PASSCAL I** 85.00 51 P P 15 37 51.8 +0.8
baz=312
I36A **Fitzsimmons Fa** 85.00 36 P P 15 37 51.2 +0.5
baz=319
BFO **Black Forest** 85.01 331 *i* P P 15 37 51.0 +0.3
BFO **Black Forest** 85.01 331 *e*P P 15 37 50.9 +0.3
comp=Z,80nm,1.1s
BFO LR LR
comp=Z,258nm,19.0s
HCY **Herceg Novi** 85.02 321⇓ *i*P P 15 37 50.7 -0.1
LPM **Los Pinos Moun** 85.02 50 *e*P P 15 37 52.2 +1.0
FETA **Feichten** 85.08 328 *i* PcP P 15 37 51.7 +0.4
comp=Z,22nm,0.9s,SNR=15
H37A **Dierke Farm, C** 85.09 35 P P 15 37 51.7 +0.6
baz=320
SMIA **Simia** 85.10 316 P P 15 37 50.9 -0.4
TIR **Tirane** 85.12 320 *e*P P 15 37 51.9 +0.6
TIR pmax pmax
comp=Z,50nm,0.7s
TIR MLR MLR
comp=Z,668nm,21.0s
TIR **Tirane** 85.12 320 *e*P P 15 37 51.9 +0.6
comp=Z,50nm,0.7s
TIR LR LR
comp=Z,668nm,21.0s
BNM **Barren Site** 85.13 50 *e*P P 15 37 52.8 +1.0
TIAR **Tiarei** 85.13 116 *e*T T 17 11 08.9
comp=Z,6.8nm,0.3s
KARP **Karpathos** 85.13 312 *e*P P 15 37 52.7 +1.2
comp=Z,27nm,0.8s
O31A **Woolen Ranch,** 85.17 42 P P 15 37 51.0 -0.6
baz=316
NEST **Nestorio** 85.18 318 P P 15 37 51.8 0.0
DAVA **Damuels** 85.22 329 *i* PcP P 15 37 52.4 +0.5
comp=Z,45nm,0.8s,SNR=24
SCHQ **Schefferville** 85.25 16 P P 15 37 52.2 +0.5
comp=Z,39nm,1.0s,baz=354,slow=5.2,SNR=15
SCHQ LR LR 16 16 22.7
comp=Z,169nm,21.8s,baz=300,slow=36
SCHQ **Schefferville** 85.25 16 *e*P P 15 37 51.7 0.0
comp=Z,42nm,0.9s
M33A **Taylor Creek F** 85.25 40 P P 15 37 51.7 -0.3
baz=317
N32A **Stulken Farm,** 85.27 41 P P 15 37 51.5 -0.6
baz=317
319A **Douglas** 85.29 54 *e*P P 15 37 53.6 +1.1
I37A **Lemond, Waseca** 85.30 36 P P 15 37 52.5 +0.3
baz=320,SNR=27
J36A **Seneca 1, Swea** 85.37 37 P P 15 37 52.6 +0.1
baz=319,SNR=5.6
L34A **Svendsen Farm,** 85.38 39 P P 15 37 52.6 0.0
baz=318,SNR=6.3
K35A **Storm Lake** 85.39 38 P P 15 37 52.6 0.0
baz=318
121A **Cookes Peak, D** 85.48 52 P P 15 37 54.6 +1.1
baz=312,SNR=15
121A **Cookes Peak, D** 85.48 52 *e*P P 15 37 53.4 -0.2
comp=Z,56nm,1.4s
AGG **Agios Georgios** 85.48 317 *e*P P 15 37 52.9 -0.3
AGG pmax pmax
comp=Z,45nm,0.7s
AGG **Agios Georgios** 85.48 317 *e*P P 15 37 52.9 -0.3
comp=Z,45nm,0.7s
ECH **Echery** 85.56 331⇓ *e*P P 15 37 53.8 +0.4
DSB **Dublin** 85.59 341 *e*P P 15 37 53.1 -0.3
comp=Z,49nm,1.0s
FUORN **Ofenpass-Fuorn** 85.60 328 *e*P P 15 37 54.6 +0.7
comp=Z,71nm,1.0s
COWI **Conover** 85.60 32 *e*P P 15 37 53.8 +0.1
comp=Z,32nm,0.9s
COWI LR LR
comp=Z,238nm,20.0s
M34A **Aspy Farms, Fr** 85.62 40 P P 15 37 53.5 -0.3
baz=318
DAVOX **Davos/Dischmat** 85.63 329 P P 15 37 54.8 +0.8
comp=Z,15nm,0.9s,baz=19,slow=2.7,SNR=17
O32A **Brockman Farm,** 85.65 41 P P 15 37 53.2 -0.8
baz=317
L35A **Bielow Farm, R** 85.69 39 P P 15 37 53.8 -0.4
baz=318
HSIG 85.73 57 *e*P P 15 37 55.3 +0.7
comp=Z,69nm,2.0s
N33A **J Bar K, Exete** 85.73 41 P P 15 37 53.6 -0.8
baz=317
J37A **Redenius Farm,** 85.76 37 P P 15 37 54.9 +0.5
baz=319,SNR=7.7
I38A **Scanlan Farm,** 85.78 35 P P 15 37 54.7 +0.2
baz=320,SNR=7.5

K36A	Gilmore City baz=319,SNR=6.4	85.83	38	P		P		15 37 54.9	+0.1
MOF	Molkenrain	85.87	331	⇓eP		P		15 37 55.3	+0.3
CBKS	Cedar Bluff baz=316	85.90	43	P		P		15 37 54.8	-0.5
CBKS	Cedar Bluff	85.90	43	eP		P		15 37 55.5	+0.2
CBKS	comp=Z,61nm,1.3s			pmax		pmax			
CBKS	Cedar Bluff comp=Z,61nm,1.3s	85.90	43	eP		P		15 37 55.5	+0.2
P32A	Huiting Farm, baz=316	85.94	42	P		P		15 37 55.2	-0.3
ANX	Ano Chora	86.01	317	P		P		15 37 55.0	-0.9
SERG	Sergoula	86.07	316	P		P		15 37 55.2	-0.9
M35A	Neola baz=318,SNR=6.2	86.09	39	P		P		15 37 56.5	+0.4
TUE	Stuetta comp=Z,34nm,1.2s	86.10	329	eP		P		15 37 56.8	+0.5
TUE				LR		LR			
K37A	comp=Z,322nm,19.0s Belmond baz=319,SNR=18	86.13	37	P		P		15 37 56.5	+0.2
L36A	Harm Buss Farm baz=319	86.13	38	P		P		15 37 56.3	0.0
O33A	Hebron baz=317	86.14	41	P		P		15 37 55.8	-0.6
N34A	Lincoln baz=318	86.15	40	P		P		15 37 55.9	-0.5
IGT	Igoumenitsa	86.20	318	P		P		15 37 56.5	-0.2
IGT	Igoumenitsa	86.20	318	P		P		15 37 56.5	-0.2
IGT	Igoumenitsa	86.20	318	P		P		15 37 56.5	-0.2
LAKA	Lakka	86.23	316	P		P		15 37 56.9	-0.1
LAKA	Lakka	86.23	316	P		P		15 37 56.9	-0.1
MEH	Mehetia comp=Z,38nm,0.2s	86.26	116	eT		T		17 12 32.5	
J38A	Wedel Dairy, R baz=320,SNR=7.3	86.26	36	P		P		15 37 56.8	-0.2
KLV	Kalavryta, Ach	86.28	316	P		P		15 37 56.5	-0.7
KLV	Kalavryta, Ach	86.28	316	P		P		15 37 56.5	-0.7
KEK	Kerkira	86.35	319	P		P		15 37 57.2	-0.2
KEK	Kerkira	86.35	319	P		P		15 37 57.2	-0.2
LOMF	Lomont	86.39	331	eP		P		15 37 57.9	+0.3
LAST	Lasithi	86.40	312	⇑iP		P		15 37 58.6	+0.7
LAST	Lasithi	86.40	312	P		P		15 37 58.4	+0.5
LAST	Lasithi comp=Z,89nm,0.8s	86.40	312	eP		P		15 37 58.4	+0.5
PDO	Prodromos	86.41	317	P		P		15 37 57.7	-0.1
Q32A	Meitler Ranch, baz=316,SNR=8.7	86.42	42	P		P		15 37 57.6	-0.3
TAOE	Nuku Hiva Isla comp=Z,409nm,33.5s	86.50	104	eLR		LR		16 04 48.5	
TAOE	Nuku Hiva Isla comp=Z,134nm,0.3s	86.50	104	eT		T		17 12 40.9	
DAMY	Dhamar comp=Z,58nm,1.2s	86.51	286	eP		P		15 37 59.7	+0.7
O34A	Beatrice baz=318	86.53	40	P		P		15 37 57.8	-0.5
M36A	Felix, Anita baz=319,SNR=6.6	86.55	39	P		P		15 37 58.8	+0.3
P33A	Williams Farm, baz=317,SNR=6.1	86.55	42	P		P		15 37 58.1	-0.4
L37A	Phoenix Point, baz=319	86.56	38	P		P		15 37 58.3	-0.1
N35A	Tabor baz=318,SNR=11	86.57	39	P		P		15 37 58.6	+0.1
K38A	Parkersburg baz=320	86.64	37	P		P		15 37 59.3	+0.5
IDI	Anoyia	86.66	313	⇑iP		P		15 37 59.1	-0.1
IDI	Anoyia comp=Z,42nm,0.7s	86.66	313	eP		P		15 37 59.0	-0.1
R32A	Long Quarter, baz=316	86.74	43	P		P		15 37 59.3	-0.1
Q33A	Connelly Farm, baz=317,SNR=8.4	86.80	42	P		P		15 37 59.6	-0.1
O35A	Humboldt baz=318,SNR=5.3	86.87	40	P		P		15 37 59.8	-0.3
AMT	Artemida-Makis	86.89	316	P		P		15 37 59.0	-1.2
P34A	Walnut Farm, R baz=318,SNR=17	86.93	41	P		P		15 38 00.1	-0.3
L38A	Oak Wood Farm, baz=320,SNR=6.3	86.93	37	P		P		15 38 00.3	+0.1
N36A	Muff Farm, Cla baz=319	86.95	39	P		P		15 38 00.7	+0.4
M37A	Trindle Farm, baz=319,SNR=6.7	86.95	38	P		P		15 38 01.1	+0.7
KFL	Anninata	86.98	317	P		P		15 38 00.6	0.0
SCIA	State Center comp=Z,124nm,1.3s	86.98	37	eP		P		15 38 01.8	+1.2
SCIA	comp=Z,228nm,20.0s			LR		LR			
SENIN	Lac Senin/Sane comp=Z,42nm,1.8s	87.02	330	eP		P		15 38 01.2	+0.3
S32A	Newby Ranch, P baz=316	87.14	43	P		P		15 38 01.4	0.0
R33A	Olander Ranch, baz=317,SNR=5.1	87.22	42	P		P		15 38 01.6	-0.1
PYL	PYLOS	87.33	316	P		P		15 38 00.4	-1.9
PYL	PYLOS	87.33	316	P		P		15 38 00.4	-1.9
Q34A	Chapman baz=318	87.33	41	P		P		15 38 02.3	0.0
P35A	Duane Minner, baz=318,SNR=6.0	87.36	41	P		P		15 38 02.3	-0.1
M38A	Pleasantville baz=320,SNR=18	87.37	38	P		P		15 38 02.7	+0.4
N37A	Lee Faris, Mou baz=319,SNR=12	87.37	39	P		P		15 38 02.9	+0.5
KSU1	Kansas State U baz=318,SNR=5.5	87.37	41	P		P		15 38 02.3	-0.1
KSU1	Kansas State U comp=Z,57nm,1.1s	87.37	41	eP		P		15 38 02.6	+0.2
KSU1	comp=Z,136nm,19.0s			LR		LR			
DYA	Yadsworthy comp=Z,29nm,0.8s	87.43	338	eP		P		15 38 02.9	+0.4
O36A	Bolckow baz=319,SNR=14	87.46	40	P		P		15 38 03.1	+0.2
VLC	Villacollemand	87.50	327	PFAKE				15 38 10.0	+7.0
VLC	comp=Z,258nm,22.0s			LR		LR			
MNTX	Cornudas Mount baz=313,SNR=6.1	87.55	51	P		P		15 38 03.8	+0.3
MNTX	Cornudas Mount comp=Z,11nm,1.0s	87.55	51	eP		P		15 38 03.8	+0.3
MNTX	comp=Z,137nm,20.0s			LR		LR			
AQU	L'Aquila	87.55	324	eP		P		15 38 04.4	+1.1
AQU	comp=Z,37nm,0.9s			pmax		pmax			
AQU	comp=Z,341nm,19.0s			MLR		MLR			
AQU	L'Aquila comp=Z,37nm,0.9s	87.55	324	eP		P		15 38 04.4	+1.1
AQU	comp=Z,341nm,19.0s			LR		LR			
MSTX	Muleshoe baz=314	87.58	48	P		P		15 38 03.7	-0.1
MSTX	Muleshoe comp=Z,44nm,1.6s	87.58	48	eP		P		15 38 04.4	+0.7
AMTX	Amarillo baz=315	87.59	47	P		P		15 38 04.5	+0.8
AMTX	Amarillo comp=Z,46nm,1.0s	87.59	47	eP		P		15 38 05.0	+1.3
JFWS	Jewell Farm	87.61	35	eP		P		15 38 03.5	0.0
JFWS	comp=Z,23nm,0.8s			pmax		pmax			
JFWS	comp=Z,223nm,20.0s			MLR		MLR			
JFWS	Jewell Farm comp=Z,23nm,0.8s	87.61	35	eP		P		15 38 03.5	0.0
JFWS	comp=Z,223nm,20.0s			LR		LR			
R34A	Isabella, Hill baz=317	87.62	42	P		P		15 38 03.6	-0.1
P36A	Good Intent, A baz=318,SNR=12	87.72	40	P		P		15 38 04.1	0.0
S33A	Kaszmaul Farm, baz=317,SNR=5.7	87.73	43	P		P		15 38 04.6	+0.4
VAL	Valentia	87.74	343	eP		P		15 38 04.6	+0.7
N38A	Joes South For baz=320,SNR=9.3	87.82	38	P		P		15 38 04.8	+0.2
O37A	Wolven Farm, M baz=319,SNR=7.8	87.84	39	P		P		15 38 05.2	+0.5
T33A	Patterson Ranc baz=317	87.97	43	P		P		15 38 05.6	+0.3
U32A	Winter Ranch, baz=316	88.06	44	P		P		15 38 06.2	+0.4
Q36A	Arnold C. Orve baz=318	88.07	41	P		P		15 38 05.8	0.0
N39A	Derby Farms, D baz=320,SNR=12	88.12	38	P		P		15 38 06.3	+0.3
S34A	Willow Spring baz=317	88.13	42	P		P		15 38 06.2	+0.1
R35A	Emporia Munici baz=318,SNR=6.4	88.16	41	P		P		15 38 07.0	+0.7
P37A	Lathrop baz=319,SNR=7.0	88.18	40	P		P		15 38 06.3	0.0
CUC	Castrocucco comp=Z,17nm,1.4s	88.19	321	eP		P		15 38 05.4	-1.0
CUC	comp=Z,184nm,19.0s			LR		LR			
O38A	Galt baz=320	88.21	39	P		P		15 38 06.9	+0.5
TIP	Timpagrande	88.33	320	P		P		15 38 06.6	-0.5
TIP	Timpagrande comp=Z,60nm,1.5s	88.33	320	eP		P		15 38 07.0	-0.1
TIP	comp=Z,335nm,22.0s			LR		LR			
BNI	Bardonecchia	88.34	330	PFAKE				15 38 20.0	+13
BNI	comp=Z,396nm,19.0s			LR		LR			
V32A	Arapaho baz=316,SNR=6.9	88.51	45	P		P		15 38 09.0	+1.0
U33A	Lingo Farm, Me baz=317	88.51	44	P		P		15 38 08.2	+0.2
R36A	Gordon, Harris baz=318,SNR=9.2	88.53	41	P		P		15 38 08.2	+0.2
P38A	Dawn baz=320,SNR=8.8	88.56	39	P		P		15 38 08.6	+0.5
S35A	Otter Creek Ra baz=318,SNR=6.4	88.57	42	P		P		15 38 08.8	+0.6
O39A	Kirksville baz=320	88.57	38	P		P		15 38 08.5	+0.3
T34A	McClaskey Farm baz=317	88.59	43	P		P		15 38 08.4	+0.1
Q37A	Longview Farm, baz=319	88.66	40	P		P		15 38 08.3	-0.3
W32A	Sentinel baz=316,SNR=7.7	88.82	45	P		P		15 38 10.2	+0.7
U34A	Anderson Ranch baz=317,SNR=6.2	88.83	43	P		P		15 38 10.1	+0.6
U34A	Anderson Ranch comp=Z,75nm,1.4s	88.83	43	eP		P		15 38 10.3	+0.8
V33A	Lossen Ranch, baz=317	88.86	44	P		P		15 38 10.0	+0.4
R37A	Teagarden Farm baz=319,SNR=5.2	88.89	41	P		P		15 38 09.3	-0.4
S36A	Lake Cedric, C baz=318	88.93	41	P		P		15 38 10.2	+0.4
SSB	Saint Sauveur	89.00	331	PFAKE				15 38 20.0	+10
SSB	comp=Z,214nm,19.0s			LR		LR			
O40A	La Belle baz=321,SNR=14	89.00	38	P		P		15 38 10.4	+0.2
Q38A	Cooks Store, C baz=320	89.02	40	P		P		15 38 10.0	-0.3
T35A	Sooner Cattle baz=318,SNR=5.8	89.03	43	P		P		15 38 10.6	+0.2
W33A	Caddo, Fort Co baz=317	89.24	45	P		P		15 38 12.4	+1.0
T36A	Boggs Farm, Ca baz=318	89.27	42	P		P		15 38 11.6	+0.1
V34A	Guthrie baz=317	89.28	44	P		P		15 38 12.0	+0.5
V34A	Guthrie comp=Z,38nm,1.0s	89.28	44	eP		P		15 38 12.7	+1.2
Q39A	Willow Grove F baz=320	89.28	39	P		P		15 38 12.0	+0.5
S37A	Fort Scott baz=319,SNR=9.3	89.30	41	P		P		15 38 11.6	0.0
X32A	Elmer baz=316	89.30	46	P		P		15 38 12.2	+0.5
U35A	Pawnee baz=318	89.31	43	P		P		15 38 12.2	+0.5
WMOK	Wichita Mounta	89.36	45	eP		P		15 38 12.9	+0.9
WMOK	comp=Z,26nm,1.1s			pmax		pmax			
WMOK	Wichita Mounta comp=Z,26nm,1.1s	89.36	45	eP		P		15 38 12.9	+0.9
P40A	Paris baz=320,SNR=16	89.37	38	P		P		15 38 12.2	+0.3
R38A	Fenwick Farm, baz=319,SNR=6.6	89.46	40	P		P		15 38 11.9	-0.4
CEL	Celeste comp=Z,34nm,0.8s	89.46	320	eP		P		15 38 11.8	-0.6
CEL	comp=Z,213nm,19.0s			LR		LR			
W34A	Bridge Creek, baz=317	89.57	44	P		P		15 38 13.2	+0.2
W34A	Bridge Creek, comp=Z,66nm,1.4s	89.57	44	eP		P		15 38 14.2	+1.3
X33A	Lawton baz=317	89.67	45	P		P		15 38 13.8	+0.4
V35A	Meyer Ranch, C baz=318	89.70	44	P		P		15 38 13.9	+0.4
T37A	Cheneyville 18 baz=319	89.73	41	P		P		15 38 13.6	0.0
Q40A	Laux Farm, Aux baz=320,SNR=7.6	89.77	39	P		P		15 38 13.9	+0.1
R39A	Chumby, Stover baz=320,SNR=7.7	89.81	40	P		P		15 38 13.6	-0.4
U36A	Oologah baz=318	89.84	42	P		P		15 38 14.7	+0.5
S38A	Stockton baz=319	89.88	41	P		P		15 38 13.8	-0.5
HDIL	Hopedale baz=322,SNR=5.4	89.90	36	P		P		15 38 14.4	+0.1
HDIL	Hopedale comp=Z,48nm,0.7s	89.90	36	eP		P		15 38 15.2	+0.9
HDIL	comp=Z,181nm,21.0s			LR		LR			
Y33A	Hilltop Ranch, baz=317	89.98	46	P		P		15 38 14.8	-0.1
X34A	Smith Ranch, M baz=317	90.00	45	P		P		15 38 15.5	+0.5
T38A	Diamond baz=319,SNR=11	90.13	41	P		P		15 38 15.7	+0.2
W35A	Tecumseh baz=316	90.13	44	P		P		15 38 15.9	+0.4
S39A	Bolivar baz=320,SNR=8.2	90.14	40	P		P		15 38 15.2	-0.3
U37A	Salina baz=319,SNR=6.8	90.16	42	P		P		15 38 16.1	+0.5
TUL1	Leonard baz=318	90.17	43	P		P		15 38 15.9	+0.2
TUL1	Leonard comp=Z,41nm,1.4s	90.17	43	eP		P		15 38 16.7	+1.0
V36A	Jenks baz=318,SNR=5.3	90.18	43	P		P		15 38 16.1	+0.4
R40A	Maddies Statio baz=320,SNR=14	90.22	39	P		P		15 38 16.1	+0.2
TX31	Lajitas Ar. Si	90.25	52	eP		P		15 38 16.9	+0.6
TXAR	Lajitas Array comp=Z,8.2nm,0.8s,baz=302,slow=3.1,SNR=98	90.25	52	P		P		15 38 16.9	+0.6
TXAR	comp=Z,1.8nm,1.0s,baz=302,slow=5.7,SNR=5.5			PP		PP		15 41 53.5	+3.8
TXAR	comp=Z,85nm,19.2s,baz=0.0,slow=34			LR		LR		16 16 43.8	
ABTX	Abilene, Hawle baz=316,SNR=5.2	90.39	47	P		P		15 38 17.3	+0.5
ABTX	Abilene, Hawle comp=Z,50nm,1.2s	90.39	47	eP		P		15 38 17.6	+0.8
Z33A	Whitaker Ranch baz=316	90.42	46	P		P		15 38 17.2	+0.3
W36A	Wetumka baz=318,SNR=5.0	90.50	44	P		P		15 38 17.8	+0.5
Y34A	Reagan Ranch, baz=317	90.51	45	P		P		15 38 17.6	+0.3
U38A	Gravette baz=319,SNR=6.8	90.53	42	P		P		15 38 17.5	+0.1
V37A	Hulbert baz=319,SNR=12	90.54	42	P		P		15 38 17.8	+0.4
HPIG	comp=Z,11nm,1.0s	90.60	55	eP		P		15 38 19.2	+1.1
T39A	Clever baz=320	90.61	41	P		P		15 38 17.7	-0.1
S40A	Lebanon baz=320,SNR=7.0	90.63	40	P		P		15 38 17.6	-0.2
X35A	Drake baz=318,SNR=10	90.63	45	P		P		15 38 17.9	0.0
SADO	Sadowa comp=Z,24nm,1.2s	90.68	27	eP		P		15 38 18.4	+0.5
133A	Hamilton Ranch baz=316	90.82	47	P		P		15 38 19.0	+0.1
Z34A	Collier Ranch, baz=317	90.85	46	P		P		15 38 19.2	+0.2
X36A	Centrahoma baz=318,SNR=13	90.85	44	P		P		15 38 19.4	+0.5
W37B	Quinton baz=318,SNR=5.3	90.94	43	P		P		15 38 19.9	+0.6
V38A	Canehill baz=319,SNR=13	90.95	42	P		P		15 38 19.4	+0.1
Y35A	Marietta baz=318	90.96	45	P		P		15 38 19.5	+0.1
T40A	Mansfield baz=320,SNR=6.9	90.96	40	P		P		15 38 19.3	-0.1
AAM	Ann Arbor	90.99	31	PFAKE				15 38 30.0	+11
AAM	comp=Z,233nm,20.0s			LR		LR			
U39A	Green Forest baz=320,SNR=14	91.05	41	P		P		15 38 19.7	-0.1
SFIN	Lafayette baz=324,SNR=5.3	91.06	35	P		P		15 38 20.2	+0.5
SFIN	Lafayette comp=Z,26nm,0.9s	91.06	35	eP		P		15 38 20.6	+0.8
Z35A	Perchaven, San baz=317,SNR=5.7	91.26	45	P		P		15 38 20.9	+0.1
233A	Rising Star baz=316,SNR=10.0	91.26	47	P		P		15 38 21.1	+0.2
134A	White-Moore Ra baz=317	91.33	46	P		P		15 38 21.7	+0.5
CLTB	Caltabellotta	91.34	321	PFAKE				15 38 30.0	+8.8
CLTB	comp=Z,154nm,20.0s			LR		LR			
V39A	Pettigrew baz=320,SNR=9.9	91.37	42	P		P		15 38 21.4	0.0
X37A	Clayton baz=318	91.38	43	P		P		15 38 21.7	+0.4
U40A	Yellville baz=320,SNR=24	91.39	41	P		P		15 38 21.5	+0.1
W38A	Poteau baz=319	91.48	43	P		P		15 38 21.9	+0.1
X38A	Whitesboro baz=319,SNR=13	91.62	43	P		P		15 38 23.2	+0.7
Y37A	Hugo baz=318	91.69	44	P		P		15 38 22.8	0.0
333A	Richland Sprin baz=316,SNR=15	91.71	48	P		P		15 38 23.7	+0.7
234A	Clairette baz=317,SNR=12	91.71	47	P		P		15 38 23.7	+0.7
135A	Vickery Place, baz=317	91.73	46	P		P		15 38 23.7	+0.6
Z36A	Blue Ridge baz=318	91.76	45	P		P		15 38 23.4	+0.3
W39A	Magazine baz=319	91.78	42	P		P		15 38 23.3	+0.1
JCT	Junction City baz=316	91.82	49	P		P		15 38 23.9	+0.4
JCT	Junction City	91.82	49	eP		P		15 38 24.3	+0.7
JCT	comp=Z,59nm,1.7s			pmax		pmax			
JCT	comp=Z,197nm,19.0s			MLR		MLR			
JCT	Junction City comp=Z,59nm,1.7s	91.82	49	eP		P		15 38 24.2	+0.7
JCT	comp=Z,197nm,19.0s			LR		LR			
V40A	Witts Springs baz=320	91.83	41	P		P		15 38 23.4	-0.1
OLIL	Olney comp=Z,24nm,0.9s	91.91	36	eP		P		15 38 24.7	+1.0
433A	Art baz=316	92.05	48	P		P		15 38 24.8	+0.2
WHTX	Lake Whitney, baz=317	92.12	46	P		P		15 38 25.2	+0.4
X39A	Fountain Ranch baz=319,SNR=11	92.12	43	P		P		15 38 25.4	+0.6
334A	Lometa baz=317,SNR=7.9	92.14	47	P		P		15 38 25.5	+0.5
W40A	Ferguson Farm, baz=320,SNR=6.5	92.17	42	P		P		15 38 25.4	+0.5
Y38A	Idabel baz=319	92.22	43	P		P		15 38 25.2	0.0
Z37A	Pogue Cattle C baz=318	92.27	45	P		P		15 38 25.6	+0.1
136A	Ennis baz=318	92.30	46	P		P		15 38 26.0	+0.4
MIAR	Mount Ida baz=320,SNR=15	92.39	42	P		P		15 38 26.5	+0.5
MIAR	Mount Ida	92.39	42	eP		P		15 38 27.0	+1.0
MIAR	comp=Z,37nm,1.0s			pmax		pmax			
MIAR	comp=Z,221nm,19.0s			MLR		MLR			
MIAR	Mount Ida comp=Z,37nm,1.0s	92.39	42	eP		P		15 38 27.0	+1.0
MIAR	comp=Z,221nm,19.0s			LR		LR			
LONY	Lake Ozonia comp=Z,18nm,1.2s	92.40	25	eP		P		15 38 26.4	+0.5
LONY	comp=Z,139nm,19.0s			LR		LR			
X201	Greenbrier Sit comp=Z,23nm,1.0s	92.46	41	eP		P		15 38 27.3	+0.9
X301	Greenbrier Sit comp=Z,19nm,1.1s	92.48	41	eP		P		15 38 24.0	-2.4
434A	Burnet baz=317	92.50	48	P		P		15 38 26.7	+0.1
WHAR	Wooly Hollow comp=Z,30nm,1.0s	92.50	41	eP		P		15 38 27.0	+0.5
FRNY	Flat Rock comp=Z,20nm,1.1s	92.54	24	eP		P		15 38 26.2	-0.3
Y39A	Lockesburg baz=319,SNR=7.5	92.57	43	P		P		15 38 27.2	+0.3
533A	Kerrville baz=316	92.58	49	P		P		15 38 27.4	+0.4
Z38A	Mt. Pleasant baz=319	92.59	44	P		P		15 38 27.2	+0.2
W41A	Tony Mavity, V baz=320	92.61	41	P		P		15 38 26.9	-0.2
W41B	Gary Mavity, V baz=320	92.61	41	P		P		15 38 27.0	0.0
137A	Heron Place, G baz=318	92.64	45	P		P		15 38 27.7	+0.5
236A	Katherine and baz=318	92.64	46	P		P		15 38 27.1	-0.1
335A	Moody baz=317	92.65	47	P		P		15 38 27.4	+0.1
X40A	Basin Creek Fa baz=320,SNR=9.6	92.83	42	P		P		15 38 28.5	+0.4
336A	Riesel baz=318	92.92	46	P		P		15 38 29.4	+0.9
435B	Jarrell baz=317	92.92	47	P		P		15 38 28.9	+0.4
633A	Saathoff Ranch baz=316	92.93	49	P		P		15 38 29.0	+0.4
534A	Blanco baz=317,SNR=7.3	92.94	48	P		P		15 38 28.7	0.0
Y40A	Okolona baz=320	92.95	43	P		P		15 38 28.8	+0.2
138A	Matatall Enter baz=319	92.97	45	P		P		15 38 29.1	+0.4
ACSO	Alum Creek Sta comp=Z,25nm,0.9s	92.98	32	eP		P		15 38 29.5	+0.8
ACSO	comp=Z,184nm,22.0s			LR		LR			
NCB	Newcomb	93.10	25	PFAKE				15 38 40.0	+11
NCB	comp=Z,2µm,20.0s			LR		LR			
WCI	Wyandotte Cave	93.15	35	eP		P		15 38 30.8	+1.3
WCI	comp=Z,12nm,0.9s			pmax		pmax			
WCI	Wyandotte Cave comp=Z,12nm,0.9s	93.15	35	eP		P		15 38 30.8	+1.3
M54A	Oil Creek Stat baz=329	93.27	29	P		P		15 38 29.9	-0.1
832A	Faith Ranch, C baz=316	93.28	51	P		P		15 38 30.7	+0.4
733A	Divot King Ran baz=316	93.39	50	P		P		15 38 31.3	+0.5
436A	Wall Ranch, Ga baz=318	93.39	47	P		P		15 38 31.1	+0.4
Z40A	Long Farm, Mag baz=320	93.46	43	P		P		15 38 31.3	+0.3
N54A	Moraine State baz=328	93.60	30	P		P		15 38 31.8	+0.3
833A	Chaparral WMA, baz=316	93.61	50	P		P		15 38 32.3	+0.5
140A	Cam and Jess, baz=320	93.83	44	P		P		15 38 32.3	-0.4
NATX	Nacogdoches	93.89	45	PFAKE				15 38 40.0	+7.0
NATX	comp=Z,303nm,20.0s			LR		LR			
LMN	Caledonia Moun	94.10	18	eP		P		15 38 34.8	+1.1

	comp=Z,29nm,0.9s							
636A	**Smothers Creek**	94.19	48	P		**P**	15 38 35.7	+1.4
	baz=317							
933A	**Laredo**	94.19	51	P		**P**	15 38 35.1	+0.7
	baz=316							
834A	**Tilden**	94.27	50	P		**P**	15 38 35.4	+0.6
	baz=316							
835A	**Beeville**	94.59	49	P		**P**	15 38 37.5	+1.3
	baz=317							
KEST	**Kesra**	94.71	322	P		**P**	15 38 37.1	+0.4
	comp=Z,13nm,1.1s,baz=355,slow=6.5,SNR=4.0							
KEST				LR		LR	16 27 16.8	
	comp=Z,257nm,19.1s,baz=351,slow=39							
KEST	**Kesra**	94.71	322	*e*P		**P**	15 38 37.7	+0.9
	comp=Z,26nm,1.3s							
O56A	**Blue Knob Stat**	94.76	29	P		**P**	15 38 37.4	+0.5
	baz=329							
034A	**Hebbronville**	94.95	51	P		**P**	15 38 39.0	+1.0
	baz=316							
440A	**Kirbyville**	95.04	45	P		**P**	15 38 38.5	+0.2
	baz=319							
KVTX	**Kingsville**	95.09	50	PFAKE			15 38 50.0	+11
KVTX				LR		LR		
	comp=Z,723nm,20.0s							
N59A	**State Game Lan**	95.25	27	P		**P**	15 38 39.6	+0.5
	baz=331							
ZAIG	**Zacatecas**	95.50	56	*e*P		**P**	15 38 42.3	+1.4
	comp=Z,30nm,1.5s							
SWET	**Sewanee**	95.76	37	*e*P		**P**	15 38 42.1	+0.6
	comp=Z,8.8nm,0.9s							
035Z	**Hargill**	95.77	51	P		**P**	15 38 42.4	+0.8
	baz=317							
TZTN	**Tazewell**	95.79	35	*e*P		**P**	15 38 42.1	+0.5
	comp=Z,23nm,1.1s							
BLA	**Blacksburg**	96.61	32	PFAKE			15 39 00.0	+15
BLA				LR		LR		
	comp=Z,217nm,22.0s							
ES19	**SONSECA Array**	96.96	333	*e*P		**P**	15 38 47.2	+0.3
CBN	**Corbin Frederi**	97.00	30	PFAKE			15 39 00.0	+13
CBN				LR		LR		
	comp=Z,133nm,20.0s							
ESDC	**Sonseca Array**	97.00	334	P		**P**	15 38 47.4	+0.2
	comp=Z,2.0nm,0.7s,baz=21,slow=3.9,SNR=12							
ESDC				PP		**PP**	15 42 45.1	+3.2
PAB	**San Pablo**	97.26	334	PFAKE			15 39 00.0	+12
PAB				LR		LR		
	comp=Z,220nm,21.0s							
MTE	**Manteigas**	97.57	336	PFAKE			15 39 00.0	+10
MTE				LR		LR		
	comp=Z,336nm,19.0s							
KMSC	**Kings Mountain**	97.95	34	P		**P**	15 38 51.3	**-0.1**
	baz=327							
GOGA	**Godfrey**	98.41	36	PFAKE			15 39 10.0	+17
GOGA				LR		LR		
	comp=Z,146nm,19.0s							
CNNC	**Cliffs of the**	99.35	31	PFAKE			15 39 10.0	+12
CNNC				LR		LR		
	comp=Z,712nm,21.0s							
KMBO	**Kilima Mbogo**	101.66	278	PFAKE			15 39 20.0	+11
KMBO				LR		LR		
	comp=Z,154nm,19.0s							
TEIG	**Tepich**	106.36	48	PFAKE			15 43 50.0	
TEIG				LR		LR		
	comp=Z,75nm,21.0s							
TAM	**Tamanrasset**	107.09	317	PFAKE			15 43 50.0	
TAM				LR		LR		
	comp=Z,195nm,20.0s							
VNDA	**Vanda**	115.17	175	PKP		**PKPdf**	15 43 54.9	**-0.3**
	comp=Z,1.9nm,0.9s,baz=304,slow=3.8,SNR=7.6							
JTS	**JuntasAbangare**	116.04	52	PFAKE			15 44 10.0	+11
JTS				LR		LR		
	comp=Z,346nm,20.0s							
SDDR	**Presa de Saban**	116.34	34	PFAKE			15 44 10.0	+11
SDDR				LR		LR		
	comp=Z,244nm,19.0s							
SJG	**San Juan**	119.30	30	PFAKE			15 44 20.0	+15
SJG				LR		LR		
	comp=Z,159nm,19.0s							
BCIP	**Isla Barro Col**	120.05	48	PFAKE			15 44 20.0	+14
BCIP				LR		LR		
	comp=Z,272nm,20.0s							
ANWB	**Willy Bob**	121.33	26	PFAKE			15 44 20.0	+11
ANWB				LR		LR		
	comp=Z,219nm,19.0s							
LBTB	**Lobatse**	124.37	263	*e*PKIKP		**PKPdf**	15 44 15.4	**+0.8**
LBTB	**Lobatse**	124.37	263	*e*PKPdf		**PKPdf**	15 44 15.4	**+0.8**
SDV	**Santo Domingo**	125.38	40	PKP		**PKPdf**	15 44 17.1	**+0.1**
	comp=Z,36nm,0.7s,baz=23,slow=0.7,SNR=6.6							
SDV	**Santo Domingo**	125.38	40	PKP		**PKPdf**	15 44 17.1	**+0.1**
SDV				LR		LR		
	comp=Z,293nm,20.0s							
GUYC	**Guyana, Colomb**	125.82	47	*e*P		**PKPdf**	15 44 18.7	**+0.5**
GRGC	**Isla de Gorgon**	125.90	51	*e*P		**PKPdf**	15 44 17.2	**-0.6**
DBIC	**Dimbokro**	125.96	317	PKP		**PKPdf**	15 44 17.6	**-0.3**
	comp=Z,6.8nm,0.6s,baz=1.3,slow=2.0,SNR=20							
DBIC				PP		**PP**	15 46 07.5	**-2.8**
	comp=Z,9.4nm,1.1s,baz=352,slow=7.1,SNR=4.2							
TIC	**Toumodi**	126.08	317	*e*PKP2		**PP**	15 46 06.5	**-4.6**
TIC	**Toumodi**	126.08	317	*e*P		**PKPdf**	15 44 17.6	**-0.5**
KIC	**Kosan Boka**	126.16	316	*e*PKP2		**PP**	15 46 06.5	**-5.1**
	comp=Z,34nm,1.2s							
KIC	**Kosan Boka**	126.16	316	*e*P		**PKPdf**	15 44 17.9	**-0.4**
	comp=Z,17nm,0.7s							
BOSA	**Boshof**	126.32	259	PKP		**PKPdf**	15 44 18.4	**+0.1**
	comp=Z,13nm,0.9s,baz=70,slow=1.4,SNR=13							
LIC	**Lamto**	126.43	316	*e*PKP2		**PP**	15 46 07.8	**-5.6**
LIC	**Lamto**	126.43	316	*e*P		**PKPdf**	15 44 15.7	**-3.1**
	comp=Z,35nm,1.1s							
ROSC	**El Rosal**	126.75	46	PKP		**PKPdf**	15 44 21.0	**+1.2**
	comp=Z,9.0nm,0.9s,baz=2.8,slow=0.8,SNR=7.7							
QSPA	**South Pole Qui**	126.95	180	*e*P		**PKPdf**	15 44 15.8	**-2.3**
CHIC	**Chingaza**	127.26	46	*e*P		**PKPdf**	15 44 20.2	**-0.7**
VILC	**Villavicencio,**	127.70	46	*e*P		**PKPdf**	15 44 21.2	**-0.2**
OTAV	**Otavalo**	127.85	54	*e*PKPdf		**PKPdf**	15 44 22.8	**+0.8**
OTAV	**Otavalo**	127.85	54	*e*P		**PKPdf**	15 44 21.7	**-0.3**
ATAH	**Atahualpa**	133.33	60	PKP		**PKPdf**	15 44 33.1	**+0.8**
	comp=Z,4.0nm,0.5s,baz=60,slow=1.1,SNR=8.4							
NNA	**Nana**	137.80	63	PKP		**PKPdf**	15 44 41.0	**+0.8**
	comp=Z,25nm,1.1s,baz=340,slow=5.5,SNR=6.7							
NNA	**Nana**	137.80	63	PKIKP		**PKPdf**	15 44 41.0	**+0.8**
NNA				pmax		pmax		
	comp=Z,25nm,1.1s							
SNAA	**Sanae**	140.83	197	PKP		PKPpre	15 44 36.3	
VNA2	**Neumayer--Watz**	142.40	196	PKP		PKPpre	15 44 42.5	
	baz=89,slow=3.5							
VNA3	**Neumayer Olymp**	142.66	195	PKP		**PKPdf**	15 44 44.1	**-3.1**
VNA1	**Neumayer--Stat**	142.80	196	PKP		**PKPdf**	15 44 49.7	**+2.3**
SAML	**Samuel**	144.33	44	*e*PKPdf		**PKPab**	15 44 50.2	**+0.4**
SAML				LR		LR		
	comp=Z,217nm,20.0s							
LPAZ	**La Paz**	146.85	59	PKPbc		**PKPbc**	15 44 58.5	**-0.2**
	comp=Z,38nm,0.7s,baz=2.7,slow=4.3,SNR=108							
RCBR	**Riachuelo**	148.64	354	*e*PKPbc		**PKPbc**	15 45 03.4	**+0.5**
LVC	**Limon Verde**	150.38	69	*e*PKPbc		**PKPbc**	15 45 08.6	**+1.2**
LCO	**Las Campanas**	152.28	82	*e*PKPbc		**PKPbc**	15 45 12.7	**+1.2**
PLCA	**Paso Flores**	155.25	108	PKPbc		PKPdf	15 45 20.0	+12
	comp=Z,4.2nm,1.0s,baz=298,slow=5.0,SNR=2.8							
PLCA				PKPab		**PKPab**	15 45 32.5	**-1.0**
	comp=Z,11nm,1.1s,baz=229,slow=4.3,SNR=4.3							
CPUP	**Villa Florida**	161.01	60	PKPab		**PKPab**	15 45 57.7	**-1.0**
	comp=Z,4.0nm,0.9s,baz=314,slow=4.8,SNR=4.6							

DDA ***22*** *15:28:32.8, 39.88N×30.61E, h7km, Md2.5*
CSEM ***22*** *15:28:34.8±0.2, 39.76N×30.54E, h2km, MD2.5, Error ellipse: s-maj=4.9km s-min=4.0km az=41.0*
ISK ***22*** *15:28:34.3, 39.75N×30.54E, h4km, MD2.5*
ISC 22 15:28:34.0±1.2, 39.77N±0.03×30.53E±0.03, h3km±11km, n22, σ0.64/35, Turkey

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
BORA	**Eskisehir**	**0.12**	**332**	*i* P	**Pg**	**15 28 35.5**	**-0.9**
ESKT	**Eskisehir**	**0.35**	**135**	*i* P	**Pg**	**15 28 40.2**	**-0.6**
ESKT				*i* S	**Sg**	**15 28 46.9**	**+1.4**
SEYT	**Eskypehyr**	**0.35**	**135**	P	**Pg**	**15 28 40.2**	**-0.6**
SEYT				S	**Sg**	**15 28 46.9**	**+1.5**
GULT	**Gulveren**	**0.66**	**359**	*e*PG	**Pb**	**15 28 48.0**	**-0.3**
GULT	**Gulveren**	**0.66**	**359**	*e*Pg	**Pb**	**15 28 48.0**	**-0.3**
CAVI	**Cavuskoy**	**0.68**	**309**	*e*PG	**Pb**	**15 28 48.4**	**-0.1**
CAVI				*e*SG	**Sb**	**15 28 58.8**	**+0.4**
CAVI	**Cavuskoy**	**0.68**	**309**	*e*Pg	**Pb**	**15 28 48.4**	**-0.1**
CAVI				*e*Sg	**Sb**	**15 28 58.8**	**+0.4**
SVRH	**Sivrihisar-ESK**	**0.83**	**113**	*e*PG	**Pb**	**15 28 50.6**	**-0.5**
SVRH	**Sivrihisar-ESK**	**0.83**	**113**	*e*Pg	**Pb**	**15 28 50.7**	**-0.5**
MDUB	**Mudurnu**	**0.87**	**36**	*e*PG	**Pb**	**15 28 51.7**	**-0.1**
MDUB				*e*SG	**Sb**	**15 29 04.5**	**+0.6**
MDUB	**Mudurnu**	**0.87**	**36**	*e*Pg	**Pb**	**15 28 51.7**	**-0.1**
MDUB				*e*Sg	**Sb**	**15 29 04.5**	**+0.6**
TVSB	**Tavsanli**	**0.88**	**249**	*e*PG	**Pb**	**15 28 52.0**	**-0.1**
TVSB	**Tavsanli**	**0.88**	**249**	*e*Pg	**Pb**	**15 28 52.0**	**-0.1**
IZI	**Iznik**	**0.99**	**305**	*e*PG	**Pb**	**15 28 54.1**	**+0.3**
IZI	**Iznik**	**0.99**	**305**	*e*Pg	**Pb**	**15 28 54.1**	**+0.3**
GDZ	**Gediz**	**1.06**	**230**	*i* P	**Pn**	**15 28 55.8**	**-0.1**
GDZ				*i* S	**Sb**	**15 29 09.4**	**0.0**
GDZ	**Gediz**	**1.06**	**230**	P	**Pn**	**15 28 55.8**	**-0.1**
GDZ				S	**Sb**	**15 29 09.4**	**0.0**
BOLV	**Bolvadin**	**1.10**	**163**	*i* P	**Pn**	**15 28 56.2**	**-0.3**
BOLV				*i* S	**Sn**	**15 29 12.2**	**-0.1**
BOLV	**Bolvadin**	**1.10**	**163**	P	**Pn**	**15 28 56.2**	**-0.3**
BOLV				S	**Sn**	**15 29 12.2**	**-0.1**
IGD	**Bursa**	**1.13**	**296**	*i* P	**Pg**	**15 28 53.7**	**-2.0**
IGD				*i* S	**Sb**	**15 29 12.1**	**+0.7**
ULDT	**Uludag**	**1.13**	**290**	*i* P	**Pg**	**15 28 55.8**	**+0.1**
ULDT				*i* S	**Sn**	**15 29 13.2**	**+0.1**
ULDT	**Uludag**	**1.13**	**290**	P	**Pg**	**15 28 55.8**	**+0.1**
ULDT				S	**Sn**	**15 29 13.2**	**+0.1**

IDC 22 15:33:26.9±2.3, 3.07N×129.15E, h0km, mb3.7/4, mb1 4.0/5, mb1mx3.6/43, mbtmp3.9/5, ML4.4/1, Error ellipse: s-maj=176.2km s-min=23.0km az=65.0, North of Halmahera

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
SIJI	**Sorong**	**4.45**	**152**	Pn	Pn	15 34 36.0	+0.3
	20nm,0.3s,baz=360,slow=13,SNR=2.8						
SIJI				Sn	Sn	15 35 23.9	-4.3
	17nm,0.3s,baz=336,slow=10.0,SNR=2.1						
WRA	**Warramunga Arr**	**23.43**	**168**	P	P	15 38 38.1	+0.2
	2.2nm,0.8s,baz=348,slow=11,SNR=5.8						
ASAR	**Alice Springs**	**26.98**	**170**	P	P	15 39 10.4	-0.1
	0.6nm,0.6s,baz=360,slow=7.8,SNR=4.9						
STKA	**Stephens Creek**	**36.71**	**162**	P	P	15 40 35.7	-0.2
	1.2nm,0.7s,baz=337,slow=8.9,SNR=3.3						
MKAR	**Makanchi Array**	**59.48**	**324**	P	P	15 43 31.7	-0.1
	0.4nm,0.4s,baz=107,slow=8.2,SNR=6.7						

ISCJB ***22*** *15:41:42.5±1.9, 11.83N±0.06×88.12W±0.05, h24km±20km, mb3.6/3, Error ellipse: s-maj=11.6km s-min=5.5km az=34.6*
IDC ***22*** *15:41:43.5±1.8, 12.89N×87.05W, h0km, mb3.6/3, mb1 3.8/4, mb1mx3.5/32, mbtmp3.6/4, ML2.8/1, Error ellipse: s-maj=109.0km s-min=22.8km az=55.0*
CASC ***22*** *15:41:43.5±1.2, 11.91N×88.09W, h20km±17km, MD3.5, ML3.9*
ISC 22 15:41:40.4±1.9, 11.89N±0.07×88.13W±0.06, h7km±11km, n25, σ1.904/32, mb3.5/3, 1C, Off coast of central America

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
CSGN	**Cosiguina Volc**	**1.22**	**27**	*e*P	**Pn**	**15 42 04.1**	**+0.2**
CSGN				*e*S	**Sn**	**15 42 21.4**	**+0.8**
CRIN	**San Cristobal**	**1.33**	**53**	*e*P	**Pg**	**15 42 06.5**	**+0.7**
CRIN				*e*S	**Sn**	**15 42 24.3**	**+0.9**
CRIN				AML	AML	15 42 32.9	
	comp=E,2μm,0.3s						
TEL3	**Telica 3**	**1.43**	**62**	*e*P	**Pg**	**15 42 07.4**	**-0.4**
TELN	**Telica**	**1.45**	**61**	*e*P	**Pb**	**15 42 07.6**	**-0.2**
CNGN	**Cerro Negro**	**1.52**	**66**	*e*P	**Pb**	**15 42 08.4**	**-0.6**
COPN	**Copaltepe**	**1.53**	**79**	*e*P	**Pg**	**15 42 09.2**	**-0.6**
LCY	**Lacayo**	**1.53**	**354**	*e*P	**Pb**	**15 42 09.1**	**-0.1**
VSM	**San Miguel**	**1.54**	**355**	*e*P	**Pg**	**15 42 09.5**	**-0.3**
PACA	**Pacayal**	**1.58**	**353**	*e*P	**Pb**	**15 42 09.8**	**-0.2**
PACA				*e*S	**Sg**	**15 42 31.9**	**+0.6**
TECA	**Tecapa**	**1.64**	**347**	*i* P	**Pb**	**15 42 10.7**	**-0.4**
MOMN	**Momotombo**	**1.64**	**72**	*e*P	**Pb**	**15 42 10.1**	**-0.9**
APYN	**Apoyeque**	**1.77**	**79**	*e*P	**Pb**	**15 42 12.7**	**-0.5**
XAVN	**Gruta Xavier**	**1.78**	**82**	*e*P	**Pb**	**15 42 12.7**	**-0.7**
CRUN	**El Crucero**	**1.79**	**87**	*e*P	**Pb**	**15 42 13.2**	**-0.4**
TISN	**Laguna Tiscapa**	**1.84**	**82**	*e*P	**Pb**	**15 42 13.8**	**-0.6**
MGAN	**Managua**	**1.86**	**82**	*e*P	**Pb**	**15 42 13.7**	**-1.0**
MGAN				*e*S	**Sn**	**15 42 35.6**	**-0.8**
LFRS	**El Faro**	**1.95**	**332**	*e*P	**Pb**	**15 42 15.2**	**-1.1**
LFRS				*e*S	**Sb**	**15 42 40.5**	**-0.4**
LBRS	**Las Brisas**	**2.04**	**334**	*e*P	**Pb**	**15 42 17.1**	**-0.8**
ESTN	**Estel**	**2.10**	**55**	*e*P	**Pn**	**15 42 16.4**	**+0.3**
ESTN				*e*S	**Sn**	**15 42 42.9**	**+0.4**
TGUH	**Tegucigalpa,Un**	**2.31**	**21**	*e*P	**Pn**	**15 42 19.9**	**+1.0**
JTS	**JuntasAbangare**	**3.50**	**117**	Pn	**Pn**	**15 42 37.4**	**+2.1**
	comp=E,1.0nm,0.3s,baz=110,slow=23,SNR=11						
JTS				Sn	**Sn**	**15 43 16.5**	**-0.5**
	comp=E,2.7nm,0.3s,baz=257,slow=18,SNR=3.4						
TXAR	**Lajitas Array**	**22.60**	**323**	P	**P**	**15 46 44.6**	**+2.8**
	comp=E,0.9nm,0.6s,baz=132,slow=10,SNR=12						
ULM	**Lac du Bonnet**	**38.77**	**352**	P	**P**	**15 49 03.0**	**-2.5**
	comp=E,2.1nm,0.5s,baz=171,slow=8.6,SNR=3.2						
YKA	**Yellowknife Ar**	**53.98**	**345**	P	**P**	**15 51 04.2**	**-0.6**
	comp=E,0.3nm,0.6s,baz=138,slow=7.8,SNR=8.5						
CMAR	**Chiang Mai Arr**	**149.05**	**347**	PKPbc	**PKPbc**	**16 01 31.2**	**+0.9**
	comp=E,0.4nm,0.6s,baz=328,slow=3.2,SNR=4.5						

IDC ***22*** *15:42:15.2±2.1, 38.94N×145.03E, h0km, mb3.3/3, mb1 3.4/5, mb1mx3.3/37, mbtmp3.3/5, ML3.2/2, Error ellipse: s-maj=60.2km s-min=26.1km az=72.0*
JMA ***22*** *15:42:29.7±0.3, 39.70N×143.35E, h18km, M3.7*
ISC 22 15:42:28.2±2.2, 39.6N±0.1×143.4E±0.1, h11km, n13, σ0.71/13, mb3.2/3, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
MIYJ	**Miyakonagasawa**	**1.22**	**271**	P	**Pg**	**15 42 51.7**	**+0.2**
MIYJ				*e*S	**Sb**	**15 43 06.4**	**-0.5**
JTH	**Tanohata**	**1.24**	**288**	P	**Pn**	**15 42 50.9**	**-0.5**
JOM	**Ohasama**	**1.63**	**267**	P	**Pb**	**15 42 57.8**	**-0.4**
JOM				*e*S	**Sn**	**15 43 17.9**	**+0.2**
JKZ	**Kuzumaki**	**1.64**	**285**	P	**Pn**	**15 42 57.6**	**+0.6**
JANG	**Nango**	**1.65**	**300**	P	**Pn**	**15 42 56.6**	**-0.5**
JRG	**Rokugo**	**2.14**	**266**	P	**Pn**	**15 43 05.2**	**+1.4**
JTM	**Tenmabayashi**	**2.16**	**305**	P	**Pn**	**15 43 04.5**	**+0.4**
JAH	**Hinai**	**2.21**	**287**	P	**Pn**	**15 43 06.0**	**+1.2**
ASAJ	**Asahikawa**	**4.58**	**353**	Pn	**Pn**	**15 43 37.8**	**+0.4**
	0.7nm,0.3s,baz=186,slow=14,SNR=9.7						
MJAR	**Matsushiro Arr**	**5.09**	**235**	Pn	**Pn**	**15 43 44.1**	**-0.2**
	0.7nm,0.3s,baz=45,slow=12,SNR=5.1						
MKAR	**Makanchi Array**	**44.14**	**300**	P	**P**	**15 50 36.5**	**-0.1**
	0.1nm,0.3s,baz=81,slow=8.0,SNR=3.2						
WRA	**Warramunga Arr**	**59.80**	**190**	P	P	15 52 18.2	-15
	0.4nm,0.5s,baz=9.1,slow=8.1,SNR=12						
ASAR	**Alice Springs**	**63.53**	**190**	P	P	15 52 46.3	-12
	0.1nm,0.9s,baz=18,slow=9.3,SNR=4.6						

SJA ***22*** *15:46:11.8±0.9, 33.76S×70.29W, h131km±6km, ML3.1, MW3.3*
ISCJB ***22*** *15:46:13.6±1.2, 33.68S±0.06×70.29W±0.06, h126km±7km, Error ellipse: s-maj=10.8km s-min=7.7km az=169.5*
GUC ***22*** *15:46:16.7±0.4, 33.59S×70.35W, h113km±2km, ML3.9*
ISC 22 15:46:12.1±3.5, 33.8S±0.1×70.31W±0.07, h134km±18km, n16, σ1.900/29, 1C, Chile-Argentina border region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
YECH	**El Yeso**	**0.21**	**63**	*e*P	**Pn**	**15 46 32.9**	**+2.0**
YECH				*e*S	**Sn**	**15 46 44.8**	**-0.2**
ANTU	**Antumapu**	**0.33**	**306**	*e*P	**Pn**	**15 46 32.1**	**+1.2**
ANTU				*e*S	**Sn**	**15 46 43.4**	**-1.7**
ANTU				IAML		15 46 45.0	
	comp=N,5μm,0.3s						
CLCH	**Cerro Calan**	**0.41**	**333**	*e*P	**Pn**	**15 46 32.2**	**+0.9**
CLCH				*e*S	**Sn**	**15 46 43.9**	**-1.9**
CLCH				IAML		15 46 45.7	
	comp=E,8μm,0.3s						
PEL	**Peldehue**	**0.69**	**333**	*e*P	**Pn**	**15 46 33.7**	**+0.7**
PEL				*e*S	**Sn**	**15 46 46.6**	**-2.1**
PEL				IAML		15 46 48.6	
	comp=N,8μm,0.3s						
ROC1	**El Roble**	**0.98**	**323**	*i* P	**Pn**	**15 46 36.1**	**+0.6**
ROC1				*i* S	**Sn**	**15 46 53.1**	**-0.1**
ROCH	**El Roble**	**0.98**	**323**	*e*P	**Pn**	**15 46 36.5**	**+1.0**
ROCH				*e*S	**Sn**	**15 46 52.0**	**-1.2**
ROCH				IAML		15 46 55.6	
	comp=E,3μm,0.5s						
AAGR	**Agrelo**	**1.41**	**62**	*i* P	**Pn**	**15 46 39.9**	**+0.2**
AAGR				*i* S	**Sn**	**15 47 00.7**	**+0.1**
ARCO	**CERRO ARCO**	**1.48**	**52**	*i* P	**Pn**	**15 46 40.5**	**+0.1**
ARCO				*i* S	**Sn**	**15 47 02.1**	**+0.1**
ARCO				IAML		15 47 02.9	
	comp=Z,90nm,0.3s						
AVIZ	**Vizcacheras**	**1.53**	**80**	*i* P	**Pn**	**15 46 40.1**	**-0.8**
ASAL	**Salagasta**	**1.71**	**47**	*i* P	**Pn**	**15 46 43.1**	**+0.2**
ASAL				*i* S	**Sn**	**15 47 06.3**	**-0.1**
AUSP	**Uspallata**	**1.72**	**27**	*i* P	**Pn**	**15 46 44.0**	**+0.6**
AUSP				*i* S	**Sn**	**15 47 07.3**	**+0.2**
RTLS	**Leoncito**	**2.14**	**24**	*i* P	**Pn**	**15 46 49.4**	**+1.1**
RTLS				*i* S	**Sn**	**15 47 16.3**	**+0.3**
RTCV	**Cerro Valdivia**	**2.41**	**39**	*i* P	**Pn**	**15 46 51.5**	**0.0**
RTCV				*i* S	**Sn**	**15 47 21.2**	**-0.5**
RTLL	**Cerro Villicun**	**2.88**	**33**	*i* P	**Pn**	**15 46 58.2**	**+0.8**
RTLL				*i* S	**Sn**	**15 47 31.7**	**-0.6**
TLL	**Tololo Astrono**	**3.61**	**353**	*e*S	**Sn**	**15 47 48.6**	**-1.0**
AVFE	**Valle Fertil**	**3.93**	**39**	*i* P	**Pn**	**15 47 11.3**	**+0.1**
AVFE				IAML		15 48 00.5	
	comp=Z,37nm,0.3s						

IDC 22 15:50:28.9±2.1, 36.23N×142.75E, h0km, mb3.5/2, mb1 3.5/5, mb1mx3.3/37, mbtmp3.6/5, ML3.0/3, Error ellipse: s-maj=48.1km s-min=26.6km az=84.0, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
MJAR	**Matsushiro Arr**	**3.67**	**276**	Pn	Pn	15 51 25.4	-1.6
	0.4nm,0.3s,baz=89,slow=16,SNR=4.6						
JHJ	**Hachijo jima 2**	**3.94**	**219**	Pn	Pn	15 51 30.9	+0.2
	5.6nm,0.3s,baz=90,slow=20,SNR=2.7						
JHJ				Sn	Sn	15 52 12.6	-5.1
	14nm,0.3s,baz=107,slow=19,SNR=5.3						
ASAJ	**Asahikawa**	**7.88**	**359**	Pn	Pn	15 52 24.6	-0.2
	0.3nm,0.3s,baz=222,slow=16,SNR=4.2						
MKAR	**Makanchi Array**	**45.46**	**303**	P	P	15 58 50.0	+0.4
	0.2nm,0.3s,baz=87,slow=9.8,SNR=6.8						
WRA	**Warramunga Arr**	**56.43**	**190**	P	P	16 00 12.0	-0.3
	0.7nm,1.3s,baz=8.8,slow=7.0,SNR=2.9						

NIED ***22*** *15:58:00, 36.90N×141.10E, h44km, Mw3.9 Best double couple: M0 9.37000×10^14 NP1:φ=227.00000°, δ=20.00000°, λ=105.00000°. NP2:φ=32.00000°, δ=71.00000°, λ=85.00000°.*
ISCJB ***22*** *15:58:14.7±0.6, 36.95N±0.05×141.06E±0.08, h57km±4km, mb3.8/16, MS3.3/1, Error ellipse: s-maj=11.3km s-min=6.4km az=25.4*
JMA ***22*** *15:58:15.6±0.1, 36.95N×141.08E, h49km±1km, M3.7*
JMA Felt II J1.
IDC ***22*** *15:58:18.8±1.9, 36.86N×140.97E, h83km±20km, mb3.5/16, mb1 3.7/18, mb1mx3.4/57, mbtmp3.8/18, MS3.0/3, Ms1 3.0/3, ms1mx2.7/37, Error ellipse: s-maj=17.8km s-min=12.0km az=52.0*
ISC 22 15:58:15.4±1.0, 36.96N±0.05×141.09E±0.08, h47km±8km, n35, σ0.98/33, mb3.7/16, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.28**	**302**	P	**Pn**	**15 58 24.4**	**+0.4**
ONAJ				S	**Sn**	**15 58 30.4**	**+0.2**
JFK	**Kawauchi**	**0.44**	**337**	P	**Pn**	**15 58 26.0**	**+0.2**
JFK				S	**Sn**	**15 58 33.2**	**0.0**
JHO	**Hitachi**	**0.54**	**231**	P	**Pn**	**15 58 26.9**	**-0.1**
JHO				S	**Sn**	**15 58 34.9**	**-0.4**
JFT	**Otama**	**0.82**	**313**	P	**Pn**	**15 58 31.8**	**+1.2**
JMM	**Marumori**	**0.94**	**345**	P	**Pn**	**15 58 32.3**	**+0.1**
JSB	**Shiboa**	**0.94**	**271**	P	**Pn**	**15 58 33.0**	**+0.8**
JAG	**Ashikaga**	**1.42**	**249**	P	**Pn**	**15 58 39.0**	**+0.3**
MJAR	**Matsushiro Arr**	**2.35**	**261**	P	**Pn**	**15 58 51.9**	**+0.4**
	4.6nm,0.3s,baz=65,slow=9.8,SNR=42						
MJAR				S	**Sn**	**15 59 21.9**	**+2.8**
	6.2nm,0.3s,

	0.8nm,0.7s,baz=41,slow=9.3,SNR=3.5								
ASAR	**Alice Springs**	**46.18**	**192**	P		**P**		**16 07 58.5**	**+0.2**
	0.4nm,0.5s,baz=16,slow=13,SNR=16								
STKA	**Stephens Creek**	**53.46**	**182**	P		P		16 08 53.0	0.0
	3.7nm,1.2s,baz=322,slow=11,SNR=3.1								
MKAR	**Makanchi Array**	**54.69**	**313**	P		**P**		**16 09 01.4**	**-0.4**
	0.2nm,0.4s,baz=89,slow=7.8,SNR=2.9								
KURBB	**Kurchatov Arra**	**57.50**	**317**	P		**P**		**16 09 21.2**	**-0.3**
	0.3nm,0.3s,baz=93,slow=7.7,SNR=5.7								
ILAR	**Eielson Array**	**61.83**	**27**	P		P		16 09 50.3	-0.6
	0.7nm,0.6s,baz=257,slow=5.4,SNR=7.2								
YKA	**Yellowknife Ar**	**76.24**	**28**	P		**P**		**16 11 19.4**	**-0.1**
	0.4nm,0.4s,baz=292,slow=5.9,SNR=9.5								
FINES	**FINESS Array B**	**83.09**	**335**	P		P		16 11 54.9	-1.5
	0.3nm,0.4s,baz=47,slow=3.9,SNR=6.4								

IDC ***22*** *16:03:20.4±3.6,36˚.83N×72˚.09E,h148km±30km,mb2.9/3, mb1 3.2/8,mb1mx2.9/60,mbtmp3.7/8, Error ellipse: s-maj=30.5km s-min=24.5km az=162.0*

NNC ***22*** *16:03:30.5±1.7,37˚.57N×72˚.01E,h202km±16km,mb2.5, mpv3.5, Error ellipse: s-maj=17.4km s-min=14.5km az=65.0*

ISC 22 16:03:23.8±1.6, 37˚.2N±0˚.1×71˚.72E±0˚.09, h142km, n15, σ2s27/21, mb2.9/3, 9C-2D, Afghanistan-Tajikistan border region

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time	Res
SFK	**Sufi-Kurgan**	**3.17**	**26**	⇑P			Pn	16 04 16.7	+3.5
	12nm,0.3s								
SFK				⇑S			**Sn**	**16 04 53.9**	**+2.5**
	64nm,0.4s								
MNAS	**Manas**	**5.35**	**6**	⇑P			**Pn**	**16 04 44.5**	**+2.7**
	2.8nm,0.3s								
MNAS				⇑S			**Sn**	**16 05 43.3**	**+0.6**
	44nm,0.6s								
AAK	**Ala-Archa**	**5.86**	**20**	P			**Pn**	**16 04 50.4**	**+1.8**
	1.3nm,0.3s,baz=190,slow=11,SNR=28								
AAK				S			**Sn**	**16 05 56.6**	**+1.7**
	1.3nm,0.3s,baz=313,slow=22,SNR=16								
AAK	**Ala-Archa**	**5.86**	**20**	P			**Pn**	**16 04 50.8**	**+2.1**
	3.5nm,0.5s								
AAK				S			**Sn**	**16 05 54.9**	**-0.1**
	14nm,0.7s								
KK31	**Karatay Array**	**6.00**	**352**	P			**Pn**	**16 04 53.2**	**+2.8**
	1.4nm,0.2s,baz=165,slow=11,SNR=38								
KK31				⇑S			**Sn**	**16 05 59.2**	**+1.1**
	2.9nm,0.2s,baz=169,slow=23,SNR=8.9								
TKM2	**Tokmak 2**	**6.47**	**26**	⇓P			**Pn**	**16 04 58.3**	**+1.4**
	0.7nm,0.4s								
TKM2				⇑S			**Sn**	**16 06 06.2**	**-3.4**
	1.7nm,0.6s								
GEYT	**Alibeck**	**10.83**	**278**	P			**Pn**	**16 05 54.8**	**-0.1**
	0.5nm,0.3s,baz=64,slow=9.8,SNR=3.7								
AB31	**Akbulak array**	**14.80**	**328**	⇑P			**Pn**	**16 06 47.2**	**+1.3**
	0.8nm,0.3s								
AB31				⇑S			**Sn**	**16 09 26.1**	**-3.8**
	0.8nm,0.4s								
BVAR	**Borovoye Array**	**15.89**	**357**	P			**Pn**	**16 06 59.1**	**-0.3**
	0.2nm,0.3s,baz=163,slow=12,SNR=6.7								
AKTO	**Aktyubinsk**	**16.51**	**328**	P			**P**	**16 07 09.2**	**+2.1**
	0.7nm,0.3s,baz=144,slow=7.7,SNR=9.6								
AKTO	**Aktyubinsk**	**16.51**	**328**	⇓P			**P**	**16 07 08.8**	**+1.8**
	2.0nm,0.5s								
AKTO				⇑S			**Sn**	**16 10 07.2**	**-3.7**
	2.1nm,0.6s								
ZALV	**Zalesovo Beam**	**19.07**	**24**	P			**P**	**16 07 33.0**	**-2.0**
	0.4nm,0.3s,baz=221,slow=11,SNR=9.6								
FINES	**FINESS Array B**	**37.26**	**325**	P			**P**	**16 10 21.2**	**-0.2**
	0.3nm,0.4s,baz=122,slow=15,SNR=2.9								
YKA	**Yellowknife Ar**	**80.55**	**3**	P			**P**	**16 15 17.6**	**-2.2**
	0.1nm,0.5s,baz=349,slow=5.7,SNR=3.7								
ASAR	**Alice Springs**	**84.17**	**125**	P			P	16 15 32.8	-6.4
	0.1nm,0.6s,baz=309,slow=4.7,SNR=5.2								

CASC 22 16:07:11.6±1.6, 12˚.49N×87˚.91W, h40km±104km, MD4.3, ML3.5, 1D, Near coast of Nicaragua

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time	Res
CSGN	**Cosiguina Volc**	**0.59**	**35**	*e*P			Pn	16 07 23.7	0.0
CSGN				*e*S			Sn	16 07 33.1	+0.9
CNCH	**Conchagua**	**0.79**	**5**	*i* P			Pn	16 07 26.6	+0.2
CRIN	**San Cristobal**	**0.86**	**76**	*e*P			Pn	16 07 27.9	+0.6
CRIN				*e*S			Sn	16 07 40.2	+1.4
VSM	**San Miguel**	**1.00**	**339**	*e*P			Pn	16 07 29.6	+0.1
LCY	**Lacayo**	**1.01**	**338**	*e*P			Pn	16 07 29.1	-0.3
TEL3	**Telica 3**	**1.04**	**85**	*e*P			Pn	16 07 30.0	+0.2
TELN	**Telica**	**1.05**	**83**	*e*P			Pn	16 07 29.9	-0.1
PACA	**Pacayal**	**1.06**	**337**	*e*P			Pn	16 07 29.9	-0.2
CNGN	**Cerro Negro**	**1.18**	**89**	*e*P			Pn	16 07 31.4	-0.3
CNGN				*e*S			Sn	16 07 46.7	+0.1
CNGN				AML			AML	16 07 51.7	
	comp=E,1μm,0.3s								
COPN	**Copaltepe**	**1.32**	**103**	*e*P			Pn	16 07 33.2	-0.3
MOMN	**Momotombo**	**1.34**	**93**	*e*P			Pn	16 07 33.1	-0.7
SNVI	**San Vicente**	**1.44**	**321**	*e*P			Pn	16 07 35.2	-0.2
SNVI				*e*S			Sn	16 07 54.3	+1.1
APYN	**Apoyeque**	**1.54**	**99**	*e*P			Pn	16 07 36.6	0.0
XAVN	**Gruta Xavier**	**1.58**	**102**	*e*P			Pn	16 07 37.2	+0.1
LFRS	**El Faro**	**1.60**	**315**	⇓*i*P			Pn	16 07 37.2	-0.3
ESTN	**Estel**	**1.62**	**68**	*e*P			Pn	16 07 37.8	0.0
TISN	**Laguna Tiscapa**	**1.64**	**102**	*e*P			Pn	16 07 37.6	-0.3
CRUN	**El Crucero**	**1.65**	**107**	*e*P			Pn	16 07 38.6	+0.5
MGAN	**Managua**	**1.66**	**102**	*e*P			Pn	16 07 38.0	-0.2
MGAN				*e*S			Sn	16 07 58.5	+0.2
MGAN				AML			AML	16 07 59.4	
	comp=N,262nm,0.5s								
LBRS	**Las Brisas**	**1.67**	**318**	*i* P			Pn	16 07 38.8	+0.4
LBRS				*e*S			Sn	16 07 59.8	+1.1
TGUH	**Tegucigalpa,Un**	**1.68**	**21**	*e*P			Pn	16 07 39.0	+0.5
LFU	**La Fuente**	**1.72**	**317**	*e*P			Pn	16 07 39.2	0.0
SNET	**Serv Nac Est T**	**1.76**	**313**	*e*P			Pn	16 07 39.4	-0.3
SNET				*e*S			Sn	16 08 00.9	-0.1
SNET				AML			AML	16 08 06.5	
	comp=Z,1μm,0.3s								
COLS	**Colinas**	**1.79**	**311**	*e*P			Pn	16 07 39.6	-0.6
COLS				*e*S			Sn	16 08 02.9	+1.0
BOQS	**Boqueron**	**1.83**	**313**	*e*P			Pn	16 07 40.8	+0.1
BOQS				*e*S			Sn	16 08 04.8	+2.0
RTR	**El Retiro**	**2.20**	**310**	*e*P			Pn	16 07 46.9	+1.0
VCR	**Vista de Mar**	**3.24**	**136**	*e*P			Pn	16 08 00.0	0.0
JCR	**Jicaral**	**3.79**	**133**	*e*P			Pn	16 08 08.9	+1.2
JCR				*e*S			Sn	16 08 51.6	+0.5
URSC	**Urasca**	**4.83**	**123**	*e*P			Pn	16 08 25.4	+3.4
URSC				*e*S			Sn	16 09 17.0	+0.1
BUS	**Buena Vista**	**5.00**	**125**	*e*P			Pn	16 08 27.4	+2.7
BUS				*e*S			Sn	16 09 22.5	+1.0

IDC ***22*** *16:16:18.4±3.9,52˚.95N×166˚.00W,h0km,mb3.6/4, mb1 3.9/4,mb1mx3.3/57,mbtmp3.6/4, Error ellipse: s-maj=98.8km s-min=34.2km az=39.0*

ISCJB ***22*** *16:16:25.7±1.6,53˚.48N±0˚.08×164˚.81W±0˚.08, h24km±12km,mb3.5/4, Error ellipse: s-maj=14.4km s-min=6.0km az=155.6*

NEIC ***22*** *16:16:26.9,53˚.55N×164˚.86W,h47km,ML3.4(AEIC), After AEIC.*

ISC 22 16:16:24.8±1.7, 53˚.60N±0˚.07×164˚.87W±0˚.04, h6km±11km, n27, σ0s76/33, mb3.6/4, Unimak Island region

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time	Res
AKSA	**Akutan Strait**	**0.73**	**318**	P			**Pn**	**16 16 41.5**	**-0.1**
AKSA				S			**Sn**	**16 16 52.5**	**-0.5**
AKUT	**Akutan**	**0.76**	**316**	P			**Pn**	**16 16 42.1**	**+0.1**
AKUT				S			**Sn**	**16 16 53.5**	**-0.1**
ZRO	**Akutan Zero**	**0.82**	**308**	P			**Pn**	**16 16 43.0**	**+0.1**
AKRB	**Akutan Reef Bi**	**0.89**	**307**	P			**Pn**	**16 16 44.1**	**+0.3**
AKRB				S			**Sn**	**16 16 57.6**	**+0.7**
AKGG	**Akutan Green G**	**0.90**	**313**	P			**Pn**	**16 16 44.1**	**+0.2**
AKGG				S			**Sn**	**16 16 57.1**	**-0.1**
WESP	**Westdahl Peak**	**0.90**	**6**	P			**Pn**	**16 16 44.3**	**+0.3**
WESP				S			**Sn**	**16 16 57.6**	**+0.2**
WECS	**Westdahl Cape**	**0.94**	**3**	P			**Pn**	**16 16 44.9**	**+0.4**
WEBT	**Westdahl Beart**	**1.00**	**4**	P			**Pn**	**16 16 45.8**	**+0.5**
UNV	**Unalaska Valle**	**1.00**	**285**	P			**Pb**	**16 16 44.8**	**+0.3**
UNV				S			**Sb**	**16 16 58.4**	**+0.5**
MTBL	**Makushin Table**	**1.13**	**290**	P			**Pn**	**16 16 47.4**	**+0.1**
MGOD	**Makushin Gods**	**1.21**	**280**	P			**Pg**	**16 16 47.9**	**0.0**
MGOD				S			**Sb**	**16 17 04.0**	**+0.2**
SSLS	**Shishaldin Sou**	**1.23**	**24**	P			**Pg**	**16 16 48.2**	**-0.2**
MSOM	**Makushin Julie**	**1.25**	**281**	P			**Pg**	**16 16 48.6**	**-0.2**
SSLW	**Shishaldin Wes**	**1.26**	**20**	P			**Pg**	**16 16 49.0**	**+0.1**
SSLN	**Shishaldin Nor**	**1.32**	**23**	P			**Pn**	**16 16 50.0**	**+0.2**
FALS	**False Pass**	**1.52**	**34**	P			**Pn**	**16 16 52.0**	**-0.5**
OKER	**Okmok East Rim**	**1.90**	**267**	P			**Pb**	**16 16 59.1**	**-0.8**
BALA	**Baldy Mountain**	**2.01**	**37**	P			**Pb**	**16 17 01.3**	**-0.4**
DT1	**Dutton Round H**	**2.14**	**44**	P			**Pn**	**16 17 01.4**	**+0.3**
DTNA	**Dutton South F**	**2.18**	**44**	P			**Pn**	**16 17 02.1**	**+0.5**
NIKH	**Nikolski High**	**2.47**	**257**	P			**Pn**	**16 17 06.2**	**+0.7**
SDPT	**Sand Point**	**3.11**	**54**	P			**Pn**	**16 17 14.9**	**+0.7**
KDAK	**Kodiak Island**	**8.11**	**54**	Pn			Pb	16 18 37.6	-7.8
	0.2nm,0.3s,baz=201,slow=6.6,SNR=5.1								
YKA	**Yellowknife Ar**	**27.37**	**51**	P			**P**	**16 22 13.4**	**+3.1**
	0.3nm,0.6s,baz=275,slow=9.5,SNR=6.9								
NVAR	**Mina Array Bea**	**35.03**	**96**	P			**P**	**16 23 17.7**	**-0.5**
	0.5nm,0.8s,baz=296,slow=7.5,SNR=4.6								
TXAR	**Lajitas Array**	**50.06**	**94**	P			**P**	**16 25 19.9**	**-0.4**
	0.6nm,0.6s,baz=302,slow=5.8,SNR=9.4								
FINES	**FINESS Array B**	**64.97**	**354**	P			**P**	**16 27 03.2**	**-1.6**
	0.5nm,0.7s,baz=6.3,slow=14,SNR=3.6								

NIED ***22*** *16:27:00,37˚.30N×144˚.00E,h8km,Mw4.8 Best double couple: M0 1.53000×10^16 NP1:ϕs23.00000°,δ37.00000°, λ-112.00000°. NP2:ϕs230.00000°,δ56.00000°, λ-74.00000°.*

IDC ***22*** *16:27:34.5±0.5,37˚.07N×144˚.29E,h0km,mb4.6/31, mb1 4.7/37,mb1mx4.7/46,mbtmp4.6/37,ML4.3/6,MS3.9/21, Ms1 3.9/21,ms1mx3.7/47, Error ellipse: s-maj=13.4km s-min=10.6km az=117.0*

ISCJB ***22*** *16:27:39.6±0.1,37˚.23N±0˚.03×144˚.06E±0˚.02,h37km, mb4.8/211,MS4.3/41, Error ellipse: s-maj=4.0km s-min=2.1km az=174.9*

JMA ***22*** *16:27:39.2±0.2,37˚.25N×143˚.97E,h57km,M4.8*

JMA Felt I J1.

BJI ***22*** *16:27:39.0,37˚.49N×144˚.15E,h34km,mb4.8/69,mB5.0/52, Ms4.5/66,Ms7 4.3/61*

NEIC ***22*** *16:27:40.7±0.7,37˚.08N×144˚.12E,h38km±6km,mb4.9/120, Error ellipse: s-maj=5.2km s-min=3.6km az=152.0*

MOS ***22*** *16:27:40.6±0.9,37˚.53N×144˚.06E,h33km,mb5.1/73, Error ellipse: s-maj=6.8km s-min=4.1km az=111.0*

GCMT ***22*** *16:27:40.7±0.3,37˚.22N×144˚.08E,h17km,MW5.0/75, Moment Tensor Solution. s37,c45; s75,c122; Duration: 0 Moment tensor: Scale 10^16Nm; Mrr-2.91±.16; Mθθ1.16±.11; Mϕϕ1.76±.11; Mrθ0.70±.29; Mϕθ1.67±.07; Mϕr1.94±.31; Best double couple: M0 3.67200×10^16 NP1:ϕs208.00000°,δ62.00000°,λ-101.00000°. NP2: ϕs52.00000°,δ30.00000°,λ-69.00000°. Principal axes: T 3.7310, Plg17.0000°, Azm307.0000°; N -0.1090, Plg10.0000°, Azm214.0000°; P -3.6130, Plg70.0000°, Azm94.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

ISC 22 16:27:39.7±0.4, 37˚.20N±0˚.04×144˚.11E±0˚.04, h30km±2km, h30km:pP-P,n717,σ1s35/774, mb4.9/211, MS4.3/41, 42C-30D, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time	Res
JIO	**Ouri**	**2.52**	**301**	P			**Pn**	**16 28 17.1**	**-1.4**
JIO				S			**Sn**	**16 28 45.4**	**-2.7**
JFK	**Kawauchi**	**2.58**	**275**	P			**Pn**	**16 28 18.2**	**-1.3**
JFK				S			**Sn**	**16 28 47.0**	**-2.9**
ONAJ	**Iwakimizuishiy**	**2.65**	**269**	S			**Sn**	**16 28 48.1**	**-3.3**
JMK	**Ichinoseki**	**2.87**	**308**	P			**Pn**	**16 28 22.3**	**-1.1**
JMK				S			**Sn**	**16 28 54.4**	**-2.5**
JOM	**Ohasama**	**3.17**	**317**	P			**Pn**	**16 28 26.2**	**-1.3**
JOM				S			**Sn**	**16 29 01.3**	**-2.9**
JYK	**Kaneyama**	**3.42**	**301**	P			**Pn**	**16 28 30.1**	**-0.8**
JYK				S			**Sn**	**16 29 08.3**	**-2.1**
JANG	**Nango**	**3.76**	**328**	P			**Pn**	**16 28 34.5**	**-1.1**
JAG	**Ashikaga**	**3.82**	**260**	P			**Pn**	**16 28 35.5**	**-0.9**
MJAR	**Matsushiro Arr**	**4.78**	**264**	Pn			**Pn**	**16 28 49.5**	**0.0**
	58nm,0.3s,baz=72,slow=9.2,SNR=300								
MJAR				Sn			**Sn**	**16 29 41.2**	**-2.7**
	63nm,0.3s,baz=114,slow=29,SNR=5.6								
MAJO	**Matsushiro**	**4.78**	**264**	*e*P	*i*	P	**Pn**	**16 28 50.3**	**+0.7**
MAJO	**Matsushiro**	**4.78**	**264**	*e*Pn			**Pn**	**16 28 50.2**	**+0.6**
MAJO				*e*Sn			**Sn**	**16 29 43.0**	**-0.9**
MAT	**Matsushiro**	**4.78**	**264**	P			**Pn**	**16 28 49.9**	**+0.3**
MAT				S			**Sn**	**16 29 40.6**	**-3.3**
MJB9	**Matsu-Tunnel**	**4.78**	**264**	*e*Pn			**Pn**	**16 28 50.2**	**+0.5**
ERM	**Erimo**	**4.86**	**352**	*d* iP			**Pn**	**16 28 48.4**	**-2.3**
ERM				pmax			pmax		
	comp=Z,288nm,1.0s								
ERM	**Erimo**	**4.86**	**352**	*e*Pn			**Pn**	**16 28 47.9**	**-2.8**
ERM				*e*Sn			**Sn**	**16 29 40.0**	**-5.9**
JHJ2	**Mitsune**	**5.39**	**222**	*e*Pn			Pn	16 28 54.2	-3.7
JHJ2				*e*Sn			**Sn**	**16 29 52.4**	**-6.5**
JHJ	**Hachijo jima 2**	**5.40**	**222**	Pn			Pn	16 28 55.5	-2.6
	comp=Z,78nm,0.3s,baz=108,slow=22,SNR=31								
JHJ				Sn			Sn	16 29 52.1	-7.1
	comp=Z,528nm,0.3s,baz=46,slow=22,SNR=10								
INU	**Inuyama**	**6.02**	**254**	*e*Pn			**Pn**	**16 29 06.5**	**-0.2**
YUK	**Yuzh-Kuril'sk**	**6.95**	**10**	*e*P			Pn	16 29 15.1	-4.3
YUK				*e*S			Sn	16 30 29.0	-8.4
YUK				pmax			pmax		
	comp=Z,298nm,0.3s								
YUK				pmax			pmax		
	comp=N,55nm,0.2s								
YUK				pmax			pmax		
	comp=E,72nm,0.2s								
YUK				MLR			MLR		
	comp=Z,1μm,10.0s								
YUK				MLR			MLR		
	comp=N,1μm,9.0s								
SHO	**Shikotan**	**6.97**	**16**	*e*P			Pn	16 29 14.6	-5.1
SHO				*e*S			Sn	16 30 28.0	-10
SHO				pmax			pmax		
	comp=N,222nm,0.5s								
SHO				pmax			pmax		
	comp=Z,210nm,0.5s								
SHO				pmax			pmax		
	comp=E,92nm,0.4s								
ASAJ	**Asahikawa**	**7.00**	**351**	Pn			**Pn**	**16 29 18.5**	**-1.6**
	comp=E,16nm,0.3s,baz=185,slow=11,SNR=180								
ASAJ				Sn			**Sn**	**16 30 33.2**	**-5.4**
	comp=E,11nm,0.3s,baz=98,slow=32,SNR=5.7								
ASAJ				LR			LR	16 32 54.9	
	comp=E,1μm,18.0s,baz=198,slow=45								
ASAJ	**Asahikawa**	**7.00**	**351**	*e*Pn			**Pn**	**16 29 17.0**	**-3.1**
ASAJ				Sn			**Sn**	**16 30 33.2**	**-5.4**
KUR	**Kuril'sk**	**8.51**	**18**	*e*P			**Pn**	**16 29 38.2**	**-2.5**
KUR				*i* S			Sn	16 31 06.8	-8.8
KUR				pmax			pmax		
	comp=Z,38nm,0.7s								
KUR				pmax			pmax		
	comp=Z,213nm,2.9s								
KUR				smax			smax		
	comp=N,100nm,0.5s								
KUR				smax			smax		
	comp=E,64nm,0.4s								
KUR				smax			smax		
	comp=E,395nm,3.7s								
KUR				smax			smax		
	comp=N,280nm,3.7s								
YSS	**Yuzh-Sakhalins**	**9.80**	**355**	⇑*e*P			**Pn**	**16 29 56.1**	**-2.3**
YSS				*e*S			Sn	16 31 37.7	-10
YSS				pmax			pmax		
	comp=Z,30nm,0.8s								
YSS				MLR			MLR		
	comp=Z,800nm,18.0s								
YSS				MLR			MLR		
	comp=N,600nm,16.0s								
CBIJ	**Chichi jima**	**10.21**	**190**	*e*Pn			Pn	16 29 58.1	-6.0
CBIJ				Sn			Sn	16 31 44.5	-13
JCJ	**Chichijima**	**10.21**	**190**	Sn			Sn	16 31 44.5	-13
	baz=163,slow=19								
VLA	**Vladivostok**	**11.06**	**306**	⇑*i*P			**Pn**	**16 30 16.4**	**+0.7**
USRK	**Ussuriysk Ar.**	**11.55**	**311**	Pn			**Pn**	**16 30 23.1**	**+0.7**
	comp=N,2.2nm,0.3s,baz=119,slow=14,SNR=56								
USRK				LR			LR	16 34 20.5	
	comp=N,596nm,20.6s,baz=119,slow=35								
JNU	**Nakatsue**	**11.57**	**253**	Pn			**Pn**	**16 30 21.6**	**-1.1**
	comp=N,0.7nm,0.3s,baz=355,slow=0.7,SNR=8.4								
JNU				LR			LR	16 35 00.5	
	comp=N,273nm,18.4s,baz=114,slow=38								
JNU	**Nakatsue**	**11.57**	**253**	*e*Pn			**Pn**	**16 30 23.3**	**+0.6**
KSRS	**Korea Array**	**12.89**	**276**	Pn			**Pn**	**16 30 42.5**	**+1.8**
	comp=N,1.1nm,0.3s,baz=85,slow=14,SNR=38								
KSRS				LR			LR	16 35 00.2	
	comp=N,564nm,18.8s,baz=76,slow=34								
KSRS				PcP			**PcP**	**16 36 14.2**	**+0.1**
	baz=104,slow=0.5,SNR=4.8								
KS01	**Wonju Array Si**	**12.91**	**276**	*e*Pn			**Pn**	**16 30 43.2**	**+2.2**
KS15	**Wonju Array Si**	**12.92**	**276**	*e*Pn			**Pn**	**16 30 43.9**	**+2.7**
KSAR	**Wonju Array Be**	**12.92**	**276**	P			**Pn**	**16 30 42.6**	**+1.4**
KSAR	**Wonju Array Be**	**12.92**	**276**	Pn			**Pn**	**16 30 42.5**	**+1.4**
KSAR				PcP			**PcP**	**16 36 14.2**	**0.0**
HABR	**Khabarovsk**	**13.07**	**332**	*e*P			**Pn**	**16 30 40.1**	**-3.0**
HABR				*e*S			**Sn**	**16 33 03.6**	**-3.7**
HABR				pmax			pmax		
	comp=Z,45nm,1.5s								
HABR				MLR			MLR		
	comp=Z,135nm,15.0s								
MDJ	**Mudanjiang**	**13.23**	**309**	P			**Pn**	**16 30 45.8**	**+0.4**
MDJ				S			**Sn**	**16 33 12.0**	**+0.6**
MDJ				pmax			pmax		
	comp=Z,27nm,1.1s								
MDJ				pmax			pmax		
	comp=Z,220nm,3.8s								
MDJ				LR			LR		
	comp=Z,840nm,13.6s								
MDJ				LR			LR		
	comp=Z,560nm,15.9s								
MDJ				LR			LR		
	comp=Z,1μm,15.1s								
MDJ	**Mudanjiang**	**13.23**	**309**	*e*Pn			Pn	16 30 40.8	-4.6
	comp=Z,24nm,0.8s								
TYV	**Tymovskoe**	**13.70**	**356**	*e*P			**Pn**	**16 30 51.0**	**-0.7**
TYV				pmax			pmax		
	comp=Z,18nm,0.8s								
KLR	**Kul'dur**	**15.00**	**327**	Pn			**Pn**	**16 31 07.1**	**-2.3**
	comp=Z,0.3nm,0.3s,baz=136,slow=14,SNR=10								
KLR				LR			LR	16 36 34.3	
	comp=Z,540nm,21.7s,baz=140,slow=36								
CN2	**Changchun**	**15.64**	**301**	*e*P			**Pn**	**16 31 19.3**	**+1.6**
CN2				*es*P			sP	16 31 34.6	+1.1
CN2				*e*S			**Sn**	**16 34 10.9**	**+0.9**
CN2				pmax			pmax		
	comp=Z,10.0nm,0.6s								
CN2				pmax			pmax		
	comp=Z,200nm,3.0s								
CN2				LR			LR		
	comp=Z,500nm,16.0s								
CN2				LR			LR		
	comp=Z,600nm,16.0s								
CN2				LR			LR		
	comp=Z,700nm,18.0s								
NKL	**Nikolayevsk**	**16.13**	**353**	*e*P			**Pn**	**16 31 22.0**	**-1.9**
NKL				pmax			pmax		
	comp=N,13nm,1.0s								
NKL				pmax			pmax		
	comp=Z,22nm,1.0s								
NKL				MLR			MLR		
	comp=N,500nm,15.0s								
NKL				MLR			MLR		
	comp=E,600nm,15.0s								
NKL				MLR			MLR		
	comp=Z,800nm,15.0s								
SNY	**Shenyang**	**16.50**	**293**	⇑P			**P**	**16 31 31.8**	**+0.7**
SNY				PP			**sP**	**16 31 44.8**	**+1.7**
SNY				S			**Sn**	**16 34 26.0**	**-4.8**
SNY				sS			**S**	**16 34 36.8**	**-5.2**
SNY				pmax			pmax		
	comp=Z,560nm,4.7s								
SNY				LR			LR		
	comp=Z,1μm,11.8s								
SNY				LR			LR		
	comp=Z,940nm,16.7s								
SNY				LR			LR		
	comp=Z,2μm,15.7s								
DL2	**Dalian**	**17.78**	**282**	P			**Pn**	**16 31 44.5**	**-0.3**
DL2				pmax			pmax		
	comp=Z,18nm,0.8s								
PETK	**Petropavlovsk-**	**18.52**	**26**	P			**P**	**16 31 51.9**	**-1.5**
	comp=Z,0.1nm,0.3s,baz=194,slow=5.6,SNR=5.5								
PETK				LR			LR	16 41 21.2	
	comp=Z,310nm,18.1s,baz=231,slow=44								
HIA	**Hailar**	**21.36**	**312**	*e*P			**P**	**16 32 21.4**	**-2.9**
HIA				pmax			pmax		
	comp=Z,24nm,0.8s								
HIA	**Hailar**	**21.36**	**312**	*e*P			**P**	**16 32 21.4**	**-2.9**
	comp=Z,24nm,0.8s								
NJ2	**Nanjing**	**21.38**	**264**	*e*P			**P**	**16 32 29.0**	**+4.3**
NJ2				pmax			pmax		
	comp=Z,13nm,0.6s								
NJ2				LR			LR		
	comp=Z,430nm,12.5s								
NJ2				LR			LR		
	comp=Z,500nm,12.5s								
NJ2				LR			LR		
	comp=Z,660nm,14.1s								
TIA	**Tai'an**	**21.64**	**276**	⇑P			**P**	**16 32 27.1**	**-0.3**
TIA				pmax			pmax		
	comp=Z,30nm,1.0s								
TIA				pmax			pmax		
	comp

comp=Z,111nm,1.3s
SEY Seymchan 26.26 9 P **P** **16 33 12.5 +0.7**
comp=Z,17nm,0.9s,baz=190,slow=7.2,SNR=55
SEY Seymchan 26.26 9⇑ *i*P **P** **16 33 13.4 +1.6**
YAK Yakutsk 26.43 345 P **P** **16 33 13.3 -0.1**
comp=Z,20nm,0.7s,baz=352,slow=0.5,SNR=16
YAK LR LR 16 44 05.3
comp=Z,76nm,18.8s,baz=158,slow=37
YAK Yakutsk 26.43 345 *e*P **P** **16 33 13.1 -0.3**
YAK *e**PP **sP** **16 33 29.6 +3.7**
YAK *e* 16 33 49.7
YAK *e*S **S** **16 37 45.8 +1.0**
YAK *e**SS **sS** **16 38 05.9 +6.5**
YAK pmax pmax
comp=Z,45nm,1.3s
YAK pmax pmax
comp=N,22nm,1.5s
YAK pmax pmax
comp=E,14nm,1.3s
YAK pmax pmax
comp=Z,9.0nm,0.7s
YAK pmax pmax
comp=N,41nm,1.5s
YAK pmax pmax
comp=E,36nm,1.8s
YAK smax smax
comp=N,204nm,5.2s
YAK smax smax
comp=E,228nm,5.1s
YAK MLR MLR
comp=Z,425nm,17.0s
YAK MLR MLR
comp=E,358nm,17.0s
YAK MLR MLR
comp=N,272nm,16.0s
H11N2 WAKE ISLAND Hy 26.43 125 T T 17 00 10.5
baz=317,slow=75,SNR=132
H11N1 WAKE ISLAND Hy 26.44 125 T T 17 00 06.9
baz=317,slow=75,SNR=60
H11N3 WAKE ISLAND Hy 26.45 125 T T 17 00 13.3
baz=317,slow=75,SNR=87
H11S1 WAKE ISLAND Hy 27.19 127 T T 17 01 11.2
baz=318,slow=76,SNR=46
H11S3 WAKE ISLAND Hy 27.19 127 T T 17 01 11.3
baz=318,slow=76,SNR=40
H11S2 WAKE ISLAND Hy 27.21 127 T T 17 01 12.5
baz=318,slow=76,SNR=51
BOD Bodaibo 28.57 326 *e*P **P** **16 33 32.8 +0.2**
BOD pmax pmax
comp=Z,22nm,0.9s
XAN Xi'an 28.68 274 P **P** **16 33 36.9 +3.0**
XAN pP sP 16 33 46.1 -0.4
XAN sP pP 16 33 50.3 +7.5
XAN sS sS 16 38 40.6 +5.0
XAN SS **SnSn** **16 39 47.0 +4.5**
XAN pmax pmax
comp=Z,17nm,0.9s
XAN pmax pmax
comp=Z,160nm,8.8s
XAN LR LR
comp=Z,450nm,16.5s
XAN LR LR
comp=Z,410nm,13.2s
XAN LR LR
comp=Z,510nm,13.3s
ULN Ulaanbaatar 29.05 303⇑ *e*P **P** **16 33 38.7 +1.4**
ULN pmax pmax
comp=Z,25nm,1.5s
ULN Ulaanbaatar 29.05 303 P **P** **16 33 37.9 +0.6**
SNR=9.2
ULN Ulaanbaatar 29.05 303 P **P** **16 33 37.9 +0.6**
SNR=9.2
SONA1 Songino Array 29.48 303 *e*P **P** **16 33 42.3 +1.3**
SONM Songino Array 29.49 303 P **P** **16 33 42.5 +1.4**
comp=Z,4.6nm,0.9s,baz=102,slow=7.1,SNR=14
SONM LR LR 16 45 34.2
comp=Z,238nm,18.3s,baz=88,slow=36
ENH Enshi 29.49 267 *e*P **P** **16 33 39.1 -2.1**
comp=Z,36nm,0.8s
TLY Talaya 31.86 310 *e*P P 16 34 08.0 +6.2
TLY *e*S **S** **16 39 06.5 -4.0**
TLY 16 44 37.2
TLY pmax pmax
comp=Z,9.0nm,0.7s
TLY MLR MLR
comp=Z,401nm,15.0s
ZAK Zakamensk 31.87 308 *e*P **P** **16 34 02.6 +0.6**
ZAK pmax pmax
comp=Z,9.0nm,1.1s
LZH Lanzhou 32.16 280 *e*P **P** **16 34 05.8 +1.0**
LZH pP sP 16 34 16.5 -0.9
LZH sP pP 16 34 21.5 +7.8
LZH PP **PnPn** **16 35 12.1 +1.1**
LZH *e*S **S** **16 39 14.3 -1.4**
LZH sS sS 16 39 30.8 +0.4
LZH *e*SS **SnSn** **16 41 07.6 +0.2**
LZH pmax pmax
comp=Z,32nm,1.3s
LZH pmax pmax
comp=Z,190nm,7.4s
LZH LR LR
comp=Z,660nm,13.0s
LZH LR LR
comp=Z,670nm,13.2s
LZH LR LR
comp=Z,890nm,14.5s
BILL Bilibino 33.28 15*c i*P **P** **16 34 14.2 +0.1**
BILL *i* *PP **sP** **16 34 24.6 -2.0**
BILL *i* *SP pP 16 34 30.7 +7.8
BILL *e* 16 36 56.6
BILL pmax pmax
comp=Z,32nm,1.1s
BILL Bilibino 33.28 15 *e*P **P** **16 34 13.7 -0.4**
comp=Z,28nm,1.1s
GYA Guiyang 33.38 262 P **P** **16 34 15.6 +0.1**
GYA pP sP 16 34 28.3 +0.2
GYA PP **PP** **16 35 29.6 -1.6**
GYA PcP **PcP** **16 36 58.0 +1.3**
GYA S **S** **16 39 32.4 -2.3**
GYA sS sS 16 39 52.0 +2.6
GYA ScP **ScP** **16 40 37.8 -1.1**
GYA SS **SnSn** **16 41 37.4 +0.3**
GYA ScS **ScS** **16 44 37.3 -2.7**
GYA pmax pmax
comp=Z,20nm,0.9s
GYA pmax pmax
comp=Z,120nm,5.2s
GYA LR LR
comp=Z,630nm,17.8s
GYA LR LR
comp=Z,580nm,19.2s
GYA LR LR
comp=Z,540nm,18.9s
MOY Mondy 33.48 310 *e*P P 16 34 24.0 +7.8
CD2 Chengdu 33.83 271 P **P** **16 34 20.5 +1.2**
CD2 pP sP 16 34 31.6 -0.3
CD2 PP **PP** **16 35 37.3 +1.3**
CD2 S **S** **16 39 41.8 +0.3**
CD2 sS sS 16 40 01.0 +4.9
CD2 pmax pmax
comp=Z,30nm,0.5s
CD2 pmax pmax
comp=Z,130nm,5.9s
CD2 LR LR
comp=Z,760nm,14.4s
CD2 LR LR
comp=Z,510nm,18.0s
GTA Gaotai 34.57 288 *e*P **P** **16 34 27.3 +1.5**
GTA pP sP 16 34 39.8 +1.4
GTA sP pP 16 34 44.8 +10
GTA S **S** **16 39 55.8 +2.8**
GTA pmax pmax
comp=Z,6.0nm,1.3s
GTA pmax pmax
comp=Z,160nm,6.7s
GTA LR LR
comp=Z,170nm,17.3s
GTA LR LR
comp=Z,370nm,16.6s
GTA LR LR
comp=Z,490nm,16.2s
QIZ Qiongzhong 34.98 248 P **P** **16 34 28.4 -0.9**
QIZ S **S** **16 39 59.1 -0.2**
QIZ LR LR
comp=Z,130nm,16.3s
QIZ LR LR
comp=Z,130nm,15.3s
TIXI Tiksi 35.41 352 P **P** **16 34 31.4 -1.0**
comp=Z,2.2nm,0.9s,baz=144,slow=6.8,SNR=7.7
TIXI Tiksi 35.41 352⇓ *e*P **P** **16 34 32.0 -0.4**
TIXI pmax pmax
comp=Z,7.0nm,1.7s
TIXI MLR MLR
comp=Z,89nm,15.0s
TIXI Tiksi 35.41 352 *e*P **P** **16 34 30.5 -1.9**
comp=Z,5.9nm,1.3s
KMI Kunming 37.12 263 P **P** **16 34 48.5 +0.7**
KMI pmax pmax
comp=Z,25nm,1.3s
KMI pmax pmax
comp=Z,95nm,5.3s
SGSI Sangihe 37.46 212 P **P** **16 34 48.5 -2.0**
KRAR Krasnoyarsk 38.84 316⇓ *e*P **P** **16 35 03.4 +1.7**
KRAR pmax pmax
comp=Z,7.0nm,0.4s
TNTI Ternate 39.41 207 P **P** **16 35 07.5 +0.6**
comp=Z,74nm,1.6s,comp=Z,1µm
MYLDM Lahad Datu 39.55 223 *e*P **P** **16 35 08.9 +0.9**
comp=Z,32nm,1.2s
GENI Genyem 39.76 186 P **P** **16 35 09.4 -0.4**
comp=Z,62nm,1.1s
SDKM Sandakan 39.88 225⇑ P **P** **16 35 11.3 +0.4**
TSM Tawau 40.62 223⇓ P **P** **16 35 17.2 +0.2**
SKNT Sakolnakorn 40.63 251 P **P** **16 35 18.6 +1.6**
comp=Z,18nm,2.1s,comp=Z,3µm
LBMI Labuha 40.67 206 P **P** **16 35 18.1 +0.8**
comp=Z,70nm,0.9s,comp=Z,855nm
CRAI Chiangrai 41.52 258 P **P** **16 35 27.1 +2.7**
comp=Z,59nm,0.8s,comp=Z,2µm
MRSI Marisa 41.89 214 P **P** **16 35 28.2 +0.8**
comp=Z,74nm,1.0s
SANI Sanana 42.52 207 P **P** **16 35 32.7 +0.2**
comp=Z,53nm,0.9s,comp=Z,542nm
WMQ Urumqi 42.68 297 P **P** **16 35 35.4 +1.7**
WMQ pP sP 16 35 46.4 0.0
WMQ sP pP 16 35 52.0 +9.3
WMQ ScP **ScP** **16 41 15.5 +1.7**
WMQ S **S** **16 41 56.3 +1.2**
WMQ sS sS 16 42 15.5 +5.5
WMQ SS **SS** **16 44 57.3 -8.5**
WMQ pmax pmax
comp=Z,4.0nm,0.6s
WMQ pmax pmax
comp=Z,80nm,5.8s
CMAI Chiengmai2 42.73 259 P **P** **16 35 36.5 +2.1**
comp=Z,20nm,1.1s,comp=Z,1µm
MSAI Masohi 42.74 203 P **P** **16 35 38.4 +4.1**
UTTA Uttaradit 42.79 255 P **P** **16 35 36.2 +1.5**
comp=Z,4.4nm,1.0s,comp=Z,41nm
LAMP Lampang 43.06 257 P **P** **16 35 38.4 +1.5**
comp=Z,12nm,0.8s,comp=Z,107nm
PBKT Sadao Pong 43.17 253 P **P** **16 35 38.8 +1.1**
comp=Z,31nm,1.0s
NLAI Namlea 43.24 205 P **P** **16 35 38.8 +0.5**
comp=Z,18nm,1.3s
ZAA0 Zalesovo Array 43.40 312 *e*P **P** **16 35 39.1 -0.1**
ZALV Zalesovo Beam 43.40 312 P **P** **16 35 39.9 +0.7**
comp=Z,2.9nm,0.8s,baz=90,slow=6.5,SNR=14
ZALV PcP **PcP** **16 37 27.1 -0.1**
comp=Z,8.9nm,0.6s,baz=88,slow=2.6,SNR=9.6
ZALV LR LR 16 55 50.9
comp=Z,131nm,18.9s,baz=72,slow=39
ZALV Zalesovo Beam 43.40 312 P **P** **16 35 39.9 +0.7**
ZALV 16 37 27.1
ZALV pmax pmax
comp=Z,4.0nm,1.0s
ZALV pmax pmax
comp=Z,9.0nm,0.6s
ZALV MLR MLR
comp=Z,131nm,18.9s
CMMT Chiang Mai 43.42 258 P **P** **16 35 40.9 +1.0**
comp=Z,23nm,1.2s,comp=Z,304nm
CHTO Chiang Mai 43.43 258 P **P** **16 35 40.9 +1.0**
comp=Z,107nm,1.2s,comp=Z,1µm
CHTO Chiang Mai 43.43 258 *e*P **P** **16 35 39.4 -0.5**
CHTO pmax pmax
comp=Z,22nm,0.9s
CHTO Chiang Mai 43.43 258 *e*P **P** **16 35 39.4 -0.5**
comp=Z,22nm,0.9s
CHTO Chiang Mai 43.43 258 P **P** **16 35 38.0 -1.9**
SNR=15
CHTO Chiang Mai 43.43 258 P **P** **16 35 38.0 -1.9**
SNR=15
CHTO P **P** **16 35 38.0 -1.9**
SNR=15
CMAR Chiang Mai Arr 43.63 257 P **P** **16 35 43.1 +1.6**
comp=Z,5.8nm,0.7s,baz=45,slow=7.1,SNR=48
CMAR PcP **PcP** **16 37 28.5 -0.1**
comp=Z,2.1nm,0.7s,baz=22,slow=2.4,SNR=5.9
CMAR LR LR 16 56 36.6
comp=Z,122nm,18.1s,baz=18,slow=40
CM01 Chiang Mai Arr 43.64 257 *e*P **P** **16 35 42.6 +1.0**
NRIK Noril'sk 44.02 335 P **P** **16 35 44.4 +0.4**
comp=Z,2.8nm,0.5s,baz=118,slow=8.7,SNR=7.1
NRIK LR LR 16 54 57.7
comp=Z,410nm,19.8s,baz=107,slow=37
NVS Novosibirsk 44.28 314⇑ *i*P **P** **16 35 47.2 +0.9**
NVS *i* 16 37 30.6
NVS *e*S S 16 42 33.8 +16
NVS pmax pmax
comp=Z,7.0nm,0.7s
NVS pmax pmax
comp=N,1.0nm,0.3s
NVS pmax pmax
comp=E,2.0nm,0.3s
NVS pmax pmax
comp=Z,7.0nm,0.6s
NVS pmax pmax
comp=N,8.0nm,1.9s
NVS pmax pmax
comp=E,11nm,1.5s
NVS smax smax
comp=N,7.0nm,1.8s
NVS smax smax
comp=E,12nm,1.3s
MHMT Maesarieng 44.58 258 P **P** **16 35 51.1 +2.0**
comp=E,16nm,1.1s,comp=E,207nm
SBUM Sibu 45.34 228 *e*P **P** **16 35 54.6 -0.6**
comp=E,27nm,1.4s
KDAK Kodiak Island 45.53 42 *i* P **P** **16 35 55.9 -0.3**
PPLA Purkeypile 45.80 35 *e*P **P** **16 35 58.5 +0.1**
comp=E,52nm,1.5s
MK01 Makanchi Array 45.85 302 *e*P **P** **16 35 59.2 +0.3**
MK31 Makanchi Array 45.85 302 *i* P **P** **16 35 59.3 +0.4**
MK31 pmax pmax
comp=Z,13nm,0.9s
MK31 Makanchi Array 45.85 302 *e*P **P** **16 35 59.6 +0.7**
MKAR Makanchi Array 45.85 302 P **P** **16 35 59.9 +1.0**
comp=Z,3.9nm,0.8s,baz=87,slow=9.5,SNR=34
MKAR LR LR 16 56 34.2
comp=Z,135nm,18.4s,baz=84,slow=38
MKAR Makanchi Array 45.85 302 *e*P **P** **16 35 59.6 +0.7**
CAST Castle Rocks 45.88 34 *e*P **P** **16 35 59.9 +1.0**
comp=Z,15nm,1.2s
MAKZ Makanchi 46.06 303 *e*P **P** **16 36 01.6 +1.0**
MAKZ pmax pmax
comp=Z,17nm,1.0s
MAKZ Makanchi 46.06 303 *e*P **P** **16 36 01.6 +1.0**
comp=Z,17nm,1.0s
KTH Kantishna Hill 46.40 34 *e*P **P** **16 36 03.7 +0.6**
comp=Z,45nm,1.4s
PMG Port Moresby 46.45 176 LR LR 16 56 51.7
comp=Z,34nm,18.8s,baz=346,slow=38
MLY Manley 46.56 32 *e*P **P** **16 36 04.7 +0.4**
comp=Z,17nm,1.0s
KSM Kuching 47.26 229 *e*P **P** **16 36 10.9 +0.7**
comp=Z,47nm,1.5s
RND Reindeer 47.33 34 *e*P **P** **16 36 10.3 0.0**
RND pmax pmax
comp=Z,20nm,1.1s
RND Reindeer 47.33 34 *e*P **P** **16 36 10.3 0.0**
comp=Z,20nm,1.1s
KURK Kurchatov 47.52 308 P **P** **16 36 12.2 +0.3**
KURK pmax pmax
comp=Z,32nm,0.6s
KURK Kurchatov 47.52 308 *e*P **P** **16 36 12.2 +0.3**
comp=Z,26nm,0.8s
KURK PcP **PcP** **16 37 41.9 +0.3**
KURK Kurchatov 47.52 308 P **P** **16 36 11.9 0.0**
SNR=10
KURK Kurchatov 47.52 308 P **P** **16 36 11.9 0.0**
SNR=10
KURK P **P** **16 36 11.9 0.0**
SNR=10
KURBB Kurchatov Arra 47.59 308 P **P** **16 36 13.1 +0.6**
comp=Z,6.0nm,0.7s,baz=82,slow=7.9,SNR=51
KURBB PcP **PcP** **16 37 41.9 +0.1**
comp=Z,3.3nm,0.8s,baz=84,slow=3.4,SNR=4.1
MDM Murphy Dome 47.63 32 *e*P **P** **16 36 13.1 +0.6**
comp=Z,34nm,1.1s
WRH Wood River Hil 47.68 33 *e*P **P** **16 36 11.8 -1.1**
comp=Z,16nm,1.4s
KAPI Kappang 47.75 214 P **P** **16 36 11.9 -2.1**
comp=Z,4.7nm,0.3s,baz=11,slow=9.2,SNR=4.1
COLA College 47.79 32⇑ *i*P **P** **16 36 15.0 +1.3**
COLA pmax pmax
comp=Z,34nm,2.1s
CCB Clear Creek Bu 47.80 33 *e*P **P** **16 36 14.3 +0.4**
comp=Z,23nm,1.7s
IL1 Eielson Array 48.20 32 *e*P **P** **16 36 15.9 -1.0**
ILAR Eielson Array 48.20 32 P **P** **16 36 16.9 -0.1**
comp=Z,6.9nm,0.9s,baz=266,slow=6.2,SNR=55
ILB Eielson Array 48.20 32 *e*P **P** **16 36 17.1 +0.1**
PDGK Podgornoye 48.60 298 P **P** **16 36 20.5 +0.2**
PDGK pmax pmax
comp=Z,18nm,1.3s
KLU Klutina 48.74 37 *e*P **P** **16 36 19.6 -1.7**
comp=Z,54nm,1.4s
DIV Divide 48.84 37 *e*P **P** **16 36 23.3 +1.3**
comp=Z,44nm,1.2s
FYU Fort Yukon 48.89 30 *e*P **P** **16 36 23.1 +0.9**
comp=Z,43nm,1.3s
MENT Mentasta 49.67 35 *e*P **P** **16 36 29.7 +1.4**
comp=Z,14nm,1.1s
KKN Kakani 49.81 277 *e*P **P** **16 36 30.9 +0.8**
comp=Z,34nm,0.7s
PKIN Phulchoki 49.81 277 *e*P **P** **16 36 30.1 -0.1**
comp=Z,17nm,0.8s
GKN Gorkha 50.22 278 *e*P **P** **16 36 33.7 +0.6**
comp=Z,45nm,0.8s
EGAK Eagle 50.65 32 *e*P **P** **16 36 35.3 -0.3**
comp=Z,26nm,1.8s
KULM Kulim 50.78 242 *e*P **P** **16 36 34.5 -2.8**
comp=Z,20nm,1.1s
COEN Coen 50.89 181 *e*P **P** **16 36 37.8 -0.1**
comp=Z,30nm,1.2s
IPM Ipoh 51.09 241 *e*P **P** **16 36 39.2 -0.4**
comp=Z,28nm,1.0s
KOLN Koldanda 51.15 278 *e*P **P** **16 36 41.0 +0.8**
comp=Z,12nm,0.5s
MTN Manton Dam 51.25 196 *e*P **P** **16 36 39.1 -1.6**
comp=Z,54nm,0.7s
TKM2 Tokmak 2 51.44 299 P **P** **16 36 43.1 +0.9**
TKM2 pmax pmax
comp=Z,36nm,1.3s
TKM2 Tokmak 2 51.44 299 *e*P **P** **16 36 44.0 +1.8**
comp=Z,21nm,0.8s
PYUN Piuthan 51.48 279 *e*P **P** **16 36 43.7 +1.0**
comp=Z,42nm,0.7s
CHKZ Chkalovo 51.77 313 P **P** **16 36 43.4 -0.7**
CHKZ pmax pmax
comp=Z,17nm,1.3s
BVA0 Borovoye Array 52.05 313 *i* P **P** **16 36 46.6 +0.3**
BVA0 pmax pmax
comp=Z,12nm,1.2s
BRVK Borovoye 52.10 313⇑ *i*P **P** **16 36 47.7 +1.0**
BRVK pmax pmax
comp=Z,12nm,1.7s
BRVK Borovoye 52.10 313 *e*P **P** **16 36 45.8 -0.9**
comp=Z,15nm,1.0s
FRU Bishkek 52.15 299⇑ *e*P **P** **16 36 48.0 +0.7**
FRU pmax pmax
comp=Z,27nm,2.0s
KSH Kashi 52.30 295 *e*P P 16 36 53.9 +5.4
KSH *es*P sP 16 37 11.8 +10
KSH *e*ScP **ScP** **16 41 55.4 +1.1**
KSH PcS **PcS** **16 42 02.8 +4.8**
KSH S **S** **16 44 16.9 +5.0**
KSH pmax pmax
comp=Z,190nm,5.5s
KSH LR LR
comp=Z,290nm,11.5s
KSH LR LR
comp=Z,230nm,8.6s
KSH LR LR
comp=Z,440nm,16.5s
AAK Ala-Archa 52.30 299 P **P** **16 36 49.7 +1.2**
comp=Z,1.9nm,0.6s,baz=105,slow=4.9,SNR=8.7
AAK Ala-Archa 52.30 299⇓ *e*P **P** **16 36 49.0 +0.5**
AAK pmax pmax
comp=Z,19nm,1.6s
AAK Ala-Archa 52.30 299 *e*P **P** **16 36 49.6 +1.0**
comp=Z,12nm,1.2s
AAK Ala-Archa 52.30 299 P **P** **16 36 46.5 -2.1**
SNR=5.6
EKS2 Erkin-Say 52.79 299 *e*P **P** **16 36 52.1 0.0**
EKS2 pmax pmax
comp=Z,6.0nm,1.0s
EKS2 Erkin-Say 52.79 299 *e*P **P** **16 36 52.1 0.0**
comp=Z,6.1nm,1.0s
ZRNK Zerenda 52.88 313 P **P** **16 36 52.8 +0.3**
ZRNK pmax pmax
comp=Z,18nm,1.5s
ZRNK Zerenda 52.88 313 *e*P **P** **16 36 53.3 +0.8**
comp=Z,17nm,1.1s
INK Inuvik 53.25 27 *e*P **P** **16 36 55.0 +0.1**
INK pmax pmax
comp=Z,8.0nm,0.8s
INK Inuvik 53.25 27 *e*P **P** **16 36 55.0 +0.1**
comp=Z,8.5nm,0.8s
MNAS Manas 53.73 299 P **P** **16 37 00.3 +1.2**
MNAS pmax pmax
comp=Z,26nm,0.9s
PSI Prapat 53.75 241 P **P** **16 37 00.2 +0.8**
comp=Z,12nm,0.6s,baz=28,slow=3.2,SNR=9.8
SFK Sufi-Kurgan 53.90 296 P **P** **16 37 01.0 +0.5**
SFK pmax pmax
comp=Z,29nm,1.1s
KK31 Karatay Array 54.90 301 P **P** **16 37 07.7 +0.3**
KK31 pmax pmax
comp=Z,19nm,1.4s
KKAR Karatay Array 54.90 301 *e*P **P** **16 37 08.3 +0.9**
KKAR Karatay Array 54.90 301 *e*P **P** **16 37 08.3 +0.9**
LEM Lembang 55.51 226 P **P** **16 37 17.8 +5.6**
comp=Z,53nm,0.8s,baz=41,slow=4.0,SNR=15
SVE Sverdlovsk 56.44 319⇓ *i*P **P** **16 37 19.7 +1.5**
SVE pmax pmax
comp=Z,27nm,0.9s
SVE MLR MLR
comp=Z,640nm,16.0s
DLBC Dease Lake 57.16 39 *e*P **P** **16 37 24.8 +1.4**
comp=Z,52nm,2.0s
WRAB Tennant Creek 57.57 191 *e*P **P** **16 37 24.6 -1.9**
WRAB pmax pmax
comp=Z,37nm,0.7s
WRAB Tennant Creek 57.57 191 *e*P **P** **16 37 24.6 -1.9**
comp=Z,37nm,0.7s
WRA Warramunga Arr 57.58 191 P **P** **16 37 24.8 -1.8**
comp=Z,33nm,0.6s,baz=13,slow=7.4,SNR=259
WRA Warramunga Arr 57.58 191 P **P** **16 37 24.8 -1.8**
WRA pmax pmax
comp=Z,32nm,0.6s
ARU Arti 57.65 319*d i*P **P** **16 37 27.4 +0.6**
ARU 16 38 20.0
ARU 16 39 33.7
ARU S **S** **16 45 24.6 +1.7**
ARU SS **SS** **16 49 15.5 +2.7**
ARU pmax pmax
comp=Z,34nm,1.7s
ARU MLR MLR
comp=Z,532nm,17.0s
ARU Arti 57.65 319 *e*P **P** **16 37 27.5 +0.6**
comp=Z,18nm,0.9s
FITZ Fitzroy Crossi 57.70 201 *e*P **P** **16 37 27.4 0.0**
comp=Z,12nm,0.8s
AB31 Akbulak array 59.47 311 P **P** **16 37 39.3 -0.3**
AB31 pmax pmax
comp=Z,7.0nm,0.7s
ABKAR Akbulak array 59.47 311 *e*P **P** **16 37 39.8 +0.2**
AKTO Aktyubinsk 60.16 313 P **P** **16 37 43.8 -0.5**
AKTO pmax pmax
comp=Z,14nm,1.0s
HYB Hyderabad 60.36 270 *i* P **P** **16 37 47.0 +0.8**
HYB *e*pP **sP** **16 37 57.0 -2.1**
HYB *es*P pP **16 38 06.5 +11**
HYB *e*PcP **PcP** **16 38 31.0 -0.1**
AS01 Alice Springs 61.29 191 *e*P **P** **16 37 50.7 -1.5**
AS31 Alice Springs 61.30 191 *e*P **P** **16 37 50.9 -1.4**
comp=Z,5.6nm,0.7s

ASAR **Alice Springs** 61.30 191 P **P** 16 37 50.8 -1.5
comp=Z,16nm,0.8s,baz=7.1,slow=7.2,SNR=184
ASAR PKP2bc 17 07 15.8
comp=Z,0.7nm,1.0s,baz=193,slow=3.9,SNR=4.2
RES **Resolute Bay** 61.89 15 *e*P **P** 16 37 55.6 0.0
RES pmax pmax
comp=Z,13nm,1.0s
RES **Resolute Bay** 61.89 15 *e*P **P** 16 37 55.6 0.0
comp=Z,13nm,1.0s
MBWA **Marble Bar** 62.43 206 *e*P **P** 16 37 57.8 -2.1
comp=Z,15nm,0.7s
YKW3 **Yellowknife Ar** 62.53 31 *e*P **P** 16 38 00.3 +0.2
comp=Z,10nm,1.4s
YKA **Yellowknife Ar** 62.57 31 P **P** 16 38 00.4 0.0
comp=Z,2.0nm,0.9s,baz=294,slow=6.7,SNR=27
YKA PKP2bc 17 07 06.2
comp=Z,0.6nm,1.0s,baz=100,slow=2.8,SNR=6.0
YKB5 **Yellowknife Ar** 62.57 31 *e*P **P** 16 37 59.4 -1.0
POO **Poona** 63.51 274 *e*P **P** 16 38 06.0 -1.3
ARCES **ARCESS Array B** 64.59 340 P **P** 16 38 15.9 +2.3
comp=Z,4.7nm,0.9s,baz=1.3,slow=8.1,SNR=3.3
ARCES LR LR 17 10 53.6
comp=Z,128nm,18.0s,baz=40,slow=40
KLMR **Klimovskoe** 64.75 328 *e*P **P** 16 38 13.7 -1.1
KLMR pmax pmax
comp=Z,20nm,1.3s
NLWA **Neilton Lookou** 65.00 49 *e*P **P** 16 38 13.7 -3.0
comp=Z,31nm,1.0s
GEYT **Allbeck** 65.63 300 P **P** 16 38 21.9 +0.9
comp=Z,5.4nm,0.9s,baz=29,slow=3.4,SNR=13
GEYT LR LR 17 10 07.1
comp=Z,95nm,18.4s,baz=70,slow=39
B05A **Bryant** 65.63 47 P **P** 16 38 21.7 +1.0
baz=299
DAG **Danmarks Havn** 65.78 356 *i* P **P** 16 38 19.9 -1.3
comp=Z,13nm,1.2s
LON **Longmire** 66.54 48 *e*P **P** 16 38 25.2 -1.5
LON pmax pmax
comp=Z,6.0nm,1.2s
LON **Longmire** 66.54 48 *e*P **P** 16 38 25.2 -1.5
comp=Z,6.3nm,1.2s
F04A **Amboy** 66.58 49 *e*P **P** 16 38 27.6 +0.7
comp=Z,21nm,0.9s
LTY **Liberty** 66.97 47 *e*P **P** 16 38 30.2 +0.8
comp=Z,19nm,1.4s
I03D **Drain, OR** 67.12 52 P **P** 16 38 31.9 +1.6
baz=300
B08A **Colville Reser** 67.18 46 *e*P **P** 16 38 30.9 +0.2
comp=Z,12nm,1.4s
H04A **Detroit Lake** 67.35 50 *e*P **P** 16 38 32.2 +0.4
comp=Z,22nm,1.0s
G05D **Wamic, OR** 67.60 50 P **P** 16 38 34.7 +1.3
baz=301
I04A **Tendick Farm,** 67.66 51 P **P** 16 38 34.8 +1.0
baz=300,SNR=6.2
L02D **Cave Junction,** 67.73 53 P **P** 16 38 35.6 +1.3
baz=300
I05D **Terrebonne, OR** 68.05 50 P **P** 16 38 37.3 +1.0
baz=301
C09A **Chrisman Ranch** 68.08 46 *e*P **P** 16 38 37.2 +0.8
comp=Z,17nm,1.3s
MOS **Moscow** 68.38 324 *e*P **P** 16 38 35.7 -2.3
MOS *e* 16 38 53.4
MOS *e* 16 41 08.0
MOS pmax pmax
comp=Z,35nm,0.9s
NEW **Newport** 68.49 45 P **P** 16 38 40.1 +1.2
baz=302
NEW **Newport** 68.49 45 *e*P **P** 16 38 39.8 +0.8
NEW pmax pmax
comp=Z,10.0nm,1.2s
NEW **Newport** 68.49 45 *e*P **P** 16 38 39.8 +0.8
comp=Z,9.9nm,1.2s
YBH **Yreka Blue Hor** 68.53 53 *e*P **P** 16 38 39.3 0.0
YBH pmax pmax
comp=Z,11nm,1.1s
YBH **Yreka Blue Hor** 68.53 53 *e*P **P** 16 38 39.3 0.0
comp=Z,11nm,1.1s
M02C **Callahan** 68.61 54 P **P** 16 38 41.6 +1.7
baz=301
J05D **Fort Rock, OR** 68.66 51 P **P** 16 38 41.7 +1.5
baz=301
STKA **Stephens Creek** 68.76 182 P **P** 16 38 39.0 -1.5
comp=Z,2.4nm,0.5s,baz=360,slow=5.6,SNR=14
STKA **Stephens Creek** 68.76 182 P **P** 16 38 39.0 -1.5
STKA pmax pmax
comp=Z,2.0nm,0.5s
VRH **Novokhopyorsk** 68.89 319 *e*P **P** 16 38 41.3 0.0
VRH pmax pmax
comp=Z,30nm,1.7s
N02D **Trinity Center** 68.92 54 P **P** 16 38 42.8 +1.0
baz=301
M04C **Macdoel** 69.06 53 P **P** 16 38 44.1 +1.4
baz=302
K05A **Summer Lake** 69.16 52 *e*P **P** 16 38 44.7 +1.3
comp=Z,33nm,1.0s
WDC **Whiskeytown Da** 69.23 54 *e*P **P** 16 38 43.7 +0.1
WDC pmax pmax
comp=Z,13nm,1.1s
WDC **Whiskeytown Da** 69.23 54 *e*P **P** 16 38 43.7 +0.1
comp=Z,13nm,1.1s
OBN **Obninsk** 69.24 324⇑ *i*P **P** 16 38 44.2 +0.9
OBN *e**PP **sP** 16 38 55.2 -1.2
OBN *e* 16 39 07.7
OBN pmax pmax
comp=Z,36nm,1.7s
OBN MLR MLR
comp=Z,316nm,16.0s
LPSR **Galich'ya Gora** 69.54 321 *e*P **P** 16 38 44.7 -0.6
LPSR pmax pmax
comp=Z,10.0nm,0.9s
FIA1 **FINESS Array S** 69.65 333 *e*P **P** 16 38 46.5 +0.7
FINES **FINESS Array B** 69.66 333 P **P** 16 38 45.5 -0.3
comp=Z,7.4nm,0.9s,baz=50,slow=7.1,SNR=16
FINES LR LR 17 13 01.4
comp=Z,135nm,18.1s,baz=50,slow=39
O03D **Paynes Creek** 69.86 54 P **P** 16 38 47.6 0.0
baz=302,SNR=6.3
MOD **Modoc Plateau** 69.97 52 *e*P **P** 16 38 48.0 -0.3
comp=Z,6.2nm,1.0s
VSR **Storozhevoye** 70.21 320 *e*P **P** 16 38 49.4 0.0
VSR pmax pmax
comp=Z,20nm,1.4s
ORV **Oroville** 70.45 55 *e*P **P** 16 38 51.8 +0.6
ORV pmax pmax
comp=Z,14nm,1.1s
ORV **Oroville** 70.45 55 *e*P **P** 16 38 51.8 +0.6
comp=Z,14nm,1.1s
SUMG **Summit** 70.50 1 *i* P **P** 16 38 52.3 +1.0
comp=Z,7.6nm,0.9s
SUMG **Summit** 70.50 1 *e*P **P** 16 38 52.4 +1.0
SUMG pmax pmax
comp=Z,8.0nm,0.8s
SUMG **Summit** 70.50 1 *e*P **P** 16 38 52.4 +1.0
comp=Z,7.9nm,0.8s
SWMT **Swartz Lake** 70.67 45 *e*P **P** 16 38 53.2 +0.8
WVOR **Wild Horse Val** 70.72 51 *e*P **P** 16 38 54.0 +1.1
WVOR pmax pmax
comp=Z,14nm,1.3s
WVOR **Wild Horse Val** 70.72 51 *e*P **P** 16 38 54.0 +1.1
comp=Z,14nm,1.3s
MSO **Missoula** 71.08 45 P **P** 16 38 55.3 +0.3
baz=304
MSO **Missoula** 71.08 45 *e*P **P** 16 38 55.5 +0.5
comp=Z,15nm,1.5s
VSU **Vasula** 71.39 330 *de*P **P** 16 38 57.1 +0.7
VSU pmax pmax
comp=Z,88nm,1.7s
MFID **Camas Ranch** 71.90 49 *e*P **P** 16 39 01.0 +1.0
comp=Z,10.0nm,1.1s
CMB **Columbia Colle** 72.01 56 *e*P **P** 16 39 01.6 +1.0
CMB pmax pmax
comp=Z,11nm,1.1s
CMB **Columbia Colle** 72.01 56 *e*P **P** 16 39 01.6 +1.0
comp=Z,11nm,1.1s
GUDG **Gudauri** 72.17 310 P **P** 16 39 04.1 +2.3
ZEI **Tsey** 72.34 311 *e*P **P** 16 39 03.2 +0.4
ZEI pmax pmax
comp=Z,13nm,0.8s
WAKR **Walker** 72.37 55 *e*P **P** 16 39 04.3 +1.3
FFC **Flin Flon** 72.38 34 *e*P **P** 16 39 02.1 -0.4
FFC pmax pmax
comp=Z,12nm,0.9s
FFC **Flin Flon** 72.38 34 *e*P **P** 16 39 02.1 -0.4
comp=Z,12nm,0.9s
KIV **Kislovodsk** 72.41 312 *d i*P **P** 16 39 04.0 +0.9
KIV *e**PP **sP** 16 39 15.3 -0.8
KIV *e*SP **PcP** 16 39 17.5 -3.3
KIV *e* 16 39 21.9
KIV pmax pmax
comp=Z,55nm,1.7s
KIV **Kislovodsk** 72.41 312 *e*P **P** 16 39 04.7 +1.6
comp=Z,31nm,0.8s
KIV **Kislovodsk** 72.41 312 P **P** 16 39 03.9 +0.9
SNR=11
KIV **Kislovodsk** 72.41 312 P **P** 16 39 03.9 +0.9
SNR=11
KBZ **Khabaz** 72.41 312 P **P** 16 39 04.5 +1.7
comp=Z,12nm,0.9s,baz=86,slow=3.2,SNR=32
KBZ LR LR 17 16 22.7
comp=Z,116nm,18.6s,baz=58,slow=40
LRM **Limekiln Ridge** 72.51 45 *e*P **P** 16 39 04.3 +0.5
HLID **Hailey** 72.67 48 P **P** 16 39 05.8 +1.2
baz=305
HLID **Hailey** 72.67 48 *e*P **P** 16 39 05.7 +1.0
comp=Z,6.1nm,1.2s
DLMT **Dillon** 72.69 46 *e*P **P** 16 39 06.1 +1.3
comp=Z,7.4nm,0.9s
EGMT **Eagleton** 72.71 42 P **P** 16 39 05.2 +0.5
baz=306
EGMT **Eagleton** 72.71 42 *e*P **P** 16 39 05.0 +0.3
comp=Z,5.5nm,0.9s
BMN **Battle Mountai** 72.72 52 *e*P **P** 16 39 06.3 +1.3
BMN pmax pmax
comp=Z,10.0nm,1.0s
BMN **Battle Mountai** 72.72 52 *e*P **P** 16 39 06.3 +1.3
comp=Z,10.0nm,1.0s
ONI **Oni** 72.73 311 P **P** 16 39 06.6 +1.7
ONI **Oni** 72.73 311 P **P** 16 39 06.6 +1.7
NEY **Neytrino** 72.79 311⇑ *i*P **P** 16 39 07.6 +2.2
NEY pmax pmax
comp=Z,2.0nm,0.9s
FCC **Fort Churchill** 72.87 28 *e*P **P** 16 39 05.1 -0.2
FCC pmax pmax
comp=Z,26nm,1.4s
FCC **Fort Churchill** 72.87 28 *e*P **P** 16 39 05.1 -0.2
comp=Z,26nm,1.4s
WSAR **Wadi Sarin** 72.90 286 P **P** 16 39 07.3 +1.2
comp=Z,4.2nm,1.0s,baz=118,slow=7.0,SNR=4.0
BOZ **Bozeman (W)** 73.08 45 P **P** 16 39 07.9 +0.8
baz=306,SNR=6.8
BOZ **Bozeman (W)** 73.08 45 *e*P **P** 16 39 07.7 +0.7
BOZ pmax pmax
comp=Z,6.0nm,0.8s
BOZ **Bozeman (W)** 73.08 45 *e*P **P** 16 39 07.7 +0.7
comp=Z,6.2nm,0.8s
NV01 **Mina Array Sit** 73.15 54 *e*P **P** 16 39 08.0 +0.3
NVAR **Mina Array Bea** 73.15 54 P **P** 16 39 08.2 +0.6
comp=Z,7.0nm,0.8s,baz=283,slow=6.3,SNR=50
BANOM **Banah** 73.19 290 P **P** 16 39 08.4 +0.6
SNR=6.6
BANOM **Banah** 73.19 290 P **P** 16 39 08.4 +0.6
SNR=6.6
NV11 **Mina Array Sit** 73.25 54 *e*P **P** 16 39 09.2 +1.1
comp=Z,6.5nm,1.0s
GNI **Garni** 73.32 308 *d i*P **P** 16 39 10.0 +1.4
GNI pmax pmax
comp=Z,79nm,1.6s
NACGM **Naroch** 73.75 328 *e* **P** 16 39 12.0 +1.4
UOSS **Minazif** 73.80 289 *e*P **P** 16 39 11.5 +0.1
comp=Z,1.0nm,0.8s
ASHO **Ashiyiah** 74.05 289 P **P** 16 39 13.1 +0.1
SNR=5.9
ASHO **Ashiyiah** 74.05 289 P **P** 16 39 13.1 +0.1
SNR=5.9
PKM **Mcpherson Peak** 74.14 58 P **P** 16 39 14.3 +0.8
baz=304
YFT **Old Faithful** 74.24 46 *e*P **P** 16 39 16.9 +3.0
comp=Z,5.3nm,0.8s
H17A **Grant Village** 74.42 46 P **P** 16 39 17.3 +2.3
baz=307,SNR=12
H17A **Grant Village** 74.42 46 *e*P **P** 16 39 17.8 +2.7
comp=Z,14nm,0.9s
IMW **Indian Meadow** 74.51 46 *e*P **P** 16 39 17.2 +1.6
comp=Z,7.7nm,0.8s
FLWY **Flagg Ranch** 74.54 46 *e*P **P** 16 39 17.6 +1.9
comp=Z,15nm,1.3s
GRAC **Grapevine Rang** 74.58 55 P **P** 16 39 16.8 +1.0
baz=305
ISA **Isabella, Lake** 74.60 57 P **P** 16 39 15.6 -0.4
baz=305
FXWY **Fox Creek** 74.61 47 *e*P **P** 16 39 17.5 +1.4
comp=Z,6.3nm,1.0s
NC405 **NORSAR Array S** 74.64 338 *e*P **P** 16 39 16.3 +0.6
NC303 **NORSAR Array S** 74.65 338 *e*P **P** 16 39 16.6 +0.8
HVU **Hansel Valley** 74.69 49 *e*P **P** 16 39 17.8 +1.3
HVU pmax pmax
comp=Z,11nm,1.4s
HVU **Hansel Valley** 74.69 49 *e*P **P** 16 39 17.8 +1.3
comp=Z,11nm,1.4s
MOOW **Moose Ponds** 74.71 46 *e*P **P** 16 39 18.1 +1.3
comp=Z,7.0nm,1.1s
RLMT **Red Lodge** 74.72 45 P **P** 16 39 18.3 +1.6
baz=308
NC204 **NORSAR Array S** 74.79 339 *e*P **P** 16 39 17.4 +0.8
NB201 **NORSAR Array S** 74.81 338 *e*P **P** 16 39 17.1 +0.4
DAC **Darwin (Calif)** 74.84 56 *e*P **P** 16 39 18.2 +0.7
DAC pmax pmax
comp=Z,9.0nm,1.2s
DAC **Darwin (Calif)** 74.84 56 *e*P **P** 16 39 18.2 +0.7
comp=Z,9.3nm,1.2s
NB2 **NORSAR Subarra** 74.84 338 P **P** 16 39 16.8 -0.1
comp=Z,30nm,1.4s,baz=37,slow=5.9
NB2 **NORSAR Subarra** 74.84 338 P **P** 16 39 16.8 -0.1
baz=37,slow=5.9
NOA **NORSAR Array B** 74.84 338 P **P** 16 39 17.4 +0.5
comp=Z,5.3nm,0.8s,baz=38,slow=5.8,SNR=16
NOA LR LR 17 17 14.0
comp=Z,109nm,19.4s,baz=35,slow=40
LOHW **Long Hollow** 74.88 47 *e*P **P** 16 39 18.8 +1.1
comp=Z,5.8nm,1.3s
NBO02 **NORSAR Array S** 74.94 338 *e*P **P** 16 39 17.6 +0.1
R11A **Troy Canyon, C** 74.95 53 P **P** 16 39 18.7 +0.6
baz=306,SNR=15
R11A **Troy Canyon, C** 74.95 53 *e*P **P** 16 39 19.0 +0.9
comp=Z,9.9nm,1.1s
ANN **Anapa** 74.95 315 *e*P **P** 16 39 16.2 -1.5
ANN *e**PP **pP** 16 39 24.4 -2.9
ANN *e* 16 39 29.2
ANN *e* 16 42 03.2
ANN *e*S **S** 16 48 51.0 -2.1
ANN *e*SS **SS** 16 53 41.6 +0.6
ANN pmax pmax
comp=Z,60nm,1.5s
NBO00 **NORSAR Array S** 74.98 338 *e*P **P** 16 39 18.9 +1.2
MPMC **Manual Prospec** 75.03 56 P **P** 16 39 19.0 +0.3
baz=305,SNR=9.0
NAO01 **NORSAR Array S** 75.10 338 *e*P **P** 16 39 19.4 +1.0
FURC **Furnace Creek,** 75.21 55 P **P** 16 39 20.5 +1.2
baz=305
LRMC **Laurel Mtn Rad** 75.24 57 P **P** 16 39 19.9 +0.1
baz=305,SNR=5.9
TPNV **Topopah Spring** 75.33 55 P **P** 16 39 20.6 +0.3
baz=306,SNR=9.2
TPNV **Topopah Spring** 75.33 55 *e*P **P** 16 39 21.2 +0.8
TPNV pmax pmax
comp=Z,12nm,1.1s
TPNV **Topopah Spring** 75.33 55 *e*P **P** 16 39 21.1 +0.8
comp=Z,12nm,1.1s
EDW2 **Edwards Air Fo** 75.37 57 P **P** 16 39 20.9 +0.5
baz=305
LAO **LASA Array** 75.42 42 P **P** 16 39 21.5 +0.9
baz=309
AKASG **Malin Array Be** 75.47 323 P **P** 16 39 21.1 +0.5
comp=Z,8.5nm,0.6s,baz=44,slow=6.2,SNR=64
AKBB **Malin Array Si** 75.47 323 *e*P **P** 16 39 21.3 +0.7
AKBB pmax pmax
comp=Z,28nm,1.1s
AKBB **Malin Array Si** 75.47 323 *e*P **P** 16 39 21.2 +0.7
comp=Z,28nm,1.1s
KIEV **Kiev** 75.48 323 *d i*P **P** 16 39 20.9 +0.3
KIEV pmax pmax
comp=Z,27nm,1.1s
KIEV **Kiev** 75.48 323 *e*P **P** 16 39 21.0 +0.3
comp=Z,27nm,1.1s
AK11 **Malin Array Si** 75.51 323 *e*P **P** 16 39 21.3 +0.5
HWUT **Hardware Ranch** 75.52 49 *e*P **P** 16 39 22.6 +1.2
comp=Z,14nm,1.4s
A25A **Svangstu Ranch** 75.59 39 P **P** 16 39 22.3 +0.8
baz=310
DUG **Dugway, Tooele** 75.60 50 P **P** 16 39 22.4 +0.6
baz=307,SNR=7.1
DUG **Dugway, Tooele** 75.60 50 *e*P **P** 16 39 22.9 +1.1
DUG pmax pmax
comp=Z,17nm,1.5s
DUG **Dugway, Tooele** 75.60 50 *e*P **P** 16 39 22.9 +1.1
comp=Z,17nm,1.5s
SUW **Suwalki** 75.89 329 *e*P **P** 16 39 23.7 +0.7
SUW **Suwalki** 75.89 329 *e*P **P** 16 39 23.7 +0.7
GSC **Goldstone, Bar** 75.92 56 P **P** 16 39 23.9 +0.3
baz=306
GSC **Goldstone, Bar** 75.92 56 *e*P **P** 16 39 24.3 +0.7
GSC pmax pmax
comp=Z,11nm,1.4s
GSC **Goldstone, Bar** 75.92 56 *e*P **P** 16 39 24.3 +0.7
comp=Z,11nm,1.4s
PSUT **Pine Spring** 75.94 52 *e*P **P** 16 39 24.9 +1.1
comp=Z,10nm,1.2s
BFSC **Mount Baldy Ra** 75.97 58 P **P** 16 39 24.5 +0.5
baz=306
BW06 **Boulder Array** 76.00 47 P **P** 16 39 24.5 +0.4
baz=308
BW06 **Boulder Array** 76.00 47 *e*P **P** 16 39 24.4 +0.2
PD31 **Pinedale Array** 76.00 47 *e*P **P** 16 39 23.9 -0.3
PDAR **Pinedale Array** 76.00 47 P **P** 16 39 24.1 -0.1
comp=Z,1.6nm,0.8s,baz=280,slow=1.6,SNR=14
A26A **Wade Farm, Ken** 76.16 38 P **P** 16 39 25.1 +0.4
baz=311
NLU **North Lily Min** 76.20 50 *e*P **P** 16 39 26.3 +1.0
comp=Z,5.5nm,1.2s
TUQ **Turquoise Moun** 76.43 56 P **P** 16 39 27.0 +0.4
baz=306,SNR=8.1
HEC **Hector,Ludlow** 76.51 57 P **P** 16 39 27.3 +0.4
baz=306
A27A **Ledoux Ranch,** 76.51 38 P **P** 16 39 27.4 +0.7
baz=312
D25A **Fairfield** 76.65 40 P **P** 16 39 28.4 +0.8
baz=311
C26A **Wahner Farm, P** 76.84 39 P **P** 16 39 29.3 +0.7
baz=311
GMRC **Granite Mounta** 76.99 56 P **P** 16 39 30.3 +0.5
baz=306
MSU **Marysvale** 77.01 51 *e*P **P** 16 39 31.2 +1.3
MSU **Marysvale** 77.01 51 *e*P **P** 16 39 31.2 +1.3
A28A **Rude Farm, Bot** 77.02 38 P **P** 16 39 30.2 +0.7
baz=312
E25A **Miller Ranch,** 77.03 41 P **P** 16 39 30.1 +0.4
baz=311
TMUT **Trail Mountain** 77.13 50 *e*P **P** 16 39 32.2 +1.5
comp=Z,5.5nm,1.1s
PFO **Pinyon Flats O** 77.14 58 P **P** 16 39 31.0 +0.4
baz=306
D26A **Manning** 77.19 40 P **P** 16 39 30.9 +0.4
baz=311
C27A **Sayler Ranch,** 77.21 39 P **P** 16 39 31.0 +0.4
baz=312
BELC **Belle Mtn. Jos** 77.22 57 P **P** 16 39 31.0 -0.1
baz=306
LCMT **Little Creek M** 77.24 53 *e*P **P** 16 39 32.3 +1.2
comp=Z,11nm,1.2s
B28A **Dugan Ranch, T** 77.28 38 P **P** 16 39 31.1 +0.1
baz=312
MTPU **Mount Pierson** 77.29 52 *e*P **P** 16 39 33.1 +1.4
comp=Z,9.2nm,1.3s
P17A **Butcher Ranch,** 77.31 50 *e*P **P** 16 39 32.7 +1.2
comp=Z,32nm,1.6s
F25A **Bowman** 77.38 41 P **P** 16 39 31.6 0.0
baz=311
KNB **Kanab** 77.50 53 *e*P **P** 16 39 34.0 +1.4
KNB pmax pmax
comp=Z,23nm,1.3s
KNB **Kanab** 77.50 53 *e*P **P** 16 39 34.0 +1.4
comp=Z,22nm,1.3s
A29A **Manning Farm,** 77.51 37 P **P** 16 39 32.9 +0.6
baz=313
P18A **Preston Nutter** 77.52 50 *e*P **P** 16 39 34.1 +1.2
comp=Z,11nm,1.2s
E26A **Carlson Angus** 77.54 40 P **P** 16 39 32.8 +0.2
baz=311
MONP2 **Monument Peak** 77.59 58 P **P** 16 39 33.6 +0.3
baz=306
SRU **San Rafael Swe** 77.67 50 *e*P **P** 16 39 34.3 +0.8
SRU pmax pmax
comp=Z,22nm,1.5s
SRU **San Rafael Swe** 77.67 50 *e*P **P** 16 39 34.3 +0.8
comp=Z,22nm,1.5s
IRM **Iron Mountain** 77.70 56 P **P** 16 39 34.0 +0.4
baz=307
B29A **Wageman Farm,** 77.77 38 P **P** 16 39 34.1 +0.4
baz=313
BC3 **Big Chuckawall** 77.79 57 P **P** 16 39 34.5 +0.3
baz=307
KBSD **Kabsdagh** 77.83 307 *e*P **P** 16 39 35.7 +1.4
F26A **Lodgepole** 77.85 41 P **P** 16 39 34.4 +0.2
baz=311
A30A **Hoffart Farm,** 77.95 37 P **P** 16 39 35.3 +0.6
baz=314
SWSC **Sam W. Stewart** 77.98 58 P **P** 16 39 36.1 +1.0
baz=306
D28A **Regan** 78.03 39 P **P** 16 39 35.7 +0.5
baz=312
E27A **Carson** 78.04 40 P **P** 16 39 35.1 -0.2
baz=312
KIS **Kishinev** 78.14 321 *e*P **P** 16 39 37.0 +1.2
KIS **Kishinev** 78.14 321 *e*P **P** 16 39 37.0 +1.2
KIS *e* 16 39 48.0
ULM **Lac du Bonnet** 78.16 35 P **P** 16 39 34.9 -0.9
comp=Z,5.1nm,0.9s,baz=303,slow=6.7,SNR=5.1
ULM **Lac du Bonnet** 78.16 35 *e*P **P** 16 39 35.5 -0.3
comp=Z,7.2nm,0.9s
F27A **Lemmon** 78.17 41 P **P** 16 39 36.6 +0.6
baz=312
G26A **Maurine** 78.25 41 P **P** 16 39 37.1 +0.6
baz=312
RSSD **Black Hills** 78.25 43 P **P** 16 39 37.0 +0.2
baz=311
B30A **Myrvik Farm, E** 78.27 37 P **P** 16 39 37.2 +0.7
baz=314
PDMCI **Parker Dam,Lak** 78.28 56 P **P** 16 39 37.3 +0.6
baz=307
Y12C **Blythe** 78.36 57 P **P** 16 39 37.8 +0.6
baz=307
SFNV **Sufian** 78.46 307 *e*P **P** 16 39 38.2 +0.3
BEL **Belsk** 78.46 328 *e*P **P** 16 39 39.4 +2.0
BEL **Belsk** 78.46 328 *e*P **P** 16 39 39.4 +2.0
LVV **L'vov** 78.49 325 *e*P **P** 16 39 38.4 +0.7
LVV MLR MLR
comp=N,200nm,15.0s
LVV MLR MLR
comp=E,300nm,15.0s
LVV MLR MLR
comp=Z,300nm,15.0s
G27A **Dupree** 78.55 41 P **P** 16 39 38.1 0.0
baz=312
GLA **Glamis** 78.57 57 P **P** 16 39 39.2 +0.7
baz=307
D29A **Pettibone, Tap** 78.61 39 P **P** 16 39 38.5 +0.1
baz=313
B31A **Greenbush Farm** 78.62 37 P **P** 16 39 39.0 +0.6
baz=314
C30A **Mose, Pekin** 78.72 38 P **P** 16 39 39.0 +0.1
baz=314
I26A **New Underwood** 78.95 43 P **P** 16 39 40.7 +0.3
baz=312
H27A **Howes** 78.97 42 P **P** 16 39 40.9 +0.4
baz=312
D30A **Buchanan** 78.99 38 P **P** 16 39 40.7 +0.2
baz=314
C31A **Landman Farms,** 79.02 37 P **P** 16 39 40.2 -0.4
baz=314
PV10 **Paradox Valley** 79.03 50 *e*P **P** 16 39 42.3 +1.2
PV04 **Paradox Valley** 79.10 50 *e*P **P** 16 39 39.6 -1.9
B32A **Ashes, Strandq** 79.17 36 P **P** 16 39 41.0 -0.4
baz=315
PV05 **Paradox Valley** 79.18 50 *e*P **P** 16 39 42.9 +0.9
KWP **Kalwaria Pacla** 79.23 326 *e*P **P** 16 39 43.6 +1.9
KWP **Kalwaria Pacla** 79.23 326 *e*P **P** 16 39 43.7 +2.0
Y14A **Wickenburg** 79.25 56 *e*P **P** 16 39 43.0 +0.7
N23A **Red Feather La** 79.27 46 P **P** 16 39 42.8 +0.3
baz=310
A33A **Warroad** 79.32 35 P **P** 16 39 41.8 -0.4
baz=316
WUAZ **Wupatki** 79.34 53 P **P** 16 39 43.6 +0.8
baz=308
WUAZ **Wupatki** 79.34 53 *e*P **P** 16 39 44.0 +1.1
comp=Z,7.1nm,1.0s
PV01 **Paradox Valley** 79.47 50 *e*P **P** 16 39 44.4 +0.9
BUR08 **Bucovina Ar. S** 79.48 323 *e*P **P** 16 39 44.4 +1.1
BURAR **Bucovina Array** 79.50 323⇓ *i*P **P** 16 39 44.0 +0.7
BURAR **Bucovina Array** 79.50 323 ⇓P **P** 16 39 44.0 +0.7
H28A **Mission Ridge** 79.50 41 P **P** 16 39 43.9 +0.6

baz=313
KSRV Kasrt alli 79.51 307 eP P 16 39 44.9 +1.4
D31A Mcclaflin, Tow 79.54 38 P P 16 39 43.8 +0.4
baz=314
AGMN Agassiz Nation 79.55 36 P P 16 39 43.0 -0.5
baz=315
AGMN Agassiz Nation 79.55 36 eP P 16 39 42.9 -0.5
comp=Z,9.9nm,1.1s
TESR Tescani 79.57 321⇓iP P 16 39 44.5 +0.9
CFR Carcaliu 79.73 320⇓iP P 16 39 45.2 +0.7
CFR Carcaliu 79.73 320 ⇓P P 16 39 45.2 +0.7
SMCO Snowmass 79.77 48 eP P 16 39 44.4 -1.0
comp=Z,2.8nm,1.0s
I28A Midland 79.88 42 P P 16 39 44.9 -0.5
baz=313
KOLS Kolonicke sedl 79.93 325 eP P 16 39 46.9 +1.3
VRI Vrincioaia 79.97 321⇑iP P 16 39 47.0 +1.1
VRI Vrincioaia 79.97 321 ⇑P P 16 39 47.0 +1.1
C33A Trail 79.98 36 P P 16 39 45.5 -0.4
baz=316
X16A Lo Mia Camp, P 79.98 54 eP P 16 39 47.4 +1.1
B34A Aery, Baudette 79.98 35 P P 16 39 45.0 -0.8
baz=316
STHS Stebnicka Huta 80.04 326 eP P 16 39 47.7 +1.5
OJC Ojcow 80.08 327 eP P 16 39 47.9 +1.6
OJC Ojcow 80.08 327 eP P 16 39 46.2 -0.1
OJC pmax pmax
comp=Z,53nm,1.1s
OJC Ojcow 80.08 327 eP P 16 39 46.2 -0.1
comp=Z,53nm,1.1s
F31A Hecla 80.11 39 P P 16 39 46.7 +0.2
baz=314
UZH Uzhgorod 80.14 325⇓iP P 16 39 47.2 +0.5
UZH e 16 39 57.8
G30A Faulkton 80.16 40 P P 16 39 46.7 -0.2
baz=314
J28A Allard Ranch, 80.23 42 P P 16 39 47.6 +0.3
baz=313
CRVS Cervenica-Dubn 80.32 326 eP P 16 39 49.0 +1.3
I29A Vivian Onida 80.32 41 P P 16 39 47.8 0.0
baz=313
BR131 Keskin Array S 80.33 313 eP P 16 39 49.3 +1.2
BRTR Keskin Array B 80.33 313 P P 16 39 49.1 +1.0
comp=Z,6.7nm,1.1s,baz=90,slow=2.8,SNR=19
TRPA Tarpa 80.39 325⇑eP P 16 39 50.2 +2.2
NIE Niedzica 80.46 327 eP P 16 39 50.3 +1.9
NIE Niedzica 80.46 327 eP P 16 39 50.3 +1.9
B35A Bob, Littlefor 80.50 35 P P 16 39 48.1 -0.5
baz=317
ISR Istrita 80.59 320⇑iP P 16 39 49.0 -0.2
ISR Istrita 80.59 320 ⇑P P 16 39 49.0 -0.2
214A Organ Pipe Nat 80.59 57 P P 16 39 49.9 +0.4
baz=308
MLR Muntele Rosu 80.63 321⇑iP P 16 39 50.3 +0.8
MLR Muntele Rosu 80.63 321 ⇑P P 16 39 50.3 +0.8
MLR Muntele Rosu 80.63 321 eP P 16 39 50.1 +0.6
comp=Z,31nm,1.4s
D34A Park Rapids 80.73 37 P P 16 39 49.7 -0.2
baz=316
BR231 Keskin MP Arra 80.76 313 eP P 16 39 49.8 -0.5
E33A Westby DABS, E 80.76 37 P P 16 39 49.9 -0.2
baz=316
S22A 4UR Ranch, Cre 80.78 49 P P 16 39 50.9 +0.2
baz=310
S22A 4UR Ranch, Cre 80.78 49 eP P 16 39 51.8 +1.1
comp=Z,29nm,2.0s
C35A Jirik Farms, M 80.86 36 P P 16 39 49.9 -0.7
baz=317
CJR Cluj-Napoca 80.91 323⇑iP P 16 39 52.8 +1.9
CJR Cluj-Napoca 80.91 323 ⇑P P 16 39 52.8 +1.9
BTCH Batrach 81.00 309 eP P 16 39 48.5 -3.2
LANS Liptovska Anna 81.02 327 eP P 16 39 53.5 +2.0
KECS Kecovo 81.07 326 eP P 16 39 52.7 +1.0
KSP Ksiaz 81.07 330 eP P 16 39 53.2 +1.6
KSP Ksiaz 81.07 330 eP P 16 39 53.3 +1.6
OKC Ostrava-Krasne 81.07 328 eP P 16 39 52.7 +1.1
OKC epP sP 16 40 04.2 -0.6
OKC AMS AMS 17 18 50.0
comp=Z,200nm,15.2s
OKC Ostrava-Krasne 81.07 328 eP P 16 39 52.7 +1.1
OKC e 16 40 04.2
OKC MLR MLR
comp=Z,200nm,15.2s
F33A 5 Mile Ranch, 81.09 38 P P 16 39 51.9 0.0
baz=315
VOIR 81.11 321⇓iP P 16 39 53.3 +1.2
VOIR 81.11 321 ⇓P P 16 39 53.3 +1.2
DRGR 81.28 324⇓iP P 16 39 54.2 +1.3
DRGR 81.28 324 ⇓P P 16 39 54.2 +1.3
C36A Pine Crest Far 81.34 35 P P 16 39 52.6 -0.5
baz=317
WRDH Warideh 81.37 308 eP P 16 39 53.6 +0.1
ARR Arges 81.37 322⇑iP P 16 39 55.5 +2.1
MORC Moravsky Berou 81.37 328⇓iP P 16 39 54.2 +0.9
MORC Moravsky Berou 81.37 328 ⇓P P 16 39 54.2 +0.9
MORC Moravsky Berou 81.37 328 eP P 16 39 54.8 +1.5
comp=Z,77nm,0.9s
ARNB Al Arnab 81.42 309 eP P 16 40 00.7 +6.8
DPC Dobruska-Polom 81.44 329 eP P 16 39 55.1 +1.4
DPC epP sP 16 40 06.2 -0.7
DPC AMS AMS 17 20 50.0
comp=Z,200nm,13.0s
DPC Dobruska-Polom 81.44 329 eP P 16 39 55.1 +1.4
DPC e 16 40 06.2
DPC MLR MLR
comp=Z,200nm,13.0s
UPC Upice 81.44 329 eP P 16 39 55.0 +1.4
UPC AMS AMS 17 19 20.0
comp=Z,300nm,16.0s
UPC Upice 81.44 329 eP P 16 39 55.0 +1.4
UPC MLR MLR
comp=Z,300nm,16.0s
KRLC Kraliky 81.46 329 eP P 16 39 55.1 +1.3
KRLC ePCP PcP 16 39 58.4 -1.4
KRLC epP sP 16 40 06.3 -0.7
KRLC Kraliky 81.46 329 eP P 16 39 55.1 +1.3
KRLC e 16 40 06.3
G33A Ortonville 81.48 39 P P 16 39 53.8 -0.2
baz=315
RABH Abou Rabah 81.55 307 eP P 16 39 54.2 -0.3
SDCO Great Sand Dun 81.58 49 P P 16 39 55.1 +0.1
baz=311
SDCO Great Sand Dun 81.58 49 eP P 16 39 55.8 +0.8
comp=Z,6.3nm,1.4s
F34A Alexandria 81.63 37 P P 16 39 54.7 0.0
baz=316
C37A Embarrass 81.66 35 P P 16 39 54.2 -0.6
baz=318
H33A Prehn Over Nor 81.69 39 P P 16 39 55.0 -0.1
baz=315
TUC Tucson 81.72 56 P P 16 39 56.1 +0.6
baz=309
BIDA Albida 81.74 308 eP P 16 39 54.8 -0.8
PSZ Piszkesteto 81.75 326⇓iP P 16 39 56.8 +1.4
PSZ Piszkesteto 81.75 326⇓eP P 16 39 56.2 +0.8
PSZ Piszkesteto 81.75 326 ⇓P P 16 39 56.8 +1.4
PSZ Piszkesteto 81.75 326 eP P 16 39 56.6 +1.2
comp=Z,31nm,1.0s
VYHS Vyhne 81.79 327 eP P 16 39 57.0 +1.5
EYMN Ely 81.81 34 P P 16 39 54.9 -0.7
baz=318
G34A Benson 81.84 38 P P 16 39 55.8 0.0
baz=316
BRG Berggiesshubel 81.98 331⇑iP P 16 39 57.2 +0.7
comp=Z,13nm,0.9s
BRG i 16 40 00.1
comp=Z,15nm,1.1s
BRG Berggiesshubel 81.98 331 iP P 16 40 08.5 +12
comp=Z,15nm,0.8s
comp=N,178nm,18.9s
comp=E,109nm,16.4s
comp=Z,322nm,16.2s
BRG Berggiesshubel 81.98 331⇑iP P 16 39 57.2 +0.7
BRG pmax pmax
comp=Z,13nm,0.9s
CLL Collm 82.00 331 iP P 16 39 57.3 +0.8
comp=Z,33nm,0.9s
CLL i 16 40 00.0
CLL ePP PP 16 43 17.0 +13
CLL eSS SS 16 55 54.0 +28
CLL Collm 82.00 331 i (P) P 16 40 08.2 +12
comp=Z,33nm,0.8s
CLL i 16 40 16.9
CLL Collm 82.00 331 iP P 16 39 57.3 +0.8
CLL pmax pmax
comp=Z,33nm,0.9s
CLL Collm 82.00 331 eP P 16 39 56.0 -0.5
comp=Z,35nm,0.8s
HAWK Haweek 82.00 307 eP P 16 39 57.6 +0.7
PVCC Panska Ves 82.01 330 eP P 16 39 58.1 +1.5
PVCC epP sP 16 40 09.2 -0.6
PVCC AMS AMS 17 19 40.0
comp=Z,200nm,19.4s
PVCC Panska Ves 82.01 330 eP P 16 39 58.1 +1.5
PVCC e 16 40 09.2
PVCC MLR MLR
comp=Z,200nm,19.4s
E36A McGregor 82.06 36 P P 16 39 57.0 0.0
baz=317
C38A Sawbill Land. 82.08 34 P P 16 39 56.6 -0.5
baz=318
K31A O'Neill 82.10 42 P P 16 39 57.5 +0.2
baz=314
VRAC Vranov 82.13 328⇑iP P 16 39 59.0 +1.7
VRAC Vranov 82.13 328 ⇑P P 16 39 59.0 +1.7
SIRR Siria 82.16 324⇑iP P 16 39 58.8 +1.3
GZR Gura Zlata 82.26 323⇓iP P 16 39 59.2 +1.1
GZR Gura Zlata 82.26 323 ⇓P P 16 39 59.2 +1.1
MARH Ras Al Marh 82.27 307 eP P 16 39 57.8 -0.8
PMOR Pomariorio Ree 82.29 115 eT T 18 09 45.6
comp=Z,2.2nm,0.2s
L31A Butterfield Fa 82.37 42 P P 16 39 58.4 -0.3
baz=314
GOPC GO Pecny, Ondr 82.40 330 eP P 16 39 59.3 +0.6
GOPC ePCP PcP 16 40 02.7 -1.1
GOPC epP sP 16 40 11.2 -0.7
GOPC AMS AMS 17 22 00.0
comp=Z,200nm,17.7s
GOPC GO Pecny, Ondr 82.40 330 eP P 16 39 59.3 +0.6
GOPC e 16 40 11.2
GOPC MLR MLR
comp=Z,200nm,17.7s
F36A Milaca 82.42 37 P P 16 39 58.2 -0.6
baz=317
PRA Prague 82.42 330 eP P 16 40 00.2 +1.5
PRA Prague 82.42 330 eP P 16 40 00.2 +1.5
ZALF Zalf 82.42 306 eP P 16 39 56.3 -2.8
ECSD EROS Data Cent 82.43 40 P P 16 39 58.8 -0.2
baz=315
ECSD EROS Data Cent 82.43 40 eP P 16 39 58.7 -0.2
comp=Z,7.9nm,0.9s
PRU Pruhonice 82.44 330 eP P 16 40 00.0 +1.1
PRU epP sP 16 40 11.4 -0.7
PRU AMS AMS 17 19 50.0
comp=Z,200nm,14.1s
PRU Pruhonice 82.44 330 eP P 16 40 00.0 +1.1
PRU e 16 40 11.4
PRU MLR MLR
comp=Z,200nm,14.1s
TREC Trest 82.60 329 AMS AMS 17 21 40.0
comp=Z,200nm,16.2s
T25A Trinidad 82.63 49 P P 16 40 00.9 +0.5
baz=312
H35A Sunnyside Ranc 82.63 38 P P 16 39 59.9 -0.1
baz=316
BZS Buzias 82.66 323⇓iP P 16 40 00.4 +0.3
BZS Buzias 82.66 323 ⇓P P 16 40 00.4 +0.3
TOTH TOTAH 82.73 307 eP P 16 40 13.3 +13
PKS7 Kunszentmiklos 82.73 326⇓eP P 16 40 02.0 +1.6
PPT2 Papeete2 82.81 118 eLR LR 17 05 39.0
comp=Z,258nm,29.0s,baz=314
ANMO Albuquerque 82.82 51 P P 16 40 02.1 +0.7
baz=311
ANMO Albuquerque 82.82 51 deP P 16 40 02.0 +0.7
ANMO pmax pmax
comp=Z,9.0nm,1.7s
ANMO Albuquerque 82.82 51 eP P 16 40 02.2 +0.9
comp=Z,12nm,1.4s
PKSG 82.82 326⇑eP P 16 40 02.3 +1.4
CSKK Cs^‡kako 82.90 326⇑eP P 16 40 02.6 +1.3
SALA Sala 82.95 306 eP P 16 40 02.6 +0.5
BRBR Barbar 83.00 307 eP P 16 39 59.9 -2.4
NKC Novy Kostel 83.07 331 eP P 16 40 03.2 +1.0
NKC epP sP 16 40 14.5 -0.9
NKC Novy Kostel 83.07 331 eP P 16 40 03.2 +1.0
NKC e 16 40 14.5
PKST T^'s 83.08 326⇑eP P 16 40 03.4 +1.2
H36A Jessenland, He 83.16 38 P P 16 40 03.1 +0.4
baz=317
MPEP Malo Peshtene 83.26 321 iP P 16 40 04.5 +1.3
SOP Sopron 83.40 327⇓eP P 16 40 05.3 +1.4
K34A Le Mars 83.44 40 P P 16 40 04.2 -0.1
baz=316
PKS9 Tamasi 83.48 326⇑eP P 16 40 05.1 +0.8
KHC Kasperske Hory 83.50 330 eP P 16 40 05.6 +1.2
KHC ePCP PcP 16 40 08.0 -0.7
KHC epP sP 16 40 16.6 -1.1
KHC Kasperske Hory 83.50 330 eP P 16 40 05.6 +1.2
KHC e 16 40 16.6
KHC Kasperske Hory 83.50 330 eP P 16 40 05.3 +0.9
comp=Z,7.1nm,0.9s
CONA Conrad Observa 83.50 328 iPcP P 16 40 06.2 +1.7
SNR=17
CONA iP sP 16 40 17.5 -0.3
comp=Z,24nm,1.0s
121A Cookes Peak, D 83.53 54 P P 16 40 04.9 -0.2
baz=310
PKSM Moragy 83.60 325⇑iP P 16 40 05.6 +0.7
PKSM Moragy 83.60 325⇑eP P 16 40 05.5 +0.7
PKSM Moragy 83.60 325 ⇑P P 16 40 05.6 +0.7
KDZ Kurdzhali 83.61 319 iP P 16 40 07.1 +2.0
CSS Mathiatis 83.64 309 eP P 16 40 06.5 +1.1
comp=Z,4.1nm,0.8s
H37A Dierke Farm, C 83.65 37 P P 16 40 05.5 +0.3
baz=318
GEC2 GERESS Array S 83.68 330 eP P 16 40 06.3 +0.9
GEC2 pmax pmax
comp=Z,25nm,1.4s
GEC2 GERESS Array S 83.68 330 eP P 16 40 06.3 +0.9
comp=Z,24nm,1.4s
GERES GERESS Array B 83.68 330 P P 16 40 06.1 +0.7
comp=Z,3.8nm,0.6s,baz=34,slow=5.7,SNR=33
GERES LR LR 17 19 23.4
comp=Z,113nm,20.8s,baz=15,slow=37
GEA0 GERESS Array S 83.69 330 eP P 16 40 05.5 0.0
ESK Eskdalemuir 83.69 342 iP P 16 40 07.5 +2.3
L34A Svendsen Farm, 83.81 41 P P 16 40 06.0 -0.1
baz=316
I37A Lemond, Waseca 83.83 38 P P 16 40 06.4 +0.2
baz=317
GRFO Grafenberg 83.98 331 eP P 16 40 07.6 +0.8
GRFO pmax pmax
comp=Z,26nm,1.1s
GRFO Grafenberg 83.98 331 eP P 16 40 07.5 +0.8
comp=Z,26nm,1.1s
TAOE Nuku Hiva Isla 84.13 106 eLR LR 17 06 09.8
comp=Z,363nm,30.0s
ARSA Arzberg 84.18 328 iPcP P 16 40 09.0 +1.1
MOA Molln 84.24 329 iPcP P 16 40 09.3 +1.2
SNR=7.7
I38A Scanlan Farm, 84.33 37 P P 16 40 08.7 0.0
baz=318
MMB Musomiste 84.54 319 iP P 16 40 11.2 +1.3
KKB Krupnik 84.67 320 iP P 16 40 12.1 +1.6
J38A Wedel Dairy, R 84.80 38 P P 16 40 11.1 0.0
baz=318
PERS Pernice 84.83 327 iP P 16 40 11.4 +0.1
SOKA Soboth 84.83 328 iPcP P 16 40 12.1 +0.8
SNR=13
N35A Tabor 84.99 41 P P 16 40 12.2 +0.1
baz=316
BEBN Eben Emael 85.06 335 P P 16 40 13.0 +0.8
comp=Z,7.3nm,1.1s
BEBN AP sP 16 40 24.6 -0.8
MEM Membach 85.10 335 P P 16 40 13.1 +0.6
comp=Z,13nm,1.4s
MEM AP sP 16 40 24.4 -1.2
OBKA Obir 85.17 328 iPcP P 16 40 13.8 +0.8
KBA Koelnbreinsper 85.23 329 iPcP P 16 40 13.9 +0.5
SNR=5.7
P34A Walnut Farm, R 85.30 43 P P 16 40 13.3 -0.4
baz=316
MYKA Terra Mystica 85.46 328 iP P 16 40 14.6 +0.2
STU Stuttgart 85.50 332 eP P 16 40 14.8 +0.3
STU pmax pmax
comp=Z,27nm,0.9s
STU Stuttgart 85.50 332 eP P 16 40 14.8 +0.3
comp=Z,27nm,0.9s
BCLA Clavier 85.50 335 P P 16 40 15.2 +0.8
comp=Z,13nm,1.2s
BCLA AP sP 16 40 26.4 -1.3
CWF Charnwood Fore 85.51 340 eP P 16 40 16.0 +1.6
comp=Z,20nm,0.9s
R33A Olander Ranch, 85.55 44 P P 16 40 14.9 -0.1
baz=315
VISS Visnje 85.60 327 iP P 16 40 15.6 +0.6
MNTX Cornudas Mount 85.62 53 P P 16 40 16.0 +0.5
baz=311
BOJS Bojanci 85.66 327 iP P 16 40 15.5 +0.2
P35A Duane Minner, 85.75 42 P P 16 40 15.7 -0.2
baz=316
SNF Seneffe 85.77 336 P P 16 40 16.7 +0.9
SNF AP sP 16 40 27.9 -1.1
WTTA Wattenberg 85.78 330 iPcP P 16 40 17.7 +1.6
AMTX Amarillo 85.78 49 P P 16 40 16.5 +0.3
baz=313
AMTX Amarillo 85.78 49 eP P 16 40 16.3 0.0
comp=Z,11nm,0.9s
N37A Lee Faris, Mou 85.81 40 P P 16 40 16.3 +0.1
baz=317
ABTA Abfaltersbach 85.84 329 iPcP P 16 40 16.6 +0.3
LANF Langenberg 85.84 333 eP P 16 40 17.2 +1.0
M38A Pleasantville 85.85 39 P P 16 40 16.7 +0.3
baz=318
WLF Walferdange 85.85 334 P P 16 40 18.1 +1.9
WLF AP sP 16 40 29.9 +0.4
WLF Walferdange 85.85 334 eP P 16 40 17.4 +1.2
WLF pmax pmax
comp=Z,32nm,1.3s
WLF Walferdange 85.85 334 eP P 16 40 17.4 +1.2
comp=Z,32nm,1.3s
JAVS Javornik 85.86 328 iP P 16 40 16.2 -0.2
O36A Bolckow 85.88 41 P P 16 40 16.7 +0.1
baz=317
MOTA Moosalm 85.93 330 iPcP P 16 40 18.9 +2.0
SNR=5.2
RETA Reutte 85.95 330 iPcP P 16 40 17.8 +0.9
SNR=11
DOU Dourbes 86.02 335 P P 16 40 17.7 +0.7
DOU AP sP 16 40 28.9 -1.3
P36A Good Intent, A 86.12 42 P P 16 40 17.4 -0.3
baz=316
PDG Podgorica 86.17 322⇑iP P 16 40 18.7 +0.8
BFO Black Forest 86.19 332 iP P 16 40 18.7 +0.8
BFO Black Forest 86.19 332 eP P 16 40 18.8 +0.8
comp=Z,20nm,1.0s
N38A Joes South For 86.29 40 P P 16 40 18.6 +0.1
baz=318
FETA Feichten 86.34 330 iP P 16 40 18.5 -0.4
DAVA Damuels 86.46 331 iPcP P 16 40 20.3 +0.8
SNR=6.1
R35A Emporia Munici 86.52 43 P P 16 40 19.6 -0.1
baz=316
P37A Lathrop 86.60 41 P P 16 40 20.2 +0.1
baz=317
N39A Derby Farms, D 86.60 39 P P 16 40 20.4 +0.3
baz=318
ECH Echery 86.71 333 eP P 16 40 21.3 +0.8
FUORN Ofenpass-Fuorn 86.85 330 eP P 16 40 22.4 +0.9
comp=Z,23nm,1.2s
R36A Gordon, Harris 86.90 43 P P 16 40 21.4 -0.2
baz=316
T34A McClasey Farm 86.90 45 P P 16 40 21.8 +0.1
baz=316
S35A Otter Creek Ra 86.91 44 P P 16 40 21.5 -0.2
baz=316
P38A Dawn 87.00 41 P P 16 40 22.1 0.0
baz=318
MOF Molkenrain 87.03 333 eP P 16 40 22.6 +0.4
U34A Anderson Ranch 87.12 45 P P 16 40 22.7 0.0
baz=315
U34A Anderson Ranch 87.12 45 eP P 16 40 23.1 +0.4
comp=Z,24nm,1.1s
S36A Lake Cedric, C 87.28 43 P P 16 40 23.5 0.0
baz=316
T35A Sooner Cattle 87.36 44 P P 16 40 24.1 +0.2
baz=316
O40A La Belle 87.48 40 P P 16 40 23.9 -0.5
baz=318
V34A Guthrie 87.56 46 P P 16 40 25.2 +0.4
baz=315
LOMF Lomont 87.56 333 eP P 16 40 25.6 +0.9
T36A Boggs Farm, Ca 87.60 44 P P 16 40 25.1 +0.1
baz=316
S37A Fort Scott 87.67 43 P P 16 40 25.2 -0.1
baz=317
Q39A Willow Grove F 87.72 41 P P 16 40 25.5 0.0
baz=318
P40A Paris 87.84 40 P P 16 40 25.9 -0.2
baz=318
U36A Oologah 88.17 44 P P 16 40 27.9 +0.2
baz=316
Q40A Laux Farm, Aux 88.22 40 P P 16 40 28.2 +0.2
baz=318
R39A Chumby, Stover 88.22 41 P P 16 40 27.5 -0.5
baz=318
TX31 Lajitas Ar. Si 88.30 54 eP P 16 40 28.3 -0.3
TXAR Lajitas Array 88.30 54 P P 16 40 28.6 0.0
comp=Z,2.0nm,0.6s,baz=307,slow=3.8,SNR=27
W35A Tecumseh 88.41 46 P P 16 40 29.0 +0.1
baz=316
HDIL Hopedale 88.44 38 P P 16 40 29.2 +0.2
baz=320
T38A Diamond 88.49 43 P P 16 40 29.4 +0.1
baz=317
U37A Salina 88.50 44 P P 16 40 29.3 0.0
baz=317
W36A Wetumka 88.79 45 P P 16 40 30.9 +0.2
baz=316
V37A Hulbert 88.87 44 P P 16 40 30.9 -0.1
baz=317
X35A Drake 88.89 46 P P 16 40 31.1 -0.1
baz=316
X36A Centrahoma 89.13 46 P P 16 40 32.6 +0.4
baz=316
V38A Canehill 89.29 44 P P 16 40 32.9 -0.1
baz=317
T40A Mansfield 89.36 42 P P 16 40 33.9 +0.5
baz=318
U39A Green Forest 89.42 43 P P 16 40 33.0 -0.6
baz=318
233A Rising Star 89.44 49 P P 16 40 34.0 +0.2
baz=315
SFIN Lafayette 89.64 37 P P 16 40 34.7 +0.2
baz=322
V39A Pettigrew 89.72 43 P P 16 40 34.9 -0.3
baz=318
TIP Timpagrande 89.87 322⇑iP P 16 40 35.5 -0.3
TIP Timpagrande 89.87 322 eP P 16 40 36.3 +0.5
comp=Z,23nm,1.5s
333A Richland Sprin 89.87 50 P P 16 40 35.5 -0.3
baz=315
PLDF La Plantade 89.90 334 eP P 16 40 36.8 +1.0
X38A Whitesboro 89.92 45 P P 16 40 36.3 +0.3
baz=317
AGO Saint Agoulin 90.00 334 eP P 16 40 37.5 +1.3
W39A Magazine 90.12 44 P P 16 40 36.5 -0.4
baz=318
334A Lometa 90.32 49 P P 16 40 37.8 -0.2
baz=315
X39A Fountain Ranch 90.44 45 P P 16 40 38.0 -0.5
baz=317
W40A Ferguson Farm, 90.52 43 P P 16 40 38.6 -0.2
baz=318
434A Burnet 90.67 50 P P 16 40 39.2 -0.3
baz=315
MIAR Mount Ida 90.72 44 P P 16 40 39.7 0.0
baz=318
MIAR Mount Ida 90.72 44 eP P 16 40 39.7 0.0
MIAR pmax pmax
comp=Z,14nm,1.0s
MIAR Mount Ida 90.72 44 eP P 16 40 39.7 0.0
comp=Z,14nm,1.0s
Y39A Lockesburg 90.87 45 P P 16 40 40.6 +0.2
baz=317
WHAR Wooly Hollow 90.87 43 eP P 16 40 40.0 -0.4
comp=Z,84nm,0.9s
W41A Tony Mavity, V 90.98 43 P P 16 40 40.6 -0.3
baz=318
W41B Gary Mavity, V 90.98 43 P P 16 40 40.5 -0.4
baz=318
534A Blanco 91.09 50 P P 16 40 41.5 -0.1
baz=315
X40A Basin Creek Fa 91.17 44 P P 16 40 41.8 0.0
baz=318
Z40A Long Farm, Mag 91.76 45 P P 16 40 44.8 +0.3
baz=318

538A	**Harpers Horsep**	**92.76**	**48**	P		**P**		**16 40 49.5**	**+0.3**
	baz=316								
ESDC	**Sonseca Array**	**98.06**	**336**	P		**P**		**16 41 13.0**	**-0.3**
	comp=Z,0.7nm,0.8s,baz=22,slow=4.1,SNR=3.8								
ESDC				LR		LR		17 29 24.1	
	comp=Z,55nm,20.6s,baz=325,slow=38								
LPAZ	**La Paz**	**144.73**	**63**	PKP		**PKPab**		**16 47 13.2**	**-0.2**
	comp=Z,2.7nm,0.8s,baz=329,slow=4.4,SNR=10								

ISK ***22*** *16:30:39.3, 37°.89N×27°.47E, h13km, MD2.5*
DDA ***22*** *16:30:39.3, 37°.83N×27°.44E, h3km, Md2.9*
CSEM ***22*** *16:30:40.3±0.3, 37°.84N×27°.45E, h2km, MD2.9, Error ellipse: s-maj=7.7km s-min=6.1km az=71.0*

ISC 22 16:30:39.9±1.0, 37°.85N±0°.02×27°.43E±0°.02, h5km±10km, n26, σ0s76/46, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GCAM	**G?zelcaml?**	**0.22**	**226**	*i* P	**Pg**	**16 30 44.0**	**-0.1**
GCAM				*i* S	**Sg**	**16 30 47.6**	**+0.6**
GCAM	**G?zelcaml?**	**0.22**	**226**	P	**Pg**	**16 30 44.0**	**-0.1**
GCAM				S	**Sg**	**16 30 47.6**	**+0.6**
AYDB	**Zeytinkoy-Aydi**	**0.38**	**75**	*e*PG	**Pg**	**16 30 46.7**	**-0.5**
AYDB				*e*SG	**Sg**	**16 30 52.0**	**-0.2**
AYDB	**Zeytinkoy-Aydi**	**0.38**	**75**	*e*Pg	**Pg**	**16 30 46.7**	**-0.5**
AYDB				*e*Sg	**Sg**	**16 30 52.0**	**-0.2**
AYDN	**Tasoluk**	**0.41**	**118**	*i* P	**Pg**	**16 30 47.6**	**-0.1**
AYDN				*i* S	**Sg**	**16 30 53.0**	**0.0**
AYDN	**Tasoluk**	**0.41**	**118**	P	**Pg**	**16 30 47.6**	**-0.1**
AYDN				S	**Sg**	**16 30 53.0**	**0.0**
BLCB	**Balcova**	**0.61**	**330**	*e*PG	**Pg**	**16 30 51.1**	**-0.6**
BLCB				*e*SG	**Sg**	**16 31 00.3**	**+0.6**
BLCB	**Balcova**	**0.61**	**330**	*e*Pg	**Pg**	**16 30 51.1**	**-0.6**
BLCB				*e*Sg	**Sg**	**16 31 00.3**	**+0.6**
BDRM	**Kayabasi**	**0.79**	**179**	*i* P	**Pg**	**16 30 53.5**	**-1.5**
BDRM				*i* S	**Sn**	**16 31 09.6**	**-0.3**
BDRM	**Kayabasi**	**0.79**	**179**	P	**Pg**	**16 30 53.5**	**-1.5**
BODT	**Bodrum**	**0.80**	**187**	*e*PG	**Pb**	**16 30 56.1**	**-0.1**
BODT				*e*SG	**Sb**	**16 31 08.0**	**+0.7**
BODT	**Bodrum**	**0.80**	**187**	*e*Pg	**Pb**	**16 30 56.1**	**-0.1**
BODT				*e*Sg	**Sb**	**16 31 08.0**	**+0.7**
ZEY	**˜zmir**	**0.83**	**298**	*i* P	**Pg**	**16 30 55.4**	**-0.4**
ZEY				*i* S	**Sg**	**16 31 07.4**	**+0.9**
URLA	**Izmir**	**0.83**	**308**	*i* P	**Pn**	**16 30 57.9**	**-0.4**
URLA				*i* S	**Sb**	**16 31 09.4**	**+1.1**
URLA	**Izmir**	**0.83**	**308**	P	**Pn**	**16 30 57.9**	**-0.4**
URLA				S	**Sb**	**16 31 09.4**	**+1.1**
YER	**Yerkesik**	**0.99**	**136**	*e*PG	**Pg**	**16 30 58.9**	**+0.1**
YER				*e*SG	**Sb**	**16 31 13.0**	**+0.1**
YER	**Yerkesik**	**0.99**	**136**	*e*Pg	**Pg**	**16 30 58.9**	**+0.1**
YER				*e*Sg	**Sb**	**16 31 13.0**	**+0.1**
AKHS	**Akhisar**	**1.07**	**16**	*i* P	**Pg**	**16 30 59.3**	**-1.1**
AKHS				*i* S	**Sb**	**16 31 15.1**	**-0.1**
AKHS	**Akhisar**	**1.07**	**16**	P	**Pg**	**16 30 59.3**	**-1.1**
AKHS				S	**Sb**	**16 31 15.1**	**-0.1**
KULA	**Kula-Manisa**	**1.17**	**55**	*e*PN	**Pg**	**16 31 01.4**	**-1.0**
KULA	**Kula-Manisa**	**1.17**	**55**	*e*Pn	**Pg**	**16 31 01.4**	**-1.0**
DEMI	**Demirci**	**1.56**	**40**	*i* P	Pg	16 31 21.1	+11
DEMI				*i* S	**Sg**	**16 31 31.6**	**+1.5**
KHAL	**Karahalli**	**1.71**	**72**	*i* P	**Pg**	**16 31 13.6**	**+1.0**
KHAL				*i* S	**Sg**	**16 31 36.1**	**+1.3**
KHAL	**Karahalli**	**1.71**	**72**	P	**Pg**	**16 31 13.6**	**+1.0**
KHAL				S	**Sg**	**16 31 36.1**	**+1.3**
BALY	**Balya**	**1.89**	**4**	*i* P	**Pb**	**16 31 14.8**	**-0.1**
BALY	**Balya**	**1.89**	**4**	P	**Pb**	**16 31 14.8**	**-0.1**

CSEM ***22*** *16:31:02.9±0.7, 39°.03N×27°.81E, h10km, MD2.7, Error ellipse: s-maj=14.3km s-min=9.4km az=22.0*
ISK ***22*** *16:31:04.3, 39°.14N×27°.86E, h14km, MD2.7*

ISC 22 16:31:07.2±1.8, 39°.25N±0°.08×27°.90E±0°.05, h17km±10km, n24, σ1s79/30, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BALB	**Balikesir**	**0.39**	**358**	*e*PG	**Pg**	**16 31 14.6**	**-0.6**
BALB				*e*SG	**Sg**	**16 31 22.0**	**+1.4**
BALB	**Balikesir**	**0.39**	**358**	*e*Pg	**Pg**	**16 31 14.6**	**-0.6**
BALB				*e*Sg	**Sg**	**16 31 22.0**	**+1.4**
DURS	**Dursunbey**	**0.57**	**52**	*i* P	**Pg**	**16 31 15.3**	**-3.2**
DURS				*i* S	**Sb**	**16 31 28.9**	**+2.3**
DURS	**Dursunbey**	**0.57**	**52**	S	**Sb**	**16 31 28.9**	**+2.3**
DURS	**Dursunbey**	**0.57**	**52**	P	**Pg**	**16 31 15.4**	**-3.2**
GONE	**Gonen-Balikesi**	**0.81**	**348**	*e*PG	**Pb**	**16 31 22.3**	**-0.5**
GONE	**Gonen-Balikesi**	**0.81**	**348**	*e*Pg	**Pb**	**16 31 22.3**	**-0.5**
KCTX	**Karacabey (Bur**	**1.07**	**19**	*e*PN	**Pn**	**16 31 26.8**	**-0.7**
KCTX	**Karacabey (Bur**	**1.07**	**19**	*e*Pn	**Pn**	**16 31 26.8**	**-0.7**
EDC	**Edincik**	**1.09**	**359**	*e*PN	**Pb**	**16 31 27.1**	**-0.5**
EDC	**Edincik**	**1.09**	**359**	*e*Pn	**Pb**	**16 31 27.2**	**-0.5**
TVSB	**Tavsanli**	**1.23**	**80**	*e*PN	**Pb**	**16 31 28.4**	**-1.7**
TVSB	**Tavsanli**	**1.23**	**80**	*e*Pn	**Pb**	**16 31 28.4**	**-1.7**
GDZ	**Gediz**	**1.24**	**97**	*i* P	**Pg**	**16 31 32.5**	**+1.2**
GDZ				*i* S	**Sg**	**16 31 50.6**	**+3.1**
ULDT	**Uludag**	**1.30**	**47**	*i* P	**Pn**	**16 31 28.7**	**-2.1**
ULDT				*i* S	**Sg**	**16 31 52.3**	**+2.8**
ULDT	**Uludag**	**1.30**	**47**	P	**Pn**	**16 31 28.7**	**-2.1**
ULDT				S	**Sg**	**16 31 52.3**	**+2.8**
RKY	**Sarkoy-Tekirda**	**1.54**	**339**	*e*PN	**Pn**	**16 31 33.3**	**-0.6**
RKY	**Sarkoy-Tekirda**	**1.54**	**339**	*e*Pn	**Pn**	**16 31 33.3**	**-0.6**
IZI	**Iznik**	**1.63**	**48**	*e*PN	**Pn**	**16 31 34.7**	**-0.5**
IZI	**Iznik**	**1.63**	**48**	*e*Pn	**Pn**	**16 31 34.7**	**-0.5**
ERIK	**Erikli-Kesan**	**1.77**	**324**	*e*PN	**Pn**	**16 31 36.4**	**-0.6**
ERIK	**Erikli-Kesan**	**1.77**	**324**	*e*Pn	**Pn**	**16 31 36.4**	**-0.6**
CAVI	**Cavuskoy**	**1.77**	**57**	*e*PN	**Pn**	**16 31 36.1**	**-1.1**
CAVI	**Cavuskoy**	**1.77**	**57**	*e*Pn	**Pn**	**16 31 36.1**	**-1.1**

NNC 22 16:44:33.6±4.8, 37°.84N×71°.65E, h101km±95km, mb3.1, mpv3.8, 4C-6D, Error ellipse: s-maj=40.0km s-min=37.0km az=94.0, Afghanistan-Tajikistan border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SFK	**Sufi-Kurgan**	**2.61**	**33**	⇑P	Pn	16 45 14.5	+0.2
	14nm,0.2s						
SFK				⇓S	Sn	16 45 46.2	+0.6
	17nm,0.2s						
MNAS	**Manas**	**4.69**	**8**	⇓P	Pn	16 45 43.0	+0.9
	8.4nm,0.3s						
MNAS				⇓S	Sn	16 46 36.3	+0.8
	4.9nm,0.5s						
AAK	**Ala-Archa**	**5.26**	**24**	⇑P	Pn	16 45 49.6	-0.3
	6.0nm,0.3s						
AAK				⇓S	Sn	16 46 49.5	+0.2
	2.3nm,0.4s						
KK31	**Karatay Array**	**5.33**	**351**	P	Pn	16 45 52.8	+2.1
	4.1nm,0.3s,baz=184,slow=15,SNR=36						
KK31				S	Sn	16 46 52.7	+1.9
	1.6nm,0.2s,baz=175,slow=23,SNR=9.5						
TKM2	**Tokmak 2**	**5.90**	**29**	⇓P	Pn	16 45 57.2	-1.5
	3.9nm,0.7s						
TKM2				⇑S	Sn	16 47 03.9	-1.1
	1.1nm,0.7s						
AB31	**Akbulak array**	**14.20**	**327**	⇓P	Pn	16 47 50.2	+0.3
	1.1nm,0.8s,baz=134,slow=14,SNR=9.9						
AB31				⇑S	Sn	16 50 23.8	-2.4
	0.3nm,0.3s,baz=148,slow=23,SNR=5.1						

WEL 22 17:00:40.3±0.7, 46°.78S×165°.56E, h12km, ML4.0/9, Error ellipse: s-maj=6.9km s-min=3.6km az=90.0, Off west coast of South Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PYZ	**Puysegur Point**	**0.99**	**52**	P*	Pg	17 00 58.5	-0.9
APZ	**The Paps**	**1.67**	**93**	PN	Pn	17 01 08.4	-1.0
APZ				AML	AML	17 01 31.5	
APZ				AML	AML	17 01 34.0	
DCZ	**Deep Cove**	**1.72**	**41**	PN	Pn	17 01 09.0	-1.1
DCZ				AML	AML	17 01 40.1	
DCZ				AML	AML	17 01 42.2	
WHZ	**Wether Hill Ro**	**1.88**	**63**	PN	Pn	17 01 11.9	-0.3
WHZ				SN	Sn	17 01 34.3	-1.5
WHZ				AML	AML	17 01 46.3	
MLZ	**Mavora Lakes**	**2.28**	**52**	PN	Pn	17 01 18.6	+0.9
MLZ				SN	Sb	17 01 48.6	-0.8
MLZ				AML	AML	17 02 06.1	
TUZ	**Tuapeka**	**2.94**	**75**	PN	Pn	17 01 26.3	-0.5
TUZ				SN	Sn	17 02 00.1	-1.8
TUZ				AML	AML	17 02 18.1	
EAZ	**Earnscleugh**	**3.04**	**61**	PN	Pn	17 01 29.6	+1.4
EAZ				AML	AML	17 02 07.6	
EAZ				AML	AML	17 02 08.3	
WKZ	**Wanaka**	**3.11**	**52**	PN	Pn	17 01 32.3	+3.1
WKZ				AML	AML	17 02 18.0	
WKZ				AML	AML	17 02 27.1	
ODZ	**Otahua Downs**	**3.95**	**66**	PN	Pn	17 01 39.8	-0.9
ODZ				AML	AML	17 02 54.4	
LBZ	**Lake Benmore**	**4.04**	**55**	*e*Pn	Pn	17 01 43.3	+1.4
LBZ				AML	AML	17 02 34.6	

ISK ***22*** *17:06:21.8, 37°.62N×35°.60E, h8km, MD2.5*
ISCJB ***22*** *17:06:22.8±0.8, 37°.61N±0°.06×35°.60E±0°.04, h6km±7km, Error ellipse: s-maj=10.2km s-min=4.8km az=164.4*
CSEM ***22*** *17:06:22.6±0.3, 37°.62N×35°.61E, h10km, MD2.5, Error ellipse: s-maj=6.2km s-min=3.9km az=175.0*
DDA ***22*** *17:06:23.2, 37°.61N×35°.59E, h7km, Md2.4*

ISC 22 17:06:21.7±1.1, 37°.62N±0°.04×35°.67E±0°.03, h13km±9km, n19, σ0s44/32, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KOZT	**Kozan**	**0.19**	**137**	*e*PG	**Pb**	**17 06 26.9**	**-0.1**
KOZT				*e*SG	**Sb**	**17 06 30.7**	**+0.1**
KOZT	**Kozan**	**0.19**	**137**	*e*Pg	**Pb**	**17 06 26.9**	**-0.1**
KOZT				*e*Sg	**Sb**	**17 06 30.7**	**+0.1**
AKO	**Adana**	**0.23**	**228**	*i* P	**Pg**	**17 06 26.8**	**0.0**
AKO				*i* S	**Sg**	**17 06 29.9**	**-0.3**
ANDN	**Andirin**	**0.54**	**94**	*i* P	**Pn**	**17 06 34.5**	**-0.8**
ANDN				*i* S	**Sn**	**17 06 44.3**	**+0.1**
ANDN	**Andirin**	**0.54**	**94**	P	**Pn**	**17 06 34.5**	**-0.8**
ANDN				S	**Sn**	**17 06 44.3**	**+0.1**
KARA	**Karaisali**	**0.60**	**234**	*e*PG	**Pg**	**17 06 33.2**	**-0.3**
KARA				*e*SG	**Sg**	**17 06 41.6**	**+0.1**
KARA	**Karaisali**	**0.60**	**234**	*e*Pg	**Pg**	**17 06 33.2**	**-0.3**
KARA				*e*Sg	**Sg**	**17 06 41.6**	**+0.1**
CEYT	**Ceyhan**	**0.61**	**174**	*e*PG	**Pb**	**17 06 34.3**	**+0.1**
CEYT				*e*SG	**Sb**	**17 06 43.4**	**+0.7**
CEYT	**Ceyhan**	**0.61**	**174**	*e*Pg	**Pb**	**17 06 34.3**	**+0.1**
CEYT				*e*Sg	**Sb**	**17 06 43.4**	**+0.7**
GULE	**Gulek**	**0.78**	**245**	*i* P	**Pn**	**17 06 38.1**	**-0.5**
GULE				*i* S	**Sb**	**17 06 48.0**	**+0.1**
GULE	**Gulek**	**0.78**	**245**	P	**Pn**	**17 06 38.1**	**-0.5**
GULE				S	**Sb**	**17 06 48.0**	**+0.1**
MERS	**Mersin**	**1.18**	**231**	*e*PN	**Pb**	**17 06 44.1**	**+0.1**
MERS	**Mersin**	**1.18**	**231**	*e*Pn	**Pb**	**17 06 44.1**	**+0.1**
BNN	**Bunyan**	**1.24**	**7**	*e*PN	**Pg**	**17 06 45.9**	**+0.2**
BNN	**Bunyan**	**1.24**	**7**	*e*Pn	**Pg**	**17 06 45.9**	**+0.2**
KERG	**Konya-Eregli**	**1.24**	**261**	*i* P	**Pg**	**17 06 45.5**	**-0.1**
KERG				*i* S	**Sg**	**17 07 02.8**	**+0.9**
KERG	**Konya-Eregli**	**1.24**	**261**	P	**Pg**	**17 06 45.5**	**-0.1**
KERG				S	**Sg**	**17 07 02.8**	**+0.9**
TAHT	**Tahtakopru-Hat**	**1.31**	**161**	*e*PN	**Pg**	**17 06 47.2**	**+0.3**
TAHT	**Tahtakopru-Hat**	**1.31**	**161**	*e*Pn	**Pg**	**17 06 47.2**	**+0.3**

IDC ***22*** *17:06:28.4±1.5, 62°.30S×163°.54E, h0km, mb3.8/4, mb1 4.1/5, mb1mx3.9/23, mbtmp3.9/5, ML4.3/1, MS4.7/3, Ms1 4.6/3, ms1mx4.0/28, Error ellipse: s-maj=98.6km s-min=28.9km az=58.0*
GCMT ***22*** *17:06:29.9±0.3, 62°.19S×165°.05E, h22km±2km, MW5.2/66, Moment Tensor Solution. s28,c30; s66,c96; Duration: 0 Moment tensor: Scale 10^16 Nm; Mrr-0.89±.36; Mθθ6.50±.31; Mϕϕ-5.61±.26; Mrθ-3.50±.57; Mrϕ-1.21±.23; Mθϕ0.56±.50; Best double couple: M◎6.88300×10^16 NP1:φs322.00000°, δ77.00000°, λ18.00000°. NP2: φs228.00000°, δ73.00000°, λ167.00000°. Principal axes: T 8.0250, Plg22.0000°, Azm186.0000°; N -2.2830, Plg68.0000°, Azm357.0000°; P -5.7410, Plg3.0000°, Azm95.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
NEIC ***22*** *17:06:29.9±0.8, 62°.24S×163°.70E, h10km, mb4.8/4 Error ellipse: s-maj=36.7km s-min=9.0km az=72.0*

ISC 22 17:06:30.0±1.0, 62°.2S±0°.1×163°.7E±0°.4, h10km, n21, σ0s97/13, mb4.0/7, Balleny Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
VNDA	**Vanda**	**15.39**	**182**	Pn	**Pn**	**17 10 05.3**	**-1.6**
	1.3nm,0.3s,baz=8.1,slow=13,SNR=29						
VNDA				LR	LR	17 15 08.8	
	comp=Z,3μm,18.3s,baz=12,slow=34						
SBA	**Scott Base**	**15.74**	**178**	*e*Pn	**Pn**	**17 10 10.2**	**-1.2**
	136nm,1.5s						
RPZ	**Rata Peaks**	**19.03**	**16**	LR	LR	17 16 58.7	
	comp=Z,2μm,20.4s,baz=215,slow=33						
QSPA	**South Pole Qui**	**27.88**	**180**	*e*P	**P**	**17 12 19.5**	**-0.2**
STKA	**Stephens Creek**	**33.54**	**325**	P	**P**	**17 13 09.6**	**-0.1**
	1.6nm,0.9s,baz=132,slow=16,SNR=2.8						
MAW	**Mawson**	**38.55**	**217**	LR	LR	17 30 10.0	
	comp=Z,870nm,19.0s,baz=102,slow=37						
H01W1	**Cape Leeuwin H**	**41.17**	**288**	T	T	17 59 09.7	
	baz=147,slow=76,SNR=42						
H01W2	**Cape Leeuwin H**	**41.17**	**288**	T	T	17 59 03.2	
	baz=147,slow=76,SNR=35						
H01W3	**Cape Leeuwin H**	**41.18**	**288**	T	T	17 59 03.2	
	baz=147,slow=76,SNR=38						
AS01	**Alice Springs**	**43.49**	**319**	*e*P	**P**	**17 14 33.4**	**+0.1**
AS31	**Alice Springs**	**43.50**	**319**	*e*P	**P**	**17 14 33.0**	**-0.4**
	4.1nm,1.8s						
ASAR	**Alice Springs**	**43.50**	**319**	P	**P**	**17 14 33.4**	**-0.1**
	0.9nm,0.8s,baz=160,slow=7.9,SNR=9.6						
SNAA	**Sanae**	**46.07**	**186**	*e*P	**P**	**17 14 55.5**	**+2.1**
	17nm,1.5s						
WR1	**Warramunga Arr**	**46.87**	**321**	*e*P	**P**	**17 15 00.0**	**-0.2**
	12nm,1.6s						
WRA	**Warramunga Ar**	**46.87**	**321**	P	**P**	**17 15 00.0**	**-0.2**
	0.7nm,1.1s,baz=160,slow=7.0,SNR=3.1						
H08S2	**Diego Garcia H**	**83.88**	**265**	T	T	18 52 37.1	
	baz=152,slow=76,SNR=19						
H08S1	**Diego Garcia H**	**83.89**	**265**	T	T	18 52 40.2	
	baz=152,slow=76,SNR=18						
H08S3	**Diego Garcia H**	**83.90**	**265**	T	T	18 52 37.1	
	baz=152,slow=76,SNR=16						
LPAZ	**La Paz**	**91.81**	**131**	P	**P**	**17 19 39.0**	**+0.2**
	0.6nm,0.7s,baz=177,slow=9.8,SNR=3.6						
YKA	**Yellowknife Ar**	**138.66**	**44**	PKP	**PKPdf**	**17 25 53.6**	**-0.8**
	0.1nm,0.3s,baz=206,slow=2.7,SNR=3.9						
NRIK	**Noril'sk**	**141.83**	**326**	PKP	**PKPdf**	**17 26 00.0**	**+0.1**
	1.1nm,0.4s,baz=104,slow=4.2,SNR=3.6						

BJI ***22*** *17:14:46.0, 22°.58S×173°.95W, h5km, mb5.4/62, mB6.1/55, Ms5.4/58, Ms7 5.1/57*
IDC ***22*** *17:14:48.0±0.4, 22°.76S×174°.64W, h0km, mb5.2/33, mb1 5.2/35, mb1mx5.2/41, mbtmp5.2/35, ML4.4/2, MS5.0/21, Ms1 5.0/21, ms1mx4.7/37, Error ellipse: s-maj=14.4km s-min=12.0km az=147.0*
GCMT ***22*** *17:14:51.2±0.1, 22°.90S×174°.18W, h13km, MW5.5/125, Moment Tensor Solution. s96,c156; s125,c239; Duration: 1s4 Moment tensor: Scale 10^17 Nm; Mrr-2.13±.04; Mθθ0.39±.03; Mϕϕ1.75±.03; Mrθ0.17±.09; Mθϕ1.41±.03; Mrϕ0.35±.08; Best double couple: M◎2.41400×10^17 NP1:φs211.00000°, δ50.00000°, λ-92.00000°. NP2:φs34.00000°, δ40.00000°, λ-88.00000°. Principal axes: T 2.6650, Plg5.0000°, Azm302.0000°; N -0.4980, Plg2.0000°, Azm212.0000°; P -2.1620, Plg85.0000°, Azm104.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
ISCJB ***22*** *17:14:51.2±0.1, 22°.88S±0°.03×174°.56W±0°.02, h33km, mb5.5/296, MS5.2/206 Error ellipse: s-maj=4.4km s-min=2.3km az=150.7*
NEIC ***22*** *17:14:51.2±1.6, 22°.81S×174°.59W, h22km±11km, mb5.5/220, MS5.2/146, Error ellipse: s-maj=4.2km s-min=3.1km az=146.0*
MOS ***22*** *17:14:52.3±1.0, 22°.64S×174°.75W, h33km, mb5.7/61, MS5.2/41, Error ellipse: s-maj=8.8km s-min=7.0km az=62.4*

ISC 22 17:14:52.7±0.3, 23°.01S±0°.04×174°.46W±0°.04, h35km±2km, h35km:pP-P, n1380, σ1s47/1395, mb5.5/293, MS5.2/209, 58C-35D, Tonga Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**6.95**	**206**	Pn	**Pn**	**17 16 32.3**	**+0.1**
	729nm,0.3s,baz=61,slow=6.9,SNR=45						
RAO				Sn	**Sn**	**17 17 51.8**	**+1.8**
	263nm,0.3s,baz=250,slow=24,SNR=7.1						
RAO	**Raoul Island**	**6.95**	**206**	*e*P	**Pn**	**17 16 34.0**	**+1.9**
RAO				*e*		17 17 51.0	
RAO	**Raoul Island**	**6.95**	**206**	*e*Pn	**Pn**	**17 16 33.4**	**+1.3**
RAO				*e*Sn	**Sn**	**17 17 47.2**	**-2.8**
MSVF	**Nonsavu**	**8.77**	**305**	*e*P	**Pn**	**17 16 56.8**	**-0.5**
MSVF	**Nonsavu**	**8.77**	**305**	*e*Pn	**Pn**	**17 16 56.8**	**-0.5**
AFI	**Afiamalu**	**9.40**	**16**	Pn	Pn	17 16 55.8	-10
	48nm,0.3s,baz=209,slow=5.4,SNR=46						
AFI				Sn	Sn	17 18 32.2	-18
	42nm,0.3s,baz=30,slow=23,SNR=4.1						
AFI	**Afiamalu**	**9.40**	**16**	*e*P	Pn	17 16 54.5	-11
AFI	**Afiamalu**	**9.40**	**16**	*e*Pn	Pn	17 16 54.5	-11
AFI				*e*Sn	Sn	17 18 27.3	-23
RAR	**Rarotonga**	**13.73**	**85**	Pn	Pn	17 17 58.2	-6.8
	57nm,0.3s,baz=281,slow=6.8,SNR=118						
RAR				Sn	Sn	17 20 21.9	-14
	28nm,0.3s,baz=266,slow=20,SNR=5.7						
RAR				LR	LR	17 23 24.0	
	comp=Z,7μm,18.4s,baz=268,slow=37						
RAR	**Rarotonga**	**13.73**	**85**	*e*Pn	Pn	17 17 58.3	-6.7
RAR				*e*		17 20 15.2	
RAR				*e*Sn	Sn	17 20 21.9	-14
OUZ	**Omahuta**	**16.02**	**218**	*e*Pn	**P**	**17 18 38.3**	**-0.1**
	47nm,1.2s						
HAZ	**Te Kaha**	**16.14**	**203**	PN	**Pn**	**17 18 31.6**	**-5.3**
HAZ				*e*SN	**Sn**	**17 21 25.7**	**-9.2**
WCZ	**Waipu Caves**	**16.14**	**215**	*e*PN	**P**	**17 18 41.3**	**+1.4**
PKGZ	**Pakihiroa**	**16.16**	**202**	*e*PN	**Pn**	**17 18 31.4**	**-5.8**
PKGZ				SN	**Sn**	**17 21 27.0**	**-8.3**
PUZ	**Puketiti**	**16.26**	**201**	*e*PN	Pn	17 18 30.0	-8.6
PUZ				*e*SN	Sn	17 21 26.3	-12
MWZ	**Matawai**	**16.75**	**202**	PN	Pn	17 18 37.2	-7.5
MWZ				SN	Sn	17 21 38.9	-11
URZ	**Urewera**	**16.83**	**204**	Pn	**Pn**	**17 18 45.7**	**+0.1**
	1.3nm,0.3s,baz=257,slow=2.8,SNR=9.7						
URZ				Sn	Sn	17 21 41.5	-10
	2.4nm,0.3s,baz=196,slow=3.4,SNR=10						
URZ	**Urewera**	**16.83**	**204**	*e*Pn	**P**	**17 18 47.6**	**+0.2**
	73nm,0.5s						
URZ				*e*Sn	Sn	17 21 38.9	-13
URZ				*e*Sn	S	17 21 41.5	-20
RIGZ	**Rimuhau**	**17.00**	**201**	SN	Sn	17 21 45.6	-10
DZM	**Mont Dzumac**	**17.67**	**269**	P	**Pn**	**17 18 54.7**	**-1.6**
	1.1nm,0.3s,baz=84,slow=15,SNR=16						
BKZ	**Black Stump Fm**	**17.86**	**204**	*e*Pn	**P**	**17 18 59.4**	**+0.5**
	36nm,0.6s						
HIZ	**Hauiti**	**17.95**	**208**	*e*Pn	**Pn**	**17 18 59.4**	**-0.2**
	62nm,0.7s						
PXZ	**Pawanui**	**18.50**	**201**	SN	Sn	17 22 16.7	-15
BFZ	**Birch Farm**	**19.29**	**202**	PN	**P**	**17 19 13.3**	**-1.2**
BFZ				SN	Sn	17 22 35.1	-16
BFZ	**Birch Farm**	**19.29**	**202**	*e*P	**Pn**	**17 19 15.9**	**+0.1**
	118nm,0.6s						
MRZ	**Mangatainoka R**	**19.50**	**203**	PN	**P**	**17 19 17.1**	**+0.1**
MRZ				*e*SN	S	17 22 38.8	-17
SNZO	**South Karori**	**20.39**	**204**	*e*P	Pn	17 19 28.2	-0.6
	82nm,0.8s						
SNZO				LR	LR		
	comp=Z,6μm,19.0s						
CTZ	**Chatham Island**	**20.75**	**184**	*e*PN	Pn	17 19 39.3	+6.4
CTZ				*e*SN	**S**	**17 23 11.4**	**-8.8**
THZ	**Tophouse**	**21.49**	**207**	PN	**P**	**17 19 38.7**	**+0.3**
THZ				*e*SN	S	17 23 25.2	-10
THZ	**Tophouse**	**21.49**	**207**	*e*P	**P**	**17 19 38.8**	**+0.3**
	comp=Z,46nm,1.0s						
KHZ	**Kahutara**	**21.79**	**205**	PN	**P**	**17 19 41.0**	**-0.6**
KHZ	**Kahutara**	**21.79**	**205**	*e*P	**P**	**17 19 40.9**	**-0.6**
	comp=Z,81nm,1.1s						
LTZ	**Lake Taylor**	**22.60**	**206**	*e*P	**P**	**17 19 49.6**	**-0.7**
	comp=Z,31nm,0.8s						
CRLZ	**Canterbury Las**	**23.13**	**204**	*e*P	**P**	**17 19 55.8**	**0.0**
	comp=Z,93nm,1.2s						
OXZ	**Oxford**	**23.14**	**206**	*e*P	**P**	**17 19 55.2**	**-0.7**
	comp=Z,136nm,1.3s						
MQZ	**McQueen's Vall**	**23.23**	**204**	*e*P	**P**	**17 19 58.4**	**+1.7**
	comp=Z,167nm,1.5s						
RPZ	**Rata Peaks**	**23.87**	**207**	P	**P**	**17 20 01.9**	**-1.0**
	comp=Z,37nm,0.8s,baz=250,slow=1.5,SNR=14						
PAE	**Paea**	**23.91**	**82**	*e*P	**P**	**17 20 02.6**	**-0.9**
	comp=Z,20nm,1.0s						
PAE	**Paea**	**23.91**	**82**	*e*T	T	17 45 25.4	
	comp=Z,32nm,0.3s						
PPT2	**Papeete2**	**23.93**	**82**	*e*P	**P**	**17 20 03.2**	**-0.7**
	comp=Z,110nm,1.1s						
PPT2				*e*S	**S**	**17 24 10.5**	**-7.8**
	comp=Z,2μm,24.8s						
PPT2				*e*LQ	LQ	17 24 32.9	
	comp=

RKT eLQ LQ 17 29 58.1
comp=Z,1μm,31.0s
RKT eLR LR 17 31 24.8
comp=Z,5μm,31.2s,baz=263
RKT Rikitea 36.25 98 eT T 18 01 10.7
comp=Z,6.0nm,0.3s
CMSA Cobar Meteorol 36.27 248 P **P** **17 21 52.2 -0.7**
baz=36,SNR=23
CTA Charters Tower 36.59 267 P **P** **17 21 54.3 -1.4**
comp=Z,11nm,0.3s,baz=94,slow=9.4,SNR=44
CTA LR LR 17 36 13.9
comp=Z,1μm,18.1s,baz=103,slow=35
CTAO Charters Tower 36.59 267 eP **P** **17 21 54.4 -1.4**
CTAO pmax pmax
comp=Z,45nm,1.0s
CTAO MLR MLR
comp=Z,2μm,19.0s
CTAO Charters Tower 36.59 267 eP **P** **17 21 54.4 -1.4**
comp=Z,45nm,1.0s
CTAO LR LR
comp=Z,2μm,19.0s
TOO Toolangi 37.22 238 P **P** **17 22 01.5 +0.5**
baz=37,SNR=6.1
RABL Rabaul 37.29 295 eP **P** **17 21 58.7 -3.1**
comp=Z,43nm,0.6s
TAU Tasmania Unive 37.30 229 PFAKE 17 22 10.0 +8.5
TAU LR LR
comp=Z,2μm,19.0s
QLP Quilpie 37.56 256 P **P** **17 22 02.6 -1.3**
baz=38,SNR=33
MTSU Mount Surprise 38.81 269 P **P** **17 22 12.9 -1.7**
baz=39,SNR=22
PMG Port Moresby 39.13 284 P **P** **17 22 15.1 -2.1**
comp=Z,95nm,1.1s,baz=78,slow=7.5,SNR=18
PMG LR LR 17 36 52.8
comp=Z,2μm,18.4s,baz=128,slow=34
PMG Port Moresby 39.13 284 *d* iP **P** **17 22 14.8 -2.5**
PMG pmax pmax
comp=Z,638nm,1.2s
PMG MLR MLR
comp=Z,10μm,16.0s
PMG Port Moresby 39.13 284 eP **P** **17 22 14.9 -2.3**
comp=Z,165nm,1.3s
STKA Stephens Creek 39.77 247 P **P** **17 22 22.1 -0.3**
comp=Z,12nm,0.6s,baz=95,slow=10,SNR=34
STKA LR LR 17 37 33.3
comp=Z,5μm,20.2s,baz=84,slow=34
STKA Stephens Creek 39.77 247 P **P** **17 22 21.9 -0.6**
baz=40,SNR=22
STKA Stephens Creek 39.77 247 eP **P** **17 22 21.7 -0.8**
STKA pmax pmax
comp=Z,7.0nm,1.4s
STKA Stephens Creek 39.77 247 eP **P** **17 22 21.7 -0.8**
comp=Z,6.9nm,1.4s
JOHN Johnston Islan 39.79 7 PFAKE 17 22 30.0 +7.4
JOHN LR LR
comp=Z,253nm,20.0s
ARPS Mount Arapiles 39.96 240 P **P** **17 22 24.3 +0.3**
baz=40,SNR=11
PTCN Pitcairn Islan 40.43 102 PFAKE 17 22 40.0 +12
PTCN LR LR
comp=Z,3μm,19.0s
COEN Coen 41.06 275 P **P** **17 22 32.5 -0.8**
baz=41,SNR=8.8
COEN Coen 41.06 275 eP **P** **17 22 32.6 -0.8**
comp=Z,90nm,1.4s
HTT Hallett 42.07 245 P **P** **17 22 40.8 -0.7**
baz=42,SNR=15
MANU Manus Island 42.47 294 eP **P** **17 22 42.4 -2.5**
comp=Z,110nm,1.8s
BBOO Buckleboo 44.47 246 P **P** **17 22 59.7 -1.1**
baz=44,SNR=23
BBOO Buckleboo 44.47 246 eP **P** **17 22 59.5 -1.3**
comp=Z,60nm,1.5s
POHA Pohakuloa 46.35 25 PFAKE 17 23 30.0 +14
POHA LR LR
comp=Z,1μm,19.0s
KIP Kipapa 46.98 21⇓ eP **P** **17 23 20.6 0.0**
KIP pmax pmax
comp=Z,843nm,1.7s
AS01 Alice Springs 47.16 258 eP **P** **17 23 20.5 -1.7**
AS31 Alice Springs 47.20 258 eP **P** **17 23 20.9 -1.7**
comp=Z,21nm,1.1s
AS31 eS **S** **17 30 10.2 -3.2**
ASAR Alice Springs 47.20 258 P **P** **17 23 21.0 -1.5**
comp=Z,57nm,0.9s,baz=94,slow=7.7,SNR=162
ASAR S **S** **17 30 10.2 -3.2**
comp=Z,2.9nm,1.0s,baz=85,slow=15,SNR=9.3
ASAR LR LR 17 42 43.7
comp=Z,5μm,19.7s,baz=106,slow=36
WRAB Tennant Creek 47.55 264⇓ *i* P **P** **17 23 22.9 -2.3**
WRAB pmax pmax
comp=Z,178nm,1.7s
WRAB MLR MLR
comp=Z,5μm,16.0s
WRAB Tennant Creek 47.55 264 eP **P** **17 23 23.6 -1.7**
comp=Z,34nm,0.9s
WRAB LR LR
comp=Z,4μm,19.0s
WR1 Warramunga Arr 47.56 264 eP **P** **17 23 23.0 -2.3**
comp=Z,46nm,0.9s
WR1 ePcP **PcP** **17 24 55.4 +0.4**
WR1 eS **S** **17 30 14.1 -4.3**
WRA Warramunga Arr 47.56 264 P **P** **17 23 23.0 -2.3**
comp=Z,10nm,0.3s,baz=96,slow=8.4,SNR=249
WRA PcP **PcP** **17 24 55.4 +0.4**
comp=Z,8.8nm,0.8s,baz=96,slow=4.0,SNR=6.6
WRA S **S** **17 30 14.1 -4.4**
comp=Z,4.1nm,1.2s,baz=44,slow=28,SNR=12
WRA LR LR 17 42 42.7
comp=Z,4μm,20.4s,baz=95,slow=35
JAY Jayapura 47.96 288 P **P** **17 23 26.1 -2.4**
comp=Z,6.8nm,0.8s,baz=161,slow=20,SNR=20
JAY Jayapura 47.96 288 P **P** **17 23 26.5 -2.0**
comp=Z,94nm,0.9s,comp=Z,806nm
GENI Genyem 48.39 288 P **P** **17 23 30.1 -1.7**
MIDW Midway 51.01 357 PFAKE 17 24 00.0 +8.7
MIDW LR LR
comp=Z,3μm,21.0s
KDU Kakadu 51.31 272 P **P** **17 23 51.8 -2.2**
baz=51,SNR=6.5
WRKA Warakurna 51.99 256 P **P** **17 23 57.8 -1.2**
baz=52,SNR=97
MTN Manton Dam 52.50 271 P **P** **17 24 00.5 -2.3**
baz=52,SNR=13
MTN Manton Dam 52.50 271 eP **P** **17 24 01.1 -1.7**
comp=Z,26nm,0.8s
GUMO Guam 53.93 308 LR LR 17 44 26.5
comp=Z,411nm,22.0s,baz=120,slow=33
SAUI Saumlaki 54.07 277 P **P** **17 24 14.3 -0.1**
FAKI Fak Fak 55.27 283 P **P** **17 24 18.8 -4.3**
SBA Scott Base 55.62 185 eP **P** **17 24 29.5 +4.8**
SBA pmax pmax
comp=Z,94nm,1.4s
SBA MLR MLR
comp=Z,2μm,20.0s
SBA Scott Base 55.62 185 eP **P** **17 24 29.4 +4.8**
comp=Z,94nm,1.4s
SBA LR LR
comp=Z,2μm,20.0s
VNDA Vanda 55.74 186 P **P** **17 24 27.4 +1.9**
comp=Z,12nm,1.0s,baz=27,slow=7.1,SNR=24
VNDA PcP **PcP** **17 25 27.8 +3.3**
comp=Z,11nm,0.9s,baz=352,slow=2.6,SNR=7.3
VNDA Vanda 55.74 186 eP **P** **17 24 29.5 +4.0**
VNDA pmax pmax
comp=Z,41nm,1.4s
VNDA Vanda 55.74 186 eP **P** **17 24 29.5 +4.0**
comp=Z,41nm,1.4s
FITZ Fitzroy Crossi 55.98 263 P **P** **17 24 27.6 -0.6**
comp=Z,13nm,0.7s,baz=80,slow=4.8,SNR=24
FITZ S **S** **17 32 13.4 -0.9**
comp=Z,1.9nm,0.9s,baz=241,slow=20,SNR=4.4
FITZ Fitzroy Crossi 55.98 263 P **P** **17 24 27.4 -0.8**
baz=56,SNR=14
FITZ Fitzroy Crossi 55.98 263 eP **P** **17 24 27.2 -0.9**
comp=Z,70nm,1.3s
FITZ S **S** **17 32 13.4 -0.9**
BNDI Bandanaira 56.71 280 P **P** **17 24 32.8 -0.6**
SIJI Sorong 57.06 285 P **P** **17 24 33.8 -2.1**
comp=Z,88nm,0.3s,baz=199,slow=6.3,SNR=3.8
SWI Sorong 57.07 285 P **P** **17 24 34.4 -1.5**
MSAI Masohi 58.09 281 P **P** **17 24 41.2 -1.9**
PALU Palau 58.34 295 P **P** **17 24 43.6 -1.2**
baz=58,SNR=4.5
NLAI Namlea 59.79 280 P **P** **17 24 53.5 -1.4**
SOEI Soe 59.88 272 P **P** **17 24 56.4 +0.7**

KLBR Kellerberrin 60.01 246 P **P** **17 24 56.5 +0.2**
baz=60,SNR=23
RKGY Rocky Gully 60.17 242 P **P** **17 24 58.7 +1.4**
baz=60,SNR=8.1
NWAO Narrogin (SRO) 60.22 244 P **P** **17 24 58.2 +0.5**
comp=Z,9.2nm,0.5s,baz=1.1,slow=0.1,SNR=12
NWAO Narrogin (SRO) 60.22 244 P **P** **17 24 58.5 +0.8**
baz=60,SNR=9.4
NWAO Narrogin (SRO) 60.22 244 eP **P** **17 24 58.6 +0.9**
NWAO pmax pmax
comp=Z,152nm,1.7s
NWAO MLR MLR
comp=Z,2μm,19.0s
NWAO Narrogin (SRO) 60.22 244 eP **P** **17 24 58.6 +0.9**
comp=Z,152nm,1.7s
NWAO LR LR
comp=Z,2μm,19.0s
BATI Baumata 60.27 271 P **P** **17 24 59.8 +1.5**
LBMI Labuha 60.53 283 P **P** **17 24 59.0 -1.0**
MBWA Marble Bar 60.54 258 eP **P** **17 24 59.1 -0.9**
comp=Z,63nm,1.4s
MBWA LR LR
comp=Z,2μm,20.0s
BLDU Ballidu 61.07 247 P **P** **17 25 03.6 +0.1**
baz=61,SNR=22
TNTI Ternate 61.28 284 P **P** **17 25 03.5 -1.6**
SANI Sanana 61.29 281 P **P** **17 25 05.5 +0.3**
MORW Morawa 61.95 248 P **P** **17 25 09.7 +0.2**
baz=62,SNR=12
MMRI Maumere 62.15 272 P **P** **17 25 09.3 -1.7**
CASY Casey 63.14 206 eP **P** **17 25 19.4 +2.7**
comp=Z,49nm,0.9s
CASY LR LR
comp=Z,226nm,20.0s
BSSI Bau Bau, Buton 64.68 274 P **P** **17 25 27.2 -0.5**
DAV Davao City (W) 65.78 290 PFAKE 17 25 50.0 +15
DAV LR LR
comp=Z,803nm,19.0s
KAPI Kappang 65.79 275 P **P** **17 25 34.8 -0.1**
comp=Z,4.0nm,0.4s,baz=216,slow=2.6,SNR=4.1
KAPI Kappang 65.79 275 eP **P** **17 25 34.2 -0.8**
comp=Z,29nm,1.1s
KAPI LR LR
comp=Z,904nm,19.0s
MRSI Marisa 66.02 281 P **P** **17 25 34.4 -2.0**
SPSI Sidrap Palu 66.18 276 P **P** **17 25 35.3 -2.1**
PLAI Plampang 66.19 270 P **P** **17 25 35.0 -2.5**
QSPA South Pole Qui 67.07 180 eP **P** **17 25 45.0 +2.5**
QSPA LR LR
comp=Z,2μm,20.0s
MIR Mirnyy 70.13 205 *i* P **P** **17 26 04.0 +2.7**
MIR pmax pmax
comp=Z,16nm,2.0s
MYLDM Lahad Datu 71.15 284⇑ P **P** **17 26 08.1 -0.3**
MYLDM Lahad Datu 71.15 284 eP **P** **17 26 08.4 0.0**
comp=Z,36nm,1.1s
TSM Tawau 71.33 283⇓ P **P** **17 26 09.1 -0.4**
SDKM Sandakan 72.52 284⇓ P **P** **17 26 16.6 -0.1**
KKM Kota Kinabalu 73.57 284 PFAKE 17 26 30.0 +7.0
KKM LR LR
comp=Z,414nm,21.0s
INU Inuyama 74.04 320 *es* P P 17 26 17.2 -7.9
PBKI Pangkalan Bun 74.11 274 P **P** **17 26 30.2 +4.1**
MJAR Matsushiro Arr 74.19 322 P **P** **17 26 25.0 -1.0**
comp=Z,22nm,0.8s,baz=160,slow=5.8,SNR=42
MJAR Matsushiro Arr 74.19 322 P **P** **17 26 25.0 -1.0**
MAJO Matsushiro 74.19 322 *d* iP **P** **17 26 25.2 -0.9**
MAJO pmax pmax
comp=Z,362nm,1.1s
MAJO Matsushiro 74.19 322 eP **P** **17 26 25.1 -0.9**
comp=Z,279nm,2.0s
MAJO LR LR
comp=Z,526nm,20.0s
MAT Matsushiro 74.19 322 P **P** **17 26 24.8 -1.2**
MAT S **S** **17 35 54.8 -2.3**
MJB9 Matsu-Tunnel 74.20 322 eP **P** **17 26 25.0 -1.1**
comp=Z,71nm,2.0s
STKI Sintang 75.38 276 P **P** **17 26 34.6 +1.2**
comp=Z,51nm,1.1s,comp=Z,5μm
SHO Shikotan 75.43 332 eP **P** **17 26 32.8 -0.1**
SHO pmax pmax
comp=N,17nm,0.8s
SHO pmax pmax
comp=Z,30nm,0.8s
ERM Erimo 75.64 329 P **P** **17 26 34.0 -0.2**
ERM pmax pmax
comp=Z,94nm,1.4s
ERM Erimo 75.64 329 PFAKE 17 26 40.0 +5.8
ERM LR LR
comp=Z,2μm,20.0s
SBUM Sibu 75.66 279⇑ P **P** **17 26 35.4 +0.4**
SBUM Sibu 75.66 279 eP **P** **17 26 34.7 -0.3**
comp=Z,76nm,1.9s
SBUM *ePP* PP 17 29 15.3 -10
CISI Cisompet, Garu 75.82 268 P **P** **17 26 36.7 +0.7**
comp=Z,126nm,1.3s,comp=Z,2μm
YUK Yuzh-Kuril'sk 75.98 332 eP **P** **17 26 32.4 -3.7**
YUK *e* 17 26 44.6
YUK *eS* **S** **17 36 21.1 +4.5**
YUK SS **SS** **17 41 09.1 -1.3**
YUK pmax pmax
comp=Z,295nm,1.1s
YUK pmax pmax
comp=N,231nm,1.0s
YUK pmax pmax
comp=E,265nm,1.0s
YUK pmax pmax
comp=Z,900nm,4.1s
KUR Kuril'sk 76.10 334 *ce* P **P** **17 26 32.2 -4.5**
KUR *e* 17 29 20.8
KUR *i* S **S** **17 36 20.4 +2.6**
KUR pmax pmax
comp=Z,645nm,4.4s
KUR pmax pmax
comp=N,19nm,1.5s
KUR pmax pmax
comp=E,14nm,1.5s
KUR pmax pmax
comp=Z,91nm,1.5s
KUR MLR MLR
comp=N,974nm,19.0s
KUR MLR MLR
comp=E,810nm,19.0s
KUR MLR MLR
comp=Z,933nm,19.0s
LEM Lembang 76.28 268 P P 17 26 44.2 +5.5
comp=Z,71nm,1.0s,baz=129,slow=4.5,SNR=29
LEM Lembang 76.28 268 P P 17 26 44.9 +6.2
JNU Nakatsue 76.36 315 P **P** **17 26 38.2 -0.4**
comp=Z,46nm,1.1s,baz=52,slow=4.4,SNR=6.0
JNU Nakatsue 76.36 315 eP **P** **17 26 37.7 -0.9**
comp=Z,89nm,1.2s
CNJI Cibinong 76.55 268 P **P** **17 26 42.7 +2.6**
SNCC San Nicolas Is 76.61 45 P **P** **17 26 40.1 +0.1**
baz=231
KSM Kuching 77.01 277 eP **P** **17 26 42.4 -0.3**
comp=Z,54nm,0.8s
KSM LR LR
comp=Z,625nm,19.0s
SCZ2 Santa Cruz Isl 77.01 44 P **P** **17 26 42.2 -0.1**
baz=231
SCI2 San Clemente I 77.08 46 P **P** **17 26 43.0 +0.3**
baz=232
SKJI Sukabumi 77.19 268 P P 17 26 49.7 +6.0
SBC Santa Barbara 77.25 44 P **P** **17 26 43.7 +0.2**
baz=231
CIS Catalina Islan 77.43 45 P **P** **17 26 44.5 -0.1**
baz=232
BLG Laguna Peak, P 77.45 44 P **P** **17 26 44.5 -0.2**
baz=231
PKM Mcpherson Peak 77.47 43 P **P** **17 26 45.3 +0.4**
baz=230
ASAJ Asahikawa 77.52 330 P **P** **17 26 45.0 +0.3**
comp=Z,21nm,0.6s,baz=225,slow=4.7,SNR=22
ASAJ Asahikawa 77.52 330 eP **P** **17 26 45.6 +0.9**
comp=Z,83nm,1.2s
SMMC Simmler 77.62 43 P **P** **17 26 46.2 +0.6**
baz=230
FMP Fort Macarthur 77.70 45 P **P** **17 26 46.2 +0.1**
baz=232
NACB Ninganchiao 77.80 303 eP **P** **17 26 45.5 -1.3**
comp=Z,155nm,1.5s
SBJI Serang 77.91 268 P **P** **17 26 49.5 +1.8**
comp=Z,225nm,1.6s,comp=Z,18μm
SLBS Sierra La Lagu 77.98 58 eP **P** **17 26 48.2 +0.2**
comp=Z,48nm,1.3s
SLBS *ePcP* **sP** **17 27 05.5 +2.8**
109C Camp Elliot, M 77.98 46 P **P** **17 26 47.9 +0.2**
baz=233
OSI Osito Audit: C 77.99 44 P **P** **17 26 47.6 -0.1**
baz=231
DECC Green Verdugo 78.01 45 P **P** **17 26 47.9 0.0**
baz=232
TPUB Ta-pu 78.10 302 eP **P** **17 26 46.6 -1.9**
comp=Z,47nm,0.9s
SSLB Suanglung 78.10 302 eP **P** **17 26 48.0 -0.6**
comp=Z,21nm,0.9s
CGJI Cibinong 78.13 268 P **P** **17 26 48.3 -0.6**
comp=Z,187nm,1.5s,comp=Z,3μm
MWC Mount Wilson 78.17 45 eP **P** **17 26 48.2 -0.7**
MWC pmax pmax
comp=Z,56nm,1.5s
MWC Mount Wilson 78.17 45 eP **P** **17 26 48.2 -0.7**
comp=Z,56nm,1.5s
SRIG Santa Rosalia 78.19 54 eP **P** **17 26 48.3 -0.6**
comp=Z,147nm,1.7s
HOPS Hopland Field 78.20 38 eP **P** **17 26 48.6 -0.1**
comp=Z,102nm,1.6s
YHNB Yeheng 78.23 303 PFAKE 17 27 00.0 +11
YHNB LR LR
comp=Z,1μm,20.0s
ARVC Arvin 78.24 44 P **P** **17 26 49.1 +0.1**
baz=231
TATO Taipei 78.31 304 PFAKE 17 27 00.0 +10
TATO LR LR
comp=Z,2μm,20.0s
MURC Murrieta 78.36 46 P **P** **17 26 49.6 -0.2**
baz=232
MONP2 Monument Peak 78.44 47 P **P** **17 26 49.5 -1.0**
baz=233,SNR=7.3
BFSC Mount Baldy Ra 78.44 45 P **P** **17 26 49.9 -0.5**
baz=232
EDW2 Edwards Air Fo 78.62 44 P **P** **17 26 51.1 -0.2**
baz=232,SNR=13
KMRM Mail Ridge 78.67 37 eP **P** **17 26 51.6 +0.2**
comp=Z,88nm,1.2s
RCTC Rector, Farmer 78.72 43 P **P** **17 26 50.7 -1.0**
baz=231
ISA Isabella, Lake 78.80 43 P **P** **17 26 52.2 -0.1**
baz=231,SNR=9.4
ISA Isabella, Lake 78.80 43 eP **P** **17 26 52.1 -0.1**
ISA pmax pmax
comp=Z,62nm,1.4s
ISA Isabella, Lake 78.80 43 eP **P** **17 26 52.1 -0.1**
comp=Z,62nm,1.4s
PFO Pinyon Flats O 78.85 46 P **P** **17 26 52.7 +0.1**
baz=233,SNR=7.1
PFO Pinyon Flats O 78.85 46 eP **P** **17 26 52.3 -0.3**
PFO *e* 17 27 09.4
PFO pmax pmax
comp=Z,93nm,1.8s
PFO MLR MLR
comp=Z,896nm,21.0s
PFO Pinyon Flats O 78.85 46 eP **P** **17 26 52.2 -0.3**
comp=Z,93nm,1.8s
PFO *ePcP* **sP** **17 27 09.4 +1.9**
PFO LR LR
comp=Z,896nm,21.0s
SWSC Sam W. Stewart 78.89 47 P **P** **17 26 52.8 +0.1**
baz=233
BBRC Big Bear Solar 78.94 45 P **P** **17 26 52.9 -0.3**
baz=232
BLSI Bandar Lampung 79.01 269 P **P** **17 26 55.5 +1.7**
comp=Z,142nm,1.6s
KHMM Horse Mountain 79.11 37 eP **P** **17 26 54.9 +1.0**
comp=Z,49nm,1.3s
CMB Columbia Colle 79.14 41 eP **P** **17 26 53.5 -0.5**
CMB pmax pmax
comp=Z,82nm,1.7s
CMB Columbia Colle 79.14 41 eP **P** **17 26 53.5 -0.5**
comp=Z,82nm,1.7s
LRMC Laurel Mtn Rad 79.19 44 P **P** **17 26 54.2 -0.2**
baz=232,SNR=11
PET Petropavlovsk 79.24 344 eP **P** **17 26 53.2 -0.9**
PET *eS* **S** **17 36 50.4 -1.1**
PET *eSS* **SS** **17 41 54.2 -5.1**
PET *eSSS* SSS 17 45 17.5
PET pmax pmax
comp=Z,42nm,1.1s
PET pmax pmax
comp=Z,700nm,4.9s
PET pmax pmax
comp=Z,400nm,12.6s
PET MLR MLR
comp=Z,1μm,19.0s
PET MLR MLR
comp=Z,1μm,18.0s
PET Petropavlovsk 79.24 344 eP **P** **17 26 52.7 -1.4**
comp=Z,151nm,1.7s
PET LR LR
comp=Z,1μm,20.0s
RRX Edison Barstow 79.27 45 P **P** **17 26 54.9 +0.2**
baz=232
AFDM Forest Hills D 79.39 40 eP **P** **17 26 55.1 -0.2**
comp=Z,35nm,1.4s
BELC Belle Mtn. Jos 79.39 46 P **P** **17 26 55.4 -0.2**
baz=233,SNR=13
PPBI Pangkal Pinang 79.41 272 P **P** **17 26 56.5 +0.5**
comp=Z,106nm,1.6s,comp=Z,5μm
ORV Oroville 79.48 39 eP **P** **17 26 55.6 -0.1**
ORV pmax pmax
comp=Z,44nm,1.5s
ORV Oroville 79.48 39 eP **P** **17 26 55.6 -0.1**
comp=Z,44nm,1.5s
BC3 Big Chuckawall 79.55 47 P **P** **17 26 56.7 +0.3**
baz=234,SNR=9.2
KLI Kotabumi 79.56 269 P **P** **17 26 57.6 +0.8**
comp=Z,81nm,1.4s,comp=Z,1μm
PEA0 Petropavlovsk- 79.57 343 eP **P** **17 26 54.6 -1.3**
PEA0B Petropavlovsk- 79.57 343 eP **P** **17 26 55.0 -0.9**
comp=Z,221nm,1.5s
PETK Petropavlovsk- 79.57 343 P **P** **17 26 55.0 -0.9**
comp=Z,42nm,0.7s,baz=119,slow=7.3,SNR=54
PETK LR LR 17 57 36.4
comp=Z,760nm,20.5s,baz=146,slow=32
PETK Petropavlovsk- 79.57 343 P **P** **17 26 55.0 -0.9**
WDC Whiskeytown Da 79.57 38 eP **P** **17 26 56.8 +0.6**
WDC pmax pmax
comp=Z,48nm,1.2s
WDC Whiskeytown Da 79.57 38 eP **P** **17 26 56.3 +0.1**
comp=Z,48nm,1.3s
PEA1 Petropavlovsk- 79.57 343 eP **P** **17 26 55.0 -1.0**
GLA Glamis 79.61 47 P **P** **17 26 57.0 +0.3**
baz=234,SNR=9.4
GLA pmax pmax
comp=Z,50nm,1.3s
GLA Glamis 79.61 47 eP **P** **17 26 57.6 +0.9**
comp=Z,50nm,1.3s
GLA Glamis 79.61 47 eP **P** **17 26 57.3 +0.6**
comp=Z,50nm,1.3s
YSS Yuzh-Sakhalins 79.63 332 *ke* P **P** **17 26 56.0 -0.3**
YSS *e* 17 27 10.8
YSS *ePPP* PPP 17 31 45.0
YSS *eS* **S** **17 36 55.0 -0.9**
YSS *ePS* PnS 17 37 17.0 -26
YSS pmax pmax
comp=Z,60nm,0.9s
YSS pmax pmax
comp=Z,1μm,5.0s
YSS pmax pmax
comp=N,400nm,4.0s
YSS Yuzh-Sakhalins 79.63 332 eP **P** **17 26 56.0 -0.3**
comp=N,63nm,0.9s
YSS LR LR
comp=Z,372nm,20.0s
KASI Kota Agung 79.64 268 P **P** **17 26 56.9 -0.3**
comp=Z,194nm,1.1s,comp=Z,2μm
GSC Goldstone, Bar 79.65 45 P **P** **17 26 56.7 -0.1**
baz=232,SNR=10.0
GSC Goldstone, Bar 79.65 45 eP **P** **17 26 57.2 +0.3**
GSC pmax pmax
comp=Z,41nm,1.4s
GSC Goldstone, Bar 79.65 45 eP **P** **17 26 56.5 -0.4**
comp=Z,41nm,1.4s
HEC Hector,Ludlow 79.67 45 P **P** **17 26 56.7 -0.3**
baz=233,SNR=15
MPMC Manual Prospec 79.67 44 P **P** **17 26 57.3 +0.1**
baz=232,SNR=16
DAC Darwin (Calif) 79.74 43 eP **P** **17 26 57.7 +0.2**
DAC *e* 17 27 07.3
DAC pmax pmax
comp=Z,58nm,1.8s
DAC Darwin (Calif) 79.74 43 eP **P** **17 26 57.7 +0.2**
comp=Z,58nm,1.8s

DAC *e*PcP **pP** 17 27 07.2 -1.1
N02D Trinity Center 79.75 37 P **P** 17 26 57.8 +0.5
baz=227,SNR=11
O03D Paynes Creek 79.80 38 P **P** 17 26 57.3 -0.3
baz=228,SNR=16
MLAC Mammoth, Mammo 79.82 42 P **P** 17 26 58.2 +0.3
baz=231
TIN Tinemaha, Big 79.83 43 P **P** 17 26 58.1 +0.2
baz=231
M02C Callahan 79.95 37 P **P** 17 26 58.5 +0.2
baz=227,SNR=14
WAKR Walker 80.01 41 *e*P **P** 17 26 58.8 -0.1
IRM Iron Mountain 80.05 46 P **P** 17 26 58.9 -0.1
baz=234,SNR=12
L02D Cave Junction, 80.06 36 P **P** 17 26 59.4 +0.5
baz=227
HSIG 80.07 53 *e*P **P** 17 26 58.5 -0.7
comp=Z,96nm,1.9s
HSIG *e*PcP **sP** 17 27 15.9 +1.9
GMRC Granite Mounta 80.08 46 P **P** 17 26 59.2 -0.1
baz=233,SNR=7.4
113A Mohawk Valley, 80.17 48 *e*P **P** 17 26 59.4 -0.2
comp=Z,61nm,1.8s
USHA Ushuaia 80.22 146 LR LR 17 56 07.6
comp=Z,3μm,18.3s,baz=228,slow=31
Y12C Blythe 80.23 47 P **P** 17 27 00.0 +0.1
baz=234
Y12C Blythe 80.23 47 *e*P **P** 17 27 00.1 +0.1
comp=Z,85nm,1.8s
LWLI Liwa 80.23 269 P **P** 17 27 01.4 +0.8
comp=Z,135nm,1.4s
YBH Yreka Blue Hor 80.25 37 *e*P **P** 17 27 00.4 +0.4
YBH pmax pmax
comp=Z,110nm,1.9s
YBH Yreka Blue Hor 80.25 37 *e*P **P** 17 27 00.0 0.0
comp=Z,109nm,1.9s
TUQ Turquoise Moun 80.30 45 P **P** 17 27 00.6 +0.1
baz=233,SNR=7.2
MAW Mawson 80.31 199 P **P** 17 27 02.9 +3.1
comp=Z,51nm,0.8s,baz=147,slow=6.7,SNR=50
MAW Mawson 80.31 199 P **P** 17 27 02.9 +3.1
baz=80,SNR=32
MAW Mawson 80.31 199 *e*P **P** 17 27 02.7 +2.9
MAW pmax pmax
comp=Z,18nm,1.0s
MAW Mawson 80.31 199 *e*P **P** 17 27 02.7 +2.9
comp=Z,18nm,1.0s
MDSI Maura Dua 80.32 269 P **P** 17 26 59.9 -1.0
comp=Z,120nm,0.8s,comp=Z,2μm
FURC Furnace Creek, 80.33 44 P **P** 17 27 00.4 0.0
baz=232
GRAC Grapevine Rang 80.33 43 P **P** 17 27 01.0 +0.5
baz=232
SHOC Shoshone, Teco 80.36 44 P **P** 17 27 00.7 +0.1
baz=233
214A Organ Pipe Nat 80.37 49 P **P** 17 27 01.2 +0.4
baz=235
PMBI Palembang 80.37 271 P **P** 17 27 04.3 +3.1
QZH Quanzhou 80.53 302 ||*i*P **P** 17 26 58.1 -3.6
QZH S **S** 17 37 02.1 -4.3
QZH pmax pmax
comp=Z,140nm,0.9s
QZH pmax pmax
comp=Z,1μm,3.6s
QZH LR LR
comp=Z,1μm,17.8s
QZH LR LR
comp=Z,1μm,15.2s
QZH LR LR
comp=Z,2μm,20.4s
LDFC Landfair 80.62 46 *e*P **P** 17 27 02.3 +0.1
comp=Z,59nm,1.2s
NV01 Mina Array Sit 80.65 41 *e*P **P** 17 27 01.4 -1.0
NVAR Mina Array Bea 80.65 41 P **P** 17 27 02.4 0.0
comp=Z,13nm,0.7s,baz=224,slow=9.0,SNR=54
NVAR LR LR 17 55 00.2
comp=Z,816nm,21.8s,baz=243,slow=30
HUMO Hull Mountain 80.72 36 *e*P **P** 17 27 02.5 +0.1
comp=Z,59nm,1.4s
NV11 Mina Array Sit 80.74 41 *e*P **P** 17 27 02.1 -0.7
comp=Z,107nm,1.7s
NEE2 Needles Airpor 80.76 46 P **P** 17 27 03.4 +0.6
baz=234
M04C Macdoel 80.77 37 P **P** 17 27 03.1 +0.3
baz=228,SNR=13
PDMCI Parker Dam,Lak 80.81 47 P **P** 17 27 03.1 0.0
baz=234,SNR=8.6
KSRS Korea Array 80.95 317 P **P** 17 27 04.4 +0.7
comp=Z,13nm,0.9s,baz=139,slow=5.7,SNR=26
KSRS LR LR 17 58 01.2
comp=Z,725nm,21.3s,baz=133,slow=32
KS15 Wonju Array Si 80.97 317 *e*P **P** 17 27 03.8 0.0
KSAR Wonju Array Be 80.97 317 P **P** 17 27 04.4 +0.6
KSAR Wonju Array Be 80.97 317 P **P** 17 27 04.4 +0.6
KS01 Wonju Array Si 80.98 317 *e*P **P** 17 27 02.9 -1.0
TPNV Topopah Spring 81.01 44 P **P** 17 27 04.3 0.0
baz=233,SNR=13
TPNV Topopah Spring 81.01 44 *e*P **P** 17 27 04.4 +0.1
TPNV pmax pmax
comp=Z,40nm,1.2s
TPNV Topopah Spring 81.01 44 *e*P **P** 17 27 03.8 -0.4
comp=Z,40nm,1.3s
LHSI Lahat 81.18 270 P **P** 17 27 05.9 +0.4
comp=Z,113nm,1.5s,comp=Z,2μm
I03D Drain, OR 81.25 35 P **P** 17 27 05.3 +0.1
baz=227,SNR=5.8
Y14A Wickenburg 81.37 48 *e*P **P** 17 27 05.9 -0.2
comp=Z,360nm,1.9s
K04D Chiloquin, OR 81.38 36 P **P** 17 27 06.3 +0.3
baz=228
W13A Hualapai Mount 81.44 46 *e*P **P** 17 27 07.0 +0.4
comp=Z,55nm,1.8s
W13A *e*PP **PP** 17 30 06.9 -6.5
DSRI Dabo 81.50 273 P **P** 17 27 08.5 +1.3
comp=Z,324nm,1.2s,comp=Z,5μm
MOD Modoc Plateau 81.71 38 *e*P **P** 17 27 07.4 -0.5
comp=Z,123nm,2.0s
INCN Inchon 81.78 317 PFAKE 17 27 20.0 +12
INCN LR LR
comp=Z,911nm,20.0s
I04A Tendick Farm, 81.82 35 P **P** 17 27 07.9 -0.3
baz=227,SNR=7.6
SSE Sheshan 81.82 309 P **P** 17 27 07.8 -0.6
SSE S **S** 17 37 25.4 +5.9
SSE SS **SS** 17 42 41.8 +3.2
SSE pmax pmax
comp=Z,40nm,0.7s
SSE pmax pmax
comp=Z,330nm,5.8s
SSE LR LR
comp=Z,560nm,31.5s
SSE LR LR
comp=Z,550nm,31.1s
SSE LR LR
comp=Z,940nm,31.7s
JMBI JAMBI 81.91 272 P **P** 17 27 12.9 +3.5
K05A Summer Lake 81.92 37 *e*P **P** 17 27 08.9 -0.1
comp=Z,92nm,1.4s
TUC Tucson 81.99 50 P **P** 17 27 10.1 +0.7
baz=237
TUC Tucson 81.99 50 *e*P **P** 17 27 10.5 +1.0
TUC pmax pmax
comp=Z,83nm,1.8s
TUC Tucson 81.99 50 *e*P **P** 17 27 09.7 +0.2
comp=Z,83nm,1.8s
TUC LR LR
comp=Z,1μm,20.0s
TPRI Tanjung Pinang 82.09 274 P **P** 17 27 11.5 +1.2
comp=Z,125nm,1.2s,comp=Z,2μm
J05D Fort Rock, OR 82.11 36 P **P** 17 27 10.2 +0.3
baz=228,SNR=12
VLA Vladivostok 82.24 323 P P 17 27 03.0 -7.3
VLA pmax pmax
comp=Z,206nm,2.1s
R11A Troy Canyon, C 82.28 43 P **P** 17 27 11.0 0.0
baz=233,SNR=16
R11A Troy Canyon, C 82.28 43 *e*P **P** 17 27 10.5 -0.4
comp=Z,57nm,2.0s
G03D McMinnville, O 82.34 34 P **P** 17 27 10.9 +0.1
baz=227
H04A Detroit Lake 82.54 35 *e*P **P** 17 27 11.1 -0.9
comp=Z,126nm,1.7s
KDAK Kodiak Island 82.54 12 *i*P **P** 17 27 12.3 +0.8
KDAK Kodiak Island 82.54 12 PFAKE 17 27 20.0 +8.5
KDAK LR LR
comp=Z,2μm,20.0s
BMN Battle Mountai 82.56 40 *e*P **P** 17 27 11.6 -0.7
BMN *e* 17 30 17.0
BMN pmax pmax
comp=Z,61nm,1.4s
BMN Battle Mountai 82.56 40 *e*P **P** 17 27 11.6 -0.7
comp=Z,61nm,1.4s
BMN *e*PP **PP** 17 30 17.0 -5.4
319A Douglas 82.56 52 *e*P **P** 17 27 12.8 +0.3
comp=Z,102nm,1.8s
MASI Maura Aman, Be 82.62 270 P **P** 17 27 14.0 +0.8
comp=Z,388nm,1.4s,comp=Z,10μm
F03A Seaside 82.69 33 *e*P **P** 17 27 13.3 +0.7
comp=Z,209nm,1.8s
TYV Tymovskoe 82.69 334 *e*P **P** 17 27 12.8 +0.3
TYV *e*S **S** 17 37 25.0 -2.6
TYV pmax pmax
comp=Z,35nm,0.8s
TYV pmax pmax
comp=Z,1μm,5.0s
TYV smax smax
comp=Z,1μm,6.0s
TYV MLR MLR
comp=Z,1μm,20.0s
X16A Lo Mia Camp, P 82.71 48 *e*P **P** 17 27 13.5 +0.2
comp=Z,35nm,1.3s
I05D Terrebonne, OR 82.75 35 P **P** 17 27 13.0 -0.1
baz=228,SNR=7.9
USRK Ussuriysk Ar. 82.90 324 P **P** 17 27 14.6 +0.9
comp=Z,20nm,0.8s,baz=108,slow=2.6,SNR=30
USRK LR LR 17 59 15.0
comp=Z,684nm,20.7s,baz=121,slow=32
HPIG 82.97 57 *e*P **P** 17 27 14.2 -0.7
comp=Z,41nm,1.6s
LCMT Little Creek M 82.98 45 *e*P **P** 17 27 14.8 +0.2
comp=Z,91nm,1.7s
WVOR Wild Horse Val 83.00 38 *e*P **P** 17 27 14.9 +0.4
WVOR pmax pmax
comp=Z,47nm,1.2s
WVOR Wild Horse Val 83.00 38 *e*P **P** 17 27 14.5 0.0
comp=Z,47nm,1.3s
WVOR LR LR
comp=Z,839nm,21.0s
MYKOM Kota Tinggi 83.05 275 *e*P **P** 17 27 15.7 +0.4
comp=Z,138nm,1.0s
F04D Rainier, OR 83.07 33 P **P** 17 27 15.1 +0.5
baz=227
E03A Lebam 83.11 33 *e*P **P** 17 27 14.3 -0.5
comp=Z,86nm,1.0s
KNB Kanab 83.26 45 *e*P **P** 17 27 16.8 +0.7
KNB pmax pmax
comp=Z,220nm,1.7s
KNB Kanab 83.26 45 *e*P **P** 17 27 16.4 +0.3
comp=Z,217nm,1.8s
F04A Amboy 83.27 34 *e*P **P** 17 27 15.4 -0.2
comp=Z,99nm,1.3s
U15A North Rim 83.27 46 *e*P **P** 17 27 16.9 +0.6
comp=Z,127nm,1.6s
WUAZ Wupatki 83.37 47 P **P** 17 27 17.0 +0.3
baz=236
WUAZ Wupatki 83.37 47 *e*P **P** 17 27 17.3 +0.6
comp=Z,88nm,1.6s
WUAZ *e*PcP **sP** 17 27 34.2 +2.7
WUAZ LR LR
comp=Z,820nm,20.0s
G05D Wamic, OR 83.37 35 P **P** 17 27 16.4 +0.1
baz=228,SNR=6.6
ZAIG Zacatecas 83.41 62 *e*P **P** 17 27 17.8 +0.5
comp=Z,90nm,2.0s
PSUT Pine Spring 83.48 43 *e*P **P** 17 27 17.6 +0.4
comp=Z,32nm,1.3s
NLWA Neilton Lookou 83.55 32 *e*P **P** 17 27 17.2 +0.1
comp=Z,71nm,1.2s
NLWA LR LR
comp=Z,1μm,19.0s
VALT Mount Saint He 83.58 34 *e*P **P** 17 27 17.9 +0.4
KGM Kluang 83.63 275 ||P **P** 17 27 19.6 +1.3
G06A Carlson Farm, 83.73 35 *e*P **P** 17 27 18.1 0.0
comp=Z,59nm,1.2s
X18A Snowflake 83.79 49 *e*P **P** 17 27 19.1 +0.2
comp=Z,69nm,1.7s
GZH Guangzhou 83.81 298 P **P** 17 27 20.0 +1.0
GZH SKS **S** 17 37 36.8 -3.3
GZH S **SKSac** 17 37 41.6 +2.0
GZH SS **SS** 17 43 12.1 +3.7
GZH pmax pmax
comp=Z,1μm,7.7s
PKCU Pink Cliffs 83.84 45 *e*P **P** 17 27 19.6 +0.4
comp=Z,276nm,2.0s
PKCU *e*PP **PP** 17 30 31.6 -1.6
ELK Elko 83.94 41 *e*P **P** 17 27 19.4 -0.2
ELK pmax pmax
comp=Z,30nm,1.2s
ELK Elko 83.94 41 *e*P **P** 17 27 19.1 -0.5
comp=Z,30nm,1.3s
NJ2 Nanjing 84.01 308 *e*P **P** 17 27 20.3 +0.5
NJ2 S **S** 17 37 41.4 -0.3
NJ2 pmax pmax
comp=Z,30nm,0.5s
NJ2 pmax pmax
comp=Z,510nm,3.8s
NJ2 LR LR
comp=Z,470nm,19.5s
NJ2 LR LR
comp=Z,800nm,22.2s
NJ2 LR LR
comp=Z,860nm,20.1s
LON Longmire 84.13 33 *e*P **P** 17 27 20.2 0.0
LON pmax pmax
comp=Z,23nm,1.2s
LON Longmire 84.13 33 *e*P **P** 17 27 19.7 -0.4
comp=Z,23nm,1.2s
COCO West Island 84.16 259 PFAKE 17 27 30.0 +9.0
COCO LR LR
comp=Z,853nm,20.0s
121A Cookes Peak, D 84.25 51 P **P** 17 27 21.8 +0.5
baz=238
MTPU Mount Pierson 84.26 45 *e*P **P** 17 27 22.1 +0.6
comp=Z,246nm,1.8s
W18A Petrified Fore 84.26 48 P **P** 17 27 21.6 +0.3
baz=237
W18A Petrified Fore 84.26 48 *e*P **P** 17 27 22.0 +0.7
comp=Z,97nm,1.4s
HABR Khabarovsk 84.26 329 *e*P **P** 17 27 18.6 -2.1
HABR *e* 17 32 33.8
HABR *e*S **S** 17 37 40.7 -2.8
HABR *e*SS **SS** 17 43 11.9 -2.3
HABR *e*SSS SSS 17 46 41.9
HABR pmax pmax
comp=Z,76nm,1.5s
HABR MLR MLR
comp=Z,460nm,18.0s
HABR MLR MLR
comp=Z,44nm,15.0s
PAYG Puerto Ayora 84.37 88 PFAKE 17 27 30.0 +7.9
PAYG LR LR
comp=Z,1μm,19.0s
TLIG Tlapa 84.39 68 *e*P **P** 17 27 22.4 +0.2
comp=Z,80nm,1.6s
TLIG *e*PcP **sP** 17 27 38.2 +1.2
MDJ Mudanjiang 84.47 324 P **P** 17 27 22.6 +0.8
MDJ PP **PP** 17 30 38.3 +0.6
MDJ S **S** 17 37 49.3 +3.5
MDJ SS **SS** 17 43 22.1 +4.6
MDJ pmax pmax
comp=Z,48nm,1.4s
MDJ pmax pmax
comp=Z,900nm,5.6s
MDJ LR LR
comp=Z,350nm,20.7s
MDJ LR LR
comp=Z,260nm,21.7s
MDJ LR LR
comp=Z,680nm,18.7s
MDJ Mudanjiang 84.47 324 *e*P **P** 17 27 22.3 +0.5
comp=Z,53nm,1.0s
MDJ LR LR
comp=Z,1μm,20.0s
MSU Marysvale 84.53 44 *e*P **P** 17 27 23.2 +0.6
MSU Marysvale 84.53 44 *e*P **P** 17 27 23.2 +0.6
PGC Sidney 84.63 31 *e*P **P** 17 27 22.5 0.0
comp=Z,40nm,0.9s
PGC *e*PcP **sP** 17 27 39.2 +1.9
BRLK Bradley Lake 84.71 12 *e*P **P** 17 27 22.6 -0.1
comp=Z,198nm,1.7s
QIZ Qiongzhong 84.88 293 P **P** 17 27 25.1 +0.6
QIZ S **S** 17 37 55.4 +4.5
QIZ pmax pmax
comp=Z,17nm,1.3s
QIZ LR LR
comp=Z,110nm,21.8s
QIZ LR LR
comp=Z,150nm,17.8s
SYO Syowa Base 84.98 192⇑ *e*P P 17 27 19.3 -4.8
SYO Syowa Base 84.98 192⇑ *i*P **P** 17 27 24.4 +0.3
SYO Syowa Base 84.98 192⇓ *e*pP pP 17 27 30.4 -4.6
B05A Bryant 85.02 32 P **P** 17 27 24.4 -0.1
baz=227,SNR=11
RSO Redoubt South 85.03 11 *e*P **P** 17 27 23.6 -0.9
A04D Lummi Island 85.03 31 P **P** 17 27 24.8 +0.3
baz=227
LTY Liberty 85.05 33 *e*P **P** 17 27 24.5 -0.3
comp=Z,83nm,1.6s
HAWA Hanford 85.07 35 *e*P **P** 17 27 24.5 -0.3
comp=Z,77nm,1.4s
HAWA LR LR
comp=Z,2μm,19.0s
DUG Dugway, Tooele 85.10 43 P **P** 17 27 25.1 -0.2
baz=235
DUG Dugway, Tooele 85.10 43 *e*P **P** 17 27 26.6 +1.3
DUG pmax pmax
comp=Z,29nm,1.4s
DUG Dugway, Tooele 85.10 43 *e*P **P** 17 27 25.4 +0.1
comp=Z,29nm,1.4s
DUG LR LR
comp=Z,610nm,19.0s
PDSI Padang 85.12 271 P **P** 17 27 26.4 +0.5
comp=Z,43nm,1.2s,comp=Z,9μm
PLCA Paso Flores 85.16 132 P **P** 17 27 27.7 +2.0
comp=Z,12nm,1.2s,baz=258,slow=7.2,SNR=4.4
PLCA LR LR 17 58 44.3
comp=Z,1μm,20.7s,baz=265,slow=31
PLCA Paso Flores 85.16 132 *e*P **P** 17 27 28.3 +2.6
PLCA pmax pmax
comp=Z,91nm,1.8s
PLCA Paso Flores 85.16 132 *e*P **P** 17 27 28.3 +2.6
comp=Z,91nm,1.8s
MFID Camas Ranch 85.22 39 *e*P **P** 17 27 25.6 -0.2
comp=Z,29nm,1.0s
NKL Nikolayevsk 85.23 335 *i*P **P** 17 27 24.0 -1.4
NKL *e*S **S** 17 37 48.0 -4.9
NKL pmax pmax
comp=N,10.0nm,1.0s
NKL pmax pmax
comp=Z,130nm,1.5s
NKL pmax pmax
comp=Z,900nm,5.0s
NKL smax smax
comp=N,500nm,10.0s
NKL smax smax
comp=E,500nm,10.0s
NKL MLR MLR
comp=N,600nm,18.0s
NKL MLR MLR
comp=Z,1μm,18.0s
BMO Blue Mountains 85.28 37 *e*P **P** 17 27 25.5 -0.6
BMO pmax pmax
comp=Z,20nm,0.9s
BMO MLR MLR
comp=Z,870nm,22.0s
BMO Blue Mountains 85.28 37 *e*P **P** 17 27 25.5 -0.6
comp=Z,20nm,0.9s
BMO LR LR
comp=Z,870nm,22.0s
C06D Leavenworth 85.38 33 P **P** 17 27 26.2 -0.2
baz=228
BGU Big Grassy Mou 85.39 42 *e*P **P** 17 27 26.9 +0.1
comp=Z,38nm,1.8s
SNAA Sanae 85.39 177 P **P** 17 27 28.0 +1.7
SNAA Sanae 85.39 177 *d*P **P** 17 27 28.1 +1.8
SNAA Sanae 85.39 177 *e*P **P** 17 27 27.8 +1.5
comp=Z,50nm,1.3s
VNA3 Neumayer Olymp 85.40 175 P **P** 17 27 27.8 +1.5
NLU North Lily Min 85.43 43 *e*P **P** 17 27 27.2 +0.2
comp=Z,35nm,1.5s
B06A Marblemount 85.49 32 *e*P **P** 17 27 26.6 -0.3
comp=Z,23nm,0.9s
MNTX Cornudas Mount 85.57 53 P **P** 17 27 28.0 +0.3
baz=240
MNTX Cornudas Mount 85.57 53 *e*P **P** 17 27 27.5 -0.2
comp=Z,99nm,1.8s
MNTX *e*PcP **sP** 17 27 44.7 +2.1
MNTX LR LR
comp=Z,745nm,19.0s
TMUT Trail Mountain 85.60 44 *e*P **P** 17 27 28.2 +0.2
comp=Z,81nm,1.3s
Y22D IRIS PASSCAL I 85.67 50 P **P** 17 27 29.0 +0.7
baz=239
LTX Lajitas 85.68 56 *e*P **P** 17 27 28.6 +0.2
LTX Lajitas 85.68 56 *e*P **P** 17 27 28.6 +0.2
TX31 Lajitas Ar. Si 85.68 56 *e*P **P** 17 27 27.9 -0.5
TXAR Lajitas Array 85.68 56 P **P** 17 27 28.6 +0.1
comp=Z,19nm,1.0s,baz=211,slow=7.1,SNR=61
TXAR LR LR 17 58 27.0
comp=Z,705nm,20.6s,baz=0.0,slow=31
LAZ Ladron 85.69 50 *e*P **P** 17 27 29.3 +0.8
MPU Maple Canyon 85.74 43 *e*P **P** 17 27 29.1 +0.5
comp=Z,24nm,1.2s
DL2 Dalian 85.82 315 P **P** 17 27 29.8 +1.1
DL2 S S 17 38 08.9 +10
DL2 pmax pmax
comp=Z,60nm,1.2s
DL2 pmax pmax
comp=Z,700nm,4.4s
DL2 LR LR
comp=Z,520nm,25.5s
DL2 LR LR
comp=Z,680nm,33.3s
D08A Wollman Farm, 85.82 34 *e*P **P** 17 27 28.4 -0.2
comp=Z,64nm,1.3s
SPU Mount Spurr 85.83 11 *e*P **P** 17 27 27.2 -1.1
VNA2 Neumayer--Watz 85.88 176 P **P** 17 27 30.5 +1.9
baz=189,slow=3.5
BNM Barren Site 85.92 50 *e*P **P** 17 27 29.7 +0.1
SRU San Rafael Swe 85.94 44 *e*P **P** 17 27 30.1 +0.5
SRU pmax pmax
comp=Z,100nm,1.5s
SRU San Rafael Swe 85.94 44 *e*P **P** 17 27 29.7 +0.1
comp=Z,103nm,1.6s
SPUT South Promonto 85.97 42 *e*P **P** 17 27 28.8 -0.8
comp=Z,55nm,1.5s
LPM Los Pinos Moun 86.00 50 *e*P **P** 17 27 30.1 +0.1
P17A Butcher Ranch, 86.00 44 *e*P **P** 17 27 30.0 +0.1
comp=Z,57nm,1.3s
F10A Beach Ranch, E 86.03 36 *e*P **P** 17 27 28.5 -1.2
comp=Z,76nm,1.4s
HVU Hansel Valley 86.05 41 *e*P **P** 17 27 29.6 -0.4
HVU *e* 17 30 47.4
HVU pmax pmax
comp=Z,27nm,1.3s
HVU Hansel Valley 86.05 41 *e*P **P** 17 27 29.6 -0.4
comp=Z,27nm,1.3s
HVU *e*PP **PP** 17 30 47.4 -3.5
CTU Camp Tracy 86.05 43 *e*P **P** 17 27 29.9 -0.2
comp=Z,35nm,1.4s
VNA1 Neumayer--Stat 86.09 175 P **P** 17 27 31.9 +2.3
HLID Hailey 86.12 39 P **P** 17 27 30.3 -0.2
baz=233
HLID Hailey 86.12 39 *e*P **P** 17 27 30.2 -0.2
comp=Z,30nm,1.4s
HLID LR LR
comp=Z,511nm,20.0s
JLU Jordanelle 86.19 43 *e*P **P** 17 27 30.4 -0.4
comp=Z,44nm,1.4s
MVCO Mesa Verde 86.23 47 P **P** 17 27 30.9 -0.3
baz=238
MVCO Mesa Verde 86.23 47 *e*P **P** 17 27 31.5 +0.3
comp=Z,43nm,1.6s
MVCO LR LR
comp=Z,898nm,21.0s
SNY Shenyang 86.25 319 ⇑P **P** 17 27 31.5 +0.7
SNY S **S** 17 38 09.9 +6.5
SNY pmax pmax
comp=Z,51nm,3.6s
SNY LR LR
comp=Z,390nm,14.8s
SNY LR LR
comp=Z,550nm,16.5s
SNY LR LR
comp=Z,820nm,21.3s
CN2 Changchun 86.30 321 *e*P **P** 17 27 29.8 -1.2
CN2 *e*S **S** 17 38 04.3 +0.4
CN2 pmax pmax
comp=Z,40nm,1.7s
CN2 pmax pmax

comp=Z,200nm,5.0s
CN2 LR LR
comp=Z,400nm,20.0s
CN2 LR LR
comp=Z,400nm,20.0s
CN2 LR LR
comp=Z,500nm,19.0s
PV05 Paradox Valley 86.30 46 *e*P **P 17 27 32.0 +0.6**
KLR Kul'dur 86.37 328 P **P 17 27 30.2 -1.0**
comp=Z,7.9nm,0.9s,baz=96,slow=2.4,SNR=21
P18A Preston Nutter 86.41 44 *e*P **P 17 27 32.0 -0.1**
comp=Z,30nm,1.2s
ANMO Albuquerque 86.45 50 P **P 17 27 32.7 +0.5**
baz=239
ANMO Albuquerque 86.45 50 *d i*P **P 17 27 32.1 -0.1**
ANMO pmax pmax
comp=Z,81nm,2.5s
ANMO Albuquerque 86.45 50 *e*P **P 17 27 31.8 -0.4**
comp=Z,59nm,1.4s
ANMO LR LR
comp=Z,1μm,20.0s
B08A Colville Reser 86.46 33 *e*P **P 17 27 30.7 -1.0**
comp=Z,100nm,1.9s
B08A *e*PcP **sP 17 27 44.7 -1.9**
PV10 Paradox Valley 86.50 46 *e*P **P 17 27 32.5 0.0**
TCUT Toone Canyon 86.51 42 *e*P **P 17 27 32.7 +0.3**
comp=Z,208nm,1.7s
PV09 Paradox Valley 86.51 46 *e*P **P 17 27 32.5 0.0**
WHN Wuhan 86.58 305 ||P **P 17 27 33.4 +0.7**
WHN SKS **SKSac 17 37 56.9 0.0**
WHN S **S 17 38 09.5 +2.4**
WHN pmax pmax
comp=Z,340nm,1.7s
WHN LR LR
comp=Z,2μm,17.3s
WHN LR LR
comp=Z,740nm,16.0s
WHN LR LR
comp=Z,1μm,17.7s
MNSI Mandailing Nat 86.59 272 P **P 17 27 33.7 +0.5**
comp=Z,51nm,0.7s,comp=Z,1μm
C09A Chrisman Ranch 86.64 34 *e*P **P 17 27 32.4 -0.1**
comp=Z,27nm,1.0s
PV01 Paradox Valley 86.68 46 *e*P **P 17 27 32.6 -0.8**
HWUT Hardware Ranch 86.69 42 *e*P **P 17 27 31.8 -1.4**
comp=Z,14nm,1.3s
HWUT LR LR
comp=Z,825nm,19.0s
IPM Ipoh 86.70 276 *e*P **P 17 27 33.9 +0.2**
comp=Z,65nm,0.8s
PMR Palmer 86.74 12 *e*P **P 17 27 32.0 -0.7**
PMR pmax pmax
comp=Z,107nm,1.4s
PMR Palmer 86.74 12 *e*P **P 17 27 32.0 -0.7**
comp=Z,107nm,1.4s
WRAK Wrangell Islan 86.75 22 PFAKE 17 27 40.0 +7.2
WRAK LR LR
comp=Z,818nm,21.0s
TT01 Tatalina 86.86 8 *e*P **P 17 27 32.6 -0.7**
TTA Tatalina 86.89 8 *e*P **P 17 27 33.1 -0.4**
TTA pmax pmax
comp=Z,110nm,1.5s
TTA Tatalina 86.89 8 *e*P **P 17 27 33.1 -0.4**
comp=Z,110nm,1.5s
DIV Divide 86.99 13 *e*P **P 17 27 33.5 -0.5**
comp=Z,181nm,1.7s
MA2 Magadan 87.10 343 P **P 17 27 34.1 -0.4**
comp=Z,10nm,0.8s,baz=184,slow=5.5,SNR=14
MA2 Magadan 87.10 343 *e*P **P 17 27 34.1 -0.4**
MA2 LR LR
comp=Z,14nm,20.0s
BMRM Bremner River 87.11 14 *e*P **P 17 27 34.8 +0.2**
comp=Z,92nm,1.4s
EFI East Falkland 87.19 146 PFAKE 17 27 50.0 +15
EFI LR LR
comp=Z,2μm,22.0s
CRQM Cirque 87.25 15 *e*P **P 17 27 36.4 +0.9**
comp=Z,54nm,1.2s
KLU Klutina 87.29 13 *e*P **P 17 27 35.3 -0.2**
comp=Z,79nm,1.4s
KLU *e*PcP **sP 17 27 49.6 -0.8**
SCM Sheep Creek Mo 87.31 13 *e*P **P 17 27 35.3 -0.3**
SCM pmax pmax
comp=Z,47nm,1.0s
SCM Sheep Creek Mo 87.31 13 *e*P **P 17 27 35.3 -0.3**
comp=Z,47nm,1.0s
KULM Kulim 87.36 277 *e*P **P 17 27 37.2 +0.4**
comp=Z,72nm,1.1s
KULM *e*PP **PP 17 30 58.6 -3.0**
KULM LR LR
comp=Z,687nm,19.0s
TIA Tai'an 87.40 311 ||P **P 17 27 36.8 +0.3**
TIA S **S 17 38 12.8 -2.1**
TIA SS **SS 17 44 06.3 +5.5**
TIA pmax pmax
comp=Z,50nm,1.6s
TIA pmax pmax
comp=Z,1μm,5.4s
TIA LR LR
comp=Z,250nm,19.0s
TIA LR LR
comp=Z,440nm,28.0s
TIA LR LR
comp=Z,970nm,33.0s
NEW Newport 87.53 34 LR LR 17 58 45.9
comp=Z,898nm,21.2s,baz=212,slow=30
NEW Newport 87.53 34 P **P 17 27 36.4 -0.6**
baz=231,SNR=6.1
NEW Newport 87.53 34 *e*P **P 17 27 37.5 +0.6**
NEW pmax pmax
comp=Z,27nm,1.4s
NEW Newport 87.53 34 *e*P **P 17 27 36.6 -0.3**
comp=Z,27nm,1.4s
AHID Auburn Hatcher 87.63 41 *e*P **P 17 27 37.9 +0.1**
comp=Z,60nm,1.8s
AHID LR LR
comp=Z,837nm,19.0s
S22A 4UR Ranch, Cre 87.64 47 P **P 17 27 38.2 +0.1**
baz=239
S22A 4UR Ranch, Cre 87.64 47 *e*P **P 17 27 38.2 +0.1**
comp=Z,88nm,1.9s
BALM Baldy 87.69 15 *e*P **P 17 27 36.8 -0.7**
BALM pmax pmax
comp=Z,148nm,1.8s
BALM Baldy 87.69 15 *e*P **P 17 27 36.8 -0.7**
comp=Z,148nm,1.8s
MCMT McKenzie Canyo 87.78 39 *e*P **P 17 27 38.7 +0.2**
CAST Castle Rocks 87.93 10 *e*P **P 17 27 36.8 -1.6**
comp=Z,127nm,1.8s
O20A White River Ci 87.97 45 P **P 17 27 39.0 -0.5**
baz=238
O20A White River Ci 87.97 45 *e*P **P 17 27 39.6 +0.1**
comp=Z,81nm,1.9s
PSI Prapat 87.97 274 *e*P **P 17 27 39.2 -0.8**
PSI pmax pmax
comp=Z,284nm,2.0s
PSI Prapat 87.97 274 *e*P **P 17 27 39.1 -0.8**
comp=Z,284nm,2.0s
832A Faith Ranch, C 88.04 58 P **P 17 27 38.6 -1.2**
baz=243,SNR=6.1
REDW Red Top Meadow 88.12 41 *e*P **P 17 27 40.2 +0.1**
comp=Z,60nm,1.6s
FXWY Fox Creek 88.17 41 *e*P **P 17 27 39.5 -0.9**
comp=Z,40nm,1.7s
SKAG Skagway 88.23 19 *e*P **P 17 27 40.6 +0.7**
comp=Z,162nm,1.8s
SNOW Snow King Moun 88.23 41 *e*P **P 17 27 41.0 +0.3**
comp=Z,84nm,1.7s
KTH Kantishna Hill 88.24 10 *e*P **P 17 27 39.2 -0.7**
comp=Z,65nm,1.4s
TRF Thorofare Moun 88.25 11 *e*P **P 17 27 39.2 -1.0**
comp=Z,218nm,1.8s
933A Laredo 88.28 59 P **P 17 27 41.2 +0.3**
baz=243
SMCO Snowmass 88.30 46 *e*P **P 17 27 41.2 -0.1**
comp=Z,23nm,1.2s
MSO Missoula 88.35 37 P **P 17 27 39.8 -1.2**
baz=234
MSO Missoula 88.35 37 *e*P **P 17 27 40.2 -0.7**
comp=Z,21nm,1.6s
IMW Indian Meadow 88.37 40 *e*P **P 17 27 41.3 0.0**
comp=Z,24nm,1.4s
MOOW Moose Ponds 88.40 41 *e*P **P 17 27 41.2 -0.2**
comp=Z,35nm,1.8s
LOHW Long Hollow 88.41 41 *e*P **P 17 27 41.1 -0.3**
comp=Z,30nm,1.4s
DHY Denali Highway 88.43 12 *e*P **P 17 27 40.3 -0.7**
comp=Z,84nm,1.6s
RND Reindeer 88.46 11 *e*P **P 17 27 40.4 -0.6**
RND pmax pmax
comp=Z,218nm,1.6s
RND Reindeer 88.46 11 *e*P **P 17 27 40.4 -0.6**
comp=Z,218nm,1.6s
BSMT Bassoo Peak 88.50 36 *e*P **P 17 27 40.7 -1.1**
034A Hebbronville 88.51 60 P **P 17 27 43.0 +1.0**
baz=243
833A Chaparral WMA, 88.51 58 P **P 17 27 41.2 -0.9**
baz=243
SDCO Great Sand Dun 88.55 48 P **P 17 27 42.2 -0.1**
baz=240
SDCO Great Sand Dun 88.55 48 *e*P **P 17 27 42.0 -0.4**
comp=Z,40nm,1.9s
SDCO LR LR
comp=Z,818nm,20.0s
BW06 Boulder Array 88.57 42 P **P 17 27 41.5 -0.7**
baz=237
BW06 Boulder Array 88.57 42 *e*P **P 17 27 41.4 -0.9**
comp=Z,25nm,1.4s
BW06 LR LR
comp=Z,823nm,19.0s
PD31 Pinedale Array 88.57 42 *e*P **P 17 27 40.7 -1.6**
PDAR Pinedale Array 88.57 42 P **P 17 27 41.2 -1.0**
comp=Z,7.1nm,1.0s,baz=205,slow=2.9,SNR=28
PDAR LR 18 00 03.1
comp=Z,452nm,21.1s,baz=259,slow=31
LRM Limekiln Ridge 88.59 38 *e*P **P 17 27 41.8 -0.5**
MSTX Muleshoe 88.60 52 P **P 17 27 41.6 -0.8**
baz=241
MSTX Muleshoe 88.60 52 *e*P **P 17 27 41.5 -1.0**
comp=Z,155nm,1.8s
QLMT Earthquake Lak 88.61 39 *e*P **P 17 27 42.4 0.0**
FLWY Flagg Ranch 88.61 40 *e*P **P 17 27 41.3 -1.2**
comp=Z,67nm,1.8s
GSI Gunungsitoli 88.63 272 P **P 17 27 45.4 +2.4**
PAX Paxson 88.71 13 *e*P **P 17 27 41.9 -0.4**
PAX Paxson 88.71 13 *e*P **P 17 27 41.7 -0.6**
comp=Z,23nm,1.0s
JTMT Jette 88.71 36 *e*P **P 17 27 42.1 -0.5**
SWMT Swartz Lake 88.72 36 *e*P **P 17 27 41.8 -0.9**
035Z Hargill 88.73 61 P **P 17 27 45.3 +2.3**
baz=244
BPAW Bear Paw Mtn. 88.74 10 *e*P **P 17 27 40.5 -1.8**
comp=Z,65nm,1.7s
BPAW *e*PKiKP **PKiKP 17 32 42.3 +0.2**
MCK McKinley 88.75 11 *e*P **P 17 27 42.0 -0.3**
MCK pmax pmax
comp=Z,170nm,1.6s
MCK McKinley 88.75 11 *e*P **P 17 27 41.6 -0.7**
comp=Z,173nm,1.6s
733A Divot King Ran 88.77 58 P **P 17 27 43.0 -0.2**
baz=243
CHMT Chamberlain Mo 88.78 37 *e*P **P 17 27 42.4 -0.8**
CHBT CHBT 88.80 284 P **P 17 27 45.2 +1.6**
comp=Z,126nm,1.3s,comp=Z,2μm
H17A Grant Village 88.86 40 P **P 17 27 44.3 +0.6**
baz=236
H17A Grant Village 88.86 40 *e*P **P 17 27 44.7 +1.1**
comp=Z,30nm,1.8s
934A Benavides 88.88 59 P **P 17 27 44.8 +1.0**
baz=244
035A Encino 88.92 60 P **P 17 27 43.6 -0.4**
baz=244
YBMT Yellow Bay 88.93 36 *e*P **P 17 27 42.2 -1.5**
BOZ Bozeman (W) 88.96 39 P **P 17 27 43.3 -0.6**
baz=235
BOZ Bozeman (W) 88.96 39 *e*P **P 17 27 43.6 -0.3**
BOZ pmax pmax
comp=Z,33nm,1.5s
BOZ Bozeman (W) 88.96 39 *e*P **P 17 27 43.2 -0.6**
comp=Z,33nm,1.5s
BOZ LR LR
comp=Z,639nm,19.0s
T25A Trinidad 88.99 49 P **P 17 27 43.7 -0.7**
baz=240
T25A Trinidad 88.99 49 *e*P **P 17 27 44.3 0.0**
comp=Z,20nm,1.4s
MENT Mentasta 89.05 14 *e*P **P 17 27 43.4 -0.4**
comp=Z,31nm,1.0s
SKNT Sakolnakorn 89.05 289 P **P 17 27 45.9 +1.1**
comp=Z,78nm,1.9s
LKWY Lake 89.06 40 PFAKE 17 28 00.0 +15
LKWY LR LR
comp=Z,1μm,19.0s
834A Tilden 89.09 59 P **P 17 27 44.6 -0.1**
baz=244
DLBC Dease Lake 89.11 22 *e*P **P 17 27 44.3 +0.1**
comp=Z,90nm,1.8s
JCT Junction City 89.18 56 P **P 17 27 44.8 -0.4**
baz=243
JCT Junction City 89.18 56 *e*P **P 17 27 46.1 +0.9**
JCT pmax pmax
comp=Z,85nm,1.8s
JCT Junction City 89.18 56 *e*P **P 17 27 44.2 -1.0**
comp=Z,85nm,1.8s
JCT LR LR
comp=Z,1μm,20.0s
633A Saathoff Ranch 89.20 58 P **P 17 27 45.4 +0.1**
baz=243
TRTT Trang 89.23 279 P **P 17 27 47.6 +1.8**
comp=Z,210nm,1.1s,comp=Z,2μm
KCSI Kotacane, Aceh 89.31 274 P P 17 27 51.1 +4.9
KVTX Kingsville 89.35 60 PFAKE 17 28 00.0 +14
KVTX LR LR
comp=Z,990nm,19.0s
Q24A Divide 89.40 47 P **P 17 27 46.2 -0.2**
baz=240
734A La Parita Cree 89.40 58 P **P 17 27 46.6 +0.4**
baz=244
ISCO Idaho Springs 89.52 46 P **P 17 27 46.9 0.0**
baz=239
ISCO Idaho Springs 89.52 46 *e*P **P 17 27 48.2 +1.3**
ISCO pmax pmax
comp=Z,12nm,1.6s
ISCO MLR MLR
comp=Z,516nm,20.0s
ISCO Idaho Springs 89.52 46 *e*P **P 17 27 48.2 +1.3**
comp=Z,12nm,1.6s
ISCO LR LR
comp=Z,516nm,20.0s
WRH Wood River Hil 89.57 11 *e*P **P 17 27 45.4 -0.8**
comp=Z,121nm,1.2s
533A Kerrville 89.58 57 P **P 17 27 47.0 -0.1**
baz=243,SNR=8.2
SEY Seymchan 89.59 346 P **P 17 27 45.8 -0.4**
comp=Z,55nm,1.3s,baz=145,slow=5.7,SNR=30
SEY Seymchan 89.59 346 *d i*P **P 17 27 45.6 -0.6**
DOT Dot Lake 89.61 13 *e*P **P 17 27 46.0 -0.4**
comp=Z,298nm,1.6s
MLY Manley 89.65 10 *e*P **P 17 27 45.3 -1.2**
comp=Z,65nm,1.8s
WALA Waterton Lakes 89.70 35 *e*P **P 17 27 46.5 -0.8**
comp=Z,25nm,0.9s
835A Beeville 89.73 59 P **P 17 27 47.9 +0.1**
baz=244
CCB Clear Creek Bu 89.78 11 *e*P **P 17 27 46.2 -0.9**
comp=Z,102nm,1.4s
634A China Grove, S 89.80 58 P **P 17 27 48.1 0.0**
baz=244
KHON Khomkaen 89.81 288 P **P 17 27 51.2 +2.9**
comp=Z,16nm,1.0s
AMTX Amarillo 89.83 52 P **P 17 27 48.0 -0.1**
baz=242
AMTX Amarillo 89.83 52 *e*P **P 17 27 48.1 -0.1**
comp=Z,98nm,1.9s
433A Art 89.85 56 P **P 17 27 48.0 -0.3**
baz=243,SNR=29
N23A Red Feather La 89.86 45 P **P 17 27 48.0 -0.5**
baz=239
N23A Red Feather La 89.86 45 *e*P **P 17 27 47.9 -0.5**
comp=Z,32nm,1.6s
BJT Baijiatuau 89.98 314 PFAKE 17 28 00.0 +11
BJT LR LR
comp=Z,592nm,19.0s
COLA College 89.98 11 *d i*P **P 17 27 47.0 -1.0**
COLA pmax pmax
comp=Z,59nm,1.2s
COLA College 89.98 11 PFAKE 17 28 00.0 +12
COLA LR LR
comp=Z,2μm,22.0s
BJI Beijing 89.99 314 P **P 17 27 49.0 +0.4**
BJI PP **PP 17 31 21.0 -1.3**
BJI S **S 17 38 42.3 +3.2**
BJI SS **SS 17 44 37.5 -0.9**
BJI pmax pmax
comp=Z,40nm,2.3s
BJI pmax pmax
comp=Z,1μm,4.5s
BJI LR LR
comp=Z,420nm,35.0s
BJI LR LR
comp=Z,520nm,31.8s
BJI LR LR
comp=Z,720nm,33.9s
534A Blanco 90.00 57 P **P 17 27 48.9 -0.1**
baz=244
735A Kenedy 90.00 59 P **P 17 27 49.9 +0.9**
baz=244
MDM Murphy Dome 90.00 11 *e*P **P 17 27 47.1 -1.1**
comp=Z,77nm,1.3s
RLMT Red Lodge 90.04 40 P **P 17 27 49.6 +0.5**
baz=237
RLMT Red Lodge 90.04 40 *e*P **P 17 27 48.5 -0.6**
comp=Z,26nm,1.6s
RLMT LR LR
comp=Z,611nm,19.0s
IL1 Eielson Array 90.06 11 *e*P **P 17 27 46.7 -1.7**
ILAR Eielson Array 90.06 11 P **P 17 27 47.5 -0.9**
comp=Z,14nm,0.9s,baz=215,slow=5.5,SNR=65
ILAR PKiKP **PKiKP 17 32 46.2 +2.0**
comp=Z,0.6nm,0.7s,baz=276,slow=2.2,SNR=5.2
ILAR LR LR 18 02 25.6
comp=Z,195nm,20.8s,baz=216,slow=32
ILB Eielson Array 90.06 11 *e*P **P 17 27 47.1 -1.3**
ENH Enshi 90.17 303 *e*P **P 17 27 50.1 +0.3**
comp=Z,253nm,1.5s
ENH LR LR
comp=Z,645nm,20.0s
333A Richland Sprin 90.19 56 P **P 17 27 49.5 -0.4**
baz=243
LCO Las Campanas 90.25 122 *e*P **P 17 27 51.7 +1.0**
comp=Z,66nm,1.6s
LCO LR LR
comp=Z,2μm,19.0s
635A Leesville 90.26 58 P **P 17 27 50.6 +0.4**
baz=244
ABTX Abilene, Hawle 90.28 55 P **P 17 27 50.1 -0.1**
baz=243
ABTX Abilene, Hawle 90.28 55 *e*P **P 17 27 49.9 -0.4**
comp=Z,86nm,1.5s
K22A Casper 90.40 43 P **P 17 27 49.8 -0.9**
baz=239
K22A Casper 90.40 43 *e*P **P 17 27 49.4 -1.3**
comp=Z,25nm,1.4s
SURT Suratani 90.49 279 P **P 17 27 54.4 +2.8**
comp=Z,12nm,1.8s,comp=Z,518nm
PKDT Phuket 90.49 278 P **P 17 27 54.9 +3.3**
comp=Z,84nm,1.7s,comp=Z,1μm
434A Burnet 90.51 57 P **P 17 27 51.0 -0.3**
baz=244,SNR=8.6
233A Rising Star 90.56 55 P **P 17 27 51.3 -0.3**
baz=243
736A Circle Diamond 90.62 59 P **P 17 27 53.0 +1.1**
baz=244
535A Dale 90.70 58 P **P 17 27 52.1 -0.1**
baz=244
GYA Guiyang 90.74 298 P **P 17 27 53.3 +0.6**
GYA PP **PP 17 31 30.5 +1.8**
GYA SKS **SKSac 17 38 23.3 +1.1**
GYA S **S 17 38 46.8 -0.1**
GYA SS **SS 17 44 51.3 +1.3**
GYA pmax pmax
comp=Z,40nm,1.0s
GYA pmax pmax
comp=Z,180nm,8.2s
GYA LR LR
comp=Z,930nm,22.8s
GYA LR LR
comp=Z,880nm,23.2s
GYA LR LR
comp=Z,940nm,22.9s
334A Lometa 90.76 56 P **P 17 27 52.1 -0.4**
baz=244,SNR=8.6
133A Hamilton Ranch 90.82 55 P **P 17 27 52.3 -0.5**
baz=243
435B Jarrell 91.02 57 P **P 17 27 53.2 -0.5**
baz=244
737A Port Lavaca 91.04 59 P **P 17 27 53.9 +0.1**
baz=244
536A Bastrop 91.11 58 P **P 17 27 54.3 +0.1**
baz=244
KSCO Kaye Shedlock' 91.13 48 P **P 17 27 54.0 -0.2**
baz=241
KSCO Kaye Shedlock' 91.13 48 *e*P **P 17 27 54.0 -0.2**
comp=Z,128nm,1.8s
234A Clairette 91.14 56 P **P 17 27 53.9 -0.4**
baz=244
EGAK Eagle 91.22 14 *e*P **P 17 27 53.3 -0.4**
comp=Z,90nm,1.6s
EGAK LR LR
comp=Z,1μm,20.0s
Z33A Whitaker Ranch 91.23 54 P **P 17 27 54.0 -0.6**
baz=243,SNR=5.9
335A Moody 91.36 57 P **P 17 27 54.8 -0.5**
baz=244
X32A Elmer 91.36 53 P **P 17 27 54.8 -0.5**
baz=243
EGMT Eagleton 91.36 37 P **P 17 27 54.8 -0.2**
baz=237,SNR=12
EGMT Eagleton 91.36 37 *e*P **P 17 27 54.5 -0.4**
comp=Z,29nm,1.1s
EGMT LR LR
comp=Z,1μm,19.0s
TIY Taiyuan 91.40 311 *e*P **P 17 27 57.3 +1.9**
TIY SKS **SKSac 17 38 29.8 +4.4**
TIY S **ScS 17 38 57.3 +2.1**
TIY pmax pmax
comp=Z,570nm,5.5s
TIY LR LR
comp=Z,1μm,35.7s
134A White-Moore Ra 91.43 55 P **P 17 27 55.7 +0.1**
baz=244
PBKT Sadao Pong 91.53 287 P **P 17 27 58.0 +1.7**
comp=Z,30nm,1.9s,comp=Z,1μm
436A Wall Ranch, Ga 91.62 57 P **P 17 27 56.6 +0.1**
baz=244
WHTX Lake Whitney, 91.65 56 P **P 17 27 56.3 -0.3**
baz=244
Y33A Hilltop Ranch, 91.66 54 P **P 17 27 56.5 -0.1**
baz=244
537A Green Hill Far 91.70 58 P **P 17 27 55.9 -1.0**
baz=245
W32A Sentinel 91.71 52 P **P 17 27 56.9 0.0**
baz=243
COLD Coldfoot 91.78 9 *e*P **P 17 27 56.4 +0.1**
comp=Z,38nm,1.5s
336A Riesel 91.86 57 P **P 17 27 57.3 -0.2**
baz=244
WMOK Wichita Mounta 91.87 53 *e*P **P 17 27 58.2 +0.6**
WMOK Wichita Mounta 91.87 53 *e*P **P 17 27 57.9 +0.3**
comp=Z,14nm,1.4s
WMOK LR LR
comp=Z,992nm,20.0s
BILL Bilibino 91.89 353 *d i*P **P 17 27 56.1 -0.7**
BILL *e* 17 28 07.3
BILL *e* 17 28 12.8
BILL *i*S **SKSac 17 38 28.8 +2.2**
BILL *i* 17 38 56.1
BILL *e* 17 40 30.6
BILL pmax pmax
comp=Z,23nm,1.2s
BILL MLR MLR
comp=Z,2μm,20.0s
BILL Bilibino 91.89 353 *e*P **P 17 27 56.3 -0.5**
comp=Z,63nm,1.8s
BILL LR LR
comp=Z,3μm,21.0s
Z34A Collier Ranch, 91.91 55 P **P 17 27 57.4 -0.4**
baz=244
135A Vickery Place, 91.93 55 P **P 17 27 57.3 -0.6**
baz=244
X33A Lawton 91.99 53 P **P 17 27 56.3 -1.8**
baz=244
HKT Hockley 92.02 58 *e*P **P 17 27 59.9 +1.6**
HKT Hockley 92.02 58 *e*P **P 17 27 59.1 +0.9**
comp=Z,55nm,1.5s
638A Rosharon 92.10 59 P **P 17 27 56.6 -2.1**
baz=245
V32A Arapaho 92.12 52 P **P 17 27 58.4 -0.4**
baz=243
437A Phantom Ranch, 92.16 57 P **P 17 27 59.0 0.0**
baz=245

NNA **Nana** **92.25** **104** PFAKE 17 28 10.0 +10
NNA LR LR
comp=Z,1μm,19.0s
TRQA **Tornquist** **92.26** **133** PFAKE 17 28 10.0 +10
TRQA LR LR
comp=Z,2μm,19.0s
XAN **Xi'an** **92.27** **306** P **P** **17 28 00.1 +0.6**
XAN pP pP 17 28 10.8 +0.3
XAN pmax pmax
comp=Z,36nm,1.2s
XAN pmax pmax
comp=Z,320nm,5.5s
XAN LR LR
comp=Z,310nm,20.2s
XAN LR LR
comp=Z,300nm,19.7s
XAN LR LR
comp=Z,630nm,20.2s
Y34A **Reagan Ranch,** **92.29** **54** P **P** **17 27 58.9 -0.6**
baz=244
W33A **Caddo, Fort Co** **92.29** **53** P **P** **17 27 59.3 -0.2**
baz=244
SRDT **SRDT** **92.29** **285** P **P** **17 28 02.8 +2.9**
comp=Z,132nm,2.3s,comp=Z,13μm
UTTA **Uttaradit** **92.35** **288** P **P** **17 28 02.7 +2.6**
comp=Z,7.5nm,1.2s,comp=Z,81nm
236A **Katherine and** **92.36** **56** P **P** **17 27 59.5 -0.3**
baz=244
Z35A **Perchaven, San** **92.39** **55** P **P** **17 27 59.4 -0.6**
baz=244
U32A **Winter Ranch,** **92.45** **51** P **P** **17 28 00.0 -0.2**
baz=243,SNR=5.3
OGNE **Ogallala** **92.46** **46** P **P** **17 28 00.0 -0.3**
baz=242
OGNE **Ogallala** **92.46** **46** PFAKE 17 28 10.0 +10
OGNE LR LR
comp=Z,889nm,19.0s
J25A **Sunshine Ranch** **92.49** **44** P **P** **17 28 00.2 -0.1**
baz=241
X34A **Smith Ranch, M** **92.51** **53** P **P** **17 28 01.1 +0.5**
baz=244,SNR=7.8
337A **Centerville** **92.56** **57** P **P** **17 28 01.2 +0.4**
baz=245
136A **Ennis** **92.57** **56** P **P** **17 28 01.2 +0.4**
baz=244
438A **Sam Houston St** **92.64** **58** P **P** **17 28 02.3 +1.1**
baz=245
HIA **Hailar** **92.65** **323** PFAKE 17 28 10.0 +9.1
HIA LR LR
comp=Z,1μm,20.0s
LAO **LASA Array** **92.68** **40** P **P** **17 28 01.5 +0.4**
baz=239,SNR=5.1
LAO **LASA Array** **92.68** **40** *e*P **P** **17 28 01.7 +0.6**
RSSD **Black Hills** **92.71** **43** P **P** **17 28 00.7 -0.8**
baz=240
RSSD **Black Hills** **92.71** **43** *e*P **P** **17 28 01.1 -0.4**
RSSD pmax pmax
comp=Z,39nm,1.3s
RSSD **Black Hills** **92.71** **43** *e*P **P** **17 28 01.1 -0.4**
comp=Z,39nm,1.3s
V33A **Lossen Ranch,** **92.72** **52** P **P** **17 28 00.6 -0.8**
baz=244
Y35A **Marietta** **92.80** **54** P **P** **17 28 01.9 0.0**
baz=244
W34A **Bridge Creek,** **92.84** **53** P **P** **17 28 02.1 0.0**
baz=244
W34A **Bridge Creek,** **92.84** **53** *e*P **P** **17 28 02.5 +0.4**
comp=Z,59nm,1.4s
I25A **Rochford** **92.85** **43** P **P** **17 28 01.9 -0.2**
baz=241
TGUH **Tegucigalpa,Un** **92.86** **76** *e*P **P** **17 28 03.2 +0.7**
comp=Z,20nm,0.8s
237A **Washetta, Mont** **92.92** **57** P **P** **17 28 02.7 +0.3**
baz=245
J26A **Sides Ranch, S** **92.92** **44** P **P** **17 28 02.5 +0.1**
baz=241
539A **Cross D Ranch,** **92.96** **59** P **P** **17 28 03.6 +0.9**
baz=245
Z36A **Blue Ridge** **92.98** **55** P **P** **17 28 02.4 -0.4**
baz=245
338A **Crockett** **93.03** **57** P **P** **17 28 02.1 -0.9**
baz=245
CBKS **Cedar Bluff** **93.03** **49** P **P** **17 28 02.3 -0.6**
baz=243
CBKS **Cedar Bluff** **93.03** **49** PFAKE 17 28 10.0 +7.1
CBKS LR LR
comp=Z,1μm,20.0s
X35A **Drake** **93.06** **54** P **P** **17 28 02.9 -0.2**
baz=244,SNR=9.4
S32A **Newby Ranch, P** **93.09** **50** P **P** **17 28 02.8 -0.4**
baz=243
U33A **Lingo Farm, Me** **93.12** **52** P **P** **17 28 03.0 -0.3**
baz=244
137A **Heron Place, G** **93.21** **56** P **P** **17 28 03.8 0.0**
baz=245
H25A **Fruitdale** **93.23** **43** P **P** **17 28 03.5 -0.2**
baz=241
V34A **Guthrie** **93.29** **52** P **P** **17 28 03.6 -0.5**
baz=244
T33A **Patterson Ranc** **93.31** **51** P **P** **17 28 03.8 -0.3**
baz=244
I26A **New Underwood** **93.40** **43** P **P** **17 28 04.2 -0.4**
baz=241
KMI **Kunming** **93.41** **296** P **P** **17 28 05.3 +0.1**
KMI PP **PP** **17 31 50.3 +0.4**
KMI S **S** **17 39 10.5 -0.7**
KMI pmax pmax
comp=Z,24nm,1.6s
KMI pmax pmax
comp=Z,410nm,4.8s
KMI LR LR
comp=Z,340nm,20.9s
KMI LR LR
comp=Z,410nm,19.7s
KMI LR LR
comp=Z,620nm,20.9s
238A **Jacksonville** **93.45** **57** P **P** **17 28 05.6 +0.8**
baz=245
HHC **Hu-ho-hao-te** **93.46** **313** *e*P **P** **17 28 05.3 +0.4**
HHC SKS **SKSac** **17 38 38.6 +1.8**
HHC S **ScS** **17 39 14.9 +2.6**
HHC SS **SS** **17 45 33.4 +4.8**
HHC pmax pmax
comp=Z,25nm,1.3s
HHC pmax pmax
comp=Z,390nm,7.7s
HHC LR LR
comp=Z,1μm,16.8s
HHC LR LR
comp=Z,1μm,16.8s
HHC LR LR
comp=Z,3μm,17.2s
W35A **Tecumseh** **93.46** **53** P **P** **17 28 05.0 0.0**
baz=244,SNR=6.5
LAMP **Lampang** **93.46** **289** P **P** **17 28 07.7 +2.4**
comp=Z,93nm,1.1s,comp=Z,107nm
CRAI **Chiangrai** **93.48** **290** P **P** **17 28 08.4 +3.0**
comp=Z,10nm,2.2s,comp=Z,1μm
JTS **JuntasAbangare** **93.50** **80** *d* *i*P **P** **17 28 06.7 +1.1**
JTS pmax pmax
comp=Z,58nm,1.0s
JTS **JuntasAbangare** **93.50** **80** *e*P **P** **17 28 06.9 +1.3**
comp=Z,31nm,0.9s
JTS LR LR
comp=Z,735nm,19.0s
U34A **Anderson Ranch** **93.54** **52** P **P** **17 28 04.5 -0.7**
baz=244
Z37A **Pogue Cattle C** **93.56** **56** P **P** **17 28 05.2 -0.2**
baz=245
R32A **Long Quarter,** **93.57** **50** P **P** **17 28 05.1 -0.2**
baz=244
J27A **Elkhorn Farm,** **93.58** **44** P **P** **17 28 05.8 +0.5**
baz=242
540A **Vidor** **93.59** **59** P **P** **17 28 06.6 +1.0**
baz=246
X36A **Centrahoma** **93.60** **54** P **P** **17 28 04.8 -0.7**
baz=245,SNR=6.7
339A **Huntington** **93.60** **58** P **P** **17 28 05.5 -0.1**
baz=246
G25A **Newell** **93.62** **42** P **P** **17 28 04.5 -1.0**
baz=241
NATX **Nacogdoches** **93.70** **57** P **P** **17 28 06.1 0.0**
baz=246
NATX **Nacogdoches** **93.70** **57** PFAKE 17 28 20.0 +14
NATX LR LR
comp=Z,1μm,20.0s
S33A **Kaszmaul Farm,** **93.71** **51** P **P** **17 28 05.5 -0.5**
baz=244
H26A **Fairpoint** **93.74** **43** P **P** **17 28 05.9 -0.1**
baz=241
138A **Matatall Enter** **93.75** **56** P **P** **17 28 06.5 +0.3**
baz=245
V35A **Meyer Ranch, C** **93.75** **53** P **P** **17 28 05.6 -0.6**
baz=245
440A **Kirbyville** **93.83** **58** P **P** **17 28 07.3 +0.6**
baz=246
Y37A **Hugo** **93.90** **55** P **P** **17 28 07.4 +0.5**
baz=245
O31A **Woolen Ranch,** **93.92** **48** P **P** **17 28 06.2 -0.7**
baz=243
Q32A **Meitler Ranch,** **93.93** **49** P **P** **17 28 06.9 -0.1**
baz=244
I27A **Quinn** **93.93** **44** P **P** **17 28 07.2 +0.3**
baz=242
W36A **Wetumka** **93.94** **54** P **P** **17 28 06.4 -0.7**
baz=245,SNR=7.4
F25A **Bowman** **93.95** **41** P **P** **17 28 06.9 -0.1**
baz=241
239A **Gary** **93.95** **57** P **P** **17 28 07.3 +0.1**
baz=246
CM01 **Chiang Mai Arr** **94.01** **288** *e*P **P** **17 28 08.4 +0.6**
R33A **Olander Ranch,** **94.03** **50** P **P** **17 28 07.0 -0.5**
baz=244
CM31 **Chiang Mai Arr** **94.04** **288** *e*P **P** **17 28 07.6 -0.3**
CMAR **Chiang Mai Arr** **94.04** **288** P **P** **17 28 09.1 +1.1**
comp=Z,7.2nm,0.8s,baz=130,slow=3.2,SNR=57
CMAR PP **PP** **17 31 56.3 +1.6**
comp=Z,1.5nm,1.0s,baz=125,slow=5.2,SNR=4.1
CMAR LR LR 18 08 46.0
comp=Z,268nm,19.9s,baz=144,slow=34
T34A **McClaskey Farm** **94.04** **52** P **P** **17 28 07.2 -0.4**
baz=244
Z38A **Mt. Pleasant** **94.07** **56** P **P** **17 28 07.9 +0.1**
baz=245
U35A **Pawnee** **94.09** **52** P **P** **17 28 07.3 -0.5**
baz=245
J28A **Allard Ranch,** **94.15** **44** P **P** **17 28 08.0 0.0**
baz=242
541A **Lake Charles** **94.15** **59** P **P** **17 28 07.8 -0.4**
baz=246
340A **Bronson** **94.16** **58** P **P** **17 28 08.0 -0.1**
baz=246
CMMT **Chiang Mai** **94.17** **289** P **P** **17 28 09.8 +1.2**
comp=Z,33nm,1.1s,comp=Z,546nm
G26A **Maurine** **94.17** **42** P **P** **17 28 07.3 -0.7**
baz=242,SNR=7.6
CHTO **Chiang Mai** **94.18** **289** P **P** **17 28 09.8 +1.2**
comp=Z,82nm,1.9s,comp=Z,2μm
CHTO **Chiang Mai** **94.18** **289** *e*P **P** **17 28 09.2 +0.6**
CHTO pmax pmax
comp=Z,39nm,1.3s
CHTO MLR MLR
comp=Z,372nm,20.0s
CHTO **Chiang Mai** **94.18** **289** *e*P **P** **17 28 09.2 +0.6**
comp=Z,39nm,1.3s
CHTO LR LR
comp=Z,372nm,20.0s
P32A **Huiting Farm,** **94.18** **49** P **P** **17 28 07.7 -0.5**
baz=244
H27A **Howes** **94.19** **43** P **P** **17 28 07.6 -0.5**
baz=242
E25A **Miller Ranch,** **94.27** **41** P **P** **17 28 08.6 +0.2**
baz=241
139A **Bunkhouse Ranc** **94.29** **56** P **P** **17 28 08.9 +0.1**
baz=246
X37A **Clayton** **94.34** **54** P **P** **17 28 08.0 -1.0**
baz=245
TEIG **Tepich** **94.35** **70** PFAKE 17 28 20.0 +11
TEIG LR LR
comp=Z,411nm,19.0s
S34A **Willow Spring** **94.39** **51** P **P** **17 28 08.8 -0.4**
baz=244
F26A **Lodgepole** **94.40** **42** P **P** **17 28 08.3 -0.7**
baz=242
V36A **Jenks** **94.42** **53** P **P** **17 28 09.0 -0.3**
baz=245,SNR=5.8
441A **DeRidder** **94.43** **59** P **P** **17 28 09.4 0.0**
baz=246
Q33A **Connelly Farm,** **94.44** **49** P **P** **17 28 08.9 -0.5**
baz=244
I28A **Midland** **94.46** **44** P **P** **17 28 08.6 -0.7**
baz=242
N31A **Bailey Ranch,** **94.48** **47** P **P** **17 28 08.9 -0.6**
baz=244
T35A **Sooner Cattle** **94.48** **52** P **P** **17 28 09.1 -0.5**
baz=245
240A **Hunter Patters** **94.51** **57** P **P** **17 28 09.0 -0.8**
baz=246
Y38A **Idabel** **94.55** **55** P **P** **17 28 09.3 -0.6**
baz=246
R34A **Isabella, Hill** **94.55** **50** P **P** **17 28 09.3 -0.6**
baz=244
LVC **Limon Verde** **94.56** **117** PFAKE 17 28 20.0 +9.2
LVC LR LR
comp=Z,1μm,19.0s
TUL1 **Leonard** **94.58** **53** P **P** **17 28 09.8 -0.2**
baz=245
TUL1 **Leonard** **94.58** **53** *e*P **P** **17 28 10.0 -0.1**
comp=Z,25nm,1.1s
G27A **Dupree** **94.63** **42** P **P** **17 28 09.5 -0.5**
baz=242,SNR=7.5
D25A **Fairfield** **94.63** **40** P **P** **17 28 09.8 -0.2**
baz=241
Z39A **Irene McRaven,** **94.68** **56** P **P** **17 28 10.6 +0.1**
baz=246
542A **Morse** **94.68** **59** P **P** **17 28 10.7 +0.1**
baz=246
O32A **Brockman Farm,** **94.69** **48** P **P** **17 28 09.8 -0.6**
baz=244
M31A **Lambtecht Ranc** **94.69** **47** P **P** **17 28 09.6 -0.9**
baz=244
P33A **Williams Farm,** **94.73** **49** P **P** **17 28 10.0 -0.6**
baz=244
J29A **Okreek** **94.73** **45** P **P** **17 28 10.5 -0.1**
baz=243
DGMT **Dagmar** **94.76** **39** P **P** **17 28 10.7 +0.1**
baz=241,SNR=9.1
DGMT **Dagmar** **94.76** **39** *e*P **P** **17 28 11.2 +0.6**
comp=Z,107nm,1.2s
DGMT LR LR
comp=Z,759nm,20.0s
X38A **Whitesboro** **94.78** **54** P **P** **17 28 10.7 -0.3**
baz=246
PB01 **IPOC Station P** **94.79** **115** *e*P **P** **17 28 13.5 +1.9**
comp=Z,20nm,1.3s
F27A **Lemmon** **94.81** **42** P **P** **17 28 10.9 0.0**
baz=242,SNR=7.4
E26A **Carlson Angus** **94.82** **41** P **P** **17 28 10.9 0.0**
baz=242,SNR=6.3
MHMT **Maesarieng** **94.82** **288** P P 17 28 18.4 +6.9
U36A **Oologah** **94.83** **53** P **P** **17 28 10.7 -0.5**
baz=245
K30A **Basset** **94.86** **46** P **P** **17 28 10.9 -0.4**
baz=243,SNR=6.0
H28A **Mission Ridge** **94.87** **43** P **P** **17 28 10.7 -0.5**
baz=243
N32A **Stulken Farm,** **94.90** **48** P **P** **17 28 10.9 -0.5**
baz=244
140A **Cam and Jess,** **94.90** **57** P **P** **17 28 11.3 -0.3**
baz=246
CD2 **Chengdu** **94.91** **301** P **P** **17 28 12.3 +0.6**
CD2 PP **PP** **17 31 59.3 -2.0**
CD2 SKS **SKSac** **17 38 48.6 +3.6**
CD2 S **ScS** **17 39 26.9 +2.2**
CD2 sS S 17 39 30.0 +6.3
CD2 SS **SS** **17 45 51.9 +2.4**
CD2 pmax pmax
comp=Z,30nm,0.4s
CD2 pmax pmax
comp=Z,330nm,5.0s
CD2 LR LR
comp=Z,410nm,19.2s
CD2 LR LR
comp=Z,260nm,20.4s
C25A **Freed Ranch, W** **94.94** **40** P **P** **17 28 11.4 -0.1**
baz=241
S35A **Otter Creek Ra** **94.95** **51** P **P** **17 28 11.2 -0.5**
baz=245
HOPE **Hope Point** **94.96** **157** PFAKE 17 28 20.0 +8.5
HOPE LR LR
comp=Z,1μm,19.0s
T36A **Boggs Farm, Ca** **95.00** **52** P **P** **17 28 11.3 -0.6**
baz=245
442A **Mamou** **95.01** **59** P **P** **17 28 11.6 -0.5**
baz=246
I29A **Vivian Onida** **95.03** **44** P **P** **17 28 11.7 -0.2**
baz=243
Y39A **Lockesburg** **95.03** **55** P **P** **17 28 11.6 -0.5**
baz=246
Q34A **Chapman** **95.04** **50** P **P** **17 28 12.1 0.0**
baz=245
V37A **Hulbert** **95.05** **53** P **P** **17 28 11.6 -0.6**
baz=246,SNR=7.0
O33A **Hebron** **95.08** **49** P **P** **17 28 11.7 -0.6**
baz=244
D26A **Manning** **95.10** **41** P **P** **17 28 12.2 0.0**
baz=242,SNR=8.3
G28A **Parade** **95.12** **43** P **P** **17 28 11.6 -0.7**
baz=243
L31A **Butterfield Fa** **95.16** **46** P **P** **17 28 11.8 -0.8**
baz=244
241A **Mo Tay, Goldon** **95.16** **58** P **P** **17 28 13.0 +0.2**
baz=246
W38A **Poteau** **95.18** **54** P **P** **17 28 12.1 -0.6**
baz=246
543A **St. Martinvill** **95.22** **60** P **P** **17 28 14.0 +0.9**
baz=247
PB11 **IPOC Station P** **95.22** **114** *e*P **P** **17 28 14.4 +0.7**
comp=Z,26nm,1.1s
J30A **Dallas** **95.24** **45** P **P** **17 28 12.4 -0.5**
baz=244
X39A **Fountain Ranch** **95.25** **55** P **P** **17 28 13.0 -0.2**
baz=246
B25A **Knox Farm, Ray** **95.27** **39** P **P** **17 28 13.6 +0.7**
baz=241
BGNE **Belgrade** **95.28** **47** P **P** **17 28 13.0 -0.1**
baz=244
Z40A **Long Farm, Mag** **95.28** **56** P **P** **17 28 13.1 -0.1**
baz=246
U37A **Salina** **95.29** **53** P **P** **17 28 13.1 -0.1**
baz=246
R35A **Emporia Munici** **95.31** **51** P **P** **17 28 12.4 -0.9**
baz=245
KSU1 **Kansas State U** **95.35** **50** P **P** **17 28 13.2 -0.2**
baz=245
KSU1 **Kansas State U** **95.35** **50** PFAKE 17 28 20.0 +6.5
KSU1 LR LR
comp=Z,1μm,20.0s
E27A **Carson** **95.35** **42** P **P** **17 28 13.2 -0.1**
baz=242,SNR=6.7
H29A **Onida** **95.36** **44** P **P** **17 28 12.7 -0.7**
baz=243
342A **Flagon Creek P** **95.36** **58** P **P** **17 28 14.1 +0.5**
baz=247
P34A **Walnut Farm, R** **95.39** **49** P **P** **17 28 13.0 -0.6**
baz=245
141A **Papa Simpson,** **95.40** **57** P **P** **17 28 13.9 +0.1**
baz=246
K31A **O'Neill** **95.41** **46** P **P** **17 28 13.5 -0.2**
baz=244
N33A **J Bar K, Exete** **95.46** **48** P **P** **17 28 13.4 -0.6**
baz=245
S36A **Lake Cedric, C** **95.49** **51** P **P** **17 28 14.0 -0.1**
baz=245
I30A **Oacoma** **95.54** **45** P **P** **17 28 13.8 -0.5**
baz=244
443A **Delano Plantat** **95.55** **59** P **P** **17 28 14.1 -0.4**
baz=247
F28A **McLaughlin** **95.55** **42** P **P** **17 28 13.7 -0.6**
baz=243
V38A **Canehill** **95.59** **54** P **P** **17 28 14.2 -0.5**
baz=246,SNR=5.4
A25A **Svangstu Ranch** **95.61** **39** P **P** **17 28 14.2 -0.3**
baz=242
OTAV **Otavalo** **95.62** **92** PFAKE 17 28 30.0 +14
OTAV LR LR
comp=Z,642nm,19.0s
L32A **Elgin** **95.64** **47** P **P** **17 28 14.4 -0.4**
baz=244
Q35A **Mercer Eighty,** **95.65** **50** P **P** **17 28 14.3 -0.5**
baz=245
MIAR **Mount Ida** **95.67** **55** P **P** **17 28 14.9 -0.2**
baz=246
MIAR **Mount Ida** **95.67** **55** PFAKE 17 28 30.0 +15
MIAR LR LR
comp=Z,1μm,20.0s
Y40A **Okolona** **95.68** **56** P **P** **17 28 15.1 0.0**
baz=246
C26A **Wahner Farm, P** **95.68** **40** P **P** **17 28 14.9 0.0**
baz=242,SNR=6.9
YAK **Yakutsk** **95.68** **337** P **P** **17 28 13.8 -0.6**
comp=Z,5.1nm,0.6s,baz=139,slow=3.2,SNR=7.2
YAK PP **PP** **17 32 06.7 +0.3**
comp=Z,7.0nm,0.4s,baz=117,slow=0.4,SNR=5.5
YAK **Yakutsk** **95.68** **337** *e*P **P** **17 28 13.8 -0.6**
YAK *e**PP **sP** **17 28 27.5 -1.8**
YAK *e* 17 32 04.3
YAK *e*S **SKSac** **17 38 45.4 -2.0**
YAK *e**SS **S** **17 39 28.4 -0.4**
YAK *e*SS **SS** **17 45 56.2 -2.8**
YAK pmax pmax
comp=Z,12nm,1.2s
YAK pmax pmax
comp=E,6.0nm,1.9s
YAK pmax pmax
comp=N,3.0nm,1.6s
YAK pmax pmax
comp=Z,79nm,3.3s
YAK pmax pmax
comp=N,72nm,3.3s
YAK pmax pmax
comp=E,47nm,3.3s
YAK smax smax
comp=N,168nm,5.9s
YAK smax smax
comp=E,134nm,6.4s
YAK MLR MLR
comp=Z,498nm,20.0s
YAK MLR MLR
comp=N,346nm,21.0s
YAK MLR MLR
comp=E,544nm,22.0s
YAK **Yakutsk** **95.68** **337** *e*P **P** **17 28 12.3 -2.0**
comp=E,17nm,1.0s
YAK PP **PP** **17 32 06.7 +0.3**
YAK LR LR
comp=Z,459nm,20.0s
D27A **Center** **95.69** **41** P **P** **17 28 14.3 -0.6**
baz=242
J31A **Geddes** **95.71** **45** P **P** **17 28 14.2 -0.9**
baz=244
T37A **Cheneyville 18** **95.73** **52** P **P** **17 28 15.0 -0.3**
baz=246
O34A **Beatrice** **95.75** **49** P **P** **17 28 14.5 -0.8**
baz=245
W39A **Magazine** **95.78** **54** P **P** **17 28 15.4 -0.2**
baz=246
G29A **Hoven** **95.80** **43** P **P** **17 28 14.8 -0.6**
baz=243
R36A **Gordon, Harris** **95.80** **51** P **P** **17 28 14.7 -0.9**
baz=246
INK **Inuvik** **95.86** **14** P **P** **17 28 14.8 -0.2**
comp=Z,5.4nm,0.9s,baz=212,slow=6.4,SNR=17
INK **Inuvik** **95.86** **14** *e*P **P** **17 28 14.6 -0.4**
INK **Inuvik** **95.86** **14** *e*P **P** **17 28 14.2 -0.8**
comp=Z,14nm,1.1s
B26A **Jensen Ranch,** **95.86** **40** P **P** **17 28 15.4 -0.2**
baz=242
P35A **Duane Minner,** **95.94** **50** P **P** **17 28 16.2 0.0**
baz=245
K32A **Verdigre** **95.94** **46** P **P** **17 28 15.0 -1.1**
baz=244
E28A **Huff** **95.95** **42** P **P** **17 28 15.5 -0.6**
baz=243
645A **Chauvin** **95.98** **61** P **P** **17 28 16.2 -0.3**
baz=247
C27A **Sayler Ranch,** **95.98** **40** P **P** **17 28 16.0 -0.2**
baz=242
M33A **Taylor Creek F** **96.00** **47** P **P** **17 28 15.9 -0.5**
baz=245
SUSD **Miller** **96.08** **44** P **P** **17 28 16.5 -0.2**
baz=244
Q36A **Arnold C. Orve** **96.10** **50** P **P** **17 28 16.3 -0.6**
baz=246
142A **Monroe** **96.12** **57** P **P** **17 28 17.1 -0.1**
baz=247
V39A **Pettigrew** **96.14** **54** P **P** **17 28 16.4 -0.9**
baz=246
F29A **Eureka** **96.15** **43** P **P** **17 28 16.3 -0.7**
baz=244
T38A **Diamond** **96.15** **52** P **P** **17 28 16.6 -0.6**
baz=246
N34A **Lincoln** **96.16** **48** P **P** **17 28 16.6 -0.5**

baz=245
I31A Royce, Wessing 96.17 45 P P 17 28 16.8 -0.4
baz=244
L33A Hoskins 96.20 47 P P 17 28 16.7 -0.7
baz=245
X40A Basin Creek Fa 96.21 55 P P 17 28 17.4 -0.1
baz=247
A26A Wade Farm, Ken 96.22 39 P P 17 28 17.4 +0.2
baz=242
G30A Faulkton 96.27 44 P P 17 28 16.9 -0.6
baz=244
R37A Teagarden Farm 96.28 51 P P 17 28 17.5 -0.3
baz=246
D28A Regan 96.31 41 P P 17 28 17.6 -0.1
baz=243
W40A Ferguson Farm, 96.31 55 P P 17 28 17.0 -0.9
baz=247
O35A Humboldt 96.33 49 P P 17 28 17.5 -0.4
baz=246
J32A Parkston 96.33 46 P P 17 28 16.3 -1.6
baz=245
M34A Aspy Farms, Fr 96.38 48 P P 17 28 17.6 -0.5
baz=245
H31A Wolsey 96.41 44 P P 17 28 17.3 -0.9
baz=244
Z42A Norrel Spur, H 96.41 57 P P 17 28 17.7 -0.7
baz=247
B27A Peters Farms, 96.45 40 P P 17 28 17.8 -0.5
baz=243
P36A Good Intent, A 96.55 50 P P 17 28 18.2 -0.8
baz=246
E29A Napoleon 96.59 42 P P 17 28 18.6 -0.4
baz=244
143A Socs Landing, 96.60 57 P P 17 28 18.1 -1.2
baz=247
F30A Leola 96.65 43 P P 17 28 18.4 -0.9
baz=244
C28A Hausauer Farms 96.65 41 P P 17 28 17.9 -1.3
baz=243
S38A Stockton 96.67 52 P P 17 28 18.7 -0.8
baz=246
A27A Ledoux Ranch, 96.71 39 P P 17 28 18.9 -0.6
baz=243
L34A Svendsen Farm, 96.72 47 P P 17 28 18.6 -1.0
baz=245
V40A Witts Springs 96.74 54 P P 17 28 19.1 -0.9
baz=247
D29A Pettibone, Tap 96.84 42 P P 17 28 19.0 -1.1
baz=244
I32A Karley and Nic 96.87 45 P P 17 28 19.3 -1.0
baz=245
J33A Davis 96.89 46 P P 17 28 19.3 -1.1
baz=245
R38A Fenwick Farm, 96.90 52 P P 17 28 19.4 -1.2
baz=246
G31A Conde 96.90 44 P P 17 28 19.4 -1.0
baz=244
LZH Lanzhou 96.90 306 *e*P P 17 28 21.0 +0.2
LZH pP PcP 17 28 24.0 +3.1
LZH sP pP 17 28 25.5 -6.3
LZH PP **PP** **17 32 18.3 +1.5**
LZH SKS **SKSac** **17 38 56.4 +0.9**
LZH *e*S **S** **17 39 40.0 -1.0**
LZH *e*SS **SS** **17 46 19.3 +1.4**
LZH pmax pmax
comp=Z,29nm,1.3s
LZH pmax pmax
comp=Z,270nm,6.0s
LZH LR LR
comp=Z,850nm,17.8s
LZH LR LR
comp=Z,920nm,18.0s
LZH LR LR
comp=Z,1μm,19.7s
W41A Tony Mavity, V 96.92 55 P P 17 28 20.5 -0.2
baz=247
W41B Gary Mavity, V 96.92 55 P P 17 28 20.6 -0.1
baz=247
U40A Yellville 96.94 54 P P 17 28 19.8 -1.0
baz=247
M35A Neola 96.97 48 P P 17 28 20.2 -0.7
baz=246
B28A Dugan Ranch, T 97.00 40 P P 17 28 20.5 -0.2
baz=243
E30A Jud 97.02 42 P P 17 28 20.4 -0.5
baz=244
H32A Carlson Farm, 97.09 45 P P 17 28 20.6 -0.7
baz=245
VBMS Vicksburg 97.11 58 P P 17 28 20.4 -1.2
baz=248
P37A Lathrop 97.14 50 P P 17 28 20.8 -0.8
baz=246
F31A Hecla 97.15 43 P P 17 28 20.6 -0.9
baz=245
A28A Rude Farm, Bot 97.26 40 P P 17 28 21.5 -0.5
baz=244
ECSD EROS Data Cent 97.30 46 P P 17 28 21.6 -0.7
baz=245
ECSD EROS Data Cent 97.30 46 *e*P P 17 28 21.6 -0.7
comp=Z,52nm,1.4s
ECSD LR LR
comp=Z,779nm,21.0s
L35A Bielow Farm, R 97.34 47 P P 17 28 21.4 -1.1
baz=246
D30A Buchanan 97.38 42 P P 17 28 21.6 -0.9
baz=244
Q38A Cooks Store, C 97.41 51 P P 17 28 22.5 -0.3
baz=247
YKA Yellowknife Ar 97.43 24 P P 17 28 21.8 -0.5
comp=Z,5.8nm,0.8s,baz=236,slow=4.4,SNR=101
YKA PKKPbc **PKKPbc** **17 45 02.6 +0.3**
comp=Z,0.3nm,0.7s,baz=35,slow=2.5,SNR=5.8
YKB5 Yellowknife Ar 97.43 24 *e*P P 17 28 21.1 -1.2
YKW3 Yellowknife Ar 97.47 24 *e*P P 17 28 21.3 -1.2
comp=Z,6.0nm,0.8s
O37A Wolven Farm, M 97.52 50 P P 17 28 22.5 -0.8
baz=246
J34A George 97.55 46 P P 17 28 22.4 -0.9
baz=246
R39A Chumby, Stover 97.57 52 P P 17 28 23.0 -0.6
baz=247
B29A Wagenman Farm, 97.61 40 P P 17 28 23.0 -0.5
baz=244
H33A Prehn Over Nor 97.61 45 P P 17 28 22.8 -0.8
baz=245
S40A Lebanon 97.68 53 P P 17 28 23.1 -1.0
baz=247
N37A Lee Faris, Mou 97.71 49 P P 17 28 22.8 -1.3
baz=247
145A Houston Renfro 97.71 58 P P 17 28 24.3 0.0
baz=248
P38A Dawn 97.74 50 P Pdif 17 28 24.3 0.0
baz=247
BCIP Isla Barro Col 97.74 83 PFAKE 17 28 40.0 +15
BCIP LR LR
comp=Z,442nm,19.0s
K35A Storm Lake 97.80 47 P P 17 28 23.5 -1.1
baz=246
C30A Mose, Pekin 97.81 41 P P 17 28 24.1 -0.3
baz=245
F32A Veblen 97.86 43 P P 17 28 23.7 -1.0
baz=245
A29A Manning Farm, 97.88 40 P P 17 28 23.7 -1.0
baz=244
D31A Mcclaflin, Tow 97.99 42 P P 17 28 24.2 -1.0
baz=245
G33A Ortonville 98.02 44 P P 17 28 25.3 -0.2
baz=246
447A Lucedale 98.04 60 P P 17 28 25.5 -0.4
baz=248
LPAZ La Paz 98.07 111 P Pdif 17 28 29.1 +1.9
comp=Z,2.4nm,1.1s,baz=253,slow=3.2,SNR=6.7
LPAZ LR LR 18 06 43.5
comp=Z,447nm,18.0s,baz=216,slow=32
LPAZ La Paz 98.07 111 *e*P Pdif 17 28 29.9 +2.7
LPAZ pmax pmax
comp=Z,14nm,1.6s
LPAZ La Paz 98.07 111 *e*P Pdif 17 28 29.9 +2.7
comp=Z,14nm,1.6s
R40A Maddies Statio 98.12 52 P P 17 28 25.8 -0.2
baz=247
B30A Myrvik Farm, E 98.22 41 P P 17 28 25.6 -0.7
baz=245
C31A Landman Farms, 98.30 42 P P 17 28 26.1 -0.5
baz=245
F33A 5 Mile Ranch, 98.38 44 Pdiff P 17 28 26.5 -0.5
baz=246
A30A Hoffart Farm, 98.44 40 Pdiff P 17 28 26.2 -1.0
baz=245
Q40A Laux Farm, Aux 98.53 51 Pdiff P 17 28 27.6 -0.3
baz=248
M38A Pleasantville 98.67 49 Pdiff Pdif 17 28 29.2 +0.8
baz=247
P40A Paris 98.76 51 Pdiff P 17 28 28.2 -0.6
baz=248
E33A Westby DABS, E 98.84 43 Pdiff P 17 28 28.1 -1.0
baz=246
SCIA State Center 98.85 48 PFAKE 17 28 40.0 +11
SCIA LR LR
comp=Z,825nm,20.0s
FFC Flin Flon 98.95 34 PFAKE 17 28 40.0 +11
FFC LR LR
comp=Z,748nm,20.0s
O40A La Belle 99.11 50 Pdiff **Pdif** **17 28 30.0 -0.4**
baz=248
B32A Ashes, Strandq 99.28 41 Pdiff **Pdif** **17 28 30.0 -0.9**
baz=246
G35A Watkins 99.30 45 Pdiff **Pdif** **17 28 30.3 -0.8**
baz=247
E34A Wadena 99.37 43 Pdiff **Pdif** **17 28 30.8 -0.6**
baz=247
H36A Jessenland, He 99.41 46 Pdiff **Pdif** **17 28 31.3 -0.4**
baz=247
ULN Ulaanbaatar 99.42 318 *i*P **Pdif** **17 28 31.9 +0.1**
ULN pmax pmax
comp=Z,8.0nm,2.0s
ULN Ulaanbaatar 99.42 318 *e*P **Pdif** **17 28 32.0 +0.1**
comp=Z,20nm,1.9s
ULN LR LR
comp=Z,484nm,20.0s
F35A Swanville 99.49 44 Pdiff **Pdif** **17 28 31.6 -0.4**
baz=247
A32A Rocking H Ranc 99.52 41 Pdiff **Pdif** **17 28 32.0 -0.1**
baz=246
AGMN Agassiz Nation 99.65 42 Pdiff **Pdif** **17 28 32.7 +0.1**
baz=246
AGMN Agassiz Nation 99.65 42 *e*P **Pdif** **17 28 32.8 +0.1**
AGMN LR LR
comp=Z,625nm,19.0s
SONA0 Songino Array 99.81 318 *e*P **Pdif** **17 28 33.2 -0.3**
comp=Z,17nm,1.9s
SONM Songino Array 99.81 318 P **Pdif** **17 28 33.2 -0.3**
comp=Z,0.9nm,0.8s,baz=137,slow=3.4,SNR=6.0
E35A Pequot Lakes 99.87 44 Pdiff **Pdif** **17 28 32.8 -0.9**
baz=247
BOD Bodaibo 99.92 329 *e*P **Pdif** **17 28 31.6 -2.0**
BOD pmax pmax
comp=Z,4.0nm,1.7s
F36A Milaca 100.17 45 Pdiff **Pdif** **17 28 35.3 +0.3**
baz=248
A33A Warroad 100.19 41 Pdiff **Pdif** **17 28 35.1 0.0**
baz=247
I38A Scanlan Farm, 100.27 47 Pdiff **Pdif** **17 28 36.2 +0.7**
baz=248
D35A Remer 100.30 43 Pdiff **Pdif** **17 28 35.8 +0.3**
baz=248
SPMN Marine on St. 100.39 45 Pdiff **Pdif** **17 28 36.3 +0.3**
baz=248
ULM Lac du Bonnet 100.42 40 P **Pdif** **17 28 34.9 -1.1**
comp=Z,2.1nm,0.7s,baz=305,slow=10,SNR=3.4
B34A Aery, Baudette 100.47 42 Pdiff **Pdif** **17 28 36.2 -0.1**
baz=247
C35A Jirik Farms, M 100.58 43 Pdiff **Pdif** **17 28 36.6 -0.2**
baz=248
E36A McGregor 100.59 44 Pdiff **Pdif** **17 28 36.3 -0.6**
baz=248
D36A Goodland 100.89 43 Pdiff **Pdif** **17 28 38.6 +0.4**
baz=248
HDIL Hopedale 101.10 51 PFAKE 17 28 50.0 +11
HDIL LR LR
comp=Z,1μm,19.0s
GTA Gaotai 101.11 308 *e*P **Pdif** **17 28 43.6 +4.1**
GTA pP pP 17 28 48.0 -2.7
GTA sP 17 28 50.8
GTA PP **PP** **17 32 55.3 +6.5**
GTA SKS **SKSac** **17 39 20.6 +4.3**
GTA S **Sdif** **17 40 18.8 +2.6**
GTA SS **SS** **17 47 19.8 +3.2**
GTA pmax pmax
comp=Z,4.0nm,0.9s
GTA pmax pmax
comp=Z,120nm,5.7s
GTA LR LR
comp=Z,160nm,18.1s
GTA LR LR
comp=Z,640nm,20.9s
GTA LR LR
comp=Z,710nm,20.2s
E37A Wrenshall 101.16 44 Pdiff **Pdif** **17 28 38.6 -0.7**
baz=249
JFWS Jewell Farm 101.27 48 PFAKE 17 28 50.0 +10
JFWS LR LR
comp=Z,835nm,20.0s
C36A Pine Crest Far 101.32 43 Pdiff **Pdif** **17 28 40.2 +0.1**
baz=249
D37A Cotton 101.36 44 Pdiff **Pdif** **17 28 40.4 +0.1**
baz=249
TIXI Tiksi 102.03 344 P **Pdif** **17 28 44.0 +1.4**
TIXI pmax pmax
comp=Z,5.0nm,1.7s
TIXI Tiksi 102.03 344 PFAKE 17 28 50.0 +7.4
TIXI LR LR
comp=Z,805nm,20.0s
EYMN Ely 102.23 43 PFAKE 17 29 00.0 +16
EYMN LR LR
comp=Z,711nm,19.0s
TIGA Tifton 102.33 61 Pdiff **Pdif** **17 28 44.0 -1.0**
baz=251
TLY Talaya 102.91 321 *e*P **Pdif** **17 28 46.1 -1.0**
TLY pmax pmax
comp=Z,2.0nm,0.4s
TLY Talaya 102.91 321 PFAKE 17 29 00.0 +13
TLY LR LR
comp=Z,517nm,19.0s
DWPF Disney Wildern 103.01 65 *e*Pdif **Pdif** **17 28 56.6 +8.6**
GOGA Godfrey 103.08 59 PFAKE 17 29 00.0 +12
GOGA LR LR
comp=Z,791nm,20.0s
MTDJ Mount Denham 103.08 76 PFAKE 17 29 00.0 +11
MTDJ LR LR
comp=Z,448nm,19.0s
COWI Conover 103.11 45 PFAKE 17 29 00.0 +12
COWI LR LR
comp=Z,851nm,19.0s
LSA Lhasa 104.66 296 PFAKE 17 29 10.0 +14
LSA LR LR
comp=Z,364nm,19.0s
ACSO Alum Creek Sta 105.56 53 PFAKE 17 33 20.0
ACSO LR LR
comp=Z,941nm,20.0s
NHSC New Hope 105.60 60 PFAKE 17 33 20.0
NHSC LR LR
comp=Z,703nm,20.0s
AAM Ann Arbor 105.67 50 PFAKE 17 33 20.0
AAM LR LR
comp=Z,1μm,21.0s
SAML Samuel 105.67 107 PFAKE 17 33 30.0
SAML LR LR
comp=Z,850nm,19.0s
GTBY Guantanamo Bay 105.81 75 PFAKE 17 33 30.0
GTBY LR LR
comp=Z,373nm,20.0s
SDV Santo Domingo 106.09 87 PFAKE 17 33 30.0
SDV LR LR
comp=Z,665nm,20.0s
BLA Blacksburg 106.61 56 PFAKE 17 33 30.0
BLA LR LR
comp=Z,615nm,19.0s
DGAR Diego Garcia 107.97 254 PFAKE 17 33 30.0
DGAR LR LR
comp=Z,1μm,19.0s
CNNC Cliffs of the 108.03 59 PFAKE 17 33 30.0
CNNC LR LR
comp=Z,804nm,20.0s
SDDR Presa de Saban 108.92 77 PFAKE 17 33 30.0
SDDR LR LR
comp=Z,419nm,20.0s
CBN Corbin Frederi 109.20 56 PFAKE 17 33 30.0
CBN LR LR
comp=Z,739nm,20.0s
SPB Sao Paulo 110.75 128 PFAKE 17 33 30.0
SPB LR LR
comp=Z,2μm,20.0s
BINY Binghamton 111.16 52 PFAKE 17 33 30.0
BINY LR LR
comp=Z,1μm,20.0s
PTGA Pitinga 112.14 101 PFAKE 17 33 40.0
PTGA LR LR
comp=Z,33μm,21.0s
LONY Lake Ozonia 112.64 50 PFAKE 17 33 40.0
LONY LR LR
comp=Z,622nm,20.0s
NCB Newcomb 112.77 50 PFAKE 17 33 40.0
NCB LR LR
comp=Z,979nm,20.0s
SJG San Juan 113.28 79 PFAKE 17 33 40.0
SJG LR LR
comp=Z,329nm,20.0s
ZAA0 Zalesovo Array 114.51 320 *e*Pdif **Pdif** **17 29 35.1 -3.5**
ZAA0 *e*PKiKP PKPdf 17 33 27.9 -0.9
ZAA1 Zalesovo Array 114.51 320 *e*PKiKP PKPdf 17 33 28.4 -0.4
ZALV Zalesovo Beam 114.51 320 PKP PKPdf 17 33 28.4 -0.4
comp=Z,1.8nm,0.7s,baz=193,slow=1.3,SNR=8.8
MK32 Makanchi Array 115.31 312 *e*Pdif **Pdif** **17 29 47.1 +4.8**
MK32 *e*PKiKP **PKPdf** **17 33 29.8 -0.8**
MK32 *e*PKKPbc **PKKPab** **17 44 08.8 -0.5**
MKAR Makanchi Array 115.31 312 Pdiff **Pdif** **17 29 47.1 +4.7**
comp=Z,0.2nm,0.2s,baz=96,slow=4.1,SNR=3.6
MKAR PKP **PKPdf** **17 33 29.8 -0.8**
comp=Z,1.4nm,0.6s,baz=73,slow=1.4,SNR=14
MKAR PKKPbc **PKKPab** **17 44 08.8 -0.5**
comp=Z,0.2nm,0.3s,baz=254,slow=4.5,SNR=4.5
MKAR Makanchi Array 115.31 312 P **Pdif** **17 29 47.1 +4.7**
MKAR *i* 17 33 28.9
MKAR 17 44 08.8
MKAR Makanchi Array 115.31 312 Pdif **Pdif** **17 29 47.1 +4.7**
MKAR *e*PKiKP **PKPdf** **17 33 28.9 -1.8**
MKAR PKKPbc **PKKPab** **17 44 08.8 -0.5**
GRGR Grenville 115.49 87 PFAKE 17 33 40.0 +8.1
GRGR LR LR
comp=Z,327nm,19.0s
NVS Novosibirsk 115.51 321 *e*PKiKP **PKPdf** **17 33 29.6 -1.1**
MAKZ Makanchi 115.53 312 *e*PKiKP **PKPdf** **17 33 29.9 -1.2**
MAKZ Makanchi 115.53 312 *e*PKiKP **PKPdf** **17 33 29.9 -1.2**
PKME Peaks-Kenny Pk 116.45 50 PFAKE 17 33 40.0 +7.2
PKME LR LR
comp=Z,1μm,19.0s
FDF Fort de France 116.80 85 PFAKE 17 33 50.0 +16
FDF LR LR
comp=Z,425nm,19.0s
ANWB Willy Bob 117.12 81 PFAKE 17 33 50.0 +15
ANWB LR LR
comp=Z,223nm,20.0s
KURK Kurchatov 118.07 316 *e*PKiKP **PKPdf** **17 33 34.1 -1.6**
KURK MLR MLR
comp=Z,1μm,20.0s
KURK Kurchatov 118.07 316 *e*PKPdf **PKPdf** **17 33 34.1 -1.6**
KURK LR LR
comp=Z,1μm,20.0s
KSH Kashi 119.02 304 *e*PKP **PKPdf** **17 33 39.8 +1.7**
KSH *e*PP **PP** **17 35 05.5 +7.2**
KSH PKS **PKSdf** **17 37 15.4 +0.5**
KSH SKS **SKSdf** **17 40 52.6 +4.8**
KSH SS **SKKSdf** **17 51 26.6 -7.2**
KSH AMB AMB
comp=Z,200nm,6.3s
KSH LR LR
comp=Z,83nm,5.7s
KSH LR LR
comp=Z,140nm,7.0s
KSH LR LR
comp=Z,440nm,17.3s
TKM2 Tokmak 2 119.65 307 *e*PKiKP **PKPdf** **17 33 38.3 -1.1**
TKM2 *e* 17 35 00.3
TKM2 MLR MLR
comp=Z,419nm,20.0s
TKM2 Tokmak 2 119.65 307 *e*PKPdf **PKPdf** **17 33 38.3 -1.1**
TKM2 *e*PP **PP** **17 35 00.2 -2.4**
TKM2 LR LR
comp=Z,419nm,20.0s
FRU Bishkek 120.36 307 *e*PKiKP **PKPdf** **17 33 40.0 -0.5**
FRU *i* 17 33 56.0
FRU *e* 17 35 02.0
FRU pmax pmax
comp=Z,20nm,1.6s
AAK Ala-Archa 120.43 307 *i*PKiKP **PKPdf** **17 33 40.1 -0.7**
AAK Ala-Archa 120.43 307 *e*PKPdf **PKPdf** **17 33 40.2 -0.6**
AAK LR LR
comp=Z,483nm,22.0s
EKS2 Erkin-Say 120.96 307 *e*PKiKP **PKPdf** **17 33 41.5 -0.3**
EKS2 MLR MLR
comp=Z,479nm,22.0s
EKS2 Erkin-Say 120.96 307 *e*PKPdf **PKPdf** **17 33 41.5 -0.3**
EKS2 LR LR
comp=Z,479nm,22.0s
SUR Sutherland 123.02 195 PFAKE 17 34 00.0 +14
SUR LR LR
comp=Z,2μm,20.0s
BVAR Borovoye Array 123.12 319 PKP **PKPdf** **17 33 44.8 -0.6**
comp=Z,2.6nm,0.6s,baz=90,slow=1.5,SNR=20
BRVK Borovoye 123.18 319 *d*PKiKP **PKPdf** **17 33 44.7 -0.8**
BRVK Borovoye 123.18 319 *e*PKPdf **PKPdf** **17 33 44.8 -0.8**
BRVK *e*PP **PP** **17 35 21.1 -4.9**
BRVK LR LR
comp=Z,524nm,20.0s
KKAR Karatay Array 123.38 307 *e*PKiKP **PKPdf** **17 33 45.7 -0.6**
KKAR Karatay Array 123.38 307 *e*PKPdf **PKPdf** **17 33 45.7 -0.6**
KBS Kingsbay 123.94 359 PFAKE 17 34 00.0 +14
KBS LR LR
comp=Z,453nm,19.0s
ZRNK Zerenda 123.96 319 *e*PKiKP **PKPdf** **17 33 46.1 -0.9**
ZRNK Zerenda 123.96 319 *e*PKPdf **PKPdf** **17 33 46.1 -0.9**
KBL Kabul 123.97 297 *e*PKiKP **PKPdf** **17 33 47.7 -0.2**
KBL Kabul 123.97 297 *e*PKPdf **PKPdf** **17 33 47.7 -0.2**
SFJD Kangerlussuaq 123.99 23 PFAKE 17 34 00.0 +13
SFJD LR LR
comp=Z,872nm,19.0s
SUMG Summit 124.77 15 *i* P **PKPdf** **17 33 49.5 +0.9**
SUMG Summit 124.77 15 *e*PKiKP **PKPdf** **17 33 49.3 +0.7**
SUMG Summit 124.77 15 *e*PKPdf **PKPdf** **17 33 49.3 +0.7**
DAG Danmarks Havn 124.87 7 *i* P **PKPdf** **17 33 46.9 -1.2**
BOSA Boshof 125.27 201 PKP **PKPdf** **17 33 52.2 +1.6**
comp=Z,11nm,0.9s,baz=228,slow=3.5,SNR=8.5
BOSA Boshof 125.27 201 *e*PKiKP **PKPdf** **17 33 52.1 +1.5**
BOSA Boshof 125.27 201 *e*PKPdf **PKPdf** **17 33 52.1 +1.5**
BOSA *e*PKPdf **PKPdf** **17 33 52.2 +1.6**
SVE Sverdlovsk 127.92 325 *i* PKiKP **PKPdf** **17 33 54.6 +0.1**
SVE pmax pmax
comp=Z,23nm,1.4s
SVE MLR MLR
comp=Z,963nm,21.0s
LBTB Lobatse 128.45 203 *e*PKiKP **PKPdf** **17 33 58.4 +1.7**
LBTB Lobatse 128.45 203 *e*PKPdf **PKPdf** **17 33 58.4 +1.7**
ARU Arti 129.13 325 *i* PKiKP **PKPdf** **17 33 56.2 -0.6**
ARU 17 36 02.5
ARU 17 41 06.9
ARU SP SP 17 46 10.6 +1.1
ARU SS SS 17 53 22.0 -0.8
ARU MLR MLR
comp=Z,830nm,23.0s
ARU Arti 129.13 325 *e*PKPdf **PKPdf** **17 33 56.6 -0.1**
ARU *e*PP PP 17 35 53.1 -12
ARU LR LR
comp=Z,762nm,20.0s
ABKAR Akbulak array 130.17 316 *e*PKPdf **PKPdf** **17 33 58.2 -0.7**
RCBR Riachuelo 130.38 120 PFAKE 17 34 10.0 +9.4
RCBR LR LR
comp=Z,1μm,19.0s
KEV Kevo 131.52 350 PFAKE 17 34 10.0 +9.1
KEV LR LR
comp=Z,842nm,19.0s
LVZ Lovozero 131.64 346 PFAKE 17 34 10.0 +8.7
LVZ LR LR
comp=Z,796nm,20.0s
ARA0 ARCESS Array S 131.94 351 *e*PKPdf **PKPdf** **17 34 02.5 +0.6**
ARCES ARCESS Array B 131.94 351 PKP **PKPdf** **17 34 02.5 +0.6**
comp=Z,7.5nm,0.7s,baz=12,slow=1.2,SNR=16
APA Apatity 132.18 346 *i* PKiKP **PKPdf** **17 34 07.0 +4.7**
APA MLR MLR
comp=Z,1μm,22.0s
GEYT Alibeck 132.90 301 PKP **PKPdf** **17 34 05.6 +1.0**
comp=Z,6.5nm,0.9s,baz=270,slow=0.4,SNR=10
GEYT PP **PP** **17 36 31.4 +0.8**
comp=Z,0.6nm,0.3s,baz=46,slow=6.4,SNR=3.7
GEYT SKP 17 37 41.7
comp=Z,1.5nm,0.6s,baz=352,slow=3.0,SNR=4.9
UOSS Minazif 133.89 283 *e*PKPdf **PKPdf** **17 34 06.7 -0.1**
KLMR Klimovskoe 135.48 337 *e*PKiKP **PKPdf** **17 34 08.3 -0.3**

KLMR pmax pmax
comp=Z,24nm,1.4s
LSZ Lusaka 135.97 212 *e*PKIKP **PKPdf** **17 34 09.5 -1.6**
LSZ *e* 17 36 50.6
LSZ MLR MLR
comp=Z,838nm,21.0s
LSZ Lusaka 135.97 212 *e*PKPdf **PKPdf** **17 34 09.5 -1.6**
LSZ *e*PP **PP** **17 36 50.6 +1.6**
LSZ LR LR
comp=Z,838nm,21.0s
TSUM Tsumeb 136.43 197 *e*PKPdf **PKPdf** **17 34 14.0 +2.1**
TSUM *e*PP **PP** **17 36 52.3 +0.8**
TSUM LR LR
comp=Z,990nm,20.0s
FIA1 FINESS Array S 139.06 345 *e*PKPdf **PKPdf** **17 34 14.3 -0.9**
FIA1 *e*PKPdf **PKiKP** **17 34 14.5 -3.0**
FIA0 FINESS Array S 139.07 345 *e*PKHKP PKPpre 17 34 07.8
FIA0 *e* 17 34 14.6
FIA0 FINESS Array S 139.07 345 *e*PKPpre PKPpre 17 34 07.8
FIA0 *e*PKPdf **PKPdf** **17 34 14.6 -0.6**
FINES FINESS Array B 139.07 345 PKhKP PKPpre 17 34 07.8
comp=Z,1.5nm,0.8s,baz=78,slow=2.7,SNR=7.2
FINES PKP **PKPdf** **17 34 14.6 -0.6**
comp=Z,5.9nm,0.9s,baz=172,slow=3.9,SNR=12
MOS Moscow 139.65 332 *e*PKIKP **PKPdf** **17 34 14.7 -1.8**
MOS *e* 17 37 19.9
VRH Novokhopyorsk 140.36 324 *e*PKIKP **PKPdf** **17 34 17.6 -0.3**
VRH pmax pmax
comp=Z,10.0nm,1.5s
OBN Obninsk 140.51 332⇓ *e*PKIKP **PKPdf** **17 34 17.8 -0.2**
OBN *i* 17 34 25.9
OBN *e* 17 37 21.5
OBN *i* 17 55 36.1
OBN pmax pmax
comp=Z,29nm,1.2s
OBN pmax pmax
comp=Z,21nm,1.6s
OBN MLR MLR
comp=Z,548nm,20.0s
OBN Obninsk 140.51 332 PFAKE 17 34 30.0 +12
OBN LR LR
comp=Z,637nm,21.0s
KMBO Kilima Mbogo 140.91 236 PKhKP PKPpre 17 34 15.9
comp=Z,2.9nm,0.8s,baz=143,slow=1.5,SNR=8.3
KMBO Kilima Mbogo 140.91 236 *e*PKHKP PKPpre 17 34 15.7
KMBO MLR MLR
comp=Z,474nm,20.0s
KMBO Kilima Mbogo 140.91 236 *e*PKPpre PKPpre 17 34 15.7
KMBO LR LR
comp=Z,474nm,20.0s
LPSR Galich'ya Gora 141.01 328 *e*PKIKP **PKPdf** **17 34 16.3 -2.7**
LPSR pmax pmax
comp=Z,7.0nm,1.0s
VSU Vasula 141.46 342⇑ *i*PKIKP **PKPdf** **17 34 20.0 +0.4**
NC303 NORSAR Array S 141.60 355 *e*PKPpre PKPpre 17 34 11.7
NC303 *e*SKPdf **SKPdf** **17 37 48.9 -3.1**
NC405 NORSAR Array S 141.68 355 *e*PKPpre PKPpre 17 34 13.9
VSR Storozhevoye 141.69 326 *e*PKIKP **PKPdf** **17 34 18.2 -2.1**
VSR pmax pmax
comp=Z,10.0nm,1.1s
NB2 NORSAR Subarra1 141.79 356 PKP PKPpre 17 34 14.1
comp=Z,14nm,1.7s,baz=17,slow=2.6
NB200 NORSAR Array S 141.79 356 *e*PKPpre PKPpre 17 34 14.7
NOA NORSAR Array B 141.79 356 PKhKP PKPpre 17 34 14.7
comp=Z,1.9nm,0.7s,baz=5.5,slow=3.6,SNR=7.8
NBO02 NORSAR Array S 141.81 356 *e*PKPpre PKPpre 17 34 15.1
NBO00 NORSAR Array S 141.83 356 *e*PKPdf **PKPdf** **17 34 20.6 +0.3**
DGRG David-gareji 142.02 309 P **PKPdf** **17 34 21.9 +0.6**
DGRG David-gareji 142.02 309 PKIKP **PKPdf** **17 34 21.9 +0.6**
TBLG Delisi 142.40 309 P **PKPdf** **17 34 19.7 -2.3**
TBLG Delisi 142.40 309 PKIKP **PKPdf** **17 34 19.6 -2.3**
ZEI Tsey 142.65 311 *i*PKIKP **PKPdf** **17 34 25.5 +2.9**
ZEI pmax pmax
comp=Z,15nm,0.9s
GNI Garni 142.84 307 *c i*PKIKP **PKPdf** **17 34 19.6 -3.4**
GNI Garni 142.84 307 PFAKE 17 34 30.0 +7.0
GNI LR LR
comp=Z,635nm,20.0s
KBZ Khabaz 143.00 313 PKP PKPbc 17 34 20.9 +1.2
comp=Z,4.3nm,0.9s,baz=162,slow=4.8,SNR=7.2
ONI Oni 143.03 311 P PKPbc 17 34 19.9 0.0
ONI Oni 143.03 311 PKIKP PKPbc 17 34 19.9 0.0
KIV Kislovodsk 143.06 313 *c*PKIKP PKPbc 17 34 19.3 -0.7
KIV *i* 17 34 24.0
KIV pmax pmax
comp=Z,7.0nm,1.4s
KIV Kislovodsk 143.06 313 PFAKE 17 34 30.0 +6.9
KIV LR LR
comp=Z,905nm,20.0s
KONO Kongsberg 143.28 357 *e*PKHKP PKPpre 17 34 18.6
KONO MLR MLR
comp=Z,483nm,19.0s
KONO Kongsberg 143.28 357 *e*PKPpre PKPpre 17 34 18.6
KONO LR LR
comp=Z,483nm,19.0s
NEY Neytrino 143.30 312 *de*PKIKP **PKPdf** **17 34 22.6 -1.1**
AKH Akhalkalaki 143.38 309 P PKPbc 17 34 21.7 +0.6
AKH Akhalkalaki 143.38 309⇑ *i*P PKPbc 17 34 21.7 +0.6
AKH Akhalkalaki 143.38 309 PKIKP PKPbc 17 34 21.7 +0.6
ASCN Ascension 143.60 145 PFAKE 17 34 40.0 +15
ASCN LR LR
comp=Z,3μm,22.0s
MICGM Minsk 144.37 338 *e*P **PKPab** **17 34 23.0 -0.1**
MICGM *e*LR LR 18 39 14.0
MNK Minsk 144.37 338 *e*PKIKP **PKPab** **17 34 23.0 -0.1**
ARTV Artvin 144.57 309 *i*P PKPbc 17 34 25.1 +0.3
GEVA Gevas 144.58 304 *i*P **PKPdf** **17 34 25.8 -0.3**
EATA Eleskirt 144.58 307 *i*P **PKPdf** **17 34 26.6 +0.3**
DAGI Agillar 144.62 309 *i*P PKPbc 17 34 25.3 +0.6
DBAD Bademkaya 144.79 309 *i*P PKPbc 17 34 25.8 +0.5
DDEM Demirkent 144.79 309 *i*P **PKPdf** **17 34 27.6 +1.3**
EKAR Karacoban 145.07 306 *i*P **PKPdf** **17 34 28.8 +1.8**
SOC Sochi 145.18 314 *d i*PKIKP **PKPbc** **17 34 25.2 -1.1**
SOC *e* 17 37 40.8
SOC pmax pmax
comp=Z,26nm,0.8s
SIRN S¯¬rnak 145.27 303 *i*P **PKPab** **17 34 27.1 0.0**
FURI Furi 145.30 252 *e*PKPbc **PKPdf** **17 34 29.6 +1.4**
ERZM Erzurum 145.39 308 *i*P **PKPab** **17 34 29.6 +1.9**
BNGL BINGOL 145.84 306 *i*P **PKPab** **17 34 31.3 +2.0**
KOPT Kop Dagi 145.99 308 *i*P **PKPab** **17 34 31.1 +1.2**
BTMN Batman 146.05 304 *i*P **PKPab** **17 34 30.0 0.0**
ANN Anapa 146.09 318 *i*PKP2 **PKPab** **17 34 29.7 0.0**
ANN *e*SSS SSS 18 02 06.3
ANN pmax pmax
comp=Z,197nm,1.5s
BGOL Bingol 146.19 306 *i*P **PKPab** **17 34 32.0 +1.5**
SUW Suwalki 146.30 341 *e*PKP **PKPbc** **17 34 29.0 -0.5**
SUW Suwalki 146.30 341 *e*PKP2 **PKPbc** **17 34 29.0 -0.5**
MUD Monsted U'grnd 146.49 356 *i*P **PKPbc** **17 34 29.4 -0.5**
comp=Z,870nm,21.0s
MARD Mardin 146.58 303 *i*P **PKPab** **17 34 31.9 -0.2**
KLNR Kaliningrad 146.59 344 *i*PKP2 **PKPbc** **17 34 29.6 -0.6**
EUZM Uzumlu 146.67 308 *i*P **PKPab** **17 34 33.2 +0.8**
AKASG Malin Array Be 146.78 332 PKPbc **PKPdf** **17 34 28.6 -0.6**
comp=Z,24nm,0.8s,baz=39,slow=4.0,SNR=81
AKBB Malin Array Si 146.78 332 *e*PKIKP **PKPdf** **17 34 28.3 -0.9**
AKBB Malin Array Si 146.78 332 *e*PKPdf **PKPdf** **17 34 28.3 -0.9**
KIEV Kiev 146.79 332 *de*PKIKP **PKPdf** **17 34 28.1 -1.1**
KIEV Kiev 146.79 332 *e*PKPdf **PKPdf** **17 34 28.8 -0.4**
KIEV LR LR
comp=Z,564nm,20.0s
AK11 Malin Array Si 146.82 332 *e*PKPdf **PKPdf** **17 34 28.6 -0.6**
KELT Kelkit 146.84 309 *i*P **PKPbc** **17 34 32.3 +0.5**
KBSD Kabsdagh 146.84 303 *e*P **PKPab** **17 34 35.0 +2.0**
COP Copenhagen 146.97 353 *i*P **PKPbc** **17 34 30.4 -0.9**
comp=Z,290nm,17.0s
TNCL Tunceli-Merkez 146.98 307 *i*P **PKPab** **17 34 33.3 -0.3**
MZRK Al-Mazaregh 147.04 301 *e*P **PKPab** **17 34 34.3 +0.5**
ESK Eskdalemuir 147.08 9 PKP2 **PKPab** **17 34 33.6 +0.3**
ESK Eskdalemuir 147.08 9 *e*PKPdf **PKPbc** **17 34 31.2 -0.5**
ESK LR LR
comp=Z,696nm,19.0s
BSD Bornholm Skovb 147.18 350 *i*P **PKPbc** **17 34 31.0 -0.9**
GRSN GIRESUNGRSN 147.25 311 *i*P **PKPbc** **17 34 32.9 +0.3**
SFNV Sufian 147.32 302 *e*P **PKPbc** **17 34 33.1 0.0**
REFA Refahiye_ERZ¯ 147.45 308 *i*P **PKPbc** **17 34 34.2 +0.8**
ORDU Ordu-Boztepe 147.50 311 *i*P **PKPbc** **17 34 33.8 +0.4**
SUSE Susehri 147.56 310 *i*P **PKPab** **17 34 36.5 +0.6**
ELZG Elazig 147.59 306 *i*P **PKPab** **17 34 35.6 -0.5**
KEMA Kemaliye 147.69 308 *i*P **PKPbc** **17 34 35.1 +1.0**
CUZAR Zara_SİVAS 147.99 309 *i*P **PKPab** **17 34 36.6 -1.0**
MNKR ALMNKUR 148.10 302 *e*P **PKPdf** **17 34 29.3 -2.6**

KSRV Kasrt alli 148.33 101 *e*P **PKPbc** **17 34 36.6 +0.9**
SURC SANLIURFA_SURC 148.36 303 *i*P **PKPbc** **17 34 36.3 +0.4**
ERBA Erbaa 148.40 311 *i*P **PKPbc** **17 34 36.8 +1.0**
CUKAN kangal_SIVAS 148.42 308 *i*P **PKPbc** **17 34 37.2 +1.2**
AKCD Akcadag 148.45 306 *i*P **PKPab** **17 34 38.2 -1.2**
DSB Dublin 148.48 14 *e*PKPdf **PKPbc** **17 34 34.9 -0.6**
BEL Belsk 148.91 342 *e*PKP **PKPbc** **17 34 37.1 +0.4**
BEL Belsk 148.91 342 *e*PKP2 **PKPbc** **17 34 37.1 +0.4**
HAVZ Havza 148.94 313 *i*P **PKPbc** **17 34 37.8 +0.6**
CUALT Altinyayla-SIV 148.95 309 *i*P **PKPbc** **17 34 39.4 +2.0**
GZT Gaziantep 149.02 305 *i*P **PKPbc** **17 34 38.5 +0.8**
SORM Soroca 149.04 330⇑ *i*P **PKPbc** **17 34 37.0 -0.1**
SORM Soroca 149.04 330⇑⇑ *i*PKP2 **PKPbc** **17 34 37.0 -0.1**
SLMH Al Salmeh 149.08 303 *e*P **PKPdf** **17 34 32.9 -0.7**
CUSAR Sarkisla-SIVAS 149.26 309 *i*P **PKPbc** **17 34 38.9 +0.7**
BOYT Boyabat 149.33 314 *i*P **PKPbc** **17 34 39.1 +1.0**
LVV L'vov 149.56 336 *e*PKP2 **PKPbc** **17 34 39.0 +0.7**
LVV MLR MLR
comp=E,400nm,22.0s
LVV MLR MLR
comp=Z,500nm,22.0s
LVV MLR MLR
comp=N,400nm,21.0s
KIS Kishinev 149.62 328 *e*PKP **PKPbc** **17 34 38.0 -0.6**
KIS LRM MLR 18 52 06.0
comp=N,400nm,22.0s
KIS Kishinev 149.62 328 *e*PKP2 **PKPbc** **17 34 38.0 -0.6**
KIS MLR MLR
comp=Z,600nm,20.0s
KIS MLR MLR
comp=Z,400nm,22.0s
KAMA Osmaniye 149.75 305 *i*P **PKPbc** **17 34 39.7 +0.3**
COAL Corum-Alaca 149.80 312 *i*P **PKPbc** **17 34 40.1 +0.7**
CWF Charnwood Fore 149.86 8 *e*PKPdf **PKPdf** **17 34 35.0 +0.9**
ANDN Andirin 149.86 306 *i*P **PKPbc** **17 34 40.5 +0.9**
DRWC Darouich 149.93 304 *e*P **PKPbc** **17 34 41.4 +1.6**
ROOS tl_alroos 150.11 299 *e*P **PKPbc** **17 34 40.8 +0.4**
RABH Abou Rabah 150.11 299 *e*P **PKPbc** **17 34 40.4 +0.1**
KWP Kalwaria Pacla 150.19 337 *e*PKP **PKPbc** **17 34 40.1 +0.2**
KWP Kalwaria Pacla 150.19 337 *e*PKP2 **PKPbc** **17 34 40.2 +0.3**
BTCH Batrach 150.27 303 *e*P **PKPbc** **17 34 39.5 -1.2**
LEOM Leova 150.27 327⇓ *i*P **PKPbc** **17 34 40.8 +0.7**
LEOM Leova 150.27 327⇓⇓ *i*PKP2 **PKPbc** **17 34 40.8 +0.7**
ILGA Ilgaz 150.29 314 *i*P **PKPbc** **17 34 42.2 +1.5**
ZALF Zalf 150.34 296 *e*P **PKPbc** **17 34 40.8 0.0**
WRDH Warideh 150.46 302 *e*P **PKPdf** **17 34 35.7 -0.1**
CDAG Cicekdag 150.50 311 *i*P **PKPbc** **17 34 44.0 +2.9**
AVNS Nevsehir-Avano 150.50 309 *i*P **PKPbc** **17 34 41.7 +0.5**
YAYL Yayladag 150.54 303 *i*P **PKPbc** **17 34 41.3 0.0**
SLNF Slenfeh 150.58 302 *e*P **PKPdf** **17 34 32.7 -3.4**
OJC Ojcow 150.64 341 *e*PKP **PKPbc** **17 34 41.3 +0.3**
OJC Ojcow 150.64 341 *e*PKIKP **PKPbc** **17 34 41.3 +0.3**
OJC Ojcow 150.64 341 *e*PKPdf **PKPdf** **17 34 36.6 +1.1**
YURE YUREGIR 150.65 305 *i*P **PKPbc** **17 34 42.4 +0.9**
BIDA Albida 150.67 301 *e*P **PKPbc** **17 34 39.9 -1.7**
ARNB Al Arnab 150.70 303 *e*P **PKPbc** **17 34 43.3 +1.7**
HAWK Haweek 150.73 300 *e*P **PKPbc** **17 34 42.5 +0.7**
MARH Ras Al Marh 150.79 299 *e*P **PKPbc** **17 34 42.8 +0.5**
BUR08 Bucovina Ar. S 150.82 332 *e*PKPdf **PKPdf** **17 34 37.3 +1.3**
BUR08 *e*PKPbc **PKiKP** **17 34 43.2 +0.9**
BURAR Bucovina Array 150.83 332⇓ *i*P **PKPbc** **17 34 41.3 -0.3**
BURAR Bucovina Array 150.83 332⇓⇓ *i*PKIKP **PKPbc** **17 34 41.3 -0.3**
TLCR 150.85 325⇑ *i*P **PKPbc** **17 34 42.6 +1.0**
TLCR 150.85 325⇑⇑ *i*PKIKP **PKPbc** **17 34 42.6 +1.0**
SALA Sala 150.87 296 *e*P **PKPbc** **17 34 42.7 +0.4**
STHS Stebnicka Huta 150.88 339 *e*PKP **PKPbc** **17 34 42.7 +1.1**
KOLS Kolonicke sedl 150.94 337 *e*PKP **PKPdf** **17 34 36.9 +0.9**
KOLS *e* 17 34 42.4
BR101 Keskin Array S 150.96 312 *e*PKPdf **PKPdf** **17 34 37.0 +0.5**
BR101 *e*PKPbc **PKPbc** **17 34 41.8 -0.5**
BR131 Keskin Array S 150.96 312 *e*PKPbc **PKPbc** **17 34 41.6 -0.7**
BRTR Keskin Array B 150.96 312 PKP **PKPdf** **17 34 37.0 +0.5**
comp=Z,6.1nm,0.8s,baz=188,slow=1.9,SNR=6.8
BRTR PKPbc **PKPbc** **17 34 41.8 -0.5**
comp=Z,16nm,0.9s,baz=132,slow=3.3,SNR=47
KSP Ksiaz 150.98 346 *e*PKP **PKPdf** **17 34 36.3 +0.3**
KSP Ksiaz 150.98 346 *e*PKIKP **PKPdf** **17 34 36.3 +0.3**
TOTH TOTAH 150.99 298 *e*P **PKPdf** **17 34 35.1 -1.5**
TESR Tescani 151.01 329⇑ *i*P **PKPbc** **17 34 42.2 +0.2**
WTSB Winterswijk 151.08 358 *e*PKPdf **PKPdf** **17 34 36.6 +0.5**
comp=Z,5.9nm,0.6s
WTSB *e*PKPbc **PKPbc** **17 34 41.7 -0.1**
comp=Z,149nm,1.0s
WTSB *e*PKPab **PKPab** **17 34 49.9 +0.4**
comp=Z,80nm,0.9s
CLL Collm 151.16 350 *e*PKPdf **PKPdf** **17 34 37.0 +0.8**
CLL ⇓ *i*PKPbc **PKPbc** **17 34 42.2 +0.1**
comp=Z,111nm,1.1s
CLL *e*PKPmax 17 35 09.0
comp=Z,300nm,19.4s
CLL *e*PP PP 17 38 29.0 +9.3
CLL *e* 17 42 25.0
CLL *e*PSKS 17 48 36.0
CLL *e* 17 51 12.0
CLL *e* 17 54 01.0
CLL *e*SS SS 17 57 38.0 -1.5
CLL *e*SSS SSS 18 03 24.0
CLL *e*SSSS 18 07 30.0
CLL comp=N,200nm,20.0s LmH 18 45 00.0
CLL comp=E,400nm,21.7s LmH 18 45 00.0
CLL comp=Z,400nm,19.8s LmV 18 48 00.0
CLL Collm 151.16 350⇓⇓ *e*PKIKP **PKPdf** **17 34 37.0 +0.8**
CLL *i* 17 34 42.2
CLL pmax pmax
comp=Z,111nm,1.1s
CLL MLR MLR
comp=Z,400nm,19.8s
CLL Collm 151.16 350 *e*PKPdf **PKPdf** **17 34 36.5 +0.2**
CLL *e*PKPbc **PKPbc** **17 34 42.3 +0.1**
UZH Uzhgorod 151.18 337 *e*PKIKP **PKPbc** **17 34 39.6 -2.6**
UZH *e* 17 34 48.8
NIE Niedzica 151.19 340 *e*PKP **PKPdf** **17 34 36.7 +0.3**
NIE Niedzica 151.19 340 *e*PKIKP **PKPdf** **17 34 36.7 +0.3**
CFR Carcaliu 151.22 326⇑ *i*P **PKPbc** **17 34 42.7 +0.3**
CFR Carcaliu 151.22 326⇑⇑ *i*PKIKP **PKPbc** **17 34 42.7 +0.3**
DED Mersin 151.23 306 *i*P **PKPbc** **17 34 42.5 -0.3**
CRVS Cervenica-Dubn 151.25 338 *e*PKP **PKPdf** **17 34 37.2 +0.7**
CRVS *e* 17 34 43.3
PETR Petresti 151.30 327⇑ *i*P **PKPab** **17 34 53.5 +2.8**
AKSY AKSARAY - Alti 151.34 309 *i*P **PKPbc** **17 34 42.8 -0.3**
UPC Upice 151.36 346⇑ *e*PKP **PKPbc** **17 34 42.9 +0.3**
UPC *e*PP **PP** **17 38 18.6 -2.3**
UPC AMS AMS 18 43 00.0
comp=Z,700nm,20.5s
UPC Upice 151.36 346 *e*PKIKP **PKPbc** **17 34 42.9 +0.3**
UPC *e* 17 38 18.6
UPC MLR MLR
comp=Z,700nm,20.5s
BRBR Barbar 151.37 298 *e*P **PKPbc** **17 34 46.1 +2.6**
BBAL Bala 151.40 312 *i*P **PKPbc** **17 34 43.8 +0.6**
BRG Berggiesshubel 151.43 349 *i*PKP **PKPdf** **17 34 37.3 +0.6**
comp=Z,21nm,1.4s
BRG *i* 17 34 43.1
comp=Z,77nm,1.0s
BRG Berggiesshubel 151.43 349 *i*PKIKP **PKPdf** **17 34 37.3 +0.6**
BRG *i* 17 34 43.1
BRG pmax pmax
comp=Z,21nm,1.4s
DPC Dobruska-Polom 151.44 345 *e*PKPDF **PKPdf** **17 34 37.7 +0.9**
DPC ⇑ *e*PKP **PKiKP** **17 34 43.3 -0.1**
DPC AMS AMS 18 43 00.0
comp=Z,800nm,20.1s
DPC Dobruska-Polom 151.44 345 *e*PKIKP **PKPdf** **17 34 37.7 +0.9**
DPC *e* 17 34 43.3
DPC MLR MLR
comp=Z,800nm,20.1s
VRI Vrincioaia 151.44 328⇑ *i*P **PKPbc** **17 34 43.0 0.0**
VRI Vrincioaia 151.44 328⇑⇑ *i*PKIKP **PKPbc** **17 34 43.0 0.0**
OKC Ostrava-Krasne 151.45 343⇑ *e*PKP **PKPbc** **17 34 43.2 +0.4**
OKC *e*PKPAB **PKPab** **17 34 52.7 +1.5**
OKC *e*PP **PP** **17 38 19.2 -2.3**
OKC AMS AMS 18 48 20.0
comp=Z,500nm,21.8s
OKC Ostrava-Krasne 151.45 343 *e*PKIKP **PKPbc** **17 34 43.2 +0.4**
OKC *e* 17 34 52.7
OKC *e* 17 38 19.2
OKC MLR MLR
comp=Z,500nm,21.8s
ANTO Ankara 151.47 312 *e*PKIKP **PKPdf** **17 34 37.1 -0.1**
ANTO *e* 17 34 43.6
ANTO Ankara 151.47 312 *e*PKPdf **PKPdf** **17 34 37.1 -0.1**
ANTO *e*PKPbc **PKPbc** **17 34 43.5 +0.2**
ANTO LR LR
comp=Z,16nm,21.0s
PLOR Plostina 151.49 328⇑ *i*P **PKPbc** **17 34 43.2 +0.1**
PLOR Plostina 151.49 328⇑⇑ *i*PKIKP **PKPbc** **17 34 43.2 +0.1**
BCAM Yenicaga 151.50 315 *i*P **PKPbc** **17 34 44.5 +1.0**
BR231 Keskin MP Arra 151.50 312 *e*PKPdf **PKPdf** **17 34 36.5 -0.8**
BR231 *e*PKPdf **PKPdf** **17 34 37.5 -5.9**
BR231 *e*PKPbc **PKiKP** **17 34 42.7 -1.3**
BR231 *e*PKPbc PKPab 17 34 43.5 -8.5
TCHB Talchebab 151.51 296 *e*P **PKPdf** **17 34 38.9 +1.5**
TIRR Tirgusor 151.55 324 *e*PKIKP **PKPbc** **17 34 43.1 -0.1**
TIRR Tirgusor 151.55 324 *e*PKPbc **PKPbc** **17 34 43.1 -0.1**
KERG Konya-Eregli 151.57 307 *i*P **PKPbc** **17 34 43.5 -0.3**
KRLC Kraliky 151.58 345⇑ *e*PKP **PKPbc** **17 34 43.5 +0.3**
KRLC Kraliky 151.58 345 *e*PKIKP **PKPbc** **17 34 43.5 +0.3**
DYA Yadsworthy 151.64 13 *e*PKPdf **PKPdf** **17 34 37.6 +0.6**
DYA *e*PKPbc **PKiKP** **17 34 43.5 -0.2**
PVCC Panska Ves 151.64 348⇑ *e*PKP **PKPbc** **17 34 44.2 +0.9**
PVCC AMS AMS 18 46 10.0
comp=Z,800nm,21.6s
PVCC Panska Ves 151.64 348 *e*PKIKP **PKPbc** **17 34 44.2 +0.9**
PVCC MLR MLR
comp=Z,800nm,21.6s
HARR Harsova 151.65 325⇑ *i*P **PKPdf** **17 34 33.0 -4.2**
HARR Harsova 151.65 325⇑⇑ *i*PKIKP **PKPdf** **17 34 33.0 -4.2**
MORC Moravsky Berou 151.67 344⇑ *i*P **PKPbc** **17 34 43.6 +0.2**
MORC Moravsky Berou 151.67 344 *e*PKIKP **PKPdf** **17 34 36.7 -0.4**
MORC *e* 17 34 43.9
MORC Moravsky Berou 151.67 344 *e*PKPdf **PKPdf** **17 34 36.7 -0.4**
MORC *e*PKPbc **PKiKP** **17 34 43.9 +0.1**
LANS Liptovska Anna 151.68 341 *e*PKP **PKPdf** **17 34 39.8 +2.6**
LANS *e* 17 34 45.5
KKUL Konya-Kulu 151.71 311 *i*P **PKPbc** **17 34 44.5 +0.5**
KIZK Mersin 151.89 305 *i*P **PKPbc** **17 34 44.9 +0.5**
KECS Kecovo 151.94 339 *e*PKP **PKPbc** **17 34 45.4 +1.4**
KECS *e* 17 34 54.3
DOPR Dopca 152.01 330⇑ *i*P PKPab 17 35 07.7 +14
ISR Istrita 152.07 327⇑ *i*P **PKPbc** **17 34 44.3 -0.2**
ISR Istrita 152.07 327⇑⇑ *i*PKIKP **PKPbc** **17 34 44.3 -0.2**
MLR Muntele Rosu 152.09 328⇑ *i*P **PKPbc** **17 34 44.7 0.0**
MLR Muntele Rosu 152.09 328⇑⇑ *i*PKIKP **PKPbc** **17 34 44.7 0.0**
MLR Muntele Rosu 152.09 328 *e*PKPdf **PKPdf** **17 34 38.1 +0.1**
MLR *e*PKPbc **PKiKP** **17 34 45.0 0.0**
PRA Prague 152.10 348⇑ *e*PKP **PKPbc** **17 34 44.9 +0.6**
PRA AMS AMS 18 46 50.0
comp=Z,1μm,19.7s
PRA Prague 152.10 348 *e*PKIKP **PKPbc** **17 34 44.9 +0.6**
PRA MLR MLR
comp=Z,1μm,19.7s
PRU Pruhonice 152.16 348⇑ *e*PKP **PKPbc** **17 34 45.0 +0.5**
PRU AMS AMS 18 46 50.0
comp=Z,1μm,21.0s
PRU Pruhonice 152.16 348 *e*PKIKP **PKPbc** **17 34 45.0 +0.5**
PRU MLR MLR
comp=Z,1μm,21.0s
GOPC GO Pecny, Ondr 152.18 347 *e*PKPDF **PKPdf** **17 34 39.2 +1.3**
GOPC ⇑ *e*PKP **PKiKP** **17 34 45.1 +0.2**
GOPC *e*PKPAB **PKPab** **17 34 55.1 +0.8**
GOPC AMS AMS 18 46 30.0
comp=Z,900nm,17.5s
GOPC GO Pecny, Ondr 152.18 347 *e*PKIKP **PKPdf** **17 34 39.2 +1.3**
GOPC *e* 17 34 45.1
GOPC *e* 17 34 55.1
GOPC MLR MLR
comp=Z,900nm,17.5s
CJR Cluj-Napoca 152.23 333⇑ *i*P **PKPbc** **17 34 43.4 -1.4**
CJR Cluj-Napoca 152.23 333⇑⇑ *i*PKIKP **PKPbc** **17 34 43.4 -1.4**
BEBN Eben Emael 152.26 360 PKPbc **PKPbc** **17 34 45.7 +1.1**
HGN Heimansgroeve 152.29 359 *e*PKPdf **PKPdf** **17 34 39.0 +1.0**
comp=Z,2.6nm,0.0s
HGN *e*PKPbc **PKPbc** **17 34 44.7 0.0**
comp=Z,36nm,0.9s
HGN *e*PKPab **PKPab** **17 34 54.1 -0.5**
comp=Z,61nm,1.2s
NKC Novy Kostel 152.29 350⇑ *e*PKP **PKPbc** **17 34 45.2 +0.4**
NKC *e*PKPAB **PKPab** **17 34 55.3 +0.6**
NKC Novy Kostel 152.29 350 *e*PKIKP **PKPbc** **17 34 45.2 +0.4**
NKC *e* 17 34 55.3
VRAC Vranov 152.34 344⇓ *i*P **PKPbc** **17 34 47.0 +2.1**
VRAC Vranov 152.34 344⇓⇓ *i*PKIKP **PKPbc** **17 34 47.0 +2.1**
SECR 152.36 328⇑ *i*P **PKPbc** **17 34 46.3 +1.2**
MEM Membach 152.45 359 PKPbc **PKPbc** **17 34 45.1 +0.1**
VYHS Vyhne 152.46 341 *e*PKP **PKPdf** **17 34 38.3 0.0**
VYHS *e* 17 34 45.8
DRGR 152.53 334⇑ *i*P **PKPbc** **17 34 45.6 +0.1**
DRGR 152.53 334⇑⇑ *i*PKIKP **PKPbc** **17 34 45.6 +0.1**
SNF Seneffe 152.53 2 PKPbc **PKPbc** **17 34 45.5 +0.2**
KDHN Kadinhani 152.56 310 *i*P **PKPbc** **17 34 45.8 -0.1**
VOIR 152.56 329⇑ *i*P **PKPbc** **17 34 45.1 -0.5**
VOIR 152.56 329⇑⇑ *i*PKIKP **PKPbc** **17 34 45.1 -0.5**
TREC Trest 152.62 346⇑ *e*PKP **PKPbc** **17 34 46.0 +0.4**
TREC *ex* x 17 38 51.2
TREC AMS AMS 18 44 00.0
comp=Z,600nm,23.0s
TREC Trest 152.62 346 *e*PKIKP **PKPbc** **17 34 46.0 +0.4**
TREC MLR MLR
comp=Z,600nm,23.0s
PSZ Piszkesteto 152.63 339⇑ *i*P **PKPbc** **17 34 47.5 +1.8**
PSZ Piszkesteto 152.63 339⇓⇓ *e*PKPdf **PKPdf** **17 34 38.5 -0.2**
PSZ Piszkesteto 152.63 339 *e*PKIKP **PKPdf** **17 34 38.4 -0.2**
PSZ *e* 17 34 46.2
PSZ MLR MLR
comp=Z,758nm,20.0s
PSZ Piszkesteto 152.63 339 *e*PKPdf **PKPdf** **17 34 38.4 -0.2**
PSZ *e*PKPbc **PKiKP** **17 34 46.2 +0.3**
PSZ *e*PKPab **PKPab** **17 34 56.0 -0.3**
PSZ LR LR
comp=Z,758nm,20.0s
BCLA Clavier 152.64 0 PKPbc **PKPbc** **17 34 45.9 +0.4**
BCLA PKPab **PKPab** **17 34 55.6 -0.5**
ERMK Ermenek 152.76 306 *i*P **PKPbc** **17 34 47.7 +1.2**
ESKT Eskisehir 152.95 313 *i*P **PKPbc** **17 34 47.6 +0.8**
DOU Dourbes 152.96 1 PKPbc **PKPbc** **17 34 46.2 0.0**
GRFO Grafenberg 153.00 352 *e*PKIKP **PKPbc** **17 34 44.6 -1.8**
GRFO *e* 17 34 57.9
GRFO Grafenberg 153.00 352 *e*PKPbc **PKPbc** **17 34 44.6 -1.8**
GRFO *e*PKPab **PKPab** **17 34 57.9 +0.2**
CSS Mathiatis 153.03 302 *e*PKPdf **PKPdf** **17 34 38.4 -1.2**
CSS *e*PKPbc **PKiKP** **17 34 47.1 0.0**
CSS *e*PKPab **PKPab** **17 34 59.2 +0.8**
CSS LR LR
comp=Z,158nm,20.0s
LOT Lotru 153.14 331⇓⇓ *i*P **PKPbc** **17 34 45.3 -1.7**
KHC Kasperske Hory 153.17 348 *e*PKPDF **PKPdf** **17 34 39.6 +0.2**
KHC ⇑ *e*PKP **PKiKP** **17 34 47.1 +0.1**
KHC *e*PKPAB **PKPab** **17 34 58.5 +0.1**
KHC *e*PP **PP** **17 38 26.7 -4.5**
KHC *ex* x 17 38 42.0
KHC *ex* x 17 48 54.4
KHC AMS AMS 18 47 30.0
comp=Z,1μm,20.1s
KHC Kasperske Hory 153.17 348 *e*PKIKP **PKPdf** **17 34 39.6 +0.2**
KHC *e* 17 34 47.1
KHC *e* 17 38 26.7
KHC MLR MLR
comp=Z,1μm,20.1s
KHC Kasperske Hory 153.17 348 *e*PKPdf **PKPdf** **17 34 39.3 0.0**
KHC *e*PKPbc **PKiKP** **17 34 47.4 +0.4**
SIRR Siria 153.38 335⇑ *i*P **PKPbc** **17 34 47.9 +0.6**
WLF Walferdange 153.39 359 PKPbc **PKPbc** **17 34 48.2 +1.0**
WLF Walferdange 153.39 359 *e*PKIKP **PKPdf** **17 34 40.3 +0.7**
WLF *e* 17 34 48.2
WLF MLR MLR
comp=Z,837nm,20.0s
WLF Walferdange 153.39 359 *e*PKPdf **PKPdf** **17 34 40.2 +0.7**
WLF *e*PKPbc **PKPbc** **17 34 48.2 +1.0**
WLF LR LR
comp=Z,837nm,20.0s
GEC2 GERESS Array S 153.42 348 *e*PKIKP **PKPdf** **17 34 39.4 -0.4**
GEC2 *e* 17 34 48.0
GEC2 GERESS Array S 153.42 348 *e*PKPdf **PKPdf** **17 34 39.4 -0.4**
GEC2 *e*PKPbc **PKiKP** **17 34 48.0 +0.5**
GERES GERESS Array B 153.42 348 PKP **PKPdf** **17 34 39.5 -0.4**
comp=Z,1.9nm,1.0s,baz=107,slow=1.4,SNR=14
GERES PKPbc **PKiKP** **17 34 47.7 +0.1**
comp=Z,5.9nm,0.9s,baz=48,slow=2.0,SNR=23
GEA0 GERESS Array S 153.43 348 *e*PKPdf **PKPdf** **17 34 39.6 -0.2**
GEA0 *e*PKPbc **PKPbc** **17 34 47.4 -0.1**
GZR Gura Zlata 153.62 332⇑ *i*P **PKPdf** **17 34 41.7 +1.5**

GZR	Gura Zlata	153.62	332	⇑PKIKP	PKPdf	17 34 41.7	+1.5		
SZH	Strazhica	153.68	325	*i* P	PKPab	17 35 01.1	+0.3		
CONA	Conrad Observa	153.80	344	*i* PKPdf	PKPdf	17 34 40.7	+0.3		
	comp=Z,11nm,1.2s,SNR=6.8								
CONA				*i* PKiKP	PKiKP	17 34 48.8	+0.4		
	comp=Z,30nm,1.3s								
CONA				*i* PKPab	PKPab	17 35 03.4	+2.2		
	comp=Z,51nm,1.7s								
BZS	Buzias	153.93	334	⇑*i*P	PKPdf	17 34 39.1	-1.4		
BZS	Buzias	153.93	334	⇑PKIKP	PKPdf	17 34 39.1	-1.4		
MOA	Molln	154.25	346	*i* PKPdf	PKPdf	17 34 41.4	+0.5		
	comp=Z,13nm,1.6s								
MOA				*i* PKPab	PKPab	17 35 04.8	+1.7		
	comp=Z,19nm,1.6s								
ARSA	Arzberg	154.52	344	*i* PKPdf	PKPdf	17 34 42.3	+0.9		
	comp=Z,5.9nm,0.9s								
PKSM	Moragy	154.54	339	⇑*i*P	PKPdf	17 34 41.4	+0.1		
PKSM	Moragy	154.54	339	⇓ePKPdf	PKPdf	17 34 40.9	-0.4		
PKSM	Moragy	154.54	339	⇑PKIKP	PKPdf	17 34 41.4	+0.1		
BFO	Black Forest	154.63	356	*i* PKIKP	PKPbc	17 34 51.8	+1.8		
BFO	Black Forest	154.63	356	ePKPdf	PKPdf	17 34 41.3	-0.1		
BFO				ePKPbc	PKPbc	17 34 49.6	-0.3		
BFO				ePKPab	PKPab	17 35 05.4	+0.7		
BFO				LR	LR				
	comp=Z,452nm,20.0s								
MPEP	Malo Peshtene	154.73	328	*i* P	PKPdf	17 34 41.2	-0.5		
PLD	Plovdiv	155.14	324	*i* P	PKPab	17 35 08.3	+1.3		
SOKA	Soboth	155.17	344	*i* PKPdf	PKPdf	17 34 42.1	-0.2		
	comp=Z,9.9nm,1.3s,SNR=11								
KBA	Koelnbreinsper	155.18	347	*i* PKPdf	PKPdf	17 34 41.7	-0.7		
	comp=Z,13nm,1.5s								
PERS	Pernice	155.19	344	*i* PKPdf	PKPdf	17 34 41.3	-1.0		
PERS				*i*		17 35 05.9			
RETA	Reutte	155.22	352	*i* sPKPdf	PKPdf	17 34 52.5	+10		
	comp=Z,9.4nm,1.3s								
RETA				*i* PKPab	PKPab	17 35 08.8	+0.1		
	comp=Z,22nm,1.4s								
WTTA	Wattenberg	155.31	350	*i* PKPdf	PKPdf	17 34 43.7	+1.1		
	comp=Z,0.4nm,0.3s								
OBKA	Obir	155.45	345	*i* PKPdf	PKPdf	17 34 43.2	+0.5		
	comp=Z,4.1nm,1.0s								
DAVA	Damuels	155.53	353	*i* sPKPdf	PKPdf	17 34 52.4	+9.5		
	comp=Z,18nm,1.4s								
DAVA				*i* PKPab	PKPab	17 35 08.8	+0.1		
	comp=Z,25nm,1.8s								
MYKA	Terra Mystica	155.54	346	PKPdf	PKPdf	17 34 42.4	-0.4		
	comp=Z,11nm,1.3s								
ABTA	Abfaltersbach	155.66	348	*i* PKPdf	PKPdf	17 34 42.6	-0.4		
	comp=Z,19nm,1.3s,SNR=11								
FETA	Feichten	155.68	351	*i* PKPdf	PKPdf	17 34 43.1	0.0		
	comp=Z,9.6nm,1.0s								
FETA				*i* sPKPdf	sPKPdf	17 34 52.8	-5.5		
	comp=Z,7.4nm,1.0s								
FETA				*i* PKPab	PKPab	17 35 10.6	+1.2		
	comp=Z,20nm,1.2s								
MMB	Musomiste	156.02	325	*i* P	PKPab	17 35 10.6	-0.3		
VISS	Visnje	156.04	344	ePKPdf	PKPdf	17 34 42.6	-0.9		
VISS				*e*		17 35 08.4			
FUORN	Ofenpass-Fuorn	156.14	352	ePKPdf	PKPdf	17 34 43.8	-0.1		
FUORN				ePKPdif	PKPdf	17 34 55.2	+11		
FUORN				ePKPab	PKPab	17 35 10.9	-0.5		
JAVS	Javornik	156.14	345	*i* PKPdf	PKPdf	17 34 42.8	-0.9		
JAVS				*e*		17 35 08.3			
KKB	Krupnik	156.15	326	*i* P	PKPab	17 35 10.9	-0.5		
BOJS	Bojanci	156.21	343	*i* PKPdf	PKPdf	17 34 43.4	-0.2		
BOJS				*i*		17 35 08.8			
TUE	Stuetta	156.39	353	ePKPdf	PKPdf	17 34 43.8	-0.3		
TUE				LR	LR				
	comp=Z,658nm,19.0s								
SENIN	Lac Senin/Sane	156.66	357	ePKPdf	PKPdf	17 34 44.4	-0.1		
SENIN				ePKPab	PKPab	17 35 13.4	-0.3		
SSB	Saint Sauveur	157.77	2	PFAKE		17 35 00.0	+14		
SSB				LR	LR				
	comp=Z,730nm,21.0s								
PGAV	Gavieira, Arco	157.85	28	*e*LR	LR	18 33 27.6			
	comp=Z,834nm,20.0s								
BNI	Bardonecchia	157.99	358	PFAKE		17 35 00.0	+14		
BNI				LR	LR				
	comp=Z,737nm,20.0s								
TIR	Tirane	158.12	330	PFAKE		17 35 00.0	+14		
TIR				LR	LR				
	comp=Z,1μm,22.0s								
SANT	Santorini	158.23	312	PFAKE		17 35 00.0	+13		
SANT				LR	LR				
	comp=Z,493nm,21.0s								
VLC	Villacollemand	158.53	350	PFAKE		17 35 00.0	+13		
VLC				LR	LR				
	comp=Z,309nm,20.0s								
PBRG	Braganca	158.62	26	ePKPab	PKPab	17 35 21.9	-0.2		
PVRL	Vila Real	158.65	28	ePKPdf	PKPdf	17 34 48.4	+1.5		
PVRL	Vila Real	158.65	28	ePKPab	PKPab	17 35 23.1	+0.9		
PVIS	Viseu	159.02	30	ePKPab	PKPab	17 35 23.9	0.0		
MVO	Moncorvo	159.04	27	ePKPdf	PKPdf	17 34 47.9	+0.5		
MVO	Moncorvo	159.04	27	ePKPab	PKPab	17 35 23.4	-0.5		
MVO	Moncorvo	159.04	27	*e*LR	LR	18 33 24.0			
	comp=Z,695nm,22.0s								
MTE	Manteigas	159.44	29	ePKPdf	PKPdf	17 34 48.3	+0.4		
MTE	Manteigas	159.44	29	*e*LR	LR	18 33 46.7			
	comp=Z,755nm,22.0s								
MTE	Manteigas	159.44	29	PFAKE		17 35 00.0	+12		
MTE				LR	LR				
	comp=Z,858nm,20.0s								
AQU	L'Aquila	159.63	343	PFAKE		17 35 00.0	+12		
AQU				LR	LR				
	comp=Z,716nm,21.0s								
PTOM	Tomar	159.64	32	ePKPab	PKPab	17 35 26.5	0.0		
PCBR	Castelo Branco	159.91	30	ePKPdf	PKPdf	17 34 50.8	+2.5		
PCBR	Castelo Branco	159.91	30	ePKPab	PKPab	17 35 27.7	0.0		
LIS	Lisbon	159.94	35	*e*P	PKPdf	17 34 48.0	-0.4		
LIS				AMS	AMS	18 41 26.3			
	comp=Z,822nm,22.9s								
LIS	Lisbon	159.94	35	ePKIKP	PKPdf	17 34 48.0	-0.4		
PMRV	Marv??o	160.28	31	ePKPdf	PKPdf	17 34 49.3	+0.5		
PMRV	Marv??o	160.28	31	ePKPab	PKPab	17 35 29.2	-0.1		
PMRV	Marv??o	160.28	31	*e*LR	LR	18 36 24.2			
	comp=Z,841nm,20.0s								
LIC	Lamto	160.45	147	ePKIKP	PKPdf	17 34 50.3	+0.6		
	comp=Z,111nm,1.7s								
PESTR	Estremoz	160.62	32	ePKPab	PKPab	17 35 30.1	-0.7		
EVO	Evora	160.67	34	ePKPab	PKPab	17 35 31.5	+0.5		
KIC	Kosan Boka	160.71	148	ePKIKP	PKPdf	17 34 50.4	+0.4		
	comp=Z,104nm,1.6s								
PNCL	Nicolau / Gran	160.71	36	ePKPdf	PKPdf	17 34 50.1	+0.8		
TIC	Toumodi	160.81	146	ePKIKP	PKPdf	17 34 50.7	+0.6		
DBIC	Dimbokro	160.91	147	PKP	PKPdf	17 34 50.7	+0.5		
	comp=Z,13nm,0.9s,baz=210,slow=0.3,SNR=11								
DBIC				PKPab	PKPab	17 35 33.9	+1.3		
	comp=Z,9.1nm,0.8s,baz=193,slow=6.9,SNR=6.7								
DBIC	Dimbokro	160.91	147	ePKIKP	PKPdf	17 34 51.2	+1.0		
DBIC	Dimbokro	160.91	147	ePKPdf	PKPdf	17 34 51.1	+1.0		
DBIC				ePKPab	PKPab	17 35 31.0	-1.6		
CUC	Castrocucco	160.96	335	PFAKE		17 35 00.0	+10		
CUC				LR	LR				
	comp=Z,376nm,20.0s								
MESJ	Messejana	161.08	36	*e*P	PKPdf	17 34 49.5	-0.2		
MESJ				ePP	PP	17 39 15.5	+0.1		
MESJ				AMS	AMS	18 58 52.9			
	comp=Z,603nm,19.7s								
MESJ	Messejana	161.08	36	ePKIKP	PKPdf	17 34 49.4	-0.2		
MESJ				*e*		17 39 15.5			
MORF	Marmelete	161.23	37	*e*P	PKPdf	17 34 49.5	-0.4		
MORF				AMS	AMS	18 45 44.8			
	comp=Z,733nm,16.9s								
MORF	Marmelete	161.23	37	ePKIKP	PKPdf	17 34 49.5	-0.4		
TIP	Timpagrande	161.27	332	ePKPdf	PKPdf	17 34 50.1	+0.1		
TIP				ePKPab	PKPab	17 35 29.7	-4.0		
TIP				LR	LR				
	comp=Z,658nm,20.0s								
PCVE	Castro Verde	161.33	36	ePKPab	PKPab	17 35 35.0	+1.1		
PBAR	Barrancos	161.43	33	ePKPdf	PKPdf	17 34 52.2	+2.2		
PBAR	Barrancos	161.43	33	PKPab	PKPab	17 35 34.4	0.0		
PAB	San Pablo	161.50	25	PFAKE		17 35 00.0	+10		
PAB				LR	LR				
	comp=Z,1μm,20.0s								
ESDC	Sonseca Array	161.53	24	PKP	PKPdf	17 34 50.2	+0.1		
	comp=Z,1.6nm,0.8s,baz=343,slow=2.4,SNR=9.2								
ESDC				PKPab	PKPab	17 35 34.8	0.0		
	comp=Z,2.9nm,0.7s,baz=316,slow=4.3,SNR=14								
ESDC				PP	PP	17 39 18.9	+1.4		
	comp=Z,1.0nm,1.0s,baz=339,slow=3.8,SNR=4.5								
ES19	SONSECA Array	161.53	24	ePKPdf	PKPdf	17 34 50.8	+0.6		
ES19				ePKPab	PKPab	17 35 34.2	-0.6		
ES19				ePP	PP	17 39 14.4	-3.1		
PVAQ	Vaqueiros	161.67	36	ePKPdf	PKPdf	17 34 52.5	+2.2		
PVAQ	Vaqueiros	161.67	36	*e*LR	LR	18 38 17.3			
	comp=Z,650nm,20.0s								
PBDV	Barranco-do-Ve	161.67	36	ePKPdf	PKPdf	17 34 53.4	+3.0		
PBDV	Barranco-do-Ve	161.67	36	ePKPab	PKPab	17 35 36.2	+0.7		
CEL	Celeste	162.40	332	PFAKE		17 35 00.0	+8.9		
CEL				LR	LR				
	comp=Z,493nm,20.0s								
VSL	Villasalto	163.25	350	PFAKE		17 35 00.0	+8.2		
VSL				LR	LR				
	comp=Z,676nm,21.0s								
CLTB	Caltabellotta	164.05	337	PFAKE		17 35 00.0	+7.2		
CLTB				LR	LR				
	comp=Z,539nm,22.0s								
RTC	Rabat Centre	164.57	42	PFAKE		17 35 00.0	+6.8		
RTC				LR	LR				
	comp=Z,3μm,20.0s								
WDD	Wied Dalam	165.00	331	PFAKE		17 35 00.0	+6.5		
WDD				LR	LR				
	comp=Z,898nm,19.0s								
TAM	Tamanrasset	179.78	175	ePKIKP	PKPdf	17 35 00.9	+0.3		
TAM				*e*		17 40 49.3			
TAM				MLR	MLR				
	comp=Z,595nm,19.0s								
TAM	Tamanrasset	179.78	175	ePKPdf	PKPdf	17 35 00.9	+0.3		
TAM				ePP	PP	17 40 49.3	+0.9		
TAM				LR	LR				
	comp=Z,595nm,19.0s								

SOME ***22*** *17:35:15.6, 40.˚93N×71.˚25E, h0km*
KRNET ***22*** *17:35:17.0±0.1, 40.˚83N×71.˚20E, h30km, mb1.9*
NNC ***22*** *17:35:19.5±2.4, 41.˚03N×71.˚56E, h0km, mb2.5, mpv2.2,*
Error ellipse: s-maj=27.0km s-min=11.1km az=59.0

ISC 22 17:35:15.8±2.1, **40.˚82N**±0.˚03×**71.˚17E**±0.˚04, **h10**km±16km, **n13**, σ**0**°**85**/**26**, **11C-7D, Tajikistan**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
BTK	**Batken**	**0.81**	**199**	⇑*e*P	**Pb**	**17 35 32.3**	**+0.3**
	baz=201						
BTK				⇑*i*S	**Sn**	**17 35 44.7**	**-0.7**
	baz=201						
ARK	**Arkit**	**1.15**	**31**	⇓*e*P	**Pb**	**17 35 37.5**	**-0.3**
	baz=31						
ARK				⇓*i*S	**Sg**	**17 35 53.6**	**+0.8**
	baz=31						
OHH	**Osh**	**1.27**	**103**	⇑*i*P	**Pn**	**17 35 39.2**	**-0.4**
	baz=103						
OHH				⇑*i*S	**Sn**	**17 35 56.6**	**-0.1**
	baz=103						
IUG	**Iuzhnay**	**1.58**	**328**	*e*P	**Pn**	**17 35 44.1**	**+0.2**
	18nm,0.2s						
IUG				*e*S	**Sb**	**17 36 04.6**	**-0.5**
	50nm,0.3s						
MNAS	**Manas**	**1.94**	**31**	⇓*e*P	**Pn**	**17 35 49.8**	**+0.8**
	baz=30						
MNAS				⇓*i*S	**Sn**	**17 36 13.5**	**0.0**
	baz=30						
MNAS	**Manas**	**1.94**	**31**	⇓Pn	**Pn**	**17 35 49.9**	**+0.9**
	1.6nm,0.5s						
MNAS				⇑Sn	**Sn**	**17 36 12.9**	**-0.6**
	3.9nm,0.4s						
SFK	**Sufi-Kurgan**	**1.96**	**114**	⇓*e*P	**Pb**	**17 35 50.9**	**-0.8**
	baz=114						
SFK				⇓*i*S	**Sb**	**17 36 15.7**	**-0.5**
	baz=114						
SFK	**Sufi-Kurgan**	**1.96**	**114**	⇑Pn	**Pb**	**17 35 50.8**	**-0.8**
	0.3nm,0.3s						
SFK				⇑Sn	**Sb**	**17 36 17.0**	**+0.7**
	4.1nm,0.3s						
BRLS	**Borolday**	**2.26**	**331**	*e*P	**Pb**	**17 35 56.3**	**-0.4**
	4.1nm,0.3s						
BRLS				*e*S	**Sb**	**17 36 25.4**	**+0.8**
	9.6nm,0.2s						
AML	**Almayashu**	**2.31**	**55**	⇑*i*P	**Pn**	**17 35 54.2**	**0.0**
	baz=54						
AML				⇑*i*S	**Sn**	**17 36 24.6**	**+1.8**
	baz=54						
KK31	**Karatay Array**	**2.33**	**348**	Pn	**Pb**	**17 35 56.2**	**-1.7**
	1.2nm,0.3s,baz=152,slow=14,SNR=35						
KK31				Sn	**Sb**	**17 36 26.4**	**-0.4**
	7.7nm,0.5s,baz=153,slow=28,SNR=10						
MRKS	**Merke**	**2.46**	**38**	*e*P	**Pb**	**17 35 59.2**	**-1.0**
	1.6nm,0.2s						
MRKS				*e*S	**Sb**	**17 36 30.1**	**-0.5**
	11nm,0.4s						
EKS2	**Erkin-Say**	**2.68**	**46**	⇑*i*P	**Pn**	**17 35 59.9**	**+0.8**
	baz=46						
EKS2				⇑*i*S	**Sn**	**17 36 32.7**	**+0.9**
	baz=46						

RSNC ***22*** *17:42:55.1±0.8, 11.˚35N×72.˚89W, h100km±56km, ML2.4*
ISCJB ***22*** *17:42:56.7±1.3, 10.˚92N±0.˚05×72.˚69W±0.˚05, h9km±8km,*
Error ellipse: s-maj=10.1km s-min=6.8km az=38.3
FUNV ***22*** *17:42:59.6, 10.˚85N×72.˚59W, h2km, MW2.9*

ISC 22 17:42:53.9±2.3, **11.˚04N**±0.˚06×**72.˚74W**±0.˚07, **h3**km±14km, **n19**, σ**1**°**77**/**24**, **1C, Near north coast of Colombia**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
VIRV	**Villa del Rosa**	**0.62**	**149**	⇑*e*P	**Pg**	**17 43 06.7**	**+0.8**
VIRV				*e*S	**Sg**	**17 43 13.2**	**-0.7**
URIC	**Uribia, Colomb**	**0.98**	**48**	*e*P	**Pn**	**17 43 14.8**	**+0.2**
URIC				*i*		17 43 17.2	
	comp=Z,64nm,0.2s						
URIC				*e*S	**Sn**	**17 43 29.0**	**0.0**
DABV	**Dabajuro**	**2.06**	**93**	*e*P	**Pb**	**17 43 32.3**	**+0.3**
DABV				*e*S	**Sb**	**17 43 58.1**	**0.0**
QARV	**Quebrada Arrib**	**2.33**	**111**	*e*P	**Pb**	**17 43 36.0**	**-0.6**
QARV				*e*S	**Sn**	**17 44 01.6**	**-0.7**
OCAC	**Ocana**	**2.84**	**192**	*e*P	**Pn**	**17 43 41.6**	**+1.3**
OCAC				*e*S	**Sb**	**17 44 19.4**	**-1.2**
MONV	**Montecano**	**2.86**	**71**	*e*P	**Pb**	**17 43 44.6**	**-0.9**
SIQV	**Siquisique**	**2.90**	**97**	*e*P	**Pb**	**17 43 43.3**	**-3.0**
CURV	**Curarigua**	**2.91**	**110**	*e*P	**Pb**	**17 43 43.6**	**-2.9**
CURV				*e*S	**Sn**	**17 44 15.9**	**-0.9**
GRMC	**Gramalote, San**	**3.30**	**181**	*e*P	**Pn**	**17 43 45.8**	**-0.9**
GRMC				*i*		17 44 38.8	
	comp=Z,15nm,0.5s						
CBRI	**Barrientos, No**	**3.30**	**181**	*e*P	**Pn**	**17 43 49.6**	**+2.9**
SOCV	**Socops**	**3.31**	**146**	*e*P	**Pn**	**17 43 48.3**	**+1.7**
SANV	**Sanarito**	**3.50**	**116**	*e*P	**Pn**	**17 43 51.8**	**+2.4**
TEPV	**Terepaima**	**3.65**	**107**	*e*P	Pn	17 43 54.1	+2.8
BRRC	**Barranca, Sant**	**4.02**	**194**	*e*P	**Pn**	**17 43 57.3**	**+0.8**
BRRC				*i*		17 43 57.9	
	comp=Z,2.3nm,0.2s						
BTLC	**Betulia, Santa**	**4.13**	**187**	*e*P	**Pn**	**17 44 00.4**	**+2.3**
MAPV	**Macapo**	**4.38**	**106**	*e*P	**Pn**	**17 44 03.3**	**+2.0**
TURV	**Turiamo**	**4.85**	**96**	*e*P	**Pn**	**17 44 10.0**	**+2.2**
BAUV	**El Baul**	**5.07**	**114**	*e*P	**Pn**	**17 44 12.5**	**+1.6**
RUSC	**La Rusia**	**5.12**	**184**	*e*P	**Pn**	**17 44 13.6**	**+1.6**

IDC ***22*** *17:45:16.9±0.9, 62.˚14S×164.˚69E, h0km, mb4.4/7,*
mb1 4.6/9, mb1mx4.5/20, mbtmp4.5/9, ML4.8/2, MS4.5/11,
Ms1 4.5/11, ms1mx4.3/24, Error ellipse: s-maj=31.9km
s-min=20.1km az=91.0
ISCJB ***22*** *17:45:17.2±0.4, 62.˚15S±0.˚04×164.˚5E±0.˚2, h10km,*
mb4.6/19, MS4.4/9, Error ellipse: s-maj=13.0km
s-min=5.6km az=8.5
GCMT ***22*** *17:45:18.6±0.3, 62.˚16S×165.˚13E, h19km±1km, MW5.1/84,*
Moment Tensor Solution. s24,c34; s84,c121; Duration:
*0 Moment tensor: Scale 10**16**Nm; Mrr=-1.80±.29;*
Mθθ=5.97±.21; Mϕϕ=-4.17±.19; Mrθ=-2.93±.46; Mrϕ=-1.01±.15;
*Mθϕ=0.06±.45; Best double couple: M=5.66800×10**16***
NP1:ϕs=230.00000°, δ83.00000°, λ161.00000°. NP2:
ϕs=323.00000°, δ71.00000°, λ8.00000°. Principal axes: T
7.0360, Plg18.0000°, Azm185.0000°; N -2.7350,
Plg70.0000°, Azm30.0000°; P -4.3010, Plg8.0000°,
Azm278.0000°; nsta1 refers to body waves, cutoff=40s.
nsta2 refers to surface waves, cutoff=50s.
NEIC ***22*** *17:45:18.6±0.4, 62.˚14S×164.˚46E, h10km, mb5.0/29 Error*
ellipse: s-maj=13.5km s-min=6.3km az=98.0

ISC 22 17:45:18.7±0.5, **62.˚16S**±0.˚07×**164.˚6E**±0.˚1, **h10**km, **n72**, σ**1**°**34**/**55**, **mb4.6**/**19**, **MS4.4**/**9**, **1C, Balleny Islands region**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MCQ	**Macquarie Isla**	**8.23**	**336**	*e*Pn	Pn	17 47 14.0	-4.0
VNDA	**Vanda**	**15.46**	**182**	Pn	**Pn**	**17 48 55.6**	**-0.9**
	4.7nm,0.3s,baz=357,slow=13,SNR=176						
VNDA				LR	LR	17 53 50.8	
	comp=Z,3μm,20.8s,baz=2.5,slow=33						
VNDA	**Vanda**	**15.46**	**182**	*e*Pn	**Pn**	**17 48 55.7**	**-0.8**
	120nm,1.5s						
SBA	**Scott Base**	**15.79**	**178**	*e*Pn	**Pn**	**17 49 00.5**	**-0.2**
	215nm,1.3s						
PYZ	**Puysegur Point**	**16.07**	**5**	*e*Pn	**Pn**	**17 49 02.8**	**-1.7**
	216nm,1.6s						
WHZ	**Wether Hill Ro**	**16.41**	**8**	*e*Pn	**Pn**	**17 49 06.5**	**-2.5**
	264nm,1.8s						
DCZ	**Deep Cove**	**16.79**	**6**	*e*Pn	**Pn**	**17 49 12.3**	**-1.4**
	79nm,1.3s						
MLZ	**Mavora Lakes**	**16.95**	**9**	*e*Pn	**Pn**	**17 49 14.3**	**-1.4**
	315nm,2.0s						
ODZ	**Otahua Downs**	**17.50**	**14**	*e*Pn	**Pn**	**17 49 23.1**	**+0.5**
	276nm,2.0s						
WKZ	**Wanaka**	**17.55**	**10**	*e*Pn	**P**	**17 49 24.5**	**+0.1**
	216nm,1.4s						
LBZ	**Lake Benmore**	**18.10**	**13**	*e*Pn	**Pn**	**17 49 29.6**	**-0.5**
	235nm,1.8s						
RPZ	**Rata Peaks**	**18.86**	**15**	P	**Pn**	**17 49 39.6**	**+0.2**
	2.3nm,0.3s,baz=182,slow=9.2,SNR=7.4						
RPZ				LR	LR	17 55 47.9	
	comp=Z,2μm,20.1s,baz=131,slow=34						
RPZ	**Rata Peaks**	**18.86**	**15**	*e*P	**Pn**	**17 49 39.1**	**-0.2**
	205nm,1.5s						
MQZ	**McQueen's Vall**	**19.08**	**18**	*e*P	**Pn**	**17 49 41.8**	**-0.2**
	102nm,1.4s						
CRLZ	**Canterbury Las**	**19.21**	**18**	*e*P	**Pn**	**17 49 43.1**	**-0.4**
	189nm,1.6s						
OXZ	**Oxford**	**19.37**	**17**	*e*P	**Pn**	**17 49 46.5**	**+1.0**
	111nm,1.6s						
LTZ	**Lake Taylor**	**19.94**	**17**	*e*P	**Pn**	**17 49 54.5**	**+2.2**
	40nm,1.0s						
KHZ	**Kahutara**	**20.48**	**19**	*e*P	Pn	17 50 02.0	+3.5
	116nm,1.3s						
THZ	**Tophouse**	**21.03**	**18**	*e*P	**P**	**17 50 06.0**	**+3.6**
	37nm,1.0s						
BFZ	**Birch Farm**	**22.63**	**24**	*e*P	**P**	**17 50 21.3**	**+1.8**
	138nm,1.4s						
BKZ	**Black Stump Fm**	**24.15**	**23**	*e*P	**P**	**17 50 34.7**	**0.0**
	67nm,1.5s						
URZ	**Urewera**	**25.14**	**24**	P	**P**	**17 50 42.4**	**-1.3**
	51nm,1.1s,baz=243,slow=4.4,SNR=8.1						
URZ				LR	LR	18 00 24.7	
	comp=Z,2μm,18.6s,baz=182,slow=36						
URZ	**Urewera**	**25.14**	**24**	*e*P	**P**	**17 50 42.8**	**-0.8**
	64nm,1.1s						
QSPA	**South Pole Qui**	**27.93**	**180**	*e*P	**P**	**17 51 09.2**	**+0.4**
STKA	**Stephens Creek**	**33.73**	**323**	P	**P**	**17 52 01.2**	**+1.2**
	3.7nm,0.8s,baz=162,slow=6.0,SNR=6.3						
STKA				LR	LR	18 03 02.0	
	comp=Z,503nm,20.5s,baz=155,slow=32						
STKA	**Stephens Creek**	**33.73**	**323**	*e*P	**P**	**17 52 01.7**	**+1.7**
	9.1nm,1.3s						
EIDS	**Eidsvold**	**37.89**	**340**	*e*P	**P**	**17 52 35.8**	**+0.1**
	13nm,1.3s						
MAW	**Mawson**	**38.83**	**217**	P	**P**	**17 52 44.1**	**+0.9**
	8.1nm,0.9s,baz=156,slow=11,SNR=5.7						
DZM	**Mont Dzumac**	**40.08**	**3**	LR	LR	18 08 12.4	
	comp=Z,298nm,18.5s,baz=230,slow=34						
H01W1	**Cape Leeuwin H**	**41.53**	**287**	T	T	18 37 47.3	
	baz=147,slow=76,SNR=77						
H01W2	**Cape Leeuwin H**	**41.53**	**287**	T	T	18 37 47.6	
	baz=147,slow=76,SNR=84						
H01W3	**Cape Leeuwin H**	**41.55**	**287**	T	T	18 37 48.5	
	baz=147,slow=76,SNR=68						
NWAO	**Narrogin (SRO)**	**41.83**	**292**	*e*P	**P**	**17 53 09.1**	**+0.7**
	18nm,1.2s						
SYO	**Syowa Base**	**43.40**	**205**	⇑*e*X		17 53 15.4	
AS01	**Alice Springs**	**43.72**	**317**	*e*P	**P**	**17 53 24.1**	**+0.3**
ASAR	**Alice Springs**	**43.73**	**317**	P	**P**	**17 53 24.4**	**+0.4**
	6.6nm,0.8s,baz=160,slow=7.7,SNR=69						
AS31	**Alice Springs**	**43.73**	**317**	*e*P	**P**	**17 53 23.6**	**-0.4**
	2.9nm,0.6s						
CTAO	**Charters Tower**	**43.92**	**335**	*e*P	**P**	**17 53 26.3**	**+0.8**
	9.0nm,1.0s						
SNAA	**Sanae**	**46.16**	**185**	P	**P**	**17 53 42.8**	**0.0**
SNAA	**Sanae**	**46.16**	**185**	*e*P	**P**	**17 53 42.1**	**-0.7**
	32nm,1.2s						
VNA3	**Neumayer Olymp**	**46.81**	**183**	P	**P**	**17 53 47.5**	**-0.4**
VNA2	**Neumayer--Watz**	**47.08**	**184**	P	**P**	**17 53 49.9**	**0.0**
	baz=166,slow=7.5						
WR1	**Warramunga Arr**	**47.09**	**320**	*e*P	**P**	**17 53 49.5**	**-1.0**
	34nm,1.8s						
WR1				*e*PcP	**

RTLL	**Cerro Villicun**	**0.69**	**84**	*i* P		Pn	17 58 25.5	+0.7
RTLL				*i* S		Sn	17 58 39.2	+0.9
RTCV	**Cerro Valdivia**	**0.78**	**126**	*i* P		Pn	17 58 26.3	+0.7
RTCV				*i* S		Sn	17 58 40.9	+1.2
AMOG	**MOGNA**	**0.82**	**56**	*i* P		Pn	17 58 26.6	+0.6
AMOG				*i* S		Sn	17 58 41.4	+1.0
AUSP	**Uspallata**	**0.82**	**187**	*i* P		Pn	17 58 27.5	+1.2
AUSP				*i* S		Sn	17 58 42.6	+1.7
ASAL	**Salagasta**	**1.24**	**163**	*i* P		Pn	17 58 31.2	+0.8
AVFE	**Valle Fertil**	**1.73**	**65**	*i* P		Pn	17 58 37.4	+1.1
AVFE				IAML			17 59 00.6	
	comp=Z,6.6nm,0.3s							

CSEM ***22*** *18:02:59.7, 38.22N×26.55W, h0km, ML3.3*
PDA 22 18:02:59.7±1.1, 38.22N×26.55W, h0km±4km, MD3.5, ML3.3, Error ellipse: s-maj=7.5km s-min=1.5km az=33.0, Azores Islands

Code	Station Name	Δ°	AZ°	Phase	ID		Time		Res
				Op		ISC	h	m s	ISC
ADH	**Angra Heroismo**	**0.69**	**309**	*e*P		Pg	18 03 11.3		-1.7
ADH				*e*S		Sg	18 03 20.5		-1.4
ADH	**Angra Heroismo**	**0.69**	**309**	*e*P		Pg	18 03 11.3		-1.7
ADH				*e*S		Sg	18 03 20.5		-1.4
ADH				A		A	18 03 23.1		
	1μm,0.3s								
PSET	**Sete Cidades**	**0.76**	**121**	*e*P		Pg	18 03 12.8		-1.5
PSET				*e*S		Sg	18 03 22.8		-1.4
PSET	**Sete Cidades**	**0.76**	**121**	*e*P		Pg	18 03 12.8		-1.5
PSET				*e*S		Sg	18 03 22.8		-1.4
PSET				A		A	18 03 24.2		
	2μm,0.2s								
PDA	**Ponta Delgada**	**0.84**	**124**	*e*P		Pg	18 03 13.9		-2.0
PDA				*e*S		Sg	18 03 24.7		-2.1
PDA	**Ponta Delgada**	**0.84**	**124**	*e*P		Pg	18 03 13.9		-2.0
PDA				*e*S		Sg	18 03 24.7		-2.1
PDA				A		A	18 03 26.9		
	850nm,0.2s								
GRON	**Grota Negra**	**0.92**	**119**	*e*P		Pg	18 03 16.5		-0.8
GRON				*e*S		Sg	18 03 29.3		+0.1
GRON				A		A	18 03 32.5		
	124nm,0.2s								
CMLA	**Cha da Macela**	**0.93**	**119**	*e*P		Pg	18 03 15.3		-2.2
CMLA				*e*S		Sg	18 03 26.7		-2.8
CMLA	**Cha da Macela**	**0.93**	**119**	*e*P		Pg	18 03 15.3		-2.2
CMLA				*e*S		Sg	18 03 26.7		-2.8
PCALD	**Caldeiras da R**	**0.94**	**117**	*e*P		Pg	18 03 15.3		-2.4
PCALD				*e*S		Sg	18 03 26.9		-2.9
PCALD				A		A	18 03 28.2		
	512nm,0.2s								
BART	**Pico Bartolome**	**1.18**	**112**	*e*P		Pg	18 03 18.5		-3.7
BART				*e*S		Sg	18 03 32.7		-4.7
BART	**Pico Bartolome**	**1.18**	**112**	*e*P		Pg	18 03 18.5		-3.7
BART				*e*S		Sg	18 03 32.7		-4.7
BART				A		A	18 03 36.6		
	236nm,0.3s								
PMAN	**Manadas**	**1.28**	**289**	*e*P		Pg	18 03 19.9		-4.3
PMAN				*e*S		Sg	18 03 35.0		-5.8
PMAN	**Manadas**	**1.28**	**289**	*e*P		Pg	18 03 19.9		-4.3
PMAN				*e*S		Sg	18 03 35.0		-5.8
PMAN				A		A	18 03 38.8		
	73nm,0.2s								
PGRA	**Graciosa**	**1.38**	**306**	*e*S		Sg	18 03 37.6		-6.5
PGRA	**Graciosa**	**1.38**	**306**	*e*S		Sg	18 03 37.6		-6.5
PGRA				A		A	18 03 40.6		
	106nm,0.5s								
ROSA	**Rosais**	**1.42**	**291**	*e*P		Pn	18 03 21.4		-5.4
ROSA				*e*S		Sg	18 03 38.7		-6.6
ROSA	**Rosais**	**1.42**	**291**	*e*P		Pn	18 03 21.4		-5.4
ROSA				*e*S		Sg	18 03 38.7		-6.6
ROSA				A		A	18 03 43.3		
	103nm,0.5s								
PICO	**Pico**	**1.50**	**281**	*e*P		Pn	18 03 23.1		-4.9
PICO				*e*S		Sg	18 03 41.2		-6.8
PICO	**Pico**	**1.50**	**281**	*e*P		Pn	18 03 23.1		-4.9
PICO				*e*S		Sg	18 03 41.2		-6.8
PICO				A		A	18 03 43.1		
	103nm,0.5s								
PCAN	**Candelaria**	**1.54**	**280**	*e*P		Pn	18 03 23.7		-4.8
PCAN				*e*S		Sn	18 03 41.9		-7.4
PCAN	**Candelaria**	**1.54**	**280**	*e*P		Pn	18 03 23.7		-4.8
PCAN				*e*S		Sn	18 03 41.9		-7.4
PCAN				A		A	18 03 44.9		
	50nm,0.2s								
PSMA	**Santa Maria**	**1.66**	**137**	*e*P		Pn	18 03 25.4		-4.7
PSMA				*e*S		Sn	18 03 44.0		-8.1
PSMA				A		A	18 03 45.2		
	225nm,0.2s								
PSMN	**Pico do Norte,**	**1.69**	**136**	*e*P		Pn	18 03 25.6		-4.9
PSMN				*e*S		Sn	18 03 44.5		-8.4
PSMN	**Pico do Norte,**	**1.69**	**136**	*e*P		Pn	18 03 25.6		-4.9
PSMN				*e*S		Sn	18 03 44.5		-8.4
PSMN				A		A	18 03 47.4		
	78nm,0.2s								
CALA	**Caldeira**	**1.73**	**283**	*e*S		Sn	18 03 46.4		-7.6
CALA	**Caldeira**	**1.73**	**283**	*e*S		Sn	18 03 46.4		-7.6

MEX 22 18:05:18.3±0.4, 14.96N×92.92W, h77km±8km, MD3.5, Near coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase	ID		Time		Res
				Op		ISC	h	m s	ISC
PCIG		**0.79**	**338**	*e*P		Pn	18 05 33.6		-1.2
PCIG				*e*S		Sn	18 05 45.0		-1.9
TGIG		**1.82**	**354**	*e*P		Pn	18 05 46.1		-1.6
TGIG				*i* S		Sn	18 06 08.4		-1.6

NIED ***22*** *18:06:00, 36.00N×141.40E, h23km, Mw4.0 Best double couple: M0 1.28000×10^15 NP1:φs92.00000°, δ25.00000°, λ-177.00000°. NP2:φs359.00000°, δ89.00000°, λ-65.00000°.*
MOS ***22*** *18:06:09.1±1.0, 36.07N×141.67E, h33km, mb4.4/19, Error ellipse: s-maj=10.4km s-min=7.0km az=107.9*
ISCJB ***22*** *18:06:09.8±0.6, 36.05N±0.03×141.55E±0.05, h36km±4km, mb4.1/32, MS4.1/4, Error ellipse: s-maj=6.7km s-min=4.6km az=10.5*
JMA ***22*** *18:06:11.5±0.1, 36.04N×141.40E, h46km±2km, M3.7*
NEIC ***22*** *18:06:11.3±0.7, 36.05N×141.61E, h36km±6km, mb4.4/7, Error ellipse: s-maj=10.3km s-min=6.9km az=110.0*
IDC ***22*** *18:06:13.1±2.0, 36.01N×141.43E, h44km±17km, mb3.6/14, mb1 3.8/20, mb1mx3.6/55, mbtmp3.9/20, ML3.5/5, Error ellipse: s-maj=20.3km s-min=14.3km az=98.0*
ISC 22 18:06:10.7±1.2, 36.03N±0.04×141.51E±0.05, h25km±8km, n100, σ1§44/109, mb4.2/32, MS4.1/4, 5C-4D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID		Time		Res
				Op		ISC	h	m s	ISC
CHOJ	**Chosi**	**0.62**	**239**	P		**Pb**	**18 06 23.1**		**+0.1**
CHOJ				S		**Sb**	**18 06 32.2**		**+0.9**
JHO	**Hitachi**	**0.96**	**308**	P		**Pn**	**18 06 27.7**		**-0.8**
JHO				*e*S		**Sb**	**18 06 39.7**		**-1.2**
JYT	**Yasato**	**1.08**	**281**	P		**Pn**	**18 06 29.2**		**-1.1**
JYT				S		**Sn**	**18 06 41.5**		**-3.0**
ONAJ	**Iwakimizuishiy**	**1.21**	**332**	P		**Pn**	**18 06 31.7**		**-0.4**
ONAJ				S		**Sn**	**18 06 45.7**		**-2.1**
JFK	**Kawauchi**	**1.43**	**339**	P		**Pn**	**18 06 34.9**		**-0.2**
BSO1	**Boso 1**	**1.44**	**198**	P		**Pn**	**18 06 35.4**		**+0.7**
BSO3	**Boso 3**	**1.47**	**214**	P		**Pn**	**18 06 35.8**		**+0.4**
BSO3				S		**Sn**	**18 06 52.1**		**-1.6**
JAG	**Ashikaga**	**1.71**	**284**	P		**Pn**	**18 06 38.2**		**-0.7**
JAG				S		**Sn**	**18 06 57.8**		**-2.1**
JFT	**Otama**	**1.76**	**328**	P		**Pn**	**18 06 40.6**		**+1.0**
JFT				S		**Sn**	**18 07 01.1**		**-0.1**
MJAR	**Matsushiro Arr**	**2.72**	**282**	P		**Pn**	**18 06 52.6**		**-0.2**
	13nm,0.3s,baz=104,slow=8.3,SNR=131								
MAJO	**Matsushiro**	**2.72**	**282**	*de*P		**Pn**	**18 06 53.6**		**+0.8**
MAJO	**Matsushiro**	**2.72**	**282**	*e*Pn		**Pn**	**18 06 53.3**		**+0.5**
MAT	**Matsushiro**	**2.72**	**282**	P		**Pn**	**18 06 53.5**		**+0.7**
MAT				S		**Sn**	**18 07 23.6**		**-1.2**
MJB9	**Matsu-Tunnel**	**2.72**	**282**	*e*Pn		**Pn**	**18 06 53.5**		**+0.7**
JHJ2	**Mitsune**	**3.23**	**206**	*e*Pn		**Pn**	**18 07 00.5**		**+0.7**
JHJ	**Hachijo jima 2**	**3.23**	**207**	P		**Pn**	**18 07 00.5**		**+0.7**
	28nm,0.3s,baz=77,slow=21,SNR=12								
JHJ				S		**Sn**	**18 07 34.8**		**-2.7**
	68nm,0.3s,baz=228,slow=23,SNR=10								
INU	**Inuyama**	**3.72**	**261**	*e*Pn		**Pn**	**18 07 08.2**		**+1.7**
ERM	**Erimo**	**6.11**	**12**	⇑ *e*P		**Pn**	**18 07 39.5**		**+0.2**
ERM					pmax	pmax			
	comp=Z,52nm,1.7s								
ERM	**Erimo**	**6.11**	**12**	*e*Pn		**Pn**	**18 07 39.5**		**+0.2**
ERM				*e*Sn		Sn	18 08 41.1		-7.4
ASAJ	**Asahikawa**	**8.12**	**6**	P		**Pn**	**18 08 06.6**		**-0.3**
	comp=Z,1.3nm,0.3s,baz=228,slow=12,SNR=12								
ASAJ				S		**Sn**	**18 09 36.9**		**-1.0**
	comp=Z,1.0nm,0.3s,baz=210,slow=32,SNR=4.0								
ASAJ	**Asahikawa**	**8.12**	**6**	*e*Pn		**Pn**	**18 08 05.3**		**-1.6**
YUK	**Yuzh-Kuril'sk**	**8.66**	**21**	*e*P		**Pn**	**18 08 12.3**		**-2.0**
YUK				S		**Sn**	**18 09 46.3**		**-4.8**
YUK				pmax	pmax				
	comp=Z,94nm,1.0s								
YUK				pmax	pmax				
	comp=E,45nm,0.4s								
SHO	**Shikotan**	**8.83**	**26**	*e*P		**Pn**	**18 08 14.2**		**-2.4**
SHO				S		Sn	18 09 46.3		-8.9
SHO				pmax	pmax				
	comp=Z,38nm,0.9s								
SHO				pmax	pmax				
	comp=E,28nm,0.5s								
SHO				pmax	pmax				
	comp=N,18nm,0.4s								
CBIJ	**Chichi jima**	**8.93**	**176**	*e*Pn		**Pn**	**18 08 17.5**		**-0.5**
JNU	**Nakatsue**	**9.23**	**255**	P		**Pn**	**18 08 23.6**		**+1.4**
	comp=N,0.1nm,0.3s,baz=41,slow=19,SNR=3.6								
JNU	**Nakatsue**	**9.23**	**255**	*e*Pn		**Pn**	**18 08 23.1**		**+0.8**
VLA	**Vladivostok**	**10.26**	**317**	⇑ *i*P		**Pn**	**18 08 36.6**		**+0.4**
VLA				pmax	pmax				
	comp=Z,192nm,1.7s								
KUR	**Kuril'sk**	**10.38**	**26**	*e*P		**Pn**	**18 08 35.9**		**-2.0**
KUR				*e*S		Sn	18 10 26.3		-7.0
KUR				pmax	pmax				
	comp=Z,8.0nm,0.6s								
KUR				smax	smax				
	comp=E,15nm,0.5s								
KUR				smax	smax				
	comp=N,6.0nm,0.4s								
USRK	**Ussuriysk Ar.**	**10.94**	**321**	P		**Pn**	**18 08 46.9**		**+1.4**
	comp=N,0.2nm,0.3s,baz=139,slow=10,SNR=4.0								
KSRS	**Korea Array**	**11.00**	**281**	P		**Pn**	**18 08 48.4**		**+2.0**
	comp=N,0.2nm,0.3s,baz=93,slow=13,SNR=7.0								
NJ2	**Nanjing**	**19.18**	**265**	*e*P		Pn	18 10 42.4		+8.9
NJ2				pmax	pmax				
	comp=Z,11nm,0.6s								
PETK	**Petropavlovsk-**	**20.52**	**29**	P		**P**	**18 10 47.2**		**+0.3**
	comp=Z,2.9nm,0.9s,baz=215,slow=7.2,SNR=3.7								
PETK	**Petropavlovsk-**	**20.52**	**29**	P		**P**	**18 10 47.2**		**+0.3**
PETK				pmax	pmax				
	comp=Z,2.0nm,0.8s								
HHC	**Hu-ho-hao-te**	**23.88**	**291**	*e*P		**P**	**18 11 21.3**		**-1.0**
HHC				pP		sP	18 11 32.5		-0.4
HHC				sP		pP	18 11 38.4		+8.7
HHC				S		**S**	**18 15 30.5**		**-6.6**
HHC				pmax	pmax				
	comp=Z,19nm,0.8s								
HHC				pmax	pmax				
	comp=Z,370nm,8.6s								
HHC				LR	LR				
	comp=N,490nm,12.3s								
HHC				LR	LR				
	comp=E,400nm,13.6s								
HHC				LR	LR				
	comp=Z,450nm,13.6s								
YAK	**Yakutsk**	**27.07**	**348**	*i* P		**P**	**18 11 52.3**		**+1.5**
YAK				pmax	pmax				
	comp=Z,15nm,1.7s								
H11N2	**WAKE ISLAND Hy**	**27.58**	**119**	T		T	18 40 57.2		
	baz=311,slow=75,SNR=74								
H11N1	**WAKE ISLAND Hy**	**27.59**	**119**	T		T	18 40 57.8		
	baz=311,slow=75,SNR=60								
H11N3	**WAKE ISLAND Hy**	**27.60**	**119**	T		T	18 40 59.9		
	baz=311,slow=75,SNR=53								
ULN	**Ulaanbaatar**	**27.99**	**306**	P		**P**	**18 12 00.0**		**+0.5**
ULN				pmax	pmax				
	comp=Z,2.0nm,0.8s								
H11S1	**WAKE ISLAND Hy**	**28.26**	**121**	T		T	18 41 45.5		
	baz=313,slow=75,SNR=68								
H11S3	**WAKE ISLAND Hy**	**28.26**	**121**	T		T	18 41 51.8		
	baz=313,slow=75,SNR=50								
H11S2	**WAKE ISLAND Hy**	**28.27**	**121**	T		T	18 41 56.5		
	baz=313,slow=75,SNR=45								
SONA1	**Songino Array**	**28.42**	**306**	*e*P		**P**	**18 12 02.1**		**-1.2**
SONM	**Songino Array**	**28.42**	**305**	P		**P**	**18 12 02.6**		**-0.7**
	comp=Z,2.0nm,0.6s,baz=102,slow=9.1,SNR=13								
BOD	**Bodaibo**	**28.42**	**329**	*e*P		**P**	**18 12 01.9**		**-1.1**
BOD				pmax	pmax				
	comp=Z,4.0nm,1.3s								
LZH	**Lanzhou**	**30.33**	**281**	*e*P		**P**	**18 12 22.0**		**+1.6**
LZH				pP		sP	18 12 34.0		+3.0
LZH				sP		pP	18 12 39.3		+11
LZH				*e*PP		**PnPn**	**18 13 21.5**		**+2.7**
LZH				pmax	pmax				
	comp=Z,21nm,1.1s								
LZH				pmax	pmax				
	comp=Z,56nm,5.2s								
LZH				LR	LR				
	comp=N,220nm,12.9s								
LZH				LR	LR				
	comp=E,230nm,13.0s								
LZH				LR	LR				
	comp=Z,290nm,16.2s								
GYA	**Guiyang**	**31.14**	**262**	*e*P		**P**	**18 12 28.0**		**+0.4**
GYA				pmax	pmax				
	comp=Z,10.0nm,0.8s								
CD2	**Chengdu**	**31.77**	**272**	P		**P**	**18 12 31.6**		**-1.4**
CD2				pmax	pmax				
	comp=Z,1.0nm,0.5s								
GTA	**Gaotai**	**32.95**	**289**	*e*P		**P**	**18 12 43.3**		**0.0**
GTA				pP		pP	18 12 47.8		-3.1
GTA				sP		sP	18 12 50.8		-3.2
GTA				pmax	pmax				
	comp=Z,4.0nm,0.8s								
KMI	**Kunming**	**34.90**	**263**	P		**P**	**18 13 00.9**		**+0.3**
KMI				pmax	pmax				
	comp=Z,3.0nm,0.8s								
KMI				pmax	pmax				
	comp=Z,94nm,4.6s								
TIXI	**Tiksi**	**36.29**	**353**	⇑ *i*P		**P**	**18 13 12.1**		**+0.4**
TIXI				pmax	pmax				
	comp=Z,2.0nm,1.2s								
TIXI	**Tiksi**	**36.29**	**353**	*e*P		**P**	**18 13 11.3**		**-0.4**
	comp=Z,1.6nm,0.6s								
CMAR	**Chiang Mai Arr**	**41.33**	**256**	P		**P**	**18 13 54.0**		**-0.5**
	comp=Z,0.6nm,0.8s,baz=46,slow=8.1,SNR=7.4								
CMAR	**Chiang Mai Arr**	**41.33**	**256**	P		**P**	**18 13 54.0**		**-0.5**
CMAR				pmax	pmax				
	comp=Z,1.0nm,0.7s								
WMQ	**Urumqi**	**41.37**	**298**	P		**P**	**18 13 55.5**		**+0.8**
WMQ				pP		sP	18 14 07.9		+2.5
WMQ				sP		pP	18 14 13.4		+11
WMQ				pmax	pmax				
	comp=Z,6.0nm,0.6s								
WMQ				LR	LR				
	comp=N,28nm,16.2s								
WMQ				LR	LR				
	comp=E,71nm,19.0s								
WMQ				LR	LR				
	comp=Z,63nm,21.6s								
ZAA0	**Zalesovo Array**	**42.65**	**313**	*e*P		**P**	**18 14 04.6**		**-0.3**
ZALV	**Zalesovo Beam**	**42.65**	**313**	P		**P**	**18 14 05.0**		**+0.1**
	comp=Z,4.5nm,0.6s,baz=90,slow=6.8,SNR=22								
MK01	**Makanchi Array**	**44.72**	**303**	*e*P		**P**	**18 14 21.2**		**-0.5**
MK31	**Makanchi Array**	**44.72**	**303**	*e*P		**P**	**18 14 21.5**		**-0.2**
MK31	**Makanchi Array**	**44.72**	**303**	*e*P		**P**	**18 14 21.5**		**-0.2**
MKAR	**Makanchi Array**	**44.72**	**303**	P		**P**	**18 14 21.7**		**0.0**
	comp=Z,2.9nm,0.8s,baz=89,slow=9.2,SNR=37								
MKAR	**Makanchi Array**	**44.72**	**303**	*e*P		**P**	**18 14 21.5**		**-0.2**
MAKZ	**Makanchi**	**44.94**	**303**	*e*P		**P**	**18 14 23.5**		**+0.1**
MAKZ				pmax	pmax				
	comp=Z,3.0nm,0.9s								
MAKZ	**Makanchi**	**44.94**	**303**	*e*P		**P**	**18 14 23.5**		**+0.1**
	comp=Z,3.3nm,0.9s								
KURK	**Kurchatov**	**46.62**	**309**	*e*P		**P**	**18 14 35.4**		**-1.2**
KURK				pmax	pmax				
	comp=Z,12nm,0.7s								
KURK	**Kurchatov**	**46.62**	**309**	*e*P		**P**	**18 14 35.4**		**-1.2**
	comp=Z,12nm,0.7s								
PKIN	**Phulchoki**	**47.87**	**276**	*e*P		**P**	**18 14 45.0**		**-2.0**
	comp=Z,5.0nm,0.8s								
KKN	**Kakani**	**47.87**	**277**	*e*P		**P**	**18 14 46.6**		**-0.4**
	comp=Z,10nm,0.9s								
GKN	**Gorkha**	**48.30**	**277**	*e*P		**P**	**18 14 49.8**		**-0.4**
	comp=Z,24nm,0.9s								
KOLN	**Koldanda**	**49.23**	**278**	*e*P		**P**	**18 14 56.9**		**-0.5**
	comp=Z,4.0nm,0.6s								
PYUN	**Piuthan**	**49.59**	**278**	*e*P		**P**	**18 15 00.0**		**-0.1**
TKM2	**Tokmak 2**	**50.18**	**299**	*e*P		**P**	**18 15 04.5**		**+0.1**
TKM2				pmax	pmax				
	comp=Z,4.0nm,0.7s								
TKM2	**Tokmak 2**	**50.18**	**299**	*e*P		**P**	**18 15 04.5**		**+0.1**
	comp=Z,3.7nm,0.7s								
ILAR	**Eielson Array**	**50.30**	**32**	P		**P**	**18 15 06.8**		**+2.0**
	comp=Z,0.4nm,0.7s,baz=264,slow=6.1,SNR=5.2								
ILAR	**Eielson Array**	**50.30**	**32**	P		**P**	**18 15 06.8**		**+2.0**
ILAR				pmax	pmax				
	comp=Z,1.0nm,0.8s								
KSH	**Kashi**	**50.89**	**295**	*e*P		P	18 15 13.9		+4.1
KSH				*e*sP		sP	18 15 31.8		+11
KSH				*e*ScP		**ScP**	**18 20 19.3**		**-1.3**
KSH				PcS		**PcS**	**18 20 24.3**		**+0.6**
KSH				S		**S**	**18 22 28.9**		**+4.1**
KSH				pmax	pmax				
	comp=Z,49nm,5.6s								
KSH				LR	LR				
	comp=N,110nm,6.7s								
KSH				LR	LR				
	comp=E,110nm,5.7s								
AAK	**Ala-Archa**	**51.04**	**299**	⇑ *e*P		**P**	**18 15 11.0**		**+0.1**
AAK				pmax	pmax				
	comp=Z,8.0nm,1.0s								
AAK	**Ala-Archa**	**51.04**	**299**	*e*P		**P**	**18 15 09.0**		**-1.9**
	comp=Z,3.8nm,1.1s								
BRVK	**Borovoye**	**51.37**	**313**	⇓ *i*P		**P**	**18 15 13.8**		**+0.9**
BRVK				pmax	pmax				
	comp=Z,5.0nm,1.7s								
ZRNK	**Zerenda**	**52.14**	**313**	*e*P		**P**	**18 15 18.4**		**-0.3**
ZRNK				pmax	pmax				
	comp=Z,8.0nm,1.3s								
ZRNK	**Zerenda**	**52.14**	**313**	*e*P		**P**	**18 15 18.4**		**-0.3**
	comp=Z,8.2nm,1.3s								
KKAR	**Karatay Array**	**53.70**	**301**	*e*P		**P**	**18 15 30.9**		**+0.5**
KKAR	**Karatay Array**	**53.70**	**301**	*e*P		**P**	**18 15 30.9**		**+0.5**
WRA	**Warramunga Arr**	**56.08**	**188**	P		**P**	**18 15 47.4**		**-0.3**
	comp=Z,0.8nm,0.6s,baz=6.7,slow=7.6,SNR=19								
ARU	**Arti**	**57.17**	**319**	*d* ⇓ *i*P		**P**	**18 15 54.9**		**-0.2**
ARU							18 17 59.2		
ARU				S		**S**	**18 23 50.6**		**+1.9**
ARU				pmax	pmax				
	comp=Z,13nm,1.7s								
ARU	**Arti**	**57.17**	**319**	*e*P		**P**	**18 15 54.8**		**-0.2**
	comp=Z,6.0nm,0.8s								
ABKAR	**Akbulak array**	**58.65**	**311**	*e*P		**P**	**18 16 05.2**		**-0.4**
ASAR	**Alice Springs**	**59.81**	**188**	P		**P**	**18 16 13.1**		**-0.7**
	comp=Z,0.5nm,0.7s,baz=16,slow=7.9,SNR=8.2								
YKA	**Yellowknife Ar**	**64.64**	**30**	P		**P**	**18 16 46.4**		**+0.7**
	comp=Z,0.3nm,0.7s,baz=300,slow=6.5,SNR=5.0								
FINES	**FINESS Array B**	**69.74**	**332**	P		**P**	**18 17 17.3**		**-0.8**
	comp=Z,1.5nm,0.7s,baz=59,slow=7.4,SNR=6.1								
FINES	**FINESS Array B**	**69.74**	**332**	*i* P		**P**	**18 17 18.7**		**+0.6**
FINES				pmax	pmax				
	comp=Z,2.0nm,0.7s								
KBZ	**Khabaz**	**71.62**	**311**	P		**P**	**18 17 29.8**		**0.0**
	comp=Z,1.4nm,0.8s,baz=61,slow=1.1,SNR=3.8								
AKASG	**Malin Array Be**	**75.14**	**322**	P		**P**	**18 17 50.2**		**-0.3**
	comp=Z,0.9nm,0.4s,baz=47,slow=6.2,SNR=9.0								
NB2	**NORSAR Subarra**	**75.14**	**337**	P		**P**	**18 17 50.4**		**0.0**
	comp=Z,0.9nm,0.6s,baz=40,slow=5.9								
NOA	**NORSAR Array B**	**75.14**	**337**	P		**P**	**18 17 49.4**		**-1.0**
	comp=Z,0.8nm,0.6s,baz=43,slow=5.4,SNR=5.0								
KIEV	**Kiev**	**75.15**	**323**	⇓ *e*P		**P**	**18 17 50.1**		**-0.5**
KIEV				pmax	pmax				
	comp=Z,2.0nm,0.6s								
BRTR	**Keskin Array B**	**79.58**	**312**	P		**P**	**18 18 15.3**		**-0.4**
	comp=Z,0.8nm,0.8s,baz=80,slow=2.0,SNR=3.9								
BRTR	**Keskin Array B**	**79.58**	**312**	*ce*P		**P**	**18 18 16.2**		**+0.4**
BRTR				pmax	pmax				
	comp=Z,1.0nm,0.9s								
CLL	**Collm**	**82.00**	**330**	*e*P		**P**	**18 18 31.0**		**+2.7**
CLL				Lm		MLR	19 05 00.0		
	comp=N,200nm,18.5s								
CLL				Lm		MLR	19 05 00.0		
	comp=E,100nm,21.8s								
CLL				Lm		MLR	19 05 00.0		
	comp=Z,300nm,20.2s								
CLL	**Collm**	**82.00**	**330**	*e*P		**P**	**18 18 31.0**		**+2.7**
CLL				MLR		MLR			
	comp=Z,300nm,20.2s								

MAN 22 18:09:52, 18.20N×122.23E, h24km, mb4.4, ML3.3, MS3.2, 2C-1D, Luzon

Code	Station Name	Δ°	AZ°	Phase	ID		Time		Res
				Op		ISC	h	m s	ISC
SGCP	**Mt. Cagua**	**0.18**	**283**	*e*P		Pn	18 09 58.9		-0.4
SGCP				*e*S		Sb	18 10 04.2		+3.2
CVP	**Callao Caves**	**0.63**	**218**	⇓ *i*P		Pn	18 10 11.4		+5.9
APYP	**Conner**	**1.00**	**250**	*e*P		Pn	18 10 10.2		-0.4
APYP				*e*S		Sn	18 10 24.9		+1.1
CAUP	**Cauayan**	**1.31**	**197**	*e*P		Pn	18 10 14.9		+0.1
ABRA	**Dolores**	**1.55**	**249**	*e*P		Pn	18 10 18.1		0.0
ABRA				*e*S		Sb	18 10 40

LTZ	Lake Taylor	19.38	197	*e*P		P		18 17 20.7	-1.4
	121nm,1.9s									
OXZ	Oxford	19.95	197	*e*P		P		18 17 25.8	-1.4
	22nm,0.6s									
MQZ	McQueen's Vall	20.15	196	*e*P		P		18 17 27.7	-1.2
	119nm,1.8s									
RPZ	Rata Peaks	20.59	199	P		P		18 17 32.5	-0.5
	6.1nm,0.4s,baz=203,slow=3.3,SNR=8.0									
RPZ	Rata Peaks	20.59	199	*e*P		P		18 17 32.2	-0.8
	103nm,1.7s									
FOZ	Fox Glacier	20.81	201	*e*P		P		18 17 36.1	+1.2
	398nm,1.7s									
ODZ	Otahua Downs	21.92	198	*e*P		P		18 17 44.0	-1.0
	84nm,1.8s									
WKZ	Wanaka	22.22	201	*e*P		P		18 17 46.0	-1.7
	123nm,1.5s									
MLZ	Mavora Lakes	23.00	202	*e*P		P		18 17 55.4	+0.7
	71nm,1.4s									
HNR	Honiara	24.26	305	P		P		18 18 04.2	-2.1
	64nm,0.6s,baz=173,slow=3.4,SNR=12									
HNR	Honiara	24.26	305	*e*P		P		18 18 04.0	-2.2
EIDS	Eidsvold	26.24	262	*e*P		P		18 18 23.4	-0.2
	22nm,1.5s									
CAN	Canberra	28.89	241	*e*P		P		18 18 46.7	-0.1
CAN				pmax		pmax				
	comp=Z,62nm,1.6s									
CAN	Canberra	28.89	241	*e*P		P		18 18 46.7	-0.1
	comp=Z,62nm,1.6s									
CTA	Charters Tower	31.49	271	P		P		18 19 09.9	+0.4
	comp=Z,17nm,0.4s,baz=96,slow=12,SNR=57									
CTA				ScP		ScP		18 24 43.8	+2.2	
	comp=Z,3.0nm,0.8s,baz=236,slow=1.6,SNR=5.0									
CTAO	Charters Tower	31.49	271	*e*P		P		18 19 09.9	+0.4
CTAO				pmax		pmax				
	comp=Z,22nm,0.7s									
CTAO	Charters Tower	31.49	271	*e*P		P		18 19 09.9	+0.4
	comp=Z,22nm,0.7s									
TAU	Tasmania Unive	32.58	227	*e*P		P		18 19 18.5	+0.1
TAU				pmax		pmax				
	comp=Z,130nm,1.5s									
TAU	Tasmania Unive	32.58	227	*e*P		P		18 19 18.5	+0.1
	comp=Z,130nm,1.5s									
RABL	Rabaul	33.52	302	*e*P		P		18 19 26.9	+0.1
	comp=Z,25nm,1.0s									
STKA	Stephens Creek	34.54	249	P		P		18 19 35.8	+0.7
	comp=Z,1.8nm,0.5s,baz=98,slow=11,SNR=14									
STKA				PcP		PcP		18 21 55.0	-0.6	
	comp=Z,3.9nm,0.8s,baz=92,slow=5.9,SNR=4.6									
STKA	Stephens Creek	34.54	249	*e*P		P		18 19 35.6	+0.5	
STKA				*e*				18 21 55.0		
STKA				pmax		pmax				
	comp=Z,9.0nm,2.0s									
STKA	Stephens Creek	34.54	249	*e*P		P		18 19 35.6	+0.5	
	comp=Z,8.5nm,2.0s									
STKA				*e*PcP		PcP		18 21 55.0	-0.6	
PMG	Port Moresby	34.68	290	P		P		18 19 35.3	-1.2	
	comp=Z,40nm,0.7s,baz=103,slow=8.2,SNR=27									
PMG	Port Moresby	34.68	290	*d iP*		P		18 19 36.0	-0.5	
PMG				pmax		pmax				
	comp=Z,166nm,0.7s									
PMG	Port Moresby	34.68	290	*e*P		P		18 19 36.4	-0.2	
	comp=Z,43nm,0.7s									
COEN	Coen	36.21	280	*e*P		P		18 19 50.2	+0.9	
	comp=Z,11nm,0.7s									
MANU	Manus Island	38.59	300	*e*P		P		18 20 08.0	-0.8	
	comp=Z,12nm,0.9s									
BBOO	Buckleboo	39.25	247	*e*P		P		18 20 13.5	-0.4	
	comp=Z,104nm,2.0s									
AS01	Alice Springs	41.92	261	*e*P		P		18 20 35.3	-0.1	
AS31	Alice Springs	41.96	261	*e*P		P		18 20 35.4	-0.3	
	comp=Z,2.4nm,1.1s									
AS31				*e*ScP		ScP		18 25 22.3	+1.5	
AS31				*e*S		S		18 26 14.9	-2.2	
ASAR	Alice Springs	41.96	261	P		P		18 20 35.3	-0.5	
	comp=Z,3.9nm,0.9s,baz=90,slow=6.6,SNR=49									
ASAR				PcP		PcP		18 22 18.5	-0.8	
	comp=Z,1.3nm,0.6s,baz=102,slow=5.5,SNR=6.1									
ASAR				ScP		ScP		18 25 22.3	+1.5	
	comp=Z,3.8nm,1.0s,baz=112,slow=4.3,SNR=10									
ASAR				S		S		18 26 14.9	-2.2	
	comp=Z,1.4nm,0.8s,baz=95,slow=16,SNR=8.5									
WRAB	Tennant Creek	42.38	267	*i iP*		P		18 20 38.0	-1.0	
WRAB				pmax		pmax				
	comp=Z,20nm,0.9s									
WRAB	Tennant Creek	42.38	267	*e*P		P		18 20 36.3	-2.8	
	comp=Z,12nm,0.6s									
WR1	Warramunga Arr	42.38	267	*e*P		P		18 20 38.2	-0.9	
	comp=Z,9.9nm,0.8s									
WR1				*e*ScP		ScP		18 25 24.7	+2.2	
WR1				*e*S		S		18 26 19.1	-4.2	
WRA	Warramunga Arr	42.38	267	P		P		18 20 38.2	-0.9	
	comp=Z,4.9nm,0.5s,baz=97,slow=8.4,SNR=126									
WRA				ScP		ScP		18 25 24.7	+2.2	
	comp=Z,12nm,0.9s,baz=102,slow=4.1,SNR=29									
WRA				S		S		18 26 19.1	-4.2	
	comp=Z,7.0nm,1.1s,baz=103,slow=14,SNR=12									
WRA				PKiKP		PKiKP		18 29 21.7	-2.3	
	comp=Z,0.3nm,0.9s,baz=141,slow=0.4,SNR=4.6									
JAY	Jayapura	43.74	294	P		P		18 20 49.3	-0.5	
	comp=Z,1.6nm,0.6s,baz=125,slow=19,SNR=18									
FITZ	Fitzroy Crossi	50.80	266	P		P		18 21 43.3	+0.4	
	comp=Z,2.5nm,0.5s,baz=129,slow=9.3,SNR=10									
FITZ	Fitzroy Crossi	50.80	266	*e*P		P		18 21 43.6	+0.7	
	comp=Z,8.9nm,1.1s									
SBA	Scott Base	53.85	183	*e*P		P		18 22 06.6	+2.8	
SBA				pmax		pmax				
	comp=Z,20nm,0.9s									
SBA	Scott Base	53.85	183	*e*P		P		18 22 06.6	+2.8	
	comp=Z,20nm,0.9s									
VNDA	Vanda	53.85	185	P		P		18 22 05.7	+1.8	
	comp=Z,2.0nm,0.5s,baz=1.2,slow=7.6,SNR=17									
VNDA				PcP		PcP		18 23 02.0	+0.6	
	comp=Z,2.6nm,0.6s,baz=359,slow=5.8,SNR=8.6									
MAW	Mawson	77.25	200	P		P		18 24 31.4	+0.9	
	comp=Z,12nm,0.7s,baz=116,slow=6.9,SNR=30									
MAW	Mawson	77.25	200	*e*P		P		18 24 31.7	+1.2	
MAW				pmax		pmax				
	comp=Z,8.0nm,1.4s									
MAW	Mawson	77.25	200	*e*P		P		18 24 31.7	+1.2	
	comp=Z,8.4nm,1.4s									
YSS	Yuzh-Sakhalins	78.62	335	*i* P		P		18 24 38.9	+0.8	
YSS				pmax		pmax				
	comp=Z,5.0nm,0.7s									
PETK	Petropavlovsk-	79.62	347	P		P		18 24 43.5	+0.3	
	comp=Z,6.6nm,0.9s,baz=115,slow=6.3,SNR=9.5									
PEA1	Petropavlovsk-	79.62	347	*e*P		P		18 24 43.5	+0.3	
NJ2	Nanjing	81.02	311	*e*P		P		18 24 52.3	+1.3	
NJ2				pmax		pmax				
	comp=Z,12nm,0.7s									
CIS	Catalina Islan	82.09	48	P		P		18 24 57.5	+0.9	
	baz=234									
SYO	Syowa Base	82.50	193‖	*e*P		P		18 24 55.9	-2.1	
SYO	Syowa Base	82.50	193‖	*e*PcP		PcP		18 25 01.1	-0.5	
MURC	Murrieta	83.04	48	P		P		18 25 03.0	+1.6	
	baz=235									
SLBS	Sierra La Lagu	83.06	60	*e*P		P		18 25 03.0	+1.3	
	comp=Z,17nm,0.7s									
BFSC	Mount Baldy Ra	83.09	48	P		P		18 25 02.5	+0.7	
	baz=234									
SRIG	Santa Rosalia	83.15	56	*e*P		P		18 24 59.6	-2.4	
	comp=Z,21nm,1.1s									
MONP2	Monument Peak	83.16	49	P		P		18 25 03.6	+1.3	
	baz=235,SNR=6.4									
EDW2	Edwards Air Fo	83.24	47	P		P		18 25 03.2	+0.9	
	baz=234,SNR=5.0									
ISA	Isabella, Lake	83.38	46	P		P		18 25 04.7	+1.6	
	baz=234									
ISA	Isabella, Lake	83.38	46	*e*P		P		18 25 00.1	-3.0	
ISA				pmax		pmax				
	comp=Z,16nm,1.0s									
ISA	Isabella, Lake	83.38	46	*e*P		P		18 25 00.1	-3.0	
	comp=Z,16nm,1.0s									
PFO	Pinyon Flats O	83.55	49	P		P		18 25 05.3	+1.3	
	comp=Z,1.1nm,0.5s,baz=271,slow=5.9,SNR=3.8									
PFO	Pinyon Flats O	83.55	49	P		P		18 25 05.7	+1.7	
	baz=235									
PFO	Pinyon Flats O	83.55	49	*e*P		P		18 25 05.3	+1.3	
PFO				pmax		pmax				
	comp=Z,8.0nm,1.1s									
PFO	Pinyon Flats O	83.55	49	*e*P		P		18 25 05.3	+1.3	
	comp=Z,7.8nm,1.1s									
CMB	Columbia Colle	83.58	43	*e*P		P		18 25 04.3	+0.3	
CMB				pmax		pmax				
	comp=Z,11nm,0.9s									
CMB	Columbia Colle	83.58	43	*e*P		P		18 25 04.3	+0.3	
	comp=Z,11nm,0.9s									
SWSC	Sam W. Stewart	83.62	50	P		P		18 25 05.6	+1.4	
	baz=236									
AFDM	Forest Hills D	83.78	42	*e*P		P		18 25 05.3	+0.4	
	comp=Z,12nm,1.1s									
LRMC	Laurel Mtn Rad	83.80	47	P		P		18 25 06.3	+1.0	
	baz=234,SNR=5.1									
ORV	Oroville	83.83	42	*e*P		P		18 25 05.6	+0.5	
ORV				pmax		pmax				
	comp=Z,10.0nm,0.9s									
ORV	Oroville	83.83	42	*e*P		P		18 25 05.6	+0.5	
	comp=Z,10nm,0.9s									
WDC	Whiskeytown Da	83.86	40	*e*P		P		18 25 06.4	+1.2	
WDC				pmax		pmax				
	comp=Z,15nm,1.1s									
WDC	Whiskeytown Da	83.86	40	*e*P		P		18 25 06.4	+1.2	
	comp=Z,15nm,1.1s									
N02D	Trinity Center	84.01	40	P		P		18 25 07.7	+1.6	
	baz=230,SNR=5.4									
BELC	Belle Mtn. Jos	84.08	49	P		P		18 25 07.9	+1.2	
	baz=235,SNR=9.3									
O03D	Paynes Creek	84.12	41	P		P		18 25 07.7	+1.0	
	baz=231,SNR=5.8									
SNAA	Sanae	84.13	179	P		P		18 25 06.2	-0.1	
SNAA	Sanae	84.13	179‖	*e*P		P		18 25 06.0	-0.3	
M02C	Callahan	84.19	39	P		P		18 25 08.8	+1.8	
	baz=230,SNR=7.7									
L02D	Cave Junction,	84.25	38	P		P		18 25 09.4	+2.2	
	baz=230									
MPMC	Manual Prospec	84.26	46	P		P		18 25 08.6	+0.9	
	baz=234,SNR=5.9									
BC3	Big Chuckawall	84.26	49	P		P		18 25 08.5	+1.0	
	baz=236,SNR=6.7									
GSC	Goldstone, Bar	84.28	47	P		P		18 25 08.6	+1.1	
	baz=235,SNR=8.2									
GSC	Goldstone, Bar	84.28	47	*e*P		P		18 25 08.1	+0.5	
GSC				pmax		pmax				
	comp=Z,10.0nm,0.9s									
GSC	Goldstone, Bar	84.28	47	*e*P		P		18 25 08.1	+0.5	
	comp=Z,10.0nm,0.9s									
DAC	Darwin (Calif)	84.32	46	*e*P		P		18 25 08.3	+0.4	
DAC				pmax		pmax				
	comp=Z,8.0nm,1.3s									
DAC	Darwin (Calif)	84.32	46	*e*P		P		18 25 08.3	+0.4	
	comp=Z,8.0nm,1.3s									
HEC	Hector,Ludlow	84.33	48	P		P		18 25 08.7	+0.9	
	baz=235,SNR=7.2									
VNA3	Neumayer Olymp	84.34	177	P		P		18 25 07.4	+0.1	
GLA	Glamis	84.36	50	P		P		18 25 09.2	+1.3	
	baz=236,SNR=6.4									
GLA	Glamis	84.36	50	*e*P		P		18 25 09.4	+1.4	
GLA				pmax		pmax				
	comp=Z,22nm,0.8s									
GLA	Glamis	84.36	50	*e*P		P		18 25 09.4	+1.4	
	comp=Z,22nm,0.8s									
WAKR	Walker	84.46	43	*e*P		P		18 25 09.4	+0.9	
YBH	Yreka Blue Hor	84.49	39	*e*P		P		18 25 09.3	+0.8	
YBH				pmax		pmax				
	comp=Z,7.0nm,1.0s									
YBH	Yreka Blue Hor	84.49	39	*e*P		P		18 25 09.3	+0.8	
	comp=Z,9.9nm,1.0s									
GMRC	Granite Mounta	84.76	48	P		P		18 25 11.1	+1.1	
	baz=236,SNR=6.2									
IRM	Iron Mountain	84.76	49	P		P		18 25 11.3	+1.4	
	baz=236,SNR=13									
VNA2	Neumayer--Watz	84.76	178	P		P		18 25 09.7	+0.4	
	baz=190,slow=3.8									
HUMO	Hull Mountain	84.91	38	*e*P		P		18 25 11.8	+1.4	
	comp=Z,12nm,1.2s									
TUQ	Tuoise Moun	84.95	47	P		P		18 25 12.3	+1.4	
	baz=235,SNR=6.0									
Y12C	Blythe	84.96	50	P		P		18 25 12.7	+1.9	
	baz=236									
VNA1	Neumayer--Stat	85.00	177	P		P		18 25 10.5	+0.1	
HSIG		85.01	55	*e*P		P		18 25 11.9	+0.7	
	comp=Z,19nm,0.8s									
M04C	Macdoel	85.03	40	P		P		18 25 13.1	+2.0	
	baz=231									
NV01	Mina Array Sit	85.13	44	*e*P		P		18 25 12.1	+0.2	
NVAR	Mina Array Bea	85.13	44	P		P		18 25 12.6	+0.8	
	comp=Z,3.8nm,0.8s,baz=223,slow=8.5,SNR=20									
214A	Organ Pipe Nat	85.19	52	P		P		18 25 13.7	+1.7	
	baz=237									
NV11	Mina Array Sit	85.22	44	*e*P		P		18 25 12.8	+0.6	
	comp=Z,6.6nm,1.0s									
LDFC	Landfair	85.30	48	*e*P		P		18 25 13.8	+1.2	
	comp=Z,26nm,0.8s									
NEE2	Needles Airpor	85.46	49	P		P		18 25 14.8	+1.6	
	baz=236									
PDMCI	Parker Dam,Lak	85.53	49	P		P		18 25 15.0	+1.5	
	baz=236									
TPNV	Topopah Spring	85.59	46	P		P		18 25 15.0	+1.0	
	baz=235,SNR=11									
TPNV	Topopah Spring	85.59	46	*e*P		P		18 25 14.4	+0.4	
TPNV				pmax		pmax				
	comp=Z,8.0nm,0.8s									
TPNV	Topopah Spring	85.59	46	*e*P		P		18 25 14.4	+0.4	
	comp=Z,7.8nm,0.8s									
I04A	Tendick Farm,	85.97	38	P		P		18 25 16.9	+1.4	
	baz=230									
Y14A	Wickenburg	86.12	50	*e*P		P		18 25 17.1	+0.7	
	comp=Z,24nm,1.0s									
W13A	Hualapai Mount	86.14	49	*e*P		P		18 25 17.6	+0.9	
	comp=Z,16nm,1.5s									
K05A	Summer Lake	86.17	39	*e*P		P		18 25 18.1	+1.4	
	comp=Z,13nm,1.0s									
J05D	Fort Rock, OR	86.32	39	P		P		18 25 18.9	+1.6	
	baz=231									
H04A	Detroit Lake	86.67	37	*e*P		P		18 25 19.2	+0.4	
	comp=Z,27nm,1.4s									
R11A	Troy Canyon, C	86.82	45	P		P		18 25 20.6	+0.7	
	baz=235									
R11A	Troy Canyon, C	86.82	45	*e*P		P		18 25 20.1	+0.3	
	comp=Z,1.9nm,0.9s									
TUC	Tucson	86.83	52	P		P		18 25 22.0	+2.1	
	baz=238									
TUC	Tucson	86.83	52	*e*P		P		18 25 21.6	+1.7	
TUC				pmax		pmax				
	comp=Z,18nm,0.9s									
TUC	Tucson	86.83	52	*e*P		P		18 25 21.6	+1.7	
	comp=Z,18nm,0.9s									
I05D	Terrebonne, OR	86.92	38	P		P		18 25 21.2	+1.2	
	baz=231									
GYA	Guiyang	87.03	301	*e*P		P		18 25 23.0	+2.0	
GYA				pP		pP		18 27 14.3	+0.2	
GYA				sP		sP		18 28 04.6	-1.5	
GYA				PP		PP		18 28 57.4	+3.4	
GYA				SKS		SKSac		18 35 01.0	+1.5	
GYA				S		S		18 35 18.9	+1.8	
GYA				sS		sS		18 38 35.5	-3.0	
GYA				pmax		pmax				
	comp=Z,10.0nm,1.0s									
MA2	Magadan	87.10	346	*e*P		P		18 25 20.0	-0.4	
WVOR	Wild Horse Val	87.31	41	*e*P		P		18 25 22.7	+0.7	
WVOR				pmax		pmax				
	comp=Z,18nm,1.2s									
WVOR	Wild Horse Val	87.31	41	*e*P		P		18 25 22.7	+0.7	
	comp=Z,18nm,1.2s									
F04A	Amboy	87.33	36	*e*P		P		18 25 22.0	+0.2	
	comp=Z,17nm,1.0s									
319A	Douglas	87.45	54	*e*P		P		18 25 24.9	+2.0	
	comp=Z,29nm,1.0s									
X16A	Lo Mia Camp, P	87.47	50	*e*P		P		18 25 24.3	+1.3	
	comp=Z,7.3nm,0.9s									
LCMT	Little Creek M	87.62	47	*e*P		P		18 25 24.5	+0.9	
	comp=Z,5.7nm,1.0s									
G06A	Carlson Farm,	87.87	37	*e*P		P		18 25 25.3	+0.9	
	comp=Z,13nm,0.9s									
PLCA	Paso Flores	87.89	134	P		P		18 25 26.4	+1.5	
	comp=Z,2.4nm,0.8s,baz=271,slow=9.2,SNR=4.5									
PLCA	Paso Flores	87.89	134	*e*P		P		18 25 26.4	+1.5	
PLCA				pmax		pmax				
	comp=Z,81nm,1.9s									
PLCA	Paso Flores	87.89	134	*e*P		P		18 25 26.4	+1.5	
	comp=Z,81nm,1.9s									
KNB	Kanab	87.91	48	*e*P		P		18 25 26.6	+1.6	
KNB				pmax		pmax				
	comp=Z,20nm,1.4s									
KNB	Kanab	87.91	48	*e*P		P		18 25 26.6	+1.6	
	comp=Z,20nm,1.4s									
U15A	North Rim	87.95	48	*e*P		P		18 25 26.6	+1.2	
	comp=Z,14nm,1.1s									
HPIG		88.02	59	*e*P		P		18 25 26.6	+0.8	
	comp=Z,11nm,0.8s									
PSUT	Pine Spring	88.05	46	*e*P		P		18 25 27.0	+1.4	
	comp=Z,3.0nm,0.8s									
WUAZ	Wupatki	88.10	49	P		P		18 25 27.4	+1.5	
	baz=238									
WUAZ	Wupatki	88.10	49	*e*P		P		18 25 26.7	+0.8	
	comp=Z,8.3nm,1.1s									
LON	Longmire	88.18	36	*e*P		P		18 25 26.5	+0.6	
LON				pmax		pmax				
	comp=Z,5.0nm,0.8s									
LON	Longmire	88.18	36	*e*P		P		18 25 26.4	+0.6	
	comp=Z,5.1nm,0.8s									
PKCU	Pink Cliffs	88.48	47	*e*P		P		18 25 28.5	+0.7	
	comp=Z,7.8nm,0.8s									
ZAIG	Zacatecas	88.57	64	*e*P		P		18 25 29.7	+1.2	
	comp=Z,5.2nm,0.9s									
X18A	Snowflake	88.58	51	*e*P		P		18 25 29.4	+1.2	
	comp=Z,7.3nm,0.8s									
MTPU	Mount Pierson	88.89	47	*e*P		P		18 25 31.3	+1.6	
	comp=Z,11nm,0.9s									
A04D	Lummi Island	88.97	34	P		P		18 25 31.1	+1.7	
	baz=230									
B05A	Bryant	88.99	34	P		P		18 25 30.9	+1.4	
	baz=231									
LTY	Liberty	89.10	36	*e*P		P		18 25 30.4	+0.2	
	comp=Z,4.9nm,0.7s									
121A	Cookes Peak, D	89.13	54	P		P		18 25 32.5	+1.7	
	baz=240									
MSU	Marysvale	89.14	47	*e*P		P		18 25 32.5	+1.7	
MSU	Marysvale	89.14	47	*e*P		P		18 25 32.5	+1.7	
HAWA	Hanford	89.19	37	*e*P		P		18 25 31.3	+0.8	
	comp=Z,9.8nm,0.9s									
KMI	Kunming	89.52	298	P		P		18 25 34.5	+1.7	
KMI				pmax		pmax				
	comp=Z,9.0nm,1.0s									
KMI				pmax		pmax				
	comp=Z,75nm,4.5s									
MFID	Camas Ranch	89.56	41	*e*P		P		18 25 33.0	+0.6	
	comp=Z,14nm,0.9s									
DUG	Dugway, Tooele	89.63	45	P		P		18 25 34.3	+1.4	
	baz=237									
CM01	Chiang Mai Arr	89.69	290	*e*P		P		18 25 34.5	+1.1	
CM31	Chiang Mai Arr	89.72	290	*e*P		P		18 25 34.9	+1.3	
CM31				*e*pP		pP		18 27 27.4	0.0	
CMAR	Chiang Mai Arr	89.72	290	P		P		18 25 34.4	+0.7	
	comp=Z,1.6nm,0.8s,baz=134,slow=3.0,SNR=14									
CMAR				pP		pP		18 27 27.4	0.0	
	comp=Z,0.4nm,0.6s,baz=126,slow=4.6,SNR=2.7									
CMAR				PP		PP		18 29 15.8	+0.6	
	comp=Z,0.3nm,0.8s,baz=120,slow=6.7,SNR=4.6									
CMAR				PKKPbc		PKKPbc		18 43 04.5	+1.1	
	comp=Z,0.9nm,0.7s,baz=286,slow=4.6,SNR=6.3									
SEY	Seymchan	89.79	348‖	*e*P		P		18 25 32.8	0.0	
CHTO	Chiang Mai	89.88	291	*e*P		P		18 25 35.4	+1.1	
CHTO				pmax		pmax				
	comp=Z,4.0nm,1.0s									
CHTO	Chiang Mai	89.88	291	*e*P		P		18 25 35.4	+1.1	
	comp=Z,3.7nm,1.0s									
NLU	North Lily Min	89.98	45	*e*P		P		18 25 35.4	+0.8	
	comp=Z,3.9nm,0.9s									
TMUT	Trail Mountain	90.20	46	*e*P		P		18 25 36.9	+1.1	
	comp=Z,21nm,0.8s									
F10A	Beach Ranch, E	90.22	38	*e*P		P		18 25 35.3	-0.1	
	comp=Z,6.0nm,0.8s									
CAST	Castle Rocks	90.29	12	*e*P		P		18 25 33.9	-1.3	
	comp=Z,42nm,1.9s									
SPUT	South Promonto	90.47	44	*e*P		P		18 25 37.1	+0.4	
	comp=Z,10nm,0.9s									
HLID	Hailey	90.49	41	P		P		18 25 38.2	+1.4	
	baz=236									
HLID	Hailey	90.49	41	*e*P		P		18 25 37.6	+0.8	
	comp=Z,5.6nm,1.0s									
MNTX	Cornudas Mount	90.51	55	P		P		18 25 38.3	+1.3	
	baz=242									
MNTX	Cornudas Mount	90.51	55	*e*P		P		18 25 37.8	+0.8	
	comp=Z,6.0nm,0.8s									
HVU	Hansel Valley	90.52	44	*e*P		P		18 25 37.5	+0.5	
HVU				pmax		pmax				
	comp=Z,9.0nm,0.7s									
HVU	Hansel Valley	90.52	44	*e*P		P		18 25 37.5	+0.5	
	comp=Z,8.9nm,0.7s									
SRU	San Rafael Swe	90.56	47	*e*P		P		18 25 38.1	+0.9	
SRU				pmax		pmax				
	comp=Z,12nm,0.8s									
SRU	San Rafael Swe	90.56	47	*e*P		P		18 25 38.1	+0.9	
	comp=Z,12nm,0.8s									
CTU	Camp Tracy	90.58	45	*e*P		P		18 25 38.1	+0.8	
	comp=Z,12nm,1.0s									
P17A	Butcher Ranch,	90.60	46	*e*P		P		18 25 37.9	+0.5	
	comp=Z,14nm,1.3s									
LTX	Lajitas	90.70	58	*e*P		P		18 25 39.7	+1.6	
LTX	Lajitas	90.70	58	*e*P		P		18 25 39.6	+1.6	
LTX				*e*PKKPdf		PK

WMOK					pmax	pmax		
	comp=Z,7.0nm,0.8s							
WMOK	**Wichita Mounta**	**96.81**	**55**	*e*P	**P**		18 26 08.0	+2.3
	comp=Z,7.4nm,0.8s							
SONA0	**Songino Array**	**97.51**	**319**	*e*pP	**pP**		18 28 03.3	+0.3
SONA0				*e*PKKPbc	**PKKPbc**		18 42 44.1	-0.3
SONM	**Songino Array**	**97.51**	**319**	pP	**pP**		18 28 03.3	+0.3
	comp=Z,0.9nm,1.0s,baz=121,slow=5.7,SNR=4.6							
SONM				PKKPbc	**PKKPbc**		18 42 44.1	-0.3
	comp=Z,0.5nm,0.6s,baz=290,slow=4.6,SNR=5.1							
INK	**Inuvik**	**98.54**	**16**	P	Pdif		18 26 11.6	-0.9
	comp=Z,1.3nm,0.9s,baz=230,slow=7.7,SNR=4.3							
TUL1	**Leonard**	**99.52**	**55**	*e*Pdif	**Pdif**		18 26 19.3	+1.6
	comp=Z,20nm,0.8s							
YKA	**Yellowknife Ar**	**100.84**	**25**	P	**Pdif**		18 26 22.4	-0.5
	comp=Z,0.2nm,0.6s,baz=240,slow=4.5,SNR=4.7							
YKA				PKiKP	**PKiKP**		18 30 44.5	-0.6
	comp=Z,0.2nm,0.6s,baz=259,slow=1.6,SNR=5.8							
YKA				PKKPbc	**PKKPbc**		18 42 33.2	-2.1
	comp=Z,0.3nm,0.5s,baz=39,slow=2.5,SNR=9.7							
H32A	**Carlson Farm,**	**101.70**	**46**	Pdiff	**Pdif**		18 26 28.1	+0.9
	baz=247							
F36A	**Milaca**	**104.77**	**46**	Pdiff	**Pdif**		18 26 42.8	+2.0
	baz=250							
ZAA1	**Zalesovo Array**	**112.37**	**320**	*e*PKiKP	**PKiKP**		18 31 05.8	-1.2
ZALV	**Zalesovo Beam**	**112.37**	**320**	PKiKP	**PKiKP**		18 31 05.8	-1.2
	comp=Z,0.8nm,0.5s,baz=236,slow=1.1,SNR=5.9							
MK32	**Makanchi Array**	**112.52**	**313**	*e*PKiKP	**PKiKP**		18 31 06.5	-1.0
MK32				*e*SKPdf	**SKPdf**		18 33 53.9	-0.3
MK32				*e*PKKPbc	**PKKPbc**		18 41 59.0	0.0
MKAR	**Makanchi Array**	**112.52**	**313**	PKiKP	**PKiKP**		18 31 06.5	-1.0
	comp=Z,1.2nm,0.8s,baz=71,slow=2.0,SNR=14							
MKAR				SKP			18 33 53.9	
	comp=Z,0.8nm,0.8s,baz=64,slow=5.5,SNR=5.7							
MKAR				PKKPbc	**PKKPbc**		18 41 59.0	0.0
	comp=Z,1.1nm,0.7s,baz=276,slow=3.9,SNR=11							
MKAR	**Makanchi Array**	**112.52**	**313**	*e*PKiKP	**PKiKP**		18 31 05.7	-1.8
MKAR							18 33 53.9	
MKAR							18 41 59.0	
MKAR	**Makanchi Array**	**112.52**	**313**	*e*PKiKP	**PKiKP**		18 31 05.7	-1.8
MKAR				SKP			18 33 53.9	
MKAR				PKKPbc	**PKKPbc**		18 41 59.0	0.0
KSH	**Kashi**	**115.58**	**304**	*e*PKP	**PKPdf**		18 31 14.5	+0.8
KSH				SKS	**SKSdf**		18 37 40.8	+3.6
KSH				SKKS	**SKKSac**		18 38 27.8	-5.2
KSH				AMB	AMB			
	comp=Z,130nm,5.6s							
KURK	**Kurchatov**	**115.59**	**316**	*e*PKiKP	**PKPdf**		18 31 12.4	-0.8
KURK				*e*			18 33 59.4	
KURK	**Kurchatov**	**115.59**	**316**	*e*PKPdf	**PKPdf**		18 31 12.4	-0.8
KURK				*e*SKPdf	**SKPdf**		18 33 59.4	-0.5
KURK				*e*PKKPbc	**PKKPbc**		18 41 47.9	-0.9
KURBB	**Kurchatov Arra**	**115.64**	**316**	PKP	**PKPdf**		18 31 12.4	-0.9
	comp=Z,2.7nm,0.7s,baz=98,slow=1.9,SNR=33							
KURBB				SKP			18 33 59.4	
	comp=Z,0.5nm,0.6s,baz=99,slow=2.6,SNR=5.1							
KURBB				PKKPbc	**PKKPbc**		18 41 47.9	-0.7
	comp=Z,0.7nm,0.7s,baz=274,slow=4.8,SNR=5.8							
TKM2	**Tokmak 2**	**116.47**	**307**	*e*PKiKP	**PKPdf**		18 31 14.5	-1.0
TKM2	**Tokmak 2**	**116.47**	**307**	*e*PKPdf	**PKPdf**		18 31 14.5	-1.0
AAK	**Ala-Archa**	**117.23**	**307**	PKP	**PKPdf**		18 31 16.2	-0.6
	comp=Z,0.6nm,0.4s,baz=201,slow=4.6,SNR=5.8							
AAK				PKKPbc	**PKKPbc**		18 41 43.4	+0.4
	comp=Z,3.0nm,0.9s,baz=246,slow=5.4,SNR=9.6							
AAK	**Ala-Archa**	**117.23**	**307**	ǁ*i*PKPdf	**PKPdf**		18 31 16.4	-0.5
KBL	**Kabul**	**120.09**	**297**	*e*PKiKP	**PKPdf**		18 31 21.9	-0.8
KBL	**Kabul**	**120.09**	**297**	*e*PKPdf	**PKPdf**		18 31 21.9	-0.8
KKAR	**Karatay Array**	**120.19**	**307**	*e*PKiKP	**PKPdf**		18 31 21.3	-1.0
KKAR	**Karatay Array**	**120.19**	**307**	*e*PKPdf	**PKPdf**		18 31 21.3	-1.0
BVAR	**Borovoye Array**	**120.85**	**318**	PKP	**PKPdf**		18 31 22.7	-0.6
	comp=Z,4.6nm,0.7s,baz=84,slow=1.0,SNR=24							
BRVK	**Borovoye**	**120.91**	**319**	*d i*PKiKP	**PKPdf**		18 31 22.8	-0.6
BRVK				pmax	pmax			
	comp=Z,6.0nm,1.7s							
BRVK	**Borovoye**	**120.91**	**319**	*e*PKPdf	**PKPdf**		18 31 22.6	-0.8
ZRNK	**Zerenda**	**121.68**	**318**	*e*PKiKP	**PKPdf**		18 31 23.8	-1.1
ZRNK	**Zerenda**	**121.68**	**318**	*e*PKPdf	**PKPdf**		18 31 23.8	-1.1
BOSA	**Boshof**	**121.93**	**206**	PKP	**PKPdf**		18 31 26.8	+0.4
	comp=Z,3.6nm,0.7s,baz=108,slow=1.6,SNR=4.8							
SPITS	**Spitsbergen Ar**	**125.65**	**356**	PKP	**PKPdf**		18 31 30.0	-1.9
	comp=Z,14nm,0.8s,baz=64,slow=4.8,SNR=7.4							
ARU	**Arti**	**127.32**	**323**	PKP	**PKPdf**		18 31 34.4	-1.1
	comp=Z,6.3nm,0.5s,baz=138,slow=0.8,SNR=17							
ARU	**Arti**	**127.32**	**323**	*i* PKiKP	**PKPdf**		18 31 35.4	-0.1
ARU							18 33 43.1	
ARU							18 37 58.3	
ARU	**Arti**	**127.32**	**323**	*e*PKPdf	**PKPdf**		18 31 35.0	-0.6
ABKAR	**Akbulak array**	**127.59**	**314**	*e*PKPdf	**PKPdf**		18 31 35.8	-0.5
AKTO	**Aktyubinsk**	**128.69**	**316**	PKP	**PKPdf**		18 31 37.4	-1.0
	comp=Z,2.9nm,0.6s,baz=79,slow=4.0,SNR=14							
GEYT	**Alibeck**	**129.24**	**300**	PKP	**PKPdf**		18 31 39.4	-0.5
	comp=Z,3.2nm,0.7s,baz=225,slow=1.9,SNR=8.7							
GEYT				SKPbc	SKPbc		18 34 14.3	+0.9
	comp=Z,3.1nm,0.9s,baz=168,slow=1.4,SNR=11							
LVZ	**Lovozero**	**131.65**	**343**	⇑*i*PKiKP	**PKPdf**		18 31 43.8	+0.3
ARA0	**ARCESS Array S**	**132.41**	**348**	*e*PKPdf	**PKPdf**		18 31 43.9	-0.9
ARCES	**ARCESS Array B**	**132.41**	**348**	PKP	**PKPdf**		18 31 43.9	-0.9
	comp=Z,4.9nm,0.8s,baz=16,slow=1.9,SNR=15							
KLMR	**Klimovskoe**	**134.66**	**334**	*e*PKiKP	**PKPdf**		18 31 47.3	-2.0
KLMR				*e*			18 34 28.2	
KLMR				pmax	pmax			
	comp=Z,13nm,1.4s							
KMBO	**Kilima Mbogo**	**135.84**	**240**	*i* PKiKP	**PKPdf**		18 31 56.5	+3.2
VRH	**Novokhopyorsk**	**138.40**	**321**	*e*PKiKP	**PKPdf**		18 31 56.1	-0.4
VRH				pmax	pmax			
	comp=Z,5.0nm,0.5s							
FIA1	**FINESS Array S**	**138.95**	**341**	*e*PKPpre	PKPpre		18 31 48.1	
FIA1				*e*PKPdf	**PKPdf**		18 31 57.7	+0.5
FIA1				*e*SKPbc	**SKPbc**		18 34 44.0	+0.2
FIA0	**FINESS Array S**	**138.95**	**341**	*e*PKHKP	PKPpre		18 31 46.9	
FIA0				*e*			18 31 57.8	
FIA0				*e*			18 34 44.5	
FIA0	**FINESS Array S**	**138.95**	**341**	*e*PKPpre	PKPpre		18 31 46.9	
FIA0				*e*PKPdf	**PKPdf**		18 31 57.8	+0.6
FIA0				*e*SKPbc	**SKPbc**		18 34 44.5	+0.7
FINES	**FINESS Array B**	**138.95**	**341**	PKhKP	PKPpre		18 31 46.9	
	comp=Z,1.2nm,0.5s,baz=65,slow=4.0,SNR=21							
FINES				PKP	**PKPdf**		18 31 57.8	+0.6
	comp=Z,4.4nm,0.8s,baz=66,slow=2.2,SNR=11							
FINES				SKPbc	**SKPbc**		18 34 44.5	+0.7
	comp=Z,7.2nm,0.8s,baz=60,slow=4.6,SNR=19							
LPSR	**Galich'ya Gora**	**139.34**	**324**	*e*PKiKP	**PKPdf**		18 31 58.3	+0.2
LPSR				pmax	pmax			
	comp=Z,5.0nm,0.5s							
ZEI	**Tsey**	**139.64**	**308**	*e*PKiKP	**PKPdf**		18 31 58.1	-1.2
ZEI				pmax	pmax			
	comp=Z,4.0nm,0.8s							
VSR	**Storozhevoye**	**139.85**	**322**	*e*PKiKP	**PKPdf**		18 31 58.4	-0.7
VSR				pmax	pmax			
	comp=Z,5.0nm,1.1s							
NEY	**Neytrino**	**140.37**	**309**	*i* PKiKP	**PKPdf**		18 32 01.0	+0.4
NC303	**NORSAR Array S**	**142.41**	**351**	*e*PKPpre	PKPpre		18 31 59.9	
NB201	**NORSAR Array S**	**142.59**	**351**	*e*PKPpre	PKPpre		18 31 59.8	
NB2	**NORSAR Subarra**	**142.61**	**351**	PKP	PKPpre		18 31 59.9	
	comp=Z,7.0nm,0.9s,baz=12,slow=3.1							
NB2	**NORSAR Subarra**	**142.61**	**351**	PKP	**SKPbc**		18 34 53.6	+0.3
	comp=Z,0.6nm,0.6s,baz=24,slow=2.6							
NB200	**NORSAR Array S**	**142.61**	**351**	*e*PKPpre	PKPpre		18 31 59.6	
NB200				*e*SKPbc	**SKPbc**		18 34 52.4	-0.9
NOA	**NORSAR Array B**	**142.61**	**351**	PKhKP	PKPpre		18 31 59.6	
	comp=Z,5.1nm,0.9s,baz=16,slow=4.7,SNR=18							
NOA				SKPbc	**SKPbc**		18 34 52.4	-0.9
	comp=Z,1.4nm,0.8s,baz=16,slow=4.3,SNR=5.2							
NBO02	**NORSAR Array S**	**142.65**	**351**	*e*PKPpre	PKPpre		18 32 00.7	
NAO01	**NORSAR Array S**	**142.84**	**351**	*e*PKPpre	PKPpre		18 32 01.0	
HFS	**Hagfors**	**143.07**	**349**	SKPbc	**SKPbc**		18 34 54.0	-0.3
	comp=Z,2.4nm,0.8s,baz=177,slow=2.8,SNR=4.6							
MZRK	**Al-Mazaregh**	**143.30**	**298**	*e*P	**PKPdf**		18 32 05.4	-0.4
SFNV	**Sufian**	**143.66**	**299**	*e*P	PKPab		18 32 04.6	-0.7
NACGM	**Naroch**	**143.69**	**334**	*e*	PKPab		18 32 04.0	-0.6
NACGM	**Naroch**	**143.69**	**334**	*e*LR	LR		18 35 33.0	
KONO	**Kongsberg**	**144.17**	**352**	*e*PKiKP	PKPbc		18 32 05.6	-0.4
KONO	**Kongsberg**	**144.17**	**352**	*e*PKPbc	PKPbc		18 32 05.6	-0.4
MNKR	**ALMNKUR**	**144.40**	**298**	*e*P	PKPbc		18 32 01.6	-6.0
KSRV	**Kasrt alli**	**144.62**	**298**	*e*P	PKPbc		18 32 08.5	+0.2
AKASG	**Malin Array Be**	**145.42**	**327**	PKPbc	**PKPdf**		18 32 08.4	-0.6
	comp=Z,8.5nm,0.6s,baz=46,slow=3.9,SNR=42							
AKASG				SKPbc	pPKPbc		18 34 07.4	-1.9
	comp=Z,1.7nm,0.6s,baz=44,slow=3.3,SNR=2.7							
AKASG				SKPbc	**SKPbc**		18 34 59.5	-0.6
	comp=Z,3.6nm,0.7s,baz=49,slow=2.9,SNR=10							
AKBB	**Malin Array Si**	**145.42**	**327**	*e*PKiKP	**PKPdf**		18 32 09.1	+0.2
AKBB	**Malin Array Si**	**145.42**	**327**	*e*PKPdf	**PKPdf**		18 32 09.1	+0.2
KIEV	**Kiev**	**145.44**	**327**	*e*PKiKP	**PKPdf**		18 32 09.3	+0.3
KIEV	**Kiev**	**145.44**	**327**	*e*PKPdf	**PKPdf**		18 32 09.2	+0.3
AK11	**Malin Array Si**	**145.47**	**327**	*e*PKPdf	**PKPdf**		18 32 08.5	-0.5
SUW	**Suwalki**	**145.75**	**336**	*e*PKP	**PKPbc**		18 32 10.9	0.0
SUW	**Suwalki**	**145.75**	**336**	*e*PKP2	**PKPbc**		18 32 11.0	0.0
ROOS	**tl_alroos**	**146.23**	**295**	*e*P	**PKPbc**		18 32 12.8	-0.4
RABH	**Abou Rabah**	**146.27**	**296**	*e*P	**PKPbc**		18 32 13.0	-0.2
ZALF	**Zalf**	**146.32**	**293**	*e*P	**PKPbc**		18 32 14.1	+0.8
DRWC	**Darouich**	**146.37**	**300**	*e*P	**PKPbc**		18 32 13.8	+0.4
BTCH	**Batrach**	**146.64**	**299**	*e*P	**PKPbc**		18 32 14.9	+0.7
ASF	**Jabal al Asfar**	**146.75**	**292**	PKPbc	**PKPbc**		18 32 14.3	-0.3
	comp=Z,6.6nm,0.7s,baz=38,slow=4.1,SNR=11							
WRDH	**Warideh**	**146.76**	**296**	*e*P	**PKPbc**		18 32 14.1	-0.4
SALA	**Sala**	**146.84**	**293**	*e*P	**PKPbc**		18 32 14.7	-0.3
SLNF	**Slenfeh**	**146.90**	**298**	*e*P	**PKPab**		18 32 21.2	+3.2
BIDA	**Albida**	**146.91**	**297**	*e*P	**PKPbc**		18 32 15.1	+0.1
HAWK	**Haweek**	**146.91**	**296**	*e*P	**PKPbc**		18 32 15.1	+0.1
MARH	**Ras Al Marh**	**146.92**	**295**	*e*P	**PKPbc**		18 32 15.6	+0.4
ARNB	**Al Arnab**	**147.06**	**299**	*e*P	**PKPdf**		18 32 08.9	-3.4
BRBR	**Barbar**	**147.43**	**294**	*e*P	**PKPdf**		18 32 14.2	+1.1
SORM	**Soroca**	**147.44**	**324**	ǁ*i*P	**PKPdf**		18 32 11.9	-0.5
SORM	**Soroca**	**147.44**	**324**	ǁPKIKP	**PKPdf**		18 32 11.9	-0.5
BR101	**Keskin Array S**	**147.91**	**307**	*e*PKPdf	**PKPdf**		18 32 12.8	-0.8
BR101				*e*PKPbc	**PKPbc**		18 32 16.8	-0.7
BR101				*ep*PKPdf	**pPKPdf**		18 34 15.8	+0.8
BR131	**Keskin Array S**	**147.91**	**307**	*e*PKPdf	**PKPdf**		18 32 13.3	-0.4
BR131				*e*PKPbc	**PKPbc**		18 32 17.1	-0.4
BRTR	**Keskin Array B**	**147.91**	**307**	PKP	**PKPdf**		18 32 12.8	-0.8
	comp=Z,4.7nm,0.7s,baz=270,slow=1.4,SNR=5.9							
BRTR				PKPbc	**PKPbc**		18 32 16.8	-0.7
	comp=Z,5.0nm,0.7s,baz=140,slow=3.7,SNR=14							
BRTR				pPKPbc	**pPKPbc**		18 34 15.8	-1.3
	comp=Z,0.8nm,0.8s,baz=98,slow=3.1,SNR=2.3							
MMAI	**Mount Meron Ar**	**147.93**	**294**	PKPbc	**PKPbc**		18 32 18.6	+1.0
	comp=Z,17nm,0.7s,baz=70,slow=4.9,SNR=33							
MMAI				pPKPbc	**pPKPbc**		18 34 15.9	-1.4
	comp=Z,3.0nm,0.8s,baz=28,slow=3.8,SNR=3.9							
BEL	**Belsk**	**148.36**	**335**	*e*PKP	**PKPbc**		18 32 18.8	+0.8
BEL	**Belsk**	**148.36**	**335**	*e*PKP2	**PKPbc**		18 32 18.8	+0.8
ANTO	**Ankara**	**148.48**	**307**	*e*PKiKP	**PKPdf**		18 32 13.9	-0.6
ANTO	**Ankara**	**148.48**	**307**	*e*PKPdf	**PKPdf**		18 32 13.9	-0.6
ANTO				*e*PKPbc	**PKPbc**		18 32 18.8	0.0
BR231	**Keskin MP Arra**	**148.50**	**307**	*e*PKPdf	**PKPdf**		18 32 14.4	-0.2
BR231				*e*PKPbc	**PKPbc**		18 32 17.9	-1.0
EIL	**Elat**	**148.53**	**287**	PKPbc	**PKPbc**		18 32 19.4	+0.3
	comp=Z,9.6nm,0.7s,baz=304,slow=7.8,SNR=9.4							
TLCR		**148.83**	**319**	ǁ*i*P	**PKPbc**		18 32 19.6	+0.3
TLCR		**148.83**	**319**	ǁPKP2	**PKPbc**		18 32 19.6	+0.3
KWP	**Kalwaria Pacla**	**149.24**	**331**	*e*PKP	**PKPbc**		18 32 20.7	+0.5
CFR	**Carcaliu**	**149.24**	**319**	⇑*i*P	**PKPbc**		18 32 20.2	-0.1
TESR	**Tescani**	**149.34**	**323**	⇑*i*P	**PKPbc**		18 32 20.2	-0.4
CSS	**Mathiatis**	**149.34**	**298**	*e*PKPbc	**PKPbc**		18 32 20.7	-0.3
BUR08	**Bucovina Ar. S**	**149.41**	**326**	*e*PKPbc	**PKPbc**		18 32 21.4	+0.6
BURAR	**Bucovina Array**	**149.42**	**326**	⇑*i*P	**PKPbc**		18 32 22.0	+1.1
BURAR	**Bucovina Array**	**149.42**	**326**	⇑PKP2	**PKPbc**		18 32 22.0	+1.1
TIRR	**Tirgusor**	**149.46**	**318**	ǁ*i*P	**PKPbc**		18 32 21.5	+0.6
HARR	**Harsova**	**149.63**	**319**	⇑*i*P	**PKPbc**		18 32 21.6	+0.3
VRI	**Vrincioaia**	**149.67**	**322**	ǁ*i*P	**PKPbc**		18 32 20.9	-0.5
PLOR	**Plostina**	**149.73**	**322**	⇑*i*P	**PKPbc**		18 32 19.3	-2.3
KOLS	**Kolonicke sedl**	**149.94**	**330**	*e*PKP	**PKPdf**		18 32 17.8	+1.4
KOLS				*e*			18 32 22.5	
KOLS				*e*			18 34 26.2	
OJC	**Ojcow**	**150.02**	**334**	*e*PKP	**PKPbc**		18 32 22.1	0.0
OJC	**Ojcow**	**150.02**	**334**	*e*PKPbc	**PKPbc**		18 32 22.0	-0.1
STHS	**Stebnicka Huta**	**150.04**	**332**	*e*PKP	**PKPbc**		18 32 22.8	+0.6
STHS				*e*			18 34 22.7	
CRVS	**Cervenica-Dubn**	**150.33**	**331**	*e*PKP	**PKPbc**		18 32 23.4	+0.6
CRVS				*e*			18 34 24.9	
MLR	**Muntele Rosu**	**150.34**	**322**	PKPbc	**PKPbc**		18 32 22.7	-0.5
	comp=Z,1.1nm,0.6s,baz=336,slow=7.1,SNR=14							
MLR	**Muntele Rosu**	**150.34**	**322**	⇑PKiKP	**PKPdf**		18 32 18.8	+1.5
NIE	**Niedzica**	**150.44**	**333**	*e*PKP	**PKPbc**		18 32 23.9	+0.8
NIE	**Niedzica**	**150.44**	**333**	*e*PKiKP	**PKPbc**		18 32 23.9	+0.8
KSP	**Ksiaz**	**150.79**	**339**	*e*PKP	**PKPbc**		18 32 24.2	+0.4
KSP	**Ksiaz**	**150.79**	**339**	*e*PKiKP	**PKPbc**		18 32 24.2	+0.4
VOIR		**150.88**	**322**	⇑*i*P	**PKPbc**		18 32 24.0	-0.3
VOIR		**150.88**	**322**	⇑PKiKP	**PKPbc**		18 32 24.0	-0.3
OKC	**Ostrava-Krasne**	**150.97**	**335**	⇑*e*PKP	**PKPbc**		18 32 24.5	+0.3
OKC	**Ostrava-Krasne**	**150.97**	**335**	⇑*e*PKiKP	**PKPbc**		18 32 24.5	+0.3
OKC				smax	smax			
	comp=N,22nm,0.4s							
LANS	**Liptovska Anna**	**150.99**	**333**	*e*PKP	**PKPbc**		18 32 25.0	+0.6
ARR	**Arges**	**151.15**	**323**	ǁ*i*P	**PKPbc**		18 32 25.9	+1.0
UPC	**Upice**	**151.17**	**339**	⇑*e*PKP	**PKPbc**		18 32 24.9	+0.2
UPC	**Upice**	**151.17**	**339**	*e*PKiKP	**PKPbc**		18 32 24.9	+0.2
DPC	**Dobruska-Polom**	**151.20**	**338**	⇑*e*PKP	**PKPbc**		18 32 25.3	+0.5
DPC				*e*PKPAB	**PKPab**		18 32 35.8	+0.7
DPC				*ep*PKP	**pPKPdf**		18 34 20.9	+1.0
DPC				*e*	x		18 34 28.1	
DPC	**Dobruska-Polom**	**151.20**	**338**	*e*PKiKP	**PKPbc**		18 32 25.3	+0.5
DPC				*e*			18 32 35.8	
DPC				*e*			18 34 20.9	
DRGR		**151.24**	**327**	ǁ*i*P	**PKPbc**		18 32 25.5	+0.4
DRGR		**151.24**	**327**	ǁPKiKP	**PKPbc**		18 32 25.5	+0.4
MORC	**Moravsky Berou**	**151.24**	**336**	ǁ*i*P	**PKPbc**		18 32 25.3	+0.3
MORC	**Moravsky Berou**	**151.24**	**336**	ǁPKiKP	**PKPbc**		18 32 25.3	+0.3
MORC	**Moravsky Berou**	**151.24**	**336**	*e*PKPbc	**PKPbc**		18 32 24.8	-0.2
KRLC	**Kraliky**	**151.27**	**337**	⇑*e*PKP	**PKPbc**		18 32 25.3	+0.3
KRLC				*ep*PKP	**pPKPdf**		18 34 30.0	+10
KRLC	**Kraliky**	**151.27**	**337**	*e*PKiKP	**PKPbc**		18 32 25.3	+0.3
CLL	**Collm**	**151.37**	**343**	*i* (P)	PKPab		18 32 49.2	+14
	comp=Z,7.0nm,0.8s							
CLL	**Collm**	**151.37**	**343**	⇑*i*PKiKP	**PKPbc**		18 32 24.9	-0.2
CLL				*i*			18 32 35.5	
CLL				pmax	pmax			
	comp=Z,30nm,0.8s							
CLL	**Collm**	**151.37**	**343**	*e*PKPbc	**PKPbc**		18 32 24.6	-0.5
HUMR	**Humele**	**151.46**	**321**	ǁ*i*P	**PKPbc**		18 32 25.0	-0.5
BRG	**Berggiesshubel**	**151.49**	**341**	*e*PKiKP	**PKPdf**		18 32 19.3	+0.6
BRG				pmax	pmax			
	comp=Z,13nm,2.0s							
BRG				MLR	MLR			
	comp=N,482nm,21.6s							
BRG				MLR	MLR			
	comp=E,143nm,17.8s							
BRG				MLR	MLR			
	comp=Z,597nm,18.1s							
PVCC	**Panska Ves**	**151.61**	**340**	⇑*e*PKP	**PKPbc**		18 32 26.0	+0.3
PVCC				*ep*PKP	pPKP		18 34 31.1	
PVCC	**Panska Ves**	**151.61**	**340**	*e*PKiKP	**PKPbc**		18 32 26.0	+0.3
PSZ	**Piszkesteto**	**151.76**	**331**	*e*PKiKP	**PKPbc**		18 32 25.7	-0.5
PSZ	**Piszkesteto**	**151.76**	**331**	*e*PKPbc	**PKPbc**		18 32 25.7	-0.5
VYHS	**Vyhne**	**151.77**	**333**	*e*PKP	**PKPbc**		18 32 26.1	0.0
VYHS				*e*			18 34 27.8	
VRAC	**Vranov**	**151.98**	**337**	PKPbc	**PKPbc**		18 32 25.7	-0.9
	comp=Z,1.1nm,0.4s,baz=25,slow=0.3,SNR=3.7							
GOPC	**GO Pecny, Ondr**	**152.08**	**339**	*e*PKP	**PKPbc**		18 32 26.8	0.0
GOPC	**GO Pecny, Ondr**	**152.08**	**339**	*e*PKiKP	**PKPbc**		18 32 26.8	0.0
PRU	**Pruhonice**	**152.09**	**340**	⇑*e*PKP	**PKPbc**		18 32 26.9	+0.1
PRU				*e*PKPAB	**PKPab**		18 32 41.7	+2.9
PRU				*ep*PKP	pPKP		18 34 31.7	
PRU	**Pruhonice**	**152.09**	**340**	*e*PKiKP	**PKPbc**		18 32 26.9	+0.1
SIRR	**Siria**	**152.13**	**327**	⇑*i*P	**PKPbc**		18 32 27.1	+0.1
GZR	**Gura Zlata**	**152.14**	**324**	⇑*i*P	**PKPbc**		18 32 26.6	-0.5
GZR	**Gura Zlata**	**152.14**	**324**	⇑PKiKP	**PKPbc**		18 32 26.6	-0.5
BZS	**Buzias**	**152.60**	**326**	ǁ*i*P	**PKPbc**		18 32 27.6	-0.4
BZS	**Buzias**	**152.60**	**326**	ǁPKiKP	**PKPbc**		18 32 27.6	-0.4
KHC	**Kasperske Hory**	**153.15**	**340**	*e*PKPDF	**PKPdf**		18 32 21.0	-0.3
KHC				⇑*e*PKP	**PKiKP**		18 32 29.3	+0.1
KHC				*e*PKPAB	**PKPab**		18 32 43.8	+0.5
KHC				*ep*PKP	**pPKPdf**		18 34 29.5	+6.6
KHC				*ex*	x		18 34 35.4	
KHC	**Kasperske Hory**	**153.15**	**340**	*e*PKiKP	**PKPdf**		18 32 21.0	-0.3
KHC				*e*			18 32 43.8	
KHC	**Kasperske Hory**	**153.15**	**340**	*e*PKPdf	**PKPdf**		18 32 20.9	-0.4
KHC				*e*PKPbc	**PKPbc**		18 32 29.1	-0.1
KHC				*e*PKPab	**PKPab**		18 32 43.3	0.0
GEC2	**GERESS Array S**	**153.36**	**340**	*e*PKiKP	**PKPbc**		18 32 28.2	-1.5
GEC2				*e*			18 32 44.3	
GEC2	**GERESS Array S**	**153.36**	**340**	*e*PKPbc	**PKPbc**		18 32 28.1	-1.5
GEC2				*e*PKPab	**PKPab**		18 32 44.3	-0.1
GERES	**GERESS Array B**	**153.36**	**340**	PKP	**PKPdf**		18 32 19.4	-2.2
	comp=Z,0.3nm,0.6s,baz=323,slow=0.7,SNR=3.9							
GERES				PKPbc	**PKPbc**		18 32 28.1	-1.6
	comp=Z,2.0nm,0.8s,baz=59,slow=5.1,SNR=12							
GERES				PKPab	**PKPab**		18 32 43.5	-0.8
	comp=Z,0.9nm,0.7s,baz=13,slow=2.9,SNR=5.0							
GEA0	**GERESS Array S**	**153.37**	**340**	*e*PKPdf	**PKPdf**		18 32 20.4	-1.3
GEA0				*e*PKPbc	**PKPbc**		18 32 27.8	-1.9
GEA0				*e*PKPab	**PKPab**		18 32 43.9	-0.5
CONA	**Conrad Observa**	**153.40**	**336**	*i* PKPdf	**PKPdf**		18 32 20.9	-0.8
	comp=Z,2.0nm,1.1s							
CON

YOJ	**Yonaguni jima**	**0.71**	**49**	P		**Pg**	19 11 53.1	**+0.3**
YOJ				*e*S		**Sb**	19 12 01.6	**-0.3**
HWA	**Hwalien**	**0.75**	**269**	*e*P		**Pn**	19 11 54.6	**+0.2**
	baz=249							
ENA	**Nanau**	**0.76**	**305**	P		**Pg**	19 11 54.0	**+0.3**
	baz=312							
ENA				*e*S		**Sg**	19 12 03.8	**0.0**
	baz=312							
TWD	**Chiawan**	**0.76**	**276**	P		**Pn**	19 11 54.6	**+0.1**
	baz=272							
TWD				S		**Sn**	19 12 05.2	**-0.3**
	baz=272							
TWC	**Suao**	**0.80**	**319**	⇑*i*P		**Pg**	19 11 54.4	**-0.1**
	baz=318							
TWC				*e*S		**Sb**	19 12 04.0	**-0.6**
	baz=318							
ESL	**Shilin**	**0.93**	**259**	P		**Pb**	19 11 56.4	**+0.2**
	baz=244							
EGS		**0.95**	**332**	*e*P		**Pg**	19 11 57.8	**+0.4**
	baz=322							
EGS				*e*S		**Sn**	19 12 11.6	**+1.3**
	baz=322							
TWE	**Neicheng**	**1.00**	**316**	*e*P		**Pn**	19 11 57.8	**0.0**
	baz=315							
TWE				*e*S		**Sg**	19 12 10.7	**-0.7**
	baz=315							
ENTT	**Nioudou**	**1.01**	**309**	*e*P		**Pg**	19 11 58.5	**0.0**
	baz=307							
NNS	**Nan Shan**	**1.05**	**295**	P		**Pg**	19 11 59.8	**+0.4**
	baz=292							
NNS				*e*S		**Sg**	19 12 13.7	**+0.4**
	baz=292							
WHF	**Hehuan Shan**	**1.07**	**278**	P		**Pg**	19 11 59.8	**+0.1**
	baz=260							
TWB1	**Santiao Chiao**	**1.08**	**339**	*e*P		**Pg**	19 11 59.5	**-0.3**
	baz=337							
EHY	**Hungye**	**1.12**	**244**	P		**Pb**	19 12 00.1	**+0.5**
	baz=241							
EHY				*e*S		**Sn**	19 12 14.8	**+0.3**
	baz=241							
TWT	**Tachien**	**1.17**	**283**	*e*P		**Pg**	19 12 01.7	**+0.2**
	baz=267							
NSK	**Sanguang**	**1.18**	**305**	*e*P		**Pg**	19 12 01.9	**+0.1**
	baz=289							
NSK				*e*S		**Sn**	19 12 15.9	**-0.2**
	baz=289							
TWF1	**Yuli**	**1.22**	**238**	⇓*i*P		**Pb**	19 12 01.6	**+0.4**
	baz=235							
TWF1				*e*S		**Sb**	19 12 16.1	**-0.5**
	baz=235							
NWF	**Wu-fen Shan**	**1.22**	**331**	*e*P		**Pg**	19 12 02.2	**-0.2**
	baz=330							
NWF				*e*S		**Sg**	19 12 17.4	**-1.1**
	baz=330							
IRIF	**Iriomote-Funau**	**1.24**	**74**	P		**Pb**	19 12 02.4	**+0.8**
IRIF				*e*S		**Sg**	19 12 19.7	**+0.6**
CHKT	**Chengkung**	**1.32**	**228**	*e*P		**Pn**	19 12 01.8	**-0.4**
	baz=224							
CHKT				*e*S		**Sn**	19 12 17.9	**-1.4**
	baz=224							
SMLT	**Sun Moon Lake**	**1.40**	**266**	P		**Pb**	19 12 04.5	**+0.1**
	baz=263							
TYC	**Yuchr**	**1.44**	**267**	P		**Pb**	19 12 05.2	**+0.2**
	baz=264							
YUS	**Yu-Shan**	**1.44**	**250**	*e*P		**Pb**	19 12 05.7	**+0.3**
	baz=248							
YUS				*e*S		**Sn**	19 12 22.6	**-0.4**
	baz=248							
NSTT	**Nanjuang**	**1.44**	**296**	*e*P		**Pg**	19 12 06.5	**-0.2**
	baz=294							
NSTT				*e*S		**Sg**	19 12 25.0	**-0.6**
	baz=294							
JKRS	**Kuro-shima**	**1.47**	**80**	P		**Pg**	19 12 06.9	**-0.3**
ELDTW	**Lidau**	**1.52**	**238**	P		**Pn**	19 12 05.6	**+0.5**
	baz=236							
ELDTW				*e*S		**Sn**	19 12 23.5	**-1.0**
	baz=236							
TWQ1	**Liyutan**	**1.55**	**283**	*e*P		**Pb**	19 12 07.8	**+0.9**
	baz=280							
TWQ1				*e*S		**Sg**	19 12 27.9	**-1.0**
	baz=280							
ALS	**Alishan**	**1.56**	**252**	P		**Pb**	19 12 07.6	**+0.3**
	baz=249							
WNT	**Mingjian**	**1.60**	**266**	*e*P		**Pb**	19 12 08.7	**+1.0**
	baz=263							
TCU	**Taichung**	**1.60**	**276**	*e*P		**Pg**	19 12 09.1	**-0.7**
	baz=272							
JIJ	**Ishigaki jima**	**1.61**	**77**	P		**Pb**	19 12 08.2	**+0.2**
JIJ				S		**Sb**	19 12 28.0	**+0.1**
CHN5	**Tsauling**	**1.65**	**256**	P		**Pb**	19 12 09.0	**+0.3**
	baz=253							
TWG	**Pinlang**	**1.71**	**227**	*e*P		**Pn**	19 12 08.3	**+0.7**
	baz=238							
TWG				*e*S		**Sn**	19 12 28.4	**-0.5**
	baz=238							
WGK	**Gukeng**	**1.73**	**260**	*e*P		**Pb**	19 12 10.9	**+0.8**
	baz=257							
STYT	**Tauyuan**	**1.74**	**242**	*e*P		**Pb**	19 12 09.6	**-0.6**
	baz=228							
STYT				*e*S		**Sb**	19 12 31.9	**+0.2**
	baz=228							
CHN4	**Tsaushan**	**1.80**	**249**	*e*P		**Pn**	19 12 09.6	**+0.8**
	baz=247							
JISG	**Ishigakijimahi**	**1.82**	**71**	P		**Pb**	19 12 10.6	**-0.9**
JISG				*e*S		**Sb**	19 12 33.2	**-0.7**
WTP	**Ta-pu**	**1.82**	**246**	*e*P		**Pb**	19 12 11.6	**0.0**
	baz=245							
WTP				*e*S		**Sb**	19 12 35.0	**+1.0**
	baz=245							
CHN1	**Nanshi**	**1.92**	**245**	P		**Pb**	19 12 13.6	**+0.3**
	baz=244							
CHN1				*e*S		**Sb**	19 12 37.3	**+0.5**
	baz=244							
TWK	**Hsinying**	**1.92**	**248**	*e*P		**Pb**	19 12 12.7	**-0.6**
	baz=245							
SGST	**Jiashian**	**1.92**	**242**	*e*P		**Pb**	19 12 12.9	**-0.4**
	baz=228							
ECL	**Taimali**	**1.94**	**224**	*e*P		**Pn**	19 12 11.5	**+0.7**
	baz=233							
SSD	**Sandimen**	**2.06**	**233**	P		**Pb**	19 12 15.0	**-0.7**
	baz=222							
EAST	**Anshuo**	**2.17**	**222**	*e*P		**Pn**	19 12 16.0	**+2.1**
	baz=220							

*IDC **22** 19:18:54.3±3.0, 23°.85S×179°.77W, h473km±39km, mb3.6/8, mb1 3.7/10, mb1mx3.4/30, mbtmp4.5/10, Error ellipse: s-maj=32.0km s-min=20.2km az=155.0*

ISC 22 19:18:58.0±1.3, 24°.1S±0°.1×179°.8W±0°.2, h518km, n11, σ0s68/11, mb4.1/8, South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time	Res
								h m s	ISC
AFI	**Afiamalu**	**12.66**	**38**	P		P		19 21 37.4	-6.3
AFI				S			S	19 23 47.1	-13
	1.9nm,0.3s,baz=328,slow=21,SNR=3.0								
	1.3nm,0.3s,baz=235,slow=21,SNR=2.6								
DZM	**Mont Dzumac**	**12.81**	**276**	P		**P**		**19 21 45.6**	**+0.5**
DZM				S			S	19 23 52.3	-11
	0.2nm,0.3s,baz=130,slow=16,SNR=3.5								
	0.1nm,0.3s,baz=287,slow=23,SNR=3.2								
URZ	**Urewera**	**14.37**	**190**	P		**P**		**19 22 01.5**	**+0.4**
	3.8nm,0.3s,baz=78,slow=19,SNR=21								
URZ				S			**S**	**19 24 31.7**	**-0.4**
	0.3nm,0.3s,baz=262,slow=15,SNR=4.3								
CTA	**Charters Tower**	**31.65**	**270**	P		**P**		**19 24 38.5**	**-0.1**
	9.9nm,0.4s,baz=96,slow=14,SNR=15								
PMG	**Port Moresby**	**34.72**	**289**	P		**P**		**19 25 04.1**	**-0.5**
	11nm,0.7s,baz=142,slow=8.2,SNR=5.3								
STKA	**Stephens Creek**	**34.81**	**248**	P		**P**		**19 25 05.7**	**+0.5**
	1.3nm,0.4s,baz=82,slow=9.0,SNR=9.2								
ASAR	**Alice Springs**	**42.17**	**261**	P		**P**		**19 26 04.8**	**-0.4**
	4.4nm,0.6s,baz=95,slow=7.5,SNR=99								
WRA	**Warramunga Arr**	**42.56**	**266**	P		**P**		**19 26 07.2**	**-1.1**
	7.6nm,0.4s,baz=93,slow=8.5,SNR=282								
FITZ	**Fitzroy Crossi**	**50.98**	**266**	P		**P**		**19 27 11.6**	**-0.4**
	4.0nm,0.6s,baz=112,slow=6.1,SNR=20								
CMAR	**Chiang Mai Arr**	**89.75**	**290**	P		**P**		**19 31 02.4**	**+1.0**
	0.5nm,0.8s,baz=139,slow=4.7,SNR=4.5								
TXAR	**Lajitas Array**	**90.39**	**58**	P		**P**		**19 31 03.9**	**-0.3**
	0.5nm,0.7s,baz=225,slow=5.1,SNR=5.6								

MEX 22 19:21:19.1±0.4, 15°.53N×95°.37W, h16km±10km, MD3.8, Near coast of Oaxaca

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time	Res
								h m s	ISC

HUIG	**Huatulco**	**0.75**	**289**	*e*P		Pg	19 21 30.9	-2.8
HUIG				*i* S		Sg	19 21 40.1	-3.5
VHO	**Vista Hermosa**	**2.02**	**320**	*e*P		Pn	19 21 49.5	-3.1
VHO				*e*S		Sn	19 22 12.9	-4.8
PCIG		**2.08**	**85**	*e*P		Pn	19 21 50.0	-3.3
PCIG				*e*S		Sn	19 22 14.2	-4.7
PNIG	**Pinotepa**	**2.79**	**288**	*e*P		Pn	19 22 00.5	-2.6
PNIG				*e*S		Sn	19 22 32.4	-4.0

IDC 22 19:28:02.6±4.3, 5°.38S×150°.36E, h0km, mb3.6/4, mb1 3.8/5, mb1mx3.4/44, mbtmp3.7/5, ML1.9/1, MS3.4/2, Ms1 3.4/2, ms1mx2.8/35, Error ellipse: s-maj=68.1km s-min=60.8km az=121.0, New Britain region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time	Res
								h m s	ISC
PMG	**Port Moresby**	**5.11**	**218**	Pn		Pn		19 29 22.3	+1.8
	3.1nm,0.3s,baz=46,slow=5.9,SNR=12								
PMG				Sn		Sn		19 30 20.0	-0.3
	6.0nm,0.3s,baz=51,slow=17,SNR=13								
WRA	**Warramunga Arr**	**21.28**	**226**	P		P		19 32 50.8	0.0
	1.2nm,0.5s,baz=52,slow=10,SNR=12								
ASAR	**Alice Springs**	**24.13**	**219**	P		P		19 33 19.3	-1.2
	0.6nm,0.6s,baz=54,slow=9.1,SNR=13								
FITZ	**Fitzroy Crossi**	**27.26**	**240**	P		P		19 33 49.0	+0.1
	0.8nm,0.7s,baz=53,slow=10,SNR=2.7								
STKA	**Stephens Creek**	**27.61**	**196**	P		P		19 33 52.5	+0.7
	1.6nm,1.0s,baz=30,slow=11,SNR=3.6								
JCJ	**Chichijima**	**33.24**	**347**	LR		LR		19 47 02.8	
	comp=Z,123nm,19.0s,baz=168,slow=34								
KSRS	**Korea Array**	**47.47**	**336**	LR		LR		19 56 07.7	
	comp=Z,24nm,19.2s,baz=175,slow=36								

SKHL 22 19:32:50.5±0.5, 48°.52N×141°.76E, h10km, mb3.5/2, Sakhalin Island

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time	Res
								h m s	ISC
UGL	**Uglegorsk**	**0.59**	**20**	*e*Pg		Pg		19 33 02.4	+0.4
UGL				AMB		AMB		19 33 06.3	
	44nm,0.5s								
UGL				*e*Sg		Sb		19 33 11.3	-0.1
UGL				A		A		19 33 13.0	
	380nm,0.2s								
UGL				A		A		19 33 13.0	
	180nm,0.2s								
TYV	**Tymovskoe**	**2.42**	**14**	*e*Pg		Pg		19 33 39.0	+2.2
TYV				AMB		AMB		19 33 40.3	
	16nm,0.6s								
GRNR	**Gornyy**	**4.13**	**305**	*e*Sg		Sg		19 35 10.0	+6.8
GRNR				A		A		19 35 11.8	
	10.0nm,0.8s								
EKMR	**Ekimchan**	**7.20**	**313**	*e*Sg		Sg		19 36 51.9	+10
EKMR				A		A		19 36 58.0	
	4.0nm,0.5s								

*IDC **22** 19:36:52.7±1.4, 36°.98N×140°.75E, h0km, mb3.5/4, mb1 3.6/6, mb1mx3.2/73, mbtmp3.5/6, ML3.0/2, Error ellipse: s-maj=30.6km s-min=22.0km az=71.0*
*ISCJB **22** 19:36:54.0±0.7, 37°.00N±0°.04×140°.78E±0°.06, h18km±5km, mb3.5/4, Error ellipse: s-maj=7.9km s-min=5.2km az=27.4*
*JMA **22** 19:36:54.8, 37°.02N×140°.66E, h7km±1km, M3.4*
JMA Felt I J1.

ISC 22 19:36:54.8±1.0, 37°.02N±0°.03×140°.69E±0°.04, h11km±7km, n14, σ0s72/23, mb3.7/4, 7C, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time	Res
								h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.12**	**44**	⇑P		**Pg**		**19 36 57.8**	**-0.1**
ONAJ				S		**Sg**		**19 37 00.1**	**0.0**
JFK	**Kawauchi**	**0.38**	**22**	⇑P		**Pg**		**19 37 02.3**	**-0.1**
JFK				S		**Sg**		**19 37 07.9**	**+0.5**
JHO	**Hitachi**	**0.42**	**194**	⇑P		**Pg**		**19 37 02.7**	**-0.3**
JHO				S		**Sg**		**19 37 08.3**	**-0.2**
JFT	**Otama**	**0.58**	**331**	⇑P		**Pg**		**19 37 06.0**	**0.0**
JFT				S		**Sg**		**19 37 13.6**	**-0.1**
JSB	**Shiboa**	**0.62**	**266**	⇑P		**Pg**		**19 37 07.1**	**+0.2**
JSB				S		**Sg**		**19 37 15.2**	**+0.2**
JMM	**Marumori**	**0.85**	**5**	⇑P		**Pg**		**19 37 10.6**	**-0.7**
JMM				S		**Sg**		**19 37 21.9**	**-0.5**
JFY	**Yanaizu**	**0.88**	**297**	⇑P		**Pg**		**19 37 11.3**	**-0.5**
JFY				S		**Sg**		**19 37 22.3**	**-1.0**
MJAR	**Matsushiro Arr**	**2.05**	**257**	Pn		**Pn**		**19 37 30.2**	**+0.9**
	8.4nm,0.3s,baz=77,slow=15,SNR=15								
MJAR				Sn		**Sn**		**19 37 55.8**	**+1.0**
	10nm,0.3s,baz=86,slow=26,SNR=12								
MAT	**Matsushiro**	**2.05**	**257**	P		**Pn**		**19 37 30.5**	**+1.3**
MAT				S		**Sb**		**19 37 57.4**	**-0.2**
ASAJ	**Asahikawa**	**7.24**	**11**	Pn		**Pn**		**19 38 41.7**	**+1.2**
	0.2nm,0.3s,baz=203,slow=13,SNR=2.7								
SONM	**Songino Array**	**27.32**	**304**	P		**P**		**19 42 38.4**	**-1.2**
	0.3nm,0.7s,baz=108,slow=8.6,SNR=3.1								
KURBB	**Kurchatov Arra**	**45.56**	**308**	P		**P**		**19 45 14.6**	**+0.2**
	0.5nm,0.4s,baz=84,slow=8.5,SNR=2.9								
WRA	**Warramunga Arr**	**56.97**	**187**	P		**P**		**19 46 39.4**	**-0.9**
	0.8nm,0.6s,baz=5.4,slow=7.5,SNR=13								
ASAR	**Alice Springs**	**60.70**	**187**	P		**P**		**19 47 05.8**	**-0.4**
	0.3nm,0.7s,baz=13,slow=7.1,SNR=4.9								

*IDC **22** 19:41:40.3±1.5, 31°.91N×50°.17E, h0km, mb3.7/12, mb1 3.8/19, mb1mx3.6/68, mbtmp3.7/19, ML3.6/7, Error ellipse: s-maj=31.4km s-min=16.0km az=177.0*
*ISCJB **22** 19:41:41.6±0.4, 31°.74N±0°.05×50°.13E±0°.04, h15km, mb3.5/13, Error ellipse: s-maj=6.8km s-min=4.4km az=9.6*
*CSEM **22** 19:41:43.2±0.3, 31°.83N×50°.17E, h10km, ML3.3, Error ellipse: s-maj=7.9km s-min=5.4km az=32.0*
*TEH **22** 19:41:43.9, 31°.85N×50°.18E, h6km, ML3.5*

ISC 22 19:41:42.7±0.6, 31°.84N±0°.06×50°.16E±0°.04, h15km, n71, σ1s50/75, mb3.5/13, 5C-2D, Northern and central Iran

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time	Res
								h m s	ISC
SHGR	**Shooshtar-Gavs**	**1.19**	**284**	*e*Pg		**Pg**		**19 42 05.8**	**+0.2**
IGAR	**Gharneh**	**1.69**	**70**	*e*Pn		**Pn**		**19 42 12.6**	**+0.7**
IGAR				*e*AMB		AMB		19 42 42.2	
	comp=Z,6μm,0.2s								
IRAM	**Ramesheh**	**1.89**	**90**	*e*Pn		**Pn**		**19 42 15.7**	**+1.1**
IRAM				*e*Sg		**Sg**		**19 42 42.9**	**-0.6**
IRAM				*e*AMB		AMB		19 42 49.7	
	comp=Z,2μm,0.3s								
IRAM	**Ramesheh**	**1.89**	**90**	*e*Pn		**Pn**		**19 42 15.7**	**+1.1**
IRAM				*e*Sg		**Sg**		**19 42 42.9**	**-0.6**
IKLH	**Kolahrood**	**1.90**	**39**	*e*Pn		**Pb**		**19 42 16.4**	**-0.9**
IKLH				*e*AMB		AMB		19 42 50.6	
	comp=Z,5μm,0.2s								
IKLH	**Kolahrood**	**1.90**	**39**	*e*Pn		**Pb**		**19 42 16.4**	**-0.9**
KHMZ	**Khomeyn**	**1.91**	**355**	*e*Pn		**Pn**		**19 42 16.3**	**+1.4**
IZEF	**Zefreh**	**2.12**	**59**	*e*Pn		**Pn**		**19 42 19.3**	**+1.5**
IZEF				*e*Sg		**Sb**		**19 42 48.6**	**+1.5**
IZEF				*e*AMB		AMB		19 42 57.5	
	comp=Z,2μm,0.4s								
IZEF	**Zefreh**	**2.12**	**59**	*e*Pn		**Pn**		**19 42 19.3**	**+1.5**
IZEF				*e*Sg		**Sb**		**19 42 48.6**	**+1.5**
QAM	**Ghamsar**	**2.20**	**29**	*e*Pn		**Pn**		**19 42 20.7**	**+1.8**
QAM				*e*AMB		AMB		19 42 25.9	
	comp=Z,6μm,0.2s								
IKMR	**Kamar-syah**	**2.25**	**319**	*e*Pn		**Pb**		**19 42 21.7**	**-1.4**
IKMR				*e*AMB		AMB		19 43 02.9	
	comp=Z,99nm,0.3s								
IKMR	**Kamar-syah**	**2.25**	**319**	*e*Pn		**Pb**		**19 42 21.7**	**-1.4**
IKAZ	**Kazeroun**	**2.51**	**144**	*e*Pn		**Pn**		**19 42 25.3**	**+2.1**
IKAZ				*e*AMB		AMB		19 43 12.7	
	comp=Z,2μm,0.2s								
IKAZ	**Kazeroun**	**2.51**	**144**	*e*Pn		**Pn**		**19 42 25.3**	**+2.1**
IKFM	**Kafar-mosalman**	**2.58**	**311**	*e*Pn		**Pn**		**19 42 26.1**	**+2.2**
IKFM				*e*AMB		AMB		19 43 60.0	
	comp=Z,99nm,0.0s								
IKFM	**Kafar-mosalman**	**2.58**	**311**	*e*Pn		**Pn**		**19 42 26.1**	**+2.2**
ASAO	**Ashtian**	**2.71**	**358**	*e*Pn		**Pn**		**19 42 27.3**	**+1.4**
GHVR	**GHOM**	**2.80**	**19**	*e*Pn		**Pn**		**19 42 27.8**	**+0.7**
ISAD	**Sadrabad**	**3.00**	**88**	*e*Pn		**Pn**		**19 42 32.5**	**+2.6**
ISAD				*e*AMB		AMB		19 42 46.7	
	comp=Z,882nm,0.3s								
ISAD	**Sadrabad**	**3.00**	**88**	*e*Pn		**Pn**		**19 42 32.5**	**+2.6**
IPAR	**Pars**	**3.18**	**128**	*e*Pn		**Pn**		**19 42 33.8**	**+1.4**
IPAR				*e*AMB		AMB		19 43 19.6	
	comp=Z,636nm,0.4s								
IPAR	**Pars**	**3.18**	**128**	*e*Pn		**Pn**		**19 42 33.8**	**+1.4**
IVRN	**Varamin**	**3.41**	**22**	*e*Pn		**Pn**		**19 42 36.8**	**+1.4**

IVRN				*e*AMB		AMB		19 42 47.5
	comp=Z,1μm,0.2s							
IVRN	**Varamin**	**3.41**	**22**	*e*Pn		**Pn**		**19 42 36.8**	**+1.4**
IRAZ	**Razeghan**	**3.57**	**357**	*e*Pn		**Pn**		**19 42 39.7**	**+2.0**
IRAZ				*e*AMB		AMB		19 42 50.5
	comp=Z,1μm,0.2s							
IRAZ	**Razeghan**	**3.57**	**357**	*e*Pn		**Pn**		**19 42 39.7**	**+2.0**
ICHK	**Chekchek**	**3.63**	**82**	*e*Pn		**Pn**		**19 42 40.7**	**+2.2**
ICHK				*e*AMB		AMB		19 42 56.2	
	comp=Z,677nm,0.3s							
ICHK	**Chekchek**	**3.63**	**82**	*e*Pn		**Pn**		**19 42 40.7**	**+2.2**
IMHD	**Mahdasht**	**3.86**	**6**	*e*Pn		**Pn**		**19 42 43.0**	**+1.3**
IMHD				*e*AMB		AMB		19 42 57.0
	comp=Z,696nm,0.2s							
IMHD	**Mahdasht**	**3.86**	**6**	*e*Pn		**Pn**		**19 42 43.0**	**+1.3**
SNGE	**Sanandaj**	**4.01**	**325**	*e*Pn		**Pn**		**19 42 45.6**	**+1.8**
IDMV	**Damavand**	**4.04**	**22**	*e*Pn		**Pn**		**19 42 45.2**	**+0.9**
IDMV				*e*AMB		AMB		19 42 57.3
	comp=Z,505nm,0.3s							
IDMV	**Damavand**	**4.04**	**22**	*e*Pn		**Pn**		**19 42 45.2**	**+0.9**
DAMV	**Damavand**	**4.07**	**21**	*e*Pn		**Pn**		**19 42 45.7**	**+1.0**
IAFJ	**Afjeh**	**4.21**	**17**	*e*Pn		**Pn**		**19 42 48.3**	**+1.6**
IAFJ				*e*AMB		AMB		19 43 12.8
	comp=Z,488nm,0.2s							
IAFJ	**Afjeh**	**4.21**	**17**	*e*Pn		**Pn**		**19 42 48.3**	**+1.6**
ILAS	**Lasjerd**	**4.24**	**33**	*e*Pn		**Pn**		**19 42 48.5**	**+1.6**
ILAS				*e*AMB		AMB		19 43 08.4
	comp=E,655nm,0.2s							
ILAS	**Lasjerd**	**4.24**	**33**	*e*Pn		**Pn**		**19 42 48.5**	**+1.6**
GHIR	**Ghir-Karzin**	**4.30**	**145**	*e*Pn		**Pn**		**19 42 47.7**	**0.0**
IFIR	**Firoozkooh**	**4.37**	**29**	*e*Pn		**Pn**		**19 42 50.7**	**+2.0**
IFIR				*e*AMB		AMB		19 43 23.1
	comp=Z,274nm,0.2s							
IFIR	**Firoozkooh**	**4.37**	**29**	*e*Pn		**Pn**		**19 42 50.7**	**+2.0**
GEYT	**Alibeck**	**5.92**	**45**	Pn		**Pn**		**19 43 51.2**	**+0.1**
	comp=Z,0.3nm,0.3s,baz=231,slow=13,SNR=7.5								
ASF	**Jabal al Asfar**	**11.27**	**275**	Pn		**Pn**		**19 44 22.2**	**-1.1**
	comp=Z,1.8nm,0.3s,baz=37,slow=4.8,SNR=14								
WSAR	**Wadi Sarin**	**11.39**	**137**	Pn		**Pn**		**19 44 24.2**	**-0.6**
	comp=Z,0.5nm,0.3s,baz=328,slow=13,SNR=8.4								
MMAI	**Mount Meron Ar**	**12.53**	**279**	Pn		**Pn**		**19 44 38.9**	**-1.6**
	comp=Z,0.3nm,0.3s,baz=106,slow=15,SNR=3.4								
EIL	**Elat**	**13.26**	**265**	Pn		**Pn**		**19 44 50.8**	**+0.3**
	comp=Z,0.4nm,0.3s,baz=99,slow=11,SNR=4.1								
BRTR	**Keskin Array B**	**15.54**	**305**	Pn		**Pn**		**19 45 22.2**	**+0.9**
	comp=Z,0.1nm,0.3s,baz=116,slow=13,SNR=3.3								
AKTO	**Aktyubinsk**	**19.48**	**15**	P		**P**		**19 46 08.6**	**-0.3**
	comp=Z,0.1nm,0.3s,baz=215,slow=16,SNR=2.8								
IDI	**Anoyia**	**21.32**	**286**	P		**P**		**19 46 29.8**	**+0.7**
	comp=Z,12nm,0.8s,baz=113,slow=14,SNR=6.5								
CFR	**Carcaliu**	**21.70**	**314**	⇑*i*P		**P**		**19 46 33.1**	**+0.2**
MLR	**Muntele Rosu**	**23.20**	**313**	P		**P**		**19 46 51.3**	**+2.2**
	comp=Z,0.3nm,0.5s,baz=340,slow=9.1,SNR=5.8								
MLR	**Muntele Rosu**	**23.20**	**313**	⇓*i*P		**P**		**19 46 51.5**	**+2.4**
TESR	**Tescani**	**23.27**	**316**	⇑*i*P		**P**		**19 46 49.4**	**-0.2**
VOIR		**23.74**	**312**	⇑*i*P		**P**		**19 46 56.0**	**+1.7**
ARR	**Arges**	**23.97**	**312**	⇑*i*P		**P**		**19 46 57.5**	**+1.0**
AKASG	**Malin Array Be**	**24.41**	**327**	P		**P**		**19 46 58.6**	**-1.8**
	comp=Z,0.3nm,0.5s,baz=110,slow=7.2,SNR=3.3								
BURAR	**Bucovina Array**	**24.68**	**317**	⇑*i*P		**P**		**19 47 04.1**	**+1.1**
GZR	**Gura Zlata**	**25.18**	**310**	⇓*i*P		**P**		**19 47 08.7**	**+1.2**
BVAR	**Borovoye Array**	**25.74**	**29**	P		**P**		**19 47 11.4**	**-1.1**
	comp=Z,0.4nm,0.5s,baz=179,slow=7.2,SNR=3.4								
KOLS	**Kolonicke sedl**	**27.04**	**317**	*e*P		**P**		**19 47 28.1**	**+3.9**
MKAR	**Makanchi Array**	**28.76**	**49**	P		**P**		**19 47 39.4**	**-0.3**
	comp=Z,0.3nm,0.5s,baz=242,slow=12,SNR=5.9								
GERES	**GERESS Array B**	**32.19**	**313**	P		**P**		**19 48 11.4**	**+1.3**
	comp=Z,0.2nm,0.4s,baz=107,slow=9.3,SNR=2.5								
ZALV	**Zalesovo Beam**	**33.15**	**38**	P		**P**		**19 48 17.3**	**-1.0**
	comp=Z,0.6nm,0.4s,baz=255,slow=9.1,SNR=4.6								
FINES	**FINESS Array B**	**33.52**	**339**	P		**P**		**19 48 21.1**	**-0.2**
	comp=Z,1.2nm,0.5s,baz=140,slow=10,SNR=14								
NB2	**NORSAR Subarra**	**38.67**	**331**	P		**P**		**19 49 04.

HWUT	**Hardware Ranch**	**3.86**	**268**	*e*Pn		**Pn**	**19 51 20.7**	**+0.2**
RLMT	**Red Lodge**	**3.88**	**329**	*e*Pn		**Pn**	**19 51 22.7**	**+2.0**
IMW	**Indian Meadow**	**3.90**	**303**	*e*Pn		**Pn**	**19 51 22.3**	**+1.2**
PV04	**Paradox Valley**	**3.94**	**210**	*e*Pn		**Pn**	**19 51 24.4**	**+2.9**
H17A	**Grant Village**	**3.97**	**311**	*e*Pn		**Pb**	**19 51 28.5**	**-2.1**
LKWY	**Lake**	**3.98**	**314**	*e*Pg		**Pb**	**19 51 29.7**	**-1.1**
KSCO	**Kaye Shedlock'**	**4.05**	**133**	*e*Pn		**Pn**	**19 51 24.4**	**+1.4**
PV01	**Paradox Valley**	**4.06**	**205**	*e*Pn		**Pn**	**19 51 24.8**	**+1.6**
SDCO	**Great Sand Dun**	**4.15**	**170**	*e*Pn		**Pn**	**19 51 26.0**	**+1.4**
MVCO	**Mesa Verde**	**4.90**	**200**	*e*Pn		Pn	19 51 39.7	+5.0
DUG	**Dugway, Tooele** 9.7nm,0.6s	**5.11**	**253**	*e*Pn		**Pn**	**19 51 38.1**	**+0.5**
DLMT	**Dillon** 9.3nm,0.9s	**5.70**	**310**	Pn		Pn	19 51 50.8	+5.2
CBKS	**Cedar Bluff** 32nm,0.5s	**5.94**	**118**	Pn		**Pn**	**19 51 50.2**	**+1.3**
HLID	**Hailey** 6.4nm,0.9s	**6.13**	**289**	*e*Pn		**Pn**	**19 51 54.8**	**+3.1**
EGMT	**Eagleton** 13nm,0.6s	**6.62**	**340**	*e*Pn		**Pn**	**19 52 00.3**	**+2.1**
MFID	**Camas Ranch** 3.9nm,0.7s	**7.12**	**286**	*e*Pn		**Pn**	**19 52 04.5**	**-0.5**
WUAZ	**Wupatki** 11nm,0.7s	**7.41**	**213**	*e*Pn		**Pn**	**19 52 10.3**	**+1.2**
ECSD	**EROS Data Cent** 6.5nm,0.4s	**7.46**	**72**	*e*Pn		**Pn**	**19 52 10.6**	**+0.9**
AMTX	**Amarillo** 20nm,0.6s	**7.88**	**150**	Pn		Pn	19 52 21.2	+5.6
AGMN	**Agassiz Nation** 6.2nm,0.3s	**9.87**	**46**	*e*Pn		**Pn**	**19 52 42.3**	**-0.4**
ULM	**Lac du Bonnet** 2.3nm,0.3s,baz=224,slow=13,SNR=13	**11.14**	**37**	Pn		**Pn**	**19 52 58.6**	**-1.5**
ULM	0.4nm,0.3s,baz=132,slow=23,SNR=3.5			Lg		Lg	19 56 09.9	
YKA	**Yellowknife Ar** 0.2nm,0.5s,baz=160,slow=11,SNR=7.5	**21.25**	**349**	P		**P**	**19 55 06.1**	**-0.9**

*ISCJB **22** 19:54:16.9±1.4, 36.°82N±0.°05×141.°41E±0.°08, h15km±8km, mb3.3/4, Error ellipse: s-maj=11.1km s-min=6.5km az=25.8*
*JMA **22** 19:54:19.9±0.1, 36.°84N×141.°18E, h37km±1km, M3.4*
*IDC **22** 19:54:24.5±3.0, 37.°09N×140.°96E, h42km±26km, mb3.2/4, mb1 3.4/7, mb1mx3.1/53, mbtmp3.5/7, ML3.2/3, Error ellipse: s-maj=40.4km s-min=22.2km az=82.0*
ISC 22 19:54:17.3±1.9, **36.°82N**±0.°04×**141.°25E**±0.°07, **h2**km±12km, **n21**, σ0**899**/24, **mb3.4**/4, **Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.46**	**308**	P	**Pb**	**19 54 28.9**	**+0.8**
ONAJ				S	**Sb**	**19 54 35.2**	**-0.2**
JHO	**Hitachi**	**0.58**	**249**	P	**Pb**	**19 54 30.9**	**+0.6**
JHO				S	**Sb**	**19 54 38.6**	**-0.4**
JFK	**Kawauchi**	**0.62**	**331**	P	**Pb**	**19 54 31.4**	**+0.5**
JFK				S	**Sb**	**19 54 39.1**	**-1.0**
JFT	**Otama**	**1.00**	**314**	P	**Pb**	**19 54 37.9**	**+0.4**
JFT				S	**Sg**	**19 54 50.4**	**+0.8**
JYT	**Yasato**	**1.04**	**235**	P	**Pb**	**19 54 37.7**	**-0.3**
JYT				*e*S	**Sg**	**19 54 50.2**	**-0.4**
JSB	**Shiboa**	**1.07**	**278**	P	**Pn**	**19 54 39.3**	**-0.1**
JSB				S	**Sb**	**19 54 53.3**	**+0.1**
JMM	**Marumori**	**1.10**	**341**	P	**Pg**	**19 54 38.7**	**+0.2**
JMM				S	**Sg**	**19 54 51.9**	**-0.9**
MJAR	**Matsushiro Arr** 3.1nm,0.3s,baz=87,slow=15,SNR=13	**2.46**	**264**	P	**Pn**	**19 54 58.6**	**+0.1**
MJAR				S	**Sb**	**19 55 32.7**	**-0.3**
	4.7nm,0.3s,baz=81,slow=30,SNR=7.8						
MAT	**Matsushiro**	**2.46**	**264**	P	**Pn**	**19 54 59.1**	**+0.6**
MAT				S	**Sb**	**19 55 31.6**	**-1.4**
JHJ	**Hachijo jima 2** 9.3nm,0.3s,baz=31,slow=18,SNR=3.1	**3.89**	**198**	P	**Pb**	**19 55 26.1**	**-0.4**
ASAJ	**Asahikawa** 0.4nm,0.3s,baz=169,slow=10,SNR=4.0	**7.36**	**8**	P	**Pn**	**19 56 05.3**	**-0.4**
SONM	**Songino Array** 0.3nm,0.7s,baz=105,slow=8.0,SNR=3.5	**27.79**	**304**	P	**P**	**20 00 05.9**	**-1.8**
H11N2	**WAKE ISLAND Hy 28.16** baz=313,slow=75,SNR=56	**120**		T	T	20 29 40.0	
H11N1	**WAKE ISLAND Hy 28.16** baz=313,slow=75,SNR=71	**120**		T	T	20 29 38.0	
H11N3	**WAKE ISLAND Hy 28.17** baz=313,slow=75,SNR=48	**120**		T	T	20 29 38.8	
H11S1	**WAKE ISLAND Hy 28.86** baz=315,slow=76,SNR=45	**122**		T	T	20 30 35.3	
H11S3	**WAKE ISLAND Hy 28.86** baz=315,slow=76,SNR=37	**122**		T	T	20 30 35.4	
H11S2	**WAKE ISLAND Hy 28.87** baz=315,slow=76,SNR=22	**122**		T	T	20 30 36.5	
ZALV	**Zalesovo Beam** 0.4nm,0.4s,baz=72,slow=9.3,SNR=3.4	**41.96**	**313**	P	**P**	**20 02 08.9**	**-0.4**
MKAR	**Makanchi Array** 0.6nm,0.7s,baz=86,slow=10,SNR=8.3	**44.12**	**302**	P	**P**	**20 02 25.9**	**-1.2**
WRA	**Warramunga Arr** 0.2nm,0.6s,baz=3.9,slow=7.1,SNR=4.5	**56.83**	**188**	P	**P**	**20 04 06.0**	**+2.7**

NNC 22 20:00:44.7±3.4, **37.°78N×71.°41E, h0km, mb3.5, mpv3.1, 1D, Error ellipse: s-maj=25.4km s-min=21.2km az=169.0, Afghanistan-Tajikistan border region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SFK	**Sufi-Kurgan** 3.6nm,0.3s	**2.76**	**36**	Pn	Pn	20 01 30.6	+0.2
SFK				⇓Sn	Sn	20 02 06.5	+1.9
	14nm,0.4s						
MNAS	**Manas** 1.4nm,0.3s	**4.78**	**10**	Pn	Pn	20 01 58.5	+0.5
MNAS				Sn	Sn	20 02 54.8	+0.7
	4.5nm,0.5s						
KK31	**Karatay Array** 0.6nm,0.3s,baz=175,slow=12,SNR=32	**5.36**	**353**	Pn	Pn	20 02 06.9	+0.9
KK31				Sn	Sn	20 03 10.2	+1.8
	5.6nm,0.5s,baz=168,slow=19,SNR=25						
AAK	**Ala-Archa** 0.9nm,0.4s	**5.39**	**25**	Pn	Pn	20 02 04.3	-2.2
AAK				Sn	Sn	20 03 08.7	-0.7
	4.3nm,0.6s						

*IDC **22** 20:08:16.0±2.3, 37.°19N×142.°91E, h0km, mb3.4/3, mb1 3.5/4, mb1mx3.2/35, mbtmp3.3/4, ML2.9/1, Error ellipse: s-maj=50.7km s-min=31.9km az=54.0*
*JMA **22** 20:08:19.5±0.2, 37.°12N×142.°56E, h18km, M3.4*
ISC 22 20:08:19.2±2.9, **37.°17N**±0.°06×**142.°50E**±0.°08, **h9**km±16km, **n15**, σ1**906**/25, **mb3.3**/3, **Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**1.31**	**279**	P	**Pb**	**20 08 43.9**	**0.0**
JFK				*e*S	**Sn**	**20 09 01.8**	**+0.6**
ONAJ	**Iwakimizuishiy**	**1.36**	**268**	P	**Pn**	**20 08 44.4**	**+0.1**
ONAJ				S	**Sg**	**20 09 03.0**	**+0.1**
JMM	**Marumori**	**1.52**	**298**	P	**Pb**	**20 08 47.2**	**-0.4**
JMM				*e*S	**Sn**	**20 09 06.6**	**+0.2**
JIO	**Ouri**	**1.57**	**325**	P	**Pb**	**20 08 48.0**	**-0.4**
JIO				S	**Sn**	**20 09 08.1**	**+0.4**
JFT	**Otama**	**1.75**	**282**	P	**Pn**	**20 08 49.9**	**+0.1**
JFT				*e*S	**Sb**	**20 09 13.3**	**-0.4**
JOU	**Okura**	**1.88**	**310**	P	**Pb**	**20 08 53.0**	**-0.7**
JOU				*e*S	**Sn**	**20 09 15.2**	**-0.1**
JMK	**Ichinoseki**	**2.05**	**331**	P	**Pn**	**20 08 54.9**	**+1.2**
JYK	**Kaneyama**	**2.43**	**317**	P	**Pn**	**20 09 00.6**	**+1.6**
JOM	**Ohasama**	**2.49**	**338**	P	**Pn**	**20 09 01.2**	**+1.4**
JOM				S	**Sb**	**20 09 33.0**	**-1.8**
JAG	**Ashikaga**	**2.55**	**254**	P	**Pn**	**20 09 01.9**	**+1.2**
JAG				*e*S	**Sn**	**20 09 32.3**	**+0.5**
JRY	**Ryogami san**	**3.11**	**249**	P	**Pn**	**20 09 09.5**	**+1.1**
JRY				S	**Sn**	**20 09 45.2**	**-0.5**
MJAR	**Matsushiro Arr** 0.9nm,0.3s,baz=89,slow=15,SNR=8.4	**3.49**	**261**	Pn	**Pn**	**20 09 15.8**	**+2.1**
MJAR				Sn	**Sb**	**20 10 02.6**	**-1.1**
	0.9nm,0.3s,baz=102,slow=27,SNR=5.3						
SONM	**Songino Array** 0.3nm,0.7s,baz=92,slow=8.3,SNR=3.0	**28.43**	**304**	P	**P**	**20 14 13.6**	**-0.6**
MKAR	**Makanchi Array** 0.1nm,0.2s,baz=80,slow=8.9,SNR=3.0	**44.78**	**302**	P	**P**	**20 16 34.5**	**+1.4**
WRA	**Warramunga Arr** 0.2nm,0.4s,baz=7.3,slow=7.1,SNR=5.1	**57.32**	**189**	P	**P**	**20 18 06.2**	**-1.3**

MEX 22 20:24:00.9±0.7, **27.°46N×111.°43W, h2km, MD3.7, Gulf of California**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GUYB	**Guaymas**	**0.66**	**48**	*e*P	Pg	20 24 12.8	-0.8
GUYB				*e*S	Sg	20 24 23.1	+1.0
SRIG	**Santa Rosalia**	**0.73**	**259**	*e*P	Pg	20 24 13.9	-1.1
SRIG				*i* S	Sg	20 24 25.1	+0.6
HSIG		**1.61**	**15**	*e*P	Pn	20 24 27.1	-3.3
HSIG				*i* S	Sn	20 24 46.2	-5.5

*ISCJB **22** 20:26:37.6±1.4, 69.°00N±0.°07×16.°1W±0.°5, h10km, Error ellipse: s-maj=26.0km s-min=8.5km az=168.6*
*CSEM **22** 20:26:38.9±0.3, 69.°06N×15.°86W, h20km, ML3.2, Error ellipse: s-maj=12.8km s-min=3.9km az=72.0*
*REY **22** 20:26:39.4, 68.°98N×15.°88W, h25km*
ISC 22 20:26:37.8±2.4, **69.°04N**±0.°09×**15.°9W**±0.°2, **h10**km, **n30**, σ0**842**/38, **Jan Mayen Island region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SCO	**Scoresbysund**	**2.55**	**307**	*i* P	**Pn**	**20 27 19.2**	**+0.1**
SCO				*e*S	Sn	20 27 30.8	-19
SCO	**Scoresbysund**	**2.55**	**307**	*i* P	**Pn**	**20 27 19.2**	**+0.1**
IGRI	**Grimsey** baz=199	**2.64**	**199**	P	**Pn**	**20 27 20.0**	**-0.3**
IGRI				S	**Sn**	**20 27 51.6**	**-0.7**
	baz=199						
IGRI	**Grimsey**	**2.64**	**199**	P	**Pn**	**20 27 20.0**	**-0.3**
IGRI				S	**Sn**	**20 27 51.6**	**-0.7**
ILEI	**Leirhofn** baz=186	**2.66**	**185**	P	**Pn**	**20 27 20.4**	**-0.2**
ILEI				S	**Sn**	**20 27 52.9**	**+0.1**
	baz=186						
ILEI	**Leirhofn**	**2.66**	**185**	P	**Pn**	**20 27 20.4**	**-0.2**
ILEI				S	**Sn**	**20 27 52.9**	**+0.1**
IGIL	**Gilhagi** baz=184	**2.98**	**183**	P	**Pn**	**20 27 24.9**	**-0.2**
IGIL				S	**Sn**	**20 28 00.8**	**-0.1**
	baz=184						
IGIL	**Gilhagi**	**2.98**	**183**	P	**Pn**	**20 27 24.9**	**-0.2**
IGIL				S	**Sn**	**20 28 00.8**	**-0.1**
IHED	**Heoinshofoi** baz=191	**3.02**	**191**	P	**Pn**	**20 27 25.6**	**-0.1**
IHED				S	**Sn**	**20 28 01.5**	**-0.4**
	baz=191						
IHED	**Heoinshofoi**	**3.02**	**191**	P	**Pn**	**20 27 25.6**	**-0.1**
IHED				S	**Sn**	**20 28 01.5**	**-0.4**
IBRE	**Brettingsstaoi** baz=196	**3.03**	**196**	P	**Pn**	**20 27 25.7**	**0.0**
IBRE	**Brettingsstaoi**	**3.03**	**196**	P	**Pn**	**20 27 25.7**	**0.0**
IDIM	**Dimmadalsˆjs** baz=188	**3.12**	**188**	P	**Pn**	**20 27 27.3**	**+0.3**
IDIM	**Dimmadalsˆjs**	**3.12**	**188**	P	**Pn**	**20 27 27.3**	**+0.3**
IGRA	**Granastaoir** baz=193	**3.21**	**192**	P	**Pn**	**20 27 28.4**	**+0.3**
IGRA	**Granastaoir**	**3.21**	**192**	P	**Pn**	**20 27 28.4**	**+0.3**
ISKI	**Skildingahˆ‡ls** baz=189	**3.22**	**188**	P	**Pn**	**20 27 28.7**	**+0.4**
ISKI	**Skildingahˆ‡ls**	**3.22**	**188**	P	**Pn**	**20 27 28.7**	**+0.4**
IGHA	**Grjothals** baz=186	**3.23**	**186**	P	**Pn**	**20 27 28.6**	**+0.1**
IGHA	**Grjothals**	**3.23**	**186**	P	**Pn**	**20 27 28.5**	**+0.1**
IHLA	**Hella** baz=199	**3.26**	**198**	P	**Pn**	**20 27 28.9**	**+0.2**
IHLA	**Hella**	**3.26**	**198**	P	**Pn**	**20 27 29.0**	**+0.2**
IHRN	**Hraun** baz=212	**3.36**	**211**	P	**Pn**	**20 27 31.1**	**+0.9**
IHRN	**Hraun**	**3.36**	**211**	P	**Pn**	**20 27 31.1**	**+0.9**
IKVO	**Krokottuvotn** baz=187	**3.37**	**187**	P	**Pn**	**20 27 30.9**	**+0.5**
IKVO	**Krokottuvotn**	**3.37**	**187**	P	**Pn**	**20 27 30.9**	**+0.5**
IGRS	**Grimsstaoir** baz=182	**3.42**	**182**	P	**Pn**	**20 27 31.6**	**+0.4**
IGRS	**Grimsstaoir**	**3.42**	**182**	P	**Pn**	**20 27 31.6**	**+0.4**
IREN	**Reynihlio** baz=187	**3.43**	**187**	P	**Pn**	**20 27 32.1**	**+0.8**
IREN	**Reynihlio**	**3.43**	**187**	P	**Pn**	**20 27 32.1**	**+0.8**

*IDC **22** 20:28:36.6±0.9, 35.°48N×142.°97E, h0km, mb3.5/10, mb1 3.7/13, mb1mx3.5/45, mbtmp3.5/13, ML3.3/3, Error ellipse: s-maj=23.2km s-min=18.9km az=112.0*
*JMA **22** 20:28:37.1±0.6, 35.°48N×143.°10E, h40km, M3.5*
*ISCJB **22** 20:28:41.9±0.6, 35.°41N±0.°05×142.°75E±0.°05, h59km, mb3.5/10, Error ellipse: s-maj=7.3km s-min=5.9km az=146.6*
ISC 22 20:28:43.9±0.9, **35.°44N**±0.°06×**142.°83E**±0.°08, **h59**km, **n32**, σ2**813**/30, **mb3.4**/10, **Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BSO1	**Boso 1**	**1.71**	**243**	P	Pn	**20 29 08.1**	**-2.8**
BSO1				S	**Sn**	**20 29 31.0**	**-0.4**
BSO2	**Boso 2**	**1.84**	**249**	*e*S	**Sn**	**20 29 37.4**	**+2.6**
BSO3	**Boso 3**	**2.01**	**252**	*e*S	**Sn**	**20 29 42.0**	**+3.0**
BSO4	**Boso 4**	**2.09**	**258**	P	**Pn**	**20 29 14.8**	**-1.6**
JCN	**Nagara**	**2.15**	**270**	*e*S	**Sn**	**20 29 45.4**	**+2.6**
JFT	**Otama**	**2.89**	**317**	P	**Pn**	**20 29 24.4**	**-3.0**
JFT				*e*S	**Sn**	**20 29 57.6**	**-3.4**
JAG	**Ashikaga**	**2.91**	**291**	P	**Pn**	**20 29 24.8**	**-3.0**
JOD2	**Odawara 2**	**3.06**	**268**	P	**Pn**	**20 29 27.4**	**-2.5**
JOD2				*e*S	**Sn**	**20 30 03.1**	**-2.2**
JRY	**Ryogami san**	**3.25**	**281**	P	**Pn**	**20 29 30.7**	**-1.7**
JHJ2	**Mitsune**	**3.41**	**228**	S	**Sn**	**20 30 11.1**	**-2.7**
JHJ	**Hachijo jima 2** 2.3nm,0.3s,baz=16,slow=7.4,SNR=2.7	**3.42**	**228**	Pn	**Pn**	**20 29 31.8**	**-3.0**
JHJ				Sn	**Sn**	**20 30 10.7**	**-3.5**
	32nm,0.3s,baz=53,slow=19,SNR=7.2						
JYN	**Shimob**	**3.50**	**272**	*e*S	**Sn**	**20 30 17.2**	**+1.1**
MJAR	**Matsushiro Arr** 1.4nm,0.3s,baz=99,slow=24,SNR=9.3	**3.91**	**288**	Pn	**Pn**	**20 29 39.6**	**-1.8**
MJAR				Sn	**Sn**	**20 30 25.6**	**-0.4**
	1.0nm,0.3s,baz=30,slow=43,SNR=3.7						
MAT	**Matsushiro**	**3.91**	**288**	P	**Pn**	**20 29 40.2**	**-1.2**
MAT				*e*S	**Sn**	**20 30 24.9**	**-1.1**
JCJ	**Chichijima** baz=180,slow=19	**8.34**	**184**	Pn	Pn	20 30 36.6	-5.5
JCJ				Sn	Sn	20 32 05.5	-9.3
	5.0nm,0.3s,baz=221,slow=19,SNR=3.6						
ASAJ	**Asahikawa** 0.8nm,0.3s,baz=224,slow=11,SNR=13	**8.67**	**359**	Pn	Pn	20 30 41.0	-5.6
H11N2	**WAKE ISLAND Hy 26.36** baz=318,slow=76,SNR=4.7	**120**		T	T	21 01 43.0	
H11N1	**WAKE ISLAND Hy 26.36** baz=318,slow=76,SNR=4.9	**120**		T	T	21 01 41.5	
H11N3	**WAKE ISLAND Hy 26.37** baz=318,slow=76,SNR=4.8	**120**		T	T	21 01 46.6	
H11S1	**WAKE ISLAND Hy 27.04** baz=318	**122**		T	T	21 02 50.8	
H11S3	**WAKE ISLAND Hy 27.04** baz=318,slow=74	**122**		T	T	21 02 42.4	
H11S2	**WAKE ISLAND Hy 27.05** baz=318,slow=74,SNR=4.5	**122**		T	T	21 02 46.1	
SONM	**Songino Array** 0.2nm,0.4s,baz=106,slow=9.2,SNR=4.1	**29.64**	**306**	P	**P**	**20 34 45.2**	**+1.5**
ZALV	**Zalesovo Beam** 0.4nm,0.4s,baz=90,slow=8.9,SNR=3.4	**43.84**	**314**	P	**P**	**20 36 43.8**	**-0.1**
MKAR	**Makanchi Array** 0.1nm,0.2s,baz=93,slow=11,SNR=3.2	**45.94**	**304**	P	**P**	**20 37 02.6**	**+1.7**
ILAR	**Eielson Array** 0.7nm,0.7s,baz=254,slow=6.2,SNR=6.8	**50.23**	**32**	P	**P**	**20 37 33.2**	**-0.4**
INK	**Inuvik** 0.9nm,0.7s,baz=286,slow=3.2,SNR=5.0	**55.29**	**27**	P	**P**	**20 38 11.4**	**+0.6**
WRA	**Warramunga Arr** 0.3nm,0.7s,baz=6.9,slow=7.2,SNR=5.0	**55.66**	**190**	P	**P**	**20 38 14.0**	**-0.1**
ASAR	**Alice Springs** 0.2nm,0.8s,baz=17,slow=9.9,SNR=3.9	**59.39**	**190**	P	**P**	**20 38 42.2**	**+1.9**
YKA	**Yellowknife Ar** 0.2nm,0.8s,baz=305,slow=7.2,SNR=4.2	**64.61**	**30**	P	**P**	**20 39 14.7**	**-0.1**
FINES	**FINESS Array B** 1.9nm,0.9s,baz=57,slow=10,SNR=3.2	**70.75**	**333**	P	**P**	**20 39 54.0**	**+0.6**
NOA	**NORSAR Array B** 0.3nm,0.8s,baz=40,slow=5.4,SNR=3.3	**76.09**	**338**	P	**P**	**20 40 25.8**	**+0.8**

*NIED **22** 20:34:00, 44.°10N×148.°20E, h53km, Mw3.9 Best double couple: M0 7.33000×10^14 NP1:φs243.00000°, δ57.00000°, λ-165.00000°. NP2:φs144.00000°, δ77.00000°, λ-34.00000°.*
*IDC **22** 20:34:50.3±4.8, 44.°63N×148.°29E, h46km±45km, mb3.3/11, mb1 3.7/12, mb1mx3.4/49, mbtmp3.6/12, ML3.4/1, MS2.9/3, Ms1 2.9/3, ms1mx2.5/26, Error ellipse: s-maj=22.0km s-min=19.4km az=113.0*
*MOS **22** 20:34:51.1±1.6, 44.°60N×148.°30E, h74km, mb4.0/4, Error ellipse: s-maj=12.3km s-min=11.0km az=108.9*
*ISCJB **22** 20:34:51.4±0.8, 44.°56N±0.°05×148.°34E±0.°09, h71km±6km, mb3.4/11, Error ellipse: s-maj=12.0km s-min=6.3km az=27.4*
*JMA **22** 20:34:51.6±0.4, 44.°12N×148.°20E, h0km, M4.6*
*SKHL **22** 20:34:52.0±0.1, 44.°64N×148.°42E, h74km±4km, mb4.6/4*
ISC 22 20:34:52.0±1.4, **44.°54N**±0.°05×**148.°38E**±0.°10, **h63**km±11km, **n55**, σ1**949**/58, **mb3.5**/11, **1C-3D, Kuril Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KUR	**Kuril'sk**	**0.78**	**333**	*i* P	**Pn**	**20 35 06.7**	**-0.7**
KUR				AMB	AMB	20 35 07.3	
	240nm,0.5s						
KUR				AMB	AMB	20 35 07.3	
	90nm,0.5s						
KUR				AMB	AMB	20 35 07.3	
	550nm,0.5s						
KUR				*i* S	**Sn**	**20 35 17.8**	**-0.9**
KUR				A	A	20 35 20.6	
	3μm,0.5s						
KUR				A	A	20 35 20.6	
	2μm,0.5s						
KUR	**Kuril'sk**	**0.78**	**333**	*d* iPN	**Pn**	**20 35 06.7**	**-0.7**
KUR				*i* S	**Sn**	**20 35 17.6**	**-1.1**
KUR				pmax	pmax		
	comp=N,483nm,0.4s						
KUR				pmax	pmax		
	comp=Z,2μm,0.4s						
KUR				pmax	pmax		
	comp=E,242nm,0.1s						
KUR				smax	smax		
	comp=E,4μm,0.2s						
KUR				smax	smax		
	comp=N,7μm,0.5s						
SHO	**Shikotan**	**1.30**	**239**	*e*P	**Pn**	**20 35 13.2**	**-0.8**
SHO				AMB	AMB	20 35 15.0	
	comp=N,270nm,0.5s						
SHO				*e*S	**Sn**	**20 35 29.1**	**-1.4**
SHO				A	A	20 35 33.0	
	comp=N,1μm,0.4s						
SHO				A	A	20 35 33.0	
	comp=N,1μm,0.4s						
SHO	**Shikotan**	**1.30**	**239**	*d* iPN	**Pn**	**20 35 13.2**	**-0.8**
SHO				*i* S	**Sn**	**20 35 29.0**	**-1.4**
SHO				pmax	pmax		
	comp=Z,142nm,0.4s						
SHO				pmax	pmax		
	comp=N,60nm,0.3s						
SHO				pmax	pmax		
	comp=E,73nm,0.2s						
SHO				smax	smax		
	comp=N,1μm,0.4s						
SHO				smax	smax		
	comp=E,2μm,0.4s						
YUK	**Yuzh-Kuril'sk**	**1.87**	**255**	*i* P	**Pn**	**20 35 22.9**	**+1.1**
YUK				AMB	AMB	20 35 24.5	
	comp=E,90nm,0.4s						
YUK				AMB	AMB	20 35 24.5	
	comp=E,220nm,0.4s						
YUK				AMB	AMB	20 35 24.5	
	comp=E,390nm,0.4s						
YUK				*i* S	**Sn**	**20 35 45.5**	**+1.1**
YUK				A	A	20 35 49.9	
	comp=E,680nm,0.5s						
YUK				A	A	20 35 49.9	
	comp=E,760nm,0.5s						
YUK	**Yuzh-Kuril'sk**	**1.87**	**255**	*d* iPN	**Pn**	**20 35 22.8**	**+1.0**
YUK				*i* S	**Sn**	**20 35 45.4**	**+1.1**
YUK				pmax	pmax		
	comp=E,222nm,0.2s						
YUK				pmax	pmax		
	comp=Z,667nm,0.2s						
YUK				pmax	pmax		
	comp=N,93nm,0.3s						
YUK				smax	smax		
	comp=N,1μm,0.2s						
YUK				smax	smax		
	comp=E,2μm,0.5s						
NEM2	**Nemuro 2**	**2.23**	**239**	P	**Pn**	**20 35 26.0**	**-0.7**
NEM2				*e*S	**Sn**	**20 35 51.2**	**-1.9**
JRA	**Rausu**	**2.41**	**257**	P	**Pn**	**20 35 30.4**	**+1.3**
JNK	**Nakash**	**2.80**	**251**	P	**Pn**	**20 35 35.3**	**+0.9**
JNK				*e*S	**Sn**	**20 36 07.4**	**+0.4**
JAK	**Akkeshi**	**3.08**	**241**	P	**Pn**	**20 35 38.1**	**-0.1**
JAK				*e*S	**Sn**	**20 36 12.9**	**-0.9**
JTKR	**Abashiri--Toko**	**3.26**	**261**	P	**Pn**	**20 35 41.9**	**+1.3**
JAR	**Ashorobuto**	**3.55**	**251**	P	**Pn**	**20 35 46.3**	**+1.7**
JKK2	**Kamakawa 2**	**4.10**	**263**	P	**Pn**	**20 35 54.6**	**+2.4**
JCH	**Churui**	**4.12**	**244**	P	**Pn**	**20 35 53.0**	**+0.6**
JKA	**Kamikawa-asahi**	**4.17**	**266**	*e*P	**Pn**	**20 35 54.7**	**+1.7**
ASAJ	**Asahikawa** comp=E,4.5nm,0.3s,baz=286,slow=0.2,SNR=48	**4.17**	**266**	P	**Pn**	**20 35 54.7**	**+1.6**
ASAJ				S	Sn	20 36 55.5	+15
	comp=E,2.9nm,0.3s,baz=358,slow=29,SNR=4.9						
JFR	**Furan**	**4.40**	**254**	P	**Pn**	**20 35 59.4**	**+3.1**
ERM	**Erimo**	**4.57**	**238**	*e*P	**Pn**	**20 36 01.3**	**+2.7**
ERM	**Erimo**	**4.57**	**238**	*i* PN	**Pn**	**20 36 01.3**	**+2.7**
YSS	**Yuzh-Sakhalins**	**4.62**	**304**	*e*P	**Pn**	**20 36 00.0**	**+0.8**
YSS				AMB	AMB	20 36 00.6	
	comp=E,20nm,0.3s						
YSS	**Yuzh-Sakhalins**	**4.62**	**304**	*e*PN	**Pn**	**20 36 00.0**	**+0.8**
YSS				*e*S	**Sn**	**20 36 51.8**	**+0.4**
YSS				pmax	pmax		
	comp=Z,30nm,1.2s						
YSS				smax	smax		
	comp=N,20nm,0.6s						
JNBK	**Urakawa-nobuka**	**4.68**	**243**	P	**Pn**	**20 36 01.1**	**+1.1**
JKB	**Kayabe**	**5.98**	**246**	P	**Pn**	**20 36 19.0**	**+1.1**
JKB				*e*S	**Sn**	**20 37 23.2**	**-1.8**
JOT	**Ohata**	**6.23**	**242**	P	**Pn**	**20 36 21.6**	**+0.3**
JOT				*e*S	**Sn**	**20 37 28.1**	**-3.0**
UGL	**Uglegorsk**	**6.27**	**319**	*e*P	**Pn**	**20 36 21.9**	**+0.1**
TYV	**Tymovskoe**	**7.41**	**331**	*e*P	**Pn**	**20 36 40.0**	**+2.7**
TYV	**Tymovskoe**	**7.41**	**331**	*e*PN	**Pn**	**20 36 40.2**	**+2.9**
TYV				pmax	pmax		
	comp=Z,6.0nm,0.6s						
HABR	**Khabarovsk**	**9.99**	**298**	*e*P	**Pn**	**20 37 11.1**	**-1.6**
HABR	**Khabarovsk**	**9.99**	**298**	*e*PN	**Pn**	**20 37 11.1**	**-1.6**
HABR				pmax	pmax		
	comp=N,51nm,2.3s						

FINES	**FINES Array B**	**64.57**	**333**	*i* P	**P**	**20 45 20.2**	**-1.9**
FINES				pmax	pmax		
	comp=Z,1.0nm,0.5s						
WRA	**Warramunga Arr**	**65.44**	**195**	P	**P**	**20 45 28.0**	**-0.2**
	comp=Z,0.5nm,0.7s,baz=9.9,slow=6.0,SNR=4.2						
WRA	**Warramunga Arr**	**65.44**	**195**	P	**P**	**20 45 28.0**	**-0.2**
WRA				pmax	pmax		
	comp=Z,1.0nm,0.7s						
NVAR	**Mina Array Bea**	**66.41**	**59**	P	**P**	**20 45 35.5**	**+0.8**
	comp=Z,0.4nm,0.7s,baz=292,slow=9.5,SNR=3.2						
ASAR	**Alice Springs**	**69.15**	**194**	P	**P**	**20 45 52.6**	**+0.9**
	comp=Z,0.2nm,0.5s,baz=15,slow=6.6,SNR=6.0						
NB2	**NORSAR Subarra**	**69.18**	**339**	P	**P**	**20 45 51.1**	**-0.4**
	comp=Z,0.3nm,0.3s,baz=30,slow=6.2						
NOA	**NORSAR Array B**	**69.18**	**339**	P	**P**	**20 45 50.5**	**-1.0**
	comp=Z,0.6nm,0.5s,baz=31,slow=6.6,SNR=6.1						
GERES	**GERESS Array B**	**78.89**	**331**	P	**P**	**20 46 47.7**	**-0.7**
	comp=Z,0.4nm,0.4s,baz=40,slow=6.4,SNR=6.9						
TXAR	**Lajitas Array**	**81.48**	**57**	P	**P**	**20 47 02.8**	**+0.2**
	comp=Z,0.3nm,0.5s,baz=288,slow=3.7,SNR=2.6						

*ISCJB **22** 20:42:30.6±0.6, 15°.85N±0°.07×94°.17W±0°.04, h77km±7km, mb3.5/3, Error ellipse: s-maj=11.5km s-min=5.6km az=14.7*
*NEIC **22** 20:42:32.4, 15°.83N×94°.23W, h6km, MD4.0(MEX), After MEX.*
*MEX **22** 20:42:32.4±0.7, 15°.83N×94°.23W, h6km±9km, MD4.0*
*IDC **22** 20:42:33.1±2.3, 16°.07N×93°.99W, h74km±14km, mb3.2/3, mb1 3.8/6, mb1mx3.4/31, mbtmp3.8/6, MS3.0/2, Ms1 3.0/2, ms1mx2.8/9, Error ellipse: s-maj=29.5km s-min=14.1km az=16.0*

ISC 22 20:42:31.6±0.9, 15°.85N±0°.06×94°.16W±0°.03, h72km±10km, n23, σ1§31/31, mb3.6/3, Near coast of Oaxaca

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
PCIG		**0.92**	**99**	*e*P		**Pn**	**20 42 49.2**	**0.0**
PCIG				*e*Sn		**Sn**	**20 43 01.6**	**-0.7**
PCIG		**0.92**	**99**	*e*P		**Pn**	**20 42 49.2**	**0.0**
PCIG				*e*S		**Sn**	**20 43 01.6**	**-0.7**
TGIG		**1.36**	**47**	*e*Pn		**Pn**	**20 42 54.9**	**0.0**
TGIG				*e*Sn		**Sn**	**20 43 16.9**	**+0.3**
TGIG		**1.36**	**47**	*i* P		**Pn**	**20 42 54.9**	**0.0**
TGIG				*i* S		**Sn**	**20 43 12.7**	**+0.3**
CMIG	**Matias Romero**	**1.42**	**331**	P		**Pn**	**20 42 56.0**	**+0.5**
	29nm,0.3s,baz=142,slow=11,SNR=433							
CMIG				S		**Sn**	**20 43 12.9**	**-0.7**
	185nm,0.3s,baz=120,slow=20,SNR=43							
HUIG	**Huatulco**	**1.87**	**268**	*e*Pn		**Pn**	**20 43 00.7**	**-0.9**
HUIG				*e*Sn		**Sn**	**20 43 22.7**	**-1.8**
HUIG	**Huatulco**	**1.87**	**268**	*e*P		**Pn**	**20 43 00.7**	**-0.9**
HUIG				*i* S		**Sn**	**20 43 22.7**	**-1.8**
THIG		**2.06**	**117**	*e*Pn		**Pn**	**20 43 04.5**	**+0.4**
THIG		**2.06**	**117**	*e*P		**Pn**	**20 43 04.5**	**+0.4**
VHO	**Vista Hermosa**	**2.75**	**297**	*e*Pn		**Pn**	**20 43 14.7**	**+1.1**
VHO				*e*Sn		**Sn**	**20 43 45.8**	**-0.1**
VHO	**Vista Hermosa**	**2.75**	**297**	*e*P		**Pn**	**20 43 14.7**	**+1.1**
VHO				*i* S		**Sn**	**20 43 45.8**	**-0.1**
TLIG	**Tlapa**	**4.55**	**293**	*e*Pn		**Pn**	**20 43 40.1**	**+2.0**
TGUH	**Tegucigalpa,Un**	**6.89**	**104**	*e*Pn		**Pn**	**20 44 11.4**	**+1.4**
TEIG	**Tepich**	**7.09**	**51**	P		**Pn**	**20 44 11.4**	**-1.4**
	10nm,0.3s,baz=225,slow=20,SNR=32							
TEIG				S		**Sn**	**20 45 27.3**	**-4.7**
	19nm,0.3s,baz=0.7,slow=23,SNR=10							
MOIG	**Morelia**	**7.70**	**301**	*e*Pn		**Pn**	**20 44 20.3**	**-1.1**
JTS	**JuntasAbangare**	**10.54**	**121**	P		**Pn**	**20 45 00.8**	**+0.9**
	1.5nm,0.3s,baz=310,slow=15,SNR=7.9							
TXAR	**Lajitas Array**	**16.02**	**329**	P		**Pn**	**20 46 12.8**	**0.0**
	0.2nm,0.3s,baz=142,slow=10,SNR=5.2							
ANMO	**Albuquerque**	**21.98**	**332**	LR		LR	20 55 36.3	
	comp=Z,41nm,20.1s,baz=150,slow=36							
SJG	**San Juan**	**26.88**	**81**	LR		LR	20 59 14.1	
	comp=Z,32nm,18.9s,baz=261,slow=38							
NVAR	**Mina Array Bea**	**30.93**	**321**	P		**P**	**20 48 43.5**	**+1.5**
	0.8nm,0.7s,baz=132,slow=8.4,SNR=8.6							
YKA	**Yellowknife Ar**	**48.77**	**348**	P		**P**	**20 51 08.4**	**-0.6**
	0.4nm,0.5s,baz=154,slow=7.2,SNR=9.8							
ILAR	**Eielson Array**	**60.33**	**337**	P		**P**	**20 52 33.0**	**+0.3**
	0.2nm,0.5s,baz=111,slow=5.1,SNR=3.0							
WRA	**Warramunga Arr**	**133.78**	**257**	PKP		**PKPdf**	**21 01 41.2**	**0.0**
	0.5nm,1.0s,baz=102,slow=1.6,SNR=4.5							

JMA 22 21:17:38.8, 35°.43N×136°.44E, h7km, M2.5, Western Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
JEG	**Eigenji**	**0.30**	**188**	P		Pg	21 17 44.8	+0.2
JEG				S		Sg	21 17 49.0	+0.4
JGM	**Miyama**	**0.35**	**40**	P		Pg	21 17 45.9	+0.2
JGM				*e*S		Sg	21 17 50.6	+0.2
JFM	**Mihama**	**0.39**	**285**	P		Pg	21 17 46.6	+0.3
JFM				S		Sg	21 17 52.0	+0.6
TSUJ	**Tsu 2**	**0.72**	**181**	P		Pg	21 17 52.6	0.0
TSUJ				S		Sg	21 18 02.2	+0.2
JKG	**Kaga**	**0.85**	**354**	P		Pg	21 17 55.4	+0.3
JKG				S		Sg	21 18 06.3	+0.1
JWT	**Wachi**	**0.86**	**260**	P		Pg	21 17 55.0	-0.3
JWT				S		Sg	21 18 05.9	-0.6
JHE	**Heguri**	**0.99**	**219**	P		Pg	21 17 57.9	+0.1
JHE				S		Sg	21 18 10.9	+0.2
JIE	**Ise**	**1.06**	**168**	P		Pg	21 17 58.6	-0.5
JIE				S		Sg	21 18 12.3	-0.6
JKY	**Yasaka**	**1.11**	**281**	P		Pg	21 17 59.7	-0.4
JKY				S		Sg	21 18 14.2	-0.2
JKN2	**Miekihoku**	**1.20**	**187**	P		Pg	21 18 01.4	-0.3
JKN2				S		Sg	21 18 17.1	-0.2
JKS	**Kasai**	**1.38**	**252**	P		Pn	21 18 04.5	0.0
JKS				S		Sb	21 18 22.6	-0.2
MAT	**Matsushiro**	**1.81**	**52**	P		Pn	21 18 11.3	+0.8
MAT				S		Sb	21 18 36.0	+0.7

*IDC **22** 21:19:53.3±24.0, 18°.24S×173°.28W, h0km, mb4.1/4, mb1 4.2/4, mb1mx3.7/40, mbtmp4.1/4, Error ellipse: s-maj=453.1km s-min=150.1km az=73.0*
*ISCJB **22** 21:19:57.5±1.2, 18°.2S±0°.3×173°.4W±0°.2, h37km, mb4.3/15, Error ellipse: s-maj=47.5km s-min=15.6km az=147.5*
*NEIC **22** 21:19:58.7±0.7, 18°.23S×173°.32W, h35km, mb4.2/11, Error ellipse: s-maj=30.2km s-min=9.7km az=147.0*

ISC 22 21:19:58.9±1.6, 18°.2S±0°.3×173°.3W±0°.3, h37km, n16, σ0§47/16, mb4.2/15, Tonga Islands

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
CTA	**Charters Tower**	**38.17**	**261**	P		**P**	**21 27 15.2**	**+0.1**
	1.2nm,0.4s,baz=89,slow=16,SNR=3.1							
CTAO	**Charters Tower**	**38.17**	**261**	*e*P		**P**	**21 27 15.2**	**+0.1**
	1.4nm,0.6s							
PMG	**Port Moresby**	**39.30**	**277**	*e*P		**P**	**21 27 24.6**	**0.0**
	5.0nm,0.7s							
STKA	**Stephens Creek**	**42.75**	**243**	P		**P**	**21 27 53.0**	**+0.1**
	1.3nm,0.5s,baz=75,slow=11,SNR=6.8							
WRAB	**Tennant Creek**	**49.32**	**259**	*e*P		**P**	**21 28 45.0**	**+0.2**
	3.5nm,1.1s							
WRA	**Warramunga Arr**	**49.33**	**259**	P		**P**	**21 28 45.0**	**+0.1**
	0.7nm,0.3s,baz=97,slow=7.2,SNR=27							
ASAR	**Alice Springs**	**49.36**	**254**	P		**P**	**21 28 44.9**	**-0.2**
	2.1nm,0.7s,baz=90,slow=8.2,SNR=32							
MBWA	**Marble Bar**	**62.68**	**255**	*e*P		**P**	**21 30 21.2**	**+0.8**
	2.1nm,0.8s							
MAJO	**Matsushiro**	**71.16**	**320**	*e*P		**P**	**21 31 14.3**	**+0.4**
	1.9nm,0.6s							
NACB	**Ninganchiao**	**76.17**	**301**	*e*P		**P**	**21 31 42.7**	**-0.9**
	11nm,0.8s							
HWUT	**Hardware Ranch**	**82.44**	**42**	*e*P		**P**	**21 32 17.8**	**+0.1**
	0.5nm,0.5s							
MA2	**Magadan**	**82.88**	**342**	*e*P		**P**	**21 32 19.5**	**+0.3**
	1.1nm,0.5s							
NEW	**Newport**	**83.00**	**34**	*e*P		**P**	**21 32 20.1**	**-0.1**
	0.5nm,0.4s							
WALA	**Waterton Lakes**	**85.19**	**35**	*e*P		**P**	**21 32 31.6**	**+0.2**
	0.8nm,0.5s							
COCO	**West Island**	**86.12**	**259**	*e*P		**P**	**21 32 35.7**	**-0.9**
	193nm,0.7s							
CHTO	**Chiang Mai**	**93.68**	**288**	*e*P		**P**	**21 33 12.1**	**-0.1**
	0.6nm,0.7s							

*NIED **22** 21:23:00, 37°.80N×142°.10E, h29km, Mw3.7 Best double couple: M0 3.85000×10^14 NP1:φ=212.00000°, δ=10.00000°, λ=141.00000°. NP2:φ=341.00000°, δ=84.00000°, λ=82.00000°.*
*JMA **22** 21:23:35.9±0.1, 37°.79N×142°.11E, h23km±3km, M3.9*
*IDC **22** 21:23:37.1±2.4, 37°.84N×142°.44E, h48km±23km, mb3.2/7, mb1 3.5/11, mb1mx3.3/50, mbtmp3.6/11, ML3.4/3, MS3.0/3, Ms1 3.0/3, ms1mx2.5/22, Error ellipse: s-maj=22.9km s-min=15.7km az=114.0*

ISC 22 21:23:32.7±2.6, 37°.81N±0°.05×142°.27E±0°.07, h13km±16km, n21, σ1§62/27, mb3.6/7, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
JIO	**Ouri**	**0.97**	**312**	P		**Pn**	**21 23 52.4**	**+0.4**
JIO				S		**Sg**	**21 24 03.8**	**-0.3**
JMM	**Marumori**	**1.17**	**273**	P		**Pb**	**21 23 55.0**	**+0.2**
JMM				S		**Sb**	**21 24 08.7**	**-1.2**
JFK	**Kawauchi**	**1.20**	**249**	P		**Pb**	**21 23 55.3**	**+0.1**
JFK				S		**Sb**	**21 24 09.2**	**-1.4**
ONAJ	**Iwakimizuishiy**	**1.37**	**239**	P		**Pn**	**21 23 58.0**	**+0.4**
ONAJ				S		**Sb**	**21 24 13.7**	**-2.0**
JOU	**Okura**	**1.39**	**294**	P		**Pb**	**21 23 58.6**	**+0.2**
JOU				S		**Sn**	**21 24 15.0**	**-1.0**
JFT	**Otama**	**1.56**	**260**	P		**Pb**	**21 24 01.6**	**+0.1**
JFT				S		**Sn**	**21 24 20.0**	**-0.4**
JHO	**Hitachi**	**1.81**	**229**	P		**Pn**	**21 24 04.2**	**+0.6**
MJAR	**Matsushiro Arr**	**3.48**	**250**	P		**Pn**	**21 24 28.7**	**+2.1**
	2.1nm,0.3s,baz=57,slow=11,SNR=20							
MJAR				S		**Sb**	**21 25 13.2**	**-3.2**
	1.7nm,0.3s,baz=75,slow=15,SNR=6.3							
MJAR				LR		LR	21 26 02.8	
	comp=Z,170nm,19.2s,baz=90,slow=40							
MAT	**Matsushiro**	**3.48**	**250**	P		**Pn**	**21 24 29.1**	**+2.5**
MAT				S		**Sn**	**21 25 11.9**	**+4.1**
JHJ	**Hachijo jima 2**	**5.10**	**204**	P		**Pn**	**21 24 50.7**	**+1.9**
	6.4nm,0.3s,baz=66,slow=20,SNR=4.0							
JHJ				S		**Sn**	**21 25 45.9**	**-1.7**
	7.2nm,0.3s,baz=105,slow=20,SNR=3.9							
ASAJ	**Asahikawa**	**6.30**	**2**	P		**Pn**	**21 25 06.7**	**+1.4**
	0.8nm,0.3s,baz=209,slow=13,SNR=8.5							
USRK	**Ussuriysk Ar.**	**10.05**	**313**	P		Pn	21 26 00.4	+3.7
	0.1nm,0.3s,baz=112,slow=14,SNR=2.3							
KSRS	**Korea Array**	**11.39**	**273**	LR		LR	21 30 28.5	
	comp=Z,59nm,19.6s,baz=66,slow=36							
SONM	**Songino Array**	**27.93**	**303**	P		**P**	**21 29 23.4**	**+0.6**
	1.1nm,0.7s,baz=102,slow=8.1,SNR=9.7							
ZALV	**Zalesovo Beam**	**41.90**	**312**	P		**P**	**21 31 22.4**	**-0.2**
	0.5nm,0.4s,baz=101,slow=7.7,SNR=3.8							
MKAR	**Makanchi Array**	**44.29**	**302**	P		**P**	**21 31 42.4**	**+0.3**
	0.2nm,0.2s,baz=83,slow=9.0,SNR=5.0							
KDAK	**Kodiak Island**	**46.06**	**42**	LR		LR	21 48 31.0	
	comp=Z,27nm,21.9s,baz=159,slow=32							
ILAR	**Eielson Array**	**48.47**	**33**	P		**P**	**21 32 15.6**	**+0.9**
	0.4nm,0.7s,baz=265,slow=6.1,SNR=4.1							
WRA	**Warramunga Arr**	**57.93**	**189**	P		**P**	**21 33 24.8**	**+0.2**
	0.7nm,0.9s,baz=6.2,slow=7.0,SNR=9.6							
ASAR	**Alice Springs**	**61.66**	**189**	P		**P**	**21 33 50.3**	**0.0**
	0.2nm,0.8s,baz=12,slow=6.6,SNR=3.4							
YKA	**Yellowknife Ar**	**62.79**	**31**	P		**P**	**21 33 55.7**	**-1.7**
	0.1nm,0.5s,baz=304,slow=2.2,SNR=2.9							

JMA 22 21:25:27.8, 37°.23N×140°.92E, h5km±1km, M2.7, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
JFK	**Kawauchi**	**0.14**	**345**	P		Pg	21 25 30.9	+0.2
JFK				*e*S		Sg	21 25 33.3	+0.7
ONAJ	**Iwakimizuishiy**	**0.16**	**217**	P		Pg	21 25 31.1	+0.1
JFT	**Otama**	**0.55**	**302**	S		Sg	21 25 46.6	+1.2
JMM	**Marumori**	**0.64**	**351**	P		Pg	21 25 40.1	-0.1
JMM				S		Sg	21 25 48.8	+0.3
MAT	**Matsushiro**	**2.28**	**253**	P		Pb	21 26 08.3	-1.2
MAT				S		Sn	21 26 35.9	+1.3

JMA 22 21:33:04.8, 33°.03N×130°.73E, h12km±1km, M3.1, Kyushu

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
JNU	**Nakatsue**	**0.15**	**54**	P		Pg	21 33 08.5	0.0
JNU				S		Sg	21 33 11.1	0.0
JTA	**Tamana**	**0.18**	**248**	P		Pg	21 33 08.9	+0.1
JTA				S		Sg	21 33 11.7	+0.1
JIU2	**Izumi 2**	**0.49**	**172**	P		Pg	21 33 14.2	-0.2
JIU2				S		Sg	21 33 20.7	-0.2

*IDC **22** 21:35:41.9±3.0, 37°.85N×72°.66E, h90km±23km, mb3.4/13, mb1 3.6/20, mb1mx3.5/48, mbtmp3.8/20, Error ellipse: s-maj=23.7km s-min=14.6km az=170.0*
*ISCJB **22** 21:35:44.1±0.3, 38°.02N±0°.03×72°.56E±0°.07, h119km, mb3.5/12, Error ellipse: s-maj=7.7km s-min=3.7km az=179.4*
*NNC **22** 21:35:48.7±2.0, 38°.27N×72°.37E, h133km±20km, mb3.2, mpv3.8, Error ellipse: s-maj=18.8km s-min=15.7km az=64.0*

ISC 22 21:35:45.2±0.6, 37°.97N±0°.05×72°.69E±0°.08, h119km, n38, σ1§38/42, mb3.5/12, 4C-6D, Tajikistan

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
SFK	**Sufi-Kurgan**	**2.14**	**17**	⇓P		**Pn**	**21 36 22.0**	**+1.5**
	46nm,0.4s							
SFK				⇓S		**Sn**	**21 36 48.9**	**+1.3**
	220nm,0.3s							
CEP	**Cherat**	**4.19**	**189**	P		**Pn**	**21 36 49.9**	**+2.6**
CEP				S		**Sn**	**21 37 36.0**	**+0.5**
CHCP	**Chirah Chowk**	**4.33**	**174**	P		**Pn**	**21 36 52.3**	**+3.2**
MNAS	**Manas**	**4.51**	**358**	⇑P		**Pn**	**21 36 52.2**	**+0.6**
	7.7nm,0.4s							
MNAS				⇑S		**Sn**	**21 37 40.6**	**-2.7**
	58nm,0.5s							
AAK	**Ala-Archa**	**4.86**	**16**	P		**Pn**	**21 36 56.3**	**0.0**
	6.7nm,0.3s,baz=137,slow=5.1,SNR=90							
AAK				S		**Sn**	**21 37 51.4**	**-0.2**
	9.1nm,0.3s,baz=315,slow=18,SNR=33							
AAK	**Ala-Archa**	**4.86**	**16**	⇓P		**Pn**	**21 36 57.7**	**+1.4**
	5.3nm,0.3s							
AAK				⇓S		**Sn**	**21 37 51.6**	**0.0**
	68nm,0.9s							
THW	**Thamme Wali**	**5.22**	**189**	P		**Pn**	**21 37 02.0**	**+0.9**
KK31	**Karatay Array**	**5.39**	**343**	P		**Pn**	**21 37 03.5**	**+0.1**
	7.0nm,0.3s,baz=148,slow=11,SNR=514							
KK31				S		**Sn**	**21 38 00.8**	**-3.4**
	40nm,0.4s,baz=153,slow=22,SNR=21							
TKM2	**Tokmak 2**	**5.42**	**23**	⇓P		**Pn**	**21 37 05.2**	**+1.3**
	1.4nm,0.3s							
TKM2				⇑S		**Sn**	**21 38 05.6**	**+0.4**
	8.1nm,0.6s							
SARP	**Sargodha**	**6.04**	**180**	P		**Pn**	**21 37 12.6**	**+0.5**
DHRM	**DHARAMSHALA**	**6.43**	**152**	*e*P		**Pn**	**21 37 18.4**	**+0.8**
DHRM				*e*S		**Sn**	**21 38 25.8**	**-3.9**
DHRM				IAML			21 38 32.3	
	comp=N,485nm,0.5s							
DHRM				IAML			21 38 33.3	
	comp=E,603nm,0.0s							
SDNR	**Sundarnagar**	**7.35**	**150**	*e*P		**Pn**	**21 37 31.0**	**+1.1**
SDNR				*e*S		Sn	21 38 46.0	-5.9
SMLA	**Simla**	**7.76**	**150**	*i* P		**Pn**	**21 37 35.5**	**+0.1**
SMLA				*i* S		Sn	21 38 57.0	-4.6
SMLA				*i* S		Sn	21 38 57.0	-4.6
SMLA				IAML			21 39 00.9	
	comp=E,199nm,0.5s							
SMLA				IAML			21 39 02.6	
	comp=N,267nm,0.2s							
DDI	**Dehra Dun**	**8.83**	**148**	*e*P		**Pn**	**21 37 49.7**	**-0.2**
DDI				*e*S		Sn	21 39 20.8	-6.9
DDI				IAML			21 39 29.2	
	comp=N,178nm,0.1s							
DDI				IAML			21 39 30.2	
	comp=E,221nm,0.5s							
NDI	**New Delhi**	**10.00**	**156**	*e*S		Sn	21 39 42.0	-14
MKAR	**Makanchi Array**	**11.31**	**36**	P		**Pn**	**21 38 23.0**	**-0.2**
	comp=E,0.1nm,0.3s,baz=215,slow=13,SNR=6.3							
GEYT	**Alibeck**	**11.51**	**274**	P		Pn	21 38 21.2	-4.6
	comp=E,1.3nm,0.3s,baz=92,slow=11,SNR=18							
GEYT				S		Sn	21 40 22.5	-10
	comp=E,2.2nm,0.3s,baz=153,slow=10.0,SNR=11							
KURBB	**Kurchatov Arra**	**13.32**	**16**	P		**Pn**	**21 38 48.1**	**-1.3**
	comp=E,0.1nm,0.3s,baz=206,slow=12,SNR=2.5							
AB31	**Akbulak array**	**14.55**	**325**	P		Pn	21 39 02.2	-3.0
	comp=E,3.9nm,0.5s,baz=136,slow=12,SNR=85							
AB31				S		Sn	21 41 35.5	-10
	comp=E,5.2nm,0.6s,baz=146,slow=23,SNR=16							
BVAR	**Borovoye Array**	**15.14**	**355**	P		**Pn**	**21 39 11.1**	**-1.5**
	comp=E,0.5nm,0.3s,baz=153,slow=12,SNR=9.5							
BVAR				S		Sn	21 41 53.2	-6.7
	comp=E,0.2nm,0.3s,baz=162,slow=25,SNR=4.0							
BHPL	**Bhopal**	**15.23**	**163**	*e*S		Sn	21 41 49.2	-13
AKTO	**Aktyubinsk**	**16.27**	**325**	P		**Pn**	**21 39 25.8**	**-0.8**
	comp=E,1.7nm,0.3s,baz=121,slow=11,SNR=42							
AKTO				S		Sn	21 42 12.7	-14
	comp=E,0.2nm,0.3s,baz=336,slow=19,SNR=6.8							
AKTO	**Aktyubinsk**	**16.27**	**325**	⇓P		**Pn**	**21 39 26.1**	**-0.5**
	comp=E,14nm,0.8s							
AKTO				⇑S		Sn	21 42 18.0	-9.2
	comp=E,10nm,1.0s							
ZALV	**Zalesovo Beam**	**18.02**	**24**	P		**P**	**21 39 46.5**	**-0.1**
	comp=E,0.6nm,0.3s,baz=215,slow=12,SNR=15							
ARU	**Arti**	**20.74**	**337**	P		**P**	**21 40 16.8**	**+0.8**
	comp=E,4.1nm,0.5s,baz=128,slow=7.1,SNR=12							
KBZ	**Khabaz**	**23.18**	**294**	P		**P**	**21 40 40.3**	**-0.9**
	comp=E,1.2nm,0.8s,baz=74,slow=15,SNR=3.2							
SONM	**Songino Array**	**26.40**	**57**	P		**P**	**21 41 09.3**	**-1.3**
	comp=E,0.2nm,0.5s,baz=248,slow=11,SNR=2.6							
BRTR	**Keskin Array B**	**30.30**	**286**	P		**P**	**21 41 45.2**	**-0.1**
	comp=E,0.6nm,0.8s,baz=64,slow=9.8,SNR=3.2							
AKASG	**Malin Array Be**	**33.11**	**307**	P		**P**	**21 42 09.6**	**+0.1**
	comp=E,0.4nm,0.3s,baz=111,slow=8.4,SNR=6.2							
FINES	**FINESS Array B**	**37.04**	**325**	P		**P**	**21 42 44.0**	**+0.8**
	comp=E,1.5nm,0.4s,baz=113,slow=9.4,SNR=22							
ARCES	**ARCESS Array B**	**40.32**	**337**	P		**P**	**21 43 10.9**	**+0.5**
	comp=E,1.9nm,0.8s,baz=106,slow=8.9,SNR=7.5							
NB2	**NORSAR Subarra**	**44.03**	**322**	P		**P**	**21 43 40.8**	**+0.1**
	comp=Z,0.8nm,0.5s,baz=91,slow=7.9							
NOA	**NORSAR Array B**	**44.03**	**322**	P		**P**	**21 43 41.1**	**+0.4**
	comp=Z,1.1nm,0.5s,baz=93,slow=7.8,SNR=8.7							
ESDC	**Sonseca Array**	**57.97**	**298**	P		**P**	**21 45 25.2**	**0.0**
	comp=Z,0.2nm,0.4s,baz=60,slow=7.4,SNR=4.5							
INK	**Inuvik**	**72.23**	**10**	P		**P**	**21 46 58.0**	**+1.2**
	comp=Z,0.9nm,0.9s,baz=4.5,slow=5.2,SNR=4.0							
ILAR	**Eielson Array**	**72.99**	**17**	P		**P**	**21 47 01.0**	**-0.4**
	comp=Z,0.5nm,0.8s,baz=324,slow=4.7,SNR=4.6							
YKA	**Yellowknife Ar**	**79.71**	**3**	P		**P**	**21 47 40.2**	**+1.0**
	comp=Z,0.5nm,0.5s,baz=351,slow=5.6,SNR=13							
WRA	**Warramunga Arr**	**81.64**	**123**	P		**P**	**21 47 51.0**	**+0.7**
	comp=Z,0.3nm,0.6s,baz=316,slow=4.1,SNR=7.5							

*CSEM **22** 21:41:00.7±0.2, 37°.88N×26°.66E, h5km, MD2.7, Error ellipse: s-maj=4.9km s-min=3.1km az=81.0*
*ISK **22** 21:41:00.1, 37°.90N×26°.68E, h8km, MD2.7*
*DDA **22** 21:41:01.4, 37°.88N×26°.71E, h7km, Md2.7*

ISC 22 21:41:01.2±1.3, 37°.87N±0°.02×26°.72E±0°.03, h4km±11km, n24, σ0§73/38, Dodecanese Islands

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
ZEY	**¨zmir**	**0.40**	**335**	*i* P		**Pg**	**21 41 09.2**	**+0.2**
ZEY				*i* S		**Sb**	**21 41 18.6**	**+1.2**
GCAM	**G?zelcaml?**	**0.44**	**113**	*i* P		**Pg**	**21 41 10.1**	**+0.3**
GCAM				*i* S		**Sb**	**21 41 17.4**	**-1.1**
GCAM	**G?zelcaml?**	**0.44**	**113**	P		**Pg**	**21 41 10.1**	**+0.3**
GCAM				S		**Sb**	**21 41 17.4**	**-1.1**
URLA	**Izmir**	**0.49**	**349**	*i* P		**Pg**	**21 41 10.8**	**0.0**
URLA				*i* S		**Sb**	**21 41 22.7**	**+2.5**
URLA	**Izmir**	**0.49**	**349**	P		**Pg**	**21 41 10.8**	**0.0**
BLCB	**Balcova**	**0.57**	**26**	*e*PG		**Pg**	**21 41 11.4**	**-0.7**
BLCB				*e*SG		**Sg**	**21 41 19.7**	**+0.1**
BLCB	**Balcova**	**0.57**	**26**	*e*Pg		**Pg**	**21 41 11.5**	**-0.7**
BLCB				*e*Sg		**Sg**	**21 41 19.7**	**+0.1**
IZM	**Izmir**	**0.68**	**39**	*e*PG		**Pg**	**21 41 13.7**	**-0.6**
IZM	**Izmir**	**0.68**	**39**	*e*Pg		**Pg**	**21 41 13.7**	**-0.6**
BODT	**Bodrum**	**0.94**	**150**	*e*PG		**Pg**	**21 41 19.3**	**+0.1**
BODT				*e*SG		**Sb**	**21 41 33.3**	**+0.5**
BODT	**Bodrum**	**0.94**	**150**	*e*Pg		**Pg**	**21 41 19.3**	**+0.1**
BODT				*e*Sg		**Sb**	**21 41 33.3**	**+0.5**
AYDN	**Tasoluk**	**0.94**	**103**	*i* P		**Pg**	**21 41 19.5**	**+0.2**
AYDN				*i* S		**Sg**	**21 41 32.1**	**+0.5**
AYDN	**

MKAR	**Makanchi Array**	**45.88**	**304**	P		**P**	**21 57 08.6**	**+1.6**
	0.4nm,0.4s,baz=88,slow=9.5,SNR=7.2							
KURK	**Kurchatov**	**47.77**	**309**	P		**P**	**21 57 23.8**	**+2.2**
KURBB	**Kurchatov Arra**	**47.83**	**309**	P		**P**	**21 57 23.8**	**+1.6**
	1.2nm,0.2s,baz=194,slow=25,SNR=2.3							
ILAR	**Eielson Array**	**50.28**	**32**	P		**P**	**21 57 41.0**	**+0.4**
	1.3nm,0.7s,baz=264,slow=6.3,SNR=13							
EKS2	**Erkin-Say**	**52.70**	**300**	*eP*		**P**	**21 58 00.2**	**+1.0**
	2.5nm,1.4s							
WRA	**Warramunga Arr**	**55.65**	**190**	P		**P**	**21 58 19.8**	**-0.9**
	0.9nm,0.7s,baz=7.4,slow=7.5,SNR=8.9							
ASAR	**Alice Springs**	**59.37**	**189**	P		**P**	**21 58 46.9**	**+0.1**
	0.3nm,0.7s,baz=15,slow=7.7,SNR=3.8							
YKA	**Yellowknife Ar**	**64.65**	**30**	P		**P**	**21 59 21.5**	**-0.2**
	0.4nm,0.7s,baz=297,slow=6.3,SNR=7.4							
FINES	**FINESS Array B**	**70.72**	**333**	P		**P**	**22 00 00.0**	**+0.1**
	0.3nm,0.7s,baz=43,slow=8.6,SNR=5.4							
NOA	**NORSAR Array B**	**76.07**	**338**	P		**P**	**22 00 32.4**	**+0.9**
	0.5nm,0.7s,baz=42,slow=5.6,SNR=4.3							
PDAR	**Pinedale Array**	**78.02**	**46**	P		**P**	**22 00 43.0**	**0.0**
	0.3nm,0.6s,baz=180,slow=0.7,SNR=4.2							
BRTR	**Keskin Array B**	**80.72**	**312**	LR		LR	22 39 42.3	
	comp=Z,15nm,19.2s,baz=117,slow=38							

*IDC **22** 22:03:36.2±2.0,0.°78N×97.°49E,h0km,mb3.5/6,mb1 3.6/8, mb1mx3.5/49,mbtmp3.5/8,ML4.4/1, Error ellipse: s-maj=54.6km s-min=22.6km az=64.0*

*ISCJB **22** 22:03:38.5±1.4,0.°8N±0.°1×97.°5E±0.°2,h27km,mb3.5/6, Error ellipse: s-maj=32.5km s-min=16.0km az=161.1*

ISC 22 22:03:41.0±1.8,0.°9N±0.°2×97.°7E±0.°3,h27km,n11,σ0°53/8, mb3.6/6,Northern Sumatera

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
PSI	**Prapat**	**2.27**	**33**	Pn		**Pn**		**22 04 16.6**	**-0.3**
	1.5nm,0.3s,baz=221,slow=19,SNR=2.0								
CMAR	**Chiang Mai Arr**	**17.50**	**4**	P		**P**		**22 07 45.0**	**+0.8**
	0.5nm,0.3s,baz=193,slow=10,SNR=4.9								
H08S2	**Diego Garcia H**	**26.51**	**251**	T		T		22 36 10.3	
	baz=72,slow=76,SNR=185								
H08S3	**Diego Garcia H**	**26.51**	**251**	T		T		22 36 16.6	
	baz=72,slow=76,SNR=160								
H08S1	**Diego Carcia H**	**26.53**	**251**	T		T		22 36 17.7	
	baz=72,slow=76,SNR=166								
WRA	**Warramunga Arr**	**41.47**	**122**	P		**P**		**22 11 25.7**	**-0.3**
	0.2nm,0.5s,baz=303,slow=8.8,SNR=3.6								
ASAR	**Alice Springs**	**42.83**	**127**	P		**P**		**22 11 37.4**	**+0.3**
	0.2nm,0.5s,baz=297,slow=7.8,SNR=4.5								
KSRS	**Korea Array**	**45.83**	**34**	P		**P**		**22 12 01.2**	**+0.4**
	1.1nm,0.6s,baz=221,slow=9.1,SNR=3.3								
SONM	**Songino Array**	**47.37**	**8**	P		**P**		**22 12 12.4**	**-0.4**
	0.2nm,0.4s,baz=190,slow=7.3,SNR=2.4								
MKAR	**Makanchi Array**	**47.65**	**346**	P		**P**		**22 12 14.9**	**0.0**
	0.6nm,0.6s,baz=168,slow=8.6,SNR=7.0								
ZALV	**Zalesovo Beam**	**53.94**	**351**	P		**P**		**22 13 01.7**	**-0.4**
	0.8nm,0.5s,baz=160,slow=4.7,SNR=4.1								

JMA 22 22:07:37.6±0.3,38.°79N×142.°57E,h24km±4km,M3.6, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**0.76**	**293**	P		P	Pb	22 07 52.0	-0.2
OFUJ				S		S	Sb	22 08 02.3	+0.2
MIYJ	**Miyakonagasawa**	**0.98**	**324**	P		P	Pn	22 07 54.8	-1.0
MIYJ				S		S	Sb	22 08 07.2	-1.2
JIO	**Ouri**	**1.01**	**251**	P		P	Pn	22 07 55.3	-1.0
JIO				S		S	Sb	22 08 07.9	-1.4
JMK	**Ichinoseki**	**1.07**	**279**	S		S	Sn	22 08 11.0	-0.1
JOM	**Ohasama**	**1.21**	**305**	P		P	Pn	22 07 59.3	+0.3
JOM				S		S	Sn	22 08 14.6	+0.1
JKZ	**Kuzumaki**	**1.53**	**322**	P		P	Pn	22 08 04.0	+0.5
JKZ				S		S	Sn	22 08 23.1	+0.4
JOU	**Okura**	**1.55**	**255**	S		S	Sn	22 08 24.0	+0.9
JRG	**Rokugo**	**1.62**	**292**	P		P	Pb	22 08 06.6	-0.3
JRG				S		S	Sb	22 08 27.8	+0.9
JMM	**Marumori**	**1.68**	**237**	P		P	Pn	22 08 06.4	+1.0
JYK	**Kaneyama**	**1.73**	**275**	P		P	Pb	22 08 07.8	-0.9
JANG	**Nango**	**1.78**	**333**	P		P	Pn	22 08 07.9	+1.0
JANG				*eS*		S	Sb	22 08 30.7	-0.7
JYS	**Shirataka**	**2.04**	**255**	S		S	Sn	22 08 37.1	+1.8
JFT	**Otama**	**2.17**	**235**	*eS*		S	Sn	22 08 40.0	+1.6

GUC 22 22:12:42.7±0.3,23.°87S×67.°57W,h210km±9km,ML4.3, 2C-1D,Chile-Argentina border region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
PB06	**IPOC Station P**	**2.17**	**302**↑	*eP*		Pn		22 13 25.3	+1.4
PB06				*eS*		S		22 13 57.7	+2.2
PB06				IAML				22 14 00.0	
	comp=N,662nm,0.4s								
PB09	**IPOC Station P**	**2.57**	**323**	*eP*		Pn		22 13 29.8	+1.6
PB09				*eS*		S		22 14 05.7	+2.4
PB04	**IPOC Station P**	**2.82**	**302**	*eP*		Pn		22 13 32.7	+1.8
PB04				*eS*		S		22 14 10.7	+2.5
PB04				IAML				22 14 13.0	
	comp=N,548nm,0.5s								
PB07	**IPOC Station P**	**3.01**	**314**↑	*eP*		Pn		22 13 35.3	+2.1
PB07				*eS*		S		22 14 15.1	+2.8
PB07				IAML				22 14 16.9	
	comp=N,501nm,0.4s								
PB01	**IPOC Station P**	**3.32**	**327**↓	*eP*		Pn		22 13 38.8	+2.0
PB01				*eS*		S		22 14 21.3	+2.7
PB01				IAML				22 14 22.8	
	comp=E,184nm,0.3s								

IDC 22 22:13:18.4±3.2,30.°25S×177.°88W,h0km,mb3.7/3, mb1 3.9/3,mb1mx3.6/22,mbtmp3.7/3,Error ellipse: s-maj=70.4km s-min=21.3km az=113.0,Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**0.99**	**358**	Pn		Pn		22 13 40.8	+1.2
	60nm,0.3s,baz=108,slow=20,SNR=3.8								
RAO				Sn		Sn		22 13 53.7	-0.5
	338nm,0.3s,baz=134,slow=18,SNR=11								
STKA	**Stephens Creek**	**34.62**	**257**	P		P		22 20 10.9	+1.7
	2.6nm,1.0s,baz=126,slow=8.5,SNR=3.9								
ASAR	**Alice Springs**	**43.22**	**267**	P		P		22 21 20.0	-1.6
	0.2nm,0.5s,baz=105,slow=7.0,SNR=6.0								
WRA	**Warramunga Arr**	**44.20**	**272**	P		P		22 21 29.2	-0.2
	0.6nm,0.4s,baz=111,slow=8.0,SNR=10								
FINES	**FINESS Array B**	**145.04**	**340**	PKPbc		PKPbc		22 32 55.1	-1.2
	0.8nm,0.5s,baz=46,slow=4.1,SNR=11								

*NIED **22** 22:23:00,37.°10N×141.°60E,h35km,Mw3.4 Best double couple: Mo1.53000×10^14 NP1:φs167.00000°,δ26.00000°, λ43.00000°, NP2:φs37.00000°,δ72.00000°,λ110.00000°.*

JMA 22 22:23:33.3±0.2,37.°12N×141.°65E,h43km±2km,M3.5, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**0.67**	**292**	P		Pn		22 23 46.3	-0.1
JFK				S		Sn		22 23 55.7	-0.1
ONAJ	**Iwakimizuishiy**	**0.68**	**269**	P		Pn		22 23 46.5	-0.1
ONAJ				S		Sn		22 23 56.1	-0.1
JHO	**Hitachi**	**1.00**	**240**	P		Pn		22 23 50.7	-0.2
JHO				S		Sn		22 24 03.2	-0.7
JMM	**Marumori**	**1.01**	**318**	P		Pn		22 23 50.9	-0.1
JFT	**Otama**	**1.12**	**291**	P		Pn		22 23 53.6	+1.1
JIO	**Ouri**	**1.35**	**350**	P		Pn		22 23 55.3	-0.4
JOU	**Okura**	**1.47**	**328**	P		Pn		22 23 58.5	+1.2
JOU				S		Sn		22 24 16.9	+1.5
MAT	**Matsushiro**	**2.82**	**259**	P		Pn		22 24 18.9	+3.0
MAT				S		Sn		22 24 57.2	+8.5

*TIF **22** 22:36:21.8,41.°27N×43.°96E,h12km±1km*

*CSEM **22** 22:36:22.7±0.2,41.°25N×43.°94E,h2km,ML1.8, Error ellipse: s-maj=5.6km s-min=2.7km az=163.0*

*DDA **22** 22:36:27.6,41.°05N×43.°56E,h7km,Md2.7*

ISC 22 22:36:22.6±1.1,41.°26N±0.°05×43.°95E±0.°02,h8km±10km, n22,σ0°31/37,Turkey-Georgia-Armenia border region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
AKH	**Akhalkalaki**	**0.37**	**294**	P		**Pg**		**22 36 29.8**	**-0.2**
AKH				S		**Sg**		**22 36 35.0**	**+0.1**
AKH	**Akhalkalaki**	**0.37**	**294**	P		**Pg**		**22 36 29.8**	**-0.2**
AKH				S		**Sg**		**22 36 35.0**	**+0.1**
KZR	**Kazreti**	**0.37**	**71**	P		**Pg**		**22 36 30.0**	**+0.1**
KZR				S		**Sg**		**22 36 34.9**	**0.0**
KZR	**Kazreti**	**0.37**	**71**	P		**Pg**		**22 36 30.0**	**+0.1**
KZR				S		**Sg**		**22 36 34.9**	**0.0**
EAK	**Akyaka**	**0.63**	**204**	*i* P		**Pg**		**22 36 34.8**	**+0.1**
EAK	**Akyaka**	**0.63**	**204**	P		**Pg**		**22 36 34.8**	**+0.1**
TBLG	**Delisi**	**0.76**	**51**	P		**Pb**		**22 36 48.9**	**+0.4**
TBLG				S		**Sb**		**22 36 48.9**	**+0.3**
TBLG	**Delisi**	**0.76**	**51**	P		**Pb**		**22 36 38.4**	**+0.4**
TBLG				S		**Sb**		**22 36 48.9**	**+0.3**
SEAG	**Tbilisi Sea**	**0.82**	**52**	P		Pn		22 36 49.3	+8.8
SEAG	**Tbilisi Sea**	**0.82**	**52**	P		Pn		22 36 49.3	+8.8
SEAG	**Tbilisi Sea**	**0.82**	**52**	S		**Sg**		**22 36 49.3**	**+0.3**
EPOS	**Posof**	**0.95**	**285**	*i* P		**Pg**		**22 36 40.8**	**0.0**
EPOS				*i* S		**Sg**		**22 36 53.5**	**+0.3**
EPOS	**Posof**	**0.95**	**285**	P		**Pg**		**22 36 40.8**	**0.0**
EPOS				S		**Sg**		**22 36 53.5**	**+0.3**
DGRG	**David-gareji**	**1.09**	**79**	P		**Pg**		**22 36 42.7**	**-0.8**
DGRG				S		**Sn**		**22 36 59.7**	**+0.2**
DGRG	**David-gareji**	**1.09**	**79**	P		**Pg**		**22 36 42.7**	**-0.8**
DGRG				S		**Sn**		**22 36 59.7**	**+0.2**
GUDG	**Gudauri**	**1.27**	**18**	P		**Pn**		**22 36 46.6**	**-0.2**
GUDG				S		**Sn**		**22 37 04.1**	**-0.1**
GUDG	**Gudauri**	**1.27**	**18**	P		**Pn**		**22 36 46.6**	**-0.2**
GUDG				S		**Sn**		**22 37 04.1**	**-0.1**
ARTV	**Artvin**	**1.52**	**268**	*i* P		**Pb**		**22 36 51.2**	**0.0**
ARTV				*i* S		**Sg**		**22 37 11.4**	**-0.2**
ARTV	**Artvin**	**1.52**	**268**	P		**Pb**		**22 36 51.2**	**0.0**
ARTV				S		**Sg**		**22 37 11.4**	**-0.2**
DAGI	**Agillar**	**1.54**	**264**	*i* P		**Pg**		**22 36 52.1**	**-0.1**
DAGI				*i* S		**Sg**		**22 37 12.8**	**+0.6**
DBAD	**Bademkaya**	**1.72**	**263**	*i* P		**Pb**		**22 36 54.0**	**-0.4**
DBAD				*i* S		**Sg**		**22 37 17.7**	**-0.1**
DBAD	**Bademkaya**	**1.72**	**263**	P		**Pb**		**22 36 54.0**	**-0.4**
DBAD				S		**Sg**		**22 37 17.7**	**-0.1**

*CSEM **22** 22:46:31.9,38.°40N×21.°99E,h11km,ML1.0/10*

ATH 22 22:46:31.9,38.°40N×21.°99E,h11km±1km,ML1.0/9,Error ellipse: s-maj=1.4km s-min=0.7km az=104.0,Greece

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
SERG	**Sergoula**	**0.06**	**76**	P		P	Pg	22 46 34.3	+0.1
SERG				S		S	Sg	22 46 35.6	-0.2
EFP	**Efpalio**	**0.07**	**293**	P		P	Pg	22 46 34.1	-0.2
EFP				S		S	Sg	22 46 35.2	-0.7
EFP	**Efpalio**	**0.07**	**293**	P		P	Pg	22 46 34.1	-0.1
EFP				S		S	Sg	22 46 35.1	-0.8
TRIZ	**Trizonia**	**0.08**	**117**	P		P	Pg	22 46 34.5	+0.2
TRIZ				S		S	Sg	22 46 36.0	0.0
RODI	**Rodini**	**0.10**	**223**	P		P	Pg	22 46 34.6	-0.1
RODI				S		S	Sg	22 46 36.9	+0.3
RODI	**Rodini**	**0.10**	**223**	P		P	Pg	22 46 34.6	0.0
RODI				AML		AML		22 46 36.6	
	comp=E,455μm,0.2s								
RODI				S		S	Sg	22 46 36.9	+0.3
RODI				AML		AML		22 46 37.0	
	comp=N,251μm,0.1s								
KALE	**Kalithea**	**0.12**	**94**	P		P	Pg	22 46 35.3	+0.3
KALE				S		S	Sg	22 46 37.7	+0.6
KALE	**Kalithea**	**0.12**	**94**	P		P	Pg	22 46 35.3	+0.4
KALE				S		S	Sg	22 46 37.7	+0.5
KALE				AML		AML		22 46 37.9	
	comp=E,244μm,0.1s								
KALE				AML		AML		22 46 37.9	
	comp=N,525μm,0.3s								
LAKA	**Lakka**	**0.16**	**182**	P		P	Pg	22 46 35.6	+0.1
LAKA				S		S	Sg	22 46 37.7	-0.3
LAKA	**Lakka**	**0.16**	**182**	P		P	Pg	22 46 35.6	+0.1
LAKA				S		S	Sg	22 46 37.7	-0.4
KLV	**Kalavryta, Ach**	**0.38**	**160**	P		P	Pg	22 46 39.2	-0.3
KLV				S		S	Sg	22 46 44.1	-0.4
KLV	**Kalavryta, Ach**	**0.38**	**160**	P		P	Pg	22 46 39.2	-0.2
KLV				S		S	Sg	22 46 44.1	-0.4
KLV				AML		AML		22 46 44.3	
	comp=N,23μm,0.1s								
KLV				AML		AML		22 46 46.2	
	comp=E,14μm,0.1s								
PVO	**Paravola**	**0.42**	**301**	P		P	Pg	22 46 40.2	0.0
PVO	**Paravola**	**0.42**	**301**	P		P	Pg	22 46 40.1	-0.1
DSF	**Desfina**	**0.42**	**88**	P		P	Pg	22 46 39.8	-0.5
DSF				S		S	Sb	22 46 47.0	-1.0
DSF	**Desfina**	**0.42**	**88**	P		P	Pg	22 46 39.8	-0.5
DSF				S		S	Sb	22 46 47.0	-0.9
DSF				AML		AML		22 46 47.7	
	comp=E,52μm,0.1s								
DSF				AML		AML		22 46 47.8	
	comp=N,63μm,0.2s								
DRO	**Drossia**	**0.50**	**206**	P		P	Pg	22 46 41.3	-0.3
DRO				S		S	Sg	22 46 49.0	+0.8
DRO	**Drossia**	**0.50**	**206**	P		P	Pg	22 46 41.3	-0.4
DRO				S		S	Sg	22 46 49.0	+0.8
DRO				AML		AML		22 46 50.1	
	comp=E,75μm,0.2s								
DRO				AML		AML		22 46 54.1	
	comp=N,37μm,0.3s								
RLS	**Riolos of Patr**	**0.53**	**230**	P		P	Pg	22 46 42.6	+0.3
RLS				S		S	Sb	22 46 51.0	0.0
RLS	**Riolos of Patr**	**0.53**	**230**	S		S	Sb	22 46 51.0	0.0
RLS				AML		AML		22 46 52.7	
	comp=E,22μm,0.3s								
RLS				AML		AML		22 46 54.1	
	comp=N,20μm,0.2s								
EVR	**Evrytania**	**0.54**	**345**	P		P	Pg	22 46 41.8	-0.6
EVR				S		S	Sg	22 46 50.1	+0.6
EVR	**Evrytania**	**0.54**	**345**	P		P	Pg	22 46 41.8	-0.6
EVR				S		S	Sg	22 46 50.1	+0.6
EVR				AML		AML		22 46 52.6	
	comp=N,28μm,0.1s								
PDO	**Prodromos**	**0.66**	**288**	P		P	Pb	22 46 45.5	0.0
PDO				S		S	Sb	22 46 54.7	0.0
PDO	**Prodromos**	**0.66**	**288**	P		P	Pb	22 46 45.5	0.0
PDO				S		S	Sb	22 46 54.7	0.0
PDO				AML		AML		22 46 57.4	
	comp=E,40μm,0.3s								
PDO				AML		AML		22 46 57.6	
	comp=N,45μm,0.5s								
AGG	**Agios Georgios**	**0.68**	**23**	P		P	Pg	22 46 43.9	-1.2
AGG				S		S	Sg	22 46 54.3	+0.3
AGG	**Agios Georgios**	**0.68**	**23**	P		P	Pg	22 46 43.9	-1.2
AGG				S		S	Sg	22 46 54.3	+0.3
AMT	**Artemida-Makis**	**0.89**	**194**	P		P	Pg	22 46 48.6	-0.6
AMT				S		S	Sb	22 47 01.7	+0.3
AMT	**Artemida-Makis**	**0.89**	**194**	P		P	Pg	22 46 48.6	-0.5
AMT				S		S	Sb	22 47 01.7	+0.3
AMT				AML		AML		22 47 05.8	
	comp=N,33μm,0.5s								
AMT				AML		AML		22 47 08.0	
	comp=E,16μm,0.4s								
DSL	**Palaion Diasel**	**1.01**	**317**	P		P	Pn	22 46 51.9	-0.2
DSL	**Palaion Diasel**	**1.01**	**317**	P		P	Pn	22 46 51.9	-0.2

PRU 22 22:46:53.9,50.°13N×19.°10E,h0km,Poland

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
OKC	**Ostrava-Krasne**	**0.68**	**245**	*e*SG		Sg		22 47 16.8	+1.1
	comp=Z,3.7nm,0.5s								
LANS	**Liptovska Anna**	**1.01**	**166**	*e*PG		Pg		22 47 13.0	-0.2
LANS				*e*SG		Sg		22 47 25.7	-0.6
LANS				*e*				23 19 02.6	
KRLC	**Kraliky**	**1.49**	**269**	*e*SG		Sg		22 47 41.5	-0.4
VYHS	**Vyhne**	**1.65**	**186**	*e*SN		Sn		22 47 43.6	-2.4
DPC	**Dobruska-Polom**	**1.80**	**278**	*e*SG		Sn		22 47 50.2	+0.5

BUC 22 22:48:01.4±1.2,45.°13N×23.°59E,h4km±7km,MD2.3/2, 6C-8D,Error ellipse: s-maj=10.2km s-min=5.2km az=356.0,Romania

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
LOT	**Lotru**	**0.34**	**22**↑	*i* P		Pg		22 48 08.6	+0.5
LOT				S		Sg		22 48 12.9	+0.2
LOT	**Lotru**	**0.34**	**22**↑	*i* P		Pg		22 48 08.6	+0.5
LOT				*i* S		Sg		22 48 12.9	+0.2
GZR	**Gura Zlata**	**0.63**	**295**↑	*i* P		Pb		22 48 14.3	-0.7
GZR				*i* S		Sg		22 48 22.1	+0.4
ARR	**Arges**	**0.78**	**72**↓	*i* P		Pb		22 48 16.9	-0.6
ARR	**Arges**	**0.78**	**72**↓	*i* P		Pb		22 48 16.9	-0.6
ARR				*i* S		Sb		22 48 27.4	-1.0
VOIR		**1.08**	**73**↓	*i* P		Pb		22 48 22.8	+0.2
VOIR		**1.08**	**73**↓	*i* P		Pb		22 48 22.8	+0.2
VOIR				*i* S		Sb		22 48 37.1	0.0
BZS	**Buzias**	**1.47**	**290**↓	*i* P		Pb		22 48 29.0	-0.3
BZS	**Buzias**	**1.47**	**290**↓	*i* P		Pb		22 48 29.0	-0.3
BZS				*i* S		Sg		22 48 48.9	+0.2
CJR	**Cluj-Napoca**	**1.58**	**0**↑	*i* P		Pg		22 48 31.9	+0.1
CJR				S		Sg		22 48 52.3	0.0
CJR	**Cluj-Napoca**	**1.58**	**0**↑	*i* P		Pg		22 48 31.9	+0.1
CJR				*i* S		Sg		22 48 52.3	0.0
MLR	**Muntele Rosu**	**1.70**	**77**↓	*i* P		Pb		22 48 32.8	-0.5
MLR	**Muntele Rosu**	**1.70**	**77**↓	*i* P		Pb		22 48 32.8	-0.5
MLR				*i* S		Sb		22 48 55.4	+0.3
DRGR		**1.77**	**340**	S		Sb		22 48 57.4	+0.4
DRGR		**1.77**	**340**	*i* S		Sb		22 48 57.4	+0.4

*ISCJB **22** 22:59:16.2±0.5,36.°64N±0.°05×142.°32E±0.°06,h19km, mb3.9/25,MS2.7/1,Error ellipse: s-maj=7.7km s-min=6.1km az=138.3*

*JMA **22** 22:59:18.0±0.4,36.°76N×142.°23E,h23km,M4.0*

*IDC **22** 22:59:21.3±2.0,36.°61N×142.°16E,h43km±19km,mb3.7/25, mb1 3.8/31,mb1mx3.8/44,mbtmp3.9/31,ML3.4/4,MS3.3/6, Ms1 3.3/6,ms1mx2.9/50,Error ellipse: s-maj=15.6km s-min=12.3km az=104.0*

ISC 22 22:59:18.3±0.6,36.°69N±0.°06×142.°29E±0.°08,h19km,n49, σ1°09/44,mb4.0/25,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**1.26**	**289**	P		P		**22 59 39.1**	**-1.9**
JFK	**Kawauchi**	**1.32**	**301**	P		P		**22 59 40.3**	**-1.4**
JHO	**Hitachi**	**1.39**	**267**	P		P		**22 59 41.4**	**-1.2**
JMM	**Marumori**	**1.67**	**315**	P		P		**22 59 45.1**	**-1.4**
JFT	**Otama**	**1.77**	**298**	P		P		**22 59 47.3**	**-0.5**
JIO	**Ouri**	**1.91**	**337**	P		P		**22 59 49.0**	**-0.8**
JOU	**Okura**	**2.11**	**323**	P		P		**22 59 53.0**	**+0.4**
MJAR	**Matsushiro Arr**	**3.29**	**269**	P		P		**23 00 09.6**	**+0.9**
	17nm,0.3s,baz=87,slow=14,SNR=104								
MJAR				LR		LR		23 01 38.4	
	comp=Z,482nm,18.4s,baz=120,slow=44								
MAT	**Matsushiro**	**3.29**	**269**	P		P		**23 00 09.8**	**+1.0**
MAT				S		S		**23 00 49.3**	**+1.9**
JHJ	**Hachijo jima 2**	**4.12**	**211**	P		P		**23 00 20.2**	**0.0**
	9.4nm,0.3s,baz=248,slow=19,SNR=5.8								
JHJ				S		S		**23 01 05.4**	**-2.4**
	27nm,0.3s,baz=53,slow=20,SNR=4.0								
ASAJ	**Asahikawa**	**7.42**	**2**	P		P		**23 01 03.9**	**-1.6**
	4.4nm,0.3s,baz=211,slow=7.8,SNR=11								
ASAJ				S		S		**23 02 26.7**	**-2.3**
	0.9nm,0.3s,baz=307,slow=20,SNR=2.4								
JNU	**Nakatsue**	**10.03**	**253**	LR		LR		23 05 43.0	
	comp=Z,84nm,20.8s,baz=110,slow=39								
USRK	**Ussuriysk Ar.**	**10.85**	**317**	P		P		**23 01 53.2**	**+0.8**
	0.1nm,0.3s,baz=136,slow=9.4,SNR=3.1								
USRK				LR		LR		23 05 43.5	
	comp=Z,246nm,19.4s,baz=140,slow=35								
KSRS	**Korea Array**	**11.51**	**278**	P		P		**23 02 02.2**	**+0.8**
	baz=96,slow=13,SNR=4.5								
KSRS				LR		LR		23 06 17.8	
	comp=Z,232nm,18.9s,baz=94,slow=36								
KLR	**Kul'dur**	**14.69**	**332**	P		P		**23 02 45.1**	**+0.1**
	0.1nm,0.3s,baz=165,slow=19,SNR=2.1								
KLR				LR		LR		23 08 17.3	
	comp=Z,161nm,18.8s,baz=144,slow=36								
PETK	**Petropavlovsk-**	**19.64**	**28**	P		P		**23 03 46.0**	**+0.3**
	0.1nm,0.3s,baz=211,slow=8.3,SNR=4.7								
MA2	**Magadan**	**23.55**	**11**	LR		LR		23 13 18.1	
	comp=Z,25nm,20.3s,baz=180,slow=35								
SEY	**Seymchan**	**26.99**	**10**	P		P		**23 04 59.9**	**+1.3**
	3.0nm,0.7s,baz=194,slow=4.9,SNR=10								
H11N2	**WAKE ISLAND Hy**	**27.37**	**121**	T		T		23 34 05.9	
	baz=314,slow=75,SNR=11								
H11N1	**WAKE ISLAND Hy**	**27.38**	**121**	T		T		23 34 18.6	
	baz=314,slow=75,SNR=8.6								
H11N3	**WAKE ISLAND Hy**	**27.39**	**121**	T		T		23 34 26.1	
	baz=314,slow=75,SNR=8.0								
H11S1	**WAKE ISLAND Hy**	**28.09**	**124**	T		T		23 34 52.9	
	baz=316,slow=76,SNR=8.5								
H11S3	**WAKE ISLAND Hy**	**28.09**	**124**	T		T		23 35 03.5	
	baz=316,slow=76,SNR=7.3								
H11S2	**WAKE ISLAND Hy**	**28.10**	**124**	T		T		23 35 04.7	
	baz=316,slow=76,SNR=6.4								
SONM	**Songino Array**	**28.56**	**304**	P		P		**23 05 13.3**	**+0.4**
	4.8nm,0.7s,ba

JAG	**Ashikaga**	**1.25 272**	P	**Pn**	**23 03 18.4**	**-0.1**
JAG			S	**Sn**	**23 03 33.7**	**-0.9**
MJAR	**Matsushiro Arr**	**2.26 275**	P	**Pn**	**23 03 33.7**	**+1.4**
	8.5nm,0.3s,baz=106,slow=9.2,SNR=22					
MJAR			S	**Sb**	**23 04 02.6**	**-1.5**
	9.9nm,0.3s,baz=102,slow=32,SNR=9.7					
MAT	**Matsushiro**	**2.26 275**	P	**Pn**	**23 03 33.9**	**+1.6**
MAT			S	**Sb**	**23 04 03.5**	**-0.6**
JHJ	**Hachijo jima 2**	**3.41 198**	P	**Pn**	**23 03 49.4**	**+1.4**
	7.0nm,0.3s,baz=79,slow=21,SNR=2.4					
JHJ			S	**Sn**	**23 04 27.6**	**-0.2**
	4.1nm,0.3s,baz=304,slow=8.6,SNR=2.4					
SONM	**Songino Array**	**27.88 305**	P	**P**	**23 08 46.1**	**+1.6**
	0.2nm,0.4s,baz=100,slow=7.7,SNR=2.2					
KURBB	**Kurchatov Arra**	**46.15 308**	P	**P**	**23 11 18.4**	**-0.4**
	0.6nm,0.4s,baz=82,slow=7.5,SNR=2.5					
WRA	**Warramunga Arr**	**56.37 188**	P	**P**	**23 12 34.7**	**-1.1**
	0.4nm,0.3s,baz=5.3,slow=7.5,SNR=3.1					
ASAR	**Alice Springs**	**60.10 188**	P	**P**	**23 13 01.5**	**-0.3**
	0.2nm,0.6s,baz=12,slow=9.0,SNR=2.8					

*BJI **22** 23:11:09.7, 45˚.45N×82˚.60E, h7km, mb4.9/46, mB4.7/24, ML4.9/12, Ms4.3/29, Ms7 4.0/24*
*MOS **22** 23:11:10.3±0.9, 45˚.49N×82˚.66E, h23km, mb5.0/51, Error ellipse: s-maj=6.1km s-min=4.5km az=120.4*
MOS Felt (III-IV) at Dostyk,(II-III) at Usharal.
*IDC **22** 23:11:10.5±1.5, 45˚.50N×82˚.63E, h15km±9km, mb4.4/30, mb1 4.5/37, mb1mx4.5/51, mbtmp4.5/37, ML4.2/8, MS3.7/29, Ms1 3.7/29, ms1mx3.6/47, Error ellipse: s-maj=9.0km s-min=8.5km az=3.0*
*ISCJB **22** 23:11:12.0±0.5, 45˚.57N±0˚.02×82˚.67E±0˚.03, h33km±4km, mb4.7/140, MS4.0/44, Error ellipse: s-maj=3.7km s-min=2.8km az=26.5*
*NEIC **22** 23:11:12.4±0.8, 45˚.51N×82˚.61E, h25km±5km, mb4.9/79, Error ellipse: s-maj=2.9km s-min=2.3km az=192.0*
NEIC Felt [IV] at Dostyq and [III] at Usharal, Kazakhstan.
*NNC **22** 23:11:13.8±1.2, 45˚.63N×82˚.04E, h7km±10km, mb5.3, mpv5.0, Error ellipse: s-maj=14.8km s-min=5.1km az=112.0*
*SOME **22** 23:11:17.3, 45˚.22N×82˚.12E, h0km, MS4.1*
ISC 22 23:11:11.3±0.4, 45˚.56N±0˚.03×82˚.64E±0˚.03, h17km±2km, h16km:pP-P,n410,σ1§38/456, mb4.8/141, MS3.9/44, 69C-29D, Kazakhstan-Xinjiang border region

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
MK01	**Makanchi Array**	**1.23**	**349**	*e*Pn		**Pg**	**23 11 34.9**	**-0.2**
MK31	**Makanchi Array**	**1.25**	**349**	⇑P		**Pg**	**23 11 35.4**	**-0.2**
	1μm,0.3s,baz=165,slow=17							
MK31				⇑S		**Sg**	**23 11 51.7**	**-0.2**
	9μm,0.7s							
MK31	**Makanchi Array**	**1.25**	**349**	*e*PG		**Pg**	**23 11 35.3**	**-0.2**
MK31	**Makanchi Array**	**1.25**	**349**	*e*Pn		**Pb**	**23 11 35.2**	**+0.7**
MKAR	**Makanchi Array**	**1.25**	**349**	Pg		**Pg**	**23 11 35.3**	**-0.3**
	2μm,0.3s,baz=167,slow=16							
MKAR				Lg		Lg	23 11 52.0	
	5μm,0.3s,baz=171,slow=29,SNR=46							
MKAR	**Makanchi Array**	**1.25**	**349**	*e*PG		**Pg**	**23 11 35.4**	**-0.2**
MKAR	**Makanchi Array**	**1.25**	**349**	*e*Pn		**Pg**	**23 11 35.4**	**-0.2**
KAPS	**Kapalarasan**	**2.33**	**264**	⇑*i*P		**Pb**	**23 11 53.2**	**+0.3**
	3μm,0.3s							
KAPS				*e*S		**Sb**	**23 12 19.6**	**-1.7**
	8μm,0.4s							
DJR	**Jarkent**	**2.37**	**240**	*e*P		**Pb**	**23 11 53.8**	**+0.2**
	3μm,0.3s							
DJR				*e*S		**Sn**	**23 12 20.2**	**+2.0**
	13μm,0.4s							
KTMS	**Ketmen**	**2.67**	**218**	*e*P		**Pb**	**23 11 58.3**	**-0.5**
	572nm,0.4s							
KTMS				*e*S		**Sn**	**23 12 28.1**	**+2.2**
	2μm,0.5s							
TDK	**Taldyqorghan**	**3.04**	**261**	*e*P		**Pb**	**23 12 07.3**	**+2.3**
	2μm,0.3s							
TDK				*e*S		**Sb**	**23 12 43.8**	**+2.0**
	14μm,0.4s							
SHLS	**Shalkode**	**3.11**	**220**	⇓*i*P		**Pb**	**23 12 06.6**	**+0.3**
	3μm,0.4s							
SHLS				*e*S		**Sb**	**23 12 42.6**	**-1.5**
	5μm,0.4s							
PDGK	**Podgornoye**	**3.18**	**226**	⇓Pn		**Pn**	**23 12 00.6**	**+0.1**
	96nm,0.3s							
PDGK				⇑Pg		**Pb**	**23 12 07.5**	**+0.2**
	1μm,0.6s							
PDGK				⇑Lg		Lg	23 12 45.9	
	4μm,0.8s							
MNBS	**Baschi**	**3.36**	**245**	*e*P		**Pb**	**23 12 11.0**	**+0.5**
	616nm,0.5s							
MNBS				*e*S		**Sb**	**23 12 49.9**	**-1.2**
	3μm,0.6s							
KPKS	**Kokpek**	**3.52**	**235**	*e*P		**Pb**	**23 12 14.0**	**+0.8**
	3μm,0.3s							
KPKS				*e*S		**Sb**	**23 12 55.3**	**-0.5**
	12μm,0.4s							
UZB	**Uzynbulak**	**3.54**	**228**	*e*P		**Pb**	**23 12 13.5**	**-0.1**
	1μm,0.4s							
UZB				*e*S		**Sb**	**23 12 54.1**	**-2.4**
	2μm,0.3s							
ARXS	**Arharly**	**3.68**	**250**	*e*P		**Pb**	**23 12 16.6**	**+0.7**
	588nm,0.3s							
ARXS				*e*S		**Sb**	**23 13 00.3**	**+0.2**
	3μm,0.5s							
KURS	**Kuram**	**3.81**	**239**	⇓*i*P		**Pb**	**23 12 19.7**	**+1.6**
	254nm,0.2s							
KURS				*e*S		**Sb**	**23 13 04.8**	**+0.8**
	2μm,0.4s							
ZHN	**Zhinishke**	**3.85**	**233**	*e*P		**Pb**	**23 12 19.9**	**+1.0**
	893nm,0.5s							
ZHN				*e*S		**Sb**	**23 13 05.4**	**+0.2**
	3μm,0.2s							
WMQ	**Urumqi**	**4.00**	**114**	Pn		**Pn**	**23 12 14.4**	**+2.4**
WMQ				Sn		**Sn**	**23 13 01.8**	**+3.2**
WMQ				smax		smax		
	comp=N,1μm,0.4s							
WMQ				smax		smax		
	comp=E,980nm,0.6s							
CHKK	**Chushkaly**	**4.36**	**249**	*e*P		**Pb**	**23 12 30.2**	**+2.8**
	429nm,0.4s							
CHKK				*e*S		**Sb**	**23 13 22.7**	**+2.9**
	3μm,0.2s							
KOTS	**Kotyrbulak**	**4.59**	**241**	*e*P		**Pb**	**23 12 32.7**	**+1.1**
KOTS				*e*S		**Sb**	**23 13 26.6**	**0.0**
KTBS	**Karatobe**	**4.63**	**249**	*e*P		**Pb**	**23 12 34.4**	**+2.2**
KTBS				*e*S		**Sb**	**23 13 29.5**	**+1.8**
MDOK	**Medeo**	**4.67**	**241**	*e*P		**Pb**	**23 12 35.5**	**+2.6**
	811nm,0.4s							
MDOK				*e*S		**Sb**	**23 13 32.3**	**+3.4**
	3μm,0.8s							
AAA	**Alma-Ata**	**4.68**	**243**	*e*PN		**Pb**	**23 12 35.9**	**+3.0**
AAA				*e*S		**Sb**	**23 13 34.8**	**+5.9**
AAA				pmax		pmax		
	comp=Z,653nm,0.5s							
AAA				smax		smax		
	comp=E,3μm,0.5s							
TNSS	**Tian-Shan**	**4.80**	**240**	*e*P		Pb	23 12 38.9	+3.7
	comp=E,484nm,0.5s							
TNSS				*e*S		**Sb**	**23 13 38.1**	**+5.2**
	comp=E,677nm,0.5s							
TKM2	**Tokmak 2**	**5.71**	**245**	⇑Pn		**Pn**	**23 12 35.5**	**0.0**
TKM2				⇑Pg		**Pb**	**23 12 52.9**	**+2.4**
	comp=E,187nm,0.5s							
TKM2				⇑Lg		Lg	23 14 04.8	
	comp=E,940nm,0.7s							
TKM2	**Tokmak 2**	**5.71**	**245**	*e*PN		**Pn**	**23 12 35.5**	**0.0**
TKM2	**Tokmak 2**	**5.71**	**245**	*e*Pn		**Pn**	**23 12 35.5**	**0.0**
KURBB	**Kurchatov Arra**	**5.76**	**333**	Pn		**Pn**	**23 12 36.9**	**+0.9**
	comp=E,4.2nm,0.3s,baz=148,slow=13,SNR=118							
KURBB				Pg		Pb	23 12 54.9	+3.5
	comp=E,14nm,0.3s,baz=140,slow=17,SNR=18							
KURBB				Sn		**Sn**	**23 13 42.5**	**+0.8**
	comp=E,20nm,0.3s,baz=154,slow=18,SNR=5.5							
KURBB				Lg		Lg	23 14 11.6	
	comp=E,47nm,0.3s,baz=149,slow=29,SNR=13							
KURK	**Kurchatov**	**5.81**	**334**	⇓Pn		**Pn**	**23 12 37.3**	**+0.6**
	comp=E,58nm,0.5s							
KURK				⇑Pg		Pb	23 12 57.0	+4.8
	comp=E,223nm,0.4s							
KURK				⇑Lg		Lg	23 14 12.7	
	comp=E,3μm,0.5s							
KURK	**Kurchatov**	**5.81**	**334**	PN		**Pn**	**23 12 36.9**	**+0.2**
KURK							23 12 54.9	
KURK				pmax		pmax		
	comp=Z,4.0nm,0.3s							
KURK				pmax		pmax		
	comp=Z,14nm,0.3s							
KURK	**Kurchatov**	**5.81**	**334**	*e*Pn		**Pn**	**23 12 37.5**	**+0.8**
KURK				*e*Sn		**Sn**	**23 13 43.1**	**+0.1**
FRU	**Bishkek**	**6.38**	**248**	*e*PN		**Pn**	**23 12 45.0**	**+0.4**
FRU				*i*			23 13 08.0	
FRU				*e*			23 14 24.0	
FRU				pmax		pmax		
	comp=Z,380nm,1.8s							
FRU				smax		smax		
	comp=E,2μm,1.2s							
FRU				smax		smax		
	comp=E,3μm,1.6s							
AAK	**Ala-Archa**	**6.55**	**246**	Pn		**Pn**	**23 12 47.8**	**+0.7**
	comp=E,7.3nm,0.3s,baz=84,slow=3.4,SNR=74							
AAK				Lg		Lg	23 14 32.8	
	comp=E,36nm,0.3s,baz=316,slow=18,SNR=4.3							
AAK	**Ala-Archa**	**6.55**	**246**	⇑Pn		**Pn**	**23 12 47.3**	**+0.2**
AAK				⇑Pg		**Pb**	**23 13 05.2**	**+0.3**
	comp=E,177nm,0.7s							
AAK				⇑Lg		Lg	23 14 32.1	
	comp=E,1μm,1.1s							
AAK	**Ala-Archa**	**6.55**	**246**	*e*Pn		**Pn**	**23 12 47.4**	**+0.3**
EKS2	**Erkin-Say**	**7.00**	**249**	*e*PN		**Pn**	**23 12 53.3**	**0.0**
EKS2	**Erkin-Say**	**7.00**	**249**	*e*Pn		**Pn**	**23 12 53.2**	**0.0**
OTUK	**Ortayu**	**7.55**	**295**	⇑Pn		**Pn**	**23 12 59.5**	**-1.0**
	comp=E,56nm,0.6s							
OTUK				⇑Lg		Lg	23 14 60.0	
	comp=E,513nm,0.5s							
KSH	**Kashi**	**7.79**	**221**	P		Pn	23 13 11.5	+7.5
KSH				*e*pP		Pb	23 13 18.8	-7.2
KSH				*e*sP			23 13 23.5	
KSH				S		Sn	23 14 39.3	+7.4
KSH				pmax		pmax		
	comp=E,8.0nm,0.3s							
KSH				smax		smax		
	comp=E,150nm,0.7s							
KSH				smax		smax		
	comp=E,590nm,1.6s							
ZAA0	**Zalesovo Array**	**8.51**	**9**	*e*Pn		**Pn**	**23 13 14.8**	**+1.0**
ZALV	**Zalesovo Beam**	**8.51**	**9**	Pn		**Pn**	**23 13 15.1**	**+1.4**
	comp=E,43nm,0.3s,baz=192,slow=14,SNR=1100							
ZALV				Sn		**Sn**	**23 14 47.6**	**-1.7**
	comp=E,60nm,0.3s,baz=196,slow=24,SNR=8.8							
ZALV				Lg		Lg	23 15 39.4	
	baz=200,slow=25,SNR=3.2							
ZALV				LR		LR	23 16 46.9	
	comp=E,498nm,20.7s,baz=53,slow=39							
KK31	**Karatay Array**	**9.03**	**259**	Pn		**Pn**	**23 13 20.1**	**-0.8**
	comp=E,5.1nm,0.9s,baz=59,slow=36,SNR=91							
KK31				⇑Pg			23 13 49.9	
	comp=E,5.9nm,0.3s							
KK31				⇑Lg		Lg	23 15 52.9	
	comp=E,134nm,0.5s,baz=72,slow=27,SNR=6.7							
KKAR	**Karatay Array**	**9.03**	**259**	*e*P		**Pn**	**23 13 20.4**	**-0.5**
KKAR	**Karatay Array**	**9.03**	**259**	*e*Pn		**Pn**	**23 13 20.4**	**-0.5**
NVS	**Novosibirsk**	**9.30**	**2**	*e*P		**Pn**	**23 13 25.4**	**+0.9**
NVS				*i*	S	**Sn**	**23 15 06.9**	**-1.6**
BVA0	**Borovoye Array**	**10.93**	**317**	Pn		**Pn**	**23 13 46.8**	**0.0**
	comp=E,34nm,0.6s,baz=127,slow=13,SNR=310							
BVA0				⇓Sn		**Sn**	**23 15 46.4**	**-2.3**
	comp=E,32nm,0.6s,baz=131,slow=22,SNR=5.0							
BVA0				⇓Lg		Lg	23 16 52.3	
	comp=E,575nm,1.6s,baz=140,slow=22,SNR=4.7							
BVAR	**Borovoye Array**	**10.93**	**317**	Pn		**Pn**	**23 13 46.6**	**-0.3**
	comp=E,6.5nm,0.3s,baz=115,slow=13,SNR=129							
BVAR				Sn		**Sn**	**23 15 43.8**	**-4.9**
	comp=E,17nm,0.3s,baz=125,slow=22,SNR=6.5							
BVAR				Lg		Lg	23 16 56.2	
	comp=E,15nm,0.3s,baz=110,slow=26,SNR=5.7							
BRVK	**Borovoye**	**11.00**	**317**	⇓Pn		**Pn**	**23 13 48.3**	**+0.4**
	comp=E,63nm,0.6s							
BRVK				⇑Sn		**Sn**	**23 15 47.3**	**-3.1**
	comp=E,80nm,0.7s							
BRVK				⇑Lg		Lg	23 16 54.1	
	comp=E,428nm,1.0s							
BRVK	**Borovoye**	**11.00**	**317**	*c i*P		**Pn**	**23 13 47.8**	**0.0**
BRVK				pmax		pmax		
	comp=Z,33nm,0.7s							
BRVK	**Borovoye**	**11.00**	**317**	*e*Pn		**Pn**	**23 13 47.6**	**-0.2**
CHKZ	**Chkalovo**	**11.24**	**321**	⇑Pn		**Pn**	**23 13 50.6**	**-0.5**
	comp=E,46nm,0.5s							
CHKZ				⇓Sn		**Sn**	**23 15 56.3**	**-0.1**
	comp=E,29nm,0.5s							
CHKZ				⇑Lg		Lg	23 16 58.1	
	comp=E,307nm,1.0s							
ZRNK	**Zerenda**	**11.56**	**315**	⇑Pn		**Pn**	**23 13 55.3**	**-0.3**
	comp=E,68nm,0.5s							
ZRNK				⇑Sn		Sn	23 15 58.3	-5.8
	comp=E,61nm,0.7s							
ZRNK				⇑Lg		Lg	23 17 08.8	
	comp=E,233nm,0.7s							
ZRNK	**Zerenda**	**11.56**	**315**	*e*P		**Pn**	**23 13 54.8**	**-0.7**
ZRNK	**Zerenda**	**11.56**	**315**	*e*Pn		**Pn**	**23 13 54.8**	**-0.7**
MOY	**Mondy**	**13.58**	**57**	*e*P		**P**	**23 14 34.0**	**+1.9**
MOY				*e*S		Sn	23 17 02.7	+9.2
CHCP	**Chirah Chowk**	**13.90**	**214**	P		**Pn**	**23 14 27.8**	**+0.3**
GTA	**Gaotai**	**14.08**	**110**	*e*P		**Pn**	**23 14 28.3**	**-1.7**
GTA				pP		P	23 14 35.8	-1.9
GTA				sP			23 14 38.8	
GTA				S		**Sn**	**23 17 02.8**	**-3.1**
GTA				sS		S	23 17 14.8	-12
GTA				SS		**SnSn**	**23 17 19.9**	**+1.9**
GTA				pmax		pmax		
	comp=Z,12nm,1.3s							
GTA				pmax		pmax		
	comp=Z,120nm,6.9s							
GTA				LR		LR		
	comp=Z,480nm,15.2s							
GTA				LR		LR		
	comp=Z,360nm,14.7s							
GTA				LR		LR		
	comp=Z,650nm,16.6s							
CEP	**Cherat**	**14.32**	**219**	P		**Pn**	**23 14 33.1**	**-0.4**
ZAK	**Zakamensk**	**14.63**	**63**	*e*P		**Pn**	**23 14 37.8**	**+0.3**
ZAK				pmax		pmax		
	comp=Z,11nm,1.0s							
ZAK				pmax		pmax		
	comp=Z,73nm,1.6s							
KBL	**Kabul**	**15.13**	**228**	*e*P		**Pn**	**23 14 44.3**	**-0.1**
KBL				pmax		pmax		
	comp=Z,16nm,0.6s							
KBL	**Kabul**	**15.13**	**228**	*e*Pn		**Pn**	**23 14 44.3**	**-0.1**
	comp=Z,16nm,0.6s							
TLY	**Talaya**	**15.15**	**59**	Pn		**P**	**23 14 48.4**	**-1.1**
	comp=Z,0.0nm,0.3s,baz=232,slow=13,SNR=8.3							
TLY				Lg		Lg	23 19 12.0	
	comp=Z,0.0nm,0.3s,baz=80,slow=5.3,SNR=6.3							
TLY				LR		LR	23 20 42.7	
	comp=Z,450nm,18.7s,baz=252,slow=38							
TLY	**Talaya**	**15.15**	**59**	*e*P		**P**	**23 14 50.4**	**+0.9**
TLY				pmax		pmax		
	comp=Z,4.0nm,0.8s							
TLY				MLR		MLR		
	comp=Z,304nm,13.0s							
TLY	**Talaya**	**15.15**	**59**	*e*Pn		**Pn**	**23 14 45.2**	**+0.7**
	comp=Z,6.0nm,0.7s							
THW	**Thamme Wali**	**15.28**	**217**	P		**Pn**	**23 14 47.6**	**+1.4**
IRK	**Irkutsk**	**15.68**	**57**	*e*P		**P**	**23 14 55.4**	**0.0**
AB31	**Akbulak array**	**15.79**	**292**	⇓Pn		**Pn**	**23 14 49.3**	**-3.4**
	comp=Z,19nm,0.6s							
AB31				⇑Sn		Sn	23 17 38.5	-8.6
	comp=Z,13nm,0.7s							
AB31				⇑Lg		Lg	23 19 26.3	
	comp=Z,89nm,0.9s							
ABKAR	**Akbulak array**	**15.79**	**292**	*e*Pn		**Pn**	**23 14 49.9**	**-2.8**
SONM	**Songino Array**	**16.44**	**74**	Pn		**Pn**	**23 15 02.1**	**+0.9**
	comp=Z,0.6nm,0.3s,baz=265,slow=12,SNR=46							
SONM				Lg		Lg	23 19 50.5	
	comp=Z,0.4nm,0.3s,baz=273,slow=30,SNR=5.3							
SONM				LR		LR	23 21 34.3	
	comp=Z,236nm,18.3s,baz=269,slow=38							
SONA1	**Songino Array**	**16.45**	**73**	*e*Pn		**Pn**	**23 15 01.4**	**+0.1**
ULN	**Ulaanbaatar**	**16.89**	**73**	⇓*i*P		**Pn**	**23 15 07.7**	**+0.8**
ULN				pmax		pmax		
	comp=Z,11nm,1.0s							
ULN	**Ulaanbaatar**	**16.89**	**73**	*e*Pn		**Pn**	**23 15 07.6**	**+0.8**
	comp=Z,10nm,0.7s							
AKTO	**Aktyubinsk**	**17.15**	**295**	P		**Pn**	**23 15 09.1**	**-1.0**
	comp=Z,1.3nm,0.3s,baz=102,slow=14,SNR=19							
AKTO				Lg		Lg	23 20 11.8	
	baz=13,slow=11,SNR=4.2							
AKTO				LR		LR	23 22 05.7	
	comp=Z,282nm,19.6s,baz=118,slow=38							
AKTO	**Aktyubinsk**	**17.15**	**295**	⇓Pn		**Pn**	**23 15 09.5**	**-0.6**
	comp=Z,17nm,0.6s							
AKTO				⇑Sn		**Sn**	**23 18 13.5**	**-6.7**
				⇑Lg		Lg	23 20 06.3	
	comp=Z,90nm,1.1s							
LSA	**Lhasa**	**17.19**	**154**	P		**P**	**23 15 13.5**	**+0.8**
LSA				pmax		pmax		
	comp=Z,10.0nm,1.0s							
LSA	**Lhasa**	**17.19**	**154**	*e*P		**Pn**	**23 15 11.1**	**-0.1**
LSA				pmax		pmax		
	comp=Z,19nm,0.9s							
LSA	**Lhasa**	**17.19**	**154**	*e*Pn		**Pn**	**23 15 11.1**	**-0.1**
	comp=Z,19nm,0.9s							
PYUN	**Piuthan**	**17.43**	**179**	*e*P		Pn	23 15 09.0	-4.9
GKN	**Gorkha**	**17.60**	**174**	*e*P		**Pn**	**23 15 14.2**	**-1.7**
	comp=Z,89nm,0.4s							
SVE	**Sverdlovsk**	**17.72**	**317**	*e*P		**P**	**23 15 19.3**	**+1.5**
SVE				pmax		pmax		
	comp=Z,34nm,0.8s							
KOLN	**Koldanda**	**17.77**	**177**	*e*P		**Pn**	**23 15 15.5**	**-2.6**
	comp=Z,75nm,0.6s							
KKN	**Kakani**	**17.86**	**172**	*e*P		**P**	**23 15 19.6**	**-0.3**
	comp=Z,176nm,0.8s							
PKIN	**Phulchoki**	**18.09**	**172**	*e*P		**P**	**23 15 22.1**	**-0.3**
	comp=Z,59nm,0.5s							
ARU	**Arti**	**18.55**	**315**	P		**Pn**	**23 15 27.7**	**+0.5**
	comp=Z,0.0nm,0.3s,baz=100,slow=11,SNR=21							
ARU				Lg		Lg	23 20 57.4	
	comp=Z,0.0nm,0.3s,baz=340,slow=15,SNR=5.6							
ARU				LR		LR	23 23 01.7	
	comp=Z,216nm,21.5s,baz=108,slow=38							
ARU	**Arti**	**18.55**	**315**	*c i*P		**Pn**	**23 15 28.1**	**+0.9**
ARU				S		**S**	**23 18 58.8**	**+1.1**
ARU				pmax		pmax		
	comp=Z,17nm,1.0s							
ARU				MLR		MLR		
	comp=Z,431nm,15.0s							
ARU	**Arti**	**18.55**	**315**	*e*P		**Pn**	**23 15 27.6**	**+0.4**
	comp=Z,22nm,0.6s							
LZH	**Lanzhou**	**18.59**	**113**	⇑P		**Pn**	**23 15 27.8**	**-0.2**
LZH				pP		sP	23 15 35.5	+0.8
LZH				sP		pP	23 15 40.0	+7.5
LZH				PP		**PnPn**	**23 15 44.0**	**+4.3**
LZH				eS		**Sn**	**23 18 49.0**	**-6.4**
LZH				sS		S	23 19 02.0	+2.9
LZH				SS		**SnSn**	**23 19 13.6**	**+4.5**
LZH				pmax		pmax		
	comp=Z,76nm,1.2s							
LZH				pmax		pmax		
	comp=Z,240nm,4.1s							
LZH				LR		LR		
	comp=Z,490nm,10.6s							
LZH				LR		LR		
	comp=Z,360nm,11.2s							
LZH				LR		LR		
	comp=Z,580nm,13.0s							
GEYT	**Alibeck**	**19.77**	**256**	P		**P**	**23 15 40.1**	**-0.4**
	comp=Z,0.3nm,0.3s,baz=70,slow=6.6,SNR=7.7							
GEYT				LR		LR	23 24 38.9	
	comp=Z,189nm,18.3s,baz=70,slow=41							
SOKR	**Solikamsk**	**20.88**	**322**	*c i*P		Pn	23 15 55.6	+0.7
SOKR				*ex*		x	23 19 49.5	
SOKR				S		S	23 19 33.4	-11
SOKR				pmax		pmax		
	comp=Z,47nm,1.0s							
SOKR				MLR		MLR		
	comp=Z,292nm,19.0s							
SHL	**Shillong**	**21.29**	**156**	*ex*		**P**	**23 15 57.8**	**+0.5**
SHL				*ex*		x	23 19 49.5	
HHC	**Hu-ho-hao-te**	**21.55**	**92**	*e*P		**P**	**23 16 00.4**	**+0.6**
HHC				PP		**PnPn**	**23 16 21.8**	**+1.6**
HHC				S		**S**	**23 19 53.4**	**-4.6**
HHC				sS		sS	23 20 02.8	-2.8
HHC				pmax		pmax		
	comp=Z,39nm,0.9s							
HHC				pmax		pmax		
	comp=Z,110nm,4.4s							
HHC				LR		LR		
	comp=Z,1μm,9.2s							
HHC				LR		LR		
	comp=Z,1μm,12.5s							
HHC				LR		LR		
	comp=Z,1μm,11.6s							
CD2	**Chengdu**	**22.03**	**124**	P		**P**	**23 16 04.4**	**-0.6**
CD2				sP		sP	23 16 17.1	+5.1
CD2				PP		**PnPn**	**23 16 32.8**	**+6.0**
CD2				S		**S**	**23 20 06.3**	**-1.0**
CD2				SS		**SnSn**	**23 20 41.8**	**+8.4**
CD2				pmax		pmax		
	comp=Z,30nm,1.0s							
CD2				pmax		pmax		
	comp=Z,110nm,3.7s							
CD2				LR		LR		
	comp=Z,360nm,10.8s							
CD2				LR		LR		
	comp=Z,330nm,14.4s							
BOD	**Bodaibo**	**22.75**	**46**	*e*P		**P**	**23 16 12.2**	**-0.2**
BOD				pmax		pmax		
	comp=Z,26nm,0.9s							
XAN	**Xi'an**	**23.14**	**111**	P		**P**	**23 16 15.8**	**-0.9**
XAN				pP		sP	23 16 25.5	+1.8
XAN				sP		pP	23 16 28.4	+6.8
XAN				pmax		pmax		
	comp=Z,43nm,1.1s							
XAN				pmax		pmax		
	comp=Z,120nm,11.9s							
XAN				LR		LR		
	comp=Z,220nm,15.1s							
XAN				LR		LR		
	comp=Z,250nm,13.7s							
XAN				LR		LR		
	comp=Z,280nm,15.1s							
TIY	**Taiyuan**	**23.51**	**99**	*e*P		**P**	**23 16 21.6**	**+1.2**
TIY				pmax		pmax		
	comp=Z,43nm,0.9s							
NRIK	**Noril'sk**	**23.97**	**4**	P		**P**	**23 16 24.8**	**+0.3**
	comp=Z,7.3nm,0.3s,baz=199,slow=6.2,SNR=12							
NRIK	**Noril'sk**	**23.97**	**4**	P		**P**	**23 16 24.8**	**+0.3**
NRIK				pmax		pmax		
	comp=Z,33nm,0.6s							
BJI	**Beijing**	**25.10**	**91**	P		**P**	**23 16 36.3**	**+1.3**
BJI				S		**S**	**23 20 57.0**	**-1.8**

GNI Garni 28.12 273 P **P** **23 17 01.2 -1.2**
comp=Z,5.6nm,0.6s,baz=320,slow=12,SNR=6.1
GNI LR LR 23 29 47.4
comp=Z,70nm,19.9s,baz=63,slow=40
GNI Garni 28.12 273⇑*eP* **P** **23 17 04.0 +1.6**
GNI pmax pmax
comp=Z,71nm,1.2s
GNI Garni 28.12 273 *eP* **P** **23 17 02.2 -0.2**
comp=Z,15nm,1.0s
KBZ Khabaz 28.14 281 P **P** **23 17 02.9 +0.6**
comp=Z,0.7nm,0.6s,baz=104,slow=6.9,SNR=4.1
KBZ LR LR 23 29 57.0
comp=Z,173nm,18.6s,baz=85,slow=40
KVAR Kislovodsk Arr 28.21 281 P **P** **23 17 04.1 +0.9**
comp=Z,1.9nm,0.8s,baz=45,slow=1.4,SNR=1.8
KVAR LR LR 23 29 58.0
comp=Z,156nm,18.6s,baz=108,slow=40
KIV Kislovodsk 28.21 281 P **P** **23 17 05.0 +1.8**
KIV *e**PP **sP** **23 17 09.5 -1.0**
KIV *e**SP pP 23 17 14.1 +5.8
KIV *e* 23 17 57.8
KIV *eS* **S** **23 21 50.3 +2.1**
KIV pmax pmax
comp=Z,3.0nm,1.0s
KIV MLR MLR
comp=Z,130nm,17.0s
HYB Hyderabad 28.27 188 *i* P P 23 17 12.0 +8.2
VSR Storozhevoye 29.08 297 *eP* **P** **23 17 10.4 -0.3**
VSR pmax pmax
comp=Z,10.0nm,0.9s
LPSR Galich'ya Gora 29.11 300 *eP* **P** **23 17 10.8 -0.1**
LPSR pmax pmax
comp=Z,10.0nm,0.7s
KLMR Klimovskoe 29.36 317 *eP* **P** **23 17 11.2 -1.8**
KLMR pmax pmax
comp=Z,45nm,0.8s
UOSS Minazif 29.59 235 *eP* **P** **23 17 15.2 -0.3**
comp=Z,0.3nm,1.1s
WSAR Wadi Sarin 29.60 229 P **P** **23 17 15.8 +0.3**
comp=Z,1.8nm,0.8s,baz=95,slow=12,SNR=2.3
WSAR PcP **PcP** **23 20 18.8 -1.3**
comp=Z,3.7nm,0.7s,baz=68,slow=0.9,SNR=5.6
MOS Moscow 29.80 306 *eP* **P** **23 17 17.5 +0.5**
MOS *e* 23 18 25.4
MOS pmax pmax
comp=Z,49nm,1.3s
CHTO Chiang Mai 29.91 148 *eP* **P** **23 17 18.0 -0.3**
CHTO pmax pmax
comp=Z,9.0nm,0.8s
CHTO Chiang Mai 29.91 148 *eP* **P** **23 17 18.0 -0.3**
comp=Z,8.6nm,0.8s
CN2 Changchun 30.23 78 *eP* **P** **23 17 23.6 +2.7**
CN2 *es*P sP 23 17 34.3 +6.1
CN2 *eS* **S** **23 22 20.3 +0.7**
CN2 pmax pmax
comp=Z,10.0nm,0.6s
CN2 pmax pmax
comp=Z,200nm,3.0s
CN2 LR LR
comp=Z,300nm,11.0s
CN2 LR LR
comp=Z,300nm,11.0s
CN2 LR LR
comp=Z,400nm,13.0s
CM31 Chiang Mai Arr 30.24 148 *eP* **P** **23 17 20.6 -0.6**
CMAR Chiang Mai Arr 30.24 148 P **P** **23 17 20.9 -0.2**
CMAR PcP **PcP** **23 20 21.5 -0.3**
comp=Z,1.1nm,0.5s,baz=321,slow=4.1,SNR=4.2
CMAR LR LR 23 29 30.8
comp=Z,73nm,18.4s,baz=312,slow=36
CM01 Chiang Mai Arr 30.27 148 *eP* **P** **23 17 21.0 -0.5**
OBN Obninsk 30.40 305 LR LR 23 29 43.7
comp=Z,266nm,18.1s,baz=90,slow=37
OBN Obninsk 30.40 305⇓*eP* **P** **23 17 22.6 +0.3**
OBN *i* *PP **sP** **23 17 28.7 -0.9**
OBN 23 18 22.0
OBN PPP PPP 23 18 34.0
OBN 23 20 23.0
OBN pmax pmax
comp=Z,65nm,2.5s
OBN MLR MLR
comp=Z,250nm,16.0s
OBN Obninsk 30.40 305 *eP* **P** **23 17 22.8 +0.5**
comp=Z,19nm,0.7s
NJ2 Nanjing 31.00 103 *eP* **P** **23 17 28.5 +0.6**
NJ2 pmax pmax
comp=Z,11nm,0.8s
YAK Yakutsk 31.43 41 P **P** **23 17 32.0 +0.7**
comp=Z,20nm,0.4s,baz=147,slow=3.0,SNR=3.7
YAK Yakutsk 31.43 41 *eP* **P** **23 17 31.9 +0.7**
YAK *e* 23 18 39.3
YAK *e* 23 20 22.6
YAK *eS* **S** **23 22 40.7 +2.8**
YAK *e* 23 28 01.8
YAK pmax pmax
comp=Z,19nm,0.9s
YAK pmax pmax
comp=E,12nm,1.3s
YAK pmax pmax
comp=Z,21nm,0.9s
YAK pmax pmax
comp=E,7.0nm,0.8s
YAK smax smax
comp=N,115nm,3.3s
YAK smax smax
comp=E,35nm,2.5s
YAK MLR MLR
comp=Z,539nm,12.0s
YAK MLR MLR
comp=E,223nm,9.0s
YAK Yakutsk 31.43 41 *eP* **P** **23 17 32.3 +1.0**
comp=E,42nm,0.7s
ANN Anapa 31.55 285 *eP* P 23 17 28.0 -4.6
ANN *e**PP pP 23 17 36.4 -1.3
ANN *e* 23 18 32.5
ANN *eS* S 23 22 33.5 -6.7
ANN pmax pmax
comp=Z,54nm,1.3s
ANN MLR MLR
comp=N,578nm,14.0s
ANN MLR MLR
comp=E,322nm,14.0s
ANN MLR MLR
comp=Z,215nm,14.0s
KLR Kul'dur 32.98 66 P **P** **23 17 45.4 +0.3**
comp=Z,2.5nm,0.4s,baz=260,slow=7.6,SNR=18
INCN Inchon 33.56 88 *eP* **P** **23 17 50.3 0.0**
comp=Z,29nm,0.9s
TIXI Tiksi 34.01 24 P **P** **23 17 54.3 +0.5**
comp=Z,6.2nm,0.4s,baz=255,slow=4.8,SNR=18
TIXI Tiksi 34.01 24⇓*iP* **P** **23 17 54.0 +0.2**
TIXI pmax pmax
comp=Z,4.0nm,0.6s
TIXI MLR MLR
comp=Z,236nm,14.0s
TIXI Tiksi 34.01 24 *eP* **P** **23 17 54.0 +0.2**
comp=Z,7.8nm,0.6s
KS01 Wonju Array Si 34.45 87 *eP* **P** **23 17 58.1 +0.1**
KSAR Wonju Array Be 34.46 87 P **P** **23 17 56.3 -1.8**
KSAR Wonju Array Be 34.46 87 P **P** **23 17 56.3 -1.8**
KSRS Korea Array 34.48 87 P **P** **23 17 56.3 -2.0**
comp=Z,2.5nm,0.6s,baz=280,slow=8.4,SNR=7.3
KSRS LR LR 23 33 05.8
comp=Z,42nm,19.0s,baz=298,slow=38
QIZ Qiongzhong 34.74 131 P **P** **23 18 00.4 -0.2**
QIZ S **S** **23 23 28.3 -1.9**
QIZ pmax pmax
comp=Z,8.0nm,1.6s
AKASG Malin Array Be 35.36 298 P **P** **23 18 04.7 -1.0**
comp=Z,4.3nm,0.5s,baz=64,slow=8.7,SNR=14
AKASG PcP **PcP** **23 20 34.9 -0.5**
comp=Z,1.8nm,0.7s,baz=63,slow=4.3,SNR=4.9
AKASG LR LR 23 33 22.8
comp=Z,100nm,19.2s,baz=80,slow=38
KIEV Kiev 35.37 298⇓*iP* **P** **23 18 04.8 -1.0**
KIEV pmax pmax
comp=Z,7.0nm,1.0s
KIEV Kiev 35.37 298 *eP* **P** **23 18 05.2 -0.6**
KIEV *ep*P **sP** **23 18 12.4 -0.7**
AK11 Malin Array Si 35.40 298 *eP* **P** **23 18 05.8 -0.3**
VSU Vasula 35.67 312*c iP* **P** **23 18 09.0 +0.8**
VSU pmax pmax
comp=Z,18nm,0.6s
FIA1 FINESS Array S 35.89 317 *eP* **P** **23 18 10.3 +0.2**
comp=Z,18nm,1.1s
FINES FINESS Array B 35.89 317 P **P** **23 18 10.3 +0.2**
comp=Z,3.7nm,0.3s,baz=105,slow=9.4,SNR=88
FINES PcP **PcP** **23 20 35.6 -1.2**
comp=Z,3.5nm,0.5s,baz=85,slow=4.0,SNR=5.0
FINES LR LR 23 33 19.5
comp=Z,250nm,20.0s,baz=70,slow=37
NACGM Naroch 36.03 306 *e* **P** **23 18 12.0 +0.6**
BR131 Keskin Array S 36.05 279 *eP* **P** **23 18 12.7 +0.8**
BRTR Keskin Array B 36.05 279 P **P** **23 18 12.2 +0.2**
comp=Z,3.3nm,0.9s,baz=90,slow=7.4,SNR=15
KEV Kevo 36.37 331 *eP* **P** **23 18 15.0 +0.9**
ANTO Ankara 36.58 279 *eP* **P** **23 18 15.5 -0.8**
ANTO pmax pmax
comp=Z,8.0nm,1.0s
ANTO Ankara 36.58 279 *eP* **P** **23 18 15.5 -0.8**
comp=Z,7.7nm,1.0s
BR231 Keskin MP Arra 36.60 279 *eP* P 23 18 13.1 -3.5
ARCES ARCESS Array B 36.84 330 P **P** **23 18 18.4 +0.2**
comp=Z,4.7nm,0.7s,baz=90,slow=8.4,SNR=29
ARCES LR LR 23 34 15.1
comp=Z,183nm,18.6s,baz=83,slow=38
ARE0 ARCESS Array S 36.84 330 *eP* **P** **23 18 18.9 +0.8**
HEF Hetta 37.33 328 *eP* **P** **23 18 24.2 +1.8**
YHNB Yeheng 37.45 111 *eP* **P** **23 18 24.0 +0.2**
comp=Z,40nm,0.9s
KTK1 Kautokeino 37.56 329 *eP* **P** **23 18 25.4 +1.1**
NKL Nikolayevsk 37.62 57 *eP* **P** **23 18 25.0 +0.1**
CFR Carcaliu 37.66 290⇑*iP* **P** **23 18 25.6 +0.2**
CFR Carcaliu 37.66 290⇑P **P** **23 18 25.6 +0.2**
MMAI Mount Meron Ar 38.12 268 LR LR 23 35 05.6
comp=Z,56nm,21.0s,baz=170,slow=38
TESR Tescani 38.18 292⇑*iP* **P** **23 18 29.5 -0.3**
SUW Suwalki 38.26 305 *eP* **P** **23 18 30.7 +0.4**
SUW Suwalki 38.26 305 *eP* **P** **23 18 30.7 +0.4**
VRI Vrincioaia 38.35 291⇓*iP* **P** **23 18 32.4 +1.2**
VRI Vrincioaia 38.35 291⇓P **P** **23 18 32.4 +1.2**
TWG Pinlang 38.54 113 *eP* **P** **23 18 33.1 +0.1**
comp=Z,123nm,1.0s
ISR Istrita 38.74 290⇓*iP* **P** **23 18 36.3 +1.8**
ISR Istrita 38.74 290⇓P **P** **23 18 36.3 +1.8**
BURAR Bucovina Array 38.74 294⇓*iP* **P** **23 18 34.9 +0.3**
BURAR Bucovina Array 38.74 294⇓P **P** **23 18 34.9 +0.3**
BUR08 Bucovina Ar. S 38.74 294 *eP* **P** **23 18 35.2 +0.6**
MLR Muntele Rosu 38.99 291⇓*iP* **P** **23 18 38.0 +1.2**
MLR Muntele Rosu 38.99 291⇓P **P** **23 18 38.0 +1.2**
MLR Muntele Rosu 38.99 291 *eP* **P** **23 18 37.7 +1.0**
comp=Z,18nm,1.6s
TRO Tromso 39.14 330 *eP* **P** **23 18 38.6 +1.1**
ARCR ARCALIA 39.47 294⇑*iP* **P** **23 18 42.8 +2.2**
VOIR 39.60 291⇓*iP* **P** **23 18 40.8 -1.0**
VOIR 39.60 291⇓P **P** **23 18 40.8 -1.0**
KWP Kalwaria Pacla 39.69 298 *eP* **P** **23 18 43.6 +1.3**
KWP Kalwaria Pacla 39.69 298⇑*iP* **P** **23 18 43.6 +1.3**
KWP Kalwaria Pacla 39.69 298⇑P **P** **23 18 43.6 +1.3**
KLNR Kaliningrad 39.83 306 *eP* **P** **23 18 44.4 +1.0**
KLNR pmax pmax
comp=Z,59nm,1.1s
ARR Arges 39.90 291⇑*iP* **P** **23 18 45.2 +1.0**
KOLS Kolonicke sedl 40.17 297 *eP* **P** **23 18 46.7 +0.3**
LOT Lotru 40.44 292⇑*iP* **P** **23 18 49.5 +0.8**
STEI Steigen 40.45 327 *eP* **P** **23 18 49.4 +1.0**
STHS Stebnicka Huta 40.66 298 *eP* **P** **23 18 51.5 +1.1**
CRVS Cervenica-Dubn 40.69 298 *eP* **P** **23 18 53.7 +3.0**
MOR8 Moi Rana 40.86 325 *eP* **P** **23 18 51.3 -0.6**
MOR8 IAmb IAmb 23 18 57.5
comp=Z,22nm,0.8s
HSPB Hornsund (broa 40.97 341 *eP* P 23 18 57.0 +4.4
SPA0 Spitsbergen Ar 41.00 343 *eP* **P** **23 18 55.2 +2.3**
LOF Lofoten 41.08 328 *eP* **P** **23 18 54.0 +0.4**
NIE Niedzica 41.24 299 *eP* **P** **23 18 56.7 +1.5**
NIE Niedzica 41.24 299 *eP* **P** **23 18 56.8 +1.5**
OJC Ojcow 41.29 300 *eP* **P** **23 18 56.0 +0.5**
OJC Ojcow 41.29 300 *eP* **P** **23 18 56.1 +0.5**
OJC Ojcow 41.29 300 *eP* **P** **23 18 56.1 +0.5**
comp=Z,25nm,1.1s
KONS Konsvik 41.37 325 *eP* **P** **23 18 57.4 +1.5**
KECS Kecovo 41.44 297 *eP* **P** **23 18 57.5 +0.7**
SIRR Siria 41.49 294⇑*iP* P 23 18 52.0 -5.3
ASAJ Asahikawa 41.67 70 *eP* **P** **23 18 59.0 +0.2**
comp=Z,172nm,2.0s
BZS Buzias 41.77 293⇑*iP* **P** **23 18 59.8 +0.2**
BZS Buzias 41.77 293⇑P **P** **23 18 59.8 +0.2**
MA2 Magadan 41.77 45 P **P** **23 18 59.6 +0.2**
comp=Z,5.0nm,0.4s,baz=316,slow=8.5,SNR=4.2
SEY Seymchan 41.92 40 P **P** **23 19 00.8 +0.2**
comp=Z,1.7nm,0.6s,baz=252,slow=7.5,SNR=7.4
SEY Seymchan 41.92 40⇓*eP* **P** **23 19 01.5 +1.0**
PSZ Piszkesteto 42.01 297 *eP* **P** **23 19 01.4 -0.2**
PSZ pmax pmax
comp=Z,6.0nm,0.9s
PSZ Piszkesteto 42.01 297 *eP* **P** **23 19 01.4 -0.2**
comp=Z,5.6nm,0.9s
HFS Hagfors 42.06 316 LR LR 23 36 52.1
comp=Z,235nm,18.2s,baz=74,slow=37
NSS Namsos 42.08 322 *eP* **P** **23 19 02.0 +0.2**
MJAR Matsushiro Arr 42.12 82 LR LR 23 37 23.8
comp=Z,64nm,18.5s,baz=310,slow=37
OKC Ostrava-Krasne 42.42 300⇑*eP* **P** **23 19 05.8 +1.0**
OKC *ep*P **sP** **23 19 11.6 -0.5**
OKC AMS AMS 23 37 00.0
comp=Z,300nm,8.4s
OKC Ostrava-Krasne 42.42 300 *eP* **P** **23 19 05.8 +1.0**
OKC *e* 23 19 11.6
OKC MLR MLR
comp=Z,300nm,8.4s
VYHS Vyhne 42.47 298 *eP* **P** **23 19 06.0 +0.8**
BSD Bornholm Skovb 42.65 308 *iP* **P** **23 19 06.5 -0.1**
MORC Moravsky Berou 42.81 300⇑*iP* **P** **23 19 09.1 +1.1**
MORC Moravsky Berou 42.81 300⇑P **P** **23 19 09.1 +1.1**
MORC Moravsky Berou 42.81 300 *eP* **P** **23 19 08.9 +0.9**
comp=Z,34nm,1.0s
NC405 NORSAR Array S 42.81 318 *eP* **P** **23 19 08.3 +0.5**
ERM Erimo 42.93 72 *eP* **P** **23 19 09.2 +0.2**
ERM pmax pmax
comp=Z,69nm,1.0s
ERM Erimo 42.93 72 *eP* **P** **23 19 09.2 +0.2**
comp=Z,69nm,1.0s
NC303 NORSAR Array S 42.95 318 *eP* **P** **23 19 09.2 +0.2**
NC602 NORSAR Array S 42.97 317 *eP* **P** **23 19 09.7 +0.6**
NC602 NORSAR Array S 42.97 317 *eP* **P** **23 19 09.3 +0.1**
NB201 NORSAR Array S 43.02 317 *eP* **P** **23 19 09.9 +0.3**
NB2 NORSAR Subarra 43.06 317 P **P** **23 19 09.9 0.0**
comp=Z,66nm,0.6s,baz=78,slow=8.6
NB2 NORSAR Subarra 43.06 317 P **P** **23 19 09.9 0.0**
baz=78,slow=8.6
NOA NORSAR Array B 43.06 317 P **P** **23 19 09.9 0.0**
comp=Z,7.6nm,0.6s,baz=78,slow=8.0,SNR=54
NOA LR LR 23 37 22.3
comp=Z,132nm,19.8s,baz=85,slow=36
NOA NORSAR Array B 43.06 317 P **P** **23 19 10.0 0.0**
NOA pmax pmax
comp=Z,8.0nm,0.6s
NOA MLR MLR
comp=Z,132nm,19.8s
KULM Kulim 43.08 153 *eP* **P** **23 19 10.1 -0.4**
comp=Z,8.3nm,0.9s
KRLC Kraliky 43.16 301⇑*eP* **P** **23 19 11.7 +0.8**
KRLC *ep*P **sP** **23 19 17.9 -0.4**
KRLC Kraliky 43.16 301 *eP* **P** **23 19 11.7 +0.8**
KRLC *e* 23 19 17.9
KSP Ksiaz 43.19 302 *eP* **P** **23 19 11.5 +0.5**
KSP Ksiaz 43.19 302 *eP* **P** **23 19 11.6 +0.5**
NC204 NORSAR Array S 43.22 318 *eP* **P** **23 19 11.3 +0.1**
NBO02 NORSAR Array S 43.23 318 *eP* **P** **23 19 11.1 -0.2**
NAO01 NORSAR Array S 43.26 317 *eP* **P** **23 19 11.5 0.0**
NBO00 NORSAR Array S 43.27 318 *eP* **P** **23 19 11.8 +0.2**
DPC Dobruska-Polom 43.34 301⇑*iP* **P** **23 19 13.5 +1.1**
DPC *ep*P **sP** **23 19 19.7 0.0**
DPC AMS AMS 23 37 30.0
comp=Z,300nm,15.2s
DPC Dobruska-Polom 43.34 301⇑*iP* **P** **23 19 13.5 +1.1**
DPC *e* 23 19 19.7
DPC MLR MLR
comp=Z,300nm,15.2s
PKSM Moragy 43.45 295⇑*iP* **P** **23 19 13.4 +0.2**
PKSM Moragy 43.45 295⇑P **P** **23 19 13.4 +0.2**
UPC Upice 43.48 302⇑*eP* **P** **23 19 14.4 +1.0**
UPC *ep*P **sP** **23 19 20.2 -0.5**
UPC AMS AMS 23 37 40.0
comp=Z,300nm,12.5s
UPC Upice 43.48 302 *eP* **P** **23 19 14.4 +1.0**
UPC *e* 23 19 20.2
UPC MLR MLR
comp=Z,300nm,12.5s
VRAC Vranov 43.55 300 LR LR 23 38 17.7
comp=Z,120nm,19.8s,baz=82,slow=37
VRAC Vranov 43.55 300⇑*iP* **P** **23 19 14.4 +0.4**
VRAC Vranov 43.55 300⇑P **P** **23 19 14.4 +0.4**
RGN Rugen 43.70 308 *eP* **P** **23 19 14.7 -0.3**
comp=Z,110nm,1.1s
KONO Kongsberg 44.18 316 *eP* **P** **23 19 19.7 +0.8**
KONO Kongsberg 44.18 316 *eP* **P** **23 19 19.3 +0.4**
KONO pmax pmax
comp=Z,30nm,1.0s
KONO Kongsberg 44.18 316 *eP* **P** **23 19 19.3 +0.4**
comp=Z,30nm,1.0s
TREC Trest 44.23 300⇑AMS AMS 23 38 10.0
comp=Z,300nm,14.9s
PVCC Panska Ves 44.33 302⇑*iP* **P** **23 19 21.5 +1.3**
PVCC *ep*P **pP** **23 19 25.7 +0.2**
PVCC AMS AMS 23 38 00.0
comp=Z,300nm,12.2s
PVCC Panska Ves 44.33 302⇑*iP* **P** **23 19 21.5 +1.3**
PVCC *e* 23 19 25.7
PVCC MLR MLR
comp=Z,300nm,12.2s
GOPC GO Pecny, Ondr 44.42 301⇑*eP* **P** **23 19 22.2 +1.2**
GOPC *ep*P **sP** **23 19 27.6 -0.8**
GOPC AMS AMS 23 38 10.0
comp=Z,300nm,12.2s
GOPC GO Pecny, Ondr 44.42 301 *eP* **P** **23 19 22.2 +1.2**
GOPC *e* 23 19 27.6
GOPC MLR MLR
comp=Z,300nm,12.2s
CONA Conrad Observa 44.52 298 *i* P **P** **23 19 23.2 +1.3**
comp=Z,5.1nm,0.7s,SNR=6.1
PRU Pruhonice 44.54 301⇑*iP* **P** **23 19 23.0 +1.1**
PRU *ep*P **sP** **23 19 28.7 -0.6**
PRU AMS AMS 23 38 10.0
comp=Z,400nm,12.6s
PRU Pruhonice 44.54 301⇑*iP* **P** **23 19 23.0 +1.1**
PRU *e* 23 19 28.7
PRU MLR MLR
comp=Z,400nm,12.6s
BRG Berggiesshubel 44.58 303 *eP* **P** **23 19 22.9 +0.7**
comp=Z,5.1nm,0.9s
BRG *e* 23 19 28.7
comp=Z,8.0nm,1.0s
BRG Berggiesshubel 44.58 303 *eP* **P** **23 19 22.9 +0.7**
BRG *e* 23 19 28.7
BRG pmax pmax
comp=Z,5.0nm,0.9s
PRA Prague 44.58 302⇑AMS AMS 23 38 20.0
comp=Z,400nm,14.5s
PSI Prapat 44.92 157 *eP* **P** **23 19 24.5 -0.9**
PSI pmax pmax
comp=Z,5.0nm,1.0s
PSI Prapat 44.92 157 *eP* **P** **23 19 24.5 -0.9**
comp=Z,4.7nm,1.0s
CLL Collm 44.97 304⇑*iP* **P** **23 19 25.8 +0.5**
comp=Z,20nm,1.1s
CLL *e* 23 19 32.0
CLL *e* 23 20 39.0
CLL Collm 44.97 304⇑*iP* **P** **23 19 25.8 +0.5**
CLL *e* 23 19 32.0
CLL pmax pmax
comp=Z,20nm,1.1s
CLL Collm 44.97 304 *eP* **P** **23 19 25.1 -0.2**
comp=Z,20nm,0.7s
ARSA Arzberg 45.00 297 *iP* **P** **23 19 26.2 +0.5**
comp=Z,1.5nm,0.6s
HOMB Homborsund 45.12 314 *eP* **P** **23 19 27.0 +0.7**
MUD Monsted U'grnd 45.34 312 *eP* **P** **23 19 29.4 +1.3**
MUD Monsted U'grnd 45.34 312 *iP* **P** **23 19 29.1 +1.0**
comp=Z,15nm,0.5s
HYA Hoyanger 45.39 319 *eP* P 23 19 35.3 +6.8
KHC Kasperske Hory 45.45 301⇑*iP* **P** **23 19 30.0 +0.8**
KHC *ep*P **sP** **23 19 36.2 -0.4**
KHC AMS AMS 23 38 50.0
comp=Z,200nm,15.1s
KHC Kasperske Hory 45.45 301⇑*iP* **P** **23 19 30.0 +0.8**
KHC *e* 23 19 36.2
KHC MLR MLR
comp=Z,200nm,15.1s
KHC Kasperske Hory 45.45 301 *eP* **P** **23 19 29.9 +0.6**
comp=Z,1.2nm,0.7s
GEC2 GERESS Array S 45.49 300 *eP* **P** **23 19 29.9 +0.3**
GEC2 pmax pmax
comp=Z,15nm,1.8s
GEC2 GERESS Array S 45.49 300 *eP* **P** **23 19 29.9 +0.3**
comp=Z,15nm,1.8s
GERES GERESS Array B 45.49 300 P **P** **23 19 29.9 +0.3**
comp=Z,1.1nm,0.5s,baz=58,slow=8.3,SNR=16
GERES LR LR 23 39 27.0
comp=Z,98nm,20.1s,baz=72,slow=37
GEA0 GERESS Array S 45.49 300 *eP* **P** **23 19 30.1 +0.5**
SOKA Soboth 45.54 297 *iP* **P** **23 19 30.5 +0.5**
comp=Z,4.1nm,0.7s,SNR=5.8
NKC Novy Kostel 45.70 302⇑AMS AMS 23 39 00.0
comp=Z,400nm,15.0s
SNART Snartemo 45.74 315 *eP* **P** **23 19 32.3 +0.9**
OBKA Obir 45.91 297 *iP* **P** **23 19 33.5 +0.6**
comp=Z,6.1nm,0.7s
BER Bergen 46.02 318 *eP* **P** **23 19 33.7 +0.2**
KBA Koelnbreinsper 46.43 298 *iP* **P** **23 19 37.8 +0.7**
comp=Z,1.5nm,0.4s
BILL Bilibino 46.47 31*deP* **P** **23 19 38.2 +1.2**
BILL *i* *PP **sP** **23 19 44.0 -0.3**
BILL *e**SP pP 23 19 48.3 +6.0
BILL *e* 23 21 12.7
BILL *e* 23 21 32.7
BILL *eS* S 23 26 38.6 +15
BILL *eSS* **SS** **23 29 44.4 -4.8**
BILL pmax pmax
comp=Z,9.0nm,2.5s
BILL MLR MLR
comp=Z,397nm,21.0s
BILL Bilibino 46.47 31 *eP* **P** **23 19 38.1 +1.1**
comp=Z,12nm,0.5s
GRFO Grafenberg 46.64 302 *eP* **P** **23 19 39.7 +1.1**
GRFO pmax pmax
comp=Z,13nm,0.8s
GRFO Grafenberg 46.64 302 *eP* **P** **23 19 39.7 +1.1**
comp=Z,12nm,0.8s
TRI Trieste 46.75 296 *eP* **P** **23 19 39.6 +0.2**
TRI pmax pmax
comp=Z,7.0nm,0.7s
TRI Trieste 46.75 296 *eP* **P** **23 19 39.6 +0.2**
comp=Z,6.8nm,0.7s
MNSI Mandailing Nat 47.02 157 P P 23 19 51.1 +9.3
PEA0 Petropavlovsk- 47.39 52 *eP* **P** **23 19 45.0 +0.7**
PETK Petropavlovsk- 47.39 52 P **P** **23 19 44.0 -0.4**
comp=Z,3.9nm,0.6s,baz=312,slow=5.3,SNR=11
PETK LR LR 23 40 36.1
comp=Z,124nm,18.1s,baz=292,slow=37
PETK Petropavlovsk- 47.39 52 P **P** **23 19 44.0 -0.4**
PETK pmax pmax
comp=Z,4.0nm,0.6s
PETK MLR MLR
comp=Z,124nm,18.1s
WTTA Wattenberg 47.40 299 *i* P **P** **23 19 45.6 +0.9**
SNR=6.1
WATA Walderalm 47.41 299 *i* P **P** **23 19 46.0 +1.3**
comp=Z,4.7nm,0.6s
MOTA Moosalm 47.69 299 *i* P **P** **23 19 48.6 +1.7**
comp=Z,9.7nm,1.0s
RETA Reutte 47.84 300 *i* P **P** **23 19 48.8 +0.8**
comp=Z,2.0nm,0.5s
TIP Timpagrande 47.86 287 *eP* **P** **23 19 49.1 +0.9**
comp=Z,10nm,1.3s
ATD Arta Tunnel 47.90 238 LR LR 23 43 33.2
comp=Z,45nm,21.7s,baz=22,slow=41
PET Petropavlovsk 47.96 52 *eP* **P** **23 19 49.4 +0.7**
PET pmax pmax
comp=Z,54nm,1.7s
PET Petropavlovsk 47.96 52 *eP* **P** **23 19 49.4 +0.7**
comp=Z,54nm,1.7s
FETA Feichten 48.06 299 *i* P **P** **23 19 50.6 +0.7**
comp=Z,7.8nm,0.8s,SNR=6.6
CUC Castrocucco 48.09 288 *eP* **P** **23 19 50.6 +0.6**
comp=Z,11nm,1.1s
JMIC Jan Mayen 48.10 334 LR LR 23 41 53.5
comp=Z,82nm,18.4s,baz=67,slow=38
STU Stuttgart 48.23 302 *eP* **P** **23 19 51.4 +0.5**
STU pmax pmax
comp=Z,8.0nm,0.7s
STU Stuttgart 48.23 302 *eP* **P** **23 19 51.4 +0.5**
comp=Z,7.5nm,0.7s
DAVA Damuels 48.47 300 *i* P **P** **23 19 53.8 +0.8**

comp=Z,6.7nm,1.1s
FUORN **Ofenpass-Fuorn** 48.53 299 *e*P P 23 19 53.6 +0.1
comp=Z,9.2nm,1.0s
DAG **Danmarks Havn** 48.63 342 *i* P P 23 19 53.5 -0.1
comp=Z,1.0nm,0.4s
DAVOX **Davos/Dischmat** 48.69 299 LR LR 23 41 34.8
comp=Z,77nm,19.1s,baz=82,slow=37
CEL **Celeste** 48.91 286 *e*P P 23 19 56.3 0.0
comp=Z,12nm,0.9s
BFO **Black Forest** 48.94 302 *i* P P 23 19 57.3 +0.9
BFO **Black Forest** 48.94 302 *e*P P 23 19 56.8 +0.4
comp=Z,6.0nm,0.8s
TUE **Stuetta** 49.16 299 *e*P P 23 19 58.3 -0.1
comp=Z,8.6nm,0.8s
WLF **Walferdange** 49.64 304 *e*P P 23 20 01.8 +0.1
WLF pmax pmax
comp=Z,17nm,1.4s
WLF **Walferdange** 49.64 304 *e*P P 23 20 01.8 +0.1
comp=Z,17nm,1.4s
SBUM **Sibu** 50.16 140 *e*P P 23 20 06.0 0.0
comp=Z,7.4nm,0.8s
KSM **Kuching** 50.20 143 *e*P P 23 20 06.1 -0.2
comp=Z,7.8nm,0.9s
BNI **Bardonecchia** 51.48 298 *e*P P 23 20 15.5 -0.3
BNI pmax pmax
comp=Z,22nm,0.9s
BNI **Bardonecchia** 51.48 298 *e*P P 23 20 15.5 -0.3
comp=Z,22nm,0.9s
ESK **Eskdalemuir** 52.19 314 *e*P P 23 20 20.8 0.0
ESK pmax pmax
comp=Z,14nm,0.8s
ESK **Eskdalemuir** 52.19 314 *e*P P 23 20 20.8 0.0
comp=Z,14nm,0.8s
CWF **Charnwood Fore** 52.41 310 *e*P P 23 20 22.8 +0.4
comp=Z,42nm,1.8s
FURI **Furi** 52.48 240 *e*P P 23 20 22.7 -1.1
comp=Z,30nm,2.0s
SUMG **Summit** 55.30 342 *i* P P 23 20 44.6 +0.8
comp=Z,0.9nm,0.3s
SUMG **Summit** 55.30 342 *e*P P 23 20 43.7 -0.1
SUMG pmax pmax
comp=Z,20nm,1.2s
SUMG **Summit** 55.30 342 *e*P P 23 20 43.7 -0.1
comp=Z,20nm,1.2s
TNTI **Ternate** 59.43 125 P P 23 21 14.4 +1.2
comp=Z,52nm,1.2s
COLD **Coldfoot** 60.64 21 *e*P P 23 21 21.2 +0.4
comp=Z,8.8nm,0.8s
ES19 **SONSECA Array** 60.95 298 *e*P P 23 21 23.7 +0.3
ESDC **Sonseca Array** 61.01 298 P P 23 21 23.7 -0.2
comp=Z,1.9nm,0.6s,baz=54,slow=6.4,SNR=20
MLY **Manley** 62.19 23 *e*P P 23 21 32.2 +0.7
comp=Z,6.1nm,0.9s
BPAW **Bear Paw Mtn.** 62.85 23 *e*P P 23 21 36.5 +0.7
comp=Z,6.0nm,0.8s
MDM **Murphy Dome** 62.92 22 *e*P P 23 21 37.4 +1.2
comp=Z,26nm,1.8s
CAST **Castle Rocks** 63.06 24 *e*P P 23 21 38.6 +1.4
comp=Z,9.5nm,1.0s
COLA **College** 63.08 22⇓*e*P P 23 21 38.7 +1.5
COLA pmax pmax
comp=Z,5.0nm,0.6s
INK **Inuvik** 63.27 14 P P 23 21 37.2 -1.2
comp=Z,4.0nm,0.9s,baz=338,slow=9.3,SNR=16
INK **Inuvik** 63.27 14 *e*P P 23 21 39.5 +1.1
INK pmax pmax
comp=Z,7.0nm,0.9s
INK **Inuvik** 63.27 14 *e*P P 23 21 39.5 +1.1
comp=Z,7.4nm,0.9s
CCB **Clear Creek Bu** 63.28 22 *e*P P 23 21 39.1 +0.6
comp=Z,27nm,1.9s
IL1 **Eielson Array** 63.41 21 *e*P P 23 21 38.9 -0.5
ILAR **Eielson Array** 63.41 21 P P 23 21 39.0 -0.5
comp=Z,4.0nm,0.7s,baz=316,slow=4.9,SNR=41
ILAR LR LR 23 52 01.2
comp=Z,75nm,18.6s,baz=330,slow=39
ILB **Eielson Array** 63.41 21 *e*P P 23 21 39.6 +0.1
DHY **Denali Highway** 64.65 23 *e*P P 23 21 47.8 0.0
comp=Z,8.6nm,0.8s
TAM **Tamanrasset** 65.25 278 *e*P P 23 21 52.5 +0.2
TAM pmax pmax
comp=Z,13nm,1.7s
TAM **Tamanrasset** 65.25 278 *e*P P 23 21 52.5 +0.2
comp=Z,13nm,1.7s
SCM **Sheep Creek Mo** 65.67 23 *e*P P 23 21 54.8 +0.5
SCM pmax pmax
comp=Z,119nm,1.6s
SCM **Sheep Creek Mo** 65.67 23 *e*P P 23 21 54.8 +0.5
comp=Z,119nm,1.6s
KDAK **Kodiak Island** 67.28 28 *i* P P 23 22 04.8 +0.3
GENI **Genyem** 69.83 116 P P 23 22 26.5 +5.4
YKW3 **Yellowknife Ar** 71.34 8 *e*P P 23 22 29.3 -0.4
comp=Z,4.7nm,0.9s
YKA **Yellowknife Ar** 71.41 8 P P 23 22 29.4 -0.6
comp=Z,1.4nm,0.7s,baz=343,slow=6.1,SNR=36
YKB5 **Yellowknife Ar** 71.41 8 *e*P P 23 22 29.3 -0.8
FITZ **Fitzroy Crossi** 74.40 138 *e*P P 23 22 47.9 -0.4
comp=Z,32nm,1.9s
FCC **Fort Churchill** 76.00 358 *e*P P 23 22 57.2 +0.2
FCC pmax pmax
comp=Z,7.0nm,0.8s
FCC **Fort Churchill** 76.00 358 *e*P P 23 22 57.2 +0.2
comp=Z,6.6nm,0.8s
SCHQ **Schefferville** 76.68 342 P P 23 23 00.3 -0.7
comp=Z,2.6nm,0.6s,baz=18,slow=5.0,SNR=10
SCHQ LR LR 00 01 24.3
comp=Z,41nm,18.5s,baz=86,slow=39
FFC **Flin Flon** 80.01 3 *e*P P 23 23 19.0 -0.4
FFC pmax pmax
comp=Z,19nm,1.5s
FFC **Flin Flon** 80.01 3 *e*P P 23 23 19.0 -0.4
comp=Z,19nm,1.5s
WRAB **Tennant Creek** 80.31 131 *d i*P P 23 23 21.1 -0.3
WRAB pmax pmax
comp=Z,36nm,0.8s
WRAB **Tennant Creek** 80.31 131 *e*P P 23 23 20.8 -0.6
comp=Z,26nm,1.4s
WRA **Warramunga Arr** 80.31 131 P P 23 23 20.7 -0.7
comp=Z,8.3nm,0.8s,baz=334,slow=5.6,SNR=33
WRA PKKPbc **PKKPbc** 23 42 03.7 +0.6
comp=Z,0.8nm,0.6s,baz=172,slow=2.0,SNR=5.2
COEN **Coen** 80.51 121 *e*P P 23 23 22.3 -0.2
comp=Z,16nm,0.9s
AS31 **Alice Springs** 83.17 134 *e*P P 23 23 35.8 -0.6
comp=Z,2.2nm,0.6s
ASAR **Alice Springs** 83.17 134 P P 23 23 35.6 -0.8
comp=Z,8.0nm,0.8s,baz=327,slow=5.0,SNR=77
ASAR PKKPbc **PKKPbc** 23 41 56.3 -0.4
comp=Z,0.2nm,0.4s,baz=141,slow=2.9,SNR=4.5
AS01 **Alice Springs** 83.19 134 *e*P P 23 23 35.5 -1.0
DBIC **Dimbokro** 83.53 273 P P 23 23 37.7 -0.9
comp=Z,4.6nm,0.7s,baz=14,slow=7.7,SNR=11
TIC **Toumodi** 83.67 273 *e*PKIKP P 23 23 38.0 -1.3
KIC **Kosan Boka** 83.67 273 *e*PKIKP P 23 23 38.0 -1.3
comp=Z,17nm,0.8s
LIC **Lamto** 83.97 273 *e*PKIKP P 23 23 37.7 -3.1
comp=Z,36nm,1.5s
B08A **Colville Reser** 84.51 15 *e*P P 23 23 43.5 +0.4
comp=Z,24nm,1.8s
ULM **Lac du Bonnet** 84.56 359 LR LR 00 04 56.0
comp=Z,51nm,18.3s,baz=346,slow=38
LON **Longmire** 85.59 17 *e*P P 23 23 49.5 +0.9
LON pmax pmax
comp=Z,3.0nm,0.8s
LON **Longmire** 85.59 17 *e*P P 23 23 49.5 +0.9
comp=Z,3.1nm,0.8s
BSMT **Bassoo Peak** 85.72 12 *e*P P 23 23 50.5 +1.0
CTAO **Charters Tower** 87.11 123 *e*P P 23 23 55.7 -0.6
CTAO pmax pmax
comp=Z,16nm,1.2s
CTAO **Charters Tower** 87.11 123 *e*P P 23 23 55.7 -0.6
comp=Z,16nm,1.2s
BOZ **Bozeman (W)** 88.30 10 *e*P P 23 24 02.0 0.0
BOZ pmax pmax
comp=Z,9.0nm,1.4s
BOZ **Bozeman (W)** 88.30 10 *e*P P 23 24 02.0 0.0
comp=Z,9.2nm,1.4s
MCMT **McKenzie Canyo** 88.95 11 *e*P P 23 24 05.4 +0.2
RLMT **Red Lodge** 89.09 8 *e*P P 23 24 05.8 0.0
comp=Z,18nm,1.6s
H17A **Grant Village** 89.66 9 *e*P P 23 24 08.3 -0.2
comp=Z,3.2nm,0.8s
FLWY **Flagg Ranch** 89.96 10 *e*P P 23 24 09.7 -0.2
comp=Z,6.1nm,0.6s
IMW **Indian Meadow** 90.11 10 *e*P P 23 24 10.4 -0.3
comp=Z,4.2nm,0.9s
MOOW **Moose Ponds** 90.28 10 *e*P P 23 24 12.4 +1.0
comp=Z,6.1nm,0.8s
LOHW **Long Hollow** 90.43 10 *e*P P 23 24 11.5 -0.6
comp=Z,13nm,1.9s
MOD **Modoc Plateau** 90.54 17 *e*P P 23 24 11.6 -0.9
comp=Z,4.2nm,1.0s
PDAR **Pinedale Array** 91.39 9 P P 23 24 15.5 -1.0
comp=Z,0.6nm,0.6s,baz=40,slow=2.1,SNR=7.6
K22A **Casper** 91.79 7 *e*P P 23 24 16.5 -1.9
comp=Z,19nm,1.0s
HWUT **Hardware Ranch** 92.29 11 *e*P P 23 24 20.3 -0.4
comp=Z,14nm,1.4s
STKA **Stephens Creek** 93.77 133 P P 23 24 26.1 -1.0
comp=Z,4.7nm,1.1s,baz=325,slow=3.9,SNR=6.7
NV01 **Mina Array Sit** 94.29 16 *e*P P 23 24 30.0 0.0
NVAR **Mina Array Bea** 94.29 16 P P 23 24 29.8 -0.2
comp=Z,1.8nm,0.7s,baz=356,slow=4.7,SNR=16
NVAR LR LR 00 11 02.3
comp=Z,67nm,18.6s,baz=260,slow=38
PV01 **Paradox Valley** 96.07 9 *e*P P 23 24 38.0 -0.1
SAML **Samuel** 133.17 310 *e*PKPdf **PKPdf** 23 30 26.3 -0.2
CPUP **Villa Florida** 142.81 287 PKP **PKPdf** 23 30 43.1 -0.7
comp=Z,4.9nm,0.8s,baz=47,slow=2.4,SNR=9.1
PB11 **IPOC Station P** 145.59 309 *e*PKPdf **PKPdf** 23 30 49.0 +0.1
PB01 **IPOC Station P** 146.53 308 *e*PKPdf **PKPdf** 23 30 50.0 -0.5
LVC **Limon Verde** 147.44 305 *e*PKPbc **PKPdf** 23 30 53.3 +1.0
PLCA **Paso Flores** 159.89 274 PKP **PKPdf** 23 31 07.1 -2.0
comp=Z,3.1nm,0.9s,baz=38,slow=8.0,SNR=3.2

NIED ***22*** *23:15:00,36.70N×140.70E,h5km,Mw4.1 Best double couple: M0 1.34000×10^15 NP1:φ=88.00000°,δ=28.00000°, λ=-83.00000°. NP2:φ=259.00000°,δ=62.00000°, λ=-94.00000°.*

ISCJB ***22*** *23:15:25.9±0.6,36.67N±0.03×140.70E±0.05,h17km±3km, mb4.2/32,MS2.5/1, Error ellipse: s-maj=7.0km s-min=4.3km az=28.4*

JMA ***22*** *23:15:26.8,36.71N×140.64E,h5km±1km,M4.5 Broadband fault plane solution: P waves. NP1: φ=288.00000°,δ=58.00000°,λ=-112.00000°. NP2: φ=144.00000°,δ=38.00000°,λ=-60.00000°. Principal axes: T Plg10.0000°, Azm33.0000°; N Plg18.0000°, Azm300.0000°; P Plg69.0000°, Azm151.0000°;*

JMA Felt IV J1.

NEIC ***22*** *23:15:30.4±0.6,36.68N×140.58E,h36km±5km,mb4.3/4 Error ellipse: s-maj=6.7km s-min=5.2km az=130.0*

NEIC Recorded [4 JMA] in Ibaraki.

IDC ***22*** *23:15:30.9±2.1,36.69N×140.51E,h40km±19km,mb4.0/26, mb1 4.2/30,mb1mx4.1/52,mbtmp4.3/30,ML3.6/4,MS2.8/6, Ms1 2.8/6,ms1mx2.7/35,Error ellipse: s-maj=14.2km s-min=12.6km az=93.0*

ISC 22 23:15:26.7±0.9,36.70N±0.03×140.56E±0.05,h10km±5km, n66,σ0=78/64,mb4.3/32,11C-3D,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
JHO	**Hitachi**	0.09	177	⇑P			**Pg**	23 15 29.2	0.0
JHO				S			**Sg**	23 15 31.2	+0.3
ONAJ	**Iwakimizuishiy**	0.44	25	⇑P			**Pg**	23 15 34.8	-0.6
ONAJ				S			**Sg**	23 15 40.5	-0.7
JYT	**Yasato**	0.56	212	⇑P			**Pb**	23 15 38.3	-0.4
JYT				S			**Sb**	23 15 46.3	-0.4
JSB	**Shiboa**	0.58	297	⇑P			**Pb**	23 15 39.7	+0.7
JSB				S			**Sb**	23 15 48.5	+1.1
JFK	**Kawauchi**	0.71	21	⇑P			**Pg**	23 15 39.6	-0.8
MJAR	**Matsushiro Arr**	1.90	266	Pn			**Pb**	23 16 01.0	-0.6
	74nm,0.3s,baz=87,slow=11,SNR=234								
MAJO	**Matsushiro**	1.90	266	*e*Pn			**Pb**	23 16 01.4	-0.2
MAJO				*e*Sn			**Sn**	23 16 23.0	-0.4
MAT	**Matsushiro**	1.90	266	P			**Pb**	23 16 01.2	-0.4
MAT				S			**Sg**	23 16 27.3	-0.6
JHJ	**Hachijo jima 2**	3.63	190	Pn			**Pn**	23 16 23.3	+0.2
	12nm,0.3s,baz=87,slow=18,SNR=3.9								
JHJ				Sn			**Sn**	23 17 08.6	+2.5
	58nm,0.3s,baz=62,slow=22,SNR=5.8								
JHJ				LR		LR	LR	23 17 55.3	
	comp=Z,292nm,18.4s,baz=36,slow=40								
ERM	**Erimo**	5.67	20	*e*Pn			**Pn**	23 16 52.0	+0.9
ERM				*e*Sn			**Sn**	23 17 55.9	-0.3
ASAJ	**Asahikawa**	7.56	11	Pn			**Pn**	23 17 18.1	+1.0
	2.1nm,0.3s,baz=198,slow=16,SNR=5.7								
ASAJ				Sn			**Sn**	23 18 45.3	+2.4
	1.4nm,0.3s,baz=300,slow=20,SNR=2.5								
ASAJ				LR		LR	LR	23 20 44.6	
	comp=Z,14nm,19.7s,baz=282,slow=41								
JNU	**Nakatsue**	8.72	249	Pn			**Pn**	23 17 34.5	+1.6
	0.1nm,0.3s,baz=86,slow=19,SNR=1.8								
JNU				LR		LR	LR	23 21 08.4	
	comp=Z,99nm,18.7s,baz=114,slow=39								
CBIJ	**Chichi jima**	9.68	171	Pn			**Pn**	23 17 45.5	-0.6
JCJ	**Chichijima**	9.68	171	Pn			**Pn**	23 17 45.5	-0.6
	5.6nm,0.3s,baz=281,slow=16,SNR=3.3								
USRK	**Ussuriysk Ar.**	9.93	322	Pn			Pn	23 17 55.7	+6.2
	0.3nm,0.3s,baz=140,slow=12,SNR=6.6								
USRK				LR		LR	LR	23 21 31.7	
	comp=Z,111nm,19.6s,baz=179,slow=36								
KSRS	**Korea Array**	10.13	278	LR		LR	LR	23 21 33.7	
	comp=Z,52nm,19.5s,baz=92,slow=36								
PETK	**Petropavlovsk-**	20.32	31	LR		LR	LR	23 29 00.8	
	comp=Z,19nm,18.8s,baz=285,slow=40								
MA2	**Magadan**	23.82	13	P			**P**	23 20 40.1	+0.4
	9.1nm,0.6s,baz=220,slow=11,SNR=6.3								
ENH	**Enshi**	26.62	265	*e*P			**P**	23 21 05.7	+0.1
	4.8nm,0.5s								
SONM	**Songino Array**	27.41	305	P			**P**	23 21 12.9	+0.3
	5.4nm,0.8s,baz=102,slow=9.5,SNR=2.8								
H11N2	**WAKE ISLAND Hy**	28.57	119	T			T	23 51 14.5	
	baz=312,slow=75,SNR=3197								
H11N1	**WAKE ISLAND Hy**	28.58	119	T			T	23 51 15.7	
	baz=312,slow=75,SNR=4379								
H11N3	**WAKE ISLAND Hy**	28.59	119	T			T	23 51 16.4	
	baz=312,slow=75,SNR=3608								
H11S1	**WAKE ISLAND Hy**	29.26	121	T			T	23 52 05.1	
	baz=314,slow=76								
H11S3	**WAKE ISLAND Hy**	29.26	121	T			T	23 52 05.1	
	baz=314,slow=76,SNR=7657								
H11S2	**WAKE ISLAND Hy**	29.28	121	T			T	23 52 08.8	
	baz=314,slow=76,SNR=5936								
CMAR	**Chiang Mai Arr**	40.75	255	P			**P**	23 23 08.3	+0.1
	0.4nm,0.5s,baz=38,slow=10,SNR=3.3								
ZALV	**Zalesovo Beam**	41.63	313	P			**P**	23 23 15.2	+0.3
	5.7nm,0.5s,baz=94,slow=6.6,SNR=6.4								
ZALV				PcP			**PcP**	23 25 10.6	-1.1
	1.5nm,0.6s,baz=108,slow=4.7,SNR=3.1								
MKAR	**Makanchi Array**	43.72	302	P			**P**	23 23 31.2	-0.8
	3.3nm,0.8s,baz=96,slow=15,SNR=3.4								
KURK	**Kurchatov**	45.60	308	P			**P**	23 23 47.2	+0.3
KURBB	**Kurchatov Arra**	45.67	308	P			**P**	23 23 47.2	-0.3
	8.1nm,0.6s,baz=83,slow=7.9,SNR=10								
AAK	**Ala-Archa**	50.05	298	*e*P			**P**	23 24 21.7	-0.1
	2.5nm,0.8s								
EIL	**Eilson Array**	50.14	32	P			**P**	23 24 22.2	+0.2
	1.2nm,0.8s,baz=280,slow=6.3,SNR=4.1								
BVAR	**Borovoye Array**	50.29	312	P			**P**	23 24 22.8	-0.4
	2.8nm,0.5s,baz=79,slow=7.8,SNR=5.8								
EKS2	**Erkin-Say**	50.55	299	*e*P			**P**	23 24 24.1	-1.4
	2.0nm,0.6s								
INK	**Inuvik**	54.99	27	P			**P**	23 24 57.7	-0.1
	2.4nm,0.9s,baz=295,slow=5.3,SNR=3.8								
ARU	**Arti**	56.16	319	P			**P**	23 25 05.8	-0.6
	2.8nm,0.4s,baz=325,slow=12,SNR=3.6								
WRA	**Warramunga Arr**	56.65	187	P			**P**	23 25 09.9	-0.3
	4.0nm,0.7s,baz=5.3,slow=7.5,SNR=10								
ASAR	**Alice Springs**	60.37	187	P			**P**	23 25 36.2	0.0
	2.2nm,0.8s,baz=13,slow=8.3,SNR=10								
YKA	**Yellowknife Ar**	64.43	30	P			**P**	23 26 03.1	+0.2
	0.8nm,0.7s,baz=303,slow=6.8,SNR=6.2								
STKA	**Stephens Creek**	68.23	179	P			**P**	23 26 26.8	-0.7
	1.5nm,0.7s,baz=328,slow=10,SNR=3.1								
FINES	**FINESS Array B**	68.79	332	P			**P**	23 26 30.0	-0.7
	4.3nm,0.7s,baz=54,slow=9.7,SNR=11								
KBZ	**Khabaz**	70.60	310	P			**P**	23 26 42.3	+0.1
	2.3nm,0.8s,baz=43,slow=10,SNR=3.3								
KVAR	**Kislovodsk Arr**	70.60	311	P			**P**	23 26 42.8	+0.4
	4.9nm,0.8s,baz=96,slow=9.2,SNR=3.6								
AKASG	**Malin Array Be**	74.14	322	P			**P**	23 27 02.0	-1.2
	1.6nm,0.5s,baz=47,slow=5.9,SNR=15								
NB2	**NORSAR Subarra**	74.22	337	P			**P**	23 27 03.4	-0.2
	comp=Z,1.8nm,0.7s,baz=41,slow=5.9								
NOA	**NORSAR Array B**	74.22	337	P			**P**	23 27 02.9	-0.7
	comp=Z,2.2nm,0.7s,baz=40,slow=5.8,SNR=16								
NVAR	**Mina Array Bea**	75.73	53	P			**P**	23 27 13.9	+1.0
	comp=Z,2.1nm,0.7s,baz=288,slow=6.0,SNR=11								
H17A **Grant Village** 76.78 44 *e*P P 23 27 19.2 +0.3
comp=Z,3.0nm,0.8s
KWP **Kalwaria Pacla** 78.00 324⇑*i*P P 23 27 26.3 +1.0
BURAR **Bucovina Array** 78.14 321⇑*i*P P 23 27 26.9 +0.7
TESR **Tescani** 78.15 320⇑*i*P P 23 27 26.1 0.0
CFR **Carcaliu** 78.24 318⇑*i*P P 23 27 26.9 +0.3
PDAR **Pinedale Array** 78.38 45 P P 23 27 28.6 +0.7
comp=Z,0.8nm,0.5s,baz=294,slow=1.2,SNR=9.2
VRI **Vrincioaia** 78.53 319⇑*i*P P 23 27 29.1 +0.8
BRTR **Keskin Array B** 78.56 311 P P 23 27 29.0 +0.3
comp=Z,1.3nm,0.9s,baz=64,slow=2.9,SNR=5.2
ARR **Arges** 79.96 320⇑*i*P P 23 27 35.5 -0.7
ULM **Lac du Bonnet** 80.15 33 P P 23 27 36.3 -0.7
comp=Z,1.9nm,0.5s,baz=259,slow=5.2,SNR=2.6
MORC **Moravsky Berou** 80.26 327⇓*i*P P 23 27 31.1 -6.6
BRG **Berggiesshuel** 80.99 329 *e*P P 23 27 34.9 -6.6
comp=Z,1.8nm,0.9s
BRG *e* 23 27 41.9
comp=Z,2.7nm,0.8s
VRAC **Vranov** 81.02 327⇓*i*P P 23 27 37.3 -4.4
CLL **Collm** 81.04 330 *i* P P 23 27 41.7 -0.1
comp=Z,6.0nm,0.9s
CLL *e* 23 27 51.0
CLL *e* 23 28 08.0
PKSM **Moragy** 82.35 324⇓*i*P P 23 27 48.6 -0.2
GERES **GERESS Array B** 82.63 328 P P 23 27 49.5 -0.8
comp=Z,0.9nm,0.5s,baz=38,slow=6.0,SNR=17
TXAR **Lajitas Array** 90.86 52 P P 23 28 30.8 -0.2
comp=Z,0.6nm,0.5s,baz=304,slow=2.7,SNR=14
ESDC **Sonseca Array** 97.28 333 P P 23 28 59.3 -0.8
comp=Z,0.1nm,0.3s,baz=25,slow=5.6,SNR=3.7

JMA 22 23:15:52.5,36.71N×140.64E,h4km±1km,M3.9,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
JHO	**Hitachi**	0.11	210	P			Pg	23 15 54.8	0.0
JHO				S			Sg	23 15 56.7	+0.4
JFT	**Otama**	0.84	343	*e*S			Sg	23 16 20.0	+0.4

KRNET ***22*** *23:24:27.8±0.1,41.06N×71.81E,h14km,mb3.8*

IDC ***22*** *23:24:29.0±3.3,40.99N×71.96E,h19km±21km,mb3.7/18, mb1 3.9/25,mb1mx3.7/53,mbtmp3.8/25,ML3.3/7,Error ellipse: s-maj=14.0km s-min=10.3km az=168.0*

NNC ***22*** *23:24:29.2±1.1,41.04N×71.86E,h0km,mb4.6,mpv4.5, Error ellipse: s-maj=11.1km s-min=5.3km az=62.0*

SOME ***22*** *23:24:30.4,41.17N×71.87E,h10km,MS3.4*

ISC 22 23:24:27.9±1.1,40.98N±0.02×71.72E±0.02,h10km±7km, n81,σ2=25/122,mb3.8/16,41C-19D,Tajikistan

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
ARK	**Arkit**	0.83	13	⇓*i*P			**Pg**	23 24 42.3	-1.7
	baz=10.0								
ARK				⇓*i*S			**Sg**	23 24 52.9	-2.0
	baz=10.0								
OHH	**Osh**	0.93	119	⇓*e*P			**Pg**	23 24 45.5	-0.3
	baz=125								
OHH				⇓*i*S			**Sb**	23 24 59.6	+1.0
	baz=125								
BTK	**Batken**	1.15	217	⇑*e*P			**Pn**	23 24 52.7	+2.5
	baz=218								
BTK				⇑*e*S			**Sn**	23 25 09.8	+3.8
	baz=218								
TOKL	**Toktogul**	1.29	42	⇑*e*P			**Pn**	23 24 51.5	-0.5
	baz=42								
TOKL				⇑*i*S			**Sb**	23 25 07.8	-1.1
	baz=42								
MNAS	**Manas**	1.61	21	⇑*i*P			**Pn**	23 24 56.4	-0.2
	baz=20								
MNAS				⇑*i*S			**Sn**	23 25 18.0	+0.5
	baz=20								
MNAS	**Manas**	1.61	21	⇓P			**Pn**	23 24 56.3	-0.2
	52nm,0.3s								
MNAS				⇑S			**Sg**	23 25 20.2	+0.4
	3μm,0.2s								
SFK	**Sufi-Kurgan**	1.67	125	⇑*e*P			**Pb**	23 24 58.9	+0.1
	baz=128								
SFK				⇑*e*S			**Sg**	23 25 21.7	+0.1
	baz=128								
SFK	**Sufi-Kurgan**	1.67	125	⇑P			**Pb**	23 24 58.8	-0.1
	280nm,0.5s								
SFK				⇑S			**Sg**	23 25 21.5	-0.1
	4μm,0.2s								
IUG	**Iuzhnay**	1.72	313	*e*P			**Pg**	23 25 01.7	+0.8
	2μm,0.3s								
IUG				*e*S			**Sg**	23 25 24.2	+1.0
	4μm,0.3s								
AML	**Almayashu**	1.87	52	⇑*i*P			**Pb**	23 25 01.9	-0.5
	baz=52								
AML				⇑*i*S			**Sn**	23 25 25.0	+0.8
	baz=52								
DZA	**Taraz**	1.93	351	*e*P			**Pb**	23 25 03.4	+0.2
	2μm,0.3s								
DZA				*e*S			**Sb**	23 25 26.9	-0.4
	3μm,0.5s								
CHM	**Chimkent**	2.07	311	⇑*i*P			**Pg**	23 25 09.0	+1.4
	314nm,0.3s								
CHM				*e*S			**Sg**	23 25 36.6	+2.1
	4μm,0.5s								
MRKS	**Merke**	2.09	32	*e*P			**Pb**	23 25 05.7	-0.2
	595nm,0.2s								
MRKS				*e*S			**Sb**	23 25 31.1	-0.8
	2μm,0.3s								
EKS2	**Erkin-Say**	2.27	42	⇓*i*P			**Pn**	23 25 07.3	+1.7
	baz=42								
EKS2				⇓*i*S			**Sb**	23 25 36.4	-0.9
	baz=42								
KK31	**Karatay Array**	2.30	337	⇓P			**Pb**	23 25 08.6	-0.9
	390nm,0.2s,baz=251,slow=5.3,SNR=950								
KK31				⇓S			**Sb**	23 25 38.9	+0.9
	356nm,0.2s,baz=151,slow=21,SNR=9.4								
BRLS	**Borolday**	2.36	320	*e*P			**Pg**	23 25 12.6	-0.5
	53nm,0.3s								
BRLS				*e*S			**Sg**	23 25 43.1	-0.5
	270nm,0.4s								
UCH	**Uchtor**	2.43	58	⇑*i*P			**Pn**	23 25 09.5	+1.4
	baz=59								
UCH				⇑*i*S			**Sn**	23 25 40.3	+2.1
	baz=59								
AAK	**Ala-Archa**	2.65	51	Pn			**Pn**	23 25 12.3	+1.5
	27nm,0.3s,baz=197,slow=5.6,SNR=97								
AAK				Lg			Lg	23 25 47.0	
	72nm,0.3s,baz=26,slow=16,SNR=20								
AAK	**Ala-Archa**	2.65	51	⇓*i*P			**Pn**	23 25 12.2	+1.4
	baz=51								
AAK				⇓*i*S			**Sn**	23 25 45.9	+2.8
	baz=51								
AAK	**Ala-Archa**	2.65	51	⇑Pn			**Pn**	23 25 12.5	+1.7
AAK				⇑Pg			**Pb**	23 25 15.3	-0.2
	56nm,0.4s								
AAK				⇓Lg			Lg	23 25 48.3	
	806nm,1.3s								
KZA	**Kyzart**	2.87	66	⇑*i*P			**Pn**	23 25 15.7	+1.7
	baz=67								
KZA				⇑*i*S			**Sn**	23 25 51.8	+3.0
	baz=67								
KBK	**Karagaybulak**	2.93	54	⇑*i*P			**Pn**	23 25 17.1	+2.4
	baz=55								
KBK				⇑*i*S			**Sn**	23 25 53.1	+3.0
	baz=55								
CHMS	**Chumysh**	3.02	47	⇑*i*P			**Pn**	23 25 17.7	+1.8
	baz=47								
CHMS				⇑*i*S			**Sn**	23 25 55.2	+3.0
	baz=47								
USP	**Ospenovka**	3.08	41	⇑*i*P			**Pn**	23 25 17.9	+1.3
	baz=41								
USP		

KSH					smax	smax		
	comp=N,460nm,0.5s							
KSH					smax	smax		
	comp=E,340nm,0.5s							
BMNS	**Besmoynak**	**3.62**	**53**	*eP*		**Pb**	**23 25 33.8 +1.7**	
	comp=E,96nm,0.3s							
BMNS					*eS*	**Sb**	**23 26 18.8 +2.6**	
	comp=E,996nm,7.3s							
DGS	**Degeres**	**3.76**	**52**	*eP*		**Pb**	**23 25 36.5 +2.0**	
	comp=E,64nm,0.5s							
DGS					*eS*	**Sb**	**23 26 23.2 +3.0**	
	comp=E,207nm,0.5s							
KST	**Kastek**	**3.77**	**56**	*eP*		**Pb**	**23 25 35.6 +1.0**	
	comp=E,12nm,0.4s							
KST					*eS*	**Sb**	**23 26 22.1 +1.7**	
	comp=E,366nm,0.5s							
MTBS	**Maitube**	**4.11**	**57**	*eP*		**Pb**	**23 25 41.8 +1.5**	
	comp=E,18nm,0.4s							
MTBS					*eS*	**Sb**	**23 26 33.1 +3.0**	
	comp=E,118nm,0.5s							
IZV	**Izvestkoviy**	**4.18**	**59**	*eP*		**Pb**	**23 25 43.6 +2.0**	
	comp=E,49nm,0.6s							
IZV					*eS*	**Sb**	**23 26 36.4 +4.1**	
	comp=E,169nm,0.5s							
KDJ	**Kajisay**	**4.25**	**73**⇑	*eP*		**Pn**	**23 25 35.2 +2.3**	
	baz=73							
KDJ				⇑	*eS*	**Sn**	**23 26 22.5 -0.1**	
	baz=73							
TNSS	**Tian-Shan**	**4.40**	**60**	*eP*		**Pb**	**23 25 47.8 +2.3**	
	comp=E,34nm,0.5s							
TNSS					*eS*	**Sb**	**23 26 43.3 +4.5**	
	comp=E,40nm,0.5s							
KUU	**Kurty**	**4.49**	**48**	*eP*		**Pb**	**23 25 48.2 +1.5**	
	comp=E,76nm,0.3s							
KUU					*eS*	**Sb**	**23 26 44.5 +3.6**	
	comp=E,119nm,0.5s							
KNDC	**Almaty**	**4.49**	**59**	⇑Pn		**Pn**	**23 25 37.8 +1.7**	
KNDC				⇑Pg		**Pg**	**23 25 51.1 -2.8**	
KNDC				⇑Lg		Lg	23 26 46.1	
AAA	**Alma-Ata**	**4.51**	**58**	*eP*		**Pb**	**23 25 48.3 +1.2**	
	comp=E,28nm,0.2s							
AAA					*eS*	**Sb**	**23 26 44.1 +2.6**	
	comp=E,289nm,0.7s							
MDOK	**Medeo**	**4.52**	**59**	*eP*		**Pb**	**23 25 48.0 +0.6**	
	comp=E,44nm,0.6s							
MDOK					*eS*	**Sb**	**23 26 44.2 +2.2**	
	comp=E,90nm,0.7s							
KTBS	**Karatobe**	**4.58**	**52**	*eP*		**Pb**	**23 25 50.8 +2.5**	
KTBS					*eS*	**Sb**	**23 26 48.0 +4.5**	
CHKK	**Chushkaly**	**4.86**	**52**	*eP*		**Pb**	**23 25 56.3 +3.3**	
	comp=E,28nm,0.5s							
CHKK					*eS*	**Sb**	**23 26 56.9 +5.4**	
	comp=E,170nm,0.5s							
ARXS	**Arharly**	**5.54**	**52**	*eP*		**Pb**	**23 26 08.6 +3.8**	
	comp=E,32nm,0.7s							
ARXS					*eS*	**Sb**	**23 27 17.8 +6.6**	
	comp=E,128nm,0.5s							
PDGK	**Podgornoye**	**6.23**	**65**	⇑Lg		Lg	23 27 40.8	
	comp=E,54nm,0.7s							
OTUK	**Ortayu**	**7.27**	**3**	⇓Lg		Lg	23 28 16.0	
	comp=E,131nm,0.8s							
MK31	**Makanchi Array**	**9.58**	**49**	⇓Lg		Lg	23 29 32.1	
	comp=E,22nm,0.9s,baz=243,slow=30,SNR=3.5							
MKAR	**Makanchi Array**	**9.58**	**49**	Pn		**Pn**	**23 26 46.3 +0.4**	
	comp=E,0.9nm,0.3s,baz=237,slow=15,SNR=12							
MKAR					Lg	Lg	23 29 29.0	
	comp=E,0.9nm,0.3s,baz=237,slow=31,SNR=4.1							
KURBB	**Kurchatov Arra**	**10.74**	**24**	Pn		**Pn**	**23 26 59.5 -2.2**	
	comp=E,0.1nm,0.3s,baz=213,slow=13,SNR=3.9							
KURBB					Lg	Lg	23 30 07.8	
	comp=E,0.4nm,0.3s,baz=214,slow=29,SNR=7.5							
KURK	**Kurchatov**	**10.85**	**24**	⇓Lg		Lg	23 30 08.5	
	comp=E,143nm,1.0s							
GEYT	**Alibeck**	**10.95**	**258**	Pn		**Pn**	**23 27 04.1 -0.5**	
	comp=E,0.9nm,0.3s,baz=64,slow=11,SNR=7.2							
GEYT					Sn	**Sn**	**23 29 03.6 -3.6**	
	comp=E,1.1nm,0.3s,baz=253,slow=30,SNR=4.0							
BVA0	**Borovoye Array**	**12.08**	**356**	⇑Pn		**Pn**	**23 27 20.2 +0.2**	
	comp=E,2.6nm,0.6s,baz=164,slow=12,SNR=11							
BVA0				⇓Sn		**Sn**	**23 29 37.2 +2.6**	
	comp=E,9.7nm,0.6s,baz=168,slow=23,SNR=5.7							
BVA0				⇑Lg		Lg	23 30 49.5	
	comp=E,35nm,1.5s,baz=162,slow=23,SNR=5.7							
BVAR	**Borovoye Array**	**12.08**	**356**	Pn		**Pn**	**23 27 18.4 -1.5**	
	comp=E,0.7nm,0.3s,baz=162,slow=12,SNR=9.2							
BVAR					Sn	**Sn**	**23 29 27.1 -7.6**	
	comp=E,1.1nm,0.3s,baz=165,slow=23,SNR=6.9							
BVAR					Lg	Lg	23 30 55.1	
	comp=E,1.0nm,0.3s,baz=170,slow=27,SNR=3.2							
ZRNK	**Zerenda**	**12.11**	**352**	⇓Pn		**Pn**	**23 27 19.4 -1.0**	
	comp=E,4.6nm,0.8s							
ZRNK				⇓Sn		**Sn**	**23 29 36.4 +0.9**	
	comp=E,6.8nm,0.6s							
ZRNK				⇑Lg		Lg	23 30 48.9	
	comp=E,33nm,0.9s							
AKTO	**Aktyubinsk**	**13.43**	**319**	Pn		**Pn**	**23 27 37.4 -1.1**	
	comp=E,0.5nm,0.3s,baz=121,slow=13,SNR=5.8							
ZALV	**Zalesovo Beam**	**15.67**	**30**	Pn		**Pn**	**23 28 07.5 -1.0**	
	comp=E,0.4nm,0.3s,baz=223,slow=13,SNR=2.5							
ZALV					Sn	**Sn**	**23 31 00.1 -1.9**	
	comp=E,0.2nm,0.3s,baz=207,slow=28,SNR=2.3							
ZALV					Lg	Lg	23 32 44.0	
	comp=E,0.2nm,0.3s,baz=213,slow=24,SNR=2.3							
PYUN	**Piuthan**	**15.84**	**141**	*eP*		**Pn**	**23 28 07.2 -3.9**	
	comp=E,20nm,0.3s							
KOLN	**Koldanda**	**16.41**	**140**	*eP*		**Pn**	**23 28 12.2 -6.2**	
	comp=E,9.7nm,0.5s							
GKN	**Gorkha**	**16.74**	**137**	*eP*		**Pn**	**23 28 18.6 -4.0**	
	comp=E,13nm,0.4s							
KKN	**Kakani**	**17.25**	**136**	*eP*		**Pn**	**23 28 27.3 -1.8**	
	comp=E,7.3nm,0.3s							
PKIN	**Phulchoki**	**17.48**	**136**	*eP*		**Pn**	**23 28 30.4 -1.6**	
	comp=E,6.4nm,0.3s							
ARU	**Arti**	**17.68**	**335**	P		**Pn**	**23 28 33.4 -0.5**	
	comp=E,0.0nm,0.3s,baz=115,slow=7.6,SNR=4.5							
ARU					Lg	Lg	23 33 50.4	
	comp=E,0.0nm,0.3s,baz=128,slow=22,SNR=3.6							
GNI	**Garni**	**20.49**	**277**	P		Pn	23 29 08.2	+0.1
	comp=E,2.9nm,0.5s,baz=328,slow=18,SNR=3.6							
WSAR	**Wadi Sarin**	**20.84**	**216**	P		**P**	**23 29 09.0 -0.7**	
	comp=E,3.8nm,0.8s,baz=24,slow=4.0,SNR=7.3							
KBZ	**Khabaz**	**21.43**	**287**	P		**P**	**23 29 19.8 +3.8**	
	comp=E,1.3nm,0.5s,baz=194,slow=4.2,SNR=4.4							
KVAR	**Kislovodsk Arr**	**21.57**	**288**	P		**P**	**23 29 20.4 +2.8**	
	comp=E,1.8nm,0.6s,baz=59,slow=5.9,SNR=3.2							
SONM	**Songino Array**	**25.54**	**63**	P		**P**	**23 29 56.7 -0.1**	
	comp=E,0.8nm,0.9s,baz=262,slow=11,SNR=4.2							
BRTR	**Keskin Array B**	**28.90**	**280**	P		**P**	**23 30 29.0 +2.0**	
	comp=E,1.1nm,0.7s,baz=86,slow=8.6,SNR=7.7							
MLR	**Muntele Rosu**	**33.30**	**293**	P		**P**	**23 31 08.2 +2.5**	
	comp=E,0.2nm,0.8s,baz=153,slow=9.0,SNR=2.7							
FINES	**FINESS Array B**	**34.18**	**322**	P		**P**	**23 31 13.3 +0.3**	
	comp=E,2.5nm,1.0s,baz=114,slow=9.7,SNR=7.0							
CRVS	**Cervenica-Dubn**	**35.88**	**300**	*eP*		**P**	**23 31 26.7 -1.1**	
STHS	**Stebnicka Huta**	**35.96**	**301**	*eP*		**P**	**23 31 29.2 +0.6**	
ARCES	**ARCESS Array B**	**37.27**	**335**	P		**P**	**23 31 39.5 +0.1**	
	comp=E,3.7nm,0.8s,baz=104,slow=7.8,SNR=6.8							
GERES	**GERESS Array B**	**40.94**	**301**	P		**P**	**23 32 12.4 +1.9**	
	comp=E,1.9nm,0.5s,baz=64,slow=8.2,SNR=25							
NB2	**NORSAR Subarra**	**41.22**	**320**	P		**P**	**23 32 12.8 +0.2**	
	comp=Z,1.4nm,0.8s,baz=90,slow=8.6							
NOA	**NORSAR Array B**	**41.22**	**320**	P		**P**	**23 32 13.2 +0.6**	
	comp=Z,0.5nm,0.7s,baz=92,slow=8.2,SNR=3.0							
DAVOX	**Davos/Dischmat**	**43.94**	**299**	P		**P**	**23 32 35.5 +0.5**	
	comp=Z,2.7nm,0.5s,baz=98,slow=4.9,SNR=14							
ESDC	**Sonseca Array**	**55.95**	**296**	P		**P**	**23 34 06.9 +0.6**	
	comp=Z,0.5nm,0.6s,baz=57,slow=7.1,SNR=3.7							
INK	**Inuvik**	**69.39**	**10**	P		**P**	**23 35 34.7 -0.7**	
	comp=Z,1.9nm,0.7s,baz=347,slow=4.9,SNR=6.8							
ILAR	**Eielson Array**	**70.32**	**16**	P		**P**	**23 35 40.3 -0.9**	
	comp=Z,0.5nm,0.8s,baz=332,slow=5.5,SNR=4.4							
YKA	**Yellowknife Ar**	**76.75**	**3**	P		**P**	**23 36 18.0 -1.0**	
	comp=Z,0.4nm,0.7s,baz=351,slow=6.4,SNR=6.5							
WRA	**Warramunga Arr**	**83.91**	**123**	P		**P**	**23 36 56.6 -1.5**	
	comp=Z,0.6nm,0.5s,baz=323,slow=4.8,SNR=4.6							
ASAR	**Alice Springs**	**86.38**	**126**	P		**P**	**23 37 08.5 -1.9**	
	comp=Z,0.9nm,0.7s,baz=318,slow=5.0,SNR=12							

DHMR 22 23:27:21.6±0.9, 11°92N×43°89E, h9km±14km, ML4.3, 2C, Ethiopia

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
ADEN	**Aden**	**1.37**	**51**	⇑*iP*			Pn	23 27 47.2	+0.2
ADEN				*i*	S		Sg	23 28 06.0	+0.3
ADEN					AML	AML		23 28 12.2	
	comp=E,11μm,0.7s								
UDYN	**Al 'Udayn**	**2.04**	**2**⇑	*iP*			Pb	23 27 57.7	-1.3
UDYN				*i*	S		Sb	23 28 25.5	+1.0
UDYN					AML	AML		23 28 33.3	
	comp=E,2μm,0.7s								
DHBB	**Dhamar BB**	**2.68**	**11**	*i*	P		Pn	23 28 07.5	+2.2
DHBB				*i*	S		Sb	23 28 44.4	+1.2
HAJJ	**Hajjah**	**3.77**	**356**	*i*	P		Pn	23 28 22.4	+2.3
HAJJ				*i*	S		Sb	23 29 10.2	-4.2
HAJJ					AML	AML		23 29 27.7	
	comp=Z,2μm,0.5s								

OTT 22 23:29:02.9±1.2, 75°67N×130°36W, h18km, ML3.9/6, 306km west from Mould Bay, Nt, Beaufort Sea

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
INK	**Inuvik**	**7.47**	**189**	PN		PN	Pn	23 30 50.2	-0.5
INK					mb			23 30 52.8	
	comp=Z,0.9nm,0.1s								
INK				SN		SN	Sn	23 32 06.3	-8.4
INK				Trac				23 32 13.8	
	comp=Z,5.7nm,0.1s								
SMPN	**Simpson Lake**	**7.59**	**169**	PN		PN	Pn	23 30 52.0	-0.4
SMPN					mb			23 30 53.0	
	comp=Z,6.5nm,0.1s								
SMPN				SN		SN	Sn	23 32 12.9	-4.8
SMPN				Trac				23 32 15.2	
	comp=Z,16nm,0.3s								
RES	**Resolute Bay**	**9.04**	**79**	PN		PN	Pn	23 31 12.4	+0.1
RES					mb			23 31 15.5	
	comp=Z,0.8nm,0.2s								
RES				SN		SN	Sn	23 32 46.7	-6.7
RES				Trac				23 32 53.6	
	comp=Z,3.2nm,0.4s								
KUKN	**Kugluktuk,NWT**	**9.18**	**141**	PN		PN	Pn	23 31 13.6	-0.6
KUKN				SN		SN	Sn	23 32 50.3	-6.6
DHRN	**Dharma Camp**	**9.32**	**153**	PN		PN	Pn	23 31 15.9	-0.3
DHRN				SN		SN	Sn	23 32 53.2	-7.2
DHRN				Trac				23 32 58.5	
	comp=Z,3.9nm,0.3s								
EUNU	**Eureka**	**9.96**	**44**	PN		PN	Pn	23 31 27.0	+2.1
HPLN	**Hepburn Lake,**	**10.51**	**145**	PN		PN	Pn	23 31 30.9	-1.5
HPLN					mb			23 31 33.1	
	comp=Z,2.1nm,0.2s								
HPLN				SN		SN	Sn	23 33 19.4	-10
HPLN				Trac				23 33 26.4	
	comp=Z,6.4nm,0.6s								
SMLN	**Simpson Lake,**	**13.47**	**102**	PN		PN	Pn	23 32 10.3	-2.4
SMLN				SN		SN	Sn	23 34 28.3	-13
SMLN				Trac				23 34 34.0	
	comp=Z,2.8nm,0.5s								
YKW3	**Yellowknife Ar**	**14.22**	**149**	PN		PN	Pn	23 32 19.9	-3.2
YKW3					mb			23 32 23.9	
	comp=Z,0.9nm,0.3s								
KUGN	**Kugaaruk Camp,**	**14.31**	**101**	PN		PN	Pn	23 32 21.3	-2.9
KUGN				SN		SN	Sn	23 34 45.0	-17
BULN	**Bullion Camp,**	**14.91**	**109**	PN		PN	Pn	23 32 26.8	-5.6
BULN				SN		SN	Sn	23 35 00.5	-16
GIFN	**Gifford Fjord,**	**15.01**	**87**	PN		PN	Pn	23 32 30.2	-3.5
GIFN				SN		SN	Sn	23 35 06.2	-13

*ISK **22** 23:32:29.0, 35°36N×25°35E, h15km, ML3.6*
*ATH **22** 23:32:30.5, 35°41N×25°55E, h29km±1km, ML3.8/17, Error ellipse: s-maj=2.4km s-min=0.7km az=182.0*
*HLW **22** 23:32:30.7, 35°55N×25°72E, h27km±12km, Md4.1, Ml3.4*
*IDC **22** 23:32:31.9±1.1, 35°36N×25°48E, h33km±13km, mb3.7/9, mb1 3.7/19, mb1mx3.5/50, mbtmp3.7/19, ML3.6/8, MS3.2/4, Ms1 3.2/4, ms1mx2.6/46, Error ellipse: s-maj=25.1km s-min=13.1km az=10.0*
*CSEM **22** 23:32:31.7±0.1, 35°35N×25°54E, h20km, ML3.8, Error ellipse: s-maj=3.1km s-min=2.1km az=32.0*
*THE **22** 23:32:31.8, 35°41N×25°55E, h11km±1km, ML3.8/25, Error ellipse: s-maj=1.5km s-min=0.6km az=170.0*
*VIE **22** 23:32:35.4, 35°25N×25°52E, h70km, mb3.6/6, ML3.8/4*
*GII **22** 23:32:37.5±0.0, 34°91N×26°18E, h1km, mb4.2/4, MD4.0/4*
*DDA **22** 23:32:42.8, 35°52N×25°49E, h34km, Md3.9*

ISC 22 23:32:30.9±0.6, 35°37N±0°03×25°57E±0°02, h24km±4km, n345, σ1°87/434, mb3.6/9, MS3.2/3, Crete

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
NPS	**Neapolis**	**0.11**	**162**	P			**Pb**	**23 32 35.9**	**+0.4**
NPS				S			**Sb**	**23 32 37.8**	**-0.8**
NPS	**Neapolis**	**0.11**	**162**	P			**Pb**	**23 32 35.9**	**+0.4**
NPS				S			**Sb**	**23 32 38.9**	**+0.4**
NPS	**Neapolis**	**0.11**	**162**	P			**Pb**	**23 32 35.8**	**+0.3**
NPS				S			**Sb**	**23 32 38.9**	**+0.4**
NPS					AML	AML		23 32 39.9	
NPS					AML	AML		23 32 40.2	
LAST	**Lasithi**	**0.22**	**200**	P			**Pb**	**23 32 37.2**	**+0.5**
LAST				S			**Sb**	**23 32 40.8**	**+0.1**
LAST	**Lasithi**	**0.22**	**200**	P			**Pb**	**23 32 37.2**	**+0.5**
LAST				S			**Sb**	**23 32 40.9**	**+0.2**
LAST	**Lasithi**	**0.22**	**200**	P			**Pb**	**23 32 37.2**	**+0.5**
IACM	**Heraklion**	**0.41**	**261**	P			**Pb**	**23 32 40.4**	**+0.8**
IACM				S			**Sb**	**23 32 46.6**	**+1.1**
IACM	**Heraklion**	**0.41**	**261**	P			**Pb**	**23 32 40.4**	**+0.8**
IACM				S			**Sb**	**23 32 46.6**	**+1.1**
IACM	**Heraklion**	**0.41**	**261**	P			**Pb**	**23 32 41.4**	**0.0**
IACM				S			**Sb**	**23 32 47.0**	**+1.6**
IACM					AML	AML		23 32 47.8	
IACM					AML	AML		23 32 47.9	
IDI	**Anoyia**	**0.56**	**262**	Pg			**Pb**	**23 32 42.5**	**+0.4**
	126nm,0.3s,baz=30,slow=6.1,SNR=1652								
IDI					Lg	Lg		23 32 49.8	
	587nm,0.3s,baz=288,slow=20,SNR=56								
ZKR	**Zakros**	**0.59**	**115**	P			**Pb**	**23 32 43.8**	**+1.3**
ZKR				S			**Sb**	**23 32 51.7**	**+1.2**
ZKR	**Zakros**	**0.59**	**115**	P			**Pb**	**23 32 43.8**	**+1.3**
ZKR				S			**Sb**	**23 32 51.7**	**+1.2**
ZKR	**Zakros**	**0.59**	**115**	P			**Pb**	**23 32 43.8**	**+1.3**
ZKR				S			**Sb**	**23 32 52.1**	**+1.6**
ZKR					AML	AML		23 32 52.6	
	comp=N,23843μm,0.4s								
ZKR					AML	AML		23 32 52.8	
	comp=E,29520μm,0.7s								
SIVA	**Sivas**	**0.71**	**241**	P			**Pb**	**23 32 45.5**	**+0.8**
SIVA				S			**Sn**	**23 32 55.1**	**-0.6**
SIVA	**Sivas**	**0.71**	**241**	P			**Pb**	**23 32 45.5**	**+0.8**
SIVA				S			**Sb**	**23 32 54.8**	**+0.7**
SIVA	**Sivas**	**0.71**	**241**	P			**Pn**	**23 32 45.8**	**+0.3**
SIVA				S			**Sb**	**23 32 54.8**	**+0.7**
SIVA					AML	AML		23 32 55.8	
	comp=N,16780μm,0.5s								
SIVA					AML	AML		23 32 58.1	
	comp=E,24565μm,0.3s								
THR6	**Thira Island,**	**0.99**	**352**	P			**Pn**	**23 32 49.1**	**-0.3**
THR6	**Thira Island,**	**0.99**	**352**	P			**Pn**	**23 32 49.1**	**-0.3**
SANT	**Santorini**	**1.00**	**355**	P			**Pn**	**23 32 49.1**	**-0.5**
SANT				S			**Sn**	**23 33 04.0**	**+1.0**
SANT	**Santorini**	**1.00**	**355**	P			**Pn**	**23 32 49.5**	**-0.1**
SANT				S			**Sn**	**23 33 04.0**	**+1.0**
SANT	**Santorini**	**1.00**	**355**	P			**Pn**	**23 32 49.5**	**-0.1**
SANT					AML	AML		23 33 05.7	
	comp=E,28571μm,0.4s								
SANT					AML	AML		23 33 06.1	
	comp=N,21257μm,0.3s								
THR3	**Thira Island,**	**1.05**	**353**	P			**Pn**	**23 32 49.7**	**-0.4**
THR3	**Thira Island,**	**1.05**	**353**	P			**Pn**	**23 32 49.7**	**-0.4**
THR7	**Fira-Santorini**	**1.06**	**354**	P			**Pn**	**23 32 50.1**	**-0.2**
THR7	**Fira-Santorini**	**1.06**	**354**	P			**Pn**	**23 32 50.1**	**-0.2**
THR5	**Thira Island,**	**1.06**	**350**	*e*PG			**Pn**	**23 32 49.9**	**-0.5**
THR5				*e*SG			**Sn**	**23 33 04.9**	**+0.5**
THR5	**Thira Island,**	**1.06**	**350**	P			**Pn**	**23 32 50.0**	**-0.3**
THR5	**Thira Island,**	**1.06**	**350**	P			**Pn**	**23 32 50.0**	**-0.3**
THR5				*e*Sg			**Sn**	**23 33 04.9**	**+0.5**
THR2	**Thira Island,**	**1.08**	**354**	P			**Pn**	**23 32 50.4**	**-0.2**
THR2	**Thira Island,**	**1.08**	**354**	P			**Pn**	**23 32 50.4**	**-0.2**
CMBO	**Columbo, Santo**	**1.11**	**353**	P			**Pn**	**23 32 50.9**	**-0.1**
CMBO				S			**Sn**	**23 33 06.0**	**+0.5**
CMBO	**Columbo, Santo**	**1.11**	**353**	P			**Pn**	**23 32 50.9**	**-0.1**
CMBO				S			**Sb**	**23 33 06.3**	**+0.9**
CMBO	**Columbo, Santo**	**1.11**	**353**	P			**Pn**	**23 32 50.5**	**-0.5**
CMBO				S			**Sb**	**23 33 06.3**	**+0.9**
CMBO					AML	AML		23 33 08.1	
	comp=E,15910μm,0.7s								
CMBO					AML	AML		23 33 10.4	
	comp=N,28872μm,0.4s								
VAM	**Vamos**	**1.12**	**272**	P			**Pn**	**23 32 51.0**	**-0.1**
VAM							S	**Sb**	**23 33 06.9**	**+1.2**
VAM	**Vamos**	**1.12**	**272**	P			**Pn**	**23 32 51.5**	**+0.4**
VAM							S	**Sb**	**23 33 06.9**	**+1.2**
IMMV	**Iera Moni Meta**	**1.30**	**274**	P			**Pn**	**23 32 54.3**	**+0.7**
IMMV							S	**Sb**	**23 33 11.3**	**+0.4**
IMMV	**Iera Moni Meta**	**1.30**	**274**	P			**Pn**	**23 32 54.3**	**+0.7**
IMMV							S	**Sb**	**23 33 11.3**	**+0.4**
IMMV	**Iera Moni Meta**	**1.30**	**274**	P			**Pn**	**23 32 54.2**	**+0.6**
IMMV						AML	AML	23 33 19.1	
	comp=N,5919μm,0.5s								
IMMV						AML	AML	23 33 21.0	
	comp=E,5956μm,0.7s								
KARP	**Karpathos**	**1.31**	**82**	*e*PN			**Pb**	**23 32 55.9**	**+1.1**
KARP	**Karpathos**	**1.31**	**82**	P			**Pn**	**23 32 54.2**	**+0.4**
KARP				S			**Sb**	**23 33 13.7**	**+2.4**
KARP	**Karpathos**	**1.31**	**82**	P			**Pn**	**23 32 54.7**	**+0.9**
KARP	**Karpathos**	**1.31**	**82**	*e*Pn			**Pb**	**23 32 55.9**	**+1.1**
KARP				S			**Sb**	**23 33 13.7**	**+2.4**
KARP	**Karpathos**	**1.31**	**82**	P			**Pn**	**23 32 54.7**	**+0.9**
KARP				S			**Sb**	**23 33 14.2**	**+3.0**
KARP					AML	AML		23 33 16.0	
	comp=E,10635μm,0.2s								
KARP					AML	AML		23 33 16.5	
	comp=N,9163μm,0.5s								
GVD	**Gavdhos**	**1.32**	**247**	P			**Pb**	**23 32 57.0**	**+1.9**
GVD				S			**Sb**	**23 33 13.5**	**+1.9**
GVD	**Gavdhos**	**1.32**	**247**	P			**Pb**	**23 32 57.0**	**+1.9**
GVD				S			**Sb**	**23 33 13.5**	**+1.9**
GVD	**Gavdhos**	**1.32**	**247**	P			**Pb**	**23 32 57.4**	**+2.3**
GVD					AML	AML		23 33 21.8	
	comp=N,4538μm,0.5s								
GVD					AML	AML		23 33 25.1	
	comp=E,4191μm,0.4s								
MHLO	**Agia Marina, M**	**1.62**	**325**	P			**Pn**	**23 32 58.5**	**+0.5**
MHLO				S			**Sn**	**23 33 19.1**	**+0.9**
MHLO	**Agia Marina, M**	**1.62**	**325**	P			**Pn**	**23 32 58.5**	**+0.5**
MHLO				S			**Sn**	**23 33 19.1**	**+0.9**
MHLO	**Agia Marina, M**	**1.62**	**325**	P			**Pn**	**23 32 58.3**	**+0.3**
MHLO				S			**Sn**	**23 33 17.8**	**-0.4**
MHLO					AML	AML		23 33 26.6	
	comp=E,15170μm,0.4s								
MHLO					AML	AML		23 33 27.4	
	comp=N,18958μm,0.6s								
APE	**Apeiranthos**	**1.70**	**359**	*e*PN			**Pn**	**23 32 59.1**	**+0.1**
APE	**Apeiranthos**	**1.70**	**359**	P			**Pn**	**23 32 58.7**	**-0.4**
APE				S			**Sn**	**23 33 19.7**	**-0.4**
APE	**Apeiranthos**	**1.70**	**359**	P			**Pn**	**23 32 58.7**	**-0.4**
APE	**Apeiranthos**	**1.70**	**359**	*e*Pn			**Pn**	**23 32 59.2**	**+0.1**
APE				S			**Sn**	**23 33 19.7**	**-0.4**
APE	**Apeiranthos**	**1.70**	**359**	P			**Pn**	**23 32 58.4**	**-0.7**
APE					AML	AML		23 33 28.6	
	comp=N,2000μm,0.2s								
APE					AML	AML		23 33 29.8	
	comp=E,2079μm,0.5s								
NISR	**Nisiros**	**1.77**	**45**	P			**Pn**	**23 33 00.2**	**+0.2**
NISR	**Nisiros**	**1.77**	**45**	P			**Pn**	**23 33 00.2**	**+0.2**
NIS1	**Nisyros Isl.**	**1.79**	**46**	*e*PN			**Pn**	**23 33 02.3**	**+1.9**
NIS1	**Nisyros Isl.**	**1.79**	**46**	P			**Pn**	**23 33 01.9**	**+1.5**
NIS1	**Nisyros Isl.**	**1.79**	**46**	P			**Pn**	**23 33 01.9**	**+1.5**
NIS1	**Nisyros Isl.**	**1.79**	**46**	*e*Pn			**Pn**	**23 33 02.3**	**+1.9**
NIS1	**Nisyros Isl.**	**1.79**	**46**	P			**Pb**	**23 33 03.6**	**+0.5**
ANKY	**Antikythira Is**	**1.91**	**286**	P			**Pn**	**23 33 02.1**	**+0.1**
ANKY				S			**Sn**	**23 33 26.5**	**+1.1**
ANKY	**Antikythira Is**	**1.91**	**286**	P			**Pn**	**23 33 02.1**	**+0.1**
ANKY				S			**Sn**	**23 33 26.5**	**+1.1**
ANKY	**Antikythira Is**	**1.91**	**286**	P			**Pn**	**23 33 01.7**	**-0.3**
BODT	**Bodrum**	**2.20**	**39**	*e*PN			**Pn**	**23 33 07.9**	**+1.9**
BODT	**Bodrum**	**2.20**	**39**	P			**Pn**	**23 33 06.2**	**+0.2**
BODT	**Bodrum**	**2.20**	**39**	P			**Pn**	**23 33 06.2**	**+0.2**
BODT	**Bodrum**	**2.20**	**39**

VLX					AML	AML	23 33 58.6		
	comp=N,352μm,0.5s								
VLX					AML	AML	23 34 05.5		
	comp=E,598μm,0.6s								
IZM	**Izmir**	**3.31**	**24**	*e*PN	**Pn**		**23 33 22.9**	**+1.6**	
IZM	**Izmir**	**3.31**	**24**	*e*Pn	**Pn**		**23 33 22.9**	**+1.6**	
EREA	**Eretria**	**3.32**	**337**	P	**Pn**		**23 33 22.4**	**+1.1**	
EREA	**Eretria**	**3.32**	**337**	P	**Pn**		**23 33 22.6**	**+1.2**	
EREA	**Eretria**	**3.32**	**337**	P	**Pn**		**23 33 22.6**	**+1.2**	
VILL	**Villia**	**3.33**	**328**	P	**Pn**		**23 33 21.7**	**+0.2**	
VILL	**Villia**	**3.33**	**328**	P	**Pn**		**23 33 21.7**	**+0.2**	
KSL	**Kastellorizon**	**3.36**	**75**	P	**Pn**		**23 33 24.3**	**+2.4**	
KSL	**Kastellorizon**	**3.36**	**75**	P	**Pn**		**23 33 24.3**	**+2.4**	
LTK	**Loutraki**	**3.38**	**322**	P	**Pn**		**23 33 23.6**	**+1.5**	
LTK	**Loutraki**	**3.38**	**322**	P	**Pn**		**23 33 23.6**	**+1.5**	
LTK	**Loutraki**	**3.38**	**322**	P	**Pn**		**23 33 24.1**	**+1.9**	
VIL2	**Platees**	**3.39**	**328**	P	**Pn**		**23 33 21.6**	**-0.7**	
AKAS	**Kas**	**3.39**	**74**	*i* P	**Pn**		**23 33 25.0**	**+2.5**	
AKAS				*i* S	**Sb**		**23 34 09.6**	**-1.6**	
AKAS	**Kas**	**3.39**	**74**	P	**Pn**		**23 33 25.0**	**+2.5**	
PYL	**PYLOS**	**3.45**	**297**	P	**Pn**		**23 33 23.9**	**+0.8**	
PYL	**PYLOS**	**3.45**	**297**	P	**Pn**		**23 33 24.0**	**+0.8**	
PYL	**PYLOS**	**3.45**	**297**	P	**Pn**		**23 33 24.0**	**+0.8**	
THAL	**Thalero**	**3.54**	**320**	P	**Pn**		**23 33 26.1**	**+1.7**	
THAL				S	**Sn**		**23 34 06.8**	**+1.3**	
THAL	**Thalero**	**3.54**	**320**	P	**Pn**		**23 33 26.1**	**+1.7**	
THAL				S	**Sn**		**23 34 06.8**	**+1.3**	
THAL	**Thalero**	**3.54**	**320**	P	**Pn**		**23 33 27.1**	**+2.7**	
PROD	**Prodromos**	**3.59**	**324**	P	**Pn**		**23 33 27.3**	**+2.2**	
PROD	**Prodromos**	**3.59**	**324**	P	**Pn**		**23 33 27.3**	**+2.2**	
DENT	**Denizli**	**3.67**	**48**	*e*PN	**Pn**		**23 33 29.0**	**+2.8**	
DENT	**Denizli**	**3.67**	**48**	*e*Pn	**Pn**		**23 33 29.0**	**+2.8**	
ELL	**Elmali**	**3.77**	**67**	*e*PN	**Pn**		**23 33 30.9**	**+3.1**	
ELL	**Elmali**	**3.77**	**67**	*e*Pn	**Pn**		**23 33 30.9**	**+3.1**	
AMT	**Artemida-Makis**	**3.79**	**306**	P	**Pn**		**23 33 28.2**	**+0.4**	
AMT	**Artemida-Makis**	**3.79**	**306**	P	**Pn**		**23 33 29.9**	**+2.1**	
AMT	**Artemida-Makis**	**3.79**	**306**	P	**Pn**		**23 33 29.9**	**+2.1**	
KLV	**Kalavryta, Ach**	**3.83**	**315**	P	**Pn**		**23 33 29.8**	**+1.4**	
KLV				S	**Sn**		**23 34 13.8**	**+1.0**	
KLV	**Kalavryta, Ach**	**3.83**	**315**	P	**Pn**		**23 33 29.8**	**+1.4**	
KLV				S	**Sn**		**23 34 13.8**	**+1.0**	
KLV	**Kalavryta, Ach**	**3.83**	**315**	P	**Pn**		**23 33 30.2**	**+1.8**	
SIGR	**SIGRI**	**3.84**	**3**	*e*PN	**Pn**		**23 33 29.7**	**+1.2**	
SIGR	**SIGRI**	**3.84**	**3**	P	**Pn**		**23 33 27.6**	**-0.9**	
SIGR	**SIGRI**	**3.84**	**3**	*e*Pn	**Pn**		**23 33 29.7**	**+1.2**	
SIGR	**SIGRI**	**3.84**	**3**	P	**Pn**		**23 33 27.6**	**-0.9**	
DKL	**Dikili**	**3.85**	**16**	*e*PN	**Pn**		**23 33 30.3**	**+1.7**	
DKL	**Dikili**	**3.85**	**16**	*e*Pn	**Pn**		**23 33 30.3**	**+1.7**	
SLUM	**Salum**	**3.88**	**185**	P	**Pn**		**23 33 31.1**	**+2.1**	
	baz=187								
SLUM				AMP			23 34 00.0		
	comp=E,40μm,0.8s,logA/T=4.7,baz=187								
SLUM				S	**Sn**		**23 34 17.1**	**+3.2**	
	baz=187								
SLUM	**Salum**	**3.88**	**185**	P	**Pn**		**23 33 31.1**	**+2.1**	
SLUM				S	**Sn**		**23 34 17.1**	**+3.2**	
DSF	**Desfina**	**3.89**	**322**	P	**Pn**		**23 33 30.8**	**+1.5**	
DSF	**Desfina**	**3.89**	**322**	P	**Pn**		**23 33 30.8**	**+1.5**	
DSF	**Desfina**	**3.89**	**322**	P	**Pn**		**23 33 31.3**	**+2.0**	
PRK	**Paraskevi**	**3.91**	**8**	P	**Pn**		**23 33 28.2**	**-1.2**	
UZP	**Denizli**	**3.93**	**46**	*i* P	**Pn**		**23 33 34.5**	**+4.6**	
UZP				*i* S	Sb		23 34 51.7	+25	
SMIA	**Simia**	**3.98**	**332**	P	**Pn**		**23 33 31.3**	**+0.8**	
SMIA	**Simia**	**3.98**	**332**	P	**Pn**		**23 33 31.5**	**+1.0**	
SMIA	**Simia**	**3.98**	**332**	P	**Pn**		**23 33 31.5**	**+1.0**	
KULA	**Kula-Manisa**	**4.00**	**37**	*e*PN	**Pn**		**23 33 33.5**	**+2.7**	
KULA	**Kula-Manisa**	**4.00**	**37**	*e*Pn	**Pn**		**23 33 33.5**	**+2.7**	
DRO	**Drossia**	**4.03**	**311**	P	**Pn**		**23 33 34.8**	**+3.6**	
DRO	**Drossia**	**4.03**	**311**	P	**Pn**		**23 33 34.8**	**+3.6**	
LAKA	**Lakka**	**4.06**	**316**	P	**Pn**		**23 33 33.3**	**+1.6**	
LAKA	**Lakka**	**4.06**	**316**	P	**Pn**		**23 33 33.2**	**+1.6**	
LAKA	**Lakka**	**4.06**	**316**	P	**Pn**		**23 33 33.2**	**+1.6**	
KALE	**Kalithea**	**4.08**	**319**	P	**Pn**		**23 33 33.3**	**+1.4**	
KALE	**Kalithea**	**4.08**	**319**	P	**Pn**		**23 33 33.3**	**+1.4**	
SERG	**Sergoula**	**4.14**	**318**	P	**Pn**		**23 33 34.3**	**+1.6**	
SERG	**Sergoula**	**4.14**	**318**	P	**Pn**		**23 33 34.3**	**+1.6**	
SKIA	**Skiathos**	**4.14**	**337**	P	**Pn**		**23 33 34.4**	**+1.7**	
SKIA	**Skiathos**	**4.14**	**337**	P	**Pn**		**23 33 34.4**	**+1.7**	
KORT	**Korkueli**	**4.20**	**66**	*i* P	**Pn**		**23 33 37.9**	**+4.4**	
KORT				*i* S	Sb		23 34 44.0	+10	
KORT	**Korkueli**	**4.20**	**66**	P	**Pn**		**23 33 37.9**	**+4.4**	
KHAL	**Karahalli**	**4.34**	**45**	*i* P	**Pn**		**23 33 38.7**	**+3.1**	
KHAL				*i* S	Sb		23 34 47.8	+9.2	
KHAL	**Karahalli**	**4.34**	**45**	P	**Pn**		**23 33 38.7**	**+3.1**	
ANTB	**Antalya**	**4.39**	**68**	*e*PN	**Pn**		**23 33 39.7**	**+3.7**	
ANTB	**Antalya**	**4.39**	**68**	*e*Pn	**Pn**		**23 33 39.7**	**+3.7**	
DEMI	**Demirci**	**4.45**	**33**	*i* P	**Pn**		**23 33 40.4**	**+3.5**	
DEMI	**Demirci**	**4.45**	**33**	P	**Pn**		**23 33 40.4**	**+3.5**	
HMAT	**Matruh**	**4.45**	**163**	P	**Pn**		**23 33 38.8**	**+1.9**	
	baz=165								
HMAT				AMP			23 34 00.0		
	comp=E,90μm,0.5s,logA/T=5.3,baz=165								
HMAT				S	**Sn**		**23 34 29.7**	**+1.7**	
	baz=165								
HMAT	**Matruh**	**4.45**	**163**	P	**Pn**		**23 33 38.8**	**+1.9**	
HMAT				S	**Sn**		**23 34 29.7**	**+1.7**	
AGG	**Agios Georgios**	**4.47**	**326**	P	**Pn**		**23 33 39.2**	**+2.0**	
AGG				S	**Sn**		**23 34 29.5**	**+1.0**	
AGG	**Agios Georgios**	**4.47**	**326**	P	**Pn**		**23 33 39.2**	**+2.0**	
AGG				S	**Sn**		**23 34 29.5**	**+1.0**	
AGG	**Agios Georgios**	**4.47**	**326**	P	**Pn**		**23 33 39.7**	**+2.5**	
EZN	**Ezine**	**4.49**	**7**	*e*PN	**Pn**		**23 33 39.4**	**+2.0**	
EZN	**Ezine**	**4.49**	**7**	*e*Pn	**Pn**		**23 33 39.4**	**+2.0**	
ZKS	**Zakynthos**	**4.50**	**302**	P	**Pn**		**23 33 38.3**	**+0.7**	
ZKS	**Zakynthos**	**4.50**	**302**	P	**Pn**		**23 33 38.3**	**+0.7**	
BCK	**Bucak**	**4.55**	**61**	*e*PN	**Pn**		**23 33 42.0**	**+3.6**	
BCK	**Bucak**	**4.55**	**61**	*e*Pn	**Pn**		**23 33 42.0**	**+3.6**	
BALB	**Balikesir**	**4.64**	**23**	*e*PN	**Pn**		**23 33 42.1**	**+2.6**	
BALB	**Balikesir**	**4.64**	**23**	*e*Pn	**Pn**		**23 33 42.1**	**+2.6**	
EVR	**Evrytania**	**4.64**	**321**	P	**Pn**		**23 33 41.4**	**+1.7**	
EVR	**Evrytania**	**4.64**	**321**	P	**Pn**		**23 33 41.4**	**+1.7**	
EVR	**Evrytania**	**4.64**	**321**	P	**Pn**		**23 33 42.3**	**+2.6**	
KFL	**Anninata**	**4.71**	**307**	P	**Pn**		**23 33 41.7**	**+1.2**	
KFL				S	**Sn**		**23 34 36.0**	**+1.5**	
KFL	**Anninata**	**4.71**	**307**	P	**Pn**		**23 33 41.7**	**+1.2**	
KFL				S	**Sn**		**23 34 36.0**	**+1.5**	
PDO	**Prodromos**	**4.77**	**314**	P	**Pn**		**23 33 44.6**	**+3.4**	
PDO	**Prodromos**	**4.77**	**314**	P	**Pn**		**23 33 44.6**	**+3.4**	
PDO	**Prodromos**	**4.77**	**314**	P	**Pn**		**23 33 45.0**	**+3.7**	
PAIG	**Paliouri**	**4.79**	**342**	P	**Pn**		**23 33 41.6**	**0.0**	
PAIG	**Paliouri**	**4.79**	**342**	P	**Pn**		**23 33 41.6**	**0.0**	
DURS	**Dursunbey**	**4.81**	**28**	*i* P	**Pn**		**23 33 43.5**	**+1.5**	
DURS	**Dursunbey**	**4.81**	**28**	P	**Pn**		**23 33 43.5**	**+1.5**	
VLS	**Valsamata**	**4.88**	**306**	P	**Pn**		**23 33 43.7**	**+0.8**	
VLS				S	**Sn**		**23 34 40.5**	**+1.9**	
VLS	**Valsamata**	**4.88**	**306**	P	**Pn**		**23 33 43.7**	**+0.8**	
VLS				S	**Sn**		**23 34 40.5**	**+1.9**	
BAGO	**Egridir - ISPA**	**4.94**	**57**	*i* P	**Pn**		**23 33 46.5**	**+2.8**	
BAGO				*i* S	**Sb**		**23 34 53.1**	**-2.7**	
THL	**Klokotos Trika**	**5.05**	**327**	P	**Pn**		**23 33 47.9**	**+2.7**	
THL	**Klokotos Trika**	**5.05**	**327**	P	**Pn**		**23 33 47.9**	**+2.7**	
GELI	**Tayfur-Gelibol**	**5.07**	**8**	*e*PN	**Pn**		**23 33 47.6**	**+2.2**	
GELI	**Tayfur-Gelibol**	**5.07**	**8**	*e*Pn	**Pn**		**23 33 47.6**	**+2.2**	
TVSB	**Tavsanli**	**5.12**	**36**	*e*PN	**Pn**		**23 33 49.3**	**+3.1**	
TVSB	**Tavsanli**	**5.12**	**36**	*e*Pn	**Pn**		**23 33 49.3**	**+3.1**	
DSL	**Palaion Diasel**	**5.18**	**318**	P	**Pn**		**23 33 49.3**	**+2.3**	
DSL				S	**Sn**		**23 34 47.6**	**+1.6**	
DSL	**Palaion Diasel**	**5.18**	**318**	P	**Pn**		**23 33 49.3**	**+2.3**	
DSL				S	**Sn**		**23 34 47.6**	**+1.6**	
DSL	**Palaion Diasel**	**5.18**	**318**	P	**Pn**		**23 33 50.8**	**+3.8**	
LKD2	**Lefkada island**	**5.20**	**312**	P	**Pn**		**23 33 49.2**	**+1.9**	
LKD2				S	**Sn**		**23 34 47.9**	**+1.4**	
LKD2	**Lefkada island**	**5.20**	**312**	P	**Pn**		**23 33 49.2**	**+1.9**	
LKD2				S	**Sn**		**23 34 47.9**	**+1.4**	
LKD2	**Lefkada island**	**5.20**	**312**	P	**Pn**		**23 33 49.6**	**+2.3**	
ERIK	**Erikli-Kesan**	**5.34**	**8**	*e*PN	**Pn**		**23 33 50.7**	**+1.5**	
ERIK	**Erikli-Kesan**	**5.34**	**8**	*e*Pn	**Pn**		**23 33 50.7**	**+1.5**	
RKY	**Sarkoy-Tekirda**	**5.46**	**13**	*e*PN	**Pn**		**23 33 53.3**	**+2.5**	
RKY	**Sarkoy-Tekirda**	**5.46**	**13**	*e*Pn	**Pn**		**23 33 53.3**	**+2.5**	
MRMT	**Marmara Adasi**	**5.46**	**16**	*e*PN	**Pn**		**23 33 53.5**	**+2.6**	
MRMT	**Marmara Adasi**	**5.46**	**16**	*e*Pn	**Pn**		**23 33 53.5**	**+2.6**	
KPRO	**Kipourio**	**5.66**	**325**	P	**Pn**		**23 33 54.9**	**+1.2**	
KPRO	**Kipourio**	**5.66**	**325**	P	**Pn**		**23 33 54.9**	**+1.2**	
IGT	**Igoumenitsa**	**5.88**	**316**	P	**Pn**		**23 33 57.8**	**+1.2**	
IGT	**Igoumenitsa**	**5.88**	**316**	P	**Pn**		**23 33 57.8**	**+1.2**	
IGT	**Igoumenitsa**	**5.88**	**316**	P	**Pn**		**23 33 56.2**	**-0.4**	
SGD	**Sagiada**	**5.99**	**317**	P	**Pn**		**23 33 59.2**	**+1.1**	
SGD	**Sagiada**	**5.99**	**317**	P	**Pn**		**23 33 59.2**	**+1.1**	
SGD	**Sagiada**	**5.99**	**317**	P	**Pn**		**23 33 58.3**	**+0.2**	
KONT	**Konya--Tatoy**	**6.03**	**63**	*e*PN	**Pn**		**23 34 03.3**	**+4.6**	
SWA2		**6.11**	**181**	P	**Pn**		**23 34 01.9**	**+2.2**	
	baz=183								
SWA2				AMP			23 35 00.0		
	comp=N,50μm,0.5s,logA/T=5.0,baz=183								
SWA2		**6.11**	**181**	P	**Pn**		**23 34 01.9**	**+2.2**	
KDHN	**Kadinhani**	**6.11**	**57**	*i* P	**Pn**		**23 34 02.4**	**+2.5**	
KDHN	**Kadinhani**	**6.11**	**57**	P	**Pn**		**23 34 02.4**	**+2.5**	
KIZT	**Kizilcal**	**6.14**	**53**	*e*PN	**Pn**		**23 34 04.5**	**+4.2**	
LADK	**Ladik-KONYA**	**6.14**	**61**	*e*PN	**Pn**		**23 34 04.5**	**+4.2**	
KNT	**Kendrikon**	**6.15**	**341**	P	**Pn**		**23 34 02.7**	**+2.4**	
KNT	**Kendrikon**	**6.15**	**341**	P	**Pn**		**23 34 02.7**	**+2.4**	
KEK	**Kerkira**	**6.31**	**315**	P	**Pn**		**23 34 02.9**	**+0.5**	
KEK	**Kerkira**	**6.31**	**315**	P	**Pn**		**23 34 02.9**	**+0.5**	
FNA	**Florina**	**6.34**	**330**	P	**Pn**		**23 34 04.7**	**+1.8**	
FNA	**Florina**	**6.34**	**330**	P	**Pn**		**23 34 04.7**	**+1.8**	
CSS	**Mathiatis**	**6.37**	**91**	P	**Pn**		**23 34 04.8**	**+1.5**	
CSS	**Mathiatis**	**6.37**	**91**	Pn	**Pn**		**23 34 04.9**	**+1.6**	
CSS				Sn	**Sn**		**23 35 14.6**	**-0.7**	
CSS	**Mathiatis**	**6.37**	**91**	P	**Pn**		**23 34 04.8**	**+1.5**	
HNAT	**Natroun**	**7.13**	**142**	P	**Pn**		**23 34 14.8**	**+1.0**	
	baz=143								
HNAT	**Natroun**	**7.13**	**142**	P	**Pn**		**23 34 14.8**	**+1.0**	
KERG	**Konya-Eregli**	**7.20**	**71**	*i* P	**Pn**		**23 34 17.0**	**+2.2**	
KERG	**Konya-Eregli**	**7.20**	**71**	P	**Pn**		**23 34 17.0**	**+2.2**	
AFSR	**Af˙ar-Bala (A**	**7.22**	**53**	*e*PN	**Pn**		**23 34 18.9**	**+3.8**	
AFSR	**Af˙ar-Bala (A**	**7.22**	**53**	*e*Pn	**Pn**		**23 34 18.9**	**+3.8**	
HSAF	**As Saff**	**7.64**	**137**	P	**Pn**		**23 34 21.9**	**+1.1**	
	baz=138								
HSAF	**As Saff**	**7.64**	**137**	P	**Pn**		**23 34 21.9**	**+1.1**	
BRTR	**Keskin Array B**	**7.74**	**53**	Pn	**Pn**		**23 34 24.4**	**+2.2**	
	comp=N,0.3nm,0.3s,baz=218,slow=14,SNR=8.2								
GLL	**Jalalah**	**7.76**	**136**	P	**Pn**		**23 34 22.9**	**+0.5**	
	baz=138								
GLL	**Jalalah**	**7.76**	**136**	P	**Pn**		**23 34 22.9**	**+0.5**	
SUZ	**Suez**	**8.24**	**130**	P	**Pn**		**23 34 30.1**	**+1.1**	
	baz=131								
SUZ	**Suez**	**8.24**	**130**	P	**Pn**		**23 34 30.1**	**+1.1**	
HNTI	**Hanita**	**8.27**	**103**	Sn	**Sn**		**23 36 00.3**	**-1.9**	
NBNS	**Bani Suef**	**8.30**	**143**	P	**Pn**		**23 34 31.4**	**+1.6**	
	baz=144								
NBNS				S	**Sn**		**23 36 02.8**	**0.0**	
	baz=144								
NBNS	**Bani Suef**	**8.30**	**143**	P	**Pn**		**23 34 31.4**	**+1.6**	
NBNS				S	**Sn**		**23 36 02.8**	**0.0**	
SLTI	**Sal'it**	**8.48**	**109**	Pn	**Pn**		**23 34 33.1**	**+0.9**	
SLTI				Sn	**Sn**		**23 36 04.5**	**-2.6**	
SLTI	**Sal'it**	**8.48**	**109**	Pn	**Pn**		**23 34 33.1**	**+0.9**	
MMAI	**Mount Meron Ar**	**8.48**	**103**	Pn	**Pn**		**23 34 32.6**	**+0.3**	
	comp=N,2.2nm,0.3s,baz=302,slow=12,SNR=17								
MMAI				Sn	**Sn**		**23 36 05.5**	**-1.8**	
	comp=N,2.1nm,0.3s,baz=292,slow=15,SNR=4.2								
MMA1	**Mount Meron ar**	**8.48**	**103**	Pn	**Pn**		**23 34 33.8**	**+1.5**	
MMA1	**Mount Meron ar**	**8.48**	**103**	Pn	**Pn**		**23 34 33.8**	**+1.5**	
HFRF	**Wahat Farafira**	**8.52**	**163**	P	**Pn**		**23 34 34.7**	**+1.8**	
	baz=164								
HFRF	**Wahat Farafira**	**8.52**	**163**	P	**Pn**		**23 34 34.7**	**+1.8**	
KSDI	**Kefar Szold**	**8.63**	**102**	Pn	**Pn**		**23 34 34.6**	**+0.3**	
KSDI				Sn	**Sn**		**23 36 08.6**	**-2.2**	
KSDI	**Kefar Szold**	**8.63**	**102**	Pn	**Pn**		**23 34 34.6**	**+0.3**	
AMAZ	**Amatzia**	**8.70**	**113**	Pn	**Pn**		**23 34 35.3**	**+0.1**	
AMAZ				Sn	**Sn**		**23 36 09.1**	**-3.5**	
AMAZ	**Amatzia**	**8.70**	**113**	Pn	**Pn**		**23 34 35.3**	**+0.1**	
MMLI	**Mount Malkishu**	**8.70**	**107**	Pn	**Pn**		**23 34 36.0**	**+0.8**	
MMLI				Sn	**Sn**		**23 36 08.9**	**-3.7**	
MMLI	**Mount Malkishu**	**8.70**	**107**	Pn	**Pn**		**23 34 36.0**	**+0.8**	
REVI	**Revivim**	**8.80**	**117**	Pn	**Pn**		**23 34 36.5**	**-0.1**	
REVI				Sn	**Sn**		**23 36 10.6**	**-4.4**	
REVI	**Revivim**	**8.80**	**117**	Pn	**Pn**		**23 34 36.5**	**-0.1**	
HMDT	**Nahal Hemdat**	**8.85**	**108**	Pn	**Pn**		**23 34 38.4**	**+1.1**	
HMDT				Sn	**Sn**		**23 36 13.6**	**-2.7**	
HMDT	**Nahal Hemdat**	**8.85**	**108**	Pn	**Pn**		**23 34 38.4**	**+1.1**	
SG1	**Sgolgore (BA)**	**8.88**	**311**	*e*Pn	**Pn**		**23 34 36.9**	**-0.9**	
BAI	**Bari**	**8.92**	**313**	*e*Pn	**Pn**		**23 34 37.6**	**-0.6**	
HNKL	**Nakhl**	**8.93**	**125**	P	**Pn**		**23 34 38.6**	**+0.2**	
	baz=126								
HNKL				AMP			23 36 00.0		
	comp=N,10μm,0.6s,logA/T=4.2,baz=126								
HNKL	**Nakhl**	**8.93**	**125**	P	**Pn**		**23 34 38.6**	**+0.2**	
DSI	**Dead Sea**	**9.03**	**112**	Pn	**Pn**		**23 34 40.0**	**+0.2**	
DSI				Sn	**Sn**		**23 36 16.9**	**-3.8**	
DSI	**Dead Sea**	**9.03**	**112**	Pn	**Pn**		**23 34 40.0**	**+0.2**	
RMNI	**Mount Ramon**	**9.07**	**119**	Pn	**Pn**		**23 34 39.6**	**-0.8**	
RMNI	**Mount Ramon**	**9.07**	**119**	Pn	**Pn**		**23 34 39.6**	**-0.8**	
MZDA	**Masada**	**9.14**	**114**	Pn	**Pn**		**23 34 41.8**	**+0.6**	
MZDA				Sn	**Sn**		**23 36 19.8**	**-3.5**	
MZDA	**Masada**	**9.14**	**114**	Pn	**Pn**		**23 34 41.8**	**+0.6**	
CDT	**Castel del Mon**	**9.27**	**311**	*e*Pn	**Pn**		**23 34 42.0**	**-1.1**	
KRMI	**Paran Flat**	**9.32**	**122**	Pn	**Pn**		**23 34 43.7**	**-0.1**	
KRMI				Sn	**Sn**		**23 36 23.2**	**-4.7**	
KRMI	**Paran Flat**	**9.32**	**122**	Pn	**Pn**		**23 34 43.7**	**-0.1**	
PRNI	**Paran**	**9.38**	**120**	Pn	**Pn**		**23 34 45.2**	**+0.6**	
PRNI				Sn	**Sn**		**23 36 25.3**	**-4.1**	
PRNI	**Paran**	**9.38**	**120**	Pn	**Pn**		**23 34 45.2**	**+0.6**	
ZFRI	**Zfri**	**9.39**	**118**	Pn	**Pn**		**23 34 44.5**	**-0.2**	
ZFRI				Sn	**Sn**		**23 36 25.7**	**-3.9**	
ZFRI	**Zfri**	**9.39**	**118**	Pn	**Pn**		**23 34 44.5**	**-0.2**	
HRFI	**Mount Harif**	**9.58**	**121**	Pn	**Pn**		**23 34 48.1**	**+0.7**	
HRFI				Sn	**Sn**		**23 36 30.5**	**-3.9**	
HRFI	**Mount Harif**	**9.58**	**121**	Pn	**Pn**		**23 34 48.1**	**+0.7**	
MBRI	**Mt Berech**	**9.64**	**123**	Pn	**Pn**		**23 34 48.4**	**+0.1**	
MBRI				Sn	**Sn**		**23 36 30.9**	**-5.0**	
MBRI	**Mt Berech**	**9.64**	**123**	Pn	**Pn**		**23 34 48.4**	**+0.1**	
STON	**Ston**	**9.67**	**323**	*e*Pn	**Pn**		**23 34 45.7**	**-2.7**	
STON				Sn	**Sn**		**23 36 28.4**	**-7.8**	
EIL	**Elat**	**9.74**	**123**	Pn	**Pn**		**23 34 50.3**	**+0.7**	
	comp=N,1.1nm,0.3s,baz=310,slow=7.2,SNR=14								
EIL				Sn	**Sn**		**23 36 34.3**	**-4.0**	
	comp=N,1.6nm,0.3s,baz=175,slow=4.8,SNR=5.7								
EIL	**Elat**	**9.74**	**123**	Pn	**Pn**		**23 34 50.7**	**+1.1**	
EIL	**Elat**	**9.74**	**123**	Pn	**Pn**		**23 34 50.7**	**+1.1**	
NUB		**9.95**	**127**	P	**Pn**		**23 34 53.8**	**+1.3**	
	baz=128								
ASF	**Jabal al Asfar**	**9.95**	**105**	Pn	**Pn**		**23 34 54.2**	**+1.6**	
	comp=N,0.1nm,0.3s,baz=270,slow=16,SNR=2.7								
ASF				Sn	**Sn**		**23 36 41.2**	**-2.3**	
	comp=N,0.1nm,0.3s,baz=288,slow=20,SNR=2.1								
MLR	**Muntele Rosu**	**10.12**	**2**	Pn	**Pn**		**23 34 57.2**	**+2.5**	
	baz=209,slow=10								
UDBI	**Udbina**	**11.84**	**324**	*e*Pn	**Pn**		**23 35 16.6**	**-1.6**	
UDBI				Sn	Sn		23 37 19.9	-10	
NVLJ	**Novalja**	**12.30**	**321**	*e*Pn	**Pn**		**23 35 21.0**	**-3.6**	
NVLJ				Sn	Sn		23 37 31.0	-10	
KEST	**Kesra**	**13.22**	**276**	Pn	**Pn**		**23 35 37.0**	**-0.1**	
	comp=N,0.1nm,0.3s,baz=241,slow=19,SNR=2.0								
SOKA	**Soboth**	**13.80**	**328**	*i* Pn	**Pn**		**23 35 47.7**	**+2.6**	
	comp=N,1.2nm,0.7s								
VRAC	**Vranov**	**15.41**	**337**	Pn	**Pn**		**23 36 09.2**	**+2.5**	
	comp=N,0.1nm,0.3s,baz=126,slow=9.7,SNR=3.6								
AKASG	**Malin Array Be**	**15.55**	**9**	Pn	**P**		**23 36 11.4**	**-1.3**	
	comp=N,2.6nm,0.3s,baz=201,slow=11,SNR=8.6								
KVAR	**Kislovodsk Arr**	**15.71**	**52**	LR	LR		23 42 38.9		
	comp=N,42nm,19.4s,baz=210,slow=38								
KBZ	**Khabaz**	**15.74**	**53**	Pn	**P**		**23 36 14.7**	**0.0**	
	comp=N,0.1nm,0.3s,baz=256,slow=6.2,SNR=3.6								
WATA	**Walderalm**	**15.89**	**323**	*i* Pn	**Pn**		**23 36 13.4**	**+0.4**	
	comp=N,2.4nm,0.6s								
GERES	**GERESS Array B**	**16.06**	**331**	Pn	**P**		**23 36 17.5**	**-0.9**	
	comp=N,0.2nm,0.3s,baz=149,slow=12,SNR=11								
DAVOX	**Davos/Dischmat**	**16.39**	**319**	Pn	**Pn**		**23 36 19.9**	**+0.3**	
	baz=18,slow=20								
ESDC	**Sonseca Array**	**23.76**	**289**	P	**P**		**23 37 41.6**	**0.0**	
	comp=N,0.3nm,0.3s,baz=83,slow=9.3,SNR=6.6								
HFS	**Hagfors**	**25.95**	**346**	P	**P**		**23 37 59.2**	**-2.1**	
	comp=N,0.9nm,0.7s,baz=119,slow=12,SNR=4.2								
FINES	**FINESS Array B**	**26.10**	**1**	P	**P**		**23 38 00.3**	**-2.2**	
	comp=N,0.2nm,0.4s,baz=184,slow=9.3,SNR=4.1								
GEYT	**Alibeck**	**26.17**	**75**	P	**P**		**23 38 05.3**	**+1.8**	
	comp=N,0.8nm,0.6s,baz=294,slow=7.2,SNR=2.7								
NOA	**NORSAR Array B**	**27.28**	**345**	LR	LR		23 50 01.3		
	comp=N,21nm,18.1s,baz=110,slow=38								
EKA	**Eskdalemuir Ar**	**28.07**	**324**	P	**P**		**23 38 19.6**	**-0.7**	
	comp=N,1.0nm,0.5s,baz=117,slow=9.9,SNR=8.0								
MKAR	**Makanchi Array**	**43.38**	**57**	P	**P**		**23 40 31.6**	**+0.3**	
	comp=N,1.5nm,0.3s,baz=268,slow=8.1,SNR=20								
ZALV	**Zalesovo Beam**	**44.62**	**46**	P	**P**		**23 40 41.0**	**-0.1**	
	comp=N,1.3nm,0.3s,baz=271,slow=8.0,SNR=4.6								
ZALV				LR	LR		00 02 20.4		
	comp=N,27nm,19.1s,baz=52,slow=40								
SONM	**Songino Array**	**59.09**	**51**	LR	LR		00 10 09.5		
	comp=N,57nm,18.0s,baz=101,slow=38								
SCHQ	**Schefferville**	**63.24**	**320**	P	**P**		**23 42 56.9**	**-0.3**	
	comp=N,2.4nm,0.7s,baz=61,slow=7.1,SNR=4.6								
YKA	**Yellowknife Ar**	**77.35**	**342**	P	**P**		**23 44 22.1**	**-1.2**	
	comp=N,0.2nm,0.4s,baz=32,slow=5.3,SNR=6.1								

**MEX 22 23:33:48.5±1.0, 16.48N×99.04W, h16km±999km, MD3.7,

*ATH **22** 23:41:34.5, 37˚.82N×26˚.70E, h22km±3km, ML2.0/4, Error ellipse: s-maj=12.5km s-min=0.9km az=223.0*
*ISCJB **22** 23:41:35.5±0.5, 37˚.92N±0˚.03×26˚.83E±0˚.04, h1km±7km, Error ellipse: s-maj=5.8km s-min=3.7km az=144.4*
*CSEM **22** 23:41:35.9±0.2, 37˚.92N×26˚.84E, h5km, ML2.0, Error ellipse: s-maj=5.4km s-min=3.2km az=51.0*
*DDA **22** 23:41:36.3, 37˚.88N×26˚.83E, h6km, Md2.6*
*ISK **22** 23:41:36.5, 37˚.95N×26˚.92E, h6km, MD2.6*

ISC 22 23:41:35.6±1.0, 37˚.90N±0˚.02×26˚.80E±0˚.03, h7km±9km, n31, σ0°60/50, Dodecanese Islands

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
SMG	**Samos**	**0.20**	**172**	P	**Pg**	**23 41 39.4**	**-0.1**
SMG				S	**Sg**	**23 41 42.4**	**+0.3**
SMG	**Samos**	**0.20**	**172**	P	**Pg**	**23 41 39.4**	**-0.1**
SMG				S	**Sg**	**23 41 42.4**	**+0.3**
SMG				AML	AML	23 41 42.9	
	comp=N,826μm,0.2s						
SMG				AML	AML	23 41 43.0	
	comp=E,1377μm,0.2s						
GCAM	**G?zelcaml?**	**0.40**	**121**	*i* P	**Pg**	**23 41 43.3**	**0.0**
GCAM				*i* S	**Sb**	**23 41 52.9**	**+1.7**
GCAM	**G?zelcaml?**	**0.40**	**121**	P	**Pg**	**23 41 43.3**	**0.0**
GCAM				S	**Sb**	**23 41 52.9**	**+1.7**
ZEY	**˝zmir**	**0.41**	**325**	*i* P	**Pg**	**23 41 42.5**	**-1.0**
ZEY				*i* S	**Sb**	**23 41 51.9**	**+0.2**
BLCB	**Balcova**	**0.52**	**21**	*e*PG	**Pg**	**23 41 45.5**	**0.0**
BLCB				*e*SG	**Sg**	**23 41 52.5**	**+0.2**
BLCB	**Balcova**	**0.52**	**21**	*e*Pg	**Pg**	**23 41 45.5**	**0.0**
BLCB				*e*Sg	**Sg**	**23 41 52.5**	**+0.2**
IZM	**Izmir**	**0.61**	**36**	*e*PG	**Pg**	**23 41 47.2**	**-0.1**
IZM	**Izmir**	**0.61**	**36**	*e*Pg	**Pg**	**23 41 47.2**	**-0.1**
CHOS	**Chios island**	**0.76**	**309**	*e*PG	**Pn**	**23 41 52.6**	**-0.2**
CHOS	**Chios island**	**0.76**	**309**	P	**Pg**	**23 41 49.7**	**-0.5**
CHOS	**Chios island**	**0.76**	**309**	*e*Pg	**Pn**	**23 41 52.6**	**-0.2**
CHOS				S	**Sg**	**23 42 00.2**	**+0.1**
CHOS	**Chios island**	**0.76**	**309**	P	**Pg**	**23 41 49.7**	**-0.5**
CHOS				S	**Sg**	**23 42 00.2**	**+0.1**
CHOS				AML	AML	23 42 00.6	
	comp=E,185μm,0.4s						
CHOS				AML	AML	23 42 02.8	
	comp=N,109μm,0.3s						
AYDB	**Zeytinkoy-Aydi**	**0.86**	**87**	*e*PG	**Pg**	**23 41 51.6**	**-0.4**
AYDB				*e*SG	**Sg**	**23 42 02.8**	**-0.5**
AYDB	**Zeytinkoy-Aydi**	**0.86**	**87**	*e*Pg	**Pg**	**23 41 51.7**	**-0.4**
AYDB				*e*Sg	**Sg**	**23 42 02.8**	**-0.5**
AYDN	**Tasoluk**	**0.89**	**106**	*i* P	**Pb**	**23 41 52.8**	**-0.6**
AYDN				*i* S	**Sb**	**23 42 04.9**	**-0.5**
AYDN	**Tasoluk**	**0.89**	**106**	P	**Pb**	**23 41 52.8**	**-0.6**
AYDN				S	**Sb**	**23 42 04.9**	**-0.5**
BODT	**Bodrum**	**0.93**	**154**	*e*PG	**Pn**	**23 41 54.9**	**-0.3**
BODT	**Bodrum**	**0.93**	**154**	*e*Pg	**Pn**	**23 41 54.9**	**-0.3**
BDRM	**Kayabasi**	**0.98**	**148**	*i* P	**Pb**	**23 41 55.0**	**+0.1**
BDRM				*i* S	**Sn**	**23 42 09.6**	**-0.4**
BDRM	**Kayabasi**	**0.98**	**148**	P	**Pb**	**23 41 55.0**	**+0.1**
BDRM				S	**Sn**	**23 42 09.6**	**-0.4**
DKL	**Dikili**	**1.17**	**4**	*e*PN	**Pn**	**23 41 58.4**	**+0.1**
DKL	**Dikili**	**1.17**	**4**	*e*Pn	**Pn**	**23 41 58.4**	**+0.1**
AKS	**Akhisar**	**1.26**	**39**	*e*PN	**Pb**	**23 41 59.2**	**-0.4**
AKS	**Akhisar**	**1.26**	**39**	*e*Pn	**Pb**	**23 41 59.2**	**-0.4**
PRK	**Paraskevi**	**1.40**	**343**	P	**Pn**	**23 42 01.8**	**+0.2**
PRK				S	**Sg**	**23 42 22.3**	**+1.6**
PRK	**Paraskevi**	**1.40**	**343**	P	**Pn**	**23 42 01.8**	**+0.2**
PRK				S	**Sg**	**23 42 22.3**	**+1.6**
PRK				AML	AML	23 42 27.0	
	comp=E,131μm,1.2s						
PRK				AML	AML	23 42 28.6	
	comp=N,75μm,1.1s						
SIGR	**SIGRI**	**1.50**	**331**	P	**Pn**	**23 42 03.3**	**+0.3**
SIGR				S	**Sn**	**23 42 22.7**	**-0.1**
SIGR	**SIGRI**	**1.50**	**331**	P	**Pn**	**23 42 03.3**	**+0.3**
SIGR				S	**Sn**	**23 42 22.7**	**-0.1**
SIGR				AML	AML	23 42 31.0	
	comp=E,74μm,1.1s						
SIGR				AML	AML	23 42 32.5	
	comp=N,127μm,2.1s						
KULA	**Kula-Manisa**	**1.58**	**67**	*e*PN	**Pn**	**23 42 04.4**	**+0.2**
KULA	**Kula-Manisa**	**1.58**	**67**	*e*Pn	**Pn**	**23 42 04.4**	**+0.2**

*IDC **22** 23:56:26.6±3.0, 35˚.93N×141˚.16E, h0km, mb3.5/3, mb1 3.6/4, mb1mx3.3/30, mbtmp3.4/4, ML3.2/1, MS3.2/1, Ms1 3.2/1, ms1mx2.4/29, Error ellipse: s-maj=79.8km s-min=25.9km az=46.0*
*ISCJB **22** 23:56:30.3±1.5, 36˚.05N±0˚.07×141˚.2E±0˚.1, h31km, mb3.4/3, MS3.1/1, Error ellipse: s-maj=15.9km s-min=9.6km az=160.8*
*JMA **22** 23:56:33.3±0.1, 35˚.89N×140˚.84E, h41km±1km, M3.0*

ISC 22 23:56:31.6±1.6, 35˚.96N±0˚.06×141˚.1E±0˚.1, h31km, n10, σ1°03/11, mb3.4/3, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
CHOJ	**Chosi**	**0.31**	**216**	P	**Pn**	**23 56 40.5**	**+0.4**
CHOJ				*e*S	**Sn**	**23 56 46.2**	**+0.6**
JYT	**Yasato**	**0.77**	**291**	P	**Pn**	**23 56 45.6**	**-0.8**
JHO	**Hitachi**	**0.78**	**328**	P	**Pb**	**23 56 47.5**	**+0.8**
BSO4	**Boso 4**	**1.14**	**213**	P	**Pb**	**23 56 52.6**	**-0.1**
BSO3	**Boso 3**	**1.25**	**202**	P	**Pn**	**23 56 53.0**	**+0.4**
MJAR	**Matsushiro Arr**	**2.40**	**285**	Pn	**Pn**	**23 57 09.1**	**+0.3**
	5.6nm,0.3s,baz=94,slow=8.8,SNR=28						
MJAR				Sn	**Sn**	**23 57 37.3**	**+0.2**
	2.8nm,0.3s,baz=93,slow=24,SNR=5.0						
TIXI	**Tiksi**	**36.33**	**354**	LR	LR	00 19 52.0	
	comp=Z,31nm,19.1s,baz=247,slow=39						
MKAR	**Makanchi Array**	**44.48**	**303**	P	**P**	**00 04 39.5**	**-0.4**
	0.2nm,0.3s,baz=89,slow=9.6,SNR=6.2						
WRA	**Warramunga Arr**	**55.96**	**188**	P	**P**	**00 06 08.3**	**+1.3**
	0.4nm,0.5s,baz=1.3,slow=7.4,SNR=2.6						
ASAR	**Alice Springs**	**59.69**	**188**	P	**P**	**00 06 31.0**	**-2.1**
	0.3nm,0.9s,baz=15,slow=7.7,SNR=3.2						

IDC 23 00:06:44.2±7.2, 5˚.46N×95˚.09E, h0km, mb3.6/5, mb1 3.7/5, mb1mx3.3/42, mbtmp3.6/5, Error ellipse: s-maj=368.2km s-min=21.9km az=57.0, Northern Sumatera

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
H08S2	**Diego Garcia H**	**26.03**	**240**	T	T	00 39 19.8	
	baz=62,SNR=5.9						
H08S3	**Diego Garcia H**	**26.03**	**240**	T	T	00 39 20.4	
	baz=62						
H08S1	**Diego Garcia H**	**26.05**	**240**	T	T	00 39 19.8	
	baz=62						
MKAR	**Makanchi Array**	**42.64**	**347**	P	P	00 14 42.2	**-0.2**
	0.2nm,0.4s,baz=158,slow=8.9,SNR=3.9						
WRA	**Warramunga Arr**	**46.12**	**124**	P	P	00 15 10.7	**+0.1**
	0.6nm,0.8s,baz=302,slow=9.8,SNR=4.4						
KURBB	**Kurchatov Arra**	**47.10**	**346**	P	P	00 15 17.9	**+0.1**
	0.1nm,0.2s,baz=167,slow=7.0,SNR=4.6						
ASAR	**Alice Springs**	**47.66**	**129**	P	P	00 15 22.5	**-0.3**
	0.3nm,0.6s,baz=303,slow=7.6,SNR=5.4						
ZALV	**Zalesovo Beam**	**49.06**	**352**	P	P	00 15 32.7	**-0.2**
	0.9nm,0.4s,baz=184,slow=8.3,SNR=4.4						

WEL 23 00:27:58.6±0.4, 40˚.13S×173˚.57E, h191km±3km, ML3.5/7, 5C-7D, Error ellipse: s-maj=2.8km s-min=1.6km az=90.0, Cook Strait

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
DUWZ	**D'Urville Isla**	**0.72**	**158**	⇑P	Pn	00 28 25.8	**+0.1**
KHEZ	**Kahui Hut**	**0.91**	**23**	P	Pn	00 28 27.0	**+0.1**
KHEZ				S	Sn	00 28 48.1	**-0.6**
LREZ	**Lake Rotokare**	**0.93**	**44**	P	Pn	00 28 27.1	**+0.2**
NEZ	**North Egmont**	**0.95**	**26**	P	Pn	00 28 27.1	**-0.1**
NEZ				S	Sn	00 28 48.7	**-0.6**
QRZ	**Quartz Range**	**1.05**	**228**	⇑P	Pn	00 28 27.5	**-0.2**
QRZ				S	Sn	00 28 48.3	**-2.2**
NNZ	**Nelson**	**1.09**	**187**	⇑P	Pn	00 28 27.9	**-0.2**
NNZ				S	Sn	00 28 50.0	**-1.1**
WAZ	**Wanganui**	**1.16**	**71**	⇑P	Pn	00 28 29.2	**+0.6**
TCW	**Tory Channel**	**1.21**	**154**	P	Pn	00 28 29.2	**+0.3**
TCW				AML	AML	00 28 52.3	
TCW				AML	AML	00 28 54.4	
KIW	**Kapiti Island**	**1.26**	**126**	P	Pn	00 28 29.3	**-0.1**
KIW				AML	AML	00 28 52.8	
TUWZ	**Tuamarina**	**1.33**	**168**	P	Pn	00 28 30.0	**+0.1**
TUWZ				AML	AML	00 28 53.2	
TUWZ				AML	AML	00 28 55.3	
OHWZ	**Ohakea**	**1.34**	**94**	P	Pn	00 28 30.7	**+0.6**
VRZ	**Vera Road**	**1.36**	**43**	P	Pn	00 28 29.6	**-0.7**
VRZ				S	Sn	00 28 53.3	**-1.6**
OGWZ	**Otaki Gorge**	**1.40**	**120**	P	Pn	00 28 30.7	**+0.1**
CAW	**Cannon Point**	**1.50**	**131**	P	Pn	00 28 31.6	**+0.1**
CAW				AML	AML	00 28 56.9	
CAW				AML	AML	00 28 58.0	
BSWZ	**Blackbirch Sta**	**1.60**	**172**	P	Pn	00 28 32.6	**+0.2**
MRZ	**Mangatainoka R**	**1.63**	**110**	P	Pn	00 28 32.4	**-0.3**
HOWZ	**Holdsworth Sta**	**1.67**	**118**	P	Pn	00 28 32.8	**-0.3**
THZ	**Tophouse**	**1.71**	**197**	P	Pn	00 28 33.1	**-0.4**
POWZ	**Post Office Ro**	**1.71**	**99**	P	Pn	00 28 33.1	**-0.3**
WNVZ	**Wahianoa**	**1.76**	**64**	⇓P	Pn	00 28 33.6	**-0.6**
FWVZ	**Far West T-bar**	**1.77**	**61**	⇓P	Pn	00 28 33.6	**-0.7**
MTW	**Mount Morrison**	**1.80**	**125**	P	Pn	00 28 34.0	**-0.3**
MTW				AML	AML	00 29 00.6	
MTW				AML	AML	00 29 01.2	
MOVZ	**Moawhango**	**1.83**	**67**	P	Pn	00 28 33.8	**-1.0**
TSZ	**Takapari Road**	**1.84**	**89**	P	Pn	00 28 34.2	**-0.6**
TSZ				AML	AML	00 29 02.8	
WTVZ	**West Tongariro**	**1.86**	**58**	P	Pn	00 28 34.4	**-0.7**
TIWZ	**Tintock**	**1.89**	**111**	P	Pn	00 28 34.9	**-0.3**
TIWZ				AML	AML	00 29 02.5	
TIWZ				AML	AML	00 29 03.0	
OTVZ	**Oturere**	**1.89**	**60**	⇓P	Pn	00 28 34.9	**-0.5**
HIZ	**Hauiti**	**1.90**	**32**	P	Pn	00 28 34.6	**-0.8**
KRVZ	**Karewarewa**	**1.91**	**58**	⇓P	Pn	00 28 34.9	**-0.8**
PLWZ	**Palliser**	**1.93**	**139**	P	Pn	00 28 35.7	**0.0**
DVHZ	**Dannevirke**	**2.00**	**96**	P	Pn	00 28 35.8	**-0.6**
BHHZ	**Black Hill Sta**	**2.03**	**72**	P	Pn	00 28 35.6	**-1.2**
PNHZ	**Pukenui**	**2.04**	**85**	P	Pn	00 28 36.3	**-0.5**
BFZ	**Birch Farm**	**2.12**	**106**	⇓P	Pn	00 28 37.2	**-0.5**
WPHZ	**Waipukurau**	**2.21**	**89**	P	Pn	00 28 38.2	**-0.5**
KRHZ	**Kereru**	**2.21**	**78**	P	Pn	00 28 38.0	**-0.7**
ANWZ	**Angora Road**	**2.25**	**99**	P	Pn	00 28 38.8	**-0.3**
KHZ	**Kahutara**	**2.28**	**180**	⇓P	Pn	00 28 38.7	**-0.7**
KWHZ	**Kaweka Forest**	**2.31**	**73**	⇑P	Pn	00 28 39.7	**-0.2**
PRHZ	**Porangahau**	**2.36**	**94**	P	Pn	00 28 39.9	**-0.4**
BKZ	**Black Stump Fm**	**2.46**	**68**	⇓P	Pn	00 28 40.3	**-1.3**
PXZ	**Pawanui**	**2.53**	**89**	P	Pn	00 28 41.7	**-0.5**
PXZ				S	Sn	00 29 13.2	**-3.1**
NMHZ	**Naumai**	**2.71**	**69**	P	Pn	00 28 44.3	**-0.2**
LTZ	**Lake Taylor**	**2.82**	**200**	P	Pn	00 28 44.7	**-1.0**
INZ	**Inchbonnie**	**3.04**	**211**	P	Pn	00 28 47.2	**-1.0**
SNGZ	**Shannon Statio**	**3.22**	**66**	P	Pn	00 28 49.8	**-0.6**
URZ	**Urewera**	**3.33**	**57**	P	Pn	00 28 49.6	**-2.2**
KNZ	**Kokohu**	**3.36**	**72**	P	Pn	00 28 50.7	**-1.4**
OXZ	**Oxford**	**3.39**	**199**	P	Pn	00 28 50.5	**-1.9**
MHGZ	**Mahia Peninsul**	**3.49**	**75**	P	Pn	00 28 52.7	**-1.0**
RIGZ	**Rimuhau**	**3.55**	**68**	P	Pn	00 28 53.2	**-1.3**
PRGZ	**Paritu Road**	**3.55**	**72**	P	Pn	00 28 53.2	**-1.3**
MWZ	**Matawai**	**3.56**	**61**	P	Pn	00 28 52.8	**-1.9**
MQZ	**McQueen's Vall**	**3.64**	**190**	P	Pn	00 28 52.7	**-2.7**
TWGZ	**Tauwhareparae**	**3.95**	**62**	P	Pn	00 28 57.9	**-1.6**
RPZ	**Rata Peaks**	**4.04**	**207**	P	Pn	00 28 58.6	**-2.0**
FOZ	**Fox Glacier**	**4.40**	**218**	P	Pn	00 29 03.3	**-1.8**
MXZ	**Matakaoa Point**	**4.50**	**57**	P	Pn	00 29 04.0	**-2.4**
ODZ	**Otahua Downs**	**5.36**	**203**	P	Pn	00 29 15.7	**-1.7**

*NIED **23** 00:29:00, 38˚.90N×142˚.40E, h20km, Mw3.6 Best double couple: M0 3.09000×10^14 NP1:φs347.00000°, δ11.00000°, λ114.00000°. NP2:φs142.00000°, δ80.00000°, λ85.00000°.*
*ISCJB **23** 00:29:02.2±1.3, 38˚.86N±0˚.04×142˚.50E±0˚.08, h29km±7km, mb3.5/5, Error ellipse: s-maj=10.3km s-min=6.0km az=18.1*
*JMA **23** 00:29:04.4±0.1, 38˚.89N×142˚.36E, h43km±2km, M3.7*
*IDC **23** 00:29:08.9±3.8, 38˚.80N×142˚.24E, h88km±36km, mb3.1/5, mb1 3.4/7, mb1mx3.2/35, mbtmp3.5/7, Error ellipse: s-maj=38.8km s-min=17.4km az=108.0*

ISC 23 00:29:02.0±1.8, 38˚.83N±0˚.04×142˚.43E±0˚.08, h25km±13km, n27, σ1°94/28, mb3.6/5, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
OFUJ	**Ofunato**	**0.65**	**293**	P	**Pn**	**00 29 16.4**	**+0.8**
OFUJ				S	**Sn**	**00 29 24.1**	**-0.9**
MIYJ	**Miyakonagasawa**	**0.89**	**328**	P	**Pb**	**00 29 19.2**	**+0.5**
MIYJ				S	**Sb**	**00 29 29.7**	**-0.5**
JIO	**Ouri**	**0.93**	**247**	P	**Pb**	**00 29 20.5**	**+1.1**
JIO				S	**Sn**	**00 29 31.9**	**0.0**
JMK	**Ichinoseki**	**0.95**	**278**	P	**Pb**	**00 29 20.7**	**+0.8**
JMK				S	**Sn**	**00 29 32.4**	**-0.2**
JOM	**Ohasama**	**1.10**	**306**	P	**Pb**	**00 29 22.5**	**+0.2**
JKZ	**Kuzumaki**	**1.44**	**324**	P	**Pb**	**00 29 27.6**	**-0.5**
JKZ				S	**Sn**	**00 29 44.9**	**+0.3**
JOU	**Okura**	**1.46**	**252**	P	**Pb**	**00 29 28.6**	**+0.1**
JOU				*e*S	**Sb**	**00 29 46.7**	**+0.1**
JRG	**Rokugo**	**1.51**	**293**	P	**Pb**	**00 29 28.7**	**-0.6**
JRG				S	**Sb**	**00 29 47.4**	**-0.7**
JMM	**Marumori**	**1.61**	**234**	P	**Pb**	**00 29 30.5**	**-0.5**
JYK	**Kaneyama**	**1.62**	**274**	P	**Pb**	**00 29 30.4**	**-0.8**
JANG	**Nango**	**1.70**	**336**	P	**Pn**	**00 29 30.5**	**+0.4**
JFK	**Kawauchi**	**1.91**	**221**	P	**Pb**	**00 29 34.9**	**-1.2**
JFK				*e*S	**Sn**	**00 29 57.1**	**+0.9**
JYS	**Shirataka**	**1.95**	**253**	P	**Pb**	**00 29 35.8**	**-1.1**
JFT	**Otama**	**2.11**	**232**	P	**Pb**	**00 29 38.4**	**-1.1**
MJAR	**Matsushiro Arr**	**4.05**	**237**	P	Pn	00 30 06.6	**+4.1**
	1.3nm,0.3s,baz=42,slow=12,SNR=7.1						
MJAR				S	**Sn**	**00 30 51.9**	**+2.8**
	0.8nm,0.3s,baz=20,slow=18,SNR=3.1						
USRK	**Ussuriysk Ar.**	**9.49**	**308**	P	Pn	00 31 21.2	**+4.2**
	0.2nm,0.3s,baz=115,slow=15,SNR=4.8						
H11N2	**WAKE ISLAND Hy**	**28.44**	**125**	T	T	01 05 23.7	
	baz=318,slow=75,SNR=165						
H11N1	**WAKE ISLAND Hy**	**28.45**	**125**	T	T	01 05 24.3	
	baz=318,slow=75,SNR=182						
H11N3	**WAKE ISLAND Hy**	**28.46**	**125**	T	T	01 05 24.9	
	baz=318,slow=75,SNR=186						
H11S1	**WAKE ISLAND Hy**	**29.22**	**127**	T	T	01 06 22.1	
	baz=319,slow=76,SNR=23						
H11S3	**WAKE ISLAND Hy**	**29.23**	**127**	T	T	01 06 22.2	
	baz=319,slow=76,SNR=23						
H11S2	**WAKE ISLAND Hy**	**29.24**	**127**	T	T	01 06 22.3	
	baz=319,slow=76,SNR=23						
MKAR	**Makanchi Array**	**43.87**	**301**	P	**P**	**00 37 05.4**	**-0.9**
	0.3nm,0.5s,baz=87,slow=9.7,SNR=4.5						
ILAR	**Eielson Array**	**47.55**	**33**	P	**P**	**00 37 35.7**	**+0.7**
	0.6nm,0.7s,baz=264,slow=6.0,SNR=6.5						
WRA	**Warramunga Arr**	**58.95**	**189**	P	**P**	**00 38 58.9**	**-0.3**
	0.7nm,0.4s,baz=6.6,slow=7.0,SNR=3.9						
YKA	**Yellowknife Ar**	**61.86**	**31**	P	**P**	**00 39 19.0**	**+0.4**
	0.1nm,0.6s,baz=305,slow=6.7,SNR=4.5						
ASAR	**Alice Springs**	**62.68**	**189**	P	**P**	**00 39 23.6**	**-1.0**
	0.3nm,0.7s,baz=14,slow=7.9,SNR=5.4						

IDC 23 00:31:56.6±8.6, 37˚.87N×144˚.74E, h0km, mb3.6/2, mb1 3.6/4, mb1mx3.3/35, mbtmp3.6/4, ML2.6/2, MS2.9/2, Ms1 2.9/2, ms1mx2.4/37, Error ellipse: s-maj=134.4km s-min=70.0km az=123.0, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
MJAR	**Matsushiro Arr**	**5.38**	**258**	Pn	Pn	00 33 17.8	**-0.4**
	0.9nm,0.3s,baz=78,slow=9.0,SNR=5.2						
ASAJ	**Asahikawa**	**6.45**	**346**	LR	LR	00 35 51.8	
	comp=Z,35nm,21.3s,baz=180,slow=36						
USRK	**Ussuriysk Ar.**	**11.52**	**307**	Pn	Pn	00 34 41.6	**-0.6**
	0.1nm,0.3s,baz=115,slow=12,SNR=4.2						
SONM	**Songino Array**	**29.55**	**302**	P	P	00 38 03.8	**+0.8**
	0.5nm,0.7s,baz=92,slow=8.4,SNR=4.8						
MKAR	**Makanchi Array**	**45.92**	**302**	P	P	00 40 20.4	**-0.6**
	0.7nm,0.9s,baz=80,slow=8.2,SNR=5.5						
FINES	**FINESS Array B**	**69.29**	**333**	LR	LR	01 15 50.6	
	comp=Z,24nm,19.1s,baz=22,slow=38						

IDC 23 00:34:11.3±2.8, 35˚.77N×142˚.46E, h0km, mb3.6/3, mb1 3.6/5, mb1mx3.3/36, mbtmp3.5/5, ML3.2/2, Error ellipse: s-maj=63.0km s-min=27.8km az=67.0, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JHJ	**Hachijo jima 2**	**3.45**	**221**	Pn	Pn	00 35 06.0	**-0.2**
	11nm,0.3s,baz=114,slow=20,SNR=2.7						
JHJ				Sn	Sn	00 35 39.0	**-8.8**
	27nm,0.3s,baz=72,slow=23,SNR=7.6						
MJAR	**Matsushiro Arr**	**3.53**	**284**	Pn	Pn	00 35 07.0	**-0.3**
	1.5nm,0.3s,baz=90,slow=10,SNR=5.2						
SONM	**Songino Array**	**29.20**	**306**	P	P	00 40 14.6	**0.0**
	0.5nm,0.6s,baz=101,slow=9.3,SNR=4.7						
MKAR	**Makanchi Array**	**45.51**	**303**	P	P	00 42 32.2	**-0.2**
	0.8nm,0.9s,baz=93,slow=9.6,SNR=4.9						
WRA	**Warramunga Arr**	**55.94**	**189**	P	P	00 43 51.2	**0.0**
	0.4nm,0.3s,baz=7.4,slow=7.5,SNR=2.9						

*ISCJB **23** 00:56:03.7±0.8, 39˚.78N±0˚.05×143˚.6E±0˚.1, h6km, mb3.7/7, MS3.1/2, Error ellipse: s-maj=12.2km s-min=6.4km az=26.1*
*JMA **23** 00:56:06.1±0.2, 39˚.85N×143˚.50E, h19km, M4.2*
*IDC **23** 00:56:11.3±3.1, 39˚.79N×143˚.38E, h45km±28km, mb3.6/8, mb1 3.7/10, mb1mx3.4/43, mbtmp3.8/10, ML3.4/2, MS3.0/7, Ms1 3.0/7, ms1mx2.8/35, Error ellipse: s-maj=37.5km s-min=18.8km az=89.0*

ISC 23 00:56:06.3±1.1, 39˚.83N±0˚.06×143˚.4E±0˚.1, h6km, n27, σ1°05/20, mb3.9/7, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JANG	**Nango**	**1.52**	**292**	P	**Pn**	**00 56 33.7**	**-0.4**
JKZ	**Kuzumaki**	**1.58**	**276**	P	**Pn**	**00 56 35.4**	**+0.6**
JMK	**Ichinoseki**	**1.88**	**243**	P	**Pn**	**00 56 39.4**	**+0.4**
JMK				S	**Sb**	**00 57 04.9**	**+0.1**
JTM	**Tenmabayashi**	**2.00**	**299**	P	**Pn**	**00 56 41.3**	**+0.7**
JOT	**Ohata**	**2.35**	**312**	P	**Pn**	**00 56 46.2**	**+0.8**
JOU	**Okura**	**2.56**	**236**	P	**Pn**	**00 56 49.9**	**+1.5**
JCH	**Churui**	**2.78**	**360**	P	**Pn**	**00 56 51.4**	**0.0**
JCH				*e*S	**Sn**	**00 57 23.4**	**-1.8**
JMM	**Marumori**	**2.81**	**227**	P	**Pn**	**00 56 51.3**	**-0.4**
ASAJ	**Asahikawa**	**4.32**	**353**	P	**Pn**	**00 57 14.8**	**+2.2**
	1.6nm,0.3s,baz=128,slow=18,SNR=2.6						
MJAR	**Matsushiro Arr**	**5.22**	**233**	P	**Pn**	**00 57 26.6**	**+1.7**
	1.3nm,0.3s,baz=50,slow=8.8,SNR=9.7						
MJAR				LR	LR	00 59 57.7	
	comp=Z,52nm,19.1s,baz=50,slow=44						
USRK	**Ussuriysk Ar.**	**9.53**	**301**	P	Pn	00 58 29.4	**+5.4**
	0.5nm,0.3s,baz=89,slow=13,SNR=12						
USRK				LR	LR	01 01 58.5	
	comp=Z,66nm,18.3s,baz=158,slow=36						
JNU	**Nakatsue**	**12.07**	**240**	LR	LR	01 03 58.1	
	comp=Z,86nm,20.6s,baz=108,slow=39						
KSRS	**Korea Array**	**12.31**	**264**	P	Pn	00 59 09.3	**+7.3**
	0.2nm,0.3s,baz=79,slow=14,SNR=3.7						
KSRS				LR	LR	01 03 38.7	
	comp=Z,62nm,18.2s,baz=72,slow=36						
KLR	**Kul'dur**	**12.52**	**322**	LR	LR	01 04 16.1	
	comp=Z,76nm,19.1s,baz=142,slow=39						
MA2	**Magadan**	**20.31**	**11**	P	**P**	**01 00 43.9**	**+1.1**
	1.1nm,0.3s,baz=176,slow=13,SNR=4.6						
SONM	**Songino Array**	**27.64**	**299**	P	**P**	**01 01 54.9**	**+0.2**
	0.7nm,0.6s,baz=101,slow=9.5,SNR=6.5						
H11N2	**WAKE ISLAND Hy**	**28.45**	**128**	T	T	01 32 58.1	
	baz=319,slow=75,SNR=46						
H11N1	**WAKE ISLAND Hy**	**28.46**	**128**	T	T	01 32 59.2	
	baz=319,slow=75,SNR=33						
H11N3	**WAKE ISLAND Hy**	**28.47**	**128**	T	T	01 32 59.1	
	baz=319,slow=75,SNR=36						
TLY	**Talaya**	**29.78**	**307**	LR	LR	01 14 53.8	
	comp=Z,19nm,18.0s,baz=98,slow=38						
ZALV	**Zalesovo Beam**	**41.23**	**310**	P	**P**	**01 03 51.7**	**0.0**
	2.2nm,0.4s,baz=88,slow=7.4,SNR=4.8						
CMAR	**Chiang Mai Arr**	**43.72**	**254**	LR	LR	01 23 36.4	
	comp=Z,57nm,18.0s,baz=190,slow=38						
MKAR	**Makanchi Array**	**44.00**	**300**	P	**P**	**01 04 14.2**	**-0.1**
	1.0nm,0.8s,baz=85,slow=8.8,SNR=8.2						
WRA	**Warramunga Arr**	**60.05**	**190**	P	**P**	**01 06 12.7**	**-1.4**
	0.6nm,0.7s,baz=7.1,slow=7.1,SNR=3.8						
ASAR	**Alice Springs**	**63.78**	**190**	P	**P**	**01 06 38.8**	**-0.3**
	0.2nm,0.4s,baz=8.7,slow=5

AKH	**Akhalkalaki**	**1.13**	**96**	P		**Pn**	**01 05 55.5**	**0.0**
AKH				S		**Sn**	**01 06 11.1**	**-0.3**
CHVG	**Ch'k'valeri**	**1.18**	**3**	P		**Pb**	**01 05 55.7**	**-0.1**
CHVG				S		**Sn**	**01 06 12.7**	**+0.3**
CHVG	**Ch'k'valeri**	**1.18**	**3**	P		**Pb**	**01 05 55.7**	**-0.1**
CHVG				S		**Sn**	**01 06 12.7**	**+0.3**
ONI	**Oni**	**1.51**	**45**	P		**Pb**	**01 06 01.3**	**-0.1**
ONI				S		**Sg**	**01 06 21.7**	**+0.2**
ONI	**Oni**	**1.51**	**45**	P		**Pb**	**01 06 01.3**	**-0.1**
ONI				S		**Sg**	**01 06 21.7**	**+0.2**
DGRG	**David-gareji**	**2.54**	**91**	P		**Pb**	**01 06 17.7**	**-1.2**
DGRG	**David-gareji**	**2.54**	**91**	P		**Pb**	**01 06 17.7**	**-1.2**

MEX 23 01:20:03.4±0.6, 31°.18N×115°.62W, h20^{km}±148^{km}, MD3.5, Baja California

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SPIG	**San Pedro Mart**	**0.19**	**136**	*i* P	Pb	01 20 08.0	-0.7
SPIG				*es*	Sb	01 20 11.0	-1.4
CBX	**Cerro Bola**	**1.43**	**322**	*i* P	Pn	01 20 24.5	-3.9
CBX				*i* S	Sn	01 20 41.9	-4.9

*ISCJB **23** 01:50:31.8±0.2, 11°.58N±0°.02×85°.97W±0°.02, h204^{km}±1^{km}, mb4.7/156, Error ellipse: s-maj=4.9km s-min=2.2km az=40.0*
*CASC **23** 01:50:32.2±1.8, 11°.56N×86°.00W, h186^{km}±7^{km}, MD4.6, ML4.4, mb4.9(NEIC)*
*NEIC **23** 01:50:32.5±0.2, 11°.57N×85°.95W, mb4.9/137, Error ellipse: s-maj=5.1km s-min=3.2km az=222.0*
NEIC Felt at Catarina, Rivas and Tola. Felt [III] at Sardinal, Costa Rica. Also felt at Belen, Liberia, Santa Cruz, Samara and Tilaran.
*IDC **23** 01:50:32.6±0.4, 11°.75N×85°.76W, h194^{km}±3^{km}, mb4.1/26, mb1 4.2/28, mb1mx4.1/47, mbtmp4.6/28, Error ellipse: s-maj=12.9km s-min=6.3km az=58.0*
*BJI **23** 01:50:33.6, 11°.60N×85°.90W, h210^{km}, mB4.9/4*
ISC 23 01:50:32.5±0.3, 11°.63N±0°.04×85°.89W±0°.05, h195^{km}±2^{km}, h195^{km}:pP-P, n781, s0°97/854, mb4.8/156, 10C-1D, Nicaragua

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MASN	**Masaya**	**0.44**	**324**	*e*P	**Pn**	**01 50 58.0**	**-0.9**
MGAN	**Managua**	**0.62**	**326**	*e*S	**Sn**	**01 51 19.7**	**-1.0**
MGAN				AML	AML	01 51 21.6	
	comp=E,2μm,0.5s						
TISN	**Laguna Tiscapa**	**0.63**	**324**	*e*P	**Pn**	**01 50 58.9**	**-0.8**
XAVN	**Gruta Xavier**	**0.67**	**320**	*e*P	**Pn**	**01 50 59.1**	**-0.7**
BOAB	**BOACO BROADBAN**	**0.84**	**15**	*e*P	**Pn**	**01 51 00.4**	**-0.4**
BOAB				*e*S	**Sn**	**01 51 21.4**	**-1.5**
COPN	**Copaltepe**	**0.88**	**309** ⇓	*i* P	**Pn**	**01 50 59.7**	**-1.3**
CNGN	**Cerro Negro**	**1.18**	**318**	*e*P	**Pn**	**01 51 02.2**	**-0.9**
CNGN				*e*S	**Sn**	**01 51 26.2**	**-0.7**
VCR	**Vista de Mar**	**1.51**	**170** ⇑	*i* P	**Pn**	**01 51 06.0**	**-0.1**
VCR				*e*S	**Sn**	**01 51 31.3**	**-0.9**
ESTN	**Estel**	**1.54**	**342**	*e*P	**Pn**	**01 51 06.0**	**-0.2**
CRIN	**San Cristobal**	**1.56**	**313**	*e*P	**Pn**	**01 51 05.7**	**-0.7**
JTS	**JuntasAbangare**	**1.61**	**145**	P	**Pn**	**01 51 06.6**	**-0.3**
	comp=E,141nm,0.3s,baz=322,slow=5.9,SNR=613						
JTS				S	**Sn**	**01 51 31.7**	**-2.0**
	comp=E,2μm,0.3s,baz=307,slow=20,SNR=25						
JTS	**JuntasAbangare**	**1.61**	**145**	*e*Pn	**Pn**	**01 51 06.1**	**-0.9**
JTS				*e*Sn	**Sn**	**01 51 31.8**	**-1.8**
ESPN	**Las Esperanzas**	**1.65**	**70**	*e*P	**Pn**	**01 51 07.3**	**+0.2**
JCR	**Jicaral**	**1.92**	**157**	*e*P	**Pn**	**01 51 10.3**	**+0.4**
JCR				*e*S	**Sn**	**01 51 36.8**	**-2.4**
CSGN	**Cosiguina Volc**	**2.11**	**310**	*e*P	**Pn**	**01 51 11.1**	**-0.9**
CSGN				*e*S	**Sn**	**01 51 42.0**	**-0.7**
HDC	**Heredia**	**2.38**	**133**	*e*P	**Pn**	**01 51 14.8**	**-0.1**
HDC				*e*S	**Sn**	**01 51 48.6**	**+0.7**
HDC	**Heredia**	**2.38**	**133**	*e*Pn	**Pn**	**01 51 15.8**	**+0.9**
CNCH	**Conchagua**	**2.51**	**311** ⇑	*e*P	**Pn**	**01 51 15.8**	**-0.5**
CNCH				*e*S	**Sn**	**01 51 49.6**	**-1.0**
TGUH	**Tegucigalpa,Un**	**2.77**	**331** ⇑	*i* P	**Pn**	**01 51 20.1**	**+1.0**
TGUH	**Tegucigalpa,Un**	**2.77**	**331**	*e*Pn	**Pn**	**01 51 20.0**	**+0.8**
QCR	**Quepos**	**2.77**	**142** ⇑	*e*P	**Pn**	**01 51 20.1**	**+0.9**
QCR				*e*S	**Sn**	**01 51 54.9**	**-0.8**
BUS	**Buena Vista**	**2.94**	**134**	*e*P	**Pn**	**01 51 22.5**	**+0.9**
VSM	**San Miguel**	**2.94**	**308**	*e*P	**Pn**	**01 51 21.2**	**-0.2**
LCY	**Lacayo**	**2.95**	**307** ⇑	*e*P	**Pn**	**01 51 21.3**	**-0.2**
PACA	**Pacayal**	**3.00**	**308** ⇑	*i* P	**Pn**	**01 51 21.8**	**-0.2**
CAHU	**Cacacuatique**	**3.11**	**313**	*e*P	**Pn**	**01 51 23.5**	**0.0**
TECA	**Tecapa**	**3.16**	**306** ⇑	*i* P	**Pn**	**01 51 23.7**	**-0.3**
SNVI	**San Vicente**	**3.49**	**305**	*e*P	**Pn**	**01 51 27.7**	**-0.2**
SNVI				*e*S	**Sn**	**01 52 08.2**	**-2.6**
LFRS	**El Faro**	**3.68**	**303** ⇑	*i* P	**Pn**	**01 51 30.0**	**-0.3**
LBRS	**Las Brisas**	**3.73**	**305**	*e*P	**Pn**	**01 51 30.6**	**-0.2**
SNET	**Serv Nac Est T**	**3.85**	**302**	*e*P	**Pn**	**01 51 32.3**	**-0.1**
SNET				AML	AML	01 52 24.0	
	comp=Z,4μm,0.5s						
COLS	**Colinas**	**3.90**	**302**	*e*P	**Pn**	**01 51 33.1**	**+0.1**
BOQS	**Boqueron**	**3.92**	**303**	*e*P	**Pn**	**01 51 33.9**	**+0.5**
TBS2		**4.25**	**131**	*e*P	**Pn**	**01 51 38.8**	**+1.4**
SBLS	**San Blas**	**4.26**	**302**	*e*P	**Pn**	**01 51 37.8**	**+0.2**
SNJE	**San Jose**	**4.26**	**302**	*e*P	**Pn**	**01 51 37.6**	**+0.1**
RTR	**El Retiro**	**4.30**	**302**	*e*P	**Pn**	**01 51 38.5**	**+0.3**
RBDL	**Robledal**	**4.45**	**304**	*e*P	**Pn**	**01 51 40.2**	**+0.2**
PNME	**Penonome**	**6.30**	**119**	*e*P	**Pn**	**01 52 04.3**	**+0.6**
BCIP	**Isla Barro Col**	**6.43**	**112** ⇑	*i* P	**Pn**	**01 52 06.3**	**+0.9**
BCIP	**Isla Barro Col**	**6.43**	**112**	*e*Pn	**Pn**	**01 52 06.8**	**+1.4**
BCIP	**Isla Barro Col**	**6.43**	**112**	*e*P	**Pn**	**01 52 06.4**	**+1.0**
TEIG	**Tepich**	**8.85**	**345**	P	**Pn**	**01 52 38.5**	**+1.6**
	comp=Z,0.7nm,0.3s,baz=89,slow=24,SNR=6.7						
CMIG	**Matias Romero**	**10.27**	**303**	P	**Pn**	**01 52 54.8**	**-0.5**
	comp=Z,5.5nm,0.3s,baz=150,slow=10,SNR=49						
CMIG				S	Sn	01 54 41.8	-8.1
	comp=Z,2.1nm,0.3s,baz=41,slow=16,SNR=4.4						
MTDJ	**Mount Denham**	**10.40**	**50**	*e*Pn	**Pn**	**01 52 56.8**	**-0.3**
MOTC	**Monteria, Cord**	**10.45**	**105**	*e*P	**Pn**	**01 52 56.8**	**-1.0**
DBBC	**Dabeiba**	**10.59**	**115**	*e*P	**Pn**	**01 53 01.3**	**+1.7**
GRGC	**Isla de Gorgon**	**11.49**	**138**	*e*P	**Pn**	**01 53 12.6**	**+1.5**
HELC	**Santa Helena**	**11.57**	**117**	*e*P	**Pn**	**01 53 13.2**	**+0.7**
GUYC	**Guyana, Colomb**	**12.18**	**121**	*e*P	**P**	**01 53 22.9**	**-1.0**
NORC	**Norcasia**	**12.45**	**118**	*e*P	**P**	**01 53 26.0**	**-1.5**
TOLC	**Tolima**	**12.58**	**123**	*e*P	**P**	**01 53 31.1**	**+1.8**
OCAC	**Ocana**	**12.83**	**104**	*e*P	**Pn**	**01 53 28.6**	**+0.4**
POPC	**Popayan, Colom**	**12.84**	**134**	*e*P	**P**	**01 53 30.8**	**-1.3**
PAYG	**Puerto Ayora**	**12.98**	**200**	*e*P	**P**	**01 53 35.7**	**+2.3**
GTBY	**Guantanamo Bay**	**13.25**	**50**	*e*Pn	**P**	**01 53 38.0**	**+1.7**
ROSC	**El Rosal**	**13.28**	**120**	P	**P**	**01 53 37.4**	**+0.2**
	comp=Z,5.4nm,0.3s,baz=151,slow=5.2,SNR=32						
ROSC	**El Rosal**	**13.28**	**120**	*e*P	**P**	**01 53 38.2**	**+1.1**
ROSC	**El Rosal**	**13.28**	**120**	*e*P	**P**	**01 53 37.7**	**+0.5**
CMBC	**Cumbal**	**13.30**	**142**	*e*P	**P**	**01 53 36.9**	**-0.4**
GIRC	**Giron, Santand**	**13.31**	**109**	*e*P	**P**	**01 53 36.7**	**-0.6**
CRUC	**La Cruz**	**13.36**	**138**	*e*P	**P**	**01 53 37.5**	**-0.5**
PRAC	**Prado**	**13.44**	**125**	*e*P	**P**	**01 53 38.6**	**+0.1**
GRMC	**Gramalote, San**	**13.47**	**106**	*e*P	**Pn**	**01 53 36.9**	**+0.6**
CBRI	**Barrientos, No**	**13.48**	**106**	*e*P	**Pn**	**01 53 36.4**	**0.0**
OTAV	**Otavalo**	**13.51**	**146**	*e*P	**P**	**01 53 39.2**	**-0.6**
OTAV	**Otavalo**	**13.51**	**146**	*e*P	**P**	**01 53 39.1**	**-0.6**
URIC	**Uribia, Colomb**	**13.61**	**88**	*e*P	**P**	**01 53 42.0**	**+1.6**
TLIG	**Tlapa**	**13.61**	**297**	*e*Pn	**P**	**01 53 40.6**	**+0.1**
PAMC	**Pamplona, Colo**	**13.69**	**107**	*e*P	**Pn**	**01 53 40.4**	**+1.1**
CHIC	**Chingaza**	**13.89**	**119**	*e*P	**P**	**01 53 44.8**	**+0.9**
VILC	**Villavicencio,**	**14.20**	**121**	*e*P	**P**	**01 53 46.5**	**-0.5**
FLOC	**Florencia**	**14.24**	**134**	*e*P	**P**	**01 53 47.6**	**+0.2**
SJAC	**San Juan de Ar**	**14.45**	**124**	*e*P	**P**	**01 53 51.2**	**+1.4**
SDV	**Santo Domingo**	**15.26**	**99**	P	**P**	**01 53 59.5**	**+0.7**
	comp=Z,8.0nm,0.3s,baz=277,slow=8.1,SNR=20						
SDV	**Santo Domingo**	**15.26**	**99**	*e*P	**P**	**01 53 58.9**	**+0.1**
	comp=Z,150nm,0.9s						
SDV	**Santo Domingo**	**15.26**	**99**	*e*P	**P**	**01 53 59.2**	**+0.3**
SDDR	**Presa de Saban**	**15.86**	**61**	*e*P	**Pn**	**01 54 07.8**	**+2.3**
	comp=Z,46nm,1.0s						
GUVC	**San Jose del G**	**15.95**	**123**	*e*P	**Pn**	**01 54 08.8**	**+2.3**
SDD	**Santo Domingo**	**16.85**	**64**	*e*P	**Pn**	**01 54 18.4**	**+1.1**
	comp=Z,269nm,0.9s						
DWPF	**Disney Wildern**	**16.92**	**14**	*e*P	**Pn**	**01 54 18.7**	**+0.6**
	comp=Z,114nm,1.5s						
GRTK	**Grand Turk**	**17.21**	**53**	*e*P	**Pn**	**01 54 22.1**	**+0.6**
	comp=Z,121nm,0.8s						
MPR	**Mayaguez**	**19.25**	**68**	*e*P	**P**	**01 54 43.4**	**+1.1**
	comp=Z,83nm,0.9s						
AGP	**Aguadilla**	**19.31**	**67**	*e*P	**Pn**	**01 54 44.8**	**-1.5**
	comp=Z,572nm,1.2s						
ZAIG	**Zacatecas**	**19.38**	**307**	*e*P	**Pn**	**01 54 50.2**	**+2.8**
	comp=Z,5.6nm,1.0s						
542A	**Morse**	**19.42**	**342**	P	**Pn**	**01 54 48.0**	**+0.5**
	baz=160						
034A	**Hebbronville**	**19.51**	**324**	P	**Pn**	**01 54 48.1**	**-0.5**
	baz=140						
444A	**Pine Grove**	**19.52**	**347**	P	**Pn**	**01 54 49.0**	**+0.3**
	baz=166						
541A	**Lake Charles**	**19.56**	**341**	P	**Pn**	**01 54 49.2**	**+0.1**
	baz=158						
CELP	**Cerrillos**	**19.73**	**69**	*e*P	**P**	**01 54 48.3**	**+0.9**
348A	**Jackson**	**19.78**	**355**	P	**Pn**	**01 54 50.9**	**-0.9**
	baz=174						
443A	**Delano Plantat**	**19.81**	**345**	P	**P**	**01 54 49.6**	**+1.5**
	baz=163						
638A	**Rosharon**	**19.82**	**335**	P	**Pn**	**01 54 51.1**	**-1.2**
	baz=152						
934A	**Benavides**	**19.82**	**325**	P	**P**	**01 54 48.7**	**+0.4**
	baz=141						
TIGA	**Tifton**	**19.83**	**6**	P	**P**	**01 54 50.2**	**+1.8**
	baz=187,SNR=14						
TIGA	**Tifton**	**19.83**	**6**	*e*P	**P**	**01 54 50.0**	**+1.7**
	comp=Z,68nm,0.8s						
347A	**Saraland**	**19.83**	**353**	P	**P**	**01 54 50.1**	**+1.7**
	baz=172						
442A	**Mamou**	**19.94**	**343**	P	**Pn**	**01 54 52.9**	**-0.8**
	baz=161						
346A	**Big Creek Wild**	**19.94**	**351**	P	**P**	**01 54 50.8**	**+1.2**
	baz=170						
345A	**Thompson Farm,**	**19.96**	**350**	P	**P**	**01 54 50.7**	**+1.0**
	baz=168						
835A	**Beeville**	**19.99**	**328**	P	**P**	**01 54 50.9**	**+0.8**
	baz=144						
ATAH	**Atahualpa**	**20.07**	**158**	P	Pn	01 54 55.1	-0.9
	comp=Z,21nm,0.8s,baz=353,slow=6.0,SNR=12						
SJG	**San Juan**	**20.13**	**69**	P	**P**	**01 54 51.9**	**+0.2**
	comp=Z,14nm,0.3s,baz=266,slow=6.2,SNR=52						
SJG	**San Juan**	**20.13**	**69**	*e*P	**P**	**01 54 52.2**	**+0.6**
	comp=Z,96nm,0.8s						
SJG	**San Juan**	**20.13**	**69**	*e*P	**P**	**01 54 52.1**	**+0.5**
539A	**Cross D Ranch,**	**20.14**	**337**	P	**P**	**01 54 52.6**	**+0.9**
	baz=154						
736A	**Circle Diamond**	**20.15**	**330**	P	**P**	**01 54 52.2**	**+0.3**
	baz=147						
441A	**DeRidder**	**20.20**	**342**	P	Pn	01 54 55.3	-1.6
	baz=159						
637A	**Eagle Lake**	**20.22**	**333**	P	Pn	01 54 55.3	-1.9
	baz=149						
344A	**Westbrook Farm**	**20.23**	**348**	P	Pn	01 54 55.1	-2.3
	baz=166,SNR=6.7						
834A	**Tilden**	**20.25**	**326**	P	**P**	**01 54 55.2**	**+2.3**
	baz=142						
933A	**Laredo**	**20.27**	**324**	P	**P**	**01 54 53.3**	**+0.3**
	baz=140						
343A	**Vidalia**	**20.27**	**346**	P	Pn	01 54 56.0	-1.7
	baz=164						
HUMP	**Col San Antoni**	**20.41**	**69**	*e*P	**P**	**01 54 55.1**	**+0.4**
	comp=Z,73nm,0.7s						
735A	**Kenedy**	**20.44**	**329**	P	**P**	**01 54 57.1**	**+2.2**
	baz=145						
CBYP	**Canovanas**	**20.44**	**69**	*e*P	**P**	**01 54 55.1**	**0.0**
	comp=Z,135nm,0.8s						
248A	**Dixon Mills**	**20.44**	**355**	P	**P**	**01 54 56.7**	**+1.9**
	baz=175						
440A	**Kirbyville**	**20.44**	**340**	P	Pn	01 54 57.6	-2.4
	baz=157						
HKT	**Hockley**	**20.44**	**335**	*e*P	**P**	**01 54 55.7**	**+0.9**
	comp=Z,7.7nm,1.0s						
247A	**Quitman**	**20.48**	**353**	P	**P**	**01 54 57.2**	**+1.8**
	baz=173,SNR=5.0						
246A	**Jackson Lee, B**	**20.51**	**352**	P	**P**	**01 54 56.9**	**+1.3**
	baz=171						
342A	**Flagon Creek P**	**20.53**	**344**	P	Pn	01 54 58.5	-2.6
	baz=162						
538A	**Harpers Horsep**	**20.54**	**336**	P	**P**	**01 54 57.7**	**+1.7**
	baz=153						
636A	**Smothers Creek**	**20.59**	**331**	P	**P**	**01 54 57.2**	**+0.7**
	baz=148						
245A	**Little AP, Sta**	**20.64**	**350**	P	**P**	**01 54 58.1**	**+1.1**
	baz=169,SNR=9.8						
341A	**Kurthwood**	**20.73**	**342**	P	**P**	**01 55 00.1**	**+2.1**
	baz=160						
537A	**Green Hill Far**	**20.76**	**334**	P	**P**	**01 55 00.0**	**+1.7**
	baz=150						
439A	**Center Grove,**	**20.77**	**338**	P	**P**	**01 54 59.2**	**+0.8**
	baz=155						
244A	**Avery, Jackson**	**20.79**	**348**	P	**P**	**01 54 59.8**	**+1.2**
	baz=167,SNR=8.4						
734A	**La Parita Cree**	**20.82**	**327**	P	**P**	**01 54 59.3**	**+0.4**
	baz=143						
635A	**Leesville**	**20.86**	**330**	P	**P**	**01 55 00.7**	**+1.4**
	baz=146						
833A	**Chaparral WMA,**	**20.87**	**325**	P	**P**	**01 54 59.8**	**+0.2**
	baz=140						
VBMS	**Vicksburg**	**20.93**	**349**	P	**P**	**01 55 02.2**	**+2.2**
	baz=168						
340A	**Bronson**	**21.04**	**341**	P	**P**	**01 55 02.9**	**+1.7**
	baz=158						
147A	**Livingston**	**21.06**	**354**	P	**P**	**01 55 03.1**	**+1.7**
	baz=174,SNR=15						
536A	**Bastrop**	**21.09**	**332**	P	**P**	**01 55 03.2**	**+1.4**
	baz=148						
146A	**Union**	**21.11**	**353**	P	**P**	**01 55 03.9**	**+1.9**
	baz=172						
733A	**Divot King Ran**	**21.12**	**326**	P	**P**	**01 55 02.5**	**+0.4**
	baz=141						
242A	**Grayson**	**21.14**	**345**	P	**P**	**01 55 03.2**	**+1.0**
	baz=163						
634A	**China Grove, S**	**21.14**	**329**	P	**P**	**01 55 03.1**	**+0.7**
	baz=144						
832A	**Faith Ranch, C**	**21.18**	**324**	P	**P**	**01 55 03.0**	**+0.3**
	baz=139						
339A	**Huntington**	**21.18**	**339**	P	**P**	**01 55 04.0**	**+1.2**
	baz=156						
145A	**Houston Renfro**	**21.20**	**351**	P	**P**	**01 55 04.1**	**+1.1**
	baz=169,SNR=5.8						
535A	**Dale**	**21.29**	**331**	P	**P**	**01 55 04.5**	**+0.7**
	baz=147						
241A	**Mo Tay, Goldon**	**21.31**	**343**	P	**P**	**01 55 05.1**	**+1.1**
	baz=161						
CDVI	**St. Croix**	**21.31**	**71**	*e*P	**P**	**01 55 05.4**	**+1.2**
	comp=Z,130nm,0.9s						
144A	**Alexander Plac**	**21.32**	**349**	P	**P**	**01 55 05.0**	**+0.9**
	baz=168						
LRAL	**Lakeview Retre**	**21.33**	**357**	*e*P	**P**	**01 55 05.8**	**+1.5**
	comp=Z,131nm,1.4s						
338A	**Crockett**	**21.48**	**338**	P	**P**	**01 55 07.1**	**+1.2**
	baz=154						
142A	**Monroe**	**21.55**	**346**	P	**P**	**01 55 07.6**	**+1.0**
	baz=164						
Z47A	**Carrollton**	**21.56**	**355**	P	**P**	**01 55 08.0**	**+1.3**
	baz=174,SNR=15						
436A	**Wall Ranch, Ga**	**21.57**	**334**	P	**P**	**01 55 07.7**	**+1.0**
	baz=150						
240A	**Hunter Patters**	**21.57**	**342**	P	**P**	**01 55 07.8**	**+1.0**
	baz=159						
143A	**Socs Landing,**	**21.58**	**347**	P	**P**	**01 55 07.9**	**+1.0**
	baz=165						
NATX	**Nacogdoches**	**21.61**	**339**	P	**P**	**01 55 08.0**	**+0.8**
	baz=156						
633A	**Saathoff Ranch**	**21.63**	**327**	P	**P**	**01 55 07.8**	**+0.3**
	baz=143						
337A	**Centerville**	**21.66**	**336**	P	**P**	**01 55 08.4**	**+0.6**
	baz=153						
Z48A	**Northport**	**21.70**	**356**	P	**P**	**01 55 09.2**	**+1.1**
	baz=176,SNR=23						
534A	**Blanco**	**21.73**	**329**	P	**P**	**01 55 08.7**	**+0.2**
	baz=145,SNR=9.5						
239A	**Gary**	**21.78**	**340**	P	**P**	**01 55 10.0**	**+1.1**
	baz=157						
GOGA	**Godfrey**	**21.80**	**5**	*e*P	**P**	**01 55 10.3**	**+1.2**
	comp=Z,43nm,0.6s						
141A	**Papa Simpson,**	**21.85**	**344**	P	**P**	**01 55 10.7**	**+1.1**
	baz=162						
CSU	**Charleston Sou**	**21.92**	**13**	*e*P	**P**	**01 55 10.8**	**+0.6**
435B	**Jarrell**	**21.93**	**332**	P	**P**	**01 55 11.2**	**+0.8**
	baz=148,SNR=10						
Z44A	**Pea Ridge, Bel**	**21.95**	**350**	P	**P**	**01 55 11.4**	**+0.8**
	baz=168,SNR=8.4						
ABVI	**Anegada Island**	**21.95**	**69**	*e*P	**P**	**01 55 10.5**	**-0.3**
	comp=Z,384nm,0.7s						
238A	**Jacksonville**	**21.99**	**339**	P	**P**	**01 55 11.9**	**+0.9**
	baz=156						
NHSC	**New Hope**	**22.01**	**13**	*e*P	**P**	**01 55 12.2**	**+1.1**
	comp=Z,255nm,1.4s						
533A	**Kerrville**	**22.05**	**328**	P	**P**	**01 55 11.1**	**-0.5**
	baz=144						
140A	**Cam and Jess,**	**22.08**	**343**	P	**P**	**01 55 12.8**	**+1.0**
	baz=160						
336A	**Riesel**	**22.12**	**334**	P	**P**	**01 55 13.0**	**+0.8**
	baz=151						
237A	**Washetta, Mont**	**22.24**	**337**	P	**P**	**01 55 13.9**	**+0.5**
	baz=154						
Y47A	**UCPARC, Winfie**	**22.25**	**356**	P	**P**	**01 55 13.9**	**+0.5**
	baz=175,SNR=15						
Z42A	**Norrel Spur, H**	**22.25**	**346**	P	**P**	**01 55 14.0**	**+0.6**
	baz=164						
434A	**Burnet**	**22.27**	**331**	P	**P**	**01 55 13.6**	**-0.1**
	baz=147						
335A	**Moody**	**22.28**	**333**	P	**P**	**01 55 14.1**	**+0.3**
	baz=149						
Y46A	**Houston**	**22.32**	**353**	P	**P**	**01 55 14.8**	**+0.8**
	baz=172,SNR=23						
139A	**Bunkhouse Ranc**	**22.36**	**341**	P	**P**	**01 55 15.5**	**+1.1**
	baz=158						
Y45A	**Yeager Farm, C**	**22.39**	**352**	P	**P**	**01 55 16.2**	**+1.6**
	baz=171,SNR=13						
Z41A	**Richland Creek**	**22.44**	**345**	P	**P**	**01 55 16.0**	**+0.8**
	baz=162						
236A	**Katherine and**	**22.52**	**336**	P	**P**	**01 55 17.0**	**+1.0**
	baz=152						
138A	**Matatall Enter**	**22.58**	**339**	P	**P**	**01 55 17.0**	**+0.5**
	baz=156						
Y44A	**Strider, Charl**	**22.58**	**351**	P	**P**	**01 55 17.3**	**+0.8**
	baz=169						
Z40A	**Long Farm, Mag**	**22.61**	**343**	P	**P**	**01 55 17.4**	**+0.7**
	baz=161						
433A	**Art**	**22.63**	**329**	P	**P**	**01 55 17.1**	**+0.2**
	baz=145,SNR=8.5						
Y43A	**Makayla and Ka**	**22.66**	**349**	P	**P**	**01 55 18.2**	**+1.1**
	baz=167						
334A	**Lometa**	**22.69**	**332**	P	**P**	**01 55 17.6**	**+0.1**
	baz=147,SNR=8.7						
SABA	**Saba**	**22.70**	**72**	*e*P	**P**	**01 55 18.5**	**+0.8**
	comp=Z,71nm,0.8s						
Y42A	**Garnett, Star**	**22.75**	**347**	P	**P**	**01 55 18.7**	**+0.7**
	baz=165						
137A	**Heron Place, G**	**22.76**	**338**	P	**P**	**01 55 20.3**	**+2.3**
	baz=155						
JCT	**Junction City**	**22.77**	**328**	P	**P**	**01 55 18.2**	**-0.1**
	baz=143						
Z39A	**Irene McRaven,**	**22.82**	**342**	P	**P**	**01 55 19.9**	**+1.3**
	baz=159						
CCAR	**Cane Creek**	**22.83**	**347**	*e*P	**P**	**01 55 19.0**	**+0.3**
	comp=Z,62nm,1.3s						
WHTX	**Lake Whitney,**	**22.90**	**334**	P	**P**	**01 55 20.7**	**+1.3**
	baz=150						
WHTX	**Lake Whitney,**	**22.90**	**334**	*e*P	**P**	**01 55 18.7**	**-0.6**
	comp=Z,29nm,0.8s						
WHTX				*e*pP	**pP**	**01 55 55.8**	**+1.1**
SEUS	**St. Eustatius**	**22.91**	**73**	*e*P	**P**	**01 55 20.6**	**+1.0**
	comp=Z,265nm,0.9s						
WLAR	**White Oak Lake**	**22.93**	**344**	*e*P	**P**	**01 55 20.8**	**+1.2**
	comp=Z,32nm,1.0s						
136A	**Ennis**	**22.94**	**336**	P	**P**	**01 55 20.9**	**+1.2**
	baz=153,SNR=11						
SMRT	**St. Maarten**	**22.95**	**71** ⇑	*i* P	**P**	**01 55 19.8**	**-0.1**
SMRT	**St. Maarten**	**22.95**	**71**	*e*P	**P**	**01 55 19.8**	**-0.1**
	comp=Z,248nm,1.0s						
OXF	**Oxford**	**23.01**	**353**	*e*P	**P**	**01 55 20.7**	**+0.5**
	comp=Z,120nm,1.1s						
OXF				*e*pP	pP	01 56 01.4	+5.7
333A	**Richland Sprin**	**23.04**	**330**	P	**P**	**01 55 20.7**	**+0.1**
	baz=146,SNR=10						
Z38A	**Mt. Pleasant**	**23.08**	**340**	P	**P**	**01 55 21.5**	**+0.5**
	baz=157						
234A	**Clairette**	**23.21**	**333**	P	**P**	**01 55 22.5**	**+0.3**
	baz=148						
Z37A	**Pogue Cattle C**	**23.25**	**339**	P	**P**	**01 55 23.0**	**+0.5**
	baz=156						
Y40A	**Okolona**	**23.28**	**344**	P	**P**	**01 55 23.4**	**+0.6**
	baz=162						
PLAL	**Pickwick Lake**	**23.34**	**355**	*e*P	**P**	**01 55 24.0**	**+0.8**
	comp=Z,28nm,0.8s						
135A	**Vickery Place,**	**23.37**	**335**	P	**P**	**01 55 24.2**	**+0.6**
	baz=151						
Y39A	**Lockesburg**	**23.44**	**343**	P	**P**	**01 55 25.0**	**+0.8**
	baz=160						
SWET	**Sewanee**	**23.48**	**360**	*e*P	**P**	**01 55 25.6**	**+1.0**
	comp=Z,19nm,0.9s						
233A	**Rising Star**	**23.57**	**331**	P	**P**	**01 55 25.8**	**+0.3**
	baz=147						
Z36A	**Blue Ridge**	**23.61**

X36A **Centrahoma** 24.75 339 P P 01 55 36.4 +0.3
baz=155,SNR=5.9
X35A **Drake** 24.82 338 P P 01 55 37.3 +0.5
baz=154,SNR=8.6
V40A **Witts Springs** 24.88 347 P P 01 55 37.7 +0.4
baz=164,SNR=7.8
TZTN **Tazewell** 24.90 4 eP P 01 55 38.7 +1.2
comp=Z,30nm,0.9s
W37B **Quinton** 24.96 341 P P 01 55 38.5 +0.5
baz=158
V39A **Pettigrew** 25.11 345 P P 01 55 40.1 +0.7
baz=162,SNR=12
NNA **Nana** 25.12 159 P P 01 55 40.9 +1.2
comp=Z,13nm,0.8s,baz=323,slow=11,SNR=5.9
NNA **Nana** 25.12 159 eP P 01 55 40.5 +0.8
comp=Z,34nm,0.7s
Y33A **Hilltop Ranch,** 25.13 334 P P 01 55 39.8 +0.1
baz=150
W36A **Wetumka** 25.22 340 P P 01 55 40.8 +0.4
baz=156
X34A **Smith Ranch, M** 25.32 336 P P 01 55 42.0 +0.6
baz=152
V38A **Canehill** 25.33 344 P P 01 55 41.5 +0.1
baz=160
U40A **Yellville** 25.41 347 P P 01 55 43.0 +0.9
baz=164,SNR=12
W35A **Tecumseh** 25.46 339 P P 01 55 42.5 0.0
baz=154
X33A **Lawton** 25.54 335 P P 01 55 43.4 +0.2
baz=150
V37A **Hulbert** 25.56 342 P P 01 55 43.7 +0.2
baz=159,SNR=6.2
U39A **Green Forest** 25.58 346 P P 01 55 43.8 +0.1
baz=163,SNR=6.1
HHAR **Hobbs** 25.60 345 eP P 01 55 43.8 0.0
comp=Z,8.1nm,0.8s
V36A **Jenks** 25.72 341 P P 01 55 45.3 +0.5
baz=157
BBGH **Gun Hill** 25.76 84 eP P 01 55 46.0 +0.5
comp=Z,631nm,1.3s
X32A **Elmer** 25.77 334 P P 01 55 45.5 +0.2
baz=149
TUL1 **Leonard** 25.78 341 P P 01 55 45.8 +0.4
baz=158
TUL1 **Leonard** 25.78 341 eP P 01 55 45.1 -0.3
comp=Z,10nm,0.7s
TUL1 eP P 01 56 26.4 +1.7
WMOK **Wichita Mounta** 25.83 335 eP P 01 55 45.0 -0.9
W34A **Bridge Creek,** 25.86 337 P P 01 55 46.5 +0.3
baz=153,SNR=6.1
W34A **Bridge Creek,** 25.86 337 eP P 01 55 46.5 +0.3
comp=Z,32nm,0.7s
W34A eP P 01 56 24.5 -1.1
U38A **Gravette** 25.87 344 P P 01 55 46.4 +0.2
baz=161
BLA **Blacksburg** 25.94 10 eP P 01 55 48.5 +1.6
comp=Z,151nm,1.5s
V35A **Meyer Ranch, C** 26.00 339 P P 01 55 47.6 +0.2
baz=155
U37A **Salina** 26.04 343 P P 01 55 47.9 +0.2
baz=159
VWCC **Virginia Weste** 26.06 11 eP P 01 55 49.6 +1.7
VWCC eP P 01 56 31.6 +4.3
W33A **Caddo, Fort Co** 26.06 336 P P 01 55 48.2 +0.3
baz=151
T40A **Mansfield** 26.10 348 P P 01 55 48.9 +0.6
baz=165
SIUC **Southern Illin** 26.15 354 eP P 01 55 49.5 +0.8
comp=Z,74nm,0.9s
SIUC eP P 01 56 29.6 +1.5
T39A **Clever** 26.17 346 P P 01 55 49.3 +0.4
baz=163
U36A **Oologah** 26.21 342 P P 01 55 49.5 +0.2
baz=158
USIN **University of** 26.27 357 eP P 01 55 50.5 +0.7
comp=Z,42nm,0.8s
V34A **Guthrie** 26.30 338 P P 01 55 49.5 -0.5
baz=154,SNR=6.1
V34A **Guthrie** 26.30 338 eP P 01 55 49.3 -0.8
comp=Z,26nm,0.9s
V34A eP P 01 56 29.0 -0.5
W32A **Sentinel** 26.35 335 P P 01 55 50.5 -0.1
baz=150
T38A **Diamond** 26.41 345 P P 01 55 51.2 +0.2
baz=161,SNR=6.6
WCI **Wyandotte Cave** 26.49 359 eP P 01 55 52.3 +0.5
comp=Z,78nm,0.8s
WCI eP P 01 56 33.0 +1.7
U35A **Pawnee** 26.51 340 P P 01 55 52.6 +0.7
baz=156
S40A **Lebanon** 26.53 348 P P 01 55 52.4 +0.3
baz=166,SNR=9.4
V33A **Lossen Ranch,** 26.57 337 P P 01 55 52.6 +0.1
baz=152
T37A **Chenevville 18** 26.65 344 P P 01 55 53.3 +0.1
baz=160,SNR=13
V32A **Arapaho** 26.78 336 P P 01 55 54.4 0.0
baz=151
S39A **Bolivar** 26.80 347 P P 01 55 54.5 0.0
baz=164,SNR=6.4
U34A **Anderson Ranch** 26.84 339 P P 01 55 55.3 +0.4
baz=154
U34A **Anderson Ranch** 26.84 339 eP P 01 55 54.7 -0.2
T36A **Boggs Farm, Ca** 26.87 342 P P 01 55 55.1 -0.1
baz=158,SNR=6.4
S38A **Stockton** 26.87 346 P P 01 55 55.2 0.0
baz=163
MNTX **Cornudas Mount** 26.88 321 P P 01 55 54.9 -0.4
baz=134
MNTX **Cornudas Mount** 26.88 321 eP P 01 55 55.3 -0.1
comp=Z,6.4nm,0.9s
JSRW **J. Sargeant Re** 26.93 14 eP P 01 55 56.7 +1.1
T35A **Sooner Cattle** 26.93 341 P P 01 55 55.7 0.0
baz=157
U33A **Lingo Farm, Me** 27.05 338 P P 01 55 57.2 +0.4
baz=153
MSTX **Muleshoe** 27.06 328 P P 01 55 57.0 0.0
baz=142
MSTX **Muleshoe** 27.06 328 eP P 01 55 56.5 -0.5
comp=Z,4.2nm,0.9s
MSTX eP P 01 56 36.4 -0.3
OLIL **Olney** 27.07 356 eP P 01 55 57.7 +0.9
comp=Z,49nm,0.8s
R40A **Maddies Statio** 27.16 349 P P 01 55 57.5 -0.2
baz=166
S37A **Fort Scott** 27.23 344 P P 01 55 58.9 +0.6
baz=161,SNR=5.5
AMTX **Amarillo** 27.24 331 P P 01 55 58.0 -0.6
baz=145
AMTX **Amarillo** 27.24 331 eP P 01 55 57.8 -0.9
comp=Z,33nm,1.2s
T34A **McClaskey Farm** 27.25 340 P P 01 55 58.4 -0.2
baz=156
R39A **Chumby, Stover** 27.33 348 P P 01 55 59.5 +0.3
baz=165
U32A **Winter Ranch,** 27.34 337 P P 01 55 59.5 +0.1
baz=151
R38A **Fenwick Farm,** 27.40 346 P P 01 56 00.0 +0.2
baz=163
S36A **Lake Cedric, C** 27.40 343 P P 01 56 00.5 +0.7
baz=159,SNR=12
BLO **Bloomington** 27.44 359 eP P 01 56 00.6 +0.4
comp=Z,56nm,0.7s
CBN **Corbin Frederi** 27.54 15 eP P 01 56 02.9 +1.8
comp=Z,55nm,0.8s
S35A **Otter Creek Ra** 27.58 342 P P 01 56 01.4 -0.1
baz=158,SNR=8.3
T33A **Patterson Ranc** 27.68 338 P P 01 56 02.7 +0.3
baz=153
R37A **Teagarden Farm** 27.75 345 P P 01 56 03.2 +0.2
baz=161
Q40A **Laux Farm, Aux** 27.81 350 P P 01 56 04.5 +1.1
baz=167
S34A **Willow Spring** 27.84 341 P P 01 56 05.5 +1.7
baz=156
R36A **Gordon, Harris** 27.94 344 P P 01 56 05.1 +0.5
baz=160
T32A **Huddler Ranch,** 28.01 337 P P 01 56 05.3 0.0
baz=152
Q39A **Willow Grove F** 28.02 348 P P 01 56 05.3 0.0
baz=165
Q38A **Cooks Store, C** 28.08 347 P P 01 56 06.0 +0.1
baz=164,SNR=5.9
R35A **Emporia Munici** 28.14 343 P P 01 56 07.3 +0.9
baz=158
Q37A **Longview Farm,** 28.19 346 P P 01 56 06.9 0.0
baz=162
P40A **Paris** 28.32 350 P P 01 56 08.1 +0.1
baz=167
MCWV **Mont Chateau** 28.43 10 eP P 01 56 10.2 +1.3
comp=Z,21nm,0.8s
R34A **Isabella, Hill** 28.44 341 P P 01 56 09.1 0.0
baz=156
Q36A **Arnold C. Orve** 28.52 344 P P 01 56 09.8 0.0
baz=160
PTGA **Pitinga** 28.53 114 P P 01 56 10.1 0.0
comp=Z,13nm,0.9s,baz=302,slow=9.7,SNR=18
Q35A **Mercer Eighty,** 28.59 343 P P 01 56 11.2 +0.9
baz=159
ACSO **Alum Creek Sta** 28.61 5 eP P 01 56 11.3 +0.8
comp=Z,105nm,0.6s
SFIN **Lafayette** 28.66 358 P P 01 56 11.2 +0.2
baz=178,SNR=13
SFIN **Lafayette** 28.66 358 eP P 01 56 10.9 -0.1
comp=Z,82nm,0.7s
SFIN eP P 01 56 51.5 +0.7
R33A **Olander Ranch,** 28.68 340 P P 01 56 11.3 0.0
baz=155
P38A **Dawn** 28.70 348 P P 01 56 11.2 -0.2
baz=164,SNR=9.3
SDMD **Soldier's Deli** 28.81 15 eP P 01 56 14.1 +1.7
comp=Z,26nm,1.0s
P37A **Lathrop** 28.84 346 P P 01 56 12.7 +0.1
baz=163
O40A **La Belle** 28.87 350 P P 01 56 12.8 -0.1
baz=168
Q34A **Chapman** 28.91 342 P P 01 56 13.3 +0.1
baz=157
121A **Cookes Peak, D** 28.95 319 P P 01 56 13.2 -0.6
baz=131
HDIL **Hopedale** 28.97 355 P P 01 56 13.9 +0.1
baz=173,SNR=15
HDIL **Hopedale** 28.97 355 eP P 01 56 13.9 +0.1
comp=Z,93nm,0.8s
KSU1 **Kansas State U** 28.98 343 P P 01 56 13.6 -0.2
baz=158
KSU1 **Kansas State U** 28.98 343 eP P 01 56 13.5 -0.2
comp=Z,8.2nm,0.6s
R32A **Long Quarter,** 29.04 339 P P 01 56 14.1 -0.3
baz=154
P36A **Good Intent, A** 29.08 345 P P 01 56 14.8 +0.1
baz=161
O39A **Kirksville** 29.11 349 P P 01 56 15.2 +0.2
baz=167
O38A **Galt** 29.16 348 P P 01 56 15.7 +0.2
baz=165
319A **Douglas** 29.21 316 eP P 01 56 16.8 +0.7
comp=Z,5.5nm,0.9s
P35A **Duane Minner,** 29.21 344 P P 01 56 16.5 +0.6
baz=160
O56A **Blue Knob Stat** 29.25 12 P P 01 56 17.1 +0.8
baz=195,SNR=12
Q33A **Connelly Farm,** 29.26 341 P P 01 56 16.4 0.0
baz=156,SNR=6.5
O37A **Wolven Farm, M** 29.35 347 P P 01 56 16.9 -0.2
baz=164
P34A **Walnut Farm, R** 29.45 343 P P 01 56 17.9 -0.1
baz=158
Q32A **Meitler Ranch,** 29.49 340 P P 01 56 18.3 -0.2
baz=154
O36A **Bolckow** 29.50 346 P P 01 56 18.6 +0.1
baz=162
P33A **Williams Farm,** 29.61 341 P P 01 56 20.0 +0.6
baz=156
N54A **Moraine State** 29.68 9 P P 01 56 20.7 +0.7
baz=192,SNR=5.7
N39A **Derby Farms, D** 29.71 350 P P 01 56 20.7 +0.4
baz=167
SSPA **Standing Stone** 29.74 12 eP P 01 56 22.0 +1.4
comp=Z,60nm,0.9s
CBKS **Cedar Bluff** 29.75 338 P P 01 56 21.6 +0.9
baz=152
N38A **Joes South For** 29.76 349 P P 01 56 21.0 +0.2
baz=166
ANMO **Albuquerque** 29.80 325 P P 01 56 21.8 +0.3
comp=Z,0.7nm,0.5s,baz=133,slow=7.5,SNR=4.9
ANMO pP pP 01 57 04.1 +2.7
comp=Z,2.2nm,0.7s,baz=146,slow=9.6,SNR=5.2
ANMO **Albuquerque** 29.80 325 P P 01 56 21.5 0.0
baz=136
ANMO **Albuquerque** 29.80 325 eP P 01 56 22.6 +1.1
ANMO ePP P 01 57 04.7 +3.3
O35A **Humboldt** 29.87 344 P P 01 56 22.5 +0.8
baz=160
N37A **Lee Faris, Mou** 29.93 347 P P 01 56 22.3 +0.1
baz=164
O34A **Beatrice** 30.00 343 P P 01 56 22.9 0.0
baz=159,SNR=5.2
P32A **Huiting Farm,** 30.08 340 P P 01 56 23.8 +0.2
baz=155,SNR=14
O33A **Hebron** 30.16 342 P P 01 56 24.5 +0.2
baz=157,SNR=6.5
M54A **Oil Creek Stat** 30.26 9 P P 01 56 26.1 +0.9
baz=192,SNR=8.1
LUPA **Lehigh Univers** 30.31 16 eP P 01 56 27.6 +2.0
comp=Z,37nm,1.1s
ALLY **Alegheny Colle** 30.33 9 eP P 01 56 26.7 +1.0
comp=Z,59nm,1.1s
N35A **Tabor** 30.36 345 P P 01 56 26.2 +0.2
baz=161,SNR=8.8
M38A **Pleasantville** 30.36 349 P P 01 56 26.6 +0.7
baz=166,SNR=7.2
T25A **Trinidad** 30.37 330 P P 01 56 26.5 +0.1
baz=142
SAML **Samuel** 30.46 131 eP P 01 56 26.7 -0.5
comp=Z,23nm,0.9s
N59A **State Game Lan** 30.50 15 P P 01 56 27.9 +0.6
baz=200,SNR=25
M37A **Trindle Farm,** 30.52 348 P P 01 56 27.8 +0.5
baz=164
O32A **Brockman Farm,** 30.55 341 P P 01 56 27.8 +0.1
baz=156
N34A **Lincoln** 30.56 344 P P 01 56 28.0 +0.2
baz=159
BRNJ **Basking Ridge** 30.61 17 eP P 01 56 29.5 +1.3
comp=Z,25nm,0.8s
AAM **Ann Arbor** 30.62 3 eP P 01 56 28.9 +0.6
comp=Z,39nm,0.8s
M36A **Felix, Anita** 30.72 347 P P 01 56 29.4 +0.2
baz=163
N33A **J Bar K, Exete** 30.73 343 P P 01 56 29.7 +0.4
baz=158
TUC **Tucson** 30.79 316 P P 01 56 29.1 -0.9
baz=127
O31A **Woolen Ranch,** 30.80 340 P P 01 56 29.9 0.0
baz=154
ERPA **Erie** 30.81 9 eP P 01 56 29.9 0.0
comp=Z,114nm,0.6s
SCIA **State Center** 30.84 349 eP P 01 56 30.6 +0.4
comp=Z,20nm,0.6s
M35A **Neola** 30.94 346 P P 01 56 30.9 -0.2
baz=161,SNR=7.7
ODNJ **Ogdensburg** 30.97 17 eP P 01 56 32.8 +1.4
comp=Z,26nm,1.4s
N32A **Stulken Farm,** 31.01 342 P P 01 56 32.2 +0.4
baz=156
L38A **Oak Wood Farm,** 31.02 350 P P 01 56 31.9 +0.2
baz=167,SNR=12
PAL **Palisades** 31.10 18 eP P 01 56 34.1 +1.6
comp=Z,32nm,0.9s
L37A **Phoenix Point,** 31.15 349 P P 01 56 33.0 +0.1
baz=165
M34A **Aspy Farms, Fr** 31.20 344 P P 01 56 33.8 +0.3
baz=160
N31A **Bailey Ranch,** 31.28 341 P P 01 56 34.4 +0.3
baz=155
L36A **Harm Buss Farm** 31.31 347 P P 01 56 34.7 +0.4
baz=164
SDCO **Great Sand Dun** 31.39 329 P P 01 56 35.8 +0.4
baz=141,SNR=5.5
SDCO **Great Sand Dun** 31.39 329 eP P 01 56 36.5 +1.1
SDCO ePP pP 01 57 17.6 +2.1
JFWS **Jewell Farm** 31.40 354 eP P 01 56 34.7 -0.4
comp=Z,44nm,0.8s
M33A **Taylor Creek F** 31.43 344 P P 01 56 36.2 +0.8
baz=159
K38A **Parkersburg** 31.48 350 P P 01 56 36.0 +0.2
baz=167,SNR=11
L35A **Bielow Farm, R** 31.52 346 P P 01 56 36.5 +0.3
baz=162,SNR=6.1
BGNE **Belgrade** 31.56 342 P P 01 56 36.7 +0.1
baz=157
L34A **Svendsen Farm,** 31.59 345 P P 01 56 37.4 +0.7
baz=160
BINY **Binghamton** 31.66 14 eP P 01 56 38.6 +1.2
comp=Z,98nm,1.1s
YLE **Yale** 31.68 19 eP P 01 56 39.2 +1.7
comp=Z,62nm,1.0s
K37A **Belmond** 31.75 349 P P 01 56 38.0 -0.1
baz=166,SNR=27
MMNY **Mt. Morris Dam** 31.76 11 eP P 01 56 39.0 +0.8
comp=Z,121nm,0.9s
K36A **Gilmore City** 31.78 348 P P 01 56 38.9 +0.4
baz=164,SNR=5.9
W18A **Petrified Fore** 31.87 321 P P 01 56 39.0 -0.6
baz=132
214A **Organ Pipe Nat** 32.00 313 P P 01 56 40.2 -0.3
baz=124
L33A **Hoskins** 32.01 344 P P 01 56 40.7 +0.2
baz=159
K35A **Storm Lake** 32.03 347 P P 01 56 40.3 -0.3
baz=163
L32A **Elgin** 32.06 343 P P 01 56 40.9 0.0
baz=157
J38A **Wedel Dairy, R** 32.09 351 P P 01 56 40.8 -0.3
baz=168,SNR=15
Q24A **Divide** 32.17 331 P P 01 56 42.2 -0.1
baz=143
K34A **Le Mars** 32.19 346 P P 01 56 42.7 +0.6
baz=161
J37A **Redenius Farm,** 32.26 349 P P 01 56 42.7 +0.1
baz=166,SNR=9.6
K33A **Hardington** 32.34 345 P P 01 56 43.9 +0.6
baz=160
J36A **Seneca 1, Swea** 32.42 348 P P 01 56 43.9 -0.2
baz=165,SNR=27
L31A **Butterfield Fa** 32.47 342 P P 01 56 44.6 +0.1
baz=156
OGNE **Ogallala** 32.48 337 P P 01 56 45.0 +0.3
baz=150
X16A **Lo Mia Camp, P** 32.50 318 eP P 01 56 47.1 +2.1
X16A ePP pP 01 57 28.4 +3.0
MVCO **Mesa Verde** 32.58 325 P P 01 56 45.1 -0.6
baz=136
MVCO **Mesa Verde** 32.58 325 eP P 01 56 44.3 -1.5
comp=Z,5.9nm,0.8s
J35A **Milford** 32.64 347 P P 01 56 45.4 -0.5
baz=163
K32A **Verdigre** 32.66 343 P P 01 56 45.9 -0.2
baz=158
J34A **George** 32.73 346 P P 01 56 47.5 +0.8
baz=162
QUA2 **Belchertown** 32.74 19 eP P 01 56 47.8 +1.0
comp=Z,127nm,2.0s
TRY **Troy** 32.76 17 eP P 01 56 48.8 +1.9
comp=Z,94nm,1.1s
I38A **Scanlan Farm,** 32.77 351 P P 01 56 46.8 -0.2
baz=168,SNR=5.2
LPAZ **La Paz** 32.83 147 P P 01 56 49.7 +1.1
comp=Z,2.0nm,0.4s,baz=342,slow=7.6,SNR=22
LPAZ **La Paz** 32.83 147 eP P 01 56 50.0 +1.5
comp=Z,3.2nm,0.8s
K31A **O'Neill** 32.85 342 P P 01 56 48.0 +0.2
baz=156
I37A **Lemond, Waseca** 32.92 350 P P 01 56 48.5 +0.1
baz=166,SNR=14
J33A **Davis** 33.00 345 P P 01 56 49.5 +0.4
baz=160
I36A **Fitzsimmons Fa** 33.03 349 P P 01 56 49.5 +0.2
baz=165
ISCO **Idaho Springs** 33.05 332 P P 01 56 49.6 -0.3
baz=143
I35A **Creekview Farm** 33.06 348 P P 01 56 49.6 0.0
baz=164,SNR=14
WUAZ **Wupatki** 33.14 320 P P 01 56 50.1 -0.5
baz=130
K30A **Basset** 33.16 341 P P 01 56 50.6 +0.1
baz=155
BCX **Boston College** 33.18 20 eP P 01 56 52.4 +1.8
comp=Z,65nm,1.1s
J32A **Parkston** 33.28 344 P P 01 56 52.1 +0.6
baz=158
ECSD **EROS Data Cent** 33.31 346 P P 01 56 51.4 -0.3
baz=161
ECSD **EROS Data Cent** 33.31 346 eP P 01 56 50.6 -1.1
comp=Z,9.2nm,1.0s
ECSD ePP pP 01 57 30.6 -1.5
ACCN **Adirondack Com** 33.37 16 eP P 01 56 53.5 +1.3
comp=Z,22nm,1.1s
H37A **Dierke Farm, C** 33.39 351 P P 01 56 52.3 -0.1
baz=168
I34A **Hadley** 33.42 347 P P 01 56 53.5 +0.8
baz=162
J31A **Geddes** 33.46 343 P P 01 56 53.7 +0.7
baz=157
SADO **Sadowa** 33.53 9 P P 01 56 53.5 -0.1
comp=Z,51nm,0.7s,baz=211,slow=8.1,SNR=41
SADO **Sadowa** 33.53 9 eP P 01 56 53.6 +0.1
comp=Z,56nm,0.8s
H36A **Jessenland, He** 33.55 350 P P 01 56 54.0 +0.2
baz=166,SNR=18
I33A **Coleman** 33.65 346 P P 01 56 55.6 +0.9
baz=161
PV10 **Paradox Valley** 33.71 326 eP P 01 56 54.5 -1.1
J30A **Dallas** 33.71 342 P P 01 56 55.8 +0.5
baz=156
H35A **Sunnyside Ranc** 33.84 349 P P 01 56 55.7 -0.5
baz=164,SNR=21
SPMN **Marine on St.** 34.00 351 P P 01 56 56.9 -0.8
baz=168,SNR=16
SPMN **Marine on St.** 34.00 351 eP P 01 56 56.8 -0.9
comp=Z,37nm,0.9s
SPMN ePP pP 01 57 37.8 -0.4
H34A **Spellman Lake,** 34.00 347 P P 01 56 57.2 -0.4
baz=163,SNR=7.1
GLA **Glamis** 34.02 313 P P 01 56 57.3 -0.8
baz=122
J29A **Okreek** 34.04 341 P P 01 56 58.1 0.0
baz=154
HNH **Hanover** 34.06 18 eP P 01 57 00.3 +2.1
comp=Z,32nm,1.0s
N23A **Red Feather La** 34.08 332 P P 01 56 58.6 -0.1
baz=143
I31A **Royce, Wessing** 34.08 344 P P 01 56 58.9 +0.5
baz=158
G36A **St. Michael** 34.16 350 P P 01 56 59.0 0.0
baz=166
Y12C **Blythe** 34.19 315 P P 01 56 58.9 -0.5
baz=124
I30A **Oacoma** 34.23 342 P P 01 56 59.7 +0.1
baz=156
PDMCI **Parker Dam,Lak** 34.23 316 P P 01 56 59.7 -0.1
baz=125
H32A **Carlson Farm,** 34.23 345 P P 01 56 59.8 +0.1
baz=160
H33A **Prehn Over Nor** 34.23 346 P P 01 57 00.5 +0.8
baz=161
G35A **Watkins** 34.28 349 P P 01 57 00.6 +0.5
baz=165
LONY **Lake Ozonia** 34.28 14 eP P 01 57 00.7 +0.5
comp=Z,42nm,0.9s
LONY ePP pP 01 57 42.7 +2.1
J28A **Allard Ranch,** 34.36 340 P P 01 57 01.7 +0.9
baz=153
COWI **Conover** 34.47 356 eP P 01 57 01.2 -0.5
comp=Z,17nm,0.8s
J27A **Elkhorn Farm,** 34.47 339 P P 01 57 02.3 +0.4
baz=152
H31A **Wolsey** 34.48 344 P P 01 57 02.5 +0.7
baz=158
G34A **Benson** 34.52 348 P P 01 57 02.8 +0.7
baz=163
SUSD **Miller** 34.58 343 P P 01 57 03.1 +0.4
baz=157
O20A **White River Ci** 34.59 329 P P 01 57 02.7 -0.4
baz=139
O20A **White River Ci** 34.59 329 eP P 01 57 03.9 +0.8
comp=Z,15nm,1.4s
I29A **Vivian Onida** 34.59 342 P P 01 57 02.8 0.0
baz=155
G33A **Ortonville** 34.65 347 P P 01 57 02.7 -0.5
baz=162,SNR=7.5
SWSC **Sam W. Stewart** 34.67 313 P P 01 57 02.7 -0.8
baz=121
F36A **Milaca** 34.73 351 P P 01 57 03.5 -0.4
baz=167,SNR=17
FRNY **Flat Rock** 34.73 15 eP P 01 57 04.7 +0.8
comp=Z,71nm,1.8s
BC3 **Big Chuckawall** 34.79 314 P P 01 57 03.9 -0.8
baz=122
IRM **Iron Mountain** 34.84 315 P P 01 57 04.6 -0.5
baz=123
I28A **Midland** 34.85 341 P P 01 57 05.0 0.0
baz=153

J26A	Sides Ranch, S	34.91	338	P		P	01 57 05.0	-0.6
	baz=150							
F35A	Swanville	34.91	349	P		P	01 57 05.3	-0.2
	baz=165,SNR=8.5							
G32A	Webster	34.95	346	P		P	01 57 05.1	-0.8
	baz=160,SNR=11							
F34A	Alexandria	34.98	349	P		P	01 57 06.8	+0.8
	baz=164							
KNB	Kanab	35.00	321	*e*P		P	01 57 08.8	+2.2
KNB				*ep*P		pP	01 57 50.6	+3.4
MONP2	Monument Peak	35.09	312	P		P	01 57 06.5	-1.0
	baz=120							
G31A	Conde	35.10	345	P		P	01 57 07.5	+0.4
	baz=159							
I27A	Quinn	35.20	340	P		P	01 57 08.7	+0.6
	baz=152							
F33A	5 Mile Ranch,	35.23	347	P		P	01 57 07.1	-1.1
	baz=162,SNR=13							
E37A	Wrenshall	35.26	352	P		P	01 57 08.9	+0.5
	baz=169							
G30A	Faulkton	35.26	344	P		P	01 57 07.6	-0.9
	baz=157,SNR=7.2							
E36A	McGregor	35.33	351	P		P	01 57 08.5	-0.5
	baz=168,SNR=5.8							
BELC	Belle Mtn. Jos	35.36	314	P		P	01 57 08.9	-0.7
	baz=122							
H28A	Mission Ridge	35.40	341	P		P	01 57 10.4	+0.6
	baz=154							
F32A	Veblen	35.45	346	P		P	01 57 09.6	-0.4
	baz=161							
I26A	New Underwood	35.45	339	P		P	01 57 09.6	-0.6
	baz=151							
GMRC	Granite Mounta	35.54	315	P		P	01 57 09.9	-1.3
	baz=123							
G29A	Hoven	35.54	343	P		P	01 57 10.9	0.0
	baz=156							
E35A	Pequot Lakes	35.55	350	P		P	01 57 10.7	-0.3
	baz=166							
109C	Camp Elliot, M	35.59	311	P		P	01 57 09.7	-1.7
	baz=120							
E34A	Wadena	35.65	349	P		P	01 57 11.2	-0.6
	baz=164,SNR=8.2							
WVL	Waterville	35.66	20	*e*P		P	01 57 13.5	+1.7
	comp=Z,102nm,1.4s							
F31A	Hecla	35.71	345	P		P	01 57 12.9	+0.6
	baz=159							
H27A	Howes	35.71	340	P		P	01 57 11.7	-0.7
	baz=152							
G28A	Parade	35.73	342	P		P	01 57 12.6	+0.1
	baz=154							
K22A	Casper	35.74	334	P		P	01 57 12.9	0.0
	baz=144							
I25A	Rochford	35.76	338	P		P	01 57 13.1	+0.1
	baz=149							
E33A	Westby DABS, E	35.80	348	P		P	01 57 12.2	-0.9
	baz=163							
D37A	Cotton	35.84	352	P		P	01 57 13.5	+0.1
	baz=169							
H26A	Fairpoint	35.93	339	P		P	01 57 14.5	+0.2
	baz=151							
RSSD	Black Hills	35.96	338	P		P	01 57 14.4	-0.3
	baz=149							
D36A	Goodland	35.96	352	P		P	01 57 14.2	-0.2
	baz=168,SNR=5.8							
D35A	Remer	36.00	350	P		P	01 57 13.8	-1.0
	baz=166,SNR=7.9							
MURC	Murrieta	36.01	312	P		P	01 57 14.2	-0.8
	baz=120							
HEC	Hector,Ludlow	36.03	315	P		P	01 57 14.6	-0.7
	baz=123							
TUQ	Turquoise Moun	36.08	316	P		P	01 57 14.6	-1.2
	baz=124							
F29A	Eureka	36.10	343	P		P	01 57 15.1	-0.5
	baz=157							
E32A	Braaten, Kindr	36.12	347	P		P	01 57 15.0	-0.7
	baz=161							
D34A	Park Rapids	36.20	349	P		P	01 57 15.7	-0.8
	baz=165,SNR=8.4							
H25A	Fruitdale	36.23	338	P		P	01 57 15.6	-1.2
	baz=150							
C39A	Grand Marais	36.25	355	P		P	01 57 17.7	+0.9
	baz=173							
C38A	Sawbill Land.	36.26	354	P		P	01 57 17.6	+0.6
	baz=171							
E31A	Nome	36.27	346	P		P	01 57 16.1	-0.9
	baz=160							
G27A	Dupree	36.32	341	P		P	01 57 17.3	-0.2
	baz=153							
C37A	Embarrass	36.37	353	P		P	01 57 17.7	-0.2
	baz=170							
D33A	AnnSam, Waubun	36.38	349	P		P	01 57 16.8	-1.1
	baz=164,SNR=11							
F28A	McLaughlin	36.39	342	P		P	01 57 18.0	-0.1
	baz=155							
PKME	Peaks-Kenny Pk	36.40	20	*e*P		P	01 57 19.5	+1.4
	comp=Z,86nm,1.5s							
G26A	Maurine	36.47	340	P		P	01 57 18.6	-0.2
	baz=152							
E30A	Jud	36.47	345	P		P	01 57 18.3	-0.4
	baz=158							
C36A	Pine Crest Far	36.48	352	P		P	01 57 19.1	+0.3
	baz=169							
EYMN	Ely	36.51	354	P		P	01 57 18.7	-0.3
	baz=171							
RRX	Edison Barstow	36.52	314	P		P	01 57 17.9	-1.4
	baz=122							
SHOC	Shoshone, Teco	36.57	316	P		P	01 57 19.4	-0.4
	baz=124							
PSUT	Pine Spring	36.59	322	*e*P		P	01 57 21.9	+1.8
	comp=Z,3.5nm,0.8s							
C35A	Jirik Farms, M	36.59	351	P		P	01 57 18.5	-1.2
	baz=167,SNR=10							
GSC	Goldstone, Bar	36.61	315	P		P	01 57 19.5	-0.7
	baz=123							
D32A	Dogwood Acres,	36.62	347	P		P	01 57 19.0	-1.0
	baz=162							
BFSC	Mount Baldy Ra	36.66	313	P		P	01 57 19.7	-1.0
	baz=120							
G25A	Newell	36.66	339	P		P	01 57 19.5	-0.9
	baz=151							
D31A	Mcclaflin, Tow	36.69	346	P		P	01 57 19.6	-1.0
	baz=160,SNR=7.0							
SCI2	San Clemente I	36.70	311	P		P	01 57 20.2	-0.7
	baz=118							
C34A	RKJ Ranch, Bem	36.70	350	P		P	01 57 19.4	-1.3
	baz=165,SNR=13							
E29A	Napoleon	36.72	344	P		P	01 57 20.7	-0.2
	baz=157							
F27A	Lemmon	36.79	341	P		P	01 57 21.2	-0.3
	baz=153							
CIS	Catalina Islan	36.80	311	P		P	01 57 20.8	-1.0
	baz=119							
SIV	San Ignacio	36.83	138	P		P	01 57 22.6	+0.5
	comp=Z,122nm,0.6s,baz=318,slow=9.0,SNR=376							
FMP	Fort Macarthur	36.86	312	P		P	01 57 21.4	-0.8
	baz=119							
C33A	Trail	36.96	349	P		P	01 57 22.5	-0.4
	baz=164							
F26A	Lodgepole	36.98	340	P		P	01 57 23.3	+0.1
	baz=152							
D30A	Buchanan	37.00	345	P		P	01 57 22.5	-0.7
	baz=159,SNR=6.3							
E28A	Huff	37.02	343	P		P	01 57 23.5	+0.1
	baz=156							
DUG	Dugway, Tooele	37.08	325	P		P	01 57 23.6	-0.5
	baz=133							
DUG	Dugway, Tooele	37.08	325	*e*P		P	01 57 21.4	-2.7
	comp=Z,8.5nm,1.3s							
TPNV	Topopah Spring	37.15	318	P		P	01 57 24.4	-0.4
	baz=125,SNR=6.4							
TPNV	Topopah Spring	37.15	318	*e*P		P	01 57 27.2	+2.4
	comp=Z,4.7nm,0.8s							
E27A	Carson	37.15	342	P		P	01 57 24.4	0.0
	baz=154,SNR=7.5							
DECC	Green Verdugo	37.15	313	P		P	01 57 24.1	-0.6
	baz=120							
D29A	Pettibone, Tap	37.17	344	P		P	01 57 23.9	-0.7
	baz=158							
B35A	Bob, Littlefor	37.20	351	P		P	01 57 25.1	+0.2
	baz=167							
EDW2	Edwards Air Fo	37.22	314	P		P	01 57 24.4	-1.0
	baz=121							
BW06	Boulder Array	37.23	331	P		P	01 57 25.2	-0.3
	baz=140							
BW06	Boulder Array	37.23	331	*e*P		P	01 57 24.3	-1.1
	comp=Z,8.8nm,1.4s							
BW06				*ep*P		pP	01 58 06.0	-0.5
PD31	Pinedale Array	37.23	331	*e*P		P	01 57 25.5	+0.1
PDAR	Pinedale Array	37.23	331	P		P	01 57 25.1	-0.3
	comp=Z,1.1nm,0.6s,baz=122,slow=9.4,SNR=16							
PDAR				pP		pP	01 58 06.2	-0.3
	comp=Z,2.8nm,0.8s,baz=123,slow=9.5,SNR=6.8							
PDAR				PcP		PcP	01 59 41.0	0.0
	comp=Z,0.8nm,0.7s,baz=135,slow=5.1,SNR=4.2							
PDAR				ScP		ScP	02 03 09.5	-0.1
	comp=Z,0.3nm,0.5s,baz=124,slow=4.8,SNR=3.6							
FURC	Furnace Creek,	37.28	317	P		P	01 57 25.5	-0.2
	baz=124							
F25A	Bowman	37.31	340	P		P	01 57 26.2	+0.3
	baz=151							
LRMC	Laurel Mtn Rad	37.31	315	P		P	01 57 25.3	-0.8
	baz=122							
HWUT	Hardware Ranch	37.38	328	*e*P		P	01 57 26.9	+0.2
	comp=Z,6.2nm,0.7s							
HWUT				*ep*P		pP	01 58 09.0	+1.2
HWUT				*e*PcP		PcP	01 59 41.8	+0.4
HWUT				*e*ScP		ScP	02 03 11.4	+1.2
C31A	Landman Farms,	37.40	347	P		P	01 57 25.9	-0.6
	baz=161,SNR=6.1							
B33A	Robert and Kas	37.42	349	P		P	01 57 27.4	+0.7
	baz=164							
E26A	Carlson Angus	37.46	341	P		P	01 57 27.0	-0.1
	baz=153							
B34A	Aery, Baudette	37.47	350	P		P	01 57 26.0	-1.1
	baz=166,SNR=6.2							
C30A	Mose, Pekin	37.48	346	P		P	01 57 26.5	-0.7
	baz=160							
MPMC	Manual Prospec	37.48	316	P		P	01 57 27.0	-0.7
	baz=123,SNR=6.4							
AGMN	Agassiz Nation	37.50	349	P		P	01 57 26.5	-0.9
	baz=164,SNR=11							
AGMN	Agassiz Nation	37.50	349	*e*P		P	01 57 26.3	-1.1
	comp=Z,10nm,0.8s							
R11A	Troy Canyon, C	37.54	320	P		P	01 57 27.0	-1.1
	baz=128							
R11A	Troy Canyon, C	37.54	320	*e*P		P	01 57 29.9	+1.8
	comp=Z,6.9nm,1.6s							
D28A	Regan	37.55	344	P		P	01 57 27.8	-0.1
	baz=156							
OSI	Osito Audit: C	37.61	313	P		P	01 57 27.8	-0.8
	baz=120							
BLG	Laguna Peak, P	37.61	312	P		P	01 57 27.8	-0.7
	baz=119							
SPUT	South Promonto	37.64	327	*e*P		P	01 57 29.9	+1.0
SPUT				*ep*P		pP	01 58 11.6	+1.7
DAC	Darwin (Calif)	37.67	316	*e*P		P	01 57 31.0	+1.7
	comp=Z,2.8nm,0.9s							
B32A	Ashes, Strandq	37.72	348	P		P	01 57 28.5	-0.7
	baz=163,SNR=30							
D27A	Center	37.75	342	P		P	01 57 29.5	0.0
	baz=155							
E25A	Miller Ranch,	37.80	340	P		P	01 57 30.3	+0.4
	baz=151							
LVC	Limon Verde	37.88	154	*e*P		P	01 57 30.7	-0.6
	comp=Z,56nm,1.7s							
ARVC	Arvin	37.94	314	P		P	01 57 30.3	-1.0
	baz=120							
D26A	Manning	37.95	342	P		P	01 57 31.1	-0.1
	baz=153							
ISA	Isabella, Lake	37.96	315	P		P	01 57 31.0	-0.5
	baz=121							
SCZ2	Santa Cruz Isl	37.97	311	P		P	01 57 31.1	-0.5
	baz=118							
B31A	Groush Farm	37.98	347	P		P	01 57 30.5	-0.9
	baz=161,SNR=7.7							
C28A	Hausauer Farms	37.98	344	P		P	01 57 31.8	+0.3
	baz=157							
A33A	Warroad	38.03	350	P		P	01 57 30.8	-1.0
	baz=165,SNR=8.7							
CWC	Cottonwood Cre	38.09	316	P		P	01 57 31.5	-1.2
	baz=122							
LMQ	La Malbaie	38.12	17	*e*P		P	01 57 33.0	+0.4
	comp=Z,22nm,0.6s							
B30A	Myrvik Farm, E	38.15	347	P		P	01 57 31.9	-1.0
	baz=160							
A32A	Rocking H Ranc	38.21	349	P		P	01 57 32.2	-1.1
	baz=163,SNR=12							
C27A	Sayler Ranch,	38.29	343	P		P	01 57 34.2	+0.2
	baz=155							
REDW	Red Top Meadow	38.30	330	*e*P		P	01 57 35.1	+0.7
	comp=Z,19nm,1.0s							
SNOW	Snow King Moun	38.33	330	*e*P		P	01 57 35.1	+0.4
	comp=Z,14nm,0.9s							
D25A	Fairfield	38.34	341	P		P	01 57 34.8	+0.3
	baz=152							
LOHW	Long Hollow	38.37	331	*e*P		P	01 57 35.1	+0.2
	comp=Z,8.5nm,1.2s							
B29A	Wagenman Farm,	38.41	346	P		P	01 57 34.9	0.0
	baz=159,SNR=7.2							
MOOW	Moose Ponds	38.53	331	*e*P		P	01 57 35.3	-1.0
	comp=Z,3.7nm,0.8s							
LMN	Caledonia Moun	38.54	24	*e*P		P	01 57 37.1	+1.0
	comp=Z,88nm,1.3s							
C26A	Wahner Farm, P	38.56	342	P		P	01 57 35.9	-0.4
	baz=154,SNR=6.6							
A30A	Hoffart Farm,	38.61	347	P		P	01 57 36.0	-0.6
	baz=160							
B28A	Dugan Ranch, T	38.65	345	P		P	01 57 37.3	+0.4
	baz=157							
IMW	Indian Meadow	38.74	331	*e*P		P	01 57 38.1	0.0
	comp=Z,8.4nm,1.3s							
FLWY	Flagg Ranch	38.76	331	*e*P		P	01 57 37.5	-0.8
	comp=Z,6.7nm,0.9s							
A29A	Manning Farm,	38.80	346	P		P	01 57 38.0	-0.2
	baz=159,SNR=7.5							
C25A	Freed Ranch, W	38.81	341	P		P	01 57 38.7	+0.3
	baz=152							
RCTC	Rector, Farmer	38.82	315	P		P	01 57 38.4	-0.2
	baz=121							
ELK	Elko	38.83	324	*e*P		P	01 57 40.3	+1.4
ELK				*ep*P		pP	01 58 23.0	+2.8
SMMC	Simmler	38.86	313	P		P	01 57 38.3	-0.7
	baz=119							
RLMT	Red Lodge	38.91	333	P		P	01 57 39.4	-0.1
	baz=142							
RLMT	Red Lodge	38.91	333	*e*P		P	01 57 39.6	+0.1
	comp=Z,21nm,1.6s							
H17A	Grant Village	38.94	332	P		P	01 57 39.6	-0.2
	baz=140							
LKWY	Lake	38.99	332	*e*P		P	01 57 41.2	+1.1
A28A	Rude Farm, Bot	39.05	345	P		P	01 57 40.2	-0.1
	baz=157							
B26A	Jensen Ranch,	39.10	343	P		P	01 57 41.3	+0.6
	baz=154							
NV11	Mina Array Sit	39.23	318	*e*P		P	01 57 44.0	+1.8
	comp=Z,9.4nm,0.9s							
B25A	Knox Farm, Ray	39.28	342	P		P	01 57 42.8	+0.5
	baz=153							
NV01	Mina Array Sit	39.33	318	*e*P		P	01 57 44.4	+1.3
NV01				*e*ScP		ScP	02 03 19.6	+1.8
NVAR	Mina Array Bea	39.33	318	P		P	01 57 44.8	+1.7
	comp=Z,5.4nm,0.6s,baz=130,slow=7.1,SNR=43							
NVAR				pP		pP	01 58 25.1	+0.7
	comp=Z,1.8nm,0.7s,baz=125,slow=7.0,SNR=2.8							
NVAR				PcP		PcP	01 59 48.9	+1.3
	comp=Z,3.4nm,0.7s,baz=124,slow=4.4,SNR=10							
NVAR				ScP		ScP	02 03 18.9	+1.1
	comp=Z,0.6nm,0.6s,baz=126,slow=4.6,SNR=4.6							
YMR	Madison River	39.33	332	*e*P		P	01 57 43.1	+0.1
YMR				*ep*P		pP	01 58 26.3	+1.9
A27A	Ledoux Ranch,	39.34	344	P		P	01 57 43.2	+0.5
	baz=156							
ULM	Lac du Bonnet	39.38	350	P		P	01 57 40.9	-2.1
	comp=Z,7.4nm,0.7s,baz=169,slow=9.1,SNR=9.2							
ULM				pP		pP	01 58 22.9	-1.4
	comp=Z,6.9nm,0.9s,baz=184,slow=8.1,SNR=3.7							
ULM	Lac du Bonnet	39.38	350	*e*P		P	01 57 41.5	-1.5
ULM				*ep*P		pP	01 58 23.3	-1.1
A26A	Wade Farm, Ken	39.51	343	P		P	01 57 44.1	-0.1
	baz=155							
DGMT	Dagmar	39.78	341	P		P	01 57 46.7	+0.3
	baz=151							
DGMT	Dagmar	39.78	341	*e*P		P	01 57 46.6	+0.2
	comp=Z,20nm,0.8s							
BMN	Battle Mountai	39.81	322	*e*P		P	01 57 47.4	+0.5
	comp=Z,5.8nm,0.8s							
BMN				*ep*P		pP	01 58 28.4	0.0
A25A	Svangstu Ranch	39.86	342	P		P	01 57 47.3	+0.3
	baz=153							
WAKR	Walker	40.11	318	*e*P		P	01 57 51.7	+2.2
HLID	Hailey	40.25	328	P		P	01 57 50.5	0.0
	baz=134							
HLID	Hailey	40.25	328	*e*P		P	01 57 50.7	+0.3
	comp=Z,2.8nm,0.8s							
MCMT	McKenzie Canyo	40.35	330	*e*P		P	01 57 52.8	+1.4
MCMT				*ep*P		pP	01 58 34.1	+1.2
BOZ	Bozeman (W)	40.38	332	P		P	01 57 51.4	-0.1
	baz=139,SNR=6.6							
BOZ	Bozeman (W)	40.38	332	*e*P		P	01 57 52.0	+0.5
	comp=Z,7.0nm,1.3s							
BOZ				*ep*P		pP	01 58 32.7	-0.4
DLMT	Dillon	40.62	331	*e*P		P	01 57 51.6	-1.8
	comp=Z,10nm,1.1s							
EGMT	Eagleton	41.42	336	P		P	01 58 00.2	+0.3
	baz=143							
EGMT	Eagleton	41.42	336	*e*P		P	01 57 59.9	+0.1
	comp=Z,13nm,1.1s							
WVOR	Wild Horse Val	41.87	323	*e*P		P	01 58 03.8	+0.1
	comp=Z,7.4nm,0.9s							
MSO	Missoula	42.33	331	P		P	01 58 07.8	+0.5
	baz=137							
O03D	Paynes Creek	42.62	318	P		P	01 58 09.4	-0.3
	baz=122							
LCO	Las Campanas	42.98	160	*e*P		P	01 58 14.1	+1.2
	comp=Z,12nm,0.8s							
M04C	Macdoel	43.44	320	P		P	01 58 16.0	-0.3
	baz=123							
N02D	Trinity Center	43.56	319	P		P	01 58 16.7	-0.5
	baz=122							
K04D	Chiloquin, OR	43.85	321	P		P	01 58 19.3	-0.3
	baz=124							
J05D	Fort Rock, OR	43.91	322	P		P	01 58 20.1	0.0
	baz=125							
YBH	Yreka Blue Hor	43.96	320	P		P	01 58 19.2	-1.3
	comp=Z,1.6nm,0.6s,baz=115,slow=5.6,SNR=4.4							
DRLN	Deer Lake	44.27	26	*e*P		P	01 58 23.2	+0.6
	comp=Z,58nm,0.9s							
I05D	Terrebonne, OR	44.59	324	P		P	01 58 26.3	+1.0
	baz=126							
L02D	Cave Junction,	44.75	320	P		P	01 58 27.6	+1.0
	baz=122							
FFC	Flin Flon	44.83	347	*e*P		P	01 58 26.1	-0.9
	comp=Z,6.3nm,0.8s							
FFC				*ep*P		pP	01 59 08.6	-0.8
NEW	Newport	44.87	331	P		P	01 58 28.5	+1.1
	baz=134							
I04A	Tendick Farm,	44.91	322	P		P	01 58 28.7	+0.9
	baz=124							
G05D	Wamic, OR	45.11	325	P		P	01 58 30.2	+0.8
	baz=127							
I03D	Drain, OR	45.42	322	P		P	01 58 32.6	+0.8
	baz=123							
SCHQ	Schefferville	45.64	15	P		P	01 58 32.6	-0.8
	comp=Z,30nm,0.6s,baz=214,slow=6.0,SNR=68							
SCHQ	Schefferville	45.64	15	*e*P		P	01 58 32.6	-0.8
	comp=Z,50nm,0.9s							
G03D	McMinnville, O	46.21	324	P		P	01 58 39.1	+1.2
	baz=125							
LON	Longmire	46.29	326	*e*P		P	01 58 37.5	-1.2
	comp=Z,5.4nm,1.2s							
LON				*ep*P		pP	01 59 21.8	+0.5
C06D	Leavenworth	46.53	328	P		P	01 58 40.8	+0.4
	baz=129							
CPUP	Villa Florida	46.85	144	P		P	01 58 42.5	-0.6
	comp=Z,6.0nm,0.6s,baz=338,slow=8.7,SNR=22							
CPUP	Villa Florida	46.85	144	*e*P		P	01 58 42.1	-1.0
FCC	Fort Churchill	47.45	354	*e*P		P	01 58 46.6	-0.6
	comp=Z,9.7nm,0.7s							
RCBR	Riachuelo	52.66	107	P		P	01 59 26.9	-0.3
	comp=Z,28nm,0.8s,baz=273,slow=6.9,SNR=16							
RCBR	Riachuelo	52.66	107	*e*P		P	01 59 26.9	-0.3
	comp=Z,23nm,0.8s							
PLCA	Paso Flores	54.00	166	P		P	01 59 37.5	+1.0
	comp=Z,13nm,0.8s,baz=1.4,slow=8.3,SNR=17							
PLCA				pP		pP	02 00 20.9	+0.5
	comp=Z,8.2nm,0.9s,baz=357,slow=7.1,SNR=4.0							
PLCA				PcP		PcP	02 00 39.4	+0.4
	comp=Z,6.0nm,0.8s,baz=343,slow=4.6,SNR=5.2							
PLCA	Paso Flores	54.00	166	*e*P		P	01 59 37.3	+0.8
	comp=Z,20nm,0.9s							
PLCA				pP		pP	02 00 20.9	+0.5
PLCA				PcP		PcP	02 00 39.4	+0.4
TRQA	Tornquist	54.26	157	*e*P		P	01 59 37.3	-1.1
	comp=Z,5.7nm,0.6s							
YKA	Yellowknife Ar	54.81	344	P		P	01 59 40.7	-1.3
	comp=Z,3.0nm,0.6s,baz=142,slow=6.9,SNR=92							
YKA				pP		pP	02 00 25.4	-0.5
	comp=Z,16nm,1.1s,baz=136,slow=7.6,SNR=11							
YKA				ScP		ScP	02 04 20.7	-0.9
	comp=Z,0.4nm,0.7s,baz=140,slow=3.9,SNR=5.7							
YKB5	Yellowknife Ar	54.81	344	*e*P		P	01 59 41.3	-0.6
YKB5				*ep*P		pP	02 00 26.3	+0.4
YKW3	Yellowknife Ar	54.87	344	*e*P		P	01 59 41.3	-1.0
YKW3				*ep*P		pP	02 00 25.9	-0.5
DLBC	Dease Lake	57.31	334	P		P	01 59 59.2	-0.6
	comp=Z,3.8nm,1.0s,baz=148,slow=4.4,SNR=5.0							
DLBC				pP		pP	02 00 44.3	0.0
	comp=Z,4.0nm,0.9s,baz=170,slow=7.4,SNR=3.9							
CHRN	Cochrane	59.80	170	*e*P		P	02 00 15.6	-1.4
	comp=Z,8.5nm,0.8s							
SFJD	Kangerlussuaq	60.10	15	*i* P		P	02 00 17.6	-1.2
	comp=Z,12nm,0.7s							
SFJD	Kangerlussuaq	60.10	15	*e*P		P	02 00 17.9	-0.9
	comp=Z,14nm,0.7s							
RES	Resolute Bay	63.24	357	P		P	02 00 38.2	-1.4
	comp=Z,8.0nm,0.7s,baz=177,slow=10,SNR=44							
RES				pP		pP	02 01 24.5	-0.5
	comp=Z,5.3nm,0.7s,baz=188,slow=9.8,SNR=5.7							
RES	Resolute Bay	63.24	357	*e*P		P	02 00 38.5	-1.2
	comp=Z,7.6nm,0.7s							
RES				*ep*P		pP	02 01 24.8	-0.2
INK	Inuvik	64.45	342	P		P	02 00 47.2	-0.4
	comp=Z,3.0nm,0.9s,baz=124,slow=8.1,SNR=8.5							
INK				pP		pP	02 01 32.3	-0.7
	comp=Z,19nm,1.0s,baz=122,slow=7.6,SNR=19							
INK	Inuvik	64.45	342	*e*P		P	02 00 46.9	-0.7
	comp=Z,29nm,1.1s							
INK				pP		pP	02 01 32.3	-0.7
SUMG	Summit	67.01	14	*i* P		P	02 01 03.7	-0.7
	comp=Z,26nm,1.1s							
SUMG	Summit	67.01	14	*e*P		P	02 01 03.1	-1.3
	comp=Z,28nm,1.1s							
SUMG				*ep*P		pP	02 01 49.4	-0.9
IL1	Eielson Array	67.39	336	*e*P		P	02 01 04.8	-1.7
ILAR	Eielson Array	67.39	336	P		P	02 01 05.7	-0.8
	comp=Z,2.3nm,0.8s,baz=128,slow=4.5,SNR=26							
ILAR				pP		pP	02 01 50.9	-1.4
	comp=Z,2.8nm,1.0s,baz=103,slow=4.8,SNR=5.4							
ILB	Eielson Array	67.39	336	*e*P		P	02 01 05.8	-0.7
RND	Reindeer	67.71	334	*e*P		P	02 01 08.9	+0.2
	comp=Z,11nm,0.7s					

	comp=Z,6.2nm,0.8s							
DAVA				*i* pP		**pP**	02 03 34.5	**-1.8**
	comp=Z,5.2nm,1.3s							
GRFO	**Grafenberg**	**85.78**	**40**	*e*P		**P**	02 02 49.3	**-0.6**
	comp=Z,5.0nm,0.9s							
FUORN	**Ofenpass-Fuorn**	**85.83**	**43**	*e*P		**P**	02 02 49.8	**-0.7**
	comp=Z,6.0nm,0.8s							
BILL	**Bilibino**	**85.83**	**339**	*e*P		**P**	02 02 49.7	**0.0**
	comp=Z,5.1nm,1.0s							
RETA	**Reutte**	**85.97**	**42**	*i* P		**P**	02 02 51.2	**+0.2**
	comp=Z,4.0nm,1.0s							
RETA				*i* pP		**pP**	02 03 39.4	**+0.5**
	comp=Z,3.7nm,1.0s							
ARCES	**ARCESS Array B**	**86.46**	**19**	P		**P**	02 02 50.9	**-1.9**
	comp=Z,4.3nm,0.9s,baz=286,slow=4.6,SNR=3.4							
CLL	**Collm**	**86.51**	**38**	*i* P		**P**	02 02 52.5	**-0.9**
	comp=Z,4.0nm,0.9s							
CLL				*i*			02 02 56.8	
CLL	**Collm**	**86.51**	**38**	*e*P		**P**	02 02 52.5	**-0.9**
	comp=Z,5.0nm,0.6s							
TAM	**Tamanrasset**	**86.86**	**68**	*e*P		**P**	02 02 55.1	**-0.8**
KHC	**Kasperske Hory**	**87.41**	**40**	*e*P		**P**	02 02 56.9	**-0.9**
	comp=Z,7.6nm,2.0s							
GERES	**GERESS Array B**	**87.56**	**41**	P		**P**	02 02 57.4	**-1.2**
	comp=Z,0.8nm,0.6s,baz=294,slow=4.0,SNR=14							
GERES				pP		**pP**	02 03 46.3	**-0.4**
	comp=Z,0.7nm,0.8s,baz=308,slow=4.4,SNR=4.0							
GEA0	**GERESS Array S**	**87.57**	**41**	*e*P		**P**	02 02 57.5	**-1.1**
CONA	**Conrad Observa**	**89.20**	**41**	*i* P		**P**	02 03 04.8	**-1.5**
	comp=Z,2.3nm,1.1s							
FINES	**FINESS Array B**	**90.03**	**26**	P		**P**	02 03 08.0	**-1.7**
	comp=Z,2.1nm,0.9s,baz=303,slow=3.9,SNR=4.3							
PSZ	**Piszkesteto**	**91.78**	**40**	*e*P		**P**	02 03 17.7	**-0.6**
	comp=Z,2.8nm,0.8s							
VNA3	**Neumayer Olymp**	**96.55**	**162**	P		**P**	02 03 40.1	**+0.8**
VNA1	**Neumayer--Stat**	**96.82**	**161**	P		**P**	02 03 41.7	**+1.1**
VNA2	**Neumayer--Watz**	**97.17**	**161**	P		Pdif	02 03 42.5	+0.2
	baz=286,slow=18							
SNAA	**Sanae**	**98.77**	**161**	P		**P**	02 03 47.6	**-1.8**
SNAA	**Sanae**	**98.77**	**161**	*e*P		**P**	02 03 49.4	**0.0**
	comp=Z,271nm,1.1s							
KURK	**Kurchatov**	**116.46**	**11**	PKKPbc		PKKPbc	02 19 19.8	-3.9
KURBB	**Kurchatov Arra**	**116.54**	**11**	PKKPbc		PKKPbc	02 19 19.8	-3.7
	comp=Z,0.3nm,0.6s,baz=171,slow=3.9,SNR=4.5							
SONM	**Songino Array**	**119.80**	**350**	PKP		**PKPdf**	02 08 58.7	**-1.1**
	comp=Z,0.5nm,0.6s,baz=331,slow=0.6,SNR=3.7							
MAW	**Mawson**	**120.39**	**167**	PKP		**PKPdf**	02 09 00.0	**0.0**
	comp=Z,2.9nm,0.7s,baz=116,slow=2.0,SNR=4.6							
KSRS	**Korea Array**	**121.77**	**329**	PKP		**PKPdf**	02 09 03.2	**-0.4**
	comp=Z,1.8nm,0.6s,baz=36,slow=1.6,SNR=5.1							
KSAR	**Wonju Array Be**	**121.80**	**329**	PKP		**PKPdf**	02 09 03.2	**-0.5**
AAK	**Ala-Archa**	**123.09**	**17**	*e*PKPdf		**PKPdf**	02 09 06.3	**0.0**
WMQ	**Urumqi**	**124.51**	**6**	*e*PKP		**PKPdf**	02 09 09.1	**+0.2**
HHC	**Hu-ho-hao-te**	**125.35**	**344**	*e*PKP		**PKPdf**	02 09 14.1	**+3.5**
HHC				PP		**PP**	02 11 04.3	**+2.2**
HHC				SS		SS	02 27 49.4	+5.7
HHC				AMB		AMB		
	comp=Z,66nm,9.4s							
HHC				LR		LR		
	comp=Z,240nm,19.6s							
HHC				LR		LR		
	comp=Z,350nm,19.5s							
HHC				LR		LR		
	comp=Z,79nm,19.8s							
KSH	**Kashi**	**126.39**	**17**	*e*PKP		**PKPdf**	02 09 09.8	**-2.9**
KSH				*es*PKP			02 10 30.6	
KSH				*e*PP		**PP**	02 11 13.3	**+4.2**
KSH				PKS		**PKSdf**	02 12 44.9	**-4.5**
KSH				SKS		SKSdf	02 15 58.1	-8.1
KSH				SKKS		SKKSac	02 17 40.4	-8.3
KSH				AMB		AMB		
	comp=Z,100nm,4.2s							
KSH				LR		LR		
	comp=Z,81nm,5.4s							
KSH				LR		LR		
	comp=Z,89nm,6.3s							
KSH				LR		LR		
	comp=Z,86nm,5.6s							
LZH	**Lanzhou**	**131.66**	**349**	*e*PKP		**PKPdf**	02 09 23.3	**+0.5**
LZH				sPKP			02 10 34.3	
STKA	**Stephens Creek**	**131.96**	**237**	PKP		**PKPdf**	02 09 23.5	**+0.3**
	comp=Z,4.9nm,0.7s,baz=87,slow=3.4,SNR=13							
COEN	**Coen**	**132.16**	**262**	*e*PKPdf		**PKPdf**	02 09 23.1	**-0.9**
CD2	**Chengdu**	**136.70**	**348**	PKP		**PKPdf**	02 09 31.3	**-1.0**
GYA	**Guiyang**	**140.22**	**342**	*e*PKP		**PKPdf**	02 09 38.0	**-0.9**
GYA				sPKP			02 10 48.3	
GYA				PP		**PP**	02 12 40.8	**+3.8**
GYA				AMB		AMB		
	comp=Z,120nm,8.2s							
ASAR	**Alice Springs**	**140.37**	**247**	PKhKP		PKPpre	02 09 32.3	
	comp=Z,2.1nm,0.5s,baz=110,slow=3.5,SNR=33							
ASAR				PKP		**PKPdf**	02 09 39.6	**+0.5**
	comp=Z,6.0nm,0.7s,baz=100,slow=2.3,SNR=34							
ASAR				pPKP		pPKPdf	02 10 27.9	-2.0
	comp=Z,1.1nm,0.7s,baz=94,slow=2.1,SNR=2.1							
ASAR				SKPbc		**SKPbc**	02 12 57.1	**+0.1**
	comp=Z,1.8nm,0.7s,baz=106,slow=3.0,SNR=15							
WRAB	**Tennant Creek**	**140.49**	**253**	*e*PKPpre		PKPpre	02 09 33.6	
WRAB				*e*PKPdf		**PKPdf**	02 09 40.1	**+0.8**
WRA	**Warramunga Arr**	**140.50**	**253**	PKhKP		PKPpre	02 09 33.0	
	comp=Z,3.5nm,0.7s,baz=91,slow=3.0,SNR=17							
WRA				PKP		**PKPdf**	02 09 39.9	**+0.5**
	comp=Z,7.3nm,0.6s,baz=93,slow=2.4,SNR=28							
WRA				pPKP		pPKPdf	02 10 29.2	-1.0
	comp=Z,2.7nm,0.7s,baz=91,slow=1.6,SNR=4.6							
WRA				SKPbc		**SKPbc**	02 12 57.9	**+0.5**
	comp=Z,1.0nm,0.6s,baz=92,slow=2.6,SNR=4.9							
KMI	**Kunming**	**142.52**	**347**	PKP		**PKPdf**	02 09 42.1	**-1.1**
FITZ	**Fitzroy Crossi**	**148.89**	**254**	*e*PKPbc		**PKPbc**	02 09 58.8	**+0.8**
CHTO	**Chiang Mai**	**149.38**	**351**	*e*PKPbc		**PKPbc**	02 09 58.2	**-1.1**
CMAR	**Chiang Mai Arr**	**149.73**	**351**	PKP		**PKPdf**	02 09 55.5	**+0.3**
	comp=Z,1.1nm,0.4s,baz=312,slow=2.4,SNR=4.2							
CMAR				PKPbc		**PKPbc**	02 09 59.6	**-0.5**
	comp=Z,1.0nm,0.3s,baz=327,slow=2.9,SNR=8.9							
CMAR				pPKPbc		**pPKPbc**	02 10 49.6	**-0.9**
	comp=Z,2.5nm,0.8s,baz=326,slow=3.1,SNR=1.7							
MBWA	**Marble Bar**	**153.69**	**246**	*e*PKPdf		**PKPdf**	02 10 00.1	**-1.0**
MBWA				*e*PKPbc		**PKiKP**	02 10 09.3	**+0.2**
KULM	**Kulim**	**161.98**	**338**	*e*PKPdf		**PKPdf**	02 10 11.3	**-0.2**

WEL 23 01:50:54.7±0.6,**36°.50S**×**177°.38E**,**h156**km±7km,**ML3.6**/5, **3C**,**Error ellipse: s-maj=8.0km s-min=6.6km az=90.0, Off east coast of North Island**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MXZ	**Matakaoa Point**	**1.30**	**145**	PN	Pn	01 51 22.5	-0.1
HAZ	**Te Kaha**	**1.30**	**166**	PN	Pn	01 51 22.7	+0.1
HAZ				SN	Sn	01 51 44.4	+0.2
PKGZ	**Pakihiroa**	**1.50**	**158**	PN	Pn	01 51 24.8	+0.1
WMGZ	**Waiomatatini S**	**1.56**	**148**	PN	Pn	01 51 25.2	-0.1
PUZ	**Puketiti**	**1.72**	**156**	PN	Pn	01 51 26.6	-0.4
TWGZ	**Tauwhareparae**	**1.74**	**164**	⇑PN	Pn	01 51 27.5	+0.2
TWGZ				SN	Sn	01 51 52.0	-0.4
URZ	**Urewera**	**1.77**	**187**	PN	Pn	01 51 27.5	0.0
URZ				SN	Sn	01 51 51.9	-1.0
URZ				AML	AML	01 51 54.5	
MWZ	**Matawai**	**1.84**	**176**	PN	Pn	01 51 28.1	-0.2
MWZ				AML	AML	01 51 55.1	
MWZ				AML	AML	01 51 55.1	
MUGZ	**Murupara**	**2.04**	**194**	PN	Pn	01 51 30.4	-0.2
CNGZ	**Carnagh Statio**	**2.09**	**162**	PN	Pn	01 51 30.7	-0.4
RIGZ	**Rimuhau**	**2.23**	**172**	PN	Pn	01 51 31.8	-1.0
SNGZ	**Shannon Statio**	**2.28**	**181**	⇑PN	Pn	01 51 32.4	-1.0
KNZ	**Kokohu**	**2.53**	**175**	⇑PN	Pn	01 51 34.6	-1.8
WHHZ	**Waihua**	**2.58**	**183**	PN	Pn	01 51 35.6	-1.4
NMHZ	**Naumai**	**2.63**	**190**	PN	Pn	01 51 37.1	-0.7
BKZ	**Black Stump Fm**	**2.75**	**195**	PN	Pn	01 51 37.6	-1.7
ARHZ	**Aropaoanui**	**2.78**	**186**	PN	Pn	01 51 37.9	-1.5
KWHZ	**Kaweka Forest**	**3.02**	**194**	PN	Pn	01 51 40.6	-1.9
BHHZ	**Black Hill Sta**	**3.16**	**199**	PN	Pn	01 51 42.1	-2.2
KAHZ	**Kahuranaki**	**3.31**	**187**	PN	Pn	01 51 43.9	-2.4
ANWZ	**Angora Road**	**4.02**	**190**	PN	Pn	01 51 52.2	-3.1
BFZ	**Birch Farm**	**4.27**	**192**	PN	Pn	01 51 54.3	-4.3
MRZ	**Mangatainoka R**	**4.39**	**198**	PN	Pn	01 51 55.7	-4.4
MRZ				SN	Sn	01 52 44.1	-7.1
OGWZ	**Otaki Gorge**	**4.65**	**201**	PN	Pn	01 51 59.1	-4.4

ISCJB ***23*** *01:52:28.8*±*1.4, 10°.85N*±*0°.07*×*72°.71W*±*0°.08, h96*km±*10km, Error ellipse: s-maj=15.3km s-min=8.8km az=43.1*
FUNV ***23*** *01:52:28.3, 10°.90N*×*72°.88W, h90*km*, MW2.9*
ISC 23 01:52:31.9±2.2,**10°.83N**±0°.09×**72°.6W**±0°.1,**h80**km±12km,
n11,σ1§**70**/17,**2D, Venezuela**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
VIRV	**Villa del Rosa**	**0.36**	**153**	*i* P	**Pn**	**01 52 43.6**	**-1.1**
VIRV				*e*S	**Sn**	**01 52 55.0**	**+1.0**
DABV	**Dabajuro**	**1.91**	**87**	*e*P	**Pn**	**01 53 02.8**	**+0.2**
DABV				*e*S	**Sn**	**01 53 28.3**	**+2.4**
QARV	**Quebrada Arrib**	**2.11**	**107**	*e*P	**Pn**	**01 53 05.4**	**0.0**
QARV				*e*S	**Sn**	**01 53 32.9**	**+2.0**
VIGV	**El Vigia**	**2.31**	**149**	*i* *e*P	**Pn**	**01 53 07.6**	**-0.4**
VIGV				*e*S	**Sn**	**01 53 35.7**	**0.0**
MONV	**Montecano**	**2.79**	**66**	*e*P	**Pn**	**01 53 13.1**	**-1.3**
MONV				*e*S	**Sn**	**01 53 47.0**	**-0.1**
SOCV	**Socops**	**3.04**	**146**	*e*P	**Pn**	**01 53 17.4**	**-0.6**
SOCV				*e*S	**Sn**	**01 53 51.9**	**-1.5**
BRRC	**Barranca, Sant**	**3.87**	**197**	*e*P	**Pn**	**01 53 27.3**	**-1.8**
BARC	**Barichara**	**4.25**	**188**	*e*P	**Pn**	**01 53 37.0**	**+2.5**
ELOV	**Elorza**	**4.88**	**141**	*e*P	**Pn**	**01 53 40.5**	**-2.4**
RUSC	**La Rusia**	**4.93**	**186**	*e*P	**Pn**	**01 53 42.6**	**-1.5**
YOPC	**Yopal, Colombi**	**5.44**	**178**	*e*P	**Pn**	**01 53 52.8**	**+2.1**

NIED ***23*** *01:53:00, 36°.50N*×*141°.30E, h32km, Mw3.7 Best double couple: M*o*4.19000*×*10*^{14} *NP1:*ϕ*s340.00000°,*δ*38.00000°,* λ*-113.00000°. NP2:*ϕ*s188.00000°,*δ*55.00000°,* λ*-73.00000°.*
ISCJB ***23*** *01:53:36.6*±*1.1, 36°.46N*±*0°.04*×*141°.36E*±*0°.09, h40km*±*9km, mb3.5/8, Error ellipse: s-maj=12.7km s-min=6.3km az=5.5*
JMA ***23*** *01:53:37.4*±*0.1, 36°.47N*×*141°.28E, h44km*±*2km, M3.6*
IDC ***23*** *01:53:40.1*±*3.3, 36°.38N*×*141°.24E, h53km*±*28km, mb3.3/8, mb1 3.5/11, mb1mx3.3/53, mbtmp3.7/11, ML3.6/2, MS2.6/2, Ms1 2.6/2, ms1mx2.2/31, Error ellipse: s-maj=33.6km s-min=13.2km az=77.0*
ISC 23 01:53:37.1±1.6,**36°.48N**±0°.04×**141°.29E**±0°.07,**h26**km±11km, **n28**,σ1§**14**/30,**mb3.7/8**,**Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHO	**Hitachi**	**0.59**	**283**	P	**Pn**	**01 53 49.4**	**-0.5**
JHO				S	**Sn**	**01 53 57.8**	**-0.9**
ONAJ	**Iwakimizuishiy**	**0.73**	**328**	P	**Pb**	**01 53 51.2**	**-0.1**
ONAJ				S	**Sb**	**01 54 00.8**	**-0.2**
JYT	**Yasato**	**0.92**	**254**	P	**Pb**	**01 53 53.7**	**-0.7**
JFK	**Kawauchi**	**0.94**	**340**	P	**Pb**	**01 53 54.1**	**-0.8**
JFK				S	**Sb**	**01 54 05.4**	**-1.6**
JSB	**Shiboa**	**1.20**	**294**	P	**Pb**	**01 53 59.0**	**-0.2**
JSB				S	**Sb**	**01 54 14.9**	**+0.6**
JFT	**Otama**	**1.28**	**324**	P	**Pb**	**01 54 00.2**	**-0.4**
JFT				S	**Sn**	**01 54 15.9**	**+0.1**
JMM	**Marumori**	**1.44**	**344**	P	**Pn**	**01 54 01.5**	**0.0**
JMM				S	**Sn**	**01 54 18.6**	**-0.9**
JAG	**Ashikaga**	**1.48**	**268**	P	**Pn**	**01 54 02.2**	**+0.1**
JAG				S	**Sn**	**01 54 20.4**	**-0.2**
MJAR	**Matsushiro Arr**	**2.48**	**272**	P	**Pn**	**01 54 17.0**	**+1.2**
	10.0nm,0.3s,baz=111,slow=8.9,SNR=37						
MJAR				LR	LR	01 55 29.4	
	comp=Z,110nm,19.8s,baz=105,slow=45						
MAT	**Matsushiro**	**2.48**	**272**	P	**Pn**	**01 54 16.9**	**+1.0**
MAT				S	**Sn**	**01 54 41.9**	**-3.4**
JHJ	**Hachijo jima 2**	**3.58**	**201**	P	**Pn**	**01 54 31.8**	**+0.9**
	23nm,0.3s,baz=319,slow=19,SNR=8.7						
JHJ				S	**Sn**	**01 55 11.7**	**-0.6**
	24nm,0.3s,baz=69,slow=22,SNR=6.1						
JNU	**Nakatsue**	**9.19**	**252**	LR	LR	01 59 23.0	
	comp=Z,47nm,19.9s,baz=295,slow=38						
USRK	**Ussuriysk Ar.**	**10.47**	**320**	P	**Pn**	**01 56 08.5**	**+3.0**
	0.1nm,0.3s,baz=128,slow=16,SNR=3.3						
H11N2	**WAKE ISLAND Hy**	**27.96**	**120**	T	T	02 28 55.5	
	baz=312,slow=75,SNR=13						
H11N1	**WAKE ISLAND Hy**	**27.96**	**120**	T	T	02 28 48.7	
	baz=312,slow=75,SNR=15						
H11N3	**WAKE ISLAND Hy**	**27.98**	**120**	T	T	02 28 56.4	
	baz=312,slow=75,SNR=13						
SONM	**Songino Array**	**28.01**	**305**	P	**P**	**01 59 26.5**	**+0.5**
	1.3nm,0.7s,baz=104,slow=8.4,SNR=6.7						
H11S1	**WAKE ISLAND Hy**	**28.65**	**122**	T	T	02 29 47.1	
	baz=314,slow=75,SNR=38						
H11S3	**WAKE ISLAND Hy**	**28.65**	**122**	T	T	02 29 40.6	
	baz=314,slow=75,SNR=32						
H11S2	**WAKE ISLAND Hy**	**28.67**	**122**	T	T	02 29 51.7	
	baz=314,slow=75,SNR=28						
ZALV	**Zalesovo Beam**	**42.21**	**313**	P	**P**	**02 01 27.8**	**+0.1**
	0.7nm,0.4s,baz=95,slow=8.0,SNR=3.3						
MKAR	**Makanchi Array**	**44.33**	**303**	P	**P**	**02 01 44.8**	**0.0**
	0.1nm,0.5s,baz=81,slow=9.2,SNR=2.5						
KURBB	**Kurchatov Arra**	**46.26**	**308**	P	**P**	**02 02 00.0**	**-0.1**
	0.7nm,0.6s,baz=82,slow=7.6,SNR=4.3						
WRA	**Warramunga Arr**	**56.50**	**188**	P	**P**	**02 03 15.7**	**-1.3**
	0.8nm,0.6s,baz=2.4,slow=7.4,SNR=4.7						
ASAR	**Alice Springs**	**60.23**	**188**	P	**P**	**02 03 42.1**	**-0.9**
	0.5nm,0.8s,baz=5.7,slow=6.3,SNR=4.3						
YKA	**Yellowknife Ar**	**64.34**	**30**	P	**P**	**02 04 09.9**	**-0.2**
	0.2nm,0.7s,baz=301,slow=6.6,SNR=4.1						
NOA	**NORSAR Array B**	**74.66**	**337**	P	**P**	**02 05 14.1**	**+0.2**
	0.3nm,0.7s,baz=40,slow=5.8,SNR=3.3						
LPAZ	**La Paz**	**147.06**	**60**	PKPbc	**PKPbc**	**02 13 18.4**	**-0.4**
	0.6nm,0.7s,baz=342,slow=3.2,SNR=4.0						

IDC ***23*** *01:53:41.5*±*7.9, 0°.63S*×*133°.72E, h0km, mb3.2/2, mb1 3.4/3, mb1mx3.2/43, mbtmp3.2/3, ML3.0/1, Error ellipse: s-maj=455.0km s-min=30.0km az=76.0*
ISCJB ***23*** *01:53:44.3*±*1.4, 0°.7S*±*0°.1*×*133°.46E*±*0°.09, h28km, mb3.2/2, Error ellipse: s-maj=21.4km s-min=10.3km az=20.8*
DJA ***23*** *01:53:45.6*±*0.7, 1°.S*±*9°*×*13°.3E*±*°, h10km, M3.8/4, MLv3.8/4*
ISC 23 01:53:45.9±1.5,**0°.6S**±0°.1×**133°.44E**±0°.09,**h28**km,**n6**, σ1§**55**/8,**Irian Jaya region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RKPI	**Ransiki, Papua**	**1.15**	**140**	P	**Pn**	**01 54 04.8**	**-1.4**
RKPI				S	**Sb**	**01 54 24.3**	**+2.6**
SWI	**Sorong**	**2.19**	**264**	P	**Pn**	**01 54 19.9**	**-0.5**
SWI				S	**Sn**	**01 54 46.8**	**+0.2**
FAKI	**Fak Fak**	**2.57**	**208**	P	**Pn**	**01 54 25.5**	**-0.2**
WRA	**Warramunga Arr**	**19.22**	**177**	P	**Pn**	**01 58 08.1**	**-0.9**
	0.0nm,0.3s,baz=360,slow=12,SNR=3.1						
ASAR	**Alice Springs**	**22.91**	**179**	P	**P**	**01 58 46.6**	**-1.1**
	0.4nm,0.4s,baz=358,slow=10,SNR=7.8						
MKAR	**Makanchi Array**	**64.97**	**324**	P	**P**	**02 04 24.3**	**+1.0**
	0.2nm,0.6s,baz=124,slow=8.9,SNR=2.7						

NIED ***23*** *02:13:00, 38°.20N*×*141°.70E, h53km, Mw3.5 Best double couple: M*o*2.15000*×*10*^{14} *NP1:*ϕ*s156.00000°,*δ*32.00000°,* λ*28.00000°. NP2:*ϕ*s43.00000°,*δ*76.00000°,* λ*119.00000°.*
IDC ***23*** *02:13:21.0*±*2.8, 38°.39N*×*142°.32E, h0km, mb3.6/4, mb1 3.7/5, mb1mx3.3/45, mbtmp3.5/5, ML3.0/1, Error ellipse: s-maj=67.8km s-min=32.4km az=74.0*
ISCJB ***23*** *02:13:29.7*±*1.0, 38°.18N*±*0°.05*×*141°.7E*±*0°.1, h55km*±*8km, mb3.6/4, Error ellipse: s-maj=14.6km s-min=5.5km az=24.7.*
JMA ***23*** *02:13:30.5*±*0.1, 38°.17N*×*141°.68E, h50km*±*1km, M3.5*
JMA Felt I J1.
ISC 23 02:13:29.8±1.5,**38°.17N**±0°.05×**141°.8E**±0°.1,**h47**km±12km, **n20**,σ1§**13**/26,**mb3.7**/4,**Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**0.44**	**311**	P	**Pn**	**02 13 40.6**	**+0.5**
JIO				S	**Sn**	**02 13 47.5**	**+0.1**
JMM	**Marumori**	**0.83**	**249**	P	**Pn**	**02 13 44.8**	**-0.3**
JMM				S	**Sn**	**02 13 55.2**	**-1.1**
JOU	**Okura**	**0.89**	**283**	P	**Pn**	**02 13 46.1**	**+0.1**
JOU				S	**Sn**	**02 13 57.5**	**-0.4**
JMK	**Ichinoseki**	**0.89**	**331**	P	**Pn**	**02 13 46.6**	**+0.6**
JMK				S	**Sn**	**02 13 57.9**	**+0.1**
OFUJ	**Ofunato**	**0.91**	**355**	P	**Pn**	**02 13 46.9**	**+0.6**
OFUJ				S	**Sn**	**02 13 58.4**	**0.0**
JFK	**Kawauchi**	**1.07**	**222**	P	**Pn**	**02 13 48.6**	**+0.2**
JFK				S	**Sn**	**02 14 01.0**	**-1.2**
JFT	**Otama**	**1.31**	**241**	P	**Pn**	**02 13 52.1**	**+0.5**
JFT				S	**Sn**	**02 14 07.7**	**-0.3**
JYK	**Kaneyama**	**1.33**	**305**	P	**Pn**	**02 13 52.4**	**+0.4**
JYS	**Shirataka**	**1.34**	**273**	P	**Pn**	**02 13 52.3**	**+0.2**
JYS				S	**Sn**	**02 14 08.6**	**-0.2**
JOM	**Ohasama**	**1.35**	**344**	P	**Pn**	**02 13 53.2**	**+0.9**
JOM				S	**Sn**	**02 14 09.6**	**+0.5**
MJAR	**Matsushiro Arr**	**3.27**	**241**	Pn	**Pn**	**02 14 20.0**	**+1.5**
	1.3nm,0.3s,baz=57,slow=10,SNR=5.8						
MAT	**Matsushiro**	**3.27**	**241**	P	**Pn**	**02 14 21.9**	**+3.3**
MAT				*e*S	**Sn**	**02 14 58.6**	**+2.4**
ZALV	**Zalesovo Beam**	**41.37**	**311**	P	**P**	**02 21 09.6**	**-1.4**
	0.6nm,0.4s,baz=75,slow=8.8,SNR=3.7						
ZALV	**Zalesovo Beam**	**41.37**	**311**	sP		02 21 28.6	-0.6
	0.4nm,0.3s,baz=156,slow=37,SNR=3.4						
MKAR	**Makanchi Array**	**43.76**	**301**	P	**P**	**02 21 30.9**	**+0.4**
	0.3nm,0.6s,baz=85,slow=9.8,SNR=3.5						
MKAR	**Makanchi Array**	**43.76**	**301**	sP		02 21 48.5	-0.4
	0.4nm,0.6s,baz=94,slow=9.9,SNR=4.8						
KURBB	**Kurchatov Arra**	**45.53**	**307**	P	**P**	**02 21 43.4**	**-1.2**
	0.5nm,0.3s,baz=81,slow=7.9,SNR=4.7						
KURBB	**Kurchatov Arra**	**45.53**	**307**	sP		02 22 02.2	-0.7
	2.1nm,0.6s,baz=8.1,SNR=9.5						
WRA	**Warramunga Arr**	**58.22**	**188**	P	**P**	**02 23 18.9**	**-0.4**
	0.3nm,0.4s,baz=5.4,slow=7.4,SNR=2.4						
WRA	**Warramunga Arr**	**58.22**	**188**	P	pP	02 23 34.0	+1.5
	0.5nm,0.8s,baz=7.0,slow=7.7,SNR=2.7						

AUST ***23*** *02:22:52.4*±*0.0, 31°.03S*×*138°.86E, h10km, Error ellipse: s-maj=0.1km s-min=0.1km az=358.0*
ISCJB ***23*** *02:22:54.1*±*0.6, 30°.99S*±*0°.06*×*138°.88E*±*0°.08, h33km, Error ellipse: s-maj=12.1km s-min=6.3km az=143.0*
IDC ***23*** *02:22:55.8*±*3.4, 30°.54S*×*139°.52E, h0km, mb1 3.6/3, mb1mx3.4/24, mbtmp3.3/3, ML3.2/3, Error ellipse: s-maj=114.2km s-min=15.8km az=45.0*
ISC 23 02:22:55.9±1.2,**31°.10S**±0°.08×**138°.89E**±0°.07,**h33**km,**n9**, σ1§**18**/11,**South Australia**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HTT	**Hallett**	**2.33**	**179**	P	**Pn**	**02 23 31.7**	**-0.3**
	baz=2.4						
STKA	**Stephens Creek**	**2.44**	**109**	Pn	**Pn**	**02 23 33.8**	**+0.3**
	2.3nm,0.3s,baz=296,slow=14,SNR=43						
STKA				Lg	Lg	02 24 06.4	
	13nm,0.3s,baz=3.5,slow=19,SNR=12						
STKA	**Stephens Creek**	**2.44**	**109**	P	**Pn**	**02 23 33.9**	**+0.4**
	baz=2.5						
BBOO	**Buckleboo**	**2.95**	**234**	P	**Pn**	**02 23 40.9**	**+0.3**
	baz=3.0						
CMSA	**Cobar Meteorol**	**5.84**	**96**	P	**Pn**	**02 24 20.3**	**+0.1**
	baz=5.9						
ARPS	**Mount Arapiles**	**6.17**	**157**	P	**Pn**	**02 24 23.7**	**-1.0**
	baz=6.2						
ASAR	**Alice Springs**	**8.62**	**328**	Pn	**Pn**	**02 24 59.8**	**+1.2**
	0.1nm,0.3s,baz=153,slow=14,SNR=4.2						
ASAR				Sn	**Sn**	**02 26 33.8**	**-0.9**
	0.3nm,0.3s,baz=149,slow=22,SNR=6.9						
WRKA	**Warakurna**	**11.13**	**300**	P	**Pn**	**02 25 34.0**	**+1.1**
	baz=11						
WRA	**Warramunga Arr**	**11.84**	**339**	Pn	**Pn**	**02 25 43.0**	**+0.5**
	0.5nm,0.3s,baz=150,slow=12,SNR=8.7						
WRA				Sn	**Sn**	**02 27 51.2**	**-2.4**
	0.1nm,0.3s,baz=159,slow=25,SNR=3.2						

NIED ***23*** *02:40:00, 38°.80N*×*143°.50E, h8km, Mw3.5 Best double couple: M*o*2.32000*×*10*^{14} *NP1:*ϕ*s1.00000°,*δ*47.00000°,* λ*-116.00000°. NP2:*ϕ*s216.00000°,*δ*49.00000°,* λ*-65.00000°.*
JMA ***23*** *02:40:51.5*±*0.3, 38°.77N*×*143°.50E, h0km, M3.8*
ISCJB ***23*** *02:40:53.8*±*1.0, 38°.8N*±*0°.1*×*143°.54E*±*0°.10, h20km, mb3.7/5, Error ellipse: s-maj=15.7km s-min=9.4km az=153.9*
IDC ***23*** *02:40:60.0*±*5.0, 38°.

YKA	**Yellowknife Ar**	**70.05**	**343**	P	**P**	**03 00 44.7**	**-1.0**
	0.8nm,0.7s,baz=140,slow=6.0,SNR=30						
DBIC	**Dimbokro**	**73.07**	**82**	P	**P**	**03 01 04.4**	**-0.3**
	4.5nm,1.1s,baz=285,slow=4.4,SNR=4.2						
GERES	**GERESS Array B**	**92.26**	**41**	P	**P**	**03 02 42.9**	**-0.7**
	0.2nm,0.6s,baz=222,slow=1.8,SNR=4.2						
ASAR	**Alice Springs**	**140.21**	**228**	PKhKP	PKPpre	03 08 53.5	
	0.4nm,0.5s,baz=128,slow=3.6,SNR=7.4						
WRA	**Warramunga Arr**	**141.91**	**234**	PKhKP	PKPpre	03 08 59.9	
	0.8nm,0.6s,baz=128,slow=2.9,SNR=7.2						

JMA 23 02:53:26.7, 35.73N×138.26E, h4km±2km, M0.7, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JNT	**Takato**	**0.17**	**326**	P	Pg	02 53 30.3	+0.1
JNT				S	Sg	02 53 33.2	+0.7
JYN	**Shimob**	**0.33**	**135**	P	Pg	02 53 33.4	+0.4
JYN				S	Sg	02 53 38.6	+1.2
JNY	**Yasuok**	**0.49**	**221**	P	Pb	02 53 37.1	-0.9

JMA 23 02:53:33.9, 36.84N×138.63E, h7km±2km, M1.1, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JGK	**Kuni**	**0.28**	**178**	S	Sg	02 53 43.9	+0.8
MAT	**Matsushiro**	**0.45**	**229**	P	Pg	02 53 42.6	0.0
MAT				S	Sg	02 53 48.2	-0.4
MAT	**Matsushiro**	**0.45**	**229**	P	Pg	02 53 42.6	0.0
JNG	**Nsakai**	**0.61**	**225**	S	Sg	02 53 53.2	-0.3

KRSC 23 02:54:45.0±1.6, 52.49N×159.66E, h42km±19km, ML3.8, Off east coast of Kamchatka Peninsula

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
RUS	**Russkaya**	**0.70**	**266**	*i* P	Pn	02 54 59.5	+1.0
RUS				*e*S	Sn	02 55 08.8	+0.6
NLC	**Nalytchevo**	**0.71**	**344**	*e*P	Pn	02 54 59.9	+1.3
NLC				*e*S	Sn	02 55 09.6	+1.2
DALK	**Dalny**	**0.78**	**315**	*e*P	Pn	02 55 00.5	+1.0
DALK				*e*S	Sn	02 55 10.4	+0.4
PET	**Petropavlovsk**	**0.81**	**312**	*i* P	Pn	02 55 01.0	+1.0
PET				*e*S	Sn	02 55 11.2	+0.3
UGLR	**Uglovaya**	**0.88**	**325**	*e*P	Pn	02 55 02.5	+1.4
UGLR				*e*S	Sn	02 55 13.4	+0.6
MTVR	**Mutnovka**	**0.90**	**270**	*e*P	Pn	02 55 02.4	+1.0
MTVR				*e*S	Sn	02 55 13.9	+0.6
SDLR	**Sedlovina**	**0.92**	**330**	*i* P	Pn	02 55 02.9	+1.3
SDLR				*e*S	Sn	02 55 14.5	+0.8
SMAR	**Somma**	**0.94**	**327**	*e*P	Pn	02 55 03.0	+1.1
AVH	**Avacha**	**0.96**	**325**	*i* P	Pn	02 55 03.6	+1.5
AVH				*e*S	Sn	02 55 15.9	+1.3
KRER	**Koryakskii**	**0.99**	**326**	*e*P	Pn	02 55 04.1	+1.5
KRMR	**Karymshinskiy**	**0.99**	**291**	*i* P	Pn	02 55 03.3	+0.8
KRMR				*e*S	Sn	02 55 15.3	0.0
KOK	**Koryaka**	**1.02**	**323**	*e*P	Pn	02 55 04.7	+1.8
KRX	**Arik**	**1.07**	**325**	*i* P	Pn	02 55 04.9	+1.3
KRX				*e*S	Sn	02 55 18.0	+0.7
ASAK	**Asacha**	**1.08**	**265**	*i* P	Pn	02 55 05.3	+1.5
ASAK				*i* S	Sn	02 55 19.2	+1.6
KII	**Karymskiy**	**1.56**	**355**	*e*P	Pn	02 55 13.3	+3.0
KII				*e*S	Sn	02 55 32.5	+3.2
GNL	**Ganaly**	**1.59**	**320**	*i* P	Pn	02 55 12.8	+2.0
GNL				*e*S	Sn	02 55 32.4	+2.2
MKZ	**Mys Kozlova**	**2.41**	**30**	*e*P	Pn	02 55 24.7	+2.8
MKZ				*e*S	Sn	02 55 53.7	+3.5
ZLN	**Zelenaya**	**3.60**	**10**	*e*P	Pn	02 55 43.9	+5.6
LGNR	**Loginova**	**3.65**	**9**	*e*P	Pn	02 55 44.1	+4.9
CIRR	**Tsirk**	**3.69**	**9**	*e*P	Pn	02 55 44.4	+4.8
KRSR	**Krestovskiy**	**3.77**	**8**	*e*P	Pn	02 55 45.4	+4.7
KBTR	**Krutoberegovo**	**4.16**	**25**	*e*P	Pn	02 55 50.2	+4.3
BDR	**Baidarnaya**	**4.19**	**12**	*e*P	Pn	02 55 50.8	+4.4
SMKR	**Semkarok**	**4.24**	**14**	*e*P	Pn	02 55 51.9	+4.9
SRKR	**Sorokina**	**4.27**	**11**	*e*P	Pn	02 55 52.8	+5.4
BKI	**Bering**	**4.62**	**51**	*e*P	Pn	02 55 54.7	+2.5
BKI				*e*S	Sn	02 56 43.5	-1.0

*IASPEI **23** 03:03:44.3±0.9, 41.98N±0.02×13.64E±0.02, h6km±5km, Error ellipse: s-maj=3.0km s-min=2.4km az=47.2, GT5 selection from ISC bulletin GT5 identified by Bond and McLaughlin (2009) selection criteria Bond and McLaughlin, A new ground truth data set for seismic studies, Seism. Res. Let., 80, 465-472, 2009*

*ISCJB **23** 03:03:44.5±0.2, 41.90N±0.02×13.65E±0.02, h5km±3km, Error ellipse: s-maj=3.5km s-min=2.5km az=135.4*

*ROM **23** 03:03:44.3±0.1, 41.88N×13.65E, h8km, Md3.0/40, Ml2.7/38, Error ellipse: s-maj=0.9km s-min=0.7km az=33.0*

*CSEM **23** 03:03:44.8±0.1, 41.89N×13.63E, h2km, ML3.3/9, Error ellipse: s-maj=2.9km s-min=2.1km az=39.0*

ISC 23 03:03:44.7±0.8, 41.87N±0.02×13.63E±0.02, h8km±4km, n103, σ0.96/133, 4C, Southern Italy

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
VVLD	**Villa Vallelon**	**0.01**	**298**	*i* Pg	**Pg**	**03 03 45.8**	**-0.5**
VVLD				Sg	**Sg**	**03 03 46.5**	**-0.9**
VVLD	**Villa Vallelon**	**0.01**	**298**	*i* Pg	**Pg**	**03 03 45.8**	**-0.5**
VVLD				Sg	**Sg**	**03 03 46.5**	**-0.9**
POFI	**Posta Fibreno**	**0.16**	**158**	*i* Pg	**Pg**	**03 03 48.3**	**+0.1**
POFI				Sg	**Sg**	**03 03 51.2**	**+0.7**
	3μm,0.6s						
POFI	**Posta Fibreno**	**0.16**	**158**	*i* Pg	**Pg**	**03 03 48.3**	**+0.1**
POFI				Sg	**Sg**	**03 03 51.2**	**+0.7**
	3μm,0.6s						
PTQR	**Pietraquaria**	**0.23**	**312**	Pg	**Pg**	**03 03 50.1**	**+0.7**
PTQR				Sg	**Sg**	**03 03 54.9**	**+2.3**
PTQR	**Pietraquaria**	**0.23**	**312**	Pg	**Pg**	**03 03 50.1**	**+0.7**
GUAR	**Guarcino**	**0.25**	**253**	Pg	**Pb**	**03 03 50.6**	**+0.9**
GUAR				Sg	**Sb**	**03 03 55.2**	**+2.1**
GUAR	**Guarcino**	**0.25**	**253**	Pg	**Pb**	**03 03 50.6**	**+0.9**
GUAR				Sg	**Sb**	**03 03 55.2**	**+2.1**
INTR	**Introdacqua**	**0.25**	**55**	Pg	**Pg**	**03 03 50.0**	**+0.2**
INTR				Sg	**Sg**	**03 03 54.2**	**+1.0**
	6μm,0.4s						
INTR	**Introdacqua**	**0.25**	**55**	Pg	**Pg**	**03 03 50.0**	**+0.2**
INTR				Sg	**Sg**	**03 03 54.2**	**+1.0**
	6μm,0.4s						
CERA	**Filignano**	**0.40**	**133**	Pg	**Pg**	**03 03 52.5**	**0.0**
CERA				Sg	**Sb**	**03 03 58.9**	**-1.4**
	2μm,0.3s						
CERA	**Filignano**	**0.40**	**133**	Pg	**Pg**	**03 03 52.5**	**0.0**
CERA				Sg	**Sb**	**03 03 58.9**	**-1.4**
	2μm,0.3s						
FAGN	**Fagnano**	**0.40**	**355**	Pg	**Pg**	**03 03 52.6**	**0.0**
FAGN				Sg	**Sb**	**03 03 59.3**	**-1.1**
	2μm,0.4s						
FAGN	**Fagnano**	**0.40**	**355**	Pg	**Pg**	**03 03 52.6**	**0.0**
FAGN				Sg	**Sb**	**03 03 59.3**	**-1.1**
	2μm,0.4s						
GIUL	**Giuliano Di Ro**	**0.42**	**222**	Pg	**Pb**	**03 03 53.5**	**-0.9**
GIUL				Sg	**Sb**	**03 04 00.6**	**-0.3**
	587nm,0.6s						
GIUL	**Giuliano Di Ro**	**0.42**	**222**	Pg	**Pb**	**03 03 53.5**	**-0.9**
GIUL				Sg	**Sb**	**03 04 00.6**	**-0.3**
	587nm,0.6s						
RNI2	**Rionero Sannit**	**0.42**	**113**	Pg	**Pb**	**03 03 53.4**	**-1.1**
	1μm,0.7s						
RNI2	**Rionero Sannit**	**0.42**	**113**	Pg	**Pb**	**03 03 53.4**	**-1.1**
	1μm,0.7s						
CERT	**Cerreto**	**0.49**	**280**	Pg	**Pg**	**03 03 54.5**	**+0.3**
CERT				Sg	**Sb**	**03 04 02.1**	**-0.9**
	626nm,0.4s						
CERT	**Cerreto**	**0.49**	**280**	Pg	**Pg**	**03 03 54.5**	**+0.3**
CERT				Sg	**Sb**	**03 04 02.1**	**-0.9**
	626nm,0.4s						
AQU	**L'Aquila**	**0.51**	**341**	Pg	**Pg**	**03 03 54.7**	**0.0**
AQU				Sg	**Sb**	**03 04 02.1**	**-1.6**
	1μm,1.2s						
AQU	**L'Aquila**	**0.51**	**341**	Pg	**Pg**	**03 03 54.7**	**0.0**
AQU				Sg	**Sb**	**03 04 02.1**	**-1.6**
	1μm,1.2s						
MIDA	**Miranda**	**0.52**	**116**	Pg	**Pg**	**03 03 54.4**	**-0.4**
MIDA				Sg	**Sb**	**03 04 02.9**	**-0.9**
	549nm,0.6s						
MIDA	**Miranda**	**0.52**	**116**	Pg	**Pg**	**03 03 54.4**	**-0.4**
MIDA				Sg	**Sb**	**03 04 02.9**	**-0.9**
	549nm,0.6s						
T0104	**Madonna delle**	**0.54**	**336**	Pg	**Pg**	**03 03 54.8**	**-0.4**
FIAM	**Fiamignano**	**0.55**	**317**	Pg	**Pg**	**03 03 55.3**	**-0.1**
	391nm,0.6s						
FIAM	**Fiamignano**	**0.55**	**317**	Pg	**Pg**	**03 03 55.3**	**-0.1**
	391nm,0.6s						
VAGA	**Valle Agricola**	**0.64**	**135**	Pg	**Pg**	**03 03 56.9**	**-0.2**
	343nm,0.3s						
VAGA	**Valle Agricola**	**0.64**	**135**	Pg	**Pg**	**03 03 56.9**	**-0.2**
	343nm,0.3s						
CAFR	**Castel Frentan**	**0.64**	**56**	Pg	**Pb**	**03 03 57.1**	**-1.1**
	641nm,0.4s						
CAFR	**Castel Frentan**	**0.64**	**56**	Pg	**Pb**	**03 03 57.1**	**-1.1**
	641nm,0.4s						
MTCE	**Montecelio**	**0.68**	**283**	Pg	**Pg**	**03 03 57.6**	**-0.2**
MTCE				Sg	**Sb**	**03 04 08.3**	**-0.1**
	366nm,0.9s						
MTCE	**Montecelio**	**0.68**	**283**	Pg	**Pg**	**03 03 57.6**	**-0.2**
MTCE				Sg	**Sb**	**03 04 08.3**	**-0.1**
	366nm,0.9s						
CAMP	**Campotosto**	**0.69**	**346**	Pg	**Pg**	**03 03 57.9**	**-0.1**
	203nm,0.7s						
CAMP	**Campotosto**	**0.69**	**346**	Pg	**Pg**	**03 03 57.9**	**-0.1**
	203nm,0.7s						
RMP	**Rome, Mte Porz**	**0.69**	**266**	Pg	**Pg**	**03 03 58.3**	**+0.2**
RMP	**Rome, Mte Porz**	**0.69**	**266**	Pg	**Pg**	**03 03 58.3**	**+0.2**
TRIV	**Trivento**	**0.70**	**98**	Pg	**Pg**	**03 03 57.8**	**-0.3**
	482nm,1.0s						
TRIV	**Trivento**	**0.70**	**98**	Pg	**Pg**	**03 03 57.8**	**-0.3**
	482nm,1.0s						
RM33	**Pellescritta (**	**0.71**	**334**	Pg	**Pg**	**03 03 57.8**	**-0.7**
	343nm,0.9s						
RM33	**Pellescritta (**	**0.71**	**334**	Pg	**Pg**	**03 03 57.8**	**-0.7**
	343nm,0.9s						
LAV9	**Lanuvio**	**0.72**	**255**	Pg	**Pg**	**03 03 58.7**	**+0.1**
	993nm,0.5s						
LAV9	**Lanuvio**	**0.72**	**255**	Pg	**Pg**	**03 03 58.7**	**+0.1**
	993nm,0.5s						
MSC	**Monte Massico**	**0.72**	**159**	Pg	**Pb**	**03 03 58.9**	**-0.6**
MSC	**Monte Massico**	**0.72**	**159**	Pg	**Pb**	**03 03 58.9**	**-0.6**
MA9	**Marino**	**0.73**	**263**	Pg	**Pg**	**03 03 58.9**	**+0.1**
	564nm,0.6s						
MA9	**Marino**	**0.73**	**263**	Pg	**Pg**	**03 03 58.9**	**+0.1**
	564nm,0.6s						
SGG	**Gregorio Mates**	**0.74**	**130**	Pg	**Pg**	**03 03 58.8**	**-0.2**
	296nm,0.6s						
SGG	**Gregorio Mates**	**0.74**	**130**	Pg	**Pg**	**03 03 58.8**	**-0.2**
	296nm,0.6s						
MODR	**Mondragone**	**0.74**	**165**	Pg	**Pb**	**03 03 59.3**	**-0.6**
	243nm,0.6s						
MODR	**Mondragone**	**0.74**	**165**	Pg	**Pb**	**03 03 59.3**	**-0.6**
	243nm,0.6s						
RM32	**Poggio Cancell**	**0.74**	**341**	Pg	**Pg**	**03 03 58.5**	**-0.6**
	248nm,0.6s						
RM32	**Poggio Cancell**	**0.74**	**341**	Pg	**Pg**	**03 03 58.5**	**-0.6**
	248nm,0.6s						
TERO	**Teramo**	**0.76**	**359**	Pg	**Pg**	**03 03 58.6**	**-0.7**
	241nm,0.6s						
TERO	**Teramo**	**0.76**	**359**	Pg	**Pg**	**03 03 58.6**	**-0.7**
	241nm,0.6s						
RM29	**Verrico (Monte**	**0.76**	**336**	Pg	**Pb**	**03 03 59.6**	**-0.7**
	482nm,1.0s						
RM29	**Verrico (Monte**	**0.76**	**336**	Pg	**Pb**	**03 03 59.6**	**-0.7**
	482nm,1.0s						
SAMA	**S.Maria delle**	**0.78**	**264**	Pg	**Pg**	**03 03 59.5**	**-0.2**
	192nm,0.5s						
SAMA	**S.Maria delle**	**0.78**	**264**	Pg	**Pg**	**03 03 59.5**	**-0.2**
	192nm,0.5s						
FRES	**Fresagrandinar**	**0.78**	**82**	Pg	**Pg**	**03 03 59.0**	**-0.8**
	549nm,1.0s						
FRES	**Fresagrandinar**	**0.78**	**82**	Pg	**Pg**	**03 03 59.0**	**-0.8**
	549nm,1.0s						
SMA1	**SAN MARTINO**	**0.79**	**344**	Pg	**Pg**	**03 03 59.6**	**-0.4**
	280nm,0.5s						
SMA1	**SAN MARTINO**	**0.79**	**344**	Pg	**Pg**	**03 03 59.6**	**-0.4**
	280nm,0.5s						
PTRJ	**Pietraroja**	**0.84**	**126**	Pg	**Pg**	**03 04 00.2**	**-0.7**
	674nm,0.5s						
PTRJ	**Pietraroja**	**0.84**	**126**	Pg	**Pg**	**03 04 00.2**	**-0.7**
	674nm,0.5s						
LNSS	**Leonessa**	**0.85**	**329**	Pg	**Pg**	**03 04 00.4**	**-0.8**
	322nm,0.8s						
LNSS	**Leonessa**	**0.85**	**329**	Pg	**Pg**	**03 04 00.4**	**-0.8**
	322nm,0.8s						
NRCA	**Norcia**	**1.04**	**339**	Pg	**Pg**	**03 04 03.8**	**-0.9**
	115nm,0.6s						
NRCA	**Norcia**	**1.04**	**339**	Pg	**Pg**	**03 04 03.8**	**-0.9**
	115nm,0.6s						
OFFI	**Offida**	**1.07**	**2**	Pg	**Pn**	**03 04 05.2**	**-0.8**
	623nm,0.8s						
OFFI	**Offida**	**1.07**	**2**	Pg	**Pn**	**03 04 05.2**	**-0.8**
	623nm,0.8s						
PAOL	**Paolisi**	**1.09**	**140**	Pg	**Pn**	**03 04 05.7**	**-0.7**
	90nm,0.5s						
PAOL	**Paolisi**	**1.09**	**140**	Pg	**Pn**	**03 04 05.7**	**-0.7**
	90nm,0.5s						
TOLF	**Tolfa**	**1.23**	**280**	Pg	**Pn**	**03 04 07.2**	**-1.0**
	99nm,0.7s						
TOLF	**Tolfa**	**1.23**	**280**	Pg	**Pn**	**03 04 07.2**	**-1.0**
	99nm,0.7s						
FDMO	**Fiordimonte**	**1.23**	**341**	Pg	**Pb**	**03 04 07.2**	**-1.1**
	154nm,1.0s						
FDMO	**Fiordimonte**	**1.23**	**341**	Pg	**Pb**	**03 04 07.2**	**-1.1**
	154nm,1.0s						
CESI	**CESI - Serrava**	**1.26**	**335**	Pg	**Pg**	**03 04 08.4**	**-0.4**
	55nm,0.7s						
CESI	**CESI - Serrava**	**1.26**	**335**	Pg	**Pg**	**03 04 08.4**	**-0.4**
	55nm,0.7s						
CING	**Cingoli**	**1.54**	**348**	Pg	**Pb**	**03 04 13.2**	**-0.3**
	61nm,0.7s						
CING	**Cingoli**	**1.54**	**348**	Pg	**Pb**	**03 04 13.2**	**-0.3**
	61nm,0.7s						
SGRT	**San Giovanni R**	**1.58**	**93**	Pg	**Pb**	**03 04 13.3**	**-1.0**
	117nm,1.0s						
SGRT	**San Giovanni R**	**1.58**	**93**	Pg	**Pb**	**03 04 13.3**	**-1.0**
	117nm,1.0s						
MCRV	**Calabrutti - M**	**1.59**	**133**	Pg	**Pb**	**03 04 13.5**	**-0.9**
	69nm,0.9s						
MCRV	**Calabrutti - M**	**1.59**	**133**	Pg	**Pb**	**03 04 13.5**	**-0.9**
	69nm,0.9s						
ARVD	**Arcevia**	**1.71**	**343**	Pg	**Pb**	**03 04 15.9**	**-0.4**
	55nm,0.7s						
ARVD	**Arcevia**	**1.71**	**343**	Pg	**Pb**	**03 04 15.9**	**-0.4**
	55nm,0.7s						
MS1	**Monte Sant'Ang**	**1.74**	**95**	*e*Pn	**Pg**	**03 04 19.9**	**+1.9**
CDT	**Castel del Mon**	**2.14**	**111**	*e*Pn	**Pb**	**03 04 22.4**	**-1.3**
CDT					Sn	**03 04 50.5**	**+0.2**
SG1	**Sgolgore (BA)**	**2.52**	**113**	*e*Pn	**Pb**	**03 04 27.8**	**-2.3**
BAI	**Bari**	**2.56**	**106**	*e*Pn	**Pn**	**03 04 28.0**	**+1.6**
NVLJ	**Novalja**	**2.84**	**18**	*i* Pn	**Pn**	**03 04 30.6**	**+0.2**
NVLJ					Sn	**03 05 06.4**	**+1.7**
NVLJ	**Novalja**	**2.84**	**18**	*i* Pn	**Pn**	**03 04 30.5**	**+0.2**
NVLJ					Sn	**03 05 06.4**	**+1.7**
TAR1	**Taranto**	**3.07**	**115**	*e*Pn	**Pn**	**03 04 32.6**	**-0.8**
UDBI	**Udbina**	**3.08**	**30**	*e*Pn	**Pn**	**03 04 35.2**	**+1.4**
UDBI					Sn	**03 05 09.8**	**-1.0**
UDBI	**Udbina**	**3.08**	**30**	*e*Pn	**Pn**	**03 04 35.1**	**+1.4**
UDBI					Sn	**03 05 09.8**	**-1.0**
STON	**Ston**	**3.18**	**70**	*e*Pn	**Pn**	**03 04 35.6**	**+0.6**
STON					Sn	**03 05 15.1**	**+2.0**
STON	**Ston**	**3.18**	**70**	*e*Pn	**Pn**	**03 04 35.6**	**+0.6**
STON					Sn	**03 05 15.0**	**+2.0**
BBLS	**Lazići**	**4.69**	**63**	*e*Pn	**Pn**	**03 04 58.4**	**+2.6**
IVAS	**Ivanjica**	**5.10**	**68**	*e*Pn	**Pn**	**03 05 03.4**	**+1.9**
DIVS	**Divibare**	**5.17**	**62**	*e*Pn	**Pn**	**03 05 04.1**	**+1.6**
TRUS	**Trudelj**	**5.50**	**62**	*e*Pn	**Pn**	**03 05 08.3**	**+1.5**
BARS	**Barje**	**6.14**	**78**	*e*Pn	**Pn**	**03 05 17.4**	**+1.7**

*ISCJB **23** 03:04:12.7±0.1, 36.48N±0.01×28.54E±0.02, h68km±3km, mb3.9/8, Error ellipse: s-maj=2.5km s-min=1.9km az=34.0*

*ATH **23** 03:04:13.8, 36.60N×28.43E, h53km±3km, ML3.7/15, Error ellipse: s-maj=3.8km s-min=1.0km az=164.0*

*DDA **23** 03:04:14.0, 36.62N×28.49E, h55km, Md3.8*

*IDC **23** 03:04:14.1±1.1, 36.50N×28.46E, h60km±14km, mb3.5/6, mb1 3.7/14, mb1mx3.5/56, mbtmp3.8/14, MS2.9/7, Ms1 2.9/7, ms1mx2.6/45, Error ellipse: s-maj=15.8km s-min=8.3km az=160.0*

*CSEM **23** 03:04:14.3±0.1, 36.50N×28.52E, h53km±3km, ML3.9, Error ellipse: s-maj=2.7km s-min=1.8km az=43.0*

*ISK **23** 03:04:14.8, 36.70N×28.44E, h49km, ML3.9*

*THE **23** 03:04:15.5, 36.58N×28.45E, h52km±2km, ML3.9/18, Error ellipse: s-maj=2.4km s-min=0.7km az=115.0*

*NIC **23** 03:04:17.2±0.2, 36.73N×28.87E, h32km, mb4.4, ML4.0*

*GII **23** 03:04:17.8±0.0, 36.38N×28.91E, h30km, MD3.5/5*

*HLW **23** 03:04:19.2, 36.00N×28.60E, h32km±29km, Md4.2, Ml3.9*

ISC 23 03:04:13.7±0.6, 36.54N±0.02×28.50E±0.02, h52km±6km, n386, σ1.9§48/451, mb3.8/8, MS3.2/4, 15C-7D, Dodecanese Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
DALY	**Dalyan (Mu¨la**	**0.30**	**24**	*e*PG	**Pn**	**03 04 23.5**	**+0.5**
DALY				*e*SG	**Sn**	**03 04 29.8**	**+0.1**
DALY	**Dalyan (Mu¨la**	**0.30**	**24**	*e*Pg	**Pn**	**03 04 23.5**	**+0.5**
DALY				*e*Sg	**Sn**	**03 04 29.8**	**+0.1**
TURN	**Turunc**	**0.34**	**14**	*i* P	**Pn**	**03 04 23.8**	**+0.4**
TURN				*i* S	**Sn**	**03 04 31.0**	**+0.7**
TURN	**Turunc**	**0.34**	**14**	P	**Pn**	**03 04 23.8**	**+0.4**
TURN				S	**Sn**	**03 04 31.0**	**+0.7**
ARG	**Arkhangelos**	**0.45**	**223**	P	**Pn**	**03 04 26.0**	**+1.5**
ARG				S	**Sn**	**03 04 33.3**	**+1.1**
ARG	**Arkhangelos**	**0.45**	**223**	P	**Pn**	**03 04 26.0**	**+1.5**
ARG				S	**Sn**	**03 04 33.4**	**+1.2**
FETY	**Fethiye**	**0.48**	**79**	*e*PG	**Pn**	**03 04 26.8**	**+1.8**
FETY				*e*SG	**Sn**	**03 04 35.5**	**+2.5**
FETY	**Fethiye**	**0.48**	**79**	P	**Pn**	**03 04 26.7**	**+1.8**
FETY				S	**Sn**	**03 04 35.3**	**+2.4**
FETY	**Fethiye**	**0.48**	**79**	P	**Pn**	**03 04 26.7**	**+1.8**
FETY				S	**Sn**	**03 04 35.3**	**+2.4**
YER	**Yerkesik**	**0.62**	**343**	*e*PG	**Pn**	**03 04 26.4**	**-0.2**
YER				*e*SG	**Sn**	**03 04 34.1**	**-1.8**
YER	**Yerkesik**	**0.62**	**343**	P	**Pn**	**03 04 27.7**	**+1.1**
YER				S	**Sn**	**03 04 36.6**	**+0.7**
YER	**Yerkesik**	**0.62**	**343**	*e*Pg	**Pn**	**03 04 26.4**	**-0.2**
YER	**Yerkesik**	**0.62**	**343**	P	**Pn**	**03 04 27.7**	**+1.1**
YER				S	**Sn**	**03 04 36.6**	**+0.7**
AKAS	**Kas**	**0.94**	**109**	*i* P	**Pn**	**03 04 32.9**	**+2.0**
AKAS				*i* S	Sn	03 04 55.4	+12
AKAS	**Kas**	**0.94**	**109**	P	**Pn**	**03 04 32.9**	**+2.0**
KSL	**Kastellorizon**	**0.96**	**114**	P	**Pn**	**03 04 32.9**	**+2.0**
KSL				S	**Sn**	**03 04 46.1**	**+2.5**
KSL	**Kastellorizon**	**0.96**	**114**	P	**Pn**	**03 04 32.6**	**+1.7**
KSL				S	**Sn**	**03 04 46.3**	**+2.8**
KSL				AML	AML	03 04 48.1	
	comp=E,5265μm,0.4s						
KSL				AML	AML	03 04 48.5	
	comp=N,2822μm,0.4s						
BDRM	**Kayabasi**	**1.00**	**302**	*i* P	**Pn**	**03 04 32.2**	**+0.7**
BDRM				*i* S	**Sn**	**03 04 47.9**	**+3.3**
BDRM	**Kayabasi**	**1.00**	**302**	P	**Pn**	**03 04 32.2**	**+0.7**
BDRM				S	**Sn**	**03 04 47.9**	**+3.3**
NIS1	**Nisyros Isl.**	**1.07**	**274**	*e*PG	**Pn**	**03 04 33.6**	**+1.2**
NIS1	**Nisyros Isl.**	**1.07**	**274**	P	**Pn**	**03 04 32.9**	**+0.5**
NIS1				S	**Sn**	**03 04 47.6**	**+1.3**
NIS1	**Nisyros Isl.**	**1.07**	**274**	P	**Pn**	**03 04 33.0**	**+0.5**
NIS1	**Nisyros Isl.**	**1.07**	**274**	*e*Pg	**Pn**	**03 04 33.6**	**+1.2**
NIS1				S	**Sn**	**03 04 47.6**	**+1.3**
NIS1	**Nisyros Isl.**	**1.07**	**274**	P	**Pn**	**03 04 33.0**	**+0.6**
NIS1				S	**Sn**	**03 04 45.4**	**-0.8**
NIS1				AML	AML	03 04 51.4	
	comp=E,11257μm,0.5s						
NIS1				AML	AML	03 04 52.6	
	comp=N,10233μm,0.4s						
BODT	**Bodrum**	**1.09**	**299**	*e*PG	**Pn**	**03 04 32.8**	**+0.1**
BODT				*e*SG	**Sn**	**03 04 46.0**	**-0.7**
BODT	**Bodrum**	**1.09**	**299**	P	**Pn**	**03 04 33.4**	**+0.7**
BODT				S	**Sn**	**03 04 46.8**	**+0.1**
BODT	**Bodrum**	**1.09**	**299**	*e*Pg	**Pn**	**03 04 32.8**	**+0.1**
BODT	**Bodrum**	**1.09**	**299**	P	**Pn**	**03 04 33.4**	**+0.7**
BODT				*e*Sg	**Sn**	**03 04 46.0**	**-0.7**
NISR	**Nisiros**	**1.11**	**274**	P	**Pn**	**03 04 32.1**	**-0.8**
NISR	**Nisiros**	**1.11**	**274**	P	**Pn**	**03 04 32.1**	**-0.8**
NISR				AML	AML	03 04 50.5	
	comp=E,3692μm,0.5s						
NISR				AML	AML	03 04 51.9	
	comp=N,3387μm,0.4s						
ELL	**Elmali**	**1.15**	**79**	*e*PN	**Pn**	**03 04 35.7**	**+2.1**
ELL	**Elmali**	**1.15**	**79**	*e*Pn	**Pn**	**03 04 35.7**	**+2.1**
AYDN	**Tasoluk**	**1.22**	**336**	*i* P	**Pn**	**03 04 35.3**	**+0.8**
AYDN				*i* S	**Sn**	**03 04 53.7**	**+3.7**
AYDN	**Tasoluk**	**1.22**	**336**	P	**Pn**	**03 04 35.3**	**+0.8**
DENT	**Denizli**	**1.28**	**19**	*e*PN	**Pn**	**03 04 35.4**	**+0.1**
DENT	**Denizli**	**1.28**	**19**	*e*Pn	**Pn**	**03 04 35.4**	**+0.1**
KARP	**Karpathos**	**1.47**	**228**	*e*PN	**Pn**	**03 04 40.8**	**+2.9**
KARP	**Karpathos**	**1.47**	**228**	P	**Pn**	**03 04 39.3**	**+1.4**

APE	Apeiranthos	2.44 283	*e*Pn	Pn	03 04 52.3	+1.1
APE			S	Sn	03 05 19.9	0.0
APE	Apeiranthos	2.44 283	P	Pn	03 04 51.4	+0.2
APE			AML	AML	03 05 27.0	
	comp=E,545µm,0.5s					
APE			AML	AML	03 05 27.4	
	comp=N,632µm,0.2s					
THR2	Thira island,	2.47 269	P	Pn	03 04 52.4	+0.8
THR2	Thira island,	2.47 269	P	Pn	03 04 52.4	+0.8
DEMI	Demirci	2.50 4	*i* P	Pn	03 04 52.4	+0.4
DEMI	Demirci	2.50 4	P	Pn	03 04 52.4	+0.4
THR3	Thira Island,	2.50 268	P	Pn	03 04 53.0	+1.1
THR3	Thira Island,	2.50 268	P	Pn	03 04 53.0	+1.1
THR6	Thira Island,	2.51 267	P	Pn	03 04 53.0	+1.0
THR6	Thira Island,	2.51 267	P	Pn	03 04 53.0	+1.0
THR5	Thira Island,	2.54 268	P	Pn	03 04 54.0	+1.5
THR5	Thira Island,	2.54 268	P	Pn	03 04 54.0	+1.5
GDZ	Gediz	2.66 17	*i* P	Pn	03 04 54.8	+0.6
GDZ	Gediz	2.66 17	P	Pn	03 04 54.8	+0.6
NPS	Neapolis	2.67 242	P	Pn	03 04 55.1	+0.8
NPS			S	Sn	03 05 24.9	-0.6
NPS	Neapolis	2.67 242	P	Pn	03 04 54.5	+0.2
NPS			S	Sn	03 05 24.9	-0.6
NPS	Neapolis	2.67 242	P	Pn	03 04 54.5	+0.2
NPS			S	Sn	03 05 24.0	-1.5
NPS			AML	AML	03 05 26.6	
	comp=E,1344µm,0.7s					
NPS			AML	AML	03 05 30.1	
	comp=N,933µm,0.4s					
CHOS	Chios island	2.68 314	P	Pn	03 04 55.0	+0.6
CHOS			S	Sn	03 05 24.8	-0.9
CHOS	Chios island	2.68 314	P	Pn	03 04 55.0	+0.6
CHOS			S	Sn	03 05 24.8	-0.9
LAST	Lasithi	2.82 242	P	Pn	03 04 57.0	+0.6
LAST			S	Sn	03 05 29.1	0.0
LAST	Lasithi	2.82 242	P	Pn	03 04 56.9	+0.6
LAST	Lasithi	2.82 242	P	Pn	03 04 56.9	+0.6
DKL	Dikili	2.82 334	*e*PN	Pn	03 04 56.7	+0.4
DKL	Dikili	2.82 334	*e*Pn	Pn	03 04 56.7	+0.4
BOLV	Bolvadin	2.91 41	*i* P	Pn	03 04 59.4	+1.7
BOLV			*i* S	Sn	03 05 55.9	+24
BOLV	Bolvadin	2.91 41	P	Pn	03 04 59.4	+1.7
TVSB	Tavsanli	3.00 14	*e*PN	Pn	03 04 59.5	+0.6
TVSB	Tavsanli	3.00 14	*e*Pn	Pn	03 04 59.5	+0.6
DURS	Dursunbey	3.05 360	*i* P	Pn	03 04 59.9	+0.3
DURS	Dursunbey	3.05 360	P	Pn	03 04 59.9	+0.3
GAZI	Gazipasa	3.09 95	*i* P	Pn	03 05 01.7	+1.7
GAZI	Gazipasa	3.09 95	P	Pn	03 05 01.7	+1.7
AYVA	Ayvalik	3.11 333	*i* P	Pn	03 05 01.9	+1.6
AYVA	Ayvalik	3.11 333	P	Pn	03 05 01.9	+1.6
BALB	Balikesir	3.13 351	*e*PN	Pn	03 05 01.1	+0.6
BALB	Balikesir	3.13 351	*e*Pn	Pn	03 05 01.1	+0.6
IDI	Anoyia	3.19 248	P	Pn	03 05 01.9	+0.5
	comp=N,18nm,0.3s,baz=8.9,slow=6.7,SNR=246					
IDI			S	Sn	03 05 37.9	-0.3
	comp=N,40nm,0.3s,baz=330,slow=14,SNR=15					
PRK	Paraskevi	3.22 327	P	Pn	03 05 02.3	+0.5
PRK			S	Sn	03 05 38.1	-0.9
PRK	Paraskevi	3.22 327	P	Pn	03 05 02.3	+0.5
PRK			S	Sn	03 05 39.1	+0.1
PRK	Paraskevi	3.22 327	P	Pn	03 05 02.1	+0.3
PRK			S	Sn	03 05 39.1	+0.1
PRK			AML	AML	03 05 40.6	
	comp=N,1618µm,0.7s					
PRK			AML	AML	03 05 41.5	
	comp=E,3215µm,0.7s					
MHLO	Agia Marina, M	3.30 274	P	Pn	03 05 04.9	+2.0
MHLO	Agia Marina, M	3.30 274	P	Pn	03 05 04.9	+2.0
SIVA	Sivas	3.37 244	*i* P	Pn	03 05 05.8	+2.0
SIVA	Sivas	3.37 244	P	Pn	03 05 05.8	+2.0
SIVA			S	Sn	03 05 42.2	-0.3
SIVA	Sivas	3.37 244	P	Pn	03 05 05.8	+2.0
SIVA			S	Sn	03 05 42.2	-0.3
SIVA	Sivas	3.37 244	P	Pn	03 05 06.2	+2.4
SIVA			AML	AML	03 05 51.9	
	comp=N,1082µm,0.7s					
SIVA			AML	AML	03 05 52.3	
	comp=E,1534µm,0.6s					
KONT	Konya--Tatoy	3.38 64	*e*PN	Pn	03 05 07.0	+2.9
SIGR	SIGRI	3.39 323	*e*PN	Pn	03 05 04.9	+0.8
SIGR	SIGRI	3.39 323	P	Pn	03 05 04.9	+0.8
SIGR			S	Sn	03 05 42.0	-1.0
SIGR	SIGRI	3.39 323	P	Pn	03 05 04.9	+0.8
SIGR			S	Sn	03 05 42.0	-1.0
SIGR	SIGRI	3.39 323	P	Pn	03 05 05.1	+1.0
SIGR			S	Sn	03 05 40.2	-2.8
SIGR			AML	AML	03 05 45.0	
	comp=N,1224µm,0.6s					
SIGR			AML	AML	03 05 45.2	
	comp=E,1352µm,0.5s					
AKMC	Akamas	3.46 115	P	Pn	03 05 06.3	+1.2
	baz=302					
AKMC	Akamas	3.46 115	P	Pn	03 05 06.3	+1.2
KDHN	Kadinhani	3.49 54	*i* P	Pn	03 05 06.6	+1.1
KDHN	Kadinhani	3.49 54	P	Pn	03 05 06.6	+1.1
LADK	Ladik-KONYA	3.49 61	*e*PN	Pn	03 05 08.4	+2.7
PPCY	Paphos	3.54 117	P	Pn	03 05 08.0	+1.9
	baz=304					
PPCY	Paphos	3.54 117	P	Pn	03 05 08.0	+1.9
ERMK	Ermenek	3.55 87	*i* P	Pn	03 05 09.8	+3.3
ERMK	Ermenek	3.55 87	P	Pn	03 05 09.8	+3.3
KIZT	Kizilcal	3.55 48	*e*PN	Pn	03 05 08.3	+1.8
KIZT	Kizilcal	3.55 48	*e*Pn	Pn	03 05 08.3	+1.8
GONE	Gonen-Balikesi	3.56 350	*e*PN	Pn	03 05 06.9	+0.5
GONE	Gonen-Balikesi	3.56 350	*e*Pn	Pn	03 05 06.9	+0.5
ALFC	Alefka	3.60 111	P	Pn	03 05 08.5	+1.4
	baz=298					
ALFC			S	Sn	03 05 48.6	+0.2
ALFC	Alefka	3.60 111	P	Pn	03 05 08.5	+1.4
ALFC			S	Sn	03 05 48.6	+0.2
BORA	Eskisehir	3.67 24	*i* P	Pn	03 05 09.4	+1.4
BORA	Eskisehir	3.67 24	P	Pn	03 05 09.4	+1.4
VAM	Vamos	3.67 253	P	Pn	03 05 08.5	+0.5
VAM	Vamos	3.67 253	P	Pn	03 05 08.5	+0.5
EZN	Ezine	3.70 333	*e*PN	Pn	03 05 09.5	+1.2
EZN	Ezine	3.70 333	P	Pn	03 05 08.8	+0.5
EZN			S	Sn	03 05 49.9	-0.7
EZN	Ezine	3.70 333	P	Pn	03 05 08.8	+0.5
EZN	Ezine	3.70 333	*e*Pn	Pn	03 05 09.5	+1.2
EZN			S	Sn	03 05 49.9	-0.7
KCTX	Karacabey (Bur	3.72 358	*e*PN	Pn	03 05 08.9	+0.2
KCTX	Karacabey (Bur	3.72 358	*e*Pn	Pn	03 05 08.9	+0.2
SVRH	Sivrihisar-ESK	3.75 39	*e*PN	Pn	03 05 10.8	+1.6
SVRH	Sivrihisar-ESK	3.75 39	*e*Pn	Pn	03 05 10.8	+1.6
CAVI	Cavuskoy	3.80 16	*e*PN	Pn	03 05 10.9	+1.1
CAVI	Cavuskoy	3.80 16	*e*Pn	Pn	03 05 10.9	+1.1
IMMV	Iera Moni Meta	3.82 255	P	Pn	03 05 10.9	+0.9
IMMV	Iera Moni Meta	3.82 255	P	Pn	03 05 10.5	+0.4
IMMV	Iera Moni Meta	3.82 255	P	Pn	03 05 10.5	+0.4
IMMV			AML	AML	03 05 55.3	
	comp=E,462µm,0.6s					
IMMV			AML	AML	03 06 03.2	
	comp=N,422µm,0.5s					
EDC	Edincik	3.83 353	*e*PN	Pn	03 05 10.4	+0.3
EDC	Edincik	3.83 353	*e*Pn	Pn	03 05 10.5	+0.3
MDNY	Mudanya-Bursa	3.83 4	*e*PN	Pn	03 05 10.8	+0.6
MDNY	Mudanya-Bursa	3.83 4	*e*Pn	Pn	03 05 10.8	+0.6
IZI	Iznik	3.86 11	*e*PN	Pn	03 05 11.8	+1.1
IZI	Iznik	3.86 11	*e*Pn	Pn	03 05 11.8	+1.1
GVD	Gavdhos	3.98 246	P	Pn	03 05 13.9	+1.8
GVD			S	Sn	03 05 57.9	+0.4
GVD	Gavdhos	3.98 246	P	Pn	03 05 13.9	+1.8
GVD			S	Sn	03 05 57.9	+0.4
GVD	Gavdhos	3.98 246	P	Pn	03 05 14.3	+2.2
GVD			AML	AML	03 05 58.8	
	comp=N,542µm,0.4s					
GVD			AML	AML	03 06 02.3	
	comp=E,764µm,0.4s					
SZAC	Souni	3.99 115	P	Pn	03 05 14.3	+1.9
	baz=302					
SZAC			S	Sn	03 05 58.8	+0.9
SZAC	Souni	3.99 115	P	Pn	03 05 14.3	+1.9
SZAC			S	Sn	03 05 58.8	+0.9
CSS	Mathiatis	4.23 110	P	Pn	03 05 17.3	+1.6
	baz=297					
CSS			S	Sn	03 06 03.8	0.0
CSS	Mathiatis	4.23 110	P	Pn	03 05 16.1	+0.4
CSS	Mathiatis	4.23 110	Pn	Pn	03 05 15.8	+0.1
CSS	Mathiatis	4.23 110	Pn	Pn	03 05 15.8	+0.1
CSS	Mathiatis	4.23 110	P	Pn	03 05 16.1	+0.4
CSS			S	Sn	03 06 03.8	0.0

LIA	Limnos Island	4.25 323	P	Pn	03 05 15.4	-0.5
LIA	Limnos Island	4.25 323	P	Pn	03 05 15.4	-0.5
LIA			S	Sn	03 06 01.6	-2.5
ANKY	Antikythira Is	4.26 262	P	Pn	03 05 18.1	+2.1
ANKY	Antikythira Is	4.26 262	P	Pn	03 05 18.1	+2.1
DID	Didima	4.32 284	P	Pn	03 05 17.9	+1.0
DID	Didima	4.32 284	P	Pn	03 05 17.9	+1.0
KYTH	Kithira	4.42 268	P	Pn	03 05 20.5	+2.3
KYTH	Kithira	4.42 268	P	Pn	03 05 20.5	+2.3
VLI	Veliai	4.48 274	P	Pn	03 05 20.8	+1.7
VLI	Veliai	4.48 274	P	Pn	03 05 20.8	+1.7
VLI	Veliai	4.48 274	P	Pn	03 05 21.5	+2.5
SMTH	Samothraki Isl	4.56 330	P	Pn	03 05 19.0	-1.2
SMTH			S	Sn	03 06 10.4	-1.5
SMTH	Samothraki Isl	4.56 330	P	Pn	03 05 20.4	+0.2
SMTH			S	Sn	03 06 10.4	-1.5
SMTH	Samothraki Isl	4.56 330	P	Pn	03 05 20.4	+0.2
SMTH			AML	AML	03 06 12.4	
	comp=N,319µm,0.4s					
SMTH			AML	AML	03 06 13.9	
	comp=E,514µm,0.5s					
ENEZ	Enez	4.57 337	P	Pn	03 05 20.8	+0.5
ENEZ			S	Sn	03 06 12.2	+0.1
ENEZ	Enez	4.57 337	P	Pn	03 05 20.8	+0.5
ENEZ			S	Sn	03 06 12.2	+0.1
KERG	Konya-Eregli	4.58 77	*i* P	Pn	03 05 23.0	+2.4
KERG	Konya-Eregli	4.58 77	P	Pn	03 05 23.0	+2.4
ALN	Alexandroupoli	4.75 337	P	Pn	03 05 23.3	+0.5
ALN	Alexandroupoli	4.75 337	P	Pn	03 05 23.3	+0.5
ALN	Alexandroupoli	4.75 337	P	Pn	03 05 21.6	-1.2
ALN			AML	AML	03 06 18.9	
	comp=N,183µm,0.5s					
ALN			AML	AML	03 06 20.2	
	comp=E,90µm,0.4s					
NEO	Neokhori	5.00 305	P	Pn	03 05 28.1	+1.8
NEO	Neokhori	5.00 305	P	Pn	03 05 28.1	+1.8
PAIG	Paliouri	5.08 313	P	Pn	03 05 27.2	-0.1
PAIG	Paliouri	5.08 313	P	Pn	03 05 27.2	-0.1
BRTR	Keskin Array B	5.15 50	P	Pn	03 05 29.9	+1.6
	comp=E,0.6nm,0.3s,baz=225,slow=14,SNR=20					
BRTR			S	Sn	03 06 28.1	+1.6
	comp=E,0.9nm,0.3s,baz=213,slow=26,SNR=4.9					
OUR	Ouranopolis	5.19 318	P	Pn	03 05 30.4	+1.7
OUR	Ouranopolis	5.19 318	P	Pn	03 05 30.4	+1.7
KLV	Kalavryta, Ach	5.28 288	P	Pn	03 05 32.6	+2.5
KLV	Kalavryta, Ach	5.28 288	P	Pn	03 05 32.6	+2.5
MATC	Matruh	5.29 192	P	Pn	03 05 29.6	-0.6
	baz=195					
KALE	Kalithea	5.39 292	P	Pn	03 05 33.9	+2.3
KALE	Kalithea	5.39 292	P	Pn	03 05 34.2	+2.6
KALE	Kalithea	5.39 292	P	Pn	03 05 33.9	+2.3
KALE	Kalithea	5.39 292	P	Pn	03 05 34.2	+2.6
KAVA	Kavala	5.43 326	P	Pn	03 05 33.0	+0.9
KAVA	Kavala	5.43 326	P	Pn	03 05 33.0	+0.9
TRIZ	Trizonia	5.43 292	P	Pn	03 05 34.5	+2.5
PYL	PYLOS	5.44 276	P	Pn	03 05 34.3	+2.0
PYL	PYLOS	5.44 276	P	Pn	03 05 34.3	+2.0
SERG	Sergoula	5.46 292	P	Pn	03 05 34.7	+2.2
SERG	Sergoula	5.46 292	P	Pn	03 05 34.7	+2.2
LAKA	Lakka	5.46 290	P	Pn	03 05 35.4	+2.8
LAKA	Lakka	5.46 290	P	Pn	03 05 35.4	+2.9
AGG	Agios Georgios	5.48 299	P	Pn	03 05 36.0	+3.2
AMT	Artemida-Makis	5.52 282	P	Pn	03 05 35.7	+2.3
AMT	Artemida-Makis	5.52 282	P	Pn	03 05 35.7	+2.3
AMT	Artemida-Makis	5.52 282	P	Pn	03 05 35.4	+2.0
AMT	Artemida-Makis	5.52 282	P	Pn	03 05 35.4	+2.0
HMAT	Matruh	5.56 193	S	Sn	03 06 28.7	-7.8
	baz=195					
HMAT			AMP		03 06 00.0	
	comp=E,190µm,0.3s,logA/T=5.8,baz=195					
EFP	Efpalio	5.57 292	P	Pn	03 05 37.0	+3.0
EFP	Efpalio	5.57 292	P	Pn	03 05 37.0	+3.0
DRO	Drossia	5.60 287	P	Pn	03 05 36.4	+2.0
DRO	Drossia	5.60 287	P	Pn	03 05 36.4	+2.0
DRO	Drossia	5.60 287	P	Pn	03 05 38.0	+3.5
ANX	Ano Chora	5.61 293	P	Pn	03 05 36.0	+1.3
ANX	Ano Chora	5.61 293	P	Pn	03 05 36.0	+1.3
SLUM	Salum	5.73 209	P	Pn	03 05 35.9	-0.3
	baz=214					
SLUM			AMP		03 06 00.0	
	comp=E,230µm,0.6s,logA/T=5.6,baz=214					
SLUM			S	Sn	03 06 34.6	-6.1
	baz=214					
SLUM	Salum	5.73 209	P	Pn	03 05 35.9	-0.3
HORT	Hortiatis	5.86 315	P	Pn	03 05 39.8	+1.8
HORT	Hortiatis	5.86 315	P	Pn	03 05 39.8	+1.8
SOH	Sokhos	5.87 318	P	Pn	03 05 40.0	+1.8
SOH	Sokhos	5.87 318	P	Pn	03 05 40.0	+1.8
SRS	Serrai	5.96 321	P	Pn	03 05 40.6	+1.2
SRS			S	Sn	03 06 45.8	-0.5
SRS	Serrai	5.96 321	P	Pn	03 05 40.6	+1.2
SRS			S	Sn	03 06 45.8	-0.5
SRS	Serrai	5.96 321	P	Pn	03 05 41.3	+1.9
NVR	Nevrokopi	6.01 324	P	Pn	03 05 41.9	+1.8
NVR	Nevrokopi	6.01 324	P	Pn	03 05 41.9	+1.8
ZKS	Zakynthos	6.27 283	P	Pn	03 05 48.0	+4.4
KFL	Anninata	6.34 287	P	Pn	03 05 48.3	+3.7
KNT	Kendrikon	6.35 318	P	Pn	03 05 47.3	+2.5
KNT	Kendrikon	6.35 318	P	Pn	03 05 47.3	+2.5
KNT	Kendrikon	6.35 318	P	Pn	03 05 48.4	+3.7
HNTI	Hanita	6.48 120	Pn	Pn	03 05 46.2	-0.4
HNTI			Sn	Sn	03 06 55.1	-4.1
HNTI	Hanita	6.48 120	Pn	Pn	03 05 46.2	-0.4
GRG	Griva	6.49 315	P	Pn	03 05 50.6	+3.9
DRWC	Darouich	6.57 87	*e*P	Pn	03 05 48.7	+0.9
LKD2	Lefkada island	6.61 292	P	Pn	03 05 52.2	+3.9
OFRI	'Ofer	6.62 124	Pn	Pn	03 05 47.1	-1.4
OFRI	'Ofer	6.62 124	Pn	Pn	03 05 47.1	-1.4
VAY	Valandovo	6.64 318	*e*Pn	Pn	03 05 48.8	+0.1
VAY			*e*Sn	Sn	03 06 52.7	-10
VAY	Valandovo	6.64 318	*e*Pn	Pn	03 05 48.8	+0.1
MMA0B	Mount Meron ar	6.68 120	Pn	Pn	03 05 49.0	-0.3
MMA0B			Sn	Sn	03 07 00.4	-3.7
MMA0B	Mount Meron ar	6.68 120	Pn	Pn	03 05 49.0	-0.3
MMAI	Mount Meron Ar	6.68 120	P	Pn	03 05 49.4	0.0
	comp=E,6.8nm,0.3s,baz=310,slow=12,SNR=29					
MMAI			S	Sn	03 07 00.6	-3.6
	comp=E,31nm,0.3s,baz=300,slow=27,SNR=18					
MMAI			LR	LR	03 09 38.0	
	comp=E,27nm,19.2s,baz=150,slow=48					
BLGI	Bet Lehem HaGe	6.70 123	Pn	Pn	03 05 48.5	-1.0
BLGI	Bet Lehem HaGe	6.70 123	Pn	Pn	03 05 48.5	-1.0
KSDI	Kefar Szold	6.77 118	Pn	Pn	03 05 50.6	+0.2
KSDI			Sn	Sn	03 07 02.4	-3.7
KSDI	Kefar Szold	6.77 118	Pn	Pn	03 05 50.6	+0.2
BRBR	Barbar	6.87 115	*e*P	Pn	03 05 52.3	+0.3
SLTI	Sal'it	6.90 127	Pn	Pn	03 05 51.7	-0.6
SLTI			Sn	Sn	03 07 35.0	-4.4
SLTI	Sal'it	6.90 127	Pn	Pn	03 05 51.7	-0.6
KSHT	Keshet	6.99 118	Pn	Pn	03 05 52.6	-0.9
KSHT	Keshet	6.99 118	Pn	Pn	03 05 52.6	-0.9
SQR	Saqqara	7.02 160	P	Pn	03 05 52.8	-1.1
	baz=159					
SQR	Saqqara	7.02 160	P	Pn	03 05 52.8	-1.1
MMLI	Mount Malkishu	7.03 124	Pn	Pn	03 05 53.3	-0.8
MMLI			Sn	Sn	03 07 08.3	-4.3
MMLI	Mount Malkishu	7.03 124	Pn	Pn	03 05 53.3	-0.8
KOT	Kottamia	7.16 156	P	Pn	03 05 54.9	-1.0
	baz=155					
KOT			AMP		03 07 00.0	
	comp=N,160µm,0.4s,logA/T=5.6,baz=155					
KOT	Kottamia	7.16 156	P	Pn	03 05 54.9	-1.0
AYT	Al 'Ayyat	7.17 161	P	Pn	03 05 55.3	-0.7
	baz=160					
AYT	Al 'Ayyat	7.17 161	P	Pn	03 05 55.3	-0.7
SGD	Sagiada	7.20 298	P	Pn	03 06 00.1	+3.7
HMDT	Nahal Hemdat	7.21 124	Pn	Pn	03 05 56.7	+0.2
HMDT			Sn	Sn	03 07 13.9	-3.1
HMDT	Nahal Hemdat	7.21 124	Pn	Pn	03 05 56.7	+0.2
HMDT			Sn	Sn	03 07 13.9	-3.1
HHAG	Hagoal	7.23 154	P	Pn	03 05 56.2	-0.6
	baz=153					
HHAG			AMP		03 07 00.0	
	comp=E,90µm,0.3s,logA/T=5.5,baz=153					
HHAG	Hagoal	7.23 154	P	Pn	03 05 56.2	-0.6
AMAZ	Amatzia	7.30 131	Pn	Pn	03 05 57.3	-0.5
AMAZ			Sn	Sn	03 07 15.5	-3.8
AMAZ	Amatzia	7.30 131	Pn	Pn	03 05 57.3	-0.5
HSAF	As Saff	7.36 159	P	Pn	03 05 57.9	-0.8
	baz=157					
HSAF	As Saff	7.36 159	P	Pn	03 05 57.9	-0.8
GLL	Jalalah	7.45 158	P	Pn	03 05 58.5	-1.3

	baz=156					
GLL	Jalalah	7.45 158	P	Pn	03 05 58.5	-1.3
REVI	Revivim	7.54 135	Pn	Pn	03 05 59.6	-1.5
REVI	Revivim	7.54 135	Pn	Pn	03 05 59.6	-1.5
DSI	Dead Sea	7.56 129	Pn	Pn	03 06 00.9	-0.4
DSI			Sn	Sn	03 07 22.2	-3.4
DSI	Dead Sea	7.56 129	Pn	Pn	03 06 00.9	-0.4
DSI			Sn	Sn	03 07 22.2	-3.4
SUZ	Suez	7.61 150	P	Pn	03 06 01.1	-0.8
	baz=148					
SUZ	Suez	7.61 150	P	Pn	03 06 01.1	-0.8
SWA2		7.72 200	P	Pn	03 06 03.1	-0.4
	baz=203					
SWA2			AMP		03 07 00.0	
	comp=N,190µm,0.3s,logA/T=5.8,baz=203					
SWA2		7.72 200	P	Pn	03 06 03.1	-0.4
MZDA	Masada	7.73 131	Pn	Pn	03 06 03.7	+0.1
MZDA			Sn	Sn	03 07 26.9	-2.8
MZDA	Masada	7.73 131	Pn	Pn	03 06 03.7	+0.1
MZDA			Sn	Sn	03 07 26.9	-2.8
SALA	Sala	7.79 117	*e*P	Pn	03 06 05.8	+1.2
RMNI	Mount Ramon	7.90 137	Pn	Pn	03 06 06.0	-0.1
RMNI	Mount Ramon	7.90 137	Pn	Pn	03 06 06.0	-0.1
HBNS	Bani Suef	7.91 162	P	Pn	03 06 05.3	-0.8
	baz=161					
HBNS	Bani Suef	7.91 162	P	Pn	03 06 05.3	-0.8
TIRR	Tirgusor	7.91 360	*i* P	Pn	03 06 06.9	+0.9
TIRR	Tirgusor	7.91 360	*i* P	Pn	03 06 06.9	+0.9
ZAF	Zafarana	8.00 154	P	Pn	03 06 06.1	-1.2
	baz=152					
ZAF	Zafarana	8.00 154	P	Pn	03 06 06.1	-1.2
HNKL	Nakhl	8.03 144	P	Pn	03 06 07.3	-0.5
	baz=141					
HNKL			AMP		03 07 00.0	
	comp=E,60µm,0.5s,logA/T=5.1,baz=141					
HNKL			S	Sn	03 07 29.7	-7.6
	baz=141					
HNKL	Nakhl	8.03 144	P	Pn	03 06 07.3	-0.5
ZNM	Zenema	8.04 152	P	Pn	03 06 06.7	-1.2
	baz=150					
ZNM	Zenema	8.04 152	P	Pn	03 06 06.7	-1.2
BARS	Barje	8.11 323	*e*Pn	Pn	03 06 11.6	+2.8
ZFRI	Zfri	8.17 135	Pn	Pn	03 06 09.3	-0.3
ZFRI			Sn	Sn	03 07 36.6	-3.9
ZFRI	Zfri	8.17 135	Pn	Pn	03 06 09.3	-0.3
ASF	Jabal al Asfar	8.20 120	P	Pn	03 06 11.1	+1.0
	comp=E,0.5nm,0.3s,baz=272,slow=10,SNR=5.4					
ASF			S	Sn	03 07 41.8	+0.5
	comp=E,3.2nm,0.3s,baz=143,slow=20,SNR=6.7					
AWBH		8.21 178	P	Pn	03 06 09.2	-1.0
	baz=178					
AWBH		8.21 178	P	Pn	03 06 09.2	-1.0
PRNI	Paran	8.22 137	Pn	Pn	03 06 09.9	-0.5
PRNI	Paran	8.22 137	Pn	Pn	03 06 09.9	-0.5
NBNS	Bani Suef	8.24 163	P	Pn	03 06 09.4	-1.3
	baz=162					
NBNS			AMP		03 07 00.0	
	comp=E,30µm,0.4s,logA/T=4.9,baz=162					
NBNS			S	Sn	03 07 33.7	-8.7
	baz=162					
NBNS	Bani Suef	8.24 163	P	Pn	03 06 09.4	-1.3
HRFI	Mount Harif	8.48 138	Pn	Pn	03 06 13.7	-0.3
HRFI	Mount Harif	8.48 138	Pn	Pn	03 06 13.7	-0.3
MBRI	Mt Berech	8.61 140	Pn	Pn	03 06 15.0	-0.8
MBRI	Mt Berech	8.61 140	Pn	Pn	03 06 15.0	-0.8
EIL	Elat	8.73 140	P	Pn	03 06 17.1	-0.2
	comp=E,4.1nm,0.3s,baz=342,slow=9.6,SNR=40					
EIL			S	Sn	03 07 46.5	-7.8
	comp=E,7.6nm,0.3s,baz=334,slow=19,SNR=9.2					
EIL	Elat	8.73 140	Pn	Pn	03 06 16.6	-0.7
EIL	Elat	8.73 140	Pn	Pn	03 06 16.6	-0.7
BOVS	Bovan	8.79 326	*e*Pn	Pn	03 06 20.8	+2.7
HRDS	Abu Rudays	8.79 151	P	Pn	03 06 17.5	-0.7
	baz=150					
BOLS	Boljevac	8.83 327	*e*Pn	Pn	03 06 20.6	+1.9
NUB		9.10 144	P	Pn	03 06 22.8	+0.3
	baz=142					
MLR	Muntele Rosu	9.14 349	P	Pn	03 06 24.5	+1.4
	baz=202,slow=5.9					
MLR	Muntele Rosu	9.14 349	*i* P	Pn	03 06 24.8	+1.7
MLR	Muntele Rosu	9.14 349	*i* P	Pn	03 06 24.8	+1.7
TR2	Tor 2	9.25 150	P	Pn	03 06 23.9	-0.6
	baz=148					
TR2	Tor 2	9.25 150	P	Pn	03 06 23.9	-0.6
HDHB	Dhahab	9.35 145	P	Pn	03 06 25.9	+0.1
	baz=143					
HDHB	Dhahab	9.35 145	P	Pn	03 06 25.9	+0.1
HFRF	Wahat Farafira	9.37 181	P	Pn	03 06 25.1	-1.0
	baz=182					
HFRF	Wahat Farafira	9.37 181	P	Pn	03 06 25.1	-1.0
PLOR	Plostina	9.40 352	*i* P	Pn	03 06 27.8	+1.3
PLOR	Plostina	9.40 352	*i* P	Pn	03 06 27.8	+1.3
VRI	Vrincioaia	9.41 352	*i* P	Pn	03 06 28.0	+1.4
VRI	Vrincioaia	9.41 352	*i* P	Pn	03 06 28.0	+1.4
KUBS	Kucevo	9.42 329	*e*Pn	Pn	03 06 28.6	+1.9

s-min=11.8km az=76.0

ISC 23 03:06:10.4±0.7, 19°63N±0°03×121°76E±0°05, h28km±5km, n152, σ1ᵗ40/163, mb4.5/59, MS3.7/12, 14C-3D, Philippine Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SGCP	**Mt. Cagua**	**1.41**	**169**	*e*P	**Pb**	**03 06 35.9**	**-0.1**
SGCP				*e*S	**Sb**	**03 06 54.9**	**+1.4**
PIP	**Pasuquin**	**1.68**	**220**	ǁ*i*P	**Pb**	**03 06 39.2**	**-1.5**
PIP				*e*S	Sb	03 07 10.7	+9.2
APYP	**Conner**	**1.82**	**196**	*e*P	**Pn**	**03 06 39.9**	**0.0**
APYP				*e*S	**Sb**	**03 07 03.5**	**-1.9**
CVP	**Callao Caves**	**1.92**	**178**	ǁ*e*P	**Pb**	**03 06 42.6**	**-2.0**
CVP				*e*S	**Sb**	**03 07 09.8**	**+1.6**
SIPP	**Brgy, Tapao**	**2.09**	**216**	⇑*e*P	**Pn**	**03 06 42.7**	**-0.9**
SIPP				*e*S	**Sb**	**03 07 13.8**	**+0.5**
ABRA	**Dolores**	**2.20**	**207**	*e*P	**Pn**	**03 06 44.9**	**-0.2**
ABRA				*e*S	**Sn**	**03 07 11.8**	**+0.4**
CAUP	**Cauayan**	**2.67**	**179**	*e*P	**Pb**	**03 06 55.2**	**-2.3**
TWG	**Pinlang**	**3.24**	**349**	*e*Pn	**Pn**	**03 06 58.0**	**-1.5**
BCPH	**Baguio City Da**	**3.42**	**199**	⇑*i*P	Pb	03 07 06.5	-3.9
BCPH				*i* S	**Sb**	**03 07 48.1**	**-3.4**
BOLP	**Bolinao**	**3.67**	**209**	*e*P	**Pn**	**03 07 07.3**	**+2.0**
YULB	**Yu-li**	**3.77**	**354**	*e*Pn	**Pn**	**03 07 05.4**	**-1.4**
TPUB	**Ta-pu**	**3.80**	**344**	*e*Pn	**Pn**	**03 07 07.3**	**+0.2**
BALP	**Baler**	**3.87**	**183**	*e*P	**Pn**	**03 07 10.1**	**+2.1**
SSLB	**Suanglung**	**4.21**	**350**	*e*Pn	**Pn**	**03 07 12.3**	**-0.4**
NACB	**Ninganchiao**	**4.53**	**358**	*e*Pn	**Pn**	**03 07 14.7**	**-2.4**
YHNB	**Yeheng**	**5.03**	**356**	*e*Pn	**Pn**	**03 07 23.1**	**-1.0**
YHNB				*e*Sn	**Sn**	**03 08 20.7**	**-0.7**
TATO	**Taipei**	**5.33**	**357**	*e*Pn	**Pn**	**03 07 26.8**	**-1.3**
LQP	**Lukban**	**5.49**	**182**	*e*P	**Pn**	**03 07 31.1**	**+0.5**
TGY	**Tagaytay City**	**5.55**	**188**	P	Pn	03 07 36.3	+5.0
	34nm,0.3s,baz=199,slow=1.5,SNR=4.4						
TGY				LR	LR	03 09 47.6	
	comp=Z,327nm,19.2s,baz=284,slow=38						
JOW	**Kunigami**	**9.35**	**39**	P	**Pn**	**03 08 23.9**	**+0.6**
	9.9nm,0.3s,baz=263,slow=28,SNR=15						
QIZ	**Qiongzhong**	**11.26**	**269**	P	**Pn**	**03 08 50.1**	**+0.5**
QIZ				S	**Sn**	**03 10 53.3**	**-1.3**
NJ2	**Nanjing**	**12.64**	**349**	*e*P	**Pn**	**03 09 09.0**	**+0.6**
NJ2				pmax	pmax		
	comp=Z,10.0nm,0.5s						
KKM	**Kota Kinabalu**	**14.54**	**202**	*e*Pn	**Pn**	**03 09 35.6**	**+1.2**
GYA	**Guiyang**	**15.46**	**299**	*e*P	**Pn**	**03 09 47.8**	**+1.1**
GYA				pmax	pmax		
	comp=Z,10.0nm,0.8s						
JNU	**Nakatsue**	**15.72**	**29**	LR	LR	03 16 05.5	
	comp=Z,105nm,19.0s,baz=124,slow=38						
TIA	**Tai'an**	**17.02**	**347**	⇑P	**Pn**	**03 10 06.8**	**+0.4**
TIA				pmax	pmax		
	comp=Z,40nm,1.0s						
XAN	**Xi'an**	**18.34**	**324**	P	**P**	**03 10 19.8**	**-2.9**
XAN				pmax	pmax		
	comp=Z,6.0nm,0.8s						
XAN				pmax	pmax		
	comp=Z,29nm,3.1s						
KMI	**Kunming**	**18.41**	**291**	P	**Pn**	**03 10 26.0**	**+2.1**
KMI				pmax	pmax		
	comp=Z,15nm,0.6s						
KMI				pmax	pmax		
	comp=Z,110nm,5.0s						
KSAR	**Wonju Array Be**	**18.54**	**16**	P	**Pn**	**03 10 25.5**	**+0.3**
KSAR	**Wonju Array Be**	**18.54**	**16**	P	**Pn**	**03 10 25.4**	**+0.3**
KSRS	**Korea Array**	**18.56**	**16**	P	**P**	**03 10 25.4**	**+0.4**
	1.3nm,0.3s,baz=195,slow=11,SNR=16						
KS01	**Wonju Array Si**	**18.57**	**15**	*e*P	**Pn**	**03 10 26.5**	**+1.0**
SBUM	**Sibu**	**19.45**	**210**	*e*P	**Pn**	**03 10 36.6**	**+0.3**
	9.1nm,0.9s						
CD2	**Chengdu**	**19.75**	**308**	P	**P**	**03 10 38.4**	**+0.2**
CD2				pP	sP	03 10 49.3	0.0
CD2				S	**S**	**03 14 18.3**	**-1.1**
CD2				pmax	pmax		
	comp=Z,20nm,0.6s						
CD2				LR	LR		
	comp=E,250nm,12.0s						
CD2				LR	LR		
	comp=Z,310nm,10.8s						
BJT	**Baijiatuau**	**20.88**	**348**	*e*P	**P**	**03 10 49.8**	**-0.6**
BJT				pmax	pmax		
	comp=Z,38nm,0.8s						
BJT	**Baijiatuau**	**20.88**	**348**	*e*P	**P**	**03 10 49.8**	**-0.6**
	comp=Z,38nm,0.8s						
BJI	**Beijing**	**20.90**	**348**	P	**P**	**03 10 49.8**	**-0.7**
BJI				pmax	pmax		
	comp=Z,39nm,0.9s						
BJI				pmax	pmax		
	comp=Z,160nm,4.2s						
CMAR	**Chiang Mai Arr**	**21.59**	**271**	P	**P**	**03 11 00.8**	**+2.6**
	comp=Z,1.0nm,0.3s,baz=74,slow=9.2,SNR=8.1						
CMAR				LR	LR	03 18 33.0	
	comp=Z,68nm,21.2s,baz=87,slow=34						
CMAR	**Chiang Mai Arr**	**21.59**	**271**	*ce*P	**P**	**03 11 02.2**	**+4.0**
CMAR				pmax	pmax		
	comp=Z,1.0nm,0.3s						
MAJO	**Matsushiro**	**22.18**	**37**	*e*P	**P**	**03 11 04.3**	**-0.1**
MAJO	**Matsushiro**	**22.18**	**37**	*e*P	**P**	**03 11 04.3**	**-0.1**
LZH	**Lanzhou**	**22.73**	**320**	*e*P	**P**	**03 11 10.0**	**-0.4**
LZH				pP	sP	03 11 21.5	-0.1
LZH				sP	pP	03 11 27.3	+9.2
LZH				PP	**PnPn**	**03 11 39.5**	**+4.7**
LZH				*e*S	**S**	**03 15 11.3**	**-6.2**
LZH				sS	Sn	03 15 29.0	-3.7
LZH				*e*SS	**SnSn**	**03 15 55.1**	**+6.3**
LZH				pmax	pmax		
	comp=Z,46nm,1.2s						
LZH				pmax	pmax		
	comp=Z,150nm,4.0s						
LZH				LR	LR		
	comp=Z,340nm,11.0s						
LZH				LR	LR		
	comp=Z,270nm,10.2s						
LZH				LR	LR		
	comp=Z,400nm,12.0s						
HHC	**Hu-ho-hao-te**	**22.88**	**340**	*e*P	**P**	**03 11 13.5**	**+1.7**
HHC				S	**S**	**03 15 20.6**	**+0.7**
HHC				pmax	pmax		
	comp=Z,14nm,0.9s						
HHC				pmax	pmax		
	comp=Z,90nm,4.3s						
HHC				LR	LR		
	comp=Z,1μm,12.5s						
HHC				LR	LR		
	comp=Z,1μm,13.1s						
HHC				LR	LR		
	comp=Z,1μm,13.4s						
GUMO	**Guam**	**22.94**	**102**	LR	LR	03 18 13.3	
	comp=Z,44nm,20.7s,baz=304,slow=32						
KULM	**Kulim**	**25.01**	**238**	*e*P	**P**	**03 11 31.5**	**-0.6**
USRK	**Ussuriysk Ar.**	**25.95**	**17**	P	**P**	**03 11 41.0**	**+0.6**
	comp=Z,4.2nm,0.8s,baz=206,slow=7.2,SNR=12						
ULN	**Ulaanbaatar**	**30.59**	**340**	*ce*P	**P**	**03 12 22.8**	**+0.8**
ULN				pmax	pmax		
	comp=Z,7.0nm,1.2s						
ULN	**Ulaanbaatar**	**30.59**	**340**	*e*P	**P**	**03 12 22.2**	**+0.2**
	comp=Z,8.7nm,1.3s						
KLR	**Kul'dur**	**30.61**	**13**	P	**P**	**03 12 21.6**	**-0.3**
	comp=Z,2.1nm,0.6s,baz=210,slow=8.9,SNR=9.2						
HABR	**Khabarovsk**	**30.72**	**17**	*e*P	**P**	**03 12 21.1**	**-1.8**
HABR				*e**PP	**sP**	**03 12 34.1**	**-0.4**
HABR				*e**SP	pP	03 12 40.1	+9.0
HABR				*e*		03 13 22.1	
HABR				*e*		03 15 18.3	
HABR				*e*		03 19 02.3	
HABR				pmax	pmax		
	comp=N,29nm,2.0s						
HABR				pmax	pmax		
	comp=Z,48nm,2.0s						
HABR				pmax	pmax		
	comp=E,52nm,2.0s						
HABR				MLR	MLR		
	comp=Z,37nm,19.0s						
SONM	**Songino Array**	**30.78**	**340**	P	**P**	**03 12 23.7**	**0.0**
	comp=Z,2.5nm,0.6s,baz=158,slow=9.4,SNR=15						
SONM				PcP	**PcP**	**03 15 21.1**	**+0.5**
	comp=Z,0.9nm,1.0s,baz=151,slow=3.4,SNR=3.8						
SONA1	**Songino Array**	**30.79**	**340**	*e*P	**P**	**03 12 23.4**	**-0.3**
MOY	**Mondy**	**35.89**	**338**	*e*P	**P**	**03 13 08.2**	**+0.1**
WMQ	**Urumqi**	**37.29**	**318**	*e*P	**P**	**03 13 21.8**	**+1.8**
WMQ				pP	sP	03 13 34.0	+2.2
WMQ				sP	pP	03 13 38.5	+10
WMQ				S	**S**	**03 19 04.9**	**-0.9**
WMQ				pmax	pmax		
	comp=Z,5.0nm,0.5s						
WMQ				pmax	pmax		
	comp=Z,75nm,4.8s						
MBWA	**Marble Bar**	**40.58**	**183**	*e*P	**P**	**03 13 47.0**	**-0.7**
WRAB	**Tennant Creek**	**41.21**	**162**	*ce*P	**P**	**03 13 53.5**	**+0.6**
WRAB				pmax	pmax		
	comp=Z,9.0nm,1.0s						
WRAB	**Tennant Creek**	**41.21**	**162**	*e*P	**P**	**03 13 52.2**	**-0.7**
	comp=Z,7.7nm,1.1s						
WRA	**Warramunga Arr**	**41.21**	**162**	P	**P**	**03 13 51.9**	**-1.0**
	comp=Z,1.3nm,0.6s,baz=343,slow=9.0,SNR=7.3						
MK01	**Makanchi Array**	**42.03**	**319**	*e*P	**P**	**03 13 59.3**	**-0.2**
MK31	**Makanchi Array**	**42.05**	**319**	*e*P	**P**	**03 14 00.0**	**+0.4**
MK31	**Makanchi Array**	**42.05**	**319**	*e*P	**P**	**03 14 00.0**	**+0.4**
MKAR	**Makanchi Array**	**42.05**	**319**	P	**P**	**03 13 59.8**	**+0.2**
	comp=Z,3.4nm,0.6s,baz=114,slow=10.0,SNR=35						
MKAR				PcP	**PcP**	**03 15 53.9**	**-0.3**
	comp=Z,1.1nm,0.8s,baz=91,slow=3.7,SNR=3.7						
H11S3	**WAKE ISLAND Hy**	**42.39**	**84**	T	T	03 59 39.7	
	baz=279,slow=75,SNR=173						
H11S1	**WAKE ISLAND Hy**	**42.40**	**84**	T	T	03 59 38.5	
	baz=279,slow=75,SNR=256						
H11N1	**WAKE ISLAND Hy**	**42.40**	**82**	T	T	03 59 39.3	
	baz=278,slow=75,SNR=1157						
H11N2	**WAKE ISLAND Hy**	**42.41**	**82**	T	T	03 59 39.8	
	baz=278,slow=75,SNR=494						
H11S2	**WAKE ISLAND Hy**	**42.41**	**84**	T	T	03 59 37.7	
	baz=279,slow=75,SNR=191						
H11N3	**WAKE ISLAND Hy**	**42.42**	**82**	T	T	03 59 40.8	
	baz=278,slow=75,SNR=517						
YAK	**Yakutsk**	**42.73**	**5**	*e*P	**P**	**03 14 04.9**	**+0.1**
YAK				pmax	pmax		
	comp=Z,28nm,0.5s						
YAK	**Yakutsk**	**42.73**	**5**	*e*P	**P**	**03 14 04.9**	**+0.1**
	comp=Z,28nm,0.5s						
PEA0	**Petropavlovsk-**	**43.41**	**31**	*e*P	**P**	**03 14 11.3**	**+0.8**
PETK	**Petropavlovsk-**	**43.41**	**31**	P	**P**	**03 14 09.6**	**-0.9**
	comp=Z,9.0nm,0.8s,baz=195,slow=3.7,SNR=12						
PETK				LR	LR	03 31 57.4	
	comp=Z,20nm,21.9s,baz=179,slow=36						
KSH	**Kashi**	**43.94**	**307**	*e*P	P	03 14 19.4	+4.3
KSH				*es*P	sP	03 14 37.3	+10
KSH				*e*PP	**PcP**	**03 16 04.6**	**+3.8**
KSH				S	**S**	**03 20 48.1**	**+2.9**
KSH				SS	**SS**	**03 24 00.3**	**-1.9**
KSH				pmax	pmax		
	comp=Z,98nm,5.4s						
KSH				LR	LR		
	comp=Z,86nm,7.1s						
KSH				LR	LR		
	comp=Z,100nm,5.0s						
KSH				LR	LR		
	comp=Z,110nm,5.4s						
ZAA0	**Zalesovo Array**	**44.38**	**329**	*e*P	**P**	**03 14 18.6**	**+0.3**
ZALV	**Zalesovo Beam**	**44.38**	**329**	P	**P**	**03 14 18.2**	**-0.1**
	comp=Z,4.1nm,0.6s,baz=116,slow=7.1,SNR=15						
AS31	**Alice Springs**	**44.63**	**164**	*e*P	**P**	**03 14 20.8**	**+0.2**
	comp=Z,0.9nm,0.5s						
ASAR	**Alice Springs**	**44.63**	**164**	P	**P**	**03 14 20.4**	**-0.3**
	comp=Z,1.0nm,0.4s,baz=345,slow=6.8,SNR=36						
ASAR				PcP	**PcP**	**03 16 03.7**	**+0.5**
	comp=Z,0.7nm,0.8s,baz=350,slow=3.9,SNR=4.2						
TKM2	**Tokmak 2**	**45.08**	**312**	*e*P	**P**	**03 14 23.8**	**-0.5**
TKM2				pmax	pmax		
	comp=Z,2.0nm,0.7s						
TKM2	**Tokmak 2**	**45.08**	**312**	*e*P	**P**	**03 14 23.8**	**-0.5**
	comp=Z,1.9nm,0.7s						
AAK	**Ala-Archa**	**45.78**	**311**	P	**P**	**03 14 30.4**	**+0.6**
	comp=Z,0.5nm,0.4s,baz=135,slow=13,SNR=2.6						
AAK	**Ala-Archa**	**45.78**	**311**	*e*P	**P**	**03 14 30.1**	**+0.3**
AAK	**Ala-Archa**	**45.78**	**311**	*e*P	**P**	**03 14 30.1**	**+0.3**
KURK	**Kurchatov**	**45.97**	**323**	P	**P**	**03 14 31.1**	**+0.1**
KURK						03 16 07.1	
KURK	**Kurchatov**	**45.97**	**323**	P	**P**	**03 14 31.1**	**+0.1**
KURK				PcP	**PcP**	**03 16 07.1**	**-0.3**
KURBB	**Kurchatov Arra**	**45.98**	**323**	P	**P**	**03 14 31.1**	**0.0**
	comp=Z,0.9nm,0.3s,baz=120,slow=7.5,SNR=10						
KURBB				PcP	**PcP**	**03 16 07.1**	**-0.3**
	comp=Z,0.4nm,0.5s,baz=98,slow=2.8,SNR=2.5						
SEY	**Seymchan**	**48.09**	**18**	*ce*P	**P**	**03 14 48.4**	**+1.1**
BRVK	**Borovoye**	**51.64**	**323**	*ce*P	**P**	**03 15 15.9**	**+1.4**
BRVK				pmax	pmax		
	comp=Z,5.0nm,0.8s						
BRVK	**Borovoye**	**51.64**	**323**	*e*P	**P**	**03 15 15.3**	**+0.9**
	comp=Z,5.5nm,1.0s						
TIXI	**Tiksi**	**52.20**	**3**	*ce*P	**P**	**03 15 17.4**	**-0.9**
TIXI				pmax	pmax		
	comp=Z,4.0nm,0.6s						
TIXI	**Tiksi**	**52.20**	**3**	*e*P	**P**	**03 15 17.3**	**-0.9**
	comp=Z,5.9nm,0.7s						
ZRNK	**Zerenda**	**52.33**	**323**	*e*P	**P**	**03 15 20.4**	**+0.7**
ZRNK				pmax	pmax		
	comp=Z,7.0nm,1.2s						
ZRNK	**Zerenda**	**52.33**	**323**	*e*P	**P**	**03 15 20.4**	**+0.7**
	comp=Z,6.6nm,1.2s						
NRIK	**Noril'sk**	**53.92**	**346**	P	**P**	**03 15 31.1**	**+0.1**
	comp=Z,5.3nm,0.8s,baz=145,slow=13,SNR=5.8						
STKA	**Stephens Creek**	**54.63**	**159**	P	**P**	**03 15 36.5**	**-0.1**
	comp=Z,0.7nm,0.5s,baz=316,slow=11,SNR=4.2						
BILL	**Bilibino**	**55.79**	**19**	*ce*P	**P**	**03 15 45.2**	**+0.6**
BILL				*e*		03 16 39.7	
BILL				*e*		03 17 50.4	
BILL				pmax	pmax		
	comp=Z,4.0nm,0.8s						
BILL				MLR	MLR		
	comp=Z,214nm,22.0s						
BILL	**Bilibino**	**55.79**	**19**	*e*P	**P**	**03 15 44.0**	**-0.7**
	comp=Z,4.6nm,0.9s						
ABKAR	**Akbulak array**	**57.05**	**317**	*e*P	**P**	**03 15 53.6**	**-0.2**
AKTO	**Aktyubinsk**	**58.44**	**318**	P	**P**	**03 16 03.3**	**-0.3**
	comp=Z,0.9nm,0.5s,baz=88,slow=10,SNR=3.6						
ARU	**Arti**	**59.08**	**325**	P	**P**	**03 16 08.2**	**+0.2**
	comp=Z,3.3nm,0.3s,baz=117,slow=4.7,SNR=6.1						
ARU	**Arti**	**59.08**	**325**	*d*P	**P**	**03 16 07.8**	**-0.2**
ARU						03 18 14.2	
ARU				S	**S**	**03 24 12.5**	**-0.7**
ARU				SS	**SS**	**03 28 04.2**	**-3.0**
ARU				pmax	pmax		
	comp=Z,11nm,1.7s						
ARU	**Arti**	**59.08**	**325**	*e*P	**P**	**03 16 07.7**	**-0.2**
	comp=Z,2.6nm,0.4s						
ZEI	**Tsey**	**68.16**	**309**	*e*P	**P**	**03 17 06.5**	**-2.0**
ZEI				pmax	pmax		
	comp=Z,6.0nm,0.8s						
VRH	**Novokhopyorsk**	**68.77**	**318**	*e*P	**P**	**03 17 11.9**	**+0.1**
VRH				pmax	pmax		
	comp=Z,10.0nm,0.5s						
KBZ	**Khabaz**	**68.77**	**310**	P	**P**	**03 17 12.7**	**+0.8**
	comp=Z,3.8nm,0.9s,baz=135,slow=1.8,SNR=7.8						
KVAR	**Kislovodsk Arr**	**68.89**	**311**	P	**P**	**03 17 13.6**	**+0.7**
	comp=Z,6.9nm,0.7s,baz=236,slow=6.6,SNR=6.5						
KIV	**Kislovodsk**	**68.90**	**311**	*ce*P	**P**	**03 17 14.6**	**+1.7**
KIV				*e*		03 17 40.5	
KIV				pmax	pmax		
	comp=Z,8.0nm,1.0s						
KLMR	**Klimovskoe**	**69.30**	**329**	*e*P	**P**	**03 17 13.4**	**-1.5**
KLMR				*e*		03 17 36.7	
KLMR				pmax	pmax		
	comp=Z,20nm,1.4s						
LPSR	**Galich'ya Gora**	**70.34**	**320**	*e*P	**P**	**03 17 21.1**	**-0.4**
LPSR				pmax	pmax		
	comp=Z,10.0nm,0.9s						
VSR	**Storozhevoye**	**70.36**	**319**	*e*P	**P**	**03 17 21.0**	**-0.6**
VSR				pmax	pmax		
	comp=Z,8.0nm,0.7s						
CAST	**Castle Rocks**	**70.94**	**28**	*e*P	**P**	**03 17 26.1**	**+1.2**
	comp=Z,10nm,0.8s						
KDAK	**Kodiak Island**	**71.33**	**34**	*ce*P	**P**	**03 17 29.0**	**+1.6**
BPAW	**Bear Paw Mtn.**	**71.35**	**28**	*e*P	**P**	**03 17 28.5**	**+1.0**
	comp=Z,15nm,1.3s						
MLY	**Manley**	**71.35**	**27**	*e*P	**P**	**03 17 28.6**	**+1.1**
	comp=Z,10nm,1.2s						
OBN	**Obninsk**	**71.41**	**323**	*ce*P	**P**	**03 17 28.9**	**+1.0**
OBN				*e*		03 17 45.5	
OBN				pmax	pmax		
	comp=Z,27nm,2.5s						
OBN				MLR	MLR		
	comp=Z,24nm,13.0s						
MCK	**McKinley**	**72.30**	**28**	*e*P	**P**	**03 17 33.3**	**+0.1**
MCK				pmax	pmax		
	comp=Z,9.0nm,0.9s						
MCK	**McKinley**	**72.30**	**28**	*e*P	**P**	**03 17 33.2**	**+0.1**
	comp=Z,9.1nm,0.9s						
RND	**Reindeer**	**72.38**	**28**	*e*P	**P**	**03 17 34.0**	**+0.3**
RND				pmax	pmax		
	comp=Z,28nm,1.3s						
RND	**Reindeer**	**72.38**	**28**	*e*P	**P**	**03 17 34.0**	**+0.3**
	comp=Z,28nm,1.3s						
ILAR	**Eielson Array**	**73.02**	**27**	P	**P**	**03 17 36.3**	**-1.1**
	comp=Z,1.1nm,0.9s,baz=267,slow=4.7,SNR=11						
ARCES	**ARCESS Array B**	**73.95**	**339**	P	**P**	**03 17 43.0**	**+0.2**
	comp=Z,9.0nm,1.0s,baz=52,slow=7.9,SNR=4.7						
ARCES	**ARCESS Array B**	**73.95**	**339**	P	**P**	**03 17 43.0**	**+0.2**
EGAK	**Eagle**	**75.41**	**26**	*e*P	**P**	**03 17 51.5**	**+0.1**
	comp=Z,4.8nm,0.9s						
FINES	**FINESS Array B**	**75.64**	**330**	P	**P**	**03 17 52.5**	**-0.2**
	comp=Z,2.2nm,0.8s,baz=93,slow=6.5,SNR=8.8						
BRTR	**Keskin Array B**	**76.32**	**308**	P	**P**	**03 17 56.7**	**-0.5**
	comp=Z,0.9nm,0.8s,baz=126,slow=4.4,SNR=4.1						
BRTR	**Keskin Array B**	**76.32**	**308**	*ce*P	**P**	**03 17 57.0**	**-0.2**
MMAI	**Mount Meron Ar**	**76.62**	**300**	LR	LR	03 56 16.0	
	comp=Z,74nm,20.3s,baz=295,slow=39						
AKASG	**Malin Array Be**	**76.63**	**319**	P	**P**	**03 17 57.7**	**-0.8**
	comp=Z,0.3nm,0.3s,baz=61,slow=5.8,SNR=6.1						
KIEV	**Kiev**	**76.64**	**319**	*e*P	**P**	**03 17 57.8**	**-0.8**
KIEV	**Kiev**	**76.64**	**319**	*e*P	**P**	**03 17 57.8**	**-0.8**
INK	**Inuvik**	**77.24**	**22**	*e*P	**P**	**03 18 00.6**	**-1.0**
INK				pmax	pmax		
	comp=Z,3.0nm,0.9s						
INK	**Inuvik**	**77.24**	**22**	*e*P	**P**	**03 18 00.6**	**-1.0**
	comp=Z,3.1nm,0.9s						
CSS	**Mathiatis**	**77.78**	**303**	*e*P	**P**	**03 18 04.8**	**-0.6**
	comp=Z,1.7nm,0.7s						
EIL	**Elat**	**77.87**	**297**	LR	LR	03 56 43.6	
	comp=Z,129nm,18.4s,baz=322,slow=39						
MLR	**Muntele Rosu**	**80.20**	**315**	P	**P**	**03 18 18.6**	**+0.1**
	comp=Z,0.9nm,0.8s,baz=303,slow=6.6,SNR=8.6						
HFS	**Hagfors**	**81.79**	**331**	P	**P**	**03 18 26.5**	**0.0**
	comp=Z,1.0nm,0.6s,baz=120,slow=5.2,SNR=6.2						
NB2	**NORSAR Subarra**	**82.49**	**333**	P	**P**	**03 18 29.7**	**-0.6**
	comp=Z,1.4nm,0.8s,baz=63,slow=5.3						
NOA	**NORSAR Array B**	**82.49**	**333**	P	**P**	**03 18 28.8**	**-1.4**
	comp=Z,0.9nm,0.7s,baz=63,slow=4.9,SNR=4.9						
NOA				LR	LR	03 58 54.2	
	comp=Z,42nm,19.6s,baz=70,slow=38						
OJC	**Ojcow**	**82.50**	**321**	*e*P	**P**	**03 18 30.2**	**-0.3**
OJC				pmax	pmax		
	comp=Z,6.0nm,0.8s						
OJC	**Ojcow**	**82.50**	**321**	*e*P	**P**	**03 18 30.2**	**-0.3**
	comp=Z,5.5nm,0.8s						
RES	**Resolute Bay**	**83.05**	**9**	*e*P	**P**	**03 18 33.2**	**+0.3**
RES				pmax	pmax		
	comp=Z,2.0nm,0.8s						
RES	**Resolute Bay**	**83.05**	**9**	*e*P	**P**	**03 18 33.1**	**+0.3**
	comp=Z,1.8nm,0.8s						
VRAC	**Vranov**	**84.77**	**321**	P	**P**	**03 18 43.1**	**+1.0**
	comp=Z,4.6nm,0.6s,baz=80,slow=3.1,SNR=6.1						
GERES	**GERESS Array B**	**86.69**	**321**	P	**P**	**03 18 51.1**	**-0.7**
	comp=Z,0.5nm,0.7s,baz=57,slow=4.9,SNR=5.9						
GERES				LR	LR	03 59 53.2	
	comp=Z,25nm,18.9s,baz=74,slow=37						
YKA	**Yellowknife Ar**	**86.95**	**23**	P	**P**	**03 18 52.2**	**-0.4**
	comp=Z,3.2nm,0.5s,baz=307,slow=4.6,SNR=139						
WLF	**Walferdange**	**90.62**	**324**	*e*P	**P**	**03 19 10.3**	**0.0**
WLF				pmax	pmax		
	comp=Z,5.0nm,0.8s						
WLF	**Walferdange**	**90.62**	**324**	*e*P	**P**	**03 19 10.3**	**0.0**
	comp=Z,5.0nm,0.8s						
TXAR	**Lajitas Array**	**114.52**	**43**	PKP	PKPdf	03 24 48.8	+0.2
	comp=Z,0.2nm,0.7s,baz=236,slow=1.4,SNR=3.6						
MOTC	**Monteria, Cord**	**146.97**	**33**	*e*P	**PKPdf**	**03 25 47.5**	**-1.9**
OCAC	**Ocana**	**148.58**	**30**	*e*P	**PKPbc**	**03 25 55.4**	**-0.5**
HELC	**Santa Helena**	**149.22**	**35**	*e*P	**PKPdf**	**03 25 55.4**	**+1.9**
RUSC	**La Rusia**	**150.74**	**31**	*e*P	**PKPdf**	**03 25 58.8**	**+2.7**
POPC	**Popayan, Colom**	**151.49**	**41**	*e*P	**PKPdf**	**03 25 54.3**	**-2.7**

JMA 23 03:09:07.8, 36°90N×140°67E, h9km±1km, M2.5, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.23**	**27**	P	Pg	03 09 12.4	0.0
ONAJ				S	Sg	03 09 16.0	+0.4
JHO	**Hitachi**	**0.30**	**196**	P	Pg	03 09 13.7	-0.1
JHO				S	Sg	03 09 17.8	0.0
JFK	**Kawauchi**	**0.49**	**19**	P	Pg	03 09 17.1	-0.3
JFK				S	Sg	03 09 23.8	-0.1
MAT	**Matsushiro**	**2.01**	**261**	P	Pn	03 09 42.8	+0.9
MAT				S	Sb	03 10 10.4	+0.7

*IDC **23** 03:12:39.1±1.7, 19°.40N×64°.32W, h0km, mb3.5/3, mb1 3.9/4, mb1mx3.5/48, mbtmp3.5/4, ML3.4/1, MS2.3/1, Ms1 2.3/1, ms1mx2.2/29, Error ellipse: s-maj=31.6km s-min=27.4km az=102.0*

*ISCJB **23** 03:12:42.0±0.7, 19°.47N±0°.05×64°.41W±0°.05, h27km, mb3.5/3, Error ellipse: s-maj=7.7km s-min=6.0km az=14.1*

*RSPR **23** 03:12:44.8, 19°.44N×64°.43W, h57km±16km, MD3.6/12*

*NEIC **23** 03:12:44.8, 19°.44N×64°.43W, h57km, MD3.6(RSPR), After RSPR.*

ISC 23 03:12:43.6±1.0, 19°44N±0°07×64°43W±0°04, h27km, n48, σ0ᵗ63/58, mb3.5/3, 26C-12D, Virgin Islands

| Code | Station Name |

YKA	Yellowknife Ar	55.00	334	P	P	03	22	11.9 -0.4
	0.5nm,0.6s,baz=107,slow=7.3,SNR=12							

*IDC **23** 03:16:15.2±1.7, 17°.43S×179°.00W, h510km±18km, mb3.5/13, mb1 3.8/15, mb1mx3.6/28, mbtmp4.4/15, Error ellipse: s-maj=21.7km s-min=11.5km az=142.0*
*ISCJB **23** 03:16:16.7±0.4, 17°.52S±0°.10×179°.05W±0°.09, h539km, mb4.2/35, Error ellipse: s-maj=15.4km s-min=7.3km az=143.6*
*NEIC **23** 03:16:17.4±1.4, 17°.54S×179°.00W, h537km±12km, mb4.4/23, Error ellipse: s-maj=20.3km s-min=7.1km az=139.0*

ISC 23 03:16:17.4±0.6, 17°.6S±0°.1×179°.0W±0°.1, h539km, n65, σ0s86/66, mb4.1/35, 1C-1D, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
MSVF	Nonsavu	2.85	266	eP		P		03 17 32.4	+1.7
AFI	Afiamalu	7.82	63	P		P		03 18 09.6	-3.6
	25nm,0.3s,baz=263,slow=8.1,SNR=25								
FUNA	Funafuti	9.17	349	eP		P		03 18 25.7	-1.1
DZM	Mont Dzumac	14.44	250	P		P		03 19 20.3	-1.1
	1.6nm,0.3s,baz=73,slow=19,SNR=22								
URZ	Urewera	20.89	189	P		P		03 20 19.2	-2.7
	8.3nm,0.6s,baz=5.0,slow=6.9,SNR=7.3								
EIDS	Eidsvold	28.89	249	eP		P		03 21 32.7	-0.2
	15nm,0.7s								
ARMA	Armidale	29.65	239	eP		P		03 21 40.6	+0.9
	24nm,0.7s								
CTAO	Charters Tower	32.98	260	eP		P		03 22 08.2	+0.1
	14nm,0.8s								
CAN	Canberra	33.49	232	eP		P		03 22 12.6	+0.3
	9.4nm,0.7s								
PMG	Port Moresby	33.88	279	eP		P		03 22 16.2	+0.4
	25nm,1.0s								
MANU	Manus Island	36.49	291	eP		P		03 22 39.2	+1.7
	28nm,0.9s								
COEN	Coen	36.58	270	eP		P		03 22 38.7	+0.5
	18nm,0.9s								
STKA	Stephens Creek	38.33	241	P		P		03 22 52.7	+0.4
	18nm,0.4s,baz=88,slow=10.0,SNR=116								
STKA	Stephens Creek	38.33	241	eP		P		03 22 52.7	+0.4
	8.4nm,1.0s								
BBOO	Buckleboo	43.10	241	eP		P		03 23 30.2	-0.1
	26nm,0.8s								
WRAB	Tennant Creek	44.16	259	eP		P		03 23 37.6	-1.2
	6.1nm,0.9s								
WRA	Warramunga Arr	44.17	259	P		P		03 23 37.7	-1.1
	6.1nm,0.6s,baz=94,slow=7.4,SNR=41								
WRA				PcP		PcP		03 25 12.3	+0.3
	1.9nm,0.7s,baz=93,slow=3.3,SNR=7.0								
AS01	Alice Springs	44.33	254	eP		P		03 23 39.3	-0.7
AS31	Alice Springs	44.37	254	eP		P		03 23 40.0	-0.4
	20nm,0.6s								
ASAR	Alice Springs	44.37	254	P		P		03 23 40.0	-0.4
	59nm,0.7s,baz=88,slow=8.1,SNR=1067								
ASAR				PcP		PcP		03 25 12.8	+0.2
	1.9nm,0.6s,baz=101,slow=3.7,SNR=4.9								
ASAR				ScP		ScP		03 28 16.4	+2.9
	0.5nm,0.6s,baz=93,slow=4.6,SNR=6.1								
MTN	Manton Dam	48.28	268	eP		P		03 24 09.7	-0.3
	19nm,0.6s								
FITZ	Fitzroy Crossi	52.56	260	eP		P		03 24 41.6	+0.4
	7.4nm,0.8s								
MBWA	Marble Bar	57.64	256	eP		P		03 25 15.9	-0.7
	7.1nm,0.5s								
VNDA	Vanda	60.73	185	P		P		03 25 37.5	+1.2
	0.5nm,0.5s,baz=7.4,slow=7.7,SNR=5.9								
KAPI	Kappang	61.14	274	eP		P		03 25 40.0	-0.1
	7.6nm,0.9s								
MJAR	Matsushiro Arr	67.33	324	P		P		03 26 18.5	-0.4
	1.8nm,0.4s,baz=152,slow=6.2,SNR=7.7								
KKM	Kota Kinabalu	68.15	284	eP		P		03 26 24.4	0.0
	8.7nm,0.7s								
PETK	Petropavlovsk-	73.23	346	P		P		03 26 53.4	-0.1
	1.5nm,0.5s,baz=117,slow=7.8,SNR=6.5								
NV01	Mina Array Sit	79.55	44	eP		P		03 27 29.7	+0.9
NVAR	Mina Array Bea	79.55	44	P		P		03 27 29.2	+0.4
	1.6nm,0.7s,baz=229,slow=8.2,SNR=13								
NV11	Mina Array Sit	79.65	44	eP		P		03 27 30.3	+1.0
	3.8nm,1.1s								
WVOR	Wild Horse Val	81.50	41	eP		P		03 27 38.6	-0.1
	5.8nm,1.2s								
IPM	Ipoh	81.86	277	eP		P		03 27 41.5	+0.4
	7.5nm,0.4s								
X16A	Lo Mia Camp, P	82.38	50	eP		P		03 27 45.6	+2.1
	1.9nm,0.9s								
MAW	Mawson	83.99	200	P		P		03 27 51.1	+0.5
	4.0nm,0.7s,baz=118,slow=5.0,SNR=6.3								
MCK	McKinley	84.34	13	eP		P		03 27 51.9	-0.4
	5.5nm,0.9s								
COLA	College	85.57	13	eP		P		03 27 57.7	-0.5
	2.7nm,0.7s								
ILAR	Eielson Array	85.69	13	P		P		03 27 57.4	-1.4
	1.0nm,0.7s,baz=227,slow=5.5,SNR=13								
IL1	Eielson Array	85.69	13	eP		P		03 27 57.7	-1.1
BILL	Bilibino	86.05	354	eP		P		03 28 00.5	+0.1
TXAR	Lajitas Array	86.27	58	P		P		03 28 03.4	+0.9
	1.0nm,0.9s,baz=208,slow=5.0,SNR=8.2								
PDAR	Pinedale Array	87.48	44	P		P		03 28 08.1	-0.1
	0.6nm,0.5s,baz=217,slow=3.8,SNR=8.2								
CMAR	Chiang Mai Arr	88.28	290	P		P		03 28 12.3	+0.2
	2.8nm,1.0s,baz=93,slow=2.5,SNR=9.0								
INK	Inuvik	91.71	15	P		P		03 28 25.8	-1.0
	0.5nm,0.5s,baz=190,slow=5.2,SNR=4.7								
YKA	Yellowknife Ar	94.25	25	P		P		03 28 37.7	-0.8
	0.4nm,0.7s,baz=238,slow=4.5,SNR=11								
ABKAR	Akbulak array	123.33	318	ePKPdf		PKPdf		03 34 13.1	0.0
GNI	Garni	136.16	310	ePKPdf		PKPdf		03 34 38.4	+0.4
LSZ	Lusaka	137.78	221	ePKPdf		PKPdf		03 34 41.2	-0.4
BUR08	Bucovina Ar. S	144.06	332	ePKPbc		PKPdf		03 34 52.3	+0.4
BR131	Keskin Array S	144.17	315	ePKPbc		PKPdf		03 34 52.4	0.0
BRTR	Keskin Array B	144.18	315	PKP		PKPbc		03 34 51.9	-0.1
	2.0nm,0.9s,baz=133,slow=2.6,SNR=11								
BR231	Keskin MP Arra	144.70	316	ePKPdf		PKPdf		03 34 52.5	-0.7
CLL	Collm	145.02	347	↑iPKP		PKPbc		03 34 53.8	-0.2
	comp=Z,6.0nm,0.8s								
CLL				↓i				03 34 57.0	
CLL	Collm	145.02	347	ePKPdf		PKPbc		03 34 53.9	-0.1
BRG	Berggiesshubel	145.22	346	e(P)		PKPbc		03 34 54.7	+0.1
	comp=Z,3.5nm,0.9s								
MMAI	Mount Meron Ar	145.52	303	PKPbc		PKPbc		03 34 56.5	+0.3
	comp=Z,5.2nm,0.8s,baz=57,slow=5.3,SNR=5.6								
CSS	Mathiatis	146.46	307	ePKPbc		PKPbc		03 34 58.6	-0.1
KHC	Kasperske Hory	146.92	345	ePKPbc		PKPbc		03 34 59.5	0.0
GERES	GERESS Array B	147.15	345	PKPbc		PKPbc		03 34 59.6	-0.6
	comp=Z,1.7nm,0.8s,baz=15,slow=2.9,SNR=15								
CONA	Conrad Observa	147.38	341	*i* PKiKP		PKPbc		03 35 01.1	+0.3
	comp=Z,4.4nm,0.9s								
WLF	Walferdange	147.72	354	ePKPbc		PKPbc		03 35 01.6	+0.1
KBA	Koelnbreinsper	148.88	344	*i* PKPbc		PKPbc		03 35 04.5	-0.2
	comp=Z,5.7nm,1.2s								
ABTA	Abfaltersbach	149.40	344	*i* PKPbc		PKPbc		03 35 05.3	-0.5
	comp=Z,3.8nm,0.8s								
DAVOX	Davos/Dischmat	149.97	348	PKPbc		PKPbc		03 35 07.1	-0.2
	comp=Z,4.4nm,0.7s,baz=297,slow=2.3,SNR=11								
FUORN	Ofenpass-Fuorn	150.05	347	ePKPbc		PKPbc		03 35 08.1	+0.5

*TIR **23** 03:19:41.5, 41°.55N×19°.28E, h12km, ML3.3*
*ISCJB **23** 03:20:01.8±0.4, 41°.53N±0°.02×19°.39E±0°.02, h4km±3km, Error ellipse: s-maj=3.4km s-min=2.1km az=140.6*
*CSEM **23** 03:20:02.5±0.1, 41°.53N×19°.39E, h5km, ML2.6, Error ellipse: s-maj=3.3km s-min=2.1km az=56.0*
*ATH **23** 03:20:02.8, 41°.49N×19°.48E, h16km±2km, ML2.6/4, Error ellipse: s-maj=5.4km s-min=1.9km az=6.0*
*THE **23** 03:20:03.3, 41°.64N×19°.26E, h28km±4km, ML2.7/6, Error ellipse: s-maj=4.3km s-min=1.0km az=306.0*
*PDG **23** 03:20:03.3±0.4, 41°.60N×19°.56E, h5km±1km, MD2.9/1, ML2.8/12, Error ellipse: s-maj=0.7km s-min=1.2km az=0.0*

ISC 23 03:20:02.4±1.1, 41°.53N±0°.02×19°.42E±0°.02, h4km±9km, n132, σ1s01/203, 21C-29D, Albania

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
TIR	Tirane	0.38	118	*i* PG		Pg		03 20 09.5	-0.2
TIR				*i* SG		Sb		03 20 16.9	-1.1
TIR	Tirane	0.38	118	*i* Pg		Pg		03 20 09.5	-0.3
TIR				S		Sg		03 20 15.0	+0.2
TIR				*i* Sg		Sb		03 20 16.9	-1.1
TIR	Tirane	0.38	118	P		Pg		03 20 09.4	-0.4
TIR				S		Sg		03 20 15.0	+0.2
TIR				AML		AML		03 20 17.1	
TIR				AML		AML		03 20 18.9	
	comp=N,4792μm,0.5s								
ULC	Ulcinj	0.45	344	↓iPg		Pg		03 20 11.1	0.0
ULC				eSg		Sg		03 20 18.2	+1.2
ULC	Ulcinj	0.45	344	↓iPg		Pg		03 20 11.1	0.0
ULC				eSg		Sg		03 20 18.2	+1.2
DRME	Dracevica, Mon	0.68	345	↓iPg		Pg		03 20 15.0	-0.4
DRME				eSg		Sb		03 20 25.5	-1.1
DRME	Dracevica, Mon	0.68	345	↓iPg		Pg		03 20 15.0	-0.4
DRME				eSg		Sg		03 20 25.3	+1.1
BUM	Brajici-Budva	0.86	333	↑iPg		Pg		03 20 19.3	+0.4
BUM				eSg		Sb		03 20 32.8	+0.9
BUM	Brajici-Budva	0.86	333	↑iPg		Pg		03 20 19.3	+0.4
BUM				eSg		Sb		03 20 32.8	+0.9
PDG	Podgorica	0.91	353	P		Pg		03 20 17.7	-2.1
PDG	Podgorica	0.91	353	P		Pg		03 20 17.7	-2.1
PDG	Podgorica	0.91	353	↓iPg		Pg		03 20 18.6	-1.2
PDG				eSg		Sg		03 20 32.1	+0.5
TTG	Podgorica	0.91	353	↓iPg		Pg		03 20 18.6	-1.2
TTG				eSg		Sb		03 20 32.8	-0.3
CEME	Cevo	1.08	340	↓iPg		Pg		03 20 23.2	+0.1
CEME				eSg		Sn		03 20 39.1	-0.8
CEME	Cevo	1.08	340	↓iPg		Pg		03 20 23.2	+0.1
CEME				eSg		Sn		03 20 39.1	-0.8
OHR	Ohrid	1.12	111	*i* Pn		Pg		03 20 22.8	-1.1
OHR				eSn		Sg		03 20 39.2	+0.8
OHR	Ohrid	1.12	111	*i* Pn		Pg		03 20 22.8	-1.1
OHR				eSn		Sg		03 20 39.2	+0.8
PVY	Plav	1.14	21	↑iPg		Pg		03 20 22.2	-2.0
PVY				eSg		Sg		03 20 38.9	-0.1
PVY	Plav	1.14	21	↑iPg		Pg		03 20 22.2	-2.0
PVY				eSg		Sg		03 20 38.9	-0.1
HCY	Herceg Novi	1.15	323	↓iPg		Pn		03 20 25.0	-0.2
HCY				eSg		Sn		03 20 42.8	+1.4
HCY	Herceg Novi	1.15	323	*e*Pg		Pg		03 20 23.8	-0.5
HCY				eSg		Sn		03 20 40.7	-0.7
NKME	Niksic	1.28	345	↓iPg		Pg		03 20 26.6	-0.4
NKME				eSg		Sn		03 20 46.2	+1.4
NKME	Niksic	1.28	345	↓iPg		Pg		03 20 26.6	-0.4
NKME				eSg		Sn		03 20 46.2	+1.4
PEJK	Peje	1.28	30	P		Pn		03 20 24.5	-2.7
PEJK				S		Sn		03 20 47.3	+2.4
ZATK	Zatriq	1.29	44	P		Pb		03 20 28.0	+0.8
ZATK				S		Sn		03 20 48.7	+3.7
NKY	Niksic	1.32	346	↓iPg		Pn		03 20 27.0	-0.7
NKY				eSg		Sn		03 20 47.1	+1.3
NKY	Niksic	1.32	346	↓iPg		Pn		03 20 27.0	-0.7
NKY				eSg		Sn		03 20 47.1	+1.3
BEY	Berane	1.39	15	P		Pn		03 20 27.1	-1.5
BEY				eSg		Sn		03 20 47.6	+0.1
IVA	Berane	1.39	15	↓iPg		Pn		03 20 27.3	-1.3
IVA				eSg		Sn		03 20 47.6	+0.1
TREB	Trebinje	1.43	327	↓iPg		Pn		03 20 29.1	0.0
TREB				eSg		Sg		03 20 49.0	+0.8
BRY	Bratogost	1.52	335	↓iPg		Pb		03 20 31.0	-0.2
BRY				eSg		Sg		03 20 54.4	+3.2
BRY	Bratogost	1.52	335	*e*Pn		Pn		03 20 30.4	-0.1
BRY	Bratogost	1.52	335	↓iPg		Pb		03 20 31.0	-0.2
BRY				eSn		Sg		03 20 51.7	+0.5
BRY				eSg		Sg		03 20 54.4	+3.2
BIA	Bitola	1.53	109	P		Pn		03 20 29.8	-0.7
BIA				S		Sn		03 20 51.0	+0.2
BIA	Bitola	1.53	109	*i* Pn		Pn		03 20 29.7	-0.8
BIA				eSn		Sg		03 20 52.2	+0.8
BIA	Bitola	1.53	109	P		Pn		03 20 29.8	-0.7
BIA				S		Sn		03 20 51.0	+0.2
BIA				*e*Sn		Sg		03 20 52.2	+0.8
FNA	Florina	1.66	116	P		Pn		03 20 32.1	-0.2
FNA				S		Sn		03 20 54.4	+0.3
FNA	Florina	1.66	116	P		Pn		03 20 32.2	-0.1
FNA				S		Sn		03 20 54.2	+0.2
FNA	Florina	1.66	116	P		Pn		03 20 32.2	-0.1
FNA				S		Sn		03 20 54.2	+0.2
FNA				AML		AML		03 20 59.7	
	comp=N,528μm,0.5s								
FNA				AML		AML		03 21 00.3	
	comp=E,417μm,0.4s								
NEST	Nestorio	1.66	131	P		Pn		03 20 33.1	+0.7
NEST				S		Sb		03 20 55.3	+0.3
NEST	Nestorio	1.66	131	P		Pn		03 20 33.1	+0.7
NEST				S		Sb		03 20 55.2	+0.3
NEST	Nestorio	1.66	131	P		Pb		03 20 33.5	-0.2
NEST				S		Sb		03 20 55.2	+0.3
NEST				AML		AML		03 21 02.6	
	comp=E,223μm,0.5s								
NEST				AML		AML		03 21 07.0	
	comp=N,178μm,1.0s								
UPM	Unac-Piva	1.71	347	↓iPn		Pb		03 20 34.2	-0.4
UPM				eSg		Sg		03 20 59.0	+1.5
UPM	Unac-Piva	1.71	347	*e*Pn		Pn		03 20 33.7	+0.5
UPM	Unac-Piva	1.71	347	P		Pb		03 20 34.5	-0.1
UPM				*e*Sn		Sn		03 20 55.6	-0.1
GJIK	Gjilan	1.77	58	P		Pn		03 20 34.4	+0.6
GJIK				S		Sg		03 20 59.5	+0.2
SJES	Sjenica	1.78	13	*e*Pn		Pn		03 20 34.1	+0.1
PLE	Pljevlja	1.80	359	↓iPn		Pb		03 20 35.5	-0.5
PLE				*e*Sn		Sg		03 21 00.6	+0.4
PLE	Pljevlja	1.80	359	↓iPn		Pb		03 20 35.5	-0.5
PLE				*e*Sn		Sg		03 21 00.6	+0.4
KEK	Kerkira	1.84	171	P		Pn		03 20 34.2	-0.5
KEK				S		Sb		03 20 59.3	-0.6
KEK	Kerkira	1.84	171	P		Pn		03 20 34.2	-0.5
KEK				S		Sb		03 20 59.3	-0.6
STON	Ston	1.85	317	*i* Pn		Pb		03 20 35.9	-0.8
STON				Sn		Sg		03 21 00.8	-1.0
STON	Ston	1.85	317	*e*Pn		Pn		03 20 35.5	+0.6
STON				*e*Sn		Sb		03 21 00.5	+0.3
TAR1	Taranto	1.90	239	*e*Pn		Pn		03 20 34.6	-0.9
NOCI	Noci	1.92	248	P		Pg		03 20 38.9	-0.3
NOCI				AML		AML		03 21 12.2	
	comp=N,301μm,0.7s								
NOCI				AML		AML		03 21 15.2	
	comp=E,383μm,0.5s								
BAI	Bari	1.96	258	*e*Pn		Pn		03 20 35.8	-0.5
BAI				Sn		Sn		03 20 58.4	-2.9
SGD	Sagiada	2.01	162	P		Pn		03 20 38.1	+1.0
SGD	Sagiada	2.01	162	P		Pn		03 20 38.1	+1.0
IGT	Igoumenitsa	2.11	160	P		Pn		03 20 38.2	-0.3
IGT				S		Sn		03 21 05.8	+0.6
IGT	Igoumenitsa	2.11	160	P		Pn		03 20 38.2	-0.3
IGT				S		Sn		03 21 05.8	+0.6
IGT	Igoumenitsa	2.11	160	P		Pn		03 20 38.2	-0.5
IVAS	Ivanjica	2.12	15	*e*Pn		Pn		03 20 38.7	+0.1
KPRO	Kipourio	2.16	136	P		Pn		03 20 39.6	+0.4
KPRO				S		Sn		03 21 07.1	+0.6
KPRO	Kipourio	2.16	136	P		Pn		03 20 39.6	+0.4
KPRO				S		Sn		03 21 07.1	+0.6
KPRO	Kipourio	2.16	136	P		Pn		03 20 40.7	+1.5
KZN	Kozani	2.16	124	P		Pn		03 20 39.3	0.0
KZN				S		Sn		03 21 08.1	+1.5
KZN	Kozani	2.16	124	P		Pn		03 20 39.3	0.0
KZN				S		Sn		03 21 08.1	+1.5
SG1	Sgolgore (BA)	2.18	252	Sn		Sn		03 21 06.9	+0.1
BARS	Barje	2.20	53	↑iPn		Pn		03 20 40.1	+0.4
GRG	Griva	2.32	103	P		Pn		03 20 41.8	+0.4
GRG	Griva	2.32	103	P		Pn		03 20 41.8	+0.4
BBLS	Lazići	2.33	360	*e*Pn		Pn		03 20 41.6	0.0
BBLS				*e*Sn		Sn		03 21 10.4	-0.4
VAY	Valandovo	2.38	94	P		Pn		03 20 41.9	-0.3
VAY	Valandovo	2.38	94	*i* Pn		Pn		03 20 42.2	0.0
VAY				*e*Sn		Sn		03 21 11.3	-0.5
VAY	Valandovo	2.38	94	P		Pn		03 20 41.9	-0.3
VAY	Valandovo	2.38	94	*i* Pn		Pn		03 20 42.2	0.0
VAY				*e*Sn		Sn		03 21 11.3	-0.5
CDT	Castel del Mon	2.41	260	*e*Pn		Pn		03 20 42.3	-0.3
GRUS	Gruza	2.54	22	↓iPn		Pn		03 20 44.5	+0.1
HAPS	Han Pijesak,BI	2.58	353	*e*Pn		Pn		03 20 44.8	-0.2
HAPS				*e*Sn		Sn		03 21 17.5	+0.6
DIVS	Divibare	2.60	9	↑iPn		Pn		03 20 45.1	-0.2
MS1	Monte Sant'Ang	2.61	275	*e*Pn		Pn		03 20 44.2	-1.2
KNT	Kendrikon	2.65	97	P		Pn		03 20 45.9	0.0
KNT				S		Sn		03 21 18.9	+0.5
KNT	Kendrikon	2.65	97	P		Pn		03 20 45.9	0.0
KNT				S		Sn		03 21 18.9	+0.5
DSL	Palaion Diasel	2.72	151	P		Pn		03 20 47.3	+0.5
DSL				S		Sn		03 21 21.1	+1.0
DSL	Palaion Diasel	2.72	151	P		Pn		03 20 47.3	+0.5
DSL				S		Sn		03 21 21.1	+1.0
THL	Klokotos Trika	2.79	134	P		Pn		03 20 48.2	+0.4
THL	Klokotos Trika	2.79	134	P		Pn		03 20 48.2	+0.4
TRUS	Trudelj	2.79	15	*e*Pn		Pn		03 20 48.4	+0.6
LKD2	Lefkada island	2.90	160	P		Pn		03 20 48.7	-0.6
LKD2	Lefkada island	2.90	160	P		Pn		03 20 48.7	-0.6
ZAPS	Zavoj	2.95	53	↑iPn		Pn		03 20 51.6	+1.5
BOLS	Boljevac	2.96	38	*e*Pn		Pn		03 20 49.1	-1.1
TEKS	Tekeris	3.02	2	*e*Pn		Pn		03 20 51.0	0.0
TIP	Timpagrande	3.10	222	↓iP		Pn		03 20 51.3	-0.9
TIP	Timpagrande	3.10	222	↓iP		Pn		03 20 51.3	-0.9
CUC	Castrocucco	3.13	242	P		Pn		03 20 53.0	+0.4
CUC	Castrocucco	3.13	242	P		Pn		03 20 53.0	+0.4
SRS	Serrai	3.17	96	P		Pn		03 20 53.1	0.0
SRS	Serrai	3.17	96	P		Pn		03 20 53.1	0.0
EVR	Evrytania	3.19	144	P		Pn		03 20 55.3	+1.9
EVR	Evrytania	3.19	144	P		Pn		03 20 55.3	+1.9
KUBS	Kucevo	3.33	29	*e*Pn		Pn		03 20 54.1	-1.1
NVR	Nevrokopi	3.35	92	P		Pn		03 20 55.8	+0.3
NVR	Nevrokopi	3.35	92	P		Pn		03 20 55.8	+0.3
BLY	Banja Luka	3.61	334	↑iP		Pb		03 21 06.9	+0.2
BLY	Banja Luka	3.61	334	*e*Pn		Pn		03 20 59.9	+0.9
BLY				*e*Sn		Sn		03 21 42.1	0.0
FGSL	Fruska Gora	3.64	4	↓iPn		Pn		03 20 59.0	-0.5
UDBI	Udbina	4.02	319	*e*Pn		Pn		03 21 05.8	+1.1
UDBI				Sn		Sn		03 21 53.4	+1.1
UDBI	Udbina	4.02	319	*e*Pn		Pn		03 21 05.8	+1.1
UDBI				Sn		Sn		03 21 53.3	+1.1
BZS	Buzias	4.39	21	↓iP		Pn		03 21 10.1	+0.3
BZS	Buzias	4.39	21	↓iP		Pn		03 21 10.1	+0.3
NVLJ	Novalja	4.50	314	*e*Pn		Pn		03 21 11.7	+0.3
NVLJ				Sn		Sn		03 22 03.4	-0.8
NVLJ	Novalja	4.50	314	*e*Pn		Pn		03 21 11.6	+0.3
NVLJ				Sn		Sn		03 22 03.3	-0.8
GZR	Gura Zlata	4.57	31	↑iP		Pn		03 21 11.5	-0.9
GZR	Gura Zlata	4.57	31	↑iP		Pn		03 21 11.5	-0.9
PKSM	Moragy	4.71	353	↑iP		Pn		03 21 13.5	-0.7
PKSM	Moragy	4.71	353	*e*Pn		Pn		03 21 13.6	-0.7
DEV	Deva	5.03	29	↓iP		Pb		03 21 28.6	-2.4
HUMR	Humele	5.06	52	↑iP		Pn		03 21 15.3	-3.7
HUMR	Humele	5.06	52	↑iP		Pn		03 21 15.3	-3.7
CRES	Cresnjev	5.17	328	*e*Pn		Pn		03 21 20.7	+0.2
CRES				*e*Sn		Sn		03 22 18.7	-1.8
ARR	Arges	5.40	43	↓iP		Pn		03 21 24.8	+1.1
ARR	Arges	5.40	43	↓iP		Pn		03 21 24.8	+1.1
CEY	Cerknica	5.55	321	*e*Pn		Pn		03 21 26.3	+0.5
CEY				*e*Sn		Sn		03 22 28.8	-1.2
MLR	Muntele Rosu	6.18	48	↑iP		Pn		03 21 37.1	+2.6
MLR	Muntele Rosu	6.18	48	↑iP		Pn		03 21 37.1	+2.6
PLOR	Plostina	6.79	48	↑iP		Pn		03 21 44.2	+1.4
PLOR	Plostina	6.79	48	↑iP		Pn		03 21 44.2	+1.4
VRI	Vrincioaia	6.85	48	↑iP		Pn		03 21 45.6	+2.1
VRI	Vrincioaia	6.85	48	↑iP		Pn		03 21 45.6	+2.1
TLCR		7.76	59	↑iP		Pn		03 21 56.7	+0.6
TLCR		7.76	59	↑iP		Pn		03 21 56.7	+0.6

*CSEM **23** 03:24:11.9±0.2, 36°.48N×28°.34E, h30km, MD2.7, Error ellipse: s-maj=5.7km s-min=3.1km az=20.0*
*ISK **23** 03:24:11.6, 36°.53N×28°.35E, h28km, MD2.6*
*ISCJB **23** 03:24:12.2±1.5, 36°.50N±0°.09×28°.36E±0°.08, h33km±8km, Error ellipse: s-maj=17.6km s-min=7.0km az=32.3*
*DDA **23** 03:24:12.9, 36°.83N×28°.74E, h8km, Md2.7*

ISC 23 03:24:12.3±1.4, 36°.50N±0°.07×28°.37E±0°.03, h31km±9km, n22, σ0s64/35, Dodecanese Islands

| Code | Station Name | Δ° | AZ° | Phase |

*NNC **23** 03:34:33.1±4.2, 46°.96N×90°.38E, h0km, mb4.4, mpv4.4, Error ellipse: s-maj=41.0km s-min=31.2km az=115.0*
*OBM **23** 03:34:37.1±0.1, 47°.16N×89°.20E, h2km, Ml3.6/2, Error ellipse: s-maj=2.3km s-min=1.9km az=43.0*
*BJI **23** 03:34:39.6, 47°.21N×89°.59E, h5km, ML3.9/7*
*IDC **23** 03:34:42.1±2.4, 47°.15N×89°.23E, h0km, mb3.6/2, mb1 3.8/5, mb1mx3.4/45, mbtmp3.7/5, ML3.5/3, Error ellipse: s-maj=42.7km s-min=20.4km az=167.0*

ISC 23 03:34:43.7±1.6, **47°.10N**±0°.09×**89°.1E**±0°.2, **h10**km, **n21**, σ2§**12**/18, **10C-6D, Northern Xinjiang**

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
HBD	**Hovd**	**1.90**	**61**	*e*Pg		Pb	03 35 11.5	-1.1
HBD				*e*Sg		Sn	03 35 33.8	-0.6
	49nm,0.2s							
BYO	**Bayan-Olgiy**	**1.92**	**16**	*e*Pg		Pg	03 35 17.1	+2.5
BYO				*e*Sg		Sg	03 35 42.5	+3.0
	747nm,0.3s							
WMQ	**Urumqi**	**3.42**	**197**	Pn		**Pn**	**03 35 39.8**	**+2.7**
WMQ				Sn		**Sb**	**03 36 23.1**	**-2.9**
WMQ				*s*max	*s*max			
	comp=N,260nm,0.4s							
WMQ				*s*max	*s*max			
	comp=E,290nm,0.3s							
ULG	**Ulaangom**	**3.43**	**33**	*e*Pg		Pb	03 35 39.3	+0.6
ULG				*e*Sg		Sg	03 36 22.1	-5.8
	975nm,0.3s							
MK31	**Makanchi Array**	**4.66**	**269**	⇑Pn		**Pn**	**03 35 57.0**	**+2.9**
	11nm,0.5s,baz=90,slow=15							
MK31				⇑Lg		Lg	03 37 31.4	
	139nm,0.7s,baz=84,slow=27							
MKAR	**Makanchi Array**	**4.66**	**269**	Pn		**Pn**	**03 35 56.7**	**+2.6**
	0.8nm,0.3s,baz=82,slow=15,SNR=38							
MKAR				Lg		Lg	03 37 13.2	
	14nm,0.3s,baz=81,slow=33,SNR=9.5							
MAKZ	**Makanchi**	**4.87**	**269**	⇓Pn		**Pn**	**03 35 59.2**	**+2.2**
	18nm,0.5s							
MAKZ				⇓Lg		Lg	03 37 34.8	
	68nm,0.5s							
TSC	**Tosontsengel**	**6.31**	**72**	*e*Pg		Pb	03 36 27.7	-0.2
TSC				*e*Sg		Sb	03 37 45.5	+2.0
ZALV	**Zalesovo Beam**	**7.37**	**340**	Lg		Lg	03 38 34.6	
	2.4nm,0.3s,baz=164,slow=28,SNR=4.2							
PDGK	**Podgornoye**	**7.75**	**244**	⇑Pn		**Pn**	**03 36 38.0**	**+1.5**
	4.1nm,0.4s							
PDGK				⇑Lg		Lg	03 39 05.6	
	46nm,0.9s							
KURK	**Kurchatov**	**7.78**	**302**	⇓Pn		**Pn**	**03 36 35.9**	**-1.0**
	14nm,0.3s							
KURK				⇓Lg		Lg	03 39 09.8	
	399nm,0.9s							
KURBB	**Kurchatov Arra**	**7.80**	**301**	Pn		**Pn**	**03 36 37.9**	**+0.8**
	0.7nm,0.3s,baz=107,slow=14,SNR=26							
HTG	**Hatgal**	**7.99**	**61**	*e*Pg		Pb	03 36 59.5	+3.1
HTG				*e*Sg		Sg	03 38 52.7	-1.5
	157nm,0.6s							
TTS	**Tsetserleg**	**8.34**	**83**	*e*Sg		Sg	03 39 03.1	-2.4
	114nm,0.7s							
BLGM	**Bulgan**	**9.78**	**75**	*e*Sg		Sn	03 39 37.6	+49
	111nm,0.9s							
DZBM		**11.26**	**101**	*e*Sg			03 40 35.7	
	46nm,2.3s							
AAK	**Ala-Archa**	**11.27**	**252**	⇓Pn		**Pn**	**03 37 20.6**	**-4.3**
	5.2nm,0.9s							
AAK				⇑Lg		Lg	03 40 58.5	
	9.7nm,0.8s							
OTUK	**Ortayu**	**11.35**	**282**	⇑P		**Pn**	**03 37 26.1**	**+0.3**
	11nm,0.5s							
UB0M		**11.36**	**80**	*e*Sg		Sn	03 40 23.3	+56
	49nm,1.2s							
SONB1	**Songino Array**	**11.68**	**80**	*e*Sg		Sn	03 40 33.0	+58
SONM	**Songino Array**	**11.75**	**80**	Lg		Lg	03 40 45.2	
	0.5nm,0.3s,baz=271,slow=22,SNR=7.7							
SEMM		**12.09**	**81**	*e*Sg			03 40 45.2	
UGDM		**12.37**	**81**	*e*Sg			03 40 56.3	
	26nm,1.0s							
MNAS	**Manas**	**12.64**	**255**	⇑Lg		Lg	03 41 39.3	
	5.7nm,0.9s							
VOSK	**Vostochnaya**	**12.94**	**302**	⇑P		**Pn**	**03 37 45.8**	**-1.7**
	3.0nm,0.4s							
BVA0	**Borovoye Array**	**13.37**	**303**	⇑P		**Pn**	**03 37 51.9**	**-1.5**
	2.7nm,0.6s							
BVAR	**Borovoye Array**	**13.37**	**303**	Pn		**Pn**	**03 37 52.6**	**-0.9**
	0.5nm,0.3s,baz=115,slow=14,SNR=9.0							
KK31	**Karatay Array**	**13.71**	**260**	P		**Pn**	**03 37 57.9**	**-0.1**
	10nm,0.9s,baz=55,slow=14,SNR=18							
ZRNK	**Zerenda**	**14.15**	**302**	⇑P		**Pn**	**03 38 02.8**	**-1.2**
	4.0nm,0.5s							
AB31	**Akbulak array**	**19.50**	**287**	P		**Pn**	**03 39 13.3**	**+1.4**
	1.6nm,0.6s,baz=84,slow=11,SNR=11							
AKTO	**Aktyubinsk**	**20.66**	**291**	⇓P		Pn	03 39 27.3	+1.6
	2.3nm,0.6s							
BRTR	**Keskin Array B**	**40.20**	**280**	P		**P**	**03 42 20.7**	**+0.4**
	0.9nm,0.7s,baz=52,slow=7.7,SNR=5.1							
ILAR	**Eielson Array**	**60.27**	**24**	P		**P**	**03 44 51.1**	**-0.7**
	0.5nm,0.8s,baz=315,slow=6.4,SNR=5.6							

*BJI **23** 03:34:53.2, 47°.24N×89°.61E, h7km, ML4.0/5*
*IDC **23** 03:34:53.7±1.0, 46°.91N×89°.28E, h0km, mb3.8/11, mb1 4.0/16, mb1mx3.8/46, mbtmp3.8/16, ML3.6/5, MS2.8/1, Ms1 2.8/1, ms1mx2.2/54, Error ellipse: s-maj=20.7km s-min=12.2km az=7.0*
*ISCJB **23** 03:34:54.9±0.7, 47°.10N±0°.06×89°.05E±0°.09, h10km, mb3.7/11, Error ellipse: s-maj=9.1km s-min=7.9km az=137.6*
*NEIC **23** 03:34:55.4±0.8, 46°.95N×89°.25E, h10km, mb4.1/3, Error ellipse: s-maj=13.4km s-min=8.8km az=147.0*

ISC 23 03:34:55.4±0.8, **46.95N**±0°.06×**89.19E**±0°.08, **h10**km, **n31**, σ1§**68**/33, **mb3.9**/12, **1C-1D, Northern Xinjiang**

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
WMQ	**Urumqi**	**3.30**	**199**	Pn		**Pb**	**03 35 51.6**	**-2.4**
WMQ				Sn		**Sb**	**03 36 35.0**	**+0.8**
WMQ				*s*max	*s*max			
	comp=N,300nm,0.4s							
WMQ				*s*max	*s*max			
	comp=E,460nm,0.4s							
MKAR	**Makanchi Array**	**4.74**	**271**	Pn		**Pn**	**03 36 09.0**	**+2.2**
	3.5nm,0.3s,baz=87,slow=16,SNR=29							
MKAR				Lg		Lg	03 37 27.7	
	15nm,0.3s,baz=81,slow=32,SNR=5.8							
MKAR				LR		LR	03 38 11.8	
	comp=Z,104nm,20.1s,baz=35,slow=41							
ZALV	**Zalesovo Beam**	**7.54**	**340**	Pn		**Pn**	**03 36 44.6**	**-0.7**
	0.8nm,0.3s,baz=160,slow=12,SNR=4.3							
ZALV				Lg		Lg	03 38 50.8	
	3.1nm,0.3s,baz=153,slow=26,SNR=8.2							
PDGK	**Podgornoye**	**7.76**	**246**	⇓Sn		**Sn**	**03 38 18.2**	**+2.1**
	27nm,0.9s							
KURK	**Kurchatov**	**7.93**	**302**	Pn		**Pn**	**03 36 51.2**	**+0.6**
KURK				Sn		**Sn**	**03 38 21.3**	**+1.0**
KURK				Lg		Lg	03 39 00.9	
KURK	**Kurchatov**	**7.93**	**302**	⇑Sn		**Sn**	**03 38 18.9**	**-1.4**
	23nm,0.4s							
KURBB	**Kurchatov Arra**	**7.94**	**301**	Pn		**Pn**	**03 36 51.2**	**+0.4**
	1.7nm,0.3s,baz=106,slow=14,SNR=30							
KURBB				Sn		**Sn**	**03 38 21.3**	**+0.6**
	0.9nm,0.3s,baz=102,slow=26,SNR=6.1							
KURBB				Lg		Lg	03 39 00.9	
	0.9nm,0.3s,baz=103,slow=32,SNR=6.0							
TKM2	**Tokmak 2**	**10.44**	**252**	*e*Pn		**Pn**	**03 37 25.2**	**-0.1**
	3.7nm,0.6s							
TLY	**Talaya**	**10.55**	**58**	Lg		Lg	03 40 11.3	
	0.0nm,0.3s,baz=22,slow=22,SNR=3.7							
AAK	**Ala-Archa**	**11.30**	**253**	Pn		**Pn**	**03 37 37.9**	**+0.9**
	0.3nm,0.3s,baz=53,slow=8.0,SNR=6.0							
AAK	**Ala-Archa**	**11.30**	**253**	*e*Pn		**Pn**	**03 37 37.4**	**+0.5**
	4.9nm,0.9s							
EKS2	**Erkin-Say**	**11.76**	**254**	*e*Pn		**Pn**	**03 37 43.8**	**+0.6**
KSH	**Kashi**	**12.16**	**237**	*e*P		Pn	03 38 01.3	+13
BVAR	**Borovoye Array**	**13.52**	**304**	Pn		**Pn**	**03 38 06.1**	**-1.0**
	1.2nm,0.3s,baz=101,slow=16,SNR=15							
BVAR				Sn		**Sn**	**03 40 32.7**	**-4.6**
	1.1nm,0.3s,baz=113,slow=22,SNR=6.4							
BRVK	**Borovoye**	**13.60**	**304**	*e*Pn		**Pn**	**03 38 03.7**	**-4.4**
KKAR	**Karatay Array**	**13.76**	**261**	*e*Pn		**Pn**	**03 38 10.9**	**+0.5**
	0.5nm,0.3s							
ABKAR	**Akbulak array**	**19.62**	**288**	*e*P		**Pn**	**03 39 24.7**	**-0.4**
	3.1nm,0.7s							
ARU	**Arti**	**21.06**	**308**	P		**P**	**03 39 42.5**	**+3.1**
	3.0nm,0.3s,baz=106,slow=3.3,SNR=13							
ARU	**Arti**	**21.06**	**308**	*e*P		**P**	**03 39 39.7**	**+0.3**
	9.3nm,0.7s							
ARCES	**ARCESS Array B**	**37.94**	**329**	P		**P**	**03 42 11.6**	**-0.9**
	7.5nm,1.0s,baz=90,slow=9.0,SNR=4.7							
FINES	**FINESS Array B**	**38.03**	**316**	P		**P**	**03 42 12.9**	**-0.5**
	0.4nm,0.4s,baz=90,slow=7.6,SNR=6.3							
AKASG	**Malin Array Be**	**38.72**	**298**	P		**P**	**03 42 19.2**	**0.0**
	0.8nm,0.4s,baz=63,slow=8.9,SNR=2.8							
BRTR	**Keskin Array B**	**40.31**	**281**	P		**P**	**03 42 34.6**	**+1.7**
	2.7nm,0.8s,baz=76,slow=8.4,SNR=13							
NOA	**NORSAR Array B**	**45.11**	**318**	P		**P**	**03 43 11.0**	**-0.5**
	0.8nm,0.8s,baz=66,slow=7.4,SNR=4.0							
GERES	**GERESS Array B**	**48.68**	**302**	P		**P**	**03 43 40.1**	**+0.5**
	0.1nm,0.4s,baz=50,slow=9.1,SNR=3.1							
ILAR	**Eielson Array**	**60.38**	**24**	P		**P**	**03 45 04.8**	**+0.6**
	0.8nm,0.6s,baz=318,slow=5.2,SNR=8.8							
INK	**Inuvik**	**60.72**	**17**	P		**P**	**03 45 07.6**	**+1.2**
	1.4nm,0.8s,baz=1.6,slow=7.1,SNR=5.9							
INK	**Inuvik**	**60.72**	**17**	*e*P		**P**	**03 45 07.6**	**+1.2**
	1.5nm,0.8s							
ESDC	**Sonseca Array**	**64.27**	**301**	P		**P**	**03 45 31.0**	**+0.3**
	0.6nm,0.6s,baz=47,slow=6.2,SNR=5.0							
YKA	**Yellowknife Ar**	**69.26**	**12**	P		**P**	**03 46 03.1**	**+1.0**
	0.2nm,0.9s,baz=341,slow=6.4,SNR=5.7							
ASAR	**Alice Springs**	**81.04**	**139**	P		**P**	**03 47 08.6**	**-1.8**
	0.2nm,0.6s,baz=323,slow=4.8,SNR=5.2							

*ISCJB **23** 03:56:55.0±0.3, 51°.51N±0°.02×16°.22E±0°.03, h0km, mb2.8/1, Error ellipse: s-maj=2.6km s-min=2.3km az=153.4*
*CSEM **23** 03:56:57.6±0.2, 51°.48N×16°.24E, h1km, ML2.8, Error ellipse: s-maj=6.3km s-min=2.8km az=74.0*
*IDC **23** 03:56:58.8±0.6, 51°.46N×15°.99E, h0km, mb3.1/1, mb1 3.3/10, mb1mx3.2/51, mbtmp3.1/10, ML3.1/9, Error ellipse: s-maj=13.2km s-min=6.4km az=105.0*
*VIE **23** 03:56:59.5, 51°.32N×16°.26E, h0km, mb3.5/2, ML3.0/3, Suspected Mining induced.*
*UPP **23** 03:57:02.6±3.1, 51°.71N×15°.76E, h0km, ML1.8, Suspected explosion*

ISC 23 03:56:56.8±0.6, **51°.51N**±0°.03×**16°.16E**±0°.02, **h0**km, **n60**, σ1§**29**/103, **2C-13D, Poland**

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
KSP	**Ksiaz**	**0.67**	**173**	*i* Pg		**Pg**	**03 57 10.3**	**+0.6**
KSP				*e*Sg		**Sg**	**03 57 18.2**	**-0.1**
KSP	**Ksiaz**	**0.67**	**173**	*i* Pg		**Pg**	**03 57 10.3**	**+0.6**
KSP				*e*Sg		**Sg**	**03 57 18.2**	**-0.1**
UPC	**Upice**	**1.01**	**186**	⇓*i*PG		**Pg**	**03 57 16.6**	**+0.5**
UPC				*e*SG		**Sg**	**03 57 28.7**	**-0.4**
DPC	**Dobruska-Polom**	**1.17**	**175**	⇓*i*PG		**Pg**	**03 57 19.1**	**0.0**
DPC				*e*SG		**Sg**	**03 57 33.2**	**-1.0**
	comp=Z,64nm,0.4s							
PVCC	**Panska Ves**	**1.41**	**226**	⇓*i*PG		**Pb**	**03 57 24.4**	**+0.5**
PVCC				*e*SG		**Sn**	**03 57 43.5**	**+0.6**
	comp=Z,211nm,0.2s							
KRLC	**Kraliky**	**1.49**	**164**	⇓*i*PG		**Pn**	**03 57 24.7**	**-0.1**
KRLC				*e*SG		**Sg**	**03 57 43.2**	**-1.4**
BRG	**Berggiesshubel**	**1.54**	**246**	PN		**Pn**	**03 57 25.8**	**+0.4**
BRG				PG		**Pg**	**03 57 27.8**	**+1.6**
BRG				SG		**Sg**	**03 57 48.0**	**+1.9**
	56nm,0.4s							
PRA	**Prague**	**1.81**	**218**	⇓*e*SG		**Sg**	**03 57 54.9**	**0.0**
	comp=Z,44nm,0.4s							
GOPC	**GO Pecny, Ondr**	**1.82**	**209**	⇓*e*PN		**Pb**	**03 57 30.5**	**-0.5**
GOPC				*e*PG		**Pg**	**03 57 31.7**	**0.0**
PRU	**Pruhonice**	**1.84**	**215**	⇓*e*PN		**Pn**	**03 57 29.8**	**+0.2**
PRU				*e*PG		**Pg**	**03 57 31.9**	**-0.1**
PRU				*e*SG		**Sb**	**03 57 55.2**	**+0.4**
	comp=Z,29nm,0.2s							
MORC	**Moravsky Berou**	**1.94**	**153**	*e*Pn		**Pn**	**03 57 30.9**	**-0.2**
MORC				*e*Sg		**Sb**	**03 57 57.4**	**-0.5**
CLL	**Collm**	**1.99**	**265**	*e*Pn		**Pn**	**03 57 32.0**	**+0.3**
CLL				*i* Pg		**Pg**	**03 57 35.3**	**+0.4**
CLL				*e*Sg		**Sg**	**03 58 02.0**	**+1.3**
	comp=Z,25nm,0.6s							
OKC	**Ostrava-Krasne**	**2.10**	**142**	⇓*e*SG		**Sb**	**03 58 01.9**	**-0.3**
CHZP	**Chorzow**	**2.17**	**123**	⇓*e*SG		**Pg**	**03 57 40.5**	**+2.2**
CHZP				⇓eSg		**Sg**	**03 58 07.7**	**+1.3**
VRAC	**Vranov**	**2.22**	**173**	Pn		**Pn**	**03 57 35.7**	**+0.8**
	comp=Z,2.8nm,0.3s,baz=342,slow=17,SNR=18							
VRAC				Lg		Lg	03 58 07.0	
	comp=Z,6.1nm,0.3s,baz=90,slow=20,SNR=11							
VRAC	**Vranov**	**2.22**	**173**	*e*Pn		**Pn**	**03 57 35.6**	**+0.8**
VRAC				*e*Sg		**Sb**	**03 58 06.4**	**+0.6**
TREC	**Trest**	**2.26**	**191**	⇓*e*PN		**Pn**	**03 57 36.1**	**+0.7**
OJC	**Ojcow**	**2.64**	**118**	Pn		**Pn**	**03 57 39.6**	**-1.0**
OJC				*e*Pg		**Pg**	**03 57 47.5**	**+0.1**
OJC				*e*Sg		**Sg**	**03 58 21.6**	**0.0**
OJC	**Ojcow**	**2.64**	**118**	*e*Pn		**Pn**	**03 57 39.6**	**-1.0**
NKC	**Novy Kostel**	**2.68**	**243**	⇓*e*PN		**Pn**	**03 57 42.5**	**+1.3**
NKC				*e*PG		**Pg**	**03 57 48.2**	**+0.1**
NKC				*e*SG		**Sg**	**03 58 23.6**	**+0.8**
	comp=Z,39nm,0.3s							
KHC	**Kasperske Hory**	**2.90**	**216**	⇓*e*PN		**Pn**	**03 57 44.9**	**+0.7**
KHC				*e*PG		**Pg**	**03 57 51.1**	**-1.3**
KHC				*e*SN		**Sn**	**03 58 20.0**	**+0.2**
KHC				*e*SG		**Sg**	**03 58 29.1**	**-0.8**
	comp=Z,19nm,0.3s							
GERES	**GERESS Array B**	**3.10**	**212**	Pn		**Pn**	**03 57 47.7**	**+0.6**
	comp=Z,0.7nm,0.3s,baz=34,slow=13,SNR=35							
GERES				Pg		**Pb**	**03 57 54.2**	**+1.4**
	comp=Z,6.3nm,0.3s,baz=30,slow=16,SNR=79							
GERES				Lg		Lg	03 58 33.5	
	comp=Z,7.6nm,0.3s,baz=38,slow=29,SNR=20							
SMOL	**Smolenice**	**3.11**	**164**	*e*Pg		**Pg**	**03 57 56.9**	**+0.6**
SMOL				*e*Sg		**Sg**	**03 58 35.6**	**-1.0**
SMOL	**Smolenice**	**3.11**	**164**	*e*PG		**Pg**	**03 57 56.9**	**+0.6**
SMOL				*e*SG		**Sg**	**03 58 35.6**	**-1.0**
LANS	**Liptovska Anna**	**3.17**	**137**	*e*Pg		**Pg**	**03 57 57.8**	**+0.3**
LANS				*e*Sg		**Sg**	**03 58 41.1**	**+2.5**
LANS	**Liptovska Anna**	**3.17**	**137**	*e*PG		**Pg**	**03 57 57.8**	**+0.3**
LANS				*e*SG		**Sg**	**03 58 41.1**	**+2.5**
NIE	**Niedzica**	**3.37**	**127**	*e*P		**Pg**	**03 58 01.2**	**-0.2**
NIE				*e*S		**Sg**	**03 58 44.4**	**-0.6**
VYHS	**Vyhne**	**3.48**	**149**	*e*Pg		**Pg**	**03 58 04.0**	**+0.6**
VYHS				*e*Sg		**Sg**	**03 58 46.2**	**-2.2**
VYHS	**Vyhne**	**3.48**	**149**	*e*PG		**Pg**	**03 58 04.0**	**+0.6**
VYHS				*e*SG		**Sg**	**03 58 46.2**	**-2.2**
CONA	**Conrad Observa**	**3.59**	**183**	*i* Pn		**Pn**	**03 57 55.0**	**+1.3**
	comp=Z,1.0nm,0.3s							
CONA				*i* Sg		**Sg**	**03 58 50.9**	**-1.2**
	comp=Z,14nm,0.3s							
CONA	**Conrad Observa**	**3.59**	**183**	Pn		**Pn**	**03 57 55.0**	**+1.3**
	comp=Z,1.0nm,0.3s							
CONA				Sg		**Sg**	**03 58 50.9**	**-1.2**
	comp=Z,14nm,0.3s							
BSD	**Bornholm Skovb**	**3.69**	**349**	⇑*i*P		**Pn**	**03 57 55.8**	**+0.8**
BSD				*i* S		**Sn**	**03 58 36.9**	**-2.2**
BSD	**Bornholm Skovb**	**3.69**	**349**	⇑*i*P		**Pn**	**03 57 55.8**	**+0.8**
BSD				*i* S		**Sn**	**03 58 36.9**	**-2.2**
STHS	**Stebnicka Huta**	**3.86**	**121**	*e*PG		**Pn**	**03 57 57.8**	**+0.4**
STHS				*e*SG		**Sg**	**03 59 06.5**	**+5.7**
STHS				*e*LG		Lg	03 59 17.0	
MOA	**Molln**	**3.87**	**199**	*i* Pn		**Pn**	**03 57 58.5**	**+1.0**
	comp=Z,1.9nm,0.3s							
MOA				*i* Sg		**Sg**	**03 59 00.1**	**-0.8**
	comp=Z,17nm,0.5s							
MOA	**Molln**	**3.87**	**199**	Pn		**Pn**	**03 57 58.5**	**+1.0**
	comp=Z,1.9nm,0.3s							
MOA				Sg		**Sg**	**03 59 00.1**	**-0.8**
	comp=Z,17nm,0.5s							
KECS	**Kecovo**	**4.12**	**136**	*e*Sg		**Sg**	**03 59 08.7**	**-0.3**
KECS	**Kecovo**	**4.12**	**136**	*e*SG		**Sg**	**03 59 08.7**	**-0.3**
KECS				*e*LG		Lg	03 59 31.0	
KOLS	**Kolonicke sedl**	**4.69**	**121**	*e*Pn		**Pn**	**03 58 07.8**	**-1.1**
KOLS	**Kolonicke sedl**	**4.69**	**121**	*e*PN		**Pn**	**03 58 07.8**	**-1.1**
KOLS				*e*PG		**Pg**	**03 58 27.0**	**+0.3**
KOLS				*e*SG		Sg	03 59 34.0	+6.5
KOLS				*e*			04 35 45.5	
BJUU	**Bjuv**	**4.94**	**339**	P		**Pn**	**03 58 12.1**	**0.0**
BJUU				S		**Sn**	**03 59 07.5**	**-2.4**
BJUU	**Bjuv**	**4.94**	**339**	P		**Pn**	**03 58 12.1**	**0.0**
BJUU				S		**Sn**	**03 59 07.5**	**-2.4**
BYXU	**Byxelkrok**	**5.81**	**5**	P		**Pn**	**03 58 25.6**	**+1.5**
BYXU				S		**Sn**	**03 59 30.4**	**-1.0**
BYXU	**Byxelkrok**	**5.81**	**5**	P		**Pn**	**03 58 25.6**	**+1.5**
BYXU				S		**Sn**	**03 59 30.4**	**-1.0**
DAVOX	**Davos/Dischmat**	**6.28**	**223**	Pn		**Pn**	**03 58 30.0**	**-0.7**
	comp=Z,0.2nm,0.3s,baz=14,slow=19,SNR=3.5							
DAVOX				Lg		Lg	04 00 14.1	
	comp=Z,0.3nm,0.3s,baz=30,slow=23,SNR=3.6							
VIKU	**Vikbolandet**	**7.01**	**2**	P		**Pn**	**03 58 42.0**	**+1.4**
VIKU	**Vikbolandet**	**7.01**	**2**	P		**Pn**	**03 58 42.0**	**+1.4**
VANU	**Vaenersborg**	**7.38**	**343**	P		**Pn**	**03 58 48.3**	**+2.6**
VANU	**Vaenersborg**	**7.38**	**343**	P		**Pn**	**03 58 48.3**	**+2.6**
NYNU	**Nynaeshamn**	**7.59**	**7**	P		**Pn**	**03 58 49.7**	**+1.3**
NYNU	**Nynaeshamn**	**7.59**	**7**	P		**Pn**	**03 58 49.7**	**+1.3**
NASU	**Vaermlandsnaes**	**7.63**	**348**	P		**Pn**	**03 58 50.2**	**+1.1**
NASU	**Vaermlandsnaes**	**7.63**	**348**	P		**Pn**	**03 58 50.2**	**+1.1**
AKASG	**Malin Array Be**	**8.26**	**91**	Pn		**Pn**	**03 58 58.5**	**+0.7**
	comp=Z,0.6nm,0.3s,baz=281,slow=12,SNR=3.6							
AKASG				Lg		Lg	04 01 24.3	
	comp=Z,0.4nm,0.3s,baz=272,slow=26,SNR=3.3							
HFS	**Hagfors**	**8.76**	**352**	Pn		**Pn**	**03 59 04.8**	**+0.2**
	comp=Z,0.2nm,0.3s,baz=175,slow=14,SNR=9.3							
NOA	**NORSAR Array B**	**9.94**	**346**	Pn		**Pn**	**03 59 20.4**	**-0.4**
	comp=Z,0.2nm,0.3s,baz=163,slow=11,SNR=3.9							
FINES	**FINESS Array B**	**11.35**	**25**	Pn		**Pn**	**03 59 38.8**	**-1.2**
	comp=Z,0.2nm,0.3s,baz=209,slow=11,SNR=11							
FINES				Sn		Sn	04 01 41.2	-6.1
	comp=Z,0.2nm,0.3s,baz=203,slow=21,SNR=4.3							
EKA	**Eskdalemuir Ar**	**12.14**	**296**	Pn		**Pn**	**03 59 50.1**	**-0.7**
	baz=102,slow=14,SNR=2.9							
ARCES	**ARCESS Array B**	**18.62**	**10**	Pn		**P**	**04 01 12.8**	**-2.6**
	comp=Z,0.3nm,0.3s,baz=197,slow=12,SNR=8.0							
YKA	**Yellowknife Ar**	**59.87**	**336**	P		**P**	**04 07 05.4**	**+1.7**
	comp=Z,0.1nm,0.9s,baz=35,slow=7.1,SNR=4.2							

*IPEC **23** 03:59:02.8±0.2, 50°.04N×18°.48E, h0km±3km, ML1.8/3, Error ellipse: s-maj=2.1km s-min=1.1km az=160.0*
*PRU **23** 03:59:03.3, 50°.05N×18°.42E, h0km*

CSEM 23 03:59:02.5±0.3, **50°.06N×18°.43E, h1**km, **ML1.8, 2C-2D, Error ellipse: s-maj=8.4km s-min=4.7km az=6.0, Poland**

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
RAC	**Raciborz**	**0.15**	**281**	*e*Pg		Pg	03 59 07.0	+1.5
RAC				*e*Sg		Sg	03 59 10.4	+2.9
OKC	**Ostrava-Krasne**	**0.28**	**220**	⇑*i*PG		Pg	03 59 08.8	+0.9
OKC				*e*SG		Sg	03 59 12.7	+1.1
	comp=Z,46nm,0.5s							
CHZP	**Chorzow**	**0.43**	**57**	⇓*e*Pg		Pg	03 59 11.5	+0.7
CHZP				⇓eSg		Sb	03 59 19.9	0.0
MORC	**Moravsky Berou**	**0.64**	**244**	*e*Pg		Pg	03 59 15.5	+0.8
MORC				*e*Sg		Sg	03 59 23.5	+0.5
	13nm,0.3s							
OJC	**Ojcow**	**0.90**	**79**	*e*Pg		Pg	03 59 19.3	-0.3
OJC				*e*Sg		Sb	03 59 32.4	-0.9
OJC	**Ojcow**	**0.90**	**79**	*e*Pg		Pg	03 59 19.3	-0.3
OJC				*e*Sg		Sb	03 59 32.4	-0.9
KRLC	**Kraliky**	**1.06**	**272**	*e*SG		Sg	03 59 36.8	+0.2
LANS	**Liptovska Anna**	**1.13**	**143**	*e*Pg		Pg	03 59 24.3	+0.2
LANS				*e*Sg		Sn	03 59 41.1	-0.6
LANS	**Liptovska Anna**	**1.13**	**143**	*e*PG		Pg	03 59 24.3	+0.2
LANS				*e*SG		Sn	03 59 41.1	-0.6
NIE	**Niedzica**	**1.37**	**117**	*e*Pg		Pn	03 59 28.8	0.0
NIE				*e*Sg		Sn	03 59 48.7	+1.1
NIE	**Niedzica**	**1.37**	**117**	*e*Pg		Pn	03 59 28.8	0.0
DPC	**Dobruska-Polom**	**1.39**	**283**	*e*PG		Pn	03 59 28.9	-0.1
DPC				*e*SG		Sb	03 59 47.4	0.0
	comp=Z,7.4nm,0.4s							
VRAC	**Vranov**	**1.41**	**239**	*e*Pg		Pn	03 59 29.1	-0.2

```
INK  Inuvik            50.53  29  P          P   04 25 08.0 -0.3
     0.7nm,0.5s,baz=257,slow=7.8,SNR=8.1
AAK  Ala-Archa         50.57 297  P          P   04 25 07.6 -1.7
     0.8nm,0.4s,baz=52,slow=5.0,SNR=3.5
EKS2 Erkin-Say         51.05 297  eP         P   04 25 10.4 -2.4
     1.9nm,0.6s
KKAR Karatay Array     53.08 299  eP         P   04 25 27.1 -0.7
ARU  Arti              55.08 318  eP         P   04 25 42.9 +0.7
     2.1nm,0.4s
ABKAR Akbulak array    57.20 309  eP         P   04 25 58.0 +0.5
     1.7nm,0.4s
AKTO Aktyubinsk        57.82 311  P          P   04 26 02.6 +0.8
     1.4nm,0.7s,baz=58,slow=14,SNR=4.3
RES  Resolute Bay      58.85  15  P          P   04 26 07.9 -0.8
     1.1nm,0.7s,baz=324,slow=5.2,SNR=5.5
YKA  Yellowknife Ar    59.95  32  P          P   04 26 16.9 +0.5
     0.4nm,0.6s,baz=303,slow=6.5,SNR=12
FINES FINESS Array B   66.68 332  P          P   04 27 01.3 +0.3
     1.0nm,0.5s,baz=49,slow=8.5,SNR=16
KBZ  Khabaz            70.10 311  P          P   04 27 24.5 +1.8
     2.5nm,0.9s,baz=133,slow=5.3,SNR=4.8
NVAR Mina Array Bea    71.51  55  P          P   04 27 32.2 +0.6
     0.3nm,0.5s,baz=297,slow=6.7,SNR=3.7
NB2  NORSAR Subarra    71.77 338  P          P   04 27 32.6  0.0
     comp=Z,0.4nm,0.5s,baz=36,slow=6.2
NOA  NORSAR Array B    71.77 338  P          P   04 27 32.3 -0.3
     comp=Z,1.0nm,0.7s,baz=38,slow=6.0,SNR=5.9
AKASG Malin Array Be   72.74 323  P          P   04 27 38.5  0.0
     comp=Z,0.5nm,0.4s,baz=41,slow=6.4,SNR=10
FRB  Frobisher Bay     73.05  14  P          P   04 27 40.0 -0.1
     comp=Z,1.6nm,0.5s,baz=323,slow=4.7,SNR=9.0
PDAR Pinedale Array    73.99  47  P          P   04 27 46.3 -0.1
     comp=Z,0.4nm,0.5s,baz=259,slow=1.4,SNR=5.9
BRTR Keskin Array B    77.97 312  P          P   04 28 09.0  0.0
     comp=Z,0.2nm,0.4s,baz=48,slow=2.1,SNR=3.1
GERES GERESS Array B   80.78 329  P          P   04 28 24.3 +0.2
     comp=Z,0.4nm,0.7s,baz=50,slow=7.3,SNR=4.8
DAVOX Davos/Dischmat   83.95 330  P          P   04 28 40.9 +0.1
     comp=Z,1.1nm,0.6s,baz=315,slow=4.3,SNR=3.1
TXAR Lajitas Array     86.61  54  P          P   04 28 55.3 +1.0
     comp=Z,0.2nm,0.5s,baz=285,slow=2.7,SNR=5.2
```

BJI ***23*** *04:16:52.4, 10.˙355×161.˙30E, h80km, mb6.3/59, mB6.4/58, Ms6.6/95, Ms7 6.5/88*

ISCJB ***23*** *04:16:53.5±0.6, 10.˙40S±0.˙02×161.˙22E±0.˙02, h80km±5km, mb6.5/298, Error ellipse: s-maj=3.0km s-min=2.5km az=25.0*

IDC ***23*** *04:16:54.8±0.6, 10.˙38S×161.˙33E, h84km±4km, mb6.0/44, mb1 6.0/45, mb1mx6.0/45, mbtmp6.3/45, Error ellipse: s-maj=10.4km s-min=7.4km az=58.0*

GCMT ***23*** *04:16:54.7±0.0, 10.˙47S×161.˙32E, h77km, MW6.8/146, Moment Tensor Solution. s145,c376; s146,c687; Duration: 6s3 Moment tensor: Scale 10¹⁹Nm; Mrr0.37±.01; Mθθ-0.99±.01; Mφφ0.62±.01; Mrθ-1.39±.01; Mθφ1.37±.01; Mφr-0.23±.01; Best double couple: M₀2.13700×10¹⁹ NP1:φs259.00000°, δ84.00000°, λ43.00000°. NP2:φs164.00000°, δ47.00000°, λ172.00000°. Principal axes: T 2.0050, Plg34.0000°, Azm131.0000°; N 0.2650, Plg47.0000°, Azm265.0000°; P -2.2700, Plg24.0000°, Azm23.0000°; nsta1 refers to body waves, cutoff=50s. nsta2 refers to surface/mantle waves, cutoff=50s.*

NEIC ***23*** *04:16:54.7±0.1, 10.˙38S×161.˙20E, h79km, mb6.7/191, ME6.6, MW6.8, MW6.8 Error ellipse: s-maj=3.2km s-min=3.0km az=107.0, Moment Tensor Solution. s73 Moment tensor: Scale 10¹⁹Nm; Mrr0.34; Mθθ-0.70; Mφφ0.36; Mrθ-1.27; Mθφ1.13; Mφr-0.20; Best double couple: M₀1.80000×10¹⁹ NP1:φs165.00000°, δ43.00000°, λ170.00000°. NP2:φs262.00000°, δ83.00000°, λ47.00000°. Principal axes: T 1.7300, Plg37.0000°, Azm136.0000°; N 0.1500, Plg42.0000°, Azm269.0000°; P -1.8800, Plg26.0000°, Azm24.0000°; Broadband fault plane solution: P waves. NP1:φs157.00000°, δ21.00000°, λ166.00000°. NP2:φs260.00000°, δ85.00000°, λ70.00000°. Principal axes: T Plg46.0000°, Azm149.0000°; N Plg0.0000°, Azm0.0000°; P Plg37.0000°, Azm8.0000°; Complex earthquake observed on broadband displacement seismograms. A small event is followed by at least one other event about 2 seconds later. Depth from synthetics of broadband displacement seismograms based on first event. Energy computed from BB mechanism.*

NEIC Felt [V] at Honiara. Also felt at Tulagi.

MOS ***23*** *04:16:55.9±0.9, 10.˙30S×161.˙19E, h102km, mb6.5/81, MS6.4/75 Error ellipse: s-maj=6.6km s-min=5.4km az=90.6*

NEIC ***23*** *04:16:55.0±0.0, 10.˙35S×161.˙23E, h81km, Moment Tensor Solution. s41 Moment tensor: Scale 10¹⁹Nm; Mrr0.24; Mθθ-0.91; Mφφ0.66; Mrθ-1.16; Mθφ1.26; Mφr-0.26; Best double couple: M₀1.90000×10¹⁹ NP1:φs257.00000°, δ86.00000°, λ40.00000°. NP2:φs163.00000°, δ50.00000°, λ174.00000°. Principal axes: T 1.8200, Plg30.0000°, Azm127.0000°; N 0.1700, Plg50.0000°, Azm261.0000°; P -1.9900, Plg23.0000°, Azm23.0000°;*

ISC 23 04:16:55.3±0.2, 10˙36S±0.˙03×161˙25E±0.˙03, h86km±1km, h85km: pP-P, n1879, s1979/2120, mb6.5/311, 70C-68D, Bougainville-Solomon Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op		ISC	h m s ISC
HNR	**Honiara**	**1.58**	**306**	P		**Pn**	**04 17 23.4 +1.6**
	23μm,0.3s,baz=148,slow=5.8,SNR=1177						
HNR				S		**Sn**	**04 17 46.8 +4.8**
	39μm,0.3s,baz=312,slow=6.8,SNR=7.6						
HNR	**Honiara**	**1.58**	**306**	*i* P		**Pn**	**04 17 22.5 +0.6**
HNR				*i* S		**Sn**	**04 17 48.5 +6.5**
RABL	**Rabaul**	**10.89**	**304**	*e*Pn		Pn	04 19 33.4 +5.0
DZM	**Mont Dzumac**	**12.67**	**157**	P		**Pn**	**04 19 51.8 -0.6**
	45nm,0.3s,baz=32,slow=10,SNR=966						
DZM				S		**Sn**	**04 22 05.3 -6.4**
	70nm,0.3s,baz=292,slow=19,SNR=5.5						
PMG	**Port Moresby**	**13.91**	**273**	P		**P**	**04 20 12.8 -1.3**
	1.5nm,0.3s,baz=87,slow=8.3,SNR=39						
PMG				S		**S**	**04 22 55.6 -2.6**
	baz=156,slow=20,SNR=1.6						
PMG	**Port Moresby**	**13.91**	**273**	*c i*P		**P**	**04 20 12.9 -1.2**
PMG				pmax	pmax		
	comp=Z,2μm,1.7s						
MANU	**Manus Island**	**16.07**	**300**	*e*Pn		**P**	**04 20 37.2 -0.9**
	comp=Z,8μm,1.9s						
TARA	**Tarawa**	**16.44**	**46**	*e*Pn		**P**	**04 20 42.2 -0.1**
	comp=Z,22μm,1.5s						
TARA				*e*Sn		**Sn**	**04 23 33.9 -9.3**
PATS	**Pohnpei**	**17.33**	**350**	P		**P**	**04 20 54.0 +2.0**
	baz=18,SNR=84						
PATS	**Pohnpei**	**17.33**	**350**	*e*Pn		**P**	**04 20 53.9 +2.0**
	comp=Z,12μm,1.2s						
CTA	**Charters Tower**	**17.39**	**234**	P		**P**	**04 20 55.5 +2.9**
	comp=Z,30nm,0.3s,baz=62,slow=12,SNR=201						
CTA				S		**S**	**04 24 08.3 -0.6**
	comp=Z,21nm,0.3s,baz=22,slow=19,SNR=6.9						
CTAO	**Charters Tower**	**17.39**	**234**	*e*P		**P**	**04 20 55.0 +2.3**
CTAO				*e*			04 24 02.6
CTAO				pmax	pmax		
	comp=Z,3μm,1.0s						
CTAO	**Charters Tower**	**17.39**	**234**	*e*Pn		**P**	**04 20 55.0 +2.3**
	comp=Z,3μm,1.0s						
CTAO				*e*Sn		**Sn**	**04 24 02.6 -3.4**
EIDS	**Eidsvold**	**17.77**	**212**	P		**Pn**	**04 20 59.0 +1.8**
	baz=18,SNR=397						
EIDS	**Eidsvold**	**17.77**	**212**	*e*P		**Pn**	**04 20 59.0 +1.8**
	comp=Z,3μm,1.4s						
FUNA	**Funafuti**	**17.80**	**86**	*e*P		**Pn**	**04 20 58.4 +0.8**
	comp=Z,9μm,1.8s						
MSVF	**Nonsavu**	**17.86**	**116**	*e*P		**P**	**04 20 58.3 +0.3**
MSVF	**Nonsavu**	**17.86**	**116**	*e*P		**P**	**04 20 58.3 +0.3**
	comp=Z,12μm,1.8s						
COEN	**Coen**	**18.02**	**257**	P		**Pn**	**04 21 03.5 +3.1**
	baz=18,SNR=229						
COEN	**Coen**	**18.02**	**257**	*e*P		**Pn**	**04 21 03.2 +2.9**
	comp=Z,8μm,1.6s						
MTSU	**Mount Surprise**	**18.13**	**243**	P		**Pn**	**04 21 03.9 +2.4**
	baz=18,SNR=965						
NFK	**Norfolk Island**	**19.62**	**162**	P		**Pn**	**04 21 18.5 -0.6**
	baz=20,SNR=27						
RMQ	**Roma**	**19.92**	**215**	P		**Pn**	**04 21 22.4 -0.3**
	baz=20,SNR=593						
KWAJ	**Kwajalein Atol**	**20.06**	**19**	*e*P		**P**	**04 21 23.1 +1.2**
KWAJ	**Kwajalein Atol**	**20.06**	**19**	*e*P		**P**	**04 21 23.1 +1.2**
	comp=Z,13μm,0.8s						
MMPI	**Merauke**	**20.67**	**273**	P		Pn	04 21 31.1 -0.5
LHI	**Lord Howe Isla**	**21.16**	**185**	P		**P**	**04 21 34.5 +1.0**
	baz=21,SNR=42						
LHI	**Lord Howe Isla**	**21.16**	**185**	*e*P		**P**	**04 21 33.9 +0.4**
	comp=Z,3μm,1.4s						
JAY	**Jayapura**	**21.84**	**290**	P		**P**	**04 21 39.7 -1.3**
	comp=Z,25nm,0.6s,baz=98,slow=23,SNR=41						
JAY				S		**S**	**04 25 41.2 +3.4**
	comp=Z,17nm,1.2s,baz=0.0,slow=20,SNR=2.6						
JAY	**Jayapura**	**21.84**	**290**	P		**P**	**04 21 39.2 -1.8**
ARMA	**Armidale**	**21.88**	**203**	P		**P**	**04 21 41.4 0.0**
	baz=22,SNR=449						
ARMA	**Armidale**	**21.88**	**203**	*e*P		**P**	**04 21 41.6 +0.2**
	comp=Z,4μm,1.4s						
GENI	**Genyem**	**22.31**	**289**	P		**P**	**04 21 46.3 +0.3**
QLP	**Quilpie**	**22.77**	**223**	P		**P**	**04 21 50.9 +0.1**
	baz=23,SNR=320						
MGCD	**Mangrove Creek**	**24.58**	**201**	P		**P**	**04 22 08.5 +1.1**
	baz=25,SNR=94						
CMSA	**Cobar Meteorol**	**25.53**	**212**	P		**P**	**04 22 16.2 +0.1**
	baz=26,SNR=303						
YNG	**Young**	**26.57**	**204**	P		**P**	**04 22 26.2 +0.7**
	baz=27,SNR=158						
AFI	**Afiamalu**	**26.60**	**100**	P		**P**	**04 22 24.6 -1.4**
	comp=Z,302nm,1.1s,baz=276,slow=9.3,SNR=24						
AFI	**Afiamalu**	**26.60**	**100**	*e*P		**P**	**04 22 25.9 -0.1**
AFI				pmax	pmax		
	comp=Z,3μm,1.5s						
AFI				MLR	MLR		
	comp=Z,50μm,21.0s						
AFI	**Afiamalu**	**26.60**	**100**	*e*P		**P**	**04 22 25.9 -0.1**
	comp=Z,3μm,1.5s						
AFI				LR	LR		
	comp=Z,50μm,21.0s						
RAO	**Raoul Island**	**27.07**	**137**	P		**P**	**04 22 28.5 -1.5**
	comp=Z,1μm,0.8s,baz=311,slow=1.8,SNR=18						
RAO	**Raoul Island**	**27.07**	**137**	*e*P		**P**	**04 22 31.6 +1.6**
RAO				MLR	MLR		
	comp=Z,75μm,22.0s						
RAO	**Raoul Island**	**27.07**	**137**	*e*P		**P**	**04 22 31.6 +1.6**
	comp=Z,16μm,1.6s						
RAO				LR	LR		
	comp=Z,75μm,22.0s						
CNB	**Canberra Magne**	**27.10**	**202**	P		**P**	**04 22 30.9 +0.6**
	baz=27,SNR=123						
OUZ	**Omahuta**	**27.19**	**157**	PN		**P**	**04 22 32.4 +1.5**
OUZ	**Omahuta**	**27.19**	**157**	*e*P		**P**	**04 22 31.5 +0.6**
	comp=Z,912nm,1.2s						
CAN	**Canberra**	**27.24**	**202**	*e*P		**P**	**04 22 32.0 +0.5**
CAN				pmax	pmax		
	comp=Z,2μm,1.4s						
CAN				MLR	MLR		
	comp=Z,162μm,22.0s						
CAN	**Canberra**	**27.24**	**202**	*e*P		**P**	**04 22 31.9 +0.5**
	comp=Z,2μm,1.4s						
CAN				LR	LR		
	comp=Z,162μm,22.0s						
WRAB	**Tennant Creek**	**27.61**	**247**	*c i*P		**P**	**04 22 35.1 +0.1**
WRAB				pmax	pmax		
	comp=Z,3μm,2.2s						
WRAB				MLR	MLR		
	comp=Z,133μm,15.0s						
WRAB	**Tennant Creek**	**27.61**	**247**	*e*P		**P**	**04 22 34.8 -0.1**
	comp=Z,3μm,1.4s						
WRAB				LR	LR		
	comp=Z,75μm,22.0s						
WRA	**Warramunga Arr**	**27.63**	**247**	P		**P**	**04 22 35.5 +0.4**
	comp=Z,294nm,0.8s,baz=78,slow=8.9,SNR=476						
WRA				P3KPbc			04 55 01.6
	comp=Z,7.4nm,1.0s,baz=274,slow=2.6,SNR=5.7						
WRA	**Warramunga Arr**	**27.63**	**247**	P		**P**	**04 22 35.5 +0.4**
WRA				pmax	pmax		
	comp=Z,189nm,0.7s						
STKA	**Stephens Creek**	**28.09**	**217**	P		**P**	**04 22 40.0 +0.9**
	comp=Z,109nm,0.8s,baz=25,slow=10,SNR=70						
STKA				P3KPbc			04 55 00.1
	comp=Z,2.6nm,0.7s,baz=171,slow=7.2,SNR=6.4						
STKA	**Stephens Creek**	**28.09**	**217**	P		**P**	**04 22 40.0 +0.9**
	baz=28,SNR=99						
STKA	**Stephens Creek**	**28.09**	**217**	*e*P		**P**	**04 22 39.2 +0.2**
STKA				pmax	pmax		
	comp=Z,419nm,1.4s						
STKA	**Stephens Creek**	**28.09**	**217**	*e*P		**P**	**04 22 39.2 +0.2**
	comp=Z,419nm,1.4s						
STKA				*e*			04 55 00.1
WCZ	**Waipu Caves**	**28.11**	**157**	PN		**P**	**04 22 40.8 +1.7**
KMPI	**Kaimana, Papua**	**28.12**	**282**	P		**P**	**04 22 42.0 +2.5**
KDU	**Kakadu**	**28.28**	**262**	P		**P**	**04 22 41.6 +0.7**
	baz=28,SNR=82						
RKPI	**Ransiki, Papua**	**28.30**	**286**	P		**P**	**04 22 45.5 +4.4**
MILA	**Mila**	**28.73**	**200**	P		**P**	**04 22 45.9 +1.1**
	baz=29,SNR=135						
GUMO	**Guam**	**28.81**	**325**	P		**P**	**04 22 44.1 -1.4**
	comp=Z,491nm,0.7s,baz=169,slow=4.9,SNR=36						
GUMO	**Guam**	**28.81**	**325**	*e*P		**P**	**04 22 46.0 +0.4**
GUMO				pmax	pmax		
	comp=Z,5μm,1.4s						
GUMO				MLR	MLR		
	comp=Z,119μm,22.0s						
GUMO	**Guam**	**28.81**	**325**	*e*P		**P**	**04 22 46.0 +0.4**
	comp=Z,5μm,1.4s						
GUMO				LR	LR		
	comp=Z,119μm,22.0s						
GRZ	**Great Barrier**	**28.82**	**156**	PN		**P**	**04 22 47.0 +1.6**
NIUE	**Niue**	**29.16**	**111**	P		**P**	**04 22 48.6 -0.1**
	baz=29,SNR=7.6						
H11S2	**WAKE ISLAND Hy**	**29.17**	**11**	P		**P**	**04 22 48.3 -0.2**
H11S2				T		T	04 53 47.7
	baz=188,slow=76,SNR=126						
H11S3	**WAKE ISLAND Hy**	**29.17**	**11**	P		**P**	**04 22 48.3 -0.2**
H11S3				T		T	04 54 03.4
	baz=188,slow=76,SNR=5.8						
H11S1	**WAKE ISLAND Hy**	**29.18**	**11**	P		**P**	**04 22 48.4 -0.2**
H11S1				T		T	04 53 49.6
	baz=188,slow=76,SNR=138						
AS01	**Alice Springs**	**29.19**	**240**	*e*P		**P**	**04 22 48.2 -0.8**
AS31	**Alice Springs**	**29.23**	**240**	*e*P		**P**	**04 22 48.6 -0.7**
	comp=Z,142nm,1.0s						
ASAR	**Alice Springs**	**29.23**	**240**	P		**P**	**04 22 48.4 -1.0**
	comp=Z,121nm,0.8s,baz=70,slow=9.1,SNR=397						
ASAR				P3KPbc			04 54 56.2
	comp=Z,5.4nm,0.8s,baz=239,slow=3.9,SNR=24						
KUZ	**Kuaotunu**	**29.35**	**156**	PN		**P**	**04 22 51.6 +1.4**
MKAZ	**Moumakai**	**29.44**	**157**	PN		**P**	**04 22 50.8 -0.2**
MTN	**Manton Dam**	**29.59**	**262**	P		**P**	**04 22 53.7 +1.1**
	baz=30,SNR=12						
MTN	**Manton Dam**	**29.59**	**262**	*e*P		**P**	**04 22 53.3 +0.7**
	comp=Z,1μm,1.4s						
SAUI	**Saumlaki**	**29.65**	**272**	P		**P**	**04 22 54.0 +0.9**
FAKI	**Fak Fak**	**29.71**	**282**	P		**P**	**04 22 54.1 +0.4**
TOZ	**Tahuroa Road**	**30.12**	**157**	PN		**P**	**04 22 57.5 +0.6**
H11N1	**WAKE ISLAND Hy**	**30.39**	**11**	P		**P**	**04 23 01.4 +2.1**
	baz=209,slow=14,SNR=61						
H11N1				T		T	04 55 32.5
	baz=188,slow=76,SNR=5.4						
H11N3	**WAKE ISLAND Hy**	**30.40**	**11**	P		**P**	**04 23 00.7 +1.4**
	baz=209,slow=14,SNR=46						
H11N3				T		T	04 55 37.8
	baz=188,slow=76,SNR=6.4						
H11N2	**WAKE ISLAND Hy**	**30.41**	**11**	P		**P**	**04 23 01.6 +2.2**
	baz=209,slow=14,SNR=35						
H11N2				T		T	04 55 41.8
	baz=188,slow=76,SNR=5.7						
HIZ	**Hauiti**	**30.57**	**159**	PN		**P**	**04 23 01.8 +0.9**
HIZ	**Hauiti**	**30.57**	**159**	*e*P		**P**	**04 23 02.1 +1.1**
	comp=Z,3μm,1.3s						
TOO	**Toolangi**	**30.59**	**205**	P		**P**	**04 23 01.9 +0.8**
	baz=31,SNR=178						
OPRZ	**Ohinepanea**	**30.63**	**156**	PN		**P**	**04 23 03.2 +1.7**
TLZ	**Tolley Road**	**30.66**	**158**	PN		**P**	**04 23 03.6 +1.9**
OMRZ	**Omania**	**30.79**	**156**	PN		**P**	**04 23 04.5 +1.6**
HTT	**Hallett**	**30.79**	**218**	P		**P**	**04 23 03.3 +0.3**
	baz=31,SNR=183						
HLRZ	**Highlands Stat**	**30.90**	**156**	*e*PN		**P**	**04 23 06.3 +2.4**
HAZ	**Te Kaha**	**31.07**	**154**	PN		**P**	**04 23 05.6 +0.3**
VRZ	**Vera Road**	**31.08**	**159**	PN		**P**	**04 23 07.2 +1.8**
MXZ	**Matakaoa Point**	**31.14**	**153**	PN		**P**	**04 23 05.3 -0.6**
MXZ	**Matakaoa Point**	**31.14**	**153**	*e*P		**P**	**04 23 07.3 +1.4**
	comp=Z,3μm,1.8s						
URZ	**Urewera**	**31.21**	**155**	P		**P**	**04 23 04.7 -1.9**
	comp=Z,192nm,0.9s,baz=290,slow=4.7,SNR=38						
URZ	**Urewera**	**31.21**	**155**	PN		**P**	**04 23 06.8 +0.3**
URZ	**Urewera**	**31.21**	**155**	*e*P		**P**	**04 23 06.6 +0.1**
	comp=Z,2μm,1.7s						
MUGZ	**Murupara**	**31.26**	**156**	*e*PN		**P**	**04 23 08.5 +1.4**
SWI	**Sorong**	**31.27**	**286**	P		**P**	**04 23 07.4 +0.1**
TWVZ	**Taurewa**	**31.28**	**158**	*e*PN		**P**	**04 23 09.1 +1.8**
WTVZ	**West Tongariro**	**31.37**	**158**	PN		**P**	**04 23 09.5 +1.4**
WMGZ	**Waiomatatini S**	**31.40**	**153**	PN		**P**	**04 23 06.8 -1.4**
MRHZ	**Matea Rd**	**31.43**	**157**	*e*PN		**P**	**04 23 09.9 +1.3**
OTVZ	**Oturere**	**31.44**	**158**	*e*PN		**P**	**04 23 08.9 +0.2**
MWZ	**Matawai**	**31.45**	**155**	*e*PN		**P**	**04 23 08.2 -0.6**
FWVZ	**Far West T-bar**	**31.48**	**158**	PN		**P**	**04 23 09.1 -0.1**
TWGZ	**Tauwhareparae**	**31.51**	**154**	PN		**P**	**04 23 08.3 -0.9**
WHVZ	**Whangaehu Hut**	**31.52**	**158**	PN		**P**	**04 23 11.8 +2.3**
WNVZ	**Wahianoa**	**31.56**	**158**	*e*PN		**P**	**04 23 09.6 -0.2**
BNDI	**Bandanaira**	**31.60**	**278**	P		**P**	**04 23 11.7 +1.4**
ARPS	**Mount Arapiles**	**31.61**	**211**	P		**P**	**04 23 11.1 +1.0**
	baz=32,SNR=55						
BKZ	**Black Stump Fm**	**31.75**	**157**	PN		**P**	**04 23 10.8 -0.5**
BKZ	**Black Stump Fm**	**31.75**	**157**	*e*P		**P**	**04 23 10.7 -0.7**
	comp=Z,883nm,1.1s						
SNGZ	**Shannon Statio**	**31.75**	**156**	*e*PN		**P**	**04 23 11.4 0.0**
NMHZ	**Naumai**	**31.81**	**157**	*e*PN		**P**	**04 23 11.6 -0.3**
RIGZ	**Rimuhau**	**31.86**	**155**	*e*PN		**P**	**04 23 11.0 -1.3**
PALU	**Palau**	**31.94**	**302**	P		**P**	**04 23 14.9 +1.7**
	baz=32,SNR=46						
KWHZ	**Kaweka Forest**	**31.95**	**157**	*e*PN		**P**	**04 23 12.4 -0.7**
KNZ	**Kokohu**	**32.09**	**156**	PN		**P**	**04 23 12.1 -2.2**
KRHZ	**Kereru**	**32.12**	**158**	PN		**P**	**04 23 13.3 -1.2**
BBOO	**Buckleboo**	**32.21**	**222**	P		**P**	**04 23 15.5 +0.1**
	baz=32,SNR=454						
BBOO	**Buckleboo**	**32.21**	**222**	*e*P		**P**	**04 23 15.6 +0.1**
	comp=Z,644nm,0.9s						
PNHZ	**Pukenui**	**32.30**	**158**	PN		**P**	**04 23 14.8 -1.3**
DUWZ	**D'Urville Isla**	**32.33**	**162**	PN		**P**	**04 23 16.6 +0.2**
TSZ	**Takapari Road**	**32.34**	**159**	PN		**P**	**04 23 15.1 -1.4**
KAHZ	**Kahuranaki**	**32.44**	**157**	PN		**P**	**04 23 16.8 -0.6**
DVHZ	**Dannevirke**	**32.62**	**159**	PN		**P**	**04 23 17.6 -1.3**
OGWZ	**Otaki Gorge**	**32.74**	**160**	PN		**P**	**04 23 18.6 -1.3**
MSAI	**Masohi**	**32.81**	**280**	P		**P**	**04 23 21.4 +0.5**
	comp=Z,217nm,0.8s,comp=Z,4μmcomp=Z,16μm						
TUWZ	**Tuamarina**	**32.91**	**162**	PN		**P**	**04 23 20.6 -0.8**
THZ	**Tophouse**	**32.92**	**164**	PN		**P**	**04 23 20.3 -1.3**
THZ	**Tophouse**	**32.92**	**164**	*e*P		**P**	**04 23 21.0 -0.6**
	comp=Z,736nm,0.8s						
HOWZ	**Holdsworth Sta**	**32.93**	**160**	PN		**P**	**04 23 20.7 -0.9**
CAW	**Cannon Point**	**32.97**	**161**	PN		**P**	**04 23 21.2 -0.8**
BFZ	**Birch Farm**	**32.99**	**159**	PN		**P**	**04 23 20.5 -1.6**
BFZ	**Birch Farm**	**32.99**	**159**	*e*P		**P**	**04 23 21.7 -0.4**
	comp=Z,1μm,1.4s						
SNZO	**South Karori**	**33.03**	**161**	*e*P		**P**	**04 23 22.6 +0.1**
	comp=Z,1μm,1.1s						
SNZO				LR	LR		
	comp=Z,74μm,20.0s						
TMWZ	**Te Maipa**	**33.24**	**160**	PN		**P**	**04 23 23.5 -0.8**
MSWZ	**Moikau Station**	**33.30**	**161**	PN		**P**	**04 23 22.9 -1.9**
PAWZ	**Paruwai Farm**	**33.33**	**160**	PN		**P**	**04 23 23.2 -1.9**
PLWZ	**Palliser**	**33.44**	**161**	*e*PN		**P**	**04 23 25.9 -0.3**
KHZ	**Kahutara**	**33.70**	**163**	PN		**P**	**04 23 26.6 -1.7**
KHZ	**Kahutara**	**33.70**	**163**	*e*P		**P**	**04 23 28.1 -0.1**
	comp=Z,3μm,1.6s						
LTZ	**Lake Taylor**	**33.70**	**165**	*e*P		**P**	**04 23 28.2 -0.1**
	comp=Z,5μm,1.9s						
FOZ	**Fox Glacier**	**33.88**	**169**	PN		**P**	**04 23 29.1 -0.7**
FOZ	**Fox Glacier**	**33.88**	**169**	*e*P		**P**	**04 23 30.0 +0.2**
	comp=Z,2μm,1.1s						
OXZ	**Oxford**	**34.16**	**166**	PN		**P**	**04 23 30.6 -1.7**
OXZ	**Oxford**	**34.16**	**166**	*e*P		**P**	**04 23 31.0 -1.2**
	comp=Z,2μm,1.2s						
JCZ	**Jackson Bay**	**34.22**	**170**	*e*PN		**P**	**04 23 32.8 0.0**
MOO	**Moorlands**	**34.25**	**199**	P		**P**	**04 23 34.7 +1.6**
	baz=34,SNR=58						
RPZ	**Rata Peaks**	**34.31**	**167**	PN		**P**	**04 23 32.9 -0.7**
RPZ	**Rata Peaks**	**34.31**	**167**	*e*P		**P**	**04 23 33.1 -0.4**
	comp=Z,3μm,1.8s						
WRKA	**Warakurna**	**34.50**	**241**	P		**P**	**04 23 34.9 -0.6**
	baz=34,SNR=157						
CRLZ	**Canterbury Las**	**34.54**	**165**	*e*P		**P**	**04 23 36.2 +0.8**
	comp=Z,4μm,1.5s						
NLAI	**Namlea**	**34.61**	**279**	P		**P**	**04 23 38.1 +1.6**
	comp=Z,1μm,2.0s,comp=Z,23μmcomp=Z,60μm						
TAU	**Tasmania Unive**	**34.63**	**198**	*e*P		**P**	**04 23 37.9 +1.6**
TAU				pmax	pmax		
	comp=Z,3μm,1.5s						
TAU				MLR	MLR		
	comp=Z,50μm,21.0s						
TAU	**Tasmania Unive**	**34.63**	**198**	*e*P		**P**	**04 23 37.9 +1.6**
	comp=Z,3μm,1.5s						
TAU				LR	LR		
	comp=Z,50μm,21.0s						
MQZ	**McQueen's Vall**	**34.67**	**165**	PN		**P**	**04 23 34.9 -1.7**
MQZ	**McQueen's Vall**	**34.67**	**165**	*e*P		**P**	**04 23 35.5 -1.2**
	comp=Z,2μm,1.4s						
LBZ	**Lake Benmore**	**34.77**	**169**	*e*P		**P**	**04 23 37.0 -0.5**
	comp=Z,2μm,1.9s						
LBMI	**Labuha**	**34.91**	**284**	P		**P**	**04 23 41.5 +2.4**
	comp=Z,1μm,1.0s,comp=Z,35μmcomp=Z,93μm						
WKZ	**Wanaka**	**34.99**	**170**	PN		**P**	**04 23 38.3 -1.1**
WKZ	**Wanaka**	**34.99**	**170**	*e*P		**P**	**04 23 39.2 -0.3**
	comp=Z,2μm,1.4s						
DCZ	**Deep Cove**	**35.35**	**173**	PN		**P**	**04 23 41.4 -1.0**
DCZ	**Deep Cove**	**35.35**	**173**	*e*P		**P**	**04 23 41.7 -0.7**
	comp=Z,2μm,0.9s						
MLZ	**Mavora Lakes**	**35.38**	**172**	*e*PN		**P**	**04 23 41.7 -1.0**
MLZ	**Mavora Lakes**

comp=Z,2µm,1.3s
KAPI LR LR
comp=Z,17µm,20.0s
CBIJ Chichi jima 41.57 334 eP P 04 24 34.3 -0.5
comp=Z,4µm,1.0s
CBIJ eS S 04 30 38.5 -6.2
JCJ Chichijima 41.57 334 P P 04 24 34.0 -0.8
comp=Z,3µm,0.9s,baz=141,slow=6.0
JCJ S S 04 30 41.8 -2.9
baz=300,slow=20
TTSI Tana Toraja 41.74 277 P P 04 24 37.8 +1.3
comp=Z,334nm,0.9s,comp=Z,14µm
PAGZ Pagadian 41.81 294 eP P 04 24 38.4 +1.4
PLP Palo 41.92 300⇓ eP P 04 24 37.0 -0.9
KMBL Kambalda 41.99 234 P P 04 24 38.7 +0.4
baz=42,SNR=51
OCLP Ormoc 42.18 299 eP P 04 24 42.6 +2.7
LLP Lapu-Lapu 42.39 298⇓ eP P 04 24 43.2 +1.5
PLAI Plampang 42.87 268 P P 04 24 45.1 -0.5
comp=Z,1µm,1.0s,comp=Z,21µm
XMAS Kiritimati 42.92 76 eP P 04 24 46.4 +0.4
comp=Z,930nm,0.9s
MIDW Midway 43.57 28 eP P 04 24 50.6 -0.4
comp=Z,944nm,1.0s
MIDW LR LR
comp=Z,25µm,19.0s
GUIM Jordan 43.73 297 eP P 04 24 52.2 -0.3
TWSI Taliwang, Sumb 43.76 268 P P 04 24 52.5 -0.2
comp=Z,759nm,0.8s,comp=Z,9µm
MCQ Macquarie Isla 44.06 182 P P 04 24 56.4 +1.8
baz=44,SNR=20
MCQ Macquarie Isla 44.06 182 eP P 04 24 55.0 +0.4
MCQ pmax pmax
comp=Z,6µm,1.6s
MCQ Macquarie Isla 44.06 182 eP P 04 24 55.0 +0.4
comp=Z,6µm,1.6s
JAP San Jose, Anti 44.35 297⇑ eP P 04 25 01.2 +3.8
AUQP San Andres 44.94 301 eP P 04 25 03.7 +1.6
OTRP Odiongan 45.03 299 eP P 04 25 03.8 +1.0
CUYO Cuyo Island 45.21 297 eP P 04 25 05.9 +1.6
MYLDM Lahad Datu 45.28 288 ⇑P P 04 25 07.7 +2.8
MYLDM Lahad Datu 45.28 288 eP P 04 25 07.0 +2.1
comp=Z,2µm,1.2s
KLBR Kellerberrin 45.39 236 P P 04 25 05.6 0.0
baz=45,SNR=50
DNP Denpasar 45.41 268 P P 04 25 06.7 +0.8
comp=Z,3µm,0.9s,comp=Z,31µm
GQP Guinayangan 45.42 301⇑ eP P 04 25 06.7 +0.8
SRBI Singaraja 45.47 269 P P 04 25 06.2 -0.2
comp=Z,887nm,0.9s,comp=Z,11µm
TSM Tawau 45.58 286 ⇑P P 04 25 08.5 +1.3
BOAC Boac 45.71 300 eP P 04 25 10.5 +2.4
BLDU Ballidu 45.96 237 P P 04 25 10.2 +0.1
baz=46,SNR=164
MORW Morawa 46.12 240 P P 04 25 11.6 +0.3
baz=46,SNR=46
NWAO Narrogin (SRO) 46.23 234 P P 04 25 11.1 -1.0
comp=Z,334nm,1.0s,baz=277,slow=0.0
NWAO Narrogin (SRO) 46.23 234 P P 04 25 12.7 +0.6
baz=46,SNR=76
NWAO Narrogin (SRO) 46.23 234 eP P 04 25 12.7 +0.6
NWAO pmax pmax
comp=Z,262nm,0.9s
NWAO MLR MLR
comp=Z,139µm,22.0s
NWAO Narrogin (SRO) 46.23 234 eP P 04 25 12.7 +0.6
comp=Z,262nm,0.9s
NWAO LR LR
comp=Z,139µm,22.0s
NWAO Narrogin (SRO) 46.23 234 P P 04 25 12.4 +0.3
SNR=34
NWAO P P 04 25 12.4 +0.3
SNR=34
NWAO Narrogin (SRO) 46.23 234 P P 04 25 12.4 +0.3
SNR=34
LQP Lukban 46.28 301 eP P 04 25 12.2 -0.7
BUSP Coron 46.44 298 eP P 04 25 14.9 +1.0
ABJI Asem Bagus 46.46 269 P P 04 25 14.6 +0.4
comp=Z,500nm,1.0s,comp=Z,16µm
JAGI Jajag, Banyuwa 46.47 268 P P 04 25 13.3 -1.0
comp=Z,1µm,1.0s,comp=Z,15µmcomp=Z,39µm
GIRL Giralia 46.52 249 P P 04 25 16.4 +1.9
baz=47,SNR=54
BBKI Banjar Baru 46.53 275 P P 04 25 16.1 +1.3
comp=Z,1µm,1.3s,comp=Z,18µmcomp=Z,76µm
SDKM Sandakan 46.66 288 ⇑P P 04 25 16.5 +0.7
ENPP El Nido 46.77 296 eP P 04 25 17.7 +1.2
TGY Tagaytay City 46.79 301 P P 04 25 17.4 +0.7
comp=Z,376nm,1.0s,baz=326,slow=1.9,SNR=24
PPR Puerto Princes 46.79 294⇑ eP P 04 25 19.2 +2.5
RKGY Rocky Gully 46.99 232 P P 04 25 19.2 +1.1
baz=47,SNR=91
MTKI Muara Teweh, K 47.00 278 P P 04 25 19.7 +1.3
comp=Z,501nm,1.2s,comp=Z,17µm
GMJI Gumukmas 47.19 268 P P 04 25 19.5 -0.3
comp=Z,309nm,1.0s,comp=Z,10µm
KDM Kudat 47.44 289 ⇓P P 04 25 23.1 +1.4
KKM Kota Kinabalu 47.71 288 ⇓P P 04 25 25.4 +1.4
KKM Kota Kinabalu 47.71 288 eP P 04 25 24.1 +0.1
comp=Z,1µm,1.0s
KKM LR LR
comp=Z,24µm,20.0s
JHJ2 Mitsune 47.81 336 eP P 04 25 25.3 +1.0
comp=Z,9µm,1.5s
JHJ Hachijo jima 2 47.83 336 P P 04 25 24.9 +0.5
comp=Z,2µm,0.9s,baz=189,slow=9.9,SNR=22
CVP Callao Caves 47.90 305⇓ eP P 04 25 26.5 +1.3
PAE Paea 48.15 104 eP P 04 25 27.6 +0.4
comp=Z,77nm,1.0s
PPT Papeete 48.15 104 P P 04 25 26.8 -0.5
comp=Z,446nm,1.0s,baz=321,slow=7.5,SNR=21
PPT Papeete 48.15 104 eP P 04 25 29.0 +1.7
PPT Papeete 48.15 104 eP P 04 25 29.0 +1.7
PPT2 Papeete2 48.15 104 eP P 04 25 28.0 +0.7
comp=Z,435nm,1.1s
PPT2 eS S 04 32 20.9 +0.6
comp=Z,49µm,24.5s
PPT2 eLQ LQ 04 37 18.0
comp=Z,172µm,27.5s
PPT2 eLR LR 04 39 12.5
comp=Z,110µm,27.2s,baz=278
BCPH Baguio City Da 48.22 303 iP P 04 25 29.6 +1.7
TIAR Tiarei 48.37 104 eP P 04 25 29.8 +0.8
comp=Z,200nm,1.1s
APYP Conner 48.45 305 eP P 04 25 29.2 -0.2
TVO Taravao 48.47 105 eP P 04 25 30.5 +0.7
comp=Z,130nm,1.0s
BOLP Bolinao 48.77 303 eP P 04 25 32.2 +0.2
PWJI Pagerwojo 48.83 268 P P 04 25 32.8 +0.3
JOW Kunigami 48.90 320 P P 04 25 32.5 -0.3
comp=Z,562nm,0.9s,baz=153,slow=6.4,SNR=31
JOW Kunigami 48.90 320 eP P 04 25 34.4 +1.6
comp=Z,1µm,1.2s
TBJI Tambak Boyo 48.94 270 P P 04 25 34.9 +1.6
SIPP Brgy, Tapao 49.11 305⇑ eP P 04 25 35.3 +0.8
PIP Pasuquin 49.19 305⇓ iP P 04 25 31.4 -3.8
NGJI Ngawi 49.24 269 P P 04 25 38.3 +2.6
H01W1 Cape Leeuwin H 49.28 233 P P 04 25 37.9 +2.5
baz=98,slow=7.0,SNR=34
H01W3 Cape Leeuwin H 49.29 233 P P 04 25 38.0 +2.5
baz=98,slow=7.0,SNR=27
H01W2 Cape Leeuwin H 49.30 233 P P 04 25 37.7 +2.2
baz=98,slow=7.0,SNR=28
PCJI Pacitan 49.42 268 P P 04 25 37.3 +0.2
MEH Mehetia 49.60 105 eP P 04 25 38.9 +0.5
comp=Z,228nm,1.1s
WOJI Wonogiri, Jawa 49.72 268 P P 04 25 39.2 -0.1
PMOR Pomariorio Ree 49.75 101 eP P 04 25 40.6 +1.1
comp=Z,782nm,1.1s
PBKI Pangkalan Bun 49.78 275 P P 04 25 42.6 +2.8
BTM Bintulu 49.81 283 ⇑P P 04 25 42.1 +2.1
KEKH Kekaha 50.00 50 eP P 04 25 41.7 +0.4
comp=Z,2µm,1.2s
VAH Vaihoa 50.00 101 eP P 04 25 42.2 +0.8
comp=Z,709nm,1.4s
UGM Wanagama 50.10 268 P P 04 25 42.6 +0.4
SMRI Semarang 50.29 269 P P 04 25 46.1 +2.4
SBUM Sibu 50.43 282 ⇓P P 04 25 46.3 +1.6
SBUM Sibu 50.43 282 eP P 04 25 45.5 +0.8
comp=Z,654nm,1.2s
STKI Sintang 50.56 279 P P 04 25 47.4 +1.7
YOJ Yonaguni jima 50.90 313 eP P 04 25 49.5 +1.5
YOJ pmax pmax
comp=Z,1µm,1.1s
YOJ Yonaguni jima 50.90 313 eP P 04 25 49.5 +1.5
comp=Z,1µm,1.1s
INU Inuyama 50.91 334 eP P 04 25 48.1 +0.2
comp=Z,2µm,1.1s
HON Honolulu 50.92 52 eP P 04 25 48.6 +0.4
HON Honolulu 50.92 52 eP P 04 25 48.6 +0.4
KIP Kipapa 50.97 52 d iP P 04 25 49.2 +0.6
KIP pmax pmax
comp=Z,3µm,1.1s
KIP Kipapa 50.97 52 eP P 04 25 48.5 0.0
comp=Z,2µm,1.2s
KIP LR LR
comp=Z,36µm,21.0s
OPA Opana 51.12 51 eP P 04 25 50.1 +0.4
OPA pmax pmax
comp=Z,4µm,1.0s
OPA Opana 51.12 51 eP P 04 25 50.1 +0.4
comp=Z,4µm,1.0s
TWG Pinlang 51.34 310 eP P 04 25 53.2 +1.9
comp=Z,2µm,1.5s
MJAR Matsushiro Arr 51.44 336 P P 04 25 51.0 -0.9
comp=Z,351nm,1.1s,baz=162,slow=7.9,SNR=112
MJAR S S 04 33 06.3 +0.8
comp=Z,1.8nm,0.7s,baz=272,slow=8.3,SNR=2.5
MJAR PKPPKP P'P'df 04 56 20.9 -8.4
comp=Z,1.7nm,0.8s,baz=304,slow=1.5,SNR=5.3
MJAR PKP2ab 04 57 00.1
comp=Z,11nm,1.3s,baz=259,slow=2.2,SNR=3.5
MAJO Matsushiro 51.45 336⇓ eP P 04 25 50.8 -1.1
MAJO pmax pmax
comp=Z,3µm,1.6s
MAJO Matsushiro 51.45 336 eP P 04 25 51.3 -0.6
comp=Z,2µm,1.4s
MAJO LR LR
comp=Z,17µm,19.0s
MAT Matsushiro 51.45 336 P P 04 25 51.3 -0.6
MAT S S 04 33 04.4 -1.1
MJB9 Matsu-Tunnel 51.45 336 eP P 04 25 51.6 -0.4
comp=Z,427nm,1.4s
YULB Yu-li 51.50 311 eP P 04 25 52.6 +0.1
comp=Z,555nm,1.2s
HPO Honuapo 51.67 56 eP P 04 25 57.1 +3.3
NACB Ninganchiao 51.75 312 eP P 04 25 55.1 +0.8
comp=Z,4µm,1.6s
MLOA Mauna Loa Obse 51.88 55 eP P 04 25 55.9 0.0
TPUB Ta-pu 51.95 311 eP P 04 25 55.3 -0.6
comp=Z,2µm,1.3s
MHA Mahukona 51.95 54 eP P 04 25 58.4 +2.5
HLK Haleakala 51.98 53 eP P 04 25 56.8 +0.3
comp=Z,3µm,1.1s
SSLB Suanglung 51.99 311 eP P 04 25 55.7 -0.5
comp=Z,1µm,1.4s
POHA Pohakuloa 52.03 55 eP P 04 25 56.7 0.0
comp=Z,3µm,1.3s
POHA LR LR
comp=Z,29µm,20.0s
KSM Kuching 52.03 280 eP P 04 25 57.0 +0.4
comp=Z,578nm,1.1s
KSM LR LR
comp=Z,14µm,19.0s
JNU Nakatsue 52.03 327 P P 04 25 56.5 +0.2
comp=Z,760nm,0.9s,baz=135,slow=4.9,SNR=73
JNU S S 04 33 15.7 +2.0
comp=Z,53nm,1.3s,baz=354,slow=24,SNR=8.1
JNU Nakatsue 52.03 327 eP P 04 25 55.9 -0.5
comp=Z,2µm,1.1s
JNU S S 04 33 15.7 +2.0
HPAH Hawaii Prepara 52.04 55 eP P 04 25 57.3 +0.6
comp=Z,2µm,1.2s
UWE Uwekahuna 52.05 55 eP P 04 25 56.9 0.0
comp=Z,1µm,1.0s
CMJI Cimerak 52.16 268 P P 04 25 57.3 -0.3
YHNB Yeheng 52.20 312 eP P 04 25 58.6 +0.8
comp=Z,1µm,1.0s
YHNB LR LR
comp=Z,54µm,22.0s
TATO Taipei 52.31 313 eP P 04 25 59.7 +1.2
comp=Z,720nm,0.9s
TATO LR LR
comp=Z,39µm,22.0s
TATO Taipei 52.31 313 P P 04 25 59.6 +1.2
SNR=5.6
TATO P P 04 25 59.6 +1.2
SNR=5.6
TATO Taipei 52.31 313 P P 04 25 59.6 +1.2
SNR=5.6
JCJI Jatiwangi 52.50 270 P P 04 26 01.7 +1.6
CISI Cisompet, Garu 52.81 268 P P 04 26 02.1 -0.4
LEM Lembang 53.10 269 P P 04 26 10.9 +6.2
CNJI Cibinong 53.51 269 P P 04 26 07.2 -0.4
CBJI Citeko 53.91 270 P P 04 26 10.6 +0.1
QZH Quanzhou 54.41 311 ⇓ iP P 04 26 11.1 -2.8
QZH pP pP 04 26 30.8 -4.3
QZH sP sP 04 26 40.3 -4.4
QZH S S 04 33 44.3 -1.8
QZH sS sS 04 34 19.0 -3.4
QZH pmax pmax
comp=Z,710nm,1.0s
QZH pmax pmax
comp=Z,26µm,11.5s
QZH LR LR
comp=Z,16µm,14.6s
QZH LR LR
comp=Z,39µm,20.8s
QZH LR LR
comp=Z,137µm,32.5s
XMIS Christmas Isla 54.62 264 eP P 04 26 17.1 +1.4
comp=Z,897nm,1.1s
ERM Erimo 54.70 344 c iP P 04 26 18.2 +2.6
ERM pmax pmax
comp=Z,1µm,1.5s
ERM Erimo 54.70 344 eP P 04 26 17.9 +2.3
comp=Z,925nm,1.2s
ERM LR LR
comp=Z,57µm,22.0s
YUK Yuzh-Kuril'sk 55.91 347 d iP P 04 26 26.1 +1.8
YUK e 04 28 35.6
YUK ePPP PPP 04 29 44.2
YUK eS S 04 34 00.6 -4.9
YUK pmax pmax
comp=Z,5µm,3.4s
YUK pmax pmax
comp=Z,2µm,1.4s
YUK pmax pmax
comp=E,780nm,1.5s
YUK pmax pmax
comp=N,596nm,1.0s
SSE Sheshan 56.34 318 P P 04 26 28.1 +0.4
SSE S S 04 34 11.0 -0.7
SSE pmax pmax
comp=N,300nm,1.0s
SSE pmax pmax
comp=N,2µm,5.3s
SSE LR LR
comp=N,24µm,27.5s
SSE LR LR
comp=N,16µm,28.5s
SSE LR LR
comp=N,32µm,30.4s
HKC Hong Kong Obse 56.41 306⇓ iP P 04 26 32.0 +3.7
KUR Kuril'sk 56.64 349 d iP P 04 26 31.8 +2.4
KUR ePPP PPP 04 28 37.4
KUR i S S 04 34 16.1 +1.1
KUR pmax pmax
comp=N,115nm,1.5s
KUR pmax pmax
comp=Z,1µm,1.5s
KUR pmax pmax
comp=E,112nm,0.7s
KUR pmax pmax
comp=Z,7µm,5.7s
KUR MLR MLR
comp=N,23µm,18.0s
KUR MLR MLR
comp=E,13µm,18.0s
KUR MLR MLR
comp=Z,15µm,18.0s
ASAJ Asahikawa 56.80 344 P P 04 26 31.6 +0.9
comp=Z,1µm,1.0s,baz=216,slow=6.7,SNR=93
ASAJ Asahikawa 56.80 344 eP P 04 26 31.5 +0.9
comp=Z,2µm,1.2s
MCO Taipa Grande 56.82 305 P P 04 26 35.0 +3.8
KSRS Korea Array 56.90 329 P P 04 26 31.8 +0.3
comp=Z,374nm,1.0s,baz=144,slow=7.1,SNR=122
KSRS S S 04 34 20.6 +1.8
comp=Z,1.1nm,0.8s,baz=235,slow=4.3,SNR=2.8
KSRS PKP2ab 04 56 49.5
comp=Z,6.8nm,1.1s,baz=243,slow=1.1,SNR=4.4
KSRS Korea Array 56.90 329 P P 04 26 31.8 +0.3
KSRS S S 04 34 20.6 +1.8
KSRS pmax pmax
comp=Z,368nm,1.0s
KSRS smax smax
comp=N,1.0nm,0.8s
KS15 Wonju Array Si 56.91 329 eP P 04 26 32.1 +0.5
KSAR Wonju Array Be 56.91 329 P P 04 26 31.8 +0.2
KSAR S S 04 34 20.6 +1.6
KSAR Wonju Array Be 56.91 329 P P 04 26 31.8 +0.2
KSAR S S 04 34 20.6 +1.6
KSAR P'P'ab **P'P'ab 04 56 49.5 -1.8**
KS01 Wonju Array Si 56.93 329 eP P 04 26 31.1 -0.6
GZH Guangzhou 57.47 306 P P 04 26 37.8 +2.0
GZH PcP PcP 04 27 28.3 -0.3
GZH S S 04 34 30.8 +4.0
GZH pmax pmax
comp=N,7µm,9.6s
INCN Inchon 57.59 328 eP P 04 26 37.1 +0.7
comp=N,2µm,1.3s
INCN LR LR
comp=Z,29µm,22.0s
INCN Inchon 57.59 328 P P 04 26 37.6 +1.2
SNR=80
INCN P P 04 26 37.6 +1.2
SNR=80
INCN Inchon 57.59 328 P P 04 26 37.6 +1.2
SNR=80
TAOE Nuku Hiva Isla 57.73 94 eP P 04 26 37.4 -0.6
comp=Z,1µm,1.0s
TAOE eS S 04 34 31.4 +0.5
comp=Z,45µm,23.1s
TAOE eLQ LQ 04 41 05.2
comp=Z,44µm,24.8s
TAOE eLR LR 04 43 39.0
comp=Z,27µm,26.8s,baz=264
TAOE Nuku Hiva Isla 57.73 94 eP P 04 26 39.4 +1.4
comp=Z,585nm,1.0s
MYKOM Kota Tinggi 58.38 279 eP P 04 26 42.5 +0.1
comp=Z,300nm,1.0s
QIZ Qiongzhong 58.48 300 P P 04 26 44.6 +1.6
QIZ pP pP 04 27 04.1 -0.3
QIZ sP sP 04 27 10.4 -3.6
QIZ PP PP 04 28 54.8 +1.4
QIZ S S 04 34 38.3 -1.9
QIZ LR LR
comp=Z,4µm,19.2s
QIZ LR LR
comp=Z,5µm,12.8s
NJ2 Nanjing 58.49 318 eP P 04 26 43.8 +1.1
NJ2 pP pP 04 27 04.3 +0.1
NJ2 S S 04 34 41.6 +1.8
NJ2 sS sS 04 35 15.0 -1.5
NJ2 SS SS 04 38 34.0 +0.2
NJ2 pmax pmax
comp=Z,5µm,11.3s
NJ2 LR LR
comp=Z,33µm,25.5s
NJ2 LR LR
comp=Z,29µm,27.1s
NJ2 LR LR
comp=Z,46µm,29.8s
YSS Yuzh-Sakhalins 59.40 345⇑ iP P 04 26 49.6 +0.9
YSS e*SP sP 04 27 18.9 -0.9
YSS i 04 27 33.9
YSS e 04 29 03.0
YSS eS S 04 34 46.4 -4.6
YSS eSS SS 04 38 50.0 +2.4
YSS eSSS SSS 04 41 10.0
YSS pmax pmax
comp=N,340nm,1.2s
YSS pmax pmax
comp=E,170nm,1.2s
YSS pmax pmax
comp=N,4µm,4.0s
YSS pmax pmax
comp=E,2µm,4.0s
YSS pmax pmax
comp=Z,7µm,4.0s
YSS smax smax
comp=E,8µm,19.0s
YSS MLR MLR
comp=Z,29µm,19.0s
YSS MLR MLR
comp=N,24µm,18.0s
YSS Yuzh-Sakhalins 59.40 345 eP P 04 26 49.3 +0.6
comp=N,975nm,1.1s
YSS LR LR
comp=Z,18µm,21.0s
MSHR Mys Shultsa 59.45 335 d iP P 04 26 51.4 +2.3
VLA Vladivostok 59.59 335⇑ eP P 04 26 51.8 +1.7
VLA pmax pmax
comp=Z,1µm,1.3s
VLA MLR MLR
comp=Z,10µm,20.0s
USRK Ussuriysk Ar. 60.44 336 P P 04 26 56.5 +0.5
comp=Z,1µm,0.9s,baz=145,slow=6.2,SNR=192
USRK PKPPKP **P'P'df 04 56 17.8 +2.0**
comp=Z,5.0nm,1.0s,baz=207,slow=0.9,SNR=4.0
USRK PKP2ab 04 56 49.2
comp=Z,5.7nm,1.1s,baz=28,slow=5.2,SNR=4.6
WHN Wuhan 60.68 314 ⇓P P 04 26 58.3 +0.5
WHN pP sP 04 27 24.3 -4.6
WHN S S 04 35 06.4 -1.7
WHN pmax pmax
comp=Z,7µm,12.9s
WHN LR LR
comp=Z,78µm,25.1s
WHN LR LR
comp=Z,38µm,17.5s
WHN LR LR
comp=Z,96µm,22.7s
SKR Severo-Kuril's 60.95 356 eP P 04 26 58.5 -0.7
SKR e 04 27 28.0
SKR eS S 04 35 12.0 +1.3
SKR e 04 36 36.0
SKR eSS SS 04 39 07.0 -4.8
SKR pmax pmax
comp=N,5µm,14.0s
SKR pmax pmax
comp=Z,9µm,14.0s
SKR pmax pmax
comp=Z,2µm,1.5s
SKR pmax pmax
comp=N,250nm,1.0s
SKR pmax pmax
comp=E,3µm,2.0s
SKR MLR MLR
comp=N,18µm,18.0s
SKR MLR MLR
comp=E,14µm,18.0s
SKR MLR MLR
comp=Z,10µm,18.0s
DL2 Dalian 61.34 325⇓ iP P 04 27 02.1 0.0
DL2 pP pP 04 27 25.3 +1.5
DL2 S S 04 35 17.3 +1.1
DL2 pmax pmax
comp=Z,820nm,1.2s
DL2 pmax pmax
comp=Z,4µm,5.4s
DL2 LR LR
comp=Z,19µm,16.9s
DL2 LR LR
comp=Z,30µm,20.6s
DL2 LR LR
comp=Z,32µm,22.0s
IPM Ipoh 61.75 281 eP P 04 27 03.9 -1.6
comp=Z,598nm,0.8s
MDJ Mudanjiang 61.76 335 P P 04 27 06.8 +1.9
MDJ pP pP 04 27 26.3 -0.3
MDJ sP sP 04 27 35.3 -0.7
MDJ PP PP 04 29 21.9 0.0
MDJ S S 04 35 22.8 +1.4
MDJ ScS SKKSac 04 36 47.3 -1.3
MDJ SS SS 04 39 28.9 +4.0
MDJ pmax pmax
comp=Z,1µm,1.1s
MDJ pmax pmax
comp=Z,10µm,10.1s
MDJ LR LR
comp=Z,42µm,30.6s
MDJ LR LR
comp=Z,39µm,26.2s
MDJ LR LR
comp=Z,56µm,36.4s
MDJ Mudanjiang 61.76 335 eP P 04 27 05.1 +0.2

comp=Z,2µm,1.2s
MDJ LR LR
comp=Z,26µm,21.0s
RKT Rikitea 61.97 111 *e*P **P 04 27 06.7 0.0**
comp=Z,300nm,1.0s
RKT *e*S **S 04 35 26.0 +1.2**
comp=Z,33µm,28.0s
RKT *e*LQ LQ 04 42 43.0
comp=Z,62µm,33.0s
RKT *e*LR LR 04 45 46.0
comp=Z,130µm,32.2s,baz=276
TIA Tai'an 62.22 320 ⇓P **P 04 27 08.0 -0.1**
TIA pP **pP 04 27 28.0 -1.8**
TIA S **S 04 35 25.6 -1.8**
TIA pmax pmax
comp=Z,250nm,1.5s
TIA pmax pmax
comp=Z,5µm,7.7s
TIA LR LR
comp=Z,27µm,21.0s
TIA LR LR
comp=Z,30µm,24.1s
TIA LR LR
comp=Z,49µm,23.7s
KULM Kulim 62.31 282 *e*P **P 04 27 08.9 -0.3**
comp=Z,505nm,1.0s
KULM LR LR
comp=Z,12µm,21.0s
SNY Shenyang 62.40 329 ⇓P **P 04 27 09.9 +0.8**
SNY PP **PP 04 29 26.0 -1.5**
SNY S **S 04 35 23.8 -5.6**
SNY sS **sS 04 36 06.9 +0.5**
SNY pmax pmax
comp=Z,380nm,1.2s
SNY pmax pmax
comp=Z,17µm,12.9s
SNY LR LR
comp=Z,36µm,23.0s
SNY LR LR
comp=Z,31µm,26.5s
SNY LR LR
comp=Z,95µm,31.4s
CHBT CHBT 62.84 290 P **P 04 27 13.2 +0.5**
comp=Z,887nm,1.1s,comp=Z,16µm
CN2 Changchun 62.96 332 ⇓P **P 04 27 13.0 +0.1**
CN2 *es*P PcP 04 27 48.3 -1.9
CN2 PP **PP 04 29 34.5 +2.0**
CN2 ScP **ScP 04 31 37.8 -7.0**
CN2 *e*S **S 04 35 35.3 -1.1**
CN2 SS **SS 04 39 44.0 +0.4**
CN2 pmax pmax
comp=Z,200nm,3.0s
CN2 LR LR
comp=Z,25µm,21.0s
CN2 LR LR
comp=Z,11µm,21.0s
CN2 LR LR
comp=Z,28µm,25.0s
HABR Khabarovsk 62.99 341 *e*P **P 04 27 11.5 -1.4**
HABR *e**PP **pP 04 27 34.1 -0.6**
HABR *e**SP **sP 04 27 44.2 +0.1**
HABR *e* 04 27 48.6
HABR *e* 04 29 30.8
HABR *e*PPP PPP 04 30 59.9
HABR *e*S **S 04 35 34.8 -1.7**
HABR *e* 04 36 01.2
HABR *e**SS **sS 04 36 13.9 +0.2**
HABR *e* 04 36 55.1
HABR *e*SS **SS 04 39 42.2 -1.6**
HABR pmax pmax
comp=Z,3µm,1.6s
HABR pmax pmax
comp=E,110nm,1.5s
HABR pmax pmax
comp=N,335nm,1.5s
HABR pmax pmax
comp=Z,2µm,1.5s
HABR MLR MLR
comp=Z,8µm,18.0s
COCO West Island 63.07 262 *e*P **P 04 27 15.1 +0.9**
COCO pmax pmax
comp=Z,3µm,1.5s
COCO MLR MLR
comp=Z,16µm,22.0s
COCO West Island 63.07 262 *e*P **P 04 27 15.1 +0.9**
comp=Z,3µm,1.5s
COCO LR LR
comp=Z,16µm,22.0s
TYV Tymovskoe 63.08 347 *e*P **P 04 27 14.8 +1.3**
TYV *e*S **S 04 35 43.0 +5.5**
TYV pmax pmax
comp=E,1µm,1.6s
TYV pmax pmax
comp=Z,3µm,1.8s
TYV smax smax
comp=E,20µm,17.0s
TYV smax smax
comp=N,4µm,3.5s
PET Petropavlovsk 63.17 358 *de*P **P 04 27 13.4 -0.6**
PET *e**PP **pP 04 27 35.2 -0.6**
PET *e**SP **sP 04 27 45.4 +0.2**
PET *e* 04 27 49.3
PET *e*S **S 04 35 37.5 -1.1**
PET *e**SS **sS 04 36 16.3 +0.6**
PET *e*SS **SS 04 39 49.0 +2.5**
PET pmax pmax
comp=Z,9µm,10.4s
PET pmax pmax
comp=Z,660nm,1.1s
PET pmax pmax
comp=Z,7µm,11.6s
PET MLR MLR
comp=Z,14µm,19.0s
PET Petropavlovsk 63.17 358 *e*P **P 04 27 14.0 -0.1**
comp=Z,1µm,1.3s
PET LR LR
comp=Z,24µm,21.0s
PEA0 Petropavlovsk- 63.29 358 *e*P **P 04 27 14.8 -0.1**
PEA0B Petropavlovsk- 63.29 358 *e*P **P 04 27 14.8 0.0**
comp=Z,2µm,1.4s
PETK Petropavlovsk- 63.29 358 P **P 04 27 14.8 -0.1**
comp=Z,292nm,0.8s,baz=139,slow=6.1,SNR=71
PETK PKP2ab 04 56 23.9
comp=Z,7.2nm,1.0s,baz=116,slow=6.8,SNR=4.7
PSI Prapat 63.40 278 *e*P **P 04 27 15.4 -1.1**
PSI pmax pmax
comp=Z,838nm,1.4s
PSI Prapat 63.40 278 *e*P **P 04 27 15.4 -1.1**
comp=Z,838nm,1.4s
SRAK Srakaew 63.52 291 P **P 04 27 14.3 -2.8**
comp=Z,381nm,1.3s,comp=Z,6µm
KHON Khomkaen 63.59 294 P **P 04 27 18.5 +0.9**
comp=Z,159nm,1.0s
SMY Shemya 63.80 9 *e*P **P 04 27 18.5 +0.3**
SMY pmax pmax
comp=Z,2µm,1.4s
SMY Shemya 63.80 9 *e*P **P 04 27 18.5 +0.3**
comp=Z,2µm,1.4s
TRTT Trang 63.89 284 P **P 04 27 19.9 +0.3**
comp=Z,397nm,1.3s,comp=Z,8µm
ENH Enshi 64.07 311 *e*P **P 04 27 20.3 -0.3**
comp=Z,861nm,1.1s
ENH LR LR
comp=Z,14µm,20.0s
PATY Pattaya 64.25 290 P **P 04 27 23.3 +1.4**
comp=Z,307nm,1.0s,comp=Z,2µm
NAYO Nakonayok 64.28 291 P **P 04 27 22.9 +0.8**
comp=Z,380nm,1.1s,comp=Z,8µm
GYA Guiyang 64.41 306 ⇑*i*P P 04 27 28.1 +5.2
GYA pP pP 04 27 46.0 +1.2
GYA sP sP 04 27 55.0 +0.8
GYA PP **PP 04 29 50.5 +4.8**
GYA ScP 04 31 51.3
GYA PcS 04 32 01.0
GYA S **S 04 35 58.1 +2.8**
GYA SKS **SKSac 04 37 07.6 -2.2**
GYA SS **SS 04 40 09.8 +2.8**
GYA pmax pmax
comp=Z,2µm,12.5s
GYA LR LR
comp=Z,23µm,24.5s
GYA LR LR
comp=Z,23µm,25.0s
GYA LR LR
comp=Z,28µm,25.0s
KLR Kul'dur 64.75 339 P **P 04 27 24.8 +0.2**
comp=Z,521nm,0.9s,baz=151,slow=4.1,SNR=124
KLR S **S 04 36 00.6 +2.1**
comp=Z,3.0nm,0.8s,baz=330,slow=16,SNR=3.7
KLR PKP2bc 04 56 12.9
comp=Z,11nm,1.2s,baz=18,slow=4.6,SNR=7.3
PKDT Phuket 65.20 284 P **P 04 27 28.7 +0.5**
comp=Z,473nm,1.1s,comp=Z,8µm
BJT Baijiatuau 65.22 323 *e*P **P 04 27 27.4 -0.4**
BJT pmax pmax
comp=Z,1µm,1.4s
BJT MLR MLR
comp=Z,20µm,22.0s
BJT Baijiatuau 65.22 323 *e*P **P 04 27 27.4 -0.4**
comp=Z,1µm,1.4s
BJT LR LR
comp=Z,20µm,22.0s
BJI Beijing 65.23 323 P **P 04 27 28.3 +0.5**
BJI pP **pP 04 27 49.8 +0.1**
BJI PP **PP 04 29 53.4 +0.9**
BJI S **S 04 36 06.6 +2.0**
BJI SS **SS 04 40 22.6 +3.5**
BJI pmax pmax
comp=Z,330nm,1.4s
BJI pmax pmax
comp=Z,6µm,12.0s
BJI LR LR
comp=Z,29µm,24.8s
BJI LR LR
comp=Z,22µm,25.6s
BJI LR LR
comp=Z,74µm,36.0s
PBKT Sadao Pong 65.34 294 P **P 04 27 29.5 +0.5**
comp=Z,351nm,1.2s,comp=Z,10µm
CASY Casey 65.45 200 *e*P **P 04 27 27.9 -0.9**
comp=Z,385nm,1.4s
CASY LR LR
comp=Z,5µm,21.0s
NKL Nikolayevsk 65.66 347 *i*P **P 04 27 30.0 -0.2**
NKL *e* 04 27 54.0
NKL *e*S **S 04 36 04.0 -5.2**
NKL *e* 04 36 42.0
NKL pmax pmax
comp=N,4µm,8.0s
NKL pmax pmax
comp=E,2µm,8.0s
NKL pmax pmax
comp=Z,9µm,9.0s
NKL smax smax
comp=N,7µm,16.0s
NKL smax smax
comp=E,16µm,16.0s
TIY Taiyuan 66.11 319 *e*P **P 04 27 35.0 +1.4**
TIY pP **pP 04 27 57.0 +1.4**
TIY S **S 04 36 16.1 +0.5**
TIY sS **sS 04 36 49.1 -3.9**
TIY pmax pmax
comp=E,170nm,1.0s
TIY pmax pmax
comp=E,2µm,5.5s
TIY LR LR
comp=E,15µm,17.4s
TIY LR LR
comp=E,4µm,13.1s
TIY LR LR
comp=E,58µm,38.1s
UTTA Uttaradit 66.12 295 P **P 04 27 34.5 +0.5**
comp=E,130nm,1.0s,comp=E,985nm
SRDT SRDT 66.31 291 P **P 04 27 36.2 +1.0**
comp=E,2µm,1.1s,comp=E,33µm
NANT Nan 66.35 296 P **P 04 27 35.7 +0.2**
comp=E,218nm,0.9s,comp=E,2µm
PTCN Pitcairn Islan 66.42 113 PFAKE 04 27 50.0 +14
PTCN LR LR
comp=Z,8µm,20.0s
XAN Xi'an 66.43 314 P **P 04 27 36.0 +0.2**
XAN pP pP 04 27 56.3 -1.4
XAN sP PcP 04 28 05.0 +0.2
XAN PP **PP 04 30 05.3 +2.1**
XAN S **S 04 36 18.0 -1.6**
XAN sS sS 04 36 52.4 -4.7
XAN SS **SS 04 40 38.5 +0.3**
XAN pmax pmax
comp=Z,3µm,11.5s
XAN LR LR
comp=Z,19µm,24.7s
XAN LR LR
comp=Z,21µm,24.7s
XAN LR LR
comp=Z,30µm,22.7s
KHLT Khaolaem Dam 66.94 291 P **P 04 27 40.0 +0.8**
comp=Z,119nm,1.3s,comp=Z,4µm
KMI Kunming 67.02 303 P **P 04 27 41.3 +1.4**
KMI PP **PP 04 30 12.6 +3.9**
KMI S **S 04 36 27.1 -0.2**
KMI SS **SS 04 40 50.1 +2.3**
KMI pmax pmax
comp=Z,290nm,1.2s
KMI pmax pmax
comp=Z,12µm,8.0s
KMI LR LR
comp=Z,10µm,21.3s
KMI LR LR
comp=Z,13µm,26.7s
KMI LR LR
comp=Z,30µm,25.3s
VNDA Vanda 67.15 180 P **P 04 27 39.4 -0.1**
comp=Z,509nm,0.9s,baz=342,slow=6.5,SNR=242
VNDA PKP2bc 04 56 05.2
comp=Z,2.3nm,0.9s,baz=199,slow=1.8,SNR=4.5
VNDA Vanda 67.15 180 *e*P **P 04 27 39.4 -0.1**
comp=Z,3µm,1.9s
VNDA ⇑*e* 04 56 05.2
LAMP Lampang 67.21 295 P **P 04 27 41.5 +0.6**
comp=Z,344nm,0.8s,comp=Z,2µm
SBA Scott Base 67.54 179 *e*P **P 04 27 42.9 +0.9**
SBA pmax pmax
comp=Z,979nm,1.1s
SBA MLR MLR
comp=Z,31µm,22.0s
SBA Scott Base 67.54 179 *e*P **P 04 27 42.9 +0.9**
comp=Z,979nm,1.1s
SBA LR LR
comp=Z,31µm,22.0s
CM31 Chiang Mai Arr 67.80 295 *e*P **P 04 27 45.8 +1.1**
CMAR Chiang Mai Arr 67.80 295 P **P 04 27 45.5 +0.8**
comp=Z,185nm,0.7s,baz=128,slow=3.7,SNR=140
CMAR S **S 04 36 37.9 +1.4**
comp=Z,1.2nm,0.3s,baz=125,slow=11,SNR=2.0
CMAR PKP2bc 04 56 03.8
comp=Z,16nm,1.0s,baz=280,slow=3.2,SNR=8.5
CMMT Chiang Mai 67.92 295 P **P 04 27 45.6 +0.2**
comp=Z,341nm,1.4s,comp=Z,8µm
CHTO Chiang Mai 67.92 295 P **P 04 27 45.7 +0.3**
comp=Z,2µm,1.2s,comp=Z,37µm
CHTO Chiang Mai 67.92 295 *e*P **P 04 27 45.8 +0.3**
CHTO pmax pmax
comp=Z,523nm,1.2s
CHTO MLR MLR
comp=Z,12µm,22.0s
CHTO Chiang Mai 67.92 295 *e*P **P 04 27 45.8 +0.4**
comp=Z,523nm,1.2s
CHTO LR LR
comp=Z,12µm,22.0s
CHTO Chiang Mai 67.92 295 P **P 04 27 46.1 +0.7**
SNR=177
CHTO P **P 04 27 46.1 +0.7**
SNR=177
CHTO Chiang Mai 67.92 295 P **P 04 27 46.1 +0.7**
SNR=177
NIKH Nikolski High 68.06 19 *e*P **P 04 27 46.0 +0.4**
comp=Z,7µm,1.5s
HHC Hu-ho-hao-te 68.50 322 *e*P **P 04 27 49.9 +1.2**
HHC pP pP 04 28 10.8 0.0
HHC sP PcP 04 28 16.0 +2.6
HHC PP **PP 04 30 19.3 -1.8**
HHC S **S 04 36 46.9 +2.7**
HHC sS sS 04 37 17.8 -4.1
HHC pmax pmax
comp=Z,300nm,1.1s
HHC pmax pmax
comp=Z,4µm,6.6s
HHC LR LR
comp=Z,18µm,16.7s
HHC LR LR
comp=Z,12µm,15.3s
HHC LR LR
comp=Z,24µm,16.2s
MHMT Maesarieng 68.61 294 P **P 04 27 50.7 +1.0**
comp=Z,107nm,0.8s,comp=Z,4µm
CD2 Chengdu 68.70 309 ⇓P **P 04 27 50.4 +0.3**
CD2 pP pP 04 28 11.6 -0.6
CD2 sP sP 04 28 20.8 -0.8
CD2 PP **PP 04 30 23.1 +0.1**
CD2 S **S 04 36 48.3 +1.4**
CD2 sS sS 04 37 24.9 +0.3
CD2 SKS **SKSac 04 37 42.1 0.0**
CD2 SS **SS 04 41 15.8 +2.4**
CD2 pmax pmax
comp=Z,370nm,0.9s
CD2 pmax pmax
comp=Z,4µm,5.9s
CD2 LR LR
comp=Z,20µm,22.8s
CD2 LR LR
comp=Z,34µm,34.8s
CMBY CAMPBELL BAY 69.21 282 *e*P **P 04 27 52.1 -1.4**
CMBY IAmb IAmb 04 27 55.6
comp=Z,2µm,2.0s
BTO Baotou 69.31 321 *e*P **P 04 27 54.5 +0.7**
BTO S **S 04 36 51.3 -2.5**
UNV Unalaska Valle 69.56 20 *e*P **P 04 27 54.7 -0.2**
comp=Z,641nm,0.8s
HIA Hailar 69.65 332 *e*P **P 04 27 55.8 +0.2**
HIA pmax pmax
comp=Z,991nm,0.9s
HIA MLR MLR
comp=Z,52µm,22.0s
HIA Hailar 69.65 332 *e*P **P 04 27 55.8 +0.2**
comp=Z,991nm,0.9s
HIA LR LR
comp=Z,52µm,22.0s
AKUT Akutan 70.05 20 *e*P **P 04 27 58.8 +1.0**
comp=Z,893nm,1.0s
MA2 Magadan 70.21 354 P **P 04 27 58.0 -0.7**
comp=Z,369nm,0.8s,baz=175,slow=6.3,SNR=80
MA2 S **S 04 37 02.2 -1.2**
comp=Z,1.5nm,0.3s,baz=198,slow=20,SNR=1.9
MA2 PKP2bc 04 55 57.7
comp=Z,1.7nm,0.3s,baz=60,slow=2.9,SNR=7.1
MA2 Magadan 70.21 354 P **P 04 27 58.0 -0.7**
MA2 S **S 04 37 02.2 -1.2**
MA2 ⇑*e* 04 55 57.7
MA2 LR LR
comp=Z,15nm,22.0s
LZH Lanzhou 71.06 314 ⇓P **P 04 28 06.1 +1.5**
LZH pP pP 04 28 27.3 +0.5
LZH sP sP 04 28 36.5 +0.3
LZH PP **PP 04 30 47.1 +3.7**
LZH S **S 04 37 13.5 -1.1**
LZH sS sS 04 37 50.3 -2.1
LZH SS **SS 04 41 50.0 +0.2**
LZH pmax pmax
comp=Z,800nm,1.0s
LZH pmax pmax
comp=Z,12µm,6.7s
LZH LR LR
comp=Z,21µm,14.5s
LZH LR LR
comp=Z,10µm,17.0s
LZH LR LR
comp=Z,26µm,18.5s
PBA Port Blair 71.50 286 *e*P P 04 28 07.6 +0.2
DGPR DIGLIPUR 71.72 288 *e*P **P 04 28 08.4 -0.3**
DGPR IAmb IAmb 04 28 12.8
comp=Z,4µm,2.9s
MIR Mirnyy 71.96 203 *i*P **P 04 28 09.5 +0.2**
MIR pmax pmax
comp=Z,22nm,1.2s
SDPT Sand Point 72.87 22 *e*P **P 04 28 13.8 -1.0**
comp=Z,1µm,0.7s
CLNS Chul'man 73.36 340 *e*P **P 04 28 18.4 +0.6**
CLNS *e* 04 28 35.5
CLNS *e* 04 31 00.7
CLNS *e*S **SKiKP 04 37 44.3 +3.5**
CLNS *e* 04 38 28.1
CLNS *e*SS **SS 04 42 20.0 -3.9**
CLNS pmax pmax
comp=N,315nm,1.0s
CLNS pmax pmax
comp=Z,752nm,1.0s
CLNS pmax pmax
comp=E,159nm,1.0s
CLNS pmax pmax
comp=E,75nm,0.9s
CLNS pmax pmax
comp=N,142nm,1.5s
CLNS pmax pmax
comp=Z,149nm,1.4s
CLNS smax smax
comp=N,3µm,12.3s
CLNS smax smax
comp=E,8µm,12.6s
CLNS MLR MLR
comp=N,7µm,19.0s
CLNS MLR MLR
comp=Z,9µm,21.0s
CLNS MLR MLR
comp=E,4µm,20.0s
SEY Seymchan 73.39 356 P **P 04 28 17.2 -0.5**
comp=E,238nm,0.8s,baz=158,slow=4.8,SNR=100
SEY Seymchan 73.39 356 ⇓*e*P **P 04 28 16.5 -1.2**
CHGN Chignik 74.35 22 *e*P **P 04 28 22.2 -1.2**
CIT Chita 74.41 332 *e*P **P 04 28 24.8 +0.8**
CIT *e* 04 28 37.3
CIT pmax pmax
comp=Z,2µm,1.5s
ULN Ulaanbaatar 75.19 326 *d*⇓P **P 04 28 29.2 +0.5**
ULN pmax pmax
comp=Z,1µm,1.2s
ULN Ulaanbaatar 75.19 326 *e*P **P 04 28 29.1 +0.3**
comp=Z,3µm,1.4s
ULN LR LR
comp=Z,15µm,20.0s
ULN Ulaanbaatar 75.19 326 P **P 04 28 29.6 +0.9**
SNR=688
ULN Ulaanbaatar 75.19 326 P **P 04 28 29.6 +0.9**
SNR=688
GTA Gaotai 75.43 315 ⇓P **P 04 28 30.8 +0.5**
GTA pP pP 04 28 50.3 -2.3
GTA sP sP 04 28 58.8 -3.2
GTA S **S 04 38 04.5 +0.7**
GTA ScS **SKSac 04 38 32.6 0.0**
GTA sS ScS 04 38 37.8 +1.5
GTA SS **SS 04 42 55.0 -1.3**
GTA pmax pmax
comp=Z,3µm,5.7s
GTA LR LR
comp=Z,13µm,21.9s
GTA LR LR
comp=Z,12µm,29.9s
GTA LR LR
comp=Z,30µm,32.3s
SONM Songino Array 75.55 325 P **P 04 28 31.1 +0.4**
comp=Z,456nm,0.9s,baz=137,slow=5.1,SNR=261
SONM PKPPKP **P'P'df 04 55 54.5 +3.4**
comp=Z,4.7nm,1.3s,baz=294,slow=1.5,SNR=5.1
SONA1 Songino Array 75.55 325 *e*P **P 04 28 30.3 -0.4**
YAK Yakutsk 76.25 345 P **P 04 28 33.9 -0.3**
comp=Z,2µm,0.7s,baz=358,slow=0.4,SNR=69
YAK S **S 04 38 13.7 +2.2**
comp=Z,13nm,0.4s,baz=297,slow=9.0,SNR=4.0
YAK Yakutsk 76.25 345 *d*⇓P **P 04 28 33.8 -0.3**
YAK *e* 04 28 46.6
YAK *e**PP **pP 04 28 58.6 +2.0**
YAK *e*PPP PPP 04 33 10.3
YAK *e*S **S 04 38 08.7 -2.9**
YAK *e* 04 38 41.4
YAK *e**SS sS 04 38 58.8 +8.9
YAK *e*SSS SSS 04 46 25.3
YAK pmax pmax
comp=Z,2µm,1.0s
YAK pmax pmax
comp=E,249nm,1.1s
YAK pmax pmax
comp=N,545nm,1.0s
YAK smax smax
comp=E,2µm,2.3s
YAK smax smax
comp=N,5µm,4.8s
YAK Yakutsk 76.25 345 *e*P **P 04 28 33.8 -0.4**
comp=N,2µm,0.9s

YAK S **S** **04 38 13.8 +2.2**
YAK LR LR
comp=Z,52µm,22.0s
SHL Shillong 76.32 300 *e*P **P** **04 28 35.1 -0.6**
SHL *i* S **S** **04 38 17.0 +2.8**
GAMB Gambell 76.75 12 *e*P **P** **04 28 38.7 +1.8**
comp=Z,563nm,1.2s
OHAK Old Harbor 76.97 23 *e*P **P** **04 28 38.4 0.0**
comp=Z,1µm,1.0s
KDAK Kodiak Island 77.63 23 P P 04 28 57.2 +15
comp=Z,768nm,0.8s,baz=232,slow=3.8,SNR=42
KDAK Kodiak Island 77.63 23 *i* P **P** **04 28 41.9 -0.1**
KDAK Kodiak Island 77.63 23 *e*P **P** **04 28 42.2 +0.2**
comp=Z,804nm,0.8s
KDAK LR LR
comp=Z,25µm,19.0s
BOD Bodaibo 78.08 336 *e*P **P** **04 28 43.7 -0.8**
BOD pmax pmax
comp=Z,390nm,1.1s
LSA Lhasa 78.27 303 P **P** **04 28 47.8 +1.0**
LSA S **S** **04 38 32.4 -3.4**
LSA LR LR
comp=Z,7µm,40.5s
LSA LR LR
comp=Z,7µm,50.1s
LSA LR LR
comp=Z,17µm,46.3s
LSA Lhasa 78.27 303 *e*P **P** **04 28 47.8 +1.0**
LSA pmax pmax
comp=Z,218nm,1.0s
LSA MLR MLR
comp=Z,14µm,21.0s
LSA Lhasa 78.27 303 *e*P **P** **04 28 47.8 +1.0**
comp=Z,218nm,1.0s
LSA LR LR
comp=Z,14µm,21.0s
BILL Bilibino 78.28 2*d i*P **P** **04 28 45.2 -0.2**
BILL *e* 04 28 56.7
BILL *e**PP **pP** **04 29 08.9 +0.9**
BILL *e**SP **sP** **04 29 23.1 +5.9**
BILL *e* 04 31 45.0
BILL *e*PPP PPP 04 33 33.2
BILL *i* S **S** **04 38 34.4 +1.0**
BILL *e*SS **SS** **04 43 40.6 +2.8**
BILL pmax pmax
comp=Z,1µm,1.0s
BILL MLR MLR
comp=Z,7µm,17.0s
BILL Bilibino 78.28 2 *e*P **P** **04 28 45.3 -0.2**
comp=Z,3µm,1.4s
BILL LR LR
comp=Z,21µm,22.0s
ZAK Zakamensk 78.65 326 *e*P **P** **04 28 47.7 -0.3**
ZAK *e* 04 29 15.1
ZAK *e* 04 38 37.6
ZAK pmax pmax
comp=Z,535nm,1.2s
SVW2 Sparrevohn 78.90 20 *e*P **P** **04 28 49.8 +0.8**
comp=Z,2µm,0.9s
IRK Irkutsk 79.11 328 *e*P **P** **04 28 49.8 -0.6**
IRK *e* 04 29 17.7
IRK *e*S **S** **04 38 40.9 -2.1**
IRK pmax pmax
comp=Z,1µm,1.4s
TLY Talaya 79.14 328 P **P** **04 28 50.8 +0.2**
comp=Z,300nm,0.9s,baz=146,slow=3.3,SNR=67
TLY Talaya 79.14 328*d i*P **P** **04 28 50.0 -0.6**
TLY *e* 04 29 13.5
TLY *e*S **S** **04 38 41.7 -1.6**
TLY *e* 04 39 32.5
TLY *e*SS **SS** **04 43 49.4 -2.0**
TLY pmax pmax
comp=Z,1µm,1.4s
TLY MLR MLR
comp=Z,16µm,19.0s
TLY Talaya 79.14 328 *e*P **P** **04 28 50.2 -0.3**
comp=Z,2µm,1.5s
TLY LR LR
comp=Z,18µm,20.0s
HOM Homer 79.28 22 *e*P **P** **04 28 52.1 +1.1**
comp=Z,5µm,1.0s
BRLK Bradley Lake 79.63 22 *e*P **P** **04 28 53.0 -0.1**
comp=Z,791nm,1.0s
QSPA South Pole Qui 79.64 180 *e*P **P** **04 28 52.4 -0.9**
comp=Z,6µm,1.1s
TT01 Tatalina 80.09 18 *e*P **P** **04 28 55.8 +0.3**
TTA Tatalina 80.11 18 *e*P **P** **04 28 55.7 +0.1**
TTA pmax pmax
comp=Z,683nm,1.0s
TTA Tatalina 80.11 18 *e*P **P** **04 28 55.7 +0.1**
comp=Z,683nm,1.0s
SPU Mount Spurr 80.17 21 *e*P **P** **04 28 56.1 +0.1**
SEW Seward 80.40 23 *e*P **P** **04 28 57.2 +0.1**
comp=Z,483nm,0.9s
MOY Mondy 80.55 327 *e*P **P** **04 28 58.2 -0.1**
MOY pmax pmax
comp=Z,553nm,1.9s
RC01 Rabbit Creek A 80.94 22 *e*P **P** **04 29 00.2 +0.2**
comp=Z,853nm,1.2s
BOK Bokaro 81.02 296 *e*P **P** **04 29 01.9 +0.6**
BOK IAMs_20 IAMs_20 04 57 11.6
comp=Z,39µm,39.3s
PPLA Purkeypile 81.31 20 *e*P **P** **04 29 01.8 -0.4**
comp=Z,1µm,1.4s
CHLP Challavanipeta 81.33 291 *e*P **P** **04 29 02.9 -0.2**
CHLP IAmb IAmb 04 29 07.0
comp=Z,267nm,0.9s
CHLP *e*S **S** **04 39 07.3 -0.2**
CHLP IVMs_BB IVMs_BB 04 58 04.4
comp=Z,6µm,41.0s
PMR Palmer 81.49 22 *e*P **P** **04 29 02.3 -0.6**
PMR pmax pmax
comp=Z,675nm,1.1s
PMR Palmer 81.49 22 *e*P **P** **04 29 02.3 -0.6**
comp=Z,675nm,1.1s
CAST Castle Rocks 81.71 19 *e*P **P** **04 29 03.2 -0.9**
comp=Z,897nm,0.9s
VIS Vishakhapatnam 81.82 290 *e*P **P** **04 29 04.8 -0.8**
SML Sawmill 81.92 22 *e*P **P** **04 29 05.6 +0.3**
SML pmax pmax
comp=Z,1µm,1.4s
SML Sawmill 81.92 22 *e*P **P** **04 29 05.6 +0.3**
comp=Z,1µm,1.4s
EYAK Cordova Ski Ar 82.11 23 *e*P **P** **04 29 07.4 +1.2**
comp=Z,1µm,1.5s
KTH Kantishna Hill 82.18 20 *e*P **P** **04 29 05.4 -1.2**
comp=Z,834nm,1.0s
SCM Sheep Creek Mo 82.31 22 *e*P **P** **04 29 07.5 +0.2**
SCM pmax pmax
comp=Z,631nm,1.0s
SCM Sheep Creek Mo 82.31 22 *e*P **P** **04 29 07.5 +0.2**
comp=Z,631nm,1.0s
TRF Thorofare Moun 82.32 20 *e*P **P** **04 29 06.8 -0.7**
comp=Z,872nm,1.2s
DIV Divide 82.45 23 *e*P **P** **04 29 08.4 +0.3**
comp=Z,2µm,1.6s
PKIN Phulchoki 82.46 300 *e*P **P** **04 29 09.2 +0.1**
comp=Z,106nm,0.8s
BPAW Bear Paw Mtn. 82.53 19 *e*P **P** **04 29 07.3 -1.1**
comp=Z,2µm,1.8s
KKN Kakani 82.62 300 *e*P **P** **04 29 10.1 +0.2**
comp=Z,326nm,1.2s
KLU Klutina 82.62 23 *e*P **P** **04 29 09.5 +0.5**
comp=Z,741nm,0.9s
RND Reindeer 82.78 20 *e*P **P** **04 29 08.9 -0.8**
RND pmax pmax
comp=Z,3µm,1.6s
RND Reindeer 82.78 20 *e*P **P** **04 29 08.9 -0.8**
comp=Z,3µm,1.6s
BMRM Bremner River 82.81 23 *e*P **P** **04 29 10.2 +0.3**
comp=Z,589nm,0.8s
PAF Port-aux-Franc 82.90 221 *e*P **P** **04 29 10.8 +0.1**
PAF pmax pmax
comp=Z,1µm,1.0s
PAF MLR MLR
comp=Z,30µm,22.0s
PAF Port-aux-Franc 82.90 221 *e*P **P** **04 29 10.8 +0.1**
comp=Z,1µm,1.0s
PAF LR LR
comp=Z,30µm,22.0s
MCK McKinley 82.96 20 *e*P **P** **04 29 09.8 -0.8**
MCK pmax pmax
comp=Z,2µm,1.1s
MCK McKinley 82.96 20 *e*P **P** **04 29 09.8 -0.8**
comp=Z,2µm,1.1s
DHY Denali Highway 83.08 21 *e*P **P** **04 29 11.2 -0.2**

GKN Gorkha 83.22 300 *e*P **P** **04 29 12.4 -0.5**
comp=Z,839nm,0.8s
MLY Manley 83.25 19 *e*P **P** **04 29 11.6 -0.5**
comp=Z,1µm,1.4s
PVM Polavaram 83.30 289 *e*P **P** **04 29 12.6 -0.7**
PVM IAmb IAmb 04 29 16.0
comp=Z,203nm,0.9s
PVM *e*SKSac **S** **04 39 23.1 -4.4**
PVM IVMs_BB IVMs_BB 04 59 22.8
comp=Z,7µm,33.8s
MAW Mawson 83.68 202 P **P** **04 29 14.4 0.0**
comp=Z,699nm,1.1s,baz=104,slow=5.8,SNR=121
MAW PKPPKP **P'P'df** **04 55 30.7 -6.5**
comp=Z,4.0nm,0.9s,baz=207,slow=2.3,SNR=3.0
MAW Mawson 83.68 202 P **P** **04 29 14.3 0.0**
baz=84,SNR=141
MAW Mawson 83.68 202 *e*P **P** **04 29 14.3 0.0**
MAW pmax pmax
comp=Z,252nm,1.4s
MAW Mawson 83.68 202 *e*P **P** **04 29 14.3 0.0**
comp=Z,252nm,1.4s
MAW P'P' 04 55 30.7
MDRS Chennai 83.69 284 *e*P **P** **04 29 14.6 -0.8**
PAX Paxson 83.69 22 *e*P **P** **04 29 14.0 -0.5**
PAX pmax pmax
comp=Z,454nm,1.4s
PAX Paxson 83.69 22 *e*P **P** **04 29 14.0 -0.5**
comp=Z,454nm,1.4s
WRH Wood River Hil 83.73 20 *e*P **P** **04 29 13.5 -1.0**
comp=Z,515nm,1.1s
CCB Clear Creek Bu 83.94 20 *e*P **P** **04 29 14.4 -1.2**
comp=Z,237nm,0.8s
MDM Murphy Dome 84.00 19 *e*P **P** **04 29 14.9 -1.0**
comp=Z,525nm,1.0s
KOLN Koldanda 84.05 300 *e*P **P** **04 29 16.3 -0.9**
comp=Z,403nm,0.7s
COLA College 84.07 19*d i*P **P** **04 29 15.1 -1.1**
COLA pmax pmax
comp=Z,769nm,1.1s
COLA College 84.07 19 *e*P **P** **04 29 15.2 -0.9**
comp=Z,526nm,0.7s
COLA LR LR
comp=Z,28µm,20.0s
MENT Mentasta 84.32 22 *e*P **P** **04 29 18.0 +0.4**
comp=Z,279nm,0.8s
IL1 Eielson Array 84.32 20 *e*P **P** **04 29 15.6 -1.9**
ILAR Eielson Array 84.32 20 P **P** **04 29 16.3 -1.2**
comp=Z,342nm,1.1s,baz=246,slow=4.7,SNR=113
ILAR PKKPbc **PKKPbc** **04 47 30.1 -2.9**
comp=Z,4.5nm,0.9s,baz=350,slow=1.6,SNR=9.8
ILAR Eielson Array 84.32 20 P **P** **04 29 16.3 -1.2**
ILAR pmax pmax
comp=Z,365nm,1.1s
ILB Eielson Array 84.32 20 *e*P **P** **04 29 16.2 -1.2**
SKHT Srikalahasti 84.34 285 *e*P **P** **04 29 18.3 -0.4**
SKHT IAmb IAmb 04 29 21.9
comp=Z,244nm,1.0s
SKHT *e*SKSac **SKSac** **04 39 34.5 -0.8**
SKHT IVMs_BB IVMs_BB 05 00 25.4
comp=Z,5µm,31.3s
H02N1 VAN INLET T-PH 84.51 34 P **P** **04 29 19.1 +0.2**
H02N1 T T 06 02 34.8
SNR=58
H02S1 DAWSON INLET T 84.52 34 P **P** **04 29 18.9 +0.2**
H02S1 T T 06 02 32.5
SNR=800
ADKI Addanki 84.54 287 *e*P **P** **04 29 19.4 -0.2**
ADKI IAmb IAmb 04 29 22.5
comp=Z,153nm,1.0s
ADKI *e*SKSac **SKSac** **04 39 34.3 -2.2**
ADKI IVMs_BB IVMs_BB 05 00 18.4
comp=Z,5µm,37.1s
DOT Dot Lake 84.61 21 *e*P **P** **04 29 19.0 0.0**
comp=Z,1µm,0.8s
TIXI Tiksi 84.62 350 P **P** **04 29 18.3 -0.6**
comp=Z,164nm,0.8s,baz=131,slow=6.7,SNR=96
TIXI S **S** **04 39 32.4 -6.3**
comp=Z,1.4nm,0.3s,baz=45,slow=20,SNR=4.5
TIXI PKPPKP **P'P'df** **04 55 28.0 -5.2**
comp=Z,1.7nm,0.4s,baz=17,slow=0.9,SNR=4.2
TIXI Tiksi 84.62 350*d i*P **P** **04 29 17.7 -1.1**
TIXI pmax pmax
comp=Z,658nm,1.5s
TIXI MLR MLR
comp=Z,17µm,18.0s
TIXI Tiksi 84.62 350 *e*P **P** **04 29 17.8 -1.1**
comp=Z,1µm,1.4s
TIXI S **S** **04 39 32.4 -6.3**
TIXI P'P' 04 55 28.0
TIXI LR LR
comp=Z,19µm,20.0s
PYUN Piuthan 84.65 300 *e*P **P** **04 29 19.2 -1.1**
comp=Z,656nm,0.9s
RPN Rapa Nui 84.84 117 *e*P **P** **04 29 24.2 +3.2**
RPN pmax pmax
comp=Z,4µm,1.1s
RPN MLR MLR
comp=Z,3µm,19.0s
RPN Rapa Nui 84.84 117 *e*P **P** **04 29 24.2 +3.2**
comp=Z,4µm,1.1s
RPN LR LR
comp=Z,3µm,19.0s
COLD Coldfoot 84.89 17 *e*P **P** **04 29 20.4 +0.1**
comp=Z,327nm,1.2s
CRAG Craig 85.16 31 *e*P **P** **04 29 25.2 +3.4**
comp=Z,298nm,1.4s
NJS Nagarjunasagar 85.31 288 *e*P **P** **04 29 22.6 -0.9**
NJS IAmb IAmb 04 29 26.0
comp=Z,300nm,0.9s
NJS *e*SKSac **SKSac** **04 39 38.1 -3.3**
NJS IVMs_BB IVMs_BB 05 00 01.5
comp=Z,6µm,44.8s
JCC Jacoby Creek, 85.39 47 *e*P **P** **04 29 25.7 +2.3**
comp=Z,735nm,1.4s
RCLA Racherla 85.42 287 *e*P **P** **04 29 23.7 -0.3**
RCLA IAmb IAmb 04 29 26.8
comp=Z,102nm,0.8s
RCLA *e*SKSac **SKSac** **04 39 39.0 -3.1**
RCLA IVMs_BB IVMs_BB 05 00 24.4
comp=Z,6µm,40.8s
KMRM Mail Ridge 85.44 48 *e*P **P** **04 29 24.8 +1.0**
comp=Z,1µm,1.7s
MCCM Marconi Confer 85.44 50 *e*P **P** **04 29 24.1 +0.4**
comp=Z,642nm,1.4s
KIPM Iron Peak 85.48 48 *e*P **P** **04 29 24.7 +0.7**
WMQ Urumqi 85.50 316 P **P** **04 29 24.6 +0.6**
WMQ pP pP 04 29 46.4 -0.4
WMQ sP sP 04 29 53.9 -2.1
WMQ PP **PP** **04 32 43.0 -0.7**
WMQ SKS **SKSac** **04 39 38.8 -2.9**
WMQ S **SKKSac** **04 39 48.6 -0.1**
WMQ sS sS 04 40 24.0 -3.8
WMQ SS **SS** **04 45 30.1 +3.7**
WMQ pmax pmax
comp=Z,930nm,5.2s
WMQ LR LR
comp=Z,6µm,21.2s
WMQ LR LR
comp=Z,7µm,23.6s
WMQ LR LR
comp=Z,18µm,30.8s
HOPS Hopland Field 85.54 49 *e*P **P** **04 29 25.0 +0.8**
comp=Z,1µm,1.7s
SRLM Srisailam 85.61 287 *e*P **P** **04 29 24.2 -0.9**
SRLM IAmb IAmb 04 29 27.5
comp=Z,331nm,1.0s
SRLM *e*SKSac **SKSac** **04 39 41.3 -2.0**
SRLM IVMs_BB IVMs_BB 05 00 31.9
comp=Z,5µm,37.0s
KHMM Horse Mountain 85.62 47 *e*P **P** **04 29 26.1 +1.4**
comp=Z,410nm,1.0s
RPR Rampur 85.81 290 *e*P **P** **04 29 25.4 -0.5**
RPR IAmb IAmb 04 29 28.1
comp=Z,186nm,0.9s
RPR *e*SKSac **SKSac** **04 39 40.4 -4.1**
RPR IVMs_BB IVMs_BB 05 00 29.5
comp=Z,5µm,40.8s
SKAG Skagway 85.92 27 *e*P **P** **04 29 26.2 +0.7**
comp=Z,546nm,1.3s
TRD Trivandrum 85.95 279 *e*P **P** **04 29 27.3 +0.6**
WRAK Wrangell Islan 85.97 31 *e*P **P** **04 29 25.9 +0.1**
comp=Z,228nm,1.0s
WRAK LR LR
comp=Z,32µm,19.0s
FYU Fort Yukon 85.97 19 *e*P **P** **04 29 27.0 +1.3**
L02D Cave Junction, 86.10 46 P **P** **04 29 27.9 +1.0**

baz=252,SNR=46
SAO San Andreas Ge 86.15 52 *e*P **P** **04 29 28.0 +0.7**
SAO pmax pmax
comp=Z,418nm,1.1s
SAO San Andreas Ge 86.15 52 *e*P **P** **04 29 28.0 +0.7**
comp=Z,418nm,1.1s
HYB Hyderabad 86.20 288 *i* P **P** **04 29 28.0 +0.1**
comp=Z,220nm,1.0s
HYB *e*pP **pP** **04 29 49.5 -1.3**
HYB *e*sP **sP** **04 29 57.5 -2.5**
HYB *e*SKS **SKSac** **04 39 44.0 -3.0**
HYB *e*S **SKKSac** **04 39 54.0 -0.9**
HYB *e*sSKS 04 40 27.0
HYB *e*sS **sS** **04 40 33.5 -2.1**
HYB *e* 04 41 24.0
HYB *e*SS **SS** **04 45 32.0 -5.5**
HYB LR LR 05 00 00.0
comp=Z,27nm,30.0s
HYB Hyderabad 86.20 288 *e*P **P** **04 29 27.1 -0.8**
HYBB Hyderabad (bro 86.20 288 *e*P **P** **04 29 27.2 -0.7**
HYBB IAmb IAmb 04 29 34.5
comp=Z,218nm,1.4s
HYBB *e*SKSac **SKSac** **04 39 43.0 -4.0**
HYBB IVMs_BB IVMs_BB 05 00 21.7
comp=Z,5µm,44.0s
EGAK Eagle 86.30 21 *e*P **P** **04 29 27.9 +0.5**
comp=Z,1µm,1.3s
EGAK LR LR
comp=Z,27µm,22.0s
N02D Trinity Center 86.39 47 P **P** **04 29 29.4 +1.0**
baz=253,SNR=115
WDC Whiskeytown Da 86.40 48 *e*P **P** **04 29 28.7 +0.3**
WDC pmax pmax
comp=Z,648nm,1.5s
WDC Whiskeytown Da 86.40 48 *e*P **P** **04 29 28.7 +0.3**
comp=Z,648nm,1.5s
M02C Callahan 86.41 47 P **P** **04 29 29.6 +1.1**
baz=253,SNR=148
BBB Bella Bella 86.56 36 P P 04 29 22.5 -6.3
comp=Z,99nm,1.0s,baz=259,slow=5.3,SNR=26
YBH Yreka Blue Hor 86.61 47 *e*P **P** **04 29 30.2 +0.7**
YBH pmax pmax
comp=Z,593nm,1.4s
YBH Yreka Blue Hor 86.61 47 *e*P **P** **04 29 30.2 +0.7**
comp=Z,593nm,1.4s
HUMO Hull Mountain 86.69 46 *e*P **P** **04 29 30.6 +0.8**
comp=Z,382nm,1.0s
SRSP Sriramsagar 86.71 290 *e*P **P** **04 29 29.4 -0.9**
SRSP IAmb IAmb 04 29 32.1
comp=Z,141nm,1.1s
SRSP *e*SKSac **SKSac** **04 39 44.8 -5.3**
SRSP IVMs_BB IVMs_BB 05 00 53.6
comp=Z,5µm,37.7s
I03D Drain, OR 86.74 45 P **P** **04 29 30.5 +0.6**
baz=252,SNR=49
SNCC San Nicolas Is 86.75 56 P **P** **04 29 30.7 +0.4**
baz=255,SNR=12
SNCC San Nicolas Is 86.75 56 *e*P **P** **04 29 31.6 +1.3**
comp=Z,2µm,1.6s
KRAR Krasnoyarsk 86.80 328*de*P **P** **04 29 31.3 +1.4**
KRAR pmax pmax
comp=Z,131nm,0.9s
SCZ2 Santa Cruz Isl 86.85 55 P **P** **04 29 31.6 +0.8**
baz=255,SNR=11
O03D Paynes Creek 86.86 48 P **P** **04 29 30.7 0.0**
baz=254,SNR=146
ORV Oroville 86.87 49 *e*P **P** **04 29 30.7 0.0**
ORV pmax pmax
comp=Z,368nm,1.4s
ORV Oroville 86.87 49 *e*P **P** **04 29 30.7 0.0**
comp=Z,368nm,1.4s
SMMC Simmler 86.90 53 P **P** **04 29 31.7 +0.7**
baz=255,SNR=42
SBC Santa Barbara 86.90 54 P **P** **04 29 31.4 +0.4**
baz=255,SNR=8.6
URV Uravakonda 86.91 286 *e*P **P** **04 29 31.4 -0.1**
URV IAmb IAmb 04 29 35.8
comp=Z,88nm,1.0s
URV *e*SKSac **SKSac** **04 39 47.2 -4.3**
URV IVMs_BB IVMs_BB 05 01 11.6
comp=Z,4µm,35.0s
PKM Mcpherson Peak 86.94 54 P **P** **04 29 31.9 +0.5**
baz=255,SNR=64
COR Corvallis 87.04 44 *e*P **P** **04 29 32.6 +1.2**
COR pmax pmax
comp=Z,926nm,1.5s
COR Corvallis 87.04 44 *e*P **P** **04 29 32.6 +1.2**
comp=Z,926nm,1.5s
AFDM Forest Hills D 87.10 50 *e*P **P** **04 29 32.1 +0.2**
comp=Z,339nm,1.1s
M04C Macdoel 87.25 47 P **P** **04 29 33.2 +0.6**
baz=254,SNR=139
G03D McMinnville, O 87.25 43 P **P** **04 29 33.3 +0.9**
baz=252,SNR=42
F03A Seaside 87.27 42 *e*P **P** **04 29 33.5 +1.0**
comp=Z,913nm,1.2s
CMB Columbia Colle 87.30 51 *e*P **P** **04 29 32.9 0.0**
CMB pmax pmax
comp=Z,212nm,1.0s
CMB Columbia Colle 87.30 51 *e*P **P** **04 29 32.9 0.0**
comp=Z,212nm,1.0s
BLG Laguna Peak, P 87.34 55 P **P** **04 29 33.6 +0.5**
baz=256,SNR=7.8
I04A Tendick Farm, 87.42 45 P **P** **04 29 33.5 +0.2**
baz=253,SNR=84
E03A Lebam 87.46 42 *e*P **P** **04 29 34.2 +0.8**
comp=Z,372nm,0.8s
HOG Hogback Mounta 87.47 46 P **P** **04 29 34.2 +0.4**
SCI2 San Clemente I 87.48 56 P **P** **04 29 34.8 +0.9**
baz=256,SNR=12
DGAR Diego Garcia 87.51 263*d i*P **P** **04 29 36.2 +1.8**
DGAR Diego Garcia 87.51 263 PFAKE 04 29 50.0 +16
DGAR LR LR
comp=Z,9µm,22.0s
NLWA Neilton Lookou 87.52 41 *e*P **P** **04 29 33.5 -0.2**
comp=Z,586nm,1.8s
NLWA LR LR
comp=Z,12µm,20.0s
K04D Chiloquin, OR 87.55 46 P **P** **04 29 34.8 +0.7**
baz=254,SNR=88
F04D Rainier, OR 87.68 42 P **P** **04 29 35.4 +1.0**
baz=253,SNR=16
CIS Catalina Islan 87.69 56 P **P** **04 29 34.9 0.0**
baz=256,SNR=13
OSI Osito Audit: C 87.74 54 P **P** **04 29 35.7 +0.6**
baz=256
OSI Osito Audit: C 87.74 54 *e*P **P** **04 29 38.4 +3.4**
comp=Z,859nm,1.5s
RCTC Rector, Farmer 87.74 53 P **P** **04 29 35.8 +0.8**
baz=256
ARVC Arvin 87.78 54 P **P** **04 29 35.6 +0.4**
baz=256,SNR=49
G04A Mulino 87.78 43 *e*P **P** **04 29 35.4 +0.4**
H04A Detroit Lake 87.83 44 *e*P **P** **04 29 35.5 +0.2**
comp=Z,493nm,1.3s
FMP Fort Macarthur 87.86 55 P **P** **04 29 35.7 +0.1**
baz=256,SNR=9.9
DLBC Dease Lake 87.95 29 P **P** **04 29 35.0 -0.6**
comp=Z,145nm,1.3s,baz=248,slow=5.4,SNR=34
DLBC PP **PP** **04 33 05.6 +2.6**
comp=Z,76nm,1.2s,baz=212,slow=6.9,SNR=3.8
DLBC PKKPbc **PKKPbc** **04 47 22.1 -1.9**
comp=Z,2.1nm,0.9s,baz=79,slow=5.2,SNR=2.4
DLBC Dease Lake 87.95 29 *e*P **P** **04 29 35.5 -0.1**
DLBC PP **PP** **04 33 05.6 +2.6**
DLBC PKKPbc **PKKPbc** **04 47 22.1 -1.9**
DECC Green Verdugo 87.96 55 P **P** **04 29 36.3 +0.2**
baz=256,SNR=15
PASC Pasadena Art C 88.06 55 *e*P **P** **04 29 36.7 +0.1**
comp=Z,557nm,1.3s
J05D Fort Rock, OR 88.09 46 P **P** **04 29 37.4 +0.7**
baz=254
WAKR Walker 88.14 50 *e*P **P** **04 29 37.5 +0.4**
KLRI Killari 88.16 289 *e*P **P** **04 29 36.7 -0.7**
KLRI IAmb IAmb 04 29 41.9
comp=Z,67nm,1.3s
KLRI *e*SKSac **SKSac** **04 39 54.5 -4.5**
KLRI IVMs_BB IVMs_BB 05 01 34.7
comp=Z,7µm,37.1s
PGC Sidney 88.17 40 *e*P **P** **04 29 37.0 +0.3**
MWC Mount Wilson 88.18 55 *e*P **P** **04 29 37.5 +0.2**
MWC pmax pmax
comp=Z,1µm,1.3s
MWC Mount Wilson 88.18 55 *e*P **P** **04 29 37.5 +0.2**
comp=Z,1µm,1.3s
K05A Summer Lake 88.18 46 *e*P **P** **04 29 37.9 +0.7**
comp=Z,845nm,1.2s

ISA	**Isabella, Lake**	**88.19**	**53**	P		**P**	**04 29 37.4**	**+0.2**
	baz=256,SNR=55								
ISA	**Isabella, Lake**	**88.19**	**53**	*e*P		**P**	**04 29 37.8**	**+0.6**
ISA				pmax		pmax			
	comp=Z,325nm,1.3s								
ISA	**Isabella, Lake**	**88.19**	**53**	*e*P		**P**	**04 29 37.8**	**+0.6**
	comp=Z,325nm,1.3s								
GNW	**Green Mountain**	**88.25**	**41**	P		**P**	**04 29 37.2**	**+0.1**
TDH	**Tom, Dick, Har**	**88.27**	**43**	P		**P**	**04 29 38.0**	**+0.5**
BLN	**Blyn Mountain**	**88.28**	**41**	*e*P		**P**	**04 29 37.9**	**+0.5**
TDL	**Tradedollar La**	**88.29**	**42**	P		**P**	**04 29 37.8**	**+0.3**
I05D	**Terrebonne, OR**	**88.31**	**44**	P		**P**	**04 29 38.1**	**+0.5**
	baz=254,SNR=86								
EDW2	**Edwards Air Fo**	**88.38**	**54**	P		**P**	**04 29 38.5**	**+0.3**
	baz=256,SNR=85								
MOD	**Modoc Plateau**	**88.38**	**47**	*e*P		**P**	**04 29 38.4**	**+0.3**
	comp=Z,334nm,1.2s								
MLAC	**Mammoth, Mammo**	**88.39**	**51**	P		**P**	**04 29 39.0**	**+0.7**
	baz=256								
BHPL	**Bhopal**	**88.44**	**294**	*e*P		**P**	**04 29 36.8**	**-1.8**
BHPL				IAmb	IAmb	IAmb	04 29 42.2		
BHPL				IAMs_20	IAMs_20	IAMs_20	05 01 56.4		
	comp=Z,25µm,32.1s								
VFP	**Flag Point**	**88.50**	**44**	P		**P**	**04 29 39.0**	**+0.4**
BFSC	**Mount Baldy Ra**	**88.50**	**55**	P		**P**	**04 29 38.9**	**+0.1**
	baz=256,SNR=74								
G05D	**Wamic, OR**	**88.58**	**44**	P		**P**	**04 29 39.0**	**+0.2**
	baz=254,SNR=50								
109C	**Camp Elliot, M**	**88.64**	**56**	P		**P**	**04 29 39.7**	**+0.3**
	baz=257,SNR=30								
A04D	**Lummi Island**	**88.67**	**40**	P		**P**	**04 29 39.6**	**+0.6**
	baz=253								
LON	**Longmire**	**88.67**	**42**	*e*P		**P**	**04 29 39.2**	**0.0**
LON				pmax		pmax			
	comp=Z,364nm,1.4s								
LON	**Longmire**	**88.67**	**42**	*e*P		**P**	**04 29 39.2**	**0.0**
	comp=Z,364nm,1.4s								
CWC	**Cottonwood Cre**	**88.69**	**53**	P		**P**	**04 29 40.1**	**+0.4**
	baz=256								
TIN	**Tinemaha, Big**	**88.72**	**52**	P		**P**	**04 29 40.5**	**+0.8**
	baz=256								
MURC	**Murrieta**	**88.73**	**56**	P		**P**	**04 29 39.8**	**+0.1**
	baz=257,SNR=40								
LRMC	**Laurel Mtn Rad**	**88.77**	**54**	P		**P**	**04 29 40.0**	**-0.1**
	baz=256,SNR=29								
ZSN	**Zaisan**	**88.81**	**319**	*i* P		**P**	**04 29 38.5**	**-1.3**
	comp=Z,2µm,1.0s								
ZSN				*e*S		**SKSac**	**04 39 58.9**	**-2.8**
B05A	**Bryant**	**88.92**	**41**	P		**P**	**04 29 40.0**	**-0.3**
	baz=253								
BAR	**Barrett**	**88.95**	**57**	*e*P		**P**	**04 29 41.4**	**+0.6**
	comp=Z,726nm,1.4s								
NV01	**Mina Array Sit**	**88.99**	**51**	*e*P		**P**	**04 29 40.6**	**-0.5**
NVAR	**Mina Array Bea**	**88.99**	**51**	P		**P**	**04 29 41.3**	**+0.2**
	comp=Z,91nm,0.8s,baz=241,slow=5.8,SNR=82								
NVAR				PP		**PP**	**04 33 10.8**	**-1.2**
	comp=Z,8.9nm,0.9s,baz=238,slow=8.4,SNR=2.3								
NVAR				S		**SKSac**	**04 40 03.9**	**+0.3**
	comp=Z,1.1nm,0.6s,baz=294,slow=0.9,SNR=3.2								
NVAR				PKPPKP		**P'P'df**	**04 55 26.1**	**-1.8**
	comp=Z,3.3nm,1.0s,baz=96,slow=2.9,SNR=4.7								
DAC	**Darwin (Calif)**	**89.03**	**53**	*e*P		**P**	**04 29 41.6**	**+0.3**
DAC				pmax		pmax			
	comp=Z,497nm,1.1s								
DAC	**Darwin (Calif)**	**89.03**	**53**	*e*P		**P**	**04 29 41.6**	**+0.3**
	comp=Z,497nm,1.1s								
G06A	**Carlson Farm,**	**89.04**	**44**	*e*P		**P**	**04 29 42.3**	**+1.3**
	comp=Z,1µm,2.0s								
MPMC	**Manual Prospec**	**89.06**	**53**	P		**P**	**04 29 41.8**	**+0.3**
	baz=256,SNR=297								
BBRC	**Big Bear Solar**	**89.10**	**55**	P		**P**	**04 29 42.1**	**+0.3**
	baz=257								
NV11	**Mina Array Sit**	**89.10**	**51**	*e*P		**P**	**04 29 41.9**	**+0.3**
H08N1	**Diego Garcia H**	**89.11**	**264**	P		**P**	**04 29 43.5**	**+2.0**
H08N2	**Diego Garcia H**	**89.12**	**264**	P		**P**	**04 29 38.9**	**-2.7**
H08N3	**Diego Garcia H**	**89.13**	**264**	P		**P**	**04 29 44.5**	**+2.9**
RRX	**Edison Barstow**	**89.18**	**54**	P		**P**	**04 29 42.5**	**+0.7**
	baz=257,SNR=15								
MONP2	**Monument Peak**	**89.20**	**57**	P		**P**	**04 29 42.9**	**+0.6**
	baz=257,SNR=134								
PFO	**Pinyon Flats O**	**89.33**	**56**	P		**P**	**04 29 42.9**	**+0.2**
	baz=257,SNR=35								
PFO	**Pinyon Flats O**	**89.33**	**56**	*e*P		**P**	**04 29 42.8**	**+0.1**
PFO				pmax		pmax			
	comp=Z,631nm,1.5s								
PFO				MLR		MLR			
	comp=Z,26µm,19.0s								
PFO	**Pinyon Flats O**	**89.33**	**56**	*e*P		**P**	**04 29 42.8**	**+0.1**
	comp=Z,631nm,1.5s								
PFO				LR		LR			
	comp=Z,26µm,19.0s								
DDI	**Dehra Dun**	**89.36**	**301**	*e*P		**P**	**04 29 42.4**	**-0.5**
DDI				IAMs_20	IAMs_20	IAMs_20	05 02 10.5		
	comp=Z,73µm,82.0s								
GRAC	**Grapevine Rang**	**89.37**	**52**	P		**P**	**04 29 42.2**	**-0.5**
	baz=257,SNR=129								
GSC	**Goldstone, Bar**	**89.43**	**54**	P		**P**	**04 29 42.6**	**-0.5**
	baz=257,SNR=68								
GSC	**Goldstone, Bar**	**89.43**	**54**	*e*P		**P**	**04 29 43.8**	**+0.7**
GSC				pmax		pmax			
	comp=Z,578nm,1.5s								
GSC	**Goldstone, Bar**	**89.43**	**54**	*e*P		**P**	**04 29 43.8**	**+0.7**
	comp=Z,578nm,1.5s								
C06D	**Leavenworth**	**89.60**	**41**	P		**P**	**04 29 43.4**	**-0.1**
	baz=254,SNR=16								
FURC	**Furnace Creek,**	**89.65**	**53**	P		**P**	**04 29 44.5**	**+0.6**
	baz=257,SNR=278								
HEC	**Hector,Ludlow**	**89.70**	**55**	P		**P**	**04 29 45.1**	**+0.7**
	baz=257,SNR=16								
WVOR	**Wild Horse Val**	**89.72**	**47**	*e*P		**P**	**04 29 44.9**	**+0.6**
WVOR				pmax		pmax			
	comp=Z,754nm,1.1s								
WVOR				MLR		MLR			
	comp=Z,17µm,19.0s								
WVOR	**Wild Horse Val**	**89.72**	**47**	*e*P		**P**	**04 29 44.9**	**+0.6**
	comp=Z,754nm,1.1s								
WVOR				LR		LR			
	comp=Z,17µm,19.0s								
SWSC	**Sam W. Stewart**	**89.72**	**57**	P		**P**	**04 29 44.9**	**+0.5**
	baz=256,SNR=53								
NDI	**New Delhi**	**89.74**	**299**	*ex*		P	04 29 39.0	-5.6	
NDI				*ex*		**S**	**04 40 23.0**	**-6.7**	
BELC	**Belle Mtn. Jos**	**89.79**	**56**	P		**P**	**04 29 45.3**	**+0.5**
	baz=257,SNR=183								
ETW	**Entiat**	**89.88**	**42**	*e*P		**P**	**04 29 44.9**	**-0.1**
SHOC	**Shoshone, Teco**	**89.98**	**54**	P		**P**	**04 29 46.1**	**+0.5**
	baz=257,SNR=31								
MK01	**Makanchi Array**	**90.00**	**318**	*e*P		**P**	**04 29 44.0**	**-1.4**
MK31	**Makanchi Array**	**90.02**	**318**	*i* P		**P**	**04 29 45.1**	**-0.4**
MK31				pmax		pmax			
	comp=Z,265nm,1.0s								
MK31	**Makanchi Array**	**90.02**	**318**	*e*P		**P**	**04 29 45.0**	**-0.5**
MKAR	**Makanchi Array**	**90.02**	**318**	P		**P**	**04 29 44.7**	**-0.7**
	comp=Z,76nm,0.6s,baz=97,slow=5.7,SNR=166								
MKAR				pP		**pP**	**04 30 08.2**	**-0.3**
	comp=Z,152nm,1.0s,baz=98,slow=6.7,SNR=3.3								
MKAR				PP		**PP**	**04 33 20.3**	**+0.4**
	comp=Z,27nm,1.1s,baz=110,slow=6.6,SNR=3.0								
MKAR				S		**SKSac**	**04 40 09.3**	**+0.5**
	comp=Z,5.9nm,1.0s,baz=85,slow=5.1,SNR=3.7								
MKAR				PKKPbc		**PKKPbc**	**04 47 17.9**	**-0.3**
	comp=Z,2.5nm,0.9s,baz=263,slow=3.7,SNR=4.6								
MKAR				PKPPKP		**P'P'df**	**04 55 26.1**	**+1.0**
	comp=Z,1.6nm,0.8s,baz=336,slow=2.7,SNR=4.1								
HAWA	**Hanford**	**90.09**	**43**	*e*P		**P**	**04 29 46.3**	**+0.5**
	comp=Z,942nm,1.8s								
HAWA				LR		LR			
	comp=Z,9µm,20.0s								
WTV	**Watsonville**	**90.15**	**42**	P		**P**	**04 29 45.8**	**-0.3**
BC3	**Big Chucawall**	**90.16**	**56**	P		**P**	**04 29 47.2**	**+0.6**
	baz=258,SNR=110								
TUQ	**Turquoise Moun**	**90.16**	**54**	P		**P**	**04 29 47.1**	**+0.5**
	baz=257,SNR=13								
GMRC	**Granite Mounta**	**90.23**	**55**	P		**P**	**04 29 47.1**	**+0.2**
	baz=258,SNR=256								
TPNV	**Topopah Spring**	**90.23**	**53**	P		**P**	**04 29 47.3**	**+0.3**
	baz=257,SNR=326								
TPNV	**Topopah Spring**	**90.23**	**53**	*e*P		**P**	**04 29 47.2**	**+0.3**
TPNV	**Topopah Spring**	**90.23**	**53**	*e*P		**P**	**04 29 47.2**	**+0.3**
BMN	**Battle Mountai**	**90.28**	**49**	*e*P		**P**	**04 29 47.5**	**+0.5**
BMN				pmax		pmax			
	comp=Z,688nm,1.4s								
BMN	**Battle Mountai**	**90.28**	**49**	*e*P		**P**	**04 29 47.5**	**+0.5**
	comp=Z,688nm,1.4s								
SMLA	**Simla**	**90.28**	**301**	*e*P		**P**	**04 29 45.3**	**-1.7**
ZALV	**Zalesovo Beam**	**90.44**	**325**	P		**P**	**04 29 45.7**	**-1.5**
	comp=Z,81nm,0.7s,baz=119,slow=4.5,SNR=72								
ZALV				pP		**pP**	**04 30 09.4**	**-0.8**
	comp=Z,26nm,0.8s,baz=134,slow=4.3,SNR=2.0								
ZALV				S		**SKSac**	**04 40 06.1**	**-4.7**
	comp=Z,0.7nm,0.4s,baz=356,slow=39,SNR=2.2								
ZALV				PKKPbc		**PKKPbc**	**04 47 17.1**	**-0.3**
	comp=Z,2.2nm,0.5s,baz=293,slow=2.6,SNR=3.9								
ZALV				PKPPKP		**P'P'df**	**04 55 26.9**	**+3.2**
	comp=Z,0.8nm,0.3s,baz=289,slow=4.5,SNR=5.0								
IRM	**Iron Mountain**	**90.52**	**56**	P		**P**	**04 29 48.6**	**+0.5**
	baz=258,SNR=231								
SDNR	**Sundarnagar**	**90.52**	**302**	*e*P		**P**	**04 29 49.0**	**+0.8**
GLA	**Glamis**	**90.55**	**57**	P		**P**	**04 29 49.0**	**+0.7**
	baz=258,SNR=45								
GLA	**Glamis**	**90.55**	**57**	*e*P		**P**	**04 29 49.5**	**+1.2**
GLA				pmax		pmax			
	comp=Z,293nm,0.9s								
GLA	**Glamis**	**90.55**	**57**	*e*P		**P**	**04 29 49.5**	**+1.2**
	comp=Z,293nm,0.9s								
D08A	**Wollman Farm,**	**90.67**	**42**	*e*P		**P**	**04 29 48.8**	**+0.4**
	comp=Z,599nm,1.4s								
INK	**Inuvik**	**90.72**	**20**	P		**P**	**04 29 48.1**	**-0.1**
	comp=Z,120nm,1.2s,baz=238,slow=5.4,SNR=59								
INK				PKKPbc		**PKKPdf**	**04 47 13.9**	**+0.6**
	comp=Z,6.7nm,0.9s,baz=90,slow=3.1,SNR=6.8								
INK	**Inuvik**	**90.72**	**20**	*e*P		**P**	**04 29 47.7**	**-0.5**
INK				PKKPbc		**PKKPdf**	**04 47 13.9**	**+0.6**
B08A	**Colville Reser**	**90.72**	**41**	*e*P		**P**	**04 29 48.3**	**-0.5**
	comp=Z,254nm,1.0s								
SHLS	**Shalkode**	**90.78**	**314**	*e*P		**P**	**04 29 49.6**	**+0.2**
	comp=Z,2µm,1.3s								
SHLS				*i* PP		**PP**	**04 33 22.3**	**-3.9**
SHLS				*e*S		**SKSac**	**04 40 12.5**	**-1.3**
POO	**Poona**	**90.81**	**289**	*e*P		**P**	**04 29 48.1**	**-1.6**
Y12C	**Blythe**	**90.94**	**56**	P		**P**	**04 29 50.4**	**+0.4**
	baz=258,SNR=66								
Y12C	**Blythe**	**90.94**	**56**	*e*P		**P**	**04 29 50.7**	**+0.7**
R11A	**Troy Canyon, C**	**91.05**	**51**	P		**P**	**04 29 50.8**	**+0.1**
	baz=258,SNR=398								
R11A	**Troy Canyon, C**	**91.05**	**51**	*e*P		**P**	**04 29 50.7**	**+0.1**
NEE2	**Needles Airpor**	**91.07**	**55**	P		**P**	**04 29 52.6**	**+1.9**
	baz=258								
PDGK	**Podgornoye**	**91.10**	**314**	P		**P**	**04 29 48.8**	**-1.7**
PDGK				pmax		pmax			
	comp=Z,221nm,1.1s								
SYO	**Syowa Base**	**91.11**	**198**	*i* P		**P**	**04 29 49.4**	**-0.7**
SYO	**Syowa Base**	**91.11**	**198**	*i* PcP		**PcP**	**04 29 52.2**	**+1.1**
H06N1	**SOCORRO T-PHAS**	**91.21**	**71**	P		**P**	**04 29 53.7**	**+2.1**
H06N1				T		T	06 10 33.8		
	SNR=58								
H06S1	**SOCORRO T**	**91.21**	**71**	P		**P**	**04 29 54.1**	**+2.5**
	SNR=9.6								
H06S1				T		T	06 10 31.3		
	SNR=25								
DHRM	**DHARAMSHALA**	**91.23**	**302**	*e*P		**P**	**04 29 50.3**	**-1.4**
DHRM				IAmb		IAmb	04 29 53.0		
	comp=Z,95nm,0.5s								
BMO	**Blue Mountains**	**91.23**	**45**	*e*P		**P**	**04 29 51.4**	**+0.1**
BMO				pmax		pmax			
	comp=Z,622nm,1.5s								
BMO				MLR		MLR			
	comp=Z,10µm,20.0s								
BMO	**Blue Mountains**	**91.23**	**45**	*e*P		**P**	**04 29 51.4**	**+0.1**
	comp=Z,622nm,1.5s								
BMO				LR		LR			
	comp=Z,10µm,20.0s								
H06E1	**SOCORRO T-PHAS**	**91.25**	**71**	P		**P**	**04 29 53.9**	**+2.1**
	SNR=25								
H06E1				T		T	06 10 31.2		
	SNR=183								
C09A	**Chrisman Ranch**	**91.27**	**42**	*e*P		**P**	**04 29 51.2**	**-0.1**
PDMCI	**Parker Dam,Lak**	**91.36**	**56**	P		**P**	**04 29 52.7**	**+0.7**
	baz=258,SNR=79								
113A	**Mohawk Valley,**	**91.36**	**57**	*e*P		**P**	**04 29 52.6**	**+0.6**
UZB	**Uzynbulak**	**91.39**	**314**	*i* P		**P**	**04 29 52.2**	**+0.1**
	comp=Z,2µm,1.3s								
UZB				*i* pP		**pP**	**04 30 12.4**	**-2.8**
UZB				*i* PP		**PP**	**04 33 30.5**	**-0.5**
UZB				*i* S		**SKSac**	**04 40 15.7**	**-1.4**
NVS	**Novosibirsk**	**91.58**	**326**	*e*P		**P**	**04 29 51.6**	**-0.9**
NVS				*i* *PP		**pP**	**04 30 16.2**	**+0.7**
NVS				*i* S		**SKSac**	**04 40 15.5**	**-1.7**
NVS				*e**SS		**S**	**04 40 42.5**	**-2.8**
NVS				pmax		pmax			
	comp=Z,464nm,1.4s								
NVS				pmax		pmax			
	comp=N,49nm,0.9s								
NVS				pmax		pmax			
	comp=E,203nm,1.0s								
NVS				smax		smax			
	comp=N,39nm,1.4s								
NVS				smax		smax			
	comp=E,316nm,1.6s								
SRIG	**Santa Rosalia**	**91.62**	**63**	*e*P		**P**	**04 29 52.9**	**-0.4**
W13A	**Hualapai Mount**	**91.72**	**55**	*e*P		**P**	**04 29 54.3**	**+0.4**
ELK	**Elko**	**91.82**	**49**	*e*P		**P**	**04 29 54.8**	**+0.5**
ELK	**Elko**	**91.82**	**49**	*e*P		**P**	**04 29 54.8**	**+0.5**
MFID	**Camas Ranch**	**91.95**	**46**	*e*P		**P**	**04 29 54.8**	**+0.1**
	comp=E,428nm,1.3s								
214A	**Organ Pipe Nat**	**92.00**	**58**	P		**P**	**04 29 55.8**	**+0.8**
	baz=259								
214A	**Organ Pipe Nat**	**92.00**	**58**	*e*P		**P**	**04 29 55.7**	**+0.6**
	comp=E,540nm,1.1s								
NEW	**Newport**	**92.13**	**41**	P		**P**	**04 29 55.0**	**-0.3**
	comp=E,397nm,1.1s,baz=239,slow=4.4,SNR=50								
NEW	**Newport**	**92.13**	**41**	P		**P**	**04 29 55.5**	**+0.2**
	baz=257								
NEW	**Newport**	**92.13**	**41**	P		**P**	**04 29 55.0**	**-0.3**
NEW				pmax		pmax			
	comp=Z,397nm,1.1s								
NEW	**Newport**	**92.13**	**41**	*e*P		**P**	**04 29 55.0**	**-0.3**
	comp=Z,397nm,1.0s								
NEW				LR		LR			
	comp=Z,13µm,19.0s								
SEM	**Semipalatinsk**	**92.22**	**321**	*i* P		**P**	**04 29 54.0**	**-1.6**
	comp=Z,2µm,1.1s								
SEM				*i* pP		**pP**	**04 30 18.7**	**+0.1**
SEM				*i* PP		**PP**	**04 33 35.5**	**-1.6**
SEM				*e*S		**SKSac**	**04 40 18.3**	**-2.8**
SEM				LRM		MLR	05 08 19.4		
	comp=Z,7µm,27.9s								
PSUT	**Pine Spring**	**92.42**	**51**	*e*P		**P**	**04 29 57.9**	**+0.8**
LCMT	**Little Creek M**	**92.60**	**53**	*e*P		**P**	**04 29 58.6**	**+0.8**
MDOK	**Medeo**	**92.81**	**313**	*i* P		**P**	**04 29 58.8**	**+0.1**
	comp=Z,515nm,1.4s								
MDOK				*i* pP		**pP**	**04 30 21.3**	**-0.4**
MDOK				*i* PP		**PP**	**04 33 44.8**	**+2.7**
MDOK				*i* S		**SKSac**	**04 40 23.6**	**-1.5**
MDOK				*i* sS		**ScS**	**04 41 00.6**	**+1.5**
MDOK				*i* SS		**SS**	**04 47 14.4**	**+1.8**
MDOK				LRM		MLR	05 11 07.4		
	comp=Z,4µm,24.3s								
KSH	**Kashi**	**92.89**	**309**	P		**P**	**04 30 00.1**	**+1.0**
KSH				*e*pP		pP	04 30 21.3	-0.9	
KSH				*e*sP		sP	04 30 29.3	-2.0	
KSH				*e*PP		**PP**	**04 33 46.1**	**+3.3**
KSH				SKS		**SKSac**	**04 40 25.8**	**+0.2**
KSH				S		**S**	**04 40 55.6**	**-2.5**
KSH				SS		**SS**	**04 47 16.8**	**+2.9**
KSH				pmax		pmax			
	comp=Z,700nm,4.7s								
KSH				LR		LR			
	comp=Z,9µm,18.8s								
KSH				LR		LR			
	comp=Z,7µm,16.1s								
KSH				LR		LR			
	comp=Z,28µm,34.1s								
AAA	**Alma-Ata**	**92.90**	**313**	*e*P		**P**	**04 29 59.7**	**+0.7**
AAA				*e*S		**SKSac**	**04 40 23.0**	**-2.4**
AAA				pmax		pmax			
	comp=Z,6µm,12.6s								
AAA				smax		smax			
	comp=E,6µm,11.3s								
AAA				MLR		MLR			
	comp=Z,11µm,20.0s								
KNB	**Kanab**	**92.94**	**53**	*e*P		**P**	**04 30 00.4**	**+0.9**
KNB	**Kanab**	**92.94**	**53**	*e*P		**P**	**04 30 00.4**	**+0.9**
CHKK	**Chushkaly**	**92.98**	**314**	*i* P		**P**	**04 29 58.5**	**-0.8**
	comp=Z,733nm,1.2s								
CHKK				*i* PP		**PP**	**04 33 44.4**	**+1.1**
HLID	**Hailey**	**92.99**	**46**	P		**P**	**04 30 00.6**	**+1.1**
	baz=259								
HLID	**Hailey**	**92.99**	**46**	*e*P		**P**	**04 30 00.1**	**+0.6**
HLID				LR		LR			
	comp=Z,15µm,21.0s								
SLBS	**Sierra La Lagu**	**93.02**	**67**	*e*P		**P**	**04 30 00.6**	**+0.6**
HSIG		**93.05**	**61**	*e*P		**P**	**04 29 59.8**	**-0.1**
KURK	**Kurchatov**	**93.30**	**321**	*e*P		**P**	**04 29 59.4**	**-1.2**
KURK				*PP		**pP**	**04 30 22.4**	**-1.2**
KURK				MLR		MLR			
	comp=Z,36µm,20.0s								
KURK	**Kurchatov**	**93.30**	**321**	*e*P		**P**	**04 29 59.4**	**-1.2**
KURK				pP		**pP**	**04 30 22.4**	**-1.2**
KURK				LR		LR			
	comp=Z,36µm,20.0s								
KURBB	**Kurchatov Arra**	**93.34**	**321**	P		**P**	**04 29 58.9**	**-1.9**
	comp=Z,132nm,0.9s,baz=109,slow=3.2,SNR=109								
KURBB				pP		**pP**	**04 30 22.4**	**-1.3**
	comp=Z,46nm,0.8s,baz=104,slow=3.6,SNR=2.2								
PKCU	**Pink Cliffs**	**93.41**	**53**	*e*P		**P**	**04 30 04.2**	**+2.3**
KUU	**Kurty**	**93.46**	**314**	*i* P		**P**	**04 30 00.9**	**-0.5**
	comp=Z,570nm,0.8s								
KUU				*i* pP		**sP**	**04 30 34.4**	**+0.7**
KUU				*i* sP		pP	04 30 43.7	+19	
KUU				*i* PP		**PP**	**04 33 43.4**	**-3.6**
KUU				*i* S		**SKSac**	**04 40 26.4**	**-1.9**
KUU				LRM		MLR	05 13 23.6		
	comp=Z,9µm,26.9s								
BGU	**Big Grassy Mou**	**93.50**	**49**	*e*P		**P**	**04 30 02.1**	**+0.2**
DUG	**Dugway, Tooele**	**93.52**	**50**	P		**P**	**04 30 02.1**	**+0.1**
	baz=260								
DUG	**Dugway, Tooele**	**93.52**	**50**	*e*P		**P**	**04 30 02.7**	**+0.7**
DUG				MLR		MLR			
	comp=Z,9µm,20.0s								
DUG	**Dugway, Tooele**	**93.52**	**50**	*e*P		**P**	**04 30 02.7**	**+0.7**
DUG				LR		LR			
	comp=Z,9µm,20.0s								
BSMT	**Bassoo Peak**	**93.58**	**42**	*e*P		**P**	**04 30 01.7**	**-0.5**
MTPU	**Mount Pierson**	**93.62**	**52**	*e*P		**P**	**04 30 04.2**	**+1.4**
MSU	**Marysvale**	**93.71**	**52**	*e*P		**P**	**04 30 04.3**	**+1.3**
MSU	**Marysvale**	**93.71**	**52**	*e*P		**P**	**04 30 04.3**	**+1.3**
TUC	**Tucson**	**93.75**	**58**	P		**P**	**04 30 03.5**	**+0.3**
	baz=260								
TUC	**Tucson**	**93.75**	**58**	*e*P		**P**	**04 30 03.7**	**+0.5**
TUC				MLR		MLR			
	comp=Z,12µm,21.0s								
TUC	**Tucson**	**93.75**	**58**	*e*P		**P**	**04 30 03.7**	**+0.5**
TUC				LR		LR			
	comp=Z,12µm,21.0s								
TKM2	**Tokmak 2**	**93.81**	**313**	*e*P		**P**	**04 30 03.0**	**-0.4**
TKM2				MLR		MLR			
	comp=Z,9µm,21.0s								
TKM2	**Tokmak 2**	**93.81**	**313**	*e*P		**P**	**04 30 03.0**	**-0.4**
TKM2				LR		LR			
	comp=Z,9µm,21.0s								
WUAZ	**Wupatki**	**93.82**	**55**	P		**P**	**04 30 03.6**	**0.0**
	baz=260,SNR=31								
WUAZ	**Wupatki**	**93.82**	**55**	*e*P		**P**	**04 30 04.3**	**+0.7**
WUAZ				LR		LR			
	comp=Z,22µm,19.0s								
HVU	**Hansel Valley**	**93.84**	**48**	*e*P		**P**	**04 30 04.0**	**+0.5**
HVU	**Hansel Valley**	**93.84**	**48**	*e*P		**P**	**04 30 04.0**	**+0.5**
BLMT	**Blacktail Moun**	**93.89**	**42**	*e*P		**P**	**04 30 05.1**	**+1.5**
JTMT	**Jette**	**93.89**	**42**	*e*P		**P**	**04 30 03.1**	**-0.4**
MSO	**Missoula**	**93.94**	**43**	P		**P**	**04 30 04.3**	**+0.5**
	baz=259								
MSO	**Missoula**	**93.94**	**43**	*e*P		**P**	**04 30 05.5**	**+1.8**
NRIK	**Noril'sk**	**93.95**	**340**	P		**P**	**04 30 01.8**	**-1.4**
	comp=Z,153nm,1.1s,baz=110,slow=4.6,SNR=57								
NRIK				PP		**PP**	**04 33 49.9**	**-0.3**
	comp=Z,74nm,1.1s,baz=122,slow=8.5,SNR=3.6								
SPUT	**South Promonto**	**94.00**	**49**	*e*P		**P**	**04 30 04.9**	**+0.7**
SWMT	**Swartz Lake**	**94.03**	**43**	*e*P		**P**	**04 30 03.5**	**-0.7**
NLU	**North Lily Min**	**94.04**	**50**	*e*P		**P**	**04 30 05.3**	**+0.8**
YBMT	**Yellow Bay**	**94.09**	**42**	*e*P		**P**	**04 30 04.7**	**+0.2**
MCMT	**McKenzie Canyo**	**94.33**	**45**	*e*P		**P**	**04 30 06.2**	**+0.4**
MMU	**Miners Mountai**	**94.34**	**52**	*e*P		**P**	**04 30 07.2**	**+1.2**
WALA	**Waterton Lakes**	**94.38**	**41**	*e*P		**P**	**04 30 06.1**	**+0.4**
CTU	**Camp Tracy**	**94.41**	**50**	*e*P		**P**	**04 30 07.2**	**+1.1**
CHMT	**Chamberlain Mo**	**94.42**	**43**	*e*P		**P**	**04 30 05.5**	**-0.6**
FRU	**Bishkek**	**94.50**	**313**	*e*P		**P**	**04 30 06.0**	**-0.3**
FRU				*e*			04 33 52.0		
FRU				*i*			04 40 32.0		
FRU				*i* S		**S**	**04 41 07.5**	**-4.3**
FRU				*i* PS	

BW06 Boulder Array 96.35 48 *e*P **P 04 30 14.4 -0.6**
BW06 LR LR
comp=Z,9µm,20.0s
PD31 Pinedale Array 96.35 48 *e*P **P 04 30 14.8 -0.3**
PDAR Pinedale Array 96.35 48 P **P 04 30 14.7 -0.3**
comp=Z,24nm,0.8s,baz=236,slow=2.5,SNR=48
PDAR PKPPKP **P'P'df 04 55 14.9 +1.1**
comp=Z,1.4nm,1.0s,baz=127,slow=4.7,SNR=3.5
MVCO Mesa Verde 96.38 53 P **P 04 30 15.1 -0.2**
baz=262,SNR=23
MVCO Mesa Verde 96.38 53 *e*P **P 04 30 16.2 +0.9**
MVCO LR LR
comp=Z,22µm,21.0s
YKA Yellowknife Ar 96.41 28 P **P 04 30 13.1 -1.3**
comp=Z,78nm,0.8s,baz=259,slow=4.4,SNR=206
YKA pP **pP 04 30 37.2 -0.3**
comp=Z,52nm,1.0s,baz=257,slow=4.5,SNR=3.2
YKA PP **PP 04 34 08.9 -0.4**
comp=Z,8.1nm,1.1s,baz=265,slow=7.9,SNR=3.0
YKA PKiKP **PKiKP 04 34 51.5 -0.1**
comp=Z,4.4nm,0.9s,baz=262,slow=0.8,SNR=5.3
YKA PKKPbc **PKKPbc 04 47 00.4 -1.6**
comp=Z,2.1nm,0.7s,baz=74,slow=2.7,SNR=12
YKA PKKPab PKKPdf 04 47 30.8 +28
comp=Z,5.3nm,0.9s,baz=77,slow=5.1,SNR=12
YKA PKPPKP **P'P'df 04 55 08.8 -3.2**
comp=Z,0.4nm,0.9s,baz=69,slow=2.6,SNR=3.8
YKB5 Yellowknife Ar 96.41 28 *e*P **P 04 30 12.1 -2.3**
YKW3 Yellowknife Ar 96.42 28 *e*P **P 04 30 13.3 -1.2**
NVL N'lazarevskaya 96.44 190 *e*P **P 04 30 14.6 0.0**
NVL *e**SP **sP 04 30 47.9 +1.1**
NVL *e* 04 34 11.9
NVL *e*S **SKSac 04 40 44.1 +0.8**
NVL *e* 04 41 16.2
NVL *e*SP **SP 04 42 51.6 +4.6**
NVL *e*SS SS 04 48 19.0 +18
PV01 Paradox Valley 96.45 53 *e*P **P 04 30 16.0 +0.4**
GCMT Greycliff 96.70 45 *e*P **P 04 30 17.4 +1.0**
RLMT Red Lodge 96.89 45 P **P 04 30 18.0 +0.6**
baz=262
RLMT Red Lodge 96.89 45 *e*P **P 04 30 18.2 +0.8**
RLMT LR LR
comp=Z,13µm,21.0s
OTUK Ortayu 96.91 318 P **P 04 30 16.4 -0.8**
EGMT Eagleton 96.94 43 P **P 04 30 17.6 +0.2**
baz=262
EGMT Eagleton 96.94 43 *e*P **P 04 30 17.2 -0.2**
EGMT LR LR
comp=Z,7µm,19.0s
O20A White River Ci 96.97 51 P **P 04 30 18.1 +0.3**
baz=262,SNR=20
O20A White River Ci 96.97 51 *e*P **P 04 30 18.2 +0.3**
LAZ Ladron 97.09 56 *e*P Pdif 04 30 19.5 +0.9
Y22D IRIS PASSCAL I 97.22 57 P **P 04 30 19.1 +0.1**
baz=262
SNAA Sanae 97.46 185 P Pdif 04 30 20.2 +0.9
SNAA Sanae 97.46 185 *c i*P **P 04 30 19.4 +0.1**
SNAA Sanae 97.46 185 *e*P **P 04 30 19.2 -0.1**
BNM Barren Site 97.47 57 *e*P **P 04 30 20.4 +0.1**
LPM Los Pinos Moun 97.49 57 *e*P Pdif 04 30 21.6 +1.2
KK31 Karatay Array 97.52 312 P Pdif 04 30 20.1 0.0
KK31 pmax pmax
comp=Z,50nm,1.2s
KKAR Karatay Array 97.52 312 *e*P **P 04 30 19.4 -0.7**
KKAR Karatay Array 97.52 312 *e*P **P 04 30 19.4 -0.7**
KBL Kabul 97.59 304 *e*P **P 04 30 20.2 -0.6**
KBL Kabul 97.59 304 *e*P **P 04 30 20.2 -0.6**
ANMO Albuquerque 97.72 56 P **P 04 30 21.3 0.0**
baz=263
ANMO Albuquerque 97.72 56 *de*P **P 04 30 21.0 -0.3**
ANMO pmax pmax
comp=Z,47nm,0.9s
ANMO Albuquerque 97.72 56 *e*P **P 04 30 21.4 0.0**
ANMO LR LR
comp=Z,16µm,22.0s
IUG luzhnay 97.76 311 *i* P Pdif 04 30 21.4 +0.1
comp=Z,222nm,1.4s
IUG *j* pP pP 04 30 43.7 -0.6
IUG *i* S **SKSac 04 40 50.4 -0.9**
S22A 4UR Ranch, Cre 97.76 53 P **P 04 30 21.7 +0.1**
baz=263,SNR=32
S22A 4UR Ranch, Cre 97.76 53 *e*P Pdif 04 30 22.2 +0.6
PMSA Palmer Station 97.77 162 P Pdif 04 30 21.4 +0.7
comp=Z,73nm,1.1s,baz=239,slow=7.1,SNR=5.2
PMSA Palmer Station 97.77 162 *e*P **P 04 30 20.5 -0.2**
PMSA LR LR
comp=Z,19µm,22.0s
SMCO Snowmass 97.82 52 *e*P Pdif 04 30 24.4 +2.3
MNTX Cornudas Mount 98.20 59 P **P 04 30 23.0 -0.3**
baz=263
MNTX Cornudas Mount 98.20 59 *e*P Pdif 04 30 25.2 +1.8
MNTX LR LR
comp=Z,18µm,21.0s
VNA3 Neumayer Olymp 98.35 183 P Pdif 04 30 23.5 +0.2
VNA2 Neumayer--Watz 98.54 184 P **P 04 30 24.1 0.0**
baz=168,slow=4.2
K22A Casper 98.56 48 P **P 04 30 24.8 -0.1**
baz=264,SNR=19
K22A Casper 98.56 48 *e*P Pdif 04 30 26.0 +1.1
BVAR Borovoye Array 98.70 322 P **P 04 30 23.4 -1.6**
comp=Z,60nm,0.8s,baz=96,slow=4.5,SNR=57
BVAR pP **pP 04 30 49.1 +1.0**
comp=Z,42nm,0.9s,baz=109,slow=3.4,SNR=5.5
BRVK Borovoye 98.77 322 *d i*P **P 04 30 24.1 -1.2**
BRVK pmax pmax
comp=Z,122nm,1.1s
BRVK Borovoye 98.77 322 *e*P **P 04 30 23.7 -1.6**
BRVK LR LR
comp=Z,22µm,22.0s
N23A Red Feather La 98.80 50 P **P 04 30 26.2 0.0**
baz=264,SNR=18
N23A Red Feather La 98.80 50 *e*P Pdif 04 30 27.5 +1.3
SDCO Great Sand Dun 98.81 53 P **P 04 30 25.7 -0.5**
baz=264,SNR=15
SDCO Great Sand Dun 98.81 53 *e*P Pdif 04 30 27.5 +1.2
SDCO LR LR
comp=Z,14µm,20.0s
VNA1 Neumayer--Stat 98.86 184 P **P 04 30 24.4 -1.1**
ISCO Idaho Springs 98.94 51 P **P 04 30 26.8 0.0**
baz=264,SNR=15
ISCO Idaho Springs 98.94 51 *e*P Pdif 04 30 29.9 +3.0
ISCO Idaho Springs 98.94 51 *e*P Pdif 04 30 29.2 +2.4
ISCO LR LR
comp=Z,24µm,19.0s
PHWY Pilot Hill 99.21 50 *e*P **Pdif 04 30 27.5 -0.5**
comp=Z,85nm,1.8s
Q24A Divide 99.21 52 P **Pdif 04 30 27.4 -0.7**
baz=264
TX31 Lajitas Ar. Si 99.39 62 *e*P **Pdif 04 30 31.1 +2.3**
TXAR Lajitas Array 99.39 62 P **Pdif 04 30 28.5 -0.4**
comp=Z,8.3nm,0.8s,baz=232,slow=5.4,SNR=26
TXAR PP **PP 04 34 34.1 +0.9**
comp=Z,34nm,1.2s,baz=257,slow=4.9,SNR=9.5
TXAR PKiKP **PKiKP 04 34 56.7 -1.5**
comp=Z,29nm,1.2s,baz=251,slow=8.4,SNR=3.6
TXAR PKKPbc **PKKPbc 04 46 53.0 +0.4**
comp=Z,2.9nm,0.8s,baz=106,slow=2.9,SNR=7.9
TXAR PKKPab PKKPdf 04 47 17.4 +21
comp=Z,3.7nm,0.7s,baz=101,slow=3.2,SNR=5.5
TXAR PKPPKP **P'P'df 04 55 05.4 -3.6**
comp=Z,0.7nm,1.0s,baz=46,slow=3.9,SNR=2.8
ZRNK Zerenda 99.53 322 *e*P **Pdif 04 30 26.8 -1.9**
ZAIG Zacatecas 99.59 69 *e*Pdif **Pdif 04 30 33.3 +3.2**
RER Riviere de l'E 100.45 246 PFAKE 04 30 40.0 +6.3
RER LR LR
comp=Z,13µm,20.0s
RSSD Black Hills 100.50 47 P **Pdif 04 30 33.4 -0.1**
baz=266
RSSD Black Hills 100.50 47 *e*P **Pdif 04 30 35.0 +1.4**
RSSD Black Hills 100.50 47 *e*Pdif **Pdif 04 30 35.0 +1.4**
J25A Sunshine Ranch 100.61 48 P **Pdif 04 30 33.5 -0.5**
baz=266
MSTX Muleshoe 100.64 57 P **Pdif 04 30 34.3 0.0**
baz=265
MSTX Muleshoe 100.64 57 *e*Pdif **Pdif 04 30 34.8 +0.5**
DGMT Dagmar 100.68 42 P **Pdif 04 30 34.2 +0.2**
baz=266,SNR=53
DGMT Dagmar 100.68 42 *e*Pdif **Pdif 04 30 33.5 -0.6**
DGMT LR LR
comp=Z,9µm,20.0s
I25A Rochford 100.71 47 P **Pdif 04 30 35.5 +1.0**
baz=266,SNR=17
H25A Fruitdale 100.85 46 P **Pdif 04 30 35.2 +0.3**
baz=266,SNR=24
G25A Newell 101.01 46 P **Pdif 04 30 36.2 +0.5**
baz=266,SNR=17
F25A Bowman 101.03 45 P **Pdif 04 30 36.7 +1.0**
baz=266,SNR=30
E25A Miller Ranch, 101.10 44 P **Pdif 04 30 36.9 +0.9**
baz=267,SNR=23
J26A Sides Ranch, S 101.14 48 P **Pdif 04 30 38.1 +1.8**
baz=266,SNR=11
KSCO Kaye Shedlock' 101.17 52 *e*Pdif **Pdif 04 30 40.7 +4.1**
D25A Fairfield 101.19 44 P **Pdif 04 30 37.1 +0.7**
baz=267,SNR=20
C25A Freed Ranch, W 101.27 43 P **Pdif 04 30 37.3 +0.6**
baz=267,SNR=10.0
I26A New Underwood 101.34 47 P **Pdif 04 30 38.2 +1.1**
baz=267,SNR=15
B25A Knox Farm, Ray 101.36 43 P **Pdif 04 30 37.7 +0.7**
baz=267,SNR=5.8
A25A Swangstu Ranch 101.42 42 P **Pdif 04 30 37.8 +0.5**
baz=267,SNR=25
H26A Fairpoint 101.43 46 P **Pdif 04 30 38.9 +1.4**
baz=267
F26A Lodgepole 101.57 45 P **Pdif 04 30 38.6 +0.5**
baz=267,SNR=8.4
G26A Maurine 101.59 46 P **Pdif 04 30 39.3 +1.0**
baz=267,SNR=45
AMTX Amarillo 101.61 56 P **Pdif 04 30 38.8 +0.2**
baz=265
AMTX Amarillo 101.61 56 *e*Pdif **Pdif 04 30 38.8 +0.2**
E26A Carlson Angus 101.75 45 P **Pdif 04 30 40.0 +1.2**
baz=267,SNR=17
OGNE Ogallala 101.76 50 PFAKE 04 30 50.0 +11
OGNE LR LR
comp=Z,12µm,19.0s
D26A Manning 101.79 44 P **Pdif 04 30 39.6 +0.6**
baz=268,SNR=39
J27A Elkhorn Farm, 101.91 48 P **Pdif 04 30 40.5 +0.8**
baz=267,SNR=8.0
I27A Quinn 101.92 47 P **Pdif 04 30 40.5 +0.8**
baz=267,SNR=12
H27A Howes 101.93 46 P **Pdif 04 30 40.0 +0.3**
baz=267,SNR=13
B26A Jensen Ranch, 101.98 43 P **Pdif 04 30 40.5 +0.7**
baz=268,SNR=10
F27A Lemmon 102.03 45 P **Pdif 04 30 41.1 +0.9**
baz=268,SNR=24
C26A Wahner Farm, P 102.06 43 P **Pdif 04 30 41.1 +0.9**
baz=268,SNR=55
G27A Dupree 102.07 46 P **Pdif 04 30 40.9 +0.6**
baz=268,SNR=18
A26A Wade Farm, Ken 102.13 42 P **Pdif 04 30 40.2 -0.3**
baz=268,SNR=18
FFC Flin Flon 102.29 36 *e*P **Pdif 04 30 40.0 -1.0**
FFC MLR MLR
comp=Z,13µm,20.0s
FFC Flin Flon 102.29 36 *e*Pdif **Pdif 04 30 40.0 -1.0**
FFC LR LR
comp=Z,13µm,20.0s
E27A Carson 102.37 45 P **Pdif 04 30 42.4 +0.8**
baz=268,SNR=44
D27A Center 102.42 44 P **Pdif 04 30 42.3 +0.5**
baz=268
C27A Sayler Ranch, 102.45 43 P **Pdif 04 30 42.2 +0.2**
baz=268,SNR=11
J28A Allard Ranch, 102.48 48 P **Pdif 04 30 42.5 +0.3**
baz=268,SNR=6.3
832A Faith Ranch, C 102.51 63 P **Pdif 04 30 42.8 +0.2**
baz=265,SNR=8.9
I28A Midland 102.56 47 P **Pdif 04 30 43.6 +1.1**
baz=268,SNR=8.5
B27A Peters Farms, 102.63 43 P **Pdif 04 30 43.1 +0.5**
baz=269
A27A Ledoux Ranch, 102.66 42 P **Pdif 04 30 44.0 +1.2**
baz=269,SNR=8.8
TLIG Tlapa 102.68 74 *e*Pdif **Pdif 04 30 51.9 +8.2**
JCT Junction City 102.84 61 P **Pdif 04 30 44.8 +0.8**
baz=266
JCT Junction City 102.84 61 *e*P **Pdif 04 30 45.0 +0.9**
JCT MLR MLR
comp=Z,18µm,22.0s
JCT Junction City 102.84 61 *e*Pdif **Pdif 04 30 45.0 +0.9**
JCT LR LR
comp=Z,18µm,22.0s
F28A McLaughlin 102.88 45 P **Pdif 04 30 46.0 +2.1**
baz=268,SNR=25
E28A Huff 102.97 44 P **Pdif 04 30 46.3 +2.1**
baz=269
933A Laxdo 103.07 64 P **Pdif 04 30 47.9 +2.8**
baz=265,SNR=7.5
D28A Regan 103.07 44 P **Pdif 04 30 46.2 +1.5**
baz=269
ABTX Abilene, Hawle 103.14 59 *e*Pdif **Pdif 04 30 49.3 +4.0**
I29A Vivian Onida 103.18 47 P **Pdif 04 30 47.5 +2.2**
baz=268,SNR=6.4
C28A Hausauer Farms 103.20 43 P **Pdif 04 30 46.9 +1.7**
baz=269,SNR=9.4
B28A Dugan Ranch, T 103.23 43 P **Pdif 04 30 47.2 +1.9**
baz=269,SNR=30
A28A Rude Farm, Bot 103.30 42 P **Pdif 04 30 47.1 +1.4**
baz=270,SNR=18
633A Saathoff Ranch 103.31 62 P **Pdif 04 30 47.5 +1.3**
baz=266
CBKS Cedar Bluff 103.41 52 P **Pdif 04 30 48.8 +2.4**
baz=267
CBKS Cedar Bluff 103.41 52 *e*P **Pdif 04 30 50.3 +3.9**
CBKS MLR MLR
comp=Z,19µm,20.0s
CBKS Cedar Bluff 103.41 52 *e*Pdif **Pdif 04 30 50.3 +3.9**
CBKS LR LR
comp=Z,19µm,20.0s
533A Kerrville 103.47 61 P **Pdif 04 30 49.1 +2.2**
baz=266
433A Art 103.48 61 P **Pdif 04 30 49.0 +2.1**
baz=266
X32A Elmer 103.55 57 P **Pdif 04 30 48.8 +1.7**
baz=267
F29A Eureka 103.56 45 P **Pdif 04 30 49.4 +2.5**
baz=269
RES Resolute Bay 103.58 15 Pdiff **Pdif 04 30 47.7 +1.4**
comp=Z,8.4nm,1.1s,baz=254,slow=3.8,SNR=9.2
RES PKiKP **PKiKP 04 35 05.5 +1.3**
comp=Z,41nm,1.2s,baz=198,slow=4.2,SNR=5.8
RES PKKPbc **PKKPbc 04 46 40.0 -1.7**
comp=Z,3.1nm,0.8s,baz=96,slow=2.2,SNR=5.6
RES PKKPab PKKPdf 04 46 59.5 +10
comp=Z,11nm,1.2s,baz=141,slow=3.3,SNR=5.7
RES Resolute Bay 103.58 15 *e*P **Pdif 04 30 48.3 +2.0**
RES *i* 04 35 05.6
RES Resolute Bay 103.58 15 *e*Pdif **Pdif 04 30 48.3 +2.0**
RES PKiKP **PKiKP 04 35 05.5 +1.3**
RES PKKPbc **PKKPbc 04 46 40.0 -1.7**
RES PKKPab PKKPdf 04 46 59.5 +10
333A Richland Sprin 103.61 60 P **Pdif 04 30 49.7 +2.2**
baz=266
W32A Sentinel 103.62 56 P **Pdif 04 30 48.0 +0.6**
baz=267
K30A Basset 103.64 49 P **Pdif 04 30 48.8 +1.4**
baz=268
233A Rising Star 103.73 59 P **Pdif 04 30 48.7 +0.7**
baz=266
D29A Pettibone, Tap 103.73 44 P **Pdif 04 30 48.7 +1.1**
baz=270
V32A Arapaho 103.82 56 P **Pdif 04 30 49.7 +1.5**
baz=267
B29A Wagenman Farm, 103.90 43 P **Pdif 04 30 50.1 +1.8**
baz=268,SNR=10
Z33A Whitaker Ranch 103.92 58 P **Pdif 04 30 50.0 +1.3**
baz=267
534A Blanco 103.96 62 P **Pdif 04 30 50.6 +1.6**
baz=266
A29A Manning Farm, 103.98 42 P **Pdif 04 30 48.7 0.0**
baz=270,SNR=23
WMOK Wichita Mounta 103.98 57 PFAKE 04 31 00.0 +11
WMOK LR LR
comp=Z,12µm,20.0s
E30A Jud 104.20 45 P **Pdif 04 30 51.0 +1.2**
baz=270
X33A Lawton 104.20 57 P **Pdif 04 30 50.9 +0.9**
baz=267
L31A Butterfield Fa 104.21 49 P **Pdif 04 30 50.9 +1.0**
baz=269
334A Lometa 104.25 60 P **Pdif 04 30 52.5 +2.2**
baz=266,SNR=9.8
KVTX Kingsville 104.29 64 PFAKE 04 31 00.0 +10
KVTX LR LR
comp=Z,8µm,20.0s
D30A Buchanan 104.31 44 P **Pdif 04 30 51.3 +1.1**
baz=270,SNR=20
P32A Huiting Farm, 104.32 52 P **Pdif 04 30 53.8 +3.3**
baz=268
234A Clairette 104.37 60 P **Pdif 04 30 51.9 +1.1**
baz=267
V33A Lossen Ranch, 104.44 56 P **Pdif 04 30 52.6 +1.5**
baz=268
735A Kenedy 104.46 63 P **Pdif 04 30 53.3 +2.1**
baz=266
C30A Mose, Pekin 104.49 43 P **Pdif 04 30 53.0 +2.0**
baz=270,SNR=18
H31A Wolsey 104.50 47 P **Pdif 04 30 52.9 +1.8**
baz=270,SNR=5.8
B30A Myrvik Farm, E 104.58 43 P **Pdif 04 30 50.6 -0.8**
baz=271,SNR=25
A30A Hoffart Farm, 104.60 42 P **Pdif 04 30 51.3 -0.1**
baz=271,SNR=25
U33A Lingo Farm, Me 104.60 55 P **Pdif 04 30 53.2 +1.4**
baz=268
F31A Hecla 104.66 45 P **Pdif 04 30 54.0 +2.2**
baz=270
535A Dale 104.74 62 P **Pdif 04 30 52.1 -0.4**
baz=266
E31A Nome 104.91 45 P **Pdif 04 30 54.6 +1.8**
baz=271,SNR=8.1
B31A Greenbush Farm 105.04 43 P **PKiKP 04 35 08.7 +1.0**
baz=271
V34A Guthrie 105.06 56 *e*Pdif **Pdif 04 30 55.4 +1.6**
U34A Anderson Ranch 105.07 55 *e*Pdif **Pdif 04 30 56.8 +3.0**
O33A Hebron 105.12 51 P **PKiKP 04 35 09.0 +0.9**
baz=269
AB31 Akbulak array 105.15 318 *i* P **Pdif 04 30 51.4 -2.4**
AB31 pmax pmax
comp=Z,16nm,1.0s
ABKAR Akbulak array 105.15 318 *e*Pdif **Pdif 04 30 52.1 -1.7**
436A Wall Ranch, Ga 105.45 61 P **Pdif 04 30 54.7 -0.9**
baz=267
X35A Drake 105.46 57 P **Pdif 04 30 55.6 +0.1**
baz=268
E32A Braaten, Kindr 105.47 44 P **Pdif 04 30 55.5 +0.2**
baz=271
D32A Dogwood Acres, 105.50 44 P **Pdif 04 30 57.1 +1.7**
baz=272
WSAR Wadi Sarin 105.53 291 Pdiff **Pdif 04 30 55.8 -0.3**
comp=Z,6.1nm,1.1s,baz=123,slow=7.2,SNR=3.5
WSAR PKiKP **PKiKP 04 35 09.7 +0.3**
comp=Z,8.5nm,1.1s,baz=45,slow=2.9,SNR=2.7
WSAR PKKPbc **PKKPbc 04 46 35.5 +1.2**
comp=Z,16nm,0.8s,baz=258,slow=4.5,SNR=17
W35A Tecumseh 105.57 56 P **Pdif 04 30 55.1 -0.9**
baz=268
K33A Hardington 105.57 49 P **Pdif 04 30 56.3 +0.4**
baz=270
ARU Arti 105.58 326 Pdiff **Pdif 04 30 53.6 -2.0**
comp=Z,8.9nm,0.8s,baz=90,slow=2.3,SNR=15
ARU Arti 105.58 326 P **Pdif 04 30 55.4 -0.2**
ARU S **SKSac 04 41 26.5 -1.2**
ARU SP **SP 04 44 18.3 -7.0**
ARU PS **PS 04 44 33.6 -2.8**
ARU MLR MLR
comp=Z,19µm,23.0s
ARU Arti 105.58 326 *e*Pdif **Pdif 04 30 54.4 -1.2**
ARU LR LR
comp=Z,18µm,22.0s
J33A Davis 105.59 48 P **Pdif 04 30 56.3 +0.3**
baz=270
Q34A Chapman 105.60 52 P **Pdif 04 30 55.3 -0.8**
baz=269
V35A Meyer Ranch, C 105.61 56 P **Pdif 04 30 56.3 0.0**
baz=268
737A Port Lavaca 105.65 63 P **Pdif 04 30 55.6 -0.9**
baz=267
P34A Walnut Farm, R 105.69 52 P **Pdif 04 30 55.2 -1.3**
baz=270
P34A P **PKiKP 04 35 10.4 +1.2**
baz=270
I33A Coleman 105.71 47 P **Pdif 04 30 55.9 -0.5**
baz=271
U35A Pawnee 105.72 55 P **Pdif 04 30 56.9 +0.2**
baz=269
H33A Prehn Over Nor 105.74 46 P **Pdif 04 30 55.8 -0.8**
baz=271
136A Ennis 105.76 59 P **Pdif 04 30 56.8 -0.1**
baz=268
637A Eagle Lake 105.78 62 P **Pdif 04 30 57.2 +0.1**
baz=267
B32A Ashes, Strandq 105.78 43 P **Pdif 04 30 57.4 +0.7**
baz=272,SNR=18
B32A P **PKiKP 04 35 10.2 +1.1**
baz=272
A32A Rocking H Ranc 105.79 42 P **Pdif 04 30 57.3 +0.6**
baz=272,SNR=14
A32A P **PKiKP 04 35 10.7 +1.6**
baz=272
C32A Crookston 105.81 43 P **Pdif 04 30 58.5 +1.7**
baz=272
537A Green Hill Far 105.83 62 P **Pdif 04 30 58.5 +1.2**
baz=267
ECSD EROS Data Cent 105.84 47 P **Pdif 04 30 58.2 +1.1**
baz=271,SNR=21
ECSD P **PKiKP 04 35 10.8 +1.4**
baz=271
ECSD EROS Data Cent 105.84 47 *e*Pdif **Pdif 04 30 58.5 +1.4**
ECSD LR LR
comp=Z,10µm,20.0s
KSU1 Kansas State U 105.86 52 P **Pdif 04 30 58.4 +1.2**
baz=270
KSU1 Kansas State U 105.86 52 *e*Pdif **Pdif 04 31 01.5 +4.2**
KSU1 LR LR
comp=Z,24µm,22.0s
Z36A Blue Ridge 105.87 58 P **Pdif 04 30 56.9 -0.5**
baz=268
M34A Aspy Farms, Fr 105.89 50 P **Pdif 04 30 56.9 -0.4**
baz=270
T35A Sooner Cattle 105.90 55 P **Pdif 04 30 58.8 +1.3**
baz=269
G33A Ortonville 105.94 46 P **Pdif 04 30 58.9 +1.5**
baz=271,SNR=18
G33A P **PKiKP 04 35 10.8 +1.4**
baz=271
N34A Lincoln 105.95 50 P **Pdif 04 30 58.8 +1.2**
baz=270
X36A Centrahoma 105.98 57 P **Pdif 04 30 58.5 +0.6**
baz=268
437A Pinnamn Ranch, 106.02 61 P **Pdif 04 30 59.0 +0.9**
baz=267
F33A 5 Mile Ranch, 106.03 45 P **Pdif 04 30 59.4 +1.5**
baz=272
L34A Svendsen Farm, 106.04 49 P **Pdif 04 30 57.5 -0.5**
baz=270
S35A Otter Creek Ra 106.07 54 P **Pdif 04 30 57.7 -0.6**
baz=269
S35A P **PKiKP 04 35 11.8 +1.8**
baz=269
W36A Wetumka 106.10 56 P **Pdif 04 30 59.9 +1.5**
baz=269
CMIG Matias Romero 106.12 75 PKKPbc PKKPbc 04 46 33.0 +0.8
comp=Z,2.6nm,0.9s,baz=163,slow=17,SNR=2.6
CMIG PKKPab **PKKPab 04 46 49.1 +0.5**
comp=Z,4.4nm,1.0s,baz=344,slow=4.0,SNR=3.8
ULM Lac du Bonnet 106.13 41 Pdiff **Pdif 04 30 56.9 -1.2**
comp=Z,28nm,0.9s,baz=287,slow=5.2,SNR=26
ULM PKiKP **PKiKP 04 35 10.4 +0.8**
comp=Z,13nm,0.8s,baz=297,slow=4.0,SNR=6.6
ULM PKKPbc **PKKPbc 04 46 31.4 -2.0**
comp=Z,2.6nm,0.7s,baz=139,slow=7.4,SNR=2.3
ULM PKKP **PKKPdf 04 46 42.8 -2.0**
comp=Z,2.4nm,0.7s,baz=90,slow=4.0,SNR=2.7
ULM PKKPab **PKKPab 04 46 48.5 +0.9**
comp=Z,3.9nm,0.8s,baz=98,slow=9.3,SNR=3.2
R35A Emporia Munici 106.17 53 P **Pdif 04 30 60.0 +1.3**
baz=270
E33A Westby DABS, E 106.21 45 P **Pdif 04 31 00.1 +1.5**
baz=272
AGMN Agassiz Nation 106.23 43 P **Pdif 04 31 00.1 +1.4**
baz=273
AGMN Agassiz Nation 106.23 43 *e*Pdif **Pdif 04 30 54.7 -4.0**
AGMN LR LR
comp=Z,10µm,21.0s
K34A Le Mars 106.24 49 P **Pdif 04 31 00.8 +1.9**
baz=271
HKT Hockley 106.24 62 *e*PKP 04 35 08.8
HKT *e*PP **PP 04 35 24.7 +0.4**
337A Centerville 106.26 60 P **Pdif 04 31 00.9 +1.7**
baz=268
D33A AnnSam, Waubun 106.30 44 P **Pdif 04 31 00.5 +1.5**
baz=272
C33A Trail 106.32 43 P **Pdif 04 31 00.0 +1.0**
baz=273,SNR=7.9
P35A Duane Minner, 106.32 52 P **Pdif 04 31 00.6 +1.4**

baz=270
P35A P PKiKP 04 35 11.8 +1.5
baz=270
J34A George 106.33 48 P Pdif 04 31 00.1 +0.8
baz=271
AKTO Aktyubinsk 106.34 320 Pdiff Pdif 04 30 58.5 -0.6
comp=Z,9.8nm,1.0s,baz=76,slow=6.3,SNR=17
AKTO PKiKP PKiKP 04 35 10.8 +0.8
comp=Z,6.3nm,0.9s,baz=84,slow=10,SNR=3.2
V36A Jenks 106.34 56 P Pdif 04 31 01.0 +1.5
baz=269
FCC Fort Churchill 106.40 32 *e*P Pdif 04 30 58.0 -1.1
FCC Fort Churchill 106.40 32 *e*Pdif Pdif 04 30 58.0 -1.1
137A Heron Place, G 106.41 59 P Pdif 04 31 01.7 +1.8
baz=268
T36A Boggs Farm, Ca 106.41 54 P Pdif 04 31 01.5 +1.8
baz=269
B33A Robert and Kas 106.42 43 P Pdif 04 30 59.7 +0.2
baz=273
B33A P PKiKP 04 35 11.3 +1.1
baz=273
H34A Spellman Lake, 106.43 46 P Pdif 04 30 59.1 -0.6
baz=272,SNR=13
H34A P PKiKP 04 35 11.8 +1.5
baz=272
TUL1 Leonard 106.47 56 P Pdif 04 31 01.6 +1.6
baz=269
TUL1 Leonard 106.47 56 *e*Pdif Pdif 04 31 07.3 +7.2
G34A Benson 106.51 46 P Pdif 04 30 59.9 -0.1
baz=272,SNR=13
G34A P PKiKP 04 35 11.9 +1.4
baz=272
A33A Warroad 106.51 42 P Pdif 04 30 59.9 0.0
baz=273,SNR=7.4
U36A Oologah 106.52 55 P Pdif 04 30 59.5 -0.7
baz=269
Z37A Pogue Cattle C 106.54 58 P Pdif 04 30 59.2 -1.2
baz=268
M35A Neola 106.55 50 P Pdif 04 30 59.1 -1.1
baz=271
Y37A Hugo 106.57 58 P Pdif 04 30 59.2 -1.3
baz=269
N35A Tabor 106.60 50 P Pdif 04 30 59.9 -0.6
baz=271
GEYT Alibeck 106.62 307 Pdiff Pdif 04 31 00.6 -0.1
comp=Z,1.6nm,0.5s,baz=2.9,slow=2.9,SNR=4.7
GEYT PKiKP PKiKP 04 35 10.5 -0.5
comp=Z,3.1nm,0.6s,baz=146,slow=6.2,SNR=5.1
GEYT PKKPab PKKPab 04 46 47.1 +1.4
comp=Z,4.5nm,0.8s,baz=262,slow=7.0,SNR=3.8
S36A Lake Cedric, C 106.65 54 P Pdif 04 31 02.1 +1.3
baz=270
S36A P PKiKP 04 35 12.4 +1.4
baz=270
L35A Bielow Farm, R 106.66 49 P Pdif 04 31 00.5 -0.3
baz=271
R36A Gordon, Harris 106.72 53 P Pdif 04 30 59.9 -1.1
baz=270
D34A Park Rapids 106.74 44 P Pdif 04 31 02.6 +1.6
baz=273,SNR=12
W37B Quinton 106.75 56 P Pdif 04 31 00.8 -0.5
baz=269
W37B P PKiKP 04 35 12.9 +1.6
baz=269
338A Crockett 106.75 60 P Pdif 04 31 02.7 +1.3
baz=268
F34A Alexandria 106.75 45 P Pdif 04 31 02.1 +1.1
baz=272
F34A P PKiKP 04 35 12.4 +1.5
baz=272
E34A Wadena 106.78 45 P Pdif 04 31 03.1 +1.9
baz=273
X37A Clayton 106.79 57 P Pdif 04 31 04.0 +2.5
baz=269
X37A P PKiKP 04 35 11.8 +0.5
baz=269
C34A RKJ Ranch, Bem 106.91 43 P Pdif 04 31 02.8 +1.1
baz=273
238A Jacksonville 106.93 60 P Pdif 04 31 04.4 +2.3
baz=268
138A Matatall Enter 106.98 59 P Pdif 04 31 02.8 +0.5
baz=268
V37A Hulbert 107.00 56 P Pdif 04 31 02.6 +0.2
baz=269,SNR=10
U37A Salina 107.02 55 P Pdif 04 31 02.5 0.0
baz=270
I35A Creekview Farm 107.02 47 P Pdif 04 31 04.1 +1.8
baz=272
B34A Aery, Baudette 107.03 42 P Pdif 04 31 02.6 +0.4
baz=274,SNR=5.9
B34A P PKiKP 04 35 12.4 +1.1
baz=274
Z38A Mt. Pleasant 107.08 58 P Pdif 04 31 03.4 +0.6
baz=269
H35A Sunnyside Ranc 107.10 46 P Pdif 04 31 02.6 0.0
baz=272,SNR=11
H35A P PKiKP 04 35 13.1 +1.5
baz=272
T37A Cheneyville 18 107.18 54 P Pdif 04 31 04.7 +1.5
baz=270
F35A Swanville 107.23 45 P Pdif 04 31 05.7 +2.5
baz=273,SNR=6.0
F35A P PKiKP 04 35 13.2 +1.4
baz=273
X38A Whitesboro 107.24 57 P Pdif 04 31 04.1 +0.7
baz=269
R37A Teagarden Farm 107.25 53 P Pdif 04 31 04.2 +0.8
baz=270
S37A Fort Scott 107.25 54 P Pdif 04 31 05.5 +2.1
baz=270
S37A P PKiKP 04 35 13.4 +1.3
baz=270
E35A Pequot Lakes 107.31 44 P PKiKP 04 35 12.8 +0.8
baz=273
NATX Nacogdoches 107.32 60 *e*PKP PKiKP 04 35 12.1 -0.3
NATX *e*PP PP 04 35 30.1 -2.1
NATX LR LR
comp=Z,16µm,20.0s
G35A Watkins 107.32 46 P PKiKP 04 35 13.6 +1.6
baz=273
K36A Gilmore City 107.45 49 P PKiKP 04 35 13.7 +1.3
baz=272
J36A Seneca 1, Swea 107.51 48 P PKiKP 04 35 12.9 +0.5
baz=272
N37A Lee Faris, Mou 107.69 51 P PKiKP 04 35 13.2 +0.4
baz=272
I36A Fitzsimmons Fa 107.72 47 P PKiKP 04 35 13.1 +0.3
baz=273
H36A Jessenland, He 107.75 47 P PKiKP 04 35 13.5 +0.6
baz=273
Z39A Irene McRaven, 107.75 58 P PKiKP 04 35 13.3 +0.1
baz=269
M37A Trindle Farm, 107.79 50 P PKiKP 04 35 14.1 +1.1
baz=272
G36A St. Michael 107.84 46 P PKiKP 04 35 13.4 +0.4
baz=273
UOSS Minazif 107.86 293 *e*Pdif Pdif 04 31 06.2 -0.3
F36A Milaca 107.96 45 P PKiKP 04 35 13.9 +0.7
baz=274
HHAR Hobbs 107.97 55 *e*Pdif Pdif 04 31 10.4 +3.7
R38A Fenwick Farm, 107.98 53 P PKiKP 04 35 12.4 -1.1
baz=271
S38A Stockton 107.98 54 P PKiKP 04 35 12.7 -0.8
baz=271
L37A Phoenix Point, 107.99 49 P PKiKP 04 35 12.8 -0.5
baz=272
PAYG Puerto Ayora 108.03 94 PFAKE 04 35 30.0
PAYG LR LR
comp=Z,7µm,20.0s
K37A Belmond 108.05 48 P PKiKP 04 35 13.8 +0.3
baz=273
J37A Redenius Farm, 108.08 48 P PKiKP 04 35 13.9 +0.4
baz=273
E36A McGregor 108.10 44 P PKiKP 04 35 14.3 +0.8
baz=274
D36A Goodland 108.12 44 P PKiKP 04 35 14.0 +0.5
baz=274
I37A Lemond, Waseca 108.16 47 P PKiKP 04 35 14.0 +0.3
baz=273
Q38A Cooks Store, C 108.19 52 P PKiKP 04 35 13.7 -0.1
baz=271
V39A Pettigrew 108.21 56 P PKiKP 04 35 14.1 0.0
baz=270
P38A Dawn 108.24 52 P PKiKP 04 35 14.3 +0.4
baz=272
MIAR Mount Ida 108.27 57 P PKiKP 04 35 14.8 +0.7
baz=270
MIAR Mount Ida 108.27 57 *e*P Pdif 04 31 14.3 +6.3
MIAR MLR MLR
comp=Z,18µm,22.0s
MIAR Mount Ida 108.27 57 *e*Pdif Pdif 04 31 14.3 +6.3
MIAR LR LR
comp=Z,18µm,22.0s
O38A Galt 108.27 51 P PKiKP 04 35 14.8 +0.9
baz=272
C36A Pine Crest Far 108.29 43 P PKiKP 04 35 14.7 +0.9
baz=275
U39A Green Forest 108.34 55 P PKiKP 04 35 14.4 +0.2
baz=271
SCIA State Center 108.40 49 *e*PKP PKiKP 04 35 14.6 +0.5
SCIA *e*PP PP 04 35 40.8 +1.0
SCIA LR LR
comp=Z,16µm,20.0s
Z40A Long Farm, Mag 108.41 58 P PKiKP 04 35 14.3 -0.1
baz=270
T39A Clever 108.42 54 P PKiKP 04 35 15.2 +0.9
baz=271
N38A Joes South For 108.43 50 P PKiKP 04 35 15.4 +1.1
baz=272
M38A Pleasantville 108.43 50 P PKiKP 04 35 15.6 +1.4
baz=272
S39A Bolivar 108.45 54 P PKiKP 04 35 15.3 +1.0
baz=271
SPMN Marine on St. 108.51 46 P PKiKP 04 35 15.2 +1.0
baz=274
SPMN Marine on St. 108.51 46 *e*Pdif Pdif 04 31 12.9 +4.0
Y40A Okolona 108.51 58 P PKiKP 04 35 15.6 +1.1
baz=270
L38A Oak Wood Farm, 108.58 49 P PKiKP 04 35 14.3 -0.1
baz=273
D37A Cotton 108.62 44 P PKiKP 04 35 14.8 +0.4
baz=275
R39A Chumby, Stover 108.66 53 P PKiKP 04 35 14.7 0.0
baz=272
Q39A Willow Grove F 108.69 52 P PKiKP 04 35 14.7 -0.1
baz=272
E37A Wrenshall 108.69 44 P PKiKP 04 35 15.0 +0.5
baz=275
K38A Parkersburg 108.69 48 P PKiKP 04 35 14.3 -0.4
baz=273
C37A Embarrass 108.73 43 P PKiKP 04 35 14.6 0.0
baz=275
241A Mo Tay, Goldon 108.80 60 P PKiKP 04 35 15.0 -0.2
baz=269
U40A Yellville 108.85 55 P PKiKP 04 35 15.2 +0.1
baz=271
J38A Wedel Dairy, R 108.87 48 P PKiKP 04 35 15.4 +0.5
baz=274
V40A Witts Springs 108.88 56 P PKiKP 04 35 15.7 +0.4
baz=271
X40A Basin Creek Fa 108.88 57 P PKiKP 04 35 15.5 +0.2
baz=270
OPO Ambohidratompo 108.90 246 PKiKP PKiKP 04 35 16.0 +0.1
comp=Z,7.7nm,0.8s,baz=16,slow=1.8,SNR=6.1
OPO PKKPbc PKKPbc 04 46 25.7 +1.9
comp=Z,12nm,1.0s,baz=260,slow=2.2,SNR=3.7
I38A Scanlan Farm, 108.93 47 P PKiKP 04 35 15.6 +0.5
baz=274
O39A Kirksville 108.98 51 P PKiKP 04 35 16.1 +0.9
baz=272
N39A Derby Farms, D 108.98 50 P PKiKP 04 35 15.6 +0.3
baz=273
542A Morse 109.09 62 P PKiKP 04 35 17.0 +1.3
baz=269
T40A Mansfield 109.10 54 P PKiKP 04 35 16.5 +0.8
baz=271
S40A Lebanon 109.10 54 P PKiKP 04 35 14.9 -0.7
baz=272
EYMN Ely 109.18 43 P PKiKP 04 35 15.9 +0.5
baz=276
EYMN Ely 109.18 43 *e*PKP 04 35 16.5
EYMN *e*PP PP 04 35 43.8 -1.4
EYMN LR LR
comp=Z,13µm,19.0s
C38A Sawbill Land. 109.35 43 P PKiKP 04 35 16.3 +0.5
baz=276
W41A Tony Mavity, V 109.36 56 P PKiKP 04 35 16.2 +0.1
baz=271
W41B Gary Mavity, V 109.36 56 P PKiKP 04 35 16.5 +0.4
baz=271
P40A Paris 109.39 52 P PKiKP 04 35 16.3 +0.2
baz=272
Q40A Laux Farm, Aux 109.39 52 P PKiKP 04 35 16.1 0.0
baz=272
O40A La Belle 109.50 51 P PKiKP 04 35 16.7 +0.5
baz=273
EFI East Falkland 109.53 155 PFAKE 04 35 30.0
EFI LR LR
comp=Z,17µm,22.0s
Z42A Norrel Spur, H 109.62 58 P PKiKP 04 35 15.8 -0.9
baz=270
KBS Kingsbay 109.81 354 *e*PP PP 04 35 49.5 +0.7
KBS IVMs_BB IVMs_BB 05 12 10.3
comp=Z,9µm,27.6s
KBS Kingsbay 109.81 354 PFAKE 04 35 30.0
KBS LR LR
comp=Z,17µm,22.0s
HOPEN Hopen 109.91 350 *e* 04 34 47.9
HOPEN *e*PP PP 04 35 50.8 +1.3
HOPEN *e*SKSac SKSac 04 41 47.0 +1.3
SPITS Spitsbergen Ar 109.92 353 Pdiff Pdif 04 31 15.3 +0.8
comp=Z,9.5nm,1.0s,baz=258,slow=20,SNR=3.1
SPITS PKiKP PKiKP 04 35 14.7 -1.4
comp=Z,15nm,0.8s,baz=116,slow=3.4,SNR=7.1
SPITS PKKPbc PKKPbc 04 46 21.4 -0.8
comp=Z,7.7nm,0.9s,baz=156,slow=6.4,SNR=7.9
PLCA Paso Flores 110.26 140 PKKPbc PKKPbc 04 46 20.6 +0.5
comp=Z,9.6nm,1.0s,baz=117,slow=5.5,SNR=7.2
PLCA PKKPab PKKPab 04 46 31.6 0.0
comp=Z,24nm,0.9s,baz=82,slow=3.2,SNR=18
JFWS Jewell Farm 110.53 48 *e*PKIKP PKiKP 04 35 18.4 +0.3
JFWS MLR MLR
comp=Z,12µm,21.0s
JFWS Jewell Farm 110.53 48 *e*PKP PKiKP 04 35 18.4 +0.3
JFWS LR LR
comp=Z,12µm,21.0s
545A Edgard 110.88 62 P PKiKP 04 35 18.0 -1.1
baz=270
Z44A Pea Ridge, Bel 110.89 58 P PKiKP 04 35 18.4 -0.6
baz=271
HSPB Hornsund (broa 110.98 352 *e*PP PP 04 35 57.4 +0.1
HSPB Hornsund (broa 110.98 352 *e*P Pdif 04 31 25.6 +6.4
HSPB *e* 04 35 56.0
HSPB *e* 04 41 51.1
HSPB *e*SP SP 04 45 13.1 -5.0
HSPB *e*PS PS 04 45 33.3 +4.0
COWI Conover 110.99 45 *e*PKP PKiKP 04 35 19.7 +0.8
445A Amite 111.01 61 P PKiKP 04 35 19.0 -0.4
baz=270
Y44A Strider, Charl 111.06 58 P PKiKP 04 35 19.1 -0.3
baz=272
HDIL Hopedale 111.43 51 P PKiKP 04 35 18.9 -1.0
baz=275
HDIL Hopedale 111.43 51 *e*PKP PKiKP 04 35 20.4 +0.5
HDIL LR LR
comp=Z,21µm,20.0s
Y45A Yeager Farm, C 111.62 58 P PKiKP 04 35 20.4 -0.1
baz=272
BJO Bjornoya 112.37 350 *e*PP PP 04 36 03.9 -3.3
TEIG Tepich 112.62 72 PFAKE 04 35 30.0
TEIG LR LR
comp=Z,3µm,20.0s
LVZ Lovozero 112.79 341 PFAKE 04 35 30.0
LVZ LR LR
comp=Z,19µm,22.0s
SFIN Lafayette 113.12 51 *e*PKP PKiKP 04 35 23.2 +0.2
SFIN *e*PP PP 04 36 12.1 -1.7
Z48A Northport 113.30 58 P PKiKP 04 35 24.3 +0.6
baz=273
DAG Danmarks Havn 113.61 360 *i* P PKiKP 04 35 25.1 +2.1
LRAL Lakeview Retre 113.78 58 *e*PKP PKiKP 04 35 25.2 +0.6
HOPE Hope Point 113.88 169 PFAKE 04 35 40.0
HOPE LR LR
comp=Z,7µm,20.0s
WCI Wyandotte Cave 113.96 53 *e*PKIKP PKiKP 04 35 25.2 +0.3
WCI Wyandotte Cave 113.96 53 *e*PKP PKiKP 04 35 25.1 +0.3
KEV Kevo 113.98 344 PFAKE 04 35 40.0
KEV LR LR
comp=Z,16µm,22.0s
KLMR Klimovskoe 114.15 333 *e*P Pdif 04 31 31.1 -2.4
KLMR *e*SS SS 04 51 59.7 -4.4
KLMR pmax pmax
comp=Z,40nm,1.4s
KLMR MLR MLR
comp=Z,23µm,22.0s
ARCES ARCESS Array B 114.52 344 Pdiff Pdif 04 31 38.8 +3.7
comp=Z,2.9nm,0.7s,baz=34,slow=6.6,SNR=3.7
ARCES PKP PKiKP 04 35 23.5 -1.4
comp=Z,15nm,0.6s,baz=79,slow=1.4,SNR=26
ARCES PKKPbc PKKPbc 04 46 02.6 -4.0
comp=Z,18nm,1.1s,baz=311,slow=2.4,SNR=6.9
ARCES PKKPab PKKPab 04 46 07.7 -2.3
comp=Z,14nm,1.0s,baz=253,slow=0.9,SNR=8.1
ARCES PKKP PKKPdf 04 46 27.2 -2.1
comp=Z,5.0nm,0.7s,baz=241,slow=3.0,SNR=4.3
ARE0 ARCESS Array S 114.52 344 *e*PP PP 04 36 22.5 -0.1
JTS JuntasAbangare 114.99 83 PKP PKPdf 04 35 26.8 -0.6
comp=Z,6.8nm,0.7s,baz=265,slow=2.3,SNR=3.7
JTS PP PP 04 36 23.7 -4.1
comp=Z,5.4nm,0.8s,baz=251,slow=8.6,SNR=3.0
JTS JuntasAbangare 114.99 83 *e*PKP PKPdf 04 35 26.7 -0.7
JTS PP PP 04 36 23.7 -4.1
JTS LR LR
comp=Z,11µm,21.0s
AAM Ann Arbor 115.43 48 *e*PKIKP PKPdf 04 35 28.1 +0.6
AAM MLR MLR
comp=Z,12µm,20.0s
AAM Ann Arbor 115.43 48 *e*PKPdf PKPdf 04 35 28.1 +0.6
AAM LR LR
comp=Z,12µm,20.0s
TRO Tromso 116.10 346 *e*PP PP 04 36 34.2 +0.7
DGRG David-gareji 116.14 311 P PKPdf 04 35 31.6 +2.6
DGRG David-gareji 116.14 311 PKIKP PKPdf 04 35 31.5 +2.6
ACSO Alum Creek Sta 116.26 50 *e*PKPdf PKPdf 04 35 28.9 -0.3
ACSO LR LR
comp=Z,16µm,20.0s
FRB Frobisher Bay 116.26 22 PKP PKPdf 04 35 28.8 +0.4
comp=Z,39nm,0.9s,baz=326,slow=1.7,SNR=18
FRB PP PP 04 36 35.4 +0.5
comp=Z,66nm,1.2s,baz=299,slow=7.4,SNR=6.7
TZTN Tazewell 116.32 54 *e*PKPdf PKPdf 04 35 30.6 +1.2
VRH Novokhopyorsk 116.35 322 *e*P Pdif 04 31 43.4 -0.2
VRH *i* 04 35 28.3
VRH *e* 04 42 10.9
VRH *e*PS PS 04 46 12.7 -6.7
VRH *e*SS SS 04 52 26.6 -7.0
VRH pmax pmax
comp=Z,7.0nm,1.1s
LCO Las Campanas 116.42 130 PFAKE 04 35 40.0 +10
LCO LR LR
comp=Z,10µm,21.0s
TBLG Delisi 116.56 312 P PKPdf 04 35 36.4 +6.7
TBLG Delisi 116.56 312 PKIKP PKPdf 04 35 36.4 +6.7
GUDG Gudauri 116.62 312 P PKPdf 04 35 34.0 +3.9
SUMG Summit 116.71 7 *i* P PKPdf 04 35 32.1 +2.5
SUMG Summit 116.71 7 *e*PKIKP PKPdf 04 35 29.5 -0.1
SUMG Summit 116.71 7 *e*PKPdf PKPdf 04 35 29.5 -0.1
GOGA Godfrey 116.71 58 *e*PKIKP PKPdf 04 35 30.4 +0.2
GOGA MLR MLR
comp=Z,17µm,22.0s
GOGA Godfrey 116.71 58 *e*PKPdf PKPdf 04 35 30.4 +0.2
GOGA LR LR
comp=Z,17µm,22.0s
TIGA Tifton 116.76 60 P PKPdf 04 35 31.0 +0.6
baz=274
TIGA Tifton 116.76 60 *e*PKPdf PKPdf 04 35 30.5 +0.1
GNI Garni 116.83 310 *d*/*i* PKIKP PKPdf 04 35 31.7 +1.2
GNI Garni 116.83 310 *e*PKPdf PKPdf 04 35 31.3 +0.9
GNI *e*PP PP 04 36 39.3 -0.7
GNI *e*PKKPbc PKKPbc 04 45 58.9 +0.9
GNI LR LR
comp=Z,6µm,20.0s
MOS Moscow 117.09 328 *i* PKIKP PKPdf 04 35 33.9 +3.7
MOS *e*PS PKKPdf 04 46 19.7 -4.4
MOS *e*SS SS 04 52 36.0 -6.9
MOS MLR MLR
comp=N,22µm,24.0s
MOS MLR MLR
comp=E,30µm,24.0s
MOS MLR MLR
comp=Z,42µm,24.0s
TRQA Tornquist 117.15 143 *e*PKPdf PKPdf 04 35 30.2 -0.8
TRQA LR LR
comp=Z,14µm,21.0s
ONI Oni 117.34 313 P PKPdf 04 35 31.6 +0.3
ONI Oni 117.34 313 PKIKP PKPdf 04 35 31.5 +0.3
KBZ Khabaz 117.50 314 PKP PKPdf 04 35 32.1 +0.8
comp=Z,6.2nm,0.8s,baz=110,slow=6.2,SNR=7.2
KBZ PP PP 04 36 42.4 -2.0
comp=Z,18nm,1.0s,baz=63,slow=4.5,SNR=3.9
KBZ PKKPbc PKKPbc 04 45 55.5 +0.2
comp=Z,15nm,0.9s,baz=215,slow=1.2,SNR=7.8
KBZ PKKP PKKPdf 04 46 20.9 -2.1
comp=Z,5.1nm,0.8s,baz=253,slow=3.0,SNR=2.5
LPSR Galich'ya Gora 117.54 324 *e*P Pdif 04 31 47.3 -1.5
LPSR *i* 04 35 32.0
LPSR *e* 04 42 16.8
LPSR *e*PS PS 04 46 28.5 -1.6
LPSR *e*SS SS 04 52 48.8 -0.1
LPSR pmax pmax
comp=Z,10.0nm,0.8s
KIV Kislovodsk 117.60 314 ||/*i* PKIKP PKPdf 04 35 32.7 +1.0
KIV *i* 04 36 45.6
KIV *e*PPP PPP 04 39 27.2
KIV *e* 04 42 17.9
KIV *i* 04 46 36.3
KIV *i* SS SS 04 52 48.7 -1.9
KIV MLR MLR
comp=Z,16µm,24.0s
KIV Kislovodsk 117.60 314 *e*PKPdf PKPdf 04 35 30.9 -0.8
KIV *e*PKKPbc PKKPbc 04 45 54.3 -0.9
KIV LR LR
comp=Z,10µm,22.0s
CLDR Caldiran 117.62 309 *e*P PKPdf 04 35 32.5 +0.4
NEY Neytrino 117.73 314 ||/*i* PKIKP PKPdf 04 35 33.1 +1.0
VSR Storozhevoye 117.88 323 *e*P Pdif 04 31 49.6 -0.8
VSR *i* 04 35 32.2
VSR *e* 04 36 44.3
VSR *e* 04 42 15.3
VSR *e*PS PKKPdf 04 46 26.6 +4.1
VSR *e*SS SS 04 52 51.8 -1.6
VSR pmax pmax
comp=Z,6.0nm,0.9s
OBN Obninsk 117.89 328 PKP PKPdf 04 35 32.0 +0.2
comp=Z,12nm,0.5s,baz=30,slow=20,SNR=3.2
OBN Obninsk 117.89 328 ||/*i* PKIKP PKPdf 04 35 32.0 +0.2
OBN *e* 04 36 44.3
OBN *e*PPP PPP 04 39 18.2
OBN *i* 04 42 13.7
OBN *i* 04 46 23.5
OBN *e*SS SS 04 52 48.5 -4.8
OBN MLR MLR
comp=Z,44µm,23.0s
OBN Obninsk 117.89 328 PKP PKPdf 04 35 32.0 +0.2
OBN LR LR
comp=Z,20µm,22.0s
ATAH Atahualpa 118.13 104 PKP PKPdf 04 35 34.0 0.0
comp=Z,10nm,0.7s,baz=233,slow=5.1,SNR=5.3
NNA Nana 118.17 110 *e*PKIKP PKPdf 04 35 33.9 +0.3
NNA MLR MLR
comp=Z,4µm,20.0s
NNA Nana 118.17 110 *e*PKPdf PKPdf 04 35 33.9 +0.3
NNA LR LR
comp=Z,4µm,20.0s
KMSC Kings Mountain 118.27 56 P PKPdf 04 35 32.3 -0.9
baz=277
KMSC Kings Mountain 118.27 56 *e*PKPdf PKPdf 04 35 32.9 -0.3
CHVG Ch'k'valeri 118.30 313 *e*P PKPdf 04 35 35.1 +2.1
CHVG Ch'k'valeri 118.30 313 P PKPdf 04 35 34.5 +1.5
CHVG Ch'k'valeri 118.30 313 ||/*i* P PKPdf 04 35 34.1 +1.1
DAMY Dhamar 118.36 281 *e*PKPdf PKPdf 04 35 35.0 +0.7
N54A Moraine State 118.37 49 P PKPdf 04 35 32.1 -1.1
baz=282
M54A Oil Creek Stat 118.50 48 P PKPdf 04 35 32.9 -0.6
baz=282
LOF Lofoten 118.50 347 *e*PP PP 04 36 51.3 +1.1
PUL Pulkovo 118.70 334 ||/*i* PKIKP PKPdf 04 35 33.8 +0.6
BLA Blacksburg 118.71 53 *e*PKIKP PKPdf 04 35 33.8 -0.2
BLA MLR MLR
comp=Z,13µm,19.0s
BLA Blacksburg 118.71 53 *e*PKPdf PKPdf 04 35 33.8 -0.2
BLA LR LR
comp=Z,13µm,19.0s
DWPF Disney Wildern 118.86 64 *e*PKPdf PKPdf 04 35 34.8 +0.3
JMIC Jan Mayen 119.08 356 *e*PP PP 04 36 53.8 -0.4
EZM Erzurum 119.42 310 *e*P PKPdf 04 35 37.1 +1.5
FINES FINESS Array B 119.47 337 Pdiff Pdif 04 31 58.6 +1.4
comp=Z,1.7nm,0.6s,baz=69,slow=7.6,SNR=6.1

FINES PKP **PKPdf 04 35 34.4 -0.2**
comp=Z,10nm,0.8s,baz=64,slow=4.4,SNR=10.0
FINES PP **PP 04 36 56.0 -1.1**
comp=Z,31nm,1.0s,baz=66,slow=4.8,SNR=5.4
FINES PKKPbc **PKKPab 04 45 47.3 -1.0**
comp=Z,6.0nm,0.9s,baz=235,slow=1.4,SNR=10
FINES PKKP PKKPdf 04 46 09.8 -10
comp=Z,4.2nm,0.8s,baz=168,slow=2.7,SNR=3.4
FINES SKKPbc SKKPbc 04 49 28.2 -1.9
comp=Z,5.0nm,1.0s,baz=205,slow=6.2,SNR=2.6
NHSC New Hope 119.48 58 PFAKE 04 35 50.0 +14
NHSC LR LR
comp=Z,12µm,21.0s
SFJD Kangerlussuaq 119.52 14 PKP **PKPdf 04 35 34.9 +0.4**
comp=Z,27nm,0.9s,baz=357,slow=1.4,SNR=13
SFJD PP **PP 04 36 56.0 -1.2**
comp=Z,110nm,1.3s,baz=334,slow=8.3,SNR=8.6
SFJD Kangerlussuaq 119.52 14 *i* P **PKPdf 04 35 34.4 -0.2**
SFJD Kangerlussuaq 119.52 14 *e*PKPdf **PKPdf 04 35 34.9 +0.4**
SFJD PP **PP 04 36 56.0 -1.2**
SFJD LR LR
comp=Z,12µm,22.0s
O56A Blue Knob Stat 119.58 50 P **PKPdf 04 35 34.1 -1.5**
baz=282
ATD Arta Tunnel 119.61 277 PKP **PKPdf 04 35 36.1 -0.3**
comp=Z,6.2nm,0.3s,baz=240,slow=18
ATD PKKPbc **PKKPab 04 45 49.0 -0.3**
comp=Z,4.2nm,0.3s,baz=288,slow=19,SNR=4.0
SOC Sochi 119.78 314 *i* P **Pdif 04 32 02.3 +3.3**
SOC *e* 04 35 35.8
SOC *e* 04 36 57.6
SOC *e*PPP PPP 04 39 42.8
SOC *e* 04 42 27.3
SOC *e*PS **PS 04 46 50.5 -0.2**
SOC *e*SS SS 04 53 25.3 +6.8
OTAV Otavalo 119.81 96 *e*PKPdf **PKPdf 04 35 37.4 +0.1**
OTAV LR LR
comp=Z,5µm,20.0s
OTAV Otavalo 119.81 96 *e*P **PKPdf 04 35 40.0 +2.6**
OTAV Otavalo 119.81 96 *e*P **PKKPab 04 45 51.1 +1.9**
MOR8 Moi Rana 119.85 345 *e* **PKPdf 04 35 33.4 -1.9**
BCIP Isla Barro Col 119.87 85 *e*PKPdf **PKPdf 04 35 36.6 -0.1**
BCIP LR LR
comp=Z,8µm,22.0s
BCIP Isla Barro Col 119.87 85 *e*P **PKPdf 04 35 36.4 -0.4**
SCO Scoresbysund 119.89 1 *i* P **PKPdf 04 35 36.7 +1.5**
SSPA Standing Stone 120.00 49 *e*PKPdf **PKPdf 04 35 35.0 -1.4**
STOK Stokkvaagen 120.07 346 *e* PP 04 37 20.1 +19
BAYT Ayd¯–ntepe-Bay 120.23 311 *e*P **PKPdf 04 35 37.9 +0.8**
CMBC Cumbal 120.57 95 *e*P **PKPdf 04 35 40.2 +1.4**
MAZI Mazidag 120.60 307 *e*P **PKPdf 04 35 38.1 +0.4**
GRGC Isla de Gorgon 120.61 93 *e*P **PKPdf 04 35 36.9 -1.4**
ERZN Erzincan 120.73 310 *e*P **PKPdf 04 35 39.8 +1.9**
CBN Corbin Frederi 120.91 52 *e*PKPdf **PKPdf 04 35 37.1 -1.0**
CBN LR LR
comp=Z,24µm,21.0s
LVC Limon Verde 120.94 124 *e*PKPdf **PKPdf 04 35 38.8 -0.3**
LVC LR LR
comp=Z,17µm,21.0s
BINY Binghamton 121.01 47 *e*PKPdf **PKPdf 04 35 38.5 +0.2**
BINY LR LR
comp=Z,16µm,20.0s
ANN Anapa 121.02 316 *i* P **Pdif 04 32 06.9 +2.4**
ANN *i* 04 35 38.9
ANN *e* 04 37 09.2
ANN *e* 04 42 28.6
ANN *e*SP SP 04 46 46.6 -4.3
ANN *e*SS **SS 04 53 37.6 +3.4**
CNNC Cliffs of the 121.05 55 *e*PKPdf **PKPdf 04 35 39.5 +1.0**
CNNC LR LR
comp=Z,9µm,19.0s
SFNV Sufian 121.06 306 *e*P **PKPdf 04 35 37.0 -1.5**
PTK Pertek 121.13 309 *e*P **PKPdf 04 35 39.7 +0.9**
SVRC Sivrice-ELAZID 121.30 309 *e*P **PKPdf 04 35 40.8 +1.6**
LONY Lake Ozonia 121.31 44 *e*PKPdf **PKPdf 04 35 37.4 -1.4**
LONY LR LR
comp=Z,9µm,19.0s
N59A State Game Lan 121.50 48 P **PKPdf 04 35 39.0 -0.3**
baz=285
CRUC La Cruz 121.55 95 *e*P **PKPdf 04 35 41.9 +1.4**
ILIC ilic-Erzincan 121.63 310 *e*P **PKPdf 04 35 40.0 +0.3**
SCHQ Schefferville 121.74 30 PKP **PKPdf 04 35 39.7 +0.5**
comp=Z,34nm,0.8s,baz=349,slow=2.1,SNR=30
SCHQ PP **PP 04 37 12.4 -0.5**
comp=Z,35nm,1.1s,baz=296,slow=9.5,SNR=4.7
SCHQ PKKPbc **PKKPab 04 45 38.7 +0.1**
comp=Z,5.7nm,0.8s,baz=152,slow=4.0,SNR=11
SCHQ PKKP PKKPbc 04 45 57.0 +17
comp=Z,5.3nm,0.8s,baz=84,slow=9.2,SNR=3.0
SCHQ SKKPbc SKKPbc 04 49 16.1 -6.3
comp=Z,8.2nm,1.0s,baz=139,slow=8.1,SNR=2.7
NSS Namsos 121.79 345 *e*PP PP 04 37 11.1 -1.7
NSS IVMs_BB IVMs_BB 05 25 05.5
comp=Z,12µm,28.2s
POPC Popayan, Colom 122.00 93 *e*P **PKPdf 04 35 41.2 -0.1**
KSRV Kasrt alli 122.05 306 *e*P **PKPdf 04 35 39.5 -0.9**
RSDY Resadiye-TOKAT 122.32 311 *e*P **PKPdf 04 35 42.2 +1.3**
BOSA Boshof 122.48 226 PKP **PKPdf 04 35 40.8 -0.9**
comp=Z,29nm,0.7s,baz=109,slow=2.2,SNR=31
BOSA PP **PP 04 37 17.3 -1.2**
comp=Z,21nm,1.0s,baz=122,slow=10,SNR=1.6
BOSA PKKPbc **PKKPab 04 45 38.3 +0.5**
comp=Z,10nm,0.8s,baz=308,slow=2.8,SNR=11
BOSA PKKP PKKPdf 04 46 00.8 -12
comp=Z,7.1nm,0.8s,baz=346,slow=3.6,SNR=4.1
MICGM Minsk 122.63 330 *e*P **Pdif 04 32 16.0 +4.6**
MICGM *e*pP 04 32 36.0
MICGM *e*PKP1 PKPdf 04 35 24.0 -17
MICGM *e*pPKP1 04 36 10.0
MICGM *e*sPKP1 04 36 24.0
MICGM *e*PP PP 04 37 06.0 -13
MICGM *e*SKP 04 39 18.0
MICGM *e*PKS **PKSdf 04 39 24.0 +6.7**
MICGM *e*SKS SKSdf 04 42 06.0 -39
MICGM *e*SP SP 04 46 04.0 -60
MICGM *e*PS PS 04 46 48.0 -27
MICGM *e*SPP SPP 04 47 38.0
MICGM *e*PPS PPS 04 48 00.0
MICGM *e*SS **SS 04 54 04.0 +10**
MICGM *e*SSS SSS 04 57 46.0
MICGM *e*LQ LQ 05 14 00.0
MICGM *e*LR LR 05 19 52.0
MICGM LRM MLR 05 23 40.0
comp=E,90nm,26.0s
MICGM LRM MLR 05 23 42.0
comp=E,32nm,26.0s
MICGM LRM MLR 05 24 40.0
comp=N,15nm,26.0s
MICGM LRM MLR 05 24 44.0
comp=N,7.4nm,26.0s
MICGM LRM MLR 05 24 50.0
comp=Z,90nm,26.0s
MICGM LRM MLR 05 24 52.0
comp=Z,64nm,26.0s
MNK Minsk 122.63 330 *e*P **Pdif 04 32 16.0 +4.6**
MNK *e*SS SS 04 54 04.0 +10
DARE Darende-Malaty 122.65 309 *e*P **PKPdf 04 35 41.9 +0.3**
SVSK Karacayir 122.69 311 *e*P **PKPdf 04 35 42.2 +0.7**
MTDJ Mount Denham 122.70 75 PFAKE 04 35 50.0 +7.8
MTDJ LR LR
comp=Z,4µm,20.0s
IZAR Zarasai 122.73 332 *e*P **PKPdf 04 35 40.8 -0.3**
IZAR IAmb IAmb 04 36 25.0
comp=Z,28nm,1.0s
IDID Didziasalis 122.74 331 *e*P **PKPdf 04 35 41.3 +0.2**
IDID IAmb IAmb 04 36 12.2
comp=Z,19nm,0.8s
FLOC Florencia 122.82 95 *e*P **PKPdf 04 35 39.8 -2.8**
ISAL Salakas 122.89 331 *e*P **PKPdf 04 35 40.9 -0.4**
ISAL IAmb IAmb 04 36 07.0
comp=Z,30nm,1.2s
NACGM Naroch 122.95 331 *e*P **Pdif 04 32 16.0 +3.2**
NACGM *e*PKP **PKiKP 04 35 42.0 +0.3**
NACGM *e*PP **PP 04 37 24.0 +3.0**
NACGM *e*PPP PPP 04 39 20.0
NACGM *e*SKS **SKSac 04 42 26.0 -9.0**
NACGM *e*SKKS SKSdf 04 43 12.0 +26
NACGM *e*SKKKS 04 44 46.0
NACGM *e*PS PKKPdf 04 46 34.0 +21
NACGM *e*SS SKKSdf 04 53 34.0 +16
NACGM *e*SSS SSS 04 58 00.0
NACGM *e*LR LR 05 19 54.0
NACGM LRM MLR 05 24 23.0
comp=Z,49nm,28.0s

NACGM LRM1 05 30 42.0
comp=Z,41nm,20.0s
KMBO Kilima Mbogo 123.13 262 PKP **PKPdf 04 35 43.5 +0.1**
comp=Z,21nm,1.0s,baz=46,slow=4.5,SNR=26
KMBO PKKPbc **PKKPab 04 45 35.5 +0.8**
comp=Z,8.8nm,1.1s,baz=200,slow=1.2,SNR=6.6
KMBO PKKP PKKPdf 04 46 00.8 -11
comp=Z,7.2nm,1.0s,baz=257,slow=5.2,SNR=3.6
KMBO Kilima Mbogo 123.13 262 *e*PKIKP **PKPdf 04 35 43.3 -0.2**
KMBO MLR MLR
comp=Z,8µm,20.0s
KMBO Kilima Mbogo 123.13 262 *e*PKPdf **PKPdf 04 35 43.3 -0.2**
KMBO *e*PKKPab **PKKPab 04 45 36.0 +1.3**
KMBO PKKP PKKPdf 04 46 00.8 -11
KMBO LR LR
comp=Z,8µm,20.0s
SUR Sutherland 123.13 220 PKP **PKPdf 04 35 44.2 +1.3**
comp=Z,2.6nm,1.0s,baz=127,slow=2.3,SNR=12
SUR PP **PP 04 37 27.1 +4.3**
comp=Z,1.5nm,1.1s,baz=143,slow=6.4,SNR=3.9
SUR Sutherland 123.13 220 *e*PKPdf **PKPdf 04 35 42.9 -0.1**
SUR PP **PP 04 37 27.1 +4.3**
SUR LR LR
comp=Z,29µm,20.0s
DBBC Dabeiba 123.17 88 *e*P **PKPdf 04 35 44.5 +1.2**
DBBC Dabeiba 123.17 88 *e*P **PKKPbc 04 45 35.8 +2.2**
TBLU Trondheim 123.27 345 *e*PP PP 04 37 22.3 -0.5
TBLU IVMs_BB IVMs_BB 05 27 22.6
comp=Z,12µm,27.6s
DODT Dodoma, Tanzan 123.29 256 *i* P **PP 04 37 26.3 +1.3**
TOLC Tolima 123.68 91 *e*P **PKPdf 04 35 45.8 +1.2**
GUYC Guyana, Colomb 123.71 91 *e*P **PKPdf 04 35 43.7 -1.1**
HELC Santa Helena 123.72 89 *e*P **PKPdf 04 35 43.7 -1.0**
HELC Santa Helena 123.72 89 *e*P **PKKPbc 04 45 33.0 +1.2**
DRWC Darouich 123.74 307 *e*P **PKPdf 04 35 45.3 +1.5**
AKASG Malin Array Be 123.83 325 Pdiff **Pdif 04 32 17.3 +0.5**
comp=Z,0.3nm,0.3s,baz=47,slow=5.1,SNR=7.1
AKASG PKP **PKPdf 04 35 41.2 -2.1**
comp=Z,32nm,0.8s,baz=61,slow=2.4,SNR=49
AKASG PP **PP 04 37 21.3 -5.9**
comp=Z,14nm,0.9s,baz=56,slow=2.5,SNR=4.1
AKASG PKKPbc **PKKPbc 04 45 31.2 -0.7**
comp=Z,30nm,1.1s,baz=255,slow=3.9,SNR=30
AKASG PKKP PKKPdf 04 45 53.9 -17
comp=Z,3.6nm,0.7s,baz=257,slow=3.8,SNR=5.4
AKASG SKKPbc SKKPbc 04 49 17.9 +2.6
comp=Z,8.0nm,1.1s,baz=239,slow=4.7,SNR=5.0
KIEV Kiev 123.84 325 *c i*PKIKP **PKPdf 04 35 43.4 0.0**
KIEV Kiev 123.84 325 *e*PKPdf **PKPdf 04 35 43.0 -0.4**
KIEV *e*PKKPab **PKKPbc 04 45 31.1 -0.8**
KIEV LR LR
comp=Z,16µm,21.0s
BYBT Boyabat 123.88 313 *e*P **PKPdf 04 35 45.1 +1.4**
MOTC Monteria, Cord 123.92 86 *e*P **PKPdf 04 35 42.0 -2.6**
MOTC Monteria, Cord 123.92 86 *e*P **PKKPbc 04 45 32.4 +1.8**
ZALF Zalf 123.94 303 *e*P **PKPdf 04 35 45.0 +0.8**
PRAC Prado 123.96 92 *e*P **PKPdf 04 35 44.3 -0.5**
PRAC Prado 123.96 92 *e*P **PKKPbc 04 45 28.5 -2.0**
YOZ Yozgat 124.01 311 *e*P **PKPdf 04 35 44.3 0.0**
BTCH Batrach 124.03 307 *e*P **PKPdf 04 35 43.9 -0.4**
HRV Adam Dziewonsk 124.06 45 *e*PKIKP **PKPdf 04 35 43.0 -1.1**
HRV Adam Dziewonsk 124.06 45 *e*PKPdf **PKPdf 04 35 43.0 -1.1**
TAHT Tahtakopru-Hat 124.17 307 *e*P **PKPdf 04 35 45.6 +1.2**
KOZT Kozan 124.19 308 *e*P **PKPdf 04 35 44.6 +0.1**
BZK Bozkurt 124.27 314 *e*P **PKPdf 04 35 44.4 -0.1**
NORC Norcasia 124.28 90 *e*P **PKPdf 04 35 45.4 0.0**
NORC Norcasia 124.28 90 *e*P **PKKPbc 04 45 27.9 -1.3**
LBTB Lobatse 124.28 230 PKP **PKPdf 04 35 44.8 -0.4**
comp=Z,33nm,1.0s,baz=157,slow=4.5,SNR=5.2
LBTB PKKPbc **PKKPab 04 45 30.1 0.0**
comp=Z,9.0nm,0.9s,baz=261,slow=4.0,SNR=5.0
SLNF Slenfeh 124.31 306 *e*P **PKPdf 04 35 42.0 -3.0**
MATP Matopo 124.36 237 PKP **PKPdf 04 35 44.2 -1.2**
comp=Z,44nm,1.0s,baz=105,slow=1.9,SNR=39
MATP PKKPbc **PKKPab 04 45 31.2 +1.5**
comp=Z,23nm,0.9s,baz=274,slow=3.6,SNR=20
MATP PKKP PKKPdf 04 45 53.3 -16
comp=Z,19nm,0.9s,baz=306,slow=4.5,SNR=6.4
CEYT Ceyhan 124.36 308 *e*P **PKPdf 04 35 46.4 +1.6**
CORM Corum 124.36 312 *e*P **PKPdf 04 35 46.7 +1.8**
LPAZ La Paz 124.43 118 PKP **PKPdf 04 35 46.1 -0.2**
comp=Z,12nm,0.7s,baz=350,slow=2.0,SNR=26
MARH Ras Al Marh 124.43 304 *e*P **PKPdf 04 35 45.3 -0.2**
ASF Jabal al Asfar 124.44 302 PKP **PKPdf 04 35 44.9 -0.3**
comp=Z,23nm,0.9s,baz=125,slow=1.7,SNR=24
ASF PKKPbc **PKKPbc 04 45 31.6 +2.5**
comp=Z,6.0nm,1.0s,baz=245,slow=4.6,SNR=3.3
ASF SKKPbc SKKPbc 04 49 07.9 -4.4
comp=Z,2.2nm,0.7s,baz=342,slow=3.2,SNR=2.3
ARNB Al Arnab 124.45 306 *e*P **PKPdf 04 35 45.3 +0.1**
MOL Molde 124.53 346 *e*PP PP 04 37 33.8 +2.6
TOS Tosya 124.55 313 *e*P **PKPdf 04 35 46.7 +1.5**
PKME Peaks-Kenny Pk 124.62 41 *e*PKPdf **PKPdf 04 35 44.0 -1.0**
PKME *ep*PKPdf **pPKPdf 04 36 10.1 +1.1**
PKME LR LR
comp=Z,15µm,19.0s
ROSC El Rosal 124.70 91 PKP **PKPdf 04 35 46.1 -0.5**
comp=Z,16nm,0.6s,baz=163,slow=5.7,SNR=18
ROSC SKKPbc SKKPbc 04 49 05.0 -5.7
comp=Z,1.7nm,0.3s,baz=162,slow=20,SNR=2.2
ROSC El Rosal 124.70 91 *e*P **PKPdf 04 35 45.4 -1.2**
SJAC San Juan de Ar 124.81 93 *e*P **PKPdf 04 35 46.1 -0.4**
NB2 NORSAR Subarra 124.81 343 PKPdf **PKPdf 04 35 44.3 -0.7**
comp=Z,64nm,1.7s,baz=39,slow=1.9
NB2 NORSAR Subarra 124.81 343 PKPdf **PKPdf 04 35 44.3 -0.7**
baz=39,slow=1.9
NOA NORSAR Array B 124.81 343 Pdiff **Pdif 04 32 22.7 +1.6**
comp=Z,1.3nm,1.0s,baz=37,slow=4.9,SNR=2.8
NOA PKP **PKPdf 04 35 43.4 -1.6**
comp=Z,21nm,0.8s,baz=37,slow=2.0,SNR=53
NOA pPKP **pPKPdf 04 36 07.5 -1.4**
comp=Z,12nm,0.8s,baz=37,slow=1.9,SNR=4.3
NOA PP **PP 04 37 37.3 +4.0**
comp=Z,19nm,1.0s,baz=36,slow=6.2,SNR=5.2
NOA PKKPbc **PKKPbc 04 45 27.2 -1.2**
comp=Z,9.7nm,0.9s,baz=217,slow=4.3,SNR=16
NOA PKKP PKKPdf 04 45 50.0 -19
comp=Z,6.6nm,0.8s,baz=217,slow=4.2,SNR=5.7
NOA SKKPbc SKKPbc 04 49 09.4 -3.2
comp=Z,5.0nm,1.2s,baz=173,slow=3.7,SNR=3.0
KARA Karaisali 124.84 308 *e*P **PKPdf 04 35 45.9 +0.2**
NIG Nigde 124.96 309 *e*P **PKPdf 04 35 47.3 +1.0**
NC602 NORSAR Array S 124.96 342 *e*PP PP 04 37 33.4 -0.8
NC602 IVMs_BB IVMs_BB 05 28 44.7
comp=Z,7µm,22.7s
GTBY Guantanamo Bay 124.99 73 *e*PKPdf **PKPdf 04 35 46.6 +0.1**
GTBY LR LR
comp=Z,5µm,19.0s
BRBR Barbar 124.99 304 *e*P **PKPdf 04 35 45.5 -0.9**
AKN Aaknes 125.00 346 *e*PP PP 04 37 34.4 0.0
SUW Suwalki 125.18 331 *e*PKPdf **PKPdf 04 35 45.8 0.0**
SUW *e*PP **PP 04 37 37.9 +1.9**
SUW *e*SKSac **SKSac 04 42 43.9 +1.7**
SUW LMZ LR 05 23 23.6
SUW Suwalki 125.18 331 *e*PKIKP **PKPdf 04 35 45.8 0.0**
SUW *e* 04 37 37.9
SUW *e* 04 42 44.0
VILC Villavicencio, 125.20 92 *e*P **PKPdf 04 35 50.8 +3.5**
BRTR Keskin Array B 125.22 312 PKP **PKPdf 04 35 45.1 -1.5**
comp=Z,11nm,0.8s,baz=140,slow=3.6,SNR=23
BRTR pPKP **pPKPdf 04 36 08.7 -1.9**
comp=Z,9.1nm,1.0s,baz=191,slow=0.6,SNR=2.9
BRTR PP **PP 04 37 39.6 +2.4**
comp=Z,13nm,0.9s,baz=113,slow=2.7,SNR=2.4
BRTR PKKPbc **PKKPbc 04 45 27.2 +0.9**
comp=Z,4.6nm,0.8s,baz=224,slow=4.0,SNR=9.2
BRTR SKKPbc SKKPbc 04 49 05.1 -5.1
comp=Z,4.9nm,1.0s,baz=242,slow=3.1,SNR=3.8
CHIC Chingaza 125.25 92 *e*P **PKPdf 04 35 46.5 -1.2**
MERS Mersin 125.35 308 *e*P **PKPdf 04 35 47.8 +1.0**
SAFT Safranbolu 125.44 314 *e*P **PKPdf 04 35 47.5 +0.7**
SORM Soroca 125.54 323 *i*/P **PKPdf 04 35 45.7 -1.0**
SORM Soroca 125.54 323 ⇓PKIKP **PKPdf 04 35 45.7 -1.0**
NRS Narsarsuaq 125.63 16 *i* P **PKPdf 04 35 47.4 +0.9**
NRS Narsarsuaq 125.63 16 *i* PKIKP **PKPdf 04 35 47.4 +0.9**
BRRC Barranca, Sant 125.63 89 *e*P **PKPdf 04 35 46.0 -1.9**
BORG Borgarnes 125.66 1 *e*PKIKP **PKPdf 04 35 45.8 -0.6**
BORG MLR MLR
comp=Z,8µm,21.0s
BORG Borgarnes 125.66 1 *e*PKPdf **PKPdf 04 35 45.8 -0.6**
BORG LR LR
comp=Z,8µm,21.0s
YESY Yesilyurt 125.70 309 *e*P **PKPdf 04 35 46.3 -1.3**
AFSR Af¯ar-Bala (A 125.73 311 *e*P **PKPdf 04 35 47.5 0.0**

KIS Kishinev 125.78 321 *e*PKP **PKPdf 04 35 52.0 +4.8**
KIS *ep*PKP pPKPdf 04 36 32.0 +21
KIS Kishinev 125.78 321 *e*PS PS 04 48 00.0 +16
KIS Kishinev 125.78 321 *e*PPS PPS 04 50 32.0
KIS *e*SS SS 04 55 14.0 +40
KIS LRM MLR 05 29 20.0
comp=Z,15µm,20.0s
KIS Kishinev 125.78 321 *e*PKIKP **PKPdf 04 35 52.0 +4.8**
KIS *e* 04 36 32.0
KIS *e* 04 42 50.0
KIS *e*SS SS 04 55 14.0 +40
KIS MLR MLR
comp=N,14µm,22.0s
KIS MLR MLR
comp=Z,19µm,22.0s
KIS MLR MLR
comp=E,15µm,20.0s
KIS MLR MLR
comp=Z,24µm,24.0s
ANTO Ankara 125.80 312 PFAKE 04 36 00.0 +12
ANTO LR LR
comp=Z,16nm,19.0s
OSL Oslo 125.85 342 *e*PP PP 04 37 40.8 +0.7
FOO Floro 125.97 346 *e*PP PP 04 37 43.4 +2.6
HYA Hoyanger 126.07 345 *e*PP PP 04 37 41.9 +0.4
RUSC La Rusia 126.08 90 *e*P **PKPdf 04 35 48.3 -1.1**
BARC Barichara 126.08 89 *e*P **PKPdf 04 35 52.2 +3.1**
CHBY Cihanbeyli 126.12 310 *e*P **PKPdf 04 35 49.5 +1.2**
GIRC Giron, Santand 126.14 89 *e*P **PKPdf 04 35 50.8 +1.7**
IKL Isikli 126.16 307 *e*P **PKPdf 04 35 48.9 +0.6**
OCAC Ocana 126.16 87 *e*P **PKPdf 04 35 48.8 -0.3**
PHNC Paralimni 126.19 306 P **PKPdf 04 35 50.2 +1.8**
LEOM Leova 126.36 321 ⇓*i*P **PKPdf 04 35 50.2 +1.9**
LEOM Leova 126.36 321 ⇓PKIKP **PKPdf 04 35 50.2 +1.9**
HRFI Mount Harif 126.37 300 P **PKPdf 04 35 50.2 +1.3**
KONO Kongsberg 126.41 343 *e*PP PP 04 37 44.5 +0.7
KONO IVMs_BB IVMs_BB 05 21 35.4
comp=Z,7µm,34.2s
KONO Kongsberg 126.41 343 *e*PKIKP **PKPdf 04 35 47.6 -0.4**
KONO MLR MLR
comp=Z,14µm,22.0s
KONO Kongsberg 126.41 343 *e*PKPdf **PKPdf 04 35 47.6 -0.4**
KONO LR LR
comp=Z,14µm,22.0s
SUE Sulen 126.51 346 *e*PP PP 04 37 43.5 -0.8
LFK Lefkose 126.52 306 *e*P **PKPdf 04 35 50.7 +1.6**
TLCR 126.57 319 ⇑*i*P **PKPdf 04 35 49.5 +0.7**
TLCR 126.57 319 ⇑PKIKP **PKPdf 04 35 49.5 +0.7**
GRMC Gramalote, San 126.60 88 *e*P **PKPdf 04 35 47.1 -2.8**
CBRI Barrientos, No 126.61 88 *e*P **PKPdf 04 35 51.0 +1.0**
LADK Ladik-KONYA 126.63 310 *e*P **PKPdf 04 35 49.4 +0.1**
YOPC Yopal, Colombi 126.65 91 *e*P **PKPdf 04 35 53.5 +3.5**
PAMC Pamplona, Colo 126.66 89 *e*P **PKPdf 04 35 46.5 -3.9**
MDUB Mudurnu 126.76 313 *e*P **PKPdf 04 35 50.5 +1.0**
CSS Mathiatis 126.76 306 P **PKPdf 04 35 48.2 -1.3**
CSS Mathiatis 126.76 306 P **PKPdf 04 35 47.0 -2.5**
CSS Mathiatis 126.76 306 *e*PKPdf **PKPdf 04 35 49.3 -0.2**
CSS LR LR
comp=Z,3µm,21.0s
KIZT Kizilcal 126.78 311 *e*P **PKPdf 04 35 49.7 +0.1**
MAMC Mammari 126.80 306 P **PKPdf 04 35 49.4 -0.1**
BER Bergen 126.96 345 *e*PP PP 04 37 47.5 +0.1
LSZ Lusaka 126.98 242 PKP **PKPdf 04 35 50.0 -0.6**
comp=Z,56nm,1.1s,baz=139,slow=2.0,SNR=28
LSZ PP **PP 04 37 49.3 0.0**
comp=Z,11nm,0.9s,baz=62,slow=9.2,SNR=2.2
LSZ Lusaka 126.98 242 *e*PKPdf **PKPdf 04 35 50.1 -0.5**
LSZ PP **PP 04 37 49.3 0.0**
LSZ LR LR
comp=Z,13µm,22.0s
CFR Carcaliu 127.00 320 ⇑*i*P **PKPdf 04 35 51.0 +1.4**
CFR Carcaliu 127.00 320 ⇑PKIKP **PKPdf 04 35 51.0 +1.4**
ODD1 Odda 127.03 344 *e*PP PP 04 37 47.9 0.0
LEF Lefka 127.07 306 *e*P **PKPdf 04 35 49.9 -0.1**
TIRR Tirgusor 127.14 319 ⇑*i*P **PKPdf 04 35 49.2 -0.7**
TIRR Tirgusor 127.14 319 ⇑PKIKP **PKPdf 04 35 49.2 -0.7**
TIRR Tirgusor 127.14 319 *e*PKPdf **PKPdf 04 35 50.7 +0.8**
LVV L'vov 127.14 326 *i* PKIKP **PKPdf 04 35 50.0 +0.3**
LVV *e* 04 42 46.1
LVV *e*PS **SP 04 47 40.3 -4.0**
LVV *e*SS SS 04 55 13.3 +22
LVV MLR MLR
comp=N,202µm,24.0s
LVV MLR MLR
comp=E,24µm,24.0s
LVV MLR MLR
comp=Z,295µm,24.0s
PRAR RASCA 127.17 323 ⇓*i*P **PKPdf 04 35 51.7 +1.8**
GULT Gulveren 127.26 313 *e*P **PKPdf 04 35 53.1 +2.8**
MAIR Mangalia 127.29 318 ⇓*i*P **PKPdf 04 35 53.2 +3.0**
ALFC Alefka 127.30 306 P **PKPdf 04 35 50.5 0.0**
TESR Tescani 127.32 322 ⇑*i*P **PKPdf 04 35 51.5 +1.3**
HARR Harsova 127.35 319 ⇓*i*P **PKPdf 04 35 52.5 +2.2**
HARR Harsova 127.35 319 ⇓PKIKP **PKPdf 04 35 52.5 +2.2**
ODBI Odobesti 127.42 321 ⇓*i*P **PKPdf 04 35 53.7 +3.3**
BLS5 Blasjo 127.49 344 *e*PP PP 04 37 51.3 +0.4
AKMC Akamas 127.54 306 P **PKPdf 04 35 54.2 +3.2**
VRI Vrincioaia 127.58 321 ⇑*i*P **PKPdf 04 35 52.2 +1.5**
VRI Vrincioaia 127.58 321 ⇑PKIKP **PKPdf 04 35 52.2 +1.5**
PLOR Plostina 127.63 321 ⇑*i*P **PKPdf 04 35 51.9 +1.0**
PLOR Plostina 127.63 321 ⇑PKIKP **PKPdf 04 35 51.9 +1.0**
BURAR Bucovina Array 127.64 324 ⇓*i*P **PKPdf 04 35 52.7 +1.8**
BURAR Bucovina Array 127.64 324 ⇓PKIKP **PKPdf 04 35 52.7 +1.8**
BEL Belsk 127.65 330 *e*PKPdf **PKPdf 04 35 52.2 +1.6**
BEL *e*PP **PP 04 37 54.8 +2.4**
BEL *e*SS SS 04 55 01.2 +4.3
BEL LMZ LR 05 27 47.9
BEL Belsk 127.65 330 *e*PKIKP **PKPdf 04 35 52.3 +1.6**
BEL *e* 04 37 54.9
BEL *e*SS SS 04 55 01.3 +4.4
CPUP Villa Florida 127.70 135 PKP **PKPdf 04 35 49.5 -2.0**
comp=Z,28nm,0.9s,baz=246,slow=1.9,SNR=29
CPUP PP **PP 04 37 52.5 -0.7**
comp=Z,24nm,1.2s,baz=219,slow=6.5,SNR=2.3
CPUP PKKP **PKKPdf 04 46 01.6 -1.4**
comp=Z,3.9nm,0.9s,baz=8.2,slow=1.2,SNR=3.4
URIC Uribia, Colomb 127.79 83 *e*P **PKPdf 04 35 52.0 0.0**
ADVT Abdulvahap 127.82 314 *e*P **PKPdf 04 35 52.3 +1.0**
HOMB Homborsund 127.87 342 *e*PP PP 04 37 55.0 +1.6
KWP Kalwaria Pacla 127.96 327 *e*PKPdf **PKPdf 04 35 52.8 +1.5**
KWP LMZ LR 05 28 59.5
KWP Kalwaria Pacla 127.96 327 ⇓*i*P **PKPdf 04 35 52.8 +1.5**
KWP Kalwaria Pacla 127.96 327 ⇓PKIKP **PKPdf 04 35 52.8 +1.5**
KMY Karmoy 127.99 345 *e*PP PP 04 37 55.0 +0.9
ISR Istrita 128.04 320 ⇑*i*P **PKPdf 04 35 54.0 +2.3**
ISR Istrita 128.04 320 ⇑PKIKP **PKPdf 04 35 54.0 +2.3**
STAV Stavanger 128.11 344 *e*PP PP 04 37 55.1 +0.1
ISP Isparta 128.13 310 PFAKE 04 36 00.0 +7.8
ISP LR LR
comp=Z,8µm,22.0s
SNART Snartemo 128.20 343 *e*PP PP 04 37 55.7 +0.1
MLR Muntele Rosu 128.24 321 ⇑*i*P **PKPdf 04 35 52.1 -0.1**
MLR Muntele Rosu 128.24 321 ⇑PKIKP **PKPdf 04 35 52.1 -0.1**
PRD Provadia 128.34 318 P **PKPdf 04 35 54.4 +2.2**
DOPR Dopca 128.35 322 ⇑*i*P **PKPdf 04 35 54.3 +2.1**
TVSB Tavsanli 128.37 313 *e*P **PKPdf 04 35 51.3 -1.3**
SECR 128.38 320 ⇑*i*P **PKPdf 04 35 53.4 +1.1**
CTKS Kestanelik-??a 128.38 315 *e*P **PKPdf 04 35 52.1 -0.3**
SULR 128.42 320 ⇑*i*P **PKPdf 04 35 53.8 +1.5**
KOLS Kolonicke sedl 128.59 326 *e*PKP **PKPdf 04 35 54.6 +2.0**
KOLS *e*PP **PP 04 38 02.3 +3.6**
KOLS *e* 04 48 09.0
KOLS *e*SS SS 04 55 15.8 +7.0
KOLS *e*L L 05 28 11.8
BMR Baia Mare 128.60 324 ⇑*i*P **PKPdf 04 35 55.4 +2.8**
BMR Baia Mare 128.60 324 ⇑PKIKP **PKPdf 04 35 55.4 +2.8**
SDDR Presa de Saban 128.62 74 *e*PKPdf **PKPdf 04 35 53.8 +0.3**
SDDR LR LR
comp=Z,9µm,20.0s
GRTK Grand Turk 128.64 71 PFAKE 04 36 10.0 +17
GRTK LR LR
comp=Z,6µm,22.0s
UZH Uzhgorod 128.75 326 *i* PKIKP **PKPdf 04 35 53.8 +1.0**
UZH *e*PP PKiKP 04 36 20.8 +27
UZH *e*PS **PS 04 48 09.8 +0.4**
UZH MLR MLR
comp=N,26µm,22.0s
UZH MLR MLR
comp=E,12µm,22.0s
UZH MLR MLR
comp=Z,16µm,22.0s
STHS Stebnicka Huta 128.87 327 *e*PKP **PKPdf 04 35 55.2 +2.1**

SDV	**Santo Domingo**	**128.87**	**87**	PKP	**PKPdf**	**04 35 52.9**	**-1.4**
	comp=Z,84nm,0.9s,baz=0.0,slow=6.1							
SDV				SKKPbc	SKKPbc	04 48 58.2	+2.0	
	comp=Z,14nm,0.3s,baz=18,slow=16,SNR=2.3							
SDV	**Santo Domingo**	**128.87**	**87**	*e*PKPdf	**PKPdf**	**04 35 55.2**	**+0.9**	
SDV				SKKPbc	SKKPbc	04 48 58.2	+2.0	
SDV				LR	LR			
	comp=Z,5µm,20.0s							
ELL	**Elmali**	**128.93**	**309**	*e*P	**PKPdf**	**04 35 52.9**	**-0.9**	
CJR	**Cluj-Napoca**	**129.05**	**323**	⇓*i*P	**PKPdf**	**04 35 56.1**	**+2.5**	
CJR	**Cluj-Napoca**	**129.05**	**323**	⇓⇓PKIKP	**PKPdf**	**04 35 56.1**	**+2.5**	
CRVS	**Cervenica-Dubn**	**129.05**	**327**	*e*PKP	**PKPdf**	**04 35 55.2**	**+1.8**	
CRVS				*e*PP	**PP**	**04 38 02.0**	**+0.3**	
CRVS				*e*		04 48 00.3		
CRVS				*e*SS	SS	04 54 54.4	-20	
ARR	**Arges**	**129.11**	**321**	⇑*i*P	**PKPdf**	**04 35 54.8**	**+1.1**	
OJC	**Ojcow**	**129.14**	**329**	*e*PKPdf	**PKPdf**	**04 35 54.2**	**+0.7**	
OJC				*e*PP	**PP**	**04 38 04.5**	**+2.3**	
OJC				*e*		04 39 47.7		
OJC				*e*PS	**PS**	**04 47 59.6**	**-13**	
OJC				*e*SS	SS	04 55 20.9	+5.5	
OJC				LMZ	LR	05 27 06.2		
OJC	**Ojcow**	**129.14**	**329**	*e*PKIKP	**PKPdf**	**04 35 54.2**	**+0.7**	
OJC				*e*		04 38 04.6		
OJC				*e*PS	**PS**	**04 47 59.6**	**-13**	
JMB	**Yambol**	**129.19**	**317**	P	**PKPdf**	**04 35 55.2**	**+1.3**	
KULA	**Kula-Manisa**	**129.28**	**312**	*e*P	**PKPdf**	**04 35 53.4**	**-0.9**	
KULA	**Kula-Manisa**	**129.28**	**312**	P	**PKPdf**	**04 35 53.9**	**-0.4**	
KULA	**Kula-Manisa**	**129.28**	**312**	P	**PKPdf**	**04 35 53.9**	**-0.4**	
HUMR	**Humele**	**129.30**	**320**	⇓*i*P	**PKPdf**	**04 35 54.6**	**+0.6**	
NIE	**Niedzica**	**129.37**	**328**	*e*PKPdf	**PKPdf**	**04 35 55.2**	**+1.1**	
NIE				*e*PP	**PP**	**04 38 07.0**	**+3.3**	
NIE				*e*		04 39 47.8		
NIE				*e*PS	PS	04 47 55.2	-20	
NIE				*e*SS	SS	04 55 27.1	+8.8	
NIE				LMZ	LR	05 27 55.9		
NIE	**Niedzica**	**129.37**	**328**	*e*PKIKP	**PKPdf**	**04 35 55.2**	**+1.1**	
NIE				*e*		04 38 07.0		
NIE				*e*PS	PS	04 47 55.2	-20	
LOT	**Lotru**	**129.59**	**322**	⇑*i*P	**PKPdf**	**04 35 56.2**	**+1.5**	
FETY	**Fethiye**	**129.60**	**309**	*e*P	**PKPdf**	**04 35 56.6**	**+1.8**	
FETY	**Fethiye**	**129.60**	**309**	P	**PKPdf**	**04 35 56.7**	**+1.8**	
FETY	**Fethiye**	**129.60**	**309**	P	SKPbc	04 39 10.0	+0.5	
FETY	**Fethiye**	**129.60**	**309**	P	**PKPdf**	**04 35 56.7**	**+1.8**	
KECS	**Kecovo**	**129.82**	**327**	*e*PKP	**PKPdf**	**04 35 58.5**	**+3.6**	
KECS				*e*		04 36 52.6		
DEV	**Deva**	**129.89**	**323**	⇓*i*P	**PKPdf**	**04 35 57.6**	**+2.5**	
DEV	**Deva**	**129.89**	**323**	⇓⇓PKIKP	**PKPdf**	**04 35 57.6**	**+2.5**	
LANS	**Liptovska Anna**	**129.96**	**328**	*e*PKP	**PKPdf**	**04 35 58.7**	**+3.5**	
ERIK	**Erikli-Kesan**	**129.99**	**315**	*e*P	**PKPdf**	**04 35 56.4**	**+0.9**	
RAC	**Raciborz**	**130.03**	**330**	*e*PKIKP	**PKPdf**	**04 35 55.3**	**+0.1**	
RAC				*e*		04 38 07.5		
RAC				MLR	MLR			
	comp=Z,18µm,23.7s							
AYDB	**Zeytinkoy-Aydi**	**130.05**	**311**	*e*P	**PKPdf**	**04 35 55.8**	**0.0**	
GELI	**Tayfur-Gelibol**	**130.13**	**315**	*e*P	**PKPdf**	**04 35 55.8**	**+0.1**	
OKC	**Ostrava-Krasne**	**130.21**	**329**	*e*PKPdf	**PKPdf**	**04 35 55.2**	**-0.4**	
OKC				AMS	AMS	05 30 40.0		
	comp=Z,21µm,23.8s							
OKC	**Ostrava-Krasne**	**130.21**	**329**	*e*PKIKP	**PKPdf**	**04 35 55.2**	**-0.4**	
OKC				MLR	MLR			
	comp=Z,21µm,23.8s							
ALN	**Alexandroupoli**	**130.22**	**316**	*e*P	**PKPdf**	**04 35 56.5**	**+0.7**	
ALN	**Alexandroupoli**	**130.22**	**316**	P	**SKPbc**	**04 39 12.4**	**+0.9**	
KDZ	**Kurdzhali**	**130.33**	**317**	P	**PKPdf**	**04 35 58.1**	**+2.0**	
SIRR	**Siria**	**130.42**	**324**	⇑*i*P	**PKPdf**	**04 35 57.6**	**+1.5**	
KSP	**Ksiaz**	**130.46**	**331**	*e*PKPdf	**PKPdf**	**04 35 57.7**	**+1.7**	
KSP				*e*PP	**PP**	**04 38 12.9**	**+2.3**	
KSP				*e*		04 39 49.2		
KSP				*e*PPS	PPS	04 51 28.1		
KSP				*e*SS	SS	04 55 34.4	+3.0	
KSP				LMZ	LR	05 32 09.8		
KSP	**Ksiaz**	**130.46**	**331**	*e*PKIKP	**PKPdf**	**04 35 57.8**	**+1.7**	
KSP				*e*		04 38 13.0		
KSP				*e*SS	SS	04 55 34.5	+3.1	
KSP				MLR	MLR			
	comp=Z,44µm,24.7s							
ARG	**Arkhangelos**	**130.46**	**309**	P	**SKPbc**	**04 39 14.4**	**+1.9**	
PSZ	**Piszkesteto**	**130.47**	**326**	⇑*i*P	**PKPdf**	**04 35 59.1**	**+2.8**	
PSZ	**Piszkesteto**	**130.47**	**326**	⇑PKIKP	**PKPdf**	**04 35 59.1**	**+2.8**	
PSZ	**Piszkesteto**	**130.47**	**326**	*e*PKPdf	**PKPdf**	**04 35 56.5**	**+0.2**	
PSZ				LR	LR			
	comp=Z,22µm,22.0s							
MORC	**Moravsky Berou**	**130.55**	**330**	⇑*i*P	**PKPdf**	**04 35 59.6**	**+3.3**	
MORC	**Moravsky Berou**	**130.55**	**330**	⇑PKIKP	**PKPdf**	**04 35 59.6**	**+3.3**	
SIV	**San Ignacio**	**130.60**	**121**	PKP	**PKPdf**	**04 35 56.8**	**-0.5**	
	comp=Z,11nm,0.9s,baz=232,slow=3.2,SNR=13							
MPEP	**Malo Peshtene**	**130.65**	**320**	P	**PKPdf**	**04 35 57.0**	**+0.4**	
VYHS	**Vyhne**	**130.69**	**328**	*e*PKP	**PKPdf**	**04 35 57.9**	**+1.3**	
VYHS				*e*PP	**PP**	**04 38 12.7**	**+0.4**	
VYHS				*e*		04 48 10.6		
VYHS				*e*SS	SS	04 55 06.8	-28	
KRLC	**Kraliky**	**130.73**	**330**	*e*PKPdf	**PKPdf**	**04 35 55.7**	**-0.9**	
KRLC				*ep*PKP	**pPKPdf**	**04 36 20.0**	**-0.6**	
KRLC	**Kraliky**	**130.73**	**330**	*e*PKIKP	**PKPdf**	**04 35 55.7**	**-0.9**	
PRK	**Paraskevi**	**130.74**	**314**	P	**SKPbc**	**04 39 14.4**	**+1.0**	
PGB	**Panagyurishte**	**130.75**	**318**	P	**PKPdf**	**04 35 57.6**	**+0.7**	
SMTH	**Samothraki Isl**	**130.76**	**315**	P	**SKPbc**	**04 39 13.8**	**+0.3**	
DPC	**Dobruska-Polom**	**130.77**	**331**	*e*PKPdf	**PKPdf**	**04 35 58.3**	**+1.6**	
DPC				*ep*PKP	**pPKPdf**	**04 36 20.2**	**-0.5**	
DPC				*e*PP	**PP**	**04 38 13.5**	**+0.7**	
DPC				*ex*	x	04 39 49.7		
DPC				*e*SS	SS	04 55 35.0	-0.4	
DPC				AMS	AMS	05 32 20.0		
	comp=Z,39µm,23.6s							
DPC	**Dobruska-Polom**	**130.77**	**331**	*e*PKIKP	**PKPdf**	**04 35 58.3**	**+1.6**	
DPC				*e*		04 38 13.5		
DPC				*e*SS	SS	04 55 35.0	-0.4	
DPC				MLR	MLR			
	comp=Z,39µm,23.6s							
RZN	**Rozhen**	**130.78**	**317**	P	**PKPdf**	**04 36 00.9**	**+3.7**	
BODT	**Bodrum**	**130.79**	**310**	*e*P	**PKPdf**	**04 35 55.3**	**-1.8**	
BODT	**Bodrum**	**130.79**	**310**	P	**SKPbc**	**04 39 09.6**	**-4.1**	
BZS	**Buzias**	**130.80**	**323**	⇓*i*P	**PKPdf**	**04 35 57.9**	**+1.1**	
BZS	**Buzias**	**130.80**	**323**	⇓⇓PKIKP	**PKPdf**	**04 35 57.9**	**+1.1**	
UPC	**Upice**	**130.81**	**331**	*e*PKPdf	**PKPdf**	**04 35 57.6**	**+0.9**	
UPC				*ep*PKP	**pPKPdf**	**04 36 20.7**	**0.0**	
UPC				*e*PP	**PP**	**04 38 11.7**	**-1.3**	
UPC				AMS	AMS	05 32 30.0		
	comp=Z,43µm,23.4s							
UPC	**Upice**	**130.81**	**331**	*e*PKIKP	**PKPdf**	**04 35 57.6**	**+0.9**	
UPC				*e*		04 38 11.7		
UPC				MLR	MLR			
	comp=Z,43µm,23.4s							
SMG	**Samos**	**130.91**	**311**	P	**SKPbc**	**04 39 12.4**	**-1.7**	
MDVR	**Moldovita**	**131.19**	**322**	⇓*i*P	**PKPdf**	**04 36 00.0**	**+2.3**	
CHOS	**Chios island**	**131.23**	**313**	P	**SKPbc**	**04 39 14.2**	**-1.1**	
LIA	**Limnos Island**	**131.24**	**315**	P	**SKPbc**	**04 39 14.3**	**-0.9**	
VRAC	**Vranov**	**131.32**	**330**	⇓*i*P	**PKPdf**	**04 35 58.8**	**+1.1**	
VRAC	**Vranov**	**131.32**	**330**	⇓⇓PKIKP	**PKPdf**	**04 35 58.8**	**+1.1**	
SMOL	**Smolenice**	**131.41**	**328**	*e*PKP	**PKPdf**	**04 35 58.1**	**+0.2**	
KARP	**Karpathos**	**131.42**	**309**	P	**SKPbc**	**04 39 16.2**	**+2.1**	
PVCC	**Panska Ves**	**131.47**	**332**	*e*PKPdf	**PKPdf**	**04 35 59.3**	**+1.3**	
PVCC				*ep*PKP	**pPKPdf**	**04 36 24.2**	**+2.3**	
PVCC				*e*PP	**PP**	**04 38 14.6**	**-2.6**	
PVCC				*e*SS	SS	04 55 47.7	+3.9	
PVCC				AMS	AMS	05 32 20.0		
	comp=Z,35µm,24.0s							
PVCC	**Panska Ves**	**131.47**	**332**	*e*PKIKP	**PKPdf**	**04 35 59.3**	**+1.3**	
PVCC				*e*		04 38 14.6		
PVCC				*e*SS	SS	04 55 47.7	+3.9	
PVCC				MLR	MLR			
	comp=Z,35µm,24.0s							
MMB	**Musomiste**	**131.49**	**317**	P	**PKPdf**	**04 35 58.3**	**0.0**	
NVR	**Nevrokopi**	**131.51**	**317**	P	**PKPdf**	**04 35 57.1**	**-1.3**	
NVR	**Nevrokopi**	**131.51**	**317**	P	**SKPbc**	**04 39 14.8**	**-1.4**	
NVR	**Nevrokopi**	**131.51**	**317**	P	**PKPdf**	**04 35 57.1**	**-1.3**	
BRG	**Berggiesshubel**	**131.52**	**333**	PDIFF	**Pdif**	**04 32 55.0**	**+3.9**	
BRG	**Berggiesshubel**	**131.52**	**333**	*i* PKP	**PKPdf**	**04 35 57.7**	**-0.3**	
	comp=Z,266nm,2.1s							
BRG				*i* pPKP	**pPKPdf**	**04 36 21.6**	**-0.3**	
	comp=Z,261nm,1.8s							
BRG				PP	**PP**	**04 38 17.0**	**-0.4**	
BRG				SDIFF		04 45 43.0		
BRG				SS	**SS**	**04 55 40.0**	**-4.2**	
	comp=N,24µm,23.5s							
	comp=E,22µm,23.0s							
	comp=Z,34µm,23.8s							
CLL	**Collm**	**131.62**	**334**	*e*Pdif	**Pdif**	**04 32 51.0**	**-0.5**	
CLL				*ep*Pdif	**pPdif**	**04 33 12.0**	**-2.6**	
CLL				*e*PKPdf	**PKPdf**	**04 35 59.0**	**+0.8**	
CLL				*i*		04 36 03.4		
	comp=Z,149nm,1.9s							
CLL				*i* pPKPdf	**pPKPdf**	**04 36 21.7**	**-0.4**	
CLL				*es*PKPdf	**sPKPdf**	**04 36 31.0**	**-0.1**	
CLL				*e*PP	**PP**	**04 38 18.0**	**-0.1**	
	comp=Z,209nm,1.8s							
CLL				*es*PP		04 38 49.0		
CLL				*i*		04 39 08.7		
CLL				*i*		04 39 17.9		
CLL				*i* SKPdf	**SKPab**	**04 39 21.2**	**+4.3**	
	comp=Z,865nm,2.2s							
CLL				*e*		04 39 55.0		
CLL				*ep*PPP		04 41 33.0		
CLL				*e*SP	**SP**	**04 48 24.0**	**+1.3**	
CLL				*e*PS	**PS**	**04 48 48.0**	**+14**	
CLL				*e*PPS	PPS	04 50 06.0		
CLL				*e*		04 50 47.0		
CLL				*e*		04 52 25.0		
CLL				*e*SS	**SS**	**04 55 45.0**	**-0.5**	
CLL				*e*		04 57 12.0		
CLL				*e*SSS	SSS	05 00 36.0		
CLL				*e*		05 01 42.0		
CLL	**Collm**	**131.62**	**334**	*e*PKIKP	**PKPdf**	**04 35 59.0**	**+0.8**	
CLL				*e*		04 38 18.0		
CLL				pmax	pmax			
	comp=Z,209nm,1.8s							
KKB	**Krupnik**	**131.78**	**318**	P	**PKPdf**	**04 36 00.7**	**+1.9**	
GOPC	**GO Pecny, Ondr**	**131.79**	**331**	*e*PKPdf	**PKPdf**	**04 36 01.2**	**+2.6**	
GOPC				*ep*PKP	**pPKPdf**	**04 36 23.1**	**+0.5**	
GOPC				*e*PP	**PP**	**04 38 12.7**	**-6.6**	
GOPC				*e*SKP		04 39 16.6		
GOPC				AMS	AMS	05 32 50.0		
	comp=Z,35µm,23.5s							
GOPC	**GO Pecny, Ondr**	**131.79**	**331**	*e*PKIKP	**PKPdf**	**04 36 01.2**	**+2.6**	
GOPC				MLR	MLR			
	comp=Z,35µm,23.5s							
SRS	**Serrai**	**131.79**	**317**	P	**SKPbc**	**04 39 16.6**	**-0.6**	
SAML	**Samuel**	**131.80**	**112**	*e*PKPpre	PKPpre	04 35 52.2		
SAML				*e*PKPdf	**PKPdf**	**04 35 59.1**	**-0.5**	
SAML				LR	LR			
	comp=Z,6µm,20.0s							
PRA	**Prague**	**131.85**	**332**	*e*PKPdf	**PKPdf**	**04 36 01.4**	**+2.7**	
PRA				*ex*	x	04 38 42.4		
PRA				*ex*	x	04 55 37.2		
PRA				AMS	AMS	05 32 50.0		
	comp=Z,37µm,24.2s							
PRA	**Prague**	**131.85**	**332**	*e*PKIKP	**PKPdf**	**04 36 01.4**	**+2.7**	
PRA				MLR	MLR			
	comp=Z,37µm,24.2s							
PRU	**Pruhonice**	**131.86**	**332**	*e*PKPdf	**PKPdf**	**04 36 00.7**	**+2.0**	
PRU				*ep*PKP	**pPKPdf**	**04 36 23.2**	**+0.6**	
PRU				*e*PP	**PP**	**04 38 15.2**	**-4.5**	
PRU				*ex*	x	04 38 42.7		
PRU				*ex*	x	04 39 55.5		
PRU				AMS	AMS	05 32 40.0		
	comp=Z,35µm,23.9s							
PRU	**Pruhonice**	**131.86**	**332**	*e*PKIKP	**PKPdf**	**04 36 00.7**	**+2.0**	
PRU				MLR	MLR			
	comp=Z,35µm,23.9s							
TREC	**Trest**	**131.88**	**330**	*e*PKPdf	**PKPdf**	**04 35 56.5**	**-2.3**	
TREC				*ep*PKP	**pPKPdf**	**04 36 22.8**	**0.0**	
TREC				*ex*	x	04 38 42.4		
TREC				*e*SS	SS	04 55 46.4	-2.5	
TREC				AMS	AMS	05 33 40.0		
	comp=Z,41µm,23.2s							
TREC	**Trest**	**131.88**	**330**	*e*PKIKP	**PKPdf**	**04 35 56.5**	**-2.3**	
TREC				*e*		04 36 22.8		
TREC				*e*SS	SS	04 55 46.4	-2.5	
TREC				MLR	MLR			
	comp=Z,41µm,23.2s							
OUR	**Ouranopolis**	**131.88**	**316**	P	**SKPbc**	**04 39 18.4**	**+0.9**	
SOH	**Sokhos**	**132.09**	**317**	P	**SKPbc**	**04 39 18.9**	**+0.6**	
PKSM	**Moragy**	**132.17**	**325**	⇑*i*P	**PKPdf**	**04 36 01.8**	**+2.4**	
PKSM	**Moragy**	**132.17**	**325**	⇑PKIKP	**PKPdf**	**04 36 01.8**	**+2.4**	
PLG	**Polygyros**	**132.23**	**316**	P	**SKPbc**	**04 39 18.2**	**-0.6**	
KNT	**Kendrikon**	**132.24**	**317**	*e*P	**PKPdf**	**04 35 58.5**	**-1.3**	
KNT	**Kendrikon**	**132.24**	**317**	P	**PKPdf**	**04 36 02.4**	**+2.7**	
KNT	**Kendrikon**	**132.24**	**317**	P	**SKPbc**	**04 39 15.2**	**-3.6**	
KNT	**Kendrikon**	**132.24**	**317**	PKIKP	**PKPdf**	**04 36 02.4**	**+2.7**	
KNT	**Kendrikon**	**132.24**	**317**	P	**PKPdf**	**04 36 02.4**	**+2.7**	
PAIG	**Paliouri**	**132.27**	**315**	P	**SKPbc**	**04 39 16.7**	**-2.2**	
ZKR	**Zakros**	**132.30**	**308**	P	**SKPbc**	**04 39 20.1**	**+0.9**	
HORT	**Hortiatis**	**132.37**	**317**	*e*P	**PKPdf**	**04 35 59.6**	**-0.4**	
HORT	**Hortiatis**	**132.37**	**317**	P	**SKPbc**	**04 39 17.7**	**-1.6**	
BBSR	**BB Station**	**132.39**	**55**	PFAKE		04 36 10.0	+10	
BBSR				LR	LR			
	comp=Z,8µm,21.0s							
SANT	**Santorini**	**132.43**	**310**	PFAKE		04 36 10.0	+10	
SANT				LR	LR			
	comp=Z,5µm,20.0s							
CMBO	**Columbo, Santo**	**132.43**	**310**	P	**SKPbc**	**04 39 20.9**	**+1.3**	
THE	**Thessaloniki**	**132.44**	**317**	P	**SKPbc**	**04 39 19.8**	**+0.3**	
TRIS	**Tristan da Cun**	**132.44**	**187**	PFAKE		04 36 10.0	+10	
TRIS				LR	LR			
	comp=Z,11µm,20.0s							
CONA	**Conrad Observa**	**132.59**	**329**	*i* PKPdf	**PKPdf**	**04 35 59.0**	**-1.3**	
	comp=Z,28nm,0.8s							
CONA				*i* PKiKP	**PKiKP**	**04 36 07.5**	**+6.1**	
	comp=Z,72nm,1.3s							
NKC	**Novy Kostel**	**132.64**	**333**	*e*PKPdf	**PKPdf**	**04 36 01.8**	**+1.6**	
NKC				*ep*PKP	**pPKPdf**	**04 36 25.0**	**+0.8**	
NKC				*e*PP	**PP**	**04 38 21.2**	**-3.5**	
NKC				AMS	AMS	05 34 40.0		
	comp=Z,27µm,21.8s							
NKC	**Novy Kostel**	**132.64**	**333**	*e*PKIKP	**PKPdf**	**04 36 01.8**	**+1.6**	
NKC				MLR	MLR			
	comp=Z,27µm,21.8s							
GRG	**Griva**	**132.67**	**317**	*e*P	**PKPdf**	**04 35 59.0**	**-1.5**	
GRG	**Griva**	**132.67**	**317**	P	**PKPdf**	**04 36 01.4**	**+0.8**	
GRG	**Griva**	**132.67**	**317**	PKIKP	**PKPdf**	**04 36 01.4**	**+0.8**	
GRG	**Griva**	**132.67**	**317**	P	**PKPdf**	**04 36 01.4**	**+0.8**	
NPS	**Neapolis**	**132.71**	**309**	P	**SKPbc**	**04 39 23.3**	**+2.7**	
EREA	**Eretria**	**132.74**	**314**	P	**SKPbc**	**04 39 22.4**	**+1.8**	
LAST	**Lasithi**	**132.85**	**309**	⇑*i*P	**PKPdf**	**04 36 02.7**	**+1.6**	
LAST	**Lasithi**	**132.85**	**309**	P	**PKPdf**	**04 36 01.8**	**+0.7**	
LAST	**Lasithi**	**132.85**	**309**	P	**SKPbc**	**04 39 21.1**	**-0.1**	
LAST	**Lasithi**	**132.85**	**309**	P	**PKPdf**	**04 36 01.8**	**+0.7**	
KHC	**Kasperske Hory**	**132.91**	**331**	*e*PKPpre	PKPpre	04 35 49.7		
KHC				*ex*	x	04 35 56.5		
KHC				*ep*PKP	pPKPdf	04 36 24.2	-0.5	
KHC				*e*PP	**PP**	**04 38 23.6**	**-2.9**	
KHC				*e*PS	**PS**	**04 48 49.6**	**+4.4**	
KHC				AMS	AMS	05 32 30.0		
	comp=Z,51µm,24.9s							
KHC	**Kasperske Hory**	**132.91**	**331**	*e*PKHKP	PKPpre	04 35 49.7		
KHC				*e*		04 38 23.6		
KHC				*e*SP	SP	04 48 49.6	+16	
KHC				MLR	MLR			
	comp=Z,51µm,24.9s							
KHC	**Kasperske Hory**	**132.91**	**331**	*e*PKPdf	**PKPdf**	**04 35 56.7**	**-4.1**	
KHC				*ep*PP	**PP**	**04 38 21.5**	**-4.9**	
PTL	**Penteli**	**132.94**	**313**	P	**PKPdf**	**04 35 59.8**	**-1.4**	
PTL	**Penteli**	**132.94**	**313**	P	**SKPbc**	**04 39 19.9**	**-1.5**	
PTL	**Penteli**	**132.94**	**313**	P	**PKPdf**	**04 35 59.8**	**-1.4**	
LIT	**Litokhoron**	**133.01**	**316**	P	**PKPdf**	**04 36 00.9**	**-0.3**	
LIT	**Litokhoron**	**133.01**	**316**	P	**SKPbc**	**04 39 21.3**	**-0.2**	
LIT	**Litokhoron**	**133.01**	**316**	PKIKP	**PKPdf**	**04 36 00.9**	**-0.3**	
LIT	**Litokhoron**	**133.01**	**316**	P	**PKPdf**	**04 36 00.9**	**-0.3**	
ATHU	**Athens Univers**	**133.03**	**313**	P	**SKPbc**	**04 39 19.8**	**-1.8**	
GERES	**GERESS Array B**	**133.04**	**331**	PKhKP	PKPpre	04 35 47.8		
	comp=Z,1.1nm,0.7s,baz=352,slow=2.0,SNR=6.6							
GERES				PKP	**PKPdf**	**04 36 00.5**	**-0.6**	
	comp=Z,7.5nm,0.8s,baz=45,slow=1.5,SNR=13							
GERES				PP	**PP**	**04 38 29.4**	**+2.0**	
	comp=Z,7.8nm,0.9s,baz=28,slow=4.8,SNR=3.7							
GERES				SKKPbc	SKKPbc	04 48 38.0	-5.2	
	comp=Z,4.4nm,1.1s,baz=197,slow=2.0,SNR=4.8							
SMIA	**Simia**	**133.06**	**314**	P	**SKPbc**	**04 39 22.3**	**+0.6**	
VLY	**Voula,Athens**	**133.07**	**313**	P	**SKPbc**	**04 39 22.0**	**+0.2**	
ARSA	**Arzberg**	**133.21**	**328**	*i* PKPdf	**PKPdf**	**04 35 59.6**	**-1.8**	
	comp=Z,9.9nm,0.9s							
ARSA				*i* PKiKP	**PKiKP**	**04 36 08.1**	**+5.5**	
	comp=Z,29nm,1.3s							
LKR	**Lokris**	**133.30**	**314**	P	**SKPbc**	**04 39 22.6**	**+0.1**	
IVA	**Berane**	**133.32**	**321**	⇑*i*PKP	**PKPdf**	**04 36 03.5**	**+1.7**	
KOGS	**Kog**	**133.34**	**327**	*e*PKPdf	**PKPdf**	**04 36 03.0**	**+1.4**	
PLE	**Pljevlja**	**133.38**	**322**	⇑*i*PKP	**PKPdf**	**04 36 04.7**	**+2.8**	
KZN	**Kozani**	**133.40**	**317**	P	**PKPdf**	**04 36 03.1**	**+1.1**	
KZN	**Kozani**	**133.40**	**317**	P	**SKPbc**	**04 39 21.9**	**-1.0**	
KZN	**Kozani**	**133.40**	**317**	PKIKP	**PKPdf**	**04 36 03.1**	**+1.1**	
KZN	**Kozani**	**133.40**	**317**	P	**PKPdf**	**04 36 03.1**	**+1.1**	
SIVA	**Sivas**	**133.41**	**309**	⇑*i*P	**PKPdf**	**04 36 05.0**	**+2.9**	
PVY	**Plav**	**133.42**	**321**	⇑*i*PKP	**PKPdf**	**04 36 02.3**	**+0.2**	
FNA	**Florina**	**133.43**	**318**	*e*P	**PKPdf**	**04 36 03.0**	**+0.9**	
FNA	**Florina**	**133.43**	**318**	P	**PKPdf**	**04 36 02.6**	**+0.6**	
FNA	**Florina**	**133.43**	**318**	PKIKP	**PKPdf**	**04 36 02.6**	**+0.6**	
FNA	**Florina**	**133.43**	**318**	P	**PKPdf**	**04 36 02.6**	**+0.6**	
MOA	**Molln**	**133.45**	**330**	*i* PKPdf	**PKPdf**	**04 35 58.6**	**-3.3**	
	comp=Z,6.1nm,0.6s							
MOA				*i* PKiKP	**PKiKP**	**04 36 06.4**	**+3.3**	
	comp=Z,11nm,0.8s							
ESK	**Eskdalemuir**	**133.51**	**348**	*e*PKIKP	**PKPdf**	**04 36 00.1**	**-1.5**	
ESK				MLR	MLR			
	comp=Z,7µm,19.0s							
ESK	**Eskdalemuir**	**133.51**	**348**	*e*PKPdf	**PKPdf**	**04 36 00.1**	**-1.5**	
ESK				LR	LR			
	comp=Z,7µm,19.0s							
SJG	**San Juan**	**133.52**	**75**	*e*PKHKP	PKPpre	04 35 54.1		
SJG				*e*		04 36 02.5		
SJG				MLR	MLR			
	comp=Z,4µm,21.0s							
SJG	**San Juan**	**133.52**	**75**	*e*PKPpre	PKPpre	04 35 54.1		
SJG				*e*PKPdf	**PKPdf**	**04 36 02.5**	**-0.2**	
SJG				*e*SKPbc	**SKPbc**	**04 39 23.2**	**-0.6**	
SJG				LR	LR			
	comp=Z,4µm,21.0s							
SJG	**San Juan**	**133.52**	**75**	*e*P	**PKPdf**	**04 36 04.1**	**+1.4**	
GRFO	**Grafenberg**	**133.58**	**333**	*e*PKIKP	**PKPdf**	**04 35 59.3**	**-2.7**	
GRFO	**Grafenberg**	**133.58**	**333**	*e*PKPdf	**PKPdf**	**04 35 59.2**	**-2.7**	
THL	**Klokotos Trika**	**133.58**	**316**	P	**PKPdf**	**04 36 02.4**	**+0.1**	
THL	**Klokotos Trika**	**133.58**	**316**	P	**SKPbc**	**04 39 22.4**	**-1.0**	
LTK	**Loutraki**	**133.60**	**313**	P	**PKPdf**	**04 36 02.7**	**+0.3**	
LTK	**Loutraki**	**133.60**	**313**	P	**SKPbc**	**04 39 20.2**	**-3.3**	
LTK	**Loutraki**	**133.60**	**313**	P	**PKPdf**	**04 36 02.7**	**+0.3**	
AGG	**Agios Georgios**	**133.61**	**315**	*e*P	**PKPdf**	**04 35 59.2**	**-3.2**	
AGG	**Agios Georgios**	**133.61**	**315**	P	**PKPdf**	**04 36 00.1**	**-2.3**	
AGG	**Agios Georgios**	**133.61**	**315**	PKIKP	**PKPdf**	**04 36 00.1**	**-2.3**	
AGG	**Agios Georgios**	**133.61**	**315**	P	**PKPdf**	**04 36 00.1**	**-2.3**	
DID	**Didima**	**133.62**	**313**	P	**SKPbc**	**04 39 18.5**	**-5.2**	
TSUM	**Tsumeb**	**133.68**	**231**	PKhKP	PKPpre	04 35 53.4		
	baz=152,slow=0.7							
TSUM	**Tsumeb**	**133.68**	**231**	*e*PKPpre	PKPpre	04 35 53.5		
TSUM				*e*PKPdf	**PKPdf**	**04 36 03.4**	**+0.2**	
TSUM				LR	LR			
	comp=Z,23µm,22.0s							
KRND	**KRANIDI**	**133.74**	**313**	P	**PKPdf**	**04 36 02.2**	**-0.4**	
KRND	**KRANIDI**	**133.74**	**313**	P	**SKPbc**	**04 39

DAVOX	Davos/Dischmat	136.32	332	PKhKP	PKPpre	04 35 55.0		
	comp=Z,4.0nm,0.6s,baz=237,slow=3.3,SNR=13							
DAVOX	Davos/Dischmat	136.32	332	PKHKP	PKPpre	04 35 55.0		
DAVOX				pmax	pmax			
	comp=Z,4.0nm,0.6s							
ECH	Echery	136.44	335	PKP	PKPpre	04 35 57.5		
MATE	Matera	136.53	320	⇑*iP*	**PKPdf**	**04 36 08.1**	**+0.4**	
MOF	Molkenrain	136.74	335	PKP	PKPpre	04 35 57.9		
TUE	Stuetta	136.80	332	*e*PKPpre	PKPpre	04 35 55.8		
TUE				LR	LR			
	comp=Z,26µm,22.0s							
LOMF	Lomont	137.26	334	PKP	PKPpre	04 35 58.3		
TIP	Timpagrande	137.30	318	⇓*iP*	PKPpre	04 36 05.3		
TIP	Timpagrande	137.30	318	*e*PKPpre	PKPpre	04 35 60.0		
TIP				*e*PKPdf	**PKPdf**	**04 36 09.0**	**-0.3**	
TIP				LR	LR			
	comp=Z,10µm,22.0s							
CUC	Castrocucco	137.46	320	*e*PKPpre	PKPpre	04 35 57.2		
CUC				*e*PKPdf	**PKPdf**	**04 36 10.4**	**+0.8**	
CUC				LR	LR			
	comp=Z,5µm,21.0s							
AQU	L'Aquila	137.51	324	*e*PKHKP	PKPpre	04 36 02.5		
AQU				*e*		04 36 09.5		
AQU				MLR	MLR			
	comp=Z,17µm,22.0s							
AQU	L'Aquila	137.51	324	*e*PKPpre	PKPpre	04 36 02.5		
AQU				*e*PKPdf	**PKPdf**	**04 36 09.5**	**-0.1**	
AQU				LR	LR			
	comp=Z,17µm,22.0s							
PTGA	Pitinga	137.55	103	PKhKP	PKPpre	04 36 04.4		
	comp=Z,8.8nm,0.8s,baz=251,slow=3.6,SNR=7.2							
PTGA				PKP	**PKPdf**	**04 36 09.5**	**-1.0**	
	comp=Z,33nm,1.0s,baz=241,slow=2.1,SNR=16							
PTGA	Pitinga	137.55	103	PKPpre	PKPpre	04 36 04.4		
PTGA				PKP	**PKPdf**	**04 36 09.5**	**-1.0**	
PTGA				LR	LR			
	comp=Z,37µm,21.0s							
ANWB	Willy Bob	137.70	75	*e*P	**PKPdf**	**04 36 09.6**	**-0.9**	
ANWB	Willy Bob	137.70	75	*e*PKPdf	**PKPdf**	**04 36 09.9**	**-0.6**	
ANWB				LR	LR			
	comp=Z,6µm,22.0s							
GRGR	Grenville	137.92	83	*e*PKPdf	**PKPdf**	**04 36 10.1**	**-0.9**	
GRGR				LR	LR			
	comp=Z,5µm,19.0s							
VLC	Villacollemand	137.95	328	PFAKE		04 36 20.0	+10	
VLC				LR	LR			
	comp=Z,9µm,22.0s							
VAL	Valentia	137.96	352	⇓*iP*	**PKPdf**	**04 36 14.8**	**+4.8**	
VAL				*e*PP	**PP**	**04 39 02.8**	**+5.1**	
CEL	Celeste	138.36	318	*e*PKPpre	PKPpre	04 36 00.8		
CEL				*e*PKPdf	**PKPdf**	**04 36 11.9**	**+0.6**	
CEL				LR	LR			
	comp=Z,8µm,20.0s							
FDF	Fort de France	138.43	79	*e*P	PKPpre	04 36 06.8		
FDF	Fort de France	138.43	79	*e*PKHKP	PKPpre	04 36 03.9		
FDF				*e*		04 36 11.8		
FDF				MLR	MLR			
	comp=Z,8µm,22.0s							
FDF	Fort de France	138.43	79	*e*PKPpre	PKPpre	04 36 03.9		
FDF				*e*PKPdf	**PKPdf**	**04 36 11.8**	**-0.2**	
FDF				LR	LR			
	comp=Z,8µm,22.0s							
H05N1	Guadeloupe/Mar	138.47	77	PKhKP	PKPpre	04 36 04.8		
H05S1	Guadeloupe/Mar	138.74	80	PKhKP	PKPpre	04 36 03.0		
BNI	Bardonecchia	139.10	332	PFAKE		04 36 20.0	+7.5	
BNI				LR	LR			
	comp=Z,20µm,22.0s							
GDM	Grand'Maison	139.24	333	PKP	PKPpre	04 36 06.2		
GRN	Grenoble	139.37	333	PKP	PKPpre	04 36 05.9		
PLDF	La Plantade	139.69	336	PKP	PKPpre	04 36 05.9		
AGO	Saint Agoulin	139.82	336	PKP	PKPpre	04 36 08.0		
SSB	Saint Sauveur	139.87	334	PKP	PKPpre	04 36 07.7		
SSB	Saint Sauveur	139.87	334	*e*PKHKP	PKPpre	04 36 07.2		
SSB				MLR	MLR			
	comp=Z,24µm,22.0s							
SSB	Saint Sauveur	139.87	334	*e*PKPpre	PKPpre	04 36 07.2		
SSB				LR	LR			
	comp=Z,24µm,22.0s							
BBGH	Gun Hill	139.98	82	PFAKE		04 36 30.0	+15	
BBGH				LR	LR			
	comp=Z,9µm,22.0s							
PYM	Petit Puy Mans	140.12	336	PKP	PKPpre	04 36 08.7		
LBL	Lubilhac	140.45	335	PKP	PKPpre	04 36 09.8		
CLTB	Caltabellotta	140.50	319	*e*PKPdf	**PKPdf**	**04 36 11.8**	**-3.4**	
CLTB				LR	LR			
	comp=Z,6µm,21.0s							
WDD	Wied Dalam	140.56	315	PFAKE		04 36 30.0	+15	
WDD				LR	LR			
	comp=Z,7µm,22.0s							
FRNF	Fournols	140.60	336	PKP	**PKPdf**	**04 36 11.5**	**-3.6**	
VSL	Villasalto	141.68	324	*e*PKPdf	**PKPdf**	**04 36 17.7**	**+0.5**	
VSL				LR	LR			
	comp=Z,6µm,21.0s							
FILF	Fillols	142.90	334	PKP	**PKPdf**	**04 36 17.0**	**-2.4**	
CARF	Carcanieres	142.97	334	PKP	**PKPdf**	**04 36 17.2**	**-2.4**	
VALF	Valcebollere	143.27	334	PKP	**PKPdf**	**04 36 19.2**	**-0.9**	
SALF	Salau	143.32	335	PKP	**PKPdf**	**04 36 18.9**	**-1.2**	
MELF	Melles	143.41	336	PKP	**PKPdf**	**04 36 19.4**	**-0.9**	
LABF	Labassere	143.53	337	PKP	**PKPdf**	**04 36 19.7**	**-0.8**	
VIEF	Viey	143.69	336	PKP	**PKPdf**	**04 36 21.0**	**+0.2**	
REYF	Montagne du Re	143.69	337	PKP	**PKPdf**	**04 36 20.2**	**-0.6**	
ORDF	Ordiarp	143.78	338	PKP	PKPbc	04 36 19.0	+0.4	
ATE	Arette	143.80	337	PKP	PKPbc	04 36 18.9	+0.2	
OSSF	Osses	143.86	338	PKP	PKPbc	04 36 19.0	+0.2	
LARF	Larrau	143.95	338	PKP	PKPbc	04 36 19.5	+0.4	
KEST	Kesra	144.10	319	PKP	**PKPab**	**04 36 19.5**	**+0.1**	
	comp=Z,172nm,0.9s,baz=357,slow=0.3,SNR=39							
CMAH	Djebel Manchou	144.74	322	P	**PKPab**	**04 36 19.7**	**-2.0**	
ABSA	Djebel Ababsia	144.93	322	P	**PKPab**	**04 36 21.7**	**-0.8**	
CAEH	'Ain El Ouahch	144.97	323	P	PKPbc	04 36 22.1	-0.4	
CKFL	Kef-Lekhel	145.31	322	P	**PKPbc**	**04 36 22.9**	**-0.8**	
CASM	Ain Smara	145.54	322	P	**PKPdf**	**04 36 23.5**	**-0.6**	
DFRA	Djebel Bou Aff	145.71	323	P	**PKPbc**	**04 36 25.0**	**0.0**	
CTEI	Djebel Teioual	145.72	322	P	**PKPab**	**04 36 26.2**	**+0.7**	
SET	Setif	146.22	323	P	**PKPab**	**04 36 28.0**	**+0.7**	
CKHR	Kef el Ahmar	146.28	323	P	**PKPbc**	**04 36 27.0**	**+0.2**	
PBRG	Braganca	146.94	343	*e*PKPab	**PKPab**	**04 36 29.7**	**-0.2**	
PBRG	Braganca	146.94	343	*e*PP	PP	04 39 55.8	+3.6	
PGAV	Gavieira, Arco	147.20	345	*e*PKPab	**PKPab**	**04 36 30.7**	**-0.2**	
PGAV	Gavieira, Arco	147.20	345	*e*PP	PP	04 39 56.3	+2.6	
PGAV	Gavieira, Arco	147.20	345	*e*SS	SS	04 58 59.3	+11	
PGAV	Gavieira, Arco	147.20	345	*e*LQ	LQ	05 18 01.4		
PGAV	Gavieira, Arco	147.20	345	*e*LR	LR	05 29 02.4		
	comp=Z,7µm,22.0s							
PCAB	Cabril	147.38	345	*e*PKPab	**PKPbc**	**04 36 30.4**	**+0.8**	
PCAB	Cabril	147.38	345	*e*PP	PP	04 39 55.9	+1.2	
EMHD	Djebel Mahouad	147.61	326	P	**PKPbc**	**04 36 30.2**	**-0.3**	
MVO	Moncorvo	147.62	343	*e*PKPab	**PKPab**	**04 36 31.6**	**-1.0**	
MVO	Moncorvo	147.62	343	*e*SS	SS	04 58 58.0	+5.3	
MVO	Moncorvo	147.62	343	*e*LQ	LQ	05 17 45.0		
MVO				*e*LR	LR	05 27 32.1		
	comp=Z,12µm,20.0s							
PVRL	Vila Real	147.70	344	*e*PKPab	**PKPbc**	**04 36 30.9**	**+0.4**	
ESDC	Sonseca Array	147.97	338	PKPbc	**PKPbc**	**04 36 30.3**	**-1.0**	
	comp=Z,60nm,1.0s,baz=13,slow=2.6,SNR=40							
ESDC				SKP		04 39 52.0		
	comp=Z,5.5nm,0.6s,baz=17,slow=6.6,SNR=2.8							
ESDC				PP	**PP**	**04 40 01.7**	**+3.3**	
	comp=Z,65nm,1.2s,baz=24,slow=5.3,SNR=5.3							
PTO	Porto	148.06	345	*e*PKPab	**PKPab**	**04 36 33.0**	**-1.2**	
PAB	San Pablo	148.23	339	*e*PKP2	**PKPbc**	**04 36 31.6**	**-0.4**	
PAB				MLR	MLR			
	comp=Z,16µm,22.0s							
PAB	San Pablo	148.23	339	*e*PKPbc	**PKPbc**	**04 36 31.6**	**-0.4**	
PAB				*e*PKPab	**PKPab**	**04 36 35.2**	**+0.1**	
PAB				LR	LR			
	comp=Z,16µm,22.0s							
PVIS	Viseu	148.28	344	*e*PKPab	**PKPbc**	**04 36 33.5**	**+1.5**	
EBNR	Beni Rached	148.31	328	P	**PKPbc**	**04 36 33.6**	**+1.4**	
MTE	Manteigas	148.47	344	*e*PKPab	**PKPbc**	**04 36 33.7**	**+1.1**	
MTE	Manteigas	148.47	344	*e*LQ	LQ	05 18 02.5		
MTE				*e*LR	LR	05 27 57.3		
	comp=Z,10µm,22.0s							
MTE	Manteigas	148.47	344	*e*PKPbc	**PKPbc**	**04 36 32.5**	**-0.1**	
MTE				LR	LR			
	comp=Z,10µm,20.0s							
ECHA	Ech Chlef	148.50	328	P	**PKPbc**	**04 36 33.5**	**+0.9**	
H07N1	FLORES T-PHASE	148.78	19	PKPbc	**PKPbc**	**04 36 32.3**	**-1.0**	
	SNR=37							
H07N1	FLORES T-PHASE	148.78	19	*e*PKPdf	**PKPab**	**04 36 35.6**	**-1.6**	
EANR	'Ain N'Sour	148.79	328	P	**PKPbc**	**04 36 33.9**	**+0.4**	
OKGL	Djebel Kef Gue	148.96	329	P	PKPab	04 36 47.0	+8.9	
PCBR	Castelo Branco	148.97	343	*e*PKPbc	**PKPbc**	**04 36 34.8**	**+1.1**	
H07S1	FLORES T-PHASE	149.04	19	PKPbc	**PKPbc**	**04 36 35.8**	**+1.8**	
	SNR=8.4							
H07S1	FLORES T-PHASE	149.04	19	*e*PKPdf	**PKPbc**	**04 36 35.4**	**+1.4**	
PCAS	Casmilo, Conde	149.06	345	*e*PKPbc	**PKPbc**	**04 36 34.4**	**+0.4**	
PCAS	Casmilo, Conde	149.06	345	*e*PP	PP	04 40 08.2	+3.7	
ETRT	Tiaret	149.11	327	P	**PKPbc**	**04 36 35.5**	**+1.1**	
OJGS	Djebel Guires	149.32	328	P	**PKPab**	**04 36 45.0**	**+5.4**	
PMRV	Marv??o	149.33	343	*e*PKPbc	**PKPbc**	**04 36 35.6**	**+0.9**	
PMRV	Marv??o	149.33	343	*e*PP	PP	04 40 08.1	+2.0	
PMRV	Marv??o	149.33	343	*e*LQ	LQ	05 18 58.2		
PMRV				*e*LR	LR	05 27 37.5		
	comp=Z,15µm,22.0s							
PTOM	Tomar	149.44	344	*e*PKPbc	**PKPbc**	**04 36 36.1**	**+1.2**	
USTO	Oran	149.81	330	P	**PKPab**	**04 36 46.0**	**+4.5**	
PMTG	Montargil	149.90	344	*e*PKPbc	**PKPbc**	**04 36 36.4**	**+0.3**	
PMTG	Montargil	149.90	344	*e*PP	PP	04 40 10.9	+1.5	
PESTR	Estremoz	149.91	342	*e*PKPbc	**PKPbc**	**04 36 37.2**	**+1.1**	
ALMR	Almeirim	149.92	344	*e*P	**PKPdf**	**04 36 30.5**	**-0.7**	
ALMR	Almeirim	149.92	344	*e*PKIKP	**PKPdf**	**04 36 30.5**	**-0.7**	
ODJA	Bouhanifia	149.92	329	P	**PKPab**	**04 36 47.0**	**+4.9**	
PGRA	Graciosa	150.28	15	*e*PKPdf	**PKPbc**	**04 36 39.5**	**+2.5**	
PMAFR	Mafra	150.29	345	*e*PKPbc	**PKPbc**	**04 36 38.4**	**+1.4**	
EVO	Evora	150.34	343	*e*PKPbc	**PKPbc**	**04 36 36.8**	**-0.4**	
PBAR	Barrancos	150.37	341	*e*PKPbc	**PKPbc**	**04 36 37.1**	**-0.1**	
PBAR	Barrancos	150.37	341	*e*SS	SS	04 59 24.6	+1.2	
PMST	Lisbon--Monsan	150.47	345	*e*PKPbc	**PKPbc**	**04 36 39.0**	**+1.6**	
PCED	Cedros	150.47	16	*e*PKPdf	**PKPbc**	**04 36 40.1**	**+2.6**	
LIS	Lisbon	150.48	345	*e*P	**PKPdf**	**04 36 31.2**	**-0.9**	
LIS				AMS	AMS	05 49 04.9		
	comp=Z,13µm,19.0s							
LIS	Lisbon	150.48	345	*e*PKIKP	**PKPdf**	**04 36 31.2**	**-0.9**	
ROSA	Rosais	150.51	15	*e*PKPdf	**PKPbc**	**04 36 39.9**	**+2.3**	
HOR	Horta	150.59	16	*e*PKPdf	**PKPbc**	**04 36 40.4**	**+2.7**	
OLHC	Oulhaca	150.62	330	P	**PKPab**	**04 36 45.0**	**+0.1**	
PMAN	Manadas	150.63	15	*e*PKPdf	**PKPbc**	**04 36 39.9**	**+2.1**	
PICO	Pico	150.67	16	*e*PKPdf	**PKPbc**	**04 36 40.5**	**+2.5**	
PCAN	Candelaria	150.69	16	*e*PKPdf	**PKPbc**	**04 36 40.5**	**+2.5**	
PBEJ	Beja	150.77	342	*e*PKPbc	**PKPbc**	**04 36 37.5**	**-0.7**	
ADH	Angra Heroismo	150.82	14	*e*PKPdf	**PKPbc**	**04 36 41.0**	**+2.8**	
SHEL	Horse Pasture	150.85	206	*e*PKIKP	**PKPdf**	**04 36 33.2**	**-0.2**	
SHEL				*e*		04 36 46.3		
SHEL				MLR	MLR			
	comp=Z,8µm,22.0s							
SHEL	Horse Pasture	150.85	206	*e*PKPdf	**PKPdf**	**04 36 33.2**	**-0.2**	
SHEL				*e*PKPbc	**PKiKP**	**04 36 39.7**	**0.0**	
SHEL				*e*PKPab	**PKPab**	**04 36 46.3**	**0.0**	
SHEL				LR	LR			
	comp=Z,8µm,22.0s							
PNCL	Nicolau / Gran	150.88	343	*e*PKPbc	**PKPbc**	**04 36 38.0**	**-0.4**	
PNCL	Nicolau / Gran	150.88	343	*e*PP	PP	04 40 17.6	+2.6	
MESJ	Messejana	151.04	343	*e*P	**PKPdf**	**04 36 32.2**	**-0.8**	
MESJ				AMS	AMS	05 47 00.8		
	comp=Z,12µm,18.3s							
MESJ	Messejana	151.04	343	*e*PKPbc	**PKPbc**	**04 36 38.4**	**-0.4**	
MESJ	Messejana	151.04	343	*e*PKIKP	**PKPdf**	**04 36 32.2**	**-0.8**	
PCVE	Castro Verde	151.18	342	*e*PKPbc	**PKPbc**	**04 36 38.4**	**-0.8**	
PVAQ	Vaqueiros	151.29	341	*e*PKPbc	**PKPbc**	**04 36 38.6**	**-0.8**	
PVAQ	Vaqueiros	151.29	341	*e*PP	PP	04 40 20.0	+2.6	
PVAQ	Vaqueiros	151.29	341	*e*LQ	LQ	05 19 35.3		
PVAQ	Vaqueiros	151.29	341	*e*LR	LR	05 31 35.5		
	comp=Z,19µm,24.0s							
PTEO	Sao Teotonio	151.46	343	*e*PKPbc	**PKPbc**	**04 36 40.9**	**+1.1**	
PBDV	Barranco-do-Ve	151.51	342	*e*PKPbc	**PKPbc**	**04 36 39.3**	**-0.7**	
MORF	Marmelete	151.66	343	*e*P	**PKPdf**	**04 36 33.2**	**-0.9**	
MORF				AMS	AMS	05 50 44.3		
	comp=Z,10µm,18.7s							
MORF	Marmelete	151.66	343	*e*PKPbc	**PKPbc**	**04 36 39.2**	**-1.2**	
MORF	Marmelete	151.66	343	*e*PKIKP	**PKPdf**	**04 36 33.1**	**-0.9**	
PFVI	Vila Bisbo	151.88	343	*e*PKPbc	**PKPbc**	**04 36 39.9**	**-0.9**	
PSET	Sete Cidades	151.94	12	*e*PKPdf	**PKPbc**	**04 36 42.5**	**+1.6**	
PDA	Ponta Delgada	152.03	12	*e*PKPdf	**PKPbc**	**04 36 42.9**	**+1.8**	
CMLA	Cha da Macela	152.04	11	*e*PKIKP	**PKPbc**	**04 36 41.5**	**+0.4**	
CMLA				MLR	MLR			
	comp=Z,8µm,20.0s							
CMLA	Cha da Macela	152.04	11	*e*PKPdf	**PKPbc**	**04 36 42.8**	**+1.7**	
CMLA	Cha da Macela	152.04	11	*e*PKPbc	**PKPbc**	**04 36 41.5**	**+0.4**	
CMLA				LR	LR			
	comp=Z,8µm,20.0s							
BART	Pico Bartolome	152.10	11	*e*PKPdf	**PKPbc**	**04 36 43.4**	**+2.0**	
PSMA	Santa Maria	152.86	11	*e*PKPdf	**PKPbc**	**04 36 44.2**	**+1.2**	
PSMN	Pico do Norte,	152.87	11	*e*PKPdf	**PKPbc**	**04 36 44.8**	**+1.8**	
TAM	Tamanrasset	153.70	301	*e*PKIKP	**PKPdf**	**04 36 37.4**	**-0.1**	
TAM				MLR	MLR			
	comp=Z,10µm,21.0s							
TAM	Tamanrasset	153.70	301	*e*PKPdf	**PKPdf**	**04 36 37.4**	**-0.1**	
TAM				*e*PKPbc	**PKiKP**	**04 36 46.2**	**+0.7**	
TAM				LR	LR			
	comp=Z,10µm,21.0s							
RTC	Rabat Centre	154.07	337	*e*PKPab	**PKPab**	**04 37 01.6**	**+2.2**	
RTC				LR	LR			
	comp=Z,27µm,21.0s							
MDT	Midelt	154.13	332	PKP	**PKPdf**	**04 36 37.9**	**+0.1**	
	comp=Z,5.0nm,0.9s,baz=64,slow=4.7,SNR=8.5							
MDT				PKPbc	**PKPbc**	**04 36 44.3**	**-1.7**	
	comp=Z,14nm,1.1s,baz=47,slow=3.8,SNR=8.6							
MDT				PKPab	**PKPab**	**04 37 00.5**	**+0.7**	
	comp=Z,114nm,0.9s,baz=52,slow=4.9,SNR=30							
RCBR	Riachuelo	156.54	133	PKP	**PKPdf**	**04 36 40.1**	**-1.4**	
	comp=Z,8.7nm,0.8s,baz=91,slow=4.3,SNR=3.6							
RCBR				PKPab	**PKPab**	**04 37 09.7**	**-0.9**	
	comp=Z,104nm,1.1s,baz=198,slow=2.7,SNR=13							
RCBR	Riachuelo	156.54	133	*e*PKPdf	**PKPdf**	**04 36 40.9**	**-0.6**	
RCBR				*e*PKPab	**PKPab**	**04 37 10.1**	**-0.4**	
RCBR				LR	LR			
	comp=Z,10µm,20.0s							
PMOZ	Porto Moniz, M	157.60	357	*e*PP	PP	04 40 54.7	+2.1	
PMOZ	Porto Moniz, M	157.60	357	*e*SS	SS	05 00 45.2	+3.4	
PMOZ	Porto Moniz, M	157.60	357	*e*LR	LR	05 30 49.9		
	comp=Z,4µm,24.0s							
FUL	Funchal	157.75	356	*e*PP	PP	04 40 54.9	+1.6	
ASCN	Ascension	161.31	194	PFAKE		04 37 00.0	+13	
ASCN				LR	LR			
	comp=Z,11µm,22.0s							
KIC	Kosan Boka	165.58	255	*e*PKP1	**PKPdf**	**04 36 49.3**	**-1.8**	
	comp=Z,466nm,1.5s							
DBIC	Dimbokro	165.78	256	PKP	**PKPdf**	**04 36 49.5**	**-1.7**	
	comp=Z,40nm,1.0s,baz=134,slow=0.4,SNR=22							
DBIC				PKPab	**PKPab**	**04 37 52.0**	**+1.0**	
	comp=Z,81nm,1.1s,baz=69,slow=2.9,SNR=7.5							
DBIC				PP	**PP**	**04 41 38.1**	**-0.4**	
	comp=Z,12nm,0.9s,baz=92,slow=14,SNR=2.7							
LIC	Lamto	165.81	254	*e*PKP1	**PKPdf**	**04 36 48.2**	**-3.1**	
	comp=Z,194nm,1.8s							
TIC	Toumodi	165.93	256	*e*PKP1	**PKPdf**	**04 36 49.4**	**-2.0**	
BBTS	Babate	175.21	333	PKP	**PKPdf**	**04 36 55.3**	**-1.0**	
	comp=Z,79nm,0.9s,baz=134,slow=1.5,SNR=3.0							
BBTS				PKPab	**PKPab**	**04 38 34.0**	**+1.7**	
	comp=Z,115nm,1.1s,baz=340,slow=2.6,SNR=2.5							

NEIC 23 04:22:35.5, 51.47N×175.64W, h20km, ML2.7 (AEIC), **After AEIC., Andreanof Islands**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ETKA	Kagalaska Isla	0.62	310	P	Pb	04 22 47.6	0.0
ETKA				S	Sb	04 22 55.9	+0.1
GSMY	Great Sitkin M	0.63	336	P	Pg	04 22 48.2	+0.1
GSMY				S	Sg	04 22 57.1	+0.5
GSCK	Great Sitkin C	0.64	330	P	Pg	04 22 48.2	0.0
GSTD	Great Sitkin T	0.67	332	P	Pg	04 22 48.7	0.0
GSTD				S	Sg	04 22 58.7	+0.9
GSTR	Great Sitkin T	0.68	338	P	Pg	04 22 49.2	+0.2
ADAG	Mount Adagdak	0.79	311	P	Pg	04 22 50.8	-0.2
KIRH	Kanaga Island	1.00	296	P	Pb	04 22 53.0	-1.2
KIKV	Kanaga Island	1.04	294	P	Pb	04 22 53.3	-1.5
KICM	Kanaga Island	1.07	296	P	Pb	04 22 53.8	-1.5
KOWE	Korovin West	1.25	43	P	Pn	04 22 57.4	-0.4
KOFP	Korovin Flat P	1.25	49	P	Pn	04 22 57.3	-0.6
KOFP				S	Sb	04 23 13.3	-1.0
KOSE	Korovin Southe	1.32	48	P	Pn	04 22 58.8	-0.1
TAFP	Tanaga Falls P	1.52	288	P	Pn	04 23 01.4	-0.2
TAFP				S	Sb	04 23 22.4	+0.6
TASE	Tanaga Southea	1.54	285	P	Pn	04 23 01.5	-0.3
INK	Inuvik	26.27	34	*e*Pn	P	04 28 06.3	-2.6
	2.1nm,0.7s						
RNO	Roman Nose	35.10	82	P	P	04 29 30.1	+2.8
VBEM	Beaver Butte	35.84	79	P	P	04 29 38.5	+4.7

PRU 23 04:34:02.7, 50.31N×18.77E, h0km, 2D, Poland

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CHZP	Chorzow	0.14	98	⇓*e*Pg	Pg	04 34 05.7	+0.3
CHZP				⇓*e*Sg	Sg	04 34 08.1	+0.8
OKC	Ostrava-Krasne	0.62	221	*e*PG	Pg	04 34 14.8	+0.2
OKC				*e*SG	Sg	04 34 23.8	+1.2
	comp=Z,4.2nm,0.5s						
LANS	Liptovska Anna	1.25	158	*e*PG	Pg	04 34 25.9	-0.7
LANS				*e*SG	Sg	04 34 42.1	-0.6
KRLC	Kraliky	1.30	260	*e*PG	Pg	04 34 26.6	-1.0
KRLC				*e*SG	Sg	04 34 43.9	-0.5
DPC	Dobruska-Polom	1.57	272	*e*PG	Pn	04 34 31.4	-0.5
DPC				*e*SG	Sg	04 34 53.5	+0.4
	comp=Z,2.4nm,0.8s						

ISCJB ***23*** *04:36:21.9±0.5, 47.49N±0.03×18.34E±0.04, h10km±3km, Error ellipse: s-maj=5.2km s-min=4.4km az=41.7*
CSEM ***23*** *04:36:21.9, 47.48N×18.35E, h10km, ML2.2/9*

ISC 23 04:36:22.0±0.9, 47.48N±0.02×18.35E±0.02, h7km±6km, n24, σ0.80/43, 9D, Hungary

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PKSG		0.09	165	⇓*e*Pg	**Pg**	**04 36 24.2**	**+0.1**
PKSG				*e*Sg	**Sg**	**04 36 25.7**	**+0.1**
PKSG		0.09	165	⇓*e*Pg	**Pg**	**04 36 24.2**	**+0.1**
PKSG				⇓*e*Sg	**Sg**	**04 36 25.7**	**+0.1**
CSKK	Cs˘‡kako	0.13	208	⇓*e*Pg	**Pg**	**04 36 24.9**	**+0.1**
CSKK				*e*Sg	**Sg**	**04 36 27.2**	**+0.4**
CSKK	Cs˘‡kako	0.13	208	⇓*e*Pg	**Pg**	**04 36 24.9**	**+0.1**
CSKK				⇓*e*Sg	**Sg**	**04 36 27.2**	**+0.4**
PKST	T˘'s	0.31	225	*e*Pg	**Pg**	**04 36 27.8**	**-0.3**
PKST				*e*Sg	**Sg**	**04 36 33.0**	**+0.8**
PKST	T˘'s	0.31	225	*e*Pg	**Pg**	**04 36 27.8**	**-0.3**
PKST				*e*Sg	**Sg**	**04 36 33.0**	**+0.8**
BUD	Budapest	0.45	89	*e*Pg	**Pg**	**04 36 31.3**	**+0.5**
BUD				*e*Sg	**Sg**	**04 36 37.8**	**+1.1**
BUD	Budapest	0.45	89	*e*Pg	**Pg**	**04 36 31.3**	**+0.5**
BUD				*e*Sg	**Sg**	**04 36 37.8**	**+1.1**
PKS9	Tamasi	0.90	183	⇓*e*Pg	**Pn**	**04 36 40.9**	**-0.1**
PKS9				*e*Sg	**Sn**	**04 36 53.9**	**-0.3**
PKS9	Tamasi	0.90	183	⇓*e*Pg	**Pn**	**04 36 40.9**	**-0.1**
PKS9				⇓*e*Sg	**Sn**	**04 36 53.9**	**-0.3**
VYHS	Vyhne	1.06	18	*e*Pn	**Pn**	**04 36 42.9**	**-0.5**
VYHS				*e*Sn	**Sb**	**04 36 57.1**	**+0.2**
VYHS	Vyhne	1.06	18	*e*PG	**Pn**	**04 36 42.9**	**-0.5**
VYHS				*e*SG	**Sb**	**04 36 57.1**	**+0.2**
VYHS				*e*LG	Lg	04 36 58.8	
PSZ	Piszkesteto	1.13	67	*e*Pn	**Pn**	**04 36 43.9**	**-0.4**
PSZ				*e*Sn	**Sn**	**04 37 00.1**	**0.0**
PSZ	Piszkesteto	1.13	67	*e*Pn	**Pn**	**04 36 43.9**	**-0.4**
PSZ				*e*Sn	**Sn**	**04 37 00.1**	**0.0**
SMOL	Smolenice	1.21	329	*e*Pn	**Pg**	**04 36

KMRS	Kahramanmaras	1.04	88	ePg	Pg	05 22 31.6	-0.5
KMRS	Kahramanmaras	1.04	88	Pg	Pg	05 22 31.6	-0.5
HCB	Kahramanmara¯	1.06	96	iP	Pg	05 22 31.0	-1.3
HCB				iS	Sb	05 22 47.1	+1.3
KERG	Konya-Eregli	1.17	268	iP	Pg	05 22 32.4	-2.0
KERG				iS	Sg	05 22 48.3	-1.3
KERG	Konya-Eregli	1.17	268	P	Pg	05 22 32.4	-2.0
KERG				S	Sg	05 22 48.3	-1.3
TAHT	Tahtakopru-Hat	1.19	156	ePN	Pg	05 22 34.3	-0.6
TAHT	Tahtakopru-Hat	1.19	156	ePn	Pg	05 22 34.3	-0.6
DRWC	Darouich	1.21	134	⇓eP	Pg	05 22 34.0	-1.2
DRWC				eS	Sn	05 22 52.9	+2.2
DRWC				AML	AML	05 22 55.1	
	comp=Z,2µm,0.6s						
DRWC				AML	AML	05 23 00.3	
	comp=E,2µm,0.5s						
DRWC				AML	AML	05 23 00.6	
	comp=N,730nm,0.5s						
BSTP	Nigde	1.27	293	iP	Pn	05 22 35.9	+0.5
BSTP				iS	Sn	05 22 55.2	+2.9
GAZ	Gaziantep	1.33	102	ePN	Pn	05 22 35.7	-0.5
GAZ	Gaziantep	1.33	102	ePn	Pn	05 22 35.7	-0.5
GAZ	Gaziantep	1.33	102	Pn	Pn	05 22 35.7	-0.5
KUZU	Kuzuini	1.38	120	⇓iP	Pn	05 22 36.8	0.0
KUZU				iS	Sb	05 22 55.5	+0.5
KUZU	Kuzuini	1.38	120	P	Pn	05 22 36.8	0.0
KUZU				S	Sb	05 22 55.5	+0.5
BNN	Bunyan	1.40	8	ePN	Pn	05 22 36.4	-0.7
BNN	Bunyan	1.40	8	ePn	Pn	05 22 36.4	-0.7
BNN	Bunyan	1.40	8	Pn	Pn	05 22 36.4	-0.7
AVNS	Nevsehir-Avano	1.46	337	iP	Pn	05 22 37.8	-0.2
AVNS				iS	Sb	05 22 56.8	-0.6
AVNS	Nevsehir-Avano	1.46	337	P	Pn	05 22 37.8	-0.2
AVNS				S	Sb	05 22 56.8	-0.6
YAYL	Yayladag	1.49	164	iP	Pn	05 22 37.6	-0.9
YAYL				iS	Sn	05 22 58.8	+1.0
YAYL	Yayladag	1.49	164	P	Pn	05 22 37.6	-0.9
YAYL				S	Sn	05 22 58.8	+1.0
KIZK	Mersin	1.52	230	iP	Pn	05 22 38.7	0.0
KIZK				iS	Sg	05 23 01.9	+1.0
KIZK	Mersin	1.52	230	P	Pn	05 22 38.7	0.0
KIZK				S	Sg	05 23 01.9	+1.0
GZT	Gaziantep	1.58	94	⇓iP	Sg	05 23 39.1	-0.5
GZT				eS	Sg	05 23 40.3	+5.5
BTCH	Batrach	1.59	154	⇓eP	Pn	05 22 39.5	-0.2
BTCH				eS	Sg	05 23 03.1	-0.1
BTCH				AML	AML	05 23 09.9	
	comp=Z,1µm,0.5s						
BTCH				AML	AML	05 23 12.2	
	comp=E,3µm,0.5s						
ARNB	Al Arnab	1.64	169	⇑eP	Pn	05 22 40.6	+0.2
ARNB				eS	Sb	05 23 03.8	+1.4
ARNB				AML	AML	05 23 06.1	
	comp=Z,872nm,0.5s						
ARNB				AML	AML	05 23 06.6	
	comp=E,3µm,0.6s						
CUGUR	Gurin_S¯VAS	1.82	46	iP	Pn	05 22 44.1	+1.0
CUGUR				iS	Sg	05 23 11.2	+0.5
CUGUR	Gurin_S¯VAS	1.82	46	P	Pn	05 22 44.1	+1.0
CUGUR				S	Sg	05 23 11.2	+0.5
DARE	Darende-Malaty	1.86	53	ePN	Pn	05 22 43.7	+0.3
DARE	Darende-Malaty	1.86	53	ePn	Pn	05 22 43.7	+0.3
AKSY	AKSARAY - Alti	1.86	310	⇓iP	Pn	05 22 44.3	+0.8
AKSY				iS	Sb	05 23 09.8	+0.8
AKSY	AKSARAY - Alti	1.86	310	P	Pn	05 22 44.3	+0.8
AKSY				S	Sb	05 23 09.8	+0.8
SLNF	Slenfeh	1.94	165	⇑eP	Pn	05 22 43.0	-1.6
SLNF				AML	AML	05 23 18.0	
	comp=Z,3µm,0.6s						
IKL	Isikli	1.96	232	ePN	Pn	05 22 45.1	+0.3
IKL	Isikli	1.96	232	Pn	Pn	05 22 45.5	+0.7
IKL	Isikli	1.96	232	Pn	Pn	05 22 45.5	+0.7
CUSAR	Sarkisla-SIVAS	2.01	15	iP	Pn	05 22 46.1	+0.4
CUSAR				iS	Sg	05 23 16.1	-0.6
CUSAR	Sarkisla-SIVAS	2.01	15	P	Pn	05 22 46.1	+0.4
CUSAR				S	Sg	05 23 16.1	-0.6
AKCD	Akcadag	2.02	65	iP	Pn	05 22 46.1	+0.4
AKCD				iS	Sn	05 23 12.4	+1.5
AKCD	Akcadag	2.02	65	P	Pn	05 22 46.2	+0.4
AKCD				S	Sn	05 23 12.4	+1.5
CUALT	Altinyayla-SIV	2.02	27	⇓iP	Pn	05 22 46.4	+0.6
CUALT				iS	Sg	05 23 17.2	+0.3
CUALT	Altinyayla-SIV	2.02	27	P	Pn	05 22 46.4	+0.6
ATAB	Bozova	2.15	89	iP	Pn	05 22 47.1	-0.4
ATAB				iS	Sb	05 23 17.2	-0.1
ATAB	Bozova	2.15	89	P	Pn	05 22 47.1	-0.4
ATAB				S	Sb	05 23 17.2	-0.1
SERE	Sereflikochisa	2.17	313	ePN	Pn	05 22 48.2	+0.2
SERE	Sereflikochisa	2.17	313	ePn	Pn	05 22 48.0	+0.2
YOZ	Yozgat	2.18	355	ePN	Pn	05 22 48.1	+0.2
YOZ	Yozgat	2.18	355	Pn	Pn	05 22 48.8	+0.9
YOZ	Yozgat	2.18	355	Pn	Pn	05 22 48.8	+0.9
EREN	Erenkoy	2.25	211	ePN	Pn	05 22 49.2	+0.5
EREN	Erenkoy	2.25	211	ePn	Pn	05 22 49.2	+0.5
EREN	Erenkoy	2.25	211	Pn	Pn	05 22 49.2	+0.5
SLMH	Al Salmeh	2.26	123	eP	Pn	05 22 49.0	+0.1
SLMH	Al Salmeh	2.26	123	eP	Pn	05 22 49.0	+0.1
ERMK	Ermenek	2.29	250	iP	Pb	05 22 52.2	-1.0
ERMK				iS	Sg	05 23 24.1	-1.6
ERMK	Ermenek	2.29	250	P	Pb	05 22 52.2	-1.0
CDAG	Cicekdag	2.35	336	iP	Pn	05 22 50.9	+0.6
CDAG				iS	Sb	05 23 23.6	+0.5
CDAG	Cicekdag	2.35	336	P	Pn	05 22 50.9	+0.6
CDAG				S	Sb	05 23 23.6	+0.5
CUKAN	kangal_SIVAS	2.36	38	iP	Pn	05 22 51.2	+0.7
CUKAN				iS	Sg	05 23 28.4	+0.5
CUKAN	kangal_SIVAS	2.36	38	P	Pn	05 22 51.2	+0.7
CHBY	Cihanbeyli	2.40	298	ePN	Pn	05 22 51.3	+0.3
CHBY	Cihanbeyli	2.40	298	ePn	Pn	05 22 51.3	+0.3
SURC	SANLIURFA_SURC	2.49	103	iP	Pn	05 22 51.4	-0.7
SURC				iS	Sg	05 23 31.4	-0.4
SURC	SANLIURFA_SURC	2.49	103	P	Pn	05 22 51.4	-0.7
URFA	Urfa	2.57	90	ePN	Pn	05 22 53.7	+0.4
URFA	Urfa	2.57	90	ePn	Pn	05 22 53.7	+0.4
URFA	Urfa	2.57	90	Pn	Pn	05 22 53.7	+0.4
KMER	Konya-Meram	2.57	278	iP	Pn	05 22 56.0	+2.6
KMER				iS	Sg	05 23 38.8	+4.2
KMER	Konya-Meram	2.57	278	P	Pn	05 22 56.0	+2.6
KONT	Konya--Tatoy	2.60	281	ePN	Pn	05 22 54.2	+0.6
KONT	Konya--Tatoy	2.60	281	Pn	Pn	05 22 54.7	+1.1
KONT	Konya--Tatoy	2.60	281	Pn	Pn	05 22 54.7	+1.1
LADK	Ladik-KONYA	2.65	287	ePN	Pn	05 22 55.1	+0.7
LADK	Ladik-KONYA	2.65	287	ePn	Pn	05 22 55.1	+0.7
LADK	Ladik-KONYA	2.65	287	Pn	Pn	05 22 55.1	+0.7
SVSK	Karacayir	2.68	24	ePN	Pn	05 22 55.3	+0.7
SVSK	Karacayir	2.68	24	ePn	Pn	05 22 55.3	+0.7
SVSK	Karacayir	2.68	24	Pn	Pn	05 22 55.0	+0.3
KKUL	Konya-Kulu	2.70	310	iP	Pn	05 22 56.5	+1.4
KKUL				iS	Sg	05 23 40.4	+1.7
KKUL	Konya-Kulu	2.70	310	P	Pn	05 22 56.5	+1.4
BRTR	Keskin Array B	2.72	326	Pn	Pn	05 22 56.4	+1.0
	comp=Z,12nm,0.3s,baz=160,slow=13,SNR=261						
BRTR				Lg	Lg	05 23 37.7	
	comp=Z,16nm,0.3s,baz=154,slow=32,SNR=13						
BR131	Keskin Array S	2.72	326	ePn	Pn	05 22 56.7	+1.3
BR131	Keskin Array S	2.72	326	ePn	Pn	05 22 56.7	+1.3
LFK	Lefkose	2.75	218	ePN	Pn	05 22 56.2	+0.6
LFK	Lefkose	2.75	218	ePn	Pn	05 22 56.2	+0.6
LFK	Lefkose	2.75	218	Pn	Pn	05 22 56.2	+0.6
PHNC	Paralimni	2.76	208	P	Pn	05 22 56.4	+0.6
	baz=19						
PHNC				S	Sn	05 23 29.1	+0.1
PHNC	Paralimni	2.76	208	P	Pn	05 22 56.4	+0.6
PHNC				S	Sn	05 23 29.1	+0.1
AFSR	Af¯ar-Bala (A	2.79	316	ePN	Pn	05 22 56.8	+0.5
AFSR	Af¯ar-Bala (A	2.79	316	ePn	Pn	05 22 56.8	+0.5
CORM	Corum	2.81	345	ePN	Pn	05 22 57.1	+0.6
CORM	Corum	2.81	345	ePn	Pn	05 22 57.1	+0.6
CORM	Corum	2.81	345	Pn	Pn	05 22 57.6	+1.1
COAL	Corum-Alaca	2.82	351	iP	Pn	05 22 58.2	+1.5
COAL				iS	Sb	05 23 37.8	+1.2
COAL	Corum-Alaca	2.82	351	P	Pn	05 22 58.2	+1.5
BBAL	Bala	2.83	318	iP	Pn	05 22 58.5	+1.6
BBAL				iS	Sg	05 23 41.1	-1.8
BBAL	Bala	2.83	318	P	Pn	05 22 58.5	+1.6
ELZG	Elazig	2.87	68	iP	Pn	05 22 57.2	-0.3
ELZG				iS	Sg	05 23 44.9	+0.6
ELZG	Elazig	2.87	68	P	Pn	05 22 57.2	-0.3
GAZI	Gazipasa	2.90	246	iP	Pb	05 23 03.0	-0.4
GAZI				iS	Sb	05 23 39.9	+1.1
GAZI	Gazipasa	2.90	246	P	Pb	05 23 03.0	-0.4
KEMA	Kemaliye	2.91	51	iP	Pn	05 22 59.4	+1.6
KEMA				iS	Sg	05 23 45.1	-0.2
KEMA	Kemaliye	2.91	51	P	Pn	05 22 59.4	+1.6
TOKA	Tokat	2.93	13	iP	Pn	05 22 58.9	+0.7
TOKA				iS	Sg	05 23 43.5	-2.6
TOKA	Tokat	2.93	13	P	Pn	05 22 58.9	+0.7
KDHN	Kadinhani	2.94	292	iP	Pn	05 23 00.1	+1.8
KDHN				iS	Sg	05 23 45.0	-1.3
KDHN	Kadinhani	2.94	292	P	Pn	05 23 00.1	+1.8
TOKT	Tokat	2.94	14	ePN	Pn	05 22 59.0	+0.7
TOKT	Tokat	2.94	14	ePn	Pn	05 22 59.0	+0.7
TOKT	Tokat	2.94	14	Pn	Pn	05 22 59.0	+0.7
CUZAR	Zara_SIVAS	2.96	35	iP	Pn	05 22 59.9	+1.3
CUZAR				iS	Sg	05 23 47.2	+0.3
CUZAR	Zara_SIVAS	2.96	35	P	Pn	05 22 59.9	+1.3
MAMC	Mammari	2.99	221	P	Pn	05 22 59.2	+0.3
	baz=33						
MAMC	Mammari	2.99	221	P	Pn	05 22 59.2	+0.3
AKDN	Akdeniz- K¯–br	3.03	225	ePN	Pn	05 23 00.3	+0.8
AKDN	Akdeniz- K¯–br	3.03	225	ePn	Pn	05 23 00.3	+0.8
ILIC	ilic-Erzincan	3.06	49	ePN	Pn	05 23 00.8	+0.7
ILIC	ilic-Erzincan	3.06	49	ePn	Pn	05 23 00.8	+0.7
SVRC	Sivrice-ELAZID	3.08	72	ePN	Pn	05 23 01.0	+0.7
SVRC	Sivrice-ELAZID	3.08	72	ePn	Pn	05 23 01.0	+0.7
CSS	Mathiatis	3.10	217	P	Pn	05 23 01.7	+1.3
	baz=29						
CSS				S	Sn	05 23 35.1	-2.2
CSS	Mathiatis	3.10	217	Pn	Pn	05 22 58.7	-1.7
CSS	Mathiatis	3.10	217	P	Pn	05 23 01.7	+1.3
CSS	Mathiatis	3.10	217	ePn	Pn	05 23 02.3	+1.9
CSS				S	Sn	05 23 35.1	-2.2
CSS	Mathiatis	3.10	217	ePn	Pn	05 23 02.3	+1.9
HWQ	Hawqa	3.20	175	eP	Pn	05 23 03.0	+1.1
HWQ	Hawqa	3.20	175	eP	Pn	05 23 03.0	+1.1
LEF	Lefka	3.20	224	ePN	Pn	05 23 03.2	+1.3
LEF	Lefka	3.20	224	ePn	Pn	05 23 03.2	+1.3
RSDY	Resadiye-TOKAT	3.22	24	ePN	Pn	05 23 03.1	+1.0
RSDY	Resadiye-TOKAT	3.22	24	ePn	Pn	05 23 03.1	+1.0
RSDY	Resadiye-TOKAT	3.22	24	Pn	Pn	05 23 03.1	+1.0
BR231	Keskin MP Arra	3.23	318	ePn	Pn	05 22 56.9	-5.5
ANTO	Ankara	3.24	318	ePn	Pn	05 23 04.2	+1.7
ANTO				eSg	Sg	05 23 57.5	+1.4
ANTO	Ankara	3.24	318	ePn	Pn	05 23 04.2	+1.7
ANTO				eSg	Sg	05 23 57.5	+1.4
KIZT	Kizilcal	3.24	297	ePN	Pn	05 23 03.2	+0.7
KIZT	Kizilcal	3.24	297	ePn	Pn	05 23 03.2	+0.7
KIZT	Kizilcal	3.24	297	Pn	Pn	05 23 04.4	+1.9
RABH	Abou Rabah	3.30	156	⇑eP	Pn	05 23 04.0	+0.7
PTK	Pertek	3.32	63	ePN	Pn	05 23 04.4	+0.8
PTK	Pertek	3.32	63	Pn	Pn	05 23 04.1	+0.5
PTK	Pertek	3.32	63	Pn	Pn	05 23 04.1	+0.5
MNKR	ALMNKUR	3.33	116	⇑eP	Pn	05 23 04.5	+0.8
ALFC	Alefka	3.34	227	P	Pn	05 23 03.2	-0.6
	baz=40						
ALFC				S	Sn	05 23 40.4	-2.9
ALFC	Alefka	3.34	227	P	Pn	05 23 03.2	-0.6
ALFC				S	Sn	05 23 40.4	-2.9
SUSE	Susehri	3.41	36	iP	Pn	05 23 07.1	+2.2
SUSE	Susehri	3.41	36	P	Pn	05 23 07.1	+2.2
ELDT	Eldivan	3.45	331	iP	Pn	05 23 06.5	+1.0
ELDT				iS	Sg	05 24 01.1	-1.8
ELDT	Eldivan	3.45	331	P	Pn	05 23 06.5	+1.0
SZAC	Souni	3.48	220	P	Pn	05 23 08.4	+2.6
	baz=32						
SZAC	Souni	3.48	220	P	Pn	05 23 08.4	+2.6
CANT	Cankiri	3.49	335	ePN	Pn	05 23 06.7	+0.9
CANT	Cankiri	3.49	335	Pn	Pn	05 23 06.7	+0.9
MARH	Ras Al Marh	3.51	168	eP	Pn	05 23 07.6	+1.2
MARH	Ras Al Marh	3.51	168	eP	Pn	05 23 07.6	+1.2
BHL	Bhannes	3.56	179	eP	Pn	05 23 07.1	+0.3
BHL	Bhannes	3.56	179	eP	Pn	05 23 07.1	+0.3
ROOS	tl_alroos	3.57	157	⇑eP	Pn	05 23 09.3	+2.3
AKMC	Akamas	3.59	228	P	Pn	05 23 08.3	+1.1
	baz=41						
AKMC	Akamas	3.59	228	P	Pn	05 23 08.3	+1.1
HAVZ	Havza	3.60	2	iP	Pn	05 23 08.8	+1.4
HAVZ				iS	Sb	05 23 59.6	+0.7
HAVZ	Havza	3.60	2	P	Pn	05 23 08.8	+1.4
DYBB	Diyarbakir	3.64	81	ePN	Pn	05 23 09.2	+1.2
DIY	Diyarbakir	3.70	82	ePn	Pn	05 23 09.2	+0.4
DQRL	Deir Qamar	3.76	180	eP	Pn	05 23 09.5	-0.1
DQRL	Deir Qamar	3.76	180	eP	Pn	05 23 09.5	-0.1
SFNV	Sufian	3.77	105	eP	Pn	05 23 09.3	-0.5
SFNV	Sufian	3.77	105	eP	Pn	05 23 09.3	-0.5
KBSD	Kabsdagh	3.98	95	⇑eP	Pn	05 23 12.6	0.0
ISP	Isparta	4.04	277	ePn	Pn	05 23 16.4	+3.0
ISP	Isparta	4.04	277	ePn	Pn	05 23 16.4	+3.0
BRBR	Barbar	4.06	176	⇑eP	Pn	05 23 14.9	+1.0
TOTH	TOTAH	4.16	170	eP	Pn	05 23 16.0	+1.0
TOTH	TOTAH	4.16	170	eP	Pn	05 23 16.0	+1.0
KSDI	Kefar Szold	4.27	179	Pn	Pn	05 23 17.3	+0.8
KSDI				Sn	Sn	05 24 05.6	-0.5
KSDI	Kefar Szold	4.27	179	Pn	Pn	05 23 17.3	+0.8
KSDI				Sn	Sn	05 24 05.6	-0.5
HNTI	Hanita	4.39	185	Pn	Pn	05 23 18.4	+0.2
HNTI				Sn	Sn	05 24 07.5	-1.7
HNTI	Hanita	4.39	185	Pn	Pn	05 23 18.4	+0.2
HNTI				Sn	Sn	05 24 07.5	-1.7
MZRK	Al-Mazaregh	4.39	110	eP	Pn	05 23 14.8	-3.4
MZRK	Al-Mazaregh	4.39	110	eP	Pn	05 23 14.8	-3.4
MMA0B	Mount Meron ar	4.45	182	Pn	Pn	05 23 19.5	+0.4
MMA0B				Sn	Sn	05 24 09.1	-1.6
MMA0B	Mount Meron ar	4.45	182	Pn	Pn	05 23 19.5	+0.4
MMA0B				Sn	Sn	05 24 09.1	-1.6
MMAI	Mount Meron Ar	4.45	182	Pn	Pn	05 23 19.5	+0.5
	comp=Z,26nm,0.3s,baz=359,slow=12,SNR=78						
MMAI				Sn	Sn	05 24 09.6	-1.1
	comp=Z,24nm,0.3s,baz=348,slow=19,SNR=8.0						
KSHT	Keshet	4.48	178	Pn	Pn	05 23 21.4	+1.9
KSHT	Keshet	4.48	178	Pn	Pn	05 23 21.4	+1.9
BLGI	Bet Lehem HaGe	4.74	184	Pn	Pn	05 23 23.7	+0.7
BLGI	Bet Lehem HaGe	4.74	184	Pn	Pn	05 23 23.7	+0.7
ZALF	Zalf	4.76	162	⇑eP	Pn	05 23 24.6	+1.3
OFRI	'Ofer	4.86	186	Pn	Pn	05 23 24.7	0.0
OFRI	'Ofer	4.86	186	Pn	Pn	05 23 24.7	0.0
MMLI	Mount Malkishu	5.02	182	Pn	Pn	05 23 27.8	+0.9
MMLI				Sn	Sn	05 24 23.3	-1.5
MMLI	Mount Malkishu	5.02	182	Pn	Pn	05 23 27.8	+0.9
MMLI				Sn	Sn	05 24 23.3	-1.5
HMDT	Nahal Hemdat	5.21	181	Pn	Pn	05 23 31.0	+1.6
HMDT	Nahal Hemdat	5.21	181	Pn	Pn	05 23 31.0	+1.6
SLTI	Sal'it	5.24	185	Pn	Pn	05 23 30.6	+0.8
SLTI				Sn	Sn	05 24 28.5	-1.5
SLTI	Sal'it	5.24	185	Pn	Pn	05 23 30.6	+0.8
SLTI				Sn	Sn	05 24 28.5	-1.5
ASF	Jabal al Asfar	5.39	168	Pn	Pn	05 23 33.9	+1.9
	comp=Z,0.4nm,0.3s,baz=329,slow=9.4,SNR=4.9						
DSI	Dead Sea	5.89	182	Pn	Pn	05 23 40.0	+1.2
DSI				Sn	Sn	05 24 44.9	-1.2
DSI	Dead Sea	5.89	182	Pn	Pn	05 23 40.0	+1.2
DSI				Sn	Sn	05 24 44.9	-1.2
AMAZ	Amatzia	5.95	186	Pn	Pn	05 23 40.6	+1.0
AMAZ				Sn	Sn	05 24 46.5	-1.1
AMAZ	Amatzia	5.95	186	Pn	Pn	05 23 40.6	+1.0
AMAZ				Sn	Sn	05 24 46.5	-1.1
MZDA	Masada	6.15	182	Pn	Pn	05 23 42.8	+0.5
MZDA	Masada	6.15	182	Pn	Pn	05 23 42.8	+0.5
REVI	Revivim	6.45	187	Pn	Pn	05 23 47.6	+1.0
REVI	Revivim	6.45	187	Pn	Pn	05 23 47.6	+1.0
KARP	Karpathos	7.05	257	ePn	Pn	05 23 56.6	+1.8
KARP	Karpathos	7.05	257	ePn	Pn	05 23 56.6	+1.8
PRNI	Paran	7.12	184	Pn	Pn	05 23 57.2	+1.5
PRNI				Sn	Sn	05 25 16.0	-0.4
PRNI	Paran	7.12	184	Pn	Pn	05 23 57.2	+1.5
PRNI				Sn	Sn	05 25 16.0	-0.4
KRMI	Paran Flat	7.37	186	Pn	Pn	05 23 59.8	+0.6
KRMI	Paran Flat	7.37	186	Pn	Pn	05 23 59.8	+0.6
MBRI	Mt Berech	7.68	184	Pn	Pn	05 24 04.3	+0.9
MBRI				Sn	Sn	05 25 29.1	-1.1
MBRI	Mt Berech	7.68	184	Pn	Pn	05 24 04.3	+0.9
MBRI				Sn	Sn	05 25 29.1	-1.1
EIL	Elat	7.80	184	Pn	Pn	05 24 07.2	+2.2
	comp=Z,0.5nm,0.3s,baz=49,slow=9.3,SNR=2.9						
EIL				Sn	Sn	05 25 32.8	-0.3
	comp=Z,0.5nm,0.3s,baz=51,slow=14,SNR=2.1						
LAST	Lasithi	8.48	257	ePn	Pn	05 24 16.5	+2.1
LAST	Lasithi	8.48	257	ePn	Pn	05 24 16.5	+2.1
IDI	Anoyia	8.90	259	Pn	Pn	05 24 22.1	+1.9
	comp=Z,3.9nm,0.3s,baz=114,slow=9.8,SNR=28						
IDI				Sn	Sn	05 25 59.4	-0.8
	comp=Z,0.1nm,0.3s,baz=313,slow=19,SNR=1.9						
BUR08	Bucovina Ar. S	12.71	326	ePn	Pn	05 25 13.7	+1.3
BUR08	Bucovina Ar. S	12.71	326	ePn	Pn	05 25 13.7	+1.3
AKASG	Malin Array Be	13.99	343	Pn	Pn	05 25 28.6	-1.0
	comp=Z,0.6nm,0.3s,baz=160,slow=12,SNR=6.7						
KECS	Kecovo	15.57	320	eP	P	05 25 55.4	+0.3
KECS	Kecovo	15.57	320	eP	P	05 25 55.4	+0.3
STHS	Stebnicka Huta	15.81	324	eP	P	05 25 59.9	+2.0
STHS	Stebnicka Huta	15.81	324	eP	P	05 25 59.9	+2.0
GEYT	Alibeck	17.83	82	P	Pn	05 26 20.3	+0.7
	comp=Z,0.6nm,0.3s,baz=278,slow=4.2,SNR=3.2						
MOA	Molln	18.74	310	iP	Pn	05 26 32.9	+2.2
	comp=Z,4.7nm,1.3s						
MOA	Molln	18.74	310	P	Pn	05 26 32.9	+2.2
	comp=Z,4.7nm,1.3s						
GEA0	GERESS Array S	19.52	313	eP	P	05 26 39.9	+1.0
GEA0	GERESS Array S	19.52	313	eP	P	05 26 39.9	+1.0
GEA0				ePn	Pn	05 26 40.0	-0.1
GERES	GERESS Array B	19.53	313	P	P	05 26 38.0	-0.9
	comp=Z,0.2nm,0.3s,baz=119,slow=11,SNR=7.9						
MOTA	Moosalm	20.52	306	iP	Pn	05 26 55.3	+3.2
	comp=Z,2.1nm,0.5s						
RETA	Reutte	20.79	307	iP	P	05 26 52.5	-0.2
	comp=Z,1.8nm,0.5s						
RETA	Reutte	20.79	307	P	P	05 26 52.5	-0.2
	comp=Z,1.8nm,0.5s						
BFO	Black Forest	22.61	307	eP	P	05 27 12.3	+0.2
	comp=Z,10nm,1.2s						
BFO	Black Forest	22.61	307	eP	P	05 27 12.3	+0.2
	comp=Z,10nm,1.2s						
FINES	FINESS Array B	24.73	349	P	P	05 27 32.1	-0.5
	comp=Z,2.1nm,0.6s,baz=155,slow=11,SNR=12						
FIA1	FINESS Array S	24.73	349	eP	P	05 27 33.0	+0.4
	comp=Z,36nm,1.8s						
FIA1	FINESS Array S	24.73	349	eP	P	05 27 33.0	+0.4
	comp=Z,36nm,1.8s						
HFS	Hagfors	26.63	335	P	P	05 27 48.7	-1.1
	comp=Z,2.4nm,0.7s,baz=138,slow=9.4,SNR=7.9						
NOA	NORSAR Array B	28.13	335	P	P	05 28 01.1	-2.1
	comp=Z,0.2nm,0.6s,baz=141,slow=8.5,SNR=2.4						
ARCES	ARCESS Array B	32.59	353	P	P	05 28 42.3	-0.2
	comp=Z,2.5nm,0.8s,baz=178,slow=7.1,SNR=4.6						
KURBB	Kurchatov Arra	33.07	53	P	P	05 28 47.8	+0.8
	comp=Z,0.3nm,0.3s,baz=268,slow=8.9,SNR=2.7						
KURK	Kurchatov	33.14	53	P	P	05 28 47.8	+0.2
KURK	Kurchatov	33.14	53	P	P	05 28 47.8	+0.2
MKAR	Makanchi Array	35.41	60	P	P	05 29 08.9	+1.5
	comp=Z,0.6nm,0.7s,baz=268,slow=7.3,SNR=3.8						
MKAR	Makanchi Array	35.41	60	eP	P	05 29 09.8	+2.4
MKAR	Makanchi Array	35.41	60	eP	P	05 29 09.8	+2.4
MK01	Makanchi Array	35.42	60	eP	P	05 29 09.6	+2.2
MK01	Makanchi Array	35.42	60	eP	P	05 29 09.6	+2.2
WMQ	Urumqi	39.49	64	eP	P	05 29 43.3	+1.2
WMQ				pmax	pmax		
	comp=Z,3.0nm,0.6s						
SPITS	Spitsbergen Ar	41.61

ARNB	**Al Arnab**	**1.64**	**168**	*e*P		**Pn**	**05 31 52.8**	**-0.7**
ARNB				*e*S		**Sb**	**05 32 16.0**	**+0.4**
ARNB				AML	AML		05 32 19.4	
	comp=Z,78nm,0.5s							
ARNB				AML	AML		05 32 27.0	
	comp=N,168nm,0.6s							
ARNB	**Al Arnab**	**1.64**	**168**	*e*P		**Pn**	**05 31 52.7**	**-0.8**
DARE	**Darende-Malaty**	**1.87**	**53**	*e*PN		**Pb**	**05 31 57.9**	**-1.2**
DARE	**Darende-Malaty**	**1.87**	**53**	*e*Pn		**Pb**	**05 31 57.9**	**-1.2**
SLNF	**Slenfeh**	**1.94**	**164**	*e*P		**Pn**	**05 31 54.1**	**-3.7**
SLNF	**Slenfeh**	**1.94**	**164**	AML	AML		05 32 11.0	
	comp=Z,246nm,0.5s							
SLNF	**Slenfeh**	**1.94**	**164**	*e*P		**Pn**	**05 31 54.1**	**-3.7**
IKL	**Isikli**	**1.95**	**231**	*e*PN		**Pb**	**05 31 59.7**	**-0.6**
IKL	**Isikli**	**1.95**	**231**	*e*Pn		**Pb**	**05 31 59.7**	**-0.6**
CUSAR	**Sarkisla-SIVAS**	**2.02**	**15**	*i* P		**Pb**	**05 32 00.9**	**-0.7**
CUSAR				*i* S		**Sb**	**05 32 27.3**	**+0.7**
CUSAR	**Sarkisla-SIVAS**	**2.02**	**15**	P		**Pb**	**05 32 00.9**	**-0.7**
CUSAR				S		**Sb**	**05 32 27.3**	**+0.7**
CUALT	**Altinyayla-SIV**	**2.03**	**27**	*i* P		**Pn**	**05 31 59.5**	**+0.5**
CUALT				*i* S		**Sg**	**05 32 29.4**	**-1.1**
CUALT	**Altinyayla-SIV**	**2.03**	**27**	P		**Pn**	**05 31 59.5**	**+0.5**
CUALT				S		**Sg**	**05 32 29.4**	**-1.1**
AKCD	**Akcadag**	**2.04**	**65**	*i* P		**Pn**	**05 31 59.9**	**+0.8**
AKCD				*i* S		**Sn**	**05 32 23.8**	**-0.5**
AKCD	**Akcadag**	**2.04**	**65**	P		**Pn**	**05 31 59.9**	**+0.8**
AKCD				S		**Sn**	**05 32 23.8**	**-0.5**
ATAB	**Bozova**	**2.17**	**89**	*i* P		**Pb**	**05 32 05.2**	**+1.0**
ATAB				*i* S		**Sg**	**05 32 34.1**	**-0.8**
ATAB	**Bozova**	**2.17**	**89**	P		**Pb**	**05 32 05.2**	**+1.0**
YOZ	**Yozgat**	**2.18**	**355**	*e*PN		**Pn**	**05 32 02.2**	**+1.2**
YOZ	**Yozgat**	**2.18**	**355**	*e*Pn		**Pn**	**05 32 02.2**	**+1.2**
SLMH	**Al Salmeh**	**2.27**	**123**	*e*P		**Pn**	**05 32 02.3**	**+0.2**
ERMK	**Ermenek**	**2.28**	**250**	*i* P		**Pb**	**05 32 06.3**	**+0.2**
ERMK				*i* S		**Sg**	**05 32 37.5**	**-0.9**
ERMK	**Ermenek**	**2.28**	**250**	P		**Pb**	**05 32 06.3**	**+0.2**
CUKAN	**kangal_SIVAS**	**2.37**	**38**	*i* P		**Pb**	**05 32 07.3**	**-0.4**
CUKAN				*i* S		**Sg**	**05 32 42.1**	**+0.7**
CUKAN	**kangal_SIVAS**	**2.37**	**38**	P		**Pb**	**05 32 07.3**	**-0.4**
URFA	**Urfa**	**2.59**	**90**	*e*PN		**Pn**	**05 32 08.5**	**+1.9**
URFA	**Urfa**	**2.59**	**90**	*e*Pn		**Pn**	**05 32 08.5**	**+1.9**
SVSK	**Karacayir**	**2.69**	**24**	*e*PN		**Pn**	**05 32 09.4**	**+1.5**
SVSK	**Karacayir**	**2.69**	**24**	*e*Pn		**Pn**	**05 32 09.4**	**+1.5**
CORM	**Corum**	**2.80**	**345**	*e*PN		**Pn**	**05 32 11.0**	**+1.4**
CORM	**Corum**	**2.80**	**345**	*e*Pn		**Pn**	**05 32 11.0**	**+1.4**
SVRC	**Sivrice-ELAZID**	**3.09**	**72**	*e*PN		**Pn**	**05 32 15.9**	**+2.3**
SVRC	**Sivrice-ELAZID**	**3.09**	**72**	*e*Pn		**Pn**	**05 32 15.9**	**+2.3**
ERBA	**Erbaa**	**3.34**	**16**	*i* P		**Pb**	**05 32 24.6**	**+0.6**
ERBA				*i* S		**Sb**	**05 33 03.9**	**-0.6**
SFNV	**Sufian**	**3.79**	**105**	*e*P		**Pn**	**05 32 23.1**	**0.0**
SFNV				AML	AML		05 33 39.5	
	comp=Z,22nm,0.5s							
SFNV	**Sufian**	**3.79**	**105**	*e*P		**Pn**	**05 32 22.9**	**-0.1**
SFNV	**Sufian**	**3.79**	**105**	*e*P		**Pn**	**05 32 23.1**	**0.0**
KBSD	**Kabsdagh**	**4.00**	**95**	*e*P		**Pn**	**05 32 27.5**	**+1.6**
KBSD	**Kabsdagh**	**4.00**	**95**	*e*P		**Pn**	**05 32 27.3**	**+1.4**
KBSD	**Kabsdagh**	**4.00**	**95**	*e*P		**Pn**	**05 32 27.5**	**+1.6**

IDC 23 05:32:32.1±4.3, 8°36S×127°27E, h294km±56km, mb3.6/2, mb1 3.7/5, mb1mx3.1/45, mbtmp4.2/5, Error ellipse: s-maj=71.5km s-min=24.8km az=55.0, Timor region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BATI	**Baumata**	**4.01**	**242**	P	Pn	05 33 36.2	-1.9
	22nm,0.3s,baz=77,slow=24,SNR=17						
BATI				S	S	05 34 31.9	+1.0
	baz=107,slow=19						
FITZ	**Fitzroy Crossi**	**9.82**	**189**	P	P	05 34 50.8	-1.3
	0.6nm,0.3s,baz=16,slow=11,SNR=16						
FITZ				S	S	05 36 46.5	+7.6
	0.3nm,0.3s,baz=14,slow=17,SNR=1.6						
WRA	**Warramunga Arr**	**13.40**	**150**	P	Pn	05 35 30.9	-0.9
	0.5nm,0.3s,baz=329,slow=12,SNR=22						
WRA				S	S	05 38 02.5	+2.5
	0.3nm,0.3s,baz=332,slow=21,SNR=8.4						
ASAR	**Alice Springs**	**16.50**	**158**	P	Pn	05 36 07.2	-1.1
	1.1nm,0.3s,baz=341,slow=12,SNR=51						
STKA	**Stephens Creek**	**26.93**	**152**	P	P	05 37 46.1	-0.9
	2.5nm,1.1s,baz=329,slow=5.9,SNR=3.8						
ILAR	**Eielson Array**	**95.72**	**25**	P	P	05 45 25.2	+0.7
	0.7nm,0.8s,baz=271,slow=6.4,SNR=7.5						

IDC 23 05:36:50.4±0.7, 39°.91N×143°.82E, h0km, mb3.8/18, mb1 4.0/22, mb1mx3.9/51, mbtmp3.9/22, ML3.7/3, Error ellipse: s-maj=19.7km s-min=15.0km az=102.0
ISCJB 23 05:36:51.1±0.5, 39°.95N±0°.03×143°.83E±0°.06, h16km, mb3.9/22, Error ellipse: s-maj=7.5km s-min=3.9km az=25.0
JMA 23 05:36:53.7±0.3, 39°.97N×143°.66E, h32km, M3.9
NEIC 23 05:36:54.8±2.6, 39°.96N×143°.80E, h28km±18km, mb4.3/6, Error ellipse: s-maj=12.4km s-min=7.1km az=114.0

ISC 23 05:36:53.2±0.7, 39°.98N±0°.05×143°.77E±0°.09, h16km, n53, σ1s00/53, mb3.9/22, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JTH	**Tanohata**	**1.47**	**269**	P	**Pn**	**05 37 17.4**	**-1.6**
MIYJ	**Miyakonagasawa**	**1.56**	**256**	P	**Pn**	**05 37 19.0**	**-1.2**
JANG	**Nango**	**1.77**	**284**	P	**Pn**	**05 37 21.8**	**-1.4**
JOM	**Ohasama**	**1.98**	**256**	P	**Pn**	**05 37 25.6**	**-0.4**
ERM	**Erimo**	**2.09**	**347**	*e*Pn	**Pn**	**05 37 27.3**	**-0.2**
JEM	**Erimo**	**2.09**	**347**	P	**Pn**	**05 37 27.2**	**-0.4**
JTM	**Tenmabayashi**	**2.22**	**292**	P	**Pn**	**05 37 28.6**	**-0.7**
JMK	**Ichinoseki**	**2.22**	**243**	P	**Pn**	**05 37 28.4**	**-1.0**
JMK				*e*S	**Sn**	**05 37 53.3**	**-3.2**
JNBK	**Urakawa-nobuka**	**2.43**	**342**	P	**Pn**	**05 37 33.7**	**+1.5**
JNBK				*e*S	**Sn**	**05 38 01.5**	**-0.1**
JOT	**Ohata**	**2.50**	**305**	P	**Pn**	**05 37 32.9**	**-0.3**
JCH	**Churui**	**2.66**	**353**	P	**Pn**	**05 37 34.9**	**-0.4**
JCH				*e*S	**Sn**	**05 38 06.0**	**-1.2**
JKB	**Kayabe**	**2.82**	**314**	P	**Pn**	**05 37 37.8**	**+0.2**
JYK	**Kaneyama**	**2.84**	**249**	P	**Pn**	**05 37 37.5**	**-0.4**
JAK	**Akkeshi**	**3.10**	**13**	P	**Pn**	**05 37 40.4**	**-1.0**
JAK				S	**Sn**	**05 38 15.6**	**-2.5**
ASAJ	**Asahikawa**	**4.23**	**348**	Pn	**Pn**	**05 37 57.7**	**+0.7**
	2.2nm,0.3s,baz=177,slow=13,SNR=11						
ASAJ				Sn	**Sn**	**05 38 45.7**	**-0.3**
	2.4nm,0.3s,baz=112,slow=19,SNR=3.9						
MJAR	**Matsushiro Arr**	**5.56**	**234**	Pn	**Pn**	**05 38 15.6**	**+0.3**
	2.2nm,0.3s,baz=44,slow=12,SNR=14						
MAJO	**Matsushiro**	**5.56**	**234**	*e*Pn	**Pn**	**05 38 15.4**	**+0.1**
	17nm,0.5s						
MAT	**Matsushiro**	**5.56**	**234**	P	**Pn**	**05 38 15.4**	**+0.1**
MAT				*e*S	**Sn**	**05 39 20.9**	**+2.0**
JHJ	**Hachijo jima 2**	**7.56**	**206**	Pn	**Pn**	**05 38 41.9**	**-0.8**
	15nm,0.3s,baz=90,slow=20,SNR=3.4						
JHJ				Sn	Sn	05 39 57.3	-11
	8.9nm,0.3s,baz=120,slow=20,SNR=3.4						
USRK	**Ussuriysk Ar.**	**9.72**	**300**	Pn	**Pn**	**05 39 13.3**	**+0.9**
	0.3nm,0.3s,baz=119,slow=9.4,SNR=5.8						
KSRS	**Korea Array**	**12.63**	**264**	Pn	Pn	05 39 55.6	+3.4
	0.1nm,0.3s,baz=266,slow=36,SNR=3.4						
KSAR	**Wonju Array Be**	**12.67**	**264**	Pn	Pn	05 39 55.6	+2.9
MA2	**Magadan**	**20.11**	**10**	P	**P**	**05 41 26.7**	**+0.6**
	1.7nm,0.3s,baz=178,slow=19,SNR=3.2						
SEY	**Seymchan**	**23.57**	**10**	P	**P**	**05 42 01.9**	**-0.8**
	2.3nm,0.7s,baz=196,slow=7.7,SNR=11						
SONM	**Songino Array**	**27.83**	**299**	P	**P**	**05 42 41.8**	**-0.1**
	1.5nm,0.8s,baz=80,slow=8.3,SNR=8.8						
H11S1	**WAKE ISLAND Hy**	**29.13**	**131**	T	T	06 14 06.3	
	baz=318						
H11S3	**WAKE ISLAND Hy**	**29.14**	**131**	T	T	06 13 45.4	
	baz=318						
H11S2	**WAKE ISLAND Hy**	**29.15**	**131**	T	T	06 13 37.4	
	baz=318						
ZALV	**Zalesovo Beam**	**41.37**	**310**	P	**P**	**05 44 38.4**	**+0.2**
	0.8nm,0.3s,baz=66,slow=7.0,SNR=3.5						
MKAR	**Makanchi Array**	**44.19**	**300**	P	**P**	**05 45 00.9**	**-0.4**
	0.8nm,0.6s,baz=88,slow=7.4,SNR=5.8						
KURK	**Kurchatov**	**45.63**	**306**	P	**P**	**05 45 13.4**	**+0.7**
KURBB	**Kurchatov Arra**	**45.71**	**306**	P	**P**	**05 45 13.4**	**+0.1**
	1.2nm,0.4s,baz=77,slow=8.4,SNR=6.2						
TKM2	**Tokmak 2**	**49.90**	**297**	*e*P	**P**	**05 45 46.5**	**+0.3**
	6.9nm,0.8s						
BVAR	**Borovoye Array**	**50.00**	**311**	P	**P**	**05 45 46.0**	**-0.5**
	0.3nm,0.4s,baz=95,slow=6.2,SNR=2.6						
BVAR	**Borovoye Array**	**50.00**	**311**	P	**P**	**05 45 46.0**	**-0.5**
AAK	**Ala-Archa**	**50.76**	**297**	*e*P	**P**	**05 45 51.1**	**-1.5**
	0.7nm,0.6s						
INK	**Inuvik**	**50.93**	**28**	P	**P**	**05 45 54.2**	**+1.0**
	0.3nm,0.4s,baz=260,slow=10,SNR=4.9						
INK	**Inuvik**	**50.93**	**28**	*e*P	**P**	**05 45 54.6**	**+1.4**
	1.6nm,0.8s						
ABKAR	**Akbulak array**	**57.48**	**309**	*e*P	**P**	**05 46 41.1**	**-0.2**
	1.6nm,0.6s						
RES	**Resolute Bay**	**59.29**	**15**	*e*P	**P**	**05 46 53.6**	**+0.1**
	4.0nm,1.3s						
WRAB	**Tennant Creek**	**60.24**	**190**	*e*P	**P**	**05 47 00.7**	**+0.1**
	9.1nm,1.3s						
WRA	**Warramunga Arr**	**60.25**	**190**	P	**P**	**05 46 59.5**	**-1.2**
	1.6nm,0.5s,baz=7.7,slow=7.0,SNR=32						
YKA	**Yellowknife Ar**	**60.34**	**32**	P	**P**	**05 47 00.8**	**-0.1**
	0.1nm,0.5s,baz=301,slow=6.4,SNR=5.8						
ASAR	**Alice Springs**	**63.98**	**190**	P	**P**	**05 47 25.1**	**-0.6**
	0.5nm,0.7s,baz=0.7,slow=6.4,SNR=7.5						
FINES	**FINESS Array B**	**67.07**	**332**	P	**P**	**05 47 45.3**	**0.0**
	0.9nm,0.7s,baz=43,slow=10,SNR=5.3						
KBZ	**Khabaz**	**70.39**	**311**	P	**P**	**05 48 07.6**	**+1.4**
	2.1nm,0.8s,baz=201,slow=14,SNR=3.6						
HFS	**Hagfors**	**72.16**	**336**	P	**P**	**05 48 17.1**	**+0.4**
	1.0nm,0.5s,baz=52,slow=9.6,SNR=8.0						
NB2	**NORSAR Subarra**	**72.18**	**338**	P	**P**	**05 48 16.9**	**0.0**
	comp=Z,1.6nm,0.7s,baz=38,slow=6.2						
NOA	**NORSAR Array B**	**72.18**	**338**	P	**P**	**05 48 16.9**	**0.0**
	comp=Z,0.5nm,0.5s,baz=37,slow=6.1,SNR=5.8						
PDAR	**Pinedale Array**	**74.30**	**47**	P	**P**	**05 48 28.9**	**-1.1**
	comp=Z,0.1nm,0.5s,baz=110,slow=1.2,SNR=4.1						
GERES	**GERESS Array B**	**81.16**	**329**	P	**P**	**05 49 08.2**	**+0.3**
	comp=Z,0.2nm,0.5s,baz=17,slow=5.9,SNR=3.3						
TXAR	**Lajitas Array**	**86.88**	**54**	P	**P**	**05 49 38.7**	**+1.2**
	comp=Z,0.2nm,0.5s,baz=294,slow=4.3,SNR=4.0						
H06S1	**SOCORRO T**	**89.28**	**66**	T	T	07 27 37.3	
	SNR=19						

ISC 23 05:43:06.0±2.0, 45°.33N±0°.06×16°.0E±0°.1, h13km, n5, σ0s27/7, Northwestern Balkan Peninsula

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BOJS	**Bojanci**	**0.58**	**287**	*i* Pg	**Pg**	**05 43 17.6**	**+0.2**
BOJS				*i* Sg	**Sg**	**05 43 24.9**	**-0.2**
GCIS	**Gornji Cirnik**	**0.61**	**331**	*i* Pg	**Pb**	**05 43 18.3**	**-0.2**
CRES	**Cresnjev**	**0.64**	**320**	*i* Pg	**Pg**	**05 43 18.8**	**+0.3**
UDBI	**Udbina**	**0.83**	**194**	*e*Pg	**Pg**	**05 43 22.1**	**+0.1**
UDBI				Sg	**Sb**	**05 43 33.5**	**+0.1**
VISS	**Visnje**	**0.97**	**300**	*e*Pg	**Pg**	**05 43 24.9**	**+0.2**

NIED 23 06:30:00.39°.00N×142°.40E, h53km, Mw4.3 Best double couple: M0 3.35000×10^15 NP1:φs335.00000°, δ4.00000°, λ-145.00000°. NP2:φs210.00000°, δ88.00000°, λ-87.00000°.
BJI 23 06:30:20.6, 38°.94N×142°.77E, h51km, mb4.7/39, mB5.1/19, Ms4.7/15, Ms7 4.5/14
JMA 23 06:30:22.5±0.1, 39°.02N×142°.42E, h34km±2km, M4.4
JMA Felt III J1.
MOS 23 06:30:22.1±1.0, 39°.01N×142°.31E, h33km, mb4.8/41, Error ellipse: s-maj=8.4km s-min=5.6km az=90.2
ISCJB 23 06:30:23.9±0.5, 39°.05N±0°.03×142°.29E±0°.04, h44km±4km, mb4.6/90, MS4.5/4, Error ellipse: s-maj=6.1km s-min=3.9km az=42.9
IDC 23 06:30:24.9±2.0, 38°.98N×142°.35E, h45km±19km, mb4.0/22, mb1 4.2/26, mb1mx4.1/43, mbtmp4.3/26, ML3.7/4, Error ellipse: s-maj=15.2km s-min=11.8km az=106.0
NEIC 23 06:30:26.5±0.5, 39°.05N×142°.28E, h52km±4km, mb4.8/46, Error ellipse: s-maj=5.3km s-min=3.6km az=142.0
NEIC Recorded [3 JMA] in Iwate.

ISC 23 06:30:23.3±0.9, 39°.03N±0°.04×142°.37E±0°.05, h29km±6km, n195, σ1s14/198, mb4.7/90, MS4.4/4, 5C-1D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**0.55**	**275**	P	**Pb**	**06 30 34.3**	**-0.1**
OFUJ				S	**Sb**	**06 30 42.4**	**+0.4**
MIYJ	**Miyakonagasawa**	**0.69**	**322**	P	**Pb**	**06 30 36.1**	**-0.7**
MIYJ				S	**Sb**	**06 30 45.4**	**-0.6**
JMK	**Ichinoseki**	**0.90**	**265**	P	**Pn**	**06 30 39.5**	**-0.4**
JMK				S	**Sb**	**06 30 51.5**	**-0.4**
JOM	**Ohasama**	**0.94**	**298**	P	**Pn**	**06 30 40.4**	**-0.2**
JOM				S	**Sn**	**06 30 52.9**	**-0.2**
JTH	**Tanohata**	**0.98**	**337**	P	**Pn**	**06 30 40.2**	**-0.9**
JTH				*e*S	**Sn**	**06 30 53.5**	**-0.6**
JIO	**Ouri**	**0.99**	**234**	P	**Pn**	**06 30 40.2**	**-0.9**
JIO				S	**Sn**	**06 30 52.3**	**-1.8**
ERM	**Erimo**	**3.04**	**11**	*i* P	**Pn**	**06 31 09.6**	**+0.3**
ERM	**Erimo**	**3.04**	**11**	*e*Pn	**Pn**	**06 31 10.4**	**+1.1**
MJAR	**Matsushiro Arr**	**4.13**	**234**	P	**Pn**	**06 31 25.4**	**+1.0**
	2.3nm,0.3s,baz=281,slow=13,SNR=13						
MAJO	**Matsushiro**	**4.13**	**234**	*d* P	**Pn**	**06 31 24.1**	**-0.3**
MAJO	**Matsushiro**	**4.13**	**234**	*e*Pn	Pn	06 31 27.8	+3.4
MAT	**Matsushiro**	**4.13**	**234**	P	**Pn**	**06 31 27.2**	**+2.8**
MAT				*e*S	**Sn**	**06 32 15.0**	**+3.3**
MJB9	**Matsu-Tunnel**	**4.13**	**234**	*e*Pn	**Pn**	**06 31 27.5**	**+3.1**
ASAJ	**Asahikawa**	**5.08**	**2**	P	**Pn**	**06 31 38.8**	**+1.4**
	2.9nm,0.3s,baz=217,slow=8.8,SNR=12						
ASAJ				S	**Sn**	**06 32 36.6**	**+1.6**
	6.2nm,0.3s,baz=62,slow=28,SNR=3.7						
INU	**Inuyama**	**5.64**	**231**	*e*Pn	**Pn**	**06 31 47.6**	**+2.5**
YUK	**Yuzh-Kuril'sk**	**5.64**	**27**	*e*P	**Pn**	**06 31 44.8**	**-0.3**
YUK				*e*S	**Sn**	**06 32 45.8**	**-3.0**
YUK				pmax	pmax		
	comp=Z,157nm,0.7s						
YUK				pmax	pmax		
	comp=E,75nm,0.3s						
YUK				pmax	pmax		
	comp=N,53nm,0.4s						
SHO	**Shikotan**	**5.88**	**33**	*e*P	**Pn**	**06 31 46.4**	**-1.9**
SHO				pmax	pmax		
	comp=Z,64nm,0.5s						
SHO				pmax	pmax		
	comp=N,14nm,0.3s						
SHO				pmax	pmax		
	comp=E,33nm,0.4s						
JHJ	**Hachijo jima 2**	**6.26**	**200**	P	**Pn**	**06 31 54.0**	**+0.3**
	comp=E,13nm,0.3s,baz=53,slow=20,SNR=3.7						
JHJ				S	Sn	06 32 56.8	-7.5
	comp=E,7.8nm,0.3s,baz=347,slow=18,SNR=2.6						
KUR	**Kuril'sk**	**7.42**	**32**	*e*P	**Pn**	**06 32 08.2**	**-1.3**
KUR				*e*S	**Sn**	**06 33 28.9**	**-3.7**
KUR				pmax	pmax		
	comp=Z,49nm,0.3s						
KUR				pmax	pmax		
	comp=N,31nm,0.1s						
KUR				pmax	pmax		
	comp=E,25nm,0.1s						
YSS	**Yuzh-Sakhalins**	**7.92**	**2**	*e*P	Pb	06 32 33.4	-6.3
YSS				pmax	pmax		
	comp=Z,40nm,1.3s						
USRK	**Ussuriysk Ar.**	**9.33**	**307**	P	Pn	06 32 39.6	+3.9
	comp=Z,1.1nm,0.3s,baz=117,slow=15,SNR=13						
KSRS	**Korea Array**	**11.47**	**267**	P	Pn	06 33 08.8	+3.7
	comp=Z,0.4nm,0.3s,baz=81,slow=14,SNR=7.4						
KSAR	**Wonju Array Be**	**11.51**	**267**	P	Pn	06 33 08.8	+3.3
KSAR	**Wonju Array Be**	**11.51**	**267**	P	Pn	06 33 08.8	+3.3
KLR	**Kul'dur**	**12.72**	**327**	P	**Pn**	**06 33 22.9**	**+0.8**
	comp=Z,0.1nm,0.3s,baz=127,slow=13,SNR=5.1						
TIA	**Tai'an**	**20.18**	**270**	P	**P**	**06 34 54.1**	**-1.3**
TIA				pmax	pmax		
	comp=Z,10.0nm,0.7s						
NJ2	**Nanjing**	**20.33**	**257**	*e*P	Pn	06 34 59.5	+0.3
NJ2				pmax	pmax		
	comp=Z,19nm,0.5s						
MA2	**Magadan**	**21.24**	**12**	P	**P**	**06 35 07.3**	**+0.6**
	comp=Z,9.5nm,0.7s,baz=223,slow=7.8,SNR=14						
HHC	**Hu-ho-hao-te**	**23.63**	**284**	*e*P	**P**	**06 35 31.3**	**-0.7**
HHC				pmax	pmax		
	comp=Z,23nm,1.0s						
HHC				pmax	pmax		
	comp=Z,150nm,4.2s						
YAK	**Yakutsk**	**24.31**	**345**	P	**P**	**06 35 37.3**	**-0.6**
	comp=Z,24nm,0.4s,baz=58,slow=0.9,SNR=8.1						
YAK	**Yakutsk**	**24.31**	**345**	*e*P	**P**	**06 35 37.0**	**-0.9**
YAK				*e*S	**S**	**06 39 53.7**	**-1.2**
YAK				*e*		06 46 44.4	
YAK				pmax	pmax		
	comp=N,16nm,1.0s						
YAK				pmax	pmax		
	comp=Z,39nm,0.9s						
YAK				pmax	pmax		
	comp=E,2.0nm,0.8s						
YAK				smax	smax		
	comp=E,224nm,4.9s						
YAK				smax	smax		
	comp=N,62nm,3.8s						
YAK				MLR	MLR		
	comp=Z,2μm,24.0s						
YAK				MLR	MLR		
	comp=N,1μm,28.0s						
YAK				MLR	MLR		
	comp=E,539nm,23.0s						
YAK	**Yakutsk**	**24.31**	**345**	*e*P	**P**	**06 35 37.4**	**-0.5**
	comp=E,54nm,0.8s						
SEY	**Seymchan**	**24.69**	**11**	P	**P**	**06 35 42.4**	**+1.1**
	comp=E,2.9nm,0.7s,baz=209,slow=5.5,SNR=16						
SEY	**Seymchan**	**24.69**	**11**	*e*P	**P**	**06 35 40.3**	**-1.1**
BOD	**Bodaibo**	**26.29**	**325**	*e*P	**P**	**06 35 55.1**	**-0.8**
BOD				pmax	pmax		
	comp=Z,6.0nm,1.6s						
ULN	**Ulaanbaatar**	**26.92**	**301**	*e*P	**P**	**06 36 02.0**	**0.0**
ULN				pmax	pmax		
	comp=Z,3.0nm,0.8s						
SONA1	**Songino Array**	**27.35**	**301**	*e*P	**P**	**06 36 06.0**	**+0.2**
SONM	**Songino Array**	**27.36**	**301**	P	**P**	**06 36 05.8**	**0.0**
	comp=Z,2.2nm,0.5s,baz=101,slow=9.0,SNR=13						
H11N2	**WAKE ISLAND Hy**	**28.60**	**125**	T	T	07 06 52.7	
	baz=318,slow=75,SNR=1079						
H11N1	**WAKE ISLAND Hy**	**28.61**	**125**	T	T	07 06 38.7	
	baz=318,slow=75,SNR=627						
H11N3	**WAKE ISLAND Hy**	**28.62**	**125**	T	T	07 06 39.4	
	baz=318,slow=75,SNR=1051						
H11S1	**WAKE ISLAND Hy**	**29.39**	**127**	T	T	07 07 40.0	
	baz=319,slow=76,SNR=119						
H11S3	**WAKE ISLAND Hy**	**29.39**	**127**	T	T	07 07 41.7	
	baz=319,slow=76,SNR=128						
H11S2	**WAKE ISLAND Hy**	**29.40**	**127**	T	T	07 07 41.3	
	baz=319,slow=76,SNR=132						
TLY	**Talaya**	**29.64**	**308**	P	**P**	**06 36 26.0**	**0.0**
	comp=Z,3.7nm,0.8s,baz=116,slow=4.2,SNR=8.9						
TLY	**Talaya**	**29.64**	**308**	*e*P	**P**	**06 36 26.5**	**+0.5**
TLY				pmax	pmax		
	comp=Z,7.0nm,1.1s						
TLY	**Talaya**	**29.64**	**308**	*e*P	**P**	**06 36 26.2**	**+0.2**
	comp=Z,5.5nm,0.9s						
ZAK	**Zakamensk**	**29.68**	**305**	*e*P	**P**	**06 36 25.9**	**-0.5**
ZAK				pmax	pmax		
	comp=Z,6.0nm,1.1s						
LZH	**Lanzhou**	**30.53**	**277**	*e*P	P	06 36 38.5	+4.3
LZH				pP	sP	06 36 51.0	+4.7
LZH				sP	pP	06 36 58.0	+15
LZH				PP	**PP**	**06 37 39.8**	**-3.5**
LZH				pmax	pmax		
	comp=Z,24nm,1.1s						
LZH				pmax	pmax		
	comp=Z,75nm,6.2s						
LZH				LR	LR		
	comp=Z,380nm,13.0s						
LZH				LR	LR		
	comp=Z,420nm,13.3s						
LZH				LR	LR		
	comp=Z,510nm,16.7s						
MOY	**Mondy**	**31.27**	**308**	*e*P	**P**	**06 36 39.2**	**-1.3**
BILL	**Bilibino**	**31.90**	**17**	*e*P	**P**	**06 36 44.9**	**-0.8**
BILL				*e*		06 36 54.1	
BILL				*e*		06 37 53.1	
BILL				*e*PPP	PPP	06 38 03.5	
BILL				pmax	pmax		
	comp=Z,2.0nm,1.0s						
GYA	**Guiyang**	**32.34**	**258**	P	**P**	**06 36 51.3**	**+1.1**
GYA				pP	sP	06 37 05.6	+3.4
GYA				sP	pP	06 37 13.3	+15
GYA				PP	**PP**	**06 38 00.3**	**-3.1**
GYA				PcP	**PcP**	**06 39 39.0**	**+1.4**
GYA				S	**S**	**06 42 00.6**	**-1.8**
GYA				sS	sS	06 42 24.4	+7.9
GYA				pmax	pmax		
	comp=Z,20nm,0.8s						
GYA				pmax	pmax		
	comp=Z,100nm,5.0s						
CD2	**Chengdu**	**32.47**	**268**	P	**P**	**06 36 49.8**	**-1.4**
CD2				pmax	pmax		
	comp=Z,2.0nm,0.5s						
TIXI	**Tiksi**	**33.41**	**352**	*e*P	**P**	**06 37 01.8**	**+3.0**
TIXI				pmax	pmax		
	comp=Z,2.0nm,0.9s						
NIKH	**Nikolski High**	**35.91**	**51**	*e*P	**P**	**06 37 21.1**	**+0.4**
	comp=Z,210nm,1.3s						
KMI	**Kunming**	**36.04**	**259**	P	**P**	**06 37 23.8**	**+1.4**
KMI				pmax	pmax		
	comp=Z,24nm,0.6s						

comp=Z,25nm,0.5s
FYU Fort Yukon 48.00 31 *e*P P **06 39 01.1 +2.0**
comp=Z,16nm,1.1s
KLU Klutina 48.12 38 *e*P P **06 39 01.2 +1.0**
comp=Z,51nm,1.8s
PAX Paxson 48.17 36 *e*P P **06 39 02.4 +1.8**
PAX pmax pmax
comp=Z,35nm,1.9s
PAX Paxson 48.17 36 *e*P P **06 39 02.4 +1.8**
comp=Z,35nm,1.9s
KKN Kakani 48.26 275 *e*P P **06 39 01.9 0.0**
comp=Z,30nm,0.6s
DMN Daman 48.48 274 *e*P P **06 39 03.7 0.0**
comp=Z,5.7nm,0.6s
GKN Gorkha 48.65 275 *e*P P **06 39 05.0 +0.1**
comp=Z,23nm,0.7s
DOT Dot Lake 48.73 35 *e*P P **06 39 05.1 +0.2**
comp=Z,79nm,1.9s
MENT Mentasta 48.97 36 *e*P P **06 39 08.3 +1.6**
comp=Z,34nm,1.8s
TKM2 Tokmak 2 49.37 297 P P **06 39 10.7 +0.4**
TKM2 pmax pmax
comp=Z,12nm,0.8s
TKM2 Tokmak 2 49.37 297 *e*P P **06 39 11.1 +0.8**
comp=Z,11nm,0.7s
CHKZ Chkalovo 49.52 312 P P **06 39 10.1 -0.8**
CHKZ pmax pmax
comp=Z,5.0nm,0.6s
KOLN Koldanda 49.57 275 *e*P P **06 39 12.2 +0.2**
comp=Z,12nm,0.6s
BVA0 Borovoye Array 49.81 311 *i* P P **06 39 13.0 -0.2**
BVA0 pmax pmax
comp=Z,6.0nm,0.7s
EGAK Eagle 49.85 33 *e*P P **06 39 13.4 +0.1**
comp=Z,10nm,1.4s
BRVK Borovoye 49.86 311 P P **06 39 13.5 -0.1**
BRVK pmax pmax
comp=Z,8.0nm,0.6s
BRVK Borovoye 49.86 311 *e*P P **06 39 13.5 -0.1**
comp=Z,6.3nm,0.6s
PYUN Piuthan 49.88 276 *e*P P **06 39 14.7 +0.3**
comp=Z,64nm,1.0s
OTUK Ortayu 49.89 305 P P **06 39 13.6 -0.3**
OTUK pmax pmax
comp=Z,4.0nm,0.7s
AAK Ala-Archa 50.23 297 *e*P P **06 39 17.2 +0.4**
AAK pmax pmax
comp=Z,6.0nm,0.9s
AAK Ala-Archa 50.23 297 *e*P P **06 39 17.1 +0.4**
comp=Z,3.2nm,0.8s
KSH Kashi 50.30 293 *e*P P **06 39 18.1 +0.8**
KSH *e*pP sP 06 39 33.9 +4.3
KSH *e*sP pP 06 39 40.8 +15
KSH S **S** **06 46 24.3 -3.9**
KSH pmax pmax
comp=Z,260nm,8.8s
KSH LR LR
comp=Z,210nm,9.7s
KSH LR LR
comp=Z,920nm,18.3s
KSH LR LR
comp=Z,940nm,18.1s
ZRNK Zerenda 50.63 311 P P **06 39 19.0 -0.4**
ZRNK pmax pmax
comp=Z,12nm,1.0s
ZRNK Zerenda 50.63 311 *e*P P **06 39 19.7 +0.2**
comp=Z,9.3nm,0.8s
EKS2 Erkin-Say 50.72 297 *e*P P **06 39 20.4 0.0**
EKS2 pmax pmax
comp=Z,4.0nm,0.6s
EKS2 Erkin-Say 50.72 297 *e*P P **06 39 20.4 0.0**
comp=Z,3.5nm,0.6s
MNAS Manas 51.66 298 P P **06 39 27.7 +0.2**
MNAS pmax pmax
comp=Z,10.0nm,0.7s
INK Inuvik 52.27 28 *e*P P **06 39 32.2 +0.8**
INK pmax pmax
comp=Z,18nm,1.8s
INK Inuvik 52.27 28 *e*P P **06 39 32.2 +0.8**
comp=Z,18nm,1.8s
KKAR Karatay Array 52.80 299 *e*P P **06 39 35.9 +0.1**
KKAR Karatay Array 52.80 299 *e*P P **06 39 35.9 +0.1**
ARU Arti 55.38 318*c* *i*P P **06 39 54.2 -0.1**
ARU S **S** **06 47 39.3 +2.7**
ARU SS **SS** **06 51 22.2 +1.4**
ARU pmax pmax
comp=Z,13nm,1.0s
ARU Arti 55.38 318 *e*P P **06 39 54.5 +0.2**
comp=Z,11nm,0.9s
AB31 Akbulak array 57.24 309 *i* P P **06 40 07.4 -0.3**
AB31 pmax pmax
comp=Z,4.0nm,0.6s
ABKAR Akbulak array 57.24 309 *e*P P **06 40 07.6 -0.2**
FITZ Fitzroy Crossi 58.96 199 *e*P P **06 40 19.7 -0.2**
comp=Z,21nm,1.8s
WRAB Tennant Creek 59.14 189 *e*P P **06 40 19.4 -1.8**
WRAB pmax pmax
comp=Z,9.0nm,0.9s
WRA Warramunga Arr 59.15 189 P P **06 40 20.0 -1.3**
comp=Z,6.5nm,0.6s,baz=6.2,slow=7.0,SNR=99
WRA Warramunga Arr 59.15 189 P P **06 40 20.0 -1.3**
WRA pmax pmax
comp=Z,7.0nm,0.6s
RES Resolute Bay 60.48 15 *e*P P **06 40 30.0 +0.2**
RES pmax pmax
comp=Z,3.0nm,0.8s
RES Resolute Bay 60.48 15 *e*P P **06 40 29.9 +0.2**
comp=Z,3.3nm,0.8s
YKA Yellowknife Ar 61.70 31 P P **06 40 38.4 +0.2**
comp=Z,1.3nm,0.7s,baz=302,slow=6.7,SNR=26
YKB5 Yellowknife Ar 61.70 31 *e*P P **06 40 37.8 -0.4**
AS01 Alice Springs 62.87 189 *e*P P **06 40 46.0 -0.5**
AS01 *e*pP **pP** **06 40 55.7 +0.2**
ASAR Alice Springs 62.87 189 P P **06 40 45.7 -0.8**
comp=Z,2.4nm,0.7s,baz=9.0,slow=5.5,SNR=38
GEYT Alibeck 63.54 298 P P **06 40 51.0 0.0**
comp=Z,2.2nm,0.2s,baz=7.1,slow=3.6,SNR=3.5
LTY Liberty 66.74 47 *e*P P **06 41 12.0 +0.3**
comp=Z,15nm,1.6s
OBN Obninsk 66.95 323 *e*P P **06 41 12.2 -0.5**
OBN *e* 06 41 24.6
OBN *e* 06 41 38.0
OBN pmax pmax
comp=Z,6.0nm,1.0s
FIA1 FINESS Array S 67.40 332 *e*P P **06 41 15.3 -0.2**
FINES FINESS Array B 67.40 332 P P **06 41 15.2 -0.3**
comp=Z,1.5nm,0.5s,baz=36,slow=7.8,SNR=14
JTMT Jette 70.03 44 *e*P P **06 41 33.7 +1.3**
KIV Kislovodsk 70.17 311 *e*P P **06 41 33.9 +0.7**
KIV *e* 06 41 53.5
KIV pmax pmax
comp=Z,7.0nm,0.8s
KBZ Khabaz 70.18 311 P P **06 41 33.4 +0.3**
comp=Z,2.3nm,0.9s,baz=79,slow=5.2,SNR=3.3
SWMT Swartz Lake 70.33 44 *e*P P **06 41 35.0 +0.9**
STKA Stephens Creek 70.55 181 P P **06 41 34.8 -0.6**
comp=Z,1.2nm,0.8s,baz=14,slow=4.2,SNR=2.2
FFC Flin Flon 71.62 33 *e*P P **06 41 42.0 +0.3**
FFC pmax pmax
comp=Z,5.0nm,0.8s
FFC Flin Flon 71.62 33 *e*P P **06 41 42.0 +0.3**
comp=Z,4.7nm,0.8s
FCC Fort Churchill 71.88 27 *e*P P **06 41 43.3 +0.2**
FCC pmax pmax
comp=Z,23nm,2.0s
FCC Fort Churchill 71.88 27 *e*P P **06 41 43.3 +0.2**
comp=Z,23nm,2.0s
LRM Limekiln Ridge 72.20 45 *e*P P **06 41 46.2 +0.6**
DLMT Dillon 72.40 46 *e*P P **06 41 47.8 +1.1**
comp=Z,2.4nm,0.8s
NC405 NORSAR Array S 72.43 337 *e*P P **06 41 46.3 -0.1**
NB201 NORSAR Array S 72.60 337 *e*P P **06 41 48.0 +0.5**
NB2 NORSAR Subarra 72.64 337 P P **06 41 47.0 -0.7**
comp=Z,1.1nm,0.7s,baz=38,slow=6.2
NOA NORSAR Array B 72.64 337 P P **06 41 47.5 -0.2**
comp=Z,0.5nm,0.6s,baz=40,slow=6.0,SNR=4.7
BOZ Bozeman (W) 72.76 45 *e*P P **06 41 49.8 +1.0**
BOZ pmax pmax
comp=Z,3.0nm,0.8s
BOZ Bozeman (W) 72.76 45 *e*P P **06 41 49.8 +1.0**
comp=Z,2.7nm,0.8s
AKASG Malin Array Be 73.18 322 P P **06 41 50.4 -0.7**
comp=Z,1.7nm,0.5s,baz=44,slow=6.3,SNR=14
KIEV Kiev 73.19 322 *e*P P **06 41 50.3 -0.8**
KIEV pmax pmax
comp=Z,3.0nm,0.9s

NVAR Mina Array Bea 73.19 54 P P **06 41 52.1 +0.5**
comp=Z,1.9nm,0.8s,baz=282,slow=6.5,SNR=14
NV01 Mina Array Sit 73.19 54 *e*P P **06 41 52.5 +0.9**
AK11 Malin Array Si 73.22 322 *e*P P **06 41 51.5 +0.3**
HVU Hansel Valley 74.51 49 *e*P P **06 42 00.8 +1.5**
HVU pmax pmax
comp=Z,2.0nm,0.8s
HVU Hansel Valley 74.51 49 *e*P P **06 42 00.8 +1.5**
comp=Z,2.1nm,0.8s
R11A Troy Canyon, C 74.94 53 *e*P P **06 42 02.5 +0.7**
comp=Z,2.2nm,1.0s
TPNV Topopah Spring 75.39 54 *e*P P **06 42 05.0 +0.6**
TPNV pmax pmax
comp=Z,8.0nm,1.4s
TPNV Topopah Spring 75.39 54 *e*P P **06 42 05.0 +0.6**
comp=Z,8.2nm,1.4s
BW06 Boulder Array 75.73 46 *e*P P **06 42 06.7 +0.3**
comp=Z,1.6nm,0.8s
PD31 Pinedale Array 75.73 46 *e*P P **06 42 06.6 +0.3**
PDAR Pinedale Array 75.73 46 P P **06 42 06.0 -0.3**
comp=Z,1.2nm,0.7s,baz=269,slow=2.2,SNR=17
MSU Marysvale 76.93 51 *e*P P **06 42 14.2 +1.0**
MSU Marysvale 76.93 51 *e*P P **06 42 14.2 +1.0**
P17A Butcher Ranch, 77.17 49 *e*P P **06 42 16.0 +1.5**
comp=Z,3.9nm,0.8s
BUR08 Bucovina Ar. S 77.20 322 *e*P P **06 42 15.2 +0.8**
MTPU Mount Pierson 77.22 51 *e*P P **06 42 16.4 +1.4**
comp=Z,13nm,2.0s
P18A Preston Nutter 77.36 49 *e*P P **06 42 16.0 +0.3**
comp=Z,2.9nm,0.9s
SRU San Rafael Swe 77.53 50 *e*P P **06 42 17.3 +0.8**
SRU pmax pmax
comp=Z,5.0nm,0.8s
SRU San Rafael Swe 77.53 50 *e*P P **06 42 17.3 +0.8**
comp=Z,4.7nm,0.8s
PV10 Paradox Valley 78.89 49 *e*P P **06 42 25.4 +1.2**
SMCO Snowmass 79.57 48 *e*P P **06 42 28.7 +0.7**
comp=Z,9.2nm,1.9s
CLL Collm 79.74 330 *e*P P **06 42 28.0 -0.2**
CLL Collm 79.74 330 *e*P P **06 42 28.0 -0.2**
GERES GERESS Array B 81.41 329 P P **06 42 37.4 +0.1**
comp=Z,0.6nm,0.7s,baz=54,slow=6.8,SNR=4.4
ANMO Albuquerque 82.73 51*ce*P P **06 42 44.6 0.0**
ANMO pmax pmax
comp=Z,10.0nm,3.9s
FUORN Ofenpass-Fuorn 84.58 329 *e*P P **06 42 53.8 -0.2**
comp=Z,16nm,1.5s
TX31 Lajitas Ar. Si 88.31 53 *e*P P **06 43 12.7 +0.3**
TXAR Lajitas Array 88.31 53 P P **06 43 11.9 -0.5**
comp=Z,0.5nm,0.6s,baz=300,slow=3.4,SNR=10
HPIG 88.71 56 *e*P P **06 43 16.4 +2.0**
comp=Z,7.5nm,0.5s
H06E1 SOCORRO T-PHAS 90.65 65 T T 08 24 28.6
MMNY Mt. Morris Dam 90.79 28 *e*P P **06 43 23.9 +0.3**
comp=Z,96nm,1.8s
SNAA Sanae 142.88 197 PKP PKPpre 06 49 47.6
VNA2 Neumayer--Watz 144.45 197 PKP **PKPab 06 49 53.4 -0.4**
baz=129,slow=2.7
VNA3 Neumayer Olymp 144.69 195 PKP **PKPab 06 49 53.9 -0.8**
LPAZ La Paz 145.01 58 PKPbc **PKPbc 06 49 57.8 -0.5**
comp=Z,0.9nm,0.8s,baz=305,slow=1.9,SNR=5.1
LPAZ La Paz 145.01 58 *e*PKPbc **PKPbc 06 49 57.9 -0.3**
PB11 IPOC Station P 146.38 64 *e*PKPdf **PKPab 06 50 02.8 +0.1**

IDC 23 06:40:28.6±4.7, 25°49S×179°87W, h504km±49km, mb3.4/6, mb1 3.5/8, mb1mx3.2/24, mbtmp4.3/8, Error ellipse: s-maj=35.5km s-min=34.3km az=50.0, South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**12.98**	**282**	P		P	P	06 43 18.2	+0.5
	0.3nm,0.3s,baz=81,slow=18,SNR=2.6								
URZ	**Urewera**	**12.99**	**191**	P		P	P	06 43 16.8	-0.5
	0.3nm,0.3s,baz=144,slow=19,SNR=1.5								
URZ				S		S	S	06 45 37.6	+1.0
	0.5nm,0.3s,baz=252,slow=20,SNR=1.9								
CTA	**Charters Tower**	**31.64**	**273**	P		P	P	06 46 10.3	+0.4
	5.5nm,0.4s,baz=96,slow=11,SNR=12								
STKA	**Stephens Creek**	**34.27**	**250**	P		P	P	06 46 32.6	+0.4
	1.6nm,0.8s,baz=126,slow=8.7,SNR=4.0								
ASAR	**Alice Springs**	**41.92**	**262**	P		P	P	06 47 34.6	-0.1
	1.8nm,0.5s,baz=86,slow=7.0,SNR=16								
WRA	**Warramunga Arr**	**42.44**	**268**	P		P	P	06 47 38.0	-0.9
	2.5nm,0.3s,baz=100,slow=7.2,SNR=123								
MJAR	**Matsushiro Arr**	**73.27**	**326**	P		P	P	06 51 08.1	-0.1
	2.1nm,0.8s,baz=167,slow=4.3,SNR=3.2								
PETK	**Petropavlovsk-**	**80.67**	**347**	P		P	P	06 51 47.9	-0.3
	4.1nm,1.0s,baz=113,slow=6.5,SNR=4.4								
NB2	**NORSAR Subarra**	**143.66**	**351**	PKP		PKPbc	PKPbc	06 59 04.4	+0.4
	comp=Z,0.9nm,0.6s,baz=20,slow=3.7								
NOA	**NORSAR Array B**	**143.66**	**351**	PKP		PKPbc	PKPbc	06 59 04.4	+0.4
	comp=Z,0.6nm,0.6s,baz=16,slow=5.0,SNR=9.3								
AKASG	**Malin Array Be**	**146.36**	**326**	PKPbc		PKPbc	PKPbc	06 59 12.8	+0.5
	comp=Z,0.6nm,0.4s,baz=52,slow=3.5,SNR=3.1								
BRTR	**Keskin Array B**	**148.61**	**305**	PKPbc		PKPbc	PKPbc	06 59 17.9	-0.9
	comp=Z,0.4nm,0.5s,baz=108,slow=3.3,SNR=2.5								

MAN 23 06:52:37, 9°52N×125°71E, h21km, mb4.0, ML2.8, MS2.5, 2C, Mindanao

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
SCPH	**Surigao**	**0.34**	**320**⇑	*e*P		Pn	Pn	06 52 45.7	-1.0
SCPH				*e*S		Sn	Sn	06 52 52.3	-0.8
CGP	**Cagayan de Oro**	**1.46**	**224**⇑	*e*P		Pn	Pn	06 53 02.5	+0.4
CGP				*e*S		Sb	Sb	06 53 21.8	+0.2

*IDC **23** 06:56:02.9±2.2, 25°99S×67°45W, h0km, mb3.6/2, mb1 3.9/3, mb1mx3.6/19, mbtmp3.5/3, ML3.8/1, Error ellipse: s-maj=106.6km s-min=55.1km az=62.0*
*ISCJB **23** 06:56:34.8±0.6, 23°91S±0°05×66°82W±0°04, h202km±6km, mb2.9/2, Error ellipse: s-maj=8.6km s-min=5.7km az=5.5*
*SJA **23** 06:56:35.8±0.5, 23°91S×66°71W, h196km±7km, ML2.2, MW2.6*
*GUC **23** 06:56:36.5±0.4, 23°88S×67°20W, h225km, ML4.2*
ISC 23 06:56:34.6±0.9, 23°90S±0°06×66°79W±0°04, h206km±8km, n18, σ1s24/26, 6C, Jujuy Province

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
HJA	**Humahuaca**	**1.44**	**62**	*i* P		Pn	Pn	06 57 09.4	+0.5
HJA				*i* S		S	S	06 57 34.4	-0.6
HJA				IAML				06 57 41.1	
	comp=Z,20nm,0.6s								
AZAP	**Zapla**	**1.61**	**102**	*i* P		Pn	Pn	06 57 10.9	+0.9
AZAP				*i* S		S	S	06 57 36.0	-1.2
YJA	**Yavi**	**2.08**	**35**	*i* P		Pn	Pn	06 57 16.0	+1.1
YJA				*i* S		S	S	06 57 46.1	+0.3
YJA				IAML				06 57 49.2	
	comp=Z,4.4nm,0.5s								
ASTB	**Santa Barbara**	**2.14**	**92**	*i* P		Pn	Pn	06 57 15.4	+0.2
ASTB				*i* S		S	S	06 57 44.9	-1.3
FSA	**Cafayete**	**2.32**	**162**	*i* P		Pn	Pn	06 57 18.0	+0.9
FSA				*i* S		S	S	06 57 49.4	-0.4
FSA				IAML				06 57 52.2	
	comp=Z,8.7nm,0.6s								
PB06	**IPOC Station P**	**2.82**	**294**⇑	*i* P		Pn	Pn	06 57 23.8	+1.1
PB06				*i* S		S	S	06 57 59.5	-0.2
PB06				IAML				06 58 03.0	
	comp=E,200nm,0.1s								
PB09	**IPOC Station P**	**3.08**	**312**⇑	*i* P		Pn	Pn	06 57 27.0	+1.2
ANCH	**Antofagasta**	**3.32**	**273**⇑	*i* P		Pn	Pn	06 57 29.5	+1.1
ANCH				*i* S		S	S	06 58 09.2	-0.8
PB14	**IPOC Station P**	**3.38**	**257**⇑	*i* P		Pn	Pn	06 57 30.1	+0.8
PB14				*i* S		S	S	06 58 10.9	-0.7
PB14				IAML				06 58 13.2	
	comp=E,315nm,0.3s								
PB10	**IPOC Station P**	**3.47**	**276**⇑	*i* P		Pn	Pn	06 57 30.9	+0.7
PB10				*i* S		S	S	06 58 10.5	-2.7
PB10				IAML				06 58 14.4	
	comp=E,432nm,0.4s								
PB07	**IPOC Station P**	**3.58**	**307**	IAML				06 58 15.8	
	comp=N,175nm,0.1s								
PB01	**IPOC Station P**	**3.79**	**318**⇑	*e*P		Pn	Pn	06 57 34.0	-0.1
PB01				*i* S		S	S	06 58 18.8	-1.5
PB01				IAML				06 58 22.4	
	comp=E,198nm,0.1s								
PB08	**IPOC Station P**	**4.34**	**329**	IAML				06 58 35.5	
	comp=E,88nm,0.3s								
LPAZ	**La Paz**	**7.68**	**350**	Pn		Pn	Pn	06 58 24.1	-0.3
	comp=E,0.4nm,0.3s,baz=182,slow=7.5,SNR=5.7								

TXAR Lajitas Array 63.71 324 P P **07 06 45.8 +1.4**
comp=E,0.1nm,0.4s,baz=153,slow=6.1,SNR=2.4
YKA Yellowknife Ar 94.10 340 P P **07 09 30.0 +1.0**
comp=E,0.1nm,0.6s,baz=135,slow=4.3,SNR=6.8
GEYT Alibeck 131.36 60 PKP **PKPdf 07 15 19.7 -2.9**
comp=E,1.3nm,0.5s,baz=297,slow=6.3,SNR=2.7
MKAR Makanchi Array 146.33 40 PKPbc **PKPbc 07 15 50.6 -0.4**
comp=E,0.4nm,0.6s,baz=356,slow=2.0,SNR=4.1

IDC 23 06:59:47.4±8.4, 8°32S×128°13E, h148km±95km, mb3.2/2, mb1 3.5/6, mb1mx3.2/41, mbtmp3.8/6, Error ellipse: s-maj=106.8km s-min=27.8km az=47.0, Timor Sea

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
BATI	**Baumata**	**4.79**	**247**	P		P	Pn	07 00 58.3	+0.3
	baz=90,slow=20								
FITZ	**Fitzroy Crossi**	**10.02**	**194**	P		P	Pn	07 02 07.5	-0.2
	1.8nm,0.3s,baz=17,slow=12,SNR=38								
FITZ				S		Sn	Sn	07 03 55.7	-3.0
	0.6nm,0.3s,baz=318,slow=16,SNR=2.3								
WRA	**Warramunga Arr**	**13.03**	**153**	P		P	Pn	07 02 45.5	-1.5
	0.6nm,0.3s,baz=326,slow=14,SNR=7.8								
WRA				S		Sn	Sn	07 05 03.6	-7.6
	0.3nm,0.3s,baz=326,slow=21,SNR=4.8								
ASAR	**Alice Springs**	**16.23**	**161**	P		P	P	07 03 28.8	+1.4
	0.3nm,0.3s,baz=331,slow=9.0,SNR=22								
ASAR				S		S	S	07 06 25.7	-2.1
	0.3nm,0.3s,baz=328,slow=18,SNR=5.3								
SONM	**Songino Array**	**59.13**	**343**	P		P	P	07 09 32.7	+0.3
	0.4nm,0.5s,baz=157,slow=7.8,SNR=3.6								
MKAR	**Makanchi Array**	**68.33**	**328**	P		P	P	07 10 32.1	-0.5
	0.4nm,0.6s,baz=130,slow=5.7,SNR=3.5								

*IDC **23** 07:19:56.1±0.8, 35°51N×141°20E, h0km, mb3.7/11, mb1 3.9/15, mb1mx3.7/65, mbtmp3.8/15, ML3.7/3, Error ellipse: s-maj=24.9km s-min=15.6km az=89.0*
*ISCJB **23** 07:19:59.0±0.5, 35°52N±0°04×141°23E±0°06, h33km, mb3.7/11, Error ellipse: s-maj=6.9km s-min=5.4km az=10.2*
*JMA **23** 07:20:00.5±0.1, 35°57N×141°07E, h37km±1km, M3.6*
JMA Felt I J1.
ISC 23 07:20:00.8±0.7, 35°55N±0°05×141°08E±0°06, h33km, n34, σ1s22/34, mb3.7/11, 1C-3D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.24**	**310**	⇓P		**Pn**	**Pn**	**07 20 07.5**	**-0.2**
CHOJ				S		**Sb**	**Sb**	**07 20 12.4**	**-0.1**
JCN	**Nagara**	**0.73**	**260**	P		**Pb**	**Pb**	**07 20 15.3**	**+0.2**
KTR	**Katsuura**	**0.74**	**238**	P		**Pb**	**Pb**	**07 20 14.6**	**-0.7**
KTR				S		**Sn**	**Sn**	**07 20 24.7**	**-0.4**
BSO4	**Boso 4**	**0.82**	**228**	P		**Pb**	**Pb**	**07 20 15.8**	**-0.8**
BSO3	**Boso 3**	**0.88**	**212**	⇑P		**Pb**	**Pb**	**07 20 16.3**	**-1.2**
BSO1	**Boso 1**	**0.90**	**185**	⇓P		**Pb**	**Pb**	**07 20 16.2**	**-1.4**
JYT	**Yasato**	**0.99**	**314**	⇓P		**Pn**	**Pn**	**07 20 17.5**	**-0.8**
JAG	**Ashikaga**	**1.58**	**304**	P		**Pn**	**Pn**	**07 20 26.3**	**-0.2**
JIM2	**Oshima 3**	**1.59**	**239**	P		**Pn**	**Pn**	**07 20 25.0**	**-1.6**
JIM2				*e*S		**Sn**	**Sn**	**07 20 44.9**	**-1.1**
JOD2	**Odawara 2**	**1.65**	**261**	P		**Pn**	**Pn**	**07 20 27.2**	**-0.3**
MJAR	**Matsushiro Arr**	**2.53**	**294**	Pn		**Pn**	**Pn**	**07 20 40.7**	**+1.1**
	4.6nm,0.3s,baz=90,slow=8.4,SNR=25								
MAT	**Matsushiro**	**2.53**	**294**	P		**Pn**	**Pn**	**07 20 41.2**	**+1.6**
MAT				*e*S		**Sb**	**Sb**	**07 21 13.9**	**-2.4**
JHJ	**Hachijo jima 2**	**2.65**	**204**	Pn		**Pn**	**Pn**	**07 20 42.1**	**+0.9**
	32nm,0.3s,baz=323,slow=3.4,SNR=7.1								
JHJ				Sn		**Sn**	**Sn**	**07 21 13.2**	**+1.0**
	65nm,0.3s,baz=79,slow=23,SNR=7.9								
JCJ	**Chichijima**	**8.48**	**173**	Pn		**Pn**	**Pn**	**07 21 59.9**	**-1.5**
	baz=315,slow=17								
JCJ				Sn		Sn	Sn	07 23 27.0	-8.9
	baz=163,slow=19								
ASAJ	**Asahikawa**	**8.64**	**7**	Pn		**Pn**	**Pn**	**07 22 02.3**	**-1.1**
	1.4nm,0.3s,baz=224,slow=8.8,SNR=7.9								
ASAJ				Sn		**Sn**	**Sn**	**07 23 36.9**	**-2.6**
	0.3nm,0.3s,baz=316,slow=18,SNR=2.2								
H11N2	**WAKE ISLAND Hy**	**27.66**	**118**	T		T	T	07 54 50.3	
	baz=310,slow=75,SNR=60								
H11N1	**WAKE ISLAND Hy**	**27.66**	**118**	T		T	T	07 54 48.1	
	baz=310,slow=75,SNR=48								
H11N3	**WAKE ISLAND Hy**	**27.68**	**118**	T		T	T	07 54 44.2	
	baz=310,slow=75,SNR=49								
H11S1	**WAKE ISLAND Hy**	**28.32**	**120**	T		T	T	07 55 40.3	
	baz=312,slow=75,SNR=177								
H11S3	**WAKE ISLAND Hy**	**28.32**	**120**	T		T	T	07 55 32.1	
	baz=312,slow=75,SNR=159								
H11S2	**WAKE ISLAND Hy**	**28.33**	**120**	T		T	T	07 55 42.4	
	baz=312,slow=75,SNR=128								
SONM	**Songino Array**	**28.42**	**306**	P		**P**	**P**	**07 25 54.8**	**+2.4**
	0.4nm,0.7s,baz=98,slow=10,SNR=2.3								
MKAR	**Makanchi Array**	**44.69**	**303**	P		**P**	**P**	**07 28 10.7**	**+0.2**
	0.3nm,0.5s,baz=67,slow=4.8,SNR=3.3								
ILAR	**Eielson Array**	**50.89**	**32**	P		**P**	**P**	**07 28 59.2**	**+1.0**
	0.6nm,0.6s,baz=258,slow=6.0,SNR=8.4								
WRA	**Warramunga Arr**	**55.56**	**188**	P		**P**	**P**	**07 29 32.5**	**-0.5**
	1.3nm,0.5s,baz=2.3,slow=7.5,SNR=15								
ASAR	**Alice Springs**	**59.28**	**189**	P		**P**	**P**	**07 29 58.9**	**-0.4**
	0.3nm,0.4s,baz=24,slow=11,SNR=7.5								
AKTO	**Aktyubinsk**	**59.47**	**313**	P		**P**	**P**	**07 30 01.8**	**+1.5**
	0.4nm,0.3s,baz=90,slow=2.0,SNR=3.2								
YKA	**Yellowknife Ar**	**65.23**	**30**	P		**P**	**P**	**07 30 39.3**	**+0.7**
	0.2nm,0.7s,baz=299,slow=6.7,SNR=5.5								
FINES	**FINESS Array B**	**70.00**	**332**	P		**P**	**P**	**07 31 08.8**	**+0.1**
	0.9nm,0.8s,baz=81,slow=8.9,SNR=3.0								
AKASG	**Malin Array Be**	**75.31**	**322**	P		**P**	**P**	**07 31 40.3**	**-0.1**
	0.4nm,0.4s,baz=45,slow=5.8,SNR=5.2								
HFS	**Hagfors**	**75.33**	**336**	P		**P**	**P**	**07 31 41.0**	**+0.6**
	1.2nm,0.8s,baz=48,slow=4.3,SNR=3.1								
NB2	**NORSAR Subarra**	**75.45**	**337**	P		**P**	**P**	**07 31 41.7**	**+0.5**
	comp=Z,0.5nm,0.6s,baz=42,slow=6.2								
NOA	**NORSAR Array B**	**75.45**	**337**	P		**P**	**P**	**07 31 42.3**	**+1.1**
	comp=Z,0.5nm,0.7s,baz=40,slow=5.9,SNR=4.3								
LPAZ	**La Paz**	**147.66**	**61**	PKPbc		**PKPab**	**P**	**07 39 43.4**	**-2.0**
	comp=Z,0.7nm,0.6s,baz=358,slow=9.6,SNR=3.2								

MEX 23 07:47:14.3±0.8, 17°43N×101°36W, h12km±17km, MD3.8, Near coast of Guerrero

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
ZIIG	**Zihuatanejo**	**0.21**	**329**	*i* P		Pg	Pg	07 47 18.2	-0.5
ZIIG				*e*S		Sg	Sg	07 47 21.4	-0.4
CAIG	**El Cayaco**	**1.11**	**110**	*i* P		Pb	Pb	07 47 31.6	-3.9
CAIG				*i* S		Sb	Sb	07 47 45.4	-4.5
ARIG	**Puente Sto Nin**	**1.28**	**48**	*e*P		Pn	Pn	07 47 35.1	-3.0
ARIG				*i* S		Sb	Sb	07 47 49.2	-5.7
MEIG	**Mezcala**	**1.73**	**73**	*i* P		Pn	Pn	07 47 41.0	-3.3
MEIG				*i* S		Sn	Sn	07 48 01.0	-5.4
MMIG	**Aquila**	**2.08**	**295**	*e*P		Pn	Pn	07 47 45.9	-3.2
TLIG	**Tlapa**	**2.66**	**87**	*i* P		Pn	Pn	07 47 54.6	-2.6
TLIG				*i* S		Sn	Sn	07 48 25.8	-3.9

*ISCJB **23** 07:55:27.4±0.5, 37°56N±0°04×35°56E±0°03, h11km±4km, Error ellipse: s-maj=7.0km s-min=3.4km az=176.1*
*DDA **23** 07:55:27.5, 37°52N×35°59E, h4km, Md2.8*
*CSEM **23** 07:55:27.5±0.1, 37°55N×35°57E, h12km, MD2.6, Error ellipse: s-maj=4.9km s-min=2.6km az=178.0*
*ISK **23** 07:55:27.1, 37°55N×35°57E, h10km, MD2.6*
ISC 23 07:55:27.0±0.9, 37°55N±0°04×35°57E±0°02, h16km±6km, n25, σ0s44/38, Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
AKO

NIG	**Nigde**	**0.94**	**307**	*e*PG	**Pn**	**07 55 45.8**	**0.0**
NIG				*e*SG	**Sn**	**07 55 59.1**	**+0.1**
NIG	**Nigde**	**0.94**	**307**	*e*Pg	**Pn**	**07 55 45.8**	**0.0**
NIG				*e*Sg	**Sn**	**07 55 59.2**	**+0.1**
KAMA	**Osmaniye**	**0.95**	**112**	*i* P	**Pb**	**07 55 45.2**	**0.0**
KAMA				*i* S	**Sn**	**07 55 58.6**	**-0.4**
KMRS	**Kahramanmaras**	**1.06**	**92**	*e*PG	**Pg**	**07 55 47.8**	**+0.2**
KMRS	**Kahramanmaras**	**1.06**	**92**	*e*Pg	**Pg**	**07 55 47.8**	**+0.2**
MERS	**Mersin**	**1.08**	**231**	*e*PN	**Pg**	**07 55 48.2**	**+0.3**
MERS	**Mersin**	**1.08**	**231**	*e*Pn	**Pg**	**07 55 48.2**	**+0.3**
HCB	**Kahramanmara^{-}**	**1.09**	**101**	*i* P	**Pg**	**07 55 48.0**	**0.0**
HCB				*i* S	**Sn**	**07 56 02.1**	**-0.2**
KERG	**Konya-Eregli**	**1.16**	**264**	*i* P	**Pb**	**07 55 48.9**	**+0.2**
KERG				*i* S	**Sb**	**07 56 03.5**	**0.0**
KERG	**Konya-Eregli**	**1.16**	**264**	P	**Pb**	**07 55 48.9**	**+0.2**
KERG				S	**Sb**	**07 56 03.5**	**0.0**
BNN	**Bunyan**	**1.32**	**10**	*e*PN	**Pg**	**07 55 52.1**	**-0.4**
BNN	**Bunyan**	**1.32**	**10**	*e*Pn	**Pg**	**07 55 52.1**	**-0.4**
KIZK	**Mersin**	**1.56**	**227**	*i* P	**Pn**	**07 55 52.7**	**-1.4**
KIZK				*i* S	**Sb**	**07 56 15.9**	**+0.8**
IKL	**Isikli**	**2.00**	**230**	*e*PN	**Pb**	**07 56 02.1**	**-0.9**
IKL	**Isikli**	**2.00**	**230**	*e*Pn	**Pb**	**07 56 02.1**	**-0.9**

*ISCJB **23** 08:00:49.3±0.4, 34.94N±0.03×58.00E±0.06, h10km, Error ellipse: s-maj=6.8km s-min=4.8km az=18.5*
*THR **23** 08:00:50.6±0.6, 34.90N×58.02E, h41km±8km, ML4.0*
*CSEM **23** 08:00:51.2±0.2, 34.96N×58.02E, h20km, ML4.0, Error ellipse: s-maj=6.1km s-min=4.4km az=107.0*
*TEH **23** 08:00:51.2, 34.98N×58.07E, h17km, ML3.8*
ISC 23 08:00:50.0±1.1, 34°95N±0°04×58°03E±0°04, h10km, n44, σ0s65/45, Northern and central Iran

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TABS	**Tabas**	**1.50**	**210**	*e*Pg	**Pn**	**08 01 17.2**	**+0.1**
TABS				AML	AML	08 01 41.4	
	comp=N,3μm,0.4s						
TABS	**Tabas**	**1.50**	**210**	*e*Pg	**Pn**	**08 01 17.2**	**+0.1**
IMOG	**Moghan**	**1.57**	**42**	*e*Pn	**Pn**	**08 01 17.7**	**-0.6**
IMOG				*e*AMB	AMB	08 01 41.2	
	comp=Z,7μm,0.4s						
IMOG	**Moghan**	**1.57**	**42**	*e*Pn	**Pn**	**08 01 17.7**	**-0.6**
IPAY	**Payeh**	**1.69**	**28**	*e*Pn	**Pn**	**08 01 19.1**	**-0.7**
IPAY				*e*AMB	AMB	08 01 20.5	
	comp=Z,13μm,0.2s						
IPAY				*e*Sg	**Sb**	**08 01 43.0**	**+0.2**
IPAY	**Payeh**	**1.69**	**28**	*e*Pn	**Pn**	**08 01 19.1**	**-0.7**
IPAY				*e*Sg	**Sb**	**08 01 43.0**	**+0.2**
IAKL	**Akhelmad**	**1.75**	**20**	*e*Pn	**Pn**	**08 01 20.0**	**-0.7**
IAKL				*e*AMB	AMB	08 01 21.6	
	comp=Z,18μm,0.1s						
ISRO	**Mashad**	**1.79**	**41**	*e*Pn	**Pn**	**08 01 20.7**	**-0.4**
ISRO				*e*AMB	AMB	08 01 46.6	
	comp=Z,19μm,0.6s						
ISRO	**Mashad**	**1.79**	**41**	*e*Pn	**Pn**	**08 01 20.7**	**-0.4**
IKRD	**Kardeh**	**1.86**	**12**	*e*Pn	**Pg**	**08 01 26.9**	**+1.1**
IKRD				*e*AMB	AMB	08 01 29.0	
	comp=Z,7μm,0.1s						
SHRO	**Shahrood**	**1.95**	**303**	*e*Pn	**Pn**	**08 01 22.9**	**-0.3**
SHRO	**Shahrood**	**1.95**	**303**	*e*Pn	**Pn**	**08 01 23.0**	**-0.3**
ISFR	**Sfrayin**	**2.10**	**359**	*e*Pn	**Pn**	**08 01 26.1**	**+0.6**
ISFR				*e*AMB	AMB	08 01 59.7	
	comp=Z,5μm,0.3s						
ITEG	**Tejag**	**2.14**	**164**	*e*Pn	**Pn**	**08 01 26.1**	**+0.2**
ITEG				*e*AMB	AMB	08 02 07.3	
	comp=Z,8μm,0.3s						
ITEG	**Tejag**	**2.14**	**164**	*e*Pn	**Pn**	**08 01 26.1**	**+0.2**
IMYA	**Miami**	**2.19**	**50**	*e*Pn	**Pn**	**08 01 26.3**	**-0.3**
IMYA				*e*AMB	AMB	08 01 29.6	
	comp=Z,3μm,0.2s						
IMYA	**Miami**	**2.19**	**50**	*e*Pn	**Pn**	**08 01 26.3**	**-0.3**
IMON	**Monand**	**2.22**	**142**	*e*Pn	**Pn**	**08 01 28.4**	**+1.3**
IMON				*e*AMB	AMB	08 02 12.3	
	comp=E,22μm,0.3s						
IMON	**Monand**	**2.22**	**142**	*e*Pn	**Pn**	**08 01 28.4**	**+1.3**
SHRT	**Shahrakht**	**2.28**	**124**	*e*Pn	**Pn**	**08 01 27.0**	**-0.8**
SHRT	**Shahrakht**	**2.28**	**124**	*e*Pn	**Pn**	**08 01 27.0**	**-0.8**
IEMG	**Emamgholi**	**2.51**	**11**	*e*Pn	**Pn**	**08 01 32.6**	**+1.4**
IEMG				*e*AMB	AMB	08 01 39.0	
	comp=N,6μm,0.1s						
IEMG	**Emamgholi**	**2.51**	**11**	*e*Pn	**Pn**	**08 01 32.6**	**+1.4**
IKOO	**Kooshah**	**2.65**	**162**	*e*Pn	**Pn**	**08 01 33.1**	**0.0**
IKOO				*e*AMB	AMB	08 02 39.4	
	comp=Z,2μm,0.2s						
IKOO	**Kooshah**	**2.65**	**162**	*e*Pn	**Pn**	**08 01 33.1**	**0.0**
IDAH	**Dahanechah**	**2.69**	**145**	*e*Pn	**Pn**	**08 01 33.6**	**0.0**
IDAH				*e*AMB	AMB	08 02 31.8	
	comp=Z,2μm,0.2s						
IDAH	**Dahanechah**	**2.69**	**145**	*e*Pn	**Pn**	**08 01 33.6**	**0.0**
BJRD	**Bojnurd**	**2.79**	**350**	*e*Pn	**Pn**	**08 01 35.3**	**+0.5**
BJRD	**Bojnurd**	**2.79**	**350**	*e*Pn	**Pn**	**08 01 35.3**	**+0.5**
MRVT	**Maraveh tapeh**	**3.12**	**330**	*e*Pn	**Pn**	**08 01 39.5**	**+0.1**
MRVT	**Maraveh tapeh**	**3.12**	**330**	*e*Pn	**Pn**	**08 01 39.5**	**+0.1**
IANJ	**Anjilo**	**3.41**	**280**	*e*Pn	**Pb**	**08 01 49.1**	**-1.5**
IGLO	**Ghaloghah**	**3.75**	**296**	*e*Pn	**Pn**	**08 01 48.5**	**+0.4**
IGLO				*e*AMB	AMB	08 01 49.9	
	comp=Z,876nm,0.2s						
IBAF	**Bafgh**	**3.94**	**212**	*e*Pn	**Pn**	**08 01 51.1**	**+0.5**
IBAF				*e*AMB	AMB	08 03 04.3	
	comp=Z,1μm,0.2s						
IBAF	**Bafgh**	**3.94**	**212**	*e*Pn	**Pn**	**08 01 51.1**	**+0.5**
ICHK	**Chekchek**	**4.05**	**229**	*e*Pn	**Pn**	**08 01 52.8**	**+0.5**
ICHK				*e*AMB	AMB	08 03 06.7	
	comp=Z,1μm,0.2s						
ICHK	**Chekchek**	**4.05**	**229**	*e*Pn	**Pn**	**08 01 52.8**	**+0.5**
IMEH	**Mehriz**	**4.56**	**220**	*e*Pn	**Pn**	**08 01 59.5**	**+0.2**
IMEH				*e*AMB	AMB	08 03 24.5	
	comp=Z,623nm,0.2s						
IMEH	**Mehriz**	**4.56**	**220**	*e*Pn	**Pn**	**08 01 59.5**	**+0.2**
ISAD	**Sadrabad**	**4.73**	**231**	*e*Pn	**Pn**	**08 02 01.9**	**+0.2**
ISAD				*e*AMB	AMB	08 03 24.5	
	comp=N,696nm,0.2s						
ISAD	**Sadrabad**	**4.73**	**231**	*e*Pn	**Pn**	**08 02 01.9**	**+0.2**
NASN	**Na'in**	**4.84**	**245**	*e*Pn	**Pn**	**08 02 02.9**	**-0.4**
NASN	**Na'in**	**4.84**	**245**	*e*Pn	**Pn**	**08 02 02.9**	**-0.4**
KRBR	**Kerman**	**5.07**	**193**	AML	AML	08 03 44.5	
	comp=N,84nm,0.7s						
KRBR				AML	AML	08 03 47.2	
	comp=E,91nm,0.9s						

*JMA **23** 08:02:38.6±0.1, 35.78N×141.44E, h16km±2km, M3.3*
*ISCJB **23** 08:02:39.2±2.2, 35.64N±0.09×141.4E±0.2, h37km±16km, mb3.5/7, MS3.1/1, Error ellipse: s-maj=31.1km s-min=13.9km az=167.0*
*IDC **23** 08:02:48.7±3.5, 35.48N×140.65E, h90km±31km, mb3.2/7, mb1 3.4/8, mb1mx3.1/60, mbtmp3.5/8, MS3.2/1, Ms1 3.2/1, ms1mx2.7/22, Error ellipse: s-maj=32.1km s-min=20.4km az=91.0*
ISC 23 08:02:42.0±1.8, 35°73N±0°08×141°2E±0°1, h28km±11km, n19, σ2s14/16, mb3.6/7, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.28**	**265**	P	**Pb**	**08 02 48.2**	**-0.8**
CHOJ				S	**Sb**	**08 02 55.0**	**+1.2**
JYT	**Yasato**	**0.96**	**301**	P	**Pb**	**08 02 59.2**	**-0.8**
JYT				S	**Sb**	**08 03 12.7**	**+0.4**
JHO	**Hitachi**	**1.02**	**330**	P	**Pn**	**08 02 59.0**	**-1.5**
JHO				S	**Sb**	**08 03 13.7**	**-0.4**
MJAR	**Matsushiro Arr**	**2.56**	**289**	P	**Pn**	**08 03 23.7**	**+2.1**
	3.9nm,0.3s,baz=89,slow=8.7,SNR=6.0						
MAT	**Matsushiro**	**2.56**	**289**	P	**Pn**	**08 03 24.7**	**+3.0**
MAT				S	**Sb**	**08 03 58.1**	**-0.2**
GUMO	**Guam**	**22.29**	**171**	LR	LR	08 16 14.8	
	comp=Z,64nm,18.4s,baz=92,slow=36						
H11N2	**WAKE ISLAND Hy 27.65**	**118**		T	T	08 37 26.0	
	baz=311,slow=75,SNR=52						
H11N1	**WAKE ISLAND Hy 27.66**	**118**		T	T	08 37 23.8	
	baz=311,slow=75,SNR=41						
H11N3	**WAKE ISLAND Hy 27.67**	**118**		T	T	08 37 24.6	
	baz=311,slow=75,SNR=38						
H11S1	**WAKE ISLAND Hy 28.32**	**121**		T	T	08 37 08.2	
	baz=312,slow=75,SNR=90						
H11S3	**WAKE ISLAND Hy 28.32**	**121**		T	T	08 37 03.5	
	baz=312,slow=75,SNR=57						
H11S2	**WAKE ISLAND Hy 28.33**	**121**		T	T	08 37 09.4	
	baz=312,slow=75,SNR=44						
MKAR	**Makanchi Array**	**44.68**	**303**	P	**P**	**08 10 50.5**	**-1.9**
	0.2nm,0.5s,baz=82,slow=10,SNR=2.8						
KURBB	**Kurchatov Arra**	**46.68**	**309**	P	**P**	**08 11 06.9**	**-1.1**
	0.5nm,0.4s,baz=85,slow=7.7,SNR=4.9						
ILAR	**Eielson Array**	**50.69**	**32**	P	**P**	**08 11 41.2**	**+2.6**
	0.5nm,0.7s,baz=260,slow=6.4,SNR=4.5						
WRA	**Warramunga Arr**	**55.75**	**188**	P	**P**	**08 12 13.6**	**-2.7**
	1.1nm,0.8s,baz=7.5,slow=7.6,SNR=6.0						
ASAR	**Alice Springs**	**59.48**	**188**	P	**P**	**08 12 40.3**	**-2.2**
	0.5nm,0.9s,baz=16,slow=13,SNR=5.2						
YKA	**Yellowknife Ar**	**65.02**	**30**	P	**P**	**08 13 22.5**	**+3.3**
	0.2nm,0.7s,baz=301,slow=7.0,SNR=5.1						
NOA	**NORSAR Array B**	**75.32**	**337**	P	**P**	**08 14 21.3**	**-1.1**
	0.3nm,0.7s,baz=66,slow=8.3,SNR=3.4						

*IDC **23** 08:10:19.5±0.8, 35.86N×142.14E, h0km, mb3.6/9, mb1 3.8/11, mb1mx3.6/57, mbtmp3.6/11, ML3.5/2, MS3.1/1, Ms1 3.1/1, ms1mx2.5/49, Error ellipse: s-maj=24.5km s-min=17.9km az=111.0*
*ISCJB **23** 08:10:21.2±0.6, 35.86N±0.06×142.08E±0.06, h23km, mb3.6/9, Error ellipse: s-maj=8.6km s-min=6.3km az=149.3*
*JMA **23** 08:10:22.0±0.2, 35.95N×142.07E, h62km, M3.3*
ISC 23 08:10:23.2±0.8, 35°88N±0°06×141°99E±0°07, h23km, n20, σ0s88/23, mb3.6/9, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.94**	**259**	P	**Pb**	**08 10 40.5**	**-0.2**
CHOJ				*e*S	**Sn**	**08 10 54.4**	**+0.8**
JHO	**Hitachi**	**1.36**	**303**	P	**Pn**	**08 10 45.9**	**-0.8**
BSO1	**Boso 1**	**1.48**	**214**	P	**Pn**	**08 10 48.5**	**+0.6**
BSO3	**Boso 3**	**1.62**	**229**	P	**Pn**	**08 10 50.7**	**+0.6**
BSO3				S	**Sn**	**08 11 09.7**	**-0.4**
JAG	**Ashikaga**	**2.12**	**285**	P	**Pn**	**08 10 56.0**	**-1.2**
JAG				S	**Sn**	**08 11 22.3**	**-0.6**
JOD2	**Odawara 2**	**2.45**	**256**	P	**Pn**	**08 11 01.7**	**0.0**
JRY	**Ryogami san**	**2.51**	**274**	P	**Pn**	**08 11 02.0**	**-0.6**
MJAR	**Matsushiro Arr**	**3.13**	**283**	Pn	**Pn**	**08 11 12.5**	**+1.4**
	3.6nm,0.3s,baz=96,slow=9.5,SNR=30						
MAT	**Matsushiro**	**3.13**	**283**	P	**Pn**	**08 11 11.1**	**0.0**
JHJ	**Hachijo jima 2**	**3.31**	**214**	Pn	**Pn**	**08 11 13.2**	**-0.3**
	20nm,0.3s,baz=0.0,slow=13,SNR=5.3						
JHJ				Sn	**Sn**	**08 11 49.9**	**-2.2**
	18nm,0.3s,baz=43,slow=19,SNR=1.9						
JHJ				LR	LR	08 12 46.5	
	comp=Z,255nm,19.4s,baz=69,slow=44						
ASAJ	**Asahikawa**	**8.24**	**3**	Pn	Pn	08 12 17.5	-3.7
	1.7nm,0.3s,baz=218,slow=7.7,SNR=12						
SONM	**Songino Array**	**28.82**	**306**	P	**P**	**08 16 21.4**	**+1.8**
	0.6nm,0.8s,baz=113,slow=9.8,SNR=4.4						
MKAR	**Makanchi Array**	**45.13**	**303**	P	**P**	**08 18 37.9**	**+0.2**
	0.4nm,0.8s,baz=77,slow=9.8,SNR=3.2						
ILAR	**Eielson Array**	**50.22**	**32**	P	**P**	**08 19 16.9**	**0.0**
	0.4nm,0.7s,baz=269,slow=5.8,SNR=5.7						
INK	**Inuvik**	**55.20**	**27**	P	**P**	**08 19 54.1**	**+0.5**
	0.8nm,0.8s,baz=313,slow=8.0,SNR=4.3						
WRA	**Warramunga Arr**	**55.99**	**189**	P	**P**	**08 19 59.6**	**-0.3**
	1.0nm,0.6s,baz=7.2,slow=7.6,SNR=12						
ASAR	**Alice Springs**	**59.72**	**189**	P	**P**	**08 20 26.0**	**0.0**
	0.4nm,0.9s,baz=14,slow=9.5,SNR=4.1						
YKA	**Yellowknife Ar**	**64.57**	**30**	P	**P**	**08 20 57.7**	**-0.4**
	0.5nm,0.8s,baz=300,slow=6.8,SNR=11						
NOA	**NORSAR Array B**	**75.42**	**338**	P	**P**	**08 22 04.3**	**-0.6**
	0.4nm,0.6s,baz=38,slow=5.7,SNR=2.6						
TXAR	**Lajitas Array**	**90.45**	**53**	P	**P**	**08 23 23.2**	**-0.1**
	0.3nm,0.8s,baz=339,slow=1.7,SNR=3.4						

*NIED **23** 08:11:00, 37.30N×141.80E, h8km, Mw4.1 Best double couple: M0 1.40000×10^{15} NP1:φs219.00000°, δ16.00000°, λ-46.00000°. NP2:φs354.00000°, δ78.00000°, λ-102.00000°.*
*ISCJB **23** 08:11:29.6±1.0, 37.34N±0.03×141.83E±0.05, h15km±6km, mb3.9/13, Error ellipse: s-maj=7.1km s-min=4.7km az=19.4*
*JMA **23** 08:11:29.7±0.1, 37.32N×141.82E, h26km±2km, M4.2*
JMA Felt I J1.
*IDC **23** 08:11:30.0±0.8, 37.55N×141.65E, h0km, mb3.8/9, mb1 4.0/12, mb1mx3.7/58, mbtmp3.8/12, ML3.6/3, Error ellipse: s-maj=22.3km s-min=16.2km az=122.0*
*NEIC **23** 08:11:33.2±2.3, 37.55N×141.61E, h21km±16km, mb4.3/5, Error ellipse: s-maj=9.9km s-min=6.4km az=110.0*
ISC 23 08:11:29.6±1.8, 37°34N±0°04×141°78E±0°06, h8km±10km, n31, σ0s98/38, mb4.0/13, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**0.72**	**273**	P	**Pg**	**08 11 43.9**	**+0.3**
JFK				S	**Sg**	**08 11 54.1**	**+1.1**
ONAJ	**Iwakimizuishiy**	**0.82**	**254**	P	**Pg**	**08 11 45.4**	**0.0**
ONAJ				S	**Sg**	**08 11 56.2**	**+0.1**
JMM	**Marumori**	**0.94**	**304**	P	**Pb**	**08 11 47.3**	**-1.0**
JMM				*e*S	**Sb**	**08 12 00.1**	**-0.8**
JFT	**Otama**	**1.16**	**279**	P	**Pn**	**08 11 51.5**	**-0.7**
JFT				S	**Sn**	**08 12 08.0**	**-0.3**
JIO	**Ouri**	**1.17**	**343**	P	**Pn**	**08 11 50.8**	**-1.4**
JIO				S	**Sb**	**08 12 05.7**	**-1.6**
JHO	**Hitachi**	**1.21**	**234**	P	**Pn**	**08 11 51.3**	**-1.6**
JHO				S	**Sb**	**08 12 05.9**	**-2.7**
JOU	**Okura**	**1.35**	**320**	P	**Pn**	**08 11 54.5**	**-0.4**
JOU				S	**Sb**	**08 12 13.1**	**+0.3**
JYS	**Shirataka**	**1.62**	**303**	P	**Pn**	**08 11 58.8**	**+0.3**
JYS				S	**Sb**	**08 12 21.2**	**+0.8**
JFY	**Yanaizu**	**1.66**	**273**	P	**Pn**	**08 11 59.0**	**0.0**
JFY				S	**Sb**	**08 12 21.0**	**-0.4**
JMK	**Ichinoseki**	**1.67**	**345**	P	**Pn**	**08 11 58.9**	**-0.3**
JMK				S	**Sn**	**08 12 19.8**	**-1.0**
MJAR	**Matsushiro Arr**	**2.97**	**256**	Pn	**Pn**	**08 12 17.5**	**+0.4**
	2.7nm,0.3s,baz=68,slow=14,SNR=4.6						
MJAR				Sn	**Sn**	**08 12 54.4**	**+1.5**
	6.4nm,0.3s,baz=5.6,slow=18,SNR=3.0						
MAJO	**Matsushiro**	**2.97**	**256**	*e*Pn	**Pn**	**08 12 18.7**	**+1.6**
MAT	**Matsushiro**	**2.97**	**256**	P	**Pn**	**08 12 17.6**	**+0.5**
MAT				S	**Sn**	**08 12 51.4**	**-1.5**
JHJ2	**Mitsune**	**4.51**	**201**	*e*Pn	Pn	08 12 42.2	+3.9
JHJ	**Hachijo jima 2**	**4.52**	**202**	Pn	Pn	08 12 41.5	+3.2
	15nm,0.3s,baz=245,slow=17,SNR=5.1						
JHJ				Sn	**Sn**	**08 13 31.2**	**+0.2**
	15nm,0.3s,baz=53,slow=20,SNR=2.9						
ASAJ	**Asahikawa**	**6.80**	**5**	Pn	**Pn**	**08 13 09.3**	**-0.4**
	1.2nm,0.3s,baz=215,slow=14,SNR=5.2						
USRK	**Ussuriysk Ar.**	**10.10**	**316**	Pn	Pn	08 13 60.0	+5.1
	0.2nm,0.3s,baz=117,slow=12,SNR=4.6						
SONM	**Songino Array**	**27.86**	**303**	P	**P**	**08 17 18.9**	**-0.8**
	1.3nm,0.6s,baz=105,slow=8.6,SNR=7.0						
ZALV	**Zalesovo Beam**	**41.93**	**312**	P	**P**	**08 19 20.1**	**-0.3**
	2.3nm,0.6s,baz=76,slow=6.3,SNR=3.7						
MKAR	**Makanchi Array**	**44.21**	**302**	P	**P**	**08 19 39.1**	**+0.1**
	1.1nm,0.6s,baz=86,slow=10,SNR=6.6						
ILAR	**Eielson Array**	**49.08**	**33**	P	**P**	**08 20 17.8**	**+0.7**
	0.7nm,0.8s,baz=265,slow=4.8,SNR=5.1						
TKM2	**Tokmak 2**	**49.74**	**298**	*e*P	**P**	**08 20 22.9**	**+0.2**
	2.1nm,0.6s						
AAK	**Ala-Archa**	**50.60**	**298**	*e*P	**P**	**08 20 28.7**	**-0.5**
	1.1nm,0.6s						
INK	**Inuvik**	**53.98**	**27**	P	**P**	**08 20 54.5**	**+1.0**
	0.3nm,0.4s,baz=161,slow=6.8,SNR=4.8						
INK	**Inuvik**	**53.98**	**27**	*e*P	**P**	**08 20 54.6**	**+1.1**
	7.4nm,1.8s						
WRAB	**Tennant Creek**	**57.39**	**188**	*e*P	P	08 21 21.4	+2.8
	5.0nm,1.1s						
WRA	**Warramunga Arr**	**57.40**	**188**	P	P	08 21 21.5	+2.9
	0.8nm,0.4s,baz=7.4,slow=7.2,SNR=8.9						
ASAR	**Alice Springs**	**61.13**	**188**	P	P	08 21 48.0	+3.5
	0.4nm,0.7s,baz=17,slow=6.5,SNR=5.6						
RES	**Resolute Bay**	**62.23**	**15**	*e*P	**P**	**08 21 51.3**	**0.0**
	1.3nm,1.0s						
YKA	**Yellowknife Ar**	**63.40**	**30**	P	**P**	**08 21 59.8**	**+0.6**
	0.4nm,0.7s,baz=301,slow=6.7,SNR=6.2						
NVAR	**Mina Array Bea**	**74.57**	**53**	P	**P**	**08 23 10.2**	**+0.8**
	0.5nm,0.6s,baz=354,slow=4.8,SNR=6.3						

IDC 23 08:25:21.0±5.1, 37°41N×33°15W, h0km, mb3.5/4, mb1 3.8/4, mb1mx3.4/61, mbtmp3.5/4, MS4.1/1, Ms1 4.1/1, ms1mx3.0/35, Error ellipse: s-maj=138.6km s-min=36.6km az=85.0, Azores Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MLR	**Muntele Rosu**	**44.14**	**60**	LR	LR	08 51 05.3	
	comp=Z,264nm,20.8s,baz=92,slow=35						
YKA	**Yellowknife Ar**	**53.79**	**325**	P	P	08 34 44.9	0.0
	0.2nm,0.5s,baz=83,slow=6.5,SNR=6.7						
PDAR	**Pinedale Array**	**56.83**	**301**	P	P	08 35 07.4	-0.2
	0.2nm,0.6s,baz=63,slow=10,SNR=3.0						
TXAR	**Lajitas Array**	**58.21**	**284**	P	P	08 35 17.1	-0.1
	0.7nm,0.8s,baz=86,slow=6.7,SNR=9.6						
LPAZ	**La Paz**	**62.75**	**218**	P	P	08 35 48.9	+0.1
	0.7nm,0.8s,baz=9.5,slow=6.1,SNR=3.0						

*NIED **23** 08:27:00, 38.40N×141.80E, h8km, Mw3.7 Best double couple: M0 3.94000×10^{14} NP1:φs106.00000°, δ73.00000°, λ-11.00000°. NP2:φs199.00000°, δ79.00000°, λ-163.00000°.*
*ISCJB **23** 08:27:45.0±0.7, 38.39N±0.04×141.86E±0.09, h63km±6km, mb3.6/7, Error ellipse: s-maj=11.7km s-min=5.6km az=17.6*
*JMA **23** 08:27:46.4, 38.40N×141.79E, h57km±1km, M4.0*
JMA Felt II J1.
*IDC **23** 08:27:46.5±2.4, 38.37N×141.84E, h60km±22km, mb3.3/7, mb1 3.6/11, mb1mx3.3/57, mbtmp3.7/11, ML3.6/4, Error ellipse: s-maj=27.5km s-min=14.8km az=99.0*
ISC 23 08:27:45.6±1.2, 38°35N±0°05×141°89E±0°09, h52km±11km, n30, σ1s01/35, mb3.7/7, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**0.43**	**284**	P	**Pn**	**08 27 56.7**	**+0.5**
JIO				S	**Sn**	**08 28 03.8**	**0.0**
OFUJ	**Ofunato**	**0.75**	**347**	P	**Pn**	**08 28 00.2**	**+0.2**
OFUJ				S	**Sn**	**08 28 10.2**	**-0.4**
JMK	**Ichinoseki**	**0.80**	**319**	P	**Pn**	**08 28 00.8**	**+0.2**
JMK				S	**Sn**	**08 28 11.1**	**-0.5**
JOU	**Okura**	**0.96**	**271**	P	**Pn**	**08 28 03.0**	**+0.2**
JOU				S	**Sn**	**08 28 15.3**	**-0.2**
JMM	**Marumori**	**0.99**	**241**	P	**Pn**	**08 28 03.5**	**+0.4**
JMM				S	**Sn**	**08 28 16.0**	**-0.1**
JOM	**Ohasama**	**1.21**	**338**	P	**Pn**	**08 28 06.3**	**+0.1**
JOM				*e*S	**Sn**	**08 28 21.3**	**-0.3**
JFK	**Kawauchi**	**1.27**	**220**	P	**Pn**	**08 28 07.8**	**+0.8**
JFK				S	**Sn**	**08 28 23.7**	**+0.8**
JYK	**Kaneyama**	**1.32**	**296**	P	**Pn**	**08 28 07.7**	**0.0**
JYK				S	**Sn**	**08 28 23.7**	**-0.5**
JRG	**Rokugo**	**1.43**	**317**	P	**Pn**	**08 28 09.2**	**0.0**
JYS	**Shirataka**	**1.44**	**265**	P	**Pn**	**08 28 09.7**	**+0.4**
JYS				S	**Sn**	**08 28 27.2**	**+0.2**
JFT	**Otama**	**1.48**	**236**	P	**Pn**	**08 28 10.9**	**+1.1**
MJAR	**Matsushiro Arr**	**3.44**	**239**	P	**Pn**	**08 28 38.8**	**+2.2**
	2.4nm,0.3s,baz=36,slow=13,SNR=19						
MJAR				S	**Sn**	**08 29 13.3**	**-2.8**
	2.0nm,0.3s,baz=306,slow=14,SNR=4.5						
MAT	**Matsushiro**	**3.44**	**239**	P	**Pn**	**08 28 39.0**	**+2.4**
MAT				*e*S	Sn	08 29 23.0	+6.9
JHJ	**Hachijo jima 2**	**5.49**	**199**	P	**Pn**	**08 29 05.1**	**+0.3**
	12nm,0.3s,baz=280,slow=16,SNR=7.1						
JHJ				S	**Sn**	**08 30 04.0**	**-2.6**
	10nm,0.3s,baz=90,slow=20,SNR=2.9						
ASAJ	**Asahikawa**	**5.79**	**5**	P	**Pn**	**08 29 08.1**	**-0.8**
	4.5nm,0.3s,baz=208,slow=9.7,SNR=23						
USRK	**Ussuriysk Ar.**	**9.46**	**311**	P	**Pn**	**08 29 60.0**	**+0.8**
	0.6nm,0.3s,baz=120,slow=14,SNR=15						
SEY	**Seymchan**	**25.43**	**11**	P	**P**	**08 33 08.4**	**+0.4**
	0.6nm,0.5s,baz=243,slow=18,SNR=3.4						
H11N2	**WAKE ISLAND Hy 28.53**	**123**		T	T	09 03 55.0	
	baz=317,slow=76						
H11N1	**WAKE ISLAND Hy 28.54**	**124**		T	T	09 03 56.0	
	baz=317,slow=76						
H11N3	**WAKE ISLAND Hy 28.55**	**123**		T	T	09 03 56.3	
	baz=317,slow=76						
H11S1	**WAKE ISLAND Hy 29.29**	**126**		T	T	09 04 51.1	
	baz=318,slow=76						
H11S3	**WAKE ISLAND Hy 29.29**	**126**		T	T	09 04 51.3	
	baz=318,slow=76						
H11S2	**WAKE ISLAND Hy 29.30**	**126**		T	T	09 04 52.2	
	baz=318,slow=76						
MKAR	**Makanchi Array**	**43.75**	**301**	P	**P**	**08 35 45.2**	**-0.5**
	0.3nm,0.4s,

ANKY	**Antikythira Is**	**1.26**	**325**	P	**Pb**	**08 38 55.1**	**+0.9**
ANKY				S	**Sb**	**08 39 12.8**	**+2.8**
ANKY	**Antikythira Is**	**1.26**	**325**	P	**Pb**	**08 38 55.4**	**+1.3**
ANKY				AML	AML	08 39 17.4	
	comp=E,953μm,0.5s						
ANKY				AML	AML	08 39 22.8	
	comp=N,947μm,0.8s						
ZKR	**Zakros**	**1.69**	**80**	P	**Pb**	**08 39 02.1**	**+0.6**
ZKR	**Zakros**	**1.69**	**80**	P	**Pb**	**08 39 02.1**	**+0.6**
KYTH	**Kithira**	**1.72**	**327**	P	**Pn**	**08 39 01.2**	**+1.5**
KYTH	**Kithira**	**1.72**	**327**	P	**Pn**	**08 39 01.2**	**+1.5**
THR5	**Thira Island,**	**1.84**	**31**	P	**Pb**	**08 39 03.1**	**-0.9**
THR5	**Thira Island,**	**1.84**	**31**	P	**Pb**	**08 39 03.1**	**-0.9**
MHLO	**Agia Marina, M**	**1.86**	**5**	P	**Pn**	**08 39 03.3**	**+1.8**
MHLO				S	**Sb**	**08 39 26.2**	**-1.0**
MHLO	**Agia Marina, M**	**1.86**	**5**	P	**Pn**	**08 39 03.3**	**+1.8**
MHLO				S	**Sb**	**08 39 26.2**	**-1.0**
MHLO	**Agia Marina, M**	**1.86**	**5**	P	**Pn**	**08 39 02.5**	**+0.9**
VLI	**Veliai**	**2.14**	**332**	P	**Pn**	**08 39 07.3**	**+1.9**
VLI				S	**Sb**	**08 39 34.2**	**-1.0**
VLI	**Veliai**	**2.14**	**332**	P	**Pn**	**08 39 07.3**	**+1.9**
VLI				S	**Sb**	**08 39 34.2**	**-1.0**
VLI	**Veliai**	**2.14**	**332**	P	**Pb**	**08 39 08.0**	**-1.1**
APE	**Apeiranthos**	**2.48**	**26**	P	**Pn**	**08 39 11.5**	**+1.4**
APE	**Apeiranthos**	**2.48**	**26**	P	**Pn**	**08 39 11.5**	**+1.4**
KARP	**Karpathos**	**2.53**	**73**	P	Pn	08 39 13.8	+2.9
KARP	**Karpathos**	**2.53**	**73**	P	Pn	08 39 13.8	+2.9
KRND	**KRANIDI**	**2.68**	**342**	P	**Pn**	**08 39 14.2**	**+1.4**
KRND	**KRANIDI**	**2.68**	**342**	P	**Pn**	**08 39 14.2**	**+1.4**
DID	**Didima**	**2.77**	**344**	P	**Pn**	**08 39 15.4**	**+1.2**
DID				S	**Sn**	**08 39 49.5**	**+2.5**
DID	**Didima**	**2.77**	**344**	P	**Pn**	**08 39 15.4**	**+1.2**
DID	**Didima**	**2.77**	**344**	P	**Pn**	**08 39 15.2**	**+1.0**
PYL	**PYLOS**	**2.86**	**317**	P	Pn	08 39 18.5	+3.2
PYL	**PYLOS**	**2.86**	**317**	P	Pn	08 39 18.5	+3.2
VLX	**Vlachokerasia**	**2.92**	**330**	P	Pn	08 39 19.6	+3.3
VLX	**Vlachokerasia**	**2.92**	**330**	P	Pn	08 39 19.6	+3.3
ITM	**Ithomi**	**2.97**	**323**	P	**Pn**	**08 39 18.6**	**+1.7**
ITM	**Ithomi**	**2.97**	**323**	P	**Pn**	**08 39 18.6**	**+1.7**
KLV	**Kalavryta, Ach**	**3.60**	**333**	P	**Pn**	**08 39 26.5**	**+1.0**
KLV	**Kalavryta, Ach**	**3.60**	**333**	P	**Pn**	**08 39 26.5**	**+1.0**
BRTR	**Keskin Array B**	**8.97**	**54**	Pn	**Pn**	**08 40 41.5**	**+2.1**
	comp=N,0.1nm,0.3s,baz=226,slow=11,SNR=2.5						
STON	**Ston**	**9.48**	**330**	*e*Pn	Pn	08 40 43.1	-3.1
STON					Sn	08 42 23.1	-9.0
MMAI	**Mount Meron Ar**	**9.49**	**98**	Pn	**Pn**	**08 40 46.7**	**+0.2**
	comp=N,0.4nm,0.3s,baz=270,slow=12,SNR=3.0						
UDBI	**Udbina**	**11.65**	**329**	*e*Pn	**Pn**	**08 41 14.7**	**-1.2**
GERES	**GERESS Array B**	**16.01**	**334**	Pn	**P**	**08 42 17.6**	**-0.6**
	comp=N,0.1nm,0.3s,baz=138,slow=12,SNR=5.1						
AKASG	**Malin Array Be**	**16.27**	**11**	Pn	**Pn**	**08 42 19.2**	**+1.2**
	comp=N,1.1nm,0.3s,baz=202,slow=9.9,SNR=6.4						
HFS	**Hagfors**	**26.22**	**348**	P	**P**	**08 44 02.1**	**-1.9**
	comp=N,1.0nm,0.5s,baz=159,slow=9.5,SNR=10.0						
FINES	**FINESS Array B**	**26.65**	**2**	P	**P**	**08 44 05.2**	**-2.7**
	comp=N,0.8nm,0.8s,baz=157,slow=10,SNR=5.3						
NB2	**NORSAR Subarra**	**27.52**	**346**	P	**P**	**08 44 14.6**	**-1.1**
	comp=Z,0.4nm,0.5s,baz=158,slow=10						
NOA	**NORSAR Array B**	**27.52**	**346**	P	**P**	**08 44 14.3**	**-1.3**
	comp=Z,0.3nm,0.6s,baz=157,slow=12,SNR=6.8						
MKAR	**Makanchi Array**	**44.62**	**56**	P	**P**	**08 46 41.5**	**-0.1**
	comp=Z,1.0nm,0.5s,baz=275,slow=7.3,SNR=11						
ZALV	**Zalesovo Beam**	**45.80**	**46**	P	**P**	**08 46 49.6**	**-1.2**
	comp=Z,3.2nm,0.3s,baz=264,slow=7.3,SNR=4.9						
SONM	**Songino Array**	**60.30**	**50**	P	**P**	**08 48 37.7**	**-0.3**
	comp=Z,0.4nm,0.4s,baz=281,slow=5.0,SNR=3.4						
YKA	**Yellowknife Ar**	**77.51**	**342**	P	**P**	**08 50 23.6**	**-0.9**
	comp=Z,0.2nm,0.5s,baz=32,slow=5.1,SNR=9.3						

BJI ***23*** *08:53:54.0,3˙.57S×102˙.42E,h211km,mb4.6/27,mB4.6/18*
MOS ***23*** *08:53:58.2±1.2,2˙.71S×102˙.66E,h197km,mb4.7/32,Error ellipse: s-maj=12.0km s-min=5.9km az=115.9*
ISCJB ***23*** *08:54:00.8±0.3,2˙.80S±0˙.03×102˙.66E±0˙.03,h223km±2km, mb4.4/92,Error ellipse: s-maj=5.7km s-min=3.3km az=136.3*
NEIC ***23*** *08:54:01.2±0.7,2˙.80S×102˙.65E,h212km±6km,mb4.5/26, Error ellipse: s-maj=7.5km s-min=4.1km az=46.0*
IDC ***23*** *08:54:01.6±0.5,2˙.70S×102.72E,h212km±4km,mb4.1/36, mb1 4.2/38,mb1mx4.1/54,mbtmp4.7/38,Error ellipse: s-maj=13.1km s-min=6.2km az=45.0*
DJA ***23*** *08:54:02.5±0.2,3˙S±3˙×10˙3E±˚,h208km±3km,M4.8/36, mB5.3/21,mb4.8/36,MLv5.1/29,Mw(mB)4.7/21*
KLM ***23*** *08:54:06.2,2˙.39S×102˙.84E,h211km,mb4.7*
ISC 23 08:54:01.0±0.4,2˙.80S±0˙.04×102˙.60E±0˙.05,h211km±3km, h211km:pP-P,n253,σ1932/268,mb4.5/92,18C-6D, Southern Sumatera

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MASI	**Maura Aman, Be**	**0.49**	**227**	P	**Pn**	**08 54 32.3**	**+2.9**
LHSI	**Lahat**	**1.38**	**138**	P	**Pn**	**08 54 35.7**	**+1.0**
MNAI	**Manna**	**1.59**	**167**	P	**Pn**	**08 54 38.0**	**+1.5**
SDSI	**Sungai Dareh**	**2.19**	**328**	P	**Pn**	**08 54 43.9**	**+1.6**
MDSI	**Maura Dua**	**2.39**	**137**	P	**Pn**	**08 54 43.7**	**+0.3**
PPSI	**Pulau Pagai**	**2.58**	**271**	P	Pn	08 54 50.4	+3.9
LWLI	**Liwa**	**2.64**	**147**	P	**Pn**	**08 54 48.0**	**+0.7**
PDSI	**Padang**	**2.84**	**311**	P	**Pn**	**08 54 51.5**	**+2.0**
KLI	**Kotabumi**	**3.05**	**132**	P	**Pn**	**08 54 52.2**	**+0.5**
KASI	**Kota Agung**	**3.30**	**145**	P	**Pn**	**08 54 54.9**	**+0.2**
BKNI	**Bangkinang**	**3.48**	**333**	P	**Pn**	**08 54 59.0**	**+2.2**
PPBI	**Pangkal Pinang**	**3.59**	**80**	P	**Pn**	**08 54 57.3**	**-0.9**
BLSI	**Bandar Lampung**	**3.67**	**134**	P	**Pn**	**08 54 59.6**	**+0.4**
TPRI	**Tanjung Pinang**	**4.17**	**28**	P	**Pn**	**08 55 04.6**	**-0.7**
MNSI	**Mandailing Nat**	**4.68**	**320**	P	**Pn**	**08 55 13.3**	**+1.7**
MYKOM	**Kota Tinggi**	**4.73**	**15**	*e*Pn	**Pn**	**08 55 11.5**	**-0.8**
SBJI	**Serang**	**4.82**	**133**	P	**Pn**	**08 55 13.2**	**-0.3**
CGJI	**Cibinong**	**4.88**	**141**	P	**Pn**	**08 55 11.7**	**-2.5**
LEM	**Lembang**	**6.40**	**129**	P	Pn	08 55 37.9	+4.1
	9.6nm,0.3s,baz=208,slow=10,SNR=9.5						
LEM				S	**S**	**08 56 48.9**	**+1.6**
	11nm,0.3s,baz=104,slow=19,SNR=4.8						
LEM	**Lembang**	**6.40**	**129**	P	Pn	08 55 40.2	+6.4
GSI	**Gunungsitoli**	**6.47**	**309**	P	**Pn**	**08 55 35.9**	**+1.4**
	246nm,0.8s,10μm4.0nm						
PSI	**Prapat**	**6.67**	**327**	P	**Pn**	**08 55 37.1**	**-0.1**
	7.0nm,0.3s,baz=151,slow=11,SNR=35						
PSI				S	**S**	**08 56 51.5**	**-2.0**
	2.2nm,0.3s,baz=198,slow=4.2,SNR=3.7						
CISI	**Cisompet, Garu**	**7.02**	**132**	P	**Pn**	**08 55 40.6**	**-1.1**
	161nm,0.8s,8μm2.9nm						
IPM	**Ipoh**	**7.40**	**348**	*e*Pn	**Pn**	**08 55 48.2**	**+1.6**
KCSI	**Kotacane, Aceh**	**7.92**	**322**	P	**Pn**	**08 55 53.1**	**-0.2**
	57nm,0.8s,2μm1.3nm						
KTGM	**Kuala Trenggan**	**8.09**	**4**	⇑P	**Pn**	**08 55 55.7**	**+0.3**
TPTI		**8.10**	**318**	P	**Pn**	**08 55 56.7**	**+1.2**
	234nm,0.8s,5μm1.5nm						
XMIS	**Christmas Isla**	**8.21**	**158**	*e*Pn	Pn	08 55 52.2	-4.8
XMIS				*e*S	S	08 57 18.8	-11
KULM	**Kulim**	**8.27**	**346**	*e*Pn	**Pn**	**08 55 58.7**	**+1.0**
KSM	**Kuching**	**8.80**	**61**	*e*Pn	**Pn**	**08 56 03.4**	**-1.3**
STKI	**Sintang**	**9.32**	**72**	P	**Pn**	**08 56 11.5**	**+0.1**
	80nm,1.1s,19μm						
UGM	**Wanagama**	**9.38**	**123**	P	**Pn**	**08 56 10.8**	**-1.4**
	204nm,1.8s						
LHMI	**Lhok Sumawe**	**9.77**	**325**	P	**Pn**	**08 56 16.9**	**-0.3**
	247nm,0.8s,2μm						
NGJI	**Ngawi**	**9.93**	**118**	P	**P**	**08 56 28.5**	**+1.9**
PCJI	**Pacitan**	**10.08**	**122**	P	**Pn**	**08 56 18.5**	**-2.6**
	89nm,1.4s						
COCO	**West Island**	**10.94**	**211**	*e*P	**Pn**	**08 56 30.9**	**-1.2**
COCO				*e*S	**S**	**08 58 32.3**	**-2.2**
COCO	**West Island**	**10.94**	**211**	*e*Pn	**Pn**	**08 56 30.9**	**-1.2**
COCO				*e*S	**S**	**08 58 32.2**	**-2.2**
SBUM	**Sibu**	**10.94**	**62**	⇑P	**Pn**	**08 56 32.6**	**+0.4**
SBUM	**Sibu**	**10.94**	**62**	*e*Pn	**Pn**	**08 56 32.7**	**+0.5**
PKDT	**Phuket**	**11.44**	**338**	P	**Pn**	**08 56 37.8**	**-0.8**
	39nm,0.9s,2μm						
BBKI	**Banjar Baru**	**12.24**	**93**	P	**Pn**	**08 56 49.5**	**+0.8**
	98nm,0.8s						
SURT	**Suratani**	**12.28**	**342**	P	**Pn**	**08 56 48.7**	**-0.5**
	10.0nm,1.1s						
MTKI	**Muara Teweh, K**	**12.43**	**82**	P	**Pn**	**08 56 50.8**	**-0.3**
	162nm,1.2s,23μm						
SRBI	**Singaraja**	**13.61**	**113**	P	**P**	**08 57 07.0**	**-0.8**
	88nm,0.8s						
BKB	**Balikpapan**	**14.37**	**84**	P	**P**	**08 57 18.4**	**+2.1**
TWSI	**Taliwang, Sumb**	**15.38**	**113**	P	**P**	**08 57 28.2**	**+0.7**
	82nm,0.8s,1μm						
CHBT	**CHBT**	**15.46**	**359**	P	**Pn**	**08 57 29.4**	**+1.1**
	214nm,1.0s						
KKM	**Kota Kinabalu**	**16.19**	**57**	*e*P	**Pn**	**08 57 37.3**	**0.0**
	26nm,1.1s						
PLAI	**Plampang**	**16.24**	**112**	P	**P**	**08 57 35.9**	**-1.0**
	140nm,0.8s,2μm						
SRAK	**Srakaew**	**16.71**	**358**	P	**Pn**	**08 57 44.2**	**+0.8**
	775nm,0.9s,5μm						
SDKM	**Sandakan**	**16.82**	**60**	⇑P	**Pn**	**08 57 44.2**	**-0.5**
TTSI	**Tana Toraja**	**17.20**	**91**	P	**Pn**	**08 57 49.5**	**+0.3**
	53nm,1.3s,732nm						
KAPI	**Kappang**	**17.25**	**98**	P	**P**	**08 57 47.9**	**-0.1**
	9.2nm,0.3s,baz=283,slow=11,SNR=67						
KAPI	**Kappang**	**17.25**	**98**	*e*P	**P**	**08 57 48.2**	**+0.1**
	286nm,0.9s						
SRDT	**SRDT**	**17.39**	**349**	P	**Pn**	**08 57 53.0**	**+1.7**
	80nm,0.8s,8μm						
MYLDM	**Lahad Datu**	**17.76**	**63**	*e*P	**Pn**	**08 57 55.4**	**-0.3**
	90nm,1.2s						
KHLT	**Khaolaem Dam**	**17.93**	**347**	P	**P**	**08 57 56.3**	**+0.9**
	18nm,0.8s						
BSSI	**Bau Bau, Buton**	**18.14**	**101**	P	**Pn**	**08 57 59.1**	**-1.2**
	191nm,1.1s						
KHON	**Khomkaen**	**19.02**	**1**	P	**Pn**	**08 58 11.9**	**+1.4**
	15nm,0.9s,1μm						
PBKT	**Sadao Pong**	**19.32**	**355**	P	**P**	**08 58 11.8**	**+1.5**
	29nm,0.9s						
MRSI	**Marisa**	**19.61**	**81**	P	**P**	**08 58 14.1**	**+0.5**
	104nm,1.0s						
SKNT	**Sakolnakorn**	**19.70**	**4**	P	**Pn**	**08 58 20.1**	**+1.5**
	50nm,1.0s						
MMRI	**Maumere**	**20.38**	**107**	P	**P**	**08 58 21.3**	**-0.5**
	82nm,0.8s,6μm						
UTTA	**Uttaradit**	**20.52**	**354**	P	**P**	**08 58 24.5**	**+1.3**
	9.9nm,0.8s,76nm						
MHMT	**Maesarieng**	**21.35**	**348**	P	**P**	**08 58 32.1**	**+0.2**
	19nm,0.8s						
LAMP	**Lampang**	**21.39**	**352**	P	**P**	**08 58 33.4**	**+1.1**
	13nm,1.1s,122nm						
CM01	**Chiang Mai Arr**	**21.39**	**350**	*e*P	**P**	**08 58 32.2**	**-0.1**
CM31	**Chiang Mai Arr**	**21.43**	**350**	*e*P	**P**	**08 58 34.0**	**+1.3**
CMAR	**Chiang Mai Arr**	**21.43**	**350**	P	**P**	**08 58 33.1**	**+0.4**
	38nm,0.9s,baz=184,slow=8.6,SNR=108						
CMMT	**Chiang Mai**	**21.78**	**351**	P	**P**	**08 58 36.5**	**+0.3**
	32nm,1.0s						
CHTO	**Chiang Mai**	**21.78**	**351**	P	**P**	**08 58 36.6**	**+0.4**
	140nm,1.0s,2μm						
CHTO	**Chiang Mai**	**21.78**	**351**	*e*P	**P**	**08 58 36.3**	**+0.1**
CHTO				pmax	pmax		
	comp=Z,47nm,1.3s						
CHTO	**Chiang Mai**	**21.78**	**351**	*e*P	**P**	**08 58 36.3**	**+0.1**
	comp=Z,47nm,1.3s						
SOEI	**Soe**	**22.61**	**109**	P	**P**	**08 58 42.0**	**-2.2**
	comp=Z,59nm,1.2s						
CMAI	**Chiengmai2**	**22.86**	**351**	P	**P**	**08 58 47.4**	**+1.0**
	comp=Z,40nm,0.9s,comp=Z,462nm						
CRAI	**Chiangrai**	**22.99**	**355**	P	**P**	**08 58 50.0**	**+2.6**
	comp=Z,41nm,1.1s						
SANI	**Sanana**	**23.38**	**89**	P	**P**	**08 58 53.2**	**+2.2**
	comp=Z,41nm,1.3s						
MBWA	**Marble Bar**	**24.72**	**139**	*e*P	**P**	**08 59 04.2**	**+1.1**
	comp=Z,6.9nm,0.8s						
FITZ	**Fitzroy Crossi**	**27.23**	**126**	P	**P**	**08 59 25.5**	**-0.1**
	comp=Z,13nm,0.7s,baz=311,slow=6.7,SNR=33						
FITZ	**Fitzroy Crossi**	**27.23**	**126**	*e*P	**P**	**08 59 25.6**	**0.0**
	comp=Z,13nm,0.7s						
KMI	**Kunming**	**27.76**	**0**	P	**P**	**08 59 34.3**	**+3.8**
KMI				pmax	pmax		
	comp=Z,15nm,0.8s						
KMI				pmax	pmax		
	comp=Z,120nm,8.5s						
SWI	**Sorong**	**28.71**	**87**	P	**P**	**08 59 38.6**	**-0.3**
	comp=Z,88nm,0.9s,comp=Z,946nm						
GYA	**Guiyang**	**29.35**	**7**	P	P	08 59 47.8	+3.3
GYA				pP	pP	09 00 30.4	+3.1
GYA				sP	PP	09 00 55.6	+0.2
GYA				PcP	**PcP**	**09 02 46.6**	**+1.1**
GYA				S	**S**	**09 04 26.3**	**+3.9**
GYA				sS	sS	09 05 41.3	+2.5
GYA				ScP	**ScP**	**09 06 06.8**	**-0.4**
GYA				ScS	**ScS**	**09 10 00.3**	**-2.0**
GYA				pmax	pmax		
	comp=Z,10.0nm,0.8s						
FAKI	**Fak Fak**	**29.61**	**91**	P	**P**	**08 59 46.9**	**0.0**
MTN	**Manton Dam**	**29.94**	**111**	*e*P	**P**	**08 59 47.9**	**-1.8**
	comp=Z,13nm,0.6s						
CD2	**Chengdu**	**33.54**	**2**	P	**P**	**09 00 21.5**	**+0.6**
PKIN	**Phulchoki**	**34.45**	**332**	*e*P	**P**	**09 00 29.9**	**+0.8**
	comp=Z,3.4nm,0.3s						
KKN	**Kakani**	**34.69**	**332**	*e*P	**P**	**09 00 31.2**	**+0.2**
	comp=Z,18nm,0.4s						
WHN	**Wuhan**	**35.01**	**18**	P	**P**	**09 00 35.1**	**+1.7**
GKN	**Gorkha**	**35.17**	**332**	*e*P	**P**	**09 00 35.0**	**-0.1**
	comp=Z,21nm,0.3s						
WRA	**Warramunga Arr**	**35.36**	**121**	P	**P**	**09 00 35.7**	**-1.0**
	comp=Z,26nm,0.9s,baz=296,slow=8.7,SNR=260						
WRA				S	S	09 05 48.4	-7.0
	comp=Z,3.3nm,1.1s,baz=295,slow=16,SNR=5.8						
WRA				ScP	**ScP**	**09 06 26.3**	**-1.6**
	comp=Z,1.0nm,0.6s,baz=310,slow=3.0,SNR=7.9						
POO	**Poona**	**35.36**	**308**	*ex*	x	09 00 37.0	
WRAB	**Tennant Creek**	**35.36**	**121**	*de*P	**P**	**09 00 36.1**	**-0.6**
WRAB				pmax	pmax		
	comp=Z,92nm,1.0s						
WRAB	**Tennant Creek**	**35.36**	**121**	*e*P	**P**	**09 00 35.9**	**-0.9**
	comp=Z,43nm,1.0s						
KOLN	**Koldanda**	**35.48**	**330**	*e*P	**P**	**09 00 38.2**	**+0.4**
	comp=Z,13nm,0.3s						
PYUN	**Piuthan**	**36.05**	**330**	*e*P	**P**	**09 00 43.1**	**+0.4**
	comp=Z,66nm,1.1s						
AS31	**Alice Springs**	**36.69**	**127**	*e*P	**P**	**09 00 48.2**	**+0.1**
	comp=Z,9.6nm,0.6s						
ASAR	**Alice Springs**	**36.69**	**127**	P	**P**	**09 00 48.0**	**0.0**
	comp=Z,21nm,0.6s,baz=304,slow=7.4,SNR=165						
ASAR				pP	**pP**	**09 01 32.0**	**+0.2**
	comp=Z,7.8nm,0.9s,baz=305,slow=8.2,SNR=3.4						
ASAR				S	S	09 06 07.0	-8.7
	comp=Z,2.0nm,0.9s,baz=297,slow=14,SNR=6.1						
ASAR				ScP	**ScP**	**09 06 31.0**	**-1.8**
	comp=Z,1.2nm,0.7s,baz=313,slow=3.5,SNR=6.9						
AS01	**Alice Springs**	**36.73**	**127**	*e*P	**P**	**09 00 48.5**	**+0.2**
AS01				*e*pP	**pP**	**09 01 31.8**	**-0.3**
XAN	**Xi'an**	**37.13**	**9**	P	**P**	**09 00 50.6**	**-0.8**
XAN				pmax	pmax		
	comp=Z,7.0nm,1.0s						
XAN				pmax	pmax		
	comp=Z,60nm,4.1s						
NJ2	**Nanjing**	**37.94**	**23**	*e*P	**P**	**09 00 59.3**	**+1.0**
NJ2				pmax	pmax		
	comp=Z,20nm,0.5s						
JAY	**Jayapura**	**38.07**	**90**	P	**P**	**09 00 58.5**	**-1.1**
	comp=Z,0.7nm,0.3s,baz=196,slow=22,SNR=10						
LZH	**Lanzhou**	**38.70**	**2**	*e*P	**P**	**09 01 06.8**	**+2.0**
LZH				pP	pP	09 01 52.0	+3.0
LZH				sP	sP	09 02 16.0	+2.9
LZH				PP	**PnPn**	**09 02 45.0**	**+2.2**
LZH				pmax	pmax		
	comp=Z,20nm,1.2s						
LZH				pmax	pmax		
	comp=Z,59nm,5.7s						
NDI	**New Delhi**	**39.67**	**324**	*e*P	P	09 01 08.0	-4.7
COEN	**Coen**	**41.57**	**108**	*e*P	**P**	**09 01 26.3**	**-2.1**
	comp=Z,18nm,1.3s						
GTA	**Gaotai**	**42.08**	**357**	*e*P	**P**	**09 01 33.1**	**+0.8**
GTA				pP	pP	09 02 15.8	-1.5
GTA				sP	sP	09 02 39.5	-1.7
GTA				pmax	pmax		
	comp=Z,9.0nm,0.9s						
HHC	**Hu-ho-hao-te**	**44.21**	**10**	*e*P	**P**	**09 01 51.5**	**+2.2**
HHC				pmax	pmax		
	comp=Z,22nm,0.8s						
HHC				pmax	pmax		
	comp=Z,71nm,4.6s						
PMG	**Port Moresby**	**44.76**	**100**	P	**P**	**09 01 54.3**	**+0.4**
	comp=Z,18nm,1.0s,baz=288,slow=10.0,SNR=3.4						
PMG	**Port Moresby**	**44.76**	**100**	*ce*P	**P**	**09 01 54.5**	**+0.6**
PMG				pmax	pmax		
	comp=Z,149nm,1.2s						
CTA	**Charters Tower**	**45.91**	**115**	P	**P**	**09 02 01.7**	**-1.2**
	comp=Z,4.1nm,0.7s,baz=324,slow=5.9,SNR=6.4						
CTA				pP	**pP**	**09 02 48.4**	**-0.2**
	comp=Z,4.1nm,0.9s,baz=38,slow=7.9,SNR=2.8						
CTAO	**Charters Tower**	**45.91**	**115**	*e*P	**P**	**09 02 02.2**	**-0.7**
CTAO				pmax	pmax		
	comp=Z,11nm,1.1s						
CTAO	**Charters Tower**	**45.91**	**115**	*e*P	**P**	**09 02 02.2**	**-0.7**
	comp=Z,11nm,1.1s						
KSAR	**Wonju Array Be**	**46.42**	**28**	P	**P**	**09 02 07.7**	**+1.2**
KSAR	**Wonju Array Be**	**46.42**	**28**	P	**P**	**09 02 07.7**	**+1.2**
	comp=Z,4.3nm,0.9s,baz=209,slow=7.5,SNR=10.0						
KSRS	**Korea Array**	**46.44**	**28**	P	**P**	**09 02 07.7**	**+1.0**
KS01	**Wonju Array Si**	**46.45**	**28**	*e*P	**P**	**09 02 07.6**	**+0.9**
STKA	**Stephens Creek**	**46.69**	**133**	P	**P**	**09 02 09.2**	**+0.3**
	comp=Z,9.2nm,0.4s,baz=310,slow=8.7,SNR=35						
STKA				pP	**pP**	**09 02 55.6**	**+1.0**
	comp=Z,5.9nm,0.6s,baz=308,slow=7.8,SNR=3.0						
STKA	**Stephens Creek**	**46.69**	**133**	*e*P	**P**	**09 02 09.1**	**+0.3**
STKA				*e**PP	**pP**	**09 02 56.0**	**+1.4**
STKA				pmax	pmax		
	comp=Z,4.0nm,0.8s						
STKA	**Stephens Creek**	**46.69**	**133**	*e*P	**P**	**09 02 09.1**	**+0.3**
	comp=Z,3.7nm,0.8s						
STKA				*e*pP	**pP**	**09 02 56.0**	**+1.4**
WMQ	**Urumqi**	**48.31**	**346**	P	**P**	**09 02 21.8**	**+0.7**
WMQ				pP	pP	09 03 07.0	-0.2
WMQ				sP	sP	09 03 29.3	-1.5
WMQ				pmax	pmax		
	comp=Z,14nm,1.2s						
WMQ				pmax	pmax		
	comp=Z,56nm,4.0s						
WMQ				LR	LR		
	comp=Z,30nm,26.6s						
KSH	**Kashi**	**48.71**	**333**	P	**P**	**09 02 23.3**	**-1.0**
KSH				*e*pP	pP	09 03 08.1	-2.4
KSH				*e*sP	sP	09 03 30.4	-3.6
KSH				PcS	**PcS**	**09 07 40.3**	**-2.3**
KSH				S	**S**	**09 09 06.1**	**-4.4**
KSH				pmax	pmax		
	comp=Z,18nm,0.7s						
KSH				pmax	pmax		
	comp=Z,150nm,4.0s						
KSH				LR	LR		
	comp=Z,210nm,8.4s						
KSH				LR	LR		
	comp=Z,110nm,5.4s						
KBL	**Kabul**	**48.72**	**323**	*e*P	**P**	**09 02 25.0**	**+0.4**
KBL				pmax	pmax		
	comp=Z,10.0nm,0.9s						
KBL	**Kabul**	**48.72**	**323**	*e*P	**P**	**09 02 25.0**	**+0.4**
	comp=Z,9.7nm,0.9s						
WSAR	**Wadi Sarin**	**50.04**	**304**	P	**P**	**09 02 37.2**	**+2.7**
	comp=Z,7.3nm,0.9s,baz=120,slow=9.0,SNR=6.7						
PDGK	**Podgornoye**	**50.42**	**338**	P	**P**	**09 02 36.9**	**0.0**
PDGK				pmax	pmax		
	comp=Z,40nm,0.9s						
SONM	**Songino Array**	**50.54**	**3**	P	**P**	**09 02 38.8**	**+0.9**
	comp=Z,12nm,0.7s,baz=183,slow=9.1,SNR=65						
SONA1	**Songino Array**	**50.55**	**3**	*e*P	**P**	**09 02 38.8**	**+0.8**
ULN	**Ulaanbaatar**	**50.61**	**4**	*ce*P	**P**	**09 02 39.5**	**+1.0**
ULN				pmax	pmax		
	comp=Z,8.0nm,0.9s						
ULN	**Ulaanbaatar**	**50.61**	**4**	*e*P	**P**	**09 02 39.2**	**+0.7**
	comp=Z,6.3nm,0.8s						
CN2	**Changchun**	**50.73**	**21**	*e*P	**P**	**09 02 38.5**	**-0.8**
CN2				pmax	pmax		
	comp=Z,10.0nm,0.7s						
MJAR	**Matsushiro Ar**	**51.31**	**37**	P	**P**	**09 02 42.6**	**-1.1**
	comp=Z,2.2nm,0.8s,baz=215,slow=8.0,SNR=5.5						
TKM2	**Tokmak 2**	**51.63**	**335**	P	**P**	**09 02 45.7**	**-0.5**
TKM2				pmax	pmax		
	comp=Z,34nm,0.9s						
TKM2	**Tokmak 2**	**51.63**	**335**	*e*P	**P**	**09 02 46.8**	**+0.6**
	comp=Z,30nm,0.9s						
EIDS	**Eidsvold**	**51.71**	**120**	*e*P	**P**	**09 02 47.5**	**+0.5**
	comp=Z,8.9nm,0.9s						
AAK	**Ala-Archa**	**51.87**	**334**	P	**P**	**09 02 48.3**	**+0.3**
	comp=Z,6.2nm,0.8s,baz=159,slow=8.2,SNR=17						
AAK	**Ala-Archa**	**51.87**	**334**	P	**P**	**09 02 47.0**	**-1.0**
AAK				pmax	pmax		
	comp=Z,12nm,1.4s						
AAK	**Ala-Archa**	**51.87**	**334**	*e*P	**P**	**09 02 48.8**	**+0.

comp=N,6.0nm,1.1s
YAK pmax pmax
comp=E,7.0nm,1.1s
YAK pmax pmax
comp=E,74nm,2.5s
YAK pmax pmax
comp=E,69nm,3.0s
YAK smax smax
comp=E,40nm,1.6s
YAK smax smax
comp=N,33nm,1.8s
GNI Garni 67.90 316 *e*P **P 09 04 37.7 +0.5**
GNI pmax pmax
comp=E,19nm,0.9s
ARU Arti 68.99 336 P **P 09 04 43.0 -0.3**
comp=Z,5.9nm,0.6s,baz=165,slow=2.5,SNR=12
ARU Arti 68.99 336 *d* iP **P 09 04 42.5 -0.8**
ARU *PP **pP** 09 05 28.9 -3.9
ARU 09 07 13.8
ARU S **S 09 13 30.5 0.0**
ARU SS **SS 09 17 55.9 -4.9**
ARU pmax pmax
comp=E,17nm,1.0s
ARU Arti 68.99 336 *e*P **P 09 04 42.7 -0.6**
comp=E,12nm,0.8s
ZEI Tsey 69.56 318 *e*P **P 09 04 47.0 -0.4**
ZEI pmax pmax
comp=E,9.0nm,0.6s
KBZ Khabaz 70.62 318 P **P 09 04 53.8 +0.3**
comp=Z,9.7nm,0.9s,baz=128,slow=5.1,SNR=15
KIV Kislovodsk 70.85 319 *e*P **P 09 04 56.4 +1.4**
KIV *e* 09 05 12.2
KIV *e**PP **pP 09 05 47.0 +2.3**
KIV *e* 09 07 31.4
KIV pmax pmax
comp=E,10.0nm,1.0s
ASF Jabal al Asfar 71.17 305 P **P 09 04 58.9 +1.7**
comp=Z,4.6nm,0.8s,baz=90,slow=6.4,SNR=7.0
EIL Elat 72.14 302 P **P 09 05 04.8 +1.8**
comp=Z,9.9nm,0.8s,baz=11,slow=2.4,SNR=7.3
PEA0 Petropavlovsk- 72.19 31 *e*P **P 09 05 02.6 -0.1**
PETK Petropavlovsk- 72.19 31 P **P 09 05 02.3 -0.4**
comp=Z,1.5nm,0.7s,baz=277,slow=1.9,SNR=2.9
MMAI Mount Meron Ar 72.61 306 P **P 09 05 07.6 +1.9**
comp=Z,2.0nm,0.6s,baz=128,slow=6.4,SNR=4.2
NRIK Noril'sk 72.73 354 P **P 09 05 04.5 -1.1**
comp=Z,10.0nm,1.2s,baz=154,slow=4.3,SNR=6.1
VRH Novokhopyorsk 74.45 325 *e*P **P 09 05 15.5 -0.4**
VRH pmax pmax
comp=Z,10.0nm,0.9s
SEY Seymchan 75.41 21 *e*P **P 09 05 22.1 +0.9**
BKZ Black Stump Fm 75.76 130 *e*P **P 09 05 23.9 +0.1**
comp=Z,53nm,1.7s
BR131 Keskin Array S 75.78 312 *e*P **P 09 05 24.1 +0.1**
BRTR Keskin Array B 75.78 312 P **P 09 05 23.8 -0.2**
comp=Z,5.9nm,0.8s,baz=133,slow=7.0,SNR=31
BRTR pP **pP 09 06 13.8 -0.6**
comp=Z,1.8nm,0.8s,baz=126,slow=7.1,SNR=5.2
VSR Storozhevoye 75.92 325 *e*P **P 09 05 23.8 -0.5**
VSR pmax pmax
comp=Z,8.0nm,0.7s
TIXI Tiksi 76.25 8 *e*P **P 09 05 23.6 -2.1**
TIXI pmax pmax
comp=Z,3.0nm,1.0s
TIXI Tiksi 76.25 8 *e*P **P 09 05 25.4 -0.3**
comp=Z,9.1nm,1.5s
BR231 Keskin MP Arra 76.45 312 *e*P **P 09 05 24.8 -2.9**
BR231 *epP **pP 09 06 14.5 -3.6**
LPSR Galich'ya Gora 76.60 326 *e*P **P 09 05 28.1 0.0**
LPSR pmax pmax
comp=Z,10.0nm,1.0s
OBN Obninsk 78.85 328 *ce*P **P 09 05 40.9 +0.5**
OBN *e* 09 05 48.7
OBN *e**PP **pP 09 06 30.3 -0.9**
OBN *e* 09 08 40.9
OBN pmax pmax
comp=Z,21nm,0.9s
KLMR Klimovskoe 79.69 334 *e*P **P 09 05 42.5 -2.3**
KLMR pmax pmax
comp=Z,21nm,1.1s
VNDA Vanda 80.88 169 P **P 09 05 53.4 +2.4**
comp=Z,2.3nm,0.8s,baz=318,slow=5.1,SNR=12
VNDA Vanda 80.88 169 *e*P **P 09 05 53.0 +2.0**
VNDA pmax pmax
comp=Z,3.0nm,0.8s
VNDA Vanda 80.88 169 *e*P **P 09 05 53.0 +2.0**
comp=Z,2.8nm,0.8s
HARR Harsova 81.12 316 ⇑ *i*P P 09 06 07.0 +14
HARR Harsova 81.12 316 ⇑P P 09 06 07.0 +14
IDI Anoyia 81.60 306 P **P 09 05 56.7 +1.0**
comp=Z,10nm,0.7s,baz=96,slow=10,SNR=4.5
SIVA Sivas 81.62 306 ⇓ *i*P **P 09 05 57.8 +2.1**
SORM Soroca 81.63 319 ⇓ *i*P **P 09 05 55.5 +0.1**
SORM Soroca 81.63 319 ⇓P **P 09 05 55.6 +0.1**
AKASG Malin Array Be 81.70 322 P **P 09 05 55.8 0.0**
comp=Z,0.6nm,0.4s,baz=85,slow=5.1,SNR=15
KIEV Kiev 81.71 322 *e*P **P 09 05 54.7 -1.1**
KIEV pmax pmax
comp=Z,2.0nm,1.0s
VRI Vrincioaia 82.20 317 ⇑ *i*P **P 09 06 00.2 +1.7**
VRI Vrincioaia 82.20 317 ⇑P **P 09 06 00.2 +1.7**
TESR Tescani 82.39 317 ⇑ *i*P **P 09 06 00.8 +1.3**
MLR Muntele Rosu 82.66 316 ⇑ *i*P **P 09 06 02.4 +1.3**
MLR Muntele Rosu 82.66 316 ⇑P **P 09 06 02.4 +1.3**
BILL Bilibino 83.01 20 *e*P **P 09 06 01.2 -1.0**
BILL *e**PP **pP 09 06 51.6 -1.9**
BILL *e**SP **sP 09 07 15.2 -0.6**
BILL *e* 09 09 14.2
BILL pmax pmax
comp=Z,1.0nm,1.1s
ARR Arges 83.55 316 ⇑ *i*P **P 09 06 05.5 0.0**
BURAR Bucovina Array 83.58 318 ⇑ *i*P **P 09 06 06.8 +1.1**
BURAR Bucovina Array 83.58 318 ⇑P **P 09 06 06.8 +1.1**
BUR08 Bucovina Ar. S 83.59 318 *e*P **P 09 06 06.0 +0.3**
SRE Strehaia 84.42 315 ⇑ *i*P P 09 06 20.3 +10
SRE Strehaia 84.42 315 ⇑P P 09 06 20.3 +10
VSU Vasula 85.01 329 *e*P **P 09 06 12.2 -0.2**
VSU pmax pmax
comp=Z,15nm,1.0s
KOLS Kolonicke sedl 85.74 319 *e*P **P 09 06 18.0 +1.7**
FIA1 FINESS Array S 86.03 332 *e*P **P 09 06 18.0 +0.6**
FINES FINESS Array B 86.03 332 P **P 09 06 17.8 +0.4**
comp=Z,3.2nm,0.8s,baz=75,slow=10,SNR=9.1
FINES FINESS Array B 86.03 332 *i* P **P 09 06 17.7 +0.3**
FINES pmax pmax
comp=Z,3.0nm,0.8s
ARCES ARCESS Array B 88.11 340 P **P 09 06 28.9 +1.6**
comp=Z,5.3nm,0.8s,baz=100,slow=6.0,SNR=18
DPC Dobruska-Polom 89.75 320 *e*P **P 09 06 37.2 +1.8**
DPC Dobruska-Polom 89.75 320 *e*P **P 09 06 37.2 +1.8**
GERES GERESS Array B 91.36 319 P **P 09 06 43.2 +0.2**
comp=Z,0.2nm,0.4s,baz=90,slow=1.3,SNR=4.3
GERES pP **pP 09 07 35.9 +0.8**
comp=Z,0.4nm,0.8s,baz=104,slow=5.6,SNR=2.1
KHC Kasperske Hory 91.45 319 *e*P **P 09 06 44.3 +1.0**
KHC Kasperske Hory 91.45 319 *e*P **P 09 06 44.3 +1.0**
HFS Hagfors 91.86 330 P **P 09 06 44.4 -0.5**
comp=Z,3.1nm,0.8s,baz=103,slow=6.7,SNR=5.9
NB2 NORSAR Subarra 93.10 331 P **P 09 06 50.3 -0.4**
comp=Z,2.4nm,1.0s,baz=91,slow=4.6
NOA NORSAR Array B 93.10 331 P **P 09 06 50.2 -0.4**
comp=Z,1.3nm,0.9s,baz=90,slow=4.7,SNR=4.6
PLEC Pleito Hills 129.83 45 *e*PKPdf **PKPdf 09 12 46.0 +0.1**
TXAR Lajitas Array 143.69 41 PKP **PKPdf 09 13 10.8 -0.8**
comp=Z,0.3nm,0.4s,baz=195,slow=0.5,SNR=9.7
HPIG 143.83 46 *e*PKPdf PKPbc 09 13 10.4 +0.2
X201 Greenbrier Sit 144.82 21 *e*PKPbc PKPbc 09 13 12.4 -0.3
X301 Greenbrier Sit 144.85 22 *e*PKPbc PKPbc 09 13 11.9 -0.9
MIAR Mount Ida 145.01 24 *e*PKIKP **PKPbc 09 13 13.3 -0.1**
MIAR Mount Ida 145.01 24 *e*PKPbc **PKPbc 09 13 13.2 -0.1**
CPUP Villa Florida 145.13 213 PKPbc **PKPab 09 13 15.1 +0.9**
comp=Z,2.4nm,0.9s,baz=90,slow=6.7,SNR=3.9
CPUP pPKPbc pPKPbc 09 14 09.6 +1.8
comp=Z,3.2nm,0.9s,baz=110,slow=3.8,SNR=2.9
WVT Waverly 145.46 15 *e*PKP2 **PKPbc 09 13 14.6 -0.1**
WVT Waverly 145.46 15 *e*PKPdf **PKPbc 09 13 14.6 -0.1**
TZTN Tazewell 145.95 9 *e*PKPdf **PKPbc 09 13 15.9 -0.3**
TKL Tuckaleechee C 146.78 9 *e*PKP2 **PKPbc 09 13 18.1 -0.5**
TKL Tuckaleechee C 146.78 9 *e*PKPbc **PKPbc 09 13 18.1 -0.5**
SWET Sewanee 146.79 13 *e*PKPdf **PKPbc 09 13 17.8 -1.0**
CPCT Cooper Cave 146.85 11 *e*PKPbc **PKPbc 09 13 18.7 -0.1**

IDC 23 08:54:58.0±1.8, **2°44S**×**148°03E, h0**km, **mb3.6**/4,
mb1 3.9/4, **mb1mx3.6**/31, **mbtmp3.6**/4, **Error ellipse: s-maj=73.1km s-min=26.6km az=110.0, Admiralty Islands region**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
WRA	**Warramunga Arr**	**21.95**	**217**	P	P	08 59 53.0	-0.4
	1.6nm,0.7s,baz=43,slow=10,SNR=18						
ASAR	**Alice Springs**	**25.15**	**212**	P	P	09 00 25.6	+0.4
	2.6nm,1.1s,baz=39,slow=7.4,SNR=18						
H11S3	**WAKE ISLAND Hy**	**27.75**	**41**	T	T	09 30 30.0	
	baz=222,slow=76,SNR=209						
H11S2	**WAKE ISLAND Hy**	**27.76**	**41**	T	T	09 30 29.4	
	baz=222,slow=76,SNR=177						
H11S1	**WAKE ISLAND Hy**	**27.77**	**41**	T	T	09 30 31.7	
	baz=222,slow=76,SNR=179						
H11N1	**WAKE ISLAND Hy**	**28.77**	**39**	T	T	09 31 46.8	
	baz=221,slow=76,SNR=31						
H11N3	**WAKE ISLAND Hy**	**28.78**	**39**	T	T	09 31 47.4	
	baz=221,slow=76,SNR=55						
H11N2	**WAKE ISLAND Hy**	**28.79**	**39**	T	T	09 31 48.2	
	baz=221,slow=76,SNR=55						
MKAR	**Makanchi Array**	**75.45**	**320**	P	P	09 06 43.9	-0.2
	0.2nm,0.4s,baz=98,slow=7.4,SNR=2.0						
YKA	**Yellowknife Ar**	**95.56**	**28**	P	P	09 08 24.9	0.0
	0.1nm,0.8s,baz=272,slow=4.9,SNR=3.1						

ISCJB ***23*** *09:11:01.8*±*1.6, 35°.24N*±*0°.08*×*141°.3E*±*0°.2, h35km, mb3.3/2, Error ellipse: s-maj=25.2km s-min=9.0km az=162.0*
JMA ***23*** *09:11:01.4*±*0.3, 35°.26N*×*141°.27E, h44km*±*4km, M2.7*
IDC ***23*** *09:11:04.2*±*4.1, 34°.62N*×*140°.46E, h0km, mb3.3/2, mb1 3.4/3, mb1mx3.2/55, mbtmp3.1/3, ML2.4/1, Error ellipse: s-maj=139.5km s-min=31.9km az=64.0*
ISC 23 09:11:03.3±1.7, **35°.24N**±0°.07×**141°.3E**±0°.2, **h35**km, **n13, s20°00/8, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CHOJ	**Chosi**	**0.56**	**326**	P	**Pn**	**09 11 13.1**	**-1.8**
CHOJ				S	**Sn**	**09 11 21.3**	**-1.6**
BSO1	**Boso 1**	**0.62**	**201**	P	**Pn**	**09 11 14.2**	**-1.0**
BSO1				X		09 11 23.7	
BSO3	**Boso 3**	**0.75**	**234**	P	**Pn**	**09 11 16.0**	**-1.1**
BSO4	**Boso 4**	**0.79**	**252**	P	**Pn**	**09 11 16.8**	**-1.0**
MJAR	**Matsushiro Arr**	**2.79**	**299**	Pn	**Pn**	**09 11 47.7**	**+2.2**
	0.8nm,0.3s,baz=134,slow=12,SNR=5.7						
H11N2	**WAKE ISLAND Hy**	**27.39**	**118**	T	T	09 45 41.2	
	baz=310,slow=76,SNR=6.9						
H11N1	**WAKE ISLAND Hy**	**27.40**	**118**	T	T	09 45 43.5	
	baz=310,slow=76,SNR=8.8						
H11N3	**WAKE ISLAND Hy**	**27.41**	**118**	T	T	09 45 44.0	
	baz=310,slow=76,SNR=8.0						
H11S1	**WAKE ISLAND Hy**	**28.04**	**120**	T	T	09 46 26.5	
	baz=312,slow=76,SNR=23						
H11S3	**WAKE ISLAND Hy**	**28.04**	**120**	T	T	09 46 26.3	
	baz=312,slow=76,SNR=9.0						
H11S2	**WAKE ISLAND Hy**	**28.06**	**120**	T	T	09 46 24.8	
	baz=312,slow=76,SNR=9.1						
WRA	**Warramunga Arr**	**55.27**	**188**	P	**P**	**09 20 33.0**	**-0.2**
	0.3nm,0.6s,baz=5.0,slow=7.6,SNR=10						
ASAR	**Alice Springs**	**58.99**	**188**	P	**P**	**09 21 01.9**	**+2.4**
	0.1nm,0.5s,baz=14,slow=12,SNR=4.8						

IDC ***23*** *09:14:00.2*±*0.6, 13°.46N*×*147°.59E, h0km, mb4.3/20, mb1 4.4/21, mb1mx4.2/65, mbtmp4.3/21, ML5.1/1, MS3.3/4, Ms1 3.4/4, ms1mx2.9/42, Error ellipse: s-maj=19.2km s-min=12.5km az=90.0*
ISCJB ***23*** *09:14:03.4*±*0.4, 13°.45N*±*0°.07*×*147°.53E*±*0°.06, h33km, mb4.4/25, MS3.3/4, Error ellipse: s-maj=9.4km s-min=8.9km az=160.6*
NEIC ***23*** *09:14:05.4*±*0.4, 13°.44N*×*147°.54E, h35km, mb4.8/4, Error ellipse: s-maj=11.3km s-min=8.3km az=95.0*
ISC 23 09:14:05.4±0.6, **13°.43N**±0°.09×**147°.53E**±0°.09, **h35**km, **n34, s0°94/31, mb4.4/25, MS3.3/4, South of Mariana Islands**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
GUMO	**Guam**	**2.59**	**274**	Pn	**Pn**	**09 14 43.6**	**-1.3**
	353nm,0.3s,baz=115,slow=6.4,SNR=139						
GUMO				Sn	**Sn**	**09 15 14.8**	**-0.4**
	656nm,0.3s,baz=345,slow=19,SNR=15						
H11S3	**WAKE ISLAND Hy**	**19.09**	**72**	T	T	09 37 51.7	
	baz=256,slow=74,SNR=18						
H11S1	**WAKE ISLAND Hy**	**19.11**	**72**	T	T	09 37 47.3	
	baz=256,slow=74,SNR=8.4						
H11S2	**WAKE ISLAND Hy**	**19.11**	**72**	T	T	09 37 54.5	
	baz=256,slow=74,SNR=24						
MJAR	**Matsushiro Arr**	**24.49**	**342**	LR	LR	09 29 30.3	
	comp=Z,36nm,18.7s,baz=220,slow=38						
JNU	**Nakatsugawa**	**24.80**	**325**	P	**P**	**09 19 22.9**	**-1.3**
	12nm,0.8s,baz=65,slow=3.0,SNR=14						
KSRS	**Korea Array**	**29.64**	**327**	P	**P**	**09 20 06.2**	**-1.4**
	4.1nm,0.8s,baz=149,slow=9.5,SNR=11						
KSAR	**Wonju Array Be**	**29.65**	**327**	P	**P**	**09 20 06.2**	**-1.5**
KAPI	**Kappang**	**33.11**	**238**	P	**P**	**09 20 38.4**	**0.0**
	8.5nm,0.6s,baz=86,slow=5.8,SNR=5.6						
WRAB	**Tennant Creek**	**35.60**	**202**	*e*P	**P**	**09 20 59.9**	**+0.1**
	13nm,1.1s						
WRA	**Warramunga Arr**	**35.61**	**202**	P	**P**	**09 21 00.2**	**+0.2**
	6.0nm,0.6s,baz=25,slow=9.5,SNR=52						
WRA				PcP	**PcP**	**09 23 28.8**	**+0.4**
	1.7nm,0.9s,baz=15,slow=3.5,SNR=6.6						
FITZ	**Fitzroy Crossi**	**38.05**	**215**	P	**P**	**09 21 21.3**	**+0.5**
	3.1nm,0.9s,baz=18,slow=5.9,SNR=4.2						
ASAR	**Alice Springs**	**39.20**	**200**	P	**P**	**09 21 30.6**	**+0.3**
	1.4nm,0.6s,baz=26,slow=6.8,SNR=22						
ASAR				LR	LR	09 37 53.4	
	comp=Z,122nm,21.8s,baz=67,slow=36						
DZM	**Mont Dzumac**	**39.86**	**152**	P	**P**	**09 21 35.8**	**-0.2**
	7.2nm,0.9s,baz=171,slow=15,SNR=5.6						
STKA	**Stephens Creek**	**45.40**	**187**	P	**P**	**09 22 19.9**	**-0.8**
	2.7nm,0.7s,baz=354,slow=7.6,SNR=7.9						
MA2	**Magadan**	**46.13**	**2**	P	**P**	**09 22 25.7**	**-0.5**
	2.3nm,0.7s,baz=200,slow=17,SNR=2.3						
CMAR	**Chiang Mai Arr**	**46.88**	**283**	P	**P**	**09 22 34.4**	**+1.7**
	2.9nm,0.5s,baz=83,slow=6.3,SNR=9.4						
CMAR				LR	LR	09 41 16.8	
	comp=Z,19nm,19.6s,baz=113,slow=35						
SONM	**Songino Array**	**48.38**	**324**	P	**P**	**09 22 44.5**	**+0.5**
	1.8nm,0.5s,baz=136,slow=6.7,SNR=12						
AFI	**Afiamalu**	**48.60**	**122**	LR	LR	09 38 20.5	
	comp=Z,49nm,21.2s,baz=262,slow=30						
SEY	**Seymchan**	**49.56**	**3**	P	**P**	**09 22 53.8**	**+1.2**
	1.3nm,0.6s,baz=166,slow=8.9,SNR=6.4						
LSA	**Lhasa**	**54.38**	**297**	P	**P**	**09 23 30.6**	**+0.9**
	4.2nm,0.4s						
BILL	**Bilibino**	**55.92**	**8**	*e*P	**P**	**09 23 38.6**	**-1.0**
	7.5nm,0.8s						
MKAR	**Makanchi Array**	**63.41**	**316**	P	**P**	**09 24 33.0**	**+1.4**
	1.2nm,0.4s,baz=92,slow=8.8,SNR=11						
KURK	**Kurchatov**	**66.38**	**320**	P	**P**	**09 24 51.5**	**+0.7**
KURBB	**Kurchatov Arra**	**66.42**	**320**	P	**P**	**09 24 51.5**	**+0.5**
	3.0nm,0.6s,baz=99,slow=6.7,SNR=16						
BVAR	**Borovoye Array**	**71.66**	**322**	P	**P**	**09 25 23.7**	**+0.1**
	2.3nm,0.7s,baz=62,slow=10,SNR=11						
INK	**Inuik**	**73.53**	**22**	P	**P**	**09 25 34.3**	**-0.1**
	0.8nm,0.6s,baz=245,slow=4.6,SNR=6.5						
ABKAR	**Akbulak array**	**78.40**	**318**	*e*P	**P**	**09 26 02.8**	**+0.3**
	0.8nm,0.4s						
YKA	**Yellowknife Ar**	**81.81**	**28**	P	**P**	**09 26 19.4**	**-1.1**
	0.4nm,0.6s,baz=284,slow=5.4,SNR=15						
NVAR	**Mina Array Bea**	**84.99**	**52**	P	**P**	**09 26 38.2**	**+0.4**
	0.5nm,0.5s,baz=270,slow=5.1,SNR=3.9						
PFO	**Pinyon Flats O**	**87.59**	**56**	*e*P	**P**	**09 26 49.8**	**-0.7**
	71nm,0.3s						
ARCES	**ARCESS Array B**	**88.02**	**343**	P	**P**	**09 26 53.0**	**+1.3**
	5.4nm,1.0s,baz=78,slow=8.4,SNR=3.9						
FINES	**FINESS Array B**	**92.39**	**336**	P	**P**	**09 27 10.7**	**-1.5**
	2.9nm,0.5s,baz=67,slow=4.5,SNR=27						
LPAZ	**La Paz**	**145.44**	**99**	PKPbc	**PKPab**	**09 33 42.3**	**+0.6**
	0.9nm,0.5s,baz=310,slow=2.6,SNR=6.5						

BJI ***23*** *09:20:28.7, 51°.69N*×*175°.12W, h35km, mb5.0/20, mB4.9/13, Ms4.6/6, Ms7 4.4/5*
MOS ***23*** *09:20:30.1*±*1.1, 51°.73N*×*175°.27W, h33km, mb4.7/59, Error ellipse: s-maj=8.0km s-min=6.4km az=71.7*
NEIC ***23*** *09:20:32.0, 51°.55N*×*175°.19W, h28km, mb4.7/137, ML4.6(AEIC), After AEIC.*
ISCJB ***23*** *09:20:33.4*±*0.3, 51°.74N*±*0°.04*×*175°.26W*±*0°.02, h67km*±*2km, mb4.6/169, Error ellipse: s-maj=6.2km s-min=2.5km az=174.0*
IDC ***23*** *09:20:34.5*±*2.5, 51°.85N*×*175°.28W, h59km*±*22km, mb4.2/42, mb1 4.3/44, mb1mx4.2/75, mbtmp4.4/44, ML5.0/1, MS3.5/16, Ms1 3.5/16, ms1mx3.3/46, Error ellipse: s-maj=14.1km s-min=8.5km az=166.0*
ISC 23 09:20:34.2±0.7, **51°.67N**±0°.07×**175°.21W**±0°.03, **h59**km±5km, **n753, s0°88/755, mb4.7/169, MS3.6/19, 18C-14D, Andreanof Islands**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
GSTR	**Great Sitkin T**	**0.68**	**310**	*e*Pn	**Pn**	**09 20 46.2**	**-2.0**
GSTR				*e*Sn	**Sn**	**09 20 59.8**	**+1.4**
GSCK	**Great Sitkin C**	**0.69**	**301**	P	**Pn**	**09 20 46.1**	**-2.1**
ETKA	**Kagalaska Isla**	**0.77**	**285**	P	**Pn**	**09 20 47.1**	**-2.1**
KOKL	**Mount Kliuchef**	**0.91**	**43**	P	**Pn**	**09 20 49.7**	**-1.4**
ADAG	**Mount Adagdak**	**0.92**	**291**	P	**Pn**	**09 20 50.1**	**-1.0**
KOWE	**Korovin West**	**0.92**	**40**	P	**Pn**	**09 20 49.9**	**-1.3**
KOFP	**Korovin Flat P**	**0.92**	**48**	P	**Pn**	**09 20 49.8**	**-1.5**
KOSE	**Korovin Southe**	**0.99**	**46**	P	**Pn**	**09 20 51.0**	**-1.1**
KONE	**Korovin Northe**	**0.99**	**42**	P	**Pn**	**09 20 51.1**	**-1.0**
KIWB	**Kanaga Island**	**1.22**	**280**	*e*Pn	Pn	09 20 46.5	-8.7
KIKV	**Kanaga Island**	**1.24**	**281**	P	**Pn**	**09 20 53.6**	**-1.7**
KICM	**Kanaga Island**	**1.26**	**282**	P	**Pn**	**09 20 54.2**	**-1.4**
TAPA	**Tanaga Point A**	**1.62**	**276**	P	**Pn**	**09 20 59.2**	**-1.4**
TAFL	**Tanaga Flats**	**1.67**	**274**	P	**Pn**	**09 20 59.9**	**-1.3**
TAFP	**Tanaga Falls P**	**1.74**	**279**	P	**Pn**	**09 21 01.1**	**-1.0**
GAEA	**Gareloi East**	**2.20**	**274**	P	**Pn**	**09 21 08.2**	**-0.2**
GALAA	**Gareloi Lava P**	**2.22**	**274**	P	**Pn**	**09 21 08.4**	**-0.2**
GANE	**Gareloi Northe**	**2.22**	**275**	P	**Pn**	**09 21 08.4**	**-0.3**
NIKH	**Nikolski High**	**4.12**	**69**	*e*Pn	Pn	09 21 38.7	+4.2
NIKH				S	**Sn**	**09 22 21.7**	**+0.3**
OKTU	**Okmok Mt. Tuli**	**4.71**	**66**	P	**Pn**	**09 21 43.6**	**+1.0**
MSOM	**Makushin Julie**	**5.46**	**64**	P	**Pn**	**09 21 53.6**	**+0.7**
MSOM	**Makushin Julie**	**5.46**	**64**	P	**Pn**	**09 21 53.6**	**+0.7**
UNV	**Unalaska Valle**	**5.72**	**64**	*e*Pn	Pn	09 22 00.9	+4.4
UNV				S	**Sn**	**09 23 04.4**	**+3.7**
ZRO	**Akutan Zero**	**6.10**	**63**	P	**Pn**	**09 22 02.8**	**+1.1**
AKUT	**Akutan**	**6.22**	**63**	*e*Pn	Pn	09 22 07.7	+4.4
SPIA	**Saint Paul Isl**	**6.24**	**26**	P	**Pn**	**09 22 05.2**	**+1.7**
SPIA				S	**Sn**	**09 23 16.0**	**+2.7**
SMY	**Shemya**	**6.66**	**283**	P	**Pn**	**09 22 09.7**	**+0.4**
SMY				S	**Sn**	**09 23 25.8**	**+2.1**
SMY	**Shemya**	**6.66**	**283**	P	**Pn**	**09 22 09.7**	**+0.4**
SMY				S	**Sn**	**09 23 25.8**	**+2.1**
SDPT	**Sand Point**	**9.52**	**61**	*e*Pn	**Pn**	**09 22 48.4**	**0.0**
OHAK	**Old Harbor**	**13.88**	**58**	*e*Pn	**Pn**	**09 23 45.8**	**-2.1**
SVW2	**Sparrevohn**	**14.35**	**41**	*e*Pn	**Pn**	**09 23 55.6**	**+1.6**
KDAK	**Kodiak Island**	**14.40**	**56**	P	P	09 24 06.6	+6.7
	1.3nm,0.3s,baz=267,slow=4.5,SNR=10						
KDAK				S	S	09 26 49.6	+0.1
	0.2nm,0.3s,baz=133,slow=19,SNR=2.0						
KDAK				LR	LR	09 30 36.5	
	comp=Z,503nm,18.4s,baz=274,slow=42						
KDAK	**Kodiak Island**	**14.40**	**56**	*i* P	**Pn**	**09 23 53.0**	**-1.6**
KDAK	**Kodiak Island**	**14.40**	**56**	*e*Pn	**P**	**09 23 58.8**	**-1.1**
KDAK				S	**S**	**09 26 49.6**	**+0.1**
TT01	**Tatalina**	**15.23**	**35**	*e*Pn	**P**	**09 24 07.3**	**-1.9**
TTA	**Tatalina**	**15.25**	**35**	*e*P	**Pn**	**09 24 07.2**	**+1.5**
TTA				pmax	pmax		
	comp=Z,16nm,0.9s						
TTA	**Tatalina**	**15.25**	**35**	*e*Pn	**Pn**	**09 24 07.2**	**+1.5**
	comp=Z,16nm,0.9s						
RSO	**Redoubt South**	**15.25**	**46**	*e*Pn	**P**	**09 24 10.5**	**+0.9**
BRLK	**Bradley Lake**	**15.85**	**50**	*e*Pn	**P**	**09 24 15.4**	**-0.7**
	comp=Z,121nm,1.5s						
SPU	**Mount Spurr**	**15.88**	**44**	*e*Pn	**P**	**09 24 16.0**	**-0.5**
PETK	**Petropavlovsk-**	**16.57**	**286**	P	**Pn**	**09 24 22.3**	**-0.1**
	comp=Z,0.5nm,0.3s,baz=88,slow=14,SNR=9.2						
PETK				PcP	**PcP**	**09 29 09.2**	**-0.4**
	comp=Z,0.2nm,0.3s,baz=29,slow=2.5,SNR=4.7						
PETK				LR	LR	09 30 17.5	
	comp=Z,106nm,20.3s,baz=108,slow=35						
SEW	**Seward**	**16.64**	**49**	*e*Pn	**P**	**09 24 27.5**	**+2.7**
	comp=Z,193nm,1.8s						
PPLA	**Purkeypile**	**16.66**	**39**	*e*Pn	**P**	**09 24 27.5**	**+2.3**
	comp=Z,37nm,1.0s						
RC01	**Rabbit Creek A**	**16.86**	**46**	*e*Pn	**Pn**	**09 24 25.9**	**-0.1**
CAST	**Castle Rocks**	**16.98**	**37**	*e*Pn	**P**	**09 24 29.2**	**+0.6**
	comp=Z,29nm,0.9s						
KTH	**Kantishna Hill**	**17.50**	**38**	*e*Pn	**P**	**09 24 35.4**	**+1.1**
	comp=Z,101nm,1.0s						
TRF	**Thorofare Moun**	**17.69**	**39**	*e*Pn	**P**	**09 24 37.5**	**+1.0**
	comp=Z,38nm,1.1s						
BPAW	**Bear Paw Mtn.**	**17.77**	**36**	*e*Pn	**P**	**09 24 38.5**	**+1.3**
	comp=Z,66nm,1.4s						
SCM	**Sheep Creek Mo**	**18.21**	**45**	*e*P	**Pn**	**09 24 42.7**	**+0.1**
SCM				pmax	pmax		
	comp=Z,115nm,1.8s						
SCM	**Sheep Creek Mo**	**18.21**	**45**	*e*P	**Pn**	**09 24 42.7**	**+0.1**
	comp=Z,115nm,1.8s						
RND	**Reindeer**	**18.23**	**40**	*e*P	**Pn**	**09 24 42.7**	**-0.1**
RND				pmax	pmax		
	comp=Z,22nm,0.8s						
RND	**Reindeer**	**18.23**	**40**	*e*P	**Pn**	**09 24 42.7**	**-0.1**
	comp=Z,22nm,0.8s						
MCK	**McKinley**	**18.35**	**39**	*e*P	**P**	**09 24 43.6**	**-0.1**
MCK				pmax	pmax		
	comp=Z,24nm,0.6s						
MCK	**McKinley**	**18.35**	**39**	*e*P	**P**	**09 24 43.6**	**-0.1**
	comp=Z,24nm,0.6s						
MLY	**Manley**	**18.38**	**34**	*e*P	**Pn**	**09 24 44.4**	**-0.2**
	comp=Z,43nm,1.2s						
DHY	**Denali Highway**	**18.68**	**42**	*e*P	**P**	**09 24 47.7**	**+0.2**
	comp=Z,21nm,0.8s						
DIV	**Divide**	**18.69**	**48**	*e*P	**P**	**09 24 47.3**	**-0.1**
BILL	**Bilibino**	**18.73**	**338**	*ce*P	**Pn**	**09 24 49.0**	**+0.3**
BILL				pmax	pmax		
	comp=Z,46nm,1.0s						
BILL				MLR	MLR		
	comp=Z,232nm,20.0s				

DLBC LR LR 09 37 00.6
comp=Z,131nm,18.1s,baz=175,slow=38
YSS Yuzh-Sakhalins 27.52 277 *eP* **P 09 26 15.4 +0.4**
YSS pmax pmax
comp=Z,14nm,1.0s
BBB Bella Bella 28.65 70 P **P 09 26 25.4 +0.4**
comp=Z,9.2nm,0.8s,baz=214,slow=5.5,SNR=6.0
BBB LR LR 09 36 47.0
comp=Z,72nm,19.0s,baz=263,slow=34
ASAJ Asahikawa 28.94 272 P **P 09 26 27.9 +0.2**
comp=Z,16nm,0.8s,baz=24,slow=5.7,SNR=7.7
ASAJ LR LR 09 41 05.9
comp=Z,23nm,18.6s,baz=226,slow=43
ASAJ Asahikawa 28.94 272 P **P 09 26 27.9 +0.2**
ASAJ pmax pmax
comp=Z,12nm,0.9s
ASAJ MLR MLR
comp=Z,23nm,18.6s
YAK Yakutsk 30.92 311 *eP* **P 09 26 45.1 +0.2**
YAK pmax pmax
comp=Z,6.0nm,0.7s
TIXI Tiksi 31.50 330 PcP **PcP 09 29 41.3 0.0**
comp=Z,11nm,0.5s,baz=118,slow=2.9,SNR=18
TIXI ScP **ScP 09 33 20.8 +1.6**
comp=Z,1.4nm,0.3s,baz=113,slow=4.6,SNR=7.6
TIXI Tiksi 31.50 330 *eP* **P 09 26 51.5 +1.5**
TIXI pmax pmax
comp=Z,1.0nm,1.0s
NLWA Neilton Lookou 33.03 77 *eP* **P 09 27 06.3 +2.6**
comp=Z,12nm,0.9s
KLR Kul'dur 33.25 287 P **P 09 27 04.8 -0.7**
comp=Z,4.8nm,0.4s,baz=66,slow=6.8,SNR=27
KLR LR LR 09 40 38.5
comp=Z,79nm,21.0s,baz=349,slow=36
YKA Yellowknife Ar 33.40 47 P **P 09 27 05.4 -1.2**
comp=Z,1.2nm,0.5s,baz=279,slow=7.8,SNR=24
YKA PcP **PcP 09 29 47.4 +0.7**
comp=Z,1.3nm,0.5s,baz=286,slow=3.2,SNR=21
YKA ScP **ScP 09 33 26.4 +0.6**
comp=Z,0.3nm,0.8s,baz=292,slow=3.3,SNR=3.7
YKB5 Yellowknife Ar 33.40 47 *eP* **P 09 27 06.1 -0.5**
YKB5 *eP*PcP **PcP 09 29 47.3 +0.7**
CMW Cultus Mountai 33.63 74 P **P 09 27 11.1 +2.2**
B05A Bryant 33.71 74 P **P 09 27 11.2 +1.6**
baz=296,SNR=6.7
RPW Rockport 33.98 74 P **P 09 27 13.0 +1.1**
HTW Haystack Looko 34.11 75 P **P 09 27 14.7 +1.6**
LON Longmire 34.58 77 *eP* **P 09 27 18.6 +1.5**
LON pmax pmax
comp=Z,5.0nm,0.8s
LON Longmire 34.58 77 *eP* **P 09 27 18.6 +1.5**
comp=Z,4.6nm,0.8s
H11N2 WAKE ISLAND Hy 34.83 210 T T 10 04 04.9
baz=18,slow=76,SNR=814
H11N3 WAKE ISLAND Hy 34.83 210 T T 10 04 06.6
baz=18,slow=76,SNR=446
H11N1 WAKE ISLAND Hy 34.84 210 T T 10 04 06.3
baz=18,slow=76,SNR=723
LTY Liberty 35.02 75 *eP* **P 09 27 22.3 +1.3**
comp=Z,13nm,1.6s
EBG Ellensburg 35.25 76 P **P 09 27 24.5 +1.6**
WTV Waterville 35.25 74 P **P 09 27 23.8 +0.9**
B08A Colville Reser 35.32 73 *eP* **P 09 27 24.8 +1.3**
comp=Z,19nm,0.8s
H04A Detroit Lake 35.36 80 *eP* **P 09 27 25.4 +1.5**
comp=Z,9.5nm,0.8s
USRK Ussuriysk Ar. 35.47 279 P **P 09 27 23.9 -0.9**
comp=Z,3.5nm,0.6s,baz=57,slow=9.4,SNR=16
USRK PcP **PcP 09 29 53.9 +0.9**
comp=Z,3.5nm,0.8s,baz=93,slow=2.0,SNR=7.3
USRK LR LR 09 41 33.2
comp=Z,79nm,21.6s,baz=48,slow=36
G05D Wamic, OR 35.61 79 P **P 09 27 27.0 +1.0**
baz=300
I04A Tendick Farm, 35.69 81 P **P 09 27 27.7 +1.0**
baz=302
H11S1 WAKE ISLAND Hy 36.03 210 T T 10 05 54.4
baz=19,slow=76,SNR=1264
MJAR Matsushiro Arr 36.04 264 P **P 09 27 30.2 +0.5**
comp=Z,1.6nm,0.5s,baz=41,slow=6.5,SNR=6.3
H11S2 WAKE ISLAND Hy 36.05 210 T T 10 06 00.3
baz=19,slow=76,SNR=686
H11S3 WAKE ISLAND Hy 36.05 210 T T 10 06 00.5
baz=19,slow=76,SNR=495
I05D Terrebonne, OR 36.06 80 P **P 09 27 31.6 +1.7**
baz=301
HAWA Hanford 36.12 76 *eP* **P 09 27 31.8 +1.4**
comp=Z,13nm,0.8s
HAWA *eP* **P 09 27 46.1 +1.0**
C09A Chrisman Ranch 36.21 73 *eP* **P 09 27 32.0 +1.0**
comp=Z,11nm,0.7s
NEW Newport 36.67 72 P **P 09 27 36.0 +1.0**
baz=298,SNR=23
NEW Newport 36.67 72 *eP* **P 09 27 35.9 +0.9**
NEW pmax pmax
comp=Z,17nm,0.8s
NEW Newport 36.67 72 *eP* **P 09 27 35.9 +0.9**
comp=Z,17nm,0.8s
J05D Fort Rock, OR 36.68 81 P **P 09 27 37.1 +1.8**
baz=302
MSHR Mys Shultsa 36.85 277 *eP* **P 09 27 36.9 +0.4**
M04C Macdoel 37.13 84 P **P 09 27 40.8 +1.7**
baz=304
K05A Summer Lake 37.19 82 *eP* **P 09 27 41.3 +1.6**
comp=Z,10nm,0.8s
F10A Beach Ranch, E 37.72 75 *eP* **P 09 27 44.7 +0.7**
comp=Z,4.2nm,0.6s
O03D Paynes Creek 38.01 86 P **P 09 27 48.9 +2.5**
baz=306
MOD Modoc Plateau 38.02 83 *eP* **P 09 27 47.8 +1.2**
WALA Waterton Lakes 38.19 69 *eP* **P 09 27 49.1 +1.2**
comp=Z,11nm,0.7s
BSMT Bassoo Peak 38.25 71 P **P 09 27 49.5 +1.0**
BLMT Blacktail Moun 38.42 71 *eP* **P 09 27 50.9 +0.9**
JTMT Jette 38.60 71 *eP* **P 09 27 52.5 +1.1**
YBMT Yellow Bay 38.70 71 *eP* **P 09 27 53.3 +1.0**
WVOR Wild Horse Val 38.74 81 *eP* **P 09 27 52.3 -0.4**
WVOR pmax pmax
comp=Z,8.0nm,0.8s
WVOR Wild Horse Val 38.74 81 *eP* **P 09 27 52.2 -0.4**
comp=Z,8.0nm,0.8s
SWMT Swartz Lake 38.88 71 *eP* **P 09 27 54.2 +0.5**
MSO Missoula 39.25 72 P **P 09 27 57.5 +0.6**
baz=300,SNR=11
MSO Missoula 39.25 72 *eP* **P 09 27 57.5 +0.6**
comp=Z,30nm,1.4s
CHMT Chamberlain Mo 39.62 72 *eP* **P 09 28 00.2 +0.2**
MFID Camas Ranch 39.92 78 *eP* **P 09 28 03.5 +1.0**
comp=Z,3.6nm,0.8s
LRM Limekiln Ridge 40.66 73 *eP* **P 09 28 08.1 -0.6**
HLID Hailey 40.70 77 P **P 09 28 10.1 +1.1**
baz=303,SNR=11
HLID Hailey 40.70 77 *eP* **P 09 28 09.4 +0.5**
comp=Z,5.2nm,0.8s
BMN Battle Mountai 40.76 82 *eP* **P 09 28 11.4 +1.9**
BMN pmax pmax
comp=Z,4.0nm,0.6s
BMN Battle Mountai 40.76 82 *eP* **P 09 28 11.4 +1.9**
comp=Z,3.9nm,0.6s
DLMT Dillon 40.81 73 *eP* **P 09 28 11.1 +1.3**
comp=Z,3.3nm,0.8s
MCMT McKenzie Canyo 40.95 74 *eP* **P 09 28 11.8 +0.7**
EGMT Eagleton 41.10 68 P **P 09 28 12.8 +0.7**
baz=300,SNR=8.3
EGMT Eagleton 41.10 68 *eP* **P 09 28 12.5 +0.4**
comp=Z,8.3nm,0.8s
BOZ Bozeman (W) 41.24 72 P **P 09 28 14.2 +0.8**
baz=302,SNR=19
BOZ Bozeman (W) 41.24 72 *eP* **P 09 28 14.2 +0.8**
BOZ pmax pmax
comp=Z,24nm,1.4s
BOZ Bozeman (W) 41.24 72 *eP* **P 09 28 14.2 +0.8**
comp=Z,24nm,1.4s
NV01 Mina Array Sit 41.29 86 *eP* **P 09 28 15.1 +1.2**
NVAR Mina Array Bea 41.29 86 P **P 09 28 14.9 +0.9**
comp=Z,1.3nm,0.7s,baz=289,slow=7.6,SNR=6.9
NVAR PcP **PcP 09 30 10.8 -0.7**
comp=Z,1.4nm,0.8s,baz=270,slow=3.1,SNR=4.8
QLMT Earthquake Lak 41.80 73 *eP* **P 09 28 18.3 +0.3**
ELK Elko 41.80 81 *eP* **P 09 28 18.8 +0.7**
ELK pmax pmax
comp=Z,4.0nm,0.8s
ELK Elko 41.80 81 *eP* **P 09 28 18.8 +0.7**
comp=Z,3.9nm,0.8s
KSRS Korea Array 41.87 273 P **P 09 28 19.1 +0.7**
comp=Z,7.9nm,0.9s,baz=57,slow=8.0,SNR=17
KSRS LR LR 09 43 21.4
comp=Z,30nm,21.6s,baz=45,slow=33
KS01 Wonju Array Si 41.87 273 *eP* **P 09 28 18.8 +0.4**
KSAR Wonju Array Be 41.90 273 P **P 09 28 19.1 +0.5**
KSAR Wonju Array Be 41.90 273 P **P 09 28 19.1 +0.5**
YMC Maple Creek 42.09 73 *eP* **P 09 28 21.3 +0.9**
FFC Flin Flon 42.14 56 *eP* **P 09 28 20.5 +0.1**
FFC pmax pmax
comp=Z,7.0nm,1.4s
FFC Flin Flon 42.14 56 *eP* **P 09 28 20.5 +0.1**
comp=Z,7.2nm,1.4s
YMR Madison River 42.16 73 *eP* **P 09 28 21.5 +0.5**
comp=Z,39nm,1.7s
YHH Holmes Hill 42.17 73 *eP* **P 09 28 21.8 +0.7**
SMMC Simmler 42.20 91 P P 09 28 24.5 +3.3
baz=310
GCMT Greycliff 42.32 71 *eP* **P 09 28 23.4 +1.3**
YFT Old Faithful 42.36 73 *eP* **P 09 28 23.5 +0.8**
comp=Z,11nm,1.2s
H17A Grant Village 42.55 73 P **P 09 28 26.7 +2.5**
baz=304,SNR=14
H17A Grt Village 42.55 73 *eP* **P 09 28 26.2 +2.1**
comp=Z,25nm,1.3s
LKWY Lake 42.56 73 *eP* **P 09 28 26.1 +1.9**
LKWY pmax pmax
comp=Z,8.0nm,0.7s
LKWY Lake 42.56 73 *eP* **P 09 28 26.1 +1.9**
comp=Z,7.9nm,0.7s
PKM Mcpherson Peak 42.59 91 P **P 09 28 26.9 +2.4**
baz=311
IMW Indian Meadow 42.61 74 *eP* **P 09 28 25.7 +1.0**
comp=Z,4.6nm,0.8s
FLWY Flagg Ranch 42.65 74 *eP* **P 09 28 25.7 +0.8**
comp=Z,8.2nm,1.0s
HVU Hansel Valley 42.70 78 *eP* **P 09 28 26.3 +0.9**
HVU pmax pmax
comp=Z,8.0nm,0.7s
HVU Hansel Valley 42.70 78 *eP* **P 09 28 26.3 +0.9**
comp=Z,7.5nm,0.7s
MOOW Moose Ponds 42.81 74 *eP* **P 09 28 26.6 +0.4**
comp=Z,2.2nm,0.9s
JNU Nakatsue 42.83 266 P **P 09 28 26.9 +0.5**
comp=Z,15nm,1.0s,baz=158,slow=2.2,SNR=4.6
RLMT Red Lodge 42.92 72 P **P 09 28 28.2 +1.0**
baz=303,SNR=36
RLMT Red Lodge 42.92 72 *eP* **P 09 28 28.1 +1.0**
comp=Z,26nm,1.0s
SNOW Snow King Moun 42.96 75 *eP* **P 09 28 29.5 +1.9**
comp=Z,3.7nm,0.8s
LOHW Long Hollow 42.97 74 *eP* **P 09 28 28.0 +0.5**
comp=Z,6.8nm,1.4s
R11A Troy Canyon, C 43.03 84 P **P 09 28 28.7 +0.6**
baz=308
R11A Troy Canyon, C 43.03 84 *eP* **P 09 28 28.9 +0.8**
comp=Z,3.9nm,0.8s
BGU Big Grassy Mou 43.05 79 *eP* **P 09 28 28.6 +0.5**
comp=Z,3.3nm,0.9s
MPMC Manual Prospec 43.28 88 P **P 09 28 30.3 +0.2**
baz=310
SCZ2 Santa Cruz Isl 43.29 92 P **P 09 28 30.4 +0.4**
baz=311
FURC Furnace Creek, 43.41 87 P **P 09 28 31.3 +0.5**
baz=310
TPNV Topopah Spring 43.49 86 P **P 09 28 32.8 +1.1**
baz=309,SNR=6.1
TPNV Topopah Spring 43.49 86 *eP* **P 09 28 32.9 +1.1**
TPNV pmax pmax
comp=Z,10.0nm,0.7s
TPNV Topopah Spring 43.49 86 *eP* **P 09 28 32.9 +1.1**
comp=Z,10.0nm,0.7s
TPNV *e*ScP **ScP 09 34 01.8 -3.1**
DUG Dugway, Tooele 43.62 80 P **P 09 28 34.0 +1.3**
baz=307,SNR=7.3
DUG Dugway, Tooele 43.62 80 *eP* **P 09 28 33.7 +1.0**
DUG pmax pmax
comp=Z,9.0nm,1.0s
DUG Dugway, Tooele 43.62 80 *eP* **P 09 28 33.7 +1.0**
comp=Z,9.3nm,1.0s
EDW2 Edwards Air Fo 43.73 89 P **P 09 28 34.7 +1.1**
baz=311
TCUT Toone Canyon 43.92 78 *eP* **P 09 28 36.0 +0.8**
comp=Z,9.7nm,0.7s
DECC Green Verdugo 43.93 90 P **P 09 28 35.8 +0.7**
baz=311
CTU Camp Tracy 43.97 78 *eP* **P 09 28 36.0 +0.4**
comp=Z,4.9nm,0.8s
PSUT Pine Spring 43.98 82 *eP* **P 09 28 36.0 +0.3**
comp=Z,5.2nm,0.8s
DGMT Dagmar 44.05 65 P **P 09 28 36.1 +0.2**
baz=302,SNR=6.8
DGMT Dagmar 44.05 65 *eP* **P 09 28 35.9 0.0**
comp=Z,39nm,1.3s
BW06 Boulder Array 44.08 75 P **P 09 28 37.1 +0.7**
baz=305,SNR=32
BW06 Boulder Array 44.08 75 *eP* **P 09 28 37.2 +0.7**
comp=Z,14nm,0.7s
PD31 Pinedale Array 44.08 75 *eP* **P 09 28 37.2 +0.7**
PDAR Pinedale Array 44.08 75 P **P 09 28 37.0 +0.6**
comp=Z,12nm,0.6s,baz=301,slow=3.6,SNR=147
PDAR LR LR 09 47 56.0
comp=Z,30nm,18.0s,baz=354,slow=37
FCC Fort Churchill 44.13 48 *eP* **P 09 28 35.6 -0.7**
FCC pmax pmax
comp=Z,4.0nm,0.9s
FCC Fort Churchill 44.13 48 *eP* **P 09 28 35.6 -0.7**
comp=Z,4.1nm,0.9s
SHOC Shoshone, Teco 44.14 87 P **P 09 28 38.0 +1.3**
baz=310
GSC Goldstone, Bar 44.19 88 P **P 09 28 38.3 +0.9**
baz=310
JLU Jordanelle 44.20 78 *eP* **P 09 28 38.0 +0.5**
comp=Z,5.6nm,0.9s
NLU North Lily Min 44.21 80 *eP* **P 09 28 37.9 +0.3**
comp=Z,4.9nm,0.8s
BFSC Mount Baldy Ra 44.36 90 P **P 09 28 39.8 +1.1**
baz=311
A25A Svangstu Ranch 44.40 64 P **P 09 28 39.0 +0.2**
baz=302,SNR=12
B25A Knox Farm, Ray 44.73 65 P **P 09 28 41.7 +0.2**
baz=303,SNR=9.7
C25A Freed Ranch, W 44.98 65 P **P 09 28 44.0 +0.6**
baz=303,SNR=6.8
A26A Wade Farm, Ken 45.02 63 P **P 09 28 43.9 +0.2**
baz=302,SNR=12
MSU Marysvale 45.03 81 *eP* **P 09 28 45.5 +1.4**
MSU Marysvale 45.03 81 *eP* **P 09 28 45.5 +1.4**
TMUT Trail Mountain 45.14 80 *eP* **P 09 28 46.5 +1.4**
comp=Z,10nm,0.7s
B26A Jensen Ranch, 45.20 64 P **P 09 28 45.7 +0.6**
baz=303
GMRC Granite Mounta 45.24 88 P **P 09 28 46.1 +0.4**
baz=311
D25A Fairfield 45.26 66 P **P 09 28 46.1 +0.5**
baz=304
MTPU Mount Pierson 45.32 82 *eP* **P 09 28 48.0 +1.5**
comp=Z,7.4nm,1.4s
P17A Butcher Ranch, 45.32 79 *eP* **P 09 28 46.9 +0.5**
comp=Z,4.9nm,0.7s
A27A Ledoux Ranch, 45.44 63 P **P 09 28 47.4 +0.4**
baz=303
P18A Preston Nutter 45.53 79 *eP* **P 09 28 48.4 +0.2**
comp=Z,6.9nm,0.9s
KNB Kanab 45.57 83 *eP* P 09 28 53.2 +4.9
KNB pmax pmax
comp=Z,4.0nm,0.9s
KNB Kanab 45.57 83 *eP* P 09 28 53.2 +4.9
comp=Z,3.7nm,0.9s
E25A Miller Ranch, 45.57 67 P **P 09 28 48.5 +0.4**
baz=304,SNR=12
C26A Wahner Farm, P 45.58 65 P **P 09 28 48.4 +0.3**
baz=303,SNR=14
109C Camp Elliot, M 45.60 91 P **P 09 28 48.4 0.0**
baz=312
SRU San Rafael Swe 45.68 79 *eP* **P 09 28 50.6 +1.4**
SRU pmax pmax
comp=Z,8.0nm,0.8s
SRU San Rafael Swe 45.68 79 *eP* **P 09 28 50.6 +1.4**
comp=Z,8.0nm,0.8s
B27A Peters Farms, 45.73 63 P **P 09 28 49.7 +0.4**
baz=303,SNR=12
D26A Manning 45.83 66 P **P 09 28 49.7 -0.3**
baz=304
F25A Bowman 45.86 67 P **P 09 28 50.4 0.0**
baz=304
K22A Casper 45.96 73 P **P 09 28 51.4 0.0**
baz=306,SNR=5.7
K22A Casper 45.96 73 *eP* **P 09 28 51.6 +0.3**
comp=Z,7.1nm,0.7s
C27A Sayler Ranch, 45.97 64 P **P 09 28 51.6 +0.4**
baz=304,SNR=7.5
IRM Iron Mountain 45.98 88 P **P 09 28 52.3 +0.9**
baz=311
A28A Rude Farm, Bot 46.00 62 P **P 09 28 51.9 +0.5**
baz=303,SNR=15
E26A Carlson Angus 46.13 66 P **P 09 28 52.7 +0.2**
baz=304,SNR=21
B28A Dugan Ranch, T 46.20 63 P **P 09 28 53.0 0.0**
baz=304,SNR=16
G25A Newell 46.30 68 P **P 09 28 54.0 +0.1**
baz=305
F26A Lodgepole 46.36 67 P **P 09 28 53.9 -0.4**
baz=305,SNR=5.2
O20A White River Ci 46.44 77 P **P 09 28 55.5 +0.3**
baz=308,SNR=19
O20A White River Ci 46.44 77 *eP* **P 09 28 55.6 +0.4**
comp=Z,20nm,0.8s
PDMCI Parker Dam,Lak 46.50 87 P **P 09 28 56.2 +0.7**
baz=311
H25A Fruitdale 46.53 69 P **P 09 28 55.7 +0.1**
baz=305
A29A Manning Farm, 46.56 62 P **P 09 28 55.8 +0.1**
baz=304,SNR=17
RSSD Black Hills 46.57 70 P **P 09 28 56.1 0.0**
baz=306
RSSD Black Hills 46.57 70 *eP* **P 09 28 56.0 -0.1**
RSSD pmax pmax
comp=Z,7.0nm,1.1s
RSSD Black Hills 46.57 70 *eP* **P 09 28 56.0 -0.1**
comp=Z,6.9nm,1.1s
E27A Carson 46.66 66 P **P 09 28 56.9 +0.3**
baz=305,SNR=16
F27A Lemmon 46.72 67 P **P 09 28 57.3 +0.2**
baz=305,SNR=6.5
G26A Maurine 46.72 68 P **P 09 28 57.4 +0.3**
baz=305,SNR=18
B29A Wagenman Farm, 46.75 62 P **P 09 28 57.3 +0.1**
baz=304,SNR=6.3
D28A Regan 46.79 64 P **P 09 28 58.1 +0.5**
baz=304,SNR=12
I25A Rochford 46.80 70 P **P 09 28 58.1 +0.1**
baz=306
GLA Glamis 46.91 89 P **P 09 28 59.1 +0.4**
baz=312
PV09 Paradox Valley 46.91 79 *eP* **P 09 28 59.3 +0.4**
H26A Fairpoint 47.01 69 P **P 09 28 59.6 +0.2**
baz=306
G27A Dupree 47.05 67 P **P 09 28 59.8 +0.1**
baz=305,SNR=12
A30A Hoffart Farm, 47.06 61 P **P 09 28 59.5 -0.2**
baz=304,SNR=16
E28A Huff 47.07 65 P **P 09 28 59.9 +0.1**
baz=305
J25A Sunshine Ranch 47.13 71 P **P 09 29 00.2 -0.2**
baz=306
PV05 Paradox Valley 47.19 80 *eP* **P 09 29 02.5 +1.4**
I26A New Underwood 47.31 69 P **P 09 29 02.1 +0.4**
baz=306
B30A Myrvik Farm, E 47.32 62 P **P 09 29 01.9 +0.2**
baz=304,SNR=16
N23A Red Feather La 47.36 75 P **P 09 29 03.1 +0.6**
baz=308,SNR=7.0
N23A Red Feather La 47.36 75 *eP* **P 09 29 03.4 +0.9**
comp=Z,6.9nm,0.8s
H27A Howes 47.41 68 P **P 09 29 02.6 +0.2**
baz=306
D29A Pettibone, Tap 47.41 64 P **P 09 29 02.7 +0.2**
baz=305,SNR=5.5
WUAZ Wupatki 47.43 84 P **P 09 29 03.6 +0.8**
baz=311
WUAZ Wupatki 47.43 84 *eP* **P 09 29 03.8 +0.9**
comp=Z,5.5nm,0.8s
F28A McLaughlin 47.43 66 P **P 09 29 02.9 +0.3**
baz=305,SNR=8.6
PV01 Paradox Valley 47.48 79 *eP* **P 09 29 03.7 +0.3**
J26A Sides Ranch, S 47.61 70 P **P 09 29 04.6 +0.5**
baz=307
ULM Lac du Bonnet 47.64 59 P **P 09 29 03.8 -0.3**
comp=Z,1.6nm,0.4s,baz=320,slow=5.2,SNR=3.6
C30A Mose, Pekin 47.66 63 P **P 09 29 04.3 -0.1**
baz=305,SNR=12
E29A Napoleon 47.67 65 P **P 09 29 04.7 +0.2**
baz=305
B31A Greenbush Farm 47.71 62 P **P 09 29 04.8 +0.1**
baz=305,SNR=9.4
I27A Quinn 47.75 69 P **P 09 29 05.5 +0.3**
baz=306,SNR=5.3
TLY Talaya 47.78 304 P **P 09 29 05.5 +0.2**
comp=Z,1.0nm,0.4s,baz=11,slow=10,SNR=2.8
TLY Talaya 47.78 304 *eP* P 09 29 09.6 +4.3
TLY pmax pmax
comp=Z,3.0nm,0.7s
SMCO Snowmass 47.80 77 *eP* **P 09 29 06.2 +0.1**
comp=Z,3.3nm,0.6s
G28A Parade 47.81 67 P **P 09 29 05.9 +0.3**
baz=306
D30A Buchanan 47.85 64 P **P 09 29 05.6 -0.2**
baz=305,SNR=7.9
F29A Eureka 47.99 66 P **P 09 29 06.8 -0.2**
baz=306,SNR=5.3
C31A Landman Farms, 48.02 62 P **P 09 29 06.9 -0.2**
baz=305,SNR=10
A32A Rocking H Ranc 48.06 60 P **P 09 29 07.1 -0.3**
baz=305,SNR=6.9
X16A Lo Mia Camp, P 48.11 85 *eP* **P 09 29 09.4 +1.2**
comp=Z,2.2nm,0.8s
MVCO Mesa Verde 48.11 80 P **P 09 29 08.3 +0.1**
baz=310
MVCO Mesa Verde 48.11 80 *eP* **P 09 29 08.9 +0.7**
comp=Z,19nm,1.7s
E30A Jud 48.12 64 P **P 09 29 07.8 -0.1**
baz=306
ULN Ulaanbaatar 48.13 298 *eP* **P 09 29 07.5 -0.6**
ULN pmax pmax
comp=Z,1.0nm,0.8s
ISCO Idaho Springs 48.23 75 P **P 09 29 09.5 +0.3**
baz=308
ISCO Idaho Springs 48.23 75 *eP* **P 09 29 09.8 +0.5**
ISCO pmax pmax
comp=Z,4.0nm,1.0s
ISCO Idaho Springs 48.23 75 *eP* **P 09 29 09.8 +0.5**
comp=Z,4.3nm,1.0s
J27A Elkhorn Farm, 48.27 70 P **P 09 29 09.4 +0.2**
baz=307
I28A Midland 48.31 68 P **P 09 29 09.8 +0.4**
baz=307,SNR=20
G29A Hoven 48.31 66 P **P 09 29 09.6 +0.2**
baz=306
B32A Ashes, Strandq 48.33 61 P **P 09 29 09.2 -0.3**
baz=305,SNR=21
D31A Mcclaflin, Tow 48.46 63 P **P 09 29 10.3 -0.2**
baz=306
H29A Onida 48.48 67 P **P 09 29 10.7 -0.1**
baz=306
SONM Songino Array 48.51 298 P **P 09 29 10.5 -0.5**
comp=Z,0.8nm,0.6s,baz=66,slow=7.0,SNR=4.3
SONM PcP **PcP 09 30 35.3 -0.8**
comp=Z,3.8nm,0.9s,baz=54,slow=2.5,SNR=10
SONM LR LR 09 50 30.6
comp=Z,78nm,18.1s,baz=82,slow=37
J28A Allard Ranch, 48.61 69 P **P 09 29 12.3 +0.5**
baz=307,SNR=13
A33A Warroad 48.64 60 P **P 09 29 12.2 +0.3**
baz=305,SNR=6.6
E31A Nome 48.66 64 P **P 09 29 11.6 -0.4**
baz=306,SNR=7.6
C32A Crookston 48.67 62 P **P 09 29 11.8 -0.3**
baz=306
AGMN Agassiz Nation 48.76 61 P **P 09 29 12.3 -0.4**
baz=305,SNR=15
AGMN Agassiz Nation 48.76 61 *eP* **P 09 29 12.0 -0.8**
comp=Z,18nm,1.0s
S22A 4UR Ranch, Cre 48.79 78 P **P 09 29 14.9 +1.3**
baz=310
S22A 4UR Ranch, Cre 48.79 78 *eP* **P 09 29 14.3 +0.8**
comp=Z,3.0nm,0.9s
I29A Vivian Onida 48.79 68 P **P 09 29 12.3 -0.9**
baz=307
G30A Faulkton 48.79 66 P **P 09 29 13.2 +0.1**
baz=306,SNR=6.1
D32A Dogwood Acres, 48.80 63 P **P 09 29 12.6 -0.5**
baz=306,SNR=5.5
F31A Hecla 48.87 65 P **P 09 29 13.3 -0.3**
baz=306
214A Organ Pipe Nat 48.90 88 P **P 09 29 14.4 +0.3**
baz=313
B33A Robert and Kas 48.92 61 P **P 09 29 13.9 -0.2**

baz=306,SNR=6.2
Q24A **Divide** 49.04 76 P P 09 29 16.0 +0.5
baz=309
Q24A **Divide** 49.04 76 *e*P P 09 29 15.9 +0.5
comp=Z,4.4nm,0.8s
E32A **Braaten, Kindr** 49.09 63 P P 09 29 14.9 -0.4
baz=306,SNR=9.0
C33A **Trail** 49.12 61 P P 09 29 15.2 -0.4
baz=306,SNR=8.0
J29A **Okreek** 49.15 68 P P 09 29 16.4 +0.5
baz=307,SNR=14
G31A **Conde** 49.27 65 P P 09 29 16.4 -0.3
baz=307
B34A **Aery, Baudette** 49.30 60 P P 09 29 16.4 -0.5
baz=306,SNR=12
SUSD **Miller** 49.31 67 P P 09 29 17.1 0.0
baz=307,SNR=5.4
I30A **Oacoma** 49.36 67 P P 09 29 17.4 -0.1
baz=307
D33A **AnnSam, Waubun** 49.45 62 P P 09 29 17.7 -0.4
baz=306,SNR=18
F32A **Veblen** 49.49 64 P P 09 29 17.6 -0.8
baz=307
H31A **Wolsey** 49.56 66 P P 09 29 19.1 +0.1
baz=307,SNR=7.9
SDCO **Great Sand Dun** 49.60 78 P P 09 29 20.8 +1.1
baz=310,SNR=14
SDCO **Great Sand Dun** 49.60 78 *e*P P 09 29 20.6 +0.9
comp=Z,5.8nm,0.9s
SDCO *e*ScP **ScP** 09 34 26.4 -4.2
C34A **RKJ Ranch, Bem** 49.66 61 P P 09 29 18.9 -0.7
baz=306,SNR=6.7
OGNE **Ogallala** 49.66 72 P P 09 29 20.5 +0.6
baz=308
J30A **Dallas** 49.68 68 P P 09 29 20.0 +0.1
baz=308
E33A **Westby DABS, E** 49.74 63 P P 09 29 19.5 -0.8
baz=307,SNR=5.2
HHC **Hu-ho-hao-te** 49.75 288 *e*P **P** 09 29 20.4 -0.2
HHC sP pP 09 29 33.6 -2.3
HHC S **S** 09 36 25.6 +0.3
HHC pmax pmax
comp=Z,23nm,0.7s
HHC pmax pmax
comp=Z,64nm,6.7s
HHC LR LR
comp=Z,150nm,13.6s
HHC LR LR
comp=Z,300nm,14.3s
HHC LR LR
comp=Z,120nm,14.8s
I31A **Royce, Wessing** 49.80 67 P P 09 29 19.9 -0.9
baz=307
D34A **Park Rapids** 49.84 62 P P 09 29 20.4 -0.6
baz=307,SNR=38
B35A **Bob, Littlefor** 49.88 60 P P 09 29 20.6 -0.7
baz=306
TUC **Tucson** 49.92 87 P P 09 29 22.1 +0.2
baz=313
TUC **Tucson** 49.92 87 *e*P P 09 29 22.3 +0.3
TUC pmax pmax
comp=Z,3.0nm,0.8s
TUC **Tucson** 49.92 87 *e*P P 09 29 22.3 +0.3
comp=Z,2.7nm,0.8s
F33A **5 Mile Ranch,** 49.98 64 P P 09 29 21.2 -0.9
baz=307,SNR=8.4
K30A **Basset** 50.01 69 P P 09 29 23.1 +0.6
baz=308
C35A **Jirik Farms, M** 50.13 60 P P 09 29 22.6 -0.7
baz=307,SNR=8.1
J31A **Geddes** 50.14 68 P P 09 29 23.6 +0.2
baz=308
H32A **Carlson Farm,** 50.14 66 P P 09 29 23.3 -0.1
baz=308
E34A **Wadena** 50.19 62 P P 09 29 23.2 -0.6
baz=307
G33A **Ortonville** 50.28 64 P P 09 29 23.9 -0.5
baz=307,SNR=6.6
I32A **Karley and Nic** 50.42 66 P P 09 29 24.9 -0.6
baz=308
H33A **Prehn Over Nor** 50.43 65 P P 09 29 25.1 -0.4
baz=308,SNR=6.8
D35A **Remer** 50.46 61 P P 09 29 25.3 -0.4
baz=307,SNR=15
KSCO **Kaye Shedlock'** 50.53 74 P P 09 29 27.4 +0.9
baz=310,SNR=5.1
KSCO **Kaye Shedlock'** 50.53 74 *e*P P 09 29 27.6 +1.0
comp=Z,16nm,0.6s
F34A **Alexandria** 50.58 63 P P 09 29 25.9 -0.7
baz=307,SNR=11
E35A **Pequot Lakes** 50.59 62 P P 09 29 26.6 -0.1
baz=307,SNR=14
J32A **Parkston** 50.60 67 P P 09 29 26.4 -0.5
baz=308
T25A **Trinidad** 50.65 77 P P 09 29 28.9 +1.3
baz=310,SNR=25
T25A **Trinidad** 50.65 77 *e*P P 09 29 28.5 +0.9
comp=Z,19nm,0.9s
G34A **Benson** 50.70 64 P P 09 29 27.6 0.0
baz=308
C36A **Pine Crest Far** 50.71 60 P P 09 29 27.1 -0.6
baz=307
L31A **Butterfield Fa** 50.77 69 P P 09 29 26.9 -1.3
baz=309
LAZ **Ladron** 50.78 82 *e*P P 09 29 29.9 +1.4
I33A **Coleman** 50.78 66 P P 09 29 27.5 -0.8
baz=308
ANMO **Albuquerque** 50.84 81 P P 09 29 29.2 +0.3
baz=312
ANMO **Albuquerque** 50.84 81 *ce*P P 09 29 29.7 +0.7
ANMO pmax pmax
comp=Z,5.0nm,1.2s
ANMO **Albuquerque** 50.84 81 *e*P P 09 29 29.9 +0.9
comp=Z,6.9nm,1.4s
D36A **Goodland** 50.89 61 P P 09 29 28.0 -1.0
baz=307
F35A **Swanville** 50.92 63 P P 09 29 28.7 -0.5
baz=308,SNR=20
H34A **Spellman Lake,** 50.98 65 P P 09 29 29.5 -0.2
baz=308,SNR=6.4
C37A **Embarrass** 51.08 59 P P 09 29 30.4 0.0
baz=307
ECSD **EROS Data Cent** 51.08 66 P P 09 29 29.6 -0.9
baz=308,SNR=12
ECSD **EROS Data Cent** 51.08 66 *e*P P 09 29 29.7 -0.8
comp=Z,16nm,1.0s
M31A **Lambtecht Ranc** 51.21 70 P P 09 29 31.3 -0.3
baz=309
E36A **McGregor** 51.24 61 P P 09 29 31.4 -0.2
baz=308,SNR=12
D37A **Cotton** 51.30 60 P P 09 29 31.3 -0.7
baz=308
EYMN **Ely** 51.32 59 P P 09 29 32.0 -0.1
baz=308
G35A **Watkins** 51.36 63 P P 09 29 32.2 -0.3
baz=308
L32A **Elgin** 51.36 69 P P 09 29 32.5 -0.1
baz=309
H35A **Sunnyside Ranc** 51.49 64 P P 09 29 33.1 -0.3
baz=308,SNR=19
F36A **Milaca** 51.50 62 P P 09 29 33.1 -0.4
baz=308,SNR=11
121A **Cookes Peak, D** 51.63 84 P P 09 29 35.4 +0.5
baz=313
BGNE **Belgrade** 51.65 69 P P 09 29 35.2 +0.4
baz=309
BGNE **Belgrade** 51.65 69 *e*P P 09 29 35.1 +0.4
comp=Z,38nm,0.6s
L33A **Hoskins** 51.68 68 P P 09 29 34.6 -0.4
baz=309
J34A **George** 51.73 66 P P 09 29 35.1 -0.3
baz=309
G36A **St. Michael** 51.76 63 P P 09 29 35.1 -0.4
baz=308
O31A **Woolen Ranch,** 51.76 71 P P 09 29 36.1 +0.5
baz=310
I35A **Creekview Farm** 51.93 65 P P 09 29 36.2 -0.6
baz=309
K34A **Le Mars** 52.03 67 P P 09 29 37.2 -0.3
baz=309,SNR=6.1
H36A **Jessenland, He** 52.07 64 P P 09 29 38.0 +0.2
baz=309,SNR=23
M33A **Taylor Creek F** 52.10 68 P P 09 29 38.1 0.0
baz=309
SPMN **Marine on St.** 52.29 62 P P 09 29 39.2 -0.2
baz=309,SNR=7.0
SPMN **Marine on St.** 52.29 62 *e*P P 09 29 39.1 -0.4
comp=Z,30nm,1.3s

L34A **Svendsen Farm,** 52.33 68 P P 09 29 39.5 -0.3
baz=309
I36A **Fitzsimmons Fa** 52.37 64 P P 09 29 39.5 -0.5
baz=309
CBKS **Cedar Bluff** 52.38 73 P P 09 29 40.9 +0.6
baz=310,SNR=8.9
CBKS **Cedar Bluff** 52.38 73 *e*P P 09 29 40.9 +0.6
CBKS pmax pmax
comp=Z,24nm,0.8s
CBKS **Cedar Bluff** 52.38 73 *e*P P 09 29 40.9 +0.6
comp=Z,24nm,0.8s
N33A **J Bar K, Exete** 52.49 69 P P 09 29 40.5 -0.5
baz=310
M34A **Aspy Farms, Fr** 52.50 68 P P 09 29 40.7 -0.4
baz=310
P32A **Huiting Farm,** 52.53 71 P P 09 29 41.2 -0.1
baz=310
J36A **Seneca 1, Swea** 52.62 65 P P 09 29 41.5 -0.4
baz=309
H37A **Dierke Farm, C** 52.63 63 P P 09 29 42.2 +0.3
baz=309
L35A **Bielow Farm, R** 52.71 67 P P 09 29 41.9 -0.7
baz=310
I37A **Lemond, Waseca** 52.72 64 P P 09 29 42.8 +0.1
baz=309,SNR=13
O33A **Hebron** 52.84 70 P P 09 29 43.2 -0.4
baz=310,SNR=6.3
Q32A **Meitler Ranch,** 52.96 72 P P 09 29 44.6 +0.1
baz=311,SNR=9.1
N34A **Lincoln** 52.98 69 P P 09 29 44.5 -0.1
baz=310
K36A **Gilmore City** 53.00 66 P P 09 29 44.5 -0.2
baz=310
M35A **Neola** 53.04 68 P P 09 29 44.9 -0.1
baz=310
J37A **Redenius Farm,** 53.08 65 P P 09 29 45.1 -0.2
baz=310,SNR=5.9
R32A **Long Quarter,** 53.24 72 P P 09 29 46.6 0.0
baz=311
O34A **Beatrice** 53.29 69 P P 09 29 46.6 -0.2
baz=310
I38A **Scanlan Farm,** 53.30 63 P P 09 29 46.9 0.0
baz=310
K37A **Belmond** 53.38 65 P P 09 29 47.2 -0.3
baz=310,SNR=6.9
Q33A **Connelly Farm,** 53.39 71 P P 09 29 47.9 +0.3
baz=311,SNR=6.9
N35A **Tabor** 53.46 68 P P 09 29 48.6 +0.5
baz=310,SNR=5.6
M36A **Felix, Anita** 53.56 67 P P 09 29 49.2 +0.4
baz=310
S32A **Newby Ranch, P** 53.58 73 P P 09 29 49.0 -0.2
baz=311
J38A **Wedel Dairy, R** 53.68 64 P P 09 29 49.3 -0.4
baz=310
O35A **Humboldt** 53.69 69 P P 09 29 49.2 -0.6
baz=311
MNTX **Cornudas Mount** 53.69 83 P P 09 29 50.7 +0.7
baz=314,SNR=7.0
MNTX **Cornudas Mount** 53.69 83 *e*P P 09 29 50.6 +0.6
comp=Z,7.9nm,1.3s
L37A **Phoenix Point,** 53.73 66 P P 09 29 49.8 -0.3
baz=310,SNR=15
MSTX **Muleshoe** 53.75 79 P P 09 29 50.7 +0.2
baz=313
MSTX **Muleshoe** 53.75 79 *e*P P 09 29 50.7 +0.2
comp=Z,11nm,0.9s
AMTX **Amarillo** 53.80 78 P P 09 29 50.4 -0.4
baz=312
AMTX **Amarillo** 53.80 78 *e*P P 09 29 51.1 +0.3
comp=Z,7.7nm,0.8s
N36A **Muff Farm, Cla** 53.88 68 P P 09 29 51.4 +0.2
baz=310
T32A **Huddler Ranch,** 53.94 74 P P 09 29 51.8 +0.2
baz=312
Q34A **Chapman** 53.96 71 P P 09 29 51.8 0.0
baz=311
M37A **Trindle Farm,** 54.02 67 P P 09 29 52.5 +0.3
baz=310,SNR=8.0
KSU1 **Kansas State U** 54.04 70 P P 09 29 52.0 -0.4
baz=311
KSU1 **Kansas State U** 54.04 70 *e*P P 09 29 52.1 -0.4
comp=Z,15nm,1.1s
P35A **Duane Minner,** 54.11 70 P P 09 29 52.6 -0.2
baz=311
L38A **Oak Wood Farm,** 54.17 65 P P 09 29 52.5 -0.8
baz=310,SNR=7.3
SCIA **State Center** 54.17 66 *e*P P 09 29 53.7 +0.4
comp=Z,32nm,0.7s
R34A **Isabella, Hill** 54.19 72 P P 09 29 52.7 -0.8
baz=311
S33A **Kaszmaul Farm,** 54.21 73 P P 09 29 53.6 -0.1
baz=312
O36A **Bolckow** 54.33 68 P P 09 29 54.2 -0.2
baz=311
N37A **Lee Faris, Mou** 54.35 67 P P 09 29 55.0 +0.4
baz=311,SNR=10
T33A **Patterson Ranc** 54.41 73 P P 09 29 54.9 -0.2
baz=312
U32A **Winter Ranch,** 54.42 75 P P 09 29 55.3 +0.1
baz=312
M38A **Pleasantville** 54.50 66 P P 09 29 55.5 -0.2
baz=311,SNR=5.7
P36A **Good Intent, A** 54.52 69 P P 09 29 55.3 -0.6
baz=311,SNR=5.9
Q35A **Mercer Eighty,** 54.54 70 P P 09 29 55.9 -0.1
baz=311
S34A **Willow Spring** 54.67 72 P P 09 29 56.1 -0.8
baz=312
O37A **Wolin Farm, M** 54.78 68 P P 09 29 57.7 0.0
baz=311
R35A **Emporia Munici** 54.80 71 P P 09 29 57.7 -0.2
baz=312
N38A **Joes South For** 54.89 67 P P 09 29 58.2 -0.3
baz=311,SNR=9.0
U33A **Lingo Farm, Me** 54.92 74 P P 09 29 58.5 -0.3
baz=312
P37A **Lathrop** 55.04 69 P P 09 29 58.9 -0.8
baz=311,SNR=10
T34A **McClaskey Farm** 55.08 73 P P 09 29 59.7 -0.2
baz=312,SNR=6.1
W32A **Sentinel** 55.12 76 P P 09 30 00.5 +0.3
baz=312
S35A **Otter Creek Ra** 55.15 72 P P 09 30 00.1 -0.3
baz=312
JFWS **Jewell Farm** 55.18 63 *e*P P 09 29 59.5 -1.1
JFWS pmax pmax
comp=Z,19nm,0.6s
JFWS **Jewell Farm** 55.18 63 *e*P P 09 29 59.5 -1.1
comp=Z,19nm,0.6s
O38A **Galt** 55.19 68 P P 09 30 00.3 -0.4
baz=311
R36A **Gordon, Harris** 55.20 70 P P 09 30 00.6 -0.2
baz=312,SNR=5.8
V33A **Lossen Ranch,** 55.22 75 P P 09 30 00.9 -0.1
baz=312
N39A **Derby Farms, D** 55.25 66 P P 09 30 00.9 -0.2
baz=311,SNR=9.2
U34A **Anderson Ranch** 55.26 73 P P 09 30 01.4 +0.2
baz=312,SNR=7.9
U34A **Anderson Ranch** 55.26 73 *e*P P 09 30 01.3 0.0
comp=Z,18nm,0.7s
ZALV **Zalesovo Beam** 55.44 315 LR LR 09 55 32.9
comp=Z,84nm,18.1s,baz=50,slow=38
Q37A **Longview Farm,** 55.45 69 P P 09 30 02.3 -0.3
baz=312
P38A **Dawn** 55.49 68 P P 09 30 02.5 -0.4
baz=312,SNR=6.6
T35A **Sooner Cattle** 55.55 72 P P 09 30 02.7 -0.6
baz=312
S36A **Lake Cedric, C** 55.55 71 P P 09 30 02.8 -0.5
baz=312
W33A **Caddo, Fort Co** 55.57 75 P P 09 30 03.9 +0.5
baz=313
X32A **Elmer** 55.57 76 P P 09 30 04.0 +0.5
baz=313,SNR=13
R37A **Teagarden Farm** 55.61 70 P P 09 30 02.7 -1.0
baz=312
O39A **Kirksville** 55.64 67 P P 09 30 03.3 -0.6
baz=312
WMOK **Wichita Mounta** 55.66 76 *e*P P 09 30 04.8 +0.6
WMOK pmax pmax
comp=Z,11nm,0.8s
WMOK **Wichita Mounta** 55.66 76 *e*P P 09 30 04.8 +0.6
comp=Z,11nm,0.8s
V34A **Guthrie** 55.68 74 P P 09 30 04.1 -0.2
baz=312
V34A **Guthrie** 55.68 74 *e*P P 09 30 04.0 -0.2

comp=Z,18nm,1.0s
U35A **Pawnee** 55.78 73 P P 09 30 04.7 -0.3
baz=312
T36A **Boggs Farm, Ca** 55.83 72 P P 09 30 04.8 -0.5
baz=312
Q38A **Cooks Store, C** 55.88 69 P P 09 30 04.2 -1.4
baz=312
W34A **Bridge Creek,** 55.93 75 P P 09 30 05.6 -0.4
baz=313
W34A **Bridge Creek,** 55.93 75 *e*P P 09 30 06.2 +0.1
comp=Z,11nm,1.0s
X33A **Lawton** 55.96 76 P P 09 30 06.4 +0.1
baz=313,SNR=8.0
S37A **Fort Scott** 55.98 71 P P 09 30 05.7 -0.6
baz=312
O40A **La Belle** 56.11 67 P P 09 30 06.9 -0.3
baz=312,SNR=18
V35A **Meyer Ranch, C** 56.13 74 P P 09 30 07.0 -0.5
baz=313
Q39A **Willow Grove F** 56.20 68 P P 09 30 06.6 -1.3
baz=312,SNR=10.0
R38A **Fenwick Farm,** 56.23 70 P P 09 30 07.0 -1.2
baz=312
X34A **Smith Ranch, M** 56.32 75 P P 09 30 07.9 -1.0
baz=313
T37A **Cheneyville 18** 56.35 71 P P 09 30 07.9 -1.1
baz=312,SNR=7.3
U36A **Oologah** 56.36 72 P P 09 30 08.3 -0.8
baz=313
TX31 **Lajitas Ar. Si** 56.39 84 *e*P P 09 30 09.8 +0.2
TXAR **Lajitas Array** 56.39 84 P P 09 30 09.6 0.0
comp=Z,2.3nm,0.8s,baz=300,slow=8.2,SNR=26
TXAR LR LR 09 53 35.5
comp=Z,39nm,18.9s,baz=0.0,slow=35
P40A **Paris** 56.41 67 P P 09 30 08.5 -0.9
baz=312,SNR=22
W35A **Tecumseh** 56.52 74 P P 09 30 10.4 +0.1
baz=313,SNR=11
ABTX **Abilene, Hawle** 56.58 78 P P 09 30 11.4 +0.7
baz=314
ABTX **Abilene, Hawle** 56.58 78 *e*P P 09 30 11.4 +0.7
comp=Z,13nm,1.0s
S38A **Stockton** 56.60 70 P P 09 30 09.6 -1.2
baz=312,SNR=7.9
V36A **Jenks** 56.65 73 P P 09 30 11.1 -0.1
baz=313,SNR=5.8
R39A **Chumby, Stover** 56.65 69 P P 09 30 10.1 -1.1
baz=312
TUL1 **Leonard** 56.65 73 P P 09 30 10.9 -0.3
baz=313
TUL1 **Leonard** 56.65 73 *e*P P 09 30 11.0 -0.3
comp=Z,9.9nm,0.9s
Z33A **Whitaker Ranch** 56.66 77 P P 09 30 11.2 -0.1
baz=314,SNR=6.1
U37A **Salina** 56.72 72 P P 09 30 11.1 -0.6
baz=313,SNR=9.3
Q40A **Laux Farm, Aux** 56.75 68 P P 09 30 11.1 -0.8
baz=312,SNR=9.7
T38A **Diamond** 56.78 71 P P 09 30 11.2 -0.9
baz=313
Y34A **Reagan Ranch,** 56.81 76 P P 09 30 12.7 +0.4
baz=313,SNR=11
S39A **Bolivar** 56.90 70 P P 09 30 11.2 -1.7
baz=313
W36A **Wetumka** 56.92 74 P P 09 30 13.3 +0.2
baz=313
X35A **Drake** 56.98 75 P P 09 30 14.0 +0.4
baz=313,SNR=13
133A **Hamilton Ranch** 57.03 78 P P 09 30 14.1 +0.1
baz=314,SNR=14
V37A **Hulbert** 57.06 72 P P 09 30 13.4 -0.7
baz=313,SNR=6.3
R40A **Maddies Statio** 57.11 68 P P 09 30 12.8 -1.6
baz=313,SNR=12
Z34A **Collier Ranch,** 57.12 76 P P 09 30 14.9 +0.4
baz=314,SNR=6.1
U38A **Gravette** 57.13 71 P P 09 30 13.4 -1.1
baz=313
X36A **Centrahoma** 57.23 74 P P 09 30 15.7 +0.4
baz=313,SNR=8.1
Y35A **Marietta** 57.28 75 P P 09 30 16.1 +0.4
baz=314,SNR=7.3
HDIL **Hopedale** 57.28 65 P P 09 30 15.1 -0.4
baz=312,SNR=6.9
HDIL **Hopedale** 57.28 65 *e*P P 09 30 15.2 -0.4
comp=Z,31nm,0.8s
T39A **Clever** 57.32 70 P P 09 30 14.7 -1.2
baz=313,SNR=9.6
W37B **Quinton** 57.40 73 P P 09 30 16.2 -0.3
baz=313,SNR=5.2
LZH **Lanzhou** 57.44 288 *e*P **P** 09 30 17.1 +0.1
LZH pP pP 09 30 28.0 -4.6
LZH sP sP 09 30 32.1 -7.2
LZH PP **PP** 09 32 25.5 +0.9
LZH pmax pmax
comp=Z,22nm,1.3s
LZH pmax pmax
comp=Z,70nm,7.4s
LZH LR LR
comp=Z,320nm,14.8s
LZH LR LR
comp=Z,340nm,15.2s
LZH LR LR
comp=Z,380nm,18.9s
233A **Rising Star** 57.45 78 P P 09 30 17.1 +0.2
baz=314,SNR=6.4
HHAR **Hobbs** 57.50 71 *e*P P 09 30 16.7 -0.5
comp=Z,4.4nm,1.1s
V38A **Canehill** 57.51 72 P P 09 30 16.7 -0.5
baz=313
Z35A **Perchaven, San** 57.54 76 P P 09 30 17.5 -0.1
baz=314
134A **White-Moore Ra** 57.57 77 P P 09 30 18.2 +0.5
baz=314,SNR=12
U39A **Green Forest** 57.70 71 P P 09 30 17.5 -1.1
baz=313
Y36A **Durant** 57.73 75 P P 09 30 19.4 +0.5
baz=314
T40A **Mansfield** 57.74 70 P P 09 30 17.5 -1.3
baz=313
X37A **Clayton** 57.81 74 P P 09 30 19.7 +0.4
baz=314,SNR=7.6
333A **Richland Sprin** 57.88 79 P P 09 30 20.1 +0.1
baz=314,SNR=8.6
234A **Clairette** 57.93 78 P P 09 30 20.7 +0.5
baz=314,SNR=10
JCT **Junction City** 57.97 80 P P 09 30 20.5 -0.1
baz=315
V39A **Pettigrew** 57.98 71 P P 09 30 20.1 -0.5
baz=313
W38A **Poteau** 57.99 73 P P 09 30 20.9 +0.3
baz=314,SNR=5.6
ENH **Enshi** 58.05 280 *e*P P 09 30 20.6 -0.5
comp=Z,6.5nm,0.4s
X38A **Whitesboro** 58.08 73 P P 09 30 21.4 +0.1
baz=314
Y37A **Hugo** 58.08 74 P P 09 30 21.5 +0.3
baz=314,SNR=7.2
Z36A **Blue Ridge** 58.08 76 P P 09 30 21.5 +0.2
baz=314,SNR=5.2
U40A **Yellville** 58.09 70 P P 09 30 20.2 -1.1
baz=313,SNR=6.9
ARCES **ARCESS Array B** 58.16 352 P P 09 30 20.4 -1.0
comp=Z,6.4nm,0.9s,baz=15,slow=8.3,SNR=5.6
433A **Art** 58.22 79 P P 09 30 21.5 -0.8
baz=315
334A **Lometa** 58.33 78 P P 09 30 23.6 +0.5
baz=314,SNR=20
W39A **Magazine** 58.34 72 P P 09 30 23.0 0.0
baz=314
WHTX **Lake Whitney,** 58.35 77 P P 09 30 23.7 +0.5
baz=314
WHTX **Lake Whitney,** 58.35 77 *e*P P 09 30 23.7 +0.5
comp=Z,17nm,0.6s
SCHQ **Schefferville** 58.37 40 P P 09 30 21.7 -1.3
comp=Z,4.8nm,0.7s,baz=336,slow=5.2,SNR=6.4
SCHQ LR LR 09 57 05.9
comp=Z,64nm,18.9s,baz=34,slow=38
V40A **Witts Springs** 58.48 71 P P 09 30 23.2 -0.9
baz=314,SNR=7.8
136A **Ennis** 58.58 76 P P 09 30 24.7 0.0
baz=314
X39A **Fountain Ranch** 58.61 73 P P 09 30 25.2 +0.2
baz=314,SNR=9.8
Z37A **Pogue Cattle C** 58.62 75 P P 09 30 25.4 +0.4
baz=314
SFIN **Lafayette** 58.63 63 P P 09 30 25.0 0.0
baz=313,SNR=8.2

Y38A	**Idabel**	**58.65**	**74**	P		**P**	**09 30 25.3**	**+0.1**
	baz=314							
434A	**Burnet**	**58.68**	**79**	P		**P**	**09 30 25.4**	**-0.2**
	baz=315,SNR=9.6							
533A	**Kerrville**	**58.73**	**80**	P		**P**	**09 30 25.6**	**-0.3**
	baz=315							
W40A	**Ferguson Farm,**	**58.76**	**72**	P		**P**	**09 30 25.6**	**-0.4**
	baz=314							
335A	**Moody**	**58.86**	**78**	P		**P**	**09 30 26.8**	**+0.1**
	baz=315							
236A	**Katherine and**	**58.91**	**77**	P		**P**	**09 30 27.2**	**+0.2**
	baz=314,SNR=6.8							
MIAR	**Mount Ida**	**58.91**	**72**	P		**P**	**09 30 26.7**	**-0.3**
	baz=314,SNR=9.8							
MIAR	**Mount Ida**	**58.91**	**72**	*eP*		**P**	**09 30 27.4**	**+0.4**
MIAR				pmax	pmax			
	comp=Z,10.0nm,0.8s							
MIAR	**Mount Ida**	**58.91**	**72**	*eP*		**P**	**09 30 27.4**	**+0.4**
	comp=Z,10nm,0.8s							
137A	**Heron Place, G**	**58.96**	**76**	P		**P**	**09 30 28.2**	**+0.8**
	baz=314							
Z38A	**Mt. Pleasant**	**58.97**	**75**	P		**P**	**09 30 27.1**	**-0.3**
	baz=314							
Y39A	**Lockesburg**	**59.02**	**73**	P		**P**	**09 30 27.9**	**+0.1**
	baz=314,SNR=6.1							
534A	**Blanco**	**59.10**	**80**	P		**P**	**09 30 28.0**	**-0.5**
	baz=315							
435B	**Jarrell**	**59.12**	**78**	P		**P**	**09 30 28.4**	**-0.1**
	baz=315							
336A	**Riesel**	**59.14**	**77**	P		**P**	**09 30 29.4**	**+0.8**
	baz=315,SNR=8.1							
OLIL	**Olney**	**59.20**	**65**	*eP*		**P**	**09 30 28.8**	**-0.1**
	comp=Z,41nm,0.9s							
W41B	**Gary Mavity, V**	**59.26**	**71**	P		**P**	**09 30 28.8**	**-0.6**
	baz=314							
W41A	**Tony Mavity, V**	**59.26**	**71**	P		**P**	**09 30 28.9**	**-0.5**
	baz=314							
138A	**Matatall Enter**	**59.31**	**75**	P		**P**	**09 30 30.2**	**+0.4**
	baz=314							
237A	**Washetta, Mont**	**59.34**	**76**	P		**P**	**09 30 29.5**	**-0.6**
	baz=315							
X40A	**Basin Creek Fa**	**59.39**	**72**	P		**P**	**09 30 30.6**	**+0.2**
	baz=314							
832A	**Faith Ranch, C**	**59.42**	**82**	P		**P**	**09 30 30.3**	**-0.3**
	baz=316,SNR=5.7							
Y40A	**Okolona**	**59.45**	**73**	P		**P**	**09 30 31.0**	**+0.2**
	baz=314							
733A	**Divot King Ran**	**59.53**	**81**	P		**P**	**09 30 31.9**	**+0.5**
	baz=316							
436A	**Wall Ranch, Ga**	**59.61**	**78**	P		**P**	**09 30 32.9**	**+1.0**
	baz=315							
634A	**China Grove, S**	**59.64**	**80**	P		**P**	**09 30 32.8**	**+0.6**
	baz=315							
535A	**Dale**	**59.66**	**79**	P		**P**	**09 30 32.7**	**+0.5**
	baz=315							
139A	**Bunkhouse Ranc**	**59.72**	**75**	P		**P**	**09 30 33.1**	**+0.5**
	baz=315							
833A	**Chaparral WMA,**	**59.75**	**82**	P		**P**	**09 30 33.4**	**+0.5**
	baz=316							
238A	**Jacksonville**	**59.76**	**76**	P		**P**	**09 30 34.0**	**+1.1**
	baz=315							
337A	**Centerville**	**59.78**	**77**	P		**P**	**09 30 33.1**	**+0.1**
	baz=315							
WLAR	**White Oak Lake**	**59.78**	**73**	*eP*		**P**	**09 30 33.5**	**+0.5**
	comp=Z,19nm,0.9s							
BLO	**Bloomington**	**59.78**	**64**	*eP*		**P**	**09 30 32.9**	**-0.1**
BLO				pmax	pmax			
	comp=Z,25nm,0.9s							
BLO	**Bloomington**	**59.78**	**64**	*eP*		**P**	**09 30 32.9**	**-0.1**
	comp=Z,25nm,0.9s							
734A	**La Parita Cree**	**59.89**	**81**	P		**P**	**09 30 34.4**	**+0.5**
	baz=316							
Z40A	**Long Farm, Mag**	**59.91**	**73**	P		**P**	**09 30 33.7**	**-0.2**
	baz=315							
437A	**Phantom Ranch,**	**59.97**	**77**	P		**P**	**09 30 35.4**	**+1.1**
	baz=315							
USIN	**University of**	**59.98**	**66**	*eP*		**P**	**09 30 34.3**	**0.0**
	comp=Z,38nm,0.8s							
635A	**Leesville**	**59.99**	**80**	P		**P**	**09 30 35.2**	**+0.7**
	baz=315,SNR=5.4							
933A	**Laredo**	**60.33**	**82**	P		**P**	**09 30 37.9**	**+1.1**
	baz=316							
735A	**Kenedy**	**60.34**	**80**	P		**P**	**09 30 37.3**	**+0.3**
	baz=316							
636A	**Smothers Creek**	**60.36**	**79**	P		**P**	**09 30 38.3**	**+1.2**
	baz=316							
KURK	**Kurchatov**	**60.42**	**315**	P		**P**	**09 30 36.2**	**-0.9**
KURK				pmax	pmax			
	comp=Z,3.0nm,0.5s							
KURK	**Kurchatov**	**60.42**	**315**	P		**P**	**09 30 36.2**	**-0.9**
Y42A	**Garnett, Star**	**60.46**	**72**	P		**P**	**09 30 38.3**	**+0.6**
	baz=315							
KURBB	**Kurchatov Arra**	**60.52**	**315**	P		**P**	**09 30 36.2**	**-1.7**
	comp=Z,3.1nm,0.5s,baz=42,slow=6.5,SNR=10							
WCI	**Wyandotte Cave**	**60.57**	**65**	*eP*		**P**	**09 30 38.4**	**0.0**
WCI				pmax	pmax			
	comp=Z,23nm,0.8s							
WCI	**Wyandotte Cave**	**60.57**	**65**	*eP*		**P**	**09 30 38.4**	**0.0**
	comp=Z,23nm,0.8s							
736A	**Circle Diamond**	**60.73**	**79**	P		**P**	**09 30 41.1**	**+1.5**
	baz=316							
Z42A	**Norrel Spur, H**	**60.76**	**72**	P		**P**	**09 30 40.4**	**+0.7**
	baz=315							
538A	**Harpers Horsep**	**60.79**	**77**	P		**P**	**09 30 42.0**	**+2.1**
	baz=315							
934A	**Benavides**	**60.80**	**82**	P		**P**	**09 30 41.6**	**+1.5**
	baz=316							
WMQ	**Urumqi**	**61.04**	**305**	*eP*		**P**	**09 30 42.8**	**+1.2**
WMQ				pmax	pmax			
	comp=Z,23nm,1.0s							
WMQ				pmax	pmax			
	comp=Z,31nm,5.2s							
WMQ				LR	LR			
	comp=Z,20nm,24.4s							
WMQ				LR	LR			
	comp=Z,35nm,20.0s							
241A	**Mo Tay, Goldon**	**61.07**	**74**	P		**P**	**09 30 42.5**	**+0.7**
	baz=315							
CD2	**Chengdu**	**61.09**	**284**	P		**P**	**09 30 39.6**	**-2.5**
CD2				pmax	pmax			
	comp=Z,1.0nm,0.5s							
WVT	**Waverly**	**61.16**	**67**	*eP*		**P**	**09 30 42.5**	**+0.1**
WVT				pmax	pmax			
	comp=Z,8.0nm,1.0s							
WVT	**Waverly**	**61.16**	**67**	*eP*		**P**	**09 30 42.5**	**+0.1**
	comp=Z,7.7nm,1.0s							
737A	**Port Lavaca**	**61.25**	**79**	P		**P**	**09 30 44.6**	**+1.5**
	baz=316							
440A	**Kirbyville**	**61.34**	**76**	P		**P**	**09 30 44.5**	**+0.8**
	baz=316							
341A	**Kurthwood**	**61.40**	**75**	P		**P**	**09 30 44.6**	**+0.5**
	baz=315							
ALLY	**Alegheny Colle**	**61.53**	**58**	*eP*		**P**	**09 30 45.4**	**+0.6**
	comp=Z,66nm,0.8s							
MK31	**Makanchi Array**	**61.59**	**310**	*eP*		**P**	**09 30 44.4**	**-0.8**
MK31	**Makanchi Array**	**61.59**	**310**	*eP*		**P**	**09 30 44.4**	**-0.8**
MKAR	**Makanchi Array**	**61.59**	**310**	P		**P**	**09 30 43.7**	**-1.5**
	comp=Z,0.9nm,0.3s,baz=58,slow=6.1,SNR=9.0							
MKAR				LR	LR		09 57 57.2	
	comp=Z,59nm,19.8s,baz=20,slow=36							
MKAR	**Makanchi Array**	**61.59**	**310**	*iP*		**P**	**09 30 44.2**	**-1.0**
MKAR				pmax	pmax			
	comp=Z,1.0nm,0.3s							
MKAR	**Makanchi Array**	**61.59**	**310**	*eP*		**P**	**09 30 44.4**	**-0.8**
MK01	**Makanchi Array**	**61.60**	**310**	*eP*		**P**	**09 30 43.4**	**-1.9**
Z44A	**Pea Ridge, Bel**	**61.66**	**71**	P		**P**	**09 30 45.6**	**-0.2**
	baz=315							
540A	**Vidor**	**61.71**	**76**	P		**P**	**09 30 45.3**	**-0.9**
	baz=316							
Y45A	**Yeager Farm, C**	**61.77**	**70**	P		**P**	**09 30 46.2**	**-0.3**
	baz=315							
M54A	**Oil Creek Stat**	**61.88**	**58**	P		**P**	**09 30 47.6**	**+0.4**
	baz=315,SNR=5.0							
035Z	**Hargill**	**61.90**	**82**	P		**P**	**09 30 47.7**	**+0.2**
	baz=316							
MMNY	**Mt. Morris Dam**	**61.93**	**56**	*eP*		**P**	**09 30 47.9**	**+0.4**
	comp=Z,51nm,1.1s							
BVAR	**Borovoye Array**	**62.09**	**322**	P		**P**	**09 30 47.5**	**-0.9**
	comp=Z,2.5nm,0.3s,baz=58,slow=6.3,SNR=15							
BVAR	**Borovoye Array**	**62.09**	**322**	P		**P**	**09 30 47.5**	**-0.9**
BVAR				pmax	pmax			
	comp=Z,2.0nm,0.3s							
N54A	**Moraine State**	**62.10**	**59**	P		**P**	**09 30 48.8**	**+0.1**
	baz=315,SNR=8.8							
BRVK	**Borovoye**	**62.10**	**322**	*ceP*		**P**	**09 30 49.5**	**+1.0**
BRVK				pmax	pmax			
	comp=Z,4.0nm,1.0s							
144A	**Alexander Plac**	**62.12**	**72**	P		**P**	**09 30 49.6**	**+0.7**
	baz=315							
Y46A	**Houston**	**62.15**	**70**	P		**P**	**09 30 49.2**	**+0.1**
	baz=315,SNR=7.5							
VBMS	**Vicksburg**	**62.36**	**72**	P		**P**	**09 30 50.8**	**+0.3**
	baz=316							
244A	**Avery, Jackson**	**62.38**	**73**	P		**P**	**09 30 51.3**	**+0.6**
	baz=316,SNR=7.6							
145A	**Houston Renfro**	**62.43**	**72**	P		**P**	**09 30 51.1**	**+0.1**
	baz=316							
GYA	**Guiyang**	**62.51**	**279**	*eP*		**P**	**09 30 51.0**	**-0.8**
GYA				pmax	pmax			
	comp=Z,10.0nm,0.8s							
443A	**Delano Plantat**	**62.64**	**74**	P		**P**	**09 30 54.3**	**+1.9**
	baz=316							
ZRNK	**Zerenda**	**62.68**	**322**	*eP*		**P**	**09 30 51.5**	**-0.9**
ZRNK				pmax	pmax			
	comp=Z,7.0nm,1.1s							
ZRNK	**Zerenda**	**62.68**	**322**	*eP*		**P**	**09 30 51.5**	**-0.9**
	comp=Z,6.6nm,1.1s							
Y47A	**UCPARC, Winfie**	**62.73**	**69**	P		**P**	**09 30 52.5**	**-0.4**
	baz=316							
344A	**Westbrook Farm**	**62.78**	**73**	P		**P**	**09 30 52.6**	**-0.7**
	baz=316							
245A	**Little AP, Sta**	**62.86**	**72**	P		**P**	**09 30 54.2**	**+0.4**
	baz=316							
SWET	**Sewanee**	**62.90**	**67**	*eP*		**P**	**09 30 53.6**	**-0.5**
	comp=Z,3.1nm,1.1s							
146A	**Union**	**62.92**	**71**	P		**P**	**09 30 54.7**	**+0.4**
	baz=316							
Z47A	**Carrollton**	**63.10**	**70**	P		**P**	**09 30 54.2**	**-1.3**
	baz=316							
MCWV	**Mont Chateau**	**63.10**	**60**	*eP*		**P**	**09 30 56.0**	**+0.6**
	comp=Z,24nm,1.0s							
BINY	**Binghamton**	**63.30**	**55**	*eP*		**P**	**09 30 56.8**	**+0.1**
	comp=Z,50nm,1.3s							
345A	**Thompson Farm,**	**63.30**	**73**	P		**P**	**09 30 55.5**	**-1.3**
	baz=316							
O56A	**Blue Knob Stat**	**63.35**	**58**	P		**P**	**09 30 57.0**	**-0.1**
	baz=316,SNR=8.3							
SSPA	**Standing Stone**	**63.44**	**58**	*eP*		**P**	**09 30 57.7**	**+0.1**
	comp=Z,22nm,0.8s							
ARU	**Arti**	**63.51**	**330**	P		**P**	**09 30 56.5**	**-1.3**
	comp=Z,2.4nm,0.4s,baz=356,slow=4.7,SNR=5.9							
ARU	**Arti**	**63.51**	**330**	*diP*		**P**	**09 30 56.2**	**-1.6**
ARU				S		**S**	**09 39 27.4**	**+1.2**
ARU				SS		**SS**	**09 43 33.0**	**-0.1**
ARU				pmax	pmax			
	comp=Z,9.0nm,1.7s							
TKL	**Tuckaleechee C**	**63.81**	**65**	*eP*		**P**	**09 31 00.3**	**+0.2**
TKL				pmax	pmax			
	comp=Z,9.0nm,0.9s							
TKL	**Tuckaleechee C**	**63.81**	**65**	*eP*		**P**	**09 31 00.3**	**+0.2**
	comp=Z,9.0nm,0.9s							
KSPA	**Keystone Colle**	**63.87**	**56**	*eP*		**P**	**09 31 00.9**	**+0.5**
	comp=Z,19nm,1.1s							
347A	**Saraland**	**64.11**	**72**	P		**P**	**09 31 02.8**	**+0.6**
	baz=316							
N59A	**State Game Lan**	**64.34**	**56**	P		**P**	**09 31 03.8**	**+0.2**
	baz=317,SNR=6.6							
BLA	**Blacksburg**	**64.56**	**62**	*eP*		**P**	**09 31 05.8**	**+0.8**
BLA				pmax	pmax			
	comp=Z,34nm,0.9s							
BLA	**Blacksburg**	**64.56**	**62**	*eP*		**P**	**09 31 05.8**	**+0.8**
	comp=Z,34nm,0.9s							
LUPA	**Lehigh Univers**	**64.78**	**56**	*eP*		**P**	**09 31 07.0**	**+0.6**
	comp=Z,46nm,1.3s							
SDMD	**Soldier's Deli**	**64.88**	**58**	*eP*		**P**	**09 31 07.7**	**+0.6**
	comp=Z,14nm,0.9s							
BRNJ	**Basking Ridge**	**65.13**	**55**	*eP*		**P**	**09 31 09.2**	**+0.6**
	comp=Z,18nm,0.8s							
KMSC	**Kings Mountain**	**65.56**	**64**	P		**P**	**09 31 11.9**	**+0.4**
	baz=317,SNR=10							
JSRW	**J. Sargeant Re**	**65.59**	**60**	*eP*		**P**	**09 31 11.9**	**+0.3**
GOGA	**Godfrey**	**65.61**	**67**	*eP*		**P**	**09 31 11.4**	**-0.4**
GOGA				pmax	pmax			
	comp=Z,27nm,1.6s							
GOGA	**Godfrey**	**65.61**	**67**	*eP*		**P**	**09 31 11.4**	**-0.4**
	comp=Z,28nm,1.6s							
KMI	**Kunming**	**65.89**	**280**	P		**P**	**09 31 14.8**	**+0.7**
KMI				pmax	pmax			
	comp=Z,17nm,0.9s							
KMI				pmax	pmax			
	comp=Z,91nm,4.5s							
FINES	**FINESS Array B**	**65.97**	**349**	P		**P**	**09 31 11.3**	**-2.3**
	comp=Z,1.6nm,0.7s,baz=343,slow=6.0,SNR=4.5							
FINES				LR	LR		10 03 13.8	
	comp=Z,64nm,20.3s,baz=16,slow=39							
FINES	**FINESS Array B**	**65.97**	**349**	*ceP*		**P**	**09 31 15.8**	**+2.1**
FINES				pmax	pmax			
	comp=Z,2.0nm,0.8s							
NB201	**NORSAR Array S**	**67.52**	**357**	*eP*		**P**	**09 31 22.9**	**-0.7**
NB2	**NORSAR Subarra**	**67.53**	**357**	P		**P**	**09 31 22.5**	**-1.2**
	comp=Z,1.0nm,0.6s,baz=5.0,slow=6.5							
NOA	**NORSAR Array B**	**67.53**	**357**	P		**P**	**09 31 22.8**	**-0.9**
	comp=Z,2.5nm,0.8s,baz=3.8,slow=6.3,SNR=9.3							
AAK	**Ala-Archa**	**68.37**	**312**	P		**P**	**09 31 27.2**	**-2.3**
	comp=Z,2.0nm,0.4s,baz=173,slow=2.0,SNR=5.2							
AAK	**Ala-Archa**	**68.37**	**312**	*eP*		**P**	**09 31 30.5**	**+1.0**
AAK				pmax	pmax			
	comp=Z,3.0nm,1.1s							
AKTO	**Aktyubinsk**	**68.71**	**327**	P		**P**	**09 31 30.4**	**-0.8**
	comp=Z,4.7nm,0.7s,baz=52,slow=7.6,SNR=11							
VSU	**Vasula**	**68.78**	**348**	*ceP*		**P**	**09 31 31.3**	**-0.2**
VSU				pmax	pmax			
	comp=Z,90nm,2.5s							
ABKAR	**Akbulak array**	**69.03**	**325**	*eP*		**P**	**09 31 33.3**	**+0.1**
KKAR	**Karatay Array**	**69.81**	**315**	*eP*		**P**	**09 31 38.6**	**+0.4**
KKAR				pmax	pmax			
	comp=Z,2.0nm,0.6s							
KKAR	**Karatay Array**	**69.81**	**315**	*eP*		**P**	**09 31 38.6**	**+0.4**
	comp=Z,2.4nm,0.6s							
KSH	**Kashi**	**70.10**	**309**	*eP*		P	09 31 45.9	+5.8
KSH				*ep*		pP	09 31 57.4	+1.2
KSH				S		S	09 40 55.4	+8.9
KSH				SS		SS	09 45 28.8	+13
KSH				pmax	pmax			
	comp=Z,76nm,4.8s							
OBN	**Obninsk**	**70.36**	**341**	*eP*		**P**	**09 31 40.3**	**-0.9**
OBN				*e*			09 32 00.1	
OBN				*e*			09 34 14.5	
OBN				pmax	pmax			
	comp=Z,6.0nm,1.1s							
OBN				MLR	MLR			
	comp=Z,52nm,14.0s							
PMOR	**Pomariorio Ree**	**70.52**	**152**	*eT*		T	10 48 55.5	
	comp=Z,7.8nm,0.2s							
PPT2	**Papeete2**	**72.51**	**154**	*e*	LR	LR	09 54 18.6	
	comp=Z,93nm,22.2s							
PPT2	**Papeete2**	**72.51**	**154**	*eT*		T	10 51 24.0	
	comp=Z,17nm,0.3s							
TIAR	**Tiarei**	**72.54**	**154**	*eT*		T	10 51 26.1	
	comp=Z,3.3nm,0.2s							
PAE	**Paea**	**72.57**	**154**	*eT*		T	10 51 28.7	
	comp=Z,8.1nm,0.3s							
CHTO	**Chiang Mai**	**72.93**	**279**	*eP*		**P**	**09 31 57.7**	**+0.4**
CHTO				pmax	pmax			
	comp=Z,8.0nm,1.1s							
CHTO	**Chiang Mai**	**72.93**	**279**	*eP*		**P**	**09 31 57.7**	**+0.4**
	comp=Z,7.7nm,1.1s							
CMAR	**Chiang Mai Arr**	**73.20**	**279**	P		**P**	**09 31 59.7**	**+0.8**
	comp=Z,6.9nm,0.8s,baz=23,slow=7.5,SNR=31							
CM01	**Chiang Mai Arr**	**73.22**	**279**	*eP*		**P**	**09 31 59.3**	**+0.3**
KKN	**Kakani**	**74.23**	**295**	*eP*		**P**	**09 32 05.0**	**-0.1**
PKIN	**Phulchoki**	**74.33**	**295**	*eP*		**P**	**09 32 04.8**	**-0.9**
	comp=Z,6.1nm,0.5s							
GKN	**Gorkha**	**74.43**	**295**	*eP*		**P**	**09 32 05.5**	**-0.7**
	comp=Z,11nm,0.5s							
KOLN	**Koldanda**	**75.20**	**296**	*eP*		**P**	**09 32 10.2**	**-0.5**
	comp=Z,9.2nm,0.5s							
PYUN	**Piuthan**	**75.28**	**297**	*eP*		**P**	**09 32 10.8**	**-0.4**
	comp=Z,22nm,0.7s							
AKASG	**Malin Array Be**	**75.92**	**344**	P		**P**	**09 32 12.8**	**-1.3**
	comp=Z,1.7nm,0.4s,baz=16,slow=5.8,SNR=6.2							
CLL	**Collm**	**77.17**	**355**	*eP*		**P**	**09 32 20.0**	**-1.2**
CLL	**Collm**	**77.17**	**355**	*eP*		**P**	**09 32 20.0**	**-1.2**
SORM	**Soroca**	**78.55**	**344**	*iP*		**P**	**09 32 28.1**	**-0.8**
SORM	**Soroca**	**78.55**	**344**	P		**P**	**09 32 28.1**	**-0.8**
KAPI	**Kappang**	**78.82**	**247**	P		**P**	**09 32 31.6**	**+0.9**
	comp=Z,6.8nm,0.9s,baz=90,slow=4.0,SNR=3.7							
CTA	**Charters Tower**	**79.00**	**217**	P		**P**	**09 32 31.8**	**+0.2**
	comp=Z,2.9nm,0.5s,baz=21,slow=9.3,SNR=4.3							
MTN	**Manton Dam**	**79.21**	**233**	*eP*		**P**	**09 32 33.5**	**+0.6**
	comp=Z,25nm,1.0s							
KIV	**Kislovodsk**	**79.27**	**333**	*eP*		**P**	**09 32 33.1**	**0.0**
KIV				*e*			09 32 40.9	
KIV				*e*			09 35 35.1	
KIV				pmax	pmax			
	comp=Z,2.0nm,0.9s							
KIV				MLR	MLR			
	comp=Z,53nm,17.0s							
BUR08	**Bucovina Ar. S**	**79.53**	**346**	*eP*		**P**	**09 32 34.1**	**-0.3**
BURAR	**Bucovina Array**	**79.56**	**346**	*⇑iP*		**P**	**09 32 34.1**	**-0.5**
BURAR	**Bucovina Array**	**79.56**	**346**	*⇑P*		**P**	**09 32 34.1**	**-0.5**
GERES	**GERESS Array B**	**79.58**	**354**	P		**P**	**09 32 33.8**	**-0.9**
	comp=Z,0.5nm,0.6s,baz=34,slow=5.0,SNR=5.1							
BATI	**Baumata**	**80.89**	**241**	P		**P**	**09 32 41.9**	**-0.1**
	comp=Z,14nm,0.6s,baz=305,slow=6.0							
VRI	**Vrincioaia**	**81.03**	**345**	*⇓iP*		**P**	**09 32 43.5**	**+1.1**
VRI	**Vrincioaia**	**81.03**	**345**	*⇓P*		**P**	**09 32 43.5**	**+1.1**
PLOR	**Plostina**	**81.05**	**345**	*⇓iP*		P	09 32 46.9	+4.3
PLOR	**Plostina**	**81.05**	**345**	*⇓P*		P	09 32 46.9	+4.3
TLCR		**81.32**	**343**	*⇑iP*		**P**	**09 32 44.3**	**+0.4**
TLCR		**81.32**	**343**	*⇑P*		**P**	**09 32 44.4**	**+0.5**
CFR	**Carcaliu**	**81.45**	**344**	*⇓iP*		**P**	**09 32 45.1**	**+0.5**
CFR	**Carcaliu**	**81.45**	**344**	*⇓P*		**P**	**09 32 45.1**	**+0.5**
MLR	**Muntele Rosu**	**81.52**	**345**	P		**P**	**09 32 44.5**	**-0.7**
	comp=Z,0.7nm,0.6s,baz=325,slow=6.2,SNR=6.8							
MLR	**Muntele Rosu**	**81.52**	**345**	*⇓iP*		**P**	**09 32 46.6**	**+1.5**
MLR	**Muntele Rosu**	**81.52**	**345**	*⇓P*		**P**	**09 32 46.6**	**+1.5**
TNR	**Turnu Rosu**	**81.62**	**346**	*⇓iP*		**P**	**09 32 43.9**	**-1.6**
TNR	**Turnu Rosu**	**81.62**	**346**	*⇓P*		**P**	**09 32 43.9**	**-1.6**
VOIR		**81.71**	**346**	*⇑iP*		**P**	**09 32 47.1**	**+1.0**
VOIR		**81.71**	**346**	*⇑P*		**P**	**09 32 47.1**	**+1.0**
ARR	**Arges**	**81.84**	**346**	*⇑iP*		**P**	**09 32 47.2**	**+0.4**
HARR	**Harsova**	**81.96**	**344**	*⇑iP*		**P**	**09 32 47.8**	**+0.5**
HARR	**Harsova**	**81.96**	**344**	*⇑P*		**P**	**09 32 47.8**	**+0.5**
RKT	**Rikitea**	**82.40**	**143**	*eT*		T	11 03 47.2	
	comp=Z,3.1nm,0.2s							
WRAB	**Tennant Creek**	**83.80**	**227**	*ceP*		**P**	**09 32 57.4**	**+0.4**
WRAB				pmax	pmax			
	comp=Z,57nm,2.5s							
WRA	**Warramunga Arr**	**83.81**	**227**	P		**P**	**09 32 56.7**	**-0.4**
	comp=Z,1.8nm,0.5s,baz=35,slow=6.1,SNR=18							
PSI	**Prapat**	**85.25**	**268**	P		**P**	**09 33 05.3**	**+0.6**
	comp=Z,10nm,0.7s,baz=300,slow=7.5,SNR=5.5							
BRTR	**Keskin Array B**	**85.57**	**338**	P		**P**	**09 33 05.2**	**-0.8**
	comp=Z,1.3nm,0.7s,baz=30,slow=2.5,SNR=5.7							
BRTR	**Keskin Array B**	**85.57**	**338**	*ceP*		**P**	**09 33 06.1**	**+0.1**
BRTR				pmax	pmax			
	comp=Z,1.0nm,0.7s							
BR231	**Keskin MP Arra**	**85.65**	**339**	*eP*		**P**	**09 33 06.7**	**+0.3**
FITZ	**Fitzroy Crossi**	**86.44**	**235**	P		**P**	**09 33 10.8**	**+0.6**
	comp=Z,5.9nm,0.8s,baz=184,slow=3.0,SNR=9.2							
AS01	**Alice Springs**	**87.23**	**225**	*eP*		**P**	**09 33 13.2**	**-0.8**
AS31	**Alice Springs**	**87.25**	**225**	*eP*		**P**	**09 33 14.6**	**+0.4**
ASAR	**Alice Springs**	**87.25**	**225**	P		**P**	**09 33 14.5**	**+0.4**
	comp=Z,4.2nm,0.8s,baz=30,slow=4.5,SNR=41							
ESDC	**Sonseca Array**	**88.72**	**7**	P		**P**	**09 33 20.9**	**-0.2**
	comp=Z,0.9nm,0.8s,baz=355,slow=6.0,SNR=3.9							
SMRT	**St. Maarten**	**88.99**	**62**	*eP*		**P**	**09 33 22.5**	**-0.2**
STKA	**Stephens Creek**	**91.42**	**216**	P		**P**	**09 33 34.3**	**+0.8**
	comp=Z,3.3nm,0.7s,baz=336,slow=8.2,SNR=9.6							
COCO	**West Island**	**98.19**	**261**	*iP*		**P**	**09 34 02.6**	**-2.2**
DBIC	**Dimbokro**	**121.31**	**11**	PKP		**PKPdf**	**09 39 20.4**	**-0.4**
	comp=Z,2.0nm,0.5s,baz=335,slow=2.0,SNR=8.5							
KMBO	**Kilima Mbogo**	**122.73**	**320**	PKP		**PKPdf**	**09 39 25.0**	**+1.1**
	comp=Z,3.4nm,0.9s,baz=277,slow=1.7,SNR=6.7							
KMBO	**Kilima Mbogo**	**122.73**	**320**	*ciPKIKP*		**PKPdf**	**09 39 25.8**	**+2.0**
KMBO				pmax	pmax			
	comp=Z,3.0nm,0.9s							
PLCA	**Paso Flores**	**128.93**	**109**	PKP		**PKPdf**	**09 39 35.1**	**+0.5**
	comp=Z,2.6nm,0.9s,baz=309,slow=4.0,SNR=3.6							
VNDA	**Vanda**	**129.71**	**186**	PKP		**PKPdf**	**09 39 33.9**	**-1.0**
	comp=Z,0.6nm,1.0s,baz=50,slow=3.5,SNR=3.3							
TSUM	**Tsumeb**	**146.07**	**338**	*ePKPdf*		**PKPbc**	**09 40 07.9**	**+0.3**
MAW	**Mawson**	**148.08**	**218**	PKPbc		**PKPbc**	**09 40 12.1**	**+0.4**
	comp=Z,8.3nm,0.8s,baz=235,slow=1.0,SNR=14							
BOSA	**Boshof**	**152.35**	**319**	PKPbc		**PKPbc**	**09 40 23.5**	**+0.1**
	comp=Z,16nm,0.5s,baz=17,slow=2.5,SNR=65							
BOSA				PKPab		**PKPab**	**09 40 32.3**	**-1.3**
	comp=Z,3.9nm,0.6s,baz=137,slow=1.1,SNR=3.6		

Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**12.29**	**199**	Pn	Pn	09 38 23.2	+1.6
	0.5nm,0.3s,baz=28,slow=14,SNR=10						
WRA	**Warramunga Arr**	**14.19**	**162**	Pn	Pn	09 38 46.4	-1.1
	0.3nm,0.3s,baz=341,slow=13,SNR=28						
WRA				Sn	Sn	09 41 12.2	-14
	1.2nm,0.3s,baz=343,slow=21,SNR=11						
ASAR	**Alice Springs**	**17.63**	**167**	P	Pn	09 39 31.9	-0.6
	0.2nm,0.3s,baz=356,slow=11,SNR=9.9						
ASAR				S	Sn	09 42 34.0	-16
	0.3nm,0.3s,baz=344,slow=26,SNR=7.1						
MKAR	**Makanchi Array**	**67.58**	**327**	P	P	09 46 23.6	0.0
	0.4nm,0.6s,baz=120,slow=7.8,SNR=4.1						

MAN 23 09:35:43.1±1.2, 23N×124.6±1.6E, h12±6km, mb4.5, ML3.3, MS3.2, 2C-2D, Leyte

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PLP	**Palo**	**0.37**	**100**	↓*e*P	Pb	09 35 52.2	+0.7
PLP				*i* S	Sb	09 35 58.4	+1.1
LLP	**Lapu-Lapu**	**1.10**	**215**	↑*e*P	Pb	09 36 03.5	-0.5
LLP				*e*S	Sn	09 36 20.8	+1.3
TBP	**Tagbilaran**	**1.69**	**206**	↓*i*P	Pg	09 36 15.4	-0.1
RCP	**Roxas**	**1.86**	**280**	↓*e*P	Pn	09 36 15.2	+0.6

JMA 23 09:39:00.7±0.1, 37.52N×141.45E, h24±1km, M3.4, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**0.48**	**252**	P	Pb	09 39 10.4	-0.2
JFK				*e*S	Sb	09 39 17.0	-0.3
JMM	**Marumori**	**0.62**	**304**	P	Pb	09 39 12.7	-0.3
JMM				*e*S	Sb	09 39 21.1	-0.3
ONAJ	**Iwakimizuishiy**	**0.67**	**231**	P	Pb	09 39 13.2	-0.5
ONAJ				S	Sb	09 39 21.9	-0.7
JFT	**Otama**	**0.89**	**270**	S	Pb	09 39 17.3	-0.1
JFT				S	Sb	09 39 28.9	+0.1
JIO	**Ouri**	**0.94**	**355**	P	Pb	09 39 17.7	-0.6
JIO				S	Sb	09 39 29.3	-1.0
JOU	**Okura**	**1.05**	**324**	P	Pb	09 39 20.2	0.0
JOU				S	Sn	09 39 33.9	+0.1
MAT	**Matsushiro**	**2.77**	**250**	P	Pn	09 39 46.1	+2.5
MAT				*e*S	Sb	09 40 25.0	+1.9

MEX 23 09:39:15.9±0.7, 16.39N×99.60W, h16±12km, MD3.8, Near coast of Guerrero

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CAIG	**El Cayaco**	**0.91**	**316**	*i* P	Pb	09 39 30.7	-2.7
CAIG				*i* S	Sb	09 39 40.7	-4.6
PNIG	**Pinotepa**	**1.42**	**90**	*e*P	Pn	09 39 36.9	-4.2
PNIG				*i* S	Sn	09 39 54.1	-5.2
MEIG	**Mezcala**	**1.53**	**359**	*e*P	Pn	09 39 39.5	-3.2
MEIG				*i* S	Sn	09 39 56.9	-5.3
TLIG	**Tlapa**	**1.53**	**40**	*e*P	Pn	09 39 39.4	-3.3
TLIG				*e*S	Sn	09 39 57.2	-5.1
ARIG	**Puente Sto Nin**	**2.01**	**339**	*e*P	Pn	09 39 46.4	-2.9
ARIG				*e*S	Sn	09 40 09.3	-4.8

IDC 23 09:39:28.0±1.3, 37.00N×143.78E, h0km, mb3.2/3, mb1 3.6/4, mb1mx3.3/35, mbtmp3.4/4, ML3.5/1, MS2.9/1, Ms1 2.9/1, ms1mx2.4/17, Error ellipse: s-maj=101.9km s-min=24.4km az=102.0, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ASAJ	**Asahikawa**	**7.17**	**353**	Pn	Pn	09 41 13.9	-0.1
	0.8nm,0.3s,baz=200,slow=13,SNR=6.8						
TGY	**Tagaytay City**	**30.58**	**228**	LR	LR	09 58 36.5	
	comp=Z,24nm,19.6s,baz=193,slow=38						
WRA	**Warramunga Arr**	**57.33**	**191**	P	P	09 49 18.6	+0.8
	0.5nm,0.6s,baz=8.1,slow=7.2,SNR=5.0						
ASAR	**Alice Springs**	**61.05**	**190**	P	P	09 49 42.7	-0.9
	0.1nm,0.5s,baz=4.8,slow=7.6,SNR=5.5						
YKA	**Yellowknife Ar**	**62.88**	**31**	P	P	09 49 55.4	0.0
	0.1nm,0.7s,baz=295,slow=6.1,SNR=2.9						

*ISCJB **23** 09:44:33.5±0.6, 6.83N±0.04×73.08W±0.04, h158±5km, Error ellipse: s-maj=8.3km s-min=4.4km az=35.1*
*FUNV **23** 09:44:34.7, 6.81N×73.13W, h162km, MW2.8*
*RSNC **23** 09:44:36.1±1.0, 6.79N×73.13W, h142±6km, ML2.6*

ISC 23 09:44:33.1±1.4, 6.84N±0.04×73.10W±0.05, h162±8km, n30, σ1§26/42, 1C-1D, Northern Colombia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BTLC	**Betulia, Santa**	**0.18**	**295**	*i* P	**Pn**	**09 44 55.3**	**+0.2**
GIRC	**Giron, Santand**	**0.25**	**339**	*i* P	**Pn**	**09 44 56.3**	**+1.1**
BARC	**Barichara**	**0.26**	**198**	*i* P	**Pn**	**09 44 55.3**	**0.0**
BARC				*i*		09 44 55.6	
	comp=Z,104nm,0.1s						
BARC				*e*S	**Sn**	**09 45 09.9**	**-2.4**
PAMC	**Pamplona, Colo**	**0.64**	**39**	*e*P	**Pn**	**09 44 58.2**	**+1.1**
PAMC				*e*S	**Sn**	**09 45 15.1**	**-0.4**
PAMC				*i*		09 45 17.6	
	comp=Z,30nm,0.6s						
BRRC	**Barranca, Sant**	**0.66**	**294**	↑*i*P	**Pn**	**09 44 57.0**	**+0.4**
BRRC				*i*		09 44 57.3	
	comp=Z,163nm,0.2s						
BRRC				*e*S	**Sn**	**09 45 13.6**	**-1.1**
GRMC	**Gramalote, San**	**0.92**	**19**	*e*P	**Pn**	**09 45 01.0**	**+2.4**
GRMC				*e*S	**Sn**	**09 45 20.5**	**+2.2**
GRMC				*i*		09 45 23.3	
	comp=Z,45nm,0.4s						
CBRI	**Barrientos, No**	**0.92**	**19**	*e*P	**Pn**	**09 44 59.8**	**+1.2**
CBRI				*e*S	**Sn**	**09 45 18.0**	**-0.3**
RUSC	**La Rusia**	**0.94**	**179**	*i* P	**Pn**	**09 44 59.2**	**0.0**
RUSC				*i*		09 45 00.5	
	comp=Z,39nm,0.1s						
RUSC				*e*S	**Sn**	**09 45 17.7**	**-1.5**
CAPV	**Capacho**	**1.28**	**37**	↓*i*P	**Pn**	**09 45 03.2**	**+1.5**
CAPV				*e*S	**Sn**	**09 45 23.6**	**-0.1**
OCAC	**Ocana**	**1.41**	**351**	*e*P	**Pn**	**09 45 03.6**	**+0.7**
OCAC				*i*		09 45 28.6	
	comp=Z,49nm,0.1s						
YOPC	**Yopal, Colombi**	**1.62**	**155**	*e*P	**Pn**	**09 45 06.0**	**+1.0**
YOPC				*e*S	**Sn**	**09 45 27.9**	**-1.8**
NORC	**Norcasia**	**2.17**	**234**	*e*P	**Pn**	**09 45 11.2**	**+0.3**
NORC				*e*S	**Sn**	**09 45 39.2**	**-1.0**
CHIC	**Chingaza**	**2.29**	**196**	*e*P	**Pn**	**09 45 13.8**	**+1.1**
ROSC	**El Rosal**	**2.33**	**211**	*e*P	**Pn**	**09 45 15.1**	**+2.0**
ROSC				*e*S	**Sn**	**09 45 43.7**	**-0.5**
ROSC				*i*		09 45 49.2	
	comp=Z,41nm,0.2s						
HELC	**Santa Helena**	**2.50**	**255**	*e*P	**Pn**	**09 45 16.1**	**+1.0**
HELC				*i*		09 45 53.6	
	comp=Z,28nm,0.4s						
SOCV	**Socops**	**2.65**	**57**	*e*P	**Pn**	**09 45 17.5**	**+0.9**
SOCV				*e*S	**Sn**	**09 45 49.2**	**-1.2**
VILC	**Villavicencio,**	**2.77**	**192**	*e*S	**Sn**	**09 45 52.3**	**-1.1**
GUYC	**Guyana, Colomb**	**2.79**	**235**	*e*P	**Pn**	**09 45 21.0**	**+2.2**
DBBC	**Dabeiba**	**3.09**	**273**	*e*P	**Pn**	**09 45 23.2**	**+1.1**
TOLC	**Tolima**	**3.15**	**225**	*e*P	**Pn**	**09 45 25.2**	**+2.1**
MOTC	**Monteria, Cord**	**3.19**	**307**	*e*P	**Pn**	**09 45 22.5**	**-0.8**
ELOV	**Elorza**	**3.60**	**87**	*e*P	**Pn**	**09 45 29.4**	**+0.9**
SJAC	**San Juan de Ar**	**3.64**	**193**	*e*P	**Pn**	**09 45 30.1**	**+0.9**
SJAC				*i*		09 46 22.4	
	comp=Z,27nm,0.0s						
VIRV	**Villa del Rosa**	**3.70**	**11**	*e*P	**Pn**	**09 45 30.0**	**+0.2**
VIRV				*e*S	**Sn**	**09 46 12.4**	**-1.7**
SANV	**Sanarito**	**4.41**	**53**	*e*P	**Pn**	**09 45 40.3**	**+1.2**
CURV	**Curarigua**	**4.42**	**44**	*e*P	**Pn**	**09 45 40.1**	**+0.9**
TEPV	**Terepaima**	**4.96**	**51**	*e*P	**Pn**	**09 45 47.2**	**+1.0**
SIQV	**Siquisique**	**4.99**	**40**	*e*P	**Pn**	**09 45 46.6**	**0.0**
BAUV	**El Baul**	**5.43**	**67**	*e*P	**Pn**	**09 45 52.2**	**-0.2**
MONV	**Montecano**	**5.95**	**31**	*e*P	**Pn**	**09 45 58.8**	**-0.4**

*IDC **23** 09:48:30.6±2.1, 37.26N×144.66E, h0km, mb3.5/2, mb1 3.7/4, mb1mx3.3/35, mbtmp3.5/4, ML3.3/2, Error ellipse: s-maj=57.3km s-min=32.5km az=75.0*
*ISCJB **23** 09:48:33.2±0.9, 37.33N±0.04×144.37E±0.06, h33km, mb3.5/2, Error ellipse: s-maj=6.9km s-min=5.7km az=18.7*

*JMA **23** 09:48:36.8±0.4, 37.32N×144.17E, h52km, MJ3.6*
ISC 23 09:48:35.1±1.5, 37.36N±0.06×144.42E±0.09, h35km, n19, σ1§59/26, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**2.66**	**295**	*e*S	**Sn**	**09 49 46.0**	**-0.5**
OFUJ	**Ofunato**	**2.76**	**309**	S	**Sn**	**09 49 48.5**	**-0.5**
JFK	**Kawauchi**	**2.82**	**271**	*e*S	**Sn**	**09 49 48.7**	**-1.8**
ONAJ	**Iwakimizuishiy**	**2.90**	**266**	S	**Sn**	**09 49 50.8**	**-1.6**
JMK	**Ichinoseki**	**2.98**	**303**	*e*S	**Sn**	**09 49 53.7**	**-0.6**
MIYJ	**Miyakonagasawa**	**3.01**	**318**	S	**Sn**	**09 49 53.5**	**-1.6**
JOM	**Ohasama**	**3.24**	**312**	P	**Pn**	**09 49 24.8**	**+1.4**
JOM				S	**Sn**	**09 50 00.7**	**0.0**
JFT	**Otama**	**3.25**	**274**	P	**Pn**	**09 49 24.9**	**+1.3**
JFT				*e*S	**Sn**	**09 50 01.5**	**+0.5**
JYK	**Kaneyama**	**3.56**	**297**	P	**Pn**	**09 49 28.8**	**+1.0**
JYK				*e*S	**Sn**	**09 50 09.0**	**+0.4**
JYT	**Yasato**	**3.57**	**253**	*e*S	**Sn**	**09 50 06.9**	**-2.0**
JRY	**Ryogami san**	**4.63**	**255**	P	**Pn**	**09 49 42.9**	**+0.4**
JRY				*e*S	**Sn**	**09 50 31.9**	**-3.2**
MJAR	**Matsushiro Arr**	**5.04**	**263**	Pn	**Pn**	**09 49 49.4**	**+1.2**
	1.2nm,0.3s,baz=87,slow=14,SNR=12						
MJAR				Sn	**Sn**	**09 50 45.2**	**+0.1**
	0.6nm,0.3s,baz=190,slow=22,SNR=4.5						
JKB	**Kayabe**	**5.22**	**331**	*e*S	**Sn**	**09 50 49.0**	**-0.6**
JCH	**Churui**	**5.31**	**352**	P	**Pn**	**09 49 52.5**	**+0.6**
JCH				*e*S	**Sn**	**09 50 49.7**	**-2.2**
JHJ2	**Mitsune**	**5.66**	**223**	*e*S	**Sn**	**09 50 58.4**	**-2.1**
JTKR	**Abashiri--Toko**	**6.62**	**357**	P	**Pn**	**09 50 10.2**	**+0.4**
JTKR				*e*S	**Sn**	**09 51 19.9**	**-4.1**
ASAJ	**Asahikawa**	**6.89**	**349**	Pn	**Pn**	**09 50 14.5**	**+0.9**
	0.5nm,0.3s,baz=209,slow=17,SNR=7.4						
WRA	**Warramunga Arr**	**57.78**	**191**	P	**P**	**09 58 22.9**	**+0.2**
	0.5nm,0.5s,baz=9.8,slow=7.1,SNR=9.2						
ASAR	**Alice Springs**	**61.50**	**191**	P	**P**	**09 58 49.0**	**+0.6**
	0.1nm,0.4s,baz=6.1,slow=7.0,SNR=3.9						

JMA 23 10:10:58.5, 36.89N×140.62E, h5±1km, M2.5, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.26**	**34**	P	Pg	10 11 03.6	+0.1
ONAJ				S	Sg	10 11 07.2	+0.3
JHO	**Hitachi**	**0.28**	**188**	P	Pg	10 11 04.1	+0.1
JHO				S	Sg	10 11 08.1	+0.4
JFK	**Kawauchi**	**0.52**	**23**	P	Pg	10 11 08.2	-0.3
JFT	**Otama**	**0.67**	**340**	S	Sg	10 11 20.2	+0.2
MAT	**Matsushiro**	**1.97**	**261**	P	Pn	10 11 33.5	+0.9
MAT				S	Sb	10 11 59.8	+0.1

*IDC **23** 10:11:09.5±0.9, 38.32N×142.45E, h0km, mb3.9/7, mb1 4.0/10, mb1mx3.6/54, mbtmp3.9/10, ML3.4/3, Error ellipse: s-maj=28.6km s-min=16.7km az=98.0*
*ISCJB **23** 10:11:11.0±1.4, 38.34N±0.04×142.33E±0.08, h21±9km, mb3.9/7, Error ellipse: s-maj=10.4km s-min=7.2km az=5.6*
*JMA **23** 10:11:13.0±0.1, 38.43N×142.25E, h25km±1km, M4.1*

ISC 23 10:11:10.1±2.0, 38.33N±0.04×142.29E±0.07, h5±12km, n18, σ1§32/26, mb4.0/7, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**0.75**	**280**	P	**Pb**	**10 11 26.4**	**+0.8**
JIO				S	**Sb**	**10 11 35.7**	**-0.4**
OFUJ	**Ofunato**	**0.89**	**327**	P	**Pb**	**10 11 27.8**	**-0.2**
OFUJ				S	**Sg**	**10 11 38.6**	**-0.1**
JMK	**Ichinoseki**	**1.04**	**307**	P	**Pb**	**10 11 30.6**	**0.0**
JMK				S	**Sb**	**10 11 43.7**	**-0.8**
JMM	**Marumori**	**1.27**	**249**	P	**Pb**	**10 11 35.0**	**+0.5**
JOU	**Okura**	**1.28**	**272**	P	**Pg**	**10 11 35.0**	**+0.4**
JOU				S	**Sg**	**10 11 51.3**	**+0.1**
JOM	**Ohasama**	**1.38**	**326**	P	**Pn**	**10 11 35.6**	**-0.4**
JOM				S	**Sb**	**10 11 52.2**	**-2.1**
JYK	**Kaneyama**	**1.62**	**292**	P	**Pb**	**10 11 40.0**	**-0.5**
JYK				*e*S	**Sn**	**10 11 59.7**	**-0.9**
MJAR	**Matsushiro Arr**	**3.71**	**242**	Pn	**Pn**	**10 12 11.1**	**+3.0**
	1.8nm,0.3s,baz=70,slow=12,SNR=5.8						
MAT	**Matsushiro**	**3.71**	**242**	P	**Pb**	**10 12 13.0**	**-3.1**
MAT				*e*S	**Sb**	**10 12 59.2**	**-2.2**
JHJ	**Hachijo jima 2**	**5.59**	**202**	Pn	**Pn**	**10 12 33.8**	**0.0**
	9.9nm,0.3s,baz=58,slow=13,SNR=2.9						
JHJ				Sn	**Sn**	**10 13 37.7**	**-0.7**
	13nm,0.3s,baz=66,slow=19,SNR=3.3						
ASAJ	**Asahikawa**	**5.78**	**2**	Pn	**Pn**	**10 12 37.5**	**+0.9**
	0.7nm,0.3s,baz=208,slow=15,SNR=8.6						
SEY	**Seymchan**	**25.39**	**11**	P	**P**	**10 16 38.8**	**+0.8**
	6.9nm,0.3s,baz=316,slow=0.6,SNR=33						
MKAR	**Makanchi Array**	**44.03**	**301**	P	**P**	**10 19 20.9**	**+2.2**
	0.2nm,0.5s,baz=83,slow=12,SNR=3.2						
KURBB	**Kurchatov Arra**	**45.76**	**307**	P	**P**	**10 19 32.4**	**+0.1**
	0.9nm,0.5s,baz=82,slow=8.0,SNR=9.5						
WRA	**Warramunga Arr**	**58.45**	**189**	P	**P**	**10 21 06.8**	**-0.1**
	1.0nm,0.7s,baz=7.1,slow=7.1,SNR=11						
ASAR	**Alice Springs**	**62.17**	**189**	P	**P**	**10 21 32.9**	**+0.5**
	0.7nm,0.7s,baz=4.7,slow=5.4,SNR=11						
FINES	**FINESS Array B**	**67.99**	**332**	P	**P**	**10 22 09.2**	**-0.6**
	3.1nm,1.1s,baz=23,slow=7.5,SNR=2.7						
PDAR	**Pinedale Array**	**76.26**	**46**	P	**P**	**10 23 00.1**	**+0.1**
	0.2nm,0.7s,baz=339,slow=2.2,SNR=3.0						

*NIED **23** 10:12:00, 39.10N×143.00E, h35km, Mw5.9 Best double couple: M0 8.00000×10^17 NP1:φs 79.00000°, δ42.00000°, λ56.00000°. NP2:φs 301.00000°, δ56.00000°, λ117.00000°.*
*ISCJB **23** 10:12:45.4±0.5, 39.13N±0.01×142.93E±0.01, h30±3km, mb5.8/366, MS5.7/270, Error ellipse: s-maj=2.6km s-min=1.7km az=160.6*
*BJI **23** 10:12:45.1, 39.03N×142.83E, h34km, mb5.7/87, mB5.9/61, Ms5.9/99, Ms7 5.9/91*
*MOS **23** 10:12:46.3±0.9, 39.25N×142.92E, h33km, mb5.9/122, MS5.8/84, Error ellipse: s-maj=5.7km s-min=3.6km az=105.1*
MOS Felt (II) at Yuzhno-Kuril'sk.
*NEIC **23** 10:12:47.0±0.1, 39.10N×142.87E, h31km, mb5.8/174, ME6.0, MS5.6/149, MW5.8, MW6.0, MW5.9, Error ellipse: s-maj=3.3km s-min=2.3km az=138.0, Moment Tensor Solution. s97 Moment tensor: Scale 10^17 Nm; Mrr 4.97; Mθθ -8.10; Mφφ 3.12; Mrθ -0.57; Mθφ 1.07; Mφr 1.14; Best double couple: M0 7.30000×10^17 NP1:φs 72.00000°, δ48.00000°, λ55.00000°. NP2:φs 298.00000°, δ53.00000°, λ122.00000°. Principal axes: T 5.5200, Plg65.0000°, Azm269.0000°; N 2.7100, Plg25.0000°, Azm97.0000°; P -8.2300, Plg3.0000°, Azm6.0000°; Broadband fault plane solution: P waves. NP1:φs 120.00000°, δ25.00000°, λ90.00000°. NP2:φs 300.00000°, δ65.00000°, λ90.00000°. Principal axes: T Plg70.0000°, Azm210.0000°; N Plg0.0000°, Azm0.0000°; P Plg20.0000°, Azm30.0000°; Depth from synthetics of broadband displacement seismograms. Energy computed from BB mechanism.*
NEIC Felt (II) at Misawa and Tokyo. Also felt at Atsugi and Ichinoseki. Recorded [3 JMA] in Aomori, Iwate and Miyagi.
*JMA **23** 10:12:46.2±0.1, 39.13N×143.00E, h35km±3km, M6.1*
JMA Felt III J1.
*GCMT **23** 10:12:47.0±0.1, 39.21N×142.91E, h30km, MW6.0/138, Moment Tensor Solution. s127,c286; s138,c425; Duration: 2s3 Moment tensor: Scale 10^18 Nm; Mrr 1.05±.01; Mθθ -1.00±.01; Mφφ -0.05±.01; Mrθ -0.30±.01; Mθφ 0.19±.01; Mφr 0.20±.01; Best double couple: M0 1.10500×10^18 NP1:φs 288.00000°, δ54.00000°, λ98.00000°. NP2:φs 94.00000°, δ36.00000°, λ78.00000°. Principal axes: T 1.1210, Plg79.0000°, Azm230.0000°; N -0.0340, Plg7.0000°, Azm103.0000°; P -1.0900, Plg9.0000°, Azm12.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface/mantle waves, cutoff=50s.*
*IDC **23** 10:12:47.4±1.8, 39.09N×142.91E, h34km±13km, mb5.3/47, mb1 5.4/51, mb1mx5.4/53, mbtmp5.5/51, ML5.2/4, MS5.6/58, Ms1 5.6/58, ms1mx5.5/68 Error ellipse: s-maj=9.6km s-min=7.4km az=66.0*
*NEIC **23** 10:12:48.0±0.0, 38.96N×143.09E, h38km, Moment Tensor Solution. s34 Moment tensor: Scale 10^17 Nm; Mrr 7.65; Mθθ -6.82; Mφφ -0.83; Mrθ -3.72; Mθφ 1.62; Mφr 0.40; Best double couple: M0 8.30000×10^17 NP1:φs 281.00000°, δ58.00000°, λ86.00000°. NP2:φs 107.00000°, δ32.00000°, λ96.00000°. Principal axes: T 8.5500, Plg76.0000°, Azm180.0000°; N -0.4500, Plg2.0000°, Azm282.0000°; P -8.1100, Plg13.0000°, Azm13.0000°;*
*NEIC **23** 10:13:01.9±0.0, 39.18N×142.69E, h32km, Moment Tensor Solution. s60 Moment tensor: Scale 10^18 Nm; Mrr 1.03; Mθθ -1.01; Mφφ -0.02; Mrθ 0.41; Mθφ 0.26; Mφr -0.02; Best double couple: M0 1.10000×10^18 NP1:φs 288.00000°, δ35.00000°, λ97.00000°. NP2:φs 100.00000°, δ56.00000°, λ85.00000°. Principal axes: T 1.1100, Plg79.0000°, Azm353.0000°; N 0.0400, Plg4.0000°, Azm103.0000°; P -1.1500, Plg10.0000°, Azm193.0000°;*

ISC 23 10:12:46.9±0.3, 39.17N±0.02×142.94E±0.02, h32±1km, h31km:pP-P, n1654, σ1§40/1871, mb5.8/389, MS5.7/279, 164C-67D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MIYJ	**Miyakonagasawa**	**0.96**	**295**	↓P	**Pn**	**10 13 04.4**	**+0.2**
MIYJ				S	**Sb**	**10 13 17.0**	**-0.4**
OFUJ	**Ofunato**	**0.99**	**265**	↑P	**Pn**	**10 13 04.8**	**+0.2**
JTH	**Tanohata**	**1.13**	**313**	↓P	**Pn**	**10 13 06.7**	**+0.1**
JTH				S	**Sb**	**10 13 22.1**	**-0.2**
JOM	**Ohasama**	**1.31**	**284**	↑P	**Pn**	**10 13 09.8**	**+0.7**
JOM				*e*S	**Sb**	**10 13 28.1**	**+0.6**
JMK	**Ichinoseki**	**1.36**	**261**	↑P	**Pn**	**10 13 10.2**	**+0.6**
JMK				*e*S	**Sb**	**10 13 28.4**	**-0.3**
JIO	**Ouri**	**1.43**	**241**	↓P	**Pn**	**10 13 10.6**	**-0.1**
JIO				S	**Sn**	**10 13 28.1**	**-0.3**
JANG	**Nango**	**1.63**	**318**	↓P	**Pn**	**10 13 13.4**	**0.0**
JRG	**Rokugo**	**1.80**	**278**	P	**Pn**	**10 13 17.1**	**+1.3**
JOU	**Okura**	**1.95**	**246**	P	**Pn**	**10 13 18.6**	**+0.7**
JOU				S	**Sn**	**10 13 42.4**	**+1.1**
JYK	**Kaneyama**	**2.02**	**264**	↑P	**Pn**	**10 13 20.0**	**+1.2**
JYK				*e*S	**Sb**	**10 13 45.5**	**-2.3**
JAH	**Hinai**	**2.05**	**301**	P	**Pn**	**10 13 20.6**	**+1.4**
JAH				S	**Sb**	**10 13 47.0**	**-1.5**
JMM	**Marumori**	**2.13**	**233**	P	**Pn**	**10 13 20.0**	**-0.3**
JMM				S	**Sn**	**10 13 45.3**	**-0.3**
JTM	**Tenmabayashi**	**2.16**	**319**	P	**Pn**	**10 13 21.1**	**+0.4**
ERM	**Erimo**	**2.85**	**3**	*e*P	**Pn**	**10 13 29.5**	**-0.6**
ERM				pmax	pmax		
	comp=Z,4μm,1.2s						
ERM	**Erimo**	**2.85**	**3**	*e*Pn	**Pn**	**10 13 29.6**	**-0.5**
ERM				*e*Sn	**Sn**	**10 14 03.8**	**+0.5**
MJAR	**Matsushiro Arr**	**4.57**	**236**	Pn	**Pn**	**10 13 56.4**	**+2.5**
	comp=Z,197nm,0.3s,baz=47,slow=10,SNR=184						
MJAR				Sn	**Sn**	**10 14 48.8**	**+2.9**
	comp=Z,107nm,0.3s,baz=228,slow=25,SNR=6.2						
MJAR				LR	LR	10 15 58.1	
	comp=Z,167μm,18.4s,baz=60,slow=42						
MAJO	**Matsushiro**	**4.57**	**236**	*d*P	**Pn**	**10 13 56.3**	**+2.4**
MAJO	**Matsushiro**	**4.57**	**236**	*e*Pn	**Pn**	**10 13 56.3**	**+2.4**
MAJO				*e*Sn	**Sn**	**10 14 46.6**	**+0.7**
MAT	**Matsushiro**	**4.57**	**236**	P	**Pn**	**10 13 55.9**	**+2.0**
MAT				S	**Sn**	**10 14 47.9**	**+2.0**
MJB9	**Matsu-Tunnel**	**4.57**	**237**	*e*Pn	**Pn**	**10 13 56.4**	**+2.5**
MJB9				*e*Sn	**Sn**	**10 14 50.2**	**+4.3**
ASAJ	**Asahikawa**	**4.95**	**357**	Pn	**Pn**	**10 13 59.9**	**+0.9**
	comp=Z,223nm,0.3s,baz=208,slow=12,SNR=178						
ASAJ				Sn	**Sn**	**10 14 57.4**	**+2.2**
	comp=Z,95nm,0.3s,baz=63,slow=30,SNR=5.7						
ASAJ				LR	LR	10 15 58.2	
	comp=Z,22μm,21.7s,baz=192,slow=38						
ASAJ	**Asahikawa**	**4.95**	**357**	*e*Pn	**Pn**	**10 13 58.9**	**-0.2**
ASAJ				*e*Sn	**Sn**	**10 14 55.5**	**+0.3**
YUK	**Yuzh-Kuril'sk**	**5.33**	**23**	*d*P	**Pn**	**10 14 02.1**	**-2.2**
YUK				*i* S	**Sn**	**10 14 58.9**	**-5.6**
YUK				pmax	pmax		
	comp=Z,5μm,0.3s						
YUK				pmax	pmax		
	comp=N,858nm,0.2s						
YUK				pmax	pmax		
	comp=E,2μm,0.2s						
YUK				MLR	MLR		
	comp=Z,46μm,18.0s						
YUK				MLR	MLR		
	comp=N,45μm,10.0s						
SHO	**Shikotan**	**5.53**	**31**	*d*P	**Pn**	**10 14 04.4**	**-2.6**
SHO				*i* S	**Sn**	**10 15 03.7**	**-5.7**
SHO				pmax	pmax		
	comp=N,2μm,0.4s						
SHO				pmax	pmax		
	comp=E,3μm,0.4s						
SHO				pmax	pmax		
	comp=Z,7μm,0.4s						
INU	**Inuyama**	**6.07**	**233**	*e*Pn	**Pn**	**10 14 16.1**	**+1.6**
JHJ2	**Mitsune**	**6.55**	**204**	*e*Pn	**Pn**	**10 14 18.7**	**-2.4**
JHJ2				*e*Sn	**Sn**	**10 15 27.4**	**-7.3**
JHJ	**Hachijo jima 2**	**6.55**	**204**	P	**Pn**	**10 14 18.9**	**-2.2**
	comp=Z,640nm,0.3s,baz=337,slow=18,SNR=87						
JHJ				Sn	**Sn**	**10 15 27.6**	**-7.2**
	comp=Z,1μm,0.3s,baz=57,slow=23,SNR=16						
KUR	**Kuril'sk**	**7.08**	**30**	*d*P	**Pn**	**10 14 26.3**	**-1.9**
KUR				*i* S	**Sn**	**10 15 43.1**	**-4.4**
KUR				pmax	pmax		
	comp=Z,5μm,3.5s						
KUR				pmax	pmax		
	comp=N,469nm,0.4s						
KUR				pmax	pmax		
	comp=E,354nm,0.4s						
KUR				pmax	pmax		
	comp=Z,2μm,0.4s						
KUR				smax	smax		
	comp=N,611nm,0.7s						
KUR				smax	smax		
	comp=E,1μm,0.7s						
KUR				smax	smax		
	comp=N,7μm,4.4s						
KUR				smax	smax		
	comp=E,4μm,4.4s						
YSS	**Yuzh-Sakhalins**	**7.78**	**359**	*i*P	**Pn**	**10 14 37.4**	**-0.5**
YSS				*e*S	**Sn**	**10 16 01.0**	**-3.8**
YSS				pmax

MDJ	**Mudanjiang**	**11.33**	**303**	P	**Pn**	**10 15 30.1**	**+3.5**
MDJ				S	**Sn**	**10 17 33.8**	**+1.7**
MDJ				ScP	**ScP**	**10 24 45.3**	**-4.2**
MDJ				PcS	**PcS**	**10 24 54.9**	**+1.9**
MDJ				pmax	pmax		
	comp=Z,190nm,1.2s						
MDJ				pmax	pmax		
	comp=Z,5μm,5.5s						
MDJ				LR	LR		
	comp=Z,15μm,15.0s						
MDJ				LR	LR		
	comp=Z,41μm,15.7s						
MDJ				LR	LR		
	comp=Z,60μm,15.0s						
MDJ	**Mudanjiang**	**11.33**	**303**	*e*Pn	**Pn**	**10 15 28.8**	**+2.2**
	comp=Z,348nm,1.1s						
MDJ				*e*Sn	**Sn**	**10 17 31.7**	**-0.4**
JNU	**Nakatsue**	**11.46**	**242**	Pn	**Pn**	**10 15 29.9**	**+1.5**
	comp=Z,5.4nm,0.3s,baz=50,slow=6.7,SNR=39						
JNU				LR	LR	10 20 18.1	
	comp=Z,66μm,19.3s,baz=51,slow=40						
JNU	**Nakatsue**	**11.46**	**242**	*e*Pn	**Pn**	**10 15 28.7**	**+0.3**
JNU				*e*Sn	**Sn**	**10 17 40.7**	**+5.3**
TYV	**Tymovskoe**	**11.70**	**359**	*e*P	**Pn**	**10 15 30.0**	**-1.5**
TYV				pmax	pmax		
	comp=Z,6μm,4.0s						
TYV				pmax	pmax		
	comp=Z,660nm,1.0s						
KSRS	**Korea Array**	**11.92**	**266**	Pn	**Pn**	**10 15 37.6**	**+3.0**
	comp=Z,3.6nm,0.3s,baz=79,slow=13,SNR=59						
KSRS				Sn	Sn	10 17 55.7	+9.2
	baz=78,slow=24,SNR=6.2						
KSRS				LR	LR	10 20 03.2	
	comp=Z,31μm,18.2s,baz=74,slow=36						
KS01	**Wonju Array Si**	**11.94**	**267**	*e*Pn	**Pn**	**10 15 36.5**	**+1.7**
KS15	**Wonju Array Si**	**11.95**	**266**	*e*Pn	**Pn**	**10 15 37.8**	**+2.7**
KSAR	**Wonju Array Be**	**11.95**	**266**	P	**Pn**	**10 15 37.7**	**+2.6**
KSAR						10 17 55.7	
KSAR	**Wonju Array Be**	**11.95**	**266**	Pn	**Pn**	**10 15 37.6**	**+2.6**
KSAR				Sn	**Sn**	**10 17 55.7**	**+8.4**
CBIJ	**Chichi jima**	**12.06**	**183**	*e*Pn	Pn	10 15 31.7	-4.8
CBIJ				*e*Sn	Sn	10 17 33.5	-16
JCJ	**Chichijima**	**12.06**	**183**	Pn	Pn	10 15 30.8	-5.8
	comp=Z,216nm,0.3s,baz=290,slow=20,SNR=41						
JCJ				Sn	Sn	10 17 37.4	-13
	baz=270,slow=20						
KLR	**Kul'dur**	**12.85**	**325**	Pn	**Pn**	**10 15 47.9**	**+0.6**
	comp=Z,3.3nm,0.3s,baz=132,slow=13,SNR=57						
KLR				LR	LR	10 20 59.9	
	comp=Z,40μm,18.4s,baz=146,slow=38						
INCN	**Inchon**	**12.92**	**268**	*e*Pn	**Pn**	**10 15 48.1**	**-0.2**
INCN				*e*Sn	Sn	10 18 21.1	+10
INCN	**Inchon**	**12.92**	**268**	Pn	**Pn**	**10 15 50.1**	**+1.8**
	SNR=5.8						
CN2	**Changchun**	**13.90**	**295**	*e*P	**Pn**	**10 16 04.9**	**+3.3**
CN2				*es*P	P	10 16 17.0	+7.6
CN2				*e*S	**Sn**	**10 18 37.9**	**+3.2**
CN2				pmax	pmax		
	comp=Z,30nm,1.5s						
CN2				pmax	pmax		
	comp=Z,200nm,5.0s						
CN2				LR	LR		
	comp=Z,15μm,17.0s						
CN2				LR	LR		
	comp=Z,15μm,17.0s						
CN2				LR	LR		
	comp=Z,17μm,19.0s						
NKL	**Nikolayevsk**	**14.07**	**354**	*i* P	**Pn**	**10 16 02.0**	**-1.8**
NKL				*e*S	**Sn**	**10 18 35.0**	**-3.7**
NKL				pmax	pmax		
	comp=N,110nm,1.0s						
NKL				pmax	pmax		
	comp=E,100nm,1.0s						
NKL				pmax	pmax		
	comp=Z,110nm,0.7s						
NKL				pmax	pmax		
	comp=E,2μm,5.0s						
NKL				pmax	pmax		
	comp=N,6μm,4.0s						
NKL				pmax	pmax		
	comp=Z,6μm,4.0s						
NKL				MLR	MLR		
	comp=N,53μm,18.0s						
NKL				MLR	MLR		
	comp=E,16μm,18.0s						
NKL				MLR	MLR		
	comp=Z,83μm,18.0s						
OKH	**Okha**	**14.38**	**360⇓**	*i*P	**Pn**	**10 16 05.8**	**-2.3**
OKH				*e*S	**Sn**	**10 18 40.2**	**-6.2**
OKH				pmax	pmax		
	comp=Z,7μm,10.0s						
OKH				smax	smax		
	comp=E,4μm,8.0s						
OKH				smax	smax		
	comp=N,6μm,15.0s						
OKH				MLR	MLR		
	comp=Z,45μm,18.0s						
SKR	**Severo-Kuril's**	**14.79**	**35**	*e*P	Pn	10 16 06.0	-7.7
SKR				*e*S	**Sn**	**10 18 48.5**	**-7.9**
SKR				pmax	pmax		
	comp=Z,170nm,0.5s						
SKR				pmax	pmax		
	comp=N,200nm,1.0s						
SKR				pmax	pmax		
	comp=E,130nm,1.0s						
SKR				pmax	pmax		
	comp=Z,3μm,10.0s						
SKR				pmax	pmax		
	comp=N,3μm,8.0s						
SKR				pmax	pmax		
	comp=E,3μm,8.0s						
SKR				MLR	MLR		
	comp=Z,13μm,20.0s						
SKR				MLR	MLR		
	comp=N,11μm,18.0s						
SKR				MLR	MLR		
	comp=E,14μm,18.0s						
SNY	**Shenyang**	**14.97**	**286**	⇑P	**Pn**	**10 16 15.8**	**-0.3**
SNY				pP	**P**	**10 16 23.4**	**+2.1**
SNY				pmax	pmax		
	comp=E,62nm,2.6s						
SNY				LR	LR		
	comp=E,14μm,15.1s						
SNY				LR	LR		
	comp=E,19μm,18.6s						
SNY				LR	LR		
	comp=E,33μm,18.1s						
DL2	**Dalian**	**16.56**	**276⇑**	*i*P	**Pn**	**10 16 36.6**	**-0.1**
DL2				S	**Sn**	**10 19 41.6**	**+2.1**
DL2				pmax	pmax		
	comp=E,510nm,0.8s						
DL2				pmax	pmax		
	comp=E,3μm,5.0s						
DL2				LR	LR		
	comp=E,14μm,15.5s						
DL2				LR	LR		
	comp=E,21μm,18.7s						
DL2				LR	LR		
	comp=E,24μm,20.1s						
PEA0	**Petropavlovsk-**	**17.24**	**31**	*e*Pn	**Pn**	**10 16 40.7**	**-4.4**
PEA0B	**Petropavlovsk-**	**17.24**	**31**	*e*Pn	**Pn**	**10 16 41.1**	**-4.0**
	comp=E,574nm,1.1s						
PETK	**Petropavlovsk-**	**17.24**	**31**	P	**Pn**	**10 16 41.0**	**-4.1**
	comp=E,3.3nm,0.3s,baz=201,slow=9.6,SNR=42						
PETK				LR	LR	10 23 05.1	
	comp=E,16μm,20.8s,baz=224,slow=36						
JOW	**Kunigami**	**17.37**	**229**	P	**Pn**	**10 16 44.0**	**-2.9**
	comp=E,1.7nm,0.3s,baz=61,slow=9.8,SNR=4.2						
JOW				LR	LR	10 23 54.8	
	comp=E,7μm,21.0s,baz=46,slow=39						
JOW	**Kunigami**	**17.37**	**229**	*e*Pn	**Pn**	**10 16 45.1**	**-1.8**
	comp=E,367nm,1.4s						
JOW				*e*Sn	**Sn**	**10 19 59.9**	**+0.6**
PET	**Petropavlovsk**	**17.57**	**33**	*e*P	**Pn**	**10 16 48.1**	**-1.1**
PET				pmax	pmax		
	comp=Z,963nm,1.3s						
PET	**Petropavlovsk**	**17.57**	**33**	*e*Pn	**P**	**10 16 50.8**	**+0.8**
	comp=Z,914nm,1.1s						
PET				*e*Sn	**S**	**10 20 08.3**	**-2.4**
HIA	**Hailar**	**19.38**	**309**	*e*P	**P**	**10 17 09.5**	**-0.5**
HIA				pmax	pmax		
	comp=Z,155nm,1.1s						
HIA	**Hailar**	**19.38**	**309**	*e*P	**P**	**10 17 09.5**	**-0.5**
	comp=Z,155nm,1.1s						
SSE	**Sheshan**	**19.50**	**252**	P	**P**	**10 17 09.3**	**-2.1**
SSE				sP	**pP**	**10 17 20.6**	**+0.8**
SSE				S	**S**	**10 20 49.1**	**-0.8**
SSE				pmax	pmax		
	comp=Z,370nm,1.1s						
SSE				pmax	pmax		
	comp=Z,1μm,4.3s						
SSE				LR	LR		
	comp=Z,18μm,17.5s						
SSE				LR	LR		
	comp=Z,14μm,17.5s						
SSE				LR	LR		
	comp=Z,25μm,17.9s						
BJI	**Beijing**	**20.62**	**281**	P	**P**	**10 17 21.0**	**-2.5**
BJI				S	**S**	**10 21 05.4**	**-6.8**
BJI				pmax	pmax		
	comp=Z,250nm,1.5s						
BJI				pmax	pmax		
	comp=Z,2μm,3.6s						
BJI				LR	LR		
	comp=Z,7μm,13.1s						
BJI				LR	LR		
	comp=Z,12μm,18.1s						
BJI				LR	LR		
	comp=Z,10μm,19.0s						
BJT	**Baijiatuau**	**20.62**	**281**	*e*P	**P**	**10 17 22.1**	**-1.5**
BJT				pmax	pmax		
	comp=Z,144nm,0.6s						
BJT				MLR	MLR		
	comp=Z,16μm,19.0s						
BJT	**Baijiatuau**	**20.62**	**281**	*e*P	**P**	**10 17 22.1**	**-1.5**
	comp=Z,144nm,0.6s						
BJT				LR	LR		
	comp=Z,16μm,19.0s						
NJ2	**Nanjing**	**20.79**	**257**	*e*P	**P**	**10 17 24.0**	**-1.4**
NJ2				pP	**sP**	**10 17 37.8**	**-0.1**
NJ2				S	**S**	**10 21 18.4**	**+2.6**
NJ2				pmax	pmax		
	comp=Z,150nm,1.5s						
NJ2				pmax	pmax		
	comp=Z,1μm,7.9s						
NJ2				LR	LR		
	comp=Z,21μm,19.0s						
NJ2				LR	LR		
	comp=Z,23μm,20.6s						
NJ2				LR	LR		
	comp=Z,30μm,18.4s						
MA2	**Magadan**	**21.02**	**11**	P	**P**	**10 17 28.2**	**+0.5**
	comp=Z,891nm,0.8s,baz=218,slow=9.3,SNR=813						
MA2				PcP	**PcP**	**10 21 33.8**	**+0.3**
	comp=Z,18nm,0.9s,baz=207,slow=1.7,SNR=3.6						
MA2				LR	LR	10 26 45.1	
	comp=Z,15μm,18.8s,baz=222,slow=40						
CLNS	**Chul'man**	**21.29**	**332**	*e*P	**P**	**10 17 30.4**	**-0.2**
CLNS				*e*		10 17 49.5	
CLNS				*e*S	**S**	**10 21 24.9**	**-0.4**
CLNS				*e*		10 21 34.8	
CLNS				*e*SS	**SnSn**	**10 21 54.1**	**+5.6**
CLNS				pmax	pmax		
	comp=Z,427nm,1.5s						
CLNS				pmax	pmax		
	comp=E,182nm,1.6s						
CLNS				pmax	pmax		
	comp=N,525nm,1.6s						
CLNS				pmax	pmax		
	comp=Z,198nm,1.4s						
CLNS				pmax	pmax		
	comp=N,338nm,1.2s						
CLNS				pmax	pmax		
	comp=E,276nm,1.0s						
CLNS				smax	smax		
	comp=N,3μm,9.3s						
CLNS				smax	smax		
	comp=E,4μm,11.1s						
CLNS				MLR	MLR		
	comp=E,12μm,15.0s						
CLNS				MLR	MLR		
	comp=Z,24μm,16.0s						
CLNS				MLR	MLR		
	comp=N,14μm,14.0s						
TATO	**Taipei**	**22.96**	**238**	*e*P	**P**	**10 17 47.9**	**-0.8**
	comp=N,595nm,1.2s						
TATO				LR	LR		
	comp=Z,33μm,20.0s						
TATO	**Taipei**	**22.96**	**238**	P	**P**	**10 17 46.3**	**-2.3**
	SNR=6.3						
YHNB	**Yeheng**	**23.24**	**238**	*e*P	**P**	**10 17 48.6**	**-3.0**
	comp=Z,177nm,0.7s						
YHNB				*e*S	**S**	**10 22 04.3**	**+2.6**
YHNB				LR	LR		
	comp=Z,29μm,20.0s						
NACB	**Ninganchiao**	**23.44**	**237**	*e*P	**P**	**10 17 48.8**	**-4.7**
	comp=Z,156nm,0.9s						
TIY	**Taiyuan**	**23.89**	**276**	*e*P	**P**	**10 17 55.0**	**-2.7**
TIY				PP	**PnPn**	**10 18 29.9**	**+3.5**
TIY				S	**S**	**10 22 11.8**	**-0.1**
TIY				sS	**sS**	**10 22 22.3**	**-4.6**
TIY				SS	**SnSn**	**10 23 01.3**	**+8.9**
TIY				pmax	pmax		
	comp=Z,130nm,0.8s						
TIY				pmax	pmax		
	comp=Z,1μm,7.5s						
TIY				LR	LR		
	comp=Z,15μm,17.9s						
TIY				LR	LR		
	comp=Z,5μm,13.6s						
TIY				LR	LR		
	comp=Z,20μm,19.0s						
HHC	**Hu-ho-hao-te**	**24.03**	**284**	*e*P	**P**	**10 17 56.6**	**-2.5**
HHC				pP	pP	10 18 05.8	-2.4
HHC				sP	sP	10 18 09.1	-3.0
HHC				S	**S**	**10 22 10.5**	**-3.7**
HHC				SS	**SnSn**	**10 23 01.0**	**+5.1**
HHC				pmax	pmax		
	comp=Z,65nm,1.0s						
HHC				pmax	pmax		
	comp=Z,840nm,4.1s						
HHC				LR	LR		
	comp=Z,10μm,13.7s						
HHC				LR	LR		
	comp=Z,19μm,13.8s						
HHC				LR	LR		
	comp=Z,23μm,13.2s						
CIT	**Chita**	**24.06**	**312**	*e*P	**P**	**10 17 58.5**	**-0.7**
CIT				*e*		10 18 12.6	
CIT				*e*		10 18 31.4	
CIT				*e*		10 18 46.5	
CIT				*e*S	**S**	**10 22 12.1**	**-2.3**
CIT				pmax	pmax		
	comp=Z,654nm,1.8s						
SSLB	**Suanglung**	**24.13**	**237**	*e*P	**P**	**10 17 56.9**	**-3.2**
	comp=Z,168nm,0.9s						
SSLB				*e*S	**S**	**10 22 14.0**	**-1.9**
YULB	**Yu-li**	**24.19**	**236**	*e*P	**P**	**10 17 57.0**	**-3.5**
	comp=Z,127nm,0.8s						
YULB				*e*S	**S**	**10 22 20.6**	**+3.8**
YAK	**Yakutsk**	**24.29**	**345**	P	**P**	**10 18 00.5**	**-0.5**
	comp=Z,542nm,0.6s,baz=276,slow=0.5,SNR=83						
YAK				LR	LR	10 28 06.2	
	comp=Z,16μm,18.5s,baz=154,slow=38						
YAK	**Yakutsk**	**24.29**	**345**	*d i*P	**P**	**10 17 59.7**	**-1.4**
YAK				*e*		10 21 45.0	
YAK				*e*S	**S**	**10 22 13.5**	**-4.2**
YAK				pmax	pmax		
	comp=Z,312nm,0.8s						
YAK				pmax	pmax		
	comp=E,48nm,0.9s						
YAK				pmax	pmax		
	comp=N,101nm,0.9s						
YAK				pmax	pmax		
	comp=Z,611nm,1.1s						
YAK				pmax	pmax		
	comp=N,319nm,1.4s						
YAK				pmax	pmax		
	comp=E,425nm,1.4s						
YAK				smax	smax		
	comp=E,6μm,3.6s						
YAK				smax	smax		
	comp=N,8μm,3.0s						
YAK				MLR	MLR		
	comp=Z,12μm,15.0s						
YAK				MLR	MLR		
	comp=N,9μm,15.0s						
YAK				MLR	MLR		
	comp=E,11μm,17.0s						
YAK	**Yakutsk**	**24.29**	**345**	*e*P	**P**	**10 18 00.6**	**-0.5**
	comp=E,611nm,0.6s						
SEY	**Seymchan**	**24.47**	**10**	P	**P**	**10 18 03.6**	**+0.9**
	comp=E,569nm,1.0s,baz=199,slow=7.9,SNR=574						
SEY				PKiKP	**PKiKP**	**10 29 22.1**	**-0.1**
	comp=E,0.3nm,0.3s,baz=244,slow=2.8,SNR=3.8						
SEY	**Seymchan**	**24.47**	**10**	*de*P	**P**	**10 18 03.8**	**+1.1**
TPUB	**Ta-pu**	**24.68**	**237**	*e*P	**P**	**10 18 01.9**	**-3.2**
	comp=E,288nm,1.1s						
TWG	**Pinlang**	**24.74**	**235**	*e*P	**P**	**10 18 03.6**	**-2.0**
	comp=E,2μm,1.2s						
TWG				*e*S	**S**	**10 22 35.0**	**+9.3**
WHN	**Wuhan**	**24.91**	**259⇑**	*i*P	**P**	**10 18 06.8**	**-0.2**
WHN				S	**S**	**10 22 23.1**	**-5.2**
WHN				pmax	pmax		
	comp=E,5μm,1.8s						
WHN				pmax	pmax		
	comp=E,10μm,4.0s						
WHN				LR	LR		
	comp=E,30μm,14.9s						
WHN				LR	LR		
	comp=E,42μm,14.8s						
WHN				LR	LR		
	comp=E,68μm,16.8s						
QZH	**Quanzhou**	**24.94**	**243⇑**	*i*P	**P**	**10 18 02.8**	**-4.5**
QZH				sP	**pP**	**10 18 15.8**	**-0.6**
QZH				S	**S**	**10 22 20.0**	**-8.8**
QZH				pmax	pmax		
	comp=E,230nm,1.0s						
QZH				pmax	pmax		
	comp=E,6μm,4.2s						
QZH				LR	LR		
	comp=E,40μm,14.2s						
QZH				LR	LR		
	comp=E,30μm,14.8s						
QZH				LR	LR		
	comp=E,59μm,14.7s						
BTO	**Baotou**	**25.22**	**284**	*e*P	**P**	**10 18 08.3**	**-1.6**
SMY	**Shemya**	**25.32**	**47**	*e*P	**P**	**10 18 12.5**	**+1.9**
SMY				pmax	pmax		
	comp=Z,1μm,1.3s						
SMY	**Shemya**	**25.32**	**47**	*e*P	**P**	**10 18 12.5**	**+1.9**
	comp=Z,1μm,1.3s						
GUMO	**Guam**	**25.54**	**176**	P	**P**	**10 18 12.5**	**-0.3**
	comp=Z,178nm,0.9s,baz=160,slow=6.7,SNR=10						
GUMO				LR	LR	10 30 03.7	
	comp=Z,6μm,19.1s,baz=24,slow=41						
GUMO	**Guam**	**25.54**	**176**	*e*P	**P**	**10 18 14.2**	**+1.4**
GUMO				pmax	pmax		
	comp=Z,2μm,1.4s						
GUMO	**Guam**	**25.54**	**176**	*e*P	**P**	**10 18 14.2**	**+1.4**
	comp=Z,2μm,1.4s						
BOD	**Bodaibo**	**26.43**	**324**	*e*P	**P**	**10 18 20.8**	**+0.3**
BOD				*e*S	**S**	**10 22 57.1**	**+5.2**
BOD				pmax	pmax		
	comp=Z,144nm,1.5s						
ULN	**Ulaanbaatar**	**27.23**	**300**	*ce*P	**P**	**10 18 28.2**	**+0.1**
ULN				pmax	pmax		
	comp=Z,230nm,2.5s						
ULN				MLR	MLR		
	comp=Z,20μm,18.0s						
ULN	**Ulaanbaatar**	**27.23**	**300**	*e*P	**P**	**10 18 28.3**	**+0.2**
	comp=Z,58nm,0.9s						
ULN				LR	LR		
	comp=Z,16μm,20.0s						
ULN	**Ulaanbaatar**	**27.23**	**300**	P	**P**	**10 18 28.5**	**+0.4**
	SNR=47						
SONA1	**Songino Array**	**27.67**	**300**	*e*P	**P**	**10 18 31.8**	**-0.2**
SONM	**Songino Array**	**27.67**	**300**	P	**P**	**10 18 32.5**	**+0.6**
	comp=Z,31nm,0.6s,baz=96,slow=7.9,SNR=145						
SONM				PcP	**PcP**	**10 21 48.3**	**-0.1**
	comp=Z,11nm,0.8s,baz=167,slow=2.8,SNR=3.9						
SONM				LR	LR	10 30 17.1	
	comp=Z,22μm,18.0s,baz=98,slow=38						
SONM				P3KPbc		10 51 02.4	
	comp=Z,1.9nm,0.9s,baz=264,slow=4.0,SNR=12						
XAN	**Xi'an**	**27.68**	**270**	P	**P**	**10 18 30.8**	**-1.3**
XAN				pP	pP	10 18 40.8	-0.5
XAN				sP	sP	10 18 44.8	-0.3
XAN				PP	**PnPn**	**10 19 17.8**	**-0.5**
XAN				S	**S**	**10 23 03.9**	**-8.3**
XAN				sS	sS	10 23 20.8	-6.6
XAN				pmax	pmax		
	comp=Z,140nm,0.8s						
XAN				pmax	pmax		
	comp=Z,2μm,6.5s						
XAN				LR	LR		
	comp=Z,6μm,15.1s						
XAN				LR	LR		
	comp=Z,9μm,12.6s						
XAN				LR	LR		
	comp=Z,12μm,13.9s						
H11N2	**WAKE ISLAND Hy**	**28.32**	**126**	T	T	10 49 16.7	
	baz=318,slow=75,SNR=162						
H11N1	**WAKE ISLAND Hy**	**28.33**	**126**	T	T	10 49 15.1	
	baz=318,slow=75,SNR=211						
H11N3	**WAKE ISLAND Hy**	**28.34**	**126**	T	T	10 49 19.8	
	baz=318,slow=75,SNR=249						
ENH	**Enshi**	**28.76**	**262**	*e*P	**P**	**10 18 41.3**	**-0.5**
	comp=Z,1μm,1.3s						
ENH				*e*PcP	**PcP**	**10 21 50.2**	**-1.1**
ENH				*e*S	**S**	**10 23 24.4**	**-4.8**
ENH				LR	LR		
	comp=Z,12μm,20.0s						
H11S1	**WAKE ISLAND Hy**	**29.12**	**128**	T	T	10 50 14.8	
	baz=319,slow=76,SNR=167						
H11S3	**WAKE ISLAND Hy**	**29.12**	**128**	T	T	10 50 16.9	
	baz=319,slow=76,SNR=188						
H11S2	**WAKE ISLAND Hy**	**29.14**	**128**	T	T	10 50 07.2	
	baz=319,slow=76,SNR=170						
IRK	**Irkutsk**	**29.62**	**309**	*e*P	**P**	**10 18 49.4**	**+0.2**
IRK				*e*		10 19 01.6	
IRK				*e*S	**S**	**10 23 42.6**	**+0.3**
IRK				pmax	pmax		
	comp=Z,155nm,2.6s						
HKC	**Hong Kong Obse**	**29.73**	**244⇑**	*i*P	**P**	**10 18 52.0**	**+1.7**
GZH	**Guangzhou**	**29.81**	**246**	P	P	10 18 45.8	-5.2
GZH				pP	pP	10 18 56.8	-3.4
GZH				PcP	**PcP**	**10 21 52.0**	**-2.0**
GZH				S	S	10 23 33.3	-12
GZH				pmax	pmax		
	comp=Z,2μm,4.6s						
GZH				LR	LR		
	comp=Z,28μm,17.5s						
GZH				LR	LR		
	comp=Z,26μm,17.6s						
TLY	**Talaya**	**29.91**	**308**	P	**P**	**10 18 52.9**	**+1.2**
	comp=Z,21nm,0.7s,baz=295,slow=7.0,SNR=7.3						
TLY				PcP	**PcP**	**10 21 54.6**	**+0.8**
	comp=Z,22nm,0.8s,baz=226,slow=1.7,SNR=5.7						
TLY				LR	LR	10 31 32.1	
	comp=Z,25μm,18.9s,baz=98,slow=38						
TLY	**Talaya**	**29.91**	**308**	*c i*P	**P**	**10 18 51.9**	**+0.2**
TLY				*e*		10 20 06.9	
TLY				*e*		10 21 54.3	
TLY				*e*S	**S**	**10 23 44.4**	**-2.4**
TLY				pmax	pmax		
	comp=Z,157nm,1.9s						
TLY				MLR	MLR		
	comp=Z,20μm,15.0s						
TLY	**Talaya**	**29.91**	**308**	*e*P	**P**	**10 18 53.1**	**+1.4**
	comp=Z,79nm,1.0s						
TLY				PcP	**PcP**	**10 21 54.6**	**+0.8**
BCPH	**Baguio City Da**	**29.95**	**227⇓**	*e*P	**P**	**10 18 50.0**	**-2.6**
BCPH				*e*S	**S**	**10 23 49.1**	**+0.7**
ZAK	**Zakamensk**	**29.96**	**305**	*e*P	**P**	**10 18 52.0**	**-0.3**
ZAK				pmax	pmax		
	comp=Z,75nm,1.3s						
MCO	**Taipa Grande**	**30.27**	**244**	P	**P**	**10 18 57.0**	**+1.9**
LZH	**Lanzhou**	**30.95**	**277**	⇑P	**P**	**10 19 01.3**	**0.0**
LZH				pP	pP	10 19 12.1	+1.6
LZH				sP	sP	10 19 16.8	+2.5
LZH				PP	**PnPn**	**10 20 04.0**	**+1.5**
LZH				S	**S**	**10 24 02.0**	**-1.8**
LZH				sS	sS	10 24 19.3	+0.3
LZH				SS	**SnSn**	**10 25 46.1**	**+1.0**
LZH				pmax	pmax		
	comp=Z,150nm,1.0s						
LZH				pmax	pmax		
	comp=Z,2μm,4.9s						
LZH				LR	LR		
	comp=Z,12μm,14.0s						
LZH				LR	LR		
	comp=Z,13μm,13.2s						
LZH				LR	LR		
	comp=Z,20μm,17.0s						
MOY	**Mondy**	**31.54**	**307**	*e*P	**P**	**10 19 06.3**	**+0.1**
MOY				pmax	pmax		
	comp=Z,240nm,3.1s						
BILL	**Bilibino**	**31.64**	**16**	*de*P	**P**	**10 19 06.9**	**+0.2**

BILL *i* 10 20 10.6
BILL *i* PPP PPP 10 20 21.9
BILL *i* S **S** **10 24 14.0 +0.5**
BILL *i* SS **SnSn** **10 26 01.6 +0.8**
BILL pmax pmax
comp=Z,236nm,1.7s
BILL MLR MLR
comp=Z,7µm,19.0s
BILL Bilibino 31.64 16 *e*P **P** **10 19 06.8 0.0**
comp=Z,164nm,0.9s
BILL LR LR
comp=Z,7µm,20.0s
GYA Guiyang 32.80 258⇑ *i*P **P** **10 19 16.9 -0.6**
GYA pP sP 10 19 30.0 -0.6
GYA PP **PnPn** **10 20 28.9 +2.5**
GYA PcP **PcP** **10 22 04.5 +2.4**
GYA S **S** **10 24 29.8 -2.9**
GYA sS sS 10 24 50.0 +2.1
GYA ScP **ScP** **10 25 43.3 -0.4**
GYA SS **SnSn** **10 26 31.8 +1.7**
GYA ScS **ScS** **10 29 41.6 -2.3**
GYA pmax pmax
comp=Z,500nm,0.9s
GYA pmax pmax
comp=Z,1µm,6.8s
GYA LR LR
comp=Z,12µm,17.1s
GYA LR LR
comp=Z,14µm,19.0s
GYA LR LR
comp=Z,19µm,21.2s
CD2 Chengdu 32.92 268 P **P** **10 19 17.4 -1.0**
CD2 sP sP 10 19 31.6 +0.1
CD2 PP **PP** **10 20 32.3 -0.8**
CD2 S **S** **10 24 31.6 -2.7**
CD2 sS sS 10 24 51.5 +2.0
CD2 pmax pmax
comp=Z,290nm,1.3s
CD2 LR LR
comp=Z,20µm,14.4s
CD2 LR LR
comp=Z,17µm,15.1s
GTA Gaotai 33.14 284 *e*P **P** **10 19 20.8 +0.4**
GTA pP pP 10 19 30.1 +0.5
GTA sP sP 10 19 34.3 +0.8
GTA PcP **PcP** **10 22 03.3 +0.4**
GTA S **S** **10 24 39.1 +1.3**
GTA sS sS 10 24 54.5 +1.5
GTA SS **SnSn** **10 26 42.1 +4.0**
GTA pmax pmax
comp=Z,31nm,0.7s
GTA pmax pmax
comp=Z,2µm,7.1s
GTA LR LR
comp=Z,7µm,22.3s
GTA LR LR
comp=Z,18µm,18.5s
GTA LR LR
comp=Z,24µm,17.8s
TIXI Tiksi 33.33 352 P **P** **10 19 21.3 -0.2**
comp=Z,13nm,0.6s,baz=149,slow=7.9,SNR=25
TIXI Tiksi 33.33 352 *de*P **P** **10 19 21.1 -0.4**
TIXI pmax pmax
comp=Z,78nm,2.5s
TIXI MLR MLR
comp=Z,10µm,17.0s
TIXI Tiksi 33.33 352 *e*P **P** **10 19 20.9 -0.6**
comp=Z,41nm,0.7s
TIXI LR LR
comp=Z,8µm,20.0s
MIDW Midway 34.54 96 *e*P **P** **10 19 32.7 +0.3**
comp=Z,335nm,1.0s
MIDW LR LR
comp=Z,6µm,19.0s
QIZ Qiongzhong 34.92 244 P **P** **10 19 36.8 +1.0**
QIZ sP **sP** **10 19 49.8 +0.9**
QIZ PP **PP** **10 20 54.4 -0.9**
QIZ S **S** **10 25 09.0 +3.7**
QIZ LR LR
comp=Z,5µm,12.5s
QIZ LR LR
comp=Z,4µm,17.1s
PATS Pohnpei 35.05 153 *e*P **P** **10 19 37.6 +0.7**
comp=Z,187nm,1.0s
DAV Davao City (W) 35.58 211⇑ *e*P **P** **10 19 39.4 -2.1**
DAV Davao City (W) 35.58 211 ⇓S **S** **10 25 15.3 -0.2**
DAV Davao City (W) 35.58 211 *e*P **P** **10 19 41.6 +0.1**
comp=Z,293nm,1.2s
DAV LR LR
comp=Z,12µm,22.0s
DAV Davao City (W) 35.58 211 P **P** **10 19 42.1 +0.5**
SNR=6.4
GAMB Gambell 36.27 32 *e*P **P** **10 19 46.8 -0.1**
comp=Z,54nm,0.9s
KMI Kunming 36.50 260 P **P** **10 19 49.5 -0.1**
KMI pP sP 10 20 02.3 -0.4
KMI sP pP 10 20 07.0 +8.1
KMI PP **PP** **10 21 14.8 +1.9**
KMI S **S** **10 25 24.4 -5.5**
KMI pmax pmax
comp=Z,690nm,1.3s
KMI pmax pmax
comp=Z,3µm,4.1s
KMI LR LR
comp=Z,12µm,20.0s
KMI LR LR
comp=Z,12µm,18.6s
KMI LR LR
comp=Z,18µm,19.8s
KRAR Krasnoyarsk 36.80 314 *ce*P **P** **10 19 51.9 +0.4**
KRAR pmax pmax
comp=Z,196nm,1.4s
KRAR MLR MLR
comp=Z,11µm,19.0s
MYLDM Lahad Datu 40.42 219 ⇓P **P** **10 20 25.0 +2.7**
MYLDM Lahad Datu 40.42 219 *e*P **P** **10 20 24.6 +2.3**
comp=Z,565nm,1.4s
SKNT Sakolnakorn 40.45 248 P **P** **10 20 22.7 +0.1**
comp=Z,512nm,1.2s,comp=Z,6µm
SDKM Sandakan 40.69 222 ⇑P **P** **10 20 25.4 +0.8**
TNTI Ternate 40.78 204 P **P** **10 20 25.8 +0.5**
comp=Z,663nm,2.0s,comp=Z,11µm
KKM Kota Kinabalu 40.86 223 ⇓P **P** **10 20 27.5 +1.4**
KKM Kota Kinabalu 40.86 223 *e*P **P** **10 20 27.6 +1.4**
comp=Z,205nm,1.3s
KKM LR LR
comp=Z,6µm,22.0s
WMQ Urumqi 40.99 295 P **P** **10 20 27.8 +0.9**
WMQ pP pP 10 20 37.8 +1.5
WMQ sP sP 10 20 41.6 +1.5
WMQ PP **PnPn** **10 22 07.3 +1.3**
WMQ S **S** **10 26 37.9 +0.9**
WMQ sS sS 10 26 52.3 -0.1
WMQ SS **SS** **10 29 36.9 -2.4**
WMQ ScS **ScS** **10 30 30.3 +1.2**
WMQ pmax pmax
comp=Z,120nm,1.2s
WMQ pmax pmax
comp=Z,2µm,4.0s
WMQ LR LR
comp=Z,4µm,13.4s
WMQ LR LR
comp=Z,3µm,15.0s
WMQ LR LR
comp=Z,3µm,20.2s
CRAI Chiangrai 41.07 255 P **P** **10 20 29.2 +1.5**
comp=Z,207nm,1.4s,comp=Z,4µm
MANU Manus Island 41.21 173 *e*P **P** **10 20 27.5 -1.3**
comp=Z,295nm,1.5s
SWI Sorong 41.26 198 P **P** **10 20 29.6 +0.4**
comp=Z,396nm,1.3s,comp=Z,5µm
ZALV Zalesovo Beam 41.40 311 P **P** **10 20 30.2 +0.2**
comp=Z,61nm,0.5s,baz=94,slow=8.9,SNR=116
ZALV PcP **PcP** **10 22 28.3 +0.7**
comp=Z,45nm,0.7s,baz=87,slow=3.2,SNR=6.6
ZALV LR LR 10 38 43.7
comp=Z,26µm,18.1s,baz=88,slow=38
TSM Tawau 41.50 220 ⇓P **P** **10 20 32.4 +1.2**
JAY Jayapura 41.53 183 P **P** **10 20 31.8 +0.3**
comp=Z,28nm,1.0s,baz=305,slow=19,SNR=52
JAY Jayapura 41.53 183 P **P** **10 20 31.9 +0.4**
comp=Z,354nm,1.1s,comp=Z,4µm
GENI Genyem 41.63 184 P **P** **10 20 33.1 +0.8**
comp=Z,641nm,1.4s,comp=Z,8µm
KHON Khomkaen 41.70 248 P **P** **10 20 33.2 +0.3**
comp=Z,115nm,1.2s,comp=Z,1µm

NRIK Noril'sk 41.85 334 P **P** **10 20 34.1 +0.5**
comp=Z,8.7nm,0.5s,baz=111,slow=7.9,SNR=33
NRIK PcP **PcP** **10 22 29.6 +0.7**
comp=Z,31nm,0.7s,baz=120,slow=4.0,SNR=5.3
NRIK LR LR 10 39 21.1
comp=Z,21µm,19.2s,baz=104,slow=38
CMAI Chiengmai2 42.25 256 P **P** **10 20 38.0 +0.4**
comp=Z,221nm,1.6s,comp=Z,4µm
NVS Novosibirsk 42.27 312 *e*P **P** **10 20 37.5 +0.4**
NVS *e* 10 22 31.2
NVS *e*S **S** **10 26 52.7 -2.7**
NVS pmax pmax
comp=N,76nm,2.0s
NVS pmax pmax
comp=E,218nm,2.0s
NVS pmax pmax
comp=Z,302nm,2.0s
NVS smax smax
comp=N,188nm,2.9s
NVS smax smax
comp=E,341nm,2.9s
UTTA Uttaradit 42.46 252 P **P** **10 20 39.4 +0.3**
comp=E,62nm,1.2s,comp=E,635nm
ZSN Zaisan 42.49 301 *i*P **P** **10 20 35.0 -4.0**
comp=E,2µm,1.9s
ZSN *i* pP **pP** **10 20 49.8 +1.3**
ZSN *i* PP **PP** **10 22 15.4 -2.3**
ZSN *i* S **S** **10 26 55.7 -3.3**
ZSN *i* sS **sS** **10 27 12.8 -1.7**
ZSN LQ LQ 10 35 30.1
ZSN LR LR 10 38 22.9
comp=E,4µm,15.1s
LAMP Lampang 42.66 254 P **P** **10 20 41.5 +0.8**
comp=E,78nm,1.1s,comp=E,767nm
PBKT Sadao Pong 42.90 250 P **P** **10 20 42.7 +0.1**
comp=E,282nm,1.3s,comp=E,5µm
TT01 Tatalina 42.98 36 *e*P **P** **10 20 44.2 +1.5**
TTA Tatalina 42.99 36 *e*P **P** **10 20 44.4 +1.5**
TTA pmax pmax
comp=Z,67nm,1.0s
TTA Tatalina 42.99 36 *e*P **P** **10 20 44.4 +1.5**
comp=Z,67nm,1.0s
CMMT Chiang Mai 43.00 255 P **P** **10 20 43.5 0.0**
comp=Z,235nm,1.6s,comp=Z,4µm
CHTO Chiang Mai 43.00 255 P **P** **10 20 43.5 0.0**
comp=Z,1µm,1.6s,comp=Z,18µm
CHTO Chiang Mai 43.00 255 *e*P **P** **10 20 43.7 +0.2**
CHTO pmax pmax
comp=Z,524nm,1.5s
CHTO MLR MLR
comp=Z,4µm,20.0s
CHTO Chiang Mai 43.00 255 *e*P **P** **10 20 43.7 +0.2**
comp=Z,524nm,1.5s
CHTO LR LR
comp=Z,4µm,20.0s
CHTO Chiang Mai 43.00 255 P **P** **10 20 43.8 +0.4**
SNR=128
FAKI Fak Fak 43.02 196 P **P** **10 20 43.9 +0.3**
comp=Z,545nm,1.5s,comp=Z,8µm
MRSI Marisa 43.04 212 P **P** **10 20 44.4 +0.7**
comp=Z,749nm,1.4s,comp=Z,10µm
SVW2 Sparrevohn 43.10 39 *e*P **P** **10 20 46.0 +2.2**
comp=Z,117nm,1.0s
CM31 Chiang Mai Arr 43.22 254 *e*P **P** **10 20 46.2 +1.0**
CMAR Chiang Mai Arr 43.22 254 P **P** **10 20 46.1 +0.9**
comp=Z,30nm,0.7s,baz=43,slow=6.9,SNR=6.2
CMAR PcP **PcP** **10 22 34.9 +0.7**
comp=Z,23nm,0.8s,baz=16,slow=2.6,SNR=11
CMAR Chiang Mai Arr 43.22 254 P **P** **10 20 46.1 +0.9**
CMAR 10 22 34.9
CMAR pmax pmax
comp=Z,31nm,0.7s
CMAR pmax pmax
comp=Z,23nm,0.8s
LSA Lhasa 43.24 274 P **P** **10 20 46.8 +0.9**
LSA S **S** **10 27 09.6 -1.7**
LSA pmax pmax
comp=Z,53nm,2.0s
LSA pmax pmax
comp=Z,1µm,7.0s
LSA LR LR
comp=Z,8µm,16.4s
LSA LR LR
comp=Z,15µm,16.4s
LSA Lhasa 43.24 274 *e*P **P** **10 20 46.5 +0.6**
LSA *e*S S 10 27 00.8 -10
LSA pmax pmax
comp=Z,52nm,0.6s
LSA MLR MLR
comp=Z,12µm,20.0s
LSA Lhasa 43.24 274 *e*P **P** **10 20 46.5 +0.6**
comp=Z,52nm,0.6s
LSA *e*S S 10 27 00.8 -10
LSA LR LR
comp=Z,12µm,20.0s
SRAK Srakaew 43.81 247 P **P** **10 20 47.0 -3.0**
comp=Z,624nm,1.2s,comp=Z,7µm
SANI Sanana 43.88 205 P **P** **10 20 51.7 +1.2**
comp=Z,707nm,1.2s,comp=Z,8µm
MK31 Makanchi Array 44.04 301 P **P** **10 20 51.6 0.0**
MK31 pmax pmax
comp=Z,173nm,1.1s
MK31 Makanchi Array 44.04 301 *e*P **P** **10 20 51.5 0.0**
MKAR Makanchi Array 44.04 301 P **P** **10 20 51.7 +0.2**
comp=Z,39nm,0.5s,baz=83,slow=10,SNR=226
MKAR S **S** **10 27 21.7 +0.1**
comp=Z,9.2nm,1.0s,baz=93,slow=15,SNR=6.2
MKAR LR LR 10 39 46.9
comp=Z,12µm,20.9s,baz=73,slow=37
MKAR P4KPbc 10 58 46.4
comp=Z,0.1nm,0.2s,baz=90,slow=2.7,SNR=3.7
MHMT Maesarieng 44.15 255 P **P** **10 20 53.4 +0.7**
comp=Z,170nm,1.4s,comp=Z,2µm
MSAI Masohi 44.23 200 P **P** **10 20 55.3 +2.0**
comp=Z,107nm,1.8s,comp=Z,3µm
OHAK Old Harbor 44.38 44 *e*P **P** **10 20 55.6 +1.5**
comp=Z,119nm,1.0s
CHBT CHBT 44.46 245 P **P** **10 20 56.0 +0.8**
comp=Z,547nm,1.2s,comp=Z,7µm
RSO Renoubt South 44.49 40 *e*P **P** **10 20 57.0 +1.8**
SEM Semipalatinsk 44.63 306 *i* P **P** **10 20 55.9 -0.3**
comp=Z,912nm,1.9s
SEM *i* PP **PP** **10 22 40.6 +0.2**
SEM *e*S **S** **10 27 29.3 -0.8**
SEM LR LR 10 39 46.9
comp=Z,8µm,17.5s
NLAI Namlea 44.66 203 P **P** **10 20 58.0 +1.3**
comp=Z,189nm,1.2s,comp=Z,3µm
SHL Shillong 44.66 268 *e*P **P** **10 20 55.6 -1.3**
SHL IAmb IAmb 10 20 56.6
comp=Z,199nm,1.6s
SHL *i* x x 10 27 35.0
KDAK Kodiak Island 44.72 43 P P 10 21 12.1 +15
comp=Z,82nm,0.8s,baz=258,slow=4.3,SNR=19
KDAK Kodiak Island 44.72 43 *i* P **P** **10 20 57.4 +0.7**
KDAK Kodiak Island 44.72 43 *e*P **P** **10 20 57.7 +1.0**
comp=Z,211nm,1.3s
KDAK LR LR
comp=Z,8µm,21.0s
PPLA Purkeypile 44.73 36 *e*P **P** **10 20 59.2 +2.2**
CAST Castle Rocks 44.79 35 *e*P **P** **10 20 59.4 +2.1**
SPU Mount Spurr 44.81 39 *e*P **P** **10 20 59.2 +1.6**
BTM Bintulu 44.92 225 ⇓P **P** **10 20 59.6 +0.7**
BNDI Bandanaira 45.11 199 P **P** **10 21 00.7 +0.4**
comp=Z,1µm,1.5s,comp=Z,14µm
BPAW Bear Paw Mtn. 45.28 34 *e*P **P** **10 21 02.9 +1.7**
KTH Kantishna Hill 45.31 35 *e*P **P** **10 21 03.3 +1.8**
comp=Z,201nm,1.0s
MLY Manley 45.41 33 *e*P **P** **10 21 04.1 +1.9**
BRLK Bradley Lake 45.45 41 *e*P **P** **10 21 03.8 +1.1**
KURK Kurchatov 45.59 307 P **P** **10 21 04.5 +0.7**
KURK 10 22 42.6
KURK S **S** **10 27 44.8 +0.8**
KURK pmax pmax
comp=Z,83nm,0.4s
KURK pmax pmax
comp=Z,17nm,0.8s
KURK smax smax
comp=N,8.0nm,1.1s
KURK Kurchatov 45.59 307 *e*P **P** **10 21 03.9 +0.1**
comp=N,293nm,0.9s
KURK PcP **PcP** **10 22 42.6 +0.8**
KURK S **S** **10 27 44.8 +0.8**
KURK P'P' 10 52 33.1
KURK LR LR
comp=Z,22µm,19.0s

TRF Thorofare Moun 45.59 35 *e*P **P** **10 21 06.1 +2.2**
KURBB Kurchatov Arra 45.67 307 P **P** **10 21 04.5 0.0**
comp=Z,78nm,0.4s,baz=79,slow=8.4,SNR=281
KURBB PcP **PcP** **10 22 42.6 +0.5**
comp=Z,17nm,0.8s,baz=80,slow=5.6,SNR=5.8
KURBB S **S** **10 27 44.8 -0.2**
comp=Z,7.6nm,1.1s,baz=83,slow=16,SNR=9.1
KURBB PKPPKP P'P'df 10 52 33.1 -8.4
comp=Z,0.3nm,0.3s,baz=224,slow=2.9,SNR=4.4
SRDT SRDT 45.69 250 P **P** **10 21 05.4 +0.4**
comp=Z,541nm,2.2s,comp=Z,11µm
COLD Coldfoot 45.70 30 *e*P **P** **10 21 06.2 +1.7**
KHLT Khaolaem Dam 45.79 251 P **P** **10 21 06.8 +1.0**
comp=Z,83nm,1.8s,comp=Z,2µm
RC01 Rabbit Creek A 45.94 39 *e*P **P** **10 21 08.2 +1.8**
SBUM Sibu 46.02 225⇑P **P** **10 21 08.3 +0.7**
SBUM Sibu 46.02 225 *e*P **P** **10 21 07.2 -0.4**
SEW Seward 46.15 40 *e*P **P** **10 21 09.1 +1.0**
MCK McKinley 46.19 35 *e*P **P** **10 21 09.5 +1.1**
MCK McKinley 46.19 35 *e*P **P** **10 21 09.5 +1.1**
PMR Palmer 46.20 38 *e*P **P** **10 21 08.8 +0.3**
PMR pmax pmax
comp=Z,65nm,0.8s
PMR Palmer 46.20 38 *e*P **P** **10 21 08.8 +0.3**
comp=Z,65nm,0.8s
RND Reindeer 46.24 35 *e*P **P** **10 21 10.1 +1.2**
RND pmax pmax
comp=Z,84nm,0.8s
RND Reindeer 46.24 35 *e*P **P** **10 21 10.1 +1.2**
comp=Z,84nm,0.8s
MDM Murphy Dome 46.47 33 *e*P **P** **10 21 12.3 +1.7**
TARA Tarawa 46.54 136 *e*P **P** **10 21 12.5 +0.9**
comp=Z,773nm,1.6s
TARA LR LR
comp=Z,542nm,20.0s
WRH Wood River Hil 46.54 34 *e*P **P** **10 21 12.3 +1.2**
comp=Z,106nm,1.0s
SML Sawmill 46.56 38 *e*P **P** **10 21 13.4 +2.0**
SML Sawmill 46.56 38 *e*P **P** **10 21 13.4 +2.0**
COLA College 46.63 33 *d i*P **P** **10 21 13.0 +1.2**
COLA pmax pmax
comp=Z,40nm,0.9s
COLA MLR MLR
comp=Z,2µm,19.0s
COLA College 46.63 33 *e*P **P** **10 21 13.5 +1.7**
comp=Z,234nm,0.8s
COLA LR LR
comp=Z,2µm,20.0s
SHLS Shalkode 46.65 296 *e*P **P** **10 21 13.1 +0.6**
comp=Z,192nm,0.7s
SHLS *i* PP **PP** **10 23 02.2 -0.2**
SHLS *e*S **S** **10 28 01.2 +1.4**
SHLS LR LR 10 41 21.4
comp=Z,2µm,14.9s
CCB Clear Creek Bu 46.66 34 *e*P **P** **10 21 13.5 +1.5**
BKB Balikpapan 46.80 217 P **P** **10 21 15.0 +1.3**
PDGK Podgornoye 46.87 297 P **P** **10 21 13.8 -0.2**
PDGK pmax pmax
comp=Z,153nm,1.2s
DHY Denali Highway 46.93 36 *e*P **P** **10 21 15.7 +1.3**
JOHN Johnston Islan 46.93 105 PFAKE 10 21 30.0 +15
JOHN LR LR
comp=Z,502nm,19.0s
SCM Sheep Creek Mo 47.04 37 *e*P **P** **10 21 16.9 +1.8**
SCM Sheep Creek Mo 47.04 37 *e*P **P** **10 21 16.9 +1.8**
HDA Harding Lake 47.04 34 *e*P **P** **10 21 17.4 +2.4**
ILAR Eielson Array 47.05 33 P **P** **10 21 15.8 +0.7**
comp=Z,40nm,0.8s,baz=264,slow=5.2,SNR=136
ILAR Eielson Array 47.05 33 P **P** **10 21 15.8 +0.7**
ILAR pmax pmax
comp=Z,41nm,0.8s
ILB Eielson Array 47.05 33 *e*P **P** **10 21 15.8 +0.7**
IL1 Eielson Array 47.05 33 *e*P **P** **10 21 15.0 -0.1**
TTSI Tana Toraja 47.10 212 P **P** **10 21 15.9 -0.1**
comp=Z,91nm,1.5s,comp=Z,2µm
UZB Uzynbulak 47.25 296⇑ *i*P **P** **10 21 17.1 0.0**
comp=Z,965nm,1.9s
UZB *e*S **S** **10 28 09.1 +0.8**
UZB LR LR 10 41 37.0
comp=Z,1µm,14.3s
MTKI Muara Teweh, K 47.49 220 P **P** **10 21 19.9 +0.8**
comp=Z,652nm,1.3s,comp=Z,9µm
FYU Fort Yukon 47.66 31 *e*P **P** **10 21 22.3 +2.5**
KLU Klutina 47.74 38 *e*P **P** **10 21 22.6 +2.0**
PAX Paxson 47.80 36 *e*P **P** **10 21 23.3 +2.2**
PAX Paxson 47.80 36 *e*P **P** **10 21 23.3 +2.2**
DIV Divide 47.85 38 *e*P **P** **10 21 23.5 +2.1**
KSM Kuching 47.89 227 *e*P **P** **10 21 22.8 +0.6**
comp=Z,293nm,1.1s
KSM *e*PcP **PcP** **10 22 50.3 -0.2**
KSM *e*S **S** **10 28 13.6 -4.0**
KSM LR LR
comp=Z,5µm,20.0s
EYAK Cordova Ski Ar 47.94 39 *e*P **P** **10 21 24.2 +2.2**
SPSI Sidrap Palu 47.95 212 P **P** **10 21 22.1 -0.5**
comp=Z,121nm,1.6s,comp=Z,3µm
GUN Gumba 48.16 275 *e*P **P** **10 21 25.5 +0.8**
comp=Z,453nm,0.9s
DOT Dot Lake 48.37 35 *e*P **P** **10 21 26.4 +1.1**
STKI Sintang 48.41 224 P **P** **10 21 27.2 +1.0**
comp=Z,362nm,1.3s
CHKK Chushkaly 48.42 298⇑ *i*P **P** **10 21 26.3 +0.2**
comp=Z,2µm,1.4s
CHKK *e*S **S** **10 28 24.7 +0.1**
BMRM Bremner River 48.44 38 *e*P **P** **10 21 28.1 +2.2**
PMG Port Moresby 48.48 174 P **P** **10 21 26.2 -0.4**
comp=Z,50nm,1.1s,baz=349,slow=5.7,SNR=8.6
PMG Port Moresby 48.48 174 *ce*P **P** **10 21 25.8 -0.9**
PMG pmax pmax
comp=Z,223nm,1.2s
PMG Port Moresby 48.48 174 *e*P **P** **10 21 26.5 -0.1**
PMG LR LR
comp=Z,2µm,21.0s
MENT Mentasta 48.60 36 *e*P **P** **10 21 29.1 +2.0**
MDOK Medeo 48.61 297⇓ *i*P **P** **10 21 28.4 +0.7**
comp=Z,1µm,1.8s
MDOK *e*S **S** **10 28 28.5 +0.9**
MDOK LR LR 10 41 56.5
comp=Z,4µm,17.4s
AAA Alma-Ata 48.65 297 *e*P **P** **10 21 29.3 +1.4**
AAA *e*S **S** **10 28 28.7 +0.8**
AAA pmax pmax
comp=Z,3µm,2.7s
AAA smax smax
comp=E,2µm,7.1s
AAA MLR MLR
comp=Z,11µm,17.0s
KKN Kakani 48.69 275 *e*P **P** **10 21 28.8 +0.3**
comp=Z,232nm,0.6s
PKIN Phulchoki 48.70 274 *e*P **P** **10 21 28.8 +0.1**
comp=Z,150nm,0.8s
KUU Kurty 48.87 298⇓ *i*P **P** **10 21 29.3 -0.2**
comp=Z,719nm,1.6s
KUU *i* PP **PP** **10 23 22.7 0.0**
KUU *i* S **S** **10 28 30.8 0.0**
KUU LR LR 10 42 26.4
comp=Z,3µm,16.9s
DMN Daman 48.91 275 *e*P **P** **10 21 30.4 +0.1**
comp=Z,2µm,1.9s
KAPI Kappang 48.91 211 LR LR 10 42 19.9
comp=Z,4µm,20.2s,baz=17,slow=36
KAPI Kappang 48.91 211 *e*P **P** **10 21 30.5 +0.5**
GKN Gorkha 49.08 275 *e*P **P** **10 21 31.5 0.0**
comp=Z,2µm,1.5s
KTGM Kuala Trenggan 49.26 237 ⇓P **P** **10 21 34.6 +1.9**
BRZS Berezniki 49.47 307⇑ *e*P **P** **10 21 33.9 -0.1**
comp=Z,104nm,0.8s
BRZS *e*S **S** **10 28 38.6 -0.5**
EGAK Eagle 49.49 33 *e*P **P** **10 21 35.1 +1.2**
EGAK LR LR
comp=Z,3µm,19.0s
BSSI Bau Bau, Buton 49.65 210 P **P** **10 21 35.8 +0.2**
comp=Z,284nm,1.3s,comp=Z,5µm
TKM2 Tokmak 2 49.70 297 P **P** **10 21 36.6 +0.5**
TKM2 pmax pmax
comp=Z,264nm,1.0s
TKM2 Tokmak 2 49.70 297 *e*P **P** **10 21 36.8 +0.7**
TKM2 LR LR
comp=Z,8µm,20.0s
BBKI Banjar Baru 49.70 218 P **P** **10 21 35.8 -0.3**
comp=Z,604nm,1.4s,comp=Z,9µm
CHKZ Chkalovo 49.76 312 P **P** **10 21 36.0 0.0**
CHKZ pmax pmax
comp=Z,71nm,0.9s
KOLN Koldanda 50.00 276 *e*P **P** **10 21 38.7 +0.2**

comp=Z,613nm,1.3s
BVA0 Borovoye Array 50.05 311 *i* P **P** **10 21 38.1 -0.2**
BVA0 pmax pmax
comp=Z,58nm,0.9s
BVAR Borovoye Array 50.05 311 P **P** **10 21 38.6 +0.2**
comp=Z,20nm,0.5s,baz=79,slow=8.3,SNR=93
BVAR PcP **PcP** **10 22 58.2 +0.4**
comp=Z,43nm,0.7s,baz=80,slow=3.6,SNR=7.9
BVAR S **S** **10 28 49.6 +2.4**
comp=Z,2.7nm,0.7s,baz=76,slow=12,SNR=4.1
BVAR LR LR 10 44 10.6
comp=Z,19μm,18.0s,baz=76,slow=38
BVAR PKPPKP P'P'df 10 52 21.6 -14
comp=Z,1.2nm,0.9s,baz=234,slow=5.0,SNR=4.3
BRVK Borovoye 50.10 311 *ce*P **P** **10 21 39.0 +0.3**
BRVK pmax pmax
comp=Z,263nm,2.5s
BRVK MLR MLR
comp=Z,19μm,18.0s
BRVK Borovoye 50.10 311 *e*P **P** **10 21 39.0 +0.3**
BRVK LR LR
comp=Z,17μm,19.0s
PYUN Piuthan 50.31 276 *e*P **P** **10 21 41.2 +0.3**
comp=Z,2μm,1.3s
FRU Bishkek 50.41 297⇑ *i*P **P** **10 21 41.5 +0.3**
FRU *e* 10 22 57.0
FRU *e* 10 23 40.0
FRU *i*S **S** **10 28 52.0 -0.4**
FRU *e*SS **SS** **10 32 22.0 -4.0**
FRU pmax pmax
comp=Z,900nm,2.1s
FRU smax smax
comp=N,520nm,2.4s
FRU MLR MLR
comp=E,7μm,17.0s
AAK Ala-Archa 50.56 297 P **P** **10 21 42.8 +0.3**
comp=E,16nm,0.4s,baz=72,slow=6.3,SNR=90
AAK Ala-Archa 50.56 297 *c i*P **P** **10 21 42.4 -0.2**
AAK pmax pmax
comp=Z,88nm,1.1s
AAK MLR MLR
comp=Z,15μm,18.0s
AAK Ala-Archa 50.56 297 *e*P **P** **10 21 42.9 +0.3**
AAK LR LR
comp=Z,6μm,21.0s
PBKI Pangkalan Bun 50.64 222 P **P** **10 21 43.7 +0.5**
comp=Z,384nm,1.1s,comp=Z,8μm
PKDT Phuket 50.65 244 P **P** **10 21 44.2 +0.9**
comp=Z,469nm,1.1s,comp=Z,8μm
KSH Kashi 50.66 293 P **P** **10 21 47.8 +4.5**
KSH *e*pP sP 10 21 57.6 +1.0
KSH *es*P pP 10 22 01.5 +8.6
KSH *e*PP **PP** **10 23 45.0 +5.8**
KSH PcS **PcS** **10 27 01.3 +3.4**
KSH S **S** **10 29 00.0 +3.8**
KSH SS **SS** **10 32 33.5 +3.1**
KSH pmax pmax
comp=Z,190nm,1.5s
KSH pmax pmax
comp=Z,1μm,3.4s
KSH LR LR
comp=Z,9μm,16.5s
KSH LR LR
comp=Z,6μm,15.9s
KSH LR LR
comp=Z,10μm,16.4s
HNR Honiara 50.88 158 P **P** **10 21 48.0 +3.1**
HNR Honiara 50.88 158 PFAKE 10 22 00.0 +15
HNR LR LR
comp=Z,9μm,21.0s
ZRNK Zerenda 50.88 311 P **P** **10 21 44.4 -0.2**
ZRNK pmax pmax
comp=Z,155nm,1.3s
ZRNK Zerenda 50.88 311 *e*P **P** **10 21 44.9 +0.3**
KULM Kulim 50.93 240 *e*P **P** **10 21 46.0 +0.6**
KULM LR LR
comp=Z,7μm,20.0s
DGPR DIGLIPUR 51.02 254 *e*P **P** **10 21 46.1 0.0**
EKS2 Erkin-Say 51.04 298 *e*P **P** **10 21 46.5 +0.3**
EKS2 MLR MLR
comp=Z,6μm,21.0s
EKS2 Erkin-Say 51.04 298 *e*P **P** **10 21 46.5 +0.3**
EKS2 LR LR
comp=Z,6μm,21.0s
IPM Ipoh 51.28 239 *e*P **P** **10 21 47.6 -0.4**
MMRI Maumere 51.30 207 P **P** **10 21 48.0 -0.1**
comp=Z,477nm,1.9s,comp=Z,10μm
KEKH Kekaha 51.44 92 *e*P **P** **10 21 50.5 +1.3**
MYKOM Kota Tinggi 51.49 234 *e*P **P** **10 21 49.8 +0.2**
SOEI Soe 51.68 204 P **P** **10 21 50.4 -0.7**
comp=Z,359nm,1.1s,comp=Z,5μm
TPRI Tanjung Pinang 51.75 232 P **P** **10 21 52.5 +0.9**
comp=Z,544nm,0.3s,comp=Z,78μm
LGTI Lohaghat 51.77 279 *ex* x 10 22 02.5
INK Inuvik 51.94 28 P **P** **10 21 54.3 +2.0**
comp=Z,41nm,0.8s,baz=301,slow=6.7,SNR=134
INK Inuvik 51.94 28 *e*P **P** **10 21 53.9 +1.6**
INK *e*S **S** **10 29 12.6 -0.2**
INK pmax pmax
comp=Z,68nm,0.5s
INK Inuvik 51.94 28 *e*P **P** **10 21 53.9 +1.6**
comp=Z,68nm,0.5s
INK *e*S **S** **10 29 12.6 -0.2**
MNAS Manas 51.98 298 P **P** **10 21 52.9 -0.3**
MNAS pmax pmax
comp=Z,186nm,1.0s
PBA Port Blair 52.14 252 *e*P P 10 21 53.9 -0.5
PBA IAMs_20 IAMs_20 10 44 58.5
comp=Z,4μm,16.8s
SFK Sufi-Kurgan 52.22 295 P **P** **10 21 54.9 -0.2**
SFK pmax pmax
comp=Z,195nm,1.2s
BATI Baumata 52.30 204 LR LR 10 44 15.2
comp=Z,2μm,19.7s,slow=36
DSRI Dabo 52.82 231 P **P** **10 22 00.7 +1.2**
comp=Z,519nm,1.7s,comp=Z,12μm
COEN Coen 52.85 180 *e*P **P** **10 21 59.3 -0.2**
MTN Manton Dam 52.90 194 *e*P **P** **10 21 59.6 -0.3**
OPA Opana 52.92 91 *e*P **P** **10 22 02.0 +1.8**
OPA Opana 52.92 91 *e*P **P** **10 22 02.0 +1.8**
DDI Dehra Dun 53.04 282 *e*P **P** **10 21 59.9 -1.2**
DDI IAMs_20 IAMs_20 10 45 54.1
comp=Z,6μm,19.9s
KIP Kipapa 53.06 91 *ce*P **P** **10 22 02.8 +1.6**
KIP pmax pmax
comp=Z,2μm,0.8s
KIP Kipapa 53.06 91 *e*P **P** **10 22 02.8 +1.6**
KIP LR LR
comp=Z,3μm,20.0s
KK31 Karatay Array 53.12 299 P **P** **10 22 01.3 -0.1**
KK31 pmax pmax
comp=Z,63nm,1.0s
KKAR Karatay Array 53.12 299 *e*P **P** **10 22 01.3 -0.1**
KKAR Karatay Array 53.12 299 *e*P **P** **10 22 01.3 -0.1**
PLAI Plampang 53.17 212 P **P** **10 22 00.4 -1.6**
comp=Z,144nm,1.9s,comp=Z,3μm
PPBI Pangkal Pinang 53.24 228 P **P** **10 22 03.5 +0.9**
comp=Z,222nm,1.6s,comp=Z,23μm
SKAG Skagway 53.28 39 *e*P **P** **10 22 04.7 +2.4**
SDNR Sundarnagar 53.31 283 *e*P **P** **10 22 03.0 0.0**
SMLA Simla 53.33 283 *i*P **P** **10 22 03.0 -0.1**
TWSI Taliwang, Sumb 53.46 213 P **P** **10 22 03.1 -1.0**
comp=Z,142nm,1.4s,comp=Z,2μm
DHRM DHARAMSHALA 53.47 285 *e*P **P** **10 22 04.3 -0.1**
SRBI Singaraja 53.60 215 P **P** **10 22 05.8 +0.7**
comp=Z,270nm,1.9s,comp=Z,6μm
THN Thein Dam 53.82 285 *e*P **P** **10 22 05.2 -1.5**
THN *ex* x 10 29 40.4
PSI Prapat 53.92 239 LR LR 10 46 04.0
comp=Z,6μm,20.2s,baz=26,slow=37
TBJI Tambak Boyo 54.07 119 P **P** **10 22 09.6 +1.0**
comp=Z,335nm,1.7s,comp=Z,6μm
KCSI Kotacane, Aceh 54.17 241 P **P** **10 22 08.3 -1.1**
comp=Z,57nm,2.0s,comp=Z,1μm
JMBI JAMBI 54.30 231 P **P** **10 22 14.3 +4.0**
CMBY CAMPBELL BAY 54.38 247 *e*P **P** **10 22 09.8 -1.1**
BKNI Bangkinang 54.40 235 P **P** **10 22 12.0 +0.9**
comp=Z,905nm,1.1s,comp=Z,8μm
NDI New Delhi 54.47 280 *e*P P 10 22 06.5 -5.0
comp=Z,16nm,0.8s
NDI *e*S **S** **10 29 42.5 -5.7**
CHLP Challavanipeta 54.57 266 *e*P **P** **10 22 12.7 +0.4**
CHLP IAmb IAmb 10 22 14.4
comp=Z,465nm,1.7s
CHLP *e*S **S** **10 29 51.3 +1.5**
CHLP IVMs_BB IVMs_BB 10 46 20.1
comp=Z,1μm,21.0s
PMBI Palembang 54.66 229 P **P** **10 22 15.1 +2.2**
comp=Z,793nm,1.2s
NGJI Ngawi 54.73 219 P **P** **10 22 14.4 +1.0**
comp=Z,236nm,1.9s,comp=Z,5μm
SMRI Semarang 54.97 221 P **P** **10 22 17.6 +2.5**
MNSI Mandailing Nat 54.98 237 P **P** **10 22 15.0 -0.3**
comp=Z,156nm,1.2s,comp=Z,2μm
SDSI Sungai Dareh 55.12 234 P **P** **10 22 16.8 +0.5**
comp=Z,605nm,1.3s,comp=Z,29μm
SOKR Solikamsk 55.38 322 *c i*P **P** **10 22 16.0 -1.5**
SOKR S **S** **10 29 57.3 -2.2**
SOKR SS **SS** **10 33 45.5 +1.9**
SOKR pmax pmax
comp=Z,98nm,1.7s
WOJI Wonogiri, Jawa 55.40 220 P **P** **10 22 19.0 +0.8**
comp=Z,176nm,1.4s
ARU Arti 55.57 318 P **P** **10 22 19.6 +0.6**
comp=Z,24nm,0.4s,baz=78,slow=5.0,SNR=66
ARU LR LR 10 48 37.8
comp=Z,19μm,18.6s,baz=66,slow=39
ARU Arti 55.57 318 *c i*P **P** **10 22 19.1 +0.1**
ARU 10 23 18.2
ARU 10 24 26.8
ARU PPP PPP 10 25 35.9
ARU *e*S **S** **10 30 01.9 -0.4**
ARU 10 31 58.6
ARU SS **SS** **10 33 45.8 -1.1**
ARU SSS SSS 10 35 56.1
ARU pmax pmax
comp=Z,255nm,1.7s
ARU MLR MLR
comp=Z,23μm,18.0s
ARU Arti 55.57 318 *e*P **P** **10 22 19.3 +0.3**
PCJI Pacitan 55.58 219 P **P** **10 22 23.0 +3.5**
VIS Vishakhapatnam 55.59 265 *e*P **P** **10 22 19.4 -0.3**
VIS IAmb IAmb 10 22 22.5
comp=Z,679nm,2.0s
UGM Wanagama 55.66 220 P **P** **10 22 19.6 -0.6**
comp=Z,616nm,1.4s,comp=Z,9μm
CRAG Craig 55.68 43 *e*P **P** **10 22 22.7 +3.0**
WRAK Wrangell Islan 55.75 42 *e*P **P** **10 22 22.6 +2.3**
WRAK LR LR
comp=Z,3μm,20.0s
POHA Pohakuloa 55.92 91 *e*P **P** **10 22 23.6 +1.3**
POHA LR LR
comp=Z,2μm,21.0s
GSI Gunungsitoli 55.93 239 P **P** **10 22 22.2 +0.1**
comp=Z,602nm,1.7s,comp=Z,11μm
MLOA Mauna Loa Obse 56.01 92 *e*P **P** **10 22 24.7 +1.6**
DLBC Dease Lake 56.21 39 P **P** **10 22 25.4 +1.7**
comp=Z,22nm,0.8s,baz=285,slow=9.5,SNR=27
DLBC Dease Lake 56.21 39 *e*P **P** **10 22 26.2 +2.6**
comp=Z,128nm,1.4s
LEM Lembang 56.25 224 LR LR 10 48 04.6
comp=Z,3μm,19.4s,slow=38
CISI Cisompet, Garu 56.76 223 P **P** **10 22 26.9 -1.1**
BHPL Bhopal 57.10 274 *e*P **P** **10 22 28.9 -1.6**
BHPL IAmb IAmb 10 22 31.9
comp=Z,416nm,1.7s
PVM Polavaram 57.18 266 *e*P **P** **10 22 30.8 -0.2**
PVM IAmb IAmb 10 22 32.8
comp=Z,316nm,1.6s
PVM *e*S **S** **10 30 24.7 +0.1**
PVM IVMs_BB IVMs_BB 10 48 14.6
comp=Z,1μm,21.6s
AB31 Akbulak array 57.50 310 P **P** **10 22 32.4 -0.4**
AB31 pmax pmax
comp=Z,72nm,0.6s
ABKAR Akbulak array 57.50 310 *e*P **P** **10 22 32.7 -0.1**
KBL Kabul 57.79 290 *e*P **P** **10 22 35.0 -0.4**
KBL Kabul 57.79 290 *e*P **P** **10 22 35.0 -0.4**
RPR Rampur 58.07 269 *e*P **P** **10 22 36.9 -0.4**
RPR IAmb IAmb 10 22 38.4
comp=Z,945nm,2.3s
RPR *e* 10 30 34.5
RPR *e*S **S** **10 30 36.9 +0.7**
RPR IVMs_BB IVMs_BB 10 50 43.2
comp=Z,2μm,19.3s
AKTO Aktyubinsk 58.16 311 P **P** **10 22 38.0 +0.5**
comp=Z,21nm,0.8s,baz=74,slow=8.3,SNR=44
AKTO LR LR 10 49 00.0
comp=Z,11μm,19.6s,baz=62,slow=37
FUNA Funafuti 58.17 136 PFAKE 10 22 50.0 +12
FUNA LR LR
comp=Z,7μm,19.0s
SPA0 Spitsbergen Ar 58.66 349 *e*P **P** **10 22 44.1 +3.5**
SPA0 *e*S **S** **10 30 43.6 +1.1**
SPA0 IAMs_20 IAMs_20 10 52 48.7
comp=Z,8μm,18.4s
SPITS Spitsbergen Ar 58.66 349 P **P** **10 22 41.8 +1.2**
comp=Z,5.1nm,0.5s,baz=90,slow=5.8,SNR=22
SPITS LR LR 10 51 31.1
comp=Z,8μm,18.6s,baz=35,slow=40
KBS Kingsbay 58.76 350 *e*P **P** **10 22 42.4 +1.1**
KBS *e*S **S** **10 30 44.5 +0.8**
KBS Kingsbay 58.76 350 *e*P **P** **10 22 43.2 +1.9**
KBS MLR MLR
comp=Z,5μm,22.0s
KBS Kingsbay 58.76 350 *e*P **P** **10 22 43.2 +1.9**
KBS LR LR
comp=Z,5μm,22.0s
SRSP Sriramsagar 58.77 270 *e*P **P** **10 22 41.1 -1.0**
SRSP IAmb IAmb 10 22 43.1
comp=Z,583nm,1.7s
SRSP *e*S **S** **10 30 44.8 -0.5**
SRSP IVMs_BB IVMs_BB 10 50 14.3
comp=Z,2μm,17.6s
CTA Charters Tower 59.03 176 LR LR 10 50 55.3
comp=Z,1μm,18.6s,slow=39
CTAO Charters Tower 59.03 176 *e*P **P** **10 22 42.6 -1.2**
CTAO pmax pmax
comp=Z,108nm,1.4s
CTAO MLR MLR
comp=Z,4μm,21.0s
CTAO Charters Tower 59.03 176 *e*P **P** **10 22 42.6 -1.2**
comp=Z,108nm,1.4s
CTAO LR LR
comp=Z,4μm,21.0s
FITZ Fitzroy Crossi 59.23 199 LR LR 10 46 01.7
comp=Z,2μm,21.7s,slow=34
FITZ Fitzroy Crossi 59.23 199 *e*P **P** **10 22 45.0 -0.1**
comp=Z,554nm,1.7s
FITZ *e*PcP **PcP** **10 23 33.5 +0.3**
WRAB Tennant Creek 59.34 189 *ce*P **P** **10 22 44.7 -1.2**
WRAB pmax pmax
comp=Z,889nm,1.2s
WRAB Tennant Creek 59.34 189 *e*P **P** **10 22 44.5 -1.4**
WRAB LR LR
comp=Z,5μm,21.0s
WRA Warramunga Arr 59.35 189 P **P** **10 22 44.8 -1.2**
comp=Z,160nm,0.8s,baz=7.6,slow=7.3,SNR=371
WRA LR LR 10 47 29.0
comp=Z,4μm,21.1s,baz=5.0,slow=35
WRA PKPPKP P'P'df 10 52 19.6 +9.5
comp=Z,2.0nm,0.9s,baz=175,slow=2.0,SNR=5.4
WRA PKP2bc 10 52 26.8
comp=Z,5.9nm,1.0s,baz=216,slow=2.5,SNR=11
WRA P4KPbc 10 59 49.9
comp=Z,1.2nm,0.9s,baz=5.3,slow=4.4,SNR=6.2
WRA Warramunga Arr 59.35 189 *i* P **P** **10 22 43.2 -2.8**
WRA pmax pmax
comp=Z,160nm,0.8s
NJS Nagarjunasagar 59.39 267 *e*P **P** **10 22 45.8 -0.7**
NJS IAmb IAmb 10 22 47.7
comp=Z,160nm,1.4s
NJS *e*S **S** **10 30 52.5 -0.9**
NJS IVMs_BB IVMs_BB 10 49 08.0
comp=Z,2μm,21.6s
HYB Hyderabad 59.47 268 *i* P **P** **10 22 47.0 -0.1**
HYB *e* 10 23 00.0
HYB *e*PcP **PcP** **10 23 34.5 0.0**
HYB *e*PP **PP** **10 25 00.0 +1.5**
HYB *e*S **S** **10 30 54.0 -0.5**
HYB *e*SS **SS** **10 34 50.0 +0.2**
HYB Hyderabad 59.47 268 *e*P **P** **10 22 45.9 -1.1**
HYB IAmb IAmb 10 22 47.4
comp=Z,93nm,1.0s
HYBB Hyderabad (bro 59.47 268 *e*P **P** **10 22 46.5 -0.6**
HYBB IAmb IAmb 10 22 47.9
comp=Z,86nm,1.0s
HYBB *e*S **S** **10 30 53.7 -0.8**
HYBB IVMs_BB IVMs_BB 10 51 25.2
comp=Z,1μm,15.0s
HSPB Hornsund (broa 59.61 348 *e*P **P** **10 22 48.2 +1.1**
HSPB *e*S **S** **10 30 55.2 +0.5**
HSPB IAMs_20 IAMs_20 10 50 46.5
comp=Z,5μm,19.2s
HSPB Hornsund (broa 59.61 348 *e*P **P** **10 22 48.0 +0.9**
HSPB *i*S **S** **10 30 54.5 -0.2**
SRLM Srisailam 59.97 267 *e*P **P** **10 22 49.7 -0.8**
SRLM IAmb IAmb 10 22 50.8
comp=Z,133nm,1.3s
SRLM *e* 10 30 57.1
SRLM *e*S **S** **10 31 00.9 -0.1**
SRLM IVMs_BB IVMs_BB 10 49 23.5
comp=Z,1μm,25.3s
RES Resolute Bay 60.23 15 P **P** **10 22 52.4 +1.0**
comp=Z,37nm,0.7s,baz=309,slow=6.0,SNR=147
RES Resolute Bay 60.23 15 *e*P **P** **10 22 52.3 +0.9**
comp=Z,88nm,0.7s
RCLA Racherla 60.30 266 *e*P **P** **10 22 52.4 -0.4**
RCLA IAmb IAmb 10 22 54.0
comp=Z,335nm,1.6s
RCLA *e*S **S** **10 31 05.8 +0.6**
RCLA IVMs_BB IVMs_BB 10 49 55.0
comp=Z,1μm,22.9s
KLRI Killari 60.61 270 *e*P **P** **10 22 54.3 -0.6**
KLRI IAmb IAmb 10 22 55.4
comp=Z,138nm,0.9s
KLRI *e*S **S** **10 31 07.1 -2.1**
KLRI IVMs_BB IVMs_BB 10 52 21.4
comp=Z,2μm,18.0s
LVZ Lovozero 60.66 336 PFAKE 10 23 10.0 +15
LVZ LR LR
comp=Z,5μm,19.0s
BJO Bjornoya 60.67 345 *e*P P 10 23 02.6 +8.1
BJO *e*S **S** **10 31 10.3 +2.0**
MDRS Chennai 60.74 263 *e*P **P** **10 22 55.7 0.0**
SKHT Srikalahasti 60.74 264 *e*P **P** **10 22 55.6 -0.1**
SKHT IAmb IAmb 10 22 57.6
comp=Z,1μm,2.2s
SKHT *e*S **S** **10 31 10.7 -0.1**
SKHT IVMs_BB IVMs_BB 10 53 07.7
comp=Z,1μm,15.8s
APA Apatity 61.24 336 *i* P **P** **10 22 59.0 +0.6**
APA *i* 10 23 43.0
APA *i*S **S** **10 31 13.0 -2.8**
APA *i* 10 32 46.0
APA *i*SS **SS** **10 35 18.0 +2.6**
APA MLR MLR
comp=Z,7μm,16.0s
YKA Yellowknife Ar 61.36 31 P **P** **10 23 00.1 +0.9**
comp=Z,14nm,0.8s,baz=304,slow=6.6,SNR=190
YKA PKP2bc 10 52 23.3
comp=Z,2.0nm,1.0s,baz=123,slow=2.6,SNR=5.8
YKA P4KPbc 10 59 59.6
comp=Z,0.1nm,0.6s,baz=301,slow=4.7,SNR=4.6
TMCR Tamitsa 61.45 331 *e*P **P** **10 23 00.4 +0.6**
TMCR *e*S **S** **10 31 24.2 +5.7**
TMCR pmax pmax
comp=Z,71nm,1.1s
KEV Kevo 61.88 339 *e*P **P** **10 23 03.2 +0.6**
KEV pmax pmax
comp=Z,32nm,0.8s
KEV MLR MLR
comp=Z,6μm,19.0s
KEV Kevo 61.88 339 *e*P **P** **10 23 03.2 +0.6**
comp=Z,32nm,0.8s
KEV LR LR
comp=Z,6μm,19.0s
URV Uravakonda 61.92 267 *e*P **P** **10 23 03.1 -0.7**
URV IAmb IAmb 10 23 04.9
comp=Z,347nm,1.8s
URV *e*S **S** **10 31 25.5 -0.4**
URV IVMs_BB IVMs_BB 10 50 43.2
comp=Z,1μm,23.7s
HAMF Hammerfest 62.20 341 *e*P **P** **10 23 04.8 0.0**
HAMF *e*S **S** **10 31 29.2 +1.3**
ARCES ARCESS Array B 62.42 339 P **P** **10 23 07.3 +1.0**
comp=Z,6.4nm,0.5s,baz=52,slow=8.3,SNR=43
ARCES LR LR 10 56 04.6
comp=Z,5μm,18.8s,baz=42,slow=42
ARE0 ARCESS Array S 62.42 339 *e*P **P** **10 23 06.8 +0.4**
ARE0 *e*S **S** **10 31 30.5 -0.3**
POO Poona 62.49 272 *e*P **P** **10 23 06.3 -1.3**
POO IAMs_20 IAMs_20 10 51 51.7
comp=Z,5μm,14.3s
KLMR Klimovskoe 62.60 328 *e*P **P** **10 23 05.7 -1.9**
KLMR *e* 10 23 44.3
KLMR *e* 10 25 24.4
KLMR *e*S **S** **10 31 28.8 -4.3**
KLMR *e*SS **SS** **10 35 35.3 -1.6**
KLMR pmax pmax
comp=Z,206nm,1.5s
KLMR MLR MLR
comp=Z,11μm,15.0s
ASAR Alice Springs 63.08 189 P **P** **10 23 10.2 -1.0**
comp=Z,62nm,0.8s,baz=11,slow=6.2,SNR=426
ASAR LR LR 10 49 33.5
comp=Z,4μm,21.3s,baz=354,slow=35
ASAR PKP2bc 10 52 15.5
comp=Z,1.8nm,0.8s,baz=188,slow=2.7,SNR=6.3
ASAR P4KPbc 11 00 06.0
comp=Z,0.8nm,0.8s,baz=13,slow=4.5,SNR=7.2
BHJ Bhuj 63.09 279 *e*P **P** **10 23 10.8 -0.6**
KTK1 Kautokeino 63.38 340 *e*P **P** **10 23 14.4 +1.7**
KTK1 *e*S **S** **10 31 44.0 +1.3**
DAG Danmarks Havn 63.75 355⇑ *i*P **P** **10 23 15.4 +0.4**
comp=Z,49nm,1.0s
MBWA Marble Bar 63.83 204 *e*P **P** **10 23 15.2 -0.9**
comp=Z,62nm,0.9s
MBWA *e*PcP **PcP** **10 23 52.0 +0.2**
MBWA LR LR
comp=Z,2μm,22.0s
MBWA Marble Bar 63.83 204 P **P** **10 23 15.4 -0.7**
SNR=12
GEYT Alibeck 63.86 299 P **P** **10 23 16.5 0.0**
comp=Z,40nm,0.8s,baz=29,slow=3.4,SNR=57
GEYT LR LR 10 53 54.0
comp=Z,4μm,18.2s,baz=40,slow=39
PGC Sidney 64.00 47 *e*P **P** **10 23 17.6 +0.5**
comp=Z,54nm,1.3s
TRO Tromso 64.09 341 *e*P **P** **10 23 17.7 +0.4**
TRO *e*S **S** **10 31 53.0 +1.6**
GOA Goa 64.27 269 *e*P **P** **10 23 17.8 -1.5**
A04D Lummi Island 64.39 47 P **P** **10 23 20.4 +0.8**
baz=301
NLWA Neilton Lookou 64.40 49 *e*P **P** **10 23 21.1 +1.3**
comp=Z,145nm,1.4s
NLWA LR LR
comp=Z,2μm,20.0s
EIDS Eidsvold 64.65 172 *e*P **P** **10 23 21.3 -0.2**
comp=Z,34nm,0.8s
DZM Mont Dzumac 64.77 156 LR LR 10 47 34.1
comp=Z,6μm,21.9s,baz=322,slow=32
B05A Bryant 64.97 47 P **P** **10 23 24.5 +1.0**
baz=301,SNR=28
RPW Rockport 65.21 47 P **P** **10 23 25.9 +0.8**
MSVF Nonsavu 65.44 143 *e*P **P** **10 23 26.8 0.0**
MSVF pmax pmax
comp=Z,354nm,1.6s
MSVF MLR MLR
comp=Z,3μm,19.0s
MSVF Nonsavu 65.44 143 *e*P **P** **10 23 26.8 0.0**
comp=Z,354nm,1.6s
MSVF LR LR
comp=Z,3μm,19.0s
F04D Rainier, OR 65.58 50 P **P** **10 23 28.4 +1.0**
baz=302
GPW Glacier Peak 65.59 47 P **P** **10 23 29.1 +1.3**
KULLO Kullorsuaq 65.74 6 *i*P **P** **10 23 28.2 +0.2**
comp=Z,67nm,1.2s
C06D Leavenworth 65.84 47 P **P** **10 23 30.1 +1.0**
baz=302,SNR=10.0
G03D McMinnville, O 65.89 51 P **P** **10 23 31.0 +1.5**
baz=302
TDL Tradedollar La 65.91 49 P **P** **10 23 31.0 +1.3**
VALT Mount Saint He 65.99 49 P **P** **10 23 32.1 +1.7**
TRD Trivandrum 66.08 261 *e*P **P** **10 23 31.1 0.0**
TRD IAmb IAmb 10 23 32.9
comp=Z,134nm,1.2s
STEI Steigen 66.25 341 *e*P **P** **10 23 31.5 +0.1**
MOS Moscow 66.25 323 *e*P **P** **10 23 29.8 -1.8**
MOS *e* 10 23 44.3
MOS *i* 10 23 44.6
MOS *e* 10 25 56.4
MOS *e*S **S** **10 32 17.4 -1.0**
MOS *i* 10 32 40.2

MOS *e* 10 33 23.2
MOS *e*SS **SS** **10 36 35.3 +1.4**
MOS pmax pmax
comp=Z,1μm,2.5s
MOS pmax pmax
comp=Z,323nm,2.0s
MOS smax smax
comp=N,3μm,4.5s
MOS smax smax
comp=E,2μm,4.0s
MOS MLR MLR
comp=N,6μm,15.0s
MOS MLR MLR
comp=E,8μm,15.0s
MOS MLR MLR
comp=Z,11μm,15.0s
LOF Lofoten 66.52 342 *e*P **P** **10 23 32.4 -0.7**
I03D Drain, OR 66.64 52 P **P** **10 23 35.8 +1.6**
baz=302,SNR=8.6
COCO West Island 66.73 230*ce*P **P** **10 23 36.6 +1.5**
COCO West Island 66.73 230 *e*P **P** **10 23 34.9 -0.2**
comp=Z,7μm,1.6s
COCO *e*PP **PP** **10 26 00.8 -1.7**
COCO LR LR
comp=Z,2μm,20.0s
VRH Novokhopyorsk 66.81 318 *e*P **P** **10 23 35.3 +0.1**
VRH *e**SP **pP** **10 23 44.3 -0.7**
VRH *e*S **S** **10 32 19.1 -6.1**
VRH *e*SS **SS** **10 36 37.6 -5.1**
VRH pmax pmax
comp=Z,80nm,1.1s
VRH pmax pmax
comp=Z,250nm,1.5s
VRH smax smax
comp=N,720nm,3.2s
VRH MLR MLR
comp=Z,19μm,20.0s
VFP Flag Point 66.90 50 P **P** **10 23 37.0 +0.8**
G05D Wamic, OR 67.03 50 P **P** **10 23 37.8 +1.0**
baz=303,SNR=14
OBN Obninsk 67.11 323 P **P** **10 23 37.5 +0.5**
comp=Z,54nm,0.6s,baz=195,slow=0.8,SNR=15
OBN Obninsk 67.11 323*ce*P **P** **10 23 37.1 +0.1**
OBN *i* 10 23 46.8
OBN *e* 10 24 03.1
OBN *e* 10 26 02.6
OBN *e*PPP PPP 10 27 39.6
OBN *i* S **S** **10 32 27.9 -0.8**
OBN *e*SS **SS** **10 36 49.4 +2.3**
OBN pmax pmax
comp=Z,368nm,2.5s
OBN MLR MLR
comp=Z,8μm,15.0s
OBN Obninsk 67.11 323 P **P** **10 23 37.5 +0.5**
OBN LR LR
comp=Z,7μm,19.0s
I04A Tendick Farm, 67.16 52 P **P** **10 23 38.3 +0.6**
baz=303,SNR=11
L02D Cave Junction, 67.31 54 P **P** **10 23 39.8 +1.2**
baz=303,SNR=10
LPSR Galich'ya Gora 67.44 320 *e*P **P** **10 23 39.1 -0.1**
LPSR *e**SP **pP** **10 23 49.6 +0.6**
LPSR *e*S **S** **10 32 30.0 -2.8**
LPSR *e*SS **SS** **10 36 50.3 -2.1**
LPSR *e*SSS SSS 10 39 56.5
LPSR pmax pmax
comp=Z,90nm,1.1s
LPSR pmax pmax
comp=Z,480nm,1.9s
LPSR smax smax
comp=N,820nm,3.4s
LPSR MLR MLR
comp=Z,5μm,21.0s
HAWA Hanford 67.45 48 *e*P **P** **10 23 40.0 +0.7**
comp=Z,38nm,1.0s
HAWA LR LR
comp=Z,1μm,21.0s
HUMO Hull Mountain 67.47 53 *e*P **P** **10 23 40.1 +0.5**
comp=Z,171nm,1.3s
FINES FINESS Array B 67.48 332 P **P** **10 23 39.7 +0.4**
comp=Z,52nm,0.8s,baz=39,slow=8.6,SNR=111
FINES PKP2bc 10 52 04.3
comp=Z,2.6nm,0.9s,baz=341,slow=4.0,SNR=3.8
FINES LR LR 10 55 49.0
comp=Z,15μm,18.6s,baz=42,slow=38
I05D Terrebonne, OR 67.51 51 P **P** **10 23 41.1 +1.2**
baz=303,SNR=17
AFI Afiamalu 67.61 132 LR LR 10 47 06.1
comp=Z,3μm,21.7s,baz=339,slow=30
NEW Newport 67.77 45 P **P** **10 23 42.0 +0.6**
baz=304,SNR=73
NEW Newport 67.77 45 *e*P **P** **10 23 42.0 +0.6**
NEW pmax pmax
comp=Z,82nm,1.0s
NEW MLR MLR
comp=Z,2μm,20.0s
NEW Newport 67.77 45 *e*P **P** **10 23 42.0 +0.6**
comp=Z,82nm,1.0s
NEW LR LR
comp=Z,2μm,20.0s
MOR8 Moi Rana 67.78 340 *e*P **P** **10 23 39.9 -1.3**
MOR8 IAmb IAmb 10 23 41.1
comp=Z,69nm,0.6s
MOR8 *e*pP **pP** **10 23 52.7 +1.7**
KONS Konsvik 67.87 341 *e*P **P** **10 23 42.4 +0.7**
STOK Stokkvaagen 68.03 340 *e*P P 10 23 49.4 +6.8
STOK *e*S **S** **10 32 37.9 -1.5**
YBH Yreka Blue Hor 68.10 54 *e*P **P** **10 23 45.0 +1.3**
YBH pmax pmax
comp=Z,43nm,1.0s
YBH Yreka Blue Hor 68.10 54 *e*P **P** **10 23 45.0 +1.3**
comp=Z,43nm,1.0s
VSR Storozhevoye 68.12 319 *e*P **P** **10 23 43.6 +0.1**
VSR *e**SP **pP** **10 23 53.7 +0.3**
VSR *e*S **S** **10 32 37.6 -3.4**
VSR *e*SS **SS** **10 37 02.4 -0.6**
VSR pmax pmax
comp=Z,150nm,1.5s
VSR pmax pmax
comp=Z,680nm,2.0s
VSR smax smax
comp=E,1μm,4.0s
VSR MLR MLR
comp=Z,20μm,23.0s
J05D Fort Rock, OR 68.15 52 P **P** **10 23 45.5 +1.4**
baz=304,SNR=47
M02C Callahan 68.19 54 P **P** **10 23 45.7 +1.4**
baz=303,SNR=30
K04D Chiloquin, OR 68.20 52 P **P** **10 23 45.2 +0.8**
baz=304,SNR=9.1
JMIC Jan Mayen 68.25 350 *e*P P 10 23 52.6 +8.6
JMIC *e*S **S** **10 32 47.5 +5.5**
JMIC Jan Mayen 68.25 350 LR LR 10 55 26.1
comp=Z,1μm,18.4s,baz=68,slow=37
N02D Trinity Center 68.52 54 P **P** **10 23 47.5 +1.1**
baz=304,SNR=29
SUMG Summit 68.55 0⇑*i*P **P** **10 23 47.7 +1.4**
comp=Z,52nm,0.9s
SUMG Summit 68.55 0 *e*P **P** **10 23 46.9 +0.5**
SUMG pmax pmax
comp=Z,56nm,0.7s
SUMG Summit 68.55 0 *e*P **P** **10 23 46.9 +0.5**
comp=Z,56nm,0.7s
M04C Macdoel 68.61 53 P **P** **10 23 48.1 +1.2**
baz=304,SNR=35
WDC Whiskeytown Da 68.84 55 *e*P **P** **10 23 48.8 +0.6**
WDC pmax pmax
comp=Z,66nm,1.1s
WDC Whiskeytown Da 68.84 55 *e*P **P** **10 23 48.8 +0.6**
comp=Z,66nm,1.1s
WALA Waterton Lakes 69.05 43 *e*P **P** **10 23 49.1 -0.4**
comp=Z,62nm,1.0s
VSU Vasula 69.22 330*ce*P **P** **10 23 50.5 +0.3**
VSU pmax pmax
comp=Z,726nm,2.5s
VSU MLR MLR
comp=Z,17μm,17.0s
HOPS Hopland Field 69.39 56 *e*P **P** **10 23 52.2 +0.5**
comp=Z,70nm,1.4s
O03D Paynes Creek 69.47 54 P **P** **10 23 52.4 +0.1**
baz=304,SNR=39
MOD Modoc Plateau 69.50 52 *e*P **P** **10 23 53.1 +0.7**
comp=Z,43nm,1.0s
GOF Gofitskoye 69.57 312⇑*i*P **P** **10 23 54.0 +1.4**
GOF *e*S **S** **10 32 59.3 +0.9**
GOF pmax pmax
comp=Z,257nm,1.1s
GOF pmax pmax
comp=E,346nm,2.0s
BMO Blue Mountains 69.61 48 *e*P **P** **10 23 53.6 +0.6**
BMO pmax pmax
comp=Z,31nm,0.9s
BMO MLR MLR
comp=Z,1μm,22.0s
BMO Blue Mountains 69.61 48 *e*P **P** **10 23 53.6 +0.6**
comp=Z,31nm,0.9s
BMO LR LR
comp=Z,1μm,22.0s
ARMA Armidale 69.70 172 *e*P **P** **10 23 53.5 0.0**
comp=Z,123nm,1.2s
NSS Namsos 69.71 340 *e*P **P** **10 23 53.1 0.0**
NSS *e*S **S** **10 33 00.1 +0.7**
NSS IVMs_BB IVMs_BB 10 59 43.1
comp=Z,3μm,21.2s
SCO Scoresbysund 70.11 355⇑*i*P **P** **10 23 56.5 +1.0**
WVOR Wild Horse Val 70.21 51 *e*P **P** **10 23 57.4 +0.6**
WVOR pmax pmax
comp=Z,267nm,1.8s
WVOR MLR MLR
comp=Z,1μm,20.0s
WVOR Wild Horse Val 70.21 51 *e*P **P** **10 23 57.4 +0.6**
comp=Z,267nm,1.8s
WVOR LR LR
comp=Z,1μm,20.0s
GUDG Gudauri 70.21 309 P **P** **10 23 57.9 +0.9**
DGRG David-gareji 70.25 308 P **P** **10 23 57.2 +0.2**
DGRG David-gareji 70.25 308 P **P** **10 23 57.2 +0.2**
MSO Missoula 70.36 45 P **P** **10 23 57.8 +0.2**
baz=307,SNR=51
ZEI Tsey 70.37 309 *e*P **P** **10 23 57.4 -0.5**
ZEI *e*S **S** **10 33 04.8 -3.6**
ZEI pmax pmax
comp=Z,290nm,1.4s
ZEI pmax pmax
comp=N,204nm,1.4s
ZEI pmax pmax
comp=E,116nm,0.9s
KVAR Kislovodsk Arr 70.41 311 LR LR 10 57 47.0
comp=E,6μm,18.1s,slow=38
KIV Kislovodsk 70.42 311*ce*P **P** **10 23 58.6 +0.6**
KIV *i* 10 24 11.4
KIV *i* 10 24 18.2
KIV *e* 10 26 33.9
KIV *e*PPP PPP 10 28 13.5
KIV *i* S **S** **10 33 08.7 +0.1**
KIV *e*SS **SS** **10 37 40.8 +1.8**
KIV pmax pmax
comp=Z,887nm,2.5s
KIV Kislovodsk 70.42 311 *e*P **P** **10 23 58.3 +0.3**
comp=Z,2μm,1.9s
KIV LR LR
comp=Z,9μm,19.0s
KBZ Khabaz 70.42 311 P **P** **10 23 58.6 +0.7**
comp=Z,72nm,1.1s,baz=60,slow=5.9,SNR=97
KBZ PKPPKP P'P'df 10 51 53.5 -10
comp=Z,2.1nm,0.8s,baz=257,slow=3.7,SNR=7.5
KBZ LR LR 11 00 01.0
comp=Z,7μm,18.5s,baz=42,slow=40
TBLG Delisi 70.48 308 P **P** **10 24 00.6 +2.3**
TBLG Delisi 70.48 308 P **P** **10 24 00.6 +2.3**
STKA Stephens Creek 70.70 181 P **P** **10 23 58.9 -0.6**
comp=Z,28nm,0.8s,baz=344,slow=7.9,SNR=57
STKA LR LR 10 57 10.0
comp=Z,1μm,20.1s,baz=0.2,slow=38
ONI Oni 70.76 310 P **P** **10 24 01.0 +0.9**
ONI Oni 70.76 310 P **P** **10 24 01.0 +0.9**
NEY Neytrino 70.81 310*c i*P **P** **10 24 01.4 +0.9**
NEY pmax pmax
comp=Z,39nm,1.7s
NEY MLR MLR
comp=Z,4μm,16.0s
TBLU Trondheim 71.18 339 *e*P **P** **10 24 02.2 0.0**
IZAR Zarasai 71.25 328 *e*P **P** **10 24 03.2 +0.5**
IZAR IAmb IAmb 10 24 04.1
comp=Z,28nm,0.9s
FFC Flin Flon 71.26 34 *e*P **P** **10 24 02.8 0.0**
FFC pmax pmax
comp=Z,87nm,0.9s
FFC MLR MLR
comp=Z,2μm,22.0s
FFC Flin Flon 71.26 34 *e*P **P** **10 24 02.8 0.0**
comp=Z,87nm,0.9s
FFC LR LR
comp=Z,2μm,22.0s
MFID Camas Ranch 71.31 49 *e*P **P** **10 24 04.2 +0.7**
comp=Z,74nm,1.2s
IDID Didziasalis 71.34 327 *e*P **P** **10 24 03.8 +0.5**
IDID IAmb IAmb 10 24 05.5
comp=Z,26nm,0.6s
GNI Garni 71.39 307 LR LR 10 58 38.2
comp=Z,8μm,19.2s,baz=53,slow=38
GNI Garni 71.39 307 *i* P **P** **10 24 05.7 +1.6**
SNR=26
GNI Garni 71.39 307*ce*P **P** **10 24 05.1 +1.0**
GNI pmax pmax
comp=Z,1μm,1.7s
GNI MLR MLR
comp=Z,22μm,18.0s
GNI Garni 71.39 307 *e*P **P** **10 24 05.0 +1.0**
comp=Z,998nm,1.4s
GNI Garni 71.39 307 P **P** **10 24 05.4 +1.3**
SNR=27
GNI P **P** **10 24 05.4 +1.3**
SNR=27
GNI Garni 71.39 307 P **P** **10 24 05.4 +1.3**
SNR=27
MICGM Minsk 71.40 326⇓*e*P **P** **10 24 04.0 +0.4**
MICGM PM 10 24 05.0
comp=Z,2.0nm,2.0s
MICGM PM 10 24 06.0
comp=Z,0.3nm,1.8s
MICGM PM 10 24 07.0
comp=E,0.1nm,1.8s
MICGM PM 10 24 08.0
comp=N,0.2nm,1.8s
MICGM *e*PcP **sP** **10 24 17.0 -0.2**
MICGM *e*S **S** **10 33 19.0 -0.4**
MICGM *e*ScS **SKSac** **10 34 02.0 -2.2**
MICGM *e*SS SS 10 37 30.0 -23
MICGM *e*SSS SSS 10 41 00.0
MICGM *e*LQ LQ 10 48 48.0
MICGM *e*LR LR 10 53 10.0
MICGM LRM MLR 10 58 04.0
comp=Z,21nm,16.0s
MICGM LRM MLR 10 58 04.0
comp=Z,24nm,16.0s
MICGM LRM MLR 10 58 08.0
comp=E,9.5nm,16.0s
MICGM LRM MLR 10 58 08.0
comp=E,8.0nm,16.0s
MICGM LRM MLR 10 58 10.0
comp=N,5.6nm,16.0s
MICGM LRM MLR 10 58 10.0
comp=N,3.2nm,16.0s
MNK Minsk 71.40 326⇓*e*P **P** **10 24 04.0 +0.4**
MNK *e* 10 24 17.0
MNK *e*S **S** **10 33 19.0 -0.4**
MNK *e* 10 34 02.0
MNK *e*SSS SSS 10 41 00.0
MNK pmax pmax
comp=Z,2μm,2.0s
MNK pmax pmax
comp=Z,250nm,1.8s
MNK pmax pmax
comp=E,140nm,1.8s
MNK pmax pmax
comp=N,180nm,1.8s
MNK MLR MLR
comp=Z,24μm,16.0s
MNK MLR MLR
comp=Z,21μm,16.0s
MNK MLR MLR
comp=E,8μm,16.0s
MNK MLR MLR
comp=E,9μm,16.0s
MNK MLR MLR
comp=N,3μm,16.0s
MNK MLR MLR
comp=N,6μm,16.0s
ISAL Salakas 71.42 328 *e*P **P** **10 24 04.3 +0.5**
ISAL IAmb IAmb 10 24 06.2
comp=Z,39nm,0.8s
AKH Akhalkalaki 71.42 308 P **P** **10 24 05.3 +1.0**
AKH Akhalkalaki 71.42 308⇑*i*P **P** **10 24 06.1 +1.8**
AKH Akhalkalaki 71.42 308 P **P** **10 24 05.2 +1.0**
ILULI Ilulissat 71.43 5⇑*i*P **P** **10 24 04.2 +0.6**
comp=Z,69nm,1.3s
WSAR Wadi Sarin 71.47 285 LR LR 10 59 32.3
comp=Z,3μm,20.5s,slow=39
CHVG Ch'k'valeri 71.50 310 P **P** **10 24 04.9 +0.4**
CHVG Ch'k'valeri 71.50 310⇓*i*P **P** **10 24 06.1 +1.6**
FCC Fort Churchill 71.56 27 *e*P **P** **10 24 04.1 -0.4**
FCC pmax pmax
comp=Z,79nm,1.0s
FCC Fort Churchill 71.56 27 *e*P **P** **10 24 04.1 -0.4**
comp=Z,79nm,1.0s
WBK Wadi Bani Khal 71.58 284 P **P** **10 24 05.9 +0.6**
SNR=37
WBK Wadi Bani Khal 71.58 284 P **P** **10 24 05.9 +0.6**
SNR=37
NACGM Naroch 71.60 327 *e*P **P** **10 24 06.0 +1.2**
NACGM PM 10 24 08.0
comp=Z,0.4nm,1.0s
NACGM *e*PcP **sP** **10 24 19.0 +0.6**
NACGM *e*PP PP 10 27 00.0 +17
NACGM *e*PPP PPP 10 28 22.0
NACGM *e*S **S** **10 33 20.0 -1.7**
NACGM *e*PS PnS 10 34 09.0 +16
NACGM *e*SS **SS** **10 38 00.0 +3.7**
NACGM *e*SSS SSS 10 41 28.0
NACGM *e*LQ LQ 10 48 50.0
NACGM *e*LR LR 10 54 00.0
NACGM LRM MLR 10 59 18.0
comp=Z,20nm,15.0s
CMB Columbia Colle 71.66 56 *e*P **P** **10 24 06.1 +0.5**
CMB pmax pmax
comp=Z,407nm,1.1s
CMB Columbia Colle 71.66 56 *e*P **P** **10 24 06.1 +0.5**
comp=Z,407nm,1.1s
BANOM Banah 71.67 289 *i* P **P** **10 24 06.1 +0.3**
SNR=106
BANOM Banah 71.67 289 P **P** **10 24 06.0 +0.3**
SNR=84
BANOM P **P** **10 24 06.0 +0.3**
SNR=84
BANOM Banah 71.67 289 P **P** **10 24 06.0 +0.3**
SNR=84
BIDO Bidbid 71.69 286 P **P** **10 24 06.5 +0.6**
SNR=58
BIDO P **P** **10 24 06.5 +0.6**
SNR=58
BIDO Bidbid 71.69 286 P **P** **10 24 06.5 +0.6**
SNR=58
SAO San Andreas Ge 71.71 57 *e*P **P** **10 24 05.7 -0.2**
SAO pmax pmax
comp=Z,74nm,1.7s
SAO San Andreas Ge 71.71 57 *e*P **P** **10 24 05.7 -0.2**
comp=Z,74nm,1.7s
EGMT Eagleton 71.88 42 P **P** **10 24 07.4 +0.6**
baz=309,SNR=50
EGMT Eagleton 71.88 42 *e*P **P** **10 24 07.1 +0.4**
comp=Z,85nm,1.0s
EGMT LR LR
comp=Z,2μm,20.0s
BBOO Buckleboo 71.90 186 *e*P **P** **10 24 06.3 -0.4**
comp=Z,198nm,1.1s
DLMT Dillon 71.99 46 *e*P **P** **10 24 08.2 +0.6**
comp=Z,84nm,1.0s
SMDO Samad 72.02 285 P **P** **10 24 08.3 +0.3**
SNR=37
SMDO Samad 72.02 285 P **P** **10 24 08.3 +0.3**
SNR=37
HLID Hailey 72.05 48 P **P** **10 24 09.0 +1.0**
baz=307,SNR=56
HLID Hailey 72.05 48 *e*P **P** **10 24 08.7 +0.7**
comp=Z,49nm,1.1s
HLID LR LR
comp=Z,2μm,21.0s
BMN Battle Mountai 72.24 52 *e*P **P** **10 24 10.1 +0.9**
BMN pmax pmax
comp=Z,72nm,1.0s
BMN Battle Mountai 72.24 52 *e*P **P** **10 24 10.1 +0.9**
comp=Z,72nm,1.0s
HOQ Hoqain 72.27 286 P **P** **10 24 09.6 +0.2**
SNR=32
HOQ Hoqain 72.27 286 P **P** **10 24 09.6 +0.2**
SNR=32
BOZ Bozeman (W) 72.35 45 P **P** **10 24 10.4 +0.7**
baz=308,SNR=118
BOZ Bozeman (W) 72.35 45 *e*P **P** **10 24 10.0 +0.3**
BOZ pmax pmax
comp=Z,60nm,0.8s
BOZ MLR MLR
comp=Z,2μm,21.0s
BOZ Bozeman (W) 72.35 45 *e*P **P** **10 24 10.0 +0.3**
comp=Z,60nm,0.8s
BOZ LR LR
comp=Z,2μm,21.0s
SOC Sochi 72.36 312*c i*P **P** **10 24 11.6 +2.0**
SOC *e**PP **pP** **10 24 18.4 -1.1**
SOC *e* 10 24 25.5
SOC *e* 10 26 48.3
SOC *e*PPP PPP 10 28 32.3
SOC *i* S **S** **10 33 31.7 +0.8**
SOC *e*SS **SS** **10 38 09.2 +0.6**
SOC pmax pmax
comp=Z,236nm,1.5s
SOC MLR MLR
comp=Z,8μm,18.0s
JMDO Jabal Madar 72.37 285 P **P** **10 24 10.0 0.0**
SNR=36
JMDO Jabal Madar 72.37 285 P **P** **10 24 10.0 0.0**
SNR=36
HATD Hatta, Dubai 72.42 288 *i* P **P** **10 24 10.6 +0.3**
SNR=66
HATD Hatta, Dubai 72.42 288 P **P** **10 24 10.8 +0.5**
SNR=94
HATD P **P** **10 24 10.8 +0.5**
SNR=94
HATD Hatta, Dubai 72.42 288 P **P** **10 24 10.8 +0.5**
SNR=94
ASHO Ashiyiah 72.56 288 *i* P **P** **10 24 11.3 +0.1**
SNR=118
ASHO Ashiyiah 72.56 288 P **P** **10 24 11.6 +0.5**
SNR=102
ASHO P **P** **10 24 11.6 +0.5**
SNR=102
ASHO Ashiyiah 72.56 288 P **P** **10 24 11.6 +0.5**
SNR=102
HFS Hagfors 72.63 336 LR LR 10 59 23.7
comp=Z,7μm,19.8s,slow=38
NAZ Nazwa, Dubai 72.67 288 *i* P **P** **10 24 11.6 -0.2**
SNR=25
NAZ Nazwa, Dubai 72.67 288 P **P** **10 24 12.0 +0.2**
SNR=65
NAZ P **P** **10 24 12.0 +0.2**
SNR=65
NAZ Nazwa, Dubai 72.67 288 P **P** **10 24 12.0 +0.2**
SNR=65
NB2 NORSAR Subarra 72.68 338 P **P** **10 24 11.2 -0.1**
comp=Z,1μm,2.5s,baz=36,slow=6.2
NB2 NORSAR Subarra 72.68 338 P **P** **10 24 11.2 -0.1**
baz=36,slow=6.2
NOA NORSAR Array B 72.68 338 P **P** **10 24 11.2 -0.1**
comp=Z,42nm,0.8s,baz=39,slow=6.0,SNR=160
NOA LR LR 11 02 12.6
comp=Z,7μm,19.2s,baz=50,slow=41
NOA NORSAR Array B 72.68 338 P **P** **10 24 11.2 -0.1**
NOA pmax pmax
comp=Z,46nm,0.8s
NVAR Mina Array Bea 72.76 54 P **P** **10 24 13.2 +0.9**
comp=Z,52nm,0.9s,baz=287,slow=6.2,SNR=194
NVAR LR LR 10 53 47.8
comp=Z,2μm,18.7s,baz=308,slow=34
NC602 NORSAR Array S 72.82 337 *e*P **P** **10 24 10.7 -1.3**
BSY Bisya 72.83 286 P **P** **10 24 12.9 +0.1**
SNR=38
BSY Bisya 72.83 286 P **P** **10 24 12.9 +0.1**
SNR=38
FAQ Al Faqa, Dubai 72.87 288 *i* P **P** **10 24 12.7 -0.2**
SNR=40
FAQ Al Faqa, Dubai 72.87 288 P **P** **10 24 13.1 +0.1**
SNR=66
FAQ P **P** **10 24 13.1 +0.1**
SNR=66
FAQ Al Faqa, Dubai 72.87 288 P **P** **10 24 13.1 +0.1**
SNR=66
MLAC Mammoth, Mammo 72.89 55 P **P** **10 24 14.5 +1.3**
baz=306,SNR=11

ANN	**Anapa**	72.91	314		*e*P		**P**		**10 24 12.9**	**+0.1**
ANN					*e*				10 24 25.3		
ANN					*e*S		**S**		**10 33 36.0**	**-1.1**
ANN					*e*				10 34 16.4		
ANN					pmax	pmax					
	comp=N,56nm,1.7s										
ANN					pmax	pmax					
	comp=Z,242nm,1.8s										
ANN					pmax	pmax					
	comp=E,47nm,1.8s										
ANN					smax	smax					
	comp=N,2µm,8.7s										
ANN					smax	smax					
	comp=E,848nm,8.6s										
ANN					MLR	MLR					
	comp=E,4µm,17.0s										
ANN					MLR	MLR					
	comp=N,5µm,17.0s										
ANN					MLR	MLR					
	comp=Z,7µm,17.0s										
AKN	**Aaknes**	72.94	340		*e*P		**P**		**10 24 12.9**	**+0.2**
AKN					*e*S		**S**		**10 33 37.8**	**+1.0**
AKN					IVMs_BB	IVMs_BB			10 59 55.1		
	comp=Z,2µm,18.9s										
ARQ	**Araqi**	73.00	286		P		**P**		**10 24 14.2**	**+0.5**
	SNR=55										
ARQ	**Araqi**	73.00	286		P		**P**		**10 24 14.2**	**+0.5**
	SNR=55										
ELK	**Elko**	73.26	51		*e*P		**P**		**10 24 15.7**	**+0.4**
ELK					pmax	pmax					
	comp=Z,136nm,1.9s										
ELK	**Elko**	73.26	51		*e*P		**P**		**10 24 15.7**	**+0.4**
	comp=Z,136nm,1.9s										
AKASG	**Malin Array Be**	73.34	323		P		**P**		**10 24 15.1**	**-0.2**
	comp=Z,21nm,0.5s,baz=44,slow=6.2,SNR=152										
AKASG					LR	LR			11 00 14.1		
	comp=Z,3µm,18.1s,baz=25,slow=39										
AKASG	**Malin Array Be**	73.34	323		P		**P**		**10 24 15.1**	**-0.2**
AKASG					pmax	pmax					
	comp=Z,19nm,0.5s										
AKASG					MLR	MLR					
	comp=Z,3µm,18.1s										
KIEV	**Kiev**	73.35	323	*c*	*i*P		**P**		**10 24 15.0**	**-0.3**
KIEV					pmax	pmax					
	comp=Z,72nm,0.9s										
KIEV					MLR	MLR					
	comp=Z,8µm,16.0s										
KIEV	**Kiev**	73.35	323		*e*P		**P**		**10 24 14.8**	**-0.5**
	comp=Z,61nm,0.9s										
KIEV					LR	LR					
	comp=Z,3µm,19.0s										
RCTC	**Rector, Farmer**	73.42	57		P		**P**		**10 24 16.5**	**+0.5**
	baz=307,SNR=5.7										
SMMC	**Simmler**	73.51	58		P		**P**		**10 24 17.5**	**+0.8**
	baz=306										
TIN	**Tinemaha, Big**	73.62	55		P		**P**		**10 24 18.2**	**+0.8**
	baz=307										
SFJD	**Kangerlussuaq**	73.65	6	⇑	*i*P		**P**		**10 24 16.9**	**+0.1**
	comp=Z,52nm,1.1s										
SFJD	**Kangerlussuaq**	73.65	6		*e*P		**P**		**10 24 17.0**	**+0.1**
SFJD					pmax	pmax					
	comp=Z,62nm,1.0s										
SFJD					MLR	MLR					
	comp=Z,6µm,20.0s										
SFJD	**Kangerlussuaq**	73.65	6		*e*P		**P**		**10 24 17.0**	**+0.1**
	comp=Z,62nm,1.0s										
SFJD					LR	LR					
	comp=Z,6µm,20.0s										
LKWY	**Lake**	73.70	46		*e*P		**P**		**10 24 20.0**	**+2.1**
LKWY					pmax	pmax					
	comp=Z,73nm,1.3s										
LKWY					MLR	MLR					
	comp=Z,3µm,20.0s										
LKWY	**Lake**	73.70	46		*e*P		**P**		**10 24 20.0**	**+2.1**
	comp=Z,73nm,1.3s										
LKWY					LR	LR					
	comp=Z,3µm,20.0s										
OSL	**Oslo**	73.71	337		*e*P		**P**		**10 24 18.5**	**+1.3**
H17A	**Grant Village**	73.71	46		P		**P**		**10 24 20.2**	**+2.3**
	baz=309,SNR=97										
H17A	**Grant Village**	73.71	46		*e*P		**P**		**10 24 20.3**	**+2.3**
	comp=Z,87nm,0.9s										
SUW	**Suwalki**	73.73	328		*e*P		**P**		**10 24 17.6**	**+0.1**
SUW					*e*S		**S**		**10 33 46.4**	**+0.4**
SUW					LMZ	LR			10 59 01.1		
SUW	**Suwalki**	73.73	328	⇑	*e*P		**P**		**10 24 17.6**	**+0.1**
SUW					*e*S		**S**		**10 33 46.5**	**+0.4**
SUW					MLR	MLR					
	comp=Z,8µm,19.1s										
IMW	**Indian Meadow**	73.82	46		*e*P		**P**		**10 24 19.9**	**+1.2**
	comp=Z,66nm,1.0s										
FLWY	**Flagg Ranch**	73.84	46		*e*P		**P**		**10 24 20.1**	**+1.5**
	comp=Z,516nm,2.2s										
PKM	**Mcpherson Peak**	73.89	58		P		**P**		**10 24 19.6**	**+0.6**
	baz=307,SNR=10										
FOO	**Floro**	73.93	341		*e*P		**P**		**10 24 21.2**	**+2.7**
RLMT	**Red Lodge**	73.97	45		P		**P**		**10 24 20.5**	**+1.1**
	baz=310,SNR=35										
RLMT	**Red Lodge**	73.97	45		*e*P		**P**		**10 24 20.1**	**+0.7**
	comp=Z,130nm,1.6s										
RLMT					LR	LR					
	comp=Z,2µm,20.0s										
HYA	**Hoyanger**	73.99	340		*e*P		**P**		**10 24 20.7**	**+1.8**
MOOW	**Moose Ponds**	74.03	46		*e*P		**P**		**10 24 20.2**	**+0.5**
	comp=Z,68nm,1.2s										
CWC	**Cottonwood Cre**	74.09	56		P		**P**		**10 24 21.1**	**+0.9**
	baz=307										
LOHW	**Long Hollow**	74.19	46		*e*P		**P**		**10 24 21.8**	**+1.1**
	comp=Z,149nm,1.8s										
SNOW	**Snow King Moun**	74.20	47		*e*P		**P**		**10 24 21.9**	**+1.0**
	comp=Z,49nm,1.0s										
REDW	**Red Top Meadow**	74.21	47		*e*P		**P**		**10 24 21.5**	**+0.7**
	comp=Z,77nm,1.4s										
GRAC	**Grapevine Rang**	74.21	55		P		**P**		**10 24 21.7**	**+1.0**
	baz=307,SNR=16										
SBC	**Santa Barbara**	74.22	58		P		**P**		**10 24 21.8**	**+1.1**
	baz=307										
KONO	**Kongsberg**	74.28	337		*e*P		**P**		**10 24 20.6**	**0.0**
KONO					*e*S		**S**		**10 33 53.1**	**+1.1**
KONO					IVMs_BB	IVMs_BB			11 02 57.5		
	comp=Z,4µm,16.5s										
KONO	**Kongsberg**	74.28	337		*e*P		**P**		**10 24 21.1**	**+0.5**
KONO					pmax	pmax					
	comp=Z,28nm,0.9s										
KONO					MLR	MLR					
	comp=Z,11µm,19.0s										
KONO	**Kongsberg**	74.28	337		*e*P		**P**		**10 24 21.1**	**+0.5**
	comp=Z,28nm,0.9s										
KONO					LR	LR					
	comp=Z,11µm,19.0s										
ISA	**Isabella, Lake**	74.30	57		P		**P**		**10 24 21.3**	**0.0**
	baz=307,SNR=9.6										
CAN	**Canberra**	74.33	175		*e*P		**P**		**10 24 20.7**	**-0.4**
CAN					pmax	pmax					
	comp=Z,129nm,1.5s										
CAN					MLR	MLR					
	comp=Z,2µm,21.0s										
CAN	**Canberra**	74.33	175		*e*P		**P**		**10 24 20.7**	**-0.4**
	comp=Z,130nm,1.5s										
CAN					LR	LR					
	comp=Z,2µm,21.0s										
ARVC	**Arvin**	74.39	57		P		**P**		**10 24 22.0**	**+0.3**
	baz=307,SNR=14										
DGMT	**Dagmar**	74.42	40		P		**P**		**10 24 21.8**	**+0.1**
	baz=312,SNR=15										
DGMT	**Dagmar**	74.42	40		*e*P		**P**		**10 24 22.0**	**+0.3**
	comp=Z,30nm,0.8s										
DGMT					LR	LR					
	comp=Z,3µm,22.0s										
AHID	**Auburn Hatcher**	74.44	47		*e*P		**P**		**10 24 22.7**	**+0.5**
	comp=Z,17nm,0.6s										
AHID					LR	LR					
	comp=Z,2µm,22.0s										
SUE	**Sulen**	74.46	340		*e*P		**P**		**10 24 20.7**	**-1.0**
SUE					*e*S		**S**		**10 33 54.2**	**+0.2**
SUE					IVMs_BB	IVMs_BB			11 02 31.1		
	comp=Z,2µm,14.9s										
DAC	**Darwin (Calif)**	74.50	56		*e*P		**P**		**10 24 22.8**	**+0.2**
DAC					pmax	pmax					
	comp=Z,52nm,1.2s										
DAC	**Darwin (Calif)**	74.50	56		*e*P		**P**		**10 24 22.8**	**+0.2**
	comp=Z,52nm,1.2s										
KLNR	**Kaliningrad**	74.51	329		*i* P		**P**		**10 24 22.3**	**+0.3**
KLNR					pmax	pmax					
	comp=Z,434nm,2.6s										
R11A	**Troy Canyon, C**	74.51	53		P		**P**		**10 24 23.0**	**+0.4**
	baz=308,SNR=133										
R11A	**Troy Canyon, C**	74.51	53		*e*P		**P**		**10 24 23.0**	**+0.4**
	comp=Z,72nm,1.1s										
A25A	**Svangstu Ranch**	74.64	39		P		**P**		**10 24 23.8**	**+0.9**
	baz=313,SNR=9.7										
SIM	**Simferopol'**	74.64	316	*c*	*e*P		**P**		**10 24 23.5**	**+0.5**
SIM					*e*S		**S**		**10 33 55.5**	**-1.1**
SIM					SS		**SS**		**10 38 40.3**	**-2.9**
SIM					pmax	pmax					
	comp=Z,59nm,0.9s										
SIM					smax	smax					
	comp=N,430nm,11.0s										
MPMC	**Manual Prospec**	74.70	56		P		**P**		**10 24 24.3**	**+0.5**
	baz=308,SNR=45										
OSI	**Osito Audit: C**	74.77	58		P		**P**		**10 24 24.5**	**+0.5**
	baz=307										
BLG	**Laguna Peak, P**	74.85	58		P		**P**		**10 24 24.5**	**+0.1**
	baz=307										
FURC	**Furnace Creek,**	74.85	55		P		**P**		**10 24 25.1**	**+0.7**
	baz=308,SNR=66										
BER	**Bergen**	74.88	340		*e*P		**P**		**10 24 23.5**	**-0.5**
BER					*e*S		**S**		**10 33 59.2**	**+0.6**
ODD1	**Odda**	74.92	339		*e*P		**P**		**10 24 25.3**	**+0.9**
LRMC	**Laurel Mtn Rad**	74.92	57		P		**P**		**10 24 25.9**	**+0.9**
	baz=308										
TPNV	**Topopah Spring**	74.95	55		P		**P**		**10 24 25.7**	**+0.5**
	baz=308,SNR=74										
DUG	**Dugway, Tooele**	75.06	50		P		**P**		**10 24 26.7**	**+1.0**
	baz=309,SNR=98										
DUG	**Dugway, Tooele**	75.06	50		*e*P		**P**		**10 24 26.5**	**+0.8**
DUG					pmax	pmax					
	comp=Z,62nm,0.8s										
DUG					MLR	MLR					
	comp=Z,2µm,22.0s										
DUG	**Dugway, Tooele**	75.06	50		*e*P		**P**		**10 24 26.5**	**+0.8**
	comp=Z,62nm,0.8s										
DUG					LR	LR					
	comp=Z,2µm,22.0s										
SNCC	**San Nicolas Is**	75.06	59		P		**P**		**10 24 26.1**	**+0.5**
	baz=307										
B25A	**Knox Farm, Ray**	75.07	39		P		**P**		**10 24 26.5**	**+1.0**
	baz=313,SNR=8.6										
EDW2	**Edwards Air Fo**	75.08	57		P		**P**		**10 24 26.4**	**+0.5**
	baz=308,SNR=34										
A26A	**Wade Farm, Ken**	75.19	38		P		**P**		**10 24 26.7**	**+0.5**
	baz=313,SNR=12										
DECC	**Green Verdugo**	75.24	58		P		**P**		**10 24 27.2**	**+0.4**
	baz=308										
BW06	**Boulder Array**	75.32	47		P		**P**		**10 24 27.5**	**+0.2**
	baz=310,SNR=65										
BW06	**Boulder Array**	75.32	47		*e*P		**P**		**10 24 27.4**	**+0.1**
	comp=Z,44nm,1.0s										
BW06					LR	LR					
	comp=Z,2µm,22.0s										
PDAR	**Pinedale Array**	75.32	47		P		**P**		**10 24 27.4**	**+0.1**
	comp=Z,22nm,0.7s,baz=272,slow=1.8,SNR=200										
PDAR					PKKPbc		**PKKPbc**		**10 43 46.6**	**-0.3**
	comp=Z,0.7nm,0.9s,baz=114,slow=3.6,SNR=4.3										
PDAR					PKPPKP	P'P'df			10 51 44.2	-11	
	comp=Z,0.2nm,0.5s,baz=106,slow=4.8,SNR=3.9										
PDAR					LR	LR			10 53 04.5		
	comp=Z,899nm,21.9s,baz=342,slow=32										
BLS5	**Blasjo**	75.38	339		*e*P		**P**		**10 24 28.8**	**+1.7**
BLS5					*e*S		**S**		**10 34 05.5**	**+1.2**
BLS5					IAMs_20	IAMs_20			11 00 45.0		
	comp=Z,5µm,20.0s										
PASC	**Pasadena Art C**	75.39	58		*e*P		**P**		**10 24 27.5**	**0.0**
	comp=Z,41nm,1.3s										
C25A	**Freed Ranch, W**	75.40	40		P		**P**		**10 24 27.8**	**+0.4**
	baz=313,SNR=15										
B26A	**Jensen Ranch,**	75.45	39		P		**P**		**10 24 28.2**	**+0.6**
	baz=313,SNR=24										
SORM	**Soroca**	75.50	321	⇑	*i*P		**P**		**10 24 28.7**	**+0.8**
SORM	**Soroca**	75.50	321	⇑	P		**P**		**10 24 28.7**	**+0.8**
A27A	**Ledoux Ranch,**	75.53	38		P		**P**		**10 24 28.4**	**+0.3**
	baz=314										
SHOC	**Shoshone, Teco**	75.57	55		P		**P**		**10 24 29.0**	**+0.4**
	baz=308,SNR=15										
FMP	**Fort Macarthur**	75.60	58		P		**P**		**10 24 29.3**	**+0.6**
	baz=308										
NWAO	**Narrogin (SRO)**	75.60	202		*e*P		**P**		**10 24 27.9**	**-0.5**
NWAO					pmax	pmax					
	comp=Z,135nm,1.3s										
NWAO					MLR	MLR					
	comp=Z,2µm,22.0s										
NWAO	**Narrogin (SRO)**	75.60	202		*e*P		**P**		**10 24 27.9**	**-0.5**
	comp=Z,135nm,1.3s										
NWAO					LR	LR					
	comp=Z,2µm,22.0s										
NWAO	**Narrogin (SRO)**	75.60	202		P		**P**		**10 24 28.2**	**-0.2**
	SNR=7.3										
GSC	**Goldstone, Bar**	75.60	56		P		**P**		**10 24 29.2**	**+0.4**
	baz=308,SNR=19										
BORG	**Borgarnes**	75.68	353	*i*	P		**P**		**10 24 32.0**	**+3.4**
BORG	**Borgarnes**	75.68	353		PFAKE				10 24 40.0	+11	
BORG					LR	LR					
	comp=Z,2µm,20.0s										
BFSC	**Mount Baldy Ra**	75.69	58		P		**P**		**10 24 29.5**	**+0.1**
	baz=308,SNR=17										
CIS	**Catalina Islan**	75.70	59		P		**P**		**10 24 29.8**	**+0.5**
	baz=308										
HOMB	**Homborsund**	75.73	337		*e*P		**P**		**10 24 29.2**	**+0.2**
HOMB					*e*S		**S**		**10 34 08.4**	**+0.3**
HOMB					IVMs_BB	IVMs_BB			11 03 43.4		
	comp=Z,3µm,19.4s										
RRX	**Edison Barstow**	75.74	57		P		**P**		**10 24 30.3**	**+0.8**
	baz=308										
D25A	**Fairfield**	75.75	40		P		**P**		**10 24 30.1**	**+0.7**
	baz=313,SNR=13										
KMY	**Karmoy**	75.89	339		*e*P		**P**		**10 24 30.4**	**+0.5**
C26A	**Wahner Farm, P**	75.89	39		P		**P**		**10 24 31.1**	**+0.9**
	baz=314,SNR=22										
B27A	**Peters Farms,**	75.90	38		P		**P**		**10 24 30.8**	**+0.5**
	baz=314,SNR=10										
STAV	**Stavanger**	76.00	339		*e*P		**P**		**10 24 30.4**	**-0.1**
A28A	**Rude Farm, Bot**	76.02	37		P		**P**		**10 24 31.7**	**+0.8**
	baz=314,SNR=28										
KIS	**Kishinev**	76.04	320	⇑	*i*P		**P**		**10 24 32.0**	**+1.0**
	comp=Z,700nm,2.0s										
KIS	**Kishinev**	76.04	320		*i* PcP		**PcP**		**10 24 42.0**	**-1.2**
KIS	**Kishinev**	76.04	320		*e*PP		PP		10 27 20.0	-1.3	
KIS	**Kishinev**	76.04	320		*e*PPP		PPP		10 29 20.0		
KIS					*i* S		**S**		**10 34 11.0**	**-1.0**
	comp=Z,600nm,2.5s										
KIS					*e*SS		**SS**		**10 39 00.0**	**-4.3**
KIS					*e*SSS		SSS		10 43 03.0		
KIS					LRM		MLR		11 00 30.0		
	comp=Z,9µm,20.0s										
KIS	**Kishinev**	76.04	320	*α*	*i*P		**P**		**10 24 32.0**	**+1.0**
KIS					*i*				10 24 42.0		
KIS					*e*				10 27 20.0		
KIS					*i* S		**S**		**10 34 11.0**	**-1.0**
KIS					*e*SS		**SS**		**10 39 00.0**	**-4.3**
KIS					pmax	pmax					
	comp=Z,700nm,2.0s										
KIS					pmax	pmax					
	comp=Z,900nm,4.0s										
KIS					smax	smax					
	comp=E,600nm,2.5s										
KIS					smax	smax					
	comp=E,1µm,8.0s										
KIS					MLR	MLR					
	comp=Z,10µm,18.0s										
KIS					MLR	MLR					
	comp=N,9µm,20.0s										
KIS					MLR	MLR					
	comp=E,7µm,17.0s										
SNART	**Snartemo**	76.06	338		*e*P		**P**		**10 24 31.4**	**+0.5**
SNART					*e*S		**S**		**10 34 12.9**	**+1.1**
TUQ	**Turquoise Moun**	76.08	56		P		**P**		**10 24 32.4**	**+0.7**
	baz=308										
BSD	**Bornholm Skovb**	76.13	332	⇑	*i*P		**P**		**10 24 31.7**	**+0.4**
E25A	**Miller Ranch,**	76.15	41		P		**P**		**10 24 32.0**	**+0.3**
	baz=313,SNR=46										
BBRC	**Big Bear Solar**	76.16	57		P		**P**		**10 24 32.6**	**+0.3**
	baz=308										
HEC	**Hector,Ludlow**	76.19	56		P		**P**		**10 24 32.8**	**+0.6**
	baz=308,SNR=6.7										
C27A	**Sayler Ranch,**	76.26	39		P		**P**		**10 24 33.1**	**+0.8**
	baz=314,SNR=8.8										
D26A	**Manning**	76.27	40		P		**P**		**10 24 32.6**	**+0.2**
	baz=313,SNR=18										
B28A	**Dugan Ranch, T**	76.30	38		P		**P**		**10 24 32.9**	**+0.4**
	baz=314,SNR=43										
BEL	**Belsk**	76.31	327		*e*P		**P**		**10 24 33.4**	**+1.0**
BEL					*e*S		**S**		**10 34 15.3**	**+0.5**
BEL					LMZ	LR			11 00 44.8		
BEL	**Belsk**	76.31	327	⇑	*e*P		**P**		**10 24 33.4**	**+1.0**
BEL					*e*S		**S**		**10 34 15.3**	**+0.5**
BEL					MLR	MLR					
	comp=Z,10µm,19.0s										
LVV	**L'vov**	76.36	324		*i* P		**P**		**10 24 33.2**	**+0.4**
LVV					*i* S		**S**		**10 34 12.1**	**-3.3**
LVV					*i* PS		PnS		10 34 34.1	-21	
LVV					pmax	pmax					
	comp=Z,450nm,2.0s										
LVV					MLR	MLR					
	comp=N,9µm,15.0s										
LVV					MLR	MLR					
	comp=E,9µm,15.0s										
LVV					MLR	MLR					
	comp=Z,13µm,15.0s										
MURC	**Murrieta**	76.39	58		P		**P**		**10 24 33.6**	**+0.3**
	baz=308,SNR=12										
A29A	**Manning Farm,**	76.50	37		P		**P**		**10 24 33.9**	**+0.3**
	baz=315,SNR=79										
F25A	**Bowman**	76.51	41		P		**P**		**10 24 34.1**	**+0.3**
	baz=313,SNR=25										
IAS	**Iasi**	76.53	321	⇓	*i*P		**P**		**10 24 35.0**	**+1.2**
IAS	**Iasi**	76.53	321	⇓	P		**P**		**10 24 35.0**	**+1.2**
COP	**Copenhagen**	76.55	334	⇑	*i*P		**P**		**10 24 34.6**	**+0.9**
E26A	**Carlson Angus**	76.64	40		P		**P**		**10 24 34.9**	**+0.4**
	baz=314,SNR=30										
GMRC	**Granite Mounta**	76.66	56		P		**P**		**10 24 35.6**	**+0.7**
	baz=309,SNR=31										
D27A	**Center**	76.67	39		P		**P**		**10 24 35.2**	**+0.6**
	baz=314,SNR=10										
LEOM	**Leova**	76.69	320	⇓	*i*P		**P**		**10 24 35.5**	**+0.8**
LEOM	**Leova**	76.69	320	⇓	P		**P**		**10 24 35.5**	**+0.8**
B29A	**Wagenman Farm,**	76.77	37		P		**P**		**10 24 35.3**	**+0.2**
	baz=315,SNR=38										
C28A	**Hausauer Farms**	76.80	38		P		**P**		**10 24 36.1**	**+0.8**
	baz=315,SNR=11										
PFO	**Pinyon Flats O**	76.86	57		LR		LR		10 52 22.2		
	comp=Z,3µm,20.8s,baz=297,slow=31										
PFO	**Pinyon Flats O**	76.86	57		P		**P**		**10 24 36.3**	**+0.3**
	baz=308,SNR=13										
PFO	**Pinyon Flats O**	76.86	57		*e*P		**P**		**10 24 36.0**	**-0.1**
PFO					pmax	pmax					
	comp=E,66nm,1.4s										
PFO	**Pinyon Flats O**	76.86	57		*e*P		**P**		**10 24 36.0**	**-0.1**
	comp=E,66nm,1.4s										
109C	**Camp Elliot, M**	76.89	58		P		**P**		**10 24 36.4**	**+0.4**
	baz=308,SNR=7.9										
A30A	**Hoffart Farm,**	76.92	36		P		**P**		**10 24 36.3**	**+0.3**
	baz=316,SNR=78										
BELC	**Belle Mtn. Jos**	76.92	57		P		**P**		**10 24 36.4**	**-0.1**
	baz=308,SNR=14										
F26A	**Lodgepole**	76.97	41		P		**P**		**10 24 36.9**	**+0.5**
	baz=314,SNR=50										
MUD	**Monsted U'grnd**	77.02	336	⇑	*i*P		**P**		**10 24 37.0**	**+0.7**
	comp=Z,64nm,1.0s										
G25A	**Newell**	77.03	42		P		**P**		**10 24 36.6**	**-0.2**
	baz=313,SNR=25										
ULM	**Lac du Bonnet**	77.06	34		P		**P**		**10 24 36.7**	**0.0**
	comp=Z,50nm,0.9s,baz=313,slow=6.6,SNR=68										
PRAR	**RASCA**	77.07	321	⇓	*i*P		**P**		**10 24 37.7**	**+0.9**
D28A	**Regan**	77.08	39		P		**P**		**10 24 37.5**	**+0.6**
	baz=314,SNR=19										
K22A	**Casper**	77.09	45		P		**P**		**10 24 37.3**	**+0.1**
	baz=312,SNR=32										
K22A	**Casper**	77.09	45		*e*P		**P**		**10 24 37.2**	**0.0**
	comp=Z,182nm,1.6s										
KWP	**Kalwaria Pacla**	77.09	325		*e*P		**P**		**10 24 37.7**	**+0.8**
KWP					*e*S		**S**		**10 34 23.4**	**0.0**
KWP					LMZ	LR			11 01 27.4		
KWP	**Kalwaria Pacla**	77.09	325	⇓	*i*P		**P**		**10 24 38.0**	**+1.1**
KWP	**Kalwaria Pacla**	77.09	325	⇓	*e*P		**P**		**10 24 37.8**	**+0.8**
KWP					*e*S		**S**		**10 34 23.5**	**0.0**
KWP					MLR	MLR					
	comp=Z,10µm,17.8s										
E27A	**Carson**	77.12	40		P		**P**		**10 24 37.6**	**+0.4**
	baz=314,SNR=24										
RAO	**Raoul Island**	77.23	146		LR		LR		10 51 59.1		
	comp=Z,1µm,21.4s,baz=51,slow=30										
B30A	**Myrvik Farm, E**	77.26	37		P		**P**		**10 24 38.2**	**+0.3**
	baz=316,SNR=86										
F27A	**Lemmon**	77.28	40		P		**P**		**10 24 37.7**	**-0.4**
	baz=314,SNR=27										
TLCR		77.29	319	⇑	*i*P		**P**		**10 24 39.4**	**+1.4**
TLCR		77.29	319	⇑	P		**P**		**10 24 39.4**	**+1.4**
H25A	**Fruitdale**	77.33	42		P		**P**		**10 24 38.4**	**0.0**
	baz=313,SNR=13										
MONP2	**Monument Pe

C31A **Landman Farms,** 78.01 37 P P 10 24 41.6 -0.5
baz=316,SNR=31
D30A **Buchanan** 78.01 38 P P 10 24 41.9 -0.2
baz=316,SNR=15
Y12C **Blythe** 78.04 56 P P 10 24 42.8 +0.3
baz=309,SNR=18
J25A **Sunshine Ranch** 78.06 43 P P 10 24 42.2 -0.4
baz=313,SNR=17
HARR **Harsova** 78.08 319⇓ iP P 10 24 43.7 +1.2
HARR **Harsova** 78.08 319⇓ P P 10 24 43.7 +1.2
GRER 78.09 320⇑ iP P 10 24 44.0 +1.5
H27A **Howes** 78.11 41 P P 10 24 43.2 +0.5
baz=314,SNR=30
B32A **Ashes, Strandq** 78.12 36 P P 10 24 42.2 -0.5
baz=317,SNR=62
I26A **New Underwood** 78.12 42 P P 10 24 43.1 +0.3
baz=314,SNR=29
BMR **Baia Mare** 78.15 323⇑ iP P 10 24 44.6 +1.8
BMR **Baia Mare** 78.15 323 ⇑P P 10 24 44.6 +1.8
ARCR **ARCALIA** 78.16 322⇑ iP P 10 24 44.9 +2.0
CRVS **Cervenica-Dubn** 78.18 325 eP P 10 24 43.5 +0.5
CRVS eS S 10 34 34.8 -0.5
A33A **Warroad** 78.24 35 P P 10 24 42.9 -0.4
baz=318,SNR=62
TRPA **Tarpa** 78.26 324⇑ eP P 10 24 44.5 +1.1
GLA **Glamis** 78.28 57 P P 10 24 44.6 +0.7
baz=309,SNR=17
NIE **Niedzica** 78.31 326 eP P 10 24 44.6 +0.8
NIE eS S 10 34 37.5 +0.8
NIE LMZ LR 11 02 19.0
NIE **Niedzica** 78.31 326⇓ eP P 10 24 44.7 +0.9
NIE eS S 10 34 37.6 +0.8
NIE MLR MLR
comp=Z,8µm,18.4s
BRTR **Keskin Array B** 78.33 312 P P 10 24 44.4 +0.2
comp=Z,10nm,0.5s,baz=90,slow=3.1,SNR=85
BRTR PKKPbc **PKKPbc** 10 43 41.0 +0.7
comp=Z,1.6nm,0.8s,baz=209,slow=5.3,SNR=7.6
BRTR LR LR 11 04 43.5
comp=Z,4µm,18.9s,baz=30,slow=40
E30A **Jud** 78.37 38 P P 10 24 43.8 -0.4
baz=316,SNR=16
G28A **Parade** 78.39 40 P P 10 24 44.6 +0.3
baz=315,SNR=15
F29A **Eureka** 78.40 39 P P 10 24 44.4 +0.1
baz=315,SNR=25
PGOR **Pogoanele** 78.41 319⇓ iP P 10 24 46.7 +2.4
DOPR **Dopca** 78.46 321⇑ iP P 10 24 47.3 +2.7
ISR **Istrita** 78.49 320⇑ iP P 10 24 46.5 +1.7
ISR **Istrita** 78.49 320 ⇑P P 10 24 46.5 +1.7
AGMN **Agassiz Nation** 78.50 36 P P 10 24 43.7 -1.1
baz=317,SNR=52
AGMN **Agassiz Nation** 78.50 36 eP P 10 24 44.3 -0.5
comp=Z,66nm,1.0s
AGMN LR LR
comp=Z,2µm,20.0s
J26A **Sides Ranch, S** 78.50 43 P P 10 24 44.8 -0.2
baz=314,SNR=26
I27A **Quinn** 78.51 42 P P 10 24 45.5 +0.4
baz=314,SNR=65
MLR **Muntele Rosu** 78.53 320 LR LR 11 02 47.1
comp=Z,2µm,19.2s,baz=46,slow=38
MLR **Muntele Rosu** 78.53 320⇑ iP P 10 24 46.1 +1.0
MLR **Muntele Rosu** 78.53 320 ⇑P P 10 24 46.1 +1.0
PV04 **Paradox Valley** 78.54 50 eP P 10 24 46.2 +0.8
C32A **Crookston** 78.54 36 P P 10 24 44.5 -0.5
baz=317,SNR=13
D31A **Mcclaflin, Tow** 78.55 37 P P 10 24 45.2 +0.2
baz=316,SNR=5.1
PHWY **Pilot Hill** 78.58 46 eP P 10 24 46.1 +0.3
comp=Z,134nm,1.8s
N23A **Red Feather La** 78.58 46 P P 10 24 46.5 +0.7
baz=312,SNR=58
H28A **Mission Ridge** 78.62 41 P P 10 24 45.4 -0.2
baz=315,SNR=33
B33A **Robert and Kas** 78.64 36 P P 10 24 44.9 -0.7
baz=318,SNR=15
RAC **Raciborz** 78.71 327 eP P 10 24 47.0 +1.1
RAC eS S 10 34 40.7 -0.2
RAC MLR MLR
comp=Z,13µm,17.4s
CJR **Cluj-Napoca** 78.79 322⇑ iP P 10 24 48.3 +1.8
CJR **Cluj-Napoca** 78.79 322 ⇑P P 10 24 48.3 +1.8
F30A **Leola** 78.79 39 P P 10 24 46.4 -0.1
baz=316
G29A **Hoven** 78.81 40 P P 10 24 46.7 +0.2
baz=315
D32A **Dogwood Acres,** 78.82 37 P P 10 24 46.2 -0.4
baz=317,SNR=17
E31A **Nome** 78.82 38 P P 10 24 46.7 +0.1
baz=316,SNR=34
LANS **Liptovska Anna** 78.87 326 eP P 10 24 48.6 +1.7
B34A **Aery, Baudette** 78.90 35 P P 10 24 46.2 -0.8
baz=318,SNR=50
PV01 **Paradox Valley** 78.91 50 eP P 10 24 48.5 +0.9
comp=Z,7µm,1.1s
WUAZ **Wupatki** 78.91 53 P P 10 24 48.3 +0.8
baz=310,SNR=51
WUAZ **Wupatki** 78.91 53 eP P 10 24 48.2 +0.7
comp=Z,99nm,1.1s
WUAZ LR LR
comp=Z,2µm,20.0s
KSP **Ksiaz** 78.91 329 eP P 10 24 47.8 +0.8
KSP eS S 10 34 42.4 -0.6
KSP LMZ LR 11 02 49.7
KSP **Ksiaz** 78.91 329⇑ eP P 10 24 47.8 +0.8
KSP eS S 10 34 42.4 -0.6
KSP MLR MLR
comp=Z,7µm,18.5s
OKC **Ostrava-Krasne** 78.92 327 eP P 10 24 48.1 +1.1
OKC epP sP 10 25 00.5 -0.2
OKC eS S 10 34 43.0 -0.1
OKC AMS AMS 11 03 30.0
comp=Z,11µm,16.2s
OKC **Ostrava-Krasne** 78.92 327 eP P 10 24 48.1 +1.1
OKC e 10 25 00.5
OKC eS S 10 34 43.0 -0.1
OKC MLR MLR
comp=Z,11µm,16.2s
KECS **Kecovo** 78.92 325 eP P 10 24 48.0 +0.9
C33A **Trail** 78.94 36 P P 10 24 46.7 -0.4
baz=318,SNR=46
ABTO **Aybut** 78.98 283 P P 10 24 47.5 -0.5
SNR=23
ABTO **Aybut** 78.98 283 P P 10 24 47.5 -0.5
SNR=23
VOIR 79.01 321⇓ iP P 10 24 49.3 +1.6
VOIR 79.01 321 ⇓P P 10 24 49.3 +1.6
I28A **Midland** 79.02 41 P P 10 24 48.2 +0.4
baz=315,SNR=84
H29A **Onida** 79.06 40 P P 10 24 47.9 -0.1
baz=315,SNR=14
J27A **Elkhorn Farm,** 79.11 42 P P 10 24 49.0 +0.7
baz=314,SNR=30
SMCO **Snowmass** 79.15 48 eP P 10 24 49.5 +0.5
comp=Z,51nm,1.0s
F31A **Hecla** 79.15 39 P P 10 24 48.2 -0.2
baz=316,SNR=29
DRGR 79.15 323⇓ iP P 10 24 49.7 +1.2
DRGR 79.15 323 ⇓P P 10 24 49.7 +1.2
E32A **Braaten, Kindr** 79.19 37 P P 10 24 48.6 0.0
baz=317,SNR=6.7
MORC **Moravsky Berou** 79.22 327⇑ iP P 10 24 49.4 +0.6
MORC **Moravsky Berou** 79.22 327 ⇑P P 10 24 49.4 +0.6
G30A **Faulkton** 79.24 40 P P 10 24 48.6 -0.3
baz=316,SNR=42
OUZ **Omahuta** 79.26 155 eP P 10 24 50.4 +1.5
comp=Z,322nm,1.7s
ARR **Arges** 79.26 321⇓ iP P 10 24 51.1 +2.0
DPC **Dobruska-Polom** 79.28 328 eP P 10 24 50.0 +0.9
DPC epP sP 10 25 01.9 -0.9
DPC eS S 10 34 47.3 +0.2
DPC AMS AMS 11 02 50.0
comp=Z,6µm,17.3s
DPC **Dobruska-Polom** 79.28 328 eP P 10 24 50.0 +0.9
DPC e 10 25 01.9
DPC eS S 10 34 47.3 +0.2
DPC MLR MLR
comp=Z,6µm,17.3s
UPC **Upice** 79.28 329 eP P 10 24 50.2 +1.2
UPC epP pP 10 24 59.8 +0.7
UPC eS S 10 34 47.3 +0.3
UPC AMS AMS 11 02 50.0
comp=Z,8µm,16.2s
UPC **Upice** 79.28 329 eP P 10 24 50.2 +1.2
UPC e 10 24 59.8
UPC eS S 10 34 47.3 +0.3
UPC MLR MLR
comp=Z,8µm,16.2s
KRLC **Kraliky** 79.31 328 eP P 10 24 49.8 +0.6
KRLC epP sP 10 25 02.7 -0.2
KRLC **Kraliky** 79.31 328 eP P 10 24 49.8 +0.6
KRLC e 10 25 02.7
D33A **AnnSam, Waubun** 79.36 36 P P 10 24 49.1 -0.5
baz=318,SNR=29
J28A **Allard Ranch,** 79.39 42 P P 10 24 50.6 +0.8
baz=315,SNR=67
PRD **Provadia** 79.40 318 i P P 10 24 50.6 +0.9
B35A **Bob, Littlefor** 79.41 35 P P 10 24 49.3 -0.4
baz=319,SNR=35
C34A **RKJ Ranch, Bem** 79.41 36 P P 10 24 49.4 -0.4
baz=318,SNR=26
MVH1 **Achvaich** 79.42 343⇑ eP P 10 24 50.4 +0.8
I29A **Vivian Onida** 79.45 41 P P 10 24 50.4 +0.3
baz=315,SNR=36
GOLR 79.48 320⇓ iP P 10 24 51.3 +1.1
ISCO **Idaho Springs** 79.51 47 eP P 10 24 51.6 +0.7
baz=313,SNR=46
ISCO **Idaho Springs** 79.51 47 eP P 10 24 51.4 +0.5
ISCO pmax pmax
comp=Z,44nm,1.0s
ISCO MLR MLR
comp=Z,2µm,20.0s
ISCO **Idaho Springs** 79.51 47 eP P 10 24 51.4 +0.5
comp=Z,44nm,1.0s
ISCO LR LR
comp=Z,2µm,20.0s
MCD **Coleburn Disti** 79.51 342⇑ eP P 10 24 50.8 +0.6
MVCO **Mesa Verde** 79.56 50 P P 10 24 52.0 +0.9
baz=312,SNR=42
MVCO **Mesa Verde** 79.56 50 eP P 10 24 51.5 +0.4
comp=Z,95nm,1.1s
MVCO LR LR
comp=Z,1µm,21.0s
PSZ **Piszkesteto** 79.61 325⇓ iP P 10 24 52.6 +1.6
PSZ **Piszkesteto** 79.61 325⇑ eP P 10 24 52.0 +1.0
PSZ **Piszkesteto** 79.61 325 ⇓P P 10 24 52.6 +1.6
PSZ **Piszkesteto** 79.61 325 eP P 10 24 51.5 +0.5
comp=Z,456nm,1.8s
PSZ LR LR
comp=Z,11µm,19.0s
G31A **Conde** 79.63 39 P P 10 24 51.2 +0.1
baz=316,SNR=19
VYHS **Vyhne** 79.64 326 eP P 10 24 52.1 +1.1
VYHS ePP PP 10 27 49.1 -2.2
VYHS eS S 10 34 51.7 +0.8
VYHS eL L 11 03 04.9
MME1 **Meikle Cairn** 79.68 342⇑ eP P 10 24 51.6 +0.5
F32A **Veblen** 79.69 38 P P 10 24 50.8 -0.5
baz=317,SNR=16
D34A **Park Rapids** 79.70 36 P P 10 24 50.8 -0.5
baz=318,SNR=63
DEV **Deva** 79.73 322⇓ iP P 10 24 52.8 +1.3
DEV **Deva** 79.73 322 ⇓P P 10 24 52.8 +1.3
E33A **Westby DABS, E** 79.75 37 P P 10 24 51.4 -0.3
baz=318,SNR=64
C35A **Jirik Farms, M** 79.79 35 P P 10 24 51.3 -0.6
baz=319,SNR=50
DGAR **Diego Garcia** 79.81 252 eP P 10 24 50.5 -1.9
DGAR MLR MLR
comp=Z,2µm,19.0s
DGAR **Diego Garcia** 79.81 252 eP P 10 24 50.5 -1.9
DGAR LR LR
comp=Z,2µm,19.0s
BRG **Berggiesshubel** 79.82 330 i P P 10 24 52.8 +0.9
comp=Z,65nm,1.1s
BRG PP PP 10 27 48.9 -3.8
comp=Z,32nm,1.8s
BRG S S 10 34 50.0 -2.6
BRG SS SS 10 40 34.0 +33
BRG ePKKP **PKKPbc** 10 43 37.0 -0.1
comp=Z,6.6nm,1.4s
BRG ePKPPKP P'P'df 10 51 31.3 -16
comp=Z,24nm,2.2s
SUSD **Miller** 79.83 40 P P 10 24 52.2 0.0
baz=316,SNR=24
CLL **Collm** 79.83 331⇑ iP P 10 24 52.1 +0.1
comp=Z,92nm,0.9s
CLL i 10 24 57.3
CLL i 10 25 05.1
CLL e 10 25 07.0
CLL e 10 27 34.0
CLL ePP PP 10 28 00.0 +7.2
CLL eS S 10 34 52.0 -0.7
CLL e(SS) 10 40 36.0
CLL eSSS SSS 10 43 30.0
CLL LmH 11 00 00.0
comp=N,6µm,19.9s
CLL LmH 11 00 00.0
comp=E,9µm,20.7s
CLL LmV 11 04 00.0
comp=N,4µm,18.3s
CLL LmV 11 04 00.0
comp=E,6µm,18.0s
CLL LmV 11 04 00.0
comp=Z,8µm,18.6s
CLL **Collm** 79.83 331⇑ iP P 10 24 52.1 +0.1
CLL eS S 10 34 52.0 -0.7
CLL pmax pmax
comp=Z,92nm,0.9s
CLL MLR MLR
comp=Z,8µm,18.6s
PVCC **Panska Ves** 79.84 329 eP P 10 24 53.3 +1.2
PVCC AMS AMS 11 03 10.0
comp=Z,10µm,16.7s
PVCC **Panska Ves** 79.84 329 eP P 10 24 53.3 +1.2
PVCC MLR MLR
comp=Z,10µm,16.7s
J29A **Okreek** 79.87 41 P P 10 24 52.7 +0.3
baz=315,SNR=25
DRUM **Mains of Drumt** 79.92 342 eP P 10 24 52.8 +0.4
DRUM AMB AMB 10 24 53.7
comp=Z,105nm,1.3s
DRUM AMS AMS 11 01 21.7
comp=Z,3µm,19.2s
G32A **Webster** 79.95 39 P P 10 24 52.4 -0.4
baz=317,SNR=7.7
I30A **Oacoma** 79.97 41 P P 10 24 53.0 +0.1
baz=316,SNR=24
VRAC **Vranov** 79.97 328 LR LR 11 03 35.4
comp=Z,10µm,18.7s,baz=34,slow=38
VRAC **Vranov** 79.97 328⇓ iP P 10 24 54.6 +1.8
VRAC **Vranov** 79.97 328 ⇓P P 10 24 54.6 +1.8
ISK **Istanbul-Kandi** 80.00 315 P P 10 24 53.3 +0.3
SIRR **Siria** 80.03 323⇑ iP P 10 24 54.2 +1.0
H31A **Wolsey** 80.04 40 P P 10 24 53.0 -0.2
baz=316,SNR=7.3
KAC **Achnashellach** 80.06 343⇑ eP P 10 24 54.0 +0.9
F33A **5 Mile Ranch,** 80.11 38 P P 10 24 53.3 -0.3
baz=317,SNR=33
SZH **Strazhica** 80.11 319 i P P 10 24 54.1 +0.5
E34A **Wadena** 80.14 37 P P 10 24 52.9 -0.8
baz=318
W18A **Petrified Fore** 80.18 53 P P 10 24 55.1 +0.7
W18A **Petrified Fore** 80.18 53 eP P 10 24 55.4 +1.0
comp=Z,32nm,1.1s
S22A **4UR Ranch, Cre** 80.19 49 P P 10 24 55.3 +0.7
baz=312,SNR=50
D35A **Remer** 80.22 36 P P 10 24 53.3 -0.9
baz=319,SNR=22
GOPC **GO Pecny, Ondr** 80.24 329 eP P 10 24 54.8 +0.5
GOPC eS S 10 34 56.2 -1.0
GOPC AMS AMS 11 04 30.0
comp=Z,8µm,16.3s
GOPC **GO Pecny, Ondr** 80.24 329 eP P 10 24 54.8 +0.5
GOPC eS S 10 34 56.2 -1.0
GOPC MLR MLR
comp=Z,8µm,16.3s
C36A **Pine Crest Far** 80.25 34 P P 10 24 53.8 -0.5
baz=319,SNR=29
PRA **Prague** 80.26 329 eP P 10 24 55.9 +1.6
PRA epP sP 10 25 08.2 +0.2
PRA eS S 10 34 58.1 +0.8
PRA AMS AMS 11 05 30.0
comp=Z,9µm,16.2s
PRA **Prague** 80.26 329 eP P 10 24 55.9 +1.6
PRA e 10 25 08.2
PRA eS S 10 34 58.1 +0.8
PRA MLR MLR
comp=Z,9µm,16.2s
KPL **Plockton** 80.28 343⇑ eP P 10 24 55.3 +1.0
KPL AMB AMB 10 24 56.1
comp=Z,140nm,1.2s
KPL AMS AMS 10 59 48.5
comp=Z,2µm,27.4s
PRU **Pruhonice** 80.28 329 eP P 10 24 55.5 +1.1
PRU epP sP 10 25 07.9 -0.2
PRU eS S 10 34 57.8 +0.3
PRU AMS AMS 11 03 30.0
comp=Z,8µm,16.7s
PRU **Pruhonice** 80.28 329 eP P 10 24 55.5 +1.1
PRU e 10 25 07.9
PRU eS S 10 34 57.8 +0.3
PRU MLR MLR
comp=Z,8µm,16.7s
214A **Organ Pipe Nat** 80.29 57 P P 10 24 55.3 +0.4
baz=310,SNR=34
214A **Organ Pipe Nat** 80.29 57 eP P 10 24 55.1 +0.2
comp=Z,225nm,1.1s
BUD **Budapest** 80.33 325⇑ eP P 10 24 55.8 +1.1
I31A **Royce, Wessing** 80.33 40 P P 10 24 54.6 -0.3
baz=316
JMB **Yambol** 80.34 318 i P P 10 24 55.5 +0.6
Q24A **Divide** 80.34 47 P P 10 24 55.5 +0.1
baz=313,SNR=27
KSB **Sheil Bridge** 80.35 343⇑ eP P 10 24 55.5 +0.9
J30A **Dallas** 80.36 41 P P 10 24 54.7 -0.3
baz=316,SNR=15
EDU **Dundee** 80.38 342⇑ eP P 10 24 55.0 +0.2
TREC **Trest** 80.44 328 eP P 10 24 56.7 +1.3
TREC AMS AMS 11 04 20.0
comp=Z,8µm,17.7s
TREC **Trest** 80.44 328 eP P 10 24 56.7 +1.3
TREC MLR MLR
comp=Z,8µm,17.7s
E35A **Pequot Lakes** 80.45 36 P P 10 24 54.9 -0.5
baz=318,SNR=12
RAR **Rarotonga** 80.46 127 P P 10 24 55.6 0.0
comp=Z,50nm,1.1s,baz=259,slow=6.9,SNR=5.9
RAR **Rarotonga** 80.46 127 P P 10 24 55.6 0.0
RAR LR LR
comp=Z,3µm,21.0s
G33A **Ortonville** 80.51 38 P P 10 24 55.6 -0.2
baz=317,SNR=49
BZS **Buzias** 80.53 323⇑ iP P 10 24 56.2 +0.3
BZS **Buzias** 80.53 323 ⇑P P 10 24 56.2 +0.3
H32A **Carlson Farm,** 80.53 39 P P 10 24 55.7 -0.2
baz=317,SNR=6.4
D36A **Goodland** 80.55 35 P P 10 24 55.1 -0.8
baz=319,SNR=10
C37A **Embarrass** 80.56 34 P P 10 24 55.3 -0.7
baz=320,SNR=26
PKS7 **Kunszentmiklos** 80.59 325 eP P 10 24 57.2 +1.1
F34A **Alexandria** 80.63 37 P P 10 24 56.2 -0.2
baz=318,SNR=28
PKSG 80.67 325⇑ eP P 10 24 57.4 +0.8
EDRB **Edirne** 80.69 317 P P 10 24 57.4 +0.6
EYMN **Ely** 80.69 34 P P 10 24 56.5 -0.2
baz=320,SNR=17
EYMN **Ely** 80.69 34 eP P 10 24 56.3 -0.5
comp=Z,40nm,0.8s
EYMN LR LR
comp=Z,2µm,21.0s
OGNE **Ogallala** 80.70 44 P P 10 24 57.2 +0.2
baz=315,SNR=7.5
OGNE **Ogallala** 80.70 44 eP P 10 24 57.2 +0.2
comp=Z,202nm,1.2s
OGNE LR LR
comp=Z,1µm,20.0s
H33A **Prehn Over Nor** 80.74 39 P P 10 24 57.1 0.0
baz=317,SNR=32
PKS6 **Bocsa** 80.75 324 eP P 10 24 58.0 +1.0
CSKK **Cs˘tkako** 80.75 326 eP P 10 24 58.2 +1.2
K30A **Basset** 80.76 42 P P 10 24 57.6 +0.4
baz=316,SNR=19
J31A **Geddes** 80.76 41 P P 10 24 57.5 +0.3
baz=316,SNR=7.5
ESY **Stoneypath** 80.85 341⇑ eP P 10 24 58.0 +0.7
G34A **Benson** 80.86 38 P P 10 24 57.8 +0.1
baz=318,SNR=40
I32A **Karley and Nic** 80.87 39 P P 10 24 57.5 -0.2
baz=317,SNR=8.0
D37A **Cotton** 80.89 35 P P 10 24 57.3 -0.5
baz=320,SNR=12
F35A **Swanville** 80.90 37 P P 10 24 57.5 -0.3
baz=318,SNR=21
NKC **Novy Kostel** 80.91 330 eP P 10 24 58.4 +0.6
NKC epP sP 10 25 11.5 0.0
NKC eS S 10 35 04.2 +0.1
NKC AMS AMS 11 06 00.0
comp=Z,9µm,16.3s
NKC **Novy Kostel** 80.91 330 eP P 10 24 58.4 +0.6
NKC e 10 25 11.5
NKC eS S 10 35 04.2 +0.1
NKC MLR MLR
comp=Z,9µm,16.3s
PKST **T˜'s** 80.93 326⇑ eP P 10 24 58.5 +0.5
C38A **Sawbill Land.** 80.97 34 P P 10 24 57.7 -0.5
baz=320,SNR=26
SDCO **Great Sand Dun** 80.97 48 P P 10 24 59.0 +0.3
baz=313,SNR=22
SDCO **Great Sand Dun** 80.97 48 eP P 10 24 59.4 +0.6
comp=Z,14nm,0.8s
SDCO LR LR
comp=Z,1µm,20.0s
PKS2 **Kecel** 80.99 324 eP P 10 24 59.4 +1.1
E36A **McGregor** 81.01 36 P P 10 24 58.0 -0.4
baz=319,SNR=41
EAB **Aberfoyle** 81.03 342⇑ eP P 10 24 59.3 +1.0
MDVR **Moldovita** 81.11 322⇑ iP P 10 24 59.6 +0.6
J32A **Parkston** 81.15 40 P P 10 24 59.0 -0.2
baz=317,SNR=9.2
MPEP **Malo Peshtene** 81.16 320 i P P 10 25 00.0 +0.7
I33A **Coleman** 81.18 39 P P 10 24 59.6 +0.2
baz=317,SNR=11
H34A **Spellman Lake,** 81.22 38 P P 10 24 59.4 -0.1
baz=318,SNR=14
PHNC **Paralimni** 81.23 308 P P 10 24 58.6 -1.2
K31A **O'Neill** 81.24 41 P P 10 24 59.7 -0.1
baz=316,SNR=18
SOP **Sopron** 81.25 327⇑ eP P 10 25 00.9 +1.3
ASF **Jabal al Asfar** 81.31 304 P P 10 25 01.4 +1.0
comp=Z,27nm,0.9s,baz=355,slow=2.6,SNR=27
PKS9 **Tamasi** 81.34 325⇓ eP P 10 25 00.8 +0.7
KHC **Kasperske Hory** 81.34 329 eP P 10 25 00.5 +0.3
KHC epP sP 10 25 13.6 -0.3
KHC eS S 10 35 08.6 -0.1
KHC AMS AMS 11 06 10.0
comp=Z,11µm,16.7s
KHC **Kasperske Hory** 81.34 329 eP P 10 25 00.5 +0.3
KHC e 10 25 13.6
KHC eS S 10 35 08.6 -0.1
KHC MLR MLR
comp=Z,11µm,16.7s
KHC **Kasperske Hory** 81.34 329 eP P 10 25 00.7 +0.5
comp=Z,96nm,1.6s
CONA **Conrad Observa** 81.35 327 iP P 10 25 01.8 +1.5
comp=Z,69nm,1.3s,SNR=59
E37A **Wrenshall** 81.35 35 P P 10 24 59.3 -0.9
baz=320,SNR=5.2
TUC **Tucson** 81.36 55 P P 10 25 01.5 +0.8
baz=311
TUC **Tucson** 81.36 55 eP P 10 25 00.9 +0.2
TUC pmax pmax
comp=Z,54nm,1.3s
TUC MLR MLR
comp=Z,2µm,20.0s
TUC **Tucson** 81.36 55 eP P 10 25 00.9 +0.2
comp=Z,54nm,1.3s
TUC LR LR
comp=Z,2µm,20.0s
C39A **Grand Marais** 81.38 33 P P 10 24 59.4 -1.0
baz=321,SNR=8.9
F36A **Milaca** 81.38 36 P P 10 24 59.9 -0.5
baz=319,SNR=9.8
PGBU **Glenifferbraes** 81.40 342⇑ eP P 10 25 00.8 +0.5
PGBU AMB AMB 10 25 02.7
comp=Z,168nm,1.2s
PGBU AMS AMS 11 07 28.9
comp=Z,2µm,16.8s
ISP **Isparta** 81.41 312 P P 10 25 00.5 -0.4
ISP **Isparta** 81.41 312 eP P 10 25 00.4 -0.4
ISP pmax pmax
comp=Z,24nm,0.8s
ISP MLR MLR

comp=Z,3µm,20.0s
ISP Isparta 81.41 312 *e*P **P 10 25 00.4 -0.4**
comp=Z,24nm,0.8s
ISP LR LR
comp=Z,3µm,20.0s
G35A Watkins 81.42 37 P **P 10 25 00.7 +0.1**
baz=319,SNR=17
PKSM Moragy 81.46 325⇓*i*P **P 10 25 01.3 +0.5**
PKSM Moragy 81.46 325⇑*e*P **P 10 25 00.7 -0.1**
PKSM Moragy 81.46 325 ⇓P **P 10 25 01.3 +0.5**
ECSD EROS Data Cent 81.50 39 P **P 10 25 01.0 -0.1**
baz=317,SNR=82
ECSD EROS Data Cent 81.50 39 *e*P **P 10 25 00.6 -0.5**
comp=Z,64nm,0.8s
ECSD LR LR
comp=Z,2µm,22.0s
L31A Butterfield Fa 81.52 41 P **P 10 25 01.6 +0.4**
baz=316,SNR=23
GERES GERESS Array B 81.52 329 P **P 10 25 01.3 +0.1**
comp=Z,11nm,0.7s,baz=34,slow=5.3,SNR=85
GERES PKKPbc **PKKPbc 10 43 33.2 -0.2**
comp=Z,1.9nm,0.7s,baz=219,slow=1.7,SNR=14
GERES PKPPKP P'P'df 10 51 31.3 -13
comp=Z,0.2nm,0.3s,baz=112,slow=1.4,SNR=4.9
GERES LR LR 11 05 49.6
comp=Z,6µm,18.4s,baz=20,slow=39
WTSB Winterswijk 81.52 334 *i*P **P 10 25 01.2 +0.2**
comp=Z,432nm,2.3s
PGB Panagyurishte 81.53 319 *i*P **P 10 25 02.0 +0.7**
KDZ Kurdzhali 81.53 318 *i*P **P 10 25 02.4 +1.1**
ESK Eskdalemuir 81.54 341⇑*e*P **P 10 25 01.7 +0.7**
ESK AMS AMS 11 07 03.9
comp=Z,3µm,17.4s
ESK Eskdalemuir 81.54 341*ce*P **P 10 25 02.6 +1.6**
ESK Eskdalemuir 81.54 341 *e*P **P 10 25 01.0 -0.1**
comp=Z,81nm,1.3s
ESK LR LR
comp=Z,3µm,19.0s
K32A Verdigre 81.61 41 P **P 10 25 01.1 -0.6**
baz=317,SNR=5.8
MAMC Mammari 81.61 309 P **P 10 25 02.7 +0.9**
J33A Davis 81.63 40 P **P 10 25 01.8 0.0**
baz=317
ECK Cauldkaine Hil 81.64 341⇑*e*P **P 10 25 01.9 +0.4**
I34A Hadley 81.64 39 P **P 10 25 02.0 +0.1**
baz=318,SNR=6.4
H35A Sunnyside Ranc 81.64 38 P **P 10 25 02.1 +0.3**
baz=318,SNR=109
CSS Mathiatis 81.69 309 P **P 10 25 03.1 +0.9**
CSS Mathiatis 81.69 309 P **P 10 25 02.1 -0.1**
CSS Mathiatis 81.69 309 *e*P **P 10 25 02.2 0.0**
comp=Z,23nm,0.8s
CSS LR LR
comp=Z,515nm,20.0s
MMAI Mount Meron Ar 81.70 306 P **P 10 25 03.2 +0.8**
comp=Z,64nm,0.9s,baz=43,slow=6.2,SNR=52
MMAI LR LR 11 04 47.3
comp=Z,2µm,21.7s,baz=25,slow=38
KSCO Kaye Shedlock' 81.73 46 P **P 10 25 02.7 +0.1**
baz=314,SNR=17
KSCO Kaye Shedlock' 81.73 46 *e*P **P 10 25 02.7 +0.1**
comp=Z,153nm,1.4s
ALN Alexandroupoli 81.74 317 P **P 10 25 02.3 0.0**
BHH Howats Hill 81.74 341⇑*e*P **P 10 25 03.1 +1.0**
G36A St. Michael 81.75 37 P **P 10 25 02.1 -0.3**
baz=319,SNR=12
ENEZ Enez 81.79 317 P **P 10 25 02.9 +0.3**
GRFO Grafenberg 81.81 331 *e*P **P 10 25 03.2 +0.6**
GRFO pmax pmax
comp=Z,62nm,0.8s
GRFO Grafenberg 81.81 331 *e*P **P 10 25 03.1 +0.6**
comp=Z,62nm,0.8s
RZN Rozhen 81.87 318 *i*P **P 10 25 04.0 +0.7**
KULA Kula-Manisa 81.99 314 P **P 10 25 03.6 -0.2**
T25A Trinidad 82.01 48 P **P 10 25 04.4 +0.2**
baz=314,SNR=86
ARSA Arzberg 82.03 327 *i*P **P 10 25 04.5 +0.6**
comp=Z,67nm,1.7s,SNR=30
M31A Lambtecht Ranc 82.04 42 P **P 10 25 03.5 -0.6**
baz=316,SNR=10
L32A Elgin 82.06 41 P **P 10 25 04.3 +0.1**
baz=317,SNR=9.9
BBO1 Bothel 82.07 341⇑*e*P **P 10 25 04.6 +0.7**
MOA Molln 82.08 328 *i*P **P 10 25 05.0 +0.9**
comp=Z,54nm,1.3s,SNR=37
GMK Mull of Kintyr 82.09 342⇑*e*P **P 10 25 04.7 +0.8**
BEHE Becsehely 82.09 326⇑*e*P **P 10 25 04.7 +0.6**
SZAC Souni 82.10 309 P **P 10 25 05.1 +0.7**
K33A Hardington 82.14 40 P **P 10 25 04.7 +0.2**
baz=317,SNR=6.5
J34A George 82.15 39 P **P 10 25 04.6 +0.1**
baz=318,SNR=5.1
H36A Jessenland, He 82.16 37 P **P 10 25 05.0 +0.4**
baz=319,SNR=43
KESW Keswick, Cumbr 82.17 341⇑*e*P **P 10 25 04.8 +0.4**
KESW AMB AMB 10 25 06.9
comp=Z,159nm,1.6s
SPMN Marine on St. 82.19 36 P **P 10 25 04.2 -0.4**
baz=320,SNR=17
SPMN Marine on St. 82.19 36 *e*P **P 10 25 04.3 -0.4**
comp=Z,26nm,0.8s
I35A Creekview Farm 82.20 38 P **P 10 25 04.9 +0.1**
baz=318,SNR=12
AKMC Akamas 82.25 309 P **P 10 25 05.9 +0.7**
ANMO Albuquerque 82.30 51 P **P 10 25 06.3 +0.6**
baz=313
ANMO Albuquerque 82.30 51*ce*P **P 10 25 06.3 +0.6**
ANMO pmax pmax
comp=Z,83nm,1.2s
ANMO Albuquerque 82.30 51 *e*P **P 10 25 06.4 +0.6**
comp=Z,78nm,1.2s
ANMO LR LR
comp=Z,2µm,20.0s
SMTH Samothraki Isl 82.31 317 P **P 10 25 01.4 -4.0**
GAL1 Galloway 82.32 342⇑*e*P **P 10 25 05.8 +0.7**
L33A Hoskins 82.32 41 P **P 10 25 05.6 +0.1**
baz=317
PPCY Paphos 82.33 309 P **P 10 25 06.5 +0.9**
EZN Ezine 82.35 316 P **P 10 25 04.5 -1.1**
BGNE Belgrade 82.43 42 P **P 10 25 05.8 -0.3**
baz=317,SNR=20
BGNE Belgrade 82.43 42 *e*P **P 10 25 05.7 -0.4**
comp=Z,260nm,0.9s
N31A Bailey Ranch, 82.43 42 P **P 10 25 06.0 0.0**
baz=316,SNR=8.1
MMB Musomiste 82.45 319 *i*P **P 10 25 06.7 +0.6**
J35A Milford 82.46 39 P **P 10 25 05.9 -0.2**
baz=318
KAVA Kavala 82.47 318 P **P 10 25 06.7 +0.5**
K34A Le Mars 82.53 40 P **P 10 25 06.4 -0.1**
baz=318,SNR=14
I36A Fitzsimmons Fa 82.54 38 P **P 10 25 06.5 0.0**
baz=319,SNR=15
NVR Nevrokopi 82.55 318 P **P 10 25 06.8 +0.1**
KKB Krupnik 82.58 319 *i*P **P 10 25 07.4 +0.6**
Y22D IRIS PASSCAL I 82.61 52 P **P 10 25 08.4 +1.1**
baz=313,SNR=6.0
H37A Dierke Farm, C 82.63 37 P **P 10 25 07.2 +0.2**
baz=320,SNR=15
PERS Pernice 82.68 327 *e*P **P 10 25 07.5 +0.2**
comp=Z,969nm,2.4s
PERS *e* 10 25 20.6
PERS eS **S 10 35 20.3 -2.3**
SOKA Soboth 82.68 327 *i*P **P 10 25 07.7 +0.4**
comp=Z,105nm,1.1s,SNR=84
O31A Woolen Ranch, 82.72 43 P **P 10 25 07.1 -0.5**
baz=316,SNR=8.0
PRK Paraskevi 82.79 316 P **P 10 25 08.8 +0.9**
M33A Taylor Creek F 82.80 41 P **P 10 25 07.8 -0.2**
baz=317,SNR=18
N32A Stulken Farm, 82.82 42 P **P 10 25 07.4 -0.6**
baz=317
HGN Heimansgroeve 82.83 334 *e*P **P 10 25 07.9 0.0**
comp=Z,233nm,1.9s
HGN Heimansgroeve 82.83 334 *e*S S 10 35 09.3 -14
I37A Lemond, Waseca 82.84 37 P **P 10 25 08.5 +0.4**
baz=319,SNR=47
SRS Serrai 82.86 318 P **P 10 25 08.4 +0.1**
BEBN Eben Emael 82.89 334 P **P 10 25 08.6 +0.4**
J36A Seneca 1, Swea 82.91 38 P **P 10 25 08.5 0.0**
baz=319,SNR=16
LIA Limnos Island 82.91 317 P **P 10 25 09.2 +0.7**
L34A Svendsen Farm, 82.92 40 P **P 10 25 08.5 0.0**
baz=318,SNR=5.3
K35A Storm Lake 82.93 39 P **P 10 25 08.5 0.0**
baz=318

MEM Membach 82.93 334 P **P 10 25 08.8 +0.4**
SCHQ Schefferville 82.95 17 P **P 10 25 09.4 +1.0**
comp=Z,42nm,0.9s,baz=348,slow=5.8,SNR=44
SCHQ PKKPbc **PKKPbc 10 43 28.2 -2.0**
comp=Z,5.6nm,0.8s,baz=230,slow=2.8,SNR=5.9
SCHQ LR LR 11 07 28.0
comp=Z,2µm,18.4s,baz=349,slow=40
WIM Isle of Man 82.96 341⇑*e*P **P 10 25 09.3 +0.8**
OBKA Obir 83.02 327 *i*P **P 10 25 09.2 +0.1**
comp=Z,29nm,0.8s,SNR=21
SIGR SIGRI 83.04 316 P **P 10 25 06.9 -2.3**
FETY Fethiye 83.06 312 P **P 10 25 09.3 -0.1**
KBA Koelnbreinsper 83.07 328 *i*P **P 10 25 09.9 +0.5**
comp=Z,61nm,0.9s,SNR=52
KSL Kastellorizon 83.11 312 P **P 10 25 09.3 -0.3**
KSL Kastellorizon 83.11 312 P **P 10 25 09.3 -0.3**
121A Cookes Peak, D 83.11 53 P **P 10 25 10.9 +1.0**
baz=312,SNR=57
121A Cookes Peak, D 83.11 53 *e*P **P 10 25 10.7 +0.8**
comp=Z,112nm,1.1s
COWI Cover 83.14 34 *e*P **P 10 25 09.4 -0.3**
comp=Z,20nm,0.7s
COWI LR LR
comp=Z,2µm,19.0s
M34A Aspy Farms, Fr 83.16 41 P **P 10 25 09.0 -0.8**
baz=318,SNR=8.5
YER Yerkesik 83.17 313 P **P 10 25 10.5 +0.5**
YER Yerkesik 83.17 313 P **P 10 25 10.5 +0.5**
YER Yerkesik 83.17 313 P **P 10 25 10.5 +0.5**
KNT Kendrikon 83.19 319 P **P 10 25 10.2 +0.3**
GMM Mts of Mourne 83.19 342⇑*e*P **P 10 25 09.8 +0.1**
O32A Brookman Farm, 83.19 42 P **P 10 25 09.2 -0.8**
baz=317
SOH Sokhos 83.20 318 P **P 10 25 09.5 -0.6**
URZ Urewera 83.20 154 P **P 10 25 08.7 -1.0**
comp=Z,67nm,0.8s,baz=360,slow=2.1,SNR=29
URZ LR LR 11 03 16.2
comp=Z,560nm,18.0s,baz=350,slow=36
URZ Urewera 83.20 154 *e*PN **P 10 25 08.1 -1.6**
URZ Urewera 83.20 154 *e*P **P 10 25 07.8 -1.9**
comp=Z,75nm,0.9s
URZ Urewera 83.20 154 SN **P 10 25 08.6 -1.0**
L35A Bielow Farm, R 83.23 40 P **P 10 25 10.0 -0.2**
baz=318
OUR Ouranopolis 83.23 318 P **P 10 25 09.7 -0.4**
VAY Valandovo 83.24 319 P **P 10 25 10.1 -0.1**
VAY Valandovo 83.24 319 *i*P **P 10 25 10.9 +0.7**
BLY Banja Luka 83.24 324⇓*i*P **P 10 25 11.1 +1.0**
N33A J Bar K, Exete 83.28 42 P **P 10 25 09.6 -0.8**
baz=317
J37A Redenius Farm, 83.30 38 P **P 10 25 10.4 -0.1**
baz=319,SNR=14
PLE Pljevlja 83.30 322⇑*i*P **P 10 25 11.0 +0.4**
MYKA Terra Mystica 83.31 328 *i*P **P 10 25 10.3 -0.3**
comp=Z,90nm,0.7s,SNR=32
I38A Scanlan Farm, 83.32 37 P **P 10 25 10.4 -0.2**
baz=320,SNR=16
SKO Skopje 83.32 320 P **P 10 25 11.3 +0.7**
SKO Skopje 83.32 320 *i*P **P 10 25 12.0 +1.3**
STU Stuttgart 83.33 331 *e*P **P 10 25 11.0 +0.4**
STU pmax pmax
comp=Z,51nm,0.7s
STU Stuttgart 83.33 331 *e*P **P 10 25 10.9 +0.4**
comp=Z,50nm,0.7s
BCLA Clavier 83.33 334 P **P 10 25 10.8 +0.3**
CWF Charnwood Fore 83.35 339⇑*e*P **P 10 25 10.9 +0.4**
CWF AMS AMS 11 02 10.2
comp=Z,3µm,23.1s
K36A Gilmore City 83.37 39 P **P 10 25 11.1 +0.2**
baz=319,SNR=6.2
LJU Ljubljana 83.40 327 *e*P **P 10 25 10.6 -0.3**
comp=Z,650nm,2.5s
LJU *e*S **S 10 35 25.6 -4.2**
IVA Berane 83.41 322⇓*i*P **P 10 25 11.7 +0.6**
CBKS Cedar Bluff 83.46 44 P **P 10 25 10.6 -0.8**
baz=316,SNR=22
CBKS Cedar Bluff 83.46 44 *e*P **P 10 25 10.6 -0.8**
CBKS pmax pmax
comp=Z,71nm,0.8s
CBKS MLR MLR
comp=Z,2µm,19.0s
CBKS Cedar Bluff 83.46 44 *e*P **P 10 25 10.6 -0.8**
comp=Z,71nm,0.8s
CBKS LR LR
comp=Z,2µm,19.0s
PLG Polygyros 83.48 318 P **P 10 25 11.3 -0.2**
P32A Huiting Farm, 83.49 43 P **P 10 25 10.8 -0.8**
baz=317,SNR=45
HORT Hortiatis 83.50 318 P **P 10 25 09.4 -2.2**
BOJS Bojanci 83.51 326 *e*P **P 10 25 11.3 -0.2**
comp=Z,783nm,3.1s
CHOS Chios island 83.52 315 P **P 10 25 09.6 -2.2**
THE Thessaloniki 83.54 318 P **P 10 25 10.5 -1.2**
WME Myndd Eilian 83.55 341⇑*e*P **P 10 25 12.3 +0.8**
SMG Samos 83.58 314 P **P 10 25 07.9 -4.1**
WPM1 Penmaenmawr 83.58 341⇑*e*P **P 10 25 12.2 +0.5**
WATA Walderalm 83.58 329 *i*P **P 10 25 12.5 +0.5**
comp=Z,46nm,1.2s,SNR=37
PVY Plav 83.58 321⇑*i*P **P 10 25 12.2 +0.1**
GRG Griva 83.59 319 P **P 10 25 11.0 -1.1**
SNF Seneffe 83.60 335 P **P 10 25 12.4 +0.5**
WTTA Wattenberg 83.62 329 *i* PcP **P 10 25 13.0 +0.7**
comp=Z,90nm,2.0s,SNR=22
UPM Unac-Piva 83.63 322⇑*i*P **P 10 25 12.3 -0.1**
M35A Neola 83.63 40 P **P 10 25 12.2 0.0**
baz=318,SNR=16
K37A Belmond 83.67 38 P **P 10 25 12.6 +0.2**
baz=319,SNR=26
L36A Harm Buiss Farm 83.67 39 P **P 10 25 12.4 0.0**
baz=319,SNR=6.0
LANF Langenberg 83.67 332⇑*e*P **P 10 25 12.8 +0.5**
WLF1 Llynfaes 83.67 341⇑*e*P **P 10 25 12.3 +0.2**
WLF1 AMB AMB 10 25 13.7
comp=Z,172nm,1.8s
WLF1 AMS AMS 11 03 12.0
comp=Z,2µm,21.1s
ABTA Abfaltersbach 83.68 328 *i*P **P 10 25 12.2 -0.3**
comp=Z,46nm,1.1s,SNR=16
WLF Walderdange 83.68 333 P **P 10 25 13.5 +1.2**
comp=Z,112nm,2.4s
WLF Walderdange 83.68 333 *e*P **P 10 25 12.5 +0.2**
WLF pmax pmax
comp=Z,273nm,1.8s
WLF MLR MLR
comp=Z,8µm,21.0s
WLF Walderdange 83.68 333 *e*P **P 10 25 12.5 +0.2**
comp=Z,273nm,1.8s
WLF LR LR
comp=Z,8µm,21.0s
PAIG Paliouri 83.69 318 P **P 10 25 11.7 -0.8**
N34A Lincoln 83.69 41 P **P 10 25 11.8 -0.7**
baz=318,SNR=9.8
O33A Hebron 83.69 42 P **P 10 25 11.8 -0.8**
baz=317,SNR=9.0
FOEL Foel Wylfa 83.72 340⇑*e*P **P 10 25 13.2 +0.7**
FOEL AMS AMS 11 07 38.8
comp=Z,3µm,17.1s
SNGZ Shannon Statio 83.75 154 *e*PN **P 10 25 11.8 -0.7**
YLL Llanberis 83.75 341⇑*e*P **P 10 25 13.5 +1.0**
MOTA Moosalm 83.76 329 *i* PcP **P 10 25 14.5 +1.5**
comp=Z,64nm,0.9s,SNR=43
BODT Bodrum 83.77 313 P **P 10 25 13.0 0.0**
RAHZ Arahi 83.78 154 *e*PN **P 10 25 12.0 -0.7**
RETA Reutte 83.78 330 *i*P **P 10 25 13.5 +0.5**
comp=Z,112nm,1.1s,SNR=42
J38A Wedel Dairy, R 83.80 37 P **P 10 25 12.9 -0.1**
baz=320,SNR=8.6
BKZ Black Stump Fm 83.81 154 *e*PN **P 10 25 12.2 -0.6**
SQTA Sankt Quirin 83.82 329 *i* PcP **P 10 25 14.3 +1.0**
comp=Z,34nm,1.2s
RIGZ Rinuhau 83.83 153 *e*PN **P 10 25 12.3 -0.7**
DOU Dourbes 83.85 334 P **P 10 25 13.3 +0.2**
comp=Z,41nm,2.6s
ARG Arkhangelos 83.90 312 P **P 10 25 13.7 0.0**
NKME Niksic 83.94 322⇓*i*P **P 10 25 13.7 -0.1**
BHHZ Black Hill Sta 83.95 155 *e*PN **P 10 25 12.9 -0.7**
PMOR Pomariorio Ree 83.95 115 *e*P **P 10 25 15.1 +1.0**
comp=Z,380nm,1.2s
PMOR Pomariorio Ree 83.95 115 *e*T T 11 57 43.0
comp=Z,82nm,0.2s
YRE Yr Eifl 83.96 341⇑*e*P **P 10 25 14.6 +0.9**
Q32A Meitler Ranch, 83.97 44 P **P 10 25 13.4 -0.6**
baz=317,SNR=20
HLM1 Long Mynd 83.97 340⇑*e*P **P 10 25 14.2 +0.5**
HLM1 AMB AMB 10 25 15.3
comp=Z,96nm,2.1s
HLM1 AMS AMS 11 09 47.7
comp=Z,3µm,16.9s
TRI Trieste 83.99 327 *e*P **P 10 25 12.7 -1.2**
TRI pmax pmax
comp=Z,265nm,1.9s
TRI Trieste 83.99 327 *e*P **P 10 25 12.7 -1.2**
comp=Z,265nm,1.9s
BFO Black Forest 84.02 331*ce*P **P 10 25 14.3 +0.2**
BFO Black Forest 84.02 331 *e*P **P 10 25 14.0 -0.1**
comp=Z,587nm,2.0s
BFO *e*PP **PP 10 28 22.8 -4.6**
BFO LR LR
comp=Z,4µm,19.0s
BRY Bratogost 84.03 322 *e*P **P 10 25 13.8 -0.6**
ELSH Elham, Standar 84.04 337⇑*e*P **P 10 25 13.5 -0.5**
PDG Podgorica 84.05 322⇑*i*P **P 10 25 14.4 +0.1**
PDG Podgorica 84.05 322 P **P 10 25 13.6 -0.7**
TTG Podgorica 84.05 322⇑*i*P **P 10 25 14.4 +0.1**
TTG Podgorica 84.05 322 P **P 10 25 13.6 -0.7**
TTG Podgorica 84.05 322 P **P 10 25 13.6 -0.7**
O34A Beatrice 84.08 42 P **P 10 25 14.0 -0.5**
baz=318,SNR=11
KNZ Kokohu 84.08 153 *e*PN **P 10 25 13.2 -1.0**
M36A Felix, Anita 84.09 40 P **P 10 25 14.7 +0.2**
baz=319,SNR=20
BIA Bitola 84.09 320 *i*P **P 10 25 14.8 +0.1**
L37A Phoenix Point, 84.10 39 P **P 10 25 14.5 -0.1**
baz=319,SNR=14
P33A Williams Farm, 84.10 43 P **P 10 25 13.8 -0.9**
baz=317
N35A Tabor 84.11 41 P **P 10 25 14.6 -0.1**
baz=318,SNR=27
CEME Cevo 84.12 322⇑*i*P **P 10 25 14.2 -0.6**
K38A Parkersburg 84.17 38 P **P 10 25 14.9 -0.1**
baz=320
FETA Feichten 84.18 329 *i*P **P 10 25 15.3 +0.2**
comp=Z,59nm,1.0s,SNR=25
LIT Litokhoron 84.18 318 P **P 10 25 14.2 -0.9**
SSW Stow on the Wo 84.19 339⇑*e*P **P 10 25 15.5 +0.7**
FNA Florina 84.24 319 P **P 10 25 14.2 -1.2**
DRME Dracevica, Mon 84.27 322⇑*i*P **P 10 25 15.3 -0.1**
OHR Ohrid 84.29 320 *i*P **P 10 25 15.4 -0.2**
DAVA Damuels 84.29 330 *i*P **P 10 25 15.9 +0.2**
comp=Z,108nm,0.9s,SNR=48
R32A Long Quarter, 84.30 44 P **P 10 25 15.0 -0.7**
baz=317,SNR=14
VAH Vaihoa 84.30 115 *e*P **P 10 25 16.6 +0.8**
comp=Z,159nm,1.2s
BUM Brajici-Budva 84.32 322⇑*i*P **P 10 25 15.5 -0.3**
Q33A Connelly Farm, 84.35 43 P **P 10 25 15.1 -0.8**
baz=317,SNR=30
SKIA Skiathos 84.35 317 P **P 10 25 16.6 +0.6**
KZN Kozani 84.39 319 P **P 10 25 15.5 -0.7**
HCY Herceg Novi 84.40 322⇑*i*P **P 10 25 15.5 -0.6**
ULC Ulcinj 84.41 321⇑*i*P **P 10 25 15.8 -0.4**
O35A Humboldt 84.42 41 P **P 10 25 15.7 -0.5**
baz=318,SNR=9.2
TSZ Takapari Road 84.43 155 *e*PN **P 10 25 15.5 -0.5**
STRD Stroud 84.44 339⇑*e*P **P 10 25 16.6 +0.4**
STRD AMB AMB 10 25 18.5
comp=Z,398nm,2.2s
STRD AMS AMS 11 02 41.9
comp=Z,4µm,23.6s
FYTO Fytoko, Volos 84.45 318 P **P 10 25 14.6 -1.8**
L38A Oak Wood Farm, 84.47 38 P **P 10 25 16.2 -0.3**
baz=320,SNR=8.2
MCH1 Michaelchurch 84.47 340⇑*e*P **P 10 25 16.7 +0.4**
MCH1 AMB AMB 10 25 18.8
comp=Z,208nm,1.9s
MCH1 AMS AMS 11 10 02.3
comp=Z,3µm,16.2s
P34A Walnut Farm, R 84.47 42 P **P 10 25 15.9 -0.6**
baz=318,SNR=21
N36A Muff Farm, Cla 84.49 40 P **P 10 25 16.8 +0.2**
baz=319,SNR=17
M37A Trindle Farm, 84.50 39 P **P 10 25 17.0 +0.4**
baz=319,SNR=10.0
SCIA State Center 84.52 39 *e*P **P 10 25 17.2 +0.5**
comp=Z,112nm,0.9s
SCIA LR LR
comp=Z,2µm,21.0s
HMNX Herstmonceux 84.53 337⇑*e*P **P 10 25 17.4 +0.9**
HMNX AMB AMB 10 25 19.4
comp=Z,274nm,2.3s
HMNX AMS AMS 11 08 14.8
comp=Z,4µm,18.3s
PPT Papeete 84.53 118 P **P 10 25 17.4 +0.4**
comp=Z,124nm,0.9s,baz=348,slow=5.4,SNR=8.4
PPT LR LR 10 55 49.9
comp=Z,3µm,21.9s,baz=291,slow=31
ECH Echery 84.55 332⇑*e*P **P 10 25 17.2 +0.4**
PPT2 Papeete2 84.55 118 *e*P **P 10 25 18.5 +1.3**
comp=Z,123nm,1.1s
PPT2 Papeete2 84.55 118 *e*S **S 10 35 40.4 -1.6**
comp=Z,2µm,29.5s
PPT2 *e*SS **SS 10 41 14.8 +0.9**
comp=Z,812nm,26.2s
PPT2 *e*LQ LQ 10 47 44.1
comp=Z,3µm,29.8s
PPT2 *e*LR LR 10 51 59.5
comp=Z,7µm,22.5s,baz=313
PPT2 Papeete2 84.55 118 *e*T T 11 58 27.5
comp=Z,21nm,0.3s
MONM Monmouth 84.56 339⇑*e*P **P 10 25 17.4 +0.7**
MONM AMB AMB 10 25 19.0
comp=Z,253nm,2.5s
MONM AMS AMS 11 10 04.1
comp=Z,3µm,18.1s
TIR Tirane 84.57 321⇑*i*P **P 10 25 17.9 +0.9**
TIR Tirane 84.57 321 ⇑P **P 10 25 17.9 +0.9**
TIR Tirane 84.57 321 *e*P **P 10 25 17.2 +0.2**
comp=Z,70nm,0.9s
TIR LR LR
comp=Z,10µm,19.0s
SWN1 Swindon 84.58 339 *e*P **P 10 25 17.6 +0.8**
SWN1 AMB AMB 10 25 19.3
comp=Z,405nm,2.7s
SWN1 AMS AMS 11 02 46.8
comp=Z,3µm,22.8s
WOL Wolverton 84.59 338⇑*e*P **P 10 25 16.9 +0.1**
WOL AMB AMB 10 25 19.0
comp=Z,181nm,2.5s
WOL AMS AMS 11 06 16.9
comp=Z,4µm,21.9s
PAE Paea 84.60 118 *e*P **P 10 25 18.3 +1.0**
comp=Z,21nm,1.1s
PAE Paea 84.60 118 *e*T T 11 58 30.4
comp=Z,3.6nm,0.3s
EREA Eretria 84.65 316 P **P 10 25 15.4 -2.1**
LPW Lampeter 84.66 340⇑*e*P **P 10 25 17.6 +0.4**
LPW AMB AMB 10 25 18.8
comp=Z,192nm,1.1s
LPW AMS AMS 11 08 08.2
comp=Z,3µm,15.9s
OLDB Oldbury-Upon-S 84.66 339 AMS AMS 11 02 60.0
comp=Z,3µm,22.4s
NEST Nestorio 84.68 319 P **P 10 25 15.3 -2.4**
TIAR Tiarei 84.69 118 *e*P **P 10 25 18.8 +1.0**
comp=Z,74nm,1.0s
TIAR Tiarei 84.69 118 *e*T T 11 58 36.9
comp=Z,7.2nm,0.3s
S32A Newby Ranch, P 84.70 45 P **P 10 25 17.5 -0.2**
baz=317,SNR=16
SMIA Simia 84.70 317 P **P 10 25 17.4 -0.3**
PXZ Pawanui 84.71 155 *e*PN **P 10 25 17.5 +0.2**
R33A Olander Ranch, 84.77 44 P **P 10 25 18.0 -0.1**
baz=317,SNR=7.7
THL Klokotos Trika 84.82 318 P **P 10 25 16.4 -1.9**
MOF Molkenrain 84.86 332⇑*e*P **P 10 25 18.7 +0.2**
Q34A Chapman 84.88 43 P **P 10 25 18.3 -0.3**
baz=318,SNR=17
M38A Pleasantville 84.91 39 P **P 10 25 18.9 +0.2**
baz=320,SNR=23
N37A Lee Faris, Mou 84.91 40 P **P 10 25 18.9 +0.1**
baz=319,SNR=22
TVO Taravao 84.91 118 *e*P **P 10 25 20.3 +1.4**
comp=Z,59nm,1.0s
P35A Duane Minner, 84.91 42 P **P 10 25 18.3 -0.5**
baz=318,SNR=8.9
KSU1 Kansas State U 84.92 42 P **P 10 25 18.3 -0.5**
baz=318,SNR=17
KSU1 Kansas State U 84.92 42 *e*P **P 10 25 18.2 -0.5**
comp=Z,64nm,0.8s
KSU1 LR LR
comp=Z,2µm,20.0s

KARP	Karpathos		84.93	313	P		P	10 25 17.7	-1.2	
PTL	Penteli		84.96	316	P		P	10 25 08.3	-11	
LKR	Lokris		84.98	317	P		P	10 25 17.2	-1.9	
O36A	Bolckow		85.00	41	P		P	10 25 19.0	-0.1	
	baz=319,SNR=13									
AGG	Agios Georgios		85.06	318	P		P	10 25 17.8	-1.7	
T32A	Huddler Ranch,		85.08	45	P		P	10 25 19.6	-0.1	
	baz=317									
ATH	Athens Observa		85.09	316	P		P	10 25 18.4	-1.3	
JFWS	Jewell Farm		85.15	36	eP		P	10 25 19.0	-0.9	
JFWS					pmax		pmax			
	comp=Z,45nm,0.7s									
JFWS					MLR		MLR			
	comp=Z,3μm,22.0s									
JFWS	Jewell Farm		85.15	36	eP		P	10 25 19.0	-0.9	
	comp=Z,45nm,0.7s									
JFWS					LR		LR			
	comp=Z,3μm,22.0s									
AMTX	Amarillo		85.17	48	P		P	10 25 20.8	+0.6	
	baz=315									
AMTX	Amarillo		85.17	48	eP		P	10 25 20.7	+0.5	
	comp=Z,116nm,0.8s									
TUE	Stuetta		85.17	330	eP		P	10 25 20.2	0.0	
	comp=Z,46nm,0.8s									
TUE					LR		LR			
	comp=Z,7μm,20.0s									
R34A	Isabella, Hill		85.17	43	P		P	10 25 19.8	-0.3	
	baz=318,SNR=7.1									
SNZO	South Karori		85.17	157	PFAKE			10 25 30.0	+10	
SNZO					LR		LR			
	comp=Z,4μm,20.0s									
MNTX	Cornudas Mount		85.17	53	P		P	10 25 20.2	0.0	
	baz=314,SNR=69									
MNTX	Cornudas Mount		85.17	53	eP		P	10 25 20.4	+0.2	
	comp=Z,58nm,1.1s									
MNTX					LR		LR			
	comp=Z,1μm,20.0s									
MSTX	Muleshoe		85.17	49	P		P	10 25 20.4	+0.1	
	baz=315,SNR=48									
MSTX	Muleshoe		85.17	49	eP		P	10 25 20.3	0.0	
	comp=Z,85nm,1.0s									
P36A	Good Intent, A		85.26	41	P		P	10 25 19.8	-0.7	
	baz=319,SNR=30									
S33A	Kaszmaul Farm,		85.28	44	P		P	10 25 20.7	0.0	
	baz=317,SNR=12									
SANT	Santorini		85.30	314	PFAKE			10 25 30.0	+9.2	
SANT					LR		LR			
	comp=Z,2μm,19.0s									
JAN	Janina		85.35	319	P		P	10 25 21.3	+0.3	
N38A	Joes South For		85.36	39	P		P	10 25 20.8	-0.2	
	baz=320,SNR=9.3									
O37A	Wolven Farm, M		85.39	40	P		P	10 25 20.9	-0.2	
	baz=319,SNR=9.9									
LOMF	Lomont		85.39	332⇑	eP		P	10 25 21.5	+0.4	
Q35A	Mercer Eighty,		85.40	42	P		P	10 25 20.5	-0.7	
	baz=318									
DSF	Desfina		85.41	317	P		P	10 25 19.0	-2.3	
EVR	Evrytania		85.41	318	P		P	10 25 19.4	-2.0	
T33A	Patterson Ranc		85.52	45	P		P	10 25 22.0	+0.1	
	baz=317									
TAOE	Nuku Hiva Isla		85.54	105	eS		S	10 35 50.2	-1.9	
	comp=Z,681nm,24.6s									
TAOE	Nuku Hiva Isla		85.54	105	eLR		LR	10 52 19.3		
	comp=Z,4μm,21.0s,baz=321									
ANX	Ano Chora		85.59	318	P		P	10 25 20.8	-1.5	
THAL	Thalero		85.61	317	P		P	10 25 20.4	-1.8	
DSL	Palaion Diasel		85.61	318	P		P	10 25 21.3	-1.0	
U32A	Winter Ranch,		85.62	46	P		P	10 25 22.8	+0.5	
	baz=317,SNR=7.6									
Q36A	Arnold C. Orve		85.62	42	P		P	10 25 21.6	-0.7	
	baz=318									
KALE	Kalithea		85.62	317	P		P	10 25 20.0	-2.4	
SERG	Sergoula		85.65	317	P		P	10 25 21.4	-1.1	
N39A	Derby Farms, D		85.66	39	P		P	10 25 22.4	-0.1	
	baz=320,SNR=28									
S34A	Willow Spring		85.68	44	P		P	10 25 22.4	-0.3	
	baz=318,SNR=7.9									
SGD	Sagiada		85.70	319	P		P	10 25 21.2	-1.4	
IGT	Igoumenitsa		85.71	319	P		P	10 25 21.6	-1.1	
R35A	Emporia Munici		85.71	43	P		P	10 25 23.1	+0.3	
	baz=318,SNR=22									
P37A	Lathrop		85.72	41	P		P	10 25 22.7	-0.1	
	baz=319,SNR=32									
O38A	Galt		85.75	40	P		P	10 25 22.8	-0.2	
	baz=320,SNR=15									
ZKR	Zakros		85.78	313	P		P	10 25 23.1	0.0	
HTL	Hartland		85.78	340⇑	eP		P	10 25 23.4	+0.6	
HTL					AMB		AMB	10 25 24.5		
	comp=Z,72nm,1.4s									
HTL					AMS		AMS	11 10 28.6		
	comp=Z,1μm,18.5s									
MEH	Mehetia		85.79	117	eP		P	10 25 24.5	+1.2	
	comp=Z,43nm,1.1s									
MEH	Mehetia		85.79	117	eT		T	12 00 00.2		
	comp=Z,113nm,0.3s									
LAKA	Lakka		85.82	317	P		P	10 25 22.2	-1.2	
KEK	Kerkira		85.84	320	P		P	10 25 22.5	-0.9	
KLV	Kalavryta, Ach		85.88	317	P		P	10 25 21.2	-2.5	
PDO	Prodromos		85.97	318	P		P	10 25 23.0	-1.0	
U33A	Lingo Farm, Me		86.07	45	P		P	10 25 24.8	+0.2	
	baz=317,SNR=13									
V32A	Arapaho		86.07	46	P		P	10 25 25.3	+0.7	
	baz=317,SNR=26									
R36A	Gordon, Harris		86.07	42	P		P	10 25 24.5	-0.1	
	baz=318,SNR=99									
LKD2	Lefkada island		86.10	319	P		P	10 25 23.5	-1.2	
P38A	Dawn		86.10	40	P		P	10 25 24.6	-0.1	
	baz=320,SNR=32									
O39A	Kirksville		86.11	39	P		P	10 25 24.5	-0.2	
	baz=320,SNR=19									
S35A	Otter Creek Ra		86.12	43	P		P	10 25 24.7	-0.1	
	baz=318,SNR=77									
DYA	Yadsworthy		86.14	339⇑	eP		P	10 25 24.6	-0.1	
DYA					AMB		AMB	10 25 25.8		
	comp=Z,172nm,1.8s									
DYA					AMS		AMS	11 11 28.8		
	comp=Z,3μm,17.2s									
T34A	McClaskey Farm		86.14	44	P		P	10 25 24.9	-0.1	
	baz=318,SNR=32									
LAST	Lasithi		86.16	313⇓	iP		P	10 25 25.5	+0.3	
LAST	Lasithi		86.16	313	P		P	10 25 24.3	-0.9	
DRO	Drossia		86.18	317	P		P	10 25 24.4	-0.7	
Q37A	Longview Farm,		86.20	41	P		P	10 25 24.6	-0.6	
	baz=319,SNR=14									
RLS	Riolos of Patr		86.23	318	P		P	10 25 24.4	-0.9	
VLX	Vlachokerasia		86.25	317	P		P	10 25 24.3	-1.3	
RPZ	Rata Peaks		86.33	160	LR		LR	10 58 52.5		
	comp=Z,3μm,22.0s,baz=336,slow=32									
RPZ	Rata Peaks		86.33	160	eP		P	10 25 25.5	+0.2	
U34A	Anderson Ranch		86.38	45	P		P	10 25 26.4	+0.2	
	baz=317,SNR=21									
U34A	Anderson Ranch		86.38	45	eP		P	10 25 26.5	+0.3	
	comp=Z,354nm,1.6s									
W32A	Sentinel		86.39	47	P		P	10 25 26.8	+0.6	
	baz=317,SNR=41									
IDI	Anoyia		86.40	314⇓	iP		P	10 25 26.5	+0.2	
IDI	Anoyia		86.40	314	P		P	10 25 24.2	-2.1	
IDI	Anoyia		86.40	314	eP		P	10 25 24.9	-1.4	
	comp=Z,56nm,1.0s									
V33A	Lossen Ranch,		86.42	46	P		P	10 25 26.3	0.0	
	baz=317,SNR=18									
R37A	Teagarden Farm		86.43	42	P		P	10 25 25.7	-0.6	
	baz=319,SNR=29									
VLI	Veliai		86.44	316	P		P	10 25 18.7	-7.7	
S36A	Lake Cedric, C		86.47	43	P		P	10 25 26.2	-0.3	
	baz=318,SNR=31									
AMT	Artemida-Makis		86.49	317	P		P	10 25 26.2	-0.5	
KFL	Anninata		86.54	318	P		P	10 25 25.5	-1.4	
O40A	La Belle		86.54	39	P		P	10 25 26.8	-0.1	
	baz=321,SNR=36									
Q38A	Cooks Store, C		86.56	41	P		P	10 25 26.4	-0.6	
	baz=320									
T35A	Sooner Cattle		86.58	44	P		P	10 25 26.9	-0.3	
	baz=318,SNR=19									
VLS	Valsamata		86.59	318	P		P	10 25 26.1	-1.0	
ITM	Ithomi		86.64	317	P		P	10 25 25.1	-2.3	
MATE	Matera		86.64	322⇓	iP		P	10 25 27.4	+0.1	
SIVA	Sivas		86.64	314⇑	iP		P	10 25 28.3	+0.8	
SIVA	Sivas		86.64	314	P		P	10 25 28.2	+0.8	
SIVA	Sivas		86.64	314	P		P	10 25 28.2	+0.8	
VLC	Villacollemand		86.65	328	PFAKE			10 25 40.0	+13	
VLC					LR		LR			
	comp=Z,3μm,21.0s									
JQE	Queens East		86.72	338⇑	eP		P	10 25 28.0	+0.6	
JSA	Saint Aubin		86.77	338⇑	eP		P	10 25 28.0	+0.3	
JSA					AMB		AMB	10 25 29.0		
	comp=Z,134nm,1.1s									
W33A	Caddo, Fort Co		86.81	46	P		P	10 25 28.8	+0.6	
	baz=317,SNR=20									
T36A	Boggs Farm, Ca		86.82	43	P		P	10 25 28.1	-0.1	
	baz=318,SNR=30									
AQU	L'Aquila		86.82	325	eP		P	10 25 28.3	0.0	
AQU					pmax		pmax			
	comp=Z,52nm,1.1s									
AQU					MLR		MLR			
	comp=Z,7μm,19.0s									
AQU	L'Aquila		86.82	325	eP		P	10 25 28.2	0.0	
	comp=Z,52nm,1.1s									
AQU					LR		LR			
	comp=Z,7μm,19.0s									
Q39A	Willow Grove F		86.82	40	P		P	10 25 28.3	+0.1	
	baz=320,SNR=98									
V34A	Guthrie		86.84	45	P		P	10 25 28.5	+0.1	
	baz=318,SNR=33									
V34A	Guthrie		86.84	45	eP		P	10 25 28.5	+0.1	
	comp=Z,44nm,0.8s									
V34A					epP		sP	10 25 41.4	-0.7	
S37A	Fort Scott		86.85	42	P		P	10 25 27.9	-0.4	
	baz=319,SNR=50									
U35A	Pawnee		86.87	44	P		P	10 25 28.7	+0.2	
	baz=318,SNR=6.6									
X32A	Elmer		86.88	47	P		P	10 25 28.3	-0.3	
	baz=317,SNR=16									
P40A	Paris		86.91	39	P		P	10 25 28.5	-0.2	
	baz=320,SNR=43									
WMOK	Wichita Mounta		86.93	47	eP		P	10 25 28.5	-0.4	
WMOK					pmax		pmax			
	comp=Z,76nm,1.1s									
WMOK					MLR		MLR			
	comp=Z,2μm,19.0s									
WMOK	Wichita Mounta		86.93	47	eP		P	10 25 28.5	-0.4	
	comp=Z,76nm,1.1s									
WMOK					LR		LR			
	comp=Z,2μm,19.0s									
PYL	PYLOS		86.95	317	P		P	10 25 26.3	-2.6	
R38A	Fenwick Farm,		87.00	41	P		P	10 25 28.4	-0.8	
	baz=319,SNR=32									
W34A	Bridge Creek,		87.13	46	P		P	10 25 30.3	+0.4	
	baz=317,SNR=15									
W34A	Bridge Creek,		87.13	46	eP		P	10 25 30.1	+0.2	
	comp=Z,82nm,1.0s									
X33A	Lawton		87.23	47	P		P	10 25 30.3	0.0	
	baz=317,SNR=19									
V35A	Meyer Ranch, C		87.26	45	P		P	10 25 30.5	+0.1	
	baz=318,SNR=6.0									
T37A	Cheneyville 18		87.28	43	P		P	10 25 30.5	0.0	
	baz=319,SNR=29									
Q40A	Laux Farm, Aux		87.31	40	P		P	10 25 30.3	-0.3	
	baz=320,SNR=42									
R39A	Chumby, Stover		87.35	41	P		P	10 25 30.3	-0.5	
	baz=320,SNR=46									
BNI	Bardonecchia		87.39	331	eP		P	10 25 16.7	-14	
BNI					MLR		MLR			
	comp=Z,9μm,22.0s									
BNI	Bardonecchia		87.39	331	eP		P	10 25 16.7	-14	
BNI					LR		LR			
	comp=Z,9μm,22.0s									
U36A	Oologah		87.39	44	P		P	10 25 30.7	-0.3	
	baz=318,SNR=9.9									
DAMY	Dhamar		87.40	287	eP		P	10 25 32.2	+0.5	
	comp=Z,820nm,2.2s									
S38A	Stockton		87.42	42	P		P	10 25 30.3	-0.9	
	baz=320,SNR=19									
HDIL	Hopedale		87.44	37	P		P	10 25 31.2	+0.1	
	baz=322,SNR=20									
HDIL	Hopedale		87.44	37	eP		P	10 25 31.3	+0.1	
HDIL	comp=Z,348nm,1.4s				LR		LR			
	comp=Z,3μm,21.0s									
Y33A	Hilltop Ranch,		87.55	47	P		P	10 25 31.8	0.0	
	baz=317,SNR=20									
X34A	Smith Ranch, M		87.56	46	P		P	10 25 32.1	+0.2	
	baz=317,SNR=26									
CUC	Castrocucco		87.58	322	eP		P	10 25 30.7	-1.2	
	comp=Z,17nm,1.5s									
CUC					LR		LR			
	comp=Z,3μm,19.0s									
T38A	Diamond		87.67	42	P		P	10 25 32.1	-0.3	
	baz=319,SNR=43									
S39A	Bolivar		87.68	41	P		P	10 25 31.4	-1.0	
	baz=320,SNR=47									
W35A	Tecumseh		87.69	45	P		P	10 25 32.5	0.0	
	baz=318,SNR=13									
U37A	Salina		87.71	43	P		P	10 25 32.4	-0.2	
	baz=319,SNR=22									
TUL1	Leonard		87.72	44	P		P	10 25 32.7	0.0	
	baz=318,SNR=16									
TUL1	Leonard		87.72	44	eP		P	10 25 32.4	-0.2	
	comp=Z,117nm,1.5s									
TUL1					epP		sP	10 25 45.3	-1.1	
PLDF	La Plantade		87.73	333⇑	eP		P	10 25 34.2	+1.6	
V36A	Jenks		87.73	44	P		P	10 25 32.2	-0.4	
	baz=318,SNR=16									
R40A	Maddies Statio		87.76	40	P		P	10 25 32.6	-0.1	
	baz=320,SNR=77									
TIP	Timpagrande		87.76	321⇑	iP		P	10 25 33.8	+1.0	
TIP	Timpagrande		87.76	321	P		P	10 25 31.8	-1.0	
TIP	Timpagrande		87.76	321	eP		P	10 25 32.2	-0.6	
	comp=Z,242nm,2.0s									
TIP					epP		sP	10 25 46.2	-0.4	
TIP					LR		LR			
	comp=Z,5μm,19.0s									
AGO	Saint Agoulin		87.83	333⇑	eP		P	10 25 34.8	+1.8	
TXAR	Lajitas Array		87.87	53	P		P	10 25 33.5	-0.1	
	comp=Z,16nm,0.8s,baz=292,slow=3.6,SNR=156									
TXAR					PKKPbc		PKKPbc	10 43 20.3	+2.0	
	comp=Z,0.7nm,0.9s,baz=154,slow=5.0,SNR=5.1									
TXAR					PKPPKP		P'P'df	10 51 26.5	-5.2	
	comp=Z,0.7nm,1.0s,baz=105,slow=2.9,SNR=4.7									
TXAR					LR		LR	10 59 48.6		
	comp=Z,1μm,20.9s,baz=0.0,slow=32									
TXAR	Lajitas Array		87.87	53	P		P	10 25 33.5	-0.1	
TXAR					pmax		pmax			
	comp=Z,15nm,0.8s									
ABTX	Abilene, Hawle		87.97	49	P		P	10 25 34.0	+0.1	
	baz=316,SNR=14									
ABTX	Abilene, Hawle		87.97	49	eP		P	10 25 34.0	+0.1	
	comp=Z,704nm,2.2s									
ABTX					epP		sP	10 25 47.5	-0.2	
SSB	Saint Sauveur		87.99	332	eP		P	10 25 33.4	-0.4	
SSB					e*PP		sP	10 25 47.6	0.0	
SSB					pmax		pmax			
	comp=Z,303nm,2.3s									
SSB					MLR		MLR			
	comp=Z,5μm,19.0s									
SSB	Saint Sauveur		87.99	332	eP		P	10 25 33.4	-0.4	
	comp=Z,303nm,2.3s									
SSB					epP		sP	10 25 47.5	0.0	
SSB					LR		LR			
	comp=Z,5μm,19.0s									
Z33A	Whitaker Ranch		88.00	48	P		P	10 25 33.8	-0.2	
	baz=317,SNR=20									
W36A	Wetumka		88.06	45	P		P	10 25 34.1	-0.1	
	baz=318,SNR=16									
U38A	Gravette		88.07	43	P		P	10 25 34.0	-0.3	
	baz=319,SNR=24									
Y34A	Reagan Ranch,		88.08	46	P		P	10 25 34.4	0.0	
	baz=317,SNR=14									
V37A	Hulbert		88.09	44	P		P	10 25 34.0	-0.4	
	baz=319,SNR=46									
PYM	Petit Puy Mans		88.13	333⇑	eP		P	10 25 36.3	+1.8	
T39A	Clever		88.16	42	P		P	10 25 34.2	-0.5	
	baz=320,SNR=26									
S40A	Lebanon		88.17	41	P		P	10 25 34.2	-0.5	
	baz=320,SNR=34									
X35A	Drake		88.19	46	P		P	10 25 34.7	-0.2	
	baz=318,SNR=19									
133A	Hamilton Ranch		88.40	48	P		P	10 25 35.8	-0.1	
	baz=317,SNR=16									
X36A	Centrahoma		88.41	45	P		P	10 25 35.7	-0.2	
	baz=318,SNR=31									
Z34A	Collier Ranch,		88.42	47	P		P	10 25 35.8	-0.2	
	baz=317,SNR=18									
W37B	Quinton		88.49	44	P		P	10 25 36.6	+0.3	
	baz=319,SNR=12									
LBL	Lubilhac		88.50	333⇑	eP		P	10 25 38.1	+1.9	
V38A	Canehill		88.50	43	P		P	10 25 35.9	-0.4	
	baz=319,SNR=59									
T40A	Mansfield		88.50	41	P		P	10 25 35.8	-0.5	
	baz=320,SNR=17									
Y35A	Marietta		88.52	46	P		P	10 25 36.1	-0.3	
	baz=318									
AAM	Ann Arbor		88.54	33	eP		P	10 25 36.8	+0.4	
AAM					pmax		pmax			
	comp=Z,81nm,0.8s									
AAM					MLR		MLR			
	comp=Z,3μm,20.0s									
AAM	Ann Arbor		88.54	33	eP		P	10 25 36.8	+0.4	
	comp=Z,81nm,0.8s									
AAM					LR		LR			
	comp=Z,3μm,20.0s									
U39A	Green Forest		88.59	42	P		P	10 25 36.2	-0.6	
	baz=320,SNR=76									
SFIN	Lafayette		88.59	36	P		P	10 25 36.4	-0.3	
	baz=324,SNR=26									
SFIN	Lafayette		88.59	36	eP		P	10 25 36.6	-0.1	
	comp=Z,85nm,0.8s									
SFIN					epP		sP	10 25 50.1	-0.3	
Z35A	Perchaven, San		88.82	47	P		P	10 25 37.8	-0.1	
	baz=318,SNR=15									
233A	Rising Star		88.84	49	P		P	10 25 38.0	-0.1	
	baz=317,SNR=30									
CEL	Celeste		88.90	321	eP		P	10 25 37.5	-0.8	
	comp=Z,61nm,1.4s									
CEL					epP		sP	10 25 51.6	-0.4	
CEL					ePP		PP	10 29 09.3	+2.3	
CEL					LR		LR			
	comp=Z,6μm,20.0s									
134A	White-Moore Ra		88.91	48	P		P	10 25 38.4	+0.1	
	baz=317,SNR=20									
V39A	Pettigrew		88.92	43	P		P	10 25 37.2	-1.2	
	baz=320,SNR=44									
X37A	Clayton		88.94	45	P		P	10 25 37.8	-0.6	
	baz=319,SNR=10									
U40A	Yellville		88.94	42	P		P	10 25 38.1	-0.3	
	baz=320,SNR=105									
Y36A	Durant		88.95	46	P		P	10 25 38.1	-0.4	
	baz=318									
W38A	Poteau		89.04	44	P		P	10 25 38.4	-0.5	
	baz=319,SNR=16									
X38A	Whitesboro		89.17	44	P		P	10 25 39.7	+0.2	
	baz=319,SNR=24									
Y37A	Hugo		89.25	45	P		P	10 25 39.6	-0.3	
	baz=319,SNR=11									
234A	Clairette		89.29	48	P		P	10 25 40.3	+0.1	
	baz=317,SNR=12									
333A	Richland Sprin		89.29	49	P		P	10 25 39.9	-0.2	
	baz=317,SNR=50									
135A	Vickery Place,		89.30	47	P		P	10 25 40.4	+0.3	
	baz=318,SNR=8.1									
Z36A	Blue Ridge		89.33	46	P		P	10 25 40.1	-0.2	
	baz=318,SNR=18									
W39A	Magazine		89.33	43	P		P	10 25 39.7	-0.5	
	baz=320,SNR=14									
V40A	Witts Springs		89.38	42	P		P	10 25 39.8	-0.7	
	baz=320,SNR=15									
JCT	Junction City		89.42	50	P		P	10 25 40.9	+0.1	
	baz=316,SNR=18									
JCT	Junction City		89.42	50	eP		P	10 25 40.0	-0.8	
JCT					e*PP		sP	10 25 54.0	-0.6	
JCT					pmax		pmax			
	comp=Z,37nm,0.8s									
JCT					MLR		MLR			
	comp=Z,2μm,21.0s									
JCT	Junction City		89.42	50	eP		P	10 25 40.0	-0.8	
	comp=Z,37nm,0.8s									
JCT					epP		sP	10 25 54.0	-0.6	
JCT					LR		LR			
	comp=Z,2μm,21.0s									
433A	Art		89.64	49	P		P	10 25 41.8	-0.1	
	baz=317,SNR=29									
X39A	Fountain Ranch		89.68	44	P		P	10 25 41.9	0.0	
	baz=319,SNR=29									
WHTX	Lake Whitney,		89.69	48	P		P	10 25 42.3	+0.3	
	baz=318,SNR=16									
WHTX	Lake Whitney,		89.69	48	eP		P	10 25 42.1	+0.1	
	comp=Z,85nm,1.0s									
WHTX					epP		sP	10 25 56.2	+0.4	
W40A	Ferguson Farm,		89.72	43	P		P	10 25 41.9	-0.1	
	baz=320,SNR=33									
334A	Lometa		89.72	49	P		P	10 25 42.2	+0.1	
	baz=317,SNR=75									
Y38A	Idabel		89.78	45	P		P	10 25 41.7	-0.6	
	baz=319,SNR=14									
Z37A	Pogue Cattle C		89.84	46	P		P	10 25 42.8	+0.1	
	baz=319,SNR=20									
136A	Ennis		89.86	47	P		P	10 25 42.6	-0.2	
	baz=318,SNR=11									
MIAR	Mount Ida		89.94	44	P		P	10 25 42.9	-0.2	
	baz=320,SNR=49									
MIAR	Mount Ida		89.94	44	eP		P	10 25 43.1	0.0	
MIAR					pmax		pmax			
	comp=Z,97nm,1.0s									
MIAR					MLR		MLR			
	comp=Z,2μm,20.0s									
MIAR	Mount Ida		89.94	44	eP		P	10 25 43.1	0.0	
	comp=Z,97nm,1.0s									
MIAR					LR		LR			
	comp=Z,2μm,20.0s									
LONY	Lake Ozonia		90.00	26	eP		P	10 25 43.0	-0.2	
	comp=Z,21nm,0.8s									
LONY					epP		sP	10 25 55.9	-1.1	
LONY					LR		LR			
	comp=Z,2μm,19.0s									
434A	Burnet		90.08	49	P		P	10 25 43.5	-0.4	
	baz=317,SNR=32									
H06N1	SOCORRO T-PHAS		90.10	65	T		T	12 06 56.3		
	SNR=25									
Y39A	Lockesburg		90.12	44	P		P	10 25 44.0	+0.1	
	baz=319,SNR=47									
Z38A	Mt. Pleasant		90.15	45	P		P	10 25 43.9	-0.2	
	baz=319,SNR=12									
W41A	Tony Mavity, V		90.16	42	P		P	10 25 43.9	-0.2	
	baz=320,SNR=18									
533A	Kerrville		90.17	50	P		P	10 25 44.0	-0.3	
	baz=317,SNR=12									
H06E1	SOCORRO T-PHAS		90.19	66	T		T	12 07 00.3		
	SNR=5.6									
137A	Heron Place, G		90.21	46	P		P	10 25 44.7

baz=319
Z40A Long Farm, Mag 91.01 44 P P 10 25 48.6 +0.5
baz=320,SNR=7.9
535A Dale 91.07 49 P P 10 25 48.6 +0.2
baz=318,SNR=9.2
634A China Grove, S 91.08 50 P P 10 25 48.8 +0.3
baz=317
PKME Peaks-Kenny Pk 91.09 22 eP P 10 25 48.3 +0.1
comp=Z,20nm,0.7s
PKME epP sP 10 26 01.6 -0.4
PKME LR LR
comp=Z,4µm,20.0s
337A Centerville 91.09 47 P P 10 25 48.7 +0.2
baz=318
N54A Moraine State 91.16 31 P P 10 25 48.9 +0.2
baz=328,SNR=10
833A Chaparral WMA, 91.22 51 P P 10 25 49.7 +0.5
baz=317
437A Phantom Ranch, 91.31 48 P P 10 25 50.1 +0.6
baz=318
536A Bastrop 91.33 49 P P 10 25 50.2 +0.6
baz=318,SNR=5.1
Z41A Richland Creek 91.33 44 P P 10 25 49.9 +0.4
baz=320
734A La Parita Cree 91.35 50 P P 10 25 50.6 +0.9
baz=317,SNR=6.9
239A Gary 91.36 46 P P 10 25 49.9 +0.1
baz=319
140A Cam and Jess, 91.39 45 P P 10 25 50.5 +0.7
baz=320,SNR=8.4
338A Crockett 91.39 47 P P 10 25 50.2 +0.3
baz=319
635A Leesville 91.42 50 P P 10 25 50.6 +0.6
baz=317,SNR=7.3
Y42A Garnett, Star 91.43 43 P P 10 25 50.5 +0.4
baz=321,SNR=18
NATX Nacogdoches 91.45 46 P P 10 25 50.8 +0.7
baz=319
NATX Nacogdoches 91.45 46 PFAKE 10 26 00.0 +10
NATX LR LR
comp=Z,2µm,21.0s
WDD Wied Dalam 91.45 320 PFAKE 10 26 00.0 +10
WDD LR LR
comp=Z,4µm,21.0s
BINY Binghamton 91.63 28 eP P 10 25 50.3 -0.5
comp=Z,45nm,0.8s
BINY epP sP 10 26 04.0 -0.7
BINY LR LR
comp=Z,5µm,19.0s
537A Green Hill Far 91.76 48 P P 10 25 53.0 +1.4
baz=318,SNR=12
636A Smothers Creek 91.77 49 P P 10 25 53.4 +1.7
baz=318,SNR=23
141A Papa Simpson, 91.78 44 P P 10 25 52.9 +1.2
baz=320,SNR=8.4
Z42A Norrel Spur, H 91.78 43 P P 10 25 52.3 +0.7
baz=321,SNR=17
735A Kenedy 91.79 50 P P 10 25 53.1 +1.3
baz=317,SNR=7.2
933A Laredo 91.81 52 P P 10 25 52.9 +1.0
baz=317,SNR=24
Y43A Makayla and Ka 91.83 42 P P 10 25 52.4 +0.5
baz=321
834A Tilden 91.88 51 P P 10 25 53.8 +1.7
baz=317
439A Center Grove, 92.12 47 P P 10 25 54.0 +0.7
baz=319
538A Harpers Horsep 92.13 48 P P 10 25 54.4 +1.1
baz=319
HKT Hockley 92.14 48 eP P 10 25 53.2 -0.1
HKT pmax pmax
comp=Z,69nm,1.5s
HKT Hockley 92.14 48 eP P 10 25 53.2 -0.1
comp=Z,69nm,1.5s
OXF Oxford 92.14 41 eP P 10 25 53.6 +0.3
OXF pmax pmax
comp=Z,60nm,0.8s
OXF Oxford 92.14 41 eP P 10 25 53.6 +0.3
comp=Z,60nm,0.8s
736A Circle Diamond 92.15 49 P P 10 25 55.3 +1.9
baz=318,SNR=13
Y44A Strider, Charl 92.16 42 P P 10 25 54.4 +1.0
baz=322,SNR=7.0
835A Beeville 92.19 50 P P 10 25 55.8 +2.1
baz=317
241A Mo Tay, Goldon 92.22 45 P P 10 25 54.7 +1.0
baz=320
637A Eagle Lake 92.23 49 P P 10 25 55.7 +1.9
baz=318,SNR=8.1
SSPA Standing Stone 92.27 30 eP P 10 25 53.7 -0.1
comp=Z,64nm,0.9s
SSPA epP sP 10 26 06.5 -1.1
934A Benavides 92.28 51 P P 10 25 55.7 +1.7
baz=317,SNR=5.0
O56A Blue Knob Stat 92.32 30 P P 10 25 54.8 +0.7
baz=329,SNR=14
142A Monroe 92.34 44 P P 10 25 55.3 +1.0
baz=321
143A Socs Landing, 92.51 43 P P 10 25 56.4 +1.3
baz=321,SNR=7.6
034A Hebbronville 92.56 52 P P 10 25 57.4 +2.0
baz=317,SNR=7.2
Z44A Pea Ridge, Bel 92.58 42 P P 10 25 56.0 +0.6
baz=322,SNR=9.3
Y45A Yeager Farm, C 92.58 41 P P 10 25 56.3 +1.0
baz=322,SNR=21
242A Grayson 92.60 44 P P 10 25 54.9 -0.6
baz=320
341A Kurthwood 92.60 45 P P 10 25 56.5 +1.0
baz=320,SNR=7.1
KVTX Kingsville 92.69 51 PFAKE 10 26 10.0 +14
KVTX LR LR
comp=Z,2µm,19.0s
N59A State Game Lan 92.82 28 P P 10 25 57.3 +0.9
baz=331,SNR=10
HRV Adam Dziewonsk 92.88 25 eP P 10 25 57.6 +1.1
HRV pmax pmax
comp=Z,11nm,0.8s
HRV Adam Dziewonsk 92.88 25 eP P 10 25 57.6 +1.1
comp=Z,11nm,0.8s
Z45A Winona 92.89 42 P P 10 25 57.7 +0.9
baz=322
Y46A Houston 92.92 41 P P 10 25 57.4 +0.5
baz=322,SNR=16
342A Flagon Creek P 93.03 45 P P 10 25 58.5 +1.0
baz=320
144A Alexander Plac 93.09 43 P P 10 25 58.7 +1.0
baz=322
936A North Padre Is 93.14 51 P P 10 25 59.5 +1.5
baz=318
TZTN Tazewell 93.33 36 eP P 10 25 58.2 -0.6
comp=Z,94nm,1.5s
TZTN ePP PP 10 29 45.4 +3.4
VBMS Vicksburg 93.36 43 P P 10 25 59.9 +1.0
baz=321
145A Houston Renfro 93.37 42 P P 10 25 59.7 +0.7
baz=322,SNR=5.3
035Z Hargill 93.38 52 P P 10 26 00.7 +1.6
baz=317
244A Avery, Jackson 93.41 43 P P 10 25 59.9 +0.7
baz=321,SNR=10
Y47A UCPARC, Winfie 93.41 40 P P 10 25 59.2 +0.1
baz=323,SNR=5.7
Z46A Louisville 93.42 41 P P 10 26 00.3 +1.1
baz=322
442A Mamou 93.48 45 P P 10 26 01.1 +1.6
baz=320
146A Union 93.80 42 P P 10 26 01.8 +0.8
baz=322,SNR=9.6
245A Little AP, Sta 93.83 43 P P 10 26 02.2 +1.1
baz=322,SNR=7.7
344A Westbrook Farm 93.84 44 P P 10 26 01.8 +0.6
baz=321
Z47A Carrollton 93.86 41 P P 10 26 01.7 +0.5
baz=323,SNR=5.8
Z48A Northport 93.98 40 P P 10 26 01.7 -0.1
baz=323
KEST Kesra 94.03 324 P P 10 26 01.9 -0.3
comp=Z,5.9nm,0.9s,baz=345,slow=9.5,SNR=4.0
KEST LR LR 11 12 32.6
comp=Z,6µm,21.0s,baz=340,slow=38
BLA Blacksburg 94.15 33 eP P 10 26 02.4 -0.2
BLA pmax pmax
comp=Z,45nm,1.0s
BLA MLR MLR
comp=Z,3µm,19.0s
BLA Blacksburg 94.15 33 eP P 10 26 02.4 -0.2
comp=Z,45nm,1.0s
BLA LR LR
comp=Z,3µm,19.0s
147A Livingston 94.17 41 P P 10 26 03.1 +0.4
baz=323
246A Jackson Lee, B 94.25 42 P P 10 26 04.3 +1.2
baz=322
345A Thompson Farm, 94.33 43 P P 10 26 04.1 +0.7
baz=322
247A Quitman 94.49 42 P P 10 26 04.9 +0.7
baz=322
CBN Corbin Frederi 94.56 31 PFAKE 10 26 20.0 +16
CBN LR LR
comp=Z,3µm,21.0s
346A Big Creek Wild 94.56 43 P P 10 26 04.5 0.0
baz=322
445A Amite 94.61 44 P P 10 26 04.7 -0.1
baz=321
248A Dixon Mills 94.90 41 P P 10 26 06.8 +0.7
baz=323
347A Saraland 95.04 42 P P 10 26 07.4 +0.7
baz=322,SNR=6.1
KMSC Kings Mountain 95.49 35 P P 10 26 08.8 +0.1
baz=327,SNR=7.2
ESDC Sonseca Array 95.89 335 P P 10 26 10.8 +0.3
comp=Z,6.7nm,0.7s,baz=19,slow=4.2,SNR=31
ESDC PKKPbc PKKPbc 10 43 00.7 +2.5
comp=Z,0.6nm,0.7s,baz=263,slow=3.3,SNR=4.3
ESDC LR LR 11 14 52.7
comp=Z,4µm,19.8s,baz=35,slow=39
GOGA Godfrey 95.94 38 PFAKE 10 26 20.0 +9.2
GOGA LR LR
comp=Z,4µm,19.0s
PAB San Pablo 96.13 335 PFAKE 10 26 20.0 +8.4
PAB LR LR
comp=Z,6µm,20.0s
MTE Manteigas 96.34 338 PFAKE 10 26 20.0 +7.4
MTE LR LR
comp=Z,6µm,19.0s
CNNC Cliffs of the 96.90 33 PFAKE 10 26 30.0 +15
CNNC LR LR
comp=Z,2µm,20.0s
TIGA Tifton 97.50 39 P P 10 26 17.1 -0.8
baz=325
NHSC New Hope 97.72 35 PFAKE 10 26 30.0 +11
NHSC LR LR
comp=Z,4µm,19.0s
RKT Rikitea 98.46 113 eSKSac SKSac 10 36 56.0 -1.8
comp=Z,338nm,26.2s
RKT eSP SP 10 39 14.8 +1.4
comp=Z,524nm,37.8s
RKT eSS SS 10 44 34.8 +0.7
comp=Z,668nm,28.8s
RKT Rikitea 98.46 113 eLR LR 10 58 19.0
comp=Z,4µm,22.2s,baz=309
MESJ Messejana 98.91 337 eP Pdif 10 26 25.9 +1.9
MESJ eS SKSac 10 37 00.6 +0.5
MESJ AMS AMS 11 11 40.3
comp=E,3µm,19.7s
MESJ Messejana 98.91 337 eP Pdif 10 26 25.9 +1.8
MESJ eS SKSac 10 37 00.5 +0.5
RTC Rabat Centre 102.02 335 PFAKE 10 26 50.0 +12
RTC LR LR
comp=Z,10µm,19.0s
CMLA Cha da Macela 102.71 351 PFAKE 10 26 50.0 +9.0
CMLA LR LR
comp=Z,2µm,20.0s
KMBO Kilima Mbogo 102.85 279 P Pdif 10 26 42.3 0.0
comp=Z,3.7nm,0.8s,baz=31,slow=7.0,SNR=11
KMBO Kilima Mbogo 102.85 279 iP Pdif 10 26 42.7 +0.4
KMBO pmax pmax
comp=Z,4.0nm,0.8s
KMBO Kilima Mbogo 102.85 279 ePdif Pdif 10 26 42.5 +0.2
comp=Z,70nm,2.0s
KMBO LR LR
comp=Z,2µm,21.0s
PTCN Pitcairn Islan 103.17 112 PFAKE 10 26 50.0 +6.9
PTCN LR LR
comp=Z,3µm,21.0s
TEIG Tepich 103.95 49 PFAKE 10 27 00.0 +13
TEIG LR LR
comp=Z,627nm,19.0s
BBSR BB Station 104.33 24 PFAKE 10 27 00.0 +12
BBSR LR LR
comp=Z,2µm,20.0s
TAM Tamanrasset 106.61 319 PFAKE 10 31 20.0
TAM LR LR
comp=Z,2µm,19.0s
CASY Casey 108.05 193 PFAKE 10 31 20.0
CASY LR LR
comp=Z,235nm,19.0s
GTBY Guantanamo Bay 111.27 38 PFAKE 10 31 30.0
GTBY LR LR
comp=Z,2µm,19.0s
MTDJ Mount Denham 111.50 42 PFAKE 10 31 30.0
MTDJ LR LR
comp=Z,1µm,19.0s
GRTK Grand Turk 111.73 34 PFAKE 10 31 30.0
GRTK LR LR
comp=Z,2µm,19.0s
JTS JuntasAbangare 113.66 53 PFAKE 10 31 30.0
JTS LR LR
comp=Z,1µm,20.0s
SDDR Presa de Saban 113.88 36 PFAKE 10 31 30.0
SDDR LR LR
comp=Z,3µm,19.0s
SJG San Juan 116.85 31 PFAKE 10 31 40.0 +11
SJG LR LR
comp=Z,1µm,22.0s
VNDA Vanda 117.00 175 PKP PKPdf 10 31 27.0 -0.1
comp=Z,7.9nm,0.7s,baz=315,slow=4.0,SNR=47
VNDA PKKPbc PKKPbc 10 41 55.5 +1.5
comp=Z,1.2nm,0.8s,baz=191,slow=3.6,SNR=3.8
BCIP Isla Barro Col 117.64 49 PFAKE 10 31 40.0 +10
BCIP LR LR
comp=Z,35µm,19.0s
SBA Scott Base 117.66 174 ePKIKP PKPdf 10 31 28.5 +0.1
SBA MLR MLR
comp=Z,1µm,19.0s
SBA Scott Base 117.66 174 ePKPdf PKPdf 10 31 28.5 +0.1
SBA LR LR
comp=Z,1µm,19.0s
PAYG Puerto Ayora 118.21 65 PFAKE 10 31 40.0 +8.6
PAYG LR LR
comp=Z,2µm,21.0s
LSZ Lusaka 118.61 273 PKP PKPdf 10 31 31.8 -0.3
comp=Z,8.9nm,0.7s,baz=46,slow=0.7,SNR=16
LSZ Lusaka 118.61 273 ePKPdf PKPdf 10 31 32.4 +0.2
LSZ LR LR
comp=Z,2µm,20.0s
ANWB Willy Bob 118.91 27 PFAKE 10 31 40.0 +7.4
ANWB LR LR
comp=Z,1µm,21.0s
RPN Rapa Nui 119.75 102 PFAKE 10 31 50.0 +16
RPN LR LR
comp=Z,614nm,19.0s
MOTC Monteria, Cord 120.34 46 eP PKPdf 10 31 36.8 +1.4
MATP Matopo 121.33 268 PKP PKPdf 10 31 37.0 -0.3
comp=Z,18nm,0.7s,baz=77,slow=1.3,SNR=32
MATP PP PP 10 33 08.6 -0.1
comp=Z,3.3nm,0.9s,baz=32,slow=7.3,SNR=4.0
FDF Fort de France 121.85 28 PFAKE 10 31 50.0 +12
FDF LR LR
comp=Z,1µm,20.0s
MAW Mawson 121.98 206 PKP PKPdf 10 31 36.9 +0.1
comp=Z,34nm,0.8s,baz=72,slow=2.2,SNR=50
MAW PKKPbc PKKPbc 10 41 37.3 +1.9
comp=Z,2.6nm,0.9s,baz=32,slow=4.7,SNR=4.7
GRMC Gramalote, San 122.78 44 eP PKPdf 10 31 39.1 -1.3
BRRC Barranca, Sant 122.79 45 eP PKPdf 10 31 40.2 0.0
SDV Santo Domingo 122.92 41 ePKPdf PKPdf 10 31 40.5 -0.2
SDV LR LR
comp=Z,2µm,22.0s
MALC Bahia Malaga 123.22 50 eP PKPdf 10 31 41.4 +0.3
BBGH Gun Hill 123.88 27 PFAKE 10 31 50.0 +7.8
BBGH LR LR
comp=Z,3µm,20.0s
GRGR Grenville 124.05 29 PFAKE 10 31 50.0 +7.4
GRGR LR LR
comp=Z,1µm,19.0s
ROSC El Rosal 124.32 47 PKP PKPdf 10 31 42.8 -0.8
comp=Z,10nm,0.5s,baz=144,slow=1.5,SNR=14
CMBC Cumbal 125.34 53 eP PKPdf 10 31 45.9 +0.2
OTAV Otavalo 125.49 54 ePKPdf PKPdf 10 31 46.3 +0.4
OTAV LR LR
comp=Z,883nm,19.0s
OTAV Otavalo 125.49 54 eP PKPdf 10 31 45.9 -0.1
DBIC Dimbokro 125.50 319 PKP PKPdf 10 31 44.9 -0.5
comp=Z,17nm,0.7s,baz=16,slow=2.6,SNR=38
DBIC PKKPab PKKPab 10 41 22.6 -0.9
comp=Z,5.3nm,1.0s,baz=162,slow=11,SNR=3.3
TIC Toumodi 125.61 320 ePKP2 PKPdf 10 31 44.8 -0.8
KIC Kosan Boka 125.71 319 ePKP2 PKPdf 10 31 45.2 -0.6
comp=Z,30nm,0.7s
LIC Lamto 125.97 319 ePKP2 PKPdf 10 31 46.3 0.0
comp=Z,18nm,0.6s
LBTB Lobatse 126.05 265 PKP PKPdf 10 31 44.6 -1.5
comp=Z,32nm,0.9s,baz=118,slow=2.7,SNR=28
BOSA Boshof 128.11 262 PKP PKPdf 10 31 50.0 -0.1
comp=Z,16nm,1.0s,baz=44,slow=2.3,SNR=13
BOSA Boshof 128.11 262 PKIKP PKPdf 10 31 50.0 -0.1
BOSA pmax pmax
comp=Z,16nm,1.0s
QSPA South Pole Qui 128.91 180 ePKPdf PKPdf 10 31 49.7 -0.5
QSPA LR LR
comp=Z,3µm,19.0s
TSUM Tsumeb 129.11 277 PKP PKPdf 10 31 51.9 -0.3
comp=Z,20nm,1.1s,baz=90,slow=3.1,SNR=21
TSUM Tsumeb 129.11 277 ePKPdf PKPdf 10 31 52.3 +0.1
TSUM LR LR
comp=Z,2µm,19.0s
SYO Syowa Base 130.65 208⇑ iPKPdf PKPdf 10 31 52.1 -1.3
SYO Syowa Base 130.65 208⇓ epPKPdf pPKPdf 10 32 03.0 -0.8
SUR Sutherland 133.24 260 PKP PKPdf 10 31 59.2 -0.6
comp=Z,0.7nm,0.9s,baz=54,slow=3.3,SNR=4.3
SUR Sutherland 133.24 260 PKP PKPdf 10 31 59.2 -0.6
SUR LR LR
comp=Z,3µm,21.0s
NNA Nana 135.59 63 iPKIKP PKPdf 10 32 05.3 +0.8
NNA Nana 135.59 63 ePKPdf PKPdf 10 32 03.1 -1.4
NNA LR LR
comp=Z,1µm,19.0s
PTGA Pitinga 136.38 34 PFAKE 10 32 20.0 +14
PTGA LR LR
comp=Z,45µm,21.0s
NVL N'lazarevskaya 139.72 203 ePKHKP PKPpre 10 32 02.0
SAML Samuel 141.89 45 ePKPpre PKPpre 10 32 10.3
SAML ePKPdf PKPdf 10 32 16.3 +0.4
SAML LR LR
comp=Z,2µm,21.0s
SNAA Sanae 143.14 197 PKP PKPab 10 32 12.2 +0.1
SNAA Sanae 143.14 197 ePKHKP PKPpre 10 32 13.1
SNAA Sanae 143.14 197 ePKPdf PKPbc 10 32 13.1 -0.4
LPAZ La Paz 144.57 59 PKP PKPab 10 32 19.7 -0.2
comp=Z,20nm,0.9s,baz=346,slow=4.2,SNR=50
VNA2 Neumayer--Watz 144.70 196 PKP PKPab 10 32 18.0 0.0
baz=110,slow=2.4
VNA3 Neumayer Olymp 144.94 195 PKP PKPab 10 32 18.5 -0.4
VNA1 Neumayer--Stat 145.10 196 PKP PKPbc 10 32 19.2 -0.2
RCBR Riachuelo 146.79 358 ePKPdf PKPdf 10 32 24.3 -0.3
RCBR LR LR
comp=Z,2µm,21.0s
LVC Limon Verde 148.28 68 ePKPdf PKPdf 10 32 28.1 +0.9
LVC ePKPbc PKiKP 10 32 31.8 -0.5
LVC LR LR
comp=Z,2µm,19.0s
PMSA Palmer Station 149.91 157 ePKPbc PKPbc 10 32 33.0 +0.2
PMSA ePKPab PKPab 10 32 39.8 +1.3
PMSA LR LR
comp=Z,2µm,20.0s
LCO Las Campanas 150.50 80 ePKPdf PKPdf 10 32 31.1 +0.6
LCO ePKPbc PKPbc 10 32 36.0 +0.2
LCO ePKPab PKPab 10 32 43.8 +1.3
LCO LR LR
comp=Z,3µm,21.0s
ROCH El Roble 151.98 88 iP PKPbc 10 32 38.6 -0.5
PEL Peldehue 152.30 88⇑ iP PKPbc 10 32 39.2 -0.3
CLCH Cerro Calan 152.51 88⇑ iP PKPbc 10 32 39.9 -0.2
PLCA Paso Flores 154.36 104 PKP PKPdf 10 32 35.4 -0.1
comp=Z,5.0nm,0.7s,baz=258,slow=2.1,SNR=12
PLCA PKPbc PKPbc 10 32 43.8 0.0
comp=Z,31nm,0.8s,baz=285,slow=3.4,SNR=24
PLCA PKPab PKPab 10 32 57.7 -0.5
comp=Z,12nm,0.7s,baz=283,slow=7.2,SNR=3.1
CPUP Villa Florida 158.74 59 PKP PKPdf 10 32 41.1 -0.4
comp=Z,17nm,1.0s,baz=340,slow=1.1,SNR=12
CPUP PKPab PKPab 10 33 17.3 +0.1
comp=Z,13nm,0.7s,baz=334,slow=5.4,SNR=10
TRQA Tornquist 160.51 95 PFAKE 10 32 50.0 +6.8
TRQA LR LR
comp=Z,2µm,20.0s
EFI East Falkland 160.75 137 PFAKE 10 32 50.0 +7.0
EFI LR LR
comp=Z,2µm,20.0s
SPB Sao Paulo 162.15 33 PFAKE 10 33 00.0 +15
SPB LR LR
comp=Z,2µm,22.0s
HOPE Hope Point 164.88 181 PFAKE 10 33 00.0 +13
HOPE LR LR
comp=Z,2µm,21.0s

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*DDA **23** 10:13:07.5, 37°.51N×35°.55E, h17km, Md2.9*
*ISK **23** 10:13:07.7, 37°.54N×35°.57E, h5km, MD2.9*
*ISCJB **23** 10:13:08.1±0.4, 37°.51N±0°.03×35°.58E±0°.03, h9km±3km, Error ellipse: s-maj=5.0km s-min=3.2km az=163.2*
*CSEM **23** 10:13:08.0±0.1, 37°.53N×35°.56E, h2km, MD2.9, Error ellipse: s-maj=3.3km s-min=2.8km az=168.0*
ISC 23 10:13:07.9±0.8, 37°.52N±0°.02×35°.56E±0°.02, h14km±6km, n45, σ0°70/62, Turkey

Code	Station Name	Δ°	AZ°	Phase	ID Op	ID ISC	Time h m s	Res ISC
AKO	**Adana**	**0.11**	**239**	*i* P		**Pg**	**10 13 11.3**	**+0.1**
AKO				*i* S		**Sg**	**10 13 13.4**	**0.0**
KOZT	**Kozan**	**0.21**	**100**	*e*PG		**Pg**	**10 13 12.6**	**-0.1**
KOZT				*e*SG		**Sg**	**10 13 15.9**	**0.0**
KOZT	**Kozan**	**0.21**	**100**	*e*Pg		**Pg**	**10 13 12.6**	**-0.1**
KOZT				*e*Sg		**Sg**	**10 13 15.9**	**0.0**
KARA	**Karaisali**	**0.48**	**238**	*e*PG		**Pg**	**10 13 17.5**	**+0.1**
KARA				*e*SG		**Sb**	**10 13 24.9**	**-0.1**
KARA	**Karaisali**	**0.48**	**238**	*e*Pg		**Pg**	**10 13 17.5**	**+0.1**
KARA				*e*Sg		**Sb**	**10 13 25.0**	**-0.1**
CEYT	**Ceyhan**	**0.53**	**164**	*e*PG		**Pb**	**10 13 19.2**	**+0.3**
CEYT				*e*SG		**Sb**	**10 13 26.6**	**+0.2**
CEYT	**Ceyhan**	**0.53**	**164**	*e*Pg		**Pb**	**10 13 19.2**	**+0.3**
CEYT				*e*Sg		**Sb**	**10 13 26.6**	**+0.2**
ANDN	**Andirin**	**0.62**	**84**	*i* P		**Pg**	**10 13 19.6**	**-0.6**
ANDN				*i* S		**Sg**	**10 13 28.4**	**-0.1**
ANDN	**Andirin**	**0.62**	**84**	P		**Pg**	**10 13 19.6**	**-0.6**
ANDN				S		**Sg**	**10 13 28.4**	**-0.1**
GULE	**Gulek**	**0.67**	**250**	*i* S		**Sb**	**10 13 30.8**	**+0.1**
GULE	**Gulek**	**0.67**	**250**	S		**Sb**	**10 13 30.8**	**+0.1**
DED	**Mersin**	**0.82**	**228**	*i* P		**Pg**	**10 13 23.5**	**-0.4**
DED				*i* S		**Sg**	**10 13 34.3**	**-0.5**
KRTS	**Karatas**	**0.95**	**189**	*e*PG		**Pn**	**10 13 26.9**	**0.0**
KRTS	**Karatas**	**0.95**	**189**	*e*Pg		**Pn**	**10 13 26.9**	**0.0**
NIG	**Nigde**	**0.96**	**308**	*e*PG		**Pg**	**10 13 26.4**	**-0.1**
NIG	**Nigde**	**0.96**	**308**	*e*Pg		**Pg**	**10 13 26.4**	**-0.1**
MERS	**Mersin**	**1.05**	**232**	*e*PG		**Pn**	**10 13 28.5**	**+0.2**
MERS	**Mersin**	**1.05**	**232**	*e*Pg		**Pn**	**10 13 28.5**	**+0.2**
KMRS	**Kahramanmaras**	**1.06**	**90**	*e*PG		**Pb**	**10 13 27.6**	**-0.4**
KMRS	**Kahramanmaras**	**1.06**	**90**	*e*Pg		**Pb**	**10 13 27.7**	**-0.4**
HCB	**Kahramanmara**	**1.08**	**99**	*i* P		**Pb**	**10 13 28.4**	**-0.1**
HCB				*i* S		**Sb**	**10 13 40.6**	**-1.9**
KERG	**Konya-Eregli**	**1.15**	**265**	*i* P		**Pb**	**10 13 28.9**	**-0.7**
KERG				*i* S		**Sb**	**10 13 44.2**	**-0.3**
KERG	**Konya-Eregli**	**1.15**	**265**	P		**Pb**	**10 13 28.9**	**-0.7**
KERG				S		**Sb**	**10 13 44.2**	**-0.3**
TAHT	**Tahtakopru-Hat**	**1.24**	**156**	*e*PN		**Pb**	**10 13 31.2**	**0.0**
TAHT	**Tahtakopru-Hat**	**1.24**	**156**	*e*Pn		**Pb**	**10 13 31.2**	**0.0**
GULA	**Gulagac**	**1.33**	**309**	*e*PN		**Pg**	**10 13 33.4**	**-0.2**
GULA	**Gulagac**	**1.33**	**309**	*e*Pn		**Pg**	**10 13 33.4**	**-0.2**
BNN	**Bunyan**	**1.35**	**9**	*e*PN		**Pn**	**10 13 32.7**	**+0.2**
BNN	**Bunyan**	**1.35**	**9**	*e*Pn		**Pn**	**10 13 32.7**	**+0.2**
GAZ	**Gaziantep**	**1.36**	**104**	*e*PN		**Pg**	**10 13 34.0**	**-0.1**
GAZ	**Gaziantep**	**1.36**	**104**	*e*Pn		**Pg**	**10 13 34.0**	**-0.1**
AVNS	**Nevsehir-Avano**	**1.41**	**337**	*i* P		**Pg**	**10 13 34.7**	**-0.3**
AVNS				*i* S		**Sg**	**10 13 54.0**	**+0.7**
AVNS	**Nevsehir-Avano**	**1.41**	**337**	P		**Pg**	**10 13 34.7**	**-0.3**
AVNS				S		**Sg**	**10 13 54.0**	**+0.7**
KIZK	**Mersin**	**1.54**	**228**	*i* P		**Pb**	**10 13 36.2**	**0.0**
KIZK				*i* S		**Sg**	**10 13 57.1**	**-0.3**
KIZK	**Mersin**	**1.54**	**228**	P		**Pb**	**10 13 36.2**	**0.0**
KIZK				S		**Sg**	**10 13 57.1**	**-0.3**
DARE	**Darende-Malaty**	**1.84**	**55**	*e*PN		**Pb**	**10 13 40.9**	**-0.6**
DARE	**Darende-Malaty**	**1.84**	**55**	*e*Pn		**Pb**	**10 13 40.9**	**-0.6**
IKL	**Isikli**	**1.97**	**230**	*e*PN		**Pb**	**10 13 42.9**	**-0.7**
IKL	**Isikli**	**1.97**	**230**	*e*Pn		**Pb**	**10 13 42.9**	**-0.7**

YOZ	**Yozgat**	**2.13**	**355**	*e*PN	**Pb**	**10 13 45.0**	**-1.4**
YOZ	**Yozgat**	**2.13**	**355**	*e*Pn	**Pb**	**10 13 45.0**	**-1.4**
SVSK	**Karacayir**	**2.65**	**25**	*e*PN	**Pn**	**10 13 52.1**	**+2.0**
SVSK	**Karacayir**	**2.65**	**25**	*e*Pn	**Pn**	**10 13 52.1**	**+2.0**
CORM	**Corum**	**2.75**	**345**	*e*PN	**Pn**	**10 13 53.7**	**+1.9**
CORM	**Corum**	**2.75**	**345**	*e*Pn	**Pn**	**10 13 53.7**	**+1.9**

*IDC **23** 10:13:38.3±1.6, 41°.51S×173°.88E, h0km, mb3.5/3, mb1 3.7/4, mb1mx3.6/22, mbtmp3.5/4, ML3.2/1, Error ellipse: s-maj=34.2km s-min=27.8km az=129.0*
*ISCJB **23** 10:13:39.1±0.4, 41°.88S±0°.04×174°.11E±0°.04, h22km±4km, mb3.5/3, Error ellipse: s-maj=6.9km s-min=4.0km az=155.9*
*WEL **23** 10:13:39.7±0.1, 41°.84S×174°.09E, h16km±1km, ML3.8/25, Error ellipse: s-maj=1.2km s-min=1.0km az=0.0, MM 5.*
WEL Felt between Wellington, Marlborough and Nelson, maximum reported intensity.
*NEIC **23** 10:13:39.9, 41°.82S×174°.10E, h16km, ML3.9(WEL), After WEL.*
NEIC Felt at Marlborough.

ISC 23 10:13:39.0±1.0, 41°.85S±0°.03×174°.10E±0°.03, h17km±6km, n79, σ0s92/86, mb3.4/3, 8C-14D, Cook Strait

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CMWZ	**Cape Campbell**	**0.13**	**41**	⇑P*	**Pb**	**10 13 43.6**	**+0.6**
CMWZ				S*	**Sb**	**10 13 46.9**	**+1.2**
CMWZ				AML	AML	10 13 49.3	
CMWZ	**Cape Campbell**	**0.13**	**41**	⇑P*	**Pb**	**10 13 43.6**	**+0.6**
CMWZ				S*	**Sb**	**10 13 46.9**	**+1.2**
BSWZ	**Blackbirch Sta**	**0.21**	**309**	⇓P*	**Pg**	**10 13 43.9**	**-0.1**
BSWZ				S*	**Sg**	**10 13 47.5**	**0.0**
BSWZ				AML	AML	10 13 47.9	
BSWZ	**Blackbirch Sta**	**0.21**	**309**	⇓P*	**Pg**	**10 13 44.0**	**-0.1**
BSWZ				S*	**Sg**	**10 13 47.5**	**0.0**
TUWZ	**Tuamarina**	**0.44**	**344**	⇑P*	**Pb**	**10 13 48.2**	**-0.1**
TUWZ				S*	**Sb**	**10 13 54.5**	**0.0**
TUWZ				AML	AML	10 13 54.9	
TUWZ	**Tuamarina**	**0.44**	**344**	P*	**Pb**	**10 13 48.2**	**-0.1**
TCW	**Tory Channel**	**0.65**	**12**	⇑P*	**Pg**	**10 13 52.0**	**+0.2**
TCW				AML	AML	10 14 02.2	
TCW				AML	AML	10 14 02.3	
TCW	**Tory Channel**	**0.65**	**12**	P*	**Pg**	**10 13 52.0**	**+0.2**
KHZ	**Kahutara**	**0.70**	**216**	⇑P*	**Pg**	**10 13 53.3**	**+0.6**
KHZ				S*	**Sn**	**10 14 05.4**	**+0.8**
KHZ	**Kahutara**	**0.70**	**216**	P*	**Pg**	**10 13 53.4**	**+0.6**
KHZ				S*	**Sn**	**10 14 05.4**	**+0.8**
BHW	**Baring Head**	**0.73**	**53**	P*	**Pb**	**10 13 54.3**	**+1.1**
BHW				AML	AML	10 14 07.7	
BHW				AML	AML	10 14 08.4	
BHW	**Baring Head**	**0.73**	**53**	P*	**Pb**	**10 13 54.3**	**+1.1**
WEL	**Wellington**	**0.76**	**42**	P*	**Pb**	**10 13 54.6**	**+0.9**
WEL	**Wellington**	**0.76**	**42**	P*	**Pb**	**10 13 54.6**	**+0.9**
NNZ	**Nelson**	**0.83**	**319**	P*	**Pb**	**10 13 55.0**	**0.0**
NNZ				AML	AML	10 14 07.0	
NNZ				AML	AML	10 14 07.0	
NNZ	**Nelson**	**0.83**	**319**	P*	**Pb**	**10 13 55.0**	**0.0**
THZ	**Tophouse**	**0.90**	**275**	⇓P*	**Pb**	**10 13 56.3**	**+0.2**
THZ				S*	**Sb**	**10 14 08.0**	**+0.2**
THZ				AML	AML	10 14 08.7	
THZ	**Tophouse**	**0.90**	**275**	⇓P*	**Pb**	**10 13 56.3**	**+0.2**
THZ				S*	**Sb**	**10 14 08.0**	**+0.2**
PLWZ	**Palliser**	**0.91**	**72**	⇓P*	**Pb**	**10 13 57.0**	**+0.7**
PLWZ	**Palliser**	**0.91**	**72**	P*	**Pb**	**10 13 57.0**	**+0.7**
MSWZ	**Moikau Station**	**0.96**	**64**	⇓P*	**Pb**	**10 13 58.1**	**+0.8**
MSWZ				AML	AML	10 14 16.5	
MSWZ				AML	AML	10 14 21.9	
MSWZ	**Moikau Station**	**0.96**	**64**	P*	**Pb**	**10 13 58.1**	**+0.8**
CAW	**Cannon Point**	**1.04**	**45**	⇓P*	**Pg**	**10 13 59.5**	**+0.4**
CAW				AML	AML	10 14 15.9	
CAW				AML	AML	10 14 16.9	
CAW	**Cannon Point**	**1.04**	**45**	P*	**Pg**	**10 13 59.5**	**+0.4**
DUWZ	**D'Urville Isla**	**1.05**	**353**	⇑P*	**Pb**	**10 13 58.9**	**+0.1**
DUWZ				AML	AML	10 14 15.8	
DUWZ				AML	AML	10 14 17.6	
DUWZ	**D'Urville Isla**	**1.05**	**353**	P*	**Pb**	**10 13 58.9**	**+0.1**
PAWZ	**Paruwai Farm**	**1.10**	**65**	P*	**Pb**	**10 13 59.6**	**0.0**
PAWZ				AML	AML	10 14 22.5	
PAWZ				AML	AML	10 14 23.0	
PAWZ	**Paruwai Farm**	**1.10**	**65**	P*	**Pb**	**10 13 59.6**	**0.0**
KIW	**Kapiti Island**	**1.16**	**32**	P*	**Pb**	**10 14 01.2**	**+0.6**
KIW				AML	AML	10 14 19.2	
KIW				AML	AML	10 14 20.0	
KIW	**Kapiti Island**	**1.16**	**32**	P*	**Pb**	**10 14 01.2**	**+0.6**
MTW	**Mount Morrison**	**1.26**	**57**	⇓P*	**Pn**	**10 14 01.8**	**-0.1**
MTW				AML	AML	10 14 24.6	
MTW				AML	AML	10 14 26.5	
MTW	**Mount Morrison**	**1.26**	**57**	P*	**Pn**	**10 14 01.8**	**-0.1**
TRWZ	**Traveller**	**1.27**	**70**	⇓P*	**Pn**	**10 14 01.7**	**-0.4**
TRWZ				AML	AML	10 14 29.0	
TRWZ				AML	AML	10 14 29.0	
TRWZ	**Traveller**	**1.27**	**70**	P*	**Pn**	**10 14 01.7**	**-0.4**
OGWZ	**Otaki Gorge**	**1.31**	**38**	⇓P*	**Pn**	**10 14 03.3**	**+0.8**
OGWZ	**Otaki Gorge**	**1.31**	**38**	P*	**Pn**	**10 14 03.3**	**+0.8**
HOWZ	**Holdsworth Sta**	**1.43**	**49**	⇓P*	**Pn**	**10 14 04.2**	**+0.1**
HOWZ	**Holdsworth Sta**	**1.43**	**49**	P*	**Pn**	**10 14 04.2**	**+0.1**
TMWZ	**Te Maipa**	**1.54**	**62**	⇓PN	**Pn**	**10 14 05.3**	**-0.4**
TMWZ	**Te Maipa**	**1.54**	**62**	Pn	**Pn**	**10 14 05.3**	**-0.4**
QRZ	**Quartz Range**	**1.56**	**310**	PN	**Pb**	**10 14 07.7**	**+0.2**
QRZ				AML	AML	10 14 30.5	
QRZ				AML	AML	10 14 30.5	
QRZ	**Quartz Range**	**1.56**	**310**	Pn	**Pb**	**10 14 07.7**	**+0.2**
MRZ	**Mangatainoka R**	**1.63**	**44**	PN	**Pn**	**10 14 07.1**	**+0.2**
MRZ	**Mangatainoka R**	**1.63**	**44**	Pn	**Pn**	**10 14 07.2**	**+0.2**
LTZ	**Lake Taylor**	**1.65**	**235**	⇑PN	**Pn**	**10 14 07.6**	**+0.4**
LTZ				AML	AML	10 14 36.9	
LTZ				AML	AML	10 14 37.9	
LTZ	**Lake Taylor**	**1.65**	**235**	⇑Pn	**Pn**	**10 14 07.6**	**+0.4**
DSZ	**Denniston Nort**	**1.72**	**273**	PN	**Pn**	**10 14 09.8**	**+1.6**
DSZ				AML	AML	10 14 35.6	
DSZ				AML	AML	10 14 38.7	
DSZ	**Denniston Nort**	**1.72**	**273**	Pn	**Pn**	**10 14 09.8**	**+1.6**
TIWZ	**Tintock**	**1.72**	**52**	PN	**Pn**	**10 14 07.8**	**-0.4**
TIWZ				AML	AML	10 14 49.5	
TIWZ				AML	AML	10 14 49.8	
TIWZ	**Tintock**	**1.72**	**52**	Pn	**Pn**	**10 14 07.8**	**-0.4**
PRWZ	**Pori Road**	**1.92**	**48**	⇓PN	**Pn**	**10 14 10.7**	**-0.2**
PRWZ	**Pori Road**	**1.92**	**48**	Pn	**Pn**	**10 14 10.7**	**-0.2**
POWZ	**Post Office Ro**	**1.93**	**41**	PN	**Pn**	**10 14 11.1**	**+0.1**
POWZ	**Post Office Ro**	**1.93**	**41**	Pn	**Pn**	**10 14 11.1**	**+0.1**
BFZ	**Birch Farm**	**2.00**	**55**	⇓PN	**Pn**	**10 14 11.0**	**-1.0**
BFZ				AML	AML	10 14 53.4	
BFZ				AML	AML	10 15 04.5	
BFZ	**Birch Farm**	**2.00**	**55**	Pn	**Pn**	**10 14 11.0**	**-1.0**
CRLZ	**Canterbury Las**	**2.04**	**212**	PN	**Pn**	**10 14 11.7**	**-0.8**
CRLZ	**Canterbury Las**	**2.04**	**212**	Pn	**Pn**	**10 14 11.7**	**-0.8**
OXZ	**Oxford**	**2.12**	**225**	PN	**Pn**	**10 14 12.7**	**-1.0**
OXZ	**Oxford**	**2.12**	**225**	Pn	**Pn**	**10 14 12.7**	**-1.0**
MQZ	**McQueen's Vall**	**2.14**	**209**	PN	**Pn**	**10 14 12.3**	**-1.6**
MQZ				AML	AML	10 14 41.0	
MQZ	**McQueen's Vall**	**2.14**	**209**	Pn	**Pn**	**10 14 12.3**	**-1.6**
INZ	**Inchbonnie**	**2.16**	**245**	PN	**Pn**	**10 14 14.6**	**+0.4**
WAZ	**Wanganui**	**2.20**	**18**	PN	**Pb**	**10 14 17.7**	**-0.6**
WAZ				AML	AML	10 14 57.2	
WAZ				AML	AML	10 15 08.9	
WAZ	**Wanganui**	**2.20**	**18**	Pn	**Pb**	**10 14 17.7**	**-0.6**
TSZ	**Takapari Road**	**2.28**	**39**	AML	AML	10 14 58.8	
TSZ				AML	AML	10 15 00.5	
NEZ	**North Egmont**	**2.58**	**360**	PN	**Pb**	**10 14 23.9**	**-0.9**
NEZ	**North Egmont**	**2.58**	**360**	Pn	**Pb**	**10 14 23.9**	**-0.9**
PKE	**Pukeiti**	**2.65**	**358**	*e*PN	**Pb**	**10 14 24.3**	**-1.8**
PKE				AML	AML	10 15 06.4	
PKE				AML	AML	10 15 10.6	
PKE	**Pukeiti**	**2.65**	**358**	*e*Pn	**Pb**	**10 14 24.3**	**-1.8**
TRVZ	**Turoa**	**2.78**	**24**	AML	AML	10 15 17.9	
TRVZ				AML	AML	10 15 21.7	
HIZ	**Hauiti**	**3.38**	**10**	*e*PN	**Pn**	**10 14 33.3**	**+2.3**
HIZ				AML	AML	10 15 29.9	
HIZ				AML	AML	10 15 30.0	
HIZ	**Hauiti**	**3.38**	**10**	*e*Pn	**Pn**	**10 14 33.3**	**+2.3**
URZ	**Urewera**	**4.26**	**34**	Pn	**Pn**	**10 14 42.5**	**-0.6**
	1.4nm,0.3s,baz=233,slow=5.8,SNR=15						
URZ				Sn	**Sn**	**10 15 30.8**	**-1.7**
	2.2nm,0.3s,baz=94,slow=19,SNR=3.8						
MWZ	**Matawai**	**4.39**	**38**	PN	**Pn**	**10 14 42.2**	**-2.7**
MWZ	**Matawai**	**4.39**	**38**	Pn	**Pn**	**10 14 42.2**	**-2.7**
VNDA	**Vanda**	**36.14**	**184**	P	P	10 20 44.2	+4.5
	0.4nm,0.5s,baz=21,slow=4.7,SNR=3.7						
ASAR	**Alice Springs**	**37.95**	**286**	P	**P**	**10 20 54.7**	**-1.1**
	0.3nm,0.4s,baz=121,slow=6.3,SNR=18						
WRA	**Warramunga Arr**	**40.03**	**291**	P	**P**	**10 21 13.6**	**+0.4**
	0.3nm,0.4s,baz=127,slow=8.6,SNR=8.6						

*CSEM **23** 10:24:14.9, 38°.78N×29°.00W, h3km, ML3.4*
PDA 23 10:24:14.9±0.9, 38°.78N×29°.00W, h3km±5km, MD3.5, ML3.4, 8D, Error ellipse: s-maj=6.7km s-min=3.3km az=62.0, Azores Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PCED	**Cedros**	**0.28**	**122**	⇓*i*P	Pg	10 24 19.9	-0.3
PCED				*e*S	Sg	10 24 23.7	-0.2
PCED	**Cedros**	**0.28**	**122**	⇓*i*P	Pg	10 24 19.9	-0.3
PCED				*e*S	Sg	10 24 23.7	-0.2
PCED				A	A	10 24 24.7	
	1µm,0.2s						
CALA	**Caldeira**	**0.30**	**129**	*e*P	Pg	10 24 20.5	-0.3
CALA	**Caldeira**	**0.30**	**129**	*e*P	Pg	10 24 20.5	-0.3
HOR	**Horta**	**0.38**	**130**	⇓*i*P	Pg	10 24 21.6	-0.7
HOR				*e*S	Sg	10 24 26.8	-0.4
HOR	**Horta**	**0.38**	**130**	⇓*i*P	Pg	10 24 21.6	-0.7
HOR				*e*S	Sg	10 24 26.8	-0.4
HOR				A	A	10 24 27.9	
	1µm,0.2s						
PCAN	**Candelaria**	**0.51**	**127**	*e*P	Pg	10 24 23.5	-1.2
PCAN				*e*S	Sg	10 24 30.7	-0.6
PCAN	**Candelaria**	**0.51**	**127**	*e*P	Pg	10 24 23.5	-1.2
PCAN				*e*S	Sg	10 24 30.7	-0.6
PCAN				A	A	10 24 32.5	
	1µm,0.2s						
PICO	**Pico**	**0.53**	**121**	*e*P	Pg	10 24 24.2	-0.9
PICO				*e*S	Sg	10 24 31.4	-0.5
PICO	**Pico**	**0.53**	**121**	*e*P	Pg	10 24 24.2	-0.9
PICO				*e*S	Sg	10 24 31.4	-0.5
PICO				A	A	10 24 32.2	
	2µm,0.2s						
ROSA	**Rosais**	**0.60**	**95**	⇓*i*P	Pg	10 24 25.2	-1.2
ROSA				*i* S	Sg	10 24 32.9	-1.2
ROSA	**Rosais**	**0.60**	**95**	⇓*i*P	Pg	10 24 25.2	-1.2
ROSA				*i* S	Sg	10 24 32.9	-1.2
ROSA				A	A	10 24 34.1	
	5µm,0.2s						
PPNO	**Prainha do Nor**	**0.65**	**117**	⇓*i*P	Pg	10 24 26.2	-1.2
PPNO				*e*S	Sg	10 24 34.7	-1.2
PPNO	**Prainha do Nor**	**0.65**	**117**	⇓*i*P	Pg	10 24 26.2	-1.2
PPNO				*e*S	Sg	10 24 34.7	-1.2
PPNO				A	A	10 24 37.3	
	3µm,0.2s						
PMAN	**Manadas**	**0.73**	**101**	*e*P	Pg	10 24 26.8	-2.1
PMAN				*e*S	Sg	10 24 36.1	-2.3
PMAN	**Manadas**	**0.73**	**101**	*e*P	Pg	10 24 26.8	-2.1
PMAN				*e*S	Sg	10 24 36.1	-2.3
PMAN				A	A	10 24 41.3	
	635nm,0.3s						
PID	**Ribeirinha**	**0.77**	**115**	*e*P	Pg	10 24 27.9	-1.7
PID	**Ribeirinha**	**0.77**	**115**	*e*P	Pg	10 24 27.9	-1.7
PGRA	**Graciosa**	**0.84**	**72**	*e*P	Pg	10 24 28.6	-2.4
PGRA				*e*S	Sg	10 24 39.1	-2.7
PGRA	**Graciosa**	**0.84**	**72**	*e*P	Pg	10 24 28.6	-2.4
PGRA				*e*S	Sg	10 24 39.1	-2.7
PGRA				A	A	10 24 46.6	
	254nm,0.4s						
ADH	**Angra Heroismo**	**1.39**	**94**	*e*P	Pn	10 24 36.6	-4.6
ADH				*e*S	Sg	10 24 52.0	-7.5
ADH	**Angra Heroismo**	**1.39**	**94**	*e*P	Pn	10 24 36.6	-4.6
ADH				*e*S	Sg	10 24 52.0	-7.5
ADH				A	A	10 24 53.7	
	120nm,0.2s						

*ISCJB **23** 10:39:50.9±1.8, 37°.70N±0°.05×141°.9E±0°.1, h17km±12km, mb3.6/3, Error ellipse: s-maj=15.1km s-min=7.4km az=17.3*
*IDC **23** 10:39:50.5±2.4, 37°.57N×142°.09E, h0km, mb3.4/3, mb1 3.6/4, mb1mx3.3/65, mbtmp3.4/4, ML3.5/1, Error ellipse: s-maj=62.3km s-min=30.4km az=60.0*
*JMA **23** 10:39:52.2±0.1, 37°.71N×141°.85E, h21km±2km, M3.8*
ISC 23 10:39:50.9±4.1, 37°.71N±0°.05×141°.85E±0°.1, h5km±27km, n12, σ1s15/20, mb3.5/3, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**0.84**	**332**	P	**Pb**	**10 40 07.7**	**-0.3**
JIO				S	**Sb**	**10 40 18.4**	**-1.2**
JFK	**Kawauchi**	**0.84**	**246**	P	**Pb**	**10 40 08.1**	**0.0**
JFK				S	**Sb**	**10 40 19.3**	**-0.5**
JMM	**Marumori**	**0.85**	**281**	P	**Pb**	**10 40 08.0**	**-0.1**
JMM				S	**Sb**	**10 40 18.8**	**-1.0**
ONAJ	**Iwakimizuishiy**	**1.03**	**234**	P	**Pb**	**10 40 11.1**	**-0.2**
ONAJ				S	**Sb**	**10 40 25.0**	**-0.1**
JOU	**Okura**	**1.14**	**305**	P	**Pn**	**10 40 12.9**	**-0.7**
JOU				S	**Sb**	**10 40 28.0**	**-0.3**
JFT	**Otama**	**1.21**	**261**	P	**Pn**	**10 40 14.5**	**-0.1**
JFT				S	**Sb**	**10 40 31.1**	**+0.7**
JHO	**Hitachi**	**1.50**	**223**	P	**Pn**	**10 40 17.4**	**-1.0**
JHO				S	**Sn**	**10 40 36.7**	**-1.7**
MJAR	**Matsushiro Arr**	**3.13**	**249**	Pn	**Pn**	**10 40 42.6**	**+1.7**
	5.6nm,0.3s,baz=79,slow=16,SNR=40						
MAT	**Matsushiro**	**3.13**	**249**	P	**Pn**	**10 40 42.7**	**+1.7**
MAT				*e*S	**Sb**	**10 41 24.1**	**-1.5**
KURBB	**Kurchatov Arra**	**45.86**	**308**	P	**P**	**10 48 16.1**	**+2.2**
	0.8nm,0.6s,baz=79,slow=8.4,SNR=10						
WRA	**Warramunga Arr**	**57.78**	**188**	P	**P**	**10 49 42.6**	**-0.4**
	0.3nm,0.6s,baz=5.9,slow=6.8,SNR=6.1						
ASAR	**Alice Springs**	**61.50**	**188**	P	**P**	**10 50 08.2**	**-0.5**
	0.2nm,0.7s,baz=350,slow=5.0,SNR=2.9						

*IDC **23** 10:53:34.2±8.3, 36°.68N×70°.93E, h76km±55km, mb3.5/2, mb1 3.4/6, mb1mx3.1/62, mbtmp3.5/6, ML3.0/4, Error ellipse: s-maj=71.7km s-min=50.1km az=162.0*
*NNC **23** 10:53:37.7±3.8, 37°.04N×70°.54E, h116km±94km, mb2.8, mpv3.3, Error ellipse: s-maj=38.1km s-min=29.8km az=73.0*
ISC 23 10:53:38.7±1.9, 37°.1N±0°.1×70°.5E±0°.1, h100km, n12, σ1s73/18, 4C-5D, Afghanistan-Tajikistan border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SFK	**Sufi-Kurgan**	**3.75**	**38**	⇑P	**Pn**	**10 54 34.7**	**+0.1**
	2.5nm,0.3s						
SFK				⇓S	**Sn**	**10 55 17.9**	**0.0**
	9.7nm,0.4s						
MNAS	**Manas**	**5.59**	**16**	⇓P	**Pn**	**10 54 59.3**	**-0.2**
	1.2nm,0.4s						
MNAS				⇓S	**Sn**	**10 56 04.8**	**+2.3**
	4.3nm,0.3s						
KK31	**Karatay Array**	**5.98**	**0**	P	**Pn**	**10 55 05.6**	**+0.9**
	1.4nm,0.3s,baz=178,slow=13,SNR=55						
KK31				⇓S	**Sn**	**10 56 14.4**	**+2.6**
	4.0nm,0.3s,baz=184,slow=21						
AAK	**Ala-Archa**	**6.32**	**28**	P	**Pn**	**10 55 08.7**	**-0.7**
	0.8nm,0.3s,baz=167,slow=9.0,SNR=6.2						
AAK				S	**Sn**	**10 56 22.0**	**+1.7**
	0.8nm,0.3s,baz=202,slow=19,SNR=3.6						
AAK	**Ala-Archa**	**6.32**	**28**	⇓P	**Pn**	**10 55 08.8**	**-0.7**
	1.2nm,0.4s						
AAK				S	**Sn**	**10 56 19.4**	**-0.9**
MKAR	**Makanchi Array**	**13.06**	**39**	P	**Pn**	**10 56 38.3**	**-1.9**
	0.1nm,0.3s,baz=230,slow=11,SNR=2.8						
AB31	**Akbulak array**	**14.35**	**331**	⇑P	**Pn**	**10 56 54.3**	**-2.5**
	0.2nm,0.3s						
AB31				⇑S	**Sn**	**10 59 32.0**	**-2.8**
	1.3nm,0.6s,baz=155,slow=23,SNR=4.9						
KURBB	**Kurchatov Arra**	**14.69**	**21**	P	**Pn**	**10 57 00.2**	**-1.0**
	0.0nm,0.3s,baz=209,slow=11,SNR=3.0						
AKTO	**Aktyubinsk**	**16.04**	**330**	P	**P**	**10 57 20.9**	**+1.1**
	0.1nm,0.3s,baz=139,slow=9.3,SNR=4.6						
AKTO	**Aktyubinsk**	**16.04**	**330**	⇑P	**P**	**10 57 19.2**	**-0.5**
	1.8nm,0.8s						
ARCES	**ARCESS Array B**	**40.42**	**337**	P	**P**	**11 01 09.2**	**+2.6**
	2.7nm,0.9s,baz=113,slow=9.0,SNR=3.4						
YKA	**Yellowknife Ar**	**80.65**	**2**	P	**P**	**11 05 40.4**	**+0.4**
	0.2nm,0.4s,baz=351,slow=5.2,SNR=8.1						

*NIED **23** 10:59:00, 35°.90N×141°.70E, h23km, Mw4.3 Best double couple: M◎3.45000×10^15 NP1:φs12.00000°, δ43.00000°, λ-103.00000°. NP2:φs209.00000°, δ49.00000°, λ-79.00000°.*
*IDC **23** 10:59:19.9±0.4, 35°.87N×141°.68E, h0km, mb4.3/34, mb1 4.4/40, mb1mx4.4/60, mbtmp4.3/40, ML3.7/5, MS4.1/1, Ms1 4.1/1, ms1mx3.2/50, Error ellipse: s-maj=11.9km s-min=10.3km az=104.0*
*NEIC **23** 10:59:23.9±1.5, 35°.89N×141°.66E, h23km±11km, mb4.6/42, Error ellipse: s-maj=5.0km s-min=4.3km az=118.0*
*BJI **23** 10:59:23.2, 35°.63N×141°.42E, h29km, mb4.6/28, mB5.3/13, Ms4.6/9, Ms7 4.4/9*
*ISCJB **23** 10:59:23.4±1.0, 35°.86N±0°.03×141°.65E±0°.04, h33km±7km, mb4.5/92, MS4.2/3, Error ellipse: s-maj=4.8km s-min=4.6km az=174.0*
*JMA **23** 10:59:23.3±0.2, 35°.93N×141°.68E, h50km±4km, M4.3*
JMA Felt I J1.
*MOS **23** 10:59:25.4±0.9, 36°.26N×141°.57E, h33km, mb4.6/51, Error ellipse: s-maj=8.9km s-min=6.1km az=106.9*
ISC 23 10:59:24.1±1.5, 35°.90N±0°.04×141°.67E±0°.05, h26km±10km, n198, σ1s03/202, mb4.5/92, MS4.2/3, 8C-2D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.69**	**253**	P	**Pb**	**10 59 37.2**	**-0.3**
CHOJ				S	**Sn**	**10 59 47.7**	**-0.3**
JHO	**Hitachi**	**1.14**	**309**	P	**Pn**	**10 59 42.7**	**-1.7**
BSO3	**Boso 3**	**1.45**	**221**	P	**Pn**	**10 59 48.4**	**0.0**
JFK	**Kawauchi**	**1.59**	**337**	P	**Pn**	**10 59 47.8**	**-2.9**
JAG	**Ashikaga**	**1.87**	**287**	P	**Pn**	**10 59 53.4**	**-1.0**
JFT	**Otama**	**1.94**	**327**	P	**Pn**	**10 59 55.4**	**0.0**
JFT				*e*S	**Sn**	**11 00 18.5**	**-0.4**
JKT	**Katashina**	**2.14**	**295**	P	**Pn**	**10 59 57.7**	**-0.5**
JKT				S	**Sn**	**11 00 23.4**	**-0.5**
MJAR	**Matsushiro Arr**	**2.87**	**284**	Pn	**Pn**	**11 00 08.4**	**+0.2**
	31nm,0.3s,baz=115,slow=7.6,SNR=302						
MJAR				Sn	**Sn**	**11 00 42.7**	**+0.8**
	16nm,0.3s,baz=210,slow=24,SNR=7.7						
MAJO	**Matsushiro**	**2.87**	**284**	*d* iP	**Pn**	**11 00 09.0**	**+0.7**
MAJO	**Matsushiro**	**2.87**	**284**	*e*Pn	**Pn**	**11 00 08.9**	**+0.7**
MAT	**Matsushiro**	**2.87**	**284**	P	**Pn**	**11 00 08.4**	**+0.2**
MAT				*e*S	**Sn**	**11 00 42.0**	**0.0**
MJB9	**Matsu-Tunnel**	**2.88**	**284**	*e*Pn	**Pn**	**11 00 08.9**	**+0.6**
JHJ2	**Mitsune**	**3.18**	**209**	*e*Pn	**Pn**	**11 00 12.6**	**+0.2**
JHJ2				*e*Sn	**Sn**	**11 00 47.8**	**-1.6**
JHJ	**Hachijo jima 2**	**3.18**	**210**	Pn	**Pn**	**11 00 11.9**	**-0.6**
	37nm,0.3s,baz=319,slow=18,SNR=20						
JHJ				Sn	**Sn**	**11 00 48.9**	**-0.7**
	104nm,0.3s,baz=63,slow=22,SNR=8.8						
INU	**Inuyama**	**3.83**	**263**	*e*Pn	**Pn**	**11 00 22.7**	**+1.3**
ERM	**Erimo**	**6.21**	**10**	*e*P	**Pn**	**11 00 51.8**	**-2.3**
ASAJ	**Asahikawa**	**8.24**	**5**	Pn	**Pn**	**11 01 20.2**	**-1.6**
	1.3nm,0.3s,baz=208,slow=15,SNR=31						
CBIJ	**Chichi jima**	**8.79**	**177**	Pn	**Pn**	**11 01 28.6**	**-0.9**
CBIJ				Sn	Sn	11 02 58.9	-8.9
JCJ	**Chichijima**	**8.79**	**177**	Pn	**Pn**	**11 01 28.6**	**-0.9**
	15nm,0.3s,baz=273,slow=22,SNR=3.3						
JCJ				Sn	Sn	11 02 58.9	-8.9
	12nm,0.3s,baz=286,slow=21,SNR=2.7						
JNU	**Nakatsue**	**9.33**	**256**	Pn	**Pn**	**11 01 38.1**	**+1.2**
	0.3nm,0.3s,baz=77,slow=4.9,SNR=3.0						
JNU				LR	LR	11 05 37.9	
	comp=Z,1µm,18.0s,baz=304,slow=40						
JNU	**Nakatsue**	**9.33**	**256**	*e*Pn	**Pn**	**11 01 37.4**	**+0.5**
KUR	**Kuril'sk**	**10.44**	**25**	*e*P	**Pn**	**11 01 51.1**	**-1.0**
KUR				S	Sn	11 03 38.4	-10
KUR				pmax	pmax		
	comp=Z,15nm,0.5s						
USRK	**Ussuriysk Ar.**	**11.12**	**321**	Pn	**Pn**	**11 02 02.9**	**+1.6**
	comp=Z,0.3nm,0.3s,baz=125,slow=12,SNR=8.3						
KSRS	**Korea Array**	**11.15**	**282**	Pn	**Pn**	**11 02 02.8**	**+1.0**
	comp=Z,0.1nm,0.3s,baz=270,slow=38,SNR=2.8						
KSAR	**Wonju Array Be**	**11.18**	**282**	P	**Pn**	**11 02 02.8**	**+0.6**
KSAR	**Wonju Array Be**	**11.18**	**282**	Pn	**Pn**	**11 02 02.8**	**+0.6**
KLR	**Kul'dur**	**15.17**	**334**	Pn	**Pn**	**11 02 54.4**	**-2.2**
	comp=Z,0.2nm,0.3s,baz=146,slow=7.9,SNR=6.6						
NKL	**Nikolayevsk**	**17.26**	**358**	*e*P	**P**	**11 03 24.7**	**+0.2**
NJ2	**Nanjing**	**19.30**	**265**	*e*P	**P**	**11 03 46.5**	**-0.6**
NJ2				pmax	pmax		
	comp=Z,12nm,0.5s						
PEA0

TLY Talaya 31.23 312 P **P** **11 05 43.8 +2.4**
comp=Z,4.7nm,0.7s,baz=109,slow=6.0,SNR=3.8
TLY Talaya 31.23 312 *e*P **P** **11 05 42.7 +1.3**
TLY pmax pmax
comp=Z,9.0nm,0.9s
CD2 Chengdu 31.90 272 P **P** **11 05 46.6 -0.9**
CD2 pmax pmax
comp=Z,1.0nm,0.5s
GTA Gaotai 33.11 289 *e*P P 11 05 53.8 -4.3
GTA pP pP 11 06 06.0 +0.2
GTA sP sP 11 06 11.3 +2.4
GTA pmax pmax
comp=Z,3.0nm,0.6s
KMI Kunming 35.01 263 P **P** **11 06 15.8 +0.9**
KMI pmax pmax
comp=Z,13nm,0.5s
KMI pmax pmax
comp=Z,440nm,11.1s
BILL Bilibino 35.05 16 *ce*P **P** **11 06 14.8 +0.3**
BILL pmax pmax
comp=Z,7.0nm,1.0s
BILL Bilibino 35.05 16 *e*P **P** **11 06 14.7 +0.2**
comp=Z,6.8nm,1.0s
TIXI Tiksi 36.44 353 P **P** **11 06 25.4 -0.8**
comp=Z,1.2nm,0.4s,baz=143,slow=7.4,SNR=5.4
TIXI Tiksi 36.44 353 *ce*P **P** **11 06 25.9 -0.3**
TIXI pmax pmax
comp=Z,3.0nm,0.7s
TIXI Tiksi 36.44 353 *e*P **P** **11 06 25.8 -0.4**
comp=Z,6.0nm,1.2s
CMAR Chiang Mai Arr 41.42 257 P **P** **11 07 08.3 -0.3**
comp=Z,0.9nm,0.4s,baz=46,slow=6.7,SNR=5.4
CMAR Chiang Mai Arr 41.42 257 *ce*P P 11 07 16.2 +7.5
CMAR pmax pmax
comp=Z,1.0nm,0.4s
WMQ Urumqi 41.54 298 P **P** **11 07 11.3 +1.9**
WMQ pP sP 11 07 22.0 +1.6
WMQ sP pP 11 07 27.0 +10
WMQ pmax pmax
comp=Z,4.0nm,0.5s
WMQ LR LR
comp=Z,410nm,17.6s
WMQ LR LR
comp=Z,210nm,16.0s
WMQ LR LR
comp=Z,190nm,16.0s
ZAA0 Zalesovo Array 42.83 313 *e*P **P** **11 07 19.6 -0.1**
ZALV Zalesovo Beam 42.83 313 P **P** **11 07 18.7 -1.0**
comp=Z,5.5nm,0.7s,baz=101,slow=5.7,SNR=9.2
ZALV PcP **PcP** **11 09 09.7 -0.8**
comp=Z,2.3nm,0.6s,baz=87,slow=3.4,SNR=3.6
ZALV Zalesovo Beam 42.83 313 P **P** **11 07 18.7 -1.0**
ZALV 11 09 09.7
ZALV pmax pmax
comp=Z,3.0nm,0.4s
ZALV pmax pmax
comp=Z,2.0nm,0.6s
MK01 Makanchi Array 44.90 303 *e*P **P** **11 07 36.5 0.0**
MK31 Makanchi Array 44.90 303 *e*P **P** **11 07 36.6 +0.1**
MK31 Makanchi Array 44.90 303 *e*P **P** **11 07 36.6 +0.1**
MKAR Makanchi Array 44.90 303 P **P** **11 07 36.5 0.0**
comp=Z,3.6nm,0.8s,baz=90,slow=8.4,SNR=12
MKAR Makanchi Array 44.90 303 *e*P **P** **11 07 36.7 +0.2**
MKAR Makanchi Array 44.90 303 *e*P **P** **11 07 36.6 +0.2**
KAPI Kappang 45.60 211 P **P** **11 07 42.2 0.0**
comp=Z,3.9nm,0.4s,baz=272,slow=3.2,SNR=5.4
KAPI Kappang 45.60 211 *e*P **P** **11 07 43.3 +1.1**
comp=Z,30nm,1.3s
KURK Kurchatov 46.80 309 P **P** **11 07 51.6 +0.3**
KURK pmax pmax
comp=Z,6.0nm,0.7s
KURK Kurchatov 46.80 309 P **P** **11 07 51.5 +0.3**
KURBB Kurchatov Arra 46.87 309 P **P** **11 07 51.5 -0.3**
comp=Z,4.1nm,0.5s,baz=85,slow=7.9,SNR=28
MDM Murphy Dome 49.77 32 *e*P **P** **11 08 15.4 +1.3**
comp=Z,10nm,0.8s
IL1 Eielson Array 50.34 32 *e*P **P** **11 08 18.5 +0.1**
ILAR Eielson Array 50.34 32 P **P** **11 08 18.3 -0.1**
comp=Z,4.9nm,0.8s,baz=267,slow=6.4,SNR=44
ILB Eielson Array 50.34 32 *e*P **P** **11 08 18.6 +0.2**
TKM2 Tokmak 2 50.36 299 *e*P **P** **11 08 20.0 +0.9**
TKM2 pmax pmax
comp=Z,6.0nm,0.8s
TKM2 Tokmak 2 50.36 299 *e*P **P** **11 08 20.0 +0.9**
comp=Z,5.8nm,0.8s
DIV Divide 51.06 37 *e*P **P** **11 08 24.4 +0.5**
comp=Z,42nm,1.3s
KSH Kashi 51.06 295 *e*P **P** **11 08 25.4 +1.0**
KSH *e*pP sP 11 08 38.0 +2.6
KSH *e*PcP **PcP** **11 09 41.4 +1.4**
KSH pmax pmax
comp=Z,460nm,9.8s
AAK Ala-Archa 51.22 299 P **P** **11 08 25.3 -0.3**
comp=Z,1.4nm,0.7s,baz=173,slow=8.1,SNR=3.5
AAK Ala-Archa 51.22 299 *e*P **P** **11 08 25.2 -0.3**
comp=Z,2.9nm,0.8s
BVAR Borovoye Array 51.49 313 P **P** **11 08 27.2 -0.1**
comp=Z,1.8nm,0.6s,baz=77,slow=6.7,SNR=9.5
BVAR PcP **PcP** **11 09 41.2 0.0**
comp=Z,2.9nm,0.8s,baz=45,slow=2.9,SNR=4.4
BRVK Borovoye 51.55 313 *ce*P **P** **11 08 28.3 +0.7**
BRVK pmax pmax
comp=Z,5.0nm,1.0s
ZRNK Zerenda 52.33 313 *e*P **P** **11 08 33.3 -0.2**
ZRNK pmax pmax
comp=Z,6.0nm,0.8s
ZRNK Zerenda 52.33 313 *e*P **P** **11 08 33.3 -0.2**
comp=Z,5.7nm,0.8s
LEM Lembang 53.20 224 P **P** **11 08 43.4 +2.9**
comp=Z,34nm,0.8s,baz=309,slow=0.4,SNR=7.0
KKAR Karatay Array 53.88 301 *e*P **P** **11 08 45.2 +0.2**
KKAR Karatay Array 53.88 301 *e*P **P** **11 08 45.2 +0.2**
INK Inuvik 55.30 27 P **P** **11 08 55.0 +0.1**
comp=Z,2.0nm,0.8s,baz=308,slow=8.3,SNR=8.2
INK Inuvik 55.30 27 *e*P **P** **11 08 55.5 +0.6**
INK pmax pmax
comp=Z,5.0nm,1.0s
INK Inuvik 55.30 27 *e*P **P** **11 08 55.5 +0.6**
comp=Z,4.9nm,1.0s
FITZ Fitzroy Crossi 55.81 199 *e*P **P** **11 08 59.3 +0.2**
comp=Z,8.1nm,0.6s
WRAB Tennant Creek 55.96 188 *ce*P P 11 09 11.6 +11
WRAB pmax pmax
comp=Z,88nm,2.5s
WRAB Tennant Creek 55.96 188 *e*P **P** **11 08 59.5 -0.8**
comp=Z,12nm,0.9s
WB2 Warramunga Arr 55.97 188 *e*P **P** **11 08 59.6 -0.6**
comp=Z,14nm,0.9s
WRA Warramunga Arr 55.97 188 P **P** **11 08 59.3 -1.0**
comp=Z,8.4nm,0.8s,baz=7.3,slow=7.5,SNR=53
WRA Warramunga Arr 55.97 188 *i* P **P** **11 08 59.2 -1.0**
WRA pmax pmax
comp=Z,9.0nm,0.8s
ARU Arti 57.35 319 *d i*P **P** **11 09 08.9 -0.8**
ARU 11 11 12.8
ARU S **S** **11 17 02.9 -1.5**
ARU SS **SS** **11 20 49.1 -4.3**
ARU pmax pmax
comp=Z,10.0nm,1.2s
ARU Arti 57.35 319 *e*P **P** **11 09 09.4 -0.3**
comp=Z,7.2nm,0.9s
HYB Hyderabad 58.39 269 *i* P **P** **11 09 18.0 +0.4**
ABKAR Akbulak array 58.83 311 *e*P **P** **11 09 19.8 -0.4**
AKTO Aktyubinsk 59.59 313 P **P** **11 09 24.5 -1.0**
comp=Z,2.3nm,0.9s,baz=78,slow=12,SNR=5.8
AS01 Alice Springs 59.69 188 *e*P **P** **11 09 26.0 -0.4**
AS31 Alice Springs 59.70 188 *e*P **P** **11 09 25.9 -0.6**
comp=Z,1.1nm,0.6s
ASAR Alice Springs 59.70 188 P **P** **11 09 25.9 -0.5**
comp=Z,2.6nm,0.8s,baz=360,slow=6.1,SNR=27
ASAR Alice Springs 59.70 188 P **P** **11 09 26.0 -0.5**
ASAR pmax pmax
comp=Z,3.0nm,0.8s
DZM Mont Dzumac 62.25 154 P **P** **11 09 42.1 -1.7**
comp=Z,7.0nm,0.8s,baz=158,slow=14,SNR=4.0
RES Resolute Bay 63.64 14 P **P** **11 09 52.2 -0.2**
comp=Z,5.5nm,0.9s,baz=318,slow=6.2,SNR=21
RES Resolute Bay 63.64 14 *e*P **P** **11 09 52.7 +0.3**
RES pmax pmax
comp=Z,7.0nm,0.9s
RES Resolute Bay 63.64 14 *e*P **P** **11 09 52.7 +0.3**
comp=Z,6.9nm,0.9s
GEYT Alibeck 64.57 300 P **P** **11 09 59.2 +0.1**
comp=Z,1.9nm,0.5s,baz=54,slow=7.0,SNR=2.6
YKW3 Yellowknife Ar 64.64 30 *e*P **P** **11 09 58.9 -0.2**
comp=Z,3.8nm,0.7s
YKA Yellowknife Ar 64.68 30 P **P** **11 09 58.9 -0.5**
comp=Z,3.8nm,0.8s,baz=301,slow=6.7,SNR=82
YKB5 Yellowknife Ar 64.68 30 *e*P **P** **11 09 59.0 -0.3**
KLMR Klimovskoe 64.82 328 P **P** **11 09 58.5 -1.8**
KLMR pmax pmax
comp=Z,9.0nm,0.9s
ARCES ARCESS Array B 65.13 340 P **P** **11 10 02.0 -0.2**
comp=Z,5.1nm,1.0s,baz=32,slow=12,SNR=3.7
STKA Stephens Creek 67.42 180 P **P** **11 10 16.7 -0.6**
comp=Z,3.3nm,1.1s,baz=24,slow=7.6,SNR=4.1
VRH Novokhopyorsk 68.56 318 *e*P **P** **11 10 24.0 -0.3**
VRH pmax pmax
comp=Z,10.0nm,0.6s
OBN Obninsk 69.12 324 *e*P **P** **11 10 28.9 +1.1**
OBN pmax pmax
comp=Z,3.0nm,0.9s
LPSR Galich'ya Gora 69.30 321 *e*P **P** **11 10 28.5 -0.4**
LPSR pmax pmax
comp=Z,5.0nm,0.7s
B08A Colville Reser 69.49 45 *e*P **P** **11 10 30.6 +0.3**
comp=Z,4.8nm,0.9s
FIA1 FINESS Array S 69.91 333 *e*P **P** **11 10 32.2 -0.2**
FINES FINESS Array B 69.91 333 P **P** **11 10 32.1 -0.4**
comp=Z,4.4nm,0.9s,baz=84,slow=5.9,SNR=9.4
VSR Storozhevoye 69.92 319 *e*P **P** **11 10 32.4 -0.4**
VSR pmax pmax
comp=Z,7.0nm,1.0s
KBZ Khabaz 71.80 311 P **P** **11 10 43.8 -0.5**
comp=Z,2.5nm,0.8s,baz=73,slow=6.4,SNR=5.2
KIV Kislovodsk 71.80 311 *e*P P 11 10 47.7 +3.2
KIV pmax pmax
comp=Z,4.0nm,1.0s
SUMG Summit 71.81 0 *e*P **P** **11 10 45.5 +1.1**
SUMG pmax pmax
comp=Z,9.0nm,1.0s
SUMG Summit 71.81 0 *e*P **P** **11 10 45.5 +1.1**
comp=Z,8.8nm,1.0s
GNI Garni 72.55 307 P **P** **11 10 49.4 +0.3**
comp=Z,5.1nm,0.4s,baz=193,slow=14,SNR=2.7
JTMT Jette 72.67 43 *e*P **P** **11 10 50.6 +0.9**
SWMT Swartz Lake 72.97 43 *e*P **P** **11 10 52.2 +0.8**
FFC Flin Flon 74.55 33 *e*P **P** **11 11 00.3 -0.1**
FFC pmax pmax
comp=Z,7.0nm,0.9s
FFC Flin Flon 74.55 33 *e*P **P** **11 11 00.2 -0.1**
comp=Z,6.5nm,0.9s
FCC Fort Churchill 74.92 26 *e*P **P** **11 11 02.0 -0.4**
FCC pmax pmax
comp=Z,11nm,1.1s
FCC Fort Churchill 74.92 26 *e*P **P** **11 11 02.0 -0.4**
comp=Z,11nm,1.1s
EGMT Eagleton 74.98 41 *e*P **P** **11 11 03.4 +0.2**
comp=Z,10nm,1.0s
DLMT Dillon 75.00 45 *e*P **P** **11 11 04.6 +1.3**
comp=Z,6.9nm,1.0s
NB2 NORSAR Subarra 75.31 337 P **P** **11 11 04.2 -0.5**
comp=Z,4.7nm,1.1s,baz=40,slow=6.2
NOA NORSAR Array B 75.31 337 P **P** **11 11 04.3 -0.5**
comp=Z,2.3nm,0.9s,baz=39,slow=5.8,SNR=8.6
AKASG Malin Array Be 75.32 323 P **P** **11 11 04.5 -0.4**
comp=Z,1.2nm,0.5s,baz=47,slow=6.1,SNR=12
KIEV Kiev 75.33 323 *e*P **P** **11 11 04.6 -0.3**
KIEV pmax pmax
comp=Z,6.0nm,0.8s
KIEV Kiev 75.33 323 *e*P **P** **11 11 04.6 -0.3**
comp=Z,5.9nm,0.8s
BOZ Bozeman (W) 75.38 44 *e*P **P** **11 11 06.5 +0.9**
BOZ pmax pmax
comp=Z,5.0nm,0.9s
BOZ Bozeman (W) 75.38 44 *e*P **P** **11 11 06.5 +0.9**
comp=Z,5.3nm,0.9s
NV01 Mina Array Sit 75.50 53 *e*P **P** **11 11 07.1 +0.6**
NVAR Mina Array Bea 75.50 53 P **P** **11 11 07.4 +0.9**
comp=Z,3.4nm,0.8s,baz=292,slow=5.5,SNR=26
H17A Grant Village 76.73 45 *e*P **P** **11 11 16.1 +2.7**
comp=Z,7.8nm,0.9s
IMW Indian Meadow 76.82 45 *e*P **P** **11 11 15.6 +1.6**
comp=Z,4.7nm,0.9s
MOOW Moose Ponds 77.03 45 *e*P **P** **11 11 15.9 +0.9**
comp=Z,1.3nm,1.9s
R11A Troy Canyon, C 77.30 52 *e*P **P** **11 11 17.5 +0.9**
comp=Z,5.0nm,1.1s
BGU Big Grassy Mou 77.37 49 *e*P **P** **11 11 17.0 0.0**
comp=Z,4.9nm,1.2s
DUG Dugway, Tooele 77.94 49 *e*P **P** **11 11 20.1 0.0**
DUG pmax pmax
comp=Z,7.0nm,1.0s
DUG Dugway, Tooele 77.94 49 *e*P **P** **11 11 20.1 0.0**
comp=Z,6.8nm,1.0s
PSUT Ping Spring 78.29 51 *e*P **P** **11 11 22.7 +0.6**
comp=Z,3.3nm,1.0s
BW06 Boulder Array 78.31 45 *e*P **P** **11 11 22.1 -0.2**
PD31 Pinedale Array 78.31 45 *e*P **P** **11 11 21.4 -0.9**
PDAR Pinedale Array 78.31 45 P **P** **11 11 22.4 +0.1**
comp=Z,1.8nm,0.6s,baz=269,slow=1.8,SNR=21
NLU North Lily Min 78.54 49 *e*P **P** **11 11 24.4 +0.9**
comp=Z,3.7nm,1.0s
BUR08 Bucovina Ar. S 79.31 322 *e*P **P** **11 11 27.8 +0.3**
MSU Marysvale 79.35 50 *e*P **P** **11 11 28.8 +0.8**
MSU Marysvale 79.35 50 *e*P **P** **11 11 28.8 +0.8**
LCMT Little Creek M 79.58 52 *e*P **P** **11 11 30.5 +1.2**
comp=Z,4.7nm,0.9s
MTPU Mount Pierson 79.63 50 *e*P **P** **11 11 30.9 +1.2**
comp=Z,3.3nm,0.9s
BR131 Keskin Array S 79.76 312 *e*P **P** **11 11 30.1 0.0**
BRTR Keskin Array B 79.76 312 P **P** **11 11 30.7 +0.6**
comp=Z,1.8nm,0.7s,baz=91,slow=3.1,SNR=8.0
KNB Kanab 79.85 52 *e*P **P** **11 11 31.6 +0.9**
KNB pmax pmax
comp=Z,6.0nm,0.9s
KNB Kanab 79.85 52 *e*P **P** **11 11 31.6 +0.9**
comp=Z,5.5nm,0.9s
SRU San Rafael Swe 80.00 49 *e*P **P** **11 11 32.3 +0.8**
SRU pmax pmax
comp=Z,7.0nm,0.8s
SRU San Rafael Swe 80.00 49 *e*P **P** **11 11 32.3 +0.8**
comp=Z,7.3nm,0.8s
BR231 Keskin MP Arra 80.20 312 *e*P **P** **11 11 31.4 -1.0**
ULM Lac du Bonnet 80.33 33 P **P** **11 11 33.0 +0.2**
comp=Z,1.3nm,0.5s,baz=312,slow=10.0,SNR=4.0
ULM Lac du Bonnet 80.33 33 P **P** **11 11 33.0 +0.2**
ULM pmax pmax
comp=Z,1.0nm,0.5s
N23A Red Feather La 81.59 45 *e*P **P** **11 11 41.0 +1.0**
comp=Z,7.7nm,1.1s
BRG Berggiesshubel 82.13 330 *e*P **P** **11 11 42.1 -0.2**
comp=Z,2.4nm,0.7s
BRG *e* 11 11 59.1
comp=Z,3.6nm,1.1s
CLL Collm 82.18 330 *e*P **P** **11 11 41.0 -1.6**
comp=Z,7.0nm,1.2s
CLL *i* Pmax 11 11 42.4
comp=Z,7.0nm,1.2s
CLL Collm 82.18 330 *e*P **P** **11 11 41.0 -1.6**
CLL pmax pmax
comp=Z,7.0nm,1.2s
X16A Lo Mia Camp, P 82.33 53 *e*P **P** **11 11 45.1 +1.2**
MVCO Mesa Verde 82.44 49 *e*P **P** **11 11 45.1 +0.5**
comp=Z,3.5nm,0.9s
GERES GERESS Array B 83.78 328 P **P** **11 11 49.8 -1.3**
comp=Z,0.6nm,0.6s,baz=21,slow=5.7,SNR=5.8
GEA0 GERESS Array S 83.79 328 *e*P **P** **11 11 50.4 -0.7**
TUC Tucson 84.07 54 *e*P **P** **11 11 53.6 +0.7**
TUC pmax pmax
comp=Z,4.0nm,1.0s
TUC Tucson 84.07 54 *e*P **P** **11 11 53.6 +0.7**
comp=Z,4.1nm,1.0s
ESK Eskdalemuir 84.29 341 *i* P P 11 11 46.8 -6.6
T25A Trinidad 84.96 47 *e*P **P** **11 11 58.0 +0.5**
comp=Z,6.3nm,1.1s
ANMO Albuquerque 85.16 50 *ce*P **P** **11 11 58.2 -0.2**
ANMO pmax pmax
comp=Z,3.0nm,1.2s
ANMO Albuquerque 85.16 50 *e*P **P** **11 11 59.1 +0.7**
comp=Z,2.1nm,0.9s
319A Douglas 85.65 54 *e*P **P** **11 12 01.7 +0.8**
TX31 Lajitas Ar. Si 90.64 53 *e*P **P** **11 12 24.8 0.0**
TXAR Lajitas Array 90.65 53 P **P** **11 12 25.1 +0.3**
comp=Z,1.6nm,0.8s,baz=296,slow=3.9,SNR=18
NNA Nana 137.91 65 *i* PKIKP **PKPdf** **11 18 48.6 +1.7**
LPAZ La Paz 147.07 61 PKPbc **PKPbc** **11 19 05.8 -0.2**
comp=Z,3.7nm,0.6s,baz=313,slow=2.3,SNR=19
SIV San Ignacio 151.64 52 PKPbc **PKPbc** **11 19 16.6 -0.1**
comp=Z,8.4nm,0.8s,baz=265,slow=1.6,SNR=12
SIV PKPab **PKPab** **11 19 26.4 +1.1**
comp=Z,4.1nm,0.8s,baz=38,slow=2.1,SNR=4.0

*IDC **23** 11:07:26.6±1.3, 40°.73S×174°.24E, h52km±14km, mb3.8/3, mb1 4.1/5, mb1mx3.8/28, mbtmp4.1/5, ML3.9/2, Error ellipse: s-maj=28.8km s-min=8.4km az=131.0*
*ISCJB **23** 11:07:27.3±0.3, 40°.76S±0°.02×174°.26E±0°.04, h110km±4km, mb4.1/3, Error ellipse: s-maj=5.2km s-min=2.7km az=32.1*
*WEL **23** 11:07:30.6±0.1, 40°.69S×174°.24E, h71km±1km, ML4.3/21, Error ellipse: s-maj=0.8km s-min=0.6km az=90.0*
WEL Felt from Waikato to Nelson, maximum reported intensity MM 5.
*NEIC **23** 11:07:30.5, 40°.70S×174°.23E, h73km, ML4.3(WEL), After WEL.*
NEIC Felt from Wanganui to Nelson.
ISC 23 11:07:29.3±0.8, 40°.72S±0°.03×174°.22E±0°.03, h83km±5km, n263,σ1$03/271, mb4.3/3, 42C-19D, Cook Strait

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
DUWZ	**D'Urville Isla**	**0.24**	**250**	PN	**Pn**		**11 07 41.0**	**-0.8**
DUWZ				SN	**Sn**		**11 07 48.7**	**-2.2**
DUWZ	**D'Urville Isla**	**0.24**	**250**	Pn	**Pn**		**11 07 41.0**	**-0.8**
DUWZ				Sn	**Sn**		**11 07 48.7**	**-2.2**
TCW	**Tory Channel**	**0.49**	**175**	⇑PN	**Pn**		**11 07 43.9**	**+0.5**
TCW				SN	**Sn**		**11 07 53.1**	**-0.6**
TCW				AML	AML		11 07 53.9	
TCW	**Tory Channel**	**0.49**	**175**	Pn	**Pn**		**11 07 43.9**	**+0.5**
TCW				Sn	**Sn**		**11 07 53.1**	**-0.6**
KIW	**Kapiti Island**	**0.54**	**105**	PN	**Pn**		**11 07 44.0**	**+0.3**
KIW				SN	**Sn**		**11 07 53.7**	**-0.8**
KIW				AML	AML		11 07 54.6	
KIW	**Kapiti Island**	**0.54**	**105**	Pn	**Pn**		**11 07 44.0**	**+0.3**
KIW				Sn	**Sn**		**11 07 53.7**	**-0.8**
SNZO	**South Karori**	**0.69**	**148**	*e*Pn	**Pn**		**11 07 46.1**	**+0.9**
SNZO				*e*Sn	**Sn**		**11 07 57.3**	**+0.4**
WEL	**Wellington**	**0.70**	**144**	⇓PN	**Pn**		**11 07 46.1**	**+0.9**
WEL				SN	**Sn**		**11 07 57.2**	**+0.1**
WEL	**Wellington**	**0.70**	**144**	Pn	**Pn**		**11 07 46.1**	**+0.9**
OGWZ	**Otaki Gorge**	**0.73**	**98**	⇓PN	**Pn**		**11 07 46.1**	**+0.6**
OGWZ	**Otaki Gorge**	**0.73**	**98**	Pn	**Pn**		**11 07 46.1**	**+0.6**
TUWZ	**Tuamarina**	**0.74**	**196**	⇑PN	**Pn**		**11 07 45.9**	**+0.3**
TUWZ				AML	AML		11 07 59.9	
TUWZ				AML	AML		11 08 00.1	
TUWZ	**Tuamarina**	**0.74**	**196**	Pn	**Pn**		**11 07 46.0**	**+0.3**
CAW	**Cannon Point**	**0.75**	**122**	⇓PN	**Pn**		**11 07 46.4**	**+0.7**
CAW				AML	AML		11 08 00.4	
CAW				AML	AML		11 08 02.0	
CAW	**Cannon Point**	**0.75**	**122**	Pn	**Pn**		**11 07 46.5**	**+0.7**
NNZ	**Nelson**	**0.81**	**232**	⇓PN	**Pn**		**11 07 46.4**	**0.0**
NNZ	**Nelson**	**0.81**	**232**	Pn	**Pn**		**11 07 46.4**	**0.0**
BHW	**Baring Head**	**0.85**	**145**	PN	**Pn**		**11 07 47.4**	**+0.7**
BHW				AML	AML		11 08 03.8	
BHW				AML	AML		11 08 04.7	
BHW	**Baring Head**	**0.85**	**145**	Pn	**Pn**		**11 07 47.5**	**+0.7**
OHWZ	**Ohakea**	**0.98**	**59**	⇑PN	**Pn**		**11 07 49.3**	**+1.0**
HOWZ	**Holdsworth Sta**	**1.00**	**101**	⇓PN	**Pn**		**11 07 48.9**	**+0.4**
HOWZ	**Holdsworth Sta**	**1.00**	**101**	Pn	**Pn**		**11 07 49.0**	**+0.4**
BSWZ	**Blackbirch Sta**	**1.03**	**195**	⇑PN	**Pn**		**11 07 50.0**	**+1.1**
BSWZ				AML	AML		11 08 07.8	
BSWZ				AML	AML		11 08 10.6	
BSWZ	**Blackbirch Sta**	**1.03**	**195**	Pn	**Pn**		**11 07 50.0**	**+1.1**
CMWZ	**Cape Campbell**	**1.03**	**180**	PN	**Pn**		**11 07 50.5**	**+1.6**
CMWZ				AML	AML		11 08 11.3	
CMWZ				AML	AML		11 08 16.0	
CMWZ	**Cape Campbell**	**1.03**	**180**	Pn	**Pn**		**11 07 50.5**	**+1.6**
MRZ	**Mangatainoka R**	**1.03**	**87**	⇓PN	**Pn**		**11 07 49.2**	**+0.3**
MRZ	**Mangatainoka R**	**1.03**	**87**	Pn	**Pn**		**11 07 49.2**	**+0.3**
MSWZ	**Moikau Station**	**1.04**	**132**	⇑PN	**Pn**		**11 07 49.8**	**+0.7**
MSWZ				AML	AML		11 08 10.6	
MSWZ				AML	AML		11 08 11.3	
MSWZ	**Moikau Station**	**1.04**	**132**	Pn	**Pn**		**11 07 49.8**	**+0.7**
MTW	**Mount Morrison**	**1.06**	**115**	⇓PN	**Pn**		**11 07 49.7**	**+0.4**
MTW				AML	AML		11 08 10.5	
MTW				AML	AML		11 08 11.2	
MTW	**Mount Morrison**	**1.06**	**115**	Pn	**Pn**		**11 07 49.8**	**+0.4**
PAWZ	**Paruwai Farm**	**1.13**	**126**	PN	**Pn**		**11 07 50.6**	**+0.5**
PAWZ				AML	AML		11 08 06.0	
PAWZ				AML	AML		11 08 12.3	
PAWZ	**Paruwai Farm**	**1.13**	**126**	Pn	**Pn**		**11 07 50.6**	**+0.5**
WAZ	**Wanganui**	**1.13**	**31**	PN	**Pn**		**11 07 50.7**	**+0.6**
WAZ	**Wanganui**	**1.13**	**31**	Pn	**Pn**		**11 07 50.7**	**+0.6**
PLWZ	**Palliser**	**1.15**	**138**	PN	**Pn**		**11 07 51.0**	**+0.6**
PLWZ	**Palliser**	**1.15**	**138**	Pn	**Pn**		**11 07 51.0**	**+0.6**
POWZ	**Post Office Ro**	**1.22**	**75**	PN	**Pn**		**11 07 51.5**	**+0.2**
POWZ	**Post Office Ro**	**1.22**	**75**	Pn	**Pn**		**11 07 51.5**	**+0.2**
LREZ	**Lake Rotokare**	**1.27**	**6**	⇑PN	**Pn**		**11 07 52.5**	**+0.7**
TIWZ	**Tintock**	**1.27**	**93**	⇓PN	**Pn**		**11 07 52.0**	**+0.2**
TIWZ				AML	AML		11 08 10.0	
TIWZ				AML	AML		11 08 16.9	
TIWZ	**Tintock**	**1.27**	**93**	Pn	**Pn**		**11 07 52.0**	**+0.2**
QRZ	**Quartz Range**	**1.29**	**265**	PN	**Pn**		**11 07 51.8**	**-0.3**
QRZ	**Quartz Range**	**1.29**	**265**	Pn	**Pn**		**11 07 51.8**	**-0.3**
TRWZ	**Traveller**	**1.30**	**122**	PN	**Pn**		**11 07 52.7**	**+0.5**
TRWZ				AML	AML		11 08 20.0	
TRWZ				AML	AML		11 08 31.6	
TRWZ	**Traveller**	**1.30**	**122**	Pn	**Pn**		**11 07 52.7**	**+0.5**
TMWZ	**Te Maipa**	**1.32**	**108**	PN	**Pn**		**11 07 52.9**	**+0.3**
TMWZ	**Te Maipa**	**1.32**	**108**	Pn	**Pn**		**11 07 52.9**	**+0.3**
NMEZ	**Namu Road**	**1.33**	**348**	⇑PN	**Pn**		**11 07 52.7**	**+0.1**
NMEZ	**Namu Road**	**1.33**	**348**	Pn	**Pn**		**11 07 52.7**	**+0.1**
PRWZ	**Pori Road**	**1.34**	**84**	⇓PN	**Pn**		**11 07 53.1**	**+0.3**
PRWZ	**Pori Road**	**1.34**	**84**	Pn	**Pn**		**11 07 53.1**	**+0.3**
PREZ	**Palmer Road**	**1.38**	**358**	⇑PN	**Pn**		**11 07 53.7**	**+0.5**
PREZ	**Palmer Road**	**1.38**	**358**	Pn	**Pn**		**11 07 53.7**	**+0.5**
KHEZ	**Kahui Hut**	**1.43**	**354**	⇑PN	**Pn**		**11 07 54.2**	**+0.2**
KHEZ	**Kahui Hut**	**1.43**	**354**	Pn	**Pn**		**11 07 54.2**	**+0.2**
THZ	**Tophouse**	**1.44**	**223**	⇑PN	**Pn**		**11 07 55.0**	**+0.9**
THZ	**Tophouse**	**1.44**	**223**	⇑Pn	**Pn**		**11 07 55.0**	**+0.9**
NEZ	**North Egmont**	**1.45**	**356**	⇑PN	**Pn**		**11 07 54.2**	**-0.1**
NEZ	**North Egmont**	**1.45**	**356**	Pn	**Pn**		**11 07 54.2**	**-0.1**
NWEZ	**Newall Road**	**1.47**	**349**	⇑PN	**Pn**		**11 07 54.6**	**+0.2**
NWEZ	**Newall Road**	**1.47**	**349**	Pn	**Pn**		**11 07 54.6**	**+0.2**
TSZ	**Takapari Road**	**1.48**	**64**	Pn	**Pn**		**11 07 54.5**	**-0.1**
TSZ				AML	AML		11 08 15.8	
TSZ				AML	AML		11 08 37.4	
TSZ	**Takapari Road**	**1.48**	**64**	Pn	**Pn**		**11 07 54.5**	**-0.1**
CPWZ	**Castlepoint**	**1.51**	**98**	PN	**Pn**		**11 07 55.5**	**+0.6**
CPWZ	**Castlepoint**	**1.51**	**98**	Pn	**Pn**		**11 07 55.5**	**+0.6**
DREZ	**Durham Road**	**1.53**	**359**	⇑PN	**Pn**		**11 07 55.6**	**+0.4**
DREZ	**Durham Road**	**1.53**	**359**	Pn	**Pn**		**11 07 55.6**	**+0.4**
PKE	**Pukeiti**	**1.53**	**353**	PN	**Pn**		**11 07 55.4**	**+0.1**
PKE	**Pukeiti**	**1.53**	**353**	Pn	**Pn**		**11 07 55.4**	**+0.1**
BFZ	**Birch Farm**	**1.54**	**89**	PN	**Pn**		**11 07 55.1**	**-0.2**
BFZ				AML	AML		11 08 14.8	
BFZ				AML	AML		11 08 15.0	
BFZ				AML	AML		11 08 16.1	
BFZ				AML	AML		11 08 24.8	
BFZ	**Birch Farm**	**1.54**	**89**	Pn	**Pn**		**11 07 55.1**	**-0.2**
DVHZ	**Dannevirke**	**1.54**	**75**	PN	**Pn**		**11 07 55.1**	**-0.2**
DVHZ	**Dannevirke**	**1.54**	**75**	Pn	**Pn**		**11 07 55.1**	**-0.2**
MTVZ	**Mangateitei**	**1.64**	**36**	⇓PN	**Pn**		**11 07 57.3**	**+0.6**
MTVZ	**Mangateitei**	**1.64**	**36**	Pn	**Pn**		**11 07 57.3**	**+0.6**
MHEZ	**Mangahewa**	**1.64**	**3**	⇑PN	**Pn**		**11 07 57.3**	**+0.7**
MHEZ	**Mangahewa**	**1.64**	**3**	Pn	**Pn**		**11 07 57.3**	**+0.7**
VRZ	**Vera Road**	**1.65**	**15**	PN	**Pn**		**11 07 56.9**	**+0.2**
VRZ	**Vera Road**	**1.65**	**15**	Pn	**Pn**		**11 07 56.9**	**+0.2**
PKVZ	**Pokaka**	**1.67**	**32**	⇑PN	**Pn**		**11 07 57.5**	**+0.5**
PKVZ	**Pokaka**	**1.67**	**32**	Pn	**Pn**		**11 07 57.5**	**+0.5**
PNHZ	**Pukenui**	**1.71**	**63**	PN	**Pn**		**11 07 57.4**	**-0.2**
PNHZ	**Pukenui**	**1.71**	**63**	Pn	**Pn**		**11 07 57.4**	**-0.2**
ANWZ	**Angora Road**	**1.73**	**82**	PN	**Pn**		**11 07 57.6**	**-0.2**
TRVZ	**Turoa**	**1.75**	**36**

TWVZ	Taurewa	1.89	30	PN	Pn	11 08 00.1	+0.1		
TWVZ	Taurewa	1.89	30	Pn	Pn	11 08 00.1	+0.1		
PRHZ	Porangahau	1.90	77	PN	Pn	11 08 00.2	+0.3		
PRHZ	Porangahau	1.90	77	Pn	Pn	11 08 00.2	+0.3		
OTVZ	Oturere	1.91	36	⇑PN	Pn	11 08 00.7	+0.4		
OTVZ	Oturere	1.91	36	Pn	Pn	11 08 00.7	+0.4		
WTVZ	West Tongariro	1.92	34	PN	Pn	11 08 00.5	+0.2		
WTVZ	West Tongariro	1.92	34	Pn	Pn	11 08 00.5	+0.2		
KRVZ	Karewarewa	1.96	34	PN	Pn	11 08 00.9	+0.1		
KRVZ	Karewarewa	1.96	34	Pn	Pn	11 08 00.9	+0.1		
KRHZ	Kereru	1.96	58	⇑PN	Pn	11 08 00.5	-0.3		
KATZ	Kakaramea	2.08	34	PN	Pn	11 08 02.6	+0.2		
KATZ	Kakaramea	2.08	34	Pn	Pn	11 08 02.6	+0.2		
DSZ	Denniston Nort	2.09	240	⇑PN	Pn	11 08 03.0	+0.4		
DSZ	Denniston Nort	2.09	240	Pn	Pn	11 08 03.0	+0.4		
KWHZ	Kaweka Forest	2.13	53	⇑PN	Pn	11 08 02.7	-0.4		
PXZ	Pawanui	2.13	72	PN	Pn	11 08 02.8	-0.3		
PXZ				AML	AML	11 08 29.4			
PXZ				AML	AML	11 08 29.8			
PXZ				AML	AML	11 08 29.9			
PXZ				AML	AML	11 08 29.9			
PXZ	Pawanui	2.13	72	Pn	Pn	11 08 02.8	-0.3		
RITZ	Rihia Road	2.15	36	⇓PN	Pn	11 08 03.7	+0.4		
RITZ	Rihia Road	2.15	36	Pn	Pn	11 08 03.7	+0.4		
RATZ	Rangitukua	2.20	33	⇑PN	Pn	11 08 04.5	+0.5		
RATZ	Rangitukua	2.20	33	Pn	Pn	11 08 04.5	+0.5		
KAHZ	Kahuranaki	2.23	66	PN	Pn	11 08 04.2	-0.2		
KAHZ	Kahuranaki	2.23	66	Pn	Pn	11 08 04.2	-0.2		
HIZ	Hauiti	2.26	13	PN	Pn	11 08 05.0	+0.2		
HIZ	Hauiti	2.26	13	Pn	Pn	11 08 05.0	+0.2		
MCHZ	McNeill Hill	2.29	57	⇑PN	Pn	11 08 04.9	-0.3		
MCHZ	McNeill Hill	2.29	57	Pn	Pn	11 08 04.9	-0.3		
WATZ	Wairara	2.32	31	PN	Pn	11 08 06.1	+0.5		
WATZ	Wairara	2.32	31	Pn	Pn	11 08 06.1	+0.5		
HATZ	Hinemaiaia	2.33	39	PN	Pn	11 08 05.1	-0.6		
HATZ	Hinemaiaia	2.33	39	Pn	Pn	11 08 05.1	-0.6		
BKZ	Black Stump Fm	2.33	49	⇑PN	Pn	11 08 05.3	-0.6		
BKZ				AML	AML	11 08 59.7			
BKZ				AML	AML	11 08 59.7			
BKZ	Black Stump Fm	2.33	49	Pn	Pn	11 08 05.3	-0.6		
WHTZ	Whakaora	2.45	34	PN	Pn	11 08 07.9	+0.5		
WHTZ	Whakaora	2.45	34	Pn	Pn	11 08 07.9	+0.5		
LTZ	Lake Taylor	2.53	215	PN	Pn	11 08 08.7	+0.3		
LTZ	Lake Taylor	2.53	215	Pn	Pn	11 08 08.7	+0.3		
MRHZ	Matea Rd	2.53	43	⇑PN	Pn	11 08 07.4	-1.1		
NMHZ	Naumai	2.56	52	Pn	Pn	11 08 08.4	-0.5		
ARHZ	Aropaoanui	2.58	57	PN	Pn	11 08 08.2	-0.8		
ARHZ	Aropaoanui	2.58	57	Pn	Pn	11 08 08.2	-0.8		
TLZ	Tolley Road	2.59	24	⇑PN	Pn	11 08 09.5	+0.2		
TLZ	Tolley Road	2.59	24	Pn	Pn	11 08 09.5	+0.2		
WPRZ	Whakapapatarin	2.66	35	⇑PN	Pn	11 08 09.7	-0.4		
WPRZ	Whakapapatarin	2.66	35	Pn	Pn	11 08 09.7	-0.4		
ALRZ	Allen Road	2.71	38	PN	Pn	11 08 10.4	-0.4		
ALRZ	Allen Road	2.71	38	Pn	Pn	11 08 10.4	-0.4		
HRRZ	Handcock Road	2.82	35	PN	Pn	11 08 12.0	-0.3		
HRRZ	Handcock Road	2.82	35	Pn	Pn	11 08 12.0	-0.3		
WHHZ	Waihua	2.84	56	⇓PN	Pn	11 08 11.5	-1.1		
RAHZ	Arahi	2.85	52	⇓PN	Pn	11 08 11.5	-1.2		
RAHZ	Arahi	2.85	52	Pn	Pn	11 08 11.5	-1.2		
INZ	Inchbonnie	2.89	225	⇑PN	Pn	11 08 14.0	+0.8		
RRRZ	Republican Roa	2.96	37	PN	Pn	11 08 13.5	-0.8		
RRRZ	Republican Roa	2.96	37	Pn	Pn	11 08 13.5	-0.8		
MUGZ	Murupara	2.98	42	⇓PN	Pn	11 08 12.8	-1.7		
TARZ	Mount Tarawera	3.04	36	PN	Pn	11 08 14.9	-0.5		
TARZ	Mount Tarawera	3.04	36	Pn	Pn	11 08 14.9	-0.5		
OXZ	Oxford	3.07	211	PN	Pn	11 08 14.8	-0.8		
SNGZ	Shannon Statio	3.08	52	PN	Pn	11 08 14.3	-1.6		
SNGZ	Shannon Statio	3.08	52	Pn	Pn	11 08 14.3	-1.6		
CRLZ	Canterbury Las	3.09	202	⇓PN	Pn	11 08 15.1	-0.8		
CRLZ	Canterbury Las	3.09	202	Pn	Pn	11 08 15.1	-0.8		
TOZ	Tahuroa Road	3.15	19	⇑PN	Pn	11 08 17.0	+0.4		
TOZ	Tahuroa Road	3.15	19	Pn	Pn	11 08 17.0	+0.4		
KNZ	Kokohu	3.15	59	⇑PN	Pn	11 08 14.8	-2.0		
KNZ				AML	AML	11 08 52.3			
KNZ				AML	AML	11 08 54.0			
KNZ	Kokohu	3.15	59	Pn	Pn	11 08 14.8	-2.0		
MQZ	McQueen's Vall	3.20	201	⇑PN	Pn	11 08 16.2	-1.2		
MQZ	McQueen's Vall	3.20	201	Pn	Pn	11 08 16.2	-1.2		
MHGZ	Mahia Peninsul	3.24	62	PN	Pn	11 08 16.3	-1.6		
MHGZ	Mahia Peninsul	3.24	62	Pn	Pn	11 08 16.3	-1.6		
RAGZ	Rawiri	3.32	49	PN	Pn	11 08 17.6	-1.5		
RAGZ	Rawiri	3.32	49	Pn	Pn	11 08 17.6	-1.5		
URZ	Urewera	3.32	43	P	Pn	11 08 16.9	-2.1		
	18nm,0.3s,baz=259,slow=4.2,SNR=226								
URZ				S	Sn	11 08 54.8	-2.7		
	69nm,0.3s,baz=82,slow=16,SNR=21								
URZ	Urewera	3.32	43	PN	Pn	11 08 16.9	-2.1		
URZ				AML	AML	11 08 55.9			
URZ				AML	AML	11 08 56.4			
PRGZ	Paritu Road	3.34	59	PN	Pn	11 08 17.3	-2.1		
PRGZ	Paritu Road	3.34	59	Pn	Pn	11 08 17.3	-2.1		
RIGZ	Rimuhau	3.39	55	PN	Pn	11 08 18.1	-2.0		
OPRZ	Ohinepanea	3.39	33	PN	Pn	11 08 19.2	-0.8		
OPRZ	Ohinepanea	3.39	33	Pn	Pn	11 08 19.2	-0.8		
MWZ	Matawai	3.49	48	PN	Pn	11 08 19.2	-2.3		
MWZ				AML	AML	11 09 01.1			
MWZ				AML	AML	11 09 01.1			
MWZ				AML	AML	11 09 02.3			
MWZ				AML	AML	11 09 04.2			
MWZ	Matawai	3.49	48	Pn	Pn	11 08 19.2	-2.3		
WVZ	Waitaha Valley	3.51	227	⇑PN	Pn	11 08 21.7	+0.1		
WVZ	Waitaha Valley	3.51	227	Pn	Pn	11 08 21.7	+0.1		
TKGZ	Te Karaka	3.61	52	⇑PN	Pn	11 08 21.0	-2.0		
TKGZ	Te Karaka	3.61	52	Pn	Pn	11 08 21.0	-2.0		
KBAZ	Karaka Road Bo	3.66	8	PN	Pn	11 08 24.2	+0.6		
KBAZ	Karaka Road Bo	3.66	8	Pn	Pn	11 08 24.2	+0.6		
AWAZ	Awhitu Peninsu	3.66	5	⇑PN	Pn	11 08 24.9	+1.1		
MKAZ	Moumakai	3.68	12	⇑PN	Pn	11 08 24.2	+0.2		
MKAZ	Moumakai	3.68	12	Pn	Pn	11 08 24.2	+0.2		
MYRZ	Mayor Island	3.78	25	PN	Pn	11 08 25.8	+0.5		
WTAZ	Waiatarua	3.79	4	PN	Pn	11 08 25.9	+0.4		
WTAZ	Waiatarua	3.79	4	Pn	Pn	11 08 25.9	+0.4		
ETAZ	East Tamaki Re	3.80	9	⇑PN	Pn	11 08 25.8	+0.3		
ETAZ	East Tamaki Re	3.80	9	Pn	Pn	11 08 25.8	+0.3		
RPZ	Rata Peaks	3.81	217	P	Pn	11 08 24.5	-1.1		
	7.6nm,0.3s,baz=222,slow=1.7,SNR=57								
RPZ				S	Sn	11 09 05.6	-3.6		
	32nm,0.3s,baz=213,slow=22,SNR=12								
RPZ	Rata Peaks	3.81	217	PN	Pn	11 08 24.5	-1.1		
TWGZ	Tauwhareparae	3.86	50	PN	Pn	11 08 24.5	-1.9		
TWGZ	Tauwhareparae	3.86	50	Pn	Pn	11 08 24.5	-1.9		
HBAZ	Herne Bay Bore	3.88	6	PN	Pn	11 08 27.1	+0.4		
HBAZ	Herne Bay Bore	3.88	6	Pn	Pn	11 08 27.1	+0.4		
RVAZ	Riverhead Bore	3.95	4	PN	Pn	11 08 27.7	+0.1		
RVAZ	Riverhead Bore	3.95	4	Pn	Pn	11 08 27.8	+0.1		
MTAZ	Motutapu	3.96	8	PN	Pn	11 08 28.0	+0.2		
MTAZ	Motutapu	3.96	8	Pn	Pn	11 08 28.0	+0.2		
WIAZ	Waiheke Island	3.98	11	⇑PN	Pn	11 08 28.4	+0.4		
HAZ	Te Kaha	4.05	44	⇑PN	Pn	11 08 25.7	-3.2		
PUZ	Puketiti	4.09	51	PN	Pn	11 08 26.8	-2.8		
PUZ				AML	AML	11 09 15.4			
PUZ				AML	AML	11 09 15.7			
PUZ	Puketiti	4.09	51	Pn	Pn	11 08 26.8	-2.8		
PKGZ	Pakihiroa	4.11	48	PN	Pn	11 08 27.6	-2.3		
KUZ	Kuaotunu	4.14	17	PN	Pn	11 08 29.8	-0.3		
KUZ	Kuaotunu	4.14	17	Pn	Pn	11 08 29.8	-0.3		
ABAZ	Army Bay	4.14	7	PN	Pn	11 08 30.5	+0.3		
ABAZ	Army Bay	4.14	7	Pn	Pn	11 08 30.5	+0.3		
FOZ	Fox Glacier	4.32	228	PN	Pn	11 08 32.0	-0.5		
FOZ	Fox Glacier	4.32	228	Pn	Pn	11 08 32.0	-0.5		
WMGZ	Waiomatatini S	4.36	50	⇓PN	Pn	11 08 30.5	-2.6		
WMGZ	Waiomatatini S	4.36	50	Pn	Pn	11 08 30.5	-2.6		
MXZ	Matakaoa Point	4.47	47	⇓PN	Pn	11 08 32.4	-2.3		
MXZ				AML	AML	11 08 42.4			
MXZ				AML	AML	11 09 25.8			
MXZ	Matakaoa Point	4.47	47	Pn	Pn	11 08 32.4	-2.3		
GRZ	Great Barrier	4.57	13	PN	Pn	11 08 35.9	-0.1		
LBZ	Lake Benmore	4.72	218	PN	Pn	11 08 36.5	-1.6		
LBZ	Lake Benmore	4.72	218	Pn	Pn	11 08 36.5	-1.6		
WCZ	Waipu Caves	4.77	1	PN	Pn	11 08 38.6	-0.2		
WCZ	Waipu Caves	4.77	1	Pn	Pn	11 08 38.6	-0.2		
ODZ	Otahua Downs	5.06	210	PN	Pn	11 08 41.2	-1.4		
ODZ	Otahua Downs	5.06	210	Pn	Pn	11 08 41.2	-1.4		
JCZ	Jackson Bay	5.24	228	⇓PN	Pn	11 08 44.2	-0.9		
JCZ	Jackson Bay	5.24	228	Pn	Pn	11 08 44.2	-0.9		
OUZ	Omahuta	5.51	355	⇓PN	Pn	11 08 49.2	+0.3		
OUZ	Omahuta	5.51	355	Pn	Pn	11 08 49.2	+0.3		
WKZ	Wanaka	5.61	221	PN	Pn	11 08 47.1	-3.1		
WKZ	Wanaka	5.61	221	Pn	Pn	11 08 47.1	-3.1		
EAZ	Earnscleugh	5.77	217	PN	Pn	11 08 49.9	-2.5		
EAZ	Earnscleugh	5.77	217	Pn	Pn	11 08 49.9	-2.5		
HHSZ	Highcliff Hill	5.80	206	PN	Pn	11 08 51.7	-1.1		
HHSZ	Highcliff Hill	5.80	206	Pn	Pn	11 08 51.7	-1.1		
MSZ	Milford Sound	6.09	227	PN	Pn	11 08 56.2	-0.5		
MSZ	Milford Sound	6.09	227	Pn	Pn	11 08 56.2	-0.5		
TUZ	Tuapeka	6.21	211	PN	Pn	11 08 57.1	-1.2		
TUZ	Tuapeka	6.21	211	Pn	Pn	11 08 57.1	-1.2		
MLZ	Mavora Lakes	6.45	222	PN	Pn	11 08 58.6	-3.0		
MLZ	Mavora Lakes	6.45	222	Pn	Pn	11 08 58.6	-3.0		
SYZ	Scrubby Hill	6.88	211	PN	Pn	11 09 06.4	-1.1		
SYZ	Scrubby Hill	6.88	211	Pn	Pn	11 09 06.4	-1.1		
CTZ	Chatham Island	7.44	117	PN	Pn	11 09 15.5	+0.5		
CTZ	Chatham Island	7.44	117	Pn	Pn	11 09 15.5	+0.5		
APZ	The Paps	7.59	214	PN	Pn	11 09 14.8	-2.5		
APZ	The Paps	7.59	214	Pn	Pn	11 09 14.8	-2.5		
ASAR	Alice Springs	37.74	284	P	P	11 14 38.0	+0.7		
	0.8nm,0.4s,baz=118,slow=6.8,SNR=31								
ASAR				PcP	PcP	11 16 54.4	+1.7		
	0.3nm,0.4s,baz=122,slow=3.9,SNR=5.7								
WRA	Warramunga Arr	39.73	289	P	P	11 14 54.6	+0.8		
	2.0nm,0.5s,baz=126,slow=8.3,SNR=58								
MAW	Mawson	60.38	204	P	P	11 17 30.7	+1.4		
	1.6nm,0.6s,baz=124,slow=7.7,SNR=4.0								
YKA	Yellowknife Ar	117.49	30	PKP	PKPdf	11 26 04.2	-0.1		
	0.2nm,0.6s,baz=248,slow=1.6,SNR=9.1								
DBIC	Dimbokro	146.09	182	PKPbc	PKPab	11 27 01.7	+0.8		
	3.5nm,0.4s,baz=208,slow=1.9,SNR=12								
ARCES	ARCESS Array B	146.80	341	PKPbc	PKPbc	11 26 59.8	-0.9		
	5.0nm,0.9s,baz=46,slow=6.9,SNR=4.4								
BRTR	Keskin Array B	150.06	281	PKPbc	PKPbc	11 27 10.0	-0.2		
	0.4nm,0.5s,baz=160,slow=4.6,SNR=4.0								
FINES	FINESS Array B	151.66	328	PKPbc	PKPbc	11 27 13.0	0.0		
	0.9nm,0.7s,baz=46,slow=5.5,SNR=6.6								

NIED ***23*** *11:07:00,37.°00N×140.°70E, h8km, Mw4.0 Best double couple: M₀1.25000×10¹⁵ NP1:ϕs319.00000°,δ28.00000°, λ-104.00000°. NP2:ϕs154.00000°,δ63.00000°, λ-83.00000°.*

ISCJB ***23*** *11:07:39.6±0.5, 37.°04N±0.°02×140.°76E±0.°04, h17km±3km, mb4.1/26, Error ellipse: s-maj=5.7km s-min=3.4km az=29.1*

JMA ***23*** *11:07:39.9, 37.°05N×140.°66E, h6km±2km, M4.3 Broadband fault plane solution: P waves. NP1: ϕs142.00000°,δ55.00000°,λ-78.00000°. NP2: ϕs303.00000°,δ37.00000°,λ-106.00000°. Principal axes: T Plg9.0000°, Azm224.0000°; N Plg10.0000°, Azm316.0000°; P Plg77.0000°, Azm92.0000°;*

JMA Felt III J1.

IDC ***23*** *11:07:44.9±1.9, 37.°03N×140.°57E, h46km±18km, mb3.8/20, mb1 4.0/22, mb1mx3.9/47, mbtmp4.1/22, ML3.7/2 Error ellipse: s-maj=16.6km s-min=12.3km az=98.0*

NEIC ***23*** *11:07:45.1±0.7, 37.°02N×140.°66E, h49km±6km, mb4.3/8, Error ellipse: s-maj=8.5km s-min=5.8km az=122.0*

NEIC Recorded [3 JMA] in Fukushima.

ISC 23 11:07:39.8±0.9, 37.°02N±0.°03×140.°67E±0.°03, h8km±6km, n59, σ1s16/62, mb4.1/26, 8C, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
ONAJ	Iwakimizuishiy	0.13	53	⇑P		Pg	11 07 42.5	-0.2
ONAJ				S		Sg	11 07 44.5	-0.2
JFK	Kawauchi	0.38	25	⇑P		Pg	11 07 46.8	-0.5
JFK				S		Sg	11 07 52.0	-0.3
JHO	Hitachi	0.42	191	⇑P		Pg	11 07 48.4	+0.4
JHO				S		Sb	11 07 55.4	-0.6
JFT	Otama	0.56	332	⇑P		Pg	11 07 50.5	-0.2
JFT				S		Sg	11 07 58.0	0.0
JSB	Shiboa	0.60	265	⇑P		Pb	11 07 52.4	-0.2
JSB				S		Sb	11 08 00.8	-0.5
JMM	Marumori	0.85	7	⇑P		Pg	11 07 55.3	-0.8
JMM				S		Sg	11 08 05.9	-1.2
JFY	Yanaizu	0.86	297	⇑P		Pg	11 07 56.3	-0.1
JFY				S		Sg	11 08 07.2	-0.4
JYT	Yasato	0.88	206	⇑P		Pg	11 07 56.9	+0.1
JYT				S		Sb	11 08 08.9	-0.3
MJAR	Matsushiro Arr	2.03	257	P		Pn	11 08 15.4	+1.0
	62nm,0.3s,baz=71,slow=15,SNR=189							
MJAR				S		Sb	11 08 42.4	-0.1
	78nm,0.3s,baz=87,slow=27,SNR=28							
MAJO	Matsushiro	2.04	257	*e*Pn		Pb	11 08 15.9	-1.2
MAJO				*e*Sn		Sb	11 08 41.3	-1.2
MAT	Matsushiro	2.04	257	P		Pb	11 08 15.9	-1.1
MAT				S		Sb	11 08 43.5	+1.0
JHJ	Hachijo jima 2	3.96	191	P		Pn	11 08 43.2	+2.4
	13nm,0.3s,baz=76,slow=19,SNR=4.4							
JHJ				S		Sn	11 09 25.2	-2.3
	10nm,0.3s,baz=73,slow=19,SNR=2.2							
JHJ2	Mitsune	3.97	190	*e*Pn		Pn	11 08 43.5	+2.6
ERM	Erimo	5.34	20	*e*Pn		Pn	11 09 02.5	+2.7
ERM				*e*Sn		Sn	11 10 02.3	+0.9
ASAJ	Asahikawa	7.24	11	P		Pn	11 09 26.3	+0.5
	1.4nm,0.3s,baz=222,slow=15,SNR=11							
ASAJ	Asahikawa	7.24	11	*e*Pn		Pn	11 09 27.7	+1.9
ASAJ				*e*Sn		Sn	11 10 51.9	+3.8
JNU	Nakatsue	8.92	247	*e*Pn		Pn	11 09 51.5	+2.6
USRK	Ussuriysk Ar.	9.74	320	P		Pn	11 10 05.8	+5.7
	0.2nm,0.3s,baz=132,slow=13,SNR=15							
YSS	Yuzh-Sakhalins	10.04	8	*e*Pn		Pn	11 10 04.9	+0.6
KSRS	Korea Array	10.17	276	P		Pn	11 10 10.9	+4.9
	0.3nm,0.3s,baz=98,slow=13,SNR=8.7							
KSAR	Wonju Array Be	10.21	276	P		Pn	11 10 10.9	+4.4
KLR	Kul'dur	13.82	335	P		P	11 11 00.2	-4.1
	0.1nm,0.3s,baz=127,slow=9.5,SNR=2.8							
BJT	Baijiatuan	19.39	286	P		Pn	11 12 07.7	+0.5
	5.7nm,0.9s							
PETK	Petropavlovsk-	20.00	31	P		Pn	11 12 15.1	+0.7
	1.5nm,0.7s,baz=143,slow=14,SNR=4.7							
MA2	Magadan	23.49	13	P		P	11 12 50.4	+0.7
	3.8nm,0.6s,baz=237,slow=10,SNR=8.2							
ENH	Enshi	26.74	265	P		P	11 13 21.4	+1.5
	4.1nm,0.5s							
ULN	Ulaanbaatar	26.87	304	*e*P		P	11 13 20.6	-0.4
	1.2nm,0.5s							
SEY	Seymchan	26.92	12	P		P	11 13 22.0	+0.9
	2.7nm,0.9s,baz=228,slow=4.4,SNR=11							
SONM	Songino Array	27.30	304	P		P	11 13 24.8	0.0
	2.0nm,0.6s,baz=104,slow=9.0,SNR=11							
H11N2	WAKE ISLAND Hy	28.66	120	T		T	11 43 26.9	
	baz=313,slow=75,SNR=77							
H11N1	WAKE ISLAND Hy	28.66	120	T		T	11 43 26.9	
	baz=313,slow=75,SNR=114							
H11N3	WAKE ISLAND Hy	28.67	120	T		T	11 43 28.0	
	baz=313,slow=75,SNR=59							
H11S1	WAKE ISLAND Hy	29.36	122	T		T	11 44 18.8	
	baz=314,slow=75,SNR=51							
H11S3	WAKE ISLAND Hy	29.36	122	T		T	11 44 20.4	
	baz=314,slow=75,SNR=55							
H11S2	WAKE ISLAND Hy	29.37	122	T		T	11 44 20.3	
	baz=314,slow=75,SNR=30							
ZALV	Zalesovo Beam	41.48	312	P		P	11 15 25.8	-1.2
	1.6nm,0.5s,baz=111,slow=8.2,SNR=3.4							
MKAR	Makanchi Array	43.62	302	P		P	11 15 44.6	0.0
	1.4nm,0.6s,baz=88,slow=10,SNR=11							
ILAR	Eielson Array	49.82	32	P		P	11 16 33.2	+0.4
	1.2nm,0.8s,baz=281,slow=6.5,SNR=10							
BVAR	Borovoye Array	50.14	312	P		P	11 16 35.6	+0.2
	2.1nm,0.4s,baz=92,slow=8.7,SNR=9.2							
BRVK	Borovoye	50.20	312	*e*P		P	11 16 35.8	-0.1
	4.4nm,0.8s							
ARU	Arti	55.97	318	*e*P		P	11 17 18.0	-0.4
	4.6nm,0.8s							
WRAB	Tennant Creek	56.96	187	*e*P		P	11 17 25.6	-0.1
	8.3nm,1.0s							
WRA	Warramunga Arr	56.97	187	P		P	11 17 25.6	-0.2
	4.6nm,0.6s,baz=3.8,slow=7.3,SNR=49							
ABKAR	Akbulak array	57.49	310	*e*P		P	11 17 28.7	-0.5
	1.4nm,0.6s							
AKTO	Aktyubinsk	58.24	312	P		P	11 17 35.2	+0.7
	1.3nm,0.7s,baz=52,slow=21,SNR=7.3							
ASAR	Alice Springs	60.70	187	P		P	11 17 51.9	+0.2
	1.5nm,0.6s,baz=18,slow=6.3,SNR=26							
ARCES	ARCESS Array B	63.80	339	P		P	11 18 10.3	-1.7
	7.0nm,1.0s,baz=55,slow=8.0,SNR=3.4							
YKA	Yellowknife Ar	64.11	30	P		P	11 18 14.2	+0.2
	0.3nm,0.7s,baz=299,slow=7.0,SNR=8.5							
FINES	FINESS Array B	68.54	332	P		P	11 18 41.3	-1.2
	2.5nm,0.7s,baz=47,slow=8.4,SNR=8.7							
STKA	Stephens Creek	68.55	179	P		P	11 18 41.6	-1.2
	2.7nm,1.0s,baz=8.9,slow=5.7,SNR=4.2							
AKASG	Malin Array Be	73.94	322	P		P	11 19 14.4	-0.9
	1.2nm,0.6s,baz=50,slow=6.3,SNR=6.2							
NB2	NORSAR Subarra	73.96	337	P		P	11 19 14.6	-0.8
	comp=Z,1.6nm,0.8s,baz=40,slow=6.2							
NOA	NORSAR Array B	73.96	337	P		P	11 19 14.7	-0.7
	comp=Z,1.5nm,0.8s,baz=39,slow=5.8,SNR=5.4							
ELK	Elko	76.01	49	*e*P		P	11 19 27.2	-0.7
	comp=Z,1.7nm,0.4s							
PDAR	Pinedale Array	78.10	45	P		P	11 19 40.1	+0.6
	comp=Z,0.6nm,0.7s,baz=270,slow=2.7,SNR=6.6							
GERES	GERESS Array B	92.41	328	P		P	11 20 01.3	-1.1
	comp=Z,0.4nm,0.4s,baz=59,slow=5.1,SNR=4.2							
TXAR	Lajitas Array	90.60	52	P		P	11 20 42.4	-0.6
	comp=Z,0.6nm,0.8s,baz=296,slow=2.2,SNR=7.7							
H06S1	SOCORRO T	92.73	64	T		T	13 03 58.6	
	SNR=7.2							
LPAZ	La Paz	147.21	59	PKPbc		PKPbc	11 27 24.6	-0.2
	comp=Z,2.1nm,0.8s,baz=301,slow=0.6,SNR=8.9							

IDC 23 11:14:48.4±56.0, 16.°84S×177.°80W, h0km, mb3.8/3, mb1 3.9/3, mb1mx3.6/28, mbtmp3.8/3, Error ellipse: s-maj=1028.0km s-min=164.0km az=78.0, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
STKA	Stephens Creek	39.66	240	P		P	11 22 22.8	+0.6
	0.9nm,0.7s,baz=67,slow=13,SNR=4.3							
WRA	Warramunga Arr	45.41	258	P		P	11 23 09.1	-0.1
	0.2nm,0.4s,baz=95,slow=7.7,SNR=8.1							
ASAR	Alice Springs	45.65	253	P		P	11 23 10.4	-0.7
	1.4nm,0.4s,baz=89,slow=7.6,SNR=57							

KRNET ***23*** *11:14:56.0±0.1, 39.°69N×74.°76E, h20km, mb3.4*

SOME ***23*** *11:14:57.5, 39.°72N×74.°80E, h5km*

NNC ***23*** *11:14:59.6±3.6, 39.°70N×74.°63E, h0km, mb3.6, mpv3.2, Error ellipse: s-maj=30.5km s-min=9.4km az=168.0*

ISC 23 11:14:56.0±2.1, 39.°74N±0.°08×74.°78E±0.°04, h3km±12km, n24, σ1s55/42, 22C-14D, Southern Xinjiang

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
SFK	Sufi-Kurgan	1.02	286	⇑*e*P		Pb	11 15 16.1	-0.3
	baz=289							
SFK				⇑*i*S		Sn	11 15 30.8	-1.6
	baz=289							
SFK	Sufi-Kurgan	1.02	286	⇑P		Pb	11 15 15

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**15.00**	**176**	Pn	Pn	11 37 25.5	-1.9
	0.2nm,0.3s,baz=353,slow=13,SNR=15						
WRA				Sn	Sn	11 40 06.3	-8.1
	0.1nm,0.3s,baz=0.2,slow=23,SNR=4.9						
ASAR	**Alice Springs**	**18.67**	**178**	P	Pn	11 38 14.5	+0.5
	0.2nm,0.3s,baz=6.3,slow=12,SNR=17						
MKAR	**Makanchi Array**	**68.25**	**325**	P	P	11 44 56.7	0.0
	0.2nm,0.4s,baz=134,slow=7.5,SNR=3.4						

NIED ***23*** *11:38:00.36˝.70N×142˚.10E,h26km,Mw4.3 Best double couple: M₀2.82000×10¹⁵ NP1:φs212.00000°,δ23.00000°, λ100.00000°. NP2:φs21.00000°,δ67.00000°,λ86.00000°.*
ISCJB ***23*** *11:38:09.6±1.3,36˚.68N±0˝.03×142˚.23E±0˝.04, h14km±8km, mb4.2/44, Error ellipse: s-maj=5.7km s-min=5.2km az=161.5*
IDC ***23*** *11:38:10.1±0.6,36˚.67N×141˚.96E,h0km,mb4.1/27, mb1 4.2/32,mb1mx4.1/51,mbtmp4.1/32,ML3.8/4,MS3.7/1, Ms1 3.7/1,ms1mx3.0/47,Error ellipse: s-maj=15.8km s-min=13.1km az=117.0*
JMA ***23*** *11:38:11.3±0.2,36˚.69N×142˚.14E,h24km,M4.4*
MOS ***23*** *11:38:12.6±0.9,36˚.74N×142˚.19E,h35km,mb4.5/31,Error ellipse: s-maj=9.6km s-min=6.4km az=109.9*
NEIC ***23*** *11:38:13.4±2.0,36˚.72N×142˚.09E,h22km±14km,mb4.5/8, Error ellipse: s-maj=9.4km s-min=6.2km az=125.0*

ISC 23 11:38:09.2±2.2,36˚.65N±0˝.05×142˚.19E±0˝.05,h2km±13km, n95,σ1°84/101,mb4.3/44,5C,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**1.20**	**292**	P	**Pb**	**11 38 31.8**	**-0.9**
JFK	**Kawauchi**	**1.27**	**305**	P	**Pn**	**11 38 32.6**	**-1.5**
JFK				*e*S	**Sb**	**11 38 48.9**	**-1.9**
JHO	**Hitachi**	**1.30**	**269**	P	**Pb**	**11 38 33.6**	**-0.8**
JHO				*e*S	**Sb**	**11 38 50.2**	**-1.4**
JMM	**Marumori**	**1.65**	**318**	P	**Pn**	**11 38 38.5**	**-0.7**
JMM				S	**Sn**	**11 38 59.2**	**-1.8**
JFT	**Otama**	**1.71**	**301**	P	**Pb**	**11 38 40.2**	**-1.3**
JFT				S	**Sn**	**11 39 01.4**	**-1.3**
JIO	**Ouri**	**1.92**	**340**	P	**Pn**	**11 38 42.8**	**-0.1**
JIO				*e*S	**Sn**	**11 39 05.1**	**-2.6**
JOU	**Okura**	**2.10**	**325**	P	**Pb**	**11 38 46.0**	**-2.0**
JOU				*e*S	**Sn**	**11 39 11.6**	**-0.5**
JFY	**Yanaizu**	**2.12**	**292**	P	**Pb**	**11 38 46.9**	**-1.6**
JFY				*e*S	**Sb**	**11 39 13.1**	**-2.2**
JAG	**Ashikaga**	**2.21**	**265**	P	**Pb**	**11 38 47.4**	**-2.6**
MJAR	**Matsushiro Arr**	**3.20**	**269**	Pn	**Pn**	**11 39 02.3**	**+1.7**
	32nm,0.3s,baz=94,slow=9.3,SNR=272						
MJAR				Sn	**Sn**	**11 39 36.5**	**-2.9**
	14nm,0.3s,baz=318,slow=25,SNR=4.5						
MAJO	**Matsushiro**	**3.21**	**269**	*c i*P	**Pn**	**11 39 02.5**	**+1.8**
MAJO	**Matsushiro**	**3.21**	**269**	*e*Pn	**Pn**	**11 39 02.4**	**+1.8**
JHJ2	**Mitsune**	**4.03**	**210**	*e*Pn	**Pn**	**11 39 13.5**	**+1.5**
JHJ	**Hachijo jima 2**	**4.04**	**210**	Pn	**Pn**	**11 39 11.8**	**-0.2**
	37nm,0.3s,baz=73,slow=14,SNR=9.2						
JHJ				Sn	**Sn**	**11 39 54.5**	**-5.5**
	116nm,0.3s,baz=236,slow=23,SNR=14						
ERM	**Erimo**	**5.41**	**8**	*e*P	**Pn**	**11 39 29.8**	**-1.1**
ERM				*e*		11 40 33.4	
ERM	**Erimo**	**5.41**	**8**	*e*Pn	**Pn**	**11 39 29.8**	**-1.1**
ERM				*e*Sn	**Sn**	**11 40 33.4**	**-0.4**
ASAJ	**Asahikawa**	**7.46**	**2**	Pn	**Pn**	**11 39 59.7**	**+0.6**
	5.1nm,0.3s,baz=212,slow=12,SNR=35						
ASAJ				Sn	**Sn**	**11 41 22.7**	**-1.7**
	1.8nm,0.3s,baz=348,slow=14,SNR=2.7						
ASAJ	**Asahikawa**	**7.46**	**2**	Pn	**Pn**	**11 39 59.7**	**+0.6**
ASAJ				*e*Sn	**Sn**	**11 41 17.8**	**-6.6**
ASAJ				Sn	**Sn**	**11 41 22.7**	**-1.7**
YUK	**Yuzh-Kuril'sk**	**7.89**	**20**	*e*P	**Pn**	**11 40 05.7**	**+0.8**
YUK				*e*S	**Sn**	**11 41 27.5**	**-7.3**
YUK				pmax	pmax		
	comp=Z,71nm,0.3s						
YUK				pmax	pmax		
	comp=N,29nm,0.4s						
YUK				pmax	pmax		
	comp=E,21nm,0.2s						
KUR	**Kuril'sk**	**9.59**	**25**	P	**Pn**	**11 40 27.3**	**-0.9**
KUR				*e*S	**Sn**	**11 42 09.6**	**-6.9**
KUR				pmax	pmax		
	comp=Z,14nm,0.9s						
KUR				smax	smax		
	comp=E,24nm,0.5s						
KUR				smax	smax		
	comp=N,17nm,0.6s						
JNU	**Nakatsue**	**9.93**	**253**	Pn	**Pn**	**11 40 33.6**	**+0.5**
	comp=N,0.4nm,0.3s,baz=29,slow=7.2,SNR=4.1						
MSHR	**Mys Shultsa**	**10.36**	**308**	*c e*P	Pn	11 40 45.9	+7.1
USRK	**Ussuriysk Ar.**	**10.82**	**317**	Pn	**Pn**	**11 40 46.8**	**+1.6**
	comp=N,0.3nm,0.3s,baz=128,slow=11,SNR=7.3						
KSRS	**Korea Array**	**11.43**	**278**	Pn	Pn	11 40 57.2	+3.7
	comp=N,0.2nm,0.3s,baz=95,slow=14,SNR=9.2						
KSRS				LR	LR	11 44 47.4	
	comp=N,414nm,19.6s,baz=56,slow=35						
KSAR	**Wonju Array Be**	**11.46**	**278**	P	**Pn**	**11 40 57.2**	**+3.3**
KSAR	**Wonju Array Be**	**11.46**	**278**	Pn	**Pn**	**11 40 57.2**	**+3.3**
KLR	**Kul'dur**	**14.69**	**332**	Pn	**Pn**	**11 41 38.4**	**+0.3**
	comp=N,0.1nm,0.3s,baz=121,slow=5.9,SNR=2.7						
PETK	**Petropavlovsk-**	**19.72**	**29**	P	**Pn**	**11 42 41.2**	**-0.1**
	comp=N,0.0nm,0.3s,baz=212,slow=13,SNR=1.9						
BJT	**Baijiatuau**	**20.66**	**287**	*e*P	Pn	11 42 51.0	-1.5
BJT				pmax	pmax		
	comp=Z,5.0nm,0.4s						
BJT	**Baijiatuau**	**20.66**	**287**	*e*P	Pn	11 42 51.0	-1.5
	comp=Z,5.0nm,0.4s						
MA2	**Magadan**	**23.61**	**11**	P	**P**	**11 43 21.5**	**+0.2**
	comp=Z,4.4nm,0.6s,baz=215,slow=9.1,SNR=12						
YAK	**Yakutsk**	**26.58**	**347**	P	**P**	**11 43 49.2**	**+0.8**
	comp=Z,25nm,0.7s,baz=347,slow=2.6,SNR=11						
YAK	**Yakutsk**	**26.58**	**347**	*e*P	**P**	**11 43 48.5**	**+0.1**
YAK				pmax	pmax		
	comp=Z,23nm,0.8s						
YAK				pmax	pmax		
	comp=N,9.0nm,1.0s						
YAK				pmax	pmax		
	comp=E,3.0nm,1.1s						
YAK	**Yakutsk**	**26.58**	**347**	*e*P	**P**	**11 43 48.6**	**+0.1**
	comp=E,31nm,0.8s						
SEY	**Seymchan**	**27.05**	**10**	P	**P**	**11 43 54.8**	**+2.1**
	comp=E,3.7nm,0.7s,baz=199,slow=7.2,SNR=18						
SEY	**Seymchan**	**27.05**	**10**	*c e*P	**P**	**11 43 53.4**	**+0.7**
H11N2	**WAKE ISLAND Hy**	**27.42**	**121**	T	T	12 13 12.8	
	baz=314,slow=75,SNR=34						
H11N1	**WAKE ISLAND Hy**	**27.43**	**121**	T	T	12 13 30.7	
	baz=314,slow=75,SNR=43						
H11N3	**WAKE ISLAND Hy**	**27.44**	**121**	T	T	12 13 24.8	
	baz=314,slow=75,SNR=32						
ENH	**Enshi**	**27.92**	**266**	*e*P	**P**	**11 44 00.6**	**-0.4**
	comp=E,20nm,0.7s						
ULN	**Ulaanbaatar**	**28.08**	**305**	*e*P	**P**	**11 44 02.4**	**+0.1**
ULN				pmax	pmax		
	comp=Z,10.0nm,1.2s						
ULN	**Ulaanbaatar**	**28.08**	**305**	*e*P	**P**	**11 44 02.5**	**+0.1**
	comp=Z,7.2nm,0.9s						
H11S1	**WAKE ISLAND Hy**	**28.13**	**123**	T	T	12 14 02.0	
	baz=316,slow=75,SNR=21						
H11S3	**WAKE ISLAND Hy**	**28.13**	**123**	T	T	12 14 12.2	
	baz=316,slow=75,SNR=19						
H11S2	**WAKE ISLAND Hy**	**28.15**	**123**	T	T	12 13 58.9	
	baz=316,slow=75,SNR=21						
BOD	**Bodaibo**	**28.18**	**328**	*e*P	**P**	**11 44 01.6**	**-1.3**
BOD				pmax	pmax		
	comp=Z,5.0nm,1.1s						
SONM	**Songino Array**	**28.51**	**304**	P	**P**	**11 44 06.4**	**+0.3**
	comp=Z,8.9nm,0.8s,baz=105,slow=9.1,SNR=46						
ZAK	**Zakamensk**	**30.99**	**309**	*e*P	**P**	**11 44 26.5**	**-1.5**
ZAK				pmax	pmax		
	comp=Z,4.0nm,1.2s						
TLY	**Talaya**	**31.05**	**311**	*e*P	**P**	**11 44 25.0**	**-3.4**
TLY				pmax	pmax		
	comp=Z,4.0nm,0.9s						
BILL	**Bilibino**	**34.22**	**16**	*e*P	**P**	**11 44 56.3**	**+0.3**
BILL				pmax	pmax		
	comp=Z,2.0nm,1.2s						
TIXI	**Tiksi**	**35.75**	**353**	P	**P**	**11 45 08.8**	**-0.2**
	comp=Z,0.8nm,0.3s,baz=122,slow=7.5,SNR=3.7						
TIXI	**Tiksi**	**35.75**	**353**	*e*P	**P**	**11 45 09.4**	**+0.4**
TIXI				pmax	pmax		
	comp=Z,7.0nm,2.5s						
CMAR	**Chiang Mai Arr**	**42.01**	**256**	P	**P**	**11 46 02.8**	**+0.6**
	comp=Z,1.1nm,0.6s,baz=50,slow=8.3,SNR=8.4						
ZALV	**Zalesovo Beam**	**42.63**	**313**	P	**P**	**11 46 07.6**	**+0.8**
	comp=Z,5.1nm,0.8s,baz=91,slow=6.7,SNR=12						
MKAR	**Makanchi Array**	**44.85**	**303**	P	**P**	**11 46 24.9**	**+0.1**
	comp=Z,2.4nm,0.7s,baz=87,slow=10,SNR=18						
KURK	**Kurchatov**	**46.66**	**308**	P	**P**	**11 46 39.4**	**+0.4**
KURK				pmax	pmax		
	comp=Z,2.0nm,0.4s						
KURK	**Kurchatov**	**46.66**	**308**	P	**P**	**11 46 39.4**	**+0.4**
KURBB	**Kurchatov Arra**	**46.73**	**308**	P	**P**	**11 46 39.4**	**-0.2**
	comp=Z,1.9nm,0.4s,baz=83,slow=8.4,SNR=22						
ILAR	**Eielson Array**	**49.49**	**32**	P	**P**	**11 47 01.9**	**+1.3**
	comp=Z,0.7nm,0.7s,baz=259,slow=6.5,SNR=9.5						
ILAR	**Eielson Array**	**49.49**	**32**	P	**P**	**11 47 02.0**	**+1.3**
ILAR				pmax	pmax		
	comp=Z,1.0nm,0.7s						
TKM2	**Tokmak 2**	**50.36**	**299**	*e*P	**P**	**11 47 08.4**	**+0.5**
TKM2				pmax	pmax		
	comp=Z,4.0nm,0.6s						
TKM2	**Tokmak 2**	**50.36**	**299**	*e*P	**P**	**11 47 08.4**	**+0.5**
	comp=Z,4.1nm,0.6s						
AAK	**Ala-Archa**	**51.22**	**299**	P	**P**	**11 47 12.9**	**-1.4**
	comp=Z,1.1nm,0.3s,baz=122,slow=23,SNR=4.1						
AAK	**Ala-Archa**	**51.22**	**299**	*e*P	**P**	**11 47 13.6**	**-0.8**
AAK				pmax	pmax		
	comp=Z,3.0nm,1.0s						
BVAR	**Borovoye Array**	**51.29**	**313**	P	**P**	**11 47 14.5**	**0.0**
	comp=Z,1.0nm,0.5s,baz=82,slow=11,SNR=4.2						
BRVK	**Borovoye**	**51.34**	**313**	*e*P	**P**	**11 47 14.7**	**-0.2**
BRVK				pmax	pmax		
	comp=Z,3.0nm,0.9s						
KKAR	**Karatay Array**	**53.85**	**301**	*e*P	**P**	**11 47 34.1**	**+0.4**
KKAR				pmax	pmax		
	comp=Z,1.0nm,0.5s						
KKAR	**Karatay Array**	**53.85**	**301**	*e*P	**P**	**11 47 34.0**	**+0.4**
	comp=Z,1.5nm,0.5s						
WRAB	**Tennant Creek**	**56.76**	**189**	*e*P	**P**	**11 47 55.8**	**+1.1**
WRAB				pmax	pmax		
	comp=Z,10.0nm,1.4s						
WRAB	**Tennant Creek**	**56.76**	**189**	*e*P	**P**	**11 47 55.8**	**+1.1**
	comp=Z,9.6nm,1.4s						
WRA	**Warramunga Arr**	**56.77**	**189**	P	**P**	**11 47 55.2**	**+0.4**
	comp=Z,0.6nm,0.6s,baz=6.5,slow=7.4,SNR=12						
ARU	**Arti**	**57.06**	**319**	P	**P**	**11 47 56.9**	**+0.4**
	comp=Z,2.0nm,0.4s,baz=72,slow=3.7,SNR=6.5						
ARU	**Arti**	**57.06**	**319**	*c i*P	**P**	**11 47 56.5**	**0.0**
ARU						11 50 02.5	
ARU				S	**S**	**11 55 51.7**	**-0.2**
ARU				SS	**SS**	**11 59 41.6**	**+1.8**
ARU				pmax	pmax		
	comp=Z,12nm,1.2s						
ABKAR	**Akbulak array**	**58.66**	**311**	*e*P	**P**	**11 48 07.8**	**-0.1**
	comp=Z,2.2nm,0.6s						
AKTO	**Aktyubinsk**	**59.39**	**312**	P	**P**	**11 48 11.6**	**-1.4**
	comp=Z,2.8nm,0.8s,baz=76,slow=11,SNR=6.5						
ASAR	**Alice Springs**	**60.50**	**189**	P	**P**	**11 48 21.4**	**+0.6**
	comp=Z,0.6nm,0.7s,baz=13,slow=9.2,SNR=12						
YKA	**Yellowknife Ar**	**63.83**	**30**	P	**P**	**11 48 43.9**	**+1.2**
	comp=Z,0.3nm,0.8s,baz=303,slow=6.4,SNR=5.2						
ARCES	**ARCESS Array B**	**64.57**	**340**	P	**P**	**11 48 48.9**	**+1.4**
	comp=Z,4.1nm,1.0s,baz=44,slow=8.1,SNR=2.2						
OBN	**Obninsk**	**68.77**	**324**	*e*P	**P**	**11 49 13.9**	**-0.6**
OBN				pmax	pmax		
	comp=Z,5.0nm,0.9s						
FINES	**FINESS Array B**	**69.44**	**333**	P	**P**	**11 49 19.0**	**+0.4**
	comp=Z,2.3nm,0.7s,baz=31,slow=11,SNR=7.6						
FINES	**FINESS Array B**	**69.44**	**333**	*i* P	**P**	**11 49 19.2**	**+0.7**
FINES				pmax	pmax		
	comp=Z,2.0nm,0.7s						
VSR	**Storozhevoye**	**69.63**	**319**	*e*P	**P**	**11 49 17.7**	**-2.2**
VSR				pmax	pmax		
	comp=Z,5.0nm,0.6s						
KVAR	**Kislovodsk Arr**	**71.62**	**311**	P	**P**	**11 49 32.7**	**+0.4**
	comp=Z,4.0nm,0.6s,baz=22,slow=15,SNR=2.9						
KBZ	**Khabaz**	**71.62**	**311**	P	**P**	**11 49 32.5**	**+0.3**
	comp=Z,2.8nm,0.8s,baz=113,slow=3.3,SNR=6.3						
KIV	**Kislovodsk**	**71.63**	**311**	*e*P	**P**	**11 49 33.2**	**+0.9**
KIV				pmax	pmax		
	comp=Z,6.0nm,1.1s						
NVAR	**Mina Array Bea**	**74.72**	**53**	P	P	11 49 54.6	+3.7
	comp=Z,0.5nm,0.8s,baz=278,slow=6.3,SNR=2.6						
NB2	**NORSAR Subarra**	**74.78**	**338**	P	**P**	**11 49 50.9**	**+0.3**
	comp=Z,0.7nm,0.7s,baz=39,slow=6.2						
NOA	**NORSAR Array B**	**74.78**	**338**	P	**P**	**11 49 50.9**	**+0.3**
	comp=Z,1.5nm,0.8s,baz=39,slow=5.8,SNR=6.7						
AKASG	**Malin Array Be**	**74.98**	**323**	P	**P**	**11 49 51.9**	**0.0**
	comp=Z,2.1nm,0.6s,baz=49,slow=6.1,SNR=10						
KIEV	**Kiev**	**74.99**	**323**	*e*P	**P**	**11 49 50.9**	**-1.0**
KIEV				pmax	pmax		
	comp=Z,3.0nm,0.9s						
PDAR	**Pinedale Array**	**77.49**	**46**	P	**P**	**11 50 08.0**	**+1.3**
	comp=Z,0.3nm,0.6s,baz=281,slow=2.3,SNR=4.0						
BRTR	**Keskin Array B**	**79.57**	**312**	P	**P**	**11 50 18.1**	**0.0**
	comp=Z,1.1nm,0.8s,baz=72,slow=4.0,SNR=5.5						
GERES	**GERESS Array B**	**83.36**	**329**	P	**P**	**11 50 37.8**	**-0.1**
	comp=Z,0.7nm,0.6s,baz=8.5,slow=2.7,SNR=4.5						
TXAR	**Lajitas Array**	**89.86**	**53**	P	**P**	**11 51 12.2**	**+2.2**
	comp=Z,0.2nm,0.6s,baz=300,slow=2.7,SNR=3.5						
LPAZ	**La Paz**	**146.34**	**61**	PKPbc	**PKPab**	**11 57 55.0**	**+1.3**
	comp=Z,0.5nm,0.5s,baz=260,slow=6.1,SNR=3.2						

IDC ***23*** *11:45:40.7±0.9,40˚.44N×143˚.65E,h0km,mb3.4/8, mb1 3.7/10,mb1mx3.5/42,mbtmp3.4/10,ML3.1/2,MS3.6/1, Ms1 3.6/1,ms1mx2.9/29,Error ellipse: s-maj=31.7km s-min=21.2km az=115.0*
ISCJB ***23*** *11:45:41.5±1.9,40˚.36N±0˝.03×143˚.74E±0˝.05, h19km±15km,mb3.4/8,Error ellipse: s-maj=7.4km s-min=4.8km az=33.3*
JMA ***23*** *11:45:42.2±0.3,40˚.38N×143˚.63E,h14km±4km,M3.5*

ISC 23 11:45:41.1±2.7,40˚.47N±0˝.05×143˚.57E±0˝.07,h3km±16km, n31,σ0°88/31,mb3.4/8,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JTH	**Tanohata**	**1.41**	**248**	P	**Pn**	**11 46 07.6**	**0.0**
JTH				*e*S	**Sn**	**11 46 26.2**	**-0.4**
JANG	**Nango**	**1.57**	**267**	P	**Pb**	**11 46 10.5**	**-0.2**
JANG				*e*S	**Sg**	**11 46 31.4**	**-0.1**
MIYJ	**Miyakonagasawa**	**1.61**	**237**	P	**Pn**	**11 46 10.6**	**+0.3**
MIYJ				*e*S	**Sn**	**11 46 30.5**	**-1.1**
JNBK	**Urakawa-nobuka**	**1.91**	**342**	*e*S	**Sg**	**11 46 43.1**	**+0.7**
JOM	**Ohasama**	**2.01**	**241**	P	**Pn**	**11 46 16.7**	**+0.8**
JOM				S	**Sn**	**11 46 42.1**	**+0.6**
JOT	**Ohata**	**2.11**	**296**	*e*S	**Sb**	**11 46 46.7**	**+0.1**
JCH	**Churui**	**2.15**	**356**	P	**Pb**	**11 46 19.4**	**-1.2**
JCH				*e*S	**Sn**	**11 46 45.9**	**+1.0**
JMK	**Ichinoseki**	**2.36**	**231**	P	**Pn**	**11 46 20.9**	**+0.3**
JKB	**Kayabe**	**2.38**	**307**	*e*S	**Sb**	**11 46 53.8**	**-0.4**
JAK	**Akkeshi**	**2.66**	**18**	P	**Pn**	**11 46 25.6**	**+0.8**
JAK				*e*S	**Sn**	**11 46 56.4**	**-1.1**
JFR	**Furan**	**2.79**	**345**	S	**Sb**	**11 47 04.1**	**-1.9**
JAR	**Ashorobuto**	**2.83**	**3**	P	**Pn**	**11 46 27.7**	**+0.6**
JAR				*e*S	**Sn**	**11 47 00.6**	**-1.1**
JEW	**Eniwo**	**2.85**	**327**	*e*S	**Sb**	**11 47 06.8**	**-1.0**
JYK	**Kaneyama**	**2.92**	**239**	P	**Pn**	**11 46 29.3**	**+0.9**
ASAJ	**Asahikawa**	**3.71**	**349**	Pn	**Pn**	**11 46 41.4**	**+2.1**
	1.0nm,0.3s,baz=197,slow=6.5,SNR=13						
MJAR	**Matsushiro Arr**	**5.75**	**229**	Pn	**Pn**	**11 47 07.5**	**+0.2**
	0.5nm,0.3s,baz=37,slow=11,SNR=9.2						
JHJ	**Hachijo jima 2**	**7.94**	**204**	LR	LR	11 51 13.5	
	comp=Z,367nm,18.6s,baz=356,slow=42						
H11N2	**WAKE ISLAND Hy**	**28.73**	**129**	T	T	12 21 35.3	
	baz=323,slow=75						
H11N1	**WAKE ISLAND Hy**	**28.74**	**129**	T	T	12 21 35.1	
	baz=323						
H11N3	**WAKE ISLAND Hy**	**28.75**	**129**	T	T	12 21 32.1	
	baz=323,slow=75						
H11S1	**WAKE ISLAND Hy**	**29.57**	**131**	T	T	12 22 40.6	
	baz=304						
H11S3	**WAKE ISLAND Hy**	**29.58**	**131**	T	T	12 22 39.8	
	baz=304						
H11S2	**WAKE ISLAND Hy**	**29.59**	**131**	T	T	12 22 47.2	
	baz=304						
ILAR	**Eielson Array**	**45.70**	**34**	P	**P**	**11 54 03.0**	**+0.1**
	0.4nm,0.7s,baz=264,slow=6.0,SNR=5.2						
YKA	**Yellowknife Ar**	**60.00**	**32**	P	**P**	**11 55 48.2**	**-0.2**
	0.2nm,0.6s,baz=302,slow=6.4,SNR=6.5						
ASAR	**Alice Springs**	**64.44**	**190**	P	**P**	**11 56 18.8**	**+0.2**
	0.2nm,0.7s,baz=15,slow=7.7,SNR=3.3						
FINES	**FINESS Array B**	**66.56**	**332**	P	**P**	**11 56 31.8**	**-0.1**
	0.8nm,0.8s,baz=46,slow=8.2,SNR=4.9						
NVAR	**Mina Array Bea**	**71.61**	**55**	P	**P**	**11 57 04.5**	**+0.5**
	0.2nm,0.6s,baz=294,slow=6.8,SNR=2.0						
NOA	**NORSAR Array B**	**71.66**	**338**	P	**P**	**11 57 04.4**	**+0.7**
	0.3nm,0.6s,baz=30,slow=7.7,SNR=2.7						
PDAR	**Pinedale Array**	**74.08**	**47**	P	**P**	**11 57 17.8**	**-0.9**
	0.2nm,0.6s,baz=286,slow=3.3,SNR=3.1						
TXAR	**Lajitas Array**	**86.71**	**54**	P	**P**	**11 58 27.1**	**+0.5**
	0.1nm,0.6s,baz=337,slow=5.9,SNR=2.6						

JMA 23 11:51:51.3,32˚.88N×130˚.91E,h11km±1km,M3.5,3C-1D Broadband fault plane solution: P waves. NP1: φs83.00000°,δ62.00000°,λ-118.00000°. **NP2:** φs312.00000°,δ38.00000°,λ-49.00000°. **Principal axes:** T Plg13.0000°, Azm193.0000°; N Plg24.0000°, Azm97.0000°; P Plg62.0000°, Azm309.0000°; **Kyushu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JNU	**Nakatsue**	**0.24**	**354**	↑P	Pg	11 51 56.5	+0.1
JNU				S	Sg	11 52 00.1	+0.3
JTA	**Tamana**	**0.33**	**285**	↓P	Pg	11 51 58.0	+0.1
JTA				*e*S	Sg	11 52 02.7	+0.4
JIU2	**Izumi 2**	**0.34**	**194**	↑P	Pg	11 51 58.1	-0.1
JIU2				*e*S	Sg	11 52 03.3	+0.5
JTZ	**Takazaki**	**0.99**	**171**	↑P	Pg	11 52 10.3	0.0
JTZ				S	Sb	11 52 23.7	+0.3

ISK ***23*** *11:53:42.5,37˚.50N×35˚.56E,h5km,MD2.9*
DDA ***23*** *11:53:42.0,37˚.54N×35˚.62E,h8km,Md2.8*
ISCJB ***23*** *11:53:43.0±0.4,37˚.49N±0˝.03×35˚.58E±0˝.02,h11km±3km, Error ellipse: s-maj=4.8km s-min=3.1km az=172.8*
CSEM ***23*** *11:53:43.0±0.1,37˚.50N×35˚.55E,h5km,MD2.9,Error ellipse: s-maj=2.9km s-min=2.5km az=172.0*

ISC 23 11:53:42.3±0.9,37˚.52N±0˝.02×35˚.58E±0˝.02,h16km±6km, n40,σ0°74/60,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AKO	**Adana**	**0.12**	**240**	*i* P	**Pg**	**11 53 46.0**	**0.0**
AKO				*i* S	**Sg**	**11 53 48.3**	**-0.2**
KOZT	**Kozan**	**0.20**	**102**	*e*PG	**Pg**	**11 53 47.3**	**+0.2**
KOZT				*e*SG	**Sb**	**11 53 50.8**	**-0.3**
KOZT	**Kozan**	**0.20**	**102**	*e*Pg	**Pg**	**11 53 47.3**	**+0.2**
KOZT				*e*Sg	**Sb**	**11 53 50.8**	**-0.3**
KARA	**Karaisali**	**0.49**	**238**	*e*PG	**Pg**	**11 53 52.1**	**-0.1**
KARA				*e*SG	**Sg**	**11 53 59.2**	**+0.4**
KARA	**Karaisali**	**0.49**	**238**	*e*Pg	**Pg**	**11 53 52.1**	**-0.1**
KARA				*e*Sg	**Sg**	**11 53 59.2**	**+0.4**
CEYT	**Ceyhan**	**0.53**	**165**	*e*PG	**Pg**	**11 53 52.9**	**+0.1**
CEYT				*e*SG	**Sb**	**11 54 00.5**	**-0.1**
CEYT	**Ceyhan**	**0.53**	**165**	*e*Pg	**Pg**	**11 53 52.9**	**+0.1**
CEYT				*e*Sg	**Sb**	**11 54 00.5**	**-0.1**
ANDN	**Andirin**	**0.61**	**84**	*i* P	**Pg**	**11 53 54.7**	**+0.3**
ANDN				*i* S	**Sb**	**11 54 04.2**	**+1.1**
ANDN	**Andirin**	**0.61**	**84**	P	**Pg**	**11 53 54.7**	**+0.3**
ANDN				S	**Sb**	**11 54 04.2**	**+1.1**
GULE	**Gulek**	**0.68**	**250**	*i* S	**Sb**	**11 54 05.6**	**+0.4**
GULE	**Gulek**	**0.68**	**250**	S	**Sb**	**11 54 05.6**	**+0.4**
YURE	**YUREGIR**	**0.70**	**177**	*i* P	**Pb**	**11 53 56.3**	**+0.2**
YURE				*i* S	**Sb**	**11 54 05.7**	**+0.3**
YURE	**YUREGIR**	**0.70**	**177**	P	**Pb**	**11 53 56.3**	**+0.2**
YURE				S	**Sb**	**11 54 05.7**	**+0.3**
DED	**Mersin**	**0.84**	**228**	*i* P	**Pn**	**11 54 00.1**	**+0.7**
DED				*i* S	**Sg**	**11 54 10.1**	**+0.4**
KAMA	**Osmaniye**	**0.93**	**111**	*i* P	**Pb**	**11 53 59.6**	**-0.5**
KAMA				*i* S	**Sb**	**11 54 11.7**	**-0.5**
KRTS	**Karatas**	**0.96**	**190**	*e*PG	**Pg**	**11 54 01.0**	**+0.1**
KRTS	**Karatas**	**0.96**	**190**	*e*Pg	**Pg**	**11 54 01.0**	**+0.1**
KMRS	**Kahramanmaras**	**1.05**	**91**	*e*PG	**Pg**	**11 54 03.4**	**+0.7**
KMRS	**Kahramanmaras**	**1.05**	**91**	*e*Pg	**Pg**	**11 54 03.4**	**+0.7**
MERS	**Mersin**	**1.07**	**233**	*e*PG	**Pn**	**11 54 02.9**	**+0.3**
MERS				*e*SG	**Sn**	**11 54 17.8**	**+0.6**
MERS	**Mersin**	**1.07**	**233**	*e*Pg	**Pn**	**11 54 02.9**	**+0.3**
MERS				*e*Sg	**Sn**	**11 54 17.8**	**+0.6**
HCB	**Kahramanmara¯**	**1.07**	**99**	*i* P	**P

CAUP	**Cauayan**	**1.40**	**65**	*eP*		Pb	12 13 59.0	-0.5	

JMA ***23*** *12:16:10.0±0.2, 38°.35N×144°.42E, h28km, M4.1*
IDC ***23*** *12:16:26.1±3.1, 37°.33N×144°.70E, h0km, mb3.4/3, mb1 3.6/4, mb1mx3.3/58, mbtmp3.5/4, ML4.0/1, Error ellipse: s-maj=79.0km s-min=33.9km az=54.0*
ISC 23 12:16:07.5±2.2, 38°.40N±0°.08×144°.6E±0°.1, h10km, n20, σ2$13/23, mb3.6/3, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**2.40**	**287**	P	**Pn**	**12 16 47.1**	**+0.2**
MIYJ	**Miyakonagasawa**	**2.47**	**299**	P	**Pn**	**12 16 48.2**	**+0.3**
MIYJ				S	**Sn**	**12 17 16.6**	**-1.5**
JIO	**Ouri**	**2.56**	**272**	P	**Pn**	**12 16 48.7**	**-0.4**
JIO				S	**Sn**	**12 17 17.6**	**-2.8**
JMK	**Ichinoseki**	**2.71**	**283**	P	**Pn**	**12 16 51.3**	**+0.2**
JMK				*eS*	**Sn**	**12 17 22.3**	**-1.7**
JOM	**Ohasama**	**2.80**	**293**	P	**Pn**	**12 16 53.0**	**+0.6**
JANG	**Nango**	**3.11**	**310**	P	**Pn**	**12 16 56.9**	**+0.3**
JANG				*eS*	**Sn**	**12 17 32.8**	**-0.9**
JYK	**Kaneyama**	**3.37**	**280**	P	**Pn**	**12 17 01.1**	**+0.9**
JYK				*eS*	**Sn**	**12 17 39.1**	**-1.2**
JFT	**Otama**	**3.49**	**257**	P	**Pn**	**12 17 02.4**	**+0.5**
JFT				S	**Sn**	**12 17 40.8**	**-2.5**
JCH	**Churui**	**4.32**	**348**	P	**Pn**	**12 17 13.9**	**+0.7**
JCH				*eS*	**Sn**	**12 18 01.3**	**-2.2**
NEM2	**Nemuro 2**	**5.03**	**9**	P	Pn	12 17 21.5	-1.5
NEM2				*eS*	Sn	12 18 16.2	-5.0
JRY	**Ryogami san**	**5.14**	**244**	P	**Pn**	**12 17 24.0**	**-0.6**
JRY				*eS*	**Sn**	**12 18 18.0**	**-6.0**
MJAR	**Matsushiro Arr** 5.6nm,0.3s,baz=91,slow=15,SNR=14	**5.42**	**252**	Pn	**Pb**	**12 17 45.4**	**+3.1**
MAT	**Matsushiro**	**5.42**	**252**	P	**Pn**	**12 17 29.9**	**+1.5**
MAT				*eS*	**Sn**	**12 18 29.7**	**-1.2**
JTKR	**Abashiri--Toko**	**5.59**	**355**	P	**Pn**	**12 17 30.8**	**+0.1**
JTKR				S	**Sn**	**12 18 31.5**	**-3.4**
H11S1	**WAKE ISLAND Hy** baz=319,slow=76,SNR=28	**27.62**	**130**	T	T	12 52 04.9	
H11S3	**WAKE ISLAND Hy** baz=319,slow=76,SNR=38	**27.62**	**130**	T	T	12 52 06.9	
H11S2	**WAKE ISLAND Hy** baz=319,slow=76,SNR=30	**27.64**	**130**	T	T	12 52 04.4	
MKAR	**Makanchi Array** 0.3nm,0.4s,baz=88,slow=10,SNR=4.8	**45.56**	**302**	P	P	12 24 52.4	+25
WRA	**Warramunga Arr** 0.2nm,0.4s,baz=9.0,slow=6.9,SNR=5.6	**58.83**	**191**	P	P	12 26 18.9	+13
ASAR	**Alice Springs** 0.2nm,0.8s,baz=9.7,slow=6.6,SNR=2.9	**62.55**	**191**	P	P	12 26 45.0	+13

JMA 23 12:20:23.0±0.1, 37°.60N×142°.54E, h3km±1km, M3.6, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**1.27**	**313**	P	Pg	12 20 46.8	-0.5
JIO				*eS*	Sb	12 21 04.2	-0.1
JFK	**Kawauchi**	**1.34**	**261**	P	Pn	12 20 48.2	-0.5
JMM	**Marumori**	**1.41**	**281**	*eS*	Sg	12 21 08.2	-0.1
ONAJ	**Iwakimizuishiy**	**1.47**	**251**	P	Pn	12 20 50.3	-0.2
ONAJ				*eS*	Sb	12 21 09.7	-0.5
JOU	**Okura**	**1.67**	**298**	P	Pn	12 20 53.3	+0.2
JOU				*eS*	Sb	12 21 15.6	-0.2
JFT	**Otama**	**1.75**	**268**	P	Pn	12 20 54.7	+0.4
JFT				S	Sn	12 21 17.3	+0.1
JHO	**Hitachi**	**1.86**	**239**	P	Pn	12 20 56.1	+0.3
JHO				S	Sn	12 21 20.5	+0.7

ISCJB ***23*** *12:22:49.7±0.8, 33°.09N×140°.0E±0°.2, h145km±7km, mb3.1/2, Error ellipse: s-maj=31.4km s-min=13.4km az=4.6*
IDC ***23*** *12:22:49.6±2.2, 33°.15N×140°.51E, h127km±19km, mb2.8/2, mb1 3.1/4, mb1mx2.8/57, mbtmp3.4/4, Error ellipse: s-maj=83.1km s-min=17.4km az=91.0*
JMA ***23*** *12:22:52.5±0.4, 33°.20N×139°.89E, h123km±4km, M3.2*
ISC 23 12:22:50.9±1.2, 33°.11N±0°.09×139°.9E±0°.2, h139km±8km, n12, σ0$90/13, Southeast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHJ2	**Mitsune**	**0.10**	**273**	P	**Pn**	**12 23 09.4**	**-0.2**
JHCJ	**Hachijojimakas**	**0.12**	**254**	P	**Pn**	**12 23 09.7**	**0.0**
JHJ	**Hachijo jima 2** 162nm,0.3s,baz=86,slow=22,SNR=11	**0.13**	**276**	P	**Pn**	**12 23 09.4**	**-0.2**
JHJ	107nm,0.3s,baz=279,slow=22,SNR=4.4			S	**Sn**	**12 23 24.7**	**+0.8**
JIM2	**Oshima 3**	**1.66**	**346**	P	**Pn**	**12 23 21.7**	**+0.3**
BSO3	**Boso 3**	**1.76**	**16**	P	**Pn**	**12 23 22.7**	**+0.5**
BSO1	**Boso 1**	**1.77**	**29**	P	**Pn**	**12 23 22.8**	**+0.7**
JOD2	**Odawara 2**	**2.26**	**342**	P	**Pn**	**12 23 28.9**	**+0.3**
JYN	**Shimob**	**2.65**	**335**	P	**Pn**	**12 23 34.0**	**+0.6**
MJAR	**Matsushiro Arr** 0.6nm,0.3s,baz=145,slow=13,SNR=1.4	**3.71**	**338**	P	**Pn**	**12 23 47.2**	**+0.2**
ASAJ	**Asahikawa** 0.5nm,0.3s,baz=183,slow=11,SNR=1.9	**11.19**	**10**	P	**Pn**	**12 25 24.6**	**-2.2**
WRA	**Warramunga Arr** 0.3nm,0.7s,baz=5.8,slow=7.7,SNR=1.8	**53.02**	**187**	P	**P**	**12 31 54.1**	**+0.5**
ASAR	**Alice Springs** 0.1nm,0.4s,baz=354,slow=5.4,SNR=1.4	**56.75**	**187**	P	**P**	**12 32 20.7**	**+0.3**

MAN 23 12:42:39, 17°.60N×119°.82E, h7km, mb4.4, ML3.2, MS3.1, 1C-1D, Philippine Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SIPP	**Brgy, Tapao**	**0.69**	**62**	*iP*	Pb	12 42 53.6	+0.3
SIPP				*eS*	Sb	12 43 03.3	+0.3
ABRA	**Dolores**	**0.85**	**86**	*eP*	Pb	12 42 55.9	-0.2
BOLP	**Bolinao**	**1.21**	**176**	*eP*	Pg	12 43 01.9	-0.4
BOLP				*eS*	Sg	12 43 17.6	-0.4
APYP	**Conner**	**1.38**	**79**	*eP*	Pn	12 43 04.2	-0.5
APYP				*eS*	Sg	12 43 24.2	+0.9
BCPH	**Baguio City Da**	**1.41**	**149**	*eP*	Pg	12 43 07.8	+1.7
BCPH				*eS*	Sb	12 43 22.5	-1.5
CAUP	**Cauayan**	**2.02**	**108**	*eP*	Pb	12 43 16.0	-0.1

NIED ***23*** *12:56:00, 35°.40N×141°.00E, h11km, Mw3.9 Best double couple: M0 8.90000×10^14 NP1:φ0320.00000°, δ38.00000°, λ-59.00000°. NP2:φ0102.00000°, δ58.00000°, λ-112.00000°.*
IDC ***23*** *12:56:40.6±0.6, 35°.35N×141°.10E, h0km, mb3.8/18, mb1 4.0/23, mb1mx3.9/58, mbtmp3.9/23, ML3.4/4, MS3.0/3, Ms1 3.0/3, ms1mx2.7/56, Error ellipse: s-maj=18.0km s-min=12.3km az=101.0*
ISCJB ***23*** *12:56:41.9±0.7, 35°.39N±0°.03×141°.14E±0°.06, h22km±5km, mb3.8/23, MS3.6/1, Error ellipse: s-maj=7.9km s-min=4.7km az=179.2*
JMA ***23*** *12:56:42.9±0.1, 35°.44N×141°.03E, h23km±1km, M3.9*
JMA Felt I J1.
NEIC ***23*** *12:56:45.6±0.3, 35°.36N×141°.05E, h35km, mb4.1/5, Error ellipse: s-maj=7.4km s-min=5.7km az=102.0*
ISC 23 12:56:42.3±1.7, 35°.40N±0°.04×140°.94E±0°.05, h10km±10km, n51, σ1$07/50, mb4.0/23, 4C, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.31**	**348**	*iP*	**Pb**	**12 56 49.8**	**-0.2**
CHOJ				*eS*	**Sb**	**12 56 54.6**	**-0.5**
KTR	**Katsuura**	**0.56**	**244**	P	**Pn**	**12 56 55.5**	**-0.9**
KTR				*eS*	**Sn**	**12 57 05.0**	**-0.7**
JCN	**Nagara**	**0.60**	**272**	P	**Pn**	**12 56 56.5**	**-0.3**
JCN				*eS*	**Sn**	**12 57 07.7**	**+1.1**
BSO4	**Boso 4**	**0.64**	**231**	*iP*	**Pn**	**12 56 57.3**	**+0.1**
BSO3	**Boso 3**	**0.69**	**211**	*iP*	**Pn**	**12 56 57.5**	**-0.3**
BSO3				X		12 57 06.3	
BSO1	**Boso 1**	**0.74**	**177**	*iP*	**Pb**	**12 56 57.1**	**+0.2**
JYT	**Yasato**	**1.03**	**324**	P	**Pg**	**12 57 01.8**	**-0.2**
JYT				S	**Sb**	**12 57 15.6**	**-0.1**
JHO	**Hitachi**	**1.25**	**346**	P	**Pg**	**12 57 06.3**	**0.0**
JHO				S	**Sb**	**12 57 21.0**	**-1.1**
JHJ2	**Mitsune**	**2.46**	**202**	*ePn*	**Pn**	**12 57 21.7**	**-0.7**
JHJ	**Hachijo jima 2** 19nm,0.3s,baz=339,slow=18,SNR=11	**2.46**	**203**	Pn	**Pn**	**12 57 21.7**	**-0.8**
JHJ	64nm,0.3s,baz=67,slow=23,SNR=4.9			Sn	**Sn**	**12 57 49.2**	**-3.4**

MJAR	**Matsushiro Arr** 6.7nm,0.3s,baz=98,slow=7.5,SNR=38	**2.49**	**298**	Pn	**Pb**	**12 57 25.5**	**-1.6**	
MJAR	comp=Z,56nm,20.7s,baz=105,slow=32			LR	LR	12 58 02.3		
MAJO	**Matsushiro**	**2.49**	**298**	*ePn*	**Pb**	**12 57 25.9**	**-1.2**	
MAT	**Matsushiro**	**2.49**	**298**	P	**Pb**	**12 57 25.6**	**-1.5**	
MAT				*eS*	**Sb**	**12 57 58.4**	**+0.5**	
ERM	**Erimo**	**6.83**	**14**	*ePn*	**Pn**	**12 58 21.8**	**-0.7**	
ERM				*eSn*	**Sn**	**12 59 39.7**	**-0.6**	
CBIJ	**Chichi jima**	**8.34**	**172**	Pn	**Pn**	**12 58 43.5**	**+0.2**	
CBIJ	**Chichijima** 11nm,0.3s,baz=285,slow=20,SNR=3.0	**8.34**	**172**	Pn	**Pn**	**12 58 43.5**	**+0.2**	
ASAJ	**Asahikawa** 1.0nm,0.3s,baz=222,slow=12,SNR=15	**8.80**	**8**	Pn	**Pn**	**12 58 49.0**	**-0.5**	
KSRS	**Korea Array** 0.1nm,0.3s,baz=100,slow=14,SNR=3.1	**10.69**	**285**	Pn	**Pn**	**12 59 17.7**	**+2.4**	
KSAR	**Wonju Array Be**	**10.71**	**285**	Pn	**Pn**	**12 59 17.7**	**+1.9**	
KLR	**Kul'dur** comp=Z,89nm,21.6s,baz=222,slow=32	**15.39**	**337**	LR	LR	13 05 01.2		
PETK	**Petropavlovsk-** 2.0nm,0.8s,baz=224,slow=8.9,SNR=3.4	**21.30**	**29**	P	**P**	**13 01 28.7**	**-0.2**	
MA2	**Magadan** 6.1nm,0.9s,baz=221,slow=8.3,SNR=9.9	**25.03**	**12**	P	**P**	**13 02 06.4**	**+0.2**	
ENH	**Enshi** 4.6nm,0.6s	**26.85**	**268**	*eP*	**P**	**13 02 22.6**	**-0.4**	
H11N2	**WAKE ISLAND Hy** baz=310,slow=76,SNR=781	**27.69**	**117**	T	T	13 31 22.0		
H11N1	**WAKE ISLAND Hy** baz=310,slow=76,SNR=547	**27.70**	**117**	T	T	13 31 26.8		
H11N3	**WAKE ISLAND Hy** baz=310,slow=76,SNR=584	**27.71**	**117**	T	T	13 31 26.0		
H11S1	**WAKE ISLAND Hy** baz=312,slow=75,SNR=2258	**28.34**	**120**	T	T	13 32 13.8		
H11S3	**WAKE ISLAND Hy** baz=312,slow=75,SNR=2549	**28.34**	**120**	T	T	13 32 13.5		
H11S2	**WAKE ISLAND Hy** baz=312,slow=75,SNR=1251	**28.36**	**120**	T	T	13 32 14.3		
SONM	**Songino Array** 0.2nm,0.5s,baz=114,slow=7.6,SNR=2.3	**28.41**	**307**	P	**P**	**13 02 39.0**	**+1.9**	
SEY	**Seynchan** 0.9nm,0.6s,baz=194,slow=7.6,SNR=5.9	**28.47**	**11**	P	**P**	**13 02 37.8**	**+0.6**	
ZALV	**Zalesovo Beam** 0.6nm,0.3s,baz=357,slow=3.3,SNR=3.5	**42.75**	**314**	P	**P**	**13 04 40.5**	**+1.0**	
MKAR	**Makanchi Array** 0.6nm,0.6s,baz=92,slow=9.5,SNR=6.9	**44.68**	**303**	P	**P**	**13 04 55.4**	**+0.1**	
PMG	**Port Moresby** comp=Z,72nm,18.5s,baz=203,slow=36	**44.95**	**171**	LR	LR	13 23 28.0		
TKM2	**Tokmak 2** 1.6nm,0.8s	**50.08**	**299**	*eP*	P	13 05 32.3	-5.3	
ILAR	**Eielson Array** 1.6nm,0.8s,baz=268,slow=6.1,SNR=16	**51.09**	**32**	P	**P**	**13 05 44.5**	**-0.1**	
WRAB	**Tennant Creek** 1.9nm,0.7s	**55.38**	**188**	*eP*	**P**	**13 06 16.1**	**-0.5**	
WRA	**Warramunga Arr** 2.0nm,0.6s,baz=2.9,slow=7.7,SNR=27	**55.39**	**188**	P	**P**	**13 06 15.6**	**-1.1**	
INK	**Inuvik** 1.7nm,0.8s,baz=295,slow=6.1,SNR=5.9	**56.02**	**27**	P	**P**	**13 06 20.6**	**-0.1**	
ABKAR	**Akbulak array** 0.7nm,0.5s	**58.71**	**311**	*eP*	**P**	**13 06 39.7**	**-0.2**	
ASAR	**Alice Springs** 0.4nm,0.5s,baz=15,slow=10,SNR=11	**59.12**	**188**	P	**P**	**13 06 43.4**	**+0.4**	
RES	**Resolute Bay** 1.3nm,0.8s,baz=305,slow=8.2,SNR=7.0	**64.28**	**14**	P	**P**	**13 07 16.7**	**-0.4**	
YKA	**Yellowknife Ar** 0.6nm,0.8s,baz=300,slow=6.5,SNR=13	**65.42**	**30**	P	**P**	**13 07 24.5**	**-0.3**	
STKA	**Stephens Creek** 1.4nm,0.3s,baz=304,slow=11,SNR=2.1	**66.92**	**179**	P	**P**	**13 07 34.3**	**-0.4**	
FINES	**FINESS Array B** 0.5nm,0.6s,baz=61,slow=7.0,SNR=6.6	**70.08**	**332**	P	**P**	**13 07 53.9**	**-0.3**	
NB2	**NORSAR Subarra** comp=Z,1.5nm,0.9s,baz=39,slow=6.2	**75.55**	**337**	P	**P**	**13 08 25.6**	**-1.1**	
NOA	**NORSAR Array B** comp=Z,1.1nm,0.8s,baz=42,slow=5.8,SNR=4.3	**75.55**	**337**	P	**P**	**13 08 26.6**	**-0.1**	
NVAR	**Mina Array Bea** comp=Z,0.9nm,0.8s,baz=287,slow=5.2,SNR=7.1	**76.28**	**53**	P	**P**	**13 08 31.6**	**+0.1**	
H17A	**Grant Village** comp=Z,1.0nm,0.8s	**77.51**	**44**	*eP*	**P**	**13 08 41.4**	**+3.0**	
PDAR	**Pinedale Array** comp=Z,0.4nm,0.7s,baz=270,slow=3.0,SNR=4.6	**79.09**	**45**	P	**P**	**13 08 46.5**	**-0.7**	
TXAR	**Lajitas Array** comp=Z,0.4nm,0.9s,baz=316,slow=5.2,SNR=3.6	**91.43**	**52**	P	**P**	**13 09 49.0**	**-0.1**	

CSEM ***23*** *12:58:53.6, 37°.92N×14°.89E, h33km, ML2.2/10*
ROM 23 12:58:53.6±0.1, 37°.92N×14°.89E, h33km±1km, MI2.2/10, Error ellipse: s-maj=1.9km s-min=1.4km az=74.0, Sicily

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MNO	**Monte Soro**	**0.16**	**276**	Pg	Pb	12 59 00.2	+0.2
MNO				*Sg*	Sb	12 59 04.9	+0.6
	235nm,0.4s						
MNO	**Monte Soro**	**0.16**	**276**	Pg	Pb	12 59 00.2	+0.2
MNO				*Sg*	Sb	12 59 04.9	+0.6
	235nm,0.4s						
NOV	**Novara**	**0.22**	**60**	Pg	Pb	12 59 00.3	-0.2
NOV				*Sg*	Sb	12 59 05.2	+0.1
	239nm,0.6s						
NOV	**Novara**	**0.22**	**60**	Pg	Pb	12 59 00.3	-0.2
NOV				*Sg*	Sb	12 59 05.2	+0.1
	239nm,0.6s						
MMME	**Mongiuffi-Meli**	**0.29**	**86**	Pg	Pb	12 59 01.3	+0.1
MMME				*Sg*	Sn	12 59 06.8	0.0
	199nm,0.4s						
MMME	**Mongiuffi-Meli**	**0.29**	**86**	Pg	Pb	12 59 01.3	+0.1
MMME				*Sg*	Sn	12 59 06.8	0.0
	199nm,0.4s						
MCSR	**Castroreale**	**0.32**	**63**	Pg	Pb	12 59 01.5	-0.2
MCSR				*Sg*	Sb	12 59 07.2	+0.1
MCSR	**Castroreale**	**0.32**	**63**	Pg	Pb	12 59 01.5	-0.2
MCSR				*Sg*	Sb	12 59 07.2	+0.1
GALF	**Gagliano Caste**	**0.33**	**231**	Pg	Pn	12 59 02.5	+0.3
GALF				*Sg*	Sn	12 59 08.6	+0.8
	92nm,0.7s						
GALF	**Gagliano Caste**	**0.33**	**231**	Pg	Pn	12 59 02.5	+0.3
GALF				*Sg*	Sn	12 59 08.6	+0.8
	92nm,0.7s						
MPNC	**Port Mandanici**	**0.43**	**58**	Pg	Pb	12 59 03.3	+0.2
MPNC				*Sg*	Sn	12 59 10.6	+0.3
	176nm,0.6s						
MPNC	**Port Mandanici**	**0.43**	**58**	Pg	Pb	12 59 03.3	+0.2
MPNC				*Sg*	Sn	12 59 10.6	+0.3
	176nm,0.6s						
MILZ	**Milazzo**	**0.44**	**37**	Pg	Pn	12 59 03.5	-0.2
MILZ				*Sg*	Sn	12 59 11.1	+0.5
	164nm,0.4s						
MILZ	**Milazzo**	**0.44**	**37**	Pg	Pn	12 59 03.5	-0.2
MILZ				*Sg*	Sn	12 59 11.1	+0.5
	164nm,0.4s						
VPL	**Vulcano Piano**	**0.47**	**9**	Pg	Pb	12 59 03.5	-0.2
VPL				*Sg*	Sn	12 59 11.2	0.0
	313nm,0.2s						
VPL	**Vulcano Piano**	**0.47**	**9**	Pg	Pb	12 59 03.5	-0.2
VPL				*Sg*	Sn	12 59 11.2	0.0
	313nm,0.2s						
HLNI	**Lentini**	**0.57**	**182**	Pg	Pb	12 59 05.0	-0.3
HLNI				*Sg*	Sn	12 59 13.9	+0.2
HLNI	**Lentini**	**0.57**	**182**	Pg	Pb	12 59 05.0	-0.3
HLNI				*Sg*	Sn	12 59 13.9	+0.2
MSRU	**Castanea** 95nm,0.5s	**0.60**	**55**	Pg	Pn	12 59 06.4	+0.6
MSRU	**Castanea** 95nm,0.5s	**0.60**	**55**	Pg	Pn	12 59 06.4	+0.6
PLLN	**Pollina** 42nm,0.4s	**0.60**	**277**	Pg	Pn	12 59 06.9	+1.0
PLLN	**Pollina** 42nm,0.4s	**0.60**	**277**	Pg	Pn	12 59 06.9	+1.0
HCRL	**Carlentini**	**0.64**	**170**	Pg	Pn	12 59 06.4	0.0
HCRL				*Sg*	Sn	12 59 15.9	+0.4
HCRL	**Carlentini**	**0.64**	**170**	Pg	Pn	12 59 06.4	0.0
HCRL				*Sg*	Sn	12 59 15.9	+0.4
HAGA	**Augusta**	**0.67**	**162**	Pg	Pn	12 59 06.5	-0.2
HAGA				*Sg*	Sn	12 59 16.5	+0.5
HAGA	**Augusta**	**0.67**	**162**	Pg	Pn	12 59 06.5	-0.2
HAGA				*Sg*	Sn	12 59 16.5	+0.5
IFIL	**Filicudi I Eol** 81nm,0.3s	**0.69**	**338**	Pg	Pn	12 59 06.7	-0.5
IFIL	**Filicudi I Eol** 81nm,0.3s	**0.69**	**338**	Pg	Pn	12 59 06.7	-0.5
AGST	**Augusta-Monte**	**0.71**	**158**	Pg	Pn	12 59 07.3	-0.1
AGST				*Sg*	Sn	12 59 18.2	+1.0
AGST	**Augusta-Monte**	**0.71**	**158**	Pg	Pn	12 59 07.3	-0.1
AGST				*Sg*	Sn	12 59 18.2	+1.0
IACL	**Alicudi**	**0.75**	**326**	Pg	Pn	12 59 07.6	-0.3
IACL				*Sg*	Sb	12 59 18.2	+0.1
	100nm,0.3s						
MPAZ	**Palizzi**	**0.88**	**87**	Pg	Pb	12 59 11.0	+0.5
MPAZ				*Sg*	Sb	12 59 23.6	+1.6
	31nm,0.3s						
MPAZ	**Palizzi**	**0.88**	**87**	Pg	Pb	12 59 11.0	+0.5
MPAZ				*Sg*	Sb	12 59 23.6	+1.6
	31nm,0.3s						

CSEM ***23*** *12:59:29.4, 37°.90N×14°.93E, h33km, ML2.7/7*
ROM 23 12:59:29.4±0.1, 37°.90N×14°.93E, h33km±1km, MI2.7/7, Error ellipse: s-maj=1.8km s-min=1.2km az=134.0, Sicily

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MNO	**Monte Soro**	**0.18**	**280**	Pg	Pb	12 59 35.8	-0.3
MNO				*Sg*	Sb	12 59 40.6	-0.1
MNO	**Monte Soro**	**0.18**	**280**	Pg	Pb	12 59 35.8	-0.3
MNO				*Sg*	Sb	12 59 40.6	-0.1
NOV	**Novara**	**0.21**	**53**	Pg	Pb	12 59 36.1	-0.1
NOV				*Sg*	Sb	12 59 40.7	-0.1
NOV	**Novara**	**0.21**	**53**	Pg	Pb	12 59 36.1	-0.1
NOV				*Sg*	Sb	12 59 40.7	-0.1
ESLN	**Serra La Nave** 630nm,0.4s	**0.21**	**169**	Pg	Pb	12 59 36.8	+0.4
ESLN	**Serra La Nave** 630nm,0.4s	**0.21**	**169**	Pg	Pb	12 59 36.8	+0.4
MMME	**Mongiuffi-Meli**	**0.26**	**83**	Pg	Pb	12 59 37.0	+0.2
MMME				*Sg*	Sb	12 59 42.5	+0.7
	908nm,0.3s						
MMME	**Mongiuffi-Meli**	**0.26**	**83**	Pg	Pb	12 59 37.0	+0.2
MMME				*Sg*	Sb	12 59 42.5	+0.7
	908nm,0.3s						
MCSR	**Castroreale**	**0.30**	**58**	Pg	Pb	12 59 37.2	-0.1
MCSR				*Sg*	Sb	12 59 42.8	+0.1
MCSR	**Castroreale**	**0.30**	**58**	Pg	Pb	12 59 37.2	-0.1
MCSR				*Sg*	Sb	12 59 42.8	+0.1
ECNV	**Catenanuova**	**0.35**	**209**	Pg	Pn	12 59 38.9	+0.7
ECNV	**Catenanuova**	**0.35**	**209**	Pg	Pn	12 59 38.9	+0.7
MPNC	**Port Mandanici**	**0.41**	**54**	Pg	Pn	12 59 39.1	0.0
MPNC				*Sg*	Sn	12 59 46.3	+0.7
	909nm,0.6s						
MPNC	**Port Mandanici**	**0.41**	**54**	Pg	Pn	12 59 39.1	0.0
MPNC				*Sg*	Sn	12 59 46.3	+0.7
	909nm,0.6s						
MILZ	**Milazzo**	**0.44**	**33**	Pg	Pb	12 59 39.1	0.0
MILZ				*Sg*	Sn	12 59 46.6	+0.4
	744nm,0.4s						
MILZ	**Milazzo**	**0.44**	**33**	Pg	Pb	12 59 39.1	0.0
MILZ				*Sg*	Sn	12 59 46.6	+0.4
	744nm,0.4s						
HLNI	**Lentini**	**0.56**	**184**	Pg	Pb	12 59 40.7	-0.2
HLNI				*Sg*	Sn	12 59 49.6	+0.6
	127nm,0.2s						
HLNI	**Lentini**	**0.56**	**184**	Pg	Pb	12 59 40.7	-0.2
HLNI				*Sg*	Sn	12 59 49.6	+0.6
	127nm,0.2s						
HCRL	**Carlentini**	**0.62**	**172**	Pg	Pn	12 59 41.8	-0.1
HCRL				*Sg*	Sn	12 59 51.3	+0.6
HCRL	**Carlentini**	**0.62**	**172**	Pg	Pn	12 59 41.8	-0.1
HCRL				*Sg*	Sn	12 59 51.3	+0.6
PLLN	**Pollina**	**0.62**	**279**	Pg	Pn	12 59 41.5	-0.4
PLLN				*Sg*	Sn	12 59 52.0	+1.2
PLLN	**Pollina**	**0.62**	**279**	Pg	Pn	12 59 41.5	-0.4
PLLN				*Sg*	Sn	12 59 52.0	+1.2
HAGA	**Augusta**	**0.64**	**163**	Pg	Pn	12 59 41.8	-0.3
HAGA	**Augusta**	**0.64**	**163**	Pg	Pn	12 59 41.8	-0.3
AGST	**Augusta-Monte**	**0.69**	**159**	Pg	Pn	12 59 42.5	-0.3
AGST				*Sg*	Sb	12 59 53.6	+1.3
AGST	**Augusta-Monte**	**0.69**	**159**	Pg	Pn	12 59 42.5	-0.3
AGST				*Sg*	Sb	12 59 53.6	+1.3
GIB	**Gibilmanna**	**0.72**	**277**	Pg	Pb	12 59 43.5	-0.1
GIB				*Sg*	Sb	12 59 54.5	+1.3
GIB	**Gibilmanna**	**0.72**	**277**	Pg	Pb	12 59 43.5	-0.1
GIB				*Sg*	Sb	12 59 54.5	+1.3
HVZN	**Vizzini**	**0.74**	**193**	Pg	Pn	12 59 43.6	0.0
HVZN				*Sg*	Sb	12 59 55.2	+1.3
	225nm,0.5s						
HVZN	**Vizzini**	**0.74**	**193**	Pg	Pn	12 59 43.6	0.0
HVZN				*Sg*	Sb	12 59 55.2	+1.3
	225nm,0.5s						
SSY	**Sortino**	**0.76**	**171**	Pg	Pn	12 59 43.7	-0.1
SSY	**Sortino**	**0.76**	**171**	Pg	Pn	12 59 43.7	-0.1
RAFF	**Raffo Rosso**	**0.81**	**214**	Pg	Pb	12 59 45.2	+0.1
RAFF	**Raffo Rosso**	**0.81**	**214**	Pg	Pb	12 59 45.2	+0.1
MPAZ	**Palizzi** 142nm,0.3s	**0.86**	**86**	Pg	Pb	12 59 46.5	+0.6
MPAZ	**Palizzi** 142nm,0.3s	**0.86**	**86**	Pg	Pb	12 59 46.5	+0.6
HMDC	**Modica**	**0.95**	**187**	Pg	Pn	12 59 46.4	0.0
HMDC				*Sg*	Sb	13 00 00.7	+1.0
HMDC	**Modica**	**0.95**	**187**	Pg	Pn	12 59 46.4	0.0
HMDC				*Sg*	Sb	13 00 00.7	+1.0
HAVL	**Avola**	**0.95**	**170**	Pg	Pb	12 59 47.0	-0.5
HAVL	**Avola**	**0.95**	**170**	Pg	Pb	12 59 47.0	-0.5
JOPP	**Joppolo**	**1.03**	**47**	Pg	Pn	12 59 48.1	+0.5
JOPP	**Joppolo**	**1.03**	**47**	Pg	Pn	12 59 48.1	+0.5

JMA ***23*** *13:01:09.5±0.3, 34°.81N×141°.18E, h

KURK	**Kurchatov**	**0.70**	**358**	⇑P	**Pg**	**13 12 39.6**	**-1.0**
	50nm,0.4s							
KURK				⇑S	**Sg**	**13 12 49.9**	**+0.3**
	94nm,0.5s							
MK31	**Makanchi Array**	**4.03**	**142**	⇑Pn	**Pn**	**13 13 30.8**	**+0.7**
	0.3nm,0.2s,baz=326,slow=13,SNR=28							
MK31				⇑Pg	**Pb**	**13 13 39.2**	**+0.3**
	2.3nm,0.4s,baz=314,slow=13,SNR=8.2							
MK31				⇑Lg	Lg	13 14 33.2		
	12nm,0.5s,baz=325,slow=28,SNR=22							
MKAR	**Makanchi Array**	**4.03**	**142**	Pn	**Pn**	**13 13 30.2**	**+0.2**
	0.6nm,0.3s,baz=322,slow=10,SNR=137							
MKAR				Lg	Lg	13 14 32.9		
	5.4nm,0.3s,baz=327,slow=30,SNR=17							
ZALV	**Zalesovo Beam**	**5.47**	**42**	Pn	**Pn**	**13 13 51.0**	**+1.2**
	1.4nm,0.3s,baz=233,slow=13,SNR=16							
ZALV				Lg	Lg	13 15 12.6		
	0.4nm,0.3s,baz=217,slow=23,SNR=3.3							
VOSK	**Vostochnaya**	**5.52**	**302**	⇑Pn	**Pn**	**13 13 50.6**	**+0.1**
	0.8nm,0.3s							
VOSK				⇓Sn	**Sn**	**13 14 55.5**	**+0.8**
	2.5nm,0.5s							
VOSK				⇑Lg	Lg	13 15 24.4		
	1.5nm,0.4s							
BVA0	**Borovoye Array**	**5.98**	**303**	⇑Pn	**Pn**	**13 13 58.4**	**+1.6**
	0.5nm,0.3s,baz=109,slow=15,SNR=14							
BVA0				⇑Pg	Pb	13 14 06.9	-5.3	
	0.7nm,0.4s,baz=113,slow=15,SNR=4.1							
BVA0				Sn	**Sn**	**13 15 06.9**	**+1.0**
	3.5nm,0.5s,baz=118,slow=22,SNR=7.7							
BVA0				⇑Lg	Lg	13 15 35.3		
	4.4nm,0.5s							
BVAR	**Borovoye Array**	**5.98**	**303**	Pn	**Pn**	**13 13 57.4**	**+0.6**
	0.4nm,0.3s,baz=114,slow=13,SNR=11							
BVAR				Sn	**Sn**	**13 15 07.2**	**+1.3**
	1.9nm,0.3s,baz=113,slow=23,SNR=14							
BVAR				Lg	Lg	13 15 32.9		
	1.2nm,0.3s,baz=111,slow=24,SNR=5.4							
AAK	**Ala-Archa**	**7.93**	**203**	Lg	Lg	13 16 37.9		
	0.2nm,0.3s,baz=99,slow=16,SNR=2.3							
AAK	**Ala-Archa**	**7.93**	**203**	⇑Lg	Lg	13 16 42.9		
	3.5nm,0.6s							
KK31	**Karatay Array**	**8.90**	**222**	⇓Lg	Lg	13 17 11.0		
	2.0nm,0.7s,baz=35,slow=28,SNR=3.6							
ARCES	**ARCESS Array B**	**31.64**	**328**	P	**P**	**13 18 50.6**	**-0.9**
	7.6nm,1.1s,baz=113,slow=11,SNR=2.9							
HFS	**Hagfors**	**37.05**	**311**	P	**P**	**13 19 37.5**	**-0.9**
	0.6nm,0.4s,baz=72,slow=11,SNR=5.8							
NOA	**NORSAR Array B**	**38.01**	**313**	P	**P**	**13 19 45.7**	**-0.8**
	0.3nm,0.5s,baz=67,slow=2.6,SNR=2.7							
ASAJ	**Asahikawa**	**42.76**	**72**	LR	LR	13 39 14.0		
	comp=Z,868nm,18.4s,baz=177,slow=38							

CRAAG ***23*** *13:28:46.7, 36.˚43N×0.˚90W, Ml3.0*
IGIL ***23*** *13:28:48.9, 35.˚68N×1.˚56W, h0km*
MDD ***23*** *13:28:48.2±0.8, 35.˚66N×1.˚52W, h0km, mbLg2.9/27, Error ellipse: s-maj=8.4km s-min=4.5km az=144.0, PRXIMO*
SFS ***23*** *13:28:48.0, 35.˚68N×1.˚56W, h0km, ML2.9*
CSEM ***23*** *13:28:49.1±0.2, 35.˚69N×1.˚62W, h10km, ML2.9, Error ellipse: s-maj=5.3km s-min=3.6km az=158.0*
INMG ***23*** *13:28:49.2±1.6, 35.˚66N×1.˚47W, h16km±11km, ML2.7, Error ellipse: s-maj=7.7km s-min=4.3km az=142.0*
LDG ***23*** *13:28:51.8, 35.˚85N×1.˚55W, h70km*
CNRM ***23*** *13:28:53.3, 35.˚56N×1.˚51W, h30km, MD3.7*

ISC 23 13:28:51.2±1.7, 35.˚78N±0.˚03×1.˚60W±0.˚03, h28km±16km, n154, σ1ş40/219, Northern Algeria

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
OLHC	**Oulhaca**	**0.55**	**164**	P	**Pn**	**13 29 05.0**	**+1.8**
OLHC	**Oulhaca**	**0.55**	**164**	P	**Pn**	**13 29 05.0**	**+1.8**
OLHC	**Oulhaca**	**0.55**	**164**	P	**Pn**	**13 29 05.0**	**+1.8**
OTSS	**Djebel Tessala**	**0.82**	**127**	P	**Pn**	**13 29 09.0**	**+1.9**
OTSS	**Djebel Tessala**	**0.82**	**127**	P	**Pn**	**13 29 09.0**	**+1.9**
OTSS	**Djebel Tessala**	**0.82**	**127**	P	**Pn**	**13 29 09.0**	**+1.9**
USTO	**Oran**	**0.85**	**93**	P	Pb	13 29 02.0	-5.5
USTO	**Oran**	**0.85**	**93**	P	Pb	13 29 02.0	-5.5
EALB	**Alboran**	**1.18**	**278**	P	**Pn**	**13 29 11.0**	**-0.8**
	37nm,0.2s,SNR=31						
EALB				S	**Sb**	**13 29 28.5**	**+0.7**
	112nm,0.2s,SNR=7.5						
EALB	**Alboran**	**1.18**	**278**	P	**Pn**	**13 29 11.0**	**-0.8**
	37nm,0.2s,SNR=31						
EALB				S	**Sb**	**13 29 28.5**	**+0.7**
	112nm,0.2s,SNR=7.5						
EMLI	**Melilla**	**1.20**	**247**	P	**Pn**	**13 29 10.7**	**-1.4**
	91nm,0.2s,SNR=12						
EMLI				S	**Sn**	**13 29 27.7**	**+0.2**
	614nm,0.2s,SNR=6.9						
EMEL	**Melilla**	**1.21**	**247**	P	**Pn**	**13 29 10.7**	**-1.5**
	91nm,0.2s,SNR=12						
EMEL				S	**Sn**	**13 29 27.7**	**0.0**
	614nm,0.2s,SNR=6.9						
ODJA	**Bouhanifia**	**1.26**	**110**	P	**Pn**	**13 29 11.0**	**-2.1**
ODJA	**Bouhanifia**	**1.26**	**110**	P	**Pn**	**13 29 11.0**	**-2.1**
ODJA	**Bouhanifia**	**1.26**	**110**	P	**Pn**	**13 29 11.0**	**-2.1**
ENIJ	**Nijar**	**1.29**	**338**	P	**Pn**	**13 29 13.0**	**-0.4**
	34nm,0.1s,SNR=7.9						
ENIJ				S	**Sn**	**13 29 29.8**	**+0.1**
	224nm,0.2s,SNR=7.9						
ENIJ	**Nijar**	**1.29**	**338**	P	**Pn**	**13 29 13.0**	**-0.4**
	34nm,0.1s,SNR=7.9						
ENIJ				S	**Sn**	**13 29 29.8**	**+0.1**
	224nm,0.2s,SNR=7.9						
EBER	**Berja**	**1.53**	**317**	P	**Pn**	**13 29 16.8**	**0.0**
	13nm,0.2s,SNR=66						
EBER				S	**Sb**	**13 29 37.9**	**-0.1**
	72nm,0.3s,SNR=11						
EBER	**Berja**	**1.53**	**317**	P	**Pn**	**13 29 16.8**	**0.0**
	13nm,0.2s,SNR=66						
EBER				S	**Sb**	**13 29 37.9**	**-0.1**
	72nm,0.3s,SNR=11						
OJBR	**Djebel Berber**	**1.59**	**97**	P	Pn	13 29 11.0	-6.7
OJBR	**Djebel Berber**	**1.59**	**97**	P	Pn	13 29 11.0	-6.7
CART	**Cartagena**	**1.87**	**15**	P	**Pn**	**13 29 19.7**	**-1.6**
CART				S	**Sn**	**13 29 40.5**	**-3.5**
CART	**Cartagena**	**1.87**	**15**	*e*P	**Pn**	**13 29 19.7**	**-1.6**
EQUE	**Quentar**	**2.06**	**314**	P	**Pn**	**13 29 25.3**	**+1.3**
	13nm,0.2s,SNR=7.9						
EQUE				S	**Sb**	**13 29 52.5**	**-0.6**
	22nm,0.3s,SNR=7.9						
EQUE	**Quentar**	**2.06**	**314**	P	**Pn**	**13 29 25.3**	**+1.3**
	13nm,0.2s,SNR=7.9						
GORA	**Gorafe**	**2.06**	**326**	P	**Pn**	**13 29 24.8**	**+0.8**
	13nm,0.2s,SNR=7.9						
GORA				S	**Sn**	**13 29 50.6**	**+1.9**
	80nm,0.5s,SNR=7.9						
GORA	**Gorafe**	**2.06**	**326**	P	**Pn**	**13 29 24.8**	**+0.8**
	13nm,0.2s,SNR=7.9						
GORA				S	**Sn**	**13 29 50.6**	**+1.9**
	80nm,0.5s,SNR=7.9						
EMUR	**La Murta**	**2.08**	**8**	P	**Pn**	**13 29 23.7**	**-0.6**
	18nm,0.3s,SNR=55						
EMUR				S	**Sn**	**13 29 47.5**	**-1.7**
	53nm,0.4s						
EMUR	**La Murta**	**2.08**	**8**	P	**Pn**	**13 29 23.7**	**-0.6**
	18nm,0.3s,SNR=55						
EANR	**'Ain N'Sour**	**2.20**	**85**	P	**Pn**	**13 29 25.7**	**-0.3**
EANR	**'Ain N'Sour**	**2.20**	**85**	P	**Pn**	**13 29 25.7**	**-0.3**
EANR	**'Ain N'Sour**	**2.20**	**85**	P	**Pn**	**13 29 25.7**	**-0.3**
SELV	**Sierra Elvira**	**2.25**	**311**	P	**Pn**	**13 29 28.0**	**+1.4**
	3.9nm,0.3s,SNR=7.9						
SELV				S	**Sb**	**13 29 58.9**	**+0.2**
	12nm,0.4s,SNR=7.9						
SELV	**Sierra Elvira**	**2.25**	**311**	P	**Pn**	**13 29 28.0**	**+1.4**
	3.9nm,0.3s,SNR=7.9						
ETRT	**Tiaret**	**2.40**	**99**	P	Pn	13 29 20.7	-8.0
ETRT	**Tiaret**	**2.40**	**99**	P	Pn	13 29 20.7	-8.0
EGOR	**Sierra Gorda,**	**2.42**	**304**	P	**Pn**	**13 29 30.2**	**+1.1**
	5.7nm,0.3s,SNR=7.9						
EGOR				S	**Sb**	**13 30 02.8**	**-0.8**
	32nm,0.4s,SNR=7.9						
EGOR	**Sierra Gorda,**	**2.42**	**304**	P	**Pn**	**13 29 30.2**	**+1.1**
	5.7nm,0.3s,SNR=7.9						
SESP	**Santiago Espad**	**2.46**	**342**	P	**Pn**	**13 29 31.3**	**+1.7**
	30nm,0.1s,SNR=7.9						
SESP				S	**Sb**	**13 30 02.1**	**-2.6**
	48nm,0.2s,SNR=7.9						
SESP	**Santiago Espad**	**2.46**	**342**	P	**Pn**	**13 29 31.3**	**+1.7**
	30nm,0.1s,SNR=7.9						
SESP				S	**Sb**	**13 30 02.1**	**-2.6**
	48nm,0.2s,SNR=7.9						
EBNR	**Beni Rached**	**2.59**	**78**	P	Pn	13 29 26.0	-5.3
EMIJ	**Mijas**	**2.68**	**288**	P	**Pn**	**13 29 31.2**	**-1.4**
	3.2nm,0.1s,SNR=36						
EMIJ				S	**Sn**	**13 30 02.9**	**-1.3**
	46nm,0.4s,SNR=4.9						
EMIJ	**Mijas**	**2.68**	**288**	P	**Pn**	**13 29 31.2**	**-1.4**
	3.2nm,0.1s,SNR=36						
EMIJ				S	**Sn**	**13 30 02.9**	**-1.3**
	46nm,0.4s,SNR=4.9						
TZK	**Tazeka**	**2.71**	**232**	P	**Pn**	**13 29 31.0**	**-2.2**
TZK				S	**Sn**	**13 30 03.0**	**-2.1**
TZK	**Tazeka**	**2.71**	**232**	P	**Pn**	**13 29 31.0**	**-2.2**
TZK				S	**Sn**	**13 30 03.0**	**-2.1**
ETOB	**Tobarra**	**2.86**	**1**	P	**Pn**	**13 29 36.1**	**+1.1**
	4.6nm,0.1s,SNR=7.9						
ETOB				S	**Sn**	**13 30 09.8**	**+1.3**
	19nm,0.4s,SNR=7.9						
ETOB	**Tobarra**	**2.86**	**1**	P	**Pn**	**13 29 36.1**	**+1.1**
	4.6nm,0.1s,SNR=7.9						
ETOB				S	**Sn**	**13 30 09.9**	**+1.3**
	19nm,0.4s,SNR=7.9						
AFON	**Font Roja**	**3.00**	**16**	P	**Pn**	**13 29 38.4**	**+1.4**
	0.2nm,0.1s,SNR=7.9						
AFON				S	**Sn**	**13 30 09.3**	**-2.8**
	5.0nm,0.3s,SNR=7.9						
AFON	**Font Roja**	**3.00**	**16**	P	**Pn**	**13 29 38.4**	**+1.4**
	0.2nm,0.1s,SNR=7.9						
LIJA	**Lijar**	**3.27**	**291**	P	Pn	13 29 44.0	+3.3
LIJA				S	**Sb**	**13 30 26.5**	**-1.5**
LIJA	**Lijar**	**3.27**	**291**	*i* P	Pn	13 29 44.0	+3.3
EADA	**Adamuz**	**3.37**	**316**	P	**Pn**	**13 29 42.8**	**+0.8**
	0.6nm,0.2s,SNR=4.6						
EADA				S	**Sn**	**13 30 22.8**	**+1.7**
	6.1nm,0.2s,SNR=4.8						
EADA	**Adamuz**	**3.37**	**316**	P	**Pn**	**13 29 42.8**	**+0.8**
	0.6nm,0.2s,SNR=4.6						
EADA				S	**Sn**	**13 30 22.8**	**+1.7**
	6.1nm,0.2s,SNR=4.8						
ESPR	**Espera**	**3.60**	**289**	P	**Pn**	**13 29 45.8**	**+0.6**
	1.6nm,0.2s,SNR=7.9						
ESPR				S	**Sn**	**13 30 27.1**	**+0.3**
	9.1nm,0.3s,SNR=7.9						
ESPR	**Espera**	**3.60**	**289**	P	**Pn**	**13 29 45.8**	**+0.6**
	1.6nm,0.2s,SNR=7.9						
ESPR				S	**Sn**	**13 30 27.1**	**+0.3**
	9.1nm,0.3s,SNR=7.9						
ECAB	**El Cabril**	**3.82**	**308**	P	**Pn**	**13 29 48.3**	**0.0**
	0.8nm,0.3s,SNR=8.1						
ECAB				S	**Sn**	**13 30 33.8**	**+1.5**
	4.0nm,0.3s						
ECAB	**El Cabril**	**3.82**	**308**	P	**Pn**	**13 29 48.3**	**0.0**
	0.8nm,0.3s,SNR=8.1						
ECAB				S	**Sn**	**13 30 33.8**	**+1.5**
	4.0nm,0.3s						
CZD	**Col de Zad**	**3.95**	**227**	P	**Pn**	**13 29 50.0**	**-0.2**
CZD				S	**Sn**	**13 30 31.0**	**-4.8**
CZD	**Col de Zad**	**3.95**	**227**	P	**Pn**	**13 29 50.0**	**-0.2**
CZD				*i* S	**Sn**	**13 30 31.0**	**-4.8**
ESDC	**Sonseca Array**	**4.32**	**335**	P	**Pn**	**13 29 56.4**	**+1.4**
	0.8nm,0.1s,baz=150,slow=13,SNR=21						
ESDC				S	**Sn**	**13 30 45.1**	**+0.7**
	1.8nm,0.3s,baz=152,slow=22,SNR=4.5						
ESDC	**Sonseca Array**	**4.32**	**335**	P	**Pn**	**13 29 56.4**	**+1.4**
	0.8nm,0.1s,SNR=21						
ESDC				S	**Sn**	**13 30 45.1**	**+0.7**
	1.8nm,0.3s,SNR=4.5						
EMIN	**Mina Concepcio**	**4.53**	**297**	P	**Pn**	**13 29 57.2**	**-0.7**
	0.7nm,0.2s,SNR=7.9						
EMIN				S	**Sn**	**13 30 49.3**	**-0.3**
	5.7nm,0.5s,SNR=7.9						
EMIN	**Mina Concepcio**	**4.53**	**297**	P	**Pn**	**13 29 57.2**	**-0.7**
	0.7nm,0.2s,SNR=7.9						
EMIN				S	**Sn**	**13 30 49.3**	**-0.3**
	5.7nm,0.5s,SNR=7.9						
EMOS	**Mosqueruela**	**4.66**	**11**	P	**Pn**	**13 30 01.5**	**+1.6**
	1.1nm,0.2s,SNR=7.9						
EMOS				S	**Sn**	**13 30 52.2**	**-0.9**
	4.4nm,0.4s,SNR=7.9						
EMOS	**Mosqueruela**	**4.66**	**11**	P	**Pn**	**13 30 01.5**	**+1.6**
	1.1nm,0.2s,SNR=7.9						
KIB	**El Ksiba**	**4.87**	**230**	P	**Pn**	**13 30 04.0**	**+1.2**
KIB				S	**Sn**	**13 30 54.0**	**-4.3**
KIB	**El Ksiba**	**4.87**	**230**	P	**Pn**	**13 30 04.0**	**+1.2**
KIB				*i* S	**Sn**	**13 30 54.0**	**-4.3**
PBAR	**Barrancos**	**4.97**	**300**	*e*P	**Pn**	**13 30 04.0**	**+0.1**
PBAR				*e*S	**Sn**	**13 31 01.2**	**+0.8**
PBAR				A	A	13 31 04.1	
	9.3nm,0.4s						
PBAR	**Barrancos**	**4.97**	**300**	P	**Pn**	**13 30 04.0**	**+0.1**
PBAR				S	**Sn**	**13 31 01.2**	**+0.8**
	9.3nm,0.4s						
PBAR	**Barrancos**	**4.97**	**300**	P	**Pn**	**13 30 04.0**	**+0.1**
PBAR				*e*S	**Sn**	**13 31 01.2**	**+0.8**
	9.3nm,0.4s						
EGRO	**El Granado**	**5.04**	**292**	P	**Pn**	**13 30 05.5**	**+0.5**
	5.6nm,0.3s,SNR=7.9						
EGRO				S	**Sn**	**13 31 01.0**	**-1.3**
	6.3nm,0.3s,SNR=7.9						
EGRO	**El Granado**	**5.04**	**292**	P	**Pn**	**13 30 05.5**	**+0.5**
	5.6nm,0.3s,SNR=7.9						
EGRO				S	**Sn**	**13 31 01.0**	**-1.3**
	6.3nm,0.3s,SNR=7.9						
PVAQ	**Vaqueiros**	**5.18**	**290**	*e*P	**Pn**	**13 30 06.9**	**0.0**
PVAQ				*e*S	**Sn**	**13 31 05.2**	**-0.5**
PVAQ				A	A	13 31 10.7	
	9.7nm,0.5s						
PVAQ	**Vaqueiros**	**5.18**	**290**	P	**Pn**	**13 30 06.9**	**0.0**
PVAQ				S	**Sn**	**13 31 05.2**	**-0.5**
	9.7nm,0.5s						
PVAQ	**Vaqueiros**	**5.18**	**290**	P	**Pn**	**13 30 06.9**	**0.0**
PVAQ				*e*S	**Sn**	**13 31 05.2**	**-0.5**
	9.7nm,0.5s						
EBAD	**Badajoz**	**5.24**	**306**	P	**Pn**	**13 30 08.1**	**+0.4**
	1.3nm,0.2s,SNR=14						
EBAD				S	**Sn**	**13 31 06.4**	**-0.7**
	4.7nm,0.2s						
EBAD	**Badajoz**	**5.24**	**306**	P	**Pn**	**13 30 08.1**	**+0.4**
	1.3nm,0.2s,SNR=14						
EBAD				S	**Sn**	**13 31 06.4**	**-0.7**
	4.7nm,0.2s						
GUD	**Guadarrama**	**5.25**	**338**	P	**Pn**	**13 30 09.2**	**+1.2**
	1.5nm,0.2s,SNR=7.3						
GUD				S	**Sn**	**13 31 07.8**	**+0.1**
	0.8nm,0.2s						
GUD	**Guadarrama**	**5.25**	**338**	P	**Pn**	**13 30 09.2**	**+1.2**
	1.5nm,0.2s,SNR=7.3						
GUD				S	**Sn**	**13 31 07.8**	**+0.1**
	0.8nm,0.2s						
ETOS	**Mallorca**	**5.30**	**40**	P	**Pn**	**13 30 07.7**	**-0.8**
	2.7nm,0.2s,SNR=12						
ETOS				S	**Sn**	**13 31 05.2**	**-3.4**
	6.6nm,0.3s,SNR=7.9						
ETOS	**Mallorca**	**5.30**	**40**	P	**Pn**	**13 30 07.7**	**-0.8**
	2.7nm,0.2s,SNR=12						
PBDV	**Barranco-do-Ve**	**5.30**	**288**	*e*P	**Pn**	**13 30 08.6**	**0.0**
PBDV				*e*S	**Sn**	**13 31 08.3**	**-0.5**
PBDV				A	A	13 31 15.7	
	5.7nm,0.6s						
PBDV	**Barranco-do-Ve**	**5.30**	**288**	P	**Pn**	**13 30 08.6**	**0.0**
PBDV				S	**Sn**	**13 31 08.3**	**-0.5**
	5.7nm,0.6s						
PBDV	**Barranco-do-Ve**	**5.30**	**288**	P	**Pn**	**13 30 08.6**	**0.0**
PBDV				*e*S	**Sn**	**13 31 08.3**	**-0.5**
	5.7nm,0.6s						
ERTA	**Horta de San J**	**5.39**	**16**	P	**Pn**	**13 30 11.0**	**+1.3**
	0.9nm,0.2s,SNR=7.9						
ERTA				S	**Sn**	**13 31 09.6**	**-1.2**
	2.9nm,0.2s,SNR=7.9						
ERTA	**Horta de San J**	**5.39**	**16**	P	**Pn**	**13 30 11.0**	**+1.3**
	0.9nm,0.2s,SNR=7.9						
PCVE	**Castro Verde**	**5.49**	**292**	*e*P	**Pn**	**13 30 11.8**	**+0.6**
PCVE				*e*S	**Sn**	**13 31 13.8**	**+0.4**
PCVE				A	A	13 31 18.3	
	4.6nm,0.3s						
PCVE	**Castro Verde**	**5.49**	**292**	P	**Pn**	**13 30 11.8**	**+0.6**
PCVE				S	**Sn**	**13 31 13.8**	**+0.4**
	4.6nm,0.3s						
PCVE	**Castro Verde**	**5.49**	**292**	P	**Pn**	**13 30 11.8**	**+0.6**
PCVE				*e*S	**Sn**	**13 31 13.8**	**+0.4**
	4.6nm,0.3s						
PBEJ	**Beja**	**5.50**	**296**	*e*P	**Pn**	**13 30 10.6**	**-0.7**
PBEJ				*e*S	**Sn**	**13 31 13.5**	**-0.1**
PBEJ				A	A	13 31 17.9	
	5.0nm,0.5s						
PBEJ	**Beja**	**5.50**	**296**	P	**Pn**	**13 30 10.6**	**-0.7**
PBEJ				S	**Sn**	**13 31 13.5**	**-0.1**
	2.5nm,0.5s						
PBEJ	**Beja**	**5.50**	**296**	P	**Pn**	**13 30 10.6**	**-0.7**
PBEJ				*e*S	**Sn**	**13 31 13.5**	**-0.1**
	5.0nm,0.5s						
PESTR	**Estremoz**	**5.68**	**305**	*e*P	**Pn**	**13 30 14.6**	**+0.8**
PESTR				*e*S	**Sn**	**13 31 17.8**	**-0.3**
PESTR				A	A	13 31 25.0	
	3.5nm,0.9s						
PESTR	**Estremoz**	**5.68**	**305**	P	**Pn**	**13 30 14.6**	**+0.8**
PESTR				S	**Sn**	**13 31 17.8**	**-0.3**
	1.8nm,0.9s						
PESTR	**Estremoz**	**5.68**	**305**	P	**Pn**	**13 30 14.6**	**+0.8**
PESTR				*e*S	**Sn**	**13 31 17.8**	**-0.3**
	3.5nm,0.9s						
MESJ	**Messejana**	**5.70**	**293**	*e*P	**Pn**	**13 30 13.3**	**-0.6**
MESJ	**Messejana**	**5.70**	**293**	*e*P	**Pn**	**13 30 14.3**	**+0.4**
MESJ				*e*S	**Sn**	**13 31 18.9**	**+0.5**
MESJ				A	A	13 31 19.1	
	6.3nm,0.4s						
MESJ	**Messejana**	**5.70**	**293**	P	**Pn**	**13 30 13.3**	**-0.6**
MESJ				P	**Pn**	**13 30 14.3**	**+0.4**
MESJ				S	**Sn**	**13 31 18.9**	**+0.5**
	6.3nm,0.4s						
MESJ	**Messejana**	**5.70**	**293**	P	**Pn**	**13 30 14.3**	**+0.4**
MESJ				*e*S	**Sn**	**13 31 18.9**	**+0.5**
	6.3nm,0.4s						
EVO	**Evora**	**5.81**	**300**	*e*P	**Pn**	**13 30 16.2**	**+0.7**
EVO				*e*S	**Sn**	**13 31 21.8**	**+0.6**
EVO				A	A	13 31 21.9	
	7.5nm,0.5s						
EVO	**Evora**	**5.81**	**300**	P	**Pn**	**13 30 16.2**	**+0.7**
EVO				S	**Sn**	**13 31 21.8**	**+0.6**
	7.5nm,0.5s						
EVO	**Evora**	**5.81**	**300**	P	**Pn**	**13 30 16.2**	**+0.7**
EVO				*e*S	**Sn**	**13 31 21.8**	**+0.6**
	7.5nm,0.5s						
MORF	**Marmelete**	**5.88**	**287**	*e*S	**Sn**	**13 31 24.4**	**+1.5**
MORF				A	A	13 31 44.5	
	6.7nm,0.8s						
MORF	**Marmelete**	**5.88**	**287**	S	**Sn**	**13 31 24.4**	**+1.5**
	6.7nm,0.8s						
MORF	**Marmelete**	**5.88**	**287**	*e*S	**Sn**	**13 31 24.4**	**+1.5**
	6.7nm,0.8s						
EPOB	**Poblet**	**5.95**	**20**	P	**Pn**	**13 30 17.8**	**+0.4**
	0.7nm,0.2s,SNR=7.9						
EPOB				S	**Sn**	**13 31 20.4**	**-4.2**
	1.9nm,0.2s,SNR=7.9						
EPOB	**Poblet**	**5.95**	**20**	P	**Pn**	**13 30 17.8**	**+0.4**
	0.7nm,0.2s,SNR=7.9						
PTEO	**Sao Teotonio**	**5.99**	**289**	*e*P	**Pn**	**13 30 18.8**	**+0.8**
PTEO	**Sao Teotonio**	**5.99**	**289**	P	**Pn**	**13 30 18.8**	**+0.8**
PTEO	**Sao Teotonio**	**5.99**	**289**	P	**Pn**	**13 30 18.8**	**+0.8**
ESAC	**San Caprasio**	**6.00**	**8**	P	**Pn**	**13 30 18.9**	**+0.8**
	1.1nm,0.2s,SNR=7.9						
ESAC				S	**Sn**	**13 31 24.6**	**-1.3**
	4.0nm,0.3s,SNR=7.9						
ESAC	**San Caprasio**	**6.00**	**8**	P	**Pn**	**13 30 18.9**	**+0.8**
	1.1nm,0.2s,SNR=7.9						
PNCL	**Nicolau / Gran**	**6.02**	**295**	*e*P	**Pn**	**13 30 19.3**	**+0.9**
PNCL				*e*S	**Sn**	**13 31 26.4**	**+0.1**
PNCL				A	A	13 31 29.1	
	5.2nm,0.6s						
PNCL	**Nicolau / Gran**	**6.02**	**295**	*e*P	**Pn**	**13 30 19.3**	**+0.9**
PNCL				*e*S	**Sn**	**13 31 26.4**	**+0.1**
	5.2nm,0.6s						
PMTG	**Montargil**	**6.21**	**304**	*e*P	**Pn**	**13 30 21.9**	**+0.9**
PMTG	**Montargil**	**6.21**	**304**	*e*P	**Pn**	**13 30 21.9**	**+0.9**
PTOM	**Tomar**	**6.62**	**307**	*e*P	**Pn**	**13 30 28.3**	**+1.7**
PTOM	**Tomar**	**6.62**	**307**	P	**Pn**	**13 30 28.3**	**+1.7**
PTOM	**Tomar**	**6.62**	**307**	P	**Pn**	**13 30 28.3**	**+1.7**
CFON	**Fontmartina**	**6.75**	**27**	P	**Pn**	**13 30 28.5**	**0.0**
	1.4nm,0.2s,SNR=8.2						
CFON				S	Sn	13 31 38.5	-6.0
	2.9nm,0.2s						
CFON	**Fontmartina**	**6.75**	**27**	P	**Pn**	**13 30 28.5**	**0.0**
	1.4nm,0.2s,SNR=8.2						
MVO	**Moncorvo**	**6.86**	**323**	P	**Pn**	**13 30 31.8**	**+1.8**
	0.8nm,0.1s,SNR=7.9						
MVO				S	**Sn**	**13 31 46.6**	**-0.4**
	1.9nm,0.3s,SNR=7.9						
MVO	**Moncorvo**	**6.86**	**323**	P	**Pn**	**13 30 31.8**	**+1.8**
	0.8nm,0.1s,SNR=7.9						
MVO				S	**Sn**	**13 31 46.7**	**-0.4**
	1.9nm,0.3s,SNR=7.9						
CSOR	**Sort**	**6.92**	**17**	P	**Pn**	**13 30 32.5**	**+1.6**
	0.9nm,0.4s,SNR=7.9						
CSOR				S	**Sn**	**13 31 47.0**	**-1.7**
	3.4nm,0.4s,SNR=7.9						
CSOR	**Sort**	**6.92**	**17**	P	**Pn**	**13 30 32.5**	**+1.6**

3μm,0.5s,baz=172,slow=30,SNR=48
MK31 Makanchi Array 1.28 348 PG **Pb** **13 36 32.0 0.0**
MK31 *i* S **Sg** **13 36 49.0 -0.9**
MK31 pmax pmax
comp=Z,325nm,0.4s
MK31 smax smax
comp=N,3μm,0.5s
MK31 Makanchi Array 1.28 348 *e*Pn **Pb** **13 36 31.8 -0.3**
MKAR Makanchi Array 1.28 348 Pg **Pn** **13 36 31.3 -0.1**
comp=N,379nm,0.3s,baz=171,slow=16,SNR=6563
MKAR Lg Lg 13 36 48.4
comp=N,982nm,0.3s,baz=173,slow=31,SNR=122
MKAR LR LR 13 37 03.2
comp=N,8μm,18.2s,baz=9.0,slow=45
MKAR Makanchi Array 1.28 348 *i* PG **Pn** **13 36 31.2 -0.1**
MKAR pmax pmax
comp=Z,500nm,0.4s
ZSN Zaisan 2.25 31 *e*P Pg 13 36 55.0 +3.5
comp=Z,2μm,0.6s
ZSN *e*S **Sg** **13 37 25.3 +4.5**
comp=Z,3μm,0.7s
KAPS Kapalarasan 2.35 265 *e*P **Pb** **13 36 49.8 -0.3**
KAPS *e*S **Sn** **13 37 16.7 +2.2**
comp=Z,1μm,0.6s
DJR Jarkent 2.38 241 *e*P **Pb** **13 36 50.0 -0.7**
comp=Z,834nm,0.5s
DJR *e*S **Sn** **13 37 17.0 +1.8**
comp=Z,3μm,0.4s
KTMS Ketmen 2.67 219 *e*P **Pb** **13 36 55.7 0.0**
comp=Z,293nm,0.7s
KTMS *e*S **Sb** **13 37 26.2 -2.0**
comp=Z,2μm,0.4s
TDK Taldyqorghan 3.06 262 *e*P **Pb** **13 37 03.1 +0.8**
comp=Z,299nm,0.6s
TDK *e*S **Sb** **13 37 39.3 0.0**
comp=Z,2μm,0.5s
SHLS Shalkode 3.11 221 *e*P **Pb** **13 37 02.8 -0.4**
comp=Z,532nm,0.6s
SHLS *e*S **Sb** **13 37 39.0 -1.9**
comp=Z,2μm,0.5s
PDGK Podgornoye 3.18 227 ⇓Pn **Pn** **13 36 56.9 -0.5**
comp=Z,12nm,0.3s
PDGK ⇑Pg **Pb** **13 37 04.0 -0.2**
PDGK ⇑Lg Lg 13 37 42.1
comp=Z,2μm,0.7s
PDGK Podgornoye 3.18 227 PN **Pn** **13 36 56.8 -0.6**
PDGK 13 37 03.6
PDGK 13 37 41.9
PDGK pmax pmax
comp=Z,12nm,0.3s
PDGK pmax pmax
comp=Z,350nm,0.7s
PDGK pmax pmax
comp=N,2μm,0.7s
MNBS Baschi 3.37 246 *e*P **Pb** **13 37 07.4 -0.3**
comp=N,163nm,0.8s
MNBS *e*S **Sb** **13 37 46.8 -1.6**
comp=N,5μm,0.6s
KPKS Kokpek 3.53 235 *e*P **Pb** **13 37 10.7 +0.4**
comp=N,504nm,0.4s
KPKS *e*S **Sb** **13 37 53.1 +0.4**
comp=N,6μm,0.7s
UZB Uzynbulak 3.55 229 *e*P **Pb** **13 37 10.6 0.0**
comp=N,346nm,0.7s
UZB *e*S **Sb** **13 37 52.4 -1.0**
comp=N,979nm,0.7s
ARXS Arharly 3.69 251 *e*P **Pb** **13 37 13.5 +0.4**
comp=N,111nm,0.5s
ARXS *e*S **Sb** **13 37 57.9 +0.4**
comp=N,4μm,0.5s
KURS Kuram 3.82 239 *e*P **Pb** **13 37 17.0 +1.8**
comp=N,182nm,0.8s
KURS ⇑*i*S **Sb** **13 38 03.5 +2.3**
comp=N,660nm,0.6s
ZHN Zhinishke 3.86 234 *e*P **Pb** **13 37 17.7 +1.9**
comp=N,232nm,0.5s
ZHN *e*S **Sb** **13 38 04.4 +2.1**
comp=N,509nm,0.2s
WMQ Urumqi 3.97 114 Pn **Pn** **13 37 10.3 +2.0**
WMQ Sn **Sn** **13 37 56.4 +2.0**
WMQ smax smax
comp=N,710nm,0.3s
WMQ smax smax
comp=N,750nm,0.4s
CHKK Chushkaly 4.38 250 *e*P **Pb** **13 37 27.0 +2.3**
comp=N,69nm,0.4s
CHKK *e*S **Sb** **13 38 20.5 +3.4**
comp=N,757nm,0.4s
KOTS Kotyrbulak 4.61 242 *e*P **Pb** **13 37 31.4 +2.8**
KOTS *e*S **Sb** **13 38 27.5 +3.7**
KTBS Karatobe 4.65 249 *e*P **Pb** **13 37 31.1 +1.7**
KTBS *e*S **Sb** **13 38 27.4 +2.4**
KNDC Almaty 4.71 242 ⇓Pg **Pb** **13 37 32.4 +2.1**
comp=N,357nm,0.9s
KNDC ⇑Lg Lg 13 38 30.3
comp=N,2μm,0.9s
TNSS Tian-Shan 4.81 241 *e*P Pb 13 37 35.7 +3.4
comp=N,99nm,0.6s
TNSS *e*S **Sb** **13 38 35.4 +5.3**
comp=N,309nm,0.9s
IZV Izvestkoviy 5.02 242 *e*P **Pb** **13 37 36.7 +1.0**
comp=N,77nm,0.5s
IZV *e*S **Sb** **13 38 38.1 +2.4**
comp=N,1μm,0.9s
DGS Degeres 5.45 248 *e*P **Pb** **13 37 45.3 +2.3**
comp=N,52nm,0.7s
DGS *e*S **Sb** **13 38 51.7 +3.6**
comp=N,601nm,0.8s
UKR Ust'-Kan 5.58 14 *e*Pn **Pn** **13 37 33.4 +2.9**
UKR *e*Sn **Sn** **13 38 37.5 +3.4**
UKR *e*Sg **Sg** **13 39 05.9 -1.4**
TKM2 Tokmak 2 5.72 245 ⇑Pg Pb 13 37 51.7 +4.1
comp=N,79nm,0.6s
TKM2 ⇑Lg Lg 13 39 00.1
comp=N,296nm,0.8s
TKM2 Tokmak 2 5.72 245 *e*PN **Pn** **13 37 32.5 0.0**
TKM2 *e* 13 38 54.3
TKM2 Tokmak 2 5.72 245 *e*Pn **Pn** **13 37 32.5 0.0**
TKM2 *e*Sn **Sb** **13 38 54.3 -1.6**
KURBB Kurchatov Arra 5.80 333 Pn **Pn** **13 37 33.3 0.0**
comp=N,1.4nm,0.3s,baz=148,slow=13,SNR=185
AKAR Aktash 5.82 33 *e*Pn Pn 13 37 37.4 +3.6
AKAR *e*Sn **Sn** **13 38 43.9 +3.7**
AKAR *e*Sg **Sg** **13 39 12.9 -2.2**
KURK Kurchatov 5.85 334 ⇓Pg **Pb** **13 37 51.7 +2.0**
comp=N,110nm,0.8s
KURK ⇑Lg Lg 13 39 07.4
comp=N,1μm,0.6s
KURK Kurchatov 5.85 334 PN **Pb** **13 37 51.6 +2.0**
KURK 13 39 07.3
KURK pmax pmax
comp=Z,110nm,0.8s
KURK pmax pmax
comp=N,1μm,0.6s
KURK Kurchatov 5.85 334 *e*Pn **Pn** **13 37 33.5 -0.5**
KURK *e*Sn **Sn** **13 38 39.1 -1.4**
FRU Bishkek 6.39 248 *e*PN Pb 13 37 52.0 -7.0
FRU pmax pmax
comp=Z,210nm,1.6s
FRU MLR MLR
comp=E,3μm,5.0s
AAK Ala-Archa 6.57 247 Pn Pn 13 37 49.0 +4.9
comp=E,0.9nm,0.3s,baz=56,slow=5.1,SNR=15
AAK Lg Lg 13 39 30.0
comp=E,9.1nm,0.3s,baz=31,slow=24,SNR=9.2
AAK Ala-Archa 6.57 247 ⇑Pg **Pb** **13 38 04.5 +2.4**
comp=E,67nm,0.8s
AAK ⇓Lg Lg 13 39 29.7
comp=E,314nm,0.7s
AAK Ala-Archa 6.57 247 *e*PN **Pn** **13 37 44.2 +0.1**
AAK Ala-Archa 6.57 247 *e*Pn **Pn** **13 37 44.8 +0.6**
AAK Lg Lg 13 39 30.0
EKS2 Erkin-Say 7.02 249 *e*PN **Pn** **13 37 47.6 -2.7**
EKS2 *e* 13 39 08.4
EKS2 Erkin-Say 7.02 249 *e*Pn **Pn** **13 37 47.6 -2.7**
EKS2 *e*Sn **Sn** **13 39 08.4 -1.3**
KSH Kashi 7.79 222 Pn **Pb** **13 38 23.8 +0.9**
KSH Sn Sb 13 40 04.4 +9.1
KSH smax smax
comp=N,74nm,1.0s
KSH smax smax
comp=E,170nm,1.3s
MNAS Manas 7.94 251 ⇓Pg Pb 13 38 30.8 +5.4
comp=E,21nm,0.8s
MNAS ⇓Lg Lg 13 40 09.4
comp=E,213nm,1.0s
ELT Eltsovka 8.07 15 *e*Pn **Pn** **13 38 06.7 +2.2**
ELT *e*Sg Sb 13 40 24.4 +21
ZAA0 Zalesovo Array 8.53 9 *e*Pn **Pn** **13 38 10.4 -0.4**
ZALV Zalesovo Beam 8.53 9 Pn **Pn** **13 38 11.4 +0.5**
comp=E,16nm,0.3s,baz=190,slow=14,SNR=387
ZALV Sn **Sn** **13 39 43.3 -3.2**
comp=E,8.3nm,0.3s,baz=194,slow=25,SNR=8.3
ZALV Lg Lg 13 40 33.3
comp=E,2.7nm,0.3s,baz=205,slow=26,SNR=3.1
ZALV LR LR 13 41 41.9
comp=E,252nm,19.7s,baz=96,slow=40
ZALV Zalesovo Beam 8.53 9 *i* P **Pn** **13 38 11.3 +0.5**
ZALV pmax pmax
comp=Z,95nm,0.5s
KK31 Karatay Array 9.05 259 Pn **Pn** **13 38 17.4 -0.7**
comp=Z,1.7nm,0.4s,baz=68,slow=13,SNR=53
KK31 ⇓Lg Lg 13 40 47.6
comp=Z,107nm,0.8s,baz=61,slow=29,SNR=6.7
KK31 Karatay Array 9.05 259 P **Pn** **13 38 17.4 -0.7**
KK31 pmax pmax
comp=Z,2.0nm,0.4s
KK31 pmax pmax
comp=N,107nm,0.9s
KKAR Karatay Array 9.05 259 *e*P **Pn** **13 38 15.8 -2.3**
KKAR Karatay Array 9.05 259 *e*Pn **Pn** **13 38 15.8 -2.3**
NVS Novosibirsk 9.32 2 *e*P **Pn** **13 38 21.4 -0.2**
NVS *e* 13 40 02.7
VOSK Vostochnaya 10.50 317 ⇓Sn **Sn** **13 40 29.8 -5.1**
comp=N,13nm,0.6s
VOSK ⇑Lg Lg 13 41 31.1
comp=N,278nm,1.2s
BVA0 Borovoye Array 10.97 317 ⇓Pn **Pn** **13 38 43.6 -0.6**
comp=N,14nm,0.6s,baz=145,slow=12,SNR=87
BVA0 ⇑Sn **Sn** **13 40 42.6 -3.7**
comp=N,16nm,0.7s,baz=107,slow=25,SNR=4.5
BVA0 ⇓Lg Lg 13 41 52.5
comp=N,139nm,0.9s,baz=120,slow=25,SNR=5.6
BVA0 Borovoye Array 10.97 317 *i* P **Pn** **13 38 42.6 -1.6**
BVA0 pmax pmax
comp=Z,13nm,0.6s
BVA0 pmax pmax
comp=N,114nm,0.8s
BVAR Borovoye Array 10.97 317 Pn **Pn** **13 38 43.4 -0.8**
comp=N,2.1nm,0.3s,baz=114,slow=13,SNR=53
BVAR Sn **Sn** **13 40 41.8 -4.6**
comp=N,3.5nm,0.3s,baz=121,slow=23,SNR=7.7
BVAR Lg Lg 13 41 52.1
comp=N,4.3nm,0.3s,baz=114,slow=24,SNR=6.4
BRVK Borovoye 11.04 317 *de*P **Pn** **13 38 44.7 -0.5**
BRVK pmax pmax
comp=Z,18nm,0.7s
BRVK Borovoye 11.04 317 *e*Pn Pn 13 38 41.5 -3.6
CHKZ Chkalovo 11.28 321 ⇓Pn **Pn** **13 38 46.6 -1.9**
comp=Z,22nm,0.6s
CHKZ ⇑Lg Lg 13 41 58.0
comp=Z,178nm,1.1s
ZRNK Zerenda 11.60 315 ⇑Pn **Pn** **13 38 50.7 -2.1**
comp=Z,33nm,0.6s
ZRNK Zerenda 11.60 315 P **Pn** **13 38 50.7 -2.1**
ZRNK 13 40 53.5
ZRNK pmax pmax
comp=Z,33nm,0.6s
ZRNK smax smax
comp=N,21nm,0.7s
ZRNK pmax pmax
comp=N,40nm,0.8s
ZRNK Zerenda 11.60 315 *e*Pn **Pn** **13 38 51.4 -1.4**
GTA Gaotai 14.04 110 *e*P **Pn** **13 39 25.6 -0.8**
GTA pP P 13 39 32.0 -2.2
GTA sP 13 39 34.8
GTA pmax pmax
comp=N,7.0nm,1.1s
TLY Talaya 15.14 59 LR LR 13 45 38.8
comp=N,156nm,18.8s,baz=256,slow=38
AB31 Akbulak array 15.82 292 ⇑P **Pn** **13 39 46.3 -3.6**
comp=N,8.2nm,0.6s,baz=96,slow=12,SNR=15
ABKAR Akbulak array 15.82 292 *e*Pn **Pn** **13 39 46.0 -3.9**
SONM Songino Array 16.42 73 Pn **Pn** **13 39 58.5 +0.6**
baz=264,slow=12,SNR=10
SONM Lg Lg 13 44 29.7
comp=N,0.1nm,0.3s,baz=267,slow=30,SNR=3.7
SONA1 Songino Array 16.43 73 *e*Pn **Pn** **13 39 54.1 -3.8**
ULN Ulaanbaatar 16.87 73 *e*P **Pn** **13 40 04.1 +0.6**
ULN pmax pmax
comp=Z,4.0nm,0.9s
AKTO Aktyubinsk 17.18 295 P **Pn** **13 40 07.8 +0.5**
comp=Z,0.8nm,0.3s,baz=88,slow=12,SNR=14
AKTO Lg Lg 13 45 07.7
comp=Z,0.1nm,0.3s,baz=3.6,slow=14,SNR=4.5
AKTO LR LR 13 47 01.0
comp=Z,171nm,21.4s,baz=91,slow=38
AKTO Aktyubinsk 17.18 295 ⇑P **Pn** **13 40 06.3 -1.0**
comp=Z,7.9nm,0.7s
PYUN Piuthan 17.41 179 *e*P **P** **13 40 11.3 -0.3**
comp=Z,117nm,1.0s
GKN Gorkha 17.57 174 *e*P **Pn** **13 40 12.5 +0.1**
comp=Z,26nm,0.5s
KOLN Koldanda 17.75 177 *e*P **P** **13 40 15.5 +0.1**
comp=Z,27nm,0.8s
KKN Kakani 17.84 172 *e*P **Pn** **13 40 15.8 +0.1**
comp=Z,68nm,0.9s
PKIN Phulchoki 18.06 172 *e*P **Pn** **13 40 17.8 -0.7**
comp=Z,16nm,0.6s
LZH Lanzhou 18.55 113 *e*P **P** **13 40 24.1 0.0**
LZH pP sP 13 40 31.8 +0.1
LZH sP pP 13 40 36.3 +7.0
LZH PP **PnPn** **13 40 40.3 +4.2**
LZH *e*S **Sn** **13 43 46.5 -4.8**
LZH sS S 13 43 57.3 +2.2
LZH *e*SS **SnSn** **13 44 10.3 +5.4**
LZH pmax pmax
comp=Z,39nm,1.0s
LZH pmax pmax
comp=Z,170nm,4.2s
LZH LR LR
comp=Z,380nm,11.3s
LZH LR LR
comp=Z,360nm,12.0s
LZH LR LR
comp=Z,480nm,12.7s
ARU Arti 18.58 315 P **Pn** **13 40 24.5 +0.1**
comp=Z,0.0nm,0.3s,baz=102,slow=8.2,SNR=6.8
ARU Lg Lg 13 45 51.7
comp=Z,0.0nm,0.3s,baz=154,slow=5.7,SNR=6.7
ARU LR LR 13 47 45.9
comp=Z,213nm,21.2s,baz=132,slow=38
ARU Arti 18.58 315 *c* P **P** **13 40 23.7 -0.4**
ARU pmax pmax
comp=Z,5.0nm,0.8s
ARU Arti 18.58 315 *e*P **P** **13 40 23.6 -0.6**
comp=Z,8.4nm,0.9s
ARU Lg Lg 13 45 51.7
GEYT Alibeck 19.79 256 P **Pn** **13 40 41.2 +2.0**
comp=Z,0.4nm,0.3s,baz=59,slow=8.8,SNR=5.2
GEYT LR LR 13 49 16.9
comp=Z,144nm,18.1s,baz=30,slow=40
SOKR Solikamsk 20.92 322 *c* P Pn 13 40 52.0 -0.1
SOKR pmax pmax
comp=Z,17nm,0.8s
SOKR MLR MLR
comp=Z,276nm,20.0s
BOD Bodaibo 22.75 46 *e*P **P** **13 41 08.7 -0.5**
BOD pmax pmax
comp=Z,8.0nm,0.9s
XAN Xi'an 23.10 111 P **P** **13 41 12.1 -1.0**
XAN pmax pmax
comp=Z,9.0nm,1.0s
XAN pmax pmax
comp=Z,72nm,5.1s
NRIK Noril'sk 23.99 4 P **P** **13 41 24.4 +3.0**
comp=Z,5.2nm,0.5s,baz=153,slow=5.0,SNR=8.7
ENH Enshi 25.91 117 *e*P **P** **13 41 38.0 -1.3**
comp=Z,7.3nm,0.6s
GYA Guiyang 27.02 127 P **P** **13 41 49.1 -0.3**
GYA pmax pmax
comp=Z,20nm,0.8s
KBZ Khabaz 28.17 281 LR LR 13 55 02.4
comp=Z,81nm,18.9s,baz=62,slow=40
KVAR Kislovodsk Arr 28.24 281 LR LR 13 56 06.0
comp=Z,68nm,18.3s,baz=174,slow=42
KIV Kislovodsk 28.25 281 *e*P P 13 41 56.7 -3.6
KIV *e* 13 42 42.4
KIV pmax pmax
comp=Z,5.0nm,1.1s
KIV MLR MLR
comp=Z,58nm,16.0s
VSR Storozhevoye 29.12 297 *e*P **P** **13 42 10.3 +2.5**
VSR pmax pmax
comp=Z,2.0nm,0.5s
LPSR Galich'ya Gora 29.14 300 *e*P **P** **13 42 09.7 +1.7**
LPSR pmax pmax
comp=Z,4.0nm,0.6s
KLMR Klimovskoe 29.39 317 *e*P **P** **13 42 08.6 -1.5**
KLMR pmax pmax
comp=Z,11nm,0.6s
CHTO Chiang Mai 29.88 148 *e*P **P** **13 42 12.3 -2.5**
CHTO pmax pmax
comp=Z,4.0nm,0.7s
CHTO Chiang Mai 29.88 148 *e*P **P** **13 42 12.3 -2.5**
comp=Z,3.6nm,0.7s
CMAR Chiang Mai Arr 30.20 148 P **P** **13 42 17.1 -0.6**
comp=Z,7.3nm,0.8s,baz=322,slow=8.9,SNR=57
CM01 Chiang Mai Arr 30.24 148 *e*P **P** **13 42 17.1 -0.9**
OBN Obninsk 30.44 305 *e*P **P** **13 42 18.1 -1.3**
OBN *i* 13 42 24.9
OBN pmax pmax
comp=Z,14nm,1.3s
OBN MLR MLR
comp=Z,140nm,16.0s
YAK Yakutsk 31.43 41 *e*P **P** **13 42 28.7 +0.6**
YAK pmax pmax
comp=Z,5.0nm,0.9s
KLR Kul'dur 32.96 66 P **P** **13 42 41.2 -0.5**
comp=Z,0.8nm,0.4s,baz=264,slow=6.3,SNR=4.3
TIXI Tiksi 34.02 24 P **P** **13 42 50.5 -0.2**
comp=Z,1.7nm,0.3s,baz=227,slow=1.7,SNR=8.4
TIXI Tiksi 34.02 24 *e*P **P** **13 42 51.5 +0.9**
TIXI pmax pmax
comp=Z,1.0nm,0.8s
AKASG Malin Array Be 35.40 298 P **P** **13 43 02.0 -0.8**
comp=Z,0.3nm,0.3s,baz=64,slow=8.5,SNR=3.4
FINES FINESS Array B 35.93 317 P **P** **13 43 06.6 -0.6**
comp=Z,0.6nm,0.5s,baz=103,slow=8.0,SNR=8.3
FINES LR LR 13 58 23.4
comp=Z,91nm,20.1s,baz=48,slow=37
FINES FINESS Array B 35.93 317 *i* P **P** **13 43 06.5 -0.7**
FINES pmax pmax
comp=Z,1.0nm,0.5s
BRTR Keskin Array B 36.08 279 P **P** **13 43 08.8 -0.1**
comp=Z,1.6nm,0.9s,baz=98,slow=6.4,SNR=5.9
BRTR Keskin Array B 36.08 279 *i* P **P** **13 43 09.8 +0.8**
BRTR pmax pmax
comp=Z,2.0nm,0.9s
BR231 Keskin MP Arra 36.63 279 *e*P **P** **13 43 10.7 -2.9**
ARCES ARCESS Array B 36.88 330 P **P** **13 43 15.1 -0.2**
comp=Z,2.9nm,0.8s,baz=100,slow=6.3,SNR=10
ARCES LR LR 13 59 11.4
comp=Z,103nm,19.9s,baz=83,slow=38
HFS Hagfors 42.10 316 P **P** **13 43 58.5 -0.3**
comp=Z,1.2nm,0.6s,baz=86,slow=9.2,SNR=4.8
NC405 NORSAR Array S 42.84 318 *e*P **P** **13 44 04.8 -0.1**
NC602 NORSAR Array S 43.01 317 *e*P **P** **13 44 06.0 -0.2**
NB2 NORSAR Subarra 43.10 318 P **P** **13 44 06.5 -0.5**
comp=Z,9.4nm,0.7s,baz=77,slow=8.6
NOA NORSAR Array B 43.10 318 P **P** **13 44 06.7 -0.3**
comp=Z,1.0nm,0.5s,baz=39,slow=19,SNR=10
NOA LR LR 14 02 17.1
comp=Z,79nm,18.8s,baz=45,slow=36
NOA NORSAR Array B 43.10 318 P **P** **13 44 06.7 -0.3**
NOA pmax pmax
comp=Z,2.0nm,0.7s
NOA MLR MLR
comp=Z,79nm,18.8s
NAO01 NORSAR Array S 43.30 317 *e*P **P** **13 44 08.0 -0.6**
DPC Dobruska-Polom 43.38 301 *e*P **P** **13 44 12.1 +2.7**
DPC *ex* x 13 44 16.2
DPC Dobruska-Polom 43.38 301 *e*P **P** **13 44 12.1 +2.7**
DPC *e* 13 44 16.2
CLL Collm 45.01 304 *i* pP pP 13 44 28.3 +0.2
comp=Z,5.0nm,0.7s
BILL Bilibino 46.48 31 *e*P **P** **13 44 33.4 -0.4**
BILL pmax pmax
comp=Z,1.0nm,1.0s
BILL MLR MLR
comp=Z,102nm,16.0s
IL1 Eielson Array 63.43 21 *e*P **P** **13 46 36.3 0.0**
ILAR Eielson Array 63.43 21 P **P** **13 46 36.6 +0.3**
comp=Z,0.7nm,0.7s,baz=323,slow=4.7,SNR=10
YKA Yellowknife Ar 71.43 8 P **P** **13 47 26.0 -0.9**
comp=Z,0.3nm,0.7s,baz=341,slow=6.0,SNR=9.9
YKA Yellowknife Ar 71.43 8 P **P** **13 47 26.0 -0.9**
WRA Warramunga Arr 80.27 132 P **P** **13 48 17.2 -0.7**
comp=Z,4.3nm,1.0s,baz=334,slow=5.8,SNR=15
ASAR Alice Springs 83.13 134 P **P** **13 48 32.1 -0.9**
comp=Z,2.1nm,0.8s,baz=328,slow=5.0,SNR=20
PDAR Pinedale Array 91.41 9 LR LR 14 34 36.3
comp=Z,49nm,18.4s,baz=296,slow=38
NVAR Mina Array Bea 94.31 16 P **P** **13 49 27.5 +0.7**
comp=Z,0.9nm,0.8s,baz=322,slow=5.5,SNR=6.4

SJA 23 13:39:25.0±0.4, 31.01S×66.52W, h36km±6km, ML2.5, MW4.1, La Rioja Province

Code	Station Name	Δ°	AZ°	Phase	ID	Time h m s	Res ISC
				Op	ISC		
AMOG	**MOGNA**	**1.70**	**272**	*i* P		Pn 13 39 54.4	+2.2
AMOG				*i* S		Sn 13 40 15.8	+3.1
RTCV	**Cerro Valdivia**	**1.93**	**243**	*i* P		Pn 13 39 57.3	+2.0
RTCV				*i* S		Sn 13 40 21.4	+3.1
AGUA	**GUANDACOL**	**2.28**	**311**	*i* P		Pn 13 40 02.5	+2.3
RTLS	**Leoncito**	**2.50**	**251**	*i* P		Pn 13 40 06.2	+2.7
ASAL	**Salagasta**	**2.53**	**231**	*i* P		Pn 13 40 06.2	+2.6
CYA	**Choya**	**2.63**	**14**	*i* P		Pn 13 40 07.4	+2.5
CYA					IAML	13 40 48.6	
comp=Z,19nm,0.4s							
VCA	**Vinchina**	**2.70**	**327**	*i* P		Pn 13 40 08.7	+2.7
VCA					IAML	13 40 49.9	
comp=Z,25nm,0.2s							
AUSP	**Uspallata**	**2.73**	**243**	*i* P		Pn 13 40 09.8	+3.2
AUSP				*i* S		Sn 13 40 42.6	+4.1
ARCO	**CERRO ARCO**	**2.75**	**228**		IAML	13 40 58.3	
comp=Z,16nm,0.2s							

NIED ***23*** *13:42:00.37.70N×142.00E,h11km,Mw3.9 Best double couple: M0 6.83000×10^14 NP1:ϕs145.00000°, δ20.00000°, λ-81.00000°. NP2:ϕs315.00000°, δ70.00000°, λ-93.00000°.*

IDC ***23*** *13:42:46.4±0.8, 37.65N×142.06E, h0km, mb3.7/11, mb1 3.9/13, mb1mx3.7/44, mbtmp3.7/13, ML3.3/2, MS2.8/2, Ms1 2.8/2, ms1mx2.4/44, Error ellipse: s-maj=22.0km s-min=16.8km az=99.0*

ISCJB ***23*** *13:42:48.3±0.6, 37.69N±0.05×142.03E±0.06, h24km, mb3.7/11, Error ellipse: s-maj=7.7km s-min=5.5km az=143.0*

JMA ***23*** *13:42:48.8±0.1, 37.70N×141.99E, h20km±3km, M3.9*

ISC 23 13:42:50.2±0.8, 37.70N±0.06×141.92E±0.07, h24km, n27, σ0.81/25, mb3.6/11, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time h m s	Res ISC
				Op	ISC		
JIO	**Ouri**	**0.88**	**329**	P		**Pb** 13 43 05.8	**-0.9**
JIO				S		**Sb** 13 43 17.3	**-0.7**
JFK	**Kawauchi**	**0.90**	**248**	P		**Pb** 13 43 06.4	**-0.6**
JFK				S		**Sn** 13 43 19.0	**-0.5**
JMM	**Marumori**	**0.91**	**281**	P		**Pb** 13 43 06.6	**-0.6**
JMM				S		**Sb** 13 43 18.9	**0.0**
ONAJ	**Iwakimizuishiy**	**1.07**	**236**	P		**Pn** 13 43 09.0	**-0.8**
ONAJ				S		**Sb** 13 43 23.4	**-0.3**
JOU	**Okura**	**1.19**	**304**	P		**Pb** 13 43 11.7	**-0.4**
JFT	**Otama**	**1.27**	**262**	P		**Pn** 13 43 12.7	**+0.3**
MJAR	**Matsushiro Arr**	**3.18**	**250**	Pn		**Pn** 13 43 40.4	**+1.7**
1.2nm,0.3s,baz=83,slow=14,SNR=9.4							
MJAR					LR	LR 13 45 02.1	
comp=Z,192nm,18.4s,baz=100,slow=42							
MAT	**Matsushiro**	**3.19**	**250**	P		**Pn** 13 43 39.9	**+1.1**
MAT				eS		**Sb** 13 44 23.1	**-1.3**
ASAJ	**Asahikawa**	**6.43**	**4**	Pn		**Pn** 13 44 23.1	**-0.2**
0.9nm,0.3s,baz=229,slow=13,SNR=9.2							
KSRS	**Korea Array**	**11.11**	**273**	LR		LR 13 49 27.9	
comp=Z,36nm,20.1s,baz=265,slow=36							
MA2	**Magadan**	**22.62**	**12**	P		**P** 13 47 48.8	**-0.1**
3.2nm,0.8s,baz=213,slow=6.7,SNR=4.1							
SONM	**Songino Array**	**27.75**	**303**	P		**P** 13 48 38.3	**+1.3**
1.1nm,0.9s,baz=81,slow=9.3,SNR=3.1							
H11N2	**WAKE ISLAND Hy**	**28.15**	**123**	T		T 14 18 11.8	
baz=315,slow=75,SNR=157							

H11N1	**WAKE ISLAND Hy 28.16**	**123**		T		T	14 18 00.2	
	baz=315,slow=75,SNR=112							
H11N3	**WAKE ISLAND Hy 28.17**	**123**		T		T	14 18 03.3	
	baz=315,slow=75,SNR=104							
H11S1	**WAKE ISLAND Hy 28.89**	**125**		T		T	14 18 58.9	
	baz=317,slow=76,SNR=50							
H11S3	**WAKE ISLAND Hy 28.90**	**125**		T		T	14 18 56.9	
	baz=317,slow=76,SNR=71							
H11S2	**WAKE ISLAND Hy 28.91**	**125**		T		T	14 19 12.2	
	baz=317,slow=76,SNR=59							
ZALV	**Zalesovo Beam**	**41.77**	**312**	P		**P**	**13 50 37.7**	**+0.4**
	0.5nm,0.4s,baz=82,slow=11,SNR=3.3							
MKAR	**Makanchi Array**	**44.11**	**302**	P		**P**	**13 50 57.6**	**+1.2**
	0.8nm,0.9s,baz=65,slow=11,SNR=2.9							
KURBB	**Kurchatov Arra**	**45.91**	**308**	P		**P**	**13 51 11.2**	**+0.5**
	0.9nm,0.5s,baz=80,slow=8.0,SNR=5.0							
ILAR	**Eielson Array**	**48.72**	**33**	P		**P**	**13 51 32.4**	**+0.1**
	0.5nm,0.8s,baz=256,slow=7.8,SNR=5.5							
WRA	**Warramunga Arr**	**57.78**	**188**	P		**P**	**13 52 38.2**	**-1.1**
	3.1nm,0.8s,baz=5.0,slow=7.1,SNR=22							
ASAR	**Alice Springs**	**61.51**	**188**	P		**P**	**13 53 05.0**	**-0.1**
	1.8nm,0.8s,baz=14,slow=6.1,SNR=18							
YKA	**Yellowknife Ar**	**63.03**	**30**	P		**P**	**13 53 14.7**	**-0.1**
	0.2nm,0.7s,baz=299,slow=5.8,SNR=3.8							
FINES	**FINESS Array B**	**68.41**	**332**	P		**P**	**13 53 49.1**	**-0.4**
	1.0nm,0.8s,baz=27,slow=13,SNR=2.1							
TXAR	**Lajitas Array**	**89.39**	**53**	P		**P**	**13 55 45.8**	**+0.6**
	0.2nm,0.8s,baz=270,slow=2.7,SNR=2.6							

CASC 23 13:54:50.3±6.6, 10°.24N×86°.94W, h30km±177km, MD4.2, ML3.4, Off coast of Costa Rica

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
VCR	**Vista de Mar**	**1.29**	**95**	*e*P	Pn	13 55 12.9	+0.5
JCR	**Jicaral**	**1.84**	**102**	*e*P	Pn	13 55 21.2	+1.3
JCR				*e*S	Sn	13 55 40.6	-1.7
MASN	**Masaya**	**1.90**	**24**	*e*P	Pn	13 55 19.7	-1.0
COPN	**Copaltepe**	**1.96**	**10**	*e*P	Pn	13 55 20.4	-1.1
COPN				AML	AML	13 55 50.0	
	comp=Z,377nm,0.5s						
XAVN	**Gruta Xavier**	**1.99**	**18**	*e*P	Pn	13 55 20.5	-1.4
TISN	**Laguna Tiscapa**	**2.00**	**19**	*e*P	Pn	13 55 20.7	-1.4
MOMN	**Momotombo**	**2.19**	**10**	*e*P	Pn	13 55 23.3	-1.5
TEL3	**Telica 3**	**2.32**	**2**	*e*P	Pn	13 55 26.6	+0.1
BOAB	**BOACO BROADBAN**	**2.52**	**29**	*e*P	Pn	13 55 27.1	-2.2
BOAB				*e*S	Sb	13 56 06.7	+1.1
QCR	**Quepos**	**2.85**	**106**	*e*P	Pb	13 55 38.8	-1.7
URSC	**Urasca**	**3.14**	**97**	*e*P	Pn	13 55 40.7	+2.8
URSC				*e*S	Sn	13 56 13.0	-1.5
BUS	**Buena Vista**	**3.21**	**102**	*e*P	Pn	13 55 41.7	+2.7
BUS				*e*S	Sn	13 56 16.2	-0.4

MEX 23 13:57:11.1±0.3, 17°.80N×101°.47W, h32km±6km, MD3.7, Near coast of Guerrero

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
ZIIG	**Zihuatanejo**	**0.19**	**179**	*i* P	Pb	13 57 16.2	-1.3
ZIIG				*i* S	Sb	13 57 20.1	-1.7
ARIG	**Puente Sto Nin**	**1.17**	**66**	*e*P	Pn	13 57 29.2	-2.0
ARIG				*i* S	Sn	13 57 43.7	-2.5
CAIG	**El Cayaco**	**1.37**	**123**	*i* P	Pn	13 57 32.1	-1.8
CAIG				*i* S	Sn	13 57 48.5	-2.5
MEIG	**Mezcala**	**1.77**	**86**	*i* P	Pn	13 57 37.8	-1.7
MEIG				*i* S	Sn	13 57 58.2	-2.7

*ISCJB **23** 13:59:18.5±0.5, 37°.35N±0°.02×71°.82E±0°.05, h95km±6km, mb4.1/37, Error ellipse: s-maj=6.5km s-min=3.4km az=160.3*
*IDC **23** 13:59:22.6±0.8, 37°.43N×71°.78E, h117km±5km, mb3.8/19, mb1 3.9/23, mb1mx3.7/61, mbtmp4.1/23, MS3.2/4, Ms1 3.2/4, ms1mx2.7/50, Error ellipse: s-maj=13.3km s-min=10.3km az=1.0*
*BJI **23** 13:59:22.6, 37°.90N×71°.70E, h134km, mb4.3/10, mB4.4/8*
*NEIC **23** 13:59:22.7±0.4, 37°.49N×71°.74E, mb4.5/12, Error ellipse: s-maj=8.2km s-min=7.1km az=176.0*
*MOS **23** 13:59:22.3±1.3, 37°.55N×71°.81E, h125km, mb4.3/22, Error ellipse: s-maj=8.2km s-min=5.7km az=107.7*
*NNC **23** 13:59:26.3±2.4, 37°.89N×71°.60E, h168km±23km, mb3.6, mpv4.3, Error ellipse: s-maj=22.9km s-min=17.4km az=42.0*

ISC 23 13:59:21.9±0.4, 37°.38N±0°.04×71°.81E±0°.05, h117km±4km, h117km:pP-P, n139, σ1s95/144, mb4.2/37, 26C-16D, Afghanistan-Tajikistan border region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
SFK	**Sufi-Kurgan**	**2.94**	**26**	⇓P	**Pn**	**14 00 09.1**	**+1.5**
	48nm,0.3s						
SFK				⇓S	**Sn**	**14 00 43.8**	**+1.1**
	460nm,0.5s						
CEP	**Cherat**	**3.55**	**179**	P	**Pn**	**14 00 17.1**	**+1.5**
CEP				S	**Sn**	**14 00 58.0**	**+1.0**
CHCP	**Chirah Chowk**	**3.90**	**162**	P	**Pn**	**14 00 21.6**	**+1.5**
KSH	**Kashi**	**3.90**	**56**	P	Pn	14 00 16.9	-3.3
KSH				S	Sn	14 00 57.3	-8.0
KSH				smax	smax		
	comp=N,2μm,0.4s						
KSH				smax	smax		
	comp=E,1μm,0.6s						
MNAS	**Manas**	**5.13**	**6**	⇑P	**Pn**	**14 00 36.1**	**-0.5**
	18nm,0.4s						
MNAS				⇑S	**Sn**	**14 01 31.2**	**-3.5**
	55nm,0.2s						
EKS2	**Erkin-Say**	**5.49**	**15**	*e*PN	**Pn**	**14 00 40.9**	**-0.5**
EKS2				*e*		14 01 42.6	
EKS2				pmax	pmax		
	comp=Z,32nm,0.5s						
EKS2	**Erkin-Say**	**5.49**	**15**	*e*Pn	**Pn**	**14 00 40.9**	**-0.5**
	comp=Z,32nm,0.5s						
EKS2				*e*Sn	**Sn**	**14 01 42.6**	**-0.8**
AAK	**Ala-Archa**	**5.63**	**21**	P	**Pn**	**14 00 44.2**	**+0.8**
	comp=Z,9.6nm,0.3s,baz=179,slow=6.3,SNR=86						
AAK				S	**Sn**	**14 01 45.5**	**-1.5**
	comp=Z,6.9nm,0.3s,baz=302,slow=23,SNR=9.7						
AAK	**Ala-Archa**	**5.63**	**21**	P	**Pn**	**14 00 44.1**	**+0.6**
	comp=Z,16nm,0.4s						
AAK				S	**Sn**	**14 01 45.7**	**-1.4**
	comp=Z,82nm,0.6s						
AAK	**Ala-Archa**	**5.63**	**21**	*c i*PN	**Pn**	**14 00 44.1**	**+0.6**
AAK	**Ala-Archa**	**5.63**	**21**	*e*Pn	**Pn**	**14 00 42.9**	**-0.6**
	comp=Z,35nm,0.3s						
AAK				*e*Sn	**Sn**	**14 01 44.6**	**-2.5**
KK31	**Karatay Array**	**5.80**	**351**	⇑P	**Pn**	**14 00 44.1**	**-1.4**
	comp=Z,23nm,0.2s,baz=175,slow=13						
KK31				⇑S	**Sn**	**14 01 45.2**	**-5.6**
	comp=Z,127nm,0.4s,baz=170,slow=23						
KKAR	**Karatay Array**	**5.80**	**351**	*e*PN	**Pn**	**14 00 44.2**	**-1.4**
KKAR				pmax	pmax		
	comp=Z,102nm,0.3s						
KKAR	**Karatay Array**	**5.80**	**351**	*e*Pn	**Pn**	**14 00 44.2**	**-1.4**
	comp=Z,102nm,0.3s						
KKAR				*e*Sn	Sn	14 01 44.5	-6.4
FRU	**Bishkek**	**5.85**	**21**	*i* PN	**Pn**	**14 00 46.5**	**+0.2**
FRU				*i* S	**Sn**	**14 01 52.0**	**-0.1**
FRU				pmax	pmax		
	comp=Z,40nm,1.8s						
FRU				smax	smax		
	comp=N,310nm,1.4s						
THN	**Thein Dam**	**5.89**	**146**	*e*P	**Pn**	**14 00 45.0**	**-1.8**
THN				*e*S	**Sn**	**14 01 48.0**	**-5.0**
TKM2	**Tokmak 2**	**6.25**	**26**	⇑P	**Pn**	**14 00 52.2**	**+0.4**
	comp=N,11nm,0.5s						
TKM2				⇑S	**Sn**	**14 01 56.2**	**-5.7**
	comp=N,18nm,0.6s						
TKM2	**Tokmak 2**	**6.25**	**26**	*e*PN	**Pn**	**14 00 51.9**	**+0.1**
TKM2				pmax	pmax		
	comp=Z,26nm,0.6s						
TKM2	**Tokmak 2**	**6.25**	**26**	*e*Pn	**Pn**	**14 00 51.9**	**+0.1**
	comp=Z,26nm,0.6s						
DHRM	**DHARAMSHALA**	**6.31**	**143**	*e*P	**Pn**	**14 00 51.4**	**-1.3**
DHRM				*e*S	**Sn**	**14 01 59.0**	**-4.7**
DHRM				IAML		14 02 07.3	
	comp=N,1μm,0.4s						
DHRM				IAML		14 02 07.7	
	comp=E,2μm,0.7s						
JWA	**Jwalamukhi**	**6.65**	**145**	*e*P	**Pn**	**14 00 56.0**	**-1.0**
JWA				*e*S	**Sn**	**14 02 07.0**	**-4.3**
SDNR	**Sundarnagar**	**7.25**	**143**	*e*P	**Pn**	**14 01 05.0**	**-0.3**
SDNR				*e*S	**Sn**	**14 02 22.0**	**-4.1**
SMLA	**Simla**	**7.65**	**143**	*e*P	**Pn**	**14 01 09.6**	**-1.1**
SMLA				*e*S	Sn	14 02 28.4	-7.4
SMLA				IAML		14 02 35.6	
	comp=N,479nm,0.4s						
SMLA				IAML		14 02 37.8	
	comp=E,709nm,0.1s						
PDGK	**Podgornoye**	**8.34**	**42**	⇑P	**Pn**	**14 01 20.6**	**+0.7**
	comp=E,4.7nm,0.5s						
KKR	**Kurukshetra**	**8.50**	**149**	*e*S	Sn	14 02 49.3	-7.0
DDI	**Dehra Dun**	**8.75**	**142**	*e*P	**Pn**	**14 01 24.5**	**-1.1**
DDI				*e*S	Sn	14 02 56.0	-6.5
RTK	**Rohtak**	**9.18**	**154**	*e*S	Sn	14 03 05.5	-7.2
BHGR	**Bahadurgarh**	**9.68**	**152**	*e*S	Sn	14 03 16.2	-8.8
KALG	**Kalgarh**	**9.76**	**142**	*e*P	Pn	14 01 24.7	-14
KALG				*e*S	Sn	14 03 07.2	-20
NDI	**New Delhi**	**9.79**	**151**	*e*P	Pn	14 01 34.0	-5.6
NDI				*e*S	Sn	14 03 16.0	-12
KHET	**Khetri**	**9.87**	**159**	*e*P	**Pn**	**14 01 38.4**	**-2.3**
KHET				*e*S	Sn	14 03 18.5	-11
KHET				IAML		14 03 23.9	
	comp=N,61nm,0.6s						
KHET				IAML		14 03 24.6	
	comp=E,98nm,0.6s						
AYAN	**Aya Nagar**	**9.93**	**152**	*e*P	Pn	14 01 29.0	-12
AYAN				*e*S	Sn	14 03 13.6	-18
KUDL	**Kundal**	**10.02**	**156**	*e*P	**Pn**	**14 01 40.6**	**-2.1**
KUDL				*e*S	Sn	14 03 23.1	-10
LGTI	**Lohaghat**	**10.59**	**136**	*e*P	Pn	14 01 57.9	+7.5
LGTI				*e*S	**Sn**	**14 03 48.1**	**+1.0**
GEYT	**Alibeck**	**10.87**	**277**	P	Pn	14 01 48.1	-6.0
	comp=E,27nm,0.3s,baz=106,slow=11,SNR=104						
GEYT				S	Sn	14 03 41.6	-12
	comp=E,9.4nm,0.3s,baz=105,slow=14,SNR=10						
GEYT				LR	LR	14 07 14.7	
	comp=E,81nm,18.5s,baz=35,slow=44						
MK31	**Makanchi Array**	**12.20**	**36**	P	**Pn**	**14 02 11.0**	**-0.7**
	comp=E,3.1nm,0.8s,baz=223,slow=13,SNR=27						
MKAR	**Makanchi Array**	**12.20**	**36**	P	**Pn**	**14 02 11.5**	**-0.1**
	comp=E,0.2nm,0.3s,baz=225,slow=13,SNR=29						
PYUN	**Piuthan**	**13.19**	**131**	*e*Pn	Pn	14 02 21.0	-3.9
PYUN				*e*Sn	Sn	14 04 38.3	-12
	comp=E,247nm,0.6s						
WMQ	**Urumqi**	**13.67**	**57**	*e*P	P	14 02 49.3	+14
KOLN	**Koldanda**	**13.80**	**131**	*e*Pn	Pn	14 02 29.3	-3.5
KOLN				*e*Sn	Sn	14 04 53.4	-12
	comp=E,79nm,0.5s						
KURBB	**Kurchatov Arra**	**14.08**	**18**	P	Pn	14 02 32.2	-3.8
	comp=E,0.1nm,0.3s,baz=211,slow=12,SNR=13						
KURK	**Kurchatov**	**14.19**	**18**	P	Pn	14 02 32.2	-5.2
KURK	**Kurchatov**	**14.19**	**18**	*e*Pn	Pn	14 02 32.9	-4.5
GKN	**Gorkha**	**14.27**	**127**	*e*Pn	Pn	14 02 34.7	-4.1
GKN				*e*Sn	Sn	14 05 02.4	-14
	comp=E,222nm,0.7s						
AB31	**Akbulak array**	**14.65**	**328**	P	Pn	14 02 39.2	-4.0
	comp=E,4.7nm,0.3s,baz=138,slow=12,SNR=348						
AB31				S	Sn	14 05 09.1	-16
	comp=E,27nm,0.6s,baz=137,slow=22,SNR=15						
ABKAR	**Akbulak array**	**14.65**	**328**	*e*Pn	Pn	14 02 39.0	-4.3
	comp=E,15nm,0.4s						
KKN	**Kakani**	**14.83**	**126**	*e*Pn	Pn	14 02 41.5	-4.4
KKN				*e*Sn	Sn	14 05 14.9	-15
	comp=E,170nm,0.8s						
BHPL	**Bhopal**	**14.90**	**160**	*e*P	**Pn**	**14 02 47.2**	**+0.6**
BHPL				*ex*	x	14 05 17.2	
PKIN	**Phulchoki**	**15.05**	**127**	*e*Pn	**Pn**	**14 02 44.3**	**-4.5**
PKIN				*e*Sn	Sn	14 05 21.1	-14
	comp=E,72nm,0.6s						
VOSK	**Vostochnaya**	**15.35**	**358**	⇑P	**Pn**	**14 02 48.9**	**-3.1**
	comp=E,12nm,0.9s						
BVA0	**Borovoye Array**	**15.67**	**357**	P	**Pn**	**14 02 53.4**	**-2.6**
	comp=E,14nm,1.1s,baz=157,slow=13,SNR=47						
BVA0				⇓S	Sn	14 05 39.7	-10
	comp=E,3.2nm,0.6s,baz=170,slow=24,SNR=5.4						
BVAR	**Borovoye Array**	**15.67**	**357**	P	**Pn**	**14 02 53.6**	**-2.4**
	comp=E,1.3nm,0.3s,baz=161,slow=13,SNR=19						
BVAR				S	Sn	14 05 40.4	-9.1
	comp=E,0.6nm,0.3s,baz=164,slow=21,SNR=5.5						
BRVK	**Borovoye**	**15.71**	**357**	*de*P	**Pn**	**14 02 53.7**	**-2.8**
BRVK				pmax	pmax		
	comp=Z,22nm,1.0s						
BRVK	**Borovoye**	**15.71**	**357**	*e*Pn	Pn	14 02 51.0	-5.5
	comp=Z,25nm,1.0s						
AKTO	**Aktyubinsk**	**16.36**	**327**	P	**Pn**	**14 03 02.0**	**-2.6**
	comp=E,15nm,0.3s,baz=124,slow=10,SNR=116						
AKTO				S	Sn	14 05 52.3	-14
	comp=E,1.0nm,0.3s,baz=156,slow=22,SNR=6.0						
AKTO				LR	LR	14 10 01.5	
	comp=E,53nm,20.0s,baz=78,slow=39						
AKTO	**Aktyubinsk**	**16.36**	**327**	⇓P	**Pn**	**14 03 01.9**	**-2.7**
	comp=E,98nm,0.7s						
AKTO				⇑S	Sn	14 05 53.2	-13
	comp=E,29nm,0.8s						
LSA	**Lhasa**	**17.83**	**110**	P	**P**	**14 03 22.3**	**+0.1**
LSA	**Lhasa**	**17.83**	**110**	*e*P	**Pn**	**14 03 22.5**	**-0.5**
LSA				pmax	pmax		
	comp=Z,21nm,0.8s						
LSA	**Lhasa**	**17.83**	**110**	*e*P	**Pn**	**14 03 22.5**	**-0.5**
	comp=Z,21nm,0.8s						
WSAR	**Wadi Sarin**	**18.09**	**222**	P	**Pn**	**14 03 25.2**	**-0.4**
	comp=Z,0.5nm,0.3s,baz=59,slow=7.2,SNR=4.6						
BOK	**Bokaro**	**18.14**	**134**	*e*P	**Pn**	**14 03 26.5**	**+0.1**
ZALV	**Zalesovo Beam**	**18.84**	**24**	P	**P**	**14 03 32.7**	**+0.2**
	comp=Z,1.1nm,0.3s,baz=224,slow=11,SNR=16						
HYB	**Hyderabad**	**20.76**	**162**	*i* P	**P**	**14 03 53.5**	**0.0**
HYB				*e*S	**S**	**14 07 37.0**	**-1.8**
ARU	**Arti**	**21.02**	**339**	P	**P**	**14 03 55.9**	**-0.1**
	comp=Z,13nm,0.8s,baz=136,slow=5.6,SNR=20						
ARU				LR	LR	14 12 13.1	
	comp=Z,39nm,18.1s,baz=213,slow=37						
ARU	**Arti**	**21.02**	**339**	*d* iP	**P**	**14 03 55.4**	**-0.6**
ARU						14 04 34.9	
ARU				S	**S**	**14 07 41.6**	**-1.7**
ARU				SS	**SnSn**	**14 08 07.5**	**-8.3**
ARU				pmax	pmax		
	comp=Z,30nm,1.2s						
ARU	**Arti**	**21.02**	**339**	*e*P	**P**	**14 03 54.8**	**-1.2**
	comp=Z,24nm,0.9s						
GNI	**Garni**	**21.26**	**286**	P	**P**	**14 04 00.7**	**+1.8**
	comp=Z,33nm,0.7s,baz=138,slow=1.0,SNR=15						
GNI	**Garni**	**21.26**	**286**	*ce*P	**P**	**14 04 00.9**	**+2.0**
TBLG	**Delisi**	**21.28**	**290**	P	**P**	**14 04 02.1**	**+3.2**
TBLG	**Delisi**	**21.28**	**290**	P	**P**	**14 04 02.1**	**+3.2**
GUDG	**Gudauri**	**21.52**	**292**	P	**P**	**14 04 03.9**	**+2.1**
ZEI	**Tsey**	**21.97**	**293**	*e*P	**P**	**14 04 05.2**	**-1.3**
ZEI				pmax	pmax		
	comp=Z,15nm,0.6s						
GTA	**Gaotai**	**22.01**	**76**	*e*P	**P**	**14 04 09.8**	**+3.0**
GTA				pmax	pmax		
	comp=Z,21nm,1.1s						
ONI	**Oni**	**22.29**	**292**	P	**P**	**14 04 13.0**	**+3.5**
ONI	**Oni**	**22.29**	**292**	P	**P**	**14 04 13.0**	**+3.5**
KBZ	**Khabaz**	**22.79**	**295**	P	**P**	**14 04 13.3**	**-1.1**
	comp=Z,6.9nm,0.8s,baz=143,slow=8.4,SNR=13						
GOF	**Gofitskoye**	**22.87**	**299**	⇑*e*P	**P**	**14 04 15.7**	**+0.5**
NEY	**Neytrino**	**22.87**	**294**	*e*P	**P**	**14 04 15.9**	**+0.4**
KIV	**Kislovodsk**	**22.97**	**296**	*ce*P	**P**	**14 04 17.7**	**+1.4**
KIV				pmax	pmax		
	comp=Z,12nm,1.0s						
KIV	**Kislovodsk**	**22.97**	**296**	*e*P	**P**	**14 04 14.8**	**-1.5**
	comp=Z,22nm,0.8s						
VRH	**Novokhopyorsk**	**25.37**	**313**	*e*P	P	14 04 50.2	+12
VRH				pmax	pmax		
	comp=Z,10.0nm,0.6s						
ZAK	**Zakamensk**	**25.92**	**50**	*e*P	**P**	**14 04 44.6**	**+1.5**
ZAK				pmax	pmax		
	comp=Z,3.0nm,1.1s						
VSR	**Storozhevoye**	**26.89**	**311**	*e*P	**P**	**14 04 50.8**	**-0.8**
VSR				pmax	pmax		
	comp=Z,10.0nm,0.8s						
SONM	**Songino Array**	**27.30**	**56**	P	**P**	**14 04 57.2**	**+1.6**
	comp=Z,0.9nm,0.6s,baz=271,slow=9.5,SNR=7.6						
SONM				pP	**pP**	**14 05 24.2**	**+3.3**
	comp=Z,0.8nm,0.8s,baz=243,slow=9.8,SNR=3.4						
LPSR	**Galich'ya Gora**	**27.49**	**314**	*e*P	**P**	**14 04 56.9**	**0.0**
LPSR				pmax	pmax		
	comp=Z,7.0nm,0.7s						
ULN	**Ulaanbaatar**	**27.75**	**57**	*ce*P	**P**	**14 05 01.5**	**+2.0**
ULN				pmax	pmax		
	comp=Z,8.0nm,2.5s						
OBN	**Obninsk**	**29.70**	**318**	*e*P	**P**	**14 05 17.3**	**+0.8**
OBN				*e*		14 06 18.2	
OBN				pmax	pmax		
	comp=Z,6.0nm,1.3s						
BRTR	**Keskin Array B**	**29.80**	**286**	P	**P**	**14 05 18.6**	**+0.9**
	comp=Z,1.8nm,0.6s,baz=102,slow=8.6,SNR=14						
BRTR				sP	**sP**	**14 05 57.2**	**+0.3**
	comp=Z,1.5nm,0.8s,baz=111,slow=7.0,SNR=3.9						
BRTR				PP	**PP**	**14 06 24.6**	**-2.4**
	comp=Z,1.6nm,0.8s,baz=86,slow=8.9,SNR=4.5						
CMAR	**Chiang Mai Arr**	**30.33**	**121**	P	**P**	**14 05 24.1**	**+1.6**
	comp=Z,1.3nm,0.6s,baz=311,slow=9.3,SNR=14						
KLMR	**Klimovskoe**	**31.04**	**330**	*e*P	**P**	**14 05 26.5**	**-1.8**
KLMR				*e*SP	**sP**	**14 06 09.5**	**+2.0**
KLMR				pmax	pmax		
	comp=Z,15nm,1.6s						
AKASG	**Malin Array Be**	**32.91**	**308**	P	**P**	**14 05 44.7**	**0.0**
	comp=Z,4.5nm,0.6s,baz=79,slow=7.2,SNR=15						
AKASG				sP	**sP**	**14 06 22.5**	**-1.5**
	comp=Z,0.5nm,0.4s,baz=82,slow=7.2,SNR=1.8						
KIEV	**Kiev**	**32.92**	**308**	*e*P	**P**	**14 05 43.8**	**-1.0**
KIEV				pmax	pmax		
	comp=Z,4.0nm,0.8s						
KIEV	**Kiev**	**32.92**	**308**	*e*P	**P**	**14 05 43.0**	**-1.9**
	comp=Z,3.6nm,0.5s						
SORM	**Soroca**	**33.26**	**303**	⇑*i*P	**P**	**14 05 47.2**	**-0.6**
SORM	**Soroca**	**33.26**	**303**	⇑P	**P**	**14 05 47.2**	**-0.6**
CFR	**Carcaliu**	**33.40**	**297**	⇑*i*P	**P**	**14 05 48.1**	**-0.9**
CFR	**Carcaliu**	**33.40**	**297**	⇑P	**P**	**14 05 48.1**	**-0.9**
VRI	**Vrincioaia**	**34.36**	**299**	⇑*i*P	**P**	**14 06 00.1**	**+2.7**
VRI	**Vrincioaia**	**34.36**	**299**	⇑P	**P**	**14 06 00.1**	**+2.7**
TESR	**Tescani**	**34.40**	**300**	⇓*i*P	**P**	**14 05 58.4**	**+0.7**
PLOR	**Plostina**	**34.42**	**299**	⇓*i*P	**P**	**14 05 59.2**	**+1.3**
PLOR	**Plostina**	**34.42**	**299**	⇓P	**P**	**14 05 59.2**	**+1.3**
MLR	**Muntele Rosu**	**34.93**	**298**	⇑*i*P	**P**	**14 06 04.7**	**+2.3**
MLR	**Muntele Rosu**	**34.93**	**298**	⇑P	**P**	**14 06 04.7**	**+2.3**
BURAR	**Bucovina Array**	**35.36**	**302**	⇓*i*P	**P**	**14 06 07.4**	**+1.3**
BURAR	**Bucovina Array**	**35.36**	**302**	⇓P	**P**	**14 06 07.4**	**+1.3**
VOIR		**35.56**	**298**	⇑*i*P	**P**	**14 06 09.0**	**+1.2**
VOIR		**35.56**	**298**	⇑P	**P**	**14 06 09.0**	**+1.2**
ARR	**Arges**	**35.86**	**298**	⇓*i*P	**P**	**14 06 11.5**	**+1.2**
FINES	**FINESS Array B**	**37.12**	**325**	P	**P**	**14 06 21.0**	**+0.3**
	comp=Z,2.5nm,0.4s,baz=120,slow=8.9,SNR=28						
FINES				pP	**pP**	**14 06 47.9**	**+1.0**
	comp=Z,2.8nm,0.7s,baz=108,slow=12,SNR=3.8						
KOLS	**Kolonicke sedl**	**37.31**	**304**	*e*P	**P**	**14 06 23.1**	**+0.6**
PKSM	**Moragy**	**39.95**	**300**	⇓*i*P	**P**	**14 06 45.6**	**+1.0**
PKSM	**Moragy**	**39.95**	**300**	⇓P	**P**	**14 06 45.6**	**+1.0**
MORC	**Moravsky Berou**	**40.37**	**306**	⇓*i*P	**P**	**14 06 48.6**	**+0.5**
MORC	**Moravsky Berou**	**40.37**	**306**	⇓P	**P**	**14 06 48.6**	**+0.5**
ARCES	**ARCESS Array B**	**40.58**	**337**	P	**P**	**14 06 50.2**	**+0.7**
	comp=Z,4.5nm,0.7s,baz=110,slow=8.1,SNR=19						
CONA	**Conrad Observa**	**41.63**	**303**	*i* P	**P**	**14 06 59.8**	**+1.2**
	comp=Z,6.6nm,1.0s						
CONA				*i* pP	**pP**	**14 07 26.9**	**+1.7**
	comp=Z,3.0nm,1.2s						
SOKA	**Soboth**	**42.36**	**301**	*i* P	**P**	**14 07 05.3**	**+0.8**
	comp=Z,3.8nm,0.9s						
BRG	**Berggiesshubel**	**42.59**	**308**	*i* P	**P**	**14 07 07.0**	**+0.8**
	comp=Z,8.1nm,1.0s						
BRG				*e*		14 07 50.2	
	comp=Z,4.3nm,0.9s						
YAK	**Yakutsk**	**42.87**	**36**	*e*P	**P**	**14 07 09.8**	**+1.6**
YAK				pmax	pmax		
	comp=Z,4.0nm,0.8s						
GERES	**GERESS Array B**	**42.96**	**305**	P	**P**	**14 07 09.2**	**0.0**
	comp=Z,0.4nm,0.4s,baz=78,slow=8.3,SNR=4.2						
CLL	**Collm**	**43.15**	**308**	*i* P	**P**	**14 07 11.3**	**+0.7**
	comp=Z,4.0nm,0.7s						
CLL	**Collm**	**43.15**	**308**	*i* P	**P**	**14 07 11.3**	**+0.7**
CLL				pmax	pmax		
	comp=Z,4.0nm,0.7s						
CUC	**Castrocucco**	**43.17**	**291**	*e*P	**P**	**14 07 09.9**	**-1.2**
	comp=Z,3.8nm,0.7s						
NB2	**NORSAR Subarra**	**44.07**	**322**	P	**P**	**14 07 17.5**	**-0.4**
	comp=Z,5.3nm,0.7s,baz=92,slow=7.9						
NOA	**NORSAR Array B**	**44.07**	**322**	P	**P**	**14 07 17.8**	**-0.1**
	comp=Z,5.1nm,0.7s,baz=94,slow=7.8,SNR=25						
NOA				PP	**PcP**	**14 08 58.9**	**-2.2**
	comp=Z,3.6nm,0.9s,baz=94,slow=10,SNR=4.8						
KLR	**Kul'dur**	**44.10**	**55**	P	**P**	**14 07 19.5**	**+1.2**
	comp=Z,0.9nm,0.4s,baz=295,slow=7.8,SNR=4.7						
TIXI	**Tiksi**	**44.71**	**22**	P	**P**	**14 07 23.6**	**+0.8**
	comp=Z,1.5nm,0.3s,baz=292,slow=4.4,SNR=7.4						
TIXI	**Tiksi**	**44.71**	**22**	*ce*P	**P**	**14 07 23.9**	**+1.1**
TIXI				pmax	pmax		
	comp=Z,3.0nm,1.0s						
TIXI	**Tiksi**	**44.71**	**22**	*e*P	**P**	**14 07 23.2**	**+0.5**
	comp=Z,3.1nm,0.8s						
KMBO	**Kilima Mbogo**	**49.90**	**228**	*ce*P	P	14 08 08.3	+4.3
KMBO				pmax	pmax		
	comp=Z,1.0nm,0.3s					

comp=Z,0.2nm,0.3s,baz=12,slow=24,SNR=1.9
CPUP Villa Florida 8.89 108 P **Pn** 14 07 56.5 -1.6
comp=Z,0.2nm,0.3s,baz=284,slow=9.4,SNR=6.0
SIV San Ignacio 9.51 35 P **Pn** 14 08 04.7 -1.6
comp=Z,0.6nm,0.3s,baz=227,slow=11,SNR=10
PLCA Paso Flores 17.09 190 P **P** 14 09 39.1 +0.1
comp=Z,0.1nm,0.3s,baz=12,slow=11,SNR=3.0
YKA Yellowknife Ar 94.10 340 P **P** 14 18 48.7 +0.3
comp=Z,0.3nm,0.6s,baz=139,slow=4.6,SNR=7.9
ASAR Alice Springs 128.64 204 PKP **PKPdf** 14 24 36.6 -0.6
comp=Z,0.9nm,1.0s,baz=143,slow=1.6,SNR=6.9
WRA Warramunga Arr 131.81 207 PKP **PKPdf** 14 24 43.0 -0.3
comp=Z,0.1nm,0.3s,baz=153,slow=2.0,SNR=8.9
MKAR Makanchi Array 146.31 40 PKPbc **PKPbc** 14 25 09.8 -0.6
comp=Z,0.7nm,0.5s,baz=295,slow=3.0,SNR=8.9

*ISCJB **23** 14:08:03.0±0.4,5˚.91N±0˚.06×123˚.99E±0˚.08, h500km, mb3.6/13, Error ellipse: s-maj=12.0km s-min=6.3km az=154.9*
*IDC **23** 14:08:03.7±0.7,5˚.68N×123˚.95E, h507km±7km, mb3.2/13, mb1 3.2/14, mb1mx3.0/46, mbtmp4.1/14, Error ellipse: s-maj=22.4km s-min=7.8km az=64.0*
*DJA **23** 14:08:03.6±0.7,6˚N±9˚×12˚.4E±˚, h479km±7km, M4.3/21, mb4.5/21, mB4.6/11, MLv4.9/7, Mw(mB)3.8/11*
*MAN **23** 14:08:04,5˚.62N×124˚.21E, h481km, MS4.4*
ISC 23 14:08:03.6±0.5,5˚.83N±0˚.08×124˚.0E±0˚.1, h500km, n34, σ1§34/41, mb3.7/13, 2D, Mindanao

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CTBH	**Cotabato--PC H**	**1.41**	**11**	‖*iP*	**P**	**14 09 07.3**	**+1.1**
DAV	**Davao City (W)**	**2.02**	**52**	P	**P**	**14 09 09.0**	**+0.3**
	9.9nm,0.3s,baz=36,slow=5.4,SNR=6.2						
DAV				S	**S**	**14 10 04.2**	**+2.5**
	20nm,0.3s,baz=342,slow=20,SNR=2.6						
SGSI	**Sangihe**	**2.63**	**144**	P	**P**	**14 09 12.2**	**-0.1**
CGP	**Cagayan de Oro**	**2.71**	**15**	‖*eP*	**P**	**14 09 13.6**	**+0.9**
MRSI	**Marisa**	**5.69**	**201**	P	**P**	**14 09 39.2**	**+2.2**
	19nm,0.6s,0.1nm						
TNTI	**Ternate**	**6.06**	**146**	P	**P**	**14 09 40.4**	**-0.1**
	95nm,1.1s,1μm1.1nm						
LBMI	**Labuha**	**7.33**	**151**	P	**P**	**14 09 53.5**	**+0.3**
	96nm,0.9s,1μm1.9nm						
SANI	**Sanana**	**8.08**	**166**	P	**P**	**14 10 00.4**	**-0.5**
	70nm,0.8s,795nm						
TGY	**Tagaytay City**	**8.75**	**340**	P	**P**	**14 10 08.1**	**+0.2**
	12nm,0.3s,baz=275,slow=4.1,SNR=3.4						
NLAI	**Namlea**	**9.53**	**161**	P	**P**	**14 10 17.9**	**+1.8**
	60nm,0.8s,718nm						
TTSI	**Tana Toraja**	**9.74**	**205**	P	P	14 10 23.2	+4.9
	79nm,0.8s,2μm						
SWI	**Sorong**	**9.86**	**132**	P	**P**	**14 10 19.9**	**+0.4**
	32nm,1.1s						
MSAI	**Masohi**	**10.37**	**151**	P	**P**	**14 10 27.0**	**+2.0**
	42nm,0.7s,470nm						
KAPI	**Kappang**	**11.56**	**201**	P	**P**	**14 10 39.4**	**+1.8**
	1.9nm,0.3s,baz=353,slow=4.5,SNR=7.0						
BNDI	**Bandanaira**	**11.87**	**150**	P	**P**	**14 10 42.2**	**+1.4**
	242nm,0.9s,2μm						
FAKI	**Fak Fak**	**11.99**	**136**	P	**P**	**14 10 43.0**	**+0.8**
	133nm,0.9s,997nm						
PBKI	**Pangkalan Bun**	**14.93**	**236**	P	P	14 11 19.4	+6.3
	236nm,0.6s						
PLAI	**Plampang**	**15.81**	**203**	P	**P**	**14 11 24.9**	**+2.5**
	58nm,0.9s						
TWSI	**Taliwang, Sumb**	**16.10**	**206**	P	**P**	**14 11 27.7**	**+2.3**
	22nm,1.5s						
GENI	**Genyem**	**18.21**	**117**	P	**P**	**14 11 47.2**	**+1.2**
JAY	**Jayapura**	**18.65**	**116**	P	**P**	**14 11 50.5**	**+0.4**
	0.2nm,0.3s,baz=30,slow=23,SNR=7.1						
PSI	**Prapat**	**25.15**	**264**	P	**P**	**14 12 47.4**	**-1.4**
	1.9nm,0.5s,baz=75,slow=7.4,SNR=3.6						
CMAR	**Chiang Mai Arr**	**27.45**	**299**	P	**P**	**14 13 10.1**	**+1.2**
	0.6nm,0.7s,baz=126,slow=7.2,SNR=5.2						
CMAR				ScP	**ScP**	**14 19 04.8**	**+0.1**
	0.3nm,0.4s,baz=126,slow=1.7,SNR=6.5						
WRA	**Warramunga Arr**	**27.57**	**159**	P	**P**	**14 13 08.7**	**-1.1**
	2.9nm,0.6s,baz=339,slow=9.4,SNR=23						
WRA				S	S	14 17 10.0	-5.6
	0.7nm,0.5s,baz=335,slow=16,SNR=6.4						
WRA				ScP	**ScP**	**14 19 03.2**	**-1.8**
	1.0nm,0.6s,baz=342,slow=3.1,SNR=9.3						
ASAR	**Alice Springs**	**30.88**	**162**	P	**P**	**14 13 38.6**	**0.0**
	3.7nm,0.5s,baz=343,slow=7.1,SNR=100						
ASAR				PcP	**PcP**	**14 16 19.8**	**-0.6**
	0.9nm,0.6s,baz=346,slow=2.6,SNR=9.5						
ASAR				S	**S**	**14 18 04.4**	**-2.6**
	3.9nm,0.8s,baz=350,slow=23,SNR=22						
ASAR				ScP	**ScP**	**14 19 13.7**	**-1.9**
	0.8nm,0.6s,baz=358,slow=3.1,SNR=6.0						
STKA	**Stephens Creek**	**41.09**	**157**	P	**P**	**14 15 03.1**	**-0.1**
	0.9nm,0.5s,baz=348,slow=7.3,SNR=4.8						
SONM	**Songino Array**	**44.48**	**343**	P	**P**	**14 15 30.6**	**+0.9**
	0.3nm,0.4s,baz=163,slow=10,SNR=2.4						
SONM				PcP	**PcP**	**14 17 02.4**	**-0.1**
	0.5nm,0.7s,baz=154,slow=3.5,SNR=3.5						
MKAR	**Makanchi Array**	**54.28**	**326**	P	**P**	**14 16 43.1**	**+0.9**
	1.2nm,0.4s,baz=120,slow=7.9,SNR=28						
MKAR				PcP	**PcP**	**14 17 38.3**	**-0.4**
	1.7nm,0.7s,baz=112,slow=4.3,SNR=13						
MKAR				ScP	**ScP**	**14 20 47.0**	**-1.8**
	0.2nm,0.5s,baz=128,slow=4.2,SNR=2.7						
ZALV	**Zalesovo Beam**	**57.49**	**334**	P	**P**	**14 17 04.2**	**-0.1**
	0.4nm,0.3s,baz=109,slow=12,SNR=2.9						
TIXI	**Tiksi**	**65.82**	**2**	P	**P**	**14 17 58.3**	**-0.1**
	1.3nm,0.4s,baz=170,slow=3.0,SNR=3.6						
NRIK	**Noril'sk**	**67.76**	**347**	P	**P**	**14 18 10.7**	**+0.2**
	2.3nm,0.6s,baz=139,slow=6.7,SNR=4.9						
BRTR	**Keskin Array B**	**86.57**	**309**	P	**P**	**14 19 52.8**	**-1.0**
	1.1nm,0.8s,baz=124,slow=4.7,SNR=6.1						
AKASG	**Malin Array Be**	**88.54**	**321**	P	**P**	**14 20 01.2**	**-1.3**
	0.6nm,0.5s,baz=66,slow=6.2,SNR=2.9						
FINES	**FINESS Array B**	**88.69**	**332**	P	**P**	**14 20 01.9**	**-1.1**
	2.9nm,1.2s,baz=43,slow=10,SNR=6.1						

JMA 23 14:08:54.3, 35˚.02N×135˚.46E, h12km, M2.6, Western Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JWT	**Wachi**	**0.27**	**350**	P	Pg	14 08 59.9	+0.1
JWT				S	Sg	14 09 03.6	0.0
JHE	**Heguri**	**0.41**	**153**	P	Pg	14 09 02.3	-0.1
JHE				S	Sg	14 09 07.9	0.0
JKS	**Kasai**	**0.51**	**266**	P	Pg	14 09 04.1	-0.1
JKS				S	Sg	14 09 10.7	-0.3
JKY	**Yasaka**	**0.67**	**334**	P	Pg	14 09 07.2	-0.2
JAJ2	**Tsuna**	**0.76**	**218**	P	Pg	14 09 08.8	-0.3
JWY	**Kouya**	**0.81**	**172**	P	Pg	14 09 09.3	-0.6
TSUJ	**Tsu 2**	**0.85**	**111**	P	Pg	14 09 10.2	-0.5
TSUJ				S	Sg	14 09 21.3	-0.4
JKSM	**Kasumi**	**0.86**	**311**	P	Pg	14 09 10.6	-0.4
MAT	**Matsushiro**	**2.70**	**55**	P	Pg	14 09 44.7	-1.4
MAT				S	Sg	14 10 18.9	-2.2

*NIED **23** 14:31:00, 36˚.40N×140˚.60E, h56km, Mw4.5 Best double couple: M₀5.90000×10¹⁵ NP1:φs118.00000°, δ44.00000°, λ15.00000°. NP2:φs17.00000°, δ80.00000°, λ133.00000°.*
*BJI **23** 14:31:25.8, 36˚.31N×140˚.85E, h45km, mb4.6/29, mB4.9/16, Ms4.4/9, Ms7 4.3/9*
*MOS **23** 14:31:25.7±1.3, 36˚.48N×140˚.66E, h33km, mb4.6/28, Error ellipse: s-maj=10.6km s-min=6.3km az=105.6*
*ISCJB **23** 14:31:28.9±0.4, 36˚.48N±0˚.03×140˚.62E±0˚.05, h61km±2km, mb4.3/49, Error ellipse: s-maj=6.7km s-min=4.2km az=28.2*
*JMA **23** 14:31:29.2, 36˚.42N×140˚.59E, h55km±1km, M4.2 Broadband fault plane solution: P waves. NP1: φs29.00000°, δ80.00000°, λ130.00000°. NP2: φs131.00000°, δ41.00000°, λ16.00000°. Principal axes: T Plg41.0000°, Azm336.0000°; N Plg39.0000°, Azm200.0000°; P Plg24.0000°, Azm89.0000°;*
JMA Felt III J1.
*NEIC **23** 14:31:31.6±0.9, 36˚.52N×140˚.42E, h70km±7km, mb4.5/10 Error ellipse: s-maj=10.9km s-min=8.1km az=110.0*
NEIC Recorded [3 JMA] in Ibaraki.
*IDC **23** 14:31:32.4±1.7, 36˚.44N×140˚.40E, h74km±16km, mb3.9/20, mb1 3.9/23, mb1mx3.8/46, mbtmp4.2/23, MS3.4/24, Ms1 3.4/24, ms1mx3.3/42, Error ellipse: s-maj=19.5km s-min=10.9km az=81.0*

ISC 23 14:31:29.5±0.7, 36˚.49N±0˚.04×140˚.68E±0˚.05, h52km±6km, n145, σ1§48/138, mb4.3/49, MS3.5/21, 11C-13D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JHO	**Hitachi**	**0.15**	**324**	‖P	**Pn**	**14 31 38.0**	**+0.2**
JHO				S	**Sn**	**14 31 44.0**	**+0.2**
JYT	**Yasato**	**0.47**	**237**	‖P	**Pn**	**14 31 39.6**	**-0.9**
JYT				S	**Sn**	**14 31 46.9**	**-1.5**
ONAJ	**Iwakimizuishiy**	**0.62**	**9**	P	**Pn**	**14 31 43.1**	**+0.7**
ONAJ				S	**Sn**	**14 31 52.6**	**+0.8**
JFK	**Kawauchi**	**0.89**	**10**	↑P	**Pn**	**14 31 46.4**	**+0.5**
JFK				S	**Sn**	**14 31 58.9**	**+1.0**
JAG	**Ashikaga**	**0.99**	**267**	‖P	**Pn**	**14 31 46.3**	**-0.8**
JAG				S	**Sn**	**14 31 58.4**	**-1.8**
JFT	**Otama**	**1.07**	**345**	↑P	**Pn**	**14 31 48.9**	**+0.7**
JFT				S	**Sn**	**14 32 03.0**	**+1.0**
JKT	**Katashina**	**1.19**	**284**	‖P	**Pn**	**14 31 49.6**	**-0.2**
JKT				S	**Sn**	**14 32 04.4**	**-0.6**
JFY	**Yanaizu**	**1.21**	**320**	P	**Pn**	**14 31 50.7**	**+0.6**
MJAR	**Matsushiro Arr**	**1.99**	**272**	P	**Pn**	**14 31 59.7**	**-1.1**
	80nm,0.3s,baz=4.4,slow=13,SNR=409						
MJAR				S	Sn	14 32 15.2	-9.3
	112nm,0.3s,baz=111,slow=8.8,SNR=8.7						
MAJO	**Matsushiro**	**1.99**	**272**	*i* P	**Pn**	**14 32 00.5**	**-0.3**
MAJO	**Matsushiro**	**1.99**	**272**	*e*P	**Pn**	**14 32 00.6**	**-0.2**
MAJO				*e*Sn	**Sn**	**14 32 24.6**	**+0.1**
MAT	**Matsushiro**	**1.99**	**272**	P	**Pn**	**14 32 00.5**	**-0.3**
MAT				S	**Sn**	**14 32 26.6**	**+2.0**
MJB9	**Matsu-Tunnel**	**2.00**	**272**	*e*Pn	**Pn**	**14 32 01.0**	**+0.2**
INU	**Inuyama**	**3.18**	**250**	*e*Pn	**Pn**	**14 32 18.2**	**+1.1**
JHJ	**Hachijo jima 2**	**3.44**	**193**	P	Pn	14 32 24.1	+3.6
	14nm,0.3s,baz=172,slow=22,SNR=7.6						
JHJ				S	**Sn**	**14 33 00.9**	**+0.8**
	35nm,0.3s,baz=64,slow=22,SNR=4.5						
JHJ2	**Mitsune**	**3.44**	**192**	*e*Pn	**Pn**	**14 32 23.1**	**+2.5**
JHJ2				*e*Sn	**Sn**	**14 33 01.4**	**+1.3**
ERM	**Erimo**	**5.85**	**18**	*e*P	**Pn**	**14 32 54.1**	**+0.6**
ASAJ	**Asahikawa**	**7.76**	**10**	P	**Pn**	**14 33 19.2**	**-0.5**
	4.3nm,0.3s,baz=228,slow=9.8,SNR=36						
ASAJ				LR	LR	14 37 10.3	
	comp=Z,77nm,20.1s,baz=200,slow=43						
ASAJ	**Asahikawa**	**7.76**	**10**	*e*Pn	**Pn**	**14 33 19.3**	**-0.5**
ASAJ				*e*Sn	**Sn**	**14 34 45.5**	**-0.7**
JNU	**Nakatsue**	**8.73**	**250**	P	**Pn**	**14 33 33.2**	**+0.1**
	0.2nm,0.3s,baz=73,slow=17,SNR=3.7						
JNU				LR	LR	14 37 11.2	
	comp=Z,261nm,21.1s,baz=110,slow=40						
SHO	**Shikotan**	**8.75**	**31**	*e*P	**Pn**	**14 33 31.0**	**-2.2**
SHO				*e*S	Sn	14 35 02.8	-7.5
SHO				pmax	pmax		
	comp=Z,7.0nm,0.4s						
SHO				pmax	pmax		
	comp=N,4.0nm,0.3s						
SHO				pmax	pmax		
	comp=E,2.0nm,0.3s						
JCJ	**Chichijima**	**9.45**	**172**	LR	LR	14 37 07.8	
	comp=E,180nm,19.1s,slow=36						
USRK	**Ussuriysk Ar.**	**10.16**	**322**	P	**Pn**	**14 33 55.2**	**+2.6**
	comp=E,0.6nm,0.3s,baz=138,slow=13,SNR=10.0						
USRK				LR	LR	14 37 36.5	
	comp=E,215nm,19.2s,baz=144,slow=36						
KSRS	**Korea Array**	**10.26**	**279**	P	Pn	14 33 57.3	+3.4
	comp=E,0.3nm,0.3s,baz=95,slow=14,SNR=16						
KSRS				LR	LR	14 37 42.5	
	comp=E,150nm,21.0s,baz=84,slow=37						
KSAR	**Wonju Array Be**	**10.29**	**279**	P	**Pn**	**14 33 57.3**	**+3.0**
KSAR	**Wonju Array Be**	**10.29**	**279**	P	**Pn**	**14 33 57.3**	**+3.0**
KUR	**Kuril'sk**	**10.29**	**30**	*e*P	**Pn**	**14 33 52.5**	**-1.8**
KUR				*e*S	**Sn**	**14 35 43.0**	**-5.1**
KUR				pmax	pmax		
	comp=N,1.0nm,0.4s						
KUR				pmax	pmax		
	comp=E,2.0nm,0.4s						
KUR				pmax	pmax		
	comp=Z,5.0nm,0.4s						
YSS	**Yuzh-Sakhalins**	**10.57**	**8**	↑*e*P	Pn	14 34 11.0	+13
CN2	**Changchun**	**13.74**	**307**	*e*P	**P**	**14 34 46.8**	**-1.8**
CN2				pmax	pmax		
	comp=Z,10.0nm,0.6s						
KLR	**Kul'dur**	**14.31**	**336**	*e*P	Pn	14 34 42.9	-6.1
NJ2	**Nanjing**	**18.57**	**263**	*e*P	**P**	**14 35 40.9**	**-1.1**
NJ2				pmax	pmax		
	comp=Z,15nm,0.5s						
TIA	**Tai'an**	**18.97**	**276**	*e*P	**P**	**14 35 45.1**	**-1.4**
TIA				pmax	pmax		
	comp=Z,20nm,1.0s						
PETK	**Petropavlovsk-**	**20.46**	**30**	LR	LR	14 43 38.1	
	comp=Z,51nm,21.7s,baz=229,slow=35						
HHC	**Hu-ho-hao-te**	**23.09**	**290**	*e*P	**P**	**14 36 29.8**	**-1.0**
HHC				pmax	pmax		
	comp=Z,23nm,0.9s						
HHC				pmax	pmax		
	comp=Z,140nm,4.6s						
MA2	**Magadan**	**24.01**	**13**	P	**P**	**14 36 40.8**	**+1.6**
	comp=Z,5.0nm,0.6s,baz=222,slow=10,SNR=13						
YAK	**Yakutsk**	**26.48**	**348**	P	**P**	**14 37 01.4**	**0.0**
	comp=Z,5.8nm,0.4s,baz=334,slow=8.7,SNR=5.3						
ENH	**Enshi**	**26.70**	**266**	*e*P	**P**	**14 37 01.8**	**-2.1**
	comp=Z,4.6nm,0.6s						
ULN	**Ulaanbaatar**	**27.18**	**305**	*e*P	**P**	**14 37 08.2**	**0.0**
ULN				pmax	pmax		
	comp=Z,6.0nm,1.1s						
ULN	**Ulaanbaatar**	**27.18**	**305**	*e*P	**P**	**14 37 05.4**	**-2.8**
	comp=Z,6.6nm,1.1s						
SEY	**Seymchan**	**27.44**	**12**	P	**P**	**14 37 11.2**	**+1.0**
	comp=Z,2.3nm,0.7s,baz=185,slow=9.3,SNR=11						
SONA1	**Songino Array**	**27.61**	**305**	*e*P	**P**	**14 37 10.5**	**-1.4**
SONM	**Songino Array**	**27.61**	**305**	P	**P**	**14 37 10.8**	**-1.2**
	comp=Z,2.4nm,0.9s,baz=103,slow=8.5,SNR=10						
SONM				LR	LR	14 48 42.1	
	comp=Z,82nm,18.9s,baz=112,slow=38						
BOD	**Bodaibo**	**27.69**	**329**	*e*P	**P**	**14 37 10.6**	**-1.7**
BOD				pmax	pmax		
	comp=Z,4.0nm,1.4s						
H11N2	**WAKE ISLAND Hy**	**28.39**	**119**	T	T	15 07 23.9	
	baz=313,slow=75,SNR=40						
H11N1	**WAKE ISLAND Hy**	**28.39**	**119**	T	T	15 07 22.8	
	baz=313,slow=75,SNR=32						
H11N3	**WAKE ISLAND Hy**	**28.40**	**119**	T	T	15 07 23.6	
	baz=313,slow=75,SNR=30						
H11S1	**WAKE ISLAND Hy**	**29.07**	**121**	T	T	15 08 14.4	
	baz=314,slow=76,SNR=60						
H11S3	**WAKE ISLAND Hy**	**29.07**	**121**	T	T	15 08 12.8	
	baz=314,slow=76,SNR=28						
H11S2	**WAKE ISLAND Hy**	**29.09**	**121**	T	T	15 08 17.0	
	baz=314,slow=76,SNR=25						
LZH	**Lanzhou**	**29.58**	**280**	*e*P	**P**	**14 37 32.1**	**+2.4**
LZH				pP	pP	14 37 43.0	0.0
LZH				sP	sP	14 37 47.8	-1.4
LZH				PP	**PnPn**	**14 38 28.5**	**+2.4**
LZH				pmax	pmax		
	comp=Z,24nm,1.1s						
LZH				pmax	pmax		
	comp=Z,68nm,5.0s						
LZH				LR	LR		
	comp=Z,310nm,13.0s						
LZH				LR	LR		
	comp=Z,320nm,12.9s						
LZH				LR	LR		
	comp=Z,360nm,16.5s						
ZAK	**Zakamensk**	**30.15**	**309**	*e*P	**P**	**14 37 31.9**	**-2.6**
ZAK				pmax	pmax		
	comp=Z,2.0nm,1.3s						
TLY	**Talaya**	**30.25**	**312**	P	**P**	**14 37 35.0**	**-0.3**
	comp=Z,1.6nm,0.8s,baz=227,slow=6.2,SNR=3.1						
TLY	**Talaya**	**30.25**	**312**	*e*P	**P**	**14 37 33.6**	**-1.6**
TLY						14 44 38.9	
TLY				pmax	pmax		
	comp=Z,3.0nm,1.3s						
TLY				MLR	MLR		
	comp=Z,58nm,18.0s						
GYA	**Guiyang**	**30.55**	**261**	P	**P**	**14 37 40.0**	**+1.8**
GYA				pmax	pmax		
	comp=Z,10.0nm,0.8s						
CD2	**Chengdu**	**31.09**	**271**	P	**P**	**14 37 42.3**	**-0.6**
CD2				pmax	pmax		
	comp=Z,1.0nm,0.5s						
KMI	**Kunming**	**34.30**	**262**	P	**P**	**14 38 12.6**	**+1.4**
KMI				pmax	pmax		
	comp=Z,8.0nm,0.6s						
KMI				pmax	pmax		
	comp=Z,140nm,4.4s						
BILL	**Bilibino**	**34.72**	**17**	*e*P	**P**	**14 38 15.2**	**+1.2**
BILL				pmax	pmax		
	comp=Z,6.0nm,2.8s						
TIXI	**Tiksi**	**35.77**	**354**	*e*P	**P**	**14 38 23.0**	**0.0**
TIXI				pmax	pmax		
	comp=Z,8.0nm,1.5s						
TIXI	**Tiksi**	**35.77**	**354**	*e*P	**P**	**14 38 22.2**	**-0.8**
	comp=Z,2.1nm,0.4s						
WMQ	**Urumqi**	**40.56**	**297**	*e*P	**P**	**14 39 05.0**	**+1.2**
WMQ				pP	pP	14 39 16.3	-1.2
WMQ				sP	sP	14 39 21.8	-1.8
WMQ				pmax	pmax		
	comp=Z,4.0nm,0.6s						
WMQ				pmax	pmax		
	comp=Z,31nm,3.6s						
CMAR	**Chiang Mai Arr**	**40.79**	**255**	LR	LR	14 57 32.0	
	comp=Z,38nm,18.4s,baz=285,slow=38						
ZAA0	**Zalesovo Array**	**41.85**	**313**	*e*P	**P**	**14 39 13.9**	**-0.2**
ZALV	**Zalesovo Beam**	**41.85**	**313**	P	**P**	**14 39 13.9**	**-0.2**
	comp=Z,9.5nm,0.8s,baz=95,slow=6.7,SNR=31						
ZALV				LR	LR	14 57 31.5	
	comp=Z,39nm,18.0s,baz=48,slow=37						
NVS	**Novosibirsk**	**42.80**	**314**	*e*P	**P**	**14 39 21.6**	**-0.2**
NVS				pmax	pmax		
	comp=E,1nm,1.1s						
NVS				pmax	pmax		
	comp=Z,13nm,1.1s						
NRIK	**Noril'sk**	**43.52**	**336**	P	**P**	**14 39 28.4**	**+0.9**
	comp=Z,1.7nm,0.4s,baz=113,slow=4.5,SNR=4.2						
NRIK				LR	LR	14 59 30.3	
	comp=Z,45nm,18.3s,baz=135,slow=39						
MK01	**Makanchi Array**	**43.91**	**302**	*e*P	**P**	**14 39 30.4**	**-0.5**
MK31	**Makanchi Array**	**43.91**	**302**	*e*P	**P**	**14 39 30.2**	**-0.8**
MK31	**Makanchi Array**	**43.91**	**302**	*e*P	**P**	**14 39 30.2**	**-0.8**
MKAR	**Makanchi Array**	**43.91**	**302**	P	**P**	**14 39 31.0**	**0.0**
	comp=Z,4.7nm,0.9s,baz=88,slow=9.8,SNR=29						
MKAR				LR	LR	14 58 46.7	
	comp=Z,40nm,18.9s,baz=98,slow=37						
MKAR	**Makanchi Array**	**43.91**	**302**	P	**P**	**14 39 31.0**	**0.0**
MKAR				pmax	pmax		
	comp=Z,5.0nm,1.0s						
MKAR				MLR	MLR		
	comp=Z,40nm,18.9s						
KAPI	**Kappang**	**45.69**	**210**	*e*P	**P**	**14 39 43.4**	**-1.9**
	comp=Z,33nm,1.6s						
KURK	**Kurchatov**	**45.81**	**308**	*e*P	**P**	**14 39 43.7**	**-2.2**
KURK				pmax	pmax		
	comp=Z,17nm,1.6s						
KURK	**Kurchatov**	**45.81**	**308**	*e*P	**P**	**14 39 43.7**	**-2.2**
	comp=Z,18nm,1.6s						
KKN	**Kakani**	**47.16**	**276**	*e*P	**P**	**14 39 56.8**	**-0.3**
GKN	**Gorkha**	**47.58**	**277**	*e*P	**P**	**14 39 59.9**	**-0.4**
	comp=Z,34nm,0.9s						
KOLN	**Koldanda**	**48.51**	**277**	*e*P	**P**	**14 40 07.2**	**-0.3**
	comp=Z,6.5nm,0.7s						
PYUN	**Piuthan**	**48.86**	**277**	*e*P	**P**	**14 40 10.3**	**+0.1**
HNR	**Honiara**	**49.14**	**155**	LR	LR	14 57 50.2	
	comp=Z,38nm,20.2s,baz=332,slow=32						
TKM2	**Tokmak 2**	**49.37**	**299**	*e*P	**P**	**14 40 11.4**	**-2.6**
TKM2				pmax	pmax		
	comp=Z,23nm,1.7s						
TKM2	**Tokmak 2**	**49.37**	**299**	*e*P	**P**	**14 40 11.4**	**-2.6**
	comp=Z,23nm,1.7s						
KSH	**Kashi**	**50.09**	**294**	*e*P	P	14 40 23.4	+4.0
KSH				*e*pP	pP	14 40 35.8	+2.4
KSH				*e*PcP	**PcP**	**14 41 42.4**	**+4.0**
KSH				PcS	**PcS**	**14 45 36.8**	**+1.3**
KSH				S	**S**	**14 47 29.9**	**+2.9**
KSH				pmax	pmax		
	comp=Z,79nm,6.0s						
KSH				LR	LR		
	comp=Z,82nm,4.9s						
KSH				LR	LR		
	comp=Z,92nm,4.6s						
KSH				LR	LR		
	comp=Z,140nm,5.5s						
AAK	**Ala-Archa**	**50.23**	**299**	LR	LR	15 02 36.8	
	comp=Z,88nm,20.4s,baz=62,slow=37						
AAK	**Ala-Archa**	**50.23**	**299**	P	P	14 40 16.8	-3.6
AAK				pmax	pmax		
	comp=Z,4.0nm,1.1s						
AAK	**Ala-Archa**	**50.23**	**299**	P	P	14 40 16.8	-3.6
	comp=Z,3.8nm,1.1s						
ILAR	**Eielson Array**	**50.27**	**32**	P	**P**	**14 40 22.1**	**+1.9**
	comp=Z,0.5nm,0.6s,baz=266,slow=7.6,SNR=5.1						
BVAR	**Borovoye Array**	**50.51**	**313**	LR	LR	15 03 22.7	
	comp=Z,155nm,21.0s,baz=74,slow=38						
BRVK	**Borovoye**	**50.56**	**313**	*ce*P	**P**	**14 40 23.3**	**+0.8**
BRVK				pmax	pmax		
	comp=Z,3.0nm,1.2s						
ZRNK	**Zerenda**	**51.34**	**313**	*e*P	**P**	**14 40 27.9**	**-0.5**
ZRNK				pmax	pmax		
	comp=Z,13nm,1.6s						
ZRNK	**Zerenda**	**51.34**	**313**	*e*P	**P**	**14 40 27.9**	**-0.5**
	comp=Z,12nm,1.6s						
INK	**Inuvik**	**55.14**	**27**	P	**P**	**14 40 58.4**	**+2.4**
	comp=Z,0.6nm,0.5s,baz=286,slow=9.0,SNR=4.2						
ARU	**Arti**	**56.38**	**319**	LR	LR	15 05 31.8	
	comp=Z,29nm,19.4s,baz=196,slow=36						
ARU	**Arti**	**56.38**	**319**	*d i*P	**P**	**14 41 05.2**	**+0.1**
ARU						14 43 08.0	
ARU				S	**S**	**14 48 50.2**	**-1.5**
ARU				SS	**SS**	**14 52 35.4**	**-3.2**
ARU				pmax	pmax		
	comp=Z,11nm,1.7s						
ARU	**Arti**	**56.38**	**319**	*e*P	**P**	**14 41 03.4**	**-1.7**
	comp=Z,6.9nm,1.1s						
WRA	**Warramunga Arr**	**56.44**	**187**	P	**P**	**14 41 05.7**	**-0.2**
	comp=Z,0.7nm,0.6s,baz=0.4,slow=7.6,SNR=11						
**

BURAR	Bucovina Array	78.37 321	‖P		P	14 43 25.0	+0.6
TESR	Tescani	78.38 320	‖/P		P	14 43 22.5	-1.8
VRI	Vrincioaia	78.76 319	⇑/P		P	14 43 29.0	+2.6
VRI	Vrincioaia	78.76 319	⇑P		P	14 43 29.0	+2.6
BRTR	Keskin Array B	78.77 311	P		P	14 43 27.1	+0.4
	comp=Z,1.8nm,0.9s,baz=93,slow=2.5,SNR=7.3						
KOLS	Kolonicke sedl	78.92 324	*e*P		P	14 43 28.3	+1.1
STHS	Stebnicka Huta	79.06 325	*e*P		P	14 43 30.5	+2.5
BR231	Keskin MP Arra	79.22 312	*e*P		P	14 43 28.2	-0.9
LANS	Liptovska Anna	80.08 325	*e*P		P	14 43 34.4	+0.8
ARR	Arges	80.19 320	⇑/P		P	14 43 36.0	+1.7
MORC	Moravsky Berou	80.49 327	⇑/P		P	14 43 35.5	-0.3
MORC	Moravsky Berou	80.49 327	⇑P		P	14 43 35.5	-0.3
PSZ	Piszkesteto	80.76 324	‖/P		P	14 43 38.4	+1.1
PSZ	Piszkesteto	80.76 324	‖P		P	14 43 38.4	+1.1
VYHS	Vyhne	80.84 325	*e*P		P	14 43 38.9	+1.3
BRG	Berggiesshubel	81.22 329	*e*P		P	14 43 40.5	+0.9
	comp=Z,1.9nm,0.7s						
CLL	Collm	81.28 330	*i* P		P	14 43 39.7	-0.2
	comp=Z,9.0nm,1.2s						
CLL			*i*			14 43 49.7	
CLL	Collm	81.28 330	*i* P		P	14 43 39.7	-0.2
CLL			*i*			14 43 49.7	
CLL			pmax		pmax		
	comp=Z,9.0nm,1.2s						
PKSM	Moragy	82.58 324	‖/P		P	14 43 46.0	-0.8
PKSM	Moragy	82.58 324	‖P		P	14 43 46.0	-0.8
KHC	Kasperske Hory	82.70 328	*e*P		P	14 43 48.0	+0.6
KHC	Kasperske Hory	82.70 328	*e*P		P	14 43 48.0	+0.6
GERES	GERESS Array B	82.86 328	P		P	14 43 48.1	-0.2
	comp=Z,0.4nm,0.4s,baz=52,slow=5.4,SNR=5.8						
PMOR	Pomariorio Ree	84.50 113	*e*T		T	16 16 59.9	
	comp=Z,2.2nm,0.2s						
PPT	Papeete	84.92 116		LR	LR	15 12 25.6	
	comp=Z,28nm,21.1s,baz=224,slow=29						
PPT2	Papeete2	84.93 116	*e*LR		LR	15 10 49.1	
	comp=Z,7.6nm,28.2s						
PDG	Podgorica	85.02 321	‖/P		P	14 43 59.7	+0.4
BFO	Black Forest	85.49 330	*ce*P		P	14 44 03.6	+2.0
KEST	Kesra	95.10 322	LR		LR	15 33 48.9	
	comp=Z,30nm,19.9s,baz=312,slow=39						

IDC 23 14:41:29.9±4.2, 5°04S×132°55E, h0km, mb3.9/1, mb1 3.6/3, mb1mx3.3/50, mbtmp3.5/3, ML3.7/3, Error ellipse: s-maj=274.2km s-min=28.2km az=77.0, Aru Islands region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
SIJI	**Sorong**	**4.33**	**343**	Pn	Pn	14 42 38.2	+1.2
	21nm,0.3s,baz=181,slow=3.2,SNR=1.7						
SIJI				Sn	Sn	14 43 22.0	-6.4
	19nm,0.3s,baz=181,slow=14,SNR=1.4						
WRA	**Warramunga Arr**	**14.92**	**173**	Pn	Pn	14 45 00.8	-1.5
	0.2nm,0.3s,baz=356,slow=13,SNR=3.7						
WRA				Sn	Sn	14 47 39.6	-8.9
	0.2nm,0.3s,baz=358,slow=23,SNR=2.9						
ASAR	**Alice Springs**	**18.57**	**176**	P	Pn	14 45 49.8	+1.0
	0.1nm,0.3s,baz=353,slow=12,SNR=2.6						
MKAR	**Makanchi Array**	**68.02**	**325**	P	P	14 52 30.8	-0.4
	0.4nm,0.3s,baz=116,slow=8.0,SNR=6.5						

*ISCJB **23** 14:45:33.9±1.1, 37°.33N±0°.04×141°.48E±0°.09, h45km±9km, mb3.5/4, Error ellipse: s-maj=12.2km s-min=6.1km az=23.9*

*IDC **23** 14:45:33.9±2.0, 37°.83N×141°.00E, h0km, mb3.8/4, mb1 3.8/5, mb1mx3.4/62, mbtmp3.7/5, ML3.1/1, Error ellipse: s-maj=41.5km s-min=27.6km az=81.0*

*JMA **23** 14:45:35.4±0.1, 37°.34N×141°.35E, h48km±1km, M3.8*

JMA Felt II J1.

ISC 23 14:45:34.8±2.1, 37°.31N±0°.06×141°.5E±0°.1, h38km±3km, n16, σ1§01/25, mb3.5/4, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JFK	**Kawauchi**	**0.48**	**277**	P	Pn	14 45 45.1	0.0
JFK				S	Sn	14 45 51.7	-0.7
ONAJ	**Iwakimizuishiy**	**0.58**	**249**	P	Pn	14 45 46.5	-0.1
ONAJ				S	Sn	14 45 54.3	-0.6
JMM	**Marumori**	**0.77**	**316**	S	Sn	14 45 58.4	-1.1
JFT	**Otama**	**0.93**	**283**	P	Pn	14 45 51.4	+0.1
JFT				S	Sn	14 46 02.7	-0.7
JHO	**Hitachi**	**1.01**	**226**	P	Pn	14 45 52.1	-0.2
JHO				S	Sn	14 46 03.6	-1.7
JIO	**Ouri**	**1.14**	**355**	P	Pn	14 45 54.3	+0.1
JIO				S	Sn	14 46 07.7	-0.9
JOU	**Okura**	**1.23**	**329**	P	Pn	14 45 55.4	0.0
JOU				S	Sn	14 46 10.8	0.0
JFY	**Yanaizu**	**1.41**	**274**	P	Pn	14 45 57.8	-0.1
JFY				S	Sn	14 46 14.6	-0.7
JYS	**Shirataka**	**1.44**	**310**	P	Pn	14 45 58.4	+0.1
JYS				eS	Sn	14 46 16.0	+0.1
MJAR	**Matsushiro Arr**	**2.73**	**255**	Pn	Pn	14 46 16.7	+0.7
	4.0nm,0.3s,baz=132,slow=8.8,SNR=28						
MJAR				Sn	Sn	14 46 49.9	+2.2
	4.6nm,0.3s,baz=302,slow=7.4,SNR=5.4						
MAT	**Matsushiro**	**2.73**	**255**	P	Pn	14 46 17.0	+1.0
MAT				*e*S	Sn	14 46 49.9	+2.2
ASAJ	**Asahikawa**	**6.85**	**7**	Pn	Pn	14 47 14.1	+1.5
	0.3nm,0.3s,baz=201,slow=15,SNR=5.4						
ZALV	**Zalesovo Beam**	**41.76**	**312**	P	P	14 53 19.2	-0.9
	0.4nm,0.3s,baz=64,slow=9.8,SNR=3.8						
MKAR	**Makanchi Array**	**44.01**	**302**	P	P	14 53 37.8	-0.6
	0.1nm,0.3s,baz=96,slow=9.9,SNR=5.3						
KURBB	**Kurchatov Arra**	**45.87**	**308**	P	P	14 53 53.2	+0.1
	0.6nm,0.2s,baz=82,slow=8.5,SNR=4.6						
WRA	**Warramunga Arr**	**57.34**	**188**	P	P	14 55 26.8	+7.8
	0.2nm,0.6s,baz=1.8,slow=7.3,SNR=3.3						

*NIED **23** 14:46:00, 36°.80N×142°.20E, h20km, Mw3.8 Best double couple: M0 6.08000×10^14 NP1:φs31.00000°, δ32.00000°, λ-68.00000°. NP2:φs186.00000°, δ60.00000°, λ-103.00000°.*

*JMA **23** 14:46:36.8±0.4, 36°.85N×142°.20E, h10km±4km, M4.2*

*ISCJB **23** 14:46:37.4±1.7, 36°.86N±0°.04×142°.13E±0°.04, h3km±11km, mb3.8/15, Error ellipse: s-maj=7.2km s-min=5.9km az=10.3*

*IDC **23** 14:46:38.8±0.7, 36°.83N×142°.04E, h0km, mb3.8/15, mb1 4.0/18, mb1mx3.8/66, mbtmp3.9/18, ML3.9/3, MS2.6/1, Ms1 2.6/1, ms1mx2.0/42, Error ellipse: s-maj=19.3km s-min=14.8km az=126.0*

ISC 23 14:46:38.9±2.1, 36°.87N±0°.05×141°.99E±0°.06, h2km±12km, n36, σ1§09/38, mb3.7/15, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.99**	**284**	P	Pb	14 46 57.9	-0.8
JFK	**Kawauchi**	**1.03**	**300**	P	Pg	14 46 58.4	-0.2
JFK				eS	Sn	14 47 15.5	+0.2
JHO	**Hitachi**	**1.17**	**258**	P	Pb	14 47 00.6	-1.3
JHO				eS	Sn	14 47 19.1	+0.2
JMM	**Marumori**	**1.38**	**317**	P	Pn	14 47 03.9	-1.3
JMM				eS	Sg	14 47 25.1	+1.7
JFT	**Otama**	**1.48**	**297**	P	Pb	14 47 06.1	-1.0
JFT				eS	Sg	14 47 27.5	+1.2
JSB	**Shiboa**	**1.67**	**274**	P	Pb	14 47 09.1	-1.2
JIO	**Ouri**	**1.67**	**342**	P	Pn	14 47 08.1	-1.0
JIO				eS	Sn	14 47 29.7	-1.4
JOU	**Okura**	**1.83**	**325**	P	Pb	14 47 11.6	-1.6
JOU				eS	Sn	14 47 34.3	-0.9
JFY	**Yanaizu**	**1.91**	**287**	P	Pb	14 47 12.8	-1.6
JFY				eS	Sn	14 47 36.4	-0.7
JAG	**Ashikaga**	**2.09**	**259**	P	Pn	14 47 14.5	-0.5
MJAR	**Matsushiro Arr**	**3.06**	**265**	Pn	Pn	14 47 28.9	+0.6
	9.9nm,0.3s,baz=93,slow=11,SNR=17						
MAT	**Matsushiro**	**3.06**	**265**	P	Pn	14 47 29.3	+1.0
MAT				eS	Sb	14 48 10.1	-1.8
JHJ	**Hachijo jima 2**	**4.15**	**207**	Pn	Pn	14 47 44.7	+1.3
	22nm,0.3s,baz=82,slow=22,SNR=5.1						
JHJ				Sn	Sn	14 48 29.8	-2.7
	30nm,0.3s,baz=64,slow=23,SNR=6.3						
ASAJ	**Asahikawa**	**7.26**	**3**	Pn	Pn	14 48 26.3	+0.4
	2.6nm,0.3s,baz=229,slow=9.0,SNR=11						
KSRS	**Korea Array**	**11.25**	**277**	Pn	Pn	14 49 25.7	+5.1
	0.1nm,0.3s,baz=87,slow=14,SNR=4.7						
KSRS				LR	LR	14 53 38.4	

	comp=Z,28nm,18.9s,baz=106,slow=37						
MA2	**Magadan**	**23.43**	**11**	P	P	14 51 48.9	-0.2
	0.8nm,0.3s,baz=231,slow=10,SNR=3.9						
SEY	**Seymchan**	**26.87**	**11**	P	P	14 52 21.9	+1.2
	1.1nm,0.7s,baz=199,slow=8.5,SNR=4.2						
H11N2	**WAKE ISLAND Hy**	**27.66**	**121**	T	T	15 21 41.9	
	baz=314,slow=75,SNR=29						
H11N1	**WAKE ISLAND Hy**	**27.67**	**121**	T	T	15 21 34.4	
	baz=314,slow=75,SNR=30						
H11N3	**WAKE ISLAND Hy**	**27.68**	**121**	T	T	15 21 43.3	
	baz=314,slow=75,SNR=32						
SONM	**Songino Array**	**28.27**	**304**	P	P	14 52 34.1	+0.5
	3.2nm,0.7s,baz=102,slow=7.8,SNR=22						
H11S1	**WAKE ISLAND Hy**	**28.38**	**123**	T	T	15 22 37.5	
	baz=316,slow=76,SNR=15						
H11S3	**WAKE ISLAND Hy**	**28.38**	**123**	T	T	15 22 36.7	
	baz=316,slow=76,SNR=14						
H11S2	**WAKE ISLAND Hy**	**28.39**	**123**	T	T	15 22 31.7	
	baz=316,slow=76,SNR=11						
CMAR	**Chiang Mai Arr**	**41.91**	**256**	P	P	14 54 31.8	+0.8
	0.6nm,0.7s,baz=46,slow=7.4,SNR=7.5						
ZALV	**Zalesovo Beam**	**42.37**	**313**	P	P	14 54 34.5	+0.2
	1.5nm,0.8s,baz=98,slow=7.6,SNR=6.1						
MKAR	**Makanchi Array**	**44.60**	**302**	P	P	14 54 53.1	+0.6
	0.3nm,0.3s,baz=86,slow=8.8,SNR=6.1						
KURBB	**Kurchatov Arra**	**46.47**	**308**	P	P	14 55 07.6	+0.4
	1.5nm,0.3s,baz=82,slow=8.1,SNR=5.3						
ILAR	**Eielson Array**	**49.39**	**32**	P	P	14 55 30.1	+0.5
	1.1nm,0.7s,baz=262,slow=6.2,SNR=12						
BVAR	**Borovoye Array**	**51.03**	**313**	P	P	14 55 42.4	+0.2
	0.2nm,0.3s,baz=64,slow=9.8,SNR=1.7						
INK	**Inuvik**	**54.33**	**27**	P	P	14 56 06.9	+0.6
	1.0nm,0.5s,baz=322,slow=6.1,SNR=5.7						
WRA	**Warramunga Arr**	**56.96**	**189**	P	P	14 56 24.9	-0.9
	0.6nm,0.7s,baz=5.6,slow=7.3,SNR=6.9						
ASAR	**Alice Springs**	**60.69**	**189**	P	P	14 56 51.5	-0.2
	0.5nm,0.8s,baz=8.9,slow=7.6,SNR=6.0						
YKA	**Yellowknife Ar**	**63.72**	**30**	P	P	14 57 11.1	-0.5
	0.3nm,0.7s,baz=301,slow=6.7,SNR=7.4						
NVAR	**Mina Array Bea**	**74.72**	**53**	P	P	14 58 21.4	+0.9
	0.4nm,0.6s,baz=289,slow=5.7,SNR=5.0						
TXAR	**Lajitas Array**	**89.85**	**53**	P	P	14 59 40.2	+0.5
	0.3nm,0.5s,baz=312,slow=3.5,SNR=3.8						

*ISK **23** 14:54:48.4, 39°.58N×33°.27E, h5km, MD2.9*

*DDA **23** 14:54:48.6, 39°.57N×33°.24E, h5km, Md2.8*

*CSEM **23** 14:54:49.3±0.1, 39°.58N×33°.28E, h2km, MD2.8, Error ellipse: s-maj=3.4km s-min=2.9km az=116.0*

ISC 23 14:54:48.9±1.1, 39°.57N±0°.02×33°.26E±0°.02, h3km±10km, n47, σ0§88/67, Turkey

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
BBAL	**Bala**	**0.11**	**257**	*i* P	Pg	14 54 50.6	-0.5
BBAL	**Bala**	**0.11**	**257**	P	Pg	14 54 50.6	-0.5
AFSR	**Af˙ar-Bala (A**	**0.19**	**230**	*e*PG	Pg	14 54 52.8	+0.2
AFSR				*e*SG	Sg	14 54 56.7	+1.6
AFSR	**Af˙ar-Bala (A**	**0.19**	**230**	*e*Pg	Pg	14 54 52.8	+0.2
AFSR				*e*Sg	Sg	14 54 56.7	+1.6
SERE	**Sereflikochisa**	**0.66**	**159**	*e*PG	Pb	14 55 02.5	-0.6
SERE				*e*SG	Sb	14 55 12.9	0.0
SERE	**Sereflikochisa**	**0.66**	**159**	*e*Pg	Pb	14 55 02.6	-0.6
SERE				*e*Sg	Sb	14 55 12.9	0.0
CDAG	**Cicekdag**	**0.86**	**86**	*i* P	Pg	14 55 05.3	-0.1
CDAG				*i* S	Sg	14 55 15.2	-1.4
CDAG	**Cicekdag**	**0.86**	**86**	P	Pg	14 55 05.3	-0.1
CDAG				S	Sg	14 55 15.2	-1.4
ELDT	**Eldivan**	**0.93**	**8**	*i* P	Pg	14 55 06.7	-0.1
ELDT				*i* S	Sg	14 55 18.4	-0.5
ELDT	**Eldivan**	**0.93**	**8**	P	Pg	14 55 06.7	-0.1
ELDT				S	Sg	14 55 18.4	-0.5
AKSY	**AKSARAY - Alti**	**1.00**	**157**	*i* P	Pg	14 55 07.7	-0.3
AKSY				*i* S	Sg	14 55 20.3	-0.6
AKSY	**AKSARAY - Alti**	**1.00**	**157**	P	Pg	14 55 07.7	-0.3
AKSY				S	Sg	14 55 20.3	-0.6
CHBY	**Cihanbeyli**	**1.02**	**196**	*e*PG	Pn	14 55 09.3	-0.9
CHBY				*e*SG	Sn	14 55 24.6	-0.6
CHBY	**Cihanbeyli**	**1.02**	**196**	*e*Pg	Pn	14 55 09.3	-0.9
CHBY				*e*Sg	Sn	14 55 24.6	-0.6
CANT	**Cankiri**	**1.07**	**15**	*e*PG	Pb	14 55 09.9	-0.2
CORM	**Corum**	**1.22**	**60**	*e*PN	Pg	14 55 12.0	-0.3
CORM	**Corum**	**1.22**	**60**	*e*Pn	Pg	14 55 12.0	-0.3
KIZT	**Kizilcal**	**1.27**	**238**	*e*PN	Pn	14 55 14.2	+0.5
KIZT	**Kizilcal**	**1.27**	**238**	*e*Pn	Pn	14 55 14.2	+0.5
SVRH	**Sivrihisar-ESK**	**1.35**	**265**	*e*PN	Pg	14 55 14.8	0.0
SVRH	**Sivrihisar-ESK**	**1.35**	**265**	*e*Pn	Pg	14 55 14.8	0.0
KDHN	**Kadinhani**	**1.37**	**221**	*i* P	Pg	14 55 14.9	-0.3
KDHN				*i* S	Sn	14 55 34.6	+0.8
KDHN	**Kadinhani**	**1.37**	**221**	P	Pg	14 55 14.9	-0.3
KDHN				S	Sn	14 55 34.6	+0.8
AVNS	**Nevsehir-Avano**	**1.45**	**121**	*i* P	Pg	14 55 16.6	-0.1
AVNS				*i* S	Sg	14 55 37.6	+2.1
AVNS	**Nevsehir-Avano**	**1.45**	**121**	P	Pg	14 55 16.6	-0.1
AVNS				S	Sg	14 55 37.6	+2.1
COAL	**Corum-Alaca**	**1.50**	**62**	*i* P	Pg	14 55 17.3	-0.3
COAL				*i* S	Sg	14 55 39.8	+2.8
COAL	**Corum-Alaca**	**1.50**	**62**	P	Pg	14 55 17.3	-0.3
LADK	**Ladik-KONYA**	**1.53**	**207**	*e*PN	Pg	14 55 18.2	-0.1
LADK	**Ladik-KONYA**	**1.53**	**207**	*e*Pn	Pg	14 55 18.2	-0.1
BCAM	**Yenicaga**	**1.55**	**324**	*i* P	Pg	14 55 18.4	-0.1
BCAM				*i* S	Sg	14 55 39.1	+0.5
BCAM	**Yenicaga**	**1.55**	**324**	P	Pg	14 55 18.4	-0.1
BCAM				S	Sg	14 55 39.1	+0.5
TOS	**Tosya**	**1.58**	**21**	*e*PN	Pb	14 55 18.3	-0.5
TOS	**Tosya**	**1.58**	**21**	*e*Pn	Pb	14 55 18.3	-0.5
YOZ	**Yozgat**	**1.59**	**87**	*e*PN	Pb	14 55 18.9	-0.2
YOZ	**Yozgat**	**1.59**	**87**	*e*Pn	Pb	14 55 18.9	-0.2
KONT	**Konya--Tatoy**	**1.77**	**204**	*e*PN	Pb	14 55 21.6	-0.3
KONT	**Konya--Tatoy**	**1.77**	**204**	*e*Pn	Pb	14 55 21.6	-0.3
NIG	**Nigde**	**1.80**	**144**	*e*PN	Pb	14 55 21.9	-0.7
NIG	**Nigde**	**1.80**	**144**	*e*Pn	Pb	14 55 21.9	-0.7
MDUB	**Mudurnu**	**1.82**	**300**	*e*PN	Pb	14 55 22.4	-0.5
MDUB	**Mudurnu**	**1.82**	**300**	*e*Pn	Pb	14 55 22.4	-0.5
BNN	**Bunyan**	**2.13**	**109**	*e*PN	Pb	14 55 26.7	-1.6
BNN	**Bunyan**	**2.13**	**109**	*e*Pn	Pb	14 55 26.7	-1.6
GULT	**Gulveren**	**2.28**	**293**	*e*PN	Pb	14 55 29.1	-1.6
GULT	**Gulveren**	**2.28**	**293**	*e*Pn	Pb	14 55 29.1	-1.6
CUSAR	**Sarkisla-SIVAS**	**2.31**	**93**	*i* P	Pn	14 55 28.7	+0.6
CUSAR				*i* S	Sb	14 56 01.8	+1.4
CUSAR	**Sarkisla-SIVAS**	**2.31**	**93**	P	Pn	14 55 28.7	+0.6

*IDC **23** 15:31:38.0±40.0, 36°.53N×142°.24E, h0km, mb3.4/2, mb1 3.6/3, mb1mx3.2/37, mbtmp3.3/3, ML3.3/1, Error ellipse: s-maj=892.6km s-min=44.0km az=29.0*

*ISCJB **23** 15:31:40.4±1.4, 36°.63N±0°.05×141°.92E±0°.08, h18km±8km, mb3.5/2, Error ellipse: s-maj=10.7km s-min=8.4km az=178.0*

*JMA **23** 15:31:43.1±0.2, 36°.64N×141°.77E, h52km±5km, M3.3*

ISC 23 15:31:38.0±2.0, 36°.71N±0°.05×141°.97E±0°.08, h2km±11km, n12, σ0§92/20, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**1.02**	**293**	P	Pn	15 31 59.6	+0.2
ONAJ				*e*S	Sb	15 32 11.6	-0.7
JFK	**Kawauchi**	**1.09**	**307**	P	Pn	15 32 01.1	+0.6
JFK				*e*S	Sb	15 32 14.2	-0.3
JHO	**Hitachi**	**1.13**	**265**	P	Pb	15 32 00.3	0.0
JHO				S	Sg	15 32 13.0	-1.3
CHOJ	**Chosi**	**1.35**	**222**	P	Pg	15 32 03.8	0.0
JMM	**Marumori**	**1.49**	**321**	P	Pg	15 32 07.0	+0.5
JMM				S	Sb	15 32 25.2	-0.6
JFT	**Otama**	**1.54**	**302**	P	Pg	15 32 08.1	+0.7
JFT				S	Sn	15 32 26.5	-0.6
JIO	**Ouri**	**1.81**	**344**	P	Pb	15 32 12.2	+0.3
JOU	**Okura**	**1.95**	**328**	P	Pg	15 32 15.2	-0.2
JOU				S	Sb	15 32 39.0	-0.2
MJAR	**Matsushiro Arr**	**3.03**	**268**	Pn	Pn	15 32 29.2	+2.2
	3.0nm,0.3s,baz=109,slow=10,SNR=23						
MJAR				Sn	Sn	15 33 04.4	+0.5
	2.9nm,0.3s,baz=291,slow=29,SNR=2.7						
MAT	**Matsushiro**	**3.03**	**268**	P	Pn	15 32 28.8	+1.7
MAT				S	Sn	15 33 04.1	+0.1
WRA	**Warramunga Arr**	**56.80**	**189**	P	P	15 41 22.7	-1.2
	1.0nm,1.1s,baz=22,slow=7.8,SNR=2.9						
ASAR	**Alice Springs**	**60.53**	**188**	P	P	15 41 49.5	-0.3
	0.2nm,0.6s,baz=8.8,slow=6.7,SNR=2.2						

*IDC **23** 15:35:29.5±1.9, 37°.94N×144°.20E, h0km, mb3.4/4, mb1 3.6/6, mb1mx3.4/39, mbtmp3.5/6, ML3.6/2, MS2.3/1, Ms1 2.3/1, ms1mx1.9/34, Error ellipse: s-maj=52.9km s-min=22.9km az=70.0*

*ISCJB **23** 15:35:33.3±0.9, 37°.99N±0°.06×143°.83E±0°.07, h33km, mb3.4/4, Error ellipse: s-maj=8.5km s-min=8.1km az=161.0*

*JMA **23** 15:35:33.3±0.2, 37°.97N×143°.77E, h41km, M3.5*

ISC 23 15:35:35.9±1.4, 38°.03N±0°.07×143°.78E±0°.10, h35km, n19, σ1§28/25, mb3.3/4, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
OFUJ	**Ofunato**	**1.96**	**303**	P	Pn	15 36 05.6	-1.0
JIO	**Ouri**	**1.96**	**283**	P	Pn	15 36 05.3	-1.3
JIO				S	Sn	15 36 28.6	-1.4
JMK	**Ichinoseki**	**2.21**	**295**	P	Pn	15 36 09.0	-1.1
JMK				*e*S	Sn	15 36 35.6	-0.6
JMM	**Marumori**	**2.37**	**267**	P	Pn	15 36 10.8	-1.4
JMM				S	Sn	15 36 38.6	-1.4
JFK	**Kawauchi**	**2.40**	**255**	P	Pn	15 36 10.6	-2.1
JOM	**Ohasama**	**2.42**	**307**	P	Pn	15 36 12.5	-0.5
JOM				*e*S	Sn	15 36 41.5	+0.1
JTH	**Tanohata**	**2.42**	**323**	P	Pn	15 36 12.7	-0.3
JOU	**Okura**	**2.48**	**279**	P	Pn	15 36 13.1	-0.7
JKZ	**Kuzumaki**	**2.73**	**316**	P	Pn	15 36 16.7	-0.6
JFT	**Otama**	**2.78**	**260**	P	Pn	15 36 17.2	-0.7
JFT				S	Sn	15 36 49.2	-0.9
JRG	**Rokugo**	**2.81**	**300**	P	Pn	15 36 18.1	-0.3
JYK	**Kaneyama**	**2.83**	**289**	P	Pn	15 36 17.9	-0.7
MJAR	**Matsushiro Arr**	**4.68**	**253**	Pn	Pn	15 36 44.8	+0.7
	1.9nm,0.3s,baz=91,slow=15,SNR=14						
MJAR				LR	LR	15 38 59.3	
	comp=Z,30nm,18.1s,baz=230,slow=42						
MAT	**Matsushiro**	**4.69**	**253**	P	Pn	15 36 45.3	+1.2
MAT				*e*S	Sn	15 37 39.7	+2.4
ASAJ	**Asahikawa**	**6.15**	**352**	Pn	Pn	15 37 03.3	-0.9
	1.5nm,0.3s,baz=107,slow=28,SNR=20						
SONM	**Songino Array**	**28.82**	**302**	P	P	15 41 33.2	+2.4
	0.3nm,0.5s,baz=106,slow=9.1,SNR=2.6						
MKAR	**Makanchi Array**	**45.19**	**302**	P	P	15 43 49.9	+0.6
	0.1nm,0.2s,baz=98,slow=8.0,SNR=2.4						
WRA	**Warramunga Arr**	**58.34**	**190**	P	P	15 45 26.4	-1.1
	0.5nm,0.7s,baz=10.0,slow=7.2,SNR=4.2						
ASAR	**Alice Springs**	**62.06**	**190**	P	P	15 45 51.5	-1.4
	0.3nm,0.9s,baz=8.3,slow=7.0,SNR=2.9						

IDC 23 15:41:54.2±68.0, 22°.44S×179°.56W, h0km, mb3.7/3, mb1 3.9/3, mb1mx3.6/33, mbtmp3.7/3, Error ellipse: s-maj=1219.0km s-min=163.4km az=85.0, South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
STKA	**Stephens Creek**	**35.66**	**246**	P	P	15 48 52.9	-1.4
	1.1nm,0.6s,baz=103,slow=6.7,SNR=4.1						
ASAR	**Alice Springs**	**42.69**	**259**	P	P	15 49 53.2	+0.1
	0.4nm,0.6s,baz=94,slow=7.8,SNR=13						
WRA	**Warramunga Arr**	**42.93**	**264**	P	P	15 49 55.7	+0.6
	1.0nm,0.7s,baz=95,slow=8.3,SNR=12						

MEX 23 15:52:55.7±0.4, 14°.25N×92°.25W, h36km±146km, MD3.7, Near coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
PCIG		**1.72**	**327**	*e*P	Pn	15 53 21.8	-1.3
PCIG				*e*S	Sn	15 53 41.9	-2.1
TGIG		**2.65**	**342**	*e*P	Pn	15 53 34.3	-1.7
TGIG				*i* S	Sn	15 54 05.1	-1.9

*IDC **23** 16:06:34.4±1.0, 14°.35S×166°.98E, h0km, mb4.0/11, mb1 4.1/13, mb1mx3.9/39, mbtmp4.0/13, ML4.4/2, MS3.9/19, Ms1 3.9/19, ms1mx3.6/43, Error ellipse: s-maj=33.6km s-min=18.2km az=127.0*

*ISCJB **23** 16:06:41.2±0.7, 14°.50S±0°.06×166°.9E±0°.1, h67km, mb3.7/10, Error ellipse: s-maj=20.5km s-min=8.8km az=3.8*

ISC 23 16:06:42.9±0.8, 14°.48S±0°.09×167°.0E±0°.2, h67km, n28, σ1§08/17, mb3.8/10, Vanuatu Islands

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
DZM	**Mont Dzumac**	**7.57**	**184**	Pn	Pn	16 08 30.0	-0.7
	2.7nm,0.3s,baz=332,slow=12,SNR=50						
DZM				Sn	Sn	16 09 56.2	+1.1
	baz=141,slow=19,SNR=2.1						
DZM				LR	LR	16 11 09.0	
	comp=Z,680nm,21.5s,baz=358,slow=36						
HNR	**Honiara**	**8.52**	**305**	Pn	Pn	16 08 38.2	-5.5
	9.2nm,0.3s,baz=194,slow=8.1,SNR=5.9						
HNR				Sn	Sn	16 10 08.5	-10
	3.4nm,0.3s,baz=18,slow=20,SNR=1.6						
HNR				LR	LR	16 11 40.4

λ-23.00000°. NP2:φs138.00000°, δ69.00000°, λ-153.00000°.

IDC 23 16:07:08.9±1.0, 35°.68N×140°.89E, h0km, mb3.4/5, mb1 3.6/6, mb1mx3.4/43, mbtmp3.3/6, ML3.0/1, MS2.6/3, Ms1 2.6/3, ms1mx2.3/30, Error ellipse: s-maj=25.4km s-min=22.6km az=73.0

ISCJB 23 16:07:09.8±0.9, 35°.73N±0°.06×140°.96E±0°.09, h20km±5km, mb3.5/5, MS3.2/1, Error ellipse: s-maj=13.5km s-min=8.8km az=150.1

JMA 23 16:07:10.6±0.1, 35°.79N×140°.96E, h14km±1km, M3.7

JMA Felt I J1.

ISC 23 16:07:10.9±1.2, 35°.80N±0°.05×140°.93E±0°.08, h12km±7km, n18, σ0°73/15, mb3.5/5, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.12**	**211**	P	**Pg**	**16 07 13.9**	**0.0**
CHOJ				*eS*	**Sg**	**16 07 16.3**	**+0.1**
JYT	**Yasato**	**0.73**	**306**	P	**Pg**	**16 07 25.0**	**-0.1**
JYT				S	**Sg**	**16 07 34.6**	**-0.1**
JHO	**Hitachi**	**0.86**	**340**	P	**Pg**	**16 07 26.8**	**-0.7**
JHO				S	**Sg**	**16 07 38.9**	**+0.2**
MJAR	**Matsushiro Arr**	**2.32**	**289**	Pn	**Pn**	**16 07 48.6**	**-0.3**
	4.2nm,0.3s,baz=91,slow=14,SNR=39						
MJAR				Sn	**Sn**	**16 08 17.2**	**-0.2**
	5.3nm,0.3s,baz=92,slow=27,SNR=5.6						
MJAR				LR	LR	16 08 35.2	
	comp=Z,18nm,20.5s,baz=65,slow=38						
MAT	**Matsushiro**	**2.33**	**289**	P	**Pn**	**16 07 48.9**	**-0.1**
MAT				*eS*	**Sb**	**16 08 22.3**	**+0.9**
JNU	**Nakatsue**	**8.72**	**255**	LR	LR	16 13 03.0	
	comp=Z,78nm,18.3s,baz=298,slow=41						
H11N2	**WAKE ISLAND Hy**	**27.88**	**118**	T	T	16 42 03.0	
	baz=311,slow=75,SNR=79						
H11N1	**WAKE ISLAND Hy**	**27.89**	**118**	T	T	16 42 01.2	
	baz=311,slow=75,SNR=84						
H11N3	**WAKE ISLAND Hy**	**27.90**	**118**	T	T	16 42 02.4	
	baz=311,slow=75,SNR=120						
H11S1	**WAKE ISLAND Hy**	**28.55**	**120**	T	T	16 42 48.7	
	baz=312,slow=76,SNR=78						
H11S3	**WAKE ISLAND Hy**	**28.55**	**120**	T	T	16 42 51.8	
	baz=312,slow=76,SNR=98						
H11S2	**WAKE ISLAND Hy**	**28.56**	**120**	T	T	16 42 48.7	
	baz=312,slow=76,SNR=49						
TIXI	**Tiksi**	**36.47**	**354**	LR	LR	16 29 33.3	
	comp=Z,36nm,18.1s,baz=216,slow=37						
MKAR	**Makanchi Array**	**44.45**	**303**	P	**P**	**16 15 21.7**	**0.0**
	0.8nm,0.7s,baz=89,slow=9.9,SNR=4.5						
ILAR	**Eielson Array**	**50.74**	**32**	P	**P**	**16 16 10.3**	**0.0**
	0.3nm,0.9s,baz=265,slow=6.0,SNR=2.7						
WRA	**Warramunga Arr**	**55.79**	**188**	P	**P**	**16 16 46.9**	**-0.9**
	0.5nm,0.7s,baz=6.2,slow=8.1,SNR=6.1						
ASAR	**Alice Springs**	**59.52**	**187**	P	**P**	**16 17 13.0**	**-1.1**
	0.2nm,0.5s,baz=11,slow=6.2,SNR=2.9						
YKA	**Yellowknife Ar**	**65.07**	**30**	P	**P**	**16 17 52.3**	**+1.5**
	0.2nm,0.6s,baz=302,slow=6.2,SNR=4.2						

CSEM 23 16:15:33.0, 38°.62N×29°.25W, h3km, ML3.6

PDA 23 16:15:33.0±1.1, 38°.62N×29°.25W, h3km±4km, MD3.8, ML3.6, Error ellipse: s-maj=6.9km s-min=5.1km az=178.0, Azores Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PCED	**Cedros**	**0.43**	**89**	*eP*	Pg	16 15 40.8	-0.4
PCED				*i* S	Sg	16 15 46.6	-0.1
PCED	**Cedros**	**0.43**	**89**	*eP*	Pg	16 15 40.8	-0.4
PCED				*i* S	Sg	16 15 46.6	-0.1
PCED				A	A	16 15 49.0	
	2μm,0.5s						
CALA	**Caldeira**	**0.43**	**96**	*eP*	Pg	16 15 41.0	-0.2
CALA				*eS*	Sg	16 15 46.4	-0.4
CALA	**Caldeira**	**0.43**	**96**	*eP*	Pg	16 15 41.0	-0.2
CALA				*eS*	Sg	16 15 46.4	-0.4
HOR	**Horta**	**0.49**	**101**	*eP*	Pg	16 15 41.6	-0.8
HOR				*eS*	Sg	16 15 48.2	-0.6
HOR	**Horta**	**0.49**	**101**	*eP*	Pg	16 15 41.6	-0.8
HOR				*eS*	Sg	16 15 48.2	-0.6
HOR				A	A	16 15 49.7	
	2μm,0.2s						
PCAN	**Candelaria**	**0.62**	**105**	*eP*	Pg	16 15 43.2	-1.6
PCAN				*eS*	Sg	16 15 51.4	-1.5
PCAN	**Candelaria**	**0.62**	**105**	*eP*	Pg	16 15 43.2	-1.6
PCAN				*eS*	Sg	16 15 51.4	-1.5
PCAN				A	A	16 15 55.5	
	2μm,0.3s						
PICO	**Pico**	**0.66**	**101**	*eP*	Pg	16 15 44.4	-1.2
PICO				*eS*	Sg	16 15 53.1	-1.0
PICO	**Pico**	**0.66**	**101**	*eP*	Pg	16 15 44.4	-1.2
PICO				*eS*	Sg	16 15 53.1	-1.0
PICO				A	A	16 15 54.3	
	4μm,0.3s						
PPNO	**Prainha do Nor**	**0.79**	**101**	*eP*	Pg	16 15 46.3	-1.8
PPNO				*eS*	Sg	16 15 56.1	-2.1
PPNO	**Prainha do Nor**	**0.79**	**101**	*eP*	Pg	16 15 46.3	-1.8
PPNO				*eS*	Sg	16 15 56.1	-2.1
PPNO				A	A	16 16 05.5	
	1μm,0.4s						
ROSA	**Rosais**	**0.79**	**83**	*eP*	Pg	16 15 46.2	-2.0
ROSA				*eS*	Sg	16 15 56.1	-2.4
ROSA	**Rosais**	**0.79**	**83**	*eP*	Pg	16 15 46.2	-2.0
ROSA				*eS*	Sg	16 15 56.1	-2.4
ROSA				A	A	16 15 59.6	
	2μm,0.4s						
PID	**Ribeirinha**	**0.90**	**101**	*eP*	Pg	16 15 48.3	-2.0
PID	**Ribeirinha**	**0.90**	**101**	*eP*	Pg	16 15 48.3	-2.0
PMAN	**Manadas**	**0.91**	**89**	*eP*	Pg	16 15 47.8	-2.6
PMAN				*eS*	Sg	16 15 58.8	-3.3
PMAN	**Manadas**	**0.91**	**89**	*eP*	Pg	16 15 47.8	-2.6
PMAN				*eS*	Sg	16 15 58.8	-3.3
PMAN				A	A	16 16 06.0	
	744nm,0.4s						
PGRA	**Graciosa**	**1.07**	**67**	*eP*	Pg	16 15 49.8	-3.7
PGRA				*eS*	Sg	16 16 02.5	-4.8
PGRA	**Graciosa**	**1.07**	**67**	*eP*	Pg	16 15 49.8	-3.7
PGRA				*eS*	Sg	16 16 02.5	-4.8
PGRA				A	A	16 16 05.8	
	482nm,0.3s						
ADH	**Angra Heroismo**	**1.57**	**88**	*eP*	Pn	16 15 57.0	-4.9
ADH				*eS*	Sn	16 16 14.9	-7.9
ADH	**Angra Heroismo**	**1.57**	**88**	*eP*	Pn	16 15 57.0	-4.9
ADH				*eS*	Sn	16 16 14.9	-7.9
ADH				A	A	16 16 21.5	
	219nm,0.6s						
PDA	**Ponta Delgada**	**2.96**	**106**	*eP*	Pn	16 16 16.8	-4.0
PDA	**Ponta Delgada**	**2.96**	**106**	*eP*	Pn	16 16 16.8	-4.0
CMLA	**Cha da Macela**	**3.06**	**105**	*eP*	Pn	16 16 17.7	-4.5
CMLA	**Cha da Macela**	**3.06**	**105**	*eP*	Pn	16 16 17.7	-4.5
BART	**Pico Bartolome**	**3.32**	**103**	*eP*	Pn	16 16 21.6	-4.4
BART	**Pico Bartolome**	**3.32**	**103**	*eP*	Pn	16 16 21.6	-4.4
PSMA	**Santa Maria**	**3.64**	**115**	*eP*	Pn	16 16 25.3	-5.0
PSMN	**Pico do Norte,**	**3.69**	**115**	*eP*	Pn	16 16 25.9	-5.0
PSMN	**Pico do Norte,**	**3.69**	**115**	*eP*	Pn	16 16 25.9	-5.0

IDC 23 16:20:32.4±1.4, 0°.12N×98°.48E, h0km, mb3.7/8, mb1 3.7/10, mb1mx3.5/37, mbtmp3.6/10, ML3.3/2, MS2.9/1, Ms1 2.9/1, ms1mx2.4/51, Error ellipse: s-maj=48.0km s-min=18.7km az=60.0

ISCJB 23 16:20:36.7±1.0, 0°.2N±0°.1×98°.5E±0°.1, h43km, mb3.7/8, Error ellipse: s-maj=19.2km s-min=13.0km az=148.0

DJA 23 16:20:41.9±1.9, 1°.1N±7°×9°.9E±°, h11km±18km, M3.5/5, MLv3.5/5

ISC 23 16:20:39.0±1.1, 0°.3N±0°.1×98°.58E±0°.10, h43km, n18, σ1°01/14, mb3.8/8, Northern Sumatera

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MNSI	**Mandailing Nat**	**1.14**	**62**	P	**Pn**	**16 20 59.8**	**+1.3**
SBSI	**Sibolga**	**1.32**	**14**	P	**Pn**	**16 21 02.7**	**+1.6**
GSI	**Gunungsitoli**	**1.45**	**316**	P	**Pn**	**16 21 03.9**	**+1.1**
PDSI	**Padang**	**2.21**	**122**	P	Pn	16 21 20.7	+7.4
PSI	**Prapat**	**2.55**	**8**	Pn	**Pn**	**16 21 16.7**	**-1.4**
	3.0nm,0.3s,baz=155,slow=13,SNR=12						
PSI				LR	LR	16 22 23.4	
	comp=Z,201nm,18.5s,baz=215,slow=43						
CMAR	**Chiang Mai Arr**	**18.09**	**1**	P	**P**	**16 24 46.4**	**-0.9**
	0.1nm,0.3s,baz=193,slow=12,SNR=4.4						
H08S2	**Diego Garcia H**	**27.17**	**253**	T	T	16 53 50.4	
	baz=74,slow=75,SNR=28						
H08S3	**Diego Garcia H**	**27.17**	**253**	T	T	16 53 50.1	
	baz=74,slow=75,SNR=19						
H08S1	**Diego Garcia H**	**27.19**	**253**	T	T	16 53 50.3	
	baz=74,slow=75,SNR=25						
WRA	**Warramunga Arr**	**40.37**	**122**	P	**P**	**16 28 12.3**	**-0.7**
	0.4nm,0.6s,baz=300,slow=9.4,SNR=3.7						
ASAR	**Alice Springs**	**41.73**	**127**	P	**P**	**16 28 23.8**	**-0.5**
	0.2nm,0.6s,baz=297,slow=7.7,SNR=8.7						
KSRS	**Korea Array**	**45.86**	**33**	P	**P**	**16 28 56.8**	**-0.4**
	0.7nm,0.7s,baz=212,slow=8.2,SNR=3.3						
SONM	**Songino Array**	**47.88**	**7**	P	**P**	**16 29 13.9**	**+1.0**
	0.6nm,0.6s,baz=188,slow=8.8,SNR=6.3						
MKAR	**Makanchi Array**	**48.50**	**345**	P	**P**	**16 29 18.1**	**+0.5**
	0.9nm,0.6s,baz=154,slow=8.2,SNR=12						
ZALV	**Zalesovo Beam**	**54.71**	**350**	P	**P**	**16 30 03.9**	**+0.1**
	0.4nm,0.3s,baz=171,slow=6.6,SNR=3.5						
BVAR	**Borovoye Array**	**57.60**	**340**	P	**P**	**16 30 23.9**	**-0.6**
	0.8nm,0.6s,baz=134,slow=8.5,SNR=6.9						
FINES	**FINESS Array B**	**81.47**	**332**	P	**P**	**16 32 52.0**	**+0.4**
	0.8nm,0.7s,baz=81,slow=8.6,SNR=2.5						
TXAR	**Lajitas Array**	**143.71**	**34**	PKP	**PKPdf**	**16 40 09.7**	**-0.6**
	0.4nm,1.0s,baz=209,slow=1.7,SNR=3.4						

ISCJB 23 16:23:09.5±0.5, 43°.73N±0°.04×128°.04W±0°.06, h11km, mb3.9/14, MS3.7/23, Error ellipse: s-maj=6.4km s-min=4.4km az=146.8

IDC 23 16:23:09.6±1.0, 43°.77N×128°.07W, h0km, mb3.7/12, mb1 3.9/18, mb1mx3.8/54, mbtmp3.7/18, ML3.6/6, MS3.6/31, Ms1 3.6/31, ms1mx3.5/59, Error ellipse: s-maj=23.9km s-min=11.8km az=44.0

NEIC 23 16:23:11.1±0.7, 43°.76N×128°.01W, h10km, mb4.2/7, Error ellipse: s-maj=9.9km s-min=6.4km az=49.0

ISC 23 16:23:11.1±0.8, 43°.72N±0°.06×128°.06W±0°.08, h11km, n98, σ1°09/71, mb4.0/14, MS3.7/23, Off coast of Oregon

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RNO	**Roman Nose**	**3.13**	**85**	P	**Pn**	**16 23 60.0**	**-0.4**
MPOR	**Mary's Peak**	**3.34**	**75**	P	**Pn**	**16 24 02.0**	**-1.3**
I03D	**Drain, OR**	**3.42**	**89**	P	**Pn**	**16 24 03.9**	**-0.3**
	baz=273,SNR=197						
I03D				S	**Sn**	**16 24 46.8**	**+2.1**
	baz=273						
COR	**Corvallis**	**3.53**	**74**	*e*Pn	Pn	16 24 00.8	-5.0
COR				*e*Sn	**Sn**	**16 24 48.5**	**+1.0**
DBO	**Dodson Butte**	**3.56**	**98**	P	**Pn**	**16 24 05.5**	**-0.8**
L02D	**Cave Junction,**	**3.62**	**114**	P	**Pn**	**16 24 06.2**	**-1.0**
	baz=298,SNR=8.0						
L02D				S	**Sn**	**16 24 49.6**	**-0.3**
	baz=298						
G03D	**McMinnville, O**	**3.74**	**65**	P	**Pn**	**16 24 08.6**	**-0.1**
	baz=248,SNR=14						
KMOR	**Kings Mountain**	**3.78**	**58**	P	**Pn**	**16 24 08.3**	**-1.0**
HUMO	**Hull Mountain**	**3.90**	**105**	*e*Pn	**Pn**	**16 24 09.6**	**-1.3**
HUMO				*e*Sn	**Sn**	**16 24 55.1**	**-1.5**
BROR	**Big Rock Looko**	**4.08**	**80**	P	**Pn**	**16 24 13.7**	**+0.3**
I04A	**Tendick Farm,**	**4.09**	**87**	P	**Pn**	**16 24 13.8**	**+0.2**
	baz=272,SNR=16						
F04D	**Rainier, OR**	**4.29**	**55**	P	**Pn**	**16 24 16.7**	**+0.4**
	baz=239,SNR=8.0						
YBH	**Yreka Blue Hor**	**4.41**	**115**	Pn	**Pn**	**16 24 18.5**	**+0.4**
	1.1nm,0.3s,baz=310,slow=9.1,SNR=12						
YBH				Sn	Sn	16 25 02.3	-7.2
	baz=286,slow=16,SNR=2.1						
F04A	**Amboy**	**4.58**	**59**	P	**Pn**	**16 24 20.8**	**+0.5**
NLWA	**Neilton Lookou**	**4.71**	**37**	*e*Pn	**Pn**	**16 24 21.8**	**-0.2**
NLWA				*e*Sn	**Sn**	**16 25 17.8**	**+1.2**
K04D	**Chiloquin, OR**	**4.74**	**101**	P	**Pn**	**16 24 23.2**	**+0.6**
	baz=286						
TDH	**Tom, Dick, Har**	**4.75**	**69**	P	**Pn**	**16 24 23.5**	**+0.7**
MTMW	**Mount Mitchell**	**4.75**	**59**	P	**Pn**	**16 24 23.4**	**+0.7**
N02D	**Trinity Center**	**4.82**	**123**	P	**Pn**	**16 24 22.7**	**-1.0**
	baz=307						
JLK	**June Lake**	**4.84**	**58**	P	**Pn**	**16 24 24.6**	**+0.7**
STD	**Studebaker Rid**	**4.84**	**57**	P	**Pn**	**16 24 24.5**	**+0.5**
I05D	**Terrebonne, OR**	**4.88**	**80**	P	**Pn**	**16 24 24.6**	**+0.1**
	baz=266						
M04C	**Macdoel**	**4.97**	**111**	P	**Pn**	**16 24 25.0**	**-0.7**
	baz=296						
J05D	**Fort Rock, OR**	**4.98**	**93**	P	**Pn**	**16 24 26.5**	**+0.6**
	baz=278,SNR=17						
G05D	**Wamic, OR**	**5.06**	**70**	P	**Pn**	**16 24 27.6**	**+0.8**
	baz=255,SNR=11						
WDC	**Whiskeytown Da**	**5.16**	**126**	*e*Pn	**Pn**	**16 24 29.0**	**+0.7**
	17nm,1.1s						
O03D	**Paynes Creek**	**5.78**	**124**	P	**Pn**	**16 24 36.3**	**-0.5**
	baz=309						
PGC	**Sidney**	**5.88**	**31**	*e*Pn	**Pn**	**16 24 37.8**	**-0.2**
PGC				*e*Sn	**Sn**	**16 25 45.3**	**0.0**
MOD	**Modoc Plateau**	**5.99**	**105**	*e*Pn	Pn	16 24 35.8	-3.9
	8.2nm,1.1s						
HOPS	**Hopland Field**	**6.03**	**140**	*e*Pn	**Pn**	**16 24 39.5**	**-0.7**
	48nm,1.2s						
B05A	**Bryant**	**6.16**	**40**	P	**Pn**	**16 24 43.0**	**+1.2**
	baz=225,SNR=6.7						
A04D	**Lummi Island**	**6.23**	**35**	P	**Pn**	**16 24 45.0**	**+2.2**
	baz=218						
C06D	**Leavenworth**	**6.54**	**47**	P	**Pn**	**16 24 48.3**	**+1.2**
	baz=233						
HAWA	**Hanford**	**6.60**	**63**	*e*Pn	Pn	16 24 45.3	-2.7
	17nm,0.8s						
WVOR	**Wild Horse Val**	**7.02**	**97**	Pn	**Pn**	**16 24 54.2**	**+0.4**
	3.2nm,0.8s						
CMB	**Columbia Colle**	**8.12**	**132**	Pn	Pn	16 25 05.8	-3.2
	314nm,1.5s						
BBB	**Bella Bella**	**8.47**	**360**	Pn	**Pn**	**16 25 12.9**	**-0.6**
	0.3nm,0.3s,baz=167,slow=14,SNR=2.9						
BBB				Sn	**Sn**	**16 26 47.9**	**-1.2**
	baz=310,slow=16,SNR=3.9						
BBB				LR	LR	16 27 13.7	
	comp=Z,57nm,18.1s,baz=160,slow=29						
NEW	**Newport**	**8.86**	**55**	Pn	**Pn**	**16 25 19.6**	**+0.5**
	0.4nm,0.3s,baz=254,slow=19,SNR=6.1						
NEW				LR	LR	16 28 43.4	
	comp=Z,685nm,20.6s,baz=241,slow=38						
NEW	**Newport**	**8.86**	**55**	P	**Pn**	**16 25 20.1**	**+1.0**
	baz=243						
NVAR	**Mina Array Bea**	**9.06**	**122**	Pn	**Pn**	**16 25 25.2**	**+3.2**
	0.3nm,0.3s,baz=296,slow=13,SNR=14						
NVAR				LR	LR	16 28 39.7	
	comp=Z,141nm,20.1s,baz=309,slow=36						
ELK	**Elko**	**9.96**	**103**	LR	LR	16 29 46.3	
	comp=Z,104nm,20.0s,baz=135,slow=40						
WALA	**Waterton Lakes**	**11.13**	**56**	*e*Pn	**Pn**	**16 25 48.9**	**-1.3**
	12nm,1.0s						
DUG	**Dugway, Tooele**	**11.88**	**102**	*e*Pn	Pn	16 25 58.0	-2.5
	6.2nm,1.2s						
IMW	**Indian Meadow**	**12.37**	**83**	*e*Pn	**Pn**	**16 26 07.8**	**+0.4**
	3.5nm,1.1s						
REDW	**Red Top Meadow**	**12.50**	**86**	Pn	Pn	16 26 06.6	-2.4
	2.2nm,0.8s						
H17A	**Grant Village**	**12.60**	**81**	*e*Pn	**Pn**	**16 26 09.7**	**-0.7**
	6.6nm,1.1s						
LOHW	**Long Hollow**	**12.64**	**84**	*e*Pn	**Pn**	**16 26 10.0**	**-1.0**
	1.9nm,0.8s						
EGMT	**Eagleton**	**13.46**	**65**	Pn	**Pn**	**16 26 21.1**	**-0.8**
	20nm,1.5s						
PDAR	**Pinedale Array**	**13.53**	**88**	Pn	Pn	16 26 26.3	+3.2
	0.1nm,0.3s,baz=291,slow=13,SNR=6.4						
PDAR				LR	LR	16 31 53.5	
	comp=Z,513nm,18.3s,baz=284,slow=39						
PFO	**Pinyon Flats O**	**13.55**	**134**	LR	LR	16 31 21.6	
	comp=Z,374nm,18.8s,baz=314,slow=36						
DLBC	**Dease Lake**	**14.79**	**356**	LR	LR	16 31 36.7	
	comp=Z,232nm,20.0s,baz=174,slow=34						
WUAZ	**Wupatki**	**15.23**	**117**	*e*Pn	**Pn**	**16 26 46.3**	**+0.2**
	14nm,1.1s						
PV01	**Paradox Valley**	**15.74**	**104**	P	**P**	**16 26 56.2**	**-0.7**
	377nm,1.0s						
MVCO	**Mesa Verde**	**16.23**	**107**	*e*Pn	**Pn**	**16 26 59.2**	**0.0**
	6.5nm,0.9s						
ISCO	**Idaho Springs**	**17.19**	**95**	*e*Pn	**Pn**	**16 27 08.2**	**-3.2**
	7.8nm,1.1s						
SDCO	**Great Sand Dun**	**18.08**	**102**	*e*Pn	**Pn**	**16 27 22.2**	**-0.3**
	30nm,1.8s						
ANMO	**Albuquerque**	**18.83**	**110**	P	**Pn**	**16 27 33.1**	**+1.6**
	0.1nm,0.3s,baz=318,slow=14,SNR=2.4						
ANMO				LR	LR	16 34 23.1	
	comp=Z,59nm,18.0s,baz=297,slow=36						
FFC	**Flin Flon**	**20.16**	**48**	*e*P	**P**	**16 27 42.9**	**-2.2**
	44nm,1.5s						
YKA	**Yellowknife Ar**	**20.39**	**18**	P	**P**	**16 27 48.0**	**+0.5**
	3.5nm,0.9s,baz=206,slow=11,SNR=24						
KDAK	**Kodiak Island**	**20.79**	**321**	LR	LR	16 34 02.6	
	comp=Z,324nm,19.3s,baz=109,slow=32						
ECSD	**EROS Data Cent**	**22.66**	**79**	*e*P	**P**	**16 28 11.7**	**-0.5**
	9.3nm,1.2s						
AGMN	**Agassiz Nation**	**22.73**	**67**	*e*P	**P**	**16 28 13.0**	**+0.2**
	40nm,1.6s						
ULM	**Lac du Bonnet**	**22.78**	**62**	P	**P**	**16 28 13.0**	**-0.4**
	12nm,0.9s,baz=272,slow=10,SNR=15						
ULM				LR	LR	16 37 18.1	
	comp=Z,334nm,19.1s,baz=278,slow=37						
ILAR	**Eielson Array**	**23.60**	**340**	P	**P**	**16 28 20.6**	**-0.9**
	1.0nm,0.9s,baz=149,slow=8.8,SNR=5.2						
ILAR				LR	LR	16 36 09.7	
	comp=Z,148nm,19.2s,baz=152,slow=33						
TXAR	**Lajitas Array**	**24.18**	**118**	P	**P**	**16 28 28.9**	**+1.3**
	3.6nm,1.0s,baz=300,slow=9.2,SNR=6.8						
TXAR				LR	LR	16 39 30.9	
	comp=Z,58nm,20.9s,baz=0.0,slow=40						
LPIG	**La Paz**	**24.40**	**138**	LR	LR	16 37 02.5	
	comp=Z,140nm,19.2s,baz=242,slow=34						
INK	**Inuvik**	**24.81**	**355**	P	**P**	**16 28 32.8**	**0.0**
	1.9nm,1.0s,baz=162,slow=11,SNR=3.2						
INK				LR	LR	16 37 49.5	
	comp=Z,208nm,18.4s,baz=172,slow=36						
SCHQ	**Schefferville**	**40.21**	**52**	LR	LR	16 47 23.2	
	comp=Z,97nm,21.6s,baz=292,slow=36						
SEY	**Seymchan**	**47.74**	**323**	P	**P**	**16 31 46.3**	**-1.3**
	3.4nm,1.0s,baz=107,slow=9.4,SNR=3.9						
TIXI	**Tiksi**	**53.04**	**337**	LR	LR	16 55 39.2	
	comp=Z,85nm,20.0s,baz=78,slow=37						
YAK	**Yakutsk**	**57.67**	**327**	LR	LR	16 56 30.1	
	comp=Z,57nm,19.9s,baz=83,slow=35						
H11N3	**WAKE ISLAND Hy**	**58.71**	**268**	T	T	17 36 32.5	
	baz=49,slow=75,SNR=508						
H11N2	**WAKE ISLAND Hy**	**58.72**	**268**	T	T	17 36 29.7	
	baz=49,slow=75,SNR=423						
H11N1	**WAKE ISLAND Hy**	**58.73**	**268**	T	T	17 36 29.3	
	baz=49,slow=75,SNR=387						
H11S1	**WAKE ISLAND Hy**	**59.64**	**267**	T	T	17 37 38.9	
	baz=50,slow=75,SNR=386						
H11S2	**WAKE ISLAND Hy**	**59.65**	**267**	T	T	17 37 37.3	
	baz=50,slow=75,SNR=307						
H11S3	**WAKE ISLAND Hy**	**59.66**	**267**	T	T	17 37 40.4	
	baz=50,slow=75,SNR=419						
KLR	**Kul'dur**	**64.15**	**314**	LR	LR	17 01 49.2	
	comp=Z,33nm,18.4s,baz=73,slow=36						
RKT	**Rikitea**	**66.81**	**187**	*e*LR	LR	16 33 00.5	
	179nm,23.2s,baz=271						
AFI	**Afiamalu**	**69.86**	**226**	LR	LR	16 55 49.2	
	comp=Z,275nm,20.5s,baz=232,slow=28						
NB2	**NORSAR Subarra**	**70.47**	**20**	P	**P**	**16 34 26.6**	**+1.4**
	comp=Z,0.7nm,0.6s,baz=332,slow=6.2						
NOA	**NORSAR Array B**	**70.47**	**20**	P	**P**	**16 34 26.5**	**+1.3**
	comp=Z,1.2nm,0.8s,baz=330,slow=6.3,SNR=4.5						
NOA				LR	LR	17 03 50.5	
	comp=Z,26nm,19.2s,baz=290,slow=35						
NNA	**Nana**	**72.41**	**127**	LR	LR	17 04 31.7	
	comp=Z,31nm,21.0s,baz=239,slow=34						
TLY	**Talaya**	**74.98**	**330**	LR	LR	17 08 33.9	
	comp=Z,63nm,19.1s,baz=26,slow=36						
SONM	**Songino Array**	**77.00**	**326**	P	**P**	**16 35 04.0**	**+0.2**
	comp=Z,0.4nm,0.8s,baz=35,slow=5.3,SNR=3.1						
SONM				LR	LR	17 08 50.3	
	comp=Z,47nm,19.3s,baz=28,slow=36						
ZALV	**Zalesovo Beam**	**78.72**	**341**	LR	LR	17 11 20.9	
	comp=Z,24nm,18.2s,baz=66,slow=37						
ARU	**Arti**	**80.06**	**356**	LR	LR	17 09 15.5	
	comp=Z,24nm,20.1s,baz=31,slow=35						
BRG	**Berggiesshubel**	**80.16**	**23**	*e*P	**P**	**16 35 23.2**	**+2.2**
	comp=Z,2.3nm,0.8s						
LPAZ	**La Paz**	**80.97**	**123**	P	**P**	**16 35 26.0**	**-0.5**
	comp=Z,0.6nm,0.3s,baz=350,slow=3.4,SNR=4.2						
GERES	**GERESS Array B**	**81.90**	**24**	P	**P**	**16 35 30.0**	**-0.5**
	comp=Z,0.7nm,0.7s,baz=338,slow=7.4,SNR=5.7						
BVAR	**Bovoye Array**	**82.33**	**349**	P	**P**	**16 35 33.9**	**+1.3**
	comp=Z,0.2nm,0.3s,baz=358,slow=4.3,SNR=4.1						
HNR	**Honiara**	**83.74**	**251**	LR	LR	17 04 44.9	
	comp=Z,70nm,19.9s,baz=98,slow=30						
AKASG	**Malin Array Be**	**83.90**	**14**	P	**P**	**16 35 40.0**	**-0.7**
	comp=Z,0.1nm,0.3s,baz=348,slow=4.7,SNR=3.3						
SIV	**San Ignacio**	**85.18**	**117**	LR	LR	17 20 29.2	
	comp=Z,70nm,18.0s,baz=200,slow=40						
MKAR	**Makanchi Array**	**85.95**	**340**	LR	LR	17 16 25.2	
	comp=Z,34nm,18.0s,baz=12,slow=37						
AKTO	**Aktyubinsk**	**86.08**	**356**	LR	LR	17 14 53.1	
	comp=Z,15nm,18.9s,baz=36						
DZM	**Mont Dzumac**	**88.76**	**238**	LR	LR	17 05 36.7	
	comp=Z,46nm,20.6s,baz=54,slow=29						
KBZ	**Khabaz**	**92.56**	**7**	LR	LR	17 21 31.7	
	comp=Z,26nm,18.2s,baz=335,slow=38

T Plg8.0000°, Azm195.0000°; N Plg14.0000°, Azm287.0000°; P Plg74.0000°, Azm76.0000°;
JMA Felt I J1.

ISC 23 16:39:49.1±1.2, 36°.93N±0°.05×140°.60E±0°.04, h9km±11km, n20,σ0°.72/23, mb3.6/3, 7C-1D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.24**	**43**	⇑P	**Pg**	**16 39 54.2**	**+0.2**
ONAJ				S	**Sg**	**16 39 57.3**	**0.0**
JHO	**Hitachi**	**0.32**	**184**	⇑P	**Pb**	**16 39 56.7**	**-0.2**
JHO				S	**Sb**	**16 40 01.7**	**-0.5**
JFK	**Kawauchi**	**0.49**	**27**	⇑P	**Pg**	**16 39 58.5**	**-0.2**
JFK				S	**Sg**	**16 40 04.8**	**-0.4**
JSB	**Shiboa**	**0.54**	**275**	⇑P	**Pb**	**16 40 01.1**	**+0.3**
JSB				S	**Sb**	**16 40 08.8**	**+0.1**
JFT	**Otama**	**0.63**	**341**	⇑P	**Pg**	**16 40 01.3**	**+0.1**
JFT				S	**Sg**	**16 40 09.2**	**-0.2**
JYT	**Yasato**	**0.77**	**205**	⇓P	**Pb**	**16 40 05.0**	**+0.4**
JYT				S	**Sb**	**16 40 15.4**	**+0.2**
JFY	**Yanaizu**	**0.86**	**304**	⇑P	**Pg**	**16 40 05.7**	**+0.1**
JFY				S	**Sg**	**16 40 16.7**	**-0.1**
JMM	**Marumori**	**0.95**	**9**	⇑P	**Pg**	**16 40 06.7**	**-0.7**
JMM				S	**Sg**	**16 40 18.9**	**-0.9**
MJAR	**Matsushiro Arr**	**1.96**	**259**	P`g	**Pb**	**16 40 24.1**	**-0.8**
	8.1nm,0.3s,baz=82,slow=15,SNR=15						
MJAR				Lg	Lg	16 40 50.0	
	14nm,0.8s,baz=79,slow=30,SNR=16						
MAT	**Matsushiro**	**1.96**	**259**	P	**Pb**	**16 40 24.3**	**-0.6**
MAT				S	**Sb**	**16 40 50.3**	**+0.9**
ASAJ	**Asahikawa**	**7.34**	**11**	Pn	**Pn**	**16 41 38.5**	**+2.1**
	0.4nm,0.3s,baz=197,slow=17,SNR=3.0						
H11N2	**WAKE ISLAND Hy 28.66**	**120**		T	T	17 15 30.7	
	baz=313,slow=75,SNR=20						
H11N1	**WAKE ISLAND Hy 28.67**	**120**		T	T	17 15 36.3	
	baz=313,slow=75,SNR=22						
H11N3	**WAKE ISLAND Hy 28.68**	**120**		T	T	17 15 35.8	
	baz=313,slow=75,SNR=18						
H11S1	**WAKE ISLAND Hy 29.36**	**122**		T	T	17 16 26.4	
	baz=314,slow=76,SNR=38						
H11S3	**WAKE ISLAND Hy 29.36**	**122**		T	T	17 16 27.5	
	baz=314,slow=76,SNR=55						
H11S2	**WAKE ISLAND Hy 29.37**	**122**		T	T	17 16 27.1	
	baz=314,slow=76,SNR=25						
KURBB	**Kurchatov Arra**	**45.55**	**308**	P	**P**	**16 48 07.7**	**-1.3**
	0.3nm,0.5s,baz=83,slow=7.7,SNR=4.3						
WRA	**Warramunga Arr**	**56.87**	**187**	P	**P**	**16 49 34.0**	**-0.2**
	0.7nm,0.7s,baz=2.1,slow=7.6,SNR=9.2						
ASAR	**Alice Springs**	**60.60**	**187**	P	**P**	**16 50 00.2**	**+0.1**
	0.4nm,0.8s,baz=15,slow=5.8,SNR=5.6						

*ISCJB **23** 16:42:48.7±0.7, 35°.45N±0°.04×141°.32E±0°.07, h33km, mb3.5/4, Error ellipse: s-maj=8.8km s-min=5.9km az=172.1*
*IDC **23** 16:42:51.4±3.1, 35°.46N×141°.16E, h37km±27km, mb3.2/4, mb1 3.6/8, mb1mx3.2/47, mbtmp3.7/8, ML3.5/4, MS2.9/2, Ms1 2.9/2, ms1mx2.5/22, Error ellipse: s-maj=42.3km s-min=17.4km az=77.0*
*JMA **23** 16:42:52.2±0.1, 35°.39N×140°.99E, h35km±2km, M3.0*

ISC 23 16:42:50.9±0.9, 35°.39N±0°.05×141°.10E±0°.08, h33km, n26, σ1§18/22, mb3.6/4, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CHOJ	**Chosi**	**0.37**	**327**	P	**Pn**	**16 43 00.3**	**+0.3**
CHOJ				S	**Sn**	**16 43 06.1**	**+0.2**
KTR	**Katsuura**	**0.69**	**249**	P	**Pn**	**16 43 04.2**	**-0.1**
JCN	**Nagara**	**0.74**	**272**	P	**Pb**	**16 43 05.5**	**+0.2**
BSO1	**Boso 1**	**0.74**	**188**	P	**Pb**	**16 43 05.6**	**+0.5**
BSO4	**Boso 4**	**0.74**	**238**	P	**Pn**	**16 43 05.2**	**+0.2**
BSO3	**Boso 3**	**0.76**	**220**	P	**Pn**	**16 43 05.5**	**+0.4**
BSO3				*e*X		16 43 16.4	
JYT	**Yasato**	**1.11**	**319**	P	**Pb**	**16 43 10.9**	**-0.7**
JIM2	**Oshima 3**	**1.53**	**244**	P	**Pn**	**16 43 14.8**	**-1.1**
JOD2	**Odawara 2**	**1.65**	**266**	P	**Pn**	**16 43 17.1**	**-0.5**
JHJ	**Hachijo jima 2**	**2.52**	**206**	Pn	**Pn**	**16 43 30.1**	**+0.7**
	18nm,0.3s,baz=53,slow=19,SNR=4.9						
JHJ				Sn	**Sn**	**16 43 56.0**	**-3.1**
	23nm,0.3s,baz=233,slow=20,SNR=2.8						
MJAR	**Matsushiro Arr**	**2.61**	**297**	Pn	**Pn**	**16 43 31.5**	**+0.7**
	3.5nm,0.3s,baz=100,slow=12,SNR=13						
MAT	**Matsushiro**	**2.61**	**297**	P	**Pn**	**16 43 33.2**	**+2.4**
MAT				*e*S	**Sn**	**16 44 03.0**	**+1.5**
JCJ	**Chichijima**	**8.32**	**173**	Pn	**Pn**	**16 44 50.3**	**+1.1**
	5.8nm,0.3s,baz=282,slow=19,SNR=2.7						
JNU	**Nakatsue**	**8.76**	**258**	LR	LR	16 48 48.4	
	comp=Z,62nm,18.4s,baz=298,slow=40						
ASAJ	**Asahikawa**	**8.75**		Pn	**Pn**	**16 44 55.5**	**0.0**
	0.4nm,0.3s,baz=192,slow=14,SNR=5.6						
ASAJ				Sn	**Sn**	**16 46 32.6**	**-0.8**
	0.1nm,0.3s,baz=241,slow=19,SNR=2.2						
KSRS	**Korea Array**	**10.82**	**285**	LR	LR	16 49 35.6	
	comp=Z,62nm,20.0s,baz=95,slow=37						
H11N2	**WAKE ISLAND Hy 27.57**	**118**		T	T	17 17 36.1	
	baz=310,slow=76,SNR=26						
H11N1	**WAKE ISLAND Hy 27.57**	**118**		T	T	17 17 35.5	
	baz=310,slow=76,SNR=26						
H11N3	**WAKE ISLAND Hy 27.59**	**118**		T	T	17 17 36.0	
	baz=310,slow=76,SNR=20						
H11S3	**WAKE ISLAND Hy 28.22**	**120**		T	T	17 18 29.7	
	baz=312,slow=76,SNR=57						
H11S1	**WAKE ISLAND Hy 28.22**	**120**		T	T	17 18 28.0	
	baz=312,slow=76,SNR=61						
H11S2	**WAKE ISLAND Hy 28.24**	**120**		T	T	17 18 28.0	
	baz=312,slow=76,SNR=56						
MKAR	**Makanchi Array**	**44.79**	**303**	P	**P**	**16 50 59.9**	**-1.5**
	0.2nm,0.2s,baz=86,slow=9.7,SNR=3.0						
KURBB	**Kurchatov Arra**	**46.83**	**309**	P	**P**	**16 51 17.7**	**+0.4**
	0.5nm,0.6s,baz=83,slow=7.7,SNR=6.4						
WRA	**Warramunga Arr**	**55.40**	**188**	P	**P**	**16 52 22.4**	**+0.3**
	0.6nm,0.7s,baz=17,slow=9.0,SNR=6.0						
ASAR	**Alice Springs**	**59.13**	**188**	P	**P**	**16 52 49.4**	**+1.1**
	0.2nm,0.9s,baz=17,slow=10,SNR=3.6						

*IDC **23** 16:54:10.7±0.8, 15°.04S×173°.33W, h0km, mb4.1/8, mb1 4.3/8, mb1mx3.9/38, mbtmp4.1/8, Error ellipse: s-maj=36.2km s-min=17.7km az=135.0*
*NEIC **23** 16:54:12.2±0.6, 15°.03S×173°.27W, h10km, mb4.0/1, Error ellipse: s-maj=26.9km s-min=11.4km az=140.0*
*ISCJB **23** 16:54:13.2±0.7, 15°.05S±0°.2×173°.3W±0°.1, h29km, mb4.1/8, Error ellipse: s-maj=29.2km s-min=12.3km az=141.2*

ISC 23 16:54:14.4±0.7, 15°.05S±0°.2×173°.2W±0°.2, h29km, n11, σ1§67/14, mb4.2/8, Samoa Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
AFI	**Afiamalu**	**1.71**	**51**	Pn	**Pn**	**16 54 42.6**	**+0.2**
	298nm,0.3s,baz=189,slow=3.1,SNR=441						
AFI				Sn	**Sn**	**16 55 00.1**	**-3.2**
	880nm,0.3s,baz=61,slow=19,SNR=38						
DZM	**Mont Dzumac**	**20.58**	**247**	P	**P**	**16 58 51.3**	**0.0**
	10.0nm,1.0s,baz=52,slow=3.4,SNR=3.4						
URZ	**Urewera**	**24.72**	**199**	P	**P**	**16 59 32.4**	**-0.8**
	8.6nm,0.6s,baz=55,slow=2.4,SNR=14						
STKA	**Stephens Creek**	**44.45**	**240**	P	**P**	**17 02 21.7**	**-1.5**
	5.3nm,1.1s,baz=101,slow=10,SNR=11						
WRAB	**Tennant Creek**	**50.17**	**256**	*e*P	**P**	**17 03 06.9**	**-0.9**
	0.6nm,0.3s						
WRA	**Warramunga Arr**	**50.18**	**256**	P	**P**	**17 03 06.7**	**-1.3**
	1.4nm,0.4s,baz=92,slow=6.6,SNR=64						
WRA				PcP	**PcP**	**17 04 25.4**	**-1.6**
	0.4nm,0.7s,baz=88,slow=3.4,SNR=3.7						
ASAR	**Alice Springs**	**50.47**	**252**	P	**P**	**17 03 09.1**	**-1.1**
	2.6nm,0.4s,baz=89,slow=7.5,SNR=128						
ASAR				PcP	**PcP**	**17 04 27.8**	**-0.3**
	0.7nm,0.9s,baz=94,slow=5.5,SNR=2.6						
VNDA	**Vanda**	**63.80**	**186**	P	**P**	**17 04 45.0**	**+1.6**
	1.3nm,1.0s,baz=7.5,slow=5.7,SNR=4.7						
ILAR	**Eielson Array**	**82.00**	**11**	P	**P**	**17 06 33.1**	**+1.9**
	0.4nm,0.7s,baz=223,slow=5.7,SNR=5.9						
YKA	**Yellowknife Ar**	**89.63**	**23**	P	**P**	**17 07 11.3**	**+2.2**
	0.2nm,0.7s,baz=242,slow=4.6,SNR=3.1						
BRTR	**Keskin Array B**	**146.00**	**322**	PKPbc	**PKPab**	**17 13 53.0**	**+0.6**
	1.5nm,0.8s,baz=98,slow=2.3,SNR=8.8						

*ISCJB **23** 16:56:47.5±0.4, 22°.13S±0°.05×67°.36W±0°.04, h184km±5km, mb3.4/4, Error ellipse: s-maj=8.6km s-min=4.7km az=22.3*
*GUC **23** 16:56:48.9±0.4, 22°.10S×67°.81W, h219km±7km, ML4.0*
*SJA **23** 16:56:49.5±0.9, 22°.12S×66°.83W, h211km±12km, ML3.0, MW2.9*
*IDC **23** 16:56:52.4±3.1, 21°.75S×66°.86W, h209km±25km, mb3.2/4, mb1 3.5/7, mb1mx3.3/28, mbtmp3.7/7, Error ellipse: s-maj=38.8km s-min=16.2km az=43.0*

ISC 23 16:56:48.0±0.8, 22°.13S±0°.06×67°.32W±0°.04, h179km±8km, n22, σ1§40/34, mb3.4/4, 3C, Chile-Bolivia border region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
YJA	**Yavi**	**1.67**	**92**	*i* P	**Pn**	**16 57 23.1**	**+1.0**
YJA				*i* S	**Sn**	**16 57 48.6**	**+0.3**
YJA				IAML		16 57 52.1	
	comp=Z,89nm,0.5s						
PB09	**IPOC Station P**	**1.82**	**280**	*e*P	**Pn**	**16 57 24.6**	**+1.3**
HJA	**Humahuaca**	**2.06**	**122**	*i* P	**Pn**	**16 57 27.5**	**+1.4**
HJA				*i* S	**Sn**	**16 57 55.7**	**+0.1**
PB06	**IPOC Station P**	**2.17**	**254**	*e*P	**Pn**	**16 57 27.8**	**+0.8**
PB06				*e*S	**Sn**	**16 57 57.7**	**+0.5**
PB01	**IPOC Station P**	**2.29**	**298**	*e*P	**Pn**	**16 57 29.0**	**+0.7**
PB01				*e*S	**Sn**	**16 57 59.7**	**+0.1**
PB01				IAML		16 58 01.0	
	comp=E,792nm,0.2s						
PB07	**IPOC Station P**	**2.42**	**279**	*e*P	**Pn**	**16 57 30.4**	**+0.6**
PB07				*e*S	**Sn**	**16 58 01.7**	**-0.7**
PB07				IAML		16 58 03.6	
	comp=N,684nm,0.1s						
PB04	**IPOC Station P**	**2.63**	**265**	*e*P	**Pn**	**16 57 32.7**	**+0.4**
PB04				*e*S	**Sn**	**16 58 05.6**	**-1.3**
PB04				IAML		16 58 10.0	
	comp=N,378nm,0.2s						
AZAP	**Zapla**	**2.94**	**136**	*i* P	**Pn**	**16 57 36.5**	**+0.4**
PATCX	**Punta Patache**	**2.94**	**296**	*e*P	**Pn**	**16 57 36.3**	**+0.3**
PATCX				*e*S	**Sn**	**16 58 11.8**	**-1.6**
HMBC	**Humberstone**	**3.02**	**307**	*e*P	**Pn**	**16 57 36.9**	**-0.2**
HMBC				*e*S	**Sn**	**16 58 13.5**	**-1.7**
ASTB	**Santa Barbara**	**3.20**	**125**	*i* P	**Pn**	**16 57 39.2**	**0.0**
ASTB				*i* S	**Sn**	**16 58 15.0**	**-4.2**
PB10	**IPOC Station P**	**3.29**	**245**	*e*P	**Pn**	**16 57 40.2**	**0.0**
PB10				*e*S	**Sn**	**16 58 19.1**	**-1.8**
ALOL	**LOMAS DE OLMED**	**3.50**	**119**	*i* P	**Pn**	**16 57 42.1**	**-0.7**
PSGC	**Pisagua**	**3.64**	**313**	*e*P	**Pn**	**16 57 44.0**	**-0.6**
PSGC				*e*S	**Sn**	**16 58 25.6**	**-3.2**
PSGC				IAML		16 58 27.1	
	comp=E,144nm,0.3s						
LPAZ	**La Paz**	**5.86**	**352**	P	**Pn**	**16 58 15.1**	**+1.4**
	comp=E,1.6nm,0.3s,baz=36,slow=19,SNR=31						
LPAZ				S	**Sn**	**16 59 20.9**	**-0.2**
	comp=E,0.1nm,0.3s,baz=68,slow=19,SNR=2.1						
SIV	**San Ignacio**	**8.49**	**45**	P	**Pn**	**16 58 45.1**	**-2.7**
	comp=E,2.3nm,0.3s,baz=254,slow=10,SNR=41						
SIV				S	Sn	17 00 14.3	-8.6
	comp=E,1.3nm,0.3s,baz=317,slow=23,SNR=11						
CPUP	**Villa Florida**	**10.03**	**117**	P	**Pn**	**16 59 08.9**	**+1.0**
	comp=E,0.2nm,0.3s,baz=288,slow=14,SNR=3.7						
TXAR	**Lajitas Array**	**61.99**	**324**	P	**P**	**17 06 50.4**	**+1.1**
	comp=E,0.1nm,0.5s,baz=159,slow=8.7,SNR=3.8						
PDAR	**Pinedale Array**	**75.40**	**329**	P	**P**	**17 08 12.1**	**0.0**
	comp=E,0.3nm,0.6s,baz=110,slow=7.8,SNR=3.3						
BOSA	**Boshof**	**81.85**	**117**	P	**P**	**17 08 47.7**	**0.0**
	comp=E,2.8nm,1.0s,baz=246,slow=7.7,SNR=6.2						
YKA	**Yellowknife Ar**	**92.27**	**340**	P	**P**	**17 09 37.1**	**0.0**
	comp=E,0.2nm,0.4s,baz=132,slow=4.8,SNR=5.4						
MKAR	**Makanchi Array**	**145.25**	**38**	PKP	**PKPab**	**17 16 05.2**	**+0.6**
	comp=E,0.1nm,0.2s,baz=264,slow=1.4,SNR=3.4						

JMA 23 17:05:16.8, 36°.21N×137°.62E, h5km±1km, M0.6, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JGN	**Niukaw**	**0.25**	**273**	S	Sg	17 05 25.3	+0.4

JMA 23 17:05:19.7, 36°.83N×138°.62E, h8km±2km, M0.7, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JGK	**Kuni**	**0.27**	**177**	S	Sg	17 05 29.1	+0.5
MAT	**Matsushiro**	**0.44**	**229**	P	Pg	17 05 28.0	-0.2
MAT				S	Sg	17 05 33.8	-0.2
MAT	**Matsushiro**	**0.44**	**229**	P	Pg	17 05 28.2	0.0
MAT				S	Sg	17 05 33.8	-0.2

MAN 23 17:11:05, 8°.87N×127°.20E, h10km, mb4.7, ML3.6, MS3.6, 2C-1D, Philippine Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
BIPH	**Bislig**	**1.07**	**231**	⇑*e*P	Pg	17 11 23.5	-2.1
BIPH				*e*S	Sg	17 11 34.5	-5.1
SCPH	**Surigao**	**1.92**	**298**	⇑*e*P	Pn	17 11 38.8	+1.1
CGP	**Cagayan de Oro**	**2.51**	**261**	⇑*e*P	Pn	17 11 47.4	+1.5
CGP				*e*S	Sn	17 12 18.2	+1.6

*ISCJB **23** 17:18:01.6±0.8, 36°.1S±0°.2×104°.2W±0°.3, h10km, mb4.0/7, MS3.3/2, Error ellipse: s-maj=37.4km s-min=21.3km az=7.5*
*IDC **23** 17:18:01.7±0.8, 36°.08S×104°.10W, h0km, mb4.1/7, mb1 4.4/7, mb1mx4.0/29, mbtmp4.0/7, MS3.4/2, Ms1 3.4/2, ms1mx3.1/23, Error ellipse: s-maj=40.3km s-min=21.7km az=97.0*

ISC 23 17:18:03.2±0.8, 36°.0S±0°.2×104°.1W±0°.3, h10km, n10, σ1§03/9, mb4.1/7, Southeast of Easter Island

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
LPAZ	**La Paz**	**37.51**	**68**	P	**P**	**17 25 17.9**	**-0.2**
	2.4nm,0.8s,baz=223,slow=4.9,SNR=8.3						
LPAZ				LR	LR	17 37 47.9	
	comp=Z,30nm,19.8s,baz=208,slow=32						
PPT	**Papeete**	**44.12**	**282**	LR	LR	17 39 20.4	
	comp=Z,73nm,20.7s,baz=170,slow=29						
VNDA	**Vanda**	**55.99**	**195**	P	**P**	**17 27 40.6**	**-0.7**
	0.8nm,0.5s,baz=119,slow=5.5,SNR=18						
TXAR	**Lajitas Array**	**65.03**	**0**	P	**P**	**17 28 44.1**	**+0.5**
	1.0nm,0.8s,baz=179,slow=8.5,SNR=11						
NVAR	**Mina Array Bea**	**75.26**	**349**	P	**P**	**17 29 47.6**	**+1.3**
	1.7nm,0.8s,baz=181,slow=8.4,SNR=12						
MAW	**Mawson**	**76.20**	**175**	P	**P**	**17 29 52.3**	**+1.2**
	1.0nm,0.6s,baz=209,slow=12,SNR=3.7						
PDAR	**Pinedale Array**	**78.59**	**356**	P	**P**	**17 30 05.2**	**+0.1**
	1.4nm,0.6s,baz=151,slow=6.8,SNR=15						
YKA	**Yellowknife Ar**	**98.56**	**355**	P	**P**	**17 31 40.1**	**-1.3**
	0.1nm,0.3s,baz=163,slow=4.5,SNR=3.1						
NRIK	**Noril'sk**	**146.03**	**353**	PKPbc	**PKPab**	**17 37 42.9**	**+0.1**
	2.0nm,0.6s,baz=342,slow=4.1,SNR=3.7						
SONM	**Songino Array**	**154.61**	**307**	PKPbc	**PKPbc**	**17 38 03.1**	**-1.0**
	0.3nm,0.7s,baz=230,slow=1.1,SNR=2.9						

MEX 23 17:19:10.8±0.4, 14°.19N×91°.72W, h56km±30km, MD3.7, Guatemala

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PCIG		**2.09**	**316**	*e*P	Pn	17 19 42.0	-1.4
PCIG				*i* S	Sn	17 20 05.9	-2.4
TGIG		**2.91**	**332**	*i* P	Pn	17 19 57.2	+2.5
TGIG				*i* S	Sn	17 20 26.8	-1.7

NNC 23 17:21:08.7±1.6, 37°.54N×71°.53E, h144km±31km, mb2.7, mpv3.5, 5C-5D, Error ellipse: s-maj=22.2km s-min=13.4km az=71.0, Afghanistan-Tajikistan border region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SFK	**Sufi-Kurgan**	**2.91**	**31**	⇓P	Pn	17 21 54.6	-0.3
	4.8nm,0.3s						
SFK				⇓S	Sn	17 22 31.3	+0.7
	8.6nm,0.2s						
MNAS	**Manas**	**5.00**	**8**	⇑P	Pn	17 22 22.4	+0.4
	5.7nm,0.4s						
MNAS				⇓S	Sn	17 23 18.9	-0.3
	6.1nm,0.5s						
AAK	**Ala-Archa**	**5.57**	**23**	⇑P	Pn	17 22 29.5	-0.2
	2.6nm,0.4s						
AAK				⇑S	Sn	17 23 34.0	+1.1
	4.6nm,0.6s						
KK31	**Karatay Array**	**5.61**	**352**	⇑P	Pn	17 22 31.0	+0.8
	1.3nm,0.2s,baz=171,slow=12,SNR=131						
KK31				⇓S	Sn	17 23 34.6	+0.9
	2.4nm,0.3s,baz=179,slow=24,SNR=3.7						
AB31	**Akbulak array**	**14.40**	**328**	⇑P	Pn	17 24 24.9	-0.8
	0.4nm,0.5s						
AKTO	**Aktyubinsk**	**16.11**	**327**	⇓P	Pn	17 24 47.1	+0.2
	1.0nm,0.6s						

JMA 23 17:28:18.2±0.3, 37°.26N×142°.24E, h17km, M3.5, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JFK	**Kawauchi**	**1.09**	**276**	P	Pb	17 28 37.7	-1.0
JFK				S	Sn	17 28 53.4	-0.1
ONAJ	**Iwakimizuishiy**	**1.16**	**263**	P	Pn	17 28 39.0	-0.7
ONAJ				S	Sn	17 28 55.2	0.0
JMM	**Marumori**	**1.30**	**298**	P	Pn	17 28 40.9	-0.7
JMM				*e*S	Sb	17 28 58.8	+0.2
JIO	**Ouri**	**1.39**	**330**	P	Pb	17 28 43.4	-0.2
JHO	**Hitachi**	**1.49**	**245**	P	Pn	17 28 44.0	-0.2
JFT	**Otama**	**1.54**	**280**	P	Pn	17 28 45.3	+0.4
JFT				*e*S	Sb	17 29 06.1	+0.7
JOU	**Okura**	**1.67**	**312**	P	Pb	17 28 47.6	-0.8
JMK	**Ichinoseki**	**1.87**	**335**	P	Pb	17 28 50.9	-1.0
JFY	**Yanaizu**	**2.03**	**275**	*e*S	Sn	17 29 16.7	+0.2
MAT	**Matsushiro**	**3.31**	**259**	P	Pn	17 29 12.7	+3.4
MAT				*e*S	Sb	17 29 52.4	-4.1

IDC 23 17:35:52.6±4.9, 7°.63N×93°.81E, h74km±43km, mb3.2/5, mb1 3.6/7, mb1mx3.2/30, mbtmp3.6/7, ML3.4/2, MS3.3/1, Ms1 3.3/1, ms1mx2.5/26, Error ellipse: s-maj=70.8km s-min=20.3km az=54.0, Nicobar Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PSI	**Prapat**	**7.00**	**133**	P	Pn	17 37 33.6	+1.0
	0.3nm,0.3s,baz=335,slow=14,SNR=3.1						
CMAR	**Chiang Mai Arr**	**11.87**	**24**	P	Pn	17 38 38.9	-0.1
	0.1nm,0.3s,baz=213,slow=15,SNR=5.0						
KAPI	**Kappang**	**28.77**	**115**	LR	LR	17 54 26.2	
	comp=Z,54nm,18.0s,baz=236,slow=39						
WRA	**Warramunga Arr**	**48.39**	**125**	P	P	17 44 27.6	+0.1
	0.3nm,0.5s,baz=308,slow=8.2,SNR=14						
ASAR	**Alice Springs**	**50.01**	**130**	P	P	17 44 39.5	-0.3
	0.3nm,0.7s,baz=301,slow=7.9,SNR=6.5						
FINES	**FINESS Array B**	**72.77**	**332**	P	P	17 47 12.7	-0.1
	0.8nm,0.6s,baz=104,slow=5.9,SNR=4.3						
GERES	**GERESS Array B**	**77.79**	**318**	P	P	17 47 42.7	+0.7
	0.4nm,0.8s,baz=103,slow=4.2,SNR=4.0						
ESDC	**Sonseca Array**	**91.12**	**310**	P	P	17 48 48.9	-0.6
	0.2nm,0.4s,baz=62,slow=4.5,SNR=3.6						

*IDC **23** 17:51:10.7±1.0, 37°.70N×144°.04E, h0km, mb3.4/5, mb1 3.7/8, mb1mx3.4/63, mbtmp3.6/8, ML3.3/3, Error ellipse: s-maj=31.8km s-min=18.8km az=113.0*
*ISCJB **23** 17:51:13.5±0.7, 37°.74N±0°.05×143°.87E±0°.06, h33km, mb3.5/5, Error ellipse: s-maj=6.8km s-min=6.2km az=136.3*
*JMA **23** 17:51:14.8±0.2, 37°.86N×143°.76E, h24km, M3.7*

ISC 23 17:51:15.6±1.0, 37°.81N±0°.06×143°.90E±0°.08, h35km, n22, σ1§33/26, mb3.6/5, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**2.11**	**289**	P	**Pn**	**17 52 47.9**	**-0.5**
JIO				*e*S	**Sn**	**17 52 12.4**	**-1.0**
OFUJ	**Ofunato**	**2.16**	**307**	P	**Pn**	**17 51 48.6**	**-0.5**
OFUJ				S	**Sn**	**17 52 13.7**	**-1.0**
JMK	**Ichinoseki**	**2.39**	**299**	P	**Pn**	**17 51 52.0**	**-0.3**
JMK				*e*S	**Sn**	**17 52 20.2**	**-0.2**
JOM	**Ohasama**	**2.63**	**310**	P	**Pn**	**17 51 55.9**	**+0.3**
JOM				S	**Sn**	**17 52 26.2**	**-0.1**
JFT	**Otama**	**2.84**	**265**	P	**Pn**	**17 51 58.9**	**+0.5**
JFT				S	**Sn**	**17 52 30.7**	**-0.7**
JYK	**Kaneyama**	**2.99**	**293**	P	**Pn**	**17 52 01.2**	**+0.7**
JYK				S	**Sn**	**17 52 35.5**	**+0.3**
JANG	**Nango**	**3.16**	**325**	P	**Pn**	**17 52 03.0**	**+0.1**
JANG				*e*S	**Sn**	**17 52 38.5**	**-0.9**
JRY	**Ryogami san**	**4.38**	**247**	P	**Pn**	**17 52 19.1**	**-0.6**
JRY				S	**Sn**	**17 53 06.7**	**-2.8**
MJAR	**Matsushiro Arr**	**4.71**	**256**	Pn	**Pn**	**17 52 24.9**	**+0.7**
	1.0nm,0.3s,baz=74,slow=9.2,SNR=11						
MJAR				Sn	**Sn**	**17 53 16.6**	**-1.1**
	0.3nm,0.3s,baz=94,slow=23,SNR=2.9						
JHJ	**Hachijo jima 2**	**5.75**	**217**	Pn	**Pn**	**17 52 37.2**	**-1.3**
	5.1nm,0.3s,baz=53,slow=20,SNR=2.1						
JHJ				Sn	Sn	17 53 36.1	-7.2
	8.1nm,0.3s,baz=76,slow=19,SNR=2.4						
ASAJ	**Asahikawa**	**6.38**	**352**	Pn	**Pn**	**17 52 46.6**	**-0.4**
	0.6nm,0.3s,baz=216,slow=15,SNR=7.9						
ASAJ				Sn	**Sn**	**17 53 54.0**	**-4.6**
	0.1nm,0.3s,baz=90,slow=20,SNR=2.3						
H11N2	**WAKE ISLAND Hy 26.92**	**126**		T	T	18 24 12.0	
	baz=315,slow=75,SNR=5.9						
H11N1	**WAKE ISLAND Hy 26.93**	**126**		T	T	18 24 11.2	
	baz=315,slow=75,SNR=4.8

ISC 23 18:12:08.4±0.9, 36°88N±0°03×140°68E±0°04, h13km±7km, n23, σ0s51/27, mb3.2/5, 5C-3D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.24**	**24**	⇑P		**Pg**	**18 12 13.6**	**0.0**
ONAJ				S		**Sg**	**18 12 17.0**	**0.0**
JHO	**Hitachi**	**0.29**	**198**	⇓P		**Pg**	**18 12 14.1**	**-0.3**
JHO				S		**Sg**	**18 12 18.8**	**+0.5**
JFK	**Kawauchi**	**0.51**	**18**	⇓P		**Pg**	**18 12 18.4**	**0.0**
JFK				S		**Sg**	**18 12 25.4**	**+0.2**
JSB	**Shiboa**	**0.61**	**278**	⇑P		**Pb**	**18 12 20.9**	**-0.2**
JSB				S		**Sb**	**18 12 29.5**	**-0.1**
JFT	**Otama**	**0.69**	**337**	⇑P		**Pg**	**18 12 21.9**	**0.0**
JFT				S		**Sg**	**18 12 31.2**	**+0.3**
JYT	**Yasato**	**0.76**	**211**	⇑P		**Pg**	**18 12 22.7**	**-0.5**
JYT				S		**Sg**	**18 12 33.0**	**-0.2**
JFY	**Yanaizu**	**0.94**	**304**	⇑P		**Pg**	**18 12 26.1**	**-0.4**
JFY				S		**Sg**	**18 12 38.3**	**-0.5**
JMM	**Marumori**	**0.98**	**5**	⇓P		**Pb**	**18 12 26.7**	**-0.7**
JMM				S		**Sb**	**18 12 39.9**	**-0.4**
MJAR	**Matsushiro Arr** 30nm,0.3s,baz=89,slow=16,SNR=154	**2.01**	**261**	Pg		**Pn**	**18 12 43.1**	**+0.9**
MJAR				Lg		Lg	18 13 10.3	
	33nm,0.3s,baz=155,slow=18,SNR=20							
MAT	**Matsushiro**	**2.01**	**261**	P		**Pn**	**18 12 43.4**	**+1.2**
MAT				S		**Sb**	**18 13 10.5**	**+0.6**
JHJ	**Hachijo jima 2** 6.2nm,0.3s,baz=29,slow=12,SNR=3.0	**3.83**	**191**	Pn		**Pn**	**18 13 07.9**	**+0.8**
JHJ				Sn		**Sn**	**18 13 51.9**	**-0.1**
	5.8nm,0.3s,baz=66,slow=20,SNR=2.2							
ASAJ	**Asahikawa** 0.4nm,0.3s,baz=214,slow=16,SNR=5.8	**7.37**	**11**	Pn		**Pn**	**18 13 56.3**	**+0.6**
SONM	**Songino Array** 0.3nm,0.6s,baz=115,slow=6.8,SNR=3.0	**27.38**	**304**	P		**P**	**18 17 53.5**	**-0.1**
H11N2	**WAKE ISLAND Hy** baz=313,slow=75,SNR=65	**28.58**	**120**	T		T	18 47 49.8	
H11N1	**WAKE ISLAND Hy** baz=313,slow=75,SNR=84	**28.59**	**120**	T		T	18 47 50.2	
H11N3	**WAKE ISLAND Hy** baz=313,slow=75,SNR=80	**28.60**	**120**	T		T	18 47 51.0	
H11S1	**WAKE ISLAND Hy** baz=314,slow=76,SNR=107	**29.28**	**122**	T		T	18 48 42.8	
H11S3	**WAKE ISLAND Hy** baz=314,slow=76,SNR=133	**29.28**	**122**	T		T	18 48 43.3	
H11S2	**WAKE ISLAND Hy** baz=314,slow=76,SNR=95	**29.30**	**122**	T		T	18 48 42.4	
MKAR	**Makanchi Array** 0.2nm,0.6s,baz=77,slow=6.5,SNR=3.0	**43.70**	**302**	P		**P**	**18 20 12.7**	**-0.5**
WRA	**Warramunga Arr** 0.2nm,0.4s,baz=2.3,slow=7.4,SNR=6.2	**56.84**	**187**	P		**P**	**18 21 52.1**	**-0.6**
ASAR	**Alice Springs** 0.5nm,1.1s,baz=7.5,slow=7.8,SNR=2.7	**60.56**	**187**	P		**P**	**18 22 18.6**	**-0.1**
YKA	**Yellowknife Ar** 0.1nm,0.6s,baz=305,slow=6.5,SNR=3.3	**64.23**	**30**	P		**P**	**18 22 43.2**	**+0.4**

*NIC **23** 18:24:19.4±0.3, 35°70N×31°34E, h8km, ML3.4*
*ISCJB **23** 18:24:21.0±0.7, 35°22N±0°04×31°28E±0°06, h45km, Error ellipse: s-maj=8.7km s-min=3.8km az=146.7*
*DDA **23** 18:24:20.7, 36°10N×31°01E, h8km, Md3.4*
*ISK **23** 18:24:22.0, 35°41N×31°34E, h68km, MD3.6*
*GII **23** 18:24:22.9±0.0, 35°14N×31°54E, h13km, MD3.0/1*
*CSEM **23** 18:24:22.3±0.3, 35°27N×31°28E, h64km±7km, ML3.4, Error ellipse: s-maj=7.3km s-min=3.6km az=54.0*

ISC 23 18:24:22.5±1.3, 35°33N±0°04×31°31E±0°05, h45km, n69, σ1s12/87, Cyprus region

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
AKMC	**Akamas** baz=309	**0.89**	**109**	P		**Pn**	**18 24 38.5**	**-0.1**
AKMC	**Akamas**	**0.89**	**109**	P		**Pn**	**18 24 38.5**	**-0.1**
PPCY	**Paphos** baz=314	**0.96**	**117**	P		**Pn**	**18 24 41.0**	**+1.5**
PPCY	**Paphos**	**0.96**	**117**	P		**Pn**	**18 24 41.0**	**+1.5**
ALFC	**Alefka** baz=298	**1.07**	**99**	P		**Pn**	**18 24 40.9**	**-0.2**
ALFC				S		**Sn**	**18 24 57.0**	**+2.2**
ALFC	**Alefka**	**1.07**	**99**	P		**Pn**	**18 24 40.9**	**-0.2**
ALFC				S		**Sn**	**18 24 57.0**	**+2.2**
GAZI	**Gazipasa**	**1.22**	**42**	*i* P		**Pn**	**18 24 40.7**	**-2.5**
GAZI				*i* S		**Sn**	**18 24 56.4**	**-2.1**
GAZI	**Gazipasa**	**1.22**	**42**	P		**Pn**	**18 24 40.7**	**-2.5**
GAZI				S		**Sn**	**18 24 56.4**	**-2.1**
LEF	**Lefka**	**1.31**	**99**	*e*PN		**Pn**	**18 24 44.7**	**+0.4**
LEF				*e*SN		**Sn**	**18 25 02.3**	**+1.7**
LEF	**Lefka**	**1.31**	**99**	*e*Pn		**Pn**	**18 24 44.7**	**+0.4**
LEF				*e*Sn		**Sn**	**18 25 02.3**	**+1.7**
AKDN	**Akdeniz- K¯–br**	**1.36**	**91**	*e*PN		**Pn**	**18 24 45.7**	**+0.8**
AKDN	**Akdeniz- K¯–br**	**1.36**	**91**	*e*Pn		**Pn**	**18 24 45.7**	**+0.8**
ANTB	**Antalya**	**1.66**	**342**	*e*PN		**Pn**	**18 24 48.9**	**-0.2**
ANTB	**Antalya**	**1.66**	**342**	*e*Pn		**Pn**	**18 24 48.9**	**-0.2**
CSS	**Mathiatis** baz=294	**1.69**	**102**	P		**Pn**	**18 24 49.8**	**+0.2**
CSS				S		**Sn**	**18 25 12.4**	**+2.3**
CSS	**Mathiatis**	**1.69**	**102**	Pn		**Pn**	**18 24 49.5**	**-0.1**
CSS	**Mathiatis**	**1.69**	**102**	Pn		**Pn**	**18 24 49.5**	**-0.1**
CSS	**Mathiatis**	**1.69**	**102**	P		**Pn**	**18 24 49.8**	**+0.2**
CSS				S		**Sn**	**18 25 12.4**	**+2.3**
ELL	**Elmali**	**1.82**	**322**	*e*PN		**Pn**	**18 24 51.6**	**+0.2**
ELL	**Elmali**	**1.82**	**322**	*e*Pn		**Pn**	**18 24 51.6**	**+0.2**
LFK	**Lefkose**	**1.82**	**91**	*e*PN		**Pn**	**18 24 52.2**	**+0.8**
LFK	**Lefkose**	**1.82**	**91**	*e*Pn		**Pn**	**18 24 52.2**	**+0.8**
ERMK	**Ermenek**	**1.85**	**44**	*i* P		**Pn**	**18 24 51.6**	**-0.3**
ERMK	**Ermenek**	**1.85**	**44**	P		**Pn**	**18 24 51.6**	**-0.3**
IKL	**Isikli**	**2.13**	**64**	*e*PN		**Pn**	**18 24 55.5**	**-0.1**
IKL	**Isikli**	**2.13**	**64**	*e*Pn		**Pn**	**18 24 55.6**	**-0.1**
FETY	**Fethiye**	**2.23**	**307**	*e*PN		**Pn**	**18 24 58.0**	**+1.0**
FETY	**Fethiye**	**2.23**	**307**	*e*Pn		**Pn**	**18 24 58.0**	**+1.0**
EREN	**Erenkoy**	**2.34**	**84**	*e*PN		**Pn**	**18 24 58.7**	**+0.2**
EREN	**Erenkoy**	**2.34**	**84**	*e*Pn		**Pn**	**18 24 58.7**	**+0.2**
KIZK	**Mersin**	**2.57**	**63**	*i* P		**Pn**	**18 25 02.4**	**+0.7**
KIZK	**Mersin**	**2.57**	**63**	P		**Pn**	**18 25 02.4**	**+0.7**
KMER	**Konya-Meram**	**2.58**	**19**	*i* P		**Pn**	**18 25 04.6**	**+2.7**
KMER	**Konya-Meram**	**2.58**	**19**	P		**Pn**	**18 25 04.6**	**+2.7**
KONT	**Konya--Tatoy**	**2.75**	**18**	*e*PN		**Pn**	**18 25 04.3**	**+0.2**
KONT	**Konya--Tatoy**	**2.75**	**18**	*e*Pn		**Pn**	**18 25 04.3**	**+0.2**
LADK	**Ladik-KONYA**	**2.99**	**16**	*e*PN		**Pn**	**18 25 07.7**	**+0.2**
LADK	**Ladik-KONYA**	**2.99**	**16**	*e*Pn		**Pn**	**18 25 07.7**	**+0.2**
MERS	**Mersin**	**3.02**	**58**	*e*PN		**Pn**	**18 25 08.7**	**+0.8**
MERS	**Mersin**	**3.02**	**58**	*e*Pn		**Pn**	**18 25 08.7**	**+0.8**
KERG	**Konya-Eregli**	**3.08**	**47**	*i* P		**Pn**	**18 25 10.1**	**+1.3**
KERG	**Konya-Eregli**	**3.08**	**47**	P		**Pn**	**18 25 10.1**	**+1.3**
YESY	**Yesilyurt**	**3.14**	**38**	*e*PN		**Pn**	**18 25 09.9**	**+0.4**
YESY	**Yesilyurt**	**3.14**	**38**	*e*Pn		**Pn**	**18 25 09.9**	**+0.4**
KDHN	**Kadinhani**	**3.25**	**11**	*i* P		Pn	18 25 06.7	-4.4
KDHN	**Kadinhani**	**3.25**	**11**	P		Pn	18 25 06.7	-4.4
KARA	**Karaisali**	**3.59**	**56**	*e*PN		**Pn**	**18 25 16.4**	**+0.8**
KARA	**Karaisali**	**3.59**	**56**	*e*Pn		**Pn**	**18 25 16.4**	**+0.8**
HNTI	**Hanita**	**3.91**	**124**	Pn		**Pn**	**18 25 18.9**	**-1.1**
HNTI				Sn		**Sn**	**18 26 02.9**	**-1.7**
HNTI	**Hanita**	**3.91**	**124**	Pn		**Pn**	**18 25 18.9**	**-1.1**
HNTI				Sn		**Sn**	**18 26 02.9**	**-1.7**
YAYL	**Yayladag**	**3.97**	**78**	*i* P		**Pn**	**18 25 19.8**	**-1.2**
YAYL	**Yayladag**	**3.97**	**78**	P		**Pn**	**18 25 19.8**	**-1.2**
TAHT	**Tahtakopru-Hat**	**4.10**	**74**	*e*PN		**Pn**	**18 25 23.8**	**+1.2**
TAHT	**Tahtakopru-Hat**	**4.10**	**74**	*e*Pn		**Pn**	**18 25 23.8**	**+1.2**
MMA0B	**Mount Meron ar**	**4.10**	**123**	Pn		**Pn**	**18 25 22.3**	**-0.4**
MMA0B				Sn		**Sn**	**18 26 08.6**	**-0.9**
MMA0B	**Mount Meron ar**	**4.10**	**123**	Pn		**Pn**	**18 25 22.3**	**-0.4**
MMA0B				Sn		**Sn**	**18 26 08.6**	**-0.9**
KSDI	**Kefar Szold**	**4.18**	**119**	Pn		**Pn**	**18 25 23.7**	**-0.1**
KSDI				Sn		**Sn**	**18 26 10.6**	**-0.8**
KSDI	**Kefar Szold**	**4.18**	**119**	Pn		**Pn**	**18 25 23.7**	**-0.1**
KSDI				Sn		**Sn**	**18 26 10.6**	**-0.8**
KOZT	**Kozan**	**4.23**	**58**	*e*PN		**Pn**	**18 25 25.4**	**+1.0**
KOZT	**Kozan**	**4.23**	**58**	*e*Pn		**Pn**	**18 25 25.4**	**+1.0**
SLTI	**Sal'it**	**4.37**	**134**	Sn		**Sn**	**18 26 15.4**	**-0.7**
SLTI	**Sal'it**	**4.37**	**134**	Sn		**Sn**	**18 26 15.4**	**-0.7**
MMLI	**Mount Malkishu**	**4.47**	**129**	Pn		**Pn**	**18 25 27.6**	**-0.2**
MMLI				Sn		**Sn**	**18 26 18.2**	**-0.4**
MMLI	**Mount Malkishu**	**4.47**	**129**	Pn		**Pn**	**18 25 27.6**	**-0.2**
MMLI				Sn		**Sn**	**18 26 18.2**	**-0.4**
HMDT	**Nahal Hemdat**	**4.66**	**130**	Pn		**Pn**	**18 25 30.6**	**+0.3**
HMDT				Sn		**Sn**	**18 26 22.1**	**-1.0**
HMDT	**Nahal Hemdat**	**4.66**	**130**	Pn		**Pn**	**18 25 30.6**	**+0.3**
HMDT				Sn		**Sn**	**18 26 22.1**	**-1.0**
KAMA	**Osmaniye**	**4.71**	**65**	*i* P		**Pn**	**18 25 30.0**	**-1.1**
DSI	**Dead Sea**	**5.06**	**137**	Pn		**Pn**	**18 25 35.1**	**-0.7**
DSI				Sn		**Sn**	**18 26 32.1**	**-0.9**

*TEH **23** 18:48:33.1, 38°91N×44°21E, h8km, ML3.2*
*NSSP **23** 18:48:34.7, 38°83N×44°57E, h10km, Ms3.2*
*DDA **23** 18:48:38.1, 38°93N×44°44E, h1km, Ml3.3*
*ISK **23** 18:48:39.6, 38°94N×44°37E, h5km, MD3.7*
*AZER **23** 18:48:41.0±2.5, 39°04N×44°48E, h5km, Error ellipse: s-maj=3.6km s-min=1.8km az=238.0*
*CSEM **23** 18:48:41.2±0.2, 38°90N×44°34E, h5km, MD3.7, Error ellipse: s-maj=7.1km s-min=4.5km az=162.0*
*ISN **23** 18:48:45.5±1.1, 38°15N×43°83E, h3km±5km, ML3.3*

ISC 23 18:48:36.3±0.9, 38°83N±0°02×44°58E±0°02, h17km±9km, n96, σ1s50/99, 10C-17D, Turkey-Iran border region

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
CLDR	**Caldiran**	**0.60**	**301**	*e*PG		**Pb**	**18 48 48.0**	**-0.5**
CLDR				*e*SG		**Sb**	**18 48 55.5**	**-1.3**
CLDR	**Caldiran**	**0.60**	**301**	*e*Pg		**Pb**	**18 48 48.0**	**-0.5**
CLDR				*e*Sg		**Sb**	**18 48 55.5**	**-1.3**
NAX	**Nakhchivan** SNR=43	**0.79**	**64**	⇓Pg		**Pn**	**18 48 54.9**	**+2.2**
NAX				⇓Sg		**Sn**	**18 49 08.4**	**+4.3**
NAX	**Nakhchivan** SNR=43	**0.79**	**64**	Pg		**Pn**	**18 48 54.9**	**+2.2**
NAX				Sg		**Sn**	**18 49 08.4**	**+4.3**
VMUR	**Van-Muradiye**	**0.80**	**282**	*i* P		**Pn**	**18 48 51.5**	**-1.5**
VMUR				*i* S		**Sn**	**18 49 03.6**	**-1.0**
VMUR	**Van-Muradiye**	**0.80**	**282**	P		**Pn**	**18 48 51.5**	**-1.5**
VMUR				S		**Sn**	**18 49 03.6**	**-1.0**
IMRD	**Marand**	**0.88**	**97**	*e*Pg		Pn	18 48 56.8	+2.7
IMRD				*e*Sg		Sn	18 49 14.3	+7.7
IMRD				*e*AMB		AMB	18 49 21.3	
	comp=Z,17μm,0.2s							
IMRD	**Marand**	**0.88**	**97**	*e*Pg		Pn	18 48 56.8	+2.7
IMRD				*e*Sg		Sn	18 49 14.3	+7.7
VANB	**Van**	**0.96**	**256**	*e*PG		**Pn**	**18 48 56.7**	**+1.6**
VANB	**Van**	**0.96**	**256**	*e*Pg		**Pn**	**18 48 56.7**	**+1.6**
TVAN	**Van**	**0.97**	**252**	*i* P		**Pn**	**18 48 56.5**	**+1.2**
TVAN				*i* S		**Sn**	**18 49 12.9**	**+4.1**
TVAN	**Van**	**0.97**	**252**	P		**Pn**	**18 48 56.5**	**+1.2**
ISHB	**Shabestar**	**0.98**	**124**	*e*Pg		Pn	18 48 58.6	+3.2
ISHB				*e*AMB		AMB	18 49 22.6	
	comp=Z,6μm,0.2s							
DYDN	**Diyadin**	**0.99**	**316**	*i* P		**Pn**	**18 48 54.9**	**-0.7**
DYDN				*i* S		**Sn**	**18 49 08.2**	**-1.2**
DYDN	**Diyadin**	**0.99**	**316**	P		**Pn**	**18 48 54.9**	**-0.7**
DYDN				S		**Sn**	**18 49 08.2**	**-1.2**
GEVA	**Gevas**	**1.30**	**247**	*i* P		**Pg**	**18 49 02.1**	**+0.6**
GEVA				*i* S		Sn	18 49 23.9	+7.0
GEVA	**Gevas**	**1.30**	**247**	P		**Pg**	**18 49 02.1**	**+0.6**
GNI	**Garni**	**1.32**	**5**	⇑*i*P		**Pg**	**18 49 01.5**	**-0.3**
GNI				⇑*i*S		**Sg**	**18 49 20.6**	**+1.5**
GNI	**Garni**	**1.32**	**5**	⇑P		**Pg**	**18 49 01.5**	**-0.3**
GNI				S		**Sg**	**18 49 20.6**	**+1.5**
ITBZ	**Tabriz**	**1.36**	**116**	*e*AMB		AMB	18 49 11.3	
	comp=Z,2μm,0.2s							
ITBZ				*e*Pn		Pg	18 49 05.5	+2.8
HKR	**Hakkari**	**1.42**	**208**	*e*PN		Pg	18 49 07.6	+3.9
HKR	**Hakkari**	**1.42**	**208**	*e*Pn		Pg	18 49 07.6	+4.0
HAKT	**HAKKARI**	**1.45**	**209**	*i* P		Pg	18 49 06.3	+2.0
HAKT				*i* S		Sg	18 49 29.5	+6.3
HAKT	**HAKKARI**	**1.45**	**209**	P		Pg	18 49 06.3	+2.1
HAKT				S		Sg	18 49 29.5	+6.4
GRS	**Goris**	**1.52**	**63**	⇓*i*P		**Pg**	**18 49 04.0**	**-1.5**
GRS				⇓*i*S		**Sg**	**18 49 25.0**	**-0.3**
VADZ	**Vardenis**	**1.61**	**34**	*e*P		Pg	18 49 09.0	+1.6
VADZ				*e*S		**Sg**	**18 49 31.0**	**+2.6**
VADZ	**Vardenis**	**1.61**	**34**	P		Pg	18 49 09.0	+1.6
VADZ				S		**Sg**	**18 49 31.0**	**+2.6**
TATV	**Tatvan**	**1.84**	**261**	*i* P		**Pg**	**18 49 11.2**	**-0.5**
TATV				*i* S		**Sg**	**18 49 36.8**	**+1.1**
TATV	**Tatvan**	**1.84**	**261**	P		**Pg**	**18 49 11.2**	**-0.5**
TATV				S		**Sg**	**18 49 36.8**	**+1.1**
IHRS	**Heris**	**2.00**	**104**	*e*Pn		Pg	18 49 16.4	+1.8
IHRS				*e*AMB		AMB	18 49 21.1	
	comp=Z,2μm,0.2s							
IHRS	**Heris**	**2.00**	**104**	*e*Pn		Pg	18 49 16.4	+1.8
EAK	**Akyaka**	**2.00**	**338**	*i* P		**Pg**	**18 49 15.8**	**+1.1**
EAK	**Akyaka**	**2.00**	**338**	P		**Pg**	**18 49 15.8**	**+1.1**
EKAR	**Karacoban**	**2.01**	**283**	*i* P		**Pg**	**18 49 15.2**	**+0.4**
EKAR	**Karacoban**	**2.01**	**283**	P		**Pg**	**18 49 15.2**	**+0.4**
GDB	**GEDABAY** SNR=7.4	**2.09**	**25**	⇓Pg		**Pg**	**18 49 15.8**	**-0.7**
GDB				⇑Sg		**Sg**	**18 49 43.0**	**-0.7**
KARS	**Kars**	**2.13**	**328**	*e*PN		**Pg**	**18 49 15.3**	**-2.0**
KARS	**Kars**	**2.13**	**328**	*e*Pn		**Pg**	**18 49 15.3**	**-2.0**
IBST	**Bostanabad**	**2.14**	**121**	*e*Pn		**Pg**	**18 49 16.8**	**-0.6**
IBST				*e*AMB		AMB	18 49 27.0	
	comp=Z,544nm,0.2s							
IBST	**Bostanabad**	**2.14**	**121**	*e*Pn		**Pg**	**18 49 16.8**	**-0.6**
SIRT	**Sirnak**	**2.15**	**232**	*e*PN		**Pg**	**18 49 17.1**	**-0.5**
SIRT	**Sirnak**	**2.15**	**232**	*e*Pn		**Pg**	**18 49 17.1**	**-0.5**
SIRN	**S¯–rnak**	**2.17**	**233**	*i* P		**Pg**	**18 49 18.4**	**+0.5**
SIRN				*i* S		**Sg**	**18 49 49.8**	**+3.7**
SIRN	**S¯–rnak**	**2.17**	**233**	P		**Pg**	**18 49 18.4**	**+0.5**
GANJ	**Ganja** SNR=46	**2.25**	**36**	⇓P		**Pg**	**18 49 19.0**	**-0.5**
GANJ				⇑S		**Sg**	**18 49 48.9**	**+0.1**
GANJ	**Ganja** SNR=46	**2.25**	**36**	P		**Pg**	**18 49 19.0**	**-0.5**
GANJ				S		**Sg**	**18 49 48.9**	**+0.1**
QZX	**Qazax, Azerbai** SNR=14	**2.30**	**15**	⇓P		**Pg**	**18 49 20.8**	**+0.3**
QZX	**Qazax, Azerbai** SNR=14	**2.30**	**15**	P		**Pg**	**18 49 20.8**	**+0.3**
HOMI	**Horasan**	**2.40**	**301**	*i* P		**Pg**	**18 49 21.6**	**-0.7**
VRTB	**Varto-Mus**	**2.46**	**279**	*e*PN		**Pb**	**18 49 20.1**	**0.0**
VRTB	**Varto-Mus**	**2.46**	**279**	*e*Pn		**Pb**	**18 49 20.1**	**0.0**
BRDA	**Brd** SNR=8.7	**2.46**	**54**	⇓P		**Pg**	**18 49 24.6**	**+1.0**
BRDA	**Brd** SNR=8.7	**2.46**	**54**	P		**Pg**	**18 49 24.6**	**+1.0**
ISRB	**Sarab**	**2.63**	**112**	*e*Pn		**Pg**	**18 49 25.9**	**-0.8**
ISRB				*e*AMB		AMB	18 49 35.0	
	comp=Z,925nm,0.3s							
ISRB	**Sarab**	**2.63**	**112**	*e*Pn		**Pg**	**18 49 25.9**	**-0.8**
BNGL	**BINGOL**	**2.68**	**274**	*i* P		**Pg**	**18 49 26.9**	**-0.9**
DGRG	**David-gareji**	**2.68**	**13**	P		**Pg**	**18 49 28.4**	**+0.6**
DGRG				S		**Sg**	**18 50 05.0**	**+2.4**
DGRG	**David-gareji**	**2.68**	**13**	P		**Pg**	**18 49 28.4**	**+0.6**
MSL	**Mosul** baz=18	**2.69**	**206**	*i* Pg		Pg	18 49 26.5	-1.5
MSL				*e*Sg		Sb	18 49 55.0	-1.8
ERZM	**Erzurum**	**2.71**	**294**	*i* P		**Pg**	**18 49 27.3**	**-1.0**
ERZM	**Erzurum**	**2.71**	**294**	P		**Pg**	**18 49 27.3**	**-1.0**
EZM	**Erzurum**	**2.72**	**294**	*e*PN		**Pb**	**18 49 23.9**	**-0.7**
BTMN	**Batman**	**2.77**	**251**	*i* P		**Pg**	**18 49 28.5**	**-0.9**
BTMN	**Batman**	**2.77**	**251**	P		**Pg**	**18 49 28.5**	**-0.9**
ZRD	**Zardab** SNR=5.9	**2.80**	**58**	⇓P		**Pg**	**18 49 28.5**	**-1.4**
ZRD				⇓S		**Sg**	**18 50 05.9**	**-0.3**
ZRD	**Zardab** SNR=5.9	**2.80**	**58**	P		**Pg**	**18 49 28.5**	**-1.4**
ZRD				S		**Sg**	**18 50 05.9**	**-0.3**
LRK	**Lerik** SNR=13	**2.94**	**93**	P		**Pg**	**18 49 31.3**	**-1.5**
LRK	**Lerik** SNR=13	**2.94**	**93**	P		**Pg**	**18 49 31.3**	**-1.5**
GLBA	**Clilabad** SNR=11	**3.00**	**81**	⇓P		**Pg**	**18 49 31.7**	**-2.0**
GLBA				⇑S		**Sg**	**18 50 10.8**	**-1.7**
GLBA	**Clilabad** SNR=11	**3.00**	**81**	P		**Pg**	**18 49 31.7**	**-2.0**
GLBA				S		**Sg**	**18 50 10.8**	**-1.7**
DAGI	**Agillar**	**3.04**	**318**	*i* P		**Pg**	**18 49 33.7**	**-0.9**
BNGB	**Bing¶ll**	**3.05**	**274**	*e*PN		**Pb**	**18 49 28.6**	**-1.5**
SEKA	**Sheki** SNR=6.3	**3.11**	**39**	⇑P		Pg	18 49 32.5	-3.4
SEKA	**Sheki** SNR=6.3	**3.11**	**39**	P		Pg	18 49 32.5	-3.4
BINT	**Bingol**	**3.20**	**272**	*e*Pn		Pb	18 49 28.6	-4.1
ZKTA	**Zakatala** SNR=6.1	**3.21**	**28**	⇓P		Pg	18 49 34.1	-3.7
LKRN	**Lenkeran, Azer** SNR=3.9	**3.28**	**91**	⇓P		**Pg**	**18 49 36.2**	**-3.0**
LKRN	**Lenkeran, Azer** SNR=3.9	**3.28**	**91**	P		**Pg**	**18 49 36.2**	**-3.0**
ASTR	**Astara** SNR=5.6	**3.30**	**93**	⇓P		**Pg**	**18 49 38.1**	**-1.5**
ASTR	**Astara** SNR=5.6	**3.30**	**93**	P		**Pg**	**18 49 38.1**	**-1.5**
IKRK	**Kirkuk**	**3.43**	**183**	*e*Pn		Pn	18 49 31.0	+2.0
IKRK				*i* Sn		Sn	18 50 02.0	-7.2
MAZI	**Mazidag**	**3.54**	**248**	*e*PN		**Pb**	**18 49 36.9**	**-1.6**
MAZI	**Mazidag**	**3.54**	**248**	*e*Pn		**Pb**	**18 49 36.9**	**-1.6**
XNQ	**Khinaliq** SNR=3.4	**3.59**	**48**	⇓P		**Pb**	**18 49 38.8**	**-0.7**
XNQ	**Khinaliq** SNR=3.4	**3.59**	**48**	P		**Pb**	**18 49 38.8**	**-0.7**
PQL	**Pirkuli**	**3.66**	**56**	⇓P		**Pb**	**18 49 40.0**	**-0.5**
PQL	**Pirkuli**	**3.66**	**56**	P		**Pb**	**18 49 40.0**	**-0.5**
GBS	**Qobustan**	**3.77**	**62**	⇑P		**Pb**	**18 49 43.4**	**+1.0**
GBS	**Qobustan**	**3.77**	**62**	P		**Pb**	**18 49 43.4**	**+1.0**
QSAR	**Qusar**	**3.89**	**45**	⇑P		**Pb**	**18 49 44.3**	**-0.1**
ATGJ	**Altiaghaj**	**3.92**	**57**	⇓P		Pg	18 49 47.2	-4.1
ATGJ	**Altiaghaj**	**3.92**	**57**	P		Pg	18 49 47.2	-4.1
SIZA	**Siyzn**	**4.00**	**55**	⇑P		**Pb**	**18 49 47.2**	**+0.8**
SIZA	**Siyzn**	**4.00**	**55**	P		**Pb**	**18 49 47.2**	**+0.8**
SVRC	**Sivrice-ELAZID**	**4.16**	**265**	*e*PN		Pb	18 49 45.1	-4.0
SVRC	**Sivrice-ELAZID**	**4.16**	**265**	*e*Pn		Pb	18 49 45.1	-4.0

*JMA **23** 18:50:37.8, 23°92N×121°60E, h36km±1km, M2.6*
*TAP **23** 18:50:38.9, 23°97N×121°58E, h37km, ML3.1, B*
*ISCJB **23** 18:50:39.1±0.2, 23°97N±0°02×121°65E±0°02, h35km±4km, Error ellipse: s-maj=3.5km s-min=2.2km az=43.2*

ISC 23 18:50:39.6±1.0, 23°99N±0°02×121°63E±0°02, h33km±2km, n59, σ0s80/100, 5C-5D, Taiwan

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
HWA	**Hwalien** baz=77	**0.02**	**239**	⇑*i*P		**Pb**	**18 50 45.4**	**+0.2**
HWA				*e*S		**Sb**	**18 50 49.7**	**+0.8**
	baz=77							
TWD	**Chiawan** baz=4.0	**0.10**	**343**	⇑*i*P		**Pb**	**18 50 45.2**	**-0.2**
TWD				*i* S		**Sb**	**18 50 49.5**	**+0.1**
	baz=4.0							
ESF	**Shoufeng Towns** baz=222	**0.16**	**223**	P		**Pb**	**18 50 45.9**	**+0.1**
ESL	**Shilin** baz=225	**0.25**	**226**	⇑*i*P		**Pn**	**18 50 45.5**	**-1.0**
ESL				S		**Sn**	**18 50 50.0**	**+0.2**
	baz=225							
TEGC	**Jichi Village** baz=178	**0.29**	**196**	*e*P		**Pn**	**18 50 47.5**	**+0.2**
TEGC				*e*S		**Sb**	**18 50 53.7**	**+1.3**
	baz=178							
WHF	**Hehuan Shan** baz=298	**0.36**	**295**	⇑*i*P		**Pb**	**18 50 47.9**	**-0.8**
WHF				S		**Sn**	**18 50 53.9**	**-0.6**
	baz=298							
ENA	**Nanau** baz=11	**0.45**	**13**	⇓*i*P		**Pb**	**18 50 48.9**	**-0.5**
ENA				*e*S		**Sb**	**18 50 56.1**	**-0.1**
	baz=11							
TWT	**Tachien** baz=310	**0.49**	**303**	P		**Pb**	**18 50 49.8**	**-0.3**
TWT				S		**Sb**	**18 50 56.9**	**-0.5**
	baz=310							
NNS	**Nan Shan** baz=342	**0.51**	**333**	P		**Pb**	**18 50 49.9**	**-0.5**
NNS				S		**Sb**	**18 50 57.5**	**

	baz=246							
WTCT	**Ta-ch'eng**	**1.24**	**265**	*e*P		**Pn**	**18 51 00.5**	**-0.1**
	baz=276							
WTCT				*e*S		**Sn**	**18 51 17.6**	**+1.5**
	baz=276							
TWK	**Hsinying**	**1.27**	**236**	*e*P		**Pn**	**18 51 00.9**	**-0.1**
	baz=225							
TWK				*e*S		**Sn**	**18 51 17.8**	**+0.9**
	baz=225							
TWG	**Pinlang**	**1.27**	**204**	*e*P		Pn	18 50 58.2	-2.8
	baz=189							
TWY	**Chenhua**	**1.28**	**359**	*e*P		**Pn**	**18 51 01.2**	**+0.1**
	baz=360							
CHN1	**Nanshi**	**1.29**	**232**	*e*P		**Pn**	**18 51 01.4**	**+0.1**
	baz=231							
CHN1				*e*S		**Sn**	**18 51 18.3**	**+1.0**
	baz=231							
JYNG	**Yonagunijimaku**	**1.29**	**69**	*e*S		**Sn**	**18 51 17.4**	**+0.1**
SGST	**Jiashian**	**1.32**	**227**	⇓P		**Pn**	**18 51 01.9**	**+0.3**
	baz=215							
SGST				*e*S		**Sn**	**18 51 19.1**	**+1.0**
	baz=215							
WSF	**Szhu**	**1.33**	**255**	*e*P		**Pn**	**18 51 02.1**	**+0.3**
	baz=256							
WSF				*e*S		**Sn**	**18 51 19.9**	**+1.5**
	baz=256							
CHN8	**Yiju**	**1.45**	**244**	*e*P		**Pn**	**18 51 02.9**	**-0.5**
	baz=244							
CHN8				*e*S		**Sn**	**18 51 21.9**	**+0.7**
	baz=244							
ECL	**Taimali**	**1.52**	**204**	*e*P		Pn	18 51 01.7	-2.7
	baz=192							
SSD	**Sandimen**	**1.54**	**217**	*e*P		**Pn**	**18 51 05.0**	**+0.3**
	baz=203							
SSD				*e*S		**Sn**	**18 51 24.1**	**+0.6**
	baz=203							
SCLT	**Jiali**	**1.54**	**239**	*e*P		**Pn**	**18 51 04.7**	**-0.1**
	baz=238							
SCLT				*e*S		**Sn**	**18 51 25.1**	**+1.5**
	baz=238							
TWM1	**Shoushan**	**1.60**	**224**	*e*P		**Pn**	**18 51 04.3**	**-1.3**
	baz=221							
EAST	**Anshuo**	**1.75**	**204**	*e*P		**Pn**	**18 51 08.1**	**+0.4**
	baz=196							
EAST				*e*S		**Sn**	**18 51 29.2**	**+0.3**
	baz=196							
SCZT	**Fangliau**	**1.86**	**210**	*e*P		**Pn**	**18 51 09.3**	**+0.3**
	baz=209							
SCZT				*e*S		**Sn**	**18 51 32.0**	**+0.7**
	baz=209							
PNG	**Penghu**	**1.94**	**258**	*e*P		**Pn**	**18 51 09.9**	**-0.4**
	baz=258							
PNG				*e*S		**Sn**	**18 51 33.3**	**-0.2**
	baz=258							
IRIF	**Iriomote-Funau**	**1.95**	**79**	P		**Pn**	**18 51 10.0**	**-0.3**
IRIF				S		**Sn**	**18 51 34.1**	**+0.4**
JKRS	**Kuro-shima**	**2.19**	**83**	P		**Pn**	**18 51 13.9**	**+0.3**
JKRS				S		**Sn**	**18 51 40.4**	**+0.8**
JIJ	**Ishigaki jima**	**2.33**	**80**	P		**Pn**	**18 51 15.0**	**-0.5**
JIJ				*e*S		**Sn**	**18 51 42.3**	**-0.7**
JISG	**Ishigakijimahi**	**2.52**	**76**	P		**Pn**	**18 51 17.6**	**-0.6**
JISG				*e*S		**Sn**	**18 51 46.7**	**-1.0**

ISC 23 18:51:41.3±2.3, 38°.98N±0°.07×44°.4E±0°.1, h5km, n6, σ0s84/10, Turkey-Iran border region

Code	Station Name	Δ°	AZ°	Phase ID		Time		Res
				Op	ISC	h	m s	ISC
CLDR	**Caldiran**	**0.41**	**294**	*e*PG	**Pg**	**18**	**51 49.6**	**+0.4**
CLDR				*e*SG	**Sb**	**18**	**51 57.8**	**0.0**
VMUR	**Van-Muradiye**	**0.64**	**272**	*i* P	**Pb**	**18**	**51 54.4**	**-0.8**
VMUR				*i* S	**Sb**	**18**	**52 05.1**	**+0.7**
DYDN	**Diyadin**	**0.79**	**316**	*i* P	**Pb**	**18**	**51 56.6**	**-1.0**
DYDN				*i* S	**Sb**	**18**	**52 09.0**	**+0.3**
TVAN	**Van**	**0.89**	**240**	*i* P	**Pg**	**18**	**51 57.4**	**-1.0**
GEVA	**Gevas**	**1.24**	**238**	*i* P	**Pn**	**18**	**52 06.3**	**+0.8**
HAKT	**HAKKARI**	**1.52**	**201**	*i* P	**Pn**	**18**	**52 09.9**	**+0.5**
HAKT				*i* S	**Sn**	**18**	**52 30.4**	**+0.8**

*ISCJB **23** 18:53:59.7±0.9, 39°.62N×0°.06×143°.68E±0°.08, h11km, mb3.5/5, Error ellipse: s-maj=8.9km s-min=7.8km az=29.4*
*JMA **23** 18:53:59.7±0.4, 39°.69N×143°.63E, h8km±5km, M4.1*
*IDC **23** 18:54:00.7±2.0, 39°.69N×143°.53E, h0km, mb3.6/5, mb1 3.7/8, mb1mx3.5/35, mbtmp3.8/8, ML3.4/3, Error ellipse: s-maj=50.1km s-min=20.0km az=87.0*

ISC 23 18:54:02.8±1.2, 39°.66N±0°.07×143°.44E±0°.08, h11km, n17, σ0s67/21, mb3.5/5, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time		Res
				Op	ISC	h	m s	ISC
JTH	**Tanohata**	**1.25**	**283**	P	**Pn**	**18**	**54 25.0**	**-1.1**
JTH				S	**Sb**	**18**	**54 43.0**	**+0.6**
MIYJ	**Miyakonagasawa**	**1.26**	**267**	P	**Pn**	**18**	**54 25.5**	**-0.8**
OFUJ	**Ofunato**	**1.49**	**248**	P	**Pn**	**18**	**54 28.8**	**-0.7**
JANG	**Nango**	**1.64**	**296**	P	**Pn**	**18**	**54 30.6**	**-1.0**
JKZ	**Kuzumaki**	**1.66**	**282**	P	**Pn**	**18**	**54 31.8**	**-0.1**
JKZ				S	**Sg**	**18**	**54 56.1**	**0.0**
JOM	**Ohasama**	**1.67**	**264**	P	**Pn**	**18**	**54 32.0**	**0.0**
JOM				S	**Sg**	**18**	**54 56.6**	**0.0**
JTM	**Tenmabayashi**	**2.14**	**303**	P	**Pn**	**18**	**54 38.3**	**-0.1**
JRG	**Rokugo**	**2.19**	**264**	P	**Pn**	**18**	**54 40.0**	**+0.9**
JAH	**Hinai**	**2.22**	**285**	P	**Pn**	**18**	**54 39.8**	**+0.3**
ASAJ	**Asahikawa**	**4.50**	**352**	Pn	**Pn**	**18**	**55 11.0**	**+0.2**
	1.2nm,0.3s,baz=189,slow=15,SNR=24							
ASAJ				Sn	**Sn**	**18**	**56 04.5**	**+1.4**
	1.0nm,0.3s,baz=180,slow=31,SNR=3.1							
MJAR	**Matsushiro Arr**	**5.17**	**235**	Pn	**Pn**	**18**	**55 21.1**	**+1.0**
	0.9nm,0.3s,baz=36,slow=13,SNR=15							
JHJ	**Hachijo jima 2**	**7.16**	**205**	Pn	**Pn**	**18**	**55 47.2**	**-0.3**
	7.0nm,0.3s,baz=54,slow=17,SNR=2.6							
SONM	**Songino Array**	**27.77**	**299**	P	**P**	**18**	**59 51.5**	**-0.1**
	0.5nm,0.6s,baz=90,slow=8.3,SNR=4.0							
ZALV	**Zalesovo Beam**	**41.38**	**310**	P	**P**	**19**	**01 48.4**	**-0.3**
	0.4nm,0.3s,baz=76,slow=7.6,SNR=3.8							
MKAR	**Makanchi Array**	**44.13**	**300**	P	**P**	**19**	**02 10.8**	**-0.3**
	0.6nm,0.7s,baz=84,slow=8.8,SNR=7.4							
WRA	**Warramunga Arr**	**59.90**	**190**	P	**P**	**19**	**04 08.7**	**0.0**
	0.2nm,0.8s,baz=7.2,slow=6.9,SNR=2.8							
FINES	**FINESS Array B**	**67.23**	**332**	P	**P**	**19**	**04 56.1**	**-0.6**
	1.0nm,0.7s,baz=57,slow=10,SNR=3.4							

*NIED **23** 18:54:00, 37°.80N×141°.80E, h53km, Mw4.1 Best double couple: M0 1.51000×10^15 NP1:φ=198.00000°, δ=44.00000°, λ=96.00000°. NP2:φ=10.00000°, δ=47.00000°, λ=84.00000°.*
*ISCJB **23** 18:54:58.7±0.8, 37°.79N±0°.03×141°.88E±0°.08, h52km±7km, mb3.6/9, Error ellipse: s-maj=10.5km s-min=5.3km az=14.2*
*JMA **23** 18:54:59.8, 37°.80N×141°.79E, h47km±1km, M4.2*
JMA Felt II J1.
*IDC **23** 18:54:59.4±2.2, 37°.87N×142°.09E, h46km±20km, mb3.4/9, mb1 3.7/15, mb1mx3.5/38, mbtmp3.8/15, ML3.5/5, MS3.0/2, Ms1 3.0/2, ms1mx2.6/22, Error ellipse: s-maj=21.0km s-min=14.8km az=109.0*

ISC 23 18:54:58.6±0.9, 37°.76N±0°.04×141°.99E±0°.09, h36km±3km, n34, σ1s52/42, mb3.7/9, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time		Res
				Op	ISC	h	m s	ISC
JIO	**Ouri**	**0.86**	**324**	P	**Pn**	**18**	**55 14.0**	**-0.1**
JIO				S	**Sn**	**18**	**55 23.9**	**-1.5**
JMM	**Marumori**	**0.95**	**277**	P	**Pn**	**18**	**55 14.7**	**-0.7**
JMM				S	**Sn**	**18**	**55 25.4**	**-2.4**
JFK	**Kawauchi**	**0.97**	**246**	P	**Pn**	**18**	**55 15.5**	**-0.2**
JFK				S	**Sn**	**18**	**55 26.5**	**-1.8**
ONAJ	**Iwakimizuishiy**	**1.16**	**236**	P	**Pn**	**18**	**55 18.3**	**0.0**
ONAJ				S	**Sn**	**18**	**55 31.6**	**-1.3**
JOU	**Okura**	**1.21**	**300**	P	**Pn**	**18**	**55 18.6**	**-0.3**
JOU				S	**Sn**	**18**	**55 32.2**	**-1.9**
JMK	**Ichinoseki**	**1.33**	**333**	P	**Pn**	**18**	**55 21.1**	**+0.5**
JMK				S	**Sn**	**18**	**55 36.5**	**-0.6**
JFT	**Otama**	**1.34**	**260**	P	**Pn**	**18**	**55 20.5**	**-0.2**
JFT				S	**Sn**	**18**	**55 36.3**	**-0.9**
JYS	**Shirataka**	**1.59**	**287**	P	**Pn**	**18**	**55 23.8**	**-0.4**
JYS				*e*S	**Sn**	**18**	**55 43.1**	**-0.4**
JYK	**Kaneyama**	**1.73**	**312**	P	**Pn**	**18**	**55 25.9**	**-0.1**
JOM	**Ohasama**	**1.79**	**342**	P	**Pn**	**18**	**55 28.1**	**+1.1**
JOM				S	**Sn**	**18**	**55 48.9**	**+0.4**
JFY	**Yanaizu**	**1.85**	**260**	P	**Pn**	**18**	**55 28.2**	**+0.4**
JFY				*e*S	**Sn**	**18**	**55 49.0**	**-1.0**
JRG	**Rokugo**	**1.95**	**327**	P	**Pn**	**18**	**55 29.6**	**+0.5**
JRG				S	**Sn**	**18**	**55 52.4**	**+0.1**
JYA	**Atsumi**	**1.98**	**295**	P	**Pn**	**18**	**55 29.0**	**-0.5**
JYA				*e*S	**Sn**	**18**	**55 51.0**	**-2.0**
MJAR	**Matsushiro Arr**	**3.26**	**249**	P	**Pn**	**18**	**55 48.2**	**+1.0**
	6.0nm,0.3s,baz=73,slow=13,SNR=21							
MJAR				S	**Sn**	**18**	**56 28.9**	**+4.2**
	6.5nm,0.3s,baz=82,slow=31,SNR=4.6							
JHJ	**Hachijo jima 2**	**4.97**	**202**	P	**Pn**	**18**	**56 13.3**	**+2.7**
	17nm,0.3s,baz=74,slow=20,SNR=5.5							
JHJ				S	**Sn**	**18**	**57 02.8**	**-4.1**
	9.3nm,0.3s,baz=90,slow=20,SNR=2.5							
ASAJ	**Asahikawa**	**6.36**	**4**	P	**Pn**	**18**	**56 28.7**	**-1.1**
	1.4nm,0.3s,baz=189,slow=13,SNR=2.9							
USRK	**Ussuriysk Ar.**	**9.92**	**314**	P	**Pn**	**18**	**57 18.9**	**+0.3**
	0.3nm,0.3s,baz=125,slow=14,SNR=4.3							
USRK				LR	LR	19	00 46.0	
	comp=Z,71nm,19.4s,baz=93,slow=35							
JNU	**Nakatsue**	**10.18**	**246**	P	**Pn**	**18**	**57 24.1**	**+2.0**
	0.2nm,0.3s,baz=63,slow=6.8,SNR=2.2							
JNU				LR	LR	19	01 23.5	
	comp=Z,103nm,21.9s,baz=110,slow=37							
KSRS	**Korea Array**	**11.17**	**273**	P	**Pn**	**18**	**57 38.4**	**+2.8**
	0.1nm,0.3s,baz=91,slow=15,SNR=4.7							
SONM	**Songino Array**	**27.77**	**303**	P	**P**	**19**	**00 43.8**	**-0.3**
	0.8nm,0.8s,baz=100,slow=9.1,SNR=4.3							
H11N2	**WAKE ISLAND Hy**	**28.14**	**123**	T	T	19	31 04.9	
	baz=315,slow=75,SNR=257							
H11N1	**WAKE ISLAND Hy**	**28.15**	**123**	T	T	19	31 09.2	
	baz=315,slow=75,SNR=237							
H11N3	**WAKE ISLAND Hy**	**28.16**	**123**	T	T	19	31 06.2	
	baz=315,slow=75,SNR=271							
H11S1	**WAKE ISLAND Hy**	**28.88**	**125**	T	T	19	31 59.2	
	baz=317,slow=76,SNR=29							
H11S3	**WAKE ISLAND Hy**	**28.88**	**125**	T	T	19	31 59.6	
	baz=317,slow=76,SNR=34							
H11S2	**WAKE ISLAND Hy**	**28.90**	**125**	T	T	19	32 01.5	
	baz=317,slow=76,SNR=24							
ZALV	**Zalesovo Beam**	**41.77**	**312**	P	**P**	**19**	**02 43.0**	**-1.1**
	1.2nm,0.6s,baz=89,slow=9.3,SNR=5.6							
CMAR	**Chiang Mai Arr**	**42.13**	**255**	P	**P**	**19**	**02 48.3**	**+0.8**
	0.2nm,0.6s,baz=42,slow=9.2,SNR=3.1							
MKAR	**Makanchi Array**	**44.12**	**302**	P	**P**	**19**	**03 03.8**	**+0.4**
	1.3nm,0.9s,baz=90,slow=6.9,SNR=6.6							
WRA	**Warramunga Arr**	**57.85**	**189**	P	**P**	**19**	**04 46.2**	**-0.4**
	1.5nm,0.6s,baz=5.0,slow=7.2,SNR=13							
ASAR	**Alice Springs**	**61.57**	**188**	P	**P**	**19**	**05 13.1**	**+0.8**
	0.6nm,0.8s,baz=12,slow=8.8,SNR=6.5							
YKA	**Yellowknife Ar**	**62.95**	**30**	P	**P**	**19**	**05 20.2**	**-0.8**
	0.2nm,0.5s,baz=304,slow=6.8,SNR=4.2							
FINES	**FINESS Array B**	**68.38**	**332**	P	**P**	**19**	**05 54.8**	**-1.3**
	1.0nm,0.7s,baz=59,slow=8.3,SNR=2.8							
TXAR	**Lajitas Array**	**89.31**	**53**	P	**P**	**19**	**07 51.9**	**+0.4**
	0.3nm,0.7s,baz=270,slow=0.9,SNR=3.5							

*NIED **23** 19:16:00, 36°.80N×142°.10E, h20km, Mw3.9 Best double couple: M0 6.80000×10^14 NP1:φ=265.00000°, δ=21.00000°, λ=168.00000°. NP2:φ=6.00000°, δ=86.00000°, λ=69.00000°.*
*IDC **23** 19:16:42.4±1.0, 36°.76N×142°.14E, h0km, mb3.6/8, mb1 3.9/10, mb1mx3.6/34, mbtmp3.7/10, ML3.9/2, MS3.0/3, Ms1 3.0/3, ms1mx2.5/56, Error ellipse: s-maj=23.8km s-min=20.1km az=91.0*
*ISCJB **23** 19:16:43.9±1.4, 36°.78N±0°.04×142°.22E±0°.05, h23km±10km, mb4.1/14, Error ellipse: s-maj=7.4km s-min=6.0km az=151.9*
*JMA **23** 19:16:43.4±0.3, 36°.81N×142°.14E, h7km±3km, M4.1*
*NEIC **23** 19:16:48.9±1.8, 36°.81N×142°.06E, h46km±15km, mb4.4/5, Error ellipse: s-maj=17.5km s-min=12.1km az=71.0*

ISC 23 19:16:44.3±2.3, 36°.78N±0°.04×142°.08E±0°.06, h13km±13km, n49, σ2s02/54, mb3.9/14, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time		Res
				Op	ISC	h	m s	ISC
ONAJ	**Iwakimizuishiy**	**1.07**	**288**	P	**Pb**	**19**	**17 04.2**	**-0.5**
ONAJ				*e*S	**Sg**	**19**	**17 19.0**	**0.0**
JFK	**Kawauchi**	**1.12**	**302**	P	**Pb**	**19**	**17 04.7**	**-0.9**
JHO	**Hitachi**	**1.22**	**262**	P	**Pb**	**19**	**17 06.9**	**-0.4**
JHO				*e*S	**Sg**	**19**	**17 24.4**	**+0.6**
JMM	**Marumori**	**1.49**	**317**	P	**Pn**	**19**	**17 10.2**	**-0.5**
JMM				S	**Sn**	**19**	**17 29.9**	**-0.1**
JFT	**Otama**	**1.57**	**298**	P	**Pb**	**19**	**17 12.4**	**-0.8**
JFT				*e*S	**Sb**	**19**	**17 33.1**	**+0.1**
JIO	**Ouri**	**1.77**	**341**	P	**Pb**	**19**	**17 15.7**	**-0.8**
JIO				S	**Sb**	**19**	**17 37.3**	**-1.3**
JOU	**Okura**	**1.94**	**325**	P	**Pb**	**19**	**17 18.0**	**-1.5**
JOU				S	**Sn**	**19**	**17 41.7**	**+0.5**
JFY	**Yanaizu**	**1.99**	**289**	P	**Pb**	**19**	**17 19.9**	**-0.6**
JFY				*e*S	**Sn**	**19**	**17 43.8**	**+1.2**
JAG	**Ashikaga**	**2.14**	**261**	P	**Pn**	**19**	**17 20.5**	**+0.8**
JAG				*e*S	**Sn**	**19**	**17 46.8**	**+0.7**
JYS	**Shirataka**	**2.15**	**313**	P	**Pb**	**19**	**17 21.3**	**-1.8**
JYS				*e*S	**Sb**	**19**	**17 48.8**	**-0.8**
MJAR	**Matsushiro Arr**	**3.12**	**267**	Pn	**Pn**	**19**	**17 34.7**	**+1.5**
	17nm,0.3s,baz=89,slow=14,SNR=223							
MJAR				Sn	**Sb**	**19**	**18 15.4**	**-2.2**
	7.6nm,0.3s,baz=343,slow=14,SNR=4.6							
MJAR				LR	LR	19	19 03.0	
	comp=Z,215nm,19.3s,baz=100,slow=45							
MAJO	**Matsushiro**	**3.12**	**267**	*e*Pn	**Pn**	**19**	**17 35.4**	**+2.2**
MAT	**Matsushiro**	**3.12**	**267**	P	**Pn**	**19**	**17 35.1**	**+1.9**
MAT				S	**Sb**	**19**	**18 14.9**	**-2.7**
MJB9	**Matsu-Tunnel**	**3.12**	**267**	*e*Pn	**Pn**	**19**	**17 35.9**	**+2.6**
JHJ2	**Mitsune**	**4.11**	**208**	*e*Pn	**Pn**	**19**	**17 47.6**	**+0.9**
JHJ	**Hachijo jima 2**	**4.11**	**208**	Pn	**Pn**	**19**	**17 47.2**	**+0.4**
	20nm,0.3s,baz=327,slow=19,SNR=10							
JHJ				Sn	**Sn**	**19**	**18 31.2**	**-3.5**
	31nm,0.3s,baz=71,slow=22,SNR=5.8							
INU	**Inuyama**	**4.34**	**252**	*e*Pn	**Pn**	**19**	**17 53.2**	**+3.2**
JNU	**Nakatsue**	**9.89**	**252**	LR	LR	19	23 33.8	
	comp=Z,92nm,18.1s,baz=3.0,slow=41							
KSRS	**Korea Array**	**11.32**	**278**	Pn	**Pn**	**19**	**19 29.8**	**+4.1**
	0.1nm,0.3s,baz=81,slow=14,SNR=3.2							
KSRS				LR	LR	19	23 42.3	
	comp=Z,69nm,20.6s,baz=96,slow=37							
KSAR	**Wonju Array Be**	**11.35**	**278**	Pn	**Pn**	**19**	**19 29.8**	**+3.7**
NACB	**Ninganchiao**	**21.61**	**240**	*e*P	**P**	**19**	**21 27.6**	**-6.5**
	15nm,0.9s							
H11N2	**WAKE ISLAND Hy**	**27.56**	**121**	T	T	19	50 17.5	
	baz=319,slow=75,SNR=21							
H11N1	**WAKE ISLAND Hy**	**27.57**	**121**	T	T	19	50 19.5	
	baz=319,slow=75,SNR=20							
H11N3	**WAKE ISLAND Hy**	**27.58**	**121**	T	T	19	50 16.0	
	baz=319,slow=75,SNR=22							
ULN	**Ulaanbaatar**	**27.93**	**304**	*e*P	**P**	**19**	**22 34.9**	**+0.5**
	18nm,2.0s							
H11S1	**WAKE ISLAND Hy**	**28.28**	**123**	T	T	19	51 29.4	
	baz=321,slow=76,SNR=10							
H11S3	**WAKE ISLAND Hy**	**28.28**	**123**	T	T	19	51 25.0	
	baz=321,slow=76,SNR=12							
H11S2	**WAKE ISLAND Hy**	**28.30**	**123**	T	T	19	51 25.6	
	baz=321,slow=76,SNR=13							
SONA1	**Songino Array**	**28.36**	**304**	*e*P	**P**	**19**	**22 38.4**	**+0.3**
SONA0	**Songino Array**	**28.36**	**304**	*e*P	**P**	**19**	**22 39.6**	**+1.5**
	3.9nm,1.0s							
SONM	**Songino Array**	**28.36**	**304**	P	**P**	**19**	**22 39.6**	**+1.5**
	2.8nm,0.8s,baz=102,slow=8.6,SNR=20							
DAV	**Davao City (W)**	**33.18**	**211**	*e*P	**P**	**19**	**23 24.0**	**+3.2**
	204nm,0.4s							
CM31	**Chiang Mai Arr**	**41.95**	**256**	*e*P	**P**	**19**	**24 36.0**	**+1.0**
CMAR	**Chiang Mai Arr**	**41.95**	**256**	P	**P**	**19**	**24 36.0**	**+1.0**
	0.5nm,0.6s,baz=39,slow=6.4,SNR=7.0							
ZAA0	**Zalesovo Array**	**42.47**	**313**	*e*P	**P**	**19**	**24 38.0**	**-0.9**
ZAA1	**Zalesovo Array**	**42.47**	**313**	*e*P	**P**	**19**	**24 38.0**	**-0.9**
ZALV	**Zalesovo Beam**	**42.47**	**313**	P	**P**	**19**	**24 38.0**	**-0.9**
	0.7nm,0.5s,baz=81,slow=9.2,SNR=4.5							
MK31	**Makanchi Array**	**44.70**	**302**	*e*P	**P**	**19**	**24 54.3**	**-2.7**
MK32	**Makanchi Array**	**44.70**	**302**	*e*P	**P**	**19**	**24 56.2**	**-0.8**
MKAR	**Makanchi Array**	**44.70**	**302**	P	**P**	**19**	**24 56.2**	**-0.8**
	0.6nm,0.8s,baz=83,slow=9.9,SNR=5.8							
MKAR	**Makanchi Array**	**44.70**	**302**	*e*P	**P**	**19**	**24 53.4**	**-3.6**
KURK	**Kurchatov**	**46.50**	**308**	*e*P	**P**	**19**	**25 06.8**	**-4.2**
	5.8nm,1.0s							
ILAR	**Eielson Array**	**49.42**	**32**	P	**P**	**19**	**25 33.5**	**0.0**
	0.5nm,0.6s,baz=263,slow=6.3,SNR=8.6							
ILB	**Eielson Array**	**49.42**	**32**	*e*P	**P**	**19**	**25 33.3**	**-0.2**
WR1	**Warramunga Arr**	**56.89**	**189**	*e*P	**P**	**19**	**26 28.9**	**0.0**
	22nm,1.8s							
WRA	**Warramunga Arr**	**56.89**	**189**	P	**P**	**19**	**26 28.9**	**0.0**
	0.4nm,0.6s,baz=4.6,slow=7.4,SNR=10							
ASAR	**Alice Springs**	**60.62**	**189**	P	**P**	**19**	**26 53.9**	**-1.0**
	0.5nm,0.9s,baz=19,slow=5.9,SNR=4.4							
LTX	**Lajitas**	**89.85**	**53**	*e*P	**P**	**19**	**29 44.8**	**+1.5**
TXAR	**Lajitas Array**	**89.85**	**53**	P	**P**	**19**	**29 44.8**	**+1.5**
	0.2nm,0.7s,baz=296,slow=2.9,SNR=3.5							

*TIR **23** 19:20:02.4±3.3, 40°.94N×20°.55E, h2km, 999km*
*ISCJB **23** 19:20:03.7±0.5, 40°.95N±0°.02×20°.54E±0°.03, h5km±4km, Error ellipse: s-maj=3.4km s-min=2.9km az=142.7*
*ATH **23** 19:20:03.4, 40°.97N×20°.53E, h22km±1km, ML2.6/4, Error ellipse: s-maj=1.7km s-min=0.8km az=30.0*
*SKO **23** 19:20:04.5, 40°.96N×20°.59E, h15km, M1.7, ML2.2*
*CSEM **23** 19:20:04.0±0.1, 40°.92N×20°.54E, h2km, ML2.4, Error ellipse: s-maj=3.2km s-min=2.5km az=56.0*
*THE **23** 19:20:05.7, 40°.89N×20°.64E, h6km, ML2.7/12, Error ellipse: s-maj=1.0km s-min=0.5km az=128.0*

ISC 23 19:20:04.1±1.0, 40°.94N±0°.02×20°.53E±0°.02, h10km±8km, n86, σ0s72/137, 2C-4D, Greece-Albania border region

Code	Station Name	Δ°	AZ°	Phase ID		Time		Res
				Op	ISC	h	m s	ISC
OHR	**Ohrid**	**0.26**	**50**	⇓*i* Pg	**Pg**	**19**	**20 10.2**	**+0.6**
OHR				*i* Sg	**Sb**	**19**	**20 15.5**	**-0.1**
OHR				*e*Lg	Lg	19	20 15.8	
	comp=E,559nm,0.5s							
OHR				*e*Lg	Lg	19	20 15.8	
	comp=N,583nm,0.9s							
OHR	**Ohrid**	**0.26**	**50**	⇓*i* Pg	**Pg**	**19**	**20 10.1**	**+0.6**
OHR				*e*Lg	Lg	19	20 15.7	
	comp=N,559nm,0.5s							
BIA	**Bitola**	**0.60**	**82**	P	**Pg**	**19**	**20 15.7**	**-0.2**
BIA				S	**Sg**	**19**	**20 24.3**	**+0.5**
BIA	**Bitola**	**0.60**	**82**	⇓*i* Pg	**Pg**	**19**	**20 16.1**	**+0.3**
BIA				*i* Sg	**Sb**	**19**	**20 25.1**	**-0.4**
BIA				*e*Lg	Lg	19	20 25.4	
	comp=E,152nm,0.4s							
BIA				*e*Lg	Lg	19	20 25.5	
	comp=N,158nm,0.4s							
BIA	**Bitola**	**0.60**	**82**	P	**Pg**	**19**	**20 15.7**	**-0.2**
BIA	**Bitola**	**0.60**	**82**	⇓*i* Pg	**Pg**	**19**	**20 16.1**	**+0.3**
BIA				S	**Sg**	**19**	**20 24.3**	**+0.5**
BIA				*i* Sg	**Sb**	**19**	**20 25.0**	**-0.4**
BIA				*e*Lg	Lg	19	20 25.3	
	comp=N,152nm,0.4s							
TIR	**Tirane**	**0.65**	**309**	*i* PG	**Pg**	**19**	**20 15.4**	**-1.2**
TIR				*i* SG	**Sg**	**19**	**20 25.6**	**+0.4**
TIR	**Tirane**	**0.65**	**309**	*i* Pg	**Pg**	**19**	**20 15.4**	**-1.2**
	SNR=90							
TIR	**Tirane**	**0.65**	**309**	P	**Pg**	**19**	**20 16.2**	**-0.5**
TIR				S	**Sg**	**19**	**20 25.1**	**0.0**
TIR	**Tirane**	**0.65**	**309**	P	**Pg**	**19**	**20 15.5**	**-1.2**
TIR				S	**Sg**	**19**	**20 25.1**	**0.0**
TIR				AML	AML	19	20 31.2	
	comp=E,740μm,0.3s							
TIR				AML	AML	19	20 32.0	
	comp=N,764μm,0.3s							
NEST	**Nestorio**	**0.66**	**143**	P	**Pg**	**19**	**20 16.4**	**-0.5**
NEST				S	**Sg**	**19**	**20 24.8**	**-0.7**
NEST	**Nestorio**	**0.66**	**143**	P	**Pg**	**19**	**20 16.4**	**-0.5**
NEST				S	**Sg**	**19**	**20 24.8**	**-0.7**
FNA	**Florina**	**0.66**	**104**	P	**Pg**	**19**	**20 16.7**	**-0.2**
FNA				S	**Sg**	**19**	**20 25.1**	**-0.4**
FNA	**Florina**	**0.66**	**104**	P	**Pg**	**19**	**20 16.7**	**-0.2**
FNA				S	**Sg**	**19**	**20 25.1**	**-0.4**
FNA	**Florina**	**0.66**	**104**	P	**Pg**	**19**	**20 17.3**	**+0.4**
FNA				S	**Sb**	**19**	**20 26.3**	**-0.7**
FNA				AML	AML	19	20 28.3	
	comp=N,3262μm,0.3s							
FNA				AML	AML	19	20 29.5	
	comp=E,2596μm,0.3s							
KZN	**Kozani**	**1.14**	**124**	P	**Pg**	**19**	**20 24.8**	**-1.2**
KZN				S	**Sb**	**19**	**20 41.0**	**+0.2**
KZN	**Kozani**	**1.14**	**124**	P	**Pg**	**19**	**20 24.8**	**-1.2**
KZN				S	**Sb**	**19**	**20 41.0**	**+0.2**

LKD2				S	Sn	19 21 07.5	+0.6
LKD2	**Lefkada island**	**2.15**	**177**	P	Pn	19 20 41.3	+1.2
EVR	**Evrytania**	**2.25**	**154**	P	Pn	19 20 41.7	+0.2
EVR	**Evrytania**	**2.25**	**154**	P	Pn	19 20 41.7	+0.2
PLG	**Polygyros**	**2.29**	**103**	P	Pn	19 20 42.6	+0.6
PLG	**Polygyros**	**2.29**	**103**	P	Pn	19 20 42.6	+0.6
AGG	**Agios Georgios**	**2.36**	**144**	P	Pn	19 20 43.1	+0.1
AGG				S	Sn	19 21 12.5	+0.4
AGG	**Agios Georgios**	**2.36**	**144**	P	Pn	19 20 43.1	+0.1
AGG				S	Sn	19 21 12.5	+0.4
AGG	**Agios Georgios**	**2.36**	**144**	P	Pn	19 20 42.9	-0.1
UPM	**Unac-Piva**	**2.56**	**332**	P	Pb	19 20 48.5	-1.8
ANX	**Ano Chora**	**2.58**	**155**	P	Pn	19 20 46.7	+0.7
ANX				S	Sn	19 21 17.7	+0.2
ANX	**Ano Chora**	**2.58**	**155**	P	Pn	19 20 46.7	+0.7
ANX				S	Sn	19 21 17.7	+0.2
PAIG	**Paliouri**	**2.61**	**112**	P	Pn	19 20 45.6	-0.7
PAIG	**Paliouri**	**2.61**	**112**	P	Pn	19 20 45.6	-0.7
NOCI	**Noci**	**2.63**	**268**	P	Pn	19 20 46.1	-0.6
NOCI	**Noci**	**2.63**	**268**	P	Pn	19 20 46.1	-0.6
IVAS	**Ivanjica**	**2.65**	**354**	*e*Pn	Pn	19 20 49.2	+2.2
VLS	**Valsamata**	**2.76**	**179**	P	Pn	19 20 48.5	0.0
ZAPS	**Zavoj**	**2.81**	**33**	*e*Pn	Pb	19 20 53.7	-0.7
STON	**Ston**	**2.86**	**313**	*i* Pn	Pn	19 20 50.9	+1.0
STON				Sn	Sn	19 21 24.5	+0.2
STON	**Ston**	**2.86**	**313**	*i* Pn	Pn	19 20 50.8	+1.0
STON				Sn	Sn	19 21 24.5	+0.2
GRUS	**Gruza**	**2.95**	**3**	*e*Pn	Pn	19 20 54.1	+3.1
BBLS	**Lazići**	**3.04**	**344**	*e*Pn	Pb	19 20 57.7	-0.7
TEKS	**Tekeris**	**3.68**	**349**	*e*Pn	Pn	19 21 01.5	+0.4
UDBI	**Udbina**	**5.02**	**317**	*e*Pn	Pn	19 21 20.6	+1.1
UDBI	**Udbina**	**5.02**	**317**	*e*Pn	Pn	19 21 20.6	+1.1
NVLJ	**Novalja**	**5.52**	**313**	*e*Pn	Pn	19 21 25.8	-0.6
NVLJ				Sn	Sn	19 22 27.6	-2.2
NVLJ	**Novalja**	**5.52**	**313**	*e*Pn	Pn	19 21 25.7	-0.6

JMA 23 19:25:53.6±0.1, 36°.97N×141°.18E, h31km±1km, M2.7, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.33**	**293**	P	Pb	19 26 01.4	-0.2
ONAJ				S	Sb	19 26 06.8	-0.3
JFK	**Kawauchi**	**0.47**	**328**	P	Pb	19 26 03.2	-0.4
JFK				S	Sb	19 26 09.9	-0.5
JHO	**Hitachi**	**0.61**	**234**	P	Pb	19 26 05.2	-0.6
JHO				S	Sb	19 26 13.5	-0.7
JFT	**Otama**	**0.87**	**309**	P	Pb	19 26 10.1	-0.1
JFT				S	Sb	19 26 22.1	+0.6
JMM	**Marumori**	**0.95**	**341**	P	Pn	19 26 10.4	-0.4
JMM				*e*S	Sn	19 26 23.1	-0.1

*ISCJB **23** 19:32:40.8±0.4, 35°.25N±0°.02×92°.36W±0°.02, h5km±2km, Error ellipse: s-maj=3.0km s-min=2.4km az=21.8*
*NEIC **23** 19:32:41.2, 35°.24N×92°.37W, h7km, MD2.7(CERI), After CERI.*
NEIC Felt [III] at Greenbrier. Also felt at Alexander.

ISC 23 19:32:41.1±0.8, 35°.24N±0°.02×92°.39W±0°.02, h7km±5km, n52, σ1§00/78, Arkansas

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
X301	**Greenbrier Sit**	**0.01**	**296**	*e*Pg	**Pg**	**19 32 42.4**	**0.0**
X201	**Greenbrier Sit**	**0.06**	**22**	*e*Pg	**Pg**	**19 32 42.9**	**0.0**
WHAR	**Wooly Hollow**	**0.10**	**56**	*e*Pg	**Pg**	**19 32 43.2**	**-0.2**
WHAR				*e*Sg	**Sg**	**19 32 44.6**	**-0.4**
W41B	**Gary Mavity, V** baz=302	**0.13**	**118**	P	**Pg**	**19 32 43.4**	**-0.5**
W41B				S	**Sg**	**19 32 45.6**	**-0.2**
UALR	**University of** baz=302	**0.46**	**175**	*e*Pg	**Pg**	**19 32 50.3**	**+0.3**
W40A	**Ferguson Farm,** baz=85,SNR=81	**0.56**	**266**	P	**Pg**	**19 32 52.1**	**+0.3**
W40A				S	**Sg**	**19 33 00.2**	**+1.1**
V40A	**Witts Springs** baz=147,SNR=222	**0.67**	**328**	P	**Pg**	**19 32 53.7**	**-0.3**
V40A				S	**Sg**	**19 33 02.6**	**-0.1**
X40A	**Basin Creek Fa** baz=27	**0.83**	**206**	P	**Pg**	**19 32 57.0**	**-0.1**
W39A	**Magazine** baz=88,SNR=31	**1.14**	**268**	P	**Pg**	**19 33 02.7**	**-0.3**
W39A				S	**Sb**	**19 33 18.5**	**+0.3**
U40A	**Yellville** baz=161,SNR=353	**1.18**	**342**	P	**Pg**	**19 33 02.9**	**-0.9**
V39A	**Pettigrew** baz=120,SNR=150	**1.19**	**301**	P	**Pg**	**19 33 03.2**	**-0.7**
V39A				S	**Sg**	**19 33 19.0**	**-0.3**
MIAR	**Mount Ida** baz=55,SNR=169	**1.19**	**235**	P	**Pg**	**19 33 03.7**	**-0.3**
MIAR				S	**Sg**	**19 33 19.7**	**+0.2**
MIAR	**Mount Ida** baz=55	**1.19**	**235**	*e*Pb	**Pg**	**19 33 03.7**	**-0.3**
MIAR				*e*Sn	**Sg**	**19 33 14.8**	**-4.6**
CCAR	**Cane Creek**	**1.41**	**159**	*e*Pn	**Pn**	**19 33 07.5**	**+0.3**
Y40A	**Okolona** baz=31	**1.42**	**211**	Pb	**Pn**	**19 33 07.7**	**+0.3**
Y40A				S	**Sb**	**19 33 26.6**	**+0.3**
U39A	**Green Forest** baz=142,SNR=74	**1.45**	**323**	Pb	**Pn**	**19 33 07.3**	**-0.4**
U39A				S	**Sb**	**19 33 26.6**	**-0.4**
HBAR	**Harrisburg** baz=142	**1.45**	**77**	*e*Pn	**Pn**	**19 33 07.1**	**-0.6**
HBAR				*e*Sn	**Sn**	**19 33 26.4**	**-0.7**
Y42A	**Garnett, Star** baz=341	**1.48**	**160**	Pb	**Pn**	**19 33 08.5**	**+0.3**
Y42A				S	**Sb**	**19 33 28.4**	**-0.3**
X39A	**Fountain Ranch** baz=62,SNR=104	**1.59**	**243**	Pb	**Pn**	**19 33 10.5**	**+0.8**
X39A				S	**Sb**	**19 33 31.8**	**+0.7**
HHAR	**Hobbs** baz=62	**1.64**	**310**	*e*Pn	**Pn**	**19 33 10.7**	**+0.4**
HHAR				*e*Sn	**Sb**	**19 33 32.8**	**+0.3**
WLAR	**White Oak Lake**	**1.66**	**201**	*e*Pn	**Pb**	**19 33 11.5**	**-0.4**
WLAR				*e*Sn	**Sg**	**19 33 34.3**	**0.0**
W38A	**Poteau** baz=84,SNR=158	**1.75**	**265**	Pb	**Pb**	**19 33 13.2**	**-0.4**
W38A				S	**Sg**	**19 33 37.3**	**-0.1**
V38A	**Canehill** baz=110,SNR=67	**1.76**	**291**	Pb	**Pn**	**19 33 12.8**	**+0.8**
V38A				S	**Sb**	**19 33 36.6**	**+0.6**
Y43A	**Makayla and Ka** baz=318	**1.79**	**137**	Sb	**Sb**	**19 33 36.9**	**+0.1**
Y39A	**Lockesburg** baz=47,SNR=9.4	**1.91**	**228**	Pb	**Pb**	**19 33 16.4**	**+0.1**
T40A	**Mansfield** baz=176,SNR=71	**1.92**	**357**	Pb	**Pn**	**19 33 15.0**	**+0.8**
T40A				S	**Sb**	**19 33 40.4**	**-0.1**
SFTN	**Shelby Forest**	**1.94**	**86**	*e*Sn	**Sb**	**19 33 41.4**	**+0.1**
T39A	**Clever** baz=155,SNR=77	**1.96**	**336**	Pb	**Pn**	**19 33 15.7**	**+1.0**
T39A				S	**Sb**	**19 33 42.2**	**+0.5**
U38A	**Gravette** baz=126,SNR=42	**2.02**	**307**	Pb	**Pn**	**19 33 16.5**	**+1.0**
U38A				S	**Sb**	**19 33 44.1**	**+0.6**
X38A	**Whitesboro** baz=74,SNR=73	**2.08**	**255**	Pb	**Pb**	**19 33 19.2**	**+0.1**
X38A				S	**Sg**	**19 33 47.6**	**-0.4**
Y44A	**Strider, Charl** baz=306	**2.20**	**125**	Sb	**Sb**	**19 33 49.4**	**+0.7**
PBMO	**Poplar Bluff**	**2.21**	**45**	*e*Pn	**Pn**	**19 33 16.6**	**-1.7**
PBMO				*e*Sn	**Sb**	**19 33 49.0**	**0.0**
V37A	**Hulbert** baz=105,SNR=43	**2.33**	**287**	P	**Pn**	**19 33 21.0**	**+1.1**
S40A	**Lebanon** baz=178,SNR=40	**2.36**	**358**	P	**Pn**	**19 33 21.6**	**+1.3**
T38A	**Diamond** baz=139,SNR=19	**2.37**	**320**	P	**Pn**	**19 33 21.5**	**+1.2**
EBZ	**Ebenezer Churc**	**2.49**	**91**	*e*Pn	**Pn**	**19 33 22.2**	**+0.1**
EBZ				*e*Sn	**Sn**	**19 33 53.2**	**+0.5**
U37A	**Salina**	**2.50**	**299**	P	**Pn**	**19 33 22.8**	**+0.5**
	baz=117,SNR=13						
OXF	**Oxford**	**2.56**	**106**	*e*Pn	**Pn**	**19 33 23.3**	**+0.3**
OXF				*e*Sn	**Sn**	**19 33 52.5**	**-1.8**
OXF				*e*Sg	**Sb**	**19 33 59.8**	**+0.9**
S39A	**Bolivar** baz=162,SNR=32	**2.56**	**343**	P	**Pn**	**19 33 24.1**	**+1.0**
TUL1	**Leonard**	**2.85**	**285**	*e*Pn	**Pn**	**19 33 26.1**	**-1.0**
V36A	**Jenks** baz=100,SNR=7.7	**2.95**	**282**	P	**Pn**	**19 33 29.0**	**+0.6**
R40A	**Maddies Statio** baz=182,SNR=8.9	**3.05**	**2**	P	**Pn**	**19 33 31.0**	**+1.2**
R39A	**Chumby, Stover** baz=170,SNR=13	**3.12**	**351**	P	**Pn**	**19 33 32.1**	**+1.4**
R38A	**Fenwick Farm,** baz=157,SNR=5.2	**3.19**	**338**	P	**Pn**	**19 33 32.5**	**+0.9**
PLAL	**Pickwick Lake**	**3.55**	**93**	*e*Pn	**Pn**	**19 33 36.5**	**-0.1**
PLAL				*e*Sg	**Sb**	**19 34 30.3**	**+2.9**
SIUC	**Southern Illin**	**3.56**	**45**	*e*P	**Sn**	**19 34 19.1**	**0.0**
WVT	**Waverly**	**3.82**	**75**	*e*Pn	**Pn**	**19 33 40.2**	**-0.1**
WVT				*e*Lg	Lg	19 34 39.2	
W34A	**Guthrie**	**4.22**	**280**	*e*Lg	Lg	19 34 54.2	
U34A	**Anderson Ranch**	**4.35**	**287**	*e*Pn	**Pn**	**19 33 48.9**	**+1.3**
U34A				*e*Lg	Lg	19 34 55.6	
W34A	**Bridge Creek,**	**4.41**	**272**	*e*P	**Pn**	**19 33 47.8**	**-0.6**
W34A				*e*Lg	Lg	19 34 59.0	
LRAL	**Lakeview Retre**	**4.98**	**115**	*e*Pn	**Pn**	**19 33 55.7**	**-0.6**
LRAL				*e*Sb	**Sb**	**19 35 12.0**	**+3.3**
SWET	**Sewanee**	**5.29**	**88**	*e*Pn	**Pn**	**19 34 00.6**	**+0.1**

*NIED **23** 19:34:00, 36°.90N×143°.80E, h5km, Mw4.6 Best double couple: M₀9.77000×10¹⁵ NP1:φ₅19.00000°, δ29.00000°, λ-131.00000°. NP2:φ₅243.00000°, δ69.00000°, λ-70.00000°.*
*IDC **23** 19:34:25.4±0.5, 36°.81N×143°.99E, h0km, mb4.6/30, mb1 4.7/37, mb1mx4.6/49, mbtmp4.6/37, ML3.8/7, MS3.8/33, Ms1 3.8/33, ms1mx3.6/44, Error ellipse: s-maj=13.8km s-min=10.9km az=129.0*
*NEIC **23** 19:34:26.6±1.4, 36°.86N×143°.93E, h6km±8km, mb4.9/106, Error ellipse: s-maj=3.9km s-min=2.5km az=150.0*
*ISCJB **23** 19:34:26.6±0.9, 36°.97N±0°.03×143°.83E±0°.02, h10km±5km, mb4.7/161, MS4.0/39, Error ellipse: s-maj=4.9km s-min=2.7km az=172.6*
*JMA **23** 19:34:29.2±0.2, 36°.92N×143°.78E, h56km, M4.8*
*MOS **23** 19:34:30.8±0.9, 37°.16N×143°.85E, h33km, mb5.0/64, Error ellipse: s-maj=7.6km s-min=4.7km az=113.0*
*BJI **23** 19:34:30.1, 37°.15N×143°.95E, h37km, mb4.5/52, mB4.9/39, Ms4.4/36, Ms7 4.2/33*

ISC 23 19:34:29.6±0.8, 36°.91N±0°.04×143°.93E±0°.04, h25km±5km, n452, σ1§65/488, mb4.8/168, MS3.9/39, 29C-15D, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**2.48**	**281**	P	**Pn**	**19 35 06.7**	**-1.7**
JFK				S	**Sn**	**19 35 34.2**	**-3.7**
ONAJ	**Iwakimizuishiy**	**2.51**	**275**	P	**Pn**	**19 35 07.2**	**-1.6**
ONAJ				S	**Sn**	**19 35 34.9**	**-3.8**
JIO	**Ouri**	**2.56**	**308**	P	**Pn**	**19 35 08.0**	**-1.5**
JIO				S	**Sn**	**19 35 36.1**	**-3.7**
JMM	**Marumori**	**2.67**	**292**	P	**Pn**	**19 35 09.4**	**-1.6**
JMM				*e*S	**Sn**	**19 35 39.0**	**-3.5**
JFT	**Otama**	**2.93**	**283**	P	**Pn**	**19 35 13.8**	**-0.8**
JFT				S	**Sn**	**19 35 46.4**	**-2.5**
JMK	**Ichinoseki**	**2.96**	**314**	P	**Pn**	**19 35 13.4**	**-1.5**
JMK				S	**Sn**	**19 35 46.3**	**-3.2**
BSO1	**Boso 1**	**3.29**	**228**	P	**Pn**	**19 35 17.0**	**-2.0**
JOM	**Ohasama**	**3.29**	**322**	P	**Pn**	**19 35 18.2**	**-1.4**
JOM				*e*S	**Sn**	**19 35 54.1**	**-3.8**
JYK	**Kaneyama**	**3.46**	**306**	P	**Pn**	**19 35 21.0**	**-0.8**
JYK				*e*S	**Sn**	**19 35 59.7**	**-2.3**
JAG	**Ashikaga**	**3.63**	**264**	P	**Pn**	**19 35 22.9**	**-1.3**
JAG				*e*S	**Sn**	**19 36 01.0**	**-5.2**
JRY	**Ryogami san**	**4.15**	**259**	P	**Pn**	**19 35 29.6**	**-1.7**
JRY				*e*S	**Sn**	**19 36 13.6**	**-5.4**
JOD2	**Odawara 2**	**4.25**	**249**	P	**Pn**	**19 35 31.0**	**-1.7**
JOD2				*e*S	**Sn**	**19 36 16.5**	**-5.0**
MJAR	**Matsushiro Arr** 11nm,0.3s,baz=86,slow=14,SNR=56	**4.61**	**267**	Pn	**Pn**	**19 35 37.0**	**-0.7**
MJAR				Sn	**Sn**	**19 36 27.2**	**-3.1**
	17nm,0.3s,baz=153,slow=29,SNR=8.0						
MJAR				LR	LR	19 37 33.6	
	comp=Z,631nm,21.8s,baz=70,slow=41						
MAJO	**Matsushiro**	**4.61**	**267**	*d* iP	**Pn**	**19 35 37.9**	**+0.2**
MAJO	**Matsushiro**	**4.61**	**267**	*e*Pn	**Pn**	**19 35 37.7**	**0.0**
MAJO				*e*Sn	**Sn**	**19 36 29.9**	**-0.5**
MAT	**Matsushiro**	**4.61**	**267**	P	**Pn**	**19 35 37.7**	**0.0**
MAT				S	**Sn**	**19 36 28.1**	**-2.3**
MJB9	**Matsu-Tunnel**	**4.61**	**267**	*e*Pn	**Pn**	**19 35 37.7**	**0.0**
MJB9				*e*Sn	**Sn**	**19 36 29.5**	**-0.9**
JOT	**Ohata**	**4.99**	**334**	P	**Pn**	**19 35 41.8**	**-1.1**
JHJ2	**Mitsune**	**5.07**	**223**	*e*S	**Sn**	**19 36 34.3**	**-7.5**
JHJ2	**Mitsune**	**5.07**	**223**	*e*Pn	**Pn**	**19 35 41.6**	**-2.4**
JHJ2				*e*Sn	**Sn**	**19 36 33.2**	**-8.5**
JHJ	**Hachijo jima 2** 32nm,0.3s,baz=325,slow=16,SNR=36	**5.08**	**223**	Pn	**Pn**	**19 35 41.1**	**-3.1**
JHJ				Sn	**Sn**	**19 36 33.8**	**-8.3**
	417nm,0.3s,baz=60,slow=23,SNR=13						
JHJ				LR	LR	19 37 43.6	
	comp=Z,199nm,20.8s,baz=345,slow=39						
ERM	**Erimo**	**5.13**	**354**	*e*P	**Pn**	**19 35 42.9**	**-1.8**
ERM	**Erimo**	**5.13**	**354**	*e*Pn	**Pn**	**19 35 43.0**	**-1.8**
ERM				*e*Sn	Sn	19 36 33.7	-10
JKB	**Kayabe**	**5.45**	**337**	P	**Pn**	**19 35 48.0**	**-1.2**
JKB				*e*S	**Sn**	**19 36 44.6**	**-6.5**
JCH	**Churui**	**5.71**	**356**	P	**Pn**	**19 35 50.2**	**-2.3**
INU	**Inuyama**	**5.80**	**256**	*e*Pn	**Pn**	**19 35 54.0**	**-0.1**
JOSM	**Okushiri--Mats**	**6.21**	**328**	P	**Pn**	**19 35 59.5**	**0.0**
NEM2	**Nemuro 2**	**6.59**	**12**	P	**Pn**	**19 36 01.0**	**-3.9**
JHR	**Hokuryu**	**7.03**	**347**	P	**Pn**	**19 36 10.1**	**-0.7**
JTKR	**Abashiri--Toko**	**7.05**	**360**	P	**Pn**	**19 36 08.7**	**-2.4**
YUK	**Yuzh-Kuril'sk**	**7.27**	**11**	P	Pn	19 36 09.3	-4.8
YUK				*e*S	Sn	19 37 26.6	-9.1
YUK	comp=Z,332nm,0.6s			pmax	pmax		
YUK	comp=E,180nm,0.7s			pmax	pmax		
YUK	comp=N,203nm,0.5s			pmax	pmax		
ASAJ	**Asahikawa** comp=N,4.1nm,0.3s,baz=219,slow=12,SNR=37	**7.27**	**352**	Pn	**Pn**	**19 36 12.5**	**-1.6**
ASAJ				Sn	**Sn**	**19 37 30.5**	**-5.3**
	comp=N,4.0nm,0.3s,baz=198,slow=20,SNR=4.1						
ASAJ	**Asahikawa**	**7.27**	**352**	*e*Pn	**Pn**	**19 36 12.6**	**-1.6**
ASAJ				*e*Sn	Sn	19 37 21.2	-15
ASAJ				Sn	**Sn**	**19 37 30.5**	**-5.3**
SHO	**Shikotan**	**7.30**	**17**	*e*P	Pn	19 36 09.4	-5.1
SHO				*e*S	Sn	19 37 27.0	-9.4
SHO	comp=N,155nm,0.7s			pmax	pmax		
SHO	comp=Z,475nm,0.7s			pmax	pmax		
SHO	comp=E,99nm,0.6s			pmax	pmax		
KUR	**Kuril'sk**	**8.83**	**18**	*i* P	**Pn**	**19 36 32.3**	**-3.2**
KUR				*e*S	**Sn**	**19 38 05.7**	**-8.4**
KUR	comp=Z,43nm,0.5s			pmax	pmax		
KUR	comp=E,71nm,0.7s			smax	smax		
KUR	comp=N,70nm,0.6s			smax	smax		
CBIJ	**Chichi jima**	**9.90**	**189**	*e*Pn	Pn	19 36 44.6	-5.7
CBIJ				*e*Sn	Sn	19 38 23.5	-17
JCJ	**Chichijima** baz=72,slow=20	**9.90**	**189**	Pn	Pn	19 36 44.5	-5.8
JCJ				Sn	Sn	19 38 25.3	-15
	comp=N,38nm,0.3s,baz=300,slow=20,SNR=8.4						
YSS	**Yuzh-Sakhalins**	**10.07**	**355**	*e*P	**Pn**	**19 36 52.7**	**+0.1**
YSS				*e*S	**Sn**	**19 38 39.5**	**-5.2**
YSS	comp=N,60nm,0.8s			smax	smax		
YSS	comp=Z,1μm,12.0s			MLR	MLR		
YSS	comp=N,700nm,13.0s			MLR	MLR		
YSS	**Yuzh-Sakhalins**	**10.07**	**355**	*e*Pn	**Pn**	**19 36 51.9**	**-0.6**
MSHR	**Mys Shultsa**	**11.34**	**304**	*ce*P	**Pn**	**19 37 10.9**	**+1.0**
JNU	**Nakatsue** comp=N,0.5nm,0.3s,baz=93,slow=3.5,SNR=5.7	**11.35**	**254**	Pn	**Pn**	**19 37 09.6**	**-0.5**
JNU				LR	LR	19 42 05.4	
JNU	**Nakatsue** comp=N,475nm,18.6s,baz=78,slow=40	**11.35**	**254**	*e*Pn	**Pn**	**19 37 09.2**	**-0.9**
USRK	**Ussuriysk Ar.** comp=N,0.9nm,0.3s,baz=119,slow=12,SNR=14	**11.63**	**312**	Pn	**Pn**	**19 37 14.4**	**+0.5**
USRK				LR	LR	19 41 23.1	
KSRS	**Korea Array** comp=N,0.2nm,0.3s,baz=87,slow=13,SNR=20	**12.78**	**277**	Pn	**Pn**	**19 37 31.1**	**+1.5**
KSRS				LR	LR	19 42 15.2	
	comp=N,156nm,19.7s,baz=78,slow=36						
KS01	**Wonju Array Si**	**12.80**	**277**	*e*Pn	**Pn**	**19 37 28.3**	**-1.6**
KS15	**Wonju Array Si**	**12.81**	**277**	*e*Pn	**Pn**	**19 37 31.0**	**+1.0**
KSAR	**Wonju Array Be**	**12.81**	**277**	P	**Pn**	**19 37 31.1**	**+1.1**
KSAR	**Wonju Array Be**	**12.81**	**277**	Pn	**Pn**	**19 37 31.1**	**+1.1**
TYV	**Tymovskoe**	**13.98**	**357**	*e*P	**Pn**	**19 37 48.8**	**+2.9**
TYV	comp=Z,26nm,1.0s			pmax	pmax		
TYV	comp=Z,600nm,22.0s			MLR	MLR		
KLR	**Kul'dur** comp=Z,0.2nm,0.3s,baz=130,slow=13,SNR=15	**15.16**	**328**	Pn	**Pn**	**19 37 58.8**	**-3.2**
KLR				LR	LR	19 43 39.5	
	comp=Z,481nm,21.0s,baz=141,slow=36						
CN2	**Changchun**	**15.66**	**302**	*e*P	**Pn**	**19 38 09.6**	**+1.1**
CN2	comp=Z,10.0nm,0.6s			pmax	pmax		
CN2	comp=Z,700nm,11.0s			LR	LR		
CN2	comp=Z,600nm,11.0s			LR	LR		
CN2	comp=Z,700nm,15.0s			LR	LR		
SKR	**Severo-Kuril's**	**16.31**	**29**	*e*P	**Pn**	**19 38 11.5**	**-5.2**
NKL	**Nikolayevsk**	**16.40**	**353**	*i* P	**P**	**19 38 21.0**	**+0.6**
NKL	comp=Z,24nm,1.0s			pmax	pmax		
NKL	comp=Z,900nm,15.0s			MLR	MLR		
DL2	**Dalian**	**17.70**	**283**	P	**P**	**19 38 35.3**	**+0.3**
DL2				*e*S	**Sn**	**19 41 47.3**	**-3.5**
DL2	comp=Z,29nm,1.1s			pmax	pmax		
DL2	comp=Z,360nm,12.5s			LR	LR		
DL2	comp=Z,420nm,11.6s			LR	LR		
DL2	comp=Z,460nm,16.0s			LR	LR		
PEA0	**Petropavlovsk-**	**18.84**	**26**	*e*P	**P**	**19 38 47.2**	**-0.3**
PEA0B	**Petropavlovsk-** comp=Z,34nm,1.1s	**18.84**	**26**	*e*P	**P**	**19 38 47.2**	**-0.3**
PETK	**Petropavlovsk-** comp=Z,0.3nm,0.3s,baz=200,slow=8.1,SNR=12	**18.84**	**26**	P	**P**	**19 38 47.0**	**-0.5**
PETK	comp=Z,151nm,18.1s,baz=224,slow=43			LR	LR	19 47 57.1	
PETK	**Petropavlovsk-**	**18.84**	**26**	P	**P**	**19 38 47.0**	**-0.5**
PETK	comp=Z,151nm,18.1s			MLR	MLR		
PEA1	**Petropavlovsk-**	**18.85**	**26**	*e*P	**P**	**19 38 47.0**	**-0.5**
SSE	**Sheshan**	**19.71**	**260**	P	**P**	**19 38 52.3**	**-4.8**
SSE				S	**S**	**19 42 36.8**	**-1.1**
NJ2	**Nanjing**	**21.20**	**264**	*e*P	**P**	**19 39 14.8**	**+1.5**
NJ2				pP	pP	**19 39 21.0**	**+0.7**
NJ2				S	S	19 42 55.3	-13
NJ2				sS	**sS**	**19 43 19.8**	**+0.9**
NJ2	comp=Z,10.0nm,0.5s			pmax	pmax		
NJ2	comp=Z,2μm,22.8s			LR	LR		
NJ2	comp=Z,1μm,27.1s			LR	LR		
NJ2	comp=Z,370nm,16.3s			LR	LR		
TIA	**Tai'an**	**21.52**	**276**	*e*P	**P**	**19 39 18.8**	**+2.1**
TIA	comp=Z,10.0nm,0.9s			pmax	pmax		
MA2	**Magadan** comp=Z,15nm,0.8s,baz=222,slow=10,SNR=14	**23.11**	**9**	P	**P**	**19 39 33.5**	**+0.1**
MA2	comp=Z,113nm,19.9s,baz=215,slow=40			LR	LR	19 49 44.3	
GUMO	**Guam** comp=Z,129nm,21.7s,baz=353,slow=33	**23.24**	**178**	LR	LR	19 47 08.8	
SSLB	**Sunglung** comp=Z,58nm,1.6s	**23.68**	**243**	*e*P	**P**	**19 39 38.9**	**-0.4**
YULB	**Yu-li** comp=Z,57nm,1.6s	**23.68**	**242**	*e*P	**P**	**19 39 39.4**	**+0.1**
TPUB	**Ta-pu** comp=Z,27nm,1.0s	**24.21**	**242**	*e*P	**P**	**19 39 43.6**	**-0.7**
HHC	**Hu-ho-hao-te**	**25.42**	**289**	*e*P	**P**	**19 39 54.4**	**-0.8**
HHC				S	**S**	**19 44 23.8**	**+3.2**
HHC	comp=Z,19nm,1.0s			pmax	pmax		
HHC	comp=Z,130nm,4.2s			pmax	pmax		
HHC	comp=Z,1μm,12.1s			LR	LR		
HHC	comp=Z,1μm,12.4s			LR	LR		
HHC	comp=Z,1μm,11.5s			LR	LR		
CIT	**Chita**	**26.18**	**315**	*e*P	**P**	**19 40 03.0**	**+1.1**
CIT				*e*		19 40 13.4	
H11N2	**WAKE ISLAND Hy** baz=316,slow=76,SNR=20	**26.38**	**124**	T	T	20 07 33.6	
H11N1	**WAKE ISLAND Hy** baz=316,slow=76,SNR=18	**26.39**	**124**	T	T	20 07 33.0	
H11N3	**WAKE ISLAND Hy** baz=316,slow=76,SNR=21	**26.40**	**124**	T	T	20 07 34.1	
SEY	**Seymchan** comp=Z,18nm,0.8s,baz=187,slow=7.0,SNR=66	**26.57**	**9**	P	**P**	**19 40 06.2**	**+1.0**
SEY	**Seymchan**	**26.57**	**9**	*e*P	**P**	**19 40 03.6**	**-1.6**
YAK	**Yakutsk** comp=Z,24nm,0.7s,baz=173,slow=1.3,SNR=13	**26.67**	**345**	P	**P**	**19 40 06.4**	**+0.3**
YAK	comp=Z,197nm,18.3s,baz=156,slow=37			LR	LR	19 51 02.1	
YAK	**Yakutsk**	**26.67**	**345**	*e*P	**P**	**19 40 05.8**	**-0.3**
YAK				*e*		19 40 51.9	
YAK				*e*S	**S**	**19 44 43.8**	**+4.2**
YAK				*e*SS	**SnSn**	**19 45 49.0**	**+5.5**
YAK				*e*		19 50 51.3	
YAK	comp=Z,23nm,0.8s			pmax	pmax		
YAK	comp=E,5.0nm,1.0s			pmax	pmax		
YAK	comp=N,8.0nm,1.0s			pmax	pmax		
YAK	comp=Z,161nm,4.1s			pmax	pmax		
YAK	comp=N,110nm,3.9s			pmax	pmax		
YAK	comp=E,40nm,3.9s			smax	smax		
YAK	comp=N,255nm,2.5s			smax	smax		
YAK	comp=E,233nm,2.9s			MLR	MLR		
YAK	comp=Z,197nm,19.0s			MLR	MLR		
YAK	comp=E,157nm,16.0s			MLR	MLR		
YAK	comp=N,115nm,19.0s			MLR	MLR		
YAK	**Yakutsk** comp=N,27nm,0.8s	**26.67**	**345**	*e*P	**P**	**19 40 06.0**	**-0.2**
H11S1	**WAKE ISLAND Hy** baz=318,slow=76,SNR=23	**27.13**	**126**	T	T	20 08 30.0	
H11S3	**WAKE ISLAND Hy** baz=318,slow=76,SNR=25	**27.14**	**126**	T	T	20 08 30.2	
H11S2	**WAKE ISLAND Hy** baz=318,slow=76,SNR=25	**27.15**	**126**	T	T	20 08 30.7	
XAN	**Xi'an**	**28.56**	**275**	P	**P**	**19 40 26.8**	**+3.4**
XAN				pP	sP	19 40 36.8	+2.8
XAN

ULN Ulaanbaatar 29.09 304 *e*P **P 19 40 28.4 +0.2**
ULN Ulaanbaatar 29.09 304 *e*P **P 19 40 29.1 +0.9**
comp=Z,8.6nm,0.9s
ENH Enshi 29.33 267 *e*P **P 19 40 32.6 +2.2**
comp=Z,12nm,0.8s
SONA1 **Songino Array 29.52 304** *e*P **P 19 40 32.7 +0.7**
SONA0 **Songino Array 29.53 304** *e*P **P 19 40 32.5 +0.4**
comp=Z,14nm,1.1s
SONM Songino Array 29.53 304 P **P 19 40 32.5 +0.4**
comp=Z,3.9nm,1.0s,baz=105,slow=7.9,SNR=8.2
SONM LR LR 19 52 07.6
comp=Z,176nm,20.4s,baz=108,slow=36
ZAK Zakamensk 31.93 308 *e*P **P 19 40 49.9 -3.2**
ZAK pmax pmax
comp=Z,4.0nm,1.3s
TLY Talaya 31.94 310 *e*P **P 19 40 56.5 +3.4**
TLY *e*S **S 19 45 58.8 -3.9**
TLY pmax pmax
comp=Z,6.0nm,0.9s
TLY MLR MLR
comp=Z,210nm,13.0s
LZH Lanzhou 32.07 281 *e*P **P 19 40 55.6 +1.0**
LZH pP sP 19 41 06.8 +1.6
LZH sP pP 19 41 10.3 +8.2
LZH PP **PnPn 19 42 01.8 +1.5**
LZH pmax pmax
comp=Z,26nm,1.2s
LZH pmax pmax
comp=Z,83nm,5.7s
LZH LR LR
comp=Z,340nm,13.2s
LZH LR LR
comp=Z,330nm,13.5s
LZH LR LR
comp=Z,390nm,16.7s
GYA Guiyang 33.19 263 P **P 19 41 04.8 +0.3**
GYA pP sP 19 41 16.8 +1.7
GYA PcP **PcP 19 43 48.9 +2.0**
GYA S **S 19 46 21.3 -1.6**
GYA sS sS 19 46 40.0 +4.7
GYA ScP **ScP 19 47 28.9 -0.6**
GYA SS **SnSn 19 48 23.4 +0.2**
GYA ScS **ScS 19 51 28.0 -2.3**
GYA pmax pmax
comp=Z,20nm,0.9s
GYA pmax pmax
comp=Z,120nm,5.2s
GYA LR LR
comp=Z,550nm,17.6s
GYA LR LR
comp=Z,520nm,17.9s
GYA LR LR
comp=Z,540nm,18.2s
BILL Bilibino 33.60 15 *e*P **P 19 41 07.1 -0.3**
BILL *e* 19 41 21.0
BILL *e* 19 42 15.1
BILL *e*PPP PPP 19 42 30.8
BILL pmax pmax
comp=Z,20nm,1.0s
BILL MLR MLR
comp=Z,83nm,18.0s
BILL Bilibino 33.60 15 *e*P **P 19 41 06.9 -0.5**
comp=Z,16nm,0.9s
CD2 Chengdu 33.69 272 P **P 19 41 07.5 -1.2**
CD2 pmax pmax
comp=Z,1.0nm,0.5s
GTA Gaotai 34.52 288 *e*P **P 19 41 17.4 +1.5**
GTA pP sP 19 41 26.6 0.0
GTA sP pP 19 41 30.8 +7.3
GTA S **S 19 46 40.8 -2.4**
GTA sS sS 19 46 58.8 +3.1
GTA SS **SnSn 19 48 53.5 -1.6**
GTA pmax pmax
comp=Z,5.0nm,1.1s
GTA pmax pmax
comp=Z,120nm,5.0s
GTA LR LR
comp=Z,200nm,15.4s
GTA LR LR
comp=Z,250nm,16.9s
GTA LR LR
comp=Z,270nm,17.3s
TIXI Tiksi 35.67 352 P **P 19 41 24.5 -0.8**
comp=Z,1.6nm,0.7s,baz=138,slow=6.8,SNR=10
TIXI Tiksi 35.67 352 *e*P **P 19 41 25.2 -0.1**
TIXI pmax pmax
comp=Z,7.0nm,1.7s
KMI Kunming 36.94 263 P **P 19 41 38.5 +1.6**
KMI pmax pmax
comp=Z,7.0nm,0.7s
KMI pmax pmax
comp=Z,110nm,5.0s
KRAR Krasnoyarsk 38.95 316 *e*P **P 19 41 53.8 +0.6**
KRAR pmax pmax
comp=Z,4.0nm,0.9s
WMQ Urumqi 42.69 297 *e*P **P 19 42 25.4 +1.1**
WMQ pP sP 19 42 36.4 +1.3
WMQ sP pP 19 42 40.0 +8.0
WMQ PcP **PcP 19 44 17.6 +1.8**
WMQ ScP **ScP 19 48 02.5 -2.5**
WMQ S **S 19 48 45.8 -0.4**
WMQ ScS **ScS 19 52 24.3 +0.5**
WMQ pmax pmax
comp=Z,3.0nm,0.6s
WMQ pmax pmax
comp=Z,54nm,5.0s
CHTO Chiang Mai 43.22 258 *e*P **P 19 42 28.7 -0.1**
CHTO pmax pmax
comp=Z,8.0nm,1.0s
CHTO Chiang Mai 43.22 258 *e*P **P 19 42 28.7 -0.1**
comp=Z,7.9nm,1.0s
CM31 Chiang Mai Arr 43.42 257 *e*P **P 19 42 29.7 -0.8**
CM31 *e*PP **PcP 19 44 17.1 -1.5**
CMAR Chiang Mai Arr 43.42 257 P **P 19 42 31.1 +0.6**
comp=Z,2.8nm,0.8s,baz=46,slow=6.9,SNR=25
CMAR PcP **PcP 19 44 18.1 -0.4**
comp=Z,1.4nm,0.9s,baz=28,slow=3.0,SNR=4.8
CMAR LR LR 20 01 36.4
comp=Z,100nm,18.3s,baz=48,slow=38
CMAR Chiang Mai Arr 43.42 257 *i* P **P 19 42 31.6 +1.1**
CMAR pmax pmax
comp=Z,3.0nm,0.8s
CM01 Chiang Mai Arr 43.43 257 *e*P **P 19 42 30.7 +0.1**
CM01 *e*PP **PcP 19 44 19.0 +0.4**
ZAA1 Zalesovo Array 43.48 313 *e*P **P 19 42 31.2 +0.7**
ZAA1 *e*PP **PcP 19 44 18.2 0.0**
ZAA0 Zalesovo Array 43.48 313 *e*P **P 19 42 30.0 -0.5**
ZALV Zalesovo Beam 43.48 313 P **P 19 42 31.2 +0.7**
comp=Z,2.3nm,0.7s,baz=85,slow=6.4,SNR=11
ZALV PcP **PcP 19 44 18.2 0.0**
comp=Z,4.9nm,0.7s,baz=97,slow=3.2,SNR=5.6
ZALV LR LR 20 00 53.3
comp=Z,104nm,20.8s,baz=78,slow=36
NRIK Noril'sk 44.23 335 LR LR 20 01 53.3
comp=Z,353nm,19.8s,baz=114,slow=37
NVS Novosibirsk 44.38 314 *e*P **P 19 42 38.0 +0.3**
NVS pmax pmax
comp=Z,14nm,1.5s
SBUM Sibu 45.04 228 *e*P **P 19 42 42.9 -0.5**
comp=Z,7.6nm,1.0s
KDAK Kodiak Island 45.85 42 *i* P **P 19 42 50.7 +1.4**
MK01 Makanchi Array 45.88 303 *e*P **P 19 42 49.6 -0.2**
MK31 Makanchi Array 45.88 303 *e*P **P 19 42 50.3 +0.5**
MK31 Makanchi Array 45.88 303 *e*P **P 19 42 50.3 +0.5**
MK32 Makanchi Array 45.88 303 *e*P **P 19 42 50.1 +0.3**
MKAR Makanchi Array 45.88 303 P **P 19 42 50.1 +0.3**
comp=Z,1.4nm,0.8s,baz=86,slow=9.1,SNR=14
MKAR LR LR 20 03 24.9
comp=Z,81nm,18.1s,baz=86,slow=38
MKAR Makanchi Array 45.88 303 *i* P **P 19 42 50.5 +0.7**
MKAR pmax pmax
comp=Z,2.0nm,0.9s
MKAR Makanchi Array 45.88 303 *e*P **P 19 42 49.8 0.0**
MAKZ Makanchi 46.09 303 *e*P **P 19 42 51.7 +0.2**
MAKZ pmax pmax
comp=Z,38nm,1.9s
MAKZ Makanchi 46.09 303 *e*P **P 19 42 51.7 +0.2**
comp=Z,38nm,1.9s
MLY Manley 46.89 32 *e*P **P 19 42 58.3 +0.8**
comp=Z,16nm,1.2s
MLY *e*PcP **PcP 19 44 30.5 +0.7**
KURK Kurchatov 47.59 309 *e*P **P 19 43 02.7 -0.3**
KURK pmax pmax
comp=Z,18nm,0.8s
KURK Kurchatov 47.59 309 *e*P **P 19 43 02.7 -0.3**
comp=Z,18nm,0.8s
RND Reindeer 47.65 34 *e*P **P 19 43 03.3 -0.1**
RND pmax pmax
comp=Z,14nm,1.1s
RND Reindeer 47.65 34 *e*P **P 19 43 03.3 -0.1**
comp=Z,14nm,1.1s
MDM Murphy Dome 47.95 32 *e*P **P 19 43 06.3 +0.6**
comp=Z,16nm,1.0s
IL1 Eielson Array 48.52 32 *e*P **P 19 43 09.6 -0.5**
IL1 *e*PcP **PcP 19 44 34.7 -1.0**
ILAR Eielson Array 48.52 32 P **P 19 43 10.1 0.0**
comp=Z,6.1nm,0.7s,baz=264,slow=6.5,SNR=57
ILAR PcP **PcP 19 44 34.7 -0.9**
comp=Z,1.5nm,0.8s,baz=270,slow=3.3,SNR=5.1
ILB Eielson Array 48.52 32 *e*P **P 19 43 09.8 -0.3**
ILB *e*PcP **PcP 19 44 33.5 -2.1**
GUN Gumba 49.17 277 *e*P **P 19 43 16.6 +0.6**
comp=Z,38nm,0.9s
FYU Fort Yukon 49.21 30 *e*P **P 19 43 16.9 +1.6**
comp=Z,48nm,1.6s
KKN Kakani 49.70 277 *e*P **P 19 43 20.6 +0.7**
comp=Z,20nm,0.8s
PKIN Phulchoki 49.70 277 *e*P **P 19 43 21.1 +1.2**
comp=Z,6.0nm,0.7s
DOT Dot Lake 49.79 34 *e*P **P 19 43 19.7 -0.1**
DOT *e*PcP **PcP 19 44 41.2 +0.9**
DMN Daman 49.92 277 *e*P **P 19 43 22.0 +0.4**
comp=Z,4.0nm,0.5s
MENT Mentasta 49.99 35 *e*P **P 19 43 21.9 +0.6**
comp=Z,7.4nm,1.0s
GKN Gorkha 50.12 278 *e*P **P 19 43 23.5 +0.5**
comp=Z,31nm,0.9s
CRQM Cirque 50.47 37 *e*P **P 19 43 26.8 +1.5**
IPM Ipoh 50.82 241 *e*P **P 19 43 28.2 0.0**
comp=Z,9.1nm,0.8s
KOLN Koldanda 51.04 278 *e*P **P 19 43 30.6 +0.6**
comp=Z,11nm,0.8s
PYUN Piuthan 51.38 279 *e*P **P 19 43 33.1 +0.6**
comp=Z,13nm,0.6s
TKM2 Tokmak 2 51.45 299 *e*P **P 19 43 33.7 +0.8**
TKM2 pmax pmax
comp=Z,13nm,1.0s
TKM2 Tokmak 2 51.45 299 *e*P **P 19 43 33.7 +0.8**
comp=Z,13nm,1.0s
VOSK Vostochnaya 51.86 312 *e*P **P 19 43 35.9 +0.4**
VOSK pmax pmax
comp=Z,6.0nm,0.9s
VOSK Vostochnaya 51.86 312 *e*P **P 19 43 35.9 +0.4**
comp=Z,6.0nm,0.9s
FRU Bishkek 52.16 299 *e*P **P 19 43 39.5 +1.5**
BRVK Borovoye 52.19 313 *ce*P **P 19 43 39.1 +1.1**
BRVK pmax pmax
comp=Z,10.0nm,2.5s
KSH Kashi 52.29 295 P **P 19 43 43.8 +4.7**
KSH *es*P sP 19 43 57.8 +7.9
KSH S **S 19 51 06.8 +3.9**
KSH pmax pmax
comp=Z,110nm,3.8s
KSH LR LR
comp=Z,79nm,6.0s
KSH LR LR
comp=Z,110nm,5.1s
KSH LR LR
comp=Z,210nm,7.3s
AAK Ala-Archa 52.31 299 *e*P **P 19 43 38.3 -1.0**
AAK pmax pmax
comp=Z,5.0nm,0.9s
AAK Ala-Archa 52.31 299 *e*P **P 19 43 39.5 +0.2**
comp=Z,5.5nm,1.1s
EKS2 Erkin-Say 52.80 299 *e*P **P 19 43 43.5 +0.6**
EKS2 pmax pmax
comp=Z,4.0nm,0.9s
EKS2 Erkin-Say 52.80 299 *e*P **P 19 43 43.5 +0.6**
comp=Z,4.4nm,0.9s
ZRNK Zerenda 52.97 313 *e*P **P 19 43 43.8 +0.1**
ZRNK pmax pmax
comp=Z,5.0nm,0.8s
ZRNK Zerenda 52.97 313 *e*P **P 19 43 43.8 +0.1**
comp=Z,4.7nm,0.8s
INK Inuvik 53.58 27 P **P 19 43 48.4 +0.5**
comp=Z,5.4nm,0.7s,baz=287,slow=6.0,SNR=20
INK PcP **PcP 19 44 54.6 +0.3**
comp=Z,2.1nm,0.6s,baz=297,slow=4.0,SNR=3.8
INK LR LR 20 09 28.6
comp=Z,35nm,19.4s,baz=274,slow=39
KKAR Karatay Array 54.92 301 *e*P **P 19 43 58.5 +0.3**
KKAR Karatay Array 54.92 301 *e*P **P 19 43 58.5 +0.3**
WRAB Tennant Creek 57.26 191 *ce*P **P 19 44 15.6 +0.7**
WRAB pmax pmax
comp=Z,28nm,1.2s
WB2 Warramunga Arr 57.26 191 *e*P **P 19 44 13.7 -1.4**
comp=Z,7.7nm,0.8s
WR1 Warramunga Arr 57.27 191 *e*P **P 19 44 13.7 -1.4**
comp=Z,7.4nm,0.8s
WRA Warramunga Arr 57.27 191 P **P 19 44 13.7 -1.4**
comp=Z,2.8nm,0.5s,baz=9.9,slow=7.3,SNR=32
DLBC Dease Lake 57.48 38 P **P 19 44 17.8 +1.6**
comp=Z,4.5nm,0.9s,baz=286,slow=9.8,SNR=7.0
DLBC Dease Lake 57.48 38 *e*P **P 19 44 17.9 +1.6**
comp=Z,44nm,1.8s
ARU Arti 57.78 319 *c i*P **P 19 44 19.1 +0.8**
ARU 19 45 10.0
ARU 19 46 24.3
ARU S **S 19 52 17.6 +1.9**
ARU SS **SS 19 56 05.4 -0.4**
ARU pmax pmax
comp=Z,14nm,1.2s
ARU MLR MLR
comp=Z,206nm,16.0s
ARU Arti 57.78 319 *e*P **P 19 44 18.2 -0.1**
comp=Z,12nm,1.1s
KBL Kabul 59.33 292 *e*P **P 19 44 29.3 -0.5**
KBL pmax pmax
comp=Z,11nm,0.9s
KBL Kabul 59.33 292 *e*P **P 19 44 29.3 -0.5**
comp=Z,11nm,0.9s
ABKAR **Akbulak array 59.55 311** *e*P **P 19 44 30.5 -0.2**
HYB Hyderabad 60.21 270 *i* P **P 19 44 36.0 +0.2**
BBB Bella Bella 60.74 45 LR LR 20 08 00.7
comp=Z,48nm,19.0s,baz=258,slow=33
AS01 Alice Springs 60.98 190 *e*P **P 19 44 39.8 -0.9**
AS31 Alice Springs 60.99 191 *e*P **P 19 44 40.5 -0.2**
comp=Z,1.9nm,0.8s
ASAR Alice Springs 60.99 191 P **P 19 44 40.0 -0.8**
comp=Z,2.1nm,0.8s,baz=15,slow=10,SNR=25
ASAR Alice Springs 60.99 191 P **P 19 44 40.0 -0.8**
ASAR pmax pmax
comp=Z,2.0nm,0.8s
RES Resolute Bay 62.21 15 P **P 19 44 48.6 +0.2**
comp=Z,19nm,0.8s,baz=309,slow=6.3,SNR=62
RES Resolute Bay 62.21 15 *e*P **P 19 44 48.3 -0.1**
RES pmax pmax
comp=Z,17nm,0.8s
RES Resolute Bay 62.21 15 *e*P **P 19 44 48.3 -0.1**
comp=Z,17nm,0.8s
DZM Mont Dzumac 62.39 156 LR LR 20 08 04.0
comp=Z,74nm,21.1s,baz=34,slow=32
YKW3 Yellowknife Ar 62.86 31 *e*P **P 19 44 52.2 -0.7**
YKW3 *e*PcP **PcP 19 45 31.6 +0.5**
YKA Yellowknife Ar 62.89 31 P **P 19 44 53.1 -0.1**
comp=Z,3.4nm,0.7s,baz=300,slow=6.7,SNR=60
YKA PcP **PcP 19 45 31.5 +0.3**
comp=Z,2.1nm,0.6s,baz=300,slow=4.0,SNR=20
YKB5 Yellowknife Ar 62.89 31 *e*P **P 19 44 52.2 -1.0**
YKB5 *e*PcP **PcP 19 45 30.1 -1.1**
TMCR Tamitsa 63.81 332 *e*P **P 19 45 00.0 +0.8**
TMCR pmax pmax
comp=Z,31nm,1.3s
ARA0 ARCESS Array S 64.81 340 *e*P **P 19 45 05.9 +0.2**
ARCES ARCESS Array B 64.81 340 P **P 19 45 05.9 +0.2**
comp=Z,6.0nm,0.8s,baz=55,slow=7.5,SNR=19
ARCES LR LR 20 19 36.0
comp=Z,99nm,18.8s,baz=41,slow=42
KLMR Klimovskoe 64.92 328 *e*P **P 19 45 05.8 -0.7**
KLMR pmax pmax
comp=Z,13nm,1.2s
NLWA Neilton Lookou 65.30 48 *e*P **P 19 45 10.3 +1.0**
comp=Z,24nm,1.1s
AFI Afiamalu 65.53 132 LR LR 20 07 49.8
comp=Z,42nm,21.1s,baz=124,slow=31
GEYT Alibeck 65.65 300 P **P 19 45 12.4 +0.7**
comp=Z,7.5nm,0.8s,baz=36,slow=2.8,SNR=18
GEYT LR LR 20 17 16.0
comp=Z,48nm,20.8s,baz=70,slow=39
DAG Danmarks Havn 66.06 356 *i* P **P 19 45 13.5 -0.1**
comp=Z,15nm,0.9s
B08A Colville Reser 67.49 46 *e*P **P 19 45 24.3 +0.9**
comp=Z,11nm,1.3s
H04A Detroit Lake 67.65 50 *e*P **P 19 45 25.2 +0.9**
comp=Z,16nm,1.1s
STKA Stephens Creek 68.47 182 P **P 19 45 28.4 -1.0**
comp=Z,4.7nm,0.8s,baz=330,slow=7.6,SNR=9.0
STKA LR LR 20 14 08.5
comp=Z,36nm,21.7s,baz=26,slow=35
STKA Stephens Creek 68.47 182 *e*P **P 19 45 29.5 +0.1**
comp=Z,1.9nm,0.8s
NEW Newport 68.80 45 P **P 19 45 32.1 +0.5**
comp=Z,1.4nm,0.7s,baz=284,slow=6.5,SNR=4.4
NEW LR LR 20 14 06.4
comp=Z,40nm,18.8s,baz=188,slow=35
NEW Newport 68.80 45 *e*P **P 19 45 32.0 +0.5**
NEW pmax pmax
comp=Z,16nm,1.6s
NEW Newport 68.80 45 *e*P **P 19 45 32.0 +0.5**
comp=Z,16nm,1.6s
VRH Novokhopyorsk 69.01 319 *e*P **P 19 45 31.8 -0.9**
VRH pmax pmax
comp=Z,10.0nm,0.9s
OBN Obninsk 69.39 324 *ce*P **P 19 45 35.7 +0.8**
OBN *e* 19 45 58.8
OBN pmax pmax
comp=Z,25nm,2.5s
OBN MLR MLR
comp=Z,154nm,15.0s
K05A Summer Lake 69.46 52 *e*P **P 19 45 37.0 +1.1**
comp=Z,19nm,1.1s
LPSR Galich'ya Gora 69.67 321 *e*P **P 19 45 37.0 +0.2**
LPSR pmax pmax
comp=Z,6.0nm,0.8s
FIA1 FINESS Array S 69.85 333 *e*P **P 19 45 37.6 -0.1**
FIA0 FINESS Array S 69.85 333 *e*P **P 19 45 38.4 +0.8**
FIA0 FINESS Array S 69.85 333 *e*P **P 19 45 38.4 +0.8**
FINES FINESS Array B 69.85 333 P **P 19 45 38.4 +0.8**
comp=Z,17nm,0.7s,baz=51,slow=7.6,SNR=75
FINES LR LR 20 19 30.6
comp=Z,204nm,18.1s,baz=42,slow=39
VSR Storozhevoye 70.34 320 *e*P **P 19 45 40.3 -0.6**
VSR pmax pmax
comp=Z,5.0nm,0.7s
VSR MLR MLR
comp=Z,120nm,9.0s
SUMG Summit 70.80 1 *i* P **P 19 45 44.9 +1.1**
comp=Z,16nm,0.7s
SUMG Summit 70.80 1 *e*P **P 19 45 44.3 +0.5**
SUMG pmax pmax
comp=Z,16nm,0.7s
SUMG Summit 70.80 1 *e*P **P 19 45 44.3 +0.5**
comp=Z,16nm,0.7s
SWMT Swartz Lake 70.98 45 *e*P **P 19 45 45.4 +0.4**
WVOR Wild Horse Val 71.02 51 *e*P **P 19 45 46.3 +0.9**
WVOR pmax pmax
comp=Z,11nm,1.2s
WVOR Wild Horse Val 71.02 51 *e*P **P 19 45 46.3 +0.9**
comp=Z,11nm,1.2s
VSU Vasula 71.57 330 *ce*P **P 19 45 49.5 +1.3**
VSU pmax pmax
comp=Z,52nm,1.2s
GOF Gofitskoye 71.66 313 *i e*P **P 19 45 50.4 +1.4**
GOF pmax pmax
comp=Z,33nm,0.8s
MFID Camas Ranch 72.20 49 *e*P **P 19 45 53.2 +0.7**
comp=Z,4.3nm,0.8s
GUDG Gudauri 72.25 310 P **P 19 45 54.8 +1.9**
ZEI Tsey 72.42 310 *e*P **P 19 45 54.3 +0.4**
ZEI pmax pmax
comp=Z,12nm,0.8s
SCO Scoresbysund 72.42 355 *i* P **P 19 45 54.2 +1.1**
comp=Z,15nm,1.1s
KIV Kislovodsk 72.50 312 *ce*P **P 19 45 56.2 +2.0**
KIV *e* 19 46 02.2
KIV *e* 19 46 20.3
KIV *e* 19 48 42.5
KIV pmax pmax
comp=Z,46nm,1.0s
KIV MLR MLR
comp=Z,95nm,17.0s
KIV Kislovodsk 72.50 312 *e*P **P 19 45 55.0 +0.8**
comp=Z,32nm,0.8s
KBZ Khabaz 72.50 312 P **P 19 45 55.5 +1.5**
comp=Z,20nm,0.8s,baz=62,slow=4.8,SNR=41
KBZ LR LR 20 20 49.4
comp=Z,66nm,19.3s,baz=48,slow=38
FFC Flin Flon 72.71 34 *e*P **P 19 45 54.8 -0.3**
FFC pmax pmax
comp=Z,13nm,0.9s
FFC Flin Flon 72.71 34 *e*P **P 19 45 54.8 -0.3**
comp=Z,13nm,0.9s
ONI Oni 72.81 311 P **P 19 45 57.7 +1.7**
ONI Oni 72.81 311 P **P 19 45 57.7 +1.7**
LRM Limekiln Ridge 72.81 45 *e*P **P 19 45 56.2 -0.1**
NEY Neytrino 72.87 311 *e*P **P 19 45 56.6 +0.1**
NEY pmax pmax
comp=Z,2.0nm,0.9s
HLID Hailey 72.97 48 *e*P **P 19 45 58.0 +0.9**
comp=Z,4.2nm,1.1s
DLMT Dillon 73.00 46 *e*P **P 19 45 57.9 +0.7**
comp=Z,17nm,1.4s
FCC Fort Churchill 73.20 27 *e*P **P 19 45 57.6 -0.3**
FCC pmax pmax
comp=Z,14nm,1.1s
FCC Fort Churchill 73.20 27 *e*P **P 19 45 57.6 -0.3**
comp=Z,14nm,1.1s
GNI Garni 73.38 308 *ce*P **P 19 46 01.6 +2.0**
GNI pmax pmax
comp=Z,64nm,1.2s
BOZ Bozeman (W) 73.39 45 *e*P **P 19 46 00.0 +0.5**
BOZ pmax pmax
comp=Z,13nm,1.4s
BOZ Bozeman (W) 73.39 45 *e*P **P 19 46 00.0 +0.5**
comp=Z,13nm,1.4s
NV01 Mina Array Sit 73.44 54 *e*P **P 19 46 00.4 +0.4**
NVAR Mina Array Bea 73.44 54 P **P 19 46 00.8 +0.8**
comp=Z,5.7nm,0.8s,baz=285,slow=6.1,SNR=5.4
AKH Akhalkalaki 73.45 309 *i e*P **P 19 46 01.8 +1.8**
UOSS Minazif 73.76 289 *e*P **P 19 46 01.6 -0.2**
comp=Z,0.7nm,0.8s
YMR Madison River 74.34 46 *e*P **P 19 46 06.7 +1.5**
comp=Z,8.0nm,1.1s
H17A Grant Village 74.73 46 *e*P **P 19 46 09.6 +2.1**
comp=Z,14nm,1.2s
IMW Indian Meadow 74.82 46 *e*P **P 19 46 08.8 +0.7**
comp=Z,7.4nm,1.0s
FLWY Flagg Ranch 74.84 46 *e*P **P 19 46 09.9 +1.7**
comp=Z,9.4nm,1.1s
NC405 NORSAR Array S 74.85 338 *e*P **P 19 46 08.3 +0.7**
NC303 NORSAR Array S 74.87 338 *e*P **P 19 46 08.0 +0.3**
FXWY Fox Creek 74.92 47 *e*P **P 19 46 09.2 +0.6**
comp=Z,6.5nm,1.1s
RAO Raoul Island 74.93 146 LR LR 20 16 29.6
comp=Z,131nm,19.3s,baz=122,slow=34
HVU Hansel Valley 74.99 49 *e*P **P 19 46 10.0 +1.1**
HVU pmax pmax
comp=Z,5.0nm,1.0s
HVU Hansel Valley 74.99 49 *e*P **P 19 46 10.0 +1.1**
comp=Z,5.0nm,1.0s
NC204 NORSAR Array S 75.01 339 *e*P **P 19 46 09.0 +0.4**
MOOW Moose Ponds 75.02 46 *e*P **P 19 46 10.4 +1.2**
comp=Z,8.1nm,1.3s
NB201 NORSAR Array S 75.03 338 *e*P **P 19 46 09.4 +0.7**
NB2 NORSAR Subarra 75.06 338 P **P 19 46 09.4 +0.6**
comp=Z,16nm,0.7s,baz=40,slow=5.9
NB2 NORSAR Subarra 75.06 338 P **P 19 46 09.4 +0.6**
baz=40,slow=5.9
NB200 NORSAR Array S 75.06 338 *e*P **P 19 46 09.4 +0.6**
NOA NORSAR Array B 75.06 338 P **P 19 46 09.4 +0.6**
comp=Z,15nm,0.7s,baz=39,slow=5.8,SNR=72
NOA NORSAR Array B 75.06 338 P **P 19 46 09.4 +0.6**
NOA pmax pmax
comp=Z,16nm,0.7s
NBO02 NORSAR Array S 75.16 338 *e*P **P 19 46 10.0 +0.6**
REDW Red Top Meadow 75.19 47 *e*P **P 19 46 11.4 +1.2**
comp=Z,8.3nm,1.3s
NBO00 NORSAR Array S 75.20 338 *e*P **P 19 46 10.3 +0.8**
R11A Troy Canyon, C 75.24 53 *e*P **P 19 46 11.2 +0.8**
comp=Z,6.3nm,1.0s
NAO01 NORSAR Array S 75.31 338 *e*P **P 19 46 10.6 +0.4**
BGU Big Grassy Mou 75.34 50 *e*P **P 19 46 11.6 +0.6**
comp=Z,3.9nm,1.1s
AKASG **Malin Array Be 75.61 323** P **P 19 46 12.4 +0.3**
comp=Z,8.4nm,0.6s,baz=45,slow=5.9,SNR=88

AKASG LR LR 20 22 18.3
comp=Z,65nm,20.7s,baz=75,slow=38
AKASG Malin Array Be 75.61 323 *i* P **P 19 46 12.3 +0.2**
AKASG pmax pmax
comp=Z,8.0nm,0.6s
AKBB Malin Array Si 75.61 323 *e*P **P 19 46 12.6 +0.5**
AKBB pmax pmax
comp=Z,13nm,0.9s
AKBB Malin Array Si 75.61 323 *e*P **P 19 46 12.6 +0.5**
comp=Z,13nm,0.9s
KIEV Kiev 75.62 323 *d* iP **P 19 46 12.3 +0.1**
KIEV pmax pmax
comp=Z,11nm,0.9s
KIEV Kiev 75.62 323 *e*P **P 19 46 12.6 +0.4**
comp=Z,13nm,0.8s
AK11 Malin Array Si 75.65 323 *e*P **P 19 46 12.4 +0.1**
HWUT Hardware Ranch 75.82 48 *e*P **P 19 46 14.3 +0.6**
comp=Z,16nm,1.4s
DUG Dugway, Tooele 75.90 50 *e*P **P 19 46 15.0 +0.8**
DUG pmax pmax
comp=Z,5.0nm,0.8s
DUG Dugway, Tooele 75.90 50 *e*P **P 19 46 15.0 +0.8**
comp=Z,5.5nm,0.8s
SUW Suwalki 76.06 328 *e*P **P 19 46 15.8 +1.2**
SUW Suwalki 76.06 328 *e*P **P 19 46 15.9 +1.3**
TCUT Toone Canyon 76.21 49 *e*P **P 19 46 16.5 +0.5**
comp=Z,11nm,1.1s
PSUT Pine Spring 76.23 52 *e*P **P 19 46 17.1 +0.9**
comp=Z,7.5nm,1.1s
BW06 Boulder Array 76.30 47 *e*P **P 19 46 16.5 0.0**
PD31 Pinedale Array 76.30 47 *e*P **P 19 46 17.1 +0.5**
PDAR Pinedale Array 76.30 47 P **P 19 46 16.4 -0.1**
comp=Z,0.6nm,0.6s,baz=328,slow=0.6,SNR=8.7
JLU Jordanelle 76.49 49 *e*P **P 19 46 18.2 +0.5**
comp=Z,5.8nm,1.1s
KONO Kongsberg 76.66 338 *e*P **P 19 46 17.9 0.0**
KONO pmax pmax
comp=Z,12nm,1.0s
KONO Kongsberg 76.66 338 *e*P **P 19 46 17.9 0.0**
comp=Z,12nm,1.0s
KLNR Kaliningrad 76.85 330 *e*P **P 19 46 18.7 -0.3**
KLNR pmax pmax
comp=Z,35nm,1.0s
MSU Marysvale 77.30 51 *e*P **P 19 46 23.1 +0.9**
MSU Marysvale 77.30 51 *e*P **P 19 46 23.1 +0.9**
TMUT Trail Mountain 77.43 50 *e*P **P 19 46 23.2 +0.1**
comp=Z,19nm,0.6s
LCMT Little Creek M 77.53 53 *e*P **P 19 46 24.4 +1.0**
comp=Z,9.2nm,1.0s
MTPU Mount Pierson 77.58 52 *e*P **P 19 46 25.2 +1.3**
comp=Z,7.3nm,1.0s
P17A Butcher Ranch, 77.61 50 *e*P **P 19 46 24.9 +1.0**
comp=Z,11nm,0.9s
SORM Soroca 77.75 322 ⇑*i*P **P 19 46 24.7 +0.5**
KNB Kanab 77.80 53 *e*P **P 19 46 26.3 +1.3**
KNB pmax pmax
comp=Z,16nm,1.1s
KNB Kanab 77.80 53 *e*P **P 19 46 26.3 +1.3**
comp=Z,16nm,1.1s
P18A Preston Nutter 77.82 49 *e*P **P 19 46 26.0 +0.8**
comp=Z,14nm,1.5s
SRU San Rafael Swe 77.96 50 *e*P **P 19 46 26.5 +0.7**
SRU pmax pmax
comp=Z,9.0nm,0.9s
SRU San Rafael Swe 77.96 50 *e*P **P 19 46 26.5 +0.7**
comp=Z,9.2nm,0.9s
RAR Rarotonga 78.47 128 LR LR 20 13 13.1
comp=Z,58nm,21.4s,baz=284,slow=30
ULM Lac du Bonnet 78.48 34 P **P 19 46 27.8 -0.5**
comp=Z,3.3nm,0.8s,baz=335,slow=7.6,SNR=4.2
U15A North Rim 78.49 53 *e*P **P 19 46 29.7 +0.8**
comp=Z,7.1nm,0.9s
BEL Belsk 78.63 328 *e*P **P 19 46 30.6 +1.6**
BEL Belsk 78.63 328 *e*P **P 19 46 30.6 +1.6**
LVV L'vov 78.65 325 *e*P **P 19 46 29.7 +0.5**
PV09 Paradox Valley 79.20 50 *e*P **P 19 46 33.3 +0.5**
PV10 Paradox Valley 79.33 50 *e*P **P 19 46 34.7 +1.2**
PV05 Paradox Valley 79.48 50 *e*P **P 19 46 35.3 +1.0**
TLCR 79.50 319 ⇑*i*P **P 19 46 35.4 +1.5**
Y14A Wickenburg 79.53 55 *e*P **P 19 46 34.6 +0.2**
comp=Z,22nm,0.9s
N23A Red Feather La 79.58 46 *e*P **P 19 46 36.0 +1.1**
comp=Z,7.7nm,0.9s
BUR08 Bucovina Ar. S 79.63 323 *e*P **P 19 46 35.2 +0.4**
BURAR Bucovina Array 79.64 323 ⇑*i*P **P 19 46 36.0 +1.2**
TESR Tescani 79.70 321 ⇓*i*P **P 19 46 35.8 +0.8**
PV01 Paradox Valley 79.77 50 *e*P **P 19 46 36.4 +0.6**
CFR Carcaliu 79.86 320 ⇓*i*P **P 19 46 37.1 +1.2**
AGMN Agassiz Nation 79.87 36 *e*P **P 19 46 35.2 -0.7**
comp=Z,14nm,1.3s
PETR Petresti 79.95 321 ⇑*i*P **P 19 46 38.8 +2.5**
ODBI Odobesti 80.01 321 ⇑*i*P **P 19 46 38.0 +1.3**
SMCO Snowmass 80.07 48 *e*P **P 19 46 38.4 +0.7**
comp=Z,12nm,1.4s
KOLS Kolonicke sedl 80.09 325 *e*P **P 19 46 38.2 +1.1**
VRI Vrincioaia 80.11 321 ⇑*i*P **P 19 46 38.9 +1.6**
PLOR Plostina 80.16 321 ⇓*i*P **P 19 46 39.4 +1.8**
STHS Stebnicka Huta 80.20 326 *e*P **P 19 46 39.3 +1.6**
TIRR Tirgusor 80.20 319 ⇓*i*P **P 19 46 39.0 +1.3**
OJC Ojcow 80.25 327 *e*P **P 19 46 38.9 +1.0**
OJC Ojcow 80.25 327 *e*P **P 19 46 38.4 +0.5**
OJC pmax pmax
comp=Z,26nm,1.1s
OJC Ojcow 80.25 327 *e*P **P 19 46 38.4 +0.5**
comp=Z,26nm,1.1s
UZH Uzhgorod 80.30 325 *e*P **P 19 46 37.7 -0.5**
UZH *e* 19 46 45.7
HARR Harsova 80.30 319 ⇑*i*P **P 19 46 39.3 +1.1**
GRER 80.32 320 ⇑*i*P **P 19 46 40.2 +1.8**
MVCO Mesa Verde 80.39 51 *e*P **P 19 46 39.7 +0.4**
comp=Z,7.8nm,1.0s
BMR Baia Mare 80.42 324 ⇑*i*P **P 19 46 40.8 +1.9**
BR101 Keskin Array S 80.42 313 *e*P **P 19 46 39.1 -0.2**
BR131 Keskin Array S 80.42 313 *e*P **P 19 46 39.6 +0.4**
BRTR Keskin Array B 80.42 313 P **P 19 46 39.1 -0.2**
comp=Z,3.9nm,0.7s,baz=105,slow=4.3,SNR=25
BRTR Keskin Array B 80.42 313 *i* P **P 19 46 40.2 +0.9**
BRTR pmax pmax
comp=Z,4.0nm,0.7s
ARCR ARCALIA 80.43 323 ⇑*i*P **P 19 46 41.1 +2.2**
CRVS Cervenica-Dubn 80.48 326 *e*P **P 19 46 40.2 +1.0**
ISCO Idaho Springs 80.48 47 *e*P **P 19 46 40.5 +0.8**
ISCO pmax pmax
comp=Z,3.0nm,0.9s
ISCO Idaho Springs 80.48 47 *e*P **P 19 46 40.5 +0.8**
comp=Z,3.1nm,0.9s
NIE Niedzica 80.62 327 *e*P **P 19 46 41.4 +1.4**
NIE Niedzica 80.62 327 *e*P **P 19 46 41.4 +1.4**
PGOR Pogoanele 80.64 320 ⇓*i*P **P 19 46 42.3 +2.2**
DOPR Dopca 80.71 322 ⇓*i*P **P 19 46 42.3 +1.8**
ISR Istrita 80.72 320 ⇓*i*P **P 19 46 42.4 +1.8**
MLR Muntele Rosu 80.76 321 ⇓*i*P **P 19 46 42.3 +1.4**
MLR Muntele Rosu 80.76 321 *e*P **P 19 46 41.3 +0.4**
MLR pmax pmax
comp=Z,29nm,1.9s
MLR Muntele Rosu 80.76 321 *e*P **P 19 46 41.3 +0.4**
comp=Z,29nm,1.9s
ANTO Ankara 80.83 313 *e*P **P 19 46 42.4 +1.1**
ANTO pmax pmax
comp=Z,16nm,0.8s
ANTO Ankara 80.83 313 *e*P **P 19 46 42.4 +1.1**
comp=Z,16nm,0.8s
BR231 Keskin MP Arra 80.86 313 *e*P **P 19 46 40.7 -0.8**
CJR Cluj-Napoca 81.06 323 ⇑*i*P **P 19 46 44.2 +1.8**
S22A 4UR Ranch, Cre 81.08 49 *e*P **P 19 46 44.3 +1.3**
comp=Z,8.9nm,1.1s
LANS Liptovska Anna 81.18 327 *e*P **P 19 46 44.9 +1.9**
KECS Kecovo 81.22 326 *e*P **P 19 46 44.1 +0.9**
OKC Ostrava-Krasne 81.24 328 *e*P **P 19 46 44.4 +1.2**
OKC Ostrava-Krasne 81.24 328 *e*P **P 19 46 44.4 +1.2**
KSP Ksiaz 81.25 329 *e*P **P 19 46 44.4 +1.2**
KSP Ksiaz 81.25 329 *e*P **P 19 46 44.4 +1.2**
VOIR 81.25 321 ⇑*i*P **P 19 46 45.3 +1.8**
ARR Arges 81.51 322 ⇑*i*P **P 19 46 47.0 +2.2**
MORC Moravsky Berou 81.54 328 ⇑*i*P **P 19 46 46.1 +1.2**
MORC Moravsky Berou 81.54 328 *e*P **P 19 46 45.8 +0.9**
MORC pmax pmax
comp=Z,44nm,1.0s
MORC Moravsky Berou 81.54 328 *e*P **P 19 46 45.8 +0.9**
comp=Z,44nm,1.0s
DPC Dobruska-Polom 81.61 329 *i* P **P 19 46 46.5 +1.2**
DPC Dobruska-Polom 81.61 329 *i* P **P 19 46 46.5 +1.2**
UPC Upice 81.62 329 *e*P **P 19 46 46.5 +1.3**
UPC Upice 81.62 329 *e*P **P 19 46 46.5 +1.3**
KRLC Kraliky 81.63 329 *i* P **P 19 46 46.2 +0.8**
KRLC Kraliky 81.63 329 *i* P **P 19 46 46.2 +0.8**
PSZ Piszkesteto 81.91 326 ⇑*i*P **P 19 46 48.5 +1.6**
PSZ Piszkesteto 81.91 326 *e*P **P 19 46 47.6 +0.7**
PSZ pmax pmax
comp=Z,13nm,0.9s
PSZ Piszkesteto 81.91 326 *e*P **P 19 46 47.6 +0.7**
comp=Z,13nm,0.9s
VYHS Vyhne 81.95 327 *e*P **P 19 46 48.3 +1.3**
BRG Berggiesshubel 82.16 331 *i* P **P 19 46 49.0 +0.9**
comp=Z,9.2nm,1.0s
CLL Collm 82.19 331 ⇓*i*P **P 19 46 48.5 +0.3**
comp=Z,16nm,0.9s
CLL *e* 19 47 02.0
CLL Collm 82.19 331 ⇓*i*P **P 19 46 48.5 +0.3**
CLL pmax pmax
comp=Z,16nm,0.9s
CLL Collm 82.19 331 *e*P **P 19 46 48.3 +0.1**
comp=Z,17nm,0.9s
PVCC Panska Ves 82.19 330 *e*P **P 19 46 49.4 +1.2**
PVCC Panska Ves 82.19 330 *e*P **P 19 46 49.4 +1.2**
VRAC Vranov 82.30 328 ⇑*i*P **P 19 46 50.3 +1.5**
GOPC GO Pecny, Ondr 82.58 330 *e*P **P 19 46 51.3 +1.0**
GOPC AMS AMS 20 26 00.0
comp=Z,200nm,16.9s
GOPC GO Pecny, Ondr 82.58 330 *e*P **P 19 46 51.3 +1.0**
GOPC MLR MLR
comp=Z,200nm,16.9s
PRU Pruhonice 82.62 330 *i* P **P 19 46 51.4 +0.9**
PRU AMS AMS 20 26 00.0
comp=Z,200nm,15.4s
PRU Pruhonice 82.62 330 *i* P **P 19 46 51.4 +0.9**
PRU MLR MLR
comp=Z,200nm,15.4s
ECSD EROS Data Cent 82.75 40 *e*P **P 19 46 50.9 -0.4**
comp=Z,8.8nm,1.0s
TREC Trest 82.77 329 *e*P **P 19 46 52.8 +1.5**
TREC Trest 82.77 329 *e*P **P 19 46 52.8 +1.5**
PPT Papeete 82.79 118 LR LR 20 17 54.6
comp=Z,59nm,19.5s,baz=318,slow=32
BZS Buzias 82.80 323 ⇑*i*P **P 19 46 52.1 +0.6**
BZS Buzias 82.80 323 ⇑P **P 19 46 52.1 +0.6**
PPT2 Papeete2 82.80 118 *e*LR LR 20 12 37.7
comp=Z,130nm,24.5s
T25A Trinidad 82.93 48 *e*P **P 19 46 53.2 +0.6**
comp=Z,9.4nm,0.9s
ANMO Albuquerque 83.11 51 *c e*P **P 19 46 52.1 -1.5**
ANMO pmax pmax
comp=Z,11nm,1.2s
ANMO Albuquerque 83.11 51 *e*P **P 19 46 54.3 +0.7**
comp=Z,9.3nm,1.1s
MPEP Malo Peshtene 83.39 321 *e*P **P 19 46 55.5 +0.9**
BNM Barren Site 83.52 52 *e*P **P 19 46 56.4 +0.6**
319A Douglas 83.58 55 *e*P **P 19 46 56.7 +0.8**
comp=Z,13nm,0.9s
CONA Conrad Observa 83.67 328 *i* sP **P 19 46 57.2 +1.1**
comp=Z,9.0nm,0.9s
KHC Kasperske Hory 83.68 330 *i* P **P 19 46 57.1 +1.1**
KHC Kasperske Hory 83.68 330 *i* P **P 19 46 57.1 +1.1**
KHC Kasperske Hory 83.68 330 *e*P **P 19 46 57.0 +0.9**
comp=Z,4.1nm,0.9s
PKSM Moragy 83.75 325 ⇓*i*P **P 19 46 57.4 +1.0**
GEC2 GERESS Array S 83.86 330 *e*P **P 19 46 57.3 +0.3**
GEC2 pmax pmax
comp=Z,5.0nm,0.8s
GEC2 GERESS Array S 83.86 330 *e*P **P 19 46 57.3 +0.3**
comp=Z,4.9nm,0.8s
GERES GERESS Array B 83.86 330 P **P 19 46 57.2 +0.3**
comp=Z,4.8nm,0.9s,baz=35,slow=4.9,SNR=29
GERES LR LR 20 27 21.7
comp=Z,107nm,18.3s,baz=33,slow=38
GEA0 GERESS Array S 83.86 330 *e*P **P 19 46 57.0 -0.1**
RPZ Rata Peaks 83.95 161 LR LR 20 18 51.2
comp=Z,55nm,20.3s,baz=294,slow=32
GRFO Grafenberg 84.16 331 *e*P **P 19 46 59.4 +1.0**
GRFO pmax pmax
comp=Z,21nm,1.4s
GRFO Grafenberg 84.16 331 *e*P **P 19 46 59.4 +1.0**
comp=Z,21nm,1.4s
ARSA Arzberg 84.34 328 *i* pP **P 19 47 00.2 +0.8**
comp=Z,3.8nm,1.1s
MOA Molln 84.41 329 *i* pP **P 19 47 00.4 +0.6**
comp=Z,4.4nm,1.1s
MMB Musomiste 84.66 319 *e*P **P 19 47 01.0 -0.2**
KKB Krupnik 84.80 320 *e*P **P 19 47 02.0 +0.2**
SOKA Soboth 85.00 327 *i* pP **P 19 47 03.3 +0.4**
comp=Z,7.9nm,1.0s
BEBN Eben Emael 85.26 335 P **P 19 47 04.3 +0.4**
OBKA Obir 85.34 328 *i* P **P 19 47 02.2 -2.4**
comp=Z,2.1nm,0.6s
STU Stuttgart 85.68 332 *e*P **P 19 47 06.7 +0.6**
STU pmax pmax
comp=Z,22nm,1.2s
STU Stuttgart 85.68 332 *e*P **P 19 47 06.7 +0.6**
comp=Z,22nm,1.2s
BCLA Clavier 85.70 335 P **P 19 47 06.5 +0.3**
MNTX Cornudas Mount 85.91 53 *e*P **P 19 47 07.9 +0.4**
comp=Z,4.3nm,0.9s
SNF Seneffe 85.97 336 P **P 19 47 08.2 +0.8**
KSU1 Kansas State U 86.05 43 *e*P **P 19 47 07.5 -0.6**
comp=Z,13nm,0.8s
AMTX Amarillo 86.08 49 *e*P **P 19 47 08.7 +0.3**
comp=Z,15nm,0.8s
MOTA Moosalm 86.11 330 *i* sP **P 19 47 09.7 +1.3**
comp=Z,3.7nm,0.9s
RETA Reutte 86.13 330 *i* pP **P 19 47 08.9 +0.5**
comp=Z,5.1nm,0.8s
DOU Dourbes 86.22 335 P **P 19 47 09.2 +0.5**
PDG Podgorica 86.31 322 ⇓*i*P **P 19 47 10.1 +0.8**
BFO Black Forest 86.38 332 *i* P **P 19 47 10.5 +1.0**
BFO Black Forest 86.38 332 *e*P **P 19 47 09.8 +0.2**
comp=Z,11nm,1.1s
DAVA Damuels 86.64 331 *i* pP **P 19 47 11.4 +0.4**
comp=Z,6.1nm,0.9s
U34A Anderson Ranch 87.43 45 *e*P **P 19 47 15.0 +0.1**
comp=Z,26nm,1.0s
TX31 Lajitas Ar. Si 88.58 54 *e*P **P 19 47 19.9 -0.7**
LTX Lajitas 88.59 54 *e*P **P 19 47 20.8 +0.1**
LTX Lajitas 88.59 54 *e*P **P 19 47 20.8 +0.1**
TXAR Lajitas Array 88.59 54 P **P 19 47 20.8 +0.1**
comp=Z,4.7nm,0.7s,baz=297,slow=2.6,SNR=68
HDIL Hopedale 88.76 38 *e*P **P 19 47 21.2 +0.1**
comp=Z,27nm,0.9s
ABTX Abilene, Hawle 88.87 49 *e*P **P 19 47 21.7 -0.1**
comp=Z,6.5nm,0.9s
HHAR Hobbs 89.55 43 *e*P **P 19 47 24.4 -0.6**
comp=Z,7.2nm,0.8s
OLIL Olney 90.75 38 *e*P **P 19 47 30.2 -0.2**
comp=Z,20nm,1.0s
MIAR Mount Ida 91.03 44 *e*P **P 19 47 31.5 -0.3**
MIAR pmax pmax
comp=Z,18nm,0.9s
MIAR Mount Ida 91.03 44 *e*P **P 19 47 31.5 -0.3**
comp=Z,18nm,0.9s
WHAR Wooly Hollow 91.19 43 *e*P **P 19 47 32.1 -0.4**
comp=Z,12nm,0.8s
KEST Kesra 96.32 324 LR LR 20 36 06.2
comp=Z,57nm,18.4s,baz=294,slow=38
ESDC Sonseca Array 98.26 336 P **P 19 48 04.9 0.0**
comp=Z,0.4nm,0.6s,baz=31,slow=3.3,SNR=3.5
ESDC LR LR 20 41 21.1
comp=Z,43nm,18.2s,baz=90,slow=41
MAW Mawson 120.30 206 *e*PKIKP **PKPdf 19 53 20.5 +3.1**
MAW Mawson 120.30 206 *e*PKPdf **PKPdf 19 53 20.5 +3.1**
SNAA Sanae 141.20 196 PKP PKPpre 19 53 49.0
VNA2 Neumayer--Watz 142.74 195 PKP PKPpre 19 53 54.3
baz=58,slow=5.2
SAML Samuel 142.87 48 *e*PKPpre PKPpre 19 53 56.7
LPAZ La Paz 144.99 63 PKP **PKPbc 19 54 04.6 -0.5**
comp=Z,2.3nm,0.6s,baz=20,slow=3.5,SNR=8.0
LPAZ La Paz 144.99 63 *e*PKPbc **PKPbc 19 54 04.8 -0.3**
PB11 IPOC Station P 146.09 69 *e*PKPdf **PKPdf 19 54 06.3 -0.7**

IDC 23 19:51:52.8±5.0, **22.44N**×**45.12W, h0**km**, mb3.5**/8, **mb1 3.8**/8, **mb1mx3.6**/61, **mbtmp3.5**/8, **MS3.4**/12, **Ms1 3.4**/12, **ms1mx3.2**/33, **Error ellipse: s-maj=139.7km s-min=25.8km az=172.0, Northern Mid-Atlantic Ridge**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
H05S1	**Guadeloupe/Mar**	**16.90**	**245**	T	T	20 12 52.8	
SJG	**San Juan**	**20.19**	**261**	LR	LR	20 02 47.4	
	comp=Z,78nm,21.0s,baz=94,slow=32						
BBTS	**Babate**	**28.15**	**101**	LR	LR	20 06 01.0	
	comp=Z,70nm,19.1s,baz=346,slow=30						
RCBR Riachuelo 29.51 161 LR LR 20 07 34.1
comp=Z,36nm,18.1s,baz=0.5,slow=32
SADO Sadowa 35.65 317 LR LR 20 10 47.1
comp=Z,42nm,19.4s,baz=159,slow=32
TKL Tuckaleechee C 36.04 300 LR LR 20 12 38.0
comp=Z,52nm,18.1s,baz=85,slow=35
TEIG Tepich 40.16 275 LR LR 20 12 54.3
comp=Z,29nm,20.1s,baz=2.0,slow=31
DBIC Dimbokro 41.84 106 LR LR 20 15 01.1
comp=Z,25nm,19.1s,baz=254,slow=33
H10N2 ASCENSION HYDR 42.49 132 T T 20 44 56.9
baz=316
H10N3 ASCENSION HYDR 42.49 132 T T 20 44 56.9
baz=316
H10N1 ASCENSION HYDR 42.51 132 T T 20 44 58.2
baz=316
H10S3 ASCENSION HYDR 43.18 133 T T 20 45 51.4
baz=317
H10S1 ASCENSION HYDR 43.18 133 T T 20 45 51.5
baz=317
H10S2 ASCENSION HYDR 43.19 133 T T 20 45 52.6
baz=317
LPAZ La Paz 44.60 212 LR LR 20 17 05.5
comp=Z,83nm,20.3s,baz=260,slow=34
ULM Lac du Bonnet 48.18 318 LR LR 20 18 59.4
comp=Z,52nm,20.6s,baz=56,slow=34
TXAR Lajitas Array 52.66 290 P P 20 01 08.7 -0.5
0.4nm,0.8s,baz=111,slow=4.9,SNR=3.4
GERES GERESS Array B 53.03 45 P P 20 01 12.0 +0.3
0.1nm,0.3s,baz=270,slow=8.7,SNR=4.0
NOA NORSAR Array B 54.47 30 P P 20 01 22.3 +0.4
0.8nm,0.9s,baz=251,slow=7.3,SNR=2.4
HFS Hagfors 55.36 31 P P 20 01 27.8 -0.6
2.0nm,0.9s,baz=243,slow=9.4,SNR=3.6
PDAR Pinedale Array 56.58 307 P P 20 01 38.5 +0.8
0.4nm,0.7s,baz=90,slow=8.6,SNR=4.0
PDAR LR LR 20 23 11.2
comp=Z,31nm,19.4s,baz=132,slow=33
YKA Yellowknife Ar 60.88 330 P P 20 02 06.4 -0.5
0.3nm,0.7s,baz=96,slow=7.2,SNR=5.6
NEW Newport 61.75 314 LR LR 20 26 50.2
comp=Z,27nm,21.6s,baz=95,slow=34
AKASG Malin Array Be 63.15 43 P P 20 02 22.1 -0.3
0.1nm,0.2s,baz=277,slow=5.6,SNR=6.3
NVAR Mina Array Bea 63.57 303 LR LR 20 27 31.0
comp=Z,59nm,21.3s,baz=88,slow=34
ILAR Eielson Array 74.81 334 P P 20 03 34.5 -0.2
1.1nm,0.8s,baz=68,slow=5.3,SNR=9.8

MDD ***23*** *19:55:03.0*±*1.3, 37.24N*×*13.97W, h0*km*, mb4.5/19, Error ellipse: s-maj=13.3km s-min=8.8km az=90.0, PRXIMO*
IGIL ***23*** *19:55:04.8, 37.35N*×*13.90W, h3*km*, ML3.0*
INMG ***23*** *19:55:05.3*±*1.9, 37.00N*×*14.25W, h10*km*, ML3.2, Error ellipse: s-maj=5.5km s-min=2.6km az=129.0*
CNRM ***23*** *19:55:05.7, 37.15N*×*13.89W, h30*km*, MD3.9*
CSEM ***23*** *19:55:07.1*±*0.3, 37.27N*×*13.55W, h10*km*, ML3.8/9, Error ellipse: s-maj=5.7km s-min=4.6km az=88.0*
LDG ***23*** *19:55:07.2*±*1.3, 37.67N*×*13.53W, h2*km*, Ml3.3/3, Error ellipse: s-maj=24.2km s-min=19.3km az=63.0*

ISC 23 19:55:05.6±2.7, **37.27N**±0.06×**13.6W**±0.1, **h10**km, **n177,** σ1§**60**/302, **1C, Azores-Cape St. Vincent Ridge**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
PMST	**Lisbon--Monsan**	**3.80**	**66**	*e*Pn	**Pn**	**19 56 05.6**	**+1.4**
PMST				*e*Sn	**Sn**	**19 56 50.3**	**+1.3**
PMST				A	A	19 56 54.8	
	34nm,0.3s						
PMST	**Lisbon--Monsan**	**3.80**	**66**	*e*Pn	**Pn**	**19 56 05.6**	**+1.4**
PMST				*e*Sn	**Sn**	**19 56 50.3**	**+1.3**
	34nm,0.3s						
PMAFR	**Mafra**	**3.82**	**63**	*e*Pn	**Pn**	**19 56 06.2**	**+1.8**
PMAFR				*e*Sn	**Sn**	**19 56 52.2**	**+2.8**
PMAFR				A	A	19 56 55.2	
	64nm,0.2s						
PMAFR				*e*T	T	20 00 01.1	
PMAFR	**Mafra**	**3.82**	**63**	⇑P	**Pn**	**19 56 06.2**	**+1.8**
	42nm,0.1s,SNR=18						
PMAFR				S	**Sn**	**19 56 51.5**	**+2.1**
	24nm,0.2s						
PMAFR	**Mafra**	**3.82**	**63**	P	**Pn**	**19 56 06.2**	**+1.8**
	42nm,0.1s,SNR=18						
PMAFR				S	**Sn**	**19 56 51.5**	**+2.1**
	24nm,0.2s						
PMAFR				*e*Sn	Sb	19 56 52.2	-7.1
	64nm,0.2s						
LIS	**Lisbon**	**3.82**	**66**	*e*Pn	**Pn**	**19 56 06.1**	**+1.7**
LIS				*e*Sn	**Sn**	**19 56 50.9**	**+1.5**
LIS	**Lisbon**	**3.82**	**66**	P	**Pn**	**19 56 06.1**	**+1.7**
LIS				S	**Sn**	**19 56 50.9**	**+1.5**
LIS	**Lisbon**	**3.82**	**66**	*e*Pn	**Pn**	**19 56 06.1**	**+1.7**
LIS				*e*Sn	**Sn**	**19 56 50.9**	**+1.5**
PFVI	**Vila Bisbo**	**3.84**	**91**	*e*Pn	**Pn**	**19 56 05.2**	**+0.5**
PFVI				*e*Sn	**Sn**	**19 56 49.5**	**-0.3**
PFVI				A	A	19 56 53.6	
	24nm,0.5s						
PFVI	**Vila Bisbo**	**3.84**	**91**	P	**Pn**	**19 56 05.2**	**+0.5**
	5.8nm,0.2s,SNR=7.9						
PFVI				S	**Sn**	**19 56 49.2**	**-0.6**
	13nm,0.1s,SNR=7.9						
PFVI	**Vila Bisbo**	**3.84**	**91**	P	**Pn**	**19 56 05.2**	**+0.5**
	5.8nm,0.2s,SNR=7.9						
PFVI				S	**Sn**	**19 56 49.2**	**-0.6**
	13nm,0.1s,SNR=7.9						
PFVI				*e*Sn	**Sn**	**19 56 49.5**	**-0.3**
	24nm,0.5s						
PTEO	**Sao Teotonio**	**3.92**	**85**	*e*Pn	**Pn**	**19 56 06.7**	**+1.0**
PTEO				*e*Sn	**Sn**	**19 56 52.1**	**+0.4**
PTEO				A	A	19 56 58.6	
	23nm,0.5s						
PTEO				*e*T	T	19 59 56.6	
PTEO	**Sao Teotonio**	**3.92**	**85**	P	**Pn**	**19 56 06.7**	**+1.0**
PTEO				S	**Sn**	**19 56 52.1**	**+0.4**
	11nm,0.5s						
PTEO	**Sao Teotonio**	**3.92**	**85**	P	**Pn**	**19 56 06.7**	**+1.0**
PTEO				*e*Sn	**Sn**	**19 56 52.1**	**+0.4**
	23nm,0.5s						
MORF	**Marmelete**	**3.97**	**88**	*e*P	**Pn**	**19 56 07.4**	**+0.8**
MORF				*e*S	**Sn**	**19 56 53.3**	**+0.1**
MORF				AML	AML	19 56 55.0	
	comp=N,36nm,0.1s						
MORF	**Marmelete**	**3.97**	**88**	*e*Pn	**Pn**	**19 56 07.4**	**+0.8**
MORF				*e*Sn	**Sn**	**19 56 53.2**	**+0.1**
MORF				A	A	19 57 02.3	
	comp=N,22nm,0.7s						
MORF				*e*T	T	20 00 18.3	
MORF	**Marmelete**	**3.97**	**88**	P	**Pn**	**19 56 07.4**	**+0.8**
MORF				P	**Pn**	**19 56 07.4**	**+0.8**
MORF				S	**Sn**	**19 56 53.3**	**+0.1**
	comp=N,36nm,0.1s						
MORF	**Marmelete**	**3.97**	**88**	P	**Pn**	**19 56 07.4**	**+0.8**
MORF				S	**Sn**	**19 56 53.3**	**+0.1**
	comp=N,36nm,0.1s						
PNCL	**Nicolau / Gran**	**4.13**	**77**	*e*Pn	**Pn**	**19 56 09.6**	**+0.9**
PNCL				*e*Sn	**Sn**	**19 56 58.2**	**+1.1**
PNCL				A	A	19 57 02.0	
	comp=N,18nm,0.3s						
PNCL				*e*T	T	20 00 05.6	
PNCL	**Nicolau / Gran**	**4.13**	**77**	*e*Pn	**Pn**	**19 56 09.6**	**+0.9**
PNCL				*e*Sn	**Sn**	**19 56 58.2**	**+1.1**
	comp=N,18nm,0.3s						
MESJ	**Messejana**	**4.34**	**81**	*e*P	**Pn**	**19 56 12.4**	**+0.9**
MESJ				*e*S	**Sn**	**19 57 01.7**	**-0.4**
MESJ				AML	AML	19 57 06.6	
	comp=N,17nm,0.5s						
MESJ	**Messejana**	**4.34**	**81**	*e*Pn	**Pn**	**19 56 12.6**	**+1.1**
MESJ				*e*Sn	**Sn**	**19 57 02.8**	**+0.7**
MESJ				A	A	19 57 07.3	
	comp=N,19nm,0.2s						
MESJ				*e*T	T	20 00 13.7	
MESJ	**Messejana**	**4.34**	**81**	P	**Pn**	**19 56 12.4**	**+0.9**
MESJ				P	**Pn**	**19 56 12.6**	**+1.1**
MESJ				S	**Sn**	**19 57 01.7**	**-0.4**
	comp=N,17nm,0.5s						
MESJ				S	**Sn**	**19 57 02.8**	**+0.7**
	comp=N,19nm,0.2s						
MESJ	**Messejana**	**4.34**	**81**	P	**Pn**	**19 56 12.4**	**+0.9**
MESJ				S	**Sn**	**19 57 02.8**	**+0.7**
	comp=N,19nm,0.2s						
MOE	**Montemor**	**4.36**	**72**	*e*Pn	**Pn**	**19 56 11.4**	**-0.4**
MOE				*e*Sn	**Sn**	**19 57 01.5**	**-1.2**
MOE	**Montemor**	**4.36**	**72**	P	**Pn**	**19 56 11.4**	**-0.4**
MOE				S	**Sn**	**19 57 01.5**	**-1.2**

MOE	**Montemor**	**4.36**	**72**	P		**Pn**	**19 56 11.4**	**-0.4**
MOE				S		**Sn**	**19 57 01.5**	**-1.2**
ALMR	**Almeirim**	**4.40**	**63**	*e*P		**Pn**	**19 56 12.9**	**+0.5**
ALMR				*e*S		**Sn**	**19 57 02.5**	**-1.2**
ALMR				AML		AML	19 57 06.4	
	comp=N,32nm,0.7s							
ALMR	**Almeirim**	**4.40**	**63**	P		**Pn**	**19 56 12.9**	**+0.5**
ALMR				S		**Sn**	**19 57 02.5**	**-1.2**
	comp=N,16nm,0.7s							
ALMR	**Almeirim**	**4.40**	**63**	P		**Pn**	**19 56 12.9**	**+0.5**
ALMR				S		**Sn**	**19 57 02.5**	**-1.2**
	comp=N,16nm,0.7s							
PCVE	**Castro Verde**	**4.46**	**84**	*e*Pn		**Pn**	**19 56 14.1**	**+0.8**
PCVE				*e*Sn		**Sn**	**19 57 05.5**	**+0.2**
PCVE				A		A	19 57 14.9	
	comp=N,11nm,0.5s							
PCVE				*e*T		T	20 00 15.2	
PCVE	**Castro Verde**	**4.46**	**84**	P		**Pn**	**19 56 14.1**	**+0.8**
PCVE				S		**Sn**	**19 57 05.5**	**+0.2**
	comp=N,11nm,0.5s							
PCVE	**Castro Verde**	**4.46**	**84**	P		**Pn**	**19 56 14.1**	**+0.8**
PCVE				*e*Sn		**Sn**	**19 57 05.5**	**+0.2**
	comp=N,11nm,0.5s							
PBDV	**Barranco-do-Ve**	**4.55**	**89**	*e*Pn		**Pn**	**19 56 15.6**	**+1.2**
PBDV				*e*Sn		**Sn**	**19 57 07.6**	**+0.2**
PBDV				A		A	19 57 15.9	
	comp=N,15nm,0.2s							
PBDV				*e*T		T	20 00 23.3	
PBDV	**Barranco-do-Ve**	**4.55**	**89**	P		**Pn**	**19 56 15.6**	**+1.2**
PBDV				S		**Sn**	**19 57 07.6**	**+0.2**
	comp=N,15nm,0.2s							
PBDV	**Barranco-do-Ve**	**4.55**	**89**	P		**Pn**	**19 56 15.6**	**+1.2**
PBDV				S		**Sn**	**19 57 07.6**	**+0.2**
	comp=N,15nm,0.2s							
EVO	**Evora**	**4.62**	**72**	*e*Pn		**Pn**	**19 56 16.6**	**+1.2**
EVO				*e*Sn		**Sn**	**19 57 10.1**	**+1.0**
EVO				A		A	19 57 13.6	
	comp=N,32nm,0.3s							
EVO	**Evora**	**4.62**	**72**	P		**Pn**	**19 56 16.6**	**+1.2**
EVO				S		**Sn**	**19 57 10.1**	**+1.0**
	comp=N,32nm,0.3s							
EVO	**Evora**	**4.62**	**72**	P		**Pn**	**19 56 16.6**	**+1.2**
EVO				S		**Sn**	**19 57 10.1**	**+1.0**
	comp=N,32nm,0.3s							
PMTG	**Montargil**	**4.62**	**66**	*e*Pn		**Pn**	**19 56 16.5**	**+1.1**
PMTG				*e*Sn		**Sn**	**19 57 11.3**	**+2.2**
PMTG				A		A	19 57 13.0	
	comp=N,12nm,0.2s							
PMTG				*e*T		T	20 00 07.8	
PMTG	**Montargil**	**4.62**	**66**	*e*Pn		**Pn**	**19 56 16.5**	**+1.1**
PMTG				*e*Sn		**Sn**	**19 57 11.3**	**+2.2**
	comp=N,12nm,0.2s							
PBEJ	**Beja**	**4.63**	**79**	*e*Pn		**Pn**	**19 56 16.8**	**+1.2**
PBEJ				*e*Sn		**Sn**	**19 57 10.8**	**+1.3**
PBEJ				A		A	19 57 14.6	
	comp=N,11nm,0.3s							
PBEJ	**Beja**	**4.63**	**79**	P		**Pn**	**19 56 16.8**	**+1.2**
PBEJ				S		**Sn**	**19 57 10.8**	**+1.3**
	comp=N,5.7nm,0.3s							
PBEJ	**Beja**	**4.63**	**79**	P		**Pn**	**19 56 16.8**	**+1.2**
PBEJ				S		**Sn**	**19 57 10.8**	**+1.3**
	comp=N,5.7nm,0.3s							
PVAQ	**Vaqueiros**	**4.71**	**87**	*e*Pn		**Pn**	**19 56 17.3**	**+0.6**
PVAQ				*e*Sn		**Sn**	**19 57 11.1**	**-0.3**
PVAQ				A		A	19 57 19.8	
	comp=N,15nm,0.4s							
PVAQ				*e*T		T	20 00 26.9	
PVAQ	**Vaqueiros**	**4.71**	**87**	P		**Pn**	**19 56 17.3**	**+0.6**
PVAQ				S		**Sn**	**19 57 11.1**	**-0.3**
	comp=N,15nm,0.4s							
PVAQ	**Vaqueiros**	**4.71**	**87**	P		**Pn**	**19 56 17.3**	**+0.6**
PVAQ				S		**Sn**	**19 57 11.1**	**-0.3**
	comp=N,15nm,0.4s							
PTOM	**Tomar**	**4.72**	**59**	*e*Pn		**Pn**	**19 56 18.4**	**+1.6**
PTOM				*e*Sn		**Sn**	**19 57 13.0**	**+1.4**
PTOM				A		A	19 57 22.0	
	comp=N,26nm,0.4s							
PTOM	**Tomar**	**4.72**	**59**	P		**Pn**	**19 56 18.4**	**+1.6**
PTOM				S		**Sn**	**19 57 13.0**	**+1.4**
	comp=N,13nm,0.4s							
PTOM	**Tomar**	**4.72**	**59**	P		**Pn**	**19 56 18.4**	**+1.6**
PTOM				S		**Sn**	**19 57 13.0**	**+1.4**
	comp=N,13nm,0.4s							
PMPS	**Porto Santo**	**4.75**	**209**	*e*Pn		Pn	19 56 04.9	-12
PMPS				*e*Sn		Sn	19 56 48.1	-24
PMPS				A		A	19 56 51.4	
	comp=N,47nm,0.2s							
PMPS	**Porto Santo**	**4.75**	**209**	P		Pn	19 56 04.9	-12
PMPS				S		Sn	19 56 48.1	-24
	comp=N,23nm,0.2s							
PMPS	**Porto Santo**	**4.75**	**209**	P		Pn	19 56 04.9	-12
PMPS				S		Sn	19 56 48.1	-24
	comp=N,23nm,0.2s							
PCAS	**Casmilo, Conde**	**4.88**	**54**	*e*Pn		**Pn**	**19 56 20.1**	**+1.1**
PCAS				*e*Sn		**Sn**	**19 57 16.9**	**+1.3**
PCAS				A		A	19 57 24.5	
	comp=N,12nm,0.3s							
PCAS	**Casmilo, Conde**	**4.88**	**54**	*e*Pn		**Pn**	**19 56 20.1**	**+1.1**
PCAS				*e*Sn		**Sn**	**19 57 16.9**	**+1.3**
	comp=N,12nm,0.3s							
EGRO	**El Granado**	**4.90**	**85**	P		**Pn**	**19 56 20.3**	**+1.0**
	comp=N,2.9nm,0.3s,SNR=7.9							
EGRO				S		**Sn**	**19 57 15.7**	**-0.4**
	comp=N,4.7nm,0.1s,SNR=4.6							
EGRO	**El Granado**	**4.90**	**85**	P		**Pn**	**19 56 20.3**	**+1.0**
	comp=N,2.9nm,0.3s,SNR=7.9							
EGRO				S		**Sn**	**19 57 15.7**	**-0.4**
	comp=N,4.7nm,0.1s,SNR=4.6							
PESTR	**Estremoz**	**5.03**	**70**	*e*Pn		**Pn**	**19 56 22.2**	**+1.2**
PESTR				*e*Sn		**Sn**	**19 57 20.2**	**+1.1**
PESTR				A		A	19 57 31.3	
	comp=N,9.8nm,0.3s							
PESTR				*e*T		T	20 00 20.1	
PESTR	**Estremoz**	**5.03**	**70**	P		**Pn**	**19 56 22.2**	**+1.2**
PESTR				S		**Sn**	**19 57 20.2**	**+1.1**
	comp=N,4.9nm,0.3s							
PESTR	**Estremoz**	**5.03**	**70**	P		**Pn**	**19 56 22.2**	**+1.2**
PESTR				S		**Sn**	**19 57 20.2**	**+1.1**
	comp=N,4.9nm,0.3s							
PMAR	**Madeira**	**5.28**	**212**	*e*Pn		Pn	19 56 12.1	-13
PMAR				*e*Sn		Sn	19 57 01.1	-25
PMAR				A		A	19 57 08.2	
	comp=N,40nm,0.2s							
PMAR	**Madeira**	**5.28**	**212**	P		Pn	19 56 12.1	-13
PMAR				S		Sn	19 57 01.1	-25
	comp=N,20nm,0.2s							
PMAR	**Madeira**	**5.28**	**212**	P		Pn	19 56 12.1	-13
PMAR				S		Sn	19 57 01.1	-25
	comp=N,20nm,0.2s							
PBAR	**Barrancos**	**5.30**	**78**	*e*Pn		**Pn**	**19 56 26.3**	**+1.5**
PBAR				*e*Sn		**Sn**	**19 57 25.9**	**0.0**
PBAR				A		A	19 57 31.6	
	comp=N,13nm,0.3s							
PBAR				*e*T		T	20 00 47.6	
PBAR	**Barrancos**	**5.30**	**78**	P		**Pn**	**19 56 26.3**	**+1.5**
PBAR				S		**Sn**	**19 57 25.9**	**0.0**
	comp=N,13nm,0.3s							
PBAR	**Barrancos**	**5.30**	**78**	P		**Pn**	**19 56 26.3**	**+1.5**
PBAR				S		**Sn**	**19 57 25.9**	**0.0**
	comp=N,13nm,0.3s							
FUL	**Funchal**	**5.33**	**211**	*e*Sn		Sn	19 57 02.6	-24
FUL				A		A	19 57 07.7	
	comp=N,43nm,0.2s							
FUL	**Funchal**	**5.33**	**211**	S		Sn	19 57 02.6	-24
	comp=N,22nm,0.2s							
PMRV	**Marv??o**	**5.36**	**64**	*e*Pn		**Pn**	**19 56 26.9**	**+1.4**
PMRV				*e*Sn		**Sn**	**19 57 28.4**	**+1.1**
PMRV				A		A	19 57 38.0	
	comp=N,16nm,0.4s							
PMRV	**Marv??o**	**5.36**	**64**	P		**Pn**	**19 56 26.9**	**+1.4**
PMRV				S		**Sn**	**19 57 28.4**	**+1.1**
	comp=N,16nm,0.4s							
PMRV	**Marv??o**	**5.36**	**64**	P		**Pn**	**19 56 26.9**	**+1.4**
PMRV				S		**Sn**	**19 57 28.4**	**+1.1**
	comp=N,16nm,0.4s							
EBAD	**Badajoz**	**5.43**	**72**	P		**Pn**	**19 56 27.7**	**+1.1**
	comp=N,4.6nm,0.1s,SNR=42							
EBAD				S		**Sn**	**19 57 28.4**	**-0.7**
	comp=N,13nm,0.2s,SNR=6.2							
EBAD	**Badajoz**	**5.43**	**72**	P		**Pn**	**19 56 27.7**	**+1.1**
	comp=N,4.6nm,0.1s,SNR=42							
EBAD				S		**Sn**	**19 57 28.4**	**-0.7**
	comp=N,13nm,0.2s,SNR=6.2							
PCBR	**Castelo Branco**	**5.46**	**60**	*e*Pn		**Pn**	**19 56 28.2**	**+1.2**
PCBR				*e*Sn		**Sn**	**19 57 30.7**	**+0.9**
PCBR				A		A	19 57 40.0	
	comp=N,8.3nm,0.4s							
PCBR	**Castelo Branco**	**5.46**	**60**	P		**Pn**	**19 56 28.2**	**+1.2**
PCBR				S		**Sn**	**19 57 30.7**	**+0.9**
	comp=N,4.2nm,0.4s							
PCBR	**Castelo Branco**	**5.46**	**60**	P		**Pn**	**19 56 28.2**	**+1.2**
PCBR				S		**Sn**	**19 57 30.7**	**+0.9**
	comp=N,4.2nm,0.4s							
PTO	**Porto**	**5.49**	**44**	*e*Sn		**Sn**	**19 57 29.1**	**-1.4**
PTO	**Porto**	**5.49**	**44**	S		**Sn**	**19 57 29.1**	**-1.4**
PTO	**Porto**	**5.49**	**44**	S		**Sn**	**19 57 29.1**	**-1.4**
EMIN	**Mina Concepcio**	**5.55**	**83**	P		**Pn**	**19 56 29.3**	**+1.1**
	comp=N,1.0nm,0.1s,SNR=35							
EMIN				S		**Sn**	**19 57 32.1**	**0.0**
	comp=N,3.7nm,0.2s							
EMIN	**Mina Concepcio**	**5.55**	**83**	P		**Pn**	**19 56 29.3**	**+1.1**
	comp=N,1.0nm,0.1s,SNR=35							
EMIN				S		**Sn**	**19 57 32.1**	**0.0**
	comp=N,3.7nm,0.2s							
PVIS	**Viseu**	**5.64**	**51**	*e*Pn		**Pn**	**19 56 30.8**	**+1.3**
PVIS				*e*Sn		**Sn**	**19 57 33.5**	**-0.8**
PVIS				A		A	19 57 38.3	
	comp=N,16nm,0.2s							
PVIS	**Viseu**	**5.64**	**51**	P		**Pn**	**19 56 30.8**	**+1.3**
PVIS				S		**Sn**	**19 57 33.5**	**-0.8**
	comp=N,8.1nm,0.2s							
PVIS	**Viseu**	**5.64**	**51**	P		**Pn**	**19 56 30.8**	**+1.3**
PVIS				S		**Sn**	**19 57 33.5**	**-0.8**
	comp=N,8.1nm,0.2s							
MTE	**Manteigas**	**5.69**	**55**	*e*Pn		**Pn**	**19 56 31.1**	**+1.0**
MTE				*e*Sn		**Sn**	**19 57 36.8**	**+1.3**
MTE				A		A	19 57 40.7	
	comp=N,17nm,0.4s							
MTE	**Manteigas**	**5.69**	**55**	P		**Pn**	**19 56 31.1**	**+1.0**
MTE				S		**Sn**	**19 57 36.8**	**+1.3**
	comp=N,8.6nm,0.4s							
MTE	**Manteigas**	**5.69**	**55**	P		**Pn**	**19 56 31.1**	**+1.0**
MTE				S		**Sn**	**19 57 36.8**	**+1.3**
	comp=N,8.6nm,0.4s							
PVRL	**Vila Real**	**6.08**	**47**	*e*Pn		**Pn**	**19 56 36.2**	**+0.6**
PVRL				*e*Sn		**Sn**	**19 57 44.1**	**-1.2**
PVRL				A		A	19 57 46.8	
	comp=N,18nm,0.1s							
PVRL	**Vila Real**	**6.08**	**47**	P		**Pn**	**19 56 36.2**	**+0.6**
PVRL				S		**Sn**	**19 57 44.1**	**-1.2**
	comp=N,8.9nm,0.1s							
PVRL	**Vila Real**	**6.08**	**47**	P		**Pn**	**19 56 36.2**	**+0.6**
PVRL				S		**Sn**	**19 57 44.1**	**-1.2**
	comp=N,8.9nm,0.1s							
PCAB	**Cabril**	**6.20**	**43**	*e*Pn		**Pn**	**19 56 38.0**	**+0.9**
PCAB				*e*Sn		**Sn**	**19 57 47.1**	**-0.9**
PCAB				A		A	19 57 52.8	
	comp=N,16nm,0.3s							
PCAB	**Cabril**	**6.20**	**43**	P		**Pn**	**19 56 38.0**	**+0.9**
PCAB				S		**Sn**	**19 57 47.1**	**-0.9**
	comp=N,7.8nm,0.3s							
PCAB	**Cabril**	**6.20**	**43**	P		**Pn**	**19 56 38.0**	**+0.9**
PCAB				S		**Sn**	**19 57 47.1**	**-0.9**
	comp=N,7.8nm,0.3s							
ESPR	**Espera**	**6.23**	**91**	P		**Pn**	**19 56 38.7**	**+1.2**
	comp=N,1.6nm,0.1s,SNR=5.7							
ESPR				S		**Sn**	**19 57 49.8**	**+1.0**
	comp=N,4.0nm,0.2s							
ESPR	**Espera**	**6.23**	**91**	P		**Pn**	**19 56 38.7**	**+1.2**
	comp=N,1.6nm,0.1s,SNR=5.7							
ESPR				S		**Sn**	**19 57 49.8**	**+1.0**
	comp=N,4.0nm,0.2s							
PGAV	**Gavieira, Arco**	**6.25**	**40**	*e*Pn		**Pn**	**19 56 38.8**	**+0.9**
PGAV				*e*Sn		**Sn**	**19 57 48.3**	**-1.2**
PGAV				A		A	19 57 56.4	
	comp=N,15nm,0.4s							
PGAV	**Gavieira, Arco**	**6.25**	**40**	*e*Pn		**Pn**	**19 56 38.8**	**+0.9**
PGAV				*e*Sn		**Sn**	**19 57 48.3**	**-1.2**
	comp=N,15nm,0.4s							
ELOB	**Lobios**	**6.29**	**41**	P		**Pn**	**19 56 39.3**	**+0.8**
	comp=N,1.4nm,0.1s,SNR=19							
ELOB				S		**Sn**	**19 57 48.2**	**-2.2**
	comp=N,5.5nm,0.1s,SNR=5.7							
ELOB	**Lobios**	**6.29**	**41**	P		**Pn**	**19 56 39.3**	**+0.8**
	comp=N,1.4nm,0.1s,SNR=19							
ELOB				S		**Sn**	**19 57 48.2**	**-2.2**
	comp=N,5.5nm,0.1s,SNR=5.7							
MVO	**Moncorvo**	**6.43**	**51**	*e*Pn		**Pn**	**19 56 40.9**	**+0.6**
MVO				*e*Sn		**Sn**	**19 57 51.9**	**-1.9**
MVO				A		A	19 57 55.3	
	comp=N,15nm,0.2s							
MVO	**Moncorvo**	**6.43**	**51**	P		**Pn**	**19 56 41.0**	**+0.6**
	comp=N,5.1nm,0.2s,SNR=7.9							
MVO				S		**Sn**	**19 57 51.9**	**-1.9**
	comp=N,20nm,0.3s,SNR=7.9							
MVO	**Moncorvo**	**6.43**	**51**	P		**Pn**	**19 56 41.0**	**+0.6**
	comp=N,5.1nm,0.2s,SNR=7.9							
MVO				S		**Sn**	**19 57 51.9**	**-1.9**
	comp=N,20nm,0.3s,SNR=7.9							
EPLA	**Plasencia**	**6.53**	**62**	P		**Pn**	**19 56 43.2**	**+1.5**
	comp=N,3.9nm,0.1s,SNR=27							
EPLA				S		**Sn**	**19 57 55.4**	**-0.9**
	comp=N,2.0nm,0.1s							
EPLA	**Plasencia**	**6.53**	**62**	P		**Pn**	**19 56 43.2**	**+1.5**
	comp=N,3.9nm,0.1s,SNR=27							
EPLA				S		**Sn**	**19 57 55.4**	**-0.9**
	comp=N,2.0nm,0.1s							
ECAB	**El Cabril**	**6.56**	**80**	P		**Pn**	**19 56 43.5**	**+1.4**
	comp=N,1.6nm,0.1s,SNR=40							
ECAB				S		**Sn**	**19 57 55.6**	**-1.5**
	comp=N,0.6nm,0.2s							
ECAB	**El Cabril**	**6.56**	**80**	P		**Pn**	**19 56 43.5**	**+1.4**
	comp=N,1.6nm,0.1s,SNR=40							
ECAB				S		**Sn**	**19 57 55.6**	**-1.5**
	comp=N,0.6nm,0.2s							
EMAZ	**Mazaricos**	**6.70**	**31**	P		**Pn**	**19 56 44.1**	**+0.1**
	comp=N,3.1nm,0.1s,SNR=7.9							
EMAZ				S		**Sn**	**19 57 55.8**	**-4.5**
	comp=N,5.7nm,0.1s,SNR=7.9							
EMAZ	**Mazaricos**	**6.70**	**31**	P		**Pn**	**19 56 44.1**	**+0.1**
	comp=N,3.1nm,0.1s,SNR=7.9							
EMAZ				S		**Sn**	**19 57 55.8**	**-4.5**
	comp=N,5.7nm,0.1s,SNR=7.9							
EAGO	**Agolada(Pontev**	**6.97**	**36**	P		**Pn**	**19 56 47.5**	**-0.2**
	comp=N,2.6nm,0.1s,SNR=7.9							
EAGO				S		**Sn**	**19 58 02.3**	**-4.7**
	comp=N,4.1nm,0.1s,SNR=7.9							
EAGO	**Agolada(Pontev**	**6.97**	**36**	P		**Pn**	**19 56 47.5**	**-0.2**
	comp=N,2.6nm,0.1s,SNR=7.9							
EAGO				S		**Sn**	**19 58 02.3**	**-4.7**
	comp=N,4.1nm,0.1s,SNR=7.9							
CIA	**Chichaoua**	**6.97**	**143**	P		**Pn**	**19 56 47.0**	**-0.8**
CIA				S		**Sn**	**19 58 02.0**	**-5.1**
CIA	**Chichaoua**	**6.97**	**143**	P		**Pn**	**19 56 47.0**	**-0.8**
CIA				S		**Sn**	**19 58 02.0**	**-5.1**
PBRG	**Braganca**	**6.99**	**47**	*e*Pn		**Pn**	**19 56 48.6**	**+0.6**
PBRG				*e*Sn		**Sn**	**19 58 06.3**	**-1.2**
PBRG				A		A	19 58 11.4	
	comp=N,8.2nm,0.2s							
PBRG	**Braganca**	**6.99**	**47**	P		**Pn**	**19 56 48.6**	**+0.6**
PBRG				S		**Sn**	**19 58 06.3**	**-1.2**
	comp=N,4.1nm,0.2s							
PBRG	**Braganca**	**6.99**	**47**	P		**Pn**	**19 56 48.6**	**+0.6**
PBRG				S		**Sn**	**19 58 06.3**	**-1.2**
	comp=N,4.1nm,0.2s							
ECAL	**Calabor**	**7.07**	**47**	P		**Pn**	**19 56 50.7**	**+1.5**
	comp=N,2.0nm,0.1s,SNR=11							
ECAL				S		**Sn**	**19 58 08.2**	**-1.5**
	comp=N,5.3nm,0.2s,SNR=4.9							
ECAL	**Calabor**	**7.07**	**47**	P		**Pn**	**19 56 50.7**	**+1.5**
	comp=N,2.0nm,0.1s,SNR=11							
ECAL				S		**Sn**	**19 58 08.2**	**-1.5**
	comp=N,5.3nm,0.2s,SNR=4.9							
EMIJ	**Mijas**	**7.13**	**93**	P		**Pn**	**19 56 52.5**	**+2.5**
	comp=N,0.5nm,0.2s,SNR=7.9							
EMIJ				S		**Sn**	**19 58 11.3**	**+0.3**
	comp=N,0.8nm,0.2s,SNR=7.9							
EMIJ	**Mijas**	**7.13**	**93**	P		**Pn**	**19 56 52.5**	**+2.5**
	comp=N,0.5nm,0.2s,SNR=7.9							
EMIJ				S		**Sn**	**19 58 11.3**	**+0.3**
	comp=N,0.8nm,0.2s,SNR=7.9							
EADA	**Adamuz**	**7.23**	**80**	P		**Pn**	**19 56 52.1**	**+0.8**
	comp=N,4.4nm,0.2s,SNR=40							
EADA				S		**Sn**	**19 58 11.9**	**-1.6**
	comp=N,1.4nm,0.2s,SNR=4.9							
EADA	**Adamuz**	**7.23**	**80**	P		**Pn**	**19 56 52.1**	**+0.8**
	comp=N,4.4nm,0.2s,SNR=40							
EADA				S		**Sn**	**19 58 11.9**	**-1.6**
	comp=N,1.4nm,0.2s,SNR=4.9							
EGOR	**Sierra Gorda,**	**7.60**	**88**	P		**Pn**	**19 56 58.7**	**+2.2**
	comp=N,0.2nm,0.2s,SNR=7.9							
EGOR				S		**Sn**	**19 58 22.1**	**-0.7**
	comp=N,0.7nm,0.2s,SNR=7.9							
EGOR	**Sierra Gorda,**	**7.60**	**88**	P		**Pn**	**19 56 58.7**	**+2.2**
	comp=N,0.2nm,0.2s,SNR=7.9							
EGOR				S		**Sn**	**19 58 22.1**	**-0.7**
	comp=N,0.7nm,0.2s,SNR=7.9							
OUK	**Oukaimeden**	**7.70**	**140**	P		Pn	19 56 55.0	-3.1
OUK				S		Sn	19 58 18.0	-7.5
OUK	**Oukaimeden**	**7.70**	**140**	P		Pn	19 56 55.0	-3.1
OUK				S		Sn	19 58 18.0	-7.5
TZC	**Tazercounte**	**7.79**	**129**	P		**Pn**	**19 56 59.0**	**-0.1**
TZC	**Tazercounte**	**7.79**	**129**	P		**Pn**	**19 56 59.0**	**-0.1**
KIB	**El Ksiba**	**7.80**	**125**	P		**Pn**	**19 56 58.0**	**-1.2**
KIB				S		Sn	19 58 21.0	-6.5
KIB	**El Ksiba**	**7.80**	**125**	P		**Pn**	**19 56 58.0**	**-1.2**
KIB				S		Sn	19 58 21.0	-6.5
EPON	**Pontenova**	**7.81**	**37**	P		**Pn**	**19 56 59.3**	**0.0**
	comp=N,4.0nm,0.3s,SNR=7.6							
EPON				S		**Sn**	**19 58 22.9**	**-4.9**
	comp=N,1.7nm,0.2s,SNR=4.7							
EPON	**Pontenova**	**7.81**	**37**	P		**Pn**	**19 56 59.3**	**0.0**
	comp=N,4.0nm,0.3s,SNR=7.6							
EPON				S		**Sn**	**19 58 22.9**	**-4.9**
	comp=N,1.7nm,0.2s,SNR=4.7							
ESDC	**Sonseca Array**	**7.95**	**69**	P		**Pn**	**19 57 02.3**	**+1.0**
	comp=N,4.0nm,0.2s,baz=258,slow=13,SNR=134							
ESDC				S		**Sn**	**19 58 29.8**	**-1.5**
	comp=N,1.2nm,0.3s,baz=257,slow=24,SNR=5.9							
ESDC	**Sonseca Array**	**7.95**	**69**	P		**Pn**	**19 57 02.3**	**+1.0**
	comp=N,4.0nm,0.2s,SNR=134							
ESDC				S		**Sn**	**19 58 29.8**	**-1.5**
	comp=N,1.2nm,0.3s,SNR=5.9							
GUD	**Guadarrama**	**8.11**	**63**	P		**Pn**	**19 57 05.0**	**+1.5**
	comp=N,0.8nm,0.1s,SNR=6.6							
GUD				S		**Sn**	**19 58 34.0**	**-1.3**
	comp=N,0.3nm,0.1s							
GUD	**Guadarrama**	**8.11**	**63**	P		**Pn**	**19 57 05.0**	**+1.5**
	comp=N,0.8nm,0.1s,SNR=6.6							
GUD				S		**Sn**	**19 58 34.0**	**-1.3**
	comp=N,0.3nm,0.1s							
CZD	**Col de Zad**	**8.20**	**118**	P		**Pn**	**19 57 05.0**	**+0.1**
CZD				S		**Sn**	**19 58 32.0**	**-5.8**
CZD	**Col de Zad**	**8.20**	**118**	P		**Pn**	**19 57 05.0**	**+0.1**
CZD				S		**Sn**	**19 58 32.0**	**-5.8**
EBER	**Berja**	**8.59**	**89**	P		**Pn**	**19 57 12.0**	**+1.8**
	comp=N,0.4nm,0.3s,SNR=7.9							
EBER	**Berja**	**8.59**	**89**	P		**Pn**	**19 57 12.0**	**+1.8**
	comp=N,0.4nm,0.3s,SNR=7.9							
EARI	**Arriondas**	**8.81**	**44**	P		**Pn**	**19 57 14.2**	**+1.2**
	comp=N,0.3nm,0.1s,SNR=9.6							
EARI				S		**Sn**	**19 58 48.1**	**-4.2**
	comp=N,0.1nm,0.2s,SNR=7.4							
EARI	**Arriondas**	**8.81**	**44**	P		**Pn**	**19 57 14.2**	**+1.2**
	comp=N,0.3nm,0.1s,SNR=9.6							
EARI				S		**Sn**	**19 58 48.1**	**-4.2**
	comp=N,0.1nm,0.2s,SNR=7.4							
SESP	**Santiago Espad**	**8.83**	**81**	P		**Pn**	**19 57 14.5**	**+1.2**
	comp=N,0.5nm,0.2s,SNR=7.9							
SESP				S		**Sn**	**19 58 51.0**	**-2.0**
	comp=N,0.5nm,0.2s,SNR=7.9							
SESP	**Santiago Espad**	**8.83**	**81**	P		**Pn**	**19 57 14.5**	**+1.2**
	comp=N,0.5nm,0.2s,SNR=7.9							
SESP				S		**Sn**	**19 58 51.0**	**-2.0**
	comp=N,0.5nm,0.2s,SNR=7.9							
ENIJ	**Nijar**	**9.13**	**88**	S		**Sn**	**19 58 57.7**	**-2.5**
	comp=N,2.4nm,0.2s,SNR=4.0							
ENIJ	**Nijar**	**9.13**	**88**	S		**Sn**	**19 58 57.7**	**-2.5**
	comp=N,2.4nm,0.2s,SNR=4.0							
ETOB	**Tobarra**	**9.64**	**78**	P		**Pn**	**19 57 25.0**	**+0.6**
	comp=N,1.2nm,0.3s,SNR=7.9							
ETOB				S		**Sn**	**19 59 10.4**	**-2.4**
	comp=N,0.9nm,0.3s,SNR=7.9							
ETOB	**Tobarra**	**9.64**	**78**	P		**Pn**	**19 57 25.0**	**+0.6**
	comp=N,1.2nm,0.3s,SNR=7.9							
ETOB				S		**Sn**	**19 59 10.4**	**-2.4**
	comp=N,0.9nm,0.3s,SNR=7.9							
ELAN	**Lanestosa**	**9.80**	**49**	P		**Pn**	**19 57 28.0**	**+1.4**
	comp=N,1.2nm,0.3s,SNR=7.9							
ELAN				S		**Sn**	**19 59 13.0**	**-3.7**
	comp=N,3.9nm,0.5s,SNR=7.9							
ELAN	**Lanestosa**	**9.80**	**49**	P		**Pn**	**19 57 28.0**	**+1.4**
	comp=N,1.2nm,0

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**46.20**	**259**	P	P	20 11 07.7	-0.2
	0.4nm,0.5s,baz=94,slow=7.2,SNR=16						
ASAR	**Alice Springs**	**46.37**	**254**	P	P	20 11 09.1	-0.1
	3.0nm,0.6s,baz=88,slow=8.4,SNR=75						
BRTR	**Keskin Array B**	**145.46**	**316**	PKPbc	PKPbc	20 22 20.5	-0.8
	0.5nm,0.8s,baz=29,slow=3.3,SNR=2.9						
GERES	**GERESS Array B**	**147.47**	**347**	PKPbc	PKPbc	20 22 26.2	-0.7
	0.1nm,0.4s,baz=344,slow=3.2,SNR=2.9						

NIED ***23*** *20:04:00.37°.20N×141°.30E,h8km,Mw4.1 Best double couple: M0 1.56000×10^15 NP1:φ=271.00000°,δ=44.00000°, λ=-83.00000°. NP2:φ=81.00000°,δ=47.00000°,λ=-96.00000°.*
BJI ***23*** *20:04:55.3,37°.08N×141°.62E,h35km,mb4.5/23,mB4.7/12, Ms4.3/6,Ms7 4.0/6*
ISCJB ***23*** *20:04:56.9±0.7,37°.23N±0°.03×141°.32E±0°.05,h26km±4km, mb4.2/49,MS3.5/8,Error ellipse: s-maj=6.6km s-min=4.1km az=17.6*
JMA ***23*** *20:04:57.6±0.1,37°.24N×141°.29E,h22km±1km,M4.3*
JMA Felt II J1.
IDC ***23*** *20:04:57.8±0.6,37°.20N×141°.17E,h18km±3km,mb3.9/20, mb1 4.1/22,mb1mx4.0/49,mbtmp4.1/22,ML3.6/2,MS3.1/7, Ms1 3.1/7,ms1mx2.8/45,Error ellipse: s-maj=16.0km s-min=12.3km az=97.0*
MOS ***23*** *20:04:58.5±1.1,37°.22N×141°.26E,h39km,mb4.4/29,Error ellipse: s-maj=10.7km s-min=7.1km az=92.4*
NEIC ***23*** *20:05:00.4±0.5,37°.26N×141°.21E,h37km±4km,mb4.5/14, Error ellipse: s-maj=5.7km s-min=4.1km az=119.0*

ISC 23 20:04:57.6±0.6,37°.24N±0°.03×141°.27E±0°.04,h17km±3km, n128,σ0.94/134,mb4.2/49,MS3.3/8,7C-2D,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**0.34**	**292**	P	**Pb**	**20 05 05.0**	**-0.2**
JFK				S	**Sb**	**20 05 10.4**	**+0.1**
ONAJ	**Iwakimizuishiy**	**0.40**	**250**	P	**Pg**	**20 05 05.9**	**0.0**
ONAJ				S	**Sb**	**20 05 12.1**	**-0.1**
JMM	**Marumori**	**0.73**	**329**	P	**Pb**	**20 05 11.3**	**-0.5**
JMM				S	**Sg**	**20 05 21.6**	**0.0**
JFT	**Otama**	**0.79**	**291**	P	**Pg**	**20 05 13.3**	**+0.2**
JFT				S	**Sg**	**20 05 24.2**	**+0.6**
JHO	**Hitachi**	**0.84**	**222**	P	**Pb**	**20 05 12.7**	**-1.1**
JHO				S	**Sb**	**20 05 23.5**	**-1.3**
JSB	**Shiboa**	**1.11**	**256**	P	**Pg**	**20 05 18.8**	**-0.3**
JSB				S	**Sg**	**20 05 34.0**	**+0.3**
JIO	**Ouri**	**1.21**	**3**	P	**Pn**	**20 05 18.7**	**-1.0**
JIO				eS	**Sb**	**20 05 33.9**	**-1.5**
JOU	**Okura**	**1.22**	**337**	P	**Pn**	**20 05 19.9**	**0.0**
JOU				eS	**Sn**	**20 05 35.9**	**-0.1**
MJAR	**Matsushiro Arr**	**2.55**	**255**	Pn	**Pn**	**20 05 39.3**	**+1.1**
	10nm,0.3s,baz=79,slow=15,SNR=23						
MAJO	**Matsushiro**	**2.55**	**255**	*c iP*	**Pn**	**20 05 39.0**	**+0.8**
MAJO	**Matsushiro**	**2.55**	**255**	*e*Pn	**Pn**	**20 05 39.6**	**+1.4**
MAT	**Matsushiro**	**2.55**	**255**	P	**Pn**	**20 05 39.6**	**+1.4**
MAT				eS	**Sb**	**20 06 13.1**	**-1.0**
MJB9	**Matsu-Tunnel**	**2.56**	**255**	*e*Pn	**Pn**	**20 05 39.6**	**+1.3**
INU	**Inuyama**	**3.92**	**242**	*e*Pn	**Pn**	**20 05 58.6**	**+1.6**
JHJ	**Hachijo jima 2**	**4.29**	**197**	Pn	**Pn**	**20 06 02.7**	**+0.6**
	17nm,0.3s,baz=63,slow=23,SNR=12						
JHJ				Sn	**Sn**	**20 06 52.2**	**+0.5**
	43nm,0.3s,baz=36,slow=22,SNR=4.3						
JHJ2	**Mitsune**	**4.29**	**197**	*e*Pn	**Pn**	**20 06 02.2**	**+0.1**
ERM	**Erimo**	**4.98**	**16**	*e*P	Pn	20 06 15.2	+3.6
ERM	**Erimo**	**4.98**	**16**	*e*Pn	**Pn**	**20 06 12.0**	**+0.4**
ASAJ	**Asahikawa**	**6.94**	**8**	Pn	**Pn**	**20 06 38.5**	**0.0**
	0.8nm,0.3s,baz=219,slow=12,SNR=9.3						
ASAJ				LR	LR	20 09 51.9	
	comp=Z,59nm,19.9s,baz=231,slow=42						
ASAJ	**Asahikawa**	**6.94**	**8**	*e*Pn	**Pn**	**20 06 38.2**	**-0.3**
SHO	**Shikotan**	**7.86**	**31**	*e*P	**Pn**	**20 06 50.5**	**-0.5**
SHO				pmax	pmax		
	comp=Z,18nm,0.7s						
SHO				pmax	pmax		
	comp=E,67nm,0.9s						
SHO				pmax	pmax		
	comp=N,28nm,0.8s						
KUR	**Kuril'sk**	**9.40**	**30**	*e*P	**Pn**	**20 07 14.5**	**+2.4**
KUR				eS	Sn	20 08 51.1	-6.3
KUR				pmax	pmax		
	comp=N,17nm,0.5s						
KUR				pmax	pmax		
	comp=E,11nm,0.5s						
KUR				pmax	pmax		
	comp=Z,8.0nm,0.5s						
JNU	**Nakatsue**	**9.45**	**247**	LR	LR	20 11 19.2	
	comp=Z,94nm,20.5s,baz=282,slow=41						
USRK	**Ussuriysk Ar.**	**9.89**	**318**	Pn	Pn	20 07 24.3	+5.4
	comp=Z,0.1nm,0.3s,baz=144,slow=12,SNR=6.9						
KSRS	**Korea Array**	**10.63**	**275**	Pn	Pn	20 07 35.2	+6.2
	comp=Z,0.1nm,0.3s,baz=91,slow=14,SNR=6.2						
KSAR	**Wonju Array Be**	**10.66**	**275**	P	Pn	20 07 35.3	+5.8
KSAR	**Wonju Array Be**	**10.66**	**275**	Pn	Pn	20 07 35.2	+5.8
KLR	**Kul'dur**	**13.83**	**333**	LR	LR	20 12 25.9	
	comp=Z,61nm,20.2s,baz=154,slow=32						
NJ2	**Nanjing**	**19.14**	**261**	*e*P	**Pn**	**20 09 20.6**	**-0.2**
NJ2				pmax	pmax		
	comp=Z,12nm,0.5s						
PETK	**Petropavlovsk-**	**19.57**	**31**	P	Pn	20 09 31.9	+6.1
	comp=Z,0.0nm,0.3s,baz=208,slow=9.2,SNR=4.3						
PEA1	**Petropavlovsk-**	**19.57**	**31**	*e*P	Pn	20 09 31.9	+6.1
MA2	**Magadan**	**23.17**	**12**	P	**P**	**20 10 03.0**	**0.0**
	comp=Z,2.2nm,0.3s,baz=208,slow=24,SNR=3.7						
MA2				LR	LR	20 19 08.3	
	comp=Z,35nm,19.7s,baz=195,slow=37						
HHC	**Hu-ho-hao-te**	**23.30**	**288**	*e*P	**P**	**20 10 03.8**	**-0.8**
HHC				S	S	20 14 09.0	-7.4
HHC				pmax	pmax		
	comp=Z,16nm,0.8s						
HHC				pmax	pmax		
	comp=Z,83nm,4.1s						
HHC				LR	LR		
	comp=Z,480nm,13.2s						
HHC				LR	LR		
	comp=Z,490nm,13.0s						
HHC				LR	LR		
	comp=Z,470nm,13.3s						
YAK	**Yakutsk**	**25.84**	**347**	LR	LR	20 20 15.8	
	comp=Z,53nm,18.4s,baz=124,slow=36						
YAK	**Yakutsk**	**25.84**	**347**	*e*P	P	20 10 35.6	+7.8
YAK				pmax	pmax		
	comp=Z,10.0nm,1.0s						
YAK				pmax	pmax		
	comp=N,4.0nm,1.4s						
YAK	**Yakutsk**	**25.84**	**347**	*e*P	**P**	**20 10 26.6**	**-1.2**
	comp=N,7.4nm,0.7s						
SEY	**Seymchan**	**26.61**	**11**	P	**P**	**20 10 36.1**	**+1.4**
	comp=N,3.6nm,0.9s,baz=188,slow=8.3,SNR=10						
SEY	**Seymchan**	**26.61**	**11**	*c e*P	**P**	**20 10 37.0**	**+2.3**
ULN	**Ulaanbaatar**	**27.14**	**304**	‖ *e*P	**P**	**20 10 39.7**	**-0.2**
ULN				pmax	pmax		
	comp=Z,7.0nm,2.5s						
ULN	**Ulaanbaatar**	**27.14**	**304**	*e*P	**P**	**20 10 39.2**	**-0.8**
	comp=Z,13nm,1.9s						
ENH	**Enshi**	**27.24**	**265**	*e*P	**P**	**20 10 40.1**	**-0.7**
	comp=Z,23nm,1.9s						
BOD	**Bodaibo**	**27.29**	**328**	*e*P	**P**	**20 10 36.7**	**-4.2**
BOD				pmax	pmax		
	comp=Z,3.0nm,1.8s						
SONA1	**Songino Array**	**27.57**	**304**	*e*P	**P**	**20 10 43.2**	**-0.6**
SONA0	**Songino Array**	**27.57**	**304**	*e*P	**P**	**20 10 43.3**	**-0.5**
	comp=Z,2.7nm,0.9s						
SONA0				*e*PcP	**PcP**	**20 14 00.2**	**-0.9**
SONM	**Songino Array**	**27.57**	**304**	P	**P**	**20 10 43.3**	**-0.5**
	comp=Z,2.2nm,0.8s,baz=104,slow=9.2,SNR=20						
SONM				PcP	**PcP**	**20 14 00.2**	**-0.9**
	comp=Z,0.7nm,0.9s,baz=157,slow=0.6,SNR=4.8						
H11N2	**WAKE ISLAND Hy**	**28.35**	**121**	T	T	20 40 26.6	
	baz=314,slow=76,SNR=1040						
H11N1	**WAKE ISLAND Hy**	**28.36**	**121**	T	T	20 40 27.3	
	baz=314,slow=76,SNR=1110						
H11N3	**WAKE ISLAND Hy**	**28.37**	**121**	T	T	20 40 28.1	
	baz=314,slow=76,SNR=1095						
H11S1	**WAKE ISLAND Hy**	**29.07**	**123**	T	T	20 41 22.1	
	baz=316,slow=76,SNR=617						
H11S3	**WAKE ISLAND Hy**	**29.07**	**123**	T	T	20 41 20.9	
	baz=316,slow=76,SNR=373						
H11S2	**WAKE ISLAND Hy**	**29.08**	**123**	T	T	20 41 16.5	
	baz=316,slow=76,SNR=356						
LZH	**Lanzhou**	**29.92**	**279**	*e*P	**P**	**20 11 05.8**	**+1.0**
LZH				pP	sP	20 11 17.9	+5.8
LZH				sP	pP	20 11 23.6	+14
LZH				PP	**PnPn**	**20 12 05.0**	**+4.0**
LZH				pmax	pmax		
	comp=Z,20nm,1.0s						
LZH				pmax	pmax		
	comp=Z,51nm,6.2s						
LZH				LR	LR		
	comp=Z,220nm,13.2s						
LZH				LR	LR		
	comp=Z,250nm,12.9s						
LZH				LR	LR		
	comp=Z,290nm,16.8s						
GYA	**Guiyang**	**31.14**	**260**	*e*P	**P**	**20 11 16.8**	**+1.2**
GYA				pmax	pmax		
	comp=Z,10.0nm,0.8s						
CD2	**Chengdu**	**31.56**	**270**	P	**P**	**20 11 17.3**	**-1.9**
CD2				pmax	pmax		
	comp=Z,1.0nm,0.5s						
GTA	**Gaotai**	**32.39**	**287**	*e*P	**P**	**20 11 25.8**	**-0.7**
GTA				pP	sP	20 11 37.1	+3.2
GTA				sP	pP	20 11 43.1	+11
GTA				pmax	pmax		
	comp=Z,3.0nm,0.8s						
BILL	**Bilibino**	**33.86**	**17**	*e*P	**P**	**20 11 39.3**	**+0.5**
BILL				*e*		20 12 54.5	
BILL				*e*PPP	PPP	20 13 05.7	
BILL				pmax	pmax		
	comp=Z,1.0nm,1.1s						
BILL				MLR	MLR		
	comp=Z,37nm,16.0s						
KMI	**Kunming**	**34.88**	**261**	P	**P**	**20 11 49.3**	**+0.9**
KMI				pmax	pmax		
	comp=Z,3.0nm,0.6s						
KMI				pmax	pmax		
	comp=Z,120nm,5.4s						
MYLDM	**Lahad Datu**	**38.10**	**219**	*e*P	**P**	**20 12 16.1**	**+0.4**
	comp=Z,12nm,1.1s						
WMQ	**Urumqi**	**40.64**	**297**	*e*P	**P**	**20 12 37.0**	**+0.3**
WMQ				pmax	pmax		
	comp=Z,3.0nm,0.6s						
WMQ				pmax	pmax		
	comp=Z,39nm,4.0s						
ZAA1	**Zalesovo Array**	**41.69**	**312**	*e*P	**P**	**20 12 44.6**	**-0.5**
ZAA1				*e*PcP	**PcP**	**20 14 41.5**	**+0.1**
ZALV	**Zalesovo Beam**	**41.69**	**312**	P	**P**	**20 12 44.6**	**-0.5**
	comp=Z,3.3nm,0.8s,baz=98,slow=6.1,SNR=18						
ZALV				pP	**pP**	**20 12 50.4**	**0.0**
	comp=Z,4.1nm,0.8s,baz=94,slow=6.7,SNR=9.1						
ZALV				PcP	**PcP**	**20 14 41.5**	**+0.1**
	comp=Z,0.5nm,0.4s,baz=146,slow=3.8,SNR=3.6						
MK01	**Makanchi Array**	**43.91**	**302**	*e*P	**P**	**20 13 02.8**	**-0.5**
MK31	**Makanchi Array**	**43.91**	**302**	*e*P	**P**	**20 13 02.9**	**-0.4**
MK31	**Makanchi Array**	**43.91**	**302**	*e*P	**P**	**20 13 02.9**	**-0.4**
MK32	**Makanchi Array**	**43.91**	**302**	*e*P	**P**	**20 13 02.9**	**-0.4**
MKAR	**Makanchi Array**	**43.91**	**302**	P	**P**	**20 13 02.9**	**-0.4**
	comp=Z,2.3nm,0.8s,baz=90,slow=9.7,SNR=27						
MKAR				pP	**pP**	**20 13 08.9**	**+0.3**
	comp=Z,2.7nm,0.8s,baz=85,slow=8.8,SNR=15						
MKAR	**Makanchi Array**	**43.91**	**302**	*c e*P	**P**	**20 13 03.2**	**-0.1**
MKAR				pmax	pmax		
	comp=Z,2.0nm,0.8s						
MAKZ	**Makanchi**	**44.12**	**302**	*e*P	**P**	**20 13 03.6**	**-1.4**
MAKZ				pmax	pmax		
	comp=Z,4.0nm,0.9s						
MAKZ	**Makanchi**	**44.12**	**302**	*e*P	**P**	**20 13 03.6**	**-1.4**
	comp=Z,3.7nm,0.9s						
KURK	**Kurchatov**	**45.71**	**308**	*e*P	**P**	**20 13 17.5**	**0.0**
KURK				pmax	pmax		
	comp=Z,12nm,0.6s						
KURK	**Kurchatov**	**45.71**	**308**	*e*P	**P**	**20 13 17.5**	**0.0**
	comp=Z,12nm,0.6s						
ILAR	**Eielson Array**	**49.38**	**32**	P	**P**	**20 13 46.4**	**+0.6**
	comp=Z,1.3nm,0.7s,baz=269,slow=6.5,SNR=14						
ILB	**Eielson Array**	**49.38**	**32**	*e*P	**P**	**20 13 46.0**	**+0.1**
TKM2	**Tokmak 2**	**49.43**	**298**	*e*P	**P**	**20 13 46.8**	**0.0**
TKM2				pmax	pmax		
	comp=Z,16nm,1.8s						
TKM2	**Tokmak 2**	**49.43**	**298**	*e*P	**P**	**20 13 46.8**	**0.0**
	comp=Z,16nm,1.8s						
AAK	**Ala-Archa**	**50.29**	**298**	*e*P	**P**	**20 13 53.1**	**-0.2**
AAK				pmax	pmax		
	comp=Z,1.0nm,1.0s						
ZRNK	**Zerenda**	**51.18**	**312**	*e*P	**P**	**20 13 59.9**	**+0.2**
ZRNK				pmax	pmax		
	comp=Z,2.0nm,0.8s						
ZRNK	**Zerenda**	**51.18**	**312**	*e*P	**P**	**20 13 59.9**	**+0.2**
	comp=Z,2.2nm,0.8s						
INK	**Inuvik**	**54.25**	**27**	P	**P**	**20 14 22.9**	**+0.8**
	comp=Z,1.0nm,0.7s,baz=293,slow=8.6,SNR=4.2						
INK				pP	**sP**	**20 14 29.0**	**-0.6**
	comp=Z,0.9nm,0.5s,baz=312,slow=5.7,SNR=2.9						
INK	**Inuvik**	**54.25**	**27**	*e*P	**P**	**20 14 23.2**	**+1.1**
	comp=Z,16nm,1.8s						
ARU	**Arti**	**56.13**	**318**	*d iP*	**P**	**20 14 35.4**	**-0.4**
ARU				S	**S**	**20 22 23.0**	**-0.9**
ARU				SS	**SS**	**20 26 09.3**	**-0.4**
ARU				pmax	pmax		
	comp=Z,12nm,1.7s						
ARU	**Arti**	**56.13**	**318**	*e*P	**P**	**20 14 35.4**	**-0.4**
	comp=Z,17nm,1.6s						
WRAB	**Tennant Creek**	**57.24**	**188**	*e*P	**P**	**20 14 43.3**	**-0.7**
WRAB				pmax	pmax		
	comp=Z,6.0nm,0.6s						
WRAB	**Tennant Creek**	**57.24**	**188**	*e*P	**P**	**20 14 43.3**	**-0.7**
	comp=Z,5.8nm,0.6s						
WR1	**Warramunga Arr**	**57.25**	**188**	*e*P	**P**	**20 14 43.4**	**-0.7**
WRA	**Warramunga Arr**	**57.25**	**188**	P	**P**	**20 14 43.4**	**-0.7**
	comp=Z,1.2nm,0.5s,baz=5.5,slow=7.0,SNR=23						
WRA				pP	**pP**	**20 14 49.3**	**-0.3**
	comp=Z,2.1nm,0.6s,baz=5.9,slow=7.4,SNR=11						
ABKAR	**Akbulak array**	**57.72**	**310**	*e*P	**P**	**20 14 46.3**	**-0.9**
AS31	**Alice Springs**	**60.98**	**188**	*e*P	**P**	**20 15 10.6**	**+0.7**
	comp=Z,2.6nm,1.4s						
ASAR	**Alice Springs**	**60.98**	**188**	P	**P**	**20 15 09.1**	**-0.9**
	comp=Z,0.7nm,0.7s,baz=14,slow=7.0,SNR=10						
KLMR	**Klimovskoe**	**63.52**	**328**	*e*P	P	20 15 23.0	-3.5
KLMR				pmax	pmax		
	comp=Z,16nm,1.6s						
GEYT	**Alibeck**	**63.63**	**299**	P	**P**	**20 15 28.4**	**+0.6**
	comp=Z,2.7nm,0.8s,baz=52,slow=9.7,SNR=5.8						
YKA	**Yellowknife Ar**	**63.69**	**30**	P	**P**	**20 15 28.0**	**+0.4**
	comp=Z,0.4nm,0.7s,baz=304,slow=7.0,SNR=7.9						
YKA				pP	**pP**	**20 15 33.4**	**+0.3**
	comp=Z,0.4nm,0.8s,baz=295,slow=6.7,SNR=4.0						
YKA	**Yellowknife Ar**	**63.69**	**30**	P	**P**	**20 15 28.0**	**+0.4**
YKA				pmax	pmax		
	comp=Z,1.0nm,0.7s						
YKB5	**Yellowknife Ar**	**63.69**	**30**	*e*P	**P**	**20 15 27.8**	**+0.2**
ARA0	**ARCESS Array S**	**63.76**	**339**	*e*P	**P**	**20 15 28.1**	**+0.1**
ARCES	**ARCESS Array B**	**63.76**	**339**	P	**P**	**20 15 28.1**	**+0.1**
	comp=Z,2.0nm,0.9s,baz=55,slow=10,SNR=3.6						
VRH	**Novokhopyorsk**	**67.35**	**318**	*e*P	**P**	**20 15 50.3**	**-1.2**
VRH				pmax	pmax		
	comp=Z,6.0nm,1.1s						
OBN	**Obninsk**	**67.86**	**323**	*e*P	**P**	**20 15 55.1**	**+0.5**
OBN				*e*		20 16 21.8	
OBN				*e*		20 18 24.9	
OBN				pmax	pmax		
	comp=Z,12nm,1.7s						
FIA0	**FINESS Array S**	**68.58**	**332**	*e*P	**P**	**20 15 58.8**	**-0.2**
FIA0	**FINESS Array S**	**68.58**	**332**	*e*P	**P**	**20 15 58.8**	**-0.2**
FINES	**FINESS Array B**	**68.58**	**332**	P	**P**	**20 15 58.8**	**-0.2**
	comp=Z,4.7nm,0.8s,baz=60,slow=7.7,SNR=16						
FINES				LR	LR	20 46 54.0	
	comp=Z,18nm,18.2s,baz=50,slow=37						
VSR	**Storozhevoye**	**68.70**	**319**	*e*P	**P**	**20 15 58.0**	**-2.0**
VSR				pmax	pmax		
	comp=Z,5.0nm,1.1s						
KBZ	**Khabaz**	**70.68**	**311**	P	**P**	**20 16 12.9**	**+0.6**
	comp=Z,2.7nm,0.8s,baz=62,slow=4.5,SNR=5.8						
KIV	**Kislovodsk**	**70.68**	**311**	*e*P	**P**	**20 16 12.7**	**+0.2**
KIV				*e*		20 16 32.3	
KIV				pmax	pmax		
	comp=Z,6.0nm,1.0s						
KIV				MLR	MLR		
	comp=Z,32nm,18.0s						
NB2	**NORSAR Subarra**	**73.95**	**337**	P	**P**	**20 16 31.5**	**-0.1**
	comp=Z,1.6nm,0.8s,baz=39,slow=6.2						
NB200	**NORSAR Array S**	**73.95**	**337**	*e*P	**P**	**20 16 31.6**	**0.0**
NOA	**NORSAR Array B**	**73.95**	**337**	P	**P**	**20 16 31.6**	**0.0**
	comp=Z,2.7nm,0.8s,baz=39,slow=5.9,SNR=9.5						
NOA				LR	LR	20 51 38.0	
	comp=Z,16nm,21.7s,baz=210,slow=38						
AKASG	**Malin Array Be**	**74.06**	**322**	P	**P**	**20 16 32.0**	**-0.4**
	comp=Z,0.5nm,0.3s,baz=46,slow=6.1,SNR=19						
AKASG				pP	**pP**	**20 16 37.8**	**-0.1**
	comp=Z,0.7nm,0.4s,baz=46,slow=6.1,SNR=6.0						
AKASG	**Malin Array Be**	**74.06**	**322**	P	**P**	**20 16 32.0**	**-0.4**
AKASG				pmax	pmax		
	comp=Z,1.0nm,0.3s						
KIEV	**Kiev**	**74.08**	**322**	*e*P	**P**	**20 16 31.9**	**-0.5**
KIEV				pmax	pmax		
	comp=Z,3.0nm,0.8s						
KIEV	**Kiev**	**74.08**	**322**	*e*P	**P**	**20 16 31.9**	**-0.5**
	comp=Z,3.2nm,0.8s						
NV01	**Mina Array Sit**	**74.95**	**53**	*e*P	**P**	**20 16 39.2**	**+1.1**
NVAR	**Mina Array Bea**	**74.95**	**53**	P	**P**	**20 16 39.2**	**+1.1**
	comp=Z,0.9nm,0.8s,baz=290,slow=6.2,SNR=5.4						
BR101	**Keskin Array S**	**78.63**	**311**	*e*P	**P**	**20 16 58.1**	**-0.6**
BRTR	**Keskin Array B**	**78.63**	**311**	P	**P**	**20 16 58.1**	**-0.6**
	comp=Z,0.7nm,0.9s,baz=132,slow=1.8,SNR=3.7						
BRTR	**Keskin Array B**	**78.63**	**311**	*c e*P	**P**	**20 17 00.2**	**+1.5**
CLL	**Collm**	**80.86**	**330**	‖ *i*P	**P**	**20 17 10.6**	**+0.2**
	comp=Z,5.0nm,0.9s						
CLL				*i*		20 17 16.6	
CLL	**Collm**	**80.86**	**330**	‖ *i*P	**P**	**20 17 10.6**	**+0.2**
CLL				pmax	pmax		
	comp=Z,5.0nm,0.9s						
KHC	**Kasperske Hory**	**82.31**	**328**	*e*P	**P**	**20 17 18.5**	**+0.3**
KHC	**Kasperske Hory**	**82.31**	**328**	*e*P	**P**	**20 17 18.5**	**+0.3**
GERES	**GERESS Array B**	**82.47**	**328**	P	**P**	**20 17 19.0**	**-0.1**
	comp=Z,0.8nm,0.6s,baz=39,slow=5.1,SNR=9.7						
GERES				pP	**pP**	**20 17 25.1**	**+0.3**
	comp=Z,0.5nm,0.6s,baz=40,slow=6.2,SNR=4.4						
GERES	**GERESS Array B**	**82.47**	**328**	P	**P**	**20 17 19.0**	**-0.1**
GERES				pmax	pmax		
	comp=Z,1.0nm,0.6s						
GERES	**GERESS Array B**	**82.47**	**328**	P	**P**	**20 17 19.0**	**-0.1**
ANMO	**Albuquerque**	**84.54**	**50**	*c e*P	**P**	**20 17 32.9**	**+2.8**
ANMO				pmax	pmax		
	comp=Z,2.0nm,1.2s						
LTX	**Lajitas**	**90.08**	**52**	*e*P	**P**	**20 17 57.6**	**+0.7**
LTX	**Lajitas**	**90.08**	**52**	*e*P	**P**	**20 17 57.5**	**+0.7**
TXAR	**Lajitas Array**	**90.08**	**52**	P	**P**	**20 17 57.5**	**+0.6**
	comp=Z,0.6nm,0.8s,baz=304,slow=3.0,SNR=6.9						
LPAZ	**La Paz**	**146.69**	**59**	PKPbc	**PKPbc**	**20 24 39.5**	**-0.2**
	comp=Z,1.0nm,0.5s,baz=10,slow=10,SNR=4.1						

IDC 23 20:15:30.5±2.1,19°.88S×169°.29E,h0km,mb3.9/3, mb1 4.2/4,mb1mx3.7/25,mbtmp3.9/4,ML3.7/1,Error ellipse: s-maj=96.2km s-min=28.3km az=149.0,Vanuatu Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**3.44**	**230**	Pn	Pn	20 16 24.8	-0.7
	7.2nm,0.3s,baz=99,slow=8.7,SNR=489						
DZM				Sn	Sn	20 17 01.2	-5.7
	18nm,0.3s,baz=1.0,slow=23,SNR=17						
WRA	**Warramunga Arr**	**32.82**	**264**	P	P	20 22 06.0	0.0
	0.4nm,0.4s,baz=92,slow=8.4,SNR=21						
ASAR	**Alice Springs**	**33.02**	**257**	P	P	20 22 07.9	+0.1
	2.0nm,0.6s,baz=86,slow=9.0,SNR=48						
NVAR	**Mina Array Bea**	**89.19**	**48**	P	P	20 28 28.6	-0.1
	0.3nm,0.5s,baz=229,slow=9.0,SNR=4.5						
GERES	**GERESS Array B**	**145.07**	**332**	PKPbc	PKPbc	20 35 08.6	-0.8
	0.5nm,0.6s,baz=46,slow=3.9,SNR=6.8						

ISCJB ***23*** *20:16:41.9±0.4,38°.55N±0°.02×26°.76E±0°.03,h3km±4km, Error ellipse: s-maj=3.7km s-min=3.1km az=160.4*
ATH ***23*** *20:16:41.5,38°.55N×26°.75E,h28km±2km,ML2.8/4,Error ellipse: s-maj=2.9km s-min=0.9km az=249.0*
ISK ***23*** *20:16:41.2,38°.53N×26°.79E,h5km,MD3.0*
DDA ***23*** *20:16:41.8,38°.55N×26°.76E,h7km,Ml3.1*
CSEM ***23*** *20:16:42.2±0.1,38°.52N×26°.76E,h5km,ML3.1,Error ellipse: s-maj=2.8km s-min=2.2km az=56.0*

ISC 23 20:16:41.8±0.8,38°.54N±0°.02×26°.76E±0°.02,h13km±7km, n75,σ0.68/96,Aegean Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
URLA	**Izmir**	**0.22**	**216**	*i* P	**Pg**	**20 16 47.0**	**+0.4**
URLA				*i* S	**Sg**	**20 16 49.7**	**-0.2**
URLA	**Izmir**	**0.22**	**216**	P	**Pg**	**20 16 47.0**	**+0.4**
URLA				S	**Sg**	**20 16 49.7**	**-0.2**
BLCB	**Balcova**	**0.27**	**125**	*e*PG	**Pg**	**20 16 47.2**	**-0.3**
BLCB				*e*SG	**Sg**	**20 16 51.3**	**+0.1**
BLCB	**Balcova**	**0.27**	**125**	*e*Pg	**Pg**	**20 16 47.2**	**-0.3**
BLCB				*e*Sg	**Sg**	**20 16 51.3**	**+0.1**
ZEY	**¯zmir**	**0.36**	**214**	*i* P	**Pg**	**20 16 49.4**	**+0.2**
ZEY				*i* S	**Sb**	**20 16 55.4**	**-0.2**
IZM	**Izmir**	**0.42**	**110**	*e*PG	**Pg**	**20 16 50.1**	**-0.1**
IZM	**Izmir**	**0.42**	**110**	*e*Pg	**Pg**	**20 16 50.1**	**-0.1**
DKL	**Dikili**	**0.54**	**12**	*e*PG	**Pg**	**20 16 52.5**	**0.0**
DKL	**Dikili**	**0.54**	**12**	*e*Pg	**Pg**	**20 16 52.5**	**0.0**
CHOS	**Chios island**	**0.58**	**255**	*e*PG	**Pb**	**20 16 53.9**	**+0.1**
CHOS	**Chios island**	**0.58**	**255**	P	**Pb**	**20 16 53

LPK	Lapseki	1.83	360	*e*Pn	Pb	20 17 15.0	-0.2
YER	Yerkesik	1.85	139	*e*PN	Pb	20 17 14.7	-0.8
YER	Yerkesik	1.85	139	*e*Pn	Pb	20 17 14.7	-0.8
GELI	Tayfur-Gelibol	1.87	353	*e*PN	Pb	20 17 16.0	+0.2
GELI	Tayfur-Gelibol	1.87	353	*e*Pn	Pb	20 17 16.0	+0.2
EDC	Edincik	2.00	25	*e*PN	Pb	20 17 17.4	-0.6
EDC	Edincik	2.00	25	*e*Pn	Pb	20 17 17.4	-0.6
KCTX	Karacabey (Bur	2.12	35	*e*PN	Pb	20 17 19.0	-1.2
KCTX	Karacabey (Bur	2.12	35	*e*Pn	Pb	20 17 19.0	-1.2
ERIK	Erikli-Kesan	2.14	355	*e*PN	Pb	20 17 19.8	-0.6
ERIK	Erikli-Kesan	2.14	355	*e*Pn	Pb	20 17 19.8	-0.6
KHAL	Karahalli	2.15	94	*i* P	Pg	20 17 22.0	-1.1
SMTH	Samothraki Isl	2.15	334	P	Pn	20 17 18.4	+1.0
SMTH	Samothraki Isl	2.15	334	P	Pn	20 17 18.4	+1.0
ENEZ	Enez	2.25	348	*e*PN	Pb	20 17 21.1	-1.1
ENEZ	Enez	2.25	348	*e*Pn	Pb	20 17 21.1	-1.1
TVSB	Tavsanli	2.29	66	*e*PN	Pb	20 17 21.6	-1.5
TVSB	Tavsanli	2.29	66	*e*Pn	Pb	20 17 21.6	-1.5
ALN	Alexandroupoli	2.42	347	*e*PN	Pb	20 17 23.4	-1.8
ALN	Alexandroupoli	2.42	347	P	Pn	20 17 21.8	+0.7
ALN	Alexandroupoli	2.42	347	*e*Pn	Pb	20 17 23.4	-1.8
ALN	Alexandroupoli	2.42	347	P	Pn	20 17 21.8	+0.7
ULDT	Uludag	2.44	48	*i* P	Pg	20 17 27.8	-0.8
ARMT	Armutlu	2.59	38	*e*PN	Pn	20 17 25.8	+2.3
ARMT	Armutlu	2.59	38	*e*Pn	Pn	20 17 25.8	+2.3
SKIA	Skiathos	2.65	285	P	Pn	20 17 24.2	0.0
SKIA	Skiathos	2.65	285	P	Pn	20 17 24.2	0.0

NEIC ***23*** *20:26:38.7±1.9, 14°.37S×166°.84E, h41km±16km, mb4.2/4, Error ellipse: s-maj=16.3km s-min=9.2km az=79.0*
IDC ***23*** *20:26:39.3±3.2, 14°.47S×166°.87E, h47km±29km, mb3.6/10, mb1 3.8/12, mb1mx3.7/33, mbtmp3.9/12, ML4.3/2, MS3.3/2, Ms1 3.3/2, ms1mx2.8/40, Error ellipse: s-maj=26.8km s-min=21.8km az=95.0*
ISCJB ***23*** *20:26:40.0±0.6, 14°.48S±0°.06×166°.7E±0°.1, h67km, mb3.8/13, Error ellipse: s-maj=16.3km s-min=8.2km az=175.7*

ISC 23 20:26:41.1±0.6, 14°.46S±0°.08×166°.9E±0°.1, h67km, n26, σ1ș20/28, mb3.9/13, Vanuatu Islands

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
DZM	**Mont Dzumac**	**7.58**	**183**	P	**Pn**	**20 28 28.6**	**-0.5**
	2.2nm,0.3s,baz=68,slow=22,SNR=31						
DZM				S	**Sn**	**20 29 55.0**	**+1.4**
	baz=305,slow=23,SNR=2.5						
DZM				LR	LR	20 31 16.4	
	comp=Z,287nm,18.3s,baz=267,slow=37						
HNR	**Honiara**	**8.46**	**305**	P	**Pn**	**20 28 38.9**	**-2.0**
	6.9nm,0.3s,baz=173,slow=17,SNR=3.1						
HNR	**Honiara**	**8.46**	**305**	*e*P	Pn	20 28 36.8	-4.1
RAO	**Raoul Island**	**20.33**	**139**	*e*P	**P**	**20 31 08.5**	**-3.4**
URZ	**Urewera**	**25.36**	**161**	P	**P**	**20 32 01.1**	**-0.9**
	4.1nm,0.9s,baz=132,slow=13,SNR=2.7						
STKA	**Stephens Creek**	**28.91**	**229**	P	**P**	**20 32 34.0**	**+0.1**
	3.0nm,1.0s,baz=33,slow=8.5,SNR=6.1						
STKA				PcP	**PcP**	**20 35 42.6**	**+0.9**
	1.1nm,0.9s,baz=14,slow=5.2,SNR=3.2						
STKA	**Stephens Creek**	**28.91**	**229**	*e*P	**P**	**20 32 34.5**	**+0.6**
	3.0nm,1.4s						
STKA				PcP	**PcP**	**20 35 42.6**	**+0.9**
WR1	**Warramunga Arr**	**31.56**	**255**	*e*P	**P**	**20 32 56.1**	**-1.4**
	16nm,1.5s						
WRA	**Warramunga Arr**	**31.56**	**255**	P	**P**	**20 32 56.1**	**-1.4**
	0.3nm,0.5s,baz=84,slow=9.6,SNR=4.9						
AS31	**Alice Springs**	**32.45**	**249**	*e*P	**P**	**20 33 05.4**	**+0.2**
	3.7nm,1.8s						
ASAR	**Alice Springs**	**32.45**	**249**	P	**P**	**20 33 04.2**	**-1.1**
	0.6nm,0.6s,baz=74,slow=9.3,SNR=14						
ASAR				PcP	**PcP**	**20 35 51.9**	**+0.6**
	0.4nm,0.6s,baz=70,slow=2.7,SNR=4.1						
PETK	**Petropavlovsk-**	**67.76**	**354**	P	**P**	**20 37 31.9**	**+0.4**
	2.4nm,0.8s,baz=142,slow=13,SNR=3.5						
PEA1	**Petropavlovsk-**	**67.76**	**354**	*e*P	**P**	**20 37 31.9**	**+0.4**
KLR	**Kul'dur**	**70.63**	**336**	LR	LR	21 10 05.4	
	comp=Z,116nm,18.1s,baz=196,slow=37						
CMAR	**Chiang Mai Arr**	**74.53**	**294**	P	**P**	**20 38 13.2**	**+0.1**
	0.2nm,0.4s,baz=110,slow=3.9,SNR=3.2						
SONA0	**Songino Array**	**82.08**	**324**	*e*P	**P**	**20 38 55.6**	**+1.2**
	8.2nm,1.9s						
SONM	**Songino Array**	**82.08**	**324**	P	**P**	**20 38 55.6**	**+1.2**
	0.3nm,0.7s,baz=127,slow=3.8,SNR=2.9						
ILAR	**Eielson Array**	**86.38**	**18**	P	**P**	**20 39 15.3**	**-0.3**
	1.0nm,0.7s,baz=241,slow=5.0,SNR=11						
ILB	**Eielson Array**	**86.38**	**18**	*e*P	**P**	**20 39 15.1**	**-0.6**
SNAA	**Sanae**	**93.80**	**183**	PKP	**P**	**20 39 51.1**	**+0.5**
VNA3	**Neumayer Olymp**	**94.48**	**181**	PKP	**P**	**20 39 54.3**	**+0.7**
VNA2	**Neumayer--Watz**	**94.74**	**182**	PKP	**P**	**20 39 56.1**	**+1.3**
	baz=182,slow=2.9						
MKAR	**Makanchi Array**	**96.78**	**316**	P	**P**	**20 40 05.4**	**+0.9**
	0.1nm,0.3s,baz=91,slow=6.4,SNR=4.6						
YKA	**Yellowknife Ar**	**97.46**	**27**	P	**P**	**20 40 07.0**	**-0.2**
	0.2nm,0.8s,baz=256,slow=2.8,SNR=5.1						
ARCES	**ARCESS Array B**	**119.91**	**345**	PKP	**PKPdf**	**20 45 23.8**	**+0.4**
	3.3nm,1.0s,baz=32,slow=4.7,SNR=4.3						
FINES	**FINESS Array B**	**125.35**	**338**	PKP	**PKPdf**	**20 45 35.6**	**+1.6**
	1.5nm,0.9s,baz=44,slow=2.5,SNR=8.5						

IDC 23 20:32:13.9±1.8, 2°.48S×147°.21E, h0km, mb3.6/4, mb1 3.8/4, mb1mx3.4/37, mbtmp3.6/4, Error ellipse: s-maj=104.1km s-min=30.8km az=117.0, Admiralty Islands region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
WRA	**Warramunga Arr**	**21.43**	**215**	P	P	20 37 04.3	+0.5
	0.9nm,0.6s,baz=42,slow=10,SNR=8.6						
ASAR	**Alice Springs**	**24.69**	**210**	P	P	20 37 35.3	-1.6
	0.3nm,0.5s,baz=38,slow=7.4,SNR=9.5						
H11S3	**WAKE ISLAND Hy**	**28.32**	**42**	T	T	21 07 41.2	
	baz=222,slow=76,SNR=120						
H11S2	**WAKE ISLAND Hy**	**28.33**	**42**	T	T	21 07 42.5	
	baz=222,slow=76,SNR=66						
H11S1	**WAKE ISLAND Hy**	**28.34**	**42**	T	T	21 07 41.8	
	baz=222,slow=76,SNR=55						
STKA	**Stephens Creek**	**29.72**	**190**	P	P	20 38 23.6	+1.7
	1.5nm,0.8s,baz=7.8,slow=10,SNR=3.4						
YKA	**Yellowknife Ar**	**95.98**	**28**	P	P	20 45 42.6	-0.2
	0.1nm,0.4s,baz=270,slow=4.0,SNR=4.1						

CSEM ***23*** *20:34:28.3, 38°.68N×29°.39W, h0km, ML2.3*
PDA 23 20:34:28.3±0.8, 38°.68N×29°.39W, h0km±11km, MD3.5, ML2.3, Error ellipse: s-maj=15.4km s-min=10.7km az=81.0, Azores Islands

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
PCED	**Cedros**	**0.54**	**96**	*e*P	Pg	20 34 38.0	-0.6
PCED				*e*S	Sg	20 34 45.1	-0.5
PCED	**Cedros**	**0.54**	**96**	*e*P	Pg	20 34 38.0	-0.6
PCED				*e*S	Sg	20 34 45.1	-0.5
PCED				A	A	20 34 46.7	
	86nm,0.2s						
CALA	**Caldeira**	**0.55**	**101**	*e*P	Pg	20 34 38.2	-0.6
CALA				*e*S	Sg	20 34 45.7	-0.1
CALA	**Caldeira**	**0.55**	**101**	*e*P	Pg	20 34 38.2	-0.6
CALA				*e*S	Sg	20 34 45.7	-0.1
HOR	**Horta**	**0.61**	**105**	*e*S	Sg	20 34 47.0	-1.0
HOR	**Horta**	**0.61**	**105**	*e*S	Sg	20 34 47.0	-1.0
HOR				A	A	20 34 48.2	
	111nm,0.2s						
PCAN	**Candelaria**	**0.74**	**107**	*e*P	Pg	20 34 41.2	-1.3
PCAN				*e*S	Sg	20 34 50.5	-1.5
PCAN	**Candelaria**	**0.74**	**107**	*e*P	Pg	20 34 41.2	-1.3
PCAN				*e*S	Sg	20 34 50.5	-1.5
PCAN				A	A	20 34 53.2	
	53nm,0.3s						
PICO	**Pico**	**0.78**	**103**	*e*S	Sg	20 34 51.8	-1.4
PICO	**Pico**	**0.78**	**103**	*e*S	Sg	20 34 51.8	-1.4
PICO				A	A	20 34 54.6	
	59nm,0.2s						
ROSA	**Rosais**	**0.90**	**87**	*e*P	Pg	20 34 42.9	-2.6
ROSA				*e*S	Sg	20 34 54.6	-2.5
ROSA	**Rosais**	**0.90**	**87**	*e*P	Pg	20 34 42.9	-2.6
ROSA				*e*S	Sg	20 34 54.6	-2.5
ROSA				A	A	20 34 55.7	
	56nm,0.2s						
PMAN	**Manadas**	**1.02**	**92**	*e*S	Sg	20 34 57.0	-4.0
PMAN	**Manadas**	**1.02**	**92**	*e*S	Sg	20 34 57.0	-4.0
PMAN				A	A	20 34 58.3	

30nm,0.1s

ISCJB ***23*** *20:35:19.9±0.6, 39°.43N±0°.04×38°.22E±0°.04, h0km±7km, Error ellipse: s-maj=6.1km s-min=4.8km az=169.0*
ISK ***23*** *20:35:19.2, 39°.40N×38°.22E, h4km, MD2.7*
DDA ***23*** *20:35:19.8, 39°.42N×38°.24E, h7km, Md2.6*
CSEM ***23*** *20:35:20.0±0.2, 39°.41N×38°.23E, h8km, MD2.6, Error ellipse: s-maj=3.8km s-min=3.4km az=166.0*

ISC 23 20:35:20.2±1.1, 39°.42N±0°.03×38°.22E±0°.03, h8km±9km, n22, σ0ș45/34, Turkey

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
KEMA	**Kemaliye**	**0.26**	**125**	*i* P	**Pg**	**20 35 25.2**	**-0.1**
KEMA				*i* S	**Sg**	**20 35 29.4**	**+0.5**
KEMA	**Kemaliye**	**0.26**	**125**	P	**Pg**	**20 35 25.2**	**-0.1**
KEMA				S	**Sg**	**20 35 29.4**	**+0.5**
ILIC	**ilic-Erzincan**	**0.28**	**83**	*e*PG	**Pg**	**20 35 25.2**	**-0.4**
ILIC				*e*SG	**Sg**	**20 35 29.7**	**+0.4**
ILIC	**ilic-Erzincan**	**0.28**	**83**	*e*Pg	**Pg**	**20 35 25.2**	**-0.4**
ILIC				*e*Sg	**Sg**	**20 35 29.7**	**+0.4**
CUKAN	**kangal_SIVAS**	**0.59**	**260**	*i* P	**Pg**	**20 35 31.5**	**0.0**
CUKAN				*i* S	**Sb**	**20 35 40.8**	**-0.7**
CUKAN	**kangal_SIVAS**	**0.59**	**260**	P	**Pg**	**20 35 31.5**	**0.0**
CUKAN				S	**Sb**	**20 35 40.8**	**-0.7**
SUSE	**Susehri**	**0.79**	**359**	*i* P	**Pb**	**20 35 36.5**	**+0.2**
SUSE	**Susehri**	**0.79**	**359**	P	**Pb**	**20 35 36.5**	**+0.2**
DARE	**Darende-Malaty**	**1.02**	**214**	*e*PG	**Pg**	**20 35 39.0**	**-0.8**
DARE	**Darende-Malaty**	**1.02**	**214**	*e*Pg	**Pg**	**20 35 39.0**	**-0.8**
PTK	**Pertek**	**1.05**	**119**	*e*PG	**Pg**	**20 35 39.9**	**-0.5**
PTK	**Pertek**	**1.05**	**119**	*e*Pg	**Pg**	**20 35 39.9**	**-0.5**
SVSK	**Karacayir**	**1.06**	**298**	*e*PG	**Pg**	**20 35 40.5**	**-0.1**
SVSK	**Karacayir**	**1.06**	**298**	*e*Pg	**Pg**	**20 35 40.5**	**-0.1**
KELT	**Kelkit**	**1.08**	**47**	*i* P	**Pg**	**20 35 40.5**	**-0.5**
KELT				*i* S	**Sb**	**20 35 55.5**	**-0.2**
KELT	**Kelkit**	**1.08**	**47**	P	**Pg**	**20 35 40.5**	**-0.5**
KELT				S	**Sb**	**20 35 55.5**	**-0.2**
ELZG	**Elazig**	**1.10**	**147**	*i* P	**Pg**	**20 35 41.0**	**-0.2**
ELZG				*i* S	**Sb**	**20 35 55.8**	**-0.2**
ELZG	**Elazig**	**1.10**	**147**	P	**Pg**	**20 35 41.0**	**-0.2**
ELZG				S	**Sb**	**20 35 55.8**	**-0.2**
AKCD	**Akcadag**	**1.14**	**192**	*i* P	**Pn**	**20 35 42.4**	**-0.2**
AKCD				*i* S	**Sn**	**20 35 59.4**	**+0.8**
AKCD	**Akcadag**	**1.14**	**192**	P	**Pn**	**20 35 42.4**	**-0.2**
AKCD				S	**Sn**	**20 35 59.4**	**+0.8**
SVRC	**Sivrice-ELAZID**	**1.34**	**140**	*e*PN	**Pn**	**20 35 45.2**	**-0.2**
SVRC	**Sivrice-ELAZID**	**1.34**	**140**	*e*Pn	**Pn**	**20 35 45.2**	**-0.2**

IDC ***23*** *20:36:22.1±0.8, 14°.23S×166°.75E, h0km, mb4.1/16, mb1 4.2/17, mb1mx4.1/42, mbtmp4.0/17, ML3.9/1, MS3.8/4, Ms1 3.8/4, ms1mx3.1/51, Error ellipse: s-maj=26.2km s-min=16.8km az=117.0*
ISCJB ***23*** *20:36:26.2±0.3, 14°.32S±0°.05×166°.49E±0°.06, h35km, mb4.2/24, MS4.0/3, Error ellipse: s-maj=8.8km s-min=7.1km az=176.6*
NEIC ***23*** *20:36:30.5±1.2, 14°.32S×166°.57E, h63km±11km, mb4.4/9, Error ellipse: s-maj=9.4km s-min=8.6km az=118.0*

ISC 23 20:36:28.2±0.4, 14°.26S±0°.07×166°.55E±0°.08, h35km, n50, σ1ș71/47, mb4.2/24, MS4.0/3, Vanuatu Islands

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
DZM	**Mont Dzumac**	**7.77**	**181**	Pn	**Pn**	**20 38 17.9**	**-1.0**
	1.6nm,0.3s,baz=186,slow=22,SNR=24						
DZM				Sn	**Sn**	**20 39 43.8**	**-1.9**
	0.9nm,0.3s,baz=308,slow=17,SNR=2.5						
DZM				LR	LR	20 40 54.9	
	comp=Z,408nm,21.4s,baz=40,slow=35						
HNR	**Honiara**	**8.05**	**306**	Pn	**Pn**	**20 38 27.3**	**+4.6**
	14nm,0.3s,baz=148,slow=6.8,SNR=5.8						
HNR	**Honiara**	**8.05**	**306**	P	**Pn**	**20 38 26.0**	**+3.3**
HNR	**Honiara**	**8.05**	**306**	*e*Pn	**Pn**	**20 38 25.6**	**+2.9**
MSVF	**Nonsavu**	**11.58**	**109**	*e*Pn	**Pn**	**20 39 14.1**	**+2.8**
FUNA	**Funafuti**	**13.64**	**67**	*e*Pn	**Pn**	**20 39 40.7**	**+1.4**
CTA	**Charters Tower**	**20.23**	**251**	P	Pn	20 41 02.4	-0.1
	6.1nm,0.8s,baz=84,slow=13,SNR=5.9						
URZ	**Urewera**	**25.67**	**161**	*e*P	**P**	**20 41 55.8**	**+0.9**
	12nm,1.0s						
BKZ	**Black Stump Fm**	**26.31**	**162**	*e*P	**P**	**20 42 00.3**	**-0.4**
	48nm,1.6s						
STKA	**Stephens Creek**	**28.77**	**228**	P	**P**	**20 42 23.4**	**+0.6**
	1.6nm,0.7s,baz=36,slow=8.8,SNR=7.2						
STKA	**Stephens Creek**	**28.77**	**228**	*e*P	**P**	**20 42 23.2**	**+0.4**
	7.1nm,1.8s						
LBZ	**Lake Benmore**	**30.18**	**175**	*e*P	**P**	**20 42 36.8**	**+1.6**
	114nm,1.8s						
WR1	**Warramunga Arr**	**31.27**	**255**	*e*P	**P**	**20 42 44.1**	**-0.9**
	12nm,1.4s						
WRA	**Warramunga Arr**	**31.27**	**255**	P	**P**	**20 42 44.1**	**-0.9**
	0.9nm,0.9s,baz=86,slow=9.3,SNR=6.4						
AS01	**Alice Springs**	**32.15**	**248**	*e*P	**P**	**20 42 51.6**	**-1.2**
AS31	**Alice Springs**	**32.19**	**248**	*e*P	**P**	**20 42 52.4**	**-0.8**
	3.2nm,1.5s						
ASAR	**Alice Springs**	**32.19**	**248**	P	**P**	**20 42 52.6**	**-0.5**
	1.1nm,0.7s,baz=75,slow=9.3,SNR=21						
SBUM	**Sibu**	**56.33**	**283**	*e*P	**P**	**20 46 04.8**	**-1.4**
	5.5nm,1.3s						
MJAR	**Matsushiro Arr**	**57.17**	**333**	P	**P**	**20 46 11.4**	**-0.3**
	1.9nm,0.9s,baz=161,slow=7.7,SNR=4.8						
VNDA	**Vanda**	**63.31**	**181**	P	**P**	**20 46 53.5**	**+0.3**
	1.0nm,0.6s,baz=0.9,slow=5.8,SNR=6.2						
USRK	**Ussuriysk Ar.**	**66.16**	**334**	P	**P**	**20 47 12.0**	**-0.1**
	3.0nm,1.0s,baz=127,slow=2.9,SNR=4.3						
PEA0	**Petropavlovsk-**	**67.52**	**354**	*e*P	**P**	**20 47 20.4**	**-0.2**
PETK	**Petropavlovsk-**	**67.52**	**354**	P	**P**	**20 47 20.6**	**-0.1**
	2.7nm,0.7s,baz=137,slow=4.4,SNR=4.7						
PEA1	**Petropavlovsk-**	**67.53**	**354**	*e*P	**P**	**20 47 20.6**	**-0.1**
KLR	**Kul'dur**	**70.30**	**337**	P	**P**	**20 47 38.6**	**+0.7**
	0.7nm,0.4s,baz=152,slow=3.8,SNR=3.1						
CM01	**Chiang Mai Arr**	**74.09**	**294**	*e*P	**P**	**20 48 02.8**	**+1.5**
CM31	**Chiang Mai Arr**	**74.12**	**294**	*e*P	**P**	**20 48 00.0**	**-1.5**
CMAR	**Chiang Mai Arr**	**74.12**	**294**	P	**P**	**20 48 03.3**	**+1.8**
	0.8nm,1.0s,baz=132,slow=4.8,SNR=7.5						
SONA0	**Songino Array**	**81.71**	**324**	*e*P	**P**	**20 48 43.7**	**+0.5**
	5.7nm,1.6s						
SONM	**Songino Array**	**81.71**	**324**	P	**P**	**20 48 43.7**	**+0.5**
	0.4nm,0.5s,baz=157,slow=7.7,SNR=3.2						
MAW	**Mawson**	**82.05**	**202**	P	**P**	**20 48 48.5**	**+3.9**
	1.8nm,0.8s,baz=132,slow=3.9,SNR=2.0						
BILL	**Bilibino**	**82.07**	**360**	*e*P	**P**	**20 48 43.5**	**-0.9**
	5.8nm,0.7s						
ILAR	**Eielson Array**	**86.30**	**18**	P	**P**	**20 49 03.7**	**-2.4**
	1.6nm,0.7s,baz=239,slow=5.2,SNR=20						
ILB	**Eielson Array**	**86.30**	**18**	*e*P	**P**	**20 49 03.3**	**-2.8**
BBB	**Bella Bella**	**86.78**	**34**	LR	LR	21 23 13.4	
	comp=Z,57nm,18.1s,baz=176,slow=32						
PFO	**Pinyon Flats O**	**87.29**	**54**	LR	LR	21 22 42.2	
	comp=Z,93nm,18.7s,baz=312,slow=32						
NVAR	**Mina Array Bea**	**87.50**	**49**	P	**P**	**20 49 12.8**	**0.0**
	0.2nm,0.4s,baz=237,slow=8.2,SNR=2.6						
NV01	**Mina Array Sit**	**87.50**	**49**	*e*P	**P**	**20 49 12.6**	**-0.2**
PDAR	**Pinedale Array**	**95.14**	**47**	LR	LR	21 25 32.8	
	comp=Z,46nm,21.8s,baz=267,slow=31						
MK32	**Makanchi Array**	**96.39**	**317**	*e*P	**P**	**20 49 53.7**	**+0.1**
MKAR	**Makanchi Array**	**96.39**	**317**	P	**P**	**20 49 53.7**	**+0.1**
	0.7nm,0.7s,baz=98,slow=7.0,SNR=5.0						
ZALV	**Zalesovo Beam**	**96.60**	**324**	P	**P**	**20 49 52.9**	**-1.5**
	0.7nm,0.6s,baz=131,slow=4.4,SNR=3.3						
ZAA1	**Zalesovo Array**	**96.61**	**324**	*e*P	**P**	**20 49 52.9**	**-1.5**
YKA	**Yellowknife Ar**	**97.45**	**27**	P	**P**	**20 49 55.4**	**-2.5**
	0.3nm,0.7s,baz=254,slow=4.4,SNR=4.2						
ARA0	**ARCESS Array S**	**119.62**	**345**	*e*PKPdf	**PKPdf**	**20 55 12.6**	**-1.2**
ARCES	**ARCESS Array B**	**119.62**	**345**	PKP	**PKPdf**	**20 55 12.6**	**-1.2**
	2.5nm,0.9s,baz=46,slow=4.5,SNR=6.7						
FIA0	**FINESS Array S**	**125.03**	**338**	*e*PKPdf	**PKPdf**	**20 55 23.8**	**-0.6**
FINES	**FINESS Array B**	**125.03**	**338**	PKP	**PKPdf**	**20 55 23.8**	**-0.6**
	0.4nm,0.5s,baz=304,slow=1.4,SNR=5.5						
GERES	**GERESS Array B**	**138.91**	**333**	PKP	**PKPdf**	**20 55 48.1**	**-3.0**
	0.1nm,0.3s,baz=349,slow=1.0,SNR=3.5						
ESDC	**Sonseca Array**	**153.34**	**344**	PKPbc	**PKPbc**	**20 56 21.7**	**-1.4**
	0.1nm,0.3s,baz=343,slow=2.6,SNR=3.5						

ISCJB ***23*** *20:38:43.2±0.9, 8°.61N±0°.05×126°.55E±0°.08, h68km±9km, mb3.8/14, Error ellipse: s-maj=13.6km s-min=7.5km az=158.4*
MAN ***23*** *20:38:43, 8°.68N×126°.41E, h18km, mb5.0, ML3.9, MS4.0*
IDC ***23*** *20:38:47.3±2.3, 8°.61N×126°.38E, h90km±22km, mb3.6/14, mb1 3.8/14, mb1mx3.6/44, mbtmp3.9/14, MS2.8/2, Ms1 2.8/2, ms1mx2.4/51, Error ellipse: s-maj=25.7km s-min=13.0km az=80.0*

ISC 23 20:38:42.7±1.6, 8°.69N±0°.09×126°.6E±0°.1, h45km±16km, n24, σ1ș62/22, mb3.8/14, 8C, Mindanao

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
BIPH	**Bislig**	**0.55**	**203**	*i* P	**Pn**	**20 38 54.0**	**-0.3**
BIPH				*i* S	**Sn**	**20 39 01.0**	**-1.5**
SCPH	**Surigao**	**1.52**	**315**	*e*P	Pn	20 39 08.8	+1.4
SCPH				*e*S	Sn	20 39 29.4	+3.3
CGP	**Cagayan de Oro**	**1.87**	**263**	*i* P	**Pn**	**20 39 12.7**	**+0.4**
CGP				*i* S	**Sn**	**20 39 34.1**	**-0.6**
DAV	**Davao City (W)**	**1.89**	**212**	P	Pn	20 39 15.6	+3.1
	33nm,0.3s,baz=280,slow=9.1,SNR=3.9						
DAV				S	Sn	20 39 39.7	+4.6
	84nm,0.3s,baz=311,slow=17,SNR=4.9						
DMPH	**Davao City--Mi**	**1.92**	**214**	*e*P	Pn	20 39 17.1	+4.2
DMPH				*e*S	**Sn**	**20 39 40.1**	**+4.3**
TBP	**Tagbilaran**	**2.86**	**291**	*i* P	Pn	20 39 27.2	+1.4
TBP				*i* S	Sn	20 40 01.7	+2.7
PLP	**Palo**	**2.92**	**328**	*e*P	Pn	20 39 28.6	+2.0
PLP				*i* S	Sn	20 40 06.1	+5.6
LLP	**Lapu-Lapu**	**3.04**	**302**	*e*P	Pn	20 39 29.9	+1.7
LLP				*e*S	Sn	20 40 06.3	+2.9
RCP	**Roxas**	**4.73**	**307**	*e*P	Pn	20 39 54.2	+2.7
TGY	**Tagaytay City**	**7.71**	**315**	LR	LR	20 43 21.4	
	comp=Z,42nm,18.4s,baz=54,slow=36						
FITZ	**Fitzroy Crossi**	**26.64**	**182**	P	**P**	**20 44 17.3**	**0.0**
	2.2nm,0.6s,baz=0.6,slow=9.3,SNR=9.7						
CMAR	**Chiang Mai Arr**	**28.52**	**293**	P	**P**	**20 44 35.1**	**+0.8**
	0.7nm,0.4s,baz=89,slow=7.2,SNR=8.2						
WRA	**Warramunga Arr**	**29.46**	**165**	P	**P**	**20 44 41.3**	**-1.2**
	0.3nm,0.6s,baz=343,slow=9.4,SNR=5.6						
MJAR	**Matsushiro Arr**	**29.68**	**19**	P	**P**	**20 44 44.5**	**+0.2**
	1.4nm,0.8s,baz=199,slow=9.6,SNR=4.7						
MJAR				LR	LR	20 54 15.5	
	comp=Z,27nm,21.5s,baz=10.0,slow=31						
ASAR	**Alice Springs**	**32.95**	**168**	P	**P**	**20 45 12.8**	**-0.4**
	0.3nm,0.3s,baz=343,slow=7.0,SNR=9.2						
ASAR				PcP	**PcP**	**20 47 56.5**	**-0.3**
	0.5nm,0.5s,baz=352,slow=2.6,SNR=7.9						
USRK	**Ussuriysk Ar.**	**35.69**	**7**	P	**P**	**20 45 38.2**	**+1.5**
	3.3nm,0.7s,baz=191,slow=7.6,SNR=9.7						
STKA	**Stephens Creek**	**42.82**	**161**	P	**P**	**20 46 36.8**	**+0.5**
	1.0nm,0.5s,baz=333,slow=11,SNR=3.3						
PETK	**Petropavlovsk-**	**50.95**	**24**	P	**P**	**20 47 41.9**	**+2.3**
	2.4nm,0.6s,baz=190,slow=1.8,SNR=9.9						
MKAR	**Makanchi Array**	**53.46**	**323**	P	**P**	**20 47 57.2**	**-1.2**
	0.5nm,0.5s,baz=121,slow=7.5,SNR=9.5						
MKAR				PcP	**PcP**	**20 49 03.7**	**-1.3**
	0.3nm,0.4s,baz=123,slow=4.4,SNR=2.8						
ZALV	**Zalesovo Beam**	**56.15**	**332**	P	**P**	**20 48 16.5**	**-1.1**
	0.4nm,0.3s,baz=132,slow=6.0,SNR=3.3						
ZALV				PcP	**PcP**	**20 49 12.7**	**-2.4**
	0.5nm,0.6s,baz=122,slow=7.0,SNR=2.3						
ILAR	**Eielson Array**	**80.72**	**26**	P	**P**	**20 50 51.3**	**+0.4**
	0.5nm,0.6s,baz=251,slow=4.3,SNR=4.5						
ARCES	**ARCESS Array B**	**85.77**	**340**	P	**P**	**20 51 15.6**	**-1.3**
	1.6nm,0.8s,baz=74,slow=4.7,SNR=7.1						
FINES	**FINESS Array B**	**87.41**	**332**	P	**P**	**20 51 23.2**	**-1.8**
	0.4nm,0.3s,baz=79,slow=3.8,SNR=14

H11S3	**WAKE ISLAND Hy 28.17**	**40**	T	T	21 18 27.0		
	baz=222,slow=76,SNR=248						
H11S2	**WAKE ISLAND Hy 28.18**	**40**	T	T	21 18 29.0		
	baz=222,slow=76,SNR=224						
H11S1	**WAKE ISLAND Hy 28.19**	**40**	T	T	21 18 29.5		
	baz=222,slow=76,SNR=187						
H11N1	**WAKE ISLAND Hy 29.20**	**39**	T	T	21 19 42.3		
	baz=221,slow=76,SNR=71						
H11N3	**WAKE ISLAND Hy 29.21**	**39**	T	T	21 19 43.7		
	baz=221,slow=76,SNR=128						
H11N2	**WAKE ISLAND Hy 29.21**	**39**	T	T	21 19 43.8		
	baz=221,slow=76,SNR=134						
CMAR	**Chiang Mai Arr**	**52.77 296**	P	P	20 52 16.4	+0.2	
	0.5nm,0.8s,baz=122,slow=5.3,SNR=4.0						
PETK	**Petropavlovsk-**	**56.46 7**	P	P	20 52 41.5	-0.8	
	1.8nm,0.7s,baz=157,slow=7.8,SNR=3.4						
VNDA	**Vanda**	**74.86 177**	P	P	20 54 41.0	+0.1	
	0.5nm,0.8s,baz=301,slow=12,SNR=3.2						
YKA	**Yellowknife Ar**	**96.04 28**	P	P	20 56 28.4	+0.5	
	0.3nm,0.8s,baz=272,slow=4.8,SNR=4.5						

IDC 23 20:49:26.4±3.3, 7°30S×125°50E, *h*418km±43km, mb3.0/3, mb1 3.1/6, mb1mx2.8/41, mbtmp3.8/6, Error ellipse: s-maj=84.4km s-min=16.6km az=54.0, Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BATI	**Baumata**	**3.41**	**212**	P	P	20 50 36.0	+1.5
	4.1nm,0.3s,baz=79,slow=24,SNR=9.7						
BATI				S	S	20 51 29.4	-0.2
FITZ	**Fitzroy Crossi**	**10.74**	**179**	P	P	20 51 51.3	-0.6
	0.6nm,0.3s,baz=16,slow=10,SNR=19						
WRA	**Warramunga Arr**	**15.21**	**147**	P	P	20 52 40.6	0.0
	0.8nm,0.3s,baz=324,slow=11,SNR=52						
ASAR	**Alice Springs**	**18.16**	**155**	P	P	20 53 12.4	+0.3
	0.6nm,0.3s,baz=344,slow=15,SNR=37						
STKA	**Stephens Creek**	**28.69**	**151**	P	P	20 54 47.3	-0.1
	0.5nm,0.3s,baz=326,slow=12,SNR=5.2						
MKAR	**Makanchi Array**	**66.11**	**329**	P	P	20 59 31.1	+0.5
	0.4nm,0.4s,baz=122,slow=8.0,SNR=8.0						
ZALV	**Zalesovo Beam**	**69.95**	**336**	P	P	20 59 53.4	-0.6
	0.3nm,0.4s,baz=132,slow=5.1,SNR=2.3						

*ISCJB **23** 20:49:28.4±0.3, 33°.02N±0°.02×116°.27W±0°.02, h3km±3km, Error ellipse: s-maj=2.8km s-min=2.6km az=27.0*
*NEIC **23** 20:49:29.8, 33°.02N×116°.32W, h4km, ML3.6(PAS), After PAS.*
*ECX **23** 20:49:30.0±0.5, 33°.02N×116°.31W, h4km, MD3.4, ML3.6*
*MEX **23** 20:49:36.6±0.8, 32°.36N×116°.20W, h16km±347km, MD3.8*
ISC 23 20:49:28.7±0.9, 33°.02N±0°.02×116°.26W±0°.02, h15km±7km, n82, σ1s83/113, 6C-7D, Southern California

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MONP2	**Monument Peak**	**0.19**	**228**	P	**Pg**	**20 49 33.0**	**-0.3**
	baz=36,SNR=1000						
MONP2				S	**Sg**	**20 49 35.5**	**-0.9**
	baz=36						
BORC	**Borrego Spring**	**0.28**	**331**	⇓*i* P	**Pg**	**20 49 34.6**	**0.0**
IKP	**In-Ko-Pah, Jac**	**0.39**	**162**	⇓*i* P	**Pb**	**20 49 37.2**	**-0.1**
SWSC	**Sam W. Stewart**	**0.39**	**101**	⇓*i* P	**Pb**	**20 49 37.8**	**+0.4**
SWSC	**Sam W. Stewart**	**0.39**	**101**	P	**Pb**	**20 49 37.7**	**+0.4**
	baz=282,SNR=107						
SWSC				S	**Sb**	**20 49 43.5**	**+0.3**
	baz=282						
RMX	**La Rumorosa**	**0.44**	**160**	⇓*i* P	**Pb**	**20 49 37.6**	**-0.7**
RMX				*e*S	**Sb**	**20 49 44.3**	**-0.5**
YUH	**Yuha Desert**	**0.47**	**143**	⇓*i* P	**Pb**	**20 49 38.7**	**+0.1**
BAR	**Barrett**	**0.49**	**226**	⇑*i* P	**Pg**	**20 49 38.3**	**-0.1**
BAR	**Barrett**	**0.49**	**226**	*e*Pg	**Pg**	**20 49 38.2**	**-0.1**
BAR				*e*Sg	**Sg**	**20 49 44.3**	**-0.6**
WESC	**Westside Schoo**	**0.51**	**121**	*e*P	**Pn**	**20 49 40.3**	**-1.2**
EML	**El Monte Cty P**	**0.51**	**255**	⇑*i* P	**Pg**	**20 49 38.5**	**-0.4**
FRD	**Ford Ranch, An**	**0.55**	**328**	⇓*i* P	**Pb**	**20 49 39.8**	**-0.4**
PFO	**Pinyon Flats O**	**0.61**	**344**	P	**Pg**	**20 49 40.6**	**-0.1**
	baz=167,SNR=65						
PFO				S	**Sg**	**20 49 48.7**	**-0.2**
	baz=167						
PFO	**Pinyon Flats O**	**0.61**	**344**	*e*Pg	**Pg**	**20 49 40.7**	**-0.1**
PFO				*e*Sg	**Sg**	**20 49 48.6**	**-0.4**
SDRC	**San Diego Road**	**0.65**	**244**	⇑*i* P	**Pg**	**20 49 40.8**	**-0.5**
109C	**Camp Elliot, M**	**0.73**	**260**	P	**Pg**	**20 49 42.2**	**-0.6**
	baz=78,SNR=188						
109C				S	**Sg**	**20 49 51.4**	**-1.0**
	baz=78						
CBX	**Cerro Bola**	**0.79**	**206**	⇑*i* P	**Pg**	**20 49 43.8**	**-0.2**
CBX				*i* S	**Sg**	**20 49 54.1**	**-0.2**
CBX				AML	AML	20 49 57.1	
	comp=N,4μm,0.8s						
CBX				AML	AML	20 49 57.4	
	comp=E,4μm,0.4s						
CBX	**Cerro Bola**	**0.79**	**206**	*e*Pg	**Pg**	**20 49 43.8**	**-0.2**
CBX				*e*Pn	**Pn**	**20 49 48.5**	**+3.0**
CBX	**Cerro Bola**	**0.79**	**206**	*e*P	**Pg**	**20 49 43.8**	**-0.2**
CBX				*e*S	**Pn**	**20 49 48.5**	**+3.0**
BC3	**Big Chuckawall**	**0.92**	**46**	P	**Pn**	**20 49 46.8**	**-0.5**
	baz=220,SNR=506						
MURC	**Murrieta**	**0.98**	**306**	P	**Pg**	**20 49 47.0**	**-0.6**
	baz=127,SNR=128						
BELC	**Belle Mtn. Jos**	**1.00**	**12**	P	**Pn**	**20 49 48.2**	**-0.2**
	baz=195,SNR=276						
BELC				S	**Sb**	**20 50 01.5**	**+0.6**
	baz=195						
CPBX	**Cerro Prieto**	**1.00**	**127**	⇑*e*	**Sg**	**20 50 06.5**	**+5.3**
CPBX				AML	AML	20 50 06.5	
	comp=N,5μm,0.3s						
CPBX				AML	AML	20 50 09.1	
	comp=N,3μm,0.4s						
CPBX				⇓*e*		20 50 09.1	
CPBX				AML	AML	20 50 11.8	
	comp=E,4μm,0.4s						
CPBX				⇑*e*		20 50 11.8	
CPBX	**Cerro Prieto**	**1.00**	**127**	*e*Pn	**Pn**	**20 49 50.0**	**+1.8**
MBIG	**Mexicali**	**1.08**	**124**	*e*P	**Pn**	**20 49 49.9**	**+0.6**
MBIG				*i* S	**Sg**	**20 49 59.4**	**-4.3**
GLA	**Glamis**	**1.20**	**88**	P	**Pb**	**20 49 50.8**	**-0.5**
	baz=270,SNR=64						
GLA	**Glamis**	**1.20**	**88**	*e*Pg	**Pb**	**20 49 50.7**	**-0.5**
GLA				*e*Sn	**Sb**	**20 50 05.9**	**-0.6**
PBX	**Punta Banda**	**1.34**	**197**	*e*P	**Pn**	**20 49 53.1**	**+0.2**
BBRC	**Big Bear Solar**	**1.36**	**336**	Pg	**Pg**	**20 49 54.2**	**-0.6**
	baz=157,SNR=11						
BBRC				Sb	**Sg**	**20 50 12.0**	**-0.5**
	baz=157						
ECNX	**Esteban Cantu**	**1.39**	**192**	*e*P	**Pn**	**20 49 53.9**	**+0.2**
IRM	**Iron Mountain**	**1.46**	**39**	P	**Pn**	**20 49 54.9**	**+0.2**
	baz=221,SNR=116						
ZAX	**El Zacaton**	**1.50**	**181**	*e*P	**Pn**	**20 49 55.7**	**+0.5**
Y12C	**Blythe**	**1.62**	**63**	P	**Pn**	**20 49 57.0**	**+0.2**
	baz=245,SNR=51						
Y12C	**Blythe**	**1.62**	**63**	*e*Pn	**Pn**	**20 49 57.0**	**+0.2**
Y12C				*e*Pg	**Pg**	**20 50 01.6**	**+1.8**
BFSC	**Mount Baldy Ra**	**1.69**	**316**	Pb	**Pb**	**20 49 59.1**	**-0.4**
	baz=136,SNR=49						
BFSC				S	**Sb**	**20 50 21.0**	**+0.3**
	baz=136						
GMRC	**Granite Mounta**	**1.83**	**16**	P	**Pn**	**20 50 00.2**	**+0.4**
	baz=197,SNR=53						
GMRC				Sb	**Sg**	**20 50 26.7**	**-0.8**
	baz=197						
CIS	**Catalina Islan**	**1.85**	**282**	P	**Pn**	**20 50 00.2**	**+0.3**
	baz=101,SNR=14						
CIS				Sb	**Sb**	**20 50 25.6**	**+0.4**
	baz=101						
ECBX	**El Chinero**	**1.85**	**146**	*e*P	**Pg**	**20 50 02.8**	**-1.5**
ECBX				*e*S	**Sg**	**20 50 27.1**	**-1.2**
MWC	**Mount Wilson**	**1.92**	**309**	*e*Pn	**Pb**	**20 50 03.2**	**-0.4**
MWC				*e*Sn	**Sb**	**20 50 27.7**	**+0.1**
SCI2	**San Clemente I**	**1.93**	**269**	S	**Sn**	**20 50 25.2**	**+0.2**
	baz=88						
RRX	**Edison Barstow**	**1.95**	**342**	Pg	**Pg**	**20 50 05.4**	**-0.8**
	baz=162,SNR=23						
PASC	**Pasadena Art C**	**1.98**	**306**	*e*Pn	**Pb**	**20 50 03.6**	**-0.8**
PASC				*e*Sn	**Sb**	**20 50 28.2**	**-0.7**
SPIG	**San Pedro Mart**	**2.08**	**161**	*e*Pn	**Pn**	**20 50 04.8**	**+1.3**
SPIG				*e*Sn	**Sn**	**20 50 27.5**	**-1.7**
SPIG	**San Pedro Mart**	**2.08**	**161**	*e*P	**Pn**	**20 50 04.8**	**+1.3**
SPIG				*i* S	**Sn**	**20 50 27.5**	**-1.7**
SPX	**San Pedro Mart**	**2.08**	**161**	*e*Sn	**Sn**	**20 50 27.3**	**-2.0**
113A	**Mohawk Valley,**	**2.11**	**96**	*e*Pn	**Pn**	**20 50 03.7**	**+0.2**
DECC	**Green Verdugo**	**2.12**	**306**	Pb	**Pb**	**20 50 06.9**	**-0.1**
	baz=125,SNR=10						
DECC				Sb	**Sb**	**20 50 33.9**	**+0.7**
	baz=125						
GSC	**Goldstone, Bar**	**2.32**	**349**	Pg	**Pg**	**20 50 12.2**	**-1.0**
	baz=169,SNR=71						
GSC	**Goldstone, Bar**	**2.32**	**349**	*e*Pn	**Pn**	**20 50 07.4**	**+0.9**
GSC				*e*Pg	**Pg**	**20 50 12.1**	**-1.0**
EDW2	**Edwards Air Fo**	**2.35**	**323**	Pb	**Pb**	**20 50 11.1**	**+0.3**
	baz=142,SNR=39						
EDW2				Sb	**Sb**	**20 50 41.4**	**+1.6**
	baz=142						
OSI	**Osito Audit: C**	**2.60**	**308**	*e*Pn	**Pn**	**20 50 12.5**	**+2.3**
SNCC	**San Nicolas Is**	**2.75**	**276**	*e*Pn	**Pn**	**20 50 12.9**	**+0.5**
W13A	**Hualapai Mount**	**2.86**	**43**	*e*Pn	**Pn**	**20 50 15.4**	**+1.4**
Y14A	**Wickenburg**	**2.87**	**71**	*e*Pn	**Pn**	**20 50 14.7**	**+0.7**
Y14A				*e*Pg	**Pg**	**20 50 22.6**	**-1.0**
ISA	**Isabella, Lake**	**3.21**	**326**	*e*Pn	**Pb**	**20 50 22.8**	**-2.7**
DAC	**Darwin (Calif)**	**3.43**	**342**	*e*Pg	**Pb**	**20 50 30.7**	**+1.4**
TPNV	**Topopah Spring**	**3.92**	**0**	*e*Pn	**Pn**	**20 50 32.2**	**+3.6**
TPNV				*e*Pg	**Pg**	**20 50 41.7**	**-2.0**
TPNV				*e*		20 50 47.8	
TPNV				*e*Sg	**Sg**	**20 51 32.4**	**-2.2**
X16A	**Lo Mia Camp, P**	**4.25**	**70**	*e*Pn	**Pn**	**20 50 34.9**	**+1.8**
TUC	**Tucson**	**4.67**	**97**	*e*Pn	**Pn**	**20 50 40.3**	**+1.5**
LCMT	**Little Creek M**	**4.69**	**31**	*e*Pn	**Pn**	**20 50 41.2**	**+2.1**
U15A	**North Rim**	**4.71**	**43**	*e*Pn	**Pn**	**20 50 41.9**	**+2.4**
WUAZ	**Wupatki**	**4.75**	**57**	*e*Pn	**Pn**	**20 50 42.3**	**+2.4**
KNB	**Kanab**	**4.88**	**34**	*e*Pn	**Pn**	**20 50 44.4**	**+2.6**
CCUT	**Cedar City**	**5.10**	**27**	*e*Pg	**Pb**	**20 51 00.3**	**+2.5**
R11A	**Troy Canyon, C**	**5.34**	**6**	*e*Pn	**Pn**	**20 50 52.4**	**+4.2**
R11A				*e*Pg	**Pg**	**20 51 08.9**	**-2.1**
X18A	**Snowflake**	**5.46**	**72**	*e*Pn	**Pn**	**20 50 51.7**	**+1.9**
PKCU	**Pink Cliffs**	**5.47**	**35**	*e*Pn	**Pn**	**20 50 53.7**	**+3.7**
PKCU				*e*Sg	**Sg**	**20 52 23.1**	**-1.1**
NV11	**Mina Array Sit**	**5.62**	**345**	*e*Pn	**Pn**	**20 50 55.4**	**+3.6**
NV11				*e*Pg	**Pg**	**20 51 14.8**	**-1.5**
NV01	**Mina Array Sit**	**5.65**	**343**	*e*Pn	**Pn**	**20 50 54.8**	**+2.5**
NV01				*e*Pg	**Pg**	**20 51 14.4**	**-2.4**
PSUT	**Pine Spring**	**5.84**	**19**	*e*Pn	**Pn**	**20 50 57.4**	**+2.4**
PSUT				*e*Sg	**Sg**	**20 52 33.0**	**-3.0**
MTPU	**Mount Pierson**	**6.01**	**32**	*e*Pn	Pn	20 51 02.7	+5.3
WAKR	**Walker**	**6.05**	**336**	*e*Pn	**Pn**	**20 51 01.1**	**+3.2**
WAKR				*e*Pg	**Pg**	**20 51 21.3**	**-3.3**
MSU	**Marysvale**	**6.40**	**30**	*e*Pn	Pn	20 51 08.8	+6.1
DUG	**Dugway, Tooele**	**7.67**	**20**	*e*Pn	Pn	20 51 26.8	+6.7
DUG				*e*Pg	**Pg**	**20 51 54.2**	**-1.4**
PV10	**Paradox Valley**	**7.94**	**46**	*e*Pn	**Pn**	**20 51 27.2**	**+3.5**
PV09	**Paradox Valley**	**7.96**	**45**	*e*Pn	**Pn**	**20 51 27.4**	**+3.3**
PV01	**Paradox Valley**	**8.07**	**49**	*e*Pn	**Pn**	**20 51 30.0**	**+4.4**
P18A	**Preston Nutter**	**8.18**	**35**	*e*Pn	**Pn**	**20 51 30.0**	**+2.8**
SMCO	**Snowmass**	**9.70**	**48**	*e*Pn	**Pn**	**20 51 52.7**	**+4.6**
SDCO	**Great Sand Dun**	**9.96**	**59**	*e*Pn	Pn	20 51 59.3	+7.7
T25A	**Trinidad**	**10.54**	**64**	*e*Pn	Pn	20 52 04.5	+5.1
AHID	**Auburn Hatcher**	**10.54**	**21**	*e*Pn	**Pn**	**20 52 01.6**	**+2.1**

*IDC **23** 20:52:06.3±1.1, 60°.88S×25°.58W, h0km, mb3.9/2, mb1 4.1/2, mb1mx3.6/20, mbtmp3.9/2, MS3.1/2, Ms1 3.1/2, ms1mx2.9/26, Error ellipse: s-maj=105.7km s-min=42.0km az=42.0*
*NEIC **23** 20:52:11.2±0.6, 61°.25S×26°.36W, h35km, mb4.2/3, Error ellipse: s-maj=30.3km s-min=14.0km az=47.0*
ISC 23 20:52:07.7±0.7, 61°.1S×26°.3W±0°.2, h10km, n22, σ0s96/15, mb4.0/5, South Sandwich Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
VNA1	**Neumayer--Stat**	**11.98**	**150**	P	**Pn**	**20 54 58.6**	**+0.4**
VNA1				S	Sn	20 57 04.3	-7.4
VNA3	**Neumayer Olymp**	**12.09**	**154**	P	**Pn**	**20 55 00.5**	**+0.7**
VNA3				S	Sn	20 57 04.5	-10
VNA2	**Neumayer--Watz**	**12.38**	**150**	P	**Pn**	**20 55 03.1**	**-0.6**
	baz=316,slow=16						
VNA2				S	Sn	20 57 09.5	-12
SNAA	**Sanae**	**13.99**	**149**	P	**Pn**	**20 55 24.8**	**-0.8**
SNAA				S	Sn	20 57 47.1	-14
SNAA	**Sanae**	**13.99**	**149**	*e*Pn	**Pn**	**20 55 24.8**	**-0.9**
	509nm,0.6s						
SNAA				*e*Sn	Sn	20 57 50.1	-11
TRQA	**Tornquist**	**32.03**	**300**	*e*P	**P**	**20 58 34.3**	**+0.2**
	3.4nm,0.6s						
PLCA	**Paso Flores**	**33.66**	**287**	LR	LR	21 10 41.6	
	comp=Z,31nm,19.1s,baz=201,slow=33						
CPUP	**Villa Florida**	**40.65**	**315**	LR	LR	21 15 10.4	
	comp=Z,27nm,21.0s,baz=138,slow=34						
TSUM	**Tsumeb**	**51.94**	**56**	P	**P**	**21 01 17.9**	**+1.2**
	1.3nm,0.8s						
H10S2	**ASCENSION HYDR**	**52.79**	**14**	T	T	21 57 53.7	
	baz=187,slow=75,SNR=8.0						
H10S3	**ASCENSION HYDR**	**52.80**	**14**	T	T	21 57 53.7	
	baz=187,slow=75,SNR=6.9						
H10S1	**ASCENSION HYDR**	**52.81**	**14**	T	T	21 57 54.9	
	baz=187,slow=75,SNR=6.5						
LPAZ	**La Paz**	**53.79**	**307**	P	**P**	**21 01 31.9**	**+1.0**
	0.9nm,0.5s,baz=100,slow=2.1,SNR=3.9						
H10N3	**ASCENSION HYDR**	**53.91**	**14**	T	T	21 59 20.1	
	baz=276,slow=74,SNR=7.5						
H10N2	**ASCENSION HYDR**	**53.93**	**15**	T	T	21 59 38.2	
	baz=178,slow=74,SNR=5.0						
SAML	**Samuel**	**58.78**	**316**	*e*P	**P**	**21 02 04.1**	**-1.7**
	1.2nm,0.6s						
ASAR	**Alice Springs**	**93.98**	**162**	P	**P**	**21 05 26.6**	**+0.8**
	0.3nm,0.6s,baz=181,slow=4.5,SNR=7.2						
FINES	**FINESS Array B**	**128.65**	**29**	PKP	**PKPdf**	**21 11 12.3**	**-1.1**
	1.0nm,0.8s,baz=122,slow=5.1,SNR=3.3						
MKAR	**Makanchi Array**	**137.86**	**76**	PKP	**PKPdf**	**21 11 30.3**	**-0.9**
	0.1nm,0.2s,baz=180,slow=0.4,SNR=2.3						
YKA	**Yellowknife Ar**	**140.17**	**314**	PKP	**PKPdf**	**21 11 34.6**	**-0.2**
	0.3nm,0.7s,baz=130,slow=2.2,SNR=4.9						
SONM	**Songino Array**	**150.19**	**95**	PKPbc	**PKPbc**	**21 11 57.2**	**-0.6**
	1.4nm,0.9s,baz=222,slow=2.3,SNR=5.5						
ILAR	**Eielson Array**	**153.63**	**304**	PKPbc	**PKPbc**	**21 12 05.5**	**+0.6**
	0.3nm,0.7s,baz=134,slow=3.9,SNR=3.2						

*NIED **23** 20:53:00, 37°.10N×140°.80E, h5km, Mw3.7 Best double couple: M₀4.19000×10¹⁴ NP1:φs219.00000°, δ39.00000°, λ-91.00000°. NP2:φs41.00000°, δ51.00000°, λ-89.00000°.*
*ISCJB **23** 20:53:03.8±0.9, 37°.09N±0°.03×140°.85E±0°.05, h14km±5km, mb3.5/16, MS3.6/1, Error ellipse: s-maj=6.5km s-min=5.2km az=35.4*
*IDC **23** 20:53:03.4±0.6, 37°.12N×140°.71E, h0km, mb3.7/16, mb1 3.9/19, mb1mx3.8/40, mbtmp3.7/19, ML3.5/3, MS3.0/3, Ms1 3.1/3, ms1mx2.6/58, Error ellipse: s-maj=18.6km s-min=14.1km az=119.0*
*JMA **23** 20:53:04.4, 37°.09N×140°.75E, h5km±1km, M3.7 Broadband fault plane solution: P waves. NP1: φs236.00000°, δ72.00000°, λ-108.00000°. NP2: φs103.00000°, δ25.00000°, λ-46.00000°. Principal axes: T Plg25.0000°, Azm340.0000°; N Plg17.0000°, Azm242.0000°; P Plg59.0000°, Azm121.0000°;*
JMA Felt III J1.
ISC 23 20:53:03.1±1.2, 37°.05N±0°.03×140°.66E±0°.04, h1km±8km, n36, σ0s96/36, mb3.5/16, 3C-1D, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.12**	**63**	⇓P	**Pg**	**20 53 05.5**	**+0.1**
ONAJ				S	**Sg**	**20 53 06.5**	**-0.5**
JFK	**Kawauchi**	**0.36**	**28**	⇑P	**Pg**	**20 53 10.1**	**+0.1**
JFK				S	**Sg**	**20 53 14.3**	**-0.4**
JHO	**Hitachi**	**0.44**	**190**	P	**Pb**	**20 53 14.0**	**+0.4**
JHO				*e*S	**Sb**	**20 53 20.8**	**+0.1**
JFT	**Otama**	**0.54**	**331**	⇑P	**Pb**	**20 53 15.0**	**-0.3**
JFT				S	**Sb**	**20 53 22.4**	**-1.2**
JSB	**Shiboa**	**0.60**	**263**	P	**Pn**	**20 53 18.4**	**-0.3**
JSB				S	**Sn**	**20 53 27.9**	**-1.2**
JMM	**Marumori**	**0.82**	**7**	P	**Pg**	**20 53 19.0**	**+0.1**
JYT	**Yasato**	**0.90**	**205**	⇑P	**Pn**	**20 53 22.6**	**-0.2**
MJAR	**Matsushiro Arr**	**2.03**	**256**	Pn	**Pb**	**20 53 41.3**	**+0.5**
	15nm,0.3s,baz=75,slow=15,SNR=104						
MJAR				Sn	**Sg**	**20 54 08.5**	**+0.1**
	20nm,0.3s,baz=140,slow=16,SNR=7.9						
MAT	**Matsushiro**	**2.04**	**256**	P	**Pg**	**20 53 41.6**	**-0.5**
MAT				S	**Sg**	**20 54 10.2**	**+1.8**
JHJ	**Hachijo jima 2**	**3.98**	**191**	Pn	**Pn**	**20 54 05.6**	**+0.4**
	6.7nm,0.3s,baz=89,slow=20,SNR=3.5						
JHJ				Sn	**Sb**	**20 54 58.5**	**-4.2**
	22nm,0.3s,baz=53,slow=22,SNR=4.3						
ASAJ	**Asahikawa**	**7.21**	**11**	Pn	**Pn**	**20 54 49.3**	**-0.2**
	1.0nm,0.3s,baz=209,slow=13,SNR=22						
USRK	**Ussuriysk Ar.**	**9.72**	**320**	Pn	Pn	20 55 30.1	+6.2
	0.2nm,0.3s,baz=136,slow=12,SNR=8.3						
USRK				LR	LR	20 59 02.8	
	comp=Z,70nm,20.3s,baz=195,slow=37						
KLR	**Kul'dur**	**13.79**	**335**	LR	LR	21 00 57.5	
	comp=Z,23nm,20.8s,baz=148,slow=34						
MA2	**Magadan**	**23.47**	**13**	P	**P**	**20 58 13.8**	**0.0**
	2.6nm,0.5s,baz=181,slow=9.0,SNR=3.8						
SONM	**Songino Array**	**27.28**	**304**	P	**P**	**20 58 49.2**	**+0.2**
	0.7nm,0.7s,baz=105,slow=9.1,SNR=4.1						
H11N2	**WAKE ISLAND Hy 28.67**	**120**	T	T	21 28 45.3		
	baz=313,slow=75,SNR=78						
H11N1	**WAKE ISLAND Hy 28.68**	**120**	T	T	21 28 45.9		
	baz=313,slow=75,SNR=96						
H11N3	**WAKE ISLAND Hy 28.69**	**120**	T	T	21 28 47.6		
	baz=313,slow=75,SNR=68						
H11S1	**WAKE ISLAND Hy 29.37**	**122**	T	T	21 29 50.9		
	baz=314,slow=76,SNR=65						
H11S3	**WAKE ISLAND Hy 29.37**	**122**	T	T	21 29 28.5		
	baz=314,slow=76,SNR=66						
H11S2	**WAKE ISLAND Hy 29.39**	**122**	T	T	21 29 45.2		
	baz=314,slow=76,SNR=58						
ZALV	**Zalesovo Beam**	**41.46**	**312**	P	**P**	**21 00 51.1**	**0.0**
	0.7nm,0.5s,baz=104,slow=6.7,SNR=4.5						
MKAR	**Makanchi Array**	**43.60**	**302**	P	**P**	**21 01 09.1**	**+0.3**
	0.5nm,0.6s,baz=85,slow=8.9,SNR=7.1						
ILAR	**Eielson Array**	**49.80**	**32**	P	**P**	**21 01 56.9**	**-0.1**
	0.5nm,0.7s,baz=265,slow=6.0,SNR=5.6						
ILAR				LR	LR	21 24 50.8	
	comp=Z,64nm,19.6s,baz=222,slow=38						
INK	**Inuvik**	**54.65**	**27**	P	**P**	**21 02 33.7**	**+0.7**
	0.2nm,0.4s,baz=280,slow=6.1,SNR=6.5						
WRA	**Warramunga Arr**	**56.99**	**187**	P	**P**	**21 02 50.8**	**+0.5**
	1.7nm,0.6s,baz=2.6,slow=7.3,SNR=30						
ASAR	**Alice Springs**	**60.72**	**187**	P	**P**	**21 03 17.2**	**+1.0**
	0.5nm,0.9s,baz=15,slow=12,SNR=6.9						
YKA	**Yellowknife Ar**	**64.10**	**30**	P	**P**	**21 03 38.1**	**-0.2**
	0.2nm,0.8s,baz=299,slow=5.9,SNR=5.4						
FINES	**FINESS Array B**	**68.52**	**332**	P	**P**	**21 04 07.0**	**+0.3**
	1.0nm,0.7s,baz=53,slow=7.4,SNR=4.7						
AKASG	**Malin Array Be**	**73.92**	**322**	P	**P**	**21 04 39.1**	**-0.4**
	0.2nm,0.4s,baz=46,slow=6.1,SNR=4.0						
NVAR	**Mina Array Bea**	**75.46**	**53**	P	**P**	**21 04 49.8**	**+0.8**
	0.5nm,0.7s,baz=289,slow=4.5,SNR=5.2						
PDAR	**Pinedale Array**	**78.08**	**45**	P	**P**	**21 05 04.1**	**+0.3**
	0.2nm,0.6s,baz=241,slow=3.1,SNR=3.9						
BRTR	**Keskin Array B**	**78.39**	**311**	P	**P**	**21 05 06.1**	**+0.7**
	0.2nm,0.5s,baz=64,slow=11,SNR=2.5						
GERES	**GERESS Array B**	**82.38**	**328**	P	**P**	**21 05 26.2**	**-0.5**
	0.1nm,0.4s,baz=38,slow=6.8,SNR=4.7						
TXAR	**Lajitas Array**	**90.59**	**52**	P	**P**	**21 06 07.3**	**0.0**
	0.3nm,0.6s,baz=284,slow=1.0,SNR=3.8						
LPAZ	**La Paz**	**147.20**	**59**	PKPbc	**PKPab**	**21 12 50.3**	**-0.6**
	0.8nm,0.6s,baz=341,slow=5.9,SNR=3.5						

*SOME **23** 20:55:03.7, 44°.83N×81°.05E, h10km*
ISC 23 20:55:05.3±1.9, 44°.84N±0°.05×81°.02E±0°.07, h9km±12km, n12, σ2s37/22, 4C-4D, Northern Xinjiang

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DJR	**Jarkent**	**1.02**	**240**	*e*P	**Pg**	**20 55 22.8**	**-2.0**
	1.6nm,0.2s						
DJR				*e*S	**Sg**	**20 55 36.8**	**-1.3**
	3.5nm,0.3s						
KAPS	**Kapalarasan**	**1.26**	**291**	*e*P	**Pn**	**20 55 27.6**	**-1.5**
	0.6nm,0.2s						
KAPS				*e*S	**Sg**	**20 55 44.5**	**-1.3**
	6.7nm,0.3s						
KTMS	**Ketmen**	**1.48**	**199**	*e*P	**Pn**	**20 55 30.7**	**-1.5**
	0.7nm,0.2s						
KTMS				*e*S	**Sb**	**20 55 50.1**	**-1.9**
	3.4nm,0.2s						
SHLS	**Shalkode**	**1.88**

Code	Station Name	Δ°	AZ°	Phase	Op	ID	Time h m s	Res ISC
JHO	**Hitachi**	**1.27**	**296**	P		**Pn**	**21 00 51.7**	**-1.7**
BSO1	**Boso 1**	**1.64**	**211**	P		**Pn**	**21 00 57.2**	**-0.8**
JAG	**Ashikaga**	**2.08**	**281**	P		**Pn**	**21 01 04.4**	**-0.2**
JAG				S		**Sb**	**21 01 34.6**	**+1.0**
JRY	**Ryogami san**	**2.50**	**270**	P		**Pn**	**21 01 10.8**	**+0.4**
JRY				S		**Sb**	**21 01 45.6**	**-0.2**
MJAR	**Matsushiro Arr**	**3.09**	**280**	P		**Pn**	**21 01 19.1**	**+0.6**
	1.2nm,0.3s,baz=103,slow=19,SNR=16							
SONM	**Songino Array**	**28.71**	**305**	P		**P**	**21 06 26.4**	**-0.1**
	0.3nm,0.4s,baz=94,slow=6.4,SNR=3.2							
MKAR	**Makanchi Array**	**45.03**	**303**	P		**P**	**21 08 44.0**	**-0.9**
	0.1nm,0.2s,baz=96,slow=11,SNR=3.3							
PMG	**Port Moresby**	**45.49**	**173**	LR		LR	21 25 56.3	
	comp=Z,90nm,21.4s,baz=290,slow=34							
WRA	**Warramunga Arr**	**56.18**	**189**	P		P	21 10 02.1	-7.0
	0.7nm,1.0s,baz=8.9,slow=7.1,SNR=3.7							
TXAR	**Lajitas Array**	**90.34**	**53**	P		**P**	**21 13 31.9**	**+1.2**
	0.1nm,0.6s,baz=308,slow=4.5,SNR=2.3							

*ISCJB **23** 21:09:08.0±0.6, 16°.40S±0°.03×179°.53W±0°.02, h484km±6km, mb4.9/262, Error ellipse: s-maj=5.1km s-min=3.1km az=159.7*

*NEIC **23** 21:09:10.9±0.1, 16°.39S×179°.53W, mb4.9/192, Error ellipse: s-maj=5.5km s-min=3.7km az=144.0*

NEIC Felt at Navua.

*IDC **23** 21:09:10.7±0.4, 16°.40S×179°.46W, h507km±4km, mb4.5/45, mb1 4.5/48, mb1mx4.5/54, mbtmp5.4/48, Error ellipse: s-maj=9.1km s-min=6.4km az=156.0*

*GCMT **23** 21:09:10.9±0.3, 16°.22S×179°.51W, h526km±1km, MW5.4/77, Moment Tensor Solution. s77,c122; Duration: 1s2 Moment tensor: Scale 10^{17}Nm; M_{rr}-0.66±.03; $M_{\theta\theta}$0.96±.05; $M_{\phi\phi}$-0.29±.05; $M_{r\theta}$-0.82±.05; $M_{\theta\phi}$0.25±.04; $M_{\phi r}$-0.92±.04; Best double couple: M_o1.51300×10^{17} NP1:$\phi_1$49.00000°, δ76.00000°, λ-114.00000°. NP2:$\phi_2$289.00000°, δ27.00000°, λ-32.00000°. Principal axes: T 1.5110, Plg27.0000°, Azm157.0000°; N 0.0050, Plg23.0000°, Azm55.0000°; P -1.5150, Plg53.0000°, Azm290.0000°; nsta1 refers to body waves, cutoff=40s.*

*MOS **23** 21:09:11.6±1.0, 16°.28S×179°.56W, h522km, mb4.9/41 Error ellipse: s-maj=7.6km s-min=7.2km az=60.0*

*BJI **23** 21:09:11.4, 15°.97S×179°.29W, h517km, mb4.9/53, mB5.0/29*

ISC 23 21:09:11.0±0.3, 16°.31S±0°.04×179°.43W±0°.04, h515km±2km, h515km:pP-P, n1112, σ1s38/1254, mb4.9/262, 58C-62D, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase	Op	ID	Time h m s	Res ISC
MSVF	**Nonsavu**	**2.79**	**239**	*eP*		**P**	**21 10 22.7**	**+0.8**
MSVF	**Nonsavu**	**2.79**	**239**	*eP*		**P**	**21 10 22.7**	**+0.8**
AFI	**Afiamalu**	**7.77**	**73**	P		**P**	**21 11 03.9**	**-1.7**
	200nm,0.3s,baz=75,slow=0.8,SNR=283							
AFI				S		**S**	**21 12 37.4**	**-2.0**
	baz=217,slow=20,SNR=2.3							
AFI	**Afiamalu**	**7.77**	**73**	*eP*		**P**	**21 11 04.2**	**-1.4**
AFI				S		**S**	**21 12 37.4**	**-2.0**
FUNA	**Funafuti**	**7.85**	**350**	*eP*		**P**	**21 11 05.2**	**-1.1**
NIUE	**Niue**	**9.47**	**108**	P		**P**	**21 11 20.8**	**-2.2**
	baz=9.4,SNR=91							
RAO	**Raoul Island**	**12.96**	**174**	S		**S**	**21 14 18.2**	**-0.2**
	37nm,0.3s,baz=279,slow=23,SNR=2.3							
DZM	**Mont Dzumac**	**14.52**	**245**	P		**P**	**21 12 14.6**	**-1.5**
	1.3nm,0.3s,baz=114,slow=17,SNR=21							
DZM				S		**S**	**21 14 55.3**	**+6.6**
	baz=312,slow=9.0,SNR=3.8							
TARA	**Tarawa**	**19.10**	**336**	*eP*		**P**	**21 13 00.1**	**-0.7**
	137nm,0.7s							
RAR	**Rarotonga**	**19.24**	**108**	P		**P**	**21 13 00.7**	**-1.3**
	0.7nm,0.3s,baz=212,slow=9.3,SNR=6.0							
RAR	**Rarotonga**	**19.24**	**108**	*eP*		**P**	**21 13 02.1**	**+0.1**
RAR				pmax		pmax		
	comp=Z,311nm,1.5s							
RAR	**Rarotonga**	**19.24**	**108**	*eP*		**P**	**21 13 02.1**	**+0.1**
	comp=Z,311nm,1.5s							
OUZ	**Omahuta**	**19.84**	**197**	*eP*		**P**	**21 13 08.3**	**+1.0**
	comp=Z,369nm,1.2s							
HNR	**Honiara**	**21.22**	**286**	P		**P**	**21 13 19.5**	**-0.6**
	comp=Z,578nm,0.8s,baz=170,slow=3.6,SNR=57							
HNR				S		**S**	**21 16 50.2**	**+8.5**
	comp=Z,11nm,0.3s,baz=107,slow=21,SNR=4.7							
HNR	**Honiara**	**21.22**	**286**	*eP*		**P**	**21 13 20.0**	**-0.1**
HNR	**Honiara**	**21.22**	**286**	*eP*		**P**	**21 13 20.2**	**+0.1**
	comp=Z,680nm,0.8s							
HNR				S		**S**	**21 16 50.2**	**+8.5**
TOZ	**Tahuroa Road**	**21.81**	**191**	PN		**P**	**21 13 25.9**	**+0.9**
TWGZ	**Tauwhareparae**	**21.91**	**185**	PN		**P**	**21 13 23.6**	**-2.4**
URZ	**Urewera**	**22.08**	**187**	P		**P**	**21 13 24.0**	**-3.6**
	comp=Z,146nm,0.7s,baz=3.0,slow=4.6,SNR=65							
URZ				S		**S**	**21 16 58.1**	**+3.4**
	comp=Z,13nm,0.7s,baz=107,slow=23,SNR=9.3							
URZ	**Urewera**	**22.08**	**187**	PN		**P**	**21 13 23.9**	**-3.6**
URZ				SN		**S**	**21 16 57.1**	**+2.4**
URZ	**Urewera**	**22.08**	**187**	*eP*		**P**	**21 13 25.5**	**-2.0**
	comp=Z,148nm,0.8s							
URZ				S		**S**	**21 16 58.1**	**+3.4**
MWZ	**Matawai**	**22.11**	**186**	PN		**P**	**21 13 24.3**	**-3.5**
BKZ	**Black Stump Fm**	**23.05**	**188**	*eP*		**P**	**21 13 35.0**	**-1.2**
	comp=Z,30nm,1.0s							
BFZ	**Birch Farm**	**24.58**	**188**	*eP*		**P**	**21 13 50.1**	**+0.3**
	comp=Z,72nm,1.3s							
THZ	**Tophouse**	**26.21**	**193**	PN		**P**	**21 14 02.3**	**-2.0**
THZ	**Tophouse**	**26.21**	**193**	*eP*		**P**	**21 14 02.9**	**-1.3**
	comp=Z,33nm,0.8s							
KHZ	**Kahutara**	**26.71**	**192**	*eP*		**P**	**21 14 06.5**	**-2.1**
	comp=Z,75nm,1.0s							
LTZ	**Lake Taylor**	**27.33**	**193**	PN		**P**	**21 14 11.3**	**-2.8**
LTZ	**Lake Taylor**	**27.33**	**193**	*eP*		**P**	**21 14 11.6**	**-2.4**
	comp=Z,126nm,0.8s							
LTZ				*eS*		**S**	**21 18 14.6**	**-2.6**
OXZ	**Oxford**	**27.90**	**193**	*eP*		**P**	**21 14 16.4**	**-2.6**
	comp=Z,101nm,0.9s							
MQZ	**McQueen's Vall**	**28.13**	**192**	*eP*		**P**	**21 14 18.7**	**-2.3**
	comp=Z,54nm,1.0s							
RPZ	**Rata Peaks**	**28.49**	**195**	P		**P**	**21 14 21.8**	**-2.4**
	comp=Z,26nm,0.7s,baz=34,slow=1.4,SNR=17							
RPZ	**Rata Peaks**	**28.49**	**195**	*eP*		**P**	**21 14 23.3**	**-0.9**
	comp=Z,37nm,0.8s							
PAE	**Paea**	**28.57**	**97**	*eP*		**P**	**21 14 25.8**	**+0.6**
	comp=Z,9.6nm,0.8s							
PPT	**Papeete**	**28.58**	**97**	P		**P**	**21 14 25.5**	**+0.2**
	comp=Z,61nm,0.9s,baz=62,slow=13,SNR=4.9							
FOZ	**Fox Glacier**	**28.64**	**196**	PN		**P**	**21 14 23.5**	**-1.9**
FOZ	**Fox Glacier**	**28.64**	**196**	*eP*		**P**	**21 14 23.8**	**-1.7**
	comp=Z,214nm,0.9s							
TIAR	**Tiarei**	**28.80**	**97**	*eP*		**P**	**21 14 28.4**	**+1.2**
	comp=Z,16nm,0.8s							
EIDS	**Eidsvold**	**28.94**	**247**	P		**P**	**21 14 27.3**	**-1.1**
	baz=29,SNR=11							
EIDS	**Eidsvold**	**28.94**	**247**	*eP*		**P**	**21 14 27.4**	**-1.1**
	comp=Z,61nm,0.9s							
LBZ	**Lake Benmore**	**29.34**	**195**	PN		**P**	**21 14 28.4**	**-3.2**
LBZ	**Lake Benmore**	**29.34**	**195**	*eP*		**P**	**21 14 28.8**	**-2.7**
	comp=Z,51nm,0.9s							
JCZ	**Jackson Bay**	**29.43**	**197**	PN		**P**	**21 14 30.8**	**-1.6**
ODZ	**Otahua Downs**	**29.84**	**194**	*eP*		**P**	**21 14 34.2**	**-1.7**
	comp=Z,159nm,1.8s							
ARMA	**Armidale**	**29.94**	**237**	P		**P**	**21 14 37.1**	**-0.1**
	baz=30,SNR=12							
ARMA	**Armidale**	**29.94**	**237**	*eP*		**P**	**21 14 37.2**	**0.0**
	comp=Z,40nm,0.9s							
WKZ	**Wanaka**	**30.05**	**197**	*eP*		**P**	**21 14 36.0**	**-1.8**
	comp=Z,134nm,1.0s							
RABL	**Rabaul**	**30.38**	**290**	*eP*		**P**	**21 14 39.7**	**-1.3**
	comp=Z,183nm,0.6s							
PMOR	**Pomariorio Ree**	**30.38**	**92**	*eP*		**P**	**21 14 41.4**	**+0.4**
	comp=Z,138nm,1.2s							
VAH	**Vaihoa**	**30.61**	**92**	*eP*		**P**	**21 14 43.3**	**+0.4**
	comp=Z,49nm,0.9s							
MLZ	**Mavora Lakes**	**30.80**	**197**	*eP*		**P**	**21 14 43.7**	**-0.5**
	comp=Z,210nm,1.0s							
RMQ	**Roma**	**31.22**	**246**	P		**P**	**21 14 48.2**	**0.0**
	baz=31,SNR=56							
WHZ	**Wether Hill Ro**	**31.33**	**197**	*eP*		**P**	**21 14 48.0**	**-0.7**
	comp=Z,220nm,0.9s							
MGCD	**Mangrove Creek**	**31.45**	**232**	P		**P**	**21 14 50.0**	**0.0**
	baz=32,SNR=25							
SYZ	**Scrubby Hill**	**31.61**	**195**	*ePN*		**P**	**21 14 50.0**	**-1.1**
PATS	**Pohnpei**	**31.84**	**315**	P		**P**	**21 14 54.6**	**+1.1**
	baz=32,SNR=7.0							
PATS	**Pohnpei**	**31.84**	**315**	*eP*		**P**	**21 14 54.1**	**+0.6**
	comp=Z,242nm,1.2s							
CTA	**Charters Tower**	**32.78**	**258**	P		**P**	**21 15 01.1**	**-0.4**
	comp=Z,81nm,0.8s,baz=87,slow=11,SNR=61							
CTAO	**Charters Tower**	**32.78**	**258**	*eP*		**P**	**21 15 01.1**	**-0.4**
CTAO				pmax		pmax		
	comp=Z,118nm,0.9s							
CTAO	**Charters Tower**	**32.78**	**258**	*eP*		**P**	**21 15 01.1**	**-0.4**
	comp=Z,118nm,0.9s							
PMG	**Port Moresby**	**33.25**	**278**	P		**P**	**21 15 06.6**	**+1.0**
	comp=Z,336nm,0.9s,baz=87,slow=6.0,SNR=57							
PMG	**Port Moresby**	**33.25**	**278**	*deP*		**P**	**21 15 06.4**	**+0.9**
PMG	**Port Moresby**	**33.25**	**278**	*eP*		**P**	**21 15 06.6**	**+1.0**
	comp=Z,438nm,0.9s							
CNB	**Canberra Magne**	**33.66**	**230**	P		**P**	**21 15 08.5**	**-0.3**
	baz=34,SNR=24							
YNG	**Young**	**33.96**	**232**	P		**P**	**21 15 11.4**	**+0.1**
	baz=34,SNR=6.5							
MILA	**Mila**	**34.61**	**227**	P		**P**	**21 15 16.4**	**-0.3**
	baz=35							
MTSU	**Mount Surprise**	**34.64**	**262**	P		**P**	**21 15 17.0**	**-0.2**
	baz=35,SNR=107							
CMSA	**Cobar Meteorol**	**35.12**	**238**	P		**P**	**21 15 20.6**	**-0.5**
	baz=35,SNR=48							
QLP	**Quilpie**	**35.22**	**247**	P		**P**	**21 15 21.2**	**-0.7**
	baz=35,SNR=50							
MANU	**Manus Island**	**35.62**	**290**	*eP*		**P**	**21 15 26.2**	**+0.8**
	comp=Z,202nm,0.9s							
COEN	**Coen**	**36.14**	**269**	P		**P**	**21 15 30.1**	**+0.4**
	baz=36,SNR=47							
COEN	**Coen**	**36.14**	**269**	*eP*		**P**	**21 15 30.2**	**+0.4**
	comp=Z,139nm,0.8s							
TOO	**Toolangi**	**37.45**	**229**	P		**P**	**21 15 39.9**	**-0.4**
	baz=38,SNR=8.7							
STKA	**Stephens Creek**	**38.57**	**239**	P		**P**	**21 15 49.3**	**-0.2**
	comp=Z,38nm,0.8s,baz=88,slow=8.5,SNR=71							
STKA	**Stephens Creek**	**38.57**	**239**	P		**P**	**21 15 49.3**	**-0.2**
	baz=39,SNR=57							
STKA	**Stephens Creek**	**38.57**	**239**	*eP*		**P**	**21 15 49.3**	**-0.2**
STKA				pmax		pmax		
	comp=Z,13nm,0.9s							
STKA	**Stephens Creek**	**38.57**	**239**	*eP*		**P**	**21 15 49.3**	**-0.2**
	comp=Z,13nm,0.9s							
ARPS	**Mount Arapiles**	**39.84**	**232**	P		**P**	**21 15 58.9**	**-0.7**
	baz=40,SNR=7.2							
HTT	**Hallett**	**41.14**	**238**	P		**P**	**21 16 09.8**	**-0.4**
	baz=41,SNR=17							
JAY	**Jayapura**	**41.53**	**285**	P		**P**	**21 16 13.9**	**+0.4**
	comp=Z,11nm,0.7s,baz=81,slow=19,SNR=54							
RKT	**Rikitea**	**42.27**	**107**	*eP*		**P**	**21 16 20.4**	**+1.2**
	comp=Z,55nm,1.1s							
BBOO	**Buckleboo**	**43.35**	**239**	P		**P**	**21 16 26.8**	**-0.7**
	baz=43,SNR=22							
BBOO	**Buckleboo**	**43.35**	**239**	*eP*		**P**	**21 16 26.7**	**-0.7**
	comp=Z,48nm,0.8s							
WB2	**Warramunga Arr**	**43.97**	**258**	*eP*		**P**	**21 16 31.4**	**-1.2**
	comp=Z,167nm,1.4s							
WRAB	**Tennant Creek**	**43.97**	**258**	*eP*		**P**	**21 16 31.2**	**-1.3**
WRAB				*e*PP		**pP**	**21 18 06.2**	**-0.8**
WRAB				pmax		pmax		
	comp=Z,141nm,1.3s							
WRAB	**Tennant Creek**	**43.97**	**258**	*eP*		**P**	**21 16 31.2**	**-1.3**
	comp=Z,141nm,1.3s							
WRAB				*epP*		**pP**	**21 18 06.2**	**-0.8**
WRA	**Warramunga Arr**	**43.98**	**258**	P		**P**	**21 16 31.2**	**-1.4**
	comp=Z,50nm,1.0s,baz=91,slow=7.5,SNR=299							
WRA				PcP		**PcP**	**21 18 07.8**	**+0.5**
	comp=Z,13nm,1.0s,baz=92,slow=4.2,SNR=9.0							
WRA				ScP		**ScP**	**21 21 12.8**	**+2.9**
	comp=Z,3.1nm,1.0s,baz=86,slow=4.9,SNR=5.4							
WRA				S		**S**	**21 22 24.2**	**-2.8**
	comp=Z,1.1nm,1.1s,baz=59,slow=22,SNR=2.6							
WRA				PKiKP		**PKiKP**	**21 25 05.5**	**-1.1**
	comp=Z,0.5nm,0.8s,baz=60,slow=0.5,SNR=4.5							
AS01	**Alice Springs**	**44.26**	**253**	*eP*		**P**	**21 16 32.2**	**-2.5**
AS31	**Alice Springs**	**44.30**	**253**	*eP*		**P**	**21 16 34.4**	**-0.7**
	comp=Z,37nm,0.6s							
ASAR	**Alice Springs**	**44.30**	**253**	P		**P**	**21 16 34.4**	**-0.7**
	comp=Z,126nm,0.7s,baz=86,slow=8.5,SNR=2466							
ASAR				PcP		**PcP**	**21 18 08.8**	**+0.5**
	comp=Z,6.6nm,0.7s,baz=93,slow=3.8,SNR=7.2							
ASAR				ScP		**ScP**	**21 21 14.2**	**+3.0**
	comp=Z,4.0nm,0.9s,baz=75,slow=4.0,SNR=7.0							
ASAR				S		**S**	**21 22 28.2**	**-3.4**
	comp=Z,7.4nm,1.0s,baz=84,slow=15,SNR=14							
ASAR				PKiKP		**PKiKP**	**21 25 05.7**	**-1.2**
	comp=Z,0.5nm,0.9s,baz=103,slow=2.0,SNR=3.7							
GUMO	**Guam**	**46.12**	**308**	P		**P**	**21 16 49.5**	**+0.5**
	comp=Z,308nm,0.8s,baz=173,slow=9.2,SNR=16							
GUMO	**Guam**	**46.12**	**308**	*eP*		**P**	**21 16 49.2**	**+0.2**
GUMO	**Guam**	**46.12**	**308**	*eP*		**P**	**21 16 49.2**	**+0.2**
	comp=Z,356nm,0.9s							
KDU	**Kakadu**	**46.62**	**268**	P		**P**	**21 16 52.7**	**-0.2**
	baz=47,SNR=33							
MTN	**Mantan Dam**	**47.88**	**267**	P		**P**	**21 17 02.2**	**-0.2**
	baz=48,SNR=8.1							
MTN	**Manton Dam**	**47.88**	**267**	*eP*		**P**	**21 17 02.0**	**-0.3**
	comp=Z,212nm,0.8s							
WRKA	**Warakurna**	**49.42**	**251**	P		**P**	**21 17 13.4**	**-0.4**
	baz=49,SNR=131							
PALU	**Palau**	**51.31**	**294**	P		**P**	**21 17 28.6**	**+0.9**
	baz=52,SNR=20							
FITZ	**Fitzroy Crossi**	**52.34**	**260**	P		**P**	**21 17 35.2**	**+0.2**
	comp=Z,43nm,0.8s,baz=101,slow=6.2,SNR=58							
FITZ				S		**S**	**21 24 22.8**	**+0.8**
	comp=Z,3.9nm,1.0s,baz=294,slow=21,SNR=6.6							
FITZ	**Fitzroy Crossi**	**52.34**	**260**	P		**P**	**21 17 35.2**	**+0.2**
	baz=52,SNR=54							
FITZ	**Fitzroy Crossi**	**52.34**	**260**	*eP*		**P**	**21 17 35.2**	**+0.2**
	comp=Z,329nm,1.8s							
FITZ				S		**S**	**21 24 22.8**	**+0.8**
MBWA	**Marble Bar**	**57.53**	**255**	*eP*		**P**	**21 18 10.7**	**-0.6**
	comp=Z,214nm,1.4s							
MBWA	**Marble Bar**	**57.53**	**255**	P		**P**	**21 18 10.9**	**-0.5**
	SNR=19							
KLBR	**Kellerberrin**	**58.68**	**243**	P		**P**	**21 18 18.0**	**-1.0**
	baz=59,SNR=68							
NWAO	**Narrogin (SRO)**	**59.11**	**241**	P		**P**	**21 18 21.3**	**-0.6**
	comp=Z,53nm,0.8s,baz=245,slow=0.0,SNR=30							
NWAO	**Narrogin (SRO)**	**59.11**	**241**	P		**P**	**21 18 21.2**	**-0.6**
	baz=59,SNR=24							
NWAO	**Narrogin (SRO)**	**59.11**	**241**	*eP*		**P**	**21 18 21.3**	**-0.6**
NWAO				pmax		pmax		
	comp=Z,50nm,0.9s							
NWAO	**Narrogin (SRO)**	**59.11**	**241**	*eP*		**P**	**21 18 21.3**	**-0.6**
	comp=Z,50nm,0.9s							
DAV	**Davao City (W)**	**59.16**	**289**	P		**P**	**21 18 23.0**	**+0.5**
	comp=Z,104nm,0.3s,baz=104,slow=2.4,SNR=7.4							
DAV	**Davao City (W)**	**59.16**	**289**	P		**P**	**21 18 23.0**	**+0.5**
RKGY	**Rocky Gully**	**59.33**	**239**	P		**P**	**21 18 23.1**	**-0.2**
	baz=59,SNR=12							
BLDU	**Badu**	**59.59**	**244**	P		**P**	**21 18 24.4**	**-0.8**
	baz=60,SNR=33							
MORW	**Morawa**	**60.24**	**246**	P		**P**	**21 18 28.8**	**-0.7**
	baz=60,SNR=20							
KAPI	**Kappang**	**60.61**	**273**	P		**P**	**21 18 32.3**	**+0.1**
	comp=Z,63nm,0.9s,baz=128,slow=3.1,SNR=27							
KAPI	**Kappang**	**60.61**	**273**	*eP*		**P**	**21 18 32.4**	**+0.1**
	comp=Z,100nm,1.0s							
SBA	**Scott Base**	**61.95**	**183**	*eP*		**P**	**21 18 40.2**	**+0.3**
SBA				*e*PP		**pP**	**21 20 23.1**	**-0.6**
SBA				pmax		pmax		
	comp=Z,25nm,1.1s							
SBA	**Scott Base**	**61.95**	**183**	*eP*		**P**	**21 18 40.2**	**+0.3**
	comp=Z,25nm,1.1s							
SBA				*epP*		**pP**	**21 20 23.1**	**-0.6**
VNDA	**Vanda**	**61.95**	**185**	P		**P**	**21 18 41.2**	**+1.3**
	comp=Z,4.1nm,0.8s,baz=348,slow=6.9,SNR=19							
VNDA	**Vanda**	**61.95**	**185**	*eP*		**P**	**21 18 40.8**	**+0.9**
VNDA				pmax		pmax		
	comp=Z,5.0nm,0.8s							
VNDA	**Vanda**	**61.95**	**185**	*eP*		**P**	**21 18 40.8**	**+0.9**
	comp=Z,5.2nm,0.8s							
GIRL	**Giralia**	**62.42**	**253**	P		**P**	**21 18 44.5**	**+0.6**
	baz=62,SNR=9.8							
JHJ	**Hachijo jima 2**	**62.71**	**322**	P		**P**	**21 18 45.9**	**+0.4**
	comp=Z,152nm,0.6s,baz=74,slow=21,SNR=9.2							
MYLDM	**Lahad Datu**	**64.98**	**284**	*eP*		**P**	**21 19 01.6**	**+1.2**
	comp=Z,160nm,1.2s							
INU	**Inuyama**	**65.91**	**322**	*eP*		**P**	**21 19 06.1**	**+0.4**
	comp=Z,73nm,1.2s							
MJAR	**Matsushiro Arr**	**66.04**	**324**	P		**P**	**21 19 06.6**	**0.0**
	comp=Z,46nm,0.8s,baz=159,slow=5.9,SNR=103							
MJAR				pP		**pP**	**21 20 52.3**	**0.0**
	comp=Z,6.4nm,1.1s,baz=152,slow=6.0,SNR=4.1							
MAJO	**Matsushiro**	**66.05**	**324**	*d iP*		**P**	**21 19 06.7**	**+0.1**
MAJO	**Matsushiro**	**66.05**	**324**	*eP*		**P**	**21 19 06.8**	**+0.1**
	comp=Z,78nm,0.9s							
MAJO				*epP*		**pP**	**21 20 53.7**	**+1.3**
MJB9	**Matsu-Tunnel**	**66.05**	**324**	*eP*		**P**	**21 19 07.0**	**+0.3**
	comp=Z,20nm,0.9s							
JOW	**Kunigami**	**66.45**	**310**	*eP*		**P**	**21 19 09.5**	**+0.2**
	comp=Z,28nm,1.4s							
KKM	**Kota Kinabalu**	**67.41**	**284**	*eP*		**P**	**21 19 15.8**	**+0.2**
	comp=Z,55nm,0.8s							
JNU	**Nakatsue**	**68.31**	**316**	P		**P**	**21 19 21.1**	**+0.4**
	comp=Z,55nm,1.0s,baz=65,slow=2.4,SNR=14							
JNU	**Nakatsue**	**68.31**	**316**	*eP*		**P**	**21 19 20.3**	**-0.4**
	comp=Z,140nm,1.2s							
YOJ	**Yonaguni jima**	**69.23**	**305**	*eP*		**P**	**21 19 26.8**	**+0.5**
YOJ				pmax		pmax		
	comp=Z,161nm,1.0s							
YOJ	**Yonaguni jima**	**69.23**	**305**	*eP*		**P**	**21 19 26.8**	**+0.5**
	comp=Z,161nm,1.0s							
ASAJ	**Asahikawa**	**69.41**	**332**	P		**P**	**21 19 28.4**	**+1.4**
	comp=Z,52nm,0.9s,baz=182,slow=5.1,SNR=12							
ASAJ	**Asahikawa**	**69.41**	**332**	*eP*		**P**	**21 19 29.2**	**+2.2**
	comp=Z,114nm,1.1s							
SBUM	**Sibu**	**69.99**	**279**	*eP*		**P**	**21 19 31.8**	**+0.7**
	comp=Z,47nm,1.0s							
TWG	**Pinlang**	**69.99**	**302**	*eP*		**P**	**21 19 29.9**	**-1.0**
	comp=Z,128nm,0.9s							
SKR	**Severo-Kuril's**	**70.07**	**344**	*eP*		**P**	**21 19 31.1**	**+0.4**
YULB	**Yu-li**	**70.08**	**303**	*eP*		**P**	**21 19 30.8**	**-0.7**
	comp=Z,209nm,2.0s							
NACB	**Ninganchiao**	**70.22**	**304**	*eP*		**P**	**21 19 32.5**	**+0.3**
	comp=Z,144nm,1.1s							
SSLB	**Suanglung**	**70.55**	**303**	*eP*		**P**	**21 19 33.5**	**-0.7**
	comp=Z,60nm,1.1s							
TPUB	**Ta-pu**	**70.58**	**302**	*eP*		**P**	**21 19 33.7**	**-0.7**
	comp=Z,134nm,0.9s							
YHNB	**Yeheng**	**70.63**	**304**	*eP*		**P**	**21 19 34.6**	**-0.1**
	comp=Z,85nm,1.1s							
KSM	**Kuching**	**71.51**	**277**	*eP*		**P**	**21 19 40.4**	**+0.2**
	comp=Z,151nm,1.0s							
YSS	**Yuzh-Sakhalins**	**71.55**	**334**	*i*	*i*	**P**	**21 19 40.2**	**+0.6**
YSS				*eS*		**S**	**21 28 13.6**	**-3.5**
YSS				pmax		pmax		
	comp=Z,70nm,1.1s							
PET	**Petropavlovsk**	**71.59**	**346**	*eP*		**P**	**21 19 39.9**	**+0.2**
PET				pmax		pmax		
	comp=Z,131nm,1.6s							
PET	**Petropavlovsk**	**71.59**	**346**	*eP*		**P**	**21 19 39.9**	**+0.2**
	comp=Z,131nm,1.6s							
LEM	**Lembang**	**71.79**	**268**	P		P	21 19 48.0	+6.0
	comp=Z,131nm,0.7s,baz=27,slow=4.6,SNR=54							
LEM	**Lembang**	**71.79**	**268**	P		P	21 19 48.0	+6.1
LEM				pmax		pmax		
	comp=Z,131nm,0.7s							
PEA0	**Petropavlovsk-**	**71.89**	**346**	*eP*		**P**	**21 19 41.3**	**-0.2**
PEA0B	**Petropavlovsk-**	**71.89**	**346**	*eP*		**P**	**21 19 40.9**	**-0.6**
	comp=Z,152nm,1.1s							
PETK	**Petropavlovsk-**	**71.89**	**346**	P		**P**	**21 19 42.0**	**+0.6**
	comp=Z,75nm,0.9s,baz=122,slow=8.5,SNR=65							
PETK				pP		**pP**	**21 21 28.9**	**-0.7**
	comp=Z,4.6nm,0.8s,baz=124,slow=13,SNR=2.7							
KSRS	**Korea Array**	**72.86**	**319**	P		**P**	**21 19 48.8**	**+1.4**
	comp=Z,24nm,0.9s,baz=135,slow=6.6,SNR=52							
KSRS				PP		**PP**	**21 22 44.4**	**+5.5**
	comp=Z,4.2nm,1.1s,baz=136,slow=8.9,SNR=4.1							
KS15	**Wonju Array Si**	**72.88**	**319**	*eP*		**P**	**21 19 49.1**	**+1.7**
KSAR	**Wonju Array Be**	**72.88**	**319**	P		**P**	**21 19 48.8**	**+1.3**
KSAR							21 22 44.4	
KSAR	**Wonju Array Be**	**72.88**	**319**	P		**P**	**21 19 48.8**	**+1.3**
KSAR				PP		**PP**	**21 22 44.4**	**+5.4**
KS01	**Wonju Array Si**	**72.89**	**319**	*eP*		**P**	**21 19 47.6**	**+0.1**
INCN	**Inchon**	**73.70**	**318**	*eP*		**P**	**21 19 54.1**	**+1.8**
	comp=Z,147nm,1.5s							
QSPA	**South Pole Qui**	**73.74**	**180**	*eP*		**P**	**21 19 52.4**	**+0.3**
	comp=Z,113nm,1.0s							
QSPA				*epP*		**pP**	**21 21 40.0**	**-0.9**
VLA	**Vladivostok**	**74.09**	**325**	*i*	*i*	**P**	**21 19 55.4**	**+1.2

ISA	Isabella, Lake	77.43	47	eP	P	21 20 14.8	+1.6
	comp=Z,35nm,1.3s						
ORV	Oroville	77.46	42	eP	P	21 20 14.0	+0.9
ORV				pmax	pmax		
	comp=Z,21nm,1.2s						
ORV	Oroville	77.46	42	eP	P	21 20 14.0	+0.9
	comp=Z,21nm,1.2s						
AFDM	Forest Hills D	77.47	43	eP	P	21 20 14.6	+1.4
	comp=Z,20nm,1.1s						
AFDM				epP	pP	21 22 05.4	+2.0
N02D	Trinity Center	77.49	40	P	P	21 20 15.3	+2.0
	baz=235,SNR=15						
MONP2	Monument Peak	77.53	50	P	P	21 20 15.2	+1.3
	baz=241						
L02D	Cave Junction,	77.62	39	P	P	21 20 16.0	+2.1
	baz=234,SNR=5.3						
M02C	Callahan	77.63	40	P	P	21 20 15.9	+1.8
	baz=235,SNR=17						
O03D	Paynes Creek	77.67	41	P	P	21 20 15.8	+1.5
	baz=236,SNR=13						
MYKOM	Kota Tinggi	77.77	276	eP	P	21 20 16.0	+0.6
	comp=Z,67nm,1.1s						
PFO	Pinyon Flats O	77.85	50	P	P	21 20 16.4	+0.8
	comp=Z,5.6nm,0.9s,baz=256,slow=3.8,SNR=4.9						
LRMC	Laurel Mtn Rad	77.89	47	P	P	21 20 17.1	+1.4
	baz=240						
YBH	Yreka Blue Hor	77.92	40	P	P	21 20 17.3	+1.6
	comp=Z,24nm,1.1s,baz=190,slow=2.2,SNR=35						
YBH				pP	pP	21 22 06.1	0.0
	comp=Z,6.4nm,1.0s,baz=180,slow=4.0,SNR=6.0						
YBH	Yreka Blue Hor	77.92	40	eP	P	21 20 17.3	+1.6
YBH				e*PP	pP	21 22 07.1	+1.1
YBH				pmax	pmax		
	comp=Z,34nm,1.1s						
YBH	Yreka Blue Hor	77.92	40	eP	P	21 20 17.3	+1.6
	comp=Z,34nm,1.1s						
YBH				epP	pP	21 22 07.1	+1.1
SWSC	Sam W. Stewart	78.02	50	P	P	21 20 17.8	+1.5
	baz=242						
CWC	Cottonwood Cre	78.10	46	P	P	21 20 18.3	+1.4
	baz=239						
CN2	Changchun	78.16	323	eP	P	21 20 18.1	+1.3
CN2				epP	pP	21 22 06.8	-0.4
CN2				pmax	pmax		
	comp=Z,10.0nm,1.1s						
CN2				pmax	pmax		
	comp=Z,200nm,3.0s						
MLAC	Mammoth, Mammo	78.19	45	P	P	21 20 19.0	+1.6
	baz=239						
KLR	Kul'dur	78.24	330	P	P	21 20 18.1	+1.1
	comp=Z,18nm,1.0s,baz=109,slow=5.0,SNR=22						
WAKR	Walker	78.24	44	eP	P	21 20 19.1	+1.5
HUMO	Hull Mountain	78.27	39	eP	P	21 20 19.2	+1.7
	comp=Z,30nm,1.1s						
HUMO				epP	pP	21 22 09.1	+1.2
TIN	Tinemaha, Big	78.31	46	P	P	21 20 19.7	+1.8
	baz=239						
MPMC	Manual Prospec	78.32	47	P	P	21 20 19.7	+1.6
	baz=240						
DAC	Darwin (Calif)	78.36	47	eP	P	21 20 19.5	+1.2
DAC				e*PP	pP	21 22 10.0	+1.2
DAC				pmax	pmax		
	comp=Z,18nm,1.4s						
DAC	Darwin (Calif)	78.36	47	eP	P	21 20 19.4	+1.2
	comp=Z,18nm,1.4s						
DAC				epP	pP	21 22 10.0	+1.2
BELC	Belle Mtn. Jos	78.38	49	P	P	21 20 19.9	+1.5
	baz=241						
GSC	Goldstone, Bar	78.43	48	P	P	21 20 19.9	+1.3
	baz=240						
GSC	Goldstone, Bar	78.43	48	eP	P	21 20 20.0	+1.5
GSC				e*PP	pP	21 22 10.7	+1.6
GSC				pmax	pmax		
	comp=Z,26nm,1.5s						
GSC	Goldstone, Bar	78.43	48	eP	P	21 20 20.0	+1.5
	comp=Z,26nm,1.5s						
GSC				epP	pP	21 22 10.7	+1.6
M04C	Macdoel	78.48	40	P	P	21 20 20.4	+1.7
	baz=236						
LPIG	La Paz	78.50	61	P	P	21 20 20.1	+1.1
	comp=Z,31nm,0.3s,baz=248,slow=1.1,SNR=4.1						
HEC	Hector,Ludlow	78.53	48	P	P	21 20 20.4	+1.3
	baz=241						
BC3	Big Chuckawall	78.61	50	P	P	21 20 21.4	+1.8
	baz=242						
I03D	Drain, OR	78.67	38	P	P	21 20 21.2	+1.7
	baz=234						
GLA	Glamis	78.79	51	P	P	21 20 22.3	+1.9
	baz=242						
WHN	Wuhan	78.87	306	P	P	21 20 22.0	+1.1
WHN				pmax	pmax		
	comp=Z,82nm,1.0s						
GRAC	Grapevine Rang	78.88	46	P	P	21 20 22.8	+1.9
	baz=240						
FURC	Furnace Creek,	78.96	47	P	P	21 20 22.7	+1.5
	baz=240						
NV01	Mina Array Sit	78.96	44	eP	P	21 20 21.9	+0.5
NVAR	Mina Array Bea	78.96	44	P	P	21 20 22.9	+1.4
	comp=Z,11nm,0.9s,baz=228,slow=9.1,SNR=60						
NVAR				pP	pP	21 22 13.8	+1.5
	comp=Z,3.3nm,0.9s,baz=231,slow=9.0,SNR=5.1						
GMRC	Granite Mounta	79.00	49	P	P	21 20 23.1	+1.4
	baz=241						
K04D	Chiloquin, OR	79.01	39	P	P	21 20 23.1	+1.6
	baz=236						
NV11	Mina Array Sit	79.06	45	eP	P	21 20 23.2	+1.3
	comp=Z,32nm,1.3s						
IRM	Iron Mountain	79.07	50	P	P	21 20 23.6	+1.6
	baz=242						
TUQ	Turquoise Moun	79.12	48	P	P	21 20 23.5	+1.2
	baz=241						
I04A	Tendick Farm,	79.28	38	P	P	21 20 24.2	+1.4
	baz=235						
MA2	Magadan	79.40	345	P	P	21 20 22.9	-0.1
	comp=Z,29nm,0.9s,baz=167,slow=5.5,SNR=26						
MA2				pP	pP	21 22 12.8	-1.2
	comp=Z,5.5nm,0.9s,baz=70,slow=4.4,SNR=2.5						
113A	Mohawk Valley,	79.45	51	eP	P	21 20 25.8	+1.9
	comp=Z,16nm,1.3s						
113A				epP	pP	21 22 16.4	+1.6
SVW2	Sparrevohn	79.47	12	eP	P	21 20 23.6	+0.2
	comp=Z,21nm,1.0s						
MOD	Modoc Plateau	79.50	41	eP	P	21 20 25.4	+1.2
	comp=Z,48nm,1.4s						
MOD				epP	pP	21 22 16.7	+1.6
K05A	Summer Lake	79.59	40	eP	P	21 20 26.3	+1.6
	comp=Z,62nm,1.1s						
G03D	McMinnville, O	79.60	37	P	P	21 20 26.3	+1.9
	baz=234,SNR=5.2						
TPNV	Topopah Spring	79.63	47	P	P	21 20 26.4	+1.5
	baz=240						
TPNV	Topopah Spring	79.63	47	eP	P	21 20 26.3	+1.3
TPNV				pmax	pmax		
	comp=Z,11nm,1.0s						
TPNV	Topopah Spring	79.63	47	eP	P	21 20 26.3	+1.3
	comp=Z,11nm,1.0s						
J05D	Fort Rock, OR	79.69	39	P	P	21 20 26.9	+1.8
	baz=236						
214A	Organ Pipe Nat	79.81	52	P	P	21 20 27.7	+1.8
	baz=244						
214A	Organ Pipe Nat	79.81	52	eP	P	21 20 27.1	+1.2
	comp=Z,97nm,1.4s						
214A				epP	pP	21 22 18.1	+1.2
PDMCI	Parker Dam,Lak	79.88	50	P	P	21 20 27.9	+1.8
	baz=242						
H04A	Detroit Lake	79.92	38	eP	P	21 20 26.9	+0.8
	comp=Z,59nm,1.4s						
HSIG		79.99	56	eP	P	21 20 28.5	+1.6
	comp=Z,21nm,1.4s						
GAMB	Gambell	80.05	3	eP	P	21 20 27.2	+0.9
	comp=Z,69nm,1.2s						
H02S1	DAWSON INLET T	80.13	27	P	P	21 20 26.8	-0.2
H02N1	VAN INLET T-PH	80.14	26	P	P	21 20 25.9	-1.2
E03A	Lebam	80.21	35	eP	P	21 20 29.1	+1.5
	comp=Z,86nm,1.0s						
I05D	Terrebonne, OR	80.22	38	P	P	21 20 29.4	+1.6
	baz=236						
SPU	Mount Spurr	80.27	13	eP	P	21 20 27.0	-0.6
W13A	Hualapai Mount	80.43	49	eP	P	21 20 30.8	+1.5
	comp=Z,15nm,1.4s						
W13A				epP	pP	21 22 21.6	+1.0
F04A	Amboy	80.50	36	eP	P	21 20 30.1	+1.0
	comp=Z,59nm,1.3s						
NLWA	Neilton Lookou	80.55	35	eP	P	21 20 30.8	+1.5
	comp=Z,35nm,1.1s						
Y14A	Wickenburg	80.55	51	eP	P	21 20 31.4	+1.6
	comp=Z,36nm,1.1s						
VFP	Flag Point	80.70	37	P	P	21 20 31.3	+0.9
BMN	Battle Mountai	80.71	43	eP	P	21 20 31.9	+1.4
BMN				pmax	pmax		
	comp=Z,44nm,1.2s						
BMN	Battle Mountai	80.71	43	eP	P	21 20 31.9	+1.4
	comp=Z,44nm,1.2s						
G05D	Wamic, OR	80.74	37	P	P	21 20 31.8	+1.3
	baz=236						
R11A	Troy Canyon, C	80.77	46	P	P	21 20 32.0	+1.0
	baz=241						
R11A	Troy Canyon, C	80.77	46	eP	P	21 20 31.8	+0.9
	comp=Z,20nm,1.5s						
R11A				epP	pP	21 22 23.0	+0.7
CROR	Criterion Ridg	80.79	38	P	P	21 20 31.7	+0.9
WVOR	Wild Horse Val	80.83	41	eP	P	21 20 32.4	+1.3
WVOR				pmax	pmax		
	comp=Z,36nm,1.1s						
WVOR	Wild Horse Val	80.83	41	eP	P	21 20 32.4	+1.3
	comp=Z,36nm,1.1s						
TDL	Tradedollar La	80.86	36	P	P	21 20 32.6	+1.5
TT01	Tatalina	81.06	11	eP	P	21 20 32.7	+1.1
TTA	Tatalina	81.08	11	eP	P	21 20 32.9	+1.1
TTA				pmax	pmax		
	comp=Z,84nm,1.2s						
TTA	Tatalina	81.08	11	eP	P	21 20 32.9	+1.1
	comp=Z,84nm,1.2s						
G06A	Carlson Farm,	81.14	38	eP	P	21 20 33.3	+0.8
	comp=Z,23nm,1.3s						
GNW	Green Mountain	81.22	35	eP	P	21 20 33.0	+0.3
IPM	Ipoh	81.25	277	eP	P	21 20 34.5	+0.7
	comp=Z,131nm,1.0s						
LON	Longmire	81.32	36	eP	P	21 20 33.6	+0.2
LON				pmax	pmax		
	comp=Z,11nm,1.1s						
LON	Longmire	81.32	36	eP	P	21 20 33.6	+0.2
	comp=Z,11nm,1.1s						
BBB	Bella Bella	81.39	29	P	P	21 20 34.6	+1.1
	comp=Z,22nm,0.9s,baz=290,slow=2.5,SNR=9.7						
TUC	Tucson	81.51	53	P	P	21 20 36.6	+1.9
	baz=245						
TUC	Tucson	81.51	53	eP	P	21 20 36.8	+2.0
TUC				e*PP	pP	21 22 27.9	+1.5
TUC				pmax	pmax		
	comp=Z,28nm,1.3s						
TUC	Tucson	81.51	53	eP	P	21 20 36.8	+2.0
	comp=Z,28nm,1.3s						
TUC				epP	pP	21 22 27.9	+1.5
PGC	Sidney	81.52	34	eP	P	21 20 35.3	+1.0
	comp=Z,42nm,1.2s						
DIV	Divide	81.72	16	eP	P	21 20 35.3	+0.1
	comp=Z,75nm,1.3s						
LCMT	Little Creek M	81.77	48	eP	P	21 20 37.8	+1.8
	comp=Z,21nm,1.3s						
KULM	Kulim	81.84	278	eP	P	21 20 37.6	+0.8
	comp=Z,50nm,1.0s						
PANO	Nakornpanom	81.89	290	P	P	21 20 37.7	+0.8
	comp=Z,116nm,1.1s						
BMRM	Bremner River	81.90	16	eP	P	21 20 36.4	+0.3
	comp=Z,88nm,1.4s						
X16A	Lo Mia Camp, P	81.92	51	eP	P	21 20 39.1	+2.2
	comp=Z,20nm,1.1s						
SCM	Sheep Creek Mo	81.93	15	eP	P	21 20 36.8	+0.6
SCM				pmax	pmax		
	comp=Z,73nm,1.2s						
SCM	Sheep Creek Mo	81.93	15	eP	P	21 20 36.8	+0.6
	comp=Z,73nm,1.2s						
BJT	Baijiatuan	81.96	316	eP	P	21 20 37.3	+0.6
BJT				pmax	pmax		
	comp=Z,239nm,1.6s						
BJT	Baijiatuan	81.96	316	eP	P	21 20 37.3	+0.6
	comp=Z,239nm,1.6s						
BJI	Beijing	81.96	316	P	P	21 20 37.6	+0.9
BJI				pmax	pmax		
	comp=Z,78nm,1.1s						
BJI				pmax	pmax		
	comp=Z,390nm,4.4s						
A04D	Lummi Island	81.96	34	P	P	21 20 38.6	+2.1
	baz=234						
SEY	Seymchan	82.00	347	P	P	21 20 36.9	+0.5
	comp=Z,74nm,0.9s,baz=148,slow=5.3,SNR=187						
SEY				pP	pP	21 22 27.5	-0.8
	comp=Z,3.9nm,0.8s,baz=159,slow=5.4,SNR=3.0						
SEY	Seymchan	82.00	347	eP	P	21 20 36.6	+0.2
B05A	Bryant	82.03	35	P	P	21 20 38.4	+1.5
	baz=235						
PSUT	Pine Spring	82.05	46	eP	P	21 20 38.8	+1.3
	comp=Z,11nm,0.9s						
PSUT				epP	pP	21 22 30.8	+1.4
KNB	Kanab	82.08	48	eP	P	21 20 39.1	+1.4
KNB				pmax	pmax		
	comp=Z,29nm,1.4s						
KNB	Kanab	82.08	48	eP	P	21 20 39.1	+1.4
	comp=Z,29nm,1.4s						
ELK	Elko	82.17	44	eP	P	21 20 39.2	+1.1
ELK				e*PP	pP	21 22 30.8	+0.8
ELK				pmax	pmax		
	comp=Z,19nm,1.1s						
ELK	Elko	82.17	44	eP	P	21 20 39.2	+1.1
	comp=Z,19nm,1.1s						
ELK				epP	pP	21 22 30.8	+0.8
U15A	North Rim	82.19	49	eP	P	21 20 40.3	+1.9
	comp=Z,38nm,1.2s						
U15A				epP	pP	21 22 32.3	+2.0
LTY	Liberty	82.25	36	eP	P	21 20 38.8	+0.6
	comp=Z,30nm,1.2s						
CAST	Castle Rocks	82.27	12	eP	P	21 20 37.0	-0.9
	comp=Z,71nm,0.9s						
319A	Douglas	82.28	54	eP	P	21 20 39.5	+0.7
	comp=Z,32nm,1.1s						
SKNT	Sakolnakorn	82.40	290	P	P	21 20 40.0	+0.5
	comp=Z,150nm,1.0s						
HAWA	Hanford	82.42	37	eP	P	21 20 40.1	+1.2
	comp=Z,56nm,1.2s						
WUAZ	Wupatki	82.45	50	P	P	21 20 40.8	+1.2
	baz=244						
C06D	Leavenworth	82.49	35	P	P	21 20 40.5	+1.2
	baz=236						
CHBT	CHBT	82.54	286	P	P	21 20 41.2	+1.0
	comp=Z,97nm,1.2s,comp=Z,1µm						
ENH	Enshi	82.56	304	eP	P	21 20 41.1	+1.0
	comp=Z,161nm,1.2s						
KTH	Kantishna Hill	82.63	12	eP	P	21 20 38.8	-0.9
	comp=Z,51nm,1.0s						
PKCU	Pink Cliffs	82.63	48	eP	P	21 20 43.4	+2.7
	comp=Z,31nm,1.4s						
TRF	Thorofare Moun	82.67	13	eP	P	21 20 39.7	-0.3
	comp=Z,82nm,1.0s						
PSI	Prapat	82.77	275	P	P	21 20 41.1	-0.5
	comp=Z,52nm,1.0s,baz=126,slow=3.0,SNR=55						
PSI				PP	PP	21 23 56.6	-4.5
	comp=Z,2.5nm,0.5s,baz=114,slow=8.9,SNR=5.9						
PSI	Prapat	82.77	275	eP	P	21 20 41.0	-0.6
PSI						21 23 56.6	
PSI				pmax	pmax		
	comp=Z,92nm,1.1s						
PSI	Prapat	82.77	275	eP	P	21 20 41.0	-0.6
	comp=Z,92nm,1.1s						
PSI				PP	PP	21 23 56.6	-4.5
WTV	Waterville	82.89	36	P	P	21 20 42.0	+0.6
BMO	Blue Mountains	82.92	39	eP	P	21 20 42.4	+0.7
BMO				pmax	pmax		
	comp=Z,20nm,1.3s						
BMO	Blue Mountains	82.92	39	eP	P	21 20 42.4	+0.7
	comp=Z,20nm,1.3s						
RND	Reindeer	82.94	13	eP	P	21 20 41.4	+0.1
RND				pmax	pmax		
	comp=Z,145nm,1.0s						
RND	Reindeer	82.94	13	eP	P	21 20 41.4	+0.1
	comp=Z,145nm,1.0s						
DHY	Denali Highway	82.99	14	eP	P	21 20 41.6	-0.1
	comp=Z,73nm,1.4s						
MTPU	Mount Pierson	82.99	47	eP	P	21 20 44.6	+2.1
	comp=Z,32nm,1.2s						
MTPU				epP	pP	21 22 37.2	+2.6
X18A	Snowflake	83.08	51	eP	P	21 20 44.9	+2.0
	comp=Z,19nm,1.3s						
BPAW	Bear Paw Mtn.	83.10	12	eP	P	21 20 41.3	-0.7
	comp=Z,17nm,0.9s						
MFID	Camas Ranch	83.11	41	eP	P	21 20 43.8	+1.2
	comp=Z,40nm,1.3s						
D08A	Wollman Farm,	83.13	37	eP	P	21 20 43.8	+1.2
	comp=Z,32nm,1.1s						
SRAK	Srakaew	83.21	287	P	P	21 20 42.4	-1.2
	comp=Z,108nm,1.3s,comp=Z,1µm						
MCK	McKinley	83.21	13	eP	P	21 20 42.4	-0.1
MCK				e*PP	pP	21 22 35.3	+0.5
MCK				pmax	pmax		
	comp=Z,75nm,1.1s						
MCK	McKinley	83.21	13	eP	P	21 20 42.4	-0.1
	comp=Z,75nm,1.1s						
MCK				epP	pP	21 22 35.3	+0.5
MSU	Marysvale	83.21	47	eP	P	21 20 45.3	+1.9
MSU				e*PP	pP	21 22 37.2	+1.5
MSU	Marysvale	83.21	47	eP	P	21 20 45.3	+1.9
MSU				epP	pP	21 22 37.2	+1.5
KHON	Khomkaen	83.24	289	P	P	21 20 44.9	+1.2
	comp=Z,29nm,1.1s,comp=Z,376nm						
E09A	Wood Farm, Sta	83.29	38	eP	P	21 20 44.6	+1.2
	comp=Z,27nm,1.2s						
PAX	Paxson	83.36	15	eP	P	21 20 43.1	-0.3
PAX				pmax	pmax		
	comp=Z,30nm,1.1s						
PAX	Paxson	83.36	15	eP	P	21 20 43.1	-0.3
	comp=Z,30nm,1.1s						
GYA	Guiyang	83.39	300	⇓ iP	P	21 20 45.5	+1.0
GYA				pP	pP	21 22 39.8	+3.1
GYA				sP	sP	21 23 31.0	+1.6
GYA				SKS	S	21 30 14.3	-8.9
GYA				S	SKKSac	21 30 22.0	-2.0
GYA				sS	sS	21 33 43.5	+0.2
GYA				pmax	pmax		
	comp=Z,20nm,0.8s						
HPIG		83.46	60	eP	P	21 20 47.0	+2.1
	comp=Z,12nm,1.3s						
W18A	Petrified Fore	83.49	51	P	P	21 20 46.5	+1.7
	baz=245						
TRTT	Trang	83.51	280	P	P	21 20 46.6	+1.5
	comp=Z,77nm,1.3s,comp=Z,928nm						
NONG	Nongkai	83.52	291	P	P	21 20 45.8	+0.7
	comp=Z,119nm,1.2s,comp=Z,7µm						
DUG	Dugway, Tooele	83.54	45	P	P	21 20 46.3	+1.4
	baz=242						
DUG	Dugway, Tooele	83.54	45	eP	P	21 20 46.0	+1.1
DUG				e*PP	pP	21 22 38.1	+0.8
DUG	Dugway, Tooele	83.54	45	eP	P	21 20 46.0	+1.1
DUG				epP	pP	21 22 38.1	+0.8
SKAG	Skagway	83.56	21	eP	P	21 20 45.8	+1.5
	comp=Z,79nm,1.4s						
B08A	Colville Reser	83.61	36	eP	P	21 20 45.1	+0.2
	comp=Z,23nm,1.1s						
BGU	Big Grassy Mou	83.73	44	eP	P	21 20 47.3	+1.4
	comp=Z,17nm,1.4s						
MENT	Mentasta	83.77	16	eP	P	21 20 46.0	+0.6
	comp=Z,48nm,1.0s						
CHAI	Chaiyaphum	83.86	288	P	P	21 20 47.3	+0.5
	comp=Z,15nm,1.1s,comp=Z,142nm						
121A	Cookes Peak, D	83.91	54	P	P	21 20 48.7	+1.7
	baz=246						
NLU	North Lily Min	83.93	46	epP	pP	21 22 41.0	+1.6
PATY	Pattaya	83.95	285	P	P	21 20 49.2	+1.9
	comp=Z,26nm,1.0s,comp=Z,1µm						
MLY	Manley	83.98	12	eP	P	21 20 46.0	-0.3
	comp=Z,34nm,1.0s						
WRH	Wood River Hil	84.03	13	eP	P	21 20 46.3	-0.3
	comp=Z,87nm,1.1s						
HLID	Hailey	84.08	41	P	P	21 20 49.1	+1.5
	baz=241						
HLID	Hailey	84.08	41	eP	P	21 20 49.0	+1.5
	comp=Z,15nm,0.9s						
HLID				epP	pP	21 22 42.0	+2.0
TMUT	Trail Mountain	84.24	46	eP	P	21 20 50.2	+1.6
	comp=Z,24nm,1.2s						
CCB	Clear Creek Bu	84.25	13	eP	P	21 20 47.2	-0.4
	comp=Z,100nm,1.3s						
DOT	Dot Lake	84.28	15	eP	P	21 20 48.1	+0.2
	comp=Z,159nm,1.0s						
SPUT	South Promonto	84.30	44	eP	P	21 20 50.2	+1.6
	comp=Z,24nm,1.2s						
SPUT				epP	pP	21 22 42.8	+1.5
HVU	Hansel Valley	84.30	44	eP	P	21 20 50.0	+1.3
HVU				pmax	pmax		
	comp=Z,32nm,1.3s						
HVU	Hansel Valley	84.30	44	eP	P	21 20 50.0	+1.3
	comp=Z,32nm,1.3s						
MDM	Murphy Dome	84.43	13	eP	P	21 20 48.1	-0.5
	comp=Z,93nm,1.2s						
COLA	College	84.44	13	eP	P	21 20 48.2	-0.3
COLA				pmax	pmax		
	comp=Z,98nm,1.0s						
CTU	Camp Tracy	84.49	45	eP	P	21 20 51.6	+2.0
	comp=Z,16nm,1.2s						
HIA	Hailar	84.50	325	eP	P	21 20 50.2	+0.9
HIA				pmax	pmax		
	comp=Z,9.0nm,0.4s						
HIA	Hailar	84.50	325	eP	P	21 20 50.2	+0.9
	comp=Z,9.5nm,0.4s						
XAN	Xi'an	84.51	308	P	P	21 20 51.1	+1.4
XAN				pmax	pmax		
	comp=Z,140nm,4.6s						
ILAR	Eielson Array	84.56	13	P	P	21 20 48.6	-0.6
	comp=Z,52nm,1.1s,baz=229,slow=5.4,SNR=117						
ILAR				pP	pP	21 22 40.7	-1.2
	comp=Z,2.0nm,1.0s,baz=232,slow=1.6,SNR=3.4						
ILAR				PP	PP	21 24 09.8	-4.5
	comp=Z,0.9nm,0.9s,baz=236,slow=6.7,SNR=2.3						
ILB	Eielson Array	84.56	13	eP	P	21 20 48.7	-0.6
IL1	Eielson Array	84.56	13	eP	P	21 20 47.8	-1.4
SRU	San Rafael Swe	84.63	47	eP	P	21 20 51.6	+1.2
SRU				e*PP	pP	21 22 44.6	+1.5
SRU	San Rafael Swe	84.63	47	eP	P	21 20 51.6	+1.2
SRU				epP	pP	21 22 44.6	+1.5
P17A	Butcher Ranch,	84.64	46	eP	P	21 20 52.4	+2.0
	comp=Z,34nm,1.6s						
JLU	Jordanelle	84.65	45	eP	P	21 20 51.9	+1.3
	comp=Z,18nm,1.2s						
SURT	Suratani	84.69	281	P	P	21 20 52.5	+1.6
	comp=Z,16nm,1.6s,comp=Z,254nm						
BILL	Bilibino	84.75	355	deP	P	21 20 50.2	+0.2
BILL				e		21 24 12.7	
BILL				pmax	pmax		
	comp=Z,95nm,1.0s						
BILL	Bilibino	84.75	355	eP	P	21 20 50.0	0.0
	comp=Z,88nm,1.0s						
DLBC	Dease Lake	84.76	24	P	P	21 20 51.6	+1.3
	comp=Z,31nm,1.1s,baz=208,slow=5.6,SNR=17						
DLBC	Dease Lake	84.76	24	eP	P	21 20 49.1	-1.3
	comp=Z,43nm,1.1s						
DLBC				ePcP	PcP	21 20 52.1	-0.7
NEW	Newport	84.80	36	P	P	21 20 51.2	+0.4
	comp=Z,8.9nm,1.0s,baz=280,slow=4.8,SNR=10						
NEW	Newport	84.80	36	P	P	21 20 51.4	+0.6
	baz=239						
NEW	Newport	84.80	36	eP	P	21 20 51.3	+0.4
NEW				pmax	pmax		
	comp=Z,15nm,1.1s						
NEW	Newport	84.80	36	eP	P	21 20 51.3	+0.4
	comp=Z,15nm,1.1s						
PKDT	Phuket	84.81	280	P	P	21 20 53.6	+2.1
	comp=Z,41nm,1.6s,comp=Z,866nm						
TCUT	Toone Canyon	84.91	45	eP	P	21 20 53.5	+1.7
	comp=Z,74nm,1.2s						
PBKT	Sadao Pong	85.00	289	P	P	21 20 53.8	+1.4
	comp=Z,45nm,1.2s,comp=Z,930nm						
HWUT	Hardware Ranch	85.03	44	eP	P	21 20 53.3	+1.0
HWUT				epP	pP	21 22 46.4	+1.3
MAW	Mawson	85.03	200	P	P	21 20 52.3	+0.8
	comp=Z,6.2nm,0.5s,baz=136,slow=4.5,SNR=48						
MAW	Mawson	85.03	200	P	P	21 20 52.3	+0.

LPM Los Pinos Moun 85.50 52 *eP* **P 21 20 56.3 +1.6**
PV01 Paradox Valley 85.60 48 *eP* **P 21 20 56.0 +0.8**
PV01 *epP* **pP 21 22 48.8 +0.6**
MCMT McKenzie Canyo 85.67 41 *eP* **P 21 20 56.6 +1.3**
MCMT *epP* **pP 21 22 49.8 +1.4**
UTTA Uttaradit 85.75 290 P **P 21 20 57.3 +1.3**
comp=Z,9.4nm,1.0s,comp=Z,81nm
AHID Auburn Hatcher 85.85 43 *eP* **P 21 20 57.3 +1.1**
comp=Z,120nm,0.5s
AHID *epP* **pP 21 22 50.1 +0.7**
ANMO Albuquerque 85.88 52 P **P 21 20 57.3 +0.7**
comp=Z,8.4nm,1.1s,baz=207,slow=5.3,SNR=13
ANMO pP **pP 21 22 50.5 +0.9**
comp=Z,13nm,1.1s,baz=237,slow=4.8,SNR=13
ANMO Albuquerque 85.88 52 P **P 21 20 57.7 +1.1**
baz=247
ANMO Albuquerque 85.88 52 *eP* **P 21 20 57.5 +1.0**
ANMO *epP* **pP 21 22 50.4 +0.7**
EGAK Eagle 85.93 15 *eP* **P 21 20 56.1 +0.2**
comp=Z,39nm,1.4s
EGAK *epP* **pP 21 22 48.6 -0.4**
BSMT Bassoo Peak 85.94 38 *eP* **P 21 20 56.9 +0.4**
NANT Nan 85.95 291 P **P 21 20 57.7 +0.7**
comp=Z,11nm,1.0s,comp=Z,112nm
MSO Missoula 85.95 39 P **P 21 20 57.2 +0.7**
baz=241
MSO Missoula 85.95 39 *eP* **P 21 20 57.1 +0.7**
comp=Z,10nm,1.3s
TX31 Lajitas Ar. Si 85.97 58 *eP* **P 21 20 58.9 +1.9**
TX31 *epP* **pP 21 22 50.7 +0.5**
TXAR Lajitas Array 85.98 58 P **P 21 20 58.9 +1.9**
comp=Z,2.9nm,0.9s,baz=225,slow=4.8,SNR=34
TXAR pP **pP 21 22 50.8 +0.7**
comp=Z,13nm,1.3s,baz=234,slow=3.0,SNR=6.0
SRDT SRDT 86.00 286 P **P 21 20 59.2 +1.9**
comp=Z,148nm,1.3s,comp=Z,2µm
COLD Coldfoot 86.03 11 *eP* **P 21 20 57.0 +0.7**
comp=Z,29nm,1.0s
COLD *epP* **pP 21 22 51.3 +1.8**
DLMT Dillon 86.08 41 *eP* **P 21 20 58.5 +1.3**
comp=Z,32nm,1.4s
DLMT *epP* **pP 21 22 51.1 +0.8**
JTMT Jette 86.19 38 *eP* **P 21 20 58.1 +0.4**
KMI Kunming 86.23 297 P **P 21 21 00.3 +1.8**
KMI pmax pmax
comp=Z,42nm,1.3s
KMI pmax pmax
comp=Z,200nm,3.9s
SWMT Swartz Lake 86.24 38 *eP* **P 21 20 58.2 +0.4**
REDW Red Top Meadow 86.28 43 *eP* **P 21 20 59.5 +1.2**
comp=Z,38nm,1.2s
REDW *epP* **pP 21 22 52.6 +1.0**
FXWY Fox Creek 86.29 43 *eP* **P 21 20 59.6 +1.3**
comp=Z,16nm,1.2s
LRM Limekiln Ridge 86.38 40 *eP* **P 21 20 59.9 +1.2**
SNOW Snow King Moun 86.39 43 *eP* **P 21 21 00.3 +1.5**
comp=Z,20nm,0.9s
SNOW *epP* **pP 21 22 53.2 +1.0**
CHMT Chamberlain Mo 86.41 39 *eP* **P 21 20 59.1 +0.3**
YBMT Yellow Bay 86.41 38 *eP* **P 21 20 59.0 +0.4**
BTO Baotou 86.41 314 *eP* **P 21 21 00.1 +1.3**
IMW Indian Meadow 86.46 42 *eP* **P 21 21 00.7 +1.4**
comp=Z,29nm,1.2s
IMW *epP* **pP 21 22 53.7 +1.2**
MOOW Moose Ponds 86.52 43 *eP* **P 21 21 00.5 +1.1**
comp=Z,14nm,1.3s
MOOW *epP* **pP 21 22 54.4 +1.6**
LOHW Long Hollow 86.55 43 *eP* **P 21 21 00.7 +1.1**
comp=Z,14nm,1.3s
LOHW *epP* **pP 21 22 54.1 +1.2**
QLMT Earthquake Lak 86.57 41 *eP* **P 21 21 01.8 +2.2**
O20A White River Ci 86.66 47 P **P 21 21 01.2 +1.0**
baz=246
O20A White River Ci 86.66 47 *eP* **P 21 21 01.3 +1.2**
comp=Z,19nm,1.2s
CRAI Chiangrai 86.69 292 P **P 21 21 02.8 +2.3**
comp=Z,33nm,1.2s
FLWY Flagg Ranch 86.70 42 *eP* **P 21 21 02.2 +1.9**
comp=Z,32nm,1.3s
S22A 4UR Ranch, Cre 86.70 49 P **P 21 21 02.1 +1.6**
baz=246
S22A 4UR Ranch, Cre 86.70 49 *eP* **P 21 21 02.2 +1.6**
S22A *epP* **pP 21 22 55.0 +1.1**
YFT Old Faithful 86.78 42 *eP* **P 21 21 03.6 +3.0**
comp=Z,18nm,1.3s
YMR Madison River 86.79 42 *eP* **P 21 21 03.0 +2.3**
comp=Z,28nm,1.3s
BOZ Bozeman (W) 86.81 41 P **P 21 21 02.1 +1.5**
baz=243
BOZ Bozeman (W) 86.81 41 *eP* **P 21 21 01.7 +1.0**
BOZ *e**PP **pP 21 22 55.1 +1.0**
BOZ pmax pmax
comp=Z,22nm,1.4s
BOZ Bozeman (W) 86.81 41 *eP* **P 21 21 01.7 +1.0**
comp=Z,22nm,1.4s
BOZ *epP* **pP 21 22 55.0 +1.0**
LAMP Lampang 86.82 290 P **P 21 21 02.4 +1.3**
comp=Z,13nm,1.0s,comp=Z,127nm
BW06 Boulder Array 86.87 44 P **P 21 21 02.1 +1.0**
baz=244
BW06 Boulder Array 86.87 44 *eP* **P 21 21 01.6 +0.5**
comp=Z,8.7nm,0.8s
PD31 Pinedale Array 86.87 44 *eP* **P 21 21 01.8 +0.6**
PDAR Pinedale Array 86.87 44 P **P 21 21 01.8 +0.6**
comp=Z,7.0nm,0.9s,baz=217,slow=3.7,SNR=23
PDAR pP **pP 21 22 54.6 0.0**
comp=Z,7.3nm,1.0s,baz=225,slow=7.5,SNR=3.4
H17A Grant Village 86.92 42 P **P 21 21 04.0 +2.7**
baz=244
H17A Grant Village 86.92 42 *eP* **P 21 21 03.8 +2.5**
comp=Z,13nm,1.0s
WALA Waterton Lakes 87.04 37 *eP* **P 21 21 02.8 +1.2**
comp=Z,18nm,1.1s
LKWY Lake 87.11 42 *eP* **P 21 21 03.5 +1.3**
LKWY pmax pmax
comp=Z,4.0nm,0.4s
LKWY Lake 87.11 42 *eP* **P 21 21 03.5 +1.3**
comp=Z,3.9nm,0.4s
LKWY *e*PcP **PcP 21 21 05.0 +1.3**
SMCO Snowmass 87.17 48 *eP* **P 21 21 03.7 +0.9**
SMCO *epP* **pP 21 22 57.5 +1.1**
CD2 Chengdu 87.38 303 P **P 21 21 03.3 -0.2**
CD2 pmax pmax
comp=Z,3.0nm,0.6s
CM01 Chiang Mai Arr 87.40 290 *eP* **P 21 21 04.6 +0.8**
CM01 *epP* **pP 21 22 57.2 -0.2**
CM31 Chiang Mai Arr 87.42 290 *eP* **P 21 21 05.8 +1.9**
CMAR Chiang Mai Arr 87.42 290 P **P 21 21 05.4 +1.5**
comp=Z,12nm,0.9s,baz=107,slow=3.0,SNR=84
CMAR pP **PP 21 24 33.0 -5.2**
comp=Z,0.3nm,0.3s,baz=114,slow=6.6,SNR=4.2
CMMT Chiang Mai 87.53 290 P **P 21 21 05.4 +1.0**
comp=Z,29nm,1.4s,comp=Z,479nm
CHTO Chiang Mai 87.53 290 P **P 21 21 05.4 +1.0**
comp=Z,128nm,1.4s,comp=Z,2µm
CHTO Chiang Mai 87.53 290 *eP* **P 21 21 05.6 +1.2**
CHTO *e* 21 24 43.2
CHTO pmax pmax
comp=Z,20nm,0.9s
CHTO Chiang Mai 87.53 290 *eP* **P 21 21 05.6 +1.2**
comp=Z,20nm,0.9s
CHTO *e*PP **PP 21 24 43.2 +4.2**
YAK Yakutsk 87.73 339 P **P 21 21 04.1 -0.2**
comp=Z,16nm,0.6s,baz=87,slow=1.3,SNR=8.6
YAK Yakutsk 87.73 339 *eP* **P 21 21 03.7 -0.6**
YAK *e**PP **pP 21 22 56.3 -1.8**
YAK *eS* **SKSac 21 30 42.0 -0.7**
YAK *e* 21 31 01.7
YAK pmax pmax
comp=Z,18nm,0.9s
YAK pmax pmax
comp=E,3.0nm,1.0s
YAK pmax pmax
comp=N,4.0nm,1.3s
YAK pmax pmax
comp=Z,98nm,2.4s
YAK pmax pmax
comp=N,55nm,2.6s
YAK pmax pmax
comp=E,103nm,2.5s
YAK smax smax
comp=N,50nm,2.3s
YAK smax smax
comp=E,46nm,2.5s
YAK Yakutsk 87.73 339 *eP* **P 21 21 04.2 -0.2**
comp=E,25nm,1.0s

RLMT Red Lodge 88.07 42 P **P 21 21 08.7 +2.1**
baz=245
RLMT Red Lodge 88.07 42 *eP* **P 21 21 08.5 +1.8**
comp=E,13nm,0.9s
T25A Trinidad 88.25 51 P **P 21 21 08.4 +0.7**
baz=248
MHMT Maesarieng 88.25 289 P **P 21 21 09.7 +1.9**
comp=E,11nm,1.4s,comp=E,172nm
MSTX Muleshoe 88.34 54 P **P 21 21 09.4 +1.3**
baz=249
MSTX Muleshoe 88.34 54 *eP* **P 21 21 09.2 +1.1**
comp=E,21nm,1.2s
MSTX *epP* **pP 21 23 03.7 +1.8**
ISCO Idaho Springs 88.38 48 P **P 21 21 10.0 +1.6**
baz=247
ISCO Idaho Springs 88.38 48 *eP* **P 21 21 09.9 +1.6**
ISCO pmax pmax
comp=Z,4.0nm,0.7s
ISCO Idaho Springs 88.38 48 *eP* **P 21 21 09.9 +1.6**
comp=Z,4.1nm,0.7s
Q24A Divide 88.39 49 P **P 21 21 10.1 +1.6**
baz=248
Q24A Divide 88.39 49 *eP* **P 21 21 10.1 +1.6**
comp=Z,38nm,1.6s
N23A Red Feather La 88.57 47 P **P 21 21 11.0 +1.9**
baz=247
N23A Red Feather La 88.57 47 *eP* **P 21 21 10.5 +1.3**
comp=Z,12nm,0.6s
832A Faith Ranch, C 88.66 60 P **P 21 21 11.3 +1.8**
baz=251
EGMT Eagleton 89.02 39 P **P 21 21 12.1 +1.2**
baz=244
EGMT Eagleton 89.02 39 *eP* **P 21 21 12.0 +1.2**
comp=Z,9.5nm,0.8s
933A Laredo 89.03 61 P **P 21 21 13.7 +2.4**
baz=251
PHWY Pilot Hill 89.07 46 *eP* **P 21 21 12.2 +0.7**
comp=Z,10nm,0.8s
LZH Lanzhou 89.14 308 ||P **P 21 21 13.5 +1.7**
LZH pP pP 21 23 10.0 +4.1
LZH sP sP 21 24 02.1 +4.1
LZH PP **PP 21 24 57.0 +5.4**
LZH SKS **SKSac 21 30 51.0 -1.6**
LZH *eS* **S 21 31 17.1 -0.2**
LZH sS sS 21 34 41.3 +0.4
LZH SS **SS 21 37 30.0 +3.1**
LZH pmax pmax
comp=Z,55nm,1.1s
LZH pmax pmax
comp=Z,220nm,4.5s
AMTX Amarillo 89.51 53 *eP* **P 21 21 14.4 +1.0**
comp=Z,17nm,1.3s
633A Saathoff Ranch 89.70 59 P **P 21 21 16.6 +2.2**
baz=251
533A Kerrville 90.02 59 P **P 21 21 17.4 +1.6**
baz=251
433A Art 90.19 58 P **P 21 21 17.7 +1.1**
baz=251
KSCO Kaye Shedlock' 90.24 49 P **P 21 21 18.3 +1.6**
baz=249
KSCO Kaye Shedlock' 90.24 49 *eP* **P 21 21 18.4 +1.6**
comp=Z,25nm,1.1s
ABTX Abilene, Hawle 90.35 56 P **P 21 21 18.3 +1.0**
baz=251
ABTX Abilene, Hawle 90.35 56 *eP* **P 21 21 18.3 +1.0**
comp=Z,35nm,1.4s
333A Richland Sprin 90.46 58 P **P 21 21 18.9 +1.1**
baz=251
534A Blanco 90.46 59 P **P 21 21 19.3 +1.4**
baz=251
INK Inuvik 90.61 15 P **P 21 21 17.3 -0.2**
comp=Z,12nm,1.1s,baz=215,slow=5.7,SNR=16
INK PP **PP 21 25 03.4 +1.3**
comp=Z,2.5nm,1.0s,baz=231,slow=7.0,SNR=3.7
INK Inuvik 90.61 15 *eP* **P 21 21 16.9 -0.7**
INK 21 25 03.4
INK pmax pmax
comp=Z,28nm,1.4s
INK Inuvik 90.61 15 *eP* **P 21 21 16.9 -0.7**
comp=Z,28nm,1.4s
INK PP **PP 21 25 03.4 +1.3**
233A Rising Star 90.75 57 P **P 21 21 20.3 +1.2**
baz=251
635A Leesville 90.84 60 P **P 21 21 21.5 +2.0**
baz=252
434A Burnet 90.88 58 P **P 21 21 20.7 +1.0**
baz=252
133A Hamilton Ranch 90.92 56 P **P 21 21 21.1 +1.2**
baz=251
X32A Elmer 91.21 55 P **P 21 21 21.8 +0.6**
baz=251
Z33A Whitaker Ranch 91.26 56 P **P 21 21 22.0 +0.6**
baz=251
ULN Ulaanbaatar 91.31 320 *de*P **P 21 21 22.0 +0.5**
ULN pmax pmax
comp=Z,36nm,1.1s
ULN Ulaanbaatar 91.31 320 *eP* **P 21 21 21.8 +0.3**
comp=Z,46nm,1.1s
ULN *epP* **pP 21 23 17.1 +1.2**
234A Clairette 91.36 57 P **P 21 21 23.1 +1.1**
baz=252
W32A Sentinel 91.47 54 P **P 21 21 23.7 +1.3**
baz=251
SONA1 Songino Array 91.70 320 *eP* **P 21 21 23.2 -0.2**
SONA1 *epP* **pP 21 23 18.2 +0.4**
SONM Songino Array 91.70 320 P **P 21 21 23.6 +0.3**
comp=Z,16nm,1.1s,baz=119,slow=4.3,SNR=55
SONM pP **pP 21 23 17.7 -0.1**
comp=Z,2.8nm,1.0s,baz=105,slow=4.3,SNR=7.2
SONM PP **PP 21 25 05.8 -5.5**
comp=Z,1.3nm,0.9s,baz=137,slow=7.1,SNR=4.2
BOD Bodaibo 91.80 331 ||P **P 21 21 22.6 -0.7**
BOD pmax pmax
comp=Z,17nm,1.4s
V32A Arapaho 91.82 53 P **P 21 21 25.8 +1.8**
baz=251
W33A Caddo, Fort Co 92.08 54 P **P 21 21 26.3 +1.1**
baz=252
135A Vickery Place, 92.11 57 P **P 21 21 26.4 +1.0**
baz=252
F25A Bowman 92.14 43 P **P 21 21 26.8 +1.5**
baz=249
J27A Elkhorn Farm, 92.17 46 P **P 21 21 27.3 +1.8**
baz=250
SNAA Sanae 92.21 179 P **P 21 21 25.0 -0.2**
Y34A Reagan Ranch, 92.27 55 P **P 21 21 27.5 +1.5**
baz=252
T32A Huddler Ranch, 92.37 52 P **P 21 21 28.2 +1.7**
baz=251
E25A Miller Ranch, 92.39 42 P **P 21 21 28.1 +1.7**
baz=249
VNA3 Neumayer Olymp 92.39 177 P **P 21 21 26.3 +0.4**
X34A Smith Ranch, M 92.41 55 P **P 21 21 27.7 +1.0**
baz=252
I27A Quinn 92.42 45 P **P 21 21 28.9 +2.3**
baz=250
V33A Lesson Ranch, 92.43 53 P **P 21 21 28.1 +1.3**
baz=252
H27A Howes 92.60 44 P **P 21 21 28.8 +1.5**
baz=250
DGMT Dagmar 92.60 40 P **P 21 21 28.5 +1.2**
baz=248
F26A Lodgepole 92.63 43 P **P 21 21 29.3 +1.8**
baz=249
W34A Bridge Creek, 92.65 54 P **P 21 21 29.6 +1.8**
baz=252
236A Katherine and 92.66 58 P **P 21 21 29.3 +1.5**
baz=252
D25A Fairfield 92.67 42 P **P 21 21 29.3 +1.6**
baz=249
J28A Allard Ranch, 92.75 46 P **P 21 21 29.9 +1.8**
baz=250
U33A Lingo Farm, Me 92.76 53 P **P 21 21 29.6 +1.4**
baz=252
136A Ennis 92.80 57 P **P 21 21 30.1 +1.6**
baz=252
NVL N'lazarevskaya 92.80 184 *eP* P 21 21 38.7 +11
VNA2 Neumayer--Watz 92.82 177 P **P 21 21 28.0 +0.1**
baz=190,slow=3.4
Y35A Marietta 92.82 56 P **P 21 21 30.2 +1.6**
baz=252
T33A Patterson Ranc 92.86 52 P **P 21 21 30.4 +1.7**
baz=252
C25A Freed Ranch, W 92.92 41 P **P 21 21 30.6 +1.8**
baz=249
R32A Long Quarter, 92.93 51 P **P 21 21 30.5 +1.5**
baz=252

G27A Dupree 92.95 44 P **P 21 21 30.4 +1.4**
baz=250
337A Centerville 92.98 58 P **P 21 21 30.1 +0.7**
baz=253
538A Harpers Horsep 92.98 60 P **P 21 21 30.1 +0.7**
baz=253
I28A Midland 92.99 45 P **P 21 21 30.9 +1.7**
baz=250
X35A Drake 93.02 55 P **P 21 21 31.1 +1.5**
baz=252
V34A Guthrie 93.03 54 P **P 21 21 31.1 +1.6**
baz=252
F27A Lemmon 93.06 43 P **P 21 21 31.0 +1.5**
baz=250
Z36A Blue Ridge 93.11 56 P **P 21 21 31.2 +1.2**
baz=253
D26A Manning 93.19 42 P **P 21 21 30.7 +0.7**
baz=250
S33A Kaszmaul Farm, 93.20 52 P **P 21 21 31.5 +1.2**
baz=252
U34A Anderson Ranch 93.20 53 P **P 21 21 30.6 +0.3**
baz=252
U34A Anderson Ranch 93.20 53 *eP* **P 21 21 31.7 +1.4**
comp=Z,34nm,1.3s
Q32A Meitler Ranch, 93.22 50 P **P 21 21 31.6 +1.2**
baz=252
237A Washetta, Mont 93.24 58 P **P 21 21 31.3 +0.8**
baz=253
GTA Gaotai 93.26 310 *eP* **P 21 21 31.3 +0.6**
GTA pP pP 21 23 26.3 +1.1
GTA pmax pmax
comp=Z,13nm,1.2s
YKA Yellowknife Ar 93.30 25 P **P 21 21 30.2 +0.2**
comp=Z,5.2nm,0.8s,baz=249,slow=4.6,SNR=55
YKA pP **pP 21 23 26.2 +1.6**
comp=Z,1.6nm,1.1s,baz=241,slow=4.5,SNR=5.5
YKA PKKP **PKKPdf 21 38 34.8 -0.8**
comp=Z,0.1nm,0.4s,baz=43,slow=2.1,SNR=4.5
YKB5 Yellowknife Ar 93.30 25 *eP* **P 21 21 29.2 -0.9**
YKB5 *epP* **pP 21 23 26.2 +1.6**
H28A Mission Ridge 93.32 44 P **P 21 21 32.0 +1.3**
baz=250
YKW3 Yellowknife Ar 93.33 25 *eP* **P 21 21 29.7 -0.5**
comp=Z,11nm,1.1s
W35A Tecumseh 93.33 54 P **P 21 21 32.0 +1.1**
baz=252
J29A Okreek 93.37 46 P **P 21 21 32.4 +1.4**
baz=251
P32A Huiting Farm, 93.39 50 P **P 21 21 32.5 +1.4**
baz=252
Y36A Durant 93.42 56 P **P 21 21 32.5 +1.2**
baz=253
R33A Olander Ranch, 93.44 51 P **P 21 21 32.7 +1.3**
baz=252
E27A Carson 93.55 43 P **P 21 21 33.3 +1.6**
baz=250
I29A Vivian Onida 93.59 45 P **P 21 21 33.1 +1.2**
baz=251
K30A Basset 93.63 47 P **P 21 21 33.3 +1.1**
baz=251
C26A Wahner Farm, P 93.69 41 P **P 21 21 33.7 +1.5**
baz=250
Q33A Connelly Farm, 93.76 51 P **P 21 21 33.9 +1.1**
baz=252
W36A Wetumka 93.83 55 P **P 21 21 35.0 +1.8**
baz=253
H29A Onida 93.85 45 P **P 21 21 34.5 +1.4**
baz=251
S34A Willow Spring 93.91 52 P **P 21 21 34.8 +1.2**
baz=252
R34A Isabella, Hill 93.98 51 P **P 21 21 35.5 +1.6**
baz=252
P33A Williams Farm, 94.00 50 P **P 21 21 35.9 +2.0**
baz=252
A26A Wade Farm, Ken 94.09 40 P **P 21 21 35.0 +0.9**
baz=250
T35A Sooner Cattle 94.13 53 P **P 21 21 35.6 +1.1**
baz=253
V36A Jenks 94.24 54 P **P 21 21 36.4 +1.4**
baz=253
O33A Hebron 94.27 50 P **P 21 21 36.6 +1.5**
baz=252
239A Gary 94.33 58 P **P 21 21 36.6 +1.1**
baz=254
TIXI Tiksi 94.37 346 P **P 21 21 34.7 -0.1**
comp=Z,10nm,1.1s,baz=119,slow=4.5,SNR=23
TIXI pP **pP 21 23 29.4 0.0**
comp=Z,2.1nm,0.9s,baz=159,slow=5.9,SNR=3.4
TIXI Tiksi 94.37 346 *eP* **P 21 21 34.2 -0.6**
TIXI *e**PP **pP 21 23 29.8 +0.4**
TIXI pmax pmax
comp=Z,14nm,1.1s
TIXI Tiksi 94.37 346 *eP* **P 21 21 34.1 -0.6**
comp=Z,14nm,1.1s
TIXI *ep*P **pP 21 23 29.8 +0.4**
TIXI *e*PP **PP 21 25 26.6 -4.4**
Q34A Chapman 94.40 51 P **P 21 21 37.1 +1.4**
baz=253
W37B Quinton 94.45 55 P **P 21 21 37.0 +1.0**
baz=253
F29A Eureka 94.50 44 P **P 21 21 36.2 +0.2**
baz=251
S35A Otter Creek Ra 94.50 52 P **P 21 21 37.6 +1.4**
baz=253
ZAK Zakamensk 94.53 321 *eP* **P 21 21 34.6 -1.6**
ZAK *e* 21 23 30.1
ZAK pmax pmax
comp=Z,7.0nm,1.2s
ZAK pmax pmax
comp=Z,3.0nm,1.5s
P34A Walnut Farm, R 94.67 50 P **P 21 21 37.7 +0.7**
baz=253
KSU1 Kansas State U 94.70 51 P **P 21 21 37.8 +0.7**
baz=253
TLY Talaya 94.77 323 P **P 21 21 37.1 0.0**
comp=Z,2.9nm,0.7s,baz=84,slow=2.3,SNR=7.2
TLY Talaya 94.77 323 *eP* **P 21 21 37.5 +0.4**
TLY pmax pmax
comp=Z,8.0nm,1.1s
TLY Talaya 94.77 323 *eP* **P 21 21 37.5 +0.4**
comp=Z,7.2nm,0.6s
X38A Whitesboro 94.79 55 P **P 21 21 38.5 +0.9**
baz=254
O34A Beatrice 94.95 50 P **P 21 21 39.9 +1.7**
baz=253
B28A Dugan Ranch, T 94.99 41 P **P 21 21 40.0 +1.8**
baz=251
D29A Pettibone, Tap 95.04 42 P **P 21 21 40.3 +1.8**
baz=252
Q35A Mercer Eighty, 95.06 51 P **P 21 21 40.4 +1.7**
baz=253
U37A Salina 95.06 54 P **P 21 21 40.6 +1.8**
baz=254
S36A Lake Cedric, C 95.07 52 P **P 21 21 40.6 +1.8**
baz=253
W38A Poteau 95.15 55 P **P 21 21 40.5 +1.3**
baz=254
Y39A Lockesburg 95.17 56 P **P 21 21 40.4 +1.1**
baz=254
341A Kurthwood 95.21 59 P **P 21 21 40.4 +0.9**
baz=254
P35A Duane Minner, 95.26 50 P **P 21 21 40.8 +1.2**
baz=253
N34A Lincoln 95.28 49 P **P 21 21 41.1 +1.4**
baz=253
R36A Gordon, Harris 95.30 52 P **P 21 21 41.2 +1.3**
baz=254
T37A Cheneyville 18 95.41 53 P **P 21 21 41.9 +1.6**
baz=254
V38A Canehill 95.46 54 P **P 21 21 42.5 +1.9**
baz=254
F31A Hecla 95.55 44 P **P 21 21 41.6 +0.8**
baz=252
O35A Humboldt 95.55 50 P **P 21 21 41.4 +0.5**
baz=253
D30A Buchanan 95.60 43 P **P 21 21 41.6 +0.7**
baz=252
241A Mo Tay, Goldon 95.60 58 P **P 21 21 41.6 +0.3**
baz=254
B29A Wagenman Farm, 95.63 41 P **P 21 21 42.3 +1.2**
baz=252
U38A Gravette 95.63 54 P **P 21 21 42.5 +1.1**
baz=254
442A Mamou 95.66 60 P **P 21 21 42.2 +0.6**
baz=254
S37A Fort Scott 95.66 52 P **P 21 21 42.8 +1.4**
baz=254
J33A Davis 95.67 47 P **P 21 21 42.4 +1.0**

baz=253
H32A Carlson Farm, 95.70 45 P **P** **21 21 42.5 +1.1**
baz=253
MIAR Mount Ida 95.75 56 P **P** **21 21 43.0 +1.1**
baz=254
R37A Teagarden Farm, 95.81 52 P **P** **21 21 43.7 +1.6**
baz=254
A29A Manning Farm, 95.85 41 P **P** **21 21 42.8 +0.8**
baz=252
T38A Diamond 95.87 53 P **P** **21 21 44.0 +1.5**
baz=254
G32A Webster 95.87 45 P **P** **21 21 43.8 +1.6**
baz=253
P36A Good Intent, A 95.89 51 P **P** **21 21 43.8 +1.3**
baz=254
342A Flagon Creek P 95.92 59 P **P** **21 21 43.2 +0.5**
baz=254
C30A Mose, Pekin 95.96 42 P **P** **21 21 43.2 +0.6**
baz=252
ECSD EROS Data Cent 96.04 46 P **P** **21 21 43.6 +0.6**
baz=253
ECSD EROS Data Cent 96.04 46 *e*P **P** **21 21 43.8 +0.8**
ECSD *e*pP **pP** **21 23 37.8 0.0**
V39A Pettigrew 96.05 55 P **P** **21 21 43.9 +0.6**
baz=254
242A Grayson 96.24 59 P **P** **21 21 45.0 +0.8**
baz=255
Q37A Longview Farm, 96.25 51 P **P** **21 21 45.4 +1.3**
baz=254
U39A Green Forest 96.32 54 P **P** **21 21 45.9 +1.4**
baz=254
S38A Stockton 96.33 53 P **P** **21 21 45.9 +1.5**
baz=254
W40A Ferguson Farm, 96.33 55 P **P** **21 21 45.1 +0.6**
baz=255
L35A Bielow Farm, R 96.33 48 P **P** **21 21 45.2 +0.8**
baz=254
A30A Hoffart Farm, 96.44 41 P **P** **21 21 45.7 +1.0**
baz=253
C31A Landman Farms, 96.46 42 P **P** **21 21 45.7 +0.9**
baz=253
R38A Fenwick Farm, 96.47 52 P **P** **21 21 45.7 +0.6**
baz=254
P37A Lathrop 96.52 51 P **P** **21 21 46.0 +0.8**
baz=254
544A White Castle 96.56 61 P **P** **21 21 45.9 +0.3**
baz=255
T39A Clever 96.57 53 P **P** **21 21 46.3 +0.7**
baz=255
G33A Ortonville 96.58 45 P **P** **21 21 46.0 +0.7**
baz=254
V40A Witts Springs 96.68 55 P **P** **21 21 46.7 +0.6**
baz=255
D32A Dogwood Acres, 96.74 43 P **P** **21 21 47.1 +1.0**
baz=253
S39A Bolivar 96.79 53 P **P** **21 21 47.2 +0.7**
baz=254
U40A Yellville 96.80 54 P **P** **21 21 47.3 +0.7**
baz=255
F33A 5 Mile Ranch, 96.85 44 P **P** **21 21 47.6 +1.0**
baz=254
645A Chauvin 96.86 61 P **P** **21 21 47.4 +0.4**
baz=255
Q38A Cooks Store, C 96.90 52 P **P** **21 21 48.2 +1.2**
baz=255
W41A Tony Mavity, V 96.97 56 P **P** **21 21 47.9 +0.6**
baz=255
W41B Gary Mavity, V 96.97 56 P **P** **21 21 48.0 +0.6**
baz=255
Y42A Garnett, Star 97.00 57 P **P** **21 21 48.2 +0.7**
baz=255
143A Socs Landing, 97.02 58 P Pdif 21 21 48.1 +0.5
baz=255
444A Pine Grove 97.06 60 P Pdif 21 21 48.3 +0.5
baz=255
545A Edgard 97.10 61 P Pdif 21 21 48.6 +0.6
baz=255
G34A Benson 97.13 45 P Pdif 21 21 48.7 +0.8
baz=254
R39A Chumby, Stover 97.17 52 P Pdif 21 21 48.9 +0.7
baz=255
T40A Mansfield 97.27 54 P **P** **21 21 49.2 +0.5**
baz=255
S40A Lebanon 97.39 53 P **P** **21 21 49.9 +0.7**
baz=255
Q39A Willow Grove F 97.40 52 P **P** **21 21 50.1 +0.9**
baz=255
R40A Maddies Statio 97.75 52 P **P** **21 21 51.5 +0.7**
baz=255
K37A Belmond 97.87 48 P **P** **21 21 52.2 +0.9**
baz=255
J37A Redenius Farm, 98.07 47 P **P** **21 21 53.0 +0.9**
baz=255
P40A Paris 98.22 51 P **P** **21 21 53.6 +0.7**
baz=256
446A Poplarville 98.23 60 P **P** **21 21 53.6 +0.5**
baz=256
ULM Lac du Bonnet 98.32 40 PKKPbc PKKPbc **21 38** 20.5 -3.0
comp=Z,0.9nm,0.4s,baz=335,slow=20,SNR=3.0
NRIK Noril'sk 106.19 338 PP PP 21 26 56.8 -2.3
comp=Z,1.2nm,0.4s,baz=124,slow=7.8,SNR=4.8
ZAA0 Zalesovo Array 106.38 322 *e*Pdif **Pdif** **21 22 29.0 +0.2**
ZAA0 *e*PP **PP** **21 26 56.9 -4.0**
ZALV Zalesovo Beam 106.38 322 Pdiff **Pdif** **21 22 28.4 -0.4**
comp=Z,1.8nm,0.9s,baz=94,slow=4.5,SNR=9.1
ZALV PKiKP **PKiKP** **21 26 35.7 -1.0**
comp=Z,1.7nm,0.7s,baz=250,slow=1.0,SNR=7.4
ZALV PP **PP** **21 26 57.1 -3.8**
comp=Z,0.7nm,0.4s,baz=93,slow=5.9,SNR=6.2
MK01 Makanchi Array 107.31 315 *e*Pdif **Pdif** **21 22 33.4 +0.2**
MKAR Makanchi Array 107.32 315 Pdiff **Pdif** **21 22 33.9 +0.7**
comp=Z,0.4nm,0.6s,baz=88,slow=6.6,SNR=7.9
MKAR PKiKP **PKiKP** **21 26 38.0 -0.7**
comp=Z,0.8nm,0.3s,baz=125,slow=0.7,SNR=20
MKAR PP **PP** **21 27 01.9 -6.1**
comp=Z,1.4nm,0.9s,baz=96,slow=7.4,SNR=5.9
MKAR PKKPbc **PKKPbc** **21 37 56.2 -0.9**
comp=Z,0.1nm,0.2s,baz=258,slow=0.6,SNR=2.5
KURK Kurchatov 109.98 319 Pdif **Pdif** **21 22 46.6 +1.8**
KURK *e*PKP **PKiKP** **21 26 43.0 -0.5**
KURK PP PP 21 27 15.9 -11
KURK *e*PP PP 21 27 22.5 -4.3
KURK PKKPbc **PKKPbc** **21 37 47.0 -1.8**
KURBB Kurchatov Arra 110.04 318 Pdiff **Pdif** **21 22 46.6 +1.5**
comp=Z,0.3nm,0.9s,baz=64,slow=3.2,SNR=2.9
KURBB PKiKP **PKiKP** **21 26 43.0 -0.7**
comp=Z,2.9nm,0.8s,baz=98,slow=2.1,SNR=21
KURBB PP PP 21 27 15.9 -11
comp=Z,2.7nm,1.0s,baz=92,slow=6.6,SNR=6.2
KURBB PKKPbc **PKKPbc** **21 37 47.0 -1.6**
comp=Z,0.3nm,0.5s,baz=275,slow=4.0,SNR=7.1
KSH Kashi 111.35 307 *e*PKP **PKiKP** **21 26 44.6 -2.1**
KSH *e*PP **PP** **21 27 41.5 +4.4**
KSH *es*PKP 21 29 40.9
KSH PKS **PKSdf** **21 30 21.1 -2.3**
KSH SKS **SKSdf** **21 33 05.0 -5.0**
KSH SKKS **SKKSac** **21 33 38.9 -6.6**
KSH AMB AMB
comp=Z,54nm,3.8s
TKM2 Tokmak 2 111.81 310 *e*PKIKP **PKiKP** **21 26 47.3 -0.3**
TKM2 Tokmak 2 111.81 310 *e*PKiKP **PKiKP** **21 26 47.3 -0.3**
FRU Bishkek 112.53 310 *e*PKIKP **PKiKP** **21 26 48.0 -0.7**
AAK Ala-Archa 112.61 310 PKiKP **PKiKP** **21 26 49.1 0.0**
comp=Z,0.5nm,0.4s,baz=153,slow=7.5,SNR=4.0
AAK PKiKPab **PKKPab** **21 37 49.0 +0.3**
comp=Z,1.2nm,0.8s,baz=127,slow=3.3,SNR=5.7
AAK Ala-Archa 112.61 310 *e*PKiKP **PKiKP** **21 26 49.5 +0.5**
AAK PKKPab **PKKPab** **21 37 49.0 +0.3**
BVAR Borovoye Array 114.99 321 PKP PKPdf 21 26 52.8 -0.3
comp=Z,5.7nm,0.3s,baz=115,slow=2.8,SNR=77
BVAR PP **PP** **21 27 56.2 -5.8**
comp=Z,1.8nm,0.9s,baz=131,slow=4.1,SNR=4.5
BRVK Borovoye 115.05 321 *e*PKIKP **PKPdf** **21 26 52.7 -0.5**
BRVK Borovoye 115.05 321 *e*PKPdf **PKPdf** **21 26 52.7 -0.5**
KKAR Karatay Array 115.54 310 *e*PKIKP **PKPdf** **21 26 54.3 -0.2**
KKAR Karatay Array 115.54 310 *e*PKPdf **PKPdf** **21 26 54.3 -0.2**
ZRNK Zerenda 115.83 321 *e*PKIKP **PKPdf** **21 26 54.3 -0.4**
ZRNK Zerenda 115.83 321 *e*PKPdf **PKPdf** **21 26 54.3 -0.4**
KBL Kabul 116.64 301 *e*PKIKP **PKPdf** **21 26 57.0 -0.1**
KBL Kabul 116.64 301 *e*PKPdf **PKPdf** **21 26 57.0 -0.1**
ARU Arti 120.98 327 *i* PKIKP **PKPdf** **21 27 04.2 -0.3**
ARU 21 28 41.5
ARU 21 33 26.3
ARU Arti 120.98 327 *e*PKPdf **PKPdf** **21 27 04.4 -0.1**
ABKAR Abkulak array 122.09 318 *e*PKPdf **PKPdf** **21 27 06.6 -0.2**
AKTO Aktyubinsk 123.02 320 PKP **PKPdf** **21 27 08.6 0.0**
comp=Z,6.4nm,0.8s,baz=158,slow=1.7,SNR=17
AKTO PP **PP** **21 28 53.5 -2.9**
comp=Z,1.5nm,0.7s,baz=30,slow=10,SNR=4.0
ARCES ARCESS Array B 124.57 350 PKP **PKPdf** **21 27 11.2 +0.1**
comp=Z,8.4nm,0.6s,baz=57,slow=4.5,SNR=43
ARCES PKKPab **PKKPab** **21 36 54.2 -1.3**
comp=Z,3.2nm,0.9s,baz=197,slow=2.5,SNR=4.0
WSAR Wadi Sarin 125.22 287 PKP **PKPdf** **21 27 13.5 -0.1**
comp=Z,7.1nm,1.1s,baz=192,slow=3.0,SNR=5.8
GEYT Alibeck 125.33 305 PKP **PKPdf** **21 27 13.8 +0.4**
comp=Z,8.8nm,0.9s,baz=264,slow=2.8,SNR=23
GEYT PP **PP** **21 29 10.9 -1.3**
comp=Z,4.3nm,1.2s,baz=64,slow=6.8,SNR=5.6
TMCR Tamitsa 125.79 341 *e*PKIKP **PKPdf** **21 27 12.3 -1.1**
TMCR pmax pmax
comp=Z,23nm,1.4s
KLMR Klimovskoe 127.51 337 *e*PKIKP **PKPdf** **21 27 14.7 -2.1**
KLMR pmax pmax
comp=Z,32nm,1.2s
UOSS Minazif 127.52 289 *e*PKPdf **PKPdf** **21 27 16.8 -1.2**
HATD Hatta, Dubai 127.58 289 P **PKPdf** **21 27 17.3 -0.8**
SNR=8.9
ASHO Ashiyiah 127.65 289 P **PKPdf** **21 27 17.8 -0.5**
SNR=8.0
NAZ Nazwa, Dubai 128.02 289 P **PKPdf** **21 27 18.9 0.0**
SNR=6.9
BOSA Boshof 129.36 208 SKPbc SKPbc 21 29 58.4 +3.2
comp=Z,2.5nm,0.9s,baz=157,slow=7.2,SNR=4.1
FIA1 FINESS Array S 131.39 344 *e*PKPdf **PKPdf** **21 27 23.4 -0.8**
FIA1 *e*PKPdf **PKiKP** **21 27 23.8 -1.5**
FIA1 *e*SKPbc **SKPab** **21 30 04.7 +2.5**
FIA1 *e*SKPbc **SKPbc** **21 30 05.1 +3.9**
FINES FINESS Array B 131.39 344 PKhKP PKPpre 21 27 15.4
comp=Z,1.6nm,0.8s,baz=45,slow=2.8,SNR=8.0
FINES PKP **PKPdf** **21 27 23.8 -0.4**
comp=Z,3.7nm,0.5s,baz=50,slow=3.1,SNR=32
FINES SKPbc **SKPab** **21 30 04.2 +2.0**
comp=Z,4.6nm,0.8s,baz=50,slow=3.0,SNR=7.7
VRH Novokhopyorsk 132.20 326 *e*PKIKP **PKPdf** **21 27 25.7 -0.3**
OBN Obninsk 132.43 333 *e*PKIKP **PKPdf** **21 27 25.5 +0.2**
OBN *e* 21 29 54.4
OBN *e* 21 30 16.6
OBN pmax pmax
comp=Z,13nm,1.1s
OBN Obninsk 132.43 333 *e*PKPdf **PKPdf** **21 27 27.2 +0.9**
OBN *e*SKPbc **SKPab** **21 30 08.3 +1.4**
LPSR Galich'ya Gora 132.87 329 *e*PKIKP **PKPdf** **21 27 27.9 +0.7**
VSR Storozhevoye 133.55 327 *e*PKIKP **PKPdf** **21 27 28.8 +0.2**
VSR *e* 21 30 10.9
NC303 NORSAR Array S 134.47 353 *e*PKPdf **PKPdf** **21 27 30.4 +0.3**
ZEI Tsey 134.67 315 *i* PKIKP **PKPdf** **21 27 31.6 +0.4**
ZEI pmax pmax
comp=Z,27nm,1.2s
NB2 NORSAR Subarra 134.67 353 PKP **PKPdf** **21 27 30.7 +0.2**
comp=Z,2.4nm,0.8s,baz=17,slow=2.6
NOA NORSAR Array B 134.67 353 PKP **PKPdf** **21 27 30.9 +0.4**
comp=Z,2.2nm,0.5s,baz=14,slow=4.1,SNR=11
NOA SKPbc **SKPab** **21 30 16.1 -0.5**
comp=Z,5.8nm,1.2s,baz=11,slow=4.1,SNR=4.9
NBO02 NORSAR Array S 134.71 353 *e*PKPdf **PKPdf** **21 27 30.7 +0.2**
KBZ Khabaz 134.98 316 PKP **PKPdf** **21 27 32.0 +0.6**
comp=Z,1.9nm,0.9s,baz=257,slow=7.9,SNR=3.5
KBZ SKP 21 30 17.1
comp=Z,3.7nm,0.9s,baz=110,slow=4.5,SNR=4.7
GNI Garni 135.00 311 *e*PKIKP **PKPdf** **21 27 32.1 +0.2**
GNI Garni 135.00 311 *e*PKPdf **PKPdf** **21 27 32.1 +0.2**
KIV Kislovodsk 135.03 317 *d i*PKIKP **PKPdf** **21 27 31.7 0.0**
KIV *e* 21 29 32.9
KIV *i* 21 30 16.4
KIV *e* 21 30 25.1
KIV pmax pmax
comp=Z,8.0nm,1.3s
IZAR Zarasai 136.01 339 *e*P **PP** **21 30 19.5 +0.4**
IZAR IAmb IAmb 21 30 22.6
comp=Z,6.7nm,0.8s
IDID Didziasalis 136.19 339 *e*P **PP** **21 30 20.5 +0.3**
IDID IAmb IAmb 21 30 22.7
comp=Z,5.4nm,1.1s
ISAL Salakas 136.19 339 *e*P **PP** **21 30 20.4 +0.2**
ISAL IAmb IAmb 21 30 22.9
comp=Z,18nm,1.3s
KONO Kongsberg 136.22 353 *e*PP PP 21 30 21.3 +1.1
AKASG Malin Array Be 138.69 332 PKhKP PKPpre 21 27 30.4
comp=Z,0.9nm,0.3s,baz=46,slow=4.6,SNR=6.9
AKASG PKP **PKPdf** **21 27 38.8 +0.6**
comp=Z,3.8nm,0.5s,baz=44,slow=2.3,SNR=19
AKASG SKPbc **SKiKP** **21 30 26.6 -1.0**
comp=Z,1.0nm,0.6s,baz=43,slow=4.4,SNR=5.7
KIEV Kiev 138.71 332 *e*PKIKP **PKPdf** **21 27 37.1 -1.0**
KIEV pmax pmax
comp=Z,3.0nm,1.1s
KIEV Kiev 138.71 332 *e*PKPdf **PKPdf** **21 27 38.2 0.0**
AK11 Malin Array Si 138.74 332 *e*PKPdf **PKPdf** **21 27 38.3 +0.1**
KMBO Kilima Mbogo 139.86 248 PKhKP PKPpre 21 27 36.0
comp=Z,2.2nm,0.9s,baz=57,slow=4.9,SNR=7.0
KMBO SKPbc **SKPbc** **21 30 29.1 0.0**
comp=Z,0.8nm,0.3s,baz=87,slow=2.8,SNR=3.3
KMBO Kilima Mbogo 139.86 248 PKHKP PKPpre 21 27 36.0
KMBO pmax pmax
comp=Z,2.0nm,0.9s
KMBO pmax pmax
comp=N,1.0nm,0.3s
SORM Soroca 140.92 330 *i*P **PKPdf** **21 27 38.8 -3.4**
SORM Soroca 140.92 330 PKIKP **PKPdf** **21 27 38.9 -3.3**
LVV L'vov 141.55 335 *e*PKIKP **PKPdf** **21 27 46.5 +3.2**
GAZ Gaziantep 141.57 310 *e*P **PKPdf** **21 27 40.4 -3.4**
KMRS Kahramanmaras 141.66 311 *e*P **PKPdf** **21 27 40.2 -3.8**
BNN Bunyan 141.85 313 *e*P **PKPdf** **21 27 40.4 -4.0**
CORM Corum 142.07 316 *e*P **PKPdf** **21 27 42.4 -2.3**
FURI Furi 142.13 264 *e*PKPdf **PKPdf** **21 27 45.6 -0.2**
DRWC Darouich 142.18 309 *i* P **PKPdf** **21 27 43.8 -1.2**
KWP Kalwaria Pacla 142.22 336 *i*P **PKPdf** **21 27 42.2 -2.3**
KWP Kalwaria Pacla 142.22 336 PKIKP **PKPdf** **21 27 42.2 -2.3**
KOZT Kozan 142.45 311 *e*P **PKPdf** **21 27 42.2 -3.1**
CANT Cankiri 142.53 317 *e*P **PKPdf** **21 27 42.4 -3.1**
RABH Abou Rabah 142.56 306 *i* P **PKPdf** **21 27 44.1 -1.6**
BTCH Batrach 142.56 309 *i* P **PKPdf** **21 27 43.9 -1.8**
TLCR 142.70 326 *i*P **PKPdf** **21 27 43.5 -1.9**
TLCR 142.70 326 PKIKP **PKPdf** **21 27 43.6 -1.9**
CEYT Ceyhan 142.70 310 *e*P **PKPdf** **21 27 43.7 -2.0**
BUR08 Bucovina Ar. S 142.73 332 *e*PKPdf **PKPdf** **21 27 44.0 -1.6**
BURAR Bucovina Array 142.75 332 *i*P **PKPdf** **21 27 43.8 -1.9**
BURAR Bucovina Array 142.75 332 PKIKP **PKPdf** **21 27 43.8 -1.9**
OJC Ojcow 142.78 340 *e*PKP **PKPdf** **21 27 43.0 -2.5**
OJC Ojcow 142.78 340 *e*PKIKP **PKPdf** **21 27 43.0 -2.5**
OJC Ojcow 142.78 340 *e*PKPpre PKPpre 21 27 42.6
SAFT Safranbolu 142.81 318 *e*P **PKPdf** **21 27 43.9 -1.9**
TESR Tescani 142.89 330 *i*P **PKPdf** **21 27 43.8 -2.0**
ZALF Zalf 142.93 303 *i* P **PKPdf** **21 27 45.3 -1.0**
STHS Stebnicka Huta 142.94 338 *e*PKP **PKPdf** **21 27 44.7 -1.1**
KOLS Kolonicke sedl 142.95 336 *e*PKP **PKPdf** **21 27 44.5 -1.4**
BR131 Keskin Array S 142.96 316 *e*PKPdf **PKPdf** **21 27 44.7 -1.6**
BRTR Keskin Array B 142.96 316 PKP **PKPdf** **21 27 44.6 -1.7**
comp=N,58nm,1.0s,baz=78,slow=0.6,SNR=207
BRTR pPKP **pPKPdf** **21 29 46.4 -1.8**
comp=N,0.2nm,0.5s,baz=316,slow=37,SNR=1.0
BRTR SKPbc **SKiKP** **21 30 39.0 +2.0**
comp=N,4.1nm,1.1s,baz=132,slow=3.5,SNR=3.7
BRTR PP **PP** **21 31 01.9 -0.5**
comp=N,1.8nm,0.9s,baz=100,slow=3.0,SNR=2.5
ARNB Al Arnab 142.99 309 *i* P **PKPdf** **21 27 45.5 -0.9**
NIG Nigde 143.05 313 *e*P PKPbc 21 27 45.0 +0.4
CFR Carcaliu 143.07 327 *i*P **PKPdf** **21 27 45.1 -1.0**
CFR Carcaliu 143.07 327 PKIKP **PKPdf** **21 27 45.1 -1.0**
KARA Karaisali 143.10 311 *e*P PKPbc 21 27 44.5 0.0
PETR Petresti 143.16 328 *i*P **PKPdf** **21 27 46.3 0.0**
UZH Uzhgorod 143.19 336 *e*PKIKP PKPbc 21 27 44.3 -0.1
ODBI Odobesti 143.22 329 *i*P **PKPdf** **21 27 46.7 +0.3**
NIE Niedzica 143.28 338 *e*PKP PKPbc 21 27 45.5 +0.8
NIE Niedzica 143.28 338 *e*PKPdf **PKPdf** **21 27 45.6 -0.9**
CRVS Cervenica-Dubn 143.29 337 *e*PKP PKPbc 21 27 45.2 +0.5
KSP Ksiaz 143.30 343 *e*PKP PKPbc 21 27 45.3 +0.6
KSP Ksiaz 143.30 343 *e*PKIKP PKPbc 21 27 45.4 +0.7
VRI Vrincioaia 143.31 329 *e*P **PKPdf** **21 27 46.0 -0.6**
VRI Vrincioaia 143.31 329 *i*P **PKPdf** **21 27 45.9 -0.7**
VRI Vrincioaia 143.31 329 PKIKP **PKPdf** **21 27 45.9 -0.7**
PLOR Plostina 143.36 329 *i*P **PKPdf** **21 27 46.0 -0.7**
PLOR Plostina 143.36 329 PKIKP **PKPdf** **21 27 46.0 -0.7**
SERE Sereflikochisa 143.39 315 *e*P **PKPdf** **21 27 46.5 -0.6**
TIRR Tirgusor 143.40 326 *i*P **PKPdf** **21 27 46.4 -0.3**
TIRR Tirgusor 143.40 326 PKIKP **PKPdf** **21 27 46.4 -0.3**
TIRR Tirgusor 143.40 326 *e*PKPdf PKPbc 21 27 45.9 +0.8
ANTO Ankara 143.45 316 *e*PKIKP **PKPdf** **21 27 46.7 -0.4**
ANTO Ankara 143.45 316 *e*PKPdf **PKPdf** **21 27 46.7 -0.4**
BMR Baia Mare 143.45 334 *i*P **PKPdf** **21 27 46.1 -0.6**
BMR Baia Mare 143.45 334 PKIKP **PKPdf** **21 27 46.1 -0.6**
BR231 Keskin MP Arra 143.48 316 *e*PKPdf PKPab 21 27 45.0 -0.5
BR231 *e*PKPdf **PKPdf** **21 27 46.8 -0.4**
SALA Sala 143.48 303 *i* P **PKPdf** **21 27 48.6 +1.1**
AFSR Af˙ar-Bala (A 143.48 316 *e*P **PKPdf** **21 27 46.7 -0.5**
TRPA Tarpa 143.49 335 *e*PKPPKPdf PKPbc 21 27 45.7 +0.4
HARR Harsova 143.50 327 *i*P **PKPdf** **21 27 47.0 +0.1**
HARR Harsova 143.50 327 PKIKP **PKPdf** **21 27 47.0 +0.1**
TOTH TOTAH 143.52 304 *i* P **PKPdf** **21 27 48.2 +0.8**
GRER 143.53 328 *i*P **PKPdf** **21 27 47.8 +0.9**
ARCR ARCALIA 143.53 332 *i*P **PKPdf** **21 27 46.9 0.0**
KDZE Karadeniz Ereo 143.55 319 *e*P PKPab 21 27 44.1 -1.5
CWF Charnwood Fore 143.62 2 *e*PKPbc PKPbc 21 27 45.8 +0.2
OKC Ostrava-Krasne 143.65 341 *i*PKP **PKPdf** **21 27 46.4 -0.6**
OKC Ostrava-Krasne 143.65 341 *i*PKIKP **PKPdf** **21 27 46.4 -0.6**
MERS Mersin 143.66 311 *e*P PKPbc 21 27 46.8 +0.5
UPC Upice 143.68 343 *i*PKP **PKPdf** **21 27 46.8 -0.3**
UPC Upice 143.68 343 *i*PKIKP **PKPdf** **21 27 46.8 -0.3**
CLL Collm 143.69 347 *i*PKPdf PKPbc 21 27 46.1 +0.3
comp=Z,137nm,1.1s
CLL *e*pPKPdf pPKPdf 21 29 56.0 +7.1
CLL *e*SKPbc **SKiKP** **21 30 41.0 +3.1**
CLL Collm 143.69 347 *e*PKIKP PKPbc 21 27 46.1 +0.3
CLL Collm 143.69 347 *e*PKPbc PKPbc 21 27 46.1 +0.3
MANR Mangalia 143.72 325 *i*P **PKPdf** **21 27 47.6 +0.3**
DPC Dobruska-Polom 143.74 343 *i*PKP **PKPdf** **21 27 47.3 +0.1**
DPC *ex* x 21 29 55.6
DPC Dobruska-Polom 143.74 343 *i*PKIKP **PKPdf** **21 27 47.3 +0.1**
LANS Liptovska Anna 143.80 339 *e*PKP **PKPdf** **21 27 47.9 +0.5**
PGOR Pogoanele 143.85 328 *i*P **PKPdf** **21 27 48.3 +0.8**
KRLC Kraliky 143.85 342 *i*PKP **PKPdf** **21 27 47.2 -0.2**
KRLC Kraliky 143.85 342 *e*PKIKP **PKPdf** **21 27 47.2 -0.2**
AMRR Amara 143.87 327 *i*P **PKPdf** **21 27 48.2 +0.7**
AMRR Amara 143.87 327 *i*PKIKP **PKPdf** **21 27 48.2 +0.7**
BRBR Barbar 143.88 305 *i* P **PKPdf** **21 27 48.6 +0.4**
BRG Berggiesshubel 143.88 346 *i* PKP **PKPdf** **21 27 47.2 -0.2**
comp=Z,147nm,1.1s
BRG *i* 21 27 51.9
comp=Z,23nm,1.0s
BRG *i* 21 27 55.2
comp=Z,21nm,1.2s
BRG *e*pPKP **pPKPdf** **21 29 48.0 -1.2**
comp=Z,12nm,1.5s
DOPR Dopca 143.89 330 *i*P **PKPdf** **21 27 48.6 +1.0**
MORC Moravsky Berou 143.89 341 *i*P **PKPdf** **21 27 47.7 +0.2**
MORC Moravsky Berou 143.89 341 PKIKP **PKPdf** **21 27 47.7 +0.2**
MORC Moravsky Berou 143.89 341 *e*PKPbc **PKPdf** **21 27 47.3 -0.2**
ISR Istrita 143.93 328 *i*P **PKPdf** **21 27 48.4 +0.7**
ISR Istrita 143.93 328 PKIKP **PKPdf** **21 27 48.4 +0.7**
MLR Muntele Rosu 143.96 329 PKIKP PKPab 21 27 47.3 +0.1
MLR Muntele Rosu 143.96 329 *e*PKPbc PKPbc 21 27 46.1 -1.0
MLR *e*SKPbc **SKiKP** **21 30 42.1 +3.3**
KECS Kecovo 144.00 337 *e*PKP **PKPdf** **21 27 47.8 +0.1**
CHBY Cihanbeyli 144.03 314 *e*P **PKPdf** **21 27 48.0 -0.1**
PVCC Panska Ves 144.05 345 *e*PKP **PKPdf** **21 27 48.0 +0.3**
PVCC Panska Ves 144.05 345 *e*PKIKP **PKPdf** **21 27 48.0 +0.3**
WTSB Winterswijk 144.08 353 *e*PKP **PKPab** **21 27 47.2 0.0**
comp=Z,197nm,1.2s
TCHB Talchebab 144.10 304 *i* P **PKPdf** **21 27 50.4 +2.0**
CJR Cluj-Napoca 144.15 333 *i*P **PKPdf** **21 27 48.5 +0.4**
CJR Cluj-Napoca 144.15 333 PKIKP **PKPdf** **21 27 48.5 +0.4**
MDUB Mudurnu 144.17 318 *e*P **PKPdf** **21 27 48.3 -0.1**
SECR 144.22 329 *i*P **PKPdf** **21 27 49.2 +1.0**
MDB Medias 144.23 331 *i*P **PKPdf** **21 27 49.3 +1.1**
MDB Medias 144.23 331 PKIKP **PKPdf** **21 27 49.3 +1.1**
SULR 144.38 328 *i*P **PKPab** **21 27 49.9 +1.3**
VOIR 144.44 330 *i*P **PKPab** **21 27 49.8 +0.9**
VOIR 144.44 330 PKIKP **PKPab** **21 27 49.8 +0.9**
DRGR 144.48 334 *i*P **PKPab** **21 27 49.1 +0.1**
DRGR 144.48 334 PKIKP **PKPab** **21 27 49.1 +0.1**
PRA Prague 144.50 345 *e*PKP **PKPab** **21 27 49.3 +0.4**
PRA Prague 144.50 345 *e*PKIKP **PKPab** **21 27 49.3 +0.4**
SVRH Sivrihisar-ESK 144.51 317 *e*P **PKPab** **21 27 49.7 +0.3**
IKL Isikli 144.53 310 *e*P PKPbc 21 27 49.1 +0.1
PRU Pruhonice 144.55 344 *e*PKP **PKPab** **21 27 49.3 +0.2**
PRU Pruhonice 144.55 344 *e*PKIKP **PKPab** **21 27 49.3 +0.2**
GOPC GO Pecny, Ondr 144.55 344 *i*PKP **PKPab** **21 27 49.5 +0.4**
GOPC GO Pecny, Ondr 144.55 344 *i*PKIKP **PKPab** **21 27 49.5 +0.4**
KIZT Kizilcal 144.56 316 *e*P **PKPab** **21 27 49.9 +0.2**
LADK Ladik-KONYA 144.57 314 *e*P **PKPdf** **21 27 48.5 -0.6**
VYHS Vyhne 144.58 339 *e*PKP **PKPab** **21 27 49.5 +0.2**
MTUR Matau 144.58 330 *i*P **PKPab** **21 27 50.3 +0.8**
MTUR Matau 144.58 330 PKIKP **PKPab** **21 27 50.3 +0.8**
VRAC Vranov 144.59 342 PKIKP **PKPab** **21 27 50.0 +0.7**
GULT Gulveren 144.63 319 *e*P **PKPdf** **21 27 49.0 -0.1**
ARR Arges 144.69 330 *i*P **PKPab** **21 27 50.4 +0.6**
PSZ Piszkesteto 144.69 337 PKIKP **PKPab** **21 27 49.5 -0.2**
PSZ Piszkesteto 144.69 337 *e*PKPdf **PKPab** **21 27 49.6 -0.2**
KONT Konya--Tatoy 144.70 314 *e*P **PKPdf** **21 27 49.4 +0.1**
PRH Provadia 144.78 325 P **PKPab** **21 27 50.1 -0.1**
NKC Novy Kostel 144.82 347 *i*PKP **PKPab** **21 27 50.3 +0.2**
NKC Novy Kostel 144.82 347 *e*PKIKP **PKPab** **21 27 50.3 +0.2**
TREC Trest 144.93 343 *i*PKP **PKPab** **21 27 50.3 -0.3**
TREC Trest 144.93 343 *e*PKIKP **PKPab** **21 27 50.3 -0.3**
HRT Hereke 144.93 320 *e*P **PKPdf** **21 27 49.6 0.0**
SMOL Smolenice 145.03 340 *e*PKP **PKPab** **21 27 51.5 +0.5**
LOT Lotru 145.03 331 *i*P **PKPbc** **21 27 50.8 +0.4**
LFK Lefkose 145.05 309 *e*P **PKPbc** **21 27 51.0 +0.3**
DEV Deva 145.10 332 *i*P **PKPab** **21 27 51.5 +0.2**
DEV Deva 145.10 332 PKP2 **PKPab** **21 27 51.5 +0.2**
ADVT Abdulvahap 145.11 319 *e*P **PKPbc** **21 27 50.6 0.0**
HUMR Humele 145.13 329 *i*P **PKPbc** **21 27 50.8 +0.3**
MAMC Mammari 145.33 309 P **PKPab** **21 27 52.4 -0.2**
CSS Mathiatis 145.33 309 *e*PKPdf **PKPbc** **21 27 51.2 -0.3**
IZI Iznik 145.34 319 *e*P **PKPbc** **21 27 51.8 +0.4**
SIRR Siria 145.34 334 *i*P **PKPab** **21 27 51.7 -0.5**
BEBN Eben Emael 145.35 354 PKP **PKPab** **21 27 51.9 -0.2**
HGN Heimansgroeve 145.36 354 *e*PKP **PKPbc** **21 27 50.5 -0.5**
comp=Z,213nm,1.4s
BUD Budapest 145.37 338 *i*PKPPKPdf **PKPab** **21 27 51.8 -0.5**
CTKS Kestenalik-??a 145.39 322 *e*P **PKPbc** **21 27 51.1 -0.3**
ZIMR 145.55 327 *i*P **PKPab** **21 27 53.2 +0.1**
ZIMR 145.55 327 PKP2 **PKPab** **21 27 53.2 +0.1**
ARMT Armutlu 145.58 320 *e*P **PKPbc** **21 27 51.9 -0.2**
KHC Kasperske Hory 145.59 345 *i*PKP **PKPbc** **21 27 51.3 -0.5**
KHC *ex* x 21 28 38.0
KHC *ex* x 21 29 32.0
KHC Kasperske Hory 145.59 345 *e*PKIKP **PKPbc** **21 27 51.3 -0.5**
KHC Kasperske Hory 145.59 345 *e*PKPdf **PKPbc** **21 27 51.2 -0.5**
LEF Lefka 145.59 309 *e*P **PKPbc** **21 27 52.5 +0.3**
GRFO Grafenberg 145.60 348 *e*PKIKP **PKPbc** **21 27 51.3 -0.5**
GRFO Grafenberg 145.60 348 *e*PKPdf **PKPbc** **21 27 51.2 -0.5**
PKS7 Kunszentmiklos 145.69 337 *i*PKPPKPdf **PKPdf** **21 27 50.9 +0.3**
CSKK Ce‡kako 145.75 338 *e*PKPPKPdf **PKPbc** **21 27 50.8 +0.7**
SZAC Souni 145.75 309 P **PKPbc** **21 27 53.1 +0.4**
SNF Seneffe 145.75 356 PKP **PKPbc** **21 27 52.8 +0.7**
BCLA Clavier 145.76 355 PKP **PKPbc** **21 27 52.9 +0.7**
DYA Yadsworthy 145.76 5 *e*PKPdf **PKPbc** **21 27 52.5 +0.4**
ALFC Alefka 145.79 309 P **PKPbc** **21 27 53.1 +0.3**
GEC2 GERESS Array S 145.82 345 *e*PKIKP **PKPdf** **21 27 51.5 +0.6**
GEC2 GERESS Array S 145.82 345 *e*PKPdf **PKPdf** **21 27 51.5 +0.6**
GERES GERESS Array B 145.82 345 PKP **PKPdf** **21 27 50.7 -0.2**
comp=Z,13nm,0.8s,baz=34,slow=2.3,SNR=79
GERES PKPbc **PKPbc** **21 27 53.0 +0.4**
comp=Z,13nm,0.8s,baz=28,slow=3.1,SNR=79
GEAO GERESS Array S 145.82 344 *e*PKPdf **PKPdf** **21 27 50.4 -0.6**
TVSB Tavsanli 145.85 318 *e*P **PKPbc** **21 27 53.4 +0.5**

AKMC	Akamas	146.05 309	P	PKPbc	21 27 53.5	0.0
KCTX	Karacabey (Bur	146.07 320	eP	PKPdf	21 27 52.0	+0.5
DOU	Dourbes	146.14 355	PKP	PKPbc	21 27 52.3	-0.9
BANR	Banloc	146.26 334	⇑iP	PKPab	21 27 55.0	-0.8
EDC	Edincik	146.32 321	eP	PKPbc	21 27 53.4	-0.7
MRMT	Marmara Adasi	146.32 321	eP	PKPbc	21 27 53.1	-1.1
PKS9	Tamasi	146.40 338	⇓ePKPPKPdf	PKPbc	21 27 54.5	+0.4
WLF	Walferdange	146.42 353	ePKIKP	PKPbc	21 27 53.3	-0.7
WLF	Walferdange	146.42 353	ePKPdf	PKPbc	21 27 53.3	-0.7
MOA	Molln	146.58 343	*i* PKPbc	PKPbc	21 27 55.3	+0.7
	comp=Z,50nm,1.1s,SNR=26					
PKSM	Moragy	146.59 337	⇑iP	PKPdf	21 27 52.6	+0.5
PKSM	Moragy	146.59 337	⇓ePKPPKPdf	PKPbc	21 27 55.0	+0.4
PKSM	Moragy	146.59 337	⇑PKIKP	PKPdf	21 27 52.6	+0.5
MPEP	Malo Peshtene	146.59 329	P	PKPbc	21 27 55.0	+0.2
BALB	Balikesir	146.73 320	eP	PKPbc	21 27 55.0	-0.3
ARSA	Arzberg	146.75 341	*i* PKPbc	PKPbc	21 27 55.5	+0.4
	comp=Z,42nm,1.2s,SNR=20					
STU	Stuttgart	146.86 350	ePKIKP	PKPdf	21 27 52.8	+0.2
STU	Stuttgart	146.86 350	ePKPdf	PKPdf	21 27 52.8	+0.2
LANF	Langenberg	146.88 351	PKP	PKPbc	21 27 56.3	+0.9
KULA	Kula-Manisa	146.89 317	eP	PKPbc	21 27 55.8	0.0
KULA	Kula-Manisa	146.89 317	P	PKPbc	21 27 56.1	+0.3
KULA	Kula-Manisa	146.89 317	P	PKPbc	21 27 56.1	+0.3
ERIK	Erikli-Kesan	146.92 322	eP	PKPbc	21 27 55.4	-0.3
PGB	Panagyurishte	146.96 327	P	PKPbc	21 27 56.4	+0.6
ELL	Elmali	146.99 314	eP	PKPbc	21 27 55.5	-0.7
BEHE	Becsehely	147.03 339	⇓ePKPPKPdf	PKPbc	21 27 56.5	+0.7
ALN	Alexandroupoli	147.05 323	P	PKPbc	21 27 55.8	-0.2
ALN	Alexandroupoli	147.05 323	PKP2	PKPbc	21 27 55.8	-0.2
ALN	Alexandroupoli	147.05 323	P	PKPbc	21 27 55.8	-0.2
GELI	Tayfur-Gelibol	147.12 322	eP	PKPbc	21 27 55.6	-0.6
RZN	Rozhen	147.26 325	P	PKPbc	21 27 57.0	+0.2
SOKA	Soboth	147.41 341	*i* PKPdf	PKPdf	21 27 53.3	-0.4
	comp=Z,4.6nm,1.2s					
SOKA			*i* PKPbc	PKPbc	21 27 57.1	+0.2
	comp=Z,27nm,0.9s,SNR=22					
PERS	Pernice	147.43 341	*i* PKPbc	PKPbc	21 27 57.0	0.0
BFO	Black Forest	147.43 350	*i* PKIKP	PKPdf	21 27 54.8	+1.3
BFO	Black Forest	147.43 350	ePKPdf	PKPdf	21 27 54.1	+0.6
GROS	Grobnik	147.46 341	*i* PKPbc	PKPbc	21 27 57.0	0.0
KBA	Koelnbreinsper	147.54 344	*i* PKPdf	PKPdf	21 27 53.4	-0.5
	comp=Z,4.1nm,1.1s					
KBA			*i* PKPbc	PKPbc	21 27 57.3	0.0
	comp=Z,0.6nm,0.2s,SNR=20					
EZN	Ezine	147.57 321	eP	PKPbc	21 27 56.8	-0.6
EZN	Ezine	147.57 321	P	PKPbc	21 27 57.3	-0.1
EZN	Ezine	147.57 321	PKP2	PKPbc	21 27 57.3	-0.1
EZN	Ezine	147.57 321	P	PKPbc	21 27 57.3	-0.1
FETY	Fethiye	147.62 314	eP	PKPbc	21 27 57.6	-0.1
FETY	Fethiye	147.62 314	P	PKPbc	21 27 57.6	-0.1
FETY	Fethiye	147.62 314	P	PKPbc	21 27 57.6	-0.1
SMTH	Samothraki Isl	147.62 323	P	PKPbc	21 27 57.2	-0.4
SMTH	Samothraki Isl	147.62 323	P	PKPbc	21 27 57.2	-0.4
AYDB	Zeytinkoy-Aydi	147.71 317	eP	PKPbc	21 27 58.5	+0.4
OBKA	Obir	147.71 342	*i* PKPdf	PKPdf	21 27 54.2	0.0
	comp=Z,3.3nm,1.0s					
OBKA			*i* PKPbc	PKPbc	21 27 58.0	+0.2
	comp=Z,23nm,1.2s,SNR=12					
ECH	Echery	147.72 352	PKP	PKPbc	21 27 57.9	+0.3
WATA	Walderalm	147.74 346	*i* PKPdf	PKPdf	21 27 55.4	+1.1
WATA			*i* PKPbc	PKPbc	21 27 58.2	+0.4
	comp=Z,45nm,1.1s,SNR=14					
RETA	Reutte	147.78 347	*i* PKPbc	PKPbc	21 27 58.4	+0.6
	comp=Z,22nm0.8s,SNR=18					
WTTA	Wattenberg	147.80 346	*i* PKiKP	PKPdf	21 27 58.6	+0.6
	comp=Z,36nm,0.8s,SNR=11					
DALY	Dalyan (Mu˙la	147.82 315	eP	PKPdf	21 27 52.0	-2.4
MOTA	Moosalm	147.84 346	*i* PKPdf	PKPdf	21 27 55.6	+1.2
	comp=Z,6.3nm,1.1s,SNR=44					
MOTA			*i* PKiKP	PKiKP	21 27 59.8	+0.2
	comp=Z,76nm,1.3s					
KAVA	Kavala	147.85 325	P	PKPbc	21 27 58.2	+0.1
KAVA	Kavala	147.85 325	P	PKPbc	21 27 58.2	+0.1
IZM	Izmir	147.85 318	eP	PKPbc	21 27 56.7	-1.6
MYKA	Terra Mystica	147.87 343	*i* PKPdf	PKPdf	21 27 54.7	+0.3
	comp=Z,0.6nm,0.3s					
MYKA			*i* PKPbc	PKPbc	21 27 57.9	-0.2
	comp=Z,36nm,1.1s,SNR=20					
YER	Yerkesik	147.90 316	eP	PKPbc	21 27 58.6	+0.1
YER	Yerkesik	147.90 316	P	PKPbc	21 27 58.9	+0.4
YER	Yerkesik	147.90 316	PKP2	PKPbc	21 27 58.9	+0.4
YER	Yerkesik	147.90 316	P	PKPbc	21 27 58.9	+0.4
SQTA	Sankt Quirin	147.94 346	*i* PKPdf	PKPdf	21 27 56.0	+1.5
NVR	Nevrokopi	147.96 326	P	PKPbc	21 27 58.5	0.0
NVR	Nevrokopi	147.96 326	P	PKPbc	21 27 58.5	0.0
KKB	Krupnik	148.01 327	P	PKPbc	21 27 59.0	+0.5
ABTA	Abfaltersbach	148.06 344	*i* PKPdf	PKPdf	21 27 54.6	-0.1
	comp=Z,9.9nm,1.0s,SNR=27					
ABTA			*i* PKPbc	PKPbc	21 27 58.9	+0.3
	comp=Z,56nm,1.2s					
MOF	Molkenrain	148.08 352	PKP	PKPbc	21 27 59.0	+0.4
LJU	Ljubljana	148.14 341	*i* PKPdf	PKPdf	21 27 55.0	+0.3
LJU			*i* PKPbc	PKPbc	21 27 59.1	+0.4
DAVA	Damuels	148.16 348	*i* PKPdf	PKPdf	21 27 55.6	+0.7
	comp=Z,14nm,1.8s					
DAVA			*i* PKiKP	PKiKP	21 28 00.0	-0.2
	comp=Z,68nm,1.2s,SNR=13					
FETA	Feichten	148.23 347	*i* PKPdf	PKPdf	21 27 55.9	+0.9
	comp=Z,8.5nm,1.1s,SNR=32					
FETA			*i* PKiKP	PKPbc	21 27 59.7	+0.6
	comp=Z,74nm,1.6s					
SIGR	SIGRI	148.24 321	eP	PKPbc	21 27 58.6	-0.6
SRS	Serrai	148.27 326	P	PKPbc	21 27 58.4	-0.8
SRS	Serrai	148.27 326	P	PKPbc	21 27 58.4	-0.8
BLY	Banja Luka	148.37 337	⇑iP	PKPbc	21 28 00.1	+0.8
BOJS	Bojanci	148.39 340	*i* PKPdf	PKPdf	21 27 55.5	+0.4
BOJS			*i* PKPbc	PKiKP	21 28 00.2	-0.4
ARG	Arkhangelos	148.50 314	P	PKPbc	21 28 00.2	+0.3
ARG	Arkhangelos	148.50 314	PKP2	PKPbc	21 28 00.2	+0.3
ARG	Arkhangelos	148.50 314	P	PKPbc	21 28 00.2	+0.3
OUR	Ouranopolis	148.59 324	eP	PKPbc	21 28 00.1	+0.1
OUR	Ouranopolis	148.59 324	P	PKPbc	21 27 59.7	-0.3
KNT	Kendrikon	148.61 327	eP	PKPbc	21 27 59.8	-0.2
KNT	Kendrikon	148.61 327	P	PKPbc	21 27 59.4	-0.6
KNT	Kendrikon	148.61 327	P	PKPbc	21 27 59.4	-0.6
LOMF	Lomont	148.61 352	PKP	PKPbc	21 28 00.2	+0.8
CHOS	Chios island	148.62 319	P	PKPbc	21 27 59.4	-0.9
CHOS	Chios island	148.62 319	P	PKPbc	21 27 59.4	-0.9
PLE	Pljevlja	148.66 333	⇓iPKP	PKPbc	21 28 00.9	+0.7
VAY	Valandovo	148.67 327	P	PKPbc	21 27 59.9	-0.2
VAY	Valandovo	148.67 327	*i* PKP	PKPbc	21 28 00.0	-0.1
VAY	Valandovo	148.67 327	P	PKPbc	21 27 59.9	-0.2
TRI	Trieste	148.67 342	ePKPbc	PKPbc	21 28 00.0	0.0
FUORN	Ofenpass-Fuorn	148.72 347	ePKPdf	PKPdf	21 27 57.4	+1.4
SKO	Skopje	148.76 329	*i* PKP	PKPbc	21 28 01.2	+0.8
IVA	Berane	148.80 332	⇓*i*PKP	PKPbc	21 28 01.0	+0.4
PLG	Polygyros	148.87 325	P	PKPbc	21 27 59.9	-0.8
HORT	Hortiatis	148.90 326	eP	PKPbc	21 28 00.6	-0.3
UPM	Unac-Piva	148.97 333	⇓*i*PKP	PKPbc	21 28 01.0	-0.1
PVY	Plav	148.99 332	⇓*i*PKP	PKPbc	21 28 01.1	0.0
GRG	Griva	149.02 327	eP	PKPbc	21 27 59.9	-1.2
PAIG	Paliouri	149.04 324	P	PKPbc	21 28 00.3	-0.8
TUE	Stuetta	149.04 348	ePKPdf	PKPdf	21 27 56.7	+0.2
UDBI	Udbina	149.07 339	P	PKPbc	21 28 01.5	+0.4
NKY	Niksic	149.24 333	⇓*i*PKP	PKPbc	21 28 02.0	+0.3
NVLJ	Novalja	149.35 340	P	PKPbc	21 28 01.8	+0.2
BRY	Bratogost	149.37 334	⇓*i*PKP	PKPbc	21 28 01.9	-0.1
PDG	Podgorica	149.43 332	⇑iP	PKPbc	21 28 02.6	+0.6
PDG	Podgorica	149.43 332	P	PKPbc	21 28 02.1	+0.1
TTG	Podgorica	149.43 332	⇓*i*PKP	PKPbc	21 28 02.0	+0.1
TTG	Podgorica	149.43 332	P	PKPbc	21 28 02.1	+0.1
SENIN	Lac Senin/Sane	149.51 351	ePKPdf	PKPdf	21 27 58.2	+1.1
KARP	Karpathos	149.51 314	ePKPbc	PKPbc	21 28 03.1	+0.6
BIA	Bitola	149.53 328	*i* PKP	PKPbc	21 28 02.2	-0.1
LIT	Litokhoron	149.58 326	P	PKPbc	21 28 01.6	-0.9
OG01	Vacheresse	149.63 352	PKP	PKPbc	21 28 03.6	+1.1
FNA	Florina	149.68 328	eP	PKPbc	21 28 01.6	-1.1
FNA	Florina	149.68 328	P	PKPbc	21 28 02.6	-0.1
FNA	Florina	149.68 328	P	PKPbc	21 28 02.6	-0.1
BUM	Brajici-Budva	149.70 332	⇓*i*PKP	PKPbc	21 28 02.7	0.0
OHR	Ohrid	149.72 329	*i* PKP	PKPbc	21 28 03.0	+0.2
STON	Ston	149.74 335	P	PKPbc	21 28 02.3	-0.3
HCY	Herceg Novi	149.75 333	⇓*i*PKP	PKPbc	21 28 02.4	-0.4
ULC	Ulcinj	149.81 332	ePKP	PKPbc	21 28 02.9	0.0
TIR	Tirane	150.00 330	⇓*i*P	PKPbc	21 28 02.7	-0.7
TIR	Tirane	150.00 330	ePKPbc	PKPbc	21 28 03.8	+0.4
SMIA	Simia	150.02 323	P	PKPbc	21 28 03.2	-0.3
NEST	Nestorio	150.12 328	P	PKPbc	21 28 04.0	+0.2
SANT	Santorini	150.20 317	ePKPbc	PKPbc	21 28 03.3	-0.7
THL	Klokotos Trika	150.22 325	P	PKPbc	21 28 02.5	-1.4
AGO	Saint Agoulin	150.26 356	PKP	PKPbc	21 28 04.5	+0.6
KPRO	Kipourio	150.29 327	P	PKPbc	21 28 03.5	-0.7
LKR	Lokris	150.29 323	P	PKPbc	21 28 03.4	-0.7
LKR	Lokris	150.29 323	P	PKPbc	21 28 03.4	-0.7
PLDF	La Plantade	150.31 356	PKP	PKPbc	21 28 05.0	+0.9
VLY	Voula,Athens	150.35 321	P	PKPbc	21 28 03.5	-0.8
AGG	Agios Georgios	150.42 324	eP	PKPbc	21 28 03.0	-1.4
AGG	Agios Georgios	150.42 324	P	PKPbc	21 28 03.5	-1.0
AGG	Agios Georgios	150.42 324	ePKIKP	PKPbc	21 28 04.0	-0.5
AGG	Agios Georgios	150.42 324	ePKPbc	PKPbc	21 28 04.0	-0.5
VILL	Villia	150.43 322	P	PKPbc	21 28 05.0	+0.5
PYM	Petit Puy Mans	150.57 357	PKP	PKPbc	21 28 05.6	+0.9
DSF	Desfina	150.73 323	P	PKPbc	21 28 03.5	-1.7
LTK	Loutraki	150.73 322	P	PKPbc	21 28 04.2	-1.0
LAST	Lasithi	150.88 315	⇑iP	PKPbc	21 28 06.2	+0.5
LAST	Lasithi	150.88 315	ePKPbc	PKPbc	21 28 06.4	+0.7
THAL	Thalero	150.90 322	P	PKPbc	21 28 04.9	-0.6
DID	Didima	150.91 321	P	PKPbc	21 28 04.7	-0.9
SSB	Saint Sauveur	150.92 354	PKP	PKPbc	21 28 06.4	+1.0
SSB	Saint Sauveur	150.92 354	ePKIKP	PKPdf	21 28 00.3	+1.1
SSB	Saint Sauveur	150.92 354	ePKPdf	PKPdf	21 28 00.3	+1.1
ANX	Ano Chora	150.95 324	P	PKPbc	21 28 06.4	+0.6
FRNF	Fournols	150.96 357	PKP	PKPbc	21 28 06.8	+1.3
KALE	Kalithea	150.96 323	P	PKPbc	21 28 05.6	-0.2
SERG	Sergoula	151.00 324	P	PKPbc	21 28 05.9	+0.1
OG22	Abries	151.07 351	PKP	PKPbc	21 28 06.7	+0.7
LBL	Lubilhac	151.07 356	PKP	PKPbc	21 28 07.0	+1.2
SGD	Sagiada	151.13 327	P	PKPbc	21 28 06.2	+0.2
IGT	Igoumenitsa	151.14 327	eP	PKPbc	21 28 05.4	-0.7
IGT	Igoumenitsa	151.14 327	P	PKPbc	21 28 06.0	-0.1
GUR	Goura	151.16 323	P	PKPbc	21 28 06.2	-0.1
LAKA	Lakka	151.16 323	P	PKPbc	21 28 06.6	+0.1
KLV	Kalavryta, Ach	151.19 323	P	PKPbc	21 28 06.4	+0.1
IDI	Anoyia	151.20 316	ePKPbc	PKPbc	21 28 07.1	+0.7
KEK	Kerkira	151.28 328	P	PKPbc	21 28 06.5	+0.1
PDO	Prodromos	151.36 325	P	PKPbc	21 28 07.0	+0.4
SIVA	Sivas	151.41 315	⇓iP	PKPbc	21 28 07.8	+1.0
LKD2	Lefkada island	151.51 326	P	PKPbc	21 28 07.2	+0.3
DRO	Drossia	151.51 323	P	PKPbc	21 28 07.8	+0.8
VLX	Vlachokerasia	151.51 322	P	PKPbc	21 28 07.2	+0.1
VAM	Vamos	151.59 316	P	PKPbc	21 28 07.9	+0.7
AQU	L'Aquila	151.80 340	ePKIKP	PKPbc	21 28 07.8	+0.3
AQU	L'Aquila	151.80 340	ePKPbc	PKPbc	21 28 07.8	+0.3
ANKY	Antikythira Is	151.90 318	P	PKPbc	21 28 06.7	-1.2
MATE	Matera	152.00 333	⇑iP	PKPbc	21 28 07.6	-0.3
GVD	Gavdhos	152.00 316	P	PKPbc	21 28 07.9	-0.2
TIP	Timpagrande	153.17 331	⇑iP	PKPbc	21 28 11.1	+0.5
TIP	Timpagrande	153.17 331	P	PKPbc	21 28 10.8	+0.2
TIP	Timpagrande	153.17 331	ePKPdf	PKPdf	21 28 03.2	+0.5
MVO	Moncorvo	154.37 13	ePKPbc	PKPbc	21 28 13.6	+0.5
PVIS	Viseu	154.59 15	ePKPab	PKPab	21 28 31.4	+0.6
PMRV	Marv??o	155.94 15	ePKPdf	PKPdf	21 28 07.0	+0.6
PMRV	Marv??o	155.94 15	ePKPab	PKPab	21 28 36.6	0.0
PMTG	Montargil	156.05 17	ePKPdf	PKPdf	21 28 08.1	+1.6
ES19	SONSECA Array	156.37 9	ePKPab	PKPab	21 28 38.7	+0.3
ESDC	Sonseca Array	156.38 9	PKP	PKPdf	21 28 05.7	-1.4
	comp=Z,0.9nm,0.9s,baz=251,slow=22,SNR=3.3					
ESDC			PKPab	PKPab	21 28 38.8	+0.3
	comp=Z,1.3nm,0.5s,baz=350,slow=4.7,SNR=11					
ESDC			PP	PP	21 32 19.5	+2.0
	comp=Z,1.5nm,0.9s,baz=262,slow=32,SNR=2.6					
KEST	Kesra	159.13 340	PKPab	PKPab	21 28 51.5	+0.9
	comp=Z,12nm,1.0s,baz=110,slow=4.3,SNR=7.5					
KEST	Kesra	159.13 340	ePKPab	PKPab	21 28 51.6	+1.0
TAM	Tamanrasset	172.03 325	ePKIKP	PKPdf	21 28 22.1	+0.8
TAM			*e*		21 29 49.6	
TAM	Tamanrasset	172.03 325	ePKPdf	PKPdf	21 28 22.1	+0.8
TAM			ePKPab	PKPab	21 29 49.6	+1.6

NIED ***23*** *21:30:00.3̲5̲˝.50N×140˚.90E, h5km, Mw3.8 Best double couple: M≅5.57000×10¹⁴ NP1:ϕ≅234.00000°, δ15.00000°, λ-16.00000°. NP2:ϕ≅340.00000°, δ86.00000°, λ-104.00000°.*

ISCJB ***23*** *21:30:36.1±0.9, 35˝.47N±0˝.04×140˝.96E±0˝.09, h25km±5km, mb3.3/5, Error ellipse: s-maj=11.9km s-min=6.2km az=3.7*

JMA ***23*** *21:30:36.6±0.1, 35˝.49N×140˝.91E, h25km±1km, M3.7*

JMA Felt II J1.

IDC ***23*** *21:30:43.6±5.2, 35˝.25N×140˝.57E, h68km±32km, mb3.1/5, mb1 3.2/7, mb1mx3.0/66, mbtmp3.4/7, ML3.2/2, Error ellipse: s-maj=76.8km s-min=15.2km az=77.0*

ISC 23 21:30:36.7±1.4, 35˚.44N±0˚.04×140˚.85E±0˚.08, h20km±5km, n20, σ0˚96/18, mb3.4/5, 1C-1D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
					Op	ISC	h m s	ISC
CHOJ	Chosi	0.26	2	⇑P		Pg	21 30 42.4	-0.4
CHOJ				S		Sb	21 30 46.6	-0.1
KTR	Katsuura	0.53	236	P		Pb	21 30 41.9	+0.6
KTR				S		Sn	21 30 56.6	-0.9
JCN	Nagara	0.53	268	P		Pn	21 30 48.7	-0.5
JCN				S		Sn	21 30 56.3	-1.3
BSO4	Boso 4	0.62	223	P		Pn	21 30 50.2	-0.1
BSO4				*e*X			21 31 01.6	
BSO3	Boso 3	0.70	204	P		Pn	21 30 51.1	-0.1
BSO3				X			21 31 03.7	
BSO1	Boso 1	0.79	172	P		Pb	21 30 51.3	-0.2
JYT	Yasato	0.95	326	⇓P		Pb	21 30 53.5	-1.0
JYT				S		Sb	21 31 06.4	-0.2
MJAR	Matsushiro Arr	2.41	298	P		Pb	21 31 18.8	-0.6
	5.7nm,0.3s,baz=118,slow=13,SNR=19							
JHJ	Hachijo jima 2	2.48	201	P		Pb	21 31 19.0	-1.6
	18nm,0.3s,baz=313,slow=23,SNR=7.4							
JHJ				S		Sn	21 31 45.0	-0.7
	16nm,0.3s,baz=60,slow=21,SNR=2.5							
H11N2	WAKE ISLAND Hy 27.77	117		T		T	22 05 18.7	
	baz=310,slow=76,SNR=105							
H11N1	WAKE ISLAND Hy 27.78	117		T		T	22 05 19.2	
	baz=310,slow=76,SNR=193							
H11N3	WAKE ISLAND Hy 27.79	117		T		T	22 05 25.1	
	baz=310,slow=76,SNR=157							
SONM	Songino Array	28.33	307	P		P	21 36 31.1	+1.8
	0.2nm,0.4s,baz=104,slow=12,SNR=2.0							
H11S1	WAKE ISLAND Hy 28.42	120		T		T	22 06 03.8	
	baz=312,slow=76,SNR=423							
H11S3	WAKE ISLAND Hy 28.42	120		T		T	22 06 06.5	
	baz=312,slow=76,SNR=430							
H11S2	WAKE ISLAND Hy 28.44	120		T		T	22 06 08.1	
	baz=312,slow=76,SNR=338							
ZALV	Zalesovo Beam	42.67	314	P		P	21 38 32.1	+0.3
	0.3nm,0.3s,baz=80,slow=12,SNR=3.3							
MKAR	Makanchi Array	44.59	303	P		P	21 38 48.8	+1.3
	0.1nm,0.2s,baz=86,slow=9.9,SNR=1.8							
KURBB	Kurchatov Arra	46.63	309	P		P	21 39 04.5	+0.9
	0.2nm,0.5s,baz=83,slow=7.5,SNR=3.4							
WRA	Warramunga Arr	55.42	187	P		P	21 40 09.3	-0.5
	0.3nm,0.7s,baz=1.7,slow=7.2,SNR=5.6							

ISCJB ***23*** *21:32:49.7±1.5, 36˚.89N±0˚.06×141˚.97E±0˚.08, h15km±10km, mb3.6/11, Error ellipse: s-maj=10.6km s-min=9.4km az=172.3*

IDC ***23*** *21:32:49.1±0.9, 36˚.76N×142˚.03E, h0km, mb3.7/11, mb1 3.9/14, mb1mx3.6/56, mbtmp3.7/14, ML3.4/3, MS3.1/1, Ms1 3.1/1, ms1mx2.3/46, Error ellipse: s-maj=23.9km s-min=17.9km az=159.0*

JMA ***23*** *21:32:52.2±0.3, 36˚.91N×141˚.87E, h39km, M3.5*

ISC 23 21:32:51.4±3.6, 36˚.88N±0˚.05×141˚.88E±0˚.07, h14km±22km, n27, σ1˚79/28, mb3.7/11, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
					Op	ISC	h m s	ISC
ONAJ	Iwakimizuishiy	0.90	285	P		Pb	21 33 08.1	-0.6
JFK	Kawauchi	0.94	302	P		Pb	21 33 08.5	-1.0
JFK				*e*S		Sb	21 33 21.1	-0.8
JHO	Hitachi	1.09	256	P		Pb	21 33 10.7	-1.3
JMM	Marumori	1.31	319	P		Pn	21 33 14.1	-1.2
JMM				S		Sn	21 33 28.1	-4.6
JFT	Otama	1.39	298	P		Pn	21 33 16.2	-0.2
JFT				*e*S		Sn	21 33 31.9	-2.7
JIO	Ouri	1.63	345	P		Pn	21 33 19.6	-0.1
JOU	Okura	1.77	327	P		Pn	21 33 21.8	+0.1
JOU				*e*S		Sn	21 33 42.4	-1.6
MJAR	Matsushiro Arr	2.97	265	Pn		Pn	21 33 39.3	+1.1
	6.0nm,0.3s,baz=92,slow=12,SNR=14							
MAT	Matsushiro	2.97	265	P		Pn	21 33 39.4	+1.3
MAT				*e*S		Sn	21 34 15.9	+2.3
JHJ	Hachijo jima 2	4.13	205	Pn		Pn	21 33 53.7	-0.3
	11nm,0.3s,baz=81,slow=23,SNR=5.9							
JHJ				Sn		Sn	21 34 38.1	-3.9
	14nm,0.3s,baz=90,slow=23,SNR=2.5							
JNU	Nakatsue	9.77	251	LR		LR	21 39 33.7	
	comp=Z,110nm,19.2s,baz=90,slow=41							
KSRS	Korea Array	11.15	277	Pn		Pn	21 35 33.0	+2.6
	0.1nm,0.3s,baz=327,slow=48,SNR=2.8							
H11N2	WAKE ISLAND Hy 27.75	121		T		T	22 07 40.2	
H11N1	WAKE ISLAND Hy 27.75	121		T		T	22 07 40.2	
H11N3	WAKE ISLAND Hy 27.76	121		T		T	22 07 40.2	
SONM	Songino Array	28.18	304	P		P	21 38 44.4	+0.9
	1.5nm,0.7s,baz=104,slow=8.6,SNR=11							
MKAR	Makanchi Array	44.52	302	P		P	21 41 02.7	+0.2
	0.1nm,0.2s,baz=77,slow=7.0,SNR=3.1							
KURBB	Kurchatov Arra	46.39	308	P		P	21 41 18.1	+0.9
	0.8nm,0.4s,baz=83,slow=8.3,SNR=7.7							
ILAR	Eielson Array	49.43	32	P		P	21 41 39.9	-0.6
	0.5nm,0.6s,baz=266,slow=6.0,SNR=6.6							
INK	Inuvik	54.35	27	P		P	21 42 17.5	+0.4
	0.8nm,0.6s,baz=294,slow=7.0,SNR=6.8							
WRA	Warramunga Arr	56.96	188	P		P	21 42 34.8	-1.6
	0.3nm,0.4s,baz=6.3,slow=7.2,SNR=5.2							
YKA	Yellowknife Ar	63.75	30	P		P	21 43 21.9	-0.5
	0.2nm,0.6s,baz=301,slow=6.7,SNR=4.7							
FINES	FINESS Array B	69.13	332	P		P	21 43 59.1	+2.4
	2.0nm,1.0s,baz=289,slow=5.8,SNR=3.3							
AKASG	Malin Array Be	74.65	323	P		P	21 44 30.5	+0.4
	0.2nm,0.5s,baz=45,slow=3.2,SNR=3.2							
NVAR	Mina Array Bea	74.78	53	P		P	21 44 32.0	+0.5
	0.3nm,0.6s,baz=316,slow=3.8,SNR=3.0							
TXAR	Lajitas Array	89.92	53	P		P	21 45 50.6	+0.1
	0.3nm,0.5s,baz=300,slow=3.9,SNR=5.0							
H06E1	SOCORRO T-PHAS	91.91	65	T		T	23 28 41.3	
	SNR=19							

IDC ***23*** *21:35:05.6±1.3, 40˚.34N×50˚.37E, h0km, mb3.7/9, mb1 3.8/15, mb1mx3.6/52, mbtmp3.6/15, ML3.3/5, Error ellipse: s-maj=26.5km s-min=11.1km az=16.0*

ISCJB ***23*** *21:35:10.0±0.6, 40˚.60N±0˚.07×50˚.62E±0˚.04, h33km, mb3.5/9, Error ellipse: s-maj=10.3km s-min=4.8km az=3.8*

NNC ***23*** *21:35:19.6±9.1, 41˚.32N×50˚.93E, h0km, mb3.7, Error ellipse: s-maj=76.1km s-min=64.9km az=99.0*

ISC 23 21:35:12.3±0.8, 40˚.64N±0˚.08×50˚.64E±0˚.05, h35km, n22, σ1˚53/29, mb3.6/9, 5C-2D, Caspian Sea

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
					Op	ISC	h m s	ISC
DGRG	David-gareji	4.06	283	P		Pn	21 36 13.1	+1.1
DGRG				S		Sn	21 36 58.4	+0.1
TBLG	Delisi	4.58	286	P		Sn	21 37 10.3	-0.8
GEYT	Alibeck	6.40	113	Pn		Pn	21 36 43.7	-0.4
	1.1nm,0.3s,baz=288,slow=11,SNR=29							
GEYT				S		Sn	21 37 54.4	-1.6
	2.1nm,0.3s,baz=293,slow=22,SNR=5.8							
KBZ	Khabaz

ETRT	**Tiaret**	**2.65**	**230**	P	**Pn**	**21 55 40.5**	**-0.9**
ETRT	**Tiaret**	**2.65**	**230**	P	**Pn**	**21 55 40.5**	**-0.9**
ETRT	**Tiaret**	**2.65**	**230**	P	**Pn**	**21 55 40.5**	**-0.9**
ETOS	**Mallorca**	**2.74**	**344**	P	**Pn**	**21 55 44.9**	**+2.3**
	1.1nm,0.1s,SNR=24						
ETOS				S	**Sn**	**21 56 16.4**	**+0.8**
	11nm,0.3s,SNR=12						
ETOS	**Mallorca**	**2.74**	**344**	P	**Pn**	**21 55 44.9**	**+2.3**
	1.1nm,0.1s,SNR=24						
ETOS				S	**Sn**	**21 56 16.4**	**+0.8**
	11nm,0.3s,SNR=12						
AFON	**Font Roja**	**3.74**	**296**	P	**Pn**	**21 55 59.2**	**+2.8**
	0.4nm,0.3s,SNR=5.9						
AFON				S	**Sn**	**21 56 39.1**	**-1.3**
	0.2nm,0.2s,SNR=7.9						
AFON	**Font Roja**	**3.74**	**296**	P	**Pn**	**21 55 59.2**	**+2.8**
	0.4nm,0.3s,SNR=5.9						
AFON				S	**Sn**	**21 56 39.1**	**-1.3**
	0.2nm,0.2s,SNR=7.9						
EMUR	**La Murta**	**4.05**	**282**	P	**Pn**	**21 56 02.0**	**+1.4**
	1.5nm,0.2s,SNR=7.1						
EMUR				S	**Sn**	**21 56 46.2**	**-1.8**
	0.6nm,0.2s,SNR=7.9						
EMUR	**La Murta**	**4.05**	**282**	P	**Pn**	**21 56 02.0**	**+1.4**
	1.5nm,0.2s,SNR=7.1						
EMUR				S	**Sn**	**21 56 46.2**	**-1.8**
	0.6nm,0.2s,SNR=7.9						
ETOB	**Tobarra**	**4.47**	**291**	P	**Pn**	**21 56 07.9**	**+1.5**
	1.1nm,0.1s,SNR=7.9						
ETOB				S	**Sn**	**21 56 56.7**	**-1.7**
	1.3nm,0.2s,SNR=7.9						
ETOB	**Tobarra**	**4.47**	**291**	P	**Pn**	**21 56 07.9**	**+1.5**
	1.1nm,0.1s,SNR=7.9						
ETOB				S	**Sn**	**21 56 56.7**	**-1.7**
	1.3nm,0.2s,SNR=7.9						
EMOS	**Mosqueruela**	**4.63**	**316**	P	**Pn**	**21 56 11.7**	**+3.0**
	0.4nm,0.1s,SNR=7.9						
EMOS				S	**Sn**	**21 57 02.5**	**+0.1**
	2.0nm,0.2s,SNR=7.9						
EMOS	**Mosqueruela**	**4.63**	**316**	P	**Pn**	**21 56 11.7**	**+3.0**
	0.4nm,0.1s,SNR=7.9						
EMOS				S	**Sn**	**21 57 02.5**	**+0.1**
	2.0nm,0.2s,SNR=7.9						
ERTA	**Horta de San J**	**4.66**	**326**	P	**Pn**	**21 56 10.8**	**+1.8**
	0.2nm,0.1s,SNR=4.0						
ERTA				S	**Sn**	**21 57 02.1**	**-1.0**
	2.2nm,0.4s,SNR=7.9						
ERTA	**Horta de San J**	**4.66**	**326**	P	**Pn**	**21 56 10.8**	**+1.8**
	0.2nm,0.1s,SNR=4.0						
ERTA				S	**Sn**	**21 57 02.1**	**-1.0**
	2.2nm,0.4s,SNR=7.9						
EPOB	**Poblet**	**4.71**	**334**	P	**Pn**	**21 56 11.0**	**+1.3**
	1.4nm,0.2s,SNR=7.9						
EPOB				S	**Sn**	**21 57 03.5**	**-0.7**
	1.6nm,0.2s,SNR=7.9						
EPOB	**Poblet**	**4.71**	**334**	P	**Pn**	**21 56 11.0**	**+1.3**
	1.4nm,0.2s,SNR=7.9						
EPOB				S	**Sn**	**21 57 03.5**	**-0.7**
	1.6nm,0.2s,SNR=7.9						
CFON	**Fontmartina**	**4.74**	**348**	P	**Pn**	**21 56 12.6**	**+2.5**
	3.2nm,0.2s,SNR=23						
CFON				S	**Sn**	**21 57 04.6**	**-0.5**
	6.5nm,0.3s,SNR=7.1						
CFON	**Fontmartina**	**4.74**	**348**	P	**Pn**	**21 56 12.6**	**+2.5**
	3.2nm,0.2s,SNR=23						
CFON				S	**Sn**	**21 57 04.6**	**-0.5**
	6.5nm,0.3s,SNR=7.1						
EJON	**La Jonquera**	**5.36**	**353**	P	Pn	21 56 21.6	+3.1
	2.6nm,0.1s,SNR=7.9						
EJON				S	**Sn**	**21 57 19.1**	**-1.1**
	2.8nm,0.4s,SNR=7.9						
EJON	**La Jonquera**	**5.36**	**353**	P	Pn	21 56 21.6	+3.1
	2.6nm,0.1s,SNR=7.9						
EJON				S	**Sn**	**21 57 19.1**	**-1.1**
	2.8nm,0.4s,SNR=7.9						
SJAF	**Saint Jean de**	**5.39**	**353**	P	Pn	21 56 22.1	+3.1
	1.4nm,0.1s,SNR=7.9						
SJAF				S	**Sn**	**21 57 21.0**	**0.0**
	1.2nm,0.2s,SNR=7.9						
SJAF	**Saint Jean de**	**5.39**	**353**	P	Pn	21 56 22.1	+3.1
	1.4nm,0.1s,SNR=7.9						
SJAF				S	**Sn**	**21 57 21.0**	**0.0**
	1.2nm,0.2s,SNR=7.9						
CLLI	**Llivia**	**5.52**	**346**	P	Pn	21 56 24.7	+3.8
	0.5nm,0.1s,SNR=7.3						
CLLI				S	**Sn**	**21 57 24.4**	**0.0**
	0.5nm,0.2s						
CLLI	**Llivia**	**5.52**	**346**	P	Pn	21 56 24.7	+3.8
	0.5nm,0.1s,SNR=7.3						
CLLI				S	**Sn**	**21 57 24.4**	**0.0**
	0.5nm,0.2s						
CSOR	**Sort**	**5.62**	**340**	P	Pn	21 56 26.4	+4.2
	0.5nm,0.1s,SNR=7.9						
CSOR				S	**Sn**	**21 57 28.1**	**+1.3**
	2.3nm,0.2s						
CSOR	**Sort**	**5.62**	**340**	P	Pn	21 56 26.4	+4.2
	0.5nm,0.1s,SNR=7.9						
CSOR				S	**Sn**	**21 57 28.1**	**+1.3**
	2.3nm,0.2s						
ESAC	**San Caprasio**	**5.64**	**326**	S	**Sn**	**21 57 28.5**	**+1.3**
	5.6nm,0.3s,SNR=7.9						
ESAC	**San Caprasio**	**5.64**	**326**	S	**Sn**	**21 57 28.5**	**+1.3**
	5.6nm,0.3s,SNR=7.9						
MTLF	**Montolieu**	**6.32**	**350**	*e*Pn	Pn	21 56 35.1	+3.4
MTLF				*e*Sn	**Sn**	**21 57 43.7**	**-0.1**
	3.1nm,0.7s						
MTLF	**Montolieu**	**6.32**	**350**	P	Pn	21 56 35.1	+3.4
MTLF				S	**Sn**	**21 57 43.7**	**-0.1**
	1.6nm,0.7s						
MTLF	**Montolieu**	**6.32**	**350**	P	Pn	21 56 35.1	+3.4
MTLF				S	**Sn**	**21 57 43.7**	**-0.1**
	1.6nm,0.7s						
EPF	**Esparros**	**6.45**	**337**	*e*Pn	**Pn**	**21 56 36.1**	**+2.4**
EPF				*e*Sn	**Sn**	**21 57 46.7**	**-0.5**
	2.7nm,0.3s						
EPF	**Esparros**	**6.45**	**337**	P	**Pn**	**21 56 36.1**	**+2.4**
EPF				S	**Sn**	**21 57 46.7**	**-0.5**
	1.4nm,0.3s						
EPF	**Esparros**	**6.45**	**337**	P	**Pn**	**21 56 36.1**	**+2.4**
EPF				S	**Sn**	**21 57 46.7**	**-0.5**
	1.4nm,0.3s						
LMR	**La Mourre**	**6.54**	**18**	*e*Pn	**Pn**	**21 56 36.6**	**+1.8**
LMR				*e*Sn	**Sn**	**21 57 47.9**	**-1.4**
	2.1nm,0.2s						
LMR	**La Mourre**	**6.54**	**18**	P	**Pn**	**21 56 36.6**	**+1.8**
LMR				S	**Sn**	**21 57 47.9**	**-1.4**
	1.1nm,0.2s						
LMR	**La Mourre**	**6.54**	**18**	P	**Pn**	**21 56 36.6**	**+1.8**
LMR				S	**Sn**	**21 57 47.9**	**-1.4**
	1.1nm,0.2s						
ESDC	**Sonseca Array**	**6.58**	**295**	P	**Pn**	**21 56 36.8**	**+1.4**
	0.2nm,0.1s,baz=110,slow=14,SNR=9.5						
ESDC				S	**Sn**	**21 57 48.6**	**-1.9**
	0.1nm,0.2s,baz=109,slow=24,SNR=7.9						
ESDC	**Sonseca Array**	**6.58**	**295**	P	**Pn**	**21 56 36.8**	**+1.4**
	0.2nm,0.1s,SNR=9.5						
ESDC				S	**Sn**	**21 57 48.6**	**-1.9**
	0.1nm,0.2s,SNR=7.9						
ETSF	**Etsaut**	**6.65**	**331**	*e*Pn	**Pn**	**21 56 38.7**	**+2.3**
ETSF				*e*Sn	**Sn**	**21 57 50.7**	**-1.4**
	1.3nm,0.3s						
ETSF	**Etsaut**	**6.65**	**331**	P	**Pn**	**21 56 38.7**	**+2.3**
ETSF				S	**Sn**	**21 57 50.7**	**-1.4**
	0.6nm,0.3s						
ETSF	**Etsaut**	**6.65**	**331**	P	**Pn**	**21 56 38.7**	**+2.3**
ETSF				S	**Sn**	**21 57 50.7**	**-1.4**
	0.6nm,0.3s						
PGF	**Pioggiola**	**6.74**	**35**	*e*Pn	Pn	21 56 40.6	+2.9
PGF				*e*Sn	**Sn**	**21 57 51.8**	**-2.6**
	3.3nm,0.3s						
PGF	**Pioggiola**	**6.74**	**35**	P	Pn	21 56 40.6	+2.9
PGF				S	**Sn**	**21 57 51.8**	**-2.6**
	1.7nm,0.3s						
PGF	**Pioggiola**	**6.74**	**35**	P	Pn	21 56 40.6	+2.9
PGF				S	**Sn**	**21 57 51.8**	**-2.6**
	1.7nm,0.3s						
FRF	**La Foret Royal**	**6.79**	**18**	*e*Pn	**Pn**	**21 56 40.0**	**+1.8**
FRF				*e*Sn	**Sn**	**21 57 54.2**	**-1.2**
	1.5nm,0.2s						
FRF	**La Foret Royal**	**6.79**	**18**	P	**Pn**	**21 56 40.0**	**+1.8**
FRF				S	**Sn**	**21 57 54.2**	**-1.2**
	0.8nm,0.2s						
FRF	**La Foret Royal**	**6.79**	**18**	P	**Pn**	**21 56 40.0**	**+1.8**
FRF				S	**Sn**	**21 57 54.2**	**-1.2**
	0.8nm,0.2s						
ATE	**Arette**	**6.86**	**331**	P	Pn	21 56 42.9	+3.7
	0.5nm,0.3s,SNR=7.9						
ATE				S	**Sn**	**21 57 57.1**	**-0.2**
	1.7nm,0.3s,SNR=7.9						
ATE	**Arette**	**6.86**	**331**	P	Pn	21 56 42.9	+3.7
	0.5nm,0.3s,SNR=7.9						
ATE				S	**Sn**	**21 57 57.1**	**-0.2**
	1.7nm,0.3s,SNR=7.9						
IELO	**Elcoad**	**6.88**	**328**	P	Pn	21 56 42.9	+3.3
	0.2nm,0.2s,SNR=7.9						
IELO				S	**Sn**	**21 57 58.1**	**+0.4**
	0.8nm,0.3s,SNR=7.9						
IELO	**Elcoad**	**6.88**	**328**	P	Pn	21 56 42.8	+3.3
	0.2nm,0.2s,SNR=7.9						
IELO				S	**Sn**	**21 57 58.1**	**+0.4**
	0.8nm,0.3s,SNR=7.9						
LASF	**Ste Croix**	**6.94**	**1**	*e*Pn	**Pn**	**21 56 43.1**	**+2.8**
LASF				*e*Sn	**Sn**	**21 57 57.4**	**-1.7**
	1.8nm,0.3s						
LASF	**Ste Croix**	**6.94**	**1**	P	**Pn**	**21 56 43.1**	**+2.8**
LASF				S	**Sn**	**21 57 57.4**	**-1.7**
	0.9nm,0.3s						
LASF	**Ste Croix**	**6.94**	**1**	P	**Pn**	**21 56 43.1**	**+2.8**
LASF				S	**Sn**	**21 57 57.4**	**-1.7**
	0.9nm,0.3s						
SMRF	**Simiane la Rot**	**6.97**	**11**	*e*Pn	Pn	21 56 44.1	+3.3
SMRF				*e*Sn	**Sn**	**21 57 58.0**	**-2.1**
	1.9nm,0.5s						
SMRF	**Simiane la Rot**	**6.97**	**11**	P	Pn	21 56 44.1	+3.3
SMRF				S	**Sn**	**21 57 58.0**	**-2.1**
	1.9nm,0.5s						
SMRF	**Simiane la Rot**	**6.97**	**11**	P	Pn	21 56 44.1	+3.3
SMRF				S	**Sn**	**21 57 58.0**	**-2.1**
	1.9nm,0.5s						
SJPF	**Ste Jean**	**7.09**	**329**	*e*Pn	Pn	21 56 45.9	+3.5
SJPF				*e*Sn	**Sn**	**21 58 02.0**	**-1.0**
	2.5nm,0.6s						
SJPF	**Ste Jean**	**7.09**	**329**	P	Pn	21 56 45.9	+3.5
SJPF				S	**Sn**	**21 58 02.0**	**-1.0**
	1.2nm,0.6s						
SJPF	**Ste Jean**	**7.09**	**329**	P	Pn	21 56 45.9	+3.5
SJPF				S	**Sn**	**21 58 02.0**	**-1.0**
	1.2nm,0.6s						
EALK	**Alkurruntz**	**7.30**	**328**	P	**Pn**	**21 56 47.0**	**+1.7**
	0.2nm,0.2s,SNR=4.0						
EALK				S	**Sn**	**21 58 07.3**	**-0.8**
	1.6nm,0.3s,SNR=7.9						
EALK	**Alkurruntz**	**7.30**	**328**	P	**Pn**	**21 56 47.0**	**+1.7**
	0.2nm,0.2s,SNR=4.0						
EALK				S	**Sn**	**21 58 07.3**	**-0.8**
	1.6nm,0.3s,SNR=7.9						
VIVF	**Saint-Julien-l**	**7.75**	**5**	*e*Pn	**Pn**	**21 56 53.3**	**+1.9**
VIVF				*e*Sn	**Sn**	**21 58 17.2**	**-1.9**
	2.1nm,0.4s						
VIVF	**Saint-Julien-l**	**7.75**	**5**	P	**Pn**	**21 56 53.3**	**+1.9**
VIVF				S	**Sn**	**21 58 17.2**	**-1.9**
	1.1nm,0.4s						
VIVF	**Saint-Julien-l**	**7.75**	**5**	P	**Pn**	**21 56 53.3**	**+1.9**
VIVF				S	**Sn**	**21 58 17.2**	**-1.9**
	1.1nm,0.4s						
CAF	**Calviac**	**7.89**	**351**	*e*Pn	Pn	21 56 56.5	+3.1
CAF	**Calviac**	**7.89**	**351**	P	Pn	21 56 56.5	+3.1
CAF	**Calviac**	**7.89**	**351**	P	Pn	21 56 56.5	+3.1

ISCJB ***23*** *21:56:45.5±0.9, 36°.38S±0°.06×73°.14W±0°.08, h25km, mb4.0/5, MS3.2/1, Error ellipse: s-maj=10.0km s-min=7.9km az=143.3*
NEIC ***23*** *21:56:46.0, 36°.42S×73°.23W, h15km, mb4.3/3, ML4.0(GUC), After GUC.*
NEIC Felt [III] at Arauco, Concepcion, Penco and San Pedro de la Paz.
GUC ***23*** *21:56:46.8±0.4, 36°.42S×73°.23W, h15km±5km, ML4.0*
IDC ***23*** *21:56:48.4±1.5, 36°.31S×71°.55W, h0km, mb3.8/4, mb1 4.0/5, mb1mx3.8/20, mbtmp3.8/5, ML3.6/1, MS3.3/1, Ms1 3.3/1, ms1mx2.9/16, Error ellipse: s-maj=59.6km s-min=19.1km az=85.0*

ISC 23 21:56:46.9±1.3, 36°.36S±0°.07×73°.1W±0°.1, h25km, n19, σ1§72/17, mb4.1/5, 2D, Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
COCH	**Cobquecura**	**0.32**	**43**	‖ *e*P	**Pn**	**21 56 54.4**	**-1.5**
COCH				*e*S	**Sn**	**21 57 00.1**	**-1.6**
COCH				IAML		21 57 01.8	
	comp=N,28μm,0.3s						
CCHI	**Chillan**	**0.82**	**107**	‖ *e*P	**Pn**	**21 57 02.1**	**-0.8**
CCHI				*e*S	**Sn**	**21 57 13.6**	**-0.7**
CCHI				IAML		21 57 15.6	
	comp=N,6μm,0.2s						
ROC1	**El Roble**	**3.77**	**27**	*i* P	**Pn**	**21 57 43.9**	**+0.2**
ROC1				*i* S	Sb	21 58 47.0	+8.6
PLCA	**Paso Flores**	**4.79**	**157**	Pn	**Pn**	**21 57 57.8**	**+0.3**
	comp=N,0.7nm,0.3s,baz=341,slow=12,SNR=9.6						
PLCA				Lg	Lg	21 59 10.4	
	comp=N,2.0nm,0.3s,baz=63,slow=21,SNR=3.9						
ARCO	**CERRO ARCO**	**4.89**	**45**	*i* P	Pb	21 58 04.2	-7.7
ARCO				IAML		21 59 27.4	
	comp=Z,34nm,0.6s						
RTLS	**Leoncito**	**5.52**	**35**	*i* P	**Pn**	**21 58 08.9**	**+1.2**
RTLS				*i* S	**Sb**	**21 59 31.4**	**+2.9**
RTLL	**Cerro Villicun**	**6.30**	**39**	*i* P	**Pn**	**21 58 19.9**	**+1.6**
AMOG	**MOGNA**	**6.61**	**36**	*i* P	**Pn**	**21 58 23.6**	**+1.0**
LCO	**Las Campanas**	**7.59**	**16**	*e*Pn	**Pn**	**21 58 34.9**	**-1.4**
AGUA	**GUANDACOL**	**7.85**	**31**	*i* P	**Pn**	**21 58 37.2**	**-2.5**
VCA	**Vinchina**	**8.63**	**30**	*i* P	**Pn**	**21 58 47.4**	**-3.0**
TRQA	**Tornquist**	**9.00**	**104**	*e*Pn	Pn	21 58 57.6	+2.4
LPAZ	**La Paz**	**20.47**	**14**	P	Pn	22 01 24.2	-1.5
	comp=Z,1.0nm,0.5s,baz=187,slow=8.1,SNR=3.0						
SIV	**San Ignacio**	**22.92**	**31**	P	**P**	**22 01 47.6**	**-1.6**
	comp=Z,1.4nm,0.6s,baz=227,slow=6.4,SNR=3.3						
SIV				LR	LR	22 12 22.9	
	comp=Z,89nm,21.3s,baz=189,slow=42						
NNA	**Nana**	**24.51**	**351**	P	P	22 02 11.2	+6.8
	comp=Z,6.1nm,0.5s,baz=139,slow=5.7,SNR=3.0						
NNA	**Nana**	**24.51**	**351**	*e*P	**P**	**22 02 05.0**	**+0.5**
	comp=Z,5.4nm,0.5s						
TXAR	**Lajitas Array**	**71.41**	**332**	P	P	22 08 13.9	+8.9
	comp=Z,0.5nm,0.7s,baz=153,slow=8.4,SNR=4.1						
WALA	**Waterton Lakes**	**92.47**	**334**	*e*P	**P**	**22 09 56.1**	**+0.7**
	comp=Z,0.6nm,0.8s						
NEW	**Newport**	**92.96**	**332**	*e*P	**P**	**22 09 58.6**	**+1.0**
	comp=Z,0.8nm,0.6s						

NIED ***23*** *21:59:00, 37°.40N×143°.90E, h8km, Mw4.4 Best double couple: M0 4.34000×10^15 NP1: φs=42.00000°, δ36.00000°, λ=-71.00000°. NP2: φs=199.00000°, δ56.00000°, λ=-103.00000°.*
IDC ***23*** *21:59:31.5±0.5, 37°.22N×144°.23E, h0km, mb4.2/25, mb1 4.4/31, mb1mx4.3/47, mbtmp4.2/31, ML4.0/5, MS3.4/8, Ms1 3.5/8, ms1mx3.1/39, Error ellipse: s-maj=14.1km s-min=12.2km az=118.0*
JMA ***23*** *21:59:35.8±0.3, 37°.37N×143°.93E, h56km, M4.6*
NEIC ***23*** *21:59:36.3±0.6, 37°.11N×144°.21E, h33km±4km, mb4.7/54, Error ellipse: s-maj=4.4km s-min=2.9km az=145.0*
ISCJB ***23*** *21:59:36.1±0.2, 37°.28N±0°.03×143°.99E±0°.03, h39km, mb4.6/106, MS3.8/15, Error ellipse: s-maj=4.4km s-min=3.0km az=167.7*
MOS ***23*** *21:59:37.2±1.1, 37°.60N×144°.00E, h33km, mb4.6/42, Error ellipse: s-maj=9.0km s-min=5.4km az=117.9*
BJI ***23*** *21:59:40.7, 37°.64N×143°.67E, h46km, mb4.4/42, mB4.9/31, Ms4.4/26, Ms7 4.2/25*

ISC 23 21:59:36.1±0.5, 37°.33N±0°.04×144°.09E±0°.05, h29km±2km, h29km:pP-P, n295, σ1§57/334, mb4.6/112, MS3.8/15, 19C-20D, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**2.44**	**298**	P	**Pn**	**22 00 12.7**	**-1.3**
JIO				S	**Sn**	**22 00 40.1**	**-2.8**
JFK	**Kawauchi**	**2.57**	**272**	P	**Pn**	**22 00 14.3**	**-1.5**
JFK				S	**Sn**	**22 00 42.6**	**-3.4**
OFUJ	**Ofunato**	**2.59**	**313**	P	**Pn**	**22 00 14.4**	**-1.6**
OFUJ				*e*S	**Sn**	**22 00 43.3**	**-3.2**
JMK	**Ichinoseki**	**2.79**	**306**	P	**Pn**	**22 00 17.4**	**-1.3**
JMK				*e*S	**Sn**	**22 00 48.4**	**-2.9**
JFT	**Otama**	**3.00**	**275**	P	**Pn**	**22 00 21.3**	**-0.4**
JFT				S	**Sn**	**22 00 54.1**	**-2.5**
JOM	**Ohasama**	**3.07**	**315**	P	**Pn**	**22 00 21.5**	**-1.1**
JOM				*e*S	**Sn**	**22 00 55.7**	**-2.7**
JYK	**Kaneyama**	**3.34**	**299**	P	**Pn**	**22 00 25.7**	**-0.7**
JYK				S	**Sn**	**22 01 03.4**	**-1.8**
JANG	**Nango**	**3.65**	**327**	P	**Pn**	**22 00 29.7**	**-0.9**
BSO1	**Boso 1**	**3.68**	**224**	P	**Pn**	**22 00 28.8**	**-1.7**
BSO1				*e*S	**Sn**	**22 01 10.6**	**-2.0**
JRY	**Ryogami san**	**4.38**	**254**	P	**Pn**	**22 00 39.2**	**-1.4**
JRY				S	**Sn**	**22 01 26.4**	**-4.2**
JOD2	**Odawara 2**	**4.54**	**244**	P	**Pn**	**22 00 41.5**	**-1.4**
JOD2				S	**Sn**	**22 01 29.2**	**-5.5**
JOT	**Ohata**	**4.68**	**331**	P	**Pn**	**22 00 44.4**	**-0.4**
ERM	**Erimo**	**4.73**	**352**	*e*P	**Pn**	**22 00 43.1**	**-2.4**
ERM	**Erimo**	**4.73**	**352**	*e*Pn	**Pn**	**22 00 49.0**	**+3.5**
MJAR	**Matsushiro Arr**	**4.78**	**262**	Pn	**Pn**	**22 00 46.0**	**-0.2**
	26nm,0.3s,baz=88,slow=15,SNR=325						
MJAR	**Matsushiro Arr**	**4.78**	**262**	P	**Pn**	**22 00 46.0**	**-0.2**
MJAR				pmax	pmax		
	comp=Z,26nm,0.3s						
MAJO	**Matsushiro**	**4.78**	**262**	*c i*P	**Pn**	**22 00 46.6**	**+0.4**
MAJO	**Matsushiro**	**4.78**	**262**	*e*Pn	**Pn**	**22 00 46.6**	**+0.4**
MAT	**Matsushiro**	**4.78**	**262**	P	**Pn**	**22 00 46.4**	**+0.2**
MAT				S	**Sn**	**22 01 38.4**	**-2.2**
MJB9	**Matsu-Tunnel**	**4.78**	**262**	*e*Pn	**Pn**	**22 00 46.6**	**+0.4**
JKB	**Kayabe**	**5.13**	**334**	P	**Pn**	**22 00 49.9**	**-1.0**
JCH	**Churui**	**5.31**	**354**	P	**Pn**	**22 00 51.2**	**-2.2**
JHJ2	**Mitsune**	**5.47**	**221**	*e*Sn	**Sn**	**22 01 51.8**	**-5.9**
JHJ	**Hachijo jima 2**	**5.49**	**221**	Pn	**Pn**	**22 00 53.4**	**-2.5**
	comp=Z,27nm,0.3s,baz=140,slow=23,SNR=11						
JHJ				Sn	**Sn**	**22 01 51.8**	**-6.2**
	comp=Z,153nm,0.3s,baz=78,slow=22,SNR=15						
INU	**Inuyama**	**6.04**	**253**	*e*Pn	**Pn**	**22 01 04.0**	**+0.5**
JTKR	**Abashiri--Toko**	**6.63**	**359**	P	**Pn**	**22 01 09.1**	**-2.5**
JTKR				*e*S	**Sn**	**22 02 19.6**	**-6.6**
YUK	**Yuzh-Kuril'sk**	**6.83**	**11**	*e*P	**Pn**	**22 01 09.9**	**-4.4**
YUK				*e*S	Sn	22 02 21.7	-9.3
YUK				pmax	pmax		
	comp=Z,189nm,0.4s						
SHO	**Shikotan**	**6.86**	**17**	*e*P	Pn	22 01 09.9	-4.7
SHO				*e*S	Sn	22 02 22.4	-9.2
SHO				pmax	pmax		
	comp=Z,68nm,0.6s						
SHO				pmax	pmax		
	comp=E,23nm,0.7s						
ASAJ	**Asahikawa**	**6.87**	**351**	Pn	**Pn**	**22 01 14.1**	**-0.8**
	comp=E,5.0nm,0.3s,baz=197,slow=13,SNR=76						
ASAJ				Sn	**Sn**	**22 02 27.9**	**-4.2**
	comp=E,1.7nm,0.3s,baz=63,slow=25,SNR=3.6						
ASAJ				LR	LR	22 04 39.1	
	comp=E,315nm,18.7s,baz=174,slow=44						
ASAJ	**Asahikawa**	**6.87**	**351**	*e*Pn	**Pn**	**22 01 18.2**	**+3.3**
ASAJ				Sn	**Sn**	**22 02 27.9**	**-4.2**
KUR	**Kuril'sk**	**8.39**	**19**	P	Pn	22 01 30.0	-5.7
KUR				*e*S	Sn	22 03 00.6	-8.8
KUR				smax	smax		
	comp=N,28nm,0.3s						
KUR				smax	smax		
	comp=E,14nm,0.3s						
YSS	**Yuzh-Sakhalins**	**9.67**	**355**	*e*P	**Pn**	**22 01 51.3**	**-1.9**
CBIJ	**Chichi jima**	**10.33**	**190**	Pn	Pn	22 01 57.0	-5.4
CBIJ				Sn	Sn	22 03 45.7	-11
JCJ	**Chichijima**	**10.33**	**190**	Pn	Pn	22 01 57.0	-5.4
	comp=E,7.3nm,0.3s,baz=289,slow=23,SNR=5.5						
JCJ				Sn	Sn	22 03 45.7	-11
	comp=E,25nm,0.3s,baz=287,slow=21,SNR=7.7						
MSHR	**Mys Shultsa**	**11.22**	**302**	*c e*P	**Pn**	**22 02 14.5**	**0.0**
USRK	**Ussuriysk Ar.**	**11.45**	**311**	Pn	**Pn**	**22 02 18.4**	**+0.8**
	comp=E,0.4nm,0.3s,baz=116,slow=14,SNR=17						
JNU	**Nakatsue**	**11.59**	**253**	Pn	**Pn**	**22 02 19.6**	**0.0**
	comp=E,0.3nm,0.3s,baz=38,slow=9.5,SNR=6.9						
KSRS	**Korea Array**	**12.86**	**275**	Pn	**Pn**	**22 02 38.6**	**+1.6**
	comp=E,0.2nm,0.3s,baz=87,slow=14,SNR=16						
KSAR	**Wonju Array Be**	**12.90**	**275**	P	**Pn**	**22 02 38.6**	**+1.2**
KSAR	**Wonju Array Be**	**12.90**	**275**	Pn	**Pn**	**22 02 38.6**	**+1.2**
INCN	**Inchon**	**13.88**	**276**	*e*Pn	**Pn**	**22 02 54.3**	**+3.4**
KLR	**Kul'dur**	**14.88**	**327**	*e*P	**Pn**	**22 03 02.3**	**-2.1**
CN2	**Changchun**	**15.56**	**300**	*e*P	**Pn**	**22 03 12.3**	**-1.0**
CN2				pmax	pmax		
	comp=E,10.0nm,0.6s						
CN2				pmax	pmax		
	comp=E,200nm,3.0s						
CN2				LR	LR		
	comp=E,400nm,12.0s						
CN2				LR	LR		
	comp=E,400nm,12.0s						
CN2				LR	LR		
	comp=E,500nm,13.0s						
SKR	**Severo-Kuril's**	**15.88**	**29**	*e*P	**Pn**	**22 03 15.8**	**-1.5**
NJ2	**Nanjing**	**21.38**	**263**	*e*P	**P**	**22 04 23.0**	**+1.7**
NJ2				pmax	pmax		
	comp=E,10.0nm,0.5s						
TIA	**Tai'an**	**21.61**	**275**	*e*P	**P**	**22 04 23.3**	**-0.5**
TIA				pmax	pmax		
	comp=E,20nm,0.9s						
GUMO	**Guam**	**23.65**	**178**	LR	LR	22 11 17.5	
	comp=E,64nm,21.2s,baz=30,slow=30						
HHC	**Hu-ho-hao-te**	**25.41**	**288**	*e*P	**P**	**22 05 02.0**	**+0.8**
HHC				pmax	pm

LZH Lanzhou 32.12 280 *e*P P **22 06 03.5 +2.4**
LZH pP sP 22 06 15.6 +2.5
LZH sP pP 22 06 21.0 +11
LZH PP **PP** **22 07 11.6 -2.2**
LZH pmax pmax
comp=Z,25nm,1.3s
LZH pmax pmax
comp=Z,72nm,5.8s
LZH LR LR
comp=Z,330nm,13.2s
LZH LR LR
comp=Z,320nm,13.3s
LZH LR LR
comp=Z,380nm,16.5s
BILL Bilibino 33.16 15 *e*P P **22 06 07.4 -2.2**
BILL *e* 22 07 17.0
BILL pmax pmax
comp=Z,12nm,1.7s
BILL MLR MLR
comp=Z,38nm,16.0s
BILL Bilibino 33.16 15 *e*P P **22 06 10.0 +0.4**
comp=Z,8.5nm,1.1s
GYA Guiyang 33.38 262 *e*P P **22 06 13.4 +1.2**
GYA pP sP 22 06 25.6 +1.5
GYA PP **PP** **22 07 26.0 -1.9**
GYA PcP **PcP** **22 08 53.4 0.0**
GYA S **S** **22 11 30.3 -1.2**
GYA sS sS 22 11 51.3 +5.8
GYA ScP **ScP** **22 12 34.0 -1.7**
GYA ScS **ScS** **22 16 33.8 -3.1**
GYA pmax pmax
comp=Z,20nm,0.8s
GYA pmax pmax
comp=Z,120nm,5.2s
GYA LR LR
comp=Z,580nm,17.8s
GYA LR LR
comp=Z,540nm,18.0s
GYA LR LR
comp=Z,560nm,18.4s
CD2 Chengdu 33.81 271 P **P** **22 06 14.8 -1.0**
CD2 pmax pmax
comp=Z,1.0nm,0.5s
GTA Gaotai 34.52 287 *e*P P **22 06 25.6 +3.7**
GTA pP sP 22 06 37.8 +3.9
GTA sP pP 22 06 43.1 +13
GTA S **S** **22 11 50.4 +1.4**
GTA sS sS 22 12 10.6 +7.6
GTA pmax pmax
comp=Z,5.0nm,0.8s
GTA pmax pmax
comp=Z,120nm,6.4s
GTA LR LR
comp=Z,85nm,11.6s
GTA LR LR
comp=Z,180nm,16.2s
GTA LR LR
comp=Z,200nm,13.3s
TIXI Tiksi 35.28 352 P **P** **22 06 27.4 -0.5**
comp=Z,0.4nm,0.4s,baz=129,slow=3.6,SNR=5.6
TIXI PcP **PcP** **22 08 57.1 -0.7**
comp=Z,0.3nm,0.2s,baz=114,slow=9.7,SNR=2.5
TIXI Tiksi 35.28 352 *c*e**P** **P** **22 06 27.0 -0.9**
TIXI pmax pmax
comp=Z,2.0nm,1.2s
KMI Kunming 37.12 263 P **P** **22 06 45.3 +0.8**
KMI pmax pmax
comp=Z,6.0nm,0.9s
KMI pmax pmax
comp=Z,28nm,4.8s
UNV Unalaska Valle 37.46 48 *e*P P **22 06 47.4 +0.6**
comp=Z,136nm,1.5s
AKUT Akutan 37.92 47 *e*P P **22 06 50.8 +0.3**
comp=Z,808nm,1.8s
MYLDM Lahad Datu 39.63 222 *e*P P **22 07 04.7 -0.7**
comp=Z,15nm,1.2s
WMQ Urumqi 42.61 297 *e*P P **22 07 31.3 +1.6**
WMQ pP sP 22 07 44.1 +2.2
WMQ sP pP 22 07 50.4 +12
WMQ S **S** **22 13 49.8 -1.0**
WMQ sS sS 22 14 08.6 +3.6
WMQ pmax pmax
comp=Z,2.0nm,0.6s
WMQ pmax pmax
comp=Z,87nm,3.8s
ZAA0 Zalesovo Array 43.30 312 *e*P P **22 07 36.3 +1.3**
ZALV Zalesovo Beam 43.30 312 P P **22 07 35.5 +0.4**
comp=Z,1.5nm,0.7s,baz=79,slow=7.7,SNR=7.2
ZALV PcP **PcP** **22 09 23.9 +0.4**
comp=Z,5.8nm,0.7s,baz=92,slow=3.0,SNR=12
ZALV LR LR 22 27 47.2
comp=Z,76nm,18.3s,baz=67,slow=39
CHTO Chiang Mai 43.44 258 *e*P P **22 07 36.9 +0.2**
CHTO *e**PP **sP** **22 07 49.1 +0.3**
CHTO Chiang Mai 43.44 258 *e*P P **22 07 36.9 +0.2**
CHTO *e*pP **sP** **22 07 49.1 +0.3**
CMAR Chiang Mai Arr 43.65 257 P P **22 07 39.5 +1.2**
comp=Z,1.5nm,0.8s,baz=43,slow=7.0,SNR=19
CMAR PcP **PcP** **22 09 26.4 +1.1**
comp=Z,0.4nm,0.5s,baz=353,slow=2.5,SNR=4.2
CMAR LR LR 22 27 47.3
comp=Z,47nm,18.2s,baz=9.5,slow=39
CM01 Chiang Mai Arr 43.66 257 *e*P P **22 07 39.3 +0.9**
NRIK Noril'sk 43.90 335 LR LR 22 27 00.7
comp=Z,116nm,18.9s,baz=120,slow=37
NVS Novosibirsk 44.19 314 *e*P P **22 07 46.1 +4.0**
NVS pmax pmax
comp=E,7.0nm,1.0s
NVS pmax pmax
comp=Z,10.0nm,1.0s
SBUM Sibu 45.42 228 *e*P P **22 07 52.4 0.0**
comp=Z,12nm,1.5s
MK01 Makanchi Array 45.77 302 *e*P P **22 07 55.5 +0.6**
MK31 Makanchi Array 45.77 302 *e*P P **22 07 56.0 +1.0**
MK31 Makanchi Array 45.77 302 *e*P P **22 07 56.0 +1.0**
MKAR Makanchi Array 45.77 302 P P **22 07 55.4 +0.4**
comp=Z,1.3nm,0.7s,baz=86,slow=9.2,SNR=15
MKAR PcP **PcP** **22 09 32.0 -0.2**
comp=Z,0.8nm,0.7s,baz=79,slow=7.5,SNR=2.3
MKAR Makanchi Array 45.77 302 *e*P P **22 07 56.0 +1.0**
MKAR 22 09 32.1
MKAR Makanchi Array 45.77 302 *e*P P **22 07 56.0 +1.0**
MKAR PcP **PcP** **22 09 32.0 -0.2**
MLY Manley 46.46 32 *e*P P **22 08 01.0 +0.8**
comp=Z,9.5nm,1.0s
KURK Kurchatov 47.43 308 P P **22 08 08.8 +1.0**
KURK 22 09 37.1
KURK pmax pmax
comp=Z,2.0nm,0.8s
KURK pmax pmax
comp=Z,1.0nm,0.9s
KURK Kurchatov 47.43 308 *e*P P **22 08 08.5 +0.7**
comp=Z,7.4nm,0.8s
KURK PcP **PcP** **22 09 37.1 -0.8**
KURBB Kurchatov Arra 47.51 308 P P **22 08 08.8 +0.4**
comp=Z,2.2nm,0.8s
KURBB PcP **PcP** **22 09 37.1 -1.1**
comp=Z,1.4nm,0.9s,baz=84,slow=8.0,SNR=4.4
MDM Murphy Dome 47.52 32 *e*P P **22 08 09.6 +1.2**
comp=Z,12nm,1.0s
WRH Wood River Hil 47.58 33 *e*P P **22 08 09.1 +0.3**
comp=Z,12nm,1.3s
CCB Clear Creek Bu 47.70 33 *e*P P **22 08 10.0 +0.3**
comp=Z,17nm,1.8s
DHY Denali Highway 47.90 35 *e*P P **22 08 12.5 +1.0**
comp=Z,9.6nm,1.2s
HDA Harding Lake 48.07 33 *e*P P **22 08 13.1 +0.5**
comp=Z,12nm,1.1s
ILAR Eielson Array 48.10 33 P P **22 08 12.8 0.0**
comp=Z,4.7nm,0.8s,baz=266,slow=6.7,SNR=24
ILB Eielson Array 48.10 33 *e*P P **22 08 13.4 +0.6**
IL1 Eielson Array 48.10 33 *e*P P **22 08 12.7 -0.1**
KLU Klutina 48.65 37 *e*P P **22 08 18.8 +1.6**
comp=Z,34nm,1.6s
DIV Divide 48.74 37 *e*P P **22 08 19.1 +1.2**
comp=Z,64nm,1.7s
RAGM Ragged Mountai 49.35 38 *e*P P **22 08 23.3 +0.8**
comp=Z,254nm,1.2s
DOT Dot Lake 49.37 34 *e*P P **22 08 23.6 +0.9**
comp=Z,57nm,1.8s
MENT Mentasta 49.57 35 *e*P P **22 08 25.1 +0.9**
comp=Z,32nm,1.8s
KEKH Kekaha 50.48 91 *e*P P **22 08 30.1 -1.5**
comp=Z,222nm,1.6s
IPM Ipoh 51.14 241 *e*P P **22 08 36.6 0.0**
comp=Z,6.5nm,0.8s

TKM2 Tokmak 2 51.37 299 *e*P P **22 08 40.1 +1.8**
TKM2 pmax pmax
comp=Z,6.0nm,0.8s
TKM2 Tokmak 2 51.37 299 *e*P P **22 08 40.1 +1.8**
comp=Z,5.6nm,0.8s
MTN Manton Dam 51.37 196 *e*P P **22 08 37.5 -0.7**
comp=Z,17nm,0.8s
YKU2 Yakutat 51.97 39 *e*P P **22 08 42.6 +0.4**
comp=Z,2µm,1.0s
OPA Opana 51.99 90 *e*P P **22 08 41.8 -1.1**
OPA Opana 51.99 90 *e*P P **22 08 41.8 -1.1**
comp=Z,80nm,1.1s
BRVK Borovoye 52.01 313 *e*P P **22 08 42.9 +0.3**
BRVK pmax pmax
comp=Z,2.0nm,0.8s
BRVK Borovoye 52.01 313 *e*P P **22 08 43.4 +0.8**
comp=Z,3.9nm,1.0s
KIP Kipapa 52.12 91 *e*P P **22 08 42.0 -1.8**
KIP Kipapa 52.12 91 *e*P P **22 08 42.0 -1.8**
comp=Z,244nm,1.8s
AAK Ala-Archa 52.23 299 *e*P P **22 08 46.1 +1.5**
AAK pmax pmax
comp=Z,3.0nm,0.9s
AAK Ala-Archa 52.23 299 *e*P P **22 08 45.7 +1.0**
comp=Z,17nm,0.8s
KSH Kashi 52.23 295 *e*P P 22 08 49.9 +5.2
KSH *e*pP sP 22 09 02.4 +5.5
KSH *e*sP pP 22 09 08.3 +15
KSH PcS **PcS** **22 13 56.8 +2.5**
KSH S **S** **22 16 11.8 +4.0**
KSH pmax pmax
comp=Z,77nm,7.8s
KSH LR LR
comp=Z,120nm,5.6s
KSH LR LR
comp=Z,51nm,4.4s
KSH LR LR
comp=Z,130nm,10.5s
EKS2 Erkin-Say 52.72 299 *e*P P **22 08 49.3 +1.1**
EKS2 pmax pmax
comp=Z,5.0nm,1.3s
EKS2 Erkin-Say 52.72 299 *e*P P **22 08 49.3 +1.1**
comp=Z,5.0nm,1.3s
ZRNK Zerenda 52.78 313 *e*P P **22 08 49.4 +1.0**
ZRNK pmax pmax
comp=Z,8.0nm,1.4s
ZRNK Zerenda 52.78 313 *e*P P **22 08 49.4 +1.0**
comp=Z,7.8nm,1.4s
INK Inuvik 53.14 27 P P **22 08 51.5 +0.8**
comp=Z,3.3nm,0.7s,baz=288,slow=7.4,SNR=13
INK Inuvik 53.14 27 *e*P P **22 08 51.8 +1.0**
INK pmax pmax
comp=Z,3.0nm,0.8s
INK Inuvik 53.14 27 *e*P P **22 08 51.8 +1.0**
comp=Z,3.4nm,0.8s
PSI Prapat 53.80 241 *e*P P **22 08 57.1 +0.6**
PSI pmax pmax
comp=Z,6.0nm,0.9s
PSI Prapat 53.80 241 *e*P P **22 08 57.1 +0.6**
comp=Z,6.0nm,0.9s
KKAR Karatay Array 54.82 301 *e*P P **22 09 04.3 +0.8**
KKAR *e**PP **sP** **22 09 15.0 -0.8**
KKAR Karatay Array 54.82 301 *e*P P **22 09 04.3 +0.8**
KKAR *e*pP **sP** **22 09 15.0 -0.8**
WRAK Wrangell Islan 56.52 41 *e*pP pP 22 09 27.3 +3.1
DLBC Dease Lake 57.06 39 *e*P P **22 09 20.0 +0.6**
comp=Z,38nm,2.0s
ARU Arti 57.55 319 P P **22 09 23.7 +1.0**
comp=Z,3.2nm,0.7s,baz=78,slow=3.2,SNR=7.7
ARU PcP **PcP** **22 10 15.8 -0.1**
comp=Z,0.7nm,0.3s,baz=277,slow=19,SNR=3.6
ARU Arti 57.55 319 *d*i**P** **P** **22 09 23.2 +0.5**
ARU 22 10 15.8
ARU 22 11 27.7
ARU S **S** **22 17 19.4 +1.1**
ARU SS **SS** **22 21 06.6 -1.3**
ARU pmax pmax
comp=Z,12nm,1.7s
ARU Arti 57.55 319 *e*P P **22 09 23.4 +0.7**
comp=Z,5.3nm,0.8s
ARU PcP **PcP** **22 10 15.8 -0.1**
WRAB Tennant Creek 57.69 191 *e*P P **22 09 22.1 -1.9**
WRAB pmax pmax
comp=Z,9.0nm,0.6s
WRAB Tennant Creek 57.69 191 *e*P P **22 09 22.1 -1.9**
comp=Z,8.7nm,0.6s
WB2 Warramunga Arr 57.70 191 *e*P P **22 09 22.7 -1.4**
comp=Z,11nm,0.6s
WRA Warramunga Arr 57.70 191 P P **22 09 22.7 -1.4**
comp=Z,10nm,0.6s,baz=12,slow=7.3,SNR=78
WRA PcP **PcP** **22 10 16.7 -0.1**
comp=Z,2.8nm,0.9s,baz=2.7,slow=3.7,SNR=3.4
FITZ Fitzroy Crossi 57.81 201 *e*P P **22 09 23.9 -0.9**
comp=Z,25nm,1.8s
KBL Kabul 59.30 292 *e*P P **22 09 35.4 -0.1**
KBL pmax pmax
comp=Z,6.0nm,1.1s
KBL Kabul 59.30 292 *e*P P **22 09 35.4 -0.1**
comp=Z,5.8nm,1.1s
ABKAR Akbulak array 59.38 311 *e*P P **22 09 36.2 +0.7**
HYB Hyderabad 60.35 270 *i* P P **22 09 44.0 +1.3**
AS01 Alice Springs 61.42 191 *e*P P **22 09 48.4 -1.2**
AS31 Alice Springs 61.42 191 *e*P P **22 09 48.1 -1.6**
comp=Z,1.2nm,0.7s
ASAR Alice Springs 61.42 191 P P **22 09 48.6 -1.1**
comp=Z,2.8nm,0.8s,baz=10,slow=8.1,SNR=33
ASAR PcP **PcP** **22 10 31.9 +0.3**
comp=Z,1.3nm,0.8s,baz=2.5,slow=4.0,SNR=3.2
RES Resolute Bay 61.77 15 *e*P P **22 09 52.0 +0.5**
RES pmax pmax
comp=Z,6.0nm,0.9s
RES Resolute Bay 61.77 15 *e*P P **22 09 52.0 +0.5**
comp=Z,6.0nm,0.9s
YKA Yellowknife Ar 62.47 31 P P **22 09 56.0 -0.3**
comp=Z,0.8nm,0.9s,baz=302,slow=7.0,SNR=11
YKA PcP **PcP** **22 10 35.4 0.0**
comp=Z,0.4nm,0.7s,baz=299,slow=4.9,SNR=5.9
NLWA Neilton Lookou 64.93 49 *e*P P **22 10 12.7 -0.2**
comp=Z,20nm,1.2s
GEYT Alibeck 65.55 300 P P **22 10 17.5 +0.4**
comp=Z,1.8nm,0.9s,baz=88,slow=7.6,SNR=3.6
C09A Chrisman Ranch 68.00 46 *e*P P **22 10 31.1 -1.4**
comp=Z,52nm,0.3s
YBH Yreka Blue Hor 68.46 53 *e*P P **22 10 35.9 +0.3**
YBH pmax pmax
comp=Z,4.0nm,1.0s
YBH Yreka Blue Hor 68.46 53 *e*P P **22 10 35.9 +0.3**
comp=Z,4.4nm,1.0s
VRH Novokhopyorsk 68.78 319 *e*P P **22 10 36.8 -0.4**
VRH pmax pmax
comp=Z,8.0nm,1.0s
STKA Stephens Creek 68.89 182 P P **22 10 37.4 -0.6**
comp=Z,1.7nm,0.7s,baz=326,slow=11,SNR=4.0
K05A Summer Lake 69.09 52 *e*P P **22 10 39.6 0.0**
comp=Z,14nm,1.1s
OBN Obninsk 69.13 324 *e*P P **22 10 40.6 +1.3**
OBN *e* 22 10 49.3
OBN *e* 22 11 06.6
OBN *e* 22 13 08.3
OBN pmax pmax
comp=Z,5.0nm,0.9s
OBN MLR MLR
comp=Z,77nm,16.0s
WDC Whiskeytown Da 69.17 54 *e*P P **22 10 40.1 +0.2**
WDC pmax pmax
comp=Z,12nm,1.5s
WDC Whiskeytown Da 69.17 54 *e*P P **22 10 40.0 +0.2**
comp=Z,12nm,1.5s
LPSR Galich'ya Gora 69.43 321 *e*P P **22 10 40.7 -0.6**
LPSR pmax pmax
comp=Z,9.0nm,1.0s
FINES FINESS Array B 69.53 333 P P **22 10 41.6 -0.1**
comp=Z,1.4nm,0.6s,baz=38,slow=9.6,SNR=9.5
FINES LR LR 22 43 08.2
comp=Z,36nm,21.3s,baz=36,slow=38
VSR Storozhevoye 70.10 320 *e*P P **22 10 45.2 -0.2**
VSR pmax pmax
comp=Z,7.0nm,1.1s
ZEI Tsey 72.25 310 *e*P P **22 10 58.4 -0.5**
ZEI pmax pmax
comp=Z,4.0nm,0.7s
FFC Flin Flon 72.28 34 *e*P P **22 10 59.0 +0.4**
FFC pmax pmax
comp=Z,4.0nm,0.8s
FFC Flin Flon 72.28 34 *e*P P **22 10 59.0 +0.4**
comp=Z,4.0nm,0.8s

KIV Kislovodsk 72.31 312 *e*P P **22 10 59.9 +0.8**
KIV *e* 22 11 11.1
KIV *e* 22 11 19.5
KIV pmax pmax
comp=Z,10.0nm,1.0s
KIV Kislovodsk 72.31 312 *e*P P **22 11 00.3 +1.2**
KIV *e*pP **sP** **22 11 12.5 +0.9**
KBZ Khabaz 72.32 312 P P **22 11 00.6 +1.6**
comp=Z,3.8nm,0.8s,baz=2.5,slow=2.8,SNR=9.5
NV01 Mina Array Sit 73.09 54 *e*P P **22 11 04.7 +0.7**
NVAR Mina Array Bea 73.09 54 P P **22 11 04.8 +0.9**
comp=Z,3.6nm,0.8s,baz=280,slow=6.4,SNR=7.1
H17A Grant Village 74.34 46 *e*P P **22 11 10.9 -0.3**
comp=Z,4.5nm,0.8s
IMW Indian Meadow 74.43 46 *e*P P **22 11 11.0 -0.8**
comp=Z,2.9nm,0.8s
NC204 NORSAR Array S 74.67 339 *e*P P **22 11 13.3 +0.7**
NB2 NORSAR Subarra 74.72 338 P P **22 11 13.1 +0.2**
comp=Z,4.6nm,1.1s,baz=39,slow=6.2
NOA NORSAR Array B 74.72 338 P P **22 11 13.0 +0.2**
comp=Z,2.4nm,0.9s,baz=38,slow=5.8,SNR=7.7
R11A Troy Canyon, C 74.88 53 *e*P P **22 11 15.3 +1.0**
comp=Z,4.4nm,1.1s
TPNV Topopah Spring 75.27 55 *e*P P **22 11 17.7 +1.1**
TPNV pmax pmax
comp=Z,5.0nm,1.0s
TPNV Topopah Spring 75.27 55 *e*P P **22 11 17.7 +1.1**
comp=Z,4.7nm,1.0s
AKASG Malin Array Be 75.35 323 P P **22 11 17.0 +0.4**
comp=Z,3.2nm,0.8s,baz=45,slow=6.0,SNR=22
AKASG Malin Array Be 75.35 323 P P **22 11 17.0 +0.4**
AKASG pmax pmax
comp=Z,5.0nm,0.9s
KIEV Kiev 75.37 323 *e*P P **22 11 17.2 +0.5**
KIEV pmax pmax
comp=Z,7.0nm,1.0s
KIEV Kiev 75.37 323 *e*P P **22 11 17.1 +0.4**
comp=Z,6.8nm,1.0s
AK11 Malin Array Si 75.40 323 *e*P P **22 11 17.9 +1.1**
TCUT Toone Canyon 75.83 49 *e*P P **22 11 15.9 -4.0**
comp=Z,5.2nm,0.9s
BW06 Boulder Array 75.92 47 *e*P P **22 11 20.4 +0.1**
PDAR Pinedale Array 75.92 47 P P **22 11 20.4 +0.1**
comp=Z,0.9nm,0.8s,baz=282,slow=2.9,SNR=6.9
SORM Soroca 77.50 322 *j*i**P** P **22 11 29.4 +0.6**
SORM Soroca 77.50 322 j**P** P **22 11 29.4 +0.6**
BEL Belsk 78.35 328 *e*P P **22 11 35.0 +1.5**
BEL Belsk 78.35 328 *e*P P **22 11 35.0 +1.5**
LVV L'vov 78.38 325 *e*P P **22 11 34.9 +1.2**
KWP Kalwaria Pacla 79.12 326 *e*P P **22 11 39.6 +1.8**
KWP Kalwaria Pacla 79.12 326 *j*i**P** P **22 11 39.5 +1.8**
KWP Kalwaria Pacla 79.12 326 j**P** P **22 11 39.5 +1.8**
BUR08 Bucovina Ar. S 79.37 323 *e*P P **22 11 40.7 +1.4**
BURAR Bucovina Array 79.39 323 *j*i**P** P **22 11 40.8 +1.4**
BURAR Bucovina Array 79.39 323 i**P** P **22 11 40.8 +1.4**
TESR Tescani 79.46 321 i**P** P **22 11 40.8 +1.1**
CFR Carcaliu 79.62 320 *j*i**P** P **22 11 41.3 +0.7**
CFR Carcaliu 79.62 320 j**P** P **22 11 41.3 +0.7**
KOLS Kolonicke sedl 79.82 325 *e*P P **22 11 43.0 +1.4**
VRI Vrincioaia 79.87 321 *j*i**P** P **22 11 44.4 +2.5**
VRI Vrincioaia 79.87 321 j**P** P **22 11 44.4 +2.5**
STHS Stebnicka Huta 79.93 326 *e*P P **22 11 44.2 +2.0**
OJC Ojcow 79.97 327 *e*P P **22 11 43.6 +1.2**
OJC Ojcow 79.97 327 *e*P P **22 11 43.7 +1.3**
OJC Ojcow 79.97 327 *e*P P **22 11 43.5 +1.1**
comp=Z,15nm,1.0s
CRVS Cervenica-Dubn 80.21 326 *e*P P **22 11 45.2 +1.5**
BRTR Keskin Array B 80.24 313 P P **22 11 45.0 +0.7**
comp=Z,1.5nm,1.0s,baz=82,slow=2.7,SNR=6.8
BRTR Keskin Array B 80.24 313 P P **22 11 45.0 +0.7**
BRTR pmax pmax
comp=Z,1.0nm,1.0s
NIE Niedzica 80.34 327 *e*P P **22 11 46.3 +1.8**
NIE Niedzica 80.34 327 *e*P P **22 11 46.3 +1.8**
DOPR Dopca 80.46 322 *j*i**P** P **22 11 47.2 +2.0**
BR231 Keskin MP Arra 80.67 313 *e*P P **22 11 46.3 -0.1**
S22A 4UR Ranch, Cre 80.70 49 *e*P P **22 11 46.1 -0.8**
comp=Z,8.0nm,1.1s
CJR Cluj-Napoca 80.80 323 i**P** P **22 11 49.0 +2.0**
CJR Cluj-Napoca 80.80 323 I**P** P **22 11 49.0 +2.0**
LANS Liptovska Anna 80.91 327 *e*P P **22 11 50.4 +2.9**
KECS Kecovo 80.95 326 *e*P P **22 11 48.8 +1.1**
KSP Ksiaz 80.95 330 *e*P P **22 11 49.1 +1.4**
KSP Ksiaz 80.95 330 *e*P P **22 11 49.2 +1.5**
OKC Ostrava-Krasne 80.96 328 *i* P P **22 11 49.1 +1.4**
OKC *e*PCP **PcP** **22 11 51.9 -2.2**
OKC *e*pP **sP** **22 12 00.2 0.0**
OKC Ostrava-Krasne 80.96 328 *i* P P **22 11 49.1 +1.4**
OKC *e* 22 12 00.2
VOIR 81.01 321 I**P** P **22 11 49.7 +1.6**
VOIR 81.01 321 I**P** P **22 11 49.7 +1.6**
DRGR 81.17 324 *j*i**P** P **22 11 49.9 +0.9**
DRGR 81.17 324 j**P** P **22 11 49.9 +0.9**
MORC Moravsky Berou 81.26 328 *j*i**P** P **22 11 50.7 +1.3**
MORC Moravsky Berou 81.26 328 j**P** P **22 11 50.7 +1.3**
MORC Moravsky Berou 81.26 328 *e*P P **22 11 50.0 +0.6**
comp=Z,29nm,1.0s
MORC *e*pP **sP** **22 12 01.9 0.0**
ARR Arges 81.26 322 I**P** P **22 11 51.6 +2.1**
DPC Dobruska-Polom 81.32 329 *i* P P **22 11 51.3 +1.6**
DPC *e*pP **sP** **22 12 02.6 +0.3**
DPC Dobruska-Polom 81.32 329 *i* P P **22 11 51.3 +1.6**
DPC *e* 22 12 02.6
UPC Upice 81.33 329 *i* P P **22 11 51.0 +1.3**
UPC Upice 81.33 329 *i* P P **22 11 51.0 +1.3**
KRLC Kraliky 81.35 329 *i* P P **22 11 51.1 +1.3**
KRLC Kraliky 81.35 329 *i* P P **22 11 51.1 +1.3**
PSZ Piszkesteto 81.64 326 I**P** P **22 11 53.0 +1.6**
PSZ Piszkesteto 81.64 326 I**P** P **22 11 53.0 +1.6**
PSZ Piszkesteto 81.64 326 *e*P P **22 11 52.5 +1.1**
comp=Z,10nm,1.0s
VYHS Vyhne 81.67 327 *e*P P **22 11 53.1 +1.6**
BRG Berggiesshubel 81.86 331 *e*P P **22 11 53.2 +0.8**
comp=Z,5.3nm,1.1s
BRG *e* 22 23 40.3
comp=Z,8.7nm,1.6s
CLL Collm 81.88 331 *j*i**P** P **22 11 53.0 +0.5**
comp=Z,9.0nm,0.9s
CLL *i* 22 12 04.4
CLL Collm 81.88 331 *j*i**P** P **22 11 53.0 +0.5**
CLL *i* 22 12 04.4
CLL pmax pmax
comp=Z,9.0nm,0.9s
CLL Collm 81.88 331 *e*P P **22 11 53.3 +0.8**
comp=Z,9.2nm,0.9s
VRAC Vranov 82.01 328 I**P** P **22 11 54.6 +1.3**
VRAC Vranov 82.01 328 I**P** P **22 11 54.6 +1.3**
GOPC GO Pecny, Ondr 82.28 330 *e*P P **22 11 56.1 +1.4**
GOPC GO Pecny, Ondr 82.28 330 *e*P P **22 11 56.1 +1.4**
PRU Pruhonice 82.33 330 *i* P P **22 11 56.2 +1.3**
PRU *e*PCP **PcP** **22 11 58.8 -1.3**
PRU *e*pP **sP** **22 12 07.3 -0.2**
PRU Pruhonice 82.33 330 *i* P P **22 11 56.2 +1.3**
PRU *e* 22 12 07.3
TREC Trest 82.48 329 *e*P P **22 11 56.7 +0.9**
TREC *e*pP **sP** **22 12 08.4 0.0**
TREC Trest 82.48 329 *e*P P **22 11 56.7 +0.9**
TREC *e* 22 12 08.4
BZS Buzias 82.55 323 *j*i**P** P **22 11 56.9 +0.8**
BZS Buzias 82.55 323 j**P** P **22 11 56.9 +0.8**
ANMO Albuquerque 82.75 51 *c*e**P** P **22 11 57.9 +0.3**
ANMO pmax pmax
comp=Z,4.0nm,2.5s
MDVR Moldovita 83.11 323 I**P** P **22 12 00.4 +1.2**
KHC Kasperske Hory 83.39 330 *i* P P **22 12 01.5 +1.0**
KHC *e*PCP **PcP** **22 12 03.9 -1.0**
KHC *e*pP **sP** **22 12 12.5 -0.6**
KHC Kasperske Hory 83.39 330 *i* P P **22 12 01.5 +1.0**
KHC *e* 22 12 12.5
KHC Kasperske Hory 83.39 330 *e*P P **22 12 01.7 +1.2**
comp=Z,2.0nm,0.8s
CONA Conrad Observa 83.39 328 *i* PcP P **22 12 02.3 +1.7**
comp=Z,7.7nm,1.0s
PKSM Moragy 83.49 325 *j*i**P** P **22 12 01.8 +0.8**
PKSM Moragy 83.49 325 j**P** P **22 12 01.8 +0.8**
GERES GERESS Array B 83.56 330 P P **22 12 01.9 +0.4**
comp=Z,1.8nm,0.8s,baz=38,slow=5.7,SNR=20
GEA0 GERESS Array S 83.57 330 *e*P P **22 12 01.9 +0.4**
SOKA Soboth 84.72 328 *i* PcP P **22 12 08.3 +0.9**
comp=Z,4.3nm,0.8s
OBKA Obir 85.06 328 *i* P P **22 12 09.6 +0.5**
comp=Z,2.0nm,0.7s
KBA Koelnbreinsper 85.11 329 *i* PcP P **22 12 10.8 +1.3**

comp=Z,2.8nm,0.7s
BCLA Clavier 85.38 335 P **P** 22 12 11.2 **+0.7**
MOTA Moosalm 85.81 330 *i* PcP **PcP** 22 12 14.6 **-1.0**
comp=Z,3.7nm,0.9s
RETA Reutte 85.83 330 *i* PcP **P** 22 12 13.9 **+1.0**
comp=Z,5.7nm,0.9s
BFO Black Forest 86.07 332 *i* P **P** 22 12 15.2 **+1.2**
BFO Black Forest 86.07 332 *eP* **P** 22 12 14.5 **+0.5**
comp=Z,6.5nm,0.9s
FETA Feichten 86.22 330 *i* PcP **P** 22 12 15.6 **+0.6**
comp=Z,5.0nm,1.1s
DAVA Damuels 86.34 331 *i* PcP **P** 22 12 16.4 **+0.9**
comp=Z,7.9nm,1.0s
TX31 Lajitas Ar. Si 88.23 54 *eP* **P** 22 12 24.5 **-0.4**
TXAR Lajitas Array 88.23 54 P **P** 22 12 25.2 **+0.3**
comp=Z,1.1nm,0.7s,baz=304,slow=4.4,SNR=14
TIP Timpagrande 89.76 322 ⇑*i* P pP 22 12 41.1 -0.1
TIP Timpagrande 89.76 322 *eP* **P** 22 12 32.5 **+0.6**
TIP epP **pP** 22 12 40.8 **-0.4**
H06S1 SOCORRO T 90.12 66 T T 23 51 28.3
SNR=4.5
PQI Presque Isle 91.55 21 *eP* **P** 22 12 39.9 **-0.1**
comp=Z,124nm,0.8s
KEST Kesra 96.06 324 *eP* **P** 22 13 02.0 **+1.0**
comp=Z,18nm,0.9s
LPAZ La Paz 144.68 62 PKP **PKPab** 22 19 09.9 **0.0**
comp=Z,1.9nm,0.7s,baz=7.2,slow=5.6,SNR=6.9

*KRNET **23** 22:00:04.0±0.1,39°.01N×70°.59E,mb2.9*
*NNC **23** 22:00:06.7±4.4,38°.83N×70°.76E,h0km,mb3.5,mpv3.1,*
Error ellipse: s-maj=34.6km s-min=23.9km az=16.0
ISC 23 22:00:07.5±3.4,39°.0N±0°.1×70°.6E±0°.1,h17km,n8,
σ2s52/14,7C-9D,Afghanistan-Tajikistan border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BTK	**Batken**	**1.08**	**9**	⇑*eP*	**Pb**	**22 00 25.5**	**-2.3**
	baz=10.0						
BTK				⇑*eS*	**Sb**	**22 00 40.1**	**-1.5**
	baz=10.0						
SFK	**Sufi-Kurgan**	**2.47**	**65**	⇓*eP*	**Pn**	**22 00 47.4**	**+0.2**
	baz=65						
SFK				⇓*eS*	**Sb**	**22 01 20.5**	**-1.3**
	baz=65						
SFK	**Sufi-Kurgan**	**2.47**	**65**	⇓Pn	**Pn**	**22 00 46.5**	**-0.7**
	5.3nm,0.4s						
SFK				⇑Sn	**Sb**	**22 01 20.6**	**-1.2**
	18nm,0.4s						
ARK	**Arkit**	**2.99**	**20**	⇓*eP*	**Pn**	**22 00 55.1**	**+0.8**
	baz=21						
ARK				⇓*eS*	**Sn**	**22 01 32.0**	**+2.2**
	baz=21						
MNAS	**Manas**	**3.78**	**22**	⇓*eP*	**Pn**	**22 01 05.8**	**+0.7**
	baz=22						
MNAS				⇓*eS*	**Sn**	**22 01 50.9**	**+1.6**
	baz=22						
MNAS	**Manas**	**3.78**	**22**	⇓Pn	**Pn**	**22 01 08.1**	**+3.0**
	4.6nm,0.6s						
MNAS				⇑Sn	**Sb**	**22 01 55.6**	**-3.8**
	6.7nm,0.6s						
KK31	**Karatay Array**	**4.11**	**359**	⇑Pn	Pn	22 01 13.6	+4.2
	0.4nm,0.2s,baz=177,slow=13,SNR=55						
KK31				⇓Lg	Lg	22 02 17.3	
	2.8nm,0.5s,baz=172,slow=30,SNR=5.3						
AAK	**Ala-Archa**	**4.69**	**38**	⇑Pn	**Pn**	**22 01 19.9**	**+2.3**
	2.1nm,0.5s						
AAK				⇑Sn	**Sn**	**22 02 16.3**	**+4.5**
	4.7nm,0.8s						

*IDC **23** 22:03:51.9±17.0,57°.26N×155°.31W,h58km±110km,*
mb3.0/3,mb1 3.4/5,mb1mx3.1/49,mbtmp3.5/5,ML3.9/2,
Error ellipse: s-maj=178.2km s-min=49.9km az=10.0
*ISCJB **23** 22:03:52.2±0.6,57°.29N±0°.06×155°.17W±0°.09,h74km±6km,*
mb3.4/2,Error ellipse: s-maj=11.4km s-min=6.4km
az=147.4
*NEIC **23** 22:03:54.0,57°.27N×155°.14W,h45km,ML3.1(AEIC),After*
AEIC.
ISC 23 22:03:53.0±1.1,57°.29N±0°.07×155°.15W±0°.05,
h65km±10km,n41,σ0s98/46,Alaska Peninsula

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PLK3	**Peulik 3**	**0.72**	**304**	P	**Pn**	**22 04 07.7**	**-0.1**
PLK3				S	**Sn**	**22 04 18.6**	**-0.2**
PLK4	**Peulik 4**	**0.74**	**298**	P	**Pn**	**22 04 07.6**	**-0.5**
PLK2	**Peulik 2**	**0.79**	**307**	P	**Pn**	**22 04 08.5**	**-0.1**
KABR	**Katmai Barrier**	**0.85**	**6**	P	**Pn**	**22 04 09.0**	**-0.3**
ACHA	**Angle Creek He**	**0.93**	**354**	P	**Pn**	**22 04 10.3**	**-0.1**
ACHA				S	**Sn**	**22 04 23.0**	**-0.2**
PLK1	**Peulik 1**	**0.94**	**304**	P	**Pn**	**22 04 10.4**	**+0.1**
KABU	**Katmai Buttres**	**0.98**	**356**	P	**Pn**	**22 04 11.6**	**+0.5**
KABU				S	**Sn**	**22 04 25.1**	**+0.6**
PLWL	**Peulik Whale M**	**0.99**	**320**	P	**Pn**	**22 04 10.7**	**-0.3**
KAKN	**Katmai Knife C**	**1.01**	**3**	P	**Pn**	**22 04 11.5**	**+0.1**
KAKN				S	**Sn**	**22 04 25.5**	**+0.4**
OHAK	**Old Harbor**	**1.01**	**93**	P	**Pn**	**22 04 11.0**	**-0.3**
KVTA	**Katmai Vly 10**	**1.10**	**356**	P	**Pn**	**22 04 12.4**	**0.0**
KAWH	**Katmai**	**1.11**	**10**	P	**Pn**	**22 04 12.4**	**-0.3**
KELA	**Mount Kelaz**	**1.19**	**345**	P	**Pn**	**22 04 13.6**	**-0.2**
KAHC	**Katmai Hardscr**	**1.36**	**3**	P	**Pn**	**22 04 16.2**	**+0.2**
KDAK	**Kodiak Island**	**1.47**	**69**	P	Pn	22 04 32.4	+15
	20nm,0.3s,baz=177,slow=3.6,SNR=124						
KDAK				S	Sn	22 04 51.0	+15
	22nm,0.3s,baz=200,slow=14,SNR=15						
KDAK	**Kodiak Island**	**1.47**	**69**	P	**Pn**	**22 04 17.4**	**+0.1**
KDAK				S	**Sn**	**22 04 35.9**	**+0.3**
ANNE	**Aniakchak Nort**	**1.63**	**258**	P	**Pn**	**22 04 19.7**	**+0.1**
FOSS	**Fourpeaked Sta**	**1.70**	**26**	P	**Pn**	**22 04 21.2**	**+0.8**
ANNW	**Aniakchak Nort**	**1.70**	**260**	P	**Pn**	**22 04 19.9**	**-0.6**
FOPK	**Fourpeaked Vol**	**1.72**	**31**	P	**Pn**	**22 04 21.7**	**+1.0**
CDD	**Cape Douglas**	**1.83**	**25**	P	**Pn**	**22 04 22.7**	**+0.6**
MCNL	**McNeil River**	**1.95**	**12**	P	**Pn**	**22 04 24.2**	**+0.5**
CHGN	**Chignik**	**2.05**	**242**	P	**Pn**	**22 04 26.0**	**+0.9**
AUW	**Augustine West**	**2.26**	**22**	P	**Pn**	**22 04 29.1**	**+1.1**
OPT	**Oil Point**	**2.57**	**22**	P	**Pn**	**22 04 33.5**	**+1.3**
ILW	**Iliamna West**	**2.97**	**20**	P	**Pn**	**22 04 38.7**	**+0.9**
INE	**Iliamna NE**	**2.98**	**21**	P	**Pn**	**22 04 38.5**	**+0.5**
BRLK	**Bradley Lake**	**3.34**	**40**	P	**Pn**	**22 04 42.5**	**-0.2**
RSO	**Redoubt South**	**3.41**	**20**	P	**Pn**	**22 04 44.6**	**+0.7**
NCT	**North Crescent**	**3.48**	**18**	P	**Pn**	**22 04 45.9**	**+1.3**
SVW2	**Sparrevohn**	**3.82**	**357**	P	**Pn**	**22 04 49.8**	**+0.5**
SLKM	**Skilak Lake**	**4.12**	**36**	P	**Pn**	**22 04 53.6**	**+0.3**
CKL	**Chakachamna La**	**4.17**	**19**	P	**Pn**	**22 04 55.7**	**+1.5**
SPWE	**Spurr West**	**4.21**	**17**	P	**Pn**	**22 04 56.0**	**+1.4**
STLK	**Strandline Lak**	**4.55**	**20**	P	**Pn**	**22 04 59.6**	**+0.4**
RC01	**Rabbit Creek A**	**4.72**	**34**	P	**Pn**	**22 04 59.6**	**-1.8**
ILAR	**Eielson Array**	**8.50**	**25**	P	**Pn**	**22 05 52.4**	**-0.7**
	0.6nm,0.3s,baz=211,slow=14,SNR=23						
ILAR				S	**Sn**	**22 07 23.1**	**-4.3**
	0.1nm,0.3s,baz=228,slow=18,SNR=2.9						
INK	**Inuvik**	**14.71**	**33**	P	**Pn**	**22 07 18.0**	**+1.0**
	0.4nm,0.3s,baz=225,slow=11,SNR=11						
YKA	**Yellowknife Ar**	**20.72**	**59**	P	**P**	**22 08 28.2**	**+0.7**
	0.2nm,0.5s,baz=272,slow=9.7,SNR=6.6						
MKAR	**Makanchi Array**	**65.83**	**321**	P	**P**	**22 14 30.8**	**-0.3**
	0.1nm,0.2s,baz=30,slow=6.3,SNR=3.0						
AKASG	**Malin Array Be**	**72.31**	**357**	P	**P**	**22 15 10.6**	**-0.5**
	0.5nm,0.5s,baz=5.1,slow=5.5,SNR=4.6						

IDC 23 22:04:32.5±2.1,37°.26N×141°.47E,h0km,mb3.3/5,
mb1 3.4/6,mb1mx3.2/41,mbtmp3.3/6,ML2.8/1,Error
ellipse: s-maj=49.4km s-min=32.6km az=74.0,Near east
coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MJAR	**Matsushiro Arr**	**2.71**	**256**	Pn	Pn	22 05 17.2	-0.2
	1.6nm,0.3s,baz=98,slow=8.8,SNR=6.4						
MAT	**Matsushiro**	**2.71**	**256**	P	Pn	22 05 16.9	-0.4
SONM	**Songino Array**	**27.70**	**304**	P	P	22 10 22.2	-0.1
	0.2nm,0.5s,baz=105,slow=8.2,SNR=1.9						
MKAR	**Makanchi Array**	**44.03**	**302**	P	P	22 12 42.8	+1.0
	0.2nm,0.2s,baz=90,slow=8.4,SNR=3.6						
KURBB	**Kurchatov Arra**	**45.90**	**308**	P	P	22 12 55.3	-1.3
	0.5nm,0.8s,baz=84,slow=8.2,SNR=4.2						
WRA	**Warramunga Arr**	**57.29**	**188**	P	P	22 14 21.9	-0.1
	0.2nm,0.5s,baz=4.6,slow=7.7,SNR=3.3						
NOA	**NORSAR Array B**	**74.00**	**337**	P	P	22 16 09.8	+0.2
	0.3nm,0.6s,baz=5.4,slow=6.2,SNR=3.2						

*IDC **23** 22:06:49.3±0.6,35°.15N×141°.26E,h0km,mb4.1/23,*
mb1 4.2/28,mb1mx4.1/50,mbtmp4.1/28,ML4.1/5,MS3.8/3,
Ms1 3.8/3,ms1mx3.2/38,Error ellipse: s-maj=15.9km
s-min=11.8km az=98.0
*ISCJB **23** 22:06:51.1±0.4,35°.10N±0°.04×141°.41E±0°.05,h27km,*
mb4.1/32,MS3.8/2,Error ellipse: s-maj=6.0km
s-min=5.1km az=177.8
*NEIC **23** 22:06:51.7±3.1,35°.15N×141°.36E,h16km±19km,mb4.6/7,*
Error ellipse: s-maj=9.8km s-min=7.6km az=95.0
*JMA **23** 22:06:51.1±0.3,35°.14N×141°.36E,h26km,M3.5*
ISC 23 22:06:52.8±0.5,35°.10N±0°.04×141°.38E±0°.07,h27km,n60,
σ1s32/60,mb4.2/32,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BSO1	**Boso 1**	**0.56**	**217**	P	**Pb**	**22 07 02.3**	**-1.4**
BSO1				X		22 07 09.9	
CHOJ	**Chosi**	**0.74**	**325**	P	**Pb**	**22 07 04.2**	**-2.9**
BSO3	**Boso 3**	**0.78**	**248**	P	**Pb**	**22 07 05.9**	**-1.6**
BSO3				X		22 07 17.4	
BSO4	**Boso 4**	**0.86**	**263**	P	**Pb**	**22 07 07.5**	**-1.6**
JHJ	**Hachijo jima 2**	**2.38**	**214**	Pn	**Pn**	**22 07 30.8**	**+0.7**
	45nm,0.3s,baz=141,slow=23,SNR=8.2						
JHJ				Sn	**Sn**	**22 07 58.9**	**+0.6**
	103nm,0.3s,baz=69,slow=20,SNR=7.9						
MJAR	**Matsushiro Arr**	**2.95**	**300**	Pn	**Pn**	**22 07 37.5**	**-0.5**
	10nm,0.3s,baz=140,slow=5.2,SNR=37						
MJAR				Sn	**Sn**	**22 08 12.1**	**-0.4**
	4.5nm,0.3s,baz=134,slow=10,SNR=5.0						
MAJO	**Matsushiro**	**2.96**	**300**	*e*Pn	**Pn**	**22 07 37.9**	**0.0**
MAT	**Matsushiro**	**2.96**	**300**	P	**Pn**	**22 07 38.5**	**+0.5**
MAT				*e*S	**Sn**	**22 08 14.8**	**+2.2**
ERM	**Erimo**	**7.04**	**11**	*e*Pn	**Pn**	**22 08 33.2**	**-0.9**
CBIJ	**Chichi jima**	**8.01**	**175**	Pn	**Pn**	**22 08 47.4**	**0.0**
CBIJ				Sn	**Sn**	**22 10 12.5**	**-4.6**
JCJ	**Chichijima**	**8.01**	**175**	Pn	**Pn**	**22 08 47.4**	**0.0**
	22nm,0.3s,baz=295,slow=23,SNR=8.4						
JCJ				Sn	**Sn**	**22 10 12.5**	**-4.6**
	6.8nm,0.3s,baz=301,slow=22,SNR=3.4						
ASAJ	**Asahikawa**	**9.05**	**6**	Pn	**Pn**	**22 08 59.2**	**-2.4**
	4.5nm,0.3s,baz=228,slow=8.9,SNR=15						
KSRS	**Korea Array**	**11.12**	**286**	Pn	Pn	22 09 33.6	+3.7
	0.2nm,0.3s,baz=100,slow=12,SNR=5.3						
KSRS				LR	LR	22 14 07.3	
	comp=Z,480nm,18.1s,baz=86,slow=40						
KSAR	**Wonju Array Be**	**11.14**	**286**	Pn	Pn	22 09 33.6	+3.3
USRK	**Ussuriysk Ar.**	**11.61**	**324**	Pn	**Pn**	**22 09 37.4**	**+0.7**
	0.2nm,0.3s,baz=126,slow=12,SNR=6.8						
KLR	**Kul'dur**	**15.80**	**336**	Pn	**Pn**	**22 10 30.6**	**-2.7**
	0.1nm,0.3s,baz=139,slow=13,SNR=3.3						
MA2	**Magadan**	**25.25**	**11**	P	**P**	**22 12 17.5**	**+1.1**
	8.6nm,0.8s,baz=210,slow=9.1,SNR=10						
H11N2	**WAKE ISLAND Hy**	**27.23**	**118**	T	T	22 41 18.2	
	baz=310,slow=75,SNR=58						
H11N1	**WAKE ISLAND Hy**	**27.24**	**118**	T	T	22 41 09.0	
	baz=310,slow=75,SNR=62						
H11N3	**WAKE ISLAND Hy**	**27.25**	**118**	T	T	22 41 08.8	
	baz=310,slow=75,SNR=62						
H11S1	**WAKE ISLAND Hy**	**27.88**	**120**	T	T	22 41 53.8	
	baz=312,slow=75,SNR=143						
H11S3	**WAKE ISLAND Hy**	**27.88**	**120**	T	T	22 41 53.9	
	baz=312,slow=75,SNR=193						
H11S2	**WAKE ISLAND Hy**	**27.89**	**120**	T	T	22 41 55.1	
	baz=312,slow=75,SNR=134						
SEY	**Seymchan**	**28.69**	**10**	P	**P**	**22 12 48.6**	**+1.4**
	1.0nm,0.5s,baz=227,slow=7.4,SNR=5.5						
SONM	**Songino Array**	**28.88**	**307**	P	**P**	**22 12 49.3**	**0.0**
	0.6nm,0.5s,baz=106,slow=9.4,SNR=5.3						
SONM				LR	LR	22 24 26.6	
	comp=Z,188nm,19.5s,baz=104,slow=37						
TIXI	**Tiksi**	**37.20**	**353**	P	**P**	**22 14 00.9**	**-0.5**
	1.3nm,0.5s,baz=165,slow=1.6,SNR=5.7						
TIXI	**Tiksi**	**37.20**	**353**	*eP*	**P**	**22 14 01.4**	**+0.1**
CMAR	**Chiang Mai Arr**	**41.02**	**257**	P	**P**	**22 14 33.2**	**-0.6**
	0.3nm,0.4s,baz=48,slow=8.0,SNR=3.7						
ZALV	**Zalesovo Beam**	**43.22**	**314**	P	**P**	**22 14 51.0**	**-0.4**
	3.4nm,0.7s,baz=91,slow=5.9,SNR=19						
ZALV				PcP	**PcP**	**22 16 40.3**	**0.0**
	1.4nm,0.7s,baz=116,slow=4.2,SNR=5.2						
MKAR	**Makanchi Array**	**45.15**	**304**	P	**P**	**22 15 06.9**	**-0.1**
	1.6nm,0.6s,baz=89,slow=9.8,SNR=18						
MKAR				PcP	**PcP**	**22 16 47.3**	**+0.2**
	0.2nm,0.3s,baz=77,slow=6.2,SNR=3.9						
KURK	**Kurchatov**	**47.12**	**310**	*eP*	**P**	**22 15 22.2**	**-0.2**
	21nm,0.8s						
KURK				PcP	**PcP**	**22 16 54.6**	**+0.7**
KURBB	**Kurchatov Arra**	**47.19**	**309**	P	**P**	**22 15 22.9**	**0.0**
	5.2nm,0.7s,baz=85,slow=8.1,SNR=47						
KURBB				PcP	**PcP**	**22 16 54.6**	**+0.5**
	0.1nm,0.6s,baz=80,slow=3.7,SNR=3.2						
TKM2	**Tokmak 2**	**50.55**	**300**	*eP*	**P**	**22 15 49.2**	**+0.1**
	3.0nm,0.6s						
ILAR	**Eielson Array**	**51.15**	**32**	P	**P**	**22 15 53.6**	**+0.6**
	1.4nm,0.8s,baz=262,slow=6.0,SNR=14						
EKS2	**Erkin-Say**	**51.91**	**300**	*eP*	**P**	**22 15 59.3**	**+0.1**
	0.5nm,0.6s						
KKAR	**Karatay Array**	**54.09**	**301**	*eP*	**P**	**22 16 15.2**	**+0.1**
	3.7nm,1.0s						
WRAB	**Tennant Creek**	**55.13**	**188**	*eP*	**P**	**22 16 22.7**	**-0.1**
	19nm,1.3s						
WRA	**Warramunga Arr**	**55.15**	**188**	P	**P**	**22 16 22.8**	**-0.1**
	11nm,0.7s,baz=5.3,slow=7.5,SNR=84						
INK	**Inuvik**	**56.12**	**26**	P	**P**	**22 16 30.1**	**+0.8**
	0.8nm,0.7s,baz=342,slow=2.8,SNR=3.7						
ARU	**Arti**	**57.80**	**319**	P	**P**	**22 16 41.2**	**-0.2**
	2.0nm,0.4s,baz=111,slow=6.5,SNR=5.2						
ARU	**Arti**	**57.80**	**319**	*eP*	**P**	**22 16 41.2**	**-0.2**
	5.0nm,0.9s						
ASAR	**Alice Springs**	**58.87**	**188**	P	**P**	**22 16 50.8**	**+1.5**
	1.0nm,0.7s,baz=15,slow=12,SNR=14						
SPITS	**Spitsbergen Ar**	**62.41**	**349**	LR	LR	22 46 55.4	
	comp=Z,69nm,18.3s,baz=55,slow=39						
RES	**Resolute Bay**	**64.48**	**14**	*eP*	**P**	**22 17 26.8**	**+0.4**
	8.3nm,1.5s						
GEYT	**Alibeck**	**64.76**	**300**	P	**P**	**22 17 29.3**	**+0.4**
	0.9nm,0.6s,baz=35,slow=5.3,SNR=3.4						
YKA	**Yellowknife Ar**	**65.49**	**30**	P	**P**	**22 17 34.0**	**+0.8**
	0.8nm,0.8s,baz=301,slow=6.5,SNR=15						
YKA	**Yellowknife Ar**	**65.49**	**30**	P	**P**	**22 17 34.0**	**+0.8**
STKA	**Stephens Creek**	**66.62**	**180**	P	**P**	**22 17 42.7**	**+2.0**
	0.4nm,0.4s,baz=182,slow=23,SNR=2.2						
FINES	**FINESS Array B**	**70.51**	**333**	P	**P**	**22 18 04.8**	**0.0**
	3.4nm,0.7s,baz=52,slow=6.3,SNR=18						
KBZ	**Khabaz**	**72.15**	**311**	P	**P**	**22 18 14.2**	**-0.8**
	1.8nm,0.9s,baz=136,slow=5.9,SNR=4.2						
AKASG	**Malin Array Be**	**75.81**	**323**	P	**P**	**22 18 36.0**	**-0.3**
	1.4nm,0.6s,baz=47,slow=6.3,SNR=16						
NB2	**NORSAR Subarra**	**75.96**	**337**	P	**P**	**22 18 36.9**	**-0.1**
	comp=Z,2.1nm,0.7s,baz=41,slow=5.9						
NOA	**NORSAR Array B**	**75.96**	**337**	P	**P**	**22 18 37.0**	**+0.1**
	comp=Z,3.0nm,0.7s,baz=40,slow=5.7,SNR=15						
NVAR	**Mina Array Bea**	**76.17**	**53**	P	**P**	**22 18 40.3**	**+1.5**
	comp=Z,0.6nm,0.7s,baz=296,slow=6.8,SNR=3.6						
PDAR	**Pinedale Array**	**79.04**	**45**	P	**P**	**22 18 56.2**	**+1.4**
	comp=Z,0.4nm,0.6s,baz=336,slow=3.3,SNR=4.5						
BRTR	**Keskin Array B**	**80.12**	**310**	P	**P**	**22 19 00.7**	**+0.1**
	comp=Z,0.8nm,0.8s,baz=127,slow=3.7,SNR=5.9						
BRG	**Berggiesshubel**	**82.70**	**330**	*eP*	**P**	**22 19 14.7**	**+0.9**
	comp=Z,4.0nm,1.2s						
CLL	**Collm**	**82.76**	**330**	*i* P	**P**	**22 19 14.3**	**+0.2**
	comp=Z,6.0nm,0.9s						
CLL				LmV		23 43 00.0	
	comp=Z,200nm,19.4s						
KHC	**Kasperske Hory**	**84.18**	**329**	*eP*	**P**	**22 19 22.5**	**+1.0**
GERES	**GERESS Array B**	**84.34**	**328**	P	**P**	**22 19 22.3**	**-0.2**
	comp=Z,1.4nm,0.8s,baz=33,slow=3.8,SNR=13						

ROM 23 22:10:58.2±0.3,35°.88N×14°.88E,h5km,Ml3.5/24,Error
ellipse: s-maj=3.7km s-min=1.4km az=137.0,Central
Mediterranean Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WDD	**Wied Dalam**	**0.29**	**267**	Pg	Pg	22 11 04.8	+0.9
WDD				Sg	Sb	22 11 09.6	-1.5
HMDC	**Modica**	**1.08**	**356**	Pg	Pg	22 11 18.9	0.0
HMDC				Sg	Sn	22 11 34.7	-0.7
	4μm,0.6s						
HAVL	**Avola**	**1.09**	**10**	Pg	Pg	22 11 19.1	-0.1
HAVL				Sg	Sn	22 11 35.0	-0.8
	1μm,0.4s						
SSY	**Sortino**	**1.28**	**7**	Pg	Pg	22 11 22.6	-0.1
SSY				Sg	Sn	22 11 40.4	+0.1
	3μm,0.6s						
HVZN	**Vizzini**	**1.30**	**354**	Pg	Pn	22 11 22.4	-0.7
HVZN				Sg	Sn	22 11 41.1	+0.2
	2μm,0.5s						
AGST	**Augusta-Monte**	**1.40**	**11**	Pg	Pn	22 11 24.6	+0.2
	679nm,0.7s						
RAFF	**Raffo Rosso**	**1.40**	**343**	Pg	Pn	22 11 24.2	-0.2
	694nm,0.7s						
HCRL	**Carlentini**	**1.40**	**5**	Pg	Pn	22 11 23.8	-0.7
HCRL				Sg	Sb	22 11 43.1	0.0
	3μm,0.6s						
HAGA	**Augusta**	**1.42**	**9**	Pg	Pn	22 11 24.0	-0.6
HAGA				Sg	Sb	22 11 43.5	0.0
	1μm,0.5s						
HLNI	**Lentini**	**1.46**	**360**	Pg	Pn	22 11 24.6	-0.7
HLNI				Sg	Sn	22 11 44.8	0.0
	717nm,0.7s						
ECNV	**Catenanuova**	**1.72**	**355**	Pg	Pn	22 11 29.7	-0.5
	693nm,0.6s						
CAGR	**Agira**	**1.76**	**350**	Pg	Pb	22 11 31.2	+0.1
GALF	**Gagliano Caste**	**1.84**	**352**	Pg	Pb	22 11 32.1	-0.3
	297nm,0.5s						
RESU	**Resuttano**	**1.88**	**340**	Pg	Pb	22 11 32.2	-0.9
	185nm,0.6s						
MMME	**Mongiuffi-Meli**	**2.07**	**8**	Pg	Pn	22 11 35.0	+1.3
	219nm,0.6s						
NOV	**Novara**	**2.15**	**5**	Pg	Pn	22 11 35.8	+1.0
	347nm,0.8s						
PLLN	**Pollina**	**2.19**	**345**	Pg	Pn	22 11 36.5	+1.2
	323nm,1.2s						
GIB	**Gibilmanna**	**2.21**	**342**	Pg	Pn	22 11 37.1	+1.4
	542nm,0.8s						
MPAZ	**Palizzi**	**2.25**	**23**	Pg	Pn	22 11 36.8	+0.6
	92nm,0.5s						
MPNC	**Port Mandanici**	**2.29**	**9**	Pg	Pn	22 11 38.0	+1.3
	395nm,0.6s						
CORL	**Corleone**	**2.37**	**328**	Pg	Pn	22 11 37.7	-0.1
	60nm,0.7s						
MILZ	**Milazzo**	**2.40**	**7**	Pg	Pn	22 11 39.9	+1.8
	211nm,0.6s						
SOLUN	**Solunto**	**2.46**	**334**	Pg	Pn	22 11 39.0	+0.1
	88nm,0.8s						
VPL	**Vulcano Piano**	**2.49**	**2**	Pg	Pn	22 11 41.0	+1.5
	849nm,0.5s						
PLAC	**Placanica**	**2.85**	**25**	Pg	Pn	22 11 45.2	+0.8
	93nm,1.1s						
SERS	**Sersale**	**3.46**	**24**	Pg	Pn	22 11 53.8	+0.9
	31nm,0.7s						
CAR1	**CAROLEI**	**3.53**	**17**	Pg	Pn	22 11 54.0	+0.3
	64nm,0.6s						
TIP	**Timpagrande**	**3.61**	**24**	Pg	Pn	22 11 55.7	+0.8

*CSEM **23** 22:11:18.2±0.1,38°.93N×22°.44E,h5km,ML2.0,Error*
ellipse: s-maj=2.2km s-min=1.6km az=152.0
*ATH **23** 22:11:18.2,38°.93N×22°.45E,h13km±3km,ML2.0/5,Error*
ellipse: s-maj=3.5km s-min=0.8km az=318.0
THE 23 22:11:18.4,38°.92N×22°.44E,h3km±0km,ML2.0/11,Error
ellipse: s-maj=9.7km s-min=0.3km az=318.0,Greece

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AGG	**Agios Georgios**	**0.13**	**319**	P	Pg	22 11 28.0	-0.3
AGG				S	Sg	22 11 23.4	+0.6
AGG	**Agios Georgios**	**0.13**	**319**	P	Pg	22 11 21.3	+0.3
AGG				S	Sg	22 11 23.4	+0.6
AGG	**Agios Georgios**	**0.13**	**319**	P	Pg	22 11 21.3	+0.3
AGG				S	Sg	22 11 23.8	+1.0
AGG				AML	AML	22 11 24.1	
	comp=N,7313μm,0.3s						
AGG				AML	AML	22 11 25.1	
	comp=E,7254μm,0.3s						
EVR	**Evrytania**	**0.49**	**269**	P	Pg	22 11 28.0	+0.1
EVR				S	Sg	22 11 34.8	+0.5
EVR	**Evrytania**	**0.49**	**269**	P	Pg	22 11 28.0	+0.1
EVR				S	Sg	22 11 34.8	+0.5
EVR	**Evrytania**	**0.49**	**269**	P	Pg	22 11 28.2	+0.3
EVR				S	Sg	22 11 35.6	+1.3
LKR	**Lokris**	**0.51**	**122**	P	Pg	22 11 28.4	+0.2
LKR				S	Sg	22 11 35.7	+0.8
LKR	**Lokris**	**0.51**	**122**	P	Pg	22 11 28.4	+0.2
LKR				S	Sg	22 11 35.7	+0.8
LKR	**Lokris**	**0.51**	**122**	P	Pg	22 11 28.4	+0.1
LKR				S	Sg	22 11 35.7	+0.8
LKR				AML	AML	22 11 37.7	
	comp=E,476μm,0.1s						
LKR				AML	AML	22 11 37.7	
	comp=N,232μm,0.2s						
DSF	**Desfina**	**0.52**	**173**	P	Pg	22 11 28.0	-0.3
DSF				S	Sg	22 11 36.2	+1.2
DSF	**Desfina**	**0

IDC ***23*** *22:22:13.4±1.1,38˚09N×26˚87E,h0km,mb3.6/6, mb1 3.6/10,mb1mx3.4/41,mbtmp3.5/10,ML3.0/4,MS2.5/2, Ms1 2.5/2,ms1mx2.2/46,Error ellipse: s-maj=24.1km s-min=15.1km az=107.0*

ATH ***23*** *22:22:13.1,38˚06N×26˚79E,h28km±1km,ML3.8/4,Error ellipse: s-maj=2.5km s-min=0.9km az=245.0*

THE ***23*** *22:22:14.0,38˚11N×26˚83E,h3km±1km,ML3.6/8,Error ellipse: s-maj=1.9km s-min=0.7km az=223.0*

ISC 23 22:22:14.4±0.9,38˚10N±0˚01×26˚80E±0˚02,h9km±7km, n273,σ0§96/319,mb3.7/6,25C-19D,Aegean Sea

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ZEY	**˜zmir**	**0.27**	**301**	*i* P	**Pg**	**22 22 19.6**	**-0.2**
ZEY				*i* S	**Sg**	**22 22 24.0**	**+0.5**
URLA	**Izmir**	**0.31**	**329**	*i* P	**Pg**	**22 22 20.6**	**0.0**
URLA				*i* S	**Sg**	**22 22 25.7**	**+1.0**
URLA	**Izmir**	**0.31**	**329**	P	**Pg**	**22 22 20.6**	**0.0**
URLA				S	**Sg**	**22 22 25.7**	**+1.0**
BLCB	**Balcova**	**0.35**	**34**	*e*PG	**Pg**	**22 22 21.0**	**-0.3**
BLCB				*e*SG	**Sg**	**22 22 26.2**	**+0.3**
BLCB	**Balcova**	**0.35**	**34**	*e*Pg	**Pg**	**22 22 21.0**	**-0.3**
BLCB				*e*Sg	**Sg**	**22 22 26.2**	**+0.3**
SMG	**Samos**	**0.39**	**175**	P	**Pg**	**22 22 21.7**	**-0.4**
SMG				S	**Sg**	**22 22 27.7**	**+0.5**
SMG	**Samos**	**0.39**	**175**	P	**Pg**	**22 22 21.7**	**-0.4**
SMG				S	**Sg**	**22 22 26.8**	**-0.4**
SMG	**Samos**	**0.39**	**175**	P	**Pg**	**22 22 22.0**	**-0.1**
SMG				S	**Sg**	**22 22 26.8**	**-0.4**
SMG				AML	AML	22 22 28.2	
	comp=N,40180μm,0.4s						
SMG				AML	AML	22 22 28.3	
	comp=E,36999μm,0.4s						
IZM	**Izmir**	**0.47**	**51**	*e*PG	**Pg**	**22 22 23.8**	**+0.1**
IZM	**Izmir**	**0.47**	**51**	*e*Pg	**Pg**	**22 22 23.8**	**+0.1**
GCAM	**G?zelcaml?**	**0.53**	**139**	*i* P	**Pg**	**22 22 24.5**	**-0.2**
GCAM				*i* S	**Sg**	**22 22 31.9**	**+0.3**
GCAM	**G?zelcaml?**	**0.53**	**139**	P	**Pg**	**22 22 24.5**	**-0.2**
GCAM				S	**Sg**	**22 22 31.9**	**+0.3**
CHOS	**Chios island**	**0.65**	**296**	*e*PG	**Pg**	**22 22 26.2**	**-0.9**
CHOS				*e*SG	**Sg**	**22 22 35.3**	**-0.3**
CHOS	**Chios island**	**0.65**	**296**	P	**Pg**	**22 22 26.9**	**-0.2**
CHOS				S	**Sb**	**22 22 36.6**	**-0.6**
CHOS	**Chios island**	**0.65**	**296**	*e*Pg	**Pg**	**22 22 26.2**	**-0.9**
CHOS	**Chios island**	**0.65**	**296**	P	**Pg**	**22 22 26.8**	**-0.2**
CHOS				*e*Sg	**Sg**	**22 22 35.3**	**-0.3**
CHOS				S	**Sb**	**22 22 36.1**	**-1.1**
CHOS	**Chios island**	**0.65**	**296**	P	**Pg**	**22 22 26.8**	**-0.2**
CHOS				S	**Sb**	**22 22 36.1**	**-1.1**
CHOS				AML	AML	22 22 38.6	
	comp=N,10902μm,0.6s						
CHOS				AML	AML	22 22 39.9	
	comp=E,15676μm,0.2s						
AYDB	**Zeytinkoy-Aydi**	**0.88**	**100**	*e*PG	**Pg**	**22 22 31.5**	**+0.2**
AYDB	**Zeytinkoy-Aydi**	**0.88**	**100**	*e*Pg	**Pg**	**22 22 31.5**	**+0.2**
AYDN	**Tasoluk**	**0.96**	**117**	*i* P	**Pg**	**22 22 32.9**	**0.0**
AYDN				*i* S	**Sg**	**22 22 45.5**	**+0.1**
AYDN	**Tasoluk**	**0.96**	**117**	P	**Pg**	**22 22 32.9**	**0.0**
AYDN				S	**Sg**	**22 22 45.5**	**+0.1**
DKL	**Dikili**	**0.97**	**5**	*e*PG	**Pg**	**22 22 32.7**	**-0.5**
DKL	**Dikili**	**0.97**	**5**	*e*Pg	**Pg**	**22 22 32.7**	**-0.5**
BODT	**Bodrum**	**1.11**	**158**	*e*PN	**Pg**	**22 22 34.7**	**-1.1**
BODT	**Bodrum**	**1.11**	**158**	P	**Pg**	**22 22 34.4**	**-1.4**
BODT				S	**Sg**	**22 22 50.0**	**-0.2**
BODT	**Bodrum**	**1.11**	**158**	P	**Pg**	**22 22 34.4**	**-1.4**
BODT	**Bodrum**	**1.11**	**158**	*e*Pn	**Pg**	**22 22 34.7**	**-1.1**
BODT				S	**Sg**	**22 22 50.0**	**-0.2**
AKHS	**Akhisar**	**1.11**	**45**	*i* P	**Pg**	**22 22 35.2**	**-0.7**
AKHS				*i* S	**Sn**	**22 22 51.3**	**-0.4**
AKHS	**Akhisar**	**1.11**	**45**	P	**Pg**	**22 22 35.2**	**-0.7**
AKHS				S	**Sn**	**22 22 51.3**	**-0.4**
AKS	**Akhisar**	**1.11**	**45**	*e*PN	**Pg**	**22 22 35.7**	**-0.2**
AKS	**Akhisar**	**1.11**	**45**	*e*Pn	**Pg**	**22 22 35.7**	**-0.2**
AYVA	**Ayvalik**	**1.21**	**356**	*i* P	**Pb**	**22 22 36.3**	**-1.2**
AYVA				*i* S	**Sn**	**22 22 54.7**	**+0.7**
AYVA	**Ayvalik**	**1.21**	**356**	P	**Pb**	**22 22 36.3**	**-1.2**
AYVA				S	**Sn**	**22 22 54.7**	**+0.7**
PRK	**Paraskevi**	**1.22**	**340**	P	**Pn**	**22 22 36.4**	**-1.2**
PRK				S	**Sb**	**22 22 52.9**	**-0.5**
PRK	**Paraskevi**	**1.22**	**340**	P	**Pn**	**22 22 36.6**	**-1.0**
PRK				S	**Sb**	**22 22 52.9**	**-0.5**
PRK	**Paraskevi**	**1.22**	**340**	P	**Pn**	**22 22 36.6**	**-1.0**
PRK				S	**Sb**	**22 22 53.3**	**-0.1**
PRK				AML	AML	22 22 57.7	
	comp=N,8269μm,0.7s						
PRK				AML	AML	22 23 00.8	
	comp=E,12761μm,0.6s						
SIGR	**SIGRI**	**1.33**	**327**	*e*PN	**Pn**	**22 22 38.3**	**-0.9**
SIGR	**SIGRI**	**1.33**	**327**	P	**Pn**	**22 22 37.9**	**-1.3**
SIGR				S	**Sb**	**22 22 55.5**	**-1.2**
SIGR	**SIGRI**	**1.33**	**327**	P	**Pn**	**22 22 37.9**	**-1.3**
SIGR	**SIGRI**	**1.33**	**327**	*e*Pn	**Pn**	**22 22 38.3**	**-0.9**
SIGR				S	**Sb**	**22 22 55.5**	**-1.2**
SIGR	**SIGRI**	**1.33**	**327**	P	**Pn**	**22 22 37.9**	**-1.3**
SIGR				S	**Sb**	**22 22 54.6**	**-2.2**
SIGR				AML	AML	22 23 01.2	
	comp=E,5797μm,0.5s						
SIGR				AML	AML	22 23 02.0	
	comp=N,4547μm,0.5s						
APE	**Apeiranthos**	**1.44**	**225**	*i* P	**Pg**	**22 22 43.8**	**+1.8**
APE	**Apeiranthos**	**1.44**	**225**	P	**Pn**	**22 22 38.5**	**-2.2**
APE				S	**Sb**	**22 22 59.5**	**-0.3**
APE	**Apeiranthos**	**1.44**	**225**	P	**Pn**	**22 22 38.5**	**-2.2**
APE				S	**Sb**	**22 22 59.5**	**-0.3**
APE	**Apeiranthos**	**1.44**	**225**	P	**Pn**	**22 22 38.0**	**-2.6**
YER	**Yerkesik**	**1.52**	**129**	*e*PN	**Pb**	**22 22 42.5**	**-0.3**
YER	**Yerkesik**	**1.52**	**129**	P	**Pn**	**22 22 41.0**	**-0.8**
YER				S	**Sn**	**22 23 00.5**	**-1.3**
YER	**Yerkesik**	**1.52**	**129**	P	**Pn**	**22 22 41.0**	**-0.8**
YER	**Yerkesik**	**1.52**	**129**	*e*Pn	**Pb**	**22 22 42.5**	**-0.3**
YER				S	**Sn**	**22 23 00.5**	**-1.3**
KULA	**Kula-Manisa**	**1.52**	**74**	*e*PN	**Pb**	**22 22 42.5**	**-0.4**
KULA	**Kula-Manisa**	**1.52**	**74**	P	**Pn**	**22 22 40.9**	**-1.0**
KULA				S	**Sn**	**22 23 00.5**	**-1.4**
KULA	**Kula-Manisa**	**1.52**	**74**	P	**Pn**	**22 22 40.9**	**-1.0**
KULA	**Kula-Manisa**	**1.52**	**74**	*e*Pn	**Pb**	**22 22 42.5**	**-0.4**
KULA				S	**Sn**	**22 23 00.5**	**-1.4**
NIS1	**Nisyros Isl.**	**1.52**	**168**	*e*PN	**Pb**	**22 22 42.5**	**-0.3**
NIS1	**Nisyros Isl.**	**1.52**	**168**	P	**Pn**	**22 22 41.2**	**-0.6**
NIS1	**Nisyros Isl.**	**1.52**	**168**	*e*Pn	**Pb**	**22 22 42.5**	**-0.3**
NIS1	**Nisyros Isl.**	**1.52**	**168**	P	**Pn**	**22 22 41.2**	**-0.6**
BALB	**Balikesir**	**1.76**	**28**	*e*PN	**Pn**	**22 22 45.8**	**+0.8**
BALB	**Balikesir**	**1.76**	**28**	*e*Pn	**Pn**	**22 22 45.8**	**+0.8**
BALY	**Balya**	**1.76**	**21**	*i* P	**Pn**	**22 22 44.5**	**-0.6**
BALY	**Balya**	**1.76**	**21**	P	**Pn**	**22 22 44.5**	**-0.6**
EZN	**Ezine**	**1.76**	**348**	*e*PN	**Pn**	**22 22 45.5**	**+0.4**
EZN	**Ezine**	**1.76**	**348**	P	**Pn**	**22 22 44.0**	**-1.1**
EZN				S	**Sb**	**22 23 08.4**	**-0.7**
EZN	**Ezine**	**1.76**	**348**	P	**Pn**	**22 22 44.0**	**-1.1**
EZN	**Ezine**	**1.76**	**348**	*e*Pn	**Pn**	**22 22 45.5**	**+0.4**
EZN				S	**Sb**	**22 23 08.4**	**-0.7**
DEMI	**Demirci**	**1.78**	**57**	*i* P	**Pn**	**22 22 44.6**	**-0.7**
DEMI	**Demirci**	**1.78**	**57**	P	**Pn**	**22 22 44.6**	**-0.7**
DENT	**Denizli**	**1.80**	**100**	*e*PN	**Pn**	**22 22 45.4**	**-0.3**
DENT	**Denizli**	**1.80**	**100**	*e*Pn	**Pn**	**22 22 45.4**	**-0.3**
BOZC	**Bozcaada**	**1.83**	**342**	*i* P	**Pn**	**22 22 45.1**	**-0.9**
BOZC				*i* S	**Sn**	**22 23 07.4**	**-2.0**
KARY	**Karystos**	**1.86**	**269**	P	**Pn**	**22 22 45.9**	**-0.6**
KARY	**Karystos**	**1.86**	**269**	P	**Pn**	**22 22 45.9**	**-0.6**
UZP	**Denizli**	**1.88**	**91**	*i* P	**Pg**	**22 22 50.2**	**-0.2**
TURN	**Turunc**	**1.89**	**130**	*i* P	**Pn**	**22 22 44.0**	**-2.8**
DALY	**Dalyan (Mu˘la**	**1.95**	**130**	*e*PN	**Pn**	**22 22 48.5**	**+0.8**
DALY	**Dalyan (Mu˘la**	**1.95**	**130**	*e*Pn	**Pn**	**22 22 48.5**	**+0.8**
DURS	**Dursunbey**	**1.99**	**41**	*i* P	**Pn**	**22 22 47.4**	**-0.9**
DURS	**Dursunbey**	**1.99**	**41**	P	**Pn**	**22 22 47.4**	**-0.9**
THR3	**Thira Island,**	**2.02**	**214**	P	**Pb**	**22 22 50.3**	**-1.0**
THR3	**Thira Island,**	**2.02**	**214**	P	**Pb**	**22 22 50.3**	**-1.0**
SANT	**Santorini**	**2.03**	**212**	*i* P	**Pg**	**22 22 55.2**	**+1.9**
SANT	**Santorini**	**2.03**	**212**	S	**Sg**	**22 23 20.5**	**+0.9**
THR5	**Thira Island,**	**2.04**	**215**	*e*PN	**Pn**	**22 22 49.1**	**+0.2**
THR5	**Thira Island,**	**2.04**	**215**	P	**Pb**	**22 22 51.3**	**-0.3**
THR5	**Thira Island,**	**2.04**	**215**	*e*Pn	**Pn**	**22 22 49.1**	**+0.2**
THR5	**Thira Island,**	**2.04**	**215**	P	**Pb**	**22 22 51.3**	**-0.3**
GONE	**Gonen-Balikesi**	**2.06**	**19**	*e*PN	**Pn**	**22 22 49.9**	**+0.7**
GONE	**Gonen-Balikesi**	**2.06**	**19**	*e*Pn	**Pn**	**22 22 49.9**	**+0.7**
THR6	**Thira Island,**	**2.07**	**213**	P	**Pb**	**22 22 51.3**	**-0.8**
THR6	**Thira Island,**	**2.07**	**213**	P	**Pb**	**22 22 51.3**	**-0.8**
KHAL	**Karahalli**	**2.14**	**82**	*i* P	**Pn**	**22 22 50.0**	**-0.4**
KHAL	**Karahalli**	**2.14**	**82**	P	**Pn**	**22 22 50.0**	**-0.4**
ARG	**Arkhangelos**	**2.16**	**150**	P	**Pn**	**22 22 50.3**	**-0.2**
ARG	**Arkhangelos**	**2.16**	**150**	P	**Pn**	**22 22 50.3**	**-0.2**
KHL	**Karahalli**	**2.16**	**83**	*e*PN	**Pn**	**22 22 51.7**	**+1.1**
KHL	**Karahalli**	**2.16**	**83**	*e*Pn	**Pn**	**22 22 51.7**	**+1.1**
LIA	**Limnos Island**	**2.19**	**326**	P	**Pn**	**22 22 50.1**	**-0.9**
LIA				S	**Sn**	**22 23 18.4**	**+0.2**
LIA	**Limnos Island**	**2.19**	**326**	P	**Pn**	**22 22 50.9**	**-0.1**
LIA				S	**Sn**	**22 23 18.4**	**+0.2**
KNL	**Bal˘kesir**	**2.24**	**14**	*i* P	**Pn**	**22 22 49.8**	**-1.8**
LPK	**Lapseki**	**2.27**	**359**	*e*PN	**Pn**	**22 22 53.1**	**+1.0**
LPK	**Lapseki**	**2.27**	**359**	*e*Pn	**Pn**	**22 22 53.1**	**+1.0**
EREA	**Eretria**	**2.28**	**279**	P	**Pn**	**22 22 52.0**	**-0.3**
EREA				S	**Sb**	**22 23 21.9**	**-2.1**
EREA	**Eretria**	**2.28**	**279**	P	**Pn**	**22 22 51.9**	**-0.3**
EREA				S	**Sb**	**22 23 21.9**	**-2.1**
EREA	**Eretria**	**2.28**	**279**	P	**Pn**	**22 22 51.9**	**-0.3**
GELI	**Tayfur-Gelibol**	**2.31**	**354**	*e*PN	**Pn**	**22 22 53.2**	**+0.6**
GELI	**Tayfur-Gelibol**	**2.31**	**354**	*e*Pn	**Pn**	**22 22 53.2**	**+0.6**
PTL	**Penteli**	**2.31**	**270**	P	**Pn**	**22 22 52.0**	**-0.7**
PTL	**Penteli**	**2.31**	**270**	P	**Pn**	**22 22 52.0**	**-0.7**
PTL	**Penteli**	**2.31**	**270**	P	**Pn**	**22 22 52.0**	**-0.7**
GDZ	**Gediz**	**2.32**	**64**	*i* P	**Pn**	**22 22 52.5**	**-0.5**
GDZ	**Gediz**	**2.32**	**64**	P	**Pn**	**22 22 52.5**	**-0.5**
KRBG	**Karabiga-Canak**	**2.33**	**9**	*e*PN	**Pn**	**22 22 53.8**	**+1.0**
KRBG	**Karabiga-Canak**	**2.33**	**9**	*e*Pn	**Pn**	**22 22 53.8**	**+1.0**
FETY	**Fethiye**	**2.33**	**128**	*e*PN	**Pn**	**22 22 54.0**	**+1.0**
FETY	**Fethiye**	**2.33**	**128**	P	**Pn**	**22 22 52.9**	**-0.1**
FETY				S	**Sn**	**22 23 22.0**	**+0.2**
FETY	**Fethiye**	**2.33**	**128**	P	**Pn**	**22 22 52.9**	**-0.1**
FETY	**Fethiye**	**2.33**	**128**	*e*Pn	**Pn**	**22 22 54.0**	**+1.0**
FETY				S	**Sn**	**22 23 22.0**	**+0.2**
ATHU	**Athens Univers**	**2.38**	**268**	P	**Pn**	**22 22 52.7**	**-0.9**
ATHU	**Athens Univers**	**2.38**	**268**	P	**Pn**	**22 22 52.7**	**-0.9**
VLY	**Voula,Athens**	**2.39**	**265**	P	**Pn**	**22 22 53.2**	**-0.4**
VLY	**Voula,Athens**	**2.39**	**265**	P	**Pn**	**22 22 53.2**	**-0.4**
EDC	**Edincik**	**2.39**	**20**	*e*PN	**Pn**	**22 22 54.4**	**+0.6**
EDC	**Edincik**	**2.39**	**20**	*e*Pn	**Pn**	**22 22 54.4**	**+0.6**
KCTX	**Karacabey (Bur**	**2.48**	**29**	*e*PN	**Pn**	**22 22 55.8**	**+0.8**
KCTX	**Karacabey (Bur**	**2.48**	**29**	*e*Pn	**Pn**	**22 22 55.8**	**+0.8**
TVSB	**Tavsanli**	**2.48**	**56**	*e*PN	**Pn**	**22 22 55.6**	**+0.5**
TVSB	**Tavsanli**	**2.48**	**56**	*e*Pn	**Pn**	**22 22 55.6**	**+0.5**
ORLT	**Orhaneli**	**2.54**	**39**	*e*PN	**Pn**	**22 22 57.0**	**+1.2**
ORLT	**Orhaneli**	**2.54**	**39**	*e*Pn	**Pn**	**22 22 57.0**	**+1.2**
KARP	**Karpathos**	**2.56**	**173**	*e*PN	**Pn**	**22 22 56.9**	**+0.8**
KARP	**Karpathos**	**2.56**	**173**	P	**Pn**	**22 22 53.6**	**-2.5**
KARP	**Karpathos**	**2.56**	**173**	*e*Pn	**Pn**	**22 22 56.9**	**+0.8**
KARP	**Karpathos**	**2.56**	**173**	P	**Pn**	**22 22 53.6**	**-2.5**
SMTH	**Samothraki Isl**	**2.56**	**338**	P	**Pn**	**22 22 54.9**	**-1.2**
SMTH	**Samothraki Isl**	**2.56**	**338**	P	**Pn**	**22 22 55.4**	**-0.7**
SMTH	**Samothraki Isl**	**2.56**	**338**	P	**Pn**	**22 22 55.4**	**-0.7**
MRMT	**Marmara Adasi**	**2.58**	**14**	*e*PN	**Pn**	**22 22 56.3**	**-0.1**
MRMT	**Marmara Adasi**	**2.58**	**14**	*e*Pn	**Pn**	**22 22 56.3**	**-0.1**
ERIK	**Erikli-Kesan**	**2.58**	**355**	*e*PN	**Pn**	**22 22 56.4**	**+0.1**
ERIK	**Erikli-Kesan**	**2.58**	**355**	*e*Pn	**Pn**	**22 22 56.4**	**+0.1**
RKY	**Sarkoy-Tekirda**	**2.60**	**6**	*e*PN	**Pn**	**22 22 57.5**	**+0.8**
RKY	**Sarkoy-Tekirda**	**2.60**	**6**	*e*Pn	**Pn**	**22 22 57.5**	**+0.8**
ENEZ	**Enez**	**2.68**	**349**	*e*PN	**Pn**	**22 22 57.7**	**0.0**
ENEZ	**Enez**	**2.68**	**349**	P	**Pn**	**22 22 57.1**	**-0.6**
ENEZ				S	**Sn**	**22 23 29.9**	**-0.4**
ENEZ	**Enez**	**2.68**	**349**	P	**Pn**	**22 22 57.1**	**-0.6**
ENEZ	**Enez**	**2.68**	**349**	*e*Pn	**Pn**	**22 22 57.7**	**0.0**
ENEZ				S	**Sn**	**22 23 29.9**	**-0.4**
KESN	**Edirne-Kesan**	**2.73**	**358**	*i* P	**Pn**	**22 22 58.2**	**-0.5**
KESN	**Edirne-Kesan**	**2.73**	**358**	P	**Pn**	**22 22 58.2**	**-0.5**
MDNY	**Mudanya-Bursa**	**2.79**	**35**	*e*PN	**Pn**	**22 23 00.3**	**+1.2**
MDNY	**Mudanya-Bursa**	**2.79**	**35**	*e*Pn	**Pn**	**22 23 00.3**	**+1.2**
SKIA	**Skiathos**	**2.82**	**293**	P	**Pn**	**22 22 59.2**	**-0.4**
SKIA	**Skiathos**	**2.82**	**293**	P	**Pn**	**22 22 59.2**	**-0.4**
ELL	**Elmali**	**2.82**	**118**	*e*PN	**Pn**	**22 23 00.5**	**+0.8**
ELL	**Elmali**	**2.82**	**118**	*e*Pn	**Pn**	**22 23 00.5**	**+0.8**
ALN	**Alexandroupoli**	**2.85**	**348**	*e*PN	**Pn**	**22 23 01.1**	**+1.0**
ALN	**Alexandroupoli**	**2.85**	**348**	P	**Pn**	**22 22 59.3**	**-0.8**
ALN				S	**Sn**	**22 23 33.8**	**-0.7**
ALN	**Alexandroupoli**	**2.85**	**348**	P	**Pn**	**22 22 59.3**	**-0.8**
ALN	**Alexandroupoli**	**2.85**	**348**	*e*Pn	**Pn**	**22 23 01.1**	**+1.0**
ALN				S	**Sn**	**22 23 33.8**	**-0.7**
ALN	**Alexandroupoli**	**2.85**	**348**	P	**Pn**	**22 22 59.1**	**-1.0**
DID	**Didima**	**2.88**	**259**	P	**Pn**	**22 22 59.5**	**-1.0**
DID	**Didima**	**2.88**	**259**	P	**Pn**	**22 22 59.5**	**-1.0**
DID	**Didima**	**2.88**	**259**	P	**Pn**	**22 22 59.2**	**-1.3**
ARMT	**Armutlu**	**2.94**	**32**	*e*PN	**Pn**	**22 23 02.6**	**+1.3**
ARMT	**Armutlu**	**2.94**	**32**	*e*Pn	**Pn**	**22 23 02.6**	**+1.3**
TKR	**Tekirdag**	**2.94**	**11**	*e*PN	**Pn**	**22 23 02.5**	**+1.3**
TKR	**Tekirdag**	**2.94**	**11**	*e*Pn	**Pn**	**22 23 02.6**	**+1.3**
ISP	**Isparta**	**2.96**	**94**	*e*PN	**Pn**	**22 23 02.8**	**+1.2**
ISP	**Isparta**	**2.96**	**94**	*i* P	**Pn**	**22 23 01.8**	**+0.2**
ISP	**Isparta**	**2.96**	**94**	P	**Pn**	**22 23 01.0**	**-0.6**
ISP	**Isparta**	**2.96**	**94**	P	**Pn**	**22 23 01.0**	**-0.6**
ISP	**Isparta**	**2.96**	**94**	*e*Pn	**Pn**	**22 23 02.8**	**+1.2**
GEMT	**Gemlik**	**2.98**	**38**	*e*PN	**Pn**	**22 23 03.0**	**+1.1**
GEMT	**Gemlik**	**2.98**	**38**	*e*Pn	**Pn**	**22 23 03.0**	**+1.1**
ZKR	**Zakros**	**3.01**	**189**	P	**Pn**	**22 23 01.4**	**-0.9**
ZKR	**Zakros**	**3.01**	**189**	P	**Pn**	**22 23 01.4**	**-0.9**
ZKR	**Zakros**	**3.01**	**189**	P	**Pn**	**22 23 01.2**	**-1.0**
KORT	**Korkueli**	**3.03**	**110**	*i* P	**Pn**	**22 23 04.4**	**+1.8**
KORT	**Korkueli**	**3.03**	**110**	P	**Pn**	**22 23 04.4**	**+1.8**
PAIG	**Paliouri**	**3.04**	**308**	P	**Pn**	**22 23 02.3**	**-0.3**
PAIG	**Paliouri**	**3.04**	**308**	P	**Pn**	**22 23 02.3**	**-0.3**
IZI	**Iznik**	**3.05**	**42**	*e*PN	**Pn**	**22 23 04.4**	**+1.5**
IZI	**Iznik**	**3.05**	**42**	*e*Pn	**Pn**	**22 23 04.4**	**+1.5**
BCK	**Bucak**	**3.07**	**101**	*e*PN	**Pn**	**22 23 04.6**	**+1.5**
BCK	**Bucak**	**3.07**	**101**	*e*Pn	**Pn**	**22 23 04.6**	**+1.5**
CRLT	**Corlu**	**3.11**	**13**	*e*PN	**Pn**	**22 23 04.7**	**+1.1**
CRLT	**Corlu**	**3.11**	**13**	*e*Pn	**Pn**	**22 23 04.7**	**+1.1**
LAST	**Lasithi**	**3.12**	**200**	*i* P	**Pb**	**22 23 11.6**	**+1.6**
LAST	**Lasithi**	**3.12**	**200**	S	**Sg**	**22 23 52.8**	**-1.8**
OUR	**Ouranopolis**	**3.12**	**316**	P	**Pn**	**22 23 03.6**	**-0.2**
OUR	**Ouranopolis**	**3.12**	**316**	P	**Pn**	**22 23 03.6**	**-0.2**
CAVI	**Cavuskoy**	**3.17**	**47**	*e*PN	**Pn**	**22 23 05.8**	**+1.4**
CAVI	**Cavuskoy**	**3.17**	**47**	*e*Pn	**Pn**	**22 23 05.8**	**+1.4**
IDI	**Anoyia**	**3.20**	**209**	Pn	**Pn**	**22 23 04.2**	**-0.7**
	comp=N,0.6nm,0.3s,baz=0.8,slow=4.2,SNR=4.5						
IDI				Lg	Lg	22 23 56.9	
	comp=N,4.2nm,0.3s,baz=125,slow=23,SNR=6.8						
IDI				LR	LR	22 24 22.1	
	comp=N,91nm,20.6s,baz=72,slow=40						
IDI	**Anoyia**	**3.20**	**209**	*i* P	**Pb**	**22 23 12.3**	**+0.9**
IDI	**Anoyia**	**3.20**	**209**	S	**Sg**	**22 23 56.7**	**-0.4**
ADVT	**Abdulvahap**	**3.26**	**43**	*e*PN	**Pn**	**22 23 07.6**	**+1.9**
ADVT	**Abdulvahap**	**3.26**	**43**	*e*Pn	**Pn**	**22 23 07.6**	**+1.9**
KAVA	**Kavala**	**3.39**	**329**	P	**Pn**	**22 23 06.8**	**-0.6**
KAVA	**Kavala**	**3.39**	**329**	P	**Pn**	**22 23 06.8**	**-0.6**
CTKS	**Kestanelik-??a**	**3.40**	**22**	*e*PN	**Pn**	**22 23 09.4**	**+1.8**
CTKS	**Kestanelik-??a**	**3.40**	**22**	*e*Pn	**Pn**	**22 23 09.4**	**+1.8**
BGKT	**Bogazkoy**	**3.44**	**26**	*e*PN	**Pn**	**22 23 09.6**	**+1.5**
BGKT	**Bogazkoy**	**3.44**	**26**	*e*Pn	**Pn**	**22 23 09.6**	**+1.5**
ISK	**Istanbul-Kandi**	**3.44**	**30**	*e*PN	**Pn**	**22 23 10.1**	**+2.0**
ISK	**Istanbul-Kandi**	**3.44**	**30**	*e*Pn	**Pn**	**22 23 10.1**	**+2.0**
SIVA	**Sivas**	**3.47**	**208**	*i* P	**Pb**	**22 23 16.6**	**+0.7**
HRT	**Hereke**	**3.51**	**38**	*e*PN	**Pn**	**22 23 11.1**	**+1.9**
HRT	**Hereke**	**3.51**	**38**	*e*Pn	**Pn**	**22 23 11.1**	**+1.9**
AGG	**Agios Georgios**	**3.62**	**286**	P	**Pn**	**22 23 10.7**	**0.0**
AGG	**Agios Georgios**	**3.62**	**286**	P	**Pn**	**22 23 10.7**	**0.0**
EDRB	**Edirne**	**3.75**	**359**	P	**Pn**	**22 23 11.8**	**-0.5**
EDRB	**Edirne**	**3.75**	**359**	P	**Pn**	**22 23 11.8**	**-0.5**
HORT	**Hortiatis**	**3.80**	**312**	P	**Pn**	**22 23 13.4**	**+0.2**
HORT	**Hortiatis**	**3.80**	**312**	P	**Pn**	**22 23 13.4**	**+0.2**
ANX	**Ano Chora**	**3.87**	**279**	P	**Pn**	**22 23 14.2**	**+0.1**
ANX	**Ano Chora**	**3.87**	**279**	P	**Pn**	**22 23 14.2**	**+0.1**
SRS	**Serrai**	**3.90**	**322**	P	**Pn**	**22 23 13.6**	**-0.9**
SRS	**Serrai**	**3.90**	**322**	P	**Pn**	**22 23 13.6**	**-0.9**
NVR	**Nevrokopi**	**3.96**	**326**	P	**Pn**	**22 23 15.2**	**-0.1**
NVR	**Nevrokopi**	**3.96**	**326**	P	**Pn**	**22 23 15.2**	**-0.1**
BRTR	**Keskin Array B**	**5.58**	**71**	Pn	**Pn**	**22 23 38.7**	**+1.0**
	comp=N,0.5nm,0.3s,baz=252,slow=13,SNR=34						
BRTR				Pg	**Pg**	**22 24 00.2**	**-1.0**
	comp=N,0.6nm,0.3s,baz=248,slow=16,SNR=14						
BRTR				Lg	Lg	22 25 16.6	
	baz=286,slow=10,SNR=2.5						
BARS	**Barje**	**6.05**	**323**	*i* Pn	**Pn**	**22 23 44.7**	**+0.7**
HUMR	**Humele**	**6.57**	**349**	*i* P	Pn	22 23 45.2	-5.9
BOVS	**Bovan**	**6.74**	**327**	*i* Pn	**Pn**	**22 23 54.4**	**+0.9**
BOLS	**Boljevac**	**6.80**	**329**	*e*Pn	**Pn**	**22 23 53.3**	**-0.9**
CFR	**Carcaliu**	**7.14**	**8**	*i* P	**Pn**	**22 23 57.0**	**-2.0**
CFR	**Carcaliu**	**7.14**	**8**	*i* P	**Pn**	**22 23 57.0**	**-2.0**
GRUS	**Gruza**	**7.39**	**323**	*e*Pn	**Pn**	**22 24 02.7**	**+0.3**
KUBS	**Kucevo**	**7.39**	**330**	*e*Pn	**Pn**	**22 24 01.4**	**-1.0**
MLR	**Muntele Rosu**	**7.41**	**355**	Pn	**Pn**	**22 24 03.6**	**+0.8**
	comp=N,0.1nm,0.3s,baz=270,slow=4.4,SNR=7.1						
MLR				Lg	Lg	22 26 11.4	
	comp=N,0.0nm,0.3s,baz=223,slow=14,SNR=2.2						
MLR	**Muntele Rosu**	**7.41**	**355**	*i* P	**Pn**	**22 24 02.5**	**-0.3**
MLR	**Muntele Rosu**	**7.41**	**355**	*i* P	**Pn**	**22 24 02.5**	**-0.3**
IVAS	**Ivanjica**	**7.44**	**319**	*e*Pn	**Pn**	**22 24 04.0**	**+0.9**
ARR	**Arges**	**7.44**	**348**	*i* P	**Pn**	**22 24 03.5**	**+0.3**
ARR	**Arges**	**7.44**	**348**	*i* P	**Pn**	**22 24 03.5**	**+0.3**
VOIR		**7.45**	**350**	*i* P	**Pn**	**22 24 03.1**	**-0.2**
VOIR		**7.45**	**350**	*i* P	**Pn**	**22 24 03.1**	**-0.2**
PLOR	**Plostina**	**7.75**	**359**	*i* P	**Pn**

JOW	Kunigami	29.44	344	LR	LR	22 51 31.7		
	comp=Z,462nm,18.8s,baz=100,slow=37							
JOW	Kunigami	29.44	344	*e*P	P	22 39 39.5	+0.1	
	comp=Z,33nm,1.0s							
LEM	Lembang	29.48	259	LR	LR	22 53 29.9		
	comp=Z,514nm,18.8s,baz=78,slow=41							
SSLB	Suanglung	29.55	330	*e*P	P	22 39 40.3	-0.2	
	comp=Z,22nm,1.2s							
NACB	Ninganchiao	29.56	331	*e*P	P	22 39 40.2	-0.3	
	comp=Z,39nm,1.1s							
YHNB	Yeheng	30.09	331	*e*P	P	22 39 44.4	-0.9	
	comp=Z,34nm,1.2s							
STKA	Stephens Creek	30.44	172	P	P	22 39 48.3	+0.1	
	comp=Z,4.7nm,0.6s,baz=342,slow=8.3,SNR=14							
STKA				LR	LR	22 54 09.9		
	comp=Z,742nm,18.7s,baz=351,slow=40							
STKA	Stephens Creek	30.44	172	*e*P	P	22 39 47.9	-0.3	
STKA				pmax	pmax			
	comp=Z,4.0nm,1.1s							
STKA	Stephens Creek	30.44	172	*e*P	P	22 39 47.9	-0.3	
	comp=Z,3.6nm,1.1s							
MYKOM	Kota Tinggi	33.05	276	*e*P	P	22 40 10.6	-0.9	
	comp=Z,15nm,1.1s							
JNU	Nakatsue	35.00	351	P	P	22 40 25.5	-2.6	
	comp=Z,45nm,1.0s,baz=154,slow=6.7,SNR=10							
JNU	Nakatsue	35.00	351	*e*P	P	22 40 26.2	-1.9	
	comp=Z,18nm,1.0s							
CAN	Canberra	35.42	163	*e*P	P	22 40 32.5	+0.8	
CAN				pmax	pmax			
	comp=Z,58nm,1.4s							
CAN	Canberra	35.42	163	*e*P	P	22 40 32.5	+0.8	
	comp=Z,58nm,1.4s							
H11S3	WAKE ISLAND Hy	35.61	54	T	T	23 18 22.6		
	baz=231,slow=75,SNR=14							
H11S2	WAKE ISLAND Hy	35.62	54	T	T	23 17 57.8		
	baz=231,slow=75,SNR=7.6							
H11S1	WAKE ISLAND Hy	35.62	54	T	T	23 17 54.4		
	baz=231,slow=75,SNR=6.1							
NWAO	Narrogin (SRO)	36.13	208	*e*P	P	22 40 36.9	-0.9	
NWAO				pmax	pmax			
	comp=Z,23nm,1.2s							
NWAO	Narrogin (SRO)	36.13	208	*e*P	P	22 40 36.9	-0.9	
	comp=Z,23nm,1.2s							
IPM	Ipoh	36.19	280	*e*P	P	22 40 37.8	-0.8	
	comp=Z,13nm,1.0s							
TARA	Tarawa	36.31	86	*e*P	P	22 40 39.9	+0.3	
	comp=Z,72nm,0.8s							
H11N1	WAKE ISLAND Hy	36.41	53	T	T	23 19 29.8		
	baz=227,slow=74,SNR=13							
H11N2	WAKE ISLAND Hy	36.42	53	T	T	23 19 33.0		
	baz=167,slow=74,SNR=11							
INU	Inuyama	36.78	0	*e*P	P	22 40 42.9	-0.4	
	comp=Z,101nm,2.0s							
CHBT	CHBT	37.01	294	P	P	22 40 47.6	+2.0	
	comp=Z,16nm,0.9s							
SKNT	Sakolnakorn	37.22	301	P	P	22 40 49.1	+1.8	
	comp=Z,16nm,1.3s							
NJ2	Nanjing	37.53	335	*e*P	P	22 40 49.6	-0.2	
NJ2				pmax	pmax			
	comp=Z,20nm,1.0s							
KHON	Khomkaen	37.94	299	P	P	22 40 58.0	+4.6	
	comp=Z,7.0nm,1.2s							
MJAR	Matsushiro Arr	37.99	2	LR	LR	22 53 51.4		
	comp=Z,259nm,20.1s,baz=190,slow=32							
MAJO	Matsushiro	38.00	2	*e*P	P	22 40 54.2	+0.6	
MAJO				pmax	pmax			
	comp=Z,67nm,1.8s							
MAJO	Matsushiro	38.00	2	*e*P	P	22 40 54.2	+0.6	
	comp=Z,67nm,1.8s							
MJB9	Matsu-Tunnel	38.00	2	*e*P	P	22 40 53.2	-0.4	
	comp=Z,17nm,1.8s							
PSI	Prapat	38.05	277	P	P	22 40 52.1	-2.5	
	comp=Z,24nm,0.9s,baz=152,slow=3.7,SNR=16							
PSI	Prapat	38.05	277	*e*P	P	22 40 53.0	-1.6	
PSI				pmax	pmax			
	comp=Z,25nm,0.9s							
PSI	Prapat	38.05	277	*e*P	P	22 40 53.0	-1.6	
	comp=Z,24nm,0.9s							
WHN	Wuhan	38.45	328	P	P	22 40 57.3	-0.2	
WHN				S	S	22 46 59.8	+8.3	
WHN				pmax	pmax			
	comp=Z,61nm,0.9s							
WHN				pmax	pmax			
	comp=Z,300nm,6.4s							
WHN				LR	LR			
	comp=Z,840nm,24.4s							
CHAI	Chaiyaphum	38.50	298	P	P	22 40 59.0	+0.9	
	comp=Z,2.6nm,1.1s,comp=Z,56nm							
KS15	Wonju Array Si	39.73	349	*e*P	P	22 41 07.7	-0.4	
KSAR	Wonju Array Be	39.73	349	P	P	22 41 05.8	-2.3	
KSAR	Wonju Array Be	39.73	349	P	P	22 41 05.8	-2.3	
KSRS	Korea Array	39.73	349	P	P	22 41 05.8	-2.3	
	comp=Z,6.6nm,1.0s,baz=168,slow=10,SNR=14							
KSRS				LR	LR	22 56 51.5		
	comp=Z,231nm,18.9s,baz=174,slow=35							
KS01	Wonju Array Si	39.76	349	*e*P	P	22 41 06.7	-1.6	
LOEI	Loei	39.79	300	P	P	22 41 04.6	-4.3	
GYA	Guiyang	40.27	316	*e*P	P	22 41 14.0	+1.1	
GYA				pmax	pmax			
	comp=Z,10.0nm,1.0s							
UTTA	Uttaradit	40.50	300	P	P	22 41 15.7	+0.9	
	comp=Z,2.5nm,0.9s							
NANT	Nan	40.82	302	P	P	22 41 18.6	+1.1	
	comp=Z,2.9nm,1.1s,comp=Z,229nm							
COCO	West Island	40.91	253	*e*P	P	22 41 16.5	-1.7	
COCO				pmax	pmax			
	comp=Z,126nm,1.3s							
COCO	West Island	40.91	253	*e*P	P	22 41 16.5	-1.7	
	comp=Z,126nm,1.3s							
ENH	Enshi	41.00	323	*e*P	P	22 41 17.7	-1.1	
	comp=Z,73nm,1.3s							
LAMP	Lampang	41.62	300	P	P	22 41 25.8	+1.8	
	comp=Z,4.5nm,0.8s							
CRAI	Chiangrai	41.73	303	P	P	22 41 31.0	+6.0	
	comp=Z,140nm,0.8s,comp=Z,14µm							
CM01	Chiang Mai Arr	42.16	300	*e*P	P	22 41 27.6	-0.9	
TAU	Tasmania Unive	42.18	168	*e*P	P	22 41 27.6	-0.7	
TAU				pmax	pmax			
	comp=Z,117nm,1.4s							
TAU	Tasmania Unive	42.18	168	*e*P	P	22 41 27.6	-0.7	
	comp=Z,117nm,1.4s							
CM31	Chiang Mai Arr	42.19	300	*e*P	P	22 41 27.3	-1.4	
CMAR	Chiang Mai Arr	42.19	300	P	P	22 41 26.2	-2.5	
	comp=Z,1.8nm,0.5s,baz=116,slow=6.8,SNR=15							
CMAR				PcP	PcP	22 43 23.4	+0.6	
	comp=Z,1.0nm,0.6s,baz=125,slow=1.7,SNR=5.2							
CMAR				LR	LR	23 02 26.3		
	comp=Z,49nm,18.3s,baz=125,slow=41							
KMI	Kunming	42.32	311	P	P	22 41 31.1	+1.2	
KMI				pP	pP	22 41 39.8	+2.8	
KMI				sP	sP	22 41 43.3	+3.5	
KMI				PP	PP	22 43 11.0	+2.8	
KMI				S	S	22 47 46.3	-3.8	
KMI				pmax	pmax			
	comp=Z,11nm,1.4s							
KMI				pmax	pmax			
	comp=Z,120nm,5.4s							
KMI				LR	LR			
	comp=Z,160nm,15.9s							
KMI				LR	LR			
	comp=Z,250nm,15.5s							
KMI				LR	LR			
	comp=Z,260nm,15.9s							
CMMT	Chiang Mai	42.33	300	P	P	22 41 31.1	+1.2	
	comp=Z,7.8nm,1.3s							
CHTO	Chiang Mai	42.33	300	P	P	22 41 31.2	+1.3	
	comp=Z,36nm,1.3s							
CHTO	Chiang Mai	42.33	300	*e*P	P	22 41 28.5	-1.4	
CHTO				pmax	pmax			
	comp=Z,10.0nm,1.2s							
CHTO	Chiang Mai	42.33	300	*e*P	P	22 41 28.5	-1.4	
	comp=Z,10nm,1.2s							
FUNA	Funafuti	42.82	101	*e*P	P	22 41 33.2	-0.7	
	comp=Z,65nm,0.9s							
MSVF	Nonsavu	43.61	114	*e*P	P	22 41 40.2	-0.1	
MSVF				pmax	pmax			
	comp=Z,82nm,2.0s							
MSVF	Nonsavu	43.61	114	*e*P	P	22 41 40.2	-0.1	
	comp=Z,82nm,2.0s							
XAN	Xi'an	44.07	326	P	P	22 41 42.6	-1.1	
XAN				pP	pP	22 41 51.6	+0.8	
XAN				sP	sP	22 41 55.6	+2.0	
XAN				PP	PP	22 43 25.6	-1.1	
XAN				S	S	22 48 10.1	-5.0	
XAN				pmax	pmax			
	comp=Z,16nm,1.3s							
XAN				pmax	pmax			
	comp=Z,62nm,3.5s							
XAN				LR	LR			
	comp=Z,200nm,17.5s							
XAN				LR	LR			
	comp=Z,240nm,16.8s							
XAN				LR	LR			
	comp=Z,330nm,20.3s							
CD2	Chengdu	45.06	319	P	P	22 41 53.5	+1.8	
CD2				sP	sP	22 42 06.3	+4.7	
CD2				PP	PP	22 43 39.4	+2.1	
CD2				S	S	22 48 31.8	+2.2	
CD2				sS	sS	22 48 46.8	+5.5	
CD2				pmax	pmax			
	comp=Z,30nm,1.2s							
CD2				pmax	pmax			
	comp=Z,130nm,4.3s							
CD2				LR	LR			
	comp=Z,250nm,12.6s							
CD2				LR	LR			
	comp=Z,270nm,16.8s							
BJT	Baijiatuau	45.52	338	*e*P	P	22 41 54.0	-1.1	
BJT				pmax	pmax			
	comp=Z,63nm,1.3s							
BJT	Baijiatuau	45.52	338	*e*P	P	22 41 54.0	-1.1	
	comp=Z,63nm,1.3s							
BJI	Beijing	45.53	338	P	P	22 41 53.9	-1.3	
BJI				pmax	pmax			
	comp=Z,24nm,1.1s							
USRK	Ussuriysk Ar.	45.82	355	P	P	22 41 55.3	-2.1	
	comp=Z,7.0nm,0.9s,baz=178,slow=8.5,SNR=8.9							
USRK				LR	LR	22 58 39.1		
	comp=Z,344nm,19.6s,baz=169,slow=33							
ASAJ	Asahikawa	45.84	6	LR	LR	22 58 32.6		
	comp=Z,182nm,21.7s,baz=180,slow=33							
CN2	Changchun	46.34	349	*e*P	P	22 41 55.5	-6.0	
CN2				pmax	pmax			
	comp=Z,10.0nm,0.6s							
CN2				pmax	pmax			
	comp=Z,200nm,4.0s							
CN2				LR	LR			
	comp=Z,500nm,15.0s							
CN2				LR	LR			
	comp=Z,300nm,15.0s							
CN2				LR	LR			
	comp=Z,400nm,17.0s							
MDJ	Mudanjiang	46.48	353	P	P	22 42 02.0	-0.6	
MDJ				pmax	pmax			
	comp=Z,21nm,0.9s							
MDJ				pmax	pmax			
	comp=Z,96nm,5.8s							
HHC	Hu-ho-hao-te	48.09	334	*e*P	P	22 42 15.1	-0.3	
HHC				S	S	22 49 08.1	-4.7	
HHC				pmax	pmax			
	comp=Z,17nm,1.1s							
HHC				pmax	pmax			
	comp=Z,160nm,6.3s							
HHC				LR	LR			
	comp=Z,310nm,15.6s							
HHC				LR	LR			
	comp=Z,250nm,15.0s							
HHC				LR	LR			
	comp=Z,240nm,16.1s							
LZH	Lanzhou	48.44	324	*e*P	P	22 42 18.8	+0.6	
LZH				pP	pP	22 42 28.3	+2.9	
LZH				sP	sP	22 42 32.3	+4.1	
LZH				PP	PP	22 44 12.0	+0.9	
LZH				*e*S	S	22 49 16.4	-1.6	
LZH				sS	sS	22 49 32.5	+2.7	
LZH				pmax	pmax			
	comp=Z,59nm,1.5s							
LZH				pmax	pmax			
	comp=Z,170nm,4.8s							
LZH				LR	LR			
	comp=Z,280nm,13.6s							
LZH				LR	LR			
	comp=Z,310nm,13.5s							
LZH				LR	LR			
	comp=Z,430nm,12.7s							
YSS	Yuzh-Sakhalins	48.66	5	*e*P	P	22 42 19.5	0.0	
YSS				pmax	pmax			
	comp=Z,175nm,1.8s							
YSS	Yuzh-Sakhalins	48.66	5	*e*P	P	22 42 19.4	0.0	
	comp=Z,175nm,1.8s							
KLR	Kul'dur	50.84	356	P	P	22 42 34.2	-1.8	
	comp=Z,6.4nm,0.6s,baz=192,slow=2.4,SNR=18							
KLR				LR	LR	23 01 37.3		
	comp=Z,404nm,19.4s,baz=181,slow=33							
URZ	Urewera	51.92	140	*e*P	P	22 42 44.0	-0.3	
	comp=Z,34nm,1.4s							
BKZ	Black Stump Fm	52.04	141	*e*P	P	22 42 45.4	0.0	
GTA	Gaotai	53.03	324	*e*P	P	22 42 48.6	-4.2	
GTA				S	S	22 50 14.8	-6.9	
GTA				SS	SS	22 53 54.8	-6.4	
GTA				pmax	pmax			
	comp=Z,3.0nm,0.6s							
GTA				pmax	pmax			
	comp=Z,63nm,4.8s							
GTA				LR	LR			
	comp=Z,140nm,15.4s							
GTA				LR	LR			
	comp=Z,160nm,17.3s							
GTA				LR	LR			
	comp=Z,140nm,13.3s							
LSA	Lhasa	53.50	309	*e*P	P	22 42 56.7	-0.1	
LSA				pmax	pmax			
	comp=Z,8.0nm,0.7s							
LSA	Lhasa	53.50	309	*e*P	P	22 42 56.7	-0.1	
	comp=Z,7.9nm,0.7s							
NKL	Nikolayevsk	54.68	3	*e*P	P	22 43 03.8	-0.5	
NKL				pmax	pmax			
	comp=Z,43nm,1.0s							
ULN	Ulaanbaatar	55.67	336	*ce*P	P	22 43 12.0	+0.1	
ULN				pmax	pmax			
	comp=Z,30nm,2.5s							
ULN	Ulaanbaatar	55.67	336	*e*P	P	22 43 12.1	+0.3	
	comp=Z,24nm,1.5s							
MCQ	Macquarie Isla	55.76	165	*e*P	P	22 43 10.6	-1.5	
MCQ	Macquarie Isla	55.76	165	*e*P	P	22 43 10.6	-1.5	
	comp=Z,2µm,1.8s							
SONM	Songino Array	55.91	336	P	P	22 43 13.5	-0.1	
	comp=Z,2.9nm,1.0s,baz=143,slow=7.7,SNR=12							
SONM				LR	LR	23 06 17.6		
	comp=Z,426nm,20.7s,baz=110,slow=35							
SONA1	Songino Array	55.92	336	*e*P	P	22 43 13.1	-0.6	
GUN	Gumba	56.95	305	*e*P	P	22 43 20.8	-0.8	
	comp=Z,38nm,0.9s							
PEA0	Petropavlovsk-	57.30	15	*e*P	P	22 43 22.9	-0.2	
PETK	Petropavlovsk-	57.30	15	P	P	22 43 23.5	+0.4	
	comp=Z,8.4nm,1.0s,baz=168,slow=4.9,SNR=8.7							
KKN	Kakani	57.40	305	*e*P	P	22 43 22.8	-1.8	
	comp=Z,22nm,0.9s							
PET	Petropavlovsk	57.47	16	*e*P	P	22 43 24.5	+0.2	
PET				pmax	pmax			
	comp=Z,13nm,0.9s							
PET	Petropavlovsk	57.47	16	*e*P	P	22 43 24.5	+0.2	
	comp=Z,13nm,0.9s							
DMN	Daman	57.47	304	*e*P	P	22 43 23.6	-1.6	
	comp=Z,40nm,1.1s							
GKN	Gorkha	58.00	305	*e*P	P	22 43 27.3	-1.5	
	comp=Z,39nm,0.9s							
KOLN	Koldanda	58.78	304	*e*P	P	22 43 32.7	-1.6	
	comp=Z,42nm,1.1s							
ZAK	Zakamensk	59.18	336	*e*P	P	22 43 33.7	-2.8	
ZAK				pmax	pmax			
	comp=Z,16nm,1.4s							
PYUN	Piuthan	59.40	304	*e*P	P	22 43 37.5	-1.1	
	comp=Z,112nm,0.9s							
TLY	Talaya	60.04	337	*e*P	P	22 43 43.7	+1.4	
TLY				*e*S	S	22 51 48.7	-5.1	
TLY				pmax	pmax			
	comp=Z,10.0nm,0.9s							
TLY	Talaya	60.04	337	*e*P	P	22 43 42.2	-0.1	
	comp=Z,8.9nm,0.8s							
IRK	Irkutsk	60.24	338	*e*P	P	22 43 43.0	-0.6	
IRK				pmax	pmax			
	comp=Z,36nm,2.3s							
HYB	Hyderabad	60.34	291	*i* P	P	22 43 44.0	-1.0	
MOY	Mondy	61.10	335	*e*P	P	22 43 50.0	+0.3	
BOD	Bodaibo	61.99	346	*e*P	P	22 43 52.6	-2.8	
BOD				pmax	pmax			
	comp=Z,8.0nm,1.6s							
WMQ	Urumqi	62.94	322	*e*P	P	22 44 01.4	-0.7	
WMQ				pP	pP	22 44 12.3	+2.8	
WMQ				sP	sP	22 44 16.0	+3.8	
WMQ				S	S	22 52 29.9	-1.1	
WMQ				pmax	pmax			
	comp=Z,3.0nm,0.5s							
WMQ				pmax	pmax			
	comp=Z,34nm,3.6s							
YAK	Yakutsk	63.71	356	*e*P	P	22 44 06.8	+0.1	
YAK				pmax	pmax			
	comp=Z,18nm,1.4s							
YAK				pmax	pmax			
	comp=N,9.0nm,1.1s							
SEY	Seymchan	65.46	8	*ce*P	P	22 44 21.3	+3.1	
MK01	Makanchi Array	67.72	323	*e*P	P	22 44 30.6	-2.3	
MK31	Makanchi Array	67.73	323	*e*P	P	22 44 32.2	-0.9	
MK31	Makanchi Array	67.73	323	*e*P	P	22 44 32.2	-0.9	
MKAR	Makanchi Array	67.73	323	P	P	22 44 31.1	-2.0	
	comp=N,8.2nm,1.1s,baz=111,slow=7.1,SNR=17							
MKAR				LR	LR	23 13 39.4		
	comp=N,60nm,21.9s,baz=107,slow=36							
MKAR	Makanchi Array	67.73	323	*i* P	P	22 44 31.1	-2.0	
MKAR				pmax	pmax			
	comp=Z,9.0nm,1.1s							
MKAR	Makanchi Array	67.73	323	*e*P	P	22 44 32.2	-0.9	
KSH	Kashi	68.91	314	P	P	22 44 40.8	+0.1	
KSH				*es*P	sP	22 44 55.3	+4.4	
KSH				*e*PcP	PcP	22 45 05.4	+0.3	
KSH				*e*PP	PP	22 47 15.4	+2.3	
KSH				S	S	22 53 39.9	-4.2	
KSH				pmax	pmax			
	comp=Z,11nm,1.1s							
KSH				pmax	pmax			
	comp=Z,100nm,3.9s							
KSH				LR	LR			
	comp=Z,95nm,6.9s							
KSH				LR	LR			
	comp=Z,84nm,4.4s							
KSH				LR	LR			
	comp=Z,140nm,5.2s							
ZALV	Zalesovo Beam	70.02	330	P	P	22 44 45.6	-1.4	
	comp=Z,0.6nm,0.3s,baz=122,slow=7.2,SNR=7.7							
ZALV				LR	LR	23 17 08.0		
	comp=Z,70nm,18.1s,baz=68,slow=37							
AAK	Ala-Archa	71.06	316	P	P	22 44 52.4	-1.6	
	comp=Z,2.3nm,1.0s,baz=92,slow=6.8,SNR=4.7							
AAK	Ala-Archa	71.06	316	*e*P	P	22 44 51.3	-2.6	
AAK				pmax	pmax			
	comp=Z,5.0nm,1.1s							
AAK	Ala-Archa	71.06	316	*e*P	P	22 44 52.8	-1.1	
	comp=Z,25nm,0.9s							
NVS	Novosibirsk	71.28	331	*e*P	P	22 44 51.0	-3.7	
NVS				pmax	pmax			
	comp=Z,31nm,2.1s							
EKS2	Erkin-Say	71.56	316	*e*P	P	22 44 56.2	-0.7	
EKS2				pmax	pmax			
	comp=Z,4.0nm,0.9s							
EKS2	Erkin-Say	71.56	316	*e*P	P	22 44 56.2	-0.7	
	comp=Z,4.2nm,0.9s							
KURK	Kurchatov	71.70	325	*e*P	P	22 44 56.8	-0.6	
KURK				pmax	pmax			
	comp=Z,11nm,1.2s							
KURK	Kurchatov	71.70	325	*e*P	P	22 44 56.8	-0.6	
	comp=Z,10nm,1.2s							
KURBB	Kurchatov Arra	71.71	325	P	P	22 44 55.0	-2.5	
	comp=Z,4.8nm,1.0s,baz=114,slow=5.3,SNR=20							
BILL	Bilibino	72.48	11	*e*P	P	22 45 02.2	+0.5	
BILL				*e*		22 45 10.5		
BILL				*e*		22 45 19.2		
BILL				pmax	pmax			
	comp=Z,2.0nm,0.9s							
BILL				MLR	MLR			
	comp=Z,73nm,18.0s							
TIXI	Tiksi	73.32	357	P	P	22 45 04.5	-2.1	
	comp=Z,1.2nm,0.4s,baz=336,slow=4.9,SNR=5.9							
TIXI	Tiksi	73.32	357	*e*P	P	22 45 07.0	+0.4	
TIXI				pmax	pmax			
	comp=Z,6.0nm,1.5s							
TIXI	Tiksi	73.32	357	*e*P	P	22 45 04.7	-2.0	
	comp=Z,3.2nm,0.9s							
PPT	Papeete	73.97	108	LR	LR	23 14 24.4		
	comp=Z,64nm,21.2s,baz=342,slow=33							
PPT2	Papeete2	73.97	108	*e*LR	LR	23 08 03.4		
	comp=Z,162nm,26.8s							
KKAR	Karatay Array	73.98	316	*e*P	P	22 45 10.2	-0.9	
KKAR	Karatay Array	73.98	316	*e*P	P	22 45 10.2	-0.9	
VNDA	Vanda	77.04	175	P	P	22 45 28.1	+0.1	
	comp=Z,4.1nm,0.7s,baz=327,slow=7.1,SNR=25							
VNDA				LR	LR	23 20 59.1		
	comp=Z,527nm,18.5s,baz=353,slow=37							
VNDA	Vanda	77.04	175	*e*P	P	22 45 28.6	+0.6	
VNDA	Vanda	77.04	175	*e*P	P	22 45 28.6	+0.6	
BVAR	Borovoye Array	77.30	325	P	P	22 45 27.5	-2.4	
	comp=Z,4.9nm,0.9s,baz=106,slow=4.8,SNR=14							
BRVK	Borovoye	77.37	325	*ce*P	P	22 45 30.2	-0.1	
BRVK				pmax	pmax			
	comp=Z,18nm,2.5s							
BRVK	Borovoye	77.37	325	*e*P	P	22 45 29.6	-0.7	
	comp=Z,5.5nm,0.9s							
NRIK	Noril'sk	78.14	344	P	P	22 45 31.8	-2.4	
	comp=Z,2.4nm,0.6s,baz=88,slow=6.5,SNR=5.3							
NRIK				LR	LR	23 18 56.4		
	comp=Z,132nm,21.7s,baz=135,slow=35							
TTA	Tatalina	81.27	25	*e*P	P	22 45 51.1	-0.4	
TTA	Tatalina	81.27	25	*e*P	P	22 45 51.1	-0.4	
GEYT	Alibeck	82.02	308	P	P	22 45 55.1	-0.9	
	comp=Z,0.8nm,0.4s,baz=35,slow=5.4,SNR=6.2							
GEYT				LR	LR	23 23 48.0		
	comp=Z,105nm,22.0s,baz=155,slow=37							
MAW	Mawson	82.39	202	P	P	22 45 55.8	-1.4	
	comp=Z,5.8nm,1.1s,baz=76,slow=9.4,SNR=6.1							
MAW	Mawson	82.39	202	*e*P	P	22 45 58.2	+1.1	
MAW	Mawson	82.39	202	*e*P	P	22 45 58.2	+1.1	
ABKAR	Akbulak array	82.62	320	*e*P	P	22 45 59.0	+0.2	
AKTO	Aktyubinsk	84.06	321	P	P	22 46 05.3	-0.9	
	comp=Z,0.8nm,0.5s,baz=72,slow=6.4,SNR=6.0							
MLY	Manley	84.15	24	*e*P	P	22 46 09.3	+2.9	
ARU	Arti	84.81	327	P	P	22 46 08.5	-1.3	
	comp=Z,1.1nm,0.2s,baz=67,slow=4.3,SNR=5.3							
ARU	Arti	84.81	327	P	P	22 46 06.5	-3.3	
ARU	Arti	84.81	327	*e*P	P	22 46 08.4	-1.4	
COLD	Coldfoot	84.98	22	*e*P	P	22 46 11.5	+1.0	
DHY	Denali Highway	85.08	26	*e*P	P	22 46 10.7	-0.5	
ILAR	Eielson Array	85.67	25	P	P	22 46 11.7	-2.3	
	comp=Z,2.1nm,0.8s,baz=267,slow=4.3,SNR=18							
ILAR				LR	LR	23 25 33.3		
	comp=Z,44nm,18.1s,baz=266,slow=36							
ILB	Eielson Array	85.67	25	*e*P	P	22 46 13.8	-0.2	
IL1	Eielson Array	85.67	25	*e*P	P	22 46 12.1	-1.9	
QSPA	South Pole Qui	88.32	180	*e*P	P	22 46 26.7	-0.3	
	comp=Z,56nm,0.8s							
KBZ	Khabaz	93.89	314	LR	LR	23 32 51.8		
	comp=Z,30nm,21.9s,baz=68,slow=38							
KIV	Kislovodsk	94.04	314	*e*P	P	22 46 54.1	+0.1	
KIV				*e*		22 50 40.3		
KIV				pmax	pmax			
	comp=Z,4.0nm,1.0s							
KLMR	Klimovskoe	94.93	331	P	P	22 46 55.6	-2.0	
KLMR				pmax	pmax			
	comp=Z,13nm,1.4s							
OBN	Obninsk	97.14	325	*e*P	P	22 47 07.0	-0.7	
OBN				*e*		22 51 04.8		
OBN				pmax	pmax

RIGZ	**Rimuhau**	**2.51**	**314**	PN	Pn	22 42 04.5	-0.9
RIGZ				SN	Sn	22 42 33.1	-1.8
KAHZ	**Kahuranaki**	**2.54**	**284**	PN	Pn	22 42 06.0	+0.1
KAHZ				SN	Sn	22 42 32.7	-3.1
SNGZ	**Shannon Statio**	**2.70**	**308**	PN	Pn	22 42 07.4	-0.7
TWGZ	**Tauwhareparae**	**2.80**	**324**	PN	Pn	22 42 08.2	-1.4
TWGZ				SN	Sn	22 42 40.3	-2.0
MWZ	**Matawai**	**2.90**	**316**	PN	Pn	22 42 09.6	-1.3
MWZ				SN	Sn	22 42 41.9	-2.8
BFZ	**Birch Farm**	**2.93**	**264**	PN	Pn	22 42 10.5	-0.6
WMGZ	**Waiomatatini S**	**2.94**	**333**	PN	Pn	22 42 10.1	-1.2
DVHZ	**Dannevirke**	**2.99**	**272**	PN	Pn	22 42 11.8	-0.3
PNHZ	**Pukenui**	**3.02**	**279**	PN	Pn	22 42 12.2	-0.3
BKZ	**Black Stump Fm**	**3.05**	**294**	PN	Pn	22 42 12.7	-0.2
PRWZ	**Pori Road**	**3.13**	**267**	PN	Pn	22 42 13.8	-0.2
TSZ	**Takapari Road**	**3.17**	**276**	PN	Pn	22 42 14.5	-0.1
URZ	**Urewera**	**3.18**	**313**	PN	Pn	22 42 14.5	-0.2
MXZ	**Matakaoa Point**	**3.21**	**334**	PN	Pn	22 42 14.6	-0.4
HAZ	**Te Kaha**	**3.24**	**326**	PN	Pn	22 42 14.8	-0.7
MRHZ	**Matea Rd**	**3.26**	**299**	PN	Pn	22 42 15.6	-0.2
POWZ	**Post Office Ro**	**3.29**	**270**	PN	Pn	22 42 16.1	-0.1
TRWZ	**Traveller**	**3.45**	**253**	PN	Pn	22 42 17.2	-1.3
HOWZ	**Holdsworth Sta**	**3.50**	**261**	PN	Pn	22 42 17.8	-1.2
MTW	**Mount Morrison**	**3.54**	**257**	PN	Pn	22 42 18.4	-1.3
OGWZ	**Otaki Gorge**	**3.75**	**263**	PN	Pn	22 42 22.1	-0.4
CAW	**Cannon Point**	**3.86**	**259**	PN	Pn	22 42 23.0	-1.0

IDC 23 22:46:08.6±3.1, 30°34S×177°43W, h0km, mb3.4/2, mb1 3.7/2, mb1mx3.4/31, mbtmp3.4/2, Error ellipse: s-maj=177.6km s-min=24.2km az=160.0, Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ASAR	**Alice Springs**	**43.60**	**267**	P	P	22 54 14.7	-0.1
	0.4nm,0.8s,baz=104,slow=7.6,SNR=4.3						
WRA	**Warramunga Arr**	**44.59**	**272**	P	P	22 54 22.5	-0.2
	0.7nm,0.8s,baz=109,slow=7.8,SNR=3.7						
FINES	**FINESS Array B**	**145.26**	**340**	PKPbc	PKPdf	23 05 47.5	0.0
	1.3nm,0.9s,baz=28,slow=13,SNR=3.2						
AKASG	**Malin Array Be**	**151.55**	**323**	PKPbc	PKPbc	23 06 03.8	-0.5
	0.1nm,0.4s,baz=45,slow=2.7,SNR=5.6						
BRTR	**Keskin Array B**	**153.00**	**299**	PKPbc	PKPbc	23 06 07.3	-0.8
	0.3nm,0.7s,baz=33,slow=3.4,SNR=2.8						

ISCJB 23 22:56:12.6±1.1, 37°.55N±0°.06×144°.42E±0°.08, h33km, mb3.5/3, MS3.8/2, Error ellipse: s-maj=9.9km s-min=7.7km az=144.9
JMA 23 22:56:13.4±0.3, 37°.65N×144°.27E, h18km, M3.9
IDC 23 22:56:18.1±2.9, 36°.16N×143°.92E, h0km, mb3.6/3, mb1 3.9/4, mb1mx3.4/32, mbtmp3.6/4, ML3.5/1, MS3.8/2, Ms1 3.8/2, ms1mx2.8/53, Error ellipse: s-maj=70.3km s-min=28.7km az=46.0

ISC 23 22:56:13.5±1.7, 37°.58N±0°.08×144°.5E±0°.1, h35km, n21, σ0°87/23, mb3.6/3, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**2.68**	**305**	P	**Pn**	**22 56 54.6**	**+0.5**
OFUJ				S	**Sn**	**22 57 24.5**	**-0.9**
JFK	**Kawauchi**	**2.89**	**267**	P	**Pn**	**22 56 57.1**	**0.0**
JMK	**Ichinoseki**	**2.92**	**299**	P	**Pn**	**22 56 57.3**	**-0.1**
JMK				*e*S	**Sn**	**22 57 30.5**	**-0.8**
JMM	**Marumori**	**2.95**	**277**	P	**Pn**	**22 56 57.5**	**-0.3**
JMM				S	**Sn**	**22 57 31.2**	**-0.8**
JTH	**Tanohata**	**3.13**	**320**	P	**Pn**	**22 57 00.6**	**+0.3**
JTH				S	**Sn**	**22 57 35.1**	**-1.3**
JOU	**Okura**	**3.13**	**286**	P	**Pn**	**22 57 01.2**	**+0.9**
JOU				S	**Sn**	**22 57 36.6**	**+0.1**
JOM	**Ohasama**	**3.15**	**308**	P	**Pn**	**22 57 01.3**	**+0.8**
JOM				S	**Sn**	**22 57 36.6**	**-0.2**
JFT	**Otama**	**3.31**	**270**	S	**Sn**	**22 57 40.8**	**-0.1**
JYK	**Kaneyama**	**3.52**	**294**	P	**Pn**	**22 57 06.7**	**+1.0**
JRG	**Rokugo**	**3.53**	**302**	P	**Pn**	**22 57 07.3**	**+1.5**
JRG				S	**Sn**	**22 57 46.9**	**-0.5**
JANG	**Nango**	**3.63**	**321**	P	**Pn**	**22 57 08.1**	**+0.9**
MJAR	**Matsushiro Arr**	**5.14**	**260**	Pn	**Pn**	**22 57 28.9**	**+0.9**
	2.1nm,0.3s,baz=89,slow=15,SNR=21						
MJAR				Sn	**Sn**	**22 58 25.1**	**-0.9**
	0.5nm,0.3s,baz=84,slow=35,SNR=2.9						
MAT	**Matsushiro**	**5.14**	**260**	P	**Pn**	**22 57 29.7**	**+1.8**
H11N2	**WAKE ISLAND Hy**	**26.40**	**126**	T	T	23 28 45.4	
	baz=308						
H11N1	**WAKE ISLAND Hy**	**26.41**	**126**	T	T	23 28 45.4	
	baz=308						
H11N3	**WAKE ISLAND Hy**	**26.41**	**126**	T	T	23 28 45.4	
	baz=308						
MKAR	**Makanchi Array**	**45.91**	**302**	P	P	23 04 45.4	+13
	0.1nm,0.2s,baz=93,slow=10,SNR=2.4						
AAK	**Ala-Archa**	**52.39**	**299**	LR	LR	23 29 45.1	
	comp=Z,73nm,18.3s,baz=141,slow=38						
WRA	**Warramunga Arr**	**58.01**	**191**	P	**P**	**23 06 02.2**	**-0.5**
	0.5nm,0.8s,baz=10,slow=7.1,SNR=6.6						
ASAR	**Alice Springs**	**61.73**	**191**	P	**P**	**23 06 28.1**	**-0.2**
	0.3nm,0.5s,baz=6.7,slow=7.5,SNR=7.5						
YBH	**Yreka Blue Hor**	**68.05**	**54**	LR	LR	23 29 01.5	
	comp=Z,76nm,20.8s,baz=296,slow=28						

IDC 23 23:01:01.9±5.3, 36°.13N×141°.94E, h0km, mb3.7/2, mb1 3.6/4, mb1mx3.3/34, mbtmp3.7/4, ML3.2/2, MS3.3/1, Ms1 3.3/1, ms1mx2.6/49, Error ellipse: s-maj=89.7km s-min=31.6km az=95.0
JMA 23 23:01:01.2±0.2, 36°.25N×142°.15E, h77km, M3.0

ISC 23 23:01:05.0±2.5, 36°.20N±0°.08×141°.9E±0°.2, h23km, n7, σ1°19/8, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.96**	**239**	P	**Pb**	**23 01 22.6**	**-0.2**
JHO	**Hitachi**	**1.12**	**292**	P	**Pn**	**23 01 24.3**	**-1.0**
ONAJ	**Iwakimizuishiy**	**1.24**	**317**	P	**Pn**	**23 01 25.4**	**-1.6**
MJAR	**Matsushiro Arr**	**2.97**	**278**	Pn	**Pn**	**23 01 51.3**	**+0.6**
	2.9nm,0.3s,baz=114,slow=8.5,SNR=30						
JHJ	**Hachijo jima 2**	**3.52**	**210**	Pn	**Pn**	**23 01 57.7**	**-0.5**
	6.9nm,0.3s,baz=86,slow=22,SNR=3.6						
JHJ				Sn	**Sn**	**23 02 38.3**	**-0.9**
	15nm,0.3s,baz=124,slow=22,SNR=3.2						
JHJ				LR	LR	23 02 57.1	
	comp=Z,405nm,19.1s,baz=353,slow=33						
SONM	**Songino Array**	**28.55**	**305**	P	**P**	**23 06 59.3**	**+0.2**
	0.5nm,0.7s,baz=101,slow=8.1,SNR=4.0						
MKAR	**Makanchi Array**	**44.87**	**303**	P	**P**	**23 09 18.9**	**+1.5**
	0.5nm,0.5s,baz=92,slow=9.0,SNR=8.0						

CSEM 23 23:21:22.4, 38°.62N×29°.24W, h2km, ML2.9

PDA 23 23:21:22.4±1.2, 38°.62N×29°.24W, h2km±7km, MD3.5, ML2.9, 2D, Error ellipse: s-maj=7.6km s-min=7.1km az=75.0, Azores Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PCED	**Cedros**	**0.42**	**89**	*e*P	Pg	23 21 30.1	-0.3
PCED				*e*S	Sg	23 21 35.7	-0.1
PCED	**Cedros**	**0.42**	**89**	*e*P	Pg	23 21 30.1	-0.3
PCED				*e*S	Sg	23 21 35.7	-0.1
PCED				A	A	23 21 36.8	
	696nm,0.2s						
CALA	**Caldeira**	**0.42**	**95**	*e*P	Pg	23 21 30.2	-0.3
CALA				*e*S	Sg	23 21 35.8	-0.1
CALA	**Caldeira**	**0.42**	**95**	*e*P	Pg	23 21 30.2	-0.3
CALA				*e*S	Sg	23 21 35.8	-0.1
HOR	**Horta**	**0.48**	**101**	*e*P	Pg	23 21 30.8	-0.9
HOR				*e*S	Sg	23 21 37.6	-0.3
HOR	**Horta**	**0.48**	**101**	*e*P	Pg	23 21 30.8	-0.9
HOR				*e*S	Sg	23 21 37.6	-0.3
HOR				A	A	23 21 38.3	
	1µm,0.2s						
PCAN	**Candelaria**	**0.61**	**105**	*i*P	Pg	23 21 32.5	-1.6
PCAN				*e*S	Sg	23 21 40.6	-1.3
PCAN	**Candelaria**	**0.61**	**105**	*i*P	Pg	23 21 32.5	-1.6
PCAN				*e*S	Sg	23 21 40.6	-1.3
PCAN				A	A	23 21 43.8	
	367nm,0.3s						
PICO	**Pico**	**0.65**	**100**	*e*P	Pg	23 21 33.5	-1.3
PICO				*e*S	Sg	23 21 42.4	-0.8
PICO	**Pico**	**0.65**	**100**	*e*P	Pg	23 21 33.5	-1.3
PICO				*e*S	Sg	23 21 42.4	-0.8
PICO				A	A	23 21 42.8	
	520nm,0.3s						
PPNO	**Prainha do Nor**	**0.78**	**101**	*e*P	Pg	23 21 35.6	-1.7
PPNO				*e*S	Sg	23 21 45.7	-1.6
PPNO	**Prainha do Nor**	**0.78**	**101**	*e*P	Pg	23 21 35.6	-1.7
PPNO				*e*S	Sg	23 21 45.7	-1.6
PPNO				A	A	23 21 50.5	
	321nm,0.3s						
ROSA	**Rosais**	**0.78**	**82**	*e*P	Pg	23 21 35.5	-1.9
ROSA	**Rosais**	**0.78**	**82**	*e*P	Pg	23 21 35.5	-1.9
ROSA				A	A	23 21 47.8	
	347nm,0.4s						
PMAN	**Manadas**	**0.90**	**89**	*e*P	Pg	23 21 37.1	-2.5
PMAN				*e*S	Sg	23 21 48.0	-3.2
PMAN	**Manadas**	**0.90**	**89**	*e*P	Pg	23 21 37.1	-2.5
PMAN				*e*S	Sg	23 21 48.0	-3.2
PMAN				A	A	23 21 48.8	
	180nm,0.3s						
PGRA	**Graciosa**	**1.06**	**67**	*e*P	Pg	23 21 39.3	-3.4
PGRA				*e*S	Sg	23 21 51.9	-4.6
PGRA	**Graciosa**	**1.06**	**67**	*e*P	Pg	23 21 39.3	-3.4
PGRA				*e*S	Sg	23 21 51.9	-4.6
PGRA				A	A	23 21 52.4	
	44nm,0.3s						
ADH	**Angra Heroismo**	**1.57**	**88**	*e*P	Pn	23 21 46.6	-4.7
ADH				*e*S	Sn	23 22 04.5	-7.7
ADH	**Angra Heroismo**	**1.57**	**88**	*e*P	Pn	23 21 46.6	-4.7
ADH				*e*S	Sn	23 22 04.5	-7.7
ADH				A	A	23 22 05.9	
	31nm,0.3s						
PSET	**Sete Cidades**	**2.88**	**105**	*e*P	Pn	23 22 04.9	-4.5
PSET	**Sete Cidades**	**2.88**	**105**	*e*P	Pn	23 22 04.9	-4.5
PDA	**Ponta Delgada**	**2.95**	**106**	*e*P	Pn	23 22 05.8	-4.4
PDA	**Ponta Delgada**	**2.95**	**106**	*e*P	Pn	23 22 05.8	-4.4
CMLA	**Cha da Macela**	**3.05**	**105**	*e*P	Pn	23 22 07.2	-4.5
CMLA	**Cha da Macela**	**3.05**	**105**	*e*P	Pn	23 22 07.2	-4.5
BART	**Pico Bartolome**	**3.31**	**103**	*e*P	Pn	23 22 11.6	-3.8
BART	**Pico Bartolome**	**3.31**	**103**	*e*P	Pn	23 22 11.6	-3.8
PSMA	**Santa Maria**	**3.63**	**115**	*e*P	Pn	23 22 14.7	-5.0
PSMN	**Pico do Norte,**	**3.68**	**115**	*e*P	Pn	23 22 15.1	-5.2
PSMN	**Pico do Norte,**	**3.68**	**115**	*e*P	Pn	23 22 15.1	-5.2

ISK 23 23:25:00.9, 38°.11N×26°.82E, h6km, MD2.5
DDA 23 23:25:00.6, 38°.07N×26°.77E, h7km, Md2.8
CSEM 23 23:25:01.1±0.3, 38°.08N×26°.80E, h2km, MD2.5, Error ellipse: s-maj=6.2km s-min=4.4km az=53.0

ISC 23 23:25:01.0±1.0, 38°.10N±0°.03×26°.79E±0°.03, h12km±8km, n23, σ0°32/40, Aegean Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ZEY	**¨zmir**	**0.27**	**302**	*i* P	**Pg**	**23 25 06.1**	**-0.5**
ZEY				*i* S	**Sg**	**23 25 10.3**	**0.0**
BLCB	**Balcova**	**0.35**	**34**	*e*PG	**Pg**	**23 25 07.6**	**-0.4**
BLCB				*e*SG	**Sg**	**23 25 12.9**	**+0.2**
BLCB	**Balcova**	**0.35**	**34**	*e*Pg	**Pg**	**23 25 07.6**	**-0.4**
BLCB				*e*Sg	**Sg**	**23 25 12.9**	**+0.2**
IZM	**Izmir**	**0.47**	**51**	*e*PG	**Pg**	**23 25 10.4**	**+0.1**
IZM				*e*SG	**Sg**	**23 25 17.3**	**+0.6**
IZM	**Izmir**	**0.47**	**51**	*e*Pg	**Pg**	**23 25 10.4**	**+0.1**
IZM				*e*Sg	**Sg**	**23 25 17.3**	**+0.6**
GCAM	**G?zelcaml?**	**0.53**	**139**	*i* P	**Pg**	**23 25 11.1**	**-0.2**
GCAM				*i* S	**Sg**	**23 25 18.5**	**+0.2**
GCAM	**G?zelcaml?**	**0.53**	**139**	P	**Pg**	**23 25 11.1**	**-0.2**
GCAM				S	**Sg**	**23 25 18.5**	**+0.2**
CHOS	**Chios island**	**0.65**	**297**	*e*PG	**Pb**	**23 25 14.3**	**0.0**
CHOS				*e*SG	**Sb**	**23 25 23.9**	**+0.6**
CHOS	**Chios island**	**0.65**	**297**	*e*Pg	**Pb**	**23 25 14.3**	**0.0**
CHOS				*e*Sg	**Sb**	**23 25 23.9**	**+0.6**
AYDB	**Zeytinkoy-Aydi**	**0.88**	**100**	*e*PG	**Pg**	**23 25 17.9**	**-0.1**
AYDB				*e*SG	**Sb**	**23 25 30.0**	**0.0**
AYDB	**Zeytinkoy-Aydi**	**0.88**	**100**	*e*Pg	**Pg**	**23 25 17.9**	**-0.1**
AYDB				*e*Sg	**Sb**	**23 25 30.0**	**0.0**
AYDN	**Tasoluk**	**0.96**	**117**	*i* P	**Pb**	**23 25 19.6**	**0.0**
AYDN				*i* S	**Sg**	**23 25 31.9**	**-0.2**
AYDN	**Tasoluk**	**0.96**	**117**	P	**Pb**	**23 25 19.6**	**0.0**
AYDN				S	**Sg**	**23 25 31.9**	**-0.2**
DKL	**Dikili**	**0.98**	**5**	*e*PG	**Pb**	**23 25 19.8**	**0.0**
DKL				*e*SG	**Sn**	**23 25 33.6**	**-0.6**
DKL	**Dikili**	**0.98**	**5**	*e*Pg	**Pb**	**23 25 19.8**	**0.0**
DKL				*e*Sg	**Sn**	**23 25 33.6**	**-0.6**
BODT	**Bodrum**	**1.11**	**158**	*e*PN	**Pn**	**23 25 22.7**	**+0.3**
BODT	**Bodrum**	**1.11**	**158**	*e*Pn	**Pn**	**23 25 22.7**	**+0.3**
AKS	**Akhisar**	**1.12**	**45**	*e*PN	**Pb**	**23 25 22.3**	**+0.1**
AKS	**Akhisar**	**1.12**	**45**	*e*Pn	**Pb**	**23 25 22.3**	**+0.1**
KULA	**Kula-Manisa**	**1.53**	**74**	*e*PN	**Pb**	**23 25 29.0**	**-0.2**
KULA	**Kula-Manisa**	**1.53**	**74**	*e*Pn	**Pb**	**23 25 29.0**	**-0.2**
DEMI	**Demirci**	**1.78**	**57**	*i* P	**Pg**	**23 25 34.8**	**-0.3**
DEMI				*i* S	**Sg**	**23 25 58.2**	**0.0**
DEMI	**Demirci**	**1.78**	**57**	P	**Pg**	**23 25 34.8**	**-0.3**
DEMI				S	**Sg**	**23 25 58.2**	**0.0**

IDC 23 23:29:11.5±1.1, 37°.02N×140°.73E, h0km, mb3.5/7, mb1 3.7/10, mb1mx3.4/50, mbtmp3.5/10, ML3.4/2, Error ellipse: s-maj=24.7km s-min=20.8km az=93.0
ISCJB 23 23:29:12.2±0.6, 37°.02N±0°.03×140°.78E±0°.06, h16km±4km, mb3.5/7, Error ellipse: s-maj=8.1km s-min=5.2km az=19.7
JMA 23 23:29:12.8, 37°.02N×140°.65E, h6km±1km, M3.4
JMA Felt I J1.

ISC 23 23:29:11.8±1.4, 36°.96N±0°.04×140°.65E±0°.04, h0km±10km, n26, σ0°85/27, mb3.6/7,7C, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.19**	**38**	⇑P	**Pg**	**23 29 15.9**	**+0.5**
ONAJ				S	**Sg**	**23 29 18.2**	**+0.4**
JHO	**Hitachi**	**0.35**	**191**	⇑P	**Pb**	**23 29 20.9**	**0.0**
JHO				S	**Sb**	**23 29 26.8**	**-0.1**
JFK	**Kawauchi**	**0.45**	**23**	P	**Pg**	**23 29 20.3**	**-0.1**
JFK				S	**Sg**	**23 29 25.6**	**-0.6**
JSB	**Shiboa**	**0.59**	**272**	⇑P	**Pg**	**23 29 25.1**	**+0.2**
JFT	**Otama**	**0.62**	**336**	⇑P	**Pg**	**23 29 23.8**	**+0.2**
JFT				S	**Sg**	**23 29 31.5**	**-0.1**
JYT	**Yasato**	**0.81**	**207**	⇑P	**Pb**	**23 29 29.2**	**+0.4**
JFY	**Yanaizu**	**0.88**	**301**	⇑P	**Pg**	**23 29 29.2**	**+0.5**
JFY				S	**Sg**	**23 29 40.2**	**+0.1**
JMM	**Marumori**	**0.92**	**7**	⇑P	**Pg**	**23 29 28.6**	**-0.8**
MJAR	**Matsushiro Arr**	**2.01**	**259**	Pn	**Pb**	**23 29 48.4**	**-0.7**
	14nm,0.3s,baz=77,slow=15,SNR=75						
MJAR				Sn	**Sg**	**23 30 16.0**	**-0.3**
	12nm,0.3s,baz=88,slow=28,SNR=20						
MAT	**Matsushiro**	**2.01**	**259**	P	**Pb**	**23 29 48.4**	**-0.7**
MAT				S	**Sg**	**23 30 16.7**	**+0.4**
ASAJ	**Asahikawa**	**7.30**	**11**	Pn	**Pn**	**23 30 59.6**	**-0.1**
	0.7nm,0.3s,baz=208,slow=15,SNR=5.9						
ASAJ				Sn	**Sn**	**23 32 26.1**	**+2.8**
	0.7nm,0.3s,baz=182,slow=33,SNR=3.9						
USRK	**Ussuriysk Ar.**	**9.78**	**320**	Pn	**Pn**	**23 31 35.2**	**+1.5**
	0.1nm,0.3s,baz=138,slow=14,SNR=2.8						
KSRS	**Korea Array**	**10.17**	**277**	Pn	Pn	23 31 44.4	+5.5
	0.3nm,0.3s,baz=84,slow=13,SNR=4.3						
SONM	**Songino Array**	**27.32**	**304**	P	**P**	**23 34 57.4**	**-0.8**
	0.3nm,0.5s,baz=93,slow=8.9,SNR=3.3						
H11N2	**WAKE ISLAND Hy**	**28.63**	**120**	T	T	00 04 57.1	
	baz=313,slow=75,SNR=21						
H11N1	**WAKE ISLAND Hy**	**28.64**	**120**	T	T	00 04 58.1	
	baz=313,slow=75,SNR=21						
H11N3	**WAKE ISLAND Hy**	**28.65**	**120**	T	T	00 04 58.5	
	baz=313,slow=75,SNR=18						
H11S1	**WAKE ISLAND Hy**	**29.33**	**122**	T	T	00 05 53.7	
	baz=314,slow=76,SNR=24						
H11S3	**WAKE ISLAND Hy**	**29.33**	**122**	T	T	00 05 50.0	
	baz=314,slow=76,SNR=16						
H11S2	**WAKE ISLAND Hy**	**29.35**	**122**	T	T	00 05 51.4	
	baz=314,slow=76,SNR=9.4						
MKAR	**Makanchi Array**	**43.65**	**302**	P	**P**	**23 37 17.5**	**-0.4**
	0.2nm,0.2s,baz=86,slow=10,SNR=4.8						
KURBB	**Kurchatov Arra**	**45.57**	**308**	P	**P**	**23 37 32.2**	**-1.0**
	0.4nm,0.5s,baz=85,slow=7.8,SNR=6.3						
WRA	**Warramunga Arr**	**56.90**	**187**	P	**P**	**23 38 58.7**	**+0.1**
	0.8nm,0.5s,baz=2.6,slow=7.4,SNR=5.8						
ASAR	**Alice Springs**	**60.63**	**187**	P	**P**	**23 39 24.8**	**+0.4**
	0.3nm,0.7s,baz=12,slow=11,SNR=4.1						
YKA	**Yellowknife Ar**	**64.18**	**30**	P	**P**	**23 39 47.7**	**0.0**
	0.1nm,0.7s,baz=305,slow=7.5,SNR=3.3						
FINES	**FINESS Array B**	**68.60**	**332**	P	**P**	**23 40 15.0**	**-1.1**
	0.5nm,0.6s,baz=90,slow=8.8,SNR=2.4						

IDC 23 23:29:33.9±3.1, 34°.31N×23°.39E, h51km±24km, mb3.4/7, mb1 3.5/12, mb1mx3.2/52, mbtmp3.6/12, ML3.5/5, Error ellipse: s-maj=22.1km s-min=17.6km az=30.0
ATH 23 23:29:36.4, 34°.86N×23°.46E, h38km±1km, ML3.3/4, Error ellipse: s-maj=2.4km s-min=0.9km az=38.0
ISCJB 23 23:29:37.2±0.9, 34°.85N±0°.07×23°.58E±0°.06, h60km±5km, mb3.6/7, Error ellipse: s-maj=13.7km s-min=4.9km az=32.8
CSEM 23 23:29:38.2±0.3, 34°.88N×23°.57E, h30km, ML3.1, Error ellipse: s-maj=7.6km s-min=2.6km az=27.0
THE 23 23:29:40.0, 34°.94N×23°.66E, h27km±1km, ML3.1/7, Error ellipse: s-maj=2.3km s-min=0.9km az=47.0

ISC 23 23:29:36.7±1.3, 34°.80N±0°.08×23°.58E±0°.06, h46km±9km, n96, σ1°51/116, mb3.7/7, Crete

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GVD	**Gavdhos**	**0.42**	**85**	P	**Pn**	**23 29 47.5**	**+0.8**
GVD				S	**Sn**	**23 29 54.3**	**+0.4**
GVD	**Gavdhos**	**0.42**	**85**	P	**Pn**	**23 29 47.3**	**+0.5**
GVD				S	**Sn**	**23 29 54.3**	**+0.4**
GVD	**Gavdhos**	**0.42**	**85**	P	**Pn**	**23 29 47.3**	**+0.5**
GVD				S	**Sn**	**23 29 55.8**	**+1.9**
GVD				AML	AML	23 29 57.9	
	comp=E,10364µm,0.3s						
GVD				AML	AML	23 29 58.7	
	comp=N,9131µm,0.4s						
IMMV	**Iera Moni Meta**	**0.74**	**27**	P	**Pn**	**23 29 51.3**	**+0.5**
IMMV				S	**Sn**	**23 29 59.7**	**-1.3**
IMMV	**Iera Moni Meta**	**0.74**	**27**	P	**Pn**	**23 29 51.3**	**+0.5**
IMMV				S	**Sn**	**23 30 02.0**	**+1.1**
IMMV	**Iera Moni Meta**	**0.74**	**27**	P	**Pn**	**23 29 52.1**	**+1.4**
IMMV				S	**Sn**	**23 30 02.0**	**+1.1**
IMMV				AML	AML	23 30 04.0	
	comp=N,4942µm,0.7s						
IMMV				AML	AML	23 30 07.8	
	comp=E,4379µm,0.8s						
VAM	**Vamos**	**0.79**	**40**	P	**Pn**	**23 29 52.4**	**+0.9**
VAM				S	**Sn**	**23 30 02.2**	**-0.1**
VAM	**Vamos**	**0.79**	**40**	P	**Pn**	**23 29 52.4**	**+0.9**
VAM				S	**Sn**	**23 30 02.2**	**-0.1**
SIVA	**Sivas**	**1.04**	**78**	P	**Pn**	**23 29 56.4**	**+1.6**
SIVA				S	**Sn**	**23 30 10.3**	**+2.2**
SIVA	**Sivas**	**1.04**	**78**	P	**Pn**	**23 29 56.4**	**+1.6**
SIVA				S	**Sn**	**23 30 10.3**	**+2.2**
SIVA	**Sivas**	**1.04**	**78**	P	**Pn**	**23 29 57.3**	**+2.5**
SIVA				S	**Sn**	**23 30 12.7**	**+4.6**
SIVA				AML	AML	23 30 19.7	
	comp=E,5491µm,0.6s						
SIVA				AML	AML	23 30 20.4	
	comp=N,4331µm,0.5s						
ANKY	**Antikythira Is**	**1.09**	**348**	P	**Pn**	**23 29 56.9**	**+1.4**
ANKY				S	**Sn**	**23 30 10.4**	**+1.0**
ANKY	**Antikythira Is**	**1.09**	**348**	P	**Pn**	**23 29 56.9**	**+1.4**
ANKY				S	**Sn**	**23 30 10.4**	**+1.0**
ANKY	**Antikythira Is**	**1.09**	**348**	P	**Pn**	**23 29 57.9**	**+2.4**
ANKY				S	**Sn**	**23 30 10.9**	**+1.5**
ANKY				AML	AML	23 30 19.4	
	comp=N,911µm,1.1s						
ANKY				AML	AML	23 30 22.7	
	comp=E,969µm,0.6s						
IDI	**Anoyia**	**1.18**	**65**	P	**Pn**	**23 29 59.2**	**+2.4**
	comp=E,10.0nm,0.3s,baz=261,slow=7.0,SNR=82						
IDI				S	Sn	23 30 18.9	+7.1
	comp=E,33nm,0.3s,baz=141,slow=22,SNR=14						
IDI	**Anoyia**	**1.18**	**65**	P	**Pn**	**23 29 58.1**	**+1.3**
IDI				S	**Sn**	**23 30 12.1**	**+0.3**
IDI	**Anoyia**	**1.18**	**65**	P	**Pn**	**23 29 58.1**	**+1.3**
IDI				S	**Sn**	**23 30 12.1**	**+0.3**
IDI	**Anoyia**	**1.18**	**65**	P	**Pn**	**23 29 59.4**	**+2.5**
KYTH	**Kithira**	**1.54**	**344**	P	**Pn**	**23 30 04.4**	**+2.7**
KYTH				S	**Sn**	**23 30 20.8**	**+0.2**
KYTH	**Kithira**	**1.54**	**344**	P	**Pn**	**23 30 02.2**	**+0.5**
KYTH				S	**Sn**	**23 30 20.8**	**+0.2**
KYTH	**Kithira**	**1.54**	**344**	P	**Pn**	**23 30 02.2**	**+0.5**
LAST	**Lasithi**	**1.60**	**77**	P	**Pn**	**23 30 03.9**	**+1.3**
LAST	**Lasithi**	**1.60**	**77**	P	**Pn**	**23 30 03.9**	**+1.3**
LAST	**Lasithi**	**1.60**	**77**	P	**Pn**	**23 30 03.5**	**+2.7**
NPS	**Neapolis**	**1.73**	**74**	P	**Pn**	**23 30 06.5**	**+2.2**
NPS	**Neapolis**	**1.73**	**74**	P	**Pn**	**23 30 06.5**	**+2.2**
NPS	**Neapolis**	**1.73**	**74**	P	**Pn**	**23 30 06.8**	**+2.5**
VLI	**Veliai**	**1.98**	**345**	P	**P

comp=E,2.0nm,1.0s,baz=168,slow=10,SNR=3.5
KURBB **Kurchatov Arra** 42.35 51 P P 23 37 26.5 +0.5
comp=E,0.6nm,0.4s,baz=273,slow=8.7,SNR=15
MKAR **Makanchi Array** 45.05 56 P P 23 37 48.8 +0.9
comp=E,0.4nm,0.4s,baz=276,slow=7.4,SNR=5.3
ZALV **Zalesovo Beam** 46.19 46 P P 23 37 56.5 -0.1
comp=E,0.4nm,0.3s,baz=275,slow=8.2,SNR=3.0
SONM **Songino Array** 60.72 50 P P 23 39 43.8 +0.3
comp=E,0.3nm,0.5s,baz=287,slow=5.9,SNR=2.5

WEL 23 23:30:22.4±0.5, 38.44S×175.87E, h164km±3km, ML3.5/5, 14C-2D, Error ellipse: s-maj=2.6km s-min=2.5km az=90.0, North Island

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
TLZ	**Tolley Road**	**0.29**	**293**	⇑PN	Pn	23 30 45.0	+0.3
TLZ				SN	Sn	23 31 02.4	+0.8
TARZ	**Mount Tarawera**	**0.54**	**67**	PN	Pn	23 30 45.6	-0.1
KATZ	**Kakaramea**	**0.55**	**195**	PN	Pn	23 30 45.8	+0.1
MRHZ	**Matea Rd**	**0.58**	**133**	⇑PN	Pn	23 30 45.5	-0.3
MRHZ				SN	Sn	23 31 01.9	-1.9
KRVZ	**Karewarewa**	**0.67**	**196**	PN	Pn	23 30 46.1	-0.2
MUGZ	**Murupara**	**0.70**	**93**	⇑PN	Pn	23 30 45.9	-0.5
WTVZ	**West Tongariro**	**0.71**	**198**	PN	Pn	23 30 46.6	0.0
TWVZ	**Taurewa**	**0.71**	**208**	PN	Pn	23 30 46.6	0.0
OTVZ	**Oturere**	**0.74**	**193**	PN	Pn	23 30 46.8	0.0
TUVZ	**Tukino**	**0.84**	**192**	PN	Pn	23 30 47.5	+0.1
FWVZ	**Far West T-bar**	**0.85**	**197**	PN	Pn	23 30 47.6	-0.1
WHVZ	**Whangaehu Hut**	**0.87**	**195**	⇑PN	Pn	23 30 47.7	-0.1
BKZ	**Black Stump Fm**	**0.87**	**146**	⇑PN	Pn	23 30 47.3	-0.2
BKZ				AML	AML	23 31 06.9	
BKZ				AML	AML	23 31 08.9	
TRVZ	**Turoa**	**0.89**	**197**	⇑PN	Pn	23 30 48.0	0.0
WNVZ	**Wahianoa**	**0.91**	**194**	⇑PN	Pn	23 30 47.9	0.0
MOVZ	**Moawhango**	**0.97**	**186**	⇑PN	Pn	23 30 47.9	-0.4
NMHZ	**Naumai**	**0.98**	**132**	PN	Pn	23 30 49.1	+0.7
NMHZ				SN	Sn	23 31 08.5	0.0
URZ	**Urewera**	**0.99**	**80**	PN	Pn	23 30 47.8	-0.6
URZ				SN	Sn	23 31 05.9	-2.4
BHHZ	**Black Hill Sta**	**1.05**	**172**	⇑PN	Pn	23 30 48.6	-0.4
RAHZ	**Arahi**	**1.06**	**117**	PN	Pn	23 30 49.3	+0.3
RAHZ				SN	Sn	23 31 08.8	-0.7
KWHZ	**Kaweka Forest**	**1.07**	**157**	PN	Pn	23 30 49.1	0.0
MCHZ	**McNeill Hill**	**1.19**	**148**	PN	Pn	23 30 50.7	+0.6
ARHZ	**Aropaoanui**	**1.20**	**133**	PN	Pn	23 30 50.5	+0.4
WHHZ	**Waihua**	**1.24**	**121**	PN	Pn	23 30 50.7	+0.2
KRHZ	**Kereru**	**1.26**	**162**	⇑PN	Pn	23 30 50.6	-0.1
MWZ	**Matawai**	**1.30**	**86**	PN	Pn	23 30 50.8	-0.4
MWZ				AML	AML	23 31 11.5	
MWZ				AML	AML	23 31 13.9	
PNHZ	**Pukenui**	**1.49**	**170**	PN	Pn	23 30 52.5	-0.4
RIGZ	**Rimuhau**	**1.50**	**101**	PN	Pn	23 30 53.1	+0.1
KNZ	**Kokohu**	**1.52**	**113**	PN	Pn	23 30 53.2	0.0
CKHZ	**Cape Kidnapper**	**1.53**	**143**	PN	Pn	23 30 53.5	+0.2
TKGZ	**Te Karaka**	**1.55**	**90**	PN	Pn	23 30 54.1	+0.5
KAHZ	**Kahuranaki**	**1.56**	**150**	⇓PN	Pn	23 30 53.8	+0.2
TSZ	**Takapari Road**	**1.61**	**178**	⇑PN	Pn	23 30 53.7	-0.5
PRGZ	**Paritu Road**	**1.64**	**108**	PN	Pn	23 30 55.1	+0.5
HAZ	**Te Kaha**	**1.66**	**66**	PN	Pn	23 30 53.8	-0.8
WPHZ	**Waipukurau**	**1.68**	**165**	PN	Pn	23 30 54.5	-0.4
TWGZ	**Tauwhareparae**	**1.68**	**81**	PN	Pn	23 30 55.4	+0.5
MHGZ	**Mahia Peninsul**	**1.74**	**115**	PN	Pn	23 30 55.6	+0.1
PXZ	**Pawanui**	**1.76**	**154**	PN	Pn	23 30 55.4	-0.3
PXZ				AML	AML	23 31 22.6	
OHWZ	**Ohakea**	**1.81**	**194**	⇓PN	Pn	23 30 56.2	-0.1
DVHZ	**Dannevirke**	**1.87**	**173**	PN	Pn	23 30 56.0	-0.9
PUZ	**Puketiti**	**1.91**	**80**	PN	Pn	23 30 58.4	+1.0
PUZ				SN	Sn	23 31 21.7	-2.7
PRHZ	**Porangahau**	**1.91**	**162**	PN	Pn	23 30 56.9	-0.5
POWZ	**Post Office Ro**	**1.95**	**182**	PN	Pn	23 30 56.8	-0.9
ANWZ	**Angora Road**	**2.07**	**167**	⇑PN	Pn	23 30 58.5	-0.6
PRWZ	**Pori Road**	**2.11**	**178**	PN	Pn	23 30 58.7	-0.8
MRZ	**Mangatainoka R**	**2.23**	**186**	⇑PN	Pn	23 30 59.6	-1.3
BFZ	**Birch Farm**	**2.25**	**173**	PN	Pn	23 31 00.1	-1.2
TIWZ	**Tintock**	**2.33**	**180**	AML	AML	23 31 31.7	
TIWZ				AML	AML	23 31 33.3	
OGWZ	**Otaki Gorge**	**2.43**	**193**	PN	Pn	23 31 02.0	-1.3
HOWZ	**Holdsworth Sta**	**2.47**	**186**	PN	Pn	23 31 02.1	-1.7
CPWZ	**Castlepoint**	**2.48**	**174**	PN	Pn	23 31 02.9	-1.0
KIW	**Kapiti Island**	**2.53**	**197**	PN	Pn	23 31 02.8	-1.7
TMWZ	**Te Maipa**	**2.66**	**180**	PN	Pn	23 31 04.4	-1.7
MTW	**Mount Morrison**	**2.73**	**186**	PN	Pn	23 31 04.8	-2.1
CAW	**Cannon Point**	**2.73**	**193**	PN	Pn	23 31 05.2	-1.8
DUWZ	**D'Urville Isla**	**2.80**	**212**	PN	Pn	23 31 06.0	-1.8
TRWZ	**Traveller**	**2.95**	**183**	PN	Pn	23 30 57.8	-1.9
MSWZ	**Moikau Station**	**3.01**	**189**	PN	Pn	23 31 08.1	-2.3
TCW	**Tory Channel**	**3.02**	**204**	PN	Pn	23 31 08.5	-2.1
PLWZ	**Palliser**	**3.16**	**188**	PN	Pn	23 31 09.7	-2.6
TUWZ	**Tuamarina**	**3.33**	**206**	PN	Pn	23 31 12.1	-2.3
NNZ	**Nelson**	**3.37**	**214**	⇑PN	Pn	23 31 12.5	-2.4
QRZ	**Quartz Range**	**3.51**	**226**	PN	Pn	23 31 13.9	-2.8
THZ	**Tophouse**	**4.02**	**214**	PN	Pn	23 31 20.7	-2.6

*ISCJB **23** 23:32:28.0±0.4, 38.07N±0.02×26.77E±0.03, h5km±3km, Error ellipse: s-maj=3.7km s-min=2.7km az=144.9*
*CSEM **23** 23:32:27.8±0.2, 38.06N×26.76E, h2km, MD3.0, Error ellipse: s-maj=3.8km s-min=2.9km az=57.0*
*THE **23** 23:32:27.8, 38.10N×26.77E, h5km±1km, ML2.5/4, Error ellipse: s-maj=1.7km s-min=0.7km az=243.0*
*ISK **23** 23:32:27.8, 38.09N×26.80E, h5km, MD3.1*
*DDA **23** 23:32:28.1, 38.08N×26.78E, h7km, Md3.0*
ISC 23 23:32:28.1±0.9, 38.07N±0.02×26.77E±0.02, h11km±8km, n82, σ0°90/118, Aegean Sea

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
ZEY	**˜zmir**	**0.27**	**309**	*i* S	**Sg**	**23 32 37.8**	**+0.4**
URLA	**Izmir**	**0.32**	**335**	*i* P	**Pg**	**23 32 34.5**	**-0.2**
URLA				*i* S	**Sg**	**23 32 39.6**	**+0.6**
URLA	**Izmir**	**0.32**	**335**	P	**Pg**	**23 32 34.5**	**-0.2**
URLA				S	**Sg**	**23 32 39.6**	**+0.6**
SMG	**Samos**	**0.36**	**172**	P	**Pg**	**23 32 35.7**	**+0.3**
SMG				S	**Sg**	**23 32 41.1**	**+0.9**
SMG	**Samos**	**0.36**	**172**	P	**Pg**	**23 32 35.7**	**+0.3**
SMG				S	**Sg**	**23 32 41.1**	**+0.9**
BLCB	**Balcova**	**0.38**	**34**	*e*PG	**Pg**	**23 32 34.9**	**-0.8**
BLCB				*e*SG	**Sg**	**23 32 40.1**	**-0.7**
BLCB	**Balcova**	**0.38**	**34**	*e*Pg	**Pg**	**23 32 34.9**	**-0.8**
BLCB				*e*Sg	**Sg**	**23 32 40.1**	**-0.7**
IZM	**Izmir**	**0.51**	**49**	*e*PG	**Pg**	**23 32 37.8**	**-0.3**
IZM				*e*SG	**Sg**	**23 32 45.0**	**+0.2**
IZM	**Izmir**	**0.51**	**49**	*e*Pg	**Pg**	**23 32 37.8**	**-0.3**
IZM				*e*Sg	**Sg**	**23 32 45.0**	**+0.2**
GCAM	**G?zelcaml?**	**0.52**	**135**	*i* P	**Pg**	**23 32 38.3**	**+0.1**
GCAM				*i* S	**Sb**	**23 32 46.1**	**-0.7**
GCAM	**G?zelcaml?**	**0.52**	**135**	P	**Pg**	**23 32 38.3**	**+0.1**
GCAM				S	**Sb**	**23 32 46.1**	**-0.7**
CHOS	**Chios island**	**0.65**	**300**	*e*PG	**Pg**	**23 32 41.0**	**+0.3**
CHOS				*e*SG	**Sb**	**23 32 50.5**	**-0.1**
CHOS	**Chios island**	**0.65**	**300**	P	**Pg**	**23 32 40.3**	**-0.4**
CHOS				S	**Sg**	**23 32 49.4**	**+0.1**
CHOS	**Chios island**	**0.65**	**300**	P	**Pg**	**23 32 40.3**	**-0.4**
CHOS	**Chios island**	**0.65**	**300**	*e*Pg	**Pg**	**23 32 41.0**	**+0.3**
CHOS				S	**Sg**	**23 32 49.4**	**+0.1**
CHOS				*e*Sg	**Sb**	**23 32 50.5**	**-0.1**
AYDB	**Zeytinkoy-Aydi**	**0.89**	**97**	*e*PG	**Pg**	**23 32 45.1**	**-0.3**
AYDB				*e*SG	**Sb**	**23 32 57.4**	**-0.3**
AYDB	**Zeytinkoy-Aydi**	**0.89**	**97**	*e*Pg	**Pg**	**23 32 45.1**	**-0.3**
AYDB				*e*Sg	**Sb**	**23 32 57.4**	**-0.3**
AYDN	**Tasoluk**	**0.97**	**115**	*i* P	**Pg**	**23 32 46.6**	**-0.2**
AYDN				*i* S	**Sg**	**23 32 58.9**	**-0.5**
AYDN	**Tasoluk**	**0.97**	**115**	P	**Pg**	**23 32 46.6**	**-0.2**
AYDN				S	**Sg**	**23 32 58.8**	**-0.5**
DKL	**Dikili**	**1.01**	**6**	*e*PG	**Pg**	**23 32 47.1**	**-0.4**
DKL				*e*SG	**Sb**	**23 33 01.4**	**+0.5**
DKL	**Dikili**	**1.01**	**6**	*e*Pg	**Pg**	**23 32 47.1**	**-0.4**
DKL				*e*Sg	**Sb**	**23 33 01.4**	**+0.5**
BODT	**Bodrum**	**1.09**	**157**	*e*PN	**Pg**	**23 32 48.8**	**-0.3**
BODT	**Bodrum**	**1.09**	**157**	*e*Pn	**Pg**	**23 32 48.8**	**-0.3**
BDRM	**Kayabasi**	**1.14**	**152**	*i* P	**Pg**	**23 32 49.1**	**-0.9**
BDRM	**Kayabasi**	**1.14**	**152**	P	**Pg**	**23 32 49.1**	**-0.9**
AKHS	**Akhisar**	**1.15**	**45**	*i* P	**Pg**	**23 32 49.9**	**-0.4**
AKHS				*i* S	**Sg**	**23 33 04.8**	**-0.4**
AKHS	**Akhisar**	**1.15**	**45**	P	**Pg**	**23 32 49.9**	**-0.4**
AKHS				S	**Sg**	**23 33 04.8**	**-0.4**
AKS	**Akhisar**	**1.15**	**45**	*e*PN	**Pg**	**23 32 49.8**	**-0.5**
AKS	**Akhisar**	**1.15**	**45**	*e*Pn	**Pg**	**23 32 49.8**	**-0.5**
AYVA	**Ayvalik**	**1.24**	**357**	*i* P	**Pb**	**23 32 51.6**	**0.0**
AYVA				*i* S	**Sn**	**23 33 09.7**	**+1.5**
AYVA	**Ayvalik**	**1.24**	**357**	P	**Pb**	**23 32 51.6**	**0.0**
AYVA				S	**Sn**	**23 33 09.7**	**+1.5**
PRK	**Paraskevi**	**1.24**	**342**	P	**Pb**	**23 32 50.3**	**-1.3**
PRK				S	**Sg**	**23 33 07.2**	**-0.9**
PRK	**Paraskevi**	**1.24**	**342**	P	**Pb**	**23 32 50.3**	**-1.3**
PRK				S	**Sg**	**23 33 07.2**	**-0.9**
SIGR	**SIGRI**	**1.35**	**328**	*e*PN	**Pb**	**23 32 53.6**	**+0.2**
SIGR	**SIGRI**	**1.35**	**328**	P	**Pn**	**23 32 51.5**	**-1.4**
SIGR				S	**Sb**	**23 33 09.4**	**-1.3**
SIGR	**SIGRI**	**1.35**	**328**	P	**Pn**	**23 32 51.5**	**-1.4**
SIGR	**SIGRI**	**1.35**	**328**	*e*Pn	**Pb**	**23 32 53.7**	**+0.2**
SIGR				S	**Sb**	**23 33 09.4**	**-1.3**
APE	**Apeiranthos**	**1.40**	**225**	*e*PN	**Pg**	**23 32 55.3**	**+0.2**
APE	**Apeiranthos**	**1.40**	**225**	P	**Pn**	**23 32 52.4**	**-1.3**
APE				S	**Sn**	**23 33 13.0**	**+0.7**
APE	**Apeiranthos**	**1.40**	**225**	P	**Pn**	**23 32 52.4**	**-1.3**
APE	**Apeiranthos**	**1.40**	**225**	*e*Pn	**Pg**	**23 32 55.3**	**+0.2**
APE				S	**Sn**	**23 33 13.0**	**+0.7**
YER	**Yerkesik**	**1.52**	**127**	*e*PN	**Pb**	**23 32 56.3**	**-0.1**
YER	**Yerkesik**	**1.52**	**127**	P	**Pn**	**23 32 54.7**	**-0.7**
YER				S	**Sn**	**23 33 15.8**	**+0.6**
YER	**Yerkesik**	**1.52**	**127**	P	**Pn**	**23 32 54.7**	**-0.7**
YER	**Yerkesik**	**1.52**	**127**	*e*Pn	**Pb**	**23 32 56.3**	**-0.1**
YER				S	**Sn**	**23 33 15.8**	**+0.6**
KULA	**Kula-Manisa**	**1.55**	**73**	*e*PN	**Pn**	**23 32 56.4**	**+0.5**
KULA	**Kula-Manisa**	**1.55**	**73**	P	**Pn**	**23 32 54.5**	**-1.3**
KULA				S	**Sn**	**23 33 15.7**	**-0.3**
KULA	**Kula-Manisa**	**1.55**	**73**	P	**Pn**	**23 32 54.5**	**-1.3**
KULA	**Kula-Manisa**	**1.55**	**73**	*e*Pn	**Pn**	**23 32 56.4**	**+0.5**
KULA				S	**Sn**	**23 33 15.7**	**-0.3**
BALB	**Balikesir**	**1.79**	**29**	*e*PN	**Pn**	**23 32 59.8**	**+0.7**
BALB	**Balikesir**	**1.79**	**29**	*e*Pn	**Pn**	**23 32 59.8**	**+0.7**
BALY	**Balya**	**1.80**	**21**	*i* P	**Pg**	**23 33 02.1**	**-0.5**
BALY	**Balya**	**1.80**	**21**	P	**Pg**	**23 33 02.1**	**-0.5**
DEMI	**Demirci**	**1.81**	**57**	*i* P	**Pb**	**23 33 01.9**	**+0.5**
DEMI				*i* S	**Sg**	**23 33 25.1**	**-1.2**
DEMI	**Demirci**	**1.81**	**57**	P	**Pb**	**23 33 01.9**	**+0.5**
DEMI				S	**Sg**	**23 33 25.1**	**-1.2**
DALY	**Dalyan (Mu˘la**	**1.95**	**129**	*e*PN	**Pb**	**23 33 02.8**	**-0.9**
DALY	**Dalyan (Mu˘la**	**1.95**	**129**	*e*Pn	**Pb**	**23 33 02.8**	**-0.9**
DURS	**Dursunbey**	**2.03**	**40**	*i* P	**Pn**	**23 33 03.3**	**+0.9**
DURS	**Dursunbey**	**2.03**	**40**	P	**Pn**	**23 33 03.3**	**+0.9**
LIA	**Limnos Island**	**2.21**	**326**	P	**Pn**	**23 33 04.5**	**-0.2**
LIA	**Limnos Island**	**2.21**	**326**	P	**Pn**	**23 33 04.5**	**-0.2**
FETY	**Fethiye**	**2.33**	**127**	*e*PN	**Pn**	**23 33 08.3**	**+1.8**
FETY	**Fethiye**	**2.33**	**127**	*e*Pn	**Pn**	**23 33 08.3**	**+1.8**
GELI	**Tayfur-Gelibol**	**2.34**	**354**	*e*PN	**Pn**	**23 33 08.0**	**+1.5**
GELI	**Tayfur-Gelibol**	**2.34**	**354**	*e*Pn	**Pn**	**23 33 08.0**	**+1.5**
GDZ	**Gediz**	**2.36**	**64**	*i* P	**Pb**	**23 33 11.1**	**+0.4**
EDC	**Edincik**	**2.43**	**20**	*e*PN	**Pn**	**23 33 09.1**	**+1.3**
EDC	**Edincik**	**2.43**	**20**	*e*Pn	**Pn**	**23 33 09.1**	**+1.3**
TVSB	**Tavsanli**	**2.52**	**56**	*e*PN	**Pn**	**23 33 10.1**	**+1.0**
TVSB	**Tavsanli**	**2.52**	**56**	*e*Pn	**Pn**	**23 33 10.1**	**+1.0**
KCTX	**Karacabey (Bur**	**2.52**	**29**	*e*PN	**Pn**	**23 33 10.1**	**+1.0**
KCTX	**Karacabey (Bur**	**2.52**	**29**	*e*Pn	**Pn**	**23 33 10.1**	**+1.0**
ORLT	**Orhaneli**	**2.58**	**39**	*e*PN	**Pn**	**23 33 11.5**	**+1.6**
ORLT	**Orhaneli**	**2.58**	**39**	*e*Pn	**Pn**	**23 33 11.5**	**+1.6**
SMTH	**Samothraki Isl**	**2.59**	**339**	P	**Pn**	**23 33 09.1**	**-0.9**
SMTH	**Samothraki Isl**	**2.59**	**339**	P	**Pn**	**23 33 09.1**	**-0.9**
ERIK	**Erikli-Kesan**	**2.61**	**356**	*e*PN	**Pn**	**23 33 12.0**	**+1.8**
ERIK	**Erikli-Kesan**	**2.61**	**356**	*e*Pn	**Pn**	**23 33 12.0**	**+1.8**
ALN	**Alexandroupoli**	**2.88**	**349**	*e*PN	**Pn**	**23 33 15.6**	**+1.6**
ALN	**Alexandroupoli**	**2.88**	**349**	*e*Pn	**Pn**	**23 33 15.6**	**+1.6**
ARMT	**Armutlu**	**2.98**	**32**	*e*PN	**Pn**	**23 33 17.3**	**+2.0**
ARMT	**Armutlu**	**2.98**	**32**	*e*Pn	**Pn**	**23 33 17.3**	**+2.0**

*CSEM **23** 23:36:04.2±0.5, 67.76N×20.32E, h1km, ML1.2, Error ellipse: s-maj=10.7km s-min=9.1km az=41.0, Mining explosion.*
*UPP **23** 23:36:05.0, 67.83N×20.19E, h0km, ML1.2, Mining explosion.*
HEL 23 23:36:04.8, 67.79N×20.18E, h0km, ML1.5, Explosion, Sweden

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
KUA	**Kurravaara**	**0.18**	**19**	P	Pg	23 36 10.1	+1.9
KUA				S	Sg	23 36 12.3	+1.8
KUA	**Kurravaara**	**0.18**	**19**	*i* P	Pg	23 36 07.8	-0.4
KUA				*i* S	Sg	23 36 09.9	-0.6
KUA	**Kurravaara**	**0.18**	**19**	P	Pg	23 36 10.1	+1.9
KUA				S	Sg	23 36 12.3	+1.8
NIKU	**Nikkaluokta**	**0.44**	**281**	*i* P	Pg	23 36 13.4	+0.2
NIKU	**Nikkaluokta**	**0.44**	**281**	P	Pg	23 36 13.4	+0.1
LANU	**Lannavaara**	**0.73**	**68**	P	Pb	23 36 21.0	+0.6
LANU	**Lannavaara**	**0.73**	**68**	*i* P	Pg	23 36 18.4	-0.5
LANU	**Lannavaara**	**0.73**	**68**	P	Pb	23 36 21.0	+0.6
LANU	**Lannavaara**	**0.73**	**68**	P	Pg	23 36 18.4	-0.4
SALU	**Saltoluokta**	**0.76**	**238**	*i* P	Pg	23 36 19.7	+0.4
SALU	**Saltoluokta**	**0.76**	**238**	P	Pg	23 36 19.7	+0.4
MASU	**Masugnsbyn**	**0.77**	**115**	*i* P	Pg	23 36 19.8	+0.3
MASU	**Masugnsbyn**	**0.77**	**115**	P	Pg	23 36 19.8	+0.3
KIF	**Kilpisjarvi** baz=186	**1.25**	**10**	*e*PB	Pg	23 36 28.0	-0.6
KIF				*e*SB	Sg	23 36 44.0	-0.7
KIF	**Kilpisjarvi**	**1.25**	**10**	Pg	Pg	23 36 28.0	-0.6
KIF				Sg	Sg	23 36 44.0	-0.8
PAJU	**Pajala**	**1.37**	**123**	P	Pb	23 36 13.4	+1.2
PAJU	**Pajala**	**1.37**	**123**	*e*P	Pb	23 36 30.3	-0.7
PAJU	**Pajala**	**1.37**	**123**	P	Pb	23 36 32.4	+1.2
PAJU	**Pajala**	**1.37**	**123**	P	Pg	23 36 30.3	-0.6
HEF	**Hetta** baz=248	**1.45**	**63**	*e*PG	Pn	23 36 31.0	-1.2
HEF				MSG		23 36 48.4	
HEF	comp=Z,3.4nm,0.2s			*e*SN	Sn	23 36 52.1	+0.2
HEF	**Hetta**	**1.45**	**63**	Pn	Pn	23 36 31.0	-1.2
HEF				Sn	Sn	23 36 52.1	+0.2
ERTU	**Ertsjaerv**	**1.47**	**147**	P	Pb	23 36 35.6	+2.7
ERTU	**Ertsjaerv**	**1.47**	**147**	*e*P	Pn	23 36 32.2	-0.2
ERTU	**Ertsjaerv**	**1.47**	**147**	P	Pb	23 36 35.6	+2.7
ERTU	**Ertsjaerv**	**1.47**	**147**	P	Pn	23 36 32.2	-0.2
HARU	**Harads**	**1.66**	**169**	P	Pg	23 36 38.1	+1.6
HARU	**Harads**	**1.66**	**169**	*e*P	Pb	23 36 35.6	-0.5
HARU	**Harads**	**1.66**	**169**	P	Pg	23 36 38.1	+1.6
HARU	**Harads**	**1.66**	**169**	P	Pn	23 36 35.6	+0.5
SJUU	**Sjulsmark**	**2.36**	**165**	*e*P	Pb	23 36 46.5	-1.6
TOF	**Tornio**	**2.37**	**134**	*e*PB	Pb	23 36 46.6	-1.6
TOF				*e*SB	Sb	23 37 18.2	+0.3
TOF	**Tornio**	**2.37**	**134**	Pg	Pb	23 36 46.6	-1.6
TOF				Sg	Sb	23 37 18.2	+0.3
RNF	**Rovaniemi**	**2.56**	**115**	*e*PB	Pb	23 36 49.7	-1.8
RNF				*e*SG	Sb	23 37 24.1	+0.6
RNF	**Rovaniemi**	**2.56**	**115**	Pg	Pb	23 36 49.7	-1.8
RNF				Sg	Sb	23 37 24.1	+0.6
ARE0	**ARCESS Array S** baz=231	**2.62**	**45**	*e*P	Pn	23 36 49.1	+0.7
ARE0				*e*SB	Sn	23 37 22.2	+1.4
ARE0	**ARCESS Array S**	**2.62**	**45**	Pg	Pn	23 36 49.1	+0.7
ARE0				Sg	Sn	23 37 22.2	+1.4
KEV	**Kevo**	**3.17**	**48**	*e*PB	Pb	23 36 59.2	-2.8
KEV				*e*S	Sn	23 37 34.5	+0.1
KEV	comp=Z,1.4nm,0.2s			MSG		23 37 38.1	
KEV	**Kevo**	**3.17**	**48**	Pg	Pb	23 36 59.1	-2.9
OUFX	**Oulainen**	**3.90**	**150**	*e*PG	Pb	23 37 15.8	+1.5
OUFX	**Oulainen**	**3.90**	**150**	Pg	Pb	23 37 15.8	+1.5

*ECX **23** 23:47:53.2±0.5, 32.12N×115.27W, h8km, MD3.0, ML3.2*
*MEX **23** 23:47:54.9±0.8, 32.22N×115.18W, h16km±18km, MD3.6*
ISC 23 23:47:51.1±1.1, 32.18N±0.05×115.19W±0.07, h25km±11km, n13, σ0°40/18, 6C-4D, California-Baja California border region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
MBIG	**Mexicali**	**0.23**	**358**	*e*P	**Pn**	**23 47 58.7**	**-0.2**
MBIG	**Mexicali**	**0.23**	**358**	*i* P	**Pn**	**23 47 58.4**	**-0.4**
MBIG				*i* S	**Sb**	**23 48 01.1**	**0.0**
CPBX	**Cerro Prieto**	**0.25**	**338**	⇓*e*P	**Pn**	**23 47 59.0**	**-0.3**
CPBX				AML	AML	23 48 06.1	
CPBX	comp=N,7μm,0.2s			⇑*e*		23 48 06.1	
CPBX				⇑*e*		23 48 06.2	
CPBX				AML	AML	23 48 06.2	
	comp=E,11μm,0.3s						
EMSC	**East Mesa**	**0.58**	**17**	⇓*i*P	Pn	23 48 04.3	+0.5
SGL	**Mount Signal**	**0.65**	**316**	⇓*i*P	Pn	23 48 05.2	+0.4
ECBX	**El Chinero**	**0.72**	**171**	⇓*e*P	Pb	23 48 05.0	+0.1
ECBX				*e*S	Sb	23 48 14.0	-0.4
WESC	**Westside Schoo**	**0.74**	**322**	*e*P	Pn	23 48 06.7	+0.8
YUH	**Yuha Desert**	**0.78**	**307**	*e*P	Pn	23 48 06.5	+0.1
RMX	**La Rumorosa**	**0.86**	**299**	⇑*e*P	Pb	23 48 07.6	+0.1
RMX				*e*S	Sn	23 48 19.4	-0.2
RMX				⇑*e*		23 48 20.9	
SPIG	**San Pedro Mart**	**1.16**	**192**	*e*P	Pb	23 48 13.2	+0.6
SPIG				*i* S	Sn	23 48 27.1	-0.1
SPX	**San Pedro Mart**	**1.16**	**192**	⇑*e*P	Pb	23 48 12.3	-0.4
CBX	**Cerro Bola**	**1.26**	**276**	⇑*e*P	Pb	23 48 14.1	-0.1
CBX	**Cerro Bola**	**1.26**	**276**	*e*P	Pb	23 48 14.1	-0.1
CBX				*i* S	Sn	23 48 29.3	-0.1

VIE 23 23:50:00.1±0.3, 47.06N×13.23E, h0km, mb1.0/3, ml1.2/10, Error ellipse: s-maj=3.6km s-min=1.9km az=6.0, Austria

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
KBA	**Koelnbreinsper** 2.8nm,0.0s	**0.08**	**74**	Pg	Pg	23 49 58.3	-3.3
KBA				*i* Sg	Sg	23 50 01.5	-1.1
KBA	**Koelnbreinsper** 2.8nm,0.0s	**0.08**	**74**	Pg	Pg	23 49 58.3	-3.3
KBA				*i* Sg	Sg	23 50 01.5	-1.1
MYKA	**Terra Mystica** 1.0nm,0.3s	**0.51**	**146**	Sg	Sg	23 50 16.1	-0.3
MYKA	**Terra Mystica** 1.0nm,0.3s	**0.51**	**146**	Pg	Pn	23 50 16.1	+1.4
ABTA	**Abfaltersbach** 0.7nm,0.3s	**0.58**	**238**	*i* Pg	Pg	23 50 10.2	-1.0
ABTA				*i* Sg	Sg	23 50 19.1	+0.3
OBKA	**Obir** 0.6nm,0.2s	**1.06**	**121**	Pg	Pg	23 50 19.9	-0.4
OBKA				*i* Sg	Sb	23 50 36.2	+0.5
OBKA	**Obir** 0.6nm,0.2s	**1.06**	**121**	Pg	Pg	23 50 19.9	-0.4
OBKA				*i* Sg	Sb	23 50 36.2	+0.5
MOA	**Molln**	**1.06**	**41**	*i* Pg	Pb	23 50 21.3	+0.1
MOA	**Molln**	**1.06**	**41**	*i* Pg	Pb	23 50 21.3	+0.1
SOKA	**Soboth** 0.4nm,0.2s	**1.29**	**106**	*e*Pg	Pg	23 50 24.3	-0.5
SOKA				*i* Sg	Sb	23 50 42.9	+0.5
SOKA	**Soboth** 0.4nm,0.2s	**1.29**	**106**	*e*Pg	Pg	23 50 24.3	-0.5
SOKA				*i* Sg	Sb	23 50 42.9	+0.5
MOTA	**Moosalm**	**1.48**	**282**	*i* Pg	Pb	23 50 28.9	+0.4
MOTA				*i* Sg	Sn	23 50 50.2	+1.9
RETA	**Reutte** 1.0nm,0.5s	**1.74**	**285**	*e*Pg	Pn	23 50 32.0	+0.4
RETA				*

VINO					Sg		Sg	00 05 47.5	+0.8
	comp=Z,348nm,0.6s								
VINO	**Villanova**		**0.26**	**263**⇑	*e*Pg		**Pg**	**00 05 43.3**	**+0.1**
VINO					*e*Sg		**Sg**	**00 05 47.6**	**+0.8**
ACOM	**Acomizza, Ital**		**0.28**	**340**	Pg		**Pg**	**00 05 43.5**	**-0.1**
ACOM					Sg		**Sg**	**00 05 48.5**	**+1.1**
	comp=Z,489nm,0.2s								
ACOM	**Acomizza, Ital**		**0.28**	**340**	*e*P		**Pg**	**00 05 43.5**	**-0.1**
ACOM					Sg		**Sg**	**00 05 48.5**	**+1.1**
	comp=Z,489nm,0.2s								
ACOM	**Acomizza, Ital**		**0.28**	**340**⇓	*e*Pg		**Pg**	**00 05 43.5**	**-0.1**
ACOM					*e*Sg		**Sg**	**00 05 48.5**	**+1.1**
BAD	**Bernadia**		**0.29**	**260**	*e*P		**Pg**	**00 05 43.7**	**0.0**
BAD	**Bernadia**		**0.29**	**260**⇑	*e*Pg		**Pg**	**00 05 43.7**	**0.0**
BAD					*e*Sg		**Sb**	**00 05 49.2**	**-0.9**
VOJS	**Vojsko**		**0.30**	**148**⇓	*i*Pg		**Pg**	**00 05 44.4**	**+0.5**
VOJS					*i* Sg		**Sb**	**00 05 50.0**	**-0.4**
	comp=Z,73nm,0.1s								
VOJS	**Vojsko**		**0.30**	**148**⇓	*i*Pg		**Pg**	**00 05 44.4**	**+0.5**
VOJS					*i* Sg		**Sb**	**00 05 50.0**	**-0.4**
	comp=Z,73nm,0.1s								
SABO	**M.te Sabotino**		**0.31**	**187**	Pg		**Pg**	**00 05 44.4**	**+0.3**
SABO					Sg		**Sb**	**00 05 50.6**	**0.0**
SABO	**M.te Sabotino**		**0.31**	**187**	Pg		**Pg**	**00 05 44.4**	**+0.3**
SABO					Sg		**Sb**	**00 05 50.6**	**0.0**
SABO	**M.te Sabotino**		**0.31**	**187**⇓	*e*Pg		**Pg**	**00 05 44.3**	**+0.3**
SABO					*e*Sg		**Sb**	**00 05 50.1**	**-0.5**
MYKA	**Terra Mystica**		**0.34**	**359**	*e*Pg		**Pg**	**00 05 44.8**	**+0.1**
	comp=Z,25nm,0.2s,SNR=43								
MYKA					*i* Sg		**Sg**	**00 05 50.3**	**+1.0**
	comp=Z,137nm,0.3s								
MYKA	**Terra Mystica**		**0.34**	**359**	Pg		**Pg**	**00 05 44.8**	**+0.1**
	comp=Z,25nm,0.2s,SNR=43								
MYKA					Sg		**Sg**	**00 05 50.3**	**+1.0**
	comp=Z,137nm,0.3s								
GEPF	**Gemona**		**0.36**	**268**	Pg		**Pg**	**00 05 44.9**	**0.0**
GEPF					Sg		**Sb**	**00 05 51.1**	**-0.8**
	comp=Z,266nm,0.6s								
GEPF	**Gemona**		**0.36**	**268**	Pg		**Pg**	**00 05 44.9**	**0.0**
GEPF					Sg		**Sb**	**00 05 51.1**	**-0.8**
	comp=Z,266nm,0.6s								
PLRO	**Paularo**		**0.44**	**307**	*e*P		**Pg**	**00 05 46.6**	**+0.1**
PLRO	**Paularo**		**0.44**	**307**	*e*Pg		**Pg**	**00 05 46.6**	**+0.1**
PLRO					*e*Sg		**Sb**	**00 05 53.6**	**-0.8**
MPRI	**Monte Prat**		**0.46**	**265**	*e*P		**Pg**	**00 05 46.9**	**-0.1**
MPRI	**Monte Prat**		**0.46**	**265**	*e*Pg		**Pg**	**00 05 46.9**	**-0.1**
MPRI					*e*Sg		**Sb**	**00 05 55.5**	**+0.4**
CRNS	**Crni Vrh**		**0.47**	**116**	*i* Pg		**Pg**	**00 05 47.4**	**+0.3**
CRNS					*e*Sg		**Sb**	**00 05 54.8**	**-0.4**
	comp=Z,82nm,0.1s								
CRNS	**Crni Vrh**		**0.47**	**116**	*i* Pg		**Pg**	**00 05 47.4**	**+0.3**
CRNS					*e*Sg		**Sb**	**00 05 54.8**	**-0.4**
	comp=Z,82nm,0.1s								
FUSE	**Fusea**		**0.47**	**286**	*e*P		**Pg**	**00 05 46.6**	**-0.4**
FUSE	**Fusea**		**0.47**	**286**⇑	*e*Pg		**Pg**	**00 05 46.6**	**-0.4**
FUSE					*e*Sg		**Sb**	**00 05 55.5**	**+0.3**
JAVS	**Javornik**		**0.49**	**144**⇓	*i*Pg		**Pg**	**00 05 47.5**	**+0.1**
JAVS					*e*Sg		**Sb**	**00 05 55.7**	**-0.1**
	comp=Z,56nm,0.2s								
JAVS	**Javornik**		**0.49**	**144**⇓	*i*Pg		**Pg**	**00 05 47.5**	**+0.1**
JAVS					*e*Sg		**Sb**	**00 05 55.7**	**-0.1**
	comp=Z,56nm,0.2s								
TLI	**Talmassons**		**0.53**	**227**	*e*Pg		**Pg**	**00 05 48.6**	**+0.5**
TLI	**Talmassons**		**0.53**	**227**	*e*Pg		**Pg**	**00 05 48.6**	**+0.5**
ZOU	**Zoufplan**		**0.54**	**300**	*e*P		**Pg**	**00 05 48.6**	**+0.1**
ZOU	**Zoufplan**		**0.54**	**300**⇓	*e*Pg		**Pg**	**00 05 48.6**	**+0.1**
ZOU					*e*Sg		**Sb**	**00 05 57.3**	**-0.3**
ZOU	**Zoufplan**		**0.54**	**300**⇓	*e*Pg		**Pg**	**00 05 48.6**	**+0.1**
ZOU					*e*Sg		**Sb**	**00 05 57.3**	**-0.3**
MOZS	**Mozjanca**		**0.55**	**89**	*i* Pg		**Pg**	**00 05 48.8**	**+0.3**
MOZS					*i* Sg		**Sb**	**00 05 58.2**	**+0.7**
	comp=Z,37nm,0.1s								
MOZS	**Mozjanca**		**0.55**	**89**	*i* Pg		**Pg**	**00 05 48.8**	**+0.3**
MOZS					*i* Sg		**Sb**	**00 05 58.2**	**+0.7**
	comp=Z,37nm,0.1s								
CLUD	**Cludinico**		**0.56**	**288**	*e*P		**Pg**	**00 05 48.6**	**-0.2**
CLUD	**Cludinico**		**0.56**	**288**⇓	*e*Pg		**Pg**	**00 05 48.6**	**-0.2**
CLUD					*e*Sg		**Sb**	**00 05 58.4**	**+0.5**
TRI	**Trieste**		**0.58**	**172**	*e*P		**Pg**	**00 05 49.1**	**0.0**
TRI	**Trieste**		**0.58**	**172**⇓	*e*Pg		**Pg**	**00 05 49.1**	**0.0**
TRI					*e*Sg		**Sb**	**00 05 58.9**	**+0.5**
GBAS	**Gorenja Brezov**		**0.65**	**122**	*i* Pg		**Pg**	**00 05 50.2**	**-0.3**
GBAS					*i* Sg		**Sb**	**00 06 01.1**	**+0.6**
	comp=Z,44nm,0.2s								
GBAS	**Gorenja Brezov**		**0.65**	**122**	*i* Pg		**Pg**	**00 05 50.2**	**-0.3**
GBAS					*i* Sg		**Sb**	**00 06 01.0**	**+0.6**
LJU	**Ljubljana**		**0.65**	**112**	*i* Pg		**Pb**	**00 05 51.3**	**-0.1**
LJU					*i* Sg		**Sb**	**00 06 00.9**	**+0.4**
	comp=Z,55nm,0.1s								
LJU	**Ljubljana**		**0.65**	**112**	*i* Pg		**Pb**	**00 05 51.3**	**-0.1**
LJU					*i* Sg		**Sb**	**00 06 00.9**	**+0.4**
	comp=Z,55nm,0.1s								
STAL	**STALIGIAL**		**0.66**	**268**	Pg		**Pg**	**00 05 49.7**	**-0.8**
	comp=Z,81nm,0.3s								
STAL	**STALIGIAL**		**0.66**	**268**	Pg		**Pg**	**00 05 49.7**	**-0.8**
	comp=Z,81nm,0.3s								
OBKA	**Obir**		**0.66**	**70**	*e*Pg		**Pg**	**00 05 50.5**	**-0.1**
	comp=Z,5.1nm,0.1s,SNR=45								
OBKA					*i* Sg		**Sb**	**00 06 01.1**	**+0.4**
	comp=Z,61nm,0.3s								
OBKA	**Obir**		**0.66**	**70**	Pg		**Pg**	**00 05 50.5**	**-0.1**
	comp=Z,5.1nm,0.1s,SNR=45								
OBKA					Sg		**Sb**	**00 06 01.1**	**+0.4**
	comp=Z,61nm,0.3s								
FVI	**Forni Avoltri**		**0.68**	**297**	Pg		**Pg**	**00 05 50.7**	**-0.3**
	comp=Z,66nm,0.4s								
FVI	**Forni Avoltri**		**0.68**	**297**	Pg		**Pg**	**00 05 50.7**	**-0.3**
	comp=Z,66nm,0.4s								
MLNI	**Malnisio**		**0.74**	**260**	*e*Pg		**Pg**	**00 05 52.1**	**0.0**
MLNI	**Malnisio**		**0.74**	**260**⇑	*e*Pg		**Pg**	**00 05 52.1**	**0.0**
VNDS	**Vrh nad Dolski**		**0.75**	**104**⇑	*i*Pg		**Pb**	**00 05 52.8**	**-0.2**
VNDS					*i* Sg		**Sb**	**00 06 03.9**	**+0.6**
	comp=Z,26nm,0.1s								
VNDS	**Vrh nad Dolski**		**0.75**	**104**⇑	*i*Pg		**Pb**	**00 05 52.8**	**-0.2**
VNDS					*i* Sg		**Sb**	**00 06 03.9**	**+0.6**
	comp=Z,26nm,0.1s								
CEY	**Cerknica**		**0.77**	**135**⇑	*i*Pg		**Pg**	**00 05 52.3**	**-0.4**
CEY					*i* Sg		**Sn**	**00 06 04.9**	**-1.5**
	comp=Z,81nm,0.3s								
CEY	**Cerknica**		**0.77**	**135**⇑	*i*Pg		**Pg**	**00 05 52.3**	**-0.4**
CEY					*i* Sg		**Sn**	**00 06 04.9**	**-1.5**
	comp=Z,81nm,0.3s								
SKDS	**Skadanscina**		**0.78**	**161**⇑	*i*Pg		**Pg**	**00 05 52.4**	**-0.5**
SKDS					*i* Sg		**Sn**	**00 06 05.6**	**-1.1**
	comp=Z,11nm,0.1s								
SKDS	**Skadanscina**		**0.78**	**161**⇑	*i*Pg		**Pg**	**00 05 52.4**	**-0.5**
SKDS					*i* Sg		**Sn**	**00 06 05.6**	**-1.1**
	comp=Z,11nm,0.1s								
KBA	**Koelnbreinsper**		**0.82**	**345**	*e*Pg		**Pg**	**00 05 53.8**	**+0.1**
	comp=Z,0.8nm,0.1s,SNR=27								
KBA					*i* Sg		**Sb**	**00 06 05.1**	**-0.4**
	comp=Z,15nm,0.2s								
KBA	**Koelnbreinsper**		**0.82**	**345**	Pg		**Pg**	**00 05 53.8**	**+0.1**
	comp=Z,0.8nm,0.1s,SNR=27								
KBA					Sg		**Sb**	**00 06 05.1**	**-0.4**
	comp=Z,15nm,0.2s								
POLC	**Polcenigo**		**0.84**	**252**	Pg		**Pg**	**00 05 54.1**	**+0.1**
	comp=Z,121nm,0.4s								
POLC	**Polcenigo**		**0.84**	**252**	*e*P		**Pg**	**00 05 54.2**	**+0.1**
POLC	**Polcenigo**		**0.84**	**252**⇓	*e*Pg		**Pg**	**00 05 54.2**	**+0.1**
POLC					*e*Sg		**Sn**	**00 06 08.3**	**+0.1**
ABTA	**Abfaltersbach**		**0.91**	**301**	*e*Pg		**Pg**	**00 05 55.4**	**-0.1**
	comp=Z,1.2nm,0.1s,SNR=15								
ABTA					*i* Sg		**Sn**	**00 06 09.0**	**-1.1**
	comp=Z,15nm,0.2s								
ABTA	**Abfaltersbach**		**0.91**	**301**	Pg		**Pg**	**00 05 55.4**	**-0.1**
	comp=Z,1.2nm,0.1s,SNR=15								
ABTA					Sg		**Sn**	**00 06 09.0**	**-1.1**
	comp=Z,15nm,0.2s								
VISS	**Visnje**		**0.96**	**120**	*i* Pg		**Pb**	**00 05 56.4**	**-0.1**
VISS					*i* Sg		**Sn**	**00 06 11.1**	**0.0**
	comp=Z,70nm,0.3s								
VISS	**Visnje**		**0.96**	**120**	*i* Pg		**Pb**	**00 05 56.4**	**-0.1**
VISS					*i* Sg		**Sn**	**00 06 11.1**	**0.0**
	comp=Z,70nm,0.3s								
PDKS	**Podkum**		**0.96**	**103**⇑	*i*Pg		**Pb**	**00 05 56.8**	**+0.2**
PDKS					*e*Sg		**Sn**	**00 06 10.7**	**-0.5**
	comp=Z,53nm,0.2s								
PDKS	**Podkum**		**0.96**	**103**⇑	*i*Pg		**Pb**	**00 05 56.8**	**+0.2**
PDKS					*e*Sg		**Sn**	**00 06 10.7**	**-0.5**
	comp=Z,53nm,0.2s								
SOKA	**Soboth**		**1.03**	**67**	*e*Pg		**Pb**	**00 05 57.3**	**-0.5**
	comp=Z,2.1nm,0.1s,SNR=24								
SOKA					*i* Sg		**Sb**	**00 06 11.4**	**0.0**
	comp=Z,15nm,0.4s								
SOKA	**Soboth**		**1.03**	**67**	Pg		**Pb**	**00 05 57.3**	**-0.5**
	comp=Z,2.1nm,0.1s,SNR=24								
SOKA					Sg		**Sb**	**00 06 11.4**	**0.0**
	comp=Z,15nm,0.4s								
PERS	**Pernice**		**1.07**	**70**	*i* Pg		**Pb**	**00 05 57.9**	**-0.7**
PERS					*e*Sg		**Sg**	**00 06 12.5**	**+0.2**
	comp=Z,37nm,0.2s								
PERS	**Pernice**		**1.07**	**70**	*i* Pg		**Pb**	**00 05 57.8**	**-0.7**
PERS					*e*Sg		**Sg**	**00 06 12.5**	**+0.2**
	comp=Z,37nm,0.2s								
BISS	**Bistriski jare**		**1.08**	**70**	*i* Pg		**Pb**	**00 05 58.2**	**-0.4**
BISS					*i* Sg		**Sn**	**00 06 13.4**	**-0.7**
	comp=Z,27nm,0.1s								
BISS	**Bistriski jare**		**1.08**	**70**	*i* Pg		**Pb**	**00 05 58.2**	**-0.4**
BISS					*i* Sg		**Sn**	**00 06 13.4**	**-0.7**
	comp=Z,27nm,0.1s								
AGOR	**Agordo**		**1.11**	**270**	Pg		**Pg**	**00 05 59.5**	**+0.2**
	comp=Z,62nm,0.4s								
AGOR	**Agordo**		**1.11**	**270**	Pg		**Pg**	**00 05 59.5**	**+0.2**
	comp=Z,62nm,0.4s								
AGOR	**Agordo**		**1.11**	**270**	*e*Pg		**Pg**	**00 05 59.7**	**+0.4**
VARN	**Col Varnada, M**		**1.12**	**255**	*e*Pg		**Pb**	**00 05 59.0**	**-0.3**
VARN	**Col Varnada, M**		**1.12**	**255**	*e*Pg		**Pb**	**00 05 59.0**	**-0.3**
LEGS	**Legarje**		**1.21**	**106**	*i* Pg		**Pg**	**00 06 01.0**	**0.0**
LEGS	**Legarje**		**1.21**	**106**	*i* Pg		**Pg**	**00 06 01.0**	**0.0**
GROS	**Grobnik**		**1.29**	**82**	*i* Pg		**Pn**	**00 06 01.8**	**-0.2**
GROS	**Grobnik**		**1.29**	**82**	*i* Pg		**Pn**	**00 06 01.8**	**-0.2**
CRES	**Cresnjev**		**1.34**	**110**	*e*Pg		**Pb**	**00 06 03.2**	**+0.2**
	comp=Z,18nm,0.2s								
CRES	**Cresnjev**		**1.34**	**110**	*e*Pg		**Pb**	**00 06 03.2**	**+0.2**
	comp=Z,18nm,0.2s								
CGRP	**Cima Grappa**		**1.35**	**253**	Pg		**Pg**	**00 06 04.1**	**+0.3**
	comp=Z,103nm,0.7s								
CGRP	**Cima Grappa**		**1.35**	**253**	Pg		**Pg**	**00 06 04.1**	**+0.3**
	comp=Z,103nm,0.7s								
CGRP	**Cima Grappa**		**1.35**	**253**⇑	*e*Pg		**Pg**	**00 06 04.2**	**+0.4**
CGRP					*e*Sg		**Sg**	**00 06 24.1**	**+2.7**
BOJS	**Bojanci**		**1.36**	**124**	*i* Pg		**Pg**	**00 06 03.9**	**-0.1**
	comp=Z,18nm,0.2s								
BOJS	**Bojanci**		**1.36**	**124**	*i* Pg		**Pg**	**00 06 03.9**	**-0.1**
	comp=Z,18nm,0.2s								
GOLS	**Golise**		**1.40**	**101**	*i* Pg		**Pg**	**00 06 04.6**	**-0.1**
	comp=Z,50nm,0.3s								
GOLS	**Golise**		**1.40**	**101**	*i* Pg		**Pg**	**00 06 04.6**	**-0.1**
	comp=Z,50nm,0.3s								
GCIS	**Gornji Cirnik**		**1.44**	**106**	*i* Pg		**Pg**	**00 06 05.3**	**-0.1**
GCIS					*i* Sg		**Sg**	**00 06 25.9**	**+1.9**
	comp=Z,31nm,0.3s								
GCIS	**Gornji Cirnik**		**1.44**	**106**	*i* Pg		**Pg**	**00 06 05.3**	**-0.1**
GCIS					*i* Sg		**Sg**	**00 06 25.9**	**+1.9**
	comp=Z,31nm,0.3s								
ARSA	**Arzberg**		**1.61**	**52**	*e*Pn		**Pg**	**00 06 08.1**	**-0.5**
	comp=Z,2.1nm,0.2s,SNR=15								
ARSA					*i* Sg		**Sg**	**00 06 29.2**	**-0.3**
	comp=Z,6.8nm,0.3s								
ARSA	**Arzberg**		**1.61**	**52**	Pn		**Pg**	**00 06 08.1**	**-0.5**
	comp=Z,2.1nm,0.2s,SNR=15								
ARSA					Sg		**Sg**	**00 06 29.2**	**-0.3**
	comp=Z,6.8nm,0.3s								
MOA	**Molln**		**1.62**	**15**	*i* Pn		**Pg**	**00 06 10.1**	**+1.2**
	comp=Z,2.3nm,0.2s								
MOA					*i* Sg		**Sg**	**00 06 31.8**	**+1.9**
	comp=Z,13nm,0.4s								
MOA	**Molln**		**1.62**	**15**	Pn		**Pg**	**00 06 10.1**	**+1.2**
	comp=Z,2.3nm,0.2s								
MOA					Sg		**Sg**	**00 06 31.8**	**+1.9**
	comp=Z,13nm,0.4s								
APPI	**Appiano**		**1.69**	**277**	Pg		**Pb**	**00 06 09.4**	**+0.3**
	comp=Z,20nm,0.5s								
APPI	**Appiano**		**1.69**	**277**	Pg		**Pb**	**00 06 09.4**	**+0.3**
	comp=Z,20nm,0.5s								
WTTA	**Wattenberg**		**1.70**	**306**	*e*Pn		**Pg**	**00 06 10.4**	**0.0**
	comp=Z,3.6nm,0.2s,SNR=6.7								
WTTA					*i* Sg		**Sg**	**00 06 33.4**	**+1.0**
	comp=Z,16nm,0.4s								
WTTA	**Wattenberg**		**1.70**	**306**	Pn		**Pg**	**00 06 10.4**	**0.0**
	comp=Z,3.6nm,0.2s,SNR=6.7								
WTTA					Sg		**Sg**	**00 06 33.4**	**+1.0**
	comp=Z,16nm,0.4s								
WATA	**Walderalm**		**1.77**	**307**	*e*Pn		**Pg**	**00 06 11.5**	**-0.3**
	comp=Z,2.4nm,0.2s,SNR=18								
WATA					*i* Sg		**Sg**	**00 06 36.5**	**+1.7**
	comp=Z,8.9nm,0.5s								
WATA	**Walderalm**		**1.77**	**307**	Pn		**Pg**	**00 06 11.5**	**-0.3**
	comp=Z,2.4nm,0.2s,SNR=18								
WATA					Sg		**Sg**	**00 06 36.5**	**+1.7**
	comp=Z,8.9nm,0.5s								
ROVR	**Rover ¤ Verone**		**1.91**	**251**	Pg		**Pb**	**00 06 11.7**	**-1.2**
	comp=Z,56nm,0.3s								
ROVR	**Rover ¤ Verone**		**1.91**	**251**	Pg		**Pb**	**00 06 11.7**	**-1.2**
	comp=Z,56nm,0.3s								
NVLJ	**Novalja**		**1.93**	**153**	*e*Pn		**Pb**	**00 06 12.8**	**-0.2**
NVLJ					Sn		**Sg**	**00 06 39.6**	**-0.1**
MOTA	**Moosalm**		**2.05**	**302**	*e*Pn		**Pg**	**00 06 17.5**	**+0.4**
	comp=Z,2.7nm,0.4s,SNR=16								
MOTA					*i* Sg		**Sg**	**00 06 47.1**	**+3.5**
	comp=Z,17nm,0.6s								
MOTA	**Moosalm**		**2.05**	**302**	Pn		**Pg**	**00 06 17.5**	**+0.4**
	comp=Z,2.7nm,0.4s,SNR=16								
MOTA					Sg		**Sg**	**00 06 47.1**	**+3.5**
	comp=Z,17nm,0.6s								
FETA	**Feichten**		**2.14**	**291**	*e*Pg		**Pg**	**00 06 18.3**	**-0.7**
	comp=Z,0.8nm,0.2s								
FETA					*i* Sg		**Sg**	**00 06 49.1**	**+2.4**
	comp=Z,1.7nm,0.3s								
FETA	**Feichten**		**2.14**	**291**	Pg		**Pg**	**00 06 18.3**	**-0.7**
	comp=Z,0.8nm,0.2s								
FETA					Sg		**Sg**	**00 06 49.1**	**+2.4**
	comp=Z,1.7nm,0.3s								
MAGA	**Magasa**		**2.17**	**257**	Pg		**Pb**	**00 06 15.8**	**-1.5**
MAGA	**Magasa**		**2.17**	**257**	Pg		**Pb**	**00 06 15.8**	**-1.5**
CONA	**Conrad Observa**		**2.23**	**42**	*i* Pn		**Pb**	**00 06 17.5**	**-0.8**
	comp=Z,0.3nm,0.2s								
CONA					*i* Sg		**Sg**	**00 06 51.5**	**+2.0**
	comp=Z,2.5nm,0.3s								
CONA	**Conrad Observa**		**2.23**	**42**	Pn		**Pb**	**00 06 17.5**	**-0.8**
	comp=Z,0.3nm,0.2s								
CONA					Sg		**Sg**	**00 06 51.5**	**+2.0**
	comp=Z,2.5nm,0.3s								
UDBI	**Udbina**		**2.30**	**139**	*i* Pn		**Pb**	**00 06 19.1**	**-0.5**
UDBI					Sn		**Sb**	**00 06 49.2**	**+1.1**
UDBI	**Udbina**		**2.30**	**139**	*i* Pn		**Pb**	**00 06 19.0**	**-0.5**
UDBI					Sn		**Sb**	**00 06 49.1**	**+1.1**
RETA	**Reutte**		**2.32**	**302**	*e*Pn		**Pg**	**00 06 22.1**	**-0.2**
	comp=Z,1.1nm,0.2s,SNR=9.4								
RETA					*e*Sg		**Sg**	**00 06 52.9**	**+0.6**
	comp=Z,8.9nm,0.4s								
RETA	**Reutte**		**2.32**	**302**	Pn		**Pg**	**00 06 22.1**	**-0.2**
	comp=Z,1.1nm,0.2s,SNR=9.4								
RETA					Sg		**Sg**	**00 06 52.9**	**+0.6**
	comp=Z,8.9nm,0.4s								
KHC	**Kasperske Hory**		**2.85**	**359**	*e*PN		**Pb**	**00 06 26.3**	**-2.5**
KHC					*e*SN		**Sb**	**00 07 01.9**	**-1.7**
KHC					*e*SG		**Sg**	**00 07 10.4**	**+1.2**
	comp=Z,5.2nm,0.6s								
PRU	**Pruhonice**		**3.75**	**9**	*e*SN		**Sn**	**00 07 22.0**	**+2.1**
PRU					*e*SG		**Sg**	**00 07 38.1**	**-0.2**
	comp=Z,3.6nm,0.5s								
PRA	**Prague**		**3.82**	**8**	*e*SG		**Sg**	**00 07 41.6**	**+1.1**
	comp=Z,7.2nm,0.7s								
BRG	**Berggiesshubel**		**4.59**	**2**	SG		**Sg**	**00 08 04.0**	**-1.3**
	comp=Z,2.6nm,0.6s								

WEL 24 00:14:01.4±0.1, 43°57S×172°43E, h9km±1km, ML3.6/16, 8C-1D, Error ellipse: s-maj=0.9km s-min=0.8km az=0.0, South Island

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
CRLZ	**Canterbury Las**	**0.14**	**91**	⇑PG	Pg	00 14 04.5	0.0
CRLZ				SG	Sg	00 14 06.8	+0.2
CRLZ				AML	AML	00 14 07.2	
CRLZ				AML	AML	00 14 07.3	
CRLZ				AML	AML	00 14 07.4	
MQZ	**McQueen's Vall**	**0.21**	**129**	⇓PG	Pg	00 14 05.7	0.0
MQZ				SG	Sg	00 14 08.7	+0.1
MQZ				AML	AML	00 14 09.2	
MQZ				AML	AML	00 14 09.2	
OXZ	**Oxford**	**0.38**	**311**	PG	Pg	00 14 08.5	-0.3
OXZ				SG	Sg	00 14 13.9	+0.2
LTZ	**Lake Taylor**	**0.80**	**352**	P*	Pg	00 14 16.8	0.0
LTZ				S*	Sg	00 14 27.8	+0.6
LTZ				AML	AML	00 14 28.5	
RPZ	**Rata Peaks**	**1.01**	**261**	⇑P*	Pg	00 14 20.1	-0.6
RPZ				S*	Sg	00 14 33.7	-0.2
RPZ					AML	00 14 40.9	
INZ	**Inchbonnie**	**1.11**	**319**	P*	Pg	00 14 22.5	-0.2
INZ				S*	Sg	00 14 36.9	-0.2
WVZ	**Waitaha Valley**	**1.33**	**291**	⇑PN	Pn	00 14 24.9	-1.3
WVZ				AML	AML	00 14 46.2	
WVZ				AML	AML	00 14 48.7	
KHZ	**Kahutara**	**1.42**	**36**	⇑PN	Pn	00 14 25.2	-2.1
LBZ	**Lake Benmore**	**1.81**	**243**	⇑PN	Pn	00 14 31.5	-1.3
LBZ				AML	AML	00 15 00.2	
LBZ				AML	AML	00 15 00.3	
LBZ				AML	AML	00 15 05.8	
LBZ				AML	AML	00 15 05.8	
THZ	**Tophouse**	**1.84**	**11**	⇑PN	Pn	00 14 31.4	-1.9
THZ				AML	AML	00 15 06.7	
THZ				AML	AML	00 15 13.2	
DSZ	**Denniston Nort**	**1.88**	**346**	*e*PN	Pn	00 14 31.2	-2.7
DSZ				AML	AML	00 15 04.6	
DSZ				AML	AML	00 15 04.6	
DSZ				AML	AML	00 15 06.7	
DSZ				AML	AML	00 15 09.3	
FOZ	**Fox Glacier**	**1.90**	**270**	PN	Pn	00 14 34.0	0.0
FOZ				SN	Sn	00 14 57.1	-0.9
FOZ				AML	AML	00 14 58.7	
FOZ				AML	AML	00 14 58.7	
ODZ	**Otahua Downs**	**1.95**	**220**	⇑PN	Pn	00 14 32.7	-2.0
ODZ				AML	AML	00 15 04.9	
ODZ				AML	AML	00 15 09.3	
ODZ				AML	AML	00 15 11.2	
ODZ				AML	AML	00 15 11.2	
BSWZ	**Blackbirch Sta**	**2.14**	**30**	PN	Pn	00 14 36.1	-1.3
HHSZ	**Highcliff Hill**	**2.65**	**209**	PN	Pn	00 14 42.4	-2.0
JCZ	**Jackson Bay**	**2.68**	**258**	*e*PN	Pn	00 14 43.6	-1.3
JCZ				AML	AML	00 15 31.7	
JCZ				AML	AML	00 15 35.7	
QRZ	**Quartz Range**	**2.75**	**2**	*e*PN	Pn	00 14 44.2	-1.5
QRZ				AML	AML	00 15 38.1	
WKZ	**Wanaka**	**2.75**	**242**	*e*PN	Pn	00 14 44.1	-1.7
WKZ				AML	AML	00 15 32.8	
WKZ				AML	AML	00 15 41.2	
EAZ	**Earnscleugh**	**2.78**	**232**	⇑PN	Pn	00 14 44.3	-1.9
EAZ				AML	AML	00 15 30.3	
EAZ				AML	AML	00 15 30.3	
EAZ				AML	AML	00 15 30.4	
EAZ				AML	AML	00 15 30.4	
TUZ	**Tuapeka**	**3.10**	**219**	PN	Pn	00 14 48.7	-1.8
TUZ				AML	AML	00 15 47.9	
TUZ				AML	AML	00 15 51.2	
OGWZ	**Otaki Gorge**	**3.43**	**37**	*e*PN	Pn	00 14 52.3	-2.7
MRZ	**Mangatainoka R**	**3.74**	**40**	PN	Pn	00 14 57.0	-2.2
SYZ	**Scrubby Hill**	**3.77**	**217**	AML	AML

CSEM ***24*** *00:28:17.9±0.1,33.°76N×32.°15E,h20km,ML3.7,Error ellipse: s-maj=2.9km s-min=2.1km az=79.0*
DDA ***24*** *00:28:17.9,34.°12N×31.°99E,h8km,Md3.3*
NSSC ***24*** *00:28:17.4±0.9,33.°93N×32.°33E,h0km±18km,ML2.7*
NIC ***24*** *00:28:17.1±0.3,33.°82N×31.°99E,h15km,mb4.1,ML3.7*
HLW ***24*** *00:28:18.6,33.°79N×32.°03E,h32km±27km,Md3.8,Ml3.0*
GII ***24*** *00:28:20.0±0.0,33.°78N×32.°14E,h31km,MD3.0/7*

ISC 24 00:28:15.5±1.4,33.°78N±0.°02×32.°10E±0.°03,h15km±10km, n154,σ1%69/228,Eastern Mediterranean Sea

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
PPCY	**Paphos**	**1.12**	**10**	P	**Pn**	**00 28 37.4**	**+0.6**
	baz=195						
PPCY	**Paphos**	**1.12**	**10**	P	**Pn**	**00 28 37.4**	**+0.6**
SZAC	**Souni**	**1.17**	**33**	P	**Pg**	**00 28 38.3**	**+0.1**
	baz=218						
SZAC				S	**Sn**	**00 28 54.8**	**+1.5**
SZAC	**Souni**	**1.17**	**33**	P	**Pg**	**00 28 38.3**	**+0.1**
SZAC				S	**Sn**	**00 28 54.8**	**+1.5**
AKMC	**Akamas**	**1.26**	**9**	P	**Pb**	**00 28 39.1**	**0.0**
	baz=193						
AKMC	**Akamas**	**1.26**	**9**	P	**Pb**	**00 28 39.1**	**0.0**
ALFC	**Alefka**	**1.44**	**17**	P	**Pn**	**00 28 41.8**	**+0.7**
	baz=200						
ALFC				S	**Sg**	**00 29 01.1**	**-0.8**
ALFC	**Alefka**	**1.44**	**17**	P	**Pn**	**00 28 41.8**	**+0.7**
ALFC				S	**Sg**	**00 29 01.1**	**-0.8**
LEF	**Lefka**	**1.49**	**26**	*e*PN	**Pn**	**00 28 43.1**	**+1.3**
LEF				*e*SN	**Sb**	**00 29 02.6**	**+0.9**
LEF	**Lefka**	**1.49**	**26**	*e*Pn	**Pn**	**00 28 43.1**	**+1.3**
LEF				*e*Sn	**Sb**	**00 29 02.6**	**+0.9**
CSS	**Mathiatis**	**1.56**	**40**	P	**Pn**	**00 28 43.6**	**+0.8**
	baz=224						
CSS	**Mathiatis**	**1.56**	**40**	Pn	**Pn**	**00 28 43.2**	**+0.4**
CSS				Sn	**Sn**	**00 29 03.0**	**+0.2**
CSS	**Mathiatis**	**1.56**	**40**	Pn	**Pn**	**00 28 43.2**	**+0.4**
CSS	**Mathiatis**	**1.56**	**40**	P	**Pn**	**00 28 43.6**	**+0.8**
CSS				Sn	**Sn**	**00 29 03.0**	**+0.2**
MAMC	**Mammari**	**1.67**	**33**	P	**Pn**	**00 28 45.8**	**+1.5**
	baz=217						
MAMC	**Mammari**	**1.67**	**33**	P	**Pn**	**00 28 45.8**	**+1.5**
AKDN	**Akdeniz- K¨–br**	**1.68**	**25**	*e*PN	**Pb**	**00 28 46.0**	**-0.1**
AKDN	**Akdeniz- K¨–br**	**1.68**	**25**	*e*Pn	**Pb**	**00 28 46.1**	**-0.1**
LFK	**Lefkose**	**1.91**	**38**	*e*PN	**Pn**	**00 28 49.5**	**+1.8**
LFK	**Lefkose**	**1.91**	**38**	*e*Pn	**Pn**	**00 28 49.5**	**+1.8**
PHNC	**Paralimni**	**2.01**	**52**	P	**Pn**	**00 28 51.0**	**+2.0**
	baz=235						
PHNC	**Paralimni**	**2.01**	**52**	P	**Pn**	**00 28 51.0**	**+2.0**
EREN	**Erenkoy**	**2.44**	**44**	*e*PN	**Pn**	**00 28 57.4**	**+2.5**
EREN	**Erenkoy**	**2.44**	**44**	*e*Pn	**Pn**	**00 28 57.4**	**+2.5**
GAZI	**Gazipasa**	**2.46**	**4**	*i* P	**Pn**	**00 28 56.5**	**+1.3**
GAZI				*i* S	**Sn**	**00 29 24.4**	**-0.6**
GAZI	**Gazipasa**	**2.46**	**4**	P	**Pn**	**00 28 56.5**	**+1.3**
GAZI				S	**Sn**	**00 29 24.4**	**-0.6**
HNTI	**Hanita**	**2.66**	**104**	Pn	**Pn**	**00 28 59.2**	**+1.2**
HNTI				Sn	**Sn**	**00 29 29.5**	**-0.5**
HNTI	**Hanita**	**2.66**	**104**	Pn	**Pn**	**00 28 59.2**	**+1.2**
HNTI				Sn	**Sn**	**00 29 29.5**	**-0.5**
OFRI	**'Ofer**	**2.68**	**115**	Pn	**Pn**	**00 28 58.5**	**+0.3**
OFRI	**'Ofer**	**2.68**	**115**	Pn	**Pn**	**00 28 58.5**	**+0.3**
IKL	**Isikli**	**2.78**	**27**	*e*PN	**Pn**	**00 29 01.7**	**+2.2**
IKL	**Isikli**	**2.78**	**27**	*e*Pn	**Pn**	**00 29 01.7**	**+2.2**
MMA0B	**Mount Meron ar**	**2.87**	**104**	Pn	**Pn**	**00 29 01.4**	**+0.6**
MMA0B				Sn	**Sn**	**00 29 35.0**	**-0.1**
MMA0B	**Mount Meron ar**	**2.87**	**104**	Pn	**Pn**	**00 29 01.4**	**+0.6**
MMA0B				Sn	**Sn**	**00 29 35.0**	**-0.1**
DQRL	**Deir Qamar**	**2.89**	**90**	*e*P	**Pn**	**00 29 01.2**	**0.0**
DQRL	**Deir Qamar**	**2.89**	**90**	*e*P	**Pn**	**00 29 01.2**	**0.0**
SLTI	**Sal'it**	**2.91**	**121**	Pn	**Pn**	**00 29 01.7**	**+0.4**
SLTI				Sn	**Sn**	**00 29 35.6**	**-0.4**
SLTI	**Sal'it**	**2.91**	**121**	Pn	**Pn**	**00 29 01.7**	**+0.4**
SLTI				Sn	**Sn**	**00 29 35.6**	**-0.4**
ERMK	**Ermenek**	**2.94**	**13**	*i* P	**Pn**	**00 29 04.7**	**+2.8**
ERMK				*i* S	**Sn**	**00 29 38.5**	**+1.5**
ERMK	**Ermenek**	**2.94**	**13**	P	**Pn**	**00 29 04.7**	**+2.8**
ERMK				S	**Sn**	**00 29 38.5**	**+1.5**
BHL	**Bhannes**	**2.96**	**87**	*e*P	**Pn**	**00 29 02.0**	**-0.1**
BHL	**Bhannes**	**2.96**	**87**	*e*P	**Pn**	**00 29 02.0**	**-0.1**
KSDI	**Kefar Szold**	**3.03**	**100**	Pn	**Pn**	**00 29 03.9**	**+0.9**
KSDI				Sn	**Sn**	**00 29 38.7**	**-0.4**
KSDI	**Kefar Szold**	**3.03**	**100**	Pn	**Pn**	**00 29 03.9**	**+0.9**
KSDI				Sn	**Sn**	**00 29 38.7**	**-0.4**
MMLI	**Mount Malkishu**	**3.09**	**115**	Pn	**Pn**	**00 29 04.4**	**+0.5**
MMLI				Sn	**Sn**	**00 29 39.6**	**-1.0**
MMLI	**Mount Malkishu**	**3.09**	**115**	Pn	**Pn**	**00 29 04.4**	**+0.5**
MMLI				Sn	**Sn**	**00 29 39.6**	**-1.0**
RCY	**Rachaya**	**3.13**	**94**	*e*P	**Pn**	**00 29 04.8**	**+0.3**
KIZK	**Mersin**	**3.18**	**31**	*i* P	**Pn**	**00 29 06.9**	**+1.9**
KIZK				*i* S	**Sn**	**00 29 44.5**	**+1.9**
KIZK	**Mersin**	**3.18**	**31**	P	**Pn**	**00 29 06.9**	**+1.9**
KIZK				S	**Sn**	**00 29 44.5**	**+1.9**
AKAS	**Kas**	**3.19**	**321**	*i* P	**Pn**	**00 29 06.7**	**+1.3**
AKAS				*i* S	**Sn**	**00 29 43.5**	**+0.3**
AKAS	**Kas**	**3.19**	**321**	P	**Pn**	**00 29 06.7**	**+1.3**
AKAS				S	**Sn**	**00 29 43.5**	**+0.3**
KSHT	**Keshet**	**3.21**	**103**	Pn	**Pn**	**00 29 07.1**	**+1.6**
KSHT	**Keshet**	**3.21**	**103**	Pn	**Pn**	**00 29 07.1**	**+1.6**
HWQ	**Hawqa**	**3.23**	**80**	*e*P	**Pn**	**00 29 05.7**	**-0.2**
HWQ	**Hawqa**	**3.23**	**80**	*e*P	**Pn**	**00 29 05.7**	**-0.2**
BRBR	**Barbar**	**3.24**	**95**	*i* P	**Pn**	**00 29 06.8**	**+0.8**
BRBR				*e*S	**Sn**	**00 29 43.0**	**-1.4**
BRBR				AML	AML	00 29 46.4	
	comp=E,117nm,0.3s						
BRBR				AML	AML	00 29 46.5	
	comp=N,134nm,0.4s						
BRBR	**Barbar**	**3.24**	**95**	*i* P	**Pn**	**00 29 06.8**	**+0.8**
BRBR				*e*S	**Sn**	**00 29 43.0**	**-1.4**
	comp=N,134nm,0.4s						
HMDT	**Nahal Hemdat**	**3.25**	**117**	Pn	**Pn**	**00 29 07.3**	**+1.2**
HMDT				Sn	**Sn**	**00 29 44.6**	**0.0**
HMDT	**Nahal Hemdat**	**3.25**	**117**	Pn	**Pn**	**00 29 07.3**	**+1.2**
HMDT				Sn	**Sn**	**00 29 44.6**	**0.0**
AMAZ	**Amatzia**	**3.26**	**133**	Pn	**Pn**	**00 29 07.7**	**+1.5**
AMAZ				Sn	**Sn**	**00 29 45.2**	**+0.4**
AMAZ	**Amatzia**	**3.26**	**133**	Pn	**Pn**	**00 29 07.7**	**+1.5**
AMAZ				Sn	**Sn**	**00 29 45.2**	**+0.4**
TCHB	**Talchebab**	**3.43**	**108**	*i* P	**Pn**	**00 29 10.4**	**+1.9**
TCHB				*e*S	**Sn**	**00 29 49.2**	**+0.3**
TCHB				AML	AML	00 29 52.1	
	comp=N,148nm,0.3s						
TCHB				AML	AML	00 29 56.2	
	comp=E,68nm,0.5s						
TCHB	**Talchebab**	**3.43**	**108**	*i* P	**Pn**	**00 29 10.4**	**+1.9**
TCHB				*e*S	**Sn**	**00 29 49.2**	**+0.3**
	comp=E,68nm,0.5s						
ELL	**Elmali**	**3.46**	**329**	*e*PN	**Pn**	**00 29 11.0**	**+1.9**
ELL	**Elmali**	**3.46**	**329**	*e*Pn	**Pn**	**00 29 11.0**	**+1.9**
REVI	**Revivim**	**3.52**	**140**	Pn	**Pn**	**00 29 11.6**	**+1.9**
REVI				Sn	**Sn**	**00 29 51.5**	**+0.5**
REVI	**Revivim**	**3.52**	**140**	Pn	**Pn**	**00 29 11.6**	**+1.9**
REVI				Sn	**Sn**	**00 29 51.5**	**+0.5**
KORT	**Korkueli**	**3.52**	**337**	*i* P	**Pn**	**00 29 13.4**	**+3.6**
KORT				*i* S	**Sb**	**00 29 55.7**	**-4.6**
KORT	**Korkueli**	**3.52**	**337**	P	**Pn**	**00 29 13.4**	**+3.6**
KORT				S	**Sb**	**00 29 55.7**	**-4.6**
DSI	**Dead Sea**	**3.54**	**128**	Pn	**Pn**	**00 29 11.3**	**+1.4**
DSI				Sn	**Sn**	**00 29 52.1**	**+0.6**
DSI	**Dead Sea**	**3.54**	**128**	Pn	**Pn**	**00 29 11.3**	**+1.4**
DSI				Sn	**Sn**	**00 29 52.1**	**+0.6**
MARH	**Ras Al Marh**	**3.65**	**85**	*i* P	**Pn**	**00 29 13.2**	**+1.3**
MARH				*e*S	**Sn**	**00 29 53.5**	**-1.4**
MARH				AML	AML	00 30 00.2	
	comp=E,78nm,0.4s						
MARH				AML	AML	00 30 02.9	
	comp=N,70nm,0.3s						
MARH	**Ras Al Marh**	**3.65**	**85**	*i* P	**Pn**	**00 29 13.2**	**+1.3**
MARH				*e*S	**Sn**	**00 29 53.5**	**-1.4**
	comp=N,70nm,0.3s						
MERS	**Mersin**	**3.67**	**32**	*e*PN	**Pn**	**00 29 14.4**	**+2.6**
MERS	**Mersin**	**3.67**	**32**	*e*Pn	**Pn**	**00 29 14.4**	**+2.6**
MZDA	**Masada**	**3.69**	**131**	Pn	**Pn**	**00 29 14.1**	**+2.0**
MZDA				Sn	**Sn**	**00 29 55.5**	**+0.2**
MZDA	**Masada**	**3.69**	**131**	Pn	**Pn**	**00 29 14.1**	**+2.0**
MZDA				Sn	**Sn**	**00 29 55.5**	**+0.2**
FETY	**Fethiye**	**3.77**	**320**	*e*PN	**Pn**	**00 29 15.3**	**+2.1**
FETY	**Fethiye**	**3.77**	**320**	*e*Pn	**Pn**	**00 29 15.4**	**+2.1**
ARNB	**Al Arnab**	**3.81**	**56**	*i* P	**Pn**	**00 29 13.9**	**+0.2**
ARNB				*e*S	**Sn**	**00 29 55.3**	**-3.0**
ARNB				AML	AML	00 29 58.7	
	comp=N,79nm,0.2s						
ARNB				AML	AML	00 29 59.0	
	comp=E,52nm,0.2s						
ARNB	**Al Arnab**	**3.81**	**56**	*i* P	**Pn**	**00 29 13.9**	**+0.2**
ARNB				*e*S	**Sn**	**00 29 55.3**	**-3.0**
	comp=E,52nm,0.2s						
HHAG	**Hagoal**	**3.81**	**180**	P	**Pn**	**00 29 15.4**	**+1.6**
	baz=179						
HHAG	**Hagoal**	**3.81**	**180**	P	**Pn**	**00 29 15.4**	**+1.6**
KOT	**Kottamia**	**3.84**	**183**	P	**Pn**	**00 29 15.8**	**+1.6**
	baz=183						
KOT				AMP		00 30 00.0	
	comp=N,60µm,0.1s,logA/T=5.6,baz=183						
KOT	**Kottamia**	**3.84**	**183**	P	**Pn**	**00 29 15.8**	**+1.6**
BCK	**Bucak**	**3.88**	**342**	*e*PN	**Pn**	**00 29 17.0**	**+2.3**
BCK	**Bucak**	**3.88**	**342**	*e*Pn	**Pn**	**00 29 17.0**	**+2.3**
RMNI	**Mount Ramon**	**3.89**	**144**	Pn	**Pn**	**00 29 16.8**	**+1.9**
RMNI	**Mount Ramon**	**3.89**	**144**	Pn	**Pn**	**00 29 16.8**	**+1.9**
SUZ	**Suez**	**3.97**	**171**	P	**Pn**	**00 29 17.6**	**+1.6**
	baz=169						
SUZ	**Suez**	**3.97**	**171**	P	**Pn**	**00 29 17.6**	**+1.6**
KERG	**Konya-Eregli**	**3.99**	**24**	*i* P	**Pn**	**00 29 19.7**	**+3.4**
KERG	**Konya-Eregli**	**3.99**	**24**	P	**Pn**	**00 29 19.7**	**+3.4**
YAYL	**Yayladag**	**3.99**	**54**	*i* P	**Pn**	**00 29 16.7**	**+0.4**
YAYL	**Yayladag**	**3.99**	**54**	P	**Pn**	**00 29 16.7**	**+0.4**
SALA	**Sala**	**4.03**	**104**	*i* P	**Pn**	**00 29 19.0**	**+2.1**
SALA				*e*S	**Sn**	**00 30 03.7**	**-0.2**
SALA				AML	AML	00 30 14.4	
	comp=N,34nm,0.4s						
SALA				AML	AML	00 30 17.6	
	comp=E,2.0nm,0.3s						
SALA	**Sala**	**4.03**	**104**	*i* P	**Pn**	**00 29 19.0**	**+2.1**
SALA				*e*S	**Sn**	**00 30 03.7**	**-0.2**
	comp=E,2.0nm,0.3s						
GULE	**Gulek**	**4.12**	**31**	*i* P	**Pn**	**00 29 21.3**	**+3.1**
GULE	**Gulek**	**4.12**	**31**	P	**Pn**	**00 29 21.3**	**+3.1**
ZFRI	**Zfri**	**4.14**	**140**	Pn	**Pn**	**00 29 19.9**	**+1.7**
ZFRI				Sn	**Sn**	**00 30 05.9**	**-0.5**
ZFRI	**Zfri**	**4.14**	**140**	Pn	**Pn**	**00 29 19.9**	**+1.7**
ZFRI				Sn	**Sn**	**00 30 05.9**	**-0.5**
HNKL	**Nakhl**	**4.16**	**157**	P	**Pn**	**00 29 19.8**	**+1.3**
	baz=156						
HNKL				AMP		00 30 00.0	
	comp=E,70µm,0.5s,logA/T=5.2,baz=156						
HNKL	**Nakhl**	**4.16**	**157**	P	**Pn**	**00 29 19.8**	**+1.3**
KONT	**Konya--Tatoy**	**4.17**	**3**	*e*PN	**Pn**	**00 29 21.3**	**+2.7**
KONT	**Konya--Tatoy**	**4.17**	**3**	*e*Pn	**Pn**	**00 29 21.3**	**+2.7**
HSAF	**As Saff**	**4.17**	**187**	P	**Pn**	**00 29 19.7**	**+1.0**
	baz=186						
HSAF	**As Saff**	**4.17**	**187**	P	**Pn**	**00 29 19.7**	**+1.0**
GLL	**Jalalah**	**4.20**	**185**	P	**Pn**	**00 29 20.6**	**+1.5**
	baz=184						
GLL	**Jalalah**	**4.20**	**185**	P	**Pn**	**00 29 20.6**	**+1.5**
TURN	**Turunc**	**4.21**	**318**	*i* P	**Pn**	**00 29 23.2**	**+4.0**
TURN	**Turunc**	**4.21**	**318**	P	**Pn**	**00 29 23.2**	**+4.0**
PRNI	**Paran**	**4.21**	**143**	Pn	**Pn**	**00 29 20.9**	**+1.6**
PRNI				Sn	**Sn**	**00 30 08.1**	**-0.1**
PRNI	**Paran**	**4.21**	**143**	Pn	**Pn**	**00 29 20.9**	**+1.6**
PRNI				Sn	**Sn**	**00 30 08.1**	**-0.1**
KARA	**Karaisali**	**4.23**	**34**	*e*PN	**Pn**	**00 29 22.2**	**+2.7**
KARA	**Karaisali**	**4.23**	**34**	*e*Pn	**Pn**	**00 29 22.2**	**+2.7**
BTCH	**Batrach**	**4.23**	**57**	*i* P	**Pn**	**00 29 20.2**	**+0.6**
BTCH				*e*S	**Sn**	**00 30 05.8**	**-3.0**
BTCH				AML	AML	00 30 11.5	
	comp=E,61nm,0.4s						
BTCH				AML	AML	00 30 12.2	
	comp=N,76nm,0.3s						
BTCH	**Batrach**	**4.23**	**57**	*i* P	**Pn**	**00 29 20.2**	**+0.6**
BTCH				*e*S	**Sn**	**00 30 05.8**	**-3.0**
	comp=N,76nm,0.3s						
TAHT	**Tahtakopru-Hat**	**4.24**	**51**	*e*PN	**Pn**	**00 29 22.8**	**+3.2**
TAHT	**Tahtakopru-Hat**	**4.24**	**51**	*e*Pn	**Pn**	**00 29 22.8**	**+3.2**
RABH	**Abou Rabah**	**4.29**	**80**	*i* P	**Pn**	**00 29 22.3**	**+1.9**
RABH				*e*S	**Sn**	**00 30 07.5**	**-2.6**
RABH				AML	AML	00 30 14.0	
	comp=E,28nm,0.3s						
RABH				AML	AML	00 30 15.3	
	comp=N,24nm,0.7s						
RABH	**Abou Rabah**	**4.29**	**80**	*i* P	**Pn**	**00 29 22.3**	**+1.9**
RABH				*e*S	**Sn**	**00 30 07.5**	**-2.6**
	comp=N,24nm,0.7s						
ROOS	**tl_alroos**	**4.33**	**83**	*i* P	**Pn**	**00 29 23.3**	**+2.3**
ROOS				*e*S	**Sn**	**00 30 08.9**	**-2.3**
ROOS				AML	AML	00 30 15.4	
	comp=E,49nm,0.5s						
ROOS				AML	AML	00 30 17.3	
	comp=N,38nm,0.5s						
ROOS	**tl_alroos**	**4.33**	**83**	*i* P	**Pn**	**00 29 23.3**	**+2.3**
ROOS				*e*S	**Sn**	**00 30 08.9**	**-2.3**
	comp=N,39nm,0.5s						
ZNM	**Zenema**	**4.44**	**171**	P	**Pn**	**00 29 24.2**	**+1.9**
	baz=170						
ZNM				AMP		00 30 00.0	
	comp=N,40µm,0.3s,logA/T=5.2,baz=170						
ZNM				S	**Sn**	**00 30 13.8**	**+0.1**
	baz=170						
ZNM	**Zenema**	**4.44**	**171**	P	**Pn**	**00 29 24.2**	**+1.9**
ZNM				S	**Sn**	**00 30 13.8**	**+0.1**
ZALF	**Zalf**	**4.46**	**100**	*i* P	**Pn**	**00 29 24.5**	**+1.8**
ZALF				*e*S	**Sn**	**00 30 13.1**	**-1.4**
ZALF				AML	AML	00 30 21.0	
	comp=E,15nm,0.4s						
ZALF				AML	AML	00 30 28.8	
	comp=N,17nm,0.5s						
ZALF	**Zalf**	**4.46**	**100**	*i* P	**Pn**	**00 29 24.5**	**+1.8**
ZALF				*e*S	**Sn**	**00 30 13.1**	**-1.4**
	comp=N,17nm,0.5s						
HRFI	**Mount Harif**	**4.49**	**145**	Pn	**Pn**	**00 29 24.8**	**+1.7**
HRFI				Sn	**Sn**	**00 30 14.9**	**-0.2**
HRFI	**Mount Harif**	**4.49**	**145**	Pn	**Pn**	**00 29 24.8**	**+1.7**
HRFI				Sn	**Sn**	**00 30 14.9**	**-0.2**
ZAF	**Zafarana**	**4.50**	**175**	P	**Pn**	**00 29 25.2**	**+2.0**
	baz=174						
ZAF	**Zafarana**	**4.50**	**175**	P	**Pn**	**00 29 25.2**	**+2.0**
YER	**Yerkesik**	**4.58**	**318**	*e*PN	**Pn**	**00 29 26.9**	**+2.6**
YER	**Yerkesik**	**4.58**	**318**	*e*Pn	**Pn**	**00 29 26.9**	**+2.6**
MBRI	**Mt Berech**	**4.64**	**148**	Pn	**Pn**	**00 29 27.0**	**+1.8**
MBRI				Sn	**Sn**	**00 30 19.2**	**+0.4**
MBRI	**Mt Berech**	**4.64**	**148**	Pn	**Pn**	**00 29 27.0**	**+1.8**
MBRI				Sn	**Sn**	**00 30 19.2**	**+0.4**
EIL	**Elat**	**4.76**	**149**	Pn	**Pn**	**00 29 28.5**	**+1.7**
EIL				Sn	**Sn**	**00 30 21.1**	**-0.6**
EIL	**Elat**	**4.76**	**149**	Pn	**Pn**	**00 29 28.5**	**+1.7**
EIL				Sn	**Sn**	**00 30 21.1**	**-0.6**
HMAT	**Matruh**	**5.00**	**239**	P	**Pn**	**00 29 31.3**	**+1.2**
	baz=239						
HMAT				AMP		00 30 00.0	
	comp=E,10µm,0.2s,logA/T=4.7,baz=239						
HMAT				S	**Sn**	**00 30 25.8**	**-1.9**
	baz=239						
HMAT	**Matruh**	**5.00**	**239**	P	**Pn**	**00 29 31.3**	**+1.2**
HMAT				S	**Sn**	**00 30 25.8**	**-1.9**
NBNS	**Bani Suef**	**5.18**	**188**	P	**Pn**	**00 29 34.4**	**+1.8**
	baz=188						
NBNS				AMP		00 30 00.0	
	comp=N,10µm,0.5s,logA/T=4.3,baz=188						
NBNS				S	**Sn**	**00 30 31.3**	**-0.9**
	baz=188						
NBNS	**Bani Suef**	**5.18**	**188**	P	**Pn**	**00 29 34.4**	**+1.8**
NBNS				S	**Sn**	**00 30 31.3**	**-0.9**
NUB		**5.21**	**155**	P	**Pn**	**00 29 35.3**	**+2.3**
	baz=154						
TR2	**Tor 2**	**5.55**	**165**	P	**Pn**	**00 29 39.1**	**+1.4**
	baz=164						
TR2	**Tor 2**	**5.55**	**165**	P	**Pn**	**00 29 39.1**	**+1.4**
TR1	**Tor 1**	**5.97**	**164**	P	**Pn**	**00 29 45.0**	**+1.5**
	baz=163						
TR1	**Tor 1**	**5.97**	**164**	P	**Pn**	**00 29 44.9**	**+1.5**
AWBH		**6.09**	**208**	P	**Pn**	**00 29 46.5**	**+1.5**
	baz=207						
AWBH		**6.09**	**208**	P	**Pn**	**00 29 46.5**	**+1.5**
SH2	**Sharm el Sheik**	**6.12**	**163**	P	**Pn**	**00 29 47.0**	**+1.6**
	baz=162						
SH2	**Sharm el Sheik**	**6.12**	**163**	P	**Pn**	**00 29 47.0**	**+1.6**
SLUM	**Salum**	**6.24**	**250**	P	**Pn**	**00 29 48.3**	**+1.2**
	baz=251						
SLUM				S	**Sn**	**00 30 55.9**	**-2.3**
	baz=251						
SLUM	**Salum**	**6.24**	**250**	P	**Pn**	**00 29 48.3**	**+1.2**
SWA2		**7.25**	**233**	P	**Pn**	**00 30 02.0**	**+1.0**
	baz=233						
SWA2				AMP		00 31 00.0	
	comp=N,10µm,0.2s,logA/T=4.6,baz=233						
SWA2				S	**Sn**	**00 31 21.1**	**-2.0**
	baz=233						
SWA2		**7.25**	**233**	P	**Pn**	**00 30 02.0**	**+1.0**

ISCJB ***24*** *00:45:44.5±0.8,44.°33N±0.°08×142.°5E±0.°1,h239km±7km, mb2.7/1,Error ellipse: s-maj=16.1km s-min=11.3km az=30.2*
JMA ***24*** *00:45:45.0±0.3,44.°45N×142.°43E,h236km±3km,M3.0*
IDC ***24*** *00:45:46.1±1.0,44.°56N×142.°49E,h223km±10km,mb2.5/1, mb1 2.9/4,mb1mx2.6/31,mbtmp3.4/4,Error ellipse: s-maj=44.5km s-min=23.5km az=144.0*

ISC 24 00:45:45.5±1.1,44.°37N±0.°09×142.°5E±0.°1,h232km±8km, n14,σ1%11/19,Hokkaido region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
ASAJ	**Asahikawa**	**0.27**	**160**	P	**Pn**	**00 46 16.5**	**+0.7**
	7.2nm,0.3s,baz=279,slow=6.4,SNR=56						
ASAJ				S	**S**	**00 46 39.5**	**0.0**
	1.3nm,0.3s,baz=50,slow=33,SNR=6.5						
ASAJ	**Asahikawa**	**0.27**	**160**	P	**Pn**	**00 46 16.1**	**+0.3**
ASAJ				*e*S	**S**	**00 46 39.9**	**+0.4**
JKK2	**Kamakawa 2**	**0.54**	**158**	P	**Pn**	**00 46 17.2**	**+0.6**
JKK2				*e*S	**S**	**00 46 41.5**	**+0.7**
JSE	**Soyaes**	**0.59**	**8**	P	**Pn**	**00 46 16.1**	**-0.5**
JMP	**Maruseppu**	**0.74**	**119**	P	**Pn**	**00 46 17.5**	**+0.2**
JWK2	**Keihoku**	**1.03**	**337**	P	**Pn**	**00 46 18.5**	**-0.2**
JTKR	**Abashiri--Toko**	**1.11**	**111**	P	**Pn**	**00 46 19.8**	**+0.5**
JTKR				*e*S	**S**	**00 46 46.2**	**+0.5**
JCH	**Churui**	**1.88**	**159**	*e*S	**S**	**00 46 54.5**	**-2.0**
JNBK	**Urakawa-nobuka**	**2.10**	**174**	*e*S	**S**	**00 47 00.2**	**-0.2**
JKB	**Kayabe**	**2.70**	**203**	P	**Pn**	**00 46 33.5**	**-0.1**
JKB				*e*S	**S**	**00 47 09.4**	**-1.9**
USRK	**Ussuriysk Ar.**	**7.52**	**272**	P	**Pn**	**00 47 32.9**	**+0.3**
	0.3nm,0.3s,baz=87,slow=15,SNR=8.7						
MJAR	**Matsushiro Arr**	**8.47**	**204**	P	**Pn**	**00 47 47.7**	**+2.9**
	0.1nm,0.3s,baz=26,slow=11,SNR=2.7						
PETK	**Petropavlovsk-**	**13.30**	**44**	P	**Pn**	**00 48 44.9**	**-0.5**
	0.1nm,0.3s,baz=228,slow=8.7,SNR=3.6						
YKA	**Yellowknife Ar**	**57.13**	**33**	P	**P**	**00 55 07.4**	**-0.1**
	0.1nm,0.5s,baz=305,slow=6.8,SNR=5.2						

JMA 24 00:52:14.8±0.2,36.°59N×141.°86E,h54km,M3.5,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.99**	**301**	P	**Pn**	**00 52 32.4**	**-0.2**
ONAJ				*e*S	**Sn**	**00 52 46.0**	**+0.3**
JHO	**Hitachi**	**1.04**	**272**	P	**Pn**	**00 52 33.1**	**0.0**
JHO				S	**Sn**	**00 52 46.5**	**-0.2**
JFK	**Kawauchi**	**1.11**	**315**	P	**Pn**	**00 52 33.9**	**-0.2**
JFT	**Otama**	**1.53**	**308**	P	**Pn**	**00 52 41.2**	**+1.4**
JFT				S	**Sn**	**00 53 00.2**	**+1.6**
JMM	**Marumori**	**1.53**	**327**	P	**Pn**	**00 52 40.0**	**+0.2**
JMM				*e*S	**Sn**	**00 52 58.5**	**-0.1**
JIO	**Ouri**	**1.91**	**348**	P	**Pn**	**00 52 45.0**	**+0.1**
JIO				S	**Sn**	**00 53 07.2**	**-0.5**
JFY	**Yanaizu**	**1.91**	**296**	P	**Pn**	**00 52 47.4**	**+2.5**
JFY				S	**Sn**	**00 53 10.7**	**+2.9**
JAG	**Ashikaga**	**1.95**	**266**	P	**Pn**	**00 52 46.5**	**+1.1**
JAG				S	**Sn**	**00 53 09.6**	**+0.9**
JOU	**Okura**	**2.01**	**332**	P	**Pn**	**00 52 48.4**	**+2.0**
JOU				S	**Sn**	**00 53 12.9**	**+2.5**
BSO1	**Boso 1**	**2.06**	**201**	P	**Pn**	**00 52 47.5**	**+1.0**
BSO1				S	**Sn**	**00 53 12.9**	**+2.1**
JMK	**Ichinoseki**	**2.41**	**348**	P	**Pn**	**00 52 52.7**	**+0.9**
JRY	**Ryogami san**	**2

	5.6nm,0.5s						
MK31				⇑Lg	Lg	01 03 50.0	
	10.0nm,0.6s,baz=33,slow=32,SNR=4.7						
MKAR	**Makanchi Array**	**7.08**	**212**	Pn	**Pn**	**01 01 55.8**	**+0.8**
	6.8nm,0.3s,baz=29,slow=13,SNR=217						
MKAR				Sn	**Sn**	**01 03 15.5**	**0.0**
	2.1nm,0.3s,baz=76,slow=31,SNR=7.1						
MKAR				Lg	Lg	01 03 50.8	
	2.0nm,0.3s,baz=33,slow=29,SNR=4.8						
MKAR				LR	LR	01 04 38.3	
	comp=Z,44nm,18.7s,baz=1.0,slow=38						
BVAR	**Borovoye Array**	**10.48**	**277**	Pn	**Pn**	**01 02 41.0**	**-0.4**
	0.1nm,0.3s,baz=90,slow=13,SNR=2.4						
BVAR				Sn	**Sn**	**01 04 36.5**	**-2.2**
	0.5nm,0.3s,baz=74,slow=26,SNR=4.6						
FINES	**FINESS Array B**	**33.28**	**310**	P	**P**	**01 06 49.1**	**+0.7**
	0.3nm,0.4s,baz=74,slow=10,SNR=7.0						
ASAJ	**Asahikawa**	**36.56**	**81**	LR	LR	01 22 17.8	
	comp=Z,55nm,21.5s,baz=30,slow=36						
NOA	**NORSAR Array B**	**40.19**	**313**	P	**P**	**01 07 47.8**	**+0.4**
	0.2nm,0.5s,baz=59,slow=5.6,SNR=2.5						
ILAR	**Eielson Array**	**55.32**	**25**	P	**P**	**01 09 43.7**	**-0.8**
	0.2nm,0.5s,baz=325,slow=5.9,SNR=3.3						
YKA	**Yellowknife Ar**	**63.58**	**11**	P	**P**	**01 10 42.0**	**+0.5**
	0.1nm,0.5s,baz=340,slow=7.0,SNR=5.4						

*IDC **24** 01:03:55.8±0.9,36.80N×142.09E,h0km,mb3.6/9, mb1 3.9/12,mb1mx3.6/41,mbtmp3.7/12,ML3.7/3,MS2.6/2, Ms1 2.6/2,ms1mx2.2/48,Error ellipse: s-maj=22.7km s-min=17.9km az=109.0*

*ISCJB **24** 01:03:56.1±0.6,36.78N±0.05×142.18E±0.07,h19km, mb3.6/9,Error ellipse: s-maj=8.3km s-min=6.2km az=38.4*

*JMA **24** 01:04:01.3±0.4,36.95N×141.80E,h68km,M3.2*

ISC 24 01:03:58.4±0.8,36.83N±0.06×141.96E±0.06,h19km,n24, σ0ᵗ95/19,mb3.7/9,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**1.02**	**302**	P		**Pg**		**01 04 18.2**	**0.0**
JHO	**Hitachi**	**1.14**	**259**	S		**Sg**		**01 04 35.9**	**+0.6**
JMM	**Marumori**	**1.39**	**318**	P		**Pb**		**01 04 22.8**	**-0.9**
JFT	**Otama**	**1.47**	**298**	P		**Pg**		**01 04 24.6**	**-2.0**
MJAR	**Matsushiro Arr**	**3.03**	**266**	Pn		**Pn**		**01 04 46.2**	**+0.9**
	5.6nm,0.3s,baz=95,slow=12,SNR=55								
MJAR				LR		LR		01 06 15.9	
	comp=Z,94nm,18.8s,baz=90,slow=45								
MAT	**Matsushiro**	**3.03**	**266**	P		**Pn**		**01 04 46.3**	**+1.0**
MAT				S		**Sb**		**01 05 26.7**	**-1.6**
JHJ	**Hachijo jima 2**	**4.11**	**206**	Pn		**Pn**		**01 04 59.5**	**-0.6**
	21nm,0.3s,baz=87,slow=23,SNR=5.1								
JHJ				Sn		**Sn**		**01 05 46.6**	**-1.1**
	12nm,0.3s,baz=93,slow=21,SNR=3.5								
ASAJ	**Asahikawa**	**7.29**	**4**	Pn		**Pn**		**01 05 43.6**	**-0.3**
	1.3nm,0.3s,baz=210,slow=12,SNR=14								
ASAJ				Sn		**Sn**		**01 07 06.3**	**+0.2**
	0.3nm,0.3s,baz=39,slow=18,SNR=2.4								
KSRS	**Korea Array**	**11.22**	**277**	LR		LR		01 10 45.5	
	comp=Z,36nm,21.6s,baz=30,slow=36								
H11N2	**WAKE ISLAND Hy**	**27.67**	**121**	T		T		01 39 00.9	
	baz=314,slow=75,SNR=31								
H11N1	**WAKE ISLAND Hy**	**27.68**	**121**	T		T		01 39 01.6	
	baz=314,slow=75,SNR=26								
H11N3	**WAKE ISLAND Hy**	**27.69**	**121**	T		T		01 39 02.3	
	baz=314,slow=75,SNR=23								
SONM	**Songino Array**	**28.26**	**304**	P		**P**		**01 09 51.5**	**+1.1**
	1.3nm,0.7s,baz=106,slow=8.3,SNR=6.7								
H11S1	**WAKE ISLAND Hy**	**28.38**	**123**	T		T		01 39 42.5	
	baz=316,slow=76,SNR=16								
H11S3	**WAKE ISLAND Hy**	**28.38**	**123**	T		T		01 39 51.8	
	baz=316,slow=76,SNR=13								
H11S2	**WAKE ISLAND Hy**	**28.40**	**123**	T		T		01 39 45.6	
	baz=316,slow=76,SNR=13								
CMAR	**Chiang Mai Arr**	**41.87**	**256**	P		**P**		**01 11 48.2**	**+0.7**
	1.7nm,0.3s,baz=43,slow=6.5,SNR=5.2								
ZALV	**Zalesovo Beam**	**42.37**	**313**	P		P		01 11 52.9	+1.8
	0.5nm,0.6s,baz=100,slow=7.5,SNR=3.0								
MKAR	**Makanchi Array**	**44.60**	**302**	P		**P**		**01 12 10.1**	**+0.8**
	0.4nm,0.7s,baz=88,slow=9.4,SNR=4.1								
ILAR	**Eielson Array**	**49.43**	**32**	P		**P**		**01 12 47.0**	**+0.3**
	0.7nm,0.9s,baz=257,slow=5.6,SNR=5.2								
WRA	**Warramunga Arr**	**56.92**	**189**	P		**P**		**01 13 42.5**	**+0.2**
	0.5nm,0.6s,baz=6.4,slow=7.5,SNR=3.6								
ASAR	**Alice Springs**	**60.65**	**188**	P		**P**		**01 14 08.7**	**+0.5**
	0.4nm,0.9s,baz=14,slow=8.2,SNR=3.5								
YKA	**Yellowknife Ar**	**63.77**	**30**	P		**P**		**01 14 28.3**	**-0.3**
	0.1nm,0.7s,baz=303,slow=6.5,SNR=4.1								
TXAR	**Lajitas Array**	**89.90**	**53**	P		**P**		**01 16 57.1**	**+0.6**
	0.4nm,0.8s,baz=285,slow=2.0,SNR=4.8								

MEX 24 01:15:55.3±0.5,16.11N×96.28W,h20km±134km,MD3.6, Oaxaca

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
HUIG	**Huatulco**	**0.37**	**154**	*i* P		Pb		01 16 01.6	-1.6
HUIG				*e*S		Sb		01 16 07.3	-1.3
VHO	**Vista Hermosa**	**1.05**	**336**	*e*P		Pb		01 16 12.4	-2.6
VHO				*i* S		Sb		01 16 24.7	-3.8
PNIG	**Pinotepa**	**1.80**	**279**	*e*P		Pn		01 16 22.6	-2.6
PNIG				*i* S		Sn		01 16 43.4	-4.1

*NIED **24** 01:16:00,36.80N×142.20E,h11km,Mw4.0 Best double couple: Mo1.18000×10¹⁵ NP1:φs6.00000°,δ30.00000°, λ-76.00000°. NP2:φs170.00000°,δ61.00000°, λ-98.00000°.*

*JMA **24** 01:16:42.1±0.5,36.82N×142.24E,h14km,M4.1*

*IDC **24** 01:16:44.6±0.8,36.81N×142.01E,h0km,mb3.9/11, mb1 4.1/16,mb1mx3.9/52,mbtmp3.9/16,ML3.5/4,MS2.9/5, Ms1 2.9/5,ms1mx2.5/50,Error ellipse: s-maj=19.8km s-min=15.6km az=128.0*

*ISCJB **24** 01:16:45.2±0.5,36.83N±0.03×142.05E±0.05,h19km, mb4.0/14,MS2.9/2,Error ellipse: s-maj=5.7km s-min=4.7km az=4.2*

*NEIC **24** 01:16:46.5±4.1,36.82N×142.04E,h13km±26km,mb4.3/2, Error ellipse: s-maj=11.8km s-min=8.1km az=110.0*

ISC 24 01:16:47.5±0.7,36.83N±0.05×141.95E±0.06,h19km,n43, σ1ᵗ22/42,mb4.0/14,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.96**	**287**	P		**Pb**		**01 17 03.6**	**-2.0**
JFK	**Kawauchi**	**1.01**	**302**	P		Pb		01 17 04.0	-2.4
JFK				*e*S		**Sb**		**01 17 21.3**	**+2.0**
JHO	**Hitachi**	**1.13**	**259**	P		**Pn**		**01 17 06.2**	**-2.1**
JHO				*e*S		**Sn**		**01 17 24.9**	**+1.6**
JMM	**Marumori**	**1.38**	**319**	P		**Pn**		**01 17 09.5**	**-2.3**
JFT	**Otama**	**1.46**	**298**	P		**Pn**		**01 17 11.7**	**-1.1**
JFT				S		**Sn**		**01 17 30.5**	**-0.9**
JIO	**Ouri**	**1.69**	**344**	P		**Pn**		**01 17 15.5**	**-0.4**
JIO				*e*S		**Sn**		**01 17 36.3**	**-0.7**
JOU	**Okura**	**1.84**	**327**	P		**Pn**		**01 17 17.0**	**-1.1**
JOU				S		**Sn**		**01 17 39.4**	**-1.4**
JFY	**Yanaizu**	**1.88**	**288**	P		**Pn**		**01 17 18.3**	**-0.4**
JYS	**Shirataka**	**2.04**	**313**	P		**Pn**		**01 17 20.4**	**-0.4**
MJAR	**Matsushiro Arr**	**3.02**	**266**	Pn		**Pn**		**01 17 34.3**	**-0.1**
	7.1nm,0.3s,baz=99,slow=11,SNR=110								
MJAR				LR		LR		01 18 54.3	
	comp=Z,122nm,18.0s,baz=75,slow=43								
MAJO	**Matsushiro**	**3.02**	**266**	*e*Pn		**Pn**		**01 17 34.4**	**+0.1**
MAT	**Matsushiro**	**3.02**	**266**	P		**Pn**		**01 17 34.7**	**+0.4**
MAT				S		**Sb**		**01 18 15.9**	**-1.3**
JHJ2	**Mitsune**	**4.11**	**206**	*e*Pn		**Pn**		**01 17 49.5**	**+0.3**
JHJ	**Hachijo jima 2**	**4.11**	**206**	Pn		**Pn**		**01 17 49.0**	**-0.3**
	15nm,0.3s,baz=300,slow=23,SNR=6.2								
JHJ				Sn		**Sn**		**01 18 35.4**	**-1.4**
	26nm,0.3s,baz=274,slow=21,SNR=4.9								
ASAJ	**Asahikawa**	**7.29**	**4**	Pn		**Pn**		**01 18 31.4**	**-1.6**
	0.9nm,0.3s,baz=197,slow=14,SNR=8.2								
ASAJ				Sn		**Sn**		**01 19 54.2**	**-0.9**
	0.3nm,0.3s,baz=354,slow=33,SNR=2.5								
JNU	**Nakatsue**	**9.81**	**251**	Pn		**Pn**		**01 19 07.7**	**+0.1**
	0.2nm,0.3s,baz=52,slow=12,SNR=2.5								
JNU				LR		LR		01 22 40.5	
	comp=Z,50nm,18.4s,baz=116,slow=36								
JNU	**Nakatsue**	**9.81**	**251**	*e*Pn		**Pn**		**01 19 08.7**	**+1.2**
USRK	**Ussuriysk Ar.**	**10.56**	**317**	Pn		**Pn**		**01 19 18.7**	**+1.0**
	0.1nm,0.3s,baz=111,slow=19,SNR=2.3								
KSRS	**Korea Array**	**11.21**	**277**	Pn		**Pn**		**01 19 29.9**	**+3.1**
	0.1nm,0.3s,baz=89,slow=13,SNR=5.0								
KSRS				LR		LR		01 23 45.1	
	comp=Z,64nm,22.0s,baz=40,slow=37								
KSAR	**Wonju Array Be**	**11.24**	**277**	Pn		**Pn**		**01 19 29.9**	**+2.7**
MA2	**Magadan**	**23.46**	**11**	LR		LR		01 30 51.3	
	comp=Z,35nm,18.6s,baz=259,slow=36								
SEY	**Seymchan**	**26.91**	**11**	P		**P**		**01 22 28.3**	**+1.2**
	1.3nm,0.7s,baz=201,slow=8.2,SNR=6.8								
H11N2	**WAKE ISLAND Hy**	**27.68**	**121**	T		T		01 51 36.8	
	baz=314,slow=75,SNR=34								
H11N1	**WAKE ISLAND Hy**	**27.69**	**121**	T		T		01 51 29.0	
	baz=314,slow=75,SNR=30								
H11N3	**WAKE ISLAND Hy**	**27.70**	**121**	T		T		01 51 34.7	
	baz=314,slow=75,SNR=28								
SONM	**Songino Array**	**28.25**	**304**	P		**P**		**01 22 40.1**	**+0.7**
	3.3nm,0.7s,baz=102,slow=8.3,SNR=18								
H11S1	**WAKE ISLAND Hy**	**28.39**	**123**	T		T		01 52 24.5	
	baz=316,slow=76,SNR=28								
H11S3	**WAKE ISLAND Hy**	**28.39**	**123**	T		T		01 52 28.6	
	baz=316,slow=76,SNR=20								
H11S2	**WAKE ISLAND Hy**	**28.41**	**123**	T		T		01 52 31.0	
	baz=316,slow=76,SNR=17								
CMAR	**Chiang Mai Arr**	**41.86**	**256**	LR		LR		01 42 05.4	
	comp=Z,20nm,19.8s,baz=270,slow=36								
ZALV	**Zalesovo Beam**	**42.37**	**313**	P		**P**		**01 24 40.5**	**+0.3**
	2.0nm,0.8s,baz=94,slow=6.1,SNR=8.6								
MKAR	**Makanchi Array**	**44.59**	**302**	P		**P**		**01 24 58.3**	**0.0**
	1.2nm,0.9s,baz=86,slow=9.8,SNR=7.9								
KURK	**Kurchatov**	**46.39**	**308**	*e*P		**P**		**01 25 12.3**	**-0.2**
	9.2nm,0.9s								
ILAR	**Eielson Array**	**49.43**	**32**	P		**P**		**01 25 35.2**	**-0.6**
	1.2nm,0.8s,baz=265,slow=6.3,SNR=12								
TKM2	**Tokmak 2**	**50.10**	**299**	*e*P		**P**		**01 25 42.1**	**+0.5**
	1.7nm,0.5s								
INK	**Inuvik**	**54.37**	**27**	P		**P**		**01 26 12.9**	**+0.3**
	2.3nm,1.1s,baz=315,slow=5.8,SNR=5.4								
WRAB	**Tennant Creek**	**56.91**	**189**	*e*P		**P**		**01 26 29.9**	**-1.4**
	3.5nm,0.9s								
WRA	**Warramunga Arr**	**56.92**	**189**	P		**P**		**01 26 31.5**	**+0.1**
	2.8nm,1.2s,baz=2.3,slow=7.4,SNR=5.7								
ABKAR	**Akbulak array**	**58.40**	**310**	*e*P		**P**		**01 26 41.7**	**+0.1**
ASAR	**Alice Springs**	**60.65**	**188**	P		**P**		**01 26 57.0**	**-0.3**
	0.7nm,0.7s,baz=9.6,slow=6.5,SNR=5.1								
YKA	**Yellowknife Ar**	**63.77**	**30**	P		**P**		**01 27 17.6**	**-0.2**
	0.4nm,0.8s,baz=301,slow=6.4,SNR=9.4								
NVAR	**Mina Array Bea**	**74.76**	**53**	P		**P**		**01 28 27.2**	**+0.6**
	0.6nm,0.6s,baz=309,slow=5.5,SNR=6.4								
TXAR	**Lajitas Array**	**89.90**	**53**	P		**P**		**01 29 45.8**	**+0.1**
	1.0nm,0.9s,baz=286,slow=2.6,SNR=9.9								

*IDC **24** 01:23:54.0±0.9,27.00N×143.76E,h0km,mb3.4/7, mb1 3.7/7,mb1mx3.5/48,mbtmp3.4/7,MS2.8/1,Ms1 2.8/1, ms1mx2.1/28,Error ellipse: s-maj=22.7km s-min=20.2km az=11.0*

*ISCJB **24** 01:23:57.1±0.8,27.0N±0.1×143.82E±0.09,h33km, mb3.5/7,MS2.7/1,Error ellipse: s-maj=19.5km s-min=11.4km az=5.4*

ISC 24 01:23:59.2±1.0,27.0N±0.2×143.8E±0.1,h35km,n9, σ0ᵗ93/9,mb3.6/7,Bonin Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
JCJ	**Chichijima**	**1.40**	**275**	Pn		**Pn**		**01 24 21.3**	**-0.9**
	baz=360,slow=19								
JCJ				Sn		**Sn**		**01 24 40.5**	**+1.1**
	baz=270,slow=20								
JAY	**Jayapura**	**29.48**	**186**	LR		LR		01 42 28.5	
	comp=Z,17nm,18.1s,baz=321,slow=38								
SONM	**Songino Array**	**35.76**	**316**	P		**P**		**01 30 55.1**	**+0.2**
	0.2nm,0.4s,baz=104,slow=7.8,SNR=2.6								
WRA	**Warramunga Arr**	**47.54**	**192**	P		**P**		**01 32 31.2**	**-0.1**
	0.4nm,0.5s,baz=12,slow=8.4,SNR=3.5								
ZALV	**Zalesovo Beam**	**50.48**	**319**	P		**P**		**01 32 52.1**	**-1.5**
	0.3nm,0.4s,baz=104,slow=6.1,SNR=2.1								
ASAR	**Alice Springs**	**51.25**	**192**	P		**P**		**01 32 59.6**	**0.0**
	0.7nm,0.9s,baz=8.8,slow=6.7,SNR=5.0								
MKAR	**Makanchi Array**	**51.62**	**310**	P		**P**		**01 33 03.1**	**+0.9**
	0.1nm,0.3s,baz=94,slow=6.1,SNR=3.1								
YKA	**Yellowknife Ar**	**71.57**	**29**	P		**P**		**01 35 16.5**	**+0.1**
	0.3nm,0.8s,baz=293,slow=6.5,SNR=5.4								
NVAR	**Mina Array Bea**	**79.48**	**52**	P		**P**		**01 36 03.2**	**+0.5**
	0.5nm,0.7s,baz=284,slow=5.5,SNR=4.3								

*IDC **24** 01:26:43.8±1.1,15.17S×173.58W,h0km,mb4.0/5, mb1 4.3/6,mb1mx3.8/50,mbtmp4.1/6,MS3.4/4,Ms1 3.5/4, ms1mx2.9/35,Error ellipse: s-maj=52.3km s-min=20.0km az=141.0*

*ISCJB **24** 01:26:45.4±0.8,15.0S±0.2×173.5W±0.2,h30km,mb4.0/5, MS3.4/4,Error ellipse: s-maj=40.5km s-min=9.0km az=146.2*

ISC 24 01:26:47.4±0.9,15.1S±0.3×173.4W±0.2,h30km,n17, σ1ᵗ80/9,mb4.0/5,MS3.5/4,Tonga Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
AFI	**Afiamalu**	**1.97**	**53**	Pn		**Pn**		**01 27 19.4**	**+0.6**
	baz=45,slow=4.3								
AFI				Sn		**Sn**		**01 27 39.6**	**-2.9**
	732nm,0.3s,baz=208,slow=22,SNR=5.4								
DZM	**Mont Dzumac**	**20.32**	**247**	LR		LR		01 37 44.6	
	comp=Z,150nm,18.8s,baz=69,slow=33								
PPT	**Papeete**	**22.98**	**99**	LR		LR		01 39 09.2	
	comp=Z,34nm,19.6s,baz=196,slow=32								
URZ	**Urewera**	**24.54**	**198**	P		**P**		**01 32 04.4**	**-0.1**
	3.4nm,0.5s,baz=356,slow=0.7,SNR=5.3								
H11S2	**WAKE ISLAND Hy**	**38.72**	**329**	T		T		02 14 53.6	
	baz=146,slow=76,SNR=26								
H11S3	**WAKE ISLAND Hy**	**38.74**	**329**	T		T		02 15 00.2	
	baz=146,slow=76,SNR=30								
H11S1	**WAKE ISLAND Hy**	**38.74**	**329**	T		T		02 15 00.2	
	baz=146,slow=76,SNR=18								
H11N3	**WAKE ISLAND Hy**	**39.67**	**330**	T		T		02 16 10.5	
	baz=147,slow=76,SNR=10.0								
H11N1	**WAKE ISLAND Hy**	**39.67**	**330**	T		T		02 16 04.2	
	baz=147,slow=76,SNR=5.4								
H11N2	**WAKE ISLAND Hy**	**39.69**	**330**	T		T		02 16 07.9	
	baz=147,slow=76,SNR=6.0								
STKA	**Stephens Creek**	**44.19**	**240**	P		**P**		**01 34 53.4**	**-0.5**
	2.2nm,0.9s,baz=92,slow=12,SNR=3.5								
WRA	**Warramunga Arr**	**49.92**	**257**	P		**P**		**01 35 37.1**	**-1.7**
	0.6nm,0.7s,baz=92,slow=7.1,SNR=5.2								
ASAR	**Alice Springs**	**50.21**	**252**	P		**P**		**01 35 40.2**	**-0.8**
	4.4nm,0.7s,baz=86,slow=8.0,SNR=73								
NVAR	**Mina Array Bea**	**74.11**	**42**	P		**P**		**01 38 23.7**	**+2.4**
	0.6nm,0.8s,baz=234,slow=9.4,SNR=4.8								
NVAR				LR		LR		02 03 53.0	
	comp=Z,35nm,20.4s,baz=308,slow=30								
PDAR	**Pinedale Array**	**82.05**	**42**	LR		LR		02 09 02.2	
	comp=Z,32nm,19.4s,baz=272,slow=31								
GERES	**GERESS Array B**	**145.86**	**352**	PKPbc		**PKPab**		**01 46 24.5**	**+0.1**
	0.1nm,0.5s,baz=16,slow=4.3,SNR=3.1								
BRTR	**Keskin Array B**	**145.94**	**321**	PKPbc		**PKPab**		**01 46 26.1**	**+1.1**
	1.3nm,1.0s,baz=77,slow=1.5,SNR=6.3								

*ISCJB **24** 01:30:57.8±0.6,37.48N±0.07×35.69E±0.03,h9km±5km, Error ellipse: s-maj=12.7km s-min=4.4km az=174.9*

*DDA **24** 01:30:57.4,37.51N×35.70E,h7km,Md2.2*

*CSEM **24** 01:30:57.5±0.2,37.49N×35.70E,h10km,MD2.5, Error ellipse: s-maj=8.0km s-min=4.3km az=176.0*

*ISK **24** 01:30:57.7,37.46N×35.70E,h9km,MD2.5*

ISC 24 01:30:57.6±0.9,37.50N±0.06×35.70E±0.03,h13km±6km, n20,σ0ᵗ54/27,Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
KOZT	**Kozan**	**0.10**	**100**	*e*PG		**Pg**		**01 31 00.6**	**-0.1**
KOZT				*e*SG		**Sg**		**01 31 02.8**	**-0.1**
KOZT	**Kozan**	**0.10**	**100**	*e*Pg		**Pg**		**01 31 00.6**	**-0.1**
KOZT				*e*Sg		**Sg**		**01 31 02.8**	**-0.1**
AKO	**Adana**	**0.20**	**260**	*i* P		**Pg**		**01 31 01.9**	**-0.3**
AKO				*i* S		**Sg**		**01 31 05.2**	**-0.1**
CEYT	**Ceyhan**	**0.49**	**175**	*e*PG		**Pg**		**01 31 06.9**	**-0.4**
CEYT	**Ceyhan**	**0.49**	**175**	*e*Pg		**Pg**		**01 31 06.9**	**-0.4**
ANDN	**Andirin**	**0.52**	**81**	*i* P		**Pg**		**01 31 06.9**	**-1.0**
ANDN				*i* S		**Sb**		**01 31 16.7**	**+0.5**
ANDN	**Andirin**	**0.52**	**81**	P		**Pg**		**01 31 06.9**	**-1.0**
ANDN				S		**Sb**		**01 31 16.7**	**+0.5**
KARA	**Karaisali**	**0.56**	**245**	*e*PG		**Pg**		**01 31 08.0**	**-0.7**
KARA				*e*SG		**Sb**		**01 31 17.1**	**-0.3**
KARA	**Karaisali**	**0.56**	**245**	*e*Pg		**Pg**		**01 31 08.0**	**-0.7**
KARA				*e*Sg		**Sb**		**01 31 17.1**	**-0.3**
GULE	**Gulek**	**0.77**	**254**	*i* S		**Sb**		**01 31 24.3**	**+1.0**
GULE	**Gulek**	**0.77**	**254**	S		**Sb**		**01 31 24.3**	**+1.0**
KAMA	**Osmaniye**	**0.83**	**112**	*i* P		**Pb**		**01 31 14.3**	**+0.3**
NIG	**Nigde**	**1.06**	**306**	*e*PG		**Pn**		**01 31 18.7**	**+0.3**
NIG	**Nigde**	**1.06**	**306**	*e*Pg		**Pn**		**01 31 18.7**	**+0.3**
MERS	**Mersin**	**1.13**	**237**	*e*PN		**Pn**		**01 31 19.3**	**+0.1**
MERS	**Mersin**	**1.13**	**237**	*e*Pn		**Pn**		**01 31 19.3**	**+0.1**
TAHT	**Tahtakopru-Hat**	**1.19**	**161**	*e*PN		**Pb**		**01 31 20.1**	**+0.1**
TAHT	**Tahtakopru-Hat**	**1.19**	**161**	*e*Pn		**Pb**		**01 31 20.1**	**+0.1**
KERG	**Konya-Eregli**	**1.25**	**267**	*i* P		**Pn**		**01 31 20.9**	**-0.1**
KERG	**Konya-Eregli**	**1.25**	**267**	P		**Pn**		**01 31 20.9**	**-0.1**

*IDC **24** 01:33:48.4±1.0,18.29N×121.27E,h0km,mb3.5/6, mb1 3.7/6,mb1mx3.4/50,mbtmp3.5/6,MS3.0/2,Ms1 3.0/2, ms1mx2.4/34,Error ellipse: s-maj=80.9km s-min=19.8km az=68.0*

*ISCJB **24** 01:33:51.7±1.4,18.55N±0.07×120.98E±0.05, h16km±12km,mb3.4/6,MS3.1/1,Error ellipse: s-maj=12.0km s-min=7.0km az=160.2*

*MAN **24** 01:33:52,18.44N×120.94E,h25km,mb4.6,ML3.5,MS3.4*

ISC 24 01:33:51.8±2.0,18.38N±0.07×120.99E±0.05,h17km±13km, n22,σ1ᵗ40/24,mb3.5/6,2C-2D,Luzon

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
APYP	**Conner**	**0.56**	**155**	*e*P		**Pn**		**01 34 05.1**	**+0.1**
APYP				*e*S		**Sn**		**01 34 15.0**	**+1.1**
SIPP	**Brgy, Tapao**	**0.68**	**228**	⇓*i* P		**Pn**		**01 34 06.7**	**+0.1**
SIPP				*e*S		**Sn**		**01 34 19.0**	**+2.3**
ABRA	**Dolores**	**0.77**	**200**	*e*P		**Pn**		**01 34 07.6**	**-0.2**
ABRA				*e*S		**Sn**		**01 34 20.0**	**+1.0**
SGCP	**Mt. Cagua**	**1.01**	**97**	*e*P		**Pn**		**01 34 11.4**	**+0.2**
SGCP				*e*S		**Sn**		**01 34 25.7**	**+0.7**
CVP	**Callao Caves**	**1.04**	**130**	⇓*i* P		**Pn**		**01 34 12.3**	**+0.7**
CVP				*i* S		**Sn**		**01 34 27.1**	**+1.5**
CAUP	**Cauayan**	**1.63**	**151**	*e*P		**Pb**		**01 34 21.9**	**+0.5**
BCPH	**Baguio City Da**	**2.02**	**191**	⇑*i* P		**Pg**		**01 34 30.1**	**-0.6**
BCPH				*i* S		**Sg**		**01 34 58.8**	**+1.8**
BOLP	**Bolinao**	**2.23**	**208**	*e*P		**Pn**		**01 34 28.8**	**+0.8**
BALP	**Baler**	**2.68**	**168**	*e*P		**Pn**		**01 34 37.6**	**-1.7**
SCZP	**Santa Cruz**	**2.78**	**202**	*e*P		**Pb**		**01 34 39.2**	**-1.9**
PCPH	**Palayan**	**2.80**	**178**	⇑*e*P		**Pb**		**01 34 41.8**	**+0.4**
JNU	**Nakatsue**	**17.16**	**29**	LR		LR		01 44 44.9	
	comp=Z,37nm,18.3s,baz=310,slow=38								
SONM	**Songino Array**	**31.71**	**341**	P		**P**		**01 40 16.7**	**+2.0**
	0.4nm,0.6s,baz=153,slow=9.7,SNR=2.5								
WRA	**Warramunga Arr**	**40.27**	**160**	P		**P**		**01 41 26.3**	**-1.8**
	0.2nm,0.5s,baz=346,slow=8.1,SNR=3.3								
MKAR	**Makanchi Array**	**42.53**	**321**	P		**P**		**01 41 47.9**	**+1.5**
	1.0nm,0.7s,baz=112,slow=9.9,SNR=9.9								
H11S3	**WAKE ISLAND Hy**	**43.26**	**82**	T		T		02 27 10.0	
	baz=278,slow=74								
H11S1	**WAKE ISLAND Hy**	**43.27**	**82**	T		T		02 27 40.7	
	baz=278								
H11S2	**WAKE ISLAND Hy**	**43.28**	**82**	T		T		02 27 24.4	
	baz=278,slow=74								
ASAR	**Alice Springs**	**43.65**	**163**	P		**P**		**01 41 53.5**	**-2.1**
	0.1nm,0.3s,baz=345,slow=7.2,SNR=3.9								
NB2	**NORSAR Subarra**	**83.26**	**333**	P		**P**		**01 46 16.0**	**-1.3**
	comp=Z,1.0nm,0.9s,baz=63,slow=5.3								
NOA	**NORSAR Array B**	**83.26**	**333**	P		**P**		**01 46 15.9**	**-1.3**
	comp=Z,0.5nm,0.8s,baz=66,slow=4.9,SNR=

Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
OFUJ	Ofunato	0.54	310	P	Pb	02 22 04.3	-0.1
OFUJ				eS	Sb	02 22 11.6	-0.4
JIO	Ouri	0.72	247	P	Pn	02 22 06.8	-0.5
JIO				S	Sb	02 22 15.9	-1.3
JMK	Ichinoseki	0.79	286	P	Pn	02 22 08.1	-0.2
JMK				S	Sn	02 22 18.3	-0.7
JOM	Ohasama	1.02	316	P	Pn	02 22 11.5	+0.2
JOM				S	Sn	02 22 24.4	-0.1
JRG	Rokugo	1.38	299	P	Pn	02 22 17.3	+0.9
JRG				S	Sb	02 22 35.2	-0.7

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*IDC **24** 02:22:18.4±0.7, 37°.24N×142°.54E, h0km, mb4.0/18, mb1 4.1/22, mb1mx3.9/65, mbtmp3.9/22, ML3.3/4, MS2.8/3, Ms1 2.9/3, ms1mx2.5/46, Error ellipse: s-maj=17.4km s-min=16.0km az=121.0*

*JMA **24** 02:22:20.7±0.2, 37°.27N×142°.61E, h32km, M4.2*

*ISCJB **24** 02:22:21.2±0.5, 37°.22N±0°.05×142°.60E±0°.05, h35km, mb4.0/23, MS2.9/1, Error ellipse: s-maj=7.0km s-min=5.3km az=167.6*

*NEIC **24** 02:22:21.6±2.6, 37°.26N×142°.55E, h20km±18km, mb4.3/7, Error ellipse: s-maj=10.3km s-min=7.4km az=125.0*

ISC 24 02:22:23.4±0.6**, 37°.24N**±0°.06×**142°.56E**±0°.06**, h35km, n47, σ0.s83**/41**, mb4.1**/23**, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
JFK	Kawauchi	1.35	276	S	Sn	02 23 01.8	-0.7
ONAJ	Iwakimizuishiy	1.41	265	eS	Sn	02 23 04.4	+0.3
JMM	Marumori	1.54	295	eS	Sn	02 23 06.9	-0.2
JIO	Ouri	1.55	322	eS	Sn	02 23 05.8	-1.6
JHO	Hitachi	1.71	249	S	Sn	02 23 11.8	+0.4
JFT	Otama	1.79	280	P	Pn	02 22 51.4	-0.5
JFT				eS	Sn	02 23 13.7	+0.3
MJAR	Matsushiro Arr	3.56	260	Pn	Pn	02 23 16.1	0.0
	3.4nm,0.3s,baz=91,slow=16,SNR=8.4						
MAJO	Matsushiro	3.56	260	ePn	Pn	02 23 15.1	-1.1
JHJ	Hachijo jima 2	4.69	210	Pn	Pn	02 23 31.4	-0.4
	24nm,0.3s,baz=232,slow=20,SNR=5.2						
JHJ				Sn	Sn	02 24 22.6	-2.4
	24nm,0.3s,baz=65,slow=21,SNR=3.1						
ERM	Erimo	4.80	5	ePn	Pn	02 23 31.1	-2.0
JNU	Nakatsue	10.40	250	LR	LR	02 29 29.7	
	comp=Z,39nm,20.2s,baz=102,slow=42						
USRK	Ussuriysk Ar.	10.61	314	Pn	Pn	02 24 51.5	-1.4
	0.4nm,0.3s,baz=114,slow=14,SNR=3.0						
KSRS	Korea Array	11.66	276	Pn	Pn	02 25 08.2	+1.0
	0.2nm,0.3s,baz=90,slow=15,SNR=4.0						
KSRS				LR	LR	02 29 05.3	
	comp=Z,61nm,19.7s,baz=105,slow=35						
KSAR	Wonju Array Be	11.69	275	Pn	Pn	02 25 08.2	+0.5
SEY	Seymchan	26.43	10	P	P	02 27 56.4	-0.1
	2.7nm,0.8s,baz=193,slow=8.8,SNR=8.6						
H11N2	WAKE ISLAND Hy	27.47	123	T	T	02 56 52.5	
	baz=315,slow=75						
H11N1	WAKE ISLAND Hy	27.48	123	T	T	02 56 52.3	
	baz=315,slow=75						
H11N3	WAKE ISLAND Hy	27.49	123	T	T	02 56 53.8	
	baz=315,slow=75						
ULN	Ulaanbaatar	28.00	304	eP	P	02 28 10.6	-0.4
	4.7nm,0.7s						
H11S1	WAKE ISLAND Hy	28.21	125	T	T	02 57 53.1	
	baz=317,slow=76						
H11S3	WAKE ISLAND Hy	28.21	125	T	T	02 57 52.3	
	baz=317,slow=76						
H11S2	WAKE ISLAND Hy	28.23	125	T	T	02 57 48.2	
	baz=317,slow=76						
CMAR	Chiang Mai Arr	42.43	256	LR	LR	02 48 20.6	
	comp=Z,15nm,19.0s,baz=60,slow=37						
ZALV	Zalesovo Beam	42.46	312	P	P	02 30 14.5	-0.2
	2.1nm,0.7s,baz=90,slow=7.3,SNR=6.8						
MKAR	Makanchi Array	44.79	302	P	P	02 30 33.7	+0.1
	1.2nm,0.6s,baz=90,slow=9.6,SNR=7.4						
KURK	Kurchatov	46.53	308	eP	P	02 30 46.6	-0.6
	11nm,0.6s						
KURBB	Kurchatov Arra	46.60	308	P	P	02 30 47.7	-0.1
	4.7nm,0.6s,baz=81,slow=8.1,SNR=14						
ILAR	Eielson Array	48.83	32	P	P	02 31 05.8	+0.9
	0.8nm,0.8s,baz=262,slow=5.4,SNR=5.0						
TKM2	Tokmak 2	50.34	299	eP	P	02 31 17.7	+0.7
	3.9nm,0.8s						
BVAR	Borovoye Array	51.11	312	P	P	02 31 23.3	+0.9
	0.6nm,0.5s,baz=113,slow=7.6,SNR=3.5						
AAK	Ala-Archa	51.20	299	P	P	02 31 22.8	-0.6
	1.3nm,0.6s,baz=157,slow=20,SNR=2.8						
AAK	Ala-Archa	51.20	299	eP	P	02 31 23.0	-0.5
	1.6nm,0.8s						
ARU	Arti	56.82	319	P	P	02 32 03.9	0.0
	1.6nm,0.5s,baz=292,slow=9.0,SNR=3.6						
ARU	Arti	56.82	319	eP	P	02 32 03.7	-0.3
	2.2nm,0.6s						
WRAB	Tennant Creek	57.38	189	eP	P	02 32 08.4	+0.1
	3.6nm,0.9s						
WRA	Warramunga Arr	57.40	189	P	P	02 32 08.6	+0.2
	1.5nm,0.6s,baz=7.2,slow=7.2,SNR=8.9						
ABKAR	Akbulak array	58.51	310	eP	P	02 32 15.4	-0.5
	0.7nm,0.6s						
ASAR	Alice Springs	61.12	189	P	P	02 32 33.5	-0.6
	1.2nm,0.8s,baz=6.6,slow=5.6,SNR=9.4						
RES	Resolute Bay	62.18	15	P	P	02 32 40.9	+0.2
	1.4nm,0.8s,baz=308,slow=6.0,SNR=6.5						
YKA	Yellowknife Ar	63.17	30	P	P	02 32 48.0	+0.6
	0.3nm,0.9s,baz=301,slow=6.5,SNR=4.3						
FINES	FINESS Array B	69.06	333	P	P	02 33 25.5	+0.2
	2.1nm,0.9s,baz=57,slow=14,SNR=4.9						
KBZ	Khabaz	71.46	311	P	P	02 33 41.1	+0.9
	2.1nm,0.8s,baz=64,slow=5.2,SNR=4.9						
NOA	NORSAR Array B	74.35	338	P	P	02 33 56.4	-0.7
	1.9nm,1.1s,baz=40,slow=5.9,SNR=3.3						
AKASG	Malin Array Be	74.70	323	P	P	02 33 58.5	-0.8
	1.1nm,0.5s,baz=45,slow=6.2,SNR=9.6						
PDAR	Pinedale Array	76.87	46	P	P	02 34 12.9	+0.8
	0.3nm,0.7s,baz=290,slow=2.7,SNR=3.1						
TXAR	Lajitas Array	89.27	53	P	P	02 35 17.6	+1.4
	0.2nm,0.6s,baz=302,slow=1.7,SNR=3.5						
LPAZ	La Paz	145.80	61	PKPbc	PKPab	02 42 00.4	0.0
	1.7nm,1.0s,baz=226,slow=4.9,SNR=4.1						

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*ISCJB **24** 02:22:50.8±0.3, 29°.63N±0°.05×89°.22E±0°.03, h10km, mb4.0/23, Error ellipse: s-maj=6.7km s-min=4.3km az=173.7*

*IDC **24** 02:22:50.3±0.7, 29°.53N×89°.16E, h0km, mb3.9/17, mb1 4.1/19, mb1mx3.8/67, mbtmp4.0/19, ML4.1/2, Error ellipse: s-maj=26.5km s-min=14.2km az=51.0*

*DMN **24** 02:23:00.1±0.3, 30°.16N×89°.00E, h10km, Ml5.1/7, Error ellipse: s-maj=14.0km s-min=6.4km az=148.0*

*BJI **24** 02:23:00.3, 29°.79N×89°.51E, h28km, mb4.3/7, mB4.2/4, ML4.0/3*

*NEIC **24** 02:23:01.9±1.0, 29°.66N×89°.29E, h95km±9km, mb4.0/8, Error ellipse: s-maj=11.9km s-min=6.0km az=222.0*

ISC 24 02:22:52.2±0.5**, 29°.58N**±0°.06×**89°.04E**±0°.04**, h10km, n59, σ2.s39**/57**, mb4.2**/23**, Xizang**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
LSA	Lhasa	1.84	86	Pg	Pg	02 23 29.6	+2.1
LSA				Sg	Sg	02 23 50.3	-1.1
LSA				smax	smax		
	comp=N,640nm,0.9s						
LSA				smax	smax		
	comp=E,2µm,0.9s						
LSA	Lhasa	1.84	86	ePn	Pg	02 23 29.3	+1.8
LSA				eSn	Sg	02 23 51.7	+0.3
GUN	Gumba	3.24	240	ePn	Pg	02 23 53.7	-0.7
GUN				eSn	Sb	02 24 32.9	+3.2
	642nm,0.3s						
KKN	Kakani	3.76	243	ePn	Pb	02 24 00.2	+1.4
KKN				eSn	Sb	02 24 44.5	0.0
	333nm,0.2s						
PKIN	Phulchoki	3.78	239	ePn	Pb	02 24 00.7	+1.5
PKIN				eSn	Sb	02 24 45.0	-0.2
	1µm,0.4s						
DMN	Daman	3.98	241	ePn	Pb	02 24 03.3	+0.6
DMN				eSn	Sb	02 24 49.9	-1.1
	502nm,0.4s						
GKN	Gorkha	4.18	249	ePn	Pb	02 24 04.5	-1.4
GKN				eSn	Sb	02 24 52.9	-3.6
	478nm,0.2s						
KOLN	Koldanda	5.11	251	ePn	Pb	02 24 17.0	-4.9
KOLN				eSn	Sn	02 25 14.1	+5.8
	708nm,0.4s						
PYUN	Piuthan	5.51	256	ePn	Pb	02 24 22.1	-6.6
PYUN				eSn	Sn	02 25 24.1	+5.9
	1µm,0.5s						
LGTI	Lohaghat	7.67	271	eP	Pb	02 25 03.4	-1.9
LGTI				eS	Sb	02 26 28.2	-8.6
KALG	Kalgarh	8.96	272	ex	Sb	02 26 29.6	
NDI	New Delhi	10.38	268	eP	Pn	02 25 25.1	+3.8
NDI				eS	Sn	02 27 13.6	-4.1
AYAN	Aya Nagar	10.49	267	ex	Pn	02 25 17.4	-5.3
SONA	Sohna	10.56	266	eP	Pn	02 25 29.8	+6.1
SONA				eS	Sn	02 27 18.9	-3.3
SONA				IAML		02 27 25.7	
	comp=E,89nm,0.4s						
SONA				IAML		02 27 26.5	
	comp=N,68nm,0.6s						
BHGR	Bahadurgarh	10.62	268	ex	Sn	02 27 12.3	-11
KKR	Kurukshetra	10.63	275	eS	Sn	02 27 19.6	-4.2
RTK	Rohtak	11.04	270	eS	Sn	02 27 29.9	-3.9
KUDL	Kundal	11.10	266	eP	Pn	02 25 34.7	+3.7
KUDL				eS	Sn	02 27 29.7	-5.6
KUDL				IAML		02 27 38.1	
	comp=N,34nm,0.3s						
KUDL				IAML		02 27 38.3	
	comp=E,30nm,0.4s						
KHET	Khetri	11.71	266	eP	Pn	02 25 43.7	+4.3
KHET				eS	Sn	02 27 45.1	-5.1
KHET				IAML		02 27 49.4	
	comp=N,64nm,0.6s						
KHET				IAML		02 27 51.3	
	comp=E,47nm,0.1s						
THN	Thein Dam	11.78	287	eS	Sn	02 27 47.0	-4.9
KMI	Kunming	12.96	107	P	Pn	02 25 55.1	-1.6
KMI				pmax	pmax		
	comp=Z,5.0nm,0.8s						
CHTO	Chiang Mai	14.01	138	ePn	Pn	02 26 10.1	-0.8
	comp=Z,5.5nm,0.9s						
CHCP	Chirah Chowk	14.05	291	P	Pn	02 26 13.3	+1.9
WMQ	Urumqi	14.25	356	eP	P	02 26 23.4	+1.9
WMQ				pmax	pmax		
	comp=Z,5.0nm,0.6s						
WMQ				pmax	pmax		
	comp=Z,12nm,3.6s						
CMAR	Chiang Mai Arr	14.29	139	Pn	Pn	02 26 13.5	-1.2
	comp=Z,0.4nm,0.3s,baz=315,slow=13,SNR=7.4						
KSH	Kashi	14.62	316	P	P	02 26 25.4	-0.3
THW	Thamme Wali	15.15	287	P	Pn	02 26 27.9	+1.5
CEP	Cherat	15.18	291	P	Pn	02 26 27.6	+0.7
HYB	Hyderabad	15.45	221	i P	P	02 26 32.0	-3.0
HYB				e		02 29 15.0	
HYB				eS	S	02 29 28.5	-9.3
TKM2	Tokmak 2	17.14	325	ePn	P	02 26 57.5	+3.7
	comp=Z,20nm,1.1s						
AAK	Ala-Archa	17.51	322	P	P	02 27 02.0	+4.2
	comp=Z,0.2nm,0.3s,baz=137,slow=8.8,SNR=11						
AAK	Ala-Archa	17.51	322	ePn	P	02 27 01.8	+4.0
POO	Poona	17.69	235	ex	x	02 30 08.0	
EKS2	Erkin-Say	17.92	321	ePn	P	02 27 06.3	+4.0
	comp=Z,4.0nm,0.6s						
MKAR	Makanchi Array	17.97	345	P	P	02 27 03.9	+1.2
	comp=Z,0.3nm,0.3s,baz=149,slow=12,SNR=18						
KKAR	Karatay Array	20.06	317	eP	Pn	02 27 28.4	+1.0
	comp=Z,2.5nm,0.5s						
KURBB	Kurchatov Arra	22.46	342	P	P	02 27 52.6	+1.3
	comp=Z,0.9nm,0.6s,baz=151,slow=9.6,SNR=5.0						
KURK	Kurchatov	22.52	343	eP	P	02 27 54.0	+2.0
	comp=Z,5.8nm,0.7s						
SONM	Songino Array	22.61	32	P	P	02 27 52.9	-0.3
	comp=Z,8.8nm,0.6s,baz=215,slow=12,SNR=52						
ULN	Ulaanbaatar	22.94	32	eP	P	02 27 55.6	-1.0
	comp=Z,5.3nm,0.6s						
ZALV	Zalesovo Beam	24.54	354	P	P	02 28 12.3	+0.4
	comp=Z,1.9nm,0.6s,baz=177,slow=7.7,SNR=9.1						
GEYT	Alibeck	26.93	296	P	P	02 28 36.4	+2.6
	comp=Z,1.3nm,0.6s,baz=123,slow=5.5,SNR=4.3						
ABKAR	Akbulak array	29.57	320	eP	P	02 28 58.7	+1.5
	comp=Z,1.8nm,0.5s						
AKTO	Aktyubinsk	31.25	321	P	P	02 29 11.8	-0.1
	comp=Z,0.9nm,0.5s,baz=117,slow=8.5,SNR=7.5						
BRTR	Keskin Array B	46.05	298	P	P	02 31 17.6	+1.2
	comp=Z,0.4nm,0.5s,baz=111,slow=7.0,SNR=3.6						
MLR	Muntele Rosu	51.22	306	P	P	02 31 56.7	+0.7
	comp=Z,0.5nm,0.8s						
FINES	FINESS Array B	51.61	327	P	P	02 31 58.5	-0.1
	comp=Z,0.7nm,0.7s,baz=89,slow=8.0,SNR=4.9						
ARCES	ARCESS Array B	53.40	337	P	P	02 32 11.9	+0.3
	comp=Z,3.0nm,0.9s,baz=102,slow=7.6,SNR=5.3						
VRAC	Vranov	57.09	312	P	P	02 32 39.4	+0.7
	comp=Z,1.8nm,0.6s,baz=102,slow=8.7,SNR=6.0						
HFS	Hagfors	57.62	325	P	P	02 32 42.2	0.0
	comp=Z,0.8nm,0.6s,baz=92,slow=10,SNR=5.8						
NOA	NORSAR Array B	58.77	326	P	P	02 32 49.3	-1.0
	comp=Z,0.7nm,0.7s,baz=85,slow=7.3,SNR=3.4						
GERES	GERESS Array B	59.05	312	P	P	02 32 52.5	0.0
	comp=Z,1.8nm,0.6s,baz=72,slow=6.7,SNR=26						
DAVOX	Davos/Dischmat	62.01	310	P	P	02 33 12.1	-0.8
	comp=Z,1.2nm,0.5s,baz=114,slow=6.7,SNR=6.6						
WRA	Warramunga Arr	65.80	133	P	P	02 33 36.8	-1.1
	comp=Z,1.2nm,0.4s,baz=326,slow=6.7,SNR=16						
WRAB	Tennant Creek	65.80	133	eP	P	02 33 36.8	-1.1
	comp=Z,1.6nm,0.4s						
PMG	Port Moresby	68.02	115	eP	P	02 33 51.6	-0.5
	comp=Z,40nm,1.4s						
ASAR	Alice Springs	68.28	136	P	P	02 33 52.8	-0.8
	comp=Z,0.5nm,0.3s,baz=323,slow=6.0,SNR=11						
LSZ	Lusaka	73.69	241	eP	P	02 34 26.1	-0.6
	comp=Z,1.1nm,0.5s						
BOSA	Boshof	84.02	232	P	P	02 35 23.1	-0.1
	comp=Z,1.1nm,0.5s,baz=105,slow=2.9,SNR=3.6						

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*KOLA **24** 02:23:37.0, 67°.67N×33°.78E, h0km*

*HEL **24** 02:23:36.5±0.4, 67°.65N×33°.85E, h0km, ML2.1, Explosion*

*CSEM **24** 02:23:37.9±0.5, 67°.59N×33°.37E, h1km, ML2.6, Error ellipse: s-maj=10.1km s-min=7.2km az=82.0, Mining explosion.*

*NAO **24** 02:23:37.2±1.0, 67°.67N×33°.72E, ML2.6*

ISC 24 02:23:35.0±1.6**, 67°.62N**±0°.03×**33°.91E**±0°.08**, h0km, n40, σ1.s64**/67**, Baltic States-Belarus-Northwestern Russia**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
APA	Apatity	0.20	254	P	Pg	02 23 40.1	+1.3
APA				S	Sg	02 23 42.4	+1.0
APZ9	Apatity	0.20	254	Pg	Pg	02 23 40.1	+1.3
APZ9				Lg	Lg	02 23 42.5	
APZ9	Apatity	0.20	254	Pg	Pg	02 23 40.1	+1.3
APZ9				Lg	Lg	02 23 42.5	
APZ9	Apatity	0.20	254	Pg	Pg	02 23 40.1	+1.3
APZ9				Lg	Lg	02 23 42.5	
	SNR=30						
APA0	Apatity Array	0.35	267	Pg	Pg	02 23 42.5	+0.8
	baz=80,slow=16						
APA0				Lg	Lg	02 23 46.6	
	baz=78,slow=37						
APA0				Rg	Rg	02 23 48.4	
	baz=73,slow=28						
APA0	Apatity Array	0.35	267	Pg	Pg	02 23 42.5	+0.8
	baz=80,slow=16						
APA0				Lg	Lg	02 23 46.6	
	baz=78,slow=37						
APA0				Rg	Rg	02 23 48.4	
	baz=73,slow=28						
APA0	Apatity Array	0.35	267	P	Pg	02 23 42.5	+0.8
APA0				S	Sg	02 23 46.5	+0.3
APA0	Apatity Array	0.35	267	Pg	Pg	02 23 42.5	+0.8
	SNR=799						
APA0				Lg	Lg	02 23 46.6	
	SNR=30						
VRF	Varrio	1.65	276	PG	Pn	02 24 05.2	0.0
	baz=87						
VRF				MSG		02 24 25.0	
	comp=Z,17nm,0.2s						
VRF				SG	Sn	02 24 25.6	-1.3
VRF	Varrio	1.65	276	Pg	Pn	02 24 05.1	0.0
VRF				Sg	Sn	02 24 25.6	-1.3
KU6	Riekki	2.26	227	PB	Pn	02 24 15.9	+2.3
	baz=43						
KU6				MSG		02 24 43.4	
	comp=Z,9.5nm,0.2s						
KU6				SG	Sb	02 24 45.2	+0.2
KU6	Riekki	2.26	227	Pb	Pn	02 24 15.8	+2.3
KU6				Sg	Sb	02 24 45.2	+0.2
MSF	Maaselka	2.58	231	PB	Pb	02 24 21.3	-0.8
MSF				SG	Sb	02 24 55.9	+1.4
MSF	Maaselka	2.58	231	Pb	Pb	02 24 21.3	-0.8
MSF				Sg	Sb	02 24 55.8	+1.4
SGF	Sodankyl	2.84	270	PN	Pn	02 24 19.5	-2.0
SGF				SG	Sb	02 25 03.0	+1.3
SGF	Sodankyl	2.84	270	Pn	Pn	02 24 19.5	-2.0
SGF				Sg	Sb	02 25 03.0	+1.3
RNF	Rovaniemi	3.25	255	PN	Pn	02 24 28.4	+1.3
RNF				SN	Sn	02 25 07.2	+0.8
RNF	Rovaniemi	3.25	255	Pn	Pn	02 24 28.4	+1.3
KEV	Kevo	3.31	314	PN	Pn	02 24 29.2	+1.3
	baz=129						
KEV				SN	Sn	02 25 08.2	+0.4
KEV	Kevo	3.31	314	Pn	Pn	02 24 29.1	+1.3
KEV				Sn	Sn	02 25 08.2	+0.4
ARA0	ARCESS Array S	3.63	306	Pn	Pn	02 24 33.2	+0.9
	baz=122,slow=16						
ARA0				Pg	Pb	02 24 41.3	+1.4
	baz=122,slow=16						
ARA0				Sn	Sn	02 25 14.3	-1.5
	baz=123,slow=28						
ARA0				Lg	Lg	02 25 26.0	
	baz=111,slow=37						
ARA0	ARCESS Array S	3.63	306	Pn	Pn	02 24 33.2	+0.9
	baz=122,slow=16						
ARA0				Pg	Pb	02 24 41.3	+1.4
	baz=122,slow=16						
ARA0				Sn	Sn	02 25 14.3	-1.5
	baz=123,slow=28						
ARA0				Lg	Lg	02 25 26.0	
	baz=111,slow=37						
ARA0	ARCESS Array S	3.63	306	Pn	Pn	02 24 33.2	+0.9
	SNR=271						
ARA0				Sn	Sn	02 25 14.3	-1.5
	SNR=8.1						
ARA0				Lg	Lg	02 25 26.0	
	SNR=1.6						
ARE0	ARCESS Array S	3.63	306	PN	Pn	02 24 32.8	+0.4
ARE0				SN	Sn	02 25 15.0	-0.8
ARE0	ARCESS Array S	3.63	306	Pn	Pn	02 24 32.8	+0.4
ARE0				Sn	Sn	02 25 15.0	-0.8
HEF	Hetta	3.93	286	PN	Pn	02 24 37.1	+0.5
HEF				SG	Sg	02 25 37.9	-3.2
HEF	Hetta	3.93	286	Pn	Pn	02 24 37.0	+0.5
HEF				Sg	Sg	02 25 37.9	-3.2
TOF	Tornio	4.09	252	PN	Pn	02 24 39.1	+0.5
TOF	Tornio	4.09	252	Pn	Pn	02 24 39.1	+0.5
OUL	Oulu	4.11	235	PN	Pn	02 24 42.5	+3.5
OUL	Oulu	4.11	235	Pn	Pn	02 24 42.4	+3.5
OUL				Sg	Sg	02 25 46.8	-0.1
LANU	Lannavaara	4.54	281	PN	Pn	02 24 44.5	-0.3
LANU				SG	Sb	02 25 53.4	+2.9
LANU	Lannavaara	4.54	281	Pn	Pn	02 24 44.5	-0.3
FIA0	FINESS Array S	7.06	212	Pn	Pn	02 25 20.4	+1.1
	baz=31,slow=12						
FIA0				Sn	Sn	02 26 37.0	-3.2
	baz=24,slow=18						
FIA0				Lg	Lg	02 27 09.9	
	baz=25,slow=28						
FIA0	FINESS Array S	7.06	212	Pn	Pn	02 25 20.4	+1.1
	baz=31,slow=12						
FIA0				Sn	Sn	02 26 37.0	-3.2
	baz=24,slow=18						
FIA0				Lg	Lg	02 27 09.9	
	baz=25,slow=28						
FIA0	FINESS Array S	7.06	212	Pn	Pn	02 25 20.4	+1.1
FIA0				Sn	Sn	02 26 37.0	-3.2
HFS	Hagfors	11.59	239	Pn	Pn	02 26 19.3	-2.2
	baz=50,slow=16						
HFS	Hagfors	11.59	239	Pn	Pn	02 26 19.3	-2.2
	baz=50,slow=16						
SPA0	Spitsbergen Ar	11.70	342	Pn	Pn	02 26 20.6	-2.2
	baz=142,slow=14						
SPA0	Spitsbergen Ar	11.70	342	Pn	Pn	02 26 20.6	-2.2
	baz=142,slow=14						

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*IDC **24** 02:24:58.6±0.7, 36°.83N×143°.99E, h0km, mb3.9/19, mb1 4.1/23, mb1mx4.0/59, mbtmp3.9/23, ML3.9/3, MS2.9/4, Ms1 2.9/4, ms1mx2.6/44, Error ellipse: s-maj=18.0km s-min=16.3km az=102.0*

*NEIC **24** 02:25:00.8±3.7, 36°.88N×144°.06E, h14km±22km, mb4.2/7, Error ellipse: s-maj=12.4km s-min=8.0km az=135.0*

*MOS **24** 02:25:01.8±1.4, 36°.90N×144°.07E, h33km, mb4.4/19, Error ellipse: s-maj=11.3km s-min=7.5km az=114.6*

*ISCJB **24** 02:25:02.4±0.4, 36°.93N±0°.04×143°.84E±0°.04, h33km, mb4.0/30, MS2.8/3, Error ellipse: s-maj=5.4km s-min=4.1km az=173.9*

*JMA **24** 02:25:03.4±0.2, 36°.97N×143°.75E, h45km, M4.6*

ISC 24 02:25:04.2±0.6**, 36°.95N**±0°.05×**143°.88E**±0°.06**, h35km, n87, σ1.s64**/87**, mb4.0**/30**, MS2.7**/3**, 9C, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
JFK	Kawauchi	2.43	281	P	Pn	02 25 40.6	-0.9
JFK				S	Sn	02 26 08.1	-2.0
ONAJ	Iwakimizuishiy	2.47	274	P	Pn	02 25 41.5	-0.5
ONAJ				S	Sn	02 26 08.4	-2.5
JIO	Ouri	2.50	308	P	Pn	02 25 41.6	-0.8
JIO				S	Sn	02 26 09.5	-2.2
JMM	Marumori	2.62	291	P	Pn	02 25 43.4	-0.6
JMM				S	Sn	02 26 13.0	-1.6
JHO	Hitachi	2.68	264	P	Pn	02 25 44.4	-0.4
JHO				S	Sn	02 26 14.7	-1.3
CHOJ	Chosi	2.74	244	P	Pn	02 25 44.8	-0.8
OFUJ	Ofunato	2.75	321	P	Pn	02 25 45.1	-0.7
OFUJ				S	Sn	02 26 14.7	-3.1
JFT	Otama	2.88	282	P	Pn	02 25 47.5	-0.1
JFT				eS	Sn	02 26 20.0	-1.1
JOU	Okura	2.91	300	P	Pn	02 25 47.9	-0.2
JOU				S	Sn	02 26 20.9	-1.0
JOM	Ohasama	3.24	322	P	Pn	02 25 52.7	+0.2
JOM				S	Sn	02 26 27.6	-2.2
BSO1	Boso 1	3.29	227	P	Pn	02 25 51.2	-1.5
BSO1				S	Sn	02 26 29.0	-1.3
JYK	Kaneyama	3.40	306	P	Pn	02 25 55.3	+0.5
JYK				eS	Sn	02 26 33.2	-0.7
MJAR	Matsushiro Arr	4.57	267	Pn	Pn	02 26 11.3	+0.5
	7.3nm,0.3s,baz=89,slow=10,SNR=15						
MAJO	Matsushiro	4.57	267	eP	Pn	02 26 11.8	+0.9
MAJO	Matsushiro	4.57	267	ePn	Pn	02 26 11.3	+0.5
MAT	Matsushiro	4.57	267	P	Pn	02 26 11.6	+0.7
MAT				S	Sn	02 27 02.6	-0.2
ERM	Erimo	5.09	354	eP	Pn	02 26 16.1	-1.8
ERM	Erimo	5.09	354	ePn	Pn	02 26 17.7	-0.2
JHJ	Hachijo jima 2	5.09	222	Pn	Pn	02 26 15.1	-2.9
	21nm,0.3s,baz=334,slow=23,SNR=6.4						
JHJ				Sn	Sn	02 27 08.7	-6.8
	62nm,0.3s,baz=284,slow=22,SNR=7.0						
ASAJ	Asahikawa	7.22	353	Pn	Pn	02 26 45.8	-1.4
	1.4nm,0.3s,baz=210,slow=9.3,SNR=11						
ASAJ				Sn	Sn	02 28 03.3	-4.7
	0.7nm,0.3s,baz=74,slow=22,SNR=2.5						
CBIJ	Chichi jima	9.93	189	Pn	Pn	02 27 18.0	-6.5
CBIJ				Sn	Sn	02 29 01.1	-14
JCJ	Chichijima	9.93	189	Pn	Pn	02 27 18.0	-6.5
	baz=300,slow=18						
JCJ				Sn	Sn	02 29 01.1	-14
	11nm,0.3s,baz=285,slow=21,SNR=4.5						
USRK	Ussuriysk Ar.	11.57	312	Pn	Pn	02 27 46.4	-0.5
	0.2nm,0.3s,baz=118,slow=12,SNR=2.3						
KSRS	Korea Array	12.73	277	Pn	Pn	02 28 06.3	+3.6
	0.3nm,0.3s,baz=85,slow=14,SNR=3.2						
KSAR	Wonju Array Be	12.76	277	P	Pn	02 28 06.3	+3.2
KSAR	Wonju Array Be	12.76	277	Pn	Pn	02 28 06.3	+3.2
KLR	Kul'dur	15.11	328	LR	LR	02 33 48.7	
	comp=Z,72nm,21.2s,baz=140,slow=35						
KLR	Kul'dur	15.11	328	eP	P	02 28 36.9	-2.8
GUMO	Guam	23.28	178	LR	LR	02 36 23.5	
	comp=Z,19nm,20.2s,baz=28,slow=30						
H11N2	WAKE ISLAND Hy	26.44	124	T	T	02 58 10.8	
	baz=317,slow=75,SNR=4.4						
H11N1	WAKE ISLAND Hy	26.45	124	T	T	02 58 12.0	
	baz=317,slow=75,SNR=4.6						
H11N3	WAKE ISLAND Hy	26.46	124	T	T	02 58 12.5	
	baz=317,slow=75,SNR=3.9						
SEY	Seymchan	26.53	9	P	P	02 30 39.2	+1.0
	3.2nm,0.8s,baz=190,slow=8.2,SNR=9.7						
SEY	Seymchan	26.53	9	eP	P	02 30 38.1	-0.2
YAK	Yakutsk	26.62	345	LR	LR	02 41 44.8	
	comp=Z,24nm,20.1s,baz=45,slow=38						

H11S1	**WAKE ISLAND Hy**	**27.19**	**126**	T		T	02 59 10.0	
	baz=319,slow=76,SNR=5.7							
H11S3	**WAKE ISLAND Hy**	**27.19**	**126**	T		T	02 59 09.5	
	baz=319,slow=76,SNR=4.5							
H11S2	**WAKE ISLAND Hy**	**27.21**	**126**	T		T	02 59 11.0	
	baz=319,slow=76,SNR=4.5							
ULN	**Ulaanbaatar**	**29.04**	**304**	*e*P		P	02 31 04.9	+3.9
ULN				pmax		pmax		
	comp=Z,4.0nm,1.6s							
SONM	**Songino Array**	**29.47**	**304**	P		**P**	**02 31 05.8**	**+0.9**
	comp=Z,0.5nm,0.6s,baz=99,slow=8.9,SNR=3.2							
BILL	**Bilibino**	**33.57**	**15**	*i* P		**P**	**02 31 38.8**	**-1.7**
BILL				*i*			02 31 56.2	
BILL				*i*			02 34 18.5	
BILL				pmax		pmax		
	comp=Z,3.0nm,1.0s							
ZALV	**Zalesovo Beam**	**43.42**	**312**	P		**P**	**02 33 02.6**	**-0.7**
	comp=Z,0.2nm,0.3s,baz=86,slow=8.8,SNR=2.6							
MKAR	**Makanchi Array**	**45.83**	**303**	P		**P**	**02 33 23.9**	**+1.2**
	comp=Z,0.2nm,0.4s,baz=88,slow=9.3,SNR=2.4							
KURK	**Kurchatov**	**47.53**	**308**	*e*P		**P**	**02 33 36.5**	**+0.6**
KURK				pmax		pmax		
	comp=Z,5.0nm,0.6s							
KURK	**Kurchatov**	**47.53**	**308**	*e*P		**P**	**02 33 36.5**	**+0.6**
	comp=Z,5.3nm,0.6s							
ILAR	**Eielson Array**	**48.51**	**32**	P		**P**	**02 33 43.2**	**-0.1**
	comp=Z,0.8nm,0.7s,baz=262,slow=6.6,SNR=5.8							
TKM2	**Tokmak 2**	**51.40**	**299**	*e*P		**P**	**02 34 06.2**	**+0.4**
TKM2				pmax		pmax		
	comp=Z,4.0nm,1.0s							
TKM2	**Tokmak 2**	**51.40**	**299**	*e*P		**P**	**02 34 06.2**	**+0.4**
	comp=Z,4.1nm,1.0s							
BVAR	**Borovoye Array**	**52.08**	**313**	P		**P**	**02 34 09.9**	**-0.6**
	comp=Z,0.4nm,0.5s,baz=111,slow=8.0,SNR=2.7							
INK	**Inuvik**	**53.56**	**27**	*e*P		**P**	**02 34 20.7**	**-0.4**
INK				pmax		pmax		
	comp=Z,1.0nm,0.4s							
INK	**Inuvik**	**53.56**	**27**	*e*P		**P**	**02 34 20.7**	**-0.4**
	comp=Z,0.7nm,0.4s							
WRAB	**Tennant Creek**	**57.29**	**191**	*ce*P		**P**	**02 34 46.6**	**-1.8**
WRAB				pmax		pmax		
	comp=Z,52nm,2.5s							
WRA	**Warramunga Arr**	**57.30**	**191**	P		**P**	**02 34 47.0**	**-1.5**
	comp=Z,1.4nm,0.5s,baz=9.7,slow=7.1,SNR=12							
ABKAR	**Akbulak array**	**59.49**	**311**	*e*P		**P**	**02 35 04.1**	**+0.5**
	comp=Z,0.6nm,0.6s							
AKTO	**Aktyubinsk**	**60.19**	**313**	P		**P**	**02 35 09.8**	**+1.4**
	comp=Z,1.1nm,0.7s,baz=64,slow=10,SNR=4.7							
ASAR	**Alice Springs**	**61.02**	**190**	P		**P**	**02 35 13.4**	**-0.8**
	comp=Z,0.9nm,0.7s,baz=15,slow=9.4,SNR=6.7							
YKA	**Yellowknife Ar**	**62.88**	**31**	P		**P**	**02 35 26.0**	**-0.3**
	comp=Z,0.4nm,0.7s,baz=299,slow=6.7,SNR=7.6							
YKA	**Yellowknife Ar**	**62.88**	**31**	*ce*P		**P**	**02 35 26.2**	**-0.1**
ARCES	**ARCESS Array B**	**64.76**	**340**	P		**P**	**02 35 39.2**	**+0.6**
	comp=Z,2.6nm,0.9s,baz=50,slow=8.2,SNR=4.4							
ARCES	**ARCESS Array B**	**64.76**	**340**	*e*P		**P**	**02 35 40.2**	**+1.6**
FINES	**FINESS Array B**	**69.79**	**333**	P		**P**	**02 36 11.6**	**+1.0**
	comp=Z,3.5nm,0.7s,baz=42,slow=8.8,SNR=11							
SUMG	**Summit**	**70.75**	**1**	*e*P		**P**	**02 36 17.1**	**+0.3**
SUMG				pmax		pmax		
	comp=Z,3.0nm,0.7s							
SUMG	**Summit**	**70.75**	**1**	*e*P		**P**	**02 36 17.1**	**+0.3**
	comp=Z,2.9nm,0.7s							
KIV	**Kislovodsk**	**72.44**	**312**	*i* P		**P**	**02 36 29.2**	**+2.2**
KIV				*i*			02 36 39.2	
KIV				pmax		pmax		
	comp=Z,8.0nm,1.1s							
KBZ	**Khabaz**	**72.44**	**312**	P		**P**	**02 36 28.8**	**+1.9**
	comp=Z,2.9nm,0.8s,baz=44,slow=5.1,SNR=7.4							
FFC	**Flin Flon**	**72.69**	**34**	*e*P		**P**	**02 36 27.5**	**-0.7**
FFC				pmax		pmax		
	comp=Z,1.0nm,0.5s							
FFC	**Flin Flon**	**72.69**	**34**	*e*P		**P**	**02 36 27.5**	**-0.7**
	comp=Z,1.0nm,0.5s							
NVAR	**Mina Array Bea**	**73.45**	**54**	P		**P**	**02 36 33.7**	**+0.4**
	comp=Z,0.6nm,0.7s,baz=296,slow=6.9,SNR=4.0							
NB2	**NORSAR Subarra**	**75.01**	**338**	P		**P**	**02 36 42.5**	**+0.8**
	comp=Z,2.8nm,0.7s,baz=40,slow=5.9							
NOA	**NORSAR Array B**	**75.01**	**338**	P		**P**	**02 36 42.7**	**+1.0**
	comp=Z,2.8nm,0.7s,baz=39,slow=5.8,SNR=13							
AKASG	**Malin Array Be**	**75.55**	**323**	P		**P**	**02 36 45.9**	**+0.9**
	comp=Z,1.0nm,0.5s,baz=44,slow=5.9,SNR=13							
SFJD	**Kangerlussuaq**	**75.78**	**6**	LR		LR	03 11 22.1	
	comp=Z,11nm,21.0s,baz=341,slow=37							
KWP	**Kalwaria Pacla**	**79.33**	**326**	*i*P		**P**	**02 37 08.3**	**+2.1**
KWP	**Kalwaria Pacla**	**79.33**	**326**	*i*P		**P**	**02 37 08.3**	**+2.1**
BURAR	**Bucovina Array**	**79.58**	**323**	*i*P		**P**	**02 37 09.3**	**+1.6**
BURAR	**Bucovina Array**	**79.58**	**323**	*i*P		**P**	**02 37 09.3**	**+1.6**
BRTR	**Keskin Array B**	**80.37**	**313**	P		**P**	**02 37 13.4**	**+1.3**
	comp=Z,0.7nm,0.7s,baz=301,slow=3.0,SNR=5.8							
ARR	**Arges**	**81.45**	**322**	*i*P		**P**	**02 37 20.4**	**+2.7**
PSZ	**Piszkesteto**	**81.85**	**326**	*e*P		**P**	**02 37 20.8**	**+1.0**
PSZ				pmax		pmax		
	comp=Z,2.0nm,0.7s							
PSZ	**Piszkesteto**	**81.85**	**326**	*e*P		**P**	**02 37 20.8**	**+1.0**
	comp=Z,1.9nm,0.7s							
CLL	**Collm**	**82.13**	**331**	*e*P		**P**	**02 37 21.0**	**-0.1**
CLL				*e*			02 37 32.0	
CLL	**Collm**	**82.13**	**331**	*e*P		**P**	**02 37 21.0**	**-0.1**
PKSM	**Moragy**	**83.70**	**325**	*i*P		**P**	**02 37 26.9**	**-2.4**
PKSM	**Moragy**	**83.70**	**325**	*i*P		**P**	**02 37 26.9**	**-2.4**
GERES	**GERESS Array B**	**83.80**	**329**	P		**P**	**02 37 29.5**	**-0.4**
	comp=Z,0.6nm,0.8s,baz=35,slow=4.9,SNR=6.7							
TXAR	**Lajitas Array**	**88.59**	**54**	P		**P**	**02 37 53.8**	**-0.1**
	comp=Z,0.4nm,0.7s,baz=294,slow=3.1,SNR=6.7							
LPAZ	**La Paz**	**145.01**	**63**	PKP		**PKPdf**	**02 44 38.2**	**-0.7**
	comp=Z,0.8nm,0.6s,baz=7.3,slow=7.1,SNR=3.7							

JMA 24 02:29:18.9±0.1, 38°42N×142°19E, h31km±2km, M3.5, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
JIO	**Ouri**	**0.66**	**273**	P		Pb	02 29 31.8	-0.2
JIO				S		Sb	02 29 40.6	-0.3
OFUJ	**Ofunato**	**0.78**	**328**	P		Pn	02 29 33.3	-0.4
OFUJ				S		Sb	02 29 43.5	-0.7
JMK	**Ichinoseki**	**0.93**	**305**	P		Pn	02 29 35.7	-0.1
JMK				S		Sn	02 29 47.9	-0.1
MIYJ	**Miyakonagasawa**	**1.19**	**346**	P		Pn	02 29 39.2	-0.2
MIYJ				S		Sn	02 29 53.5	-1.1
JOU	**Okura**	**1.20**	**268**	P		Pn	02 29 40.0	+0.4
JOU				*e*S		Sb	02 29 55.6	-0.6
JMM	**Marumori**	**1.23**	**244**	P		Pn	02 29 39.5	-0.5
JMM				*e*S		Sn	02 29 55.1	-0.5
JOM	**Ohasama**	**1.26**	**327**	P		Pb	02 29 41.5	-0.6
JOM				*e*S		Sb	02 29 57.2	-0.8
JFK	**Kawauchi**	**1.48**	**225**	P		Pn	02 29 42.6	-0.8
JYK	**Kaneyama**	**1.52**	**290**	P		Pn	02 29 44.9	+1.0
JYK				*e*S		Sb	02 30 04.4	-0.9

*NEIC **24** 02:30:26.8, 38°42N×118°72W, h2km, ML3.5(REN), After REN.*

ISC 24 02:30:26.6±0.7, 38°45N±0°02×118°72W±0°02, h10km, n39, σ1§73/80, California-Nevada border region

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
NV01	**Mina Array Sit**	**0.33**	**94**	*e*Pg		**Pg**	**02 30 33.2**	**-0.1**
NV11	**Mina Array Sit**	**0.44**	**92**	*e*Pg		**Pg**	**02 30 35.4**	**0.0**
NV11				*e*Sg		**Sg**	**02 30 42.3**	**+1.0**
WAKR	**Walker**	**0.56**	**276**	*e*Pg		**Pg**	**02 30 38.0**	**+0.3**
WAKR				*e*Sg		**Sb**	**02 30 47.0**	**0.0**
MLAC	**Mammoth, Mammo**	**0.82**	**186**	P		**Pg**	**02 30 41.8**	**-0.8**
	baz=6.8							
MLAC				S		**Sb**	**02 30 53.2**	**-1.3**
	baz=6.8							
MTUM	**Tungsten Hills**	**1.10**	**174**	*e*Pg		**Pg**	**02 30 46.8**	**-1.1**
CMB	**Columbia Colle**	**1.38**	**253**	*e*Pg		**Pn**	**02 30 52.0**	**+0.1**
CMB				*e*Sg		**Sb**	**02 31 09.7**	**-0.5**
GRAC	**Grapevine Rang**	**1.81**	**143**	P		**Pb**	**02 30 58.7**	**-1.2**
	baz=324							
GRAC				Sb		**Sg**	**02 31 25.1**	**+0.3**
	baz=324							
AFDM	**Forest Hills D**	**1.83**	**286**	*e*Pn		**Pb**	**02 31 00.2**	**0.0**
AFDM				*e*Sn		**Sb**	**02 31 22.9**	**-0.4**
BMN	**Battle Mountai**	**2.29**	**30**	*e*Pn		**Pn**	**02 31 05.1**	**+0.4**
BMN				*e*Sn		**Sn**	**02 31 35.1**	**+2.1**
DAC	**Darwin (Calif)**	**2.35**	**157**	*e*Pg		**Pb**	**02 31 09.4**	**+0.2**
DAC				*e*Sg		**Sg**	**02 31 40.0**	**-2.1**
ORV	**Oroville**	**2.43**	**298**	*e*Pn		**Pn**	**02 31 08.5**	**+2.1**
ORV				*e*Sn		**Sb**	**02 31 40.3**	**-0.1**
R11A	**Troy Canyon, C**	**2.46**	**91**	Pb		**Pb**	**02 31 11.4**	**+0.2**
	baz=273							
R11A				Sb		**Sg**	**02 31 44.4**	**-1.4**
	baz=273							
R11A	**Troy Canyon, C**	**2.46**	**91**	*e*Pn		**Pn**	**02 31 07.6**	**+0.5**
R11A				*e*Pb		**Pb**	**02 31 11.3**	**+0.2**
R11A				*e*Pg		**Pg**	**02 31 13.4**	**-0.5**
R11A				*e*Sn		**Sn**	**02 31 38.6**	**+1.3**
R11A				*e*Sg		**Sg**	**02 31 44.8**	**-1.1**
TPNV	**Topopah Spring**	**2.47**	**127**	P		**Pn**	**02 31 08.2**	**+1.1**
	baz=308							
TPNV	**Topopah Spring**	**2.47**	**127**	*e*Pn		**Pn**	**02 31 08.7**	**+1.6**
TPNV				*e*Pg		**Pb**	**02 31 12.1**	**+0.9**
SAO	**San Andreas Ge**	**2.74**	**233**	*e*Pn		**Pn**	**02 31 11.2**	**+0.4**
SAO				*e*Pg		**Pb**	**02 31 16.1**	**+0.3**
SAO				*e*Sg		**Sg**	**02 31 52.2**	**-2.6**
ISA	**Isabella, Lake**	**2.79**	**176**	Pb		**Pb**	**02 31 16.7**	**+0.1**
	baz=356							
ISA				Sb		**Sb**	**02 31 52.6**	**+1.7**
	baz=356							
ISA	**Isabella, Lake**	**2.79**	**176**	*e*Pn		**Pb**	**02 31 16.9**	**+0.2**
HOPS	**Hopland Field**	**3.45**	**280**	*e*Pg		**Pb**	**02 31 28.6**	**+0.8**
GSC	**Goldstone, Bar**	**3.50**	**153**	*e*Pg		**Pg**	**02 31 32.3**	**-1.4**
ELK	**Elko**	**3.53**	**48**	*e*Pn		**Pn**	**02 31 22.3**	**+0.5**
ELK				*e*Pb		**Pb**	**02 31 29.6**	**+0.2**
ELK				*e*Pg		**Pg**	**02 31 32.9**	**-1.4**
ELK				*e*Sn		**Sn**	**02 32 06.0**	**+2.2**
ELK				*e*Sg		**Sg**	**02 32 18.6**	**-1.4**
WDC	**Whiskeytown Da**	**3.64**	**307**	*e*Pn		**Pn**	**02 31 24.1**	**+1.1**
WDC				*e*Pg		**Pg**	**02 31 34.7**	**-1.7**
WDC				*e*Sn		**Sn**	**02 32 07.6**	**+1.5**
WDC				*e*Sg		**Sg**	**02 32 22.8**	**-0.7**
MOD	**Modoc Plateau**	**3.65**	**341**	*e*Pn		**Pn**	**02 31 24.4**	**+1.0**
MOD				*e*Pg		**Pb**	**02 31 34.3**	**+2.9**
MOD				*e*Sn		**Sn**	**02 32 08.9**	**+2.3**
MOD				*e*Sg		**Sg**	**02 32 23.4**	**-0.6**
PSUT	**Pine Spring**	**3.82**	**87**	*e*Pg		**Pg**	**02 31 38.2**	**-1.6**
OSI	**Osito Audit: C**	**3.83**	**180**	*e*Pg		**Pb**	**02 31 36.3**	**+2.0**
WVOR	**Wild Horse Val**	**3.98**	**1**	*e*Pn		**Pn**	**02 31 29.5**	**+1.7**
WVOR				*e*Pg		**Pg**	**02 31 41.3**	**-1.5**
WVOR				*e*Sn		**Sn**	**02 32 17.4**	**+1.8**
WVOR				*e*Sg		**Sg**	**02 32 32.9**	**-1.5**
YBH	**Yreka Blue Hor**	**4.48**	**318**	*e*Pn		**Pn**	**02 31 36.8**	**+2.1**
YBH				*e*Pg		**Pb**	**02 31 48.5**	**+3.0**
YBH				*e*Sg		**Sg**	**02 32 48.0**	**-2.6**
LCMT	**Little Creek M**	**4.57**	**107**	*e*Pg		**Pb**	**02 31 50.0**	**+3.0**
K05A	**Summer Lake**	**4.58**	**340**	*e*Pg		**Pg**	**02 31 52.5**	**-1.9**
DUG	**Dugway, Tooele**	**4.90**	**67**	*e*Pn		**Pn**	**02 31 41.7**	**+1.2**
DUG				*e*Pg		**Pg**	**02 32 00.0**	**-0.5**
DUG				*e*Sn		**Sn**	**02 32 37.5**	**+0.1**
DUG				*e*Sg		**Sg**	**02 33 01.5**	**-2.5**
BGU	**Big Grassy Mou**	**5.04**	**59**	*e*Pn		**Pn**	**02 31 43.6**	**+1.3**
BGU				*e*Pg		**Pg**	**02 32 02.5**	**-0.6**
W13A	**Hualapai Mount**	**5.12**	**129**	*e*Pg		**Pg**	**02 32 06.8**	**+2.0**
MTPU	**Mount Pierson**	**5.16**	**93**	*e*Pg		**Pg**	**02 32 03.0**	**-2.5**
PKCU	**Pink Cliffs**	**5.17**	**99**	*e*Pg		**Pg**	**02 32 04.8**	**-0.8**
MFID	**Camas Ranch**	**5.42**	**23**	*e*Pn		**Pn**	**02 31 47.5**	**-0.1**
	3.1nm,0.6s							
MFID				*e*Pg		**Pg**	**02 32 08.9**	**-1.5**
MFID				*e*Sg		**Sg**	**02 33 18.1**	**-2.6**
U15A	**North Rim**	**5.50**	**110**	*e*Pg		Pg	02 32 08.7	-3.3
HLID	**Hailey**	**6.05**	**31**	*e*Pn		**Pn**	**02 31 58.0**	**+1.6**
	2.8nm,0.5s							
HLID				*e*Pg		Pg	02 32 18.9	-3.7
HLID				*e*Sg		**Sg**	**02 33 36.0**	**-5.0**
HWUT	**Hardware Ranch**	**6.33**	**58**	*e*Pg		**Pg**	**02 32 25.4**	**-2.4**
HWUT				*e*Sg		**Sg**	**02 33 44.6**	**-5.2**
WUAZ	**Wupatki**	**6.57**	**114**	*e*Pn		**Pn**	**02 32 04.4**	**+1.0**
WUAZ				*e*Sg		Pg	02 32 27.0	-5.4
WUAZ				*e*Sg		**Sg**	**02 33 53.7**	**-3.8**

*CSEM **24** 02:34:43.5, 43.67N×12.17E, h9km, MD1.8/8*
ROM 24 02:34:43.5±0.1, 43.67N×12.17E, h9km, Md1.8/8, Ml0.9/3, Error ellipse: s-maj=2.0km s-min=1.1km az=7.0, Central Italy

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
PARC	**Parchiule**	**0.06**	**116**	Pg		Pg	02 34 46.1	+0.6
PARC				Sg		Sg	02 34 47.4	+0.4
PARC	**Parchiule**	**0.06**	**116**	Pg		Pg	02 34 46.1	+0.6
PARC				Sg		Sg	02 34 47.4	+0.4
CRE	**Caprese Michel**	**0.17**	**251**	Pg		Pg	02 34 47.8	+0.7
CRE				Sg		Sg	02 34 50.7	+1.1
	14nm,0.2s							
CRE	**Caprese Michel**	**0.17**	**251**	Pg		Pg	02 34 47.8	+0.7
CRE				Sg		Sg	02 34 50.7	+1.1
	14nm,0.2s							
BADI	**Badiali**	**0.17**	**161**	Pg		Pg	02 34 47.9	+0.7
BADI				Sg		Sg	02 34 50.9	+1.2
BADI	**Badiali**	**0.17**	**161**	Pg		Pg	02 34 47.9	+0.7
BADI				Sg		Sg	02 34 50.9	+1.2
ATPC	**Poggio Castell**	**0.29**	**132**	Pg		Pg	02 34 49.9	+0.7
ATPC				Sg		Sb	02 34 54.9	-0.8
	13nm,0.3s							
ATPC	**Poggio Castell**	**0.29**	**132**	Pg		Pg	02 34 49.9	+0.7
ATPC				Sg		Sb	02 34 54.9	-0.8
	13nm,0.3s							
PIEI	**Pieia**	**0.30**	**117**	Pg		Pg	02 34 50.1	+0.6
PIEI				Sg		Sb	02 34 55.1	-1.0
PIEI	**Pieia**	**0.30**	**117**	Pg		Pg	02 34 50.1	+0.6
PIEI				Sg		Sb	02 34 55.1	-1.0
ATVO	**AVT- Monte Val**	**0.34**	**149**	Pg		Pg	02 34 50.9	+0.7
ATVO				Sg		Sb	02 34 56.7	-0.6
	14nm,0.3s							
ATVO	**AVT- Monte Val**	**0.34**	**149**	Pg		Pg	02 34 50.9	+0.7
ATVO				Sg		Sb	02 34 56.7	-0.6
	14nm,0.3s							
FRON	**Frontone**	**0.44**	**111**	Pg		Pg	02 34 52.5	+0.5
FRON				Sg		Sb	02 34 59.9	-0.1
FRON	**Frontone**	**0.44**	**111**	Pg		Pg	02 34 52.5	+0.5
FRON				Sg		Sb	02 34 59.9	-0.1
SSFR	**Montelago di S**	**0.51**	**118**	Pg		Pg	02 34 53.9	+0.5
SSFR				Sg		Sb	02 35 02.0	-0.1
SSFR	**Montelago di S**	**0.51**	**118**	Pg		Pg	02 34 53.9	+0.5
SSFR				Sg		Sb	02 35 02.0	-0.1

*CSEM **24** 02:34:57.1±0.1, 39.03N×21.86E, h10km, ML1.9, Error ellipse: s-maj=1.7km s-min=1.4km az=148.0*
*ATH **24** 02:34:57.4, 39.02N×21.85E, h13km±2km, ML1.9/6, Error ellipse: s-maj=2.5km s-min=0.8km az=183.0*
THE 24 02:34:57.3, 39.03N×21.87E, h12km, ML1.9/11, Error ellipse: s-maj=0.6km s-min=0.4km az=324.0, Greece

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
EVR	**Evrytania**	**0.12**	**204**	P		Pg	02 35 00.6	+0.1
EVR				S		Sg	02 35 02.6	-0.2
EVR	**Evrytania**	**0.12**	**204**	P		Pg	02 35 00.7	+0.2
EVR				S		Sg	02 35 02.6	-0.2
EVR	**Evrytania**	**0.12**	**204**	P		Pg	02 35 00.7	+0.2
EVR				S		Sg	02 35 02.5	-0.3
EVR				AML		AML	02 35 03.2	
	comp=N,2962μm,0.2s							
AGG	**Agios Georgios**	**0.36**	**91**	P		Pg	02 35 04.8	+0.3
AGG				S		Sg	02 35 09.8	+0.5
AGG	**Agios Georgios**	**0.36**	**91**	P		Pg	02 35 04.8	+0.3
AGG				S		Sg	02 35 09.8	+0.5
AGG	**Agios Georgios**	**0.36**	**91**	P		Pg	02 35 04.8	+0.4
AGG				S		Sb	02 35 10.6	-0.6
AGG				AML		AML	02 35 11.8	
	comp=E,1635μm,0.2s							
AGG				AML		AML	02 35 11.9	
	comp=N,1987μm,0.3s							
ANX	**Ano Chora**	**0.44**	**175**	P		Pg	02 35 05.9	-0.1
ANX				S		Sg	02 35 12.2	+0.4
ANX	**Ano Chora**	**0.44**	**175**	P		Pg	02 35 05.9	-0.1
ANX				S		Sg	02 35 12.2	+0.4
PVO	**Paravola**	**0.49**	**213**	P		Pg	02 35 06.6	-0.4
PVO				S		Sg	02 35 13.9	+0.4
PVO	**Paravola**	**0.49**	**213**	P		Pg	02 35 06.6	-0.4
PVO				S		Sg	02 35 13.9	+0.4
THL	**Klokotos Trika**	**0.55**	**12**	P		Pg	02 35 07.8	-0.2
THL				S		Sg	02 35 15.7	+0.5
THL	**Klokotos Trika**	**0.55**	**12**	P		Pg	02 35 07.8	-0.2
THL				S		Sg	02 35 15.7	+0.5
DSL	**Palaion Diasel**	**0.61**	**280**	P		Pg	02 35 08.5	-0.7
DSL				S		Sg	02 35 17.9	+0.6
DSL	**Palaion Diasel**	**0.61**	**280**	P		Pg	02 35 08.7	-0.5
DSL				S		Sg	02 35 17.0	-0.3
DSL	**Palaion Diasel**	**0.61**	**280**	P		Pg	02 35 08.7	-0.5
DSL				S		Sg	02 35 17.0	-0.3
DSL				AML		AML	02 35 18.8	
	comp=N,118μm,0.2s							
DSL				AML		AML	02 35 18.8	
	comp=E,184μm,0.2s							
SERG	**Sergoula**	**0.63**	**167**	P		Pg	02 35 09.2	-0.4
SERG				S		Sg	02 35 18.4	+0.5
SERG	**Sergoula**	**0.63**	**167**	P		Pg	02 35 09.2	-0.4
SERG				S		Sg	02 35 18.4	+0.5
KALE	**Kalithea**	**0.67**	**162**	P		Pg	02 35 10.0	-0.3
KALE				S		Sb	02 35 19.9	+0.4
KALE	**Kalithea**	**0.67**	**162**	P		Pg	02 35 10.0	-0.3
KALE				S		Sg	02 35 19.7	+0.5
KALE	**Kalithea**	**0.67**	**162**	P		Pg	02 35 09.9	-0.4
KALE				S		Sg	02 35 19.7	+0.5
KALE				AML		AML	02 35 21.7	
	comp=E,90μm,0.3s							
KALE				AML		AML	02 35 22.8	
	comp=N,101μm,0.3s							
TRIZ	**Trizonia**	**0.68**	**167**	P		Pg	02 35 09.6	-0.9
PDO	**Prodromos**	**0.69**	**232**	P		Pg	02 35 10.3	-0.4
PDO				S		Sb	02 35 20.9	+0.1
PDO	**Prodromos**	**0.69**	**232**	P		Pg	02 35 10.3	-0.4
PDO				S		Sg	02 35 19.4	-0.3
PDO	**Prodromos**	**0.69**	**232**	P		Pg	02 35 10.8	+0.2
PDO				S		Sg	02 35 19.4	-0.3
PDO				AML		AML	02 35 23.3	
	comp=N,387μm,0.2s							
PDO				AML		AML	02 35 23.7	
	comp=E,255μm,0.3s							
LAKA	**Lakka**	**0.79**	**174**	P		Pg	02 35 12.4	-0.2
LAKA				S		Sb	02 35 23.9	+0.1
LAKA	**Lakka**	**0.79**	**174**	P		Pg	02 35 12.6	0.0
LAKA				S		Sb	02 35 23.9	+0.1
LAKA	**Lakka**	**0.79**	**174**	P		Pg	02 35 12.6	0.0
DSF	**Desfina**	**0.80**	**140**	P		Pg	02 35 12.9	+0.1
DSF				S		Sb	02 35 23.8	-0.3
DSF	**Desfina**	**0.80**	**140**	P		Pg	02 35 12.9	+0.1
DSF				S		Sg	02 35 23.5	+0.2
DSF	**Desfina**	**0.80**	**140**	P		Pb	02 35 13.4	+0.2
DSF				S		Sg	02 35 23.5	+0.2
DSF				AML		AML	02 35 25.1	
	comp=N,168μm,0.1s							
DSF				AML		AML	02 35 25.6	
	comp=E,107μm,0.1s							
FYTO	**Fytoko, Volos**	**0.91**	**65**	P		Pg	02 35 14.1	-0.8
FYTO				S		Sb	02 35 27.4	+0.2
FYTO	**Fytoko, Volos**	**0.91**	**65**	P		Pb	02 35 15.0	-0.1
FYTO				S		Sb	02 35 27.4	+0.2
FYTO	**Fytoko, Volos**	**0.91**	**65**	P		Pb	02 35 15.0	0.0
AXS	**Araxos**	**0.92**	**205**	P		Pb	02 35 15.2	0.0
AXS	**Araxos**	**0.92**	**205**	P		Pb	02 35 15.2	0.0
LKR	**Lokris**	**0.96**	**113**	P		Pg	02 35 15.6	-0.2
LKR				S		Sb	02 35 28.8	+0.3
LKR	**Lokris**	**0.96**	**113**	P		Pg	02 35 15.6	-0.2
LKR				S		Sb	02 35 28.8	+0.3
LKD2	**Lefkada island**	**0.98**	**256**	P		Pg	02 35 15.7	-0.4
LKD2				S		Sb	02 35 29.8	+0.7
LKD2	**Lefkada island**	**0.98**	**256**	P		Pg	02 35 15.7	-0.4
LKD2				S		Sb	02 35 29.8	+0.7
LKD2	**Lefkada island**	**0.98**	**256**	P		Pg	02 35 15.8	-0.4
KLV	**Kalavryta, Ach**	**1.01**	**167**	P		Pg	02 35 16.1	-0.6
KLV				S		Sb	02 35 30.5	+0.5
KLV	**Kalavryta, Ach**	**1.01**	**167**	P		Pg	02 35 16.1	-0.6
KLV				S		Sb	02 35 30.5	+0.5
KLV	**Kalavryta, Ach**	**1.01**	**167**	P		Pg	02 35 16.0	-0.8
RLS	**Riolos of Patr**	**1.02**	**198**	P		Pb	02 35 16.7	-0.2
RLS				S		Sn	02 35 31.2	-0.5
RLS	**Riolos of Patr**	**1.02**	**198**	P		Pb	02 35 16.7

SIRT	Sirnak	1.88	162	*e*Pn	Pn	03 00 11.6	-0.6
MAZI	Mazidag	2.08	209	*e*PN	Pn	03 00 15.2	+0.1
MAZI	Mazidag	2.08	209	*e*Pn	Pn	03 00 15.2	+0.1
SVRC	Sivrice-ELAZID	2.09	245	*e*PN	Pn	03 00 15.4	+0.3
SVRC	Sivrice-ELAZID	2.09	245	*e*Pn	Pn	03 00 15.5	+0.3

ISCJB ***24*** *03:17:57.2±0.5,38.6E±0.04×142.58E±0.04, h24km, mb3.8/17, MS3.0/2, Error ellipse: s-maj=6.1km s-min=4.5km az=149.0*

NIED ***24*** *03:18:00, 38.60N×142.40E, h53km, Mw4.1 Best double couple: M0=1.35000×10^15 NP1:φs=86.00000°, δ37.00000°, λ128.00000°. NP2:φs=221.00000°, δ62.00000°, λ65.00000°.*

JMA ***24*** *03:18:00.5±0.1, 38.64N×142.41E, h38km±2km, M4.2*

JMA Felt II J1.

IDC ***24*** *03:18:02.6±2.4, 38.66N×142.23E, h57km±20km, mb3.5/17, mb1 3.7/20, mb1mx3.6/48, mbtmp3.8/20, ML3.5/3, MS3.0/4, Ms1 3.0/4, ms1mx2.5/39, Error ellipse: s-maj=17.9km s-min=12.6km az=112.0*

ISC 24 03:17:58.5±0.6, 38.60N±0.05×142.50E±0.06, h24km, n43, σ1§29/40, mb3.8/17, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
OFUJ	**Ofunato**	**0.81**	**307**	P	**Pb**	**03 18 14.5**	**+0.6**
OFUJ				S	**Sb**	**03 18 24.2**	**-0.3**
JIO	**Ouri**	**0.91**	**262**	P	**Pb**	**03 18 16.0**	**+0.3**
JIO				S	**Sb**	**03 18 27.0**	**-0.4**
JMK	**Ichinoseki**	**1.06**	**290**	P	**Pn**	**03 18 18.1**	**+0.2**
JMK				S	**Sb**	**03 18 30.4**	**-1.3**
JOM	**Ohasama**	**1.29**	**313**	P	**Pn**	**03 18 21.5**	**+0.5**
JTH	**Tanohata**	**1.43**	**340**	P	**Pn**	**03 18 23.3**	**+0.4**
JOU	**Okura**	**1.46**	**262**	P	**Pn**	**03 18 24.3**	**+0.9**
JOU				S	**Sn**	**03 18 42.2**	**+0.5**
JMM	**Marumori**	**1.53**	**242**	P	**Pn**	**03 18 25.1**	**+0.8**
JRG	**Rokugo**	**1.66**	**299**	P	**Pn**	**03 18 26.8**	**+0.7**
JYK	**Kaneyama**	**1.71**	**282**	P	**Pn**	**03 18 27.5**	**+0.8**
JFK	**Kawauchi**	**1.78**	**227**	P	**Pn**	**03 18 28.8**	**+1.1**
MJAR	**Matsushiro Arr**	**3.98**	**240**	P	**Pn**	**03 19 00.4**	**+2.4**
	5.8nm,0.3s,baz=34,slow=14,SNR=33						
MAT	**Matsushiro**	**3.98**	**240**	P	**Pn**	**03 19 01.1**	**+3.1**
MAT				eS	**Sn**	**03 19 46.8**	**+2.9**
ASAJ	**Asahikawa**	**5.52**	**1**	P	**Pn**	**03 19 19.8**	**+0.7**
	2.8nm,0.3s,baz=221,slow=12,SNR=21						
ASAJ				S	**Sn**	**03 20 22.2**	**+0.4**
	1.0nm,0.3s,baz=36,slow=33,SNR=2.8						
JHJ	**Hachijo jima 2**	**5.89**	**203**	P	**Pn**	**03 19 24.5**	**+0.2**
	8.7nm,0.3s,baz=60,slow=20,SNR=6.8						
JHJ				S	**Sn**	**03 20 28.1**	**-2.9**
	24nm,0.3s,baz=318,slow=24,SNR=6.2						
USRK	**Ussuriysk Ar.**	**9.68**	**309**	P	**Pn**	**03 20 17.6**	**+1.4**
	0.5nm,0.3s,baz=102,slow=24,SNR=8.0						
USRK				LR	LR	03 23 52.0	
	comp=Z,64nm,18.3s,baz=132,slow=37						
KSRS	**Korea Array**	**11.56**	**269**	P	Pn	03 20 46.9	+5.0
	0.3nm,0.3s,baz=82,slow=14,SNR=3.6						
KLR	**Kul'dur**	**13.14**	**327**	LR	LR	03 26 03.8	
	comp=Z,67nm,18.8s,baz=134,slow=37						
SEY	**Seymchan**	**25.10**	**11**	P	**P**	**03 23 22.1**	**+1.1**
	3.6nm,0.9s,baz=210,slow=11,SNR=8.1						
SONM	**Songino Array**	**27.67**	**301**	P	**P**	**03 23 43.1**	**-1.4**
	0.6nm,0.4s,baz=105,slow=12,SNR=3.1						
H11N2	**WAKE ISLAND Hy**	**28.27**	**125**	T	T	03 54 24.1	
	baz=317,slow=75,SNR=413						
H11N1	**WAKE ISLAND Hy**	**28.28**	**125**	T	T	03 54 18.0	
	baz=317,slow=75,SNR=435						
H11N3	**WAKE ISLAND Hy**	**28.29**	**125**	T	T	03 54 19.9	
	baz=317,slow=75,SNR=354						
H11S1	**WAKE ISLAND Hy**	**29.04**	**127**	T	T	03 55 22.0	
	baz=319,slow=76,SNR=35						
H11S3	**WAKE ISLAND Hy**	**29.04**	**127**	T	T	03 55 22.2	
	baz=319,slow=76,SNR=63						
H11S2	**WAKE ISLAND Hy**	**29.06**	**127**	T	T	03 55 23.6	
	baz=319,slow=76,SNR=35						
TLY	**Talaya**	**30.00**	**309**	LR	LR	03 36 56.4	
	comp=Z,36nm,18.9s,baz=76,slow=38						
ZALV	**Zalesovo Beam**	**41.52**	**311**	P	**P**	**03 25 42.6**	**-0.9**
	1.4nm,0.4s,baz=92,slow=8.1,SNR=8.9						
MKAR	**Makanchi Array**	**44.04**	**301**	P	**P**	**03 26 03.5**	**-0.7**
	0.7nm,0.4s,baz=82,slow=10.0,SNR=9.3						
ILAR	**Eielson Array**	**47.72**	**33**	P	**P**	**03 26 34.0**	**+1.0**
	0.7nm,0.7s,baz=263,slow=6.7,SNR=9.7						
INK	**Inuvik**	**52.61**	**28**	P	**P**	**03 27 11.2**	**+1.4**
	0.3nm,0.4s,baz=257,slow=4.8,SNR=3.9						
AKTO	**Aktyubinsk**	**58.28**	**312**	LR	LR	03 53 37.4	
	comp=Z,13nm,20.2s,baz=51,slow=37						
WRA	**Warramunga Arr**	**58.73**	**189**	P	**P**	**03 27 53.9**	**-0.5**
	1.8nm,0.6s,baz=7.2,slow=7.0,SNR=24						
YKA	**Yellowknife Ar**	**62.03**	**3**	P	**P**	**03 28 17.0**	**+0.6**
	0.2nm,0.5s,baz=301,slow=6.5,SNR=6.4						
ASAR	**Alice Springs**	**62.45**	**189**	P	**P**	**03 28 20.1**	**+0.3**
	1.0nm,0.7s,baz=9.1,slow=5.4,SNR=12						
FINES	**FINESS Array B**	**67.83**	**332**	P	**P**	**03 28 52.2**	**-2.0**
	0.7nm,0.6s,baz=32,slow=11,SNR=8.1						
HFS	**Hagfors**	**73.02**	**336**	P	**P**	**03 29 25.2**	**-0.7**
	0.4nm,0.4s,baz=46,slow=4.3,SNR=8.2						
NOA	**NORSAR Array B**	**73.08**	**338**	P	**P**	**03 29 25.8**	**-0.5**
	0.4nm,0.6s,baz=16,slow=4.1,SNR=3.4						
NVAR	**Mina Array Bea**	**73.37**	**54**	P	**P**	**03 29 29.6**	**+0.9**
	0.6nm,0.8s,baz=302,slow=6.1,SNR=4.5						
AKASG	**Malin Array Be**	**73.59**	**322**	P	**P**	**03 29 27.8**	**-1.6**
	0.4nm,0.4s,baz=45,slow=6.5,SNR=3.5						
PDAR	**Pinedale Array**	**75.96**	**46**	P	**P**	**03 29 44.6**	**+0.9**
	0.8nm,0.5s,baz=246,slow=2.0,SNR=12						
BRTR	**Keskin Array B**	**78.46**	**312**	P	**P**	**03 29 56.4**	**-1.2**
	0.2nm,0.5s,baz=141,slow=29,SNR=3.7						
TXAR	**Lajitas Array**	**88.49**	**53**	P	**P**	**03 30 50.0**	**+0.8**
	0.3nm,0.6s,baz=307,slow=4.2,SNR=7.1						
LPAZ	**La Paz**	**145.16**	**59**	PKPbc	**PKPbc**	**03 37 34.3**	**-0.4**
	0.8nm,0.6s,baz=24,slow=7.9,SNR=3.9						

NIED ***24*** *03:25:00, 36.10N×139.90E, h56km, Mw4.1 Best double couple: M0=1.87000×10^15 NP1:φs=284.00000°, δ26.00000°, λ-153.00000°. NP2:φs=169.00000°, δ78.00000°, λ-67.00000°.*

ISCJB ***24*** *03:25:09.7±0.4, 36.05N±0.03×139.86E±0.05, h56km±3km, mb3.8/16, MS2.9/6, Error ellipse: s-maj=6.2km s-min=4.5km az=167.2*

JMA ***24*** *03:25:10.8±0.1, 36.07N×139.86E, h44km±1km, M4.1 Broadband fault plane solution: P waves. NP1: φs=357.00000°, δ79.00000°, λ74.00000°. NP2: φs=235.00000°, δ20.00000°, λ146.00000°. Principal axes: T Plg53.0000°, Azm248.0000°; N Plg16.0000°, Azm1.0000°; P Plg32.0000°, Azm101.0000°;*

JMA Felt III J1.

IDC ***24*** *03:25:11.6±1.6, 36.04N×139.78E, h57km±14km, mb3.6/16, mb1 3.8/21, mb1mx3.7/50, mbtmp3.9/21, MS3.0/8, Ms1 3.0/8, ms1mx2.8/37 Error ellipse: s-maj=15.6km s-min=12.6km az=54.0*

ISC 24 03:25:10.6±0.8, 36.04N±0.04×139.86E±0.05, h48km±7km, n42, σ0§92/48, mb3.8/16, MS3.0/6, 3C-5D, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JYT	**Yasato**	**0.33**	**55**	↑P	**Pn**	**03 25 19.5**	**-0.3**
JYT				S	**Sn**	**03 25 25.8**	**-0.6**
TOK	**Tokyo**	**0.36**	**193**	↓P	**Pn**	**03 25 21.4**	**+1.3**
JAG	**Ashikaga**	**0.51**	**320**	↓P	**Pn**	**03 25 21.5**	**-0.3**
JAG				S	**Sn**	**03 25 29.1**	**-0.7**
JRY	**Ryogami san**	**0.78**	**269**	↓P	**Pn**	**03 25 25.0**	**-0.3**
JRY				S	**Sn**	**03 25 35.4**	**-0.6**
JKT	**Katashina**	**0.88**	**326**	↓P	**Pn**	**03 25 26.2**	**-0.5**
JKT				S	**Sn**	**03 25 38.2**	**-0.3**
JOD2	**Odawara 2**	**1.00**	**219**	↑P	**Pn**	**03 25 28.5**	**+0.3**
JOD2				S	**Sn**	**03 25 41.9**	**+0.7**
JYN	**Shimob**	**1.20**	**244**	↑P	**Pn**	**03 25 31.8**	**+0.8**
BSO3	**Boso 3**	**1.34**	**156**	P	**Pn**	**03 25 32.7**	**0.0**
BSO3				S	**Sn**	**03 25 51.2**	**+1.9**
JIM2	**Oshima 3**	**1.36**	**195**	P	**Pn**	**03 25 32.9**	**-0.3**
JFY	**Yanaizu**	**1.37**	**355**	P	**Pn**	**03 25 33.8**	**+0.5**
JFY				S	**Sn**	**03 25 50.6**	**+0.3**
JHK	**Hiroka**	**1.38**	**331**	↓P	**Pn**	**03 25 33.5**	**0.0**
JHK				S	**Sn**	**03 25 51.2**	**+0.6**
MJAR	**Matsushiro Arr**	**1.42**	**291**	P	**Pn**	**03 25 33.6**	**-0.4**
	136nm,0.3s,baz=33,slow=12,SNR=1211						
MJAR				S	**Sn**	**03 25 50.7**	**-0.9**
	71nm,0.3s,baz=88,slow=11,SNR=13						
MAT	**Matsushiro**	**1.43**	**291**	P	**Pn**	**03 25 34.6**	**+0.6**
MAT				S	**Sn**	**03 25 53.0**	**+1.3**
JHJ	**Hachijo jima 2**	**2.91**	**181**	P	**Pn**	**03 25 54.6**	**+0.2**
	125nm,0.3s,baz=330,slow=18,SNR=40						
JHJ				S	**Sn**	**03 26 27.4**	**-0.7**
	154nm,0.3s,baz=251,slow=23,SNR=11						
JNU	**Nakatsue**	**7.96**	**251**	P	**Pn**	**03 27 05.0**	**+1.4**
	0.5nm,0.3s,baz=151,slow=11,SNR=5.6						
JNU				LR	LR	03 30 22.8	
	comp=Z,171nm,20.1s,baz=118,slow=39						
ASAJ	**Asahikawa**	**8.34**	**14**	P	**Pn**	**03 27 09.9**	**+1.2**
	1.4nm,0.3s,baz=235,slow=13,SNR=11						
ASAJ				S	Sn	03 28 32.5	-9.0
	0.7nm,0.3s,baz=224,slow=18,SNR=2.4						
JCJ	**Chichijima**	**9.13**	**167**	P	**Pn**	**03 27 16.7**	**-3.0**
	baz=270,slow=14						
JCJ				S	Sn	03 28 55.3	-5.9
	5.8nm,0.3s,baz=266,slow=22,SNR=3.9						
KSRS	**Korea Array**	**9.68**	**282**	P	**Pn**	**03 27 28.1**	**+1.0**
	0.6nm,0.3s,baz=94,slow=14,SNR=6.6						
KSRS				LR	LR	03 31 09.5	
	comp=Z,74nm,21.4s,baz=116,slow=37						
USRK	**Ussuriysk Ar.**	**10.13**	**326**	P	**Pn**	**03 27 34.5**	**+1.2**
	0.2nm,0.3s,baz=148,slow=44,SNR=3.3						
PETK	**Petropavlovsk-**	**21.18**	**31**	LR	LR	03 37 31.7	
	comp=Z,31nm,20.2s,baz=221,slow=35						
MA2	**Magadan**	**24.60**	**13**	LR	LR	03 39 23.5	
	comp=Z,14nm,20.9s,baz=242,slow=35						
SONM	**Songino Array**	**27.33**	**306**	P	**P**	**03 30 51.8**	**+0.9**
	0.5nm,0.7s,baz=120,slow=8.5,SNR=2.3						
CMAR	**Chiang Mai Arr**	**40.03**	**255**	LR	LR	03 51 44.7	
	comp=Z,28nm,18.5s,baz=255,slow=40						
ZALV	**Zalesovo Beam**	**41.67**	**313**	P	**P**	**03 32 53.4**	**-0.7**
	3.7nm,0.7s,baz=82,slow=6.7,SNR=16						
MKAR	**Makanchi Array**	**43.59**	**303**	P	**P**	**03 33 09.1**	**-0.8**
	0.9nm,0.6s,baz=88,slow=9.2,SNR=7.7						
MKAR				LR	LR	03 52 09.0	
	comp=Z,21nm,18.6s,baz=56,slow=37						
AAK	**Ala-Archa**	**49.86**	**299**	LR	LR	03 56 19.2	
	comp=Z,35nm,19.1s,baz=35,slow=38						
ILAR	**Eielson Array**	**51.00**	**32**	P	**P**	**03 34 07.1**	**-0.1**
	1.7nm,0.7s,baz=270,slow=6.1,SNR=20						
WRA	**Warramunga Arr**	**55.92**	**186**	P	**P**	**03 34 43.1**	**-0.6**
	1.2nm,0.4s,baz=0.4,slow=7.5,SNR=13						
ASAR	**Alice Springs**	**59.65**	**186**	P	**P**	**03 35 10.1**	**+0.3**
	0.6nm,0.5s,baz=18,slow=12,SNR=11						
GEYT	**Ailbeck**	**63.22**	**299**	P	**P**	**03 35 33.7**	**-0.2**
	1.1nm,0.5s,baz=90,slow=1.4,SNR=2.2						
YKA	**Yellowknife Ar**	**65.29**	**29**	P	**P**	**03 35 46.9**	**-0.1**
	0.7nm,0.7s,baz=302,slow=6.7,SNR=19						
OBN	**Obninsk**	**68.14**	**323**	LR	LR	04 05 51.6	
	comp=Z,8.7nm,21.7s,baz=82,slow=36						
FINES	**FINESS Array B**	**69.11**	**332**	P	**P**	**03 36 09.4**	**-1.8**
	0.6nm,0.5s,baz=51,slow=6.3,SNR=5.7						
HFS	**Hagfors**	**74.47**	**335**	P	**P**	**03 36 44.3**	**+0.9**
	0.6nm,0.5s,baz=56,slow=3.7,SNR=5.1						
NB2	**NORSAR Subarra**	**74.61**	**337**	P	**P**	**03 36 43.4**	**-0.9**
	comp=Z,0.7nm,0.5s,baz=39,slow=5.9						
NOA	**NORSAR Array B**	**74.61**	**337**	P	**P**	**03 36 43.6**	**-0.7**
	comp=Z,0.6nm,0.6s,baz=40,slow=5.9,SNR=3.7						
NVAR	**Mina Array Bea**	**76.59**	**52**	P	**P**	**03 36 57.4**	**+1.2**
	comp=Z,1.1nm,0.6s,baz=285,slow=5.9,SNR=9.0						
BRTR	**Keskin Array B**	**78.56**	**311**	P	**P**	**03 37 07.0**	**-0.1**
	comp=Z,0.3nm,0.4s,baz=127,slow=3.1,SNR=3.5						
PDAR	**Pinedale Array**	**79.25**	**45**	P	**P**	**03 37 11.2**	**+0.2**
	comp=Z,0.4nm,0.6s,baz=340,slow=1.5,SNR=5.9						
GERES	**GERESS Array B**	**82.89**	**327**	P	**P**	**03 37 29.7**	**-0.4**
	comp=Z,0.2nm,0.5s,baz=35,slow=3.6,SNR=3.8						
TXAR	**Lajitas Array**	**91.72**	**51**	P	**P**	**03 38 13.7**	**+0.5**
	comp=Z,0.6nm,0.5s,baz=292,slow=2.4,SNR=19						
LPAZ	**La Paz**	**148.28**	**59**	PKPbc	**PKPbc**	**03 44 53.0**	**+0.4**
	comp=Z,0.5nm,0.5s,baz=316,slow=4.4,SNR=3.8						

NIED ***24*** *03:27:00, 39.10N×142.40E, h20km, Mw3.7 Best double couple: M0=4.30000×10^14 NP1:φs=169.00000°, δ55.00000°, λ-26.00000°. NP2:φs=275.00000°, δ69.00000°, λ-142.00000°.*

JMA 24 03:27:15.6±0.1, 39.11N×142.38E, h30km±2km, M3.5, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
OFUJ	**Ofunato**	**0.55**	**267**	P	Pb	03 27 26.8	-0.1
OFUJ				S	Sb	03 27 34.4	-0.2
MIYJ	**Miyakonagasawa**	**0.64**	**317**	P	Pb	03 27 27.7	-0.6
MIYJ				S	Sb	03 27 36.0	-0.9
JMK	**Ichinoseki**	**0.92**	**260**	P	Pn	03 27 32.5	+0.1
JMK				S	Sn	03 27 44.1	-0.5
JOM	**Ohasama**	**0.92**	**294**	P	Pn	03 27 32.6	+0.1
JOM				S	Sn	03 27 44.5	-0.2
JIO	**Ouri**	**1.04**	**231**	P	Pn	03 27 33.6	-0.5
JIO				S	Sn	03 27 46.2	-1.4
JKZ	**Kuzumaki**	**1.19**	**317**	P	Pb	03 27 37.0	-0.6
JKZ				S	Sb	03 27 52.4	-0.3
JRG	**Rokugo**	**1.39**	**282**	P	Pb	03 27 40.6	-0.3
JRG				S	Sb	03 27 59.2	+1.0
JANG	**Nango**	**1.43**	**332**	P	Pb	03 27 40.6	-1.0
JANG				S	Sn	03 27 58.1	+0.9

IDC ***24*** *03:29:09.0±1.3, 38.45N×21.71E, h0km, mb3.8/9, mb1 3.8/16, mb1mx3.7/44, mbtmp3.6/16, ML3.5/6, MS2.6/1, Ms1 2.6/1, ms1mx2.0/47, Error ellipse: s-maj=25.3km s-min=15.2km az=36.0*

ISCJB ***24*** *03:29:09.2±0.2, 38.32N±0.01×21.70E±0.01, h7km±1km, mb3.7/9, Error ellipse: s-maj=2.0km s-min=1.7km az=39.5*

IASPEI ***24*** *03:29:09.4±0.8, 38.31N±0.01×21.72E±0.01, h10km±4km, mb3.9/9, Error ellipse: s-maj=2.0km s-min=1.9km az=127.6, GT5 selection from ISC bulletin GT5 identified by Bond˙ı˙r and McLaughlin (2009) selection criteria Bond˙ı˙r and McLaughlin, A new ground truth data set for seismic studies, Seism. Res. Let., 80, 465-472, 2009*

CSEM ***24*** *03:29:09.8±0.1, 38.31N×21.71E, h5km, ML3.3, Error ellipse: s-maj=2.6km s-min=1.9km az=45.0*

THE ***24*** *03:29:09.7, 38.31N×21.73E, h1km, ML3.4/40, Error ellipse: s-maj=0.9km s-min=0.3km az=210.0*

ATH ***24*** *03:29:09.2, 38.31N×21.75E, h16km, ML3.3/15, Error ellipse: s-maj=0.7km s-min=0.5km az=195.0*

ISC 24 03:29:09.5±0.7, 38.31N±0.01×21.72E±0.01, h9km±4km, n342, σ1§10/449, mb3.9/9, 11C-13D, Greece

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
UPR	**University Cam**	**0.06**	**118**	P	**Pg**	**03 29 11.6**	**+0.1**
UPR				S	**Sg**	**03 29 12.6**	**-0.3**
UPR	**University Cam**	**0.06**	**118**	P	**Pg**	**03 29 11.2**	**-0.3**
UPR				S	**Sg**	**03 29 12.6**	**-0.3**
UPR	**University Cam**	**0.06**	**118**	P	**Pg**	**03 29 11.2**	**-0.3**
RODI	**Rodini**	**0.14**	**86**	P	**Pg**	**03 29 12.9**	**+0.3**
RODI				S	**Sg**	**03 29 13.4**	**-1.3**
RODI	**Rodini**	**0.14**	**86**	P	**Pg**	**03 29 12.8**	**+0.3**
RODI				S	**Sg**	**03 29 13.4**	**-1.3**
RODI				AML	AML	03 29 16.5	
	comp=N,32609μm,0.5s						
RODI				AML	AML	03 29 16.6	
	comp=E,52628μm,0.4s						
EFP	**Efpalio**	**0.19**	**52**	P	**Pg**	**03 29 13.6**	**+0.2**
EFP				S	**Sg**	**03 29 16.2**	**+0.1**
EFP	**Efpalio**	**0.19**	**52**	P	**Pg**	**03 29 13.6**	**+0.2**
EFP				S	**Sg**	**03 29 16.2**	**+0.1**
EFP	**Efpalio**	**0.19**	**52**	P	**Pg**	**03 29 13.7**	**+0.2**
EFP				S	**Sg**	**03 29 17.0**	**+0.9**
EFP				AML	AML	03 29 17.5	
	comp=N,4480μm,0.3s						
EFP				AML	AML	03 29 18.5	
	comp=E,60458μm,0.3s						
LAKA	**Lakka**	**0.22**	**109**	P	**Pg**	**03 29 14.0**	**0.0**
LAKA				S	**Sg**	**03 29 17.2**	**+0.2**
LAKA	**Lakka**	**0.22**	**109**	P	**Pg**	**03 29 14.0**	**0.0**
LAKA				S	**Sg**	**03 29 17.2**	**+0.2**
LAKA	**Lakka**	**0.22**	**109**	P	**Pg**	**03 29 14.4**	**+0.5**
LAKA				S	**Sg**	**03 29 17.4**	**+0.4**
TRIZ	**Trizonia**	**0.28**	**79**	P	**Pg**	**03 29 15.7**	**+0.5**
TRIZ				S	**Sg**	**03 29 19.4**	**+0.4**
SERG	**Sergoula**	**0.28**	**69**	P	**Pg**	**03 29 15.2**	**0.0**
SERG				S	**Sg**	**03 29 19.6**	**+0.5**
SERG	**Sergoula**	**0.28**	**69**	P	**Pg**	**03 29 15.2**	**0.0**
SERG				S	**Sg**	**03 29 19.6**	**+0.5**
AXS	**Araxos**	**0.29**	**247**	P	**Pg**	**03 29 15.4**	**+0.1**
AXS				S	**Sg**	**03 29 19.6**	**+0.3**
AXS	**Araxos**	**0.29**	**247**	P	**Pg**	**03 29 15.5**	**+0.1**
AXS				S	**Sg**	**03 29 19.6**	**+0.3**
AXS	**Araxos**	**0.29**	**247**	P	**Pg**	**03 29 15.3**	**+0.1**
AXS				S	**Sg**	**03 29 20.4**	**+1.1**
RLS	**Riolos of Patr**	**0.32**	**218**	P	**Pg**	**03 29 16.2**	**+0.3**
RLS				S	**Sg**	**03 29 20.7**	**+0.5**
RLS	**Riolos of Patr**	**0.32**	**218**	P	**Pg**	**03 29 16.1**	**+0.2**
RLS				S	**Sg**	**03 29 20.7**	**+0.5**
ANX	**Ano Chora**	**0.32**	**30**	P	**Pg**	**03 29 16.0**	**+0.1**
ANX				S	**Sg**	**03 29 20.9**	**+0.6**
ANX	**Ano Chora**	**0.32**	**30**	P	**Pg**	**03 29 16.1**	**+0.1**
ANX				S	**Sg**	**03 29 20.9**	**+0.6**
PVO	**Paravola**	**0.34**	**334**	P	**Pg**	**03 29 16.2**	**0.0**
PVO				S	**Sg**	**03 29 21.6**	**+0.8**
PVO	**Paravola**	**0.34**	**334**	P	**Pg**	**03 29 16.2**	**0.0**
PVO				S	**Sg**	**03 29 21.5**	**+0.8**
PVO	**Paravola**	**0.34**	**334**	P	**Pg**	**03 29 16.0**	**-0.2**
PVO				S	**Sg**	**03 29 21.5**	**+0.7**
KALE	**Kalithea**	**0.34**	**77**	P	**Pg**	**03 29 16.3**	**0.0**
KALE				S	**Sg**	**03 29 21.5**	**+0.7**
KALE	**Kalithea**	**0.34**	**77**	P	**Pg**	**03 29 16.3**	**0.0**
KALE				S	**Sg**	**03 29 20.0**	**-0.8**
KALE	**Kalithea**	**0.34**	**77**	P	**Pg**	**03 29 16.8**	**+0.5**
KALE				S	**Sg**	**03 29 20.0**	**-0.8**
KALE				AML	AML	03 29 26.2	
	comp=N,13044μm,0.3s						
KALE				AML	AML	03 29 26.4	
	comp=E,12087μm,0.4s						
DRO	**Drossia**	**0.36**	**181**	P	**Pg**	**03 29 16.5**	**-0.1**
DRO				S	**Sg**	**03 29 21.8**	**+0.5**
DRO	**Drossia**	**0.36**	**181**	P	**Pg**	**03 29 16.6**	**-0.1**
DRO				S	**Sg**	**03 29 21.6**	**+0.2**
DRO	**Drossia**	**0.36**	**181**	P	**Pg**	**03 29 16.7**	**+0.1**
DRO				S	**Sg**	**03 29 21.6**	**+0.2**
DRO				AML	AML	03 29 32.5	
	comp=E,22795μm,0.6s						
DRO				AML	AML	03 29 33.4	
	comp=N,17260μm,0.6s						
KLV	**Kalavryta, Ach**	**0.43**	**128**	P	**Pg**	**03 29 17.8**	**-0.2**
KLV				S	**Sg**	**03 29 24.2**	**+0.5**
KLV	**Kalavryta, Ach**	**0.43**	**128**	P	**Pg**	**03 29 17.8**	**-0.2**
KLV				S	**Sg**	**03 29 24.2**	**+0.5**
KLV	**Kalavryta, Ach**	**0.43**	**128**	P	**Pg**	**03 29 18.2**	**+0.2**
PDO	**Prodromos**	**0.51**	**304**	P	**Pg**	**03 29 18.8**	**-0.6**
PDO				S	**Sb**	**03 29 27.5**	**-0.7**
PDO	**Prodromos**	**0.51**	**304**	P	**Pg**	**03 29 18.8**	**-0.6**
PDO				S	**Sb**	**03 29 27.5**	**-0.7**
PDO	**Prodromos**	**0.51**	**304**	P	**Pg**	**03 29 18.8**	**-0.6**
PDO				S	**Sb**	**03 29 27.4**	**-0.7**
PDO				AML	AML	03 29 31.3	
	comp=E,9860μm,0.3s						
PDO				AML	AML	03 29 33.0	
	comp=N,18850μm,0.4s						
VTN	**Vitineika**	**0.58**	**227**	P	Pn	03 29 27.7	+3.8
EVR	**Evrytania**	**0.61**	**7**	P	**Pg**	**03 29 20.8**	**-0.5**
EVR				S	**Sb**	**03 29 30.8**	**-0.3**
EVR	**Evrytania**	**0.61**	**7**	P	**Pg**	**03 29 20.8**	**-0.5**
EVR				S	**Sg**	**03 29 29.1**	**-0.2**
EVR	**Evrytania**	**0.61**	**7**	P	**Pg**	**03 29 19.2**	**-2.1**
EVR				S	**Sg**	**03 29 29.1**	**-0.2**
EVR				AML	AML	03 29 36.7	
	comp=N,4360μm,0.3s						
DSF	**Desfina**	**0.64**	**81**	P	**Pg**	**03 29 21.1**	**-0.9**
DSF				S	**Sg**	**03 29 30.7**	**+0.3**
DSF	**Desfina**	**0.64**	**81**	P	**Pg**	**03 29 21.1**	**-0.9**
DSF				S	**Sg**	**03 29 30.4**	**0.0**
DSF	**Desfina**	**0.64**	**81**	P	**Pg**	**03 29 21.0**	**-0.9**
DSF				S	**Sg**	**03 29 30.4**	**0.0**
DSF				AML	AML	03 29 34.1	
	comp=N,4329μm,0.3s						
DSF				AML	AML	03 29 36.8	
	comp=E,4908μm,0.4s						
KFL	**Anninata**	**0.76**	**255**	P	**Pg**	**03 29 24.2**	**0.0**
KFL				S	**Sb**	**03 29 35.5**	**+0.1**
KFL	**Anninata**	**0.76**	**255**	P	**Pb**	**03 29 24.8**	**-0.1**
KFL				S	**Sb**	**03 29 35.5**	**+0.1**
KFL	**Anninata**	**0.76**	**255**	P	**Pb**	**03 29 24.8**	**-0.1**
AMT	**Artemida-Makis**	**0.78**	**181**	P	**Pg**	**03 29 24.2**	**-0.3**
AMT				S	**Sb**	**03 29 35.8**	**-0.1**
AMT	**Artemida-Makis**	**0.78**	**181**	P	**Pg**	**03 29 24.9**	**+0.4**
AMT				S	**Sg**	**03 29 34.9**	**+0.2**
AMT	**Artemida-Makis**	**0.78**	**181**	P	**Pg**	**03 29 24.9**	**+0.4**
AMT				S	**Sg**	**03 29 34.9**	**+0.2**
AMT				AML	AML	03 29 47.1	
	comp=E,5839μm,0.6

ITM				S	Sg	03 29 45.4	-0.9	
ITM				AML	AML	03 29 52.6		
	comp=E,1241µm,0.5s							
ITM				AML	AML	03 29 54.6		
	comp=N,1538µm,0.5s							
VIL2	**Platees**	**1.23**	**94**	P	**Pb**	**03 29 32.5**	**-0.4**	
VILL	**Villia**	**1.26**	**96**	P	**Pn**	**03 29 32.5**	**-0.9**	
THL	**Klokotos Trika**	**1.27**	**10**	P	**Pn**	**03 29 33.6**	**+0.1**	
THL				S	**Sn**	**03 29 52.5**	**+1.8**	
THL	**Klokotos Trika**	**1.27**	**10**	P	**Pn**	**03 29 33.6**	**+0.1**	
THL				S	**Sn**	**03 29 51.1**	**+0.4**	
SMIA	**Simia**	**1.30**	**64**	P	**Pn**	**03 29 33.2**	**-0.7**	
SMIA				S	**Sn**	**03 29 52.0**	**+0.6**	
SMIA	**Simia**	**1.30**	**64**	P	**Pn**	**03 29 33.8**	**-0.1**	
SMIA				S	**Sb**	**03 29 50.2**	**-0.7**	
SMIA	**Simia**	**1.30**	**64**	P	**Pn**	**03 29 33.8**	**-0.1**	
SMIA				S	**Sb**	**03 29 50.2**	**-0.7**	
PYL	**PYLOS**	**1.41**	**179**	P	**Pn**	**03 29 35.8**	**+0.3**	
PYL				S	**Sg**	**03 29 56.1**	**+1.1**	
PYL	**PYLOS**	**1.41**	**179**	P	**Pn**	**03 29 35.8**	**+0.3**	
PYL				S	**Sg**	**03 29 56.1**	**+1.1**	
PYL	**PYLOS**	**1.41**	**179**	P	**Pb**	**03 29 36.0**	**-0.1**	
DID	**Didima**	**1.45**	**123**	P	**Pn**	**03 29 35.3**	**-0.6**	
DID	**Didima**	**1.45**	**123**	P	**Pn**	**03 29 35.6**	**-0.3**	
DID	**Didima**	**1.45**	**123**	P	**Pn**	**03 29 35.6**	**-0.3**	
FYTO	**Fytoko, Volos**	**1.45**	**41**	P	**Pb**	**03 29 36.7**	**0.0**	
FYTO				S	**Sg**	**03 29 56.4**	**+0.2**	
FYTO	**Fytoko, Volos**	**1.45**	**41**	P	**Pb**	**03 29 36.7**	**0.0**	
FYTO				S	**Sg**	**03 29 56.4**	**+0.2**	
FYTO	**Fytoko, Volos**	**1.45**	**41**	P	**Pb**	**03 29 37.1**	**+0.4**	
KRND	**KRANIDI**	**1.47**	**129**	P	**Pn**	**03 29 36.1**	**0.0**	
KRND				S	**Sg**	**03 29 56.7**	**+0.1**	
KRND	**KRANIDI**	**1.47**	**129**	P	**Pn**	**03 29 36.1**	**0.0**	
KRND				S	**Sg**	**03 29 56.7**	**+0.1**	
KRND	**KRANIDI**	**1.47**	**129**	P	**Pn**	**03 29 36.0**	**-0.2**	
JAN	**Janina**	**1.50**	**334**	P	**Pb**	**03 29 37.6**	**0.0**	
JAN				S	**Sg**	**03 29 58.1**	**+0.2**	
JAN	**Janina**	**1.50**	**334**	P	**Pb**	**03 29 37.6**	**0.0**	
JAN				S	**Sg**	**03 29 58.1**	**+0.2**	
NEO	**Neokhori**	**1.54**	**49**	P	**Pn**	**03 29 37.5**	**+0.3**	
NEO				S	**Sg**	**03 29 59.0**	**0.0**	
NEO	**Neokhori**	**1.54**	**49**	P	**Pn**	**03 29 37.7**	**+0.5**	
NEO				S	**Sg**	**03 29 59.0**	**0.0**	
NEO	**Neokhori**	**1.54**	**49**	P	**Pn**	**03 29 37.7**	**+0.5**	
ATH	**Athens Observa**	**1.61**	**102**	P	**Pn**	**03 29 38.4**	**+0.2**	
ATH				S	**Sg**	**03 30 01.0**	**-0.4**	
ATH	**Athens Observa**	**1.61**	**102**	P	**Pn**	**03 29 38.4**	**+0.2**	
ATH				S	**Sg**	**03 30 01.0**	**-0.4**	
SKIA	**Skiathos**	**1.61**	**58**	P	**Pn**	**03 29 38.2**	**0.0**	
SKIA				S	**Sb**	**03 30 00.1**	**+0.2**	
SKIA	**Skiathos**	**1.61**	**58**	P	**Pn**	**03 29 38.2**	**0.0**	
SKIA				S	**Sb**	**03 30 00.1**	**+0.2**	
SKIA	**Skiathos**	**1.61**	**58**	P	**Pn**	**03 29 38.0**	**-0.2**	
IGT	**Igoumenitsa**	**1.63**	**319**	*e*P	**Pg**	**03 29 41.3**	**+0.5**	
IGT	**Igoumenitsa**	**1.63**	**319**	P	**Pn**	**03 29 39.0**	**+0.6**	
IGT				S	**Sb**	**03 30 00.3**	**-0.1**	
IGT	**Igoumenitsa**	**1.63**	**319**	P	**Pn**	**03 29 39.0**	**+0.6**	
IGT				S	**Sb**	**03 30 00.3**	**-0.1**	
IGT	**Igoumenitsa**	**1.63**	**319**	P	**Pg**	**03 29 40.8**	**0.0**	
KPRO	**Kipourio**	**1.66**	**351**	P	**Pn**	**03 29 39.1**	**+0.1**	
KPRO				S	**Sg**	**03 30 03.0**	**0.0**	
KPRO	**Kipourio**	**1.66**	**351**	P	**Pn**	**03 29 39.1**	**+0.1**	
KPRO				S	**Sg**	**03 30 03.0**	**0.0**	
KPRO	**Kipourio**	**1.66**	**351**	P	**Pg**	**03 29 41.2**	**+0.2**	
ATHU	**Athens Univers**	**1.67**	**101**	P	**Pn**	**03 29 39.0**	**+0.1**	
ATHU				S	**Sb**	**03 30 02.3**	**+0.8**	
ATHU	**Athens Univers**	**1.67**	**101**	P	**Pn**	**03 29 39.0**	**+0.1**	
ATHU				S	**Sb**	**03 30 02.3**	**+0.8**	
ATHU	**Athens Univers**	**1.67**	**101**	P	**Pn**	**03 29 38.8**	**-0.1**	
VLY	**Voula,Athens**	**1.70**	**105**	P	**Pn**	**03 29 39.0**	**-0.4**	
VLY	**Voula,Athens**	**1.70**	**105**	P	**Pn**	**03 29 39.0**	**-0.4**	
VLY	**Voula,Athens**	**1.70**	**105**	P	**Pn**	**03 29 39.0**	**-0.4**	
PTL	**Penteli**	**1.71**	**98**	P	**Pn**	**03 29 39.9**	**+0.3**	
PTL	**Penteli**	**1.71**	**98**	P	**Pn**	**03 29 39.9**	**+0.3**	
PTL				S	**Sn**	**03 30 02.2**	**+0.6**	
PTL	**Penteli**	**1.71**	**98**	P	**Pn**	**03 29 39.8**	**+0.2**	
PTL				S	**Sn**	**03 30 02.2**	**+0.6**	
PTL				AML	AML	03 30 12.7		
	comp=N,792µm,0.7s							
PTL				AML	AML	03 30 13.5		
	comp=E,655µm,0.8s							
SGD	**Sagiada**	**1.74**	**319**	P	**Pb**	**03 29 41.2**	**-0.4**	
SGD	**Sagiada**	**1.74**	**319**	P	**Pb**	**03 29 41.2**	**-0.4**	
SGD	**Sagiada**	**1.74**	**319**	P	**Pg**	**03 29 42.6**	**-0.3**	
EREA	**Eretria**	**1.74**	**86**	P	**Pn**	**03 29 40.5**	**+0.5**	
EREA				S	**Sb**	**03 30 03.4**	**-0.4**	
EREA	**Eretria**	**1.74**	**86**	P	**Pn**	**03 29 40.5**	**+0.5**	
EREA				S	**Sb**	**03 30 03.4**	**-0.4**	
EREA	**Eretria**	**1.74**	**86**	P	**Pn**	**03 29 40.7**	**+0.7**	
VLI	**Veliai**	**1.86**	**148**	P	**Pn**	**03 29 42.1**	**+0.5**	
VLI				S	**Sb**	**03 30 06.7**	**-0.5**	
VLI	**Veliai**	**1.86**	**148**	P	**Pn**	**03 29 42.1**	**+0.5**	
VLI				S	**Sb**	**03 30 06.7**	**-0.5**	
VLI	**Veliai**	**1.86**	**148**	P	**Pn**	**03 29 42.1**	**+0.5**	
LIT	**Litokhoron**	**1.88**	**18**	P	**Pn**	**03 29 42.6**	**+0.7**	
LIT				S	**Sb**	**03 30 08.5**	**+0.7**	
LIT	**Litokhoron**	**1.88**	**18**	P	**Pn**	**03 29 42.6**	**+0.7**	
LIT				S	**Sb**	**03 30 08.5**	**+0.7**	
LIT	**Litokhoron**	**1.88**	**18**	P	**Pn**	**03 29 42.7**	**+0.7**	
KZN	**Kozani**	**1.99**	**1**	P	**Pn**	**03 29 44.0**	**+0.5**	
KZN				S	**Sb**	**03 30 10.4**	**-0.6**	
KZN	**Kozani**	**1.99**	**1**	P	**Pn**	**03 29 44.0**	**+0.5**	
KZN				S	**Sb**	**03 30 10.4**	**-0.6**	
KEK	**Kerkira**	**2.05**	**314**	P	**Pn**	**03 29 45.0**	**+0.8**	
KEK				S	**Sb**	**03 30 12.7**	**+0.2**	
KEK	**Kerkira**	**2.05**	**314**	P	**Pn**	**03 29 45.0**	**+0.8**	
KEK				S	**Sb**	**03 30 12.7**	**+0.2**	
KARY	**Karystos**	**2.16**	**97**	P	**Pn**	**03 29 46.3**	**+0.6**	
KARY	**Karystos**	**2.16**	**97**	P	**Pn**	**03 29 46.3**	**+0.6**	
NEST	**Nestorio**	**2.16**	**346**	P	**Pb**	**03 29 49.3**	**+0.4**	
NEST				S	**Sg**	**03 30 20.3**	**+1.3**	
NEST	**Nestorio**	**2.16**	**346**	P	**Pb**	**03 29 49.3**	**+0.4**	
NEST	**Nestorio**	**2.16**	**346**	P	**Pg**	**03 29 51.9**	**+0.9**	
PAIG	**Paliouri**	**2.22**	**43**	P	**Pn**	**03 29 46.4**	**-0.1**	
PAIG	**Paliouri**	**2.22**	**43**	P	**Pn**	**03 29 46.4**	**-0.1**	
PAIG	**Paliouri**	**2.22**	**43**	P	**Pn**	**03 29 45.6**	**-1.0**	
KYTH	**Kithira**	**2.28**	**152**	P	**Pn**	**03 29 48.2**	**+0.8**	
KYTH	**Kithira**	**2.28**	**152**	P	**Pn**	**03 29 48.2**	**+0.8**	
PLG	**Polygyros**	**2.46**	**33**	P	**Pn**	**03 29 50.1**	**+0.3**	
PLG	**Polygyros**	**2.46**	**33**	P	**Pn**	**03 29 50.2**	**+0.4**	
PLG	**Polygyros**	**2.46**	**33**	P	**Pn**	**03 29 50.2**	**+0.4**	
FNA	**Florina**	**2.48**	**354**	*e*P	**Pb**	**03 29 52.7**	**-1.7**	
FNA	**Florina**	**2.48**	**354**	P	**Pb**	**03 29 52.8**	**-1.5**	
FNA				S	**Sn**	**03 30 22.3**	**+1.6**	
FNA	**Florina**	**2.48**	**354**	P	**Pb**	**03 29 52.8**	**-1.5**	
FNA				S	**Sn**	**03 30 22.3**	**+1.6**	
FNA	**Florina**	**2.48**	**354**	P	**Pb**	**03 29 53.9**	**-0.5**	
THE	**Thessaloniki**	**2.51**	**22**	P	**Pn**	**03 29 50.3**	**-0.2**	
THE	**Thessaloniki**	**2.51**	**22**	P	**Pn**	**03 29 50.3**	**-0.2**	
HORT	**Hortiatis**	**2.52**	**25**	P	**Pn**	**03 29 50.9**	**+0.1**	
HORT	**Hortiatis**	**2.52**	**25**	P	**Pn**	**03 29 50.9**	**+0.1**	
HORT	**Hortiatis**	**2.52**	**25**	P	**Pn**	**03 29 50.8**	**+0.1**	
OUR	**Ouranopolis**	**2.68**	**40**	*e*P	**Pn**	**03 29 54.3**	**+1.6**	
OUR	**Ouranopolis**	**2.68**	**40**	P	**Pn**	**03 29 53.0**	**+0.2**	
OUR	**Ouranopolis**	**2.68**	**40**	P	**Pn**	**03 29 53.0**	**+0.2**	
OUR	**Ouranopolis**	**2.68**	**40**	P	**Pn**	**03 29 52.7**	**-0.1**	
MHLO	**Agia Marina, M**	**2.68**	**126**	P	**Pn**	**03 29 54.1**	**+1.2**	
MHLO	**Agia Marina, M**	**2.68**	**126**	P	**Pn**	**03 29 54.1**	**+1.2**	
GRG	**Griva**	**2.69**	**11**	*e*P	**Pn**	**03 29 55.1**	**+2.0**	
GRG	**Griva**	**2.69**	**11**	P	**Pn**	**03 29 54.3**	**+1.2**	
GRG	**Griva**	**2.69**	**11**	P	**Pn**	**03 29 54.3**	**+1.2**	
GRG	**Griva**	**2.69**	**11**	P	**Pn**	**03 29 55.0**	**+2.0**	
BIA	**Bitola**	**2.72**	**354**	*i* Pn	**Pb**	**03 29 56.9**	**-1.6**	
BIA	**Bitola**	**2.72**	**354**	*i* Pn	**Pb**	**03 29 56.8**	**-1.6**	
ANKY	**Antikythira Is**	**2.75**	**152**	P	**Pn**	**03 29 54.1**	**+0.3**	
ANKY	**Antikythira Is**	**2.75**	**152**	P	**Pn**	**03 29 54.1**	**+0.3**	
SOH	**Sokhos**	**2.81**	**26**	P	**Pn**	**03 29 55.5**	**+0.8**	
SOH				S	**Sn**	**03 30 30.4**	**+1.7**	
SOH	**Sokhos**	**2.81**	**26**	P	**Pn**	**03 29 55.4**	**+0.8**	
SOH				S	**Sn**	**03 30 30.4**	**+1.7**	
SOH	**Sokhos**	**2.81**	**26**	P	**Pn**	**03 29 55.4**	**+0.8**	
OHR	**Ohrid**	**2.88**	**346**	*i* Pn	**Pb**	**03 29 59.0**	**-2.3**	
OHR	**Ohrid**	**2.88**	**346**	*i* Pn	**Pb**	**03 29 58.9**	**-2.3**	
KNT	**Kendrikon**	**2.99**	**17**	*e*P	**Pn**	**03 29 58.8**	**+1.7**	
KNT	**Kendrikon**	**2.99**	**17**	P	**Pn**	**03 29 57.8**	**+0.7**	
KNT				S	**Sn**	**03 30 35.2**	**+2.1**	
KNT	**Kendrikon**	**2.99**	**17**	P	**Pn**	**03 29 57.8**	**+0.7**	
KNT				S	**Sn**	**03 30 35.2**	**+2.1**	
KNT	**Kendrikon**	**2.99**	**17**	P	**Pn**	**03 29 58.5**	**+1.4**	
VAY	**Valandovo**	**3.08**	**12**	*i* Pn	**Pb**	**03 30 02.2**	**-2.3**	
VAY	**Valandovo**	**3.08**	**12**	*i* Pn	**Pb**	**03 30 02.1**	**-2.3**	
LIA	**Limnos Island**	**3.13**	**58**	P	**Pn**	**03 29 59.2**	**+0.2**	
SRS	**Serrai**	**3.15**	**27**	P	**Pn**	**03 29 59.8**	**+0.4**	
SRS	**Serrai**	**3.15**	**27**	P	**Pn**	**03 29 59.8**	**+0.4**	
SRS	**Serrai**	**3.15**	**27**	P	**Pn**	**03 29 59.8**	**+0.4**	
APE	**Apeiranthos**	**3.27**	**111**	*e*P	**Pn**	**03 30 02.5**	**+1.5**	
APE	**Apeiranthos**	**3.27**	**111**	P	**Pn**	**03 30 01.3**	**+0.3**	
APE	**Apeiranthos**	**3.27**	**111**	P	**Pn**	**03 30 01.3**	**+0.3**	
TIR	**Tirane**	**3.35**	**335**	ǁ *i*P	**Pn**	**03 30 03.7**	**+1.6**	
TIR	**Tirane**	**3.35**	**335**	ǁ *i*P	**Pn**	**03 30 03.7**	**+1.6**	
TIR	**Tirane**	**3.35**	**335**	P	**Pn**	03 30 06.0	-3.1	
SIGR	**SIGRI**	**3.36**	**73**	P	**Pn**	**03 30 01.8**	**-0.4**	
SIGR	**SIGRI**	**3.36**	**73**	P	**Pn**	**03 30 01.8**	**-0.4**	
IMMV	**Iera Moni Meta**	**3.38**	**147**	P	**Pn**	**03 30 03.1**	**+0.7**	
IMMV	**Iera Moni Meta**	**3.38**	**147**	P	**Pn**	**03 30 03.1**	**+0.7**	
CHOS	**Chios island**	**3.41**	**87**	P	**Pn**	**03 30 04.0**	**+1.0**	
CHOS	**Chios island**	**3.41**	**87**	P	**Pn**	**03 30 04.0**	**+1.0**	
KAVA	**Kavala**	**3.44**	**38**	P	**Pn**	**03 30 03.3**	**0.0**	
KAVA	**Kavala**	**3.44**	**38**	P	**Pn**	**03 30 03.3**	**0.0**	
NVR	**Nevrokopi**	**3.45**	**28**	P	**Pn**	**03 30 03.8**	**+0.3**	
NVR				S	**Sn**	**03 30 46.8**	**+2.2**	
NVR	**Nevrokopi**	**3.45**	**28**	P	**Pn**	**03 30 03.8**	**+0.3**	
NVR				S	**Sn**	**03 30 46.8**	**+2.2**	
THR5	**Thira Island,**	**3.46**	**122**	*e*P	**Pn**	**03 30 06.3**	**+2.8**	
THR5	**Thira Island,**	**3.46**	**122**	*e*P	**Pn**	**03 30 06.3**	**+2.8**	
VAM	**Vamos**	**3.52**	**145**	P	**Pn**	**03 30 05.8**	**+1.4**	
SMTH	**Samothraki Isl**	**3.66**	**53**	P	**Pn**	**03 30 06.7**	**+0.4**	
SMTH	**Samothraki Isl**	**3.66**	**53**	P	**Pn**	**03 30 06.7**	**+0.4**	
SKO	**Skopje**	**3.66**	**357**	*i* Pn	**Pn**	**03 30 08.9**	**+2.5**	
SKO	**Skopje**	**3.66**	**357**	*i* Pn	**Pn**	**03 30 08.8**	**+2.5**	
PRK	**Paraskevi**	**3.68**	**74**	P	**Pn**	**03 30 04.8**	**-1.8**	
PRK	**Paraskevi**	**3.68**	**74**	P	**Pn**	**03 30 04.8**	**-1.8**	
EZN	**Ezine**	**3.89**	**66**	*e*P	**Pn**	**03 30 11.7**	**+2.2**	
EZN	**Ezine**	**3.89**	**66**	*e*P	**Pn**	**03 30 11.7**	**+2.2**	
IDI	**Anoyia**	**3.95**	**139**	Pn	**Pn**	**03 30 12.4**	**+1.9**	
	comp=E,1.3nm,0.3s,baz=329,slow=14,SNR=9.5							
IDI				Sn	**Sb**	**03 31 03.2**	**-4.0**	
	comp=E,2.4nm,0.3s,baz=72,slow=20,SNR=2.3							
IDI	**Anoyia**	**3.95**	**139**	ǁ *i*P	**Pn**	**03 30 13.2**	**+2.8**	
IDI	**Anoyia**	**3.95**	**139**	P	**Pn**	**03 30 12.3**	**+1.9**	
GVD	**Gavdhos**	**3.96**	**150**	P	**Pn**	**03 30 12.5**	**+2.1**	
GVD	**Gavdhos**	**3.96**	**150**	P	**Pn**	**03 30 12.5**	**+2.1**	
TIP	**Timpagrande**	**3.97**	**284**	P	**Pn**	**03 30 11.8**	**+1.1**	
TIP	**Timpagrande**	**3.97**	**284**	P	**Pn**	**03 30 11.8**	**+1.1**	
TIP	**Timpagrande**	**3.97**	**284**	P	**Pn**	**03 30 12.8**	**+2.1**	
TAR1	**Taranto**	**4.08**	**304**	*e*Pn	**Pn**	**03 30 13.0**	**+0.9**	
SMG	**Samos**	**4.09**	**97**	P	**Pn**	**03 30 12.8**	**+0.6**	
SMG	**Samos**	**4.09**	**97**	P	**Pn**	**03 30 12.8**	**+0.6**	
SIVA	**Sivas**	**4.12**	**142**	P	**Pn**	**03 30 14.8**	**+2.1**	
SIVA	**Sivas**	**4.12**	**142**	P	**Pn**	**03 30 14.8**	**+2.1**	
ENEZ	**Enez**	**4.20**	**53**	*e*P	**Pn**	**03 30 16.3**	**+2.6**	
ENEZ	**Enez**	**4.20**	**53**	*e*P	**Pn**	**03 30 16.3**	**+2.6**	
ALN	**Alexandroupoli**	**4.22**	**51**	*e*P	**Pn**	**03 30 16.4**	**+2.3**	
ALN	**Alexandroupoli**	**4.22**	**51**	P	**Pn**	**03 30 13.1**	**-1.0**	
ALN	**Alexandroupoli**	**4.22**	**51**	P	**Pn**	**03 30 13.1**	**-1.0**	
GELI	**Tayfur-Gelibol**	**4.24**	**59**	*e*P	**Pn**	**03 30 16.6**	**+2.4**	
GELI	**Tayfur-Gelibol**	**4.24**	**59**	*e*P	**Pn**	**03 30 16.6**	**+2.4**	
DRME	**Dracevica, Mon**	**4.33**	**334**	*e*Pn	**Pn**	**03 30 16.8**	**+1.3**	
IZM	**Izmir**	**4.36**	**87**	*e*P	**Pn**	**03 30 17.5**	**+1.5**	
IZM	**Izmir**	**4.36**	**87**	*e*P	**Pn**	**03 30 17.5**	**+1.5**	
LAST	**Lasithi**	**4.36**	**135**	ǁ *i*P	**Pn**	**03 30 18.2**	**+2.2**	
LAST	**Lasithi**	**4.36**	**135**	P	**Pn**	**03 30 16.2**	**+0.2**	
LAST	**Lasithi**	**4.36**	**135**	P	**Pn**	**03 30 16.2**	**+0.2**	
NOCI	**Noci**	**4.37**	**306**	P	**Pn**	**03 30 15.1**	**-1.0**	
NOCI	**Noci**	**4.37**	**306**	P	**Pn**	**03 30 15.1**	**-1.0**	
ERIK	**Erikli-Kesan**	**4.39**	**56**	*e*P	**Pn**	**03 30 18.8**	**+2.4**	
ERIK	**Erikli-Kesan**	**4.39**	**56**	*e*P	**Pn**	**03 30 18.8**	**+2.4**	
BARS	**Barje**	**4.50**	**1**	*e*Pn	**Pn**	**03 30 20.5**	**+2.6**	
PDG	**Podgorica**	**4.52**	**336**	ǁ *i*P	**Pn**	**03 30 19.6**	**+1.4**	
PDG	**Podgorica**	**4.52**	**336**	*e*Pn	**Pn**	**03 30 19.2**	**+1.0**	
PDG	**Podgorica**	**4.52**	**336**	ǁ *i*P	**Pn**	**03 30 19.6**	**+1.4**	
MATE	**Matera**	**4.53**	**303**	ǁ *i*P	**Pn**	**03 30 18.8**	**+0.6**	
MATE	**Matera**	**4.53**	**303**	S	**Sn**	**03 31 08.7**	**-2.2**	
MATE	**Matera**	**4.53**	**303**	ǁ *i*P	**Pn**	**03 30 18.8**	**+0.6**	
BODT	**Bodrum**	**4.61**	**104**	*e*P	**Pn**	**03 30 21.2**	**+1.8**	
BODT	**Bodrum**	**4.61**	**104**	*e*P	**Pn**	**03 30 21.2**	**+1.8**	
SG1	**Sgolgore (BA)**	**4.64**	**305**	*e*Pn	**Pn**	**03 30 20.6**	**+0.8**	
BAI	**Bari**	**4.66**	**308**	*e*Pn	**Pn**	**03 30 20.8**	**+0.8**	
HCY	**Herceg Novi**	**4.81**	**330**	*e*Pn	**Pn**	**03 30 21.8**	**-0.3**	
AYDB	**Zeytinkoy-Aydi**	**4.88**	**92**	*e*P	**Pn**	**03 30 25.9**	**+2.6**	
AYDB	**Zeytinkoy-Aydi**	**4.88**	**92**	*e*P	**Pn**	**03 30 25.9**	**+2.6**	
CUC	**Castrocucco**	**4.88**	**292**	P	**Pn**	03 30 26.7	+3.5	
CDT	**Castel del Mon**	**5.03**	**305**	*e*Pn	**Pn**	**03 30 26.0**	**+0.8**	
TREB	**Trebinje**	**5.09**	**331**	*e*Pn	**Pn**	**03 30 25.8**	**-0.2**	
KARP	**Karpathos**	**5.16**	**121**	*e*P	**Pn**	03 30 30.5	+3.5	
KARP	**Karpathos**	**5.16**	**121**	*e*P	**Pn**	03 30 30.5	+3.5	
BRY	**Bratogost**	**5.18**	**333**	*e*Pn	**Pn**	**03 30 27.7**	**+0.3**	
EDRB	**Edirne**	**5.23**	**46**	*e*P	**Pn**	**03 30 30.7**	**+2.9**	
EDRB	**Edirne**	**5.23**	**46**	*e*P	**Pn**	**03 30 30.7**	**+2.9**	
UPM	**Unac-Piva**	**5.33**	**337**	*e*Pn	**Pn**	**03 30 32.2**	**+2.7**	
YER	**Yerkesik**	**5.34**	**101**	*e*P	**Pn**	03 30 32.8	+3.3	
YER	**Yerkesik**	**5.34**	**101**	*e*P	**Pn**	03 30 32.8	+3.4	
IVAS	**Ivanjica**	**5.39**	**348**	*e*Pn	**Pn**	**03 30 31.4**	**+1.2**	
KULA	**Kula-Manisa**	**5.46**	**86**	*e*P	**Pn**	**03 30 33.1**	**+2.0**	
KULA	**Kula-Manisa**	**5.46**	**86**	*e*P	**Pn**	**03 30 33.1**	**+2.0**	
STON	**Ston**	**5.49**	**327**	*e*Pn	**Pn**	**03 30 30.4**	**-1.1**	
STON				Sn	**Sn**	**03 31 31.3**	**-3.2**	
STON	**Ston**	**5.49**	**327**	*e*Pn	**Pn**	**03 30 30.3**	**-1.1**	
BBLS	**Lastaći**	**5.82**	**343**	*e*Pn	**Pn**	**03 30 38.0**	**+0.7**	
DIVS	**Divibare**	**5.92**	**348**	*e*Pn	**Pn**	**03 30 38.5**	**+1.0**	
FETY	**Fethiye**	**6.09**	**104**	*e*P	**Pn**	03 30 43.4	+3.6	
HAPS	**Han Pijesak,Bl**	**6.13**	**341**	*e*Pn	**Pn**	**03 30 39.6**	**-0.8**	
TEKS	**Tekeris**	**6.45**	**346**	*e*Pn	**Pn**	**03 30 44.7**	**+0.1**	
BLY	**Banja Luka**	**7.27**	**334**	ǁ *i*P	**Pn**	**03 30 56.3**	**+0.3**	
BLY	**Banja Luka**	**7.27**	**334**	S	**Sn**	**03 32 18.9**	**+0.3**	
BLY	**Banja Luka**	**7.27**	**334**	ǁ *i*P	**Pn**	**03 30 56.3**	**+0.3**	
BZS	**Buzias**	**7.30**	**359**	ǁ *i*P	Pn	03 31 00.0	+3.7	
ARR	**Arges**	**7.38**	**16**	ǁ *i*P	**Pn**	**03 30 59.6**	**+2.1**	
ARR	**Arges**	**7.38**	**16**	ǁ *i*P	**Pn**	**03 30 59.6**	**+2.1**	
UDBI	**Udbina**	**7.65**	**326**	*e*Pn	**Pn**	**03 31 01.6**	**+0.4**	
UDBI				Sn	**Sn**	**03 32 27.3**	**-0.8**	
UDBI	**Udbina**	**7.65**	**326**	*e*Pn	**Pn**	**03 31 01.6**	**+0.4**	
UDBI				Sn	**Sn**	**03 32 27.2**	**-0.8**	
MLR	**Muntele Rosu**	**7.83**	**22**	Pn	**Pn**	**03 31 05.8**	**+2.0**	
	comp=E,0.0nm,0.3s,baz=198,slow=15,SNR=5.1							
MLR	**Muntele Rosu**	**7.83**	**22**	ǁ *i*P	Pn	03 31 07.6	+3.8	
NVLJ	**Novalja**	**8.09**	**323**	*e*Pn	**Pn**	**03 31 07.1**	**-0.1**	
NVLJ				Sn	**Sn**	**03 32 35.4**	**-3.2**	
NVLJ	**Novalja**	**8.09**	**323**	*e*Pn	**Pn**	**03 31 07.0**	**-0.1**	
DOPR	**Dopca**	**8.12**	**18**	ǁ *i*P	**Pn**	**03 31 10.3**	**+2.7**	
DOPR	**Dopca**	**8.12**	**18**	ǁ *i*P	**Pn**	**03 31 10.3**	**+2.7**	
PKSM	**Moragy**	**8.22**	**345**	ǁ *i*P	**Pn**	**03 31 08.9**	**0.0**	
PKSM	**Moragy**	**8.22**	**345**	*e*Pn	**Pn**	**03 31 08.1**	**-0.8**	
PKSM	**Moragy**	**8.22**	**345**	ǁ *i*P	**Pn**	**03 31 08.9**	**0.0**	
PLOR	**Plostina**	**8.38**	**24**	ǁ *i*P	Pn	03 31 17.0	+5.9	
VRI	**Vrincioaia**	**8.42**	**25**	ǁ *i*P	Pn	03 31 15.9	+4.3	
DRGR		**8.51**	**5**	ǁ *i*P	**Pn**	**03 31 15.6**	**+2.7**	
DRGR		**8.51**	**5**	ǁ *i*P	**Pn**	**03 31 15.6**	**+2.7**	
CRES	**Cresnjev**	**8.83**	**330**	*e*Pn	**Pn**	**03 31 16.4**	**-0.9**	
CEY	**Cerknica**	**9.19**	**326**	*e*Pn	**Pn**	**03 31 21.7**	**-0.5**	
BRTR	**Keskin Array B**	**9.39**	**78**	Pn	**Pn**	**03 31 27.7**	**+2.6**	
	comp=E,0.6nm,0.3s,baz=261,slow=12,SNR=34							
LJU	**Ljubljana**	**9.39**	**328**	*e*Pn	**Pn**	**03 31 24.2**	**-0.7**	
PSZ	**Piszkesteto**	**9.69**	**353**	ǁ *i*P	**Pn**	**03 31 32.3**	**+3.1**	
PSZ	**Piszkesteto**	**9.69**	**353**	ǁ *i*P	**Pn**	**03 31 32.3**	**+3.1**	
SOKA	**Soboth**	**9.71**	**332**	*i* Pn	**Pn**	**03 31 29.4**	**+0.1**	
	comp=E,2.3nm,0.5s							
SOKA	**Soboth**	**9.71**	**332**	P	**Pn**	**03 31 29.4**	**+0.1**	
	comp=E,2.3nm,0.5s							
OBKA	**Obir**	**9.75**	**329**	*i* Pn	**Pn**	**03 31 30.9**	**+0.9**	
	comp=E,2.7nm,0.6s							
OBKA	**Obir**	**9.75**	**329**	P	**Pn**	**03 31 30.9**	**+0.9**	
	comp=E,2.7nm,0.6s							
KBA	**Koelnbreinsper**	**10.70**	**328**	*i* Pn	**Pn**	**03 31 44.0**	**+0.9**	
	comp=E,3.8nm,1.3s							
KBA	**Koelnbreinsper**	**10.70**	**328**	P	**Pn**	**03 31 44.0**	**+0.9**	
	comp=E,3.8nm,1.3s							
MOA	**Molln**	**10.97**	**333**	*i* P	**Pn**	**03 31 48.7**	**+2.0**	
	comp=E,2.6nm,0.9s							
MOA	**Molln**	**10.97**	**333**	P	**Pn**	**03 31 48.7**	**+2.0**	
	comp=E,2.6nm,0.9s							
VRAC	**Vranov**	**11.60**	**343**	LR	LR	03 37 05.5		
	comp=E,29nm,20.2s,baz=241,slow=42							
WATA	**Walderalm**	**11.68**	**324**	*i* Pn	**Pn**	**03 31 57.1**	**+0.6**	
WATA	**Walderalm**	**11.68**	**324**	P	**Pn**	**03 31 57.1**	**+0.6**	
MOTA	**Moosalm**	**11.91**	**323**	*i* Pn	**Pn**	**03 32 00.5**	**+0.9**	
	comp=E,4.9nm,0.6s							
MOTA	**Moosalm**	**11.91**	**323**	P	**Pn**	**03 32 00.5**	**+0.9**	
	comp=E,4.9nm,0.6s							
GERES	**GERESS Array B**	**12.02**	**334**	Pn	**Pn**	**03 32 01.3**	**+0.3**	
	comp=E,0.2nm,0.3s,baz=158,slow=14,SNR=11							
DAVOX	**Davos/Dischmat**	**12.15**	**318**	Pn	**Pn**	**03 32 03.8**

WDT			*e*S	**Sn**	**03 45 40.0**	**-1.3**
	baz=248						
TWF1	**Yuli**	**1.78 236**	*e*P	**Pn**	**03 45 20.5**	**-0.2**
	baz=233						
TWF1			*e*S	**Sn**	**03 45 41.1**	**-1.0**
	baz=233						
TYC	**Yuchr**	**1.93 257**	*e*P	**Pn**	**03 45 24.0**	**+1.3**
	baz=255						
TYC			*e*S	**Sn**	**03 45 44.5**	**-1.2**
	baz=255						
YUS	**Yu-Shan**	**1.98 245**	*e*S	**Sn**	**03 45 47.1**	**-0.7**
	baz=242						
CHN5	**Tsauling**	**2.17 250**	*e*P	**Pn**	**03 45 27.5**	**+1.3**
	baz=248						
CHN5			*e*S	**Sn**	**03 45 52.0**	**0.0**
	baz=248						

ISN ***24*** *03:57:24.7±1.9, 36.˚40N×40.˚77E, h50km±316km, ML3.2*
CSEM ***24*** *03:57:29.8±0.4, 36.˚29N×40.˚85E, h10km, ML2.1, Error ellipse: s-maj=9.5km s-min=6.7km az=118.0*
NSSC ***24*** *03:57:29.2±0.6, 36.˚28N×40.˚72E, h40km±10km, ML2.1*
ISK ***24*** *03:57:31.8, 36.˚53N×41.˚02E, h6km, MD2.9*
DDA ***24*** *03:58:16.6, 36.˚20N×40.˚87E, h9km, Ml3.2*

ISC 24 03:57:28.3±1.4, 36˚28N±0˚03×40˚84E±0˚04, h4km±11km, n32, σ0°63/49, Jordan-Syria region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MZRK	**Al-Mazaregh**	**0.47**	**198**	*i* P	**Pb**	**03 57 39.2**	**0.0**
MZRK				AML	AML	03 57 39.4	
	comp=N,56nm,0.2s						
MZRK				*e*S	**Sb**	**03 57 46.5**	**-0.1**
MZRK				AML	AML	03 57 53.0	
	comp=E,107nm,0.4s						
MZRK	**Al-Mazaregh**	**0.47**	**198**	*i* P	**Pb**	**03 57 39.2**	**0.0**
MZRK				*e*S	**Sb**	**03 57 46.5**	**-0.1**
	comp=E,107nm,0.4s						
SFNV	**Sufian**	**0.60**	**284**	*i* P	**Pb**	**03 57 40.8**	**-0.7**
SFNV				*e*S	**Sg**	**03 57 48.1**	**+0.4**
SFNV				AML	AML	03 57 50.6	
	comp=N,198nm,0.2s						
SFNV				AML	AML	03 57 56.1	
	comp=E,147nm,0.7s						
SFNV	**Sufian**	**0.60**	**284**	*i* P	**Pb**	**03 57 40.8**	**-0.7**
SFNV				*e*S	**Sg**	**03 57 48.1**	**+0.4**
	comp=E,147nm,0.7s						
KBSD	**Kabsdagh**	**0.76**	**342**	*i* P	**Pg**	**03 57 43.2**	**+0.3**
KBSD				*e*S	**Sg**	**03 57 52.9**	**+0.2**
KBSD				AML	AML	03 57 57.7	
	comp=N,89nm,0.2s						
KBSD				AML	AML	03 58 00.4	
	comp=E,98nm,0.3s						
KBSD	**Kabsdagh**	**0.76**	**342**	*i* P	**Pg**	**03 57 43.2**	**+0.3**
KBSD				*e*S	**Sg**	**03 57 52.9**	**+0.2**
	comp=E,98nm,0.3s						
MARD	**Mardin**	**1.03**	**358**	*i* P	**Pg**	**03 57 48.3**	**+0.1**
MARD				*i* S	**Sg**	**03 58 02.0**	**+0.4**
MAZI	**Mazidag**	**1.22**	**345**	*e*PG	**Pb**	**03 57 52.0**	**0.0**
MAZI				*e*SG	**Sg**	**03 58 06.8**	**-0.7**
MAZI	**Mazidag**	**1.22**	**345**	*e*Pg	**Pb**	**03 57 52.0**	**0.0**
MAZI				*e*Sg	**Sg**	**03 58 06.8**	**-0.7**
KSRV	**Kasrt alli**	**1.54**	**255**	*i* P	**Pb**	**03 57 57.2**	**-0.2**
KSRV				*e*S	**Sn**	**03 58 16.9**	**-0.2**
KSRV				AML	AML	03 58 22.0	
	comp=N,43nm,0.2s						
KSRV				AML	AML	03 58 26.1	
	comp=E,32nm,0.1s						
KSRV	**Kasrt alli**	**1.54**	**255**	*i* P	**Pb**	**03 57 57.2**	**-0.2**
KSRV				*e*S	**Sn**	**03 58 16.9**	**-0.2**
	comp=E,32nm,0.1s						
BTMN	**Batman**	**1.65**	**12**	*i* P	**Pn**	**03 57 58.1**	**0.0**
BTMN				*i* S	**Sb**	**03 58 20.4**	**0.0**
BTMN	**Batman**	**1.65**	**12**	P	**Pn**	**03 57 58.1**	**0.0**
BTMN				S	**Sb**	**03 58 20.5**	**0.0**
DIY	**Diyarbakir**	**1.69**	**343**	*e*Pn	**Pg**	**03 58 01.1**	**+0.4**
DIYA	**Diyarbakir**	**1.74**	**341**	*i* P	**Pb**	**03 58 00.5**	**-0.3**
DIYA				*i* S	**Sb**	**03 58 23.2**	**+0.1**
DIYA	**Diyarbakir**	**1.74**	**341**	P	**Pb**	**03 58 00.5**	**-0.3**
DIYA				S	**Sb**	**03 58 23.2**	**+0.1**
SIRN	**S˘˘rnak**	**1.75**	**46**	*i* P	**Pn**	**03 57 59.5**	**-0.1**
SIRN				*i* S	**Sn**	**03 58 22.6**	**+0.2**
SIRN	**S˘˘rnak**	**1.75**	**46**	P	**Pn**	**03 57 59.5**	**-0.1**
SIRN				S	**Sn**	**03 58 22.6**	**+0.2**
DYBB	**Diyarbakir**	**1.76**	**342**	*e*PN	**Pb**	**03 58 01.1**	**-0.2**
SIRT	**Sirnak**	**1.77**	**46**	*e*PN	**Pn**	**03 57 59.6**	**-0.2**
SIRT	**Sirnak**	**1.77**	**46**	*e*Pn	**Pn**	**03 57 59.6**	**-0.2**
MSL	**Mosul**	**1.84**	**86**	*e*Pg	Pn	03 57 59.4	-1.3
	baz=270						
MSL				*e*Sg	Sn	03 58 23.4	-1.1
SURC	**SANLIURFA_SURC**	**1.89**	**289**	*i* P	**Pn**	**03 58 01.3**	**-0.1**
SURC				*i* S	**Sb**	**03 58 27.5**	**+0.2**
SURC	**SANLIURFA_SURC**	**1.89**	**289**	P	**Pn**	**03 58 01.3**	**-0.1**
SURC				S	**Sb**	**03 58 27.5**	**+0.2**
URFA	**Urfa**	**1.99**	**306**	*e*PN	**Pg**	**03 58 06.3**	**-0.2**
URFA	**Urfa**	**1.99**	**306**	*e*Pn	**Pg**	**03 58 06.3**	**-0.2**
SVRC	**Sivrice-ELAZID**	**2.42**	**330**	*e*PN	**Pb**	**03 58 11.1**	**-1.5**
SVRC	**Sivrice-ELAZID**	**2.42**	**330**	*e*Pn	**Pb**	**03 58 11.1**	**-1.5**
PTK	**Pertek**	**2.85**	**337**	*e*PN	**Pn**	**03 58 16.8**	**+2.0**
PTK	**Pertek**	**2.85**	**337**	*e*Pn	**Pn**	**03 58 16.8**	**+2.0**
IKRK	**Kirkuk**	**2.98**	**106**	*e*Pg	Pn	03 58 16.6	+0.2
IKRK				*e*Sg	Sn	03 58 52.7	+0.1
TAHT	**Tahtakopru-Hat**	**3.76**	**273**	*e*PN	**Pb**	**03 58 34.1**	**-1.1**

NIED ***24*** *04:02:00, 39.˚20N×142.˚40E, h35km, Mw3.9 Best double couple: M0 7.24000×10 14 NP1:φs 319.00000°, δ35.00000°, λ-128.00000°. NP2:φs 183.00000°, δ63.00000°, λ-67.00000°.*
ISCJB ***24*** *04:02:18.7±1.0, 39.˚17N±0.˚04×142.˚41E±0.˚09, h37km±10km, mb3.5/8, Error ellipse: s-maj=11.3km s-min=5.7km az=14.8*
JMA ***24*** *04:02:18.4±0.1, 39.˚20N×142.˚40E, h29km±1km, M4.1*
JMA Felt I J1.
IDC ***24*** *04:02:21.6±2.3, 39.˚15N×142.˚39E, h51km±21km, mb3.3/8, mb1 3.6/12, mb1mx3.4/39, mbtmp3.7/12, ML3.5/3, MS2.9/6, Ms1 2.9/6, ms1mx2.7/24, Error ellipse: s-maj=24.9km s-min=12.7km az=113.0*

ISC 24 04:02:17.9±1.4, 39˚14N±0˚04×142˚34E±0˚06, h20km±5km, n30, σ1°15/30, mb3.7/8, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**0.53**	**264**	P	**Pn**	**04 02 29.8**	**-0.5**
MIYJ	**Miyakonagasawa**	**0.60**	**317**	P	**Pg**	**04 02 29.8**	**-0.1**
MIYJ				S	**Sb**	**04 02 37.7**	**0.0**
JOM	**Ohasama**	**0.88**	**293**	P	**Pg**	**04 02 35.0**	**-0.1**
JOM				S	**Sn**	**04 02 47.1**	**-0.4**
JTH	**Tanohata**	**0.88**	**335**	P	**Pb**	**04 02 34.0**	**-0.6**
JTH				S	**Sb**	**04 02 45.8**	**-0.1**
JMK	**Ichinoseki**	**0.90**	**258**	P	**Pg**	**04 02 35.5**	**+0.1**
JMK				S	**Sn**	**04 02 47.9**	**+0.2**
JIO	**Ouri**	**1.03**	**229**	P	**Pn**	**04 02 37.3**	**0.0**
JIO				S	**Sn**	**04 02 51.2**	**+0.1**
JKZ	**Kuzumaki**	**1.15**	**318**	P	**Pn**	**04 02 38.9**	**-0.1**
JKZ				S	**Sb**	**04 02 53.4**	**-0.4**
JRG	**Rokugo**	**1.35**	**282**	P	**Pb**	**04 02 42.9**	**+0.3**
JRG				S	**Sg**	**04 03 01.4**	**-0.3**
JOU	**Okura**	**1.52**	**240**	P	**Pb**	**04 02 45.4**	**-0.1**
JOU				S	**Sg**	**04 03 06.0**	**-1.1**
MJAR	**Matsushiro Arr**	**4.17**	**233**	P	**Pn**	**04 03 23.4**	**+2.9**
	2.2nm,0.3s,baz=44,slow=10,SNR=29						
MJAR				LR	LR	04 05 13.2	
	comp=Z,140nm,18.0s,baz=65,slow=41						
ASAJ	**Asahikawa**	**4.98**	**2**	P	**Pn**	**04 03 34.4**	**+2.8**
	1.2nm,0.3s,baz=223,slow=10,SNR=9.3						
ASAJ				S	**Sn**	**04 04 29.5**	**+1.0**
	0.4nm,0.3s,baz=114,slow=19,SNR=2.2						
ASAJ				LR	LR	04 05 59.5	
	comp=Z,106nm,20.3s,baz=78,slow=44						
JHJ	**Hachijo jima 2**	**6.35**	**200**	P	**Pn**	**04 03 52.9**	**+2.5**
	5.7nm,0.3s,baz=61,slow=19,SNR=2.3						
JHJ				S	**Sn**	**04 04 59.7**	**-2.6**
	6.3nm,0.3s,baz=30,slow=16,SNR=2.3						
USRK	**Ussuriysk Ar.**	**9.25**	**306**	P	Pn	04 04 33.7	+3.6
	0.2nm,0.3s,baz=110,slow=13,SNR=4.9						
USRK				LR	LR	04 07 59.3	
	comp=Z,135nm,19.2s,baz=109,slow=36						
JNU	**Nakatsue**	**11.04**	**241**	LR	LR	04 09 21.0	
	comp=Z,61nm,21.7s,baz=310,slow=38						
KSRS	**Korea Array**	**11.46**	**266**	LR	LR	04 08 55.3	
	comp=Z,51nm,19.1s,baz=114,slow=34						
KLR	**Kul'dur**	**12.62**	**327**	LR	LR	04 09 58.2	
	comp=Z,54nm,21.5s,baz=146,slow=36						
SEY	**Seymchan**	**24.59**	**11**	P	**P**	**04 07 36.6**	**+0.2**
	0.5nm,0.4s,baz=193,slow=14,SNR=3.3						
H11N2	**WAKE ISLAND Hy**	**28.68**	**125**	T	T	04 38 39.0	
	baz=318,slow=76,SNR=218						
H11N1	**WAKE ISLAND Hy**	**28.69**	**125**	T	T	04 38 36.0	
	baz=318,slow=76,SNR=218						
H11N3	**WAKE ISLAND Hy**	**28.70**	**125**	T	T	04 38 35.3	
	baz=318,slow=76,SNR=97						
H11S1	**WAKE ISLAND Hy**	**29.47**	**127**	T	T	04 39 37.2	
	baz=319,slow=76,SNR=34						
H11S3	**WAKE ISLAND Hy**	**29.47**	**127**	T	T	04 39 34.4	
	baz=319,slow=76,SNR=40						
H11S2	**WAKE ISLAND Hy**	**29.48**	**127**	T	T	04 39 35.5	
	baz=319,slow=76,SNR=29						
ZALV	**Zalesovo Beam**	**41.07**	**311**	P	**P**	**04 09 60.0**	**+0.1**
	0.7nm,0.4s,baz=87,slow=7.7,SNR=4.9						
CMAR	**Chiang Mai Arr**	**42.76**	**254**	P	**P**	**04 10 14.1**	**0.0**
	0.8nm,0.3s,baz=46,slow=6.5,SNR=2.3						
MKAR	**Makanchi Array**	**43.66**	**300**	P	**P**	**04 10 21.5**	**+0.4**
	0.5nm,0.4s,baz=77,slow=11,SNR=7.2						
ILAR	**Eielson Array**	**47.33**	**33**	P	**P**	**04 10 49.3**	**-0.6**
	0.5nm,0.7s,baz=266,slow=7.1,SNR=6.1						
WRA	**Warramunga Arr**	**59.24**	**189**	P	**P**	**04 12 17.2**	**-0.7**
	0.9nm,0.9s,baz=5.0,slow=7.0,SNR=6.6						
YKA	**Yellowknife Ar**	**61.63**	**31**	P	**P**	**04 12 33.5**	**-0.3**
	0.1nm,0.6s,baz=301,slow=6.4,SNR=3.1						
PDAR	**Pinedale Array**	**75.68**	**46**	P	**P**	**04 14 02.2**	**+0.2**
	0.1nm,0.3s,baz=357,slow=1.8,SNR=2.8						

IDC 24 04:19:33.0±1.0, 21˚07N×121˚38E, h0km, mb3.7/6, mb1 3.8/6, mb1mx3.5/33, mbtmp3.7/6, MS3.0/4, Ms1 3.0/4, ms1mx2.6/43, Error ellipse: s-maj=75.6km s-min=18.9km az=66.0, Taiwan region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JNU	**Nakatsue**	**14.67**	**33**	LR	LR	04 29 05.8	
	comp=Z,42nm,18.1s,baz=299,slow=39						
CMAR	**Chiang Mai Arr**	**21.28**	**267**	LR	LR	04 33 25.5	
	comp=Z,30nm,18.7s,baz=110,slow=39						
GUMO	**Guam**	**23.60**	**105**	LR	LR	04 34 05.2	
	comp=Z,33nm,18.2s,baz=96,slow=37						
SONM	**Songino Array**	**29.32**	**339**	LR	LR	04 39 02.1	
	comp=Z,37nm,20.1s,baz=153,slow=40						
MKAR	**Makanchi Array**	**40.74**	**318**	P	P	04 27 15.4	-0.2
	0.3nm,0.4s,baz=120,slow=8.5,SNR=2.9						
WRA	**Warramunga Arr**	**42.69**	**162**	P	P	04 27 31.0	-0.8
	1.2nm,0.6s,baz=343,slow=8.9,SNR=9.3						
ZALV	**Zalesovo Beam**	**42.97**	**329**	P	P	04 27 33.6	-0.1
	0.3nm,0.3s,baz=124,slow=7.2,SNR=2.5						
ASAR	**Alice Springs**	**46.11**	**164**	P	P	04 27 59.5	+0.4
	0.5nm,0.5s,baz=339,slow=6.6,SNR=10						
STKA	**Stephens Creek**	**56.09**	**159**	P	P	04 29 14.1	0.0
	1.5nm,0.6s,baz=339,slow=8.6,SNR=5.9						
YKA	**Yellowknife Ar**	**85.76**	**23**	P	P	04 32 13.8	0.0
	0.1nm,0.5s,baz=309,slow=4.7,SNR=4.6						

NIED ***24*** *04:47:00, 38.˚30N×141.˚90E, h62km, Mw4.2 Best double couple: M0 2.11000×10 15 NP1:φs 99.00000°, δ64.00000°, λ168.00000°. NP2:φs 195.00000°, δ79.00000°, λ26.00000°.*
ISCJB ***24*** *04:47:52.8±0.5, 38.˚35N±0.˚03×141.˚90E±0.˚06, h71km±3km, mb4.1/29, Error ellipse: s-maj=8.8km s-min=4.7km az=27.6*
JMA ***24*** *04:47:54.0±0.1, 38.˚34N×141.˚86E, h63km±1km, M4.3*
JMA Felt II J1.
NEIC ***24*** *04:47:54.1±0.8, 38.˚40N×141.˚89E, h64km±6km, mb4.3/11, Error ellipse: s-maj=9.2km s-min=5.8km az=135.0*
IDC ***24*** *04:47:54.1±1.9, 38.˚31N×141.˚88E, h67km±17km, mb3.8/18, mb1 4.0/24, mb1mx3.9/48, mbtmp4.1/24, MS2.8/3, Ms1 2.8/3, ms1mx2.5/32, Error ellipse: s-maj=15.6km s-min=12.6km az=105.0*

ISC 24 04:47:53.4±1.0, 38˚35N±0˚05×141˚90E±0˚07, h60km±8km, n65, σ1°34/72, mb4.1/29, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**0.44**	**284**	P	**Pn**	**04 48 05.6**	**+0.9**
JIO				S	**Sn**	**04 48 13.6**	**+0.7**
OFUJ	**Ofunato**	**0.76**	**347**	P	**Pn**	**04 48 09.2**	**+0.9**
OFUJ				S	**Sn**	**04 48 20.2**	**+1.0**
JMK	**Ichinoseki**	**0.80**	**319**	P	**Pn**	**04 48 09.9**	**+1.0**
JMK				S	**Sn**	**04 48 21.3**	**+1.0**
JOU	**Okura**	**0.97**	**272**	P	**Pn**	**04 48 11.7**	**+0.7**
JOU				S	**Sn**	**04 48 24.8**	**+0.7**
JMM	**Marumori**	**0.99**	**242**	P	**Pn**	**04 48 11.5**	**+0.2**
JMM				S	**Sn**	**04 48 24.4**	**-0.2**
JOM	**Ohasama**	**1.22**	**338**	P	**Pn**	**04 48 15.2**	**+0.8**
JOM				S	**Sn**	**04 48 31.2**	**+1.2**
JFK	**Kawauchi**	**1.27**	**220**	P	**Pn**	**04 48 15.2**	**+0.2**
JFK				S	**Sn**	**04 48 30.7**	**-0.4**
JYK	**Kaneyama**	**1.33**	**296**	P	**Pn**	**04 48 16.6**	**+0.8**
JYK				S	**Sn**	**04 48 33.6**	**+1.0**
JRG	**Rokugo**	**1.44**	**317**	P	**Pn**	**04 48 18.1**	**+0.8**
JYS	**Shirataka**	**1.45**	**266**	P	**Pn**	**04 48 18.2**	**+0.8**
JYS				S	**Sn**	**04 48 36.1**	**+0.8**
JFT	**Otama**	**1.48**	**237**	P	**Pn**	**04 48 18.7**	**+0.8**
JFT				S	**Sn**	**04 48 37.1**	**+0.8**
JYA	**Atsumi**	**1.73**	**279**	P	**Pn**	**04 48 22.0**	**+0.8**
JYA				S	**Sn**	**04 48 40.5**	**-1.7**
MAJO	**Matsushiro**	**3.44**	**240**	*e*Pn	**Pn**	**04 48 46.5**	**+1.9**
MAT	**Matsushiro**	**3.44**	**240**	P	**Pn**	**04 48 46.6**	**+2.0**
MAT				S	**Sn**	**04 49 30.1**	**+6.0**
MJAR	**Matsushiro Arr**	**3.44**	**240**	P	**Pn**	**04 48 46.5**	**+1.9**
	9.9nm,0.3s,baz=55,slow=10,SNR=114						
ERM	**Erimo**	**3.79**	**14**	*e*Pn	**Pn**	**04 48 47.7**	**-1.6**
ERM				*e*Sn	**Sn**	**04 49 31.5**	**-1.1**
JHJ	**Hachijo jima 2**	**5.49**	**199**	P	**Pn**	**04 49 12.2**	**-0.5**
	21nm,0.3s,baz=317,slow=23,SNR=12						
JHJ				S	**Sn**	**04 50 09.6**	**-4.8**
	120nm,0.3s,baz=268,slow=24,SNR=14						
ASAJ	**Asahikawa**	**5.79**	**5**	P	**Pn**	**04 49 16.4**	**-0.2**
	8.4nm,0.3s,baz=209,slow=11,SNR=50						
ASAJ				S	**Sn**	**04 50 18.1**	**-3.6**
	8.5nm,0.3s,baz=209,slow=20,SNR=3.6						
USRK	**Ussuriysk Ar.**	**9.47**	**311**	P	**Pn**	**04 50 08.7**	**+1.7**
	3.6nm,0.3s,baz=122,slow=14,SNR=52						
JNU	**Nakatsue**	**10.36**	**243**	LR	LR	04 54 41.3	
	comp=Z,64nm,20.6s,baz=113,slow=39						
KSRS	**Korea Array**	**11.08**	**270**	LR	LR	04 54 05.3	
	comp=Z,43nm,21.4s,baz=36,slow=34						
KLR	**Kul'dur**	**13.10**	**329**	P	**Pn**	**04 50 55.7**	**-0.9**
	0.5nm,0.3s,baz=142,slow=11,SNR=12						
KLR				LR	LR	04 55 49.5	
	comp=Z,45nm,20.8s,baz=146,slow=36						
PETK	**Petropavlovsk-**	**18.37**	**31**	P	**Pn**	**04 52 03.9**	**+0.2**
	0.1nm,0.3s,baz=242,slow=6.2,SNR=4.2						
MA2	**Magadan**	**21.99**	**12**	P	**P**	**04 52 42.6**	**+0.3**
	4.6nm,0.7s,baz=288,slow=6.5,SNR=3.8						
SEY	**Seymchan**	**25.43**	**11**	P	**P**	**04 53 16.7**	**+1.5**
	1.0nm,0.4s,baz=204,slow=11,SNR=5.8						
ULN	**Ulaanbaatar**	**26.96**	**302**	*e*P	**P**	**04 53 28.2**	**-1.2**
	2.2nm,0.5s						
SONM	**Songino Array**	**27.40**	**302**	P	**P**	**04 53 33.3**	**0.0**
	2.9nm,0.5s,baz=114,slow=9.0,SNR=17						
ENH	**Enshi**	**27.85**	**263**	*e*P	**P**	**04 53 38.4**	**+1.0**
	4.4nm,0.3s						
H11N2	**WAKE ISLAND Hy**	**28.52**	**124**	T	T	05 24 02.7	
	baz=316,slow=75,SNR=320						
H11N1	**WAKE ISLAND Hy**	**28.53**	**124**	T	T	05 24 10.4	
	baz=316,slow=75,SNR=362						
H11N3	**WAKE ISLAND Hy**	**28.54**	**124**	T	T	05 24 11.0	
	baz=316,slow=75,SNR=265						
H11S1	**WAKE ISLAND Hy**	**29.28**	**126**	T	T	05 25 02.7	
	baz=318,slow=76,SNR=216						
H11S3	**WAKE ISLAND Hy**	**29.28**	**126**	T	T	05 24 58.4	
	baz=318,slow=76,SNR=322						
H11S2	**WAKE ISLAND Hy**	**29.30**	**126**	T	T	05 25 03.9	
	baz=318,slow=76,SNR=252						
ZALV	**Zalesovo Beam**	**41.33**	**311**	P	**P**	**04 55 33.0**	**-0.1**
	8.0nm,0.5s,baz=85,slow=7.8,SNR=42						
MKAR	**Makanchi Array**	**43.76**	**301**	P	**P**	**04 55 52.7**	**-0.2**
	5.0nm,0.7s,baz=86,slow=9.8,SNR=42						
KURK	**Kurchatov**	**45.44**	**307**	*e*P	**P**	**04 56 05.2**	**-0.9**
	20nm,0.4s						
GUN	**Gumba**	**47.42**	**275**	*e*P	**P**	**04 56 22.2**	**-0.2**
	15nm,0.4s						
KKN	**Kakani**	**47.94**	**275**	*e*P	**P**	**04 56 25.7**	**-0.6**
	17nm,0.6s						
ILAR	**Eielson Array**	**48.19**	**33**	P	**P**	**04 56 27.5**	**+0.1**
	1.0nm,0.7s,baz=272,slow=5.8,SNR=9.1						
GKN	**Gorkha**	**48.35**	**276**	*e*P	**P**	**04 56 27.9**	**-1.5**
KOLN	**Koldanda**	**49.27**	**276**	*e*P	**P**	**04 56 36.7**	**+0.2**
	7.9nm,0.4s						
TKM2	**Tokmak 2**	**49.35**	**298**	*e*P	**P**	**04 56 37.2**	**+0.3**
	6.8nm,0.5s						
PYUN	**Piuthan**	**49.59**	**277**	*e*P	**P**	**04 56 39.2**	**+0.2**
	17nm,0.4s						
AAK	**Ala-Archa**	**50.21**	**298**	P	**P**	**04 56 44.4**	**+0.9**
	2.0nm,0.4s,baz=106,slow=5.9,SNR=6.3						
EKS2	**Erkin-Say**	**50.70**	**298**	*e*P	**P**	**04 56 48.0**	**+0.9**
	1.7nm,0.5s						
KKAR	**Karatay Array**	**52.81**	**299**	*e*P	**P**	**04 57 01.6**	**-1.0**
	2.3nm,0.8s						
ARU	**Arti**	**55.64**	**318**	*e*P	**P**	**04 57 22.4**	**-0.5**
	3.4nm,0.6s						
ABKAR	**Akbulak array**	**57.39**	**310**	*e*P	**P**	**04 57 34.9**	**-0.6**
	1.8nm,0.3s						
WRA	**Warramunga Arr**	**58.41**	**188**	P	**P**	**04 57 42.1**	**-0.8**
	1.2nm,0.5s,baz=6.0,slow=6.9,SNR=26						
ASAR	**Alice Springs**	**62.14**	**188**	P	**P**	**04 58 07.7**	**-0.6**
	0.8nm,0.7s,baz=7.2,slow=4.2,SNR=9.5						
YKA	**Yellowknife Ar**	**62.48**	**31**	P	**P**	**04 58 10.3**	**+0.1**
	0.5nm,0.7s,baz=302,slow=6.6,SNR=14						
ARCES	**ARCESS Array B**	**62.91**	**339**	P	**P**	**04 58 13.1**	**+0.1**
	1.0nm,0.5s,baz=64,slow=8.3,SNR=11						
FINES	**FINESS Array B**	**67.83**	**332**	P	**P**	**04 58 44.7**	**-0.1**
	1.9nm,0.6s,baz=38,slow=9.3,SNR=14						
KBZ	**Khabaz**	**70.34**	**311**	P	**P**	**04 59 00.6**	**-0.1**
	1.4nm,0.7s,baz=97,slow=4.9,SNR=4.2						
FFC	**Flin Flon**	**72.40**	**33**	*e*P	**P**	**04 59 12.7**	**-0.2**
	1.3nm,0.7s						
NB2	**NORSAR Subarra**	**73.13**	**337**	P	**P**	**04 59 17.3**	**+0.1**
	comp=Z,1.7nm,0.8s,baz=40,slow=6.5						
NOA	**NORSAR Array B**	**73.13**	**337**	P	**P**	**04 59 17.2**	**+0.1**
	comp=Z,1.1nm,0.7s,baz=39,slow=6.0,SNR=5.6						
AKASG	**Malin Array Be**	**73.50**	**322**	P	**P**	**04 59 19.0**	**-0.5**
	comp=Z,0.9nm,0.4s,baz=46,slow=6.1,SNR=14						
NVAR	**Mina Array Bea**	**73.90**	**54**	P	**P**	**04 59 23.0**	**+0.6**
	comp=Z,0.6nm,0.6s,baz=306,slow=7.3,SNR=5.0						
R11A	**Troy Canyon, C**	**75.66**	**52**	*e*P	**P**	**04 59 32.2**	**-0.2**
	comp=Z,1.0nm,0.8s						
PDAR	**Pinedale Array**	**76.48**	**46**	P	**P**	**04 59 37.6**	**+0.5**
	comp=Z,1.3nm,0.5s,baz=267,slow=1.8,SNR=19						
PSZ	**Piszkesteto**	**79.81**	**325**	*e*P	**P**	**04 59 55.5**	**+0.2**
	comp=Z,1.3nm,0.7s						
TXAR	**Lajitas Array**	**89.02**	**53**	P	**P**	**05 00 42.1**	**0.0**
	comp=Z,0.9nm,0.6s,baz=294,slow=3.2,SNR=16						
LPAZ	**La Paz**	**145.69**	**58**	PKPbc	**PKPdf**	**05 07 26.1**	**-0.2**
	comp=Z,2.1nm,0.6s,baz=339,slow=4.0,SNR=10						

NIED ***24*** *05:06:00, 34.˚90N×141.˚10E, h8km, Mw4.2 Best double couple: M0 2.51000×10 15 NP1:φs 162.00000°, δ34.00000°, λ90.00000°. NP2:φs 343.00000°, δ56.00000°, λ90.00000°.*
IDC ***24*** *05:06:05.1±0.5, 34.˚90N×140.˚86E, h0km, mb4.1/22, mb1 4.2/27, mb1mx4.1/38, mbtmp4.0/27, ML2.9/4, MS3.3/7, Ms1 3.4/7, ms1mx3.0/39, Error ellipse: s-maj=15.8km s-min=12.3km az=92.0*
ISCJB ***24*** *05:06:08.0±0.6, 34.˚88N±0.˚03×140.˚92E±0.˚04, h32km±4km, mb4.3/61, MS3.6/10, Error ellipse: s-maj=5.4km s-min=4.7km az=151.9*
JMA ***24*** *05:06:07.0±0.1, 34.˚94N×141.˚06E, h43km±3km, M4.4*
NEIC ***24*** *05:06:07.2±2.5, 34.˚88N×140.˚92E, h14km±15km, mb4.6/21, Error ellipse: s-maj=6.4km s-min=4.8km az=79.0*
BJI ***24*** *05:06:08.9, 34.˚87N×140.˚67E, h29km, mb4.5/28, mB4.8/23, Ms4.3/17, Ms7 4.2/12*
MOS ***24*** *05:06:08.8±1.0, 34.˚95N×140.˚92E, h39km, mb4.6/33, Error ellipse: s-maj=11.6km s-min=6.7km az=117.7*

ISC 24 05:06:08.7±0.5, 34˚92N±0˚04×140˚98E±0˚04, h24km±3km, h24km:pP-P, n149, σ1°37/156, mb4.4/61, MS3.5/10, 10C-2D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BSO1	**Boso 1**	**0.27**	**180**	↑P	**Pb**	**05 06 15.2**	**+0.6**
BSO3	**Boso 3**	**0.40**	**253**	↓P	**Pb**	**05 06 17.4**	**+0.4**
BSO4	**Boso 4**	**0.53**	**277**	↓P	**Pb**	**05 06 19.4**	**+0.1**
KTR	**Katsuura**	**0.59**	**293**	P	**Pb**	**05 06 19.9**	**-0.4**
KTR				*e*S	**Sb**	**05 06 28.6**	**+0.

XAN pP pP 05 11 49.1 -1.2
XAN sP sP 05 11 53.1 -0.2
XAN PP **PnPn** **05 12 20.1 -3.0**
XAN S S 05 16 03.3 -12
XAN pmax pmax
comp=Z,4.0nm,0.6s
XAN pmax pmax
comp=Z,30nm,6.4s
XAN LR LR
comp=N,140nm,14.5s
XAN LR LR
comp=E,220nm,12.4s
XAN LR LR
comp=Z,250nm,13.2s
H11N2 WAKE ISLAND Hy 27.45 117 T T 05 40 53.1
baz=309,slow=75,SNR=273
H11N1 WAKE ISLAND Hy 27.45 117 T T 05 40 46.2
baz=309,slow=75,SNR=183
H11N3 WAKE ISLAND Hy 27.46 117 T T 05 40 43.1
baz=309,slow=75,SNR=165
YAK Yakutsk 28.06 349 LR LR 05 23 15.9
comp=Z,108nm,20.1s,baz=173,slow=37
H11S3 WAKE ISLAND Hy 28.08 119 T T 05 41 48.1
baz=312,slow=75,SNR=133
H11S1 WAKE ISLAND Hy 28.08 119 T T 05 41 46.4
baz=312,slow=75,SNR=171
H11S2 WAKE ISLAND Hy 28.09 119 T T 05 41 46.3
baz=312,slow=75,SNR=122
ULN Ulaanbaatar 28.30 308 *e*P **P** **05 12 00.8 +0.4**
ULN pmax pmax
comp=Z,4.0nm,1.7s
SONA1 Songino Array 28.72 307 *e*P **P** **05 12 03.6 -0.5**
SONM Songino Array 28.73 307 P **P** **05 12 03.6 -0.6**
comp=Z,1.6nm,0.8s,baz=115,slow=9.7,SNR=6.9
SEY Seymchan 28.93 11 P **P** **05 12 05.9 +0.3**
comp=Z,0.6nm,0.4s,baz=150,slow=7.1,SNR=4.2
SEY Seymchan 28.93 11 *e*P **P** **05 12 05.4 -0.2**
BOD Bodaibo 29.15 330 *e*P **P** **05 12 06.5 -1.2**
BOD pmax pmax
comp=Z,3.0nm,0.7s
LZH Lanzhou 30.14 283 *e*P P 05 12 24.1 +7.3
LZH pP sP 05 12 35.9 +9.0
LZH sP pP 05 12 41.6 +18
LZH pmax pmax
comp=Z,18nm,1.0s
LZH pmax pmax
comp=Z,120nm,4.4s
LZH LR LR
comp=N,370nm,14.7s
LZH LR LR
comp=E,240nm,12.1s
LZH LR LR
comp=Z,260nm,15.4s
GYA Guiyang 30.57 263 *e*P **P** **05 12 20.9 +0.2**
GYA pmax pmax
comp=Z,10.0nm,0.8s
CD2 Chengdu 31.38 273 P **P** **05 12 25.9 -1.8**
GTA Gaotai 32.90 290 *e*P **P** **05 12 41.8 +0.7**
GTA pP sP 05 12 50.9 -0.3
GTA sP pP 05 12 55.1 +6.8
GTA pmax pmax
comp=Z,6.0nm,0.9s
BILL Bilibino 36.15 16 *i* P **P** **05 13 07.3 -1.4**
BILL *i* 05 13 15.1
BILL pmax pmax
comp=Z,1.0nm,1.0s
BILL MLR MLR
comp=Z,53nm,16.0s
TIXI Tiksi 37.34 354 *e*P **P** **05 13 19.2 +0.5**
TIXI pmax pmax
comp=Z,5.0nm,1.7s
CMAR Chiang Mai Arr 40.65 257 LR LR 05 32 01.1
comp=Z,80nm,18.1s,baz=42,slow=38
CM01 Chiang Mai Arr 40.66 257 *e*P **P** **05 13 50.0 +2.8**
CM01 *e*pP **sP** **05 13 59.3 +2.0**
WMQ Urumqi 41.51 299 *e*P **P** **05 13 55.0 +1.0**
WMQ pP sP 05 14 04.8 +0.6
WMQ sP pP 05 14 09.1 +7.8
WMQ pmax pmax
comp=Z,2.0nm,0.6s
WMQ pmax pmax
comp=Z,35nm,3.6s
ZAA0 Zalesovo Array 43.10 314 *e*P **P** **05 14 06.4 -0.3**
ZALV Zalesovo Beam 43.10 314 P **P** **05 14 06.8 +0.1**
comp=Z,2.7nm,0.8s,baz=101,slow=6.5,SNR=11
ZALV PcP **PcP** **05 15 56.1 -0.1**
comp=Z,0.8nm,0.5s,baz=106,slow=2.9,SNR=4.4
NVS Novosibirsk 44.06 315 *e*P **P** **05 14 13.7 -0.7**
NVS pmax pmax
comp=N,6.0nm,0.8s
NVS pmax pmax
comp=Z,7.0nm,0.8s
MK01 Makanchi Array 44.96 304 *e*P **P** **05 14 21.5 -0.3**
MK31 Makanchi Array 44.97 304 *e*P **P** **05 14 22.4 +0.5**
MK31 Makanchi Array 44.97 304 *e*P **P** **05 14 22.4 +0.5**
MKAR Makanchi Array 44.97 304 P **P** **05 14 21.5 -0.3**
comp=Z,1.0nm,0.6s,baz=108,slow=4.0,SNR=10
MKAR LR LR 05 33 23.3
comp=Z,27nm,19.9s,baz=96,slow=36
MKAR Makanchi Array 44.97 304 *ce*P **P** **05 14 22.6 +0.8**
MKAR pmax pmax
comp=Z,1.0nm,0.6s
MKAR Makanchi Array 44.97 304 *e*P **P** **05 14 21.6 -0.2**
KURK Kurchatov 46.98 310 *ce*P **P** **05 14 37.3 -0.3**
KURK pmax pmax
comp=Z,8.0nm,0.7s
KURK Kurchatov 46.98 310 *e*P **P** **05 14 36.9 -0.6**
comp=Z,8.4nm,0.8s
TKM2 Tokmak 2 50.35 300 *e*P **P** **05 15 04.3 +0.5**
TKM2 pmax pmax
comp=Z,4.0nm,0.6s
TKM2 Tokmak 2 50.35 300 *e*P **P** **05 15 04.3 +0.5**
comp=Z,4.5nm,0.6s
MDM Murphy Dome 50.89 31 *e*P **P** **05 15 09.5 +2.1**
comp=Z,12nm,1.2s
KSH Kashi 50.97 296 P **P** **05 15 12.9 +4.4**
KSH *e*pP sP 05 15 22.6 +3.8
KSH *e*ScP **ScP** **05 20 20.5 +1.2**
KSH S **S** **05 22 27.3 +3.2**
KSH pmax pmax
comp=Z,90nm,5.0s
KSH LR LR
comp=Z,98nm,5.2s
KSH LR LR
comp=Z,110nm,5.6s
KSH LR LR
comp=Z,120nm,6.4s
AAK Ala-Archa 51.20 300 *e*P **P** **05 15 09.8 -0.5**
AAK pmax pmax
comp=Z,6.0nm,0.8s
AAK Ala-Archa 51.20 300 *e*P **P** **05 15 10.7 +0.4**
comp=Z,4.4nm,1.1s
ILAR Eielson Array 51.47 31 P **P** **05 15 12.2 +0.5**
comp=Z,2.4nm,0.8s,baz=271,slow=6.3,SNR=19
ILB Eielson Array 51.47 31 *e*P **P** **05 15 12.2 +0.5**
IL1 Eielson Array 51.47 31 *e*P **P** **05 15 11.7 0.0**
BRVK Borovoye 51.80 314 *ce*P **P** **05 15 15.8 +1.4**
BRVK pmax pmax
comp=Z,3.0nm,1.0s
ZRNK Zerenda 52.58 314 *e*P **P** **05 15 20.4 +0.2**
ZRNK pmax pmax
comp=Z,5.0nm,0.8s
ZRNK Zerenda 52.58 314 *e*P **P** **05 15 20.4 +0.2**
comp=Z,4.9nm,0.8s
KKAR Karatay Array 53.90 301 *e*P **P** **05 15 30.3 +0.3**
KKAR Karatay Array 53.90 301 *e*P **P** **05 15 30.3 +0.3**
FITZ Fitzroy Crossi 54.71 198 *e*P **P** **05 15 36.4 +0.4**
FITZ *e*pP **pP** **05 15 42.4 -1.1**
WRAB Tennant Creek 54.92 188 *ce*P **P** **05 15 38.9 +1.4**
WRAB pmax pmax
comp=Z,31nm,1.2s
WB2 Warramunga Arr 54.92 188 *e*P **P** **05 15 37.2 -0.4**
WB2 *e*pP **pP** **05 15 45.2 +0.2**
WRA Warramunga Arr 54.93 188 P **P** **05 15 37.2 -0.4**
comp=Z,7.1nm,0.9s,baz=5.4,slow=7.5,SNR=47
INK Inuvik 56.43 26 P **P** **05 15 48.6 +0.8**
comp=Z,1.4nm,0.8s,baz=305,slow=11,SNR=6.7
ARU Arti 57.72 319 *c* *i* P **P** **05 15 56.7 -0.4**
ARU S **S** **05 23 54.9 +0.6**
ARU SS **SS** **05 27 45.3 +1.0**
ARU pmax pmax
comp=Z,6.0nm,1.0s
ARU Arti 57.72 319 *e*P **P** **05 15 56.8 -0.4**
comp=Z,10nm,0.9s
AS01 Alice Springs 58.65 188 *e*P **P** **05 16 03.8 -0.2**
AS31 Alice Springs 58.65 188 *e*P **P** **05 16 04.1 0.0**
comp=Z,7.4nm,1.9s
ASAR Alice Springs 58.65 188 P **P** **05 16 03.9 -0.2**
comp=Z,2.2nm,0.8s,baz=18,slow=10,SNR=19
ABKAR Akbulak array 59.04 311 *e*P **P** **05 16 06.3 -0.2**
MBWA Marble Bar 59.31 203 *e*P **P** **05 16 08.9 +0.3**
comp=Z,12nm,1.0s
GEYT Alibeck 64.56 300 P **P** **05 16 43.3 -0.6**
comp=Z,3.5nm,0.8s,baz=35,slow=3.6,SNR=5.2
RES Resolute Bay 64.73 14 *e*P **P** **05 16 44.9 +0.6**
RES pmax pmax
comp=Z,5.0nm,0.9s
RES Resolute Bay 64.73 14 *e*P **P** **05 16 44.9 +0.6**
comp=Z,5.0nm,0.9s
YKA Yellowknife Ar 65.81 30 P **P** **05 16 51.3 -0.2**
comp=Z,1.1nm,0.8s,baz=299,slow=6.4,SNR=17
YKA Yellowknife Ar 65.81 30 *ce*P **P** **05 16 51.9 +0.4**
YKA pmax pmax
comp=Z,1.0nm,0.8s
STKA Stephens Creek 66.45 179 P **P** **05 16 56.3 +0.4**
comp=Z,2.5nm,1.0s,baz=7.9,slow=12,SNR=2.8
OBN Obninsk 69.58 324 *i* P **P** **05 17 16.2 +0.8**
OBN pmax pmax
comp=Z,3.0nm,1.0s
LPSR Galich'ya Gora 69.70 321 *e*P **P** **05 17 16.0 -0.2**
LPSR pmax pmax
comp=Z,4.0nm,0.9s
VSR Storozhevoye 70.29 319 *e*P **P** **05 17 21.6 +1.7**
VSR pmax pmax
comp=Z,3.0nm,0.9s
FINES FINESS Array B 70.52 332 P **P** **05 17 20.4 -0.6**
comp=Z,0.8nm,0.7s,baz=77,slow=12,SNR=5.0
ZEI Tsey 71.87 310 *e*P **P** **05 17 27.2 -2.7**
ZEI pmax pmax
comp=Z,7.0nm,0.8s
KBZ Khabaz 72.01 311 P **P** **05 17 31.1 +0.7**
comp=Z,3.9nm,0.9s,baz=33,slow=3.9,SNR=9.2
KIV Kislovodsk 72.03 311 *e*P **P** **05 17 27.8 -2.9**
KIV *i* 05 17 40.8
KIV *i* 05 17 50.3
KIV *i* 05 20 07.6
KIV pmax pmax
comp=Z,8.0nm,1.0s
KIV Kislovodsk 72.03 311 *e*P **P** **05 17 31.4 +0.7**
comp=Z,19nm,1.1s
K05A Summer Lake 72.56 50 *e*P **P** **05 17 36.6 +2.6**
comp=Z,9.3nm,1.1s
JTMT Jette 73.77 43 *e*P **P** **05 17 42.9 +1.9**
JTMT *e*pP **sP** **05 17 52.0 +0.5**
SWMT Swartz Lake 74.06 43 *e*P **P** **05 17 43.5 +0.8**
CMB Columbia Colle 75.39 54 *e*P **P** **05 17 51.9 +1.4**
CMB pmax pmax
comp=Z,4.0nm,0.9s
CMB Columbia Colle 75.39 54 *e*P **P** **05 17 51.9 +1.4**
comp=Z,3.9nm,0.9s
FFC Flin Flon 75.67 32 *e*P **P** **05 17 52.1 +0.4**
FFC *e**PP **sP** **05 18 01.9 -0.3**
FFC Flin Flon 75.67 32 *e*P **P** **05 17 52.1 +0.4**
FFC *e*pP **sP** **05 18 01.9 -0.3**
AKASG Malin Array Be 75.75 322 P **P** **05 17 51.3 -0.9**
comp=Z,0.5nm,0.5s,baz=44,slow=6.7,SNR=5.9
AKASG Malin Array Be 75.75 322 *ce*P **P** **05 17 51.7 -0.5**
AKASG pmax pmax
comp=Z,1.0nm,0.5s
KIEV Kiev 75.76 322 *e*P P 05 17 59.4 +7.2
KIEV pmax pmax
comp=Z,9.0nm,1.4s
KIEV Kiev 75.76 322 *e*P P 05 17 59.4 +7.1
comp=Z,9.4nm,1.4s
NB2 NORSAR Subarra 75.99 337 P **P** **05 17 53.2 -0.3**
comp=Z,5.3nm,0.9s,baz=41,slow=6.2
NOA NORSAR Array B 75.99 337 P **P** **05 17 52.9 -0.6**
comp=Z,1.4nm,0.8s,baz=39,slow=5.8,SNR=6.6
FCC Fort Churchill 76.05 26 *e*P **P** **05 17 52.0 -1.7**
FCC *e**PP **sP** **05 18 03.6 -0.6**
FCC Fort Churchill 76.05 26 *e*P **P** **05 17 52.0 -1.7**
FCC *e*pP **sP** **05 18 03.6 -0.6**
DLMT Dillon 76.09 44 *e*P **P** **05 17 56.2 +1.8**
comp=Z,4.2nm,0.9s
NVAR Mina Array Bea 76.54 53 P **P** **05 17 58.6 +1.4**
comp=Z,2.6nm,1.1s,baz=286,slow=5.6,SNR=9.1
H17A Grant Village 77.82 44 *e*P **P** **05 18 07.6 +3.2**
comp=Z,6.0nm,0.9s
R11A Troy Canyon, C 78.35 51 *e*P **P** **05 18 06.3 -1.0**
comp=Z,2.6nm,0.9s
TPNV Topopah Spring 78.72 53 *e*P **P** **05 18 08.7 -0.7**
TPNV pmax pmax
comp=Z,4.0nm,1.0s
TPNV Topopah Spring 78.72 53 *e*P **P** **05 18 08.7 -0.7**
comp=Z,4.4nm,1.0s
BW06 Boulder Array 79.40 45 *e*P **P** **05 18 13.8 +0.7**
PDAR Pinedale Array 79.40 45 P **P** **05 18 14.2 +1.1**
comp=Z,0.7nm,0.7s,baz=282,slow=2.2,SNR=5.7
NLU North Lily Min 79.61 48 *e*P **P** **05 18 18.3 +4.1**
comp=Z,5.1nm,1.5s
BRTR Keskin Array B 79.98 312 P **P** **05 18 16.9 +0.7**
comp=Z,1.5nm,0.9s,baz=93,slow=2.5,SNR=7.4
BRTR Keskin Array B 79.98 312 *ce*P **P** **05 18 16.8 +0.6**
BRTR pmax pmax
comp=Z,2.0nm,0.9s
BR231 Keskin MP Arra 80.44 312 *e*P **P** **05 18 17.8 -0.8**
KNB Kanab 80.90 51 *e*P **P** **05 18 20.6 -0.6**
KNB pmax pmax
comp=Z,8.0nm,1.0s
KNB Kanab 80.90 51 *e*P **P** **05 18 20.6 -0.6**
comp=Z,8.4nm,1.0s
WUAZ Wupatki 82.74 52 *e*P **P** **05 18 29.6 -1.3**
comp=Z,7.2nm,1.0s
CLL Collm 82.75 330 *e*P **P** **05 18 30.0 -0.4**
CLL *i* 05 18 39.4
comp=Z,4.0nm,0.9s
CLL Collm 82.75 330 *e*P **P** **05 18 30.0 -0.4**
CLL *i* 05 18 39.4
PV01 Paradox Valley 82.88 48 *e*P **P** **05 18 31.6 -0.1**
comp=Z,366nm,0.9s
SMCO Snowmass 83.18 47 *e*P **P** **05 18 32.7 -0.7**
comp=Z,4.2nm,1.0s
KHC Kasperske Hory 84.15 328 *e*pP pP 05 18 46.0 +0.5
KHC Kasperske Hory 84.15 328 *e*P pP 05 18 46.0 +0.5
GERES GERESS Array B 84.31 328 P **P** **05 18 38.3 -0.3**
comp=Z,0.2nm,0.7s,baz=59,slow=3.8,SNR=3.4
SCHQ Schefferville 87.46 16 P **P** **05 18 54.1 +0.1**
comp=Z,2.2nm,0.8s,baz=240,slow=16,SNR=3.0
TXAR Lajitas Array 91.69 52 P **P** **05 19 17.1 +2.7**
comp=Z,0.3nm,0.7s,baz=286,slow=2.6,SNR=3.7
SAML Samuel 145.98 46 *e*PKPbc **PKPbc** **05 25 46.8 -0.1**
LPAZ La Paz 148.03 62 PKPbc **PKPbc** **05 25 53.9 +0.5**
comp=Z,2.1nm,0.9s,baz=358,slow=2.2,SNR=6.5

*ISCJB **24** 05:12:11.0±0.5,35°.23N±0°.03×92°.37W±0°.03,h5km±4km, Error ellipse: s-maj=4.0km s-min=3.2km az=39.4*
*NEIC **24** 05:12:12.0,35°.23N×92°.37W,h4km,MD2.6(CERI), After CERI.*
ISC 24 05:12:11.5±1.1,35°.23N±0°.03×92°.40W±0°.02,h4km±9km, n24,σ1°02/40,Arkansas

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
W41B	**Gary Mavity, V**	**0.13**	**116**	P		P	**Pg**	**05 12 14.2**	**+0.1**
	baz=298,SNR=871								
W41B				S		S	**Sg**	**05 12 16.3**	**+0.3**
	baz=298								
W40A	**Ferguson Farm,**	**0.55**	**266**	P		P	**Pg**	**05 12 22.7**	**+0.6**
	baz=86,SNR=42								
V40A	**Witts Springs**	**0.67**	**329**	P		P	**Pg**	**05 12 24.5**	**+0.1**
	baz=147								
V40A				S		S	**Sg**	**05 12 33.7**	**+0.6**
	baz=147								
X40A	**Basin Creek Fa**	**0.83**	**206**	P		P	**Pg**	**05 12 27.3**	**-0.1**
	baz=27,SNR=24								
W39A	**Magazine**	**1.14**	**269**	S		S	**Sg**	**05 12 48.8**	**+0.7**
	baz=88								
U40A	**Yellville**	**1.18**	**342**	P		P	**Pg**	**05 12 33.8**	**-0.4**
	baz=161								
V39A	**Pettigrew**	**1.19**	**301**	P		P	**Pg**	**05 12 33.9**	**-0.4**
	baz=120								
V39A				S		S	**Sg**	**05 12 49.7**	**0.0**
	baz=120								
MIAR	**Mount Ida**	**1.19**	**235**	P		P	**Pg**	**05 12 33.9**	**-0.3**
	baz=55,SNR=50								
MIAR				S		S	**Sg**	**05 12 49.8**	**+0.1**
	baz=55								
MIAR	**Mount Ida**	**1.19**	**235**	*e*P		P	**Pg**	**05 12 34.0**	**-0.3**
MIAR				*e*Sg		S	**Sg**	**05 12 49.6**	**-0.1**
Y40A	**Okolona**	**1.42**	**211**	Pg		P	**Pn**	**05 12 38.2**	**+0.1**
	baz=31								
Y40A				S		S	**Sb**	**05 12 56.6**	**-0.4**
	baz=31								
U39A	**Green Forest**	**1.45**	**323**	Pb		P	**Pn**	**05 12 38.3**	**-0.3**
	baz=142,SNR=18								
U39A				Sb		S	**Sb**	**05 12 57.7**	**-0.3**
	baz=142								
Y42A	**Garnett, Star**	**1.48**	**160**	Pb		P	**Pn**	**05 12 38.9**	**0.0**
	baz=341,SNR=5.6								
Y42A				Sg		S	**Sg**	**05 12 60.0**	**+0.9**
	baz=341								
X39A	**Fountain Ranch**	**1.59**	**244**	Pb		P	**Pn**	**05 12 40.6**	**+0.1**
	baz=63,SNR=57								
X39A				Sb		S	**Sn**	**05 13 01.6**	**+0.2**
	baz=63								
W38A	**Poteau**	**1.75**	**265**	Pb		P	**Pn**	**05 12 43.6**	**+1.0**
	baz=84,SNR=18								
W38A				Sb		S	**Sb**	**05 13 07.5**	**+1.0**
	baz=84								
V38A	**Canehill**	**1.76**	**292**	Pb		P	**Pn**	**05 12 43.5**	**+0.7**
	baz=110,SNR=12								
V38A				Sb		S	**Sn**	**05 13 07.1**	**+1.4**
	baz=110								
Y43A	**Makayla and Ka**	**1.79**	**137**	Sb		S	**Sb**	**05 13 07.8**	**+0.2**
	baz=318								
T40A	**Mansfield**	**1.92**	**357**	Pb		P	**Pn**	**05 12 46.0**	**+1.0**
	baz=176,SNR=23								
T40A				Sb		S	**Sb**	**05 13 11.6**	**+0.2**
	baz=176								
T39A	**Clever**	**1.96**	**336**	Pb		P	**Pn**	**05 12 46.7**	**+1.1**
	baz=155,SNR=26								
X38A	**Whitesboro**	**2.08**	**255**	Pb		P	**Pb**	**05 12 49.4**	**-0.4**
	baz=74								
S40A	**Lebanon**	**2.36**	**358**	Pb		P	**Pn**	**05 12 52.9**	**+1.8**
	baz=177,SNR=14								
OXF	**Oxford**	**2.56**	**105**	Pn		P	**Pn**	**05 12 52.6**	**-1.2**
OXF				Sn		S	**Sn**	**05 13 25.0**	**-0.3**
V34A	**Guthrie**	**4.22**	**280**	Pn		P	**Pn**	**05 13 15.7**	**-1.0**
V34A				*e*Sn		S	**Sn**	**05 14 06.7**	**+0.3**
V34A				*e*Sg		S	**Sg**	**05 14 24.0**	**-3.1**
LRAL	**Lakeview Retre**	**4.98**	**115**	Pn		P	**Pn**	**05 13 30.1**	**+3.0**
LRAL				*e*Sn		S	**Sn**	**05 14 24.3**	**-0.9**
SFIN	**Lafayette**	**6.63**	**38**	Pn		P	**Pn**	**05 13 48.5**	**-1.3**
SFIN				*e*Sg		S	Sg	05 15 37.0	-7.4

*ISCJB **24** 05:12:55.0±0.9,36°.63N±0°.05×140°.74E±0°.06,h13km±4km, mb3.5/10,Error ellipse: s-maj=9.3km s-min=5.9km az=41.3*
*IDC **24** 05:12:54.2±0.8,36°.79N×140°.81E,h0km,mb3.6/10, mb1 3.7/12,mb1mx3.6/37,mbtmp3.6/12,ML2.7/2,Error ellipse: s-maj=22.2km s-min=19.4km az=61.0*
*JMA **24** 05:12:56.9,36°.69N×140°.61E,h5km±1km,M3.5*
JMA Felt II J1.
ISC 24 05:12:56.1±1.1,36°.67N±0°.04×140°.67E±0°.06,h10km±6km, n27,σ0s67/24,mb3.6/10,2C,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
JHO	**Hitachi**	**0.10**	**233**	⇑P		P	**Pg**	**05 12 58.8**	**+0.1**
JHO				S		S	**Sg**	**05 13 00.3**	**-0.2**
ONAJ	**Iwakimizuishiy**	**0.44**	**13**	P		P	**Pg**	**05 13 05.3**	**+0.5**
JYT	**Yasato**	**0.59**	**221**	P		P	**Pg**	**05 13 07.7**	**+0.3**
JYT				S		S	**Sg**	**05 13 15.7**	**+0.6**
JSB	**Shiboa**	**0.67**	**296**	P		P	**Pg**	**05 13 09.5**	**+0.4**
JFK	**Kawauchi**	**0.71**	**13**	⇑P		P	**Pg**	**05 13 10.1**	**+0.2**
JFT	**Otama**	**0.89**	**343**	P		P	**Pg**	**05 13 13.3**	**+0.1**
JFT				S		S	**Sg**	**05 13 24.9**	**+0.2**
JAG	**Ashikaga**	**1.01**	**256**	S		S	**Sg**	**05 13 27.2**	**-1.4**
MJAR	**Matsushiro Arr**	**1.98**	**267**	Pn		P	**Pn**	**05 13 30.5**	**+0.8**
	18nm,0.3s,baz=83,slow=9.3,SNR=107								
MJAR				Sn		S	**Sn**	**05 13 54.9**	**+0.2**
	32nm,0.3s,baz=100,slow=28,SNR=20								
MAT	**Matsushiro**	**1.99**	**267**	P		P	**Pn**	**05 13 30.2**	**+0.4**
MAT				S		S	**Sn**	**05 13 56.0**	**+1.3**
ASAJ	**Asahikawa**	**7.58**	**11**	Pn		P	Pn	05 14 35.5	-11
	0.7nm,0.3s,baz=266,slow=14,SNR=6.3								
USRK	**Ussuriysk Ar.**	**10.01**	**321**	Pn		P	**Pn**	**05 15 19.3**	**-0.6**
	0.1nm,0.3s,baz=114,slow=14,SNR=2.2								
SEY	**Seymchan**	**27.26**	**12**	P		P	P	05 18 36.6	-3.6
	1.4nm,0.5s,baz=207,slow=6.3,SNR=6.8								
SONM	**Songino Array**	**27.50**	**305**	P		P	**P**	**05 18 42.5**	**-0.2**
	0.3nm,0.4s,baz=113,slow=9.6,SNR=3.0								
H11N2	**WAKE ISLAND Hy**	**28.48**	**119**	T		T		05 48 37.2	
	baz=77,slow=74,SNR=239								
H11N1	**WAKE ISLAND Hy**	**28.49**	**119**	T		T		05 48 36.2	
	baz=317,slow=74,SNR=252								
H11N3	**WAKE ISLAND Hy**	**28.50**	**119**	T		T		05 49 14.6	
H11S1	**WAKE ISLAND Hy**	**29.17**	**121**	T		T		05 49 28.8	
	baz=316,slow=76,SNR=175								
H11S3	**WAKE ISLAND Hy**	**29.17**	**121**	T		T		05 49 28.9	
	baz=316,slow=76,SNR=177								
H11S2	**WAKE ISLAND Hy**	**29.19**	**121**	T		T		05 49 27.4	
	baz=316,slow=76,SNR=119								
ZALV	**Zalesovo Beam**	**41.72**	**313**	P		P	**P**	**05 20 44.4**	**-0.6**
	0.8nm,0.5s,baz=97,slow=6.7,SNR=4.4								
MKAR	**Makanchi Array**	**43.81**	**302**	P		P	**P**	**05 21 02.6**	**+0.6**
	0.2nm,0.3s,baz=86,slow=9.8,SNR=2.2								
KURBB	**Kurchatov Arra**	**45.76**	**308**	P		P	**P**	**05 21 17.1**	**-0.3**
	0.8nm,0.7s,baz=83,slow=7.8,SNR=9.1								
WRA	**Warramunga Arr**	**56.62**	**187**	P		P	**P**	**05 22 38.9**	**-0.4**
	0.8nm,0.8s,baz=4.1,slow=7.4,SNR=5.5								
ASAR	**Alice Springs**	**60.35**	**187**	P		P	**P**	**05 23 05.8**	**+0.5**
	0.5nm,0.9s,baz=22,slow=5.1,SNR=4.0								
AKASG	**Malin Array Be**	**74.22**	**322**	P		P	**P**	**05 24 32.5**	**-0.4**
	0.2nm,0.5s,baz=45,slow=6.7,SNR=4.6								
PDAR	**Pinedale Array**	**78.34**	**45**	P		P	**P**	**05 24 55.9**	**-1.0**
	0.2nm,0.6s,baz=262,slow=1.8,SNR=2.8								
TXAR	**Lajitas Array**	**90.81**	**52**	P		P	**P**	**05 26 00.8**	**+0.7**
	0.1nm,0.5s,baz=303,slow=4.0,SNR=2.6								

*NIED **24** 05:13:00,38°.40N×142°.30E,h20km,Mw4.0 Best double couple: M0 9.97000×10^14 NP1:φ188.00000°,δ31.00000°, λ-88.00000°. NP2:φ5.00000°,δ59.00000°,λ-91.00000°.*
*IDC **24** 05:13:05.4±0.9,38°.26N×142°.26E,h0km,mb3.9/10, mb1 4.0/10,mb1mx3.8/34,mbtmp3.9/10,MS3.2/2, Ms1 3.2/2,ms1mx2.6/41,Error ellipse: s-maj=28.1km s-min=21.0km az=84.0*
*ISCJB **24** 05:13:07.0±1.6,38°.31N±0°.07×142°.35E±0°.09,h23km±9km, mb3.9/10,Error ellipse: s-maj=11.6km s-min=11.4km az=7.1*
*JMA **24** 05:13:08.3±0.1,38°.37N×142°.31E,h22km±1km,M4.1*
JMA Felt I J1.
ISC 24 05:13:07.3±2.7,38°.35N±0°.08×142°.28E±0°.09,h11km±15km, n18,σ0s42/21,mb3.9/10,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**0.74**	**279**	P		P	**Pb**	**05 13 22.5**	**+0.3**
JIO				S		S	**Sb**	**05 13 32.5**	**+0.1**
OFUJ	**Ofunato**	**0.88**	**327**	P		P	**Pb**	**05 13 24.5**	**0.0**
OFUJ				S		S	**Sb**	**05 13 36.0**	**-0.3**
JMK	**Ichinoseki**	**1.03**	**306**	P		P	**Pg**	**05 13 27.1**	**0.0**
JMK				S		S	**Sb**	**05 13 40.6**	**0.0**
JOU	**Okura**	**1.27**	**271**	P		P	**Pb**	**05 13 31.6**	**+0.3**
JOU				S		S	**Sb**	**05 13 47.4**	**-0.3**
JOM	**Ohasama**	**1.36**	**326**	P		P	**Pn**	**05 13 32.1**	**-0.2**
JOM				S		S	**Sb**	**05 13 49.7**	**-0.6**
JNU	**Nakatsue**	**10.63**	**244**	LR		LR		05 20 13.4	
	comp=Z,178nm,18.0s,baz=114,slow=40								
KLR	**Kul'dur**	**13.26**	**329**	LR		LR		05 20 43.6	
	comp=Z,68nm,18.6s,baz=125,slow=34								
ZALV	**Zalesovo Beam**	**41.55**	**311**	P		P	**P**	**05 20 54.9**	**+0.2**
	1.6nm,0.4s,baz=85,slow=7.6,SNR=9.3								
MKAR	**Makanchi Array**	**44.02**	**301**	P		P	**P**	**05 21 15.1**	**+0.2**
	0.8nm,0.6s,baz=86,slow=11,SNR=7.5								
KURBB	**Kurchatov Arra**	**45.75**	**307**	P		P	**P**	**05 21 28.3**	**-0.2**
	3.8nm,0.6s,baz=80,slow=8.2,SNR=20								
ILAR	**Eielson Array**	**48.02**	**33**	P		P	**P**	**05 21 46.2**	**+0.2**
	0.4nm,0.8s,baz=270,slow=7.2,SNR=3.4								
WRA	**Warramunga Arr**	**58.46**	**189**	P		P	**P**	**05 23 02.4**	**-1.0**
	0.6nm,0.7s,baz=5.9,slow=7.3,SNR=5.8								
ASAR	**Alice Springs**	**62.19**	**189**	P		P	**P**	**05 23 28.1**	**-0.6**
	0.6nm,0.9s,baz=3.5,slow=5.4,SNR=5.3								
YKA	**Yellowknife Ar**	**62.33**	**31**	P		P	**P**	**05 23 29.9**	**+0.6**
	0.3nm,0.9s,baz=294,slow=6.5,SNR=3.8								
FINES	**FINESS Array B**	**67.97**	**332**	P		P	**P**	**05 24 06.2**	**+0.2**
	2.1nm,0.7s,baz=38,slow=9.6,SNR=9.5								
NB2	**NORSAR Subarra**	**73.24**	**337**	P		P	**P**	**05 24 38.6**	**+0.4**
	comp=Z,0.9nm,0.7s,baz=41,slow=6.2								

NOA NORSAR Array B 73.24 337 P **P** **05 24 38.5 +0.3**
comp=Z,0.8nm,0.7s,baz=43,slow=6.2,SNR=4.2
AKASG Malin Array Be 73.68 322 P **P** **05 24 40.9 0.0**
comp=Z,1.4nm,0.7s,baz=46,slow=5.9,SNR=12

GUC 24 05:17:41.2±0.6, 22.98S×69.26W, h77km±4km, ML3.5, 6C-1D, Northern Chile

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PB06	**IPOC Station P**	**0.40**	**314**	*i*P	Pn	05 17 54.1	+0.1
PB06				*i* S	Sn	05 18 04.2	+0.8
PB06				IAML		05 18 04.9	
	comp=N,4μm,0.1s						
PB04	**IPOC Station P**	**1.04**	**308**	*i*P	Pn	05 18 00.9	+0.2
PB04				*i* S	Sn	05 18 16.3	+1.0
PB04				IAML		05 18 17.9	
	comp=N,1μm,0.2s						
PB09	**IPOC Station P**	**1.18**	**1**	*i*P	Pn	05 18 03.2	+0.7
PB09				IAML		05 18 26.7	
	comp=E,1μm,0.3s						
PB10	**IPOC Station P**	**1.30**	**246**	*i*P	Pn	05 18 04.1	+0.3
PB10				*e*S	Sn	05 18 22.4	+1.5
PB10				IAML		05 18 25.6	
	comp=E,3μm,0.5s						
PB07	**IPOC Station P**	**1.38**	**335**	*i*P	Pn	05 18 05.5	+0.5
PB07				IAML		05 18 29.4	
	comp=E,438nm,0.2s						
PB01	**IPOC Station P**	**1.94**	**354**	*i*P	Pn	05 18 13.1	+0.8
PB01				*i* S	Sn	05 18 37.6	+1.6
PB01				IAML		05 18 42.7	
	comp=E,399nm,0.3s						
PB14	**IPOC Station P**	**1.94**	**212**	*i*P	Pn	05 18 12.3	-0.3
PB14				*e*S	Sn	05 18 36.5	+0.2
PB14				IAML		05 18 43.0	
	comp=E,664nm,0.1s						
HMBC	**Humberstone**	**2.75**	**348**	IAML		05 19 03.1	
	comp=E,204nm,0.8s						

IDC 24 05:23:27.0±2.4, 16.71S×66.31E, h0km, mb3.6/6, mb1 3.7/6, mb1mx3.5/41, mbtmp3.6/6, MS3.4/2, Ms1 3.4/2, ms1mx2.8/45, Error ellipse: s-maj=91.6km s-min=25.5km az=43.0, Mid-Indian Ridge

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
H08S1	**Diego Carcia H**	**10.84**	**34**	T	T	05 36 37.9	
	baz=212,slow=75,SNR=136						
H08S2	**Diego Garcia H**	**10.85**	**35**	T	T	05 36 35.7	
	baz=212,slow=75,SNR=104						
H08S3	**Diego Garcia H**	**10.86**	**34**	T	T	05 36 39.1	
	baz=212,slow=75,SNR=132						
H08N3	**Diego Garcia H**	**11.28**	**25**	T	T	05 37 13.5	
	baz=203,slow=76,SNR=46						
H08N1	**Diego Garcia H**	**11.29**	**25**	T	T	05 37 18.9	
	baz=203,slow=76,SNR=32						
H08N2	**Diego Garcia H**	**11.30**	**25**	T	T	05 37 15.1	
	baz=203,slow=76,SNR=45						
WSAR	**Wadi Sarin**	**40.41**	**349**	LR	LR	05 43 33.0	
	comp=Z,38nm,20.7s,baz=110,slow=30						
H01W3	**Cape Leeuwin H**	**46.24**	**122**	T	T	06 21 14.0	
	baz=279,slow=74						
H01W2	**Cape Leeuwin H**	**46.24**	**122**	T	T	06 21 12.1	
	baz=279						
H01W1	**Cape Leeuwin H**	**46.26**	**122**	T	T	06 21 16.8	
	baz=279,slow=74						
ASAR	**Alice Springs**	**63.32**	**108**	P	P	05 33 58.2	-0.2
	0.4nm,0.6s,baz=273,slow=5.6,SNR=6.7						
BRTR	**Keskin Array B**	**63.88**	**332**	P	P	05 34 01.8	0.0
	0.3nm,0.5s,baz=161,slow=9.2,SNR=3.4						
WRA	**Warramunga Arr**	**64.27**	**104**	P	P	05 34 04.8	+0.2
	0.9nm,0.8s,baz=272,slow=5.9,SNR=5.4						
ZALV	**Zalesovo Beam**	**72.14**	**11**	P	P	05 34 52.5	-0.7
	0.4nm,0.4s,baz=204,slow=3.3,SNR=4.2						
SONM	**Songino Array**	**73.57**	**27**	P	P	05 35 02.6	+0.5
	0.5nm,0.6s,baz=225,slow=5.4,SNR=3.2						
AKASG	**Malin Array Be**	**74.60**	**337**	P	P	05 35 07.9	+0.1
	0.1nm,0.3s,baz=132,slow=4.0,SNR=3.9						
KEST	**Kesra**	**75.00**	**315**	LR	LR	06 08 37.4	
	comp=Z,28nm,18.4s,baz=236,slow=36						

MEX 24 05:24:11.3±0.8, 16.45N×99.33W, h16km±16km, MD3.8, Near coast of Guerrero

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ACX	**Acapulco**	**0.66**	**310**	*e*P	Pg	05 24 21.7	-2.5
CAIG	**El Cayaco**	**1.08**	**304**	*e*P	Pb	05 24 27.8	-3.7
CAIG				*e*S	Sb	05 24 40.2	-5.2
PNIG	**Pinotepa**	**1.16**	**93**	*e*P	Pn	05 24 29.0	-3.8
PNIG				*i* S	Sb	05 24 42.7	-5.0
MEIG	**Mezcala**	**1.49**	**349**	*e*P	Pn	05 24 33.9	-3.7
MEIG				*e*S	Sn	05 24 51.9	-4.9
ARIG	**Puente Sto Nin**	**2.06**	**332**	*e*P	Pn	05 24 42.7	-2.7
ARIG				*e*S	Sn	05 25 05.6	-5.2
VHO	**Vista Hermosa**	**2.56**	**76**	*i*P	Pn	05 24 49.5	-2.9
VHO				*i* S	Sn	05 25 18.6	-4.7
HUIG	**Huatulco**	**3.17**	**102**	*e*P	Pb	05 25 05.1	-2.2

GUC 24 05:25:44.2±0.8, 37.41S×74.27W, h35km±4km, ML3.8, 2C-1D, Off coast of central Chile

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PSCH	**Puerto Saavedr**	**1.55**	**154**	*i* S	Sn	05 26 30.6	+2.5
COCH	**Cobquecura**	**1.74**	**43**	*i*P	Pn	05 26 12.9	+1.0
COCH				*i* S	Sn	05 26 34.9	+2.1
COCH				IAML		05 26 46.6	
	comp=E,1μm,0.5s						
CCHI	**Chillan**	**1.93**	**66**	*i*P	Pn	05 26 15.5	+1.0
CCHI				*i* S	Sn	05 26 40.3	+2.8
CCHI				IAML		05 26 56.2	
	comp=N,2μm,0.5s						
CLCH	**Cerro Calan**	**5.03**	**38**	*e*P	Pn	05 26 59.1	+1.9
ROCH	**El Roble**	**5.17**	**32**	*i*P	Pn	05 27 01.2	+1.9

*ISCJB **24** 05:28:18.6±0.7, 39.10S±0.06×70.87W±0.07, h150km, mb4.0/6, Error ellipse: s-maj=8.5km s-min=7.6km az=43.5*
*NEIC **24** 05:28:19.0±1.1, 39.10S×70.96W, h156km±10km, mb4.3/2, Error ellipse: s-maj=21.6km s-min=13.9km az=80.0*
*IDC **24** 05:28:19.7±1.4, 39.16S×70.78W, h163km±17km, mb3.8/6, mb1 3.9/6, mb1mx3.6/24, mbtmp4.2/6, Error ellipse: s-maj=34.6km s-min=21.3km az=70.0*
*GUC **24** 05:28:22.1±0.6, 39.01S×70.95W, h135km±27km, ML4.5*
*SJA **24** 05:29:31.0±1.2, 33.80S×69.06W, h121km±12km, MD2.4*
ISC 24 05:28:19.4±1.0, 39.05S±0.08×70.84W±0.06, h150km, n24, σ2.9 29/28, mb4.0/6, 2D, Southern Argentina

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PLCA	**Paso Flores**	**1.69**	**173**	P	**Pn**	**05 28 51.0**	**-0.1**
	96nm,0.3s,baz=7.9,slow=10.0,SNR=93						
PSCH	**Puerto Saavedr**	**2.01**	**276**	*i*P	**Pn**	**05 28 55.1**	**+0.5**
PSCH				*i* S	**Sn**	**05 29 21.3**	**-0.3**
CCHI	**Chillan**	**2.63**	**338**	*e*P	**Pn**	**05 29 04.1**	**+1.9**
CCHI				*e*S	**Sn**	**05 29 35.0**	**-0.2**
CCHI				IAML		05 29 42.7	
	comp=E,903nm,0.2s						
COCH	**Cobquecura**	**3.30**	**331**	*i*P	**Pn**	**05 29 12.1**	**+1.5**
COCH				*i* S	**Sn**	**05 29 50.2**	**0.0**
COCH				IAML		05 29 53.3	
	comp=N,1μm,0.3s						
AAGR	**Agrelo**	**6.17**	**16**	*i* P	**Pn**	**05 29 51.4**	**+2.8**
ASAL	**Salagasta**	**6.65**	**15**	*e*P	**Pn**	**05 29 57.1**	**+2.2**
AUSP	**Uspallata**	**6.92**	**10**	*i* P	**Pn**	**05 30 01.0**	**+2.3**
TRQA	**Tornquist**	**7.02**	**85**	*e*Pn	**Pn**	**05 30 01.1**	**+1.4**
	comp=N,39nm,1.1s						
TRQA				*e*Sn	**Sn**	**05 31 15.0**	**-3.2**
RTLS	**Leoncito**	**7.35**	**10**	*i* P	**Pn**	**05 30 05.8**	**+1.4**
ACAN	**Cantantal**	**7.39**	**25**	*i* P	**Pn**	**05 30 07.5**	**+2.8**
RTCV	**Cerro Valdivia**	**7.42**	**15**	*i* P	**Pn**	**05 30 06.1**	**+1.0**
RTLL	**Cerro Villicun**	**7.95**	**15**	*e*P	**Pn**	**05 30 11.9**	**-0.3**
AMOG	**MOGNA**	**8.32**	**14**	*e*P	**Pn**	**05 30 17.3**	**+0.1**
AGUA	**GUANDACOL**	**9.74**	**12**	*e*P	**Pn**	**05 30 35.7**	**-0.4**
LCO	**Las Campanas**	**10.02**	**1**	*e*Pn	**Pn**	**05 30 38.3**	**-1.6**
LCO				*e*Sn	**Sn**	**05 32 25.7**	**-5.3**
LVC	**Limon Verde**	**16.47**	**6**	*e*P	**P**	**05 32 03.5**	**+1.2**
	comp=N,3.7nm,0.6s						
CPUP	**Villa Florida**	**17.01**	**46**	P	**Pn**	**05 32 15.1**	**+6.7**
	comp=N,0.4nm,0.3s,baz=226,slow=12,SNR=6.4						
LPAZ	**La Paz**	**22.80**	**7**	P	**P**	**05 33 10.8**	**+0.7**
	comp=N,3.7nm,0.5s,baz=187,slow=6.4,SNR=17						
SIV	**San Ignacio**	**24.52**	**23**	P	**P**	**05 33 24.8**	**-0.3**
	comp=N,3.1nm,0.8s,baz=216,slow=11,SNR=3.0						
PTGA	**Pitinga**	**39.42**	**17**	P	**P**	**05 35 33.8**	**-1.0**
	comp=N,3.8nm,0.5s,baz=192,slow=9.3,SNR=7.4						
TXAR	**Lajitas Array**	**74.60**	**331**	P	**P**	**05 39 41.2**	**-0.8**
	comp=N,0.5nm,0.7s,baz=154,slow=7.9,SNR=7.7						
DBIC	**Dimbokro**	**75.97**	**69**	P	**P**	**05 39 49.6**	**-0.5**
	comp=N,7.7nm,1.0s,baz=206,slow=7.6,SNR=11						
BOSA	**Boshof**	**76.92**	**116**	P	**P**	**05 39 53.6**	**-1.9**
	comp=N,2.9nm,0.9s,baz=250,slow=7.9,SNR=6.6						
SEY	**Seymchan**	**144.84**	**327**	PKP	PKPbc	05 47 35.9	-1.1
	comp=N,2.7nm,0.6s,baz=74,slow=5.4,SNR=12						

IDC 24 05:43:04.6±1.7, 4.35N×127.12E, h0km, mb3.5/4, mb1 3.7/4, mb1mx3.4/36, mbtmp3.5/4, Error ellipse: s-maj=160.2km s-min=21.6km az=68.0, Talaud Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
WRA	**Warramunga Arr**	**25.16**	**164**	P	P	05 48 31.2	-0.6
	0.7nm,0.6s,baz=343,slow=11,SNR=7.3						
ASAR	**Alice Springs**	**28.62**	**167**	P	P	05 49 03.5	+0.5
	0.3nm,0.7s,baz=335,slow=8.8,SNR=3.0						
MKAR	**Makanchi Array**	**57.27**	**325**	P	P	05 52 54.9	+0.8
	0.5nm,0.5s,baz=119,slow=8.8,SNR=5.5						
ZALV	**Zalesovo Beam**	**60.22**	**333**	P	P	05 53 13.7	-0.7
	0.3nm,0.3s,baz=148,slow=5.3,SNR=2.6						

*IDC **24** 06:01:03.9±0.6, 15.31S×175.76W, h0km, mb4.6/21, mb1 4.7/21, mb1mx4.6/40, mbtmp4.5/21, MS4.6/34, Ms1 4.6/34, ms1mx4.5/46, Error ellipse: s-maj=24.3km s-min=14.3km az=141.0*
*ISCJB **24** 06:01:07.9±0.2, 15.42S±0.06×175.72W±0.04, h33km, mb4.9/145, MS4.6/35, Error ellipse: s-maj=8.7km s-min=5.1km az=157.6*
*NEIC **24** 06:01:09.6±0.2, 15.33S×175.80W, h35km, mb5.0/108, Error ellipse: s-maj=8.2km s-min=3.9km az=148.0*
*MOS **24** 06:01:13.8±1.1, 15.28S×175.69W, h78km, mb5.2/33, Error ellipse: s-maj=13.5km s-min=8.5km az=52.4*
*BJI **24** 06:01:15.4, 15.86S×175.54W, h105km, mb4.8/18, mB5.0/12*
*GCMT **24** 06:01:17.2±0.2, 15.20S×175.58W, h17km±1km, MW5.2/112, Moment Tensor Solution. s60,c87; s112,c194; Duration: 1s0 Moment tensor: Scale 10^{16} Nm; M_{rr}0.50±.18; $M_{\theta\theta}$-3.87±.18; $M_{\phi\phi}$3.37±.16; $M_{r\theta}$-1.58±.40; $M_{r\phi}$7.84±.16; $M_{\theta\phi}$0.97±.38; Best double couple: M_o8.81200×10^{16} NP1:ϕ_s77.00000°, δ83.00000°, λ-8.00000°. NP2:ϕ_s168.00000°, δ82.00000°, λ-173.00000°. Principal axes: T 8.3860, Plg0.0000°, Azm123.0000°; N 0.8520, Plg79.0000°, Azm214.0000°; P -9.2380, Plg11.0000°, Azm33.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

ISC 24 06:01:09.3±0.3, 15.32S±0.08×175.67W±0.07, h35km, n707, σ1.31 391/681, mb5.0/145, MS4.7/36, 21C-11D, Tonga Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
AFI	**Afiamalu**	**4.02**	**70**	Pn	Pn	06 02 01.3	-7.2
	17nm,0.3s,baz=31,slow=10,SNR=17						
AFI				Sn	Sn	06 02 42.2	-12
	88nm,0.3s,baz=60,slow=20,SNR=11						
AFI				LR	LR	06 03 32.1	
	comp=Z,5μm,19.8s,baz=249,slow=36						
AFI				T	T	06 06 05.1	
	33nm,0.3s,baz=95,slow=21,SNR=3.7						
MSVF	**Nonsavu**	**6.48**	**247**	*i*P	Pn	06 02 48.6	+6.3
MSVF	**Nonsavu**	**6.48**	**247**	*e*Pn	Pn	06 02 48.7	+6.4
RAO	**Raoul Island**	**14.02**	**188**	LR	LR	06 08 55.0	
	comp=Z,5μm,21.3s,baz=18,slow=34						
RAR	**Rarotonga**	**16.19**	**114**	Pn	**Pn**	**06 04 49.4**	**-4.7**
	2.3nm,0.3s,baz=270,slow=14,SNR=5.5						
RAR				LR	LR	06 09 47.9	
	comp=Z,2μm,21.4s,baz=284,slow=32						
DZM	**Mont Dzumac**	**18.21**	**246**	P	**Pn**	**06 05 22.9**	**+3.4**
	0.9nm,0.3s,baz=66,slow=19,SNR=20						
DZM				LR	LR	06 11 12.5	
	comp=Z,2μm,18.8s,baz=74,slow=34						
URZ	**Urewera**	**23.72**	**194**	P	**P**	**06 06 14.0**	**-4.0**
	4.0nm,0.6s,baz=329,slow=19,SNR=5.7						
URZ				LR	LR	06 14 24.3	
	comp=Z,2μm,18.3s,baz=23,slow=34						
URZ	**Urewera**	**23.72**	**194**	*e*P	**P**	**06 06 18.1**	**0.0**
HNR	**Honiara**	**24.51**	**281**	LR	LR	06 14 28.9	
	comp=Z,5μm,21.1s,baz=124,slow=33						
PAE	**Paea**	**25.12**	**99**	*e*T	T	06 32 16.2	
	3.2nm,0.3s						
PPT	**Papeete**	**25.12**	**99**	LR	LR	06 13 42.7	
	comp=Z,755nm,20.4s,baz=270,slow=30						
PPT2	**Papeete2**	**25.12**	**99**	*e*P	**P**	**06 06 30.8**	**-0.4**
	69nm,1.3s						
PPT2				*e*LQ	LQ	06 11 31.0	
	5μm,25.2s						
PPT2				*e*LR	LR	06 12 37.4	
	3μm,26.2s,baz=261						
PPT2	**Papeete2**	**25.12**	**99**	*e*T	T	06 32 17.2	
	4.6nm,0.3s						
TIAR	**Tiarei**	**25.34**	**99**	*e*T	T	06 32 32.6	
	3.5nm,0.3s						
TVO	**Taravao**	**25.44**	**99**	*e*T	T	06 32 40.0	
	2.0nm,0.3s						
MEH	**Mehetia**	**26.57**	**99**	*e*T	T	06 34 04.5	
	7.8nm,0.3s						
PMOR	**Pomariorio Ree**	**26.81**	**93**	*e*P	**P**	**06 06 46.4**	**0.0**
	266nm,1.3s						
VAH	**Vaihoa**	**27.05**	**94**	*e*T	T	06 34 39.2	
	9.5nm,0.3s						
RPZ	**Rata Peaks**	**30.48**	**199**	LR	LR	06 18 40.3	
	comp=Z,3μm,19.0s,baz=30,slow=35						
TAOE	**Nuku Hiva Isla**	**35.29**	**84**	*e*LR	LR	06 17 17.2	
	620nm,21.7s						
TAOE	**Nuku Hiva Isla**	**35.29**	**84**	*e*T	T	06 44 55.5	
	33nm,0.2s						
PMG	**Port Moresby**	**36.74**	**275**	LR	LR	06 22 01.7	
	comp=Z,1μm,18.1s,baz=74,slow=34						
PMG	**Port Moresby**	**36.74**	**275**	*d*iP	**P**	**06 08 16.2**	**+2.6**
PMG				pmax	pmax		
	comp=Z,202nm,1.2s						
PMG	**Port Moresby**	**36.74**	**275**	*e*P	**P**	**06 08 16.8**	**+3.2**
	comp=Z,48nm,1.1s						
H11N3	**WAKE ISLAND Hy**	**38.81**	**333**	T	T	06 49 42.8	
	baz=153,slow=76,SNR=47						
H11N1	**WAKE ISLAND Hy**	**38.81**	**333**	T	T	06 49 44.6	
	baz=153,slow=76,SNR=63						
H11N2	**WAKE ISLAND Hy**	**38.83**	**333**	T	T	06 49 46.7	
	baz=153,slow=76,SNR=63						
RKT	**Rikitea**	**39.10**	**108**	*e*LQ	LQ	06 17 49.2	
	comp=Z,521nm,28.0s						
RKT				*e*LR	LR	06 19 07.1	
	comp=Z,2μm,27.0s,baz=279						
RKT	**Rikitea**	**39.10**	**108**	*e*T	T	06 49 45.9	
	comp=Z,5.6nm,0.3s						
COEN	**Coen**	**39.80**	**266**	*e*P	**P**	**06 08 40.1**	**+0.7**
	comp=Z,24nm,1.0s						
STKA	**Stephens Creek**	**42.18**	**239**	P	**P**	**06 08 58.0**	**-0.8**
	comp=Z,6.1nm,1.0s,baz=98,slow=10,SNR=12						
STKA				LR	LR	06 25 41.1	
	comp=Z,674nm,19.0s,baz=66,slow=35						
STKA	**Stephens Creek**	**42.18**	**239**	*e*P	**P**	**06 08 59.5**	**+0.7**
STKA				pmax	pmax		
	comp=Z,6.0nm,1.4s						
STKA	**Stephens Creek**	**42.18**	**239**	*e*P	**P**	**06 08 59.5**	**+0.7**
	comp=Z,6.3nm,1.4s						
JAY	**Jayapura**	**44.83**	**282**	LR	LR	06 26 27.6	
	comp=Z,35nm,19.8s,baz=90,slow=34						
WB2	**Warramunga Arr**	**47.72**	**257**	*e*P	**P**	**06 09 43.0**	**0.0**
	comp=Z,22nm,1.2s						
WRAB	**Tennant Creek**	**47.72**	**257**	*e*P	**P**	**06 09 41.4**	**-1.6**
WRAB				pmax	pmax		
	comp=Z,55nm,1.2s						
WRAB	**Tennant Creek**	**47.72**	**257**	*e*P	**P**	**06 09 41.9**	**-1.1**
	comp=Z,22nm,1.3s						
WRA	**Warramunga Arr**	**47.73**	**257**	P	**P**	**06 09 41.8**	**-1.3**
	comp=Z,9.6nm,1.1s,baz=90,slow=7.1,SNR=19						
WRA				PcP	**PcP**	**06 11 12.0**	**-0.1**
	comp=Z,4.1nm,1.1s,baz=89,slow=3.2,SNR=3.2						
WRA				LR	LR	06 28 36.2	
	comp=Z,1μm,19.2s,baz=110,slow=35						
WRA	**Warramunga Arr**	**47.73**	**257**	*i* P	**P**	**06 09 42.7**	**-0.4**
WRA				pmax	pmax		
	comp=Z,10.0nm,1.1s						
AS01	**Alice Springs**	**48.01**	**252**	*e*P	**P**	**06 09 44.6**	**-0.7**
AS31	**Alice Springs**	**48.05**	**252**	*e*P	**P**	**06 09 45.3**	**-0.3**
	comp=Z,5.0nm,0.8s						
ASAR	**Alice Springs**	**48.05**	**252**	P	**P**	**06 09 43.9**	**-1.7**
	comp=Z,6.3nm,0.8s,baz=84,slow=8.1,SNR=40						
ASAR				LR	LR	06 29 11.5	
	comp=Z,460nm,18.9s,baz=94,slow=35						
GUMO	**Guam**	**48.47**	**304**	LR	LR	06 27 31.4	
	comp=Z,367nm,19.3s,baz=126,slow=33						
JCJ	**Chichijima**	**58.75**	**316**	LR	LR	06 32 04.1	
	comp=Z,736nm,20.2s,baz=132,slow=32						
MBWA	**Marble Bar**	**61.27**	**254**	*e*P	**P**	**06 11 21.5**	**-0.1**
	comp=Z,55nm,1.4s						
SBA	**Scott Base**	**63.16**	**184**	*e*P	**P**	**06 11 34.8**	**+1.6**
SBA				pmax	pmax		
	comp=Z,65nm,1.9s						
SBA	**Scott Base**	**63.16**	**184**	*e*P	**P**	**06 11 34.8**	**+1.6**
	comp=Z,65nm,1.9s						
VNDA	**Vanda**	**63.24**	**185**	P	**P**	**06 11 34.4**	**+0.7**
	comp=Z,4.7nm,1.1s,baz=3.2,slow=7.4,SNR=7.7						
VNDA				LR	LR	06 33 50.7	
	comp=Z,160nm,22.0s,baz=23,slow=31						
VNDA	**Vanda**	**63.24**	**185**	*e*P	**P**	**06 11 34.7**	**+1.0**
VNDA				pmax	pmax		
	comp=Z,20nm,1.5s						
VNDA	**Vanda**	**63.24**	**185**	*e*P	**P**	**06 11 34.7**	**+1.0**
	comp=Z,20nm,1.5s						
MJAR	**Matsushiro Arr**	**67.48**	**321**	LR	LR	06 35 59.4	
	comp=Z,242nm,21.8s,baz=125,slow=31						
JNU	**Nakatsue**	**70.16**	**314**	P	**P**	**06 12 18.8**	**+0.2**
	comp=Z,5.4nm,0.9s,baz=154,slow=18,SNR=2.6						
JNU				LR	LR	06 37 02.2	
	comp=Z,305nm,21.6s,baz=116,slow=31						
PEA0	**Petropavlovsk-**	**71.91**	**343**	*e*P	**P**	**06 12 28.9**	**+0.2**
PETK	**Petropavlovsk-**	**71.91**	**343**	P	**P**	**06 12 28.7**	**0.0**
	comp=Z,12nm,0.9s,baz=124,slow=7.1,SNR=11						
SNCC	**San Nicolas Is**	**72.11**	**47**	P	**P**	**06 12 32.0**	**+1.6**
	baz=237						
YSS	**Yuzh-Sakhalins**	**72.35**	**332**	*e*P	**P**	**06 12 32.5**	**+1.1**
YSS				pmax	pmax		
	comp=Z,73nm,1.7s						
SCZ2	**Santa Cruz Isl**	**72.44**	**46**	P	**P**	**06 12 34.1**	**+1.8**
	baz=237						
SBC	**Santa Barbara**	**72.63**	**46**	P	**P**	**06 12 35.1**	**+1.8**
	baz=237						
SCI2	**San Clemente I**	**72.67**	**48**	P	**P**	**06 12 35.2**	**+1.6**
	baz=238						
PKM	**Mcpherson Peak**	**72.80**	**45**	P	**P**	**06 12 36.1**	**+1.4**
	baz=237						
BLG	**Laguna Peak, P**	**72.90**	**46**	P	**P**	**06 12 36.6**	**+1.5**
	baz=237						
SMMC	**Simmler**	**72.91**	**45**	P	**P**	**06 12 36.7**	**+1.5**
	baz=236						
FMP	**Fort Macarthur**	**73.23**	**47**	P	**P**	**06 12 38.5**	**+1.5**
	baz=238						
KMRM	**Mail Ridge**	**73.36**	**39**	*e*P	**P**	**06 12 37.6**	**-0.2**
	comp=Z,56nm,1.5s						
OSI	**Osito Audit: C**	**73.41**	**46**	P	**P**	**06 12 39.4**	**+1.3**
	baz=238						
ARVC	**Arvin**	**73.61**	**46**	P	**P**	**06 12 40.7**	**+1.5**
	baz=237						
109C	**Camp Elliot, M**	**73.65**	**48**	P	**P**	**06 12 41.1**	**+1.6**
	baz=239						
KHMM	**Horse Mountain**	**73.75**	**38**	*e*P	**P**	**06 12 40.3**	**+0.2**
	comp=Z,48nm,1.8s						
MURC	**Murrieta**	**73.95**	**48**	P	**P**	**06 12 42.8**	**+1.4**
	baz=239						
BFSC	**Mount Baldy Ra**	**73.96**	**47**	P	**P**	**06 12 42.6**	**+1.2**
	baz=238						
RCTC	**Rector, Farmer**	**73.97**	**44**	P	**P**	**06 12 42.7**	**+1.5**
	baz=237						
EDW2	**Edwards Air Fo**	**74.06**	**46**	P	**P**	**06 12 43.1**	**+1.2**
	baz=238						
ISA	**Isabella, Lake**	**74.14**	**45**	P	**P**	**06 12 43.8**	**+1.4**
	baz=237						
ISA	**Isabella, Lake**	**74.14**	**45**	*e*P	**P**	**06 12 44.8**	**+2.4**
ISA	**Isabella, Lake**	**74.14**	**45**	*e*P	**P**	**06 12 44.8**	**+2.4**
MONP2	**Monument Peak**	**74.15**	**49**	P	**P**	**06 12 43.7**	**+1.0**
	baz=240						
CMB	**Columbia Colle**	**74.17**	**42**	*e*P	**P**	**06 12 43.1**	**+0.6**
CMB				pmax	pmax		
	comp=Z,19nm,1.7s						
CMB	**Columbia Colle**	**74.17**	**42**	*e*P	**P**	**06 12 43.0**	**+0.6**
	comp=Z,19nm,1.7s						
WDC	**Whiskeytown Da**	**74.29**	**39**	*e*P	**P**	**06 12 43.9**	**+0.8**
WDC				pmax	pmax		
	comp=Z,13nm,1.3s						
WDC	**Whiskeytown Da**	**74.29**	**39**	*e*P	**P**	**06 12 43.9**	**+0.8**
	comp=Z,13nm,1.3s						
AFDM	**Forest Hills D**	**74.31**	**41**	*e*P	**P**	**06 12 44.1**	**+0.9**
AFDM				*e*PcP	**PcP**	**06 12 57.6**	**-0.3**
N02D	**Trinity Center**	**74.43**	**39**	P	**P**	**06 12 45.8**	**+1.8**
	baz=233,SNR=6.1						
PFO	**Pinyon Flats O**	**74.49**	**48**	P	**P**	**06 12 46.2**	**+1.7**
	baz=239						
PFO	**Pinyon Flats O**	**74.49**	**48**	*e*P	**P**	**06 12 45.5**	**+1.0**
PFO				pmax	pmax		
	comp=Z,17nm,1.4s						
PFO	**Pinyon Flats O**	**74.49**	**48**	*e*P	**P**	**06 12 45.5**	**+1.0**
	comp=Z,17nm,1.4s						
BBRC	**Big Bear Solar**	**74.49**	**47**	P	**P**	**06 12 46.0**	**+1.3**
	baz=239						
O03D	**Paynes Creek**	**74.58**	**40**	P	**P**	**06 12 46.2**	**+1.3**
	baz=234						
KSRS	**Korea Array**	**74.58**	**317**	P	**P**	**06 12 45.9**	**+1.1**
	comp=Z,1.6nm,0.8s,baz=136,slow=5.6,SNR=3.7						
KSRS				LR	LR	06 41 59.8	
	comp=Z,200nm,19.4s,baz=138,slow=33						
KSRS	**Korea Array**	**74.58**	**317**	P	**P**	**06 12 45.9**	**+1.1**
KSRS				pmax	pmax		
	comp=Z,1.0

baz=240
NV01 **Mina Array Sit** 75.75 43 *e*P P 06 12 52.6 +0.8
NVAR **Mina Array Bea** 75.75 43 P P 06 12 52.4 +0.6
comp=Z,6.6nm,0.9s,baz=227,slow=7.7,SNR=25
NVAR LR LR 06 38 42.6
comp=Z,369nm,20.9s,baz=242,slow=30
SHOC **Shoshone, Teco** 75.79 46 P P 06 12 53.1 +1.3
baz=239
TUQ **Turquoise Moun** 75.80 47 P P 06 12 53.3 +1.2
baz=239
NV11 **Mina Array Sit** 75.85 43 *e*P P 06 12 53.0 +0.7
comp=Z,18nm,1.3s
Y12C **Blythe** 75.95 49 P P 06 12 54.4 +1.6
baz=240
Y12C **Blythe** 75.95 49 *e*P P 06 12 54.4 +1.6
comp=Z,43nm,1.6s
USRK **Ussuriysk Ar.** 76.02 324 LR LR 06 41 30.2
comp=Z,510nm,20.0s,baz=185,slow=32
113A **Mohawk Valley,** 76.03 50 *e*P P 06 12 54.0 +0.7
comp=Z,73nm,2.0s
I04A **Tendick Farm,** 76.30 37 P P 06 12 55.9 +1.3
baz=233
TPNV **Topopah Spring** 76.35 45 P P 06 12 56.2 +1.0
baz=239
214A **Organ Pipe Nat** 76.36 51 P P 06 12 56.4 +1.1
baz=242
214A **Organ Pipe Nat** 76.36 51 *e*P P 06 12 56.3 +1.1
comp=Z,96nm,1.4s
NEE2 **Needles Airpor** 76.39 48 P P 06 12 56.6 +1.4
baz=240
MOD **Modoc Plateau** 76.43 39 *e*P P 06 12 56.6 +1.1
comp=Z,11nm,1.0s
HSIG 76.46 55 *e*P P 06 12 56.2 +0.4
comp=Z,11nm,1.3s
PDMCI **Parker Dam,Lak** 76.50 48 P P 06 12 57.4 +1.5
baz=241
K05A **Summer Lake** 76.56 38 *e*P P 06 12 57.5 +1.2
comp=Z,24nm,1.4s
J05D **Fort Rock, OR** 76.68 38 P P 06 12 58.3 +1.4
baz=234,SNR=20
G03D **McMinnville, O** 76.69 35 P P 06 12 58.4 +1.7
baz=232
H04A **Detroit Lake** 76.97 36 *e*P P 06 12 58.8 +0.5
comp=Z,12nm,1.0s
W13A **Hualapai Mount** 77.07 48 *e*P P 06 13 00.8 +1.5
comp=Z,30nm,1.8s
Y14A **Wickenburg** 77.15 49 *e*P P 06 13 00.2 +0.6
comp=Z,70nm,1.1s
I05D **Terrebonne, OR** 77.25 37 P P 06 13 01.6 +1.6
baz=233
E03A **Lebam** 77.35 34 *e*P P 06 13 01.7 +1.4
comp=Z,32nm,1.1s
F04D **Rainier, OR** 77.36 35 P P 06 13 02.3 +1.8
baz=232
R11A **Troy Canyon, C** 77.52 44 P P 06 13 03.1 +1.3
baz=239
R11A **Troy Canyon, C** 77.52 44 *e*P P 06 13 02.2 +0.5
comp=Z,21nm,1.9s
BMN **Battle Mountai** 77.54 42 *e*P P 06 13 02.2 +0.4
BMN pmax pmax
comp=Z,26nm,1.5s
BMN **Battle Mountai** 77.54 42 *e*P P 06 13 02.2 +0.4
comp=Z,26nm,1.5s
WVOR **Wild Horse Val** 77.75 39 *e*P P 06 13 03.2 +0.3
WVOR pmax pmax
comp=Z,15nm,1.3s
WVOR **Wild Horse Val** 77.75 39 *e*P P 06 13 03.2 +0.3
comp=Z,15nm,1.3s
G05D **Wamic, OR** 77.80 36 P P 06 13 04.4 +1.5
baz=233
TUC **Tucson** 78.05 52 P P 06 13 06.2 +1.4
baz=243
TUC **Tucson** 78.05 52 *e*P P 06 13 06.2 +1.4
TUC pmax pmax
comp=Z,37nm,1.4s
TUC **Tucson** 78.05 52 *e*P P 06 13 06.2 +1.4
comp=Z,37nm,1.4s
NJ2 **Nanjing** 78.38 308 *e*P P 06 13 06.5 +0.1
NJ2 pmax pmax
comp=Z,12nm,0.5s
LON **Longmire** 78.43 35 *e*P P 06 13 07.2 +0.7
LON pmax pmax
comp=Z,9.0nm,1.2s
LON **Longmire** 78.43 35 *e*P P 06 13 07.2 +0.7
comp=Z,9.4nm,1.2s
LCMT **Little Creek M** 78.46 46 *e*P P 06 13 08.0 +1.0
comp=Z,15nm,1.5s
PGC **Sidney** 78.73 32 *e*P P 06 13 09.1 +1.1
comp=Z,20nm,1.3s
KNB **Kanab** 78.76 47 *e*P P 06 13 09.5 +0.8
KNB pmax pmax
comp=Z,66nm,2.0s
KNB **Kanab** 78.76 47 *e*P P 06 13 09.5 +0.8
comp=Z,66nm,2.0s
319A **Douglas** 78.79 53 *e*P P 06 13 09.9 +1.0
comp=Z,46nm,1.5s
PSUT **Pine Spring** 78.79 45 *e*P P 06 13 09.0 +0.1
comp=Z,7.4nm,1.0s
U15A **North Rim** 78.85 47 *e*P P 06 13 10.8 +1.4
comp=Z,39nm,1.6s
ELK **Elko** 78.99 42 *e*P P 06 13 10.7 +0.8
ELK pmax pmax
comp=Z,9.0nm,1.3s
ELK **Elko** 78.99 42 *e*P P 06 13 10.7 +0.8
comp=Z,9.1nm,1.3s
WUAZ **Wupatki** 79.08 48 P P 06 13 11.7 +1.3
baz=242
WUAZ **Wupatki** 79.08 48 *e*P P 06 13 11.9 +1.5
comp=Z,31nm,1.4s
A04D **Lummi Island** 79.16 33 P P 06 13 12.1 +1.8
baz=232
B05A **Bryant** 79.20 33 P P 06 13 12.5 +1.9
baz=232
KLR **Kul'dur** 79.28 328 LR LR 06 42 59.9
comp=Z,288nm,21.7s,baz=151,slow=32
KLR **Kul'dur** 79.28 328 *e*P P 06 13 07.6 -3.4
PKCU **Pink Cliffs** 79.32 46 *e*P P 06 13 13.8 +1.8
comp=Z,67nm,1.8s
MA2 **Magadan** 79.45 343 P P 06 13 11.1 -0.5
comp=Z,2.8nm,0.7s,baz=179,slow=8.3,SNR=5.4
TT01 **Tatalina** 79.48 9 *e*P P 06 13 13.2 +1.5
HAWA **Hanford** 79.48 36 *e*P P 06 13 12.8 +0.6
comp=Z,10nm,0.9s
TTA **Tatalina** 79.50 9 *e*P P 06 13 12.9 +0.9
TTA **Tatalina** 79.50 9 *e*P P 06 13 12.9 +0.9
CN2 **Changchun** 79.63 321 *e*P P 06 13 16.0 +2.9
X18A **Snowflake** 79.67 50 *e*P P 06 13 14.6 +0.9
comp=Z,24nm,1.4s
HPIG 79.85 58 *e*P P 06 13 15.5 +0.6
comp=Z,15nm,1.5s
BMO **Blue Mountains** 79.90 38 *e*P P 06 13 15.6 +1.0
BMO pmax pmax
comp=Z,15nm,1.4s
BMO **Blue Mountains** 79.90 38 *e*P P 06 13 15.6 +1.0
comp=Z,16nm,1.4s
MSU **Marysvale** 79.92 45 *e*P P 06 13 16.4 +1.3
MSU **Marysvale** 79.92 45 *e*P P 06 13 16.4 +1.3
MFID **Camas Ranch** 80.02 40 *e*P P 06 13 15.5 +0.2
comp=Z,10nm,1.1s
MFID *e*PcP **sP** 06 13 29.1 -1.2
W18A **Petrified Fore** 80.09 49 P P 06 13 17.7 +1.7
baz=243
D08A **Wollman Farm,** 80.21 35 *e*P P 06 13 17.3 +1.2
comp=Z,17nm,1.1s
DUG **Dugway, Tooele** 80.31 44 P P 06 13 18.0 +1.0
baz=240,SNR=6.9
DUG **Dugway, Tooele** 80.31 44 *e*P P 06 13 16.9 -0.1
DUG pmax pmax
comp=Z,24nm,1.7s
DUG **Dugway, Tooele** 80.31 44 *e*P P 06 13 16.9 -0.1
comp=Z,24nm,1.7s
121A **Cookes Peak, D** 80.43 53 P P 06 13 19.3 +1.5
baz=245
121A **Cookes Peak, D** 80.43 53 *e*P P 06 13 19.4 +1.5
comp=Z,36nm,1.5s
BGU **Big Grassy Mou** 80.53 43 *e*P P 06 13 18.2 +0.1
comp=Z,16nm,1.8s
B08A **Colville Reser** 80.73 34 *e*P P 06 13 18.2 -0.8
comp=Z,8.0nm,0.9s
QIZ **Qiongzhong** 80.85 293 P P 06 13 22.4 +2.3
QIZ LR LR
comp=Z,140nm,17.7s
TMUT **Trail Mountain** 80.96 45 *e*P P 06 13 21.8 +1.0
comp=Z,13nm,1.0s
HLID **Hailey** 80.97 40 P P 06 13 21.9 +1.4
baz=239,SNR=17
HLID **Hailey** 80.97 40 *e*P P 06 13 21.6 +1.1
comp=Z,11nm,1.0s
C09A **Chrisman Ranch** 81.00 35 *e*P P 06 13 21.3 +0.9
comp=Z,6.6nm,0.8s
HVU **Hansel Valley** 81.11 42 *e*P P 06 13 21.6 +0.3
HVU pmax pmax
comp=Z,11nm,1.1s
HVU **Hansel Valley** 81.11 42 *e*P P 06 13 21.6 +0.3
comp=Z,11nm,1.1s
RND **Reindeer** 81.20 12 *e*P P 06 13 22.0 +0.9
RND pmax pmax
comp=Z,40nm,1.5s
RND **Reindeer** 81.20 12 *e*P P 06 13 22.0 +0.9
comp=Z,40nm,1.5s
CTU **Camp Tracy** 81.26 44 *e*P P 06 13 23.1 +1.0
comp=Z,5.8nm,0.9s
SRU **San Rafael Swe** 81.34 46 *e*P P 06 13 23.0 +0.4
SRU pmax pmax
comp=Z,13nm,1.3s
SRU **San Rafael Swe** 81.34 46 *e*P P 06 13 23.0 +0.4
comp=Z,13nm,1.3s
P17A **Butcher Ranch,** 81.36 45 *e*P P 06 13 23.6 +0.9
comp=Z,20nm,1.6s
JLU **Jordanelle** 81.42 44 *e*P P 06 13 24.1 +1.1
comp=Z,10nm,1.3s
MCK **McKinley** 81.48 12 *e*P P 06 13 23.2 +0.7
MCK pmax pmax
comp=Z,30nm,1.3s
MCK **McKinley** 81.48 12 *e*P P 06 13 23.2 +0.7
comp=Z,30nm,1.3s
TCUT **Toone Canyon** 81.69 43 *e*P P 06 13 25.2 +0.7
comp=Z,26nm,0.9s
LAZ **Ladron** 81.70 51 *e*P P 06 13 26.2 +1.5
P18A **Preston Nutter** 81.78 45 *e*P P 06 13 26.1 +1.0
comp=Z,34nm,2.0s
HWUT **Hardware Ranch** 81.82 43 *e*P P 06 13 25.5 +0.4
comp=Z,18nm,1.5s
PV05 **Paradox Valley** 81.87 47 *e*P P 06 13 27.4 +1.9
NEW **Newport** 81.89 35 LR LR 06 42 26.8
comp=Z,579nm,20.5s,baz=184,slow=30
NEW **Newport** 81.89 35 P P 06 13 26.3 +1.2
baz=236
NEW **Newport** 81.89 35 *e*P P 06 13 24.9 -0.2
NEW pmax pmax
comp=Z,10.0nm,1.4s
NEW **Newport** 81.89 35 *e*P P 06 13 24.9 -0.2
comp=Z,9.6nm,1.4s
SEY **Seymchan** 81.89 346 P P 06 13 23.5 -1.2
comp=Z,3.3nm,0.8s,baz=134,slow=2.0,SNR=6.8
SEY **Seymchan** 81.89 346 *e*P P 06 13 24.7 0.0
SEY *i* *PP sP 06 13 50.6 +11
MVCO **Mesa Verde** 81.91 48 P P 06 13 27.2 +1.5
baz=244
MVCO **Mesa Verde** 81.91 48 *e*P P 06 13 26.2 +0.5
comp=Z,16nm,1.4s
MNTX **Cornudas Mount** 81.95 54 P P 06 13 27.2 +1.5
baz=246
MNTX **Cornudas Mount** 81.95 54 *e*P P 06 13 26.9 +1.2
comp=Z,26nm,1.4s
BNM **Barren Site** 81.98 51 *e*P P 06 13 27.5 +1.3
PV09 **Paradox Valley** 82.03 47 *e*P P 06 13 27.8 +1.4
PV10 **Paradox Valley** 82.04 47 *e*P P 06 13 27.9 +1.5
LPM **Los Pinos Moun** 82.05 51 *e*P P 06 13 27.8 +1.4
PV04 **Paradox Valley** 82.15 47 *e*P P 06 13 27.3 +0.5
PV01 **Paradox Valley** 82.27 47 *e*P P 06 13 28.7 +1.1
WRH **Wood River Hil** 82.31 12 *e*P P 06 13 27.6 +0.8
comp=Z,26nm,1.3s
MLY **Manley** 82.32 10 *e*P P 06 13 27.9 +0.9
comp=Z,20nm,1.6s
TX31 **Lajitas Ar. Si** 82.40 57 *e*P P 06 13 29.2 +1.0
TXAR **Lajitas Array** 82.40 57 P P 06 13 29.1 +0.8
comp=Z,9.0nm,1.1s,baz=229,slow=4.8,SNR=40
TXAR LR LR 06 42 21.6
comp=Z,411nm,20.8s,baz=0.0,slow=30
DOT **Dot Lake** 82.43 14 *e*P P 06 13 28.9 +1.3
comp=Z,54nm,1.5s
ANMO **Albuquerque** 82.44 51 P P 06 13 29.2 +0.7
comp=Z,14nm,1.1s,baz=230,slow=4.5,SNR=27
ANMO **Albuquerque** 82.44 51 P P 06 13 29.7 +1.2
baz=245
ANMO **Albuquerque** 82.44 51 *ce*P P 06 13 29.4 +0.9
ANMO pmax pmax
comp=Z,32nm,1.4s
ANMO **Albuquerque** 82.44 51 *e*P P 06 13 29.7 +1.2
comp=Z,35nm,1.4s
DLBC **Dease Lake** 82.45 22 LR LR 06 42 48.3
comp=Z,829nm,20.1s,baz=228,slow=30
CCB **Clear Creek Bu** 82.52 12 *e*P P 06 13 28.0 0.0
comp=Z,9.0nm,0.9s
MCMT **McKenzie Canyo** 82.58 40 *e*P P 06 13 30.4 +1.3
AHID **Auburn Hatcher** 82.68 42 *e*P P 06 13 30.3 +0.7
comp=Z,19nm,1.3s
COLA **College** 82.71 12 *e*P P 06 13 29.6 +0.7
COLA pmax pmax
comp=Z,15nm,1.0s
COLA **College** 82.71 12 *e*P P 06 13 29.6 +0.7
comp=Z,15nm,1.0s
MDM **Murphy Dome** 82.72 11 *e*P P 06 13 28.8 -0.2
comp=Z,46nm,1.8s
ILAR **Eielson Array** 82.81 12 P P 06 13 28.9 -0.6
comp=Z,5.6nm,1.2s,baz=219,slow=6.5,SNR=12
ILAR LR LR 06 43 26.9
comp=Z,294nm,21.0s,baz=214,slow=31
ILB **Eielson Array** 82.81 12 *e*P P 06 13 29.5 0.0
IL1 **Eielson Array** 82.81 12 *e*P P 06 13 28.9 -0.6
MSO **Missoula** 82.94 38 P P 06 13 32.2 +1.5
baz=239
BSMT **Bassoo Peak** 82.99 36 *e*P P 06 13 31.5 +0.5
DLMT **Dillon** 83.01 39 *e*P P 06 13 32.2 +1.1
comp=Z,11nm,0.9s
REDW **Red Top Meadow** 83.12 42 *e*P P 06 13 33.0 +1.2
comp=Z,24nm,1.2s
FXWY **Fox Creek** 83.14 41 *e*P P 06 13 32.9 +0.9
comp=Z,22nm,1.4s
SNOW **Snow King Moun** 83.23 42 *e*P P 06 13 33.1 +0.6
comp=Z,29nm,1.3s
IMW **Indian Meadow** 83.32 41 *e*P P 06 13 34.0 +1.0
comp=Z,21nm,1.3s
LRM **Limekiln Ridge** 83.32 39 *e*P P 06 13 33.2 +0.3
S22A **4UR Ranch, Cre** 83.34 48 P P 06 13 34.4 +1.2
baz=245,SNR=24
S22A **4UR Ranch, Cre** 83.34 48 *e*P P 06 13 34.5 +1.3
comp=Z,25nm,1.1s
MOOW **Moose Ponds** 83.38 41 *e*P P 06 13 34.3 +1.1
comp=Z,17nm,1.5s
O20A **White River Ci** 83.38 45 P P 06 13 34.2 +1.0
baz=244,SNR=8.4
O20A **White River Ci** 83.38 45 *e*P P 06 13 34.4 +1.2
comp=Z,49nm,1.6s
CHMT **Chamberlain Mo** 83.39 38 *e*P P 06 13 33.5 +0.3
LOHW **Long Hollow** 83.40 42 *e*P P 06 13 34.1 +0.8
comp=Z,20nm,1.4s
QLMT **Earthquake Lak** 83.46 40 *e*P P 06 13 35.5 +1.9
FLWY **Flagg Ranch** 83.56 41 *e*P P 06 13 35.3 +1.2
comp=Z,24nm,1.1s
YFT **Old Faithful** 83.65 41 *e*P P 06 13 37.3 +2.7
comp=Z,18nm,1.4s
YMR **Madison River** 83.68 40 *e*P P 06 13 36.3 +1.6
comp=Z,37nm,1.4s
BW06 **Boulder Array** 83.68 43 P P 06 13 35.4 +0.7
baz=242,SNR=15
BW06 **Boulder Array** 83.68 43 *e*P P 06 13 34.6 -0.2
comp=Z,0.4nm,0.8s
PD31 **Pinedale Array** 83.68 43 *e*P P 06 13 34.8 0.0
PDAR **Pinedale Array** 83.68 43 P P 06 13 35.0 +0.2
comp=Z,7.3nm,0.8s,baz=213,slow=3.4,SNR=43
PDAR LR LR 06 43 35.0
comp=Z,301nm,20.8s,baz=244,slow=30
BOZ **Bozeman (W)** 83.74 39 P P 06 13 36.0 +1.1
baz=241
BOZ **Bozeman (W)** 83.74 39 *e*P P 06 13 35.7 +0.8
BOZ pmax pmax
comp=Z,17nm,1.3s
BOZ **Bozeman (W)** 83.74 39 *e*P P 06 13 35.7 +0.8
comp=Z,17nm,1.3s
H17A **Grant Village** 83.79 41 P P 06 13 37.1 +1.8
baz=242
H17A **Grant Village** 83.79 41 *e*P P 06 13 36.6 +1.3
comp=Z,14nm,1.3s
BJI **Beijing** 83.84 314 P P 06 13 37.0 +1.7
BJI sP sP 06 14 13.6 +23
BJI S **S** 06 23 49.5 -6.8
BJI SS **SS** 06 29 22.8 -1.9
BJI pmax pmax
comp=Z,12nm,2.2s
BJI pmax pmax
comp=Z,230nm,3.8s
BJI LR LR
comp=Z,190nm,14.3s
BJI LR LR
comp=Z,270nm,17.2s
BJI LR LR
comp=Z,250nm,22.0s
SMCO **Snowmass** 83.84 47 *e*P P 06 13 36.8 +0.9
comp=Z,29nm,1.5s
LKWY **Lake** 83.98 41 *e*P P 06 13 38.5 +2.2
LKWY pmax pmax
comp=Z,18nm,1.3s
LKWY **Lake** 83.98 41 *e*P P 06 13 38.5 +2.2
comp=Z,18nm,1.3s
EGAK **Eagle** 84.07 14 *e*P P 06 13 36.9 +0.9
comp=Z,25nm,1.4s
WALA **Waterton Lakes** 84.12 36 *e*P P 06 13 36.8 +0.1
comp=Z,5.8nm,1.0s
BILL **Bilibino** 84.16 353 *i*P P 06 13 36.5 +0.2
BILL pmax pmax
comp=Z,6.0nm,1.1s
BILL **Bilibino** 84.16 353 *e*P P 06 13 37.0 +0.7
comp=Z,9.1nm,1.0s
SDCO **Great Sand Dun** 84.30 49 P P 06 13 39.2 +1.1
baz=246,SNR=9.6
SDCO **Great Sand Dun** 84.30 49 *e*P P 06 13 38.6 +0.5
comp=Z,15nm,1.4s
COLD **Coldfoot** 84.42 10 *e*P P 06 13 39.0 +1.3
comp=Z,19nm,1.1s
T25A **Trinidad** 84.85 49 P P 06 13 41.3 +0.5
baz=246
T25A **Trinidad** 84.85 49 *e*P P 06 13 40.8 0.0
comp=Z,11nm,1.4s
MSTX **Muleshoe** 84.85 53 P P 06 13 41.6 +0.8
baz=248,SNR=7.9
MSTX **Muleshoe** 84.85 53 *e*P P 06 13 40.8 0.0
comp=Z,34nm,1.4s
RLMT **Red Lodge** 84.95 41 P P 06 13 42.5 +1.3
baz=243
RLMT **Red Lodge** 84.95 41 *e*P P 06 13 42.3 +1.1
comp=Z,22nm,1.4s
GCMT **Greycliff** 85.02 40 *e*P P 06 13 42.4 +1.1
ENH **Enshi** 85.03 303 *e*P P 06 13 43.3 +1.6
832A **Faith Ranch, C** 85.04 59 P P 06 13 42.9 +1.2
baz=250
Q24A **Divide** 85.05 48 P P 06 13 43.0 +1.1
baz=246,SNR=6.5
Q24A **Divide** 85.05 48 *e*P P 06 13 43.1 +1.1
comp=Z,20nm,1.3s
ISCO **Idaho Springs** 85.06 47 P P 06 13 43.2 +1.2
baz=246
ISCO **Idaho Springs** 85.06 47 *e*P P 06 13 42.5 +0.6
ISCO pmax pmax
comp=Z,8.0nm,1.3s
ISCO **Idaho Springs** 85.06 47 *e*P P 06 13 42.5 +0.6
comp=Z,8.2nm,1.3s
N23A **Red Feather La** 85.29 46 P P 06 13 44.0 +1.0
baz=245
933A **Laredo** 85.39 60 P P 06 13 44.5 +1.1
baz=250
833A **Chaparral WMA,** 85.54 59 P P 06 13 45.4 +1.2
baz=250
K22A **Casper** 85.64 44 P P 06 13 46.0 +1.4
baz=245
K22A **Casper** 85.64 44 *e*P P 06 13 45.0 +0.4
comp=Z,8.9nm,1.1s
034A **Hebbronville** 85.71 61 P P 06 13 46.5 +1.5
baz=250
733A **Divot King Ran** 85.75 59 P P 06 13 46.8 +1.6
baz=250
CMIG **Matias Romero** 85.93 71 LR LR 06 43 25.7
comp=Z,285nm,18.7s,baz=236,slow=30
JCT **Junction City** 85.94 57 P P 06 13 46.9 +0.7
baz=250
JCT **Junction City** 85.94 57 *e*P P 06 13 45.9 -0.3
JCT pmax pmax
comp=Z,20nm,1.4s
JCT **Junction City** 85.94 57 *e*P P 06 13 45.9 -0.3
comp=Z,20nm,1.4s
EGMT **Eagleton** 86.01 38 P P 06 13 46.9 +0.8
baz=242
EGMT **Eagleton** 86.01 38 *e*P P 06 13 46.6 +0.5
comp=Z,20nm,1.4s
934A **Benavides** 86.02 60 P P 06 13 48.2 +1.6
baz=250
AMTX **Amarillo** 86.03 52 P P 06 13 47.7 +1.1
baz=248
GYA **Guiyang** 86.08 299 *e*P P 06 13 47.3 +0.2
GYA pP sP 06 14 13.8 +12
GYA sP pP 06 14 25.5 +27
GYA PP **PP** 06 17 10.4 +2.6
GYA SKS **SKSac** 06 24 01.3 -10
GYA S **SKKSac** 06 24 11.0 -7.4
GYA pmax pmax
comp=Z,10.0nm,1.0s
633A **Saathoff Ranch** 86.10 58 P P 06 13 48.5 +1.5
baz=250,SNR=11
035A **Encino** 86.15 61 P P 06 13 47.8 +0.6
baz=251
834A **Tilden** 86.17 60 P P 06 13 48.6 +1.3
baz=250,SNR=7.5
PSI **Prapat** 86.30 274 P P 06 13 48.8 +0.4
comp=Z,1.2nm,0.3s,baz=159,slow=5.9,SNR=3.2
PSI **Prapat** 86.30 274 *e*P P 06 13 48.1 -0.4
PSI **Prapat** 86.30 274 *e*P P 06 13 48.1 -0.4
PSI *e*PcP **PcP** 06 13 53.8 +2.8
734A **La Parita Cree** 86.41 59 P P 06 13 50.2 +1.7
baz=250
533A **Kerrville** 86.42 58 P P 06 13 49.4 +0.8
baz=250,SNR=16
433A **Art** 86.61 57 P P 06 13 49.9 +0.5
baz=250,SNR=15
634A **China Grove, S** 86.75 59 P P 06 13 50.8 +0.6
baz=250
ABTX **Abilene, Hawle** 86.81 55 P P 06 13 51.4 +0.9
baz=250,SNR=14
ABTX **Abilene, Hawle** 86.81 55 *e*P P 06 13 51.3 +0.9
comp=Z,41nm,1.3s
XAN **Xi'an** 86.82 306 P P 06 13 52.8 +2.4
XAN pP sP 06 14 19.0 +13
XAN sP pP 06 14 29.5 +28
XAN PP **PP** 06 17 20.0 +6.4
XAN SKS **SKSac** 06 24 09.0 -6.0
XAN S **SKKSac** 06 24 21.6 -1.9
XAN SS **SS** 06 30 10.0 +1.0
XAN pmax pmax
comp=Z,5.0nm,1.1s
XAN pmax pmax
comp=Z,41nm,5.9s
XAN LR LR
comp=Z,130nm,16.8s
XAN LR LR
comp=Z,230nm,20.9s
XAN LR LR
comp=Z,220nm,19.5s
835A **Beeville** 86.82 60 P P 06 13 51.7 +1.2
baz=251
534A **Blanco** 86.87 58 P P 06 13 51.4 +0.7
baz=250,SNR=16
KSCO **Kaye Shedlock'** 86.87 48 P P 06 13 51.8 +1.1
baz=248
333A **Richland Sprin** 86.89 57 P P 06 13 51.5 +0.7
baz=250,SNR=6.7
735A **Kenedy** 87.03 59 P P 06 13 52.2 +0.7
baz=251
MAW **Mawson** 87.16 199 P P 06 13 51.7 +0.3
comp=Z,4.9nm,1.1s,baz=107,slow=2.6,SNR=3.9
MAW LR LR 06 50 37.3
comp=Z,443nm,18.2s,baz=73,slow=34
233A **Rising Star** 87.19 56 P P 06 13 53.0 +0.7
baz=250
635A **Leesville** 87.23 59 P P 06 13 53.8 +1.3
baz=251,SNR=6.0
434A **Burnet** 87.30 57 P P 06 13 53.4 +0.6
baz=250,SNR=12
HHC **Hu-ho-hao-te** 87.38 314 *e*P P 06 13 54.3 +1.2
HHC sP sP 06 14 30.8 +23
HHC S **S** 06 24 24.5 -6.9
HHC pmax pmax
comp=Z,26nm,1.2s
HHC pmax pmax
comp=Z,77nm,4.6s
133A **Hamilton Ranch** 87.38 55 P P 06 13 54.9 +1.7
baz=250
334A **Lometa** 87.49 57 P P 06 13 54.9 +1.2
baz=250,SNR=6.2
535A **Dale** 87.61 58 P P 06 13 55.4 +1.1
baz=251
X32A **Elmer** 87.71 54 P P 06 13 55.1 +0.4

baz=250
Z33A Whitaker Ranch 87.73 55 P P 06 13 55.3 +0.5
baz=250
J25A Sunshine Ranch 87.76 44 P P 06 13 55.6 +0.8
baz=247
234A Clairette 87.80 56 P P 06 13 55.6 +0.5
baz=250
435B Jarrell 87.84 57 P P 06 13 56.0 +0.6
baz=251
636A Smothers Creek 87.85 59 P P 06 13 56.0 +0.5
baz=251
RSSD Black Hills 87.89 43 P P 06 13 56.0 +0.4
baz=246
RSSD Black Hills 87.89 43 eP P 06 13 55.3 -0.3
RSSD pmax pmax
comp=Z,8.0nm,1.2s
RSSD Black Hills 87.89 43 eP P 06 13 55.3 -0.3
comp=Z,8.3nm,1.2s
W32A Sentinel 87.98 53 P P 06 13 56.6 +0.6
baz=250
134A White-Moore Ra 88.03 56 P P 06 13 57.1 +0.9
baz=250
536A Bastrop 88.04 58 P P 06 13 56.8 +0.5
baz=251
I25A Rochford 88.06 43 P P 06 13 56.8 +0.4
baz=247
Y33A Hilltop Ranch, 88.08 54 P P 06 13 57.0 +0.5
baz=250
335A Moody 88.13 57 P P 06 13 57.8 +1.0
baz=251
J26A Sides Ranch, S 88.22 44 P P 06 13 58.2 +1.2
baz=247
WHTX Lake Whitney, 88.34 56 P P 06 13 58.8 +1.1
baz=251
V32A Arapaho 88.34 52 P P 06 13 58.7 +1.0
baz=250
X33A Lawton 88.36 54 P P 06 13 58.6 +0.8
baz=250
H25A Fruitdale 88.38 43 P P 06 13 58.6 +0.9
baz=247
W33A Caddo, Fort Co 88.59 53 P P 06 13 59.4 +0.5
baz=250
U32A Winter Ranch, 88.60 52 P P 06 13 59.5 +0.6
baz=250
336A Riesel 88.64 57 P P 06 13 59.7 +0.6
baz=251
I26A New Underwood 88.64 44 P P 06 13 59.8 +0.8
baz=247
537A Green Hill Far 88.65 58 P P 06 13 59.8 +0.6
baz=252
G25A Newell 88.73 42 P P 06 14 00.2 +0.9
baz=247
INK Inuvik 88.73 14 P P 06 13 59.3 +0.6
comp=Z,2.5nm,0.9s,baz=192,slow=5.6,SNR=7.4
INK Inuvik 88.73 14 eP P 06 13 59.6 +0.9
INK pmax pmax
comp=Z,6.0nm,1.1s
INK Inuvik 88.73 14 eP P 06 13 59.6 +0.9
comp=Z,6.4nm,1.1s
Y34A Reagan Ranch, 88.75 54 P P 06 14 00.3 +0.7
baz=251
CBKS Cedar Bluff 88.90 49 P P 06 14 00.4 +0.2
baz=249
X34A Smith Ranch, M 88.90 54 P P 06 14 01.5 +1.2
baz=251
J27A Elkhorn Farm, 88.91 45 P P 06 14 01.1 +0.8
baz=248
H26A Fairpoint 88.92 43 P P 06 14 00.8 +0.5
baz=247
T32A Huddler Ranch, 88.93 51 P P 06 14 00.8 +0.3
baz=250
Z35A Perchaven, San 88.94 55 P P 06 14 00.9 +0.4
baz=251
V33A Lossen Ranch, 88.96 52 P P 06 14 00.9 +0.3
baz=250
F25A Bowman 88.99 42 P P 06 14 01.2 +0.7
baz=247
KMI Kunming 89.02 296 P P 06 14 05.3 +3.9
KMI pP sP 06 14 32.3 +16
KMI sP pP 06 14 45.1 +33
KMI S S 06 24 41.1 -6.8
KMI sS sS 06 25 25.8 +19
KMI pmax pmax
comp=Z,7.0nm,1.4s
KMI pmax pmax
comp=Z,48nm,3.7s
KMI LR LR
comp=Z,170nm,16.9s
KMI LR LR
comp=Z,200nm,15.7s
KMI LR LR
comp=Z,280nm,25.0s
S32A Newby Ranch, P 89.10 51 P P 06 14 01.4 +0.1
baz=250
I27A Quinn 89.19 44 P P 06 14 02.1 +0.6
baz=248
E25A Miller Ranch, 89.25 41 P P 06 14 03.1 +1.3
baz=247
U33A Lingo Farm, Me 89.29 52 P P 06 14 02.8 +0.6
baz=250
G26A Maurine 89.30 42 P P 06 14 02.7 +0.7
baz=247
538A Harpers Horsep 89.38 59 P P 06 14 03.0 +0.4
baz=252
H27A Howes 89.39 43 P P 06 14 02.6 +0.2
baz=248
337A Centerville 89.39 57 P P 06 14 03.5 +0.8
baz=252
T33A Patterson Ranc 89.41 51 P P 06 14 03.2 +0.6
baz=250
F26A Lodgepole 89.47 42 P P 06 14 03.3 +0.5
baz=247
J28A Allard Ranch, 89.50 45 P P 06 14 03.1 +0.1
baz=248
X35A Drake 89.50 54 P P 06 14 03.4 +0.3
baz=251
R32A Long Quarter, 89.52 50 P P 06 14 03.3 +0.1
baz=250
DGMT Dagmar 89.54 39 P P 06 14 03.6 +0.6
baz=246
DGMT Dagmar 89.54 39 eP P 06 14 03.0 0.0
comp=Z,28nm,1.1s
V34A Guthrie 89.55 53 P P 06 14 03.6 +0.3
baz=251
438A Sam Houston St 89.55 58 P P 06 14 03.8 +0.3
baz=252
D25A Fairfield 89.56 41 P P 06 14 03.8 +0.6
baz=247
Z36A Blue Ridge 89.57 55 P P 06 14 03.8 +0.4
baz=251
O31A Woolen Ranch, 89.66 48 P P 06 14 03.8 0.0
baz=250
237A Washetta, Mont 89.67 57 P P 06 14 04.1 +0.1
baz=252
U34A Anderson Ranch 89.73 52 P P 06 14 04.2 0.0
baz=251
U34A Anderson Ranch 89.73 52 eP P 06 14 03.2 -1.0
comp=Z,55nm,1.9s
I28A Midland 89.76 44 P P 06 14 04.5 +0.3
baz=248
S33A Kaszmaul Farm, 89.76 51 P P 06 14 05.0 +0.7
baz=250
G27A Dupree 89.77 43 P P 06 14 04.9 +0.8
baz=248
C25A Freed Ranch, W 89.82 40 P P 06 14 05.4 +1.1
baz=247
Q32A Meitler Ranch, 89.82 49 P P 06 14 05.3 +0.8
baz=250
W35A Tecumseh 89.82 53 P P 06 14 04.7 0.0
baz=251
E26A Carlson Angus 89.84 41 P P 06 14 05.5 +1.0
baz=248
338A Crockett 89.87 58 P P 06 14 05.5 +0.6
baz=252
Y36A Durant 89.89 55 P P 06 14 05.5 +0.5
baz=251
F27A Lemmon 89.89 42 P P 06 14 05.5 +0.8
baz=248
137A Heron Place, G 89.90 56 P P 06 14 05.5 +0.5
baz=252
CD2 Chengdu 89.91 302 P P 06 14 04.6 -0.6
CD2 pmax pmax
comp=Z,1.0nm,0.6s
539A Cross D Ranch, 89.97 59 P P 06 14 05.8 +0.4
baz=252
P32A Huiting Farm, 90.00 49 P P 06 14 05.8 +0.4
baz=250
R33A Olander Ranch, 90.02 50 P P 06 14 06.0 +0.5
baz=250
X36A Centrahoma 90.05 54 P P 06 14 06.2 +0.5
baz=251
V35A Meyer Ranch, C 90.05 53 P P 06 14 06.3 +0.6
baz=251
D26A Manning 90.07 41 P P 06 14 06.5 +1.0
baz=248
B25A Knox Farm, Ray 90.10 40 P P 06 14 06.6 +1.0
baz=247
J29A Okreek 90.11 45 P P 06 14 06.5 +0.7
baz=249
439A Center Grove, 90.15 58 P P 06 14 06.9 +0.7
baz=252
N31A Bailey Ranch, 90.16 48 P P 06 14 07.4 +1.3
baz=250
T34A McClaskey Farm 90.19 52 P P 06 14 07.0 +0.8
baz=251
238A Jacksonville 90.23 57 P P 06 14 07.5 +0.9
baz=252
G28A Parade 90.32 43 P P 06 14 07.7 +0.9
baz=249
M31A Lambtecht Ranc 90.32 47 P P 06 14 07.3 +0.4
baz=250
W36A Wetumka 90.32 54 P P 06 14 07.5 +0.6
baz=252
U35A Pawnee 90.33 52 P P 06 14 07.4 +0.5
baz=251
K30A Basset 90.34 46 P P 06 14 07.2 +0.3
baz=249
I29A Vivian Onida 90.35 44 P P 06 14 07.2 +0.3
baz=249
Q33A Connelly Farm, 90.36 50 P P 06 14 07.4 +0.4
baz=251
A25A Svangstu Ranch 90.39 39 P P 06 14 07.7 +0.7
baz=247
E27A Carson 90.40 42 P P 06 14 07.9 +0.8
baz=248
Y37A Hugo 90.43 55 P P 06 14 08.1 +0.6
baz=252
138A Matatall Enter 90.45 56 P P 06 14 08.2 +0.6
baz=252
O32A Brockman Farm, 90.45 48 P P 06 14 08.2 +0.7
baz=250
S34A Willow Spring 90.47 51 P P 06 14 08.3 +0.7
baz=251
339A Huntington 90.48 58 P P 06 14 08.7 +1.0
baz=252
CMAR Chiang Mai Arr 90.51 289 P P 06 14 09.6 +1.4
comp=Z,1.5nm,0.3s,baz=96,slow=3.0,SNR=7.6
CMAR LR LR 06 50 06.8
comp=Z,224nm,21.4s,baz=106,slow=32
NATX Nacogdoches 90.52 57 P P 06 14 09.1 +1.1
baz=252
C26A Wahner Farm, P 90.58 40 P P 06 14 09.4 +1.5
baz=248
H29A Onida 90.62 44 P P 06 14 09.0 +0.9
baz=249
J30A Dallas 90.65 45 P P 06 14 08.6 +0.3
baz=250
T35A Sooner Cattle 90.67 52 P P 06 14 09.0 +0.4
baz=251
F28A McLaughlin 90.68 42 P P 06 14 08.9 +0.5
baz=249
L31A Butterfield Fa 90.70 46 P P 06 14 09.2 +0.6
baz=250
B26A Jensen Ranch, 90.71 40 P P 06 14 09.2 +0.7
baz=248
Z38A Mt. Pleasant 90.72 56 P P 06 14 09.0 +0.2
baz=252
V36A Jenks 90.75 53 P P 06 14 09.0 +0.1
baz=252
239A Gary 90.76 57 P P 06 14 09.2 +0.2
baz=252
O33A Hebron 90.89 49 P P 06 14 10.2 +0.6
baz=251
I30A Oacoma 90.90 45 P P 06 14 10.1 +0.7
baz=250
TUL1 Leonard 90.90 53 P P 06 14 10.3 +0.6
baz=252
YKB5 Yellowknife Ar 90.91 24 eP P 06 14 08.8 -0.2
YKA Yellowknife Ar 90.91 24 P P 06 14 08.8 -0.1
comp=Z,4.2nm,1.1s,baz=240,slow=4.3,SNR=27
C27A Sayler Ranch, 90.91 41 P P 06 14 10.2 +0.7
baz=248
K31A O'Neill 90.92 46 P P 06 14 10.1 +0.5
baz=250
BGNE Belgrade 90.93 47 P P 06 14 10.4 +0.7
baz=250
W37B Quinton 90.94 54 P P 06 14 10.1 +0.2
baz=252
YKW3 Yellowknife Ar 90.94 24 eP P 06 14 09.7 +0.6
comp=Z,8.8nm,1.4s
Q34A Chapman 90.99 50 P P 06 14 10.8 +0.8
baz=251
E28A Huff 91.01 42 P P 06 14 10.5 +0.6
baz=249
A26A Wade Farm, Ken 91.03 39 P P 06 14 10.8 +0.9
baz=248
S35A Otter Creek Ra 91.06 51 P P 06 14 10.8 +0.5
baz=252
U36A Oologah 91.10 53 P P 06 14 11.1 +0.6
baz=252
J31A Geddes 91.16 45 P P 06 14 11.5 +0.8
baz=250
PLCA Paso Flores 91.18 133 LR LR 06 45 55.1
comp=Z,381nm,21.6s,baz=278,slow=30
T36A Boggs Farm, Ca 91.19 52 P P 06 14 11.7 +0.7
baz=252
L32A Elgin 91.23 47 P P 06 14 12.0 +1.0
baz=250
X38A Whitesboro 91.27 54 P P 06 14 11.9 +0.5
baz=252
P34A Walnut Farm, R 91.27 49 P P 06 14 12.2 +0.9
baz=251
B27A Peters Farms, 91.32 40 P P 06 14 12.1 +0.8
baz=248
240A Hunter Patters 91.34 57 P P 06 14 12.1 +0.4
baz=253
R35A Emporia Munici 91.35 51 P P 06 14 12.2 +0.6
baz=252
V37A Hulbert 91.39 53 P P 06 14 12.4 +0.5
baz=252
LZH Lanzhou 91.42 307 eP P 06 14 12.8 +0.5
LZH pP sP 06 14 41.3 +14
LZH sP pP 06 14 52.3 +29
LZH pmax pmax
comp=Z,22nm,1.2s
441A DeRidder 91.43 59 P P 06 14 12.8 +0.6
baz=253
341A Kurthwood 91.61 58 P P 06 14 13.0 0.0
baz=253
S36A Lake Cedric, C 91.62 51 P P 06 14 13.4 +0.5
baz=252
Q35A Mercer Eighty, 91.64 50 P P 06 14 13.6 +0.6
baz=252
X39A Fountain Ranch 91.78 55 P P 06 14 14.0 +0.2
baz=253
T37A Cheneyville 18 91.94 52 P P 06 14 14.9 +0.5
baz=252
V38A Canehill 91.96 53 P P 06 14 14.8 +0.3
baz=253
Z40A Long Farm, Mag 91.99 56 P P 06 14 15.3 +0.6
baz=253
Q36A Arnold C. Orve 92.10 50 P P 06 14 15.9 +0.8
baz=252
A28A Rude Farm, Bot 92.12 40 P P 06 14 15.9 +0.9
baz=249
E30A Jud 92.14 42 P P 06 14 15.9 +0.8
baz=250
U38A Gravette 92.15 53 P P 06 14 15.9 +0.5
baz=253
141A Papa Simpson, 92.19 57 P P 06 14 16.1 +0.4
baz=253
S37A Fort Scott 92.20 52 P P 06 14 16.3 +0.7
baz=252
MIAR Mount Ida 92.22 55 P P 06 14 16.4 +0.6
baz=253
W39A Magazine 92.25 54 P P 06 14 16.5 +0.6
baz=253
Y40A Okolona 92.30 55 P P 06 14 16.7 +0.6
baz=253
L34A Svendsen Farm, 92.37 47 P P 06 14 16.9 +0.6
baz=252
R37A Teagarden Farm 92.37 51 P P 06 14 16.9 +0.5
baz=252
T38A Diamond 92.39 52 P P 06 14 17.1 +0.5
baz=253
D30A Buchanan 92.44 42 P P 06 14 17.4 +0.9
baz=250
H32A Carlson Farm, 92.45 45 P P 06 14 17.3 +0.6
baz=251
P36A Good Intent, A 92.49 50 P P 06 14 17.4 +0.6
baz=252
V39A Pettigrew 92.54 54 P P 06 14 17.7 +0.4
baz=253
443A Delano Plantat 92.60 59 P P 06 14 17.8 +0.2
baz=254
G32A Webster 92.65 44 P P 06 14 18.2 +0.7
baz=251
242A Grayson 92.65 58 P P 06 14 18.2 +0.4
baz=254
ECSD EROS Data Cent 92.76 45 P P 06 14 18.8 +0.7
baz=252
ECSD EROS Data Cent 92.76 45 eP P 06 14 18.5 +0.4
comp=Z,22nm,1.6s
A29A Manning Farm, 92.76 40 P P 06 14 18.6 +0.7
baz=250
X40A Basin Creek Fa 92.79 55 P P 06 14 19.0 +0.6
baz=253
W40A Ferguson Farm, 92.81 54 P P 06 14 19.5 +1.0
baz=253
C30A Mose, Pekin 92.82 41 P P 06 14 19.1 +0.9
baz=250
E31A Nome 92.82 42 P P 06 14 19.2 +0.9
baz=251
U39A Green Forest 92.83 53 P P 06 14 18.8 +0.3
baz=253
S38A Stockton 92.86 52 P P 06 14 19.1 +0.5
baz=253
H33A Prehn Over Nor 92.97 45 P P 06 14 19.6 +0.5
baz=252
N36A Muff Farm, Cla 93.03 49 P P 06 14 20.6 +1.2
baz=252
R38A Fenwick Farm, 93.03 51 P P 06 14 19.7 +0.3
baz=253
J34A George 93.07 46 P P 06 14 20.2 +0.6
baz=252
SNAA Sanae 93.08 178 P P 06 14 19.0 -0.2
P37A Lathrop 93.11 50 P P 06 14 20.2 +0.4
baz=253
VNA3 Neumayer Olymp 93.12 176 P P 06 14 19.2 -0.1
V40A Witts Springs 93.17 54 P P 06 14 20.7 +0.5
baz=254
U40A Yellville 93.30 53 P P 06 14 21.2 +0.5
baz=254
C31A Landman Farms, 93.33 41 P P 06 14 21.0 +0.4
baz=251
S39A Bolivar 93.33 52 P P 06 14 21.1 +0.3
baz=253
M36A Felix, Anita 93.33 48 P P 06 14 21.4 +0.6
baz=253
SONM Songino Array 93.33 319 P P 06 14 21.1 +0.4
comp=Z,0.6nm,1.1s,baz=163,slow=5.4,SNR=3.1
SONM LR LR 06 51 37.3
comp=Z,164nm,21.9s,baz=96,slow=32
G33A Ortonville 93.34 44 P P 06 14 21.2 +0.5
baz=252
X301 Greenbrier Sit 93.34 55 eP P 06 14 20.1 -0.9
comp=Z,12nm,1.3s
A30A Hoffart Farm, 93.35 40 P P 06 14 21.1 +0.4
baz=251
JTS JuntasAbangare 93.36 80 eP P 06 14 19.0 -2.5
JTS pmax pmax
comp=Z,34nm,1.6s
JTS JuntasAbangare 93.36 80 eP P 06 14 18.9 -2.5
comp=Z,34nm,1.6s
I34A Hadley 93.37 45 P P 06 14 21.1 +0.2
baz=252
K35A Storm Lake 93.41 47 P P 06 14 21.4 +0.3
baz=252
O37A Wolven Farm, M 93.43 49 P P 06 14 21.5 +0.3
baz=253
Y42A Garnett, Star 93.44 56 P P 06 14 21.8 +0.4
baz=254
W41A Tony Mavity, V 93.44 55 P P 06 14 21.7 +0.3
baz=254
W41B Gary Mavity, V 93.44 55 P P 06 14 21.8 +0.4
baz=254
Q38A Cooks Store, C 93.47 51 P P 06 14 21.6 +0.2
baz=253
545A Edgard 93.47 60 P P 06 14 21.9 +0.2
baz=254
B31A Greenbush Farm 93.58 41 P P 06 14 22.2 +0.5
baz=251
VNA2 Neumayer--Watz 93.59 176 P P 06 14 21.0 -0.4
baz=184,slow=4.9
L36A Harm Buss Farm 93.62 47 P P 06 14 22.7 +0.6
baz=253
H34A Spellman Lake, 93.62 45 P P 06 14 22.4 +0.4
baz=252
F33A 5 Mile Ranch, 93.64 44 P P 06 14 22.4 +0.3
baz=252
R39A Chumby, Stover 93.72 51 P P 06 14 22.8 +0.2
baz=254
P38A Dawn 93.72 50 P P 06 14 22.7 +0.1
baz=253
T40A Mansfield 93.78 53 P P 06 14 23.0 0.0
baz=254
VNA1 Neumayer--Stat 93.80 176 P P 06 14 17.4 -5.0
G34A Benson 93.89 44 P P 06 14 23.6 +0.4
baz=252
O38A Galt 93.91 50 P P 06 14 23.9 +0.4
baz=253
S40A Lebanon 93.92 52 P P 06 14 24.0 +0.5
baz=254
K36A Gilmore City 93.93 47 P P 06 14 24.0 +0.5
baz=253
Q39A Willow Grove F 93.97 51 P P 06 14 24.0 +0.2
baz=254
J36A Seneca 1, Swea 94.21 46 P P 06 14 25.2 +0.4
baz=253
N38A Joes South For 94.27 49 P P 06 14 25.5 +0.4
baz=254
H35A Sunnyside Ranc 94.28 45 P P 06 14 25.2 +0.2
baz=253
L37A Phoenix Point, 94.28 48 P P 06 14 25.4 +0.3
baz=253
B32A Ashes, Strandq 94.28 41 P P 06 14 25.3 +0.4
baz=252
R40A Maddies Statio 94.29 52 P P 06 14 25.5 +0.3
baz=254
A32A Rocking H Ranc 94.47 41 P P 06 14 25.9 +0.2
baz=252
M38A Pleasantville 94.48 48 P P 06 14 26.1 +0.1
baz=254
245A Little AP, Sta 94.49 58 P P 06 14 26.5 +0.2
baz=255
K37A Belmond 94.54 47 P P 06 14 27.0 +0.7
baz=253
E34A Wadena 94.59 43 P P 06 14 26.9 +0.5
baz=253
O39A Kirksville 94.63 50 P P 06 14 27.1 +0.4
baz=254
Q40A Laux Farm, Aux 94.63 51 P P 06 14 27.0 +0.2
baz=254
G35A Watkins 94.66 44 P P 06 14 27.4 +0.7
baz=253
AGMN Agassiz Nation 94.68 41 P P 06 14 27.3 +0.5
baz=252
346A Big Creek Wild 94.68 59 P P 06 14 27.3 +0.2
baz=255
Y44A Strider, Charl 94.74 56 P P 06 14 27.4 0.0
baz=255
D34A Park Rapids 94.74 43 P P 06 14 27.8 +0.7
baz=253
J37A Redenius Farm, 94.76 47 P P 06 14 27.8 +0.6
baz=254
F35A Swanville 94.79 44 P P 06 14 27.8 +0.4
baz=253
P40A Paris 94.80 50 P P 06 14 27.6 0.0
baz=254
N39A Derby Farms, D 94.83 49 P P 06 14 28.1 +0.4
baz=254
H36A Jessenland, He 94.86 45 P P 06 14 28.4 +0.7
baz=253
Z45A Winona 95.00 57 P P 06 14 29.0 +0.4
baz=255
I37A Lemond, Waseca 95.06 46 P P 06 14 29.2 +0.6
baz=254
O40A La Belle 95.09 50 P P 06 14 29.2 +0.4
baz=254
K38A Parkersburg 95.12 47 P P 06 14 29.5 +0.6
baz=254
A33A Warroad 95.17 41 P P 06 14 29.7 +0.7
baz=253
447A Lucedale 95.20 60 P P 06 14 29.7 +0.2

baz=255
ULM Lac du Bonnet 95.26 39 LR LR 06 51 49.3
comp=Z,595nm,19.8s,baz=262,slow=32
347A Saraland 95.44 59 P **P** **06 14 31.0 +0.3**
baz=255
F36A Milaca 95.50 44 P **P** **06 14 31.2 +0.6**
baz=254
B34A Aery, Baudette 95.50 41 P **P** **06 14 31.2 +0.6**
baz=253
J38A Wedel Dairy, R 95.52 47 P **P** **06 14 31.2 +0.5**
baz=254
H37A Dierke Farm, C 95.55 45 P **P** **06 14 31.2 +0.3**
baz=254
Z46A Louisville 95.56 57 P **P** **06 14 31.2 0.0**
baz=255
C35A Jirik Farms, M 95.71 42 P **P** **06 14 31.8 +0.3**
baz=254
Y46A Houston 95.80 57 P **P** **06 14 32.3 +0.1**
baz=256
SPMN Marine on St. 95.81 45 P **P** **06 14 32.5 +0.5**
baz=254
SPMN Marine on St. 95.81 45 *e*P **P** **06 14 31.2 -0.7**
comp=Z,8.8nm,1.1s
I38A Scanlan Farm, 95.81 46 P **P** **06 14 32.3 +0.3**
baz=254
E36A McGregor 95.86 43 P **P** **06 14 32.6 +0.4**
baz=254
B35A Bob, Littlefor 96.06 42 P **P** **06 14 33.6 +0.6**
baz=254
D36A Goodland 96.10 43 P **P** **06 14 33.9 +0.6**
baz=254
C36A Pine Crest Far 96.47 42 P **P** **06 14 35.5 +0.5**
baz=254
D37A Cotton 96.58 43 P **P** **06 14 36.0 +0.6**
baz=255
EYMN Ely 97.39 42 P Pdif 06 14 39.7 +0.5
baz=256
C38A Sawbill Land. 97.48 43 P Pdif 06 14 40.1 +0.5
baz=256
MKAR Makanchi Array 109.21 315 PKiKP **PKiKP** **06 19 34.6 -1.0**
comp=Z,0.6nm,0.6s,baz=107,slow=1.5,SNR=4.6
MKAR PKKPab **PKKPab** **06 30 54.3 +0.9**
comp=Z,0.1nm,0.2s,baz=298,slow=2.6,SNR=3.7
KURK Kurchatov 111.64 316 ⇑*i*PKIKP **PKiKP** **06 19 40.1 +0.1**
AAK Ala-Archa 114.76 310 ⇑*i*PKIKP PKPdf 06 19 45.7 -0.8
BVAR Borovoye Array 116.47 322 PKP **PKPdf** **06 19 48.6 -0.6**
comp=Z,1.4nm,0.6s,baz=41,slow=4.6,SNR=9.2
BRVK Borovoye 116.53 322 ⇓*i*PKIKP **PKPdf** **06 19 48.7 -0.7**
ZRNK Zerenda 117.31 322 *e*PKIKP **PKPdf** **06 19 50.2 -0.7**
ZRNK Zerenda 117.31 322 *e*PKPdf **PKPdf** **06 19 50.2 -0.7**
ARU Arti 122.12 328 *i* PKIKP **PKPdf** **06 19 59.6 -0.4**
ARU 06 21 37.2
ARU 06 27 02.0
ARU SS SS 06 38 04.8 -6.4
ARU MLR MLR
comp=Z,306nm,23.0s
ARU Arti 122.12 328 *e*PKPdf **PKPdf** **06 19 59.7 -0.4**
ABKAR Akbulak array 123.74 319 *e*PKPdf **PKPdf** **06 20 03.6 +0.3**
ARCES ARCESS Array B 124.22 351 PKP **PKPdf** **06 20 03.1 -0.6**
comp=Z,2.5nm,0.8s,baz=347,slow=1.6,SNR=5.3
GEYT Alibeck 127.70 306 PKP **PKPdf** **06 20 11.2 -0.1**
comp=Z,1.1nm,0.3s,baz=29,slow=3.3,SNR=2.0
KLMR Klimovskoe 127.95 339 *e*PKIKP **PKPdf** **06 20 09.6 -1.4**
KLMR pmax pmax
comp=Z,18nm,1.4s
FINES FINESS Array B 131.37 346 PKP **PKPdf** **06 20 17.2 -0.3**
comp=Z,0.7nm,0.7s,baz=69,slow=3.3,SNR=2.9
OBN Obninsk 133.15 335 *i* PKIKP **PKPdf** **06 20 22.6 +1.6**
OBN pmax pmax
comp=Z,6.0nm,0.9s
VSU Vasula 133.81 344 ⇓*e*PKIKP **PKPdf** **06 20 20.2 -2.0**
ZEI Tsey 136.49 317 *i* PKIKP **PKPdf** **06 20 31.8 +3.8**
ZEI pmax pmax
comp=Z,6.0nm,1.0s
KIV Kislovodsk 136.73 319 *i* PKIKP **PKPdf** **06 20 29.7 +1.4**
KIV pmax pmax
comp=Z,4.0nm,1.1s
GNI Garni 137.04 313 ⇓*i*PKIKP **PKPdf** **06 20 30.7 +1.7**
GNI pmax pmax
comp=Z,53nm,1.2s
NEY Neytrino 137.04 318 ⇑*i*PKIKP **PKPdf** **06 20 29.3 +0.3**
AKASG Malin Array Be 139.40 336 PKP **PKPdf** **06 20 31.4 -1.4**
comp=Z,0.4nm,0.5s,baz=36,slow=2.3,SNR=5.1
KIEV Kiev 139.41 336 ⇑*i*PKIKP **PKPdf** **06 20 35.8 +3.0**
KOLS Kolonicke sedl 143.40 340 *e*PKP **PKPdf** **06 20 44.1 +4.0**
KOLS *e* 06 20 48.3
CLL Collm 143.44 351 *e*PKPdf **PKPdf** **06 20 41.0 +1.0**
CLL *i* 06 20 43.3
comp=Z,4.0nm,0.9s
CLL *e*pPKPdf pPKPdf 06 21 06.0 +14
CLL *e* 06 24 00.0
CLL *e*PKSdf **PKSdf** **06 24 14.0 -1.5**
CLL LmV 07 34 00.0
comp=Z,200nm,18.3s
CLL Collm 143.44 351 *e*PKIKP **PKPdf** **06 20 41.2 +1.2**
CLL Collm 143.44 351 *e*PKPdf **PKPdf** **06 20 41.2 +1.2**
KMBO Kilima Mbogo 143.57 246 PKP PKPbc 06 20 39.2 +0.1
comp=Z,4.8nm,1.0s,baz=69,slow=7.6,SNR=6.2
KMBO Kilima Mbogo 143.57 246 PKIKP PKPbc 06 20 39.3 +0.2
KMBO pmax pmax
comp=Z,3.0nm,0.8s
KMBO Kilima Mbogo 143.57 246 *e*PKPdf PKPbc 06 20 40.0 +0.9
UZH Uzhgorod 143.65 340 *e*PKIKP **PKPdf** **06 20 41.0 +0.5**
UZH *e* 06 21 12.0
CRVS Cervenica-Dubn 143.69 341 *e*PKP **PKPdf** **06 20 41.9 +1.3**
BRG Berggiesshubel 143.70 350 *e*PKP **PKPdf** **06 20 41.4 +0.9**
comp=Z,7.4nm,1.6s
DPC Dobruska-Polom 143.74 347 *e*PKP **PKPdf** **06 20 40.8 +0.1**
DPC Dobruska-Polom 143.74 347 *e*PKIKP **PKPdf** **06 20 40.8 +0.1**
MORC Moravsky Berou 143.99 345 *e*PKIKP **PKPdf** **06 20 40.8 -0.3**
MORC Moravsky Berou 143.99 345 *e*PKPdf **PKPdf** **06 20 40.8 -0.3**
VRI Vrincioaia 144.22 333 ⇑*i*P **PKPab** **06 20 38.2 -1.2**
VRI Vrincioaia 144.22 333 ⇑PKIKP **PKPab** **06 20 38.2 -1.2**
GOPC GO Pecny, Ondr 144.47 348 *e*PKP **PKPdf** **06 20 42.3 +0.4**
GOPC GO Pecny, Ondr 144.47 348 *e*PKIKP **PKPdf** **06 20 42.3 +0.4**
VRAC Vranov 144.66 346 ⇑*i*P **PKPab** **06 20 37.9 -3.0**
VRAC Vranov 144.66 346 ⇑PKHKP **PKPab** **06 20 37.9 -3.0**
BR13 Keskin Array S 144.69 319 *e*PKPdf PKPbc 06 20 42.2 +0.6
BRTR Keskin Array B 144.69 319 PKP **PKPab** **06 20 41.6 0.0**
comp=Z,17nm,0.9s,baz=116,slow=2.9,SNR=48
BRTR Keskin Array B 144.69 319 *c*PKIKP PKPbc 06 20 41.9 +0.2
BRTR pmax pmax
comp=Z,17nm,0.9s
VYHS Vyhne 144.83 343 *e*PKP **PKPdf** **06 20 42.8 +0.2**
MLR Muntele Rosu 144.85 333 ⇓*i*P **PKPab** **06 20 38.2 -3.7**
MLR Muntele Rosu 144.85 333 ⇓PKHKP **PKPab** **06 20 38.2 -3.7**
MLR Muntele Rosu 144.85 333 *e*PKPbc **PKPbc** **06 20 40.8 -1.1**
SNF Seneffe 144.91 0 PKP **PKPdf** **06 20 42.8 +0.2**
PSZ Piszkesteto 145.04 342 ⇓*i*P **PKPbc** **06 20 41.0 -1.4**
PSZ Piszkesteto 145.04 342 ⇓PKIKP **PKPbc** **06 20 41.0 -1.4**
PSZ Piszkesteto 145.04 342 *e*PKPbc **PKPbc** **06 20 41.9 -0.5**
SLNF Slenfeh 145.07 311 *e*P PKPbc 06 20 34.9 -8.2
DRGR 145.08 338 ⇑*i*P **PKPab** **06 20 42.9 +0.3**
DRGR 145.08 338 ⇑PKIKP **PKPab** **06 20 42.9 +0.3**
ANTO Ankara 145.14 320 *e*PKIKP **PKPdf** **06 20 44.1 +0.6**
ANTO Ankara 145.14 320 *e*PKPbc **PKPdf** **06 20 44.1 +0.6**
BR231 Keskin MP Arra 145.16 320 *e*PKPbc **PKPbc** **06 20 42.5 -0.6**
KHC Kasperske Hory 145.44 349 *e*PKP **PKPab** **06 20 44.2 +0.3**
KHC *e*pPKP pPKP 06 21 13.9
KHC Kasperske Hory 145.44 349 *e*PKIKP **PKPab** **06 20 44.2 +0.3**
KHC *e* 06 21 13.9
KHC Kasperske Hory 145.44 349 *e*PKPdf **PKPdf** **06 20 43.7 0.0**
ARR Arges 145.51 334 ⇑*i*P **PKPab** **06 20 45.2 +0.9**
GERES GERESS Array B 145.70 349 PKPbc **PKPdf** **06 20 43.8 -0.4**
comp=Z,2.2nm,0.8s,baz=29,slow=3.0,SNR=16
WLF Walferdange 145.72 358 PKP **PKPab** **06 20 45.4 +0.6**
WLF Walferdange 145.72 358 PKP2 **PKPab** **06 20 45.4 +0.6**
WLF Walferdange 145.72 358 *e*PKPdf **PKPab** **06 20 45.4 +0.6**
SIRR Siria 145.91 338 ⇓*i*P **PKPbc** **06 20 45.0 -0.2**
CONA Conrad Observa 146.12 346 *i* PKPab **PKPab** **06 20 46.4 -0.1**
comp=Z,12nm,1.3s
BZS Buzias 146.48 338 ⇑*i*P **PKPbc** **06 20 46.7 -0.2**
BZS Buzias 146.48 338 ⇑PKP2 **PKPbc** **06 20 46.7 -0.2**
MOA Molln 146.54 348 *i* PKPab **PKPbc** **06 20 47.5 +0.5**
comp=Z,8.4nm,1.0s
ARSA Arzberg 146.83 346 *i* PKPab **PKPbc** **06 20 48.2 +0.3**
comp=Z,4.5nm,1.0s
BFO Black Forest 146.92 355 *i* PKP2 **PKPab** **06 20 49.4 -0.1**
BFO Black Forest 146.92 355 *e*PKPdf **PKPab** **06 20 51.3 +1.9**
PKSM Moragy 146.95 342 ⇑*i*P **PKPab** **06 20 45.3 -0.9**
PKSM Moragy 146.95 342 ⇑PKIKP **PKPdf** **06 20 45.3 -0.9**
CSS Mathiatis 147.45 312 *e*PKPdf **PKPbc** **06 20 49.5 -0.5**
KBA Koelnbreinsper 147.46 349 *i* PKiKP **PKPab** **06 20 51.7 -0.2**
comp=Z,6.8nm,1.0s
SOKA Soboth 147.49 346 PKPbc **PKPbc** **06 20 49.1 -0.8**
comp=Z,11nm,1.0s
RETA Reutte 147.49 352 *i* PKiKP **PKiKP** **06 20 53.4 +1.5**
comp=Z,7.1nm,1.1s
MPEP Malo Peshtene 147.51 333 *i* P **PKPab** **06 20 52.5 +0.6**
MOTA Moosalm 147.58 351 *i* PKiKP **PKiKP** **06 20 52.2 -0.1**
comp=Z,12nm,1.2s
OBKA Obir 147.75 347 *i* PKiKP **PKPbc** **06 20 51.4 +0.8**
comp=Z,7.4nm,1.3s
ISP Isparta 147.78 319 ⇓*i*PKP2 **PKPbc** **06 20 50.0 -0.9**
DAVA Damuels 147.80 353 *i* PKPab **PKPab** **06 20 53.8 +0.7**
comp=Z,11nm,1.4s
MYKA Terra Mystica 147.83 348 *e*PKiKP **PKiKP** **06 20 51.9 -0.8**
comp=Z,6.3nm,1.1s
ABTA Abfaltersbach 147.93 349 *i* PKPbc **PKPdf** **06 20 48.3 +0.3**
comp=Z,7.9nm,1.0s
FETA Feichten 147.95 352 *i* PKPbc **PKPdf** **06 20 49.1 +1.0**
comp=Z,14nm,1.2s
KDZ Kurdzhali 148.06 329 *i* P **PKPab** **06 20 54.3 +0.1**
FUORN Ofenpass-Fuorn 148.41 352 *e*PKPbc **PKPbc** **06 20 52.9 +0.4**
TUE Stuetta 148.66 353 *e*PKPbc **PKPbc** **06 20 53.7 +0.6**
MMB Musomiste 148.91 331 *i* P **PKPbc** **06 20 52.7 -1.0**
SENIN Lac Senin/Sane 148.96 356 *e*PKPab **PKPab** **06 21 02.0 +4.1**
KKB Krupnik 148.99 332 *i* P **PKPbc** **06 20 54.5 +0.7**
SSB Saint Sauveur 150.14 360 *e*PKIKP **PKPbc** **06 20 55.7 -0.9**
SSB Saint Sauveur 150.14 360 *e*PKPbc **PKPbc** **06 20 55.7 -0.9**
TIP Timpagrande 153.85 338 *e*PKPbc **PKPbc** **06 21 06.2 +1.0**
ES19 SONSECA Array 154.67 15 *e*PKPab **PKPab** **06 21 22.9 +1.2**
ESDC Sonseca Array 154.68 15 PKPbc **PKPbc** **06 21 06.2 -0.8**
comp=Z,0.1nm,0.3s,baz=270,slow=1.9,SNR=3.0
ESDC PKPab **PKPab** **06 21 22.5 +0.8**
comp=Z,1.1nm,0.7s,baz=323,slow=3.7,SNR=4.9

JMA ***24*** *06:01:57.2±0.2, 39.°13N×142.°96E, h35km±4km, M3.3*
IDC ***24*** *06:02:01.5±3.0, 39.°71N×141.°71E, h0km, mb3.5/3, mb1 3.6/4, mb1mx3.2/52, mbtmp3.4/4, ML3.0/1, Error ellipse: s-maj=77.5km s-min=30.8km az=72.0*
ISC 24 06:01:55.0±2.4, 39.2N±0.1×143.1E±0.2, h16km, n13, σ0§66/10, mb3.7/3, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
MIYJ	**Miyakonagasawa**	**1.02**	**290**			P	**Pn**	**06 02 15.0**	**+0.3**
MIYJ						S	**Sb**	**06 02 27.5**	**+0.1**
OFUJ	**Ofunato**	**1.09**	**262**			P	**Pb**	**06 02 15.4**	**-0.2**
JOM	**Ohasama**	**1.39**	**280**			P	**Pb**	**06 02 20.5**	**-0.1**
JMK	**Ichinoseki**	**1.46**	**259**			P	**Pn**	**06 02 20.7**	**0.0**
JKZ	**Kuzumaki**	**1.53**	**300**			P	**Pb**	**06 02 23.0**	**0.0**
JIO	**Ouri**	**1.55**	**240**			P	**Pn**	**06 02 21.1**	**-0.9**
MJAR	**Matsushiro Arr**	**4.69**	**236**			Pn	**Pn**	**06 03 06.6**	**+1.4**
	1.0nm,0.3s,baz=34,slow=14,SNR=13								
H11N2	**WAKE ISLAND Hy**	**28.29**	**127**			T	T	06 38 30.2	
	baz=317								
H11N1	**WAKE ISLAND Hy**	**28.30**	**127**			T	T	06 38 27.8	
	baz=317,slow=74								
H11N3	**WAKE ISLAND Hy**	**28.31**	**127**			T	T	06 38 35.6	
	baz=317,slow=74								
MKAR	**Makanchi Array**	**44.08**	**300**			P	**P**	**06 10 02.2**	**-0.1**
	0.2nm,0.5s,baz=80,slow=8.9,SNR=2.1								
KURBB	**Kurchatov Arra**	**45.70**	**307**			P	**P**	**06 10 14.7**	**-0.3**
	0.4nm,0.4s,baz=78,slow=8.8,SNR=4.2								
WRA	**Warramunga Arr**	**59.44**	**190**			P	P	06 12 08.0	+11
	0.5nm,0.7s,baz=6.7,slow=6.9,SNR=4.6								

ROM ***24*** *06:04:25.5±0.4, 43.°10N×15.°88E, h20km, Ml2.9/24, Error ellipse: s-maj=6.1km s-min=3.2km az=53.0*
CSEM ***24*** *06:04:28.9±0.1, 42.°99N×15.°62E, h20km, ML3.4/4, Error ellipse: s-maj=3.0km s-min=2.4km az=103.0*
PRU ***24*** *06:04:28.6, 43.°14N×16.°00E, h0km*
ISC 24 06:04:26.0±1.2, 43.02N±0.02×15.68E±0.03, h1km±11km, n124, σ1§01/146, Adriatic Sea

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
CAFR	**Castel Frentan**	**1.26**	**232**			Pn	**Pn**	**06 04 50.8**	**+0.1**
CAFR						Sn	**Sn**	**06 05 10.5**	**+2.3**
	974nm,1.1s								
CAFR	**Castel Frentan**	**1.26**	**232**			Pn	**Pn**	**06 04 50.8**	**+0.1**
SGRT	**San Giovanni R**	**1.26**	**178**			Pn	**Pg**	**06 04 50.1**	**-0.1**
SGRT	**San Giovanni R**	**1.26**	**178**			Pn	**Pg**	**06 04 50.1**	**-0.1**
FRES	**Fresagrandinar**	**1.28**	**216**			Pn	**Pg**	**06 04 50.4**	**-0.1**
FRES						Sn	**Sn**	**06 05 09.9**	**+1.1**
	479nm,0.9s								
FRES	**Fresagrandinar**	**1.28**	**216**			Pn	**Pg**	**06 04 50.4**	**-0.1**
FRES						Sn	**Sn**	**06 05 09.9**	**+1.1**
	479nm,0.9s								
MSAG	**Monte S. Angel**	**1.31**	**172**			Pn	**Pg**	**06 04 50.8**	**-0.4**
MSAG	**Monte S. Angel**	**1.31**	**172**			Pn	**Pg**	**06 04 50.8**	**-0.4**
MS1	**Monte Sant'Ang**	**1.32**	**171**	*e*Pn		Pn	**Pn**	**06 04 52.4**	**+0.7**
CIGN	**Sant'Elia a Pi**	**1.48**	**203**			Pn	**Pn**	**06 04 53.9**	**+0.2**
	132nm,0.7s								
CIGN	**Sant'Elia a Pi**	**1.48**	**203**			Pn	**Pn**	**06 04 53.9**	**+0.2**
	132nm,0.7s								
VCEL	**Villa Celiera**	**1.49**	**246**			Pn	**Pn**	**06 04 53.7**	**-0.3**
	160nm,0.6s								
VCEL	**Villa Celiera**	**1.49**	**246**			Pn	**Pn**	**06 04 53.7**	**-0.3**
	160nm,0.6s								
STON	**Ston**	**1.49**	**95**	*e*Pn		Pn	**Pn**	**06 04 53.5**	**-0.4**
STON						Sn	**Sn**	**06 05 15.1**	**+1.0**
STON	**Ston**	**1.49**	**95**	*e*Pn		Pn	**Pn**	**06 04 53.5**	**-0.4**
STON						Sn	**Sn**	**06 05 15.0**	**+1.0**
TRIV	**Trivento**	**1.50**	**214**			Pn	**Pn**	**06 04 53.6**	**-0.5**
	330nm,0.8s								
TRIV	**Trivento**	**1.50**	**214**			Pn	**Pn**	**06 04 53.6**	**-0.5**
	330nm,0.8s								
UDBI	**Udbina**	**1.51**	**2**	*e*Pn		Pn	**Pn**	**06 04 54.0**	**-0.3**
UDBI						Sn	**Sn**	**06 05 16.3**	**+1.6**
UDBI	**Udbina**	**1.51**	**2**	*e*Pn		Pn	**Pn**	**06 04 54.0**	**-0.3**
UDBI						Sn	**Sn**	**06 05 16.3**	**+1.6**
TERO	**Teramo**	**1.57**	**256**			Pn	**Pn**	**06 04 54.9**	**-0.2**
	87nm,0.7s								
TERO	**Teramo**	**1.57**	**256**			Pn	**Pn**	**06 04 54.9**	**-0.2**
	87nm,0.7s								
AOI	**Ancona**	**1.61**	**290**			Pn	**Pn**	**06 04 55.0**	**-0.5**
	70nm,0.8s								
AOI	**Ancona**	**1.61**	**290**			Pn	**Pn**	**06 04 55.0**	**-0.5**
	70nm,0.8s								
INTR	**Introdacqua**	**1.65**	**233**			Pn	**Pn**	**06 04 55.8**	**-0.4**
	178nm,0.6s								
INTR	**Introdacqua**	**1.65**	**233**			Pn	**Pn**	**06 04 55.8**	**-0.4**
	178nm,0.6s								
NVLJ	**Novalja**	**1.65**	**340**	*e*Pn		Pn	**Pn**	**06 04 56.5**	**+0.4**
NVLJ						Sn	**Sg**	**06 05 19.7**	**+0.6**
NVLJ	**Novalja**	**1.65**	**340**	*e*Pn		Pn	**Pn**	**06 04 56.5**	**+0.4**
NVLJ						Sn	**Sg**	**06 05 19.7**	**+0.6**
BSSO	**Busso**	**1.67**	**209**			Pn	**Pn**	**06 04 56.7**	**+0.2**
	188nm,0.9s								
BSSO	**Busso**	**1.67**	**209**			Pn	**Pn**	**06 04 56.7**	**+0.2**
	188nm,0.9s								
MOCO	**Biccari - m.te**	**1.69**	**193**			Pn	**Pn**	**06 04 56.4**	**-0.3**
	146nm,0.8s								
FAGN	**Fagnano**	**1.71**	**245**			Pn	**Pn**	**06 04 57.4**	**+0.4**
	153nm,0.5s								
FAGN	**Fagnano**	**1.71**	**245**			Pn	**Pn**	**06 04 57.4**	**+0.4**
	153nm,0.5s								
MIDA	**Miranda**	**1.73**	**218**			Pn	**Pn**	**06 04 56.5**	**-0.8**
	138nm,0.6s								
MIDA	**Miranda**	**1.73**	**218**			Pn	**Pn**	**06 04 56.5**	**-0.8**
	138nm,0.6s								
SMA1	**SAN MARTINO**	**1.76**	**258**			Pn	**Pn**	**06 04 58.1**	**+0.3**
	135nm,1.1s								
SMA1	**SAN MARTINO**	**1.76**	**258**			Pn	**Pn**	**06 04 58.1**	**+0.3**
	135nm,1.1s								
SACR	**S. Croce Del S**	**1.77**	**204**			Pn	**Pn**	**06 04 58.3**	**+0.5**
	73nm,0.6s								
SACR	**S. Croce Del S**	**1.77**	**204**			Pn	**Pn**	**06 04 58.3**	**+0.5**
	73nm,0.6s								
AQU	**L'Aquila**	**1.80**	**249**	*e*Pn		Pn	**Pb**	**06 04 59.7**	**-0.1**
RM32	**Poggio Cancell**	**1.81**	**257**			Pn	**Pn**	**06 04 58.8**	**+0.4**
	53nm,0.9s								
RM32	**Poggio Cancell**	**1.81**	**257**			Pn	**Pn**	**06 04 58.8**	**+0.4**
	53nm,0.9s								
CING	**Cingoli**	**1.85**	**282**			Pn	**Pn**	**06 04 59.5**	**+0.6**
CING	**Cingoli**	**1.85**	**282**			Pn	**Pn**	**06 04 59.5**	**+0.6**
PTRJ	**Pietraroja**	**1.86**	**208**			Pn	**Pn**	**06 04 58.7**	**-0.3**
	307nm,0.7s								
PTRJ	**Pietraroja**	**1.86**	**208**			Pn	**Pn**	**06 04 58.7**	**-0.3**
	307nm,0.7s								
CERA	**Filignano**	**1.88**	**222**			Pn	**Pb**	**06 05 00.8**	**-0.3**
	125nm,0.7s								
CERA	**Filignano**	**1.88**	**222**			Pn	**Pb**	**06 05 00.8**	**-0.3**
	125nm,0.7s								
RM33	**Pellescritta (**	**1.88**	**255**			Pn	**Pn**	**06 05 00.3**	**+0.9**
	79nm,0.9s								
RM33	**Pellescritta (**	**1.88**	**255**			Pn	**Pn**	**06 05 00.3**	**+0.9**
	79nm,0.9s								
NRCA	**Norcia**	**1.89**	**265**			Pn	**Pn**	**06 04 59.6**	**+0.1**
	67nm,1.1s								
NRCA	**Norcia**	**1.89**	**265**			Pn	**Pn**	**06 04 59.6**	**+0.1**
	67nm,1.1s								
SGG	**Gregorio Mates**	**1.89**	**211**			Pn	**Pn**	**06 04 59.8**	**+0.3**
SGG	**Gregorio Mates**	**1.89**	**211**			Pn	**Pn**	**06 04 59.8**	**+0.3**
VVLD	**Villa Vallelon**	**1.90**	**234**			Pn	**Pn**	**06 05 00.0**	**+0.4**
	84nm,0.7s								
VVLD	**Villa Vallelon**	**1.90**	**234**			Pn	**Pn**	**06 05 00.0**	**+0.4**
	84nm,0.7s								
PSB1	**Pescosannita**	**1.90**	**200**			Pn	**Pn**	**06 04 59.9**	**+0.3**
	89nm,0.7s								
PSB1	**Pescosannita**	**1.90**	**200**			Pn	**Pn**	**06 04 59.9**	**+0.3**
	89nm,0.7s								
VAGA	**Valle Agricola**	**1.92**	**214**			Pn	**Pn**	**06 05 00.0**	**+0.1**
	132nm,0.8s								
VAGA	**Valle Agricola**	**1.92**	**214**			Pn	**Pn**	**06 05 00.0**	**+0.1**
	132nm,0.8s								
POFI	**Posta Fibreno**	**1.95**	**229**			Pn	**Pn**	**06 05 00.5**	**+0.2**
	69nm,0.8s								
POFI	**Posta Fibreno**	**1.95**	**229**			Pn	**Pn**	**06 05 00.5**	**+0.2**
	69nm,0.8s								
PTQR	**Pietraquaria**	**1.95**	**240**			Pn	**Pn**	**06 05 01.3**	**+1.0**
PTQR	**Pietraquaria**	**1.95**	**240**			Pn	**Pn**	**06 05 01.3**	**+1.0**
CDT	**Castel del Mon**	**1.98**	**167**	*e*Pn		Pn	**Pn**	**06 05 00.9**	**+0.2**
LNSS	**Leonessa**	**1.98**	**259**			Pn	**Pn**	**06 05 00.6**	**-0.2**
	52nm,0.6s								
LNSS	**Leonessa**	**1.98**	**259**			Pn	**Pn**	**06 05 00.6**	**-0.2**
	52nm,0.6s								
TREB	**Trebinje**	**1.99**	**98**	*e*Pn		Pn	**Pn**	**06 05 01.8**	**+1.1**
BLY	**Banja Luka**	**2.05**	**32**	*e*Pn		Pn	**Pb**	**06 05 03.8**	**-0.2**
BRY	**Bratogost**	**2.10**	**92**	*e*Pn		Pn	**Pn**	**06 05 03.1**	**+0.6**
HCY	**Herceg Novi**	**2.15**	**104**	*e*Pn		Pn	**Pn**	**06 05 03.9**	**+0.9**
UPM	**Unac-Piva**	**2.37**	**84**	*e*Pn		Pn	**Pb**	**06 05 08.5**	**-1.1**
BOJS	**Bojanci**	**2.51**	**353**	*i* Pn		Pn	**Pn**	**06 05 09.3**	**+1.4**
BOJS						*e*Sn	**Sb**	**06 05 41.6**	**-1.5**
	comp=Z,121nm,1.2s								
BOJS	**Bojanci**	**2.51**	**353**	*i* Pn		Pn	**Pn**	**06 05 09.3**	**+1.4**
BOJS						*e*Sn	**Sb**	**06 05 41.6**	**-1.5**
	comp=Z,121nm,1.2s								
HAPS	**Han Pijesak,Bl**	**2.61**	**65**	*e*Pn		Pn	**Pn**	**06 05 10.1**	**+0.7**
PDG	**Podgorica**	**2.70**	**101**	*e*Pn		Pn	**Pb**	**06 05 13.9**	**-1.2**
DRME	**Dracevica, Mon**	**2.72**	**107**	*e*Pn		Pn	**Pn**	**06 05 11.6**	**+0.8**
TAR1	**Taranto**	**2.76**	**154**	*e*Pn		Pn	**Pn**	**06 05 10.5**	**-0.9**
CRES	**Cresnjev**	**2.81**	**357**	*e*Pn		Pn	**Pn**	**06 05 13.4**	**+1.3**
BBLS	**Lazići**	**2.85**	**71**	*e*Pn		Pn	**Pn**	**06 05 14.7**	**+2.1**
CEY	**Cerknica**	**2.87**	**342**	*e*Pn		Pn	**Pn**	**06 05 13.9**	**+1.0**
LJU	**Ljubljana**	**3.14**	**345**	*e*Pn		Pn	**Pn**	**06 05 18.2**	**+1.6**
LJU						*e*Sn	**Sn**	**06 05 57.7**	**+3.1**
LJU	**Ljubljana**	**3.14**	**345**	*e*Pn		Pn	**Pn**	**06 05 17.8**	**+1.2**
TEKS	**Tekeris**	**3.18**	**60**	*e*Pn		Pn	**Pb**	**06 05 22.2**	**-1.2**
SABO	**M.te Sabotino**	**3.31**	**334**	*e*Pn		Pn	**Pn**	**06 05 19.6**	**+0.6**
SABO	**M.te Sabotino**	**3.31**	**334**	*e*Pn		Pn	**Pn**	**06 05 19.6**	**+0.6**
DIVS	**Divibare**	**3.32**	**69**	*e*Pn		Pn	**Pb**	**06 05 24.9**	**-0.8**
DRE	**Drenchia**	**3.48**	**336**	*e*Pn		Pn	**Pn**	**06 05 21.6**	**+0.4**
DRE	**Drenchia**	**3.48**	**336**	*e*Pn		Pn	**Pn**	**06 05 21.6**	**+0.4**
OBKA	**Obir**	**3.58**	**347**	*i* Pn		Pn	**Pn**	**06 05 24.2**	**+1.4**
	comp=Z,2.5nm,0.3s								
OBKA				*i* Sn		Sn	**Sn**	**06 06 05.0**	**-0.8**
	comp=Z,6.6nm,0.4s								
OBKA	**Obir**	**3.58**	**347**	Pn		Pn	**Pn**	**06 05 24.2**	**+1.4**
	comp=Z,2.5nm,0.3s								
OBKA				Sn		Sn	**Sn**	**06 06 05.0**	**-0.8**
	comp=Z,6.6nm,0.4s								
TRUS	**Trudelj**	**3.64**	**69**	*e*Pn		Pn	**Pn**	**06 05 24.9**	**+1.4**
VINO	**Villanova**	**3.66**	**333**	*e*Pn		Pn	**Pn**	**06 05 23.8**	**0.0**
VINO	**Villanova**	**3.66**	**333**	*e*Pn		Pn	**Pn**	**06 05 23.8**	**0.0**
SOKA	**Soboth**	**3.69**	**353**	*i* Pn		Pn	**Pn**	**06 05 25.5**	**+1.2**
	comp=Z,1.2nm,0.5s								
SOKA				*i* Sg		**Sg**	**Sg**	**06 06 24.7**	**+0.1**
	comp=Z,14nm,0.7s								
SOKA	**Soboth**	**3.69**	**353**	Pn		Pn	**Pn**	**06 05 25.5**	**+1.2**
	comp=Z,1.2nm,0.5s								
SOKA				Sg		**Sg**	**Sg**	**06 06 24.7**	**+0.1**
	comp=Z,14nm,0.7s								
GRUS	**Gruza**	**3.77**	**75**	*e*Pn		Pn	**Pb**	**06 05 31.3**	**-2.1**
PKSM	**Moragy**	**3.83**	**33**	*e*Pn		Pn	**Pn**	**06 05 28.1**	**+2.0**
ACOM	**Acomizza, Ital**	**3.85**	**337**	*e*Pn		Pn	**Pn**	**06 05 27.4**	**+0.9**
ACOM	**Acomizza, Ital**	**3.85**

λ-170.00000°. NP2:φ≈77.00000°, δ80.00000°, λ-17.00000°.

IDC 24 06:11:31.2±1.2, 36°.30N×141°.10E, h0km, mb3.3/3, mb1 3.7/6, mb1mx3.3/56, mbtmp3.5/6, ML3.5/3, MS3.9/1, Ms1 3.9/1, ms1mx2.5/34, Error ellipse: s-maj=37.3km s-min=20.8km az=113.0

ISCJB 24 06:11:33.1±0.8, 36°.17N±0'.05×141°.08E±0'.07, h31km, mb3.4/3, MS3.9/1, Error ellipse: s-maj=7.8km s-min=6.3km az=156.5

JMA 24 06:11:34.0±0.1, 36°.10N×141°.03E, h42km±1km, M3.6

JMA Felt I J1.

ISC 24 06:11:34.6±0.8, **36°.17N**±0'.05×**141°.04E**±0'.06, **h31**km, **n17**, σ1§**11**/15, **mb3.5/3**, **Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.49**	**198**	P		**Pb**		**06 11 43.7**	**-1.2**
CHOJ					*e*S	**Sb**		**06 11 50.5**	**-1.4**
JHO	**Hitachi**	**0.58**	**319**	P		**Pb**		**06 11 46.1**	**-0.3**
JYT	**Yasato**	**0.69**	**275**	P		**Pb**		**06 11 47.4**	**-0.7**
JYT				S		**Sb**		**06 11 56.8**	**-0.6**
JAG	**Ashikaga**	**1.31**	**282**	P		**Pn**		**06 11 56.3**	**-0.4**
JAG				S		**Sn**		**06 12 12.7**	**-0.4**
MJAR	**Matsushiro Arr**	**2.32**	**280**	Pn		**Pn**		**06 12 10.8**	**+0.2**
	6.0nm,0.3s,baz=95,slow=15,SNR=22								
MJAR				Sn		**Sn**		**06 12 38.0**	**0.0**
	6.6nm,0.3s,baz=78,slow=20,SNR=6.2								
JHJ	**Hachijo jima 2**	**3.21**	**199**	Pn		**Pn**		**06 12 23.5**	**+0.6**
	6.1nm,0.3s,baz=53,slow=19,SNR=3.6								
JHJ				Sn		**Sn**		**06 12 60.0**	**-0.2**
	26nm,0.3s,baz=75,slow=20,SNR=4.7								
ASAJ	**Asahikawa**	**9.03**	**8**	Pn		**Pn**		**06 13 27.4**	**-1.6**
	1.6nm,0.3s,baz=263,slow=6.6,SNR=9.9								
H11N2	**WAKE ISLAND Hy**	**27.98**	**119**	T		T		06 46 29.8	
	baz=312,slow=75,SNR=21								
H11N1	**WAKE ISLAND Hy**	**27.98**	**119**	T		T		06 46 34.8	
	baz=312,slow=75,SNR=19								
H11N3	**WAKE ISLAND Hy**	**28.00**	**119**	T		T		06 46 28.9	
	baz=312,slow=75,SNR=21								
H11S1	**WAKE ISLAND Hy**	**28.66**	**121**	T		T		06 47 26.2	
	baz=314,slow=76,SNR=21								
H11S3	**WAKE ISLAND Hy**	**28.66**	**121**	T		T		06 47 29.3	
	baz=314,slow=76,SNR=23								
H11S2	**WAKE ISLAND Hy**	**28.67**	**121**	T		T		06 47 26.2	
	baz=314,slow=76,SNR=24								
KAPI	**Kappang**	**45.57**	**210**	LR		LR		06 39 09.1	
	comp=Z,151nm,21.7s,baz=88,slow=36								
ILAR	**Eielson Array**	**50.38**	**32**	P		**P**		**06 20 28.8**	**+0.3**
	0.5nm,0.9s,baz=269,slow=6.6,SNR=4.0								
WRA	**Warramunga Arr**	**56.16**	**188**	P		**P**		**06 21 14.1**	**+2.7**
	0.2nm,0.4s,baz=3.2,slow=7.4,SNR=3.0								
YKA	**Yellowknife Ar**	**64.71**	**30**	P		**P**		**06 22 09.3**	**0.0**
	0.2nm,0.8s,baz=305,slow=7.4,SNR=4.0								

IDC 24 06:13:28.1±0.9, 37°.86N×144°.74E, h0km, mb3.4/5, mb1 3.7/8, mb1mx3.5/56, mbtmp3.6/8, ML3.7/3, MS4.2/1, Ms1 4.2/1, ms1mx2.5/40, Error ellipse: s-maj=30.5km s-min=19.9km az=113.0

ISCJB 24 06:13:31.0±0.7, 37°.93N±0'.05×144°.58E±0'.06, h33km, mb3.4/5, MS4.2/1, Error ellipse: s-maj=6.7km s-min=6.4km az=39.7

JMA 24 06:13:32.7±0.2, 38°.00N×144°.50E, h45km, M3.9

ISC 24 06:13:33.4±1.0, **37°.98N**±0'.05×**144°.54E**±0'.09, **h35**km, **n22**, σ1§**62**/30, **mb3.4/5**, **Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**2.51**	**297**	P		**Pn**		**06 14 11.6**	**0.0**
OFUJ					*e*S	**Sn**		**06 14 40.8**	**-0.1**
JIO	**Ouri**	**2.56**	**282**	P		**Pn**		**06 14 12.4**	**+0.1**
JIO					*e*S	**Sn**		**06 14 41.6**	**-0.6**
JMK	**Ichinoseki**	**2.78**	**292**	P		**Pn**		**06 14 15.8**	**+0.4**
JOM	**Ohasama**	**2.95**	**301**	P		**Pn**		**06 14 18.0**	**+0.3**
JOM					*e*S	**Sn**		**06 14 51.6**	**-0.2**
JANG	**Nango**	**3.35**	**316**	P		**Pn**		**06 14 23.1**	**-0.2**
JANG					*e*S	**Sn**		**06 15 01.2**	**-0.7**
JFT	**Otama**	**3.36**	**263**	S		**Sn**		**06 15 02.5**	**+0.4**
JYK	**Kaneyama**	**3.41**	**287**	P		**Pn**		**06 14 25.3**	**+1.2**
JOT	**Ohata**	**4.34**	**323**	P		**Pn**		**06 14 37.7**	**+0.9**
BSO1	**Boso 1**	**4.39**	**222**	S		**Sn**		**06 15 24.8**	**-1.8**
JCH	**Churui**	**4.72**	**349**	P		**Pn**		**06 14 41.0**	**-1.0**
JKB	**Kayabe**	**4.75**	**326**	P		**Pn**		**06 14 43.4**	**+1.0**
JKB					*e*S	**Sn**		**06 15 33.3**	**-2.8**
JRY	**Ryogami san**	**4.92**	**248**	P		**Pn**		**06 14 44.8**	**0.0**
MJAR	**Matsushiro Arr**	**5.25**	**256**	Pn		**Pn**		**06 14 50.7**	**+1.4**
	1.7nm,0.3s,baz=81,slow=15,SNR=13								
MJAR				Sn		**Sn**		**06 15 47.1**	**-1.5**
	0.2nm,0.3s,baz=86,slow=26,SNR=2.0								
MAT	**Matsushiro**	**5.25**	**256**	P		**Pn**		**06 14 51.3**	**+2.0**
MAT				S		**Sn**		**06 15 51.9**	**+3.3**
JHJ	**Hachijo jima 2**	**6.21**	**220**	Pn		**Pn**		**06 15 00.8**	**-1.7**
	4.4nm,0.3s,baz=6.7,slow=7.8,SNR=3.2								
JHJ				Sn		**Sn**		**06 16 07.0**	**-5.2**
	4.7nm,0.3s,baz=53,slow=20,SNR=2.6								
ASAJ	**Asahikawa**	**6.31**	**347**	Pn		**Pn**		**06 15 03.5**	**-0.3**
	1.8nm,0.3s,baz=218,slow=21,SNR=9.1								
ASAJ				Sn		**Sn**		**06 16 13.0**	**-1.6**
	0.9nm,0.3s,baz=221,slow=20,SNR=2.2								
MKAR	**Makanchi Array**	**45.73**	**302**	P		**P**		**06 21 52.2**	**+1.2**
	0.2nm,0.7s,baz=78,slow=9.1,SNR=2.4								
INK	**Inuvik**	**52.41**	**28**	LR		LR		06 47 10.4	
	comp=Z,243nm,20.6s,baz=216,slow=39								
WRA	**Warramunga Arr**	**58.40**	**191**	P		**P**		**06 23 24.4**	**-1.0**
	0.8nm,0.8s,baz=8.2,slow=6.9,SNR=7.0								
YKA	**Yellowknife Ar**	**61.73**	**31**	P		**P**		**06 23 47.9**	**+0.1**
	0.2nm,0.8s,baz=299,slow=6.3,SNR=3.0								
ASAR	**Alice Springs**	**62.12**	**191**	P		**P**		**06 23 50.2**	**-0.6**
	0.2nm,0.6s,baz=13,slow=9.7,SNR=3.5								
PDAR	**Pinedale Array**	**75.22**	**47**	P		**P**		**06 25 13.3**	**+0.6**
	0.5nm,0.7s,baz=282,slow=4.5,SNR=4.2								

ISCJB 24 06:18:56.2±0.3, 35°.22N±0'.01×92°.39W±0'.01, h7km±2km, Error ellipse: s-maj=2.1km s-min=1.9km az=10.3

NEIC 24 06:18:57.0, 35°.23N×92°.38W, h6km, MN3.2, After CERI.

NEIC Felt [III] at Conway, Damascus and Greenbrier. Also felt at Mountain Home and Rose Bud.

ISC 24 06:18:56.5±0.8, **35°.22N**±0'.02×**92°.40W**±0'.02, **h5**km±5km, **n131**, σ1§**32**/180, **Arkansas**

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
X301	**Greenbrier Sit**	**0.02**	**353**	*e*Pg		**Pg**		**06 18 58.0**	**+0.6**
X301					*e*Sg	**Sg**		**06 18 58.8**	**+0.7**
X201	**Greenbrier Sit**	**0.08**	**21**	*e*Pg		**Pg**		**06 18 58.8**	**+0.5**
WHAR	**Wooly Hollow**	**0.11**	**51**	*e*Pg		**Pg**		**06 18 59.1**	**+0.3**
WHAR					*e*Sg	**Sg**		**06 19 00.8**	**+0.4**
W41B	**Gary Mavity, V**	**0.13**	**110**	P		**Pg**		**06 18 59.1**	**0.0**
	baz=296,SNR=1000								
W41B				S		**Sg**		**06 19 01.2**	**+0.3**
	baz=296								
UALR	**University of**	**0.45**	**174**	*e*Pg		**Pg**		**06 19 05.6**	**+0.6**
W40A	**Ferguson Farm,**	**0.55**	**267**	P		**Pg**		**06 19 07.5**	**+0.4**
	baz=86,SNR=286								
W40A				S		**Sg**		**06 19 15.7**	**+1.4**
	baz=86								
V40A	**Witts Springs**	**0.68**	**329**	P		**Pg**		**06 19 09.3**	**-0.2**
	baz=148,SNR=323								
V40A				S		**Sg**		**06 19 18.5**	**+0.1**
	baz=148								
X40A	**Basin Creek Fa**	**0.81**	**206**	P		**Pg**		**06 19 12.4**	**+0.3**
	baz=27,SNR=112								
W39A	**Magazine**	**1.14**	**269**	P		**Pg**		**06 19 18.1**	**-0.2**
	baz=88,SNR=60								
W39A				S		**Sb**		**06 19 33.9**	**+0.2**
	baz=88								
MIAR	**Mount Ida**	**1.18**	**236**	P		**Pg**		**06 19 18.7**	**-0.4**
	baz=55,SNR=681								
MIAR	**Mount Ida**	**1.18**	**236**	*e*Pg		**Pg**		**06 19 19.0**	**-0.1**
MIAR					*e*Sg	**Sb**		**06 19 35.1**	**+0.2**
V39A	**Pettigrew**	**1.19**	**302**	P		**Pg**		**06 19 18.8**	**-0.5**
	baz=120,SNR=242								
V39A				S		**Sg**		**06 19 34.6**	**-0.2**
	baz=120								
U40A	**Yellville**	**1.19**	**342**	P		**Pg**		**06 19 18.8**	**-0.6**
	baz=161								
CCAR	**Cane Creek**	**1.40**	**158**	*e*Pn		**Pn**		**06 19 22.7**	**0.0**
CCAR					*e*Sn	**Sg**		**06 19 41.5**	**+0.1**
Y40A	**Okolona**	**1.41**	**211**	Pb		**Pb**		**06 19 23.2**	**-0.1**
	baz=31,SNR=34								
Y40A				S		**Sb**		**06 19 41.7**	**+0.2**
	baz=31								
U39A	**Green Forest**	**1.46**	**323**	Pb		**Pn**		**06 19 23.1**	**-0.4**
	baz=142								
U39A					Sb	**Sb**		**06 19 42.5**	**-0.5**
	baz=142								
HBAR	**Harrisburg**	**1.46**	**76**	*e*Pn		**Pn**		**06 19 23.3**	**-0.2**
HBAR					*e*Sn	**Sg**		**06 19 43.8**	**+0.4**
Y42A	**Garnett, Star**	**1.47**	**160**	Pb		**Pn**		**06 19 23.6**	**0.0**
	baz=341,SNR=46								
Y42A					Sg	**Sg**		**06 19 45.0**	**+1.3**
	baz=341								
QUAR	**Qualls**	**1.49**	**73**	*e*Pn		**Pn**		**06 19 23.9**	**0.0**
X39A	**Fountain Ranch**	**1.58**	**244**	Pb		**Pn**		**06 19 25.5**	**+0.4**
	baz=63,SNR=756								
X39A					Sb	**Sb**		**06 19 46.8**	**+0.4**
	baz=63								
WLAR	**White Oak Lake**	**1.64**	**201**	*e*Pn		**Pn**		**06 19 26.5**	**+0.5**
WLAR					*e*Sn	**Sn**		**06 19 46.9**	**-0.5**
HHAR	**Hobbs**	**1.64**	**311**	*e*Pn		**Pn**		**06 19 26.6**	**+0.5**
HHAR					*e*Sn	**Sb**		**06 19 48.6**	**+0.3**
W38A	**Poteau**	**1.75**	**266**	Pb		**Pb**		**06 19 28.4**	**-0.6**
	baz=84,SNR=337								
W38A					Sb	**Sg**		**06 19 52.4**	**-0.2**
	baz=84								
V38A	**Canehill**	**1.76**	**292**	Pb		**Pn**		**06 19 28.4**	**+0.7**
	baz=110,SNR=134								
V38A					Sb	**Sb**		**06 19 52.1**	**+0.4**
	baz=110								
Y43A	**Makayla and Ka**	**1.78**	**137**	Pb		**Pn**		**06 19 28.4**	**+0.5**
	baz=318,SNR=40								
Y43A					Sb	**Sb**		**06 19 52.9**	**+0.7**
	baz=318								
Y39A	**Lockesburg**	**1.90**	**228**	P		**Pn**		**06 19 29.9**	**+0.4**
	baz=47,SNR=35								
T40A	**Mansfield**	**1.93**	**357**	Pb		**Pn**		**06 19 30.8**	**+0.8**
	baz=177,SNR=50								
T40A					Sb	**Sb**		**06 19 56.7**	**+0.1**
	baz=177								
SFTN	**Shelby Forest**	**1.95**	**85**	*e*Sn		**Sb**		**06 19 57.3**	**+0.2**
T39A	**Clever**	**1.97**	**337**	Pb		**Pn**		**06 19 31.7**	**+1.1**
	baz=156,SNR=41								
T39A					Sb	**Sb**		**06 19 58.0**	**+0.3**
	baz=156								
Z42A	**Norrel Spur, H**	**1.98**	**169**	P		**Pn**		**06 19 30.6**	**0.0**
	baz=350,SNR=38								
Z41A	**Richland Creek**	**1.98**	**190**	P		**Pn**		**06 19 30.9**	**+0.2**
	baz=10.0,SNR=20								
Z41A					S	**Sn**		**06 19 56.5**	**+0.5**
	baz=10.0								
MET	**Memphis--Engin**	**2.02**	**92**	*e*Pn		**Pn**		**06 19 32.3**	**+1.1**
MET					*e*Sn	**Sn**		**06 19 56.3**	**-0.6**
U38A	**Gravette**	**2.02**	**308**	P		**Pn**		**06 19 32.0**	**+0.7**
	baz=126,SNR=61								
U38A					Sb	**Sb**		**06 19 60.0**	**+0.7**
	baz=126								
DLAR	**Dell**	**2.04**	**72**	*e*Pn		**Pb**		**06 19 32.9**	**-1.1**
X38A	**Whitesboro**	**2.07**	**255**	Pb		**Pb**		**06 19 33.7**	**-0.9**
	baz=74								
GNAR	**Gosnell**	**2.08**	**68**	*e*Pn		**Pn**		**06 19 32.4**	**+0.4**
GNAR					*e*Sn	**Sb**		**06 20 01.3**	**+0.5**
Z40A	**Long Farm, Mag**	**2.12**	**203**	P		**Pn**		**06 19 33.0**	**+0.3**
	baz=23								
Z40A					S	**Sn**		**06 19 59.8**	**+0.4**
	baz=23								
Y44A	**Strider, Charl**	**2.20**	**124**	P		**Pn**		**06 19 34.3**	**+0.7**
	baz=306,SNR=14								
Z43A	**Armstrong Fami**	**2.22**	**154**	Sb		**Sb**		**06 20 05.8**	**+0.9**
	baz=335								
PBMO	**Poplar Bluff**	**2.23**	**45**	*e*Pn		**Pn**		**06 19 34.7**	**+0.6**
PBMO					*e*Sn	**Sn**		**06 20 03.4**	**+1.4**
Y38A	**Idabel**	**2.32**	**237**	P		**Pn**		**06 19 35.7**	**+0.4**
	baz=56,SNR=40								
V37A	**Hulbert**	**2.33**	**287**	P		**Pn**		**06 19 36.6**	**+1.0**
	baz=106,SNR=72								
V37A					Sb	**Sb**		**06 20 08.8**	**+0.6**
	baz=106								
T38A	**Diamond**	**2.38**	**320**	P		**Pn**		**06 19 36.8**	**+0.7**
	baz=139,SNR=26								
S40A	**Lebanon**	**2.38**	**358**	P		**Pn**		**06 19 37.0**	**+0.9**
	baz=178,SNR=71								
S40A					Sb	**Sb**		**06 20 09.3**	**-0.1**
	baz=178								
W37B	**Quinton**	**2.49**	**269**	P		**Pn**		**06 19 38.6**	**+1.0**
	baz=87,SNR=46								
EBZ	**Ebenezer Churc**	**2.50**	**91**	*e*Pn		**Pn**		**06 19 38.1**	**+0.3**
EBZ					*e*Sn	**Sn**		**06 20 09.2**	**+0.6**
U37A	**Salina**	**2.51**	**299**	P		**Pn**		**06 19 38.7**	**+0.7**
	baz=117,SNR=21								
X37A	**Clayton**	**2.52**	**256**	P		**Pn**		**06 19 38.7**	**+0.5**
	baz=75,SNR=79								
OXF	**Oxford**	**2.56**	**105**	*e*Pn		**Pn**		**06 19 38.9**	**+0.3**
OXF					*e*Sn	**Sn**		**06 20 10.0**	**-0.1**
S39A	**Bolivar**	**2.58**	**343**	P		**Pn**		**06 19 39.8**	**+0.8**
	baz=163,SNR=49								
HALT	**Halls**	**2.59**	**74**	*e*Pn		**Pn**		**06 19 39.1**	**+0.1**
HALT					*e*Sn	**Sn**		**06 20 10.4**	**-0.4**
S38A	**Stockton**	**2.70**	**334**	P		**Pn**		**06 19 41.1**	**+0.6**
	baz=152,SNR=32								
GLAT	**Glass**	**2.74**	**67**	*e*Pn		**Pn**		**06 19 41.5**	**+0.5**
T37A	**Cheneyville 18**	**2.79**	**314**	P		**Pn**		**06 19 43.4**	**+1.6**
	baz=132,SNR=43								
TUL1	**Leonard**	**2.85**	**285**	P		**Pn**		**06 19 43.3**	**+0.6**
	baz=103,SNR=51								
TUL1	**Leonard**	**2.85**	**285**	*e*Pn		**Pn**		**06 19 43.4**	**+0.7**
Z45A	**Winona**	**2.90**	**129**	P		**Pn**		**06 19 43.6**	**+0.2**
	baz=311								
V36A	**Jenks**	**2.95**	**282**	P		**Pn**		**06 19 44.5**	**+0.6**
	baz=100,SNR=36								
R40A	**Maddies Statio**	**3.07**	**2**	P		**Pn**		**06 19 45.8**	**+0.2**
	baz=182,SNR=18								
UTMT	**University of**	**3.08**	**68**	*e*Pn		**Pn**		**06 19 45.8**	**-0.1**
R39A	**Chumby, Stover**	**3.13**	**351**	P		**Pn**		**06 19 47.2**	**+0.7**
	baz=170,SNR=27								
W36A	**Wetumka**	**3.14**	**270**	P		**Pn**		**06 19 46.4**	**-0.2**
	baz=87,SNR=9.8								
R38A	**Fenwick Farm,**	**3.20**	**338**	P		**Pn**		**06 19 48.1**	**+0.6**
	baz=157,SNR=13								
S37A	**Fort Scott**	**3.20**	**323**	P		**Pn**		**06 19 48.0**	**+0.5**
	baz=141,SNR=14								
T36A	**Boggs Farm, Ca**	**3.36**	**304**	P		**Pn**		**06 19 50.3**	**+0.6**
	baz=122,SNR=18								
PLAL	**Pickwick Lake**	**3.55**	**93**	*e*Pn		**Pn**		**06 19 52.3**	**0.0**
SIUC	**Southern Illin**	**3.57**	**45**	*e*Pn		**Pn**		**06 19 53.3**	**+0.7**
S36A	**Lake Cedric, C**	**3.59**	**315**	P		**Pn**		**06 19 53.5**	**+0.7**
	baz=133,SNR=9.6								
239A	**Gary**	**3.63**	**209**	P		**Pn**		**06 19 53.8**	**+0.4**
	baz=28,SNR=10								
R37A	**Teagarden Farm**	**3.65**	**328**	P		**Pn**		**06 19 54.4**	**+0.7**
	baz=147,SNR=12								
V35A	**Meyer Ranch, C**	**3.66**	**280**	P		**Pn**		**06 19 54.4**	**+0.5**
	baz=97,SNR=12								
W35A	**Tecumseh**	**3.67**	**270**	P		**Pn**		**06 19 54.3**	**+0.4**
	baz=88,SNR=16								
U35A	**Pawnee**	**3.71**	**289**	P		**Pn**		**06 19 55.0**	**+0.6**
	baz=107,SNR=8.1								
T35A	**Sooner Cattle**	**3.74**	**298**	P		**Pn**		**06 19 55.5**	**+0.6**
	baz=116,SNR=7.5								
Q40A	**Laux Farm, Aux**	**3.78**	**4**	P		**Pn**		**06 19 56.3**	**+0.9**
	baz=184,SNR=6.1								
245A	**Little AP, Sta**	**3.80**	**146**	P		**Pn**		**06 19 55.5**	**-0.2**
	baz=328,SNR=7.2								
SLM	**Saint Louis**	**3.83**	**26**	*e*Pn		**Pn**		**06 19 57.3**	**+1.2**
SLM					*e*Sb	**Sb**		**06 20 54.3**	**+3.2**
WVT	**Waverly**	**3.83**	**75**	*e*Pn		**Pn**		**06 19 55.9**	**-0.1**
Q38A	**Cooks Store, C**	**3.86**	**346**	P		**Pn**		**06 19 57.1**	**+0.6**
	baz=165								
341A	**Kurthwood**	**3.93**	**190**	P		**Pn**		**06 19 58.0**	**+0.5**
	baz=9.4,SNR=11								
NATX	**Nacogdoches**	**3.94**	**209**	*e*Pn		**Pn**		**06 19 57.5**	**-0.1**
Y47A	**UCPARC, Winfie**	**3.98**	**108**	P		**Pn**		**06 19 58.1**	**0.0**
	baz=291								
R36A	**Gordon, Harris**	**3.98**	**322**	P		**Pn**		**06 19 58.9**	**+0.8**
	baz=140,SNR=8.4								
V34A	**Guthrie**	**4.22**	**280**	P		**Pn**		**06 20 01.9**	**+0.4**
	baz=97,SNR=9.4								
V34A	**Guthrie**	**4.22**	**280**	*e*Pn		**Pn**		**06 20 02.2**	**+0.7**
237A	**Washetta, Mont**	**4.29**	**223**	P		**Pn**		**06 20 02.8**	**+0.4**
	baz=41								
P40A	**Paris**	**4.31**	**4**	P		**Pn**		**06 20 03.5**	**+0.8**
	baz=184,SNR=18								
U34A	**Anderson Ranch**	**4.35**	**288**	P		**Pn**		**06 20 03.5**	**+0.2**
	baz=105								
U34A	**Anderson Ranch**	**4.35**	**288**	*e*Pn		**Pn**		**06 20 04.0**	**+0.7**
U34A					*e*Pb	**Pb**		**06 20 12.0**	**-1.4**
345A	**Thompson Farm,**	**4.38**	**152**	P		**Pn**		**06 20 03.9**	**+0.2**
	baz=334								
W34A	**Bridge Creek,**	**4.40**	**272**	P		**Pn**		**06 20 04.4**	**+0.4**
	baz=89								
W34A	**Bridge Creek,**	**4.40**	**272**	*e*Pn		**Pn**		**06 20 04.8**	**+0.8**
Z48A	**Northport**	**4.41**	**113**	P		**Pn**		**06 20 04.2**	**+0.1**
	baz=296								
Q36A	**Arnold C. Orve**	**4.47**	**328**	P		**Pn**		**06 20 05.5**	**+0.6**
	baz=146,SNR=8.9								
P38A	**Dawn**	**4.49**	**349**	P		**Pn**		**06 20 06.0**	**+0.8**
	baz=168								
X34A	**Smith Ranch, M**	**4.51**	**264**	P		**Pn**		**06 20 05.7**	**+0.2**
	baz=80								
Q35A	**Mercer Eighty,**	**4.66**	**322**	P		**Pn**		**06 20 08.2**	**+0.7**
	baz=140								
USIN	**University of**	**4.69**	**53**	*e*Pn		**Pn**		**06 20 08.8**	**+0.8**
USIN					*e*Sb	**Sb**		**06 21 21.3**	**+5.3**
O40A	**La Belle**	**4.91**	**5**	P		**Pn**		**06 20 11.3**	**+0.3**
	baz=185								
OLIL	**Olney**	**4.91**	**43**	*e*Pn		**Pn**		**06 20 11.9**	**+0.9**
OLIL					*e*Sg	**Sg**		**06 21 30.4**	**-3.9**
P36A	**Good Intent, A**	**4.93**	**334**	P		**Pn**		**06 20 12.0**	**+0.8**
	baz=152,SNR=22								
W33A	**Caddo, Fort Co**	**4.97**	**271**	P		**Pn**		**06 20 12.1**	**+0.3**
	baz=87,SNR=6.6								
LRAL	**Lakeview Retre**	**4.98**	**114**	*e*Pn		**Pn**		**06 20 12.1**	**+0.2**
KSU1	**Kansas State U**	**5.13**	**320**	*e*Pn		**Pn**		**06 20 14.5**	**+0.5**
KSU1					*e*Pb	**Pb**		**06 20 28.7**	**+1.9**
Q34A	**Chapman**	**5.18**	**317**	P		**Pn**		**06 20 15.2**	**+0.5**
	baz=134,SNR=7.5								
WMOK	**Wichita Mounta**	**5.26**	**267**	*e*Pn		**Pn**		**06 20 16.6**	**+0.7**
WMOK					*e*Sg	**Sg**		**06 21 44.0**	**-1.6**
Y33A	**Hilltop Ranch,**	**5.28**	**259**	P		**Pn**		**06 20 16.0**	**0.0**
	baz=75								
SWET	**Sewanee**	**5.29**	**88**	*e*Pn		**Pn**		**06 20 16.2**	**-0.1**
P34A	**Walnut Farm, R**	**5.58**	**322**	P		**Pn**		**06 20 20.0**	**-0.2**
	baz=139,SNR=7.5								
Z33A	**Whitaker Ranch**	**5.61**	**252**	P		**Pn**		**06 20 21.5**	**+0.8**
	baz=68,SNR=9.2								
WCI	**Wyandotte Cave**	**5.75**	**57**	*e*Pn		**Pn**		**06 20 23.0**	**+0.5**
WCI					*e*Pb	**Pb**		**06 20 39.0**	**+1.8**
WCI					*e*Sb	**Sg**		**06 21 55.3**	**-5.8**
335A	**Moody**	**5.76**	**228**	P		**Pn**		**06 20 23.3**	**+0.6**
	baz=46,SNR=14								
HDIL	**Hopedale**	**5.87**	**24**	*e*Pn		**Pn**		**06 20 25.0**	**+0.9**
HDIL					*e*Sb	**Sb**		**06 21 55.0**	**+5.2**
BLO	**Bloomington**	**6.13**	**48**	*e*Pn		**Pn**		**06 20 28.2**	**+0.5**
BLO					*e*Sb	Sg		06 22 06.0	-7.3
CPCT	**Cooper Cave**	**6.44**	**86**	*e*Pn		**Pn**		**06 20 32.1**	**+0.1**
CPCT					*e*Sn	**Sb**		**06 22 01.9**	**-4.5**
CPCT					*e*Sb	Sg		06 22 13.5	-10
ABTX	**Abilene, Hawle**	**6.56**	**249**	*e*Pn		**Pn**		**06 20 33.9**	**+0.2**
ABTX					*e*Pb	Pb		06 20 55.3	+4.2
434A	**Burnet**	**6.60**	**230**	P		**Pn**		**06 20 34.1**	**-0.2**
	baz=47,SNR=17								
SFIN	**Lafayette**	**6.64**	**38**	*e*Sn		**Sn**		**06 21 51.3**	**+0.5**
SCIA	**State Center**	**6.71**	**355**	Pn		**Pn**		**06 20 36.0**	**+0.4**
SCIA					*e*Sn	**Sn**		**06 21 52.6**	**+0.1**
SCIA					*e*Sg	**Sg**		**06 22 27.1**	**-4.7**
CBKS	**Cedar Bluff**	**6.88**	**304**	*e*Pn		**Pn**		**06 20 39.2**	**+1.2**
CBKS					*e*Sg	**Sg**		**06 22 33.5**	**-3.9**
TKL	**Tuckaleechee C**	**7.05**	**84**	*e*Pn		**Pn**		**06 20 40.0**	**-0.4**
TKL					*e*Sb	Sg		06 22 34.0	-9.0
TZTN	**Tazewell**	**7.30**	**77**	*e*Pn		**Pn**		**06 20 44.4**	**+0.6**
TZTN					*e*Sg	**Sg**		**06 22 45.5**	**-5.5**
GOGA	**Godfrey**	**7.61**	**101**	*e*Pn		**Pn**		**06 20 48.5**	**+0.6**
GOGA					*e*Sb	Sg		06 22 51.0	-10
AMTX	**

VIGV	**El Vigia**	**2.61**	**41**	*eP*	**Pn**	**06 21 03.4**	**+1.3**
VIGV				*eS*	**Sn**	**06 21 33.7**	**-1.8**
SOCV	**Socops**	**2.63**	**57**	*eS*	**Sn**	**06 21 35.0**	**-0.8**
VILC	**Villavicencio,** comp=Z,26nm,0.5s	**2.79**	**193**	*eP*	**Pn**	**06 21 05.3**	**+0.9**
VILC				*eS*	**Sn**	**06 21 38.2**	**-1.3**
VILC				*i*		06 21 47.3	
GUYC	**Guyana, Colomb** comp=Z,34nm,0.5s	**2.81**	**235**	*eP*	**Pn**	**06 21 06.4**	**+1.4**
GUYC				*eS*	**Sn**	**06 21 40.8**	**+0.3**
GUYC				*i*		06 21 45.1	
DBBC	**Dabeiba** comp=Z,61nm,0.3s	**3.11**	**273**	*eP*	**Pn**	**06 21 09.2**	**+0.9**
TOLC	**Tolima** comp=Z,32nm,0.4s	**3.17**	**225**	*eP*	**Pn**	**06 21 10.4**	**+1.1**
MOTC	**Monteria, Cord**	**3.20**	**307**	⇓*iP*	**Pn**	**06 21 08.8**	**-0.6**
ELOV	**Elorza**	**3.58**	**87**	*eP*	**Pn**	**06 21 15.5**	**+1.4**
PRAC	**Prado**	**3.59**	**210**	*eP*	**Pn**	**06 21 15.4**	**+0.9**
PRAC				*eS*	**Sn**	**06 21 57.5**	**-0.1**
PRAC				*i*		06 22 04.1	
SJAC	**San Juan de Ar** comp=Z,61nm,0.3s	**3.66**	**194**	*eP*	**Pn**	**06 21 15.2**	**-0.1**
SJAC				*i*		06 21 59.9	
VIRV	**Villa del Rosa** comp=Z,32nm,0.4s	**3.69**	**10**	*eP*	**Pn**	**06 21 16.1**	**+0.5**
VIRV				*eS*	**Sn**	**06 21 56.6**	**-3.2**
SANV	**Sanarito**	**4.39**	**53**	*eP*	**Pn**	**06 21 26.3**	**+1.5**
CURV	**Curarigua**	**4.41**	**44**	*eP*	**Pn**	**06 21 26.1**	**+1.2**
DABV	**Dabajuro**	**4.71**	**31**	*eP*	**Pn**	**06 21 29.6**	**+0.7**
TEPV	**Terepaima**	**4.94**	**51**	*eP*	**Pn**	**06 21 32.7**	**+0.9**
BAUV	**El Baul**	**5.41**	**67**	*eP*	**Pn**	**06 21 37.9**	**-0.2**
MAPV	**Macapo**	**5.45**	**57**	*eP*	**Pn**	**06 21 39.4**	**+0.8**
MONV	**Montecano**	**5.93**	**31**	*eP*	**Pn**	**06 21 45.0**	**+0.1**
TURV	**Turiamo**	**6.30**	**55**	*eP*	**Pn**	**06 21 50.3**	**+0.5**

*IDC **24** 06:20:40.8±1.8,37.°57N×143.°66E,h0km,mb3.5/3, mb1 3.7/8,mb1mx3.4/57,mbtmp3.7/8,ML3.0/5,Error ellipse: s-maj=41.2km s-min=22.5km az=72.0*
*ISCJB **24** 06:20:43.6±1.0,37.°56N±0.°07×143.°53E±0.°1,h33km, mb3.6/3,Error ellipse: s-maj=11.7km s-min=10.0km az=142.6*
*JMA **24** 06:20:45.0±0.3,37.°56N×143.°42E,h46km,M3.0*

ISC 24 06:20:45.9±1.5,37.°48N±0.°08×143.°5E±0.°1,h35km,n12, σ1.°74/14,mb3.7/3,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**1.92**	**301**	S	**Sn**	**06 21 38.0**	**-1.0**
JFK	**Kawauchi**	**2.05**	**268**	P	**Pn**	**06 21 17.9**	**-0.1**
JFK				*eS*	**Sn**	**06 21 41.9**	**-0.4**
OFUJ	**Ofunato**	**2.12**	**319**	P	**Pn**	**06 21 17.6**	**-1.3**
JMM	**Marumori**	**2.14**	**281**	P	**Pn**	**06 21 18.9**	**-0.2**
MJAR	**Matsushiro Arr** 1.4nm,0.3s,baz=88,slow=25,SNR=6.3	**4.29**	**259**	Pn	**Pn**	**06 21 51.2**	**+2.4**
JHJ	**Hachijo jima 2** 8.4nm,0.3s,baz=90,slow=20,SNR=3.4	**5.28**	**216**	Pn	**Pn**	**06 22 02.5**	**+0.1**
JHJ				Sn	**Sn**	**06 22 58.3**	**-3.7**
ASAJ	**Asahikawa** 17nm,0.3s,baz=90,slow=23,SNR=5.2	**6.66**	**355**	Pn	**Pn**	**06 22 20.8**	**-0.4**
USRK	**Ussuriysk Ar.** 0.3nm,0.3s,baz=109,slow=16,SNR=4.6	**10.96**	**311**	Pn	**Pn**	**06 23 19.0**	**-1.2**
KSRS	**Korea Array** 0.1nm,0.3s,baz=108,slow=17,SNR=3.3	**12.34**	**275**	Pn	**Pn**	**06 23 41.6**	**+2.6**
MKAR	**Makanchi Array** 0.1nm,0.3s,baz=94,slow=16,SNR=4.5	**45.25**	**302**	P	**P**	**06 28 59.5**	**-0.3**
WRA	**Warramunga Arr** 0.1nm,0.3s,baz=81,slow=8.0,SNR=3.8	**57.76**	**190**	P	**P**	**06 30 34.3**	**+0.8**
ASAR	**Alice Springs** 0.9nm,0.6s,baz=7.6,slow=7.1,SNR=7.8	**61.48**	**190**	P	**P**	**06 31 00.3**	**+1.2**
	0.3nm,0.5s,baz=5.8,slow=7.4,SNR=5.8						

*ISCJB **24** 06:25:59.7±0.8,22.°03N±0.°06×121.°67E±0.°03,h18km, Error ellipse: s-maj=9.3km s-min=3.9km az=162.4*
*TAP **24** 06:25:59.3,22.°01N×121.°57E,h20km,ML2.9,D*
*JMA **24** 06:26:02.4±0.5,22.°21N×121.°73E,h21km,M3.4*

ISC 24 06:26:00.2±1.2,22.°05N±0.°06×121.°59E±0.°04,h18km,n28, σ0.°76/35,1D,Taiwan region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LAY	**Lan-yu** baz=328	**0.04**	**249**	⇓*iP*	**Pb**	**06 26 03.1**	**-0.4**
LAY				*eS*	**Sb**	**06 26 05.8**	**+0.2**
TSEB	**Hengchuen, Pin** baz=260	**0.66**	**257**	*eS*	**Sb**	**06 26 23.0**	**+1.1**
TWK1	**Hengchun** baz=264	**0.74**	**262**	*eP*	**Pb**	**06 26 13.3**	**-1.2**
EAST	**Anshuo** baz=298	**0.76**	**296**	*eP*	**Pb**	**06 26 14.4**	**-0.6**
TWG	**Pinlang** baz=330	**0.90**	**328**	*eP*	**Pb**	**06 26 16.0**	**-1.3**
SCZT	**Fangliau** baz=292	**0.95**	**290**	*eP*	**Pb**	**06 26 17.5**	**-0.7**
SSD	**Sandimen** baz=310	**1.12**	**308**	*eP*	**Pn**	**06 26 21.5**	**+0.4**
ELDTW	**Lidau** baz=336	**1.25**	**335**	*eP*	**Pn**	**06 26 22.3**	**-0.5**
TWF1	**Yuli** baz=349	**1.32**	**348**	*eP*	**Pn**	**06 26 23.0**	**-0.8**
TWF1				*eS*	**Sn**	**06 26 41.1**	**+0.1**
SGST	**Jiashian** baz=319	**1.38**	**318**	*eP*	**Pn**	**06 26 25.3**	**+0.7**
WTP	**Ta-pu** baz=324	**1.49**	**323**	*eP*	**Pb**	**06 26 28.1**	**+0.7**
CHN1	**Nanshi** baz=320	**1.49**	**319**	*eP*	**Pb**	**06 26 27.9**	**+0.4**
YUS	**Yu-Shan** baz=338	**1.55**	**338**	*eP*	**Pb**	**06 26 28.8**	**+0.2**
TWK	**Hsinying** baz=321	**1.58**	**320**	*eP*	**Pn**	**06 26 27.6**	**+0.2**
CHN4	**Tsaushan** baz=325	**1.59**	**325**	*eP*	**Pb**	**06 26 29.1**	**0.0**
CHN4				*eS*	**Sn**	**06 26 48.2**	**+0.7**
WDT	**Danda** baz=347	**1.75**	**346**	*eP*	**Pb**	**06 26 32.5**	**+0.6**
CHN5	**Tsauling** baz=332	**1.75**	**331**	*eP*	**Pb**	**06 26 31.1**	**-0.7**
SMLT	**Sun Moon Lake** baz=341	**1.93**	**341**	*eP*	**Pb**	**06 26 34.1**	**-0.8**
TYC	**Yuchr** baz=340	**1.96**	**340**	*eP*	**Pb**	**06 26 34.7**	**-0.7**
WHF	**Hehuan Shan** baz=352	**2.10**	**352**	*eP*	**Pb**	**06 26 37.3**	**-0.8**
TWT	**Tachien** baz=350	**2.22**	**350**	*eP*	**Pn**	**06 26 35.0**	**-1.4**
NSK	**Sanguang** baz=355	**2.62**	**355**	*eP*	**Pn**	**06 26 43.0**	**+1.3**
HATJ	**Hateruma jima**	**2.85**	**45**	P	**Pn**	**06 26 45.5**	**+0.7**
IRIF	**Iriomote-Funau**	**3.01**	**41**	P	**Pn**	**06 26 47.7**	**+0.8**
JKRS	**Kuro-shima**	**3.11**	**45**	P	**Pn**	**06 26 49.3**	**+0.9**
JKRS				S	**Sn**	**06 27 24.7**	**-0.4**
JIJ	**Ishigaki jima**	**3.29**	**45**	P	**Pn**	**06 26 51.2**	**+0.4**
JIJ				S	**Sn**	**06 27 29.0**	**-0.5**
JISG	**Ishigakijimahi**	**3.55**	**44**	P	**Pn**	**06 26 54.6**	**+0.2**
JISG				*eS*	**Sn**	**06 27 35.3**	**-0.7**
JTJ	**Tarama**	**3.85**	**47**	P	**Pn**	**06 26 59.4**	**+0.9**
JTJ				*eS*	**Sn**	**06 27 42.6**	**-0.7**

*IDC **24** 06:28:23.3±1.9,37.°11N×141.°35E,h0km,mb3.5/2, mb1 3.6/4,mb1mx3.2/68,mbtmp3.5/4,ML3.3/2,MS3.8/1, Ms1 3.8/1,ms1mx2.8/49,Error ellipse: s-maj=33.9km s-min=28.2km az=86.0*
*JMA **24** 06:28:28.9±0.1,37.°09N×141.°17E,h50km±1km,M3.7*
JMA Felt I J1.

ISC 24 06:28:25.9±2.4,37.°05N±0.°05×141.°30E±0.°07,h17km±15km, n22,σ0.°93/24,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.41**	**277**	P	**Pn**	**06 28 38.0**	**+1.0**
ONAJ				S	**Sn**	**06 28 44.3**	**+0.1**
JFK	**Kawauchi**	**0.46**	**313**	P	**Pn**	**06 28 38.5**	**+0.7**
JFK				S	**Sn**	**06 28 45.2**	**-0.4**
JHO	**Hitachi**	**0.74**	**233**	P	**Pn**	**06 28 41.9**	**+0.4**
JHO				S	**Sn**	**06 28 51.1**	**-1.2**
JFT	**Otama**	**0.90**	**301**	P	**Pn**	**06 28 44.7**	**+1.0**
JFT				S	**Sn**	**06 28 55.8**	**-0.6**
JMM	**Marumori**	**0.91**	**334**	P	**Pn**	**06 28 44.2**	**+0.4**
JMM				S	**Sg**	**06 28 55.4**	**0.0**
JFY	**Yanaizu**	**1.32**	**286**	P	**Pb**	**06 28 50.0**	**-0.2**
JIO	**Ouri**	**1.40**	**1**	P	**Pb**	**06 28 51.4**	**-0.1**
JOU	**Okura**	**1.40**	**339**	P	**Pb**	**06 28 51.8**	**+0.2**
JYS	**Shirataka**	**1.52**	**320**	P	**Pb**	**06 28 53.4**	**-0.3**
JYS				S	**Sn**	**06 29 12.0**	**+0.2**
JAG	**Ashikaga**	**1.61**	**248**	P	**Pn**	**06 28 53.9**	**+0.4**
JAG				S	**Sn**	**06 29 13.1**	**-0.8**
MJAR	**Matsushiro Arr** 3.0nm,0.3s,baz=80,slow=16,SNR=24	**2.54**	**259**	Pn	**Pn**	**06 29 07.2**	**+0.9**
MJAR				Sn	**Sb**	**06 29 40.5**	**-1.4**
MAT	**Matsushiro** 4.1nm,0.3s,baz=62,slow=21,SNR=5.7	**2.54**	**259**	P	**Pn**	**06 29 07.7**	**+1.4**
MAT				S	**Sn**	**06 29 39.0**	**+2.2**
ASAJ	**Asahikawa** 0.7nm,0.3s,baz=187,slow=17,SNR=5.8	**7.12**	**8**	Pn	**Pn**	**06 30 09.6**	**+0.3**
SONM	**Songino Array** 0.4nm,0.5s,baz=90,slow=7.2,SNR=2.4	**27.70**	**304**	P	**P**	**06 34 12.0**	**-1.2**
H11N2	**WAKE ISLAND Hy** baz=313	**28.23**	**121**	T	T	07 04 16.6	
H11N1	**WAKE ISLAND Hy** baz=313,slow=74	**28.24**	**121**	T	T	07 04 17.9	
H11N3	**WAKE ISLAND Hy** baz=313,slow=74	**28.25**	**121**	T	T	07 04 18.0	
H11S1	**WAKE ISLAND Hy** baz=315,slow=75,SNR=9.9	**28.95**	**123**	T	T	07 05 17.7	
H11S3	**WAKE ISLAND Hy** baz=315,slow=75,SNR=12	**28.95**	**123**	T	T	07 05 11.9	
H11S2	**WAKE ISLAND Hy** baz=315,slow=75,SNR=10	**28.96**	**123**	T	T	07 04 57.4	
TIXI	**Tiksi** comp=Z,166nm,20.5s,baz=128,slow=38	**35.26**	**353**	LR	LR	06 50 52.5	
WRA	**Warramunga Arr** 0.5nm,1.1s,baz=2.7,slow=7.3,SNR=2.8	**57.07**	**188**	P	**P**	**06 38 11.7**	**+0.6**

JMA 24 06:30:33.6±0.1,36.°69N×141.°46E,h49km±2km,M3.6, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.67**	**308**	P	Pn	06 30 46.7	-0.3
ONAJ				S	Sn	06 30 56.4	-0.3
JHO	**Hitachi**	**0.72**	**264**	P	Pn	06 30 47.3	-0.3
JFK	**Kawauchi**	**0.82**	**325**	P	Pn	06 30 48.7	-0.3
JFK				S	Sn	06 31 00.0	-0.2
JFT	**Otama**	**1.22**	**313**	P	Pn	06 30 55.5	+1.2
JFT				S	Sn	06 31 11.4	+1.7
JMM	**Marumori**	**1.29**	**336**	P	Pn	06 30 55.4	+0.2
JMM				S	Sn	06 31 12.1	+0.8
JFY	**Yanaizu**	**1.58**	**298**	P	Pn	06 31 00.6	+1.4
JAG	**Ashikaga**	**1.64**	**261**	P	Pn	06 31 01.0	+1.0
JIO	**Ouri**	**1.76**	**357**	P	Pn	06 31 01.6	-0.1
JKT	**Katashina**	**1.78**	**273**	P	Pn	06 31 03.8	+1.8
JOU	**Okura**	**1.79**	**340**	P	Pn	06 31 03.6	+1.5
JOU				S	Sn	06 31 25.8	+2.2
MAT	**Matsushiro**	**2.62**	**268**	P	Pn	06 31 15.9	+2.4
MAT				S	Sn	06 31 49.1	+5.0

*NNC **24** 06:31:54.3±1.1,44.°68N×79.°25E,h0km,mb3.5,mpv3.1, Error ellipse: s-maj=12.3km s-min=6.9km az=103.0*
*SOME **24** 06:31:54.3,44.°72N×79.°07E,h10km*

ISC 24 06:31:52.2±1.3,44.°77N±0.°03×79.°26E±0.°03,h7km±12km, n28,σ0.°93/42,20C-21D,Eastern Kazakhstan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KAPS	**Kapalarasan** 110nm,0.2s	**0.52**	**8**	⇑*iP*	**Pn**	**06 32 06.7**	**+0.7**
KAPS				⇑*iS*	**Sn**	**06 32 14.8**	**-0.2**
DJR	**Jarkent** 332nm,0.3s	**0.58**	**139**	⇑*iP*	**Pn**	**06 32 06.5**	**-0.4**
DJR				⇓*iS*	**Sb**	**06 32 13.7**	**+0.5**
KPKS	**Kokpek** 204nm,0.2s	**1.37**	**198**	*eP*	**Pb**	**06 32 18.2**	**0.0**
KPKS				*eS*	**Sb**	**06 32 35.6**	**-0.2**
PDGK	**Podgornoye** 27nm,0.5s	**1.46**	**173**	⇑P	**Pg**	**06 32 20.2**	**+0.1**
PDGK				⇑S	**Sg**	**06 32 38.6**	**-0.3**
KURS	**Kuram** 32nm,0.3s	**1.50**	**212**	*eP*	**Pb**	**06 32 20.4**	**0.0**
KURS				⇓*iS*	**Sn**	**06 32 39.5**	**+0.1**
UZB	**Uzynbulak** 66nm,0.4s	**1.64**	**186**	⇑*iP*	**Pg**	**06 32 23.2**	**-0.3**
UZB				⇑*iS*	**Sb**	**06 32 44.1**	**+0.5**
SHLS	**Shalkode** 94nm,0.4s	**1.68**	**164**	⇓*iP*	**Pg**	**06 32 24.2**	**-0.1**
SHLS				⇓*iS*	**Sg**	**06 32 46.6**	**+0.5**
ZHN	**Zhinishke** 49nm,0.2s	**1.71**	**201**	*eP*	**Pb**	**06 32 23.9**	**-0.1**
ZHN				*eS*	**Sn**	**06 32 44.8**	**+0.1**
CHKK	**Chushkaly** 54nm,0.3s	**1.85**	**242**	*eP*	**Pb**	**06 32 25.7**	**-0.7**
CHKK				*eS*	**Sb**	**06 32 49.1**	**-0.6**
AAA	**Alma-Ata** 77nm,0.2s	**2.24**	**229**	*eP*	**Pb**	**06 32 33.3**	**+0.3**
AAA				*eS*	**Sg**	**06 33 03.0**	**-1.2**
MDOK	**Medeo** 16nm,0.2s	**2.27**	**225**	*eP*	**Pb**	**06 32 32.8**	**-0.6**
MDOK				*eS*	**Sb**	**06 33 01.1**	**-0.6**
KNDC	**Almaty** 15nm,0.3s	**2.27**	**228**	⇑Pn	**Pb**	**06 32 33.1**	**-0.4**
KNDC				⇓Lg	Lg	06 33 01.6	
KUU	**Kurty** 40nm,0.3s	**2.27**	**248**	*eP*	**Pb**	**06 32 32.0**	**-1.4**
KUU				*eS*	**Sb**	**06 33 00.5**	**-1.2**
TNSS	**Tian-Shan** 27nm,0.2s	**2.41**	**225**	⇑*iP*	**Pb**	**06 32 35.1**	**-0.8**
TNSS				⇑*iS*	**Sb**	**06 33 05.8**	**-0.2**
MTBS	**Maitube** 28nm,0.4s	**2.62**	**232**	⇑*iP*	**Pb**	**06 32 38.4**	**-1.0**
MTBS				⇓*iS*	**Sb**	**06 33 11.0**	**-0.9**
MK31	**Makanchi Array** 0.5nm,0.2s,baz=219,slow=14,SNR=97	**2.93**	**45**	⇓Pn	**Pb**	**06 32 43.9**	**-0.8**
MK31				⇓Pg	**Pg**	**06 32 49.1**	**+0.8**
MK31	4.1nm,0.4s			⇓Sn	**Sb**	**06 33 20.5**	**-0.2**
MK31	5.4nm,0.4s,baz=223,slow=26			⇑Lg	Lg	06 33 28.0	
KST	**Kastek** 8.6nm,0.5s	**2.94**	**235**	⇓*iP*	**Pb**	**06 32 44.9**	**-0.1**
KST	241nm,0.3s			⇓*iS*	**Sb**	**06 33 20.4**	**-0.8**
BMNS	**Besmoynak** 20nm,0.1s	**3.08**	**239**	*eP*	**Pb**	**06 32 47.6**	**+0.3**
BMNS	168nm,0.5s			⇓*iS*	**Sb**	**06 33 24.4**	**-0.7**
TKM2	**Tokmak 2** 4.3nm,0.4s	**3.23**	**236**	⇑Pg	**Pb**	**06 32 51.2**	**+1.3**
TKM2	34nm,0.6s			⇑Lg	Lg	06 33 29.5	
AAK	**Ala-Archa** 2.1nm,0.6s	**4.06**	**240**	⇓Pn	**Pn**	**06 32 55.8**	**+1.0**
AAK	3.2nm,0.4s			⇑Pg	**Pb**	**06 33 05.1**	**+1.1**
AAK	36nm,0.6s			⇓Lg	Lg	06 33 53.8	
MRKS	**Merke** 4.6nm,0.5s	**4.81**	**247**	⇓*iP*	**Pb**	06 33 20.1	+3.3
MRKS	14nm,0.6s			⇓*iS*	**Sb**	**06 34 18.7**	**+3.7**
MNAS	**Manas** 1.8nm,0.7s	**5.41**	**247**	⇓Pn	Pg	06 33 31.7	-4.0
MNAS	12nm,0.6s			⇑Lg	Lg	06 34 35.8	
KURK	**Kurchatov** 8.2nm,0.9s	**5.96**	**356**	⇓Sn	**Sn**	**06 34 27.9**	**-1.3**
KURK	22nm,0.6s			⇑Lg	Lg	06 34 57.0	
KK31	**Karatay Array** 0.2nm,0.2s,baz=75,slow=13,SNR=16	**6.53**	**258**	⇑Pn	**Pn**	**06 33 29.1**	**+0.6**
KK31	7.8nm,0.6s			⇓Lg	Lg	06 35 10.9	
BVA0	**Borovoye Array** 5.9nm,0.9s	**10.10**	**328**	⇓Lg	Lg	06 37 07.4	
BRVK	**Borovoye** 11nm,1.2s	**10.17**	**328**	⇑Lg	Lg	06 37 07.2	
CHKZ	**Chkalovo** 5.0nm,1.1s	**10.54**	**331**	⇓Lg	Lg	06 37 27.7	
ZRNK	**Zerenda** 5.2nm,0.8s	**10.60**	**324**	⇑Lg	Lg	06 37 23.7	

*IDC **24** 06:34:25.7±2.7,35.°37N×141.°26E,h0km,mb3.3/2, mb1 3.3/4,mb1mx3.1/74,mbtmp3.2/4,ML2.7/2,Error ellipse: s-maj=56.6km s-min=25.3km az=75.0*
*ISCJB **24** 06:34:28.7±1.5,35.°44N±0.°06×141.°2E±0.°2,h33km, mb3.3/2,Error ellipse: s-maj=20.8km s-min=7.2km az=169.3*
*JMA **24** 06:34:29.6±0.1,35.°46N×141.°15E,h29km±2km,M2.8*

ISC 24 06:34:29.9±1.6,35.°43N±0.°06×141.°1E±0.°2,h33km,n16, σ0.°93/12,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.36**	**319**	P	**Pb**	**06 34 37.4**	**-1.0**
CHOJ				*eS*	**Sb**	**06 34 42.8**	**-1.4**
KTR	**Katsuura**	**0.74**	**247**	P	**Pn**	**06 34 43.8**	**-0.2**
BSO1	**Boso 1**	**0.79**	**190**	P	**Pn**	**06 34 44.4**	**+0.1**
BSO1				X		06 34 55.8	
BSO4	**Boso 4**	**0.80**	**236**	P	**Pn**	**06 34 44.7**	**0.0**
BSO3	**Boso 3**	**0.82**	**220**	P	**Pn**	**06 34 45.0**	**+0.1**
BSO3				X		06 34 57.2	
JYT	**Yasato**	**1.11**	**316**	P	**Pn**	**06 34 48.8**	**-0.3**
JHJ	**Hachijo jima 2** 5.6nm,0.3s,baz=327,slow=22,SNR=4.7	**2.57**	**206**	Pn	**Pn**	**06 35 08.3**	**-0.9**
JHJ	13nm,0.3s,baz=69,slow=23,SNR=4.2			Sn	**Sn**	**06 35 39.7**	**+0.4**
MJAR	**Matsushiro Arr** 0.9nm,0.3s,baz=110,slow=6.7,SNR=5.9	**2.62**	**296**	Pn	**Pn**	**06 35 11.6**	**+1.6**
H11N2	**WAKE ISLAND Hy** baz=310	**27.56**	**118**	T	T	07 09 21.4	
H11N1	**WAKE ISLAND Hy** baz=310	**27.56**	**118**	T	T	07 09 22.0	
H11N3	**WAKE ISLAND Hy** baz=310	**27.57**	**118**	T	T	07 09 22.7	
H11S1	**WAKE ISLAND Hy** baz=312,slow=76,SNR=36	**28.21**	**120**	T	T	07 10 09.1	
H11S3	**WAKE ISLAND Hy** baz=312,slow=76,SNR=32	**28.21**	**120**	T	T	07 10 08.2	
H11S2	**WAKE ISLAND Hy** baz=312,slow=76,SNR=23	**28.23**	**120**	T	T	07 10 04.3	
MKAR	**Makanchi Array** 0.1nm,0.3s,baz=91,slow=8.9,SNR=2.3	**44.80**	**303**	P	**P**	**06 42 41.3**	**+0.8**
WRA	**Warramunga Arr** 0.4nm,0.8s,baz=5.7,slow=7.6,SNR=3.8	**55.45**	**188**	P	**P**	**06 44 02.0**	**+0.6**

MEX 24 06:34:49.5±0.6,16.°47N×98.°33W,h9km±4km,MD3.9,Near coast of Guerrero

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PNIG	**Pinotepa**	**0.21**	**113**	*eP*	Pg	06 34 53.2	-0.6
PNIG				*eS*	Sg	06 34 57.0	+0.3
VHO	**Vista Hermosa**	**1.64**	**68**	*eP*	Pn	06 35 15.5	-3.2
VHO				*eS*	Sn	06 35 35.3	-4.7
MEIG	**Mezcala**	**1.90**	**320**	*eP*	Pn	06 35 18.8	-3.4
MEIG				*i S*	Sn	06 35 41.9	-4.5
CAIG	**El Cayaco**	**1.94**	**287**	*eP*	Pn	06 35 18.3	-4.4
CAIG				*i S*	Sn	06 35 43.3	-4.1
HUIG	**Huatulco**	**2.24**	**108**	*i P*	Pn	06 35 23.2	-3.7
HUIG				*i S*	Sn	06 35 50.2	-4.6

IDC 24 06:40:11.4±1.7,9.°81S×154.°30E,h0km,mb3.7/6, mb1 3.9/6,mb1mx3.7/41,mbtmp3.7/6,MS3.1/1,Ms1 3.1/1, ms1mx2.5/35,Error ellipse: s-maj=60.6km s-min=22.9km az=115.0,D'Entrecasteaux Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac** comp=Z,62nm,18.2s,baz=336,slow=30	**16.86**	**138**	LR	LR	06 48 38.1	
WRA	**Warramunga Arr** 0.8nm,0.6s,baz=64,slow=9.9,SNR=3.8	**21.74**	**240**	P	P	06 45 04.5	-0.1
ASAR	**Alice Springs** 1.8nm,0.8s,baz=62,slow=9.4,SNR=18	**23.85**	**232**	P	P	06 45 26.2	-0.5
STKA	**Stephens Creek** 3.8nm,0.6s,baz=42,slow=12,SNR=16	**24.91**	**206**	P	P	06 45 36.6	+0.3
SONM	**Songino Array** 0.3nm,0.5s,baz=147,slow=6.4,SNR=2.4	**71.34**	**328**	P	P	06 51 33.4	+0.1
MKAR	**Makanchi Array** 0.2nm,0.5s,baz=111,slow=6.9,SNR=2.4	**85.06**	**319**	P	P	06 52 49.5	+0.3
ILAR	**Eielson Array** 0.4nm,0.7s,baz=228,slow=4.3,SNR=3.8	**86.23**	**22**	P	P	06 52 54.2	-0.3

*DJA **24** 06:45:45.9±4.0,1.°N±17.°×9.°6E±2.°4,h19km±17km,M4.2/9, mb4.3/2,MLv4.2/9*
*IDC **24** 06:45:48.8±1.4,1.°08N×96.°80E,h0km,mb4.0/9, mb1 4.0/11,mb1mx3.8/46,mbtmp4.0/11,ML2.9/1,Error ellipse: s-maj=40.0km s-min=16.9km az=61.0*
*ISCJB **24** 06:45:50.5±0.7,1.°09N±0.°06×96.°77E±0.°07,h25km, mb4.0/13,Error ellipse: s-maj=9.5km s-min=8.9km az=165.8*
*NEIC **24** 06:45:54.3±0.5,1.°12N×96.°88E,h35km,mb4.0/4,Error ellipse: s-maj=10.4km s-min=7.1km az=64.0*

ISC 24 06:45:52.7±1.0,1.°13N±0.°09×96.°81E±0.°09,h25km,n30, σ0.°59/24,mb4.0/13,Off west coast of northern Sumatera

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GSI	**Gunungsitoli**	**0.78**	**77**	P	**Pb**	**06 46 07.8**	**0.0**
TPTI		**2.15**	**10**	P	**Pn**	**06 46 25.9**	**-1.2**
KCSI	**Kotacane, Aceh**	**2.57**	**22**	P	**Pn**	**06 46 32.5**	**-0.3**
PSI	**Prapat** 2.2nm,0.3s,baz=219,slow=5.7,SNR=27	**2.69**	**52**	Pn	**Pn**	**06 46 33.9**	**-0.6**
PSI	8.0nm,0.3s,baz=146,slow=18,SNR=8.7			Sn	**Sn**	**06 47 06.3**	**-0.1**
MNSI	**Mandailing Nat**	**2.79**	**97**	P	**Pn**	**06 46 35.5**	**-0.3**
TSI	**Tuntungan**	**2.94**	**37**	P	**Pn**	**06 46 38.4**	**+0.5**
IPM	**Ipoh** 11nm,0.6s	**5.37**	**52**	*ePn*	**Pn**	**06 47 12.1**	**+0.7**
KULM	**Kulim** 15nm,0.7s	**5.64**	**43**	*ePn*	**Pn**	**06 47 15.0**	**-0.1**
CMAR	**Chiang Mai Arr** baz=203,slow=11,SNR=9.1	**17.35**	**7**	Pn	**P**	**06 49 54.5**	**-0.1**
H08S2	**Diego Garcia H** baz=70,slow=75,SNR=484	**25.77**	**250**	T	T	07 18 09.1	
H08S3	**Diego Garcia H** baz=70,slow=75,SNR=479	**25.78**	**250**	T	T	07 18 09.4	
H08S1	**Diego Carcia H** baz=70,slow=75,SNR=435	**25.79**	**250**	T	T	07 18 11.3	
FITZ	**Fitzroy Crossi** 28nm,2.2s	**34.20**	**125**	*eP*	**P**	**06 52 36.0**	**-0.5**
H01W3	**Cape Leeuwin H** baz=333,slow=76,SNR=19	**39.33**	**157**	T	T	07 35 08.3	
H01W2	**Cape Leeuwin H** baz=333,slow=76,SNR=24	**39.34**	**157**	T	T	07 35 09.0	
H01W1	**Cape Leeuwin H** baz=333,slow=76,SNR=20	**39.34**	**157**	T	T	07 34 59.9	
WRA	**Warramunga Arr** 1.1nm,0.7s,baz=300,slow=9.0,SNR=13	**42.33**	**122**	P	**P**	**06 53 44.2**	**-0.8**
WRAB	**Tennant Creek** 1.4nm,0.6s	**42.33**	**122**	*eP*	**P**	**06 53 45.2**	**+0.2**
ASAR	**Alice Springs** 0.4nm,0.6s,baz=302,slow=8.7,SNR=8.3	**43.66**	**127**	P	**P**	**06 53 55.6**	**-0.2**
KSAR	**Wonju Array Be**	**46.10**	**35**	P	**P**	**06 54 14.1**	**-0.8**
KSRS	**Korea Array** 2.9nm,0.8s,baz=227,slow=7.2,SNR=7.0	**46.13**	**35**	P	**P**	**06 54

BVAR	**Borovoye Array**	**56.19**	**341**	P	**P**	**06 55 30.1**	**-0.4**
	1.2nm,0.7s,baz=154,slow=7.8,SNR=7.2						
ABKAR	**Akbulak array**	**57.40**	**332**	*e*P	**P**	**06 55 39.4**	**+0.2**
	0.6nm,0.6s						
TXAR	**Lajitas Array**	**143.93**	**31**	PKhKP	PKPpre	07 05 22.7	
	0.2nm,0.8s,baz=257,slow=3.6,SNR=3.2						

*SOME **24** 06:46:52.0, 44.˚72N×79.˚03E, h0km*
*NNC **24** 06:46:53.2±0.9, 44.˚69N×79.˚27E, h0km, mb3.2, mpv2.9, Error ellipse: s-maj=9.6km s-min=6.0km az=111.0*

ISC 24 06:46:52.1±1.2, 44.˚72N±0.˚03×79.˚03E±0.˚03, h3km±12km, n23, σ1$18/40, 14C-13D, Eastern Kazakhstan

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
KAPS	**Kapalarasan**	**0.61**	**22**	*e*P		**Pg**	**06 47 03.5**	**-0.3**
	57nm,0.2s							
KAPS				*e*S		**Sb**	**06 47 12.9**	**-1.5**
	164nm,0.1s							
DJR	**Jarkent**	**0.67**	**126**	*e*P		**Pg**	**06 47 05.2**	**+0.2**
	71nm,0.1s							
DJR				*e*S		**Sg**	**06 47 13.3**	**-0.3**
	596nm,0.3s							
KPKS	**Kokpek**	**1.28**	**191**	*e*P		**Pg**	**06 47 17.1**	**+0.4**
	119nm,0.2s							
KPKS				*e*S		**Sn**	**06 47 34.0**	**-0.8**
	585nm,0.5s							
KURS	**Kuram**	**1.38**	**207**	*e*P		**Pg**	**06 47 18.6**	**+0.1**
	15nm,0.3s							
KURS				*e*S		**Sg**	**06 47 40.4**	**+3.9**
	54nm,0.5s							
PDGK	**Podgornoye**	**1.44**	**167**	⇓P		**Pg**	**06 47 19.2**	**-0.4**
	12nm,0.5s							
PDGK				⇓S		**Sg**	**06 47 37.4**	**-0.8**
	75nm,0.3s							
UZB	**Uzynbulak**	**1.58**	**180**	⇑*i*P		**Pg**	**06 47 21.9**	**-0.4**
	39nm,0.2s							
UZB				⇑*i*S		**Sg**	**06 47 42.5**	**-0.3**
	93nm,0.3s							
ZHN	**Zhinishke**	**1.61**	**196**	*e*P		**Pg**	**06 47 22.6**	**-0.4**
	32nm,0.2s							
ZHN				*e*S		**Sg**	**06 47 44.1**	**+0.2**
	310nm,0.3s							
SHLS	**Shalkode**	**1.68**	**158**	⇓*i*P		**Pb**	**06 47 23.3**	**-0.6**
	73nm,0.2s							
SHLS				⇓*i*S		**Sg**	**06 47 45.5**	**-0.7**
	332nm,0.5s							
CHKK	**Chushkaly**	**1.69**	**240**	*e*P		**Pg**	**06 47 24.5**	**0.0**
	10nm,0.4s							
CHKK				*e*S		**Sg**	**06 47 47.8**	**+1.4**
	140nm,0.2s							
AAA	**Alma-Ata**	**2.09**	**227**	*e*P		**Pg**	**06 47 32.2**	**0.0**
	42nm,0.1s							
AAA				*e*S		**Sg**	**06 48 01.7**	**+2.5**
	162nm,0.2s							
KUU	**Kurty**	**2.10**	**248**	*e*P		**Pb**	**06 47 30.5**	**-0.4**
	8.1nm,0.3s							
KUU				*e*S		**Sg**	**06 47 59.1**	**-0.5**
	64nm,0.4s							
MDOK	**Medeo**	**2.12**	**223**	⇑*i*P		**Pb**	**06 47 30.7**	**-0.5**
	8.4nm,0.4s							
MDOK				⇓*i*S		**Sg**	**06 48 00.2**	**+0.1**
	49nm,0.2s							
KNDC	**Almaty**	**2.12**	**225**	⇑Pn		**Pb**	**06 47 31.4**	**+0.2**
	5.0nm,0.2s							
KNDC				⇓Sn		**Sg**	**06 48 00.3**	**+0.1**
	34nm,0.3s							
TNSS	**Tian-Shan**	**2.26**	**223**	⇓*i*P		**Pb**	**06 47 33.6**	**-0.2**
	11nm,0.5s							
TNSS				⇑*i*S		**Sg**	**06 48 04.5**	**-0.2**
	23nm,0.3s							
MTBS	**Maitube**	**2.46**	**231**	⇓*i*P		**Pb**	**06 47 37.6**	**+0.6**
	9.9nm,0.3s							
MTBS				⇑*i*S		**Sg**	**06 48 10.0**	**-1.2**
	103nm,0.5s							
KST	**Kastek**	**2.78**	**234**	*e*P		**Pb**	**06 47 42.8**	**+0.2**
	2.8nm,0.1s							
KST				⇑*i*S		**Sg**	**06 48 19.7**	**-1.8**
	81nm,0.3s							
BMNS	**Besmoynak**	**2.92**	**238**	*e*P		**Pb**	**06 47 45.4**	**+0.6**
	8.1nm,0.1s							
BMNS				⇓*i*S		**Sg**	**06 48 22.9**	**-2.9**
	37nm,0.5s							
TKM2	**Tokmak 2**	**3.07**	**235**	⇑Pn		**Pb**	**06 47 46.4**	**-1.1**
	1.3nm,0.4s							
TKM2				⇑Lg		Lg	06 48 27.7	
	12nm,0.6s							
MK31	**Makanchi Array**	**3.08**	**47**	⇓Pn		**Pn**	**06 47 42.4**	**+0.7**
	0.7nm,0.2s							
MK31				⇑Pg		**Pg**	**06 47 51.9**	**+0.8**
	1.4nm,0.3s							
MK31				⇑Sn		**Sn**	**06 48 19.0**	**0.0**
	2.7nm,0.3s							
MK31				⇑Lg		Lg	06 48 25.5	
	4.0nm,0.3s							
MRKS	**Merke**	**4.65**	**247**	*e*P		Pg	06 48 17.9	-3.2
	1.5nm,0.3s							
MRKS				⇓*i*S		**Sg**	**06 49 19.5**	**-1.8**
	4.4nm,0.5s							
MNAS	**Manas**	**5.24**	**247**	⇑Lg		Lg	06 49 36.0	
	3.3nm,0.6s							
KURK	**Kurchatov**	**6.00**	**358**	⇓Lg		Lg	06 49 57.7	
	19nm,0.6s							
KK31	**Karatay Array**	**6.36**	**258**	⇓Pn		**Pn**	**06 48 27.8**	**+1.1**
	0.4nm,0.6s,baz=76,slow=13,SNR=4.2							
KK31				⇑Lg		Lg	06 50 11.1	
	1.2nm,0.4s,baz=73,slow=27,SNR=9.3							

*LDG **24** 06:47:47.4±0.2, 46.˚78N×7.˚21E, h7km, Md1.8/1, Ml1.6/5, Error ellipse: s-maj=3.7km s-min=1.5km az=119.0*
*CSEM **24** 06:47:48.1±0.1, 46.˚83N×7.˚14E, h5km, ML1.6/7, Error ellipse: s-maj=2.7km s-min=2.2km az=107.0*

ZUR 24 06:47:47.7, 46.˚86N×7.˚12E, h6km±2km, ML1.2, 4C, Switzerland

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
SCOU	**Cournillens**	**0.01**	**245**	⇑*i*P	g	Pg	06 47 49.1	+0.2
SCOU				*i* S	g	Sg	06 47 50.0	+0.2
SCOU	**Cournillens**	**0.01**	**245**	⇑*i*P	g	Pg	06 47 49.1	+0.2
SCOU				*i* Sg		Sg	06 47 50.0	+0.2
STAF	**Tafers**	**0.09**	**129**	*e*P	g	Pg	06 47 50.0	+0.3
STAF				*i* Sg		Sg	06 47 51.6	+0.5
STAF	**Tafers**	**0.09**	**129**	*e*P	g	Pg	06 47 50.0	+0.3
STAF				*i* Sg		Sg	06 47 51.6	+0.5
TORNY	**Torny/Romont**	**0.14**	**232**	⇑*i*P	g	Pg	06 47 50.8	+0.2
TORNY				*i* Sg		Sg	06 47 53.2	+0.6
TORNY	**Torny/Romont**	**0.14**	**232**	⇑*i*P	g	Pg	06 47 50.8	+0.2
TORNY				*i* Sg		Sg	06 47 53.2	+0.6
BRANT	**Les Verrieres**	**0.45**	**280**	*e*Sg		Sb	06 48 04.2	-0.9
	28nm,0.3s							
BRANT	**Les Verrieres**	**0.45**	**280**	*e*Sg		Sb	06 48 04.2	-0.9
	28nm,0.3s							
CABF	**La Chapelle**	**0.75**	**251**	*e*Pg		Pg	06 48 02.5	+0.4
CABF				*e*Sg		Sb	06 48 12.9	-0.8
	0.5nm,0.2s							
CABF	**La Chapelle**	**0.75**	**251**	*e*Pg		Pg	06 48 02.5	+0.4
CABF				*e*Sg		Sb	06 48 12.9	-0.8
	0.2nm,0.2s							
HINF	**Hinteralfeld**	**0.97**	**349**	*e*Pg		Pb	06 48 07.4	+0.4
HINF				*e*Sg		Sn	06 48 21.6	-0.5
	2.0nm,0.2s							
HINF	**Hinteralfeld**	**0.97**	**349**	*e*Pg		Pb	06 48 07.4	+0.4
HINF				*e*Sg		Sn	06 48 21.6	-0.5
	1.0nm,0.2s							
HAU	**Haudompre**	**1.26**	**336**	*e*Pg		Pg	06 48 12.7	+0.8
HAU				*e*Sg		Sn	06 48 30.1	+1.0
	2.7nm,0.3s							
HAU	**Haudompre**	**1.26**	**336**	*e*Pg		Pg	06 48 12.7	+0.8
HAU				*e*Sg		Sn	06 48 30.1	+1.0
	1.4nm,0.3s							
CDF	**Champ du Feu**	**1.56**	**4**	*e*Sg		Sg	06 48 38.9	+1.1
	0.2nm,0.1s							
CDF	**Champ du Feu**	**1.56**	**4**	*e*Sg		Sg	06 48 38.9	+1.1
	0.1nm,0.1s							
PAGF	**Fort de Pagny**	**1.94**	**331**	*e*Sg		Sg	06 48 51.8	+1.8
	0.5nm,0.3s							
PAGF	**Fort de Pagny**	**1.94**	**331**	*e*Sg		Sg	06 48 51.8	+1.8
	0.2nm,0.3s							
SFTF	**Sexfontaines**	**1.95**	**314**	*e*Sg		Sg	06 48 52.0	+1.7
	0.6nm,0.2s							
SFTF	**Sexfontaines**	**1.95**	**314**	*e*Sg		Sg	06 48 52.0	+1.7
	0.3nm,0.2s							

KRSC 24 06:53:01.5±2.2, 49.˚62N×157.˚12E, h15km±10km, ML3.7, East of Kuril Islands

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
SKR	**Severo-Kuril's**	**1.24**	**329**	*e*P		Pn	06 53 23.2	-1.1
SKR				*e*S		Sb	06 53 38.1	-2.4
PAU	**Pauzhetka**	**1.86**	**354**	*e*P		Pb	06 53 34.6	-0.6
PAU				*e*S		Sb	06 53 57.6	-0.6
ASAK	**Asacha**	**2.81**	**10**	*e*P		Pb	06 53 49.3	-2.1
RUS	**Russkaya**	**2.95**	**17**	*e*P		Pn	06 53 50.7	+2.9
RUS				*e*S		Sn	06 54 26.2	+3.3
DALK	**Dalny**	**3.56**	**16**	*e*S		Sb	06 54 43.1	-4.2
UGLR	**Uglovaya**	**3.75**	**16**	*e*P		Pn	06 54 02.9	+4.0
AVH	**Avacha**	**3.79**	**15**	*e*P		Pb	06 54 04.1	-4.0
SMAR	**Somma**	**3.80**	**15**	*e*P		Pn	06 54 01.2	+1.6
SDLR	**Sedlovina**	**3.83**	**16**	*e*P		Pn	06 54 03.4	+3.5
KRER	**Koryakskii**	**3.83**	**15**	*e*P		Pb	06 54 04.5	-4.3
SPN	**Mys Shipunski**	**3.93**	**26**	*e*P		Pn	06 54 05.7	+4.5
GNL	**Ganaly**	**4.11**	**7**	*e*P		Pn	06 54 08.1	+4.2
MKZ	**Mys Kozlova**	**5.70**	**28**	*e*P		Pn	06 54 28.6	+3.1

GUC 24 06:59:43.1±0.7, 21.˚19S×68.˚98W, h128km±4km, ML3.8, 4C-8D, Chile-Bolivia border region

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
PB01	**IPOC Station P**	**0.50**	**287**	⇓*i*P		Pn	07 00 02.6	+0.5
PB01				*i* S		Sn	07 00 17.1	+0.7
PB01				IAML			07 00 17.7	
	comp=N,6μm,0.3s							
PB09	**IPOC Station P**	**0.65**	**202**	⇑*i*P		Pn	07 00 03.6	+0.4
PB09				*i* S		Sn	07 00 18.9	+0.5
PB09				IAML			07 00 19.2	
	comp=N,5μm,0.5s							
PB07	**IPOC Station P**	**1.00**	**237**	⇑*i*P		Pn	07 00 07.2	+1.1
PB07				*i* S		Sn	07 00 24.8	+1.3
PB07				IAML			07 00 25.9	
	comp=N,1μm,0.3s							
PATCX	**Punta Patache**	**1.16**	**288**	⇓*i*P		Pn	07 00 09.0	+1.5
PATCX				*i* S		Sn	07 00 28.1	+2.1
PATCX				IAML			07 00 29.9	
	comp=E,3μm,0.4s							
HMBC	**Humberstone**	**1.24**	**317**	⇓*i*P		Pn	07 00 09.2	+0.8
HMBC				*i* S		Sn	07 00 28.9	+1.3
HMBC				IAML			07 00 30.2	
	comp=E,1μm,0.3s							
PB11	**IPOC Station P**	**1.56**	**336**	⇓*i*P		Pn	07 00 12.3	+0.4
PB11				*i* S		Sn	07 00 34.7	+0.9
PB04	**IPOC Station P**	**1.58**	**223**	⇑*i*P		Pn	07 00 13.2	+1.0
PB04				*i* S		Sn	07 00 35.2	+0.9
PB04				IAML			07 00 38.7	
	comp=N,892nm,0.3s							
PB06	**IPOC Station P**	**1.61**	**200**	⇑*i*P		Pn	07 00 13.2	+0.7
PB06				*i* S		Sn	07 00 35.5	+0.6
PB06				IAML			07 00 37.3	
	comp=E,457nm,0.3s							
PSGC	**Pisagua**	**1.91**	**326**	⇓*i*P		Pn	07 00 16.2	+0.2
PSGC				*i* S		Sn	07 00 41.7	+0.5
PSGC				IAML			07 00 43.4	
	comp=E,352nm,0.5s							
MNMC	**Minye Minye**	**2.13**	**344**	⇓*i*P		Pn	07 00 19.4	+0.5
MNMC				*i* S		Sn	07 00 47.6	+1.4
MNMC				IAML			07 00 50.2	
	comp=E,2μm,0.3s							
PB12	**IPOC Station P**	**2.86**	**333**	⇓*i*P		Pn	07 00 27.5	-0.5
PB12				*i* S		Sn	07 01 02.0	-0.5
PB13	**IPOC Station P**	**2.88**	**350**	⇓*i*P		Pn	07 00 29.7	+1.0
PB13				*i* S		Sn	07 01 05.2	+1.5

*IDC **24** 06:59:54.7±0.9, 3.˚35S×148.˚73E, h0km, mb4.1/10, mb1 4.3/10, mb1mx4.0/33, mbtmp4.1/10, MS3.7/20, Ms1 3.7/20, ms1mx3.6/38, Error ellipse: s-maj=27.8km s-min=19.5km az=103.0*
*ISCJB **24** 06:59:58.2±0.6, 3.˚26S±0.˚06×148.˚7E±0.˚1, h33km, mb4.1/13, MS3.7/17, Error ellipse: s-maj=18.1km s-min=8.5km az=5.6*
*NEIC **24** 07:00:00.1±0.7, 3.˚27S×148.˚71E, h35km, mb4.4/3, Error ellipse: s-maj=18.8km s-min=10.3km az=95.0*

ISC 24 07:00:00.2±0.8, 3.˚21S±0.˚07×148.˚8E±0.˚2, h35km, n35, σ1$59/21, mb4.2/13, MS3.7/17, Bismarck Sea

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**6.36**	**195**	Pn		**Pn**	**07 01 32.9**	**+1.4**
	2.0nm,0.3s,baz=48,slow=8.6,SNR=8.7							
PMG				Sn		**Sn**	**07 02 43.7**	**+0.8**
	2.1nm,0.3s,baz=343,slow=19,SNR=8.7							
PMG				LR		LR	07 03 54.1	
	comp=E,631nm,18.2s,baz=1.0,slow=38							
PMG	**Port Moresby**	**6.36**	**195**	*e*Pn		**Pn**	**07 01 32.1**	**+0.6**
	21nm,0.6s							
PMG				Sn		**Sn**	**07 02 43.7**	**+0.8**
PMG				*e*Sn		**Sn**	**07 02 46.8**	**+3.8**
COEN	**Coen**	**12.03**	**207**	*e*Pn		**Pn**	**07 02 49.6**	**+0.3**
HNR	**Honiara**	**12.70**	**120**	LR		LR	07 07 30.3	
	comp=Z,388nm,21.3s,baz=292,slow=36							
CTA	**Charters Tower**	**16.95**	**188**	Pn		**P**	**07 03 55.6**	**-0.8**
	0.2nm,0.3s,baz=5.2,slow=11,SNR=2.8							
GUMO	**Guam**	**17.14**	**347**	LR		LR	07 09 07.8	
	comp=Z,282nm,20.9s,baz=144,slow=32							
WRAB	**Tennant Creek**	**21.79**	**219**	*e*P		**P**	**07 04 46.6**	**-2.6**
	22nm,1.0s							
WRA	**Warramunga Arr**	**21.80**	**219**	P		**P**	**07 04 46.6**	**-2.7**
	7.8nm,0.8s,baz=40,slow=11,SNR=33							
WRA				PcP		**PcP**	**07 08 49.7**	**+0.7**
	0.4nm,0.6s,baz=34,slow=2.1,SNR=4.4							
WRA				LR		LR	07 14 28.0	
	comp=Z,210nm,19.1s,baz=50,slow=40							
EIDS	**Eidsvold**	**22.14**	**174**	P		**P**	**07 04 52.8**	**-0.2**
	15nm,0.9s							
ASAR	**Alice Springs**	**24.91**	**214**	P		**P**	**07 05 18.1**	**-2.0**
	5.0nm,0.9s,baz=47,slow=7.9,SNR=51							
ASAR				LR		LR	07 15 23.0	
	comp=Z,262nm,20.2s,baz=43,slow=38							
DZM	**Mont Dzumac**	**25.41**	**139**	P		**P**	**07 05 23.3**	**-1.4**
	7.2nm,0.9s,baz=28,slow=5.4,SNR=3.9							
DZM				LR		LR	07 13 54.5	
	comp=Z,443nm,19.2s,baz=256,slow=33							
FITZ	**Fitzroy Crossi**	**27.07**	**235**	P		**P**	**07 05 38.5**	**-1.2**
	13nm,1.0s,baz=54,slow=9.8,SNR=9.3							
FITZ				LR		LR	07 16 47.1	
	comp=Z,255nm,19.2s,baz=64,slow=38							
ARMA	**Armidale**	**27.19**	**175**	*e*P		**P**	**07 05 39.1**	**-1.7**
	9.1nm,1.0s							
H11S3	**WAKE ISLAND Hy**	**27.86**	**39**	T		T	07 34 57.9	
	baz=220,slow=76,SNR=248							
H11S2	**WAKE ISLAND Hy**	**27.87**	**39**	T		T	07 34 59.4	
	baz=220,slow=76,SNR=390							
H11S1	**WAKE ISLAND Hy**	**27.88**	**39**	T		T	07 34 59.3	
	baz=220,slow=76,SNR=302							
H11N1	**WAKE ISLAND Hy**	**28.91**	**37**	T		T	07 36 19.0	
	baz=218,slow=76,SNR=34							
H11N3	**WAKE ISLAND Hy**	**28.92**	**37**	T		T	07 36 24.6	
	baz=218,slow=76,SNR=32							
H11N2	**WAKE ISLAND Hy**	**28.93**	**37**	T		T	07 36 21.7	
	baz=218,slow=76,SNR=74							
STKA	**Stephens Creek**	**29.30**	**193**	LR		LR	07 18 31.9	
	comp=Z,265nm,18.6s,baz=19,slow=38							
MJAR	**Matsushiro Arr**	**40.76**	**347**	LR		LR	07 22 31.3	
	comp=Z,68nm,19.8s,baz=185,slow=33							
KSRS	**Korea Array**	**44.86**	**336**	LR		LR	07 26 02.2	
	comp=Z,75nm,19.6s,baz=157,slow=35							
USRK	**Ussuriysk Ar.**	**49.55**	**344**	LR		LR	07 27 32.3	
	comp=Z,98nm,20.0s,baz=156,slow=33							
CMAR	**Chiang Mai Arr**	**53.58**	**296**	P		**P**	**07 09 18.2**	**0.0**
	1.0nm,0.4s,baz=104,slow=5.8,SNR=7.1							
KLR	**Kul'dur**	**54.28**	**346**	LR		LR	07 30 46.9	
	comp=Z,70nm,19.8s,baz=167,slow=34							
PETK	**Petropavlovsk-**	**56.61**	**6**	LR		LR	07 30 30.0	
	comp=Z,40nm,21.9s,baz=180,slow=32							
SONM	**Songino Array**	**62.89**	**329**	P		**P**	**07 10 23.5**	**+0.6**
	1.2nm,0.7s,baz=140,slow=5.3,SNR=6.4							
SONM				LR		LR	07 38 09.6	
	comp=Z,60nm,19.9s,baz=141,slow=36							
TLY	**Talaya**	**66.74**	**331**	LR		LR	07 37 39.5	
	comp=Z,72nm,21.9s,baz=126,slow=34							
TIXI	**Tiksi**	**75.84**	**354**	LR		LR	07 44 40.6	
	comp=Z,26nm,19.2s,baz=188,slow=35							
MKAR	**Makanchi Array**	**76.52**	**320**	P		**P**	**07 11 46.9**	**+0.1**
	1.0nm,0.8s,baz=109,slow=7.0,SNR=8.2							
MKAR				LR		LR	07 46 24.1	
	comp=Z,56nm,18.5s,baz=70,slow=36							
ZALV	**Zalesovo Beam**	**77.63**	**327**	P		**P**	**07 11 53.0**	**+0.2**
	1.1nm,0.7s,baz=116,slow=5.4,SNR=6.4							
ZALV				LR		LR	07 46 18.4	
	comp=Z,38nm,20.2s,baz=40,slow=36							
ILAR	**Eielson Array**	**82.24**	**23**	P		**P**	**07 12 18.6**	**+1.0**
	0.3nm,0.8s,baz=234,slow=5.8,SNR=2.3							
NRIK	**Noril'sk**	**83.19**	**342**	LR		LR	07 51 08.1	
	comp=Z,22nm,18.1s,baz=122,slow=37							
BBB	**Bella Bella**	**88.28**	**38**	LR		LR	07 45 14.3	
	comp=Z,28nm,19.1s,baz=150,slow=31							
YKA	**Yellowknife Ar**	**95.89**	**28**	P		**P**	**07 13 23.4**	**+0.4**
	0.2nm,0.6s,baz=273,slow=5.0,SNR=7.5							

*NIED **24** 07:00:00, 35.˚80N×140.˚90E, h8km, Mw3.7 Best double couple: M0 3.80000×10^14 NP1: φs 359.00000°, δ 43.00000°, λ -87.00000°. NP2: φs 175.00000°, δ 47.00000°, λ -93.00000°.*
*IDC **24** 07:00:02.9±0.7, 35.˚74N×140.˚92E, h0km, mb3.5/10, mb1 3.8/12, mb1mx3.6/47, mbtmp3.5/12, ML3.2/2, Error ellipse: s-maj=21.9km s-min=18.2km az=110.0*
*ISCJB **24** 07:00:04.0±0.8, 35.˚80N±0.˚04×140.˚96E±0.˚07, h17km±5km, mb3.5/10, Error ellipse: s-maj=9.6km s-min=6.2km az=156.0*
*JMA **24** 07:00:04.5±0.1, 35.˚82N×140.˚91E, h12km±1km, M3.8*
JMA Felt I J1.

ISC 24 07:00:04.7±1.0, 35.˚79N±0.˚04×140.˚90E±0.˚07, h13km±6km, n23, σ1$25/26, mb3.6/10, 2C-2D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.10**	**199**	⇓P		**Pg**	**07 00 07.7**	**+0.1**
CHOJ				S		Sg	07 00 09.9	+0.2
JCN	**Nagara**	**0.68**	**237**	⇑P		**Pb**	**07 00 19.2**	**+0.8**
JYT	**Yasato**	**0.72**	**308**	P		**Pg**	**07 00 18.1**	**-0.5**
JYT				S		**Sg**	**07 00 27.3**	**-0.8**
JHO	**Hitachi**	**0.86**	**342**	⇓P		**Pg**	**07 00 19.9**	**-1.4**
JHO				S		**Sg**	**07 00 31.6**	**-1.0**
BSO4	**Boso 4**	**0.92**	**210**	P		**Pn**	**07 00 23.3**	**0.0**
BSO3	**Boso 3**	**1.04**	**198**	⇑P		**Pg**	**07 00 24.3**	**-0.4**
MJAR	**Matsushiro Arr**	**2.30**	**290**	Pn		**Pn**	**07 00 41.6**	**-0.8**
	10nm,0.3s,baz=90,slow=8.7,SNR=64							
MJAR				Sn		**Sn**	**07 01 10.9**	**+0.4**
	6.7nm,0.3s,baz=73,slow=22,SNR=6.4							
MAT	**Matsushiro**	**2.30**	**290**	P		**Pn**	**07 00 41.7**	**-0.7**
MAT				S		**Sn**	**07 01 12.3**	**+1.7**
JHJ	**Hachijo jima 2**	**2.82**	**199**	Pn		**Pn**	**07 00 48.8**	**-0.7**
	5.5nm,0.3s,baz=66,slow=20,SNR=2.2							
JHJ				Sn		**Sn**	**07 01 19.2**	**-4.2**
	10nm,0.3s,baz=53,slow=20,SNR=3.3							
H11N2	**WAKE ISLAND Hy**	**27.90**	**118**	T		T	07 34 59.5	
	baz=311,slow=75,SNR=248							
H11N1	**WAKE ISLAND Hy**	**27.91**	**118**	T		T	07 35 00.0	
	baz=311,slow=75,SNR=130							
H11N3	**WAKE ISLAND Hy**	**27.92**	**118**	T		T	07 35 00.7	
	baz=311,slow=75,SNR=126							
ZALV	**Zalesovo Beam**	**42.45**	**313**	P		**P**	**07 08 01.1**	**+2.0**
	0.3nm,0.4s,baz=71,slow=9.3,SNR=2.8							
MKAR	**Makanchi Array**	**44.43**	**303**	P		**P**	**07 08 15.2**	**-0.1**
	0.6nm,0.8s,baz=91,slow=11,SNR=4.2							
ILAR	**Eielson Array**	**50.77**	**32**	P		**P**	**07 09 04.7**	**+0.5**
	0.7nm,0.7s,baz=269,slow=6.1,SNR=6.9							
WRA	**Warramunga Arr**	**55.78**	**187**	P		**P**	**07 09 40.2**	**-1.3**
	0.6nm,0.8s,baz=6.0,slow=7.3,SNR=5.5							
ASAR	**Alice Springs**	**59.51**	**187**	P		**P**	**07 10 08.0**	**+0.3**
	0.2nm,0.7s,baz=8.9,slow=7.8,SNR=3.9							
YKA	**Yellowknife Ar**	**65.09**	**30**	P		**P**	**07 10 44.7**	**+0.1**
	0.3nm,0.7s,baz=297,slow=6.5,SNR=7.1							
FINES	**FINESS Array B**	**69.72**	**332**	P		**P**	**07 11 13.5**	**-0.4**
	0.7nm,0.7s,baz=114,slow=2.3,SNR=4.4							
NVAR	**Mina Array Bea**	**76.07**	**53**	P		**P**	**07 11 53.3**	**+0.9**
	0.5nm,0.8s,baz=294,slow=7.4,SNR=3.7							
PDAR	**Pinedale Array**	**78.83**	**45**	P		**P**	**07 12 07.8**	**0.0**
	0.3nm,0.6s,baz=289,slow=3.2,SNR=3.3							
TXAR	**Lajitas Array**	**91.21**	**52**	P		**P**	**07 13 10.4**	**+0.4**
	0.1nm,0.6s,baz=321,slow=2.3,SNR=3.0							
LPAZ	**La Paz**	**147.67**	**61**	PKPbc		**PKPbc**	**07 19 50.8**	**+0.5**
	1.0nm,0.8s,baz=341,slow=5.7,SNR=4.4							

*DDA **24** 07:07:50.1, 38.˚99N×29.˚83E, h7km, Ml3.0*
*CSEM **24** 07:07:50.8±0.1, 38.˚98N×29.˚82E, h2km, ML3.0, Error ellipse: s-maj=2.4km s-min=1.9km az=165.0*
*ISK **24** 07:07:50.7, 38.˚98N×29.˚76E, h5km, MD2.6*

ISC 24 07:07:50.5±1.0, 38.˚98N±0.˚02×29.˚83E±0.˚02, h13km±11km, n38, σ0$56/62, Turkey

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
GDZ	**Gediz**	**0.29**	**293**	*i* P		**Pg**	**07 07 56.4**	**-0.3**
GDZ				*i* S		**Sg**	**07 08 00.8**	**0.0**
GDZ	**Gediz**	**0.29**	**293**	P		**Pg**	**07 07 56.4**	**-0.3**
GDZ				S		**Sg**	**07 08 00.8**	**0.0**
TVSB	**Tavsanli**	**0.55**	**329**	*

ROM.
NEIC Felt at San Giustino.
ISCJB ***24*** *07:19:03.9±0.2, 43°.58N±0°.01×12°.11E±0°.02, h21km±2km, mb3.4/4, MS3.1/1, Error ellipse: s-maj=2.6km s-min=1.8km az=18.2*
IASPEI ***24*** *07:19:04.1±0.8, 43°.56N±0°.02×12°.18E±0°.02, h13km±5km, mb3.5/4, Error ellipse: s-maj=2.9km s-min=2.0km az=29.8, GT5 selection from ISC bulletin GT5 identified by Bond¨ji¨r and McLaughlin (2009) selection criteria Bond¨ji¨r and McLaughlin, A new ground truth data set for seismic studies, Seism. Res. Let., 80, 465-472, 2009*
IDC ***24*** *07:19:04.9±1.8, 43°.69N×12°.31E, h0km, mb3.4/4, mb1 3.4/8, mb1mx3.3/62, mbtmp3.3/8, ML3.2/4, MS3.3/1, Ms1 3.3/1, ms1mx2.4/40, Error ellipse: s-maj=29.5km s-min=20.5km az=70.0*
CSEM ***24*** *07:19:04.2±0.1, 43°.54N×12°.13E, h10km, ML3.6/28, Error ellipse: s-maj=2.7km s-min=1.9km az=27.0*
PRU ***24*** *07:19:05.8, 43°.66N×12°.58E, h0km*
STR ***24*** *07:19:13.3±0.4, 43°.93N×11°.46E, h10km, Ml3.2, Error ellipse: s-maj=0.0km s-min=0.0km az=0.0*

ISC 24 07:19:04.4±0.7, 43°.53N±0°.02×12°.13E±0°.01, h13km±4km, n252, σ1§67/366, mb3.5/4, 23C-4D, Central Italy

Code	Station Name	Δ°	AZ°	Phase	ID	Time h m s	Res ISC
				Op	ISC		
BADI	**Badiali**	**0.08**	**107**	***i*Pg**	**Pg**	**07 19 06.6**	**-0.6**
BADI				Sg	**Sg**	**07 19 08.5**	**-0.7**
	82μm,0.2s						
BADI	**Badiali**	**0.08**	**107**	***i*Pg**	**Pg**	**07 19 06.6**	**-0.6**
BADI				Sg	**Sg**	**07 19 08.5**	**-0.7**
	82μm,0.2s						
CRE	**Caprese Michel**	**0.16**	**303**	***i*Pg**	**Pg**	**07 19 08.1**	**-0.2**
CRE				Sg	**Sg**	**07 19 11.3**	**+0.3**
	11μm,0.2s						
CRE	**Caprese Michel**	**0.16**	**303**	***i*Pg**	**Pg**	**07 19 08.1**	**-0.2**
CRE				Sg	**Sg**	**07 19 11.3**	**+0.3**
	11μm,0.2s						
CAFI	**Castiglion Fio**	**0.24**	**211**	***i*Pg**	**Pb**	**07 19 10.7**	**0.0**
CAFI				Sg	**Sb**	**07 19 15.7**	**+0.9**
	7μm,0.6s						
CAFI	**Castiglion Fio**	**0.24**	**211**	***i*Pg**	**Pb**	**07 19 10.7**	**0.0**
CAFI				Sg	**Sb**	**07 19 15.7**	**+0.9**
	7μm,0.6s						
ATPC	**Poggio Castell**	**0.24**	**103**	***i*Pg**	**Pg**	**07 19 08.7**	**-0.9**
ATPC				Sg	**Sg**	**07 19 12.7**	**-0.3**
	17μm,0.2s						
ATPC	**Poggio Castell**	**0.24**	**103**	***i*Pg**	**Pg**	**07 19 08.7**	**-0.9**
ATPC				Sg	**Sg**	**07 19 12.7**	**-0.3**
	17μm,0.2s						
ATVO	**AVT- Monte Val**	**0.25**	**127**	***i*Pg**	**Pg**	**07 19 09.6**	**-0.1**
ATVO				Sg	**Sg**	**07 19 14.1**	**+0.8**
ATVO	**AVT- Monte Val**	**0.25**	**127**	***i*Pg**	**Pg**	**07 19 09.6**	**-0.1**
ATVO				Sg	**Sg**	**07 19 14.1**	**+0.8**
PIEI	**Pieia**	**0.29**	**89**	***i*Pg**	**Pg**	**07 19 09.1**	**-1.4**
PIEI				Sg	**Sg**	**07 19 13.4**	**-1.1**
	5μm,0.2s						
PIEI	**Pieia**	**0.29**	**89**	***i*Pg**	**Pg**	**07 19 09.1**	**-1.4**
PIEI				Sg	**Sg**	**07 19 13.4**	**-1.1**
	5μm,0.2s						
ASQU	**Asqua**	**0.36**	**317**	Pg	**Pg**	**07 19 11.1**	**-0.7**
ASQU				Sg	**Sg**	**07 19 16.9**	**+0.2**
	3μm,0.5s						
ASQU	**Asqua**	**0.36**	**317**	Pg	**Pg**	**07 19 11.1**	**-0.7**
ASQU				Sg	**Sg**	**07 19 16.9**	**+0.2**
	3μm,0.5s						
ATTE	**AVT- Monte Tez**	**0.37**	**154**	Pg	**Pg**	**07 19 12.1**	**+0.2**
ATTE				Sg	**Sb**	**07 19 18.4**	**-0.3**
	3μm,0.4s						
ATTE	**AVT- Monte Tez**	**0.37**	**154**	Pg	**Pg**	**07 19 12.1**	**+0.2**
ATTE				Sg	**Sb**	**07 19 18.4**	**-0.3**
	3μm,0.4s						
MURB	**Monte Urbino**	**0.39**	**133**	Pg	**Pg**	**07 19 12.1**	**-0.2**
MURB				Sg	**Sb**	**07 19 19.2**	**-0.1**
	9μm,0.4s						
MURB	**Monte Urbino**	**0.39**	**133**	Pg	**Pg**	**07 19 12.1**	**-0.2**
MURB				Sg	**Sb**	**07 19 19.2**	**-0.1**
	9μm,0.4s						
SFI	**Santa Sofia**	**0.42**	**331**	Pg	**Pg**	**07 19 11.9**	**-1.0**
SFI				Sg	**Sg**	**07 19 18.3**	**-0.3**
	2μm,0.3s						
SFI	**Santa Sofia**	**0.42**	**331**	Pg	**Pg**	**07 19 11.9**	**-1.0**
SFI				Sg	**Sg**	**07 19 18.3**	**-0.3**
	2μm,0.3s						
FRON	**Frontone**	**0.43**	**92**	***i*Pg**	**Pg**	**07 19 11.5**	**-1.5**
FRON				Sg	**Sg**	**07 19 18.1**	**-0.7**
	3μm,0.4s						
FRON	**Frontone**	**0.43**	**92**	***i*Pg**	**Pg**	**07 19 11.5**	**-1.5**
FRON				Sg	**Sg**	**07 19 18.1**	**-0.7**
	3μm,0.4s						
RSM	**Repubblica di**	**0.46**	**30**	***i*Pg**	**Pg**	**07 19 12.5**	**-1.0**
RSM				Sg	**Sg**	**07 19 19.4**	**-0.2**
	2μm,0.8s						
RSM	**Repubblica di**	**0.46**	**30**	***i*Pg**	**Pg**	**07 19 12.5**	**-1.0**
RSM				Sg	**Sg**	**07 19 19.4**	**-0.2**
	2μm,0.8s						
SSFR	**Montelago di S**	**0.48**	**101**	Pg	**Pg**	**07 19 12.5**	**-1.4**
SSFR				Sg	**Sg**	**07 19 19.9**	**-0.5**
	5μm,0.3s						
SSFR	**Montelago di S**	**0.48**	**101**	Pg	**Pg**	**07 19 12.5**	**-1.4**
SSFR				Sg	**Sg**	**07 19 19.9**	**-0.5**
	5μm,0.3s						
ARVD	**Arcevia**	**0.59**	**93**	***i*Pg**	**Pg**	**07 19 14.4**	**-1.5**
ARVD				Sg	**Sg**	**07 19 23.3**	**-0.4**
	1μm,0.8s						
ARVD	**Arcevia**	**0.59**	**93**	***i*Pg**	**Pg**	**07 19 14.4**	**-1.5**
ARVD				Sg	**Sg**	**07 19 23.3**	**-0.4**
	1μm,0.8s						
VMG	**Vicchio**	**0.60**	**315**	Pg	**Pg**	**07 19 15.8**	**-0.4**
	133nm,0.1s						
VMG	**Vicchio**	**0.60**	**315**	Pg	**Pg**	**07 19 15.8**	**-0.4**
	133nm,0.1s						
MGAB	**Montegabbione**	**0.62**	**181**	Pg	**Pb**	**07 19 17.1**	**-0.1**
	3μm,0.4s						
MGAB	**Montegabbione**	**0.62**	**181**	Pg	**Pb**	**07 19 17.1**	**-0.1**
	3μm,0.4s						
SNTG	**Esanatoglia**	**0.65**	**115**	***i*Pg**	**Pg**	**07 19 15.9**	**-1.2**
SNTG				Sg	**Sb**	**07 19 26.3**	**-0.4**
	2μm,0.4s						
SNTG	**Esanatoglia**	**0.65**	**115**	***i*Pg**	**Pg**	**07 19 15.9**	**-1.2**
SNTG				Sg	**Sb**	**07 19 26.3**	**-0.4**
	2μm,0.4s						
PESA	**Pesaro**	**0.65**	**51**	***i*Pg**	**Pg**	**07 19 15.3**	**-1.9**
PESA				Sg	**Sg**	**07 19 25.0**	**-0.8**
	2μm,0.3s						
PESA	**Pesaro**	**0.65**	**51**	***i*Pg**	**Pg**	**07 19 15.3**	**-1.9**
PESA				Sg	**Sg**	**07 19 25.0**	**-0.8**
	2μm,0.3s						
SACS	**San Casciano d**	**0.70**	**194**	Pg	**Pb**	**07 19 18.9**	**+0.3**
	2μm,1.1s						
BRIS	**BRISIGHELLA**	**0.76**	**324**	Pg	**Pg**	**07 19 17.8**	**-1.4**
	542nm,0.4s						
BRIS	**BRISIGHELLA**	**0.76**	**324**	Pg	**Pg**	**07 19 17.8**	**-1.4**
	542nm,0.4s						
SEI	**Scarperia**	**0.77**	**313**	Pg	**Pg**	**07 19 18.6**	**-0.7**
SEI	**Scarperia**	**0.77**	**313**	Pg	**Pg**	**07 19 18.6**	**-0.7**
CESI	**CESI - Serrava**	**0.77**	**133**	Pg	**Pg**	**07 19 18.7**	**-0.7**
	293nm,0.6s						
CESI	**CESI - Serrava**	**0.77**	**133**	Pg	**Pg**	**07 19 18.7**	**-0.7**
	293nm,0.6s						
CING	**Cingoli**	**0.79**	**101**	***i*Pg**	**Pg**	**07 19 18.1**	**-1.6**
CING				Sg	**Sb**	**07 19 30.5**	**-0.2**
	576nm,0.5s						
CING	**Cingoli**	**0.79**	**101**	***i*Pg**	**Pg**	**07 19 18.1**	**-1.6**
CING				Sg	**Sb**	**07 19 30.5**	**-0.2**
	576nm,0.5s						
SENI	**Senigallia**	**0.82**	**78**	Pg	**Pg**	**07 19 19.0**	**-1.2**
	631nm,0.8s						
SENI	**Senigallia**	**0.82**	**78**	Pg	**Pg**	**07 19 19.0**	**-1.2**
	631nm,0.8s						
MCIV	**Monte Civitell**	**0.83**	**204**	Pg	**Pb**	**07 19 20.7**	**0.0**
	280nm,0.4s						
MCIV	**Monte Civitell**	**0.83**	**204**	Pg	**Pb**	**07 19 20.7**	**0.0**
	280nm,0.4s						
ARCI	**Arcidosso**	**0.83**	**215**	Pg	**Pb**	**07 19 21.2**	**+0.3**
	712nm,0.8s						
ARCI	**Arcidosso**	**0.83**	**215**	Pg	**Pb**	**07 19 21.2**	**+0.3**
	712nm,0.8s						
FDMO	**Fiordimonte**	**0.86**	**125**	Pg	**Pg**	**07 19 19.8**	**-1.2**
	501nm,0.6s						
FDMO	**Fiordimonte**	**0.86**	**125**	Pg	**Pg**	**07 19 19.8**	**-1.2**
	501nm,0.6s						
IMOL	**Imola, Italy**	**0.87**	**341**	Pg	**Pb**	**07 19 21.5**	**0.0**
	162nm,0.5s						
IMOL	**Imola, Italy**	**0.87**	**341**	Pg	**Pb**	**07 19 21.5**	**0.0**
	162nm,0.5s						
LATE	**Laterza**	**0.95**	**195**	Pg	**Pn**	**07 19 23.4**	**-0.2**
	792nm,0.5s						
LATE	**Laterza**	**0.95**	**195**	Pg	**Pn**	**07 19 23.4**	**-0.2**
	792nm,0.5s						
FNVD	**Fontana Vidola**	**0.97**	**311**	Pg	**Pb**	**07 19 22.5**	**-0.6**
	1μm,0.8s						
FNVD	**Fontana Vidola**	**0.97**	**311**	Pg	**Pb**	**07 19 22.5**	**-0.6**
	1μm,0.8s						
MTRZ	**Monterenzio**	**0.97**	**330**	Pg	**Pb**	**07 19 22.5**	**-0.7**
	2μm,0.8s						
MTRZ	**Monterenzio**	**0.97**	**330**	Pg	**Pb**	**07 19 22.5**	**-0.7**
	2μm,0.8s						
CESX	**Cesi**	**0.98**	**160**	Pg	**Pb**	**07 19 23.3**	**0.0**
	1μm,0.5s						
CESX	**Cesi**	**0.98**	**160**	Pg	**Pb**	**07 19 23.3**	**0.0**
	1μm,0.5s						
TRIF	**Trifonti**	**0.99**	**245**	Pg	**Pn**	**07 19 23.9**	**-0.2**
	580nm,0.3s						
TRIF	**Trifonti**	**0.99**	**245**	Pg	**Pn**	**07 19 23.9**	**-0.2**
	580nm,0.3s						
NRCA	**Norcia**	**1.00**	**134**	Pg	**Pb**	**07 19 22.8**	**-0.9**
	453nm,0.5s						
NRCA	**Norcia**	**1.00**	**134**	Pg	**Pb**	**07 19 22.8**	**-0.9**
	453nm,0.5s						
AOI	**Ancona**	**1.07**	**89**	Pg	**Pb**	**07 19 23.0**	**-1.8**
	544nm,0.7s						
AOI	**Ancona**	**1.07**	**89**	Pg	**Pb**	**07 19 23.0**	**-1.8**
	544nm,0.7s						
SASS	**Sassa**	**1.09**	**256**	Pg	**Pb**	**07 19 25.0**	**-0.1**
	161nm,0.5s						
SASS	**Sassa**	**1.09**	**256**	Pg	**Pb**	**07 19 25.0**	**-0.1**
	161nm,0.5s						
POPM	**Popiglio**	**1.12**	**298**	P	**Pb**	**07 19 25.7**	**0.0**
POPM				S	**Sn**	**07 19 41.8**	**+0.6**
LNSS	**Leonessa**	**1.14**	**144**	Pg	**Pb**	**07 19 25.5**	**-0.7**
	582nm,0.7s						
LNSS	**Leonessa**	**1.14**	**144**	Pg	**Pb**	**07 19 25.5**	**-0.7**
	582nm,0.7s						
CASP	**Castiglione de**	**1.19**	**232**	Pg	**Pn**	**07 19 26.5**	**-0.3**
	120nm,0.3s						
CASP	**Castiglione de**	**1.19**	**232**	Pg	**Pn**	**07 19 26.5**	**-0.3**
	120nm,0.3s						
BDI	**Bagni Di Lucca**	**1.23**	**296**	Pg	**Pn**	**07 19 26.7**	**-0.8**
	625nm,0.5s						
BDI	**Bagni Di Lucca**	**1.23**	**296**	Pg	**Pn**	**07 19 26.7**	**-0.8**
	625nm,0.5s						
RM29	**Verrico (Monte**	**1.25**	**141**	Pg	**Pn**	**07 19 27.5**	**-0.3**
	501nm,0.6s						
RM29	**Verrico (Monte**	**1.25**	**141**	Pg	**Pn**	**07 19 27.5**	**-0.3**
	501nm,0.6s						
MAIM	**Mastiano**	**1.25**	**288**	Pg	**Pn**	**07 19 27.3**	**-0.3**
	421nm,0.5s						
MAIM	**Mastiano**	**1.25**	**288**	P	**Pn**	**07 19 27.3**	**-0.3**
MAIM				S	**Sb**	**07 19 43.6**	**-0.3**
SMA1	**SAN MARTINO**	**1.26**	**135**	Pg	**Pn**	**07 19 27.4**	**-0.5**
	648nm,0.5s						
SMA1	**SAN MARTINO**	**1.26**	**135**	Pg	**Pn**	**07 19 27.4**	**-0.5**
	648nm,0.5s						
OFFI	**Offida**	**1.28**	**117**	Pg	**Pb**	**07 19 28.4**	**-0.1**
	1μm,0.6s						
OFFI	**Offida**	**1.28**	**117**	Pg	**Pb**	**07 19 28.4**	**-0.1**
	1μm,0.6s						
RM32	**Poggio Cancell**	**1.28**	**138**	Pg	**Pn**	**07 19 28.0**	**-0.3**
	593nm,1.0s						
RM32	**Poggio Cancell**	**1.28**	**138**	Pg	**Pn**	**07 19 28.0**	**-0.3**
	593nm,1.0s						
RM33	**Pellescritta (**	**1.29**	**142**	Pg	**Pn**	**07 19 28.0**	**-0.4**
	431nm,0.5s						
RM33	**Pellescritta (**	**1.29**	**142**	Pg	**Pn**	**07 19 28.0**	**-0.4**
	431nm,0.5s						
MAON	**Monte Argentar**	**1.33**	**214**	Pg	**Pg**	**07 19 30.9**	**+1.0**
	78nm,0.6s						
MAON	**Monte Argentar**	**1.33**	**214**	Pg	**Pg**	**07 19 30.9**	**+1.0**
	78nm,0.6s						
GUMA	**Gualdo di Mace**	**1.40**	**109**	Pg	Pn	07 19 22.8	-6.9
	2μm,0.7s						
VLC	**Villacollemand**	**1.41**	**297**	*e*Pn	**Pn**	**07 19 29.8**	**-0.1**
VLC				*e*Sn	**Sg**	**07 19 50.5**	**+0.6**
VLC	**Villacollemand**	**1.41**	**297**	*e*Pn	**Pn**	**07 19 29.8**	**-0.1**
VLC				*e*Sn	**Sg**	**07 19 50.5**	**+0.6**
TERO	**Teramo**	**1.41**	**130**	Pg	**Pn**	**07 19 29.7**	**-0.2**
	516nm,0.8s						
TERO	**Teramo**	**1.41**	**130**	Pg	**Pn**	**07 19 29.7**	**-0.2**
	516nm,0.8s						
SARO	**Sassorosso**	**1.41**	**298**	P	**Pn**	**07 19 29.4**	**-0.6**
AQU	**L'Aquila**	**1.50**	**141**	*e*Pn	**Pn**	**07 19 31.2**	**0.0**
AQU	**L'Aquila**	**1.50**	**141**	*e*Pn	**Pn**	**07 19 31.2**	**0.0**
GRAM	**Graiana**	**1.77**	**303**	P	**Pn**	**07 19 35.6**	**+0.7**
NVLJ	**Novalja**	**2.23**	**62**	*e*Pn	**Pn**	**07 19 40.6**	**-0.5**
NVLJ				Sn	**Sn**	**07 20 09.1**	**+0.6**
NVLJ	**Novalja**	**2.23**	**62**	*e*Pn	**Pn**	**07 19 40.5**	**-0.5**
NVLJ				Sn	**Sn**	**07 20 09.0**	**+0.6**
SKDS	**Skadanscina**	**2.42**	**33**	*e*Pn	**Pn**	**07 19 42.1**	**-1.7**
SKDS				*i* Sn	**Sn**	**07 20 12.6**	**-0.7**
	comp=Z,74nm,0.5s						
SKDS	**Skadanscina**	**2.42**	**33**	*e*Pn	**Pn**	**07 19 42.1**	**-1.7**
SKDS				*i* Sn	**Sn**	**07 20 12.6**	**-0.7**
	comp=Z,74nm,0.5s						
TRI	**Trieste**	**2.47**	**28**	*e*Pn	**Pn**	**07 19 42.4**	**-2.0**
TRI				*e*Sg	**Sb**	**07 20 20.2**	**+1.3**
TRI	**Trieste**	**2.47**	**28**	*e*Pn	**Pn**	**07 19 42.4**	**-2.0**
TRI				*e*Sg	**Sb**	**07 20 20.2**	**+1.3**
PGF	**Pioggiola**	**2.50**	**248**	*e*Pn	**Pn**	**07 19 44.9**	**0.0**
PGF				*e*Sn	**Sn**	**07 20 14.7**	**-0.7**
	comp=Z,37nm,0.7s						
PGF	**Pioggiola**	**2.50**	**248**	*e*Pn	**Pn**	**07 19 44.9**	**0.0**
PGF				*e*Sn	**Sn**	**07 20 14.7**	**-0.7**
	comp=Z,19nm,0.7s						
CEY	**Cerknica**	**2.75**	**36**	*i*Pn	**Pn**	**07 19 46.7**	**-1.6**
UDBI	**Udbina**	**2.80**	**68**	*i* Pn	**Pn**	**07 19 49.5**	**+0.4**
UDBI	**Udbina**	**2.80**	**68**	*i* Pn	**Pn**	**07 19 49.4**	**+0.4**
LJU	**Ljubljana**	**3.03**	**33**	*e*Pn	**Pn**	**07 19 51.5**	**-0.7**
LJU				*e*Sn	**Sn**	**07 20 29.0**	**+0.6**
LJU	**Ljubljana**	**3.03**	**33**	*i*Pn	**Pn**	**07 19 51.4**	**-0.7**
ABTA	**Abfaltersbach**	**3.23**	**5**	*i* Pn	**Pn**	**07 19 55.9**	**+1.0**
	comp=Z,1.9nm,0.2s,SNR=9.9						
ABTA				*i* Sn	**Sn**	**07 20 34.3**	**+1.1**
	comp=Z,32nm,0.6s						
ABTA	**Abfaltersbach**	**3.23**	**5**	Pn	**Pn**	**07 19 55.9**	**+1.0**
	comp=Z,1.9nm,0.2s,SNR=9.9						
ABTA				Sn	**Sn**	**07 20 34.3**	**+1.1**
	comp=Z,32nm,0.6s						
MYKA	**Terra Mystica**	**3.27**	**19**	*i* Pn	**Pn**	**07 19 57.7**	**+2.1**
	comp=Z,1.7nm,0.2s						
MYKA	**Terra Mystica**	**3.27**	**19**	Pn	**Pn**	**07 19 57.7**	**+2.1**
	comp=Z,1.7nm,0.2s						
CRES	**Cresnjev**	**3.30**	**45**	*i*Pn	**Pn**	**07 19 55.0**	**-0.8**
SBF	**Sospel**	**3.42**	**277**	*e*Pn	**Pn**	**07 19 58.1**	**+0.5**
SBF				*e*Sn	**Sn**	**07 20 36.5**	**-1.6**
	comp=Z,46nm,0.4s						
SBF	**Sospel**	**3.42**	**277**	*e*Pn	**Pn**	**07 19 58.1**	**+0.5**
SBF				*e*Sn	**Sn**	**07 20 36.5**	**-1.6**
	comp=Z,23nm,0.4s						
OBKA	**Obir**	**3.43**	**29**	*i* Pn	**Pn**	**07 19 57.6**	**-0.2**
	comp=Z,4.3nm,0.2s						
OBKA	**Obir**	**3.43**	**29**	Pn	**Pn**	**07 19 57.6**	**-0.2**
	comp=Z,4.3nm,0.2s						
TUE	**Stuetta**	**3.54**	**327**	*e*Pn	**Pn**	**07 20 01.4**	**+2.1**
TUE				*e*Sn	**Sn**	**07 20 38.8**	**-2.4**
TUE	**Stuetta**	**3.54**	**327**	*e*Pn	**Pn**	**07 20 01.4**	**+2.1**
TUE				*e*Sn	**Sn**	**07 20 38.8**	**-2.4**
DAVOX	**Davos/Dischmat**	**3.62**	**335**	Pn	**Pn**	**07 20 02.7**	**+2.3**
	comp=Z,5.5nm,0.3s,baz=156,slow=21,SNR=66						
DAVOX				Sn	**Sn**	**07 20 45.4**	**+2.4**
	comp=Z,3.5nm,0.3s,baz=131,slow=20,SNR=8.8						
FETA	**Feichten**	**3.62**	**345**	*i* Pn	**Pn**	**07 20 02.8**	**+2.4**
	comp=Z,6.0nm,0.5s,SNR=24						
FETA				*i* Sn	**Sn**	**07 20 46.1**	**+2.9**
	comp=Z,5.2nm,0.6s						
FETA	**Feichten**	**3.62**	**345**	Pn	**Pn**	**07 20 02.8**	**+2.4**
	comp=Z,6.0nm,0.5s,SNR=24						
FETA				Sn	**Sn**	**07 20 46.1**	**+2.9**
	comp=Z,5.2nm,0.6s						
KBA	**Koelnbreinsper**	**3.65**	**13**	*i* Pn	**Pn**	**07 20 02.1**	**+1.3**
	comp=Z,3.8nm,0.2s						
KBA	**Koelnbreinsper**	**3.65**	**13**	Pn	**Pn**	**07 20 02.1**	**+1.3**
	comp=Z,3.8nm,0.2s						
TRAV	**Traversella**	**3.71**	**304**	P	**Pn**	**07 20 01.4**	**-0.1**
SQTA	**Sankt Quirin**	**3.74**	**350**	*i* Pn	**Pn**	**07 20 04.6**	**+2.5**
	comp=Z,6.6nm,0.2s						
SQTA	**Sankt Quirin**	**3.74**	**350**	Pn	**Pn**	**07 20 04.6**	**+2.5**
	comp=Z,6.6nm,0.2s						
WTTA	**Wattenberg**	**3.75**	**355**	*i* Pn	**Pn**	**07 20 04.9**	**+2.8**
	comp=Z,2.2nm,0.2s						
WTTA				*i* Sn	**Sn**	**07 20 49.8**	**+3.6**
	comp=Z,53nm,0.8s						
WTTA	**Wattenberg**	**3.75**	**355**	Pn	**Pn**	**07 20 04.9**	**+2.8**
	comp=Z,2.2nm,0.2s						
WTTA				Sn	**Sn**	**07 20 49.8**	**+3.6**
	comp=Z,53nm,0.8s						
SOKA	**Soboth**	**3.75**	**32**	*i* Pn	**Pn**	**07 20 01.6**	**-0.6**
	comp=Z,0.5nm,0.2s						
SOKA	**Soboth**	**3.75**	**32**	Pn	**Pn**	**07 20 01.6**	**-0.6**
	comp=Z,0.5nm,0.2s						
WATA	**Walderalm**	**3.82**	**354**	*i* Pn	**Pn**	**07 20 05.6**	**+2.5**
	comp=Z,4.7nm,0.2s,SNR=17						
WATA	**Walderalm**	**3.82**	**354**	Pn	**Pn**	**07 20 05.6**	**+2.5**
	comp=Z,4.7nm,0.2s,SNR=17						
BLY	**Banja Luka**	**3.83**	**70**	*e*Pn	**Pn**	**07 20 05.5**	**+2.3**
MOTA	**Moosalm**	**3.88**	**350**	*i* Pn	**Pn**	**07 20 07.3**	**+3.4**
	comp=Z,11nm,0.4s,SNR=30						
MOTA	**Moosalm**	**3.88**	**350**	Pn	**Pn**	**07 20 07.3**	**+3.4**
	comp=Z,11nm,0.4s,SNR=30						
FRF	**La Foret Royal**	**3.99**	**272**	*e*Pn	**Pn**	**07 20 05.2**	**-0.1**
FRF				*e*Sn	**Sn**	**07 20 50.1**	**-1.8**
	comp=Z,38nm,0.7s						
FRF	**La Foret Royal**	**3.99**	**272**	*e*Pn	**Pn**	**07 20 05.2**	**-0.1**
FRF				*e*Sn	**Sn**	**07 20 50.1**	**-1.8**
	comp=Z,19nm,0.7s						
MBDF	**Montbardon**	**4.04**	**289**	*e*Pn	**Pn**	**07 20 05.4**	**-0.8**
MBDF				*e*Sn	**Sn**	**07 20 51.0**	**-2.4**
	comp=Z,39nm,0.6s						
MBDF	**Montbardon**	**4.04**	**289**	*e*Pn	**Pn**	**07 20 05.4**	**-0.8**
MBDF				*e*Sn	**Sn**	**07 20 51.0**	**-2.4**
	comp=Z,19nm,0.6s						
RETA	**Reutte**	**4.07**	**347**	*i* Pn	**Pn**	**07 20 08.6**	**+2.1**
	comp=Z,6.5nm,0.3s,SNR=8.0						
RETA	**Reutte**	**4.07**	**347**	Pn	**Pn**	**07 20 08.6**	**+2.1**
	comp=Z,6.5nm,0.3s,SNR=8.0						
DAVA	**Damuels**	**4.07**	**338**	*i* Pn	**Pn**	**07 20 09.6**	**+3.0**
	comp=Z,8.3nm,0.2s,SNR=16						
DAVA				*i* Pn	**Pn**	**07 20 09.7**	**+3.0**
	comp=Z,6.2nm,0.3s						
DAVA				*i* Sn	**Sn**	**07 20 58.8**	**+4.6**
	comp=Z,14nm,0.4s						
DAVA	**Damuels**	**4.07**	**338**	Pn	**Pn**	**07 20 09.6**	**+3.0**
	comp=Z,8.3nm,0.2s,SNR=16						
LMR	**La Mourre**	**4.10**	**269**	*e*Pn	**Pn**	**07 20 07.1**	**+0.3**
LMR				*e*Sn	**Sn**	**07 20 52.7**	**-2.0**
	comp=Z,6.3nm,0.3s						
LMR	**La Mourre**	**4.10**	**269**	*e*Pn	**Pn**	**07 20 07.1**	**+0.3**
LMR				*e*Sn	**Sn**	**07 20 52.7**	**-2.0**
	comp=Z,3.2nm,0.3s						
STON	**Ston**	**4.12**	**97**	*e*Pn	**Pn**	**07 20 07.7**	**+0.6**
LPG	**La Plagne**	**4.32**	**299**	*e*Pn	**Pn**	**07 20 10.2**	**+0.1**
LPG				*e*Sn	**Sn**	**07 20 57.9**	**-2.6**
	comp=Z,28nm,0.9s						
LPG	**La Plagne**	**4.32**	**299**	*e*Pn	**Pn**	**07 20 10.2**	**+0.1**
LPG				*e*Sn	**Sn**	**07 20 57.9**	**-2.6**
	comp=Z,14nm,0.9s						
LPL	**La Plagne**	**4.34**	**299**	*e*Pn	**Pn**	**07 20 10.6**	**+0.2**
LPL				*e*Sn	**Sn**	**07 20 58.1**	**-2.8**
	comp=Z,14nm,0.5s						
LPL	**La Plagne**	**4.34**	**299**	*e*Pn	**Pn**	**07 20 10.6**	**+0.2**
LPL				*e*Sn	**Sn**	**07 20 58.1**	**-2.8**
	comp=Z,6.8nm,0.5s						
ARSA	**Arzberg**	**4.42**	**32**	*i* Pn	**Pn**	**07 20 10.2**	**-1.0**
	comp=Z,0.7nm,0.2s						
ARSA	**Arzberg**	**4.42**	**32**	Pn	**Pn**	**07 20 10.2**	**-1.0**
	comp=Z,0.7nm,0.2s						
MOA	**Molln**	**4.57**	**18**	*i* Pn	**Pn**	**07 20 13.7**	**+0.4**
	comp=Z,2.0nm,0.2s						
MOA				*i* Sn	**Sn**	**07 21 04.9**	**-1.3**
	comp=Z,12nm,0.5s						
MOA	**Molln**	**4.57**	**18**	Pn	**Pn**	**07 20 13.7**	**+0.4**
	comp=Z,2.0nm,0.2s						
MOA				Sn	**Sn**	**07 21 04.9**	**-1.3**
	comp=Z,12nm,0.5s						
TREB	**Trebinje**	**4.62**	**98**	*e*Pn	**Pn**	**07 20 15.0**	**+1.0**
ORIF	**Oris-en-Rattie**	**4.70**	**289**	*e*Pn	**Pn**	**07 20 16.5**	**+1.3**
ORIF				*e*Sn	**Sn**	**07 21 06.8**	**-2.9**
	comp=Z,24nm,0.5s						
ORIF	**Oris-en-Rattie**	**4.70

LANF	**Langenberg**	**6.22**	**333**	P	**Pn**	**07 20 36.6**	**+0.7**
LANF				S	**Sn**	**07 21 47.0**	**+0.1**
LANF	**Langenberg**	**6.22**	**333**	P	**Pn**	**07 20 36.6**	**+0.7**
LANF				S	**Sn**	**07 21 47.0**	**+0.1**
GRUS	**Gruza**	**6.23**	**84**	*e*Pn	**Pn**	**07 20 37.9**	**+1.8**
PLDF	**La Plantade**	**6.53**	**295**	P	**Pn**	**07 20 40.8**	**+0.5**
PLDF				S	**Sn**	**07 21 53.5**	**-1.2**
PLDF	**La Plantade**	**6.53**	**295**	P	**Pn**	**07 20 40.8**	**+0.5**
PLDF				S	**Sn**	**07 21 53.5**	**-1.2**
LBL	**Lubilhac**	**6.59**	**288**	P	**Pn**	**07 20 42.8**	**+1.7**
LBL	**Lubilhac**	**6.59**	**288**	P	**Pn**	**07 20 42.8**	**+1.7**
SMF	**Signal de Mont**	**6.64**	**301**	*e*Pn	**Pn**	**07 20 40.4**	**-1.4**
SMF				*e*Sn	**Sn**	**07 21 52.7**	**-4.6**
	comp=Z,7.5nm,0.4s						
SMF	**Signal de Mont**	**6.64**	**301**	*e*Pn	**Pn**	**07 20 40.4**	**-1.4**
NKC	**Novy Kostel**	**6.71**	**2**	*e*SN	**Sn**	**07 21 55.6**	**-3.3**
PAGF	**Fort de Pagny**	**6.71**	**321**	*e*Pn	**Pn**	**07 20 43.3**	**+0.6**
	baz=131						
PAGF				*e*Sn	**Sn**	**07 21 54.2**	**-4.9**
	comp=Z,5.2nm,0.9s						
PAGF	**Fort de Pagny**	**6.71**	**321**	*e*Pn	**Pn**	**07 20 43.3**	**+0.6**
SFTF	**Sexfontaines**	**6.81**	**316**	*e*Pn	**Pn**	**07 20 43.2**	**-0.8**
SFTF				*e*Sn	**Sn**	**07 21 56.4**	**-4.9**
	comp=Z,9.4nm,0.6s						
SFTF	**Sexfontaines**	**6.81**	**316**	*e*Pn	**Pn**	**07 20 43.2**	**-0.8**
AGO	**Saint Agoulin**	**6.88**	**295**	P	**Pn**	**07 20 45.9**	**+0.8**
AGO	**Saint Agoulin**	**6.88**	**295**	P	**Pn**	**07 20 45.9**	**+0.8**
LOR	**Lormes**	**6.92**	**306**	*e*Pn	**Pn**	**07 20 43.4**	**-2.1**
	baz=123						
LOR				*e*Sn	**Sn**	**07 21 59.3**	**-4.8**
	comp=Z,7.6nm,0.4s						
LOR	**Lormes**	**6.92**	**306**	*e*Pn	**Pn**	**07 20 43.4**	**-2.1**
MEZF	**Maizieres J'vi**	**7.00**	**318**	*e*Pn	**Pn**	**07 20 47.4**	**+0.8**
	baz=144						
MEZF				*e*Sn	**Sn**	**07 22 00.8**	**-5.2**
	comp=Z,4.8nm,0.5s						
MEZF	**Maizieres J'vi**	**7.00**	**318**	*e*Pn	**Pn**	**07 20 47.4**	**+0.8**
AVF	**Avril sur Loir**	**7.01**	**301**	*e*Pn	**Pn**	**07 20 45.6**	**-1.2**
AVF				*e*Sn	**Sn**	**07 22 01.8**	**-4.5**
	comp=Z,4.4nm,0.7s						
AVF	**Avril sur Loir**	**7.01**	**301**	*e*Pn	**Pn**	**07 20 45.6**	**-1.2**
SSF	**Saint Saulge**	**7.03**	**303**	*e*Pn	**Pn**	**07 20 45.6**	**-1.5**
SSF				*e*Sn	**Sn**	**07 22 02.1**	**-4.8**
	comp=Z,4.5nm,0.6s						
SSF	**Saint Saulge**	**7.03**	**303**	*e*Pn	**Pn**	**07 20 45.6**	**-1.5**
RUP	**Ruppelstein**	**7.09**	**332**	P	**Pn**	**07 20 49.4**	**+1.5**
RUP				S	**Sn**	**07 22 07.4**	**-0.9**
BARS	**Barje**	**7.12**	**92**	*e*Pn	**Pn**	**07 20 49.0**	**+0.7**
MTLF	**Montolieu**	**7.22**	**272**	*e*Pn	**Pn**	**07 20 48.9**	**-0.8**
MTLF				*e*Sn	**Sn**	**07 22 07.3**	**-4.3**
	comp=Z,3.1nm,0.7s						
MTLF	**Montolieu**	**7.22**	**272**	*e*Pn	**Pn**	**07 20 48.9**	**-0.8**
BGF	**Bois d'Agland**	**7.24**	**298**	*e*Pn	**Pn**	**07 20 48.7**	**-1.2**
BGF				*e*Sn	**Sn**	**07 22 07.2**	**-4.8**
	comp=Z,8.1nm,0.4s						
BGF	**Bois d'Agland**	**7.24**	**298**	*e*Pn	**Pn**	**07 20 48.7**	**-1.2**
CAF	**Calviac**	**7.37**	**284**	*e*Pn	**Pn**	**07 20 51.7**	**0.0**
CAF				*e*Sn	**Sn**	**07 22 10.7**	**-4.5**
	comp=Z,0.8nm,0.2s						
CAF	**Calviac**	**7.37**	**284**	*e*Pn	**Pn**	**07 20 51.7**	**0.0**
TCF	**Toulx Ste Croi**	**7.56**	**295**	*e*Pn	**Pn**	**07 20 52.8**	**-1.6**
TCF	**Toulx Ste Croi**	**7.56**	**295**	*e*Pn	**Pn**	**07 20 52.8**	**-1.6**
RJF	**Les Rejaudoux**	**7.80**	**287**	*e*Pn	**Pn**	**07 20 56.5**	**-1.2**
RJF				*e*Sn	**Sn**	**07 22 20.9**	**-5.0**
	comp=Z,0.9nm,0.4s						
RJF	**Les Rejaudoux**	**7.80**	**287**	*e*Pn	**Pn**	**07 20 56.5**	**-1.2**
LFF	**La Frestale**	**8.30**	**284**	*e*Pn	**Pn**	**07 21 03.7**	**-0.8**
LFF				*e*Sn	**Sn**	**07 22 33.0**	**-5.1**
	comp=Z,2.6nm,0.5s						
LFF	**La Frestale**	**8.30**	**284**	*e*Pn	**Pn**	**07 21 03.7**	**-0.8**
EPF	**Esparros**	**8.62**	**271**	*e*Pn	**Pn**	**07 21 07.9**	**-1.0**
EPF	**Esparros**	**8.62**	**271**	*e*Pn	**Pn**	**07 21 07.9**	**-1.0**
EKA	**Eskdalemuir Ar**	**15.40**	**325**	Pn	**Pn**	**07 22 41.8**	**+0.6**
	baz=136,slow=14,SNR=3.0						
FINES	**FINESS Array B**	**19.77**	**20**	P	**P**	**07 23 33.3**	**-0.6**
	comp=Z,0.1nm,0.3s,baz=202,slow=6.9,SNR=2.6						
MMAI	**Mount Meron Ar**	**21.01**	**112**	LR	LR	07 34 23.1	
	comp=Z,86nm,21.1s,baz=70,slow=44						
KURBB	**Kurchatov Arra**	**44.39**	**57**	P	**P**	**07 27 14.7**	**+0.2**
	comp=Z,0.2nm,0.3s,baz=289,slow=8.2,SNR=2.8						
MKAR	**Makanchi Array**	**48.06**	**60**	P	**P**	**07 27 43.5**	**0.0**
	comp=Z,0.4nm,0.8s,baz=294,slow=7.2,SNR=4.0						
SONM	**Songino Array**	**61.91**	**50**	P	**P**	**07 29 26.6**	**+2.8**
	comp=Z,0.2nm,0.3s,baz=299,slow=6.3,SNR=3.0						
YKA	**Yellowknife Ar**	**66.05**	**336**	P	**P**	**07 29 51.8**	**+1.3**
	comp=Z,0.1nm,0.5s,baz=39,slow=5.7,SNR=5.8						

*ISCJB **24** 07:40:50.9±0.8,36.8°N±0.1°×33.6°W±0.1°,h10km,mb3.7/10, MS3.7/7,Error ellipse: s-maj=19.1km s-min=13.0km az=146.7*

*IDC **24** 07:40:51.1±0.9,36.69°N×33.56°W,h0km,mb3.7/10, mb1 3.9/10,mb1mx3.6/42,mbtmp3.7/10,MS3.7/7, Ms1 3.7/7,ms1mx2.2/38,Error ellipse: s-maj=27.7km s-min=19.5km az=178.0*

ISC 24 07:40:52.9±0.8,36°9N±0.1°×33°5W±0.1°,h10km,n16, σ1§29/13,mb3.7/10,MS3.7/7,Azores Islands region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
H07S1	**FLORES T-PHASE**	**3.10**	**35**	Pn	**Pn**	**07 41 41.6**	**-0.4**
H07S1				Sn	**Sn**	**07 42 16.3**	**-2.8**
H07N1	**FLORES T-PHASE**	**3.40**	**33**	Pn	**Pn**	**07 41 46.7**	**+0.7**
	SNR=3.3						
SCHQ	**Schefferville**	**28.99**	**319**	LR	LR	07 57 38.0	
	comp=Z,199nm,19.4s,baz=106,slow=35						
TORD	**Torodi Ar. Bea**	**39.32**	**118**	P	**P**	**07 48 21.9**	**-0.5**
	0.6nm,0.8s,baz=308,slow=7.0,SNR=3.8						
TORD				LR	LR	08 01 58.1	
	comp=Z,64nm,21.6s,baz=140,slow=32						
DBIC	**Dimbokro**	**39.80**	**132**	LR	LR	08 03 44.6	
	comp=Z,122nm,18.0s,baz=316,slow=35						
FINES	**FINESS Array B**	**44.03**	**37**	P	**P**	**07 49 01.6**	**+1.1**
	0.4nm,0.6s,baz=267,slow=9.7,SNR=4.6						
ULM	**Lac du Bonnet**	**45.86**	**308**	LR	LR	08 07 53.1	
	comp=Z,86nm,20.3s,baz=78,slow=35						
AKASG	**Malin Array Be**	**45.99**	**52**	P	**P**	**07 49 16.7**	**+0.5**
	0.6nm,0.6s,baz=274,slow=7.9,SNR=4.7						
BRTR	**Keskin Array B**	**51.64**	**65**	P	**P**	**07 50 00.6**	**+0.7**
	0.4nm,0.5s,baz=297,slow=6.3,SNR=3.0						
YKA	**Yellowknife Ar**	**54.10**	**326**	P	**P**	**07 50 18.7**	**+1.2**
	0.5nm,0.7s,baz=80,slow=7.2,SNR=15						
PDAR	**Pinedale Array**	**56.90**	**301**	P	**P**	**07 50 36.8**	**-1.5**
	0.5nm,0.8s,baz=71,slow=8.7,SNR=4.5						
PDAR				LR	LR	08 14 54.7	
	comp=Z,67nm,18.8s,baz=78,slow=36						
TXAR	**Lajitas Array**	**58.10**	**285**	P	**P**	**07 50 46.6**	**-0.2**
	0.9nm,0.8s,baz=82,slow=7.4,SNR=10						
TXAR				LR	LR	08 16 52.4	
	comp=Z,40nm,18.0s,baz=0.0,slow=37						
INK	**Inuvik**	**59.85**	**335**	P	**P**	**07 50 58.9**	**+0.7**
	0.7nm,0.8s,baz=66,slow=3.4						
LPAZ	**La Paz**	**62.14**	**218**	P	**P**	**07 51 13.9**	**-1.2**
	1.5nm,0.8s,baz=43,slow=12,SNR=4.9						
MKAR	**Makanchi Array**	**78.80**	**39**	P	**P**	**07 52 56.4**	**+0.5**
	0.5nm,0.7s,baz=302,slow=7.1,SNR=6.1						
PLCA	**Paso Flores**	**84.36**	**207**	LR	LR	08 29 16.7	
	comp=Z,44nm,18.8s,baz=154,slow=34						

IDC 24 07:45:30.4±0.7,19°32N×144°58E,h0km,mb3.7/11, mb1 4.0/11,mb1mx3.7/38,mbtmp3.7/11,MS1.9/1, Ms1 1.9/1,ms1mx1.8/42,Error ellipse: s-maj=29.8km s-min=16.9km az=95.0,Mariana Islands

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
GUMO	**Guam**	**5.70**	**177**	LR	LR	07 48 13.0	
	comp=Z,10nm,19.3s,baz=192,slow=28						
H11S3	**WAKE ISLAND Hy**	**20.93**	**89**	T	T	08 11 51.1	
	baz=276,slow=75						
H11S1	**WAKE ISLAND Hy**	**20.95**	**89**	T	T	08 11 58.4	
	baz=276,slow=75						
H11S2	**WAKE ISLAND Hy**	**20.95**	**89**	T	T	08 11 52.0	
	baz=276,slow=75						
H11N1	**WAKE ISLAND Hy**	**21.04**	**85**	T	T	08 12 03.4	
	baz=273,slow=75,SNR=7.4						
H11N2	**WAKE ISLAND Hy**	**21.04**	**85**	T	T	08 12 04.5	
	baz=273,slow=75,SNR=6.7						
H11N3	**WAKE ISLAND Hy**	**21.05**	**85**	T	T	08 12 08.3	
	baz=273,slow=75,SNR=4.9						
KSRS	**Korea Array**	**23.20**	**325**	P	P	07 50 40.2	**+1.4**
	0.4nm,0.3s,baz=144,slow=11,SNR=2.7						
WRA	**Warramunga Arr**	**40.29**	**195**	P	P	07 53 09.5	**+0.1**
	0.8nm,0.8s,baz=17,slow=8.9,SNR=6.1						
WRA				PcP	PcP	07 55 13.6	**+0.2**
	0.3nm,0.6s,baz=8.9,slow=3.4,SNR=3.9						
ASAR	**Alice Springs**	**43.97**	**194**	P	P	07 53 38.8	**-0.8**
	0.3nm,0.6s,baz=22,slow=7.1,SNR=6.8						
STKA	**Stephens Creek**	**50.98**	**183**	P	P	07 54 34.1	**+0.2**
	2.7nm,0.9s,baz=338,slow=11,SNR=4.7						
ZALV	**Zalesovo Beam**	**56.88**	**322**	P	P	07 55 16.5	**-0.4**
	0.2nm,0.2s,baz=101,slow=7.8,SNR=2.8						
MKAR	**Makanchi Array**	**57.27**	**314**	P	P	07 55 19.9	**+0.1**
	0.3nm,0.7s,baz=91,slow=8.6,SNR=3.5						
ILAR	**Eielson Array**	**63.56**	**26**	P	P	07 56 02.0	**-0.5**
	1.7nm,0.7s,baz=264,slow=5.0,SNR=14						
INK	**Inuvik**	**69.22**	**23**	P	P	07 56 38.8	**+0.1**
	1.7nm,1.0s,baz=251,slow=4.6,SNR=5.7						
YKA	**Yellowknife Ar**	**77.94**	**28**	P	P	07 57 30.4	**+0.3**
	0.3nm,0.6s,baz=291,slow=5.5,SNR=10						
NVAR	**Mina Array Bea**	**83.59**	**52**	P	P	07 58 01.8	**+0.7**
	0.4nm,0.6s,baz=280,slow=5.4,SNR=5.0						
FINES	**FINESS Array B**	**85.88**	**335**	P	P	07 58 10.3	**-1.5**
	2.3nm,1.1s,baz=49,slow=4.2,SNR=4.9						

IDC 24 07:46:28.4±2.1,19°38N×144°96E,h0km,mb3.4/4, mb1 3.7/4,mb1mx3.3/38,mbtmp3.4/4,MS2.6/1,Ms1 2.6/1, ms1mx2.2/26,Error ellipse: s-maj=364.5km s-min=22.9km az=110.0,Mariana Islands

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
H11S3	**WAKE ISLAND Hy**	**20.57**	**89**	T	T	08 12 51.4	
	baz=274						
H11S1	**WAKE ISLAND Hy**	**20.58**	**89**	T	T	08 12 54.2	
	baz=274						
H11S2	**WAKE ISLAND Hy**	**20.59**	**89**	T	T	08 12 51.8	
	baz=274						
H11N1	**WAKE ISLAND Hy**	**20.67**	**85**	T	T	08 13 01.1	
	baz=272						
H11N2	**WAKE ISLAND Hy**	**20.68**	**85**	T	T	08 13 02.1	
	baz=272						
H11N3	**WAKE ISLAND Hy**	**20.69**	**85**	T	T	08 13 02.5	
	baz=272						
PETK	**Petropavlovsk-**	**35.08**	**13**	LR	LR	08 06 20.5	
	comp=Z,11nm,21.5s,baz=339,slow=34						
WRA	**Warramunga Arr**	**40.45**	**196**	P	P	07 54 08.6	**-0.2**
	0.5nm,0.9s,baz=17,slow=8.8,SNR=2.7						
ASAR	**Alice Springs**	**44.13**	**195**	P	P	07 54 38.8	**-0.1**
	0.3nm,0.9s,baz=23,slow=10,SNR=3.0						
ILAR	**Eielson Array**	**63.34**	**26**	P	P	07 56 58.9	**-0.2**
	0.6nm,0.7s,baz=252,slow=5.9,SNR=4.7						
YKA	**Yellowknife Ar**	**77.71**	**28**	P	P	07 58 27.1	**+0.2**
	0.2nm,0.7s,baz=291,slow=5.4,SNR=2.7						

WEL 24 07:47:13.1±0.4,38°29S×176°05E,h156km±3km,ML3.7/14, 16C-4D,Error ellipse: s-maj=1.8km s-min=1.5km az=0.0, North Island

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
TLZ	**Tolley Road**	**0.40**	**264**	PN	Pn	07 47 35.0	**+0.2**
MUGZ	**Murupara**	**0.60**	**108**	PN	Pn	07 47 35.5	**-0.1**
MRHZ	**Matea Rd**	**0.61**	**152**	PN	Pn	07 47 35.7	**-0.1**
MRHZ				SN	Sn	07 47 52.5	**-0.7**
RITZ	**Rihia Road**	**0.70**	**192**	PN	Pn	07 47 36.7	**+0.4**
TOZ	**Tahuroa Road**	**0.71**	**322**	⇓PN	Pn	07 47 36.3	**0.0**
URZ	**Urewera**	**0.84**	**88**	⇓PN	Pn	07 47 36.5	**-0.7**
URZ				AML	AML	07 47 54.8	
URZ				AML	AML	07 47 56.1	
KRVZ	**Karewarewa**	**0.86**	**202**	PN	Pn	07 47 37.4	**-0.1**
WTVZ	**West Tongariro**	**0.90**	**203**	PN	Pn	07 47 37.8	**+0.1**
TWVZ	**Taurewa**	**0.91**	**211**	PN	Pn	07 47 37.4	**-0.4**
OTVZ	**Oturere**	**0.92**	**199**	⇑PN	Pn	07 47 38.3	**+0.3**
BKZ	**Black Stump Fm**	**0.94**	**158**	⇑PN	Pn	07 47 37.9	**-0.1**
BKZ				AML	AML	07 47 58.2	
BKZ				AML	AML	07 47 59.2	
NGZ	**Ngauruhoe**	**0.95**	**201**	⇓PN	Pn	07 47 38.4	**+0.2**
HIZ	**Hauiti**	**0.96**	**256**	PN	Pn	07 47 38.1	**0.0**
NMHZ	**Naumai**	**1.00**	**144**	PN	Pn	07 47 39.3	**+0.8**
RAHZ	**Arahi**	**1.03**	**128**	PN	Pn	07 47 39.1	**+0.4**
FWVZ	**Far West T-bar**	**1.04**	**202**	PN	Pn	07 47 39.0	**0.0**
WHVZ	**Whangaehu Hut**	**1.05**	**200**	PN	Pn	07 47 39.1	**-0.1**
WNVZ	**Wahianoa**	**1.09**	**199**	PN	Pn	07 47 39.3	**-0.1**
RAGZ	**Rawiri**	**1.09**	**101**	PN	Pn	07 47 39.5	**+0.2**
SNGZ	**Shannon Statio**	**1.13**	**116**	⇑PN	Pn	07 47 39.8	**+0.2**
MOVZ	**Moawhango**	**1.14**	**192**	PN	Pn	07 47 39.2	**-0.5**
MWZ	**Matawai**	**1.17**	**93**	⇑PN	Pn	07 47 39.6	**-0.3**
MWZ				SN	Sn	07 47 59.1	**-1.3**
MWZ				AML	AML	07 48 01.6	
MWZ				AML	AML	07 48 01.6	
KWHZ	**Kaweka Forest**	**1.17**	**166**	PN	Pn	07 47 39.9	**0.0**
MTVZ	**Mangateitei**	**1.18**	**202**	PN	Pn	07 47 39.9	**-0.1**
BHHZ	**Black Hill Sta**	**1.20**	**179**	PN	Pn	07 47 39.8	**-0.4**
WHHZ	**Waihua**	**1.22**	**131**	PN	Pn	07 47 40.6	**+0.3**
ARHZ	**Aropaoanui**	**1.22**	**143**	⇑PN	Pn	07 47 40.7	**+0.4**
MCHZ	**McNeill Hill**	**1.26**	**156**	PN	Pn	07 47 41.3	**+0.5**
VRZ	**Vera Road**	**1.31**	**230**	⇑PN	Pn	07 47 41.3	**+0.1**
KRHZ	**Kereru**	**1.37**	**170**	PN	Pn	07 47 41.7	**-0.2**
RIGZ	**Rimuhau**	**1.41**	**108**	PN	Pn	07 47 42.2	**0.0**
TKGZ	**Te Karaka**	**1.42**	**97**	PN	Pn	07 47 42.5	**+0.2**
KNZ	**Kokohu**	**1.47**	**120**	⇑PN	Pn	07 47 42.5	**-0.2**
TWGZ	**Tauwhareparae**	**1.53**	**86**	PN	Pn	07 47 43.4	**0.0**
PRGZ	**Paritu Road**	**1.57**	**114**	PN	Pn	07 47 43.7	**-0.2**
CKHZ	**Cape Kidnapper**	**1.58**	**150**	PN	Pn	07 47 44.1	**+0.1**
PNHZ	**Pukenui**	**1.62**	**176**	PN	Pn	07 47 43.8	**-0.7**
KAHZ	**Kahurangi**	**1.64**	**157**	⇑PN	Pn	07 47 44.5	**0.0**
PKGZ	**Pakihiroa**	**1.65**	**77**	PN	Pn	07 47 44.5	**-0.2**
WAZ	**Wanganui**	**1.68**	**209**	⇑PN	Pn	07 47 44.6	**-0.5**
MHGZ	**Mahia Peninsul**	**1.69**	**121**	PN	Pn	07 47 45.1	**0.0**
LREZ	**Lake Rotokare**	**1.74**	**227**	PN	Pn	07 47 45.8	**+0.3**
PUZ	**Puketiti**	**1.75**	**84**	AML	AML	07 48 11.7	
TSZ	**Takapari Road**	**1.77**	**182**	⇑PN	Pn	07 47 45.2	**-0.8**
WPHZ	**Waipukurau**	**1.80**	**170**	⇑PN	Pn	07 47 45.7	**-0.6**
PXZ	**Pawanui**	**1.85**	**160**	PN	Pn	07 47 46.3	**-0.5**
WMGZ	**Waiomatatini S**	**1.93**	**77**	PN	Pn	07 47 47.0	**-0.7**
DVHZ	**Dannevirke**	**2.01**	**177**	⇑PN	Pn	07 47 47.5	**-1.2**
PRHZ	**Porangahau**	**2.02**	**167**	PN	Pn	07 47 48.1	**-0.7**
POWZ	**Post Office Ro**	**2.11**	**186**	PN	Pn	07 47 48.5	**-1.3**
ANWZ	**Angora Road**	**2.19**	**171**	⇑PN	Pn	07 47 49.9	**-0.9**
PRWZ	**Pori Road**	**2.26**	**181**	PN	Pn	07 47 50.4	**-1.2**
BFZ	**Birch Farm**	**2.39**	**176**	⇑PN	Pn	07 47 51.6	**-1.6**
MRZ	**Mangatainoka R**	**2.40**	**189**	⇑PN	Pn	07 47 51.1	**-1.8**
TIWZ	**Tintock**	**2.49**	**183**	PN	Pn	07 47 52.7	**-1.6**
OGWZ	**Otaki Gorge**	**2.61**	**195**	⇑PN	Pn	07 47 53.9	**-1.9**
CPWZ	**Castlepoint**	**2.62**	**177**	PN	Pn	07 47 54.1	**-1.8**
HOWZ	**Holdsworth Sta**	**2.64**	**189**	PN	Pn	07 47 53.9	**-2.2**
KIW	**Kapiti Island**	**2.71**	**199**	PN	Pn	07 47 54.7	**-2.4**
TMWZ	**Te Maipa**	**2.81**	**182**	PN	Pn	07 47 56.1	**-2.3**
MTW	**Mount Morrison**	**2.90**	**188**	PN	Pn	07 47 56.7	**-2.6**
CAW	**Cannon Point**	**2.91**	**195**	PN	Pn	07 47 57.1	**-2.5**
DUWZ	**D'Urville Isla**	**3.00**	**213**	PN	Pn	07 47 58.0	**-2.7**
TRWZ	**Traveller**	**3.12**	**185**	PN	Pn	07 47 59.5	**-2.6**
MSWZ	**Moikau Station**	**3.18**	**191**	PN	Pn	07 47 60.0	**-3.0**
TCW	**Tory Channel**	**3.22**	**205**	PN	Pn	07 48 00.7	**-2.7**
PLWZ	**Palliser**	**3.33**	**190**	⇓PN	Pn	07 48 01.7	**-3.2**
TUWZ	**Tuamarina**	**3.53**	**207**	PN	Pn	07 48 04.2	**-3.2**
NNZ	**Nelson**	**3.57**	**214**	PN	Pn	07 48 04.7	**-3.3**
QRZ	**Quartz Range**	**3.72**	**226**	PN	Pn	07 48 06.1	**-3.7**
THZ	**Tophouse**	**4.22**	**214**	PN	Pn	07 48 12.8	**-3.6**
KHZ	**Kahutara**	**4.54**	**204**	PN	Pn	07 48 16.9	**-3.6**
LTZ	**Lake Taylor**	**5.33**	**211**	PN	Pn	07 48 26.3	**-4.7**
INZ	**Inchbonnie**	**5.65**	**217**	PN	Pn	07 48 29.7	**-5.4**

MEX 24 07:48:22.2±0.5,14°33N×91°79W,h20km±39km,MD3.7, Guatemala

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
PCIG		**1.95**	**315**	*i* P	Pn	07 48 51.3	**-2.8**
PCIG				*e*S	Sn	07 49 13.8	**-4.2**
TGIG		**2.76**	**332**	*i* P	Pn	07 49 02.5	**-2.8**
TGIG				*i* S	Sn	07 49 35.1	**-3.1**

*KRNET **24** 07:48:45.8±0.1,41.07°N×71.80°E,h16km,mb1.8*
*SOME **24** 07:48:46.3,41.30°N×72.08°E,h0km*
*NNC **24** 07:48:48.3±2.4,41.06°N×72.01°E,h122km±29km,mb1.1, mpv2.5,Error ellipse: s-maj=21.0km s-min=5.9km az=67.0*

ISC 24 07:48:46.2±1.1,41°08N±0.03°×71°83E±0.04°,h16km±10km, n12,σ1§27/23,14C-5D,Kyrgyzstan

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
ARK	**Arkit**	**0.73**	**8**	⇓*i*P	**Pg**	**07 48 59.8**	**-0.7**
	baz=11						
ARK				⇓*i*S	**Sg**	**07 49 09.9**	**-0.3**
	baz=11						
BTK	**Batken**	**1.28**	**217**	⇑*i*P	**Pg**	**07 49 10.3**	**-0.6**
	baz=217						
BTK				⇑*i*S	**Sn**	**07 49 27.2**	**+0.9**
	baz=217						
MNAS	**Manas**	**1.50**	**19**	⇑*i*P	**Pg**	**07 49 14.7**	**-0.4**
	baz=20						
MNAS				⇑*i*S	**Sg**	**07 49 35.5**	**+0.9**
	baz=20						
MNAS	**Manas**	**1.50**	**19**	⇑P	**Pg**	**07 49 15.1**	**0.0**
	3.2nm,0.4s						
MNAS				⇓S	**Sg**	**07 49 36.9**	**+2.3**
	16nm,0.4s						
SFK	**Sufi-Kurgan**	**1.66**	**129**	⇑eP	**Pb**	**07 49 16.8**	**+0.3**
	baz=128						
SFK				⇑*i*S	**Sg**	**07 49 39.1**	**-0.7**
	baz=128						
SFK	**Sufi-Kurgan**	**1.66**	**129**	⇑Pn	**Pb**	**07 49 16.9**	**+0.4**
	0.5nm,0.3s						
SFK				⇓Sn	**Sb**	**07 49 38.5**	**+1.2**
	9.2nm,0.3s						
IUG	**Iuzhnay**	**1.72**	**309**	*e*P	**Pg**	**07 49 18.8**	**-0.6**
	14nm,0.2s						
IUG				*e*S	**Sg**	**07 49 42.2**	**+0.5**
	25nm,0.3s						
AML	**Almayashu**	**1.75**	**52**	⇑*i*P	**Pb**	**07 49 18.8**	**+0.6**
	baz=52						
AML				⇑*i*S	**Sg**	**07 49 42.2**	**-0.5**
	baz=52						
MRKS	**Merke**	**1.97**	**32**	*e*P	**Pn**	**07 49 17.9**	**-1.0**
	5.1nm,0.4s						
MRKS				*e*S	**Sn**	**07 49 40.4**	**-2.9**
	2.3nm,0.2s						
EKS2	**Erkin-Say**	**2.15**	**42**	⇑*i*P	**Pb**	**07 49 25.0**	**+0.1**
	baz=42						
EKS2				⇑*i*S	**Sb**	**07 49 53.1**	**+1.8**
	baz=42						
KK31	**Karatay Array**	**2.25**	**335**	⇑Pn	**Pb**	**07 49 26.2**	**-0.3**
	1.3nm,0.3s,baz=147,slow=17,SNR=32						
KK31				⇑Sn	**Sb**	**07 49 55.5**	**+1.4**
	5.0nm,0.6s,baz=153,slow=26						
AAK	**Ala-Archa**	**2.53**	**51**	⇓Sn	**Sb**	**07 50 04.2**	**+2.0**
	3.0nm,0.8s						

*NIED **24** 07:49:00,36.90N×141.80E,h11km,Mw3.7 Best double couple: M0 4.31000×10^14 NP1:φs297.00000°,δ27.00000°, λ-137.00000°. NP2:φs168.00000°,δ72.00000°, λ-70.00000°.*

*IDC **24** 07:49:32.6±0.7,36.83N×142.03E,h0km,mb3.7/13, mb1 4.0/16,mb1mx3.8/38,mbtmp3.8/16,ML3.9/3,MS3.0/2, Ms1 3.0/2,ms1mx2.4/41,Error ellipse: s-maj=21.1km s-min=15.2km az=129.0*

*ISCJB **24** 07:49:33.4±0.5,36.86N±0.04°×142.08E±0.05,h19km, mb3.8/15,Error ellipse: s-maj=6.8km s-min=4.6km az=42.3*

*JMA **24** 07:49:36.9±0.4,36.89N×141.75E,h41km±5km,M3.5*

*NEIC **24** 07:49:37.7±0.5,36.87N×142.01E,h35km,mb4.4/2,Error ellipse: s-maj=11.8km s-min=7.5km az=130.0*

ISC 24 07:49:35.6±0.6,36°91N±0.05°×141°84E±0.06°,h19km,n41, σ1§47/40,mb3.8/15,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.85**	**283**	P	**Pb**	**07 49 51.5**

*IDC **24** 07:56:28.7±2.4,39°.19N×144°.68E,h0km,mb3.7/2, mb1 3.7/4,mb1mx3.3/33,mbtmp3.6/4,ML3.2/2,Error ellipse: s-maj=49.7km s-min=33.9km az=130.0*
*ISCJB **24** 07:56:30.4±1.0,39°.19N±0°.05×144°.55E±0°.06,h19km, mb3.7/2,Error ellipse: s-maj=8.3km s-min=6.2km az=137.1*
*JMA **24** 07:56:32.9±0.2,39°.12N×144°.49E,h44km,M3.7*

ISC 24 07:56:31.4±1.5,39°.16N±0°.07×144°.56E±0°.09,h19km,n18, σ0s87/25,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MIYJ	**Miyakonagasawa**	**2.17**	**282**	P	**Pn**	**07 57 06.9**	**+0.4**
MIYJ				S	**Sn**	**07 57 32.1**	**-0.7**
JTH	**Tanohata**	**2.23**	**291**	P	**Pn**	**07 57 07.5**	**+0.2**
JTH				S	**Sn**	**07 57 33.6**	**-0.7**
OFUJ	**Ofunato**	**2.25**	**269**	P	**Pn**	**07 57 08.1**	**+0.5**
OFUJ				S	**Sn**	**07 57 33.9**	**-1.0**
JOM	**Ohasama**	**2.56**	**278**	P	**Pn**	**07 57 12.8**	**+1.0**
JOM				S	**Sn**	**07 57 41.9**	**-0.5**
JMK	**Ichinoseki**	**2.61**	**267**	P	**Pn**	**07 57 13.3**	**+0.8**
JMK				*e*S	**Sn**	**07 57 43.3**	**-0.4**
JKZ	**Kuzumaki**	**2.63**	**289**	P	**Pn**	**07 57 13.9**	**+1.0**
JKZ				S	**Sn**	**07 57 44.6**	**+0.3**
JANG	**Nango**	**2.65**	**298**	P	**Pn**	**07 57 13.1**	**+0.1**
JANG				*e*S	**Sn**	**07 57 43.8**	**-0.8**
JTM	**Tenmabayashi**	**3.14**	**302**	S	**Sn**	**07 57 57.1**	**+0.3**
JOU	**Okura**	**3.15**	**257**	P	**Pn**	**07 57 20.4**	**+0.4**
JOU				S	**Sn**	**07 57 56.2**	**-0.8**
JMM	**Marumori**	**3.23**	**248**	P	**Pn**	**07 57 20.5**	**-0.5**
JNBK	**Urakawa-nobuka**	**3.41**	**337**	P	**Pn**	**07 57 23.2**	**-0.3**
JNBK				S	**Sn**	**07 58 01.8**	**-1.6**
ASAJ	**Asahikawa**	**5.17**	**344**	Pn	**Pn**	**07 57 47.5**	**-0.2**
ASAJ	0.6nm,0.3s,baz=212,slow=20,SNR=12			Sn	**Sn**	**07 58 49.2**	**+2.3**
MJAR	1.0nm,0.3s,baz=60,slow=33,SNR=6.2 **Matsushiro Arr**	**5.66**	**245**	Pn	**Pn**	**07 57 55.5**	**+1.0**
H11N2	0.8nm,0.3s,baz=55,slow=10,SNR=7.4 **WAKE ISLAND Hy**	**27.31**	**129**	T	T	08 30 32.1	
H11N1	baz=318 **WAKE ISLAND Hy**	**27.32**	**129**	T	T	08 30 29.3	
H11N3	baz=318 **WAKE ISLAND Hy**	**27.33**	**129**	T	T	08 30 33.5	
ILAR	baz=318 **Eielson Array**	**46.37**	**33**	P	**P**	**08 04 55.6**	**-0.4**
FINES	0.3nm,0.6s,baz=265,slow=6.6,SNR=5.2 **FINESS Array B**	**68.08**	**333**	P	**P**	**08 07 29.6**	**+0.2**
	1.6nm,1.0s,baz=33,slow=4.7,SNR=4.6						

*MOS **24** 07:58:57.7±2.4,48°.78N×156°.71E,h6km,mb4.1/1,Error ellipse: s-maj=63.9km s-min=9.5km az=81.7*
*SKHL **24** 07:58:58.3±0.0,48°.80N×155°.69E,h24km±5km,mb4.0/1*

KRSC 24 07:58:57.7±1.5,48°.78N×156°.71E,h6km±3km,ML4.1, East of Kuril Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SKR	**Severo-Kuril's**	**1.94**	**349**	*e*P	Pn	07 59 30.6	-0.6
SKR				*e*S	Sn	07 59 55.5	-0.4
SKR	**Severo-Kuril's**	**1.94**	**349**	*e*P	Pn	07 59 28.5	-2.7
SKR	40nm,0.2s			AMB	AMB	07 59 29.0	
SKR				*e*S	Sn	07 59 51.2	-4.7
SKR	150nm,0.2s			A	A	07 59 55.5	
SKR	140nm,0.2s			A	A	07 59 55.5	
SKR	**Severo-Kuril's**	**1.94**	**349**	*e*PN	Pn	07 59 28.5	-2.7
SKR	comp=Z,40nm,0.3s			pmax	pmax		
PAU	**Pauzhetka**	**2.69**	**1**	*e*P	Pb	07 59 43.9	-2.3
PAU				*e*S	Sb	08 00 18.1	-1.4
PAU	**Pauzhetka**	**2.69**	**1**	*e*P	Pb	07 59 43.9	-2.3
PAU				*e*S	Sb	08 00 18.1	-1.4
PAU	**Pauzhetka**	**2.69**	**1**	PN	Pb	07 59 43.9	-2.3
PAU				S	Sb	08 00 18.1	-1.4
ASAK	**Asacha**	**3.69**	**11**	*e*P	Pb	07 59 59.3	-4.0
RUS	**Russkaya**	**3.83**	**17**	*e*P	Pn	08 00 00.2	+3.0
RUS				*e*S	Sb	08 00 47.5	-4.9
RUS	**Russkaya**	**3.83**	**17**	*e*P	Pn	08 00 00.2	+3.0
RUS	**Russkaya**	**3.83**	**17**	PN	Pn	08 00 00.2	+3.0
RUS				S	Sb	08 00 47.5	-4.9
DALK	**Dalny**	**4.45**	**16**	*e*P	Pn	08 00 10.0	+4.4
DALK				*e*S	Sb	08 01 03.9	-6.1
UGLR	**Uglovaya**	**4.63**	**16**	*e*P	Pn	08 00 12.5	+4.2
SMAR	**Somma**	**4.68**	**16**	*e*P	Pn	08 00 13.8	+4.8
SMAR	**Somma**	**4.68**	**16**	PN	Pn	08 00 13.8	+4.8
SDLR	**Sedlovina**	**4.71**	**16**	*e*P	Pn	08 00 13.3	+3.9
SDLR	**Sedlovina**	**4.71**	**16**	PN	Pn	08 00 13.3	+3.9
KRER	**Koryakskii**	**4.71**	**15**	*e*P	Pn	08 00 13.5	+4.1
KRX	**Arik**	**4.75**	**14**	*e*P	Pn	08 00 13.7	+3.8
SPN	**Mys Shipunski**	**4.81**	**25**	*e*P	Pn	08 00 14.8	+4.3
SPN				*e*S	Sn	08 01 11.7	+5.2
SPN	**Mys Shipunski**	**4.81**	**25**	*e*P	Pn	08 00 14.8	+4.3
SPN	**Mys Shipunski**	**4.81**	**25**	PN	Pn	08 00 14.8	+4.3
SPN				S	Sn	08 01 11.7	+5.2
GNL	**Ganaly**	**4.98**	**8**	*e*P	Pn	08 00 17.4	+4.3
GNL	**Ganaly**	**4.98**	**8**	PN	Pn	08 00 17.4	+4.3
MKZ	**Mys Kozlova**	**6.57**	**26**	*e*P	Pn	08 00 39.4	+4.6
MKZ	**Mys Kozlova**	**6.57**	**26**	*e*P	Pn	08 00 39.4	+4.6
MKZ	**Mys Kozlova**	**6.57**	**26**	PN	Pn	08 00 39.4	+4.6
KBTR	**Krutoberegovo**	**8.32**	**24**	*e*P	Pn	08 01 03.9	+5.2
KBTR	**Krutoberegovo**	**8.32**	**24**	PN	Pn	08 01 03.9	+5.2

*DDA **24** 08:01:43.8,39°.03N×38°.06E,h7km,Ml2.7*
*ISK **24** 08:01:43.8,39°.01N×38°.08E,h10km,MD2.3*
*ISCJB **24** 08:01:44.1±0.5,39°.01N±0°.03×38°.06E±0°.04,h5km±7km, Error ellipse: s-maj=5.3km s-min=4.2km az=137.7*
*CSEM **24** 08:01:44.1±0.2,39°.01N×38°.07E,h10km,ML2.7,Error ellipse: s-maj=3.6km s-min=3.1km az=145.0*

ISC 24 08:01:43.8±1.0,39°.01N±0°.03×38°.07E±0°.03,h15km±10km, n20,σ0s35/36,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KEMA	**Kemaliye**	**0.42**	**52**	*i* P	**Pg**	**08 01 51.9**	**-0.4**
KEMA				*i* S	**Sb**	**08 01 59.1**	**-0.1**
KEMA	**Kemaliye**	**0.42**	**52**	P	**Pg**	**08 01 51.9**	**-0.4**
KEMA				S	**Sb**	**08 01 59.1**	**-0.1**
CUKAN	**kangal_SIVAS**	**0.56**	**303**	*i* P	**Pg**	**08 01 54.8**	**-0.2**
CUKAN				*i* S	**Sg**	**08 02 02.5**	**0.0**
CUKAN	**kangal_SIVAS**	**0.56**	**303**	P	**Pg**	**08 01 54.8**	**-0.2**
CUKAN				S	**Sg**	**08 02 02.5**	**0.0**
ILIC	**ilic-Erzincan**	**0.59**	**41**	*e*PG	**Pb**	**08 01 55.7**	**-0.2**
ILIC				*e*SG	**Sb**	**08 02 04.1**	**+0.1**
ILIC	**ilic-Erzincan**	**0.59**	**41**	*e*Pg	**Pb**	**08 01 55.7**	**-0.2**
ILIC				*e*Sg	**Sb**	**08 02 04.1**	**+0.1**
DARE	**Darende-Malaty**	**0.64**	**227**	*e*PG	**Pg**	**08 01 56.2**	**-0.1**
DARE				*e*SG	**Sb**	**08 02 06.0**	**+0.7**
DARE	**Darende-Malaty**	**0.64**	**227**	*e*Pg	**Pg**	**08 01 56.3**	**-0.1**
DARE				*e*Sg	**Sb**	**08 02 06.1**	**+0.7**
AKCD	**Akcadag**	**0.72**	**189**	*i* P	**Pb**	**08 01 58.1**	**0.0**
AKCD				*i* S	**Sn**	**08 02 09.7**	**-0.8**
AKCD	**Akcadag**	**0.72**	**189**	P	**Pb**	**08 01 58.2**	**0.0**
AKCD				S	**Sn**	**08 02 09.7**	**-0.8**
ELZG	**Elazig**	**0.88**	**125**	*i* P	**Pb**	**08 02 00.6**	**-0.3**
ELZG				*i* S	**Sn**	**08 02 14.0**	**-0.4**
ELZG	**Elazig**	**0.88**	**125**	P	**Pb**	**08 02 00.6**	**-0.3**
ELZG				S	**Sn**	**08 02 14.0**	**-0.4**
PTK	**Pertek**	**1.04**	**96**	*e*PG	**Pg**	**08 02 03.9**	**0.0**
PTK				*e*SG	**Sn**	**08 02 18.5**	**+0.2**
PTK	**Pertek**	**1.04**	**96**	*e*Pg	**Pg**	**08 02 03.9**	**0.0**
PTK				*e*Sg	**Sn**	**08 02 18.5**	**+0.2**
SVRC	**Sivrice-ELAZID**	**1.15**	**123**	*e*PN	**Pg**	**08 02 06.3**	**+0.2**
SVRC	**Sivrice-ELAZID**	**1.15**	**123**	*e*Pn	**Pg**	**08 02 06.3**	**+0.2**
SVSK	**Karacayir**	**1.23**	**318**	*e*PN	**Pg**	**08 02 07.6**	**+0.1**
SVSK	**Karacayir**	**1.23**	**318**	*e*Pn	**Pg**	**08 02 07.6**	**+0.1**
KELT	**Kelkit**	**1.46**	**38**	*i* P	**Pb**	**08 02 11.0**	**+0.2**
KELT				*i* S	**Sg**	**08 02 31.5**	**+0.5**
KELT	**Kelkit**	**1.46**	**38**	P	**Pb**	**08 02 11.0**	**+0.2**
KELT				S	**Sg**	**08 02 31.5**	**+0.5**

*JMA **24** 08:04:24.9±0.2,24°.51N×122°.24E,h70km±3km,M2.1*
*ISCJB **24** 08:04:25.3±0.7,24°.58N±0°.04×122°.28E±0°.02,h66km±7km, Error ellipse: s-maj=7.3km s-min=3.4km az=173.9*
*TAP **24** 08:04:25.4,24°.59N×122°.25E,h64km±1km,ML3.0,D*

ISC 24 08:04:26.0±1.4,24°.55N±0°.05×122°.28E±0°.03,h61km±11km, n26,σ0s73/48,Taiwan region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TWC	**Suao**	**0.39**	**279**	*i* P	**Pn**	**08 04 36.8**	**-0.2**
TWC	baz=273			*i* S	**Sn**	**08 04 44.9**	**-0.1**
EGS	baz=273 **Nanau**	**0.43**	**313**	*e*P	**Pn**	**08 04 36.8**	**-0.5**
ENA	baz=312 **Nanau**	**0.50**	**256**	*i* P	**Pn**	**08 04 38.1**	**+0.1**
ENA	baz=250			*e*S	**Sn**	**08 04 48.1**	**+1.2**
TWE	baz=250 **Neicheng**	**0.58**	**287**	P	**Pn**	**08 04 38.6**	**-0.3**
TWE	baz=283			*e*S	**Sn**	**08 04 48.2**	**-0.1**
JYNG	baz=283 **Yonagunijimaku**	**0.62**	**99**	P	**Pn**	**08 04 39.2**	**-0.1**
JYNG				S	**Sn**	**08 04 49.8**	**+0.7**
ENTT	**Nioudou**	**0.65**	**278**	*i* P	**Pn**	**08 04 39.9**	**+0.2**
ENTT	baz=274			*e*S	**Sn**	**08 04 50.7**	**+0.9**
YOJ	baz=274 **Yonaguni jima**	**0.68**	**97**	P	**Pn**	**08 04 40.1**	**+0.1**
YOJ				S	**Sn**	**08 04 50.7**	**+0.4**
NWF	**Wu-fen Shan**	**0.69**	**319**	*i* P	**Pn**	**08 04 39.7**	**-0.6**
NWF	baz=318			S	**Sn**	**08 04 49.9**	**-0.7**
TWD	baz=318 **Chiawan**	**0.78**	**233**	*e*P	**Pn**	**08 04 40.8**	**-0.5**
TWD	baz=229			*e*S	**Sn**	**08 04 52.5**	**+0.1**
NNS	baz=229 **Nan Shan**	**0.83**	**263**	*e*P	**Pn**	**08 04 41.7**	**-0.3**
NNS	baz=259			*e*S	**Sn**	**08 04 53.7**	**-0.1**
NSK	baz=259 **Sanguang**	**0.84**	**279**	*e*P	**Pn**	**08 04 41.9**	**-0.3**
NSK	baz=275			*e*S	**Sn**	**08 04 53.8**	**-0.3**
TWY	baz=275 **Chenhua**	**0.95**	**320**	*e*P	**Pn**	**08 04 44.2**	**+0.8**
TWY	baz=319			*e*S	**Sn**	**08 04 55.5**	**-0.8**
WHF	baz=319 **Hehuan Shan**	**1.00**	**247**	*i* P	**Pn**	**08 04 44.0**	**-0.5**
WHF	baz=243			S	**Sn**	**08 04 57.8**	**-0.4**
TWT	baz=243 **Tachien**	**1.04**	**254**	*e*P	**Pn**	**08 04 45.1**	**+0.3**
TWT	baz=251			S	**Sn**	**08 04 59.1**	**+0.3**
NSTT	baz=251 **Nanjuang**	**1.16**	**274**	*e*S	**Sn**	**08 05 01.1**	**-0.2**
WDT	baz=272 **Danda**	**1.31**	**233**	*i* P	**Pn**	**08 04 47.9**	**-0.6**
WDT	baz=230			*e*S	**Sn**	**08 05 04.6**	**-0.6**
IRIF	baz=230 **Iriomote-Funau**	**1.34**	**99**	P	**Pn**	**08 04 48.2**	**-0.4**
IRIF				*e*S	**Sn**	**08 05 05.8**	**+0.3**
SMLT	**Sun Moon Lake**	**1.42**	**242**	*e*P	**Pn**	**08 04 50.4**	**+0.7**
SMLT	baz=240			*e*S	**Sn**	**08 05 09.2**	**+1.7**
TYC	baz=240 **Yuchr**	**1.45**	**244**	*e*P	**Pn**	**08 04 50.4**	**+0.5**
TYC	baz=241			*e*S	**Sn**	**08 05 09.4**	**+1.4**
TWF1	baz=241 **Yuli**	**1.49**	**217**	*e*P	**Pn**	**08 04 49.5**	**-1.1**
YUS	baz=214 **Yu-Shan**	**1.60**	**229**	P	**Pn**	**08 04 52.5**	**-0.1**
YUS	baz=227			*e*S	**Sn**	**08 05 12.7**	**+0.1**
JKRS	baz=227 **Kuro-shima**	**1.61**	**101**	P	**Pn**	**08 04 52.2**	**0.0**
JKRS				*e*S	**Sn**	**08 05 12.7**	**+0.7**
ALS	**Alishan**	**1.70**	**233**	*e*P	**Pn**	**08 04 53.5**	**-0.1**
ALS	baz=230			*e*S	**Sn**	**08 05 15.9**	**+1.4**
JIJ	baz=230 **Ishigaki jima**	**1.71**	**96**	P	**Pn**	**08 04 53.3**	**-0.2**
JIJ				*e*S	**Sn**	**08 05 14.0**	**-0.4**
CHN5	**Tsauling**	**1.74**	**237**	*e*S	**Sn**	**08 05 16.7**	**+1.4**
ELDTW	baz=235 **Lidau**	**1.78**	**221**	*e*P	**Pn**	**08 04 53.4**	**-1.1**
ELDTW	baz=218			*e*S	**Sn**	**08 05 14.4**	**-1.8**

*ISCJB **24** 08:17:27.6±0.4,14°.14N±0°.04×120°.54E±0°.07,h150km, mb3.8/11,Error ellipse: s-maj=9.9km s-min=6.2km az=170.5*
*MAN **24** 08:17:29,14°.09N×120°.46E,h129km,mb4.5,ML3.4, MS3.3*
*IDC **24** 08:17:30.9±6.8,14°.08N×120°.67E,h179km±64km, mb3.6/11,mb1 3.7/11,mb1mx3.3/50,mbtmp4.0/11,MS3.6/2, Ms1 3.6/2,ms1mx2.7/32,Error ellipse: s-maj=33.7km s-min=13.1km az=61.0*

ISC 24 08:17:28.3±0.6,14°.10N±0°.04×120°.57E±0°.08,h150km,n26, σ1s23/29,mb3.9/11,5C-1D,Luzon

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TGY	**Tagaytay City**	**0.35**	**90**	*i*P	**Pn**	**08 17 49.8**	**+0.6**
TGY				*i* S	Sn	08 17 59.8	-5.1
PGP	**Puerto Galera**	**0.70**	**148**	*e*P	**Pn**	**08 17 51.1**	**+0.2**
PGP				*i* S	**Sn**	**08 18 08.2**	**+0.1**
LQP	**Lukban**	**0.94**	**89**	*e*P	**Pn**	**08 17 53.5**	**+0.6**
BOAC	**Boac**	**1.39**	**117**	*e*P	**Pn**	**08 17 58.1**	**+1.4**
BOAC				*e*S	**Sn**	**08 18 20.9**	**+2.4**
PCPH	**Palayan**	**1.54**	**19**	*e*P	**Pn**	**08 17 57.7**	**-0.6**
SJMP	**San Jose**	**1.72**	**162**	*e*P	**Pn**	**08 18 01.1**	**+0.8**
SCZP	**Santa Cruz**	**1.78**	**339**	*e*P	**Pn**	**08 18 00.6**	**-0.4**
GQP	**Guinayangan**	**1.83**	**96**	*e*P	Pn	08 17 59.0	-2.5
BUSP	**Coron**	**2.12**	**190**	*e*P	**Pn**	**08 18 05.4**	**+0.6**
BUSP				*e*S	**Sn**	**08 18 32.9**	**0.0**
BCPH	**Baguio City Da**	**2.27**	**0**	*i*P	**Pn**	**08 18 09.5**	**+2.7**
BCPH				*i* S	**Sn**	**08 18 38.4**	**+1.9**
ENPP	**El Nido**	**3.09**	**201**	*e*P	**Pn**	**08 18 18.4**	**+1.6**
CUYO	**Cuyo Island**	**3.26**	**172**	*e*P	**Pn**	**08 18 20.0**	**+0.9**
CMAR	**Chiang Mai Arr**	**21.20**	**285**	P	**P**	**08 22 04.7**	**+2.3**
PSI	3.0nm,0.5s,baz=98,slow=8.0,SNR=15 **Prapat**	**24.14**	**244**	P	**P**	**08 22 32.0**	**+1.2**
JHJ	5.8nm,0.6s,baz=63,slow=6.8,SNR=5.8 **Hachijo jima 2**	**25.77**	**39**	LR	LR	08 32 19.5	
SONM	comp=Z,185nm,18.1s,baz=5.5,slow=34 **Songino Array**	**35.64**	**344**	P	**P**	**08 24 12.1**	**+0.2**
WRA	0.4nm,0.4s,baz=159,slow=12,SNR=4.1 **Warramunga Arr**	**36.44**	**158**	P	**P**	**08 24 17.6**	**-1.3**
ASAR	0.6nm,0.3s,baz=331,slow=10,SNR=10 **Alice Springs**	**39.74**	**161**	P	**P**	**08 24 46.0**	**-0.5**
ASAR	1.7nm,0.4s,baz=335,slow=6.7,SNR=48			PcP	**PcP**	**08 26 49.0**	**-1.1**
BVAR	0.3nm,0.4s,baz=356,slow=2.7,SNR=3.5 **Borovoye Array**	**55.37**	**326**	P	**P**	**08 26 46.0**	**-0.7**
ARCES	1.0nm,0.6s,baz=125,slow=9.0,SNR=7.5 **ARCESS Array B**	**78.67**	**339**	P	**P**	**08 29 12.9**	**-0.5**
ARCES	3.0nm,1.0s,baz=81,slow=6.5,SNR=5.3			LR	LR	09 06 36.3	
FINES	comp=Z,25nm,18.9s,baz=4.0,slow=37 **FINESS Array B**	**79.88**	**331**	P	**P**	**08 29 19.4**	**-0.7**
INK	0.7nm,0.7s,baz=57,slow=5.1,SNR=6.8 **Inuvik**	**82.77**	**21**	P	**P**	**08 29 34.6**	**-0.6**
NB2	0.8nm,0.7s,baz=292,slow=5.6,SNR=3.6 **NORSAR Subarra**	**86.85**	**333**	P	**P**	**08 29 54.5**	**-1.3**
NOA	comp=Z,2.0nm,1.0s,baz=70,slow=4.8 **NORSAR Array B**	**86.85**	**333**	P	**P**	**08 29 54.7**	**-1.1**
YKA	comp=Z,0.6nm,0.7s,baz=68,slow=4.6,SNR=3.9 **Yellowknife Ar**	**92.45**	**22**	P	**P**	**08 30 22.0**	**0.0**
TXAR	comp=Z,0.4nm,0.4s,baz=306,slow=4.5,SNR=19 **Lajitas Array**	**119.27**	**44**	PKP	**PKPdf**	**08 36 00.1**	**-0.5**
	comp=Z,0.2nm,0.4s,baz=268,slow=1.1,SNR=5.0						

*NIED **24** 08:20:00,38°.30N×141°.80E,h62km,Mw3.9 Best double couple: M0 8.16000×10^14 NP1:φs=233.00000°,δ41.00000°, λ-154.00000°. NP2:φs=122.00000°,δ73.00000°, λ-52.00000°.*
*ISCJB **24** 08:20:45.0±0.7,38°.28N±0°.03×141°.93E±0°.07,h45km±7km, mb3.7/13,Error ellipse: s-maj=9.3km s-min=4.4km az=9.3*
*IDC **24** 08:20:46.8±2.1,38°.26N×141°.91E,h42km±20km,mb3.5/12, mb1 3.8/17,mb1mx3.6/43,mbtmp3.9/17,ML3.8/3,MS2.7/3, Ms1 2.7/3,ms1mx2.4/38,Error ellipse: s-maj=22.9km s-min=13.4km az=99.0*
*NEIC **24** 08:20:46.9±0.8,38°.25N×141°.98E,h45km±9km,mb4.3/1, Error ellipse: s-maj=12.8km s-min=6.9km az=103.0*
*JMA **24** 08:20:47.2±0.1,38°.34N×141°.77E,h49km±1km,M4.2*
JMA Felt II J1.

ISC 24 08:20:45.1±0.8,38°.31N±0°.03×141°.98E±0°.06,h30km±5km, n42,σ1s50/53,mb3.8/13,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**0.51**	**286**	P	**Pn**	**08 20 56.8**	**+0.4**
JIO				S	**Sb**	**08 21 03.3**	**+0.3**
OFUJ	**Ofunato**	**0.80**	**343**	P	**Pb**	**08 21 01.3**	**+0.7**
OFUJ				S	**Sb**	**08 21 11.0**	**-0.1**
JMK	**Ichinoseki**	**0.87**	**317**	P	**Pb**	**08 21 01.7**	**0.0**
JMK				S	**Sn**	**08 21 11.8**	**-1.2**
JOU	**Okura**	**1.03**	**273**	P	**Pn**	**08 21 03.4**	**-0.2**
JOU				S	**Sn**	**08 21 15.3**	**-1.8**
JMM	**Marumori**	**1.03**	**245**	P	**Pn**	**08 21 03.2**	**-0.4**
JMM				S	**Sn**	**08 21 14.9**	**-2.1**
JOM	**Ohasama**	**1.28**	**335**	P	**Pn**	**08 21 07.7**	**+0.8**
JFK	**Kawauchi**	**1.28**	**223**	P	**Pn**	**08 21 07.4**	**+0.3**
JFK				S	**Sn**	**08 21 22.3**	**-1.0**
JYK	**Kaneyama**	**1.40**	**296**	P	**Pn**	**08 21 08.5**	**-0.2**
JYK				S	**Sn**	**08 21 24.3**	**-1.9**
JRG	**Rokugo**	**1.51**	**316**	P	**Pn**	**08 21 10.5**	**+0.4**
JRG				S	**Sn**	**08 21 27.7**	**-1.0**
JYS	**Shirataka**	**1.51**	**267**	P	**Pn**	**08 21 10.0**	**-0.1**
JYS				S	**Sn**	**08 21 27.3**	**-1.4**
MJAR	**Matsushiro Arr**	**3.48**	**241**	P	**Pn**	**08 21 38.9**	**+1.6**
MJAR	3.8nm,0.3s,baz=46,slow=11,SNR=42			S	**Sn**	**08 22 19.5**	**+2.0**
MJAR	3.2nm,0.3s,baz=48,slow=19,SNR=4.6			LR	LR	08 23 13.2	
MAJO	comp=Z,144nm,19.9s,baz=65,slow=43 **Matsushiro**	**3.48**	**241**	*e*Pn	**Pn**	**08 21 39.0**	**+1.7**
MAT	**Matsushiro**	**3.48**	**241**	P	**Pn**	**08 21 39.0**	**+1.7**
MAT				S	**Sn**	**08 22 21.0**	**+3.5**
JHJ2	**Mitsune**	**5.48**	**199**	*e*Pn	**Pn**	**08 22 05.1**	**+0.5**
JHJ2				*e*Sn	**Sn**	**08 23 06.6**	**-0.1**
JHJ	**Hachijo jima 2**	**5.48**	**200**	P	**Pn**	**08 22 05.7**	**+1.0**
JHJ	20nm,0.3s,baz=302,slow=22,SNR=12			S	**Sn**	**08 23 04.7**	**-2.0**
ASAJ	26nm,0.3s,baz=90,slow=20,SNR=3.4 **Asahikawa**	**5.82**	**4**	P	**Pn**	**08 22 10.3**	**+1.0**
ASAJ	2.1nm,0.3s,baz=189,slow=16,SNR=18			S	**Sn**	**08 23 11.5**	**-3.5**
ASAJ	1.1nm,0.3s,baz=197,slow=17,SNR=2.1 **Asahikawa**	**5.82**	**4**	*e*Pn	**Pn**	**08 22 10.6**	**+1.3**
ASAJ				S	**Sn**	**08 23 11.5**	**-3.5**
ASAJ				*e*Sn	Sb	08 23 16.2	-19
USRK	**Ussuriysk Ar.**	**9.54**	**311**	P	**Pn**	**08 23 00.8**	**+0.3**
JNU	0.3nm,0.3s,baz=124,slow=14,SNR=4.7 **Nakatsue**	**10.40**	**243**	LR	LR	08 27 33.5	
KSRS	comp=Z,63nm,19.6s,baz=108,slow=39 **Korea Array**	**11.14**	**270**	LR	LR	08 27 18.8	
CBIJ	comp=Z,25nm,20.1s,baz=165,slow=35 **Chichi jima**	**11.19**	**179**	P	**Pn**	**08 23 22.8**	**-0.2**
CBIJ				S	**Sn**	**08 25 23.7**	**-3.3**
JCJ	**Chichijima**	**11.19**	**179**	P	**Pn**	**08 23 22.8**	**-0.2**
JCJ	baz=306,slow=19			S	**Sn**	**08 25 23.7**	**-3.3**
MA2	3.5nm,0.3s,baz=270,slow=20,SNR=2.6 **Magadan**	**22.01**	**12**	P	**P**	**08 25 37.2**	**+0.5**
SEY	2.0nm,0.7s,baz=211,slow=12,SNR=4.7 **Seymchan**	**25.45**	**11**	P	**P**	**08 26 11.2**	**+1.1**
H11N2	0.6nm,0.4s,baz=200,slow=15,SNR=3.2 **WAKE ISLAND Hy**	**28.45**	**124**	T	T	08 56 54.7	
H11N1	baz=316,slow=76,SNR=672 **WAKE ISLAND Hy**	**28.46**	**124**	T	T	08 56 55.4	
H11N3	baz=316,slow=76,SNR=962 **WAKE ISLAND Hy**	**28.47**	**124**	T	T	08 56 56.1	
H11S1	baz=316,slow=76,SNR=787 **WAKE ISLAND Hy**	**29.21**	**126**	T	T	08 57 51.0	
H11S3	baz=318,slow=76,SNR=332 **WAKE ISLAND Hy**	**29.22**	**126**	T	T	08 57 52.4	
H11S2	baz=318,slow=76,SNR=392 **WAKE ISLAND Hy**	**29.22**	**126**	T	T	08 57 53.7	
ZALV	baz=318,slow=76,SNR=270 **Zalesovo Beam**	**41.40**	**311**	P	**P**	**08 28 28.0**	**-0.4**
MKAR	0.7nm,0.4s,baz=96,slow=7.6,SNR=3.8 **Makanchi Array**	**43.83**	**301**	P	**P**	**08 28 47.5**	**-0.8**
INK	0.4nm,0.4s,baz=83,slow=12,SNR=3.6 **Inuvik**	**53.05**	**28**	P	**P**	**08 29 59.7**	**+0.8**
WRAB	1.0nm,0.8s,baz=273,slow=5.0,SNR=3.1 **Tennant Creek**	**58.38**	**188**	*e*P	**P**	**08 30 36.3**	**-1.4**
WRA	1.5nm,0.6s **Warramunga Arr**	**58.39**	**188**	P	**P**	**08 30 36.9**	**-0.9**
WRA	1.3nm,0.6s,baz=6.1,slow=7.1,SNR=26			pP	**sP**	**08 30 50.5**	**+0.1**
ASAR	0.9nm,0.5s,baz=7.8,slow=7.7,SNR=6.1 **Alice Springs**	**62.11**	**188**	P	**P**	**08 31 02.5**	**-0.7**
ASAR	0.7nm,0.7s,baz=9.3,slow=6.3,SNR=8.9			pP	**sP**	**08 31 15.1**	**-0.9**
YKA	0.5nm,0.8s,baz=6.2,slow=5.7,SNR=3.7 **Yellowknife Ar**	**62.48**	**31**	P	**P**	**08 31 05.4**	**+0.1**
FINES	0.2nm,0.6s,baz=300,slow=5.7,SNR=5.4 **FINESS Array B**	**67.89**	**332**	P	**P**	**08 31 42.0**	**+1.7**
NVAR	0.7nm,0.8s,baz=46,slow=8.0,SNR=3.4 **Mina Array Bea**	**73.87**	**54**	P	**P**	**08 32 18.6**	**+1.2**
PDAR	0.4nm,0.8s,baz=297,slow=6.0,SNR=3.5 **Pinedale Array**	**76.45**	**46**	P	**P**	**08 32 32.7**	**+0.5**
TXAR	0.4nm,0.6s,baz=235,slow=1.9,SNR=6.5 **Lajitas Array**	**88.99**	**53**	P	**P**	**08 33 38.0**	**+0.6**
LPAZ	0.3nm,0.6s,baz=293,slow=3.3,SNR=5.5 **La Paz**	**145.65**	**59**	PKPbc	**PKPdf**	**08 40 21.8**	**+0.1**
	0.9nm,0.7s,baz=350,slow=8.6,SNR=4.0						

IDC 24 08:22:33.3±3.3,54°.11N×87°.40E,h0km,mb1 3.0/2, mb1mx2.8/44,mbtmp3.0/2,ML2.9/2,Error ellipse: s-maj=27.7km s-min=15.6km az=67.0,Southwestern Siberia

| Code | Station Name | Δ° | AZ° |

*NIED **24** 08:28:00.37˝.30N×141˝.90E.h50km.Mw3.7 Best double couple: M₀3.89000×10¹⁴ NP1:φs221.00000°,δ24.00000°, λ60.00000°. NP2:φs73.00000°,δ69.00000°,λ102.00000°.*
*IDC **24** 08:28:31.8±1.0.37˝.20N×142˝.09E.h0km.mb3.5/6, mb1 3.6/9,mb1mx3.4/39,mbtmp3.6/9,ML3.4/3,MS2.6/1, Ms1 2.6/1,ms1mx2.2/38,Error ellipse: s-maj=30.1km s-min=17.6km az=102.0*
*JMA **24** 08:28:35.2±0.2.37˝.32N×141˝.89E,h29km±4km,M3.7*

ISC 24 08:28:32.7±2.3,37˝26N±0˝.05×141˝93E±0˝.07,h10km±14km, n24,σ1º38/24,mb3.5/6,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**0.85**	**278**	P	**Pn**	**08 28 50.4**	**-0.3**
JFK				S	**Sb**	**08 29 00.6**	**-0.4**
ONAJ	**Iwakimizuishiy**	**0.91**	**261**	P	**Pn**	**08 28 51.6**	**-0.1**
ONAJ				S	**Sb**	**08 29 02.8**	**-0.1**
JMM	**Marumori**	**1.09**	**304**	P	**Pb**	**08 28 53.7**	**+0.1**
JMM				S	**Sb**	**08 29 06.6**	**-1.3**
JHO	**Hitachi**	**1.26**	**240**	P	**Pn**	**08 28 56.5**	**+0.1**
JIO	**Ouri**	**1.28**	**339**	P	**Pn**	**08 28 56.2**	**-0.5**
JFT	**Otama**	**1.29**	**282**	P	**Pg**	**08 28 57.8**	**+0.3**
JFT				S	**Sb**	**08 29 13.2**	**-0.6**
JOU	**Okura**	**1.49**	**318**	P	**Pb**	**08 29 00.5**	**-0.1**
JOU				eS	**Sn**	**08 29 17.7**	**-1.5**
MJAR	**Matsushiro Arr**	**3.06**	**258**	Pn	**Pb**	**08 29 24.8**	**-2.5**
	1.1nm,0.3s,baz=82,slow=16,SNR=9.0						
MJAR				Sn	**Sn**	**08 30 00.3**	**+2.4**
	1.9nm,0.3s,baz=60,slow=20,SNR=5.0						
JHJ	**Hachijo jima 2**	**4.48**	**204**	Pn	**Pn**	**08 29 42.7**	**+2.0**
	10.0nm,0.3s,baz=45,slow=19,SNR=4.6						
JHJ				Sn	**Sn**	**08 30 31.4**	**-1.6**
	26nm,0.3s,baz=292,slow=23,SNR=5.5						
ASAJ	**Asahikawa**	**6.87**	**4**	Pn	**Pn**	**08 30 15.4**	**+1.9**
	0.9nm,0.3s,baz=217,slow=16,SNR=9.7						
ASAJ				Sn	**Sn**	**08 31 29.1**	**-2.6**
	0.3nm,0.3s,baz=285,slow=20,SNR=2.1						
JCJ	**Chichijima**	**10.13**	**179**	LR	LR	08 35 05.1	
	comp=Z,39nm,21.8s,baz=26,slow=39						
USRK	**Ussuriysk Ar.**	**10.24**	**316**	Pn	Pn	08 31 06.4	+6.7
	0.1nm,0.3s,baz=121,slow=13,SNR=3.6						
SEY	**Seymchan**	**26.50**	**11**	P	**P**	**08 34 11.6**	**+1.6**
	0.6nm,0.5s,baz=208,slow=17,SNR=3.1						
H11N2	**WAKE ISLAND Hy**	**27.91**	**122**	T	T	09 03 50.7	
	baz=315,slow=75,SNR=29						
H11N1	**WAKE ISLAND Hy**	**27.92**	**122**	T	T	09 03 54.8	
	baz=315,slow=75,SNR=32						
H11N3	**WAKE ISLAND Hy**	**27.93**	**122**	T	T	09 03 56.8	
	baz=315,slow=75,SNR=24						
H11S1	**WAKE ISLAND Hy**	**28.64**	**124**	T	T	09 04 48.7	
	baz=316,slow=76,SNR=25						
H11S3	**WAKE ISLAND Hy**	**28.64**	**124**	T	T	09 04 45.0	
	baz=316,slow=76,SNR=23						
H11S2	**WAKE ISLAND Hy**	**28.66**	**124**	T	T	09 04 50.3	
	baz=316,slow=76,SNR=19						
ZALV	**Zalesovo Beam**	**42.07**	**312**	P	**P**	**08 36 25.3**	**+0.8**
	0.3nm,0.3s,baz=98,slow=8.9,SNR=3.2						
MKAR	**Makanchi Array**	**44.35**	**302**	P	**P**	**08 36 43.6**	**+0.6**
	0.3nm,0.3s,baz=96,slow=9.9,SNR=4.5						
ILAR	**Eielson Array**	**49.09**	**32**	P	**P**	**08 37 20.3**	**+0.4**
	0.4nm,0.8s,baz=282,slow=4.5,SNR=4.0						
WRA	**Warramunga Arr**	**57.34**	**188**	P	**P**	**08 38 21.0**	**0.0**
	0.4nm,0.5s,baz=6.7,slow=7.6,SNR=6.8						
ASAR	**Alice Springs**	**61.06**	**188**	P	**P**	**08 38 46.8**	**0.0**
	0.3nm,0.9s,baz=17,slow=6.8,SNR=3.1						

*ISCJB **24** 08:47:04.6±0.3,35˝.22N±0˝.01×92˝.40W±0˝.01,h4km±2km, Error ellipse: s-maj=2.5km s-min=2.1km az=3.3*
*NEIC **24** 08:47:05.0,35˝.23N×92˝.38W,h5km,MN2.9,After CERI.*
NEIC Felt at Benton, Conway and Greenbrier.

ISC 24 08:47:05.0±0.8,35˝23N±0˝.02×92˝41W±0˝.02,h5km±5km, n90,σ1º19/117,Arkansas

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
X301	**Greenbrier Sit**	**0.01**	**21**	*e*Pg	**Pg**	**08 47 06.3**	**+0.3**
X301				*e*Sg	**Sg**	**08 47 07.1**	**+0.4**
X201	**Greenbrier Sit**	**0.07**	**29**	*e*Pg	**Pg**	**08 47 07.0**	**+0.3**
X201				*e*Sg	**Sg**	**08 47 08.0**	**+0.1**
WHAR	**Wooly Hollow**	**0.11**	**57**	*e*Pg	**Pg**	**08 47 07.4**	**0.0**
WHAR				*e*Sg	**Sg**	**08 47 09.0**	**0.0**
W41B	**Gary Mavity, V**	**0.14**	**113**	P	**Pg**	**08 47 07.4**	**-0.5**
	baz=302,SNR=1000						
W41B				S	**Sg**	**08 47 09.5**	**-0.3**
	baz=302						
UALR	**University of**	**0.46**	**174**	*e*Pg	**Pg**	**08 47 14.3**	**+0.5**
W40A	**Ferguson Farm,**	**0.55**	**266**	P	**Pg**	**08 47 15.8**	**+0.3**
	baz=85,SNR=197						
V40A	**Witts Springs**	**0.67**	**329**	P	**Pg**	**08 47 17.6**	**-0.2**
	baz=147						
V40A				S	**Sg**	**08 47 26.9**	**+0.3**
	baz=147						
X40A	**Basin Creek Fa**	**0.82**	**206**	P	**Pg**	**08 47 20.7**	**-0.1**
	baz=26,SNR=130						
W39A	**Magazine**	**1.13**	**269**	P	**Pg**	**08 47 26.4**	**-0.3**
	baz=87,SNR=28						
W39A				S	**Sg**	**08 47 42.1**	**+0.8**
	baz=87						
V39A	**Pettigrew**	**1.18**	**301**	P	**Pg**	**08 47 27.0**	**-0.6**
	baz=120						
V39A				S	**Sg**	**08 47 42.9**	**-0.1**
	baz=120						
MIAR	**Mount Ida**	**1.18**	**235**	P	**Pg**	**08 47 27.1**	**-0.6**
	baz=54,SNR=333						
MIAR				S	**Sg**	**08 47 43.3**	**+0.2**
	baz=54						
MIAR	**Mount Ida**	**1.18**	**235**	*e*Pg	**Pg**	**08 47 27.6**	**-0.1**
MIAR				*e*Sg	**Sg**	**08 47 43.2**	**+0.2**
U40A	**Yellville**	**1.18**	**342**	P	**Pg**	**08 47 26.9**	**-0.8**
	baz=161						
CCAR	**Cane Creek**	**1.41**	**158**	*e*Pn	**Pn**	**08 47 31.4**	**+0.1**
Y40A	**Okolona**	**1.41**	**211**	Pb	**Pn**	**08 47 31.3**	**-0.1**
	baz=31,SNR=96						
Y40A				S	**Sb**	**08 47 50.0**	**-0.1**
	baz=31						
U39A	**Green Forest**	**1.45**	**323**	Pb	**Pn**	**08 47 31.4**	**-0.5**
	baz=142						
U39A				S	**Sb**	**08 47 50.7**	**-0.5**
	baz=142						
HBAR	**Harrisburg**	**1.46**	**77**	*e*Pn	**Pb**	**08 47 32.4**	**-0.3**
HBAR				*e*Sn	**Sg**	**08 47 52.2**	**+0.1**
Y42A	**Garnett, Star**	**1.48**	**160**	Pb	**Pn**	**08 47 32.0**	**-0.3**
	baz=341,SNR=44						
Y42A				S	**Sb**	**08 47 52.2**	**+0.1**
	baz=341						
QUAR	**Qualls**	**1.49**	**73**	*e*Pn	**Pn**	**08 47 32.2**	**-0.2**
QUAR				*e*Sn	**Sg**	**08 47 54.4**	**+1.4**
X39A	**Fountain Ranch**	**1.58**	**243**	Pb	**Pn**	**08 47 33.9**	**+0.3**
	baz=62,SNR=294						
X39A				Sb	**Sn**	**08 47 55.1**	**+0.6**
	baz=62						
HHAR	**Hobbs**	**1.63**	**311**	*e*Pn	**Pn**	**08 47 34.8**	**+0.4**
HHAR				*e*Sn	**Sb**	**08 47 56.9**	**+0.4**
WLAR	**White Oak Lake**	**1.65**	**201**	*e*Pn	**Pn**	**08 47 34.6**	**+0.1**
W38A	**Poteau**	**1.74**	**265**	Pb	**Pn**	**08 47 36.7**	**+0.9**
	baz=84,SNR=107						
W38A				Sb	**Sb**	**08 48 00.7**	**+1.2**
	baz=84						
V38A	**Canehill**	**1.75**	**292**	Pb	**Pn**	**08 47 36.6**	**+0.5**
	baz=110,SNR=124						
V38A				Sb	**Sb**	**08 48 00.2**	**+0.3**
	baz=110						
Y43A	**Makayla and Ka**	**1.79**	**137**	Sb	**Sb**	**08 48 01.1**	**+0.1**
	baz=318						
Y39A	**Lockesburg**	**1.90**	**228**	P	**Pn**	**08 47 38.3**	**+0.3**
	baz=47,SNR=7.6						
T40A	**Mansfield**	**1.92**	**357**	Pb	**Pn**	**08 47 39.2**	**+0.8**
	baz=177,SNR=146						
T40A				Sb	**Sb**	**08 48 04.7**	**-0.1**
	baz=177						
SFTN	**Shelby Forest**	**1.96**	**86**	*e*Sn	**Sb**	**08 48 05.4**	**-0.4**
T39A	**Clever**	**1.96**	**337**	Pb	**Pn**	**08 47 39.8**	**+1.0**
	baz=155,SNR=121						
Z42A	**Norrel Spur, H**	**1.99**	**169**	P	**Pn**	**08 47 38.9**	**-0.3**
	baz=350,SNR=8.9						
Z41A	**Richland Creek**	**1.99**	**190**	P	**Pn**	**08 47 39.3**	**0.0**
	baz=9.9,SNR=10.0						
U38A	**Gravette**	**2.01**	**307**	P	**Pn**	**08 47 40.5**	**+0.8**
	baz=126,SNR=50						
U38A				Sb	**Sb**	**08 48 08.2**	**+0.8**
	baz=126						
MET	**Memphis--Engin**	**2.03**	**92**	*e*Pn	**Pn**	**08 47 40.1**	**+0.3**
DLAR	**Dell**	**2.04**	**73**	*e*Pn	**Pb**	**08 47 41.3**	**-1.2**
DLAR				*e*Sn	**Sb**	**08 48 08.4**	**+0.2**
X38A	**Whitesboro**	**2.07**	**255**	Pb	**Pb**	**08 47 42.1**	**-0.9**
	baz=73						
X38A				Sb	**Sg**	**08 48 11.5**	**0.0**
	baz=73						
GNAR	**Gosnell**	**2.08**	**69**	*e*Pn	**Pn**	**08 47 40.6**	**+0.1**
Z40A	**Long Farm, Mag**	**2.13**	**203**	S	**Sn**	**08 48 08.0**	**-0.1**
	baz=23						
Y44A	**Strider, Charl**	**2.21**	**124**	P	**Pn**	**08 47 43.2**	**+0.9**
	baz=306,SNR=5.3						
Z43A	**Armstrong Fami**	**2.23**	**154**	P	**Pn**	**08 47 42.5**	**-0.1**
	baz=336						
Z43A				Sb	**Sb**	**08 48 14.2**	**+0.4**
	baz=336						
V37A	**Hulbert**	**2.33**	**287**	P	**Pn**	**08 47 44.5**	**+0.6**
	baz=105,SNR=43						
T38A	**Diamond**	**2.36**	**320**	P	**Pn**	**08 47 45.3**	**+0.8**
	baz=139,SNR=32						
S40A	**Lebanon**	**2.37**	**358**	P	**Pn**	**08 47 45.3**	**+0.8**
	baz=178,SNR=66						
W37B	**Quinton**	**2.48**	**269**	P	**Pn**	**08 47 47.5**	**+1.5**
	baz=87,SNR=87						
U37A	**Salina**	**2.50**	**299**	P	**Pn**	**08 47 47.1**	**+0.8**
	baz=117,SNR=8.3						
EBZ	**Ebenezer Churc**	**2.50**	**91**	*e*Pn	**Pn**	**08 47 46.3**	**0.0**
EBZ				*e*Sn	**Sn**	**08 48 17.3**	**0.0**
OXF	**Oxford**	**2.56**	**105**	*e*Pn	**Pn**	**08 47 47.2**	**0.0**
OXF				*e*Sn	**Sn**	**08 48 18.5**	**-0.3**
S39A	**Bolivar**	**2.57**	**344**	P	**Pn**	**08 47 48.2**	**+0.9**
	baz=162,SNR=41						
PARMO	**Parma**	**2.58**	**56**	*e*Pn	**Pn**	**08 47 47.3**	**-0.1**
PARMO				*e*Sn	**Sn**	**08 48 18.9**	**-0.3**
HALT	**Halls**	**2.59**	**74**	*e*Pn	**Pn**	**08 47 47.6**	**+0.1**
S38A	**Stockton**	**2.69**	**334**	P	**Pn**	**08 47 49.9**	**+1.0**
	baz=152,SNR=29						
GLAT	**Glass**	**2.74**	**67**	*e*Pn	**Pn**	**08 47 49.5**	**-0.1**
T37A	**Cheneyville 18**	**2.78**	**314**	P	**Pn**	**08 47 51.6**	**+1.5**
	baz=132,SNR=36						
TUL1	**Leonard**	**2.84**	**285**	P	**Pn**	**08 47 52.0**	**+0.9**
	baz=103,SNR=22						
TUL1	**Leonard**	**2.84**	**285**	*e*Pn	**Pn**	**08 47 52.3**	**+1.2**
V36A	**Jenks**	**2.94**	**282**	P	**Pn**	**08 47 53.0**	**+0.7**
	baz=100,SNR=12						
R40A	**Maddies Statio**	**3.06**	**2**	P	**Pn**	**08 47 54.8**	**+0.8**
	baz=182,SNR=10						
UTMT	**University of**	**3.08**	**68**	*e*Pn	**Pn**	**08 47 55.1**	**+0.8**
R39A	**Chumby, Stover**	**3.12**	**351**	P	**Pn**	**08 47 56.0**	**+1.1**
	baz=170,SNR=18						
S37A	**Fort Scott**	**3.19**	**323**	P	**Pn**	**08 47 56.6**	**+0.8**
	baz=141,SNR=10						
T36A	**Boggs Farm, Ca**	**3.35**	**304**	P	**Pn**	**08 47 58.8**	**+0.8**
	baz=122,SNR=12						
PLAL	**Pickwick Lake**	**3.56**	**93**	*e*Pn	**Pn**	**08 48 00.9**	**+0.1**
PLAL				*e*Sb	**Sb**	**08 48 54.2**	**+2.3**
SIUC	**Southern Illin**	**3.57**	**45**	*e*Sn	**Sn**	**08 48 46.1**	**+2.6**
R37A	**Teagarden Farm**	**3.64**	**328**	P	**Pn**	**08 48 02.8**	**+0.8**
	baz=147,SNR=7.4						
V35A	**Meyer Ranch, C**	**3.66**	**280**	P	**Pn**	**08 48 02.9**	**+0.6**
	baz=97,SNR=10						
245A	**Little AP, Sta**	**3.81**	**146**	P	**Pn**	**08 48 04.7**	**+0.3**
	baz=328,SNR=5.2						
SLM	**Saint Louis**	**3.82**	**26**	*e*Sb	**Sb**	**08 49 02.1**	**+2.7**
WVT	**Waverly**	**3.83**	**75**	*e*Pn	**Pn**	**08 48 04.3**	**-0.3**
X35A	**Drake**	**3.85**	**259**	Pb	**Pb**	**08 48 12.8**	**-0.6**
	baz=76,SNR=6.3						
341A	**Kurthwood**	**3.94**	**190**	P	**Pn**	**08 48 06.4**	**+0.3**
	baz=9.4,SNR=7.0						
V34A	**Guthrie**	**4.21**	**280**	*e*Pb	**Pb**	**08 48 19.7**	**+0.1**
V34A				*e*Sg	**Sg**	**08 49 17.7**	**-2.7**
Z48A	**Northport**	**4.42**	**113**	P	**Pn**	**08 48 12.8**	**+0.1**
	baz=296,SNR=8.1						
Q36A	**Arnold C. Orve**	**4.45**	**328**	P	**Pn**	**08 48 13.7**	**+0.5**
	baz=146,SNR=8.6						
P36A	**Good Intent, A**	**4.92**	**334**	P	**Pn**	**08 48 20.3**	**+0.7**
	baz=152,SNR=7.0						
R34A	**Isabella, Hill**	**4.95**	**310**	P	**Pn**	**08 48 20.5**	**+0.4**
	baz=127,SNR=5.6						
LRAL	**Lakeview Retre**	**4.99**	**114**	*e*Pn	**Pn**	**08 48 20.7**	**+0.1**
LRAL				*e*Pb	Pb	08 48 28.9	-3.9
LRAL				*e*Sg	**Sb**	**08 49 36.9**	**+3.8**
KSU1	**Kansas State U**	**5.12**	**320**	*e*Pb	Pb	08 48 38.6	+3.6
KSU1				*e*Sg	**Sg**	**08 49 45.6**	**-3.8**
SWET	**Sewanee**	**5.30**	**88**	*e*Pn	**Pn**	**08 48 24.9**	**+0.1**
SWET				*e*Sb	**Sg**	**08 49 49.4**	**-5.8**
P34A	**Walnut Farm, R**	**5.56**	**322**	P	**Pn**	**08 48 28.4**	**-0.1**
	baz=139,SNR=5.2						
Z33A	**Whitaker Ranch**	**5.61**	**252**	P	**Pn**	**08 48 29.3**	**+0.2**
	baz=68,SNR=6.6						
WCI	**Wyandotte Cave**	**5.75**	**57**	*e*Sb	**Sg**	**08 50 03.7**	**-5.9**
HDIL	**Hopedale**	**5.86**	**24**	*e*Pn	**Pn**	**08 48 32.7**	**+0.2**
CPCT	**Cooper Cave**	**6.45**	**86**	*e*Pn	**Pn**	**08 48 40.6**	**0.0**
CPCT				*e*Sb	Sg	08 50 23.4	-8.6
ABTX	**Abilene, Hawle**	**6.55**	**249**	*e*Pn	**Pn**	**08 48 42.3**	**+0.2**
SFIN	**Lafayette**	**6.64**	**38**	*e*Sb	Sg	08 50 29.5	-8.6
SCIA	**State Center**	**6.70**	**355**	*e*Sb	Sg	08 50 33.2	-6.8
TKL	**Tuckaleechee C**	**7.06**	**84**	*e*Pn	**Pn**	**08 48 48.9**	**-0.1**
GOGA	**Godfrey**	**7.61**	**101**	*e*Pn	**Pn**	**08 48 57.1**	**+0.6**
GOGA				*e*Sb	Sg	08 51 09.2	-9.2
AMTX	**Amarillo**	**7.62**	**270**	*e*Pn	**Pn**	**08 48 57.5**	**+0.8**
JFWS	**Jewell Farm**	**7.86**	**12**	*e*Sb	Sg	08 51 08.3	-8.8
ECSD	**EROS Data Cent**	**9.09**	**340**	*e*Pn	**Pn**	**08 49 16.4**	**-0.5**

*NIED **24** 08:49:00.37˝.70N×142˝.70E.h14km.Mw3.5 Best double couple: M₀2.33000×10¹⁴ NP1:φs316.00000°,δ33.00000°, λ-116.00000°. NP2:φs166.00000°,δ60.00000°, λ-74.00000°.*
*IDC **24** 08:49:49.4±2.9,37˝.78N×143˝.17E,h0km,mb3.5/3, mb1 3.6/4,mb1mx3.2/45,mbtmp3.4/4,ML3.0/1,Error ellipse: s-maj=72.0km s-min=31.1km az=62.0*
*ISCJB **24** 08:49:52.6±1.2,37˝.72N±0˝.06×142˝.8E±0˝.1,h24km, mb3.4/3,Error ellipse: s-maj=12.3km s-min=8.0km az=5.3*
*JMA **24** 08:49:53.0±0.2,37˝.69N×142˝.75E,h38km,M3.5*

ISC 24 08:49:54.8±1.5,37˝.77N±0˝.07×142˝.7E±0˝.1,h24km,n18, σ1º25/16,mb3.5/3,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**1.27**	**303**	P	**Pn**	**08 50 15.3**	**-1.7**
JIO				eS	**Sn**	**08 50 32.0**	**-1.3**
JFK	**Kawauchi**	**1.50**	**255**	P	**Pn**	**08 50 19.0**	**-1.3**
JMM	**Marumori**	**1.51**	**274**	P	**Pn**	**08 50 18.6**	**-1.8**
OFUJ	**Ofunato**	**1.54**	**329**	P	**Pn**	**08 50 19.9**	**-0.9**
JOU	**Okura**	**1.71**	**291**	P	**Pn**	**08 50 21.0**	**-0.2**
JFT	**Otama**	**1.89**	**263**	P	**Pn**	**08 50 25.1**	**-0.5**
JFT				eS	**Sn**	**08 50 49.3**	**+0.6**
MIYJ	**Miyakonagasawa**	**1.93**	**339**	P	**Pn**	**08 50 25.8**	**-0.4**
MIYJ				S	**Sn**	**08 50 50.5**	**+0.8**
JOM	**Ohasama**	**2.03**	**328**	P	**Pn**	**08 50 27.2**	**-0.3**
JOM				eS	**Sn**	**08 50 53.3**	**+1.2**
MJAR	**Matsushiro Arr**	**3.79**	**253**	Pn	**Pn**	**08 50 53.7**	**+2.0**
	0.8nm,0.3s,baz=67,slow=12,SNR=7.0						
H11N2	**WAKE ISLAND Hy**	**27.67**	**124**	T	T	09 24 36.4	
	baz=316,slow=75,SNR=11						
H11N1	**WAKE ISLAND Hy**	**27.68**	**124**	T	T	09 24 41.0	
	baz=316,slow=75,SNR=7.8						
H11N3	**WAKE ISLAND Hy**	**27.69**	**124**	T	T	09 24 39.7	
	baz=316,slow=75,SNR=9.6						
SONM	**Songino Array**	**28.24**	**303**	P	**P**	**08 55 46.6**	**+0.6**
	0.3nm,0.5s,baz=96,slow=7.4,SNR=2.7						
H11S1	**WAKE ISLAND Hy**	**28.43**	**126**	T	T	09 25 31.2	
	baz=318,slow=76,SNR=6.0						
H11S3	**WAKE ISLAND Hy**	**28.43**	**126**	T	T	09 25 33.5	
	baz=318,slow=76,SNR=8.2						
H11S2	**WAKE ISLAND Hy**	**28.44**	**126**	T	T	09 25 32.8	
	baz=318,slow=76,SNR=6.1						
MKAR	**Makanchi Array**	**44.60**	**302**	P	**P**	**08 58 06.1**	**+1.1**
	0.2nm,0.3s,baz=82,slow=9.7,SNR=4.2						
WRA	**Warramunga Arr**	**57.94**	**189**	P	**P**	**08 59 43.9**	**-1.3**
	0.8nm,1.1s,baz=6.7,slow=7.0,SNR=4.2						

*ISCJB **24** 08:50:59.6±0.5,43˝.66S±0˝.03×172˝.64E±0˝.05,h23km±4km, mb3.2/2,Error ellipse: s-maj=7.2km s-min=4.0km az=43.4*
*IDC **24** 08:50:59.9±1.9,43˝.36S×172˝.44E,h0km,mb3.3/2, mb1 3.6/3,mb1mx3.5/21,mbtmp3.4/3,ML3.2/1,Error ellipse: s-maj=48.7km s-min=14.4km az=153.0*
*WEL **24** 08:51:01.3±0.1,43˝.62S×172˝.50E,h8km,ML4.3/30,Error ellipse: s-maj=0.5km s-min=0.5km az=90.0,6.*
WEL Felt between West Coast, Otago and Canterbury, maximum reported intensity MM.

*NEIC **24** 08:51:01.3,43˝.62S×172˝.49E,h7km,ML4.3(WEL),After WEL.*
NEIC Felt at Christchurch.

ISC 24 08:51:00.5±0.9,43˝62S±0˝.03×172˝58E±0˝.03,h19km±3km, n84,σ0º87/87,12C-5D,South Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MQZ	**McQueen's Vall**	**0.10**	**148**	⇓PG	**Pg**	**08 51 04.4**	**0.0**
MQZ				SG	**Sg**	**08 51 06.5**	**-0.4**
MQZ				AML	AML	08 51 07.0	
MQZ	**McQueen's Vall**	**0.10**	**148**	⇓Pg	**Pg**	**08 51 04.4**	**0.0**
MQZ				Sg	**Sg**	**08 51 06.5**	**-0.4**
OXZ	**Oxford**	**0.49**	**307**	⇓PG	**Pg**	**08 51 09.6**	**-0.8**
OXZ				SG	**Sg**	**08 51 16.0**	**-1.2**
OXZ	**Oxford**	**0.49**	**307**	⇓Pg	**Pg**	**08 51 09.6**	**-0.8**
OXZ				Sg	**Sg**	**08 51 16.0**	**-1.2**
LTZ	**Lake Taylor**	**0.87**	**345**	⇑P*	**Pg**	**08 51 17.9**	**+0.4**
LTZ				S*	**Sg**	**08 51 29.0**	**+0.1**
LTZ				AML	AML	08 51 32.4	
LTZ	**Lake Taylor**	**0.87**	**345**	P*	**Pg**	**08 51 17.9**	**+0.4**
LTZ				S*	**Sg**	**08 51 29.0**	**+0.1**
RPZ	**Rata Peaks**	**1.11**	**265**	Pg	**Pb**	**08 51 20.8**	**-0.3**
	260nm,0.3s,baz=105,slow=4.4,SNR=607						
RPZ				Lg	Lg	08 51 34.6	
	577nm,0.3s,baz=129,slow=18,SNR=47						
RPZ	**Rata Peaks**	**1.11**	**265**	⇑P*	**Pb**	**08 51 20.8**	**-0.3**
RPZ				AML	AML	08 51 40.6	
RPZ				AML	AML	08 51 46.5	
INZ	**Inchbonnie**	**1.22**	**317**	P*	**Pn**	**08 51 22.2**	**-0.3**
KHZ	**Kahutara**	**1.39**	**31**	⇑PN	**Pn**	**08 51 25.4**	**+0.5**
KHZ	**Kahutara**	**1.39**	**31**	⇑Pn	**Pn**	**08 51 25.4**	**+0.5**
WVZ	**Waitaha Valley**	**1.45**	**291**	⇑PN	**Pn**	**08 51 26.0**	**+0.3**
WVZ				AML	AML	08 51 51.7	
WVZ				AML	AML	08 51 52.2	
WVZ	**Waitaha Valley**	**1.45**	**291**	Pn	**Pn**	**08 51 26.0**	**+0.3**
THZ	**Tophouse**	**1.87**	**7**	PN	**Pn**	**08 51 31.9**	**+0.3**
THZ				AML	AML	08 52 02.0	
THZ				AML	AML	08 52 09.3	
THZ	**Tophouse**	**1.87**	**7**	Pn	**Pn**	**08 51 31.9**	**+0.3**
LBZ	**Lake Benmore**	**1.89**	**245**	⇑PN	**Pn**	**08 51 31.9**	**+0.2**
LBZ				AML	AML	08 52 02.9	
LBZ				AML	AML	08 52 02.9	
LBZ				AML	AML	08 52 06.0	
LBZ				AML	AML	08 52 06.1	
LBZ	**Lake Benmore**	**1.89**	**245**	Pn	**Pn**	**08 51 31.9**	**+0.2**
DSZ	**Denniston Nort**	**1.96**	**343**	AML	AML	08 52 01.9	
DSZ				AML	AML	08 52 02.0	
DSZ				AML	AML	08 52 06.5	
DSZ				AML	AML	08 52 06.6	
ODZ	**Otahua Downs**	**1.99**	**224**	⇑PN	**Pn**	**08 51 33.1**	**0.0**
ODZ				AML	AML	08 52 03.7	
ODZ				AML	AML	08 52 03.7	
ODZ				AML	AML	08 52 12.1	
ODZ				AML	AML	08 52 12.1	
ODZ	**Otahua Downs**	**1.99**	**224**	Pn	**Pn**	**08 51 33.1**	**0.0**
FOZ	**Fox Glacier**	**2.01**	**272**	PN	**Pn**	**08 51 34.6**	**+1.3**
FOZ				AML	AML	08 52 08.4	
FOZ				AML	AML	08 52 08.5	
FOZ				AML	AML	08 52 09.3	
FOZ				AML	AML	08 52 09.3	
FOZ	**Fox Glacier**	**2.01**	**272**	Pn	**Pn**	**08 51 34.6**	**+1.3**
BSWZ	**Blackbirch Sta**	**2.13**	**27**	PN	**Pn**	**08 51 35.8**	**+0.8**
BSWZ				AML	AML	08 52 06.4	
BSWZ				AML	AML	08 52 09.8	
BSWZ	**Blackbirch Sta**	**2.13**	**27**	Pn	**Pn**	**08 51 35.8**	**+0.8**
TUWZ	**Tuamarina**	**2.41**	**25**	PN	**Pn**	**08 51 39.4**	**+0.5**
TUWZ				AML	AML	08 52 27.5	
TUWZ				AML	AML	08 52 33.5	
TUWZ	**Tuamarina**	**2.41**	**25**	Pn	**Pn**	**08 51 39.4**	**+0.5**
NNZ	**Nelson**	**2.47**	**14**	⇑PN	**Pn**	**08 51 40.7**	**+1.0**
NNZ				AML	AML	08 52 22.4	
NNZ				AML	AML	08 52 26.7	
NNZ	**Nelson**	**2.47**	**14**	Pn	**Pn**	**08 51 40.7**	**+1.0**
HHSZ	**Highcliff Hill**	**2.67**	**211**	⇑PN	**Pn**	**08 51 42.4**	**0.0**
HHSZ	**Highcliff Hill**	**2.67**	**211**	Pn	**Pn**	**08 51 42.4**	**0.0**
TCW	**Tory Channel**	**2.72**	**28**	PN	**Pn**	**08 51 43.8**	**+0.7**
TCW				AML	AML	08 52 25.4	
TCW				AML	AML	08 52 29.8	
TCW	**Tory Channel**	**2.72**	**28**	Pn	**Pn**	**08 51 43.8**	**+0.7**
JCZ	**Jackson Bay**	**2.78**	**259**	PN	**Pn**	**08 51 44.4**	**+0.3**
JCZ				AML	AML	08 52 33.6	
JCZ				AML	AML	08 52 39.3	

WNVZ	**Wahianoa**	**4.85**	**29**	PN	**Pn**	**08 52 13.9**	**+1.3**
BKZ	**Black Stump Fm**	**5.33**	**35**	PN	**Pn**	**08 52 18.5**	**-0.7**
BKZ	**Black Stump Fm**	**5.33**	**35**	Pn	**Pn**	**08 52 18.5**	**-0.7**
HIZ	**Hauiti**	**5.38**	**19**	⇑PN	**Pn**	**08 52 20.3**	**+0.6**
HIZ	**Hauiti**	**5.38**	**19**	Pn	**Pn**	**08 52 20.3**	**+0.6**
TLZ	**Tolley Road**	**5.74**	**24**	PN	**Pn**	**08 52 25.4**	**+0.7**
TLZ	**Tolley Road**	**5.74**	**24**	Pn	**Pn**	**08 52 26.3**	**+1.6**
KNZ	**Kokohu**	**5.98**	**42**	PN	**Pn**	**08 52 26.7**	**-1.3**
KNZ	**Kokohu**	**5.98**	**42**	Pn	**Pn**	**08 52 26.7**	**-1.3**
URZ	**Urewera**	**6.36**	**34**	Pn	**Pn**	**08 52 31.8**	**-1.3**
	0.5nm,0.3s,baz=220,slow=8.9,SNR=3.8						
URZ				Sn	**Sn**	**08 53 41.3**	**-3.8**
	1.6nm,0.3s,baz=143,slow=16,SNR=5.1						
ASAR	**Alice Springs**	**37.42**	**289**	P	**P**	**08 58 13.1**	**+0.7**
	0.4nm,0.8s,baz=124,slow=7.2,SNR=3.5						
WRA	**Warramunga Arr**	**39.67**	**294**	P	**P**	**08 58 32.3**	**+1.0**
	0.2nm,0.5s,baz=135,slow=7.3,SNR=6.3						
TORD	**Torodi Ar. Bea**	**148.64**	**197**	PKPbc	**PKPbc**	**09 10 49.1**	**+2.6**
	0.3nm,0.6s,baz=197,slow=1.5,SNR=3.2						

NIED ***24*** *09:08:00,36.70N×142.40E,h23km,Mw3.8 Best double couple: M₀4.81000×10¹⁴ NP1:φ₀206.00000°,δ28.00000°, λ99.00000°. NP2:φ₀16.00000°,δ63.00000°,λ85.00000°.*

ISCJB ***24*** *09:08:07.8±0.7,36.65N±0.04×142.43E±0.07,h19km, mb3.5/6,MS3.3/1,Error ellipse: s-maj=8.5km s-min=6.0km az=178.9*

JMA ***24*** *09:08:07.1±0.5,36.68N×142.38E,h9km±4km,M3.8*

IDC ***24*** *09:08:07.5±0.9,36.71N×142.29E,h0km,mb3.4/6, mb1 3.7/9,mb1mx3.5/65,mbtmp3.6/9,ML3.8/3,MS2.9/4, Ms1 2.9/4,ms1mx2.5/33,Error ellipse: s-maj=26.7km s-min=18.5km az=106.0*

ISC 24 09:08:09.7±0.9, 36.72N±0.05×142.24E±0.07, h19km, n29, σ1§41/29, mb3.6/6, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**1.21**	**289**	P	**Pn**	**09 08 31.5**	**-0.3**
JFK	**Kawauchi**	**1.27**	**301**	P	**Pn**	**09 08 32.3**	**-0.1**
JHO	**Hitachi**	**1.35**	**266**	P	**Pb**	**09 08 33.7**	**-0.7**
CHOJ	**Chosi**	**1.51**	**228**	P	**Pn**	**09 08 35.7**	**-0.1**
JMM	**Marumori**	**1.62**	**315**	P	**Pn**	**09 08 37.9**	**+0.6**
JFT	**Otama**	**1.71**	**298**	P	**Pb**	**09 08 39.7**	**-0.9**
JFT				S	**Sb**	**09 09 02.7**	**+0.9**
JIO	**Ouri**	**1.87**	**338**	P	**Pn**	**09 08 40.8**	**+0.1**
JOU	**Okura**	**2.06**	**323**	P	**Pn**	**09 08 44.8**	**+1.4**
JOU				*e*S	**Sb**	**09 09 12.5**	**+0.7**
JFY	**Yanaizu**	**2.14**	**289**	P	**Pb**	**09 08 46.1**	**-1.8**
JAG	**Ashikaga**	**2.26**	**263**	P	**Pn**	**09 08 46.8**	**+0.7**
JYS	**Shirataka**	**2.29**	**312**	P	**Pb**	**09 08 49.0**	**-1.4**
BSO1	**Boso 1**	**2.31**	**207**	S	**Sn**	**09 09 14.2**	**+0.4**
JMK	**Ichinoseki**	**2.37**	**340**	P	**Pn**	**09 08 48.2**	**+0.7**
MJAR	**Matsushiro Arr**	**3.25**	**268**	Pn	**Pn**	**09 09 01.2**	**+1.6**
	9.2nm,0.3s,baz=99,slow=11,SNR=57						
MJAR				Sn	**Sn**	**09 09 38.0**	**+0.2**
	1.7nm,0.3s,baz=95,slow=17,SNR=4.1						
MAT	**Matsushiro**	**3.25**	**268**	P	**Pn**	**09 09 01.5**	**+1.8**
MAT				S	**Sb**	**09 09 45.1**	**-0.8**
JHJ	**Hachijo jima 2**	**4.12**	**210**	Pn	**Pn**	**09 09 11.6**	**-0.1**
	14nm,0.3s,baz=72,slow=20,SNR=3.9						
JHJ				Sn	**Sn**	**09 09 55.5**	**-3.9**
	31nm,0.3s,baz=73,slow=19,SNR=8.0						
ASAJ	**Asahikawa**	**7.39**	**2**	Pn	**Pn**	**09 09 56.1**	**-0.4**
	1.5nm,0.3s,baz=237,slow=13,SNR=14						
ASAJ				Sn	**Sn**	**09 11 16.3**	**-3.6**
	0.4nm,0.3s,baz=119,slow=19,SNR=1.8						
JCJ	**Chichijima**	**9.60**	**180**	Pn	Pn	09 10 23.1	-3.8
	baz=279,slow=19						
JCJ				Sn	Sn	09 12 05.8	-8.4
	2.5nm,0.3s,baz=294,slow=20,SNR=2.7						
JNU	**Nakatsue**	**9.99**	**252**	LR	LR	09 14 25.1	
	comp=Z,33nm,18.4s,baz=118,slow=38						
USRK	**Ussuriysk Ar.**	**10.80**	**317**	Pn	Pn	09 10 46.7	+3.5
	0.1nm,0.3s,baz=118,slow=13,SNR=2.7						
KSRS	**Korea Array**	**11.46**	**278**	LR	LR	09 15 10.6	
	comp=Z,68nm,19.2s,baz=126,slow=37						
KLR	**Kul'dur**	**14.65**	**332**	LR	LR	09 16 59.7	
	comp=Z,30nm,19.1s,baz=142,slow=36						
SONM	**Songino Array**	**28.51**	**304**	P	**P**	**09 14 04.6**	**+0.7**
	1.1nm,0.7s,baz=101,slow=9.1,SNR=9.4						
MKAR	**Makanchi Array**	**44.84**	**303**	P	**P**	**09 16 23.1**	**+0.5**
	0.4nm,0.4s,baz=89,slow=10,SNR=4.8						
ILAR	**Eielson Array**	**49.40**	**32**	P	**P**	**09 16 58.6**	**+0.8**
	0.6nm,0.8s,baz=265,slow=5.1,SNR=6.0						
AAK	**Ala-Archa**	**51.22**	**299**	LR	LR	09 39 58.5	
	comp=Z,29nm,18.4s,baz=29,slow=37						
WRA	**Warramunga Arr**	**56.85**	**189**	P	**P**	**09 17 52.4**	**-0.8**
	0.5nm,1.0s,baz=5.7,slow=7.4,SNR=4.8						
ASAR	**Alice Springs**	**60.58**	**189**	P	**P**	**09 18 20.9**	**+1.9**
	0.2nm,0.8s,baz=15,slow=7.7,SNR=4.0						
YKA	**Yellowknife Ar**	**63.74**	**30**	P	**P**	**09 18 40.7**	**+0.8**
	0.1nm,0.6s,baz=300,slow=6.2,SNR=3.4						

NIED ***24*** *09:11:00,37.20N×142.70E,h5km,Mw3.8 Best double couple: M₀5.16000×10¹⁴ NP1:φ₀225.00000°,δ34.00000°, λ-20.00000°. NP2:φ₀332.00000°,δ79.00000°, λ-123.00000°.*

ISCJB ***24*** *09:11:04.8±0.4,37.14N±0.04×142.63E±0.04,h9km, mb4.0/22,Error ellipse: s-maj=6.4km s-min=4.8km az=170.3*

JMA ***24*** *09:11:04.3±0.4,37.19N×142.66E,h9km,M4.1*

IDC ***24*** *09:11:05.2±0.7,37.11N×142.51E,h0km,mb3.8/16, mb1 4.0/19,mb1mx3.8/67,mbtmp3.8/19,ML3.4/3,Error ellipse: s-maj=18.1km s-min=15.7km az=121.0*

NEIC ***24*** *09:11:10.7±0.7,37.14N×142.52E,h37km±6km,mb4.2/6, Error ellipse: s-maj=8.1km s-min=5.3km az=121.0*

ISC 24 09:11:07.0±0.7, 37.19N±0.08×142.56E±0.06, h9km, n50, σ1§10/41, mb3.9/22, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JFK	**Kawauchi**	**1.35**	**278**	P	**Pn**	**09 11 30.8**	**-1.4**
JFK				*e*S	**Sb**	**09 11 49.1**	**-1.0**
ONAJ	**Iwakimizuishiy**	**1.41**	**267**	P	Pn	09 11 31.1	-1.8
ONAJ				*e*S	**Sb**	**09 11 51.0**	**-0.6**
JMM	**Marumori**	**1.56**	**296**	P	Pn	09 11 32.9	-2.0
JIO	**Ouri**	**1.58**	**323**	*e*S	**Sn**	**09 11 54.4**	**-1.5**
JHO	**Hitachi**	**1.70**	**251**	P	Pn	09 11 35.3	-1.5
JFT	**Otama**	**1.80**	**281**	P	Pn	09 11 36.7	-1.6
JOU	**Okura**	**1.91**	**309**	P	**Pn**	**09 11 39.6**	**-0.1**
JYS	**Shirataka**	**2.23**	**298**	P	**Pn**	**09 11 43.9**	**-0.3**
JYS				*e*S	**Sn**	**09 12 11.3**	**-0.5**
JFY	**Yanaizu**	**2.29**	**276**	P	**Pn**	**09 11 45.0**	**0.0**
JAG	**Ashikaga**	**2.61**	**254**	P	Pn	**09 11 49.1**	**-0.2**
MJAR	**Matsushiro Arr**	**3.55**	**261**	Pn	**Pn**	**09 12 02.2**	**-0.1**
	3.8nm,0.3s,baz=89,slow=15,SNR=11						
MAJO	**Matsushiro**	**3.55**	**261**	*e*Pn	**Pn**	**09 12 03.1**	**+0.7**
MAT	**Matsushiro**	**3.55**	**261**	P	Pn	**09 12 02.9**	**+0.6**
MAT				*e*S	**Sn**	**09 12 48.4**	**+4.0**
JHJ2	**Mitsune**	**4.65**	**210**	*e*Pn	**Pn**	**09 12 17.4**	**0.0**
JHJ	**Hachijo jima 2**	**4.65**	**210**	Pn	Pn	09 12 15.6	-1.9
	6.9nm,0.3s,baz=72,slow=19,SNR=2.7						
JHJ				Sn	Sn	09 13 06.3	-5.4
	4.3nm,0.3s,baz=72,slow=20,SNR=2.4						
ERM	**Erimo**	**4.84**	**5**	*e*Pn	**Pn**	**09 12 22.5**	**+2.4**
ASAJ	**Asahikawa**	**6.92**	**0**	Pn	**Pn**	**09 12 49.4**	**+0.8**
	0.6nm,0.3s,baz=181,slow=10,SNR=6.5						
ASAJ				Sn	Sn	09 14 03.6	-3.8
	baz=197,slow=19,SNR=2.1						
JNU	**Nakatsue**	**10.39**	**250**	Pn	**Pn**	**09 13 37.3**	**+1.1**
	0.3nm,0.3s,baz=87,slow=4.2,SNR=4.5						
USRK	**Ussuriysk Ar.**	**10.64**	**314**	Pn	**Pn**	**09 13 42.2**	**+2.6**
	0.1nm,0.3s,baz=126,slow=13,SNR=6.7						
SEY	**Seymchan**	**26.47**	**10**	P	**P**	**09 16 45.2**	**+1.1**
	1.4nm,0.6s,baz=196,slow=8.7,SNR=6.2						
H11N2	**WAKE ISLAND Hy**	**27.45**	**123**	T	T	09 45 47.7	
	baz=315,slow=75,SNR=66						
H11N1	**WAKE ISLAND Hy**	**27.46**	**123**	T	T	09 45 39.4	
	baz=315,slow=75,SNR=43						
H11N3	**WAKE ISLAND Hy**	**27.47**	**123**	T	T	09 45 43.1	
	baz=315,slow=75,SNR=42						
H11S1	**WAKE ISLAND Hy**	**28.18**	**125**	T	T	09 46 32.9	
	baz=317,slow=76,SNR=41						
H11S3	**WAKE ISLAND Hy**	**28.19**	**125**	T	T	09 46 36.4	
	baz=317,slow=76,SNR=38						
H11S2	**WAKE ISLAND Hy**	**28.20**	**125**	T	T	09 46 37.5	
	baz=317,slow=76,SNR=44						
SONM	**Songino Array**	**28.46**	**303**	P	**P**	**09 17 02.3**	**0.0**
	1.8nm,0.8s,baz=92,slow=7.3,SNR=11						
SDPT	**Sand Point**	**42.04**	**46**	*e*P	P	09 18 57.1	-1.5
	178nm,1.4s						

ZALV	**Zalesovo Beam**	**42.49**	**312**	P	**P**	**09 19 01.3**	**-1.0**
	0.4nm,0.3s,baz=89,slow=11,SNR=3.9						
MKAR	**Makanchi Array**	**44.81**	**302**	P	**P**	**09 19 20.7**	**-0.5**
	1.1nm,0.7s,baz=92,slow=7.3,SNR=7.1						
KURK	**Kurchatov**	**46.56**	**308**	P	**P**	**09 19 34.9**	**0.0**
KURBB	**Kurchatov Arra**	**46.63**	**308**	P	**P**	**09 19 34.9**	**-0.5**
	1.4nm,0.5s,baz=81,slow=7.6,SNR=5.2						
ILAR	**Eielson Array**	**48.87**	**32**	P	**P**	**09 19 52.9**	**+0.2**
	1.1nm,0.8s,baz=266,slow=6.3,SNR=11						
TKM2	**Tokmak 2**	**50.36**	**299**	*e*P	**P**	**09 20 04.7**	**+0.1**
	2.7nm,0.8s						
BVAR	**Borovoye Array**	**51.14**	**312**	P	**P**	**09 20 09.9**	**-0.2**
	0.6nm,0.7s,baz=70,slow=9.6,SNR=4.1						
INK	**Inuvik**	**53.83**	**27**	*e*P	**P**	**09 20 30.2**	**+0.5**
	2.2nm,1.3s						
ARU	**Arti**	**56.85**	**319**	*e*P	**P**	**09 20 50.9**	**-0.8**
	3.8nm,0.9s						
WRAB	**Tennant Creek**	**57.34**	**189**	*e*P	**P**	**09 20 54.7**	**-0.8**
	25nm,2.0s						
WRA	**Warramunga Arr**	**57.35**	**189**	P	P	09 20 54.1	-1.5
	1.5nm,0.9s,baz=7.7,slow=7.3,SNR=10						
ABKAR	**Akbulak array**	**58.54**	**310**	*e*P	**P**	**09 21 03.0**	**-0.7**
	0.6nm,0.6s						
ASAR	**Alice Springs**	**61.08**	**189**	P	**P**	**09 21 20.5**	**-0.8**
	0.8nm,0.9s,baz=9.1,slow=5.2,SNR=6.7						
RES	**Resolute Bay**	**62.22**	**15**	P	**P**	**09 21 28.1**	**-0.4**
	1.1nm,0.7s,baz=320,slow=7.4,SNR=7.1						
RES	**Resolute Bay**	**62.22**	**15**	*e*P	**P**	**09 21 28.4**	**0.0**
	1.1nm,0.8s						
YKA	**Yellowknife Ar**	**63.21**	**30**	P	P	09 21 34.7	-0.5
	0.2nm,0.8s,baz=304,slow=6.7,SNR=4.1						
FINES	**FINESS Array B**	**69.10**	**333**	P	**P**	**09 22 12.9**	**-0.1**
	1.2nm,0.6s,baz=46,slow=11,SNR=8.5						
NVAR	**Mina Array Bea**	**74.16**	**54**	P	**P**	**09 22 44.5**	**+0.3**
	0.3nm,0.7s,baz=286,slow=6.5,SNR=2.7						
AKASG	**Malin Array Be**	**74.73**	**323**	P	**P**	**09 22 46.4**	**-0.6**
	1.0nm,0.5s,baz=43,slow=6.3,SNR=8.7						
PDAR	**Pinedale Array**	**76.90**	**46**	P	**P**	**09 23 00.4**	**+0.4**
	0.3nm,0.8s,baz=290,slow=2.7,SNR=3.0						
TXAR	**Lajitas Array**	**89.30**	**53**	P	**P**	**09 24 04.2**	**+0.1**
	0.3nm,0.6s,baz=302,slow=2.7,SNR=6.2						
LPAZ	**La Paz**	**145.82**	**61**	PKPbc	**PKPdf**	**09 30 47.5**	**+0.1**
	0.7nm,0.5s,baz=346,slow=1.4,SNR=3.8						

ISCJB ***24*** *09:21:18.0±1.7,35.78N±0.14×14.82E±0.10,h10km,Error ellipse: s-maj=17.3km s-min=9.5km az=156.3*

ROM ***24*** *09:21:18.4±0.3,35.82N×14.91E,h9km,Ml3.7/26,Error ellipse: s-maj=5.2km s-min=2.1km az=141.0*

ISC 24 09:21:18.8±1.9, 35.79N±0.14×14.89E±0.08, h10km, n29, σ1§07/33, 1C, Central Mediterranean Sea

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
WDD	**Wied Dalam**	**0.30**	**264**	⇑*i*Pn	**Pb**	**09 21 25.6**	**-0.6**
WDD				Sn	**Sb**	**09 21 30.5**	**-0.6**
	6μm,0.5s						
HMDC	**Modica**	**1.06**	**355**	Pn	**Pn**	**09 21 39.6**	**-0.1**
HMDC				Sn	**Sn**	**09 21 55.7**	**+1.1**
	6μm,0.8s						
HAVL	**Avola**	**1.08**	**10**	Pn	**Pn**	**09 21 39.9**	**0.0**
HAVL				Sn	**Sn**	**09 21 55.9**	**+1.0**
	2μm,0.3s						
SSY	**Sortino**	**1.26**	**7**	Pn	**Pg**	**09 21 43.0**	**0.0**
	6μm,0.7s						
HVZN	**Vizzini**	**1.28**	**354**	Pn	**Pn**	**09 21 42.9**	**+0.1**
	3μm,0.5s						
AGST	**Augusta-Monte**	**1.38**	**11**	Pn	**Pb**	**09 21 44.6**	**-0.1**
HCRL	**Carlentini**	**1.39**	**5**	Pn	**Pn**	**09 21 44.4**	**+0.2**
	6μm,0.5s						
RAFF	**Raffo Rosso**	**1.39**	**342**	Pn	**Pb**	**09 21 44.8**	**0.0**
	949nm,0.6s						
HAGA	**Augusta**	**1.40**	**9**	Pn	**Pb**	**09 21 44.9**	**-0.1**
	2μm,0.6s						
HLNI	**Lentini**	**1.45**	**360**	Pn	**Pb**	**09 21 45.4**	**-0.4**
	1μm,0.6s						
ECNV	**Catenanuova**	**1.70**	**355**	Pn	**Pg**	**09 21 51.1**	**-0.3**
	2μm,1.2s						
GALF	**Gagliano Caste**	**1.83**	**352**	Pn	**Pb**	**09 21 52.2**	**-0.1**
	465nm,0.6s						
RESU	**Resuttano**	**1.87**	**339**	Pn	**Pb**	**09 21 53.7**	**+0.7**
	370nm,0.9s						
MMME	**Mongiuffi-Meli**	**2.05**	**8**	Pn	**Pb**	**09 21 55.1**	**-1.1**
	361nm,0.6s						
ALJA	**Alia**	**2.06**	**334**	Pn	**Pb**	**09 21 55.9**	**-0.3**
	129nm,0.6s						
PLLN	**Pollina**	**2.17**	**344**	Pn	**Pb**	**09 21 57.2**	**-1.0**
	336nm,0.8s						
GIB	**Gibilmanna**	**2.20**	**342**	Pn	**Pb**	**09 21 57.8**	**-0.8**
	770nm,0.8s						
MPAZ	**Palizzi**	**2.24**	**23**	Pn	**Pn**	**09 21 57.2**	**+1.3**
	202nm,0.7s						
MPNC	**Port Mandanici**	**2.27**	**9**	Pn	**Pb**	**09 21 58.1**	**-1.8**
	679nm,0.7s						
CORL	**Corleone**	**2.36**	**328**	Pn	**Pn**	**09 21 58.9**	**+1.3**
	84nm,0.7s						
SOI	**Samo**	**2.36**	**23**	Pn	**Pn**	**09 21 58.9**	**+1.3**
	141nm,0.7s						
MILZ	**Milazzo**	**2.38**	**7**	Pn	**Pb**	**09 22 00.0**	**-1.7**
	345nm,0.5s						
SOLUN	**Solunto**	**2.44**	**334**	Pn	**Pn**	**09 21 59.8**	**+1.1**
	135nm,0.9s						
VPL	**Vulcano Piano**	**2.48**	**2**	Pn	**Pn**	**09 22 00.9**	**+1.7**
	684nm,0.5s						
IACL	**Alicudi**	**2.66**	**351**	Pn	**Pn**	**09 22 03.2**	**+1.5**
	169nm,0.5s						
PLAC	**Placanica**	**2.83**	**26**	Pn	**Pn**	**09 22 05.9**	**+1.8**
	93nm,0.7s						
USI	**Ustica**	**3.12**	**335**	Pn	**Pn**	**09 22 08.2**	**+0.2**
	228nm,0.6s						
SERS	**Sersale**	**3.44**	**24**	Pn	**Pn**	**09 22 14.4**	**+1.8**
	57nm,0.7s						
STON	**Ston**	**7.29**	**17**	*i*Pn	**Pn**	**09 23 05.3**	**0.0**
STON				Sn	**Sn**	**09 24 26.4**	**-1.8**

IDC ***24*** *09:21:47.0±0.9,38.50N×144.39E,h0km,mb3.5/8, mb1 3.7/12,mb1mx3.5/57,mbtmp3.6/12,ML3.5/3,Error ellipse: s-maj=23.8km s-min=17.7km az=97.0*

ISCJB ***24*** *09:21:49.5±0.6,38.54N±0.04×144.20E±0.05,h29km, mb3.5/8,Error ellipse: s-maj=5.8km s-min=4.4km az=138.2*

JMA ***24*** *09:21:50.3±0.2,38.63N×144.20E,h47km,M3.8*

ISC 24 09:21:50.5±0.9, 38.62N±0.05×144.32E±0.07, h29km, n38, σ2§06/58, mb3.5/8, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
OFUJ	**Ofunato**	**2.12**	**283**	P	**Pn**	**09 22 23.1**	**-0.8**
OFUJ				*e*S	**Sn**	**09 22 47.3**	**-2.0**
MIYJ	**Miyakonagasawa**	**2.17**	**297**	P	**Pn**	**09 22 23.5**	**-1.1**
JTH	**Tanohata**	**2.31**	**305**	P	**Pn**	**09 22 25.5**	**-1.2**
JIO	**Ouri**	**2.33**	**267**	P	**Pn**	**09 22 26.0**	**-0.9**
JIO				S	**Sn**	**09 22 52.2**	**-2.4**
JMK	**Ichinoseki**	**2.44**	**279**	P	**Pn**	**09 22 27.7**	**-0.7**
JOM	**Ohasama**	**2.50**	**291**	P	**Pn**	**09 22 28.7**	**-0.6**
JOM				S	**Sn**	**09 22 56.8**	**-2.0**
JKZ	**Kuzumaki**	**2.69**	**301**	P	**Pn**	**09 22 31.2**	**-0.6**
JKZ				S	**Sn**	**09 23 00.9**	**-2.5**
JANG	**Nango**	**2.79**	**310**	P	**Pn**	**09 22 32.5**	**-0.7**
JMM	**Marumori**	**2.87**	**256**	P	**Pn**	**09 22 34.0**	**-0.3**
JMM				S	**Sn**	**09 23 05.4**	**-2.5**
JOU	**Okura**	**2.88**	**266**	P	**Pn**	**09 22 33.8**	**-0.6**
JOU				*e*S	**Sn**	**09 23 05.9**	**-2.2**
JRG	**Rokugo**	**2.97**	**286**	P	**Pn**	**09 22 35.6**	**-0.1**
JRG				*e*S	**Sn**	**09 23 09.8**	**-0.6**
JFK	**Kawauchi**	**2.99**	**246**	P	**Pn**	**09 22 35.3**	**-0.7**
JFK				S	**Sn**	**09 23 08.3**	**-2.7**
JYK	**Kaneyama**	**3.11**	**277**	P	**Pn**	**09 22 37.6**	**0.0**
JYK				*e*S	**Sn**	**09 23 13.0**	**-0.7**
ONAJ	**Iwakimizuishiy**	**3.17**	**243**	P	**Pn**	**09 22 36.8**	**-1.7**
ONAJ				S	**Sn**	**09 23 12.2**	**-3.1**
JAH	**Hinai**	**3.25**	**300**	P	**Pn**	**09 22 39.3**	**-0.3**
JTM	**Tenmabayashi**	**3.31**	**312**	P	**Pn**	**09 22 39.3**	**-1.0**
JFT	**Otama**	**3.33**	**252**	P	**Pn**	**09 22 40.9**	**+0.3**
JFT				S	**Sn**	**09 23 18.2**	**-1.0**
JYS	**Shirataka**	**3.36**	**265**	P	**Pn**	**09 22 41.3**	**+0.2**
JYS				S	**Sn**	**09 23 18.9**	**-1.1**
JHO	**Hitachi**	**3.59**	**237**	P	**Pn**	**09 22 42.7**	**-1.5**
JHO				S	**Sn**	**09 23 21.3**	**-4.3**
JYT	**Yasato**	**4.06**	**235**	P	**Pn**	**09 22 49.8**	**-0.8**
JYT				S	**Sn**	**09 23 32.8**	**-4.3**
JAK	**Akkeshi**	**4.38**	**4**	*e*S	**Sn**	**09 23 41.3**	**-3.8**
JAG	**Ashikaga**	**4.44**	**242**	P	**Pn**	**09 22 55.6**	**-0.3**
JAG				S	**Sn**	**09 23 44.5**	**-2.2**
JAR	**Ashorobuto**	**4.69**	**355**	P	**Pn**	**09 22 56.9**	**-2.4**
JAR				S	**Sn**	**09 23 47.2**	**-5.5**
JHU	**Hanno**	**4.88**	**237**	P	**Pn**	**09 23 00.1**	**-1.8**
JHU				S	**Sn**	**09 23 53.1**	**-4.2**
JRY	**Ryogami san**	**5.04**	**241**	P	**Pn**	**09 23 03.7**	**-0.4**
JRY				S	**Sn**	**09 23 56.4**	**-5.0**
MJAR	**Matsushiro Arr**	**5.28**	**249**	Pn	**Pn**	**09 23 08.1**	**+0.7**
	2.9nm,0.3s,baz=58,slow=12,SNR=22						
MJAR				Sn	**Sn**	**09 24 06.7**	**-0.5**
	0.6nm,0.3s,baz=82,slow=20,SNR=2.8						
MAT	**Matsushiro**	**5.28**	**249**	P	Pn	**09 23 08.5**	**+1.1**
MAT				S	**Sn**	**09 24 07.6**	**+0.4**
ASAJ	**Asahikawa**	**5.64**	**347**	Pn	Pn	**09 23 12.1**	**-0.3**
	0.8nm,0.3s,baz=206,slow=14,SNR=8.4						
ASAJ				Sn	**Sn**	**09 24 12.9**	**-3.3**
	0.4nm,0.3s,baz=150,slow=20,SNR=3.4						
JHJ	**Hachijo jima 2**	**6.61**	**215**	Pn	Pn	**09 23 24.1**	**-1.6**
	4.8nm,0.3s,baz=59,slow=19,SNR=4.4						
JHJ				Sn	Sn	09 24 32.2	-7.8
	6.8nm,0.3s,baz=49,slow=20,SNR=2.7						
USRK	**Ussuriysk Ar.**	**10.80**	**305**	Pn	**Pn**	**09 24 25.0**	**+1.8**
	0.1nm,0.3s,baz=87,slow=15,SNR=4.1						
SEY	**Seymchan**	**24.83**	**9**	P	**P**	**09 27 11.9**	**+2.0**
	0.4nm,0.4s,baz=198,slow=12,SNR=4.2						
SONM	**Songino Array**	**28.88**	**301**	P	P	09 27 50.0	+3.4
	0.3nm,0.5s,baz=98,slow=8.9,SNR=2.9						
MKAR	**Makanchi Array**	**45.24**	**301**	P	**P**	**09 30 05.7**	**+0.5**
	0.2nm,0.3s,baz=84,slow=8.3,SNR=2.5						
KURBB	**Kurchatov Arra**	**46.86**	**307**	P	**P**	**09 30 18.6**	**+0.9**
	0.2nm,0.5s,baz=82,slow=8.8,SNR=3.3						
INK	**Inuvik**	**51.92**	**28**	P	**P**	**09 30 57.6**	**+1.5**
	1.6nm,1.1s,baz=253,slow=3.1,SNR=5.6						
WRA	**Warramunga Arr**	**59.00**	**191**	P	**P**	**09 31 47.2**	**-0.3**
	0.7nm,0.7s,baz=13,slow=7.4,SNR=9.0						
ASAR	**Alice Springs**	**62.72**	**191**	P	**P**	**09 32 13.2**	**+0.4**
	0.2nm,0.5s,baz=8.5,slow=6.9,SNR=3.8						
TXAR	**Lajitas Array**	**87.33**	**54**	P	**P**	**09 34 36.6**	**+1.6**
	0.1nm,0.5s,baz=316,slow=2.5,SNR=3.3						

ROM ***24*** *09:25:28.0±0.5,35.83N×14.89E,h9km,Ml3.7/17,Error ellipse: s-maj=6.9km s-min=2.2km az=143.0*

NEIC ***24*** *09:25:28.0,35.81N×14.89E,h20km,ML3.5(ROM),After ROM.*

NEIC Felt [III] at Birkirkara and San Giljan and [II] at Sliema and Tarxien. Also felt at Kalkara, Kirkop, Luqa, Masaskala, Melieha, Msida, Paola, Pieta, San Gwann, San Pawl il-Bahar, Valletta, Zabbar and Zejtun.

CSEM ***24*** *09:25:29.9±0.5,35.93N×14.85E,h10km,ML3.7,Error ellipse: s-maj=11.3km s-min=5.0km az=147.0*

ISC 24 09:25:27.4±2.1, 35.89N±0.07×14.87E±0.05, h1km±12km, n60, σ0§87/84, 2C, Central Mediterranean Sea

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
WDD	**Wied Dalam**	**0.28**	**266**	⇑*i*Pn	**Pb**	**09 25 35.0**	**-0.2**
WDD				Sn	**Sb**	**09 25 39.7**	**-0.7**
	7μm,0.7s						
WDD	**Wied Dalam**	**0.28**	**266**	⇑*i*Pn	**Pb**	**09 25 35.0**	**-0.2**
WDD				Sn	**Sb**	**09 25 39.7**	**-0.7**
	7μm,0.7s						
WDD				*e*Sg	**Sb**	**09 25 40.3**	**-0.1**
WDD	**Wied Dalam**	**0.28**	**266**	*e*Pg	**Pb**	**09 25 34.9**	**-0.3**
WDD				*e*Sg	**Sb**	**09 25 40.3**	**-0.1**
HMDC	**Modica**	**1.07**	**356**	Pn	**Pn**	**09 25 49.1**	**-0.5**
HMDC				Sn	**Sn**	**09 26 04.9**	**-0.2**
	3μm,0.5s						
HMDC	**Modica**	**1.07**	**356**	P	**Pn**	**09 25 49.0**	**-0.5**
HMDC				Sn	**Sn**	**09 26 04.9**	**-0.2**
	3μm,0.5s						
HMDC	**Modica**	**1.07**	**356**	P	Pn	**09 25 49.0**	**-0.5**
HMDC				S	**Sn**	**09 26 04.9**	**-0.2**
HAVL	**Avola**	**1.09**	**11**	Pn	**Pb**	**09 25 49.2**	**+0.2**
HAVL				Sn	**Sn**	**09 26 05.2**	**-0.4**
	2μm,0.3s						
HAVL	**Avola**	**1.09**	**11**	P	**Pb**	**09 25 49.3**	**+0.2

CUC				*e*Sn		**Sn**	**09 27 21.1**	**-0.4**
CUC	**Castrocucco**	**4.17**	**10**	*e*Pn		**Pn**	**09 26 33.5**	**+1.4**
CUC				*e*Sn		**Sn**	**09 27 21.1**	**-0.4**
TAR1	**Taranto**	**5.01**	**22**	*e*Pn		**Pn**	**09 26 43.5**	**-0.1**
VSL	**Villasalto**	**5.65**	**311**	*e*Pn		**Pn**	**09 26 52.8**	**+0.3**
VSL				*e*Sn		**Sn**	**09 27 57.0**	**-1.0**
VSL	**Villasalto**	**5.65**	**311**	*e*Pn		**Pn**	**09 26 52.8**	**+0.3**
VSL				*e*Sn		**Sn**	**09 27 57.0**	**-1.0**

NIED ***24*** *09:30:00.0, 34.90N× 141.10E, h8km, Mw4.2 Best double couple: M◎2.22000×10^15 NP1:φs190.00000°, δ28.00000°, λ136.00000°. NP2:φs320.00000°, δ71.00000°, λ69.00000°.*
IDC ***24*** *09:30:08.8±0.5, 34.89N× 140.85E, h0km, mb4.0/24, mb1 4.1/27, mb1mx4.1/46, mbtmp4.0/27, ML3.9/3, MS3.1/5, Ms1 3.1/5, ms1mx2.8/39, Error ellipse: s-maj=16.1km s-min=12.7km az=87.0*
BJI ***24*** *09:30:08.1, 34.89N× 141.19E, h18km, mb4.6/21, mB4.8/12, Ms4.3/6, Ms7 4.2/5*
NEIC ***24*** *09:30:11.0±2.2, 34.90N× 140.88E, h11km±13km, mb4.7/25, Error ellipse: s-maj=6.1km s-min=4.5km az=93.0*
JMA ***24*** *09:30:11.1±0.2, 34.93N× 141.05E, h41km±3km, M3.6*
MOS ***24*** *09:30:12.4±1.4, 34.99N× 140.98E, h33km, mb4.4/27, Error ellipse: s-maj=10.4km s-min=6.2km az=108.1*
ISCJB ***24*** *09:30:12.1±0.7, 34.86N±0.03× 140.92E±0.04, h33km±4km, mb4.3/56, MS3.4/3, Error ellipse: s-maj=5.2km s-min=4.5km az=172.3*

ISC 24 09:30:12.6±0.5, 34.93N±0.04× 140.97E±0.04, h24km±3km, n154, σ1s29/162, mb4.4/56, MS3.5/4, 10C-5D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BSO1	**Boso 1**	**0.28**	**179**	P	**Pb**	**09 30 19.1**	**+0.3**
BSO3	**Boso 3**	**0.40**	**251**	P	**Pb**	**09 30 21.4**	**+0.4**
BSO4	**Boso 4**	**0.53**	**277**	P	**Pb**	**09 30 23.5**	**+0.3**
KTR	**Katsuura**	**0.58**	**292**	P	**Pb**	**09 30 23.8**	**-0.4**
KTR				S	**Sb**	**09 30 32.5**	**+0.4**
CHOJ	**Chosi**	**0.78**	**353**	P	**Pb**	**09 30 25.9**	**-1.6**
JCN	**Nagara**	**0.80**	**308**	P	**Pb**	**09 30 27.2**	**-0.7**
JCN				S	**Sn**	**09 30 38.8**	**-0.7**
JIM2	**Oshima 3**	**1.29**	**261**	P	**Pn**	**09 30 33.2**	**-2.0**
JIM2				S	**Sn**	**09 30 50.6**	**-1.1**
JYT	**Yasato**	**1.44**	**334**	P	**Pn**	**09 30 36.3**	**-1.0**
JMY	**Miyakejima3**	**1.48**	**235**	*e*S	**Sn**	**09 30 53.9**	**-2.5**
JHJ2	**Mitsune**	**2.05**	**208**	*e*Pn	**Pn**	**09 30 44.0**	**-1.7**
JHJ	**Hachijo jima 2**	**2.06**	**209**	Pn	**Pn**	**09 30 43.6**	**-2.2**
	272nm,0.3s,baz=91,slow=17,SNR=56						
JHJ				Sn	**Sn**	**09 31 07.4**	**-3.3**
	147nm,0.3s,baz=72,slow=20,SNR=3.8						
MJAR	**Matsushiro Arr**	**2.76**	**306**	Pn	**Pn**	**09 30 54.5**	**-1.0**
	5.5nm,0.3s,baz=100,slow=9.6,SNR=45						
MAJO	**Matsushiro**	**2.77**	**306**	*e*P	**Pn**	**09 30 55.0**	**-0.5**
MAJO	**Matsushiro**	**2.77**	**306**	*e*Pn	**Pn**	**09 30 55.1**	**-0.4**
MAT	**Matsushiro**	**2.77**	**306**	P	**Pn**	**09 30 55.0**	**-0.5**
MAT				*e*S	**Sn**	**09 31 28.4**	**+0.2**
MJB9	**Matsu-Tunnel**	**2.77**	**306**	*e*Pn	**Pn**	**09 30 55.0**	**-0.6**
INU	**Inuyama**	**3.27**	**278**	*e*Pn	**Pn**	**09 31 03.7**	**+1.3**
ERM	**Erimo**	**7.28**	**13**	*e*P	**Pn**	**09 31 58.4**	**+1.0**
ERM	**Erimo**	**7.28**	**13**	*e*Pn	**Pn**	**09 31 59.1**	**+1.6**
CBIJ	**Chichi jima**	**7.88**	**172**	*e*Pn	**Pn**	**09 32 04.2**	**-1.5**
JCJ	**Chichijima**	**7.88**	**172**	Pn	**Pn**	**09 32 03.8**	**-2.0**
	8.3nm,0.3s,baz=291,slow=22,SNR=6.0						
JCJ				LR	LR	09 35 23.1	
	comp=Z,143nm,20.2s,slow=40						
JNU	**Nakatsue**	**8.57**	**261**	Pn	**Pn**	**09 32 15.3**	**+0.1**
	0.3nm,0.3s,baz=16,slow=7.4,SNR=4.4						
JNU				LR	LR	09 35 43.7	
	comp=Z,208nm,20.6s,baz=118,slow=40						
ASAJ	**Asahikawa**	**9.26**	**7**	Pn	**Pn**	**09 32 22.2**	**-2.4**
	1.0nm,0.3s,baz=220,slow=11,SNR=6.1						
ASAJ				Sn	**Sn**	**09 34 03.2**	**-4.7**
	0.1nm,0.3s,baz=254,slow=20,SNR=2.5						
KSRS	**Korea Array**	**10.84**	**287**	Pn	Pn	09 32 49.6	+3.3
	0.1nm,0.3s,baz=108,slow=14,SNR=3.0						
KSRS				LR	LR	09 36 42.8	
	comp=Z,59nm,21.5s,baz=76,slow=36						
KSAR	**Wonju Array Be**	**10.87**	**287**	P	**Pn**	**09 32 49.6**	**+2.9**
KSAR	**Wonju Array Be**	**10.87**	**287**	Pn	**Pn**	**09 32 49.6**	**+2.9**
USRK	**Ussuriysk Ar.**	**11.56**	**326**	Pn	**Pn**	**09 32 58.6**	**+2.6**
	0.1nm,0.3s,baz=137,slow=14,SNR=4.2						
KUR	**Kuril'sk**	**11.56**	**25**	*e*P	**Pn**	**09 32 54.2**	**-1.9**
YSS	**Yuzh-Sakhalins**	**12.09**	**6**	*e*P	**Pn**	**09 33 03.9**	**+0.6**
CN2	**Changchun**	**14.90**	**311**	*e*P	**Pn**	**09 33 42.3**	**+0.6**
NJ2	**Nanjing**	**18.67**	**267**	*e*P	**Pn**	**09 34 29.8**	**+0.4**
NJ2				pmax	pmax		
	comp=Z,18nm,0.5s						
BJI	**Beijing**	**20.30**	**292**	P	**P**	**09 34 46.8**	**+0.1**
BJI				S	**S**	**09 38 31.6**	**-1.6**
BJI				pmax	pmax		
	comp=Z,8.0nm,0.9s						
BJI				pmax	pmax		
	comp=Z,130nm,3.7s						
BJI				LR	LR		
	comp=N,170nm,6.9s						
BJI				LR	LR		
	comp=E,170nm,11.1s						
HHC	**Hu-ho-hao-te**	**23.89**	**293**	*e*P	**P**	**09 35 23.8**	**-0.7**
HHC				S	**S**	**09 39 33.3**	**-6.1**
HHC				pmax	pmax		
	comp=Z,13nm,1.1s						
HHC				pmax	pmax		
	comp=Z,84nm,5.2s						
HHC				LR	LR		
	comp=N,500nm,12.0s						
HHC				LR	LR		
	comp=E,470nm,10.6s						
HHC				LR	LR		
	comp=Z,410nm,12.6s						
MA2	**Magadan**	**25.48**	**12**	P	**P**	**09 35 38.6**	**-0.1**
	4.6nm,0.8s,baz=212,slow=9.6,SNR=6.8						
H11N2	**WAKE ISLAND Hy**	**27.45**	**117**	T	T	10 04 46.9	
	baz=309,slow=75,SNR=93						
H11N1	**WAKE ISLAND Hy**	**27.46**	**117**	T	T	10 04 46.0	
	baz=309,slow=75,SNR=92						
H11N3	**WAKE ISLAND Hy**	**27.47**	**117**	T	T	10 04 47.6	
	baz=309,slow=75,SNR=74						
YAK	**Yakutsk**	**28.05**	**349**	*e*P	**P**	**09 36 01.0**	**-0.8**
YAK				pmax	pmax		
	comp=Z,7.0nm,0.6s						
H11S1	**WAKE ISLAND Hy**	**28.09**	**119**	T	T	10 05 36.6	
	baz=312,slow=75,SNR=83						
H11S3	**WAKE ISLAND Hy**	**28.09**	**119**	T	T	10 05 37.2	
	baz=312,slow=75,SNR=69						
H11S2	**WAKE ISLAND Hy**	**28.10**	**119**	T	T	10 05 37.9	
	baz=312,slow=75,SNR=68						
ULN	**Ulaanbaatar**	**28.30**	**308**	*e*P	**P**	**09 36 03.1**	**-1.3**
ULN				pmax	pmax		
	comp=Z,1.0nm,1.1s						
SONM	**Songino Array**	**28.72**	**307**	P	**P**	**09 36 06.9**	**-1.2**
	comp=Z,0.8nm,0.6s,baz=122,slow=9.3,SNR=4.5						
SEY	**Seymchan**	**28.92**	**11**	*e*P	**P**	**09 36 08.1**	**-1.4**
BOD	**Bodaibo**	**29.14**	**330**	*e*P	**P**	**09 36 11.0**	**-0.6**
BOD				pmax	pmax		
	comp=Z,2.0nm,0.9s						
GYA	**Guiyang**	**30.57**	**263**	*e*P	**P**	**09 36 24.8**	**+0.1**
GYA				pmax	pmax		
	comp=Z,10.0nm,0.8s						
CD2	**Chengdu**	**31.38**	**273**	P	**P**	**09 36 30.3**	**-1.4**
GTA	**Gaotai**	**32.90**	**290**	*e*P	**P**	**09 36 47.4**	**+2.4**
GTA				pP	sP	09 36 56.4	+1.3
GTA				sP	pP	09 37 00.8	+8.6
GTA				pmax	pmax		
	comp=Z,5.0nm,0.7s						
KMI	**Kunming**	**34.34**	**264**	P	**P**	**09 36 55.8**	**-2.0**
KMI				pP	sP	09 37 08.3	+0.3
KMI				pmax	pmax		
	comp=Z,7.0nm,0.7s						
KMI				pmax	pmax		
	comp=Z,73nm,4.7s						
TIXI	**Tiksi**	**37.33**	**354**	P	**P**	**09 37 22.2**	**-0.5**
	comp=Z,1.1nm,0.3s,baz=106,slow=2.6,SNR=3.8						
TIXI	**Tiksi**	**37.33**	**354**	*i*P	**P**	**09 37 22.7**	**0.0**
TIXI				pmax	pmax		
	comp=Z,1.0nm,0.9s						
CMAR	**Chiang Mai Arr**	**40.65**	**257**	LR	LR	09 54 52.1	
	comp=Z,28nm,19.2s,baz=240,slow=37						
WMQ	**Urumqi**	**41.51**	**299**	*e*P	**P**	**09 37 58.5**	**+0.6**
WMQ				pP	sP	09 38 08.3	+0.2
WMQ				sP	pP	09 38 12.5	+7.3
WMQ				S	**S**	**09 44 11.3**	**-0.9**
WMQ				pmax	pmax		
	comp=Z,3.0nm,0.6s						
WMQ				pmax	pmax		
	comp=Z,24nm,3.6s						
ZAA0	**Zalesovo Array**	**43.09**	**314**	*e*P	**P**	**09 38 10.4**	**-0.2**
ZALV	**Zalesovo Beam**	**43.09**	**314**	P	**P**	**09 38 10.1**	**-0.5**
	comp=Z,1.9nm,0.6s,baz=84,slow=6.9,SNR=6.6						
ZALV				PcP	**PcP**	**09 39 59.3**	**-0.8**
	comp=Z,0.3nm,0.3s,baz=72,slow=4.7,SNR=4.2						
NVS	**Novosibirsk**	**44.06**	**315**	*e*P	**P**	**09 38 20.0**	**+1.6**
MK01	**Makanchi Array**	**44.96**	**304**	*e*P	**P**	**09 38 26.3**	**+0.5**
MK31	**Makanchi Array**	**44.96**	**304**	*e*P	**P**	**09 38 26.3**	**+0.5**
MK31	**Makanchi Array**	**44.96**	**304**	*e*P	**P**	**09 38 26.2**	**+0.5**
MKAR	**Makanchi Array**	**44.96**	**304**	P	**P**	**09 38 25.9**	**+0.2**
	comp=Z,0.9nm,0.4s,baz=90,slow=9.7,SNR=8.5						
MKAR				LR	LR	09 57 52.6	
	comp=Z,14nm,18.8s,baz=114,slow=37						
MKAR	**Makanchi Array**	**44.96**	**304**	*c*e*c*P	**P**	**09 38 26.1**	**+0.3**
MKAR				pmax	pmax		
	comp=Z,1.0nm,0.4s						
MKAR	**Makanchi Array**	**44.96**	**304**	*e*P	**P**	**09 38 26.2**	**+0.5**
KURK	**Kurchatov**	**46.97**	**310**	*d i*P	**P**	**09 38 41.0**	**-0.5**
KURK				pmax	pmax		
	comp=Z,6.0nm,0.7s						
KURK	**Kurchatov**	**46.97**	**310**	*e*P	**P**	**09 38 40.2**	**-1.3**
	comp=Z,5.7nm,0.7s						
KURBB	**Kurchatov Arra**	**47.04**	**309**	P	**P**	**09 38 41.4**	**-0.7**
	comp=Z,3.4nm,0.5s,baz=84,slow=7.5,SNR=50						
MTN	**Manton Dam**	**48.42**	**193**	*e*P	**P**	**09 38 52.9**	**-0.1**
	comp=Z,73nm,1.8s						
TKM2	**Tokmak 2**	**50.34**	**300**	*e*P	**P**	**09 39 08.7**	**+0.9**
TKM2				pmax	pmax		
	comp=Z,4.0nm,0.6s						
TKM2	**Tokmak 2**	**50.34**	**300**	*e*P	**P**	**09 39 08.7**	**+0.9**
	comp=Z,3.8nm,0.6s						
MDM	**Murphy Dome**	**50.89**	**31**	*e*P	**P**	**09 39 12.4**	**+1.1**
	comp=Z,18nm,1.6s						
AAK	**Ala-Archa**	**51.20**	**300**	P	**P**	**09 39 14.0**	**-0.2**
	comp=Z,0.8nm,0.4s,baz=89,slow=2.4,SNR=5.3						
AAK	**Ala-Archa**	**51.20**	**300**	*e*P	**P**	**09 39 14.3**	**+0.1**
AAK				pmax	pmax		
	comp=Z,4.0nm,1.0s						
AAK	**Ala-Archa**	**51.20**	**300**	*e*P	**P**	**09 39 13.9**	**-0.2**
	comp=Z,4.6nm,1.2s						
ILAR	**Eielson Array**	**51.47**	**31**	P	**P**	**09 39 16.3**	**+0.6**
	comp=Z,1.2nm,0.8s,baz=269,slow=5.7,SNR=12						
BVAR	**Borovoye Array**	**51.74**	**313**	P	**P**	**09 39 18.1**	**+0.2**
	comp=Z,1.6nm,0.6s,baz=96,slow=8.7,SNR=9.8						
BVAR				PcP	**PcP**	**09 40 31.1**	**+0.1**
	comp=Z,0.5nm,0.6s,baz=70,slow=4.7,SNR=2.3						
BRVK	**Borovoye**	**51.80**	**314**	*c i*P	**P**	**09 39 18.8**	**+0.5**
BRVK				pmax	pmax		
	comp=Z,7.0nm,2.5s						
ZRNK	**Zerenda**	**52.58**	**314**	*e*P	**P**	**09 39 24.2**	**+0.1**
ZRNK				pmax	pmax		
	comp=Z,4.0nm,0.8s						
ZRNK	**Zerenda**	**52.58**	**314**	*e*P	**P**	**09 39 24.2**	**+0.1**
	comp=Z,4.1nm,0.8s						
KKAR	**Karatay Array**	**53.89**	**301**	*e*P	**P**	**09 39 34.6**	**+0.6**
KKAR	**Karatay Array**	**53.89**	**301**	*e*P	**P**	**09 39 34.6**	**+0.6**
FITZ	**Fitzroy Crossi**	**54.72**	**198**	*e*P	**P**	**09 39 40.7**	**+0.6**
	comp=Z,5.7nm,0.9s						
WRAB	**Tennant Creek**	**54.92**	**188**	*e*P	**P**	**09 39 41.0**	**-0.6**
WRAB				pmax	pmax		
	comp=Z,13nm,1.2s						
WRAB	**Tennant Creek**	**54.92**	**188**	*e*P	**P**	**09 39 41.4**	**-0.2**
	comp=Z,11nm,1.1s						
WB2	**Warramunga Arr**	**54.93**	**188**	*e*P	**P**	**09 39 41.1**	**-0.5**
	comp=Z,36nm,1.8s						
WRA	**Warramunga Arr**	**54.93**	**188**	P	**P**	**09 39 40.6**	**-1.0**
	comp=Z,4.9nm,0.7s,baz=4.8,slow=7.5,SNR=58						
INK	**Inuvik**	**56.42**	**26**	P	**P**	**09 39 52.5**	**+0.7**
	comp=Z,0.6nm,0.6s,baz=303,slow=6.3,SNR=4.1						
INK	**Inuvik**	**56.42**	**26**	*e*P	**P**	**09 39 52.4**	**+0.7**
INK				pmax	pmax		
	comp=Z,16nm,1.8s						
INK	**Inuvik**	**56.42**	**26**	*e*P	**P**	**09 39 52.4**	**+0.7**
	comp=Z,16nm,1.8s						
ARU	**Arti**	**57.71**	**319**	*d i*P	**P**	**09 40 00.8**	**-0.3**
ARU						09 42 07.8	
ARU				S	**S**	**09 48 00.9**	**+2.7**
ARU				SS	**SS**	**09 51 51.1**	**+3.0**
ARU				pmax	pmax		
	comp=Z,5.0nm,1.0s						
ARU	**Arti**	**57.71**	**319**	*e*P	**P**	**09 40 00.5**	**-0.6**
	comp=Z,7.9nm,0.8s						
AS01	**Alice Springs**	**58.65**	**188**	*e*P	**P**	**09 40 07.5**	**-0.6**
AS31	**Alice Springs**	**58.66**	**188**	*e*P	**P**	**09 40 08.8**	**+0.7**
	comp=Z,1.0nm,0.7s						
ASAR	**Alice Springs**	**58.66**	**188**	P	**P**	**09 40 07.4**	**-0.7**
	comp=Z,1.3nm,0.7s,baz=20,slow=11,SNR=25						
ASAR	**Alice Springs**	**58.66**	**188**	P	**P**	**09 40 07.4**	**-0.7**
ASAR				pmax	pmax		
	comp=Z,2.0nm,0.8s						
ABKAR	**Akbulak array**	**59.03**	**311**	*e*P	**P**	**09 40 10.3**	**-0.2**
MBWA	**Marble Bar**	**59.32**	**203**	*e*P	**P**	**09 40 12.5**	**-0.2**
	comp=Z,49nm,1.9s						
EIDS	**Eidsvold**	**60.73**	**170**	*e*P	**P**	**09 40 22.9**	**+0.6**
	comp=Z,29nm,1.4s						
GEYT	**Alibeck**	**64.55**	**300**	P	**P**	**09 40 46.3**	**-1.6**
	comp=Z,1.3nm,0.5s,baz=56,slow=3.7,SNR=3.6						
RES	**Resolute Bay**	**64.72**	**14**	*e*P	**P**	**09 40 48.9**	**+0.6**
RES				pmax	pmax		
	comp=Z,3.0nm,0.8s						
RES	**Resolute Bay**	**64.72**	**14**	*e*P	**P**	**09 40 48.9**	**+0.6**
	comp=Z,2.9nm,0.8s						
YKA	**Yellowknife Ar**	**65.81**	**30**	P	**P**	**09 40 55.0**	**-0.4**
	comp=Z,0.6nm,0.8s,baz=300,slow=6.4,SNR=11						
YKA	**Yellowknife Ar**	**65.81**	**30**	*c*e*c*P	**P**	**09 40 55.7**	**+0.2**
YKA				pmax	pmax		
	comp=Z,1.0nm,0.8s						
YKB5	**Yellowknife Ar**	**65.81**	**30**	*e*P	**P**	**09 40 57.5**	**+2.0**
STKA	**Stephens Creek**	**66.46**	**179**	P	**P**	**09 40 59.5**	**-0.4**
	comp=Z,1.9nm,0.9s,baz=333,slow=9.9,SNR=3.3						
STKA	**Stephens Creek**	**66.46**	**179**	*e*P	**P**	**09 41 00.1**	**+0.2**
STKA				pmax	pmax		
	comp=Z,5.0nm,1.9s						
STKA	**Stephens Creek**	**66.46**	**179**	*e*P	**P**	**09 41 00.1**	**+0.2**
	comp=Z,5.0nm,1.9s						
BBOO	**Buckleboo**	**67.54**	**184**	*e*P	**P**	**09 41 07.0**	**+0.1**
	comp=Z,23nm,1.4s						
FIA1	**FINESS Array S**	**70.51**	**332**	*e*P	**P**	**09 41 24.8**	**-0.2**
	comp=Z,20nm,1.7s						
FINES	**FINESS Array B**	**70.51**	**332**	P	**P**	**09 41 24.5**	**-0.5**
	comp=Z,1.1nm,0.8s,baz=72,slow=2.4,SNR=4.6						
FINES	**FINESS Array B**	**70.51**	**332**	*i* P	**P**	**09 41 25.7**	**+0.7**
FINES				pmax	pmax		
	comp=Z,1.0nm,0.8s						
KBZ	**Khabaz**	**72.00**	**311**	P	**P**	**09 41 34.6**	**+0.2**
	comp=Z,5.3nm,1.2s,baz=45,slow=1.4,SNR=5.8						
KBZ	**Khabaz**	**72.00**	**311**	P	**P**	**09 41 34.6**	**+0.2**
KBZ				pmax	pmax		
	comp=Z,4.0nm,1.1s						
KIV	**Kislovodsk**	**72.02**	**311**	*i* P	**P**	**09 41 35.6**	**+1.0**
KIV				*i*		09 41 44.8	
KIV				pmax	pmax		
	comp=Z,6.0nm,1.0s						
KIV	**Kislovodsk**	**72.02**	**311**	*e*P	**P**	**09 41 34.9**	**+0.3**
KIV				*e*pP	**sP**	**09 41 45.2**	**+0.1**
NEY	**Neytrino**	**72.36**	**311**	*e*P	**P**	**09 41 35.8**	**-1.0**
SUMG	**Summit**	**72.78**	**360**	*e*P	**P**	**09 41 40.9**	**+1.8**
SUMG				pmax	pmax		
	comp=Z,32nm,1.8s						
SUMG	**Summit**	**72.78**	**360**	*e*P	**P**	**09 41 40.9**	**+1.8**
	comp=Z,32nm,1.8s						
JTMT	**Jette**	**73.77**	**43**	*e*P	**P**	**09 41 46.1**	**+1.1**
JTMT				*e*pP	**sP**	**09 41 55.6**	**+0.1**
YBMT	**Yellow Bay**	**73.86**	**43**	*e*P	**P**	**09 41 46.4**	**+0.9**
SWMT	**Swartz Lake**	**74.06**	**43**	*e*P	**P**	**09 41 47.8**	**+1.1**
FFC	**Flin Flon**	**75.67**	**32**	*e*P	**P**	**09 41 56.3**	**+0.6**
FFC				*e**PP	**sP**	**09 42 05.8**	**-0.4**
FFC	**Flin Flon**	**75.67**	**32**	*e*P	**P**	**09 41 56.3**	**+0.6**
FFC				*e*pP	**sP**	**09 42 05.8**	**-0.4**
AKASG	**Malin Array Be**	**75.74**	**322**	P	**P**	**09 41 55.2**	**-0.9**
	comp=Z,0.3nm,0.5s,baz=47,slow=6.5,SNR=4.4						
AKASG	**Malin Array Be**	**75.74**	**322**	*c*e*c*P	**P**	**09 41 56.4**	**+0.3**
AKASG				pmax	pmax		
	comp=Z,1.0nm,0.5s						
LRM	**Limekiln Ridge**	**75.90**	**44**	*e*P	**P**	**09 41 58.2**	**+0.7**
NB2	**NORSAR Subarra**	**75.98**	**337**	P	**P**	**09 41 57.1**	**-0.3**
	comp=Z,3.1nm,0.9s,baz=40,slow=6.2						
NOA	**NORSAR Array B**	**75.98**	**337**	P	**P**	**09 41 57.1**	**-0.3**
	comp=Z,1.0nm,0.8s,baz=40,slow=5.7,SNR=4.2						
DLMT	**Dillon**	**76.09**	**44**	*e*P	**P**	**09 41 59.8**	**+1.3**
	comp=Z,3.0nm,1.0s						
NV01	**Mina Array Sit**	**76.54**	**53**	*e*P	**P**	**09 42 01.4**	**+0.2**
NVAR	**Mina Array Bea**	**76.54**	**53**	P	**P**	**09 42 02.5**	**+1.2**
	comp=Z,0.9nm,0.9s,baz=293,slow=5.6,SNR=7.6						
H17A	**Grant Village**	**77.82**	**44**	*e*P	**P**	**09 42 09.9**	**+1.5**
	comp=Z,3.0nm,0.8s						
DUG	**Dugway, Tooele**	**79.01**	**49**	*e*P	**P**	**09 42 14.9**	**+0.1**
DUG				*e**PP	**sP**	**09 42 25.8**	**+0.4**
DUG	**Dugway, Tooele**	**79.01**	**49**	*e*P	**P**	**09 42 14.9**	**+0.1**
DUG				*e*pP	**sP**	**09 42 25.8**	**+0.4**
BW06	**Boulder Array**	**79.40**	**45**	*e*P	**P**	**09 42 17.8**	**+0.7**
	comp=Z,5.3nm,1.5s						
PDAR	**Pinedale Array**	**79.40**	**45**	P	**P**	**09 42 17.8**	**+0.8**
	comp=Z,0.3nm,0.5s,baz=271,slow=3.4,SNR=5.7						
BRTR	**Keskin Array B**	**79.98**	**312**	P	**P**	**09 42 19.4**	**-0.7**
	comp=Z,0.9nm,0.9s,baz=106,slow=2.7,SNR=4.9						
BRTR	**Keskin Array B**	**79.98**	**312**	*c*e*c*P	**P**	**09 42 22.0**	**+1.9**
BRTR				pmax	pmax		
	comp=Z,1.0nm,0.7s						
BR231	**Keskin MP Arra**	**80.44**	**312**	*e*P	**P**	**09 42 21.4**	**-1.1**
LCMT	**Little Creek M**	**80.63**	**51**	*e*P	**P**	**09 42 25.9**	**+2.2**
	comp=Z,4.5nm,1.0s						
KNB	**Kanab**	**80.90**	**51**	*e*P	**P**	**09 42 27.6**	**+2.4**
KNB				pmax	pmax		
	comp=Z,8.0nm,1.2s						
KNB	**Kanab**	**80.90**	**51**	*e*P	**P**	**09 42 27.6**	**+2.4**
	comp=Z,7.5nm,1.2s						
SRU	**San Rafael Swe**	**81.07**	**48**	*e*P	**P**	**09 42 27.4**	**+1.3**
SRU				pmax	pmax		
	comp=Z,6.0nm,0.6s						
SRU	**San Rafael Swe**	**81.07**	**48**	*e*P	**P**	**09 42 27.4**	**+1.3**
	comp=Z,5.5nm,0.6s						
PV10	**Paradox Valley**	**82.43**	**48**	*e*P	**P**	**09 42 34.9**	**+1.5**
CLL	**Collm**	**82.74**	**330**	*i* (pP)	pP	09 42 43.7	+1.6
PV01	**Paradox Valley**	**82.87**	**48**	*e*P	**P**	**09 42 36.6**	**+0.9**
KHC	**Kasperske Hory**	**84.14**	**328**	*e*pP	pP	09 42 49.8	+0.3
KHC	**Kasperske Hory**	**84.14**	**328**	*e*P	P	09 42 49.8	+8.1
GERES	**GERESS Array B**	**84.31**	**328**	P	**P**	**09 42 42.1**	**-0.5**
	comp=Z,0.4nm,0.9s,baz=47,slow=4.7,SNR=2.7						
TXAR	**Lajitas Array**	**91.69**	**52**	P	**P**	**09 43 20.7**	**+2.3**
	comp=Z,0.2nm,0.7s,baz=290,slow=2.7,SNR=2.8						
TORD	**Torodi Ar. Bea**	**118.54**	**314**	PKP	**PKPdf**	**09 48 57.9**	**-1.1**
	comp=Z,0.3nm,0.7s,baz=24,slow=2.0,SNR=2.7						
SAML	**Samuel**	**145.97**	**46**	*e*PKPdf	**PKPab**	**09 49 51.1**	**-0.2**
PMSA	**Palmer Station**	**146.52**	**161**	*e*PKPdf	**PKPbc**	**09 49 51.0**	**0.0**
LPAZ	**La Paz**	**148.03**	**62**	PKPbc	**PKPbc**	**09 49 57.6**	**+0.2**
	comp=Z,0.7nm,0.6s,baz=346,slow=4.2,SNR=3.1						
LPAZ	**La Paz**	**148.03**	**62**	*e*PKPdf	**PKPdf**	**09 49 55.6**	**+1.3**

JMA 24 09:30:27.9±0.1, 37.72N×139.97E, h10km±1km, M2.0, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFY	**Yanaizu**	**0.38**	**214**	*e*S	Sg	09 30 40.4	0.0

CSEM ***24*** *09:44:00.6, 45.36N× 26.96E, h3km, MD3.2/1*
BUC 24 09:44:00.6±0.6, 45.36N±26.96E, h3km, MD3.2/1, 39C-9D, Error ellipse: s-maj=6.5km s-min=4.5km az=103.0, Romania

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GRER		**0.03**	**26**	*i*P	Pg	09 44 01.0	-0.3
GRER				S	Sg	09 44 03.5	+1.6
GRER		**0.03**	**26**	*i*P	Pg	09 44 01.0	-0.3
GRER				*i* S	Sg	09 44 03.5	+1.6
GRER		**0.03**	**26**	*i*P	Pg	09 44 01.0	-0.3
GRER				*i* S	Sg	09 44 03.5	+1.6
ISR	**Istrita**	**0.38**	**231**	*i*P	Pb	09 44 09.1	-0.9
ISR	**Istrita**	**0.38**	**231**	S	Sb	09 44 16.0	-0.2
ISR	**Istrita**	**0.38**	**231**	*i*P	Pb	09 44 09.1	-0.9
ISR				*i* S	Sb	09 44 16.0	-0.2
ISR	**Istrita**	**0.38**	**231**	*i*P	Pb	09 44 09.1	-0.9
ISR				*i* S	Sb	09 44 16.0	-0.2
ODBI	**Odobesti**	**0.41**	**10**	*i*P	Pb	09 44 10.8	+0.2
ODBI	**Odobesti**	**0.41**	**10**	S	Sb	09 44 16.7	-0.6
ODBI	**Odobesti**	**0.41**	**10**	*i*P	Pb	09 44 10.8	+0.2
ODBI				*i* S

JMA ***24*** *09:51:56.5±0.1,38°.62N×141°.92E,h49km±1km,M4.4*
JMA Felt II J1.
IDC ***24*** *09:51:57.2±0.6,38°.63N×141°.84E,h54km±5km,mb4.0/26, mb1 4.2/31,mb1mx4.1/41,mbtmp4.3/31,MS3.6/29, Ms1 3.6/29,ms1mx3.5/45,Error ellipse: s-maj=12.7km s-min=11.4km az=95.0*
NEIC ***24*** *09:51:58.2±0.5,38°.68N×141°.92E,h59km±4km,mb4.7/33, Error ellipse: s-maj=5.9km s-min=4.1km az=125.0*
ISC 24 09:51:57.1±0.6,38°.71N±0'.04×141°.97E±0'.04,h50km±4km, h50km:pP-P,n231,σ1s31/232,mb4.5/78,MS3.7/25, 15C-12D,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
OFUJ	**Ofunato**	**0.44**	**328**	P	**Pn**	**09 52 07.7**	**+0.1**
OFUJ				S	**Sn**	**09 52 15.5**	**+0.4**
JIO	**Ouri**	**0.55**	**243**	P	**Pn**	**09 52 07.5**	**-1.3**
JIO				S	**Sn**	**09 52 14.9**	**-2.4**
JMK	**Ichinoseki**	**0.63**	**293**	P	**Pn**	**09 52 09.5**	**-0.4**
JMK				S	**Sn**	**09 52 19.2**	**0.0**
JOM	**Ohasama**	**0.93**	**326**	P	**Pn**	**09 52 14.1**	**+0.3**
JOM				S	**Sn**	**09 52 25.8**	**-0.3**
JOU	**Okura**	**1.08**	**252**	P	**Pn**	**09 52 14.6**	**-1.2**
JOU				S	**Sn**	**09 52 28.0**	**-1.7**
JRG	**Rokugo**	**1.25**	**304**	P	**Pn**	**09 52 18.1**	**0.0**
JRG				S	**Sn**	**09 52 35.7**	**+1.9**
JMM	**Marumori**	**1.25**	**228**	P	**Pn**	**09 52 16.2**	**-1.9**
JMM				S	**Sn**	**09 52 30.7**	**-3.1**
JYK	**Kaneyama**	**1.27**	**280**	P	**Pn**	**09 52 18.0**	**-0.5**
ERM	**Erimo**	**3.43**	**15**	*ce*P	**Pn**	**09 52 48.3**	**+0.4**
ERM	**Erimo**	**3.43**	**15**	*e*Pn	**Pn**	**09 52 48.9**	**+1.0**
MJAR	**Matsushiro Arr** 6.3nm,0.3s,baz=39,slow=12,SNR=53	**3.69**	**235**	P	**Pn**	**09 52 51.7**	**+0.2**
MJAR				LR	LR	09 54 36.6	
	comp=Z,155nm,18.3s,baz=15,slow=45						
MAJO	**Matsushiro**	**3.69**	**235**	*ce*P	**Pn**	**09 52 53.5**	**+2.0**
MAJO	**Matsushiro**	**3.69**	**235**	*e*Pn	**Pn**	**09 52 52.4**	**+0.8**
MAT	**Matsushiro**	**3.69**	**235**	P	**Pn**	**09 52 51.9**	**+0.4**
MAT				S	**Sn**	**09 53 37.2**	**+3.5**
MJB9	**Matsu-Tunnel**	**3.69**	**235**	*e*Pn	**Pn**	**09 52 52.4**	**+0.9**
INU	**Inuyama**	**5.19**	**231**	*e*Pn	**Pn**	**09 53 14.0**	**+1.8**
ASAJ	**Asahikawa** 9.6nm,0.3s,baz=208,slow=11,SNR=46	**5.42**	**5**	P	**Pn**	**09 53 16.1**	**+0.8**
ASAJ				S	**Sn**	**09 54 17.2**	**+0.8**
	7.5nm,0.3s,baz=163,slow=20,SNR=2.8						
JHJ2	**Mitsune**	**5.85**	**198**	*e*Pn	**Pn**	**09 53 19.7**	**-1.5**
JHJ	**Hachijo jima 2** 37nm,0.3s,baz=39,slow=0.9,SNR=9.7	**5.85**	**198**	P	**Pn**	**09 53 19.1**	**-2.1**
JHJ				S	Sn	09 54 20.2	-6.8
	21nm,0.3s,baz=72,slow=19,SNR=4.3						
JHJ				LR	LR	09 55 57.1	
	comp=Z,300nm,18.7s,baz=52,slow=42						
YUK	**Yuzh-Kuril'sk**	**6.07**	**28**	*e*P	**Pn**	**09 53 24.3**	**+0.1**
YUK				*i* S	**Sn**	**09 54 29.6**	**-2.7**
YUK				pmax	pmax		
	comp=Z,173nm,0.3s						
YUK				pmax	pmax		
	comp=N,44nm,0.4s						
YUK				pmax	pmax		
	comp=E,31nm,0.2s						
SHO	**Shikotan**	**6.32**	**34**	*e*P	**Pn**	**09 53 26.0**	**-1.6**
SHO				*i* S	Sn	09 54 32.6	-5.9
SHO				pmax	pmax		
	comp=N,72nm,1.1s						
SHO				pmax	pmax		
	comp=Z,185nm,1.1s						
SHO				pmax	pmax		
	comp=E,142nm,1.0s						
KUR	**Kuril'sk**	**7.86**	**32**	*e*P	**Pn**	**09 53 48.5**	**-0.2**
KUR				*i* S	**Sn**	**09 55 12.6**	**-3.6**
KUR				pmax	pmax		
	comp=Z,50nm,0.7s						
KUR				pmax	pmax		
	comp=E,15nm,0.1s						
KUR				pmax	pmax		
	comp=N,16nm,0.2s						
YSS	**Yuzh-Sakhalins**	**8.26**	**4⇓**	*e*P	**Pn**	**09 53 55.6**	**+1.4**
YSS				*e*S	**Sn**	**09 55 22.0**	**-4.0**
YSS				pmax	pmax		
	comp=Z,60nm,0.8s						
YSS	**Yuzh-Sakhalins**	**8.26**	**4**	*e*Pn	**Pn**	**09 53 54.9**	**+0.7**
VLA	**Vladivostok**	**8.81**	**303⇓**	*e*P	**Pn**	**09 54 04.1**	**+2.4**
MSHR	**Mys Shultsa**	**9.08**	**299⇑**	*e*P	**Pn**	**09 54 05.7**	**+0.3**
USRK	**Ussuriysk Ar.**	**9.28**	**309**	P	**Pn**	**09 54 08.9**	**+0.7**
	comp=Z,1.3nm,0.3s,baz=124,slow=14,SNR=14						
USRK				LR	LR	09 57 36.6	
	comp=Z,388nm,18.9s,baz=141,slow=37						
JNU	**Nakatsue**	**10.58**	**242**	LR			
	comp=Z,260nm,20.7s,baz=319,slow=39				LR	LR	09 58 48.0
HABR	**Khabarovsk**	**10.97**	**335**	*e*P	Pn	09 54 27.1	-4.1
HABR				*e*S	**Sn**	**09 56 27.7**	**-4.6**
HABR				pmax	pmax		
	comp=Z,128nm,2.2s						
HABR				MLR	MLR		
	comp=Z,274nm,14.0s						
MDJ	**Mudanjiang**	**10.97**	**306**	P	Pn	09 54 35.3	+4.0
MDJ				pmax	pmax		
	comp=Z,19nm,1.1s						
MDJ				pmax	pmax		
	comp=Z,170nm,4.0s						
KSRS	**Korea Array**	**11.14**	**268**	P	Pn	09 54 36.6	+3.0
	comp=Z,0.4nm,0.3s,baz=82,slow=13,SNR=10						
KSRS				LR	LR	09 58 31.2	
	comp=Z,224nm,20.6s,baz=86,slow=36						
KS01	**Wonju Array Si**	**11.16**	**268**	*e*Pn	**Pn**	**09 54 36.1**	**+2.2**
KS15	**Wonju Array Si**	**11.18**	**268**	*e*Pn	**Pn**	**09 54 35.5**	**+1.4**
KSAR	**Wonju Array Be**	**11.18**	**268**	P	**Pn**	**09 54 36.6**	**+2.5**
KSAR	**Wonju Array Be**	**11.18**	**268**	P	**Pn**	**09 54 36.6**	**+2.5**
CBIJ	**Chichi jima**	**11.58**	**179**	P	Pn	09 54 33.7	-6.0
CBIJ				S	Sn	09 56 35.0	-13
JCJ	**Chichijima** baz=270,slow=20	**11.58**	**179**	P	Pn	09 54 33.7	-6.0
JCJ				S	Sn	09 56 35.0	-13
	baz=306,slow=19						
TYV	**Tymovskoe**	**12.16**	**2**	*e*P	**Pn**	**09 54 47.8**	**+0.3**
KLR	**Kul'dur**	**12.82**	**328**	P	**Pn**	**09 54 57.0**	**+0.5**
	comp=Z,0.1nm,0.3s,baz=135,slow=14,SNR=3.4						
KLR				LR	LR	10 00 01.6	
	comp=Z,403nm,18.1s,baz=140,slow=38						
KLR	**Kul'dur**	**12.82**	**328⇓**	*e*P	**Pn**	**09 54 56.6**	**+0.1**
CN2	**Changchun**	**13.43**	**298**	*e*P	**Pn**	**09 55 05.1**	**+0.3**
CN2				pmax	pmax		
	comp=Z,10.0nm,0.3s						
PETK	**Petropavlovsk-**	**18.03**	**32**	P	**P**	**09 56 01.8**	**-1.9**
	comp=Z,0.1nm,0.3s,baz=197,slow=9.0,SNR=2.5						
PETK				LR	LR	10 03 21.3	
	comp=Z,55nm,19.2s,baz=207,slow=38						
NJ2	**Nanjing**	**19.95**	**258**	*e*P	**Pn**	**09 56 26.4**	**-0.6**
NJ2				pmax	pmax		
	comp=Z,19nm,0.6s						
BJI	**Beijing**	**19.97**	**282**	P	**P**	**09 56 24.6**	**-0.4**
BJI				S	**S**	**10 00 03.1**	**-3.7**
BJI				pmax	pmax		
	comp=Z,8.0nm,0.9s						
BJI				pmax	pmax		
	comp=Z,49nm,3.7s						
BJI				LR	LR		
	comp=Z,170nm,7.7s						
BJI				LR	LR		
	comp=Z,180nm,13.1s						
MA2	**Magadan**	**21.63**	**12**	P	**P**	**09 56 42.9**	**+0.1**
	comp=Z,17nm,0.7s,baz=216,slow=9.7,SNR=16						
MA2				LR	LR	10 05 24.5	
	comp=Z,76nm,18.1s,baz=221,slow=37						
NACB	**Ninganchiao**	**22.56**	**236**	*e*P	**P**	**09 56 53.3**	**+0.3**
	comp=Z,11nm,0.8s						
HHC	**Hu-ho-hao-te**	**23.41**	**285**	*e*P	**P**	**09 57 00.8**	**-0.8**
HHC				pP	pP	09 57 15.5	+1.7
HHC				S	**S**	**10 01 06.5**	**-4.7**
HHC				pmax	pmax		
	comp=Z,25nm,1.2s						
HHC				pmax	pmax		
	comp=Z,89nm,4.9s						
HHC				LR	LR		
	comp=Z,1μm,10.4s						
HHC				LR	LR		
	comp=Z,1μm,11.6s						
HHC				LR	LR		
	comp=Z,1μm,12.4s						
WHN	**Wuhan**	**24.08**	**259**	P	P	09 57 14.3	+6.6
YAK	**Yakutsk**	**24.54**	**346**	P	**P**	**09 57 10.9**	**-0.8**
	comp=Z,49nm,0.9s,baz=155,slow=4.9,SNR=12						
YAK				LR	LR	10 07 04.5	
	comp=Z,105nm,21.1s,baz=158,slow=37						

YAK	**Yakutsk**	**24.54**	**346**	*e*P	**P**	**09 57 10.9**	**-0.8**
YAK				pmax	pmax		
	comp=Z,37nm,0.9s						
YAK				pmax	pmax		
	comp=E,4.0nm,1.0s						
YAK				pmax	pmax		
	comp=N,17nm,1.1s						
YAK	**Yakutsk**	**24.54**	**346**	*e*P	**P**	**09 57 10.2**	**-1.5**
	comp=N,36nm,0.8s						
SEY	**Seymchan**	**25.07**	**11**	P	**P**	**09 57 17.9**	**+1.4**
	comp=N,18nm,0.8s,baz=201,slow=6.7,SNR=76						
SEY	**Seymchan**	**25.07**	**11⇑**	*e*P	**P**	**09 57 18.2**	**+1.8**
GUMO	**Guam**	**25.15**	**173**	LR	LR	10 07 14.5	
	comp=N,43nm,21.9s,baz=10.0,slow=37						
BOD	**Bodaibo**	**26.37**	**326**	*e*P	**P**	**09 57 27.6**	**-0.7**
BOD				pmax	pmax		
	comp=Z,7.0nm,0.7s						
ULN	**Ulaanbaatar**	**26.82**	**301⇑**	*e*P	**P**	**09 57 33.0**	**+0.3**
ULN				pmax	pmax		
	comp=Z,7.0nm,1.2s						
ULN	**Ulaanbaatar**	**26.82**	**301**	*e*P	**P**	**09 57 32.8**	**+0.1**
	comp=Z,6.1nm,1.1s						
SONA1	**Songino Array**	**27.25**	**301**	*e*P	**P**	**09 57 36.2**	**-0.3**
SONM	**Songino Array**	**27.25**	**301**	P	**P**	**09 57 35.9**	**-0.7**
	comp=Z,2.5nm,0.7s,baz=102,slow=10,SNR=11						
SONM				LR	LR	10 08 54.0	
	comp=Z,121nm,18.1s,baz=88,slow=37						
H11N2	**WAKE ISLAND Hy**	**28.68**	**124**	T	T	10 28 07.8	
	baz=316,slow=75,SNR=2900						
H11N1	**WAKE ISLAND Hy**	**28.68**	**124**	T	T	10 28 08.6	
	baz=316,slow=75,SNR=3532						
H11N3	**WAKE ISLAND Hy**	**28.69**	**124**	T	T	10 28 10.8	
	baz=316,slow=75,SNR=2406						
H11S1	**WAKE ISLAND Hy**	**29.45**	**126**	T	T	10 29 03.2	
	baz=318,slow=76,SNR=843						
H11S3	**WAKE ISLAND Hy**	**29.45**	**126**	T	T	10 29 03.4	
	baz=318,slow=76,SNR=1398						
H11S2	**WAKE ISLAND Hy**	**29.46**	**126**	T	T	10 29 05.4	
	baz=318,slow=76,SNR=1027						
TLY	**Talaya**	**29.60**	**309**	P	**P**	**09 57 56.8**	**-0.4**
	comp=Z,7.3nm,0.7s,baz=173,slow=1.9,SNR=3.3						
TLY				LR	LR	10 10 32.1	
	comp=Z,169nm,18.6s,baz=134,slow=38						
TLY	**Talaya**	**29.60**	**309**	*e*P	**P**	**09 57 57.3**	**+0.1**
TLY				pmax	pmax		
	comp=Z,9.0nm,0.8s						
TLY				MLR	MLR		
	comp=Z,163nm,20.0s						
TLY	**Talaya**	**29.60**	**309**	*e*P	**P**	**09 57 57.3**	**+0.1**
	comp=Z,8.9nm,0.9s						
ZAK	**Zakamensk**	**29.61**	**306**	*e*P	**P**	**09 57 57.2**	**-0.2**
ZAK				pmax	pmax		
	comp=Z,8.0nm,0.8s						
ZAK				pmax	pmax		
	comp=Z,2.0nm,0.7s						
LZH	**Lanzhou**	**30.26**	**277**	*e*P	P	09 58 06.5	+3.1
LZH				pmax	pmax		
	comp=Z,27nm,1.3s						
LZH				pmax	pmax		
	comp=Z,130nm,4.3s						
MOY	**Mondy**	**31.22**	**308**	*e*P	**P**	**09 58 11.2**	**-0.5**
GYA	**Guiyang**	**31.96**	**258**	*e*P	**P**	**09 58 17.8**	**-0.7**
GYA				pP	sP	09 58 35.0	-2.3
GYA				sP	pP	09 58 43.0	+12
GYA				PP	**PnPn**	**09 59 26.8**	**+2.0**
GYA				PcP	**PcP**	**10 01 08.9**	**+1.2**
GYA				S	**S**	**10 03 23.4**	**-3.1**
GYA				sS	sS	10 03 51.3	+3.0
GYA				ScP	**ScP**	**10 04 45.0**	**-1.9**
GYA				ScS	**ScS**	**10 08 42.6**	**-3.1**
GYA				pmax	pmax		
	comp=Z,10.0nm,0.8s						
GYA				LR	LR		
	comp=Z,480nm,17.9s						
GYA				LR	LR		
	comp=Z,450nm,18.2s						
GYA				LR	LR		
	comp=Z,470nm,18.5s						
CD2	**Chengdu**	**32.14**	**268**	P	**P**	**09 58 18.8**	**-1.1**
CD2				pmax	pmax		
	comp=Z,2.0nm,0.6s						
BILL	**Bilibino**	**32.30**	**17⇓**	*i* P	**P**	**09 58 21.4**	**+0.7**
BILL				*i*		09 58 30.1	
BILL				pmax	pmax		
	comp=Z,4.0nm,1.0s						
BILL	**Bilibino**	**32.30**	**17**	*e*P	**P**	**09 58 21.5**	**+0.7**
	comp=Z,4.3nm,1.0s						
TIXI	**Tiksi**	**33.69**	**353⇓**	*e*P	**P**	**09 58 32.6**	**-0.2**
TIXI				pmax	pmax		
	comp=Z,4.0nm,0.7s						
TIXI	**Tiksi**	**33.69**	**353**	*e*P	**P**	**09 58 32.4**	**-0.4**
	comp=Z,4.5nm,0.7s						
DAV	**Davao City (W)**	**34.80**	**209**	*e*P	**P**	**09 58 45.7**	**+2.6**
	comp=Z,178nm,0.6s						
KMI	**Kunming**	**35.67**	**259**	P	**P**	**09 58 50.3**	**-0.5**
KMI				pmax	pmax		
	comp=Z,8.0nm,0.9s						
KMI				pmax	pmax		
	comp=Z,44nm,5.2s						
NIKH	**Nikolski High**	**36.36**	**51**	*e*P	**P**	**09 58 55.3**	**-0.7**
	comp=Z,117nm,0.9s						
WMQ	**Urumqi**	**40.50**	**295**	P	**P**	**09 59 32.1**	**+1.0**
WMQ				pP	sP	09 59 49.3	-0.8
WMQ				sP	pP	09 59 55.1	+11
WMQ				PcP	**PcP**	**10 01 32.6**	**-0.2**
WMQ				S	**S**	**10 05 35.1**	**-1.3**
WMQ				pmax	pmax		
	comp=Z,15nm,0.8s						
WMQ				pmax	pmax		
	comp=Z,23nm,3.8s						
ZAA0	**Zalesovo Array**	**41.13**	**311**	*e*P	**P**	**09 59 36.2**	**+0.2**
ZALV	**Zalesovo Beam**	**41.13**	**311**	P	**P**	**09 59 35.7**	**-0.3**
	comp=Z,7.1nm,0.6s,baz=90,slow=7.4,SNR=39						
ZALV				pP	**pP**	**09 59 49.5**	**+0.3**
	comp=Z,4.5nm,0.7s,baz=81,slow=7.5,SNR=3.5						
ZALV				PcP	**PcP**	**10 01 34.6**	**+0.1**
	comp=Z,0.9nm,0.4s,baz=95,slow=3.3,SNR=3.8						
ZALV				LR	LR	10 17 27.3	
	comp=Z,122nm,18.2s,baz=68,slow=37						
NRIK	**Noril'sk**	**41.94**	**334**	P	**P**	**09 59 41.9**	**-0.5**
	comp=Z,4.5nm,0.7s,baz=145,slow=3.5,SNR=3.6						
NRIK				LR	LR	10 18 07.5	
	comp=Z,202nm,18.9s,baz=122,slow=37						
NRIK	**Noril'sk**	**41.94**	**334**	P	**P**	**09 59 41.9**	**-0.5**
NRIK				pmax	pmax		
	comp=Z,3.0nm,0.6s						
NRIK				MLR	MLR		
	comp=Z,202nm,18.9s						
NVS	**Novosibirsk**	**42.02**	**312**	*e*P	**P**	**09 59 42.3**	**-0.9**
NVS				pmax	pmax		
	comp=Z,14nm,1.2s						
CMAR	**Chiang Mai Arr**	**42.36**	**254**	LR	LR	10 19 54.8	
	comp=Z,33nm,19.0s,baz=10.0,slow=40						
MK01	**Makanchi Array**	**43.62**	**301**	*e*P	**P**	**09 59 56.0**	**-0.4**
MK31	**Makanchi Array**	**43.62**	**301**	*e*P	**P**	**09 59 56.5**	**+0.1**
MK31	**Makanchi Array**	**43.62**	**301**	*e*P	**P**	**09 59 56.5**	**+0.1**
MKAR	**Makanchi Array**	**43.62**	**301**	P	**P**	**09 59 56.0**	**-0.4**
	comp=Z,5.3nm,0.7s,baz=83,slow=9.9,SNR=23						
MKAR				LR	LR	10 18 31.8	
	comp=Z,50nm,19.9s,baz=76,slow=37						
MKAR	**Makanchi Array**	**43.62**	**301**	*i* P	**P**	**09 59 56.5**	**+0.1**
MKAR				pmax	pmax		
	comp=Z,5.0nm,0.7s						
MKAR	**Makanchi Array**	**43.62**	**301**	*e*P	**P**	**09 59 56.5**	**+0.1**
SHL	**Shillong**	**43.88**	**268**	*e*P	**P**	**10 00 02.0**	**+3.1**
KURK	**Kurchatov**	**45.26**	**307**	*c i*P	**P**	**10 00 08.6**	**-0.8**
KURK				pmax	pmax		
	comp=Z,44nm,1.0s						
KURK	**Kurchatov**	**45.26**	**307**	*e*P	**P**	**10 00 08.9**	**-0.5**
	comp=Z,33nm,0.8s						
KURK				pP	**pP**	**10 00 22.9**	**+0.1**
KURBB	**Kurchatov Arra**	**45.34**	**307**	P	**P**	**10 00 09.5**	**-0.5**
	comp=Z,26nm,0.7s,baz=82,slow=8.2,SNR=115						
KURBB				pP	**pP**	**10 00 22.9**	**-0.4**
	comp=Z,3.7nm,0.4s,baz=82,slow=8.2,SNR=3.4						
MLY	**Manley**	**46.20**	**33**	*e*P	**P**	**10 00 19.0**	**+2.3**
	comp=Z,18nm,2.0s						
GUN	**Gumba**	**47.45**	**274**	*e*P	**P**	**10 00 26.9**	**-0.3**
	comp=Z,25nm,0.6s						
IL1	**Eielson Array**	**47.85**	**33**	*e*P	**P**	**10 00 30.7**	**+1.2**
ILAR	**Eielson Array**	**47.85**	**33**	P	**P**	**10 00 30.4**	**+0.9**
	comp=Z,1.5nm,0.7s,baz=268,slow=6.7,SNR=16						
ILB	**Eielson Array**	**47.85**	**33**	*e*P	**P**	**10 00 31.4**	**+1.9**
KKN	**Kakani**	**47.97**	**275**	*e*P	**P**	**10 00 30.3**	**-0.9**
	comp=Z,23nm,0.7s						
PKIN	**Phulchoki**	**47.98**	**274**	*e*P	**P**	**10 00 30.8**	**-0.5**

	comp=Z,9.0nm,0.3s						
DMN	**Daman**	**48.19**	**275**	*e*P	**P**	**10 00 32.1**	**-0.8**
GKN	**Gorkha**	**48.37**	**275**	*e*P	**P**	**10 00 33.7**	**-0.5**
	comp=Z,5.9nm,0.3s						
TKM2	**Tokmak 2**	**49.24**	**297**	*e*P	**P**	**10 00 41.3**	**+0.6**
TKM2				pmax	pmax		
	comp=Z,8.0nm,0.8s						
TKM2	**Tokmak 2**	**49.24**	**297**	*e*P	**P**	**10 00 41.3**	**+0.6**
	comp=Z,7.7nm,0.8s						
KOLN	**Koldanda**	**49.29**	**276**	*e*P	**P**	**10 00 40.5**	**-0.8**
	comp=Z,9.6nm,0.6s						
PYUN	**Piuthan**	**49.61**	**276**	*e*P	**P**	**10 00 43.6**	**-0.1**
BRVK	**Borovoye**	**49.84**	**311**	*c i*P	**P**	**10 00 44.5**	**-0.3**
BRVK				pmax	pmax		
	comp=Z,5.0nm,0.6s						
BRVK	**Borovoye**	**49.84**	**311**	*e*P	**P**	**10 00 45.0**	**+0.2**
	comp=Z,6.4nm,0.7s						
AAK	**Ala-Archa**	**50.10**	**297⇓**	*i* P	**P**	**10 00 47.1**	**-0.1**
AAK				pmax	pmax		
	comp=Z,5.0nm,0.9s						
AAK	**Ala-Archa**	**50.10**	**297**	*e*P	**P**	**10 00 47.3**	**+0.1**
	comp=Z,9.3nm,1.6s						
KSH	**Kashi**	**50.14**	**293**	P	P	10 00 51.8	+4.3
KSH				*e*pP	sP	10 01 07.6	+0.8
KSH				*e*PP	PP	10 02 48.5	+5.7
KSH				S	**S**	**10 07 58.8**	**+3.1**
KSH				ScS	**ScS**	**10 10 33.8**	**-0.7**
KSH				SS	**SS**	**10 11 33.9**	**+4.9**
KSH				pmax	pmax		
	comp=Z,67nm,4.0s						
KSH				LR	LR		
	comp=Z,120nm,6.1s						
KSH				LR	LR		
	comp=Z,120nm,8.5s						
KSH				LR	LR		
	comp=Z,110nm,5.7s						
EGAK	**Eagle**	**50.29**	**33**	*e*P	**P**	**10 00 50.3**	**+2.1**
	comp=Z,13nm,1.5s						
EKS2	**Erkin-Say**	**50.59**	**298**	*e*P	**P**	**10 00 50.9**	**+0.1**
EKS2				pmax	pmax		
	comp=Z,3.0nm,0.8s						
EKS2	**Erkin-Say**	**50.59**	**298**	*e*P	**P**	**10 00 50.9**	**+0.1**
	comp=Z,2.9nm,0.8s						
ZRNK	**Zerenda**	**50.61**	**312**	*e*P	**P**	**10 00 50.7**	**0.0**
ZRNK				pmax	pmax		
	comp=Z,8.0nm,0.8s						
ZRNK	**Zerenda**	**50.61**	**312**	*e*P	**P**	**10 00 50.7**	**0.0**
	comp=Z,8.2nm,0.8s						
HNR	**Honiara**	**50.74**	**157**	LR	LR	10 22 17.7	
	comp=Z,70nm,19.2s,baz=354,slow=36						
KKAR	**Karatay Array**	**52.68**	**299**	*e*P	**P**	**10 01 06.1**	**-0.2**
KKAR	**Karatay Array**	**52.68**	**299**	*e*P	**P**	**10 01 06.1**	**-0.2**
INK	**Inuvik**	**52.70**	**28**	P	**P**	**10 01 07.1**	**+1.1**
	comp=Z,1.4nm,0.8s,baz=299,slow=7.4,SNR=9.9						
INK	**Inuvik**	**52.70**	**28**	*e*P	**P**	**10 01 07.5**	**+1.5**
INK				pmax	pmax		
	comp=Z,19nm,1.9s						
INK	**Inuvik**	**52.70**	**28**	*e*P	**P**	**10 01 07.5**	**+1.5**
	comp=Z,19nm,1.9s						
ARU	**Arti**	**55.41**	**318**	*c i*P	**P**	**10 01 25.6**	**-0.3**
ARU						10 02 23.0	
ARU						10 03 27.2	
ARU				S	**S**	**10 09 08.6**	**+1.9**
ARU				SS	**SS**	**10 12 50.8**	**-0.4**
ARU				pmax	pmax		
	comp=Z,13nm,1.0s						
ARU	**Arti**	**55.41**	**318**	*e*P	**P**	**10 01 25.2**	**-0.7**
	comp=Z,11nm,0.9s						
ABKAR	**Akbulak array**	**57.21**	**309**	*e*P	**P**	**10 01 38.3**	**-0.6**
WRAB	**Tennant Creek**	**58.77**	**188⇓**	*e*P	**P**	**10 01 50.8**	**+0.8**
WRAB				pmax	pmax		
	comp=Z,10.0nm,1.1s						
WRAB	**Tennant Creek**	**58.77**	**188**	*e*P	**P**	**10 01 49.1**	**-0.9**
	comp=Z,36nm,1.9s						
WB2	**Warramunga Arr**	**58.78**	**188**	*e*P	**P**	**10 01 48.9**	**-1.1**
	comp=Z,35nm,1.9s						
WRA	**Warramunga Arr**	**58.78**	**188**	P	**P**	**10 01 48.5**	**-1.6**
	comp=Z,3.8nm,0.9s,baz=6.8,slow=7.1,SNR=29						
RES	**Resolute Bay**	**60.87**	**15**	*e*P	**P**	**10 02 04.3**	**+0.5**
RES				pmax	pmax		
	comp=Z,15nm,1.8s						
RES	**Resolute Bay**	**60.87**	**15**	*e*P	**P**	**10 02 04.3**	**+0.5**
	comp=Z,15nm,1.8s						
YKA	**Yellowknife Ar**	**62.14**	**31**	P	**P**	**10 02 12.7**	**+0.1**
	comp=Z,0.5nm,0.7s,baz=301,slow=6.5,SNR=17						
YKA	**Yellowknife Ar**	**62.14**	**31**	*ce*P	**P**	**10 02 13.1**	**+0.5**
YKA				pmax	pmax		
	comp=Z,1.0nm,0.7s						
AS01	**Alice Springs**	**62.50**	**188**	*e*P	**P**	**10 02 15.2**	**-0.2**
ASAR	**Alice Springs**	**62.51**	**188**	P	**P**	**10 02 14.4**	**-1.0**
	comp=Z,1.0nm,0.7s,baz=14,slow=6.1,SNR=16						
ASAR				LR	LR	10 28 00.8	
	comp=Z,59nm,20.7s,baz=116,slow=35						
KLMR	**Klimovskoe**	**62.58**	**327**	P	**P**	**10 02 12.9**	**-2.6**
KLMR				pmax	pmax		
	comp=Z,23nm,1.5s						
ARCES	**ARCESS Array B**	**62.59**	**339**	P	**P**	**10 02 15.6**	**+0.1**
	comp=Z,2.7nm,0.8s,baz=52,slow=6.6,SNR=5.7						
ARCES				LR	LR	10 35 04.6	
	comp=Z,29nm,18.3s,baz=54,slow=41						
GEYT	**Alibeck**	**63.42**	**298**	P	**P**	**10 02 21.2**	**-0.3**
	comp=Z,2.2nm,0.6s,baz=64,slow=3.4,SNR=4.6						
GEYT				LR	LR	10 31 18.7	
	comp=Z,68nm,20.8s,baz=330,slow=37						
DAG	**Danmarks Havn**	**64.15**	**355**	*i* P	**P**	**10 02 25.6**	**0.0**
	comp=Z,4.9nm,0.9s						
DAG	**Danmarks Havn**	**64.15**	**355**	*i* P	**P**	**10 02 25.6**	**0.0**
DAG				pmax	pmax		
	comp=Z,4.0nm,0.9s						
DZM	**Mont Dzumac**	**64.67**	**155**	LR	LR	10 27 49.7	
	comp=Z,76nm,19.2s,baz=43,slow=33						
OBN	**Obninsk**	**67.02**	**323**	*i* P	**P**	**10 02 41.9

NBO02	NORSAR Array S	72.91	337	eP		P	10 03 20.5	-0.1
NBO00	NORSAR Array S	72.95	337	eP		P	10 03 20.9	+0.1
NC602	NORSAR Array S	72.95	337	eP		P	10 03 21.3	+0.5
AKASG	Malin Array Be	73.24	322	P		P	10 03 21.9	-0.8
	comp=Z,3.0nm,0.7s,baz=46,slow=6.0,SNR=25							
KIEV	Kiev	73.25	322⇑	eP		P	10 03 21.6	-1.1
KIEV				pmax	pmax			
	comp=Z,5.0nm,0.9s							
KIEV	Kiev	73.25	322	eP		P	10 03 21.9	-0.8
	comp=Z,5.3nm,0.9s							
AK11	Malin Array Si	73.28	322	eP		P	10 03 22.6	-0.3
NVAR	Mina Array Bea	73.64	54	P		P	10 03 26.4	+0.9
	comp=Z,0.2nm,0.4s,baz=289,slow=4.5,SNR=3.5							
H17A	Grant Village	74.58	45	eP		P	10 03 32.9	+2.0
	comp=Z,6.3nm,1.3s							
MOOW	Moose Ponds	74.89	46	eP		P	10 03 34.0	+1.3
	comp=Z,2.9nm,1.2s							
BW06	Boulder Array	76.19	46	eP		P	10 03 41.0	+0.8
PDAR	Pinedale Array	76.19	46	P		P	10 03 41.0	+0.8
	comp=Z,0.5nm,0.6s,baz=216,slow=0.6,SNR=8.1							
PDAR				pP		pP	10 03 56.3	+1.8
	comp=Z,1.2nm,0.7s,baz=310,slow=3.9,SNR=7.3							
BEL	Belsk	76.29	327	eP		P	10 03 41.7	+1.4
BEL	Belsk	76.29	327	eP		P	10 03 41.7	+1.4
BUR08	Bucovina Ar. S	77.26	322	eP		P	10 03 46.4	+0.4
BURAR	Bucovina Array	77.27	322⇓	iP		P	10 03 46.1	+0.1
BURAR	Bucovina Array	77.27	322	⇓P		P	10 03 46.1	+0.1
TESR	Tescani	77.33	320⇑	iP		P	10 03 46.1	-0.2
CFR	Carcaliu	77.48	318⇓	iP		P	10 03 46.9	-0.2
CFR	Carcaliu	77.48	318	⇓P		P	10 03 46.9	-0.2
OJC	Ojcow	77.89	326	eP		P	10 03 50.0	+0.7
OJC	Ojcow	77.89	326	eP		P	10 03 50.1	+0.7
OJC	Ojcow	77.89	326	eP		P	10 03 50.0	+0.7
	comp=Z,8.8nm,1.0s							
BRTR	Keskin Array B	78.07	312	P		P	10 03 50.8	+0.1
	comp=Z,0.6nm,0.5s,baz=90,slow=4.9,SNR=4.9							
BRTR				LR	LR		10 40 58.2	
	comp=Z,14nm,20.9s,baz=56,slow=38							
BR231	Keskin MP Arra	78.50	312	eP		P	10 03 51.8	-1.2
MORC	Moravsky Berou	79.20	327	eP		P	10 03 55.9	-0.7
MORC				pmax	pmax			
	comp=Z,11nm,0.8s							
MORC	Moravsky Berou	79.20	327	eP		P	10 03 55.9	-0.7
	comp=Z,11nm,0.8s							
VYHS	Vyhne	79.60	326	eP		P	10 03 59.1	+0.4
BRG	Berggiesshubel	79.83	330	eP		P	10 04 00.3	+0.3
	comp=Z,2.9nm,0.9s							
CLL	Collm	79.86	330	iP		P	10 03 59.7	-0.4
	comp=Z,6.0nm,0.8s							
CLL				e			10 04 04.0	
CLL				iPP		PP	10 07 00.5	-0.8
CLL	Collm	79.86	330	iP		P	10 03 59.7	-0.4
CLL				e			10 04 04.0	
CLL				pmax	pmax			
	comp=Z,6.0nm,0.8s							
CONA	Conrad Observa	81.32	327	iP		P	10 04 09.2	+1.1
	comp=Z,2.8nm,0.7s							
GERES	GERESS Array B	81.52	328	P		P	10 04 09.3	+0.1
	comp=Z,0.9nm,0.5s,baz=32,slow=3.8,SNR=8.6							
GERES				LR	LR		10 42 43.2	
	comp=Z,94nm,20.6s,baz=42,slow=37							
SOKA	Soboth	82.65	326	iP		P	10 04 15.4	+0.3
	comp=Z,4.4nm,0.9s							
ANMO	Albuquerque	83.18	50⇓	eP		P	10 04 20.2	+2.0
ANMO				pmax	pmax			
	comp=Z,1.0nm,1.1s							
BCLA	Clavier	83.42	334	P		P	10 04 20.6	+1.7
CWF	Charnwood Fore	83.50	339	eP		P	10 04 19.0	-0.3
	comp=Z,42nm,1.7s							
SCHQ	Schefferville	83.61	16	LR	LR		10 45 38.0	
	comp=Z,30nm,18.4s,baz=46,slow=38							
SNF	Seneffe	83.69	334	P		P	10 04 20.7	+0.4
BFO	Black Forest	84.06	331	iP		P	10 04 23.0	+0.8
BFO	Black Forest	84.06	331	eP		P	10 04 22.5	+0.3
	comp=Z,4.6nm,0.9s							
DAVA	Damuels	84.31	329	iP		P	10 04 23.6	0.0
	comp=Z,6.5nm,0.9s							
PMOR	Pomariorio Ree	84.45	114	eT		T	11 37 47.0	
	comp=Z,46nm,0.2s							
FUORN	Ofenpass-Fuorn	84.69	329	eP		P	10 04 26.2	+0.4
	comp=Z,7.6nm,0.8s							
AGG	Agios Georgios	84.89	317	eP		P	10 04 25.5	-1.1
AGG				pmax	pmax			
	comp=Z,97nm,2.0s							
AGG	Agios Georgios	84.89	317	eP		P	10 04 25.5	-1.1
	comp=Z,97nm,2.0s							
PPT	Papeete	85.00	117	LR	LR		10 35 47.5	
	comp=Z,23nm,20.5s,baz=336,slow=31							
PPT2	Papeete2	85.01	117	eLR	LR		10 31 26.4	
	comp=Z,116nm,25.5s							
PPT2	Papeete2	85.01	117	eT	T		11 38 27.6	
	comp=Z,3.3nm,0.2s							
PAE	Paea	85.06	117	eT	T		11 38 30.1	
	comp=Z,1.2nm,0.3s							
TIAR	Tiarei	85.15	117	eT	T		11 38 37.4	
	comp=Z,2.7nm,0.3s							
SENIN	Lac Senin/Sane	86.08	330	eP		P	10 04 32.5	-0.1
	comp=Z,15nm,1.6s							
TAOE	Nuku Hiva Isla	86.16	104	eLR	LR		10 32 01.6	
	comp=Z,120nm,28.8s							
TAOE	Nuku Hiva Isla	86.16	104	eT	T		11 39 59.4	
	comp=Z,14nm,0.2s							
MEH	Mehetia	86.26	116	eT	T		11 40 01.2	
	comp=Z,22nm,0.2s							
TX31	Lajitas Ar. Si	88.75	53	eP		P	10 04 46.6	+0.9
TXAR	Lajitas Array	88.76	53	P		P	10 04 46.3	+0.6
	comp=Z,0.2nm,0.5s,baz=269,slow=2.4,SNR=4.0							
TXAR				pP		pP	10 05 01.2	+1.0
	comp=Z,1.0nm,0.8s,baz=289,slow=3.7,SNR=10							
KEST	Kesra	93.95	323	LR	LR		10 52 29.8	
	comp=Z,72nm,18.9s,baz=333,slow=39							
ESDC	Sonseca Array	95.98	334	LR	LR		10 53 27.2	
	comp=Z,66nm,18.4s,baz=310,slow=38							
VNA2	Neumayer–Watz	144.05	197	PKP		pPKPdf	10 11 39.0	-2.0
	baz=74,slow=2.2							
VNA3	Neumayer Olymp	144.29	195	PKP		pPKPdf	10 11 38.4	-3.0
LPAZ	La Paz	145.45	58	PKPbc		PKPdf	10 11 30.0	-0.7
	comp=Z,1.3nm,0.6s,baz=338,slow=4.2,SNR=6.2							
LPAZ				pPKPbc	pPKPbc		10 11 45.9	+0.2
	comp=Z,1.7nm,0.7s,baz=315,slow=2.9,SNR=5.1							
LPAZ	La Paz	145.45	58	ePKIKP		PKPab	10 11 31.1	+0.1
LPAZ							10 11 45.9	
LPAZ	La Paz	145.45	58	ePKPdf		PKPab	10 11 31.1	+0.1
LPAZ				pPKPbc	pPKPbc		10 11 45.9	+0.2
LCO	Las Campanas	151.33	80	ePKPbc		PKPbc	10 11 46.3	+0.8

NIED **24** *10:09:00,37˚.10N×140˚.70E,h14km,Mw4.2 Best double couple: M₀2.14000×10¹⁵ NP1:φ=126.00000°,δ25.00000°, λ-28.00000°. NP2:φ=242.00000°,δ79.00000°, λ-113.00000°.*

IDC **24** *10:09:50.9±0.5,37˚.04N×140˚.48E,h11km±3km,mb4.1/25, mb1 4.3/27,mb1mx4.2/44,mbtmp4.2/27,ML4.3/2,MS3.5/9, Ms1 3.5/9,ms1mx3.1/46,Error ellipse: s-maj=14.7km s-min=10.6km az=84.0*

BJI **24** *10:09:50.8,37˚.06N×141˚.03E,h37km,mb4.6/27,mB4.9/16, Ms4.5/14,Ms7 4.2/11*

ISCJB **24** *10:09:51.1±0.3,37˚.07N±0˚.02×140˚.66E±0˚.03,h24km±2km, mb4.5/74,MS3.7/10,Error ellipse: s-maj=4.5km s-min=3.3km az=26.7*

JMA **24** *10:09:51.7,37˚.06N×140˚.64E,h14km±1km,M4.5 Broadband fault plane solution: P waves. NP1: φ=224.00000°,δ77.00000°,λ-115.00000°. NP2: φ=109.00000°,δ28.00000°,λ-28.00000°. Principal axes: T Plg28.0000°, Azm334.0000°; N Plg24.0000°, Azm230.0000°; P Plg51.0000°, Azm106.0000°;*

JMA Felt IV J1.

MOS **24** *10:09:52.1±1.1,37˚.12N×140˚.68E,h33km,mb4.5/34 Error ellipse: s-maj=8.6km s-min=5.4km az=96.0*

NEIC **24** *10:09:55.7±0.5,37˚.08N×140˚.52E,h43km±5km,mb4.9/32, Error ellipse: s-maj=5.6km s-min=4.1km az=115.0*

NEIC Recorded [4 JMA] in Fukushima.

ISC 24 10:09:51.1±0.5,37˚.07N±0˚.03×140˚.64E±0˚.03,h12km±3km, h12km:pP-P,n180,σ1§34/199,mb4.6/74,MS3.6/10, 15C-11D,Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
				Op				
ONAJ	Iwakimizuishiy	0.13	75	⇑P		Pb	10 09 55.2	-0.4
ONAJ				S		Sg	10 09 57.6	+0.7
JFK	Kawauchi	0.35	32	⇑P		Pg	10 09 58.8	+0.5
JFK				S		Sg	10 10 03.6	+0.6
JHO	Hitachi	0.46	187	⇑P		Pg	10 10 00.3	+0.1
JHO				S		Sg	10 10 06.3	0.0
JFT	Otama	0.51	332	⇑P		Pb	10 10 02.0	0.0
JFT				S		Sb	10 10 09.0	-0.4
JSB	Shiboa	0.58	260	⇓P		Pb	10 10 03.5	+0.2
JSB				S		Sb	10 10 11.5	0.0
JMM	Marumori	0.81	9	⇑P		Pg	10 10 06.6	-0.1
JMM				S		Sg	10 10 17.5	+0.2
JFY	Yanaizu	0.82	295	⇑P		Pb	10 10 07.2	-0.1
JFY				S		Sg	10 10 17.9	+0.2
MJAR	Matsushiro Arr	2.02	256	Pn		Pn	10 10 26.1	+1.1
	23nm,0.3s,baz=80,slow=16,SNR=80							
MJAR				Pg		Pg	10 10 29.7	-0.2
	70nm,0.3s,baz=77,slow=16,SNR=80							
MJAR				LR	LR		10 10 47.8	
	comp=Z,50nm,19.4s,baz=35,slow=30							
MJAR				Lg	Lg		10 10 54.2	
	62nm,0.3s,baz=92,slow=22,SNR=11							
MAJO	Matsushiro	2.02	256	c iP		Pn	10 10 26.3	+1.3
MAJO	Matsushiro	2.02	256	ePn		Pb	10 10 26.5	-1.2
MAT	Matsushiro	2.02	256	P		Pn	10 10 26.4	+1.4
MAT				S		Sb	10 10 52.9	0.0
MJB9	Matsu-Tunnel	2.02	256	ePn		Pb	10 10 26.6	-1.2
INU	Inuyama	3.39	241	ePn		Pn	10 10 46.6	+2.7
JHJ	Hachijo jima 2	4.00	190	Pn		Pn	10 10 53.2	+1.0
	37nm,0.3s,baz=114,slow=23,SNR=14							
JHJ				Sn		Sn	10 11 40.6	+1.6
	38nm,0.3s,baz=108,slow=20,SNR=3.5							
JHJ2	Mitsune	4.00	190	ePn		Pn	10 10 54.7	+2.5
ERM	Erimo	5.31	21⇓	eP		Pn	10 11 10.4	+0.2
ERM	Erimo	5.31	21	ePn		Pn	10 11 11.5	+1.4
ERM				eSn		Sn	10 12 12.4	+1.2
ASAJ	Asahikawa	7.20	11	Pn		Pn	10 11 37.0	+0.9
	6.8nm,0.3s,baz=226,slow=10,SNR=33							
ASAJ				Sn		Sn	10 13 01.1	+3.4
	2.8nm,0.3s,baz=210,slow=20,SNR=2.6							
ASAJ	Asahikawa	7.20	11	ePn		Pn	10 11 36.5	+0.5
ASAJ				Sn		Sn	10 13 01.1	+3.4
YUK	Yuzh-Kuril'sk	8.01	28	P		Pn	10 11 45.6	-1.6
YUK				i S		Sn	10 13 12.5	-5.2
YUK				pmax	pmax			
	comp=N,86nm,0.3s							
YUK				pmax	pmax			
	comp=Z,132nm,0.3s							
YUK				pmax	pmax			
	comp=E,90nm,0.2s							
SHO	Shikotan	8.27	33	eP		Pn	10 11 47.7	-3.1
SHO				i S		Sn	10 13 16.2	-7.8
SHO				pmax	pmax			
	comp=Z,135nm,1.0s							
SHO				pmax	pmax			
	comp=E,77nm,1.1s							
JNU	Nakatsue	8.91	247	Pn		Pn	10 12 02.4	+2.6
	comp=E,0.1nm,0.3s,baz=27,slow=6.8,SNR=2.3							
MSHR	Mys Shultsa	9.13	310⇓	eP		Pn	10 12 03.9	+1.2
USRK	Ussuriysk Ar.	9.69	320	Pn		Pn	10 12 13.5	+3.2
	comp=E,0.9nm,0.3s,baz=133,slow=13,SNR=64							
USRK				LR	LR		10 15 43.3	
	comp=E,375nm,18.4s,baz=106,slow=37							
KUR	Kuril'sk	9.81	31	eP		Pn	10 12 10.9	-0.9
KUR				eS		Sn	10 13 56.6	-5.2
KUR				smax	smax			
	comp=N,31nm,0.7s							
KUR				smax	smax			
	comp=E,40nm,0.7s							
YSS	Yuzh-Sakhalins	10.00	8	eP		Pn	10 12 14.7	+0.2
YSS				pmax	pmax			
	comp=Z,30nm,0.9s							
YSS	Yuzh-Sakhalins	10.00	8	ePn		Pn	10 12 14.8	+0.3
CBIJ	Chichi jima	10.03	172	ePn		Pn	10 12 14.9	0.0
CBIJ				Sn		Sn	10 13 58.5	-9.0
JCJ	Chichijima	10.03	172	Pn		Pn	10 12 11.4	-3.6
	baz=287,slow=17							
JCJ				Sn		Sn	10 13 58.4	-9.0
	comp=Z,4.8nm,0.3s,baz=317,slow=19,SNR=2.9							
KSRS	Korea Array	10.14	276	Pn		Pn	10 12 19.5	+3.0
	comp=Z,0.3nm,0.3s,baz=94,slow=14,SNR=8.8							
KSRS				LR	LR		10 16 01.4	
	comp=Z,173nm,19.0s,baz=86,slow=37							
KSAR	Wonju Array Be	10.18	276	P		Pn	10 12 19.5	+2.5
KSAR	Wonju Array Be	10.18	276	Pn		Pn	10 12 19.4	+2.5
MDJ	Mudanjiang	11.26	315	P		Pn	10 12 36.4	+4.7
MDJ				pmax	pmax			
	comp=Z,18nm,1.2s							
MDJ				pmax	pmax			
	comp=Z,89nm,3.8s							
CN2	Changchun	13.37	305	eP		Pn	10 13 02.6	+2.0
KLR	Kul'dur	13.77	335	Pn		Pn	10 13 08.8	+2.8
	comp=Z,0.2nm,0.3s,baz=139,slow=12,SNR=14							
KLR				LR	LR		10 18 13.5	
	comp=Z,212nm,18.9s,baz=152,slow=37							
KLR	Kul'dur	13.77	335⇓	eP		Pn	10 13 08.5	+2.6
TYV	Tymovskoe	13.87	5	eP		Pn	10 13 06.0	-1.3
TYV				pmax	pmax			
	comp=Z,22nm,1.0s							
NJ2	Nanjing	18.61	261	eP		P	10 14 06.6	-1.7
NJ2				pmax	pmax			
	comp=Z,11nm,0.6s							
BJI	Beijing	19.35	286	P		P	10 14 15.9	-0.4
BJI				pmax	pmax			
	comp=Z,5.0nm,0.6s							
BJI				LR	LR			
	comp=Z,150nm,7.8s							
BJI				LR	LR			
	comp=Z,130nm,7.8s							
PEA0	Petropavlovsk-	19.97	31	eP		P	10 14 23.7	+0.6
PETK	Petropavlovsk-	19.97	31	P		Pn	10 14 25.1	+0.3
	comp=Z,3.7nm,0.8s,baz=186,slow=12,SNR=5.8							
HHC	Hu-ho-hao-te	22.87	288	eP		P	10 14 54.8	+0.3
HHC				sP	sP		10 15 06.9	+7.3
HHC				S	S		10 18 52.9	-11
HHC				pmax	pmax			
	comp=Z,24nm,1.1s							
HHC				pmax	pmax			
	comp=Z,85nm,5.0s							
HHC				LR	LR			
	comp=Z,1μm,10.0s							
HHC				LR	LR			
	comp=Z,1μm,11.2s							
HHC				LR	LR			
	comp=Z,1μm,10.2s							
MA2	Magadan	23.45	13	P		P	10 15 00.5	+0.4
	comp=Z,6.7nm,0.6s,baz=232,slow=8.5,SNR=11							
MA2				LR	LR		10 24 53.0	
	comp=Z,57nm,18.6s,baz=216,slow=38							
YAK	Yakutsk	25.91	348	LR	LR		10 25 38.1	
	comp=Z,105nm,18.9s,baz=132,slow=37							
YAK	Yakutsk	25.91	348	eP		P	10 15 21.2	-1.4
YAK				pmax	pmax			
	comp=Z,18nm,1.0s							
ULN	Ulaanbaatar	26.82	304⇓	eP		P	10 15 31.7	+0.4
ULN				pmax	pmax			
	comp=Z,7.0nm,1.2s							
SEY	Seymchan	26.88	12	P		P	10 15 32.2	+0.7
	comp=Z,6.7nm,0.9s,baz=200,slow=8.6,SNR=17							
SEY	Seymchan	26.88	12⇓	eP		P	10 15 31.7	+0.3
BOD	Bodaibo	27.17	328	eP		P	10 15 32.7	-1.4
BOD				pmax	pmax			
	comp=Z,4.0nm,1.0s							
SONA1	Songino Array	27.25	304	eP		P	10 15 35.1	0.0
SONM	Songino Array	27.25	304	P		P	10 15 34.5	-0.7
	comp=Z,4.3nm,0.6s,baz=102,slow=8.8,SNR=15							
H11N2	WAKE ISLAND Hy	28.70	120	T		T	10 45 39.5	
	baz=313,slow=75,SNR=958							
H11N1	WAKE ISLAND Hy	28.71	120	T		T	10 45 40.1	
	baz=313,slow=75,SNR=1175							
H11N3	WAKE ISLAND Hy	28.72	120	T		T	10 45 36.6	
	baz=313,slow=75,SNR=748							
H11S1	WAKE ISLAND Hy	29.40	122	T		T	10 46 33.1	
	baz=314,slow=76,SNR=1217							
H11S3	WAKE ISLAND Hy	29.40	122	T		T	10 46 29.5	
	baz=314,slow=76,SNR=712							
H11S2	WAKE ISLAND Hy	29.42	122	T		T	10 46 31.2	
	baz=314,slow=76,SNR=628							
LZH	Lanzhou	29.45	279	eP		P	10 15 59.8	+4.9
LZH				pP		sP	10 16 09.4	+9.2
LZH				sP		pP	10 16 13.9	+15
LZH				pmax	pmax			
	comp=Z,37nm,1.2s							
LZH				pmax	pmax			
	comp=Z,140nm,4.5s							
LZH				LR	LR			
	comp=Z,180nm,13.0s							
LZH				LR	LR			
	comp=Z,220nm,14.0s							
LZH				LR	LR			
	comp=Z,220nm,15.0s							
TLY	Talaya	29.84	311	eP		P	10 15 57.1	-0.9
TLY				pmax	pmax			
	comp=Z,4.0nm,1.3s							
TLY				MLR	MLR			
	comp=Z,142nm,15.0s							
GYA	Guiyang	30.62	260	eP		P	10 16 05.6	+0.4
GYA				pP	sP		10 16 14.8	+4.3
GYA				PP	PnPn		10 17 06.0	+1.5
GYA				PcP	PcP		10 19 04.5	+0.9
GYA				S	S		10 21 04.0	-3.3
GYA				sS	sS		10 21 20.8	+7.3
GYA				ScP	ScP		10 22 42.3	-3.6
GYA				ScS	ScS		10 26 38.6	-3.8
GYA				pmax	pmax			
	comp=Z,10.0nm,0.8s							
GYA				LR	LR			
	comp=Z,490nm,17.7s							
GYA				LR	LR			
	comp=Z,470nm,18.0s							
GYA				LR	LR			
	comp=Z,460nm,18.2s							
CD2	Chengdu	31.05	270	P		P	10 16 08.1	-0.9
CD2				pmax	pmax			
	comp=Z,3.0nm,0.5s							
BILL	Bilibino	34.17	17⇑	eP		P	10 16 35.9	+0.1
BILL				pmax	pmax			
	comp=Z,11nm,2.5s							
KMI	Kunming	34.35	261	P		P	10 16 42.6	+4.5
KMI				pmax	pmax			
	comp=Z,6.0nm,0.9s							
TIXI	Tiksi	35.18	354⇑	eP		P	10 16 43.1	-1.4
TIXI				pmax	pmax			
	comp=Z,1.0nm,0.7s							
TIXI	Tiksi	35.18	354	eP		P	10 16 43.1	-1.4
	comp=Z,3.7nm,0.5s							
WMQ	Urumqi	40.27	297	eP		P	10 17 29.3	+1.4
WMQ				pmax	pmax			
	comp=Z,5.0nm,0.6s							
WMQ				pmax	pmax			
	comp=Z,62nm,4.0s							
ZAA0	Zalesovo Array	41.43	312	eP		P	10 17 36.8	-0.5
ZALV	Zalesovo Beam	41.43	312	P		P	10 17 36.5	-0.8
	comp=Z,3.0nm,0.5s,baz=94,slow=6.0,SNR=9.9							
ZALV				pP		pP	10 17 40.1	-1.0
	comp=Z,3.0nm,0.5s,baz=101,slow=7.7,SNR=9.4							
ZALV				PcP		PcP	10 19 34.9	0.0
	comp=Z,0.5nm,0.4s,baz=64,slow=3.4,SNR=2.8							
ZALV				ScP		ScP	10 23 24.4	-0.3
	comp=Z,0.7nm,0.5s,baz=97,slow=5.8,SNR=5.4							
ZALV				LR	LR		10 35 12.5	
	comp=Z,33nm,21.5s,baz=76,slow=37							
MK01	Makanchi Array	43.57	302	eP		P	10 17 54.4	-0.5
MK31	Makanchi Array	43.58	302	eP		P	10 17 54.9	0.0
MK31	Makanchi Array	43.58	302	eP		P	10 17 54.9	0.0
MKAR	Makanchi Array	43.58	302	P		P	10 17 54.4	-0.4
	comp=Z,1.9nm,0.6s,baz=87,slow=10.0,SNR=16							
MKAR				LR	LR		10 35 10.1	
	comp=Z,39nm,20.8s,baz=84,slow=35							
MKAR	Makanchi Array	43.58	302	ceP		P	10 17 55.0	+0.1
MKAR				pmax	pmax			
	comp=Z,2.0nm,0.6s							
MKAR	Makanchi Array	43.58	302	eP		P	10 17 54.8	0.0
KURK	Kurchatov	45.42	308	c iP		P	10 18 08.2	-1.3
KURK				pmax	pmax			
	comp=Z,21nm,1.2s							
KURK	Kurchatov	45.42	308	eP		P	10 18 08.5	-1.0
	comp=Z,12nm,0.6s							
KURBB	Kurchatov Arra	45.49	308	P		P	10 18 09.3	-0.7
	comp=Z,8.2nm,0.7s,baz=84,slow=8.1,SNR=32							
KURBB				pP		pP	10 18 12.9	-1.0
	comp=Z,8.3nm,0.7s,baz=84,slow=8.1,SNR=45							
SVW2	Sparrevohn	45.87	37	eP		P	10 18 15.4	+2.4
	comp=Z,39nm,1.7s							
CAST	Castle Rocks	47.55	34	eP		P	10 18 28.3	+2.3
	comp=Z,25nm,1.9s							
MLY	Manley	48.15	32	eP		P	10 18 31.9	+1.2
	comp=Z,8.2nm,1.3s							
MCK	McKinley	48.95	34	eP		P	10 18 38.0	+1.1
MCK				pmax	pmax			
	comp=Z,37nm,1.9s							
MCK	McKinley	48.95	34	eP		P	10 18 38.0	+1.1
	comp=Z,37nm,1.9s							
MDM	Murphy Dome	49.22	32	eP		P	10 18 40.7	+1.8
	comp=Z,19nm,1.6s							
WRH	Wood River Hil	49.29	33	eP		P	10 18 41.5	+2.1
	comp=Z,30nm,1.8s							
CCB	Clear Creek Bu	49.41	33	eP		P	10 18 42.8	+2.5
	comp=Z,18nm,1.8s							
IL1	Eielson Array	49.80	32	eP		P	10 18 43.5	+0.2
ILAR	Eielson Array	49.80	32	P		P	10 18 43.6	+0.3
	comp=Z,1.7nm,0.7s,baz=270,slow=6.6,SNR=16							
ILAR				LR	LR		10 41 35.7	
	comp=Z,42nm,18.1s,baz=156,slow=38							
ILB	Eielson Array	49.80	32	eP		P	10 18 44.9	+1.6
KSH	Kashi	49.83	294	eP		P	10 18 47.8	+3.8
KSH				es	P	sP	10 19 01.8	+12
KSH				ePcP		PcP	10 20 07.6	+3.0
KSH				PcS		PcS	10 24 03.5	+1.9
KSH				S		S	10 25 54.8	+1.3
KSH				pmax	pmax			
	comp=Z,120nm,5.0s							
KSH				LR	LR			
	comp=Z,160nm,5.7s							
KSH				LR	LR			
	comp=Z,63nm,5.9s							
KSH				LR	LR			
	comp=Z,200nm,6.1s							
AAK	Ala-Archa	49.93	298	P		P	10 18 44.3	-0.5
	comp=Z,0.7nm,0.3s,baz=68,slow=11,SNR=3.5							
AAK	Ala-Archa	49.93	298⇓	eP		P	10 18 44.4	-0.5
AAK				pmax	pmax			
	comp=Z,3.0nm,0.9s							
BVAR	Borovoye Array	50.09	312	P		P	10 18 45.3	-0.4
	comp=Z,1.4nm,0.7s,baz=72,slow=6.7,SNR=9.4							
BVAR	Borovoye Array	50.09	312	P		P	10 18 45.3	-0.4
BVAR				pmax	pmax			
	comp=Z,3.0nm,0.9s							
BRVK	Borovoye	50.15	312⇓	eP		P	10 18 45.9	-0.2
BRVK				pmax	pmax			
	comp=

ASAR				pP		**pP**	**10 20 06.0**	**-0.6**
	comp=Z,4.0nm,0.7s,baz=12,slow=6.4,SNR=23								
MBWA	**Marble Bar**	**61.18**	**202**	*eP*		**P**	**10 20 05.8**	**+0.2**
	comp=Z,22nm,1.4s								
LVZ	**Lovozero**	**61.82**	**336**	*eP*		**P**	**10 20 08.8**	**-0.7**
LVZ				pmax	pmax				
	comp=Z,60nm,1.3s								
LVZ	**Lovozero**	**61.82**	**336**	*eP*		**P**	**10 20 08.8**	**-0.7**
	comp=Z,60nm,1.3s								
RES	**Resolute Bay**	**62.72**	**14**	*eP*		**P**	**10 20 15.3**	**0.0**
RES				pmax	pmax				
	comp=Z,5.0nm,1.2s								
RES	**Resolute Bay**	**62.72**	**14**	*eP*		**P**	**10 20 15.3**	**0.0**
	comp=Z,5.2nm,1.2s								
KEV	**Kevo**	**63.19**	**339**	*eP*		**P**	**10 20 18.4**	**-0.1**
KEV				pmax	pmax				
	comp=Z,45nm,1.4s								
KEV	**Kevo**	**63.19**	**339**	*eP*		**P**	**10 20 18.4**	**-0.1**
	comp=Z,45nm,1.4s								
GEYT	**Alibeck**	**63.27**	**299**	P		**P**	**10 20 19.1**	**-0.6**
	comp=Z,2.4nm,0.5s,baz=336,slow=3.3,SNR=3.7								
KLMR	**Klimovskoe**	**63.40**	**328**	P		P	10 20 16.6	-3.4
KLMR				pmax	pmax				
	comp=Z,4.0nm,0.9s								
ARA0	**ARCESS Array S**	**63.74**	**339**	*eP*		**P**	**10 20 21.8**	**-0.5**
ARCES	**ARCESS Array B**	**63.74**	**339**	P		**P**	**10 20 21.9**	**-0.3**
	comp=Z,1.5nm,0.6s,baz=58,slow=8.6,SNR=15								
ARCES	**ARCESS Array B**	**63.74**	**339**	P		**P**	**10 20 21.9**	**-0.3**
ARCES				pmax	pmax				
	comp=Z,1.0nm,0.7s								
ARE0	**ARCESS Array S**	**63.74**	**339**	*eP*		**P**	**10 20 21.9**	**-0.3**
	comp=Z,70nm,1.6s								
YKA	**Yellowknife Ar**	**64.09**	**30**	P		**P**	**10 20 24.7**	**+0.1**
	comp=Z,0.3nm,0.7s,baz=304,slow=6.9,SNR=10								
DAG	**Danmarks Havn**	**65.69**	**355**	*iP*		**P**	**10 20 34.1**	**-0.7**
	comp=Z,5.0nm,0.9s								
DAG	**Danmarks Havn**	**65.69**	**355**	*iP*		**P**	**10 20 34.1**	**-0.7**
DAG				pmax	pmax				
	comp=Z,4.0nm,0.9s								
FIA1	**FINESS Array S**	**68.49**	**332**	*eP*		**P**	**10 20 52.4**	**-0.4**
	comp=Z,7.0nm,0.8s								
FINES	**FINESS Array B**	**68.49**	**332**	P		**P**	**10 20 52.0**	**-0.8**
	comp=Z,5.0nm,0.7s,baz=55,slow=7.2,SNR=19								
FINES	**FINESS Array B**	**68.49**	**332**	*iP*		**P**	**10 20 52.2**	**-0.6**
FINES				pmax	pmax				
	comp=Z,5.0nm,0.7s								
VSR	**Storozhevoye**	**68.50**	**319**	*eP*		**P**	**10 20 50.9**	**-2.1**
VSR				pmax	pmax				
	comp=Z,3.0nm,0.6s								
STKA	**Stephens Creek**	**68.59**	**179**	P		**P**	**10 20 53.2**	**-0.5**
	comp=Z,2.2nm,0.7s,baz=341,slow=6.8,SNR=6.5								
STKA	**Stephens Creek**	**68.59**	**179**	*eP*		**P**	**10 20 53.5**	**-0.2**
STKA				pmax	pmax				
	comp=Z,1.0nm,0.9s								
STKA	**Stephens Creek**	**68.59**	**179**	*eP*		**P**	**10 20 53.5**	**-0.2**
	comp=Z,1.0nm,0.9s								
BBOO	**Buckleboo**	**69.65**	**184**	*eP*		**P**	**10 21 00.2**	**0.0**
	comp=Z,57nm,1.9s								
VSU	**Vasula**	**70.11**	**329**⇑	*eP*		**P**	**10 21 02.9**	**+0.1**
VSU				pmax	pmax				
	comp=Z,12nm,1.0s								
KBZ	**Khabaz**	**70.41**	**310**	P		**P**	**10 21 04.7**	**-0.2**
	comp=Z,1.9nm,0.8s,baz=21,slow=8.6,SNR=3.3								
KIV	**Kislovodsk**	**70.41**	**311**	*ceP*		**P**	**10 21 05.7**	**+0.6**
KIV				pmax	pmax				
	comp=Z,7.0nm,1.0s								
SUMG	**Summit**	**70.65**	**360**	*iP*		**P**	**10 21 07.5**	**+1.0**
SUMG	**Summit**	**70.65**	**360**	*iP*		**P**	**10 21 07.5**	**+1.0**
AKASG	**Malin Array Be**	**73.89**	**322**	P		**P**	**10 21 24.5**	**-1.2**
	comp=Z,1.3nm,0.5s,baz=47,slow=6.2,SNR=16								
AKASG				LR	LR		10 56 44.8		
	comp=Z,63nm,18.1s,baz=45,slow=38								
KIEV	**Kiev**	**73.90**	**322**⇑	*eP*		**P**	**10 21 24.2**	**-1.5**
KIEV				pmax	pmax				
	comp=Z,3.0nm,0.9s								
NB2	**NORSAR Subarra**	**73.91**	**337**	P		**P**	**10 21 25.0**	**-0.7**
	comp=Z,6.3nm,1.2s,baz=41,slow=6.2								
NOA	**NORSAR Array B**	**73.91**	**337**	P		**P**	**10 21 25.0**	**-0.7**
	comp=Z,2.5nm,0.8s,baz=40,slow=5.9,SNR=8.1								
FCC	**Fort Churchill**	**74.25**	**26**	*eP*		**P**	**10 21 27.8**	**+0.2**
FCC				pmax	pmax				
	comp=Z,20nm,1.8s								
FCC	**Fort Churchill**	**74.25**	**26**	*eP*		**P**	**10 21 27.8**	**+0.2**
	comp=Z,20nm,1.8s								
DLMT	**Dillon**	**74.75**	**44**	*eP*		**P**	**10 21 33.0**	**+2.0**
	comp=Z,2.9nm,0.6s								
NVAR	**Mina Array Bea**	**75.46**	**53**	P		**P**	**10 21 37.0**	**+1.6**
	comp=Z,1.5nm,0.7s,baz=304,slow=6.4,SNR=10								
DUG	**Dugway, Tooele**	**77.80**	**49**	*eP*		**P**	**10 21 48.5**	**0.0**
DUG				pmax	pmax				
	comp=Z,2.0nm,0.6s								
DUG	**Dugway, Tooele**	**77.80**	**49**	*eP*		**P**	**10 21 48.5**	**0.0**
	comp=Z,2.1nm,0.6s								
BW06	**Boulder Array**	**78.08**	**45**	*eP*		**P**	**10 21 51.0**	**+0.9**
PDAR	**Pinedale Array**	**78.08**	**45**	P		**P**	**10 21 50.6**	**+0.6**
	comp=Z,0.3nm,0.5s,baz=246,slow=3.0,SNR=4.7								
BRTR	**Keskin Array B**	**78.36**	**311**	P		**P**	**10 21 51.9**	**+0.4**
	comp=Z,0.9nm,0.7s,baz=80,slow=3.6,SNR=5.7								
BRTR	**Keskin Array B**	**78.36**	**311**	*iP*		**P**	**10 21 53.7**	**+2.1**
BRTR				pmax	pmax				
	comp=Z,1.0nm,0.7s								
BR231	**Keskin MP Arra**	**78.81**	**312**	*eP*		**P**	**10 21 53.0**	**-1.0**
SRU	**San Rafael Swe**	**79.85**	**48**	*eP*		**P**	**10 22 01.6**	**+1.8**
SRU				pmax	pmax				
	comp=Z,3.0nm,0.6s								
SRU	**San Rafael Swe**	**79.85**	**48**	*eP*		**P**	**10 22 01.6**	**+1.8**
	comp=Z,2.8nm,0.6s								
DPC	**Dobruska-Polom**	**80.10**	**328**	*eP*		**P**	**10 22 01.1**	**+0.4**
DPC				*e*PCP		**pP**	**10 22 05.1**	**+0.3**
DPC	**Dobruska-Polom**	**80.10**	**328**	*eP*		**P**	**10 22 01.1**	**+0.4**
CLL	**Collm**	**80.76**	**330**⇓	*iP*		**P**	**10 22 03.8**	**-0.4**
	comp=Z,5.0nm,1.2s								
CLL				*i*			10 22 07.6		
CLL	**Collm**	**80.76**	**330**⇓	*iP*		**P**	**10 22 03.8**	**-0.4**
CLL				pmax	pmax				
	comp=Z,5.0nm,1.2s								
PV10	**Paradox Valley**	**81.22**	**48**	*eP*		**P**	**10 22 09.6**	**+2.4**
KHC	**Kasperske Hory**	**82.19**	**328**	*eP*		**P**	**10 22 11.7**	**-0.2**
KHC				*e*PCP		**pP**	**10 22 15.7**	**-0.2**
KHC	**Kasperske Hory**	**82.19**	**328**	*eP*		**P**	**10 22 11.7**	**-0.2**
KHC	**Kasperske Hory**	**82.19**	**328**	*eP*		**P**	**10 22 11.9**	**0.0**
	comp=Z,0.8nm,0.8s								
GEC2	**GERESS Array S**	**82.35**	**328**	*eP*		**P**	**10 22 12.1**	**-0.7**
GEC2				pmax	pmax				
	comp=Z,14nm,2.0s								
GEC2	**GERESS Array S**	**82.35**	**328**	*eP*		**P**	**10 22 12.1**	**-0.7**
	comp=Z,14nm,2.0s								
GERES	**GERESS Array B**	**82.35**	**328**	P		**P**	**10 22 12.0**	**-0.8**
	comp=Z,0.6nm,0.4s,baz=34,slow=6.6,SNR=9.4								
GERES				pP		**pP**	**10 22 16.2**	**-0.7**
	comp=Z,0.6nm,0.5s,baz=90,slow=1.9,SNR=9.3								
GERES	**GERESS Array B**	**82.35**	**328**	P		**P**	**10 22 12.0**	**-0.8**
GERES				pmax	pmax				
	comp=Z,1.0nm,0.4s								
GEA0	**GERESS Array S**	**82.36**	**328**	*eP*		**P**	**10 22 12.3**	**-0.5**
BFO	**Black Forest**	**84.97**	**330**	*iP*		P	10 22 21.1	-5.0
TX31	**Lajitas Ar. Si**	**90.59**	**52**	*eP*		**P**	**10 22 54.8**	**+1.2**
TXAR	**Lajitas Array**	**90.59**	**52**	P		**P**	**10 22 54.5**	**+0.9**
	comp=Z,1.0nm,0.9s,baz=293,slow=4.0,SNR=6.9								
LPAZ	**La Paz**	**147.21**	**59**	PKPbc		**PKPbc**	**10 29 35.7**	**+0.2**
	comp=Z,1.1nm,0.7s,baz=346,slow=4.1,SNR=3.5								
LPAZ	**La Paz**	**147.21**	**59**	*e*PKPdf		**PKPdf**	**10 29 34.0**	**+0.8**
SIV	**San Ignacio**	**151.53**	**48**	PKPbc		**PKPbc**	**10 29 44.6**	**-1.0**
	comp=Z,2.4nm,0.8s,baz=279,slow=2.8,SNR=1.4								
SIV				pPKPbc		**pPKPbc**	**10 29 48.7**	**-1.1**
	comp=Z,2.4nm,0.8s,baz=247,slow=2.1,SNR=3.7								
LCO	**Las Campanas**	**152.62**	**82**	*e*PKPbc		**PKPbc**	**10 29 48.8**	**+0.7**

IDC 24 10:10:17.1±2.4, 18°.92S×178°.03W, h508km±25km, mb3.1/6, mb1 3.4/7, mb1mx3.1/35, mbtmp4.0/7, Error ellipse: s-maj=94.5km s-min=14.1km az=151.0, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AFI	**Afiamalu**	**7.80**	**51**	P	P	10 12 13.4	+1.6
	3.0nm,0.3s,baz=263,slow=16,SNR=4.8						
AFI				S	S	10 13 44.1	-1.7
	3.6nm,0.3s,baz=288,slow=20,SNR=4.7						
STKA	**Stephens Creek**	**38.47**	**242**	P	P	10 16 55.0	-0.3
	1.4nm,0.6s,baz=79,slow=9.3,SNR=5.0						
WRA	**Warramunga Arr**	**44.81**	**260**	P	P	10 17 45.4	-0.2
	3.8nm,0.3s,baz=96,slow=7.7,SNR=220						
ASAR	**Alice Springs**	**44.87**	**255**	P	P	10 17 46.0	-0.1
	7.6nm,0.7s,baz=88,slow=8.1,SNR=107						
NVAR	**Mina Array Bea**	**79.90**	**44**	P	P	10 21 32.7	-0.5
	0.2nm,0.5s,baz=231,slow=5.7,SNR=1.9						
TXAR	**Lajitas Array**	**86.23**	**57**	P	P	10 22 05.4	+0.4
	0.3nm,0.7s,baz=200,slow=7.4,SNR=4.1						
ILAR	**Eielson Array**	**86.79**	**13**	P	P	10 22 07.2	+0.6
	0.2nm,0.7s,baz=230,slow=5.0,SNR=4.7						

JMA 24 10:35:15.5, 37°.10N×140°.70E, h8km±1km, M2.8, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.08**	**89**	P	Pg	10 35 17.7	+0.1
ONAJ				S	Sg	10 35 19.1	0.0
JFK	**Kawauchi**	**0.30**	**28**	P	Pg	10 35 21.6	+0.1
JFK				S	Sg	10 35 25.8	+0.3
MAT	**Matsushiro**	**2.08**	**255**	P	Pn	10 35 50.4	-0.3
MAT				S	Sb	10 36 20.1	+0.7

*ISCJB **24** 10:39:21.7±0.4, 18°.84N±0°.05×145°.3E±0°.1, h214km, mb3.7/25, Error ellipse: s-maj=15.4km s-min=6.9km az=175.3*
*IDC **24** 10:39:25.7±2.9, 18°.83N×145°.35E, h240km±27km, mb3.5/25, mb1 3.6/26, mb1mx3.5/56, mbtmp4.1/26, Error ellipse: s-maj=16.7km s-min=11.0km az=99.0*
ISC 24 10:39:23.1±0.6, 18°.83N±0°.07×145°.4E±0°.1, h214km, n30, σ0°.99/31, mb3.8/25, Mariana Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GUMO	**Guam**	**5.23**	**186**	S	**S**	**10 41 41.6**	**-0.6**
	26nm,0.3s,baz=6.7,slow=18,SNR=5.6						
JCJ	**Chichijima**	**8.74**	**341**	P	**Pn**	**10 41 27.3**	**+1.4**
	baz=144,slow=19						
JCJ				S	**S**	**10 43 01.1**	**-3.4**
	5.7nm,0.3s,baz=252,slow=20,SNR=3.5						
JOW	**Kunigami**	**17.66**	**300**	P	**Pn**	**10 43 18.3**	**+1.8**
	baz=128,slow=12						
MJAR	**Matsushiro Arr**	**18.75**	**342**	P	**P**	**10 43 26.2**	**+0.1**
	0.2nm,0.3s,baz=168,slow=10.0,SNR=3.1						
ASAJ	**Asahikawa**	**25.32**	**355**	P	**P**	**10 44 30.8**	**+0.6**
	5.8nm,0.6s,baz=145,slow=7.1,SNR=4.5						
KLR	**Kul'dur**	**32.26**	**343**	P	**P**	**10 45 31.9**	**+0.4**
	0.8nm,0.3s,baz=159,slow=9.9,SNR=4.9						
PETK	**Petropavlovsk-**	**35.53**	**13**	P	**P**	**10 46 00.5**	**+1.0**
	2.0nm,0.8s,baz=167,slow=6.7,SNR=5.8						
WRA	**Warramunga Arr**	**40.03**	**196**	P	**P**	**10 46 37.8**	**+0.3**
	1.1nm,0.4s,baz=6.0,slow=8.5,SNR=49						
SONM	**Songino Array**	**42.86**	**321**	P	**P**	**10 47 00.7**	**+0.3**
	0.5nm,0.5s,baz=125,slow=7.2,SNR=3.2						
ASAR	**Alice Springs**	**43.70**	**195**	P	**P**	**10 47 06.9**	**-0.3**
	0.4nm,0.5s,baz=12,slow=6.6,SNR=14						
SEY	**Seymchan**	**44.33**	**5**	P	**P**	**10 47 13.1**	**+1.4**
	1.3nm,0.7s,baz=191,slow=7.6,SNR=6.7						
ZALV	**Zalesovo Beam**	**57.74**	**322**	P	**P**	**10 48 51.1**	**-0.4**
	0.6nm,0.4s,baz=104,slow=6.1,SNR=3.1						
MKAR	**Makanchi Array**	**58.16**	**314**	P	**P**	**10 48 54.5**	**-0.2**
	0.7nm,0.5s,baz=89,slow=9.3,SNR=8.6						
KURBB	**Kurchatov Arra**	**61.03**	**318**	P	**P**	**10 49 13.5**	**-0.6**
	0.9nm,0.4s,baz=97,slow=7.2,SNR=8.8						
ILAR	**Eielson Array**	**63.66**	**26**	P	**P**	**10 49 29.9**	**-1.3**
	1.6nm,0.8s,baz=254,slow=4.9,SNR=17						
BVAR	**Borovoye Array**	**66.19**	**320**	P	**P**	**10 49 47.6**	**-0.2**
	1.9nm,0.5s,baz=95,slow=8.1,SNR=9.5						
INK	**Inuvik**	**69.37**	**23**	P	**P**	**10 50 07.0**	**-0.3**
	1.0nm,0.4s,baz=268,slow=4.3,SNR=9.6						
DLBC	**Dease Lake**	**71.34**	**34**	P	**P**	**10 50 19.4**	**-0.1**
	1.4nm,0.6s,baz=269,slow=5.5,SNR=7.9						
AKTO	**Aktyubinsk**	**74.08**	**318**	P	**P**	**10 50 35.2**	**-0.5**
	0.6nm,0.4s,baz=38,slow=5.3,SNR=5.0						
YKA	**Yellowknife Ar**	**78.01**	**28**	P	**P**	**10 50 57.1**	**-0.5**
	1.6nm,0.5s,baz=289,slow=5.5,SNR=39						
SPITS	**Spitsbergen Ar**	**78.99**	**351**	P	**P**	**10 51 02.9**	**+0.1**
	2.7nm,0.7s,baz=77,slow=6.4,SNR=5.2						
YBH	**Yreka Blue Hor**	**79.09**	**50**	P	**P**	**10 51 04.8**	**+0.7**
	1.3nm,0.8s,baz=311,slow=3.8,SNR=5.8						
RES	**Resolute Bay**	**79.37**	**14**	P	**P**	**10 51 04.7**	**-0.1**
	0.9nm,0.6s,baz=274,slow=9.3,SNR=8.9						
NEW	**Newport**	**81.01**	**42**	P	**P**	**10 51 14.2**	**+0.1**
	0.7nm,0.5s,baz=296,slow=9.8,SNR=3.3						
ARCES	**ARCESS Array B**	**82.28**	**342**	P	**P**	**10 51 20.0**	**-0.3**
	2.5nm,0.8s,baz=85,slow=7.8,SNR=11						
NVAR	**Mina Array Bea**	**83.29**	**52**	P	**P**	**10 51 26.9**	**+0.5**
	2.3nm,0.5s,baz=266,slow=7.1,SNR=12						
FINES	**FINESS Array B**	**86.65**	**335**	P	**P**	**10 51 41.1**	**-1.2**
	1.0nm,0.4s,baz=60,slow=5.0,SNR=29						
PDAR	**Pinedale Array**	**87.94**	**45**	P	**P**	**10 51 48.5**	**-0.7**
	0.2nm,0.4s,baz=190,slow=0.9,SNR=4.2						
HFS	**Hagfors**	**92.16**	**338**	P	**P**	**10 52 07.2**	**-0.9**
	1.3nm,0.8s,baz=60,slow=3.8,SNR=5.3						
LPAZ	**La Paz**	**147.97**	**91**	PKPbc	**PKPbc**	**10 58 44.5**	**-0.3**
	0.6nm,0.5s,baz=225,slow=2.9,SNR=3.6						

*NIED **24** 10:45:00, 38°.70N×142°.00E, h53km, Mw3.8 Best double couple: M0 6.41000×10^14 NP1:φs178.00000°, δ15.00000°, λ68.00000°. NP2:φs20.00000°, δ76.00000°, λ96.00000°.*
*ISCJB **24** 10:45:12.2±0.6, 38°.64N±0°.05×142°.19E±0°.06, h41km, mb3.6/16, Error ellipse: s-maj=8.1km s-min=6.0km az=143.6*
*JMA **24** 10:45:14.1±0.1, 38°.66N×142°.04E, h44km±1km, M3.8*
JMA Felt I J1.
*IDC **24** 10:45:14.1±3.7, 38°.61N×141°.98E, h40km±33km, mb3.4/16, mb1 3.6/18, mb1mx3.4/49, mbtmp3.7/18, ML2.7/2, MS2.9/1, Ms1 2.9/1, ms1mx2.2/33, Error ellipse: s-maj=23.6km s-min=17.8km az=96.0*
ISC 24 10:45:14.2±0.8, 38°.65N±0°.06×142°.05E±0°.08, h41km, n34, σ0°.76/30, mb3.7/16, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**0.52**	**326**	P	**Pn**	**10 45 25.3**	**0.0**
OFUJ				S	**Sn**	**10 45 33.0**	**-0.2**
JIO	**Ouri**	**0.58**	**251**	P	**Pn**	**10 45 25.9**	**-0.1**
JIO				S	**Sn**	**10 45 34.1**	**-0.3**
JMK	**Ichinoseki**	**0.71**	**296**	P	**Pn**	**10 45 27.9**	**+0.1**
JMK				S	**Sn**	**10 45 37.8**	**+0.1**
JOM	**Ohasama**	**1.01**	**325**	P	**Pn**	**10 45 32.1**	**+0.1**
JOU	**Okura**	**1.12**	**256**	P	**Pn**	**10 45 33.8**	**+0.4**
JOU				*e*S	**Sn**	**10 45 48.3**	**+0.7**
JMM	**Marumori**	**1.26**	**232**	P	**Pn**	**10 45 35.2**	**-0.1**
MJAR	**Matsushiro Arr**	**3.70**	**237**	P	**Pn**	**10 46 11.2**	**+2.3**
	4.4nm,0.3s,baz=39,slow=12,SNR=31						
MAT	**Matsushiro**	**3.70**	**237**	P	**Pn**	**10 46 11.0**	**+2.1**
MAT				S	Sn	10 46 56.9	+5.6
ASAJ	**Asahikawa**	**5.48**	**4**	P	**Pn**	**10 46 34.0**	**+0.7**
	0.1nm,0.3s,baz=203,slow=13,SNR=2.0						
USRK	**Ussuriysk Ar.**	**9.37**	**310**	P	Pn	10 47 30.4	+3.8
	0.3nm,0.5s,baz=118,slow=14,SNR=16						
KSRS	**Korea Array**	**11.20**	**268**	P	**Pn**	**10 47 50.6**	**-1.1**
	0.1nm,0.3s,baz=82,slow=14,SNR=4.9						
KLR	**Kul'dur**	**12.91**	**328**	LR	LR	10 53 09.1	
	comp=Z,51nm,19.2s,baz=156,slow=37						
SEY	**Seymchan**	**25.11**	**11**	P	**P**	**10 50 35.2**	**+0.3**
	1.8nm,0.7s,baz=241,slow=3.7,SNR=8.5						
SONM	**Songino Array**	**27.34**	**301**	P	**P**	**10 50 54.9**	**-0.4**
	0.3nm,0.5s,baz=111,slow=6.3,SNR=2.7						
H11N2	**WAKE ISLAND Hy**	**28.59**	**124**	T	T	11 21 28.9	
	baz=317,slow=76,SNR=104						
H11N1	**WAKE ISLAND Hy**	**28.60**	**124**	T	T	11 21 29.6	
	baz=317,slow=76,SNR=118						
H11N3	**WAKE ISLAND Hy**	**28.61**	**124**	T	T	11 21 30.3	
	baz=317,slow=76,SNR=97						
H11S1	**WAKE ISLAND Hy**	**29.36**	**126**	T	T	11 22 22.4	
	baz=318,slow=76,SNR=47						
H11S3	**WAKE ISLAND Hy**	**29.36**	**126**	T	T	11 22 23.3	
	baz=318,slow=76,SNR=70						
H11S2	**WAKE ISLAND Hy**	**29.38**	**126**	T	T	11 22 23.7	
	baz=318,slow=76,SNR=52						
ZALV	**Zalesovo Beam**	**41.22**	**311**	P	**P**	**10 52 54.2**	**-0.6**
	1.3nm,0.7s,baz=82,slow=11,SNR=5.5						
MKAR	**Makanchi Array**	**43.70**	**301**	P	**P**	**10 53 15.0**	**-0.1**
	0.7nm,0.5s,baz=84,slow=10,SNR=5.7						
KURBB	**Kurchatov Arra**	**45.42**	**307**	P	**P**	**10 53 28.3**	**-0.4**
	3.5nm,0.6s,baz=81,slow=8.1,SNR=26						
ILAR	**Eielson Array**	**47.87**	**33**	P	**P**	**10 53 47.6**	**-0.1**
	0.3nm,0.7s,baz=268,slow=6.1,SNR=3.3						
BVAR	**Borovoye Array**	**49.87**	**311**	P	**P**	**10 54 02.9**	**-0.3**
	0.7nm,0.5s,baz=57,slow=8.9,SNR=3.9						
WRA	**Warramunga Arr**	**58.73**	**188**	P	**P**	**10 55 07.0**	**-0.8**
	0.2nm,0.4s,baz=5.8,slow=7.0,SNR=6.5						
YKA	**Yellowknife Ar**	**62.17**	**31**	P	**P**	**10 55 31.4**	**+0.5**
	0.1nm,0.5s,baz=301,slow=6.2,SNR=3.2						
ASAR	**Alice Springs**	**62.45**	**188**	P	**P**	**10 55 33.2**	**0.0**
	0.2nm,0.8s,baz=10,slow=5.7,SNR=2.6						
FINES	**FINESS Array B**	**67.62**	**332**	P	**P**	**10 56 05.8**	**-0.5**
	0.7nm,0.7s,baz=50,slow=13,SNR=4.5						
KBZ	**Khabaz**	**70.23**	**310**	P	**P**	**10 56 23.7**	**+0.8**
	0.5nm,0.5s,baz=60,slow=3.3,SNR=3.6						
HFS	**Hagfors**	**72.83**	**336**	P	**P**	**10 56 38.4**	**+0.2**
	0.6nm,0.6s,baz=88,slow=3.5,SNR=3.2						
NOA	**NORSAR Array B**	**72.89**	**337**	P	**P**	**10 56 38.6**	**-0.1**
	0.9nm,0.9s,baz=39,slow=6.0,SNR=2.9						
AKASG	**Malin Array Be**	**73.33**	**322**	P	**P**	**10 56 40.7**	**-0.6**
	0.4nm,0.5s,baz=69,slow=3.1,SNR=3.4						
GERES	**GERESS Array B**	**81.60**	**328**	P	**P**	**10 57 27.3**	**-0.5**
	0.2nm,0.6s,baz=52,slow=6.4,SNR=3.8						

*NIED **24** 10:49:00, 38°.50N×141°.80E, h62km, Mw4.0 Best double couple: M0 9.60000×10^14 NP1:φs308.00000°, δ15.00000°, λ43.00000°. NP2:φs175.00000°, δ80.00000°, λ101.00000°.*
*ISCJB **24** 10:49:36.3±0.6, 38°.48N±0°.04×141°.84E±0°.07, h62km±4km, mb3.6/16, Error ellipse: s-maj=10.0km s-min=5.2km az=21.7*
*JMA **24** 10:49:37.1, 38°.50N×141°.85E, h56km±1km, M4.1*
JMA Felt II J1.
*IDC **24** 10:49:39.0±2.2, 38°.44N×141°.77E, h72km±21km, mb3.4/16, mb1 3.6/21, mb1mx3.5/49, mbtmp3.7/21, MS2.8/6, Ms1 2.8/6, ms1mx2.6/22, Error ellipse: s-maj=17.6km s-min=15.2km az=92.0*
ISC 24 10:49:37.1±1.1, 38°.47N±0°.05×141°.89E±0°.08, h53km±9km, n40, σ1°.04/45, mb3.6/16, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**0.42**	**268**	P	**Pn**	**10 49 47.6**	**0.0**
JIO				S	**Sn**	**10 49 55.0**	**-0.2**
OFUJ	**Ofunato**	**0.63**	**344**	P	**Pn**	**10 49 49.8**	**-0.3**
OFUJ				S	**Sn**	**10 49 58.9**	**-0.6**
JMK	**Ichinoseki**	**0.71**	**313**	P	**Pn**	**10 49 50.9**	**-0.1**
JMK				S	**Sn**	**10 50 00.8**	**-0.4**
JOU	**Okura**	**0.97**	**264**	P	**Pn**	**10 49 54.3**	**-0.2**
JOU				S	**Sn**	**10 50 06.9**	**-0.4**
JMM	**Marumori**	**1.05**	**235**	P	**Pn**	**10 49 55.2**	**-0.4**
JMM				S	**Sn**	**10 50 08.5**	**-0.8**
JOM	**Ohasama**	**1.10**	**335**	P	**Pn**	**10 49 56.0**	**-0.2**
JOM				S	**Sn**	**10 50 10.4**	**0.0**
JYK	**Kaneyama**	**1.28**	**291**	P	**Pn**	**10 49 58.5**	**-0.1**
JYK				S	**Sn**	**10 50 14.5**	**-0.2**
JRG	**Rokugo**	**1.34**	**314**	P	**Pn**	**10 49 59.4**	**-0.1**
JFK	**Kawauchi**	**1.36**	**216**	P	**Pn**	**10 49 59.8**	**0.0**
JFK				S	**Sn**	**10 50 16.6**	**-0.2**
JYS	**Shirataka**	**1.46**	**261**	P	**Pn**	**10 50 01.0**	**-0.2**
JYS				S	**Sn**	**10 50 19.4**	**-0.4**
MAT	**Matsushiro**	**3.50**	**238**	P	**Pn**	**10 50 31.6**	**+2.5**
MAT				S	Sn	10 51 14.9	+5.6
MJAR	**Matsushiro Arr**	**3.50**	**238**	P	**Pn**	**10 50 31.1**	**+2.1**
	9.4nm,0.3s,baz=39,slow=12,SNR=80						
MJAR				S	**Sn**	**10 51 07.6**	**-1.7**
	2.5nm,0.3s,baz=52,slow=13,SNR=5.3						
MJAR				LR	LR	10 52 07.6	
	comp=Z,136nm,19.4s,baz=55,slow=44						
JHJ	**Hachijo jima 2**	**5.61**	**198**	P	**Pn**	**10 50 58.0**	**+0.1**
	6.0nm,0.3s,baz=107,slow=19,SNR=5.2						
JHJ				S	**Sn**	**10 51 58.0**	**-3.0**
	12nm,0.3s,baz=19,slow=17,SNR=4.5						
ASAJ	**Asahikawa**	**5.66**	**5**

JFT	**Otama**	**0.68 338**	⇑P	**Pg**	**11 03 51.4**	**+0.2**
JFT			S	**Sg**	**11 04 00.7**	**+0.6**
JYT	**Yasato**	**0.76 210**	⇑P	**Pg**	**11 03 52.3**	**-0.3**
JYT			S	**Sb**	**11 04 03.2**	**-0.6**
MJAR	**Matsushiro Arr**	**2.00 261**	P	**Pn**	**11 04 12.8**	**+0.8**
	37nm,0.3s,baz=76,slow=17,SNR=246					
MJAR			S	**Sb**	**11 04 39.9**	**+0.4**
	54nm,0.3s,baz=98,slow=26,SNR=8.4					
MJAR			LR	LR	11 05 05.7	
	comp=Z,66nm,19.0s,baz=95,slow=43					
MAT	**Matsushiro**	**2.00 261**	P	**Pb**	**11 04 13.4**	**-1.2**
MAT			S	**Sb**	**11 04 39.5**	**-0.1**
JHJ	**Hachijo jima 2**	**3.83 191**	P	**Pn**	**11 04 38.6**	**+1.4**
	7.1nm,0.3s,baz=77,slow=14,SNR=3.7					
JHJ			S	**Sn**	**11 05 22.9**	**+0.7**
	16nm,0.3s,baz=65,slow=19,SNR=3.3					
ASAJ	**Asahikawa**	**7.37 11**	P	**Pn**	**11 05 26.1**	**+0.3**
	0.4nm,0.3s,baz=216,slow=14,SNR=4.5					
JNU	**Nakatsue**	**8.86 248**	P	Pn	11 05 55.5	+9.2
	0.2nm,0.3s,baz=95,slow=12,SNR=3.8					
USRK	**Ussuriysk Ar.**	**9.84 321**	P	Pn	11 06 03.7	+4.0
	0.1nm,0.3s,baz=121,slow=14,SNR=4.8					
KSRS	**Korea Array**	**10.18 277**	P	Pn	11 06 10.7	+6.3
	baz=92,slow=14,SNR=3.4					
MA2	**Magadan**	**23.63 13**	P	**P**	**11 08 49.8**	**+0.5**
	1.7nm,0.6s,baz=180,slow=10,SNR=3.2					
SEY	**Seymchan**	**27.05 12**	P	**P**	**11 09 21.2**	**+0.8**
	0.7nm,0.5s,baz=187,slow=16,SNR=3.3					
H11N2	**WAKE ISLAND Hy 28.60 120**		T	T	11 39 19.9	
	baz=313,slow=75,SNR=47					
H11N1	**WAKE ISLAND Hy 28.61 120**		T	T	11 39 21.8	
	baz=313,slow=75,SNR=47					
H11N3	**WAKE ISLAND Hy 28.61 120**		T	T	11 39 22.7	
	baz=313,slow=75,SNR=37					
H11S1	**WAKE ISLAND Hy 29.29 122**		T	T	11 40 13.7	
	baz=314,slow=76,SNR=116					
H11S3	**WAKE ISLAND Hy 29.29 122**		T	T	11 40 12.1	
	baz=314,slow=76,SNR=71					
H11S2	**WAKE ISLAND Hy 29.31 122**		T	T	11 40 14.0	
	baz=314,slow=76,SNR=70					
ZALV	**Zalesovo Beam**	**41.57 313**	P	**P**	**11 11 25.7**	**-0.2**
	0.4nm,0.3s,baz=74,slow=11,SNR=4.3					
MKAR	**Makanchi Array**	**43.68 302**	P	**P**	**11 11 43.5**	**+0.3**
	0.2nm,0.2s,baz=82,slow=10,SNR=3.2					
WRA	**Warramunga Arr**	**56.84 187**	P	**P**	**11 13 21.8**	**-1.2**
	1.1nm,0.7s,baz=4.3,slow=7.3,SNR=17					
ASAR	**Alice Springs**	**60.56 187**	P	**P**	**11 13 48.4**	**-0.5**
	0.3nm,0.6s,baz=9.8,slow=7.1,SNR=5.9					
YKA	**Yellowknife Ar**	**64.24 30**	P	**P**	**11 14 12.7**	**-0.4**
	0.1nm,0.6s,baz=303,slow=6.7,SNR=4.5					
FINES	**FINESS Array B**	**68.66 332**	P	**P**	**11 14 40.8**	**-0.6**
	1.3nm,0.8s,baz=56,slow=8.5,SNR=5.5					
NOA	**NORSAR Array B**	**74.09 337**	P	**P**	**11 15 13.9**	**-0.4**
	0.7nm,0.9s,baz=40,slow=5.6,SNR=2.5					
NVAR	**Mina Array Bea**	**75.56 53**	P	**P**	**11 15 24.4**	**+1.0**
	0.4nm,0.8s,baz=297,slow=7.9,SNR=3.0					
BRTR	**Keskin Array B**	**78.49 311**	P	**P**	**11 15 40.3**	**+0.5**
	0.3nm,0.4s,baz=64,slow=3.4,SNR=2.7					
GERES	**GERESS Array B**	**82.52 328**	P	**P**	**11 16 00.5**	**-0.7**
	0.2nm,0.4s,baz=38,slow=6.8,SNR=6.0					
TXAR	**Lajitas Array**	**90.69 52**	P	**P**	**11 16 41.1**	**-0.5**
	0.3nm,0.9s,baz=318,slow=1.7,SNR=3.4					

IDC 24 11:07:09.5±2.2, 13°99N×93°01E, h0km, mb3.2/3, mb1 3.4/4, mb1mx3.1/35, mbtmp3.1/4, ML3.3/1, MS2.5/1, Ms1 2.7/1, ms1mx2.3/25, Error ellipse: s-maj=62.9km s-min=30.5km az=67.0, Andaman Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time	Res
								h m s	ISC
CMAR	**Chiang Mai Arr**	**7.23**	**51**	Pn		Pn	Pn	11 08 56.0	-0.5
	0.1nm,0.3s,baz=240,slow=20,SNR=2.6								
CMAR				Sn		Sn	Sn	11 10 13.6	-5.9
	0.2nm,0.3s,baz=238,slow=27,SNR=4.1								
CMAR				LR		LR	LR	11 12 27.7	
	comp=Z,37nm,18.5s,baz=192,slow=44								
MKAR	**Makanchi Array**	**33.92**	**347**	P		P	P	11 13 54.4	+0.1
	0.2nm,0.3s,baz=171,slow=8.4,SNR=3.4								
WRA	**Warramunga Arr**	**52.82**	**129**	P		P	P	11 16 26.7	-0.4
	0.2nm,0.8s,baz=304,slow=9.5,SNR=2.8								
ASAR	**Alice Springs**	**54.77**	**133**	P		P	P	11 16 41.6	+0.2
	0.1nm,0.5s,baz=309,slow=6.9,SNR=4.2								

*NIED **24** 11:07:00, 35°70N×141°00E, h14km, Mw3.8 Best double couple: M₀4.82000×10¹⁴ NP1:φ₀222.00000°, δ83.00000°, λ4.00000°. NP2:φ₀131.00000°, δ86.00000°, λ173.00000°.*
*ISCJB **24** 11:07:32.4±1.0, 35°74N±0°04×141°13E±0°07, h16km±7km, mb3.2/5, MS3.3/1, Error ellipse: s-maj=9.3km s-min=6.1km az=171.3*
*IDC **24** 11:07:32.5±1.2, 35°63N×141°05E, h0km, mb3.3/5, mb1 3.5/8, mb1mx3.4/36, mbtmp3.4/8, ML3.4/3, MS3.3/1, Ms1 3.3/1, ms1mx2.4/24, Error ellipse: s-maj=28.2km s-min=18.6km az=84.0*
*JMA **24** 11:07:33.9±0.2, 35°70N×141°02E, h21km±1km, M3.6*
JMA Felt I J1

ISC 24 11:07:34.6±1.0, 35°72N±0°04×140°98E±0°06, h16km±6km, n22, σ1°35/21, mb3.3/5, 2C, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time	Res
								h m s	ISC
CHOJ	**Chosi**	**0.10**	**261**	⇑P		**Pg**	**11 07 38.1**		**+0.1**
CHOJ				S		**Sg**	**11 07 41.0**		**+0.8**
JCN	**Nagara**	**0.70**	**245**	P		**Pb**	**11 07 48.5**		**+0.1**
JYT	**Yasato**	**0.81**	**309**	P		**Pb**	**11 07 49.2**		**-1.2**
JYT				S		**Sb**	**11 08 00.1**		**-1.1**
JHO	**Hitachi**	**0.95**	**340**	P		**Pb**	**11 07 51.1**		**-1.6**
BSO3	**Boso 3**	**0.99**	**203**	⇑P		**Pb**	**11 07 51.7**		**-1.5**
BSO1	**Boso 1**	**1.06**	**180**	P		**Pb**	**11 07 51.7**		**-2.6**
MJAR	**Matsushiro Arr**	**2.39**	**291**	Pn		**Pn**	**11 08 12.4**		**-0.7**
	2.8nm,0.3s,baz=104,slow=14,SNR=8.4								
MJAR				Sn		**Sb**	**11 08 44.7**		**-1.8**
	4.0nm,0.3s,baz=106,slow=17,SNR=8.3								
MAT	**Matsushiro**	**2.39**	**291**	P		**Pn**	**11 08 12.8**		**-0.3**
MAT				S		**Sn**	**11 08 41.7**		**-0.4**
JHJ	**Hachijo jima 2**	**2.77**	**201**	Pn		**Pn**	**11 08 19.2**		**+0.9**
	11nm,0.3s,baz=72,slow=20,SNR=4.2								
JHJ				Sn		**Sn**	**11 08 52.1**		**+0.6**
	13nm,0.3s,baz=73,slow=19,SNR=2.9								
ASAJ	**Asahikawa**	**8.48**	**8**	Pn		**Pn**	**11 09 35.9**		**-0.8**
	0.9nm,0.3s,baz=280,slow=9.4,SNR=11								
ASAJ				Sn		**Sn**	**11 11 12.3**		**+0.2**
	0.3nm,0.3s,baz=0.0,slow=20,SNR=2.4								
H11N2	**WAKE ISLAND Hy 27.81 118**			T		T	11 42 18.7		
	baz=311,slow=76,SNR=244								
H11N1	**WAKE ISLAND Hy 27.82 118**			T		T	11 42 16.5		
	baz=311,slow=76,SNR=250								
H11N3	**WAKE ISLAND Hy 27.83 118**			T		T	11 42 13.3		
	baz=311,slow=76,SNR=243								
H11S3	**WAKE ISLAND Hy 28.47 120**			T		T	11 43 05.3		
	baz=312,slow=76,SNR=459								
H11S1	**WAKE ISLAND Hy 28.47 120**			T		T	11 43 05.4		
	baz=312,slow=76,SNR=408								
H11S2	**WAKE ISLAND Hy 28.49 120**			T		T	11 43 05.5		
	baz=312,slow=76,SNR=315								
ZALV	**Zalesovo Beam**	**42.55**	**313**	P		**P**	**11 15 31.0**		**+1.6**
	0.3nm,0.4s,baz=106,slow=7.4,SNR=2.4								
MKAR	**Makanchi Array**	**44.53**	**303**	P		**P**	**11 15 47.2**		**+1.7**
	0.5nm,0.5s,baz=90,slow=9.7,SNR=6.5								
WRA	**Warramunga Arr**	**55.71**	**188**	P		**P**	**11 17 09.2**		**-1.2**
	0.2nm,0.5s,baz=5.4,slow=7.6,SNR=5.1								
ARU	**Arti**	**57.12**	**319**	LR		LR	11 42 07.2		
	comp=Z,26nm,19.7s,baz=164,slow=36								
ASAR	**Alice Springs**	**59.44**	**188**	P		**P**	**11 17 35.8**		**-0.8**
	0.1nm,0.8s,baz=14,slow=7.9,SNR=3.0								
YKA	**Yellowknife Ar**	**65.12**	**30**	P		**P**	**11 18 15.9**		**+1.7**
	0.1nm,0.7s,baz=305,slow=7.5,SNR=2.8								

MEX 24 11:12:36.0±0.5, 16°10N×95°83W, h28km±13km, MD3.6, Oaxaca

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time	Res
								h m s	ISC
HUIG	**Huatulco**	**0.43**	**219**	*e*P		Pb	Pb	11 12 43.7	-1.5
HUIG				*e*S		Sb	Sb	11 12 49.6	-1.8
VHO	**Vista Hermosa**	**1.30**	**318**	*i* P		Pn	Pn	11 12 56.4	-2.2
VHO				*e*S		Sn	Sn	11 13 11.6	-3.5
PNIG	**Pinotepa**	**2.23**	**278**	*i* P		Pn	Pn	11 13 09.7	-1.4
PNIG				*e*S		Sn	Sn	11 13 37.3	-0.5

*IDC **24** 11:25:36.9±1.2, 35°77N×142°92E, h0km, mb3.3/4, mb1 3.6/7, mb1mx3.3/55, mbtmp3.5/7, ML3.4/3, Error ellipse: s-maj=29.5km s-min=22.7km az=91.0*
*ISCJB **24** 11:25:39.8±0.8, 35°86N±0°06×142°87E±0°06, h35km, mb3.3/4, Error ellipse: s-maj=8.0km s-min=7.3km az=7.4*
*JMA **24** 11:25:40.8±0.3, 35°91N×142°67E, h20km, M3.4*

ISC 24 11:25:42.1±1.2, 35°80N±0°06×142°79E±0°09, h35km, n20, σ1°47/19, mb3.4/4, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time	Res
								h m s	ISC
CHOJ	**Chosi**	**1.58**	**267**	P		**Pn**	**11 26 07.0**		**-0.5**
BSO2	**Boso 2**	**1.97**	**238**	*e*S		**Sn**	**11 26 38.5**		**+2.5**
JHO	**Hitachi**	**1.97**	**295**	S		**Sn**	**11 26 35.4**		**-1.1**
BSO3	**Boso 3**	**2.12**	**243**	*e*S		**Sn**	**11 26 41.5**		**+1.8**
JFT	**Otama**	**2.61**	**312**	P		**Pn**	**11 26 22.2**		**+0.4**
JFT				S		**Sn**	**11 26 52.0**		**-0.4**
JAG	**Ashikaga**	**2.77**	**284**	P		**Pn**	**11 26 23.3**		**-0.7**
JAG				*e*S		**Sn**	**11 26 54.8**		**-1.5**
JHJ	**Hachijo jima 2**	**3.65**	**224**	Pn		**Pn**	**11 26 34.0**		**-2.1**
	5.5nm,0.3s,baz=17,slow=20,SNR=3.0								
JHJ				Sn		**Sn**	**11 27 15.3**		**-2.6**
	17nm,0.3s,baz=78,slow=20,SNR=4.9								
MJAR	**Matsushiro Arr**	**3.78**	**283**	Pn		**Pn**	**11 26 38.6**		**+0.7**
	1.9nm,0.3s,baz=107,slow=8.7,SNR=15								
MJAR				Sn		**Sn**	**11 27 23.3**		**+2.1**
	0.7nm,0.3s,baz=104,slow=10,SNR=4.8								
MAT	**Matsushiro**	**3.78**	**283**	P		**Pn**	**11 26 38.8**		**+0.9**
MAT				S		**Sn**	**11 27 20.2**		**-1.0**
ASAJ	**Asahikawa**	**8.31**	**359**	Pn		**Pn**	**11 27 38.7**		**-1.2**
	0.7nm,0.3s,baz=245,slow=9.4,SNR=6.8								
H11N2	**WAKE ISLAND Hy 26.56 121**			T		T	11 58 60.0		
	baz=312,slow=74,SNR=4.2								
H11N1	**WAKE ISLAND Hy 26.57 121**			T		T	11 59 00.4		
	baz=312,slow=74,SNR=3.7								
H11N3	**WAKE ISLAND Hy 26.58 121**			T		T	11 59 28.0		
	baz=312								
H11S1	**WAKE ISLAND Hy 27.26 123**			T		T	11 59 49.3		
	baz=314,slow=76,SNR=4.7								
H11S3	**WAKE ISLAND Hy 27.26 123**			T		T	11 59 54.5		
	baz=314,slow=76,SNR=3.4								
H11S2	**WAKE ISLAND Hy 27.27 123**			T		T	11 59 58.2		
	baz=314,slow=76,SNR=2.8								
KURBB	**Kurchatov Arra**	**47.64**	**309**	P		**P**	**11 34 15.3**		**+0.7**
	0.3nm,0.6s,baz=76,slow=8.7,SNR=2.6								
WRA	**Warramunga Arr**	**56.02**	**190**	P		**P**	**11 35 17.2**		**-0.1**
	0.2nm,0.5s,baz=6.9,slow=7.3,SNR=6.4								
ASAR	**Alice Springs**	**59.74**	**189**	P		**P**	**11 35 43.7**		**+0.3**
	0.2nm,0.8s,baz=6.8,slow=8.6,SNR=3.1								
YKA	**Yellowknife Ar**	**64.31**	**30**	P		**P**	**11 36 13.6**		**-0.1**
	0.2nm,0.9s,baz=279,slow=6.0,SNR=3.4								

*DDA **24** 11:30:56.8, 36°94N×27°59E, h7km, Md2.6*
*ISK **24** 11:30:56.7, 36°98N×27°58E, h9km, MD2.6*
*ISCJB **24** 11:30:57.1±0.6, 36°96N±0°03×27°61E±0°04, h6km±8km, Error ellipse: s-maj=5.9km s-min=4.9km az=148.2*
*CSEM **24** 11:30:57.3±0.2, 36°96N×27°59E, h8km, MD2.6, Error ellipse: s-maj=3.9km s-min=3.5km az=145.0*

ISC 24 11:30:57.0±0.9, 36°98N±0°03×27°58E±0°03, h14km±6km, n23, σ0°41/34, Dodecanese Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time	Res
								h m s	ISC
BDRM	**Kayabasi**	**0.14**	**309**	*i* P		**Pg**	**11 31 00.3**		**-0.4**
BDRM				*i* S		**Sg**	**11 31 03.6**		**+0.4**
BDRM	**Kayabasi**	**0.14**	**309**	P		**Pg**	**11 31 00.3**		**-0.4**
BDRM				S		**Sg**	**11 31 03.6**		**+0.4**
BODT	**Bodrum**	**0.23**	**291**	*e*PG		**Pg**	**11 31 01.8**		**-0.3**
BODT				*e*SG		**Sg**	**11 31 05.9**		**+0.4**
BODT	**Bodrum**	**0.23**	**291**	*e*Pg		**Pg**	**11 31 01.8**		**-0.3**
BODT				*e*Sg		**Sg**	**11 31 05.9**		**+0.4**
NIS1	**Nisyros Isl.**	**0.49**	**221**	*e*PG		**Pg**	**11 31 06.8**		**0.0**
NIS1				*e*SG		**Sb**	**11 31 14.3**		**-0.2**
NIS1	**Nisyros Isl.**	**0.49**	**221**	*e*Pg		**Pg**	**11 31 06.8**		**0.0**
NIS1				*e*Sg		**Sb**	**11 31 14.3**		**-0.2**
YER	**Yerkesik**	**0.58**	**74**	*e*PG		**Pg**	**11 31 08.5**		**0.0**
YER				*e*SG		**Sb**	**11 31 17.0**		**-0.2**
YER	**Yerkesik**	**0.58**	**74**	*e*Pg		**Pg**	**11 31 08.5**		**0.0**
YER				*e*Sg		**Sb**	**11 31 17.0**		**-0.2**
AYDN	**Tasoluk**	**0.72**	**19**	*i* P		**Pb**	**11 31 11.3**		**-0.1**
AYDN				*i* S		**Sb**	**11 31 22.1**		**+1.0**
AYDN	**Tasoluk**	**0.72**	**19**	P		**Pb**	**11 31 11.3**		**-0.1**
AYDN				S		**Sb**	**11 31 22.1**		**+1.0**
GCAM	**G?zelcaml?**	**0.77**	**339**	*i* P		**Pn**	**11 31 13.5**		**+0.1**
GCAM				*i* S		**Sn**	**11 31 24.5**		**-0.3**
GCAM	**G?zelcaml?**	**0.77**	**339**	P		**Pn**	**11 31 13.5**		**+0.1**
GCAM				S		**Sn**	**11 31 24.5**		**-0.3**
TURN	**Turunc**	**0.83**	**97**	*i* P		Pg	11 31 07.3		-5.8
TURN				*i* S		Sg	11 31 16.2		-7.8
DALY	**Dalyan (Mu¨la**	**0.88**	**100**	*e*PG		**Pg**	**11 31 14.0**		**0.0**
DALY	**Dalyan (Mu¨la**	**0.88**	**100**	*e*Pg		**Pg**	**11 31 14.0**		**0.0**
AYDB	**Zeytinkoy-Aydi**	**1.00**	**14**	*e*PG		**Pb**	**11 31 16.2**		**+0.1**
AYDB	**Zeytinkoy-Aydi**	**1.00**	**14**	*e*Pg		**Pb**	**11 31 16.2**		**+0.1**
FETY	**Fethiye**	**1.26**	**105**	*e*PN		**Pg**	**11 31 21.0**		**-0.2**
FETY	**Fethiye**	**1.26**	**105**	*e*Pn		**Pg**	**11 31 21.0**		**-0.2**
KARP	**Karpathos**	**1.47**	**193**	*e*PN		**Pb**	**11 31 24.1**		**0.0**
KARP	**Karpathos**	**1.47**	**193**	*e*Pn		**Pb**	**11 31 24.1**		**0.0**
KULA	**Kula-Manisa**	**1.76**	**29**	*e*PN		**Pb**	**11 31 28.1**		**-0.9**
KULA	**Kula-Manisa**	**1.76**	**29**	*e*Pn		**Pb**	**11 31 28.1**		**-0.9**

*ISCJB **24** 11:37:59.9±0.9, 23°9N±0°1×141°2E±0°2, h151km, mb3.4/7, Error ellipse: s-maj=30.2km s-min=12.9km az=16.5*
*IDC **24** 11:38:05.1±1.9, 24°03N×141°39E, h181km±15km, mb3.3/8, mb1 3.4/9, mb1mx3.1/51, mbtmp3.8/9, MS2.7/1, Ms1 2.7/1, ms1mx2.2/17, Error ellipse: s-maj=29.7km s-min=18.9km az=98.0*

ISC 24 11:38:01.6±1.0, 23°9N±0°1×141°3E±0°2, h151km, n10, σ1°31/9, mb3.5/7, Volcano Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time	Res
								h m s	ISC
JCJ	**Chichijima**	**3.29**	**13**	P		P	Pn	11 38 56.8	+4.1
	baz=195,slow=19								
JCJ				S		**Sn**	**11 39 34.6**		**+2.2**
	15nm,0.3s,baz=253,slow=19,SNR=9.0								
KSRS	**Korea Array**	**17.75**	**323**	LR		LR	11 47 43.7		
	comp=Z,25nm,19.7s,baz=88,slow=33								
ASAJ	**Asahikawa**	**20.21**	**3**	P		**P**	**11 42 24.1**		**-0.5**
	17nm,1.2s,baz=195,slow=10,SNR=6.3								
WRA	**Warramunga Arr**	**44.09**	**189**	P		**P**	**11 45 56.2**		**+1.3**
	0.6nm,0.7s,baz=7.3,slow=8.6,SNR=7.8								
MKAR	**Makanchi Array**	**51.98**	**312**	P		**P**	**11 46 56.1**		**+0.8**
	0.3nm,0.3s,baz=89,slow=7.6,SNR=3.2								
BVAR	**Borovoye Array**	**59.91**	**319**	P		**P**	**11 47 51.4**		**-0.2**
	0.9nm,0.5s,baz=99,slow=8.0,SNR=6.8								
ILAR	**Eielson Array**	**60.90**	**28**	P		**P**	**11 47 57.2**		**-0.9**
	0.5nm,0.8s,baz=248,slow=4.9,SNR=4.0								
YKA	**Yellowknife Ar**	**75.33**	**28**	P		**P**	**11 49 27.3**		**-0.6**
	0.2nm,0.4s,baz=292,slow=5.8,SNR=6.7								
FINES	**FINESS Array B**	**80.48**	**334**	P		**P**	**11 49 55.1**		**-1.3**
	0.9nm,0.8s,baz=60,slow=5.4,SNR=8.0								
NVAR	**Mina Array Bea**	**83.11**	**51**	P		**P**	**11 50 11.2**		**+0.1**
	0.3nm,0.6s,baz=294,slow=4.8,SNR=3.3								

*ISCJB **24** 11:48:08.2±0.6, 32°22N±0°04×115°30W±0°06, h13km±6km, Error ellipse: s-maj=8.7km s-min=5.4km az=154.9*
*ECX **24** 11:48:09.5±0.6, 32°21N×115°30W, h6km, MD2.5, ML2.7*
*MEX **24** 11:48:09.5±0.4, 32°30N×115°18W, h12km±123km, MD3.6*

ISC 24 11:48:07.7±1.0, 32°21N±0°04×115°30W±0°04, h15km±9km, n17, σ0°52/23, 4C-7D, California-Baja California border region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time	Res
								h m s	ISC
CPBX	**Cerro Prieto**	**0.21**	**359**	*i*P		**Pb**	**11 48 13.3**		**+0.1**
CPBX				*e*P		**Pg**	**11 48 13.5**		**+1.0**
CPBX				*e*S		**Sb**	**11 48 16.6**		**-0.2**
CPBX				*e*			11 48 17.8		
CPBX				AML		AML	11 48 17.8		
	comp=E,4μm,0.2s								
CPBX				AML		AML	11 48 18.2		
	comp=N,4μm,0.1s								
CPBX				⇑*e*			11 48 18.2		
CPBX				*e*			11 48 20.5		
CPBX				AML		AML	11 48 20.5		
	comp=N,3μm,0.2s								
MBIG	**Mexicali**	**0.21**	**23**	*i*P		**Pb**	**11 48 13.8**		**+0.5**
MBIG	**Mexicali**	**0.21**	**23**	*e*P		**Pg**	**11 48 13.0**		**+0.4**
MBIG				*i* S		**Sg**	**11 48 14.6**		**-1.3**
SGL	**Mount Signal**	**0.57**	**321**	*i* P		**Pb**	**11 48 19.6**		**+0.3**
EMSC	**East Mesa**	**0.59**	**27**	*e*P		**Pb**	**11 48 19.9**		**+0.2**
DREC	**Desert Rsrch C**	**0.61**	**348**	*i*P		**Pb**	**11 48 20.6**		**+0.7**
ERPC	**Ernies Place**	**0.61**	**330**	*e*P		**Pb**	**11 48 20.1**		**0.0**
WESC	**Westside Schoo**	**0.66**	**326**	⇑*e*P		**Pb**	**11 48 21.5**		**+0.6**
YUH	**Yuha Desert**	**0.69**	**310**	*e*P		**Pb**	**11 48 21.4**		**+0.1**
YMD	**Yuma Desert**	**0.72**	**61**	⇑*i*P		**Pb**	**11 48 21.6**		**-0.4**
ECBX	**El Chinero**	**0.77**	**164**	*i*P		**Pg**	**11 48 23.1**		**+0.5**
ECBX				*e*S		**Sb**	**11 48 33.1**		**+0.3**
ECBX				AML		AML	11 48 34.3		
	comp=N,330nm,0.2s								
ECBX				⇑*e*			11 48 34.3		
RMX	**La Rumorosa**	**0.77**	**301**	*e*P		**Pb**	**11 48 22.5**		**-0.3**
CBX	**Cerro Bola**	**1.16**	**275**	*i*P		**Pb**	**11 48 29.6**		**+0.1**
CBX	**Cerro Bola**	**1.16**	**275**	*e*P		**Pn**	**11 48 29.2**		**-0.2**
CBX				*i* S		**Sb**	**11 48 43.7**		**-0.7**
SPIG	**San Pedro Mart**	**1.17**	**187**	*e*P		**Pn**	**11 48 29.7**		**-0.1**
SPIG	**San Pedro Mart**	**1.17**	**187**	*e*P		**Pn**	**11 48 29.7**		**-0.1**
SPIG				*i* S		**Sn**	**11 48 45.5**		**-0.1**
SPX	**San Pedro Mart**	**1.17**	**187**	*i*P		**Pn**	**11 48 29.9**		**+0.1**

*ISCJB **24** 11:50:16.7±0.9, 37°13N±0°03×140°87E±0°06, h2km±5km, mb3.4/3, Error ellipse: s-maj=8.5km s-min=4.5km az=23.4*
*IDC **24** 11:50:16.3±1.5, 36°98N×141°06E, h0km, mb3.3/3, mb1 3.6/4, mb1mx3.3/30, mbtmp3.3/4, ML2.9/1, Error ellipse: s-maj=33.9km s-min=26.7km az=151.0*
*JMA **24** 11:50:17.4, 37°13N×140°79E, h3km±1km, M3.1*
JMA Felt III J1.

ISC 24 11:50:16.8±1.1, 37°07N±0°05×140°81E±0°05, h4km±6km, n12, σ0°68/21, mb3.4/3, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time	Res
								h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.03**	**343**	P		**Pg**	**11 50 18.1**		**+0.2**
ONAJ				S		**Sg**	**11 50 18.8**		**+0.1**
JFK	**Kawauchi**	**0.30**	**10**	P		**Pg**	**11 50 22.4**		**-0.2**
JFK				S		**Sg**	**11 50 26.1**		**-0.5**
JHO	**Hitachi**	**0.50**	**203**	P		**Pb**	**11 50 27.9**		**-0.2**
JHO				S		**Sb**	**11 50 35.6**		**0.0**
JFT	**Otama**	**0.59**	**320**	P		**Pg**	**11 50 28.1**		**0.0**
JFT				S		**Sg**	**11 50 35.5**		**-0.2**
JSB	**Shiboa**	**0.72**	**262**	P		**Pb**	**11 50 31.9**		**0.0**
JSB				S		**Sb**	**11 50 42.0**		**-0.1**
JMM	**Marumori**	**0.80**	**359**	P		**Pg**	**11 50 31.3**		**-0.8**
JMM				S		**Sg**	**11 50 41.6**		**-0.8**
JFY	**Yanaizu**	**0.94**	**291**	P		**Pg**	**11 50 34.9**		**0.0**
JFY				S		**Sg**	**11 50 47.1**		**-0.1**
MJAR	**Matsushiro Arr**	**2.15**	**257**	Pn		**Pb**	**11 50 55.9**		**-0.4**
	3.5nm,0.3s,baz=78,slow=16,SNR=27								
MJAR				Sn		**Sg**	**11 51 25.2**		**-0.8**
	7.3nm,0.3s,baz=87,slow=26,SNR=13								
MAT	**Matsushiro**	**2.15**	**257**	P		**Pb**	**11 50 55.6**		**-0.7**
MAT				S		**Sg**	**11 51 24.8**		**-1.2**
MKAR	**Makanchi Array**	**43.69**	**302**	P		**P**	**11 58 24.5**		**+1.8**
	0.2nm,0.2s,baz=72,slow=11,SNR=3.5								
ILAR	**Eielson Array**	**49.72**	**32**	P		**P**	**11 59 09.5**		**-0.1**
	0.3nm,0.7s,baz=273,slow=6.0,SNR=3.4								
WRA	**Warramunga Arr**	**57.03**	**187**	P		**P**	**12 00 03.5**		**-0.3**
	0.2nm,0.5s,baz=3.7,slow=7.3,SNR=5.3								

*NIED **24** 12:06:00, 36°70N×142°60E, h20km, Mw3.6 Best double couple: M₀2.42000×10¹⁴ NP1:φ₀202.00000°, δ26.00000°, λ98.00000°. NP2:φ₀14.00000°, δ64.00000°, λ86.00000°.*

JMA 24 12:06:05.4±0.4, 36°71N×142°57E, h47km, M3.6, Off east coast of Honshu

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0.4nm,0.4s,baz=108,slow=7.7,SNR=3.1
MKAR Makanchi Array 43.66 302 P **P 12 29 01.5 -0.9**
0.2nm,0.3s,baz=85,slow=8.6,SNR=3.8
ILAR Eielson Array 49.68 32 P **P 12 29 49.0 -0.3**
0.3nm,0.6s,baz=268,slow=6.4,SNR=5.4
FITZ Fitzroy Crossi 56.76 197 LR LR 12 56 23.0
comp=Z,54nm,18.2s,baz=116,slow=38
WRA Warramunga Arr 57.09 187 P **P 12 30 42.7 -1.5**
0.8nm,0.6s,baz=4.7,slow=7.6,SNR=20
CTA Charters Tower 57.14 174 LR LR 12 55 52.4
comp=Z,161nm,18.9s,baz=44,slow=37
ASAR Alice Springs 60.81 187 P **P 12 31 08.3 -1.8**
0.3nm,0.6s,baz=16,slow=7.7,SNR=3.8
FINES FINESS Array B 68.51 332 P **P 12 31 58.4 -1.5**
0.9nm,0.7s,baz=42,slow=5.9,SNR=3.8
NVAR Mina Array Bea 75.32 53 P **P 12 32 42.6 +1.1**
0.2nm,0.5s,baz=288,slow=6.1,SNR=3.6
MLR Muntele Rosu 79.00 319 LR LR 13 09 51.9
comp=Z,5.9nm,18.6s,baz=221,slow=37
VRAC Vranov 80.78 327 LR LR 13 11 17.8
comp=Z,43nm,18.5s,baz=204,slow=37
TXAR Lajitas Array 90.45 52 P **P 12 33 60.0 0.0**
0.1nm,0.6s,baz=305,slow=3.2,SNR=2.7
LPAZ La Paz 147.07 59 PKPbc **PKPbc 12 40 41.2 -0.9**
0.8nm,0.6s,baz=339,slow=2.4,SNR=5.0

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*CSEM **24** 12:26:51.7±0.1, 40.06N×21.66E, h2km, ML2.7, Error ellipse: s-maj=2.5km s-min=2.0km az=94.0*
*THE **24** 12:26:51.8, 40.06N×21.66E, h0km, ML2.9/26, Error ellipse: s-maj=0.9km s-min=0.3km az=290.0*
*ATH **24** 12:26:51.3, 40.07N×21.66E, h18km±1km, ML2.7/20, Error ellipse: s-maj=1.2km s-min=0.6km az=321.0*
ISC 24 12:26:51.5±0.8, 40.06N±0.01×21.67E±0.01, h13km±6km, n153, σ1§00/220, 5C-7D, Greece

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
KPRO	**Kipourio**	**0.26**	**246**	P		**Pg**	**12 26 56.7**	**-0.3**
KPRO				S		**Sg**	**12 27 00.9**	**+0.3**
KPRO	**Kipourio**	**0.26**	**246**	P		**Pg**	**12 26 56.5**	**-0.5**
KPRO				S		**Sg**	**12 27 00.9**	**+0.3**
KPRO	**Kipourio**	**0.26**	**246**	P		**Pg**	**12 26 56.5**	**-0.5**
KPRO				S		**Sg**	**12 27 01.2**	**+0.6**
KPRO				AML	AML		12 27 04.1	
	comp=N,10609μm,0.6s							
KPRO				AML	AML		12 27 04.8	
	comp=E,10861μm,0.5s							
KZN	**Kozani**	**0.26**	**17**	P		**Pg**	**12 26 57.0**	**-0.1**
KZN				S		**Sg**	**12 27 01.0**	**+0.2**
KZN	**Kozani**	**0.26**	**17**	P		**Pg**	**12 26 57.0**	**-0.1**
KZN				S		**Sg**	**12 27 00.7**	**-0.1**
THL	**Klokotos Trika**	**0.56**	**151**	P		**Pg**	**12 27 02.2**	**-0.3**
THL				S		**Sb**	**12 27 11.5**	**+0.4**
THL	**Klokotos Trika**	**0.56**	**151**	P		**Pg**	**12 27 02.2**	**-0.3**
THL				S		**Sg**	**12 27 09.8**	**-0.1**
NEST	**Nestorio**	**0.59**	**307**	P		**Pg**	**12 27 02.8**	**-0.4**
NEST				S		**Sb**	**12 27 11.6**	**-0.6**
NEST	**Nestorio**	**0.59**	**307**	P		**Pg**	**12 27 02.8**	**-0.4**
NEST				S		**Sb**	**12 27 11.6**	**-0.6**
NEST	**Nestorio**	**0.59**	**307**	P		**Pg**	**12 27 02.8**	**-0.4**
NEST				S		**Sb**	**12 27 12.3**	**+0.1**
NEST				AML	AML		12 27 14.2	
	comp=E,1334μm,0.4s							
NEST				AML	AML		12 27 18.5	
	comp=N,2091μm,0.4s							
LIT	**Litokhoron**	**0.63**	**86**	P		**Pb**	**12 27 03.8**	**-0.7**
LIT				S		**Sb**	**12 27 13.5**	**+0.3**
LIT	**Litokhoron**	**0.63**	**86**	P		**Pg**	**12 27 04.1**	**+0.2**
LIT				S		**Sb**	**12 27 13.0**	**-0.2**
LIT	**Litokhoron**	**0.63**	**86**	P		**Pg**	**12 27 04.1**	**+0.2**
LIT				S		**Sb**	**12 27 13.0**	**-0.2**
LIT				AML	AML		12 27 16.4	
	comp=E,3346μm,0.3s							
LIT				AML	AML		12 27 16.8	
	comp=N,3259μm,0.3s							
JAN	**Janina**	**0.75**	**238**	P		**Pb**	**12 27 05.6**	**-0.8**
JAN				S		**Sn**	**12 27 17.3**	**-1.7**
JAN	**Janina**	**0.75**	**238**	P		**Pb**	**12 27 05.3**	**-1.1**
JAN				S		**Sn**	**12 27 17.3**	**-1.7**
JAN	**Janina**	**0.75**	**238**	AML	AML		12 27 30.3	
	comp=E,783μm,0.9s							
FNA	**Florina**	**0.76**	**343**	P		**Pb**	**12 27 05.5**	**-1.2**
FNA				S		**Sg**	**12 27 16.4**	**+0.2**
FNA	**Florina**	**0.76**	**343**	P		**Pb**	**12 27 05.8**	**-0.8**
FNA				S		**Sg**	**12 27 16.4**	**+0.2**
FNA	**Florina**	**0.76**	**343**	P		**Pb**	**12 27 05.8**	**-0.8**
FNA				S		**Sb**	**12 27 14.7**	**-2.2**
FNA				AML	AML		12 27 19.2	
	comp=E,3954μm,0.3s							
FNA				AML	AML		12 27 19.2	
	comp=N,4376μm,0.4s							
BIA	**Bitola**	**1.00**	**345**	P		**Pb**	**12 27 10.0**	**-0.6**
BIA				S		**Sn**	**12 27 25.0**	**-0.3**
BIA	**Bitola**	**1.00**	**345**	ǁ *i* Pg		**Pn**	**12 27 10.2**	**-1.1**
BIA				*e*Sg		**Sn**	**12 27 25.8**	**+0.6**
BIA	**Bitola**	**1.00**	**345**	ǁ *i* Pg		**Pb**	**12 27 10.1**	**-0.6**
BIA				S		**Sn**	**12 27 25.0**	**-0.3**
DSL	**Palaion Diasel**	**1.02**	**206**	P		**Pb**	**12 27 10.5**	**-0.6**
DSL				S		**Sn**	**12 27 26.0**	**+0.1**
DSL	**Palaion Diasel**	**1.02**	**206**	P		**Pb**	**12 27 10.5**	**-0.6**
DSL				S		**Sn**	**12 27 26.0**	**+0.1**
DSL	**Palaion Diasel**	**1.02**	**206**	P		**Pb**	**12 27 10.5**	**-0.6**
DSL				AML	AML		12 27 29.5	
	comp=N,749μm,0.4s							
DSL				AML	AML		12 27 34.6	
	comp=E,1109μm,0.5s							
GRG	**Griva**	**1.06**	**32**	P		**Pg**	**12 27 12.5**	**+0.6**
GRG				S		**Sg**	**12 27 27.6**	**+1.9**
GRG	**Griva**	**1.06**	**32**	P		**Pg**	**12 27 12.5**	**+0.6**
GRG				S		**Sg**	**12 27 27.6**	**+1.9**
GRG	**Griva**	**1.06**	**32**	P		**Pg**	**12 27 11.5**	**-0.4**
GRG				AML	AML		12 27 31.7	
	comp=N,757μm,0.4s							
GRG				AML	AML		12 27 32.3	
	comp=E,592μm,0.4s							
EVR	**Evrytania**	**1.15**	**175**	P		**Pb**	**12 27 12.9**	**-0.3**
EVR				S		**Sg**	**12 27 30.0**	**+1.5**
EVR	**Evrytania**	**1.15**	**175**	P		**Pb**	**12 27 12.9**	**-0.3**
EVR				S		**Sg**	**12 27 30.0**	**+1.5**
EVR	**Evrytania**	**1.15**	**175**	P		**Pn**	**12 27 12.7**	**-0.7**
EVR				S		**Sg**	**12 27 30.3**	**+1.8**
EVR				AML	AML		12 27 33.6	
	comp=N,1164μm,0.5s							
THE	**Thessaloniki**	**1.15**	**60**	P		**Pg**	**12 27 14.2**	**+0.6**
THE				S		**Sg**	**12 27 29.5**	**+1.0**
THE	**Thessaloniki**	**1.15**	**60**	P		**Pg**	**12 27 14.2**	**+0.6**
THE				S		**Sg**	**12 27 29.5**	**+1.0**
THE				AML	AML		12 27 31.9	
	comp=N,176μm,0.4s							
THE				AML	AML		12 27 37.4	
	comp=E,271μm,0.7s							
AGG	**Agios Georgios**	**1.15**	**153**	P		**Pb**	**12 27 13.0**	**-0.4**
AGG				S		**Sg**	**12 27 30.6**	**+1.8**
AGG	**Agios Georgios**	**1.15**	**153**	P		**Pg**	**12 27 13.5**	**-0.3**
AGG				S		**Sg**	**12 27 28.9**	**+0.1**
AGG	**Agios Georgios**	**1.15**	**153**	P		**Pg**	**12 27 13.5**	**-0.3**
AGG				S		**Sg**	**12 27 28.9**	**+0.1**
AGG				AML	AML		12 27 33.3	
	comp=N,2384μm,0.7s							
AGG				AML	AML		12 27 34.4	
	comp=E,1972μm,0.5s							
IGT	**Igoumenitsa**	**1.16**	**243**	P		**Pb**	**12 27 12.7**	**-0.7**
IGT				S		**Sg**	**12 27 30.4**	**+1.6**
IGT	**Igoumenitsa**	**1.16**	**243**	P		**Pb**	**12 27 12.7**	**-0.7**
IGT				S		**Sg**	**12 27 30.0**	**+1.2**
IGT	**Igoumenitsa**	**1.16**	**243**	P		**Pg**	**12 27 14.1**	**+0.3**
IGT				S		**Sg**	**12 27 30.0**	**+1.2**
FYTO	**Fytoko, Volos**	**1.18**	**123**	P		**Pg**	**12 27 14.2**	**+0.1**
FYTO				S		**Sg**	**12 27 31.5**	**+2.1**
FYTO	**Fytoko, Volos**	**1.18**	**123**	P		**Pg**	**12 27 14.2**	**+0.1**
FYTO				S		**Sg**	**12 27 31.5**	**+2.1**
FYTO	**Fytoko, Volos**	**1.18**	**123**	P		**Pg**	**12 27 14.7**	**+0.6**
SGD	**Sagiada**	**1.19**	**249**	P		**Pb**	**12 27 13.8**	**-0.2**
SGD	**Sagiada**	**1.19**	**249**	P		**Pb**	**12 27 13.8**	**-0.2**
SGD	**Sagiada**	**1.19**	**249**	P		**Pb**	**12 27 13.8**	**-0.2**
HORT	**Hortiatis**	**1.22**	**63**	P		**Pg**	**12 27 14.9**	**-0.1**
HORT				S		**Sg**	**12 27 32.5**	**+1.6**
HORT	**Hortiatis**	**1.22**	**63**	P		**Pg**	**12 27 15.6**	**+0.6**
HORT				S		**Sg**	**12 27 32.3**	**+1.4**
HORT	**Hortiatis**	**1.22**	**63**	P		**Pg**	**12 27 15.6**	**+0.6**
HORT				S		**Sg**	**12 27 32.3**	**+1.4**
HORT				AML	AML		12 27 35.4	
	comp=N,202μm,0.3s							
HORT				AML	AML		12 27 37.9	
	comp=E,162μm,0.4s							
OHR	**Ohrid**	**1.24**	**328**	*i* Pg		**Pg**	**12 27 14.7**	**-0.8**
OHR				*e*Sg		**Sg**	**12 27 35.0**	**+3.3**
OHR	**Ohrid**	**1.24**	**328**	*i* Pg		**Pg**	**12 27 14.6**	**-0.8**
OHR				*e*Sg		**Sg**	**12 27 34.9**	**+3.3**
PLG	**Polygyros**	**1.40**	**76**	P		**Pg**	**12 27 17.7**	**-0.7**
PLG				S		**Sg**	**12 27 38.2**	**+1.7**
PLG	**Polygyros**	**1.40**	**76**	P		**Pg**	**12 27 17.7**	**-0.7**
PLG				S		**Sg**	**12 27 38.2**	**+1.7**
PLG	**Polygyros**	**1.40**	**76**	P		**Pn**	**12 27 15.8**	**-1.0**
PLG				AML	AML		12 27 41.1	
	comp=N,166μm,0.8s							
PLG				AML	AML		12 27 42.5	
	comp=E,113μm,0.4s							
NEO	**Neokhori**	**1.42**	**122**	P		**Pg**	**12 27 18.4**	**-0.3**
NEO				S		**Sg**	**12 27 39.0**	**+1.9**
NEO	**Neokhori**	**1.42**	**122**	P		**Pg**	**12 27 18.4**	**-0.3**
NEO				S		**Sg**	**12 27 39.0**	**+1.9**
NEO	**Neokhori**	**1.42**	**122**	P		**Pg**	**12 27 19.0**	**+0.3**
NEO				AML	AML		12 27 41.5	
	comp=N,378μm,0.5s							
NEO				AML	AML		12 27 42.4	
	comp=E,984μm,0.5s							
VAY	**Valandovo**	**1.44**	**28**	P		**Pg**	**12 27 18.7**	**-0.4**
VAY				S		**Sg**	**12 27 38.2**	**+0.4**
VAY	**Valandovo**	**1.44**	**28**	*i* Pg		**Pg**	**12 27 19.0**	**-0.1**
VAY				*e*Sg		**Sg**	**12 27 40.8**	**+3.0**
VAY	**Valandovo**	**1.44**	**28**	P		**Pg**	**12 27 18.7**	**-0.4**
VAY				S		**Sg**	**12 27 38.2**	**+0.4**
VAY				*e*Sg		**Sg**	**12 27 40.7**	**+3.0**
PVO	**Paravola**	**1.44**	**184**	P		**Pg**	**12 27 19.1**	**-0.1**
PVO	**Paravola**	**1.44**	**184**	P		**Pg**	**12 27 19.1**	**-0.1**
KNT	**Kendrikon**	**1.45**	**40**	P		**Pg**	**12 27 18.4**	**-0.9**
KNT				S		**Sg**	**12 27 39.0**	**+0.9**
KNT	**Kendrikon**	**1.45**	**40**	P		**Pg**	**12 27 18.5**	**-0.9**
KNT				S		**Sg**	**12 27 39.0**	**+0.9**
KNT	**Kendrikon**	**1.45**	**40**	P		**Pg**	**12 27 18.5**	**-0.8**
ANX	**Ano Chora**	**1.48**	**172**	P		**Pg**	**12 27 19.4**	**-0.5**
ANX				S		**Sg**	**12 27 40.0**	**+0.9**
ANX	**Ano Chora**	**1.48**	**172**	P		**Pg**	**12 27 19.4**	**-0.5**
ANX				S		**Sg**	**12 27 40.0**	**+0.9**
ANX	**Ano Chora**	**1.48**	**172**	P		**Pg**	**12 27 20.4**	**+0.5**
KEK	**Kerkira**	**1.48**	**257**	P		**Pg**	**12 27 19.2**	**-0.7**
KEK				S		**Sg**	**12 27 40.2**	**+1.0**
KEK	**Kerkira**	**1.48**	**257**	P		**Pg**	**12 27 19.2**	**-0.7**
KEK				S		**Sg**	**12 27 40.2**	**+1.0**
LKD2	**Lefkada island**	**1.49**	**212**	P		**Pg**	**12 27 19.7**	**-0.4**
LKD2				S		**Sg**	**12 27 40.9**	**+1.4**
LKD2	**Lefkada island**	**1.49**	**212**	P		**Pn**	**12 27 17.7**	**-0.4**
LKD2				S		**Sg**	**12 27 40.9**	**+1.4**
LKD2	**Lefkada island**	**1.49**	**212**	P		**Pn**	**12 27 17.7**	**-0.4**
LKD2				AML	AML		12 27 50.9	
	comp=N,564μm,0.6s							
LKD2				AML	AML		12 27 51.6	
	comp=E,588μm,0.6s							
SOH	**Sokhos**	**1.50**	**59**	P		**Pb**	**12 27 19.2**	**0.0**
SOH				S		**Sg**	**12 27 40.6**	**+0.9**
SOH	**Sokhos**	**1.50**	**59**	P		**Pb**	**12 27 19.2**	**0.0**
SOH				S		**Sg**	**12 27 40.6**	**+0.9**
SOH	**Sokhos**	**1.50**	**59**	P		**Pg**	**12 27 20.1**	**-0.2**
SOH				AML	AML		12 27 46.4	
	comp=N,383μm,0.5s							
SOH				AML	AML		12 27 46.5	
	comp=E,378μm,0.6s							
PDO	**Prodromos**	**1.50**	**195**	P		**Pb**	**12 27 19.6**	**+0.3**
PDO				S		**Sg**	**12 27 40.9**	**+0.9**
PDO	**Prodromos**	**1.50**	**195**	P		**Pb**	**12 27 19.3**	**0.0**
PDO				S		**Sg**	**12 27 40.9**	**+0.9**
PDO	**Prodromos**	**1.50**	**195**	P		**Pb**	**12 27 19.3**	**0.0**
PDO				AML	AML		12 27 46.6	
	comp=N,922μm,0.5s							
PDO				AML	AML		12 27 47.0	
	comp=E,528μm,0.4s							
PAIG	**Paliouri**	**1.55**	**94**	P		**Pb**	**12 27 19.3**	**-0.8**
PAIG				S		**Sg**	**12 27 41.0**	**-0.4**
PAIG	**Paliouri**	**1.55**	**94**	P		**Pb**	**12 27 19.3**	**-0.8**
PAIG				S		**Sg**	**12 27 41.0**	**-0.4**
PAIG	**Paliouri**	**1.55**	**94**	P		**Pn**	**12 27 18.3**	**-0.5**
SKIA	**Skiathos**	**1.65**	**122**	P		**Pb**	**12 27 21.4**	**-0.4**
SKIA	**Skiathos**	**1.65**	**122**	P		**Pb**	**12 27 21.4**	**-0.4**
SKIA	**Skiathos**	**1.65**	**122**	P		**Pb**	**12 27 21.1**	**-0.7**
SMIA	**Simia**	**1.68**	**134**	P		**Pb**	**12 27 21.4**	**-0.8**
SMIA				S		**Sg**	**12 27 45.2**	**-0.2**
SMIA	**Simia**	**1.68**	**134**	P		**Pb**	**12 27 21.5**	**-0.8**
SMIA				S		**Sg**	**12 27 45.2**	**-0.2**
SMIA	**Simia**	**1.68**	**134**	P		**Pb**	**12 27 21.6**	**-0.7**
KALE	**Kalithea**	**1.70**	**167**	P		**Pb**	**12 27 22.2**	**-0.6**
KALE				S		**Sg**	**12 27 45.4**	**-1.0**
KALE	**Kalithea**	**1.70**	**167**	P		**Pb**	**12 27 22.2**	**-0.6**
KALE				S		**Sg**	**12 27 45.4**	**-1.0**
KALE	**Kalithea**	**1.70**	**167**	P		**Pb**	**12 27 22.1**	**-0.7**
KALE				AML	AML		12 27 50.6	
	comp=E,541μm,0.6s							
KALE				AML	AML		12 27 53.7	
	comp=N,463μm,0.9s							
TRIZ	**Trizonia**	**1.72**	**169**	P		**Pb**	**12 27 23.5**	**+0.5**
LKR	**Lokris**	**1.74**	**143**	P		**Pb**	**12 27 22.6**	**-0.8**
LKR	**Lokris**	**1.74**	**143**	P		**Pb**	**12 27 22.6**	**-0.8**
LKR	**Lokris**	**1.74**	**143**	P		**Pb**	**12 27 22.6**	**-0.8**
DSF	**Desfina**	**1.77**	**158**	P		**Pn**	**12 27 22.4**	**+0.4**
DSF	**Desfina**	**1.77**	**158**	P		**Pn**	**12 27 22.4**	**+0.4**
DSF	**Desfina**	**1.77**	**158**	P		**Pn**	**12 27 22.4**	**+0.4**
DSF				AML	AML		12 27 55.8	
	comp=E,251μm,0.5s							
DSF				AML	AML		12 27 58.8	
	comp=N,216μm,0.4s							
OUR	**Ouranopolis**	**1.79**	**80**	P		**Pb**	**12 27 23.4**	**-0.8**
OUR	**Ouranopolis**	**1.79**	**80**	P		**Pb**	**12 27 23.4**	**-0.8**
SRS	**Serrai**	**1.81**	**54**	P		**Pb**	**12 27 23.4**	**-1.1**
SRS				S		**Sg**	**12 27 47.8**	**-1.9**
SRS	**Serrai**	**1.81**	**54**	P		**Pb**	**12 27 23.4**	**-1.1**
SRS				S		**Sg**	**12 27 47.8**	**-1.9**
SRS	**Serrai**	**1.81**	**54**	P		**Pb**	**12 27 23.3**	**-1.1**
LAKA	**Lakka**	**1.83**	**172**	P		**Pg**	**12 27 26.2**	**-0.5**
LAKA	**Lakka**	**1.83**	**172**	P		**Pg**	**12 27 26.2**	**-0.5**
SKO	**Skopje**	**1.92**	**355**	*e*Pn		**Pb**	**12 27 24.7**	**-1.8**
SKO	**Skopje**	**1.92**	**355**	*e*Pn		**Pb**	**12 27 24.6**	**-1.8**
RLS	**Riolos of Patr**	**2.00**	**185**	P		**Pb**	**12 27 28.1**	**+0.3**
PROD	**Prodromos**	**2.04**	**152**	P		**Pn**	**12 27 25.7**	**+0.2**
PROD	**Prodromos**	**2.04**	**152**	P		**Pn**	**12 27 25.7**	**+0.2**
PROD				AML	AML		12 27 57.7	
	comp=N,124μm,0.3s							
PROD				AML	AML		12 28 01.1	
	comp=E,212μm,0.5s							
KLV	**Kalavryta, Ach**	**2.05**	**169**	P		**Pb**	**12 27 27.2**	**-1.4**
KLV	**Kalavryta, Ach**	**2.05**	**169**	P		**Pb**	**12 27 27.2**	**-1.4**
KLV	**Kalavryta, Ach**	**2.05**	**169**	P		**Pb**	**12 27 27.5**	**-1.1**
KLV				AML	AML		12 27 59.2	
	comp=E,106μm,0.7s							
KLV				AML	AML		12 28 05.3	
	comp=N,99μm,0.7s							
KFL	**Anninata**	**2.06**	**200**	P		**Pb**	**12 27 28.3**	**-0.5**
KFL				S		**Sb**	**12 27 55.2**	**+0.8**
KFL	**Anninata**	**2.06**	**200**	P		**Pb**	**12 27 28.3**	**-0.5**
KFL				S		**Sb**	**12 27 55.2**	**+0.8**
KFL	**Anninata**	**2.06**	**200**	P		**Pb**	**12 27 28.8**	**-0.1**
DRO	**Drossia**	**2.10**	**179**	P		**Pb**	**12 27 29.6**	**+0.1**
DRO	**Drossia**	**2.10**	**179**	P		**Pb**	**12 27 29.6**	**+0.1**
NVR	**Nevrokopi**	**2.11**	**52**	P		**Pb**	**12 27 27.7**	**-1.9**
NVR				S		**Sb**	**12 27 55.9**	**+0.1**
NVR	**Nevrokopi**	**2.11**	**52**	P		**Pb**	**12 27 27.7**	**-1.9**
NVR				S		**Sb**	**12 27 55.9**	**+0.1**
THAL	**Thalero**	**2.16**	**159**	P		**Pb**	**12 27 28.6**	**-1.9**
THAL	**Thalero**	**2.16**	**159**	P		**Pb**	**12 27 28.6**	**-1.9**
VIL2	**Platees**	**2.22**	**145**	P		**Pn**	**12 27 28.6**	**+0.5**
LTK	**Loutraki**	**2.27**	**153**	P		**Pn**	**12 27 29.1**	**+0.3**
LTK	**Loutraki**	**2.27**	**153**	P		**Pn**	**12 27 29.1**	**+0.3**
VILL	**Villia**	**2.28**	**145**	P		**Pn**	**12 27 28.6**	**-0.4**
KAVA	**Kavala**	**2.36**	**66**	P		**Pn**	**12 27 30.5**	**+0.5**
KAVA	**Kavala**	**2.36**	**66**	P		**Pn**	**12 27 30.5**	**+0.5**
PTL	**Penteli**	**2.64**	**139**	P		**Pn**	**12 27 35.2**	**+1.4**
PTL	**Penteli**	**2.64**	**139**	P		**Pn**	**12 27 35.2**	**+1.4**
BARS	**Barje**	**2.76**	**2**	*e*Pn		**Pn**	**12 27 37.1**	**+1.6**
DID	**Didima**	**2.83**	**154**	P		**Pn**	**12 27 37.7**	**+1.3**
DID	**Didima**	**2.83**	**154**	P		**Pn**	**12 27 37.7**	**+1.3**
DID	**Didima**	**2.83**	**154**	P		**Pn**	**12 27 35.8**	**-0.6**
PDG	**Podgorica**	**2.99**	**323**	ǁ *i* P		**Pb**	**12 27 44.3**	**-0.3**
PDG	**Podgorica**	**2.99**	**323**	ǁ *i* P		**Pb**	**12 27 44.3**	**-0.3**
IVAS	**Ivanjica**	**3.69**	**343**	*e*Pn		**Pn**	**12 27 50.7**	**+2.3**
MATE	**Matera**	**3.84**	**280**	ǁ *i* P		**Pn**	**12 27 50.9**	**+0.6**
MATE	**Matera**	**3.84**	**280**	ǁ *i* P		**Pn**	**12 27 50.9**	**+0.6**
GRUS	**Gruza**	**3.89**	**350**	*e*Pn		**Pn**	**12 27 52.5**	**+1.4**
TIP	**Timpagrande**	**3.89**	**259**	ǁ *i* P		**Pn**	**12 27 53.8**	**+2.7**
TIP	**Timpagrande**	**3.89**	**259**	ǁ *i* P		**Pn**	**12 27 53.8**	**+2.7**
STON	**Ston**	**4.10**	**315**	*e*Pn		**Pn**	**12 27 56.3**	**+2.5**
STON						**Sn**		
STON	**Ston**	**4.10**	**315**	*e*Pn		**Pn**	**12 27 56.3**	**+2.5**
STON						**Sn**		
DIVS	**Divibare**	**4.23**	**343**	*e*Pn		**Pn**	**12 27 57.5**	**+1.8**
TRUS	**Trudelj**	**4.27**	**348**	*e*Pn		**Pn**	**12 27 57.7**	**+1.5**
TEKS	**Tekeris**	**4.76**	**341**	*e*Pn		**Pn**	**12 28 04.8**	**+1.8**
VOIR		**5.92**	**24**	ǁ *i* P		**Pn**	**12 28 21.4**	**+2.4**
MLR	**Muntele Rosu**	**6.28**	**29**	ǁ *i* P		**Pn**	**12 28 29.2**	**+5.3**
PKSM	**Moragy**	**6.54**	**341**	ǁ *i* P		**Pn**	**12 28 30.3**	**+3.0**
PKSM	**Moragy**	**6.54**	**341**	ǁ *i* P		**Pn**	**12 28 30.3**	**+3.0**
NVLJ	**Novalja**	**6.75**	**314**	*e*Pn		**Pn**	**12 28 31.6**	**+1.2**
NB2	**NORSAR Subarra**	**21.98**	**346**	P		**P**	**12 31 44.4**	**-0.6**
	comp=Z,0.9nm,0.8s,baz=158,slow=10							
NB2	**NORSAR Subarra**	**21.98**	**346**	P		**P**	**12 31 44.4**	**-0.6**
	comp=Z,0.9nm,0.8s,SNR=4.2							

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*NIED **24** 12:30:00, 37.70N×144.40E, h5km, Mw3.8 Best double couple: M0 6.31000×10^14 NP1:φs=28.00000°, δ25.00000°, λ-63.00000°. NP2:φs179.00000°, δ68.00000°, λ-102.00000°.*
*NEIC **24** 12:30:22.8±0.5, 37.62N×144.71E, h10km, mb4.4/4, Error ellipse: s-maj=11.8km s-min=7.9km az=124.0*
*ISCJB **24** 12:30:24.6±0.5, 37.67N±0.05×144.47E±0.04, h33km, mb3.8/14, Error ellipse: s-maj=6.8km s-min=5.1km az=0.1*
*JMA **24** 12:30:26.2±0.3, 37.73N×144.36E, h55km, M4.0*
*IDC **24** 12:30:26.6±0.7, 37.57N×144.64E, h33km±6km, mb3.4/11, mb1 3.8/13, mb1mx3.5/44, mbtmp3.7/13, ML3.8/2, MS2.5/4, Ms1 2.5/4, ms1mx2.4/41, Error ellipse: s-maj=21.8km s-min=14.1km az=127.0*
ISC 24 12:30:26.5±0.7, 37.70N±0.05×144.51E±0.07, h35km, n38, σ1§50/42, mb3.7/14, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
JIO	**Ouri**	**2.61**	**288**	P		**Pn**	**12 31 05.3**	**-0.9**
JIO				S		**Sn**	**12 31 35.0**	**-1.6**
OFUJ	**Ofunato**	**2.63**	**303**	P		**Pn**	**12 31 05.6**	**-0.8**
JMK	**Ichinoseki**	**2.88**	**297**	P		**Pn**	**12 31 09.6**	**-0.3**
JMK				*e*S		**Sn**	**12 31 42.0**	**-1.3**
JOM	**Ohasama**	**3.08**	**306**	P		**Pn**	**12 31 12.1**	**-0.6**
JOM				*e*S		**Sn**	**12 31 46.7**	**-1.7**
JFT	**Otama**	**3.32**	**268**	P		**Pn**	**12 31 15.8**	**-0.2**
JFT				S		**Sn**	**12 31 53.4**	**-0.9**
JYK	**Kaneyama**	**3.49**	**292**	P		**Pn**	**12 31 18.2**	**-0.1**
JYK				*e*S		**Sn**	**12 31 57.3**	**-1.0**
JANG	**Nango**	**3.55**	**320**	P		**Pn**	**12 31 18.5**	**-0.6**
JANG				*e*S		**Sn**	**12 31 56.5**	**-3.3**
ERM	**Erimo**	**4.44**	**347**	*e*Pn		**Pn**	**12 31 31.6**	**+0.3**
MJAR	**Matsushiro Arr**	**5.17**	**259**	Pn		**Pn**	**12 31 42.4**	**+1.0**
	1.9nm,0.3s,baz=87,slow=15,SNR=12							
MJAR						**Sn**	**12 32 40.0**	**+0.2**
	2.7nm,0.3s,baz=85,slow=8.4,SNR=9.1							
MAJO	**Matsushiro**	**5.17**	**259**	*e*Pn		**Pn**	**12 31 43.1**	**+1.7**
	12nm,0.6s							
MAT	**Matsushiro**	**5.17**	**259**	P		**Pn**	**12 31 42.5**	**+1.1**
MAT				S		**Sn**	**12 32 38.9**	**-0.9**
JHJ2	**Mitsune**	**5.97**	**221**	*e*Pn		**Pn**	**12 31 50.9**	**-1.5**
JHJ	**Hachijo jima 2**	**5.98**	**222**	Pn		**Pn**	**12 31 50.9**	**-1.7**
	12nm,0.3s,baz=95,slow=22,SNR=3.1							
JHJ						**Sn**	**12 32 54.6**	**-5.2**
	31nm,0.3s,baz=118,slow=22,SNR=7.2							
ASAJ	**Asahikawa**	**6.58**	**348**	Pn		**Pn**	**12 31 59.9**	**-0.8**
	1.0nm,0.3s,baz=201,slow=14,SNR=17							
ASAJ						**Sn**	**12 33 12.2**	**-2.2**
	baz=129,slow=32,SN

MMPI	**Merauke**	**7.81**	**153**	P		**Pn**	**12 40 41.2**	**+0.4**
	311nm,1.3s,1.4nm							
MSAI	**Masohi**	**8.11**	**256**	P		**Pn**	**12 40 46.4**	**+1.5**
	16nm,0.7s,290nm							
LBMI	**Labuha**	**9.36**	**275**	P		**Pn**	**12 41 02.0**	**0.0**
	20nm,1.8s,565nm							
TNTI	**Ternate**	**9.71**	**283**	P		**Pn**	**12 41 07.4**	**+0.5**
	35nm,0.9s							
SANI	**Sanana**	**10.85**	**267**	P		**Pn**	**12 41 22.7**	**+0.3**
	16nm,1.0s							
MTN	**Manton Dam**	**12.64**	**206**	*e*Pn		**Pn**	**12 41 45.7**	**-1.2**
COEN	**Coen**	**13.92**	**153**	*e*Pn		**Pn**	**12 42 01.8**	**-2.6**
SOEI	**Soe**	**14.96**	**236**	P		**Pn**	**12 42 19.0**	**+0.3**
	26nm,0.8s							
BATI	**Baumata**	**15.71**	**236**	LR		LR	12 49 10.3	
	comp=Z,274nm,21.5s,baz=8.0,slow=40							
BATI	**Baumata**	**15.71**	**236**	P		**Pn**	**12 42 28.0**	**-0.4**
	19nm,1.8s,520nm							
BSSI	**Bau Bau, Buton**	**16.95**	**254**	P		**Pn**	**12 42 43.9**	**-0.2**
	35nm,1.2s							
KAPI	**Kappang**	**17.41**	**258**	LR		LR	12 50 12.9	
	comp=Z,87nm,21.8s,baz=98,slow=40							
WRAB	**Tennant Creek**	**18.52**	**187**	*e*P		**P**	**12 43 01.2**	**-2.0**
	37nm,1.6s							
WB2	**Warramunga Arr**	**18.53**	**187**	*e*Pn		**P**	**12 43 01.8**	**-1.4**
	13nm,1.0s							
WRA	**Warramunga Arr**	**18.53**	**187**	P		**P**	**12 43 02.7**	**-0.6**
	0.7nm,0.3s,baz=9.3,slow=12,SNR=18							
FITZ	**Fitzroy Crossi**	**19.86**	**213**	P		**P**	**12 43 18.2**	**+0.4**
	0.4nm,0.3s,baz=26,slow=10,SNR=8.3							
FITZ	**Fitzroy Crossi**	**19.86**	**213**	*e*P		**P**	**12 43 17.6**	**-0.1**
	9.5nm,1.0s							
PLAI	**Plampang**	**20.32**	**248**	P		**P**	**12 43 22.3**	**-0.6**
	27nm,1.3s							
CTA	**Charters Tower**	**20.68**	**154**	P		Pn	12 43 28.8	-0.5
	7.9nm,0.8s,baz=351,slow=11,SNR=3.4							
CTAO	**Charters Tower**	**20.68**	**154**	*e*P		**P**	**12 43 27.2**	**+0.4**
	14nm,1.0s							
AS01	**Alice Springs**	**22.25**	**187**	*e*P		**P**	**12 43 43.2**	**-0.4**
AS31	**Alice Springs**	**22.26**	**187**	*e*P		**P**	**12 43 43.4**	**-0.3**
	22nm,1.6s							
ASAR	**Alice Springs**	**22.26**	**187**	P		**P**	**12 43 43.0**	**-0.8**
	11nm,0.6s,baz=16,slow=12,SNR=58							
ASAR				LR		LR	12 53 10.5	
	comp=Z,207nm,19.1s,baz=10.0,slow=39							
MBWA	**Marble Bar**	**25.72**	**219**	*e*P		**P**	**12 44 19.5**	**+2.6**
	40nm,1.6s							
EIDS	**Eidsvold**	**27.46**	**151**	*e*P		**P**	**12 44 34.2**	**+1.6**
	50nm,1.6s							
LEM	**Lembang**	**29.60**	**259**	LR		LR	12 59 36.4	
	comp=Z,85nm,19.8s,baz=22,slow=42							
STKA	**Stephens Creek**	**30.59**	**172**	P		**P**	**12 45 00.1**	**-0.3**
	2.9nm,0.6s,baz=339,slow=10,SNR=7.9							
STKA	**Stephens Creek**	**30.59**	**172**	*e*P		**P**	**12 45 00.5**	**+0.2**
	7.7nm,2.0s							
BBOO	**Buckleboo**	**31.20**	**181**	*e*P		**P**	**12 45 05.9**	**+0.2**
	21nm,1.4s							
ARMA	**Armidale**	**32.05**	**155**	*e*P		**P**	**12 45 15.7**	**+2.4**
	72nm,2.0s							
MJAR	**Matsushiro Arr**	**37.83**	**2**	LR		LR	12 59 02.2	
	comp=Z,41nm,20.4s,baz=160,slow=32							
KSRS	**Korea Array**	**39.59**	**349**	LR		LR	13 02 11.7	
	comp=Z,26nm,18.4s,baz=164,slow=36							
CMAR	**Chiang Mai Arr**	**42.18**	**300**	P		**P**	**12 46 40.4**	**+0.9**
	0.5nm,0.4s,baz=116,slow=5.6,SNR=6.1							
CMAR				LR		LR	13 07 22.4	
	comp=Z,29nm,18.1s,baz=158,slow=41							
KMI	**Kunming**	**42.28**	**311**	P		P	12 46 59.3	+19
KMI				pmax		pmax		
	comp=Z,6.0nm,1.1s							
XAN	**Xi'an**	**43.98**	**326**	P		**P**	**12 46 53.5**	**-0.3**
XAN				pmax		pmax		
	comp=Z,5.0nm,0.9s							
XAN				pmax		pmax		
	comp=Z,41nm,5.3s							
CD2	**Chengdu**	**45.00**	**318**	P		P	12 47 22.0	+20
CD2				pmax		pmax		
	comp=Z,1.0nm,0.5s							
BJI	**Beijing**	**45.41**	**338**	P		P	12 47 26.9	+22
BJI				pmax		pmax		
	comp=Z,7.0nm,0.6s							
USRK	**Ussuriysk Ar.**	**45.66**	**355**	P		**P**	**12 47 07.2**	**+0.3**
	comp=Z,0.8nm,0.6s,baz=186,slow=6.8,SNR=3.0							
HHC	**Hu-ho-hao-te**	**47.98**	**334**	*e*P		P	12 47 49.5	+24
HHC				pmax		pmax		
	comp=Z,22nm,0.9s							
HHC				pmax		pmax		
	comp=Z,110nm,5.5s							
SONM	**Songino Array**	**55.80**	**336**	P		**P**	**12 48 22.7**	**-0.7**
	comp=Z,0.8nm,1.0s,baz=108,slow=4.8,SNR=3.5							
TLY	**Talaya**	**59.92**	**337**	LR		LR	13 15 10.7	
	comp=Z,36nm,18.2s,baz=128,slow=36							
WMQ	**Urumqi**	**62.87**	**322**	*e*P		P	12 49 32.8	+20
WMQ				pmax		pmax		
	comp=Z,1.0nm,0.6s							
WMQ				pmax		pmax		
	comp=Z,46nm,4.2s							
MKAR	**Makanchi Array**	**67.66**	**323**	P		**P**	**12 49 43.0**	**-0.3**
	comp=Z,0.9nm,0.7s,baz=122,slow=6.3,SNR=9.4							
ZALV	**Zalesovo Beam**	**69.92**	**330**	P		**P**	**12 49 55.3**	**-1.9**
	comp=Z,0.3nm,0.3s,baz=119,slow=5.1,SNR=4.0							
VNDA	**Vanda**	**77.19**	**175**	P		**P**	**12 50 40.2**	**+0.7**
	comp=Z,1.6nm,0.7s,baz=315,slow=6.4,SNR=12							
MAW	**Mawson**	**82.58**	**202**	P		**P**	**12 51 09.8**	**+1.0**
	comp=Z,1.9nm,0.7s,baz=106,slow=4.9,SNR=4.4							
ILAR	**Eielson Array**	**85.48**	**25**	P		**P**	**12 51 21.9**	**-1.8**
	comp=Z,0.5nm,0.6s,baz=265,slow=4.4,SNR=7.2							
QSPA	**South Pole Qui**	**88.48**	**180**	*e*P		**P**	**12 51 38.3**	**-0.1**
CPUP	**Villa Florida**	**149.18**	**155**	PKPbc		**PKPbc**	**12 58 35.9**	**+0.6**
	comp=Z,2.3nm,0.6s,baz=238,slow=2.7,SNR=6.8							
CPUP	**Villa Florida**	**149.18**	**155**	*e*PKPbc		**PKPbc**	**12 58 36.8**	**+1.4**
LPAZ	**La Paz**	**149.70**	**127**	PKPbc		**PKPbc**	**12 58 38.8**	**+1.1**
	comp=Z,0.7nm,0.7s,baz=211,slow=24,SNR=2.9							
LPAZ	**La Paz**	**149.70**	**127**	*e*PKPbc		**PKPbc**	**12 58 39.3**	**+1.6**

*CSEM **24** 13:01:51.8±0.1,38.02N×21.55E,h15km,ML2.0,Error ellipse: s-maj=1.9km s-min=1.7km az=169.0*
*ATH **24** 13:01:51.8,38.02N×21.54E,h20km±1km,ML2.0/10,Error ellipse: s-maj=1.6km s-min=0.8km az=284.0*
*ISCJB **24** 13:01:52.4±0.4,38.02N±0.02×21.56E±0.02,h13km±2km, Error ellipse: s-maj=3.4km s-min=3.0km az=11.0*
*THE **24** 13:01:52.0,38.02N×21.55E,h17km,ML2.0/9,Error ellipse: s-maj=0.4km s-min=0.3km az=134.0*

ISC 24 13:01:51.9±0.8,38.02N±0.02×21.56E±0.02,h17km±4km, n62,σ0$44/110,Greece

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
RLS	**Riolos of Patr**	**0.08**	**297**	P		**Pg**	**13 01 55.2**	**-0.1**
RLS				S		**Sg**	**13 01 57.8**	**+0.2**
RLS	**Riolos of Patr**	**0.08**	**297**	P		**Pg**	**13 01 55.2**	**-0.1**
RLS				S		**Sg**	**13 01 57.8**	**+0.2**
RLS	**Riolos of Patr**	**0.08**	**297**	S		**Sg**	**13 01 57.8**	**+0.2**
RLS				AML		AML	13 01 58.1	
	comp=E,3546μm,0.2s							
RLS				AML		AML	13 01 58.1	
	comp=N,6748μm,0.2s							
DRO	**Drossia**	**0.14**	**120**	P		**Pg**	**13 01 55.9**	**-0.1**
DRO				S		**Sb**	**13 01 59.2**	**+0.4**
DRO	**Drossia**	**0.14**	**120**	P		**Pg**	**13 01 55.9**	**-0.1**
DRO				S		**Sb**	**13 01 59.1**	**+0.3**
DRO	**Drossia**	**0.14**	**120**	P		**Pg**	**13 01 55.6**	**-0.3**
DRO				S		**Sb**	**13 01 59.1**	**+0.3**
DRO				AML		AML	13 01 59.7	
	comp=E,3092μm,0.1s							
DRO				AML		AML	13 01 59.9	
	comp=N,3139μm,0.1s							
AXS	**Araxos**	**0.23**	**321**	P		**Pg**	**13 01 57.0**	**-0.2**
AXS				S		**Sb**	**13 02 00.9**	**-0.4**
AXS	**Araxos**	**0.23**	**321**	P		**Pb**	**13 01 57.2**	**-0.3**
AXS				S		**Sb**	**13 02 01.8**	**+0.5**
AXS	**Araxos**	**0.23**	**321**	P		**Pb**	**13 01 57.2**	**-0.3**
AXS				S		**Sb**	**13 02 01.8**	**+0.5**
UPR	**University Cam**	**0.32**	**34**	P		**Pb**	**13 01 59.0**	**-0.1**
UPR	**University Cam**	**0.32**	**34**	P		**Pb**	**13 01 59.0**	**-0.1**
LAKA	**Lakka**	**0.40**	**56**	P		**Pg**	**13 02 00.0**	**-0.1**
LAKA				S		**Sg**	**13 02 06.0**	**+0.3**
LAKA	**Lakka**	**0.40**	**56**	P		**Pg**	**13 02 00.0**	**-0.1**
LAKA				S		**Sg**	**13 02 05.8**	**+0.2**
LAKA	**Lakka**	**0.40**	**56**	P		**Pg**	**13 02 00.0**	**-0.1**
LAKA				S		**Sg**	**13 02 05.8**	**+0.2**
RODI	**Rodini**	**0.40**	**41**	P		**Pb**	**13 02 00.7**	**+0.2**
RODI				S		**Sb**	**13 02 07.6**	**+1.2**
RODI	**Rodini**	**0.40**	**41**	P		**Pb**	**13 02 00.7**	**+0.2**
RODI				S		**Sb**	**13 02 07.6**	**+1.2**
RODI				AML		AML	13 02 08.2	
	comp=E,1127μm,0.3s							
RODI				AML		AML	13 02 08.3	
	comp=N,1043μm,0.2s							
KLV	**Kalavryta, Ach**	**0.47**	**87**	P		**Pg**	**13 02 00.9**	**-0.5**
KLV				S		**Sb**	**13 02 08.6**	**+0.3**
KLV	**Kalavryta, Ach**	**0.47**	**87**	P		**Pg**	**13 02 00.9**	**-0.5**
KLV				S		**Sb**	**13 02 08.6**	**+0.3**
KLV	**Kalavryta, Ach**	**0.47**	**87**	P		**Pg**	**13 02 00.9**	**-0.5**
KLV				S		**Sb**	**13 02 09.0**	**+0.6**
KLV				AML		AML	13 02 10.7	
	comp=N,256μm,0.4s							
KLV				AML		AML	13 02 11.7	
	comp=E,160μm,0.3s							
EFP	**Efpalio**	**0.49**	**34**	P		**Pg**	**13 02 01.6**	**-0.2**
EFP				S		**Sb**	**13 02 08.9**	**0.0**
EFP	**Efpalio**	**0.49**	**34**	P		**Pg**	**13 02 01.6**	**-0.2**
EFP				S		**Sb**	**13 02 08.9**	**0.0**
EFP	**Efpalio**	**0.49**	**34**	P		**Pg**	**13 02 01.5**	**-0.2**
EFP				S		**Sb**	**13 02 09.5**	**+0.6**
EFP				AML		AML	13 02 10.7	
	comp=E,460μm,0.4s							
EFP				AML		AML	13 02 12.2	
	comp=N,453μm,0.3s							
AMT	**Artemida-Makis**	**0.50**	**166**	P		**Pg**	**13 02 02.0**	**-0.1**
AMT				S		**Sb**	**13 02 09.6**	**+0.3**
AMT	**Artemida-Makis**	**0.50**	**166**	P		**Pg**	**13 02 01.9**	**-0.1**
AMT				S		**Sb**	**13 02 09.6**	**+0.3**
AMT	**Artemida-Makis**	**0.50**	**166**	P		**Pg**	**13 02 01.9**	**-0.1**
AMT				S		**Sb**	**13 02 09.8**	**+0.5**
AMT				AML		AML	13 02 13.0	
	comp=N,394μm,0.2s							
AMT				AML		AML	13 02 13.3	
	comp=E,377μm,0.4s							
TRIZ	**Trizonia**	**0.53**	**50**	P		**Pg**	**13 02 02.6**	**+0.1**
SERG	**Sergoula**	**0.55**	**45**	P		**Pg**	**13 02 03.0**	**0.0**
SERG	**Sergoula**	**0.55**	**45**	P		**Pg**	**13 02 03.0**	**0.0**
KALE	**Kalithea**	**0.59**	**51**	P		**Pg**	**13 02 03.4**	**-0.2**
KALE				S		**Sb**	**13 02 12.5**	**+0.7**
KALE	**Kalithea**	**0.59**	**51**	P		**Pg**	**13 02 03.4**	**-0.2**
KALE				S		**Sb**	**13 02 12.5**	**+0.7**
KALE	**Kalithea**	**0.59**	**51**	P		**Pg**	**13 02 03.3**	**-0.3**
KALE				S		**Sb**	**13 02 12.9**	**+1.1**
KALE				AML		AML	13 02 15.2	
	comp=E,238μm,0.4s							
KALE				AML		AML	13 02 15.3	
	comp=N,236μm,0.3s							
PVO	**Paravola**	**0.59**	**358**	P		**Pb**	**13 02 03.9**	**+0.1**
PVO				S		**Sb**	**13 02 12.5**	**+0.6**
PVO	**Paravola**	**0.59**	**358**	P		**Pb**	**13 02 03.9**	**+0.1**
PVO				S		**Sb**	**13 02 12.5**	**+0.6**
PVO	**Paravola**	**0.59**	**358**	P		**Pb**	**13 02 04.2**	**+0.4**
KFL	**Anninata**	**0.61**	**278**	P		**Pb**	**13 02 04.0**	**-0.1**
KFL				S		**Sb**	**13 02 12.9**	**+0.4**
KFL	**Anninata**	**0.61**	**278**	P		**Pb**	**13 02 04.1**	**-0.1**
KFL				S		**Sb**	**13 02 12.9**	**+0.4**
KFL	**Anninata**	**0.61**	**278**	P		**Pb**	**13 02 04.1**	**0.0**
ANX	**Ano Chora**	**0.64**	**26**	P		**Pg**	**13 02 04.3**	**-0.3**
ANX				S		**Sb**	**13 02 14.1**	**+0.8**
ANX	**Ano Chora**	**0.64**	**26**	P		**Pg**	**13 02 04.3**	**-0.3**
ANX				S		**Sb**	**13 02 14.1**	**+0.8**
PDO	**Prodromos**	**0.65**	**333**	P		**Pb**	**13 02 04.8**	**+0.1**
PDO				S		**Sb**	**13 02 13.8**	**+0.3**
PDO	**Prodromos**	**0.65**	**333**	P		**Pb**	**13 02 04.8**	**+0.1**
PDO				S		**Sb**	**13 02 13.5**	**0.0**
PDO	**Prodromos**	**0.65**	**333**	P		**Pg**	**13 02 04.4**	**-0.3**
PDO				S		**Sb**	**13 02 13.5**	**0.0**
PDO				AML		AML	13 02 17.1	
	comp=N,746μm,0.3s							
PDO				AML		AML	13 02 17.7	
	comp=E,555μm,0.3s							
ZKS	**Zakynthos**	**0.69**	**242**	P		**Pb**	**13 02 05.8**	**+0.3**
ZKS				S		**Sb**	**13 02 15.3**	**+0.5**
ZKS	**Zakynthos**	**0.69**	**242**	P		**Pb**	**13 02 05.8**	**+0.3**
ZKS				S		**Sb**	**13 02 15.3**	**+0.5**
TRIP	**Tripoli**	**0.75**	**131**	P		**Pb**	**13 02 06.4**	**-0.1**
TRIP				S		**Sn**	**13 02 18.5**	**-0.2**
TRIP	**Tripoli**	**0.75**	**131**	P		**Pb**	**13 02 06.4**	**-0.1**
TRIP				S		**Sn**	**13 02 18.6**	**-0.2**
VLS	**Valsamata**	**0.78**	**282**	P		**Pb**	**13 02 06.4**	**-0.6**
VLS				S		**Sg**	**13 02 18.0**	**+0.5**
VLS	**Valsamata**	**0.78**	**282**	P		**Pb**	**13 02 06.4**	**-0.6**
VLS				S		**Sg**	**13 02 18.0**	**+0.5**
DSF	**Desfina**	**0.86**	**63**	P		**Pb**	**13 02 08.0**	**-0.3**
DSF				S		**Sg**	**13 02 20.5**	**+0.6**
DSF	**Desfina**	**0.86**	**63**	P		**Pb**	**13 02 08.0**	**-0.3**
DSF				S		**Sg**	**13 02 20.5**	**+0.6**
DSF	**Desfina**	**0.86**	**63**	P		**Pb**	**13 02 07.1**	**-1.3**
DSF				S		**Sn**	**13 02 20.8**	**-0.5**
DSF				AML		AML	13 02 22.2	
	comp=E,86μm,0.3s							
DSF				AML		AML	13 02 22.3	
	comp=N,106μm,0.5s							
ITM	**Ithomi**	**0.89**	**161**	P		**Pb**	**13 02 08.6**	**-0.3**
ITM				S		**Sg**	**13 02 21.3**	**+0.3**
ITM	**Ithomi**	**0.89**	**161**	P		**Pb**	**13 02 08.6**	**-0.3**
ITM				S		**Sg**	**13 02 21.3**	**+0.3**
ITM	**Ithomi**	**0.89**	**161**	P		**Pb**	**13 02 08.0**	**-0.9**
ITM				S		**Sn**	**13 02 22.9**	**+0.8**
ITM				AML		AML	13 02 25.9	
	comp=E,132μm,0.4s							
ITM				AML		AML	13 02 26.6	
	comp=N,83μm,0.4s							
LKD2	**Lefkada island**	**1.04**	**318**	P		**Pb**	**13 02 10.9**	**-0.6**
LKD2				S		**Sn**	**13 02 25.8**	**-0.1**
LKD2	**Lefkada island**	**1.04**	**318**	P		**Pb**	**13 02 10.9**	**-0.6**
LKD2				S		**Sn**	**13 02 25.8**	**-0.1**
LTK	**Loutraki**	**1.11**	**89**	P		**Pb**	**13 02 12.3**	**-0.4**
LTK	**Loutraki**	**1.11**	**89**	P		**Pb**	**13 02 12.3**	**-0.4**
AGG	**Agios Georgios**	**1.17**	**31**	P		**Pn**	**13 02 13.1**	**-0.4**
AGG	**Agios Georgios**	**1.17**	**31**	P		**Pn**	**13 02 13.1**	**-0.4**
DID	**Didima**	**1.43**	**111**	P		**Pb**	**13 02 17.6**	**-0.4**
DID	**Didima**	**1.43**	**111**	P		**Pb**	**13 02 17.6**	**-0.4**

*ISCJB **24** 13:02:12.4±0.8,35.82N±0.03×14.89E±0.03,h19km±5km, mb3.4/10,MS2.7/2,Error ellipse: s-maj=5.9km s-min=4.4km az=153.8*
*NEIC **24** 13:02:12.0,35.82N×14.88E,h20km,ML4.1(ROM),After ROM.*
NEIC Felt [III] at Birkirkara and Sliema. Also felt at Attard, Balzan, Birzebugia, Bormla, Dingli, Ghaxaq, Gudja, Gzira, Marsascala, Mqabba, Naxxar, Qormi, Rabat, San Gwann, Swieqi, Tarxien, Valletta, Xghajra, Zabbar and Zebbug. Felt in southeastern Sicily.
*ROM **24** 13:02:12.0±0.3,35.83N×14.91E,h10km,Ml4.3/33,Error ellipse: s-maj=4.7km s-min=1.7km az=146.0*
*IDC **24** 13:02:13.2±1.1,36.00N×14.75E,h0km,mb3.5/10, mb1 3.6/18,mb1mx3.5/58,mbtmp3.6/18,ML3.6/8,MS2.8/6, Ms1 2.8/6,ms1mx2.5/35,Error ellipse: s-maj=19.7km s-min=16.3km az=166.0*
*CSEM **24** 13:02:13.2±0.4,35.84N×14.84E,h15km,ML4.1,Error ellipse: s-maj=9.1km s-min=4.6km az=164.0*

ISC 24 13:02:14.3±1.0,35.95N±0.04×14.82E±0.04,h11km±7km, n142,σ1$02/166,mb3.6/10,2C,Central Mediterranean Sea

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
WDD	**Wied Dalam**	**0.25**	**252**	*i*Pn		**Pg**	**13 02 19.1**	**-0.3**
WDD				Sn		**Sg**	**13 02 23.8**	**+0.9**
	27μm,0.4s							
WDD	**Wied Dalam**	**0.25**	**252**	*e*Pg		**Pg**	**13 02 18.4**	**-1.0**
WDD	**Wied Dalam**	**0.25**	**252**	*i*Pn		**Pg**	**13 02 19.1**	**-0.3**
WDD				Sn		**Sg**	**13 02 23.8**	**+0.9**
	27μm,0.4s							
WDD	**Wied Dalam**	**0.25**	**252**	*e*Pg		**Pg**	**13 02 18.4**	**-1.0**
WDD				*e*Sg		**Sg**	**13 02 24.0**	**+1.1**
HMDC	**Modica**	**1.01**	**358**	Pn		**Pb**	**13 02 33.1**	**-0.7**
HMDC				Sn		**Sn**	**13 02 49.1**	**+0.5**
	23μm,1.0s							
HMDC	**Modica**	**1.01**	**358**	P		**Pb**	**13 02 32.9**	**-0.9**
HMDC				S		**Sn**	**13 02 48.5**	**-0.1**
HMDC				Sn		**Sn**	**13 02 49.1**	**+0.5**
	23μm,1.0s							
HMDC	**Modica**	**1.01**	**358**	P		**Pb**	**13 02 32.9**	**-0.9**
HMDC				S		**Sn**	**13 02 48.5**	**-0.1**
HAVL	**Avola**	**1.04**	**14**	Pn		**Pb**	**13 02 33.4**	**-0.9**
HAVL				S		**Sg**	**13 02 49.0**	**+1.1**
HAVL	**Avola**	**1.04**	**14**	P		**Pb**	**13 02 33.4**	**-0.9**
HAVL				S		**Sg**	**13 02 49.0**	**+1.1**
SSY	**Sortino**	**1.22**	**10**	Pn		**Pn**	**13 02 36.4**	**-0.9**
	16μm,0.6s							
SSY	**Sortino**	**1.22**	**10**	Pn		**Pn**	**13 02 36.4**	**-0.9**
	16μm,0.6s							
SSY				S		**Sn**	**13 02 54.4**	**+0.5**
SSY	**Sortino**	**1.22**	**10**	P		**Pn**	**13 02 36.3**	**-0.9**
SSY				S		**Sn**	**13 02 54.4**	**+0.5**
HVZN	**Vizzini**	**1.23**	**356**	Pn		**Pn**	**13 02 36.2**	**-1.3**
	9μm,0.5s							
HVZN	**Vizzini**	**1.23**	**356**	Pn		**Pn**	**13 02 36.2**	**-1.3**
	9μm,0.5s							
HVZN				S		**Sg**	**13 02 54.7**	**+0.7**
HVZN	**Vizzini**	**1.23**	**356**	P		**Pn**	**13 02 36.2**	**-1.3**
HVZN				S		**Sg**	**13 02 54.7**	**+0.7**
RAFF	**Raffo Rosso**	**1.32**	**344**	Pn		**Pn**	**13 02 38.2**	**-0.5**
	4μm,0.7s							
RAFF	**Raffo Rosso**	**1.32**	**344**	Pn		**Pn**	**13 02 38.2**	**-0.5**
	4μm,0.7s							
RAFF				S		**Sg**	**13 02 58.6**	**+1.7**
RAFF	**Raffo Rosso**	**1.32**	**344**	P		**Pn**	**13 02 38.2**	**-0.5**
RAFF				S		**Sg**	**13 02 58.6**	**+1.7**
HCRL	**Carlentini**	**1.34**	**7**	Pn		**Pn**	**13 02 37.9**	**-1.1**
	14μm,0.5s							
HCRL	**Carlentini**	**1.34**	**7**	Pn		**Pn**	**13 02 37.9**	**-1.1**
	14μm,0.5s							
HAGA	**Augusta**	**1.36**	**11**	Pn		**Pn**	**13 02 38.1**	**-1.1**
	5μm,0.5s							
HAGA	**Augusta**	**1.36**	**11**	Pn		**Pn**	**13 02 38.1**	**-1.1**
	5μm,0.5s							
HLNI	**Lentini**	**1.40**	**2**	Pn		**Pn**	**13 02 38.5**	**-1.2**
	3μm,0.7s							
HLNI	**Lentini**	**1.40**	**2**	Pn		**Pn**	**13 02 38.5**	**-1.2**
	3μm,0.7s							
VAE	**Valguarnera**	**1.56**	**348**	Pn		**Pb**	**13 02 43.1**	**-0.1**
	74nm,0.3s,baz=321,slow=8.7,SNR=111							
VAE						Sn		**Sg**	**13 03 07.4**	**+2.8**
	105nm,0.3s,baz=56,slow=7.7,SNR=6.0							
ECNV	**Catenanuova**	**1.65**	**357**	Pn		**Pn**	**13 02 43.8**	**+0.6**
	4μm,0.7s							
ECNV	**Catenanuova**	**1.65**	**357**	Pn		**Pn**	**13 02 43.8**	**+0.6**
	4μm,0.7s							
CAGR	**Agira**	**1.69**	**351**	Pn		**Pn**	**13 02 44.5**	**+0.7**
	2μm,0.6s							
CAGR	**Agira**	**1.69**	**351**	Pn		**Pn**	**13 02 44.5**	**+0.7**
	2μm,0.6s							
ESLN	**Serra La Nave**	**1.75**	**4**	Pn		**Pn**	**13 02 44.7**	**0.0**
	4μm,1.1s							
ESLN	**Serra La Nave**	**1.75**	**4**	Pn		**Pn**	**13 02 44.7**	**0.0**
	4μm,1.1s							
GALF	**Gagliano Caste**	**1.77**	**354**	Pn		**Pn**	**13 02 45.1**	**+0.2**
	1μm,0.5s							
GALF	**Gagliano Caste**	**1.77**	**354**	Pn		**Pn**	**13 02 45.1**	**+0.2**
	1μm,0.5s							
RESU	**Resuttano**	**1.80**	**340**	Pn		**Pb**	**13 02 46.5**	**-0.8**
	945nm,0.6s							
RESU	**Resuttano**	**1.80**	**340**	Pn		**Pb**	**13 02 46.5**	**-0.8**
	945nm,0.6s							
RESU	**Resuttano**	**1.80**	**340**	P		**Pb**	**13 02 46.9**	**-0.4**
RESU	**Resuttano**	**1.80**	**340**	P		**Pb**	**13 02 46.9**	**-0.4**
MNO	**Monte Soro**	**1.99**	**357**	Pn		**Pn**	**13 02 49.0**	**+1.0**
	844nm,0.5s							
MNO	**Monte Soro**	**1.99**	**357**	Pn		**Pn**	**13 02 49.0**	**+1.0**
	844nm,0.5s							
ALJA	**Alia**	**1.99**	**335**	Pn		**Pn**	**13 02 48.8**	**+0.9**
	596nm,0.7s							
ALJA	**Alia**	**1.99**	**335**	Pn		**Pn**	**13 02 48.8**	**+0.9**
	596nm,0.7s							
MMME	**Mongiuffi-Meli**	**2.02**	**10**	Pn		**Pn**	**13 02 48.2**	**-0.1**
	942nm,0.4s							
MMME	**Mongiuffi-Meli**	**2.02**	**10**	Pn		**Pn**	**13 02 48.2**	**-0.1**
	942nm,0.4s							
CLTB	**Caltabellotta**	**2.08**	**322**	*e*Pn		**Pn**	**13 02 47.2**	**-1.9**
CLTB				*e*Sn		**Sn**	**13 03 14.3**	**-0.7**
CLTB	**Caltabellotta**	**2.08**	**322**	*e*Pn		**Pn**	**13 02 47.2**	**-1.9**
CLTB				*e*Sn		**Sn**	**13 03 14.3**	**-0.7**
NOV	**Novara**	**2.09**	**7**	Pn		**Pn**	**13 02 49.8**	**+0.5**
	2μm,0.5s							
NOV	**Novara**	**2.09**	**7**	Pn		**Pn**	**13 02 49.8**	**+0.5**
	2μm,0.5s							
PLLN	**Pollina**	**2.11**	**345**	Pn		**Pn**	**13 02 50.5**	**+0.9**
	926nm,0.6s							
PLLN	**Pollina**	**2.11**	**345**	Pn		**Pn**	**13 02 50.5**	**+0.9**
	926nm,0.6s							
GIB	**Gibilmanna**	**2.13**	**343**	Pn		**Pn**	**13 02 51.1**	**+1.2**
	2μm

KEST	Kesra	4.45	269	Pn		Pn	13 03 22.7	+1.0	
	3.5nm,0.3s,baz=139,slow=5.1,SNR=39								
KEST				Sn		Sn	13 04 13.9	+0.3	
	5.4nm,0.3s,baz=57,slow=22,SNR=11								
KEST				LR		LR	13 04 49.7		
	comp=Z,53nm,20.1s,baz=220,slow=36								
TAR1	Taranto	4.97	22	*e*Pn		Pn	13 03 27.2	-1.5	
TAR1				Sn		Sn	13 04 25.6	-0.5	
SG1	Sgolgore (BA)	5.10	16	*e*Pn		Pn	13 03 31.1	+0.5	
SG1				Sn		Sn	13 04 28.7	-0.8	
CDT	Castel del Mon	5.25	12	*e*Pn		Pn	13 03 33.5	+0.8	
BAI	Bari	5.40	17	*e*Pn		Pn	13 03 34.1	-0.6	
VSL	Villasalto	5.58	311	*e*Pn		Pn	13 03 36.7	-0.5	
	30nm,0.4s								
VSL	Villasalto	5.58	311	*e*Pn		Pn	13 03 36.6	-0.5	
	30nm,0.4s								
VSL				*e*Sn		Sn	13 04 37.7	-3.6	
TIR	Tirane	6.68	35	*e*Sn		Sn	13 05 05.7	-2.8	
OHR	Ohrid	6.97	40	*e*Pn		Pn	13 03 55.5	-0.9	
OHR	Ohrid	6.97	40	*e*Pn		Pn	13 03 55.4	-0.9	
BIA	Bitola	7.19	43	*e*Pn		Pn	13 03 59.7	+0.3	
BIA	Bitola	7.19	43	*e*Pn		Pn	13 03 59.6	+0.3	
STON	Ston	7.27	17	*e*Pn		Pn	13 03 59.0	-1.4	
STON				Sn		Sn	13 05 18.3	-4.4	
STON	Ston	7.27	17	*e*Pn		Pn	13 03 58.9	-1.4	
SKO	Skopje	7.92	39	*e*Pn		Pn	13 04 09.4	0.0	
SKO	Skopje	7.92	39	*e*Pn		Pn	13 04 09.3	0.0	
VAY	Valandovo	8.10	46	*e*Pn		Pn	13 04 04.9	-6.8	
IDI	Anoyia	8.23	92	Pn		Pn	13 04 13.7	0.0	
	1.2nm,0.3s,baz=3.7,slow=14,SNR=7.5								
IDI				Sn		Sn	13 05 43.9	-2.7	
	2.6nm,0.3s,baz=146,slow=23,SNR=12								
SJES	Sjenica	8.32	27	*e*Pn		Pn	13 04 15.2	+0.4	
IVAS	Ivanjica	8.65	27	*e*Pn		Pn	13 04 19.4	0.0	
BARS	Barje	8.74	36	*e*Pn		Pn	13 04 19.5	-1.0	
DIVS	Divibare	9.06	24	*e*Pn		Pn	13 04 23.2	-1.7	
GRUS	Gruza	9.13	28	*e*Pn		Pn	13 04 27.3	+1.6	
TRUS	Trudelj	9.31	26	*e*Pn		Pn	13 04 28.9	+0.6	
TEKS	Tekeris	9.31	21	*e*Pn		Pn	13 04 27.6	-0.8	
KUBS	Kucevo	9.95	30	*e*Pn		Pn	13 04 35.2	-1.9	
DAVOX	Davos/Dischmat	11.44	343	Pn		Pn	13 04 58.1	+0.4	
	0.1nm,0.3s,baz=154,slow=22,SNR=3.6								
DAVOX				LR		LR	13 09 36.1		
	comp=Z,37nm,18.1s,baz=274,slow=39								
MLR	Muntele Rosu	12.72	38	Pn		Pn	13 05 15.8	+0.7	
	0.1nm,0.3s,baz=302,slow=18,SNR=7.6								
GERES	GERESS Array B	12.92	357	Pn		Pn	13 05 16.1	-1.6	
	0.1nm,0.3s,baz=162,slow=18,SNR=4.2								
GERES				LR		LR	13 10 43.2		
	comp=Z,31nm,18.1s,baz=185,slow=40								
VRAC	Vranov	13.42	5	Pn		P	13 05 37.9	+3.9	
	0.1nm,0.3s,baz=189,slow=8.2,SNR=4.4								
ESDC	Sonseca Array	15.30	290	Pn		P	13 05 54.9	-0.1	
	0.1nm,0.3s,baz=92,slow=14,SNR=3.4								
BRTR	Keskin Array B	15.34	70	Pn		Pn	13 05 50.0	-0.8	
	0.1nm,0.3s,baz=259,slow=12,SNR=4.5								
CLL	Collm	15.41	356	*i* P		P	13 05 55.6	-0.5	
MDT	Mideit	15.34	265	Pn		Pn	13 06 02.9	-0.8	
	0.1nm,0.3s,baz=246,slow=11,SNR=3.6								
MDT				LR		LR	13 13 09.5		
	comp=Z,60nm,20.5s,baz=143,slow=40								
MMAI	Mount Meron Ar	17.22	94	P		P	13 06 16.4	0.0	
	0.4nm,0.3s,baz=316,slow=12,SNR=2.1								
AKASG	Malin Array Be	18.04	31	P		P	13 06 25.7	+0.5	
	0.7nm,0.3s,baz=223,slow=10,SNR=6.9								
KBZ	Khabaz	22.84	62	P		P	13 07 19.6	+2.3	
	2.5nm,0.9s,baz=262,slow=14,SNR=5.8								
EKA	Eskdalemuir Ar	22.98	333	P		P	13 07 17.6	-1.0	
	0.6nm,0.6s,baz=143,slow=12,SNR=4.8								
GNI	Garni	23.88	71	LR		LR	13 17 56.2		
	comp=Z,30nm,19.1s,baz=269,slow=39								
HFS	Hagfors	24.21	359	P		P	13 07 30.0	-0.7	
	1.7nm,0.6s,baz=182,slow=10,SNR=7.8								
NOA	NORSAR Array B	25.22	356	P		P	13 07 40.4	+0.6	
	1.2nm,0.8s,baz=165,slow=9.5,SNR=3.5								
NOA				LR		LR	13 18 24.6		
	comp=Z,17nm,18.6s,baz=170,slow=39								
TORD	Torodi Ar. Bea	25.59	211	P		P	13 07 44.3	+0.8	
	0.3nm,0.5s,baz=14,slow=10,SNR=4.2								
FINES	FINESS Array B	26.50	12	P		P	13 07 50.3	-1.0	
	0.6nm,0.6s,baz=187,slow=11,SNR=6.8								
KURBB	Kurchatov Arra	47.20	51	P		P	13 10 48.0	+1.2	
	0.3nm,0.5s,baz=280,slow=8.5,SNR=4.0								
MKAR	Makanchi Array	50.34	56	P		P	13 11 11.5	+0.5	
	0.5nm,0.6s,baz=290,slow=6.9,SNR=7.4								
ZALV	Zalesovo Beam	50.55	46	P		P	13 11 13.6	+1.2	
	0.5nm,0.5s,baz=271,slow=10,SNR=3.0								
YKA	Yellowknife Ar	73.84	338	P		P	13 13 49.0	+0.5	
	0.1nm,0.4s,baz=54,slow=8.5,SNR=2.9								

*ISCJB **24** 13:12:35.8±0.3,3.95N±0.03×126.82E±0.06,h45km, mb4.2/41,MS3.2/7,Error ellipse: s-maj=8.4km s-min=4.3km az=160.1*
*NEIC **24** 13:12:38.1±1.5,3.87N×126.62E,h57km±14km,mb4.4/11, Error ellipse: s-maj=16.7km s-min=7.5km az=72.0*
*DJA **24** 13:12:40.2±0.7,4.1N±7.7×12.7E±.1,h10km,M4.5/11, mb4.5/11,mB4.9/3,MLv4.5/11,Mw(mB)4.2/3*
*BJI **24** 13:12:44.5,4.98N×126.35E,h50km,mb4.5/10,mB4.8/8, Ms4.2/3,Ms7.4.1/2*
*IDC **24** 13:12:44.5±1.6,3.77N×126.40E,h114km±15km,mb3.8/22, mb1 3.9/24,mb1mx3.7/44,mbtmp4.1/24,MS3.2/7, Ms1 3.2/7,ms1mx2.9/39,Error ellipse: s-maj=24.1km s-min=9.0km az=78.0*
ISC 24 13:12:37.7±0.4,3.92N±0.06×126.70E±0.08,h45km,n75, σ1.98/98,**mb4.3**/40,**MS3.1**/7,**1C-2D,Talaud Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SGSI	Sangihe	1.19	259	P	Pn	13 13 00.8	+2.9
TNTI	Ternate	3.19	168	P	Pn	13 13 26.2	+0.8
DAV	Davao City (W)	3.33	340	P	Pn	13 13 35.3	+8.0
	93nm,0.3s,baz=261,slow=15,SNR=3.2						
DAV				S	Sn	13 14 16.7	+11
	41nm,0.3s,baz=96,slow=22,SNR=3.9						
DAV	Davao City (W)	3.33	340	*e*Pn	Pn	13 13 26.1	-1.1
DAV				S	Sn	13 14 16.7	+11
KCP	Kidapawan	3.47	333	‖*e*P	Pn	13 13 28.6	-0.6
CTBH	Cotabato--PC H	4.09	323	‖*i*P	Pn	13 13 40.7	+2.9
CTBH				*i* S	Sn	13 14 28.0	+3.5
LBMI	Labuha	4.59	170	P	Pn	13 13 46.4	+1.7
CGP	Cagayan de Oro	4.93	336	‖*e*P	Pn	13 13 52.7	+3.4
MRSI	Marisa	5.86	234	P	Pn	13 14 03.2	+1.2
	124nm,0.7s,2μm0.5nm						
SANI	Sanana	5.97	187	P	Pn	13 14 03.6	+0.1
	27nm,0.8s,639nm0.2nm						
SWI	Sorong	6.58	136	P	Pn	13 14 14.6	+2.7
	31nm,0.9s,763nm0.1nm						
MSAI	Masohi	7.55	163	P	Pn	13 14 26.6	+1.3
	9.3nm,0.8s,0.3nm						
MYLDM	Lahad Datu	8.27	279	*e*Pn	Pn	13 14 37.0	+1.8
FAKI	Fak Fak	8.77	141	P	Pn	13 14 44.1	+2.1
	25nm,0.7s						
KAPI	Kappang	11.26	218	LR	LR	13 20 08.1	
	comp=Z,95nm,19.9s,baz=33,slow=40						
SBUM	Sibu	14.53	265	*e*Pn	P	13 16 03.8	-2.5
GENI	Genyem	14.93	115	P	P	13 16 14.2	+3.4
JAY	Jayapura	15.38	114	P	P	13 16 17.4	+1.5
	0.1nm,0.3s,baz=232,slow=23,SNR=6.2						
KSM	Kuching	16.55	262	*e*Pn	P	13 16 32.3	+3.5
	8.3nm,0.8s						
MTN	Manton Dam	17.22	165	*e*Pn	Pn	13 16 32.9	-2.3
	51nm,1.5s						
GUMO	Guam	20.35	61	LR	LR	13 23 18.7	
	comp=Z,93nm,21.4s,baz=244,slow=31						
LEM	Lembang	21.83	241	LR	LR	13 26 18.4	
	comp=Z,93nm,19.9s,baz=32,slow=38						
FITZ	Fitzroy Crossi	21.90	183	P	P	13 17 26.6	-0.6
	4.0nm,0.7s,baz=5.3,slow=10,SNR=12						
PMG	Port Moresby	24.31	123	LR	LR	13 27 39.9	
	comp=Z,67nm,19.3s,baz=294,slow=37						
WRAB	Tennant Creek	24.86	163	*e*P	P	13 17 52.8	-3.5
	12nm,0.8s						
WRA	Warramunga Arr	24.87	163	P	P	13 17 55.3	-1.0
	3.8nm,0.8s,baz=343,slow=10,SNR=49						
WB2	Warramunga Arr	24.87	163	*e*P	P	13 17 55.9	-0.4
	14nm,0.9s						
SKNT	Sakolnakorn	25.79	302	P	P	13 18 08.1	+3.3
	37nm,0.8s						
KHON	Khomkaen	26.51	299	P	P	13 18 15.7	+4.5
	9.3nm,1.0s						
PSI	Prapat	27.75	269	LR	LR	13 31 11.3	
	comp=Z,55nm,20.1s,baz=74,slow=40						
PBKT	Sadao Pong	28.22	298	P	P	13 18 32.9	+6.3
	12nm,1.0s						
AS31	Alice Springs	28.30	166	*e*P	P	13 18 26.5	-0.7
	1.2nm,0.6s						
ASAR	Alice Springs	28.30	166	P	P	13 18 26.7	-0.5
	0.8nm,0.5s,baz=341,slow=6.5,SNR=28						
NANT	Nan	29.40	302	P	P	13 18 41.3	+4.2
	2.3nm,0.6s						
CM01	Chiang Mai Arr	30.73	300	*e*P	P	13 18 47.5	-1.3
CMAR	Chiang Mai Arr	30.75	300	P	P	13 18 47.8	-1.3
	0.7nm,0.7s,baz=117,slow=8.2,SNR=6.9						
CMAR				LR	LR	13 31 16.4	
	comp=Z,19nm,20.5s,baz=110,slow=36						
CMMT	Chiang Mai	30.90	301	P	P	13 18 53.7	+3.4
	9.0nm,0.8s						
CHTO	Chiang Mai	30.90	301	P	P	13 18 53.8	+3.4
	40nm,0.7s						
CHTO	Chiang Mai	30.90	301	*e*P	P	13 18 50.4	0.0
	6.7nm,0.7s						
CMAI	Chiengmai2	31.31	303	P	P	13 18 59.2	+5.1
	37nm,0.8s						
KSAR	Wonju Array Be	33.39	2	P	P	13 19 12.2	+0.4
KSRS	Korea Array	33.40	2	P	P	13 19 12.2	+0.3
	1.7nm,0.6s,baz=181,slow=9.7,SNR=5.8						
MJAR	Matsushiro Arr	34.15	17	P	P	13 19 17.9	-0.7
	0.5nm,0.5s,baz=183,slow=8.7,SNR=3.5						
CD2	Chengdu	34.48	324	P	P	13 19 20.4	-1.1
CD2				pmax	pmax		
	comp=Z,1.0nm,0.6s						
BJI	Beijing	37.20	347	P	P	13 19 43.9	-0.7
BJI				pmax	pmax		
	comp=Z,7.0nm,0.9s						
BJI				pmax	pmax		
	comp=Z,96nm,4.0s						
STKA	Stephens Creek	38.31	159	P	P	13 19 54.4	+0.3
	7.0nm,0.8s,baz=328,slow=6.8,SNR=16						
STKA	Stephens Creek	38.31	159	*e*P	P	13 19 54.2	+0.1
	1.7nm,0.8s						
HHC	Hu-ho-hao-te	39.22	342	*e*P	P	13 20 02.0	+0.2
HHC				sP	sP	13 20 23.3	+4.0
HHC				S	S	13 25 57.4	-1.7
HHC				pmax	pmax		
	comp=Z,23nm,1.0s						
HHC				pmax	pmax		
	comp=Z,67nm,7.6s						
HHC				LR	LR		
	comp=N,130nm,15.7s						
HHC				LR	LR		
	comp=E,100nm,14.7s						
CN2	Changchun	39.74	359	*e*P	P	13 20 06.8	+0.9
USRK	Ussuriysk Ar.	40.39	6	P	P	13 20 11.6	+0.3
	1.0nm,0.6s,baz=146,slow=43,SNR=3.8						
KLR	Kul'dur	45.36	5	P	P	13 20 50.9	-0.5
	1.5nm,0.5s,baz=208,slow=5.3,SNR=7.0						
SONM	Songino Array	47.12	341	P	P	13 21 05.7	+0.2
	0.8nm,0.6s,baz=162,slow=9.3,SNR=6.9						
WMQ	Urumqi	52.56	325	*e*P	P	13 21 47.0	+0.2
WMQ				pmax	pmax		
	comp=Z,4.0nm,0.6s						
WMQ				pmax	pmax		
	comp=Z,21nm,4.2s						
PETK	Petropavlovsk-	55.27	22	P	P	13 22 07.0	+0.7
	1.8nm,0.6s,baz=96,slow=1.5,SNR=5.0						
MK01	Makanchi Array	57.37	325	*e*P	P	13 22 20.1	-1.4
MK31	Makanchi Array	57.39	325	*e*P	P	13 22 19.7	-1.9
MKAR	Makanchi Array	57.39	325	P	P	13 22 20.2	-1.5
	0.7nm,0.4s,baz=113,slow=7.7,SNR=11						
MKAR				ScP	ScP	13 27 10.4	-1.2
	0.4nm,0.7s,baz=123,slow=6.0,SNR=4.5						
MKAR	Makanchi Array	57.39	325	*e*P	P	13 22 19.7	-2.0
YAK	Yakutsk	58.03	2	P	P	13 22 26.1	+0.3
	5.7nm,0.5s,baz=237,slow=2.0,SNR=2.8						
MA2	Magadan	58.53	14	P	P	13 22 31.5	+2.1
	1.2nm,0.3s,baz=198,slow=13,SNR=2.9						
AAK	Ala-Archa	60.20	318	LR	LR	13 50 03.2	
	comp=Z,21nm,20.9s,baz=90,slow=37						
ZALV	Zalesovo Beam	60.41	333	P	P	13 22 40.9	-1.6
	0.5nm,0.4s,baz=133,slow=8.7,SNR=3.8						
KURK	Kurchatov	61.57	327	*e*P	P	13 22 48.5	-1.9
	4.1nm,0.7s						
SEY	Seymchan	61.86	13	P	P	13 22 53.3	+1.3
	1.3nm,0.6s,baz=201,slow=17,SNR=2.3						
BRVK	Borovoye	67.22	327	*e*P	P	13 23 25.3	-2.0
	3.8nm,0.9s						
ZRNK	Zerenda	67.88	326	*e*P	P	13 23 29.8	-1.7
	3.4nm,0.7s						
ABKAR	Akbulak array	71.99	321	*e*P	P	13 23 54.0	-2.7
VNDA	Vanda	83.61	173	P	P	13 25 00.8	0.0
	0.6nm,0.6s,baz=322,slow=7.2,SNR=4.2						
COLD	Coldfoot	83.73	23	*e*P	P	13 24 58.5	-3.1
	3.1nm,0.9s						
ILAR	Eielson Array	84.95	25	P	P	13 25 09.4	+1.5
	0.7nm,1.0s,baz=246,slow=5.5,SNR=5.5						
ARCES	ARCESS Array B	90.27	340	P	P	13 25 31.8	-1.6
	1.9nm,0.8s,baz=83,slow=5.0,SNR=6.0						
FINES	FINESS Array B	91.66	332	P	P	13 25 38.2	-1.7
	1.1nm,0.7s,baz=42,slow=5.7,SNR=5.6						
AKASG	Malin Array Be	91.73	321	P	P	13 25 38.7	-1.9
	0.1nm,0.3s,baz=72,slow=4.7,SNR=4.4						
NOA	NORSAR Array B	98.61	334	P	P	13 26 11.2	-0.6
	0.6nm,0.7s,baz=66,slow=4.7,SNR=3.2						
YKA	Yellowknife Ar	99.34	24	P	Pdif	13 26 14.9	-0.1
	0.2nm,0.7s,baz=296,slow=3.7,SNR=2.5						

*CSEM **24** 13:13:50.4±0.4,43.31N×12.41E,h2km,ML1.1/5,Error ellipse: s-maj=10.1km s-min=6.3km az=96.0*
ROM 24 13:13:48.3±0.1,43.35N×12.52E,h10km,Md1.5/7,MlI0.8/5, Error ellipse: s-maj=0.9km s-min=0.7km az=86.0, Central Italy

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ATVO	AVT- Monte Val	0.09	291	Pg	Pg	13 13 51.0	+0.3
ATVO				Sg	Sg	13 13 52.7	+0.2
ATVO	AVT- Monte Val	0.09	291	Pg	Pg	13 13 51.0	+0.3
ATVO				Sg	Sg	13 13 52.7	+0.2
MURB	Monte Urbino	0.09	177	Pg	Pg	13 13 51.2	+0.5
MURB				Sg	Sg	13 13 53.3	+0.8
	42nm,0.3s						
MURB	Monte Urbino	0.09	177	Pg	Pg	13 13 51.2	+0.5
MURB				Sg	Sg	13 13 53.3	+0.8
	42nm,0.3s						
ATPC	Poggio Castell	0.14	341	Pg	Pg	13 13 51.9	+0.4
ATPC				Sg	Sg	13 13 54.9	+1.2
	22nm,0.3s						
ATPC	Poggio Castell	0.14	341	Pg	Pg	13 13 51.9	+0.4
ATPC				Sg	Sg	13 13 54.9	+1.2
	22nm,0.3s						
PIEI	Pieia	0.18	4	Pg	Pg	13 13 52.9	+0.6
PIEI				Sg	Sg	13 13 56.4	+1.4
	14nm,0.2s						
PIEI	Pieia	0.18	4	Pg	Pg	13 13 52.9	+0.6
PIEI				Sg	Sg	13 13 56.4	+1.4
	14nm,0.2s						
ATTE	AVT- Monte Tez	0.20	218	Pg	Pg	13 13 53.1	+0.7
ATTE				Sg	Sg	13 13 56.6	+1.4
	9.0nm,0.2s						
ATTE	AVT- Monte Tez	0.20	218	Pg	Pg	13 13 53.1	+0.7
ATTE				Sg	Sg	13 13 56.6	+1.4
	9.0nm,0.2s						
SSFR	Montelago di S	0.21	66	Pg	Pg	13 13 53.1	+0.4
SSFR				Sg	Sg	13 13 57.1	+1.4
	14nm,0.2s						
BADI	Badiali	0.26	309	Pg	Pb	13 13 54.3	-0.8
BADI				Sg	Sb	13 13 58.8	-0.8
	19nm,0.3s						
BADI	Badiali	0.26	309	Pg	Pb	13 13 54.3	-0.8
BADI				Sg	Sb	13 13 58.8	-0.8
	19nm,0.3s						

*CSEM **24** 13:14:25.7±0.6,44.97N×13.50E,h10km,ML2.8/10,Error ellipse: s-maj=9.5km s-min=5.7km az=57.0*
*ROM **24** 13:14:26.7±1.1,44.98N×13.37E,h10km,Md2.5/4,MI1.8/3, Error ellipse: s-maj=21.9km s-min=11.1km az=102.0*
*VIE **24** 13:14:28.4±1.4,45.01N×13.70E,h0km,mb1.5/2,ml1.9/4, Error ellipse: s-maj=8.9km s-min=8.0km az=32.0*
ISC 24 13:14:26.5±1.5,44.94N±0.04×13.54E±0.05,h19km±3km, n53,σ0.47/75,5C,Adriatic Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SKDS	Skadanscina	0.69	29	*i* Pg	Pg	13 14 40.1	0.0
SKDS				*i* Sg	Sg	13 14 49.5	+0.1
	comp=Z,35nm,0.1s						
SKDS	Skadanscina	0.69	29	*i* Pg	Pg	13 14 40.1	-0.1
TRI	Trieste	0.78	12	*e*Sg	Sg	13 14 52.2	-0.1
TRI	Trieste	0.78	12	*e*Pg	Pg	13 14 41.8	0.0
TRI	Trieste	0.78	12	‖*e*Pg	Pg	13 14 41.8	-0.1
TRI				*e*Sg	Sg	13 14 52.1	-0.1
KNDS	Knezji Dol	0.83	45	*i* Pg	Pg	13 14 42.9	0.0
KNDS				*i* Sg	Sg	13 14 53.9	-0.1
	comp=Z,6.0nm,0.1s						
KNDS	Knezji Dol	0.83	45	*i* Pg	Pg	13 14 42.9	+0.1
CEY	Cerknica	1.01	38	*i* Sg	Sn	13 14 58.9	-0.5
JAVS	Javornik	1.02	21	‖*i*Pg	Pb	13 14 45.3	-0.3
JAVS				*i* Sg	Sb	13 14 59.0	+0.3
	comp=Z,7.0nm,0.1s						
JAVS	Javornik	1.02	21	‖*i*Pg	Pb	13 14 45.3	-0.3
NVLJ	Novalja	1.02	111	*e*Pg	Pg	13 14 46.3	0.0
NVLJ				Sg	Sg	13 14 59.8	0.0
NVLJ	Novalja	1.02	111	*e*Pg	Pg	13 14 46.3	0.0
NVLJ	Novalja	1.02	111	Sg	Sg	13 14 59.7	-0.1
SABO	M.te Sabotino	1.04	2	Pg	Pb	13 14 45.8	0.0
SABO				Sg	Sg	13 15 00.5	+0.2
	comp=Z,37nm,0.3s						
SABO	M.te Sabotino	1.04	2	Pg	Pb	13 14 45.8	0.0
SABO				Sg	Sg	13 15 00.5	+0.2
	comp=Z,37nm,0.3s						
SABO	M.te Sabotino	1.04	2	*e*Pg	Pb	13 14 45.9	0.0
SABO	M.te Sabotino	1.04	2	*e*Pg	Pb	13 14 45.9	0.0
SABO				*e*Sg	Sn	13 15 00.0	0.0
GBRS	Gornja Briga	1.07	56	*i* Pg	Pn	13 14 46.7	+0.2
GBRS				*e*Sg	Sg	13 15 01.3	-0.2
	comp=Z,3.0nm,0.0s						
VOJS	Vojsko	1.12	12	*i* Pg	Pn	13 14 46.7	-0.5
VOJS				*i* Sg	Sn	13 15 02.3	+0.2
	comp=Z,4.0nm,0.1s						
VOJS	Vojsko	1.12	12	*i* Pg	Pn	13 14 46.7	-0.5
GBAS	Gorenja Brezov	1.18	32	*i* Pg	Pn	13 14 48.1	+0.1
GBAS				*i* Sg	Sn	13 15 04.0	+0.5
	comp=Z,4.0nm,0.1s						
GBAS	Gorenja Brezov	1.18	32	*i* Sg	Sn	13 15 04.0	+0.5
GBAS	Gorenja Brezov	1.18	32	*i* Pg	Pn	13 14 48.1	+0.1
DRE	Drenchia	1.23	3	*e*Sg	Sb	13 15 03.9	-0.8
DRE	Drenchia	1.23	3	*e*Pg	Pn	13 14 48.6	-0.2
DRE	Drenchia	1.23	3	*e*Pg	Pn	13 14 48.6	-0.2
DRE				*e*Sg	Sb	13 15 03.9	-0.8
CRNS	Crni Vrh	1.25	24	*i* Pg	Pn	13 14 48.8	-0.1
CRNS				*i* Sg	Sn	13 15 05.2	0.0
	comp=Z,4.0nm,0.1s						
CRNS	Crni Vrh	1.25	24	*i* Pg	Pn	13 14 48.8	-0.1
VISS	Visnje	1.26	46	*i* Pg	Pn	13 14 49.3	+0.3
VISS				*e*Sg	Sn	13 15 05.7	+0.2
	comp=Z,4.0nm,0.1s						
VISS	Visnje	1.26	46	*i* Pg	Pn	13 14 49.3	+0.3
CADS	Cadrg	1.29	6	*i* Pg	Pn	13 14 49.2	-0.4
CADS	Cadrg	1.29	6	*i* Pg	Pn	13 14 49.2	-0.4
VINO	Villanova	1.33	352	Pg	Pn	13 14 49.9	-0.1
VINO				Sg	Sn	13 15 06.6	-0.6
	comp=Z,7.0nm,0.2s						
VINO	Villanova	1.33	352	Pg	Pn	13 14 49.9	-0.1
VINO				Sg	Sn	13 15 06.6	-0.6
	comp=Z,7.0nm,0.2s						
VINO	Villanova	1.33	352	*e*Pg	Pb	13 14 50.6	-0.1
BOJS	Bojanci	1.33	65	‖*i*Pg	Pb	13 14 50.6	-0.3
BOJS				*i* Sg	Sb	13 15 07.5	-0.1
	comp=Z,4.0nm,0.1s						
BOJS	Bojanci	1.33	65	‖*i*Pg	Pb	13 14 50.6	-0.3
BOJS				*i* Sg	Sb	13 15 07.5	-0.1
	comp=Z,4.0nm,0.1s						
GORS	Gorjuse	1.41	13	*i* Pg	Pn	13 14 51.2	0.0
GORS				*e*Sg	Sn	13 15 09.0	-0.4
	comp=Z,3.0nm,0.1s						
GORS	Gorjuse	1.41	13	*i* Pg	Pn	13 14 51.2	0.0
VNDS	Vrh nad Dolski	1.42	35	*i* Pg	Pb	13 14 52.0	-0.4
VNDS				*e*Sg	Sn	13 15 09.4	0.0
	comp=Z,4.0nm,0.1s						
VNDS	Vrh nad Dolski	1.42	35	*i* Pg	Pb	13 14 52.0	-0.3
ACOM	Acomizza, Ital	1.61	359	Pg	Pn	13 14 54.8	+0.8
ACOM	Acomizza, Ital	1.61	359	Pg	Pn	13 14 54.8	+0.8
CRES	Cresnjev	1.61	56	*i* Pn	Pn	13 14 54.7	+0.7
	comp=Z,2.0nm,0.1s						
CRES	Cresnjev	1.61	56	*i* Pn	Pn	13 14 54.7	+0.7
	comp=Z,2.0nm,0.1s						
UDBI	Udbina	1.64	104	Sn	Sb	13 15 16.5	0.0
UDBI	Udbina	1.64	104	Sn	Sb	13 15 16.4	0.0
MYKA	Terra Mystica	1.69	2	*i* Sg	Sg	13 15 22.6	+1.5
	comp=Z,1.3nm,0.2s						
OBKA	Obir	1.72	24	*i* Pn	Pb	13 14 57.0	-0.5

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KUR	**Kuril'sk**	**1.27**	**312**	*e*P	**Pn**	**13 28 09.8**	**-0.5**
KUR				AMB	AMB	13 28 10.4	
	380nm,0.6s						
KUR				AMB	AMB	13 28 10.4	
	170nm,0.6s						
KUR				AMB	AMB	13 28 10.4	
	1μm,0.6s						
KUR				*e*S	**Sn**	**13 28 25.5**	**-0.8**
KUR				A	A	13 28 28.5	
	4μm,0.6s						
KUR				A	A	13 28 28.5	
	3μm,0.6s						
KUR	**Kuril'sk**	**1.27**	**312**	*c i* PN	**Pn**	**13 28 09.8**	**-0.5**
KUR				*i*		13 28 25.5	
KUR				pmax	pmax		
	comp=N,751nm,0.5s						
KUR				pmax	pmax		
	comp=Z,2μm,0.5s						
KUR				pmax	pmax		
	comp=E,344nm,0.4s						
KUR				smax	smax		
	comp=N,9μm,0.5s						
KUR				smax	smax		
	comp=E,7μm,0.5s						
SHO	**Shikotan**	**1.79**	**254**	*e*P	**Pn**	**13 28 16.8**	**-0.6**
SHO				AMB	AMB	13 28 19.6	
	comp=E,220nm,0.4s						
SHO				*e*S	**Sn**	**13 28 38.0**	**-1.0**
SHO				A	A	13 28 48.4	
	comp=E,3μm,0.5s						
SHO				A	A	13 28 48.4	
	comp=E,3μm,0.5s						
SHO	**Shikotan**	**1.79**	**254**	*c i* PN	**Pn**	**13 28 16.8**	**-0.6**
SHO				*i*		13 28 38.3	
SHO				smax	smax		
	comp=N,2μm,0.5s						
SHO				smax	smax		
	comp=E,5μm,0.7s						
YUK	**Yuzh-Kuril'sk**	**2.43**	**263**	*e*P	**Pn**	**13 28 26.0**	**-0.3**
YUK				AMB	AMB	13 28 29.2	
	comp=E,570nm,0.5s						
YUK				*e*S	**Sn**	**13 28 54.3**	**-0.6**
YUK				A	A	13 29 01.3	
	comp=E,1μm,0.5s						
YUK				A	A	13 29 01.3	
	comp=E,2μm,0.5s						
YUK	**Yuzh-Kuril'sk**	**2.43**	**263**	*e*PN	**Pn**	**13 28 27.4**	**+1.1**
YUK				*i*		13 28 53.5	
YUK				pmax	pmax		
	comp=E,473nm,0.5s						
YUK				pmax	pmax		
	comp=Z,572nm,0.5s						
YUK				pmax	pmax		
	comp=N,181nm,0.2s						
YUK				smax	smax		
	comp=N,1μm,0.5s						
YUK				smax	smax		
	comp=E,2μm,0.5s						
NEM2	**Nemuro 2**	**2.70**	**249**	P	Pn	13 28 26.7	-3.3
NEM2				*e*S	Sn	13 28 55.3	-6.3
JRA	**Rausu**	**2.97**	**263**	P	**Pn**	**13 28 32.2**	**-1.5**
JNK	**Nakash**	**3.33**	**258**	P	**Pn**	**13 28 36.4**	**-2.3**
JAR	**Ashorobuto**	**4.08**	**256**	P	**Pn**	**13 28 47.8**	**-1.2**
JMP	**Maruseppu**	**4.22**	**267**	P	**Pn**	**13 28 49.8**	**-1.1**
HRK	**Horoka**	**4.48**	**260**	*e*P	**Pn**	**13 28 55.5**	**+0.9**
JCH	**Churui**	**4.60**	**249**	P	**Pn**	**13 28 54.6**	**-1.6**
JKA	**Kamikawa-asahi**	**4.75**	**269**	*e*P	**Pn**	**13 28 59.7**	**+1.5**
ASAJ	**Asahikawa**	**4.75**	**269**	Pn	**Pn**	**13 28 59.7**	**+1.5**
	comp=E,2.3nm,0.3s,baz=82,slow=13,SNR=21						
ASAJ				LR	LR	13 31 06.5	
	comp=E,1μm,18.1s,baz=174,slow=43						
ASAJ	**Asahikawa**	**4.75**	**269**	*e*Pn	**Pn**	**13 29 01.2**	**+3.0**
MYR	**Moyori**	**4.80**	**246**	*e*P	**Pn**	**13 28 56.3**	**-2.6**
ERM	**Erimo**	**5.02**	**244**	*c e*PN	**Pn**	**13 29 03.6**	**+1.8**
ERM				pmax	pmax		
	comp=Z,154nm,0.5s						
ERM	**Erimo**	**5.02**	**244**	*e*Pn	**Pn**	**13 29 00.4**	**-1.4**
YSS	**Yuzh-Sakhalins**	**5.19**	**302**	*e*P	**Pn**	**13 29 05.7**	**+1.4**
YSS				AMB	AMB	13 29 07.2	
	comp=Z,30nm,1.0s						
YSS				*e*S	**Sn**	**13 30 03.4**	**+0.4**
YSS				A	A	13 30 06.1	
	comp=Z,60nm,0.7s						
YSS				A	A	13 30 06.1	
	comp=Z,100nm,0.7s						
YSS				AMS	AMS	13 31 07.0	
	comp=Z,900nm,16.0s						
YSS				AMS	AMS	13 31 07.0	
	comp=Z,1μm,16.0s						
YSS				AMS	AMS	13 31 07.0	
	comp=Z,1μm,16.0s						
YSS	**Yuzh-Sakhalins**	**5.19**	**302**	*e*PN	**Pn**	**13 29 05.7**	**+1.4**
YSS				pmax	pmax		
	comp=Z,30nm,1.3s						
YSS				MLR	MLR		
	comp=Z,1μm,16.0s						
YSS				MLR	MLR		
	comp=N,900nm,15.0s						
YSS				MLR	MLR		
	comp=E,1μm,16.0s						
YSS	**Yuzh-Sakhalins**	**5.19**	**302**	*e*Pn	**Pn**	**13 29 05.4**	**+1.2**
JKB	**Kayabe**	**6.48**	**250**	P	**Pn**	**13 29 18.8**	**-3.1**
UGL	**Uglegorsk**	**6.78**	**316**	*e*P	**Pn**	**13 29 29.0**	**+3.0**
UGL				AMB	AMB	13 29 35.5	
	comp=E,80nm,0.9s						
UGL				AMS	AMS	13 32 20.0	
	comp=E,2μm,16.0s						
UGL				AMS	AMS	13 32 20.0	
	comp=E,1μm,16.0s						
UGL				AMS	AMS	13 32 20.0	
	comp=E,2μm,16.0s						
UGL	**Uglegorsk**	**6.78**	**316**	PN	Pn	13 29 33.0	+7.0
UGL				*e*		13 30 55.0	
UGL				pmax	pmax		
	comp=Z,82nm,0.9s						
UGL				MLR	MLR		
	comp=N,2μm,16.0s						
UGL				MLR	MLR		
	comp=E,1μm,16.0s						
UGL				MLR	MLR		
	comp=Z,2μm,16.0s						
JYM2	**Yakumo 2**	**6.84**	**254**	P	**Pn**	**13 29 26.3**	**-0.5**
JANG	**Nango**	**6.96**	**237**	P	**Pn**	**13 29 26.9**	**-1.7**
JTM	**Tenmabayashi**	**7.00**	**242**	P	**Pn**	**13 29 27.5**	**-1.6**
TYV	**Tymovskoe**	**7.84**	**328**	*e*P	**Pn**	**13 29 42.7**	**+2.2**
SKR	**Severo-Kuril's**	**7.84**	**34**	*e*P	**Pn**	**13 29 39.7**	**-0.9**
SKR				AMB	AMB	13 29 42.0	
	comp=Z,50nm,0.6s						
SKR				AMB	AMB	13 29 42.0	
	comp=Z,40nm,0.6s						
SKR				AMB	AMB	13 29 42.0	
	comp=Z,60nm,0.6s						
SKR				*e*S	**Sn**	**13 31 07.5**	**-0.6**
SKR				A	A	13 31 18.5	
	comp=Z,60nm,0.6s						
SKR				A	A	13 31 18.5	
	comp=Z,80nm,0.6s						
SKR				AMS	AMS	13 32 58.0	
	comp=Z,3μm,12.0s						
SKR	**Severo-Kuril's**	**7.84**	**34**	*e*PN	**Pn**	**13 29 39.7**	**-0.9**
SKR				pmax	pmax		
	comp=N,50nm,0.5s						
SKR				pmax	pmax		
	comp=E,40nm,0.5s						
SKR				pmax	pmax		
	comp=Z,70nm,0.5s						
SKR				MLR	MLR		
	comp=N,3μm,12.0s						
SKR				MLR	MLR		
	comp=Z,3μm,12.0s						
PAU	**Pauzhetka**	**8.73**	**33**	*e*P	**Pn**	**13 29 54.4**	**+1.7**
PAU				*e*S	**Sn**	**13 31 28.7**	**-1.2**
PAU				AMS	AMS	13 32 08.0	
	comp=Z,6μm,19.0s						
TEY	**Ternei**	**9.00**	**279**	*e*P	**Pn**	**13 29 59.0**	**+2.6**
PEA0	**Petropavlovsk-**	**10.36**	**30**	*e*Pn	**Pn**	**13 30 16.4**	**+1.2**
PEA0B	**Petropavlovsk-**	**10.36**	**30**	*e*Pn	**Pn**	**13 30 17.1**	**+1.9**
PETK	**Petropavlovsk-**	**10.36**	**30**	Pn	**Pn**	**13 30 13.7**	**-1.4**
	comp=Z,0.8nm,0.3s,baz=185,slow=10.0,SNR=16						
PETK				LR	LR	13 34 19.1	
	comp=Z,466nm,18.1s,baz=211,slow=38						
HABR	**Khabarovsk**	**10.58**	**298**	*e*PN	**Pn**	**13 30 16.3**	**-1.9**
HABR				*e*SS	Sn	13 32 26.7	+11
HABR				pmax	pmax		
	comp=N,19nm,1.5s						
HABR				pmax	pmax		
	comp=Z,14nm,1.5s						
HABR				pmax	pmax		
	comp=E,10.0nm,1.5s						
HABR				MLR	MLR		
	comp=Z,319nm,15.0s						
PET	**Petropavlovsk**	**10.65**	**32**	*e*P	**Pn**	**13 30 19.5**	**+0.5**
PET				AMB	AMB	13 30 25.6	
	comp=Z,150nm,4.5s						
PET				*e*S	**Sn**	**13 32 13.0**	**-4.1**
PET				A	A	13 32 30.5	
	comp=Z,200nm,4.0s						
PET				AMS	AMS	13 34 42.8	
	comp=Z,950nm,15.0s						
PET	**Petropavlovsk**	**10.65**	**32**	*e*PN	Pn	13 30 13.3	-5.7
PET				MLR	MLR		
	comp=Z,700nm,15.0s						
PET				MLR	MLR		
	comp=Z,900nm,15.0s						
GRNR	**Gornyy**	**10.73**	**311**	*e*rx	rx	13 30 22.0	
MAJO	**Matsushiro**	**11.46**	**231**	*d i* PN	**Pn**	**13 30 29.5**	**-0.8**
MAJO	**Matsushiro**	**11.46**	**231**	*e*Pn	**Pn**	**13 30 29.3**	**-1.0**
MAT	**Matsushiro**	**11.46**	**231**	P	**Pn**	**13 30 29.1**	**-1.2**
MAT				S	**Sn**	**13 32 33.6**	**-3.6**
MJAR	**Matsushiro Arr**	**11.46**	**231**	Pn	**Pn**	**13 30 28.9**	**-1.4**
	comp=Z,1.5nm,0.3s,baz=29,slow=14,SNR=34						
MJAR				Sn	Sn	13 32 43.6	+6.4
	comp=Z,0.4nm,0.3s,baz=40,slow=23,SNR=4.2						
MJAR				LR	LR	13 33 37.4	
	comp=Z,22nm,21.7s,baz=90,slow=31						
MJB9	**Matsu-Tunnel**	**11.46**	**231**	*e*Pn	**Pn**	**13 30 29.2**	**-1.1**
USRK	**Ussuriysk Ar.**	**12.34**	**275**	Pn	**Pn**	**13 30 43.8**	**+1.6**
	comp=Z,0.3nm,0.3s,baz=80,slow=16,SNR=8.8						
USRK				LR	LR	13 35 40.4	
	comp=Z,290nm,18.4s,baz=97,slow=39						
KLR	**Kul'dur**	**12.89**	**298**	Pn	**Pn**	**13 30 49.8**	**+0.1**
	comp=Z,0.1nm,0.3s,baz=89,slow=3.6,SNR=2.6						
KLR				LR	LR	13 36 12.4	
	comp=Z,337nm,18.2s,baz=110,slow=39						
KLR	**Kul'dur**	**12.89**	**298**	*e*P	**Pn**	**13 30 51.0**	**+1.3**
KLR	**Kul'dur**	**12.89**	**298**	‖ *e*PN	**Pn**	**13 30 51.0**	**+1.3**
MSHR	**Mys Shultsa**	**13.23**	**268**	‖ *e*PN	**Pn**	**13 30 54.9**	**+0.5**
EKMR	**Ekimchan**	**13.77**	**315**	*e*P	**Pn**	**13 31 01.7**	**0.0**
EKMR				AMB	AMB	13 31 07.5	
	comp=Z,6.0nm,0.8s						
MA2	**Magadan**	**15.24**	**3**	Pn	**Pn**	**13 31 22.0**	**+0.6**
	comp=Z,0.9nm,0.3s,baz=210,slow=9.2,SNR=12						
MA2				LR	LR	13 37 38.9	
	comp=Z,153nm,18.1s,baz=213,slow=39						
BMKR	**Bomnak**	**16.70**	**315**	*e*P	**Pn**	**13 31 40.7**	**+0.4**
BMKR				AMB	AMB	13 31 47.0	
	comp=Z,2.0nm,0.5s						
CN2	**Changchun**	**17.07**	**276**	*e*P	**Pn**	**13 31 43.8**	**-1.1**
CN2				pmax	pmax		
	comp=Z,10.0nm,0.3s						
ZEA	**Zeya**	**17.09**	**311**	*e*rx	rx	13 31 42.8	
KSRS	**Korea Array**	**17.48**	**254**	P	**Pn**	**13 31 49.0**	**-1.1**
	comp=Z,0.2nm,0.3s,baz=60,slow=13,SNR=3.7						
KSAR	**Wonju Array Be**	**17.52**	**254**	P	**Pn**	**13 31 49.1**	**-1.4**
KSAR	**Wonju Array Be**	**17.52**	**254**	P	**Pn**	**13 31 49.0**	**-1.4**
JNU	**Nakatsue**	**18.14**	**238**	P	**P**	**13 32 01.9**	**+3.4**
	comp=Z,1.1nm,0.3s,baz=87,slow=14,SNR=2.4						
CBIJ	**Chichi jima**	**18.16**	**200**	P	**P**	**13 32 01.8**	**+3.2**
JCJ	**Chichijima**	**18.16**	**200**	P	**P**	**13 32 01.8**	**+3.2**
	baz=356,slow=19						
SEY	**Seymchan**	**18.67**	**5**	P	**P**	**13 32 03.5**	**-0.5**
	comp=Z,0.4nm,0.3s,baz=180,slow=9.7,SNR=14						
SEY	**Seymchan**	**18.67**	**5**	*e*P	**P**	**13 32 03.6**	**-0.3**
SEY	**Seymchan**	**18.67**	**5**	‖ *e*P	**P**	**13 32 03.6**	**-0.3**
YAK	**Yakutsk**	**21.03**	**334**	P	**P**	**13 32 28.0**	**-1.6**
	comp=Z,2.6nm,0.3s,baz=157,slow=3.3,SNR=2.7						
YAK				LR	LR	13 41 10.2	
	comp=Z,290nm,18.4s,baz=148,slow=38						
YAK	**Yakutsk**	**21.03**	**334**	*e*P	**P**	**13 32 34.0**	**+4.4**
YAK				pmax	pmax		
	comp=Z,33nm,1.2s						
YAK				pmax	pmax		
	comp=E,15nm,1.3s						
YAK				pmax	pmax		
	comp=N,18nm,1.1s						
JOW	**Kunigami**	**24.31**	**231**	P	**P**	**13 33 04.7**	**+1.2**
	comp=N,12nm,0.9s,baz=54,slow=16,SNR=2.8						
BJI	**Beijing**	**24.74**	**271**	P	**P**	**13 33 08.3**	**+1.0**
BJI				S	**S**	**13 37 26.8**	**-0.5**
BJI				pmax	pmax		
	comp=N,8.0nm,1.4s						
BJI				LR	LR		
	comp=N,190nm,17.4s						
BJI				LR	LR		
	comp=N,130nm,14.2s						
BILL	**Bilibino**	**25.35**	**15**	*i* P	**P**	**13 33 09.6**	**-2.9**
BILL				*i*		13 33 48.3	
BILL				*i*		13 36 43.6	
BILL				pmax	pmax		
	comp=Z,2.0nm,1.1s						
BILL				MLR	MLR		
	comp=Z,268nm,19.0s						
TIA	**Tai'an**	**25.67**	**263**	*e*P	**P**	**13 33 17.1**	**+1.4**
TIA				pmax	pmax		
	comp=Z,10.0nm,1.1s						
NJ2	**Nanjing**	**26.68**	**253**	*e*P	**P**	**13 33 28.3**	**+3.4**
NJ2				pmax	pmax		
	comp=Z,15nm,0.7s						
HHC	**Hu-ho-hao-te**	**27.76**	**276**	*e*P	**P**	**13 33 35.1**	**+0.4**
HHC				sP	sP	13 33 50.8	+3.2
HHC				PP	**PnPn**	**13 34 22.8**	**+1.6**
HHC				S	**S**	**13 38 15.1**	**-0.2**
HHC				pmax	pmax		
	comp=Z,18nm,1.1s						
HHC				pmax	pmax		
	comp=Z,74nm,5.3s						
HHC				LR	LR		
	comp=Z,480nm,13.6s						
HHC				LR	LR		
	comp=Z,370nm,13.2s						
HHC				LR	LR		
	comp=Z,380nm,14.2s						
H11N2	**WAKE ISLAND Hy**	**28.68**	**143**	T	T	14 04 34.3	
	baz=334,slow=76,SNR=333						
H11N1	**WAKE ISLAND Hy**	**28.69**	**143**	T	T	14 04 35.3	
	baz=334,slow=76,SNR=230						
H11N3	**WAKE ISLAND Hy**	**28.69**	**143**	T	T	14 04 35.6	
	baz=334,slow=76,SNR=210						
TIXI	**Tiksi**	**29.05**	**347**	P	**P**	**13 33 42.8**	**-2.9**
	comp=Z,0.5nm,0.2s,baz=148,slow=6.9,SNR=2.9						
TIXI				LR	LR	13 46 11.7	
	comp=Z,120nm,18.1s,baz=153,slow=38						
ULN	**Ulaanbaatar**	**29.15**	**292**	*e*P	**P**	**13 33 47.4**	**+0.3**
ULN	**Ulaanbaatar**	**29.15**	**292**	‖ *e*P	**P**	**13 33 47.4**	**+0.3**
ULN				pmax	pmax		
	comp=Z,7.0nm,2.5s						
SONM	**Songino Array**	**29.59**	**292**	P	**P**	**13 33 50.8**	**-0.1**
	comp=Z,1.1nm,0.6s,baz=71,slow=9.0,SNR=4.7						
SONM				LR	LR	13 46 36.0	
	comp=Z,194nm,18.8s,baz=92,slow=38						
H11S1	**WAKE ISLAND Hy**	**29.68**	**145**	T	T	14 05 50.2	
	baz=335,slow=76,SNR=444						
H11S3	**WAKE ISLAND Hy**	**29.69**	**145**	T	T	14 05 52.8	
	baz=335,slow=76,SNR=279						
H11S2	**WAKE ISLAND Hy**	**29.70**	**145**	T	T	14 05 56.5	
	baz=335,slow=76,SNR=236						
TLY	**Talaya**	**30.90**	**300**	LR	LR	13 47 27.0	
	comp=Z,231nm,18.3s,baz=88,slow=38						
ZAK	**Zakamensk**	**31.26**	**298**	*e*P	P	13 34 19.6	+14
ZAK				pmax	pmax		
	comp=Z,3.0nm,1.8s						
LZH	**Lanzhou**	**35.23**	**272**	*e*P	P	13 34 43.8	+3.4
LZH				pP	sP	13 34 51.8	-1.6
LZH				sP	pP	13 34 55.4	+5.8
LZH				pmax	pmax		
	comp=Z,27nm,1.2s						
LZH				pmax	pmax		
	comp=Z,130nm,4.1s						
TT01	**Tatalina**	**35.99**	**40**	*e*P	**P**	**13 34 47.3**	**+0.9**
TTA	**Tatalina**	**36.00**	**39**	*e*P	**P**	**13 34 47.7**	**+1.1**
TTA				pmax	pmax		
	comp=Z,14nm,1.1s						
TTA	**Tatalina**	**36.00**	**39**	*e*P	**P**	**13 34 47.7**	**+1.1**
	comp=Z,14nm,1.1s						
GTA	**Gaotai**	**36.64**	**280**	*e*P	**P**	**13 34 53.4**	**+0.9**
GTA				pP	pP	13 35 00.6	-1.1
GTA				sP	sP	13 35 03.9	-1.6
GTA				pmax	pmax		
	comp=Z,4.0nm,1.2s						
KDAK	**Kodiak Island**	**37.72**	**48**	*i* P	**P**	**13 35 02.8**	**+1.6**
CAST	**Castle Rocks**	**37.80**	**39**	*e*P	**P**	**13 35 03.3**	**+1.4**
	comp=Z,49nm,1.9s						
CD2	**Chengdu**	**37.94**	**265**	P	**P**	**13 35 00.9**	**-2.5**
CD2				pmax	pmax		
	comp=Z,1.0nm,0.5s						
BPAW	**Bear Paw Mtn.**	**38.31**	**38**	*e*P	**P**	**13 35 07.2**	**+1.1**
	comp=Z,31nm,2.0s						
KTH	**Kantishna Hill**	**38.33**	**39**	*e*P	**P**	**13 35 07.6**	**+1.3**
	comp=Z,81nm,1.8s						
MLY	**Manley**	**38.45**	**36**	*e*P	**P**	**13 35 08.6**	**+1.3**
	comp=Z,4.7nm,0.8s						
GYA	**Guiyang**	**38.51**	**257**	*e*P	**P**	**13 35 08.8**	**+0.5**
GYA				pmax	pmax		
	comp=Z,10.0nm,0.8s						
COLD	**Coldfoot**	**38.81**	**33**	*e*P	**P**	**13 35 11.1**	**+0.8**
	comp=Z,4.9nm,0.9s						
BWN	**Browne**	**38.98**	**38**	*e*P	**P**	**13 35 13.5**	**+1.8**
	comp=Z,91nm,1.4s						
MCK	**McKinley**	**39.22**	**38**	*e*P	**P**	**13 35 14.3**	**+0.6**
MCK	**McKinley**	**39.22**	**38**	*e*P	**P**	**13 35 14.3**	**+0.6**
MCK				pmax	pmax		
	comp=Z,22nm,1.4s						
MCK	**McKinley**	**39.22**	**38**	*e*P	**P**	**13 35 14.3**	**+0.6**
	comp=Z,22nm,1.4s						
NRIK	**Noril'sk**	**39.41**	**331**	LR	LR	13 52 03.5	
	comp=Z,124nm,21.7s,baz=118,slow=37						
MDM	**Murphy Dome**	**39.52**	**36**	*e*P	**P**	**13 35 17.4**	**+1.2**
	comp=Z,7.1nm,0.8s						
SML	**Sawmill**	**39.56**	**41**	*e*P	**P**	**13 35 17.6**	**+0.9**
SML				pmax	pmax		
	comp=Z,33nm,1.1s						
SML	**Sawmill**	**39.56**	**41**	*e*P	**P**	**13 35 17.6**	**+0.9**
	comp=Z,33nm,1.1s						
WRH	**Wood River Hil**	**39.58**	**37**	*e*P	**P**	**13 35 17.3**	**+0.6**
	comp=Z,22nm,1.5s						
COLA	**College**	**39.68**	**37**	*e*P	**P**	**13 35 17.6**	**+0.1**
COLA	**College**	**39.68**	**37**	*e*P	**P**	**13 35 17.6**	**+0.1**
COLA				pmax	pmax		
	comp=Z,9.0nm,0.9s						
COLA	**College**	**39.68**	**37**	*e*P	**P**	**13 35 17.6**	**+0.1**
	comp=Z,9.1nm,0.9s						
CCB	**Clear Creek Bu**	**39.70**	**37**	*e*P	**P**	**13 35 18.2**	**+0.5**
	comp=Z,34nm,2.0s						
HDA	**Harding Lake**	**40.08**	**37**	*e*P	**P**	**13 35 21.2**	**+0.4**
	comp=Z,45nm,2.0s						
ILAR	**Eielson Array**	**40.09**	**37**	P	**P**	**13 35 21.4**	**+0.5**
	comp=Z,7.5nm,1.1s,baz=254,slow=5.9,SNR=22						
ILAR	**Eielson Array**	**40.09**	**37**	P	**P**	**13 35 21.5**	**+0.5**
ILAR				pmax	pmax		
	comp=Z,4.0nm,0.9s						
ILB	**Eielson Array**	**40.09**	**37**	*e*P	**P**	**13 35 21.2**	**+0.2**
IL1	**Eielson Array**	**40.09**	**37**	*e*P	**P**	**13 35 21.0**	**+0.1**
FYU	**Fort Yukon**	**40.75**	**34**	*e*P	**P**	**13 35 27.6**	**+1.2**
	comp=Z,43nm,1.5s						
ZALV	**Zalesovo Beam**	**41.79**	**307**	P	**P**	**13 35 34.1**	**-1.0**
	comp=Z,0.5nm,0.5s,baz=81,slow=9.4,SNR=2.9						
ZALV				PcP	**PcP**	**13 37 30.9**	**+0.2**
	comp=Z,1.9nm,0.7s,baz=96,slow=3.3,SNR=7.7						
ZALV				LR	LR	13 54 02.1	
	comp=Z,113nm,18.5s,baz=70,slow=38						
EGAK	**Eagle**	**42.54**	**36**	*e*P	**P**	**13 35 41.3**	**+0.3**
	comp=Z,10nm,1.1s						
WMQ	**Urumqi**	**43.23**	**292**	*e*P	**P**	**13 35 46.9**	**-0.1**
WMQ				pmax	pmax		
	comp=Z,3.0nm,0.6s						
WMQ				pmax	pmax		
	comp=Z,38nm,5.2s						
INK	**Inuvik**	**45.10**	**31**	P	**P**	**13 36 02.4**	**+0.9**
	comp=Z,3.0nm,0.7s,baz=296,slow=7.1,SNR=13						
INK	**Inuvik**	**45.10**	**31**	*e*P	**P**	**13 36 02.3**	**+0.8**
INK	**Inuvik**	**45.10**	**31**	*e*P	**P**	**13 36 02.3**	**+0.8**
INK				pmax	pmax		
	comp=Z,6.0nm,0.9s						
INK	**Inuvik**	**45.10**	**31**	*e*P	**P**	**13 36 02.3**	**+0.8**
	comp=Z,5.8nm,0.9s						
MK31	**Makanchi Array**	**45.60**	**298**	*e*P	**P**	**13 36 04.9**	**-0.9**
MK31	**Makanchi Array**	**45.60**	**298**	*e*P	**P**	**13 36 04.9**	**-0.9**
MKAR	**Makanchi Array**	**45.60**	**298**	P	**P**	**13 36 05.7**	**-0.1**
	comp=Z,1.9nm,0.8s,baz=76,slow=7.9,SNR=11						
MKAR				PcP	**PcP**	**13 37 44.0**	**+0.2**
	comp=Z,1.3nm,0.7s,baz=52,slow=3.6,SNR=2.7						
MKAR				LR	LR	13 56 30.3	
	comp=Z,229nm,18.4s,baz=44,slow=38						
MKAR	**Makanchi Array**	**45.60**	**298**	*e*P	**P**	**13 36 05.6**	**-0.2**
MKAR	**Makanchi Array**	**45.60**	**298**	*i* P	**P**	**13 36 05.6**	**-0.2**
MKAR				pmax	pmax		
	comp=Z,2.0nm,0.8s						
MKAR	**Makanchi Array**	**45.60**	**298**	*e*P	**P**	**13 36 05.1**	**-0.7**
MKAR				PcP	**PcP**	**13 37 44.0**	**+0.2**
MK01	**Makanchi Array**	**45.60**	**298**	*e*P	**P**	**13 36 05.3**	**-0.5**
KURK	**Kurchatov**	**46.40**	**304**	*e*P	**P**	**13 36 12.9**	**+0.9**
KURK	**Kurchatov**	**46.40**	**304**	‖ *e*P	**P**	**13 36 12.9**	**+0.9**
KURK				pmax	pmax		
	comp=Z,1.0nm,0.9s						
KURK	**Kurchatov**	**46.40**	**304**	*e*P	**P**	**13 36 11.3**	**-0.7**
	comp=Z,2.6nm,0.7s						
KURK				PcP	**PcP**	**13 37 46.8**	**+0.4**
KURBB	**Kurchatov Arra**	**46.48**	**304**	P	**P**	**13 36 11.6**	**-1.1**
	comp=Z,0.8nm,0.3s,baz=71,slow=9.0,SNR=13						
KURBB				PcP	**PcP**	**13 37 46.8**	**0.0**
	comp=Z,0.8nm,0.6s,baz=84,slow=3.2,SNR=5.7						
CMAR	**Chiang Mai Arr**	**49.12**	**255**	P	**P**	**13 36 33.8**	**+0.3**
	comp=Z,0.9nm,0.7s,baz=46,slow=7.0,SNR=8.0						
CMAR				LR	LR	13 59 14.6	
	comp=Z,98nm,18.4s,baz=46,slow=38						
CM01	**Chiang Mai Arr**	**49.14**	**255**	*e*P	**P**	**13 36 33.9**	**+0.3**
BVAR	**Borovoye Array**	**50.24**	**310**	P	**P**	**13 36 42.7**	**+1.1**
	comp=Z,0.4nm,0.5s,baz=55,slow=12,SNR=2.3						
BRVK	**Borovoye**	**50.28**	**310**	‖ *e*P	**P**	**13 36 41.9**	**0.0**
BRVK				pmax	pmax		
	comp=Z,6.0nm,2.5s						
BRVK	**Borovoye**	**50.28**	**310**	*e*P	**P**	**13 36 42.0**	**0.0**
	comp=Z,3.2nm,1.2s						
ZRNK	**Zerenda**	**51.03**	**310**	*e*P	**P**	**13 36 46.9**	**-0.7**
ZRNK				pmax	pmax		
	comp=Z,2.0nm,0.8s						
ZRNK	**Zerenda**	**51.03**	**310**	*e*P	**P**	**13 36 46.9**	**-0.7**
	comp=Z,1.6nm,0.8s						
TKM2	**Tokmak 2**	**51.56**	**296**	*e*P	**P**	**13 36 52.4**	**+0.4**
TKM2				pmax	pmax		
	comp=Z,11nm,1.5s						
TKM2	**Tokmak 2**	**51.56**	**296**	*e*P	**P**	**13 36 52.4**	**+0.4**
	comp=Z,11nm,1.5s						
AAK	**Ala-Archa**	**52.41**	**296**	P	**P**	**13 36 58.4**	**+0.2**
	comp=Z,1.2nm,0.3s,baz=97,slow=4.1						
**AAK

YKW3 **Yellowknife Ar** 54.40 34 *e*P P 13 37 12.7 +0.3
comp=Z,22nm,1.7s
YKA **Yellowknife Ar** 54.44 35 P P 13 37 13.4 +0.8
comp=Z,3.5nm,0.8s,baz=298,slow=6.8,SNR=51
YKB5 **Yellowknife Ar** 54.44 35 *e*P P 13 37 12.2 -0.4
KKAR **Karatay Array** 54.72 298 *e*P P 13 37 14.5 -0.4
KKAR **Karatay Array** 54.72 298 *e*P P 13 37 14.5 -0.4
ARU **Arti** 54.88 317 *e*P P 13 37 17.1 +1.1
ARU **Arti** 54.88 317 *c i*P P 13 37 17.0 +1.1
ARU 13 39 15.2
ARU 13 44 57.0 +2.1
ARU SS SS 13 48 38.5 +0.7
ARU pmax pmax
comp=Z,4.0nm,1.7s
ABKAR **Akbulak array** 57.81 309 *e*P P 13 37 36.3 -0.5
LVZ **Lovozero** 57.82 336 *e*P P 13 37 40.1 +3.4
LVZ pmax pmax
comp=Z,58nm,1.5s
B05A **Bryant** 58.03 52 P P 13 37 39.2 +0.8
baz=302
BATI **Baumata** 59.07 210 LR LR 14 00 14.0
comp=Z,55nm,21.1s,baz=314,slow=33
ARCES **ARCESS Array B** 59.15 340 P P 13 37 45.0 -1.0
comp=Z,0.9nm,0.8s,baz=39,slow=5.8,SNR=3.0
ARCES PcP PcP 13 38 35.1 +0.9
comp=Z,1.1nm,0.7s,baz=39,slow=5.8,SNR=3.0
ARCES **ARCESS Array B** 59.15 340 *e*P P 13 37 45.0 -1.0
B08A **Colville Reser** 59.52 51 *e*P P 13 37 49.5 +0.6
comp=Z,8.8nm,1.4s
I03D **Drain, OR** 59.80 57 P P 13 37 51.7 +1.0
baz=304
G05D **Wamic, OR** 60.13 55 P P 13 37 54.3 +1.2
baz=304
I04A **Tendick Farm,** 60.30 56 P P 13 37 54.8 +0.5
baz=305
I05D **Terrebonne, OR** 60.63 55 P P 13 37 58.0 +1.4
baz=305
NEW **Newport** 60.79 50 P P 13 37 57.8 +0.2
baz=305
NEW **Newport** 60.79 50 *e*P P 13 37 57.6 0.0
NEW pmax pmax
comp=Z,4.0nm,0.9s
NEW **Newport** 60.79 50 *e*P P 13 37 57.6 0.0
comp=Z,4.4nm,0.9s
J05D **Fort Rock, OR** 61.30 56 P P 13 38 02.8 +1.6
baz=305
M02C **Callahan** 61.41 59 P P 13 38 03.6 +1.7
baz=306
N02D **Trinity Center** 61.74 59 P P 13 38 05.7 +1.5
baz=306
M04C **Macdoel** 61.80 58 P P 13 38 06.0 +1.4
baz=306
K05A **Summer Lake** 61.83 57 *e*P P 13 38 06.1 +1.2
comp=Z,34nm,1.6s
WALA **Waterton Lakes** 62.06 48 *e*P P 13 38 07.0 +0.7
comp=Z,22nm,1.6s
O03D **Paynes Creek** 62.70 59 P P 13 38 11.5 +0.9
baz=306
SWMT **Swartz Lake** 62.94 49 *e*P P 13 38 13.1 +0.9
WVOR **Wild Horse Val** 63.34 56 *e*P P 13 38 15.8 +0.9
WVOR pmax pmax
comp=Z,4.0nm,1.0s
WVOR **Wild Horse Val** 63.34 56 *e*P P 13 38 15.8 +0.9
comp=Z,4.3nm,1.0s
MSO **Missoula** 63.38 50 P P 13 38 16.0 +1.0
baz=307
MSO **Missoula** 63.38 50 *e*P P 13 38 15.8 +0.7
comp=Z,8.3nm,1.0s
FFC **Flin Flon** 64.30 38 *e*P P 13 38 21.2 +0.4
FFC pmax pmax
comp=Z,9.0nm,0.9s
FFC **Flin Flon** 64.30 38 *e*P P 13 38 21.1 +0.4
comp=Z,9.3nm,0.9s
FCC **Fort Churchill** 64.72 31 *e*P P 13 38 23.3 -0.1
FCC **Fort Churchill** 64.72 31 *e*P P 13 38 23.3 -0.1
FCC pmax pmax
comp=Z,5.0nm,0.9s
FCC **Fort Churchill** 64.72 31 *e*P P 13 38 23.3 -0.1
comp=Z,5.4nm,0.9s
LRM **Limekiln Ridge** 64.81 50 *e*P P 13 38 25.2 +0.6
EGMT **Eagleton** 64.88 47 P P 13 38 25.7 +0.8
baz=309,SNR=8.2
EGMT **Eagleton** 64.88 47 *e*P P 13 38 25.5 +0.7
comp=Z,17nm,1.1s
FIA1 **FINESS Array S** 64.97 334 *e*P P 13 38 24.0 -1.0
FINES **FINESS Array B** 64.97 334 P P 13 38 24.4 -0.6
comp=Z,1.6nm,0.7s,baz=48,slow=6.3,SNR=10
FINES **FINESS Array B** 64.97 334 *i*P P 13 38 28.3 +3.3
FINES pmax pmax
comp=Z,2.0nm,0.7s
HLID **Hailey** 65.12 53 P P 13 38 27.5 +0.9
baz=308
HLID **Hailey** 65.12 53 *e*P P 13 38 27.4 +0.9
comp=Z,3.0nm,1.1s
BOZ **Bozeman (W)** 65.37 50 P P 13 38 29.1 +1.0
baz=309,SNR=11
BOZ **Bozeman (W)** 65.37 50 *e*P P 13 38 29.1 +1.0
BOZ pmax pmax
comp=Z,5.0nm,0.8s
BOZ **Bozeman (W)** 65.37 50 *e*P P 13 38 29.1 +1.0
comp=Z,5.1nm,0.8s
GEYT **Alibeck** 65.42 300 P P 13 38 28.5 +0.1
comp=Z,3.8nm,0.7s,baz=7.6,slow=4.5,SNR=8.2
GEYT LR LR 14 09 29.5
comp=Z,105nm,18.2s,baz=15,slow=38
WRA **Warramunga Arr** 65.45 195 P P 13 38 26.0 -2.6
comp=Z,2.9nm,0.6s,baz=16,slow=6.9,SNR=33
WRA **Warramunga Arr** 65.45 195 *e*P P 13 38 28.7 +0.1
WRA **Warramunga Arr** 65.45 195 *i*P P 13 38 28.7 +0.1
WRA pmax pmax
comp=Z,3.0nm,0.6s
OBN **Obninsk** 65.66 324 *e*P P 13 38 30.6 +1.0
OBN **Obninsk** 65.66 324 *i*P P 13 38 29.0 -0.6
OBN pmax pmax
comp=Z,9.0nm,0.7s
NVAR **Mina Array Bea** 65.98 59 P P 13 38 33.4 +1.1
comp=Z,2.9nm,0.7s,baz=297,slow=6.9,SNR=19
NV01 **Mina Array Sit** 65.98 59 *e*P P 13 38 33.0 +0.7
VRH **Novokhopyorsk** 66.02 319 *e*P P 13 38 31.1 -0.9
VRH pmax pmax
comp=Z,7.0nm,0.9s
NV11 **Mina Array Sit** 66.07 59 *e*P P 13 38 33.8 +1.0
comp=Z,3.2nm,1.0s
MLAC **Mammoth, Mammo** 66.15 60 P P 13 38 35.0 +1.6
baz=309
GCMT **Greycliff** 66.34 49 *e*P P 13 38 35.6 +1.2
LPSR **Galich'ya Gora** 66.36 321 *e*P P 13 38 31.8 -2.4
LPSR pmax pmax
comp=Z,5.0nm,1.0s
RCTC **Rector, Farmer** 66.72 62 P P 13 38 38.1 +1.4
baz=309
H17A **Grant Village** 66.74 50 P P 13 38 39.4 +2.2
baz=310,SNR=7.0
H17A **Grant Village** 66.74 50 *e*P P 13 38 39.3 +2.2
comp=Z,5.5nm,0.9s
IMW **Indian Meadow** 66.86 51 *e*P P 13 38 39.0 +1.1
comp=Z,4.6nm,0.9s
RLMT **Red Lodge** 66.99 49 P P 13 38 39.2 +0.6
baz=310
RLMT **Red Lodge** 66.99 49 *e*P P 13 38 39.7 +1.1
comp=Z,9.1nm,1.3s
MOOW **Moose Ponds** 67.06 51 *e*P P 13 38 40.6 +1.5
comp=Z,3.0nm,0.9s
HVU **Hansel Valley** 67.18 53 *e*P P 13 38 40.8 +1.0
HVU pmax pmax
comp=Z,3.0nm,0.9s
HVU **Hansel Valley** 67.18 53 *e*P P 13 38 40.8 +1.0
comp=Z,2.7nm,0.9s
VSR **Storozhevoye** 67.20 320 *e*P P 13 38 38.2 -1.3
VSR pmax pmax
comp=Z,6.0nm,0.7s
LOHW **Long Hollow** 67.23 51 *e*P P 13 38 40.8 +0.6
comp=Z,14nm,1.8s
PKM **Mcpherson Peak** 67.24 63 P P 13 38 40.8 +0.4
baz=309
SNOW **Snow King Moun** 67.24 51 *e*P P 13 38 41.6 +1.3
comp=Z,4.8nm,1.0s
REDW **Red Top Meadow** 67.25 51 *e*P P 13 38 41.7 +1.4
comp=Z,6.8nm,1.1s
DGMT **Dagmar** 67.42 44 P P 13 38 41.5 +0.5
baz=312
DGMT **Dagmar** 67.42 44 *e*P P 13 38 41.6 +0.6
comp=Z,18nm,1.1s
GRAC **Grapevine Rang** 67.46 60 P P 13 38 43.0 +1.4
baz=309
SBC **Santa Barbara** 67.59 63 P P 13 38 43.5 +1.2
baz=309
A25A **Svangstu Ranch** 67.63 43 P P 13 38 43.2 +0.8
baz=313
R11A **Troy Canyon, C** 67.69 58 P P 13 38 43.9 +0.8
baz=310,SNR=7.9
R11A **Troy Canyon, C** 67.69 58 *e*P P 13 38 43.7 +0.6
comp=Z,5.7nm,1.1s
ARVC **Arvin** 67.72 62 P P 13 38 43.4 +0.3
baz=310
DAC **Darwin (Calif)** 67.77 61 *e*P P 13 38 44.2 +0.5
DAC **Darwin (Calif)** 67.77 61 *e*P P 13 38 44.2 +0.5
SCZ2 **Santa Cruz Isl** 67.92 64 P P 13 38 44.8 +0.4
baz=310
MPMC **Manual Prospec** 67.97 61 P P 13 38 45.7 +0.7
baz=310,SNR=5.3
FURC **Furnace Creek,** 68.11 60 P P 13 38 46.6 +1.2
baz=310
DUG **Dugway, Tooele** 68.17 55 P P 13 38 47.1 +1.0
baz=310,SNR=5.9
DUG **Dugway, Tooele** 68.17 55 *e*P P 13 38 46.9 +0.8
DUG pmax pmax
comp=Z,5.0nm,1.0s
DUG **Dugway, Tooele** 68.17 55 *e*P P 13 38 46.9 +0.8
comp=Z,5.1nm,1.0s
TPNV **Topopah Spring** 68.18 59 P P 13 38 47.2 +1.0
baz=310,SNR=8.4
TPNV **Topopah Spring** 68.18 59 *e*P P 13 38 46.8 +0.6
TPNV pmax pmax
comp=Z,6.0nm,1.0s
TPNV **Topopah Spring** 68.18 59 *e*P P 13 38 46.8 +0.6
comp=Z,6.3nm,1.0s
BW06 **Boulder Array** 68.36 51 P P 13 38 47.6 +0.2
baz=311,SNR=6.5
BW06 **Boulder Array** 68.36 51 *e*P P 13 38 47.4 +0.1
comp=Z,3.6nm,0.9s
PD31 **Pinedale Array** 68.36 51 *e*P P 13 38 47.1 -0.2
PDAR **Pinedale Array** 68.36 51 P P 13 38 47.7 +0.4
comp=Z,2.1nm,0.8s,baz=276,slow=2.0,SNR=21
EDW2 **Edwards Air Fo** 68.41 62 P P 13 38 48.4 +0.9
baz=310
SNCC **San Nicolas Is** 68.47 64 P P 13 38 49.8 +2.0
baz=310
A27A **Ledoux Ranch,** 68.53 42 P P 13 38 49.5 +1.5
baz=314
NLU **North Lily Min** 68.76 55 *e*P P 13 38 50.5 +0.7
comp=Z,3.6nm,0.9s
SHOC **Shoshone, Teco** 68.83 60 P P 13 38 50.9 +0.8
baz=310
GSC **Goldstone, Bar** 68.89 61 P P 13 38 51.0 +0.5
baz=310
C26A **Wahner Farm, P** 68.89 43 P P 13 38 51.4 +1.1
baz=314
MPU **Maple Canyon** 68.97 54 *e*P P 13 38 52.1 +0.9
comp=Z,4.1nm,0.9s
A28A **Rude Farm, Bot** 69.02 41 P P 13 38 51.9 +0.8
baz=314
RRX **Edison Barstow** 69.04 61 P P 13 38 52.1 +0.7
baz=310
E25A **Miller Ranch,** 69.14 45 P P 13 38 52.6 +0.7
baz=313
AS01 **Alice Springs** 69.15 195 *e*P P 13 38 52.8 +0.8
AS31 **Alice Springs** 69.16 195 *e*P P 13 38 52.8 +0.7
comp=Z,0.9nm,0.8s
ASAR **Alice Springs** 69.16 195 P P 13 38 50.5 -1.6
comp=Z,2.7nm,0.7s,baz=12,slow=5.9,SNR=36
C27A **Sayler Ranch,** 69.26 43 P P 13 38 53.4 +0.8
baz=314
D26A **Manning** 69.27 44 P P 13 38 54.0 +1.4
baz=314
B28A **Dugan Ranch, T** 69.30 42 P P 13 38 54.2 +1.5
baz=314
NC405 **NORSAR Array S** 69.34 339 *e*P P 13 38 52.3 -0.5
TUQ **Turquoise Moun** 69.35 60 P P 13 38 54.6 +1.1
baz=310
A29A **Manning Farm,** 69.50 41 P P 13 38 55.1 +1.1
baz=315,SNR=6.8
NB2 **NORSAR Subarra** 69.53 340 P P 13 38 53.4 -0.6
comp=Z,4.2nm,0.9s,baz=31,slow=6.5
NOA **NORSAR Array B** 69.53 340 P P 13 38 53.5 -0.5
comp=Z,2.1nm,0.6s,baz=32,slow=6.6,SNR=7.2
P17A **Butcher Ranch,** 69.85 54 *e*P P 13 38 57.5 +1.0
comp=Z,4.9nm,0.9s
A30A **Hoffart Farm,** 69.92 40 P P 13 38 57.2 +0.5
baz=315
GMRC **Granite Mounta** 69.94 61 P P 13 38 57.7 +0.7
baz=311
MTPU **Mount Pierson** 69.94 56 *e*P P 13 38 58.7 +1.4
comp=Z,3.3nm,0.9s
F26A **Lodgepole** 69.96 45 P P 13 38 57.5 +0.5
baz=314
LCMT **Little Creek M** 69.97 58 *e*P P 13 38 57.9 +0.6
comp=Z,5.9nm,0.8s
G25A **Newell** 70.03 46 P P 13 38 58.2 +0.8
baz=314
ULM **Lac du Bonnet** 70.09 38 P P 13 38 57.3 -0.3
comp=Z,2.5nm,0.6s,baz=319,slow=6.3,SNR=4.0
K22A **Casper** 70.11 49 P P 13 38 59.2 +1.1
baz=313
PFO **Pinyon Flats O** 70.19 62 P P 13 39 00.0 +1.3
baz=311
SRU **San Rafael Swe** 70.21 54 *e*P P 13 38 59.4 +0.6
SRU pmax pmax
comp=Z,7.0nm,0.9s
SRU **San Rafael Swe** 70.21 54 *e*P P 13 38 59.4 +0.6
comp=Z,6.5nm,0.9s
KNB **Kanab** 70.23 57 *e*P P 13 39 00.1 +1.2
KNB pmax pmax
comp=Z,6.0nm,1.0s
KNB **Kanab** 70.23 57 *e*P P 13 39 00.1 +1.2
comp=Z,6.1nm,1.0s
B30A **Myrvik Farm, E** 70.26 41 P P 13 38 59.7 +1.0
baz=315
F27A **Lemmon** 70.27 45 P P 13 38 59.8 +1.0
baz=314
G26A **Maurine** 70.38 45 P P 13 39 00.2 +0.7
baz=314,SNR=5.1
KIV **Kislovodsk** 70.43 313 *e*P P 13 39 01.0 +1.1
KIV **Kislovodsk** 70.43 313 *i*P P 13 38 59.9 0.0
KIV pmax pmax
comp=Z,9.0nm,1.1s
KIV MLR MLR
comp=Z,176nm,19.0s
KIV **Kislovodsk** 70.43 313 *e*P P 13 39 00.4 +0.6
comp=Z,9.2nm,1.0s
RSSD **Black Hills** 70.44 47 P P 13 39 00.8 +0.7
baz=313
RSSD **Black Hills** 70.44 47 *e*P P 13 39 00.2 +0.1
RSSD pmax pmax
comp=Z,11nm,1.3s
RSSD **Black Hills** 70.44 47 *e*P P 13 39 00.2 +0.1
comp=Z,10nm,1.3s
E28A **Huff** 70.44 43 P P 13 39 00.5 +0.6
baz=315
KBZ **Khabaz** 70.47 312 P P 13 39 00.9 +1.0
comp=Z,4.8nm,0.9s,baz=178,slow=2.6,SNR=12
KBZ LR LR 14 14 24.5
comp=Z,214nm,18.8s,baz=40,slow=40
KBZ **Khabaz** 70.47 312 P P 13 39 01.0 +1.0
KBZ pmax pmax
comp=Z,5.0nm,0.9s
KBZ MLR MLR
comp=Z,214nm,18.8s
ZEI **Tsey** 70.57 311 *e*P P 13 39 00.3 -0.6
ZEI pmax pmax
comp=Z,6.0nm,0.8s
B31A **Greenbush Farm** 70.60 40 P P 13 39 01.7 +1.0
baz=316
IRM **Iron Mountain** 70.67 61 P P 13 39 02.1 +0.6
baz=311
I25A **Rochford** 70.67 47 P P 13 39 01.9 +0.4
baz=314
C30A **Mose, Pekin** 70.72 41 P P 13 39 02.4 +0.9
baz=316
A32A **Rocking H Ranc** 70.77 40 P P 13 39 02.0 +0.2
baz=316
BC3 **Big Chuckawall** 70.80 62 P P 13 39 02.9 +0.5
baz=311
O20A **White River Ci** 70.85 52 P P 13 39 03.1 +0.5
baz=312
NEY **Neytrino** 70.89 312 *e*P P 13 39 05.7 +2.9
NEY pmax pmax
comp=Z,2.0nm,1.4s
C31A **Landman Farms,** 71.01 41 P P 13 39 03.4 +0.2
baz=316
D30A **Buchanan** 71.01 42 P P 13 39 03.6 +0.4
baz=316
J25A **Sunshine Ranch** 71.07 47 P P 13 39 04.0 +0.2
baz=314
H27A **Howes** 71.11 46 P P 13 39 04.8 +0.9
baz=314
I26A **New Underwood** 71.12 46 P P 13 39 04.5 +0.4
baz=314
B32A **Ashes, Strandq** 71.13 40 P P 13 39 04.2 +0.2
baz=316,SNR=5.0
PDMCI **Parker Dam,Lak** 71.20 60 P P 13 39 05.5 +0.9
baz=311
Y12C **Blythe** 71.32 61 P P 13 39 06.4 +1.0
baz=311
J26A **Sides Ranch, S** 71.50 47 P P 13 39 06.6 +0.2
baz=314
AGMN **Agassiz Nation** 71.51 40 P P 13 39 06.4 +0.1
baz=317
AGMN **Agassiz Nation** 71.51 40 *e*P P 13 39 06.1 -0.2
comp=Z,5.2nm,0.9s
PV10 **Paradox Valley** 71.57 54 *e*P P 13 39 08.2 +1.0
GLA **Glamis** 71.59 62 P P 13 39 06.7 -0.4
baz=312
H28A **Mission Ridge** 71.61 45 P P 13 39 07.3 +0.3
baz=315
N23A **Red Feather La** 71.62 51 P P 13 39 07.7 +0.3
baz=313
PV04 **Paradox Valley** 71.63 54 *e*P P 13 39 08.1 +0.7
B33A **Robert and Kas** 71.66 40 P P 13 39 07.5 +0.3
baz=317
E31A **Nome** 71.82 42 P P 13 39 08.4 +0.2
baz=316
GNI **Garni** 71.91 309 *e*P P 13 39 10.7 +1.7
GNI pmax pmax
comp=Z,13nm,1.0s
B34A **Aery, Baudette** 71.92 39 P P 13 39 08.3 -0.5
baz=318
AKASG **Malin Array Be** 71.93 325 P P 13 39 08.1 -0.6
comp=Z,5.1nm,0.9s,baz=37,slow=6.1,SNR=22
KIEV **Kiev** 71.94 325 *e*P P 13 39 08.0 -0.7
KIEV **Kiev** 71.94 325 *e*P P 13 39 08.0 -0.7
KIEV pmax pmax
comp=Z,4.0nm,0.9s
KIEV **Kiev** 71.94 325 *e*P P 13 39 07.7 -1.1
comp=Z,5.6nm,0.9s
C33A **Trail** 71.95 40 P P 13 39 08.3 -0.6
baz=317
AK11 **Malin Array Si** 71.97 325 *e*P P 13 39 07.8 -1.1
PV01 **Paradox Valley** 72.00 54 *e*P P 13 39 10.3 +0.6
I28A **Midland** 72.01 46 P P 13 39 08.7 -0.7
baz=315
H29A **Onida** 72.06 45 P P 13 39 09.7 +0.1
baz=315
WUAZ **Wupatki** 72.09 58 P P 13 39 10.1 -0.1
baz=312
WUAZ **Wupatki** 72.09 58 *e*P P 13 39 11.5 +1.3
comp=Z,4.9nm,1.1s
Y14A **Wickenburg** 72.15 60 *e*P P 13 39 11.0 +0.6
comp=Z,18nm,0.8s
SMCO **Snowmass** 72.21 52 *e*P P 13 39 10.5 -0.6
comp=Z,5.2nm,1.1s
G30A **Faulkton** 72.23 44 P P 13 39 10.7 +0.1
baz=316
D33A **AnnSam, Waubun** 72.36 40 P P 13 39 10.8 -0.6
baz=317
J28A **Allard Ranch,** 72.39 46 P P 13 39 11.1 -0.6
baz=315
C34A **RKJ Ranch, Bem** 72.42 40 P P 13 39 11.2 -0.5
baz=318
B35A **Bob, Littlefor** 72.43 39 P P 13 39 11.3 -0.5
baz=318
ISCO **Idaho Springs** 72.55 51 P P 13 39 13.3 +0.2
baz=314,SNR=5.7
ISCO **Idaho Springs** 72.55 51 *e*P P 13 39 13.8 +0.7
ISCO pmax pmax
comp=Z,3.0nm,1.0s
ISCO **Idaho Springs** 72.55 51 *e*P P 13 39 13.8 +0.7
comp=Z,3.3nm,1.0s
MVCO **Mesa Verde** 72.67 55 P P 13 39 13.2 -0.5
baz=313
F32A **Veblen** 72.68 42 P P 13 39 12.4 -0.9
baz=317
D34A **Park Rapids** 72.71 40 P P 13 39 12.9 -0.6
baz=318
E33A **Westby DABS, E** 72.76 41 P P 13 39 12.6 -1.2
baz=317
C35A **Jirik Farms, M** 72.81 39 P P 13 39 13.5 -0.5
baz=318
J29A **Okreek** 72.87 46 P P 13 39 14.5 0.0
baz=316
I30A **Oacoma** 72.96 45 P P 13 39 15.1 +0.1
baz=316
F33A **5 Mile Ranch,** 73.11 42 P P 13 39 15.7 -0.1
baz=317
D35A **Remer** 73.23 40 P P 13 39 15.4 -1.1
baz=318
S22A **4UR Ranch, Cre** 73.28 53 P P 13 39 17.1 -0.2
baz=314
S22A **4UR Ranch, Cre** 73.28 53 *e*P P 13 39 18.5 +1.1
comp=Z,3.9nm,1.1s
C36A **Pine Crest Far** 73.28 38 P P 13 39 16.6 -0.2
baz=319
J30A **Dallas** 73.35 45 P P 13 39 16.8 -0.5
baz=316
Q24A **Divide** 73.39 52 P P 13 39 17.3 -0.8
baz=314
G33A **Ortonville** 73.51 42 P P 13 39 18.3 +0.1
baz=317
H32A **Carlson Farm,** 73.53 43 P P 13 39 18.1 -0.3
baz=317
D36A **Goodland** 73.57 39 P P 13 39 18.0 -0.6
baz=319
214A **Organ Pipe Nat** 73.59 61 P P 13 39 19.1 +0.1
baz=312
C37A **Embarrass** 73.59 38 P P 13 39 18.3 -0.3
baz=319
F34A **Alexandria** 73.63 41 P P 13 39 18.9 -0.1
baz=318
EYMN **Ely** 73.73 38 P P 13 39 19.1 -0.4
baz=320
EYMN **Ely** 73.73 38 *e*P P 13 39 19.4 -0.1
comp=Z,13nm,1.2s
H33A **Prehn Over Nor** 73.74 43 P P 13 39 19.4 -0.2
baz=317
K30A **Basset** 73.75 46 P P 13 39 19.7 -0.1
baz=316
G34A **Benson** 73.86 42 P P 13 39 20.5 +0.2
baz=318
I32A **Karley and Nic** 73.86 44 P P 13 39 20.4 +0.1
baz=317
F35A **Swanville** 73.90 41 P P 13 39 20.7 +0.1
baz=318
D37A **Cotton** 73.91 39 P P 13 39 20.1 -0.5
baz=319
C38A **Sawbill Land.** 74.00 38 P P 13 39 20.5 -0.6
baz=320,SNR=5.1
E36A **McGregor** 74.02 40 P P 13 39 21.3 +0.1
baz=319,SNR=7.1
SDCO **Great Sand Dun** 74.04 53 P P 13 39 21.2 -0.6
baz=314
I33A **Coleman** 74.17 43 P P 13 39 22.2 +0.1
baz=317
K31A **O'Neill** 74.23 45 P P 13 39 22.3 -0.2
baz=316
F36A **Milaca** 74.39 40 P P 13 39 22.9 -0.5
baz=319
C39A **Grand Marais** 74.42 37 P P 13 39 22.7 -0.8
baz=320
ECSD **EROS Data Cent** 74.49 43 P P 13 39 23.9 -0.2
baz=318,SNR=6.4
ECSD **EROS Data Cent** 74.49 43 *e*P P 13 39 23.8 -0.2
comp=Z,13nm,1.4s
TUC **Tucson** 74.62 60 P P 13 39 25.8 +0.7
baz=313
TUC **Tucson** 74.62 60 *e*P P 13 39 25.5 +0.5
TUC pmax pmax
comp=Z,4.0nm,1.1s
TUC **Tucson** 74.62 60 *e*P P 13 39 25.5 +0.5
comp=Z,4.4nm,1.1s
J33A **Davis** 74.62 44 P P 13 39 25.2 +0.4
baz=317
I34A **Hadley** 74.64 43 P P 13 39 24.9 +0.1
baz=318
H35A **Sunnyside Ranc** 74.64 42 P P 13 39 25.2 +0.3
baz=318,SNR=6.3
L32A **Elgin** 75.06 45 P P 13 39 27.8 +0.5
baz=317
H36A **Jessenland, He** 75.16 41 P P 13 39 28.0 +0.1
baz=319
I35A **Creekview Farm** 75.20 42 P P 13 39 28.3 +0.2
baz=318
SPMN **Marine on St.** 75.20 40 P P 13 39 27.9 -0.1
baz=319

BGNE	**Belgrade**	**75.42**	**46**	P		**P**	**13 39 28.2**	**-1.2**
	baz=317								
ANMO	**Albuquerque**	**75.42**	**55**	P		**P**	**13 39 30.1**	**+0.3**
	baz=314								
ANMO	**Albuquerque**	**75.42**	**55**	⇑*i*P		**P**	**13 39 31.0**	**+1.2**
ANMO					pmax	pmax			
	comp=Z,7.0nm,2.5s								
ANMO	**Albuquerque**	**75.42**	**55**	*e*P		**P**	**13 39 30.7**	**+0.9**
	comp=Z,2.7nm,1.0s								
H37A	**Dierke Farm, C**	**75.64**	**41**	P		**P**	**13 39 30.8**	**+0.3**
	baz=319								
I37A	**Lemond, Waseca**	**75.84**	**41**	P		**P**	**13 39 32.1**	**+0.4**
	baz=319,SNR=5.7								
J36A	**Seneca 1, Swea**	**75.90**	**42**	P		**P**	**13 39 31.9**	**-0.3**
	baz=319								
L34A	**Svendsen Farm,**	**75.91**	**44**	P		**P**	**13 39 31.9**	**-0.3**
	baz=318								
K35A	**Storm Lake**	**75.92**	**43**	P		**P**	**13 39 32.0**	**-0.2**
	baz=318								
BUR08	**Bucovina Ar. S**	**75.97**	**325**	*e*P		**P**	**13 39 32.5**	**0.0**
BURAR	**Bucovina Array**	**75.98**	**325**	⇑*i*P		**P**	**13 39 32.8**	**+0.2**
BURAR	**Bucovina Array**	**75.98**	**325**	⇑P		**P**	**13 39 32.9**	**+0.3**
OJC	**Ojcow**	**76.00**	**329**	*e*P		**P**	**13 39 32.8**	**+0.3**
OJC					pmax	pmax			
	comp=Z,5.0nm,0.7s								
OJC	**Ojcow**	**76.00**	**329**	*e*P		**P**	**13 39 32.8**	**+0.3**
	comp=Z,4.9nm,0.7s								
KOLS	**Kolonicke sedl**	**76.11**	**327**	*e*P		**P**	**13 39 32.7**	**-0.5**
KOLS				*e*			13 39 39.8		
STHS	**Stebnicka Huta**	**76.11**	**328**	*e*P		**P**	**13 39 34.7**	**+1.5**
319A	**Douglas**	**76.19**	**60**	*e*P		**P**	**13 39 34.4**	**+0.4**
	comp=Z,13nm,1.0s								
STKA	**Stephens Creek**	**76.22**	**187**	P		**P**	**13 39 34.1**	**+0.3**
	comp=Z,2.0nm,0.6s,baz=350,slow=5.9,SNR=9.5								
STKA	**Stephens Creek**	**76.22**	**187**	P		**P**	**13 39 34.1**	**+0.3**
STKA					pmax	pmax			
	comp=Z,1.0nm,0.5s								
TESR	**Tescani**	**76.25**	**323**	⇓*i*P		**P**	**13 39 34.5**	**+0.5**
J37A	**Redenius Farm,**	**76.30**	**42**	P		**P**	**13 39 33.4**	**-1.0**
	baz=319								
121A	**Cookes Peak, D**	**76.31**	**58**	P		**P**	**13 39 35.4**	**+0.6**
	baz=314								
121A	**Cookes Peak, D**	**76.31**	**58**	*e*P		**P**	**13 39 35.4**	**+0.6**
	comp=Z,7.4nm,1.3s								
I38A	**Scanlan Farm,**	**76.32**	**41**	P		**P**	**13 39 34.3**	**-0.2**
	baz=320								
K36A	**Gilmore City**	**76.37**	**43**	P		**P**	**13 39 34.5**	**-0.2**
	baz=319								
CRVS	**Cervenica-Dubn**	**76.45**	**328**	*e*P		**P**	**13 39 35.0**	**-0.1**
M35A	**Neola**	**76.63**	**44**	P		**P**	**13 39 36.4**	**+0.2**
	baz=318								
K37A	**Belmond**	**76.66**	**42**	P		**P**	**13 39 36.4**	**-0.1**
	baz=319								
L36A	**Harm Buss Farm**	**76.66**	**43**	P		**P**	**13 39 36.4**	**-0.1**
	baz=319								
J38A	**Wedel Dairy, R**	**76.80**	**41**	P		**P**	**13 39 36.7**	**-0.5**
	baz=320								
Q32A	**Meitler Ranch,**	**76.97**	**48**	P		**P**	**13 39 37.7**	**-0.6**
	baz=317								
O34A	**Beatrice**	**77.07**	**46**	P		**P**	**13 39 38.3**	**-0.5**
	baz=318								
UPC	**Upice**	**77.10**	**331**	*e*P		**P**	**13 39 39.8**	**+1.0**
UPC	**Upice**	**77.10**	**331**	*e*P		**P**	**13 39 39.8**	**+1.0**
DPC	**Dobruska-Polom**	**77.13**	**331**	*e*P		**P**	**13 39 39.4**	**+0.4**
DPC	**Dobruska-Polom**	**77.13**	**331**	*e*P		**P**	**13 39 39.4**	**+0.4**
MORC	**Moravsky Berou**	**77.18**	**330**	⇓*i*P		**P**	**13 39 40.4**	**+1.1**
MORC	**Moravsky Berou**	**77.18**	**330**	⇓P		**P**	**13 39 40.4**	**+1.1**
MORC	**Moravsky Berou**	**77.18**	**330**	*e*P		**P**	**13 39 39.5**	**+0.2**
	comp=Z,27nm,1.0s								
KRLC	**Kraliky**	**77.20**	**331**	*e*P		**P**	**13 39 39.9**	**+0.5**
KRLC	**Kraliky**	**77.20**	**331**	*e*P		**P**	**13 39 39.9**	**+0.5**
Q33A	**Connelly Farm,**	**77.35**	**47**	P		**P**	**13 39 39.9**	**-0.5**
	baz=318								
CLL	**Collm**	**77.41**	**334**	*e*P		**P**	**13 39 40.1**	**-0.4**
CLL	**Collm**	**77.41**	**334**	⇓*i*P		**P**	**13 39 40.1**	**-0.4**
	comp=Z,10.0nm,1.0s								
CLL				*i*			13 39 48.8		
CLL				*i*			13 39 54.1		
CLL	**Collm**	**77.41**	**334**	⇓*i*P		**P**	**13 39 40.1**	**-0.4**
CLL				*i*			13 39 48.8		
CLL					pmax	pmax			
	comp=Z,10.0nm,1.0s								
CLL	**Collm**	**77.41**	**334**	*e*P		**P**	**13 39 40.2**	**-0.2**
	comp=Z,9.9nm,0.9s								
P34A	**Walnut Farm, R**	**77.47**	**46**	P		**P**	**13 39 40.6**	**-0.5**
	baz=318								
DRGR		**77.67**	**326**	⇑*i*P		**P**	**13 39 42.3**	**+0.2**
DRGR		**77.67**	**326**	⇑P		**P**	**13 39 42.4**	**+0.3**
VYHS	**Vyhne**	**77.78**	**329**	*e*P		**P**	**13 39 43.3**	**+0.7**
R33A	**Olander Ranch,**	**77.78**	**48**	P		**P**	**13 39 42.1**	**-0.7**
	baz=318								
PSZ	**Piszkesteto**	**77.86**	**328**	⇑*i*P		**P**	**13 39 43.2**	**+0.1**
PSZ	**Piszkesteto**	**77.86**	**328**	⇑P		**P**	**13 39 43.2**	**+0.1**
P35A	**Duane Minner,**	**77.91**	**46**	P		**P**	**13 39 43.2**	**-0.3**
	baz=318								
KSU1	**Kansas State U**	**77.92**	**47**	P		**P**	**13 39 43.0**	**-0.5**
	baz=318								
PRU	**Pruhonice**	**78.04**	**332**	*e*P		**P**	**13 39 44.5**	**+0.5**
PRU				*e*pP		**pP**	**13 39 55.1**	**+1.2**
PRU	**Pruhonice**	**78.04**	**332**	*e*P		**P**	**13 39 44.5**	**+0.5**
PRU				*e*			13 39 55.1		
BRTR	**Keskin Array B**	**78.16**	**315**	P		**P**	**13 39 45.0**	**0.0**
	comp=Z,0.8nm,0.7s,baz=110,slow=3.8,SNR=5.5								
BRTR					LR	LR	14 20 12.1		
	comp=Z,40nm,18.4s,baz=70,slow=40								
BRTR	**Keskin Array B**	**78.16**	**315**	*e*P		**P**	**13 39 45.5**	**+0.5**
BRTR					pmax	pmax			
	comp=Z,1.0nm,0.7s								
AMTX	**Amarillo**	**78.24**	**53**	P		**P**	**13 39 45.9**	**+0.4**
	baz=316								
MSTX	**Muleshoe**	**78.27**	**54**	P		**P**	**13 39 45.8**	**+0.1**
	baz=316								
TREC	**Trest**	**78.31**	**331**	*e*P		**P**	**13 39 46.1**	**+0.5**
TREC	**Trest**	**78.31**	**331**	*e*P		**P**	**13 39 46.1**	**+0.5**
MNTX	**Cornudas Mount**	**78.34**	**57**	P		**P**	**13 39 46.7**	**+0.7**
	baz=315								
MNTX	**Cornudas Mount**	**78.34**	**57**	*e*P		**P**	**13 39 46.4**	**+0.4**
	comp=Z,2.1nm,0.8s								
BR231	**Keskin MP Arra**	**78.51**	**315**	*e*P		**P**	**13 39 46.0**	**-1.0**
Q36A	**Arnold C. Orve**	**78.62**	**46**	P		**P**	**13 39 47.8**	**+0.4**
	baz=319								
P37A	**Lathrop**	**78.71**	**45**	P		**P**	**13 39 48.1**	**+0.2**
	baz=319								
R36A	**Gordon, Harris**	**79.07**	**46**	P		**P**	**13 39 50.3**	**+0.4**
	baz=319								
P38A	**Dawn**	**79.10**	**44**	P		**P**	**13 39 50.4**	**+0.4**
	baz=320								
KHC	**Kasperske Hory**	**79.10**	**332**	*e*P		**P**	**13 39 50.3**	**+0.4**
KHC				*e*pP		**sP**	**13 40 02.4**	**-1.1**
KHC	**Kasperske Hory**	**79.10**	**332**	*e*P		**P**	**13 39 49.6**	**-0.3**
KHC	**Kasperske Hory**	**79.10**	**332**	*e*P		**P**	**13 39 50.3**	**+0.4**
KHC				*e*			13 40 02.4		
KHC	**Kasperske Hory**	**79.10**	**332**	*e*P		**P**	**13 39 49.6**	**-0.3**
	comp=Z,1.9nm,0.7s								
S35A	**Otter Creek Ra**	**79.12**	**47**	P		**P**	**13 39 50.0**	**-0.2**
	baz=319								
T34A	**McClaskey Farm**	**79.15**	**48**	P		**P**	**13 39 50.1**	**-0.3**
	baz=318								
Q37A	**Longview Farm,**	**79.20**	**45**	P		**P**	**13 39 49.8**	**-0.8**
	baz=319								
GERES	**GERESS Array B**	**79.31**	**332**	P		**P**	**13 39 50.5**	**-0.6**
	comp=Z,0.7nm,0.5s,baz=42,slow=4.7,SNR=9.4								
GERES					LR	LR	14 18 47.7		
	comp=Z,96nm,18.7s,baz=7.5,slow=39								
GEA0	**GERESS Array S**	**79.31**	**332**	*e*P		**P**	**13 39 50.0**	**-1.1**
U34A	**Anderson Ranch**	**79.40**	**49**	P		**P**	**13 39 50.8**	**-1.0**
	baz=318								
R37A	**Teagarden Farm**	**79.43**	**46**	P		**P**	**13 39 51.3**	**-0.6**
	baz=319								
W32A	**Sentinel**	**79.43**	**51**	P		**P**	**13 39 51.5**	**-0.5**
	baz=318								
V33A	**Lossen Ranch,**	**79.45**	**50**	P		**P**	**13 39 51.3**	**-0.8**
	baz=318								
S36A	**Lake Cedric, C**	**79.47**	**47**	P		**P**	**13 39 51.8**	**-0.3**
	baz=319								
O40A	**La Belle**	**79.54**	**43**	P		**P**	**13 39 52.3**	**-0.1**
	baz=321								
Q38A	**Cooks Store, C**	**79.56**	**45**	P		**P**	**13 39 52.4**	**-0.1**
	baz=320								
T35A	**Sooner Cattle**	**79.59**	**48**	P		**P**	**13 39 52.8**	**0.0**
	baz=319								
Q39A	**Willow Grove F**	**79.82**	**44**	P		**P**	**13 39 54.1**	**+0.1**
	baz=320								
T36A	**Boggs Farm, Ca**	**79.82**	**47**	P		**P**	**13 39 53.9**	**-0.1**
	baz=319								
W33A	**Caddo, Fort Co**	**79.84**	**50**	P		**P**	**13 39 54.0**	**-0.1**
	baz=318								
S37A	**Fort Scott**	**79.85**	**46**	P		**P**	**13 39 54.1**	**0.0**
	baz=319								
V34A	**Guthrie**	**79.86**	**49**	P		**P**	**13 39 53.4**	**-0.9**
	baz=318								
P40A	**Paris**	**79.91**	**44**	P		**P**	**13 39 54.5**	**+0.1**
	baz=320								
X32A	**Elmer**	**79.92**	**51**	P		**P**	**13 39 54.3**	**-0.3**
	baz=318								
R38A	**Fenwick Farm,**	**80.00**	**46**	P		**P**	**13 39 53.8**	**-1.1**
	baz=320								
MEM	**Membach**	**80.12**	**337**	P		**P**	**13 39 55.5**	**+0.1**
T37A	**Cheneyville 18**	**80.28**	**47**	P		**P**	**13 39 56.4**	**-0.1**
	baz=319								
Q40A	**Laux Farm, Aux**	**80.31**	**44**	P		**P**	**13 39 56.3**	**-0.2**
	baz=321								
R39A	**Chumbley, Stover**	**80.34**	**45**	P		**P**	**13 39 56.5**	**-0.3**
	baz=320								
S38A	**Stockton**	**80.42**	**46**	P		**P**	**13 39 56.9**	**-0.3**
	baz=320								
HDIL	**Hopedale**	**80.44**	**41**	P		**P**	**13 39 56.9**	**-0.4**
	baz=322								
HDIL	**Hopedale**	**80.44**	**41**	*e*P		**P**	**13 39 57.0**	**-0.2**
	comp=Z,16nm,1.2s								
BCLA	**Clavier**	**80.49**	**338**	P		**P**	**13 39 56.6**	**-0.7**
	comp=Z,8.0nm,1.9s								
LPIG	**La Paz**	**80.57**	**66**	LR		LR	14 11 20.0		
	comp=Z,36nm,18.5s,baz=190,slow=32								
Y33A	**Hilltop Ranch,**	**80.60**	**51**	P		**P**	**13 39 58.4**	**+0.1**
	baz=318								
X34A	**Smith Ranch, M**	**80.60**	**50**	P		**P**	**13 39 58.2**	**-0.1**
	baz=318								
T38A	**Diamond**	**80.67**	**47**	P		**P**	**13 39 58.4**	**-0.2**
	baz=320,SNR=7.8								
S39A	**Bolivar**	**80.67**	**46**	P		**P**	**13 39 58.5**	**-0.1**
	baz=320								
U37A	**Salina**	**80.72**	**47**	P		**P**	**13 39 58.9**	**0.0**
	baz=319								
R40A	**Maddies Statio**	**80.75**	**44**	P		**P**	**13 39 58.8**	**-0.2**
	baz=321								
ABTX	**Abilene, Hawle**	**81.04**	**53**	P		**P**	**13 40 00.8**	**+0.1**
	baz=318								
TX31	**Lajitas Ar. Si**	**81.06**	**58**	*e*P		**P**	**13 40 01.1**	**+0.2**
TXAR	**Lajitas Array**	**81.06**	**58**	P		**P**	**13 40 01.5**	**+0.6**
	comp=Z,4.5nm,0.6s,baz=300,slow=4.0,SNR=62								
TXAR	**Lajitas Array**	**81.06**	**58**	P		**P**	**13 40 01.5**	**+0.6**
TXAR					pmax	pmax			
	comp=Z,4.0nm,0.6s								
U38A	**Gravette**	**81.08**	**47**	P		**P**	**13 40 00.9**	**+0.1**
	baz=320								
W36A	**Wetumka**	**81.08**	**49**	P		**P**	**13 40 00.4**	**-0.4**
	baz=319								
V37A	**Hulbert**	**81.10**	**48**	P		**P**	**13 40 00.5**	**-0.4**
	baz=319								
T39A	**Clever**	**81.16**	**46**	P		**P**	**13 40 00.5**	**-0.7**
	baz=320								
S40A	**Lebanon**	**81.16**	**45**	P		**P**	**13 40 00.7**	**-0.5**
	baz=320								
X35A	**Drake**	**81.22**	**50**	P		**P**	**13 40 01.2**	**-0.3**
	baz=319								
HHAR	**Hobbs**	**81.43**	**47**	*e*P		**P**	**13 40 02.2**	**-0.4**
	comp=Z,16nm,1.6s								
Z34A	**Collier Ranch,**	**81.47**	**51**	P		**P**	**13 40 02.6**	**-0.3**
	baz=318								
133A	**Hamilton Ranch**	**81.47**	**52**	P		**P**	**13 40 03.2**	**+0.2**
	baz=318								
T40A	**Mansfield**	**81.50**	**45**	P		**P**	**13 40 02.7**	**-0.3**
	baz=320								
V38A	**Canehill**	**81.50**	**47**	P		**P**	**13 40 03.0**	**-0.1**
	baz=320,SNR=5.2								
W37B	**Quinton**	**81.50**	**48**	P		**P**	**13 40 02.9**	**-0.1**
	baz=319								
U39A	**Green Forest**	**81.59**	**46**	P		**P**	**13 40 03.2**	**-0.3**
	baz=320,SNR=5.9								
233A	**Rising Star**	**81.91**	**53**	P		**P**	**13 40 04.8**	**-0.5**
	baz=318								
V39A	**Pettigrew**	**81.92**	**47**	P		**P**	**13 40 05.0**	**-0.3**
	baz=320								
U40A	**Yellville**	**81.94**	**46**	P		**P**	**13 40 05.0**	**-0.3**
	baz=320,SNR=5.3								
X37A	**Clayton**	**81.95**	**49**	P		**P**	**13 40 04.9**	**-0.5**
	baz=319								
W38A	**Poteau**	**82.05**	**48**	P		**P**	**13 40 05.5**	**-0.4**
	baz=320								
X38A	**Whitesboro**	**82.18**	**48**	P		**P**	**13 40 06.2**	**-0.4**
	baz=320								
W39A	**Magazine**	**82.34**	**47**	P		**P**	**13 40 07.6**	**+0.2**
	baz=320								
Z36A	**Blue Ridge**	**82.36**	**50**	P		**P**	**13 40 07.1**	**-0.5**
	baz=319								
333A	**Richland Sprin**	**82.38**	**53**	P		**P**	**13 40 07.9**	**+0.1**
	baz=318								
V40A	**Witts Springs**	**82.38**	**46**	P		**P**	**13 40 07.2**	**-0.5**
	baz=320								
FUORN	**Ofenpass-Fuorn**	**82.39**	**333**	*e*P		**P**	**13 40 07.3**	**-0.5**
	comp=Z,8.6nm,1.3s								
X39A	**Fountain Ranch**	**82.69**	**48**	P		**P**	**13 40 09.3**	**0.0**
	baz=320								
W40A	**Ferguson Farm,**	**82.72**	**47**	P		**P**	**13 40 08.9**	**-0.4**
	baz=320								
433A	**Art**	**82.73**	**54**	P		**P**	**13 40 09.7**	**+0.1**
	baz=318								
334A	**Lometa**	**82.80**	**53**	P		**P**	**13 40 09.5**	**-0.4**
	baz=318								
MIAR	**Mount Ida**	**82.94**	**48**	P		**P**	**13 40 11.0**	**+0.4**
	baz=320,SNR=6.8								
MIAR	**Mount Ida**	**82.94**	**48**	*e*P		**P**	**13 40 11.0**	**+0.4**
MIAR					pmax	pmax			
	comp=Z,8.0nm,0.9s								
MIAR	**Mount Ida**	**82.94**	**48**	*e*P		**P**	**13 40 11.0**	**+0.4**
	comp=Z,8.4nm,0.9s								
WHAR	**Wooly Hollow**	**83.05**	**46**	*e*P		**P**	**13 40 10.8**	**-0.3**
	comp=Z,6.6nm,0.8s								
PPT	**Papeete**	**83.10**	**123**	LR		LR	14 17 23.6		
	comp=Z,48nm,18.9s,baz=350,slow=36								
Y39A	**Lockesburg**	**83.13**	**48**	P		**P**	**13 40 10.3**	**-1.3**
	baz=320								
X40A	**Basin Creek Fa**	**83.38**	**47**	P		**P**	**13 40 12.4**	**-0.5**
	baz=321								
534A	**Blco**	**83.63**	**54**	P		**P**	**13 40 14.2**	**-0.1**
	baz=318								
633A	**Saathoff Ranch**	**83.64**	**55**	P		**P**	**13 40 14.4**	**+0.1**
	baz=318								
WVT	**Waverly**	**84.64**	**43**	*e*P		**P**	**13 40 19.4**	**+0.1**
WVT					pmax	pmax			
	comp=Z,4.0nm,0.8s								
WVT	**Waverly**	**84.64**	**43**	*e*P		**P**	**13 40 19.4**	**+0.1**
	comp=Z,3.5nm,0.8s								
Y46A	**Houston**	**85.91**	**45**	P		**P**	**13 40 25.4**	**-0.3**
	baz=323								
TORD	**Torodi Ar. Bea**	**115.56**	**325**	PKP		**PKPdf**	**13 46 27.1**	**-0.9**
	comp=Z,0.3nm,0.6s,baz=51,slow=1.7,SNR=3.1								
VNDA	**Vanda**	**121.89**	**177**	PKP		**PKPdf**	**13 46 37.4**	**-0.9**
	comp=Z,0.4nm,0.5s,baz=34,slow=3.6,SNR=3.2								
SNAA	**Sanae**	**149.51**	**197**	PKP		**PKPbc**	**13 47 33.9**	**+0.3**
PLCA	**Paso Flores**	**150.69**	**97**	PKPbc		**PKPbc**	**13 47 37.7**	**+0.3**
	comp=Z,3.6nm,0.8s,baz=158,slow=0.8,SNR=6.3								
VNA2	**Neumayer--Watz**	**151.01**	**196**	PKP		**PKPbc**	**13 47 37.8**	**+0.7**
	baz=29,slow=0.6								
VNA3	**Neumayer Olymp**	**151.16**	**194**	PKP		**PKPbc**	**13 47 38.0**	**+0.5**
CPUP	**Villa Florida**	**152.03**	**59**	PKPbc		**PKPbc**	**13 47 41.1**	**+0.3**
	comp=Z,2.4nm,0.8s,baz=273,slow=2.8,SNR=3.2								

*SJA **24** 13:32:38.8±0.5,30°.51S×70°.53W,h323km±8km, ML3.2, MW4.2*
*GUC **24** 13:32:43.6±0.4,29°.89S×71°.30W,h47km±2km, ML2.5*
ISC 24 13:32:36.9±2.2,29°.93S±0°.04×71°.8W±0°.1,h9km±16km,n14,s172/19,Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
LSCH	**La Serena**	**0.45**	**87**	*e*P		**Pn**	**13 32 50.9**	**+1.4**
LSCH				*e*S		**Sb**	**13 32 56.6**	**+2.9**
TLL	**Tololo Astrono**	**0.86**	**106**	*e*P		**Pn**	**13 32 55.9**	**+0.4**
TLL				*e*S		**Sb**	**13 33 04.7**	**-1.2**
TLL					IAML		13 33 06.3	
	comp=N,698nm,0.2s							
LCO	**Las Campanas**	**1.30**	**45**	*e*P		**Pg**	**13 33 02.5**	**+0.6**
LCO				*e*S		**Sb**	**13 33 17.2**	**-1.4**
LCO					IAML		13 33 18.2	
	comp=N,187nm,0.3s							
VACH	**Vallenar**	**1.61**	**33**	*e*P		**Pb**	**13 33 07.2**	**+0.4**
VACH				*e*S		**Sn**	**13 33 25.1**	**-1.3**
RTLS	**Leoncito**	**2.82**	**132**	*i*P		**Pb**	**13 33 26.4**	**-1.2**
RTLS				*i*S		**Sb**	**13 34 00.8**	**-1.5**
AGUA	**GUANDACOL**	**2.88**	**82**	*i*P		**Pb**	**13 33 28.0**	**-0.5**
AMOG	**MOGNA**	**3.00**	**110**	*i*P		**Pn**	**13 33 26.3**	**+1.6**
AUSP	**Uspallata**	**3.06**	**139**	*i*P		**Pn**	**13 33 28.0**	**+2.3**
AUSP				*i*S		**Sn**	**13 34 04.8**	**+2.1**
ROC1	**El Roble**	**3.10**	**168**	*i*P		**Pb**	**13 33 32.0**	**-0.4**
RTLL	**Cerro Villicun**	**3.16**	**117**	*i*P		**Pn**	**13 33 27.5**	**+0.7**
SJA	**San Juan**	**3.18**	**121**	IAML			13 34 11.1	
	comp=Z,108nm,0.1s							
VCA	**Vinchina**	**3.33**	**70**	*i*P		**Pb**	**13 33 33.5**	**-2.6**
VCA				IAML			13 34 22.6	
	comp=Z,42nm,0.3s							
RTCV	**Cerro Valdivia**	**3.37**	**126**	*i*P		**Pn**	**13 33 28.7**	**-1.1**
ARCO	**CERRO ARCO**	**3.78**	**141**	*i*P		**Pn**	**13 33 33.7**	**-1.7**
ARCO				IAML			13 34 37.3	
	comp=Z,12nm,0.5s							

*TAP **24** 13:42:59.3,23°.64N×120°.56E,h5km,ML3.0,B*
*JMA **24** 13:42:59.1±0.1,23°.65N×120°.54E,h0km,M3.5*
*IASPEI **24** 13:43:00.4±0.8,23°.66N±0°.02×120°.54E±0°.02,h8km±5km, Error ellipse: s-maj=2.9km s-min=2.3km az=124.6,GT5 selection from ISC bulletin GT5 identified by Bond"jr and McLaughlin (2009) selection criteria Bond"jr and McLaughlin, A new ground truth data set for seismic studies, Seism. Res. Let., 80, 465-472, 2009*
*ISCJB **24** 13:43:00.9±0.2,23°.65N±0°.01×120°.54E±0°.02,h8km±2km, Error ellipse: s-maj=2.7km s-min=1.9km az=31.4*
ISC 24 13:43:00.6±0.8,23°.66N±0°.02×120°.53E±0°.02,h6km±6km, n56,σ0s80/93,4C-15D,Taiwan

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
WGK	**Gukeng**	**0.04**	**50**	⇓*i*P		**Pg**	**13 43 01.4**	**-0.4**
WGK	baz=15			*i*	S	**Sg**	**13 43 03.3**	**+0.5**
CHN2	**Minshiung**	**0.14**	**201**	P		**Pg**	**13 43 03.2**	**-0.1**
CHN2	baz=215			S		**Sg**	**13 43 06.5**	**+1.2**
CHN5	**Tsauling**	**0.15**	**114**	⇑*i*P		**Pg**	**13 43 02.7**	**-1.0**
CHN5	baz=110			*i*	S	**Sg**	**13 43 05.3**	**-0.5**
CHY	**Chiayi**	**0.19**	**211**	*i*P		**Pg**	**13 43 04.4**	**+0.1**
CHY	baz=218			*i*	S	**Sg**	**13 43 08.8**	**+1.9**
WNT	**Mingjian**	**0.26**	**33**	*e*P		**Pg**	**13 43 06.3**	**+0.7**
WNT	baz=29			S		**Sb**	**13 43 11.4**	**-1.0**
WSF	**Szhu**	**0.28**	**266**	⇑*i*P		**Pg**	**13 43 06.6**	**+0.5**
WSF	baz=270			*i*	S	**Sb**	**13 43 12.3**	**-0.8**
ALS	**Alishan**	**0.29**	**120**	⇓*i*P		**Pg**	**13 43 06.0**	**-0.4**
ALS	baz=118			*e*	S	**Sg**	**13 43 11.3**	**+0.9**
WTCT	**Ta-ch'eng**	**0.30**	**312**	⇑P		**Pb**	**13 43 07.2**	**-1.2**
WTCT	baz=297			*e*	S	**Sb**	**13 43 13.2**	**-0.5**
CHN4	**Tsaushan**	**0.31**	**169**	⇓*i*P		**Pg**	**13 43 06.3**	**-0.3**
CHN4	baz=173			*e*	S	**Sg**	**13 43 11.7**	**+0.9**
TYC	**Yuchr**	**0.39**	**51**	⇓*i*P		**Pg**	**13 43 08.5**	**+0.4**
TYC	baz=48			*i*	S	**Sb**	**13 43 15.1**	**-1.0**
TWK	**Hsinying**	**0.39**	**185**	⇓*i*P		**Pg**	**13 43 08.2**	**0.0**
SMLT	**Sun Moon Lake**	**0.41**	**57**	⇓*i*P		**Pg**	**13 43 08.8**	**+0.3**
SMLT	baz=54			*e*	S	**Sb**	**13 43 15.4**	**-1.4**
WTP	**Ta-pu**	**0.42**	**169**	⇓*i*P		**Pg**	**13 43 08.3**	**-0.5**
WTP	baz=170			*e*	S	**Sg**	**13 43 15.0**	**+0.8**
YUS	**Yu-Shan**	**0.42**	**113**	⇓*i*P		**Pg**	**13 43 08.7**	**-0.3**
YUS	baz=111			S		**Sg**	**13 43 15.9**	**+1.3**
CHN8	**Yiju**	**0.43**	**223**	P		**Pg**	**13 43 09.2**	**+0.4**
CHN8	baz=226			S		**Sb**	**13 43 17.2**	**-0.1**
CHN1	**Nanshi**	**0.47**	**180**	⇓P		**Pg**	**13 43 09.5**	**-0.2**
TCU	**Taichung**	**0.50**	**16**	*e*P		**Pb**	**13 43 11.2**	**-0.7**
TCU	baz=15			*e*	S	**Sb**	**13 43 19.1**	**-0.4**
STYT	**Tauyuan**	**0.54**	**157**	⇓*i*P		**Pg**	**13 43 10.4**	**-0.6**
STYT	baz=156			*e*	S	**Sg**	**13 43 18.7**	**+0.7**
WDT	**Danda**	**0.56**	**80**	⇓*i*P		**Pg**	**13 43 11.5**	**0.0**
WDT	baz=78			*e*	S	**Sb**	**13 43 20.4**	**-1.1**
SCLT	**Jiali**	**0.57**	**212**	*e*P		**Pb**	**13 43 12.4**	**-0.6**
SCLT	baz=231			*e*	S	**Sb**	**13 43 22.3**	**+0.9**
SGST	**Jiashian**	**0.58**	**175**	*e*P		**Pg**	**13 43 11.4**	**-0.3**
SGST	baz=175			*e*	S	**Sb**	**13 43 21.1**	**-0.5**
CHN3	**Shinhua**	**0.60**	**194**	*e*P		**Pb**	**13 43 13.2**	**-0.3**
**ELDT

NNS	**Nan Shan**	**1.09**	**45**	*e*P		**Pg**	**13 43 20.6**	**-1.0**
	baz=42								
ECL	**Taimali**	**1.13**	**160**	‖*e*P		**Pg**	**13 43 21.3**	**-0.9**
	baz=146								
ECL				*e*S		**Sb**	**13 43 37.7**	**+0.2**
	baz=146								
SCZT	**Fangliau**	**1.28**	**176**	*e*P		**Pn**	**13 43 23.9**	**-1.2**
	baz=165								
SCZT				*e*S		**Sn**	**13 43 42.7**	**+0.1**
	baz=165								
EAST	**Anshuo**	**1.30**	**167**	*e*P		**Pn**	**13 43 24.5**	**-0.9**
	baz=175								
EAST				*e*S		**Sb**	**13 43 42.4**	**-0.2**
	baz=175								
ENA	**Nanau**	**1.35**	**55**	*e*P		**Pn**	**13 43 24.2**	**-1.8**
	baz=53								
ENTT	**Nioudou**	**1.36**	**44**	*e*P		**Pn**	**13 43 25.6**	**-0.6**
	baz=30								
TWE	**Neicheng**	**1.48**	**44**	*e*P		**Pb**	**13 43 28.2**	**-0.4**
	baz=46								
TWE				*e*S		**Sg**	**13 43 49.6**	**+1.3**
	baz=46								
TWC	**Suao**	**1.53**	**52**	*e*P		**Pn**	**13 43 28.6**	**0.0**
	baz=53								
TWC				*e*S		**Sn**	**13 43 48.2**	**-0.6**
	baz=53								
EGS		**1.74**	**47**	*e*P		**Pg**	**13 43 34.0**	**0.0**
	baz=45								
KNM	**Kinmen**	**2.06**	**292**	*e*P		**Pb**	**13 43 38.0**	**-0.4**
	baz=292								
JYNG	**Yonagunijimaku**	**2.35**	**70**	P		**Pn**	**13 43 40.4**	**+0.7**
JYNG				S		**Sn**	**13 44 10.4**	**+1.6**
YOJ	**Yonaguni jima**	**2.41**	**70**	P		**Pn**	**13 43 41.3**	**+0.8**
IRIF	**Iriomote-Funau**	**3.00**	**76**	P		**Pn**	**13 43 49.6**	**+0.8**
IRIF				*e*S		**Sn**	**13 44 26.9**	**+1.8**
JKRS	**Kuro-shima**	**3.24**	**79**	P		**Pn**	**13 43 52.8**	**+0.9**
JKRS				*e*S		**Sn**	**13 44 32.2**	**+1.4**
JIJ	**Ishigaki jima**	**3.38**	**77**	P		**Pn**	**13 43 53.9**	**0.0**
JIJ				*e*S		**Sn**	**13 44 35.5**	**+1.1**
JISG	**Ishigakijimahi**	**3.58**	**74**	P		**Pn**	**13 43 56.3**	**-0.3**
JISG				*e*S		**Sn**	**13 44 41.1**	**+1.9**

NIED ***24*** *13:48:00, 36˚.70N× 142˚.40E, h17km, Mw3.6 Best double couple: M₀2.56000×10¹⁴ NP1:φ=230.00000°, δ=28.00000°, λ=120.00000°. NP2:φ=17.00000°, δ=66.00000°, λ=75.00000°.*
ISCJB ***24*** *13:48:28.0±0.7, 36˚.67N±0˚.03× 142˚.51E±0˚.07, h15km, mb3.5/4, Error ellipse: s-maj=8.5km s-min=4.9km az=7.6*
IDC ***24*** *13:48:28.5±1.6, 36˚.68N× 142˚.37E, h0km, mb3.6/4, mb1 3.8/8, mb1mx3.5/52, mbtmp3.9/8, ML3.8/4, Error ellipse: s-maj=33.3km s-min=21.7km az=120.0*
JMA ***24*** *13:48:29.1±0.3, 36˚.69N× 142˚.41E, h22km, M3.7*
ISC 24 13:48:29.6±1.1, 36˚.66N±0˚.04× 142˚.34E±0˚.08, h15km, n27, σ1§37/27, mb3.5/4, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**1.31**	**290**	P	**Pn**	**13 48 52.9**	**-0.6**
JFK	**Kawauchi**	**1.37**	**301**	P	**Pn**	**13 48 53.5**	**-0.7**
JHO	**Hitachi**	**1.43**	**269**	P	**Pn**	**13 48 54.7**	**-0.3**
JMM	**Marumori**	**1.73**	**315**	P	**Pn**	**13 48 58.6**	**-0.5**
JFT	**Otama**	**1.82**	**299**	P	**Pb**	**13 49 00.7**	**-1.9**
JIO	**Ouri**	**1.96**	**337**	P	**Pn**	**13 49 01.6**	**-0.7**
JOU	**Okura**	**2.16**	**322**	P	**Pn**	**13 49 05.5**	**+0.4**
JOU				S	**Sn**	**13 49 32.1**	**+0.4**
BSO1	**Boso 1**	**2.29**	**209**	P	**Pn**	**13 49 07.6**	**+1.3**
BSO1				*e*S	**Sb**	**13 49 36.2**	**-1.9**
JMK	**Ichinoseki**	**2.46**	**339**	P	**Pn**	**13 49 09.5**	**+0.4**
JMK				S	**Sn**	**13 49 38.5**	**-0.3**
JYK	**Kaneyama**	**2.75**	**326**	P	**Pn**	**13 49 13.8**	**+0.7**
JRY	**Ryogami san**	**2.85**	**258**	P	**Pn**	**13 49 15.2**	**+0.6**
JOM	**Ohasama**	**2.93**	**344**	P	**Pn**	**13 49 15.9**	**+0.3**
JOM				S	**Sn**	**13 49 51.0**	**+0.5**
MJAR	**Matsushiro Arr**	**3.33**	**269**	Pn	**Pn**	**13 49 22.9**	**+1.7**
	8.2nm,0.3s,baz=98,slow=11,SNR=67						
MJAR				Sn	**Sb**	**13 50 06.4**	**-2.3**
	2.0nm,0.3s,baz=85,slow=14,SNR=6.0						
MAT	**Matsushiro**	**3.33**	**269**	P	**Pn**	**13 49 23.2**	**+2.1**
MAT				S	**Sn**	**13 50 04.1**	**+3.6**
JHJ	**Hachijo jima 2**	**4.11**	**212**	Pn	**Pn**	**13 49 32.4**	**+0.5**
	15nm,0.3s,baz=317,slow=17,SNR=8.5						
JHJ				Sn	**Sn**	**13 50 17.6**	**-2.1**
	23nm,0.3s,baz=255,slow=23,SNR=5.7						
ASAJ	**Asahikawa**	**7.45**	**1**	Pn	**Pn**	**13 50 17.7**	**0.0**
	1.1nm,0.3s,baz=224,slow=9.1,SNR=16						
JCJ	**Chichijima**	**9.54**	**181**	Pn	**Pn**	**13 50 46.8**	**+0.4**
	2.1nm,0.3s,baz=12,slow=20,SNR=3.0						
SEY	**Seymchan**	**27.02**	**10**	P	**P**	**13 54 11.1**	**+0.3**
	0.4nm,0.3s,baz=17,slow=21,SNR=4.0						
H11N2	**WAKE ISLAND Hy**	**27.32**	**121**	T	T	14 22 54.1	
	baz=314,slow=75,SNR=6.6						
H11N1	**WAKE ISLAND Hy**	**27.32**	**121**	T	T	14 22 58.2	
	baz=314,slow=75,SNR=6.6						
H11N3	**WAKE ISLAND Hy**	**27.33**	**121**	T	T	14 22 49.1	
	baz=314,slow=75,SNR=5.1						
H11S1	**WAKE ISLAND Hy**	**28.03**	**124**	T	T	14 23 56.4	
	baz=334,slow=76,SNR=5.8						
H11S3	**WAKE ISLAND Hy**	**28.03**	**124**	T	T	14 23 45.6	
	baz=334,slow=76,SNR=4.1						
H11S2	**WAKE ISLAND Hy**	**28.05**	**124**	T	T	14 23 56.3	
	baz=334,slow=76,SNR=3.1						
SONM	**Songino Array**	**28.61**	**304**	P	**P**	**13 54 26.5**	**+1.2**
	0.9nm,0.6s,baz=105,slow=9.1,SNR=3.4						
MKAR	**Makanchi Array**	**44.95**	**303**	P	**P**	**13 56 44.8**	**+0.8**
	0.4nm,0.7s,baz=87,slow=9.9,SNR=5.3						
ILAR	**Eielson Array**	**49.41**	**32**	P	P	13 57 20.4	+1.9
	0.3nm,0.8s,baz=269,slow=5.8,SNR=4.4						

DDA ***24*** *13:49:25.9, 38˚.99N× 29˚.83E, h7km, Md2.7*
CSEM ***24*** *13:49:26.6±0.1, 38˚.97N× 29˚.82E, h2km, MD2.7, Error ellipse: s-maj=3.1km s-min=2.2km az=121.0*
ISK ***24*** *13:49:27.0, 38˚.98N× 29˚.72E, h6km, MD2.5*
ISC 24 13:49:26.0±1.3, 38˚.93N±0˚.04× 29˚.83E±0˚.03, h3km±14km, n22, σ0§27/36, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GDZ	**Gediz**	**0.32**	**301**	*i*P	**Pg**	**13 49 32.1**	**-0.1**
GDZ				*i*S	**Sg**	**13 49 36.4**	**+0.1**
GDZ	**Gediz**	**0.32**	**301**	P	**Pg**	**13 49 32.1**	**-0.1**
GDZ				S	**Sg**	**13 49 36.4**	**+0.1**
TVSB	**Tavsanli**	**0.60**	**331**	*e*PG	**Pg**	**13 49 37.5**	**0.0**
TVSB				*e*SG	**Sg**	**13 49 44.8**	**-0.4**
TVSB	**Tavsanli**	**0.60**	**331**	*e*Pg	**Pg**	**13 49 37.5**	**0.0**
TVSB				*e*Sg	**Sg**	**13 49 44.8**	**-0.4**
KHAL	**Karahalli**	**0.61**	**206**	*i*P	**Pb**	**13 49 39.1**	**-0.4**
KHAL				*i*S	**Sb**	**13 49 48.3**	**-0.3**
KHAL	**Karahalli**	**0.61**	**206**	P	**Pb**	**13 49 39.1**	**-0.4**
KHAL				S	**Sb**	**13 49 48.3**	**-0.3**
AUKIR	**K¨–rka- Seyitg**	**0.65**	**57**	*i*P	**Pg**	**13 49 38.2**	**-0.2**
AUKIR				*i*S	**Sg**	**13 49 47.0**	**+0.2**
AUKIR	**K¨–rka- Seyitg**	**0.65**	**57**	P	**Pg**	**13 49 38.2**	**-0.2**
AUKIR				S	**Sg**	**13 49 47.0**	**+0.2**
KHL	**Karahalli**	**0.65**	**202**	*e*PG	**Pb**	**13 49 40.3**	**+0.3**
KHL				*e*SG	**Sb**	**13 49 49.8**	**+0.3**
KHL	**Karahalli**	**0.65**	**202**	*e*Pg	**Pb**	**13 49 40.3**	**+0.3**
KHL				*e*Sg	**Sb**	**13 49 49.8**	**+0.3**
DEMI	**Demirci**	**0.88**	**278**	*i*P	**Pg**	**13 49 43.1**	**+0.4**
DEMI				*i*S	**Sg**	**13 49 54.4**	**+0.2**
DEMI	**Demirci**	**0.88**	**278**	P	**Pg**	**13 49 43.2**	**+0.4**
DEMI				S	**Sg**	**13 49 54.4**	**+0.2**
KULA	**Kula-Manisa**	**1.00**	**246**	*e*PG	**Pb**	**13 49 45.6**	**-0.4**
KULA				*e*SG	**Sb**	**13 49 59.3**	**-0.4**
KULA	**Kula-Manisa**	**1.00**	**246**	*e*Pg	**Pb**	**13 49 45.7**	**-0.4**
KULA				*e*Sg	**Sb**	**13 49 59.3**	**-0.4**
CAVI	**Cavuskoy**	**1.27**	**0**	*e*PN	**Pn**	**13 49 50.9**	**+0.1**
CAVI	**Cavuskoy**	**1.27**	**0**	*e*Pn	**Pn**	**13 49 50.9**	**+0.1**
ORLT	**Orhaneli**	**1.33**	**327**	*e*PN	**Pb**	**13 49 51.8**	**+0.1**
ORLT	**Orhaneli**	**1.33**	**327**	*e*Pn	**Pb**	**13 49 51.8**	**+0.1**
GULT	**Gulveren**	**1.59**	**19**	*e*PN	**Pb**	**13 49 56.3**	**+0.1**
GULT	**Gulveren**	**1.59**	**19**	*e*Pn	**Pb**	**13 49 56.3**	**+0.1**
BALB	**Balikesir**	**1.67**	**296**	*e*PN	**Pn**	**13 49 56.3**	**+0.1**
BALB	**Balikesir**	**1.67**	**296**	*e*Pn	**Pn**	**13 49 56.3**	**+0.1**

ISCJB ***24*** *13:54:50.2±0.2, 6˚.96S±0˚.03× 130˚.06E±0˚.03, h104km, mb4.5/53, Error ellipse: s-maj=3.8km s-min=3.7km az=164.3*
BJI ***24*** *13:54:50.2, 6˚.96S× 130˚.15E, h115km, mb4.8/31, mB4.9/19*
NEIC ***24*** *13:54:51.1±0.8, 6˚.91S× 130˚.06E, h98km±8km, mb4.6/21,*

Error ellipse: s-maj=8.9km s-min=5.6km az=57.0
IDC ***24*** *13:54:53.4±1.6, 6˚.78S× 129˚.91E, h111km±14km, mb4.1/22, mb1 4.1/26, mb1mx4.1/38, mbtmp4.5/26, MS3.3/3, Ms1 3.3/3, ms1mx2.8/31, Error ellipse: s-maj=13.4km s-min=9.9km az=103.0*
DJA ***24*** *13:54:54.3±0.2, 7˚.5S±2˚×13˚.0E±˚, h102km±4km, M5.0/44, mB5.5/16, mb4.8/44, MLv5.3/13, Mw(mB)4.9/16*
ISC 24 13:54:51.9±0.3, 6.94S±0˚.04× 130˚.07E±0˚.05, h104km, n148, σ1§66/152, mb4.5/53, 3C-5D, Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SAUI	**Saumlaki**	**1.60**	**130**	P	**Pn**	**13 55 23.4**	**+3.8**
BNDI	**Bandanaira**	**2.41**	**356**	P	**Pn**	**13 55 31.0**	**+0.9**
MSAI	**Masohi**	**3.75**	**342**	P	**Pn**	**13 55 49.5**	**+1.6**
FAKI	**Fak Fak**	**4.55**	**29**	P	**Pn**	**13 55 57.9**	**-0.8**
KMPI	**Kaimana, Papua**	**4.87**	**48**	P	**Pn**	**13 56 03.8**	**+0.8**
MTN	**Manton Dam**	**5.96**	**170**	*e*Pn	**Pn**	**13 56 18.1**	**+0.4**
SWI	**Sorong**	**6.16**	**11**	P	**Pn**	**13 56 19.4**	**-1.0**
SANI	**Sanana**	**6.34**	**320**	P	**Pn**	**13 56 26.5**	**+3.6**
SOEI	**Soe**	**6.39**	**244**	P	**Pn**	**13 56 24.1**	**+0.4**
	364nm,0.8s,5µm2.0nm						
LBMI	**Labuha**	**6.77**	**338**	P	**Pn**	**13 56 30.7**	**+1.9**
	383nm,1.0s,3µm1.4nm						
RKPI	**Ransiki, Papua**	**6.77**	**37**	P	**Pn**	**13 56 30.6**	**+1.8**
	541nm,0.7s,9µm4.0nm						
BATI	**Baumata**	**7.12**	**242**	P	**Pn**	**13 56 33.8**	**+0.3**
	baz=17,slow=20						
BATI				S	**Sn**	**13 57 53.1**	**+0.2**
	baz=180,slow=20						
BATI	**Baumata**	**7.12**	**242**	P	**Pn**	**13 56 33.7**	**+0.2**
	108nm,0.7s,2µm0.6nm						
MMRI	**Maumere**	**7.94**	**257**	P	**Pn**	**13 56 45.9**	**+1.2**
	106nm,1.3s,2µm0.4nm						
TNTI	**Ternate**	**8.13**	**341**	P	**Pn**	**13 56 48.2**	**+1.0**
	163nm,0.8s,1µm						
BSSI	**Bau Bau, Buton**	**9.55**	**274**	P	**Pn**	**13 57 08.1**	**+1.5**
	68nm,1.4s,1µm						
BASI	**Baing, Sumba**	**9.94**	**250**	P	**Pn**	**13 57 11.4**	**-0.4**
	298nm,1.1s,4µm						
MMPI	**Merauke**	**10.33**	**99**	P	**Pn**	**13 57 19.4**	**+2.2**
	276nm,0.6s						
KAPI	**Kappang**	**10.44**	**280**	P	**Pn**	**13 57 19.1**	**+0.4**
	1.3nm,0.3s,baz=131,slow=4.8,SNR=2.8						
TTSI	**Tana Toraja**	**10.92**	**290**	P	Pn	13 57 32.7	+7.5
GENI	**Genyem**	**10.95**	**67**	P	**Pn**	**13 57 27.8**	**+2.2**
	79nm,0.7s						
MRSI	**Marisa**	**10.96**	**312**	P	**Pn**	**13 57 27.3**	**+1.6**
	151nm,0.9s,2µm						
JAY	**Jayapura**	**11.47**	**68**	P	**Pn**	**13 57 33.4**	**+0.8**
	0.3nm,0.3s,baz=206,slow=22,SNR=13						
JAY				S	**Sn**	**13 59 40.2**	**+1.3**
	0.2nm,0.3s,baz=301,slow=23,SNR=2.9						
JAY	**Jayapura**	**11.47**	**68**	P	**Pn**	**13 57 34.8**	**+2.1**
	25nm,1.1s						
FITZ	**Fitzy Crossi**	**11.90**	**201**	P	Pn	13 57 34.0	-4.3
	7.2nm,0.3s,baz=30,slow=10.0,SNR=110						
FITZ				S	Sn	13 59 38.0	-11
	38nm,0.3s,baz=105,slow=21,SNR=10						
PLAI	**Plampang**	**12.32**	**260**	P	**Pn**	**13 57 41.1**	**-2.8**
TWSI	**Taliwang, Sumb**	**13.19**	**261**	P	**Pn**	**13 57 55.3**	**0.0**
	16nm,0.9s						
WRAB	**Tennant Creek**	**13.56**	**163**	*e*Pn	**Pn**	**13 57 57.8**	**-2.4**
WRA	**Warramunga Arr**	**13.57**	**163**	P	**Pn**	**13 57 57.4**	**-2.9**
	11nm,0.3s,baz=339,slow=14,SNR=204						
WRA				S	Sn	14 00 21.4	-8.3
	26nm,0.3s,baz=335,slow=22,SNR=9.6						
WB2	**Warramunga Arr**	**13.57**	**163**	*e*Pn	**Pn**	**13 57 58.0**	**-2.2**
COEN	**Coen**	**14.64**	**119**	*e*Pn	**Pn**	**13 58 13.2**	**-0.9**
BBKI	**Banjar Baru**	**15.55**	**282**	P	**P**	**13 58 28.9**	**+1.2**
JAGI	**Jajag, Banyuwa**	**15.85**	**263**	P	**Pn**	**13 58 29.0**	**-0.3**
	27nm,1.2s						
TSM	**Tawau**	**16.52**	**312**	⇑P	**P**	**13 58 38.9**	**+0.5**
GMJI	**Gumukmas**	**16.53**	**264**	P	**P**	**13 58 40.0**	**+1.5**
	20nm,1.1s						
MYLDM	**Lahad Datu**	**16.69**	**316**	⇓P	**P**	**13 58 42.3**	**+2.1**
MYLDM	**Lahad Datu**	**16.69**	**316**	*e*Pn	**P**	**13 58 41.1**	**+1.0**
	42nm,0.9s						
AS31	**Alice Springs**	**17.03**	**168**	*e*Pn	**Pn**	**13 58 43.4**	**-0.4**
	16nm,0.4s						
ASAR	**Alice Springs**	**17.03**	**168**	P	**Pn**	**13 58 44.1**	**+0.3**
	4.2nm,0.3s,baz=328,slow=8.9,SNR=198						
ASAR				S	**Sn**	**14 01 44.7**	**-8.6**
	7.0nm,0.3s,baz=345,slow=26,SNR=9.8						
ASAR				ScP	**ScP**	**14 06 47.9**	**-1.3**
	baz=16,slow=3.4,SNR=4.9						
AS01	**Alice Springs**	**17.04**	**168**	*e*Pn	**Pn**	**13 58 44.3**	**+0.4**
PMG	**Port Moresby**	**17.09**	**99**	P	**P**	**13 58 49.4**	**+4.7**
	2.5nm,0.3s,baz=318,slow=6.6,SNR=9.2						
PMG				S	**Sn**	**14 01 48.6**	**-6.1**
	3.7nm,0.3s,baz=176,slow=22,SNR=9.6						
PMG				LR	LR	14 06 06.9	
	comp=Z,101nm,18.6s,baz=295,slow=39						
MBWA	**Marble Bar**	**17.31**	**214**	*e*P	**P**	**13 58 45.5**	**-1.6**
	26nm,0.8s						
SDKM	**Sandkan**	**17.93**	**314**	⇓P	**Pn**	**13 58 55.6**	**+0.8**
PWJI	**Pagerwojo**	**18.14**	**265**	P	**Pn**	**13 58 57.7**	**+0.4**
	23nm,0.6s						
PCJI	**Pacitan**	**18.77**	**265**	P	**P**	**13 59 02.0**	**-1.1**
PBKI	**Pangkalan Bun**	**18.81**	**282**	P	**P**	**13 59 03.8**	**+0.2**
	167nm,1.0s						
KKM	**Kota Kinabalu**	**18.91**	**313**	⇓P	**Pn**	**13 59 06.9**	**+0.4**
KKM	**Kota Kinabalu**	**18.91**	**313**	*e*P	**P**	**13 59 04.6**	**-0.2**
	50nm,0.9s						
WOJI	**Wonogiri, Jawa**	**19.01**	**266**	P	**Pn**	**13 59 06.7**	**-0.9**
	43nm,1.5s,7µm						
KDM	**Kudat**	**19.08**	**316**	⇓P	**Pn**	**13 59 08.4**	**+0.1**
UGM	**Wanagama**	**19.41**	**266**	P	**Pn**	**13 59 12.3**	**0.0**
	66nm,1.6s						
RCP	**Roxas**	**19.77**	**338**	‖*e*P	**P**	**13 59 14.4**	**+0.3**
STKI	**Sintang**	**19.81**	**290**	P	**P**	**13 59 14.9**	**+0.4**
	39nm,0.9s,12µm						
SBUM	**Sibu**	**20.11**	**297**	*e*P	**P**	**13 59 18.2**	**+0.5**
	32nm,0.7s						
CTA	**Charters Tower**	**20.42**	**131**	P	Pn	13 59 28.6	+4.5
	13nm,1.1s,baz=312,slow=13,SNR=6.3						
KSM	**Kuching**	**21.42**	**292**	⇑P	**P**	**13 59 32.9**	**+1.1**
KSM	**Kuching**	**21.42**	**292**	*e*P	**P**	**13 59 28.9**	**-2.9**
	34nm,1.4s						
LEM	**Lembang**	**22.29**	**269**	P	**P**	**13 59 44.6**	**+3.5**
	12nm,0.4s,baz=48,slow=14,SNR=4.1						
PPBI	**Pangkal Pinang**	**24.32**	**280**	P	**P**	**14 00 00.1**	**-0.1**
	24nm,1.2s						
BBOO	**Buckleboo**	**26.33**	**169**	*e*P	**P**	**14 00 19.3**	**+1.1**
	11nm,0.6s						
LHSI	**Lahat**	**26.61**	**275**	P	**P**	**14 00 22.2**	**+1.3**
	16nm,0.6s,2µm						
STKA	**Stephens Creek**	**27.04**	**158**	P	**P**	**14 00 26.6**	**+2.1**
	4.9nm,0.6s,baz=336,slow=8.4,SNR=32						
STKA	**Stephens Creek**	**27.04**	**158**	*e*P	**P**	**14 00 26.6**	**+2.1**
	2.2nm,0.5s						
KGM	**Kluang**	**28.14**	**288**	⇑P	**P**	**14 00 35.4**	**+0.8**
NWAO	**Narrogin (SRO)**	**28.47**	**203**	P	**P**	**14 00 38.4**	**+1.1**
	8.8nm,0.8s,baz=295,slow=0.3,SNR=7.5						
HNR	**Honiara**	**29.67**	**97**	LR	LR	14 12 48.5	
	comp=Z,84nm,18.9s,baz=139,slow=36						
PSI	**Prapat**	**32.56**	**286**	P	**P**	**14 01 11.2**	**-2.6**
	4.7nm,0.5s,baz=108,slow=4.1,SNR=5.3						
GSI	**Gunungsitoli**	**33.45**	**283**	P	**P**	**14 01 22.5**	**+1.2**
SKNT	**Sakolnakorn**	**35.08**	**313**	P	**P**	**14 01 34.4**	**-0.9**
	23nm,1.0s						
UTTA	**Uttaradit**	**38.10**	**310**	P	**P**	**14 02 00.2**	**-0.8**
	9.7nm,0.8s,117nm						
LAMP	**Lampang**	**39.27**	**311**	P	**P**	**14 02 10.5**	**-0.3**
	6.7nm,0.8s						
CM01	**Chiang Mai Arr**	**39.72**	**310**	*e*P	**P**	**14 02 13.2**	**-1.3**
CM31	**Chiang Mai Arr**	**39.75**	**310**	*e*P	**P**	**14 02 14.1**	**-0.6**
CMAR	**Chiang Mai Arr**	**39.75**	**310**	P	**P**	**14 02 13.7**	**-1.1**
	8.1nm,0.7s,baz=138,slow=7.3,SNR=54						
CRAI	**Chiangrai**	**39.78**	**313**	P	**P**	**14 02 15.0**	**0.0**
	5.1nm,0.9s,4µm						
CMMT	**Chiang Mai**	**39.96**	**310**	P	**P**	**14 02 15.3**	**-1.2**
	26nm,0.8s,306nm						
CHTO	**Chiang Mai**	**39.96**	**310**	P	**P**	**14 02 15.4**	**-1.1**
	1.13nm,0.8s						
CHTO	**Chiang Mai**	**39.96**	**310**	*e*P	**P**	**14 02 15.4**	**-1.1**
	17nm,0.8s						
CMAI	**Chiengmai2**	**40.56**	**312**	P	**P**	**14 02 20.5**	**-1.2**
	34nm,0.7s						
JHJ	**Hachijo jima 2**	**40.90**	**12**	P	**P**	**14 02 24.2**	**+0.2**
	159nm,0.9s,baz=75,slow=21,SNR=2.8						
KMI	**Kunming**	**41.52**	**321**	P	**P**	**14 02 29.6**	**+0.1**
KMI				pmax	pmax		
	comp=Z,8.0nm,1.0s						
ENH	**Enshi**	**41.95**	**333**	*e*P	**P**	**14 02 31.5**	**-1.2**
	12nm,0.6s						
MJAR	**Matsushiro Arr**	**43.92**	**9**	P	**P**	**14 02 47.1**	**-1.4**
	3.0nm,0.7s,baz=184,slow=9.3,SNR=9.2						
KSAR	**Wonju Array Be**	**44.20**	**358**	P	**P**	**14 02 50.7**	**+0.1**
KSRS	**Korea Array**	**44.21**	**358**	P	**P**	**14 02 50.7**	**0.0**
	1.2nm,0.5s,baz=174,slow=9.2,SNR=9.2						
KSRS				LR	LR	14 19 17.9	
	comp=Z,20nm,20.5s,baz=186,slow=33						
CD2	**Chengdu**	**45.29**	**328**	P	**P**	**14 02 59.8**	**+0.3**
XAN	**Xi'an**	**45.42**	**335**	P	**P**	**14 02 59.3**	**-1.2**
XAN				pmax	pmax		
	comp=Z,14nm,0.7s						
XAN				pmax	pmax		
	comp=Z,30nm,5.5s						
BJI	**Beijing**	**48.48**	**346**	P	**P**	**14 03 23.8**	**-0.3**
BJI				pmax	pmax		
	comp=Z,17nm,0.7s						
BJI				pmax	pmax		
	comp=Z,90nm,3.9s						
LZH	**Lanzhou**	**49.39**	**332**	*e*P	**P**	**14 03 32.0**	**+0.7**
LZH				pP	pP	14 03 56.8	+0.7
LZH				sP	sP	14 04 08.3	+0.6
LZH				pmax	pmax		
	comp=Z,30nm,1.1s						
LZH				pmax	pmax		
	comp=Z,98nm,4.0s						
HHC	**Hu-ho-hao-te**	**50.51**	**342**	*e*P	**P**	**14 03 43.0**	**+3.3**
HHC				pmax	pmax		
	comp=Z,12nm,1.1s						
HHC				pmax	pmax		
	comp=Z,100nm,4.4s						
CN2	**Changchun**	**50.68**	**356**	*e*P	**P**	**14 03 43.8**	**+3.1**
USRK	**Ussuriysk Ar.**	**50.94**	**2**	P	**P**	**14 03 42.2**	**-0.4**
	2.6nm,0.5s,baz=185,slow=7.6,SNR=17						
ASAJ	**Asahikawa**	**52.07**	**11**	P	**P**	**14 03 51.1**	**+0.1**
	5.7nm,0.6s,baz=215,slow=9.1,SNR=7.4						
LSA	**Lhasa**	**52.21**	**316**	*e*P	**P**	**14 03 52.5**	**-0.5**
	7.3nm,0.7s						
GTA	**Gaotai**	**53.96**	**331**	*e*P	**P**	**14 04 04.6**	**-0.7**
GTA				pP	pP	14 04 30.9	+0.6
GTA				sP	sP	14 04 43.4	+1.5
GTA				pmax	pmax		
	comp=Z,8.0nm,1.0s						
GUN	**Gumba**	**54.97**	**311**	*e*P	**P**	**14 04 11.7**	**-1.4**
	63nm,0.6s						
PKIN	**Phulchoki**	**55.16**	**310**	*e*P	**P**	**14 04 12.4**	**-1.9**
	7.6nm,0.5s						
KKN	**Kakani**	**55.35**	**311**	*e*P	**P**	**14 04 12.6**	**-3.1**
	25nm,0.6s						
DMN	**Daman**	**55.39**	**310**	*e*P	**P**	**14 04 14.5**	**-1.5**
	41nm,0.9s						
GKN	**Gorkha**	**55.95**	**311**	*e*P	**P**	**14 04 18.4**	**-1.5**
	41nm,0.6s						
KLR	**Kul'dur**	**55.96**	**1**	P	**P**	**14 04 18.9**	**-0.4**
	1.2nm,0.5s,baz=179,slow=6.4,SNR=7.4						
HYB	**Hyderabad**	**56.35**	**296**	*i* P	**P**	**14 04 27.0**	**+4.2**
KOLN	**Koldanda**	**56.62**	**310**	*e*P	**P**	**14 04 23.4**	**-1.3**
	20nm,0.5s						
PYUN	**Piuthan**	**57.25**	**310**	*e*P	**P**	**14 04 27.9**	**-1.2**
	53nm,0.8s						
ULN	**Ulaanbaatar**	**58.23**	**342**	*e*P	**P**	**14 04 35.0**	**-0.5**
	3.9nm,0.6s						
SONM	**Songino Array**	**58.41**	**341**	P	**P**	**14 04 36.9**	**+0.2**
	1.9nm,0.5s,baz=162,slow=6.7,SNR=11						
SONA1	**Songino Array**	**58.42**	**341**	*e*P	**P**	**14 04 36.1**	**-0.7**
WMQ	**Urumqi**	**63.39**	**327**	P	**P**	**14 05 11.5**	**+1.0**
WMQ				pP	pP	14 05 39.1	+2.8
WMQ				sP	sP	14 05 51.5	+3.8
WMQ				pmax	pmax		
	comp=Z,7.0nm,0.8s						
WMQ				pmax	pmax		
	comp=Z,53nm,3.6s						
WMQ				LR	LR		
	comp=N,8.0nm,15.4s						
WMQ				LR	LR		
	comp=E,8.0nm,17.6s						
WMQ				LR	LR		
	comp=Z,6.0nm,15.4s						
**PET

*ISCJB **24** 14:10:27.9±0.6, 9°.51S±0°.06×123°.40E±0°.06, h75km, mb3.6/5, Error ellipse: s-maj=9.7km s-min=6.6km az=135.1*

*IDC **24** 14:10:28.4±1.3, 9°.32S×123°.36E, h74km±14km, mb3.6/5, mb1 3.7/6, mb1mx3.4/30, mbtmp3.9/6, MS2.6/1, Ms1 2.6/1, ms1mx2.4/32, Error ellipse: s-maj=57.8km s-min=19.9km az=71.0*

*DJA **24** 14:10:30.3±0.9, 9°.S±3°×12°.3E±°, h12km±9km, M4.3/13, mB5.1/2, mb4.4/8, MLv4.3/13, Mw(mB)4.4/2*

ISC 24 14:10:29.3±0.7, 9°.44S±0°.06×123°.28E±0°.06, h75km, n24, σ1°80/24, mb3.7/5, Timor region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BATI	**Baumata**	**0.85**	**154**	P	**Pn**	**14 10 46.9**	**+0.6**
	120nm,0.3s,baz=126,slow=24,SNR=166						
BATI				S	**Sn**	**14 11 00.2**	**+1.3**
BATI	**Baumata**	**0.85**	**154**	P	**Pn**	**14 10 46.7**	**+0.4**
SOEI	**Soe**	**1.02**	**108**	P	**Pn**	**14 10 48.4**	**-0.1**
SOEI				S	**Sn**	**14 11 05.6**	**+2.8**
MMRI	**Maumere**	**1.30**	**308**	P	**Pn**	**14 10 52.3**	**+0.5**
MMRI				S	**Sn**	**14 11 09.8**	**+1.0**
BASI	**Baing, Sumba**	**2.77**	**254**	P	**Pn**	**14 11 13.2**	**+1.7**
BASI				S	**Sn**	**14 11 46.8**	**+2.9**
BSSI	**Bau Bau, Buton**	**4.28**	**320**	P	**Pn**	**14 11 34.4**	**+2.3**
PLAI	**Plampang**	**5.47**	**276**	P	**Pn**	**14 11 50.2**	**+2.0**
	87nm,0.5s,2μm0.4nm						
KAPI	**Kappang**	**5.62**	**321**	P	Pn	14 11 53.7	+3.4
	2.5nm,0.3s,baz=162,slow=6.8,SNR=15						
KAPI				LR	LR	14 14 04.1	
	comp=Z,67nm,21.1s,baz=119,slow=39						
TWSI	**Taliwang, Sumb**	**6.36**	**276**	P	**Pn**	**14 12 01.7**	**+1.3**
	60nm,0.6s,1μm0.4nm						
SPSI	**Sidrap Palu**	**6.46**	**327**	P	**Pn**	**14 12 04.9**	**+3.1**
	8.6nm,0.9s,0.0nm						
TTSI	**Tana Toraja**	**7.22**	**331**	P	**Pn**	**14 12 15.4**	**+3.2**
	14nm,0.9s,0.2nm						
SANI	**Sanana**	**7.82**	**20**	P	Pn	14 12 24.5	+4.1
FITZ	**Fitzroy Crossi**	**8.91**	**165**	P	Pn	14 12 31.9	-3.4
	2.5nm,0.3s,baz=352,slow=11,SNR=82						
FITZ				S	Sn	14 14 04.7	-9.4
	3.5nm,0.3s,baz=298,slow=4.7,SNR=13						
JAGI	**Jajag, Banyuwa**	**9.07**	**275**	P	**Pn**	**14 12 36.0**	**-1.4**
WRA	**Warramunga Arr**	**14.94**	**136**	P	Pn	14 13 50.4	-6.1
	0.6nm,0.3s,baz=317,slow=13,SNR=23						
WRA				S	Sn	14 16 25.9	-15
	2.1nm,0.3s,baz=266,slow=2.7,SNR=11						
LEM	**Lembang**	**15.72**	**278**	P	P	14 14 14.9	+5.9
	3.7nm,0.3s,baz=330,slow=22,SNR=2.7						
DAV	**Davao City (W)**	**16.56**	**8**	P	Pn	14 14 04.3	-13
	36nm,0.3s,baz=130,slow=21,SNR=2.2						
ASAR	**Alice Springs**	**17.42**	**146**	P	**Pn**	**14 14 25.8**	**-1.7**
	0.3nm,0.3s,baz=320,slow=11,SNR=20						
ASAR				S	Sn	14 17 25.4	-16
	0.5nm,0.3s,baz=316,slow=21,SNR=17						
NWAO	**Narrogin (SRO)**	**24.03**	**193**	P	**P**	**14 15 37.5**	**+0.2**
	3.1nm,0.5s,baz=277,slow=0.6,SNR=6.7						
STKA	**Stephens Creek**	**28.05**	**145**	P	**P**	**14 16 13.9**	**+0.2**
	1.0nm,0.5s,baz=312,slow=10,SNR=7.6						
SONM	**Songino Array**	**58.96**	**347**	P	**P**	**14 20 19.6**	**-1.4**
	0.5nm,0.6s,baz=152,slow=6.5,SNR=2.5						
MKAR	**Makanchi Array**	**66.84**	**331**	P	**P**	**14 21 12.2**	**-0.9**
	0.4nm,0.6s,baz=135,slow=7.6,SNR=8.3						
MKAR				pP	**pP**	**14 21 33.3**	**+0.5**
	1.5nm,0.6s,baz=135,slow=7.6,SNR=11						
ZALV	**Zalesovo Beam**	**71.02**	**337**	P	**P**	**14 21 36.9**	**-2.0**
	0.3nm,0.3s,baz=125,slow=10.0,SNR=3.8						
ZALV				pP	**pP**	**14 21 57.2**	**-1.5**
	0.7nm,0.5s,baz=111,slow=5.2,SNR=3.0						
TORD	**Torodi Ar. Bea**	**122.70**	**280**	PKP	**PKPdf**	**14 29 17.3**	**-0.2**
	0.5nm,0.6s,baz=50,slow=1.9,SNR=6.8						

IDC 24 14:20:57.6±6.7, 4°.55S×142°.63E, h77km±67km, mb2.8/2, mb1 3.1/4, mb1mx2.9/30, mbtmp3.1/4, ML3.7/1, Error ellipse: s-maj=72.6km s-min=16.1km az=93.0, New Guinea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JAY	**Jayapura**	**2.78**	**316**	P	Pn	14 21 41.0	+1.0
	0.2nm,0.3s,baz=145,slow=22,SNR=14						
JAY				S	Sn	14 22 13.1	+0.4
	0.8nm,0.3s,baz=154,slow=23,SNR=8.0						
WRA	**Warramunga Arr**	**17.30**	**207**	P	P	14 24 56.0	+1.4
	0.2nm,0.3s,baz=27,slow=13,SNR=16						
WRA				S	Sn	14 28 04.0	-2.4
	0.1nm,0.3s,baz=35,slow=27,SNR=4.3						
ASAR	**Alice Springs**	**20.79**	**203**	P	Pn	14 25 34.2	-1.5
	0.2nm,0.6s,baz=33,slow=11,SNR=6.0						
ILAR	**Eielson Array**	**85.90**	**24**	P	P	14 33 27.7	-0.9
	0.3nm,0.5s,baz=267,slow=4.2,SNR=5.5						

*ISK **24** 14:28:24.9, 41°.34N×41°.96E, h11km, MD2.9*

*ISCJB **24** 14:28:25.7±0.6, 41°.21N±0°.04×42°.00E±0°.05, h3km±6km, Error ellipse: s-maj=7.4km s-min=4.9km az=41.5*

*DDA **24** 14:28:25.1, 41°.21N×42°.00E, h6km, Ml2.8*

*CSEM **24** 14:28:25.4±0.1, 41°.19N×42°.01E, h2km, ML2.8, Error ellipse: s-maj=5.1km s-min=2.7km az=132.0*

ISC 24 14:28:25.3±1.0, 41°.21N±0°.03×42°.01E±0°.04, h5km±9km, n18, σ0°60/31, Turkey-Georgia-Armenia border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ARTV	**Artvin**	**0.07**	**248**	*i* P	**Pg**	**14 28 26.8**	**-0.2**
ARTV				*i* S	**Sg**	**14 28 28.3**	**+0.1**
ARTV	**Artvin**	**0.07**	**248**	P	**Pg**	**14 28 26.8**	**-0.2**
ARTV				S	**Sg**	**14 28 28.3**	**+0.1**
DAGI	**Agillar**	**0.15**	**209**	*i* P	**Pg**	**14 28 28.3**	**-0.1**
DAGI				*i* S	**Sg**	**14 28 31.6**	**+1.2**
DBOC	**Borcka**	**0.29**	**297**	*i* P	**Pg**	**14 28 31.3**	**+0.3**
DBOC				*i* S	**Sg**	**14 28 35.4**	**+0.5**
DBOC	**Borcka**	**0.29**	**297**	P	**Pg**	**14 28 31.3**	**+0.3**
DBOC				S	**Sg**	**14 28 35.4**	**+0.5**
DBAD	**Bademkaya**	**0.31**	**231**	*i* P	**Pg**	**14 28 31.3**	**0.0**
DBAD				*i* S	**Sg**	**14 28 35.9**	**+0.5**
DBAD	**Bademkaya**	**0.31**	**231**	P	**Pg**	**14 28 31.3**	**0.0**
DBAD				S	**Sg**	**14 28 35.9**	**+0.5**
DDEM	**Demirkent**	**0.37**	**212**	*i* P	**Pg**	**14 28 32.7**	**+0.1**
DDEM				*i* S	**Sg**	**14 28 38.2**	**+0.7**
DDEM	**Demirkent**	**0.37**	**212**	P	**Pg**	**14 28 32.7**	**+0.1**
DDEM				S	**Sg**	**14 28 38.2**	**+0.7**
EPOS	**Posof**	**0.61**	**61**	*i* P	**Pg**	**14 28 37.3**	**+0.2**
EPOS				*i* S	**Sb**	**14 28 46.7**	**-1.0**
EPOS	**Posof**	**0.61**	**61**	P	**Pg**	**14 28 37.3**	**+0.2**
EPOS				S	**Sb**	**14 28 46.7**	**-1.0**
EZM	**Erzurum**	**1.40**	**201**	*e*PN	**Pg**	**14 28 52.4**	**+0.3**
CHVG	**Ch'k'valeri**	**1.51**	**2**	*e*PN	**Pg**	**14 28 53.9**	**-0.3**
CHVG				*e*SN	**Sg**	**14 29 15.1**	**+1.3**
CHVG	**Ch'k'valeri**	**1.51**	**2**	*e*Pn	**Pg**	**14 28 53.9**	**-0.3**
CHVG				*e*Sn	**Sg**	**14 29 15.1**	**+1.3**
BAYT	**Ayd¯–ntepe-Bay**	**1.64**	**241**	*e*PN	**Pn**	**14 28 54.8**	**-0.2**
BAYT	**Ayd¯–ntepe-Bay**	**1.64**	**241**	*e*Pn	**Pn**	**14 28 54.8**	**-0.2**
GUMT	**Gumushane**	**2.06**	**250**	*e*PN	**Pn**	**14 29 00.5**	**-0.3**
GUMT	**Gumushane**	**2.06**	**250**	*e*Pn	**Pn**	**14 29 00.5**	**-0.3**

*MOS **24** 14:33:59.5±1.0, 37°.98N×141°.84E, h33km, mb4.6/40, Error ellipse: s-maj=7.8km s-min=5.4km az=100.7*

*NIED **24** 14:34:00, 38°.00N×141°.60E, h50km, Mw4.2 Best double couple: M0 2.65000×10^15 NP1:φ=203.00000°, δ=20.00000°, λ=111.00000°. NP2:φ=1.00000°, δ=71.00000°, λ=83.00000°.*

*BJI **24** 14:34:00.5, 37°.87N×141°.90E, h64km, mb4.6/45, mB4.9/24, Ms4.6/10, Ms7 4.2/8*

*ISCJB **24** 14:34:02.0±0.4, 37°.99N±0°.02×141°.74E±0°.04, h56km±3km, mb4.4/66, MS3.1/8, Error ellipse: s-maj=5.8km s-min=3.8km az=18.9*

*IDC **24** 14:34:03.4±1.3, 38°.00N×141°.68E, h47km±12km, mb4.0/29, mb1 4.1/35, mb1mx4.1/45, mbtmp4.3/35, ML3.9/5, MS3.0/11, Ms1 3.1/11, ms1mx2.9/43, Error ellipse: s-maj=14.1km s-min=7.7km az=99.0*

*JMA **24** 14:34:03.4±0.1, 37°.97N×141°.65E, h47km±1km, M4.2*

JMA Felt II J1.

*NEIC **24** 14:34:04.6±0.5, 38°.03N×141°.69E, h62km±4km, mb4.6/16, Error ellipse: s-maj=6.1km s-min=4.1km az=113.0*

ISC 24 14:34:02.9±0.8, 37°.97N±0°.04×141°.80E±0°.05, h50km±7km, n182, σ1°66/196, mb4.4/66, MS3.0/8, 9C-6D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**0.60**	**324**	P	**Pn**	**14 34 15.0**	**-0.4**
JIO				S	**Sn**	**14 34 22.8**	**-1.6**
JMM	**Marumori**	**0.81**	**263**	P	**Pn**	**14 34 16.8**	**-1.2**
JMM				S	**Sn**	**14 34 26.6**	**-2.4**
JFK	**Kawauchi**	**0.95**	**231**	P	**Pn**	**14 34 18.9**	**-1.1**
JFK				S	**Sn**	**14 34 30.4**	**-2.2**
JOU	**Okura**	**0.98**	**294**	P	**Pn**	**14 34 19.6**	**-0.8**
JOU				S	**Sn**	**14 34 31.5**	**-1.7**
JMK	**Ichinoseki**	**1.08**	**335**	P	**Pn**	**14 34 21.8**	**+0.1**
JMK				S	**Sn**	**14 34 34.9**	**-0.7**
JFT	**Otama**	**1.25**	**249**	P	**Pn**	**14 34 23.5**	**-0.5**
JFT				S	**Sn**	**14 34 38.4**	**-1.3**
JYS	**Shirataka**	**1.39**	**281**	P	**Pn**	**14 34 25.2**	**-0.7**
JYS				S	**Sn**	**14 34 41.6**	**-1.6**
JYK	**Kaneyama**	**1.48**	**310**	P	**Pn**	**14 34 26.7**	**-0.4**
JYK				S	**Sn**	**14 34 44.4**	**-0.8**
JOM	**Ohasama**	**1.55**	**345**	P	**Pn**	**14 34 28.8**	**+0.7**
JRG	**Rokugo**	**1.69**	**328**	P	**Pn**	**14 34 30.5**	**+0.5**
JRG				S	**Sn**	**14 34 51.6**	**+1.1**
JFY	**Yanaizu**	**1.76**	**252**	P	**Pn**	**14 34 30.5**	**-0.4**
JYA	**Atsumi**	**1.76**	**291**	P	**Pn**	**14 34 30.3**	**-0.6**
MJAR	**Matsushiro Arr**	**3.20**	**245**	P	**Pn**	**14 34 51.1**	**+0.4**
	13nm,0.3s,baz=64,slow=11,SNR=112						
MAJO	**Matsushiro**	**3.20**	**245**	*d* iP	**Pn**	**14 34 51.3**	**+0.6**
MAJO				pmax	pmax		
	comp=Z,114nm,0.7s						
MAJO	**Matsushiro**	**3.20**	**245**	*e*Pn	**Pn**	**14 34 51.3**	**+0.6**
MAT	**Matsushiro**	**3.20**	**245**	P	**Pn**	**14 34 51.2**	**+0.5**
MAT				S	**Sn**	**14 35 32.1**	**+4.4**
MJB9	**Matsu-Tunnel**	**3.20**	**245**	*e*Pn	**Pn**	**14 34 51.2**	**+0.4**
ERM	**Erimo**	**4.17**	**14**	*e*P	**Pn**	**14 35 04.7**	**+0.8**
ERM	**Erimo**	**4.17**	**14**	*e*Pn	**Pn**	**14 35 04.9**	**+0.9**
INU	**Inuyama**	**4.65**	**237**	*e*Pn	**Pn**	**14 35 11.9**	**+1.4**
JHJ2	**Mitsune**	**5.11**	**199**	*e*Pn	**Pn**	**14 35 18.1**	**+1.3**
JHJ	**Hachijo jima 2**	**5.11**	**199**	P	**Pn**	**14 35 18.4**	**+1.5**
	comp=Z,24nm,0.3s,baz=314,slow=21,SNR=6.3						
JHJ				S	**Sn**	**14 36 13.4**	**-1.2**
	comp=Z,44nm,0.3s,baz=254,slow=22,SNR=5.6						
ASAJ	**Asahikawa**	**6.17**	**5**	P	**Pn**	**14 35 31.6**	**+0.3**
	comp=Z,3.1nm,0.3s,baz=219,slow=14,SNR=20						
ASAJ				S	**Sn**	**14 36 39.4**	**-1.1**
	comp=Z,2.4nm,0.3s,baz=79,slow=6.7,SNR=2.8						
ASAJ	**Asahikawa**	**6.17**	**5**	*e*Pn	**Pn**	**14 35 32.0**	**+0.6**
ASAJ				S	**Sn**	**14 36 39.4**	**-1.1**
YUK	**Yuzh-Kuril'sk**	**6.79**	**26**	*e*P	**Pn**	**14 35 39.3**	**-0.5**
YUK				*i* S	**Sn**	**14 36 51.4**	**-4.3**
YUK				pmax	pmax		
	comp=Z,100nm,0.7s						
YUK				pmax	pmax		
	comp=E,64nm,0.6s						
YUK				pmax	pmax		
	comp=N,70nm,0.4s						
SHO	**Shikotan**	**7.01**	**31**	*e*P	**Pn**	**14 35 41.5**	**-1.4**
SHO				*e*S	**Sn**	**14 36 54.5**	**-6.7**
SHO				pmax	pmax		
	comp=Z,110nm,0.7s						
SHO				pmax	pmax		
	comp=N,50nm,0.9s						
KUR	**Kuril'sk**	**8.56**	**30**	*e*P	**Pn**	**14 36 04.0**	**0.0**
KUR				*e*S	**Sn**	**14 37 36.0**	**-3.1**
KUR				pmax	pmax		
	comp=Z,23nm,1.4s						
KUR				smax	smax		
	comp=E,41nm,0.4s						
KUR				smax	smax		
	comp=N,30nm,0.5s						
YSS	**Yuzh-Sakhalins**	**9.01**	**4**	*e*P	**Pn**	**14 36 10.7**	**+0.6**
YSS	**Yuzh-Sakhalins**	**9.01**	**4**	*e*Pn	**Pn**	**14 36 10.7**	**+0.6**
VLA	**Vladivostok**	**9.13**	**307**	*e*P	**Pn**	**14 36 11.4**	**-0.5**
MSHR	**Mys Shultsa**	**9.35**	**303**	*e*P	**Pn**	**14 36 14.4**	**-0.4**
USRK	**Ussuriysk Ar.**	**9.67**	**313**	P	**Pn**	**14 36 20.1**	**+0.8**
	comp=N,1.7nm,0.3s,baz=117,slow=12,SNR=26						
JNU	**Nakatsue**	**10.13**	**245**	P	**Pn**	**14 36 27.6**	**+2.0**
	comp=N,0.5nm,0.3s,baz=0.6,slow=3.3,SNR=5.2						
JNU				LR	LR	14 40 39.8	
	comp=N,228nm,20.8s,baz=119,slow=39						
CBIJ	**Chichi jima**	**10.85**	**178**	P	**Pn**	**14 36 37.9**	**+2.4**
CBIJ				S	**Sn**	**14 38 28.1**	**-7.3**
JCJ	**Chichijima**	**10.85**	**178**	P	**Pn**	**14 36 37.9**	**+2.4**
	comp=N,3.9nm,0.3s,baz=267,slow=23,SNR=3.3						
JCJ				S	**Sn**	**14 38 28.1**	**-7.3**
KSRS	**Korea Array**	**11.01**	**272**	P	**Pn**	**14 36 40.6**	**+3.0**
	comp=N,0.5nm,0.3s,baz=84,slow=13,SNR=17						
KSRS				LR	LR	14 40 39.5	
	comp=N,105nm,19.0s,baz=55,slow=36						
KS15	**Wonju Array Si**	**11.04**	**272**	*e*Pn	**Pn**	**14 36 39.6**	**+1.5**
KSAR	**Wonju Array Be**	**11.04**	**272**	P	**Pn**	**14 36 40.6**	**+2.5**
KSAR	**Wonju Array Be**	**11.04**	**272**	P	**Pn**	**14 36 40.6**	**+2.5**
MDJ	**Mudanjiang**	**11.33**	**310**	P	**Pn**	**14 36 46.1**	**+4.2**
MDJ				pmax	pmax		
	comp=N,18nm,0.8s						
MDJ				pmax	pmax		
	comp=N,89nm,4.1s						
MDJ	**Mudanjiang**	**11.33**	**310**	*e*Pn	**Pn**	**14 36 46.0**	**+4.2**
	comp=N,27nm,1.0s						
KLR	**Kul'dur**	**13.39**	**330**	LR	LR	14 42 19.1	
	comp=N,80nm,18.6s,baz=138,slow=37						
JOW	**Kunigami**	**15.91**	**230**	P	**Pn**	**14 37 45.1**	**+1.7**
PETK	**Petropavlovsk-**	**18.72**	**31**	P	**P**	**14 38 17.3**	**+0.1**
	comp=N,0.1nm,0.3s,baz=217,slow=14,SNR=2.6						
PETK				LR	LR	14 45 06.5	
	comp=N,29nm,19.6s,baz=221,slow=35						
NJ2	**Nanjing**	**19.68**	**259**	*e*P	**P**	**14 38 27.4**	**-0.4**
NJ2				pmax	pmax		
	comp=N,16nm,0.7s						
TIA	**Tai'an**	**19.75**	**272**	*e*P	**P**	**14 38 27.8**	**-0.8**
TIA				pmax	pmax		
	comp=N,10.0nm,0.9s						
BJI	**Beijing**	**20.01**	**284**	P	**P**	**14 38 30.0**	**-1.2**
BJI				pmax	pmax		
	comp=N,9.0nm,0.6s						
BJI				pmax	pmax		
	comp=N,95nm,3.5s						
MA2	**Magadan**	**22.37**	**12**	P	**P**	**14 38 56.1**	**-0.5**
	comp=N,5.7nm,0.8s,baz=219,slow=9.8,SNR=7.9						
MA2				LR	LR	14 47 34.2	
	comp=N,17nm,21.6s,baz=240,slow=36						
HHC	**Hu-ho-hao-te**	**23.48**	**287**	*e*P	**P**	**14 39 07.0**	**-1.1**
HHC				pP	pP	14 39 17.8	-2.6
HHC				S	**S**	**14 43 11.3**	**-6.8**
HHC				pmax	pmax		
	comp=N,21nm,1.0s						
HHC				pmax	pmax		
	comp=N,77nm,6.9s						
HHC				LR	LR		
	comp=N,1μm,11.2s						
HHC				LR	LR		
	comp=N,1μm,10.8s						
HHC				LR	LR		
	comp=N,1μm,13.4s						
GUMO	**Guam**	**24.44**	**173**	LR	LR	14 48 34.3	
	comp=N,12nm,21.8s,baz=60,slow=36						
YAK	**Yakutsk**	**25.23**	**347**	P	**P**	**14 39 23.1**	**-0.5**
	comp=N,6.1nm,0.4s,baz=31,slow=1.8,SNR=6.3						
YAK	**Yakutsk**	**25.23**	**347**	*e*P	**P**	**14 39 24.1**	**+0.4**
YAK				pmax	pmax		
	comp=Z,13nm,1.1s						
YAK	**Yakutsk**	**25.23**	**347**	*e*P	**P**	**14 39 21.9**	**-1.7**
YAK				*e*		14 39 35.8	
SEY	**Seymchan**	**25.81**	**11**	P	**P**	**14 39 30.7**	**+1.7**
	comp=Z,4.3nm,0.9s,baz=211,slow=6.2,SNR=14						
SEY	**Seymchan**	**25.81**	**11**	*e*P	**P**	**14 39 31.1**	**+2.1**
XAN	**Xi'an**	**26.81**	**272**	P	**P**	**14 39 36.3**	**-2.1**
XAN				pmax	pmax		
	comp=Z,3.0nm,0.5s						
XAN				pmax	pmax		
	comp=Z,25nm,4.3s						
BOD	**Bodaibo**	**26.91**	**327**	*e*P	**P**	**14 39 37.9**	**-1.1**
BOD				pmax	pmax		
	comp=Z,5.0nm,0.7s						
ULN	**Ulaanbaatar**	**27.10**	**303**	*ce*P	**P**	**14 39 41.6**	**+0.6**
ULN				pmax	pmax		
	comp=Z,3.0nm,0.6s						
SONA1	**Songino Array**	**27.53**	**302**	*e*P	**P**	**14 39 44.8**	**0.0**
SONM	**Songino Array**	**27.53**	**302**	P	**P**	**14 39 45.2**	**+0.4**
	comp=Z,2.8nm,0.7s,baz=99,slow=8.8,SNR=20						
SONM				PcP	**PcP**	**14 43 01.9**	**+0.2**
	comp=Z,0.5nm,0.5s,baz=119,slow=2.8,SNR=4.4						
SONM				LR	LR	14 50 30.6	
	comp=Z,33nm,20.5s,baz=97,slow=36						
ENH	**Enshi**	**27.73**	**264**	*e*P	**P**	**14 39 44.8**	**-1.8**
	comp=Z,44nm,1.1s						
H11N2	**WAKE ISLAND Hy**	**28.38**	**123**	T	T	15 10 08.6	
	baz=316,slow=75,SNR=302						
H11N1	**WAKE ISLAND Hy**	**28.39**	**123**	T	T	15 10 09.2	
	baz=316,slow=75,SNR=268						
H11N3	**WAKE ISLAND Hy**	**28.39**	**123**	T	T	15 10 11.2	
	baz=316,slow=75,SNR=181						
H11S1	**WAKE ISLAND Hy**	**29.12**	**125**	T	T	15 11 04.8	
	baz=318,slow=76,SNR=156						
H11S3	**WAKE ISLAND Hy**	**29.12**	**125**	T	T	15 11 05.5	
	baz=318,slow=76,SNR=159						
H11S2	**WAKE ISLAND Hy**	**29.14**	**125**	T	T	15 11 05.9	
	baz=318,slow=76,SNR=129						
ZAK	**Zakamensk**	**29.94**	**307**	*e*P	**P**	**14 40 05.6**	**-0.6**
ZAK				pmax	pmax		
	comp=Z,3.0nm,1.2s						
TLY	**Talaya**	**29.96**	**310**	P	**P**	**14 40 06.4**	**+0.1**
	comp=Z,2.1nm,0.7s,baz=224,slow=1.8,SNR=6.2						
TLY				LR	LR	14 52 43.0	
	comp=Z,54nm,18.7s,baz=113,slow=38						
TLY	**Talaya**	**29.96**	**310**	*e*P	**P**	**14 40 06.9**	**+0.7**
TLY				pmax	pmax		
	comp=Z,2.0nm,0.6s						
TLY				MLR	MLR		
	comp=Z,87nm,21.0s						
GYA	**Guiyang**	**31.69**	**259**	*e*P	**P**	**14 40 21.3**	**-0.5**
GYA				pmax	pmax		
	comp=Z,10.0nm,0.9s						
CD2	**Chengdu**	**31.99**	**269**	P	**P**	**14 40 23.0**	**-1.4**
CD2				pmax	pmax		
	comp=Z,1.0nm,0.5s						
GTA	**Gaotai**	**32.59**	**286**	*e*P	**P**	**14 40 28.9**	**-0.8**
GTA				pP	pP	14 40 43.3	+0.6
GTA				sP	sP	14 40 50.0	+1.4
GTA				pmax	pmax		
	comp=Z,4.0nm,0.7s						
BILL	**Bilibino**	**33.04**	**17**	*c* iP	**P**	**14 40 32.8**	**-0.3**
BILL				pmax	pmax		
	comp=Z,3.0nm,1.7s						
TIXI	**Tiksi**	**34.40**	**353**	P	**P**	**14 40 44.6**	**-0.2**
	comp=Z,0.6nm,0.3s,baz=161,slow=3.9,SNR=3.3						
TIXI				PcP	**PcP**	**14 43 19.3**	**0.0**
	comp=Z,1.0nm,0.4s,baz=346,slow=0.9,SNR=3.9						
TIXI	**Tiksi**	**34.40**	**353**	*e*P	**P**	**14 40 44.4**	**-0.4**
TIXI				pmax	pmax		
	comp=Z,1.0nm,0.9s						
KMI	**Kunming**	**35.42**	**260**	P	**P**	**14 40 54.3**	**-0.1**
KMI				pP	pP	14 41 07.8	+0.3
KMI				pmax	pmax		
	comp=Z,9.0nm,0.9s						
KRAR	**Krasnoyarsk**	**37.01**	**315**	*e*P	**P**	**14 41 07.9**	**+0.6**
KRAR				pmax	pmax		
	comp=Z,8.0nm,0.6s						
WMQ	**Urumqi**	**40.70**	**296**	P	**P**	**14 41 38.3**	**-0.2**
WMQ				pP	pP	14 41 54.3	+2.5
WMQ				sP	sP	14 42 02.4	+4.7
WMQ				pmax	pmax		
	comp=Z,10.0nm,1.2s						
WMQ				pmax	pmax		
	comp=Z,29nm,3.8s						
ZAA0	**Zalesovo Array**	**41.52**	**312**	*e*P	**P**	**14 41 44.6**	**-0.3**
ZALV	**Zalesovo Beam**	**41.52**	**312**	P	**P**	**14 41 45.0**	**0.0**
	comp=Z,7.4nm,0.6s,baz=90,slow=7.1,SNR=31						
ZALV				PcP	**PcP**	**14 43 41.9**	**+0.3**
	comp=Z,1.0nm,0.5s,baz=92,slow=3.4,SNR=4.1						
CHTO	**Chiang Mai**	**41.83**	**255**	*e*P	**P**	**14 41 47.9**	**0.0**
CHTO				pmax	pmax		
	comp=Z,8.0nm,1.6s						
CHTO	**Chiang Mai**	**41.83**	**255**	*e*P	**P**	**14 41 47.9**	**0.0**
	comp=Z,7.9nm,1.6s						
CMAR	**Chiang Mai Arr**	**42.04**	**255**	P	**P**	**14 41 50.6**	**+1.0**
	comp=Z,1.2nm,0.3s,baz=49,slow=7.2,SNR=6.3						
CMAR				LR	LR	14 58 57.7	
	comp=Z,17nm,20.1s,baz=195,slow=36						
NVS	**Novosibirsk**	**42.42**	**313**	*i* P	**P**	**14 41 52.6**	**+0.3**
NVS				pmax	pmax		
	comp=Z,4.0nm,0.4s						
NVS				pmax	pmax		
	comp=E,3.0nm,0.5s						
LSA	**Lhasa**	**42.44**	**274**	P	**P**	**14 41 55.3**	**+1.9**
LSA	**Lhasa**	**42.44**	**274**	P	**P**	**14 41 55.2**	**+1.9**
NRIK	**Noril'sk**	**42.55**	**335**	P	**P**	**14 41 53.5**	**+0.4**
	comp=E,1.2nm,0.3s,baz=163,slow=12,SNR=3.1						
MK01	**Makanchi Array**	**43.89**	**301**	*e*P	**P**	**14 42 03.8**	**-0.6**
MK31	**Makanchi Array**	**43.89**	**301**	*e*P	**P**	**14 42 04.0**	**-0.4**
MK31	**Makanchi Array**	**43.89**	**301**	*e*P	**P**	**14 42 04.0**	**-0.4**
MKAR	**Makanchi Array**	**43.89**	**301**	P	**P**	**14 42 04.1**	**-0.2**
	comp=E,5.9nm,0.9s,baz=86,slow=9.5,SNR=41						
MKAR				LR	LR	14 59 50.2	
	comp=E,25nm,19.2s,baz=78,slow=35						
MKAR	**Makanchi Array**	**43.89**	**301**	*e*P	**P**	**14 42 03.8**	**-0.5**
KURK	**Kurchatov**	**45.60**	**307**	*ce*P	**P**	**14 42 17.3**	**-0.6**
KURK				pmax	pmax		
	comp=Z,43nm,1.2s						
KURK	**Kurchatov**	**45.60**	**307**	*e*P	**P**	**14 42 17.2**	**-0.7**
	comp=Z,12nm,0.7s						
GUN	**Gumba**	**47.38**	**275**	*e*P	**P**	**14 42 32.0**	**-0.5**
	comp=Z,14nm,0.6s			

WRAB	**Tennant Creek**	**58.02**	**188**	*e*P		**P**	**14 43 50.2**	**-0.4**
	comp=Z,5.2nm,0.8s							
WB2	**Warramunga Arr**	**58.03**	**188**	*e*P		**P**	**14 43 50.5**	**-0.1**
	comp=Z,6.4nm,0.8s							
WRA	**Warramunga Arr**	**58.03**	**188**	P		**P**	**14 43 50.6**	**-0.1**
	comp=Z,6.5nm,0.7s,baz=6.6,slow=7.4,SNR=70							
AS01	**Alice Springs**	**61.75**	**188**	*e*P		**P**	**14 44 16.2**	**0.0**
ASAR	**Alice Springs**	**61.76**	**188**	P		**P**	**14 44 16.6**	**+0.4**
	comp=Z,1.4nm,0.7s,baz=11,slow=7.1,SNR=17							
YKA	**Yellowknife Ar**	**62.84**	**30**	*i* P		**P**	**14 44 24.4**	**+1.4**
YKA				pmax	pmax			
	comp=Z,1.0nm,0.7s							
ARCES	**ARCESS Array B**	**63.23**	**339**	P		**P**	**14 44 25.9**	**+0.4**
	comp=Z,1.7nm,0.5s,baz=52,slow=7.3,SNR=17							
GEYT	**Alibeck**	**63.66**	**299**	P		**P**	**14 44 29.1**	**+0.2**
	comp=Z,2.1nm,0.6s,baz=64,slow=3.4,SNR=6.5							
VRH	**Novokhopyorsk**	**67.09**	**318**	*e*P		**P**	**14 44 49.8**	**-1.0**
VRH				pmax	pmax			
	comp=Z,10.0nm,0.7s							
VALT	**Mount Saint He**	**67.45**	**48**	*e*P		**P**	**14 44 54.3**	**+0.8**
OBN	**Obninsk**	**67.53**	**323**	*i* P		**P**	**14 44 52.6**	**-0.9**
OBN				pmax	pmax			
	comp=Z,4.0nm,0.9s							
LPSR	**Galich'ya Gora**	**67.78**	**320**	*e*P		**P**	**14 44 55.0**	**-0.1**
LPSR				pmax	pmax			
	comp=Z,7.0nm,0.8s							
FIA1	**FINESS Array S**	**68.13**	**332**	*e*P		**P**	**14 44 56.8**	**-0.3**
FINES	**FINESS Array B**	**68.13**	**332**	P		**P**	**14 44 57.2**	**0.0**
	comp=Z,3.8nm,0.6s,baz=35,slow=8.4,SNR=39							
VSR	**Storozhevoye**	**68.43**	**319**	*e*P		**P**	**14 44 58.9**	**-0.4**
VSR				pmax	pmax			
	comp=Z,10.0nm,0.8s							
STKA	**Stephens Creek**	**69.49**	**180**	P		**P**	**14 45 06.8**	**+1.0**
	comp=Z,0.9nm,0.5s,baz=9.1,slow=7.2,SNR=8.2							
ZEI	**Tsey**	**70.44**	**309**	*e*P		P	14 45 06.6	-5.5
ZEI				pmax	pmax			
	comp=Z,3.0nm,0.6s							
KBZ	**Khabaz**	**70.53**	**311**	P		**P**	**14 45 12.8**	**+0.6**
	comp=Z,2.7nm,0.7s,baz=49,slow=4.3,SNR=6.7							
KIV	**Kislovodsk**	**70.53**	**311**	*i* P		**P**	**14 45 12.6**	**+0.1**
KIV				*i*			14 45 35.5	
KIV				pmax	pmax			
	comp=Z,9.0nm,1.0s							
ANN	**Anapa**	**73.11**	**314**	*e*P		**P**	**14 45 32.0**	**+4.3**
ANN				pmax	pmax			
	comp=Z,189nm,6.9s							
NB2	**NORSAR Subarra**	**73.44**	**337**	P		**P**	**14 45 29.7**	**+0.2**
	comp=Z,5.6nm,1.0s,baz=39,slow=6.2							
NOA	**NORSAR Array B**	**73.44**	**337**	P		**P**	**14 45 29.8**	**+0.3**
	comp=Z,3.0nm,0.8s,baz=39,slow=6.0,SNR=10							
NOA				LR		LR	15 21 35.1	
	comp=Z,16nm,18.8s,baz=305,slow=39							
AKASG	**Malin Array Be**	**73.75**	**322**	P		**P**	**14 45 31.2**	**-0.2**
	comp=Z,3.7nm,0.5s,baz=45,slow=6.1,SNR=35							
KIEV	**Kiev**	**73.76**	**322**	*e*P		**P**	**14 45 31.2**	**-0.3**
KIEV				pmax	pmax			
	comp=Z,3.0nm,0.8s							
KIEV	**Kiev**	**73.76**	**322**	*e*P		**P**	**14 45 30.8**	**-0.7**
	comp=Z,4.8nm,0.8s							
AK11	**Malin Array Si**	**73.79**	**322**	*e*P		**P**	**14 45 30.9**	**-0.8**
NWAO	**Narrogin (SRO)**	**74.16**	**201**	P		**P**	**14 45 34.3**	**+0.5**
	comp=Z,6.8nm,0.8s,baz=116,slow=0.2,SNR=3.4							
NVAR	**Mina Array Bea**	**74.18**	**54**	P		**P**	**14 45 36.6**	**+2.1**
	comp=Z,0.5nm,0.7s,baz=281,slow=5.3,SNR=5.6							
BW06	**Boulder Array**	**76.79**	**46**	*e*P		**P**	**14 45 50.6**	**+1.2**
PDAR	**Pinedale Array**	**76.79**	**46**	P		**P**	**14 45 51.2**	**+1.8**
	comp=Z,0.9nm,0.6s,baz=275,slow=2.9,SNR=12							
BUR08	**Bucovina Ar. S**	**77.76**	**322**	*e*P		**P**	**14 45 55.0**	**+0.4**
STHS	**Stebnicka Hta**	**78.37**	**325**	*e*P		**P**	**14 45 56.3**	**-1.5**
BRTR	**Keskin Array B**	**78.46**	**312**	P		**P**	**14 45 59.0**	**+0.4**
	comp=Z,1.2nm,0.7s,baz=72,slow=4.7,SNR=6.6							
BR231	**Keskin MP Arra**	**78.89**	**312**	*e*P		**P**	**14 45 59.1**	**-1.9**
DPC	**Dobruska-Polom**	**79.83**	**328**	*e*P		**P**	**14 46 06.6**	**+0.8**
DPC	**Dobruska-Polom**	**79.83**	**328**	*e*P		**P**	**14 46 06.6**	**+0.8**
KRLC	**Kraliky**	**79.84**	**328**	*e*P		**P**	**14 46 06.1**	**+0.2**
KRLC	**Kraliky**	**79.84**	**328**	*e*P		**P**	**14 46 06.1**	**+0.2**
BRG	**Berggiesshubel**	**80.40**	**330**	*e*P		**P**	**14 46 09.3**	**+0.5**
	comp=Z,1.7nm,0.8s							
CLL	**Collm**	**80.44**	**330**	*i* P		**P**	**14 46 09.1**	**+0.1**
	comp=Z,7.0nm,1.1s							
CLL	**Collm**	**80.44**	**330**	*i* P		**P**	**14 46 09.1**	**+0.1**
CLL				pmax	pmax			
	comp=Z,7.0nm,1.1s							
CLL	**Collm**	**80.44**	**330**	*e*P		**P**	**14 46 08.8**	**-0.2**
	comp=Z,7.5nm,1.0s							
PRU	**Pruhonice**	**80.84**	**329**	*e*P		**P**	**14 46 11.9**	**+0.7**
PRU	**Pruhonice**	**80.84**	**329**	*e*P		**P**	**14 46 11.9**	**+0.7**
KHC	**Kasperske Hory**	**81.91**	**329**	*e*P		**P**	**14 46 17.7**	**+0.8**
KHC				*e*PCP		**PcP**	**14 46 21.5**	**-0.9**
KHC	**Kasperske Hory**	**81.91**	**329**	*e*P		**P**	**14 46 17.7**	**+0.8**
GERES	**GERESS Array B**	**82.08**	**328**	P		**P**	**14 46 17.9**	**+0.1**
	comp=Z,1.1nm,0.8s,baz=36,slow=5.3,SNR=11							
GERES	**GERESS Array B**	**82.08**	**328**	P		**P**	**14 46 18.0**	**+0.1**
GERES				pmax	pmax			
	comp=Z,1.0nm,0.8s							
BFO	**Black Forest**	**84.64**	**331**	*i* P		**P**	**14 46 32.3**	**+1.4**
BFO	**Black Forest**	**84.64**	**331**	*e*P		**P**	**14 46 31.3**	**+0.3**
	comp=Z,8.9nm,1.4s							
FUORN	**Ofenpass-Fuorn**	**85.26**	**329**	*e*P		**P**	**14 46 34.8**	**+0.4**
	comp=Z,4.7nm,0.8s							
TX31	**Lajitas Ar. Si**	**89.31**	**53**	*e*P		**P**	**14 46 55.4**	**+1.4**
TXAR	**Lajitas Array**	**89.31**	**53**	P		**P**	**14 46 55.8**	**+1.8**
	comp=Z,0.8nm,0.5s,baz=292,slow=2.9,SNR=18							
TORD	**Torodi Ar. Bea**	**116.89**	**316**	PKP		**PKPdf**	**14 52 41.9**	**-0.4**
	comp=Z,0.3nm,0.6s,baz=10.0,slow=1.9,SNR=3.4							
SNAA	**Sanae**	**141.73**	**197**	PKP	PKPpre		14 53 19.7	
VNA2	**Neumayer--Watz**	**143.30**	**196**	PKP	PKPbc		14 53 28.8	+1.2
	baz=125,slow=3.2							
VNA3	**Neumayer Olymp**	**143.55**	**195**	PKP	PKPab		14 53 26.1	-1.2

MEX 24 14:37:25.7±0.5, 17.71N×101.24W, h46km±7km, MD3.5, Near coast of Guerrero

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
ZIIG	**Zihuatanejo**	**0.24**	**245**	*i* P	Pn	14 37 32.2	-1.7
ZIIG				*i* S	Sn	14 37 38.1	-1.6
ARIG	**Puente Sto Nin**	**1.02**	**56**	*e*P	Pn	14 37 42.1	-1.6
ARIG				*e*S	Sn	14 37 55.0	-2.0
CAIG	**El Cayaco**	**1.14**	**125**	*e*P	Pn	14 37 44.3	-0.9
CAIG				*e*S	Sn	14 37 57.5	-2.2
MEIG	**Mezcala**	**1.56**	**82**	*e*P	Pn	14 37 50.0	-1.1
MEIG				*i* S	Sn	14 38 07.8	-2.3

*IDC **24** 14:44:55.1±6.5, 7.27S×129.06E, h91km±64km, mb3.5/4, mb1 3.6/8, mb1mx3.4/27, mbtmp3.8/8, ML3.8/3, Error ellipse: s-maj=54.5km s-min=18.7km az=42.0*
*ISCJB **24** 14:44:56.9±0.9, 7.52S±0.08×129.03E±0.08, h131km, mb3.5/4, Error ellipse: s-maj=12.6km s-min=9.8km az=139.2*

ISC 24 14:44:59.1±1.1, 7.64S±0.09×129.0E±0.1, h131km, n8, σ2ˢ58/11, mb3.5/4, Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
BATI	**Baumata**	**5.85**	**244**	P	**Pn**	**14 46 24.5**	**+0.9**
BATI				S	**Sn**	**14 47 30.6**	**+1.0**
FITZ	**Fitzroy Crossi**	**10.90**	**197**	P	**Pn**	**14 47 31.6**	**+0.2**
	0.3nm,0.3s,baz=43,slow=14,SNR=8.5						
FITZ				S	**Sn**	**14 49 27.7**	**-4.0**
	1.5nm,0.3s,baz=114,slow=23,SNR=10						
WRA	**Warramunga Arr**	**13.29**	**158**	P	**Pn**	**14 48 03.0**	**+0.3**
	0.5nm,0.3s,baz=335,slow=11,SNR=18						
WRA				S	**Sn**	**14 50 26.4**	**-3.0**
	2.2nm,0.3s,baz=334,slow=22,SNR=15						
ASAR	**Alice Springs**	**16.62**	**164**	P	**P**	**14 48 47.6**	**+3.0**
	0.5nm,0.3s,baz=340,slow=9.9,SNR=30						
STKA	**Stephens Creek**	**26.83**	**156**	P	**P**	**14 50 30.4**	**+3.1**
	0.7nm,0.4s,baz=345,slow=8.7,SNR=8.7						
CMAR	**Chiang Mai Arr**	**39.39**	**311**	P	**P**	**14 52 15.3**	**-0.9**
	0.2nm,0.3s,baz=141,slow=5.5,SNR=5.4						
MKAR	**Makanchi Array**	**68.21**	**327**	P	**P**	**14 55 44.4**	**-1.1**
	0.8nm,0.4s,baz=117,slow=8.5,SNR=18						
ZALV	**Zalesovo Beam**	**71.71**	**334**	P	**P**	**14 56 04.4**	**-2.3**
	0.2nm,0.3s,baz=132,slow=4.2,SNR=4.3						

*ISCJB **24** 14:51:31.0±0.8, 13.77S±0.09×76.2W±0.1, h49km, mb4.2/8, Error ellipse: s-maj=17.6km s-min=8.2km az=139.4*
*NEIC **24** 14:51:33.4±0.6, 13.67S×76.15W, MG4.2(ARE), Error ellipse: s-maj=18.0km s-min=10.4km az=224.0*
NEIC Felt [III] at Chincha Alta, Pisco and Tambo de Mora.
*IDC **24** 14:51:33.6±0.7, 13.75S×76.51W, h50km±5km, mb3.8/7, mb1 4.0/8, mb1mx3.8/29, mbtmp4.0/8, MS3.2/1, Ms1 3.3/1, ms1mx2.8/21, Error ellipse: s-maj=19.4km s-min=9.1km az=69.0*

ISC 24 14:51:32.8±0.7, 13.79S±0.10×76.2W±0.1, h49km, n27, σ1ˢ57/28, mb4.1/8, Near coast of Peru

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
NNA	**Nana**	**1.91**	**340**	P	**Pn**	**14 52 00.9**	**-2.1**
	41nm,0.3s,baz=132,slow=10,SNR=52						
NNA				S	**Sn**	**14 52 24.1**	**-1.8**
	340nm,0.3s,baz=204,slow=14,SNR=14						
NNA				LR	LR	14 52 55.9	
	comp=Z,253nm,21.1s,baz=135,slow=46						
ARE	**Arequipa**	**5.25**	**121**	*e*P	**Pn**	**14 52 48.0**	**-1.0**
ARE				*e*S	Sn	14 53 06.0	-42
ATAH	**Atahualpa**	**6.96**	**342**	P	**Pn**	**14 53 14.3**	**+1.6**
	1.2nm,0.3s,baz=188,slow=6.5,SNR=4.7						
ATAH				S	**Sn**	**14 54 35.8**	**+4.9**
	1.9nm,0.3s,baz=237,slow=21,SNR=2.1						
LPAZ	**La Paz**	**8.16**	**109**	P	Pn	14 53 35.5	+6.3
	2.0nm,0.3s,baz=296,slow=8.4,SNR=36						
LPAZ				S	Sn	14 55 14.2	+14
	baz=192,slow=23,SNR=7.3						
LPAZ				LR	LR	14 57 24.3	
	comp=Z,163nm,21.4s,baz=294,slow=41						
LVC	**Limon Verde**	**11.16**	**143**	*e*Pn	Pn	14 54 14.2	+4.1
SAML	**Samuel**	**13.61**	**71**	*e*Pn	**Pn**	**14 54 42.0**	**-1.4**
	5.0nm,0.7s						
PTGA	**Pitinga**	**20.63**	**52**	P	**P**	**14 56 08.3**	**-0.2**
	3.0nm,0.5s,baz=194,slow=11,SNR=5.6						
TXAR	**Lajitas Array**	**50.43**	**328**	P	**P**	**15 00 26.4**	**+0.7**
	0.5nm,0.8s,baz=151,slow=11,SNR=6.1						
TXAR				pP	**pP**	**15 00 39.0**	**-0.2**
	0.9nm,0.8s,baz=147,slow=7.4,SNR=6.6						
PDAR	**Pinedale Array**	**64.08**	**333**	P	**P**	**15 02 01.6**	**-0.4**
	0.5nm,0.8s,baz=134,slow=6.4,SNR=3.8						
PDAR				pP	**pP**	**15 02 15.0**	**-0.9**
	0.2nm,0.6s,baz=69,slow=42,SNR=3.0						
NVAR	**Mina Array Bea**	**65.21**	**325**	pP	pP	15 02 23.8	+0.4
	0.9nm,0.6s,baz=138,slow=6.5,SNR=2.3						
ULM	**Lac du Bonnet**	**66.07**	**346**	P	**P**	**15 02 13.3**	**-1.2**
	2.3nm,0.6s,baz=157,slow=6.2,SNR=4.4						
PPT	**Papeete**	**70.38**	**256**	P	**P**	**15 02 40.9**	**-1.4**
	36nm,0.9s,baz=97,slow=18,SNR=3.2						
DBIC	**Dimbokro**	**73.63**	**79**	P	**P**	**15 03 02.4**	**+0.6**
	4.8nm,0.8s,baz=269,slow=3.5,SNR=4.7						
TORD	**Torodi Ar. Bea**	**81.64**	**74**	P	**P**	**15 03 47.9**	**+1.5**
	3.8nm,0.8s,baz=263,slow=5.2,SNR=15						
TORD				pP	**sP**	**15 04 03.4**	**-2.7**
	2.0nm,1.0s,baz=244,slow=5.3,SNR=4.0						
YKA	**Yellowknife Ar**	**81.75**	**343**	P	**P**	**15 03 45.9**	**0.0**
	0.9nm,0.7s,baz=141,slow=6.0,SNR=20						
YKA				pP	**pP**	**15 03 59.6**	**-0.5**
	1.1nm,0.8s,baz=140,slow=5.5,SNR=11						
ILAR	**Eielson Array**	**94.39**	**336**	P	**P**	**15 04 47.1**	**+0.1**
	0.4nm,0.9s,baz=188,slow=1.0,SNR=3.7						
ILAR				pP	**pP**	**15 05 00.3**	**-1.1**
	0.4nm,0.8s,baz=160,slow=3.2,SNR=3.4						
H11N3	**WAKE ISLAND Hy**	**19.59**	**285**	T	T	17 20 37.9	
	baz=178,slow=74,SNR=6.8						
H11N2	**WAKE ISLAND Hy**	**19.60**	**285**	T	T	17 20 49.8	
	baz=96,slow=74,SNR=7.7						
H11S2	**WAKE ISLAND Hy**	**19.67**	**284**	T	T	17 20 45.0	
	baz=102,slow=73,SNR=5.8						
H11S1	**WAKE ISLAND Hy**	**19.67**	**284**	T	T	17 20 48.6	
	baz=102,slow=73,SNR=6.1						
H11S3	**WAKE ISLAND Hy**	**19.69**	**284**	T	T	17 21 05.8	
	baz=102,slow=73,SNR=5.8						
ABKAR	**Akbulak array**	**129.62**	**36**	*e*PKPdf	**PKPdf**	**15 10 38.3**	**+1.8**
WRA	**Warramunga Arr**	**135.00**	**222**	PKP	**PKPdf**	**15 10 48.9**	**+1.3**
	0.4nm,0.8s,baz=137,slow=2.1,SNR=5.6						
WRA				pPKP	**pPKPdf**	**15 11 04.1**	**+1.6**
	0.4nm,0.8s,baz=128,slow=1.9,SNR=1.8						
ZALV	**Zalesovo Beam**	**137.22**	**16**	PKP	**PKPdf**	**15 10 50.5**	**-0.1**
	1.0nm,0.7s,baz=248,slow=0.8,SNR=4.9						
ZALV				pPKP	**pPKPdf**	**15 11 05.6**	**+0.1**
	0.8nm,0.6s,baz=298,slow=3.2,SNR=3.4						
MJAR	**Matsushiro Arr**	**141.82**	**313**	PKP	**PKPdf**	**15 11 00.0**	**+0.4**
	0.6nm,0.6s,baz=18,slow=18,SNR=4.4						
ULN	**Ulaanbaatar**	**145.92**	**356**	*e*PKPbc	**PKPab**	**15 11 08.4**	**+0.6**
SONM	**Songino Array**	**145.99**	**357**	PKPbc	**PKPab**	**15 11 08.7**	**+0.7**
	2.1nm,0.8s,baz=352,slow=2.1,SNR=9.4						
SONM				pPKPbc	pPKPbc	15 11 22.0	-0.2
	1.9nm,0.7s,baz=330,slow=2.3,SNR=5.7						

JMA 24 14:56:57.8, 34.86N×136.82E, h40km±1km, M3.1, 4C-3D Broadband fault plane solution: P waves. NP1: ϕs216.00000°, δ79.00000°, λ-11.00000°. **NP2:** ϕs308.00000°, δ79.00000°, λ-169.00000°. **Principal axes:** T Plg0.0000°, Azm262.0000°; N Plg75.0000°, Azm352.0000°; P Plg15.0000°, Azm172.0000°; **Western Honshu**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JAA	**Atsumi**	**0.35**	**130**	↑P	Pn	14 57 06.6	0.0
JAA				S	Sn	14 57 12.6	-0.2
TSUJ	**Tsu 2**	**0.36**	**246**	↑P	Pn	14 57 06.3	-0.5
TSUJ				S	Sn	14 57 12.5	-0.5
JIE	**Ise**	**0.48**	**191**	↓P	Pn	14 57 08.2	0.0
JIE				S	Sn	14 57 15.5	0.0
JKN2	**Miekihoku**	**0.77**	**216**	↑P	Pn	14 57 12.0	-0.1
JKN2				S	Sn	14 57 22.3	-0.2
JGM	**Miyama**	**0.84**	**354**	↓P	Pn	14 57 13.6	+0.4
JGM				S	Sn	14 57 25.1	+0.7
JHE	**Heguri**	**0.96**	**258**	↑P	Pn	14 57 14.6	-0.2
JHE				S	Sn	14 57 27.4	+0.2
TTO2	**TONANKAI O.B.S**	**1.14**	**171**	↓P	Pn	14 57 17.5	+0.6
SHZ3	**Shizuoka 3**	**1.16**	**79**	P	Pn	14 57 18.6	+1.0
TK02	**Tokai 2**	**1.20**	**139**	P	Pn	14 57 17.9	+0.1
TK02				S	Sn	14 57 32.5	-0.2
MAT	**Matsushiro**	**2.02**	**34**	P	Pn	14 57 30.9	+1.5
MAT				S	Sn	14 57 56.2	+2.7

MAN 24 15:00:17, 13.47N×120.52E, h32km, mb4.6, ML3.5, MS3.4, 1C, Mindoro

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
PGP	**Puerto Galera**	**0.42**	**86**	↑*e*P	Pn	15 00 28.3	+1.5
PGP				*e*S	Sn	15 00 35.5	+2.0
SJMP	**San Jose**	**1.16**	**150**	*e*P	Pb	15 00 38.9	+0.4
SJMP				*e*S	Sn	15 00 52.4	+0.6
BUSP	**Coron**	**1.49**	**192**	*e*P	Pn	15 00 42.9	+1.2
BUSP				*e*S	Sb	15 01 04.1	+1.3
ENPP	**El Nido**	**2.50**	**206**	*e*P	Pn	15 00 56.2	+0.8

*NIED **24** 15:04:00, 28.10N×128.00E, h5km, Mw4.1 Best double couple: M0 1.44000×10¹⁵ NP1:ϕs305.00000°, δ49.00000°, λ-16.00000°. NP2:ϕs46.00000°, δ78.00000°, λ-138.00000°.*
*JMA **24** 15:04:45.9±0.2, 28.13N×128.02E, h7km±2km, M3.6*
*IDC **24** 15:04:46.7±0.9, 27.86N×127.66E, h0km, mb3.6/5, mb1 3.8/7, mb1mx3.5/35, mbtmp3.7/7, ML2.9/2, MS3.2/15, Ms1 3.2/15, ms1mx3.0/47, Error ellipse: s-maj=35.8km s-min=14.3km az=66.0*
*ISCJB **24** 15:04:47.5±1.8, 28.07N±0.03×128.06E±0.04, h11km±13km, mb3.4/5, MS3.2/11, Error ellipse: s-maj=7.0km s-min=4.5km az=31.7*

ISC 24 15:04:46.3±1.7, 28.10N±0.04×128.07E±0.06, h5km±12km, n33, σ1ˢ01/27, mb3.5/5, MS3.1/11, Ryukyu Islands

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JTK	**Tokunoshima**	**0.84**	**112**	P	**Pg**	**15 05 02.8**	**+0.4**
JTK				*e*S	**Sg**	**15 05 14.5**	**+1.2**
JOKE	**Okinoerabujima**	**0.86**	**149**	P	**Pg**	**15 05 03.4**	**+0.6**
JAMN	**Amaminishikomi**	**0.99**	**81**	P	**Pg**	**15 05 05.3**	**+0.1**
JAMN				*e*S	**Sb**	**15 05 19.3**	**+0.1**
JIH	**Iheya**	**1.06**	**185**	P	**Pg**	**15 05 06.4**	**-0.4**
JIH				*e*S	**Sg**	**15 05 20.8**	**+0.2**
JOW	**Kunigami**	**1.28**	**172**	Pn	**Pn**	**15 05 09.9**	**-0.9**
	188nm,0.3s,baz=69,slow=18,SNR=315						
JOW				Sn	**Sb**	**15 05 26.9**	**-0.7**
	92nm,0.3s,baz=102,slow=28,SNR=10						
JOW	**Kunigami**	**1.28**	**172**	P	**Pn**	**15 05 10.1**	**-0.8**
JOW				*e*S	**Sb**	**15 05 27.8**	**+0.2**
JAM	**Amami Oshima**	**1.39**	**77**	P	**Pn**	**15 05 12.3**	**-0.1**
JAM				*e*S	**Sb**	**15 05 30.9**	**+0.1**
JTAJ	**Takarajima**	**1.45**	**43**	P	**Pn**	**15 05 12.5**	**-0.7**
JNTH	**Nagotoyohara**	**1.58**	**182**	P	**Pn**	**15 05 15.0**	**0.0**
JNTH				*e*S	**Sn**	**15 05 35.1**	**-0.7**
JAGN	**Aguni-jima**	**1.68**	**206**	P	**Pn**	**15 05 15.9**	**-0.4**
JAGN				*e*S	**Sn**	**15 05 37.8**	**-0.4**
JZK	**Kikaishima**	**1.69**	**82**	P	**Pg**	**15 05 19.6**	**+0.8**
JJT2	**Tamagusuku 2**	**1.97**	**188**	P	**Pb**	**15 05 21.5**	**-1.2**
JKE	**Kume jima 2**	**2.10**	**213**	P	**Pb**	**15 05 24.6**	**-0.4**
JYAK	**Yakushimahirau**	**3.01**	**44**	P	**Pb**	**15 05 37.8**	**-2.7**
JNU	**Nakatsue**	**5.56**	**25**	Pn	Pb	15 06 16.2	-7.7
	0.5nm,0.3s,baz=187,slow=4.5,SNR=7.2						
JNU				LR	LR	15 08 29.1	
	comp=Z,156nm,19.8s,baz=199,slow=38						
KSRS	**Korea Array**	**9.33**	**359**	LR	LR	15 10 43.3	
	comp=Z,136nm,19.8s,baz=164,slow=37						
MJAR	**Matsushiro Arr**	**12.01**	**43**	LR	LR	15 12 39.7	
	comp=Z,64nm,19.3s,baz=235,slow=38						
USRK	**Ussuriysk Ar.**	**16.37**	**10**	Pn	**P**	**15 08 41.7**	**+1.9**
	0.1nm,0.3s,baz=185,slow=11,SNR=4.3						
USRK				LR	LR	15 15 22.9	
	comp=Z,73nm,18.4s,baz=176,slow=38						
KLR	**Kul'dur**	**21.29**	**7**	LR	LR	15 17 27.5	
	comp=Z,52nm,18.3s,baz=182,slow=35						
SONM	**Songino Array**	**25.93**	**325**	P	**P**	**15 10 21.3**	**+1.7**
	0.9nm,0.9s,baz=120,slow=5.2,SNR=3.8						
CMAR	**Chiang Mai Arr**	**28.36**	**257**	LR	LR	15 22 39.8	
	comp=Z,22nm,18.1s,baz=95,slow=38						
TLY	**Talaya**	**29.84**	**329**	LR	LR	15 23 20.6	
	comp=Z,45nm,19.6s,baz=128,slow=37						
YAK	**Yakutsk**	**33.95**	**1**	LR	LR	15 25 30.1	
	comp=Z,40nm,19.4s,baz=164,slow=36						
MA2	**Magadan**	**35.10**	**20**	LR	LR	15 24 42.3	
	comp=Z,15nm,21.1s,baz=210,slow=34						
MKAR	**Makanchi Array**	**40.20**	**310**	P	**P**	**15 12 24.4**	**+0.7**
	0.2nm,0.3s,baz=109,slow=7.8,SNR=2.8						
ZALV	**Zalesovo Beam**	**40.69**	**322**	P	**P**	**15 12 26.5**	**-1.1**
	0.3nm,0.3s,baz=108,slow=12,SNR=2.5						
ZALV				LR	LR	15 30 40.7	
	comp=Z,19nm,18.7s,baz=66,slow=38						
NRIK	**Noril'sk**	**47.44**	**342**	LR	LR	15 34 44.5	
	comp=Z,23nm,19.4s,baz=108,slow=38						
WRA	**Warramunga Arr**	**48.14**	**172**	P	**P**	**15 13 27.8**	**+0.2**
	0.9nm,0.9s,baz=349,slow=8.5,SNR=4.4						
FINES	**FINESS Array B**	**71.17**	**330**	LR	LR	15 54 06.1	
	comp=Z,47nm,18.2s,baz=356,slow=42						
YKA	**Yellowknife Ar**	**76.90**	**25**	P	P	15 16 42.7	+3.4
	0.2nm,0.7s,baz=299,slow=6.3,SNR=3.9						
RAO	**Raoul Island**	**76.95**	**133**	LR	LR	15 44 50.6	
	comp=Z,103nm,20.7s,baz=115,slow=31						
NOA	**NORSAR Array B**	**77.58**	**334**	LR	LR	15 57 11.3	
	comp=Z,18nm,18.3s,baz=340,slow=40						
GERES	**GERESS Array B**	**83.63**	**323**	LR	LR	15 59 46.7	
	comp=Z,20nm,18.3s,baz=60,slow=40						

*ISCJB **24** 15:13:24.4±1.1, 39.24N±0.04×142.3E±0.1, h48km±8km, mb3.4/6, Error ellipse: s-maj=16.5km s-min=7.1km az=9.7*
*JMA **24** 15:13:25.4±0.1, 39.28N×142.24E, h42km±1km, M3.4*
JMA Felt I J1.
*IDC **24** 15:13:30.9±2.2, 39.19N×142.08E, h92km±20km, mb3.1/6, mb1 3.2/9, mb1mx3.0/42, mbtmp3.4/9, MS2.6/3, Ms1 2.6/3, ms1mx2.2/18, Error ellipse: s-maj=28.0km s-min=14.3km az=103.0*

ISC 24 15:13:24.5±1.9, 39.26N±0.05×142.27E±0.1, h33km±12km, n24, σ0ˢ41/20, mb3.3/6, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
MIYJ	**Miyakonagasawa**	**0.47**	**313**	P	**Pn**	**15 13 35.3**	**+0.3**
MIYJ				S	**Sn**	**15 13 42.4**	**+0.2**
OFUJ	**Ofunato**	**0.50**	**250**	P	**Pn**	**15 13 35.9**	**+0.6**
OFUJ				S	**Sn**	**15 13 42.8**	**0.0**
JTH	**Tanohata**	**0.75**	**336**	P	**Pb**	**15 13 39.0**	**-0.2**
JTH				S	**Sb**	**15 13 49.2**	**+0.1**
JOM	**

	2.3nm,0.6s							
ASAR	**Alice Springs**	**45.08**	**258**	P	**P**	**15 31 50.4**	**-0.6**
	7.7nm,0.7s,baz=97,slow=7.4,SNR=122							
ASAR				PcP	**PcP**	**15 33 30.6**	**+2.9**
	1.6nm,0.7s,baz=107,slow=3.9,SNR=8.5							
WB2	**Warramunga Arr**	**45.31**	**263**	*e*P	**P**	**15 31 51.6**	**-1.1**
	6.7nm,0.8s							
WRAB	**Tennant Creek**	**45.31**	**263**	*e*P	**P**	**15 31 51.3**	**-1.4**
	6.2nm,1.0s							
WRA	**Warramunga AR**	**45.32**	**263**	P	**P**	**15 31 51.6**	**-1.2**
	4.2nm,0.6s,baz=99,slow=5.4,SNR=66							
FITZ	**Fitzroy Crossi**	**53.75**	**263**	*e*P	**P**	**15 32 56.5**	**+0.2**
	12nm,1.4s							
SBA	**Scott Base**	**56.33**	**184**	*e*P	**P**	**15 33 15.2**	**+1.4**
VNDA	**Vanda**	**56.39**	**185**	P	**P**	**15 33 15.0**	**+0.7**
	1.3nm,0.8s,baz=345,slow=6.0,SNR=5.0							
MBWA	**Marble Bar**	**58.42**	**258**	*e*P	**P**	**15 33 28.5**	**-0.9**
	8.1nm,0.6s							
MAW	**Mawson**	**80.36**	**200**	P	**P**	**15 35 43.1**	**+0.4**
	1.5nm,0.7s,baz=120,slow=2.3,SNR=5.2							
NVAR	**Mina Array Bea**	**81.56**	**43**	P	**P**	**15 35 49.2**	**-0.6**
	0.6nm,0.8s,baz=224,slow=6.2,SNR=4.0							
SNAA	**Sanae**	**86.37**	**178**	P	P	15 36 09.3	-4.1
VNA3	**Neumayer Olymp**	**86.47**	**176**	P	P	15 36 10.7	-3.0
VNA2	**Neumayer--Watz**	**86.92**	**177**	P	**P**	**15 36 13.9**	**-2.0**
	baz=194,slow=3.8							
TXAR	**Lajitas Array**	**87.15**	**57**	P	**P**	**15 36 18.1**	**+0.2**
	0.7nm,0.8s,baz=216,slow=6.2,SNR=5.7							
ILAR	**Eielson Array**	**89.68**	**12**	P	**P**	**15 36 27.9**	**-0.9**
	0.3nm,0.7s,baz=225,slow=6.0,SNR=6.1							
CMAR	**Chiang Mai Arr**	**91.53**	**289**	P	**P**	**15 36 40.7**	**+2.3**
	0.3nm,0.3s,baz=111,slow=4.4,SNR=4.7							
AKASG	**Malin Array Be**	**144.88**	**331**	PKP	**PKPab**	**15 43 05.3**	**-1.2**
	0.8nm,0.6s,baz=43,slow=4.4,SNR=12							
BRTR	**Keskin Array B**	**148.61**	**311**	PKPbc	**PKPbc**	**15 43 17.1**	**-0.4**
	0.8nm,0.7s,baz=131,slow=4.0,SNR=6.0							
GERES	**GERESS Array B**	**152.00**	**345**	PKPbc	**PKPbc**	**15 43 25.4**	**+0.1**
	0.2nm,0.4s,baz=45,slow=1.5,SNR=3.6							
TORD	**Torodi Ar. Bea**	**170.99**	**172**	PKPab	**PKPab**	**15 44 58.4**	**-0.4**
	1.9nm,0.8s,baz=192,slow=4.1,SNR=7.7							

ATH ***24*** *16:01:48.6,36°.09N×27°.88E,h32km±2km, ML2.3/2, Error ellipse: s-maj=3.1km s-min=1.1km az=86.0*
ISCJB ***24*** *16:01:49.7±0.6,36°.10N±0°.03×27°.82E±0°.03,h10km±5km, Error ellipse: s-maj=5.3km s-min=4.1km az=141.7*
CSEM ***24*** *16:01:49.9±0.2,36°.11N×27°.84E,h15km, ML2.3, Error ellipse: s-maj=4.6km s-min=3.5km az=141.0*
ISK ***24*** *16:01:49.3,36°.12N×27°.84E,h14km, MD2.6*
DDA ***24*** *16:01:50.1,36°.17N×27°.83E,h7km, Ml2.7*

ISC 24 16:01:49.7±1.0,36°.12N±0°.02×27°.84E±0°.02,h13km±11km, n37,σ0°59/49,Dodecanese Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ARG	**Arkhangelos**	**0.25**	**67**	P	**Pb**	**16 01 56.1**	**-0.1**
ARG				S	**Sb**	**16 01 59.7**	**-0.8**
NIS1	**Nisyros Isl.**	**0.72**	**312**	*e*PG	**Pg**	**16 02 03.8**	**+0.1**
NIS1				*e*SG	**Sb**	**16 02 14.3**	**+0.3**
NIS1	**Nisyros Isl.**	**0.72**	**312**	*e*Pg	**Pg**	**16 02 03.8**	**+0.1**
NIS1	**Nisyros Isl.**	**0.72**	**312**	P	**Pb**	**16 02 04.4**	**+0.3**
NIS1				*e*Sg	**Sb**	**16 02 14.3**	**+0.3**
NIS1	**Nisyros Isl.**	**0.72**	**312**	P	**Pb**	**16 02 04.4**	**+0.3**
NIS1				S	**Sb**	**16 02 14.6**	**+0.7**
NIS1				AML	AML	16 02 17.4	
	comp=N,749μm,0.4s						
NIS1				AML	AML	16 02 21.0	
	comp=E,933μm,0.3s						
KARP	**Karpathos**	**0.79**	**224**	*e*PG	**Pg**	**16 02 05.1**	**+0.1**
KARP				*e*SG	**Sb**	**16 02 16.4**	**+0.4**
KARP	**Karpathos**	**0.79**	**224**	*e*Pg	**Pg**	**16 02 05.1**	**+0.1**
KARP	**Karpathos**	**0.79**	**224**	P	**Pb**	**16 02 05.5**	**+0.1**
KARP				S	**Sg**	**16 02 15.0**	**-0.4**
KARP				*e*Sg	**Sb**	**16 02 16.4**	**+0.4**
KARP	**Karpathos**	**0.79**	**224**	P	**Pb**	**16 02 05.5**	**+0.1**
KARP				S	**Sg**	**16 02 15.0**	**-0.4**
KARP				AML	AML	16 02 18.4	
	comp=N,391μm,0.1s						
KARP				AML	AML	16 02 18.5	
	comp=E,396μm,0.2s						
DALY	**Dalyan (Mu˙la**	**0.96**	**43**	*e*PG	**Pg**	**16 02 08.2**	**0.0**
DALY	**Dalyan (Mu˙la**	**0.96**	**43**	*e*Pg	**Pg**	**16 02 08.2**	**0.0**
TURN	**Turunc**	**0.97**	**39**	*i* P	**Pg**	16 02 03.8	-4.8
TURN				*i* S	Sg	16 02 14.4	-6.8
TURN	**Turunc**	**0.97**	**39**	P	Pg	16 02 03.8	-4.7
BDRM	**Kayabasi**	**1.00**	**342**	*i* P	**Pg**	**16 02 08.6**	**-0.4**
BDRM				*i* S	**Sg**	**16 02 22.1**	**0.0**
BDRM	**Kayabasi**	**1.00**	**342**	P	**Pg**	**16 02 08.6**	**-0.4**
BDRM				S	**Sg**	**16 02 22.0**	**0.0**
BODT	**Bodrum**	**1.03**	**336**	*e*PG	**Pb**	**16 02 09.7**	**+0.2**
BODT	**Bodrum**	**1.03**	**336**	*e*Pg	**Pb**	**16 02 09.7**	**+0.2**
YER	**Yerkesik**	**1.08**	**19**	*e*PN	**Pg**	**16 02 10.5**	**0.0**
YER	**Yerkesik**	**1.08**	**19**	*e*Pn	**Pg**	**16 02 10.5**	**0.0**
FETY	**Fethiye**	**1.13**	**62**	*e*PN	**Pn**	**16 02 11.4**	**+0.1**
FETY	**Fethiye**	**1.13**	**62**	*e*Pn	**Pn**	**16 02 11.4**	**+0.1**
KSL	**Kastellorizon**	**1.41**	**88**	P	**Pn**	**16 02 13.4**	**-1.7**
KSL	**Kastellorizon**	**1.41**	**88**	P	**Pn**	**16 02 13.3**	**-1.7**
AKAS	**Kas**	**1.43**	**85**	*i* P	**Pg**	**16 02 17.6**	**+0.3**
AKAS				*i* S	**Sg**	**16 02 37.1**	**+1.1**
AKAS	**Kas**	**1.43**	**85**	P	**Pg**	**16 02 17.6**	**+0.3**
AKAS				S	**Sg**	**16 02 37.1**	**+1.1**
AYDN	**Tasoluk**	**1.54**	**1**	*i* P	**Pn**	**16 02 17.2**	**+0.2**
AYDN				*i* S	**Sg**	**16 02 38.7**	**-0.7**
AYDN	**Tasoluk**	**1.54**	**1**	P	**Pn**	**16 02 17.2**	**+0.2**
AYDN				S	**Sg**	**16 02 38.7**	**-0.7**
ELL	**Elmali**	**1.78**	**69**	*e*PN	**Pn**	**16 02 20.5**	**+0.1**
ELL	**Elmali**	**1.78**	**69**	*e*Pn	**Pn**	**16 02 20.5**	**+0.1**
AYDB	**Zeytinkoy-Aydi**	**1.83**	**1**	*e*PN	**Pn**	**16 02 20.8**	**-0.2**
AYDB	**Zeytinkoy-Aydi**	**1.83**	**1**	*e*Pn	**Pn**	**16 02 20.8**	**-0.2**
NPS	**Neapolis**	**2.00**	**245**	P	**Pn**	**16 02 23.9**	**+0.6**
NPS	**Neapolis**	**2.00**	**245**	P	**Pn**	**16 02 23.9**	**+0.6**
LAST	**Lasithi**	**2.15**	**244**	P	**Pn**	**16 02 25.0**	**-0.3**
LAST	**Lasithi**	**2.15**	**244**	P	**Pn**	**16 02 25.0**	**-0.3**
IDI	**Anoyia**	**2.54**	**252**	P	**Pn**	**16 02 29.6**	**-1.1**
IDI	**Anoyia**	**2.54**	**252**	P	**Pn**	**16 02 29.6**	**-1.1**

IDC ***24*** *16:04:08.4±1.1,34°.62N×138°.06E,h0km,mb3.4/4, mb1 3.6/5,mb1mx3.3/57,mbtmp3.4/5,ML2.7/1, Error ellipse: s-maj=44.5km s-min=20.1km az=73.0*
ISCJB ***24*** *16:04:09.7±0.9,34°.63N±0°.09×137°.9E±0°.2,h20km, mb3.3/4, Error ellipse: s-maj=24.9km s-min=11.9km az=169.8*

ISC 24 16:04:11.7±1.0,34°.7N±0°.1×138°.0E±0°.2,h20km,n7, σ1ş45/8,mb3.4/4,Near south coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MAT	**Matsushiro**	**1.83**	**5**	P	**Pn**	**16 04 41.4**	**-0.7**
MAT				S	Sb	16 05 14.1	+7.1
MJAR	**Matsushiro Arr**	**1.83**	**5**	Pn	**Pn**	**16 04 41.4**	**-0.7**
	2.5nm,0.3s,baz=95,slow=8.7,SNR=21						
JHJ	**Hachijo jima 2**	**2.17**	**137**	Pn	**Pn**	**16 04 46.4**	**-0.4**
	6.2nm,0.3s,baz=240,slow=20,SNR=4.7						
JHJ				Sn	**Sb**	**16 05 18.1**	**+1.2**
	35nm,0.3s,baz=78,slow=22,SNR=8.2						
MKAR	**Makanchi Array**	**43.05**	**304**	P	**P**	**16 12 11.6**	**+1.5**
	0.2nm,0.3s,baz=96,slow=9.1,SNR=4.7						
WRA	**Warramunga Arr**	**54.47**	**184**	P	**P**	**16 13 37.1**	**-0.8**
	0.3nm,0.6s,baz=2.8,slow=7.7,SNR=3.1						
ASAR	**Alice Springs**	**58.19**	**184**	P	**P**	**16 14 02.3**	**-2.1**
	0.1nm,0.6s,baz=2.4,slow=6.7,SNR=3.9						
NOA	**NORSAR Array B**	**75.22**	**336**	P	**P**	**16 15 53.3**	**+0.7**
	0.6nm,0.8s,baz=39,slow=5.8,SNR=2.9						

IDC ***24*** *16:04:43.4±4.8,28°.66S×69°.82W,h94km±39km,mb3.8/6, mb1 3.9/8,mb1mx3.6/35,mbtmp4.0/8, Error ellipse: s-maj=38.3km s-min=20.5km az=52.0*
ISCJB ***24*** *16:04:44.2±0.3,28°.58S±0°.03×69°.89W±0°.06,h112km±4km, mb3.9/7, Error ellipse: s-maj=8.2km s-min=5.6km az=2.3*
GUC ***24*** *16:04:44.2±0.3,28°.60S×69°.84W,h111km±6km, ML4.3*
NEIC ***24*** *16:04:44.3±0.6,28°.63S×69°.75W,h102km±6km, mb4.4/3, Error ellipse: s-maj=10.7km s-min=9.0km az=101.0*
SJA ***24*** *16:04:47.0±0.8,28°.81S×69°.31W,h185km±5km, ML3.5, MW4.3*

ISC 24 16:04:44.7±0.8,28°.61S±0°.05×69°.76W±0°.06,h104km±7km, n40,σ1ş46/44,mb4.0/7,1C,Chile-Argentina border region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
VACH	**Vallenar**	**0.88**	**272**	*e*P	**Pn**	**16 05 03.3**	**-1.0**
VACH				*e*S	**Sn**	**16 05 17.7**	**-1.3**
LCO	**Las Campanas**	**0.92**	**244**	*i* P	**Sn**	**16 05 18.2**	**-2.0**
LCO	**Las Campanas**	**0.92**	**244**	*e*P	**Pn**	**16 05 04.5**	**-0.4**
LCO				*e*S	**Sn**	**16 05 19.7**	**-0.4**
LCO				IAML		16 05 20.7	
	comp=E,10μm,0.3s						
LCO	**Las Campanas**	**0.92**	**244**	*e*Sn	**Sn**	**16 05 19.5**	**-0.7**
CPCH	**Copiapo**	**1.35**	**337**	*e*P	**Pn**	**16 05 08.7**	**-0.8**
CPCH				*e*S	**Sn**	**16 05 27.3**	**-0.9**
VCA	**Vinchina**	**1.37**	**96**	*i* P	Pn	16 05 15.6	+5.8
VCA				*i* S	Sn	16 05 36.4	+7.7
VCA				IAML		16 05 37.0	
TLL	**Tololo Astrono**	**1.80**	**210**	*e*P	**Pn**	**16 05 15.0**	**-0.2**
TLL				*e*S	**Sn**	**16 05 38.1**	**-0.3**
TLL				IAML		16 05 40.9	
	comp=E,4μm,0.4s						
LSCH	**La Serena**	**1.84**	**225**	*e*P	**Pn**	**16 05 14.4**	**-0.9**
LSCH				*e*S	**Sn**	**16 05 37.2**	**-1.5**
AMOG	**MOGNA**	**2.57**	**155**	*i* P	**Pn**	**16 05 27.9**	**+2.9**
RTLL	**Cerro Villicun**	**2.93**	**158**	*i* P	**Pn**	**16 05 31.8**	**+2.1**
RTLS	**Leoncito**	**3.21**	**173**	*i* P	Pn	16 05 37.2	+3.6
RTLS				*e*P	Pn	16 05 37.2	+3.6
RTCV	**Cerro Valdivia**	**3.41**	**162**	*i* P	**Pn**	**16 05 38.0**	**+1.9**
CYA	**Choya**	**3.48**	**88**	*i* P	**Pn**	**16 05 37.8**	**+0.7**
CYA				IAML		16 06 21.9	
	comp=Z,258nm,0.3s						
AUSP	**Uspallata**	**3.62**	**175**	*i* P	**Pn**	**16 05 41.1**	**+2.0**
ASAL	**Salagasta**	**4.05**	**169**	*e*P	**Pn**	**16 05 46.7**	**+2.0**
ASAL				*i* P	**Pn**	**16 05 46.7**	**+2.0**
FSA	**Cafayete**	**4.18**	**54**	*i* P	**Pn**	**16 05 49.4**	**+2.8**
FSA				IAML		16 07 16.5	
	comp=Z,9.1nm,0.4s						
ACAN	**Cantantal**	**4.27**	**149**	*i* P	**Pn**	**16 05 48.1**	**+0.5**
ACAN				*i* S	**Sn**	**16 06 33.2**	**-3.4**
ARCO	**CERRO ARCO**	**4.28**	**171**	IAML		16 06 45.1	
	comp=Z,101nm,0.5s						
AHML	**Horco Molle**	**4.32**	**66**	*i* P	**Pn**	**16 05 50.2**	**+1.8**
AAGR	**Agrelo**	**4.53**	**170**	*i* P	**Pn**	**16 05 52.6**	**+1.4**
MRA	**San Martin**	**5.15**	**138**	*i* P	**Pn**	**16 05 58.7**	**-0.9**
MRA				IAML		16 07 28.7	
	comp=Z,92nm,0.6s						
LVC	**Limon Verde**	**6.02**	**7**	*e*Pn	**Pn**	**16 06 10.1**	**-1.6**
	comp=Z,31nm,0.6s						
AZAP	**Zapla**	**6.06**	**45**	*i* P	**Pn**	**16 06 14.1**	**+2.0**
HJA	**Humahuaca**	**6.65**	**37**	*i* P	**Pn**	**16 06 22.7**	**+2.5**
HJA				IAML		16 07 25.3	
	comp=Z,3.7nm,0.7s						
CPUP	**Villa Florida**	**11.27**	**81**	P	**Pn**	**16 07 21.3**	**-1.2**
	comp=Z,0.3nm,0.3s,baz=259,slow=13,SNR=5.7						
TRQA	**Tornquist**	**11.44**	**147**	*e*Pn	**Pn**	**16 07 24.8**	**-0.1**
LPAZ	**La Paz**	**12.35**	**7**	P	**Pn**	**16 07 38.0**	**+0.4**
	comp=Z,0.2nm,0.3s,baz=196,slow=19,SNR=3.9						
SAML	**Samuel**	**20.51**	**19**	*e*P	Pn	16 09 17.0	-0.7
	comp=Z,3.0nm,0.8s						
JCT	**Junction City**	**65.38**	**332**	*e*P	**P**	**16 15 16.5**	**+0.4**
	comp=Z,2.8nm,0.5s						
TXAR	**Lajitas Array**	**66.11**	**328**	P	**P**	**16 15 21.1**	**+0.2**
	comp=Z,0.9nm,0.7s,baz=153,slow=8.1,SNR=8.3						
TXAR				PcP	**PcP**	**16 15 50.5**	**0.0**
	comp=Z,0.2nm,0.5s,baz=142,slow=5.8,SNR=4.2						
MAW	**Mawson**	**77.77**	**163**	P	**P**	**16 16 30.5**	**+0.6**
	comp=Z,1.7nm,0.6s,baz=217,slow=7.0,SNR=7.3						
PDAR	**Pinedale Array**	**79.91**	**331**	P	**P**	**16 16 42.1**	**0.0**
	comp=Z,0.4nm,0.6s,baz=117,slow=5.2,SNR=4.9						
TORD	**Torodi Ar. Bea**	**80.51**	**69**	P	**P**	**16 16 46.0**	**+0.3**
	comp=Z,1.5nm,0.5s,baz=271,slow=5.0,SNR=12						
BOSA	**Boshof**	**80.83**	**117**	P	**P**	**16 16 47.4**	**-0.1**
	comp=Z,1.0nm,0.4s,baz=214,slow=6.4,SNR=3.6						
YKA	**Yellowknife Ar**	**97.61**	**341**	P	**P**	**16 18 05.9**	**-0.8**
	comp=Z,0.3nm,0.5s,baz=142,slow=4.2,SNR=11						
BRTR	**Keskin Array B**	**117.41**	**58**	PKP	**PKPdf**	**16 23 17.5**	**-0.7**
	comp=Z,0.3nm,0.5s,baz=243,slow=1.6,SNR=2.2						
ASAR	**Alice Springs**	**123.25**	**206**	PKP	**PKPdf**	**16 23 28.8**	**-1.2**
	comp=Z,0.5nm,0.4s,baz=128,slow=1.7,SNR=20						
WRA	**Warramunga Arr**	**126.41**	**209**	PKP	**PKPdf**	**16 23 35.2**	**-0.8**
	comp=Z,1.2nm,0.4s,baz=155,slow=1.8,SNR=27						
ZALV	**Zalesovo Beam**	**148.61**	**29**	PKPbc	**PKPbc**	**16 24 19.4**	**+0.3**
	comp=Z,5.4nm,0.5s,baz=303,slow=3.4,SNR=29						
MKAR	**Makanchi Array**	**151.61**	**43**	PKPbc	**PKPbc**	**16 24 26.7**	**+0.1**
	comp=Z,1.8nm,0.5s,baz=310,slow=1.8,SNR=30						

MAN 24 16:17:03,10°.59N×126°.14E,h68km,mb4.5,ML3.4,MS3.3, 3C-2D,Philippine Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SCPH	**Surigao**	**1.03**	**219**	*i* P	Pn	16 17 19.8	-2.0
SCPH				*i* S	Sn	16 17 31.6	-4.1
PLP	**Palo**	**1.28**	**297**	*i* P	Pn	16 17 26.1	+1.1
PLP				*i* S	Sn	16 17 43.2	+1.8
OCLP	**Ormoc**	**1.57**	**287**	*e*P	Pn	16 17 30.8	+1.9
OCLP				*e*S	Sn	16 17 50.6	+2.2
BUTP	**Butuan**	**1.69**	**198**	*e*P	Pn	16 17 32.0	+1.6
BUTP				*e*S	Sn	16 17 52.9	+1.7
LLP	**Lapu-Lapu**	**2.16**	**263**	*e*P	Pn	16 17 37.5	+0.8
LLP				*e*S	Sn	16 18 04.2	+1.7
TBP	**Tagbilaran**	**2.42**	**248**	*e*P	Pn	16 17 41.5	+1.3
CGP	**Cagayan de Oro**	**2.56**	**214**	*e*P	Pn	16 17 43.5	+1.3
CGP				*e*S	Sn	16 18 11.7	-0.6
BUKP	**Musuan**	**2.90**	**202**	*e*P	Pn	16 17 48.8	+1.9
BUKP				*e*S	Sn	16 18 23.0	+2.3
RCP	**Roxas**	**3.47**	**286**	*e*P	Pn	16 17 57.2	+2.6
GUIM	**Jordan**	**3.49**	**271**	*e*P	Pn	16 17 55.8	+0.9

IDC ***24*** *16:18:31.9±0.4,38°.19N×143°.57E,h0km,mb4.6/30, mb1 4.8/38,mb1mx4.7/47,mbtmp4.7/38,ML4.3/8,MS4.0/30, Ms1 4.0/30,ms1mx3.9/37, Error ellipse: s-maj=12.3km s-min=10.4km az=127.0*
ISCJB ***24*** *16:18:31.4±0.8,38°.24N±0°.02×143°.52E±0°.02,h5km±4km, mb4.8/214,MS4.3/50, Error ellipse: s-maj=4.1km s-min=2.4km az=159.2*
BJI ***24*** *16:18:34.2,38°.29N×143°.35E,h18km,mb5.1/79,mB4.9/48, Ms4.6/80,Ms7 4.5/73*
JMA ***24*** *16:18:34.7±0.2,38°.31N×143°.54E,h41km, M4.8*
NEIC ***24*** *16:18:35.0±1.5,38°.23N×143°.50E,h19km±9km,mb4.9/135, Error ellipse: s-maj=4.3km s-min=2.5km az=137.0*
MOS ***24*** *16:18:36.4±1.0,38°.41N×143°.48E,h33km,mb5.0/77, MS4.3/17, Error ellipse: s-maj=6.5km s-min=4.3km az=108.0*

ISC 24 16:18:35.0±0.6,38°.28N±0°.04×143°.56E±0°.04,h19km±2km, n501,σ1ş23/522,mb4.9/220,MS4.4/50,45C-16D,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
OFUJ	**Ofunato**	**1.68**	**299**	P	**Pn**	**16 19 02.1**	**-1.3**
OFUJ				*e*S	**Sn**	**16 19 21.3**	**-3.1**
JIO	**Ouri**	**1.74**	**276**	P	**Pn**	**16 19 03.3**	**-1.0**
JIO				S	**Sn**	**16 19 24.0**	**-2.0**
JMK	**Ichinoseki**	**1.95**	**291**	P	**Pn**	**16 19 06.3**	**-0.8**
JTH	**Tanohata**	**2.12**	**322**	P	**Pn**	**16 19 08.0**	**-1.4**
JOM	**Ohasama**	**2.13**	**305**	P	**Pn**	**16 19 08.8**	**-0.8**
JMM	**Marumori**	**2.22**	**260**	P	**Pn**	**16 19 09.8**	**-1.0**
JMM				S	**Sn**	**16 19 36.0**	**-1.7**
JOU	**Okura**	**2.28**	**273**	P	**Pn**	**16 19 11.2**	**-0.4**
JOU				*e*S	**Sn**	**16 19 38.5**	**-0.7**
JFK	**Kawauchi**	**2.31**	**248**	P	**Pn**	**16 19 10.5**	**-1.6**
JFK				S	**Sn**	**16 19 37.6**	**-2.4**
JRG	**Rokugo**	**2.54**	**297**	P	**Pn**	**16 19 15.0**	**-0.2**
JRG				*e*S	**Sn**	**16 19 46.8**	**+1.1**
JYK	**Kaneyama**	**2.58**	**285**	P	**Pn**	**16 19 15.6**	**-0.2**
JANG	**Nango**	**2.62**	**324**	P	**Pn**	**16 19 14.8**	**-1.6**
JFT	**Otama**	**2.66**	**254**	P	**Pn**	**16 19 16.7**	**-0.2**
JFT				S	**Sn**	**16 19 47.9**	**-0.7**
JTM	**Tenmabayashi**	**3.16**	**323**	P	**Pn**	**16 19 22.5**	**-1.2**
JTM				*e*S	**Sn**	**16 19 58.8**	**-2.1**
ERM	**Erimo**	**3.75**	**355**	*i* P	**Pn**	**16 19 31.1**	**-0.7**
ERM				pmax	pmax		
	comp=Z,100nm,1.0s						
ERM	**Erimo**	**3.75**	**355**	*e*Pn	**Pn**	**16 19 30.6**	**-1.1**
JNBK	**Urakawa-nobuka**	**4.04**	**352**	S	**Sn**	**16 20 19.9**	**-2.8**
JCH	**Churui**	**4.33**	**358**	S	**Sn**	**16 20 25.4**	**-4.5**
MJAR	**Matsushiro Arr**	**4.60**	**249**	Pn	**Pn**	**16 19 44.2**	**+0.7**
	comp=Z,54nm,0.3s,baz=57,slow=12,SNR=1024						
MJAR				Sn	**Sn**	**16 20 36.2**	**-0.2**
	comp=Z,0.9nm,0.3s,baz=6.1,slow=27,SNR=3.8						
MJAR				LR	LR	16 21 41.6	
	comp=Z,2μm,19.3s,baz=55,slow=42						
MAJO	**Matsushiro**	**4.60**	**250**	*c* *i*P	**Pn**	**16 19 44.0**	**+0.5**
MAJO	**Matsushiro**	**4.60**	**250**	*e*Pn	**Pn**	**16 19 44.0**	**+0.5**
MAT	**Matsushiro**	**4.60**	**250**	P	**Pn**	**16 19 44.0**	**+0.5**
MAT				S	**Sn**	**16 20 39.1**	**+2.7**
MJB9	**Matsu-Tunnel**	**4.60**	**250**	*e*Pn	**Pn**	**16 19 44.1**	**+0.5**
ASAJ	**Asahikawa**	**5.88**	**353**	Pn	**Pn**	**16 20 00.7**	**-0.4**
	comp=Z,22nm,0.3s,baz=199,slow=11,SNR=141						
ASAJ				Sn	**Sn**	**16 21 04.0**	**-3.9**
	comp=Z,18nm,0.3s,baz=49,slow=33,SNR=7.2						
ASAJ				LR	LR	16 22 49.1	
	comp=Z,1μm,18.6s,baz=140,slow=43						
JHJ2	**Mitsune**	**5.99**	**212**	*e*Pn	**Pn**	**16 20 00.8**	**-1.8**
JHJ	**Hachijo jima 2**	**5.99**	**212**	Pn	**Pn**	**16 20 00.6**	**-2.1**
	comp=Z,63nm,0.3s,baz=93,slow=23,SNR=14						
JHJ				Sn	Sn	16 21 04.0	-6.8
	comp=Z,165nm,0.3s,baz=166,slow=23,SNR=9.0						
JHJ				LR	LR	16 22 54.8	
	comp=Z,866nm,18.9s,baz=67,slow=44						
INU	**Inuyama**	**6.00**	**243**	*e*Pn	**Pn**	**16 20 02.6**	**-0.2**
YUK	**Yuzh-Kuril'sk**	**6.01**	**16**	*i*P	**Pn**	**16 20 00.6**	**-2.3**
YUK				*i* S	Sn	16 21 05.1	-6.0
YUK				pmax	pmax		
	comp=N,169nm,0.2s						
YUK				pmax	pmax		
	comp=E,218nm,0.2s						
YUK				pmax	pmax		
	comp=Z,1μm,0.2s						
SHO	**Shikotan**	**6.11**	**23**	*i*P	Pn	16 20 01.0	-3.2
SHO				*i* S	Sn	16 21 06.1	-7.5
SHO				pmax	pmax		
	comp=N,321nm,0.4s						
SHO				pmax	pmax		
	comp=Z,609nm,0.4s						
SHO				pmax	pmax		
	comp=E,87nm,0.2s						
KUR	**Kuril'sk**	**7.66**	**23**	*i*P	Pn	16 20 22.5	-3.0
KUR				*i* S	Sn	16 21 44.4	-7.3
KUR				pmax	pmax		
	comp=E,188nm,0.5s						
KUR				pmax	pmax		
	comp=Z,271nm,0.5s						
KUR				pmax	pmax		
	comp=N,144nm,0.3s						
YSS	**Yuzh-Sakhalins**	**8.69**	**356**	*e*P	**Pn**	**16 20 39.3**	**-0.4**
YSS				*e*S	Sn	16 22 11.2	-5.9
YSS	**Yuzh-Sakhalins**	**8.69**	**356**	*e*Pn	**Pn**	**16 20 38.8**	**-0.8**
VLA	**Vladivostok**	**10.09**	**302**	*d* *i*P	**Pn**	**16 21 01.2**	**+2.3**
MSHR	**Mys Shultsa**	**10.38**	**298**	*e*P	**Pn**	**16 21 03.2**	**+0.4**
USRK	**Ussuriysk Ar.**	**10.53**	**308**	Pn	**Pn**	**16 21 06.6**	**+1.8**
	comp=N,4.9nm,0.3s,baz=113,slow=14,SNR=44						
USRK				LR	LR	16 25 11.8	
	comp=N,1μm,18.1s,baz=116,slow=38						
CBIJ	**Chichi jima**	**11.21**	**186**	Pn	Pn	16 21 09.4	-4.9
CBIJ				Sn	Sn	16 23 04.0	-15
JCJ	**Chichijima**	**11.21**	**186**	Pn	Pn	16 21 09.4	-4.9
	comp=N,14nm,0.3s,baz=354,slow=20,SNR=9.6						
JCJ				Sn	Sn	16 23 04.0	-15
	comp=N,9.1nm,0.3s,baz=300,slow=20,SNR=3.8						
JNU	**Nakatsue**	**11.52**	**247**	Pn	**Pn**	**16 21 18.4**	**-0.1**
	comp=N,1.0nm,0.3s,baz=52,slow=5.5,SNR=18						
JNU				LR	LR	16 26 18.5	
	comp=N,1μm,18.1s,baz=67,slow=41						
HABR	**Khabarovsk**	**11.91**	**332**	*d*e*P*	**Pn**	**16 21 22.0**	**-1.7**
HABR				*e*S	**Sn**	**16 23 34.1**	**-2.0**
HABR				pmax	pmax		
	comp=N,50nm,2.0s						
HABR				pmax	pmax		
	comp=Z,33nm,2.0s						
HABR				pmax	pmax		
	comp=E,51nm,2.0s						
HABR				MLR	MLR		

PET MLR MLR
comp=Z,200nm,6.6s
PET MLR MLR
comp=Z,500nm,19.0s
PET MLR MLR
comp=Z,500nm,16.0s
PET Petropavlovsk 18.08 30 *e*P **P 16 22 46.4 +1.2**
comp=Z,79nm,1.3s
SSE Sheshan 19.71 255 P **P 16 23 02.8 -0.6**
SSE S **S 16 26 41.8 -3.1**
SSE pmax pmax
comp=Z,43nm,0.7s
SSE pmax pmax
comp=Z,66nm,2.7s
SSE LR LR
comp=Z,730nm,15.0s
SSE LR LR
comp=Z,430nm,15.0s
SSE LR LR
comp=Z,970nm,13.2s
HIA Hailar 20.32 310 *e*P **P 16 23 07.6 -2.3**
HIA Hailar 20.32 310 *e*P **P 16 23 07.6 -2.3**
NJ2 Nanjing 21.10 260 *e*P **P 16 23 19.0 +0.6**
NJ2 S **S 16 27 08.3 -4.1**
NJ2 pmax pmax
comp=Z,14nm,0.8s
NJ2 LR LR
comp=Z,1μm,14.6s
NJ2 LR LR
comp=Z,950nm,17.9s
NJ2 LR LR
comp=Z,670nm,14.6s
TIA Tai'an 21.12 273 *e*P **P 16 23 16.5 -2.1**
TIA pmax pmax
comp=Z,40nm,1.1s
TIA LR LR
comp=Z,930nm,15.2s
TIA LR LR
comp=Z,600nm,13.5s
TIA LR LR
comp=Z,780nm,14.5s
BJI Beijing 21.28 283 P **P 16 23 17.9 -2.3**
BJI S **S 16 27 16.0 +0.2**
BJI pmax pmax
comp=Z,56nm,0.8s
BJI pmax pmax
comp=Z,250nm,4.1s
BJI LR LR
comp=Z,260nm,15.4s
BJI LR LR
comp=Z,1μm,13.5s
BJI LR LR
comp=Z,430nm,15.4s
BJT Baijiatuau 21.28 283 *e*P **P 16 23 17.8 -2.5**
BJT Baijiatuau 21.28 283 *e*P **P 16 23 17.8 -2.5**
MA2 Magadan 21.81 10 P **P 16 23 27.0 +1.2**
comp=Z,15nm,0.8s,baz=198,slow=13,SNR=13
MA2 LR LR 16 31 50.7
comp=Z,108nm,19.5s,baz=216,slow=36
YHNB Yeheng 23.20 241 *e*P **P 16 23 38.3 -2.6**
comp=Z,28nm,0.7s
SSLB Suanglung 24.07 240 *e*P **P 16 23 46.0 -3.4**
comp=Z,20nm,0.9s
YULB Yu-li 24.11 238 *e*P **P 16 23 46.8 -2.8**
comp=Z,42nm,1.0s
TIY Taiyuan 24.48 278 *e*P **P 16 23 52.8 -0.2**
TIY pP **sP 16 24 01.1 +0.1**
TIY pmax pmax
comp=Z,71nm,0.9s
TIY LR LR
comp=Z,360nm,15.5s
TIY LR LR
comp=Z,600nm,13.5s
TIY LR LR
comp=Z,770nm,17.4s
TPUB Ta-pu 24.62 239 *e*P **P 16 23 52.0 -2.3**
comp=Z,106nm,1.2s
TWG Pinlang 24.65 238 *e*P **P 16 23 52.3 -2.3**
comp=Z,279nm,1.1s
HHC Hu-ho-hao-te 24.73 286 *e*P **P 16 23 53.5 -1.7**
HHC sP sP 16 24 02.8 -0.5
HHC PP **PnPn 16 24 24.8 -2.4**
HHC S **S 16 28 12.3 -4.1**
HHC sS sS 16 28 25.6 -0.1
HHC pmax pmax
comp=Z,44nm,1.1s
HHC pmax pmax
comp=Z,160nm,8.5s
HHC LR LR
comp=Z,810nm,13.8s
HHC LR LR
comp=Z,1μm,13.4s
HHC LR LR
comp=Z,1μm,13.2s
CIT Chita 25.02 313 *e*P **P 16 23 56.8 -0.9**
CIT *e* 16 24 09.8
CIT *e* 16 24 28.3
CIT *e* 16 28 19.2
CIT pmax pmax
comp=Z,98nm,1.1s
WHN Wuhan 25.23 261 P **P 16 23 59.1 -0.6**
WHN S **S 16 28 25.3 +1.0**
WHN pmax pmax
comp=Z,120nm,1.0s
WHN LR LR
comp=Z,3μm,17.2s
WHN LR LR
comp=Z,540nm,8.8s
WHN LR LR
comp=Z,2μm,12.5s
SEY Seymchan 25.26 9 P **P 16 24 01.6 +1.8**
comp=Z,14nm,0.8s,baz=198,slow=7.8,SNR=56
SEY Seymchan 25.26 9⇓ *e*P **P 16 24 01.4 +1.7**
YAK Yakutsk 25.27 345 P **P 16 23 59.3 -0.6**
comp=Z,26nm,0.5s,baz=226,slow=5.7,SNR=20
YAK LR LR 16 35 49.3
comp=Z,290nm,18.1s,baz=154,slow=41
YAK Yakutsk 25.27 345 *e*P **P 16 23 59.2 -0.6**
YAK *e**PP **sP 16 24 06.0 -1.8**
YAK *e* 16 24 32.5
YAK *e*PPP PPP 16 24 43.7
YAK *e*S **S 16 28 23.9 -0.6**
YAK *e**SS **sS 16 28 36.2 +2.4**
YAK *e*SS **SnSn 16 29 15.6 -0.2**
YAK *e*SSS SSS 16 29 31.5
YAK *e* 16 34 57.3
YAK pmax pmax
comp=E,9.0nm,1.5s
YAK pmax pmax
comp=N,17nm,1.1s
YAK pmax pmax
comp=Z,37nm,0.9s
YAK pmax pmax
comp=Z,78nm,2.3s
YAK smax smax
comp=E,123nm,1.8s
YAK smax smax
comp=N,299nm,4.0s
YAK MLR MLR
comp=E,374nm,15.0s
YAK MLR MLR
comp=Z,441nm,16.0s
YAK MLR MLR
comp=N,342nm,15.0s
YAK Yakutsk 25.27 345 *e*P **P 16 23 58.9 -0.9**
comp=N,54nm,0.8s
BTO Baotou 25.92 286 *e*P **P 16 24 03.8 -2.2**
H11N2 WAKE ISLAND Hy 27.41 126 T T 16 52 53.0
baz=318,slow=76,SNR=85
H11N1 WAKE ISLAND Hy 27.42 126 T T 16 52 56.3
baz=318,slow=76,SNR=28
H11N3 WAKE ISLAND Hy 27.43 126 T T 16 53 10.5
baz=318,slow=76,SNR=28
ULN Ulaanbaatar 28.11 302*c* *i*P **P 16 24 26.1 +0.4**
ULN pmax pmax
comp=Z,47nm,1.2s
ULN Ulaanbaatar 28.11 302 *e*P **P 16 24 26.1 +0.4**
comp=Z,39nm,1.1s
ULN Ulaanbaatar 28.11 302 P **P 16 24 26.6 +0.9**
XAN Xi'an 28.18 272 P **P 16 24 26.0 -0.4**
XAN pP sP 16 24 31.3 -3.1
XAN sP pP 16 24 34.3 +2.2
XAN PP **PnPn 16 25 19.4 +5.0**
XAN S **S 16 29 14.8 +3.8**
XAN sS sS 16 29 24.0 +3.6
XAN pmax pmax
comp=Z,23nm,1.0s
XAN pmax pmax
comp=Z,61nm,4.2s
XAN LR LR
comp=Z,420nm,15.6s
XAN LR LR
comp=Z,520nm,16.9s
XAN LR LR
comp=Z,580nm,16.9s
H11S1 WAKE ISLAND Hy 28.19 128 T T 16 54 24.5
baz=319,slow=76,SNR=17
H11S3 WAKE ISLAND Hy 28.19 128 T T 16 54 14.0
baz=319,slow=76,SNR=19
H11S2 WAKE ISLAND Hy 28.21 128 T T 16 54 16.0
baz=319,slow=76,SNR=16
SONA1 Songino Array 28.54 302 *e*P **P 16 24 29.9 +0.3**
SONM Songino Array 28.54 302 P **P 16 24 30.5 +0.9**
comp=Z,11nm,0.5s,baz=100,slow=9.1,SNR=37
SONM LR LR 16 36 22.7
comp=Z,447nm,18.0s,baz=80,slow=37
SONM Songino Array 28.54 302 P **P 16 24 30.5 +0.9**
SONM pmax pmax
comp=Z,9.0nm,0.4s
SONM MLR MLR
comp=Z,447nm,18.0s
ENH Enshi 29.14 264 *e*P **P 16 24 34.2 -0.7**
comp=Z,46nm,0.6s
IRK Irkutsk 30.56 310 *e*P **P 16 24 47.6 +0.3**
IRK pmax pmax
comp=Z,44nm,1.1s
TLY Talaya 30.84 309 *e*P **P 16 24 50.6 +0.9**
TLY *e*S **S 16 29 54.2 +1.8**
TLY pmax pmax
comp=Z,35nm,0.9s
TLY MLR MLR
comp=Z,631nm,15.0s
TLY Talaya 30.84 309 *e*P **P 16 24 50.5 +0.7**
comp=Z,28nm,0.8s
ZAK Zakamensk 30.87 306 *e*P **P 16 24 50.5 +0.4**
ZAK pmax pmax
comp=Z,28nm,1.1s
LZH Lanzhou 31.55 278 *e*P **P 16 24 57.0 +0.7**
LZH pP sP 16 25 01.5 -2.9
LZH sP pP 16 25 03.4 +1.4
LZH PP **PnPn 16 26 02.0 +2.3**
LZH *e*S **S 16 30 05.0 +0.9**
LZH sS sS 16 30 15.6 +2.1
LZH SS **SnSn 16 31 50.4 +0.9**
LZH pmax pmax
comp=Z,78nm,1.2s
LZH pmax pmax
comp=Z,180nm,5.3s
LZH LR LR
comp=Z,750nm,15.8s
LZH LR LR
comp=Z,580nm,14.8s
LZH LR LR
comp=Z,780nm,16.6s
BILL Bilibino 32.36 16 *i*P **P 16 25 00.9 -2.0**
BILL *i* 16 25 11.5
BILL *i* 16 26 07.5
BILL *i*S S 16 30 08.9 -6.9
BILL pmax pmax
comp=Z,3.0nm,0.8s
BILL Bilibino 32.36 16 *e*P **P 16 25 03.3 +0.4**
comp=Z,9.7nm,1.0s
MOY Mondy 32.47 308 *e*P **P 16 25 06.4 +2.2**
MOY pmax pmax
comp=Z,7.0nm,1.1s
GYA Guiyang 33.11 260⇑ *i*P **P 16 25 08.9 -1.1**
GYA PP **PnPn 16 26 20.4 +0.6**
GYA PcP **PcP 16 27 54.3 +1.2**
GYA S **S 16 30 27.0 -1.4**
GYA ScP **ScP 16 31 37.3 +1.0**
GYA SS **SnSn 16 32 26.8 -0.7**
GYA ScS **ScS 16 35 34.5 -2.5**
GYA pmax pmax
comp=Z,30nm,0.8s
GYA pmax pmax
comp=Z,120nm,5.0s
GYA LR LR
comp=Z,520nm,17.8s
GYA LR LR
comp=Z,470nm,18.4s
GYA LR LR
comp=Z,490nm,18.0s
CD2 Chengdu 33.38 269 P **P 16 25 11.8 -0.5**
CD2 pP sP 16 25 17.3 -3.0
CD2 PP **PP 16 26 27.1 -0.7**
CD2 S **S 16 30 32.0 -0.4**
CD2 sS sS 16 30 41.4 -0.5
CD2 pmax pmax
comp=Z,60nm,0.7s
CD2 pmax pmax
comp=Z,60nm,4.3s
CD2 LR LR
comp=Z,900nm,16.8s
CD2 LR LR
comp=Z,540nm,16.8s
GTA Gaotai 33.84 286 P **P 16 25 17.1 +0.8**
GTA pP sP 16 25 21.8 -2.6
GTA sP pP 16 25 25.1 +3.1
GTA PcP **PcP 16 27 58.0 +3.0**
GTA S **S 16 30 41.3 +1.7**
GTA sS sS 16 30 47.8 -1.3
GTA SS **SnSn 16 32 46.8 +1.8**
GTA pmax pmax
comp=Z,41nm,1.2s
GTA pmax pmax
comp=Z,160nm,5.2s
GTA LR LR
comp=Z,630nm,17.6s
GTA LR LR
comp=Z,780nm,16.2s
GTA LR LR
comp=Z,790nm,15.0s
TIXI Tiksi 34.28 352⇑ *e*P **P 16 25 19.1 -0.4**
TIXI pmax pmax
comp=Z,7.0nm,2.5s
TIXI Tiksi 34.28 352 *e*P **P 16 25 19.3 -0.2**
comp=Z,5.0nm,0.7s
QIZ Qiongzhong 34.99 246 P P 16 25 22.3 -3.9
QIZ pmax pmax
comp=Z,11nm,1.8s
QIZ LR LR
comp=Z,180nm,19.7s
QIZ LR LR
comp=Z,180nm,20.1s
KMI Kunming 36.83 261 P **P 16 25 41.8 -0.5**
KMI pP pP 16 25 46.8 -1.2
KMI sP sP 16 25 51.4 +1.1
KMI PP **PP 16 27 05.5 -0.7**
KMI S **S 16 31 25.3 -0.7**
KMI SS **SnSn 16 33 50.8 -7.1**
KMI pmax pmax
comp=Z,17nm,1.2s
KMI pmax pmax
comp=Z,90nm,3.9s
KMI LR LR
comp=Z,250nm,14.0s
KMI LR LR
comp=Z,510nm,12.4s
KMI LR LR
comp=Z,420nm,12.0s
KRAR Krasnoyarsk 37.77 315⇓ *e*P **P 16 25 49.8 +0.2**
KRAR pmax pmax
comp=Z,15nm,0.9s
MYLDM Lahad Datu 40.05 221 *e*P **P 16 26 11.1 +1.9**
comp=Z,27nm,1.1s
CRAI Chiangrai 41.33 257 P **P 16 26 21.2 +1.5**
comp=Z,28nm,0.9s
LBMI Labuha 41.46 205 P P 16 26 32.2 +12
WMQ Urumqi 41.81 296 P **P 16 24.8 +1.3**
WMQ pP sP 16 26 30.8 -0.8
WMQ sP pP 16 26 32.9 +3.6
WMQ PP **PnPn 16 28 04.8 -0.3**
WMQ S **S 16 32 43.5 +3.4**
WMQ pmax pmax
comp=Z,14nm,1.0s
WMQ LR LR
comp=Z,220nm,18.4s
WMQ LR LR
comp=Z,140nm,16.8s
WMQ LR LR
comp=Z,100nm,18.4s
ZAA0 Zalesovo Array 42.35 311 *e*P **P 16 26 27.5 -0.1**
ZALV Zalesovo Beam 42.35 311 P **P 16 26 27.9 +0.3**
comp=Z,11nm,0.6s,baz=87,slow=8.0,SNR=46
ZALV LR LR 16 45 02.4
comp=Z,470nm,18.3s,baz=70,slow=38
CMAI Chiengmai2 42.52 257 P **P 16 26 30.7 +1.1**
comp=Z,105nm,0.7s
MRSI Marisa 42.54 213 P **P 16 26 31.5 +1.9**
comp=Z,50nm,1.1s
UTTA Uttaradit 42.66 254 P **P 16 26 31.0 +0.5**
comp=Z,4.5nm,0.9s,comp=Z,46nm
NRIK Noril'sk 42.87 334 P **P 16 26 32.8 +1.2**
comp=Z,2.9nm,0.4s,baz=122,slow=6.6,SNR=3.9
NRIK LR LR 16 45 24.4
comp=Z,530nm,20.0s,baz=110,slow=38
LAMP Lampang 42.89 255 P **P 16 26 33.4 +1.0**
comp=Z,7.2nm,0.9s
PBKT Sadao Pong 43.07 252 P **P 16 26 34.2 +0.3**
comp=Z,14nm,1.1s
NVS Novosibirsk 43.23 313⇑ *i*P **P 16 26 35.2 +0.5**
NVS pmax pmax
comp=Z,18nm,1.0s
NVS pmax pmax
comp=E,13nm,1.1s
CMMT Chiang Mai 43.24 256 P **P 16 26 35.4 +0.1**
comp=E,16nm,1.1s,comp=E,382nm
CHTO Chiang Mai 43.24 256 P **P 16 26 35.5 +0.2**
comp=E,72nm,1.2s
CHTO Chiang Mai 43.24 256 *e*P **P 16 26 35.3 0.0**
CHTO pmax pmax
comp=Z,11nm,0.9s
CHTO Chiang Mai 43.24 256 *e*P **P 16 26 35.3 0.0**
comp=Z,11nm,0.9s
SANI Sanana 43.29 206 P P 16 26 48.0 +12
CM31 Chiang Mai Arr 43.45 256 *e*P **P 16 26 35.4 -1.6**
CMAR Chiang Mai Arr 43.45 256 P **P 16 26 36.6 -0.4**
comp=Z,3.2nm,0.7s,baz=43,slow=7.4,SNR=8.2
CMAR PcP **PcP 16 28 25.7 +0.7**
comp=Z,0.9nm,0.6s,baz=29,slow=2.1,SNR=4.5
CMAR LR LR 16 47 54.4
comp=Z,149nm,18.9s,baz=42,slow=41
CM01 Chiang Mai Arr 43.46 256 *e*P **P 16 26 36.1 -1.0**
SVW2 Sparrevohn 43.50 38 *e*P **P 16 26 38.4 +1.6**
comp=Z,13nm,1.0s
LSA Lhasa 43.79 275 P **P 16 26 41.0 +0.8**
MHMT Maesarieng 44.39 256 P **P 16 26 45.7 +1.2**
comp=Z,11nm,1.0s
CHBT CHBT 44.53 246 P **P 16 26 46.3 +0.6**
comp=Z,57nm,0.9s
MK01 Makanchi Array 44.91 301 *e*P **P 16 26 48.4 -0.1**
MK31 Makanchi Array 44.91 301 *i*P **P 16 26 48.5 +0.1**
MK31 pmax pmax
comp=Z,14nm,0.6s
MK31 Makanchi Array 44.91 301 *e*P **P 16 26 48.4 +0.1**
MKAR Makanchi Array 44.91 301 P **P 16 26 48.6 +0.2**
comp=Z,20nm,0.8s,baz=85,slow=9.5,SNR=49
MKAR LR LR 16 46 21.1
comp=Z,202nm,18.5s,baz=74,slow=37
MKAR Makanchi Array 44.91 301*c* *e*P **P 16 26 48.5 +0.1**
MKAR pmax pmax
comp=Z,21nm,0.8s
MKAR Makanchi Array 44.91 301 *e*P **P 16 26 48.3 -0.1**
KDAK Kodiak Island 45.03 43 *i*P **P 16 26 49.7 +0.5**
CAST Castle Rocks 45.24 35 *e*P P 16 26 47.6 -3.2
comp=Z,46nm,2.0s
PATY Pattaya 45.48 248 P **P 16 26 54.6 +1.4**
comp=Z,9.8nm,0.9s,comp=Z,1μm
BPAW Bear Paw Mtn. 45.75 34 P **P 16 26 55.3 +0.5**
KTH Kantishna Hill 45.76 35 *e*P **P 16 26 56.4 +1.4**
comp=Z,14nm,1.0s
MLY Manley 45.89 33 *e*P **P 16 26 57.4 +1.5**
comp=Z,7.4nm,0.8s
COLD Coldfoot 46.24 30 *e*P **P 16 26 59.8 +1.2**
comp=Z,14nm,1.7s
BWN Browne 46.42 34 *e*P **P 16 27 02.0 +2.0**
comp=Z,33nm,1.0s
KURK Kurchatov 46.52 307*c* *i*P **P 16 27 00.8 -0.2**
KURK pmax pmax
comp=Z,37nm,0.7s
KURK Kurchatov 46.52 307 *e*P **P 16 27 00.8 -0.2**
comp=Z,40nm,0.8s
PMR Palmer 46.61 37 *e*P **P 16 27 01.9 +0.3**
PMR pmax pmax
comp=Z,9.0nm,0.9s
PMR Palmer 46.61 37 *e*P **P 16 27 01.9 +0.3**
comp=Z,9.3nm,0.9s
RND Reindeer 46.69 35 *e*P **P 16 27 02.6 +0.3**
RND pmax pmax
comp=Z,17nm,1.2s
RND Reindeer 46.69 35 *e*P **P 16 27 02.6 +0.3**
comp=Z,17nm,1.2s
MDM Murphy Dome 46.96 33 *e*P **P 16 27 05.2 +0.9**
comp=Z,17nm,1.0s
WRH Wood River Hil 47.02 33 *e*P **P 16 27 05.4 +0.7**
comp=Z,46nm,2.0s
COLA College 47.12 33 *e*P **P 16 27 05.7 +0.2**
COLA pmax pmax
comp=Z,10.0nm,1.1s
COLA College 47.12 33 *e*P **P 16 27 05.7 +0.2**
comp=Z,9.6nm,1.1s
CCB Clear Creek Bu 47.14 33 *e*P **P 16 27 05.9 +0.3**
comp=Z,24nm,1.8s
SCM Sheep Creek Mo 47.46 37 *e*P **P 16 27 09.0 +0.7**
SCM pmax pmax
comp=Z,161nm,2.0s
SCM Sheep Creek Mo 47.46 37 *e*P **P 16 27 09.0 +0.7**
comp=Z,161nm,2.0s
HDA Harding Lake 47.51 33 *e*P **P 16 27 08.8 +0.1**
comp=Z,10nm,0.8s
IL1 Eielson Array 47.53 33 *e*P **P 16 27 08.7 0.0**
ILAR Eielson Array 47.53 33 P **P 16 27 08.9 +0.2**
comp=Z,9.0nm,0.8s,baz=264,slow=6.5,SNR=89
ILB Eielson Array 47.53 33 *e*P **P 16 27 08.8 +0.1**
KSM Kuching 47.64 228 *e*P **P 16 27 10.8 +0.7**
comp=Z,18nm,0.9s
PDGK Podgornoye 47.71 297 *i*P **P 16 27 09.8 -0.5**
PDGK pmax pmax
comp=Z,26nm,0.7s
STKI Sintang 48.12 226 P **P 16 27 15.0 +1.2**
comp=Z,29nm,1.0s,comp=Z,5μm
KLU Klutina 48.15 37 *e*P **P 16 27 15.0 +1.3**
comp=Z,18nm,1.0s
FYU Fort Yukon 48.18 31 *e*P **P 16 27 15.7 +2.0**
comp=Z,75nm,1.8s
DIV Divide 48.26 38 *e*P **P 16 27 15.7 +1.2**
comp=Z,32nm,1.2s
KAPI Kappang 48.41 213 *e*P **P 16 27 15.9 -0.1**
comp=Z,24nm,1.0s
GUN Gumba 48.73 276 *e*P **P 16 27 19.4 +0.5**
comp=Z,70nm,0.6s
DOT Dot Lake 48.82 34 *e*P **P 16 27 19.0 +0.2**
comp=Z,14nm,0.8s
BMRM Bremner River 48.84 38 *e*P **P 16 27 20.1 +1.2**
comp=Z,33nm,1.1s
MENT Mentasta 49.04 35 *e*P **P 16 27 21.0 +0.6**
comp=Z,21nm,1.2s
KKN Kakani 49.25 276 *e*P **P 16 27 22.9 +0.1**
comp=Z,71nm,0.6s
PKIN Phulchoki 49.26 276 *e*P **P 16 27 23.3 +0.4**
comp=Z,27nm,0.6s
BBKI Banjar Baru 49.31 219 P **P 16 27 23.0 0.0**
comp=Z,52nm,0.9s,comp=Z,1μm
DMN Daman 49.47 276 *e*P **P 16 27 24.7 +0.2**
comp=Z,22nm,0.7s
GKN Gorkha 49.65 276 *e*P **P 16 27 26.0 +0.2**
comp=Z,43nm,0.5s
TRTT Trang 49.78 244 P P 16 27 29.9 +3.3
comp=Z,23nm,1.0s
EGAK Eagle 49.98 33 *e*P **P 16 27 27.6 +0.1**
comp=Z,38nm,1.8s
TKM2 Tokmak 2 50.54 298 *e*P **P 16 27 33.1 +0.7**
TKM2 pmax pmax
comp=Z,30nm,0.8s
TKM2 Tokmak 2 50.54 298 *e*P **P 16 27 33.0 +0.7**
comp=Z,30nm,0.8s
KOLN Koldanda 50.57 277 *e*P **P 16 27 33.1 +0.3**
comp=Z,40nm,0.7s
PKDT Phuket 50.70 245 P **P 16 27 35.1 +1.5**
comp=Z,52nm,0.9s
PYUN Piuthan 50.90 277 *e*P **P 16 27 35.7 +0.5**
comp=Z,161nm,0.9s
KULM Kulim 50.91 241 *e*P **P 16 27 35.7 +0.5**
comp=Z,25nm,1.0s
BVA0 Borovoye Array 51.00 312 *i*P **P 16 27 34.8 -0.6**
BVA0 pmax pmax
comp=Z,11nm,0.9s
BRVK Borovoye 51.05 312*c* *i*P **P 16 27 36.0 +0.2**
BRVK pmax pmax

BRVK **Borovoye** 51.05 312 *e*P P 16 27 35.8 0.0
comp=Z,14nm,0.7s
IPM **Ipoh** 51.24 240 *e*P P 16 27 37.5 -0.2
comp=Z,35nm,0.9s
FRU **Bishkek** 51.25 298 *e*P P 16 27 37.0 -0.5
FRU *e* 16 27 44.0
FRU *i* 16 29 32.0
FRU pmax pmax
comp=Z,40nm,1.8s
AAK **Ala-Archa** 51.40 298*c i*P P 16 27 38.7 -0.1
AAK pmax pmax
comp=Z,27nm,1.0s
AAK **Ala-Archa** 51.40 298 *e*P P 16 27 39.0 +0.2
comp=Z,9.4nm,0.9s
KSH **Kashi** 51.45 294 *e*P P 16 27 43.9 +4.7
KSH *e*pP sP 16 27 49.9 +2.5
KSH S **S** 16 35 03.1 +4.8
KSH ScS **ScS** 16 37 29.0 +0.2
KSH pmax pmax
comp=Z,100nm,4.0s
KSH LR LR
comp=Z,280nm,11.3s
KSH LR LR
comp=Z,130nm,8.3s
KSH LR LR
comp=Z,340nm,14.9s
ZRNK **Zerenda** 51.83 312 *e*P P 16 27 41.4 -0.2
ZRNK pmax pmax
comp=Z,16nm,0.8s
ZRNK **Zerenda** 51.83 312 *e*P P 16 27 41.4 -0.2
comp=Z,16nm,0.8s
EKS2 **Erkin-Say** 51.89 298 *e*P P 16 27 42.5 +0.1
EKS2 pmax pmax
comp=Z,9.0nm,0.8s
EKS2 **Erkin-Say** 51.89 298 *e*P P 16 27 42.5 +0.1
comp=Z,9.4nm,0.8s
MTN **Manton Dam** 52.17 195 *e*P P 16 27 43.8 -0.7
comp=Z,34nm,0.8s
INK **Inuvik** 52.50 28 P P 16 27 47.3 +0.9
comp=Z,5.6nm,0.6s,baz=272,slow=6.6,SNR=24
INK **Inuvik** 52.50 28 *e*P P 16 27 47.0 +0.6
INK pmax pmax
comp=Z,6.0nm,0.7s
INK **Inuvik** 52.50 28 *e*P P 16 27 47.0 +0.6
comp=Z,6.1nm,0.7s
MNAS **Manas** 52.83 299 *i* P P 16 27 49.9 +0.5
MNAS pmax pmax
comp=Z,26nm,0.7s
TWSI **Taliwang, Sumb** 52.98 214 P P 16 27 49.7 -0.8
comp=Z,29nm,0.9s
PSI **Prapat** 53.89 240 *e*P P 16 27 57.0 -0.4
PSI pmax pmax
comp=Z,15nm,1.1s
PSI **Prapat** 53.89 240 *e*P P 16 27 57.0 -0.4
comp=Z,15nm,1.1s
RGRI **Rengat** 53.97 235 P P 16 28 05.9 +8.1
KK31 **Karatay Array** 53.98 300 *i* P P 16 27 57.2 -0.4
KK31 pmax pmax
comp=Z,5.0nm,0.6s
KKAR **Karatay Array** 53.98 300 *e*P P 16 27 57.4 -0.3
KKAR **Karatay Array** 53.98 300 *e*P P 16 27 57.4 -0.3
SOKR **Solikamsk** 56.38 322⇑*i*P P 16 28 14.2 -0.4
SOKR pmax pmax
comp=Z,18nm,1.1s
ARU **Arti** 56.56 318 P P 16 28 16.3 +0.3
comp=Z,17nm,0.8s,baz=72,slow=4.8,SNR=28
ARU **Arti** 56.56 318*d i*P P 16 28 16.1 +0.1
ARU 16 29 08.9
ARU 16 30 18.5
ARU S **S** 16 36 07.8 +1.3
ARU 16 37 58.8
ARU SS **SS** 16 39 52.7 -0.7
ARU pmax pmax
comp=Z,38nm,1.2s
ARU MLR MLR
comp=Z,436nm,17.0s
ARU **Arti** 56.56 318 *e*P P 16 28 16.1 +0.1
comp=Z,25nm,0.9s
DLBC **Dease Lake** 56.59 39 *e*P P 16 28 18.0 +1.7
comp=Z,12nm,1.0s
AB31 **Akbulak array** 58.44 310 *i* P P 16 28 29.1 -0.3
AB31 pmax pmax
comp=Z,4.0nm,0.4s
ABKAR **Akbulak array** 58.44 310 *e*P P 16 28 29.2 -0.1
WRAB **Tennant Creek** 58.54 190*ce*P P 16 28 29.2 -1.1
WRAB pmax pmax
comp=Z,114nm,0.8s
WRAB **Tennant Creek** 58.54 190 *e*P P 16 28 28.9 -1.4
comp=Z,42nm,0.8s
FITZ **Fitzroy Crossi** 58.55 200 *e*P P 16 28 30.2 -0.1
comp=Z,9.3nm,0.8s
WB2 **Warramunga Arr** 58.55 190 *e*P P 16 28 29.2 -1.2
comp=Z,46nm,0.7s
KBL **Kabul** 58.55 291 *e*P P 16 28 29.9 -0.8
KBL pmax pmax
comp=Z,17nm,0.8s
KBL **Kabul** 58.55 291 *e*P P 16 28 29.9 -0.8
comp=Z,17nm,0.8s
WRA **Warramunga Arr** 58.55 190 P P 16 28 29.3 -1.1
comp=Z,43nm,0.7s,baz=9.2,slow=7.1,SNR=215
WRA **Warramunga Arr** 58.55 190 *i* P P 16 28 28.2 -2.2
WRA pmax pmax
comp=Z,44nm,0.6s
AKTO **Aktyubinsk** 59.11 312 *i* P P 16 28 33.7 -0.3
AKTO pmax pmax
comp=Z,13nm,0.8s
HYB **Hyderabad** 59.93 269 *i* P P 16 28 40.0 -0.2
HYB *e* 16 28 51.0
RES **Resolute Bay** 60.97 15 P P 16 28 46.4 +0.1
comp=Z,5.7nm,0.8s,baz=322,slow=8.8,SNR=29
RES **Resolute Bay** 60.97 15 *e*P P 16 28 46.6 +0.2
RES pmax pmax
comp=Z,7.0nm,0.8s
RES **Resolute Bay** 60.97 15 *e*P P 16 28 46.6 +0.2
comp=Z,6.6nm,0.8s
YKW3 **Yellowknife Ar** 61.84 31 *e*P P 16 28 52.5 +0.1
comp=Z,4.0nm,0.9s
YKA **Yellowknife Ar** 61.87 31 P P 16 28 52.8 +0.1
comp=Z,3.3nm,0.7s,baz=302,slow=6.8,SNR=76
YKB5 **Yellowknife Ar** 61.87 31 *e*P P 16 28 51.8 -0.9
AS01 **Alice Springs** 62.27 190 *e*P P 16 28 54.8 -0.9
AS31 **Alice Springs** 62.28 190 *e*P P 16 28 55.0 -0.9
comp=Z,3.4nm,0.6s
ASAR **Alice Springs** 62.28 190 P P 16 28 55.2 -0.6
comp=Z,8.7nm,0.7s,baz=14,slow=7.5,SNR=140
ASAR LR LR 17 02 05.9
comp=Z,20nm,18.0s,baz=59,slow=42
TMCR **Tamitsa** 62.47 332 *e*P P 16 28 58.9 +2.3
TMCR pmax pmax
comp=Z,20nm,0.9s
MBWA **Marble Bar** 63.22 205 *e*P P 16 29 01.1 -0.9
comp=Z,9.4nm,0.8s
ARCES **ARCESS Array B** 63.43 340 P P 16 29 03.4 +0.4
comp=Z,1.6nm,0.8s,baz=46,slow=8.7,SNR=8.7
ARCES LR LR 17 02 50.5
comp=Z,168nm,18.2s,baz=48,slow=42
EIDS **Eidsvold** 63.70 172 *e*P P 16 29 05.3 +0.1
comp=Z,9.8nm,0.6s
NLWA **Neilton Lookou** 64.62 49 *e*P P 16 29 12.9 +1.7
comp=Z,17nm,0.8s
GEYT **Alibeck** 64.72 299 P P 16 29 12.2 +0.2
comp=Z,8.5nm,0.7s,baz=24,slow=4.0,SNR=24
GEYT LR LR 16 59 20.6
comp=Z,185nm,18.7s,baz=70,slow=38
LON **Longmire** 66.16 49 *e*P P 16 29 22.0 +0.8
LON pmax pmax
comp=Z,4.0nm,0.9s
LON **Longmire** 66.16 49 *e*P P 16 29 22.0 +0.8
comp=Z,4.2nm,0.9s
LTY **Liberty** 66.56 48 *e*P P 16 29 24.5 +0.7
comp=Z,6.0nm,0.6s
B08A **Colville Reser** 66.75 46 *e*P P 16 29 25.4 +0.4
comp=Z,19nm,1.4s
H04A **Detroit Lake** 67.00 51 P P 16 29 27.9 +1.2
MOS **Moscow** 67.26 324 *e*P P 16 29 38.7 +11
MOS *e* 16 29 55.3
C09A **Chrisman Ranch** 67.65 46 *e*P P 16 29 31.2 +0.5
comp=Z,16nm,1.0s
D08A **Wollman Farm,** 67.68 47 *e*P P 16 29 30.9 0.0
comp=Z,6.3nm,0.7s
VRH **Novokhopyorsk** 67.79 318 *e*P P 16 29 30.7 -0.7
VRH pmax pmax
comp=Z,10.0nm,0.5s
VRH MLR MLR
comp=Z,200nm,12.0s

NEW **Newport** 68.05 45 P P 16 29 33.8 +0.6
comp=Z,8.7nm,1.0s,baz=300,slow=3.8,SNR=13
NEW **Newport** 68.05 45 *e*P P 16 29 33.5 +0.3
NEW pmax pmax
comp=Z,13nm,1.0s
NEW **Newport** 68.05 45 *e*P P 16 29 33.5 +0.3
comp=Z,13nm,1.0s
OBN **Obninsk** 68.11 324 *i* P P 16 29 33.4 +0.1
OBN *i* 16 29 43.7
OBN *i* 16 29 59.6
OBN *i* S **S** 16 38 36.5 +4.6
OBN pmax pmax
comp=Z,13nm,1.0s
OBN MLR MLR
comp=Z,223nm,16.0s
YBH **Yreka Blue Hor** 68.24 54 P P 16 29 35.9 +1.4
comp=Z,4.0nm,0.8s,baz=321,slow=3.2,SNR=15
YBH **Yreka Blue Hor** 68.24 54 *e*P P 16 29 36.0 +1.4
YBH pmax pmax
comp=Z,12nm,1.5s
YBH **Yreka Blue Hor** 68.24 54 *e*P P 16 29 36.0 +1.4
comp=Z,12nm,1.5s
LPSR **Galich'ya Gora** 68.43 321 *e*P P 16 29 35.7 +0.3
LPSR pmax pmax
comp=Z,10.0nm,0.7s
LPSR MLR MLR
comp=Z,120nm,11.0s
FIA1 **FINESS Array S** 68.50 333 *e*P P 16 29 35.6 -0.1
comp=Z,67nm,1.9s
FINES **FINESS Array B** 68.50 333 P P 16 29 35.7 0.0
comp=Z,5.4nm,0.6s,baz=39,slow=9.0,SNR=39
FINES LR LR 17 01 42.3
comp=Z,204nm,20.2s,baz=38,slow=38
K05A **Summer Lake** 68.84 52 *e*P P 16 29 40.0 +1.6
comp=Z,20nm,0.8s
WDC **Whiskeytown Da** 68.97 55 *e*P P 16 29 39.6 +0.7
WDC pmax pmax
comp=Z,6.0nm,1.0s
WDC **Whiskeytown Da** 68.97 55 *e*P P 16 29 39.6 +0.7
comp=Z,5.9nm,1.0s
VSR **Storozhevoye** 69.11 319 *e*P P 16 29 39.2 -0.4
VSR pmax pmax
comp=Z,10.0nm,0.5s
VSR MLR MLR
comp=Z,340nm,15.0s
WALA **Waterton Lakes** 69.37 43 *e*P P 16 29 41.9 +0.3
comp=Z,8.8nm,0.8s
MOD **Modoc Plateau** 69.66 52 *e*P P 16 29 44.4 +0.9
comp=Z,5.7nm,0.7s
STKA **Stephens Creek** 69.82 182 P P 16 29 43.5 -0.5
comp=Z,4.8nm,0.6s,baz=344,slow=7.5,SNR=25
STKA **Stephens Creek** 69.82 182 *e*P P 16 29 43.8 -0.3
STKA pmax pmax
comp=Z,1.0nm,0.7s
STKA **Stephens Creek** 69.82 182 *e*P P 16 29 43.8 -0.3
comp=Z,1.0nm,0.7s
JTMT **Jette** 69.92 45 *e*P P 16 29 45.8 +0.8
YBMT **Yellow Bay** 70.00 44 *e*P P 16 29 46.3 +0.9
ORV **Oroville** 70.19 55 *e*P P 16 29 46.8 +0.2
ORV pmax pmax
comp=Z,5.0nm,0.9s
ORV **Oroville** 70.19 55 *e*P P 16 29 46.8 +0.2
comp=Z,4.7nm,0.9s
SWMT **Swartz Lake** 70.21 45 *e*P P 16 29 47.5 +0.8
VSU **Vasula** 70.23 330*c i*P P 16 29 46.7 +0.3
VSU pmax pmax
comp=Z,36nm,1.0s
WVOR **Wild Horse Val** 70.39 51 *e*P P 16 29 48.7 +0.8
WVOR pmax pmax
comp=Z,5.0nm,0.8s
WVOR **Wild Horse Val** 70.39 51 *e*P P 16 29 48.7 +0.8
comp=Z,5.3nm,0.8s
GOF **Gofitskoye** 70.52 312⇑*i*P P 16 29 49.2 +0.7
GOF pmax pmax
comp=Z,44nm,0.8s
MSO **Missoula** 70.64 45 *e*P P 16 29 49.8 +0.5
comp=Z,11nm,1.4s
AFDM **Forest Hills D** 70.87 55 *e*P P 16 29 51.5 +0.7
comp=Z,12nm,1.6s
BBOO **Buckleboo** 71.07 187 *e*P P 16 29 50.9 -0.9
comp=Z,7.6nm,0.7s
ZEI **Tsey** 71.31 310 *e*P P 16 29 52.7 -0.9
ZEI pmax pmax
comp=Z,26nm,0.9s
KIV **Kislovodsk** 71.37 312*c i*P P 16 29 54.3 +0.5
KIV *i* 16 30 13.0
KIV pmax pmax
comp=Z,43nm,1.0s
KIV **Kislovodsk** 71.37 312 *e*P P 16 29 54.2 +0.5
comp=Z,50nm,1.0s
KBZ **Khabaz** 71.37 311 P P 16 29 54.5 +0.9
comp=Z,5.5nm,0.8s,baz=60,slow=4.0,SNR=46
MFID **Camas Ranch** 71.53 49 *e*P P 16 29 55.4 +0.6
comp=Z,4.4nm,0.8s
FFC **Flin Flon** 71.73 34 *e*P P 16 29 55.8 +0.1
FFC pmax pmax
comp=Z,12nm,1.0s
FFC **Flin Flon** 71.73 34 *e*P P 16 29 55.8 +0.1
comp=Z,12nm,1.0s
NEY **Neytrino** 71.75 311⇑*e*P P 16 29 56.9 +0.7
NEY pmax pmax
comp=Z,1.0nm,0.6s
CMB **Columbia Colle** 71.76 56 *e*P P 16 29 56.2 0.0
CMB pmax pmax
comp=Z,4.0nm,0.7s
CMB **Columbia Colle** 71.76 56 *e*P P 16 29 56.2 0.0
comp=Z,4.4nm,0.7s
LRM **Limekiln Ridge** 72.07 45 *e*P P 16 29 58.6 +0.5
FCC **Fort Churchill** 72.12 28 *e*P P 16 29 57.5 -0.3
FCC pmax pmax
comp=Z,16nm,1.6s
FCC **Fort Churchill** 72.12 28 *e*P P 16 29 57.5 -0.3
comp=Z,16nm,1.6s
EGMT **Eagleton** 72.21 42 *e*P P 16 29 59.2 +0.5
comp=Z,7.7nm,0.9s
DLMT **Dillon** 72.26 46 *e*P P 16 29 59.7 +0.6
comp=Z,5.4nm,0.7s
HLID **Hailey** 72.28 48 *e*P P 16 30 00.2 +0.8
comp=Z,3.2nm,0.9s
GNI **Garni** 72.32 307⇑*e*P P 16 30 00.5 +0.9
GNI pmax pmax
comp=Z,101nm,1.2s
GNI **Garni** 72.32 307 *e*P P 16 29 59.5 -0.1
comp=Z,12nm,0.8s
BMN **Battle Mountai** 72.41 52 *e*P P 16 30 01.4 +1.3
BMN pmax pmax
comp=Z,7.0nm,0.9s
BMN **Battle Mountai** 72.41 52 *e*P P 16 30 01.4 +1.3
comp=Z,6.7nm,0.9s
BANOM **Banah** 72.41 289 *i* P P 16 30 00.6 +0.3
SNR=7.2
BANOM **Banah** 72.41 289 P P 16 30 00.9 +0.7
SNR=7.2
BANOM **Banah** 72.41 289 P P 16 30 00.9 +0.7
SNR=7.2
NACGM **Naroch** 72.61 327 *e* P 16 30 01.0 +0.1
BOZ **Bozeman (W)** 72.63 45 *e*P P 16 30 02.3 +0.9
BOZ pmax pmax
comp=Z,5.0nm,0.8s
BOZ **Bozeman (W)** 72.63 45 *e*P P 16 30 02.2 +0.9
comp=Z,4.7nm,0.8s
NV01 **Mina Array Sit** 72.88 54 *e*P P 16 30 03.6 +0.5
NVAR **Mina Array Bea** 72.88 54 P P 16 30 04.1 +1.0
comp=Z,6.7nm,0.8s,baz=284,slow=6.2,SNR=42
NVAR LR LR 16 55 59.3
comp=Z,39nm,21.9s,baz=272,slow=31
NV11 **Mina Array Sit** 72.98 54 *e*P P 16 30 03.9 +0.3
comp=Z,4.3nm,0.9s
UOSS **Minazif** 73.04 289 *e*P P 16 30 03.8 -0.1
comp=Z,1.4nm,1.0s
HATD **Hatta, Dubai** 73.16 288 *i* P P 16 30 05.0 +0.3
SNR=8.3
HATD **Hatta, Dubai** 73.16 288 P P 16 30 05.3 +0.6
SNR=8.3
HATD **Hatta, Dubai** 73.16 288 P P 16 30 05.3 +0.6
SNR=8.3
ASHO **Ashiyiah** 73.29 288 *i* P P 16 30 05.6 +0.1
SNR=7.1
ASHO **Ashiyiah** 73.29 288 P P 16 30 06.0 +0.5
SNR=7.1
ASHO **Ashiyiah** 73.29 288 P P 16 30 06.0 +0.5
SNR=7.1
SOC **Sochi** 73.32 313 *e*P P 16 30 13.0 +7.7
SOC *e* 16 32 47.7
SOC pmax pmax
comp=Z,15nm,0.6s
SOC MLR MLR

comp=Z,169nm,15.0s
NC405 **NORSAR Array S** 73.48 338 *e*P P 16 30 06.3 +0.3
FAQ **Al Faqa, Dubai** 73.61 289 P P 16 30 07.4 +0.1
NC204 **NORSAR Array S** 73.63 338 *e*P P 16 30 07.2 +0.3
NB2 **NORSAR Subarra** 73.69 338 P P 16 30 06.9 -0.3
comp=Z,6.8nm,0.9s,baz=38,slow=5.9
NOA **NORSAR Array B** 73.69 338 P P 16 30 07.2 0.0
comp=Z,3.8nm,0.8s,baz=39,slow=5.9,SNR=12
NOA LR LR 17 07 51.6
comp=Z,183nm,18.4s,baz=45,slow=40
NBO02 **NORSAR Array S** 73.78 338 *e*P P 16 30 07.8 +0.1
NBO00 **NORSAR Array S** 73.82 338 *e*P P 16 30 08.4 +0.5
ANN **Anapa** 73.88 315 *e*P P 16 30 11.1 +2.6
ANN pmax pmax
comp=Z,54nm,1.9s
H17A **Grant Village** 73.99 46 *e*P P 16 30 11.7 +2.1
comp=Z,5.3nm,0.7s
IMW **Indian Meadow** 74.09 46 *e*P P 16 30 09.0 -1.2
FLWY **Flagg Ranch** 74.11 46 *e*P P 16 30 11.0 +0.8
comp=Z,1.9nm,1.3s
RLMT **Red Lodge** 74.27 45 *e*P P 16 30 12.5 +1.3
AKASG **Malin Array Be** 74.34 323 P P 16 30 10.4 -0.7
comp=Z,6.0nm,0.6s,baz=46,slow=6.0,SNR=26
AKASG LR LR 17 05 05.5
comp=Z,105nm,20.1s,baz=30,slow=38
AKASG **Malin Array Be** 74.34 323*ce*P P 16 30 11.1 0.0
AKASG pmax pmax
comp=Z,6.0nm,0.6s
KIEV **Kiev** 74.35 323*c i*P P 16 30 10.7 -0.5
KIEV pmax pmax
comp=Z,7.0nm,0.9s
KIEV **Kiev** 74.35 323 *e*P P 16 30 10.8 -0.4
comp=Z,14nm,1.1s
AK11 **Malin Array Si** 74.38 323 *e*P P 16 30 10.9 -0.5
DAC **Darwin (Calif)** 74.60 56 *e*P P 16 30 13.5 +0.3
DAC pmax pmax
comp=Z,22nm,0.6s
DAC **Darwin (Calif)** 74.60 56 *e*P P 16 30 13.5 +0.3
comp=Z,22nm,0.6s
R11A **Troy Canyon, C** 74.66 53 *e*P P 16 30 13.5 +0.1
comp=Z,5.9nm,1.0s
AHID **Auburn Hatcher** 74.69 47 *e*P P 16 30 14.4 +0.7
comp=Z,29nm,1.4s
TPNV **Topopah Spring** 75.07 55 *e*P P 16 30 16.1 +0.3
TPNV pmax pmax
comp=Z,9.0nm,1.0s
TPNV **Topopah Spring** 75.07 55 *e*P P 16 30 16.1 +0.3
comp=Z,9.3nm,1.0s
BW06 **Boulder Array** 75.58 47 *e*P P 16 30 19.1 +0.3
comp=Z,4.4nm,0.7s
PD31 **Pinedale Array** 75.58 47 *e*P P 16 30 19.1 +0.3
PDAR **Pinedale Array** 75.58 47 P P 16 30 19.1 +0.3
comp=Z,3.6nm,0.6s,baz=248,slow=1.5,SNR=24
PDAR LR LR 17 01 41.8
comp=Z,48nm,19.6s,baz=312,slow=34
GSC **Goldstone, Bar** 75.69 56 *e*P P 16 30 20.4 +1.0
GSC pmax pmax
comp=Z,5.0nm,0.9s
GSC **Goldstone, Bar** 75.69 56 *e*P P 16 30 20.4 +1.0
comp=Z,5.2nm,0.9s
SORM **Soroca** 76.50 321⇑*i*P P 16 30 23.5 0.0
SORM **Soroca** 76.50 321 ⇑P P 16 30 23.5 0.0
LCMT **Little Creek M** 76.94 53 *e*P P 16 30 27.6 +1.1
comp=Z,6.8nm,0.9s
MTPU **Mount Pierson** 76.97 52 *e*P P 16 30 28.0 +1.1
comp=Z,6.4nm,0.8s
KNB **Kanab** 77.20 53 *e*P P 16 30 29.3 +1.3
KNB pmax pmax
comp=Z,13nm,1.2s
KNB **Kanab** 77.20 53 *e*P P 16 30 29.3 +1.3
comp=Z,13nm,1.2s
BEL **Belsk** 77.32 328 *e*P P 16 30 29.6 +1.5
BEL **Belsk** 77.32 328 *e*P P 16 30 29.7 +1.6
LVV **L'vov** 77.36 325 *e*P P 16 30 28.2 -0.2
ULM **Lac du Bonnet** 77.52 34 P P 16 30 29.0 -0.3
comp=Z,5.2nm,0.8s,baz=314,slow=6.5,SNR=9.0
ULM **Lac du Bonnet** 77.52 34 *e*P P 16 30 28.6 -0.7
ULM pmax pmax
comp=Z,7.0nm,0.9s
ULM **Lac du Bonnet** 77.52 34 *e*P P 16 30 28.6 -0.7
comp=Z,7.1nm,0.9s
RSSD **Black Hills** 77.77 43 *e*P P 16 30 31.0 -0.1
RSSD pmax pmax
comp=Z,6.0nm,0.8s
RSSD **Black Hills** 77.77 43 *e*P P 16 30 31.0 -0.1
comp=Z,5.5nm,0.8s
KWP **Kalwaria Pacla** 78.09 325 *e*P P 16 30 33.8 +1.3
KWP **Kalwaria Pacla** 78.09 325⇑*i*P P 16 30 34.0 +1.5
KWP **Kalwaria Pacla** 78.09 325 ⇑P P 16 30 34.0 +1.5
BUR08 **Bucovina Ar. S** 78.36 323 *e*P P 16 30 34.1 0.0
BURAR **Bucovina Array** 78.38 323⇓*i*P P 16 30 34.0 -0.2
BURAR **Bucovina Array** 78.38 323 ⇓P P 16 30 34.0 -0.2
TESR **Tescani** 78.45 321⇓*i*P P 16 30 33.6 -1.0
PV09 **Paradox Valley** 78.54 50 *e*P P 16 30 36.4 +0.9
CFR **Carcaliu** 78.63 319⇑*i*P P 16 30 35.5 +0.1
CFR **Carcaliu** 78.63 319 ⇑P P 16 30 35.6 +0.1
PV10 **Paradox Valley** 78.67 50 *e*P P 16 30 37.4 +1.1
PV04 **Paradox Valley** 78.75 50 *e*P P 16 30 37.6 +1.0
KOLS **Kolonicke sedl** 78.80 325 *e*P P 16 30 36.5 +0.1
PV05 **Paradox Valley** 78.83 50 *e*P P 16 30 38.0 +0.9
VRI **Vrincioaia** 78.86 321⇑*i*P P 16 30 37.4 +0.5
VRI **Vrincioaia** 78.86 321 ⇑P P 16 30 37.4 +0.5
STHS **Stebnicka Huta** 78.91 326 *e*P P 16 30 38.6 +1.6
OJC **Ojcow** 78.94 327 *e*P P 16 30 38.3 +1.1
OJC **Ojcow** 78.94 327 *e*P P 16 30 38.3 +1.1
OJC **Ojcow** 78.94 327 *e*P P 16 30 37.6 +0.5
comp=Z,16nm,1.0s
AGMN **Agassiz Nation** 78.94 36 *e*P P 16 30 36.6 -0.6
comp=Z,5.3nm,0.7s
Y14A **Wickenburg** 79.00 55 *e*P P 16 30 38.4 +0.5
comp=Z,21nm,0.9s
UZH **Uzhgorod** 79.01 325 *e*P P 16 30 37.4 -0.1
UZH *e* 16 30 52.4
WUAZ **Wupatki** 79.06 53 *e*P P 16 30 38.8 +0.5
comp=Z,8.2nm,0.9s
PV01 **Paradox Valley** 79.11 50 *e*P P 16 30 39.2 +0.6
CRVS **Cervenica-Dubn** 79.19 325 *e*P P 16 30 42.7 +4.1
BR131 **Keskin Array S** 79.28 312 *e*P P 16 30 40.0 +0.6
BRTR **Keskin Array B** 79.28 312 P P 16 30 39.7 +0.3
comp=Z,2.4nm,0.9s,baz=92,slow=3.7,SNR=14
BRTR LR LR 17 11 11.5
comp=Z,76nm,18.7s,baz=45,slow=40
BRTR **Keskin Array B** 79.28 312*ce*P P 16 30 40.0 +0.6
BRTR pmax pmax
comp=Z,2.0nm,0.9s
NIE **Niedzica** 79.32 326 *e*P P 16 30 40.3 +1.0
NIE **Niedzica** 79.32 326 *e*P P 16 30 40.4 +1.1
SMCO **Snowmass** 79.38 48 *e*P P 16 30 40.9 +0.6
comp=Z,5.6nm,1.2s
MLR **Muntele Rosu** 79.52 321⇓*i*P P 16 30 36.9 -3.7
MLR **Muntele Rosu** 79.52 321 ⇓P P 16 30 36.9 -3.7
MLR **Muntele Rosu** 79.52 321 *e*P P 16 30 40.7 +0.1
comp=Z,8.6nm,1.1s
ANTO **Ankara** 79.68 313 *e*P P 16 30 43.1 +1.6
ANTO pmax pmax
comp=Z,1.0nm,0.8s
ANTO **Ankara** 79.68 313 *e*P P 16 30 43.1 +1.6
comp=Z,0.8nm,0.8s
BR231 **Keskin MP Arra** 79.71 313 *e*P P 16 30 40.1 -1.6
MVCO **Mesa Verde** 79.75 51 *e*P P 16 30 42.9 +0.7
comp=Z,11nm,1.3s
ISCO **Idaho Springs** 79.76 47 *e*P P 16 30 43.0 +0.8
ISCO pmax pmax
comp=Z,5.0nm,1.0s
ISCO **Idaho Springs** 79.76 47 *e*P P 16 30 43.0 +0.8
comp=Z,4.8nm,1.0s
LANS **Liptovska Anna** 79.88 326 *e*P P 16 30 43.0 +0.6
KSP **Ksiaz** 79.92 329 *e*P P 16 30 43.6 +1.1
KSP **Ksiaz** 79.92 329 *e*P P 16 30 43.7 +1.2
VOIR 80.00 321⇑*i*P P 16 30 44.4 +1.3
VOIR 80.00 321 ⇑P P 16 30 44.4 +1.3
DRGR 80.16 323⇑*i*P P 16 30 44.9 +1.0
DRGR 80.16 323 ⇑P P 16 30 44.9 +1.0
MORC **Moravsky Berou** 80.23 328⇑*i*P P 16 30 45.1 +0.8
MORC **Moravsky Berou** 80.23 328 *e*P P 16 30 45.1 +0.8
MORC pmax pmax
comp=Z,37nm,1.0s
MORC **Moravsky Berou** 80.23 328 *e*P P 16 30 45.1 +0.8
comp=Z,37nm,1.0s
ARR **Arges** 80.26 321⇑*i*P P 16 30 46.7 +2.2
DPC **Dobruska-Polom** 80.29 329 *e*P P 16 30 45.9 +1.3
DPC *ex* x 16 31 00.7
DPC **Dobruska-Polom** 80.29 329 *e*P P 16 30 45.9 +1.3
DPC *e* 16 31 00.7

UPC	**Upice**	**80.30**	**329**	AMS	AMS	17 10 50.0	
	comp=Z,200nm,17.9s						
S22A	**4UR Ranch, Cre**	**80.41**	**49**	*e*P	**P**	**16 30 46.9**	**+1.2**
	comp=Z,7.1nm,1.1s						
PSZ	**Piszkesteto**	**80.62**	**325**	⇑*i*P	**P**	**16 30 47.5**	**+1.1**
PSZ	**Piszkesteto**	**80.62**	**325**	⇑P	**P**	**16 30 47.5**	**+1.1**
PSZ	**Piszkesteto**	**80.62**	**325**	*e*P	**P**	**16 30 47.6**	**+1.1**
	comp=Z,12nm,1.0s						
VYHS	**Vyhne**	**80.65**	**326**	*e*P	**P**	**16 30 47.0**	**+0.5**
BRG	**Berggiesshubel**	**80.83**	**330**	*e*P	**P**	**16 30 48.4**	**+1.0**
	comp=Z,3.4nm,1.3s						
CLL	**Collm**	**80.85**	**331**	*e*P	**P**	**16 30 47.0**	**-0.4**
	comp=Z,10.0nm,1.3s						
CLL				*i*		16 30 53.8	
CLL				*i*		16 31 00.0	
CLL				*i*		16 31 06.6	
CLL				*e*PP	**PP**	**16 33 48.0**	**-3.1**
CLL				*e*		16 34 01.0	
CLL				LmH		17 04 00.0	
	comp=N,200nm,18.3s						
CLL				LmH		17 04 00.0	
	comp=E,300nm,19.3s						
CLL				LmV		17 11 00.0	
	comp=Z,200nm,18.0s						
CLL	**Collm**	**80.85**	**331**	*e*P	**P**	**16 30 47.0**	**-0.4**
CLL				*i*		16 30 53.8	
CLL				*i*		16 31 00.0	
CLL				pmax	pmax		
	comp=Z,10.0nm,1.3s						
CLL				MLR	MLR		
	comp=Z,200nm,18.0s						
CLL	**Collm**	**80.85**	**331**	*e*P	**P**	**16 30 47.5**	**+0.1**
	comp=Z,7.8nm,0.9s						
PVCC	**Panska Ves**	**80.86**	**330**	AMS	AMS	17 11 40.0	
	comp=Z,300nm,14.4s						
VRAC	**Vranov**	**80.98**	**328**	⇓*i*P	**P**	**16 30 49.6**	**+1.3**
VRAC	**Vranov**	**80.98**	**328**	⇓P	**P**	**16 30 49.6**	**+1.3**
GOPC	**GO Pecny, Ondr**	**81.25**	**329**	*e*P	**P**	**16 30 51.9**	**+2.2**
GOPC				AMS	AMS	17 11 30.0	
	comp=Z,300nm,16.8s						
GOPC	**GO Pecny, Ondr**	**81.25**	**329**	*e*P	**P**	**16 30 51.9**	**+2.2**
GOPC				MLR	MLR		
	comp=Z,300nm,16.8s						
PRU	**Pruhonice**	**81.29**	**330**	*e*P	**P**	**16 30 50.5**	**+0.6**
PRU				*ex*	x	16 31 03.0	
PRU				AMS	AMS	17 11 30.0	
	comp=Z,300nm,17.4s						
PRU	**Pruhonice**	**81.29**	**330**	*e*P	**P**	**16 30 50.5**	**+0.6**
PRU				*e*		16 31 03.0	
PRU				MLR	MLR		
	comp=Z,300nm,17.4s						
TUC	**Tucson**	**81.47**	**56**	*e*P	**P**	**16 30 50.6**	**-0.7**
TUC				pmax	pmax		
	comp=Z,3.0nm,1.0s						
TUC	**Tucson**	**81.47**	**56**	*e*P	**P**	**16 30 50.6**	**-0.7**
	comp=Z,2.6nm,1.0s						
BZS	**Buzias**	**81.53**	**323**	⇑*i*P	**P**	**16 30 50.7**	**-0.5**
BZS	**Buzias**	**81.53**	**323**	⇑P	**P**	**16 30 50.7**	**-0.5**
ECSD	**EROS Data Cent**	**81.88**	**39**	*e*P	**P**	**16 30 52.5**	**-0.6**
	comp=Z,5.5nm,0.8s						
NKC	**Novy Kostel**	**81.92**	**331**	*e*P	**P**	**16 30 55.1**	**+1.9**
NKC	**Novy Kostel**	**81.92**	**331**	*e*P	**P**	**16 30 55.1**	**+1.9**
URZ	**Urewera**	**82.19**	**154**	P	**P**	**16 30 53.0**	**-1.4**
	comp=Z,4.0nm,0.6s,baz=172,slow=18,SNR=3.5						
T25A	**Trinidad**	**82.25**	**48**	*e*P	**P**	**16 30 56.1**	**+0.7**
	comp=Z,7.6nm,0.9s						
KHC	**Kasperske Hory**	**82.36**	**329**	*e*P	**P**	**16 30 56.3**	**+0.8**
KHC				AMS	AMS	17 12 10.0	
	comp=Z,400nm,18.5s						
KHC	**Kasperske Hory**	**82.36**	**329**	*e*P	**P**	**16 30 55.9**	**+0.3**
KHC				pmax	pmax		
	comp=Z,7.0nm,1.6s						
KHC	**Kasperske Hory**	**82.36**	**329**	*e*P	**P**	**16 30 55.9**	**+0.3**
	comp=Z,6.5nm,1.6s						
CONA	**Conrad Observa**	**82.36**	**328**	*i* P	**P**	**16 30 56.6**	**+0.9**
	comp=Z,5.9nm,1.1s						
PKSM	**Moragy**	**82.47**	**325**	⇑*i*P	**P**	**16 30 55.8**	**-0.3**
PKSM	**Moragy**	**82.47**	**325**	⇑P	**P**	**16 30 55.8**	**-0.3**
ANMO	**Albuquerque**	**82.48**	**51**	⇑*e*P	**P**	**16 30 58.1**	**+1.4**
ANMO				pmax	pmax		
	comp=Z,10.0nm,1.7s						
ANMO	**Albuquerque**	**82.48**	**51**	*e*P	**P**	**16 30 57.5**	**+0.8**
	comp=Z,7.7nm,1.2s						
GEC2	**GERESS Array S**	**82.53**	**329**	*e*P	**P**	**16 30 57.0**	**+0.5**
GEC2				pmax	pmax		
	comp=Z,5.0nm,1.3s						
GEC2	**GERESS Array S**	**82.53**	**329**	*e*P	**P**	**16 30 57.0**	**+0.5**
	comp=Z,5.2nm,1.3s						
GERES	**GERESS Array B**	**82.53**	**329**	P	**P**	**16 30 56.6**	**0.0**
	comp=Z,0.8nm,0.7s,baz=57,slow=4.9,SNR=6.8						
GERES				LR	LR	17 10 53.2	
	comp=Z,244nm,18.1s,baz=38,slow=38						
GEA0	**GERESS Array S**	**82.54**	**329**	*e*P	**P**	**16 30 56.5**	**0.0**
319A	**Douglas**	**83.05**	**55**	*e*P	**P**	**16 31 00.2**	**+0.6**
	comp=Z,10nm,0.9s						
MOA	**Molln**	**83.09**	**328**	*i* P	**P**	**16 31 00.2**	**+0.8**
	comp=Z,5.1nm,1.2s						
PMOR	**Pomariorio Ree**	**83.14**	**115**	*e*T	T	18 02 30.4	
	comp=Z,1.8nm,0.2s						
121A	**Cookes Peak, D**	**83.25**	**54**	*e*P	**P**	**16 31 01.5**	**+0.8**
	comp=Z,4.9nm,0.8s						
SCHQ	**Schefferville**	**83.66**	**17**	LR	LR	17 13 27.1	
	comp=Z,44nm,19.0s,baz=312,slow=39						
PERS	**Pernice**	**83.69**	**327**	*i* P	**P**	**16 31 02.7**	**+0.2**
PPT	**Papeete**	**83.69**	**118**	LR	LR	17 00 36.1	
	comp=Z,72nm,21.6s,baz=348,slow=30						
SOKA	**Soboth**	**83.69**	**327**	*i* P	**P**	**16 31 03.0**	**+0.4**
	comp=Z,4.6nm,0.7s,SNR=11						
PPT2	**Papeete2**	**83.71**	**118**	*e*LR	LR	16 56 45.3	
	comp=Z,135nm,23.0s						
VISS	**Visnje**	**84.46**	**327**	*i* P	**P**	**16 31 06.0**	**-0.4**
BOJS	**Bojanci**	**84.52**	**326**	*i* P	**P**	**16 31 06.7**	**0.0**
WATA	**Walderalm**	**84.60**	**329**	*i* PcP	**P**	**16 31 09.4**	**+2.1**
	comp=Z,0.1nm,0.3s						
ABTA	**Abfaltersbach**	**84.69**	**329**	*i* PcP	**P**	**16 31 09.1**	**+1.4**
	comp=Z,2.9nm,1.0s						
JAVS	**Javornik**	**84.72**	**327**	*i* P	**P**	**16 31 06.9**	**-0.9**
MOTA	**Moosalm**	**84.78**	**330**	*i* PcP	**P**	**16 31 09.9**	**+1.8**
	comp=Z,4.8nm,0.8s						
RETA	**Reutte**	**84.80**	**330**	*i* PcP	**P**	**16 31 08.7**	**+0.5**
	comp=Z,8.5nm,0.9s						
BFO	**Black Forest**	**85.03**	**332**	*i* P	**P**	**16 31 10.8**	**+1.6**
BFO	**Black Forest**	**85.03**	**332**	*e*P	**P**	**16 31 09.8**	**+0.5**
	comp=Z,11nm,1.1s						
FETA	**Feichten**	**85.19**	**330**	*i* PcP	**P**	**16 31 10.4**	**+0.2**
	comp=Z,7.2nm,1.0s						
DAVA	**Damuels**	**85.30**	**330**	*i* PcP	**P**	**16 31 11.1**	**+0.3**
	comp=Z,13nm,0.8s						
MNTX	**Cornudas Mount**	**85.33**	**53**	*e*P	**P**	**16 31 11.2**	**+0.2**
	comp=Z,2.3nm,0.8s						
AMTX	**Amarillo**	**85.40**	**48**	*e*P	**P**	**16 31 11.6**	**+0.2**
	comp=Z,9.2nm,0.9s						
FUORN	**Ofenpass-Fuorn**	**85.70**	**330**	*e*P	**P**	**16 31 13.2**	**+0.3**
	comp=Z,12nm,0.8s						
TUE	**Stuetta**	**86.18**	**330**	*e*P	**P**	**16 31 15.9**	**+0.7**
	comp=Z,5.4nm,0.9s						
WMOK	**Wichita Mounta**	**87.19**	**47**	*e*P	**P**	**16 31 20.1**	**-0.1**
WMOK				pmax	pmax		
	comp=Z,7.0nm,1.3s						
WMOK	**Wichita Mounta**	**87.19**	**47**	*e*P	**P**	**16 31 20.1**	**-0.1**
	comp=Z,6.9nm,1.3s						
TX31	**Lajitas Ar. Si**	**88.02**	**54**	*e*P	**P**	**16 31 24.4**	**+0.1**
TXAR	**Lajitas Array**	**88.02**	**54**	P	**P**	**16 31 24.2**	**-0.1**
	comp=Z,1.2nm,0.6s,baz=305,slow=3.2,SNR=24						
TXAR				LR	LR	17 03 59.6	
	comp=Z,35nm,21.9s,baz=0.0,slow=31						
MIAR	**Mount Ida**	**90.25**	**44**	*e*P	**P**	**16 31 34.6**	**0.0**
MIAR				pmax	pmax		
	comp=Z,5.0nm,0.8s						
MIAR	**Mount Ida**	**90.25**	**44**	*e*P	**P**	**16 31 34.6**	**0.0**
	comp=Z,4.9nm,0.8s						
WHAR	**Wooly Hollow**	**90.38**	**43**	*e*P	**P**	**16 31 34.6**	**-0.6**
	comp=Z,21nm,1.5s						
KEST	**Kesra**	**95.04**	**324**	LR	LR	17 19 15.9	
	comp=Z,127nm,18.2s,baz=254,slow=38						
ESDC	**Sonseca Array**	**96.90**	**335**	LR	LR	17 23 23.8	
	comp=Z,91nm,18.3s,baz=0.0,slow=40						
TORD	**Torodi Ar. Bea**	**117.62**	**317**	PKP	**PKPdf**	**16 37 19.3**	**-1.0**
	comp=Z,0.3nm,0.4s,baz=20,slow=1.3,SNR=3.7						
MAW	**Mawson**	**121.40**	**206**	PKP	**PKPdf**	**16 37 26.2**	**+0.4**
	comp=Z,1.6nm,0.7s,baz=208,slow=1.9,SNR=5.5						
QSPA	**South Pole Qui**	**128.02**	**180**	*e*PKPdf	**PKPdf**	**16 37 38.1**	**-0.6**
SNAA	**Sanae**	**142.43**	**197**	PKP	PKPdf	16 38 00.2	-5.2
VNA2	**Neumayer--Watz**	**143.98**	**196**	PKP	PKPab	16 38 05.6	+0.1
	baz=130,slow=4.1						
VNA3	**Neumayer Olymp**	**144.20**	**194**	PKP	**PKPab**	**16 38 06.0**	**-0.3**
VNA1	**Neumayer--Stat**	**144.38**	**196**	PKP	**PKPab**	**16 38 07.0**	**+0.1**
LPAZ	**La Paz**	**144.60**	**61**	PKP	**PKPab**	**16 38 10.0**	**0.0**
	comp=Z,0.9nm,0.5s,baz=339,slow=0.6,SNR=2.9						
PB11	**IPOC Station P**	**145.84**	**67**	*e*PKPdf	**PKPdf**	**16 38 13.2**	**+0.1**

*ISCJB **24** 16:21:51.9±0.5, 24°.33N±0°.02×122°.12E±0°.02, h7km±3km, Error ellipse: s-maj=3.2km s-min=2.3km az=160.1*
*JMA **24** 16:21:52.6, 24°.28N×122°.03E, h40km±2km, M2.1*
*TAP **24** 16:21:52.8, 24°.38N×122°.02E, h27km, ML3.0, C*

ISC 24 16:21:51.5±1.1, 24°.29N±0°.02×122°.11E±0°.02, h11km±9km, n50, σ0s62/90, Taiwan region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ENA	**Nanau**	**0.36**	**292**	P	**Pb**	**16 21 59.6**	**-0.4**
	baz=287						
ENA				S	**Sg**	**16 22 04.4**	**+0.8**
	baz=287						
TWC	**Suao**	**0.40**	**323**	P	**Pg**	**16 21 59.8**	**+0.5**
	baz=333						
TWC				S	**Sg**	**16 22 04.3**	**-0.2**
	baz=333						
TWD	**Chiawan**	**0.52**	**246**	P	**Pb**	**16 22 03.2**	**+0.6**
	baz=233						
TWD				S	**Sb**	**16 22 11.9**	**+1.8**
	baz=233						
HWA	**Hwalien**	**0.56**	**236**	P	**Pn**	**16 22 04.6**	**-0.9**
	baz=234						
EGS		**0.57**	**343**	P	**Pb**	**16 22 03.3**	**-0.3**
	baz=351						
EGS				S	**Sg**	**16 22 10.5**	**+0.3**
	baz=351						
ILA	**Ilan**	**0.58**	**325**	*e*P	**Pb**	**16 22 04.0**	**+0.4**
	baz=328						
ILA				*e*S	**Sg**	**16 22 10.2**	**-0.1**
	baz=328						
TWE	**Neicheng**	**0.59**	**317**	*e*P	**Pg**	**16 22 02.9**	**0.0**
	baz=318						
TWE				*e*S	**Sg**	**16 22 09.9**	**-0.8**
	baz=318						
ENTT	**Nioudou**	**0.61**	**305**	*e*P	**Pg**	**16 22 03.3**	**0.0**
	baz=303						
ENTT				*e*S	**Sg**	**16 22 10.9**	**-0.3**
	baz=303						
NNS	**Nan Shan**	**0.69**	**282**	*e*P	**Pb**	**16 22 05.3**	**-0.3**
	baz=281						
NNS				S	**Sg**	**16 22 13.8**	**-0.2**
	baz=281						
TWB1	**Santiao Chiao**	**0.72**	**351**	*e*P	**Pb**	**16 22 05.8**	**-0.3**
	baz=351						
TWB1				*e*S	**Sg**	**16 22 14.8**	**-0.1**
	baz=351						
JYNG	**Yonagunijimaku**	**0.78**	**78**	P	**Pn**	**16 22 08.2**	**-0.2**
JYNG				S	**Sn**	**16 22 20.1**	**0.0**
ESL	**Shilin**	**0.78**	**233**	P	**Pb**	**16 22 07.6**	**+0.4**
	baz=223						
ESL				*e*S	**Sn**	**16 22 19.3**	**-0.9**
	baz=223						
WHF	**Hehuan Shan**	**0.79**	**259**	P	**Pb**	**16 22 07.3**	**-0.2**
	baz=251						
WHF				*e*S	**Sb**	**16 22 18.4**	**0.0**
	baz=251						
NWF	**Wu-fen Shan**	**0.83**	**339**	P	**Pb**	**16 22 07.9**	**-0.1**
	baz=337						
NWF				S	**Sg**	**16 22 18.5**	**+0.1**
	baz=337						
YOJ	**Yonaguni jima**	**0.84**	**78**	P	**Pn**	**16 22 09.1**	**-0.1**
YOJ				S	**Sn**	**16 22 21.6**	**0.0**
TWT	**Tachien**	**0.85**	**268**	*e*P	**Pn**	**16 22 09.4**	**-0.3**
	baz=261						
TWT				S	**Sb**	**16 22 20.2**	**+0.2**
	baz=261						
TWS1	**Kuangyinshan**	**1.02**	**322**	*e*P	**Pg**	**16 22 10.7**	**-0.5**
	baz=334						
TWS1				*e*S	**Sg**	**16 22 24.0**	**-0.5**
	baz=334						
EHY	**Hungye**	**1.07**	**223**	*e*P	**Pg**	**16 22 11.8**	**-0.2**
	baz=215						
EHY				*e*S	**Sn**	**16 22 27.2**	**-0.1**
	baz=215						
NSTT	**Nanjuang**	**1.07**	**289**	P	**Pg**	**16 22 11.8**	**-0.3**
	baz=286						
NSTT				*e*S	**Sg**	**16 22 25.3**	**-0.6**
	baz=286						
NCU	**National Centr**	**1.08**	**309**	*e*S	**Sb**	**16 22 26.9**	**+0.6**
	baz=309						
TWY	**Chenhua**	**1.08**	**335**	*e*P	**Pg**	**16 22 12.2**	**-0.1**
	baz=338						
TWY				*e*S	**Sg**	**16 22 25.4**	**-1.1**
	baz=338						
HSN	**Hsinchu**	**1.16**	**296**	*e*S	**Sb**	**16 22 28.3**	**-0.2**
	baz=297						
SMLT	**Sun Moon Lake**	**1.18**	**250**	*e*P	**Pb**	**16 22 14.0**	**0.0**
	baz=233						
SMLT				*e*S	**Sb**	**16 22 29.9**	**+0.5**
	baz=233						
TWF1	**Yuli**	**1.20**	**219**	*e*P	**Pb**	**16 22 13.1**	**-1.2**
	baz=227						
TWF1				*e*S	**Sn**	**16 22 30.8**	**+0.3**
	baz=227						
TYC	**Yuchr**	**1.21**	**252**	*e*P	**Pb**	**16 22 14.0**	**-0.4**
	baz=234						
TYC				*e*S	**Sg**	**16 22 30.5**	**0.0**
	baz=234						
TWQ1	**Liyutan**	**1.22**	**273**	P	**Pg**	**16 22 15.1**	**+0.1**
	baz=269						
TWQ1				S	**Sb**	**16 22 30.5**	**+0.1**
	baz=269						
NSY	**Sanyi**	**1.24**	**276**	*e*S	**Sb**	**16 22 32.0**	**+0.4**
	baz=272						
TCU	**Taichung**	**1.32**	**264**	*e*S	**Sg**	**16 22 35.8**	**+1.8**
	baz=259						
YUS	**Yu-Shan**	**1.33**	**233**	*e*P	**Pn**	**16 22 16.5**	**0.0**
	baz=213						
YUS				*e*S	**Sb**	**16 22 33.8**	**-0.2**
	baz=213						
CHKT	**Chengkung**	**1.37**	**210**	*e*P	**Pb**	**16 22 17.2**	**0.0**
	baz=185						
CHKT				*e*S	**Sb**	**16 22 33.8**	**-0.9**
	baz=185						
ALS	**Alishan**	**1.43**	**237**	*e*P	**Pg**	**16 22 18.9**	**-0.1**
	baz=219						
ALS				*e*S	**Sg**	**16 22 38.3**	**+0.8**
	baz=219						
IRIF	**Iriomote-Funau**	**1.48**	**88**	P	**Pn**	**16 22 18.7**	**+0.7**
IRIF				S	**Sn**	**16 22 37.8**	**+0.4**
CHN5	**Tsauling**	**1.48**	**242**	*e*P	**Pb**	**16 22 19.3**	**+0.2**
	baz=222						
CHN5				*e*S	**Sg**	**16 22 39.6**	**+0.4**
	baz=222						
ELDTW	**Lidau**	**1.49**	**223**	*e*P	**Pn**	**16 22 17.8**	**-0.5**
	baz=204						
ELDTW				*e*S	**Sn**	**16 22 37.9**	**0.0**
	baz=204						
WGK	**Gukeng**	**1.54**	**247**	*e*S	**Sg**	**16 22 42.3**	**+1.2**
	baz=241						
STYT	**Tauyuan**	**1.68**	**228**	*e*P	**Pn**	**16 22 21.8**	**+0.9**
	baz=222						
STYT				*e*S	**Sb**	**16 22 43.8**	**+0.2**
	baz=222						
CHN4	**Tsaushan**	**1.68**	**236**	*e*P	**Pb**	**16 22 23.1**	**+0.7**
	baz=231						
CHN4				*e*S	**Sg**	**16 22 45.2**	**-0.3**
	baz=231						
CHN2	**Minshiung**	**1.68**	**244**	*e*S	**Sg**	**16 22 46.6**	**+1.1**
	baz=225						
WTP	**Ta-pu**	**1.72**	**233**	*e*P	**Pb**	**16 22 23.4**	**+0.2**
	baz=218						
WTP				*e*S	**Sg**	**16 22 46.4**	**-0.5**
	baz=218						
WTCT	**Ta-ch'eng**	**1.73**	**256**	*e*S	**Sb**	**16 22 45.5**	**+0.6**
	baz=249						
JKRS	**Kuro-shima**	**1.73**	**91**	P	**Pb**	**16 22 22.8**	**-0.5**
JKRS				S	**Sn**	**16 22 44.7**	**+1.0**
CHY	**Chiayi**	**1.74**	**243**	*e*S	**Sb**	**16 22 46.3**	**+1.1**
	baz=225						
TWK	**Hsinying**	**1.81**	**236**	*e*P	**Pb**	**16 22 24.0**	**-0.6**
	baz=217						
TWK				*e*S	**Sg**	**16 22 48.9**	**-0.7**
	baz=217						
CHN1	**Nanshi**	**1.82**	**233**	*e*P	**Pb**	**16 22 24.4**	**-0.5**
	baz=227						
CHN1				*e*S	**Sb**	**16 22 48.5**	**+0.7**
	baz=227						
WSF	**Szhu**	**1.85**	**250**	*e*S	**Sb**	**16 22 48.7**	**+0.2**
	baz=243						
SGST	**Jiashian**	**1.85**	**230**	*e*P	**Pb**	**16 22 25.2**	**-0.1**
	baz=211						
SGST				*e*S	**Sg**	**16 22 49.8**	**-1.1**
	baz=211						
JIJ	**Ishigaki jima**	**1.85**	**87**	P	**Pn**	**16 22 24.0**	**+0.8**
JIJ				S	**Sn**	**16 22 46.3**	**-0.4**
ECL	**Taimali**	**2.00**	**212**	*e*P	**Pn**	**16 22 25.4**	**+0.2**
	baz=207						
ECL				*e*S	**Sn**	**16 22 48.6**	**-1.6**
	baz=207						
JISG	**Ishigakijimahi**	**2.02**	**81**	P	**Pn**	**16 22 25.9**	**+0.3**
JISG				*e*S	**Sn**	**16 22 50.6**	**-0.3**
SSD	**Sandimen**	**2.05**	**222**	*e*P	**Pb**	**16 22 27.8**	**-1.1**
	baz=199						
SSD				*e*S	**Sb**	**16 22 54.7**	**+0.3**
	baz=199						

*CSEM **24** 16:28:02.0, 42°.85N×13°.04E, h11km, MD1.5/4*

ROM 24 16:28:02.0±0.1, 42°.85N×13°.04E, h11km, Md1.5/4, MI0.8/3, Error ellipse: s-maj=1.7km s-min=0.6km az=85.0, Central Italy

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
NRCA	**Norcia**	**0.06**	**106**	Pg	Pg	16 28 04.7	+0.3
NRCA				Sg	Sg	16 28 06.4	+0.3
NRCA	**Norcia**	**0.06**	**106**	Pg	Pg	16 28 04.7	+0.3
NRCA				Sg	Sg	16 28 06.4	+0.3
CESI	**CESI - Serrava**	**0.18**	**328**	Pg	Pg	16 28 06.6	+0.5
CESI				Sg	Sg	16 28 09.8	+0.9
	5.0nm,0.2s						
CESI	**CESI - Serrava**	**0.18**	**328**	Pg	Pg	16 28 06.6	+0.5
CESI				Sg	Sg	16 28 09.8	+0.9
	5.0nm,0.2s						
FDMO	**Fiordimonte**	**0.19**	**11**	Pg	Pg	16 28 06.7	+0.5
FDMO				Sg	Sg	16 28 10.1	+1.1
	25nm,0.2s						
FDMO	**Fiordimonte**	**0.19**	**11**	Pg	Pg	16 28 06.7	+0.5
FDMO				Sg	Sg	16 28 10.1	+1.1
	25nm,0.2s						
LNSS	**Leonessa**	**0.25**	**179**	Pg	Pg	16 28 07.6	+0.4
LNSS				Sg	Sg	16 28 11.8	+1.2
	18nm,0.2s						
LNSS	**Leonessa**	**0.25**	**179**	Pg	Pg	16 28 07.6	+0.4
LNSS				Sg	Sg	16 28 11.8	+1.2
	18nm,0.2s						

*IDC **24** 16:37:09.7±22.0, 36°.83N×71°.16E, h0km, mb3.8/1, mb1 3.7/4, mb1mx3.3/30, mbtmp3.6/4, ML3.3/3, MS4.1/1, Ms1 4.1/1, ms1mx2.7/32, Error ellipse: s-maj=415.3km s-min=31.3km az=160.0*
*ISCJB **24** 16:37:11.8±0.6, 36°.47N±0°.06×70°.99E±0°.07, h100km, mb3.8/1, Error ellipse: s-maj=9.9km s-min=6.0km az=42.2*
*NNC **24** 16:37:22.9±1.7, 37°.18N×71°.14E, h98km±38km, mb3.3, mpv3.8, Error ellipse: s-maj=19.5km s-min=13.1km az=82.0*

ISC 24 16:37:13.6±1.0, 36°.63N±0°.08×71°.11E±0°.07, h100km, n19, σ2s14/21, 6C-2D, Afghanistan-Tajikistan border region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SFK	**Sufi-Kurgan**	**3.86**	**28**	⇑P	**Pn**	**16 38 14.1**	**+3.0**
	3.4nm,0.3s						
MNAS	**Manas**	**5.95**	**10**	⇑P	**Pn**	**16 38 41.0**	**+1.9**
	3.2nm,0.3s						
MNAS				⇑S	**Sn**	**16 39 43.2**	**-2.8**
	19nm,0.7s						
KK31	**Karatay Array**	**6.48**	**356**	P	**Pn**	**16 38 48.1**	**+1.8**
	11nm,0.3s,baz=178,slow=13,SNR=509						
KK31				⇓S	**Sn**	**16 39 55.5**	**-3.2**
	3.5nm,0.3s,baz=189,slow=25						
AAK	**Ala-Archa**	**6.54**	**23**	⇓P	**Pn**	**16 38 49.5**	**+2.2**
	2.6nm,0.3s						
AAK				⇑S	**Sn**	**16 39 57.2**	**-3.2**
	8.8nm,0.9s						
GEYT	**Alibeck**	**10.43**	**281**	Pn	**Pn**	**16 39 40.3**	**+0.2**
	0.8nm,0.3s,baz=113,slow=9.6,SNR=6.1						
GEYT				Sn	**Sn**	**16 41 32.9**	**-2.2**
	1.0nm,0.3s,baz=104,slow=16,SNR=5.0						
MKAR	**Makanchi Array**	**13.13**	**36**	Pn	**Pn**	**16 40 17.1**	**+1.1**
	0.1nm,0.3s,baz=227,slow=14,SNR=9.1						
PYUN	**Piuthan**	**13.15**	**127**	*e*P	**Pn**	**16 40 15.7**	**-0.9**
	12nm,0.4s						
KOLN	**Koldanda**	**13.77**	**126**	*e*P	**Pn**	**16 40 23.6**	**-1.1**
	5.6nm,0.3s						
GKN	**Gorkha**	**14.30**	**123**	*e*P	**Pn**	**16 40 30.2**	**-1.3**
	9.7nm,0.4s						
GKN				*e*S	Sn	16 42 59.0	-10
DMN	**Daman**	**14.87**	**123**	*e*P	**Pn**	**16 40 38.0**	**-0.9**
	5.4nm,0.4s						
KKN	**Kakani**	**14.87**	**122**	*e*P	**Pn**	**16 40 37.3**	**-1.6**
	8.5nm,0.5s						
AB31	**Akbulak array**	**15.01**	**331**	P	**Pn**	**16 40 40.0**	**-0.2**
	1.1nm,0.5s,baz=157,slow=12,SNR=45						
AB31				⇑S	Sn	16 43 14.6	-11
	1.0nm,0.5s						
PKIN	**Phulchoki**	**15.09**	**123**	*e*P	**Pn**	**16 40 40.3**	**-1.4**
	3.2nm,0.2s						
GUN	**Gumba**	**15.21**	**121**	*e*P	**Pn**	**16 40 42.4**	**-0.9**
	8.4nm,0.4s						
BVA0	**Borovoye Array**	**16.40**	**358**	P	**P**	**16 40 59.9**	**+1.3**
	3.8nm,1.2s,baz=180,slow=7.9,SNR=8.4						
AKTO	**Aktyubinsk**	**16.71**	**330**	⇑P	**P**	**16 41 06.0**	**+4.0**
	2.3nm,0.6s						
ZALV	**Zalesovo Beam**	**19.76**	**24**	P	**Pn**	**16 41 37.3**	**-0.5**
	0.3nm,0.3s,baz=217,slow=9.7,SNR=5.8						
FINES	**FINESS Array B**	**37.42**	**326**	P	P	16 44 23.4	+6.8
	1.5nm,0.9s,baz=124,slow=12,SNR=3.8						
JCJ	**Chichijima**	**59.89**	**77**	LR	LR	17 17 38.6	
	comp=Z,142nm,18.7s,baz=24,slow=41						

*IDC **24** 16:41:41.7±1.5, 37°.52N×140°.92E, h0km, mb3.5/4, mb1 3.5/6, mb1mx3.3/28, mbtmp3.4/6, ML2.6/2, MS4.3/1, Ms1 4.3/1, ms1mx2.8/26, Error ellipse: s-maj=34.2km s-min=22.9km az=75.0*
*JMA **24** 16:41:45.5, 37°.09N×140°.75E, h6km±1km, M3.1*

RTLS				*i* S	Sn	16 49 07.4	+1.8
SJA	**San Juan**	**0.49**	**90**	IAML		16 49 59.0	
	comp=Z,143nm,0.1s						
RTLL	**Cerro Villicun**	**0.60**	**71**	*i* P	Pn	16 48 56.4	+0.5
RTLL				*i* S	Sn	16 49 09.8	+1.3
RTCV	**Cerro Valdivia**	**0.61**	**123**	*i* P	Pn	16 48 56.9	+0.9
RTCV				*i* S	Sn	16 49 09.4	+0.8
AUSP	**Uspallata**	**0.72**	**197**	⇓*i* P	Pn	16 48 58.5	+1.2
AMOG	**MOGNA**	**0.81**	**43**	*i* P	Pn	16 48 58.5	+0.8
ASAL	**Salagasta**	**1.09**	**166**	*i* P	Pn	16 49 01.9	+1.1
ARCO	**CERRO ARCO**	**1.32**	**172**	*i* P	Pn	16 49 04.5	+1.0
ARCO				IAML		16 49 26.5	
	comp=Z,16nm,0.5s						

SJA 24 16:57:25.1±0.5, 27°79′S×67°40′W, h149km±5km, ML2.2, MW3.5, Catamarca Province

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
VCA	**Vinchina**	**1.18**	**217**	*i* P	Pn	16 57 52.5	+0.9
VCA				*i* S	Sn	16 58 12.1	+0.2
VCA				IAML		16 58 16.0	
	comp=Z,38nm,0.3s						
CYA	**Choya**	**1.56**	**115**	*i* P	Pn	16 57 55.7	+0.5
CYA				*i* S	Sn	16 58 18.8	+0.5
CYA				IAML		16 58 20.9	
	comp=Z,9.8nm,0.4s						
AGUA	**GUANDACOL**	**1.95**	**209**	*i* P	Pn	16 58 00.5	+0.9
AGUA				*i* S	Sn	16 58 26.4	+0.2
AHML	**Horco Molle**	**2.09**	**62**	*i* P	Pn	16 58 02.1	+0.8
FSA	**Cafayete**	**2.10**	**38**	*i* P	Pn	16 58 02.4	+0.9
AMOG	**MOGNA**	**3.28**	**197**	*i* P	Pn	16 58 16.9	+0.8

*IDC **24** 17:09:24.6±1.8, 30°.46S×178°.03W, h122km±11km, mb3.7/4, mb1 3.8/6, mb1mx3.5/34, mbtmp4.1/6, MS3.9/1, Ms1 3.9/1, ms1mx2.8/35, Error ellipse: s-maj=44.6km s-min=16.0km az=106.0*

ISC 24 17:09:23.7±1.7, 30°.5S±0°.1×177°.9W±0°.4, h150km, n31, σ2.9s42/29, mb3.9/4, Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**1.22**	**359**	P	**Pn**	**17 09 49.2**	**-1.3**
	263nm,0.3s,baz=70,slow=9.5,SNR=19						
RAO				S	**Sn**	**17 10 07.2**	**-3.6**
	487nm,0.3s,baz=119,slow=19,SNR=9.5						
WMGZ	**Waiomatatini S**	**7.95**	**202**	PN	**Pn**	**17 11 16.8**	**+0.5**
HAZ	**Te Kaha**	**8.11**	**205**	PN	**Pn**	**17 11 19.2**	**+0.8**
HAZ				*e*SN	**Sn**	**17 12 50.3**	**+1.6**
PUZ	**Puketiti**	**8.23**	**202**	PN	**Pn**	**17 11 19.6**	**-0.5**
PUZ				SN	**Sn**	**17 12 50.0**	**-1.7**
TWGZ	**Tauwhareparae**	**8.41**	**203**	PN	**Pn**	**17 11 23.1**	**+0.5**
TWGZ				SN	**Sn**	**17 12 58.4**	**+2.3**
CNGZ	**Carnagh Statio**	**8.62**	**201**	PN	**Pn**	**17 11 25.4**	**+0.1**
TKGZ	**Te Karaka**	**8.69**	**203**	SN	**Sn**	**17 13 03.1**	**+0.3**
MWZ	**Matawai**	**8.71**	**205**	PN	**Pn**	**17 11 25.4**	**-1.2**
MWZ				SN	**Sn**	**17 13 03.2**	**-0.1**
URZ	**Urewera**	**8.80**	**207**	P	**Pn**	**17 11 26.8**	**-0.9**
	0.5nm,0.3s,baz=273,slow=5.2,SNR=12						
URZ				S	**Sn**	**17 13 05.6**	**+0.3**
	5.5nm,0.3s,baz=154,slow=21,SNR=25						
URZ	**Urewera**	**8.80**	**207**	*e*PN	**Pn**	**17 11 25.8**	**-1.9**
URZ				*e*SN	**Sn**	**17 13 05.5**	**+0.1**
RIGZ	**Rimuhau**	**8.96**	**202**	PN	**Pn**	**17 11 29.1**	**-0.8**
RIGZ				SN	**Sn**	**17 13 06.9**	**-2.4**
KNZ	**Kokohu**	**9.28**	**202**	SN	Sn	17 13 09.0	-7.9
ARHZ	**Aropaoanui**	**9.73**	**204**	SN	**Sn**	**17 13 26.6**	**-1.1**
MCHZ	**McNeill Hill**	**9.99**	**205**	SN	**Sn**	**17 13 32.4**	**-1.8**
PNHZ	**Pukenui**	**10.59**	**206**	SN	**Sn**	**17 13 42.9**	**-5.7**
WPHZ	**Waipukurau**	**10.63**	**204**	SN	**Sn**	**17 13 47.6**	**-1.9**
DVHZ	**Dannevirke**	**10.94**	**205**	SN	**Sn**	**17 13 51.5**	**-5.4**
PRWZ	**Pori Road**	**11.23**	**205**	SN	**Sn**	**17 13 59.6**	**-4.4**
MRZ	**Mangatainoka R**	**11.47**	**206**	SN	Sn	17 14 02.5	-7.3
TCW	**Tory Channel**	**12.45**	**208**	SN	Sn	17 14 25.7	-7.6
KHZ	**Kahutara**	**13.77**	**208**	SN	Sn	17 14 55.5	-9.4
LTZ	**Lake Taylor**	**14.60**	**210**	SN	Sn	17 15 12.3	-13
INZ	**Inchbonnie**	**14.92**	**212**	SN	Sn	17 15 21.0	-12
MQZ	**McQueen's Vall**	**15.20**	**207**	SN	Sn	17 15 25.1	-14
RPZ	**Rata Peaks**	**15.87**	**211**	P	**P**	**17 13 02.4**	**+2.9**
	1.3nm,0.3s,baz=292,slow=1.7,SNR=7.4						
CTA	**Charters Tower**	**33.91**	**279**	P	P	17 15 56.1	+3.6
	1.7nm,0.3s,baz=91,slow=5.6,SNR=2.6						
STKA	**Stephens Creek**	**34.56**	**257**	P	P	17 16 02.0	+4.0
	1.0nm,0.5s,baz=105,slow=10,SNR=9.0						
ASAR	**Alice Springs**	**43.20**	**267**	P	**P**	**17 17 11.8**	**+1.7**
	0.5nm,0.4s,baz=105,slow=7.2,SNR=30						
WRA	**Warramunga Arr**	**44.20**	**272**	P	**P**	**17 17 19.6**	**+1.5**
	1.0nm,0.3s,baz=111,slow=8.1,SNR=51						
SIJI	**Sorong**	**56.45**	**292**	LR	LR	17 43 40.2	
	comp=Z,100nm,19.1s,baz=188,slow=36						
FINES	**FINESS Array B**	**145.25**	**340**	PKPbc	**PKPab**	**17 28 46.1**	**+3.0**
	0.5nm,0.4s,baz=52,slow=4.2,SNR=14						

WEL 24 17:19:56.2±0.3, 37°.87S×179°.15E, h33km, ML3.7/5, 4C-7D, Error ellipse: s-maj=3.3km s-min=1.9km az=90.0, Off east coast of North Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WMGZ	**Waiomatatini S**	**0.58**	**275**	⇑PN	Pb	17 20 07.5	-0.7
PUZ	**Puketiti**	**0.73**	**254**	PN	Pn	17 20 09.4	-0.9
PUZ				SN	Sn	17 20 19.3	-1.1
PUZ				AML	AML	17 20 20.0	
MXZ	**Matakaoa Point**	**0.74**	**295**	PN	Pn	17 20 10.3	0.0
MXZ				AML	AML	17 20 22.7	
MXZ				AML	AML	17 20 22.7	
MXZ				AML	AML	17 20 22.8	
MXZ				AML	AML	17 20 22.9	
PKGZ	**Pakihiroa**	**0.85**	**269**	⇑PN	Pn	17 20 11.2	-0.8
PKGZ				SN	Sn	17 20 22.7	-0.6
CNGZ	**Carnagh Statio**	**0.96**	**230**	PN	Pn	17 20 13.4	0.0
TWGZ	**Tauwhareparae**	**0.97**	**251**	⇓PN	Pn	17 20 13.3	-0.3
TWGZ				SN	Sn	17 20 26.3	0.0
HAZ	**Te Kaha**	**1.09**	**276**	⇓PN	Pn	17 20 15.0	-0.2
TKGZ	**Te Karaka**	**1.17**	**241**	⇓PN	Pn	17 20 16.0	-0.3
MWZ	**Matawai**	**1.36**	**250**	⇓PN	Pn	17 20 18.3	-0.7
MWZ				AML	AML	17 20 36.8	
MWZ				AML	AML	17 20 37.1	
MWZ				AML	AML	17 20 37.1	
MWZ				AML	AML	17 20 37.3	
RIGZ	**Rimuhau**	**1.37**	**232**	PN	Pn	17 20 18.7	-0.4
PRGZ	**Paritu Road**	**1.45**	**223**	⇑PN	Pn	17 20 19.8	-0.3
MHGZ	**Mahia Peninsul**	**1.61**	**217**	PN	Pn	17 20 21.8	-0.5
KNZ	**Kokohu**	**1.63**	**225**	⇓PN	Pn	17 20 21.7	-0.9
URZ	**Urewera**	**1.66**	**256**	PN	Pn	17 20 23.0	+0.1
URZ				AML	AML	17 20 48.6	
URZ				AML	AML	17 20 50.1	
SNGZ	**Shannon Statio**	**1.69**	**237**	PN	Pn	17 20 23.0	-0.5
WHHZ	**Waihua**	**1.93**	**231**	PN	Pn	17 20 26.2	-0.5
RAHZ	**Arahi**	**1.93**	**237**	PN	Pn	17 20 26.8	+0.1
MUGZ	**Murupara**	**1.97**	**251**	PN	Pn	17 20 27.5	+0.2
OPRZ	**Ohinepanea**	**2.06**	**270**	PN	Pn	17 20 28.1	-0.3
ARHZ	**Aropaoanui**	**2.19**	**230**	PN	Pn	17 20 29.9	-0.4
NMHZ	**Naumai**	**2.21**	**236**	⇓PN	Pn	17 20 30.6	-0.1
MRHZ	**Matea Rd**	**2.35**	**245**	PN	Pn	17 20 32.3	-0.3
CKHZ	**Cape Kidnapper**	**2.41**	**222**	PN	Pn	17 20 32.3	-1.0
BKZ	**Black Stump Fm**	**2.45**	**237**	⇓PN	Pn	17 20 33.7	-0.2
BKZ				AML	AML	17 21 03.3	
MCHZ	**McNeill Hill**	**2.48**	**230**	PN	Pn	17 20 33.9	-0.4
KAHZ	**Kahuranaki**	**2.62**	**222**	PN	Pn	17 20 34.9	-1.3
KWHZ	**Kaweka Forest**	**2.64**	**233**	⇑PN	Pn	17 20 35.9	-0.6
KRHZ	**Kereru**	**2.80**	**230**	PN	Pn	17 20 37.6	-1.2
BHHZ	**Black Hill Sta**	**2.91**	**235**	PN	Pn	17 20 39.4	-0.8
PNHZ	**Pukenui**	**3.08**	**228**	PN	Pn	17 20 40.8	-1.7
TSZ	**Takapari Road**	**3.31**	**228**	PN	Pn	17 20 43.5	-2.2
ANWZ	**Angora Road**	**3.32**	**218**	PN	Pn	17 20 43.9	-1.9
DVHZ	**Dannevirke**	**3.36**	**223**	PN	Pn	17 20 44.2	-2.2
BFZ	**Birch Farm**	**3.60**	**218**	PN	Pn	17 20 46.8	-2.9
PRWZ	**Pori Road**	**3.64**	**222**	PN	Pn	17 20 48.3	-2.0
HOWZ	**Holdsworth Sta**	**4.13**	**222**	PN	Pn	17 20 54.0	-3.0

*IDC **24** 17:35:34.8±0.6, 13°.90N×92°.92E, h0km, mb4.0/15, mb1 4.1/16, mb1mx3.9/47, mbtmp4.0/16, ML3.6/1, MS3.4/9, Ms1 3.4/9, ms1mx3.1/46, Error ellipse: s-maj=25.9km s-min=13.5km az=51.0*

*ISCJB **24** 17:35:38.1±0.5, 13°.95N±0°.06×92°.75E±0°.05, h33km, mb4.0/15, MS3.4/8, Error ellipse: s-maj=9.7km s-min=6.0km az=28.3*

*BKK **24** 17:36:14.5±2.9, 15°.N±10°×9°.5E±2°.7, h10km, M4.1/10, mB5.2/3, mb4.2/6, MLv4.0/10, Mw(mB)4.7/3*

ISC 24 17:35:40.4±0.6, 13°.91N±0°.09×92°.68E±0°.08, h35km, n43, σ1.5s73/38, mb4.1/15, MS3.4/8, Andaman Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KHLT	**Khaolaem Dam**	**5.80**	**81**	P	**Pn**	**17 37 01.9**	**-2.0**
SRDT	**SRDT**	**6.27**	**85**	P	**Pn**	**17 37 08.6**	**-1.8**
MHMT	**Maesarieng**	**6.60**	**49**	P	**Pn**	**17 37 17.5**	**+2.6**
CMAR	**Chiang Mai Arr**	**7.53**	**52**	Pn	**Pn**	**17 37 25.4**	**-2.3**
	0.2nm,0.3s,baz=240,slow=16,SNR=12						
CMAR				Sn	Sn	17 38 43.9	-8.0
	0.6nm,0.3s,baz=239,slow=26,SNR=5.4						
CMAR				LR	LR	17 41 04.9	
	comp=Z,166nm,18.8s,baz=236,slow=45						
CHTO	**Chiang Mai**	**7.74**	**50**	P	**Pn**	**17 37 32.6**	**+1.9**
	23nm,0.9s,0.3nm						
CMMT	**Chiang Mai**	**7.75**	**50**	P	**Pn**	**17 37 32.5**	**+1.8**
	11nm,0.6s,483nm0.1nm						
PATY	**Pattaya**	**8.03**	**96**	P	**Pn**	**17 37 34.4**	**-0.2**
	10nm,0.6s,2μm0.2nm						
LAMP	**Lampang**	**8.10**	**55**	P	Pn	17 37 44.5	+8.9
PBKT	**Sadao Pong**	**8.43**	**71**	P	**Pn**	**17 37 39.6**	**-0.5**
	20nm,0.7s,0.1nm						
CRAI	**Chiangrai**	**9.68**	**48**	P	**Pn**	**17 37 58.2**	**+1.0**
VIS	**Vishakhapatnam**	**9.76**	**294**	*i* P	**Pn**	**17 37 58.9**	**+0.6**
VIS				*i* S	**Sn**	**17 39 41.8**	**-4.9**
VIS				*ex*	x	17 39 46.1	
PSI	**Prapat**	**12.65**	**150**	Pn	**Pn**	**17 38 40.7**	**+2.7**
	baz=306,slow=14,SNR=3.9						
PKIN	**Phulchoki**	**15.20**	**335**	*e*P	**Pn**	**17 39 09.8**	**-2.9**
	21nm,0.3s						
GUN	**Gumba**	**15.30**	**337**	*e*P	**Pn**	**17 39 12.8**	**-1.4**
	27nm,0.7s						
DMN	**Daman**	**15.35**	**334**	*e*P	**Pn**	**17 39 13.5**	**-1.2**
KKN	**Kakani**	**15.44**	**335**	*e*P	**Pn**	**17 39 13.6**	**-2.2**
	9.5nm,0.4s						
GKN	**Gorkha**	**15.90**	**333**	*e*P	**Pn**	**17 39 20.3**	**-1.4**
	35nm,0.3s						
KOLN	**Koldanda**	**16.18**	**330**	*e*P	**Pn**	**17 39 24.1**	**-1.2**
	52nm,0.8s						
PYUN	**Piuthan**	**16.75**	**329**	*e*P	**Pn**	**17 39 31.8**	**-0.8**
	16nm,0.4s						
KAPI	**Kappang**	**32.80**	**123**	LR	LR	17 55 11.7	
	comp=Z,22nm,20.7s,baz=309,slow=36						
MKAR	**Makanchi Array**	**33.92**	**347**	P	**P**	**17 42 20.5**	**+0.4**
	2.5nm,0.8s,baz=160,slow=8.3,SNR=23						
MKAR				LR	LR	18 00 22.8	
	comp=Z,25nm,18.9s,baz=158,slow=44						
GEYT	**Alibeck**	**38.87**	**314**	P	**P**	**17 43 03.9**	**+1.4**
	2.2nm,0.6s,baz=134,slow=8.6,SNR=7.2						
GEYT				LR	LR	17 59 41.5	
	comp=Z,54nm,19.0s,baz=70,slow=37						
KSRS	**Korea Array**	**39.13**	**47**	LR	LR	18 01 52.8	
	comp=Z,69nm,18.5s,baz=355,slow=40						
ZALV	**Zalesovo Beam**	**40.42**	**353**	P	**P**	**17 43 15.7**	**+0.6**
	2.2nm,0.6s,baz=176,slow=8.5,SNR=15						
FITZ	**Fitzroy Crossi**	**45.48**	**133**	P	**P**	**17 43 54.2**	**-2.3**
	1.0nm,0.4s,baz=317,slow=6.2,SNR=9.5						
KLR	**Kul'dur**	**47.58**	**34**	LR	LR	18 08 20.9	
	comp=Z,36nm,18.6s,baz=148,slow=41						
WRA	**Warramunga Arr**	**53.02**	**128**	P	**P**	**17 44 52.3**	**-2.0**
	1.2nm,0.8s,baz=310,slow=7.7,SNR=24						
YAK	**Yakutsk**	**54.81**	**20**	LR	LR	18 10 33.3	
	comp=Z,174nm,18.7s,baz=83,slow=38						
ASAR	**Alice Springs**	**54.95**	**132**	P	**P**	**17 45 06.5**	**-1.8**
	1.1nm,0.4s,baz=308,slow=6.7,SNR=60						
BRTR	**Keskin Array B**	**57.49**	**308**	P	**P**	**17 45 27.9**	**+1.4**
	1.0nm,0.7s,baz=116,slow=9.0,SNR=9.7						
BRTR				LR	LR	18 13 36.6	
	comp=Z,14nm,18.3s,baz=124,slow=40						
STKA	**Stephens Creek**	**65.33**	**135**	P	**P**	**17 46 18.5**	**-0.8**
	1.0nm,0.6s,baz=289,slow=10,SNR=5.8						
FINES	**FINESS Array B**	**66.75**	**331**	P	**P**	**17 46 28.0**	**+0.1**
	1.0nm,0.6s,baz=92,slow=6.1,SNR=7.2						
ARCES	**ARCESS Array B**	**69.14**	**340**	P	**P**	**17 46 43.2**	**+0.4**
	1.4nm,0.8s,baz=79,slow=6.8,SNR=2.3						
GERES	**GERESS Array B**	**72.42**	**317**	P	**P**	**17 47 03.5**	**+0.2**
	0.4nm,0.6s,baz=94,slow=5.8,SNR=6.3						
NB2	**NORSAR Subarra**	**73.81**	**330**	P	**P**	**17 47 11.3**	**+0.2**
	comp=Z,1.6nm,0.9s,baz=91,slow=5.6						
NOA	**NORSAR Array B**	**73.81**	**330**	P	**P**	**17 47 11.0**	**-0.1**
	comp=Z,0.3nm,0.6s,baz=90,slow=5.8,SNR=2.8						
BOSA	**Boshof**	**77.64**	**236**	P	**P**	**17 47 35.5**	**+1.8**
	comp=Z,4.5nm,0.7s,baz=69,slow=4.9,SNR=12						
TORD	**Torodi Ar. Bea**	**87.83**	**283**	P	**P**	**17 48 28.3**	**+1.4**
	comp=Z,0.6nm,0.7s,baz=92,slow=3.7,SNR=4.8						
ILAR	**Eielson Array**	**89.71**	**22**	P	**P**	**17 48 33.7**	**-1.0**
	comp=Z,0.4nm,0.8s,baz=274,slow=4.1,SNR=3.8						
INK	**Inuvik**	**91.61**	**16**	LR	LR	18 36 52.6	
	comp=Z,42nm,18.0s,baz=288,slow=40						
PDAR	**Pinedale Array**	**120.02**	**19**	PKP	**PKPdf**	**17 54 27.2**	**-0.8**
	comp=Z,0.1nm,0.4s,baz=50,slow=2.8,SNR=3.7						
NVAR	**Mina Array Bea**	**120.40**	**28**	PKP	**PKPdf**	**17 54 28.9**	**+0.1**
	comp=Z,0.4nm,0.3s,baz=291,slow=2.5,SNR=4.9						
TXAR	**Lajitas Array**	**134.20**	**20**	PKP	**PKPdf**	**17 54 55.1**	**-0.1**
	comp=Z,0.3nm,0.7s,baz=329,slow=1.1,SNR=3.8						

*IDC **24** 17:43:11.5±1.7, 36°.98N×140°.86E, h0km, mb3.6/2, mb1 3.7/4, mb1mx3.3/45, mbtmp3.5/4, ML3.2/2, Error ellipse: s-maj=31.9km s-min=27.6km az=85.0*

*ISCJB **24** 17:43:12.6±0.6, 37°.08N×140°.70E±0°.05, h11km±4km, mb3.5/2, Error ellipse: s-maj=7.1km s-min=4.7km az=27.9*

JMA 17:43:12.8, 37°.08N×140°.66E, h9km±1km, M3.3
Broadband fault plane solution: P waves. NP1: φs159.00000°, δ49.00000°, λ-111.00000°. NP2: φs10.00000°, δ45.00000°, λ-67.00000°. Principal axes: T Plg2.0000°, Azm264.0000°; N Plg16.0000°, Azm173.0000°; P Plg74.0000°, Azm1.0000°;
JMA Felt II J1.

ISC 24 17:43:12.6±1.0, 37°.09N±0°.03×140°.63E±0°.05, h6km±10km, n12, σ0.9s80/21, 5C-1D, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.14**	**84**	⇑P	**Pg**	**17 43 15.6**	**+0.1**
ONAJ				S	**Sg**	**17 43 17.6**	**+0.2**
JFK	**Kawauchi**	**0.34**	**35**	⇑P	**Pg**	**17 43 19.5**	**+0.2**
JFK				S	**Sg**	**17 43 24.2**	**+0.4**
JHO	**Hitachi**	**0.48**	**186**	⇑P	**Pg**	**17 43 21.8**	**0.0**
JHO				S	**Sg**	**17 43 28.1**	**+0.1**
JFT	**Otama**	**0.49**	**332**	P	**Pb**	**17 43 23.1**	**-0.5**
JFT				S	**Sb**	**17 43 29.9**	**-1.1**
JSB	**Shiboa**	**0.58**	**258**	⇑P	**Pb**	**17 43 25.1**	**0.0**
JSB				S	**Sb**	**17 43 33.7**	**+0.1**
JMM	**Marumori**	**0.79**	**10**	⇓P	**Pg**	**17 43 27.7**	**0.0**
JMM				S	**Sg**	**17 43 38.3**	**+0.3**
JFY	**Yanaizu**	**0.80**	**294**	⇑P	**Pb**	**17 43 28.8**	**-0.1**
JFY				S	**Sb**	**17 43 39.5**	**-0.5**
MJAR	**Matsushiro Arr**	**2.02**	**255**	Pn	**Pb**	**17 43 48.5**	**-1.2**
	13nm,0.3s,baz=75,slow=15,SNR=91						
MJAR				Sn	**Sb**	**17 44 15.9**	**+0.9**
	5.5nm,0.3s,baz=82,slow=27,SNR=4.8						
MAT	**Matsushiro**	**2.02**	**255**	P	**Pb**	**17 43 48.6**	**-1.0**
MAT				S	**Sg**	**17 44 17.6**	**+0.2**
ASAJ	**Asahikawa**	**7.18**	**11**	Pn	**Pn**	**17 44 57.7**	**-0.4**
	0.3nm,0.3s,baz=214,slow=11,SNR=6.5						
MKAR	**Makanchi Array**	**43.56**	**302**	P	**P**	**17 51 19.2**	**+2.0**
	0.1nm,0.2s,baz=84,slow=8.8,SNR=2.3						
WRA	**Warramunga Arr**	**57.03**	**187**	P	**P**	**17 52 58.4**	**-1.0**
	0.6nm,0.5s,baz=3.0,slow=7.2,SNR=16						

IDC 24 17:48:05.0±7.8, 3°.36N×126°.32E, h0km, mb3.6/3, mb1 3.7/3, mb1mx3.3/39, mbtmp3.6/3, Error ellipse: s-maj=188.9km s-min=126.1km az=75.0, Talaud Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**24.46**	**162**	P	P	17 53 24.0	-2.0
	0.6nm,0.6s,baz=342,slow=9.7,SNR=14						
ASAR	**Alice Springs**	**27.86**	**165**	P	P	17 53 56.5	-0.1
	0.3nm,0.3s,baz=344,slow=12,SNR=15						
STKA	**Stephens Creek**	**37.94**	**159**	P	P	17 55 26.2	+1.8
	0.3nm,0.3s,baz=323,slow=9.8,SNR=7.1						

*NIED **24** 17:48:00, 33°.00N×130°.70E, h8km, Mw4.0 Best double couple: Mo1.03000×10^15 NP1: φs148.00000°, δ67.00000°, λ-18.00000°. NP2: φs245.00000°, δ74.00000°, λ-156.00000°.*

*IDC **24** 17:48:20.2±0.9, 32°.99N×130°.59E, h0km, mb3.3/6, mb1 3.5/9, mb1mx3.3/46, mbtmp3.4/9, ML3.3/3, MS2.7/3, Ms1 2.7/3, ms1mx2.5/26, Error ellipse: s-maj=17.5km s-min=6.3km az=154.0*

*ISCJB **24** 17:48:21.3±0.5, 33°.01N±0°.04×130°.71E±0°.06, h20km±4km, mb3.2/6, MS2.8/1, Error ellipse: s-maj=9.5km s-min=6.9km az=25.1*

*JMA **24** 17:48:22.0, 33°.03N×130°.73E, h12km±1km, M4.1*
Broadband fault plane solution: P waves. NP1: φs329.00000°, δ82.00000°, λ-14.00000°. NP2: φs60.00000°, δ77.00000°, λ-172.00000°. Principal axes: T Plg4.0000°, Azm15.0000°; N Plg74.0000°, Azm120.0000°; P Plg15.0000°, Azm284.0000°;
JMA Felt III J1.

ISC 24 17:48:22.5±0.9, 33°.01N±0°.04×130°.70E±0°.05, h11km±6km, n17, σ1.9s32/19, mb3.2/6, 2C-1D, Kyushu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JTA	**Tamana**	**0.15**	**254**	⇓P	**Pg**	**17 48 26.1**	**+0.2**
JTA				S	**Sg**	**17 48 28.9**	**+0.5**
JNU	**Nakatsue**	**0.19**	**52**	Pg	**Pg**	**17 48 25.7**	**-1.0**
	7μm,0.3s,baz=247,slow=4.3						
JNU				Lg	Lg	17 48 29.2	
	10μm,0.3s,baz=188,slow=19,SNR=271						
JNU	**Nakatsue**	**0.19**	**52**	⇑P	**Pg**	**17 48 25.9**	**-0.8**
JNU				S	**Sg**	**17 48 28.5**	**-1.1**
JIU2	**Izumi 2**	**0.47**	**168**	⇑P	**Pg**	**17 48 31.4**	**-0.3**
JIU2				S	**Sg**	**17 48 38.0**	**+0.1**
KSRS	**Korea Array**	**4.99**	**334**	Pn	**Pn**	**17 49 37.1**	**-0.1**
	0.4nm,0.3s,baz=145,slow=15,SNR=5.4						
KSRS				Lg	Lg	17 50 56.9	
	5.7nm,0.3s,baz=153,slow=30,SNR=7.6						
JOW	**Kunigami**	**6.50**	**200**	Pn	**Pn**	**17 49 58.2**	**+0.1**
	0.9nm,0.3s,baz=98,slow=17,SNR=2.3						
MAT	**Matsushiro**	**7.11**	**58**	P	**Pn**	**17 50 07.8**	**+1.3**
MJAR	**Matsushiro Arr**	**7.11**	**58**	Pn	**Pn**	**17 50 07.4**	**+0.9**
	3.0nm,0.3s,baz=91,slow=15,SNR=24						
MJAR				Lg	Lg	17 52 06.3	
	baz=234,slow=28,SNR=5.0						
MJAR				LR	LR	17 52 31.0	
	comp=Z,39nm,21.7s,baz=250,slow=35						
USRK	**Ussuriysk Ar.**	**11.22**	**5**	Pn	**Pn**	**17 51 05.4**	**+2.7**
	0.1nm,0.3s,baz=184,slow=12,SNR=5.8						
KLR	**Kul'dur**	**16.23**	**2**	Pn	**P**	**17 52 15.3**	**+1.9**
	0.2nm,0.3s,baz=168,slow=9.8,SNR=12						
KLR				LR	LR	17 57 51.4	
	comp=Z,32nm,18.6s,baz=224,slow=35						
PETK	**Petropavlovsk-**	**27.88**	**36**	LR	LR	18 04 53.1	
	comp=Z,26nm,19.4s,baz=169,slow=36						
MKAR	**Makanchi Array**	**39.00**	**305**	P	**P**	**17 55 48.4**	**-0.4**
	0.1nm,0.2s,baz=83,slow=6.0,SNR=1.8						
WRA	**Warramunga Arr**	**52.76**	**176**	P	**P**	**17 57 35.1**	**-2.4**
	0.4nm,0.9s,baz=356,slow=7.9,SNR=3.2						
ASAR	**Alice Springs**	**56.44**	**176**	P	**P**	**17 58 04.1**	**-0.1**
	0.1nm,0.5s,baz=12,slow=13,SNR=4.5						
FINES	**FINESS Array B**	**68.07**	**330**	P	**P**	**17 59 20.0**	**-1.7**
	0.4nm,0.7s,baz=77,slow=6.0,SNR=3.1						
YKA	**Yellowknife Ar**	**71.51**	**26**	P	**P**	**17 59 42.3**	**-0.6**
	0.1nm,0.6s,baz=312,slow=6.5,SNR=3.2						
AKASG	**Malin Array Be**	**71.81**	**319**	P	**P**	**17 59 44.7**	**-0.3**
	0.1nm,0.3s,baz=57,slow=5.8,SNR=2.5						

SJA 24 17:49:35.3±0.4, 31°.22S×69°.07W, h107km±2km, ML2.5, MW4.1, San Juan Province

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RTLL	**Cerro Villicun**	**0.52**	**102**	*i* P	Pn	17 49 52.9	+0.9
RTLL				*i* S	Sn	17 50 05.6	+1.0
SJA	**San Juan**	**0.53**	**125**	*i* P	Pn	17 49 52.8	+0.7
SJA				IAML		17 50 08.8	
	comp=Z,88nm,0.2s						
AMOG	**MOGNA**	**0.57**	**61**	*i* P	Pn	17 49 53.1	+0.7
AMOG				*i* S	Sn	17 50 06.1	+0.9
RTLS	**Leoncito**	**0.61**	**198**	*i* P	Pn	17 49 53.9	+0.9
RTLS				*i* S	Sn	17 50 08.0	+1.8
RTCV	**Cerro Valdivia**	**0.78**	**145**	*i* P	Pn	17 49 55.0	+0.8
RT

KSRS	**Korea Array**	**11.24 287**	LR	LR	18 19 05.4		
	comp=Z,32nm,18.1s,baz=110,slow=37						
ZALV	**Zalesovo Beam**	**43.37 314**	P	**P**	**18 20 07.2**	**0.0**	
	0.2nm,0.4s,baz=95,slow=7.2,SNR=2.2						
MKAR	**Makanchi Array**	**45.29 304**	P	**P**	**18 20 21.6**	**-1.2**	
	0.2nm,0.6s,baz=98,slow=8.9,SNR=3.2						
KURBB	**Kurchatov Arra**	**47.34 310**	P	**P**	**18 20 39.1**	**+0.4**	
	0.7nm,0.6s,baz=85,slow=7.9,SNR=6.7						
ILAR	**Eielson Array**	**51.20 31**	P	**P**	**18 21 07.6**	**-0.4**	
	0.3nm,0.9s,baz=266,slow=5.4,SNR=3.6						
WRA	**Warramunga Arr**	**55.04 188**	P	**P**	**18 21 37.2**	**+0.5**	
	0.8nm,0.7s,baz=4.4,slow=7.5,SNR=9.7						
ASAR	**Alice Springs**	**58.76 188**	P	**P**	**18 22 03.5**	**+0.4**	
	0.2nm,0.8s,baz=7.0,slow=7.3,SNR=3.0						
FINES	**FINESS Array B**	**70.66 333**	P	**P**	**18 23 20.9**	**+0.7**	
	2.1nm,1.1s,baz=39,slow=9.1,SNR=4.1						

*IDC **24** 18:14:33.0±2.2,34°.00S×178°.90W,h0km,mb3.7/2, mb1 4.1/4,mb1mx3.7/35,mbtmp4.0/4,ML4.1/2,MS3.6/2, Ms1 3.5/2,ms1mx2.9/23,Error ellipse: s-maj=59.4km s-min=34.7km az=125.0*

*ISCJB **24** 18:14:33.9±1.6,34°.1S±0°.1×178°.6W±0°.3,h35km,mb3.6/2, MS3.6/2,Error ellipse: s-maj=35.3km s-min=10.6km az=20.9*

ISC 24 18:14:36.8±2.0,34°.1S±0°.2×178°.6W±0°.3,h35km,n20, σ1§47/23,South of Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
WMGZ	**Waiomatatini S**	**4.42**	**212**	PN	**Pn**	**18 15 42.4**	**+1.0**
PKGZ	**Pakihiroa**	**4.63**	**214**	PN	**Pn**	**18 15 42.9**	**-1.5**
HAZ	**Te Kaha**	**4.67**	**217**	PN	**Pn**	**18 15 44.7**	**-0.1**
HAZ				SN	**Sn**	**18 16 41.7**	**+3.9**
TWGZ	**Tauwhareparae**	**4.91**	**213**	PN	**Pn**	**18 15 47.4**	**-0.8**
CNGZ	**Carnagh Statio**	**5.07**	**209**	PN	**Pn**	**18 15 49.6**	**-0.7**
TKGZ	**Te Karaka**	**5.19**	**212**	PN	**Pn**	**18 15 52.2**	**+0.3**
TKGZ				SN	**Sn**	**18 16 51.8**	**+1.3**
MWZ	**Matawai**	**5.25**	**215**	PN	**Pn**	**18 15 51.7**	**-1.1**
URZ	**Urewera**	**5.40**	**218**	Pn	**Pn**	**18 15 54.9**	**+0.1**
	16nm,0.3s,baz=318,slow=1.6,SNR=104						
URZ				Sn	**Sn**	**18 16 55.0**	**-0.7**
	1.8nm,0.3s,baz=104,slow=16,SNR=7.1						
RIGZ	**Rimuhau**	**5.45**	**211**	PN	**Pn**	**18 15 54.6**	**-0.9**
SNGZ	**Shannon Statio**	**5.70**	**214**	PN	**Pn**	**18 15 58.1**	**-0.8**
SNGZ				SN	**Sn**	**18 17 03.7**	**+0.6**
KNZ	**Kokohu**	**5.75**	**210**	PN	**Pn**	**18 15 57.3**	**-2.3**
WHHZ	**Waihua**	**5.98**	**213**	PN	**Pn**	**18 16 02.9**	**+0.1**
WHHZ				SN	**Sn**	**18 17 09.7**	**-0.4**
ARHZ	**Aropaoanui**	**6.24**	**213**	PN	**Pn**	**18 16 04.8**	**-1.6**
RPZ	**Rata Peaks**	**12.51**	**217**	Pn	**Pn**	**18 17 29.7**	**-2.6**
	0.4nm,0.3s,baz=18,slow=13,SNR=2.8						
STKA	**Stephens Creek**	**33.29**	**263**	LR	LR	18 33 43.3	
	comp=Z,85nm,18.9s,baz=200,slow=35						
ASAR	**Alice Springs**	**42.51**	**271**	P	**P**	**18 22 28.7**	**-0.3**
	0.7nm,0.8s,baz=111,slow=7.2,SNR=16						
WRA	**Warramunga Arr**	**43.83**	**276**	P	**P**	**18 22 38.8**	**-0.9**
	0.8nm,0.4s,baz=118,slow=7.6,SNR=12						
JCJ	**Chichijima**	**71.29**	**324**	LR	LR	18 52 12.6	
	comp=Z,44nm,20.6s,baz=230,slow=32						
FINES	**FINESS Array B**	**148.38**	**337**	PKPbc	**PKPbc**	**18 34 19.3**	**+0.6**
	1.7nm,0.6s,baz=58,slow=3.9,SNR=16						
AKASG	**Malin Array Be**	**153.79**	**318**	PKPbc	**PKPbc**	**18 34 33.4**	**+1.7**
	0.2nm,0.3s,baz=71,slow=4.0,SNR=2.9						

*ISCJB **24** 18:31:35.0±0.6,32°.29N±0°.03×115°.36W±0°.04,h13km±4km, Error ellipse: s-maj=5.3km s-min=4.2km az=154.2*

*MEX **24** 18:31:35.4±1.0,32°.50N×115°.17W,h27km±9km,MD3.6*

*ECX **24** 18:31:36.0±0.5,32°.29N×115°.37W,h5km,MD2.8,ML3.0*

ISC 24 18:31:34.3±1.1,32°.31N±0°.03×115°.37W±0°.02, h15km±10km,n28,σ0§51/40,6C-8D,California-Baja California border region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
CPBX	**Cerro Prieto**	**0.12**	**26**⇓	*e*P	**Pb**	**18 31 38.6**	**+0.2**
CPBX				*e*P	**Pb**	**18 31 38.6**	**+0.2**
CPBX				*e*S	**Sb**	**18 31 41.2**	**+0.1**
CPBX				*i*		18 31 41.2	
CPBX				AML	AML	18 31 44.1	
	comp=E,16μm,0.3s						
CPBX				*e*		18 31 44.1	
MBIG	**Mexicali**	**0.17**	**56**⇓	*e*P	**Pb**	**18 31 39.8**	**+0.5**
MBIG	**Mexicali**	**0.17**	**56**	*i* P	**Pb**	**18 31 39.6**	**+0.3**
MBIG				*e*S	**Sb**	**18 31 42.8**	**+0.3**
SGL	**Mount Signal**	**0.45**	**319**⇑	*i* P	**Pb**	**18 31 44.2**	**+0.2**
DREC	**Desert Rsrch C**	**0.50**	**352**⇓	*e*P	**Pb**	**18 31 45.6**	**+0.8**
ERPC	**Ernies Place**	**0.50**	**330**⇓	*i* P	**Pb**	**18 31 45.5**	**+0.7**
EMSC	**East Mesa**	**0.54**	**37**	*e*P	**Pb**	**18 31 45.9**	**+0.4**
WESC	**Westside Schoo**	**0.54**	**326**⇓	*e*P	**Pb**	**18 31 46.2**	**+0.7**
YUH	**Yuha Desert**	**0.58**	**306**	*i* P	**Pb**	**18 31 46.2**	**0.0**
COA	**Coachella**	**0.59**	**20**⇓	*i* P	**Pb**	**18 31 46.6**	**+0.2**
RMX	**La Rumorosa**	**0.67**	**296**⇑	*e*P	**Pg**	**18 31 47.3**	**-0.1**
RMX				*e*S	**Sb**	**18 31 56.6**	**-0.3**
IKP	**In-Ko-Pah, Jac**	**0.71**	**299**⇑	*i* P	**Pb**	**18 31 48.7**	**+0.2**
SWSC	**Sam W. Stewart**	**0.73**	**330**	P	**Pg**	**18 31 48.6**	**0.0**
	baz=152,SNR=7.4						
SWSC				S	**Sn**	**18 32 00.5**	**-0.4**
	baz=152						
YMD	**Yuma Desert**	**0.74**	**70**⇑	*i* P	**Pg**	**18 31 48.5**	**-0.2**
GLA	**Glamis**	**0.87**	**31**	P	**Pg**	**18 31 50.5**	**-0.8**
	baz=208,SNR=20						
GLA				S	**Sg**	**18 32 02.9**	**+0.2**
	baz=208						
ECBX	**El Chinero**	**0.88**	**162**⇑	*e*P	**Pb**	**18 31 51.0**	**-0.2**
ECBX				*e*S	**Sb**	**18 32 02.7**	**0.0**
ECBX				AML	AML	18 32 04.2	
	comp=N,675nm,0.4s						
MONP2	**Monument Peak**	**1.06**	**303**	P	**Pg**	**18 31 54.7**	**-0.1**
	baz=126,SNR=22						
MONP2				S	**Sg**	**18 32 08.6**	**-0.1**
	baz=126						
CBX	**Cerro Bola**	**1.10**	**271**⇑	*e*P	**Pn**	**18 31 55.2**	**0.0**
CBX				AML	AML	18 32 16.7	
	comp=E,308nm,0.5s						
CBX	**Cerro Bola**	**1.10**	**271**	*i* P	**Pn**	**18 31 55.2**	**0.0**
CBX				*i* S	**Sn**	**18 32 10.1**	**-0.1**
SPIG	**San Pedro Mart**	**1.26**	**184**⇓	*e*P	**Pn**	**18 31 57.4**	**-0.3**
SPIG	**San Pedro Mart**	**1.26**	**184**	*e*P	**Pn**	**18 31 57.4**	**-0.3**
SPIG				*e*S	**Sg**	**18 32 16.5**	**+1.3**
SPX	**San Pedro Mart**	**1.26**	**184**⇓	*e*P	**Pn**	**18 31 57.4**	**-0.3**
BC3	**Big Chuckawall**	**1.34**	**357**	P	**Pg**	**18 32 00.1**	**-0.2**
	baz=176,SNR=12						
109C	**Camp Elliot, M**	**1.58**	**292**	P	**Pb**	**18 32 03.2**	**0.0**
	baz=113,SNR=14						
109C				S	**Sb**	**18 32 23.7**	**+0.8**
	baz=113						
PFO	**Pinyon Flats O**	**1.59**	**325**	S	**Sg**	**18 32 24.9**	**-0.6**
	baz=146						
Y12C	**Blythe**	**1.60**	**26**	Pb	**Pg**	**18 32 04.9**	**-0.3**
	baz=205,SNR=13						
IRM	**Iron Mountain**	**1.86**	**6**	Pb	**Pb**	**18 32 08.9**	**+0.9**
	baz=185,SNR=8.4						
MURC	**Murrieta**	**2.01**	**310**	Pb	**Pb**	**18 32 11.6**	**+1.0**
	baz=131,SNR=6.6						
MURC				Sb	**Sg**	**18 32 37.9**	**-1.1**
	baz=131						

WEL 24 18:45:09.2±0.2,40°.51S×173°.43E,h164km±2km,ML3.7/12, 4C-9D,Error ellipse: s-maj=1.4km s-min=1.1km az=90.0, Cook Strait

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
DUWZ	**D'Urville Isla**	**0.47**	**128**	⇑PN	Pn	18 45 31.9	0.0
DUWZ				SN	Sn	18 45 48.7	-0.8
NNZ	**Nelson**	**0.70**	**183**	⇑PN	Pn	18 45 33.0	-0.1
QRZ	**Quartz Range**	**0.75**	**245**	PN	Pn	18 45 33.0	-0.4
TCW	**Tory Channel**	**0.95**	**138**	PN	Pn	18 45 35.1	+0.3
TCW				SN	Sn	18 45 52.8	-1.7
TCW				AML	AML	18 45 54.5	
TUWZ	**Tuamarina**	**0.99**	**157**	PN	Pn	18 45 35.3	+0.1
TUWZ				AML	AML	18 45 55.1	
TUWZ				AML	AML	18 45 55.7	
KIW	**Kapiti Island**	**1.18**	**108**	PN	Pn	18 45 36.6	-0.1
KIW				AML	AML	18 45 58.0	
KIW				AML	AML	18 45 58.2	
BSWZ	**Blackbirch Sta**	**1.25**	**164**	PN	Pn	18 45 37.6	+0.3
BSWZ				AML	AML	18 46 00.5	
BSWZ				AML	AML	18 46 00.7	
WEL	**Wellington**	**1.27**	**128**	⇓PN	Pn	18 45 37.6	+0.1

PREZ	**Palmer Road**	**1.30**	**26**	PN	Pn	18 45 37.6	-0.3
THZ	**Tophouse**	**1.31**	**197**	⇓PN	Pn	18 45 37.8	-0.1
OGWZ	**Otaki Gorge**	**1.36**	**103**	⇓PN	Pn	18 45 38.4	+0.1
CAW	**Cannon Point**	**1.38**	**116**	⇓PN	Pn	18 45 38.4	-0.1
CAW				AML	AML	18 46 01.0	
CAW				AML	AML	18 46 07.3	
BHW	**Baring Head**	**1.41**	**130**	PN	Pn	18 45 38.6	-0.2
BHW				AML	AML	18 46 01.4	
BHW				AML	AML	18 46 01.6	
WAZ	**Wanganui**	**1.41**	**58**	PN	Pn	18 45 39.2	+0.3
OHWZ	**Ohakea**	**1.47**	**79**	PN	Pn	18 45 39.7	+0.3
HOWZ	**Holdsworth Sta**	**1.63**	**104**	PN	Pn	18 45 40.9	-0.2
MSWZ	**Moikau Station**	**1.65**	**124**	PN	Pn	18 45 41.1	-0.1
MSWZ				AML	AML	18 46 05.0	
MSWZ				AML	AML	18 46 05.3	
MTW	**Mount Morrison**	**1.70**	**113**	⇓PN	Pn	18 45 41.7	-0.1
MTW				AML	AML	18 46 04.9	
MTW				AML	AML	18 46 05.5	
VRZ	**Vera Road**	**1.73**	**37**	PN	Pn	18 45 41.2	-0.9
DSZ	**Denniston Nort**	**1.74**	**224**	⇑PN	Pn	18 45 41.9	-0.3
DSZ				SN	Sn	18 46 05.2	-2.6
PLWZ	**Palliser**	**1.74**	**128**	⇓PN	Pn	18 45 42.0	-0.2
PAWZ	**Paruwai Farm**	**1.74**	**120**	⇓PN	Pn	18 45 42.1	-0.2
PAWZ				AML	AML	18 46 05.5	
PAWZ				AML	AML	18 46 06.2	
POWZ	**Post Office Ro**	**1.79**	**87**	PN	Pn	18 45 42.4	-0.3
TIWZ	**Tintock**	**1.89**	**99**	PN	Pn	18 45 43.7	-0.2
TIWZ				AML	AML	18 46 08.2	
TIWZ				AML	AML	18 46 10.3	
KHZ	**Kahutara**	**1.90**	**178**	⇓PN	Pn	18 45 44.0	+0.1
TRWZ	**Traveller**	**1.93**	**118**	PN	Pn	18 45 44.1	-0.1
TRWZ				AML	AML	18 46 09.3	
TRWZ				AML	AML	18 46 09.8	
PRWZ	**Pori Road**	**1.94**	**92**	⇑PN	Pn	18 45 44.4	+0.1
TMWZ	**Te Maipa**	**1.96**	**108**	PN	Pn	18 45 44.5	-0.1
TSZ	**Takapari Road**	**1.99**	**78**	⇓PN	Pn	18 45 44.5	-0.5
WNVZ	**Wahianoa**	**2.05**	**55**	PN	Pn	18 45 45.2	-0.7
DVHZ	**Dannevirke**	**2.10**	**85**	PN	Pn	18 45 45.6	-0.6
CPWZ	**Castlepoint**	**2.14**	**102**	PN	Pn	18 45 47.1	+0.4
BFZ	**Birch Farm**	**2.15**	**95**	PN	Pn	18 45 46.6	-0.2
BFZ				AML	AML	18 46 13.0	
BFZ				AML	AML	18 46 13.0	
PNHZ	**Pukenui**	**2.21**	**75**	PN	Pn	18 45 46.8	-0.7
BHHZ	**Black Hill Sta**	**2.27**	**64**	PN	Pn	18 45 47.3	-1.0
HIZ	**Hauiti**	**2.28**	**29**	PN	Pn	18 45 47.4	-1.0
ANWZ	**Angora Road**	**2.32**	**90**	PN	Pn	18 45 48.5	-0.3
KRHZ	**Kereru**	**2.42**	**70**	PN	Pn	18 45 49.2	-0.8
LTZ	**Lake Taylor**	**2.43**	**201**	PN	Pn	18 45 49.5	-0.5
PRHZ	**Porangahau**	**2.46**	**85**	PN	Pn	18 45 50.3	-0.2
KWHZ	**Kaweka Forest**	**2.54**	**66**	PN	Pn	18 45 51.5	-0.1
INZ	**Inchbonnie**	**2.66**	**213**	PN	Pn	18 45 52.1	-0.8
INZ				SN	Sn	18 46 24.3	-2.6
BKZ	**Black Stump Fm**	**2.72**	**61**	PN	Pn	18 45 52.2	-1.4
OXZ	**Oxford**	**3.00**	**200**	PN	Pn	18 45 56.1	-0.9
OXZ				SN	Sn	18 46 29.3	-4.9
CRLZ	**Canterbury Las**	**3.12**	**191**	PN	Pn	18 45 56.9	-1.6
MQZ	**McQueen's Vall**	**3.24**	**190**	PN	Pn	18 45 58.0	-2.0
MQZ				SN	Sn	18 46 34.1	-5.5
WVZ	**Waitaha Valley**	**3.25**	**217**	PN	Pn	18 45 59.7	-0.5
ODZ	**Otahua Downs**	**4.97**	**203**	PN	Pn	18 46 20.8	-1.5
ODZ				SN	Sn	18 47 14.7	-4.9

*ISCJB **24** 18:46:40.9±0.6,22°.9N±0°.1×93°.83E±0°.08,h105km, mb3.7/14,Error ellipse: s-maj=16.9km s-min=5.0km az=33.1*

*IDC **24** 18:46:42.7±2.9,23°.17N×94°.41E,h94km±26km,mb3.5/13, mb1 3.6/14,mb1mx3.3/48,mbtmp3.8/14,Error ellipse: s-maj=41.9km s-min=11.3km az=57.0*

ISC 24 18:46:42.0±0.7,22°.8N±0°.1×93°.8E±0°.1,h105km,n24, σ1§88/31,mb3.6/14,Myanmar-India border region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
SHL	**Shillong**	**3.30**	**328**	*i* P	**Pn**	**18 47 35.0**	**+3.0**
SHL				*e*S	**Sn**	**18 48 08.3**	**-2.3**
CMAR	**Chiang Mai Arr**	**6.44**	**131**	P	**Pn**	**18 48 13.3**	**-1.1**
	0.7nm,0.3s,baz=313,slow=14,SNR=23						
CMAR				S	**Sn**	**18 49 23.9**	**-2.7**
	0.8nm,0.3s,baz=318,slow=18,SNR=5.0						
GUN	**Gumba**	**8.81**	**307**	*e*Pn	**Pn**	**18 48 48.2**	**+1.4**
GUN				*e*Sn	**Sn**	**18 50 22.1**	**-2.4**
	319nm,0.8s						
PKIN	**Phulchoki**	**9.00**	**304**	*e*Pn	**Pn**	**18 48 50.4**	**+1.1**
PKIN				*e*Sn	**Sn**	**18 50 26.4**	**-2.6**
	57nm,0.4s						
KKN	**Kakani**	**9.19**	**305**	*e*Pn	**Pn**	**18 48 53.2**	**+1.3**
KKN				*e*Sn	**Sn**	**18 50 32.0**	**-1.7**
	54nm,0.3s						
DMN	**Daman**	**9.23**	**303**	*e*Pn	**Pn**	**18 48 53.9**	**+1.4**
DMN				*e*Sn	**Sn**	**18 50 33.1**	**-1.7**
GKN	**Gorkha**	**9.79**	**304**	*e*Pn	**Pn**	**18 49 00.8**	**+0.8**
GKN				*e*Sn	**Sn**	**18 50 45.6**	**-2.5**
	144nm,0.4s						
KOLN	**Koldanda**	**10.49**	**300**	*e*Pn	**Pn**	**18 49 10.4**	**+0.9**
KOLN				*e*Sn	**Sn**	**18 51 03.0**	**-2.2**
	78nm,0.4s						
PYUN	**Piuthan**	**11.12**	**301**	*e*Pn	**Pn**	**18 49 18.2**	**+0.1**
PYUN				*e*Sn	**Sn**	**18 51 17.7**	**-2.8**
	148nm,0.8s						
AAK	**Ala-Archa**	**25.52**	**325**	P	**P**	**18 52 03.5**	**+2.7**
	1.4nm,0.6s,baz=109,slow=7.5,SNR=5.9						
MKAR	**Makanchi Array**	**25.72**	**342**	P	**P**	**18 52 02.6**	**+0.2**
	5.7nm,0.6s,baz=146,slow=9.9,SNR=78						
SONM	**Songino Array**	**26.98**	**19**	P	**P**	**18 52 11.4**	**-2.5**
	0.5nm,0.6s,baz=212,slow=8.9,SNR=2.6						
ZALV	**Zalesovo Beam**	**31.87**	**350**	P	**P**	**18 52 55.5**	**-1.5**
	0.6nm,0.4s,baz=165,slow=7.7,SNR=4.7						
BVAR	**Borovoye Array**	**35.09**	**335**	P	**P**	**18 53 25.3**	**+0.3**
	0.2nm,0.3s,baz=126,slow=7.3,SNR=3.8						
WRA	**Warramunga Arr**	**58.03**	**134**	P	**P**	**18 56 25.3**	**+1.1**
	2.7nm,0.6s,baz=320,slow=7.5,SNR=45						
FINES	**FINESS Array B**	**59.64**	**329**	P	**P**	**18 56 36.6**	**+1.8**
	0.3nm,0.3s,baz=76,slow=5.5,SNR=9.5						
ASAR	**Alice Springs**	**60.41**	**137**	P	**P**	**18 56 42.4**	**+1.7**
	2.4nm,0.6s,baz=318,slow=6.6,SNR=93						
ARCES	**ARCESS Array B**	**61.30**	**338**	P	**P**	**18 56 46.5**	**+0.5**
	1.2nm,0.8s,baz=102,slow=8.4,SNR=7.1						
GERES	**GERESS Array B**	**66.82**	**315**	P	**P**	**18 57 23.8**	**+1.2**
	0.1nm,0.3s,baz=89,slow=8.2,SNR=2.3						
STKA	**Stephens Creek**	**71.01**	**138**	P	**P**	**18 57 49.7**	**+1.2**
	0.6nm,0.6s,baz=326,slow=4.4,SNR=4.6						
ILAR	**Eielson Array**	**81.15**	**22**	P	P	18 58 40.3	-5.3
	0.2nm,0.5s,baz=313,slow=6.3,SNR=4.0						
TORD	**Torodi Ar. Bea**	**86.91**	**283**	P	P	18 59 20.7	+4.9
	0.5nm,0.8s,baz=64,slow=3.4,SNR=3.2						
YKA	**Yellowknife Ar**	**92.08**	**13**	P	**P**	**18 59 36.9**	**-2.2**
	0.1nm,0.7s,baz=347,slow=5.1,SNR=2.5						
TXAR	**Lajitas Array**	**125.54**	**19**	PKP	**PKPdf**	**19 05 32.3**	**+0.7**
	0.3nm,0.8s,baz=335,slow=4.0,SNR=2.5						

*NIED **24** 18:52:00,37°.70N×142°.10E,h23km,Mw3.3 Best double couple: M◇1.00000×10^14 NP1:◇◇181.00000°,δ36.00000°, λ-89.00000°. NP2:◇◇360.00000°,δ54.00000°, λ-91.00000°.*

JMA 24 18:52:53.9±0.2,37°.72N×142°.06E,h26km±4km,M3.6,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**0.92**	**323**	P	Pn	18 53 10.8	-0.4
JIO				S	Sb	18 53 22.3	-0.8
JFK	**Kawauchi**	**1.01**	**250**	P	Pn	18 53 12.2	-0.2
JFK				S	Sb	18 53 25.0	-0.5
JMM	**Marumori**	**1.01**	**279**	P	Pn	18 53 12.4	0.0
JMM				S	Sb	18 53 25.3	-0.4
ONAJ	**Iwakimizuishiy**	**1.18**	**239**	P	Pn	18 53 14.6	-0.2
ONAJ				S	Sn	18 53 29.0	-1.0
JOU	**Okura**	**1.28**	**301**	P	Pn	18 53 16.6	+0.5
JFT	**Otama**	**1.38**	**262**	P	Pb	18 53 18.7	-0.4
JFT				*e*S	Sb	18 53 36.1	-0.2
JHO	**Hitachi**	**1.63**	**228**	P	Pn	18 53 20.8	-0.1
JHO				S	Sn	18 53 39.6	-1.4
MAT	**Matsushiro**	**3.30**	**250**	P	Pn	18 53 47.2	+3.4
MAT				S	Sb	18 54 28.5	-2.8

*IDC **24** 18:53:38.8±3.3,28°.59N×88°.62E,h0km,mb3.4/4, mb1 3.5/6,mb1mx3.3/35,mbtmp3.4/6,ML3.3/2,Error ellipse: s-maj=183.5km s-min=19.4km az=64.0*

ISC 24 18:53:40.6±2.7,28°.0N±0°.4×86°.9E±0°.5,h35km,n7,σ0§47/5, mb3.4/4,Nepal

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
SHL	**Shillong**	**5.10**	**117**	*i* P	**Pn**	**18 54 54.8**	**+0.1**
SHL				*e*S	Sn	18 56 00.0	+7.6
CMAR	**Chiang Mai Arr**	**14.60**	**128**	Pn	Pn	18 56 56.9	-7.8
	0.0nm,0.3s,baz=315,slow=14,SNR=3.3						
MKAR	**Makanchi Array**	**19.11**	**350**	P	**P**	**18 58 00.3**	**-0.1**
	0.1nm,0.3s,baz=172,slow=10,SNR=9.5						
KURBB	**Kurchatov Arra**	**23.47**	**347**	P	**P**	**18 58 47.4**	**+0.5**
	1.3nm,0.8s,baz=157,slow=9.3,SNR=12						
ZALV	**Zalesovo Beam**	**25.97**	**357**	P	**P**	**18 59 09.4**	**-0.4**
	0.4nm,0.4s,baz=183,slow=8.4,SNR=3.5						
WRA	**Warramunga Arr**	**66.17**	**131**	P	P	19 04 22.8	-2.2
	0.2nm,0.5s,baz=326,slow=6.4,SNR=3.6						
ASAR	**Alice Springs**	**68.52**	**134**	P	**P**	**19 04 39.6**	**-0.1**
	0.2nm,0.6s,baz=322,slow=5.9,SNR=4.8						

*IDC **24** 19:20:53.0±0.8,38°.28N×144°.87E,h0km,mb3.7/12, mb1 3.9/15,mb1mx3.7/34,mbtmp3.7/15,ML3.2/3,MS2.7/1, Ms1 2.7/1,ms1mx2.2/32,Error ellipse: s-maj=21.9km s-min=18.1km az=108.0*

*ISCJB **24** 19:20:56.5±0.6,38°.47N±0°.04×144°.66E±0°.04,h29km, mb3.7/12,Error ellipse: s-maj=6.5km s-min=4.5km az=168.6*

*JMA **24** 19:20:57.2±0.2,38°.44N×144°.64E,h41km,M4.1*

ISC 24 19:20:58.1±0.8,38°.42N±0°.06×144°.69E±0°.07,h29km,n36, σ1§04/42,mb3.8/12,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
OFUJ	**Ofunato**	**2.45**	**287**	P	**Pn**	**19 21 35.6**	**-0.5**
OFUJ				*e*S	**Sn**	**19 22 04.8**	**-0.2**
JIO	**Ouri**	**2.62**	**272**	P	**Pn**	**19 21 37.7**	**-0.7**
JIO				S	**Sn**	**19 22 07.5**	**-1.8**
JTH	**Tanohata**	**2.67**	**306**	P	**Pn**	**19 21 38.2**	**-0.9**
JTH				*e*S	**Sn**	**19 22 09.4**	**-1.0**
JMK	**Ichinoseki**	**2.76**	**282**	P	**Pn**	**19 21 40.1**	**-0.3**
JMK				*e*S	**Sn**	**19 22 11.9**	**-0.9**
JOM	**Ohasama**	**2.85**	**293**	P	**Pn**	**19 21 41.3**	**-0.3**
JOM				*e*S	**Sn**	**19 22 14.1**	**-0.8**
JMM	**Marumori**	**3.12**	**261**	*e*S	**Sn**	**19 22 19.8**	**-1.8**
JANG	**Nango**	**3.14**	**309**	P	**Pn**	**19 21 44.5**	**-1.0**
JANG				*e*S	**Sn**	**19 22 20.1**	**-1.9**
JOU	**Okura**	**3.16**	**270**	P	**Pn**	**19 21 46.0**	**+0.1**
JOU				*e*S	**Sn**	**19 22 29.0**	**-0.6**
JRG	**Rokugo**	**3.31**	**288**	P	**Pn**	**19 21 48.2**	**+0.3**
JRG				*e*S	**Sn**	**19 22 26.7**	**+0.5**
JYK	**Kaneyama**	**3.42**	**280**	P	**Pn**	**19 21 49.7**	**+0.2**
JYK				*e*S	**Sn**	**19 22 29.3**	**+0.2**
JFT	**Otama**	**3.55**	**257**	*e*S	**Sn**	**19 22 31.7**	**-0.6**
JTM	**Tenmabayashi**	**3.66**	**311**	P	**Pn**	**19 21 52.4**	**-0.3**
JTM				*e*S	**Sn**	**19 22 33.1**	**-1.8**
JNBK	**Urakawa-nobuka**	**4.13**	**340**	P	**Pn**	**19 21 58.3**	**-0.9**
JNBK				*e*S	**Sn**	**19 22 45.1**	**-1.3**
MJAR	**Matsushiro Arr**	**5.48**	**252**	Pn	**Pn**	**19 22 18.2**	**+0.4**
	0.8nm,0.3s,baz=75,slow=13,SNR=10						
ASAJ	**Asahikawa**	**5.90**	**345**	Pn	**Pn**	**19 22 23.1**	**-0.5**
	1.4nm,0.3s,baz=187,slow=15,SNR=21						
ASAJ				Sn	**Sn**	**19 23 29.8**	**-0.4**
	0.6nm,0.3s,baz=96,slow=19,SNR=3.4						
ASAJ				LR	LR	19 25 23.8	
	comp=Z,57nm,18.9s,baz=176,slow=44						
USRK	**Ussuriysk Ar.**	**11.15**	**305**	Pn	**Pn**	**19 23 37.2**	**+1.7**
	0.2nm,0.3s,baz=104,slow=12,SNR=6.4						
KLR	**Kul'dur**	**14.26**	**323**	Pn	**P**	**19 24 25.4**	**+0.6**
	0.1nm,0.3s,baz=154,slow=7.6,SNR=4.3						
PETK	**Petropavlovsk-**	**17.22**	**27**	Pn	**P**	**19 24 59.7**	**+2.0**
	0.1nm,0.3s,baz=221,slow=10,SNR=3.4						
SEY	**Seymchan**	**24.99**	**8**	P	**P**	**19 26 19.4**	**+0.5**
	2.8nm,0.8s,baz=168,slow=3.7,SNR=11						
YAK	**Yakutsk**	**25.38**	**343**	P	**P**	**19 26 23.

ASAJ Sn **Sn** **19 51 23.7 +3.7**
comp=Z,26nm,0.3s,baz=255,slow=29,SNR=4.0
ASAJ **Asahikawa** **3.87 348** *e*Pn **Pn** **19 50 35.4 +0.1**
ASAJ Sn **Sn** **19 51 23.7 +3.7**
YUK **Yuzh-Kuril'sk** **4.03 23**⇑ *i*P **Pn** **19 50 36.3 -1.3**
YUK *i* S **Sn** **19 51 21.0 -3.0**
YUK pmax pmax
comp=E,166nm,0.3s
YUK pmax pmax
comp=Z,750nm,0.3s
YUK pmax pmax
comp=N,90nm,0.2s
YUK MLR MLR
comp=Z,1μm,17.0s
YUK MLR MLR
comp=E,2μm,16.0s
SHO **Shikotan** **4.23 32**⇑ *i*P **Pn** **19 50 37.9 -2.4**
SHO *i* S **Sn** **19 51 23.4 -5.6**
SHO pmax pmax
comp=Z,471nm,0.4s
SHO pmax pmax
comp=N,227nm,0.5s
SHO pmax pmax
comp=E,258nm,0.5s
MAJO **Matsushiro** **5.74 230***c* *i*P **Pn** **19 51 01.6 +0.6**
MAJO **Matsushiro** **5.74 230** *e*Pn **Pn** **19 51 01.7 +0.6**
MAJO *e*Sn **Sn** **19 52 01.7 -4.4**
MAT **Matsushiro** **5.74 230** P **Pn** **19 51 01.7 +0.7**
MAT *e*S **Sn** **19 52 09.9 +3.8**
MJAR **Matsushiro Arr** **5.74 230** Pn **Pn** **19 51 01.7 +0.6**
comp=E,15nm,0.3s,baz=40,slow=11,SNR=285
MJAR LR LR 19 53 37.2
comp=E,910nm,18.2s,baz=45,slow=43
MJB9 **Matsu-Tunnel** **5.74 231** *e*Pn **Pn** **19 51 01.8 +0.8**
KUR **Kuril'sk** **5.78 31***c* *i*P **Pn** **19 51 01.0 -0.5**
KUR *e*S **Sn** **19 52 03.8 -3.2**
KUR pmax pmax
comp=N,17nm,0.4s
KUR pmax pmax
comp=E,34nm,0.4s
KUR pmax pmax
comp=Z,106nm,0.4s
KUR pmax pmax
comp=Z,788nm,4.1s
KUR smax smax
comp=N,121nm,0.5s
KUR smax smax
comp=E,176nm,0.5s
KUR pmax pmax
comp=N,717nm,4.4s
KUR pmax pmax
comp=E,1μm,4.4s
YSS **Yuzh-Sakhalins** **6.65 354** *e*P Pn 19 51 18.6 +5.0
YSS *e*S **Sn** **19 52 26.6 -2.0**
YSS pmax pmax
comp=Z,20nm,1.0s
YSS MLR MLR
comp=Z,1μm,13.0s
YSS MLR MLR
comp=N,800nm,15.0s
INU **Inuyama** **7.26 229** *e*Pn **Pn** **19 51 22.9 +1.0**
JHJ **Hachijo jima 2** **7.86 205** Pn **Pn** **19 51 27.3 -2.8**
comp=N,23nm,0.3s,baz=85,slow=22,SNR=8.4
JHJ Sn Sn 19 52 50.7 -7.5
comp=N,21nm,0.3s,baz=72,slow=19,SNR=3.7
JHJ LR LR 19 54 12.2
comp=N,294nm,20.1s,baz=166,slow=36
VLA **Vladivostok** **9.26 291**⇓ *e*P **Pn** **19 51 51.5 +2.2**
USRK **Ussuriysk Ar.** **9.50 298** Pn **Pn** **19 51 54.7 +2.1**
comp=N,4.0nm,0.3s,baz=98,slow=12,SNR=59
USRK LR LR 19 55 36.3
comp=N,706nm,18.8s,baz=120,slow=38
MSHR **Mys Shultsa** **9.68 287**⇓ *e*P **Pn** **19 51 54.5 -0.6**
TYV **Tymovskoe** **10.56 356** *e*P **Pn** **19 52 09.0 +2.0**
TYV pmax pmax
comp=Z,9.0nm,0.8s
TYV MLR MLR
comp=N,1μm,10.0s
TYV MLR MLR
comp=Z,1μm,17.0s
MDJ **Mudanjiang** **11.26 297** P **Pn** **19 52 18.3 +1.6**
MDJ pmax pmax
comp=Z,7.0nm,0.9s
MDJ pmax pmax
comp=Z,170nm,6.0s
MDJ LR LR
comp=Z,420nm,14.7s
MDJ LR LR
comp=Z,900nm,14.7s
MDJ LR LR
comp=Z,1μm,13.9s
MDJ **Mudanjiang** **11.26 297** *e*Pn **Pn** **19 52 17.3 +0.6**
comp=Z,32nm,1.1s
KLR **Kul'dur** **12.28 320** Pn **Pn** **19 52 31.7 +1.1**
comp=Z,0.1nm,0.3s,baz=135,slow=14,SNR=4.9
KLR LR LR 19 57 48.5
comp=Z,345nm,18.5s,baz=136,slow=40
KLR **Kul'dur** **12.28 320**⇑ *e*P **Pn** **19 52 31.5 +0.9**
JNU **Nakatsue** **12.54 239** LR LR 19 57 40.5
comp=Z,673nm,19.1s,baz=113,slow=39
KSRS **Korea Array** **12.62 262** Pn **Pn** **19 52 38.0 +2.7**
comp=Z,0.7nm,0.3s,baz=71,slow=14,SNR=9.2
KSRS LR LR 19 57 17.1
comp=Z,812nm,18.1s,baz=72,slow=36
KS01 **Wonju Array Si** **12.64 262** *e*Pn **Pn** **19 52 36.8 +1.2**
KSAR **Wonju Array Be** **12.66 262** P **Pn** **19 52 38.1 +2.3**
KSAR **Wonju Array Be** **12.66 262** Pn **Pn** **19 52 38.0 +2.3**
CN2 **Changchun** **13.99 290** *e*P **Pn** **19 52 53.9 -0.1**
PETK **Petropavlovsk-** **15.94 32** Pn **P** **19 53 23.1 -0.3**
comp=Z,0.3nm,0.3s,baz=211,slow=8.4,SNR=3.9
PETK LR LR 19 59 04.4
comp=Z,99nm,20.9s,baz=219,slow=36
HIA **Hailar** **19.14 306** *e*P **P** **19 53 58.2 -0.5**
HIA pmax pmax
comp=Z,8.0nm,0.6s
HIA **Hailar** **19.14 306** *e*P **P** **19 53 58.2 -0.5**
comp=Z,8.2nm,0.6s
MA2 **Magadan** **19.77 11** P **P** **19 54 06.2 +0.7**
comp=Z,0.6nm,0.3s,baz=216,slow=14,SNR=3.9
MA2 LR LR 20 02 45.3
comp=Z,181nm,18.3s,baz=228,slow=40
BJI **Beijing** **21.00 278** P **P** **19 54 17.8 -1.2**
BJI S **S** **19 58 08.3 -3.4**
BJI pmax pmax
comp=Z,9.0nm,0.8s
BJI pmax pmax
comp=Z,110nm,5.7s
BJI LR LR
comp=Z,250nm,13.7s
BJI LR LR
comp=Z,410nm,16.7s
BJI LR LR
comp=Z,310nm,20.1s
NJ2 **Nanjing** **21.64 255** *e*P **P** **19 54 25.5 -0.4**
NJ2 pmax pmax
comp=Z,20nm,0.8s
NJ2 LR LR
comp=Z,440nm,16.3s
NJ2 LR LR
comp=Z,1μm,30.4s
NJ2 LR LR
comp=Z,840nm,23.9s
SEY **Seymchan** **23.22 10** P **P** **19 54 41.5 -0.9**
comp=Z,3.5nm,0.5s,baz=180,slow=10,SNR=26
SEY **Seymchan** **23.22 10**⇑ *e*P **P** **19 54 41.9 -0.5**
YAK **Yakutsk** **23.33 343** *e*P **P** **19 54 43.7 +0.2**
YAK *e**PP **sP** **19 54 52.5 -0.6**
YAK *e*PPP PPP 19 55 15.8
YAK *e*S **S** **19 58 51.1 -3.4**
YAK *e**SS **sS** **19 59 06.5 +0.5**
YAK *e*SSS SSS 19 59 35.5
YAK pmax pmax
comp=Z,9.0nm,0.8s
YAK pmax pmax
comp=Z,59nm,2.3s
YAK smax smax
comp=E,116nm,3.3s
YAK smax smax
comp=N,169nm,3.7s
YAK MLR MLR
comp=Z,347nm,15.0s
YAK MLR MLR
comp=N,347nm,16.0s
YAK MLR MLR
comp=E,310nm,15.0s
CIT **Chita** **23.74 310** *e*P P 19 54 41.6 -6.1
CIT *e* 19 54 47.0
CIT *e* 19 54 54.4
CIT pmax pmax
comp=Z,37nm,0.8s
HHC **Hu-ho-hao-te** **24.34 282** *e*P **P** **19 54 53.6 +0.2**
HHC pP sP 19 55 03.4 +0.1
HHC PP **PnPn** **19 55 26.0 +2.2**
HHC S **S** **19 59 08.5 -2.9**
HHC sS sS 19 59 21.9 -0.9
HHC pmax pmax
comp=Z,20nm,0.9s
HHC pmax pmax
comp=Z,77nm,7.0s
HHC LR LR
comp=Z,610nm,13.3s
HHC LR LR
comp=Z,420nm,13.9s
HHC LR LR
comp=Z,590nm,13.5s
YULB **Yu-li** **25.33 235** *e*P **P** **19 55 00.2 -2.1**
comp=Z,9.3nm,0.8s
BOD **Bodaibo** **25.84 323** *e*P **P** **19 55 06.4 -0.3**
BOD pmax pmax
comp=Z,7.0nm,0.9s
TWG **Pinlang** **25.89 234** *e*P **P** **19 55 06.5 -0.9**
comp=Z,130nm,1.3s
SONA1 **Songino Array** **27.61 298** *e*P **P** **19 55 22.0 -0.9**
SONM **Songino Array** **27.61 298** P **P** **19 55 23.6 +0.6**
comp=Z,3.0nm,0.6s,baz=91,slow=9.0,SNR=12
SONM LR LR 20 07 12.1
comp=Z,402nm,18.3s,baz=80,slow=38
XAN **Xi'an** **28.28 268** P **P** **19 55 28.8 -0.1**
XAN pmax pmax
comp=Z,8.0nm,0.6s
XAN pmax pmax
comp=Z,56nm,7.0s
H11N2 **WAKE ISLAND Hy** **28.57 129** T T 20 25 28.3
baz=322
H11N1 **WAKE ISLAND Hy** **28.58 129** T T 20 25 35.0
baz=322
H11N3 **WAKE ISLAND Hy** **28.59 129** T T 20 25 38.9
baz=322
H11S1 **WAKE ISLAND Hy** **29.41 131** T T 20 26 32.8
baz=323,slow=76,SNR=34
H11S3 **WAKE ISLAND Hy** **29.41 131** T T 20 26 37.9
baz=323,slow=76,SNR=32
H11S2 **WAKE ISLAND Hy** **29.43 131** T T 20 26 43.2
baz=323,slow=76,SNR=35
ENH **Enshi** **29.51 261** *e*P **P** **19 55 38.9 -0.9**
comp=Z,13nm,0.6s
TLY **Talaya** **29.68 306** LR LR 20 08 30.6
comp=Z,170nm,19.6s,baz=102,slow=38
TLY **Talaya** **29.68 306** *e*P P 19 55 46.2 +5.1
TLY *e*S **S** **20 00 34.3 -1.1**
TLY pmax pmax
comp=Z,4.0nm,0.8s
TLY MLR MLR
comp=Z,258nm,16.0s
BILL **Bilibino** **30.36 17***d* *i*P **P** **19 55 47.0 +0.1**
BILL *i* 19 55 55.4
BILL pmax pmax
comp=Z,7.0nm,1.0s
BILL MLR MLR
comp=Z,95nm,16.0s
BILL **Bilibino** **30.36 17** *e*P **P** **19 55 46.6 -0.3**
comp=Z,7.7nm,0.8s
MOY **Mondy** **31.32 306** *e*P P 19 55 59.4 +3.6
LZH **Lanzhou** **31.42 275** *e*P P 19 56 02.0 +5.2
LZH pP sP 19 56 11.4 +4.7
LZH sP pP 19 56 15.8 +12
LZH pmax pmax
comp=Z,16nm,1.0s
TIXI **Tiksi** **32.27 351** *e*P **P** **19 56 04.3 +0.7**
TIXI pmax pmax
comp=Z,2.0nm,0.5s
TIXI **Tiksi** **32.27 351** *e*P **P** **19 56 04.3 +0.7**
comp=Z,1.6nm,0.5s
GTA **Gaotai** **33.44 283** *e*P **P** **19 56 15.1 +0.7**
GTA pP sP 19 56 27.3 +2.9
GTA sP pP 19 56 32.5 +11
GTA S **S** **20 01 33.3 -1.3**
GTA sS sS 20 01 53.9 +7.8
GTA pmax pmax
comp=Z,8.0nm,1.1s
GTA pmax pmax
comp=Z,64nm,6.2s
GTA LR LR
comp=Z,230nm,14.5s
GTA LR LR
comp=Z,500nm,16.4s
GTA LR LR
comp=Z,510nm,15.2s
CD2 **Chengdu** **33.56 266** P **P** **19 56 14.6 -0.9**
CD2 pmax pmax
comp=Z,1.0nm,0.5s
GYA **Guiyang** **33.62 257** *e*P **P** **19 56 15.3 -0.8**
GYA pmax pmax
comp=Z,10.0nm,0.8s
DAV **Davao City (W)** **36.88 211** LR LR 20 12 14.3
comp=Z,96nm,18.1s,baz=15,slow=37
KMI **Kunming** **37.30 259** P **P** **19 56 48.8 +0.9**
KMI pP sP 19 56 56.5 -1.3
KMI sP pP 19 57 01.0 +6.1
KMI PP **PP** **19 58 12.9 -0.1**
KMI S **S** **20 02 35.4 +1.2**
KMI pmax pmax
comp=Z,7.0nm,1.5s
KMI pmax pmax
comp=Z,72nm,6.2s
KMI LR LR
comp=Z,450nm,15.9s
KMI LR LR
comp=Z,360nm,15.9s
KMI LR LR
comp=Z,530nm,15.7s
WMQ **Urumqi** **41.04 294** P **P** **19 57 21.3 +2.5**
WMQ pP sP 19 57 30.8 +2.0
WMQ sP pP 19 57 36.8 +11
WMQ S **S** **20 03 25.3 -4.7**
WMQ pmax pmax
comp=Z,5.0nm,0.8s
WMQ pmax pmax
comp=Z,23nm,5.0s
WMQ LR LR
comp=Z,95nm,12.6s
WMQ LR LR
comp=Z,120nm,14.2s
NRIK **Noril'sk** **41.07 333** LR LR 20 16 01.4
comp=Z,262nm,18.9s,baz=108,slow=39
ZAA0 **Zalesovo Array** **41.10 310** *e*P **P** **19 57 18.1 -0.9**
ZALV **Zalesovo Beam** **41.10 310** P **P** **19 57 19.5 +0.4**
comp=Z,3.7nm,0.5s,baz=94,slow=7.9,SNR=26
ZALV LR LR 20 15 22.7
comp=Z,144nm,20.6s,baz=70,slow=38
NVS **Novosibirsk** **41.94 311** *e*P P 19 57 31.8 +5.9
CAST **Castle Rocks** **43.50 36** *e*P **P** **19 57 40.4 +1.9**
comp=Z,34nm,1.8s
LSA **Lhasa** **43.76 273** *e*P **P** **19 57 41.9 +0.3**
LSA pmax pmax
comp=Z,7.0nm,0.6s
LSA **Lhasa** **43.76 273** *e*P **P** **19 57 41.9 +0.3**
comp=Z,7.5nm,0.6s
CHTO **Chiang Mai** **43.87 254** *e*P **P** **19 57 41.4 -0.6**
CHTO pmax pmax
comp=Z,6.0nm,0.9s
CHTO **Chiang Mai** **43.87 254** *e*P **P** **19 57 41.4 -0.6**
comp=Z,5.8nm,0.9s
MK01 **Makanchi Array** **43.96 300** *e*P **P** **19 57 42.4 0.0**
MK31 **Makanchi Array** **43.96 300** *e*P **P** **19 57 42.6 +0.1**
MK31 **Makanchi Array** **43.96 300** *e*P **P** **19 57 42.6 +0.1**
MKAR **Makanchi Array** **43.96 300** P **P** **19 57 42.6 +0.1**
comp=Z,3.2nm,0.8s,baz=85,slow=10,SNR=19
CM31 **Chiang Mai Arr** **44.10 254** *e*P **P** **19 57 42.4 -1.4**
CMAR **Chiang Mai Arr** **44.10 254** P **P** **19 57 44.5 +0.6**
comp=Z,1.1nm,0.5s,baz=42,slow=7.1,SNR=20
CMAR **Chiang Mai Arr** **44.10 254***c* *e*P **P** **19 57 44.7 +0.9**
CMAR pmax pmax
comp=Z,1.0nm,0.5s
CM01 **Chiang Mai Arr** **44.11 254** *e*P **P** **19 57 43.3 -0.6**
MLY **Manley** **44.11 34** *e*P **P** **19 57 44.7 +1.2**
comp=Z,3.4nm,0.7s
COLD **Coldfoot** **44.41 31** *e*P **P** **19 57 46.4 +0.7**
comp=Z,8.8nm,1.4s
RND **Reindeer** **44.95 36** *e*P P 19 57 45.6 -4.6
RND pmax pmax
comp=Z,21nm,1.4s
RND **Reindeer** **44.95 36** *e*P P 19 57 45.6 -4.6
comp=Z,21nm,1.4s
MDM **Murphy Dome** **45.18 34** *e*P **P** **19 57 51.1 -0.8**
comp=Z,5.5nm,0.9s
WRH **Wood River Hil** **45.25 35** *e*P P 19 57 47.8 -4.6
comp=Z,4.7nm,0.8s
KURK **Kurchatov** **45.38 306***c* *i*P **P** **19 57 53.7 +0.1**
KURK pmax pmax
comp=Z,5.0nm,0.6s
KURK **Kurchatov** **45.38 306** *e*P **P** **19 57 52.7 -0.9**
comp=Z,12nm,0.6s
IL1 **Eielson Array** **45.76 34** *e*P **P** **19 57 54.7 -1.8**
ILAR **Eielson Array** **45.76 34** P **P** **19 57 56.9 +0.4**
comp=Z,2.0nm,0.7s,baz=260,slow=6.4,SNR=34
ILB **Eielson Array** **45.76 34** *e*P **P** **19 57 56.0 -0.5**
DOT **Dot Lake** **47.08 35** *e*P **P** **19 58 06.9 0.0**
comp=Z,70nm,1.9s
EGAK **Eagle** **48.20 34** *e*P P **19 58 15.6 +0.1**
comp=Z,32nm,2.0s
GUN **Gumba** **48.66 274** *e*P **P** **19 58 20.4 +0.4**
comp=Z,90nm,0.5s
KKN **Kakani** **49.18 274** *e*P **P** **19 58 24.6 +0.8**
PKIN **Phulchoki** **49.20 274** *e*P **P** **19 58 24.5 +0.5**
comp=Z,15nm,0.5s
DMN **Daman** **49.41 274** *e*P **P** **19 58 25.1 -0.5**
GKN **Gorkha** **49.56 275** *e*P **P** **19 58 26.7 0.0**
comp=Z,23nm,0.6s
TKM2 **Tokmak 2** **49.69 297** *e*P **P** **19 58 27.7 +0.2**
TKM2 pmax pmax
comp=Z,14nm,0.6s
TKM2 **Tokmak 2** **49.69 297** *e*P **P** **19 58 27.7 +0.2**
comp=Z,14nm,0.6s
BRVK **Borovoye** **49.78 311**⇑ *e*P **P** **19 58 26.9 -0.9**
BRVK pmax pmax
comp=Z,1.0nm,0.8s
BRVK **Borovoye** **49.78 311** *e*P **P** **19 58 28.9 +1.1**
comp=Z,6.6nm,0.6s
KAPI **Kappang** **50.21 212** LR LR 20 20 03.9
comp=Z,13nm,21.0s,baz=354,slow=36
KOLN **Koldanda** **50.47 275** *e*P **P** **19 58 35.0 +1.4**
comp=Z,20nm,0.5s
ZRNK **Zerenda** **50.55 311** *e*P **P** **19 58 34.7 +1.1**
ZRNK pmax pmax
comp=Z,8.0nm,0.6s
ZRNK **Zerenda** **50.55 311** *e*P **P** **19 58 34.7 +1.1**
comp=Z,8.3nm,0.6s
AAK **Ala-Archa** **50.55 297** LR LR 20 21 16.9
comp=Z,194nm,18.5s,baz=94,slow=38
AAK **Ala-Archa** **50.55 297**⇑ *e*P **P** **19 58 33.6 -0.4**
AAK pmax pmax
comp=Z,4.0nm,1.4s
AAK **Ala-Archa** **50.55 297** *e*P **P** **19 58 34.2 +0.2**
comp=Z,4.7nm,0.9s
INK **Inuvik** **50.64 28** *e*P **P** **19 58 35.5 +1.5**
INK pmax pmax
comp=Z,5.0nm,0.6s
INK **Inuvik** **50.64 28** *e*P **P** **19 58 35.5 +1.5**
comp=Z,4.7nm,0.6s
KSH **Kashi** **50.75 292** *e*P P 19 58 40.8 +5.3
KSH *e*pP sP 19 58 53.0 +7.4
KSH *e*sP pP 19 58 58.5 +16
KSH *e*PP PP 20 00 38.9 +7.4
KSH S **S** **20 05 54.3 +4.6**
KSH ScS **ScS** **20 08 24.3 -0.6**
KSH pmax pmax
comp=Z,92nm,6.4s
KSH LR LR
comp=Z,140nm,6.0s
KSH LR LR
comp=Z,130nm,6.8s
KSH LR LR
comp=Z,170nm,4.7s
PYUN **Piuthan** **50.77 276** *e*P **P** **19 58 37.6 +1.7**
comp=Z,16nm,0.4s
EKS2 **Erkin-Say** **51.03 297** *e*P **P** **19 58 37.6 0.0**
EKS2 pmax pmax
comp=Z,4.0nm,0.6s
EKS2 **Erkin-Say** **51.03 297** *e*P **P** **19 58 37.6 0.0**
comp=Z,4.3nm,0.6s
KKAR **Karatay Array** **53.07 299** *e*P **P** **19 58 52.0 -0.6**
KKAR **Karatay Array** **53.07 299** *e*P **P** **19 58 52.0 -0.6**
ARU **Arti** **55.11 318** LR LR 20 25 31.0
comp=Z,296nm,18.4s,baz=70,slow=39
ARU **Arti** **55.11 318***d* *i*P **P** **19 59 06.5 -0.7**
ARU 20 00 08.9
ARU 20 01 08.8
ARU S **S** **20 06 47.9 -0.4**
ARU SS **SS** **20 10 31.5 -0.2**
ARU pmax pmax
comp=Z,4.0nm,1.2s
ARU MLR MLR
comp=Z,454nm,17.0s
ARU **Arti** **55.11 318** *e*P **P** **19 59 05.0 -2.2**
comp=Z,1.1nm,1.1s
ABKAR **Akbulak array** **57.21 309** *e*P **P** **19 59 22.2 -0.1**
RES **Resolute Bay** **58.96 15** *e*P **P** **19 59 34.1 -0.1**
RES pmax pmax
comp=Z,4.0nm,0.7s
RES **Resolute Bay** **58.96 15** *e*P **P** **19 59 34.1 -0.1**
comp=Z,3.7nm,0.7s
YKA **Yellowknife Ar** **60.06 32** P **P** **19 59 42.3 +0.3**
comp=Z,1.2nm,0.7s,baz=302,slow=6.2,SNR=31
YKA **Yellowknife Ar** **60.06 32***c* *e*P **P** **19 59 42.5 +0.5**
YKA pmax pmax
comp=Z,1.0nm,0.6s
YKB5 **Yellowknife Ar** **60.06 32** *e*P **P** **19 59 40.3 -1.7**
WRAB **Tennant Creek** **60.58 190**⇑ *e*P **P** **19 59 45.2 -0.8**
WRAB pmax pmax
comp=Z,30nm,2.5s
WB2 **Warramunga Arr** **60.59 190** *e*P **P** **19 59 44.6 -1.4**
comp=Z,5.5nm,0.9s
WRA **Warramunga Arr** **60.59 190** P **P** **19 59 45.2 -0.9**
comp=Z,2.1nm,0.6s,baz=9.0,slow=6.9,SNR=30
ARCES **ARCESS Array B** **61.54 339** P **P** **19 59 53.6 +1.7**
comp=Z,2.2nm,1.0s,baz=54,slow=9.1,SNR=6.4
ARCES LR LR 20 32 39.8
comp=Z,94nm,18.1s,baz=24,slow=42
KLMR **Klimovskoe** **61.93 327** *e*P **P** **19 59 52.0 -2.7**
KLMR pmax pmax
comp=Z,6.0nm,1.4s
GEYT **Alibeck** **63.82 299** P **P** **20 00 08.0 +0.2**
comp=Z,2.0nm,0.7s,baz=1.9,slow=4.5,SNR=5.1
GEYT LR LR 20 30 03.1
comp=Z,94nm,19.6s,baz=110,slow=38
AS01 **Alice Springs** **64.31 190** *e*P **P** **20 00 08.6 -2.3**
AS31 **Alice Springs** **64.32 190** *e*P **P** **20 00 10.9 0.0**
comp=Z,1.0nm,0.7s
ASAR **Alice Springs** **64.32 190** P **P** **20 00 10.5 -0.4**
comp=Z,1.4nm,0.9s,baz=12,slow=11,SNR=12
ASAR **Alice Springs** **64.32 190** P **P** **20 00 10.5 -0.4**
ASAR pmax pmax
comp=Z,2.0nm,0.9s
B08A **Colville Reser** **65.26 47** *e*P **P** **20 00 16.5 -0.5**
comp=Z,10nm,1.6s
FIA1 **FINESS Array S** **66.73 332** *e*P **P** **20 00 25.9 -0.1**
FINES **FINESS Array B** **66.73 332** P **P** **20 00 26.5 +0.4**
comp=Z,1.8nm,0.5s,baz=48,slow=6.6,SNR=37
FINES **FINESS Array B** **66.73 332** *i* P **P** **20 00 26.7 +0.6**
FINES pmax pmax
comp=Z,2.0nm,0.5s
LPSR **Galich'ya Gora** **66.92 320** *e*P **P** **20 00 27.3 -0.1**
SUMG **Summit** **67.38 1** *i* P P 20 00 39.9 +9.3
SUMG **Summit** **67.38 1** *e*P P 20 00 39.9 +9.3
VSR **Storozhevoye** **67.63 319** *e*P P 20 00 42.7 +11
SWMT **Swartz Lake** **68.68 45** *e*P **P** **20 00 39.5 +0.6**
FFC **Flin Flon** **69.97 34** *e*P **P** **20 00 46.8 +0.3**
FFC pmax pmax
comp=Z,4.0nm,0.7s
FFC **Flin Flon** **69.97 34** *e*P **P** **20 00 46.8 +0.3**
comp=Z,4.1nm,0.7s
ZEI **Tsey** **70.09 310** *e*P **P** **20 00 48.2 +0.5**
ZEI pmax pmax
comp=Z,6.0nm,0.6s
KIV **Kislovodsk** **70.09 311** *i* P **P** **20 00 48.0 +0.4**
KIV *i* 20 00 57.0
KIV *i* 20 01 09.5
KIV *i* S **S** **20 09 59.1 +2.0**
KIV pmax pmax
comp=Z,5.0nm,1.0s
KIV **Kislovodsk** **70.09 311** *e*P **P** **20 00 49.8 +2.3**
comp=Z,20nm,1.1s
KBZ **Khabaz** **70.11 311** P **P** **20 00 49.1 +1.6**
comp=Z,1.7nm,0.5s,baz=102,slow=4.5,SNR=9.6
KBZ LR LR 20 37 10.8
comp=Z,113nm,18.6s,baz=120,slow=41
NEY **Neytrino** **70.50 310**⇓ *e*P **P** **20 00 51.6 +1.4**

LRM	**Limekiln Ridge**	**70.56**	**46**	*eP*	**P**	**20 00 51.7**	**+1.1**
DLMT	**Dillon**	**70.76**	**47**	*eP*	**P**	**20 00 53.0**	**+1.3**
	comp=Z,5.2nm,0.8s						
HLID	**Hailey**	**70.84**	**49**	*eP*	**P**	**20 00 53.7**	**+1.4**
	comp=Z,2.8nm,1.1s						
BOZ	**Bozeman (W)**	**71.12**	**46**	*eP*	**P**	**20 00 55.2**	**+1.3**
BOZ				pmax	pmax		
	comp=Z,7.0nm,0.7s						
BOZ	**Bozeman (W)**	**71.12**	**46**	*eP*	**P**	**20 00 55.2**	**+1.3**
	comp=Z,7.1nm,0.7s						
NV01	**Mina Array Sit**	**71.61**	**55**	*eP*	**P**	**20 00 58.1**	**+1.1**
NVAR	**Mina Array Bea**	**71.61**	**55**	P	**P**	**20 00 57.9**	**+0.9**
	comp=Z,1.6nm,0.6s,baz=297,slow=7.4,SNR=6.1						
NB2	**NORSAR Subarra**	**71.83**	**338**	P	**P**	**20 00 58.0**	**+0.3**
	comp=Z,1.8nm,0.5s,baz=37,slow=6.2						
NOA	**NORSAR Array B**	**71.83**	**338**	P	**P**	**20 00 58.2**	**+0.5**
	comp=Z,2.0nm,0.8s,baz=36,slow=6.1,SNR=9.5						
NOA				LR	LR	20 36 32.1	
	comp=Z,47nm,20.2s,baz=40,slow=39						
STKA	**Stephens Creek**	**71.87**	**182**	P	**P**	**20 00 58.0**	**-0.2**
	comp=Z,1.9nm,1.0s,baz=7.5,slow=6.6,SNR=6.3						
STKA	**Stephens Creek**	**71.87**	**182**	P	**P**	**20 00 58.0**	**-0.2**
STKA				pmax	pmax		
	comp=Z,2.0nm,1.0s						
GCMT	**Greycliff**	**72.09**	**45**	*eP*	**P**	**20 01 01.2**	**+1.5**
H17A	**Grant Village**	**72.48**	**46**	*eP*	**P**	**20 01 05.3**	**+3.0**
	comp=Z,6.8nm,0.9s						
IMW	**Indian Meadow**	**72.60**	**47**	*eP*	**P**	**20 01 05.0**	**+2.0**
	comp=Z,4.7nm,0.8s						
FXWY	**Fox Creek**	**72.72**	**47**	*eP*	**P**	**20 01 05.4**	**+1.8**
	comp=Z,2.5nm,0.8s						
AKASG	**Malin Array Be**	**72.77**	**323**	P	**P**	**20 01 03.7**	**+0.2**
	comp=Z,1.3nm,0.5s,baz=45,slow=6.1,SNR=11						
KIEV	**Kiev**	**72.78**	**323**	*eP*	**P**	**20 01 03.8**	**+0.3**
KIEV				pmax	pmax		
	comp=Z,2.0nm,0.9s						
KIEV	**Kiev**	**72.78**	**323**	*eP*	**P**	**20 01 03.8**	**+0.3**
	comp=Z,14nm,1.5s						
MOOW	**Moose Ponds**	**72.80**	**47**	*eP*	**P**	**20 01 05.9**	**+1.8**
	comp=Z,2.9nm,0.8s						
DUG	**Dugway, Tooele**	**73.87**	**51**	*eP*	**P**	**20 01 11.5**	**+1.2**
DUG				pmax	pmax		
	comp=Z,7.0nm,0.7s						
DUG	**Dugway, Tooele**	**73.87**	**51**	*eP*	**P**	**20 01 11.5**	**+1.2**
	comp=Z,6.7nm,0.7s						
BW06	**Boulder Array**	**74.10**	**47**	*eP*	**P**	**20 01 12.5**	**+0.7**
PD31	**Pinedale Array**	**74.10**	**47**	*eP*	**P**	**20 01 12.5**	**+0.7**
PDAR	**Pinedale Array**	**74.10**	**47**	P	**P**	**20 01 12.0**	**+0.2**
	comp=Z,1.5nm,0.5s,baz=276,slow=1.3,SNR=25						
PDAR	**Pinedale Array**	**74.10**	**47**	P	**P**	**20 01 12.0**	**+0.2**
NLU	**North Lily Min**	**74.46**	**51**	*eP*	**P**	**20 01 15.3**	**+1.5**
	comp=Z,3.3nm,0.8s						
P17A	**Butcher Ranch,**	**75.55**	**50**	*eP*	**P**	**20 01 21.6**	**+1.5**
	comp=Z,5.8nm,0.7s						
SRU	**San Rafael Swe**	**75.92**	**51**	*eP*	**P**	**20 01 23.5**	**+1.2**
SRU				pmax	pmax		
	comp=Z,6.0nm,0.7s						
SRU	**San Rafael Swe**	**75.92**	**51**	*eP*	**P**	**20 01 23.5**	**+1.2**
	comp=Z,6.1nm,0.7s						
RSSD	**Black Hills**	**76.19**	**43**	*eP*	**P**	**20 01 24.0**	**+0.2**
RSSD				pmax	pmax		
	comp=Z,4.0nm,0.8s						
RSSD	**Black Hills**	**76.19**	**43**	*eP*	**P**	**20 01 24.0**	**+0.2**
	comp=Z,4.3nm,0.8s						
KWP	**Kalwaria Pacla**	**76.47**	**325**	⇑*iP*	**P**	**20 01 27.1**	**+2.1**
KWP	**Kalwaria Pacla**	**76.47**	**325**	⇑P	**P**	**20 01 27.1**	**+2.1**
BURAR	**Bucovina Array**	**76.81**	**322**	⇓*iP*	**P**	**20 01 28.2**	**+1.1**
BURAR	**Bucovina Array**	**76.81**	**322**	⇓P	**P**	**20 01 28.2**	**+1.1**
TESR	**Tescani**	**76.93**	**321**	⇓*iP*	**P**	**20 01 28.5**	**+0.9**
CFR	**Carcaliu**	**77.15**	**319**	⇑*iP*	**P**	**20 01 29.9**	**+1.1**
CFR	**Carcaliu**	**77.15**	**319**	⇑P	**P**	**20 01 29.9**	**+1.1**
KOLS	**Kolonicke sedl**	**77.18**	**325**	*eP*	**P**	**20 01 28.7**	**-0.3**
STHS	**Stebnicka Huta**	**77.27**	**326**	*eP*	**P**	**20 01 30.9**	**+1.4**
VRI	**Vrincioaia**	**77.35**	**320**	⇓*iP*	**P**	**20 01 32.5**	**+2.5**
VRI	**Vrincioaia**	**77.35**	**320**	⇓P	**P**	**20 01 32.5**	**+2.5**
BRTR	**Keskin Array B**	**77.98**	**312**	P	**P**	**20 01 34.5**	**+0.7**
	comp=Z,0.4nm,0.7s,baz=61,slow=2.6,SNR=4.2						
MLR	**Muntele Rosu**	**78.00**	**320**	⇑*iP*	**P**	**20 01 35.0**	**+1.2**
MLR	**Muntele Rosu**	**78.00**	**320**	⇑P	**P**	**20 01 35.0**	**+1.2**
MORC	**Moravsky Berou**	**78.55**	**328**	⇓*iP*	**P**	**20 01 38.0**	**+1.3**
MORC	**Moravsky Berou**	**78.55**	**328**	⇓P	**P**	**20 01 38.0**	**+1.3**
DRGR		**78.58**	**323**	⇓*iP*	**P**	**20 01 38.5**	**+1.6**
DRGR		**78.58**	**323**	⇓P	**P**	**20 01 38.5**	**+1.6**
DPC	**Dobruska-Polom**	**78.59**	**329**	*eP*	**P**	**20 01 39.3**	**+2.4**
DPC				*epP*	**sP**	**20 01 47.1**	**-0.1**
DPC	**Dobruska-Polom**	**78.59**	**329**	*eP*	**P**	**20 01 39.3**	**+2.4**
DPC				*e*		20 01 47.1	
KRLC	**Kraliky**	**78.63**	**328**	*eP*	**P**	**20 01 38.8**	**+1.7**
KRLC				*epP*	**sP**	**20 01 47.2**	**-0.2**
KRLC	**Kraliky**	**78.63**	**328**	*eP*	**P**	**20 01 38.8**	**+1.7**
KRLC				*e*		20 01 47.2	
ARR	**Arges**	**78.73**	**321**	⇑*iP*	P	20 01 28.7	-9.0
PSZ	**Piszkesteto**	**78.99**	**325**	⇓*iP*	**P**	**20 01 41.2**	**+2.1**
PSZ	**Piszkesteto**	**78.99**	**325**	⇓P	**P**	**20 01 41.2**	**+2.1**
LOT	**Lotru**	**79.08**	**322**	⇓*iP*	P	20 01 45.3	+5.6
BRG	**Berggiesshubel**	**79.10**	**330**	*eP*	P	20 01 49.4	+10
	comp=Z,1.9nm,0.7s						
CLL	**Collm**	**79.11**	**331**	*eP*	**P**	**20 01 40.0**	**+0.4**
CLL				*e*		20 01 49.0	
CLL				*e*		20 02 01.0	
CLL				*ePP*	**PP**	**20 04 35.0**	**-3.2**
CLL				LmV		20 39 00.0	
	comp=Z,100nm,19.6s						
CLL	**Collm**	**79.11**	**331**	*eP*	**P**	**20 01 40.0**	**+0.4**
CLL				*e*		20 01 49.0	
VRAC	**Vranov**	**79.30**	**328**	⇑*iP*	**P**	**20 01 42.9**	**+2.1**
VRAC	**Vranov**	**79.30**	**328**	⇑P	**P**	**20 01 42.9**	**+2.1**
PRU	**Pruhonice**	**79.58**	**329**	*eP*	**P**	**20 01 43.7**	**+1.5**
PRU	**Pruhonice**	**79.58**	**329**	*eP*	**P**	**20 01 43.7**	**+1.5**
BZS	**Buzias**	**79.96**	**323**	⇓*iP*	P	20 01 53.5	+9.1
BZS	**Buzias**	**79.96**	**323**	⇓P	P	20 01 53.5	+9.1
KHC	**Kasperske Hory**	**80.64**	**329**	*eP*	**P**	**20 01 49.2**	**+1.2**
KHC				*epP*	**sP**	**20 01 57.4**	**-1.0**
KHC	**Kasperske Hory**	**80.64**	**329**	*eP*	**P**	**20 01 49.2**	**+1.2**
KHC				*e*		20 01 57.4	
GERES	**GERESS Array B**	**80.83**	**329**	P	**P**	**20 01 49.3**	**+0.2**
	comp=Z,0.5nm,0.7s,baz=38,slow=5.0,SNR=7.3						
GERES				LR	LR	20 42 05.1	
	comp=Z,145nm,18.0s,baz=356,slow=39						
PKSM	**Moragy**	**80.85**	**325**	⇑*iP*	**P**	**20 01 49.3**	**+0.2**
PKSM	**Moragy**	**80.85**	**325**	⇑P	**P**	**20 01 49.3**	**+0.2**
ANMO	**Albuquerque**	**81.12**	**51**	⇑*eP*	**P**	**20 01 52.4**	**+1.4**
ANMO				pmax	pmax		
	comp=Z,4.0nm,1.2s						
TX31	**Lajitas Ar. Si**	**86.71**	**54**	*eP*	**P**	**20 02 20.1**	**+0.5**
TXAR	**Lajitas Array**	**86.71**	**54**	P	**P**	**20 02 19.5**	**-0.1**
	comp=Z,0.9nm,0.7s,baz=309,slow=4.8,SNR=12						
ESDC	**Sonseca Array**	**95.08**	**336**	LR	LR	20 50 20.4	
	comp=Z,63nm,18.2s,baz=50,slow=38						
TORD	**Torodi Ar. Bea**	**116.17**	**318**	PKP	**PKPdf**	**20 08 17.4**	**-1.7**
	comp=Z,0.9nm,1.1s,baz=6.6,slow=2.5,SNR=3.9						
MATP	**Matopo**	**121.93**	**269**	PKP	**PKPdf**	**20 08 29.9**	**-0.1**
	comp=Z,0.7nm,0.4s,baz=43,slow=2.6,SNR=5.1						
LPAZ	**La Paz**	**143.46**	**58**	PKP	PKPbc	20 09 08.3	0.0
	comp=Z,0.6nm,0.5s,baz=159,slow=1.8,SNR=4.9						
SNAA	**Sanae**	**144.42**	**197**	PKP	**PKPab**	**20 09 08.7**	**0.0**
VNA2	**Neumayer--Watz**	**145.98**	**197**	PKP	**PKPbc**	**20 09 13.8**	**0.0**
	baz=133,slow=3.1						
VNA3	**Neumayer Olymp**	**146.21**	**195**	PKP	**PKPdf**	**20 09 13.8**	**+0.4**

SJA 24 19:51:08.0±0.7, 27°.87S×68°.78W, h138km±6km, ML2.3, MW3.8, Chile-Argentina border region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
VCA	**Vinchina**	**1.00**	**150**	*i* P	Pn	19 51 32.3	+0.5
VCA				*i* S	Sn	19 51 50.5	+0.4
VCA				IAML		19 51 53.5	
	comp=Z,45nm,0.2s						
AGUA	**GUANDACOL**	**1.63**	**171**	*i* P	Pn	19 51 38.9	+0.7
AGUA				*i* S	Sn	19 52 02.4	+1.0
CYA	**Choya**	**2.69**	**103**	*i* P	Pn	19 51 51.7	+0.7
CYA				*i* S	Sn	19 52 24.4	+0.3
CYA				IAML		19 52 27.4	
	comp=Z,6.4nm,0.4s						
FSA	**Cafayete**	**3.05**	**56**	*i* P	Pn	19 51 57.1	+1.3
AMOG	**MOGNA**	**3.07**	**175**	*i* P	Pn	19 51 57.1	+1.2
AHML	**Horco Molle**	**3.25**	**71**	*i* P	Pn	19 51 59.5	+1.3
RTLL	**Cerro Villicun**	**3.46**	**176**	*i* P	Pn	19 52 01.6	+0.7

*GCMT **24** 20:00:24.0±0.3, 9°.11S×67°.37E, h16km±1km, MW4.9/72, Moment Tensor Solution. s26,c29; s72,c95; Duration: 0 Moment tenso: Scale 10^16 Nm; M_rr 0.00±.13; M_θθ -2.48±.11; M_φφ 2.47±.11; M_rθ -0.74±.34; M_rφ 0.95±.10; M_θφ 0.11±.33; Best double couple: M_0 2.75100×10^16 NP1: ϕ_S 55.00000°, δ80.00000°, λ -11.00000°. NP2: ϕ_S 146.00000°, δ79.00000°, λ -170.00000°. Principal axes: T 2.6470, Plg1.0000°, Azm101.0000°; N 0.2000, Plg75.0000°, Azm193.0000°; P -2.8540, Plg15.0000°, Azm10.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

IDC 24 20:00:18.6±1.0, 8°.94S×67°.35E, h0km, mb3.7/10, mb1 3.8/10, mb1mx3.6/59, mbtmpg3.7/10, MS3.7/23, Ms1 3.7/23, ms1mx3.6/44 Error ellipse: s-maj=28.6km s-min=23.5km az=39.0, Mid-Indian Ridge

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
H08N3	**Diego Garcia H**	**4.44**	**55**	T	T	20 05 52.3	
	baz=230,slow=75,SNR=128						
H08N2	**Diego Garcia H**	**4.46**	**55**	T	T	20 05 51.2	
	baz=230,slow=75,SNR=91						
H08N1	**Diego Garcia H**	**4.46**	**55**	T	T	20 05 49.6	
	baz=230,slow=75,SNR=142						
H08S1	**Diego Garcia H**	**5.24**	**76**	T	T	20 06 48.3	
	baz=254,slow=76,SNR=8.8						
H08S3	**Diego Garcia H**	**5.25**	**76**	T	T	20 06 48.2	
	baz=254,slow=76,SNR=7.2						
H08S2	**Diego Garcia H**	**5.25**	**76**	T	T	20 06 48.2	
	baz=254,slow=76,SNR=8.5						
OPO	**Ambohidratompo**	**21.77**	**242**	LR	LR	20 11 35.7	
	comp=Z,121nm,21.0s,baz=56,slow=31						
KMBO	**Kilima Mbogo**	**30.94**	**283**	LR	LR	20 17 08.3	
	comp=Z,83nm,19.5s,baz=90,slow=33						
WSAR	**Wadi Sarin**	**33.10**	**345**	LR	LR	20 17 25.5	
	comp=Z,147nm,19.4s,baz=176,slow=31						
PSI	**Prapat**	**33.57**	**71**	LR	LR	20 19 14.2	
	comp=Z,286nm,19.6s,baz=240,slow=34						
LSZ	**Lusaka**	**38.76**	**257**	P	P	20 07 45.3	-0.1
	comp=Z,0.5nm,0.5s,baz=52,slow=3.5,SNR=3.5						
LEM	**Lembang**	**39.93**	**90**	LR	LR	20 20 38.6	
	comp=Z,219nm,21.9s,baz=178,slow=31						
CMAR	**Chiang Mai Arr**	**41.39**	**49**	P	P	20 08 08.4	+1.4
	0.7nm,0.6s,baz=244,slow=9.4,SNR=8.6						
CMAR				LR	LR	20 23 32.8	
	comp=Z,38nm,19.1s,baz=75,slow=34						
BOSA	**Boshof**	**44.10**	**238**	LR	LR	20 25 35.2	
	comp=Z,113nm,18.4s,baz=78,slow=34						
H01W3	**Cape Leeuwin H**	**49.91**	**128**	T	T	21 02 47.5	
	baz=290,slow=75,SNR=16						
H01W2	**Cape Leeuwin H**	**49.91**	**128**	T	T	21 02 49.0	
	baz=290,slow=75,SNR=19						
H01W1	**Cape Leeuwin H**	**49.93**	**128**	T	T	21 02 47.5	
	baz=290,slow=75,SNR=17						
MKAR	**Makanchi Array**	**57.06**	**12**	P	P	20 10 05.5	-1.1
	0.5nm,0.7s,baz=199,slow=7.5,SNR=7.1						
MKAR				LR	LR	20 34 07.5	
	comp=Z,49nm,18.8s,baz=190,slow=36						
BRTR	**Keskin Array B**	**57.61**	**330**	P	P	20 10 10.9	+0.2
	0.3nm,0.7s,baz=92,slow=7.9,SNR=4.5						
BRTR				LR	LR	20 34 25.1	
	comp=Z,57nm,18.4s,baz=121,slow=36						
MAW	**Mawson**	**58.67**	**182**	LR	LR	20 31 19.5	
	comp=Z,74nm,18.4s,baz=56,slow=32						
KURBB	**Kurchatov Arra**	**60.10**	**8**	P	P	20 10 27.4	-0.2
	0.7nm,0.7s,baz=203,slow=6.7,SNR=4.1						
DAV	**Davao City (W)**	**60.17**	**77**	LR	LR	20 35 38.0	
	comp=Z,56nm,18.7s,baz=209,slow=35						
BVAR	**Borovoye Array**	**61.77**	**2**	P	P	20 10 38.9	-0.1
	0.8nm,0.9s,baz=188,slow=4.2,SNR=3.1						
ZALV	**Zalesovo Beam**	**64.37**	**11**	P	P	20 10 54.3	-1.9
	0.3nm,0.4s,baz=186,slow=5.5,SNR=3.3						
ZALV				LR	LR	20 37 15.6	
	comp=Z,62nm,19.2s,baz=252,slow=34						
ASAR	**Alice Springs**	**65.04**	**112**	P	P	20 11 00.8	-0.5
	0.5nm,0.7s,baz=279,slow=5.8,SNR=15						
ASAR				LR	LR	20 38 18.4	
	comp=Z,38nm,18.5s,baz=272,slow=35						
WRA	**Warramunga Arr**	**65.44**	**108**	P	P	20 11 03.7	-0.3
	0.4nm,0.7s,baz=279,slow=6.2,SNR=4.8						
WRA				LR	LR	20 36 27.1	
	comp=Z,143nm,21.7s,baz=135,slow=33						
SONM	**Songino Array**	**66.24**	**28**	P	P	20 11 09.4	+0.8
	1.0nm,0.8s,baz=232,slow=7.3,SNR=4.1						
SONM				LR	LR	20 39 23.2	
	comp=Z,102nm,20.3s,baz=45,slow=35						
TORD	**Torodi Ar. Bea**	**68.78**	**288**	LR	LR	20 39 43.8	
	comp=Z,94nm,19.9s,baz=255,slow=34						
STKA	**Stephens Creek**	**71.98**	**121**	LR	LR	20 38 34.8	
	comp=Z,69nm,20.6s,baz=214,slow=32						
KSRS	**Korea Array**	**72.97**	**46**	LR	LR	20 44 44.1	
	comp=Z,29nm,18.5s,baz=352,slow=36						
DBIC	**Dimbokro**	**73.61**	**280**	LR	LR	20 42 50.1	
	comp=Z,59nm,20.3s,baz=84,slow=35						
NRIK	**Norilʹsk**	**79.35**	**7**	LR	LR	20 46 59.4	
	comp=Z,58nm,20.2s,baz=303,slow=35						
SPITS	**Spitsbergen Ar**	**91.30**	**351**	LR	LR	20 59 22.2	
	comp=Z,24nm,18.0s,baz=255,slow=39						
JMIC	**Jan Mayen**	**93.82**	**341**	LR	LR	20 54 48.6	
	comp=Z,44nm,18.4s,baz=235,slow=35						
BORG	**Borgarnes**	**97.45**	**334**	LR	LR	21 02 47.3	
	comp=Z,33nm,18.0s,baz=19,slow=38						
YKA	**Yellowknife Ar**	**126.52**	**1**	PKP	PKPdf	20 19 25.0	+1.5
	0.1km,0.6s,baz=352,slow=1.9,SNR=4.3						
PDAR	**Pinedale Array**	**146.19**	**356**	PKPbc	PKPdf	20 20 00.7	+0.1
	0.1nm,0.5s,baz=85,slow=4.1,SNR=2.4						

*IDC **24** 20:20:43.0±1.1, 37°.43N×144°.53E, h0km, mb3.5/6, mb1 3.7/8, mb1mx3.4/39, mbtmpg3.5/8, ML3.4/2, Error ellipse: s-maj=33.4km s-min=21.6km az=87.0*
*ISCJB **24** 20:20:46.6±0.8, 37°.46N±0°.05×144°.19E±0°.06, h33km, mb3.6/6, Error ellipse: s-maj=7.0km s-min=6.6km az=179.0*
*JMA **24** 20:20:47.9±0.2, 37°.67N×144°.05E, h15km, M3.9*

ISC 24 20:20:48.3±1.1, 37°.52N±0°.06×144°.26E±0°.08, h35km, n26, σ1§83/30, mb3.7/6, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**2.48**	**293**	P	**Pn**	**20 21 26.1**	**-0.1**
JIO				*eS*	**Sn**	**20 21 53.9**	**-1.3**
OFUJ	**Ofunato**	**2.56**	**308**	P	**Pn**	**20 21 27.0**	**-0.3**
OFUJ				*eS*	**Sn**	**20 21 55.9**	**-1.4**
JMK	**Ichinoseki**	**2.79**	**302**	P	**Pn**	**20 21 30.4**	**0.0**
JMK				S	**Sn**	**20 22 02.0**	**-0.8**
JOM	**Ohasama**	**3.04**	**311**	P	**Pn**	**20 21 34.2**	**+0.4**
JOM				S	**Sn**	**20 22 08.3**	**-0.6**
JFT	**Otama**	**3.12**	**271**	P	**Pn**	**20 21 35.9**	**+0.9**
JFT				S	**Sn**	**20 22 11.1**	**+0.1**
JYK	**Kaneyama**	**3.37**	**296**	P	**Pn**	**20 21 39.1**	**+0.7**
JYK				S	**Sn**	**20 22 17.5**	**+0.3**
JANG	**Nango**	**3.56**	**324**	S	**Sn**	**20 22 19.1**	**-2.8**
JRY	**Ryogami san**	**4.56**	**252**	P	**Pn**	**20 21 54.8**	**+0.1**
JRY				S	**Sn**	**20 22 43.6**	**-2.9**
JOT	**Ohata**	**4.59**	**328**	P	**Pn**	**20 21 57.0**	**+1.9**
JOD2	**Odawara 2**	**4.74**	**243**	*eS*	**Sn**	**20 22 48.6**	**-2.4**
MJAR	**Matsushiro Arr**	**4.94**	**260**	Pn	**Pn**	**20 22 01.3**	**+1.3**
	1.2nm,0.3s,baz=89,slow=15,SNR=12						
MJAR				Sn	**Sn**	**20 22 55.0**	**-0.9**
	1.0nm,0.3s,baz=68,slow=23,SNR=4.7						
JKB	**Kayabe**	**5.02**	**331**	P	**Pn**	**20 22 01.7**	**+0.7**
JKB				S	**Sn**	**20 22 54.7**	**-3.1**
JHJ	**Hachijo jima 2**	**5.72**	**221**	Sn	**Sn**	**20 23 10.2**	**-4.8**
	11nm,0.3s,baz=70,slow=15,SNR=3.5						
ASAJ	**Asahikawa**	**6.71**	**350**	Pn	**Pn**	**20 22 23.8**	**-0.4**
	0.6nm,0.3s,baz=213,slow=13,SNR=8.8						
ASAJ				Sn	**Sn**	**20 23 35.4**	**-4.0**
	0.3nm,0.3s,baz=196,slow=20,SNR=2.6						
H11N2	**WAKE ISLAND Hy**	**26.51**	**126**	T	T	20 53 48.4	
	baz=322						
H11N1	**WAKE ISLAND Hy**	**26.52**	**126**	T	T	20 53 48.4	
	baz=322						
H11N3	**WAKE ISLAND Hy**	**26.53**	**126**	T	T	20 53 50.7	
	baz=322						
H11S1	**WAKE ISLAND Hy**	**27.29**	**128**	T	T	20 54 53.2	
	baz=318						
H11S3	**WAKE ISLAND Hy**	**27.29**	**128**	T	T	20 54 53.8	
	baz=318						
H11S2	**WAKE ISLAND Hy**	**27.30**	**128**	T	T	20 54 52.6	
	baz=318						
MKAR	**Makanchi Array**	**45.78**	**302**	P	**P**	**20 29 07.6**	**+1.2**
	0.2nm,0.2s,baz=90,slow=8.6,SNR=3.3						
KURBB	**Kurchatov Arra**	**47.49**	**308**	P	**P**	**20 29 21.3**	**+1.7**
	0.4nm,0.4s,baz=81,slow=8.0,SNR=3.4						
ILAR	**Eielson Array**	**47.86**	**33**	P	**P**	**20 29 21.9**	**-0.4**
	0.3nm,0.6s,baz=268,slow=6.5,SNR=4.2						
WRA	**Warramunga Arr**	**57.91**	**191**	P	**P**	**20 30 36.3**	**-0.6**
	0.5nm,0.6s,baz=11,slow=7.2,SNR=6.1						
ASAR	**Alice Springs**	**61.64**	**191**	P	**P**	**20 31 02.1**	**-0.3**
	0.2nm,0.5s,baz=14,slow=8.4,SNR=4.8						
FINES	**FINESS Array B**	**69.42**	**333**	P	**P**	**20 31 53.7**	**+1.4**
	0.7nm,0.9s,baz=41,slow=19,SNR=2.6						

*ISCJB **24** 20:29:04.7±1.4, 32°.61S±0°.09×69°.76W±0°.08, h120km±14km, Error ellipse: s-maj=16.9km s-min=7.2km az=145.9*
*SJA **24** 20:29:04.5±0.4, 32°.60S×69°.75W, h115km±4km, ML2.9, MW4.5*
*GUC **24** 20:29:05.2±0.3, 32°.57S×69°.96W, h130km±8km, ML2.9*

ISC 24 20:29:05.3±2.3, 32°.62S±0°.09×69°.75W±0°.07, h116km±19km, n13, σ0§25/19, Mendoza Province

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
AUSP	**Uspallata**	**0.50**	**38**	*i* P	**Pn**	**20 29 23.2**	**0.0**
ARCO	**CERRO ARCO**	**0.72**	**108**	*i* P	**Pn**	**20 29 24.6**	**-0.1**
ARCO				IAML		20 29 39.9	
	comp=Z,279nm,0.2s						
AAGR	**Agrelo**	**0.90**	**121**	*i* P	**Pn**	**20 29 26.2**	**0.0**
RTLS	**Leoncito**	**0.91**	**25**	*i* P	**Pn**	**20 29 26.7**	**+0.3**
PEL	**Peldehue**	**0.94**	**236**	*eP*	**Pn**	**20 29 26.2**	**-0.2**
PEL				*eS*	**Sn**	**20 29 42.3**	**-0.2**
PEL				IAML		20 29 43.5	
	comp=N,253nm,0.2s						
CLCH	**Cerro Calan**	**1.02**	**220**	*eP*	**Pn**	**20 29 27.3**	**+0.1**
CLCH				*eS*	**Sn**	**20 29 44.2**	**+0.3**
CLCH				IAML		20 29 46.6	
	comp=E,315nm,0.3s						
ROCH	**El Roble**	**1.12**	**251**	*eP*	**Pn**	**20 29 28.1**	**-0.3**
ROCH				*eS*	**Sn**	**20 29 45.5**	**-0.5**
ROCH				IAML		20 29 48.2	
	comp=N,476nm,0.3s						
ROC1	**El Roble**	**1.12**	**251**	*i* P	**Pn**	**20 29 28.7**	**+0.2**
ROC1				*i* S	**Sn**	**20 29 46.4**	**+0.3**
ANTU	**Antumapu**	**1.20**	**218**	*eP*	**Pn**	**20 29 29.2**	**0.0**
ANTU				*eS*	**Sn**	**20 29 47.4**	**+0.2**
RTCV	**Cerro Valdivia**	**1.27**	**54**	*i* P	**Pn**	**20 29 29.8**	**-0.1**
RTCV				*i* S	**Sn**	**20 29 48.4**	**-0.2**
RTLL	**Cerro Villicun**	**1.68**	**40**	*i* P	**Pn**	**20 29 34.8**	**+0.1**
AGUA	**GUANDACOL**	**3.31**	**19**	*i* P	**Pn**	**20 29 55.8**	**+0.1**
VCA	**Vinchina**	**4.09**	**19**	*i* P	**Pn**	**20 30 06.1**	**-0.1**
VCA				IAML		20 30 59.0	
	comp=Z,12nm,0.3s						

*ISCJB **24** 20:30:44.3±1.0, 26°.4N±0°.1×143°.9E±0°.1, h10km, mb3.5/6, Error ellipse: s-maj=25.7km s-min=12.1km az=38.0*
*IDC **24** 20:30:45.4±1.1, 26°.38N×143°.66E, h0km, mb3.5/6, mb1 3.6/6, mb1mx3.4/37, mbtmpg3.5/6, Error ellipse: s-maj=30.9km s-min=19.9km az=60.0*

ISC 24 20:30:46.7±1.2, 26°.4N±0°.2×143°.7E±0°.1, h10km, n7, σ1§19/8, mb3.6/6, Bonin Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JCJ	**Chichijima**	**1.50**	**299**	Pn	**Pg**	**20 31 15.3**	**-0.2**
	baz=270,slow=20						
JCJ				Sn	**Sg**	**20 31 36.0**	**+1.0**
	26nm,0.3s,baz=270,slow=20,SNR=6.2						
SONM	**Songino Array**	**36.15**	**316**	P	**P**	**20 37 49.4**	**+0.1**
	0.7nm,0.7s,baz=108,slow=9.3,SNR=2.9						
WRA	**Warramunga Arr**	**46.92**	**192**	P	**P**	**20 39 18.4**	**+0.8**
	0.5nm,0.4s,baz=12,slow=8.4,SNR=13						
ASAR	**Alice Springs**	**50.63**	**192**	P	**P**	**20 39 45.8**	**-0.3**
	0.2nm,0.6s,baz=6.2,slow=10,SNR=3.9						
ZALV	**Zalesovo Beam**	**50.89**	**319**	P	**P**	**20 39 46.2**	**-1.6**
	0.3nm,0.3s,ba

NLYR max
comp=N,3μm,0.8s
NLYR Nelyaty 1.02 85 *e*PG **Pb** **20 35 31.1 -1.1**
NLYR *e* 20 35 44.7
NLYR pmax pmax
comp=Z,533nm,0.7s
NLYR smax smax
comp=E,3μm,1.0s
YOA Uoyan 1.23 257 *e*Pg **Pn** **20 35 34.7 -0.8**
YOA *e*Sg **Sb** **20 35 51.1 -0.3**
YOA Pmax
comp=E,309nm,0.3s
YOA Smax
comp=E,3μm,0.6s
YOA Uoyan 1.23 257⇑ *i*PG **Pn** **20 35 34.7 -0.8**
YOA *i* 20 35 51.5
YOA pmax pmax
comp=Z,356nm,0.2s
YOA smax smax
comp=E,4μm,0.5s
BOD Bodaibo 1.40 3⇑ *i*Pg **Pn** **20 35 36.7 -1.2**
BOD *e*Sg **Sn** **20 35 54.9 -1.4**
BOD Pmax
comp=E,366nm,0.2s
BOD Smax
comp=E,716nm,0.2s
BOD Bodaibo 1.40 3⇑ *i*PG **Pn** **20 35 36.1 -1.8**
BOD *e* 20 35 54.1
BOD pmax pmax
comp=Z,364nm,0.4s
BOD smax smax
comp=E,695nm,0.3s
KMO Kumora 1.58 251⇑ *i*Pg **Pn** **20 35 39.9 -0.5**
KMO *e*Sg **Sn** **20 36 01.3 +0.6**
KMO Pmax
comp=E,96nm,0.3s
KMO Smax
comp=E,657nm,0.5s
KMO Kumora 1.58 251⇑ *i*PG **Pn** **20 35 39.8 -0.6**
KMO *e* 20 35 41.6
KMO *e* 20 36 01.4
KMO pmax pmax
comp=Z,75nm,0.4s
KMO smax smax
comp=E,651nm,0.8s
YLYR Ulyunkhan 2.18 226⇑ *i*Pn **Pn** **20 35 48.3 -0.2**
YLYR *e*Pg **Pb** **20 35 51.4 -0.4**
YLYR *e*Sn **Sn** **20 36 15.3 -0.1**
YLYR *e*Sg **Sb** **20 36 19.7 +1.0**
YLYR Pmax
comp=E,69nm,0.5s
YLYR Smax
comp=E,295nm,0.2s
YLYR Ulyunkhan 2.18 226⇑ *i*PN **Pn** **20 35 48.3 -0.2**
YLYR *e* 20 35 50.6
YLYR *e*S **Sn** **20 36 15.6 +0.2**
YLYR *e* 20 36 19.0
YLYR pmax pmax
comp=Z,69nm,0.5s
YLYR smax smax
comp=E,296nm,0.3s
CRS Chara 2.48 77 *e*Pn **Pn** **20 35 52.4 -0.3**
CRS *e*Pg **Pb** **20 35 57.1 +0.1**
CRS *e*Sg **Sb** **20 36 29.2 +1.7**
CRS Pmax
comp=E,137nm,0.9s
CRS Smax
comp=E,622nm,0.5s
CRS Chara 2.48 77 *e*PN **Pb** **20 35 57.4 +0.4**
CRS *e* 20 36 29.2
CRS pmax pmax
comp=Z,79nm,0.7s
CRS smax smax
comp=E,746nm,1.3s
NIZ Nizh Angarsk 2.51 257 *e*Pn **Pn** **20 35 52.6 -0.5**
NIZ *e*Pg **Pb** **20 35 56.2 -1.2**
NIZ *e*PgPg **PnPn** **20 35 59.8 -0.3**
NIZ *e*Sg **Sb** **20 36 28.8 +0.6**
NIZ max
comp=E,41nm,0.4s
NIZ Smax
comp=E,345nm,0.3s
KHNR Khani 3.41 79 *e*Pn **Pn** **20 36 05.6 +0.1**
KHNR *e*Pg **Pb** **20 36 13.5 +0.6**
KHNR *e*Sn **Sn** **20 36 44.7 -1.2**
KHNR *e*Sg **Sb** **20 36 57.4 +3.1**
SYVR Suvo 3.55 220 *e*Pn **Pn** **20 36 06.6 -0.8**
SYVR *e*Pg **Pb** **20 36 16.0 +0.8**
SYVR *e* 20 36 23.4
SYVR *e*Sn **Sn** **20 36 48.9 -0.3**
SYVR *e*Sg **Sb** **20 37 03.2 +5.0**
SYVR Pmax
comp=E,34nm,0.5s
SYVR Smax
comp=E,201nm,0.8s
TUP Tupik 4.01 117 *e*Pn **Pn** **20 36 12.9 -0.8**
TUP *e* 20 36 18.4
TUP *e*Sn **Sn** **20 37 57.6 -2.9**
TUP *e*Sg **Sb** **20 37 16.7 +5.3**
TUP Smax
comp=E,370nm,0.8s
TUP Tupik 4.01 117 *e*PN **Pn** **20 36 12.6 -1.1**
TUP *e* 20 36 22.9
TUP *e*S **Sn** **20 36 59.9 -0.6**
TUP *e* 20 37 15.5
TUP pmax pmax
comp=Z,23nm,0.8s
TUP smax smax
comp=N,372nm,0.9s
CIT Chita 4.41 182 *e*Pn **Pn** **20 36 17.3 -2.0**
CIT *e*Pg **Pb** **20 36 30.9 +1.0**
CIT *e*Sn **Sn** **20 37 08.7 -1.9**
CIT *e*Sg **Sg** **20 37 30.5 -3.6**
CIT Pmax
comp=N,26nm,0.1s
CIT Smax
comp=N,145nm,0.2s
CIT Chita 4.41 182 *e*PN Pn 20 36 22.2 +2.9
CIT *e* 20 36 34.7
CIT *e* 20 37 32.0
CIT pmax pmax
comp=Z,46nm,0.3s
CIT smax smax
comp=E,145nm,0.4s
OGRR Ongureny 4.55 235 *e*Pn **Pn** **20 36 22.6 +1.4**
OGRR *e*Pg **Pb** **20 36 33.5 +1.2**
OGRR *e*Sg **Sb** **20 37 32.4 +5.3**
OGRR Pmax
comp=E,8.0nm,0.3s
OGRR Smax
comp=E,73nm,0.6s
ZRHB Zarechye 5.50 228 *e*Sg Sg 20 38 03.4 -5.7
ZRHB Smax
comp=E,212nm,1.3s
TRG Tyrgan 5.70 233 *e*Pn **Pn** **20 36 35.4 -1.6**
TRG *e*Pg **Pb** **20 36 54.1 +2.2**
TRG *e*Sg Sb 20 38 07.0 +6.9
TRG Smax
comp=E,49nm,0.6s
UUDB Ulan-Yde 5.84 221 *e*Pn **Pn** **20 36 38.7 -0.1**
UUDB *e*Pg **Pb** **20 36 56.9 +2.7**
UUDB *e*Sg Sg 20 38 13.3 -6.5
UUDB Pmax
comp=E,24nm,1.0s
UUDB Smax
comp=E,167nm,1.3s
IENR Iengra 6.12 87 *e*Pn **Pn** **20 36 41.9 -0.9**
IENR *e*Pg **Pb** **20 37 01.5 +2.5**
IENR *e*Sg Sb 20 38 21.0 +8.8
HRMR Khuramsha 6.29 223 *e*Pn **Pn** **20 36 45.3 +0.2**
HRMR *e*Sg Sg 20 38 26.9 -7.5
HRMR Smax
comp=E,145nm,0.5s
KPC Khapcheranga 6.79 188 *e*Pn **Pn** **20 36 50.1 -1.8**
KPC *e*Pg Pb 20 37 16.0 +5.6
KPC *e*Sg Sg 20 38 45.0 -5.2
KPC Pmax
comp=E,2.0nm,0.4s
KPC Smax
comp=E,57nm,0.9s
LSTR Listvyanka 6.99 233 *e*Sg Sg 20 38 48.2 -8.6
LSTR Smax
comp=E,50nm,1.7s
TLY Talaya 7.66 236 *e*Sg Sb 20 39 08.4 +12
TLY Smax
comp=E,25nm,1.1s
ARS Arshan 8.08 241 *e* Pb 20 37 39.9 +7.5
ARS *e*Sg Sb 20 39 20.4 +12
ARS Smax
comp=E,88nm,1.1s
ZAK Zakamensk 8.74 231 *e*Sg Sn 20 39 42.6 +45
ZAK Smax
comp=E,23nm,1.1s
MOY Mondy 8.94 243 *e*Pn **Pn** **20 37 20.9 -0.5**
MOY *e* 20 39 13.4
MOY *e*Sg Sn 20 39 49.1 +47
MOY Smax
comp=E,37nm,1.5s
ORL Orlik 9.05 250 *e*Pn **Pn** **20 37 22.5 -0.5**
ORL *e*Sg Sn 20 39 52.9 +48
ORL Smax
comp=E,62nm,1.3s

SJA 24 20:45:25.7±0.5, 27°30S×66°43W, h111km±9km, ML1.8, MW3.8, Catamarca Province

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
AHML	**Horco Molle**	**1.10**	**63**	*i* P	Pn	20 45 49.0	+0.9
AHML				*i* S	Sn	20 46 06.2	+1.2
FSA	**Cafayete**	**1.25**	**19**	*i* P	Pn	20 45 50.5	+0.7
FSA				*i* S	Sn	20 46 09.7	+1.6
FSA				IAML		20 46 14.4	
	comp=Z,8.7nm,0.2s						
CYA	**Choya**	**1.27**	**154**	*i* P	Pn	20 45 50.8	+0.9
CYA				*i* S	Sn	20 46 09.2	+0.9
CYA				IAML		20 46 12.6	
	comp=Z,10nm,0.8s						
VCA	**Vinchina**	**2.13**	**227**	*i* P	Pn	20 46 01.8	+1.3
VCA				IAML		20 46 40.4	
	comp=Z,9.9nm,0.2s						
YJA	**Yavi**	**5.17**	**9**	*i* P	Pn	20 46 43.2	+2.0

*NIED **24** 20:54:00, 35°.80N×140°.80E, h5km, Mw3.5 Best double couple: M₀2.25000×10¹⁴ NP1:φs311.00000°, δ38.00000°, λ-160.00000°. NP2:φs205.00000°, δ78.00000°, λ-54.00000°.*
*ISCJB **24** 20:54:25.5±0.7, 35°.77N±0°.05×140°.74E±0°.07, h9km±6km, mb3.5/4, Error ellipse: s-maj=11.4km s-min=6.5km az=147.0*
*JMA **24** 20:54:25.7, 35°.78N×140°.78E, h7km±1km, M3.6*
JMA Felt II J1.
*IDC **24** 20:54:29.0±2.5, 35°.20N×139°.89E, h0km, mb3.5/4, mb1 3.6/4, mb1mx3.2/46, mbtmp3.5/4, Error ellipse: s-maj=77.0km s-min=23.9km az=63.0*
ISC 24 20:54:25.5±1.1, 35°.75N±0°.07×140°.73E±0°.09, h7km±11km, n17, σ0s97/14, mb3.6/4, 1D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CHOJ	**Chosi**	**0.12**	**115**	⇓P	**Pg**	**20 54 28.0**	**0.0**
CHOJ				S	**Sg**	**20 54 29.7**	**-0.1**
JYT	**Yasato**	**0.65**	**318**	P	**Pg**	**20 54 38.3**	**+0.3**
JYT				S	**Sg**	**20 54 46.9**	**+0.5**
TOK	**Tokyo**	**0.79**	**266**	P	**Pn**	**20 54 42.6**	**-0.5**
BSO4	**Boso 4**	**0.82**	**203**	P	**Pn**	**20 54 43.0**	**-0.5**
JHO	**Hitachi**	**0.87**	**351**	P	**Pg**	**20 54 41.8**	**-0.4**
JHO				S	**Sg**	**20 54 53.3**	**-0.2**
MJAR	**Matsushiro Arr**	**2.19**	**292**	Pn	**Pn**	**20 55 01.9**	**-0.4**
	3.1nm,0.3s,baz=135,slow=15,SNR=27						
MJAR				Sn	**Sn**	**20 55 27.4**	**-2.3**
	3.9nm,0.3s,baz=113,slow=25,SNR=6.8						
MAT	**Matsushiro**	**2.19**	**292**	P	**Pn**	**20 55 01.9**	**-0.5**
MAT				S	**Sn**	**20 55 29.8**	**+0.1**
H11N2	**WAKE ISLAND Hy 28.00**	**118**		T	T	21 29 21.8	
	baz=311,slow=76,SNR=28						
H11N1	**WAKE ISLAND Hy 28.01**	**118**		T	T	21 29 21.3	
	baz=311,slow=76,SNR=29						
H11N3	**WAKE ISLAND Hy 28.02**	**118**		T	T	21 29 21.0	
	baz=311,slow=76,SNR=26						
SONM	**Songino Array**	**28.07**	**306**	P	P	21 00 21.8	+4.1
	0.7nm,0.5s,baz=120,slow=10,SNR=2.4						
H11S1	**WAKE ISLAND Hy 28.66**	**120**		T	T	21 30 06.0	
	baz=312,slow=75,SNR=44						
H11S3	**WAKE ISLAND Hy 28.66**	**120**		T	T	21 30 04.4	
	baz=312,slow=75,SNR=39						
H11S2	**WAKE ISLAND Hy 28.68**	**120**		T	T	21 30 06.1	
	baz=312,slow=75,SNR=40						
ZALV	**Zalesovo Beam**	**42.38**	**313**	P	P	21 02 24.3	+4.0
	0.3nm,0.3s,baz=102,slow=9.7,SNR=2.5						
KURBB	**Kurchatov Arra**	**46.37**	**309**	P	**P**	**21 02 53.8**	**+1.6**
	0.2nm,0.3s,baz=85,slow=7.9,SNR=2.9						
WRA	**Warramunga Arr**	**55.72**	**187**	P	**P**	**21 04 02.7**	**-0.1**
	0.3nm,0.7s,baz=5.9,slow=7.4,SNR=4.5						

MAN 24 20:58:42, 7°30N×125°30E, h23km, mb4.3, ML3.2, MS3.0, 1C-1D, Mindanao

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
KCP	**Kidapawan**	**0.35**	**215**	⇓*i*P	Pn	20 58 52.0	+0.2
KCP				*i* S	Sn	20 58 59.7	+1.6
BUKP	**Musuan**	**0.62**	**338**	*e*P	Pn	20 58 55.2	-0.3
BUKP				*e*S	Sn	20 59 05.3	+0.5
MATI	**Mati**	**1.02**	**110**	*e*P	Pn	20 59 00.7	-0.2
MATI				*e*S	Sn	20 59 15.5	+1.0
CGP	**Cagayan de Oro**	**1.29**	**333**⇑	*e*P	Pb	20 59 05.9	+0.2
CGP				*e*S	Sb	20 59 23.1	+1.2
BUTP	**Butuan**	**1.69**	**11**	*e*P	Pn	20 59 10.2	0.0
PAGZ	**Pagadian**	**1.97**	**286**	*e*P	Pn	20 59 14.7	+0.7

*IDC **24** 21:01:56.9±2.2, 34°.74N×141°.48E, h0km, mb3.4/3, mb1 3.4/5, mb1mx3.2/56, mbtmp3.3/5, ML2.7/2, Error ellipse: s-maj=47.6km s-min=23.5km az=83.0*
*ISCJB **24** 21:01:59.3±1.6, 34°.89N±0°.07×141°.4E±0°.2, h35km, mb3.5/3, Error ellipse: s-maj=21.2km s-min=9.6km az=6.3*
*JMA **24** 21:01:59.2±0.3, 34°.94N×141°.32E, h41km±4km, M2.6*
ISC 24 21:02:01.1±1.6, 34°.89N±0°.07×141°.4E±0°.2, h35km, n10, σ2s24/11, mb3.6/3, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
BSO1	**Boso 1**	**0.42**	**236**	P	**Pn**	**21 02 08.5**	**-1.6**
BSO1				*e*X		21 02 15.4	
BSO3	**Boso 3**	**0.73**	**263**	P	**Pn**	**21 02 12.7**	**-2.1**
BSO4	**Boso 4**	**0.87**	**277**	P	**Pn**	**21 02 14.5**	**-2.3**
CHOJ	**Chosi**	**0.92**	**332**	P	**Pn**	**21 02 14.5**	**-3.1**
TATJ	**Tateyama 2**	**1.24**	**277**	P	**Pn**	**21 02 20.2**	**-1.8**
JHJ	**Hachijo jima 2**	**2.22**	**218**	Pn	**Pn**	**21 02 33.3**	**-2.1**
	4.8nm,0.3s,baz=342,slow=20,SNR=3.9						
JHJ				Sn	**Sn**	**21 03 01.9**	**+0.3**
	22nm,0.3s,baz=108,slow=19,SNR=4.6						
MJAR	**Matsushiro Arr**	**3.07**	**303**	Pn	**Pn**	**21 02 46.8**	**-0.4**
	1.2nm,0.3s,baz=119,slow=11,SNR=9.0						
MKAR	**Makanchi Array**	**45.27**	**304**	P	**P**	**21 10 17.5**	**+2.3**
	0.1nm,0.2s,baz=81,slow=8.9,SNR=2.3						
KURBB	**Kurchatov Arra**	**47.33**	**310**	P	**P**	**21 10 33.4**	**+2.2**
	0.4nm,0.6s,baz=84,slow=7.6,SNR=3.8						
WRA	**Warramunga Arr**	**54.94**	**188**	P	**P**	**21 11 28.5**	**-0.1**
	0.4nm,0.6s,baz=9.5,slow=7.5,SNR=7.4						

*NIED **24** 21:06:00, 35°.20N×141°.30E, h20km, Mw5.0 Best double couple: M₀3.62000×10¹⁶ NP1:φs316.00000°, δ29.00000°, λ-169.00000°. NP2:φs216.00000°, δ85.00000°, λ-62.00000°.*
*IDC **24** 21:06:32.0±0.4, 35°.18N×141°.13E, h0km, mb4.9/43, mb1 5.0/48, mb1mx4.9/64, mbtmp4.9/48, ML4.5/3, MS4.5/18, Ms1 4.5/18, ms1mx4.1/53, Error ellipse: s-maj=11.8km s-min=9.0km az=89.0*
*BJI **24** 21:06:34.9, 35°.29N×141°.05E, h37km, mb4.8/77, mB4.9/50, Ms4.9/86, Ms7 4.9/78*
*JMA **24** 21:06:34.3±0.1, 35°.23N×141°.24E, h40km±2km, M5.1*
JMA Felt II J1.
*MOS **24** 21:06:36.3±0.9, 35°.24N×140°.95E, h35km, mb5.3/116, MS4.7/35, Error ellipse: s-maj=6.5km s-min=4.0km az=108.6*
*ISCJB **24** 21:06:36.4±0.4, 35°.21N±0°.02×140°.92E±0°.02, h35km±3km, mb5.0/298, MS4.8/47, Error ellipse: s-maj=3.5km s-min=2.6km az=172.0*
*NEIC **24** 21:06:38.6±0.5, 35°.20N×140°.93E, h41km±4km, mb5.1/216, Error ellipse: s-maj=3.2km s-min=2.5km az=153.0*
NEIC Recorded [2 JMA] in Chiba, Ibaraki and Saitama.
*GCMT **24** 21:06:38.6±0.4, 35°.07N×141°.02E, h25km, MW5.0/62, Moment Tensor Solution. s20,c30; s62,c85; Duration: 0 Moment tensor: Scale 10¹⁶Nm; Mrr1.54±.14; Mθθ-2.32±.09; Mφφ0.78±.11; Mrθ3.11±.19; Mφθ0.80±.08; Mφr0.42±.23; Best double couple: Mo3.79200×1016 NP1:φs83.00000°, δ75.00000°, λ73.00000°. NP2: φs314.00000°, δ22.00000°, λ139.00000°. Principal axes: T 3.4840, Plg56.0000°, Azm331.0000°; N 0.6160, Plg17.0000°, Azm87.0000°; P -4.1000, Plg28.0000°, Azm187.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
ISC 24 21:06:36.8±0.4, 35°.25N±0°.03×141°.02E±0°.03, h29km±2km, h28km:pP-P, n1046, σ1s19/1124, mb5.1/307, MS4.8/48, 75C-25D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CHOJ	**Chosi**	**0.47**	**344**	⇑P	**Pb**	**21 06 46.0**	**-0.7**
CHOJ				S	**Sn**	**21 06 54.4**	**-0.5**
I30JP	**ISUMI INFRASON**	**0.58**	**276**	Pg	**Pb**	**21 06 47.4**	**-1.1**
	baz=112,slow=19,SNR=1.8						
KTR	**Katsuura**	**0.59**	**260**	⇑P	**Pn**	**21 06 48.9**	**-0.3**
KTR				S	**Sn**	**21 06 59.1**	**+1.3**
BSO1	**Boso 1**	**0.60**	**183**	⇓P	**Pb**	**21 06 46.4**	**-2.1**
BSO3	**Boso 3**	**0.61**	**223**	⇓P	**Pb**	**21 06 48.4**	**-0.5**
BSO4	**Boso 4**	**0.62**	**245**	⇑P	**Pn**	**21 06 49.3**	**-0.2**
JCN	**Nagara**	**0.69**	**284**	⇑P	**Pn**	**21 06 51.1**	**+0.5**
JYT	**Yasato**	**1.18**	**326**	P	**Pn**	**21 06 56.8**	**-0.6**
JHO	**Hitachi**	**1.40**	**345**	P	**Pn**	**21 06 59.8**	**-0.7**
JIM2	**Oshima 3**	**1.41**	**248**	P	**Pn**	**21 06 59.3**	**-1.3**
JHJ2	**Mitsune**	**2.36**	**205**	*e*Pn	**Pn**	**21 07 11.8**	**-1.7**
JHJ2				*e*Sn	**Sn**	**21 07 38.7**	**-2.8**
JHJ	**Hachijo jima 2**	**2.36**	**206**	Pn	**Pn**	**21 07 11.3**	**-2.4**
	334nm,0.3s,baz=312,slow=5.7,SNR=50						
JHJ				LR	LR	21 07 38.2	
	comp=E,2μm,18.9s,baz=54,slow=28						
JHJ				Sn	**Sn**	**21 07 39.5**	**-2.2**
	468nm,0.3s,baz=66,slow=18,SNR=6.4						
MJAR	**Matsushiro Arr**	**2.62**	**300**	Pn	**Pn**	**21 07 18.4**	**+1.2**
	46nm,0.3s,baz=98,slow=12,SNR=393						
MJAR				LR	LR	21 08 25.0	
	comp=Z,4μm,21.0s,baz=135,slow=42						
MAJO	**Matsushiro**	**2.62**	**300**	*ce*P	**Pn**	**21 07 18.8**	**+1.6**
MAJO	**Matsushiro**	**2.62**	**300**	*e*Pn	**Pn**	**21 07 19.8**	**+2.5**
MAT	**Matsushiro**	**2.62**	**300**	P	**Pn**	**21 07 18.4**	**+1.2**
MAT				*e*S	**Sb**	**21 07 52.0**	**-2.9**
MJB9	**Matsu-Tunnel**	**2.62**	**300**	*e*Pn	**Pn**	**21 07 19.4**	**+2.1**
INU	**Inuyama**	**3.28**	**273**	*e*Pn	**Pn**	**21 07 28.3**	**+2.1**
ERM	**Erimo**	**6.96**	**13**⇓	*e*P	**Pn**	**21 08 14.1**	**-2.6**
ERM				pmax	pmax		
	comp=Z,120nm,1.2s						
ERM	**Erimo**	**6.96**	**13**	*e*Pn	Pn	21 08 12.6	-4.1
ERM				*e*Sn	**Sn**	**21 09 32.8**	**-2.0**
CBIJ	**Chichi jima**	**8.19**	**173**	*e*Pn	Pn	21 08 29.6	-4.2
CBIJ				*e*Sn	Sn	21 09 56.7	-8.7
JCJ	**Chichijima**	**8.19**	**173**	Pn	Pn	21 08 29.6	-4.2
	comp=Z,47nm,0.3s,baz=282,slow=18,SNR=20						
JCJ				Sn	Sn	21 09 56.7	-8.7
	comp=Z,6.2nm,0.3s,baz=307,slow=20,SNR=2.3						
JCJ				LR	LR	21 11 18.6	
	comp=Z,2μm,20.3s,slow=35						
JNU	**Nakatsue**	**8.67**	**259**	Pn	Pn	21 08 44.1	+3.8
	comp=Z,1.2nm,0.3s,baz=74,slow=6.6,SNR=11						
JNU				LR	LR	21 12 30.6	
	comp=Z,3μm,18.1s,baz=87,slow=41						
JNU	**Nakatsue**	**8.67**	**259**	*e*Pn	**Pn**	**21 08 41.5**	**+1.2**
ASAJ	**Asahikawa**	**8.93**	**7**	Pn	**Pn**	**21 08 41.0**	**-2.8**
	comp=Z,6.7nm,0.3s,baz=214,slow=11,SNR=28						
ASAJ	**Asahikawa**	**8.93**	**7**	*e*Pn	**Pn**	**21 08 41.5**	**-2.4**
YUK	**Yuzh-Kuril'sk**	**9.53**	**22**	P	**Pn**	**21 08 54.7**	**+2.7**
YUK				*e*S	**Sn**	**21 10 32.7**	**-5.3**
YUK				pmax	pmax		
	comp=Z,131nm,0.7s						
YUK				pmax	pmax		
	comp=N,86nm,0.3s						
YUK				pmax	pmax		
	comp=E,120nm,0.3s						
YUK				MLR	MLR		
	comp=Z,2μm,13.0s						
SHO	**Shikotan**	**9.70**	**26**	*e*P	Pn	21 08 50.3	-4.0
SHO				pmax	pmax		
	comp=Z,111nm,0.6s						
SHO				pmax	pmax		
	comp=N,23nm,0.4s						
SHO				pmax	pmax		
	comp=E,77nm,0.6s						
VLA	**Vladivostok**	**10.57**	**321**⇑	*e*P	**Pn**	**21 09 07.1**	**+0.8**
MSHR	**Mys Shultsa**	**10.60**	**317**⇑	*e*P	**Pn**	**21 09 07.3**	**+0.6**
KSRS	**Korea Array**	**10.79**	**286**	Pn	Pn	21 09 14.6	+5.3
	comp=E,0.9nm,0.3s,baz=98,slow=14,SNR=47						
KSRS				LR	LR	21 13 36.6	
	comp=E,4μm,18.6s,baz=81,slow=39						
KS01	**Wonju Array Si**	**10.81**	**286**	*e*Pn	**Pn**	**21 09 11.1**	**+1.5**
KS15	**Wonju Array Si**	**10.82**	**285**	*e*Pn	**Pn**	**21 09 11.7**	**+2.0**
KSAR	**Wonju Array Be**	**10.82**	**285**	P	Pn	21 09 14.6	+4.9
KSAR	**Wonju Array Be**	**10.82**	**285**	Pn	Pn	21 09 14.6	+4.9
KUR	**Kuril'sk**	**11.25**	**26**	P	**Pn**	**21 09 12.9**	**-2.7**
USRK	**Ussuriysk Ar.**	**11.31**	**325**	Pn	**Pn**	**21 09 18.2**	**+1.8**
	comp=E,0.6nm,0.3s,baz=135,slow=11,SNR=22						
USRK				LR	LR	21 13 32.6	
	comp=E,4μm,18.2s,baz=131,slow=37						
YSS	**Yuzh-Sakhalins**	**11.76**	**6**⇑	*e*P	**Pn**	**21 09 19.6**	**-2.9**
YSS				*e*S	**Sn**	**21 11 27.8**	**-4.9**
YSS				pmax	pmax		
	comp=Z,90nm,0.8s						
YSS				MLR	MLR		
	comp=Z,4μm,15.0s						
YSS				MLR	MLR		
	comp=N,3μm,17.0s						
YSS				MLR	MLR		
	comp=E,4μm,19.0s						
YSS	**Yuzh-Sakhalins**	**11.76**	**6**	*e*Pn	**Pn**	**21 09 20.9**	**-1.7**
INCN	**Inchon**	**11.81**	**285**	*e*Pn	**Pn**	**21 09 24.8**	**+1.5**
MDJ	**Mudanjiang**	**12.81**	**320**	P	**Pn**	**21 09 37.6**	**+0.7**
MDJ				S	**Sn**	**21 11 59.6**	**+1.2**
MDJ				PcP	**PcP**	**21 15 12.3**	**+0.9**
MDJ				ScP	**ScP**	**21 18 42.3**	**-0.1**
MDJ				PcS	**PcS**	**21 18 46.6**	**+1.0**
MDJ				ScS	**ScS**	**21 22 19.1**	**+0.4**
MDJ				pmax	pmax		
	comp=E,14nm,0.9s						
MDJ				pmax	pmax		
	comp=E,450nm,11.2s						
MDJ				LR	LR		
	comp=E,190nm,11.8s						
MDJ				LR	LR		
	comp=E,2μm,13.1s						
MDJ				LR	LR		
	comp=E,3μm,15.7s						
MDJ	**Mudanjiang**	**12.81**	**320**	*e*Pn	Pn	21 09 40.8	+3.9
JOW	**Kunigami**	**13.77**	**236**	*e*Pn	**Pn**	**21 09 51.0**	**+0.9**
UGL	**Uglegorsk**	**13.84**	**3**	*e*P	**P**	**21 10 01.0**	**+2.1**
UGL				pmax	pmax		
	comp=Z,120nm,0.8s						
UGL				MLR	MLR		
	comp=Z,5μm,16.0s						
UGL				MLR	MLR		
	comp=N,5μm,18.0s						
UGL				MLR	MLR		
	comp=E,5μm,18.0s						
HABR	**Khabarovsk**	**13.93**	**343**	*de*P	**Pn**	**21 09 49.7**	**-2.4**
HABR				*e*S	**Sn**	**21 12 23.2**	**-2.5**
HABR				pmax	pmax		
	comp=Z,34nm,0.9s						
HABR				MLR	MLR		
	comp=Z,2μm,14.0s						
CN2	**Changchun**	**14.72**	**310**	*e*P	**Pn**	**21 10 03.5**	**+0.5**
CN2				*e*SP	P	21 10 15.5	+6.7
CN2				*e*S	**Sn**	**21 12 44.8**	**-0.3**
CN2				pmax	pmax		
	comp=Z,10.0nm,0.9s						
CN2				pmax	pmax		
	comp=Z,200nm,3.0s						
CN2				LR	LR		
	comp=Z,2μm,14.0s						
CN2				LR	LR		
	comp=Z,2μm,14.0s						
CN2				LR	LR		
	comp=Z,2μm,15.0s						

SNY	**Shenyang**	**15.13**	**301**	⇓P	**Pn**	**21 10 09.5**	**+1.0**
SNY				pmax	pmax			
	comp=Z,23nm,1.6s							
SNY				pmax	pmax			
	comp=Z,440nm,2.9s							
SNY				LR	LR			
	comp=Z,2μm,15.1s							
SNY				LR	LR			
	comp=Z,2μm,19.6s							
SNY				LR	LR			
	comp=Z,4μm,20.8s							
KLR	**Kul'dur**	**15.54**	**337**	Pn	**Pn**	**21 10 11.2**	**-2.6**
	comp=Z,0.3nm,0.3s,baz=138,slow=11,SNR=14							
KLR				LR	LR	21 16 24.8		
	comp=Z,3μm,18.1s,baz=142,slow=38							
TYV	**Tymovskoe**	**15.65**	**4**	*e*P	**Pn**	**21 10 11.5**	**-3.6**
TYV				pmax	pmax			
	comp=Z,121nm,0.8s							
TYV				MLR	MLR			
	comp=N,3μm,18.0s							
TYV				MLR	MLR			
	comp=Z,2μm,20.0s							
DL2	**Dalian**	**15.90**	**289**	⇑P	**Pn**	**21 10 19.0**	**+0.6**
DL2				S	**Sn**	**21 13 17.9**	**+4.2**
DL2				pmax	pmax			
	comp=Z,84nm,1.0s							
DL2				pmax	pmax			
	comp=Z,550nm,9.1s							
DL2				LR	LR			
	comp=Z,1μm,10.7s							
DL2				LR	LR			
	comp=Z,3μm,15.9s							
DL2				LR	LR			
	comp=Z,4μm,16.3s							
SSE	**Sheshan**	**17.11**	**262**	P	**Pn**	**21 10 33.0**	**-0.8**
SSE				sP	**sP**	**21 10 47.3**	**+0.6**
SSE				S	**Sn**	**21 13 46.3**	**+3.1**
SSE				pmax	pmax			
	comp=Z,31nm,0.8s							
SSE				pmax	pmax			
	comp=Z,65nm,3.7s							
SSE				LR	LR			
	comp=Z,1μm,14.2s							
SSE				LR	LR			
	comp=Z,2μm,13.9s							
SSE				LR	LR			
	comp=Z,4μm,13.9s							
NKL	**Nikolayevsk**	**17.89**	**359**	*e*P	**Pn**	**21 10 43.0**	**-0.4**
NKL				pmax	pmax			
	comp=Z,83nm,1.2s							
NKL				MLR	MLR			
	comp=N,2μm,17.0s							
NKL				MLR	MLR			
	comp=E,1μm,17.0s							
NKL				MLR	MLR			
	comp=Z,4μm,17.0s							
NJ2	**Nanjing**	**18.72**	**266**	*e*P	**Pn**	**21 10 54.3**	**+0.6**
NJ2				pmax	pmax			
	comp=Z,13nm,1.0s							
NJ2				LR	LR			
	comp=Z,1μm,19.3s							
NJ2				LR	LR			
	comp=Z,2μm,15.7s							
NJ2				LR	LR			
	comp=Z,2μm,13.0s							
SKR	**Severo-Kuril's**	**18.91**	**31**	*e*P	**P**	**21 10 50.9**	**-4.1**
SKR				S	**S**	**21 14 30.0**	**+2.0**
SKR				pmax	pmax			
	comp=N,320nm,1.4s							
SKR				pmax	pmax			
	comp=Z,390nm,1.4s							
SKR				pmax	pmax			
	comp=E,110nm,1.0s							
SKR				MLR	MLR			
	comp=N,3μm,16.0s							
SKR				MLR	MLR			
	comp=E,3μm,16.0s							
SKR				MLR	MLR			
	comp=Z,3μm,16.0s							
TIA	**Tai'an**	**19.42**	**280**	⇓P	**P**	**21 10 59.4**	**-1.3**
TIA				S	**S**	**21 14 31.6**	**-7.0**
TIA				pmax	pmax			
	comp=Z,20nm,0.7s							
TIA				pmax	pmax			
	comp=Z,190nm,3.8s							
TIA				LR	LR			
	comp=Z,2μm,12.6s							
TIA				LR	LR			
	comp=Z,3μm,13.5s							
TIA				LR	LR			
	comp=Z,4μm,13.5s							
BJI	**Beijing**	**20.22**	**291**	P	**P**	**21 11 07.3**	**-2.1**
BJI				sP	**sP**	**21 11 19.9**	**-1.0**
BJI				S	**S**	**21 14 54.8**	**0.0**
BJI				sS	**sS**	**21 15 06.3**	**-0.8**
BJI				pmax	pmax			
	comp=Z,69nm,1.6s							
BJI				LR	LR			
	comp=Z,680nm,16.9s							
BJI				LR	LR			
	comp=Z,1μm,19.7s							
BJI				LR	LR			
	comp=Z,1μm,22.4s							
BJT	**Baijiatuau**	**20.22**	**291**	*e*P	**P**	**21 11 07.5**	**-1.9**
BJT				pmax	pmax			
	comp=Z,92nm,1.0s							
BJT	**Baijiatuau**	**20.22**	**291**	*e*P	**P**	**21 11 07.5**	**-1.9**
	comp=Z,92nm,1.0s							
SSLB	**Suanglung**	**20.82**	**242**	*e*P	**P**	**21 11 16.8**	**+0.7**
SSLB				*e*sP	sP	21 11 34.0	+6.4
SSLB				*e*S	**S**	**21 15 07.6**	**+0.5**
HIA	**Hailar**	**20.98**	**318**	*e*P	**P**	**21 11 15.5**	**-2.1**
HIA				pmax	pmax			
	comp=Z,110nm,1.9s							
HIA	**Hailar**	**20.98**	**318**	*e*P	**P**	**21 11 15.5**	**-2.1**
	comp=Z,110nm,1.9s							
TPUB	**Ta-pu**	**21.36**	**242**	*e*P	**P**	**21 11 23.9**	**+2.0**
	comp=Z,34nm,1.2s							
PEA0	**Petropavlovsk-**	**21.39**	**28**	*e*P	**P**	**21 11 22.1**	**+0.1**
PEA0B	**Petropavlovsk-**	**21.39**	**28**	*e*P	**P**	**21 11 23.1**	**+1.1**
	comp=Z,151nm,1.5s							
PETK	**Petropavlovsk-**	**21.39**	**28**	P	**P**	**21 11 21.3**	**-0.7**
	comp=Z,18nm,1.0s,baz=190,slow=5.9,SNR=10							
PETK				LR	LR	21 20 11.2		
	comp=Z,681nm,20.2s,baz=216,slow=38							
PEA1	**Petropavlovsk-**	**21.40**	**28**	*e*P	**P**	**21 11 21.3**	**-0.7**
PET	**Petropavlovsk**	**21.71**	**30**	*e*P	**P**	**21 11 26.1**	**+0.8**
PET				*e*S	**S**	**21 15 18.0**	**-5.9**
PET				pmax	pmax			
	comp=Z,500nm,6.6s							
PET				pmax	pmax			
	comp=Z,300nm,13.8s							
PET				pmax	pmax			
	comp=Z,69nm,1.3s							
PET				MLR	MLR			
	comp=Z,1μm,19.0s							
PET				MLR	MLR			
	comp=Z,800nm,16.0s							
PET	**Petropavlovsk**	**21.71**	**30**	*e*P	**P**	**21 11 26.3**	**+1.0**
	comp=Z,86nm,1.2s							
GUMO	**Guam**	**21.85**	**170**	*e*P	**P**	**21 11 28.3**	**+1.2**
GUMO				pmax	pmax			
	comp=Z,622nm,1.3s							
GUMO	**Guam**	**21.85**	**170**	*e*P	**P**	**21 11 28.2**	**+1.2**
	comp=Z,622nm,1.3s							
WHN	**Wuhan**	**22.85**	**266**	⇓P	**P**	**21 11 35.9**	**-1.8**
WHN				S	**S**	**21 15 41.4**	**-4.0**
WHN				LR	LR			
	comp=Z,3μm,12.4s							
WHN				LR	LR			
	comp=Z,4μm,13.7s							
WHN				LR	LR			
	comp=Z,4μm,13.0s							
TIY	**Taiyuan**	**23.08**	**285**	*e*P	**P**	**21 11 41.8**	**+1.7**
TIY				S	**S**	**21 15 50.0**	**+0.6**
TIY				pmax	pmax			
	comp=Z,27nm,0.9s							
TIY				LR	LR			
	comp=Z,350nm,14.2s							
TIY				LR	LR			
	comp=Z,2μm,15.7s							
TIY				LR	LR			
	comp=Z,3μm,15.6s							
HHC	**Hu-ho-hao-te**	**23.80**	**292**	*e*P	**P**	**21 11 43.3**	**-3.9**
HHC				sP	sP	21 12 02.3	+3.3
HHC				PP	**PnPn**	**21 12 16.1**	**+0.7**
HHC				S	**S**	**21 15 54.4**	**-6.6**
HHC				sS	sS	21 16 07.4	-7.4
HHC				pmax	pmax			
	comp=Z,23nm,1.1s							
HHC				pmax	pmax			
	comp=Z,170nm,4.0s							
HHC				LR	LR			
	comp=Z,2μm,13.7s							
HHC				LR	LR			
	comp=Z,2μm,13.3s							
HHC				LR	LR			
	comp=Z,2μm,13.2s							
CLNS	**Chul'man**	**24.20**	**338**	*e*P	**P**	**21 11 51.0**	**+0.4**
CLNS				*e**PP	**pP**	**21 11 58.4**	**-0.6**
CLNS				*e*		21 12 19.9		
CLNS				*e*		21 15 35.2		
CLNS				*e*S	**S**	**21 16 04.6**	**-2.4**
CLNS				*e*SS	**SnSn**	**21 16 54.2**	**+4.2**
CLNS				pmax	pmax			
	comp=Z,117nm,1.2s							
CLNS				pmax	pmax			
	comp=N,97nm,1.3s							
CLNS				pmax	pmax			
	comp=E,36nm,1.3s							
CLNS				pmax	pmax			
	comp=N,29nm,1.0s							
CLNS				pmax	pmax			
	comp=E,16nm,0.8s							
CLNS				pmax	pmax			
	comp=Z,19nm,1.0s							
CLNS				smax	smax			
	comp=N,356nm,11.5s							
CLNS				smax	smax			
	comp=E,148nm,14.8s							
CLNS				MLR	MLR			
	comp=E,640nm,15.0s							
CLNS				MLR	MLR			
	comp=N,1μm,15.0s							
CLNS				MLR	MLR			
	comp=Z,2μm,16.0s							
BTO	**Baotou**	**24.95**	**292**	*e*P	**P**	**21 11 55.1**	**-2.7**
MA2	**Magadan**	**25.16**	**12**	P	**P**	**21 11 59.3**	**0.0**
	comp=Z,56nm,0.9s,baz=213,slow=9.6,SNR=22							
MA2				LR	LR	21 22 02.4		
	comp=Z,536nm,20.3s,baz=216,slow=37							
CIT	**Chita**	**25.78**	**319**	*e*P	**P**	**21 12 01.5**	**-3.6**
CIT				*e*		21 12 18.3		
XAN	**Xi'an**	**26.38**	**277**	P	**P**	**21 12 09.3**	**-1.4**
XAN				pP	pP	21 12 18.5	-0.6
XAN				sP	sP	21 12 22.8	+0.2
XAN				PP	**PnPn**	**21 12 52.3**	**+1.6**
XAN				S	**S**	**21 16 37.8**	**-4.4**
XAN				sS	sS	21 16 53.8	-2.3
XAN				SS	**SnSn**	**21 17 48.3**	**+4.6**
XAN				pmax	pmax			
	comp=Z,16nm,1.1s							
XAN				pmax	pmax			
	comp=Z,55nm,4.0s							
XAN				LR	LR			
	comp=Z,2μm,16.7s							
XAN				LR	LR			
	comp=Z,2μm,16.2s							
XAN				LR	LR			
	comp=Z,2μm,16.2s							
ENH	**Enshi**	**26.91**	**268**	*e*P	**P**	**21 12 13.9**	**-1.6**
	comp=Z,54nm,0.9s							
H11N2	**WAKE ISLAND Hy**	**27.56**	**117**	T	T	21 41 34.2		
	baz=310,slow=75,SNR=642							
H11N1	**WAKE ISLAND Hy**	**27.57**	**117**	T	T	21 41 34.7		
	baz=310,slow=75,SNR=825							
H11N3	**WAKE ISLAND Hy**	**27.58**	**117**	T	T	21 41 29.3		
	baz=310,slow=75,SNR=806							
YAK	**Yakutsk**	**27.74**	**349**	P	**P**	**21 12 22.4**	**-0.1**
	comp=Z,101nm,0.7s,baz=164,slow=1.0,SNR=31							
YAK				LR	LR	21 23 32.7		
	comp=Z,2μm,20.2s,baz=106,slow=37							
YAK	**Yakutsk**	**27.74**	**349**	*c i*P	**P**	**21 12 22.1**	**-0.4**
YAK				*e**PP	**pP**	**21 12 30.6**	**-0.3**
YAK				*e*PPP	PPP	21 13 17.2		
YAK				*e*S	**S**	**21 17 03.6**	**+0.6**
YAK				*e**SS	**sS**	**21 17 18.6**	**+1.7**
YAK				*e*SS	**SnSn**	**21 18 15.7**	**-0.7**
YAK				*e*SSS	SSS	21 18 33.8		
YAK				pmax	pmax			
	comp=Z,170nm,1.1s							
YAK				pmax	pmax			
	comp=N,95nm,1.1s							
YAK				pmax	pmax			
	comp=E,61nm,1.6s							
YAK				pmax	pmax			
	comp=Z,75nm,2.3s							
YAK				pmax	pmax			
	comp=N,102nm,1.8s							
YAK				pmax	pmax			
	comp=E,48nm,1.5s							
YAK				smax	smax			
	comp=E,236nm,4.1s							
YAK				smax	smax			
	comp=N,290nm,4.0s							
YAK				MLR	MLR			
	comp=E,940nm,19.0s							
YAK				MLR	MLR			
	comp=Z,1μm,17.0s							
YAK				MLR	MLR			
	comp=N,1μm,18.0s							
YAK	**Yakutsk**	**27.74**	**349**	*e*P	**P**	**21 12 22.4**	**-0.1**
	comp=N,211nm,1.0s							
ULN	**Ulaanbaatar**	**28.13**	**307**	*d i*P	**P**	**21 12 26.3**	**-0.1**
ULN				pmax	pmax			
	comp=Z,46nm,1.7s							
ULN	**Ulaanbaatar**	**28.13**	**307**	*e*P	**P**	**21 12 25.4**	**-1.0**
	comp=Z,120nm,2.0s							
ULN	**Ulaanbaatar**	**28.13**	**307**	P	**P**	**21 12 26.6**	**+0.2**
	SNR=20							
ULN	**Ulaanbaatar**	**28.13**	**307**	P	**P**	**21 12 26.6**	**+0.2**
	SNR=20							
H11S3	**WAKE ISLAND Hy**	**28.21**	**120**	T	T	21 42 15.4		
	baz=312,slow=75,SNR=2285							
H11S1	**WAKE ISLAND Hy**	**28.21**	**120**	T	T	21 42 13.4		
	baz=312,slow=75,SNR=2176							
H11S2	**WAKE ISLAND Hy**	**28.23**	**120**	T	T	21 42 16.6		
	baz=312,slow=75,SNR=1852							
SONA1	**Songino Array**	**28.55**	**307**	*e*P	**P**	**21 12 29.7**	**-0.4**
SONA0	**Songino Array**	**28.55**	**307**	*e*P	**P**	**21 12 30.2**	**0.0**
	comp=Z,37nm,1.3s							
SONM	**Songino Array**	**28.55**	**307**	P	**P**	**21 12 30.2**	**0.0**
	comp=Z,14nm,1.0s,baz=110,slow=6.1,SNR=18							
SONM				LR	LR	21 24 26.4		
	comp=Z,2μm,19.3s,baz=88,slow=38							
SEY	**Seymchan**	**28.59**	**11**	P	**P**	**21 12 30.5**	**+0.3**
	comp=Z,13nm,0.8s,baz=197,slow=6.7,SNR=23							
SEY	**Seymchan**	**28.59**	**11**	⇑*e*P	**P**	**21 12 30.7**	**+0.6**
BOD	**Bodaibo**	**28.88**	**330**	⇓*i*P	**P**	**21 12 32.0**	**-0.8**
BOD				pmax	pmax			
	comp=Z,47nm,1.2s							
LZH	**Lanzhou**	**30.10**	**283**	*e*P	**P**	**21 12 43.9**	**-0.1**
LZH				pP	pP	21 12 53.4	+1.0
LZH				sP	sP	21 12 57.0	+1.0
LZH				PP	**PnPn**	**21 13 41.5**	**0.0**
LZH				*e*S	**S**	**21 17 37.0**	**-4.0**
LZH				sS	sS	21 17 53.5	-1.4
LZH				SS	**SnSn**	**21 19 17.0**	**+2.4**
LZH				pmax	pmax			
	comp=Z,43nm,1.1s							
LZH				pmax	pmax			
	comp=Z,170nm,5.0s							
LZH				LR	LR			
	comp=Z,2μm,12.4s							
LZH				LR	LR			
	comp=Z,2μm,14.6s							
LZH				LR	LR			
	comp=Z,2μm,15.6s							
GYA	**Guiyang**	**30.65**	**263**	⇑*i*P	**P**	**21 12 50.0**	**+1.1**
GYA				pP	sP	21 13 00.8	0.0
GYA				PP	**PnPn**	**21 13 51.0**	**+2.2**
GYA				PcP	**PcP**	**21 15 48.9**	**+2.2**
GYA				S	**S**	**21 17 48.8**	**-0.8**
GYA				sS	sS	21 18 05.0	+1.4
GYA				ScP	**ScP**	**21 19 27.3**	**+0.1**
GYA				SS	**SnSn**	**21 19 32.3**	**+4.2**
GYA				ScS	**ScS**	**21 23 22.8**	**-1.1**
GYA				pmax	pmax			
	comp=Z,30nm,0.8s							
GYA				pmax	pmax			
	comp=Z,120nm,5.0s							
GYA				LR	LR			
	comp=Z,640nm,17.9s							
GYA				LR	LR			
	comp=Z,590nm,18.2s							
GYA				LR	LR			
	comp=Z,600nm,18.5s							
IRK	**Irkutsk**	**31.09**	**315**	*e*P	**P**	**21 12 52.2**	**-0.2**
IRK				pmax	pmax			
	comp=Z,32nm,1.3s							
ZAK	**Zakamensk**	**31.16**	**311**	*e*P	**P**	**21 12 52.2**	**-0.9**
ZAK				pmax	pmax			
	comp=Z,17nm,1.1s							
TLY	**Talaya**	**31.29**	**313**	P	**P**	**21 12 55.4**	**+1.2**
	comp=Z,5.4nm,0.7s,baz=113,slow=9.2,SNR=6.2							
TLY				LR	LR	21 26 19.1		
	comp=Z,900nm,18.9s,baz=106,slow=38							
TLY	**Talaya**	**31.29**	**313**	*e*P	**P**	**21 12 56.0**	**+1.9**
TLY				*e*S	**S**	**21 18 04.1**	**+5.1**
TLY				*e*SS	**SnSn**	**21 19 43.6**	**+0.6**
TLY				*e*SSS	SSS	21 20 08.9		
TLY				pmax	pmax			
	comp=Z,23nm,1.4s							
TLY				MLR	MLR			
	comp=Z,1μm,18.0s							
TLY	**Talaya**	**31.29**	**313**	*e*P	**P**	**21 12 55.2**	**+1.0**
	comp=Z,15nm,1.0s							
CD2	**Chengdu**	**31.40**	**273**	P	**P**	**21 12 54.1**	**-1.3**
CD2				sP	sP	21 13 08.6	+1.2
CD2				S	**S**	**21 17 58.3**	**-2.9**
CD2				sS	sS	21 18 16.3	+1.1
CD2				pmax	pmax			
	comp=Z,30nm,0.6s							
CD2				pmax	pmax			
	comp=Z,120nm,4.9s							
CD2				LR	LR			
	comp=Z,3μm,19.2s							
CD2				LR	LR			
	comp=Z,4μm,15.6s							
GTA	**Gaotai**	**32.82**	**290**	*e*P	**P**	**21 13 07.9**	**0.0**
GTA				pP	pP	21 13 17.1	+0.7
GTA				sP	sP	21 13 21.6	+1.7
GTA				PcP	**PcP**	**21 15 53.8**	**+1.4**
GTA				S	**S**	**21 18 20.0**	**-3.4**
GTA				sS	sS	21 18 37.1	-0.3
GTA				SS	**SnSn**	**21 20 18.8**	**-1.9**
GTA				pmax	pmax			
	comp=Z,13nm,1.3s							
GTA				pmax	pmax			
	comp=Z,100nm,5.9s							
GTA				LR	LR			
	comp=Z,1μm,14.5s							
GTA				LR	LR			
	comp=Z,740nm,16.2s							
GTA				LR	LR			
	comp=Z,950nm,17.8s							
MOY	**Mondy**	**32.87**	**312**	*e*P	**P**	**21 13 09.6**	**+1.4**
KMI	**Kunming**	**34.41**	**264**	P	**P**	**21 13 20.5**	**-1.5**
KMI				pP	pP	21 13 31.6	+1.1
KMI				sP	sP	21 13 35.8	+1.8
KMI				S	**S**	**21 18 47.8**	**-0.7**
KMI				sS	sS	21 19 03.6	+1.1
KMI				SS	**SnSn**	**21 20 55.9**	**-3.8**
KMI				pmax	pmax			
	comp=Z,6.0nm,1.2s							
KMI				pmax	pmax			
	comp=Z,67nm,6.3s							
KMI				LR	LR			
	comp=Z,1μm,14.3s							
KMI				LR	LR			
	comp=Z,2μm,15.5s							
KMI				LR	LR			
	comp=Z,2μm,15.1s							
BILL	**Bilibino**	**35.82**	**16**	*c i*P	**P**	**21 13 32.7**	**-0.6**
BILL				*i*		21 13 42.2		
BILL				*i*		21 14 56.5		
BILL				*i*		21 15 59.5		
BILL				*i* S	S	21 19 02.1	-6.7	
BILL				pmax	pmax			
	comp=Z,17nm,1.0s							
BILL				MLR	MLR			
	comp=Z,438nm,16.0s							
BILL	**Bilibino**	**35.82**	**16**	*e*P	**P**	**21 13 33.2**	**-0.1**
	comp=Z,17nm,1.1s							
TIXI	**Tiksi**	**37.02**	**354**	P	**P**	**21 13 43.4**	**-0.1**
	comp=Z,29nm,0.9s,baz=146,slow=6.4,SNR=78							
TIXI	**Tiksi**	**37.02**	**354**	*c i*P	**P**	**21 13 43.2**	**-0.3**
TIXI				pmax	pmax			
	comp=Z,41nm,1.0s							
TIXI	**Tiksi**	**37.02**	**354**	*e*P	**P**	**21 13 43.0**	**-0.4**
	comp=Z,34nm,0.9s							
GENI	**Genyem**	**37.66**	**181**	P	**P**	**21 13 51.6**	**+2.1**
	comp=Z,87nm,0.7s,comp=Z,5μm							
KRAR	**Krasnoyarsk**	**38.55**	**318**	⇓*e*P	**P**	**21 13 57.0**	**+0.4**
KRAR				pmax	pmax			
	comp=Z,54nm,1.0s							
FAKI	**Fak Fak**	**38.85**	**194**	P	P	21 13 56.2	-3.4
CHTO	**Chiang Mai**	**40.57**	**257**	*e*P	**P**	**21 14 13.3**	**-0.6**
CHTO				pmax	pmax			
	comp=Z,11nm,1.3s							
CHTO	**Chiang Mai**	**40.57**	**257**	*e*P	**P**	**21 14 13.3**	**-0.6**
	comp=Z,12nm,1.3s							
RABL	**Rabaul**	**40.61**	**163**	*e*P	**P**	**21 14 14.5**	**+0.3**
	comp=Z,31nm,0.4s							
CM31	**Chiang Mai Arr**	**40.76**	**257**	*e*P	**P**	**21 14 15.0**	**-0.5**
CM31				*e*PcP	**PcP**	**21 16 17.4**	**+1.0**
CMAR	**Chiang Mai Arr**	**40.76**	**257**	P	**P**	**21 14 15.0**	**-0.5**
	comp=Z,2.0nm,0.6s,baz=48,slow=8.2,SNR=22							
CMAR				PcP	**PcP**	**21 16 17.4**	**+1.0**
	comp=Z,2.3nm,1.1s,baz=28,slow=4.1,SNR=4.9							
CMAR				LR	LR	21 32 00.8		
	comp=Z,152nm,21.4s,baz=38,slow=37							
CM01	**Chiang Mai Arr**	**40.77**	**257**	*e*P	**P**	**21 14 18.1**	**+2.6**
WMQ	**Urumqi**	**41.38**	**299**	P	**P**	**21 14 22.9**	**+2.5**
WMQ				pP	sP	21 14 32.6	+0.1
WMQ				sP	pP	21 14 35.6	+6.6
WMQ				PcP	**PcP**	**21 16 19.8**	**+1.6**
WMQ				S	**S**	**21 20 34.0**	**+0.6**
WMQ				sS	sS	21 20 50.3	+2.7
WMQ				SS	**SS**	**21 23 36.6**	**-1.0**
WMQ				pmax	pmax			
	comp=Z,27nm,1.4s							
WMQ				pmax	pmax			
	comp=Z,160nm,3.6s							
WMQ				LR	LR			
	comp=Z,340nm,18.0s							
WMQ				LR	LR			
	comp=Z,370nm,16.0s							
WMQ				LR	LR			
	comp=Z,280nm,20.2s							
LSA	**Lhasa**	**42.08**	**277**	P	**P**	**21 14 27.5**	**+0.7**
LSA				pmax	pmax			
	comp=Z,9.0nm,1.6s							
LSA	**Lhasa**	**42.08**	**277**	*e*P	**P**	**21 14 28.3**	**+1.5**
LSA				pmax	pmax			
	comp=Z,13nm,0.9s							
LSA	**Lhasa**	**42.08**	**277**	*e*P	**P**	**21 14 28.3**	**+1.5**
	comp=Z,13nm,0.9s							
SBUM	**Sibu**	**42.19**	**226**	*e*P	**P**	**21 14 27.4**	**+0.2**
	comp=Z,24nm,1.7s							
ZAA0	**Zalesovo Array**	**42.90**	**314**	*e*P	**P**	**21 14 32.5**	**0.0**
ZAA1	**Zalesovo Array**	**42.90**	**314**	*e*P	**P**	**21 14 32.9**	**+0.3**
ZAA1				*e*PcP	**PcP**	**21 16 22.4**	**-0.5**
ZALV	**Zalesovo Beam**	**42.90**	**314**	P	**P**	**21 14 32.9**	**+0.3**
	comp=Z,29nm,0.7s,baz=96,slow=6.4,SNR=84							
ZALV				PcP	**PcP**	**21 16 22.4**	**-0.5**
	comp=Z,6.8nm,0.9s,baz=116,slow=3.4,SNR=3.6							
ZALV				LR	LR	21 33 17.6		
	comp=Z,398nm,19.1s,baz=70,slow=37							
NVS	**Novosibirsk**	**43.85**	**315**	⇓*i*P	**P**	**21 14 40.7**	**+0.5**
NVS				*e*S	**S**	**21 21 08.9**	**-0.4**
NVS				pmax	pmax			
	comp=N,16nm,1.4s							
NVS				pmax	pmax			
	comp=E,52nm,1.4s							
NVS				pmax	pmax			
	comp=Z,66nm,1.4s							
NVS				smax	smax			
	comp=E,12nm,1.6s							
NRIK	**Noril'sk**	**44.76**	**336**	P	**P**	**21 14 47.3**	**+0.1**
	comp=E,45nm,1.2s,baz=114,slow=8.9,SNR=39							
NRIK				LR	LR	21 34 41.1		
	comp=E,1μm,18.7s,baz=106,slow=38							
MK01	**Makanchi Array**	**44.81**	**304**	*e*P	**P**	**21 14 47.5**	**-0.5**
MK31	**Makanchi Array**	**44.81**	**304**	*e*P	**P**	**21 14 48.4**	**+0.3**
MK31	**Makanchi Array**	**44.81**	**304**	*e*P	**P**	**21 14 48.4**	**+0.3**
MK32	**Makanchi Array**	**44.81**	**304**	*e*P	**P**	**21 14 48.4**	**+0.3**

MKAR **Makanchi Array** 44.81 304 P **P** 21 14 48.4 +0.3
comp=E,35nm,0.9s,baz=86,slow=7.4,SNR=117
MKAR LR LR 21 34 29.8
comp=E,997nm,18.3s,baz=86,slow=37
MAKZ **Makanchi** 45.03 304 *e*P **P** 21 14 50.1 +0.3
MAKZ pmax pmax
comp=Z,47nm,0.9s
MAKZ **Makanchi** 45.03 304 *e*P **P** 21 14 50.1 +0.3
comp=Z,47nm,0.9s
KURK **Kurchatov** 46.80 309*c i*P **P** 21 15 03.4 -0.2
KURK pmax pmax
comp=Z,102nm,0.8s
KURK **Kurchatov** 46.80 309 *e*P **P** 21 15 03.6 0.0
comp=Z,122nm,0.8s
KURBB **Kurchatov Arra** 46.86 309 P **P** 21 15 04.0 -0.1
comp=Z,54nm,0.7s,baz=86,slow=8.0,SNR=195
GUN **Gumba** 47.04 277 *e*P **P** 21 15 06.2 0.0
comp=Z,110nm,1.0s
TT01 **Tatalina** 47.06 34 *e*P **P** 21 15 06.5 +1.0
TTA **Tatalina** 47.07 34 *e*P **P** 21 15 06.5 +0.8
TTA pmax pmax
comp=Z,37nm,2.0s
TTA **Tatalina** 47.07 34 *e*P **P** 21 15 06.5 +0.8
comp=Z,37nm,2.0s
SOEI **Soe** 47.49 203 P P 21 15 19.6 +10
PKIN **Phulchoki** 47.56 277 *e*P **P** 21 15 10.5 +0.3
comp=Z,23nm,0.7s
KKN **Kakani** 47.57 277 *e*P **P** 21 15 09.9 -0.3
comp=Z,38nm,0.9s
JOHN **Johnston Islan** 47.60 100 *e*P **P** 21 15 11.2 +0.9
comp=Z,163nm,1.0s
DMN **Daman** 47.78 277 *e*P **P** 21 15 11.6 -0.3
comp=Z,45nm,1.3s
HNR **Honiara** 47.91 154 *e*P **P** 21 15 13.0 +0.4
HNR pmax pmax
comp=Z,32nm,0.6s
HNR **Honiara** 47.91 154 *e*P **P** 21 15 13.0 +0.4
comp=Z,32nm,0.6s
IPM **Ipoh** 47.96 240 *e*P **P** 21 15 13.6 +0.5
comp=Z,17nm,1.1s
GKN **Gorkha** 48.01 278 *e*P **P** 21 15 13.3 -0.3
comp=Z,213nm,1.3s
RSO **Redoubt South** 48.50 37 *e*P **P** 21 15 18.4 +1.4
KDAK **Kodiak Island** 48.64 41 *i* P **P** 21 15 19.3 +1.5
MTN **Manton Dam** 48.74 193 *e*P **P** 21 15 18.3 -0.6
comp=Z,129nm,1.7s
SPU **Mount Spurr** 48.85 36 *e*P **P** 21 15 20.7 +1.2
CAST **Castle Rocks** 48.88 33 *e*P **P** 21 15 21.6 +2.0
comp=Z,23nm,1.5s
CAST *e*pP **pP** 21 15 27.0 -1.4
KOLN **Koldanda** 48.94 278 *e*P **P** 21 15 20.8 0.0
comp=Z,47nm,0.9s
COEN **Coen** 48.98 177 *e*P **P** 21 15 20.6 -0.2
comp=Z,48nm,1.4s
AAA **Alma-Ata** 49.17 300 *e*P **P** 21 15 24.2 +2.0
AAA *e*S **S** 21 22 21.1 -4.7
AAA pmax pmax
comp=Z,200nm,4.2s
AAA smax smax
comp=E,700nm,25.7s
AAA MLR MLR
comp=Z,1µm,18.0s
PYUN **Piuthan** 49.30 279 *e*P **P** 21 15 23.9 +0.3
comp=Z,268nm,1.1s
BPAW **Bear Paw Mtn.** 49.39 32 *e*P **P** 21 15 24.0 +0.5
BPAW *es*P sP 21 15 43.4 +7.7
KTH **Kantishna Hill** 49.40 33 *e*P **P** 21 15 24.9 +1.3
comp=Z,22nm,1.1s
MLY **Manley** 49.53 31 *e*P **P** 21 15 25.9 +1.4
comp=Z,24nm,1.3s
COLD **Coldfoot** 49.86 28 *e*P **P** 21 15 28.9 +1.9
comp=Z,24nm,2.0s
RC01 **Rabbit Creek A** 49.97 36 *e*P **P** 21 15 28.9 +1.0
comp=Z,34nm,1.2s
BWN **Browne** 50.06 32 *e*P **P** 21 15 31.1 +2.6
comp=Z,55nm,1.1s
TKM2 **Tokmak 2** 50.21 300 *e*P **P** 21 15 31.4 +1.1
TKM2 pmax pmax
comp=Z,57nm,1.0s
TKM2 **Tokmak 2** 50.21 300 *e*P **P** 21 15 31.4 +1.1
comp=Z,57nm,1.0s
PMR **Palmer** 50.25 36 *e*P **P** 21 15 30.8 +0.8
PMR pmax pmax
comp=Z,32nm,1.2s
PMR **Palmer** 50.25 36 *e*P **P** 21 15 30.8 +0.8
comp=Z,32nm,1.2s
MCK **McKinley** 50.29 33 *e*P **P** 21 15 31.3 +1.0
MCK pmax pmax
comp=Z,43nm,1.6s
MCK **McKinley** 50.29 33 *e*P **P** 21 15 31.3 +1.0
comp=Z,43nm,1.6s
RND **Reindeer** 50.33 33 *e*P **P** 21 15 30.9 +0.2
RND *e**PP **pP** 21 15 38.5 -1.0
RND pmax pmax
comp=Z,29nm,1.4s
RND **Reindeer** 50.33 33 *e*P **P** 21 15 30.9 +0.2
comp=Z,29nm,1.4s
RND *e*pP **pP** 21 15 38.5 -1.0
MDM **Murphy Dome** 50.59 31 *e*P **P** 21 15 33.4 +0.8
comp=Z,29nm,1.0s
SML **Sawmill** 50.62 35 *e*P **P** 21 15 33.3 +0.4
SML pmax pmax
comp=Z,29nm,1.1s
SML **Sawmill** 50.62 35 *e*P **P** 21 15 33.3 +0.4
comp=Z,29nm,1.1s
WRH **Wood River Hil** 50.66 32 *e*P **P** 21 15 34.6 +1.6
comp=Z,18nm,1.2s
COLA **College** 50.76 31 *e*P **P** 21 15 35.0 +1.2
COLA pmax pmax
comp=Z,13nm,0.8s
COLA **College** 50.76 31 *e*P **P** 21 15 35.0 +1.2
comp=Z,13nm,0.8s
CCB **Clear Creek Bu** 50.78 32 *e*P **P** 21 15 36.1 +2.2
comp=Z,9.0nm,1.2s
KSH **Kashi** 50.86 295 *e*P P 21 15 39.8 +4.7
KSH *es*P sP 21 15 53.8 +6.4
KSH S **S** 21 22 54.0 +4.4
KSH ScS **ScS** 21 25 25.9 +1.9
KSH pmax pmax
comp=Z,130nm,4.1s
KSH LR LR
comp=Z,510nm,15.6s
KSH LR LR
comp=Z,350nm,10.4s
KSH LR LR
comp=Z,770nm,16.1s
FRU **Bishkek** 50.93 300 *i* P **P** 21 15 35.0 -0.5
FRU pmax pmax
comp=Z,100nm,1.8s
DHY **Denali Highway** 51.01 34 *e*P **P** 21 15 36.4 +0.5
comp=Z,39nm,1.9s
AAK **Ala-Archa** 51.07 300 P **P** 21 15 37.6 +0.9
comp=Z,17nm,0.7s,baz=96,slow=5.4,SNR=24
AAK **Ala-Archa** 51.07 300*de*P **P** 21 15 37.5 +0.8
AAK pmax pmax
comp=Z,42nm,1.1s
AAK **Ala-Archa** 51.07 300 *e*P **P** 21 15 37.6 +0.8
comp=Z,23nm,0.8s
SCM **Sheep Creek Mo** 51.09 35 *e*P **P** 21 15 38.0 +1.5
SCM pmax pmax
comp=Z,37nm,1.2s
SCM **Sheep Creek Mo** 51.09 35 *e*P **P** 21 15 38.0 +1.5
comp=Z,37nm,1.2s
PWJI **Pagerwojo** 51.12 218 P **P** 21 15 36.6 -0.5
HDA **Harding Lake** 51.15 32 *e*P **P** 21 15 37.5 +0.7
comp=Z,14nm,1.1s
IL1 **Eielson Array** 51.17 32 *e*P **P** 21 15 36.4 -0.5
ILAR **Eielson Array** 51.17 32 P **P** 21 15 36.8 -0.1
comp=Z,5.3nm,0.8s,baz=267,slow=5.3,SNR=32
ILB **Eielson Array** 51.17 32 *e*P **P** 21 15 36.8 -0.1
BVAR **Borovoye Array** 51.55 313 P **P** 21 15 40.0 +0.1
comp=Z,19nm,0.9s,baz=76,slow=6.3,SNR=64
BVAR **Borovoye Array** 51.55 313 P **P** 21 15 40.0 +0.1
BVAR pmax pmax
comp=Z,19nm,0.9s
EKS2 **Erkin-Say** 51.57 300 *e*P **P** 21 15 40.8 +0.4
EKS2 pmax pmax
comp=Z,15nm,0.8s
EKS2 **Erkin-Say** 51.57 300 *e*P **P** 21 15 40.8 +0.4
comp=Z,15nm,0.8s
BRVK **Borovoye** 51.60 313*c i*P **P** 21 15 40.6 +0.2
BRVK pmax pmax
comp=Z,33nm,1.0s
BRVK **Borovoye** 51.60 313 *e*P **P** 21 15 40.5 +0.2
comp=Z,33nm,1.0s
KLU **Klutina** 51.79 36 *e*P **P** 21 15 42.8 +1.1
comp=Z,26nm,1.3s
KLU *e*pP **pP** 21 15 48.3 -2.2
FYU **Fort Yukon** 51.81 29 *e*P **P** 21 15 44.2 +2.6
comp=Z,148nm,1.9s
PAX **Paxson** 51.88 34 *e*P **P** 21 15 43.3 +0.9
PAX pmax pmax
comp=Z,33nm,1.8s
PAX **Paxson** 51.88 34 *e*P **P** 21 15 43.3 +0.9
comp=Z,32nm,1.8s
DIV **Divide** 51.89 36 *e*P **P** 21 15 44.0 +1.5
comp=Z,53nm,1.3s
LEM **Lembang** 52.37 224 P **P** 21 15 46.3 -0.3
comp=Z,6.4nm,0.4s,baz=336,slow=19,SNR=1.8
ZRNK **Zerenda** 52.38 313 *e*P **P** 21 15 45.6 -0.5
ZRNK pmax pmax
comp=Z,59nm,1.1s
ZRNK **Zerenda** 52.38 313 *e*P **P** 21 15 45.6 -0.5
comp=Z,59nm,1.1s
KLI **Kotabumi** 52.41 228 P P 21 15 54.0 +7.2
DOT **Dot Lake** 52.46 33 *e*P **P** 21 15 46.8 +0.2
comp=Z,47nm,1.4s
BMRM **Bremner River** 52.47 36 *e*P **P** 21 15 48.1 +1.3
comp=Z,35nm,1.2s
GSI **Gunungsitoli** 52.62 240 P **P** 21 15 48.5 +0.1
MENT **Mentasta** 52.68 34 *e*P **P** 21 15 49.6 +1.3
comp=Z,13nm,0.9s
BALM **Baldy** 53.56 36 *e*P **P** 21 15 55.7 +0.9
BALM pmax pmax
comp=Z,27nm,1.4s
BALM **Baldy** 53.56 36 *e*P **P** 21 15 55.7 +0.9
comp=Z,27nm,1.4s
EGAK **Eagle** 53.62 31 *e*P **P** 21 15 57.1 +2.0
comp=Z,7.4nm,0.9s
KKAR **Karatay Array** 53.76 301 *e*P **P** 21 15 56.7 +0.2
KKAR **Karatay Array** 53.76 301 *e*P **P** 21 15 56.7 +0.2
KIP **Kipapa** 54.64 87 *e*P **P** 21 16 04.3 +1.2
KIP pmax pmax
comp=Z,229nm,1.8s
KIP **Kipapa** 54.64 87 *e*P **P** 21 16 04.2 +1.2
comp=Z,229nm,1.8s
HON **Honolulu** 54.70 87 *e*P **P** 21 16 03.7 +0.2
HON **Honolulu** 54.70 87 *e*P **P** 21 16 03.7 +0.2
comp=Z,310nm,1.3s
FITZ **Fitzroy Crossi** 55.03 198 P **P** 21 16 05.2 -0.6
comp=Z,13nm,0.7s,baz=14,slow=8.8,SNR=23
FITZ **Fitzroy Crossi** 55.03 198 *e*P **P** 21 16 05.2 -0.6
comp=Z,73nm,1.8s
WRAB **Tennant Creek** 55.25 188*d i*P **P** 21 16 05.3 -2.1
WRAB pmax pmax
comp=Z,195nm,1.7s
WRAB **Tennant Creek** 55.25 188 *e*P **P** 21 16 06.1 -1.2
comp=Z,230nm,2.0s
WB2 **Warramunga Arr** 55.26 188 *e*P **P** 21 16 05.9 -1.5
comp=Z,59nm,1.2s
WR1 **Warramunga Arr** 55.26 188 *e*P **P** 21 16 06.0 -1.5
comp=Z,57nm,1.1s
WRA **Warramunga Arr** 55.26 188 P **P** 21 16 06.0 -1.5
comp=Z,11nm,0.4s,baz=23,slow=7.2,SNR=186
WRA **Warramunga Arr** 55.26 188 *i* P **P** 21 16 05.8 -1.6
WRA pmax pmax
comp=Z,11nm,0.4s
CTA **Charters Tower** 55.26 174 P **P** 21 16 06.8 -0.6
comp=Z,1.8nm,0.6s,baz=326,slow=3.6,SNR=2.9
INK **Inuvik** 56.12 27 P **P** 21 16 13.2 +0.2
comp=Z,2.3nm,0.3s,baz=275,slow=8.1,SNR=13
INK **Inuvik** 56.12 27 *e*P **P** 21 16 13.6 +0.6
INK pmax pmax
comp=Z,17nm,1.3s
INK **Inuvik** 56.12 27 *e*P **P** 21 16 13.6 +0.6
comp=Z,17nm,1.3s
ARU **Arti** 57.49 319 P **P** 21 16 23.0 -0.1
comp=Z,48nm,0.9s,baz=73,slow=4.2,SNR=53
ARU **Arti** 57.49 319*c i*P **P** 21 16 22.9 -0.1
ARU 21 18 29.5
ARU S **S** 21 24 20.5 +2.2
ARU SS **SS** 21 28 02.0 -5.7
ARU pmax pmax
comp=Z,77nm,1.0s
ARU MLR MLR
comp=Z,629nm,17.0s
ARU **Arti** 57.49 319 *e*P **P** 21 16 22.9 -0.1
comp=Z,69nm,1.0s
SOKR **Solikamsk** 57.55 323*d i*P **P** 21 16 22.0 -1.3
SOKR pmax pmax
comp=Z,39nm,1.2s
SOKR MLR MLR
comp=Z,757nm,21.0s
KBL **Kabul** 57.77 292 *e*P **P** 21 16 26.2 +0.6
KBL pmax pmax
comp=Z,57nm,1.3s
KBL **Kabul** 57.77 292 *e*P **P** 21 16 26.2 +0.6
comp=Z,57nm,1.3s
HYB **Hyderabad** 57.85 269 *i* P **P** 21 16 26.0 -0.1
ABKAR **Akbulak array** 58.85 311 *e*P **P** 21 16 32.6 -0.1
AS01 **Alice Springs** 58.98 188 *e*P **P** 21 16 31.4 -2.3
AS31 **Alice Springs** 58.98 188 *e*P **P** 21 16 32.8 -1.0
comp=Z,3.4nm,0.6s
ASAR **Alice Springs** 58.98 188 P **P** 21 16 32.8 -1.0
comp=Z,3.9nm,0.8s,baz=358,slow=6.1,SNR=42
ASAR LR LR 21 40 54.1
comp=Z,221nm,21.6s,baz=12,slow=35
ASAR PKP2bc 21 46 19.2
comp=Z,2.2nm,1.0s,baz=202,slow=4.7,SNR=9.2
MBWA **Marble Bar** 59.63 203 *e*P **P** 21 16 37.5 -0.8
comp=Z,17nm,0.9s
AKTO **Aktyubinsk** 59.63 313 P **P** 21 16 37.6 -0.4
comp=Z,16nm,0.9s,baz=75,slow=6.2,SNR=24
DLBC **Dease Lake** 60.23 37 *e*P **P** 21 16 43.7 +1.6
comp=Z,21nm,1.4s
DZM **Mok Dzumac** 61.90 153 P **P** 21 16 53.6 -0.2
comp=Z,7.5nm,0.9s,baz=345,slow=12,SNR=3.4
MSVF **Nonsavu** 63.34 140⇓ *e*P **P** 21 17 03.9 +0.5
MSVF pmax pmax
comp=Z,6.0nm,1.0s
TMCR **Tamitsa** 64.16 332 *e*P **P** 21 17 08.1 -0.1
TMCR pmax pmax
comp=Z,58nm,1.1s
APA **Apatity** 64.18 336⇓ *i*P **P** 21 17 09.8 +1.5
APA pmax pmax
comp=Z,28nm,1.0s
APA MLR MLR
comp=Z,1µm,17.0s
RES **Resolute Bay** 64.40 14 *e*P **P** 21 17 09.6 0.0
RES pmax pmax
comp=Z,21nm,1.1s
RES **Resolute Bay** 64.40 14 *e*P **P** 21 17 09.6 0.0
comp=Z,22nm,1.1s
GEYT **Alibeck** 64.42 300 P **P** 21 17 11.1 +0.6
comp=Z,22nm,1.0s,baz=46,slow=4.3,SNR=50
KLMR **Klimovskoe** 65.09 328 *e*P **P** 21 17 12.4 -1.9
KLMR *e* 21 17 43.8
KLMR *e*SS SS 21 30 06.0 -0.4
KLMR pmax pmax
comp=Z,47nm,1.4s
YKW3 **Yellowknife Ar** 65.47 30 *e*P **P** 21 17 16.8 +0.1
comp=Z,62nm,1.6s
YKA **Yellowknife Ar** 65.51 30 P **P** 21 17 16.6 -0.4
comp=Z,4.3nm,1.0s,baz=295,slow=6.5,SNR=40
YKA **Yellowknife Ar** 65.51 30*de*P **P** 21 17 16.7 -0.3
YKA pmax pmax
comp=Z,4.0nm,1.0s
YKB5 **Yellowknife Ar** 65.51 30 *e*P **P** 21 17 16.9 -0.1
ARA0 **ARCESS Array S** 65.55 340 *e*P **P** 21 17 18.6 +1.4
ARA0 *e*PP **PP** 21 19 38.8 -2.3
ARCES **ARCESS Array B** 65.55 340 P **P** 21 17 17.2 0.0
comp=Z,7.8nm,0.9s,baz=44,slow=2.3,SNR=9.8
ARCES PP **PP** 21 19 38.8 -2.3
comp=Z,7.3nm,1.1s,baz=69,slow=6.6,SNR=5.5
STKA **Stephens Creek** 66.78 179 P **P** 21 17 24.8 -0.6
comp=Z,1.3nm,0.4s,baz=359,slow=8.2,SNR=14
DAG **Danmarks Havn** 67.52 355 *i* P **P** 21 17 28.8 -0.8
comp=Z,34nm,1.4s
DAG **Danmarks Havn** 67.52 355 *i* P **P** 21 17 28.8 -0.8
DAG pmax pmax
comp=Z,79nm,1.4s
NLWA **Neilton Lookou** 68.16 47 *e*P **P** 21 17 36.0 +1.8
comp=Z,40nm,1.1s
MOS **Moscow** 68.49 324 *e*P **P** 21 17 34.9 -1.2
MOS *e* 21 17 59.4
MOS *e* 21 20 05.4
MOS pmax pmax
comp=Z,56nm,1.2s
MOS MLR MLR
comp=Z,700nm,16.0s
VRH **Novokhopyorsk** 68.69 318 *e*P **P** 21 17 36.7 -0.7
VRH pmax pmax
comp=Z,10.0nm,0.6s
VRH MLR MLR
comp=Z,460nm,12.0s
E03A **Lebam** 68.75 47 *e*P **P** 21 17 39.4 +1.5
comp=Z,28nm,1.0s
B05A **Bryant** 68.78 45 P **P** 21 17 38.8 +0.8
baz=299,SNR=6.6
JCW **Jim Creek** 68.91 45 *e*P **P** 21 17 39.8 +0.9
B06A **Marblemount** 69.01 45 *e*P **P** 21 17 40.4 +1.0
comp=Z,34nm,1.3s
OBN **Obninsk** 69.33 324*c i*P **P** 21 17 40.6 -0.7
OBN *i* 21 18 04.1
OBN *i* 21 20 13.4
OBN *i* S **S** 21 26 42.7 -3.2
OBN pmax pmax
comp=Z,28nm,1.1s
OBN MLR MLR
comp=Z,588nm,15.0s
OBN **Obninsk** 69.33 324 *e*P **P** 21 17 41.6 +0.3
comp=Z,32nm,1.1s
LPSR **Galich'ya Gora** 69.47 320 *e*P **P** 21 17 42.0 -0.2
LPSR pmax pmax
comp=Z,20nm,0.9s
LPSR MLR MLR
comp=Z,950nm,18.0s
G03D **McMinnville, O** 69.58 49 P **P** 21 17 44.4 +1.4
baz=300
C06D **Leavenworth** 69.65 45 P **P** 21 17 44.9 +1.4
baz=300
TDL **Tradedollar La** 69.66 47 P **P** 21 17 44.6 +0.9
LON **Longmire** 69.70 47 *e*P **P** 21 17 44.7 +0.8
LON *e**PP **pP** 21 17 53.8 +0.9
LON pmax pmax
comp=Z,7.0nm,1.2s
LON **Longmire** 69.70 47 *e*P **P** 21 17 44.7 +0.8
comp=Z,6.8nm,1.2s
LON *e*pP **pP** 21 17 53.8 +0.9
F04A **Amboy** 69.74 48 *e*P **P** 21 17 45.1 +1.1
comp=Z,26nm,1.1s
COR **Corvallis** 69.87 49 *e*P **P** 21 17 45.3 +0.5
COR pmax pmax
comp=Z,60nm,1.2s
COR **Corvallis** 69.87 49 *e*P **P** 21 17 45.3 +0.5
comp=Z,60nm,1.2s
NLW **Nelson Butte** 69.89 45 P **P** 21 17 45.9 +0.7
VSR **Storozhevoye** 70.06 319 *e*P **P** 21 17 45.7 -0.2
VSR pmax pmax
comp=Z,20nm,0.9s
VSR MLR MLR
comp=Z,520nm,14.0s
LTY **Liberty** 70.11 46 *e*P **P** 21 17 47.0 +0.5
comp=Z,14nm,1.3s
FIA1 **FINESS Array S** 70.24 332 *e*P **P** 21 17 46.7 -0.1
FIA0 **FINESS Array S** 70.24 332 *e*P **P** 21 17 46.7 -0.1
FIA0 *e* 21 20 21.5
FIA0 **FINESS Array S** 70.24 332 *e*P **P** 21 17 46.7 -0.1
FIA0 *e*PP **PP** 21 20 21.5 -0.4
FINES **FINESS Array B** 70.24 332 P **P** 21 17 46.7 -0.1
comp=Z,23nm,0.9s,baz=67,slow=5.0,SNR=44
FINES PP **PP** 21 20 21.5 -0.4
comp=Z,3.9nm,0.8s,baz=50,slow=10,SNR=3.8
I03D **Drain, OR** 70.29 50 P **P** 21 17 49.2 +1.8
baz=300,SNR=6.1
B08A **Colville Reser** 70.33 44 *e*P **P** 21 17 48.3 +0.6
comp=Z,21nm,1.1s
EBG **Ellensburg** 70.35 46 P **P** 21 17 48.9 +1.1
H04A **Detroit Lake** 70.51 49 *e*P **P** 21 17 49.9 +1.1
comp=Z,23nm,1.0s
G05D **Wamic, OR** 70.76 48 P **P** 21 17 51.9 +1.5
baz=301
I04A **Tendick Farm,** 70.82 50 P **P** 21 17 52.1 +1.3
baz=301,SNR=12
L02D **Cave Junction,** 70.90 52 P **P** 21 17 52.4 +1.1
baz=300
WSAR **Wadi Sarin** 71.03 285 P **P** 21 17 53.5 +1.2
comp=Z,8.2nm,1.0s,baz=33,slow=5.9,SNR=5.6
GOF **Gofitskoye** 71.04 312⇑ *i*P **P** 21 17 52.0 0.0
GOF pmax pmax
comp=Z,53nm,1.1s
I05D **Terrebonne, OR** 71.21 49 P **P** 21 17 54.2 +1.1
baz=301
C09A **Chrisman Ranch** 71.22 44 *e*P **P** 21 17 53.8 +0.7
comp=Z,264nm,0.1s
HAWA **Hanford** 71.23 46 *e*P **P** 21 17 54.2 +1.1
comp=Z,18nm,1.3s
D08A **Wollman Farm,** 71.24 45 *e*P **P** 21 17 53.9 +0.7
comp=Z,20nm,1.1s
BIDO **Bidbid** 71.28 286 P **P** 21 17 54.6 +0.8
SNR=6.2
BIDO **Bidbid** 71.28 286 P **P** 21 17 54.6 +0.8
SNR=6.2
BIDO P **P** 21 17 54.6 +0.8
SNR=6.2
NWAO **Narrogin (SRO)** 71.40 201 P **P** 21 17 53.3 -0.8
comp=Z,8.5nm,0.7s,baz=90,slow=3.0,SNR=4.8
NWAO **Narrogin (SRO)** 71.40 201 *e*P **P** 21 17 53.3 -0.8
comp=Z,21nm,1.1s
KHMM **Horse Mountain** 71.47 53 *e*P **P** 21 17 57.0 +2.2
comp=Z,21nm,1.1s
BANOM **Banah** 71.48 289 P **P** 21 17 55.1 +0.1
NCK **Nalchik** 71.51 310⇓ *e*P **P** 21 17 55.1 +0.2
NCK pmax pmax
comp=Z,22nm,1.0s
SMDO **Samad** 71.58 286 P **P** 21 17 56.4 +0.7
SNR=5.9
SMDO **Samad** 71.58 286 P **P** 21 17 56.4 +0.7
SNR=5.9
NEW **Newport** 71.63 44 P **P** 21 17 56.2 +0.6
baz=302
NEW **Newport** 71.63 44 *e*P **P** 21 17 56.2 +0.6
NEW pmax pmax
comp=Z,19nm,1.1s
NEW **Newport** 71.63 44 *e*P **P** 21 17 56.2 +0.6
comp=Z,19nm,1.1s
ZEI **Tsey** 71.68 310 *e*P **P** 21 17 55.4 -0.8
ZEI pmax pmax
comp=Z,32nm,0.9s
YBH **Yreka Blue Hor** 71.69 52 *e*P **P** 21 17 57.6 +1.5
YBH pmax pmax
comp=Z,11nm,1.1s
YBH **Yreka Blue Hor** 71.69 52 *e*P **P** 21 17 57.6 +1.5
comp=Z,11nm,1.1s
TBLG **Delisi** 71.70 308 P P 21 17 60.0 +3.9
TBLG **Delisi** 71.70 308 P P 21 17 59.9 +3.8
M02C **Callahan** 71.77 52 P **P** 21 17 57.8 +1.2
baz=301,SNR=7.2
J05D **Fort Rock, OR** 71.82 50 P **P** 21 17 58.1 +1.2
baz=302,SNR=7.7
KBZ **Khabaz** 71.82 311 P **P** 21 17 57.4 +0.7
comp=Z,26nm,1.1s,baz=54,slow=6.8,SNR=41
VSU **Vasula** 71.83 330*ce*P **P** 21 17 56.2 -0.2
VSU pmax pmax
comp=Z,119nm,1.0s
KVAR **Kislovodsk Arr** 71.83 311 P **P** 21 17 57.7 +0.8
comp=Z,43nm,1.1s,baz=342,slow=1.9,SNR=38
KIV **Kislovodsk** 71.83 311*c i*P **P** 21 17 57.0 +0.1
KIV *i* 21 18 13.6
KIV pmax pmax
comp=Z,63nm,1.0s
KIV **Kislovodsk** 71.83 311 *e*P **P** 21 17 57.7 +0.7
comp=Z,106nm,1.4s
E09A **Wood Farm, Sta** 71.98 46 *e*P **P** 21 17 58.8 +1.1
comp=Z,25nm,1.1s
UOSS **Minazif** 72.05 288 *e*P **P** 21 17 59.1 +0.7
comp=Z,0.8nm,1.0s
ONI **Oni** 72.07 310 P **P** 21 17 59.7 +1.4
ONI **Oni** 72.07 310 P **P** 21 17 59.7 +1.4
N02D **Trinity Center** 72.08 52 P **P** 21 17 59.6 +1.1
baz=301
HATD **Hatta, Dubai** 72.17 288 *i* P **P** 21 17 59.3 +0.1
SNR=11
HATD **Hatta, Dubai** 72.17 288 P **P** 21 17 58.9 -0.2
SNR=6.3
HATD **Hatta, Dubai** 72.17 288 P **P** 21 17 58.9 -0.2
SNR=6.3
HATD P **P** 21 17 58.9 -0.2
SNR=6.3
NEY **Neytrino** 72.18 311⇑ *e*P **P** 21 18 00.1 +1.0
NEY pmax pmax
comp=Z,2.0nm,1.1s
M04C **Macdel** 72.22 51 P **P** 21 18 00.4 +1.1
baz=302,SNR=11
ASHO **Ashiyiah** 72.30 288 *i* P **P** 21 17 59.9 -0.1
SNR=8.2
ASHO **Ashiyiah** 72.30 288 P **P** 21 17 60.0 0.0
SNR=6.4
ASHO **Ashiyiah** 72.30 288 P **P** 21 17 60.0 0.0

SNR=6.4
ASHO P P 21 17 60.0 0.0
SNR=6.4
K05A Summer Lake 72.33 50 eP P 21 18 01.6 +1.5
comp=Z,39nm,1.0s
WDC Whiskeytown Da 72.40 53 eP P 21 18 01.3 +1.1
WDC pmax pmax
comp=Z,14nm,1.1s
WDC Whiskeytown Da 72.40 53 eP P 21 18 01.3 +1.1
comp=Z,14nm,1.1s
NAZ Nazwa, Dubai 72.45 288 P P 21 18 00.5 -0.3
SUMG Summit 72.46 360 i P P 21 18 00.4 -0.2
comp=Z,39nm,1.3s
SUMG Summit 72.46 360 i P P 21 18 00.4 -0.2
SUMG pmax pmax
comp=Z,39nm,1.3s
SUMG Summit 72.46 360 eP P 21 18 01.5 +1.0
comp=Z,30nm,1.1s
GNI Garni 72.52 307 P P 21 18 02.5 +1.3
comp=Z,29nm,1.1s,baz=195,slow=2.7,SNR=18
GNI Garni 72.52 307 i P P 21 18 02.1 +1.0
SNR=14
GNI Garni 72.52 307 ceP P 21 18 02.2 +1.0
GNI pmax pmax
comp=Z,141nm,1.3s
GNI Garni 72.52 307 eP P 21 18 02.7 +1.5
GNI Garni 72.52 307 P P 21 18 02.5 +1.3
SNR=11
GNI Garni 72.52 307 P P 21 18 02.5 +1.3
SNR=11
F10A Beach Ranch, E 72.81 46 eP P 21 18 03.5 +0.8
comp=Z,17nm,1.5s
CHVG Ch'k'valeri 72.86 310 P P 21 18 04.4 +1.4
CHVG Ch'k'valeri 72.86 310⇑ iP P 21 18 04.6 +1.6
WALA Waterton Lakes 72.97 42 eP P 21 18 04.8 +1.2
comp=Z,14nm,1.1s
O03D Paynes Creek 73.03 53 P P 21 18 04.5 +0.4
baz=302,SNR=9.7
MOD Modoc Plateau 73.13 50 eP P 21 18 05.8 +1.0
comp=Z,11nm,1.0s
BSMT Bassoo Peak 73.17 43 eP P 21 18 06.0 +1.0
BLMT Blacktail Moun 73.31 43 eP P 21 18 06.9 +1.1
BMO Blue Mountains 73.38 47 eP P 21 18 07.0 +0.9
BMO pmax pmax
comp=Z,16nm,1.3s
BMO Blue Mountains 73.38 47 eP P 21 18 07.0 +0.9
comp=Z,16nm,1.3s
JTMT Jette 73.51 43 eP P 21 18 07.8 +0.9
YBMT Yellow Bay 73.59 43 eP P 21 18 08.2 +0.8
ORV Oroville 73.61 53 eP P 21 18 07.8 +0.3
ORV pmax pmax
comp=Z,12nm,1.0s
ORV Oroville 73.61 53 eP P 21 18 07.8 +0.3
comp=Z,12nm,1.0s
IZAR Zarasai 73.74 328 eP P 21 18 07.3 -0.5
IZAR IAmb IAmb 21 18 07.9
comp=Z,19nm,1.2s
MICGM Minsk 73.79 326 eP P 21 18 09.0 +0.8
MICGM eLR LR 21 53 02.0
MNK Minsk 73.79 326 eP P 21 18 09.0 +0.8
IDID Didziasalis 73.80 327 eP P 21 18 07.8 -0.4
IDID IAmb IAmb 21 18 10.4
comp=Z,10.0nm,0.9s
SWMT Swartz Lake 73.80 43 eP P 21 18 09.3 +0.7
SOC Sochi 73.85 312 eP P 21 18 12.4 +3.6
SOC ePPP PPP 21 22 37.2
SOC eS S 21 27 42.0 +3.6
SOC pmax pmax
comp=Z,20nm,1.1s
SOC MLR MLR
comp=Z,378nm,17.0s
WVOR Wild Horse Val 73.89 49 eP P 21 18 10.3 +1.1
WVOR pmax pmax
comp=Z,11nm,1.1s
WVOR Wild Horse Val 73.89 49 eP P 21 18 10.2 +1.1
comp=Z,11nm,1.1s
ISAL Salakas 73.90 328 eP P 21 18 08.3 -0.5
ISAL IAmb IAmb 21 18 12.0
comp=Z,16nm,0.9s
NACGM Naroch 74.03 327 e P 21 18 10.0 +0.4
NACGM eLQ LQ 21 50 06.0
NACGM eLR LR 21 53 15.0
MSO Missoula 74.22 44 P P 21 18 11.2 +0.1
baz=305,SNR=7.0
MSO Missoula 74.22 44 eP P 21 18 11.4 +0.4
comp=Z,9.6nm,1.1s
AFDM Forest Hills D 74.29 53 eP P 21 18 12.8 +1.3
comp=Z,14nm,1.4s
ANN Anapa 74.54 314 eP P 21 18 11.4 -1.3
ANN pmax pmax
comp=Z,33nm,1.3s
ANN MLR MLR
comp=Z,302nm,18.0s
CHMT Chamberlain Mo 74.56 43 eP P 21 18 13.2 +0.1
MFID Camas Ranch 75.06 47 eP P 21 18 16.9 +1.0
comp=Z,15nm,1.1s
CMB Columbia Colle 75.17 54 eP P 21 18 17.2 +0.6
CMB pmax pmax
comp=Z,17nm,1.0s
CMB Columbia Colle 75.17 54 eP P 21 18 17.2 +0.6
comp=Z,17nm,1.0s
FFC Flin Flon 75.37 32 eP P 21 18 17.2 -0.2
FFC pmax pmax
comp=Z,21nm,1.3s
FFC Flin Flon 75.37 32 eP P 21 18 17.2 -0.2
comp=Z,21nm,1.3s
HRY Holter Researc 75.47 43 eP P 21 18 19.2 +1.0
NC405 NORSAR Array S 75.49 337 eP P 21 18 18.4 +0.5
AKASG Malin Array Be 75.51 322 P P 21 18 17.9 -0.4
comp=Z,14nm,0.8s,baz=46,slow=6.2,SNR=53
AKBB Malin Array Si 75.51 322 eP P 21 18 17.9 -0.3
AKBB pmax pmax
comp=Z,25nm,0.9s
AKBB Malin Array Si 75.51 322 eP P 21 18 17.9 -0.3
comp=Z,25nm,0.9s
NC303 NORSAR Array S 75.51 337 eP P 21 18 18.5 +0.4
KIEV Kiev 75.52 322 c iP P 21 18 17.8 -0.5
KIEV pmax pmax
comp=Z,26nm,1.0s
KIEV Kiev 75.52 322 eP P 21 18 18.0 -0.3
comp=Z,23nm,0.9s
WAKR Walker 75.53 53 eP P 21 18 20.1 +1.2
AK11 Malin Array Si 75.55 322 eP P 21 18 18.4 -0.1
LRM Limekiln Ridge 75.64 44 eP P 21 18 20.1 +0.6
NC204 NORSAR Array S 75.66 338 eP P 21 18 19.2 +0.2
NB201 NORSAR Array S 75.67 337 eP P 21 18 18.9 -0.1
NB2 NORSAR Subarra 75.70 337 P P 21 18 18.9 -0.3
comp=Z,108nm,1.7s,baz=41,slow=5.9
NB2 NORSAR Subarra 75.70 337 P P 21 18 18.9 -0.3
baz=41,slow=5.9
NB200 NORSAR Array S 75.70 337 eP P 21 18 19.2 0.0
NB200 ePP PP 21 21 07.0 -1.4
NOA NORSAR Array B 75.70 337 P P 21 18 19.2 0.0
comp=Z,12nm,0.8s,baz=40,slow=5.8,SNR=46
NOA PP PP 21 21 07.0 -1.4
comp=Z,8.0nm,1.1s,baz=40,slow=8.7,SNR=5.1
NOA LR LR 21 54 48.1
comp=Z,692nm,19.8s,baz=200,slow=38
FCC Fort Churchill 75.73 26 eP P 21 18 19.4 0.0
FCC pmax pmax
comp=Z,31nm,1.3s
FCC Fort Churchill 75.73 26 eP P 21 18 19.4 0.0
comp=Z,31nm,1.3s
NBO02 NORSAR Array S 75.81 337 eP P 21 18 19.9 +0.1
EGMT Eagleton 75.82 41 P P 21 18 20.8 +0.6
baz=307
EGMT Eagleton 75.82 41 eP P 21 18 20.8 +0.6
comp=Z,35nm,1.2s
HLID Hailey 75.82 47 P P 21 18 20.8 +0.4
baz=305
HLID Hailey 75.82 47 eP P 21 18 21.4 +1.0
comp=Z,11nm,1.3s
NC602 NORSAR Array S 75.83 337 eP P 21 18 20.4 +0.5
DLMT Dillon 75.83 44 eP P 21 18 21.3 +0.9
comp=Z,24nm,1.1s
NBO00 NORSAR Array S 75.85 337 eP P 21 18 20.4 +0.4
BMN Battle Mountai 75.88 50 eP P 21 18 22.1 +1.3
BMN pmax pmax
comp=Z,21nm,1.3s
BMN Battle Mountai 75.88 50 eP P 21 18 22.1 +1.3
comp=Z,21nm,1.3s
NAO01 NORSAR Array S 75.95 337 eP P 21 18 20.7 +0.1
MCMT McKenzie Canyo 76.00 45 eP P 21 18 22.5 +1.0
BOZ Bozeman (W) 76.21 44 P P 21 18 22.9 +0.4
baz=307,SNR=12
BOZ Bozeman (W) 76.21 44 eP P 21 18 23.5 +0.9
BOZ pmax pmax
comp=Z,15nm,1.1s
BOZ Bozeman (W) 76.21 44 eP P 21 18 23.5 +0.9
comp=Z,14nm,1.1s
SUW Suwalki 76.21 327 eP P 21 18 22.0 -0.2
SUW Suwalki 76.21 327 eP P 21 18 22.0 -0.2
NV01 Mina Array Sit 76.31 53 eP P 21 18 23.1 -0.3
NVAR Mina Array Bea 76.31 53 P P 21 18 23.1 -0.3
comp=Z,4.6nm,0.7s,baz=288,slow=6.4,SNR=19
SIM Simferopol' 76.37 316 eP P 21 18 23.5 +0.2
SIM S S 21 28 14.0 +7.6
SIM pmax pmax
comp=Z,14nm,0.9s
SIM MLR MLR
comp=E,300nm,16.0s
NV11 Mina Array Sit 76.41 53 eP P 21 18 25.0 +1.2
comp=E,15nm,1.4s
MLAC Mammoth, Mammo 76.41 54 P P 21 18 24.4 +0.4
baz=304
QLMT Earthquake Lak 76.81 44 eP P 21 18 27.8 +1.7
SMMC Simmler 76.93 56 P P 21 18 27.6 +1.0
baz=304
ELK Elko 76.94 49 eP P 21 18 28.2 +1.3
ELK pmax pmax
comp=Z,9.0nm,1.2s
ELK Elko 76.94 49 eP P 21 18 28.1 +1.3
comp=Z,9.2nm,1.2s
YMR Madison River 77.17 44 eP P 21 18 30.1 +1.9
comp=Z,16nm,1.3s
GCMT Greycliff 77.22 43 eP P 21 18 29.5 +1.2
KONO Kongsberg 77.29 337⇓ eP P 21 18 27.3 -0.9
KONO pmax pmax
comp=Z,125nm,1.7s
KONO Kongsberg 77.29 337 eP P 21 18 28.6 +0.5
comp=Z,14nm,1.1s
PKM Mcpherson Peak 77.29 56 P P 21 18 30.0 +1.1
baz=304,SNR=5.9
LKWY Lake 77.56 44 eP P 21 18 33.0 +2.6
LKWY pmax pmax
comp=Z,11nm,1.0s
LKWY Lake 77.56 44 eP P 21 18 33.0 +2.6
comp=Z,11nm,1.0s
H17A Grant Village 77.56 44 P P 21 18 32.4 +2.1
baz=307,SNR=21
H17A Grant Village 77.56 44 eP P 21 18 32.6 +2.3
comp=Z,22nm,1.0s
CWC Cottonwood Cre 77.58 54 P P 21 18 31.6 +1.1
baz=305
IMW Indian Meadow 77.66 45 eP P 21 18 29.3 -1.6
comp=Z,14nm,1.2s
FLWY Flagg Ranch 77.68 44 eP P 21 18 32.9 +1.9
comp=Z,15nm,1.1s
SFJD Kangerlussuaq 77.68 5 eP P 21 18 30.5 +0.3
SFJD pmax pmax
comp=Z,20nm,1.1s
SFJD Kangerlussuaq 77.68 5 eP P 21 18 30.5 +0.3
comp=Z,20nm,1.1s
GRAC Grapevine Rang 77.74 53 P P 21 18 32.2 +1.0
baz=305
ISA Isabella, Lake 77.76 55 P P 21 18 32.2 +0.9
baz=305
FXWY Fox Creek 77.76 45 eP P 21 18 32.9 +1.4
comp=Z,9.4nm,1.2s
ARVC Arvin 77.82 56 P P 21 18 32.3 +0.7
baz=305
HVU Hansel Valley 77.84 47 eP P 21 18 33.1 +1.3
HVU pmax pmax
comp=Z,10.0nm,0.9s
HVU Hansel Valley 77.84 47 eP P 21 18 33.1 +1.3
comp=Z,10nm,0.9s
RLMT Red Lodge 77.86 43 P P 21 18 32.6 +0.7
baz=308,SNR=7.1
RLMT Red Lodge 77.86 43 eP P 21 18 33.0 +1.1
comp=Z,12nm,1.3s
MOOW Moose Ponds 77.86 45 eP P 21 18 33.3 +1.3
comp=Z,11nm,1.4s
SCZ2 Santa Cruz Isl 77.92 57 P P 21 18 32.8 +0.6
baz=304
DAC Darwin (Calif) 78.00 54 eP P 21 18 33.4 +0.6
DAC pmax pmax
comp=Z,12nm,1.2s
DAC Darwin (Calif) 78.00 54 eP P 21 18 33.4 +0.6
comp=Z,12nm,1.2s
LOHW Long Hollow 78.02 45 eP P 21 18 34.0 +1.2
comp=Z,7.1nm,1.3s
SNOW Snow King Moun 78.02 45 eP P 21 18 34.5 +1.6
comp=Z,10nm,1.1s
REDW Red Top Meadow 78.03 45 eP P 21 18 34.2 +1.2
comp=Z,9.6nm,1.1s
R11A Troy Canyon, C 78.11 51 P P 21 18 34.2 +0.8
baz=306,SNR=16
R11A Troy Canyon, C 78.11 51 eP P 21 18 34.4 +0.9
comp=Z,18nm,1.4s
OSI Osito Audit: C 78.19 56 P P 21 18 34.8 +1.0
baz=305
MPMC Manual Prospec 78.19 54 P P 21 18 34.7 +0.8
baz=305
BGU Big Grassy Mou 78.20 48 eP P 21 18 35.0 +1.2
comp=Z,21nm,1.9s
BLG Laguna Peak, P 78.24 57 P P 21 18 35.1 +1.1
baz=305
AHID Auburn Hatcher 78.25 46 eP P 21 18 36.2 +2.1
comp=Z,6.0nm,0.8s
FURC Furnace Creek, 78.37 54 P P 21 18 35.8 +1.2
baz=305
LRMC Laurel Mtn Rad 78.39 55 P P 21 18 36.1 +1.1
baz=305
DGMT Dagmar 78.43 38 P P 21 18 35.8 +1.0
baz=311
DGMT Dagmar 78.43 38 eP P 21 18 35.7 +0.9
comp=Z,28nm,1.1s
TPNV Topopah Spring 78.50 53 P P 21 18 36.6 +1.0
baz=306
TPNV Topopah Spring 78.50 53 eP P 21 18 36.5 +1.0
TPNV pmax pmax
comp=Z,20nm,1.2s
TPNV Topopah Spring 78.50 53 eP P 21 18 36.5 +1.0
comp=Z,20nm,1.2s
EDW2 Edwards Air Fo 78.53 55 P P 21 18 36.7 +1.1
baz=305
LVV L'vov 78.63 324 eP P 21 18 35.9 +0.1
LVV MLR MLR
comp=E,400nm,16.0s
LVV MLR MLR
comp=N,300nm,17.0s
LVV MLR MLR
comp=Z,300nm,18.0s
DECC Green Verdugo 78.66 56 P P 21 18 37.4 +1.1
baz=305
A25A Svangstu Ranch 78.66 37 P P 21 18 37.5 +1.4
baz=311
HWUT Hardware Ranch 78.67 47 eP P 21 18 37.6 +1.1
comp=Z,18nm,1.2s
BEL Belsk 78.76 327 eP P 21 18 37.2 +0.8
BEL Belsk 78.76 327 eP P 21 18 37.3 +0.8
DUG Dugway, Tooele 78.76 49 P P 21 18 38.1 +1.2
baz=307
DUG Dugway, Tooele 78.76 49 eP P 21 18 38.1 +1.2
DUG pmax pmax
comp=Z,11nm,1.0s
DUG Dugway, Tooele 78.76 49 eP P 21 18 38.1 +1.2
comp=Z,11nm,1.0s
BSD Bornholm Skovb 78.86 332 i P P 21 18 36.2 -0.7
comp=Z,50nm,1.0s
BSD Bornholm Skovb 78.86 332 i P P 21 18 36.2 -0.7
BSD pmax pmax
comp=Z,50nm,1.0s
TCUT Toone Canyon 79.06 47 eP P 21 18 40.0 +1.3
comp=Z,28nm,1.4s
B25A Knox Farm, Ray 79.08 38 P P 21 18 39.0 +0.6
baz=312
GSC Goldstone, Bar 79.08 55 P P 21 18 39.7 +1.0
baz=306
GSC Goldstone, Bar 79.08 55 eP P 21 18 40.2 +1.5
GSC pmax pmax
comp=Z,19nm,1.2s
GSC Goldstone, Bar 79.08 55 eP P 21 18 40.2 +1.5
comp=Z,19nm,1.2s
PSUT Pine Spring 79.11 50 eP P 21 18 39.9 +1.0
comp=Z,17nm,1.3s
BFSC Mount Baldy Ra 79.12 56 P P 21 18 39.1 +0.1
baz=305
BW06 Boulder Array 79.14 45 P P 21 18 39.0 -0.1
baz=308
BW06 Boulder Array 79.14 45 eP P 21 18 39.4 +0.3
PD31 Pinedale Array 79.14 45 eP P 21 18 39.2 +0.1
PDAR Pinedale Array 79.14 45 P P 21 18 39.2 +0.1
comp=Z,2.3nm,0.6s,baz=264,slow=2.4,SNR=19
A26A Wade Farm, Ken 79.22 37 P P 21 18 39.6 +0.5
baz=312
SCI2 San Clemente I 79.24 57 P P 21 18 39.8 +0.4
baz=305
JLU Jordanelle 79.35 48 eP P 21 18 41.5 +1.2
comp=Z,9.4nm,1.3s
NLU North Lily Min 79.36 48 eP P 21 18 41.4 +1.1
comp=Z,6.3nm,1.0s
COP Copenhagen 79.37 333 i P P 21 18 38.8 -0.9
comp=Z,22nm,1.1s
COP Copenhagen 79.37 333 eP P 21 18 38.8 -0.9
COP pmax pmax
comp=Z,22nm,1.1s
KWP Kalwaria Pacla 79.39 324 eP P 21 18 40.6 +0.6
KWP Kalwaria Pacla 79.39 324⇑ iP P 21 18 40.8 +0.8
KWP Kalwaria Pacla 79.39 324⇑ P P 21 18 40.8 +0.8
B26A Jensen Ranch, 79.47 37 P P 21 18 40.9 +0.3
baz=312
TESR Tescani 79.50 320⇓ iP P 21 18 40.9 +0.3
BUR08 Bucovina Ar. S 79.50 322 eP P 21 18 41.4 +0.6
BURAR Bucovina Array 79.51 322⇑ iP P 21 18 40.2 -0.6
BURAR Bucovina Array 79.51 322⇑ P P 21 18 40.2 -0.6
CFR Carcaliu 79.57 319⇑ iP P 21 18 37.4 -3.6
CFR Carcaliu 79.57 319⇑ P P 21 18 37.4 -3.6
A27A Ledoux Ranch, 79.57 36 P P 21 18 41.6 +0.6
baz=313
MPU Maple Canyon 79.59 48 eP P 21 18 42.7 +1.1
comp=Z,14nm,1.3s
BBRC Big Bear Solar 79.61 55 P P 21 18 42.4 +0.6
baz=306
HEC Hector,Ludlow 79.67 55 P P 21 18 42.8 +0.9
baz=306
D25A Fairfield 79.74 39 P P 21 18 42.9 +0.8
baz=312
BR101 Keskin Array S 79.79 312 eP P 21 18 43.4 +0.8
BR101 ePP PP 21 21 43.0 -0.4
BR131 Keskin Array S 79.79 312 eP P 21 18 43.0 +0.4
BRTR Keskin Array B 79.79 312 P P 21 18 43.4 +0.8
comp=Z,8.7nm,1.0s,baz=92,slow=2.8,SNR=30
BRTR PP PP 21 21 43.0 -0.4
comp=Z,1.4nm,0.8s,baz=72,slow=6.6,SNR=4.5
BRTR Keskin Array B 79.79 312 ceP P 21 18 43.0 +0.4
BRTR pmax pmax
comp=Z,9.0nm,1.0s
MURC Murrieta 79.81 56 P P 21 18 43.0 +0.4
baz=306,SNR=6.7
VRI Vrincioaia 79.88 320⇑ iP P 21 18 44.3 +1.6
VRI Vrincioaia 79.88 320⇑ P P 21 18 44.3 +1.6
C26A Wahner Farm, P 79.91 38 P P 21 18 43.5 +0.6
baz=312
MUD Monsted U'grnd 79.93 335 i P P 21 18 41.8 -0.9
comp=Z,22nm,1.2s
MUD Monsted U'grnd 79.93 335 i P P 21 18 41.8 -0.9
MUD pmax pmax
comp=Z,22nm,1.2s
A28A Rude Farm, Bot 80.07 36 P P 21 18 44.4 +0.6
baz=313
KOLS Kolonicke sedl 80.07 324 eP P 21 18 44.2 +0.5
KOLS ePP PP 21 21 45.1 -0.2
KOLS eL L 21 54 07.1
E25A Miller Ranch, 80.13 39 P P 21 18 45.2 +1.1
baz=312
GMRC Granite Mounta 80.15 54 P P 21 18 45.1 +0.6
baz=306,SNR=7.4
MSU Marysvale 80.17 50 eP P 21 18 46.0 +1.2
MSU Marysvale 80.17 50 eP P 21 18 46.0 +1.2
ANTO Ankara 80.22 312 eP P 21 18 45.7 +0.9
ANTO pmax pmax
comp=Z,14nm,0.9s
ANTO Ankara 80.22 312 eP P 21 18 45.7 +0.9
comp=Z,14nm,0.9s
STHS Stebnicka Huta 80.23 325 eP P 21 18 46.1 +1.5
BR231 Keskin MP Arra 80.25 312 eP P 21 18 43.5 -1.5
BR231 ePP PP 21 21 43.9 -3.2
UZH Uzhgorod 80.27 324 eP P 21 18 43.3 -1.4
D26A Manning 80.27 38 P P 21 18 45.5 +0.6
baz=312
109C Camp Elliot, M 80.28 57 P P 21 18 45.6 +0.5
baz=306
C27A Sayler Ranch, 80.28 37 P P 21 18 45.8 +0.9
baz=313
TMUT Trail Mountain 80.29 49 eP P 21 18 47.3 +1.8
comp=Z,6.2nm,1.0s
PFO Pinyon Flats O 80.30 56 P P 21 18 46.3 +1.0
baz=306,SNR=9.5
PFO Pinyon Flats O 80.30 56 eP P 21 18 46.1 +0.7
PFO pmax pmax
comp=Z,40nm,1.1s
PFO Pinyon Flats O 80.30 56 eP P 21 18 46.1 +0.7
comp=Z,40nm,1.1s
OJC Ojcow 80.34 326 eP P 21 18 45.5 +0.4
OJC Ojcow 80.34 326 eP P 21 18 45.5 +0.4
OJC Ojcow 80.34 326 eP P 21 18 45.5 +0.4
comp=Z,31nm,1.0s
B28A Dugan Ranch, T 80.34 36 P P 21 18 45.3 +0.1
baz=313
BELC Belle Mtn. Jos 80.38 55 P P 21 18 46.3 +0.4
baz=306,SNR=8.7
LCMT Little Creek M 80.40 51 eP P 21 18 47.4 +1.5
comp=Z,35nm,1.2s
MTPU Mount Pierson 80.45 50 eP P 21 18 48.7 +2.3
comp=Z,28nm,1.4s
MTPU ePP PP 21 21 50.9 +1.7
P17A Butcher Ranch, 80.47 48 eP P 21 18 47.4 +1.2
comp=Z,27nm,1.4s
CRVS Cervenica-Dubn 80.48 324 eP P 21 18 46.7 +0.8
F25A Bowman 80.48 40 P P 21 18 46.6 +0.6
baz=312
TRPA Tarpa 80.49 323⇑ eP P 21 18 46.8 +0.9
MLR Muntele Rosu 80.53 320⇑ iP P 21 18 46.8 +0.4
MLR Muntele Rosu 80.53 320⇑ P P 21 18 46.8 +0.4
MLR Muntele Rosu 80.53 320 eP P 21 18 47.0 +0.5
comp=Z,35nm,2.0s
A29A Manning Farm, 80.56 35 P P 21 18 46.8 +0.4
baz=314
E26A Carlson Angus 80.63 39 P P 21 18 47.2 +0.3
baz=312
KNB Kanab 80.67 51 eP P 21 18 49.2 +1.8
KNB pmax pmax
comp=Z,56nm,1.2s
KNB Kanab 80.67 51 eP P 21 18 49.2 +1.8
comp=Z,56nm,1.2s
NIE Niedzica 80.67 325 eP P 21 18 47.4 +0.5
NIE Niedzica 80.67 325 eP P 21 18 47.5 +0.5
P18A Preston Nutter 80.68 48 eP P 21 18 49.2 +1.7
comp=Z,22nm,1.5s
BAR Barrett 80.70 57 eP P 21 18 48.6 +1.2
comp=Z,16nm,1.0s
MONP2 Monument Peak 80.74 56 P P 21 18 48.4 +0.5
baz=306
B29A Wagenman Farm, 80.82 36 P P 21 18 48.3 +0.6
baz=314
SRU San Rafael Swe 80.83 48 eP P 21 18 49.1 +0.9
SRU pmax pmax
comp=Z,6.0nm,0.8s
SRU San Rafael Swe 80.83 48 eP P 21 18 49.1 +0.9
comp=Z,6.3nm,0.8s
IRM Iron Mountain 80.86 55 P P 21 18 49.2 +0.9
baz=306,SNR=12
MMU Miners Mountai 80.91 49 eP P 21 18 49.0 +0.2
F26A Lodgepole 80.94 39 P P 21 18 48.8 +0.3
baz=312
BC3 Big Chuckawall 80.95 55 P P 21 18 49.6 +0.7
baz=306,SNR=7.8
K22A Casper 80.95 44 P P 21 18 49.0 +0.2
baz=310
K22A Casper 80.95 44 eP P 21 18 49.2 +0.4
comp=Z,14nm,1.3s
A30A Hoffart Farm, 80.99 35 P P 21 18 49.0 +0.4
baz=315
G25A Newell 80.99 40 P P 21 18 49.3 +0.5
baz=312
VOIR 81.04 320⇑ iP P 21 18 50.2 +1.1
VOIR 81.04 320⇑ P P 21 18 50.2 +1.1
D28A Regan 81.10 37 P P 21 18 49.1 -0.2
baz=313
E27A Carson 81.12 38 P P 21 18 49.3 -0.1
baz=313
W13A Hualapai Mount 81.13 53 eP P 21 18 50.6 +0.7
comp=Z,21nm,1.4s
SWSC Sam W. Stewart 81.14 56 P P 21 18 49.9 +0.2
baz=306
ULM Lac du Bonnet 81.16 33 P P 21 18 48.7 -0.8
comp=Z,8.6nm,1.0s,baz=322,slow=7.4,SNR=6.2
ULM Lac du Bonnet 81.16 33 eP P 21 18 49.2 -0.3

ULM pmax pmax
comp=Z,18nm,1.3s
ULM Lac du Bonnet 81.16 33 *eP* **P 21 18 49.2 -0.3**
comp=Z,18nm,1.3s
KECS Kecovo 81.24 325 *eP* **P 21 18 49.3 -0.7**
LANS Liptovska Anna 81.25 326 *eP* **P 21 18 51.7 +1.7**
F27A Lemmon 81.26 39 P **P 21 18 50.2 0.0**
baz=313,SNR=6.4
H25A Fruitdale 81.27 41 P **P 21 18 50.6 +0.2**
baz=312
ARR Arges 81.31 320⇑ *iP* **P 21 18 51.7 +1.2**
B30A Myrvik Farm, E 81.32 35 P **P 21 18 50.2 -0.2**
baz=315
DRGR 81.33 322⇑ *iP* **P 21 18 50.8 +0.3**
DRGR 81.33 322 ⇑P **P 21 18 50.8 +0.3**
G26A Maurine 81.35 40 P **P 21 18 50.8 +0.1**
baz=312,SNR=8.5
OKC Ostrava-Krasne 81.36 327⇑ *eP* **P 21 18 51.3 +0.8**
OKC AMS AMS 22 01 40.0
comp=Z,700nm,15.8s
OKC Ostrava-Krasne 81.36 327 *eP* **P 21 18 51.3 +0.8**
OKC MLR MLR
comp=Z,700nm,15.8s
U15A North Rim 81.36 51 *eP* **P 21 18 53.2 +2.0**
comp=Z,23nm,1.3s
RSSD Black Hills 81.37 41 P **P 21 18 51.0 0.0**
baz=312
RSSD Black Hills 81.37 41 *eP* **P 21 18 51.9 +0.9**
RSSD pmax pmax
comp=Z,11nm,1.4s
RSSD Black Hills 81.37 41 *eP* **P 21 18 51.9 +0.9**
comp=Z,11nm,1.4s
PDMCI Parker Dam,Lak 81.44 54 P **P 21 18 51.7 +0.4**
baz=307,SNR=10
KSP Ksiaz 81.44 328 *eP* **P 21 18 51.5 +0.5**
KSP Ksiaz 81.44 328 *eP* **P 21 18 51.5 +0.5**
Y12C Blythe 81.52 55 P **P 21 18 52.6 +0.9**
baz=307,SNR=6.8
Y12C Blythe 81.52 55 *eP* **P 21 18 52.8 +1.1**
comp=Z,30nm,1.1s
O20A White River Ci 81.56 46 P **P 21 18 52.2 +0.1**
baz=309
O20A White River Ci 81.56 46 *eP* **P 21 18 52.7 +0.6**
comp=Z,14nm,1.3s
I25A Rochford 81.60 41 P **P 21 18 52.2 0.0**
baz=312
G27A Dupree 81.64 39 P **P 21 18 52.6 +0.3**
baz=313,SNR=8.1
B31A Greenbush Farm 81.66 35 P **P 21 18 52.1 -0.1**
baz=315
MORC Moravsky Berou 81.67 327⇑ *iP* **P 21 18 53.0 +0.7**
MORC Moravsky Berou 81.67 327 ⇑P **P 21 18 53.0 +0.7**
MORC Moravsky Berou 81.67 327 *eP* **P 21 18 52.7 +0.4**
comp=Z,54nm,1.1s
MORC *e*PP **PP 21 22 02.3 +3.8**
D29A Pettibone, Tap 81.67 37 P **P 21 18 52.8 +0.4**
baz=314
LOT Lotru 81.70 321⇓ *iP* **P 21 18 53.7 +1.1**
H26A Fairpoint 81.72 40 P **P 21 18 53.1 +0.5**
baz=312
GLA Glamis 81.73 55 P **P 21 18 53.1 +0.2**
baz=307
GLA Glamis 81.73 55 *eP* **P 21 18 54.5 +1.6**
GLA pmax pmax
comp=Z,30nm,1.0s
GLA Glamis 81.73 55 *eP* **P 21 18 54.5 +1.6**
comp=Z,30nm,1.0s
C30A Mose, Pekin 81.77 36 P **P 21 18 52.4 -0.5**
baz=315
DPC Dobruska-Polom 81.79 328 *eP* **P 21 18 53.5 +0.6**
DPC *e*PP **PP 21 21 54.8 -4.7**
DPC AMS AMS 21 59 30.0
comp=Z,800nm,16.0s
DPC Dobruska-Polom 81.79 328 *eP* **P 21 18 53.5 +0.6**
DPC *e* 21 21 54.8
DPC MLR MLR
comp=Z,800nm,16.0s
KRLC Kraliky 81.79 327⇑ *eP* **P 21 18 53.4 +0.5**
KRLC Kraliky 81.79 327 *eP* **P 21 18 53.4 +0.5**
UPC Upice 81.81 328⇑ *eP* **P 21 18 53.4 +0.4**
UPC AMS AMS 21 59 40.0
comp=Z,1μm,17.2s
UPC Upice 81.81 328 *eP* **P 21 18 53.4 +0.4**
UPC MLR MLR
comp=Z,1μm,17.2s
A32A Rocking H Ranc 81.84 34 P **P 21 18 53.6 +0.4**
baz=316
F28A McLaughlin 81.91 38 P **P 21 18 54.3 +0.7**
baz=313
PSZ Piszkesteto 81.92 324⇑ *iP* **P 21 18 54.1 +0.4**
PSZ Piszkesteto 81.92 324⇑ *eP* **P 21 18 54.3 +0.6**
PSZ Piszkesteto 81.92 324 ⇑P **P 21 18 54.1 +0.4**
PSZ Piszkesteto 81.92 324 *eP* **P 21 18 53.4 -0.3**
comp=Z,40nm,1.4s
J25A Sunshine Ranch 81.98 42 P **P 21 18 55.1 +1.0**
baz=312
E29A Napoleon 81.99 37 P **P 21 18 55.0 +0.9**
baz=314
VYHS Vyhne 82.01 325 *eP* **P 21 18 54.7 +0.7**
VYHS *e*PP **PP 21 21 59.8 -1.5**
VYHS *e*L L 21 54 39.8
D30A Buchanan 82.05 37 P **P 21 18 55.1 +0.8**
baz=315
PV09 Paradox Valley 82.06 48 *eP* **P 21 18 56.0 +1.1**
I26A New Underwood 82.06 41 P **P 21 18 55.2 +0.7**
baz=312
C31A Landman Farms, 82.06 36 P **P 21 18 54.8 +0.5**
baz=315
H27A Howes 82.07 40 P **P 21 18 55.1 +0.6**
baz=313,SNR=10
PV10 Paradox Valley 82.19 48 *eP* **P 21 18 56.9 +1.4**
B32A Ashes, Strandq 82.20 35 P **P 21 18 54.8 -0.2**
baz=316
BFZ Birch Farm 82.22 154 *eP* PP 21 21 58.2 -5.9
A33A Warroad 82.33 34 P **P 21 18 55.6 -0.1**
baz=317
PV05 Paradox Valley 82.34 48 *eP* **P 21 18 57.6 +1.3**
G28A Parade 82.38 39 P **P 21 18 56.8 +0.8**
baz=313
E30A Jud 82.40 37 P **P 21 18 57.4 +1.2**
baz=314
F29A Eureka 82.41 38 P **P 21 18 57.5 +1.2**
baz=314
Y14A Wickenburg 82.41 54 *eP* **P 21 18 57.5 +1.0**
comp=Z,82nm,1.1s
PVCC Panska Ves 82.41 329⇑ *eP* **P 21 18 57.0 +0.9**
PVCC AMS AMS 22 02 10.0
comp=Z,700nm,18.1s
PVCC Panska Ves 82.41 329 *eP* **P 21 18 57.0 +0.9**
PVCC MLR MLR
comp=Z,700nm,18.1s
N23A Red Feather La 82.42 45 P **P 21 18 58.2 +1.5**
baz=311
N23A Red Feather La 82.42 45 *eP* **P 21 18 57.8 +1.1**
comp=Z,26nm,1.3s
BRG Berggiesshubel 82.42 329 *i* P **P 21 18 56.2 +0.1**
comp=Z,30nm,1.6s
BRG *e* 21 22 05.5
comp=Z,32nm,2.2s
BRG PP **PP 21 22 08.0 +3.5**
comp=N,440nm,16.4s
comp=E,449nm,19.4s
comp=Z,708nm,20.4s
J26A Sides Ranch, S 82.43 41 P **P 21 18 57.8 +1.3**
baz=312
PHWY Pilot Hill 82.43 44 *eP* **P 21 18 57.3 +0.6**
comp=Z,18nm,1.5s
VRAC Vranov 82.44 327⇑ *iP* **P 21 18 57.1 +0.8**
VRAC Vranov 82.44 327 ⇑P **P 21 18 57.1 +0.8**
I27A Quinn 82.47 40 P **P 21 18 57.3 +0.7**
baz=313,SNR=6.4
CLL Collm 82.48 330⇑ *iP* **P 21 18 56.2 -0.2**
comp=Z,24nm,0.9s
CLL *i* 21 19 02.3
CLL *i* 21 19 09.6
CLL *e*PP **PP 21 22 05.0 0.0**
comp=Z,12nm,1.3s
CLL *e* 21 22 15.0
CLL Collm 82.48 330⇑ *iP* **P 21 18 56.2 -0.2**
CLL *i* 21 19 02.3
CLL *i* 21 19 09.6
CLL pmax pmax
comp=Z,24nm,0.9s
CLL Collm 82.48 330 *eP* **P 21 18 56.2 -0.2**
comp=Z,25nm,0.8s
CLL *e*PP **PP 21 22 04.2 -0.7**

WUAZ Wupatki 82.51 52 P **P 21 18 58.4 +1.3**
baz=308
WUAZ Wupatki 82.51 52 *eP* **P 21 18 58.4 +1.3**
comp=Z,20nm,1.1s
AGMN Agassiz Nation 82.58 34 P **P 21 18 56.8 -0.3**
baz=316
AGMN Agassiz Nation 82.58 34 *eP* **P 21 18 56.6 -0.4**
comp=Z,25nm,1.5s
D31A Mcclaflin, Tow 82.60 36 P **P 21 18 57.8 +0.7**
baz=315
H28A Mission Ridge 82.60 39 P **P 21 18 58.7 +1.5**
baz=313,SNR=9.3
113A Mohawk Valley, 82.61 55 *eP* **P 21 18 58.2 +0.8**
comp=Z,19nm,1.1s
PV01 Paradox Valley 82.63 48 *eP* **P 21 18 58.6 +0.8**
BUD Budapest 82.64 325⇑ *eP* **P 21 18 58.2 +0.9**
SMOL Smolenice 82.64 326 *eP* **P 21 18 58.8 +1.5**
BZS Buzias 82.69 322⇓ *iP* **P 21 18 57.6 0.0**
BZS Buzias 82.69 322⇓ *iP* **P 21 18 57.6 0.0**
B33A Robert and Kas 82.72 34 P **P 21 18 58.8 +1.1**
baz=317
GOPC GO Pecny, Ondr 82.78 328 *eP* **P 21 18 58.6 +0.5**
GOPC AMS AMS 21 59 30.0
comp=Z,700nm,17.4s
GOPC GO Pecny, Ondr 82.78 328 *eP* **P 21 18 58.6 +0.5**
GOPC MLR MLR
comp=Z,700nm,17.4s
G29A Hoven 82.81 39 P **P 21 18 59.7 +1.4**
baz=314
F30A Leola 82.81 38 P **P 21 18 59.8 +1.5**
baz=314
PRA Prague 82.81 329⇑ *eP* **P 21 18 59.1 +0.9**
PRA AMS AMS 21 58 40.0
comp=Z,800nm,18.4s
PRA Prague 82.81 329 *eP* **P 21 18 59.1 +0.9**
PRA MLR MLR
comp=Z,800nm,18.4s
PRU Pruhonice 82.83 328⇑ *iP* **P 21 18 58.6 +0.3**
PRU *e*PCP **PcP 21 19 04.9 +1.8**
PRU *e*P **sP 21 19 12.0 +1.1**
PRU *e*PP **PP 21 22 04.7 -3.2**
PRU AMS AMS 21 58 40.0
comp=Z,800nm,15.1s
PRU Pruhonice 82.83 328⇑ *iP* **P 21 18 58.6 +0.3**
PRU *e* 21 19 04.9
PRU *e* 21 19 12.0
PRU *e* 21 22 04.7
PRU MLR MLR
comp=Z,800nm,15.1s
E31A Nome 82.86 37 P **P 21 18 59.1 +0.5**
baz=315
D32A Dogwood Acres, 82.87 36 P **P 21 18 59.4 +0.8**
baz=316
PKS7 Kunszentmiklos 82.89 324⇓ *eP* **P 21 18 59.8 +1.2**
SMCO Snowmass 82.92 47 *eP* **P 21 19 00.5 +1.0**
comp=Z,6.9nm,1.1s
TREC Trest 82.94 328⇑ *eP* **P 21 18 59.6 +0.7**
TREC *ex* x 21 33 27.0
TREC AMS AMS 21 59 30.0
comp=Z,1μm,20.7s
TREC Trest 82.94 328 *eP* **P 21 18 59.6 +0.7**
TREC MLR MLR
comp=Z,1μm,20.7s
I28A Midland 82.98 40 P **P 21 19 00.1 +0.8**
baz=313,SNR=6.2
B34A Aery, Baudette 83.00 34 P **P 21 18 59.5 +0.3**
baz=317
PKSG 83.00 325⇑ *eP* **P 21 18 59.7 +0.5**
C33A Trail 83.01 35 P **P 21 19 00.2 +0.9**
baz=316
PKS6 Bocsa 83.01 324⇑ *eP* **P 21 18 59.5 +0.2**
DIM Dimitrovgrad 83.04 317 P **P 21 19 01.3 +1.8**
J27A Elkhorn Farm, 83.04 41 P **P 21 19 01.1 +1.5**
baz=313
H29A Onida 83.05 39 P **P 21 19 00.3 +0.7**
baz=314,SNR=10
CSKK Cs˙tkako 83.09 325⇑ *eP* **P 21 19 00.3 +0.6**
MPEP Malo Peshtene 83.14 319 P **P 21 19 00.7 +0.7**
X16A Lo Mia Camp, P 83.14 53 *eP* P 21 18 57.2 -3.2
comp=Z,30nm,1.3s
F31A Hecla 83.18 37 P **P 21 19 01.2 +1.0**
baz=315
G30A Faulkton 83.24 38 P **P 21 19 00.9 +0.4**
baz=314,SNR=14
PKST T˙s 83.27 325⇑ *eP* **P 21 19 00.8 +0.2**
ISCO Idaho Springs 83.32 45 P **P 21 19 02.5 +1.1**
baz=311
ISCO Idaho Springs 83.32 45 *eP* **P 21 19 02.3 +0.9**
ISCO pmax pmax
comp=Z,5.0nm,0.9s
ISCO Idaho Springs 83.32 45 *eP* **P 21 19 02.3 +0.9**
comp=Z,4.6nm,0.9s
J28A Allard Ranch, 83.34 40 P **P 21 19 02.5 +1.3**
baz=313
KDZ Kurdzhali 83.37 317 P **P 21 19 02.3 +1.0**
I29A Vivian Onida 83.42 40 P **P 21 19 02.7 +1.2**
baz=314
C34A RKJ Ranch, Bem 83.49 34 P **P 21 19 03.1 +1.3**
baz=317
NKC Novy Kostel 83.53 330⇑ *eP* **P 21 19 02.3 +0.4**
NKC *e*PCP **PcP 21 19 06.9 +0.7**
NKC *ex* x 21 33 29.8
NKC Novy Kostel 83.53 330 *eP* **P 21 19 02.3 +0.4**
PKS9 Tamasi 83.64 324⇓ *eP* **P 21 19 02.7 +0.2**
SOP Sopron 83.65 326⇓ *eP* **P 21 19 03.2 +0.7**
G31A Conde 83.65 38 P **P 21 19 03.1 +0.5**
baz=315
F32A Veblen 83.72 37 P **P 21 19 03.4 +0.4**
baz=316
PKSM Moragy 83.73 324⇑ *iP* **P 21 19 02.7 -0.3**
PKSM Moragy 83.73 324⇑ *eP* **P 21 19 02.8 -0.3**
PKSM Moragy 83.73 324 ⇑P **P 21 19 02.7 -0.3**
214A Organ Pipe Nat 83.75 55 P **P 21 19 03.8 +0.4**
baz=308,SNR=12
D34A Park Rapids 83.77 35 P **P 21 19 04.0 +0.8**
baz=317
CONA Conrad Observa 83.78 326 *i* PcP **P 21 19 04.2 +0.8**
comp=Z,28nm,1.1s,SNR=25
CONA *i* PP **PP 21 22 17.6 +1.7**
comp=Z,11nm,1.7s
W18A Petrified Fore 83.80 51 P **P 21 19 03.6 -0.2**
baz=309
E33A Westby DABS, E 83.81 36 P **P 21 19 03.8 +0.4**
baz=316
SUSD Miller 83.82 39 P **P 21 19 04.0 +0.4**
baz=315
J29A Okreek 83.83 40 P **P 21 19 03.9 +0.3**
baz=314
C35A Jirik Farms, M 83.88 34 P **P 21 19 03.6 -0.1**
baz=318
KHC Kasperske Hory 83.89 328⇑ *iP* **P 21 19 04.0 +0.2**
KHC *e*pP **pP 21 19 14.0 +0.9**
KHC *e*PP PP 21 22 08.2 -8.5
KHC *ex* x 21 33 22.8
KHC *ex* x 21 34 19.4
KHC AMS AMS 21 58 10.0
comp=Z,1μm,19.5s
KHC Kasperske Hory 83.89 328 *eP* **P 21 19 04.0 +0.2**
KHC pmax pmax
comp=Z,8.0nm,1.0s
KHC Kasperske Hory 83.89 328 *eP* **P 21 19 04.0 +0.2**
comp=Z,7.5nm,1.0s
S22A 4UR Ranch, Cre 83.94 48 P **P 21 19 05.6 +1.0**
baz=310,SNR=16
S22A 4UR Ranch, Cre 83.94 48 *eP* **P 21 19 06.0 +1.5**
comp=Z,16nm,1.1s
I30A Oacoma 83.95 39 P **P 21 19 04.3 +0.1**
baz=314
X18A Snowflake 84.04 52 *eP* **P 21 19 06.6 +1.6**
comp=Z,19nm,1.2s
GEC2 GERESS Array S 84.05 328 *eP* **P 21 19 04.9 +0.2**
GEC2 pmax pmax
comp=Z,20nm,1.4s
GEC2 GERESS Array S 84.05 328 *eP* **P 21 19 04.9 +0.2**
comp=Z,20nm,1.4s
GERES GERESS Array B 84.05 328 P **P 21 19 04.5 -0.2**
comp=Z,5.9nm,0.8s,baz=38,slow=4.0,SNR=41
GERES PP **PP 21 22 19.5 +1.4**
comp=Z,1.6nm,0.9s,baz=34,slow=9.7,SNR=6.0
GEA0 GERESS Array S 84.06 328 *eP* **P 21 19 04.4 -0.3**
GEA0 *e*PP **PP 21 22 19.3 +1.2**
Q24A Divide 84.14 46 P **P 21 19 06.4 +0.8**
baz=311,SNR=7.5
Q24A Divide 84.14 46 *eP* **P 21 19 06.5 +0.8**
comp=Z,14nm,1.1s
F33A 5 Mile Ranch, 84.15 36 P **P 21 19 05.1 -0.1**
baz=316,SNR=17
J30A Dallas 84.33 40 P **P 21 19 07.3 +1.2**
baz=314
MMB Musomiste 84.35 318 P **P 21 19 06.9 +0.6**
C36A Pine Crest Far 84.35 33 P **P 21 19 06.1 0.0**
baz=318
BEHE Becsehely 84.44 325⇑ *eP* **P 21 19 06.8 +0.2**
ARSA Arzberg 84.44 326 *i* P **P 21 19 06.9 +0.3**
comp=Z,16nm,1.3s,SNR=13
GRFO Grafenberg 84.45 330 *eP* **P 21 19 06.7 +0.1**
GRFO pmax pmax
comp=Z,46nm,1.1s
GRFO Grafenberg 84.45 330 *eP* **P 21 19 06.7 +0.1**
comp=Z,46nm,1.1s
KKB Krupnik 84.51 318 P **P 21 19 08.2 +1.1**
E35A Pequot Lakes 84.53 35 P **P 21 19 07.7 +0.6**
baz=318
G33A Ortonville 84.55 37 P **P 21 19 07.6 +0.4**
baz=316,SNR=6.7
H32A Carlson Farm, 84.55 38 P **P 21 19 08.4 +1.2**
baz=316
MOA Molln 84.56 327 *i* P **P 21 19 07.7 +0.5**
comp=Z,15nm,1.2s,SNR=11
MOA *i* PP **PP 21 22 23.5 +1.4**
comp=Z,7.5nm,1.1s
OGNE Ogallala 84.60 43 P **P 21 19 08.5 +0.9**
baz=313
OGNE Ogallala 84.60 43 *eP* **P 21 19 08.6 +0.9**
comp=Z,36nm,1.3s
D36A Goodland 84.64 34 P **P 21 19 08.1 +0.5**
baz=318
C37A Embarrass 84.67 33 P **P 21 19 08.1 +0.4**
baz=319
K30A Basset 84.72 40 P **P 21 19 09.3 +1.1**
baz=314
SDCO Great Sand Dun 84.73 47 P **P 21 19 09.3 +0.7**
baz=311
H33A Prehn Over Nor 84.77 37 P **P 21 19 08.6 +0.2**
baz=316,SNR=10
EYMN Ely 84.81 32 P **P 21 19 08.8 +0.4**
baz=319
EYMN Ely 84.81 32 *eP* **P 21 19 08.8 +0.4**
comp=Z,17nm,1.1s
I32A Karley and Nic 84.87 38 P **P 21 19 10.0 +1.2**
baz=316
TUC Tucson 84.88 54 P **P 21 19 10.2 +1.0**
baz=309
TUC Tucson 84.88 54 *eP* **P 21 19 10.1 +0.9**
TUC pmax pmax
comp=Z,17nm,1.2s
TUC Tucson 84.88 54 *eP* **P 21 19 10.1 +0.9**
comp=Z,17nm,1.2s
G34A Benson 84.90 36 P **P 21 19 09.9 +1.0**
baz=317
F35A Swanville 84.96 35 P **P 21 19 09.5 +0.2**
baz=317
C38A Sawbill Land. 85.08 32 P **P 21 19 10.0 +0.2**
baz=320
PERS Pernice 85.08 326 *i* P **P 21 19 09.8 -0.2**
E36A McGregor 85.09 34 P **P 21 19 10.2 +0.4**
baz=318
SOKA Soboth 85.09 326 *i* P **P 21 19 10.1 +0.2**
comp=Z,38nm,1.1s,SNR=39
J32A Parkston 85.14 39 P **P 21 19 11.2 +1.0**
baz=315
I33A Colman 85.19 38 P **P 21 19 11.6 +1.2**
baz=316
K31A O'Neill 85.20 40 P **P 21 19 12.0 +1.4**
baz=315
H34A Spellman Lake, 85.25 37 P **P 21 19 11.3 +0.6**
baz=317
F36A Milaca 85.45 35 P **P 21 19 11.0 -0.7**
baz=318
G35A Watkins 85.47 36 P **P 21 19 12.8 +1.0**
baz=318
L31A Butterfield Fa 85.47 40 P **P 21 19 12.5 +0.5**
baz=315
C39A Grand Marais 85.50 32 P **P 21 19 12.7 +0.9**
baz=320
ECSD EROS Data Cent 85.51 38 P **P 21 19 11.5 -0.6**
baz=316,SNR=12
ECSD EROS Data Cent 85.51 38 *eP* **P 21 19 11.5 -0.6**
comp=Z,18nm,1.2s
KBA Koelnreinsper 85.55 327 *i* P **P 21 19 12.1 -0.3**
comp=Z,0.6nm,0.5s,SNR=5.3
KBA *i* PP **PP 21 22 33.5 +3.1**
comp=Z,18nm,1.3s
KSCO Kaye Shedlock' 85.57 44 P **P 21 19 13.5 +0.8**
baz=313,SNR=8.5
KSCO Kaye Shedlock' 85.57 44 *eP* **P 21 19 13.3 +0.7**
comp=Z,62nm,1.4s
K32A Verdigre 85.59 39 P **P 21 19 13.4 +0.9**
baz=315
J33A Davis 85.63 38 P **P 21 19 12.4 -0.3**
baz=316
I34A Hadley 85.67 37 P **P 21 19 13.1 +0.3**
baz=317
H35A Sunnyside Ranc 85.69 36 P **P 21 19 13.3 +0.4**
baz=317,SNR=15
BEBN Eben Emael 85.72 333 P **P 21 19 13.1 +0.2**
comp=Z,7.2nm,1.3s
MEM Membach 85.75 333 P **P 21 19 13.2 +0.1**
comp=Z,9.7nm,1.4s
MYKA Terra Mystica 85.76 327 *i* P **P 21 19 12.6 -0.7**
comp=Z,0.6nm,0.3s,SNR=5.1
T25A Trinidad 85.78 47 P **P 21 19 14.7 +0.9**
baz=312,SNR=16
T25A Trinidad 85.78 47 *eP* **P 21 19 14.7 +0.9**
comp=Z,24nm,1.1s
G36A St. Michael 85.81 35 P **P 21 19 14.0 +0.5**
baz=318
VISS Visnje 85.83 326 *i* P **P 21 19 13.0 -0.6**
BOJS Bojanci 85.86 325 *i* P **P 21 19 13.8 0.0**
ANMO Albuquerque 85.98 50 P **P 21 19 16.0 +1.2**
baz=311
ANMO Albuquerque 85.98 50*c iP* **P 21 19 15.1 +0.3**
ANMO pmax pmax
comp=Z,12nm,1.0s
ANMO Albuquerque 85.98 50 *eP* **P 21 19 15.8 +1.0**
comp=Z,14nm,1.1s
M31A Lambtecht Ranc 85.99 41 P **P 21 19 15.2 +0.7**
baz=315
STU Stuttgart 86.00 330 *eP* **P 21 19 14.5 +0.1**
STU pmax pmax
comp=Z,25nm,0.9s
STU Stuttgart 86.00 330 *eP* **P 21 19 14.5 +0.1**
comp=Z,25nm,0.9s
L32A Elgin 86.03 40 P **P 21 19 15.9 +1.2**
baz=315
JAVS Javornik 86.12 326 *i* P **P 21 19 14.0 -1.2**
K33A Hardington 86.13 39 P **P 21 19 15.6 +0.4**
baz=316
PDG Podgorica 86.14 321⇓ *iP* **P 21 19 14.5 -0.7**
WTTA Wattenberg 86.16 328 *i* PcP **P 21 19 15.7 +0.3**
comp=Z,7.3nm,1.5s
J34A George 86.17 38 P **P 21 19 15.5 +0.1**
baz=317
BCLA Clavier 86.17 333 P **P 21 19 14.6 -0.5**
comp=Z,16nm,1.4s
ABTA Abfaltersbach 86.17 327 *i* P **P 21 19 14.5 -0.8**
comp=Z,12nm,1.2s,SNR=7.3
H36A Jessenland, He 86.22 36 P **P 21 19 16.2 +0.7**
baz=318,SNR=6.2
I35A Creekview Farm 86.23 37 P **P 21 19 15.8 +0.2**
baz=317
SPMN Marine on St. 86.27 35 P **P 21 19 15.9 +0.2**
baz=319
SPMN Marine on St. 86.27 35 *eP* **P 21 19 15.9 +0.2**
comp=Z,16nm,1.1s
L33A Hoskins 86.30 39 P **P 21 19 16.6 +0.6**
baz=316
MOTA Moosalm 86.32 328 *i* PcP **P 21 19 17.3 +1.1**
comp=Z,7.3nm,1.1s,SNR=6.0
RETA Reutte 86.36 329 *i* PcP **P 21 19 16.7 +0.4**
comp=Z,23nm,1.1s,SNR=20
BGNE Belgrade 86.38 40 P **P 21 19 17.0 +0.5**
baz=315
BGNE Belgrade 86.38 40 *eP* **P 21 19 17.0 +0.5**
comp=Z,50nm,0.9s
LANF Langenberg 86.38 331 *eP* **P 21 19 16.3 0.0**
TRI Trieste 86.40 326 *eP* **P 21 19 15.1 -1.2**
TRI pmax pmax
comp=Z,16nm,1.1s
TRI Trieste 86.40 326 *eP* **P 21 19 15.1 -1.2**
comp=Z,16nm,1.1s
CWF Charnwood Fore 86.43 338 *eP* **P 21 19 16.7 +0.3**
comp=Z,44nm,1.4s
SNF Seneffe 86.46 334 P **P 21 19 16.8 +0.2**

WLF	Walferdange	86.47	333	P		P		21 19 17.1	+0.4	
	comp=Z,21nm,1.6s									
WLF	Walferdange	86.47	333	*e*P		P		21 19 17.3	+0.7	
WLF					pmax	pmax				
	comp=Z,24nm,1.1s									
WLF	Walferdange	86.47	333	*e*P		P		21 19 17.3	+0.7	
	comp=Z,24nm,1.1s									
K34A	Le Mars	86.53	38	P		P		21 19 17.2	+0.1	
	baz=317									
I36A	Fitzsimmons Fa	86.59	36	P		P		21 19 17.7	+0.4	
	baz=318									
O31A	Woolen Ranch,	86.63	42	P		P		21 19 17.8	+0.1	
	baz=315									
DOU	Dourbes	86.69	334	P		P		21 19 18.4	+0.7	
H37A	Dierke Farm, C	86.69	35	P		P		21 19 18.6	+0.8	
	baz=319									
BFO	Black Forest	86.70	331	*i* P		P		21 19 18.0	+0.2	
BFO	Black Forest	86.70	331	*e*P		P		21 19 17.7	-0.1	
	comp=Z,23nm,1.0s									
121A	Cookes Peak, D	86.70	52	P		P		21 19 19.2	+0.8	
	baz=310									
FETA	Feichten	86.73	328	*i* PcP		P		21 19 18.5	+0.2	
	comp=Z,10nm,1.1s,SNR=6.2									
N32A	Stulken Farm,	86.76	41	P		P		21 19 19.2	+0.9	
	baz=315									
M33A	Taylor Creek F	86.77	40	P		P		21 19 19.2	+0.8	
	baz=316									
DAVA	Damuels	86.89	329	*i* PcP		P		21 19 19.3	+0.3	
	comp=Z,25nm,1.2s,SNR=9.0									
I37A	Lemond, Waseca	86.89	36	P		P		21 19 19.5	+0.7	
	baz=318,SNR=9.8									
L34A	Svendsen Farm,	86.91	39	P		P		21 19 19.5	+0.5	
	baz=316,SNR=8.0									
J36A	Seneca 1, Swea	86.94	37	P		P		21 19 19.5	+0.4	
	baz=318									
K35A	Storm Lake	86.94	38	P		P		21 19 19.9	+0.8	
	baz=317									
SCHQ	Schefferville	87.13	16	P		P		21 19 19.7	-0.1	
	comp=Z,10.0nm,1.0s,baz=332,slow=4.4,SNR=3.8									
SCHQ	Schefferville	87.13	16	*e*P		P		21 19 19.7	-0.1	
	comp=Z,32nm,1.4s									
M34A	Aspy Farms, Fr	87.14	39	P		P		21 19 20.9	+0.8	
	baz=316									
FUORN	Ofenpass-Fuorn	87.25	328	*e*P		P		21 19 21.1	+0.3	
	comp=Z,15nm,0.8s									
ECH	Echery	87.25	331	*e*P		P		21 19 20.2	-0.4	
COWI	Conover	87.26	32	*e*P		P		21 19 20.7	+0.1	
	comp=Z,19nm,1.3s									
J37A	Redenius Farm,	87.34	37	P		P		21 19 21.0	0.0	
	baz=318,SNR=7.9									
CBKS	Cedar Bluff	87.34	43	*e*P		P		21 19 21.5	+0.3	
CBKS					pmax	pmax				
	comp=Z,52nm,1.3s									
CBKS	Cedar Bluff	87.34	43	*e*P		P		21 19 21.5	+0.3	
	comp=Z,52nm,1.3s									
I38A	Scanlan Farm,	87.38	35	P		P		21 19 21.0	-0.2	
	baz=319,SNR=8.3									
K36A	Gilmore City	87.39	37	P		P		21 19 21.5	+0.2	
	baz=318,SNR=6.9									
P32A	Huiting Farm,	87.40	42	P		P		21 19 21.2	-0.3	
	baz=315,SNR=8.8									
MOF	Molkenrain	87.56	331⇑	*e*P		P		21 19 21.3	-0.8	
O33A	Hebron	87.63	41	P		P		21 19 22.2	-0.4	
	baz=316									
N34A	Lincoln	87.66	40	P		P		21 19 22.3	-0.3	
	baz=316,SNR=6.3									
K37A	Belmond	87.70	37	P		P		21 19 23.0	+0.2	
	baz=318,SNR=12									
TUE	Stuetta	87.75	329	*e*P		P		21 19 24.0	+0.8	
	comp=Z,26nm,1.7s									
J38A	Wedel Dairy, R	87.85	36	P		P		21 19 23.8	+0.3	
	baz=319,SNR=9.7									
Q32A	Meitler Ranch,	87.87	42	P		P		21 19 23.8	+0.1	
	baz=315									
P33A	Williams Farm,	88.03	41	P		P		21 19 24.2	-0.2	
	baz=316									
O34A	Beatrice	88.03	40	P		P		21 19 24.5	0.0	
	baz=316									
LOMF	Lomont	88.08	331⇑	*e*P		P		21 19 23.9	-0.7	
M36A	Felix, Anita	88.09	38	P		P		21 19 25.4	+0.7	
	baz=318									
N35A	Tabor	88.09	39	P		P		21 19 25.1	+0.4	
	baz=317									
L37A	Phoenix Point,	88.12	37	P		P		21 19 25.1	+0.3	
	baz=318									
R32A	Long Quarter,	88.19	43	P		P		21 19 25.3	+0.1	
	baz=315									
Q33A	Connelly Farm,	88.27	42	P		P		21 19 25.6	0.0	
	baz=316,SNR=6.1									
O35A	Humboldt	88.38	40	P		P		21 19 26.2	+0.1	
	baz=317									
P34A	Walnut Farm, R	88.42	41	P		P		21 19 26.2	0.0	
	baz=316,SNR=8.7									
L38A	Oak Wood Farm,	88.50	37	P		P		21 19 26.8	+0.2	
	baz=319,SNR=6.1									
M37A	Trindle Farm,	88.50	38	P		P		21 19 27.5	+0.8	
	baz=318									
SCIA	State Center	88.55	37	*e*P		P		21 19 27.7	+0.9	
	comp=Z,64nm,1.4s									
S32A	Newby Ranch, P	88.57	43	P		P		21 19 27.6	+0.6	
	baz=315									
R33A	Olander Ranch,	88.67	42	P		P		21 19 27.9	+0.4	
	baz=316									
MNTX	Cornudas Mount	88.78	51	P		P		21 19 28.7	+0.6	
	baz=312									
Q34A	Chapman	88.81	41	P		P		21 19 28.3	+0.2	
	baz=316,SNR=8.9									
KSU1	Kansas State U	88.86	41	P		P		21 19 28.7	+0.4	
	baz=316									
KSU1	Kansas State U	88.86	41	*e*P		P		21 19 28.9	+0.6	
	comp=Z,43nm,1.3s									
P35A	Duane Minner,	88.86	40	P		P		21 19 27.5	-0.8	
	baz=317									
MSTX	Muleshoe	88.90	48	P		P		21 19 28.8	+0.1	
	baz=313									
N37A	Lee Faris, Mou	88.90	39	P		P		21 19 29.1	+0.6	
	baz=318									
M38A	Pleasantville	88.92	38	P		P		21 19 29.1	+0.5	
	baz=318,SNR=7.4									
AMTX	Amarillo	88.94	47	P		P		21 19 29.7	+0.8	
	baz=314									
AMTX	Amarillo	88.94	47	*e*P		P		21 19 29.8	+0.9	
	comp=Z,20nm,1.3s									
T32A	Huddler Ranch,	88.95	44	P		P		21 19 29.5	+0.7	
	baz=315									
O36A	Bolckow	88.97	39	P		P		21 19 29.3	+0.4	
	baz=317									
R34A	Isabella, Hill	89.08	42	P		P		21 19 30.4	+1.0	
	baz=316									
AQU	L'Aquila	89.12	324	*e*P		P		21 19 29.9	+0.3	
AQU					pmax	pmax				
	comp=Z,22nm,0.9s									
AQU	L'Aquila	89.12	324	*e*P		P		21 19 29.9	+0.3	
	comp=Z,22nm,0.9s									
S33A	Kaszmaul Farm,	89.17	43	P		P		21 19 30.6	+0.7	
	baz=316,SNR=7.2									
P36A	Good Intent, A	89.22	40	P		P		21 19 30.3	+0.3	
	baz=317									
Q35A	Mercer Eighty,	89.34	41	P		P		21 19 30.9	+0.3	
	baz=317									
O37A	Wolven Farm, M	89.37	39	P		P		21 19 31.4	+0.6	
	baz=318									
U32A	Winter Ranch,	89.47	44	P		P		21 19 32.3	+1.0	
	baz=315									
S34A	Willow Spring	89.59	42	P		P		21 19 32.4	+0.6	
	baz=316									
R35A	Emporia Munici	89.64	41	P		P		21 19 33.2	+1.2	
	baz=317									
N39A	Derby Farms, D	89.68	38	P		P		21 19 32.4	+0.3	
	baz=319									
P37A	Lathrop	89.69	39	P		P		21 19 32.4	+0.1	
	baz=318									
O38A	Galt	89.75	39	P		P		21 19 33.5	+1.0	
	baz=318									
V32A	Arapaho	89.91	45	P		P		21 19 34.4	+1.0	
	baz=315									
U33A	Lingo Farm, Me	89.93	44	P		P		21 19 33.6	+0.2	
	baz=316									
BNI	Bardonecchia	90.01	330	*e*P		P		21 19 29.1	-4.7	
BNI					pmax	pmax				
	comp=Z,11nm,1.2s									
BNI	Bardonecchia	90.01	330	*e*P		P		21 19 29.1	-4.7	
	comp=Z,11nm,1.2s									
R36A	Gordon, Harris	90.01	41	P		P		21 19 33.9	+0.1	
	baz=317									
T34A	McClaskey Farm	90.03	43	P		P		21 19 34.2	+0.3	
	baz=316									
S35A	Otter Creek Ra	90.04	42	P		P		21 19 34.4	+0.5	
	baz=317,SNR=6.9									
P38A	Dawn	90.09	39	P		P		21 19 34.1	0.0	
	baz=318									
O39A	Kirksville	90.12	38	P		P		21 19 34.6	+0.4	
	baz=319									
W32A	Sentinel	90.21	45	P		P		21 19 35.5	+0.7	
	baz=315,SNR=6.5									
U34A	Anderson Ranch	90.26	43	P		P		21 19 35.6	+0.7	
	baz=316,SNR=8.6									
U34A	Anderson Ranch	90.26	43	*e*P		P		21 19 35.8	+0.8	
	comp=Z,32nm,1.1s									
V33A	Lossen Ranch,	90.27	44	P		P		21 19 35.7	+0.6	
	baz=315									
R37A	Teagarden Farm	90.38	41	P		P		21 19 35.5	0.0	
	baz=318,SNR=6.3									
S36A	Lake Cedric, C	90.40	41	P		P		21 19 35.8	+0.2	
	baz=317									
T35A	Sooner Cattle	90.48	43	P		P		21 19 36.4	+0.4	
	baz=316,SNR=6.9									
Q38A	Cooks Store, C	90.54	39	P		P		21 19 36.1	-0.1	
	baz=318									
O40A	La Belle	90.56	38	P		P		21 19 36.9	+0.6	
	baz=319									
W33A	Caddo, Fort Co	90.64	45	P		P		21 19 37.1	+0.3	
	baz=315									
X32A	Elmer	90.68	46	P		P		21 19 37.5	+0.6	
	baz=315,SNR=6.7									
SSB	Saint Sauveur	90.69	331	*e*P		P		21 19 36.9	+0.1	
SSB					pmax	pmax				
	comp=Z,9.0nm,1.1s									
SSB	Saint Sauveur	90.69	331	*e*P		P		21 19 36.9	+0.1	
	comp=Z,9.1nm,1.1s									
V34A	Guthrie	90.70	44	P		P		21 19 37.3	+0.3	
	baz=316									
V34A	Guthrie	90.70	44	*e*P		P		21 19 37.8	+0.8	
	comp=Z,19nm,0.9s									
T36A	Boggs Farm, Ca	90.73	42	P		P		21 19 37.7	+0.6	
	baz=317,SNR=5.4									
WMOK	Wichita Mounta	90.75	45	*e*P		P		21 19 37.6	+0.3	
WMOK					pmax	pmax				
	comp=Z,11nm,1.1s									
WMOK	Wichita Mounta	90.75	45	*e*P		P		21 19 37.6	+0.3	
	comp=Z,11nm,1.1s									
U35A	Pawnee	90.76	43	P		P		21 19 37.7	+0.5	
	baz=316									
S37A	Fort Scott	90.79	41	P		P		21 19 37.4	0.0	
	baz=318,SNR=9.0									
Q39A	Willow Grove F	90.81	39	P		P		21 19 37.6	+0.2	
	baz=319,SNR=7.3									
P40A	Paris	90.92	38	P		P		21 19 38.4	+0.5	
	baz=319,SNR=6.9									
R38A	Fenwick Farm,	90.96	40	P		P		21 19 37.2	-1.0	
	baz=318									
W34A	Bridge Creek,	90.98	44	P		P		21 19 38.3	-0.1	
	baz=316									
W34A	Bridge Creek,	90.98	44	*e*P		P		21 19 39.2	+0.9	
	comp=Z,30nm,1.2s									
X33A	Lawton	91.05	45	P		P		21 19 39.0	+0.3	
	baz=315									
V35A	Meyer Ranch, C	91.13	44	P		P		21 19 38.9	-0.2	
	baz=316									
T37A	Cheneyville 18	91.21	41	P		P		21 19 39.2	-0.2	
	baz=317									
U36A	Oologah	91.30	42	P		P		21 19 40.4	+0.6	
	baz=317									
Q40A	Laux Farm, Aux	91.31	39	P		P		21 19 40.0	+0.2	
	baz=319									
R39A	Chumby, Stover	91.33	40	P		P		21 19 39.6	-0.2	
	baz=319,SNR=7.8									
Y33A	Hilltop Ranch,	91.36	46	P		P		21 19 40.0	0.0	
	baz=315,SNR=6.2									
S38A	Stockton	91.38	41	P		P		21 19 39.9	-0.2	
	baz=318,SNR=6.6									
X34A	Smith Ranch, M	91.40	45	P		P		21 19 40.3	0.0	
	baz=316,SNR=5.4									
TX31	Lajitas Ar. Si	91.46	52	*e*P		P		21 19 41.5	+0.7	
LTX	Lajitas	91.46	52	*e*P		P		21 19 41.1	+0.3	
LTX	Lajitas	91.46	52	*e*P		P		21 19 41.1	+0.3	
TXAR	Lajitas Array	91.46	52	P		P		21 19 41.1	+0.3	
	comp=Z,6.1nm,1.1s,baz=298,slow=2.7,SNR=26									
HDIL	Hopedale	91.49	36	P		P		21 19 39.7	-0.9	
	baz=321									
W35A	Tecumseh	91.55	44	P		P		21 19 40.7	-0.3	
	baz=316									
T38A	Diamond	91.61	41	P		P		21 19 41.4	+0.2	
	baz=318,SNR=17									
TUL1	Leonard	91.61	43	P		P		21 19 41.7	+0.5	
	baz=317									
TUL1	Leonard	91.61	43	*e*P		P		21 19 42.2	+1.0	
	comp=Z,18nm,0.9s									
V36A	Jenks	91.62	43	P		P		21 19 41.1	-0.2	
	baz=317									
U37A	Saa	91.62	42	P		P		21 19 41.5	+0.2	
	baz=317,SNR=8.0									
S39A	Bolivar	91.64	40	P		P		21 19 40.9	-0.5	
	baz=318,SNR=9.1									
ABTX	Abilene, Hawle	91.72	47	P		P		21 19 42.0	+0.1	
	baz=315									
ABTX	Abilene, Hawle	91.72	47	*e*P		P		21 19 42.5	+0.7	
	comp=Z,23nm,1.2s									
HPIG		91.73	55	*e*P		P		21 19 43.6	+1.4	
	comp=Z,7.9nm,1.2s									
R40A	Maddies Statio	91.74	39	P		P		21 19 41.6	-0.1	
	baz=319,SNR=8.2									
Z33A	Whitaker Ranch	91.78	46	P		P		21 19 42.5	+0.4	
	baz=315,SNR=6.2									
Y34A	Reagan Ranch,	91.90	45	P		P		21 19 42.8	+0.2	
	baz=316									
W36A	Wetumka	91.93	44	P		P		21 19 43.1	+0.4	
	baz=317									
V37A	Hulbert	91.99	42	P		P		21 19 43.2	+0.2	
	baz=317,SNR=13									
U38A	Gravette	92.00	42	P		P		21 19 43.0	0.0	
	baz=318,SNR=5.2									
X35A	Drake	92.04	45	P		P		21 19 43.2	0.0	
	baz=316,SNR=8.5									
T39A	Clever	92.11	41	P		P		21 19 43.8	+0.3	
	baz=318									
S40A	Lebanon	92.14	40	P		P		21 19 43.4	-0.2	
	baz=318,SNR=7.5									
133A	Hamilton Ranch	92.17	47	P		P		21 19 44.4	+0.5	
	baz=315									
Z34A	Collier Ranch,	92.22	46	P		P		21 19 44.3	+0.1	
	baz=316									
X36A	Centrahoma	92.27	44	P		P		21 19 44.3	0.0	
	baz=316									
HHAR	Hobbs	92.36	41	*e*P		P		21 19 44.7	0.0	
	comp=Z,71nm,0.2s									
W37B	Quinton	92.38	43	P		P		21 19 44.8	0.0	
	baz=317									
V38A	Canehill	92.41	42	P		P		21 19 45.2	+0.2	
	baz=318,SNR=14									
U39A	Green Forest	92.53	41	P		P		21 19 45.2	-0.3	
	baz=318,SNR=14									
233A	Rising Star	92.59	47	P		P		21 19 46.7	+0.8	
	baz=315									
Z35A	Perchaven, San	92.64	45	P		P		21 19 46.5	+0.4	
	baz=316									
SFIN	Lafayette	92.67	35	P		P		21 19 46.2	+0.2	
	baz=323									
134A	White-Moore Ra	92.69	46	P		P		21 19 46.4	+0.1	
	baz=316									
Y36A	Durant	92.79	44	P		P		21 19 47.0	+0.3	
	baz=317									
X37A	Clayton	92.81	43	P		P		21 19 46.8	0.0	
	baz=317									
V39A	Pettigrew	92.85	42	P		P		21 19 46.9	-0.1	
	baz=318									
U40A	Yellville	92.89	41	P		P		21 19 47.2	+0.1	
	baz=319									
W38A	Poteau	92.93	43	P		P		21 19 47.4	0.0	
	baz=318									
333A	Richland Sprin	93.03	48	P		P		21 19 48.3	+0.4	
	baz=315									
X38A	Whitesboro	93.06	43	P		P		21 19 48.3	+0.4	
	baz=317									
234A	Clairette	93.06	47	P		P		21 19 48.8	+0.8	
	baz=315									
JCT	Junction City	93.12	49	P		P		21 19 48.5	+0.2	
	baz=314									
H06N1	SOCORRO T-PHAS	93.14	64	T		T		23 03 36.0		
	SNR=9.6									
Z36A	Blue Ridge	93.16	45	P		P		21 19 48.6	+0.2	
	baz=316									
W39A	Magazine	93.25	42	P		P		21 19 49.0	+0.2	
	baz=318									
V40A	Witts Springs	93.32	41	P		P		21 19 49.2	0.0	
	baz=319									
433A	Art	93.37	48	P		P		21 19 49.1	-0.3	
	baz=315									
334A	Lometa	93.48	47	P		P		21 19 50.1	+0.1	
	baz=315									
WHTX	Lake Whitney,	93.48	47	P		P		21 19 50.3	+0.4	
	baz=316									
OLIL	Olney	93.49	36	*e*P		P		21 19 50.1	+0.3	
	comp=Z,21nm,1.3s									
X39A	Fountain Ranch	93.57	43	P		P		21 19 50.6	+0.3	
	baz=318									
W40A	Ferguson Farm,	93.64	42	P		P		21 19 50.6	0.0	
	baz=318									
Y38A	Idabel	93.65	44	P		P		21 19 51.0	+0.4	
	baz=318									
434A	Burnet	93.83	48	P		P		21 19 51.6	0.0	
	baz=315									
PBMO	Poplar Bluff	93.84	39	*e*P		P		21 19 52.1	+0.7	
	comp=Z,18nm,1.3s									
MIAR	Mount Ida	93.84	42	P		P		21 19 51.3	-0.2	
	baz=318									
MIAR	Mount Ida	93.84	42	*e*P		P		21 19 51.9	+0.4	
MIAR					pmax	pmax				
	comp=Z,23nm,1.2s									
MIAR	Mount Ida	93.84	42	*e*P		P		21 19 51.9	+0.4	
	comp=Z,23nm,1.2s									
533A	Kerrville	93.88	49	P		P		21 19 52.2	+0.4	
	baz=315									
X201	Greenbrier Sit	93.95	41	*e*P		P		21 19 53.1	+1.1	
	comp=Z,19nm,1.2s									
X301	Greenbrier Sit	93.97	41	*e*P		P		21 19 53.2	+1.1	
	comp=Z,14nm,1.2s									
WHAR	Wooly Hollow	93.99	41	*e*P		P		21 19 52.6	+0.4	
	comp=Z,18nm,1.2s									
Y39A	Lockesburg	94.00	43	P		P		21 19 52.0	-0.3	
	baz=318									
W41A	Tony Mavity, V	94.10	41	P		P		21 19 52.5	-0.2	
	baz=319									
W41B	Gary Mavity, V	94.10	41	P		P		21 19 52.7	0.0	
	baz=319									
633A	Saathoff Ranch	94.22	49	P		P		21 19 53.8	+0.4	
	baz=315									
534A	Blanco	94.25	49	P		P		21 19 53.4	-0.1	
	baz=315									
336A	Riesel	94.27	47	P		P		21 19 53.4	-0.2	
	baz=316									
X40A	Basin Creek Fa	94.29	42	P		P		21 19 53.4	-0.2	
	baz=319									
Y40A	Okolona	94.40	43	P		P		21 19 53.8	-0.3	
	baz=318									
832A	Faith Ranch, C	94.54	51	P		P		21 19 55.0	+0.1	
	baz=314									
733A	Divot King Ran	94.66	50	P		P		21 19 56.0	+0.6	
	baz=315									
436A	Wall Ranch, Ga	94.74	47	P		P		21 19 56.0	+0.2	
	baz=316									
535A	Dale	94.81	48	P		P		21 19 56.7	+0.7	
	baz=316									
FURI	Furi	94.85	284	*e*P		P		21 19 59.0	+2.1	
	comp=Z,14nm,1.3s									
Z40A	Long Farm, Mag	94.90	43	P		P		21 19 56.0	-0.4	
	baz=318									
M54A	Oil Creek Stat	94.98	29	P		P		21 19 56.7	0.0	
	baz=328									
933A	Laredo	95.45	51	P		P		21 19 58.7	-0.3	
	baz=315									
636A	Smothers Creek	95.51	48	P		P		21 19 59.5	+0.3	
	baz=316									
TOA1	Torodi Ar. Sit	118.34	314	*e*PKPdf		PKPdf		21 25 21.1	-0.9	
TOA1				*e*PP		PP		21 26 27.5	-10	
TOA0	Torodi Ar. Sit	118.34	314	*e*PKPdf		PKPdf		21 25 21.7	-0.3	
TORD	Torodi Ar. Bea	118.34	314	PKP		PKPdf		21 25 21.1	-0.9	
	comp=Z,1.1nm,0.8s,baz=16,slow=2.3,SNR=4.8									
TORD				PP		PP		21 26 27.5	-10	
	comp=Z,2.0nm,1.0s,baz=185,slow=4.9,SNR=4.8									
QSPA	South Pole Qui	125.00	180	*e*PKPdf		PKPdf		21 25 33.0	-0.3	
VNA2	Neumayer--Watz	140.52	196	PKP		PKPdf		21 25 58.2	-4.0	
	baz=60,slow=2.1									
VNA3	Neumayer Olymp	140.77	195	PKP		PKPdf		21 26 00.7	-2.0	
SAML	Samuel	145.72	46	*e*PKPdf		PKPdf		21 26 12.2	-0.9	
LPAZ	La Paz	147.84	62	PKPbc		PKPbc		21 26 20.7	+0.4	
	comp=Z,5.7nm,0.7s,baz=340,slow=5.4,SNR=7.4									
SIV	San Ignacio	152.46	51	PKPbc		PKPbc		21 26 29.6	-1.2	
	comp=Z,7.7nm,1.1s,baz=260,slow=2.8,SNR=6.3									

DDA ***24*** *21:08:59.6,37.°11N×35.°98E,h28km,Md2.7*
ISK ***24*** *21:08:59.9,37.°15N×35.°97E,h14km,MD2.7*
ISCJB ***24*** *21:09:00.1±0.5,37.°14N±0.°03×35.°96E±0.°03,h11km±4km,*
Error ellipse: s-maj=5.0km s-min=3.8km az=171.8
CSEM ***24*** *21:09:00.2±0.1,37.°13N×35.°97E,h14km±1km,MD2.7,*
Error ellipse: s-maj=3.4km s-min=3.0km az=3.0
ISC 24 21:08:59.8±1.0,**37.°12N**±0.°03×**35.°96E**±0.°02,**h13**km±9km,
n34,σ0s47/49,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CEYT	Ceyhan	0.20	237	*e*PG	Pb	21 09 05.2	-0.2
CEYT				*e*SG	Sb	21 09 09.1	0.0
CEYT	Ceyhan	0.20	237	*e*Pg	Pb	21 09 05.2	-0.2
CEYT				*e*Sg	Sb	21 09 09.1	0.0
KOZT	Kozan	0.37	344	*e*PG	Pg	21 09 07.4	0.0
KOZT				*e*SG	Sg	21 09 12.9	+0.4
KOZT	Kozan	0.37	344	*e*Pg	Pg	21 09 07.4	0.0
KOZT				*e*Sg	Sg	21 09 12.9	+0.4
YURE	YUREGIR	0.40	222	*i* P	Pb	21 09 08.7	0.0
YURE	YUREGIR	0.40	222	P	Pb	21 09 08.7	0.0
KAMA	Osmaniye	0.57	83	*i* P	Pg	21 09 10.3	-0.8
KARA	Karaisali	0.74	281	*e*PG	Pb	21 09 14.5	0.0
KARA	Karaisali	0.74	281	*e*Pg	Pb	21 09 14.5	0.0
TAHT	Tahtakopru-Hat	0.77	166	*e*PG	Pb	21 09 15.6	+0.6
TAHT	Tahtakopru-Hat	0.77	166	*e*Pg	Pb	21 09 15.6	+0.6
HCB	Kahramanmara¯	0.79

$M_{\theta\theta}$3.38±.03; $M_{\phi\phi}$0.79±.09; Best double couple: M_o3.80500×10^{17} NP1:ϕ_s170.00000°,δ83.00000°, λ-166.00000°. NP2:ϕ_s78.00000°,δ76.00000°,λ-8.00000°. Principal axes: T 3.7890, Plg4.0000°, Azm303.0000°; N 0.0360, Plg74.0000°, Azm197.0000°; P -3.8210, Plg15.0000°, Azm34.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface/mantle waves, cutoff=50s.

NEIC ***24*** *21:09:35.0±0.0,35°27S×17°47W,h15km,Moment Tensor Solution. s19 Moment tensor: Scale 10^{17}Nm; M_{rr}0.00; $M_{\theta\theta}$-0.60; $M_{\phi\phi}$0.60; $M_{r\theta}$-1.20; $M_{r\phi}$2.70; $M_{\theta r}$-1.50; Best double couple: M_o3.00000×10^{17} NP1:ϕ_s267.00000°, δ71.00000°,λ20.00000°. NP2:ϕ_s170.00000°,δ70.00000°, λ160.00000°. Principal axes: T 3.8000, Plg27.0000°, Azm128.0000°; N -1.0000, Plg62.0000°, Azm306.0000°; P -2.7000, Plg0.0000°, Azm38.0000°;*

BJI ***24*** *21:09:36.8,35°30S×17°50W,h10km,mB5.6/13,Ms5.3/8, Ms7 5.1/9*

ISC 24 21:09:33.5±0.4,35°70S±0°08×17°19W±0°08,h10km,n250, σ1°83/76,mb4.9/30,MS5.1/174,1C-1D,Southern Mid-Atlantic Ridge

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
H09W1	**TRISTAN DA CUN**	**4.16**	**111**	Pn	Pn	21 10 31.6	-5.3
	SNR=891						
H09W1				T	T	21 14 49.9	
	SNR=66						
H09N1	**TRISTAN DA CUN**	**4.16**	**111**	Pn	Pn	21 10 31.4	-5.6
	SNR=258						
H09N1				T	T	21 14 51.8	
	SNR=257						
TRIS	**Tristan da Cun**	**4.16**	**111**	*e*Pn	Pn	21 10 30.3	-6.7
H10S2	**ASCENSION HYDR**	**26.72**	**6**	T	T	21 42 47.6	
	baz=185,slow=74,SNR=391						
H10S3	**ASCENSION HYDR**	**26.72**	**6**	T	T	21 42 47.9	
	baz=185,slow=74,SNR=172						
H10S1	**ASCENSION HYDR**	**26.73**	**6**	T	T	21 42 48.9	
	baz=185,slow=74,SNR=201						
H10N1	**ASCENSION HYDR**	**27.83**	**6**	T	T	21 44 09.0	
	baz=186,slow=74,SNR=30						
H10N3	**ASCENSION HYDR**	**27.84**	**6**	T	T	21 44 12.0	
	baz=186						
H10N2	**ASCENSION HYDR**	**27.85**	**6**	T	T	21 44 11.3	
	baz=186,slow=74,SNR=47						
SPB	**Sao Paulo**	**28.81**	**286**	PFAKE		21 15 40.0	+8.2
SPB				LR	LR		
	comp=Z,4μm,21.0s						
SUR	**Sutherland**	**31.53**	**95**	PFAKE		21 16 10.0	+14
SUR				LR	LR		
	comp=Z,3μm,20.0s						
EFI	**East Falkland**	**33.09**	**228**	PFAKE		21 16 20.0	+11
EFI				LR	LR		
	comp=Z,5μm,20.0s						
RCBR	**Riachuelo**	**34.35**	**326**	LR	LR	21 27 26.4	
	comp=Z,3μm,18.5s,baz=166,slow=31						
RCBR	**Riachuelo**	**34.35**	**326**	PFAKE		21 16 30.0	+9.3
RCBR				LR	LR		
	comp=Z,3μm,20.0s						
TSUM	**Tsumeb**	**34.73**	**71**	*e*P	**P**	**21 16 22.3**	**-1.8**
	comp=Z,37nm,1.8s						
TSUM				LR	LR		
	comp=Z,1μm,20.0s						
CPUP	**Villa Florida**	**35.45**	**274**	P	**P**	**21 16 29.8**	**-0.3**
	comp=Z,5.1nm,1.0s,baz=108,slow=8.3,SNR=3.6						
CPUP				LR	LR	21 28 26.4	
	comp=Z,4μm,20.5s,baz=124,slow=32						
TRQA	**Tornquist**	**35.65**	**253**	*e*P	**P**	**21 16 31.6**	**-0.1**
	comp=Z,84nm,1.9s						
TRQA				LR	LR		
	comp=Z,3μm,22.0s						
VNA2	**Neumayer--Watz**	**35.67**	**174**	P	P	21 16 39.7	+8.2
	baz=340,slow=10						
VNA3	**Neumayer Olymp**	**35.83**	**176**	P	P	21 16 37.7	+4.8
BOSA	**Boshof**	**36.40**	**91**	P	P	21 16 34.2	-4.1
	comp=Z,3.8nm,0.8s,baz=246,slow=4.1,SNR=6.4						
BOSA				LR	LR	21 28 12.7	
	comp=Z,1μm,21.5s,baz=244,slow=31						
SNAA	**Sanae**	**36.81**	**172**	P	P	21 16 48.9	+7.6
SNAA	**Sanae**	**36.81**	**172**	*e*P	**P**	**21 16 40.4**	**-0.9**
	comp=Z,12nm,1.1s						
LBTB	**Lobatse**	**38.16**	**86**	*e*P	**P**	**21 16 51.2**	**-2.0**
	comp=Z,62nm,1.6s						
PMSA	**Palmer Station**	**40.24**	**209**	PFAKE		21 17 20.0	+10
PMSA				LR	LR		
	comp=Z,2μm,19.0s						
PLCA	**Paso Flores**	**41.69**	**246**	P	**P**	**21 17 22.9**	**+0.5**
	comp=Z,3.2nm,0.9s,baz=183,slow=11,SNR=3.2						
PLCA				LR	LR	21 32 44.2	
	comp=Z,2μm,19.5s,baz=122,slow=33						
PLCA	**Paso Flores**	**41.69**	**246**	*e*P	**P**	**21 17 22.9**	**+0.5**
	comp=Z,67nm,1.8s						
MATP	**Matopo**	**42.70**	**82**	P	P	21 17 27.1	-3.9
	comp=Z,2.3nm,0.5s,baz=238,slow=9.2,SNR=12						
LIC	**Lamto**	**43.24**	**18**	*e*P	**P**	**21 17 35.7**	**+0.6**
	comp=Z,92nm,1.7s						
KIC	**Kosan Boka**	**43.44**	**18**	*e*P	**P**	**21 17 36.9**	**+0.1**
	comp=Z,89nm,1.2s						
TIC	**Toumodi**	**43.65**	**18**	*e*P	**P**	**21 17 39.4**	**+1.0**
SIV	**San Ignacio**	**43.67**	**285**	P	**P**	**21 17 39.1**	**+0.3**
	comp=Z,9.7nm,0.9s,baz=126,slow=6.4,SNR=12						
SIV				LR	LR	21 33 30.1	
	comp=Z,4μm,21.6s,baz=136,slow=33						
DBIC	**Dimbokro**	**43.71**	**18**	P	**P**	**21 17 38.2**	**-0.7**
	comp=Z,6.4nm,1.0s,baz=173,slow=10,SNR=9.8						
DBIC				LR	LR	21 31 13.3	
	comp=Z,1μm,20.6s,baz=176,slow=30						
DBIC	**Dimbokro**	**43.71**	**18**	*e*P	**P**	**21 17 39.8**	**+0.9**
	comp=Z,22nm,1.0s						
LCO	**Las Campanas**	**45.23**	**263**	PFAKE		21 18 00.0	+8.6
LCO				LR	LR		
	comp=Z,2μm,21.0s						
LSZ	**Lusaka**	**45.26**	**75**	P	**P**	**21 17 50.5**	**-1.0**
	comp=Z,2.7nm,0.8s,baz=218,slow=3.9,SNR=6.2						
LSZ	**Lusaka**	**45.26**	**75**	*e*P	**P**	**21 17 50.5**	**-1.0**
	comp=Z,10.0nm,1.0s						
LSZ				LR	LR		
	comp=Z,896nm,19.0s						
SYO	**Syowa Base**	**45.36**	**155**‖	*e*P	P	21 17 47.2	-4.3
SYO	**Syowa Base**	**45.36**	**155**‖	*e*pP	**P**	**21 17 51.0**	**-0.5**
LVC	**Limon Verde**	**46.53**	**272**	PFAKE		21 18 10.0	+8.2
LVC				LR	LR		
	comp=Z,2μm,22.0s						
PB01	**IPOC Station P**	**47.75**	**273**	*e*P	**P**	**21 18 10.4**	**-0.6**
	comp=Z,104nm,1.9s						
PB11	**IPOC Station P**	**48.53**	**275**	*e*P	**P**	**21 18 15.8**	**-1.3**
	comp=Z,77nm,1.1s						
LPAZ	**La Paz**	**49.12**	**279**	P	**P**	**21 18 20.2**	**-2.0**
	comp=Z,6.3nm,1.0s,baz=138,slow=5.0,SNR=9.5						
LPAZ				LR	LR	21 38 49.1	
	comp=Z,2μm,20.1s,baz=116,slow=36						
LPAZ	**La Paz**	**49.12**	**279**	*e*P	**P**	**21 18 20.0**	**-2.2**
LPAZ				*es*P	**P**	**21 18 20.2**	**-2.0**
SAML	**Samuel**	**49.58**	**291**	*e*P	**P**	**21 18 24.6**	**-0.4**
	comp=Z,12nm,0.9s						
SAML				LR	LR		
	comp=Z,4μm,20.0s						
BBTS	**Babate**	**50.09**	**1**	LR	LR	21 34 47.1	
	comp=Z,976nm,19.4s,baz=190,slow=30						
TOA0	**Torodi Ar. Sit**	**51.76**	**24**	*e*P	**P**	**21 18 41.2**	**-0.2**
TORD	**Torodi Ar. Bea**	**51.76**	**24**	P	P	21 18 37.5	-3.9
	comp=Z,2.8nm,0.8s,baz=197,slow=7.6,SNR=11						
TORD				LR	LR	21 36 04.6	
	comp=Z,1μm,20.5s,baz=210,slow=31						
TOA1	**Torodi Ar. Sit**	**51.77**	**24**	*e*P	P	21 18 37.5	-3.9
	comp=Z,22nm,1.3s						
PTGA	**Pitinga**	**52.79**	**301**	LR	LR	21 40 19.9	
	comp=Z,1μm,19.4s,baz=133,slow=35						
PTGA	**Pitinga**	**52.79**	**301**	*e*P	**P**	**21 18 49.4**	**+0.2**
	comp=Z,32nm,1.6s						
MAW	**Mawson**	**53.81**	**152**	P	**P**	**21 18 55.0**	**-0.9**
	comp=Z,3.8nm,0.8s,baz=274,slow=13,SNR=5.2						
MAW				LR	LR	21 36 49.6	
	comp=Z,2μm,21.9s,baz=272,slow=30						
MAW	**Mawson**	**53.81**	**152**	*e*P	**P**	**21 18 55.0**	**-0.9**
	comp=Z,2.6nm,0.9s						
QSPA	**South Pole Qui**	**54.55**	**180**	*e*P	**P**	**21 19 02.5**	**+0.9**
	comp=Z,81nm,0.9s						
QSPA				*ep*P	**pP**	**21 19 03.0**	**-1.8**
QSPA				LR	LR		
	comp=Z,1μm,21.0s						
NNA	**Nana**	**58.52**	**278**	LR	LR	21 45 03.0	
	comp=Z,919nm,18.4s,baz=142,slow=36						
NNA	**Nana**	**58.52**	**278**	PFAKE		21 19 40.0	+10
NNA				LR	LR		
	comp=Z,1μm,21.0s						
KMBO	**Kilima Mbogo**	**61.01**	**68**	LR	LR	21 43 05.6	
	comp=Z,1μm,20.2s,baz=223,slow=33						
KMBO	**Kilima Mbogo**	**61.01**	**68**	PFAKE		21 20 00.0	+12
KMBO				LR	LR		
	comp=Z,1μm,20.0s						
TAM	**Tamanrasset**	**62.02**	**24**	*e*P	**P**	**21 19 54.4**	**+0.2**
	comp=Z,14nm,1.4s						
TAM				LR	LR		
	comp=Z,1μm,22.0s						
PAF	**Port-aux-Franc**	**62.38**	**132**	PFAKE		21 20 10.0	+14
PAF				LR	LR		
	comp=Z,6μm,21.0s						
BBGH	**Gun Hill**	**62.97**	**313**	PFAKE		21 20 10.0	+9.5
BBGH				LR	LR		
	comp=Z,2μm,22.0s						
GRGR	**Grenville**	**63.47**	**310**	PFAKE		21 20 20.0	+16
GRGR				LR	LR		
	comp=Z,892nm,19.0s						
FDF	**Fort de France**	**65.16**	**312**	PFAKE		21 20 30.0	+15
FDF				LR	LR		
	comp=Z,560nm,19.0s						
CHIC	**Chingaza**	**66.38**	**295**	*e*P	**P**	**21 20 22.0**	**-1.4**
SBA	**Scott Base**	**66.69**	**181**	*e*P	P	21 20 31.3	+7.3
	comp=Z,22nm,1.1s						
SBA				LR	LR		
	comp=Z,1μm,22.0s						
RUSC	**La Rusia**	**66.75**	**296**	*e*P	**P**	**21 20 25.3**	**-0.6**
ROSC	**El Rosal**	**66.95**	**295**	LR	LR	21 48 18.1	
	comp=Z,3μm,19.0s,baz=175,slow=35						
VNDA	**Vanda**	**67.05**	**180**	P	**P**	**21 20 26.7**	**+0.4**
	comp=Z,1.3nm,1.1s,baz=236,slow=6.7,SNR=2.6						
VNDA				LR	LR	21 47 38.1	
	comp=Z,675nm,18.5s,baz=180,slow=34						
SDV	**Santo Domingo**	**67.05**	**300**	LR	LR	21 48 35.1	
	comp=Z,2μm,18.9s,baz=106,slow=35						
SDV	**Santo Domingo**	**67.05**	**300**	PFAKE		21 20 40.0	+13
SDV				LR	LR		
	comp=Z,2μm,20.0s						
OTAV	**Otavalo**	**67.11**	**288**	PFAKE		21 20 40.0	+12
OTAV				LR	LR		
	comp=Z,4μm,21.0s						
PAMC	**Pamplona, Colo**	**67.45**	**298**	*e*P	**P**	**21 20 29.6**	**-0.7**
ANWB	**Willy Bob**	**67.83**	**314**	PFAKE		21 20 40.0	+8.0
ANWB				LR	LR		
	comp=Z,770nm,22.0s						
HELC	**Santa Helena**	**68.75**	**295**	*e*P	**P**	**21 20 37.7**	**-0.6**
	comp=Z,16nm,0.7s						
RTC	**Rabat Centre**	**70.00**	**9**	PFAKE		21 21 00.0	+15
RTC				LR	LR		
	comp=Z,4μm,19.0s						
MOTC	**Monteria, Cord**	**70.58**	**297**	*e*P	**P**	**21 20 48.1**	**-1.1**
SJG	**San Juan**	**70.81**	**311**	PFAKE		21 21 00.0	+10
SJG				LR	LR		
	comp=Z,1μm,20.0s						
BCIP	**Isla Barro Col**	**73.90**	**294**	PFAKE		21 21 20.0	+11
BCIP				LR	LR		
	comp=Z,2μm,20.0s						
SDDR	**Presa de Saban**	**74.70**	**307**	PFAKE		21 21 30.0	+16
SDDR				LR	LR		
	comp=Z,1μm,20.0s						
KEST	**Kesra**	**75.24**	**22**	LR	LR	21 51 23.3	
	comp=Z,2μm,19.3s,baz=167,slow=34						
PAB	**San Pablo**	**75.81**	**10**	PFAKE		21 21 30.0	+10
PAB				LR	LR		
	comp=Z,700nm,22.0s						
PAYG	**Puerto Ayora**	**75.91**	**279**	PFAKE		21 21 30.0	+9.2
PAYG				LR	LR		
	comp=Z,1μm,22.0s						
ESDC	**Sonseca Array**	**75.99**	**10**	P	**P**	**21 21 18.3**	**-2.2**
	comp=Z,0.4nm,0.7s,baz=188,slow=5.6,SNR=3.8						
ESDC				LR	LR	21 51 08.8	
	comp=Z,325nm,19.1s,baz=330,slow=33						
ES19	**SONSECA Array**	**76.02**	**11**	*e*P	**P**	**21 21 20.9**	**+0.2**
ES19				*e*PcP	**PcP**	**21 21 32.4**	**-0.6**
MTE	**Manteigas**	**76.24**	**8**	PFAKE		21 21 30.0	+8.0
MTE				LR	LR		
	comp=Z,501nm,22.0s						
GRTK	**Grand Turk**	**76.45**	**309**	PFAKE		21 21 40.0	+16
GRTK				LR	LR		
	comp=Z,1μm,20.0s						
WDD	**Wied Dalam**	**77.08**	**26**	PFAKE		21 21 40.0	+13
WDD				LR	LR		
	comp=Z,635nm,20.0s						
GTBY	**Guantanamo Bay**	**77.89**	**305**	PFAKE		21 21 40.0	+8.4
GTBY				LR	LR		
	comp=Z,966nm,21.0s						
CLTB	**Caltabellotta**	**78.17**	**24**	PFAKE		21 21 40.0	+7.1
CLTB				LR	LR		
	comp=Z,375nm,19.0s						
MTDJ	**Mount Denham**	**78.34**	**302**	PFAKE		21 21 50.0	+16
MTDJ				LR	LR		
	comp=Z,1μm,22.0s						
JTS	**JuntasAbangare**	**78.46**	**292**	PFAKE		21 21 50.0	+15
JTS				LR	LR		
	comp=Z,1μm,21.0s						
VSL	**Villasalto**	**78.74**	**21**	PFAKE		21 21 50.0	+14
VSL				LR	LR		
	comp=Z,803nm,21.0s						
CEL	**Celeste**	**79.71**	**26**	PFAKE		21 21 50.0	+8.7
CEL				LR	LR		
	comp=Z,723nm,19.0s						
TIP	**Timpagrande**	**80.83**	**26**	PFAKE		21 22 00.0	+13
TIP				LR	LR		
	comp=Z,734nm,21.0s						
BBSR	**BB Station**	**81.04**	**321**	PFAKE		21 22 00.0	+11
BBSR				LR	LR		
	comp=Z,611nm,20.0s						
CUC	**Castrocucco**	**81.23**	**25**	PFAKE		21 22 00.0	+11
CUC				LR	LR		
	comp=Z,307nm,20.0s						
SANT	**Santorini**	**81.94**	**34**	PFAKE		21 22 00.0	+6.7
SANT				LR	LR		
	comp=Z,338nm,21.0s						
AQU	**L'Aquila**	**82.56**	**22**	PFAKE		21 22 10.0	+14
AQU				LR	LR		
	comp=Z,1μm,21.0s						
AGG	**Agios Georgios**	**82.83**	**30**	*e*P	**P**	**21 21 58.7**	**+0.8**
	comp=Z,29nm,1.1s						
SSB	**Saint Sauveur**	**82.97**	**15**	PFAKE		21 22 10.0	+12
SSB				LR	LR		
	comp=Z,647nm,20.0s						
BNI	**Bardonecchia**	**83.23**	**17**	PFAKE		21 22 10.0	+10
BNI				LR	LR		
	comp=Z,1μm,21.0s						
VLC	**Villacollemand**	**83.34**	**20**	PFAKE		21 22 10.0	+10
VLC				LR	LR		
	comp=Z,274nm,20.0s						
TIR	**Tirane**	**83.87**	**27**	PFAKE		21 22 10.0	+6.9
TIR				LR	LR		
	comp=Z,1μm,19.0s						
CSS	**Mathiatis**	**84.62**	**40**	PFAKE		21 22 20.0	+13
CSS				LR	LR		
	comp=Z,168nm,22.0s						
TUE	**Stuetta**	**85.21**	**18**	PFAKE		21 22 20.0	+10
TUE				LR	LR		
	comp=Z,715nm,19.0s						
DGAR	**Diego Garcia**	**85.44**	**96**	PFAKE		21 22 20.0	+8.2
DGAR				LR	LR		
	comp=Z,793nm,22.0s						
ISP	**Isparta**	**85.47**	**36**	PFAKE		21 22 20.0	+8.6
ISP				LR	LR		
	comp=Z,367nm,21.0s						
FUORN	**Ofenpass-Fuorn**	**85.58**	**19**	*e*P	**P**	**21 22 11.2**	**-0.7**
	comp=Z,20nm,1.4s						
JAVS	**Javornik**	**85.97**	**21**	*i* P	P	21 22 23.4	+10
VISS	**Visnje**	**86.12**	**22**	*e*P	P	21 22 26.2	+12
BFO	**Black Forest**	**86.70**	**17**	*e*P	**P**	**21 22 14.6**	**-2.6**
	comp=Z,6.7nm,1.0s						
BFO				*ep*wP	sP	21 22 28.6	+6.9
BFO				LR	LR		
	comp=Z,685nm,20.0s						
PERS	**Pernice**	**86.96**	**22**	*i* P	P	21 22 22.7	+4.2
TEIG	**Tepich**	**87.25**	**297**	PFAKE		21 22 30.0	+10
TEIG				LR	LR		
	comp=Z,471nm,21.0s						
WLF	**Walferdange**	**87.48**	**15**	PFAKE		21 22 30.0	+9.2
WLF				LR	LR		
	comp=Z,676nm,20.0s						
BRTR	**Keskin Array B**	**88.47**	**37**	LR	LR	22 00 11.0	
	comp=Z,248nm,20.1s,baz=232,slow=34						
GEA0	**GERESS Array S**	**88.54**	**20**	*e*PP	PP	21 25 56.5	+1.6
PSZ	**Piszkesteto**	**89.60**	**24**	PFAKE		21 22 40.0	+9.0
PSZ				LR	LR		
	comp=Z,511nm,22.0s						
NHSC	**New Hope**	**90.32**	**312**	PFAKE		21 22 50.0	+15
NHSC				LR	LR		
	comp=Z,611nm,21.0s						
CNNC	**Cliffs of the**	**90.44**	**314**	PFAKE		21 22 50.0	+15
CNNC				LR	LR		
	comp=Z,1μm,21.0s						
CLL	**Collm**	**90.61**	**18**	*e*P	P	21 22 45.0	+9.5
CLL				*e*		21 22 57.0	
CLL				*i*		21 23 16.3	
CLL				*e*SKSac	SKSac	21 32 57.0	-10
CLL				*eS*	**ScS**	**21 33 40.0**	**+5.7**
CLL				*eP*S	**PnS**	**21 34 41.0**	**+1.2**
CLL				*eSS*	**SS**	**21 39 29.0**	**-4.2**
CBN	**Corbin Frederi**	**92.23**	**317**	PFAKE		21 22 50.0	+6.6
CBN				LR	LR		
	comp=Z,535nm,21.0s						
GOGA	**Godfrey**	**92.55**	**310**	PFAKE		21 23 00.0	+15
GOGA				LR	LR		
	comp=Z,622nm,20.0s						
BLA	**Blacksburg**	**93.28**	**314**	PFAKE		21 23 00.0	+12
BLA				LR	LR		
	comp=Z,693nm,20.0s						
PKME	**Peaks-Kenny Pk**	**93.34**	**326**	PFAKE		21 23 00.0	+12
PKME				LR	LR		
	comp=Z,716nm,19.0s						
BRAL	**Brewton**	**93.38**	**306**	PFAKE		21 23 00.0	+11
BRAL				LR	LR		
	comp=Z,1μm,21.0s						
BINY	**Binghamton**	**94.33**	**320**	PFAKE		21 23 00.0	+7.0
BINY				LR	LR		
	comp=Z,723nm,20.0s						
GNI	**Garni**	**94.56**	**43**	PFAKE		21 23 00.0	+5.7
GNI				LR	LR		
	comp=Z,547nm,19.0s						
NCB	**Newcomb**	**94.71**	**323**	PFAKE		21 23 10.0	+15
NCB				LR	LR		
	comp=Z,1μm,19.0s						
KIEV	**Kiev**	**95.24**	**28**	PFAKE		21 23 10.0	+13
KIEV				LR	LR		
	comp=Z,835nm,20.0s						
LONY	**Lake Ozonia**	**95.36**	**323**	PFAKE		21 23 10.0	+12
LONY				LR	LR		
	comp=Z,648nm,20.0s						
KBZ	**Khabaz**	**96.08**	**39**	LR	LR	22 06 59.8	
	comp=Z,240nm,18.2s,baz=140,slow=36						
KIV	**Kislovodsk**	**96.13**	**39**	PFAKE		21 23 10.0	+8.7
KIV				LR	LR		
	comp=Z,378nm,20.0s						
H01W2	**Cape Leeuwin H**	**96.37**	**142**	T	T	23 11 04.4	
	baz=218,slow=75,SNR=7.5						
H01W3	**Cape Leeuwin H**	**96.38**	**142**	T	T	23 11 03.8	
	baz=218,slow=75,SNR=8.2						
H01W1	**Cape Leeuwin H**	**96.38**	**142**	T	T	23 11 03.8	
	baz=218,slow=75,SNR=9.6						
ACSO	**Alum Creek Sta**	**96.79**	**315**	PFAKE		21 23 20.0	+16
ACSO				LR	LR		
	comp=Z,592nm,20.0s						
RKT	**Rikitea**	**97.04**	**235**	*e*S	S	21 34 19.7	-9.5
	comp=Z,506nm,29.5s						
RKT				*e*SS	**SS**	**21 41 04.3**	**-0.3**
	comp=Z,577nm,30.5s						
RKT				*e*LQ	LQ	21 50 41.7	
	comp=Z,1μm,32.2s						
RKT				*e*LR	LR	21 54 40.8	
	comp=Z,521nm,28.5s						
KONO	**Kongsberg**	**97.55**	**13**	PFAKE		21 23 20.0	+13
KONO				LR	LR		
	comp=Z,843nm,20.0s						
AAM	**Ann Arbor**	**98.54**	**317**	PFAKE		21 23 20.0	+7.9
AAM				LR	LR		
	comp=Z,643nm,20.0s						
KVTX	**Kingsville**	**98.66**	**298**	PFAKE		21 23 20.0	+7.0
KVTX				LR	LR		
	comp=Z,726nm,19.0s						
NATX	**Nacogdoches**	**98.86**	**303**	PFAKE		21 23 20.0	+6.2
NATX				LR	LR		
	comp=Z,698nm,21.0s						
NOA	**NORSAR Array B**	**99.15**	**14**	LR	LR	22 04 45.3	
	comp=Z,165nm,21.4s,baz=195,slow=34						
NWAO	**Narrogin (SRO)**	**99.49**	**142**	PFAKE		21 23 30.0	+13
NWAO				LR	LR		
	comp=Z,675nm,20.0s						
MIAR	**Mount Ida**	**99.78**	**306**	PFAKE		21 23 30.0	+12
MIAR				LR	LR		
	comp=Z,1μm,22.0s						
HDIL	**Hopedale**	**100.70**	**312**	PFAKE		21 23 30.0	+8.2
HDIL				LR	LR		
	comp=Z,682nm,19.0s						
OBN	**Obninsk**	**101.48**	**28**	PFAKE		21 23 40.0	+15
OBN				LR	LR		
	comp=Z,349nm,21.0s						
COCO	**West Island**	**101.66**	**114**	PFAKE		21 23 40.0	+13
COCO				LR	LR		
	comp=Z,494nm,22.0s						
JCT	**Junction City**	**101.71**	**299**	PFAKE		21 23 40.0	+13
JCT				LR	LR		
	comp=Z,340nm,21.0s						
JFWS	**Jewell Farm**	**102.70**	**314**	PFAKE		21 23 40.0	+9.3
JFWS				LR	LR		
	comp=Z,651nm,22.0s						
WMOK	**Wichita Mounta**	**103.39**	**303**	PFAKE		21 23 50.0	+16
WMOK				LR	LR		
	comp=Z,813nm,22.0s						
SCIA	**State Center**	**103.88**	**312**	PFAKE		21 23 50.0	+14
SCIA				LR	LR		
	comp=Z,740nm,19.0s						
COWI	**Conover**	**103.99**	**317**	PFAKE		21 23 50.0	+14
COWI				LR	LR		
	comp=Z,612nm,20.0s						
KSU1	**Kansas State U**	**104.40**	**308**	PFAKE		21 23 50.0	+12
KSU1				LR	LR		
	comp=Z,725nm,22.0s						
CBKS	**Cedar Bluff**	**106.27**	**306**	PFAKE		21 28 10.0	
CBKS				LR	LR		
	comp=Z,837nm,20.0s						
MNTX	**Cornudas Mount**	**106.38**	**297**	PFAKE		21 28 10.0	
MNTX				LR	LR		
	comp=Z,425nm,21.0s						
EYMN	**Ely**	**106.38**	**318**	PFAKE		21 28 10.0	
EYMN				LR	LR		
	comp=Z,476nm,20.0s						
ECSD	**EROS Data Cent**	**106.97**	**312**	PFAKE		21 28 10.0	
ECSD				LR	LR		
	comp=Z,585nm,21.0s						
CAN	**Canberra**	**108.18**	**168**	PFAKE		21 28 10.0	
CAN				LR	LR		
	comp=Z,1μm,19.0s						
ANMO	**Albuquerque**	**108.83**	**300**	PFAKE		21 28 10.0	
ANMO				LR	LR		
	comp=Z,684nm,22.0s						
OGNE	**Ogallala**	**108.90**	**307**	PFAKE		21 28 10.0	
OGNE				LR	LR		
	comp=Z,792nm,21.0s						
AGMN	**Agassiz Nation**	**109.01**	**316**	PFAKE		21 28 10.0	
AGMN				LR	LR		
	comp=Z,587nm,20.0s						
SDCO	**Great Sand Dun**	**109.58**	**303**	PFAKE		21 28 20.0	
SDCO				LR	LR		
	comp=Z,622nm,22.0s						
KEV	**Kevo**	**109.97**	**15**	PFAKE		21 28 10.0	
KEV				LR	LR		
	comp=Z,364nm,20.0s						
MBWA	**Marble Bar**	**110.27**	**137**	PFAKE		21 28 20.0	
MBWA				LR	LR		
	comp=Z,733nm,21.0s						
LVZ	**Lovozero**	**110.33**	**18**	PFAKE		21 28 20.0	
LVZ				LR	LR		
	comp=Z,513nm,19.0s						
TAOE	**Nuku Hiva Isla**	**110.42**	**242**	*e

WUAZ	**Wupatki**	**112.61**	**298**	PFAKE			21 28 20.0		
WUAZ				LR	LR				
	comp=Z,441nm,21.0s								
EKS2	**Erkin-Say**	**113.72**	**54**	PFAKE			21 28 20.0		
EKS2				LR	LR				
	comp=Z,754nm,21.0s								
DGMT	**Dagmar**	**113.91**	**313**	PFAKE			21 28 20.0		
DGMT				LR	LR				
	comp=Z,450nm,20.0s								
AAK	**Ala-Archa**	**114.18**	**54**	PFAKE			21 28 20.0	+6.9	
AAK				LR	LR				
	comp=Z,348nm,20.0s								
BW06	**Boulder Array**	**114.70**	**306**	PFAKE			21 28 30.0	+16	
BW06				LR	LR				
	comp=Z,537nm,20.0s								
TKM2	**Tokmak 2**	**115.04**	**54**	PFAKE			21 28 30.0	+15	
TKM2				LR	LR				
	comp=Z,525nm,21.0s								
PFO	**Pinyon Flats O**	**115.44**	**294**	PFAKE			21 28 30.0	+14	
PFO				LR	LR				
	comp=Z,333nm,19.0s								
FFC	**Flin Flon**	**115.49**	**320**	PFAKE			21 28 30.0	+15	
FFC				LR	LR				
	comp=Z,493nm,20.0s								
HWUT	**Hardware Ranch**	**115.53**	**304**	PFAKE			21 28 30.0	+14	
HWUT				LR	LR				
	comp=Z,563nm,19.0s								
RLMT	**Red Lodge**	**115.54**	**308**	PFAKE			21 28 30.0	+14	
RLMT				LR	LR				
	comp=Z,771nm,20.0s								
KULM	**Kulim**	**115.57**	**103**	PFAKE			21 28 30.0	+14	
KULM				LR	LR				
	comp=Z,461nm,19.0s								
KBS	**Kingsbay**	**115.63**	**6**	PFAKE			21 28 30.0	+15	
KBS				LR	LR				
	comp=Z,235nm,21.0s								
AHID	**Auburn Hatcher**	**115.72**	**305**	PFAKE			21 28 30.0	+14	
AHID				LR	LR				
	comp=Z,728nm,21.0s								
DUG	**Dugway, Tooele**	**115.76**	**302**	PFAKE			21 28 30.0	+14	
DUG				LR	LR				
	comp=Z,688nm,20.0s								
LKWY	**Lake**	**116.03**	**307**	PFAKE			21 28 30.0	+13	
LKWY				LR	LR				
	comp=Z,1μm,20.0s								
BRVK	**Borovoye**	**116.20**	**42**	PFAKE			21 28 30.0	+14	
BRVK				LR	LR				
	comp=Z,317nm,22.0s								
EGMT	**Eagleton**	**117.07**	**311**	PFAKE			21 28 30.0	+12	
EGMT				LR	LR				
	comp=Z,409nm,21.0s								
BOZ	**Bozeman (W)**	**117.28**	**308**	PFAKE			21 28 30.0	+11	
BOZ				LR	LR				
	comp=Z,558nm,21.0s								
HLID	**Hailey**	**118.25**	**305**	PFAKE			21 28 30.0	+9.1	
HLID				LR	LR				
	comp=Z,729nm,22.0s								
WRAB	**Tennant Creek**	**118.45**	**149**	PFAKE			21 28 30.0	+8.1	
WRAB				LR	LR				
	comp=Z,734nm,21.0s								
KURK	**Kurchatov**	**120.05**	**47**	PFAKE			21 28 30.0	+6.1	
KURK				LR	LR				
	comp=Z,650nm,21.0s								
LSA	**Lhasa**	**120.61**	**74**	PFAKE			21 28 40.0	+14	
LSA				LR	LR				
	comp=Z,281nm,20.0s								
BMO	**Blue Mountains**	**120.67**	**306**	PFAKE			21 28 40.0	+15	
BMO				LR	LR				
	comp=Z,638nm,21.0s								
KSM	**Kuching**	**120.67**	**113**	PFAKE			21 28 40.0	+14	
KSM				LR	LR				
	comp=Z,380nm,19.0s								
WVOR	**Wild Horse Val**	**120.67**	**302**	*e*PPKPdf	**pPKPdf**		**21 28 30.3**	**+1.3**	
WVOR				LR	LR				
	comp=Z,521nm,21.0s								
MK32	**Makanchi Array**	**120.94**	**52**	*e*PKPdf	**PKPdf**		**21 28 25.6**	**-0.1**	
MKAR	**Makanchi Array**	**120.94**	**52**	PKP	**PKPdf**		**21 28 25.7**	**-0.1**	
	comp=Z,0.1nm,0.2s,baz=257,slow=2.5,SNR=2.3								
CM01	**Chiang Mai Arr**	**121.53**	**89**	*e*PKPdf	**PKPdf**		**21 28 32.3**	**+4.6**	
CHTO	**Chiang Mai**	**121.72**	**89**	PFAKE			21 28 40.0	+12	
CHTO				LR	LR				
	comp=Z,189nm,20.0s								
NEW	**Newport**	**121.74**	**309**	PFAKE			21 28 40.0	+13	
NEW				LR	LR				
	comp=Z,490nm,22.0s								
CTAO	**Charters Tower**	**122.34**	**162**	PFAKE			21 28 40.0	+11	
CTAO				LR	LR				
	comp=Z,509nm,21.0s								
HAWA	**Hanford**	**122.67**	**307**	PFAKE			21 28 40.0	+11	
HAWA				LR	LR				
	comp=Z,562nm,20.0s								
KAPI	**Kappang**	**122.82**	**126**	PFAKE			21 28 40.0	+10	
KAPI				LR	LR				
	comp=Z,370nm,21.0s								
WMQ	**Urumqi**	**123.51**	**57**	*e*PKP	**PKPdf**		**21 28 32.9**	**+2.0**	
WMQ				LR	LR				
	comp=Z,160nm,26.6s								
WMQ				LR	LR				
	comp=Z,160nm,26.6s								
WMQ				LR	LR				
	comp=Z,160nm,26.6s								
YKA	**Yellowknife Ar**	**124.29**	**326**	PKP	**PKPdf**		**21 28 32.3**	**+0.6**	
	comp=Z,0.3nm,0.7s,baz=108,slow=2.5,SNR=3.1								
YKB5	**Yellowknife Ar**	**124.29**	**326**	*e*PKPdf	**PKPdf**		**21 28 30.6**	**-1.0**	
MSVF	**Nonsavu**	**124.93**	**198**	PFAKE			21 28 50.0	+16	
MSVF				LR	LR				
	comp=Z,422nm,19.0s								
NLWA	**Neilton Lookou**	**125.80**	**307**	PFAKE			21 28 50.0	+15	
NLWA				LR	LR				
	comp=Z,739nm,20.0s								
KMI	**Kunming**	**127.83**	**84**	PKP	**PKPdf**		**21 28 41.9**	**+2.0**	
KKM	**Kota Kinabalu**	**128.09**	**113**	PFAKE			21 28 50.0	+9.4	
KKM				LR	LR				
	comp=Z,489nm,21.0s								
CD2	**Chengdu**	**131.05**	**78**	PKP	**PKPdf**		**21 28 47.0**	**+1.3**	
GYA	**Guiyang**	**131.60**	**85**	*e*Pdif	**Pdif**		**21 25 42.8**	**+3.1**	
GYA				PKP	**PKiKP**		**21 28 48.9**	**+1.0**	
GYA				PP	PP		21 31 13.6	+6.8	
GYA				AMB	AMB				
	comp=Z,120nm,7.9s								
INK	**Inuvik**	**132.34**	**333**	PKP	**PKPdf**		**21 28 46.6**	**-0.2**	
	comp=Z,0.7nm,0.9s,baz=59,slow=2.0,SNR=3.9								
INK	**Inuvik**	**132.34**	**333**	*e*PKPpre	**PKPdf**		**21 28 46.6**	**-0.2**	
INK				*e*PKPdf	**PKiKP**		**21 28 52.3**	**+4.4**	
WRAK	**Wrangell Islan**	**132.48**	**317**	PFAKE			21 29 00.0	+13	
WRAK				LR	LR				
	comp=Z,457nm,19.0s								
PMG	**Port Moresby**	**132.77**	**159**	PFAKE			21 29 00.0	+11	
PMG				LR	LR				
	comp=Z,466nm,19.0s								
FUNA	**Funafuti**	**133.38**	**203**	PFAKE			21 29 00.0	+9.5	
FUNA				LR	LR				
	comp=Z,12μm,19.0s								
HNR	**Honiara**	**135.03**	**176**	PFAKE			21 29 00.0	+6.4	
HNR				LR	LR				
	comp=Z,276nm,19.0s								
ENH	**Enshi**	**135.39**	**81**	PFAKE			21 29 00.0	+6.2	
ENH				LR	LR				
	comp=Z,222nm,20.0s								
DAV	**Davao City (W)**	**135.58**	**121**	PFAKE			21 29 10.0	+15	
DAV				LR	LR				
	comp=Z,437nm,21.0s								
TLY	**Talaya**	**135.59**	**50**	PFAKE			21 29 00.0	+6.5	
TLY				LR	LR				
	comp=Z,269nm,19.0s								
EGAK	**Eagle**	**136.04**	**329**	PFAKE			21 29 00.0	+6.1	
EGAK				LR	LR				
	comp=Z,754nm,21.0s								
ULN	**Ulaanbaatar**	**137.55**	**56**	PFAKE			21 29 10.0	+13	
ULN				LR	LR				
	comp=Z,337nm,21.0s								
IL1	**Eielson Array**	**138.39**	**330**	*e*PKPdf	**PKPdf**		**21 28 59.0**	**+0.8**	
ILAR	**Eielson Array**	**138.39**	**330**	PKiKP	PKPpre		21 28 50.5		
	comp=Z,0.4nm,0.8s,baz=101,slow=1.9,SNR=2.6								
ILAR				PKP	**PKPdf**		**21 28 59.1**	**+0.8**	
	comp=Z,1.5nm,1.0s,baz=60,slow=1.2,SNR=6.4								
ILB	**Eielson Array**	**138.39**	**330**	*e*PKPpre	PKPpre		21 28 50.5		
ILB				*e*PKPdf	**PKPdf**		**21 28 59.1**	**+0.8**	
COLA	**College**	**138.75**	**331**	PFAKE			21 29 10.0	+11	
COLA				LR	LR				
	comp=Z,445nm,19.0s								
TIXI	**Tiksi**	**139.90**	**16**	PFAKE			21 29 10.0	+9.2	
TIXI				LR	LR				
	comp=Z,300nm,21.0s								
HHC	**Hu-ho-hao-te**	**139.91**	**67**	*e*PKP	**PKPdf**		**21 29 05.6**	**+3.7**	
HHC				PP	PP		21 32 04.3	+5.4	
HHC				SKS	**SKSdf**		**21 36 11.0**	**-1.4**	
HHC				SS	**SS**		**21 50 22.6**	**+1.7**	
HHC				AMB	AMB				
	comp=Z,160nm,8.6s								
HHC				LR	LR				
	comp=Z,200nm,18.2s								
HHC				LR	LR				
	comp=Z,310nm,20.6s								
HHC				LR	LR				
	comp=Z,330nm,19.2s								
POHA	**Pohakuloa**	**140.18**	**258**	PFAKE			21 29 10.0	+6.8	
POHA				LR	LR				
	comp=Z,406nm,20.0s								
YHNB	**Yeheng**	**142.78**	**96**	PFAKE			21 29 20.0	+12	
YHNB				LR	LR				
	comp=Z,5μm,19.0s								
TATO	**Taipei**	**143.00**	**95**	PFAKE			21 29 20.0	+12	
TATO				LR	LR				
	comp=Z,3μm,22.0s								
BJT	**Baijiatuan**	**143.25**	**69**	PFAKE			21 29 20.0	+12	
BJT				LR	LR				
	comp=Z,364nm,20.0s								
BJI	**Beijing**	**143.25**	**69**	PKP	**PKPdf**		**21 29 10.6**	**+2.8**	
BJI				PP	**PP**		**21 32 23.8**	**+4.7**	
BJI				SS	SS		21 51 06.3	+6.7	
BJI				LR	LR				
	comp=Z,320nm,21.9s								
BJI				LR	LR				
	comp=Z,250nm,24.2s								
BJI				LR	LR				
	comp=Z,370nm,34.3s								
HIA	**Hailar**	**145.94**	**53**	PFAKE			21 29 20.0	+6.6	
HIA				LR	LR				
	comp=Z,294nm,20.0s								
YAK	**Yakutsk**	**146.48**	**28**	PFAKE			21 29 20.0	+5.0	
YAK				LR	LR				
	comp=Z,369nm,22.0s								
BILL	**Bilibino**	**147.55**	**358**	PFAKE			21 29 20.0	+0.9	
BILL				LR	LR				
	comp=Z,300nm,21.0s								
CN2	**Changchun**	**150.35**	**63**	*e*PKPbc	**PKPbc**		**21 29 24.3**	**-0.5**	
INCN	**Inchon**	**151.00**	**76**	PFAKE			21 29 30.0	+3.4	
INCN				LR	LR				
	comp=Z,821nm,19.0s								
SEY	**Seymchan**	**151.98**	**10**	PKPbc	**PKPbc**		**21 29 27.6**	**-0.4**	
	comp=Z,2.6nm,0.7s,baz=315,slow=1.4,SNR=4.4								
SEY				PKPab	**PKPab**		**21 29 36.6**	**-0.7**	
	comp=Z,6.1nm,0.8s,baz=118,slow=3.3,SNR=5.1								
KS15	**Wonju Array Si**	**151.99**	**76**	*e*PKPab	**PKPab**		**21 29 37.6**	**-0.6**	
KSAR	**Wonju Array Be**	**151.99**	**76**	PKPab	**PKPab**		**21 29 37.6**	**-0.6**	
KS01	**Wonju Array Si**	**152.00**	**76**	*e*PKPbc	**PKPab**		**21 29 33.7**	**-4.6**	
KSRS	**Korea Array**	**152.02**	**76**	PKPab	**PKPab**		**21 29 37.6**	**-0.7**	
	comp=Z,4.0nm,0.9s,baz=279,slow=3.3,SNR=4.2								
GUMO	**Guam**	**152.70**	**139**	PFAKE			21 29 30.0	-1.0	
GUMO				LR	LR				
	comp=Z,816nm,21.0s								
MDJ	**Mudanjiang**	**153.24**	**60**	PFAKE			21 29 30.0	-1.4	
MDJ				LR	LR				
	comp=Z,287nm,20.0s								
KLR	**Kul'dur**	**153.60**	**50**	PKPbc	**PKPbc**		**21 29 32.8**	**+0.8**	
	comp=Z,2.7nm,0.8s,baz=325,slow=4.6,SNR=7.2								
KLR				PKPab	**PKPab**		**21 29 42.9**	**-1.8**	
	comp=Z,5.7nm,0.9s,baz=324,slow=4.2,SNR=10								
MAJO	**Matsushiro**	**160.11**	**80**	PFAKE			21 29 40.0	+7.0	
MAJO				LR	LR				
	comp=Z,706nm,19.0s								
PET	**Petropavlovsk**	**162.43**	**8**	PFAKE			21 29 40.0	+5.1	
PET				LR	LR				
	comp=Z,460nm,22.0s								

*ISCJB **24** 21:12:55.0±0.5, 36°.96N±0°.02×22°.94E±0°.03, h3km±4km,*
Error ellipse: s-maj=4.1km s-min=3.0km az=163.6
*ATH **24** 21:12:55.3, 36°.96N×22°.91E, h14km±5km, ML2.4/4, Error*
ellipse: s-maj=5.7km s-min=0.9km az=146.0
*THE **24** 21:12:55.5, 36°.97N×22°.96E, h2km±1km, ML2.8/17, Error*
ellipse: s-maj=1.2km s-min=0.5km az=141.0
*CSEM **24** 21:12:55.3±0.1, 36°.96N×22°.95E, h8km, ML2.4, Error*
ellipse: s-maj=3.0km s-min=2.4km az=74.0

ISC 24 21:12:55.4±0.9, 36°.97N±0°.02×22°.95E±0°.02, h9km±8km, n87, σ0s63/128, Southern Greece

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
VLI	**Veliai**	**0.25**	**182**	P	**Pg**	**21 13 00.1**	**-0.3**
VLI				S	**Sg**	**21 13 04.2**	**+0.5**
VLI	**Veliai**	**0.25**	**182**	P	**Pg**	**21 13 00.1**	**-0.3**
VLI				S	**Sg**	**21 13 04.2**	**+0.5**
VLI	**Veliai**	**0.25**	**182**	P	**Pg**	**21 13 00.0**	**-0.3**
VLI				S	**Sg**	**21 13 04.2**	**+0.5**
VLI				AML	AML	21 13 05.4	
VLI	comp=E,2235μm,0.7s			AML	AML	21 13 06.9	
	comp=N,3915μm,0.5s						
KRND	**KRANIDI**	**0.45**	**21**	P	**Pg**	**21 13 04.0**	**-0.1**
KRND				S	**Sg**	**21 13 10.9**	**+0.9**
KRND	**KRANIDI**	**0.45**	**21**	P	**Pg**	**21 13 04.0**	**-0.1**
KRND				S	**Sg**	**21 13 10.9**	**+0.9**
KRND	**KRANIDI**	**0.45**	**21**	P	**Pg**	**21 13 04.6**	**+0.5**
KRND				S	**Sb**	**21 13 11.4**	**-0.8**
KRND				AML	AML	21 13 14.3	
	comp=E,671μm,0.4s						
KRND				AML	AML	21 13 14.9	
	comp=N,1016μm,0.4s						
DID	**Didima**	**0.59**	**23**	P	**Pg**	**21 13 06.4**	**-0.3**
DID				S	**Sg**	**21 13 15.1**	**+0.6**
DID	**Didima**	**0.59**	**23**	P	**Pg**	**21 13 06.5**	**-0.3**
DID				S	**Sg**	**21 13 15.2**	**+0.6**
DID	**Didima**	**0.59**	**23**	P	**Pg**	**21 13 06.5**	**-0.3**
DID				S	**Sb**	**21 13 15.9**	**-0.4**
DID				AML	AML	21 13 17.2	
	comp=E,692μm,0.2s						
DID				AML	AML	21 13 18.3	
	comp=N,629μm,0.3s						
VLX	**Vlachokerasia**	**0.61**	**312**	P	**Pg**	**21 13 06.9**	**-0.3**
VLX				S	**Sg**	**21 13 15.7**	**+0.5**
VLX	**Vlachokerasia**	**0.61**	**312**	P	**Pg**	**21 13 06.9**	**-0.3**
VLX				S	**Sg**	**21 13 15.6**	**+0.4**
VLX	**Vlachokerasia**	**0.61**	**312**	P	**Pg**	**21 13 07.4**	**+0.2**
VLX				S	**Sg**	**21 13 15.6**	**+0.4**
VLX				AML	AML	21 13 17.3	
	comp=E,1510μm,0.6s						
VLX				AML	AML	21 13 17.9	
	comp=N,932μm,0.4s						
KYTH	**Kithira**	**0.70**	**174**	P	**Pg**	**21 13 09.0**	**0.0**
KYTH				S	**Sb**	**21 13 18.7**	**-0.9**
KYTH	**Kithira**	**0.70**	**174**	P	**Pg**	**21 13 09.0**	**0.0**
KYTH				S	**Sg**	**21 13 17.6**	**-0.5**
KYTH	**Kithira**	**0.70**	**174**	P	**Pb**	**21 13 09.6**	**-0.2**
TRIP	**Tripoli**	**0.78**	**316**	P	**Pg**	**21 13 10.2**	**-0.2**
TRIP	**Tripoli**	**0.78**	**316**	P	**Pg**	**21 13 10.2**	**-0.2**
ITM	**Ithomi**	**0.84**	**285**	P	**Pg**	**21 13 11.3**	**-0.4**
ITM				S	**Sb**	**21 13 24.6**	**+0.9**
ITM	**Ithomi**	**0.84**	**285**	P	**Pg**	**21 13 11.3**	**-0.4**
ITM				S	**Sg**	**21 13 21.8**	**-0.9**
ITM	**Ithomi**	**0.84**	**285**	P	**Pg**	**21 13 11.5**	**-0.1**
ITM				S	**Sg**	**21 13 21.8**	**-0.9**
PYL	**PYLOS**	**0.97**	**266**	P	**Pg**	**21 13 13.5**	**-0.5**
PYL	**PYLOS**	**0.97**	**266**	P	**Pg**	**21 13 13.7**	**-0.3**
PYL	**PYLOS**	**0.97**	**266**	P	**Pg**	**21 13 13.7**	**-0.3**
LTK	**Loutraki**	**1.06**	**1**	P	**Pg**	**21 13 14.7**	**-1.0**
LTK	**Loutraki**	**1.06**	**1**	P	**Pg**	**21 13 15.4**	**-0.3**
LTK	**Loutraki**	**1.06**	**1**	P	**Pg**	**21 13 15.4**	**-0.3**
THAL	**Thalero**	**1.09**	**348**	P	**Pg**	**21 13 15.7**	**-0.7**
THAL	**Thalero**	**1.09**	**348**	P	**Pb**	**21 13 16.6**	**+0.1**
THAL	**Thalero**	**1.09**	**348**	P	**Pb**	**21 13 16.6**	**+0.1**
VLY	**Voula,Athens**	**1.11**	**37**	P	**Pg**	**21 13 15.6**	**-1.2**
VLY	**Voula,Athens**	**1.11**	**37**	P	**Pn**	**21 13 17.3**	**+0.2**
VLY	**Voula,Athens**	**1.11**	**37**	P	**Pn**	**21 13 17.3**	**+0.2**
ANKY	**Antikythira Is**	**1.13**	**165**	P	**Pb**	**21 13 17.0**	**-0.1**
ANKY				S	**Sn**	**21 13 33.1**	**+0.1**
ANKY	**Antikythira Is**	**1.13**	**165**	P	**Pb**	**21 13 17.0**	**-0.1**
ANKY				S	**Sn**	**21 13 33.1**	**+0.1**
ANKY	**Antikythira Is**	**1.13**	**165**	P	**Pn**	**21 13 17.6**	**+0.2**
AMT	**Artemida-Makis**	**1.14**	**300**	P	**Pg**	**21 13 16.9**	**-0.4**
AMT				S	**Sn**	**21 13 34.2**	**+0.9**
AMT	**Artemida-Makis**	**1.14**	**300**	P	**Pg**	**21 13 16.9**	**-0.4**
AMT				S	**Sn**	**21 13 34.2**	**+0.9**
AMT	**Artemida-Makis**	**1.14**	**300**	P	**Pg**	**21 13 15.5**	**-1.8**
MHLO	**Agia Marina, M**	**1.20**	**103**	P	**Pb**	**21 13 18.1**	**-0.1**
MHLO	**Agia Marina, M**	**1.20**	**103**	P	**Pb**	**21 13 18.1**	**-0.1**
MHLO	**Agia Marina, M**	**1.20**	**103**	P	**Pb**	**21 13 17.7**	**-0.5**
ATHU	**Athens Univers**	**1.20**	**33**	P	**Pb**	**21 13 17.4**	**-0.9**
ATHU				S	**Sn**	**21 13 34.7**	**0.0**
ATHU	**Athens Univers**	**1.20**	**33**	P	**Pb**	**21 13 17.4**	**-0.9**
ATHU				S	**Sn**	**21 13 34.7**	**0.0**
VILL	**Villia**	**1.23**	**13**	P	**Pb**	**21 13 18.9**	**+0.1**
VILL				S	**Sn**	**21 13 35.7**	**+0.1**
VILL	**Villia**	**1.23**	**13**	P	**Pb**	**21 13 18.9**	**+0.1**
VILL				S	**Sn**	**21 13 35.7**	**+0.1**
KLV	**Kalavryta, Ach**	**1.25**	**330**	P	**Pn**	**21 13 17.9**	**-1.2**
KLV				S	**Sn**	**21 13 36.4**	**+0.3**
KLV	**Kalavryta, Ach**	**1.25**	**330**	P	**Pn**	**21 13 17.9**	**-1.2**
KLV				S	**Sn**	**21 13 36.4**	**+0.3**
KLV	**Kalavryta, Ach**	**1.25**	**330**	P	**Pn**	**21 13 17.8**	**-1.2**
PROD	**Prodromos**	**1.29**	**358**	P	**Pg**	**21 13 20.5**	**+0.3**
PROD	**Prodromos**	**1.29**	**358**	P	**Pg**	**21 13 20.5**	**+0.3**
PTL	**Penteli**	**1.30**	**34**	P	**Pn**	**21 13 19.3**	**-0.5**
PTL				S	**Sn**	**21 13 39.0**	**+1.7**
PTL	**Penteli**	**1.30**	**34**	P	**Pn**	**21 13 19.3**	**-0.5**
PTL				S	**Sn**	**21 13 39.0**	**+1.7**
PTL	**Penteli**	**1.30**	**34**	P	**Pn**	**21 13 19.1**	**-0.7**
DRO	**Drossia**	**1.39**	**315**	P	**Pn**	**21 13 21.1**	**+0.1**
DRO				S	**Sg**	**21 13 41.7**	**+1.5**
DRO	**Drossia**	**1.39**	**315**	P	**Pn**	**21 13 20.7**	**-0.3**
DRO				S	**Sg**	**21 13 41.7**	**+1.5**
DRO	**Drossia**	**1.39**	**315**	P	**Pn**	**21 13 20.7**	**-0.3**
DSF	**Desfina**	**1.48**	**347**	P	**Pn**	**21 13 22.1**	**-0.2**
DSF				S	**Sg**	**21 13 42.8**	**-0.3**
DSF	**Desfina**	**1.48**	**347**	P	**Pn**	**21 13 22.1**	**-0.2**
DSF				S	**Sg**	**21 13 42.8**	**-0.3**
LAKA	**Lakka**	**1.49**	**329**	P	**Pn**	**21 13 22.1**	**-0.2**
LAKA	**Lakka**	**1.49**	**329**	P	**Pn**	**21 13 22.2**	**-0.1**
LAKA	**Lakka**	**1.49**	**329**	P	**Pn**	**21 13 22.2**	**-0.1**
KALE	**Kalithea**	**1.56**	**336**	P	**Pn**	**21 13 22.9**	**-0.5**
KALE				S	**Sb**	**21 13 44.6**	**+0.2**
KALE	**Kalithea**	**1.56**	**336**	P	**Pn**	**21 13 22.9**	**-0.5**
KALE				S	**Sb**	**21 13 44.6**	**+0.2**
KARY	**Karystos**	**1.59**	**48**	P	**Pn**	**21 13 23.5**	**-0.2**
KARY	**Karystos**	**1.59**	**48**	P	**Pn**	**21 13 23.5**	**-0.2**
SERG	**Sergoula**	**1.61**	**334**	P	**Pn**	**21 13 24.0**	**0.0**
SERG				S	**Sb**	**21 13 45.8**	**+0.1**
SERG	**Sergoula**	**1.61**	**334**	P	**Pn**	**21 13 24.0**	**0.0**
SERG				S	**Sb**	**21 13 45.8**	**+0.1**
EFP	**Efpalio**	**1.68**	**331**	P	**Pn**	**21 13 25.4**	**+0.5**
EFP				S	**Sb**	**21 13 47.7**	**+0.1**
EFP	**Efpalio**	**1.68**	**331**	P	**Pn**	**21 13 25.4**	**+0.5**
LKR	**Lokris**	**1.68**	**1**	P	**Pn**	**21 13 24.7**	**-0.3**
LKR	**Lokris**	**1.68**	**1**	P	**Pn**	**21 13 24.7**	**-0.3**
ANX	**Ano Chora**	**1.82**	**334**	P	**Pn**	**21 13 26.9**	**0.0**
ANX	**Ano Chora**	**1.82**	**334**	P	**Pn**	**21 13 26.9**	**0.0**
VAM	**Vamos**	**1.85**	**147**	P	**Pn**	**21 13 27.2**	**-0.1**
VAM	**Vamos**	**1.85**	**147**	P	**Pn**	**21 13 27.2**	**-0.1**
SMIA	**Simia**	**1.92**	**6**	P	**Pn**	**21 13 28.6**	**+0.3**
SMIA	**Simia**	**1.92**	**6**	P	**Pn**	**21 13 28.6**	**+0.3**
AGG	**Agios Georgios**	**2.11**	**347**	P	**Pn**	**21 13 31.0**	**+0.1**
AGG				S	**Sb**	**21 13 59.4**	**-0.7**
AGG	**Agios Georgios**	**2.11**	**347**	P	**Pn**	**21 13 31.0**	**+0.1**
AGG				S	**Sb**	**21 13 59.4**	**-0.7**
EVR	**Evrytania**	**2.15**	**336**	P	**Pn**	**21 13 31.4**	**0.0**
EVR	**Evrytania**	**2.15**	**336**	P	**Pn**	**21 13 31.4**	**0.0**
PDO	**Prodromos**	**2.15**	**320**	P	**Pb**	**21 13 33.4**	**-1.0**
PDO	**Prodromos**	**2.15**	**320**	P	**Pb**	**21 13 33.4**	**-1.0**
IDI	**Anoyia**	**2.30**	**136**	P	**Pn**	**21 13 34.0**	**+0.6**
IDI	**Anoyia**	**2.30**	**136**	P	**Pn**	**21 13 34.0**	**+0.6**
LKD2	**Lefkada island**	**2.57**	**316**	P	**Pn**	**21 13 39.2**	**+2.0**
LKD2				S	**Sn**	**21 14 08.3**	**-0.3**
LKD2	**Lefkada island**	**2.57**	**316**	P	**Pn**	**21 13 39.2**	**+2.0**

*CSEM **24** 21:13:11.0, 36°.94N×22°.94E, h16km, ML2.8/5*
ATH 24 21:13:11.0, 36°.94N×22°.94E, h16km±6km, ML2.8/5, Error ellipse: s-maj=6.7km s-min=1.1km az=157.0, Southern Greece

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
VLI	**Veliai**	**0.22**	**180**	P	Pg	21 13 15.5	-0.6
VLI				S	Sg	21 13 20.0	+0.5
VLI	**Veliai**	**0.22**	**180**	P	Pg	21 13 15.5	-0.6
VLI				S	Sb	21 13 20.0	-0.5
VLI				AML	AML	21 13 22.6	
VLI	comp=N,7254μm,0.6s			AML	AML	21 13 22.9	
	comp=E,5580μm,0.7s						
KRND	**KRANIDI**	**0.47**	**21**	P	Pg	21 13 19.8	-0.6
KRND				S	Sb	21 13 27.4	-0.3
KRND	**KRANIDI**	**0.47**	**21**	P	Pg	21 13 19.8	-0.6
KRND				S	Sb	21 13 27.4	-0.3
KRND				AML	AML	21 13 30.6	
	comp=N,2170μm,0.4s						
KRND				AML	AML	21 13 30.6	
	comp=E,2086μm,0.4s						
DID	**Didima**	**0.61**	**23**	P	Pb	21 13 23.8	+0.4
DID				S	Sb	21 13 31.5	-0.3
DID	**Didima**	**0.61**	**23**	P	Pb	21 13 23.8	+0.4
DID				S	Sb	21 13 31.6	-0.2
DID				AML	AML	21 13 33.8	
	comp=E,1606μm,0.2s						
DID				AML	AML	21 13 33.9	
	comp=N,1834μm,0.4s						
**

JFK	Kawauchi	2.33	248	P	Pn	21 16 11.5	-0.3	
JYK	Kaneyama	2.61	285	P	Pn	21 16 16.8	+1.2	
JFT	Otama	2.67	255	P	Pn	21 16 18.1	+1.5	
MJAR	Matsushiro Arr	4.61	250	Pn	Pn	21 16 45.2	+2.0	
	2.8nm,0.3s,baz=57,slow=13,SNR=23							
MAT	Matsushiro	4.61	250	P	Pn	21 16 45.7	+2.5	
ASAJ	Asahikawa	5.89	353	Pn	Pn	21 17 00.9	+0.2	
	1.4nm,0.3s,baz=184,slow=10,SNR=16							
ASAJ				Sn	Sn	21 18 05.5	-2.1	
	0.3nm,0.3s,baz=252,slow=20,SNR=2.5							
JHJ	Hachijo jima 2	6.00	212	Pn	Pn	21 17 00.1	-2.1	
	8.2nm,0.3s,baz=64,slow=18,SNR=4.9							
KURBB	Kurchatov Arra	46.61	307	P	P	21 24 02.2	+1.0	
	0.1nm,0.3s,baz=76,slow=8.7,SNR=2.6							
ILAR	Eielson Array	47.53	33	P	P	21 24 08.4	+0.2	
	0.4nm,0.8s,baz=263,slow=7.0,SNR=4.6							
WRA	Warramunga Arr	58.55	190	P	P	21 25 28.4	-1.4	
	0.8nm,0.6s,baz=9.8,slow=7.3,SNR=10							
ASAR	Alice Springs	62.27	190	P	P	21 25 55.1	-0.1	
	0.2nm,0.5s,baz=7.5,slow=7.9,SNR=4.1							

*ISCJB **24** 21:16:38.3±0.4, 36.96N×0.01×22.92E±0.02, h4km±3km, Error ellipse: s-maj=3.1km s-min=2.3km az=154.5*
*ATH **24** 21:16:38.2, 36.96N×22.94E, h25km±1km, ML2.6/10, Error ellipse: s-maj=1.2km s-min=0.8km az=190.0*
*CSEM **24** 21:16:38.5±0.1, 36.97N×22.93E, h5km, ML2.6, Error ellipse: s-maj=1.8km s-min=1.4km az=64.0*
*THE **24** 21:16:38.7, 36.97N×22.92E, h4km, ML2.6/33, Error ellipse: s-maj=0.7km s-min=0.4km az=191.0*

ISC 24 21:16:38.7±1.0, 36.97N±0.01×22.94E±0.02, h7km±8km, n109, σ0s56/187, Southern Greece

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
VLI	Veliai	0.25	180	P	Pg	21 16 43.4	-0.3
VLI				S	Sg	21 16 47.3	+0.2
VLI	Veliai	0.25	180	P	Pg	21 16 43.4	-0.3
VLI				S	Sg	21 16 47.3	+0.2
VLI	Veliai	0.25	180	P	Pg	21 16 43.0	-0.7
VLI				AML	AML	21 16 48.7	
	comp=E,3654μm,0.8s						
VLI				AML	AML	21 16 50.2	
	comp=N,4121μm,0.5s						
KRND	KRANIDI	0.45	23	P	Pg	21 16 47.7	+0.3
KRND				S	Sg	21 16 53.9	+0.7
KRND	KRANIDI	0.45	23	P	Pg	21 16 47.7	+0.3
KRND				S	Sg	21 16 53.9	+0.7
KRND	KRANIDI	0.45	23	P	Pg	21 16 47.7	+0.3
KRND				S	Sg	21 16 54.3	+1.1
KRND				AML	AML	21 16 58.2	
	comp=N,1255μm,0.3s						
KRND				AML	AML	21 16 58.3	
	comp=E,925μm,0.3s						
DID	Didima	0.59	24	P	Pg	21 16 49.7	-0.4
DID				S	Sg	21 16 58.6	+0.9
DID	Didima	0.59	24	P	Pg	21 16 49.7	-0.4
DID				S	Sg	21 16 58.6	+0.9
DID	Didima	0.59	24	P	Pg	21 16 49.6	-0.4
DID				S	Sb	21 16 58.9	-0.9
DID				AML	AML	21 17 01.5	
	comp=E,813μm,0.2s						
DID				AML	AML	21 17 01.6	
	comp=N,856μm,0.3s						
VLX	Vlachokerasia	0.60	312	P	Pg	21 16 49.9	-0.4
VLX				S	Sg	21 16 58.9	+0.8
VLX	Vlachokerasia	0.60	312	P	Pg	21 16 50.1	-0.2
VLX				S	Sg	21 16 58.4	+0.3
VLX	Vlachokerasia	0.60	312	P	Pg	21 16 50.1	-0.2
VLX				S	Sg	21 16 58.4	+0.3
VLX				AML	AML	21 17 02.9	
	comp=E,1924μm,0.3s						
VLX				AML	AML	21 17 03.1	
	comp=N,1275μm,0.3s						
KYTH	Kithira	0.71	173	P	Pg	21 16 52.4	0.0
KYTH				S	Sg	21 17 01.9	+0.3
KYTH	Kithira	0.71	173	P	Pg	21 16 52.4	0.0
KYTH				S	Sg	21 17 01.8	+0.2
KYTH	Kithira	0.71	173	P	Pb	21 16 53.1	-0.3
TRIP	Tripoli	0.77	317	P	Pg	21 16 53.3	-0.2
TRIP				S	Sg	21 17 03.4	-0.1
TRIP	Tripoli	0.77	317	P	Pg	21 16 53.4	-0.2
TRIP				S	Sg	21 17 03.4	-0.1
TRIP				AML	AML	21 17 06.0	
	comp=N,720μm,0.3s						
TRIP				AML	AML	21 17 08.1	
	comp=E,522μm,0.4s						
ITM	Ithomi	0.83	285	P	Pg	21 16 54.6	-0.1
ITM				S	Sg	21 17 05.4	-0.2
ITM	Ithomi	0.83	285	P	Pg	21 16 54.6	-0.1
ITM				S	Sg	21 17 05.4	-0.2
ITM	Ithomi	0.83	285	P	Pg	21 16 54.8	+0.1
ITM				AML	AML	21 17 05.8	
	comp=E,632μm,0.4s						
ITM				AML	AML	21 17 08.5	
	comp=N,479μm,0.3s						
PYL	PYLOS	0.96	266	P	Pg	21 16 56.7	-0.4
PYL				S	Sg	21 17 09.7	+0.1
PYL	PYLOS	0.96	266	P	Pg	21 16 56.8	-0.4
PYL				S	Sg	21 17 09.7	+0.1
PYL	PYLOS	0.96	266	P	Pg	21 16 56.8	-0.3
LTK	Loutraki	1.05	1	P	Pg	21 16 58.6	-0.3
LTK				S	Sb	21 17 13.8	+0.6
LTK	Loutraki	1.05	1	P	Pg	21 16 58.6	-0.3
LTK				S	Sb	21 17 13.8	+0.6
LTK	Loutraki	1.05	1	P	Pg	21 16 58.6	-0.3
THAL	Thalero	1.09	349	P	Pg	21 16 58.6	-1.0
THAL				S	Sb	21 17 14.7	+0.5
THAL	Thalero	1.09	349	P	Pg	21 16 59.0	-0.6
THAL				S	Sb	21 17 14.7	+0.5
THAL	Thalero	1.09	349	P	Pg	21 16 59.0	-0.6
VLY	Voula,Athens	1.11	38	P	Pg	21 16 59.9	-0.2
VLY				S	Sn	21 17 16.0	-0.3
VLY	Voula,Athens	1.11	38	P	Pg	21 16 59.9	-0.2
VLY				S	Sb	21 17 15.8	+0.8
VLY	Voula,Athens	1.11	38	P	Pb	21 17 00.5	+0.2
VLY				S	Sb	21 17 15.8	+0.8
VLY				AML	AML	21 17 21.5	
	comp=E,803μm,0.6s						
VLY				AML	AML	21 17 24.9	
	comp=N,697μm,0.6s						
AMT	Artemida-Makis	1.13	300	P	Pg	21 16 59.4	-1.0
AMT				S	Sb	21 17 16.0	+0.6
AMT	Artemida-Makis	1.13	300	P	Pg	21 17 00.0	-0.4
AMT				S	Sb	21 17 16.0	+0.6
AMT	Artemida-Makis	1.13	300	P	Pg	21 16 60.0	-0.4
ANKY	Antikythira Is	1.14	165	P	Pg	21 17 00.1	-0.5
ANKY				S	Sb	21 17 16.1	+0.4
ANKY	Antikythira Is	1.14	165	P	Pb	21 17 00.6	-0.1
ANKY				S	Sb	21 17 15.6	-0.1
ANKY	Antikythira Is	1.14	165	P	Pb	21 17 00.6	-0.1
ANKY				S	Sb	21 17 15.6	-0.1
ATH	Athens Observa	1.18	32	P	Pn	21 17 02.0	+0.4
ATHU	Athens Univers	1.20	34	P	Pg	21 17 01.2	-0.6
ATHU				S	Sn	21 17 18.8	+0.3
ATHU	Athens Univers	1.20	34	P	Pg	21 17 01.2	-0.6
ATHU				S	Sn	21 17 18.8	+0.3
MHLO	Agia Marina, M	1.21	103	P	Pg	21 17 01.5	-0.4
MHLO				S	Sn	21 17 19.1	+0.5
MHLO	Agia Marina, M	1.21	103	P	Pg	21 17 01.7	-0.2
MHLO				S	Sg	21 17 17.6	0.0
MHLO	Agia Marina, M	1.21	103	P	Pg	21 17 01.7	-0.2
MHLO				S	Sg	21 17 17.6	0.0
MHLO				AML	AML	21 17 23.4	
	comp=N,2570μm,0.5s						
MHLO				AML	AML	21 17 24.3	
	comp=E,1559μm,0.5s						
VILL	Villia	1.23	14	P	Pg	21 17 02.1	-0.2
VILL				S	Sn	21 17 20.3	+1.1
VILL	Villia	1.23	14	P	Pg	21 17 02.1	-0.2
VILL				S	Sn	21 17 20.3	+1.1
KLV	Kalavryta, Ach	1.24	330	P	Pg	21 17 01.2	-1.3
KLV				S	Sb	21 17 18.7	0.0
KLV	Kalavryta, Ach	1.24	330	P	Pg	21 17 01.2	-1.3
KLV				S	Sb	21 17 18.7	0.0
KLV	Kalavryta, Ach	1.24	330	P	Pg	21 17 01.1	-1.4
KLV				AML	AML	21 17 23.8	
	comp=E,236μm,0.3s						
KLV				AML	AML	21 17 28.7	
	comp=N,172μm,0.5s						
SERI	Serifos	1.25	81	P	Pg	21 17 01.5	-1.3
SERI	Serifos	1.25	81	P	Pg	21 17 01.5	-1.3
PROD	Prodromos	1.29	359	P	Pn	21 17 02.7	-0.4
PROD	Prodromos	1.29	359	P	Pn	21 17 02.7	-0.4
PTL	Penteli	1.31	34	P	Pn	21 17 02.9	-0.5
PTL				S	Sn	21 17 21.8	+0.7
PTL	Penteli	1.31	34	P	Pn	21 17 02.9	-0.5
PTL				S	Sg	21 17 20.3	-0.4
PTL	Penteli	1.31	34	P	Pn	21 17 02.8	-0.6
PTL				S	Sg	21 17 20.3	-0.4
DRO	Drossia	1.38	316	P	Pn	21 17 03.8	-0.6
DRO				S	Sn	21 17 23.6	+0.7
DRO	Drossia	1.38	316	P	Pn	21 17 03.8	-0.6
DRO				S	Sb	21 17 22.8	+0.1
DRO	Drossia	1.38	316	P	Pn	21 17 04.6	+0.1
DRO				S	Sb	21 17 22.8	+0.1
DRO				AML	AML	21 17 29.7	
	comp=E,615μm,0.4s						
DRO				AML	AML	21 17 31.6	
	comp=N,361μm,0.3s						
DSF	Desfina	1.47	347	P	Pn	21 17 05.0	-0.7
DSF				S	Sn	21 17 25.6	+0.3
DSF	Desfina	1.47	347	P	Pn	21 17 05.5	-0.2
DSF				S	Sn	21 17 25.6	+0.3
DSF	Desfina	1.47	347	P	Pn	21 17 05.5	-0.2
LAKA	Lakka	1.48	329	P	Pn	21 17 05.3	-0.4
LAKA				S	Sn	21 17 25.6	+0.3
LAKA	Lakka	1.48	329	P	Pn	21 17 05.3	-0.4
LAKA				S	Sn	21 17 25.6	+0.3
LAKA	Lakka	1.48	329	P	Pn	21 17 05.9	+0.2
KALE	Kalithea	1.55	336	P	Pn	21 17 06.2	-0.6
KALE				S	Sg	21 17 28.2	-0.4
KALE	Kalithea	1.55	336	P	Pn	21 17 06.2	-0.6
KALE				S	Sg	21 17 28.2	-0.4
KALE	Kalithea	1.55	336	P	Pn	21 17 05.8	-0.9
TRIZ	Trizonia	1.55	334	P	Pn	21 17 05.9	-0.8
RLS	Riolos of Patr	1.59	313	P	Pn	21 17 07.2	-0.1
RLS				S	Sn	21 17 27.7	-0.4
RLS	Riolos of Patr	1.59	313	P	Pn	21 17 07.2	-0.1
RLS				S	Sn	21 17 27.7	-0.4
KARY	Karystos	1.60	48	P	Pn	21 17 07.0	-0.3
KARY				S	Sn	21 17 28.1	-0.1
KARY	Karystos	1.60	48	P	Pn	21 17 07.0	-0.3
KARY				S	Sn	21 17 28.1	-0.1
SERG	Sergoula	1.60	334	P	Pn	21 17 06.9	-0.5
SERG				S	Sn	21 17 28.6	+0.3
SERG	Sergoula	1.60	334	P	Pn	21 17 06.9	-0.5
SERG				S	Sn	21 17 28.6	+0.3
EREA	Eretria	1.65	28	P	Pn	21 17 07.7	-0.4
EREA				S	Sn	21 17 29.8	+0.3
EREA	Eretria	1.65	28	P	Pn	21 17 07.7	-0.4
EREA				S	Sn	21 17 29.8	+0.3
EREA	Eretria	1.65	28	P	Pn	21 17 07.5	-0.6
EFP	Efpalio	1.67	331	P	Pb	21 17 09.5	-0.2
EFP	Efpalio	1.67	331	P	Pb	21 17 09.5	-0.2
LKR	Lokris	1.68	2	P	Pn	21 17 08.0	-0.5
LKR				S	Sn	21 17 30.6	+0.4
LKR	Lokris	1.68	2	P	Pn	21 17 08.0	-0.5
LKR				S	Sn	21 17 30.6	+0.4
LKR	Lokris	1.68	2	P	Pn	21 17 07.4	-1.1
IMMV	Iera Moni Meta	1.73	150	P	Pn	21 17 08.7	-0.4
IMMV				S	Sn	21 17 31.4	0.0
IMMV	Iera Moni Meta	1.73	150	P	Pn	21 17 08.7	-0.4
IMMV				S	Sn	21 17 31.4	0.0
IMMV	Iera Moni Meta	1.73	150	P	Pn	21 17 07.5	-1.6
ANX	Ano Chora	1.81	334	P	Pn	21 17 10.2	-0.1
ANX				S	Sn	21 17 34.0	+0.4
ANX	Ano Chora	1.81	334	P	Pn	21 17 10.2	-0.1
ANX				S	Sn	21 17 34.0	+0.4
ZKS	Zakynthos	1.86	294	P	Pn	21 17 11.7	+0.7
ZKS	Zakynthos	1.86	294	P	Pn	21 17 11.7	+0.7
VAM	Vamos	1.87	146	P	Pn	21 17 10.7	-0.3
VAM				S	Sn	21 17 35.3	+0.5
VAM	Vamos	1.87	146	P	Pn	21 17 10.7	-0.3
VAM				S	Sn	21 17 35.3	+0.5
SMIA	Simia	1.92	6	P	Pn	21 17 11.7	-0.1
SMIA				S	Sn	21 17 37.0	+0.8
SMIA	Simia	1.92	6	P	Pn	21 17 11.7	-0.1
SMIA				S	Sn	21 17 37.0	+0.8
AGG	Agios Georgios	2.10	347	P	Pn	21 17 13.8	-0.5
AGG				S	Sn	21 17 41.3	+0.5
AGG	Agios Georgios	2.10	347	P	Pn	21 17 14.1	-0.3
AGG				S	Sn	21 17 41.3	+0.5
AGG	Agios Georgios	2.10	347	P	Pn	21 17 14.1	-0.3
EVR	Evrytania	2.14	336	P	Pn	21 17 14.9	0.0
EVR				S	Sn	21 17 42.5	+0.8
EVR	Evrytania	2.14	336	P	Pn	21 17 14.9	0.0
EVR				S	Sn	21 17 42.5	+0.8
PDO	Prodromos	2.14	320	P	Pb	21 17 16.9	-0.8
PDO	Prodromos	2.14	320	P	Pb	21 17 16.9	-0.8
SKIA	Skiathos	2.23	11	P	Pn	21 17 16.0	-0.1
SKIA				S	Sn	21 17 44.1	+0.2
SKIA	Skiathos	2.23	11	P	Pn	21 17 16.0	-0.1
SKIA				S	Sn	21 17 44.1	+0.2
IDI	Anoyia	2.31	136	P	Pn	21 17 17.3	+0.1
IDI	Anoyia	2.31	136	P	Pn	21 17 17.3	+0.1
GVD	Gavdhos	2.32	156	P	Pn	21 17 18.5	+1.2
GVD	Gavdhos	2.32	156	P	Pn	21 17 18.5	+1.2
DSL	Palaion Diasel	2.60	327	P	Pn	21 17 21.3	+0.1
DSL				S	Sn	21 17 54.7	+1.6
DSL	Palaion Diasel	2.60	327	P	Pn	21 17 21.3	+0.1
DSL				S	Sn	21 17 54.7	+1.6

*IDC **24** 21:16:36.7±0.9, 18.28S×168.40E, h0km, mb4.0/10, mb1 4.3/12, mb1mx4.1/40, mbtmp4.1/12, ML4.1/2, MS3.0/2, Ms1 3.0/2, ms1mx2.9/40, Error ellipse: s-maj=31.0km s-min=20.0km az=137.0*
*ISCJB **24** 21:16:41.3±0.6, 18.34S±0.07×168.08E±0.09, h37km, mb4.0/11, Error ellipse: s-maj=12.4km s-min=8.7km az=23.0*
*NEIC **24** 21:16:44.5±1.1, 18.33S×168.10E, h55km±11km, mb4.7/2, Error ellipse: s-maj=14.2km s-min=11.3km az=169.0*

ISC 24 21:16:41.8±0.7, 18.34S±0.08×168.3E±0.1, h37km, n30, σ0s90/26, mb4.0/11, 2D, Vanuatu Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	Mont Dzumac	4.10	205	Pn	Pn	21 17 42.6	+0.5
	3.4nm,0.3s,baz=66,slow=14,SNR=44						
DZM				Sn	Sn	21 18 26.9	-1.9
	14nm,0.3s,baz=327,slow=24,SNR=8.4						
DZM				LR	LR	21 18 37.2	
	comp=Z,109nm,19.6s,baz=80,slow=29						
MSVF	Nonsavu	9.30	88	ePn	Pn	21 19 00.2	+6.8
	34nm,1.0s						
HNR	Honiara	12.00	316	Pn	Pn	21 19 30.0	-0.4
	3.3nm,0.3s,baz=158,slow=1.1,SNR=6.4						
HNR				LR	LR	21 23 37.6	
	comp=Z,104nm,18.4s,baz=160,slow=35						
HNR	Honiara	12.00	316	Pn	Pn	21 19 29.9	-0.4
	49nm,0.7s						
CTAO	Charters Tower	20.89	262	eP	Pn	21 21 21.6	-2.1
STKA	Stephens Creek	27.59	236	P	P	21 22 26.8	+1.2
	1.8nm,0.7s,baz=86,slow=7.3,SNR=3.7						
WRA	Warramunga Arr	32.09	262	P	P	21 23 05.7	0.0
	1.3nm,1.1s,baz=81,slow=6.1,SNR=3.1						
ASAR	Alice Springs	32.49	255	P	P	21 23 09.6	+0.4
	1.1nm,0.5s,baz=82,slow=8.7,SNR=14						
FITZ	Fitzroy Crossi	40.45	263	P	P	21 24 18.1	+1.1
	1.5nm,0.6s,baz=78,slow=10,SNR=6.2						
FITZ	Fitzroy Crossi	40.45	263	eP	P	21 24 16.5	-0.6
	2.2nm,0.6s						
USRK	Ussuriysk Ar.	70.53	333	P	P	21 27 52.3	-0.5
	1.2nm,0.8s,baz=94,slow=7.6,SNR=4.3						
QSPA	South Pole Qui	71.71	180	eP	P	21 28 00.2	+0.3
	36nm,1.3s						
KLR	Kul'dur	74.69	336	P	P	21 28 18.8	+1.4
	1.1nm,0.7s,baz=87,slow=2.9,SNR=4.5						
CMAR	Chiang Mai Arr	77.32	294	P	P	21 28 35.4	+2.3
	1.4nm,0.9s,baz=128,slow=3.9,SNR=9.4						
SEY	Seymchan	81.97	353	P	P	21 28 57.9	+0.5
	1.5nm,0.6s,baz=130,slow=5.9,SNR=5.7						
SYO	Syowa Base	85.54	196	ieP	P	21 29 16.4	+0.7
SYO	Syowa Base	85.54	196	ipP	pP	21 29 32.4	+5.1
NVAR	Mina Array Bea	88.88	49	P	P	21 29 32.8	+0.1
	0.4nm,0.3s,baz=219,slow=7.0,SNR=3.7						
ILAR	Eielson Array	89.64	18	P	P	21 29 34.6	-0.7
	0.8nm,0.7s,baz=242,slow=5.5,SNR=5.3						
MKAR	Makanchi Array	100.47	316	P	Pdif	21 30 26.2	+1.0
	0.1nm,0.2s,baz=91,slow=5.8,SNR=2.6						
ARCES	ARCESS Array B	123.97	345	PKP	PKPdf	21 35 35.6	+0.2
	0.8nm,0.4s,baz=65,slow=1.9,SNR=16						
FINES	FINESS Array B	129.42	338	PKP	PKPdf	21 35 46.7	+0.7
	1.1nm,1.0s,baz=29,slow=4.4,SNR=5.6						
GERES	GERESS Array B	143.28	332	PKP	PKPdf	21 36 10.1	-2.1
	0.2nm,0.5s,baz=35,slow=3.6,SNR=4.2						
SOKA	Soboth	144.18	328	*i* PKPdf	PKPdf	21 36 12.3	-1.5
	1.3nm,0.7s						
KBA	Koelnbreinsper	144.73	330	*i* PKPdf	PKPdf	21 36 14.5	-0.4
	5.2nm,1.4s						
ABTA	Abfaltersbach	145.36	330	*i* PKPdf	PKPab	21 36 16.1	+0.2
	6.0nm,0.7s						
MOTA	Moosalm	145.56	332	*i* PKiKP	PKiKP	21 36 19.6	-0.7
RETA	Reutte	145.60	333	*i* PKPab	PKPab	21 36 17.6	+0.8
	2.7nm,0.7s						
FETA	Feichten	145.97	332	*i* PKPab	PKPab	21 36 18.7	+0.4
	6.2nm,0.9s						
RCBR	Riachuelo	146.14	133	PKPbc	PKPab	21 36 19.6	-0.2
	7.3nm,1.1s,baz=262,slow=5.7,SNR=4.7						

JMA 24 21:19:28.1±0.2, 39.11N×142.92E, h32km±3km, M3.5, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MIYJ	Miyakonagasawa	0.97	299	P	Pn	21 19 45.7	+0.2
MIYJ				S	Sn	21 19 58.0	-0.2
OFUJ	Ofunato	0.97	269	P	Pn	21 19 45.9	+0.4
OFUJ				S	Sn	21 19 58.6	+0.3
JTH	Tanohata	1.16	316	P	Pn	21 19 48.3	+0.2
JTH				S	Sn	21 20 02.6	-0.3
JOM	Ohasama	1.31	287	P	Pn	21 19 51.0	+0.8
JOM				S	Sn	21 20 07.4	+0.7
JMK	Ichinoseki	1.33	264	P	Pn	21 19 51.3	+0.8
JMK				S	Sn	21 20 07.9	+0.8
JIO	Ouri	1.39	242	P	Pn	21 19 51.7	+0.4
JRG	Rokugo	1.80	280	P	Pn	21 19 58.3	+1.4
JRG				S	Sb	21 20 21.3	-1.2
JOU	Okura	1.91	248	P	Pn	21 19 59.9	+1.4
JOU				*e*S	Sn	21 20 23.4	+1.9
JYK	Kaneyama	2.00	265	P	Pn	21 20 01.3	+1.6
JMM	Marumori	2.08	234	P	Pn	21 20 01.2	+0.5
JMM				*e*S	Sn	21 20 25.7	+0.2

IDC 24 21:27:42.3±4.2, 17.58S×72.27W, h0km, mb3.7/2, mb1 3.9/3, mb1mx3.5/40, mbtmp3.7/3, ML3.6/1, Error ellipse: s-maj=146.2km s-min=42.7km az=10.0, Near coast of Peru

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LPAZ	La Paz	4.16	73	Pn	Pn	21 28 47.5	-0.2
	2.4nm,0.3s,baz=247,slow=12,SNR=11						
SIV	San Ignacio	10.84	83	Pn	Pn	21 30 14.1	-4.8
	0.6nm,0.3s,baz=269,slow=14,SNR=2.6						
TORD	Torodi Ar. Bea	79.11	72	P	P	21 39 49.6	+0.2
	0.2nm,0.3s,baz=262,slow=4.9,SNR=4.5						
YKA	Yellowknife Ar	86.47	342	P	P	21 40 26.4	-0.1
	0.5nm,0.6s,baz=135,slow=4.9,SNR=16						

*IDC **24** 21:45:31.9±1.3, 0.53N×97.10E, h0km, mb3.6/6, mb1 3.6/8, mb1mx3.4/42, mbtmp3.5/8, ML3.4/2, MS4.0/1, Ms1 4.0/1, ms1mx2.9/41, Error ellipse: s-maj=44.4km s-min=20.2km az=57.0*
*ISCJB **24** 21:45:34.0±1.1, 0.6N±0.1×97.2E±0.2, h23km, mb3.5/6, MS4.0/1, Error ellipse: s-maj=25.8km s-min=15.5km az=155.5*

ISC 24 21:45:35.8±1.2, 0.7N±0.1×97.3E±0.2, h23km, n18, σ0s49/9, mb3.5/6, Northern Sumatera

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PSI	Prapat	2.71	38	Pn	Pn	21 46 18.1	0.0
	1.3nm,0.3s,baz=264,slow=7.7,SNR=3.1						
CMAR	Chiang Mai Arr	17.77	5	P	P	21 49 42.0	-0.5
	0.1nm,0.3s,baz=196,slow=12,SNR=6.3						
H08S2	Diego Garcia H	26.03	251	T	T	22 18 02.8	
	baz=72,slow=75,SNR=237						
H08S3	Diego Garcia H	26.04	251	T	T	22 18 03.9	
	baz=72,slow=75,SNR=310						
H08S1	Diego Garcia H	26.05	251	T	T	22 18 02.8	
	baz=72,slow=75,SNR=312						
H08N1	Diego Garcia H	27.10	255	T	T	22 20 14.9	
	baz=128						
H08N2	Diego Garcia H	27.11	255	T	T	22 20 13.3	
	baz=128						
H08N3	Diego Garcia H	27.12	255	T	T	22 20 14.5	
	baz=128						
H01W3	Cape Leeuwin H	38.73	158	T	T	22 34 02.9	
	baz=334,slow=76,SNR=7.7						
H01W2	Cape Leeuwin H	38.74	158	T	T	22 34 02.9	
	baz=334,slow=76,SNR=7.8						
H01W1	Cape Leeuwin H	38.74	158	T	T	22 34 04.1	
	baz=334,slow=76,SNR=6.7						
WRA	Warramunga Arr	41.70	121	P	P	21 53 23.2	-0.1
	0.5nm,0.8s,baz=295,slow=8.7,SNR=3.5						
ASAR	Alice Springs	43.03	127	P	P	21 53 34.4	+0.3
	0.3nm,0.5s,baz=300,slow=8.0,SNR=6.3						
MKAR	Makanchi Array	47.78	346	P	P	21 54 12.1	+0.7
	0.8nm,0.6s,baz=159,slow=7.7,SNR=12						
MKAR				LR	LR	22 17 29.9	
	comp=Z,166nm,21.6s,baz=234,slow=40						
KURBB	Kurchatov Arra	52.27	345	P	P	21 54 45.5	+0.3
	0.3nm,0.7s,baz=168,slow=6.4,SNR=4.3						
ZALV	Zalesovo Beam	54.10	351	P	P	21 54 59.3	+0.5
	0.6nm,0.4s,baz=160,slow=7.2,SNR=5.1						
FINES	FINESS Array B	80.50	333	P	P	21 57 45.6	-0.3
	0.6nm,0.8s,baz=99,slow=7.2,SNR=3.2						
CPUP	Villa Florida	144.64	222	PKP	PKPab	22 05 09.7	-0.4
	1.8nm,0.7s,baz=214,slow=8.5,SNR=3.0						

*SCB **24** 21:45:55.7±1.1, 18.21S×72.85W, h36km, Ml4.0/1, Error ellipse: s-maj=27.8km s-min=11.9km az=101.0*
*IDC **24** 21:46:01.9±2.7, 19.16S×72.08W, h0km, mb3.9/3, mb1 4.1/5, mb1mx3.8/26, mbtmp4.0/5, ML4.0/2, Error ellipse: s-maj=71.8km s-min=38.4km az

*IDC **24** 21:55:14.9±1.0,35°.01N×141°.63E,h0km,mb3.5/7, mb1 3.6/10,mb1mx3.5/46,mbtmp3.5/10,ML3.3/3,MS3.5/3, Ms1 3.5/3,ms1mx3.0/32,Error ellipse: s-maj=28.0km s-min=18.4km az=94.0*

*ISCJB **24** 21:55:16.9±0.8,34°.94N±0°.05×141°.58E±0°.08,h27km, mb3.5/7,MS4.5/1,Error ellipse: s-maj=9.6km s-min=6.5km az=175.4*

*JMA **24** 21:55:19.3±0.4,34°.92N×141°.36E,h47km±4km,M3.0*

ISC 24 21:55:19.3±1.0,34°.98N±0°.05×141°.42E±0°.10,h27km,n20, σ1§14/21,mb3.6/7,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BSO1	**Boso 1**	**0.48**	**229**	P	**Pn**	**21 55 29.3**	**-0.7**
BSO1				*eX*		21 55 36.1	
BSO3	**Boso 3**	**0.77**	**257**	P	**Pb**	**21 55 33.3**	**-0.6**
CHOJ	**Chosi**	**0.86**	**328**	P	**Pb**	**21 55 35.2**	**-0.4**
CHOJ				*eS*	**Sn**	**21 55 47.4**	**+0.1**
BSO4	**Boso 4**	**0.89**	**271**	P	**Pn**	**21 55 35.2**	**-0.7**
KTR	**Katsuura**	**0.92**	**281**	P	**Pn**	**21 55 35.4**	**-1.1**
JYT	**Yasato**	**1.60**	**322**	P	**Pb**	**21 55 47.0**	**-1.2**
JIM2	**Oshima 3**	**1.66**	**262**	P	**Pn**	**21 55 45.1**	**-1.5**
JHJ	**Hachijo jima 2**	**2.30**	**217**	Pn	**Pn**	**21 55 56.0**	**+0.6**
	7.8nm,0.3s,baz=60,slow=16,SNR=4.1						
JHJ				Sn	**Sn**	**21 56 21.8**	**-1.0**
	27nm,0.3s,baz=76,slow=22,SNR=4.8						
MJAR	**Matsushiro Arr**	**3.04**	**302**	Pn	**Pn**	**21 56 06.9**	**+1.2**
	3.0nm,0.3s,baz=125,slow=8.0,SNR=18						
MJAR				LR	LR	21 57 45.7	
	comp=Z,193nm,18.0s,baz=130,slow=48						
MAT	**Matsushiro**	**3.04**	**302**	P	**Pn**	**21 56 07.8**	**+2.1**
MAT				S	**Sn**	**21 56 43.6**	**+2.3**
JNU	**Nakatsue**	**8.94**	**261**	LR	LR	22 01 11.7	
	comp=Z,142nm,20.0s,baz=113,slow=39						
ASAJ	**Asahikawa**	**9.17**	**5**	Pn	**Pn**	**21 57 28.4**	**-1.4**
	0.6nm,0.3s,baz=208,slow=24,SNR=4.6						
CMAR	**Chiang Mai Arr**	**41.02**	**258**	P	**P**	**22 03 00.5**	**+0.1**
	0.4nm,0.8s,baz=55,slow=7.8,SNR=3.8						
ZALV	**Zalesovo Beam**	**43.32**	**314**	P	**P**	**22 03 19.4**	**+0.7**
	0.5nm,0.5s,baz=85,slow=6.2,SNR=3.7						
MKAR	**Makanchi Array**	**45.24**	**304**	P	**P**	**22 03 35.1**	**+0.8**
	0.2nm,0.3s,baz=89,slow=11,SNR=4.7						
WRA	**Warramunga Arr**	**55.03**	**188**	P	**P**	**22 04 49.2**	**+0.7**
	1.6nm,0.9s,baz=4.8,slow=7.6,SNR=11						
ASAR	**Alice Springs**	**58.76**	**188**	P	**P**	**22 05 14.9**	**-0.1**
	0.4nm,0.8s,baz=21,slow=11,SNR=3.5						
YKA	**Yellowknife Ar**	**65.59**	**30**	P	**P**	**22 05 59.5**	**-0.8**
	0.1nm,0.7s,baz=304,slow=7.0,SNR=3.3						
FINES	**FINESS Array B**	**70.64**	**333**	P	**P**	**22 06 31.5**	**-0.5**
	0.8nm,0.8s,baz=35,slow=7.0,SNR=4.4						
RAO	**Raoul Island**	**74.52**	**144**	LR	LR	22 31 18.6	
	comp=Z,246nm,21.7s,baz=115,slow=29						

*ISCJB **24** 22:01:07.9±1.1,32°.59S±0°.06×71°.05W±0°.08,h78km±10km, Error ellipse: s-maj=11.5km s-min=8.6km az=30.7*

*SJA **24** 22:01:07.7±0.6,32°.54S×70°.98W,h66km±4km,ML3.4, MW4.4*

*GUC **24** 22:01:08.4±0.3,32°.57S×70°.96W,h70km±2km,ML3.8*

ISC 24 22:01:09.1±2.3,32°.60S±0°.06×71°.0W±0°.1,h69km±18km, n18,σ0§35/30,3D,Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ROCH	**El Roble**	**0.37**	**179**	*ieP*	**Pn**	**22 01 20.9**	**0.0**
ROCH				*eS*	**Sn**	**22 01 30.2**	**+0.6**
ROCH				IAML		22 01 30.9	
	comp=E,7μm,0.5s						
ROC1	**El Roble**	**0.37**	**180**	*i* P	**Pn**	**22 01 20.9**	**-0.1**
ROC1				*i* S	**Sn**	**22 01 30.0**	**+0.3**
PEL	**Peldehue**	**0.61**	**153**	*ieP*	**Pn**	**22 01 22.3**	**-0.7**
PEL				*eS*	**Sn**	**22 01 32.8**	**-0.4**
PEL				IAML		22 01 34.4	
	comp=E,6μm,0.5s						
CLCH	**Cerro Calan**	**0.89**	**153**	*ieP*	**Pn**	**22 01 25.9**	**-0.4**
CLCH				*eS*	**Sn**	**22 01 39.1**	**+0.2**
CLCH				IAML		22 01 40.2	
	comp=E,2μm,0.2s						
STL	**Santa Lucia**	**0.89**	**159**	*eP*	**Pn**	**22 01 25.9**	**-0.3**
STL				*eS*	**Sn**	**22 01 39.1**	**+0.2**
RCDM	**Rinconada Maip**	**0.90**	**169**	*eP*	**Pn**	**22 01 25.9**	**-0.4**
RCDM				*eS*	**Sn**	**22 01 39.6**	**+0.4**
ANTU	**Antumapu**	**1.02**	**162**	*eP*	**Pn**	**22 01 27.5**	**-0.2**
ANTU				*eS*	**Sn**	**22 01 41.9**	**+0.2**
ANTU				IAML		22 01 43.0	
	comp=N,7μm,0.4s						
AUSP	**Uspallata**	**1.43**	**75**	*i* P	**Pn**	**22 01 33.1**	**-0.2**
RTLS	**Leoncito**	**1.66**	**62**	*i* P	**Pn**	**22 01 36.2**	**-0.3**
RTLS				*i* S	**Sn**	**22 01 57.3**	**+0.1**
ARCO	**CERRO ARCO**	**1.77**	**98**	*i* P	**Pn**	**22 01 37.9**	**+0.1**
ARCO				*i* S	**Sn**	**22 02 00.1**	**+0.6**
ARCO				IAML		22 02 06.5	
	comp=Z,216nm,0.2s						
ASAL	**Salagasta**	**1.84**	**90**	*i* P	**Pn**	**22 01 38.4**	**-0.2**
ASAL				*i* S	**Sn**	**22 02 01.4**	**+0.3**
AAGR	**Agrelo**	**1.90**	**105**	*i* P	**Pn**	**22 01 40.0**	**+0.5**
RTCV	**Cerro Valdivia**	**2.22**	**71**	*i* P	**Pn**	**22 01 43.4**	**-0.3**
RTCV				*i* S	**Sn**	**22 02 09.9**	**-0.4**
RTLL	**Cerro Villicun**	**2.50**	**60**	*i* P	**Pn**	**22 01 47.4**	**-0.2**
RTLL				*i* S	**Sn**	**22 02 16.7**	**-0.4**
AMOG	**MOGNA**	**2.71**	**53**	*i* P	**Pn**	**22 01 50.5**	**0.0**
ACAN	**Cantantal**	**3.25**	**85**	*i* P	**Pn**	**22 01 57.6**	**-0.1**
AGUA	**GUANDACOL**	**3.79**	**36**	*i* P	**Pn**	**22 02 05.3**	**+0.2**
VCA	**Vinchina**	**4.55**	**33**	*i* P	**Pn**	**22 02 15.5**	**-0.1**
VCA				IAML		22 03 16.2	
	comp=Z,60nm,0.3s						

*ISCJB **24** 22:03:46.8±0.5,46°.71N±0°.06×152°.95E±0°.08,h40km, mb3.8/17,MS3.2/1,Error ellipse: s-maj=10.8km s-min=4.2km az=140.6*

*MOS **24** 22:03:48.9±1.2,46°.73N×152°.89E,h61km,mb4.2/12,Error ellipse: s-maj=12.8km s-min=8.8km az=85.0*

*SKHL **24** 22:03:48.6±0.7,46°.67N×153°.00E,h60km±5km,mb4.5/2*

*IDC **24** 22:03:55.1±2.3,46°.86N×152°.68E,h95km±20km,mb3.5/18, mb1 3.7/25,mb1mx3.6/59,mbtmp3.9/25,MS3.3/2, Ms1 3.3/2,ms1mx2.8/43,Error ellipse: s-maj=18.2km s-min=11.5km az=138.0*

ISC 24 22:03:48.2±0.6,46°.69N±0°.08×152°.97E±0°.08,h40km,n79, σ1§39/79,mb3.9/17,9C-7D,Kuril Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KUR	**Kuril'sk**	**3.85**	**250**	*eP*	**Pn**	**22 04 45.9**	**+1.1**
KUR				AMB	AMB	22 04 48.7	
	50nm,0.4s						
KUR				*eS*	**Sn**	**22 05 29.1**	**+0.4**
KUR				A	A	22 05 47.4	
	120nm,0.4s						
KUR				A	A	22 05 47.4	
	100nm,0.4s						
KUR	**Kuril'sk**	**3.85**	**250**	*ePN*	**Pn**	**22 04 46.9**	**+2.1**
KUR				*eS*	**Sn**	**22 05 31.6**	**+2.9**
KUR				pmax	pmax		
	comp=Z,104nm,0.4s						
KUR				smax	smax		
	comp=E,262nm,0.8s						
KUR				smax	smax		
	comp=N,118nm,0.3s						
SKR	**Severo-Kuril's**	**4.50**	**26**	*eP*	**Pn**	**22 04 54.5**	**+0.7**
SKR				AMB	AMB	22 04 56.0	
	comp=N,40nm,0.5s						
SKR				*eS*	**Sn**	**22 05 43.7**	**-1.2**
SKR				A	A	22 05 55.0	
	comp=N,100nm,0.5s						
SKR				A	A	22 05 55.0	
	comp=N,200nm,0.5s						
SKR	**Severo-Kuril's**	**4.50**	**26**	*ePN*	**Pn**	**22 04 54.5**	**+0.7**
SKR				*eS*	**Sn**	**22 05 43.0**	**-1.9**
SKR				pmax	pmax		
	comp=Z,40nm,0.5s						
SKR				smax	smax		
	comp=N,80nm,0.5s						
SKR				smax	smax		
	comp=E,120nm,0.5s						
SHO	**Shikotan**	**5.17**	**239**	*eP*	**Pn**	**22 05 02.8**	**-0.2**
SHO				*eS*	**Sn**	**22 05 59.0**	**-2.3**
SHO				A	A	22 06 14.0	
	comp=E,200nm,0.6s						
SHO				A	A	22 06 14.0	
	comp=E,50nm,0.6s						

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SHO	**Shikotan**	**5.17**	**239**	*ePN*	**Pn**	**22 05 02.8**	**-0.2**
YUK	**Yuzh-Kuril'sk**	**5.67**	**245**	*eP*	**Pn**	**22 05 12.1**	**+2.3**
YUK				*eS*	**Sn**	**22 06 14.1**	**+0.5**
YUK				A	A	22 06 26.4	
	comp=E,220nm,0.7s						
JRA	**Rausu**	**6.18**	**246**	P	**Pn**	**22 05 19.4**	**+2.6**
JNK	**Nakash**	**6.61**	**245**	P	**Pn**	**22 05 24.6**	**+1.9**
JNK				*eS*	**Sn**	**22 06 36.9**	**+0.1**
JAK	**Akkeshi**	**6.95**	**241**	P	**Pn**	**22 05 27.3**	**0.0**
JAK				*eS*	**Sn**	**22 06 41.8**	**-3.2**
YSS	**Yuzh-Sakhalins**	**7.02**	**276**	*eP*	**Pn**	**22 05 30.4**	**+2.1**
PETK	**Petropavlovsk-**	**7.11**	**24**	P	**Pn**	22 05 36.6	+7.1
	comp=E,1.1nm,0.3s,baz=186,slow=13,SNR=12						
HRK	**Honoka**	**7.68**	**249**	*eP*	**Pn**	**22 05 39.9**	**+2.5**
UGL	**Uglegorsk**	**7.71**	**292**	*eP*	**Pn**	**22 05 39.6**	**+1.8**
JKA	**Kamikawa-asahi**	**7.74**	**254**	*eP*	**Pn**	22 05 41.9	+3.7
ASAJ	**Asahikawa**	**7.74**	**254**	P	**Pn**	22 05 41.9	+3.6
	comp=E,1.5nm,0.3s,baz=83,slow=22,SNR=9.8						
TYV	**Tymovskoe**	**7.99**	**305**	*eP*	**Pn**	**22 05 42.9**	**+1.3**
TYV	**Tymovskoe**	**7.99**	**305**	*ePN*	**Pn**	**22 05 44.0**	**+2.4**
TYV				pmax	pmax		
	comp=Z,7.0nm,0.5s						
JFR	**Furan**	**8.16**	**248**	P	Pn	22 05 47.4	+3.3
MYR	**Moyori**	**8.20**	**241**	*eS*	**Sn**	**22 07 11.7**	**-4.2**
JNB	**Noboribetsu**	**9.50**	**248**	P	**Pn**	**22 06 03.4**	**+1.0**
JKB	**Kayabe**	**9.81**	**245**	P	**Pn**	**22 06 05.9**	**-0.7**
JKB				*eS*	Sn	22 07 49.0	-6.4
JANG	**Nango**	**10.44**	**237**	P	**Pn**	**22 06 12.9**	**-2.3**
JANG				*eS*	Sn	22 08 01.2	-10
MA2	**Magadan**	**12.97**	**355**	P	**Pn**	**22 06 51.2**	**+1.5**
	comp=Z,1.4nm,0.3s,baz=187,slow=9.1,SNR=4.9						
EKMR	**Ekimchan**	**14.38**	**304**	*eP*	**Pn**	**22 07 09.2**	**+0.3**
KLR	**Kul'dur**	**14.44**	**288**	P	**P**	**22 07 13.1**	**-2.8**
	comp=Z,0.1nm,0.3s,baz=84,slow=10,SNR=3.2						
USRK	**Ussuriysk Ar.**	**14.93**	**268**	P	**Pn**	**22 07 17.4**	**+1.1**
	comp=Z,0.3nm,0.3s,baz=74,slow=12,SNR=5.3						
USRK				LR	LR	22 12 52.7	
	comp=Z,112nm,21.2s,baz=247,slow=36						
MJAR	**Matsushiro Arr**	**14.97**	**233**	P	**P**	**22 07 22.1**	**+0.3**
	comp=Z,0.4nm,0.3s,baz=35,slow=6.2,SNR=4.3						
SEY	**Seymchan**	**16.28**	**359**	P	**P**	**22 07 36.3**	**+0.2**
	comp=Z,0.4nm,0.3s,baz=160,slow=11,SNR=5.1						
BMKR	**Bomnak**	**17.20**	**307**	*eP*	**Pn**	**22 07 44.7**	**-0.5**
KSRS	**Korea Array**	**20.69**	**253**	P	**P**	**22 08 26.4**	**+1.8**
	comp=Z,1.8nm,0.7s,baz=58,slow=9.2,SNR=6.3						
JCJ	**Chichijima**	**21.34**	**207**	LR	LR	22 15 33.1	
	comp=Z,104nm,21.2s,baz=270,slow=33						
H11N2	**WAKE ISLAND Hy**	**29.21**	**152**	T	T	22 41 08.8	
	baz=340,slow=76,SNR=789						
H11N1	**WAKE ISLAND Hy**	**29.23**	**152**	T	T	22 41 13.1	
	baz=340,slow=76,SNR=603						
H11N3	**WAKE ISLAND Hy**	**29.23**	**152**	T	T	22 41 11.7	
	baz=340,slow=76,SNR=605						
H11S1	**WAKE ISLAND Hy**	**30.30**	**153**	T	T	22 42 35.2	
	baz=340,slow=76,SNR=1171						
H11S3	**WAKE ISLAND Hy**	**30.31**	**154**	T	T	22 42 34.9	
	baz=340,slow=76,SNR=1259						
H11S2	**WAKE ISLAND Hy**	**30.32**	**153**	T	T	22 42 36.1	
	baz=340,slow=76,SNR=1073						
ILAR	**Eielson Array**	**36.66**	**39**	P	**P**	**22 10 51.4**	**+0.9**
	comp=Z,0.6nm,0.9s,baz=266,slow=7.3,SNR=5.9						
INK	**Inuvik**	**41.75**	**32**	P	**P**	**22 11 34.6**	**+1.7**
	comp=Z,1.2nm,0.5s,baz=259,slow=8.0,SNR=7.7						
ZALV	**Zalesovo Beam**	**42.57**	**306**	P	**P**	**22 11 38.1**	**-1.7**
	comp=Z,0.4nm,0.5s,baz=72,slow=4.7,SNR=2.4						
ZALV				PcP	**PcP**	**22 13 30.5**	**-0.9**
	comp=Z,0.9nm,0.7s,baz=42,slow=2.4,SNR=4.8						
MKAR	**Makanchi Array**	**46.88**	**297**	P	**P**	**22 12 12.8**	**-1.4**
	comp=Z,0.9nm,0.8s,baz=68,slow=7.1,SNR=8.5						
MKAR				PcP	**PcP**	**22 13 46.3**	**-0.2**
	comp=Z,0.2nm,0.3s,baz=63,slow=3.7,SNR=3.8						
YKA	**Yellowknife Ar**	**51.03**	**37**	P	**P**	**22 12 46.6**	**+0.9**
	comp=Z,0.4nm,0.7s,baz=296,slow=6.8,SNR=6.6						
YKA				PcP	**PcP**	**22 14 01.9**	**+0.7**
	comp=Z,0.6nm,0.9s,baz=299,slow=4.2,SNR=6.5						
CMAR	**Chiang Mai Arr**	**52.26**	**256**	P	**P**	**22 12 56.8**	**+1.2**
	comp=Z,1.4nm,0.8s,baz=38,slow=7.2,SNR=13						
KKN	**Kakani**	**55.40**	**275**	*eP*	**P**	**22 13 19.3**	**+0.7**
	comp=Z,13nm,0.8s						
PKIN	**Phulchoki**	**55.45**	**275**	*eP*	**P**	**22 13 20.3**	**+1.2**
	comp=Z,3.9nm,0.6s						
DMN	**Daman**	**55.63**	**275**	*eP*	**P**	**22 13 20.8**	**+0.5**
GKN	**Gorkha**	**55.70**	**276**	*eP*	**P**	**22 13 21.0**	**+0.3**
	comp=Z,15nm,0.8s						
KOLN	**Koldanda**	**56.56**	**276**	*eP*	**P**	**22 13 26.6**	**-0.3**
	comp=Z,3.1nm,0.4s						
FINES	**FINESS Array B**	**64.05**	**335**	P	**P**	**22 14 16.2**	**-1.1**
	comp=Z,1.3nm,0.4s,baz=34,slow=7.3,SNR=29						
PDAR	**Pinedale Array**	**64.86**	**54**	P	**P**	**22 14 24.6**	**+1.4**
	comp=Z,0.9nm,0.8s,baz=259,slow=1.5,SNR=7.4						
FRB	**Frobisher Bay**	**65.14**	**19**	P	**P**	**22 14 23.6**	**-0.7**
	comp=Z,1.5nm,0.7s,baz=350,slow=5.4,SNR=3.3						
GEYT	**Alibeck**	**66.55**	**301**	LR	**P**	**22 14 33.4**	**-0.6**
	comp=Z,0.7nm,0.5s,baz=72,slow=5.2,SNR=3.8						
NB2	**NORSAR Subarra**	**68.25**	**341**	P	**P**	**22 14 43.3**	**-1.0**
	comp=Z,2.9nm,0.7s,baz=28,slow=6.2						
NOA	**NORSAR Array B**	**68.25**	**341**	P	**P**	**22 14 43.7**	**-0.7**
	comp=Z,3.0nm,0.8s,baz=27,slow=6.2,SNR=14						
WRA	**Warramunga Arr**	**68.43**	**199**	P	**P**	**22 14 45.9**	**+0.2**
	comp=Z,0.7nm,0.7s,baz=19,slow=6.6,SNR=4.3						
AKASG	**Malin Array Be**	**71.54**	**326**	P	**P**	**22 15 03.3**	**-1.3**
	comp=Z,0.9nm,0.3s,baz=36,slow=5.5,SNR=9.7						
ASAR	**Alice Springs**	**72.12**	**198**	P	**P**	**22 15 09.8**	**+1.4**
	comp=Z,0.9nm,0.6s,baz=12,slow=5.1,SNR=15						
STHS	**Stebnicka Huta**	**75.52**	**330**	*eP*	**P**	**22 15 28.6**	**+0.5**
BURAR	**Bucovina Array**	**75.58**	**326**	*i*/*eP*	**P**	**22 15 28.0**	**-0.6**
BURAR	**Bucovina Array**	**75.58**	**326**	*i*/*eP*	**P**	**22 15 28.0**	**-0.6**
TESR	**Tescani**	**75.94**	**325**	*i*/*eP*	**P**	**22 15 30.1**	**-0.4**
MORC	**Moravsky Berou**	**76.44**	**332**	*i*/*eP*	**P**	**22 15 32.3**	**-1.1**
MORC	**Moravsky Berou**	**76.44**	**332**	*i*/*eP*	**P**	**22 15 32.3**	**-1.1**
MLR	**Muntele Rosu**	**77.06**	**325**	*i*/*eP*	**P**	**22 15 37.1**	**+0.1**
MLR	**Muntele Rosu**	**77.06**	**325**	*i*/*eP*	**P**	**22 15 37.1**	**+0.1**
VRAC	**Vranov**	**77.16**	**332**	*i*/*eP*	**P**	**22 15 36.6**	**-0.8**
VRAC	**Vranov**	**77.16**	**332**	*i*/*eP*	**P**	**22 15 36.6**	**-0.8**
PSZ	**Piszkesteto**	**77.26**	**330**	*i*/*eP*	**P**	**22 15 38.0**	**-0.1**
PSZ	**Piszkesteto**	**77.26**	**330**	*i*/*eP*	**P**	**22 15 38.0**	**-0.1**
VOIR		**77.45**	**325**	*i*/*eP*	**P**	**22 15 39.1**	**-0.1**
VOIR		**77.45**	**325**	*i*/*eP*	**P**	**22 15 39.1**	**-0.1**
TXAR	**Lajitas Array**	**77.61**	**60**	P	**P**	**22 15 41.7**	**+1.4**
	comp=Z,0.3nm,0.5s,baz=289,slow=5.6,SNR=4.6						
ARR	**Arges**	**77.67**	**326**	*i*/*eP*	**P**	**22 15 41.1**	**+0.7**
BRTR	**Keskin Array B**	**78.36**	**317**	P	**P**	**22 15 44.3**	**-0.2**
	comp=Z,0.8nm,0.8s,baz=40,slow=5.3,SNR=6.3						
GERES	**GERESS Array B**	**78.47**	**334**	P	**P**	**22 15 44.3**	**-0.5**
	comp=Z,0.6nm,0.9s,baz=28,slow=6.0,SNR=4.7						
BZS	**Buzias**	**78.61**	**327**	*i*/*eP*	**P**	**22 15 44.2**	**-1.3**
BZS	**Buzias**	**78.61**	**327**	*i*/*eP*	**P**	**22 15 44.2**	**-1.3**
PLCA	**Paso Flores**	**148.30**	**95**	PKPbc	**PKPbc**	**22 23 28.7**	**-0.9**
	comp=Z,2.8nm,0.9s,baz=307,slow=5.1,SNR=2.6						

*ISCJB **24** 22:11:34.0±0.4,37°.16N±0°.03×142°.34E±0°.05,h19km, mb3.9/23,Error ellipse: s-maj=5.6km s-min=4.1km az=23.9*

*IDC **24** 22:11:33.4±0.6,37°.17N×142°.28E,h0km,mb3.8/17, mb1 4.0/21,mb1mx3.9/46,mbtmp3.9/21,ML4.1/4,Error ellipse: s-maj=19.9km s-min=14.0km az=111.0*

*NEIC **24** 22:11:34.4±2.6,37°.19N×142°.28E,h7km±16km,mb4.4/6, Error ellipse: s-maj=8.7km s-min=5.3km az=117.0*

*JMA **24** 22:11:34.9±0.3,37°.22N×142°.26E,h19km,M4.0*

ISC 24 22:11:36.0±0.5,37°.18N±0°.04×142°.13E±0°.06,h19km,n49, σ1§29/51,mb4.0/23,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**1.02**	**281**	P	**Pn**	**22 11 55.2**	**-0.2**
ONAJ	**Iwakimizuishiy**	**1.07**	**266**	P	**Pn**	**22 11 56.4**	**+0.3**
JMM	**Marumori**	**1.27**	**303**	P	**Pn**	**22 11 58.3**	**-0.4**
JHO	**Hitachi**	**1.38**	**246**	P	**Pn**	**22 12 00.1**	**-0.1**
JIO	**Ouri**	**1.41**	**334**	P	**Pn**	**22 11 59.6**	**-1.1**
JIO				*eS*	**Sn**	**22 12 17.4**	**-1.4**
JFT	**Otama**	**1.47**	**284**	P	**Pb**	**22 12 02.7**	**-0.1**
JFT				*eS*	**Sb**	**22 12 22.2**	**+1.1**
JOU	**Okura**	**1.66**	**316**	P	**Pn**	**22 12 04.9**	**+0.8**
JOU				*eS*	**Sb**	**22 12 26.3**	**-0.2**
MJAR	**Matsushiro Arr**	**3.21**	**260**	Pn	**Pn**	**22 12 27.8**	**+2.3**
	9.0nm,0.3s,baz=88,slow=15,SNR=84						
MJAR				Sn	**Sb**	**22 13 07.5**	**-3.7**
	3.5nm,0.3s,baz=71,slow=15,SNR=5.0						
MAJO	**Matsushiro**	**3.21**	**260**	*ePn*	**Pn**	**22 12 27.8**	**+2.3**
MAT	**Matsushiro**	**3.21**	**260**	P	**Pb**	**22 12 29.5**	**-3.0**
MAT				S	**Sb**	**22 13 09.7**	**-1.6**
JHJ2	**Mitsune**	**4.49**	**206**	*ePn*	**Pn**	**22 12 42.8**	**-0.1**
JHJ2				*eSn*	**Sn**	**22 13 35.7**	**+1.1**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHJ	**Hachijo jima 2**	**4.49**	**206**	Pn	**Pn**	**22 12 44.0**	**+0.9**
	54nm,0.3s,baz=334,slow=10,SNR=14						
JHJ				Sn	**Sn**	**22 13 33.9**	**-0.9**
	21nm,0.3s,baz=246,slow=20,SNR=2.1						
ERM	**Erimo**	**4.89**	**9**	*ePn*	**Pn**	**22 12 48.1**	**-0.4**
ERM					Sn	**Sn**	**22 13 45.0**	**+0.5**
ASAJ	**Asahikawa**	**6.93**	**3**	Pn	**Pn**	**22 13 17.2**	**+0.7**
	2.0nm,0.3s,baz=220,slow=11,SNR=12						
ASAJ				Sn	**Sn**	**22 14 31.2**	**-3.7**
	baz=270,slow=20,SNR=1.6						
ASAJ	**Asahikawa**	**6.93**	**3**	*ePn*	**Pn**	**22 13 15.4**	**-1.2**
ASAJ				*eSn*	**Sn**	**22 14 35.3**	**+0.4**
CBIJ	**Chichi jima**	**10.06**	**180**	Pn	**Pn**	**22 13 57.2**	**-2.3**
JCJ	**Chichijima**	**10.06**	**180**	Pn	**Pn**	**22 13 57.2**	**-2.3**
	5.4nm,0.3s,baz=37,slow=20,SNR=4.6						
JNU	**Nakatsue**	**10.07**	**250**	Pn	Pn	22 14 03.4	+3.8
	0.3nm,0.3s,baz=17,slow=4.1,SNR=4.2						
USRK	**Ussuriysk Ar.**	**10.41**	**315**	Pn	Pn	22 14 10.7	+6.5
	0.1nm,0.3s,baz=113,slow=13,SNR=4.4						
SEY	**Seymchan**	**26.54**	**10**	P	**P**	**22 17 12.8**	**+0.6**
	0.8nm,0.4s,baz=205,slow=12,SNR=4.1						
H11N2	**WAKE ISLAND Hy**	**27.73**	**122**	T	T	22 46 17.6	
	baz=315,slow=75,SNR=72						
H11N1	**WAKE ISLAND Hy**	**27.74**	**122**	T	T	22 46 17.7	
	baz=315,slow=75,SNR=54						
H11N3	**WAKE ISLAND Hy**	**27.75**	**122**	T	T	22 46 15.4	
	baz=315,slow=75,SNR=48						
ENH	**Enshi**	**27.92**	**265**	*eP*	**P**	**22 17 25.8**	**+0.7**
	13nm,1.6s						
SONM	**Songino Array**	**28.18**	**304**	P	**P**	**22 17 27.3**	**0.0**
	0.7nm,0.5s,baz=104,slow=10,SNR=2.7						
H11S1	**WAKE ISLAND Hy**	**28.46**	**124**	T	T	22 47 08.2	
	baz=317,slow=76,SNR=80						
H11S3	**WAKE ISLAND Hy**	**28.46**	**124**	T	T	22 47 08.3	
	baz=317,slow=76,SNR=50						
H11S2	**WAKE ISLAND Hy**	**28.48**	**124**	T	T	22 47 09.5	
	baz=317,slow=76,SNR=66						
TIXI	**Tiksi**	**35.21**	**353**	*eP*	**P**	**22 18 27.6**	**-0.9**
	3.2nm,0.3s						
ZALV	**Zalesovo Beam**	**42.24**	**312**	P	**P**	**22 19 28.1**	**+0.4**
	0.4nm,0.5s,baz=79,slow=9.4,SNR=3.8						
MKAR	**Makanchi Array**	**44.53**	**302**	P	**P**	**22 19 47.7**	**+1.4**
	0.4nm,0.4s,baz=87,slow=8.6,SNR=4.7						
KURK	**Kurchatov**	**46.29**	**308**	*eP*	**P**	**22 20 00.4**	**+0.2**
	4.8nm,0.7s						
ILAR	**Eielson Array**	**49.06**	**32**	P	**P**	**22 20 21.6**	**+0.1**
	0.7nm,0.7s,baz=264,slow=6.1,SNR=9.7						
TKM2	**Tokmak 2**	**50.06**	**299**	*eP*	**P**	**22 20 30.8**	**+1.1**
	1.4nm,0.7s						
INK	**Inuvik**	**53.99**	**27**	P	**P**	**22 20 58.5**	**+0.2**
	0.6nm,0.4s,baz=273,slow=7.0,SNR=4.4						
WRAB	**Tennant Creek**	**57.28**	**189**	*eP*	**P**	**22 21 22.4**	**-0.1**
	6.0nm,1.1s						
WRA	**Warramunga Arr**	**57.29**	**189**	P	**P**	**22 21 22.6**	**+0.1**
	1.1nm,0.5s,baz=6.7,slow=7.0,SNR=25						
ABKAR	**Akbulak array**	**58.28**	**310**	*eP*	**P**	**22 21 29.8**	**+0.6**
	1.6nm,1.1s						
ASAR	**Alice Springs**	**61.02**	**189**	P	**P**	**22 21 49.0**	**+0.6**
	0.6nm,0.7s,baz=12,slow=8.3,SNR=8.5						
RES	**Resolute Bay**	**62.31**	**15**	P	**P**	**22 21 57.0**	**+0.6**
	1.0nm,0.6s,baz=309,slow=7.7,SNR=5.8						
YKA	**Yellowknife Ar**	**63.39**	**30**	P	**P**	**22 22 03.7**	**-0.1**
	0.6nm,1.0s,baz=302,slow=5.8,SNR=4.3						
FINES	**FINESS Array B**	**68.95**	**332**	P	**P**	**22 22 40.3**	**+0.9**
	1.3nm,0.7s,baz=58,slow=7.2,SNR=7.6						
NOA	**NORSAR Array B**	**74.27**	**338**	P	**P**	**22 23 12.8**	**+1.2**
	0.4nm,0.7s,baz=39,slow=5.8,SNR=2.7						
AKASG	**Malin Array Be**	**74.53**	**323**

70nm,0.3s
YAYL Yayladag 0.46 213 *i* P **Pg 22 32 02.4 -0.3**
YAYL *i* S **Sb 22 32 09.5 -1.0**
YAYL Yayladag 0.46 213 P **Pg 22 32 02.4 -0.3**
YAYL S **Sb 22 32 09.5 -1.0**
KUZU Kuzuini 0.64 56 *i* P **Pg 22 32 05.8 -0.2**
KUZU *i* S **Sg 22 32 14.7 +0.3**
KUZU Kuzuini 0.64 56 P **Pg 22 32 05.8 -0.2**
KUZU S **Sg 22 32 14.7 +0.3**
ARNB Al Arnab 0.67 213 *e*P **Pb 22 32 07.1 -0.1**
ARNB *e*S **Sb 22 32 16.0 -0.4**
16nm,1.7s
YURE YUREGIR 0.75 303 *i* P **Pn 22 32 10.3 +0.4**
YURE YUREGIR 0.75 303 P **Pn 22 32 10.4 +0.4**
KAMA Osmaniye 0.79 15 *i* P **Pb 22 32 09.5 +0.2**
KAMA *i* S **Sb 22 32 19.7 -0.3**
CEYT Ceyhan 0.80 318 *e*PG **Pg 22 32 08.8 -0.2**
CEYT Ceyhan 0.80 318 *e*Pg **Pg 22 32 08.8 -0.2**
SLNF Slenfeh 0.84 191 *e*P **Pb 22 32 10.1 -0.1**
SLNF *e*S **Sb 22 32 21.2 -0.2**
35nm,0.3s
GAZ Gaziantep 0.98 40 *e*PG **Pb 22 32 12.3 -0.3**
GAZ *e*SG **Sb 22 32 25.8 +0.3**
GAZ Gaziantep 0.98 40 *e*Pg **Pb 22 32 12.3 -0.3**
GAZ *e*Sg **Sb 22 32 25.8 +0.3**
HCB Kahramanmara¯ 1.00 23 *i* P **Pn 22 32 13.4 0.0**
HCB *i* S **Sn 22 32 27.3 -0.2**
KMRS Kahramanmaras 1.15 19 *e*PN **Pn 22 32 15.4 -0.1**
KMRS Kahramanmaras 1.15 19 *e*Pn **Pn 22 32 15.4 -0.1**
KOZT Kozan 1.16 336 *e*PN **Pb 22 32 15.3 -0.2**
KOZT Kozan 1.16 336 *e*Pn **Pb 22 32 15.3 -0.2**
GZT Gaziantep 1.31 44 *i* P **Pg 22 32 18.6 -0.2**
GZT *i* S **Sg 22 32 36.0 +0.2**
IKL Isikli 2.21 266 *e*PN **Pn 22 32 31.5 +1.4**
IKL Isikli 2.21 266 *e*Pn **Pn 22 32 31.5 +1.4**

IDC ***24*** *22:37:53.5±1.3,36˚97N×142˚08E,h0km,mb3.3/4, mb1 3.5/5,mb1mx3.3/43,mbtmp3.3/5,ML3.4/1,Error ellipse: s-maj=36.0km s-min=30.1km az=112.0*
ISCJB ***24*** *22:37:55.6±1.1,36˚65N±0˚09×141˚91E±0˚08,h19km, mb3.3/4,Error ellipse: s-maj=13.9km s-min=8.4km az=22.8*
JMA ***24*** *22:37:56.6±0.2,36˚56N×141˚80E,h61km,M3.1*
ISC 24 22:37:56.1±1.3,36˚8N±0˚1×141˚90E±0˚08,h19km,n12, σ1s33/13,mb3.4/4,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.92**	**287**	P			**Pg**	**22 38 14.2**	**+0.2**
ONAJ				S			**Sn**	**22 38 27.1**	**+0.4**
JHO	**Hitachi**	**1.09**	**259**	P			**Pn**	**22 38 14.5**	**-1.8**
JHO				*e*S			**Sb**	**22 38 27.9**	**-2.2**
JFT	**Otama**	**1.42**	**299**	P			**Pg**	**22 38 22.9**	**-0.6**
JFT				S			**Sg**	**22 38 42.0**	**-0.1**
MJAR	**Matsushiro Arr**	**2.98**	**266**	Pn			**Pn**	**22 38 43.1**	**+0.8**
	4.9nm,0.3s,baz=97,slow=9.2,SNR=49								
MJAR				Sn			**Sn**	**22 39 18.9**	**+1.4**
	2.4nm,0.3s,baz=201,slow=27,SNR=9.1								
MAT	**Matsushiro**	**2.98**	**266**	P			**Pn**	**22 38 42.9**	**+0.6**
MAT				S			**Sn**	**22 39 19.3**	**+1.8**
H11N2	**WAKE ISLAND Hy**	**27.71**	**121**	T			T	23 13 05.0	
	baz=314,slow=76,SNR=3.5								
H11N1	**WAKE ISLAND Hy**	**27.72**	**121**	T			T	23 13 05.3	
	baz=314,slow=76,SNR=2.5								
H11N3	**WAKE ISLAND Hy**	**27.73**	**121**	T			T	23 12 56.7	
	baz=314,slow=76,SNR=3.6								
MKAR	**Makanchi Array**	**44.55**	**302**	P			**P**	**22 46 07.9**	**+1.3**
	0.1nm,0.2s,baz=82,slow=7.9,SNR=2.8								
WRA	**Warramunga Arr**	**56.92**	**188**	P			P	22 47 42.8	+2.9
	0.3nm,0.5s,baz=1.6,slow=7.6,SNR=2.5								
ASAR	**Alice Springs**	**60.64**	**188**	P			**P**	**22 48 06.2**	**+0.4**
	0.3nm,0.8s,baz=29,slow=8.5,SNR=2.5								
YKA	**Yellowknife Ar**	**63.79**	**30**	P			**P**	**22 48 25.5**	**-1.0**
	0.1nm,0.8s,baz=303,slow=5.8,SNR=4.7								

NIED ***24*** *22:44:00,36˚40N×141˚00E,h59km,Mw4.2 Best double couple: M0 2.39000×10^15 NP1:φs282.00000°,δ13.00000°, λ77.00000°. NP2:φs116.00000°,δ77.00000°,λ93.00000°.*
ISCJB ***24*** *22:44:11.6±0.9,36˚38N±0˚04×141˚04E±0˚07,h34km±8km, mb3.6/12,Error ellipse: s-maj=9.8km s-min=5.7km az=19.9*
JMA ***24*** *22:44:12.1±0.1,36˚37N×140˚97E,h38km±1km,M3.6*
JMA Felt II J1.
IDC ***24*** *22:44:14.4±1.8,36˚34N×141˚01E,h42km±16km,mb3.5/11, mb1 3.6/16,mb1mx3.4/64,mbtmp3.7/16,ML3.3/4,MS2.8/1, Ms1 2.8/1,ms1mx2.5/53,Error ellipse: s-maj=14.2km s-min=9.6km az=79.0*
ISC 24 22:44:13.2±1.5,36˚42N±0˚05×140˚85E±0˚07,h27km±10km, n30,σ0s99/32,mb3.7/12,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
JHO	**Hitachi**	**0.29**	**311**	P			**Pn**	**22 44 21.1**	**-0.7**
JHO				S			**Sn**	**22 44 27.3**	**0.0**
JYT	**Yasato**	**0.56**	**250**	P			**Pb**	**22 44 24.5**	**0.0**
JYT				*e*S			**Sn**	**22 44 33.3**	**-0.5**
ONAJ	**Iwakimizuishiy**	**0.68**	**357**	P			**Pb**	**22 44 25.8**	**-0.8**
ONAJ				*e*S			**Sb**	**22 44 35.4**	**-0.3**
JAG	**Ashikaga**	**1.12**	**271**	P			**Pn**	**22 44 33.1**	**-0.1**
JAG				S			**Sb**	**22 44 48.6**	**+0.4**
JFT	**Otama**	**1.17**	**340**	P			**Pb**	**22 44 34.5**	**-0.3**
JFT				S			**Sb**	**22 44 50.1**	**+0.5**
MJAR	**Matsushiro Arr**	**2.13**	**274**	P			**Pn**	**22 44 48.0**	**+0.9**
	20nm,0.3s,baz=110,slow=9.1,SNR=83								
MJAR				S			**Sb**	**22 45 16.6**	**-0.5**
	6.5nm,0.3s,baz=71,slow=15,SNR=6.1								
MJAR				LR			LR	22 45 52.4	
	comp=Z,201nm,21.6s,baz=295,slow=44								
MAT	**Matsushiro**	**2.13**	**274**	P			**Pn**	**22 44 48.2**	**+1.1**
MAT				S			**Sb**	**22 45 17.2**	**+0.1**
JHJ	**Hachijo jima 2**	**3.41**	**195**	P			**Pn**	**22 45 05.8**	**+1.2**
	6.0nm,0.3s,baz=14,slow=17,SNR=1.7								
JHJ				S			**Sn**	**22 45 42.9**	**-1.3**
	8.9nm,0.3s,baz=60,slow=20,SNR=2.6								
ASAJ	**Asahikawa**	**7.80**	**9**	P			**Pn**	**22 46 04.7**	**-0.3**
	0.4nm,0.3s,baz=249,slow=14,SNR=3.0								
ASAJ				S			**Sn**	**22 47 33.2**	**+0.8**
	0.5nm,0.3s,baz=255,slow=20,SNR=2.3								
USRK	**Ussuriysk Ar.**	**10.30**	**322**	P			**Pn**	**22 46 40.0**	**+0.9**
	0.1nm,0.3s,baz=138,slow=12,SNR=2.6								
KSRS	**Korea Array**	**10.40**	**280**	P			Pn	22 46 43.8	+3.2
	0.3nm,0.3s,baz=83,slow=12,SNR=3.5								
KLR	**Kul'dur**	**14.42**	**335**	P			**Pn**	**22 47 35.1**	**-0.3**
	0.1nm,0.3s,baz=172,slow=7.1,SNR=2.9								
SEY	**Seymchan**	**27.48**	**11**	P			**P**	**22 50 00.5**	**+3.5**
	0.9nm,0.6s,baz=257,slow=7.8,SNR=4.2								
SONM	**Songino Array**	**27.76**	**305**	P			**P**	**22 49 58.8**	**-1.0**
	1.5nm,0.7s,baz=103,slow=6.4,SNR=2.7								
H11N2	**WAKE ISLAND Hy**	**28.24**	**119**	T			T	23 19 22.2	
	baz=313,slow=75,SNR=34								
H11N1	**WAKE ISLAND Hy**	**28.25**	**119**	T			T	23 19 22.7	
	baz=313,slow=75,SNR=37								
H11N3	**WAKE ISLAND Hy**	**28.26**	**119**	T			T	23 19 21.6	
	baz=313,slow=75,SNR=30								
H11S1	**WAKE ISLAND Hy**	**28.92**	**121**	T			T	23 20 12.4	
	baz=314								
H11S3	**WAKE ISLAND Hy**	**28.92**	**121**	T			T	23 20 13.9	
	baz=314,slow=74								
H11S2	**WAKE ISLAND Hy**	**28.94**	**121**	T			T	23 20 13.9	
	baz=314,slow=74								
ZALV	**Zalesovo Beam**	**41.99**	**313**	P			**P**	**22 52 02.4**	**+0.5**
	2.3nm,0.6s,baz=95,slow=7.5,SNR=16								
MKAR	**Makanchi Array**	**44.06**	**303**	P			**P**	**22 52 19.1**	**+0.3**
	1.0nm,0.7s,baz=88,slow=9.8,SNR=10								
ILAR	**Eielson Array**	**50.26**	**32**	P			**P**	**22 53 06.8**	**+0.1**
	0.6nm,0.8s,baz=249,slow=5.4,SNR=5.0								
WRA	**Warramunga Arr**	**56.39**	**187**	P			**P**	**22 53 50.6**	**-1.6**
	0.5nm,0.6s,baz=4.6,slow=7.2,SNR=3.5								
ARU	**Arti**	**56.52**	**319**	P			**P**	**22 53 52.8**	**0.0**
	1.6nm,0.4s,baz=80,slow=6.1,SNR=5.0								
ASAR	**Alice Springs**	**60.12**	**187**	P			**P**	**22 54 17.0**	**-1.3**
	0.4nm,0.9s,baz=13,slow=7.0,SNR=4.9								
YKA	**Yellowknife Ar**	**64.57**	**30**	P			**P**	**22 54 47.5**	**-0.1**
	0.1nm,0.5s,baz=309,slow=7.2,SNR=3.3								
FINES	**FINESS Array B**	**69.14**	**332**	P			**P**	**22 55 16.5**	**-0.2**
	0.9nm,0.9s,baz=27,slow=12,SNR=3.5								
AKASG	**Malin Array Be**	**74.50**	**322**	P			**P**	**22 55 48.7**	**-0.4**
	0.2nm,0.3s,baz=52,slow=6.2,SNR=3.3								
PDAR	**Pinedale Array**	**78.42**	**45**	P			**P**	**22 56 11.9**	**+0.1**
	0.2nm,0.6s,baz=260,slow=5.1,SNR=2.4								

ISCJB ***24*** *22:44:14.5±0.3,35˚38S±0˚05×17˚03W±0˚06,h10km, mb4.8/50,MS5.4/175,Error ellipse: s-maj=8.0km s-min=7.1km az=155.6*
IDC ***24*** *22:44:14.2±0.6,35˚51S×17˚00W,h0km,mb4.3/18, mb1 4.4/18,mb1mx4.3/36,mbtmp4.3/18,MS4.8/8, Ms1 4.8/8,ms1mx4.5/23,Error ellipse: s-maj=19.9km s-min=15.6km az=177.0*
NEIC ***24*** *22:44:15.8±0.3,35˚42S×16˚96W,h10km,mb5.0/30, MS5.4/158,MW5.6,Error ellipse: s-maj=11.4km s-min=8.7km az=177.0*
NEIC ***24*** *22:44:16.0±0.0,35˚44S×17˚42W,h15km,Moment Tensor Solution. s6 Moment tensor: Scale 10^17Nm; Mrr0.60; Mθθ-0.20; Mφφ-0.40; Mrθ-1.30; Mθφ2.80; Mφr0.30; Best double couple: M0 3.00000×10^17 NP1:φs273.00000°, δ86.00000°,λ26.00000°. NP2:φs181.00000°,δ64.00000°, λ175.00000°. Principal axes: T 2.7000, Plg20.0000°, Azm140.0000°; N 0.7000, Plg63.0000°, Azm280.0000°; P -3.4000, Plg15.0000°, Azm44.0000°;*
GCMT ***24*** *22:44:16.1±0.1,35˚47S×16˚82W,h20km,MW5.6/116, Moment Tensor Solution. s75,c117; s116,c274; Duration: 1s5 Moment tensor: Scale 10^17Nm; Mrr-0.04±.04; Mθθ-1.06±.04; Mφφ1.09±.04; Mrθ-0.49±.09; Mθφ2.35±.04; Mφr0.94±.10; Best double couple: M0 2.78900×10^17 NP1:φs168.00000°,δ85.00000°, λ-159.00000°. NP2:φs77.00000°,δ69.00000°,λ-5.00000°. Principal axes: T 2.7050, Plg11.0000°, Azm301.0000°; N 0.1590, Plg68.0000°, Azm180.0000°; P -2.8740, Plg18.0000°, Azm35.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface/mantle waves, cutoff=50s.*
BJI ***24*** *22:44:18.7,35˚20S×17˚00W,h10km,mB5.6/11,Ms5.9/5, Ms7 5.5/6*
ISC 24 22:44:15.5±0.4,35˚8S±0˚1×17˚07W±0˚07,h10km,n290, σ1s86/104,mb4.8/52,MS5.3/174,6C-8D,Southern Mid-Atlantic Ridge

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
H09W1	**TRISTAN DA CUN**	**4.04**	**110**	Pn			**Pn**	**22 45 14.6**	**-2.7**
	SNR=2585								
H09W1				T			T	22 49 27.2	
	SNR=95								
H09N1	**TRISTAN DA CUN**	**4.04**	**110**	Pn			**Pn**	**22 45 14.8**	**-2.6**
	SNR=4454								
H09N1				T			T	22 49 19.5	
	SNR=101								
TRIS	**Tristan da Cun**	**4.04**	**110**	*e*Pn			Pn	22 45 14.1	-3.3
SHEL	**Horse Pasture**	**22.19**	**30**	*e*P			P	22 49 08.4	-3.6
	633nm,1.7s								
HOPE	**Hope Point**	**22.89**	**210**	PFAKE				22 49 30.0	+11
HOPE				LR			LR		
	comp=Z,2μm,22.0s								
H10S2	**ASCENSION HYDR**	**26.80**	**5**	T			T	23 17 31.4	
	baz=184,slow=74,SNR=210								
H10S3	**ASCENSION HYDR**	**26.80**	**5**	T			T	23 17 29.9	
	baz=184,slow=74,SNR=192								
H10S1	**ASCENSION HYDR**	**26.82**	**5**	T			T	23 17 35.0	
	baz=184,slow=74,SNR=187								
H10N1	**ASCENSION HYDR**	**27.92**	**5**	T			T	23 18 56.5	
	baz=191,slow=79,SNR=36								
H10N3	**ASCENSION HYDR**	**27.92**	**5**	T			T	23 18 55.6	
	baz=191,slow=79,SNR=156								
H10N2	**ASCENSION HYDR**	**27.93**	**5**	T			T	23 18 54.9	
	baz=191,slow=79,SNR=70								
SPB	**Sao Paulo**	**28.92**	**287**	PFAKE				22 50 30.0	+15
SPB				LR			LR		
	comp=Z,2μm,21.0s								
SUR	**Sutherland**	**31.43**	**95**	*e*P			**P**	**22 50 36.9**	**-0.3**
	comp=Z,128nm,1.9s								
SUR				LR			LR		
	comp=Z,2μm,20.0s								
EFI	**East Falkland**	**33.10**	**228**	PFAKE				22 51 10.0	+19
EFI				LR			LR		
	comp=Z,3μm,19.0s								
RCBR	**Riachuelo**	**34.48**	**325**	*e*P			P	22 51 00.1	-3.6
	comp=Z,39nm,1.4s								
RCBR				LR			LR		
	comp=Z,2μm,21.0s								
TSUM	**Tsumeb**	**34.68**	**71**	*e*P			**P**	**22 51 03.0**	**-2.6**
	comp=Z,24nm,1.6s								
TSUM				LR			LR		
	comp=Z,372nm,22.0s								
CPUP	**Villa Florida**	**35.54**	**274**	P			**P**	**22 51 13.5**	**+0.7**
	comp=Z,5.0nm,0.9s,baz=134,slow=8.0,SNR=5.4								
CPUP				LR			LR	23 03 11.2	
	comp=Z,2μm,20.3s,baz=123,slow=32								
VNA2	**Neumayer--Watz**	**35.57**	**175**	P			P	22 51 16.6	+4.0
	baz=341,slow=11								
TRQA	**Tornquist**	**35.71**	**253**	*e*P			**P**	**22 51 13.8**	**-0.4**
	comp=Z,71nm,1.9s								
TRQA				LR			LR		
	comp=Z,2μm,21.0s								
VNA3	**Neumayer Olymp**	**35.73**	**176**	P			P	22 51 18.0	+4.0
BOSA	**Boshof**	**36.31**	**91**	P			**P**	**22 51 19.9**	**+0.3**
	comp=Z,2.5nm,0.5s,baz=258,slow=8.3,SNR=5.1								
BOSA				LR			LR	23 03 00.7	
	comp=Z,824nm,20.0s,baz=244,slow=31								
BOSA	**Boshof**	**36.31**	**91**	*e*P			**P**	**22 51 20.2**	**+0.7**
SNAA	**Sanae**	**36.71**	**173**	P			P	22 51 28.0	+5.6
SNAA	**Sanae**	**36.71**	**173**	*e*P			P	22 51 25.9	+3.5
	comp=Z,45nm,1.9s								
LBTB	**Lobatse**	**38.08**	**86**	P			**P**	**22 51 33.4**	**-1.2**
	comp=Z,4.2nm,0.7s,baz=256,slow=8.9,SNR=6.4								
LBTB	**Lobatse**	**38.08**	**86**	*e*P			**P**	**22 51 33.4**	**-1.2**
	comp=Z,33nm,1.5s								
PMSA	**Palmer Station**	**40.20**	**209**	P			P	22 51 56.9	+5.3
	comp=Z,110nm,1.2s,baz=25,slow=9.6,SNR=6.2								
PLCA	**Paso Flores**	**41.74**	**247**	P			**P**	**22 52 03.0**	**-1.8**
	comp=Z,2.8nm,1.0s,baz=86,slow=8.2,SNR=2.9								
PLCA				LR			LR	23 07 29.3	
	comp=Z,1μm,20.3s,baz=122,slow=33								
PLCA	**Paso Flores**	**41.74**	**247**	*e*P			**P**	**22 52 03.0**	**-1.8**
	comp=Z,20nm,1.3s								
MATP	**Matopo**	**42.63**	**81**	*i* P			**P**	**22 52 09.9**	**-2.4**
MATP	**Matopo**	**42.63**	**81**	P			**P**	**22 52 10.8**	**-1.5**
	comp=Z,6.8nm,0.6s,baz=238,slow=9.2,SNR=21								
LIC	**Lamto**	**43.30**	**18**	*e*P			P	22 52 14.9	-2.7
	comp=Z,32nm,1.1s								
KIC	**Kosan Boka**	**43.50**	**18**	*e*P			P	22 52 16.5	-2.7
	comp=Z,96nm,1.5s								
TIC	**Toumodi**	**43.71**	**17**	*e*P			P	22 52 17.9	-3.0
DBIC	**Dimbokro**	**43.77**	**18**	P			P	22 52 18.7	-2.6
	comp=Z,6.3nm,0.8s,baz=185,slow=8.6,SNR=6.3								
DBIC				LR			LR	23 05 53.8	
	comp=Z,636nm,20.5s,baz=174,slow=30								
DBIC	**Dimbokro**	**43.77**	**18**	*e*P			P	22 52 17.2	-4.1
	comp=Z,32nm,1.3s								
SIV	**San Ignacio**	**43.79**	**285**	P			**P**	**22 52 22.7**	**+1.0**
	comp=Z,12nm,0.8s,baz=133,slow=7.6,SNR=21								
LSZ	**Lusaka**	**45.19**	**75**	*e*P			**P**	**22 52 32.2**	**-0.7**
	comp=Z,10nm,0.9s								
LSZ				LR			LR		
	comp=Z,873nm,19.0s								
SYO	**Syowa Base**	**45.24**	**155**	*e*P			**P**	**22 52 32.6**	**+0.1**
LCO	**Las Campanas**	**45.31**	**263**	PFAKE				22 52 50.0	+16
LCO				LR			LR		
	comp=Z,1μm,20.0s								
LVC	**Limon Verde**	**46.62**	**272**	PFAKE				22 53 00.0	+15
LVC				LR			LR		
	comp=Z,2μm,22.0s								
PB01	**IPOC Station P**	**47.85**	**273**	*e*P			**P**	**22 52 54.7**	**+0.9**
	comp=Z,50nm,1.7s								
PB11	**IPOC Station P**	**48.63**	**275**	*e*P			**P**	**22 52 59.9**	**0.0**
	comp=Z,70nm,1.2s								
LPAZ	**La Paz**	**49.23**	**279**	P			**P**	**22 53 03.9**	**-1.2**
	comp=Z,5.3nm,0.9s,baz=97,slow=6.5,SNR=19								
LPAZ				LR			LR	23 13 44.2	
	comp=Z,1μm,19.9s,baz=116,slow=36								
LPAZ	**La Paz**	**49.23**	**279**	*e*P			**P**	**22 53 03.9**	**-1.2**
LPAZ				*es*P			**pP**	**22 53 04.5**	**-3.7**
SAML	**Samuel**	**49.70**	**291**	*e*P			**P**	**22 53 08.7**	**+0.8**
	comp=Z,46nm,1.5s								
SAML				LR			LR		
	comp=Z,2μm,21.0s								
CRZF	**Crozet Islands**	**51.49**	**124**	*e*P			P	22 53 24.9	+3.8
	comp=Z,331nm,0.2s								
TOA0	**Torodi Ar. Sit**	**51.81**	**24**	*e*P			P	22 53 20.6	-3.1
TORD	**Torodi Ar. Bea**	**51.81**	**24**	P			P	22 53 20.4	-3.3
	comp=Z,6.5nm,0.9s,baz=201,slow=6.7,SNR=27								
TORD				LR			LR	23 10 43.9	
	comp=Z,652nm,20.7s,baz=195,slow=31								
TOA1	**Torodi Ar. Sit**	**51.81**	**23**	*e*P			P	22 53 20.4	-3.4
	comp=Z,10nm,1.0s								
PTGA	**Pitinga**	**52.92**	**301**	*e*P			**P**	**22 53 32.7**	**+0.7**
	comp=Z,17nm,1.1s								
PTGA				LR			LR		
MAW	**Mawson**	**53.69**	**152**	P			**P**	**22 53 38.4**	**+1.4**
	comp=Z,2.8nm,0.7s,baz=246,slow=8.7,SNR=9.3								
MAW	**Mawson**	**53.69**	**152**	*e*P			**P**	**22 53 38.4**	**+1.4**
	comp=Z,8.0nm,1.8s								
QSPA	**South Pole Qui**	**54.46**	**180**	*e*P			P	22 53 47.4	+4.5
QSPA				*ep*P			*s*P	22 53 47.8	+0.4
QSPA				LR			LR		
	comp=Z,999nm,20.0s								
NNA	**Nana**	**58.62**	**278**	PFAKE				22 54 30.0	+17
NNA				LR			LR		
	comp=Z,647nm,21.0s								
KMBO	**Kilima Mbogo**	**60.96**	**68**	P			**P**	**22 54 29.5**	**+0.1**
	comp=Z,0.5nm,0.2s,baz=205,slow=17,SNR=3.9								
KMBO	**Kilima Mbogo**	**60.96**	**68**	*e*P			**P**	**22 54 29.5**	**+0.1**
	comp=Z,5.0nm,1.3s								
KMBO				LR			LR		
	comp=Z,1μm,21.0s								
TAM	**Tamanrasset**	**62.07**	**24**	*e*P			**P**	**22 54 34.8**	**-1.7**
	comp=Z,9.4nm,1.2s								
TAM				LR			LR		
	comp=Z,792nm,21.0s								
BBGH	**Gun Hill**	**63.09**	**312**	PFAKE				22 54 50.0	+6.7
BBGH				LR			LR		
	comp=Z,756nm,19.0s								
GRGR	**Grenville**	**63.59**	**310**	PFAKE				22 55 00.0	+13
GRGR				LR			LR		
	comp=Z,606nm,20.0s								
FDF	**Fort de France**	**65.29**	**312**	PFAKE				22 55 10.0	+12
FDF				LR			LR		
	comp=Z,428nm,19.0s								
CHIC	**Chingaza**	**66.50**	**295**	*e*P			**P**	**22 55 05.6**	**-0.5**
SBA	**Scott Base**	**66.60**	**181**	*e*P			P	22 55 11.2	+5.8
	comp=Z,23nm,1.3s								
SBA				LR			LR		
	comp=Z,1μm,22.0s								
RUSC	**La Rusia**	**66.87**	**296**	*e*P			**P**	**22 55 06.8**	**-1.8**
VNDA	**Vanda**	**66.95**	**180**	P			P	22 55 10.4	+2.7
	comp=Z,1.7nm,1.0s,baz=206,slow=2.1,SNR=6.1								
VNDA	**Vanda**	**66.95**	**180**	*e*P			P	22 55 13.8	+6.2
ROSC	**El Rosal**	**67.08**	**295**	LR			LR	23 22 53.5	
	comp=Z,2μm,20.2s,baz=176,slow=35								
ROSC	**El Rosal**	**67.08**	**295**	*e*P			**P**	**22 55 07.4**	**-2.4**
	comp=Z,6.5nm,1.1s								
SDV	**Santo Domingo**	**67.18**	**300**	PFAKE				22 55 20.0	+10
SDV				LR			LR		
	comp=Z,1μm,21.0s								
OTAV	**Otavalo**	**67.23**	**288**	*e*P			**P**	**22 55 11.1**	**+0.2**
	comp=Z,16nm,1.3s								
OTAV				LR			LR		
	comp=Z,3μm,21.0s								
OTAV	**Otavalo**	**67.23**	**288**	*e*P			**P**	**22 55 11.3**	**+0.4**
ANWB	**Willy Bob**	**67.96**	**314**	PFAKE				22 55 30.0	+15
ANWB				LR			LR		
	comp=Z,575nm,22.0s								
FURI	**Furi**	**68.74**	**61**	*e*P			**P**	**22 55 20.0**	**-0.2**
	comp=Z,5.8nm,0.9s								
HELC	**Santa Helena**	**68.87**	**295**	*e*P			**P**	**22 55 21.3**	**+0.3**
	comp=Z,26nm,1.1s								
RTC	**Rabat Centre**	**70.07**	**9**	PFAKE				22 55 40.0	+12
RTC				LR			LR		
	comp=Z,2μm,19.0s								
MOTC	**Monteria, Cord**	**70.70**	**297**	*e*P			**P**	**22 55 31.6**	**-0.2**
HUMP	**Col San Antoni**	**70.78**	**311**	*e*P			**P**	**22 55 31.3**	**-0.9**
	comp=Z,15nm,0.8s								
SJG	**San Juan**	**70.94**	**311**	PFAKE				22 55 40.0	+6.8
SJG				LR			LR		
	comp=Z,652nm,20.0s								
BCIP	**Isla Barro Col**	**74.02**	**294**	PFAKE				22 56 00.0	+8.3
BCIP				LR			LR		
	comp=Z,1μm,21.0s								
SDDR	**Presa de Saban**	**74.83**	**307**	PFAKE				22 56 10.0	+14
SDDR				LR			LR		
	comp=Z,722nm,19.0s								
KEST	**Kesra**	**75.29**	**22**	P			**P**	**22 55 58.4**	**-0.3**
	comp=Z,7.9nm,0.9s,baz=235,slow=5.4,SNR=3.8								
KEST				LR			LR	23 26 13.0	
	comp=Z,892nm,18.9s,baz=184,slow=34								
KEST	**Kesra**	**75.29**	**22**	*e*P			**P**	**22 55 58.4**	**-0.3**
	comp=Z,28nm,1.1s								
PAB	**San Pablo**	**75.88**	**10**	PFAKE				22 56 10.0	+8.1
PAB				LR			LR		
	comp=Z,604nm,21.0s								
ESDC	**Sonseca Array**	**76.06**	**10**	P			**P**	**22 56 01.7**	**-1.2**
	comp=Z,0.9nm,0.8s,baz=193,slow=5.9,SNR=5.3								
ES19	**SONSECA Array**	**76.10**	**10**	*e*P			**P**	**22 56 01.4**	**-1.8**
MTE	**Manteigas**	**76.32**	**7**	PFAKE				22 56 10.0	+5.6
MTE				LR			LR		
	comp=Z,1μm,20.0s								
GRTK	**Grand Turk**	**76.58**	**309**	PFAKE				22 56 20.0	+14
GRTK				LR			LR		
	comp=Z,1μm,19.0s								
WDD	**Wied Dalam**	**77.

FETA	**Feichten**	**86.14**	**19**	*i* pP		pP		22 56 59.8	0.0	
	comp=Z,3,3nm,1.0s									
ABTA	**Abfaltersbach**	**86.36**	**20**	*i* P		**P**		**22 56 57.6**	**+0.1**	
	comp=Z,11nm,1.6s									
MOTA	**Moosalm**	**86.53**	**19**	*i* sP		P		22 57 03.6	+5.1	
	comp=Z,3,9nm,0.9s									
BFO	**Black Forest**	**86.76**	**17**	PFAKE				22 57 10.0	+11	
BFO				LR		LR				
	comp=Z,1μm,19.0s									
TEIG	**Tepich**	**87.37**	**297**	PFAKE				22 57 10.0	+7.0	
TEIG				LR		LR				
	comp=Z,330nm,20.0s									
WLF	**Walferdange**	**87.54**	**15**	PFAKE				22 57 10.0	+6.9	
WLF				LR		LR				
	comp=Z,2μm,22.0s									
ARSA	**Arzberg**	**87.69**	**22**	*i* pP		pP		22 57 08.4	+1.1	
	comp=Z,5.7nm,1.2s									
PKSM	**Morągy**	**87.74**	**24**	⇑ *i* P		**P**		**22 57 03.4**	**-0.7**	
MOA	**Molln**	**87.86**	**21**	*i* PcP		**PcP**		**22 57 07.5**	**+0.9**	
	comp=Z,6.4nm,1.4s									
BR231	**Keskin MP Arra**	**88.16**	**36**	*e*P		**P**		**22 57 07.1**	**+0.6**	
BZS	**Buzias**	**88.24**	**26**	⇓ *i* P		**P**		**22 57 06.3**	**-0.3**	
CONA	**Conrad Observa**	**88.39**	**21**	*i* sP		P		22 57 12.1	+4.7	
	comp=Z,5.5nm,1.3s									
BR101	**Keskin Array S**	**88.49**	**37**	*e*P		**P**		**22 57 07.7**	**-0.4**	
BRTR	**Keskin Array B**	**88.49**	**37**	P		**P**		**22 57 07.7**	**-0.4**	
	comp=Z,0.8nm,0.9s,baz=149,slow=5.5,SNR=4.7									
GEA0	**GERESS Array S**	**88.60**	**20**	*e*P		**P**		**22 57 11.0**	**+2.7**	
GEA0				*e*PP		**PP**		**23 00 37.9**	**+0.7**	
GEC2	**GERESS Array S**	**88.61**	**20**	*e*PP		PP		23 00 43.1	+5.8	
GERES	**GERESS Array B**	**88.61**	**20**	P		**P**		**22 57 08.0**	**-0.3**	
	comp=Z,1.0nm,1.0s,baz=217,slow=4.2,SNR=6.4									
GERES				PP		**PP**		**23 00 39.0**	**+1.7**	
	comp=Z,0.5nm,0.8s,baz=205,slow=8.3,SNR=3.4									
KHC	**Kasperske Hory**	**88.83**	**20**	*e*P		**P**		**22 57 11.4**	**+2.1**	
KHC				*ex*		x		22 57 16.9		
ARR	**Arges**	**89.15**	**28**	⇑ *i* P		**P**		**22 57 13.6**	**+2.7**	
DRGR		**89.64**	**26**	⇓ *i* P		P		22 57 17.4	+4.2	
PSZ	**Piszkesteto**	**89.65**	**24**	⇑ *i* P		**P**		**22 57 15.0**	**+1.8**	
PSZ	**Piszkesteto**	**89.65**	**24**	*e*P		**P**		**22 57 15.7**	**+2.5**	
	comp=Z,28nm,2.0s									
PSZ				LR		LR				
	comp=Z,977nm,20.0s									
MLR	**Muntele Rosu**	**89.75**	**29**	P		**P**		**22 57 14.6**	**+0.7**	
	comp=Z,0.7nm,1.1s,baz=265,slow=6.9									
MLR	**Muntele Rosu**	**89.75**	**29**	⇓ *i* P		P		22 57 17.6	+3.7	
MLR	**Muntele Rosu**	**89.75**	**29**	*e*P		**P**		**22 57 14.5**	**+0.7**	
	comp=Z,9.8nm,1.4s									
VYHS	**Vyhne**	**89.81**	**23**	*e*P		**P**		**22 57 17.0**	**+3.1**	
VRAC	**Vranov**	**89.85**	**21**	P		**P**		**22 57 16.1**	**+2.0**	
	comp=Z,0.8nm,0.5s,baz=234,slow=9.8,SNR=4.2									
VRAC	**Vranov**	**89.85**	**21**	⇓ *i* P		P		22 57 21.8	+7.8	
PRU	**Pruhonice**	**89.88**	**20**	*e*P		**P**		**22 57 16.8**	**+2.7**	
PRU				*ex*		x		22 57 23.2		
KECS	**Kecovo**	**90.34**	**24**	*e*P		P		22 57 20.4	+4.1	
NHSC	**New Hope**	**90.45**	**312**	PFAKE				22 57 30.0	+13	
NHSC				LR		LR				
	comp=Z,750nm,19.0s									
BRG	**Berggiesshubel**	**90.52**	**19**	*e*P		P		22 57 24.8	+7.7	
	comp=Z,21nm,1.9s									
MORC	**Moravsky Berou**	**90.55**	**22**	⇓ *i* P		P		22 57 22.3	+5.0	
CNNC	**Cliffs of the**	**90.57**	**314**	PFAKE				22 57 30.0	+12	
CNNC				LR		LR				
	comp=Z,850nm,21.0s									
CLL	**Collm**	**90.67**	**18**	⇑ *i* P		P		22 57 22.0	+4.2	
	comp=Z,7.0nm,1.3s									
CLL				*i*				22 57 26.1		
	comp=Z,15nm,1.4s									
CLL				*e*S		S		23 08 27.0	+14	
CLL				*e*PS		**PS**		**23 09 21.0**	**-1.2**	
CLL				*e*SS		SS		23 14 11.0	-5.0	
DPC	**Dobruska-Polom**	**90.70**	**21**	*e*P		**P**		**22 57 21.2**	**+3.2**	
DPC				*ex*		x		22 57 26.5		
CRVS	**Cervenica-Dubn**	**91.02**	**24**	*e*P		**P**		**22 57 22.0**	**+2.5**	
BURAR	**Bucovina Array**	**91.25**	**27**	⇑ *i* P		P		22 57 24.1	+3.4	
KOLS	**Kolonicke sedl**	**91.32**	**25**	*e*P		P		22 57 25.2	+4.3	
KWP	**Kalwaria Pacla**	**92.07**	**25**	⇓ *i* P		**P**		**22 57 27.3**	**+2.9**	
CBN	**Corbin Frederi**	**92.36**	**317**	PFAKE				22 57 40.0	+14	
CBN				LR		LR				
	comp=Z,581nm,20.0s									
PTCN	**Pitcairn Islan**	**92.46**	**237**	PFAKE				22 57 40.0	+13	
PTCN				LR		LR				
	comp=Z,1μm,19.0s									
GOGA	**Godfrey**	**92.68**	**310**	PFAKE				22 57 40.0	+12	
GOGA				LR		LR				
	comp=Z,691nm,20.0s									
BLA	**Blacksburg**	**93.41**	**314**	PFAKE				22 57 40.0	+9.1	
BLA				LR		LR				
	comp=Z,1μm,22.0s									
PKME	**Peaks-Kenny Pk**	**93.47**	**326**	PFAKE				22 57 40.0	+9.1	
PKME				LR		LR				
	comp=Z,845nm,20.0s									
BRAL	**Brewton**	**93.51**	**306**	PFAKE				22 57 40.0	+8.5	
BRAL				LR		LR				
	comp=Z,1μm,21.0s									
BINY	**Binghamton**	**94.46**	**320**	PFAKE				22 57 50.0	+14	
BINY				LR		LR				
	comp=Z,874nm,20.0s									
GNI	**Garni**	**94.57**	**43**	PFAKE				22 57 50.0	+14	
GNI				LR		LR				
	comp=Z,2μm,21.0s									
NCB	**Newcomb**	**94.84**	**323**	PFAKE				22 57 50.0	+13	
NCB				LR		LR				
	comp=Z,1μm,22.0s									
KIEV	**Kiev**	**95.28**	**27**	PFAKE				22 57 50.0	+11	
KIEV				LR		LR				
	comp=Z,1μm,21.0s									
AKASG	**Malin Array Be**	**95.29**	**27**	P		**P**		**22 57 37.8**	**-1.3**	
	comp=Z,0.1nm,0.2s,baz=218,slow=4.3,SNR=7.9									
LONY	**Lake Ozonia**	**95.49**	**323**	PFAKE				22 57 50.0	+10	
LONY				LR		LR				
	comp=Z,729nm,20.0s									
KIV	**Kislovodsk**	**96.14**	**39**	PFAKE				22 57 50.0	+6.7	
KIV				LR		LR				
	comp=Z,1μm,22.0s									
H01W2	**Cape Leeuwin H**	**96.24**	**142**	T		T		00 45 55.6		
	baz=219,slow=75,SNR=12									
H01W3	**Cape Leeuwin H**	**96.25**	**142**	T		T		00 45 55.1		
	baz=219,slow=75,SNR=9.6									
H01W1	**Cape Leeuwin H**	**96.25**	**142**	T		T		00 45 57.8		
	baz=219,slow=75,SNR=12									
ACSO	**Alum Creek Sta**	**96.92**	**315**	PFAKE				22 58 00.0	+13	
ACSO				LR		LR				
	comp=Z,638nm,21.0s									
KONO	**Kongsberg**	**97.62**	**13**	PFAKE				22 58 00.0	+10	
KONO				LR		LR				
	comp=Z,1μm,19.0s									
AAM	**Ann Arbor**	**98.67**	**316**	PFAKE				22 58 10.0	+15	
AAM				LR		LR				
	comp=Z,827nm,19.0s									
KVTX	**Kingsville**	**98.78**	**298**	PFAKE				22 58 10.0	+14	
KVTX				LR		LR				
	comp=Z,2μm,19.0s									
NATX	**Nacogdoches**	**98.98**	**303**	PFAKE				22 58 10.0	+14	
NATX				LR		LR				
	comp=Z,677nm,19.0s									
NWAO	**Narrogin (SRO)**	**99.36**	**142**	PFAKE				22 58 10.0	+12	
NWAO				LR		LR				
	comp=Z,8μm,21.0s									
MIAR	**Mount Ida**	**99.91**	**305**	PFAKE				22 58 10.0	+10	
MIAR				LR		LR				
	comp=Z,891nm,22.0s									
TAU	**Tasmania Unive**	**100.39**	**168**	PFAKE				22 58 20.0	+17	
TAU				LR		LR				
	comp=Z,17μm,19.0s									
HDIL	**Hopedale**	**100.83**	**312**	PFAKE				22 58 20.0	+16	
HDIL				LR		LR				
	comp=Z,708nm,20.0s									
HHAR	**Hobbs**	**101.17**	**307**	*e*Pdif		**Pdif**		**22 58 06.4**	**+0.4**	
HHAR				*e*PP		PP		23 02 22.1	+6.8	
OBN	**Obninsk**	**101.52**	**28**	PFAKE				22 58 20.0	+13	
OBN				LR		LR				
	comp=Z,1μm,20.0s									
COCO	**West Island**	**101.54**	**114**	PFAKE				22 58 20.0	+12	
COCO				LR		LR				
	comp=Z,7μm,19.0s									
JCT	**Junction City**	**101.83**	**299**	PFAKE				22 58 20.0	+11	
JCT				LR		LR				
	comp=Z,664nm,21.0s									
SNZO	**South Karori**	**102.51**	**189**	PFAKE				22 58 30.0	+18	
SNZO				LR		LR				
	comp=Z,12μm,22.0s									
JFWS	**Jewell Farm**	**102.83**	**314**	PFAKE				22 58 20.0	+6.8	
JFWS				LR		LR				
	comp=Z,673nm,20.0s									

WMOK	**Wichita Mounta**	**103.52**	**303**	PFAKE				22 58 30.0	+14	
WMOK				LR		LR				
	comp=Z,783nm,19.0s									
SCIA	**State Center**	**104.01**	**312**	PFAKE				22 58 30.0	+12	
SCIA				LR		LR				
	comp=Z,711nm,19.0s									
COWI	**Conover**	**104.12**	**317**	PFAKE				22 58 30.0	+11	
COWI				LR		LR				
	comp=Z,956nm,21.0s									
KSU1	**Kansas State U**	**104.53**	**308**	PFAKE				22 58 30.0	+9.2	
KSU1				LR		LR				
	comp=Z,721nm,20.0s									
CBKS	**Cedar Bluff**	**106.40**	**306**	PFAKE				23 02 50.0		
CBKS				LR		LR				
	comp=Z,1μm,21.0s									
MNTX	**Cornudas Mount**	**106.50**	**297**	PFAKE				23 02 50.0		
MNTX				LR		LR				
	comp=Z,476nm,19.0s									
EYMN	**Ely**	**106.51**	**318**	PFAKE				23 02 50.0		
EYMN				LR		LR				
	comp=Z,851nm,19.0s									
ECSD	**EROS Data Cent**	**107.10**	**312**	PFAKE				23 02 50.0		
ECSD				LR		LR				
	comp=Z,635nm,20.0s									
CAN	**Canberra**	**108.07**	**168**	PFAKE				23 03 00.0		
CAN				LR		LR				
	comp=Z,12μm,19.0s									
ANMO	**Albuquerque**	**108.95**	**300**	PFAKE				23 03 00.0		
ANMO				LR		LR				
	comp=Z,501nm,20.0s									
OGNE	**Ogallala**	**109.03**	**307**	PFAKE				23 03 00.0		
OGNE				LR		LR				
	comp=Z,597nm,20.0s									
AGMN	**Agassiz Nation**	**109.14**	**316**	PFAKE				23 03 00.0		
AGMN				LR		LR				
	comp=Z,946nm,21.0s									
SDCO	**Great Sand Dun**	**109.71**	**303**	PFAKE				23 03 00.0		
SDCO				LR		LR				
	comp=Z,932nm,21.0s									
KEV	**Kevo**	**110.03**	**15**	PFAKE				23 03 00.0		
KEV				LR		LR				
	comp=Z,3μm,20.0s									
MBWA	**Marble Bar**	**110.14**	**137**	PFAKE				23 03 00.0		
MBWA				LR		LR				
	comp=Z,3μm,20.0s									
LVZ	**Lovozero**	**110.39**	**18**	PFAKE				23 03 00.0		
LVZ				LR		LR				
	comp=Z,5μm,21.0s									
TUC	**Tucson**	**110.75**	**295**	PFAKE				23 03 00.0		
TUC				LR		LR				
	comp=Z,1μm,21.0s									
ISCO	**Idaho Springs**	**110.81**	**305**	PFAKE				23 03 00.0		
ISCO				LR		LR				
	comp=Z,860nm,19.0s									
MVCO	**Mesa Verde**	**111.52**	**301**	PFAKE				23 03 00.0		
MVCO				LR		LR				
	comp=Z,734nm,20.0s									
KKAR	**Karatay Array**	**111.80**	**52**	*e*Pdif		**Pdif**		**22 58 55.0**	**+1.9**	
ARU	**Arti**	**111.84**	**35**	PFAKE				23 03 00.0		
ARU				LR		LR				
	comp=Z,4μm,21.0s									
WUAZ	**Wupatki**	**112.73**	**298**	PFAKE				23 03 00.0		
WUAZ				LR		LR				
	comp=Z,1μm,22.0s									
RAO	**Raoul Island**	**112.83**	**198**	PFAKE				23 03 10.0		
RAO				LR		LR				
	comp=Z,9μm,22.0s									
RAR	**Rarotonga**	**113.20**	**218**	PFAKE				23 03 10.0		
RAR				LR		LR				
	comp=Z,2μm,19.0s									
EKS2	**Erkin-Say**	**113.71**	**54**	PFAKE				23 03 10.0		
EKS2				LR		LR				
	comp=Z,9μm,21.0s									
KSH	**Kashi**	**113.73**	**58**	*e*PKP		**PKiKP**		**23 02 56.3**	**+2.0**	
KSH				*e*PP		**PP**		**23 03 50.1**	**+2.6**	
KSH				SKS		**SKSdf**		**23 10 08.9**	**+2.4**	
KSH				SKKS		**SKKSac**		**23 10 43.8**	**-5.2**	
KSH				AMB		AMB				
	comp=Z,84nm,4.5s									
DGMT	**Dagmar**	**114.04**	**313**	PFAKE				23 03 10.0	+16	
DGMT				LR		LR				
	comp=Z,926nm,20.0s									
AAK	**Ala-Archa**	**114.16**	**54**	PFAKE				23 03 10.0	+15	
AAK				LR		LR				
	comp=Z,7μm,20.0s									
BW06	**Boulder Array**	**114.83**	**306**	PFAKE				23 03 10.0	+14	
BW06				LR		LR				
	comp=Z,1μm,20.0s									
FRIM	**Kepong**	**114.99**	**105**	⇓ P		**Pdif**		**22 59 07.5**	**-0.5**	
TKM2	**Tokmak 2**	**115.02**	**54**	PFAKE				23 03 10.0	+13	
TKM2				LR		LR				
	comp=Z,5μm,20.0s									
KULM	**Kulim**	**115.47**	**102**	PFAKE				23 03 10.0	+12	
KULM				LR		LR				
	comp=Z,3μm,19.0s									
PFO	**Pinyon Flats O**	**115.56**	**294**	PFAKE				23 03 10.0	+12	
PFO				LR		LR				
	comp=Z,3μm,20.0s									
FFC	**Flin Flon**	**115.62**	**320**	PFAKE				23 03 10.0	+13	
FFC				LR		LR				
	comp=Z,784nm,20.0s									
HWUT	**Hardware Ranch**	**115.65**	**304**	PFAKE				23 03 10.0	+12	
HWUT				LR		LR				
	comp=Z,2μm,21.0s									
RLMT	**Red Lodge**	**115.67**	**308**	PFAKE				23 03 10.0	+12	
RLMT				LR		LR				
	comp=Z,2μm,22.0s									
KBS	**Kingsbay**	**115.71**	**6**	PFAKE				23 03 10.0	+13	
KBS				LR		LR				
	comp=Z,4μm,20.0s									
AHID	**Auburn Hatcher**	**115.84**	**305**	PFAKE				23 03 10.0	+12	
AHID				LR		LR				
	comp=Z,2μm,22.0s									
DUG	**Dugway, Tooele**	**115.89**	**302**	PFAKE				23 03 10.0	+12	
DUG				LR		LR				
	comp=Z,2μm,22.0s									
LKWY	**Lake**	**116.16**	**307**	PFAKE				23 03 10.0	+11	
LKWY				LR		LR				
	comp=Z,2μm,21.0s									
BRVK	**Borovoye**	**116.21**	**42**	PFAKE				23 03 10.0	+12	
BRVK				LR		LR				
	comp=Z,5μm,19.0s									
EGMT	**Eagleton**	**117.20**	**311**	PFAKE				23 03 10.0	+9.4	
EGMT				LR		LR				
	comp=Z,1μm,21.0s									
BOZ	**Bozeman (W)**	**117.40**	**308**	PFAKE				23 03 10.0	+8.8	
BOZ				LR		LR				
	comp=Z,2μm,22.0s									
WRAB	**Tennant Creek**	**118.32**	**149**	PFAKE				23 03 20.0	+16	
WRAB				LR		LR				
	comp=Z,3μm,21.0s									
HLID	**Hailey**	**118.38**	**305**	PFAKE				23 03 10.0	+6.9	
HLID				LR		LR				
	comp=Z,1μm,21.0s									
KURBB	**Kurchatov Arra**	**119.96**	**47**	PKKPbc		PKKPbc		23 13 17.0	+2.0	
	comp=Z,0.2nm,0.2s,baz=54,slow=4.7,SNR=4.2									
KURK	**Kurchatov**	**120.05**	**47**	PFAKE				23 03 20.0	+14	
KURK				LR		LR				
	comp=Z,12μm,21.0s									
LSA	**Lhasa**	**120.55**	**74**	PFAKE				23 03 20.0	+12	
LSA				LR		LR				
	comp=Z,7μm,20.0s									
KSM	**Kuching**	**120.55**	**113**	PFAKE				23 03 20.0	+12	
KSM				LR		LR				
	comp=Z,2μm,21.0s									
BMO	**Blue Mountains**	**120.80**	**305**	PFAKE				23 03 20.0	+12	
BMO				LR		LR				
	comp=Z,2μm,22.0s									
WVOR	**Wild Horse Val**	**120.80**	**302**	PFAKE				23 03 20.0	+12	
WVOR				LR		LR				
	comp=Z,2μm,22.0s									
MMRI	**Maumere**	**121.52**	**131**	P		**Pdif**		**22 59 37.8**	**+0.7**	
CHTO	**Chiang Mai**	**121.63**	**89**	PFAKE				23 03 20.0	+10	
CHTO				LR		LR				
	comp=Z,7μm,19.0s									
NEW	**Newport**	**121.87**	**309**	PFAKE				23 03 20.0	+10	
NEW				LR		LR				
	comp=Z,2μm,21.0s									
CTAO	**Charters Tower**	**122.22**	**161**	PFAKE				23 03 20.0	+8.9	
CTAO				LR		LR				
	comp=Z,3μm,19.0s									
KAPI	**Kappang**	**122.69**	**126**	PFAKE				23 03 20.0	+7.9	
KAPI				LR		LR				
	comp=Z,2μm,20.0s									
HAWA	**Hanford**	**122.80**	**306**	PFAKE				23 03 20.0	+8.7	
HAWA				LR		LR				
	comp=Z,2μm,21.0s									
WMQ	**Urumqi**	**123.49**	**57**	*e*PKP		**PKPdf**		**23 03 12.6**	**-0.2**	
WMQ				SKKS				23 11 47.4		
WMQ				SS		**SS**		**23 21 41.9**	**-0.3**	
WMQ				AMB		AMB				
	comp=Z,36nm,11.2s									
WMQ				LR		LR				
	comp=Z,1μm,20.8s									
WMQ				LR		LR				
	comp=Z,800nm,20.8s									
WMQ				LR		LR				
	comp=Z,1μm,23.6s									
YKA	**Yellowknife Ar**	**124.41**	**326**	PKP		**PKPdf**		**23 03 12.3**	**-1.6**	
	comp=Z,0.4nm,0.9s,baz=102,slow=1.9,SNR=4.3									
YKB5	**Yellowknife Ar**	**124.41**	**326**	*e*PKPdf		**PKPdf**		**23 03 12.3**	**-1.6**	
MSVF	**Nonsavu**	**124.87**	**198**	PFAKE				23 03 30.0	+14	
MSVF				LR		LR				
	comp=Z,4μm,19.0s									
AFI	**Afiamalu**	**125.08**	**210**	PFAKE				23 03 30.0	+13	
AFI				LR		LR				
	comp=Z,2μm,20.0s									
NLWA	**Neilton Lookou**	**125.93**	**307**	PFAKE				23 03 30.0	+13	
NLWA				LR		LR				
	comp=Z,2μm,22.0s									
KMI	**Kunming**	**127.75**	**84**	PKP		PKPdf		23 03 27.8	+6.0	
KKM	**Kota Kinabalu**	**127.97**	**113**	PFAKE				23 03 30.0	+7.6	
KKM				LR		LR				
	comp=Z,2μm,20.0s									
CD2	**Chengdu**	**130.98**	**78**	PKP		**PKPdf**		**23 03 27.4**	**-0.1**	
GYA	**Guiyang**	**131.51**	**85**	*e*Pdif		**Pdif**		**23 00 22.0**	**+0.7**	
GYA				PKP		**PKiKP**		**23 03 30.3**	**+0.6**	
GYA				PP		**PP**		**23 05 52.8**	**+4.6**	
GYA				AMB		AMB				
	comp=Z,120nm,7.8s									
INK	**Inuvik**	**132.46**	**333**	PKP		**PKPdf**		**23 03 30.1**	**+1.0**	
	comp=Z,2.0nm,1.0s,baz=94,slow=4.2,SNR=5.6									
WRAK	**Wrangell Islan**	**132.60**	**317**	PFAKE				23 03 40.0	+10	
WRAK				LR		LR				
	comp=Z,2μm,21.0s									
PMG	**Port Moresby**	**132.65**	**159**	PFAKE				23 03 40.0	+8.9	
PMG				LR		LR				
	comp=Z,2μm,20.0s									
LZH	**Lanzhou**	**132.83**	**71**	*e*PKP		**PKPdf**		**23 03 34.3**	**+3.3**	
LZH				sPKP				23 03 39.9		
FUNA	**Funafuti**	**133.33**	**202**	PFAKE				23 03 40.0	+7.6	
FUNA				LR		LR				
	comp=Z,9μm,19.0s									
HNR	**Honiara**	**134.93**	**176**	PFAKE				23 03 50.0	+15	
HNR				LR		LR				
	comp=Z,2μm,20.0s									
ENH	**Enshi**	**135.32**	**81**	PFAKE				23 03 50.0	+14	
ENH				LR		LR				
	comp=Z,7μm,19.0s									
DAV	**Davao City (W)**	**135.45**	**121**	PFAKE				23 03 50.0	+14	
DAV				LR		LR				
	comp=Z,1μm,19.0s									
TLY	**Talaya**	**135.58**	**50**	PFAKE				23 03 50.0	+15	
TLY				LR		LR				
	comp=Z,5μm,19.0s									
EGAK	**Eagle**	**136.16**	**329**	PFAKE				23 03 50.0	+14	
EGAK				LR		LR				
	comp=Z,1μm,20.0s									
ULN	**Ulaanbaatar**	**137.53**	**56**	PFAKE				23 03 50.0	+11	
ULN				LR		LR				
	comp=Z,5μm,20.0s									
IL1	**Eielson Array**	**138.52**	**330**	*e*PKPdf		**PKPdf**		**23 03 43.1**	**+2.6**	
ILAR	**Eielson Array**	**138.52**	**330**	PKP		**PKPdf**		**23 03 39.1**	**-1.4**	
	comp=Z,0.6nm,0.8s,baz=356,slow=2.5,SNR=4.5									
BMRM	**Bremner River**	**138.58**	**324**	*e*PKPdf		**PKPdf**		**23 03 45.7**	**+4.9**	
COLA	**College**	**138.87**	**331**	PFAKE				23 03 50.0	+9.0	
COLA				LR		LR				
	comp=Z,2μm,21.0s									
HHC	**Hu-ho-hao-te**	**139.86**	**67**	*e*PKP		**PKPdf**		**23 03 46.3**	**+2.5**	
HHC				PP		**PP**		**23 06 42.6**	**+2.0**	
HHC				SKS		**SKSdf**		**23 10 56.0**	**+1.8**	
HHC				SKKS		**SKKSac**		**23 13 37.8**	**+3.7**	
HHC				SS		**SS**		**23 25 04.4**	**+2.1**	
HHC				AMB		AMB				
	comp=Z,450nm,8.8s									
HHC				LR		LR				
	comp=Z,320nm,21.6s									
HHC				LR		LR				
	comp=Z,410nm,21.6s									
HHC				LR		LR				
	comp=Z,560nm,21.2s									
TIXI	**Tiksi**	**139.96**	**16**	PFAKE				23 03 50.0	+7.1	
TIXI				LR		LR				
	comp=Z,7μm,22.0s									
POHA	**Pohakuloa**	**140.25**	**258**	PFAKE				23 04 00.0	+15	
POHA				LR		LR				
	comp=Z,3μm,21.0s									
YHNB	**Yeheng**	**142.68**	**96**	PFAKE				23 04 00.0	+11	
YHNB				LR		LR				
	comp=Z,2μm,21.0s									
TATO	**Taipei**	**142.91**	**95**	PFAKE				23 04 00.0	+10	
TATO				LR		LR				
	comp=Z,2μm,20.0s									
KIP	**Kipapa**	**143.09**	**258**	PFAKE				23 04 00.0	+10	
KIP				LR		LR				
	comp=Z,6μm,20.0s									
BJT	**Baijiatuan**	**143.19**	**69**	PFAKE				23 04 00.0	+10	
BJT				LR		LR				
	comp=Z,5μm,20.0s									
BJI	**Beijing**	**143.20**	**69**	PKP		**PKPdf**		**23 03 51.9**	**+2.3**	
BJI				SS		SS		23 25 45.3	+4.3	
BJI				LR		LR				
	comp=Z,5μm,19.1s									
BJI				LR		LR				
	comp=Z,7μm,24.0s		

NIED **24** *22:53:00.21˝.00N×120˚.90E.h26km.Mw4.9 Best double couple: M₀2.29000×10¹⁶ NP1:φ₀356.00000°,δ44.00000°, λ.99.00000°. NP2:φ₀163.00000°,δ47.00000°,λ.81.00000°.*
JMA **24** *22:53:31.7±0.6.20˝.97N×120˚.94E.h0km.M4.8*
BJI **24** *22:53:36.7.21˚.21N×120˚.99E.h15km.mb4.4/50.mB4.8/41, ML4.3/6.Ms4.6/56.Ms7 4.4/50*
NEIC **24** *22:53:37.1±0.2.21˚.03N×121˚.23E.mb5.0/61.Error ellipse: s-maj=5.2km s-min=3.7km az=90.0*
MOS **24** *22:53:37.1±1.2.21˚.04N×121˚.32E.h33km.mb5.1/33.Error ellipse: s-maj=9.1km s-min=5.6km az=109.6*
TAP **24** *22:53:37.8.21˚.04N×120˚.70E.h47km±1km.ML4.9.D*
ISCJB **24** *22:53:38.0±0.2.21˚.07N±0˚.01×121˚.14E±0˚.02.h36km±2km, mb4.7/104.MS4.3/9.Error ellipse: s-maj=3.2km s-min=2.0km az=0.9*
IDC **24** *22:53:39.6±1.8.21˚.02N×121˚.29E.h40km±15km.mb4.2/35, mb1 4.3/38.mb1mx4.1/66.mbtmp4.4/38.ML4.0/3.MS4.3/5, Ms1 4.3/5.ms1mx3.8/57.Error ellipse: s-maj=13.3km s-min=8.6km az=73.0*
BKK **24** *22:53:45.4±0.3.21˚.N±4˚.×12˚.1E±˚.h86km.M4.8/25, mB5.0/12.mb4.7/25.MLv5.6/1.Mw(mB)4.3/12*
ISC 24 22:53:38.9±0.4**,21˚.04N**±0˚.02×**121˚.07E**±0˚.03**,h31**km±2km, h31km:pP-P,n398,**σ1§96/482**,mb4.8**/106**,MS4.3**/9, **22C-23D,Taiwan region**

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op	ISC		h m s	ISC
TSEB	**Hengchuen, Pin**	**0.87**	**349**	P		**Pn**	**22 53 54.1**	**-0.9**
	baz=9.0							
TSEB				S		**Sn**	**22 54 05.4**	**-1.2**
	baz=9.0							
TWK1	**Hengchun**	**0.93**	**345**	*i* P		**Pn**	**22 53 55.0**	**-0.9**
	baz=6.0							
TWK1				*i* S		**Sn**	**22 54 06.4**	**-1.7**
	baz=6.0							
HEN	**Hengchun**	**1.01**	**342**	*e*P		**Pn**	**22 53 55.4**	**-1.5**
	baz=2.0							
LAY	**Lan-yu**	**1.09**	**24**	S		**Sb**	**22 54 15.8**	**+2.7**
TAW	**Tawu**	**1.32**	**353**	P		**Pn**	**22 53 60.0**	**-1.2**
	baz=8.0							
TAW				*e*S		**Sn**	**22 54 15.5**	**-2.2**
	baz=8.0							
EAST	**Anshuo**	**1.35**	**351**	*i* P		**Pn**	**22 54 00.1**	**-1.6**
	baz=6.0							
EAST				S		**Sn**	**22 54 16.9**	**-1.8**
	baz=6.0							
SCZT	**Fangliau**	**1.39**	**342**	P		**Pn**	**22 54 00.5**	**-1.7**
	baz=357							
SCZT				S		**Sn**	**22 54 17.0**	**-2.5**
	baz=357							
TWP	**Hsiaoliuchiu**	**1.46**	**333**	*e*P		**Pn**	**22 54 02.3**	**-0.8**
	baz=346							
ECL	**Taimali**	**1.55**	**356**	*e*P		**Pn**	**22 54 02.4**	**-2.0**
	baz=9.0							
ECL				*e*S		**Sn**	**22 54 23.1**	**-0.4**
	baz=9.0							
KAU	**Kaohsiung**	**1.68**	**335**	*e*P		**Pn**	**22 54 02.8**	**-3.3**
	baz=346							
KAU				*e*S		**Sn**	**22 54 23.2**	**-3.4**
	baz=346							
TTN	**Taitung**	**1.71**	**2**	*e*P		**Pn**	**22 54 05.9**	**-0.6**
	baz=13							
TTN				*e*S		**Sn**	**22 54 28.0**	**+0.7**
	baz=13							
SSD	**Sandimen**	**1.75**	**347**	*e*P		**Pn**	**22 54 05.4**	**-1.7**
	baz=358							
SGLT	**Jiouru**	**1.76**	**342**	*e*P		**Pn**	**22 54 05.9**	**-1.3**
	baz=353							
TWG	**Pinlang**	**1.77**	**360**	*e*P		**Pn**	**22 54 05.7**	**-1.7**
	baz=11							
TWG				*e*S		**Sn**	**22 54 29.4**	**+0.5**
	baz=11							
TWG	**Pinlang**	**1.77**	**360**	*e*Pn		**Pn**	**22 54 05.5**	**-1.9**
TWG				*e*Sn		**Sn**	**22 54 27.5**	**-1.5**
TWM1	**Shoushan**	**1.88**	**341**	P		**Pn**	**22 54 07.2**	**-1.7**
	baz=352							
TWM1				*e*S		**Sn**	**22 54 28.6**	**-2.8**
	baz=352							
CHKT	**Chengkung**	**2.07**	**7**	*e*P		**Pn**	**22 54 11.1**	**-0.4**
	baz=17							
CHKT				*e*S		**Sn**	**22 54 34.6**	**-1.5**
	baz=17							
SGST	**Jiashian**	**2.08**	**347**	*e*P		**Pn**	**22 54 10.8**	**-0.9**
	baz=357							
SGST				*e*S		**Sn**	**22 54 36.8**	**+0.2**
	baz=357							
CHN3	**Shinhua**	**2.13**	**342**	*e*P		**Pn**	**22 54 10.4**	**-1.9**
	baz=351							
CHN3				*e*S		**Sn**	**22 54 36.0**	**-1.7**
	baz=351							
STYT	**Tauyuan**	**2.13**	**352**	*e*P		**Pn**	**22 54 11.5**	**-0.9**
	baz=1.0							
STYT				*e*S		**Sb**	**22 54 40.5**	**-2.5**
	baz=1.0							
ELDTW	**Lidau**	**2.14**	**359**	*e*P		**Pn**	**22 54 13.4**	**+0.8**
	baz=8.0							
ELDTW				*e*S		**Sn**	**22 54 37.7**	**-0.4**
	baz=8.0							
TAI1	**Yung-k'ang**	**2.14**	**339**	*e*P		**Pn**	**22 54 10.2**	**-2.2**
	baz=347							
CHN1	**Nanshi**	**2.19**	**347**	*e*P		**Pn**	**22 54 11.5**	**-1.7**
	baz=355							
CHN1				*e*S		**Sn**	**22 54 37.6**	**-1.8**
	baz=355							
WTP	**Ta-pu**	**2.24**	**349**	*e*P		**Pn**	**22 54 13.0**	**-0.9**
	baz=358							
WTP				*e*S		**Sn**	**22 54 38.5**	**-1.9**
	baz=358							
SCLT	**Jiali**	**2.28**	**339**	*e*P		**Pn**	**22 54 12.5**	**-1.8**
	baz=347							
SCLT				*e*S		**Sn**	**22 54 38.0**	**-3.3**
	baz=347							
TWK	**Hsinying**	**2.28**	**346**	P		**Pn**	**22 54 12.7**	**-1.7**
	baz=355							
TWK				*e*S		**Sn**	**22 54 39.6**	**-2.0**
	baz=355							
TPUB	**Ta-pu**	**2.29**	**350**	*e*Pn		**Pn**	**22 54 13.1**	**-1.5**
TPUB				*e*Sn		**Sn**	**22 54 40.4**	**-1.2**
TWF1	**Yuli**	**2.31**	**5**	*e*P		**Pn**	**22 54 14.4**	**-0.4**
	baz=13							
TWF1				*e*S		**Sn**	**22 54 42.3**	**+0.1**
	baz=13							
CHN4	**Tsaushan**	**2.34**	**349**	P		**Pn**	**22 54 14.4**	**-0.9**
	baz=357							
YULB	**Yu-li**	**2.35**	**5**	*e*Pn		**Pn**	**22 54 13.2**	**-2.2**
YULB				*e*Sn		**Sn**	**22 54 38.4**	**-4.8**
CHN8	**Yiju**	**2.43**	**341**	*e*P		**Pn**	**22 54 14.2**	**-2.2**
	baz=349							
YUS	**Yu-Shan**	**2.44**	**357**	*e*P		**Pn**	**22 54 16.8**	**-0.3**
	baz=5.0							
YUS				*e*S		**Sn**	**22 54 45.2**	**-0.9**
	baz=5.0							
EHY	**Hungye**	**2.46**	**5**	*e*P		**Pn**	**22 54 17.8**	**+0.9**
	baz=13							
EHY				*e*S		**Sn**	**22 54 44.3**	**-1.8**
	baz=13							
ALS	**Alishan**	**2.47**	**354**	*e*P		**Pn**	**22 54 16.0**	**-1.3**
	baz=2.0							
ALS				*e*S		**Sn**	**22 54 45.1**	**-1.5**
	baz=2.0							
CHY	**Chiayi**	**2.52**	**346**	*e*P		**Pn**	**22 54 16.8**	**-0.9**
	baz=354							
CHY				*e*S		**Sn**	**22 54 45.1**	**-2.2**
	baz=354							
CHN2	**Minshiung**	**2.54**	**348**	*e*P		**Pn**	**22 54 17.2**	**-0.7**
	baz=355							
CHN2				*e*S		**Sn**	**22 54 45.7**	**-2.1**
	baz=355							
WDGT	**Dungji**	**2.57**	**330**	*e*P		**Pn**	**22 54 15.6**	**-2.7**
	baz=336							
WDGT				*e*S		**Sn**	**22 54 43.4**	**-5.2**
	baz=336							
CHN5	**Tsauling**	**2.57**	**352**	*e*P		**Pn**	**22 54 17.2**	**-1.3**
	baz=359							
CHN5				*e*S		**Sn**	**22 54 47.1**	**-1.6**
	baz=359							
WGK	**Gukeng**	**2.68**	**350**	*e*P		**Pn**	**22 54 19.4**	**-0.5**
	baz=357							
WGK				*e*S		**Sn**	**22 54 49.7**	**-1.5**
	baz=357							
WSF	**Szhu**	**2.70**	**343**	*e*P		**Pn**	**22 54 18.8**	**-1.4**
	baz=350							
WSF				*e*S		**Sn**	**22 54 48.6**	**-3.3**
	baz=350							
PIP	**Pasuquin**	**2.73**	**189**	*i*P		**Pn**	**22 54 20.8**	**+0.1**
PIP				*e*S		**Sn**	**22 54 51.6**	**-1.0**
SSLB	**Suanglung**	**2.74**	**358**	*e*Pn		**Pn**	**22 54 20.2**	**-0.5**
SSLB				*e*Sn		**Sn**	**22 54 46.5**	**-6.3**
ESL	**Shilin**	**2.78**	**7**	*e*P		**Pn**	**22 54 22.1**	**+0.8**
	baz=14							
ESL				*e*S		**Sn**	**22 54 54.9**	**+1.1**
	baz=14							
SMLT	**Sun Moon Lake**	**2.83**	**357**	*e*P		**Pn**	**22 54 21.4**	**-0.7**
	baz=3.0							
SMLT				*e*S		**Sn**	**22 54 54.6**	**-0.6**
	baz=3.0							
WNT	**Mingjian**	**2.85**	**353**	*e*P		**Pn**	**22 54 20.6**	**-1.6**
	baz=359							
WNT				*e*S		**Sn**	**22 54 52.4**	**-3.0**
	baz=359							
TYC	**Yuchr**	**2.86**	**356**	*e*P		**Pn**	**22 54 22.0**	**-0.4**
	baz=3.0							
TYC				*e*S		**Sn**	**22 54 54.9**	**-0.8**
	baz=3.0							
PNG	**Penghu**	**2.88**	**331**	*e*P		**Pn**	**22 54 20.2**	**-2.4**
	baz=337							
PNG				*e*S		**Sn**	**22 54 50.7**	**-5.5**
	baz=337							
WTCT	**Ta-ch'eng**	**2.91**	**346**	*e*S		**Sn**	**22 54 54.4**	**-2.4**
	baz=352							
SGCP	**Mt. Cagua**	**2.93**	**162**	*e*P		**Pn**	**22 54 23.9**	**+0.6**
SGCP				*e*S		**Sn**	**22 54 51.6**	**-5.9**
HWA	**Hwalien**	**2.96**	**9**	*e*P		**Pn**	**22 54 25.3**	**+1.5**
	baz=16							
HWA				*e*S		**Sn**	**22 54 59.4**	**+1.0**
	baz=16							
TWD	**Chiawan**	**3.06**	**9**	*e*P		**Pn**	**22 54 26.1**	**+0.9**
	baz=15							
TWD				*e*S		**Sn**	**22 55 00.1**	**-0.6**
	baz=15							
WHF	**Hehuan Shan**	**3.10**	**3**	*e*P		**Pn**	**22 54 26.0**	**0.0**
	baz=9.0							
WHF				*e*S		**Sn**	**22 55 01.6**	**-0.6**
	baz=9.0							
TCU	**Taichung**	**3.12**	**353**	*e*P		**Pn**	**22 54 25.4**	**-0.4**
	baz=359							
TCU				*e*S		**Sn**	**22 55 00.2**	**-1.8**
	baz=359							
SIPP	**Brgy, Tapao**	**3.15**	**191**	*e*P		**Pn**	**22 54 27.2**	**+0.8**
SIPP				*e*S		**Sn**	**22 54 59.4**	**-3.6**
NACB	**Ninganchiao**	**3.16**	**9**	*e*Pn		**Pn**	**22 54 25.6**	**-0.8**
NACB				*e*Sn		**Sn**	**22 55 00.2**	**-2.8**
APYP	**Conner**	**3.17**	**177**	*e*P		**Pn**	**22 54 27.3**	**+0.8**
TWT	**Tachien**	**3.20**	**2**	*e*P		**Pn**	**22 54 27.8**	**+0.5**
	baz=7.0							
TWT				*e*S		**Sn**	**22 55 03.0**	**-1.4**
	baz=7.0							
TWQ1	**Liyutan**	**3.30**	**355**	*e*P		**Pn**	**22 54 28.3**	**-0.2**
	baz=1.0							
TWQ1				*e*S		**Sn**	**22 55 05.2**	**-1.5**
	baz=1.0							
NSY	**Sanyi**	**3.37**	**355**	*e*P		**Pn**	**22 54 30.1**	**+0.6**
	baz=1.0							
NSY				*e*S		**Sn**	**22 55 07.6**	**-0.8**
	baz=1.0							
ABRA	**Dolores**	**3.39**	**186**	*e*P		**Pn**	**22 54 31.0**	**+1.4**
CVP	**Callao Caves**	**3.39**	**168**	*e*P		**Pn**	**22 54 30.5**	**+0.8**
CVP				*i* S		**Sn**	**22 55 10.2**	**+1.2**
NNS	**Nan Shan**	**3.40**	**5**	*e*P		**Pn**	**22 54 31.2**	**+1.4**
	baz=10.0							
NNS				*e*S		**Sn**	**22 55 08.2**	**-0.9**
	baz=10.0							
ENA	**Nanau**	**3.43**	**10**	*e*P		**Pn**	**22 54 31.3**	**+1.1**
	baz=16							
NSTT	**Nanjuang**	**3.58**	**359**	*e*P		**Pn**	**22 54 32.2**	**0.0**
	baz=4.0							
NSTT				*e*S		**Sn**	**22 55 11.9**	**-1.5**
	baz=4.0							
ENTT	**Nioudou**	**3.61**	**7**	*e*P		**Pn**	**22 54 33.7**	**+0.9**
	baz=12							
ENTT				*e*S		**Sn**	**22 55 15.6**	**+1.2**
	baz=12							
TWC	**Suao**	**3.62**	**11**	*e*P		**Pn**	**22 54 34.0**	**+1.1**
	baz=16							
TWC				*e*S		**Sn**	**22 55 15.2**	**+0.6**
	baz=16							
YHNB	**Yeheng**	**3.62**	**4**	*e*Pn		**Pn**	**22 54 32.9**	**-0.1**
YHNB				*e*Sn		**Sn**	**22 55 09.0**	**-5.8**
TWE	**Neicheng**	**3.71**	**8**	*e*P		**Pn**	**22 54 35.8**	**+1.8**
	baz=13							
TWE				*e*S		**Sn**	**22 55 17.2**	**+0.6**
	baz=13							
HSN	**Hsinchu**	**3.75**	**359**	*e*S		**Sn**	**22 55 20.4**	**+2.8**
	baz=4.0							
ILA	**Ilan**	**3.76**	**9**	*e*S		**Sn**	**22 55 21.9**	**+4.0**
	baz=14							
JYNG	**Yonagunijimaku**	**3.81**	**27**	P		**Pn**	**22 54 36.8**	**+1.4**
JYNG				*e*S		**Sn**	**22 55 19.5**	**+0.3**
YOJ	**Yonaguni jima**	**3.85**	**27**	P		**Pn**	**22 54 36.3**	**+0.4**
YOJ				S		**Sn**	**22 55 20.7**	**+0.6**
YOJ	**Yonaguni jima**	**3.85**	**27**	*e*P		**Pn**	**22 54 33.7**	**-2.2**
YOJ				*e*			22 55 13.1	
YOJ	**Yonaguni jima**	**3.85**	**27**	*e*Pn		**Pn**	**22 54 33.7**	**-2.2**
YOJ				*e*Sn		**Sn**	**22 55 13.1**	**-7.0**
EGS		**3.87**	**12**	*e*P		**Pn**	**22 54 37.8**	**+1.5**
	baz=16							
EGS				*e*S		**Sn**	**22 55 21.6**	**+0.9**
	baz=16							
NCU	**National Centr**	**3.91**	**2**	*e*S		**Sn**	**22 55 21.2**	**-0.5**
	baz=6.0							
HATJ	**Hateruma jima**	**3.92**	**40**	P		**Pn**	**22 54 37.5**	**+0.5**
HATJ				*e*S		**Sn**	**22 55 21.3**	**-0.7**
TATO	**Taipei**	**3.94**	**6**	*e*Pn		**Pn**	**22 54 36.1**	**-1.1**
TATO				*e*Sn		**Sn**	**22 55 18.3**	**-3.9**
TAP	**Taipei**	**4.00**	**6**	*e*S		**Sn**	**22 55 24.1**	**+0.2**
	baz=10.0							
TAP1	**Taipei**	**4.00**	**6**	*e*P		**Pn**	**22 54 38.5**	**+0.4**
	baz=10.0							
TAP1				*e*S		**Sn**	**22 55 23.9**	**0.0**
	baz=10.0							
TWB1	**Santiao Chiao**	**4.04**	**12**	*e*P		**Pn**	**22 54 40.8**	**+2.2**
	baz=16							
TWB1				*e*S		**Sn**	**22 55 25.5**	**+0.7**
	baz=16							
TWS1	**Kuangyinshan**	**4.05**	**4**	*e*S		**Sn**	**22 55 25.4**	**+0.2**
	baz=9.0							
NWF	**Wu-fen Shan**	**4.07**	**9**	*e*P		**Pn**	**22 54 41.2**	**+2.1**
	baz=13							
NWF				*e*S		**Sn**	**22 55 25.4**	**-0.2**
	baz=13							
IRIF	**Iriomote-Funau**	**4.10**	**36**	P		**Pn**	**22 54 39.9**	**+0.6**
IRIF				*e*S		**Sn**	**22 55 27.9**	**+1.7**
CAUP	**Cauayan**	**4.14**	**170**	*e*P		**Pn**	**22 54 43.1**	**+3.2**
KNM	**Kinmen**	**4.15**	**325**	*e*P		**Pn**	**22 54 38.4**	**-1.7**
	baz=326							
KNM				*e*S		**Sn**	**22 55 22.4**	**-5.2**
	baz=326							
JKRS	**Kuro-shima**	**4.18**	**40**	P		**Pn**	**22 54 40.7**	**+0.2**
JKRS				*e*S		**Sn**	**22 55 26.8**	**-1.5**
JIJ	**Ishigaki jima**	**4.36**	**40**	P		**Pn**	**22 54 42.8**	**-0.1**
JIJ				*e*S		**Sn**	**22 55 30.7**	**-2.0**
QZH	**Quanzhou**	**4.51**	**330**	*i*Pn		Pn	22 54 39.5	-5.5
QZH				Sn		Sn	22 55 26.4	-10
QZH				smax		smax		
	comp=N,420nm,0.9s							
QZH				smax		smax		
	comp=E,640nm,0.5s							
QZH				LR		LR		
	comp=N,3μm,12.9s							
QZH				LR		LR		
	comp=E,5μm,11.2s							
QZH				LR		LR		
	comp=Z,8μm,17.0s							
JISG	**Ishigakijimahi**	**4.62**	**40**	P		**Pn**	**22 54 46.8**	**+0.2**
JISG				*e*S		**Sn**	**22 55 40.0**	**+0.7**
BOLP	**Bolinao**	**4.76**	**194**	*e*P		**Pn**	**22 54 50.7**	**+2.2**
JTJ	**Tarama**	**4.90**	**42**	P		**Pn**	**22 54 50.6**	**+0.1**
JTJ				*e*S		**Sn**	**22 55 48.0**	**+1.8**
BALP	**Baler**	**5.29**	**175**	*e*P		**Pn**	**22 54 58.7**	**+2.9**
JIRB	**Irabujima**	**5.34**	**44**	P		**Pn**	**22 54 56.8**	**+0.4**
JIRB				*e*S		**Sn**	**22 55 55.9**	**-1.0**
JMJ	**Miyako jima 2**	**5.41**	**45**	P		**Pn**	**22 54 57.7**	**+0.3**
JOGS	**Gusukube**	**5.45**	**46**	P		**Pn**	**22 54 58.4**	**+0.5**
PCPH	**Palayan**	**5.45**	**180**	*e*P		**Pn**	**22 55 00.2**	**+2.3**
JIKM	**Ikemajima**	**5.45**	**44**	P		**Pn**	**22 54 59.3**	**+1.3**
LQP	**Lukban**	**6.90**	**176**	*e*P		**Pn**	**22 55 15.8**	**-2.4**
MCO	**Taipa Grande**	**7.08**	**280**	P		**Pn**	**22 55 19.0**	**-1.3**
JKE	**Kume jima 2**	**7.42**	**44**	P		**Pn**	**22 55 24.5**	**-0.6**
GZH	**Guangzhou**	**7.45**	**287**	P		**Pn**	**22 55 22.6**	**-2.9**
GZH				smax		smax		
	comp=N,370nm,0.8s							
GZH				smax		smax		
	comp=E,300nm,0.8s							
JOW	**Kunigami**	**8.75**	**47**	Pn		**Pn**	**22 55 42.8**	**-0.5**
	3.8nm,0.3s,baz=149,slow=16,SNR=22							
JOW				Sn		**Sn**	**22 57 19.6**	**-1.3**
	1.3nm,0.3s,baz=131,slow=19,SNR=3.4							
JOW	**Kunigami**	**8.75**	**47**	P		**Pn**	**22 55 42.8**	**-0.5**
NJ2	**Nanjing**	**11.14**	**350**	*e*P		**Pn**	**22 56 14.9**	**-1.2**
NJ2				S		**Sn**	**22 58 22.3**	**+2.7**
NJ2				pmax		pmax		
	comp=Z,10.0nm,0.8s							
NJ2				LR		LR		
	comp=N,2μm,10.1s							
NJ2				LR		LR		
	comp=E,2μm,11.4s							
NJ2				LR		LR		
	comp=Z,2μm,12.4s							
WHN	**Wuhan**	**11.23**	**329**	P		**Pn**	**22 56 15.5**	**-1.8**
WHN				S		**Sn**	**22 58 15.3**	**-6.5**
WHN				LR		LR		
	comp=N,2μm,7.0s							
WHN				LR		LR		
	comp=E,3μm,13.1s							
WHN				LR		LR		
	comp=Z,5μm,18.0s							
ENH	**Enshi**	**13.91**	**314**	*e*Pn		**Pn**	**22 56 54.4**	**+0.5**
	7.7nm,0.9s							
GYA	**Guiyang**	**14.25**	**295**	*i*P		**Pn**	**22 56 57.5**	**-1.2**
GYA				pP		P	22 57 05.3	-0.3
GYA				S		**Sn**	**22 59 40.0**	**+4.2**
GYA				pmax		pmax		
	comp=Z,30nm,0.8s							
GYA				pmax		pmax		
	comp=Z,210nm,7.3s							
GYA				LR		LR		
	comp=N,690nm,17.1s							
GYA				LR		LR		
	comp=E,2μm,14.0s							
GYA				LR		LR		
	comp=Z,2μm,14.0s							
DAV	**Davao City (W)**	**14.56**	**162**	LR		LR	23 02 46.7	
	comp=Z,2μm,21.7s,baz=340,slow=38							
JNU	**Nakatsue**	**14.86**	**34**	Pn		**Pn**	**22 57 06.5**	**-0.4**
	0.4nm,0.3s,baz=228,slow=10,SNR=2.7							
JNU				Sn		**Sn**	**22 59 54.0**	**+3.6**
	0.1nm,0.3s,baz=221,slow=20,SNR=1.8							
JNU				LR		LR	23 02 53.3	
	comp=Z,866nm,22.0s,baz=262,slow=38							
JNU	**Nakatsue**	**14.86**	**34**	*e*Pn		**Pn**	**22 57 05.4**	**-1.4**
TIA	**Tai'an**	**15.51**	**348**	*e*P		**Pn**	**22 57 16.3**	**+1.0**
TIA				pmax		pmax		
	comp=Z,10.0nm,0.9s							
KKM	**Kota Kinabalu**	**15.63**	**198**	⇑P		**P**	**22 57 21.1**	**0.0**
MYLDM	**Lahad Datu**	**15.96**	**189**	⇑P		**P**	**22 57 25.3**	**+0.7**
MYLDM	**Lahad Datu**	**15.96**	**189**	*e*Pn		**P**	**22 57 25.3**	**+0.7**
	112nm,1.3s							
SKNT	**Sakolnakorn**	**16.66**	**259**	P		**P**	**22 57 33.3**	**+1.0**
	59nm,2.0s							
XAN	**Xi'an**	**16.83**	**323**	P		**Pn**	**22 57 31.8**	**-0.4**
XAN				pP		P	22 57 36.4	+2.3
XAN				S		**Sn**	**23 00 35.1**	**-3.2**
XAN				sS		S	23 00 42.3	-5.9
XAN				pmax		pmax		
	comp=Z,29nm,1.5s							
XAN				pmax		pmax		
	comp=Z,38nm,3.0s							
XAN				LR		LR		
	comp=N,1μm,16.5s							
XAN				LR		LR		
	comp=E,920nm,16.5s							
XAN				LR		LR		
	comp=Z,2μm,17.4s							
TSM	**Tawau**	**16.93**	**191**	⇓P		**P**	**22 57 37.7**	**+2.3**
KMI	**Kunming**	**17.35**	**287**	P		**Pn**	**22 57 39.0**	**0.0**
KMI				sP		pP	22 57 49.4	+1.0
KMI				PP		**sP**	**22 57 55.8**	**+3.4**
KMI				S		**S**	**23 00 56.8**	**-2.5**
KMI				pmax		pmax		
	comp=Z,23nm,1.7s							
KMI				pmax		pmax		
	comp=Z,170nm,3.9s							
KMI				LR		LR		
	comp=N,580nm,15.4s							
KMI				LR		LR		
	comp=E,950nm,15.8s							
KMI				LR		LR		
	comp=Z,1μm,15.8s							
KS15	**Wonju Array Si**	**17.38**	**18**	*e*Pn		**P**	**22 57 39.9**	**-0.3**
KSAR	**Wonju Array Be**	**17.38**	**18**	P		**P**	**22 57 39.9**	**-0.3**
KSAR	**Wonju Array Be**	**17.38**	**18**	P		**P**	**22 57 39.9**	**-0.3**
KSRS	**Korea Array**	**17.40**	**19**	P		**P**	**22 57 39.9**	**-0.5**
	0.7nm,0.3s,baz=197,slow=11,SNR=16							
KS01	**Wonju Array Si**	**17.42**	**18**	*e*Pn		**P**	**22 57 39.9**	**-0.6**
TIY	**Taiyuan**	**18.22**	**338**	*e*P		**P**	**22 57 51.8**	**+2.3**
TIY				S		**Sn**	**23 01 12.9**	**+0.8**
TIY				pmax		pmax		
	comp=Z,220nm,5.0s							
TIY				LR		LR		
	comp=N,1μm,13.5s							
TIY				LR		LR		
	comp=E,440nm,12.0s							
TIY				LR		LR		
	comp=Z,2μm,14.3s							
CD2	**Chengdu**	**18.39**	**306**	P		**Pn**	**22 57 51.9**	**+0.3**
CD2				sP		pP	22 58 01.3	+1.6
CD2				S		**S**	**23 01 18.9**	**-1.0**
CD2				pmax		pmax		
	comp=Z,80nm,1.0s							
CD2				pmax		pmax		
	comp=Z,380nm,4.1s							
CD2				LR		LR		
	comp=N,2μm,14.4s							
CD2				LR		LR		
	comp=Z,3μm,16.8s							
BJT	**Baijiatuan**	**19.38**	**349**	*e*P		**P**	**22 58 02.3**	**+0.2**
BJT				pmax		pmax		
	comp=Z,53nm,1.1s							
BJT	**Baijiatuan**	**19.38**	**349**	*e*P		**P**	**22 58 02.3**	**+0.2**
	comp=Z,53nm,1.1s							
CRAI	**Chiangrai**	**19.39**	**271**	P		**Pn**	**22 58 06.0**	**+2.3**
	comp=Z,165nm,1.1s							
BJI	**Beijing**	**19.40**	**349**	P		**P**	**22 58 02.3**	**0.0**
BJI				S		**S**	**23 01 37.8**	**-2.1**
BJI				pmax		pmax		
	comp=Z,25nm,1.1s							
BJI				pmax		pmax		
	comp=Z,280nm,8.1s							
BJI				LR		LR		
	comp=Z,1μm,17.9s							
BJI				LR		LR		
	comp=Z,1μm,18.9s							
BJI				LR		LR		
	comp=Z,950nm,18.6s							
PBKT	**Sadao Pong**	**19.54**	**260**	P		**Pn**	**22 58 06.5**	**+1.0**
	comp=Z,30nm,1.5s,comp=Z,727nm							
UTTA	**Uttaradit**	**19.63**	**264**	P		**Pn**	**22 58

CMAR Chiang Mai Arr 20.98 267 P Pn 22 58 21.6 -0.8
comp=Z,13nm,0.9s,baz=72,slow=9.4,SNR=76
CMAR LR LR 23 07 02.8
comp=Z,936nm,19.1s,baz=76,slow=38
TNTI Ternate 21.06 162 P **P** **22 58 23.4 +2.8**
LZH Lanzhou 21.25 319 *eP* **P** **22 58 24.5 +1.9**
LZH pP pP 22 58 32.3 +1.3
LZH sP sP 22 58 35.1 +0.1
LZH PP **PnPn** **22 58 49.0 +6.3**
LZH *eS* **S** **23 02 17.0 -0.3**
LZH sS Sn 23 02 27.3 +2.1
LZH pmax pmax
comp=Z,97nm,1.6s
LZH pmax pmax
comp=Z,190nm,4.2s
LZH LR LR
comp=Z,830nm,12.6s
LZH LR LR
comp=Z,1μm,14.3s
LZH LR LR
comp=Z,2μm,15.7s
HHC Hu-ho-hao-te 21.34 340 *eP* **P** **22 58 24.3 +0.8**
HHC sP pP 22 58 33.9 +2.0
HHC PP **PnPn** **22 58 50.0 +6.2**
HHC S **S** **23 02 19.8 +0.9**
HHC sS Sn 23 02 23.3 -3.8
HHC pmax pmax
comp=Z,25nm,1.0s
HHC pmax pmax
comp=Z,170nm,5.1s
HHC LR LR
comp=Z,1μm,14.1s
HHC LR LR
comp=Z,930nm,13.9s
HHC LR LR
comp=Z,1μm,14.7s
MAJO Matsushiro 21.49 40⇑ *eP* **P** **22 58 22.4 -2.6**
MAJO pmax pmax
comp=Z,66nm,1.1s
MJAR Matsushiro Arr 21.49 40 P **P** **22 58 23.9 -1.1**
comp=Z,6.1nm,0.9s,baz=229,slow=7.9,SNR=13
BTO Baotou 21.65 337 *eP* **P** **22 58 28.0 +1.1**
SRDT SRDT 21.93 256 P **P** **22 58 33.3 +3.4**
comp=Z,50nm,1.4s
MHMT Maesarieng 21.98 267 P **P** **22 58 33.8 +3.3**
comp=Z,15nm,1.0s,comp=Z,219nm
KSM Kuching 22.10 210 *eP* **P** **22 58 33.9 +2.1**
comp=Z,22nm,1.0s
KHLT Khaolaem Dam 22.26 258 P P 22 58 41.0 +7.5
comp=Z,11nm,1.4s,comp=Z,188nm
LBMI Labuha 22.44 163 P **P** **22 58 39.3 +3.9**
comp=Z,146nm,1.2s,comp=Z,2μm
BKB Balikpapan 22.54 191 P **P** **22 58 39.9 +3.5**
STKI Sintang 22.86 205 P **P** **22 58 43.5 +3.7**
CN2 Changchun 22.99 8 *eP* **P** **22 58 41.6 +0.7**
CN2 *eS* **S** **23 02 46.8 -2.4**
CN2 pmax pmax
comp=Z,10.0nm,0.3s
CN2 pmax pmax
comp=Z,200nm,5.0s
CN2 LR LR
comp=Z,1μm,16.0s
CN2 LR LR
comp=Z,1μm,16.0s
CN2 LR LR
comp=Z,2μm,16.0s
GUMO Guam 23.88 104 P **P** **22 58 47.1 -2.7**
comp=Z,79nm,0.8s,baz=297,slow=9.0,SNR=3.9
TTSI Tana Toraja 23.97 183 P **P** **22 58 54.1 +3.5**
SURT Suratani 24.60 244 P **P** **22 58 58.2 +1.7**
comp=Z,11nm,1.1s
KRAB Krabi 24.66 242 P P 22 59 06.6 +10
USRK Ussuriysk Ar. 24.81 19 P **P** **22 58 59.2 +1.0**
comp=Z,1.6nm,0.7s,baz=217,slow=7.0,SNR=4.2
SPSI Sidrap Palu 24.88 183 P **P** **22 58 59.2 +0.2**
KULM Kulim 25.25 235 *eP* **P** **22 59 02.9 +0.4**
comp=Z,22nm,1.3s
MSAI Masohi 25.43 161 P **P** **22 59 02.6 -1.4**
MYKOM Kota Tinggi 25.46 224 ⇓P **P** **22 59 07.7 +3.5**
MYKOM Kota Tinggi 25.46 224 *eP* **P** **22 59 05.9 +1.6**
comp=Z,30nm,1.0s
IPM Ipoh 25.50 233 ⇓P **P** **22 59 05.6 +0.9**
IPM Ipoh 25.50 233 *eP* **P** **22 59 05.3 +0.6**
comp=Z,34nm,0.8s
KGM Kluang 25.63 225 ⇑P **P** **22 59 07.7 +1.8**
GTA Gaotai 25.83 320 *eP* **P** **22 59 08.0 +0.4**
GTA pP pP 22 59 13.3 -3.3
GTA sP sP 22 59 16.6 -3.8
GTA S **S** **23 03 35.0 -0.3**
GTA sS sS 23 03 43.5 -6.7
GTA SS **SnSn** **23 04 38.9 +6.5**
GTA pmax pmax
comp=Z,4.0nm,1.1s
GTA pmax pmax
comp=Z,110nm,5.9s
GTA LR LR
comp=Z,600nm,20.4s
GTA LR LR
comp=Z,750nm,17.8s
GTA LR LR
comp=Z,870nm,17.3s
KAPI Kappang 25.92 183 P **P** **22 59 09.2 +0.8**
comp=Z,4.8nm,0.3s,baz=236,slow=3.3,SNR=6.6
KAPI Kappang 25.92 183 *eP* **P** **22 59 09.2 +0.8**
comp=Z,63nm,0.8s
ERM Erimo 27.99 37 *eP* **P** **22 59 24.3 -2.5**
ERM pmax pmax
comp=Z,69nm,1.2s
ERM Erimo 27.99 37 *eP* **P** **22 59 24.3 -2.5**
comp=Z,69nm,1.2s
PSI Prapat 28.18 233 P **P** **22 59 30.2 +1.4**
comp=Z,4.0nm,0.4s,baz=354,slow=6.2,SNR=8.8
PSI Prapat 28.18 233 *eP* **P** **22 59 28.8 -0.1**
PSI *e*SP **pP** **22 59 38.5 +0.6**
PSI pmax pmax
comp=Z,24nm,1.2s
PSI Prapat 28.18 233 *eP* **P** **22 59 28.8 -0.1**
comp=Z,24nm,1.2s
PSI *es*P **pP** **22 59 38.5 +0.6**
LSA Lhasa 28.32 294 P **P** **22 59 32.4 +1.9**
LSA pmax pmax
comp=Z,7.0nm,0.9s
LSA Lhasa 28.32 294 *eP* **P** **22 59 28.7 -1.7**
LSA pmax pmax
comp=Z,8.0nm,0.9s
LSA Lhasa 28.32 294 *eP* **P** **22 59 28.7 -1.7**
comp=Z,7.8nm,0.9s
ULN Ulaanbaatar 29.06 340 *de*P **P** **22 59 36.8 +0.3**
ULN pmax pmax
comp=Z,16nm,1.7s
ULN Ulaanbaatar 29.06 340 *eP* **P** **22 59 37.5 +1.0**
comp=Z,43nm,1.6s
MNSI Mandailing Nat 29.07 229 P **P** **22 59 37.6 +0.9**
ASAJ Asahikawa 29.13 33 P **P** **22 59 36.8 -0.2**
comp=Z,4.2nm,0.4s,baz=214,slow=19,SNR=4.2
ASAJ Asahikawa 29.13 33 *eP* **P** **22 59 36.8 -0.2**
comp=Z,80nm,1.6s
SONA0 Songino Array 29.24 340 *eP* **P** **22 59 38.8 +0.7**
comp=Z,25nm,1.4s
SONM Songino Array 29.24 340 P **P** **22 59 38.8 +0.7**
comp=Z,2.3nm,0.5s,baz=155,slow=9.3,SNR=4.3
SONA1 Songino Array 29.25 340 *eP* **P** **22 59 38.6 +0.5**
KLR Kul'dur 29.39 14 P **P** **22 59 40.6 +1.4**
comp=Z,2.7nm,0.8s,baz=210,slow=3.6,SNR=5.9
PLAI Plampang 29.86 187 P **P** **22 59 44.7 +1.1**
TWSI Taliwang, Sumb 29.88 188 P **P** **22 59 44.0 +0.2**
MDSI Maura Dua 30.30 215 P **P** **22 59 50.3 +2.7**
SOEI Soe 30.76 174 P P 22 59 58.4 +6.6
ZAK Zakamensk 32.48 339 *eP* **P** **23 00 05.3 -1.2**
ZAK pmax pmax
comp=Z,6.0nm,1.3s
GUN Gumba 32.67 289 *eP* **P** **23 00 09.7 +0.9**
comp=Z,71nm,1.1s
PKIN Phulchoki 33.08 288 *eP* **P** **23 00 12.7 +0.4**
KKN Kakani 33.19 289 *eP* **P** **23 00 13.5 +0.3**
DMN Daman 33.34 288 *eP* **P** **23 00 14.9 +0.4**
comp=Z,36nm,1.1s
GKN Gorkha 33.77 289 *eP* **P** **23 00 18.3 +0.1**
comp=Z,43nm,1.3s
MOY Mondy 34.34 338 *eP* **P** **23 00 23.8 +1.0**
MANU Manus Island 34.48 129 *e*PP PP 23 01 44.1 +1.3
KOLN Koldanda 34.68 289 *eP* **P** **23 00 26.5 +0.4**
comp=Z,17nm,0.9s
MTN Manton Dam 35.09 163 *eP* **P** **23 00 27.5 -2.0**
comp=Z,58nm,1.5s
PYUN Piuthan 35.23 289 *eP* **P** **23 00 31.6 +0.7**

WMQ Urumqi 35.82 317 *eP* **P** **23 00 38.3 +2.7**
WMQ pP pP 23 00 43.3 -1.4
WMQ sP sP 23 00 46.3 -2.2
WMQ S **S** **23 06 13.5 +2.3**
WMQ pmax pmax
comp=Z,3.0nm,0.6s
WMQ pmax pmax
comp=Z,42nm,4.8s
WMQ LR LR
comp=Z,190nm,21.0s
WMQ LR LR
comp=Z,82nm,21.0s
FITZ Fitzroy Crossi 39.16 173 P **P** **23 01 02.6 -1.3**
comp=Z,22nm,1.0s,baz=2.7,slow=6.8,SNR=16
FITZ Fitzroy Crossi 39.16 173 *eP* **P** **23 01 02.6 -1.3**
comp=Z,30nm,1.1s
PMG Port Moresby 39.66 137 P **P** **23 01 06.9 -1.3**
comp=Z,45nm,0.8s,baz=350,slow=7.6,SNR=11
PMG Port Moresby 39.66 137 *ce*P **P** **23 01 06.2 -2.0**
PMG pmax pmax
comp=Z,278nm,1.2s
PMG Port Moresby 39.66 137 *eP* **P** **23 01 07.3 -0.9**
comp=Z,51nm,0.9s
MK01 Makanchi Array 40.55 319 *eP* **P** **23 01 15.6 +0.2**
MK01 *eS* **S** **23 07 16.1 -6.5**
MK31 Makanchi Array 40.57 319 *eP* **P** **23 01 16.6 +1.1**
MK31 Makanchi Array 40.57 319 *eP* **P** **23 01 16.6 +1.1**
MK32 Makanchi Array 40.57 319 *eP* **P** **23 01 16.4 +0.9**
MK32 *e*ScP **ScP** **23 07 04.1 -0.6**
MKAR Makanchi Array 40.57 319 P **P** **23 01 16.4 +0.9**
comp=Z,3.2nm,0.8s,baz=113,slow=9.1,SNR=26
MKAR ScP **ScP** **23 07 04.1 -0.6**
comp=Z,0.2nm,0.4s,baz=134,slow=4.2,SNR=2.3
MKAR Makanchi Array 40.57 319 *eP* **P** **23 01 16.6 +1.1**
MAKZ Makanchi 40.77 318 *eP* **P** **23 01 17.8 +0.7**
MAKZ pmax pmax
comp=Z,10.0nm,1.0s
MAKZ Makanchi 40.77 318 *eP* **P** **23 01 17.8 +0.7**
comp=Z,10nm,1.0s
COEN Coen 41.00 146 *eP* **P** **23 01 18.0 -1.3**
comp=Z,88nm,1.6s
MBWA Marble Bar 41.96 182 *eP* **P** **23 01 26.3 -0.7**
comp=Z,22nm,1.3s
KSH Kashi 42.59 306 P **P** **23 01 36.8 +4.5**
KSH *ep*P pP 23 01 43.1 +1.5
KSH *es*P sP 23 01 45.8 +0.5
KSH PcS **PcS** **23 07 19.1 +2.7**
KSH S **S** **23 08 00.6 +7.4**
KSH SS **SS** **23 11 05.8 +2.2**
KSH ScS **ScS** **23 11 34.3 +2.6**
KSH pmax pmax
comp=Z,100nm,3.4s
WRAB Tennant Creek 42.74 161 *c i*P **P** **23 01 31.7 -1.8**
WRAB pmax pmax
comp=Z,129nm,1.7s
WRAB Tennant Creek 42.74 161 *eP* **P** **23 01 32.4 -1.1**
comp=Z,24nm,0.8s
WR1 Warramunga Arr 42.75 161 *eP* **P** **23 01 31.7 -1.8**
comp=Z,29nm,0.9s
WR1 *e*ScP **ScP** **23 07 12.6 -1.0**
WR1 *e*S **S** **23 07 49.8 -5.7**
WRA Warramunga Arr 42.75 161 P **P** **23 01 31.7 -1.8**
comp=Z,13nm,0.7s,baz=344,slow=8.8,SNR=32
WRA ScP **ScP** **23 07 12.5 -1.0**
comp=Z,5.6nm,1.1s,baz=348,slow=4.3,SNR=8.7
WRA S **S** **23 07 49.8 -5.7**
comp=Z,5.5nm,1.1s,baz=343,slow=15,SNR=6.4
WB2 Warramunga Arr 42.75 161 *eP* **P** **23 01 32.3 -1.3**
comp=Z,28nm,0.9s
ZAA0 Zalesovo Array 42.85 329 *eP* **P** **23 01 34.4 +0.4**
ZAA0 *e*ScP **ScP** **23 07 11.4 -2.1**
ZALV Zalesovo Beam 42.85 329 P **P** **23 01 34.1 +0.1**
comp=Z,4.2nm,0.9s,baz=123,slow=7.3,SNR=15
ZAA1 Zalesovo Array 42.85 329 *eP* **P** **23 01 34.1 +0.1**
H11N1 WAKE ISLAND Hy 42.86 83 T T 23 47 46.0
baz=310,slow=76,SNR=19
H11N2 WAKE ISLAND Hy 42.86 83 T T 23 47 40.1
baz=310,slow=76,SNR=19
H11N3 WAKE ISLAND Hy 42.88 83 T T 23 47 44.7
baz=310,slow=76,SNR=20
H11S3 WAKE ISLAND Hy 42.89 85 T T 23 48 31.7
baz=312,slow=76,SNR=10
H11S1 WAKE ISLAND Hy 42.90 85 T T 23 48 32.1
baz=312,slow=76,SNR=30
H11S2 WAKE ISLAND Hy 42.91 85 T T 23 48 33.7
baz=312,slow=76,SNR=21
NVS Novosibirsk 44.12 329 ⇓ *i*P **P** **23 01 46.3 +2.1**
NVS pmax pmax
comp=E,13nm,1.7s
NVS pmax pmax
comp=Z,21nm,1.7s
NVS pmax pmax
comp=N,15nm,1.9s
KURK Kurchatov 44.47 322⇑ *eP* **P** **23 01 48.4 +1.4**
KURK pmax pmax
comp=Z,18nm,1.7s
KURK Kurchatov 44.47 322 *eP* **P** **23 01 44.9 -2.2**
comp=Z,15nm,1.1s
KURBB Kurchatov Arra 44.48 322 P **P** **23 01 48.2 +1.1**
comp=Z,4.9nm,0.8s,baz=127,slow=7.4,SNR=30
AS31 Alice Springs 46.16 164 *eP* **P** **23 01 59.8 -1.0**
comp=Z,4.4nm,0.6s
AS31 *e*ScP **ScP** **23 07 26.9 -0.7**
AS31 *e*S **S** **23 08 45.9 +0.8**
ASAR Alice Springs 46.16 164 P **P** **23 01 59.8 -1.0**
comp=Z,10.0nm,0.8s,baz=348,slow=7.8,SNR=34
ASAR ScP **ScP** **23 07 26.9 -0.7**
comp=Z,4.1nm,1.0s,baz=350,slow=4.1,SNR=13
ASAR S **S** **23 08 45.9 +0.8**
comp=Z,4.3nm,1.1s,baz=359,slow=21,SNR=5.6
AS01 Alice Springs 46.17 164 *eP* **P** **23 01 59.7 -1.1**
AS01 *e*ScP **ScP** **23 07 25.5 -2.1**
KWAJ Kwajalein Atol 46.42 98 *eP* **P** **23 02 01.1 -1.9**
KWAJ pmax pmax
comp=Z,214nm,1.4s
KWAJ Kwajalein Atol 46.42 98 *eP* **P** **23 02 01.1 -1.9**
comp=Z,214nm,1.4s
KBL Kabul 47.48 298 *eP* **P** **23 02 13.2 +1.9**
KBL pmax pmax
comp=Z,12nm,0.5s
KBL Kabul 47.48 298 *eP* **P** **23 02 13.2 +1.9**
comp=Z,12nm,0.5s
CTA Charters Tower 47.73 147 P **P** **23 02 12.2 -0.8**
comp=Z,34nm,1.1s,baz=339,slow=11,SNR=9.9
CTAO Charters Tower 47.73 147 *eP* **P** **23 02 12.8 -0.3**
CTAO pmax pmax
comp=Z,56nm,1.1s
CTAO Charters Tower 47.73 147 *eP* **P** **23 02 12.8 -0.3**
comp=Z,56nm,1.1s
BVAR Borovoye Array 50.06 322 P **P** **23 02 32.6 +2.0**
comp=Z,0.8nm,0.5s,baz=99,slow=8.9,SNR=3.5
BRVK Borovoye 50.13 322⇑ *eP* **P** **23 02 32.1 +0.9**
BRVK pmax pmax
comp=Z,4.0nm,0.9s
BRVK Borovoye 50.13 322 *eP* **P** **23 02 29.9 -1.2**
comp=Z,7.7nm,0.7s
TIXI Tiksi 50.83 3 P **P** **23 02 33.4 -2.7**
comp=Z,1.9nm,0.3s,baz=194,slow=6.7,SNR=4.2
TIXI Tiksi 50.83 3⇓ *eP* **P** **23 02 33.6 -2.5**
TIXI pmax pmax
comp=Z,5.0nm,1.2s
ZRNK Zerenda 50.83 322 *eP* **P** **23 02 35.6 -0.8**
ZRNK pmax pmax
comp=Z,13nm,1.1s
ZRNK Zerenda 50.83 322 *eP* **P** **23 02 35.6 -0.8**
comp=Z,13nm,1.1s
NRIK Noril'sk 52.40 346 P **P** **23 02 47.6 -0.3**
comp=Z,10nm,0.9s,baz=126,slow=6.5,SNR=16
NWAO Narrogin (SRO) 53.79 184 P **P** **23 02 58.1 -0.3**
comp=Z,11nm,0.9s,baz=205,slow=0.1,SNR=5.6
NWAO Narrogin (SRO) 53.79 184 *eP* **P** **23 02 58.2 -0.3**
NWAO pmax pmax
comp=Z,34nm,1.4s
NWAO Narrogin (SRO) 53.79 184 *eP* **P** **23 02 58.1 -0.3**
comp=Z,34nm,1.4s
EIDS Eidsvold 54.57 146 *eP* **P** **23 03 02.7 -1.6**
comp=Z,29nm,1.4s
BILL Bilibino 54.67 19 *i*P **P** **23 03 01.6 -2.9**
BILL *i* 23 03 09.9
BILL *i* 23 04 04.5
BILL pmax pmax
comp=Z,2.0nm,0.9s
BILL Bilibino 54.67 19 *eP* **P** **23 03 06.7 +2.1**
comp=Z,17nm,1.3s
BBOO Buckleboo 55.43 165 *eP* **P** **23 03 10.0 -0.4**
comp=Z,73nm,0.9s

ABKAR Akbulak array 55.59 316 *eP* **P** **23 03 13.2 +1.7**
STKA Stephens Creek 56.17 159 P **P** **23 03 15.2 -0.6**
comp=Z,16nm,0.8s,baz=337,slow=7.0,SNR=48
STKA Stephens Creek 56.17 159 *eP* **P** **23 03 15.2 -0.6**
STKA pmax pmax
comp=Z,5.0nm,0.8s
STKA Stephens Creek 56.17 159 *eP* **P** **23 03 15.2 -0.6**
comp=Z,4.6nm,0.8s
GEYT Alibeck 56.34 302 P **P** **23 03 18.9 +1.8**
comp=Z,3.3nm,0.8s,baz=70,slow=4.9,SNR=8.4
AKTO Aktyubinsk 56.97 317 P **P** **23 03 22.9 +1.5**
comp=Z,0.4nm,0.3s,baz=110,slow=12,SNR=2.5
ARU Arti 57.57 324 P **P** **23 03 25.8 +0.3**
comp=Z,1.8nm,0.4s,baz=70,slow=4.1,SNR=6.2
ARU Arti 57.57 324 *d i*P **P** **23 03 25.5 +0.1**
ARU 23 04 18.1
ARU 23 05 35.5
ARU S **S** **23 11 23.7 +2.6**
ARU SS **SS** **23 15 15.7 +4.6**
ARU pmax pmax
comp=Z,11nm,1.7s
ARU Arti 57.57 324 *eP* **P** **23 03 25.8 +0.3**
comp=Z,8.6nm,0.9s
ARMA Armidale 59.00 149 *eP* **P** **23 03 34.4 -1.5**
comp=Z,53nm,1.8s
GNI Garni 66.52 306⇓ *eP* **P** **23 04 29.8 +3.7**
GNI pmax pmax
comp=Z,31nm,1.5s
GNI Garni 66.52 306 *eP* **P** **23 04 22.3 -3.8**
comp=Z,12nm,1.0s
ZEI Tsey 66.78 309 *eP* **P** **23 04 27.6 -0.1**
ZEI pmax pmax
comp=Z,21nm,0.9s
VRH Novokhopyorsk 67.29 318 *eP* **sP** **23 04 43.8 -0.1**
VRH pmax pmax
comp=Z,5.0nm,0.4s
KBZ Khabaz 67.38 310 P **P** **23 04 32.8 +1.5**
comp=Z,1.3nm,0.8s,baz=94,slow=8.2,SNR=3.2
KIV Kislovodsk 67.50 310 *i*P **P** **23 04 33.8 +1.7**
KIV *i* 23 04 44.8
KIV *i* 23 04 54.1
KIV pmax pmax
comp=Z,2.0nm,0.8s
KIV Kislovodsk 67.50 310 *eP* **P** **23 04 33.9 +1.7**
comp=Z,12nm,0.8s
NEY Neytrino 67.57 309⇑ *eP* **P** **23 04 32.6 -0.1**
NEY pmax pmax
comp=Z,1.0nm,1.0s
KLMR Klimovskoe 67.77 328 *eP* **P** **23 04 31.3 -2.0**
KLMR *e* 23 04 56.5
KLMR pmax pmax
comp=Z,27nm,1.3s
KLMR MLR MLR
comp=Z,916nm,19.0s
MSVF Nonsavu 67.84 120 *ce*P **P** **23 04 34.5 -0.1**
MSVF pmax pmax
comp=Z,42nm,1.1s
MSVF Nonsavu 67.84 120 *eP* **P** **23 04 34.9 +0.3**
comp=Z,32nm,1.0s
TMCR Tamitsa 68.26 332 *eP* P 23 04 42.9 +6.5
TMCR pmax pmax
comp=Z,39nm,1.0s
LPSR Galich'ya Gora 68.86 320 *eP* **sP** **23 04 53.1 -0.6**
LPSR pmax pmax
comp=Z,10.0nm,0.9s
VSR Storozhevoye 68.89 318 *eP* **sP** **23 04 53.7 -0.3**
VSR pmax pmax
comp=Z,10.0nm,0.9s
OBN Obninsk 69.91 322 *i*P **P** **23 04 46.9 +0.1**
OBN pmax pmax
comp=Z,4.0nm,0.8s
CAST Castle Rocks 70.01 29 *eP* **P** **23 04 46.9 -0.4**
comp=Z,14nm,0.8s
MLY Manley 70.38 27 *eP* **P** **23 04 49.2 -0.4**
comp=Z,12nm,1.0s
BPAW Bear Paw Mtn. 70.40 28 *eP* **P** **23 04 49.7 0.0**
comp=Z,45nm,1.6s
BPAW *e*PcP **pP** **23 04 56.5 -3.0**
MCK McKinley 71.36 28 *eP* **P** **23 04 54.9 -0.6**
MCK pmax pmax
comp=Z,22nm,1.1s
MCK McKinley 71.36 28 *eP* **P** **23 04 54.9 -0.6**
comp=Z,22nm,1.1s
RND Reindeer 71.45 28 *eP* **P** **23 04 54.6 -1.5**
RND pmax pmax
comp=Z,19nm,0.9s
RND Reindeer 71.45 28 *eP* **P** **23 04 54.6 -1.5**
comp=Z,19nm,0.9s
MDM Murphy Dome 71.45 27 *eP* **P** **23 04 55.3 -0.8**
comp=Z,32nm,1.2s
SML Sawmill 71.97 30 *eP* **P** **23 04 58.5 -0.8**
SML pmax pmax
comp=Z,33nm,1.3s
SML Sawmill 71.97 30 *eP* **P** **23 04 58.5 -0.8**
comp=Z,33nm,1.3s
ILAR Eielson Array 72.05 27 P **P** **23 04 57.2 -2.4**
comp=Z,0.8nm,0.7s,baz=271,slow=4.7,SNR=4.5
ILB Eielson Array 72.05 27 *eP* **P** **23 04 57.2 -2.4**
ARA0 ARCESS Array S 72.41 338 *eP* **P** **23 05 01.6 -0.1**
ARCES ARCESS Array B 72.41 338 P **P** **23 05 01.6 -0.1**
comp=Z,2.5nm,1.0s,baz=86,slow=5.0,SNR=5.3
SCM Sheep Creek Mo 72.43 30 *eP* **P** **23 05 00.8 -1.3**
SCM pmax pmax
comp=Z,44nm,1.2s
SCM Sheep Creek Mo 72.43 30 *eP* **P** **23 05 00.8 -1.3**
comp=Z,44nm,1.2s
DIV Divide 73.31 30 *eP* **P** **23 05 06.7 -0.6**
comp=Z,35nm,1.3s
DOT Dot Lake 73.50 28 *eP* **P** **23 05 07.3 -1.0**
DOT *ep*P **pP** **23 05 14.1 -4.0**
FIA1 FINESS Array S 74.10 330 *eP* **P** **23 05 12.1 +0.3**
comp=Z,13nm,1.1s
FIA1 *ep*P **pP** **23 05 18.3 -3.3**
FIA0 FINESS Array S 74.10 330 *eP* **P** **23 05 12.4 +0.6**
FIA0 FINESS Array S 74.10 330 *eP* **P** **23 05 12.4 +0.6**
FINES FINESS Array B 74.10 330 P **P** **23 05 12.4 +0.6**
comp=Z,2.3nm,0.9s,baz=37,slow=6.6,SNR=8.8
FINES FINESS Array B 74.10 330 *i*P **P** **23 05 15.1 +3.3**
FINES pmax pmax
comp=Z,2.0nm,0.9s
EGAK Eagle 74.43 26 *eP* **P** **23 05 12.1 -1.6**
comp=Z,7.7nm,0.9s
VSU Vasula 74.54 327 *ce*P **P** **23 05 13.7 -0.7**
VSU pmax pmax
comp=Z,40nm,1.7s
BR101 Keskin Array S 74.96 307 *eP* **P** **23 05 17.8 +0.3**
BRTR Keskin Array B 74.96 307 P **P** **23 05 17.8 +0.3**
comp=Z,0.6nm,0.8s,baz=109,slow=6.9,SNR=4.5
BRTR Keskin Array B 74.96 307 *i*P **P** **23 05 21.2 +3.8**
AKASG Malin Array Be 75.15 319 P **P** **23 05 18.0 -0.1**
comp=Z,0.2nm,0.3s,baz=61,slow=7.2,SNR=5.6
AKBB Malin Array Si 75.15 319 *eP* **P** **23 05 18.0 -0.1**
AKBB pmax pmax
comp=Z,6.0nm,0.6s
AKBB Malin Array Si 75.15 319 *eP* **P** **23 05 18.0 -0.1**
comp=Z,6.0nm,0.6s
BR231 Keskin MP Arra 75.57 307 *eP* **P** **23 05 24.6 +3.7**
INK Inuvik 76.17 22 P **P** **23 05 22.3 -1.3**
comp=Z,1.1nm,0.3s,baz=325,slow=6.6,SNR=6.4
INK Inuvik 76.17 22 *eP* **P** **23 05 22.3 -1.3**
INK pmax pmax
comp=Z,33nm,1.8s
INK Inuvik 76.17 22 *eP* **P** **23 05 22.3 -1.3**
comp=Z,33nm,1.8s
CFR Carcaliu 77.38 314⇓ *i*P sP 23 05 45.8 +1.4
TESR Tescani 77.97 315⇑ *i*P P 23 05 41.6 +7.4
VRI Vrincioaia 78.12 315⇓ *i*P **P** **23 05 36.9 +1.9**
VRI Vrincioaia 78.12 315 ⇓P **P** **23 05 36.9 +1.9**
MLR Muntele Rosu 78.76 314 P **P** **23 05 42.4 +3.7**
comp=Z,0.4nm,0.8s,baz=95,slow=11
MLR Muntele Rosu 78.76 314⇓ *i*P **P** **23 05 42.6 +3.9**
MLR Muntele Rosu 78.76 314 ⇓P **P** **23 05 42.6 +3.9**
MLR Muntele Rosu 78.76 314 *eP* **P** **23 05 42.4 +3.7**
comp=Z,20nm,1.6s
VOIR 79.37 315⇓ *i*P sP 23 05 54.6 -0.9
KWP Kalwaria Pacla 79.47 319⇑ *i*P **P** **23 05 42.6 +0.3**
KWP Kalwaria Pacla 79.47 319 ⇑P **P** **23 05 42.6 +0.3**
ARR Arges 79.67 315⇓ *i*P **P** **23 05 45.2 +1.6**
KOLS Kolonicke sedl 79.97 319 *eP* **P** **23 05 45.5 +0.4**
DRGR 80.44 316⇑ *i*P **P** **23 05 48.6 +0.8**
DRGR 80.44 316 ⇑P **P** **23 05 48.6 +0.8**
NB2 NORSAR Subarra 80.95 332 P **P** **23 05 50.2 +0.1**
comp=Z,3.3nm,0.8s,baz=63,slow=5.3
NB200 NORSAR Array S 80.95 332 *eP* **P** **23 05 49.7 -0.4**
NOA NORSAR Array B 80.95 332 P **P** **23 05 49.7 -0.4**

comp=Z,0.8nm,0.8s,baz=58,slow=5.6,SNR=3.1
OJC Ojcow 81.01 320 *e*P P 23 05 53.0 +2.3
OJC pmax pmax
comp=Z,9.0nm,1.0s
OJC Ojcow 81.01 320 *e*P P 23 05 53.0 +2.3
comp=Z,9.3nm,1.0s
BZS Buzias 81.57 316 ⇓ *i*P sP 23 06 06.3 -0.9
RES Resolute Bay 81.77 9 P P 23 05 52.5 -1.6
comp=Z,4.1nm,0.9s,baz=325,slow=5.3,SNR=12
RES Resolute Bay 81.77 9 *e*P P 23 05 52.6 -1.6
RES pmax pmax
comp=Z,11nm,1.1s
RES Resolute Bay 81.77 9 *e*P P 23 05 52.5 -1.6
comp=Z,11nm,1.1s
OKC Ostrava-Krasne 82.14 320 *e*P P 23 05 58.8 +2.2
OKC Ostrava-Krasne 82.14 320 *e*P P 23 05 58.8 +2.2
VYHS Vyhne 82.25 319 *e*P P 23 05 56.9 -0.4
MORC Moravsky Berou 82.53 321 ⇑ *i*P sP 23 06 14.5 +2.3
KRLC Kraliky 82.86 321 *e*P P 23 06 01.9 +1.5
KRLC *ex* x 23 06 14.2
KRLC Kraliky 82.86 321 *e*P P 23 06 01.9 +1.5
KRLC *e* 23 06 14.2
DPC Dobruska-Polom 83.01 321 *e*P P 23 06 03.0 +1.8
DPC *ex* x 23 06 15.3
DPC Dobruska-Polom 83.01 321 *e*P P 23 06 03.0 +1.8
DPC *e* 23 06 15.3
PKSM Moragy 83.27 317 ⇑ *i*P P 23 06 04.7 +2.2
PKSM Moragy 83.27 317 ⇑P P 23 06 04.7 +2.2
VRAC Vranov 83.28 320 P P 23 06 03.0 +0.4
comp=Z,1.8nm,0.8s,baz=104,slow=4.3,SNR=6.7
VRAC Vranov 83.28 320 ⇓ *i*P P 23 06 02.8 +0.2
VRAC Vranov 83.28 320 ⇓P P 23 06 02.8 +0.2
BRG Berggiesshubel 84.16 323 *e*P P 23 06 09.1 +2.1
comp=Z,2.8nm,1.0s
BRG *e* 23 06 20.6
comp=Z,8.1nm,1.4s
BRG PDIFF 23 22 03.8
comp=Z,8.5nm,1.2s
BRG SKS 23 32 45.0
BRG SDIFF 23 34 00.0
comp=N,3μm,21.9s
comp=E,4μm,22.7s
comp=Z,5μm,22.5s
PRU Pruhonice 84.20 322 *e*P P 23 06 08.7 +1.5
PRU *es*P pP 23 06 17.9 +0.7
PRU Pruhonice 84.20 322 *e*P P 23 06 08.7 +1.5
PRU *e* 23 06 17.9
CONA Conrad Observa 84.30 319 *i* PcP P 23 06 10.2 +2.3
comp=Z,4.6nm,1.5s
CLL Collm 84.49 323 *e*P P 23 06 09.0 +0.3
CLL *i* 23 06 22.0
CLL *i* 23 06 27.6
CLL Collm 84.49 323 *e*P P 23 06 09.0 +0.3
KMBO Kilima Mbogo 84.63 267 P P 23 06 11.1 +0.7
comp=Z,0.5nm,0.2s,baz=154,slow=8.9,SNR=3.6
KMBO Kilima Mbogo 84.63 267 *e*P P 23 06 11.1 +0.7
KMBO pmax pmax
comp=Z,11nm,1.6s
KMBO Kilima Mbogo 84.63 267 *e*P P 23 06 11.1 +0.7
comp=Z,11nm,1.6s
KHC Kasperske Hory 85.14 321 *e*P P 23 06 13.0 +0.9
KHC *es*P pP 23 06 22.5 +0.5
KHC Kasperske Hory 85.14 321 *e*P P 23 06 13.0 +0.9
KHC *e* 23 06 22.5
GERES GERESS Array B 85.20 321 P P 23 06 13.3 +0.8
comp=Z,0.7nm,0.8s,baz=36,slow=5.0,SNR=6.2
GEA0 GERESS Array S 85.20 321 *e*pP pP 23 06 17.8 -4.6
MOA Molln 85.30 320 pP pP 23 06 18.1 -4.8
comp=Z,5.7nm,1.0s
SOKA Soboth 85.35 318 sP P 23 06 21.1 +7.9
comp=Z,2.3nm,0.8s
YKW3 Yellowknife Ar 85.85 23 *es*P P 23 06 23.1 +7.9
comp=Z,9.2nm,1.1s
YKA Yellowknife Ar 85.90 23 P P 23 06 13.6 -1.8
comp=Z,4.0nm,0.9s,baz=314,slow=4.8,SNR=49
YKA PKKPbc **PKKPbc** 23 24 17.3 -0.3
comp=Z,0.3nm,0.7s,baz=133,slow=2.8,SNR=6.3
YKB5 Yellowknife Ar 85.90 23 *e*P P 23 06 13.7 -1.8
NEW Newport 93.64 35 *e*P P 23 06 52.1 -0.2
NEW pmax pmax
comp=Z,18nm,1.9s
NEW Newport 93.64 35 *e*P P 23 06 52.1 -0.2
comp=Z,18nm,1.9s
VNA2 Neumayer--Watz 121.88 198 PKP **PKPdf** 23 12 29.9 +0.6
baz=120,slow=2.9
VNA3 Neumayer Olymp 122.34 197 PKP **PKPdf** 23 12 27.8 -2.3
GRMC Gramalote, San 148.34 27 *e*P **PKPbc** 23 13 22.7 -0.5
HELC Santa Helena 148.41 33 *e*P **PKPbc** 23 13 22.7 -1.0
NORC Norcasia 149.28 32 *e*P **PKPbc** 23 13 26.7 +1.2
GUYC Guyana, Colomb 149.30 34 *e*P **PKPdf** 23 13 22.7 +0.9
RUSC La Rusia 149.84 29 *e*P **PKPbc** 23 13 25.4 -2.1
ROSC El Rosal 150.17 32 PKPbc **PKPbc** 23 13 27.2 -0.9
comp=Z,2.9nm,0.5s,baz=90,slow=4.3,SNR=5.2
CHIC Chingaza 150.65 31 *e*P **PKPbc** 23 13 26.7 -2.6
VILC Villavicencio, 151.11 32 *e*P **PKPbc** 23 13 28.0 -2.0
OTAV Otavalo 151.52 44 *e*PKPbc **PKPbc** 23 13 31.7 +0.3
LPAZ La Paz 170.08 63 PKP **PKPdf** 23 13 43.7 -1.4
comp=Z,1.9nm,1.0s,baz=244,slow=1.7,SNR=4.9

*ISK **24** 22:54:04.3, 35°.67N×45°.74E, h5km, MD4.8*
*ISN **24** 22:54:05.2±1.3, 36°.02N×45°.39E, h0km±4km, ML3.7*
*AZER **24** 22:54:08.8±0.1, 35°.02N×45°.87E, h46km±2km, Error ellipse: s-maj=13.3km s-min=1.7km az=226.0*
*IDC **24** 22:54:11.6±1.4, 36°.23N×45°.41E, h0km, mb3.6/4, mb1 3.6/12, mb1mx3.4/62, mbtmp3.5/12, ML2.8/7, MS3.5/1, Ms1 3.5/1, ms1mx2.5/57, Error ellipse: s-maj=22.2km s-min=14.6km az=144.0*
*CSEM **24** 22:54:12.9±0.1, 36°.13N×45°.54E, h10km, ML3.7, Error ellipse: s-maj=7.3km s-min=3.3km az=34.0*
*TEH **24** 22:54:13.6, 36°.22N×45°.50E, h16km, ML3.7*
*THR **24** 22:54:13.2±0.7, 36°.19N×45°.67E, h14km±10km, ML3.5*
ISC 24 22:54:12.0±1.2, 36°.20N±0°.03×45°.67E±0°.03, h6km±10km, n120, σ1§62/142, mb3.3/4, 7C-8D, Iran-Iraq border region

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
IKRK	**Kirkuk**	**1.34**	**234**	*e*Pg		Pg	22 54 28.0	-10
IKRK				*e*Sg		Sg	22 54 45.0	-10
IDHR	**Dehrash**	**1.61**	**158**	*e*Pn		**Pn**	**22 54 40.8**	**-0.4**
IDHR				*e*AMB	AMB		22 54 43.3	
comp=Z,21μm,0.3s								
IDHR	**Dehrash**	**1.61**	**158**	*e*Pn		**Pn**	**22 54 40.8**	**-0.4**
ILIN	**Lien**	**1.66**	**140**	*e*Pn		**Pn**	**22 54 41.7**	**-0.2**
ILIN				*e*Sg		**Sg**	**22 55 08.5**	**+3.1**
ILIN				*e*AMB	AMB		22 55 15.8	
comp=Z,8μm,0.3s								
ILIN	**Lien**	**1.66**	**140**	*e*Pn		**Pn**	**22 54 41.7**	**-0.2**
ILIN				*e*Sg		**Sg**	**22 55 08.5**	**+3.1**
SNGE	**Sanandaj**	**1.76**	**128**	*e*Pg		**Pb**	**22 54 44.9**	**+0.1**
SNGE				*e*Sg		**Sg**	**22 55 09.0**	**+0.3**
SNGE				AML	AML		22 55 16.5	
comp=N,873nm,0.6s								
SNGE				AML	AML		22 55 20.1	
comp=E,771nm,0.6s								
SNGE	**Sanandaj**	**1.76**	**128**	*e*P		**Pb**	**22 54 44.9**	**+0.1**
SNGE				*e*Sg		**Sg**	**22 55 09.0**	**+0.3**
IBST	**Bostanabad**	**1.79**	**33**	*e*Pn		**Pn**	**22 54 42.9**	**-0.8**
IBST				*e*AMB	AMB		22 55 12.6	
comp=Z,8μm,0.3s								
CUKT	**Cukurca**	**1.95**	**303**	*e*PN		**Pn**	**22 54 45.2**	**-0.6**
CUKT				*e*SN		**Sg**	**22 55 15.0**	**+0.1**
CUKT	**Cukurca**	**1.95**	**303**	*e*Pn		**Pn**	**22 54 45.2**	**-0.6**
IGHG	**Ghaleghazi**	**2.01**	**158**	*e*Pn		**Pn**	**22 54 47.9**	**+1.2**
IGHG				*e*AMB	AMB		22 55 25.4	
comp=Z,12μm,0.3s								
IGHG	**Ghaleghazi**	**2.01**	**158**	*e*Pn		**Pn**	**22 54 47.9**	**+1.2**
ITBZ	**Tabriz**	**2.06**	**11**	*e*Pn		**Pn**	**22 54 48.0**	**+0.6**
ITBZ				*e*AMB	AMB		22 55 24.9	
comp=Z,3μm,0.2s								
ITBZ	**Tabriz**	**2.06**	**11**	*e*Pn		**Pn**	**22 54 48.0**	**+0.6**
HAKT	**HAKKARI**	**2.07**	**311**	*i* P		**Pn**	**22 54 48.0**	**+0.4**
HAKT				*i* S		**Sg**	**22 55 17.3**	**-1.3**
HAKT	**HAKKARI**	**2.07**	**311**	P		**Pn**	**22 54 48.0**	**+0.4**
HAKT				S		**Sg**	**22 55 17.3**	**-1.3**
MSL	**Mosul**	**2.07**	**276**	*e*Pn		Pn	22 54 38.0	-9.3
MSL				*e*SN4			22 55 03.0	
ISHB	**Shabestar**	**2.08**	**359**	*e*Pn		**Pn**	**22 54 47.3**	**-0.3**
ISHB				*e*Sg		**Sg**	**22 55 17.9**	**-0.9**
ISHB				*e*AMB	AMB		22 55 26.0	
comp=Z,9μm,0.2s								
ISRB	**Sarab**	**2.28**	**44**	*e*Pn		**Pn**	**22 54 51.5**	**+1.1**
ISRB				*e*AMB	AMB		22 54 57.5	
comp=Z,3μm,0.3s								
ISRB	**Sarab**	**2.28**	**44**	*e*Pn		**Pn**	**22 54 51.5**	**+1.1**
ZNJK	**Zanjan**	**2.48**	**78**	*e*Pn		**Pn**	**22 54 55.5**	**+2.3**
ZNJK				*e*Sg		**Sg**	**22 55 31.0**	**-0.7**
ZNJK	**Zanjan**	**2.48**	**78**	*e*Pn		**Pn**	**22 54 55.5**	**+2.3**
IBZA	**Bozab**	**2.49**	**133**	*e*Pn		**Pn**	**22 54 54.7**	**+1.3**
IBZA				*e*AMB	AMB		22 55 42.9	
comp=Z,3μm,0.3s								
IBZA	**Bozab**	**2.49**	**133**	*e*Pn		**Pn**	**22 54 54.7**	**+1.3**
IMRD	**Marand**	**2.51**	**1**	*e*Pn		**Pn**	**22 54 54.1**	**+0.6**
IMRD				*e*Sg		**Sg**	**22 55 32.2**	**-0.4**
IMRD				*e*AMB	AMB		22 55 36.5	
comp=Z,7μm,0.4s								
IMRD	**Marand**	**2.51**	**1**	*e*Pn		**Pn**	**22 54 54.1**	**+0.6**
SIRT	**Sirnak**	**2.89**	**298**	*e*PN		**Pn**	**22 54 57.9**	**-0.8**
SIRT	**Sirnak**	**2.89**	**298**	*e*Pn		**Pn**	**22 54 57.9**	**-0.8**
TVAN	**Van**	**2.94**	**323**	*i* P		**Pn**	**22 55 01.2**	**+1.8**
TVAN				*i* S		**Sg**	**22 55 45.8**	**-0.7**
TVAN	**Van**	**2.94**	**323**	P		**Pn**	**22 55 01.2**	**+1.8**
GEVA	**Gevas**	**2.96**	**316**	*i* P		**Pn**	**22 55 00.6**	**+0.9**
GEVA				*i* S		**Sg**	**22 55 47.9**	**+0.8**
GEVA	**Gevas**	**2.96**	**316**	P		**Pn**	**22 55 00.6**	**+0.9**
NAX	**Nakhchivan**	**2.97**	**357**	⇓P		**Pg**	**22 55 08.3**	**-0.6**
SNR=6.1								
NAX				⇑S		**Sg**	**22 55 48.9**	**+1.5**
VANB	**Van**	**3.00**	**323**	*e*PN		**Pn**	**22 55 01.4**	**+1.2**
VANB	**Van**	**3.00**	**323**	*e*Pn		**Pn**	**22 55 01.4**	**+1.2**
GRMI	**Germi**	**3.15**	**34**	*e*Pn		**Pn**	**22 55 04.7**	**+2.4**
GRMI	**Germi**	**3.15**	**34**	*e*P		**Pn**	**22 55 04.6**	**+2.4**
IKFM	**Kafar-mosalman**	**3.22**	**145**	*e*PN		**Pn**	**22 55 04.7**	**+1.6**
IKFM	**Kafar-mosalman**	**3.22**	**145**	*e*Pn		**Pn**	**22 55 04.7**	**+1.6**
LRK	**Lerik**	**3.23**	**40**	⇓P		**Pn**	**22 55 05.2**	**+1.7**
SNR=3.9								
LRK				⇑S		**Sg**	**22 55 54.8**	**-1.1**
LRK	**Lerik**	**3.23**	**40**	P		**Pn**	**22 55 05.2**	**+1.7**
SNR=3.9								
VMUR	**Van-Muradiye**	**3.24**	**330**	*i* P		**Pn**	**22 55 04.8**	**+1.2**
VMUR				*i* S		**Sg**	**22 56 00.4**	**+4.3**
VMUR	**Van-Muradiye**	**3.24**	**330**	P		**Pn**	**22 55 04.8**	**+1.2**
CLDR	**Caldiran**	**3.25**	**335**	*e*PN		**Pn**	**22 55 05.4**	**+1.7**
CLDR	**Caldiran**	**3.25**	**335**	*e*Pn		**Pn**	**22 55 05.4**	**+1.7**
ASTR	**Astara**	**3.43**	**46**	⇓P		**Pb**	**22 55 12.5**	**-0.6**
SNR=4.8								
ASTR				⇓S		**Sg**	**22 56 02.8**	**+0.7**
ASTR	**Astara**	**3.43**	**46**	P		**Pb**	**22 55 12.5**	**-0.6**
SNR=4.8								
IKMR	**Kamar-syah**	**3.49**	**139**	*e*Pn		**Pn**	**22 55 09.1**	**+2.3**
IKMR	**Kamar-syah**	**3.49**	**139**	*e*Pn		**Pn**	**22 55 09.1**	**+2.3**
LKRN	**Lenkeran, Azer**	**3.52**	**44**	⇑P		**Pb**	**22 55 13.9**	**-0.8**
SNR=2.8								
LKRN				⇓S		**Sg**	**22 56 03.1**	**-2.0**
LKRN	**Lenkeran, Azer**	**3.52**	**44**	P		**Pb**	**22 55 13.9**	**-0.8**
SNR=2.8								
TATV	**Tatvan**	**3.55**	**311**	*e*P		**Pb**	**22 55 16.6**	**+1.2**
IRAZ	**Razeghan**	**3.56**	**102**	*e*AMB	AMB		22 55 21.1	
comp=Z,974nm,0.3s								
IRAZ				*e*Pn		**Pn**	**22 55 09.5**	**+1.6**
GLBA	**Cilabad**	**3.73**	**35**	P		**Pb**	**22 55 17.6**	**-0.6**
SNR=4.5								
GLBA				⇓S		**Sg**	**22 56 13.0**	**+1.4**
GLBA	**Cilabad**	**3.73**	**35**	P		**Pb**	**22 55 17.6**	**-0.6**
SNR=4.5								
BTMN	**Batman**	**3.90**	**297**	*i* P		**Pn**	**22 55 12.0**	**-0.5**
BTMN	**Batman**	**3.90**	**297**	P		**Pn**	**22 55 12.0**	**-0.5**
ASAO	**Ashtian**	**3.93**	**114**	*e*Pn		**Pn**	**22 55 15.4**	**+2.4**
ASAO				AML	AML		22 56 33.6	
comp=E,31nm,0.5s								
ASAO	**Ashtian**	**3.93**	**114**	*e*P		**Pn**	**22 55 15.5**	**+2.4**
GNI	**Garni**	**4.01**	**350**	Pn		**Pn**	**22 55 16.0**	**+2.0**
comp=E,0.6nm,0.3s,baz=166,slow=6.6,SNR=3.4								
GNI				Pg		**Pb**	**22 55 24.6**	**+1.5**
comp=E,1.1nm,0.3s,baz=194,slow=5.4,SNR=10								
GNI				Lg	Lg		22 56 21.1	
comp=E,2.0nm,0.3s,baz=55,slow=16,SNR=4.8								
MARD	**Mardin**	**4.08**	**287**	*i* P		**Pn**	**22 55 14.9**	**-0.1**
MARD				*i* S		**Sb**	**22 56 12.3**	**-1.6**
EKAR	**Karacoban**	**4.18**	**318**	*i* P		**Pb**	**22 55 25.5**	**-0.6**
EKAR				*i* S		**Sg**	**22 56 31.6**	**+5.5**
BRDA	**Brd**	**4.22**	**16**	⇑P		**Pg**	**22 55 31.1**	**-1.9**
SNR=5.6								
BRDA				⇑S		**Sg**	**22 56 28.1**	**+0.4**
ZRD	**Zardab**	**4.37**	**21**	⇓P		**Pg**	**22 55 33.0**	**-2.7**
SNR=6.3								
ZRD				⇑S		**Sg**	**22 56 32.4**	**+0.1**
MAZI	**Mazidag**	**4.37**	**288**	*e*PN		**Pn**	**22 55 17.8**	**-1.2**
MAZI	**Mazidag**	**4.37**	**288**	*e*Pn		**Pn**	**22 55 17.8**	**-1.2**
VRTB	**Varto-Mus**	**4.46**	**313**	*e*PN		**Pn**	**22 55 21.5**	**+1.3**
VRTB	**Varto-Mus**	**4.46**	**313**	*e*Pn		**Pn**	**22 55 21.5**	**+1.3**
GANJ	**Ganja**	**4.47**	**6**	⇓P		**Pb**	**22 55 32.7**	**+1.8**
SNR=7.9								
GANJ				⇑S		**Sg**	**22 56 35.1**	**-0.3**
BNGL	**BINGOL**	**4.52**	**309**	*e*P		**Pb**	**22 55 34.5**	**+2.7**
DIY	**Diyarbakir**	**4.67**	**293**	*e*Pn		**Pn**	**22 55 23.8**	**+0.7**
DYBB	**Diyarbakir**	**4.75**	**293**	*e*Pn		**Pn**	**22 55 23.8**	**-0.5**
BNGB	**Bing¶ll**	**4.84**	**307**	*e*PN		**Pn**	**22 55 26.5**	**+1.1**
BINT	**Bingol**	**4.90**	**305**	*e*Pn		**Pn**	**22 55 26.5**	**+0.1**
EZM	**Erzurum**	**5.02**	**319**	*e*PN		**Pn**	**22 55 30.1**	**+2.0**
IDMV	**Damavand**	**5.21**	**95**	*e*Pn		**Pn**	**22 55 31.7**	**+1.0**
IDMV				*e*AMB	AMB		22 57 16.5	
comp=Z,220nm,0.3s								
IDMV				*e*AMB	AMB		02 03 38.5	
comp=Z,140nm,0.1s								
IDMV	**Damavand**	**5.21**	**95**	*e*Pn		**Pn**	**22 55 31.7**	**+1.0**
RTB	**Rutbah**	**5.43**	**236**	*e*Pn		Pn	22 55 24.0	-10
RTB				*e*SN4			22 56 20.0	
SVRC	**Sivrice-ELAZID**	**5.51**	**295**	*e*PN		**Pn**	**22 55 33.9**	**-0.9**
SVRC	**Sivrice-ELAZID**	**5.51**	**295**	*e*Pn		**Pn**	**22 55 33.9**	**-0.9**
URFA	**Urfa**	**5.63**	**285**	*e*PN		**Pn**	**22 55 35.2**	**-1.1**
URFA	**Urfa**	**5.63**	**285**	*e*Pn		**Pn**	**22 55 35.2**	**-1.1**
IKLH	**Kolahrood**	**5.65**	**119**	*e*Pn		**Pn**	**22 55 40.7**	**+3.9**
IKLH				*e*AMB	AMB		22 57 30.9	
comp=Z,354nm,0.4s								
IKLH	**Kolahrood**	**5.65**	**119**	*e*Pn		**Pn**	**22 55 40.7**	**+3.9**
PTK	**Pertek**	**5.66**	**300**	*e*PN		**Pn**	**22 55 36.5**	**-0.3**
PTK	**Pertek**	**5.66**	**300**	*e*Pn		**Pn**	**22 55 36.5**	**-0.3**
IFIR	**Firoozkooh**	**5.78**	**93**	*e*Pn		**Pn**	**22 55 40.7**	**+2.1**
IFIR				*e*AMB	AMB		22 56 12.4	
comp=Z,68nm,0.2s								
IFIR				*e*AMB	AMB		02 03 20.0	
comp=Z,325nm,0.1s								
IFIR	**Firoozkooh**	**5.78**	**93**	*e*Pn		**Pn**	**22 55 40.7**	**+2.1**
IZEF	**Zefreh**	**6.41**	**119**	*e*Pn		**Pn**	**22 55 49.2**	**+2.0**
IZEF				*e*AMB	AMB		22 57 48.5	
comp=Z,103nm,0.5s								
IZEF	**Zefreh**	**6.41**	**119**	*e*Pn		**Pn**	**22 55 49.2**	**+2.0**
IGAR	**Gharneh**	**6.50**	**124**	*e*Pn		**Pn**	**22 55 49.9**	**+1.5**
IGAR				*e*AMB	AMB		22 58 10.9	
comp=Z,127nm,0.4s								
GAZ	**Gaziantep**	**6.86**	**281**	*e*PN		**Pn**	**22 55 51.8**	**-1.4**
GAZ	**Gaziantep**	**6.86**	**281**	*e*Pn		**Pn**	**22 55 51.8**	**-1.4**
IRAM	**Ramesheh**	**7.09**	**126**	*e*Pn		**Pn**	**22 56 56.0**	**-0.5**
IRAM				*e*AMB	AMB		22 58 15.8	
comp=Z,72nm,0.4s								
IRAM	**Ramesheh**	**7.09**	**126**	*e*Pn		**Pn**	**22 55 56.0**	**-0.5**
TAHT	**Tahtakopru-Hat**	**7.66**	**274**	*e*PN		**Pn**	**22 56 01.7**	**-2.4**
TAHT	**Tahtakopru-Hat**	**7.66**	**274**	*e*Pn		**Pn**	**22 56 01.7**	**-2.4**
SVSK	**Karacayir**	**7.78**	**301**	*e*PN		**Pn**	**22 56 06.4**	**+0.7**
SVSK	**Karacayir**	**7.78**	**301**	*e*Pn		**Pn**	**22 56 06.4**	**+0.7**
KBZ	**Khabaz**	**7.81**	**345**	Pn		**Pn**	**22 56 08.0**	**+1.9**
comp=Z,0.1nm,0.3s,baz=146,slow=6.1,SNR=4.9								
KOZT	**Kozan**	**7.99**	**282**	*e*PN		**Pn**	**22 56 07.0**	**-1.6**
KOZT	**Kozan**	**7.99**	**282**	*e*Pn		**Pn**	**22 56 07.1**	**-1.6**
KVAR	**Kislovodsk Arp**	**8.07**	**345**	Pn		**Pn**	**22 56 13.4**	**+3.5**
baz=131,slow=11,SNR=2.6								
BNN	**Bunyan**	**8.24**	**292**	*e*PN		**Pn**	**22 56 11.7**	**-0.5**
BNN	**Bunyan**	**8.24**	**292**	*e*Pn		**Pn**	**22 56 11.7**	**-0.5**
IKAZ	**Kazeroun**	**8.24**	**139**	*e*Pn		**Pn**	**22 56 12.4**	**0.0**
IKAZ				*e*AMB	AMB		22 56 23.3	
comp=Z,202nm,0.2s								
IKAZ	**Kazeroun**	**8.24**	**139**	*e*Pn		**Pn**	**22 56 12.4**	**0.0**
ASF	**Jabal al Asfar**	**8.30**	**244**	Pn		**Pn**	**22 56 12.6**	**-0.4**
comp=Z,0.1nm,0.3s,baz=39,slow=6.5,SNR=2.5								
ASF				Pg		**Pb**	**22 56 37.9**	**+1.7**
comp=Z,0.3nm,0.3s,baz=351,slow=18,SNR=3.7								
ASF				Sn		**Sn**	**22 57 43.8**	**-3.3**
comp=Z,0.2nm,0.3s,baz=302,slow=19,SNR=2.0								
ASF				Lg	Lg		22 58 31.0	
comp=Z,0.3nm,0.3s,baz=331,slow=19,SNR=2.5								
IPAR	**Pars**	**8.87**	**134**	*e*Pn		**Pn**	**22 56 20.4**	**-0.6**
IPAR				*e*AMB	AMB		22 56 21.4	
comp=Z,84nm,0.2s								
IPAR	**Pars**	**8.87**	**134**	*e*Pn		**Pn**	**22 56 20.4**	**-0.6**
MMAI	**Mount Meron Ar**	**9.04**	**252**	Pn		**Pn**	**22 56 22.6**	**-0.4**
comp=Z,0.4nm,0.3s,baz=81,slow=18,SNR=4.8								
GEYT	**Alibeck**	**10.10**	**76**	Pn		**Pn**	**22 56 41.3**	**+3.7**
comp=Z,0.0nm,0.3s,baz=278,slow=10.0,SNR=4.7								
BRTR	**Keskin Array B**	**10.12**	**294**	Pn		**Pn**	**22 56 38.9**	**+0.8**
comp=Z,0.0nm,0.3s,baz=115,slow=13,SNR=9.4								
AKTO	**Aktyubinsk**	**16.79**	**28**	Pn		**Pn**	**22 58 09.2**	**+1.5**
comp=Z,0.1nm,0.3s,baz=214,slow=15,SNR=2.9								
KOLS	**Kolonicke sedl**	**21.31**	**314**	*e*P		**P**	**22 58 59.7**	**+0.3**
VRAC	**Vranov**	**24.87**	**311**	LR		LR	23 09 54.3	
comp=Z,98nm,19.6s,baz=60,slow=38								
GERES	**GERESS Array B**	**26.52**	**308**	P		**P**	**22 59 48.2**	**-2.2**
comp=Z,0.1nm,0.4s,baz=106,slow=7.2,SNR=2.8								
MKAR	**Makanchi Array**	**29.16**	**57**	P		**P**	**23 00 14.7**	**+0.8**
comp=Z,0.1nm,0.3s,baz=258,slow=5.9,SNR=5.2								
ESDC	**Sonseca Array**	**38.90**	**291**	P		**P**	**23 01 36.3**	**-2.1**
comp=Z,0.5nm,0.6s,baz=65,slow=7.9,SNR=5.9								
PETK	**Petropavlovsk-**	**73.37**	**36**	P		**P**	**23 05 46.5**	**+2.0**
comp=Z,2.7nm,0.9s,baz=343,slow=4.5,SNR=3.8								

IDC 24 22:54:27.6±1.8, 4°.22S×134°.53E, h0km, mb3.6/1, mb1 3.9/5, mb1mx3.6/49, mbtmp3.8/5, ML3.8/4, MS4.2/1, Ms1 4.2/1, ms1mx3.2/33, Error ellipse: s-maj=63.8km s-min=25.6km az=72.0, Irian Jaya region

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
MRSI	**Marisa**	**13.41**	**290**	P		Pn	22 57 36.6	-2.8
WRA	**Warramunga Ar**	**15.63**	**181**	Pn		Pn	22 58 07.8	-1.6
0.1nm,0.3s,baz=2.5,slow=13,SNR=3.4								
WRA				Sn		Sn	23 00 52.5	-11
0.1nm,0.3s,baz=359,slow=24,SNR=3.7								
FITZ	**Fitzroy Crossi**	**16.31**	**212**	Pn		Pn	22 58 17.6	-0.6
0.4nm,0.3s,baz=36,slow=12,SNR=7.2								
ASAR	**Alice Springs**	**19.34**	**182**	P		P	22 58 55.2	+0.4
0.4nm,0.3s,baz=7.2,slow=11,SNR=29								
CTA	**Charters Tower**	**19.48**	**145**	P		Pn	22 58 56.9	-0.6
0.6nm,0.3s,baz=334,slow=12,SNR=5.2								
GUMO	**Guam**	**20.45**	**30**	LR		LR	23 07 45.0	
comp=Z,730nm,19.7s,baz=278,slow=39								
MKAR	**Makanchi Array**	**68.50**	**324**	P		P	23 05 31.9	0.0
0.5nm,0.7s,baz=110,slow=6.3,SNR=2.4								

SJA 24 22:54:35.1±0.6, 31°.12S×67°.92W, h22km±2km, ML2.3, MW4.0, San Juan Province

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
RTLL	**Cerro Villicun**	**0.52**	**246**	*i* P		Pb	22 54 46.3	+0.6
RTLL				*i* S		Sb	22 54 54.0	+1.2
SJA	**San Juan**	**0.69**	**233**	*i* P		Pb	22 54 48.7	+0.2
SJA				IAML			22 55 10.6	
comp=Z,158nm,0.1s								
RTCV	**Cerro Valdivia**	**0.91**	**216**	*i* P		Pn	22 54 52.8	+0.1
ACAN	**Cantantal**	**1.31**	**152**	*i* P		Pb	22 54 59.8	+0.7
RTLS	**Leoncito**	**1.36**	**240**	*i* P		Pb	22 55 01.0	+1.0
RTLS				*i* S		Sb	22 55 21.0	+3.9
ASAL	**Salagasta**	**1.66**	**208**	*i* P		Pb	22 55 05.4	+0.3
ASAL				*i* S		Sb	22 55 27.8	+2.1
AUSP	**Uspallata**	**1.67**	**228**	*i* P		Pb	22 55 05.7	+0.4
AUSP				*i* S		Sb	22 55 28.3	+2.3
AGUA	**GUANDACOL**	**1.70**	**343**	*i* P		Pb	22 55 05.8	+0.1
AAGR	**Agrelo**	**2.11**	**201**	*i* P		Pb	22 55 11.9	-0.8
VCA	**Vinchina**	**2.39**	**354**	*i* P		Pb	22 55 15.5	-2.0
VCA				IAML			22 55 51.9	
comp=Z,15nm,0.2s								

*SOME **24** 22:59:53.5, 41°.92N×72°.17E, h5km*
*KRNET **24** 22:59:54.0±0.1, 41°.94N×72°.26E, h9km, mb3.1*
*NNC **24** 22:59:55.9±0.8, 42°.02N×72°.21E, h0km, mb3.7, mpv3.2, Error ellipse: s-maj=6.8km s-min=4.6km az=108.0*
*KNET **24** 22:59:56.5±0.6, 42°.03N×72°.38E, h0km,

BTK				⇓*i*S		Sg	23 01 03.1	-1.0
	baz=211							
SFK	**Sufi-Kurgan**	**2.19**	**153**	⇑*e*P		**Pb**	**23 00 33.8**	**-0.1**
	baz=153							
SFK				⇑*i*S		**Sg**	**23 01 02.0**	**-2.3**
	baz=153							
SFK	**Sufi-Kurgan**	**2.19**	**153**	⇓Pn		**Pb**	**23 00 33.9**	**0.0**
	5.8nm,0.4s							
SFK				⇓Sn		**Sg**	**23 01 03.7**	**-0.7**
	34nm,0.5s							
KZA	**Kyzart**	**2.27**	**86**	⇑P		**Pg**	**23 00 36.8**	**-0.7**
	44nm,0.2s							
TKM2	**Tokmak 2**	**2.68**	**68**	⇑Pn		**Pb**	**23 00 42.3**	**0.0**
	14nm,0.5s							
TKM2				⇑Sn		**Sg**	**23 01 19.5**	**-0.6**
	12nm,0.6s							
TKM2	**Tokmak 2**	**2.68**	**68**	⇓P		**Pb**	**23 00 42.5**	**+0.2**
	19nm,0.5s							
BMNS	**Besmoynak**	**2.80**	**65**	*e*P		**Pb**	**23 00 45.5**	**+1.3**
	61nm,0.2s							
BMNS				*e*S		**Sg**	**23 01 22.2**	**-1.6**
	32nm,0.2s							
DGS	**Degeres**	**2.92**	**63**	*e*P		**Pb**	**23 00 46.9**	**+0.6**
	6.2nm,0.4s							
DGS				*e*S		**Sb**	**23 01 24.3**	**+2.1**
	30nm,0.4s							
KST	**Kastek**	**2.98**	**68**	*e*P		**Pb**	**23 00 47.7**	**+0.5**
	4.9nm,0.5s							
KST				*e*S		**Sg**	**23 01 26.2**	**-3.3**
	59nm,0.4s							
MTBS	**Maitube**	**3.33**	**68**	*e*P		**Pg**	**23 00 56.0**	**-1.6**
	3.9nm,0.1s							
MTBS				*e*S		**Sg**	**23 01 40.3**	**-0.5**
	6.5nm,0.2s							
PDGK	**Podgornoye**	**5.54**	**73**	⇓Pn		Pn	23 01 19.8	+3.2
	16nm,1.4s							
PDGK				⇑Lg		Lg	23 02 45.9	
	8.5nm,1.1s							

BJI ***24*** *23:07:48.6,4.˚60S×122.˚75E,h10km,mb5.5/83,mB5.8/69, Ms5.9/98,Ms7 5.8/90*

IDC ***24*** *23:07:49.6±0.3,4.˚37S×122.˚75E,h0km,mb5.2/48, mb1 5.2/51,mb1mx5.2/52,mbtmp5.2/51,ML5.0/2,MS5.7/25, Ms1 5.7/25,ms1mx5.4/38,Error ellipse: s-maj=11.4km s-min=8.9km az=66.0*

ISCJB ***24*** *23:07:51.6±0.5,4.˚41S±0.˚02×122.˚94E±0.˚02,h19km±3km, mb5.6/219,MS5.7/225,Error ellipse: s-maj=3.2km s-min=2.7km az=169.0*

NEIC ***24*** *23:07:51.5±0.2,4.˚59S×122.˚77E,h8km,mb5.7/109,ME6.0, MS5.8/152,MW6.1,MW6.1,MW6.1,Error ellipse: s-maj=6.9km s-min=4.7km az=57.0,Moment Tensor Solution. s48 Moment tensor: Scale 10¹⁸Nm; Mrr0.13; Mθθ1.31; Mϕϕ-1.44; Mrθ0.29; Mθϕ-0.69; Mϕr0.05; Best double couple: M₀1.60000×10¹⁸ NP1:ϕs149.00000°, δ80.00000°,λ5.00000°. NP2:ϕs58.00000°,δ85.00000°, λ169.00000°. Principal axes: T 1.5200, Plg11.0000°, Azm13.0000°; N 0.0800, Plg78.0000°, Azm212.0000°; P -1.6100, Plg4.0000°, Azm104.0000°; Depth from synthetics of broadband displacement seismograms. Energy computed from CMT mechanism.*

NEIC Felt [IV] at Kendari.

NEIC ***24*** *23:07:51.0±0.0,4.˚59S×122.˚81E,h15km,Moment Tensor Solution. s18 Moment tensor: Scale 10¹⁸Nm; Mrr-0.30; Mθθ1.18; Mϕϕ-0.88; Mrθ1.38; Mθϕ-0.35; Mϕr0.76; Best double couple: M₀1.90000×10¹⁸ NP1:ϕs241.00000°, δ84.00000°,λ-123.00000°. NP2:ϕs142.00000°, δ34.00000°,λ-9.00000°. Principal axes: T 2.0100, Plg31.0000°, Azm357.0000°; N -0.1600, Plg33.0000°, Azm244.0000°; P -1.8500, Plg40.0000°, Azm119.0000°;*

GCMT ***24*** *23:07:51.5±0.1,4.˚27S×122.˚80E,h15km,MW6.1/137, Moment Tensor Solution. s134,c295; s137,c466; Duration: 29.7 Moment tensor: Scale 10¹⁸Nm; Mrr-0.26±.01; Mθθ1.67±.01; Mϕϕ-1.41±.01; Mrθ0.66±.03; Mθϕ-0.47±.01; Mϕr0.80±.03; Best double couple: M₀1.92400×10¹⁸ NP1:ϕs236.00000°,δ81.00000°, λ-148.00000°. NP2:ϕs141.00000°,δ58.00000°, λ-10.00000°. Principal axes: T 1.8870, Plg15.0000°, Azm4.0000°; N 0.0730, Plg57.0000°, Azm254.0000°; P -1.9600, Plg28.0000°, Azm103.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface/mantle waves, cutoff=50s.*

KLM ***24*** *23:07:52.1,4.˚38S×123.˚03E,h10km,mb6.0,ML6.3,MS6.3*

MOS ***24*** *23:07:54.1±1.9,4.˚42S×122.˚86E,h33km,mb5.9/81, MS5.7/56,Error ellipse: s-maj=7.6km s-min=4.4km az=111.8*

DJA ***24*** *23:07:54.0±0.6,4.˚S±2.˚×12.˚3E±.˚,h12km±5km,M5.9/126, mb5.5/126,mB6.2/109,MLv6.0/23,Mw(mB)5.8/109, Mwp6.1/25*

NEIC ***24*** *23:08:09.7±0.0,4.˚02S×122.˚89E,h10km,Moment Tensor Solution. s90 Moment tensor: Scale 10¹⁸Nm; Mrr-0.12; Mθθ1.38; Mϕϕ-1.26; Mrθ0.51; Mθϕ-0.59; Mϕr1.70; Best double couple: M₀2.10000×10¹⁸ NP1:ϕs138.00000°, δ55.00000°,λ-17.00000°. NP2:ϕs238.00000°,δ76.00000°, λ-144.00000°. Principal axes: T 1.5400, Plg14.0000°, Azm4.0000°; N 1.1000, Plg52.0000°, Azm256.0000°; P -2.6400, Plg35.0000°, Azm103.0000°;*

ISC 24 23:07:54.7±0.3, 4.˚48S±0.˚03×122.˚86E±0.˚03, h28km±2km, h28km:pP-P,n863,σ2s23/901,mb5.7/238,MS5.8/226, 45C-41D,Sulawesi

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
BSSI	**Bau Bau, Buton**	**2.88**	**235**	P		**Pn**	**23 08 37.5**	**-1.3**
BSSI				S		**Sb**	**23 09 19.6**	**-0.8**
SPSI	**Sidrap Palu**	**3.13**	**279**	P		**Pn**	**23 08 40.6**	**-1.6**
KAPI	**Kappang**	**3.15**	**260**	Pn		**Pn**	**23 08 40.8**	**-1.6**
	137nm,0.3s,baz=112,slow=5.6,SNR=84							
KAPI				Sn		**Sn**	**23 09 18.2**	**-0.9**
	217nm,0.3s,baz=210,slow=6.2,SNR=4.3							
TTSI	**Tana Toraja**	**3.36**	**295**	P		**Pn**	**23 08 43.5**	**-1.8**
SANI	**Sanana**	**3.94**	**52**	P		**Pn**	**23 08 52.8**	**-0.6**
SANI				S		**Sn**	**23 09 38.3**	**-0.5**
MMRI	**Maumere**	**4.17**	**189**	P		**Pn**	**23 08 54.5**	**-2.1**
MRSI	**Marisa**	**5.01**	**349**	P		**Pn**	**23 09 04.5**	**-3.6**
KMSI	**Cibinong**	**5.14**	**13**	P		**Pn**	**23 09 09.1**	**-0.8**
	6μm,0.8s,91μm43nm							
SOEI	**Soe**	**5.42**	**165**	P		**Pn**	**23 09 16.3**	**+2.5**
	3μm,0.9s,31μm9.4nm							
LBMI	**Labuha**	**6.00**	**51**	P		**Pn**	**23 09 21.1**	**-0.6**
	1μm,1.0s,14μm7.6nm							
BASI	**Baing, Sumba**	**6.13**	**202**	P		**Pn**	**23 09 24.3**	**+0.8**
	3μm,1.2s,37μm303μm8.9nm							
MSAI	**Masohi**	**6.15**	**80**	P		**Pn**	**23 09 26.9**	**+3.1**
	155nm,0.8s,3μm27μm0.7nm							
PLAI	**Plampang**	**6.65**	**229**	P		**Pn**	**23 09 32.4**	**+1.8**
	747nm,1.1s,9μm135μm3.2nm							
BKB	**Balikpapan**	**6.76**	**298**	P		**Pn**	**23 09 34.7**	**+2.5**
	1μm,1.0s,29μm340μm15nm							
TNTI	**Ternate**	**6.89**	**41**	P		**Pn**	**23 09 31.7**	**-2.2**
	4μm,0.8s,39μm131μm14nm							
BNDI	**Bandanaira**	**7.02**	**91**	P		**Pn**	**23 09 35.7**	**0.0**
	792nm,1.5s,20μm207μm4.1nm							
TWSI	**Taliwang, Sumb**	**7.29**	**234**	P		**Pn**	**23 09 42.2**	**+2.8**
	344nm,1.6s,5μm2.3nm							
SRBI	**Singaraja**	**8.41**	**244**	P		**Pn**	**23 09 57.6**	**+2.9**
	221nm,1.1s,7μm23μm							
SGSI	**Sangihe**	**8.54**	**18**	P		**Pn**	**23 09 56.6**	**+0.1**
	2μm,1.1s,16μm							
DNP	**Denpasar**	**8.67**	**241**	P		**Pn**	**23 10 02.1**	**+3.7**
	602nm,1.2s							
MTKI	**Muara Teweh, K**	**8.70**	**294**	P		**Pn**	**23 09 59.8**	**+1.0**
	435nm,1.3s,13μm107μm							
SWI	**Sorong**	**9.12**	**67**	P		**Pn**	**23 10 03.9**	**-0.7**
	786nm,1.1s,8μm							
SIJI	**Sorong**	**9.13**	**67**	Pn		**Pn**	**23 10 04.0**	**-0.6**
	23nm,0.3s,baz=92,slow=23,SNR=9.8							
SIJI				Sn		**Sn**	**23 11 45.6**	**-0.9**
	20nm,0.3s,baz=270,slow=1.0,SNR=1.9							
ABJI	**Asem Bagus**	**9.19**	**249**	P		**Pn**	**23 10 08.9**	**+3.4**
	315nm,1.6s,9μm							
FAKI	**Fak Fak**	**9.49**	**81**	P		**Pn**	**23 10 09.1**	**-0.6**
	648nm,0.6s,8μm100μm							
JAGI	**Jajag, Banyuwa**	**9.52**	**245**	P		**Pn**	**23 10 13.7**	**+3.7**
	278nm,1.4s,5μm							
GMJI	**Gumukmas**	**10.09**	**248**	P		**Pn**	**23 10 20.6**	**+2.8**
	234nm,1.6s,6μm28μm							
MYLDM	**Lahad Datu**	**10.54**	**336**	⇑P		**Pn**	**23 10 23.6**	**-0.4**
	comp=Z,194nm,1.0s							
IPM					LR	LR		
	comp=Z,27μm,19.0s							
MNSI	**Mandailing Nat**	**23.85**	**282**	P		**P**	**23 13 07.9**	**+2.0**
	comp=Z,207nm,2.5s,comp=Z,10μm							
KULM	**Kulim**	**24.22**	**293**	⇑P		**P**	**23 13 10.0**	**+0.7**
KULM	**Kulim**	**24.22**	**293**	*e*P		**P**	**23 13 08.3**	**-1.0**
	comp=Z,1μm,2.0s							
KULM					LR	LR		
	comp=Z,35μm,21.0s							
MANU	**Manus Island**	**24.58**	**85**	*e*P		**P**	**23 13 13.0**	**+0.3**
	comp=Z,448nm,2.0s							
PMG	**Port Moresby**	**24.60**	**103**	P		**P**	**23 13 12.6**	**-0.1**
	comp=Z,131nm,1.1s,baz=309,slow=9.1,SNR=17							
PMG					LR	LR	23 26 26.3	
	comp=Z,20μm,18.2s,baz=260,slow=45							
PMG	**Port Moresby**	**24.60**	**103**	*d*P		**P**	**23 13 11.4**	**-1.4**
PMG					pmax	pmax		
	comp=Z,258nm,1.4s							
PMG					MLR	MLR		
	comp=Z,69μm,18.0s							
PMG	**Port Moresby**	**24.60**	**103**	*e*P		**P**	**23 13 11.8**	**-1.0**
	comp=Z,299nm,1.0s							
MTSU	**Mount Surprise**	**24.99**	**125**	P		**P**	**23 13 15.6**	**-0.7**
	baz=25,SNR=10							
PSI	**Prapat**	**24.99**	**286**	P		**P**	**23 13 15.4**	**-1.1**
	comp=Z,92nm,0.8s,baz=108,slow=5.6,SNR=20							
PSI					LR	LR	23 24 45.3	
	comp=Z,58μm,19.5s,baz=127,slow=41							
PSI	**Prapat**	**24.99**	**286**	*e*P		**P**	**23 13 14.9**	**-1.6**
PSI					pmax	pmax		
	comp=Z,544nm,1.5s							
PSI	**Prapat**	**24.99**	**286**	*e*P		**P**	**23 13 14.9**	**-1.6**
	comp=Z,544nm,1.5s							
MORW	**Morawa**	**25.30**	**194**	P		**P**	**23 13 19.7**	**+0.8**
	baz=26,SNR=15							
GSI	**Gunungsitoli**	**25.91**	**282**	P		**P**	**23 13 25.7**	**+1.0**
	comp=Z,197nm,1.9s,comp=Z,5μm							
KCSI	**Kotacane, Aceh**	**26.30**	**287**	P		**P**	**23 13 28.4**	**+0.1**
	comp=Z,62nm,1.2s,comp=Z,2μm							
BLDU	**Ballidu**	**26.64**	**192**	P		**P**	**23 13 31.5**	**+0.4**
	baz=27,SNR=9.1							
QIZ	**Qiongzhong**	**26.65**	**332**	P		**P**	**23 13 31.6**	**+0.3**
QIZ				S		**S**	**23 18 11.4**	**+6.6**
QIZ					pmax	pmax		
	comp=Z,20nm,1.0s							
QIZ					LR	LR		
	comp=Z,7μm,15.2s							
QIZ					LR	LR		
	comp=Z,12μm,11.3s							
KMBL	**Kambalda**	**26.76**	**182**	P		**P**	**23 13 34.5**	**+2.4**
	baz=27,SNR=9.8							
TPTI		**26.79**	**286**	P		**P**	**23 13 35.8**	**+3.2**
	comp=Z,170nm,2.0s,comp=Z,4μm							
COCO	**West Island**	**26.85**	**252**	*e*P		**P**	**23 13 31.6**	**-1.5**
COCO					pmax	pmax		
	comp=Z,308nm,1.4s							
COCO					MLR	MLR		
	comp=Z,21μm,22.0s							
COCO	**West Island**	**26.85**	**252**	*e*P		**P**	**23 13 31.6**	**-1.5**
	comp=Z,308nm,1.4s							
COCO					LR	LR		
	comp=Z,21μm,22.0s							
TWG	**Pinlang**	**27.19**	**356**	*e*P		**P**	**23 13 37.0**	**+0.9**
TWG				*e*sP		**sP**	**23 13 46.8**	**-1.0**
KLBR	**Kellerberrin**	**27.39**	**190**	P		**P**	**23 13 37.3**	**-0.6**
	baz=28,SNR=11							
SURT	**Suratani**	**27.46**	**299**	P		**P**	**23 13 45.4**	**+6.8**
CTA	**Charters Tower**	**27.56**	**126**	P		**P**	**23 13 38.9**	**-0.5**
	comp=Z,18nm,1.0s,baz=306,slow=9.8,SNR=12							
CTA					LR	LR	23 27 08.4	
	comp=Z,22μm,19.6s,baz=298,slow=42							
CTAO	**Charters Tower**	**27.56**	**126**	*e*P		**P**	**23 13 39.0**	**-0.5**
CTAO					pmax	pmax		
	comp=Z,68nm,1.2s							
CTAO					MLR	MLR		
	comp=Z,26μm,20.0s							
CTAO	**Charters Tower**	**27.56**	**126**	*e*P		**P**	**23 13 39.0**	**-0.5**
	comp=Z,68nm,1.2s							
CTAO					LR	LR		
	comp=Z,26μm,20.0s							
LHMI	**Lhok Sumawe**	**27.62**	**290**	P		**P**	**23 13 42.3**	**+2.2**
	comp=Z,176nm,1.4s,comp=Z,6μm							
TPUB	**Ta-pu**	**27.70**	**356**	*e*P		**P**	**23 13 41.5**	**+0.8**
	comp=Z,251nm,1.3s							
YULB	**Yu-li**	**27.75**	**357**	*e*P		**P**	**23 13 42.0**	**+0.9**
	comp=Z,110nm,1.3s							
HKC	**Hong Kong Obse**	**27.94**	**343**	⇑*i*P		**P**	**23 13 43.0**	**+0.2**
MCO	**Taipa Grande**	**27.96**	**341**	P		**P**	**23 13 46.0**	**+3.0**
SSLB	**Suanglung**	**28.16**	**356**	*e*P		**P**	**23 13 46.5**	**+1.8**
GUMO	**Guam**	**28.27**	**50**	P		**P**	**23 13 46.2**	**+0.3**
	comp=Z,38nm,0.4s,baz=188,slow=7.1,SNR=3.1							
GUMO	**Guam**	**28.27**	**50**	*e*P		**P**	**23 13 46.3**	**+0.4**
GUMO					pmax	pmax		
	comp=Z,448nm,1.3s							
GUMO					MLR	MLR		
	comp=Z,10μm,21.0s							
GUMO	**Guam**	**28.27**	**50**	*e*P		**P**	**23 13 46.3**	**+0.4**
	comp=Z,448nm,1.3s							
GUMO					LR	LR		
	comp=Z,10μm,21.0s							
NACB	**Ninganchiao**	**28.51**	**358**	*e*P		**P**	**23 13 47.5**	**-0.4**
	comp=Z,182nm,1.8s							
YOJ	**Yonaguni jima**	**28.77**	**0**	*e*P		**P**	**23 13 50.7**	**+0.5**
YOJ				*e**PP		**pP**	**23 13 57.2**	**-1.2**
YOJ	**Yonaguni jima**	**28.77**	**0**	*e*P		**P**	**23 13 50.6**	**+0.5**
YOJ				*e*pP		**pP**	**23 13 57.2**	**-1.2**
NWAO	**Narrogin (SRO)**	**28.79**	**190**	P		**P**	**23 13 49.4**	**-0.9**
	comp=Z,13nm,1.0s,baz=306,slow=0.6,SNR=3.1							
NWAO	**Narrogin (SRO)**	**28.79**	**190**	P		**P**	**23 13 49.4**	**-0.9**
NWAO					MLR	MLR		
	comp=Z,15μm,20.0s							
NWAO	**Narrogin (SRO)**	**28.79**	**190**	P		**P**	**23 13 49.4**	**-0.9**
NWAO					LR	LR		
	comp=Z,15μm,20.0s							
GZH	**Guangzhou**	**28.93**	**342**	P		**P**	**23 13 54.0**	**+2.4**
GZH				S		**S**	**23 18 46.9**	**+6.2**
GZH					pmax	pmax		
	comp=Z,3μm,8.4s							
GZH					LR	LR		
	comp=Z,20μm,17.2s							
GZH					LR	LR		
	comp=Z,26μm,17.6s							
YHNB	**Yeheng**	**29.01**	**357**	*e*P		**P**	**23 13 52.5**	**+0.1**
	comp=Z,148nm,1.5s							
YHNB					LR	LR		
	comp=Z,16μm,19.0s							
RABL	**Rabaul**	**29.22**	**91**	*e*P		**P**	**23 13 54.0**	**-0.4**
	comp=Z,175nm,1.1s							
TATO	**Taipei**	**29.31**	**357**	*e*P		**P**	**23 13 55.7**	**+0.8**
	comp=Z,197nm,1.6s							
TATO					LR	LR		
	comp=Z,12μm,21.0s							
QZH	**Quanzhou**	**29.54**	**332**	⇑*i*P		P	23 13 49.4	-7.6
QZH				S		S	23 18 37.5	-13
QZH					pmax	pmax		
	comp=Z,130nm,0.8s							
QZH					pmax	pmax		
	comp=Z,4μm,4.4s							
QZH					LR	LR		
	comp=N,14μm,13.8s							
QZH					LR	LR		
	comp=E,10μm,10.1s							
QZH					LR	LR		
	comp=Z,32μm,18.4s							
QLP	**Quilpie**	**30.01**	**139**	P		**P**	**23 14 00.6**	**-0.6**
	baz=30,SNR=13							
SRDT	**SRDT**	**30.07**	**309**	P		**P**	**23 14 03.9**	**+2.0**
	comp=Z,494nm,2.0s,comp=Z,8μm							
PBKT	**Sadao Pong**	**30.10**	**315**	P		**P**	**23 14 01.5**	**-0.6**
	comp=Z,166nm,1.3s,comp=Z,2μm							
KHLT	**Khaolaem Dam**	**30.75**	**309**	P		**P**	**23 14 09.5**	**+1.6**
	comp=Z,68nm,1.2s,comp=Z,2μm							
BBOO	**Buckleboo**	**30.77**	**158**	*e*P		**P**	**23 14 06.7**	**-1.1**
	comp=Z,184nm,1.8s							
JOW	**Kunigami**	**31.57**	**9**	P		**P**	**23 14 13.5**	**-1.4**
	comp=Z,93nm,0.8s,baz=205,slow=8.0							
JOW					LR	LR	23 28 07.7	
	comp=Z,14μm,20.9s,baz=187,slow=39							
JOW	**Kunigami**	**31.57**	**9**	*e*P		**P**	**23 14 14.3**	**-0.5**
	comp=Z,208nm,1.1s							
STKA	**Stephens Creek**	**32.43**	**149**	P		**P**	**23 14 22.2**	**-0.3**
	comp=Z,9.1nm,0.9s,baz=328,slow=8.3,SNR=18							
STKA					LR	LR	23 27 02.5	
	comp=Z,12μm,21.4s,baz=337,slow=35							
STKA	**Stephens Creek**	**32.43**	**149**	P		**P**	**23 14 22.1**	**-0.4**
	baz=32,SNR=17							

STKA	**Stephens Creek**	**32.43**	**149**	*e*P	**P**	**23 14 20.8**	**-1.6**
STKA				*e*pP	**P**	**23 14 22.2**	**-0.3**
HTT	**Hallett**	**32.46**	**154**	P	**P**	**23 14 22.7**	**-0.1**
	baz=32,SNR=11						
CM01	**Chiang Mai Arr**	**32.76**	**315**	*e*P	**P**	**23 14 24.7**	**-0.8**
CM31	**Chiang Mai Arr**	**32.79**	**315**	*e*P	**P**	**23 14 25.5**	**-0.3**
CMAR	**Chiang Mai Arr**	**32.79**	**315**	P	**P**	**23 14 24.7**	**-1.1**
	comp=Z,29nm,0.8s,baz=278,slow=33,SNR=5.5						
CMAR				LR	LR	23 30 50.0	
	comp=Z,18µm,18.8s,baz=138,slow=42						
CMMT	**Chiang Mai**	**33.03**	**315**	P	**P**	**23 14 27.1**	**-0.8**
	comp=Z,141nm,1.3s,comp=Z,3µm						
CHTO	**Chiang Mai**	**33.03**	**315**	P	**P**	**23 14 27.5**	**-0.4**
	comp=Z,633nm,1.3s,comp=Z,12µm						
CHTO	**Chiang Mai**	**33.03**	**315**	*e*P	**P**	**23 14 27.5**	**-0.4**
CHTO				pmax	pmax		
	comp=Z,126nm,1.0s						
CHTO				MLR	MLR		
	comp=Z,18µm,21.0s						
CHTO	**Chiang Mai**	**33.03**	**315**	*e*P	**P**	**23 14 27.5**	**-0.4**
	comp=Z,126nm,1.0s						
CHTO				LR	LR		
	comp=Z,18µm,21.0s						
CHTO	**Chiang Mai**	**33.03**	**315**	P	**P**	**23 14 27.0**	**-0.9**
	SNR=80						
RMQ	**Roma**	**33.04**	**134**	P	**P**	**23 14 27.6**	**-0.3**
	baz=33,SNR=7.8						
MHMT	**Maesarieng**	**33.34**	**313**	P	**P**	**23 14 31.1**	**+0.5**
	comp=Z,105nm,1.6s,comp=Z,1µm						
PBA	**Port Blair**	**33.98**	**298**	*e*P	P	23 14 36.1	-0.1
EIDS	**Eidsvold**	**34.12**	**130**	*e*P	**P**	**23 14 35.9**	**-1.5**
	comp=Z,19nm,1.0s						
CMSA	**Cobar Meteorol**	**34.41**	**144**	P	**P**	**23 14 40.6**	**+0.8**
	baz=34,SNR=17						
DGPR	**DIGLIPUR**	**34.52**	**301**	*e*P	**P**	**23 14 39.7**	**-1.2**
DGPR				IAmb	IAmb	23 14 42.7	
	comp=Z,153nm,1.8s						
GYA	**Guiyang**	**34.53**	**334**	⇑*i*P	**P**	**23 14 39.0**	**-1.9**
GYA				PP	**PP**	**23 16 01.3**	**+1.8**
GYA				PcP	**PcP**	**23 17 17.8**	**+2.2**
GYA				S	**S**	**23 20 03.1**	**-5.1**
GYA				ScP	**ScP**	**23 21 02.8**	**+3.7**
GYA				pmax	pmax		
	comp=Z,140nm,1.0s						
GYA				pmax	pmax		
	comp=Z,910nm,8.7s						
GYA				LR	LR		
	comp=Z,12µm,19.0s						
GYA				LR	LR		
	comp=Z,11µm,20.3s						
GYA				LR	LR		
	comp=Z,16µm,21.2s						
KMI	**Kunming**	**35.33**	**327**	P	**P**	**23 14 46.8**	**-1.2**
KMI				pP	pP	23 14 56.9	+0.5
KMI				sP	sP	23 15 01.1	+1.2
KMI				PP	**PP**	**23 16 11.6**	**+3.0**
KMI				S	**S**	**23 20 22.6**	**+1.7**
KMI				SS	**SnSn**	**23 22 39.1**	**-1.5**
KMI				pmax	pmax		
	comp=Z,120nm,2.0s						
KMI				pmax	pmax		
	comp=Z,1µm,6.2s						
KMI				LR	LR		
	comp=Z,3µm,25.0s						
KMI				LR	LR		
	comp=Z,14µm,21.2s						
KMI				LR	LR		
	comp=Z,16µm,20.4s						
SSE	**Sheshan**	**35.41**	**358**	P	**P**	**23 14 46.1**	**-2.2**
SSE				sP	**sP**	**23 15 01.3**	**+1.1**
SSE				PP	**PP**	**23 16 09.1**	**0.0**
SSE				S	**S**	**23 20 23.8**	**+2.3**
SSE				pmax	pmax		
	comp=Z,32nm,0.6s						
SSE				pmax	pmax		
	comp=Z,1µm,9.1s						
SSE				LR	LR		
	comp=Z,12µm,23.9s						
SSE				LR	LR		
	comp=Z,5µm,23.9s						
SSE				LR	LR		
	comp=Z,14µm,24.2s						
WHN	**Wuhan**	**35.77**	**347**	P	**P**	**23 14 50.6**	**-0.8**
WHN				S	**S**	**23 20 25.3**	**-1.6**
WHN				pmax	pmax		
	comp=Z,340nm,1.3s						
WHN				pmax	pmax		
	comp=Z,3µm,10.3s						
WHN				LR	LR		
	comp=Z,25µm,18.4s						
WHN				LR	LR		
	comp=Z,34µm,19.0s						
WHN				LR	LR		
	comp=Z,70µm,20.0s						
CBIJ	**Chichi jima**	**36.53**	**30**	*e*P	**P**	**23 14 57.9**	**-0.1**
	comp=Z,97nm,0.8s						
JCJ	**Chichijima**	**36.53**	**30**	P	**P**	**23 14 57.8**	**-0.2**
	comp=Z,291nm,0.9s,baz=295,slow=11,SNR=5.5						
JCJ				LR	LR	23 29 30.0	
	comp=Z,6µm,21.2s,baz=212,slow=36						
NJ2	**Nanjing**	**36.53**	**354**	*e*P	**P**	**23 14 59.0**	**+1.1**
NJ2				pP	**pP**	**23 15 04.6**	**-1.7**
NJ2				sP	**sP**	**23 15 07.9**	**-1.8**
NJ2				S	**S**	**23 20 39.1**	**+0.5**
NJ2				pmax	pmax		
	comp=Z,51nm,1.1s						
NJ2				pmax	pmax		
	comp=Z,1µm,4.1s						
NJ2				LR	LR		
	comp=Z,10µm,28.2s						
NJ2				LR	LR		
	comp=Z,8µm,26.0s						
NJ2				LR	LR		
	comp=Z,11µm,24.4s						
ARPS	**Mount Arapiles**	**36.55**	**154**	P	**P**	**23 14 57.7**	**-0.4**
	baz=37,SNR=19						
ENH	**Enshi**	**36.85**	**341**	*e*P	**P**	**23 14 59.8**	**-0.9**
	comp=Z,203nm,1.1s						
ENH				LR	LR		
	comp=Z,12µm,21.0s						
HNR	**Honiara**	**37.12**	**100**	P	**P**	**23 15 03.5**	**+0.3**
	comp=Z,17nm,0.3s,baz=190,slow=5.3,SNR=7.3						
HNR				LR	LR	23 32 37.4	
	comp=Z,5µm,20.2s,baz=273,slow=40						
HNR	**Honiara**	**37.12**	**100**	*e*P	**P**	**23 15 03.1**	**-0.1**
HNR				pmax	pmax		
	comp=Z,120nm,0.8s						
HNR	**Honiara**	**37.12**	**100**	*e*P	**P**	**23 15 03.1**	**-0.1**
	comp=Z,120nm,0.8s						
ARMA	**Armidale**	**37.44**	**137**	P	**P**	**23 15 07.0**	**+1.1**
	baz=37,SNR=12						
ARMA	**Armidale**	**37.44**	**137**	*e*P	**P**	**23 15 06.7**	**+0.9**
	comp=Z,76nn,1.2s						
YNG	**Young**	**37.97**	**145**	P	**P**	**23 15 10.1**	**-0.1**
	baz=38,SNR=26						
JNU	**Nakatsue**	**38.16**	**11**	P	**P**	**23 15 11.7**	**-0.1**
	comp=Z,61nm,1.0s,baz=148,slow=5.0,SNR=12						
JNU				LR	LR	23 31 07.2	
	comp=Z,7µm,21.7s,baz=168,slow=37						
JNU	**Nakatsue**	**38.16**	**11**	*e*P	**P**	**23 15 11.7**	**-0.1**
	comp=Z,162nm,1.2s						
TOO	**Toolangi**	**38.89**	**151**	P	**P**	**23 15 18.2**	**+0.2**
	baz=39,SNR=11						
CAN	**Canberra**	**39.05**	**145**	*e*P	**P**	**23 15 17.3**	**-2.0**
CAN				*e**SP	**pP**	**23 15 23.9**	**-3.8**
CAN				MLR	MLR		
	comp=Z,12µm,19.0s						
CAN	**Canberra**	**39.05**	**145**	*e*P	**P**	**23 15 17.3**	**-2.0**
CAN				*es*P	**pP**	**23 15 23.9**	**-3.8**
CAN				LR	LR		
	comp=Z,12µm,19.0s						
CNB	**Canberra Magne**	**39.25**	**145**	P	**P**	**23 15 20.5**	**-0.5**
	baz=39,SNR=9.6						
CD2	**Chengdu**	**39.64**	**334**	⇓*i*P	**P**	**23 15 22.5**	**-1.8**
CD2				sP	pP	23 15 27.3	-5.4
CD2				PP	**PP**	**23 16 53.0**	**-2.7**
CD2				S	**S**	**23 21 20.4**	**-5.5**
CD2				sS	sS	23 21 33.4	-6.4
CD2				pmax	pmax		
	comp=Z,140nm,1.9s						
CD2				pmax	pmax		
	comp=Z,1µm,7.7s						
CD2				LR	LR		
	comp=Z,19µm,20.4s						
CD2				LR	LR		
	comp=Z,13µm,21.6s						
XAN	**Xi'an**	**40.51**	**342**	P	**P**	**23 15 29.3**	**-2.1**
XAN				pP	pP	23 15 33.3	-6.6
XAN				sP	sP	23 15 35.8	-7.5
XAN				PP	**PP**	**23 17 03.5**	**-1.6**
XAN				S	S	23 21 29.4	-9.4
XAN				pmax	pmax		
	comp=Z,18nm,1.3s						
XAN				pmax	pmax		
	comp=Z,1µm,8.8s						
XAN				LR	LR		
	comp=Z,12µm,20.3s						
XAN				LR	LR		
	comp=Z,10µm,18.9s						
XAN				LR	LR		
	comp=Z,17µm,22.1s						
JHJ	**Hachijo jima 2**	**40.69**	**22**	P	**P**	**23 15 30.9**	**-1.9**
	comp=Z,123nm,0.8s,baz=80,slow=17,SNR=2.5						
TIA	**Tai'an**	**40.83**	**353**	⇓P	**P**	**23 15 32.1**	**-1.9**
TIA				pmax	pmax		
	comp=Z,50nm,0.8s						
TIA				pmax	pmax		
	comp=Z,2µm,9.2s						
TIA				LR	LR		
	comp=Z,10µm,21.4s						
TIA				LR	LR		
	comp=Z,4µm,20.4s						
INU	**Inuyama**	**41.79**	**17**	*e*P	**P**	**23 15 41.9**	**0.0**
	comp=Z,138nm,1.2s						
INCN	**Inchon**	**41.90**	**4**	*e*P	**P**	**23 15 42.3**	**-0.4**
	comp=Z,251nm,1.4s						
INCN				LR	LR		
	comp=Z,4µm,21.0s						
INCN	**Inchon**	**41.90**	**4**	P	**P**	**23 15 41.5**	**-1.2**
	SNR=9.5						
INCN	**Inchon**	**41.90**	**4**	P	**P**	**23 15 41.5**	**-1.2**
	SNR=9.5						
KS15	**Wonju Array Si**	**41.97**	**6**	*e*P	**P**	**23 15 44.8**	**+1.6**
KSAR	**Wonju Array Be**	**41.97**	**6**	P	**P**	**23 15 42.6**	**-0.7**
KSAR	**Wonju Array Be**	**41.97**	**6**	P	**P**	**23 15 42.6**	**-0.7**
KSRS	**Korea Array**	**41.98**	**6**	P	**P**	**23 15 42.6**	**-0.8**
	comp=Z,17nm,0.7s,baz=182,slow=7.9,SNR=35						
KSRS	**Korea Array**	**41.98**	**6**	P	**P**	**23 15 42.6**	**-0.8**
KSRS				pmax	pmax		
	comp=Z,24nm,0.9s						
KS01	**Wonju Array Si**	**42.00**	**6**	*e*P	**P**	**23 15 43.4**	**-0.2**
SHL	**Shillong**	**42.38**	**316**	*i*P	**P**	**23 15 48.5**	**+1.5**
SHL				*i* x	x	23 21 35.3	
TIY	**Taiyuan**	**43.09**	**348**	*e*P	**P**	**23 15 54.3**	**+1.9**
TIY				S	**S**	**23 22 18.8**	**+2.0**
TIY				sS	**sS**	**23 22 29.1**	**-1.8**
TIY				pmax	pmax		
	comp=Z,31nm,0.5s						
TIY				pmax	pmax		
	comp=Z,830nm,5.8s						
TIY				LR	LR		
	comp=Z,11µm,18.4s						
TIY				LR	LR		
	comp=Z,2µm,11.2s						
TIY				LR	LR		
	comp=Z,14µm,19.6s						
DL2	**Dalian**	**43.18**	**359**	⇑*i*P	**P**	**23 15 50.9**	**-2.2**
DL2				S	**S**	**23 22 19.8**	**+1.8**
DL2				pmax	pmax		
	comp=Z,120nm,1.6s						
DL2				pmax	pmax		
	comp=Z,1µm,8.3s						
DL2				LR	LR		
	comp=Z,8µm,17.6s						
DL2				LR	LR		
	comp=Z,5µm,15.3s						
DL2				LR	LR		
	comp=Z,18µm,23.1s						
MAJO	**Matsushiro**	**43.26**	**18**	*ce*P	**P**	**23 15 53.5**	**-0.3**
MAJO				pmax	pmax		
	comp=Z,321nm,1.2s						
MAJO				MLR	MLR		
	comp=Z,41µm,21.0s						
MAJO	**Matsushiro**	**43.26**	**18**	*e*P	**P**	**23 15 54.0**	**+0.2**
MAJO				*es*P	**P**	**23 15 54.1**	**+0.3**
MAJO				LR	LR		
	comp=Z,6µm,20.0s						
MAT	**Matsushiro**	**43.26**	**18**	P	**P**	**23 15 50.4**	**-3.4**
MAT				S	**S**	**23 22 16.0**	**-3.3**
MJAR	**Matsushiro Arr**	**43.26**	**18**	P	**P**	**23 15 50.7**	**-3.1**
	comp=Z,21nm,0.7s,baz=195,slow=8.7,SNR=30						
MJAR				PcP	**PcP**	**23 17 41.7**	**-0.9**
	comp=Z,13nm,1.1s,baz=185,slow=7.9,SNR=3.1						
MJAR				LR	LR	23 34 32.4	
	comp=Z,4µm,20.4s,baz=205,slow=37						
MJB9	**Matsu-Tunnel**	**43.26**	**18**	*e*P	**P**	**23 15 54.1**	**+0.2**
	comp=Z,40nm,1.2s						
TAU	**Tasmania Unive**	**43.99**	**154**	*e*P	**P**	**23 15 57.6**	**-2.0**
TAU				pmax	pmax		
	comp=Z,71nm,1.1s						
TAU				MLR	MLR		
	comp=Z,17µm,19.0s						
TAU	**Tasmania Unive**	**43.99**	**154**	*e*P	**P**	**23 15 57.6**	**-2.0**
	comp=Z,71nm,1.1s						
TAU				LR	LR		
	comp=Z,17µm,19.0s						
LZH	**Lanzhou**	**44.11**	**338**	*e*P	**P**	**23 16 02.3**	**+1.4**
LZH				pP	pP	23 16 06.5	-2.9
LZH				sP	sP	23 16 08.5	-4.3
LZH				PP	**PcP**	**23 17 47.0**	**+1.2**
LZH				*e*S	**S**	**23 22 35.0**	**+2.9**
LZH				sS	sS	23 22 43.0	-3.2
LZH				pmax	pmax		
	comp=Z,160nm,1.4s						
LZH				pmax	pmax		
	comp=Z,1µm,6.1s						
LZH				LR	LR		
	comp=Z,7µm,13.4s						
LZH				LR	LR		
	comp=Z,9µm,12.6s						
LZH				LR	LR		
	comp=Z,20µm,15.8s						
CHLP	**Challavanipeta**	**44.54**	**302**	*e*P	**P**	**23 16 03.2**	**-1.1**
CHLP				IAmb	IAmb	23 16 07.0	
	comp=Z,612nm,2.2s						
CHLP				*e*S	**S**	**23 22 38.5**	**+0.1**
CHLP				IVMs_BB	IVMs_BB	23 38 40.6	
	comp=Z,4µm,19.1s						
BJT	**Baijiatuau**	**44.71**	**353**	*e*P	**P**	**23 16 04.5**	**-0.9**
BJT				pmax	pmax		
	comp=Z,116nm,1.2s						
BJT				MLR	MLR		
	comp=Z,14µm,21.0s						
BJT	**Baijiatuau**	**44.71**	**353**	*e*P	**P**	**23 16 04.5**	**-0.9**
	comp=Z,116nm,1.2s						
BJT				LR	LR		
	comp=Z,14µm,21.0s						
BJI	**Beijing**	**44.73**	**353**	P	**P**	**23 16 03.8**	**-1.7**
BJI				PP	**PcP**	**23 17 45.4**	**-2.1**
BJI				S	**S**	**23 22 37.3**	**-3.2**
BJI				pmax	pmax		
	comp=Z,76nn,1.3s						
BJI				pmax	pmax		
	comp=Z,2µm,9.9s						
BJI				LR	LR		
	comp=Z,10µm,22.4s						
BJI				LR	LR		
	comp=Z,6µm,20.5s						
BJI				LR	LR		
	comp=Z,12µm,21.5s						
VIS	**Vishakhapatnam**	**44.81**	**301**	*e*P	**P**	**23 16 06.9**	**+0.4**
VIS				IAmb	IAmb	23 16 09.9	
	comp=Z,78nn,1.0s						
LSA	**Lhasa**	**45.60**	**320**	P	**P**	**23 16 11.3**	**-1.9**
LSA				S	**S**	**23 22 48.8**	**-5.7**
LSA				pmax	pmax		
	comp=Z,12nn,2.8s						
LSA				pmax	pmax		
	comp=Z,1µm,10.6s						
LSA				LR	LR		
	comp=Z,5µm,30.4s						
LSA				LR	LR		
	comp=Z,11µm,23.6s						
LSA				LR	LR		
	comp=Z,8µm,27.0s						
LSA	**Lhasa**	**45.60**	**320**	*e*P	**P**	**23 16 13.3**	**+0.1**
LSA				pmax	pmax		
	comp=Z,278nn,1.5s						
LSA				MLR	MLR		
	comp=Z,7µm,20.0s						
LSA	**Lhasa**	**45.60**	**320**	*e*P	**P**	**23 16 13.3**	**+0.1**
	comp=Z,278nn,1.5s						
LSA				LR	LR		
	comp=Z,7µm,20.0s						
DZM	**Mont Dzumac**	**45.66**	**117**	P	**P**	**23 16 14.1**	**+0.8**
	comp=Z,32nm,1.1s,baz=271,slow=4.1,SNR=6.3						
DZM				LR	LR	23 37 56.5	
	comp=Z,8µm,18.4s,baz=288,slow=39						
BOK	**Bokaro**	**45.70**	**310**	*e*P	**P**	**23 16 10.8**	**-2.8**
BOK				IAmb	IAmb	23 16 16.1	
	comp=Z,250nm,1.9s						
MDRS	**Chennai**	**45.77**	**293**	*e*P	**P**	**23 16 13.3**	**-0.9**
MDRS				IAmb	IAmb	23 16 17.6	
	comp=Z,482nm,2.1s						
PVM	**Polavaram**	**46.09**	**299**	*e*P	**P**	**23 16 17.7**	**+1.0**
PVM				IAmb	IAmb	23 16 20.0	
	comp=Z,77nm,1.3s						
PVM				*e*S	**S**	**23 23 00.5**	**-0.5**
PVM				IVMs_BB	IVMs_BB	23 34 08.1	
	comp=Z,3µm,24.5s						
SNY	**Shenyang**	**46.09**	**1**	⇓P	**P**	**23 16 14.9**	**-1.4**
SNY				S	**S**	**23 22 58.8**	**-1.4**
SNY				pmax	pmax		
	comp=Z,220nm,1.8s						
SNY				LR	LR		
	comp=Z,4µm,19.1s						
SNY				LR	LR		
	comp=Z,9µm,19.6s						
SNY				LR	LR		
	comp=Z,11µm,39.2s						
HHC	**Hu-ho-hao-te**	**46.28**	**348**	*e*P	**P**	**23 16 15.8**	**-2.2**
HHC				pP	pP	23 16 19.8	-6.7
HHC				PP	**PP**	**23 18 07.5**	**+0.5**
HHC				S	**S**	**23 23 02.3**	**-0.9**
HHC				pmax	pmax		
	comp=Z,22nn,1.1s						
HHC				pmax	pmax		
	comp=Z,980nm,8.1s						
HHC				LR	LR		
	comp=Z,9µm,18.8s						
HHC				LR	LR		
	comp=Z,8µm,17.7s						
HHC				LR	LR		
	comp=Z,12µm,18.6s						
BTO	**Baotou**	**46.39**	**346**	*e*P	**P**	**23 16 19.1**	**+0.3**
SKHT	**Srikalahasti**	**46.49**	**294**	*e*P	**P**	**23 16 20.7**	**+0.8**
SKHT				IAmb	IAmb	23 16 22.1	
	comp=Z,650nm,2.3s						
SKHT				*e*S	**S**	**23 23 06.7**	**-0.1**
SKHT				IVMs_BB	IVMs_BB	23 39 54.1	
	comp=Z,4µm,19.4s						
ADKI	**Addanki**	**47.01**	**296**	*e*P	**P**	**23 16 24.7**	**+0.8**
ADKI				IAmb	IAmb	23 16 26.1	
	comp=Z,584nm,2.2s						
ADKI				*e*S	**S**	**23 23 15.1**	**+1.0**
ADKI				IVMs_BB	IVMs_BB	23 39 11.8	
	comp=Z,6µm,18.7s						
TRD	**Trivandrum**	**47.56**	**286**	*e*P	**P**	**23 16 29.0**	**+0.7**
TRD				IAmb	IAmb	23 16 31.6	
	comp=Z,112nm,1.1s						
RCLA	**Racherla**	**47.77**	**295**	*e*P	**P**	**23 16 30.3**	**+0.4**
RCLA				IAmb	IAmb	23 16 31.4	
	comp=Z,663nm,2.3s						
RCLA				*e*S	**S**	**23 23 25.2**	**+0.1**
RCLA				IVMs_BB	IVMs_BB	23 37 06.1	
	comp=Z,4µm,19.9s						
NJS	**Nagarjunasagar**	**47.86**	**297**	*e*P	**P**	**23 16 31.0**	**+0.5**
NJS				IAmb	IAmb	23 16 32.2	
	comp=Z,504nm,2.2s						
NJS				*e*S	**S**	**23 23 25.2**	**-1.0**
NJS				IVMs_BB	IVMs_BB	23 39 50.3	
	comp=Z,4µm,17.3s						
GUN	**Gumba**	**48.04**	**314**	*e*P	**P**	**23 16 31.2**	**-1.0**
	comp=Z,1µm,1.4s						
SRLM	**Srisailam**	**48.06**	**296**	*e*P	**P**	**23 16 32.2**	**+0.1**
SRLM				IAmb	IAmb	23 16 33.7	
	comp=Z,633nm,2.3s						
SRLM				*e*S	**S**	**23 23 28.4**	**-0.7**
SRLM				IVMs_BB	IVMs_BB	23 39 41.8	
	comp=Z,3µm,19.8s						
VLA	**Vladivostok**	**48.08**	**9**	*de*P	**P**	**23 16 32.9**	**+1.2**
VLA				pmax	pmax		
	comp=Z,150nm,1.6s						
CN2	**Changchun**	**48.12**	**3**	*e*P	**P**	**23 16 31.3**	**-0.7**
CN2				*e*S	**S**	**23 23 25.8**	**-3.2**
CN2				pmax	pmax		
	comp=Z,20nm,1.0s						
CN2				pmax	pmax		
	comp=Z,200nm,3.0s						
CN2				LR	LR		
	comp=Z,6µm,21.0s						
CN2				LR	LR		
	comp=Z,6µm,21.0s						
CN2				LR	LR		
	comp=Z,6µm,26.0s						
PKIN	**Phulchoki**	**48.19**	**314**	*e*P	**P**	**23 16 32.1**	**-1.2**
	comp=Z,413nm,1.8s						
KKN	**Kakani**	**48.40**	**314**	*e*P	**P**	**23 16 33.6**	**-1.2**
	comp=Z,737nm,1.6s						
DMN	**Daman**	**48.42**	**313**	*e*P	**P**	**23 16 33.8**	**-1.2**
	comp=Z,456nm,1.2s						
GTA	**Gaotai**	**48.58**	**336**	P	**P**	**23 16 35.3**	**-0.6**
GTA				pP	pP	23 16 39.5	-5.0
GTA				sP	sP	23 16 42.4	-5.5
GTA				S	**S**	**23 23 32.4**	**-3.6**
GTA				pmax	pmax		
	comp=Z,18nm,1.5s						
GTA				pmax	pmax		
	comp=Z,1µm,6.7s						
GTA				LR	LR		
	comp=Z,6µm,22.3s						
GTA				LR	LR		
	comp=Z,6µm,20.0s						
GTA				LR	LR		
	comp=Z,8µm,19.7s						
RPR	**Rampur**	**48.77**	**300**	*e*P	**P**	**23 16 38.1**	**+0.6**
RPR				IAmb	IAmb	23 16 39.2	
	comp=Z,671nm,2.2s						
RPR				*e*S	**S**	**23 23 36.7**	**-2.3**
RPR				IVMs_BB	IVMs_BB	23 37 54.3	
	comp=Z,3µm,22.6s						
HYB	**Hyderabad**	**48.85**	**298**	*i*P	**P**	**23 16 39.0**	**+0.8**
HYB				*e*		23 16 48.0	
HYB				*e*PP	**PP**	**23 18 34.0**	**+2.2**
HYB				*e*		23 19 29.5	
HYB				*e*S	**S**	**23 23 40.0**	**-0.3**
HYB				*e*SS	**SS**	**23 27 14.0**	**+2.6**
HYB	**Hyderabad**	**48.85**	**298**	*e*P	**P**	**23 16 37.0**	**-1.2**
HYB				IAmb	IAmb	23 16 38.9	
	comp=Z,393nm,1.9s						
HYBB	**Hyderabad (bro**	**48.85**	**298**	*e*P	**P**	**23 16 38.7**	**+0.4**
HYBB				IAmb	IAmb	23 16 39.6	
	comp=Z,630nm,2.2s						
HYBB				*e*S	**S**	**23 23 37.8**	**-2.6**
HYBB				IVMs_BB	IVMs_BB	23 40 42.7	
	comp=Z,4µm,19.7s						
GKN	**Gorkha**	**48.98**	**314**	*e*P	**P**	**23 16 37.2**	**-2.0**
	comp=Z,465nm,1.2s						
URV	**Uravakonda**	**49.13**	**294**	*e*P	**P**	**23 16 40.5**	**+0.1**
URV				IAmb	IAmb	23 16 41.7	
	comp=Z,450nm,2.3s						
URV				*e*S	**S**	**23 23 39.7**	**-4.6**
URV				IVMs_BB	IVMs_BB	23 39 38.9	
	comp=Z,4µm,17.8s						
USRK	**Ussuriysk Ar.**	**49.15**	**9**	P	**P**	**23 16 38.1**	**-1.9**
	comp=Z,72nm,0.9s,baz=192,slow=7.4,SNR=34						
USRK				LR	LR	23 38 16.2	
	comp=Z,5µm,20.6s,baz=190,slow=37						
MDJ	**Mudanjiang**	**49.25**	**6**	P	**P**	**23 16 40.1**	**-0.6**
MDJ				PcP	**PcP**	**23 18 03.1**	**-0.4**
MDJ				PP	**PP**	**23 18 33.4**	**-1.5**
MDJ				ScP	**ScP**	**23 21 59.9**	**+3.0**
MDJ				S	S	23 23 54.8	+10
MDJ				ScS	**ScS**	**23 26 33.4**	**+2.6**
MDJ				pmax	pmax		
	comp=Z,100nm,1.1s						
MDJ				pmax	pmax		
	comp=Z,890nm,3.7s						
MDJ				LR	LR		
	comp=Z,10µm,27.6s						
MDJ				LR	LR		
	comp=Z,2µm,17.2s						
MDJ				LR	LR		
	comp=Z,12µm,29.3s						
MDJ	**Mudanjiang**	**49.25**	**6**	*e*P	**P**	**23 16 39.7**	**-1.0**
	comp=Z,203nm,1.0s						
MDJ				LR	LR		
	comp=Z,8µm,20.0s						

KOLN	**Koldanda**	**49.61**	**313**	*e*P		**P**	**23 16 41.8**	**-2.3**		
	comp=Z,390nm,1.1s									
SRSP	**Sriramsagar**	**49.62**	**299**	*e*P		**P**	**23 16 43.9**	**-0.1**		
SRSP				IAmb		IAmb	23 16 45.4			
	comp=Z,492nm,2.2s									
SRSP				*e*S		**S**	**23 23 49.2**	**-1.8**		
SRSP				IVMs_BB		IVMs_BB	23 41 47.4			
	comp=Z,4μm,19.5s									
ERM	**Erimo**	**49.83**	**20**⇓	*e*P		**P**	**23 16 48.4**	**+3.2**		
ERM				pmax		pmax				
	comp=Z,78nm,1.2s									
ERM				MLR		MLR				
	comp=Z,5μm,19.0s									
ERM	**Erimo**	**49.83**	**20**	PFAKE			23 17 00.0	+15		
ERM				LR		LR				
	comp=Z,6μm,21.0s									
DGAR	**Diego Garcia**	**50.20**	**264**	PFAKE			23 17 00.0	+11		
DGAR				LR		LR				
	comp=Z,9μm,19.0s									
PYUN	**Piuthan**	**50.24**	**313**	*e*P		**P**	**23 16 46.4**	**-2.5**		
	comp=Z,1μm,1.1s									
TARA	**Tarawa**	**50.35**	**85**	PFAKE			23 17 00.0	+10		
TARA				LR		LR				
	comp=Z,338nm,21.0s									
KLRI	**Killari**	**50.82**	**298**	*e*P		**P**	**23 16 53.2**	**-0.1**		
KLRI				IAmb		IAmb	23 16 56.3			
	comp=Z,86nm,1.2s									
KLRI				*e*S		**S**	**23 24 04.6**	**-3.3**		
KLRI				IVMs_BB		IVMs_BB	23 41 18.2			
	comp=Z,6μm,20.9s									
ASAJ	**Asahikawa**	**51.53**	**18**	P		**P**	**23 16 56.5**	**-1.5**		
	comp=Z,68nm,0.9s,baz=244,slow=8.7,SNR=17									
ASAJ	**Asahikawa**	**51.53**	**18**	P		**P**	**23 16 56.5**	**-1.5**		
ASAJ				pmax		pmax				
	comp=Z,86nm,1.0s									
ASAJ	**Asahikawa**	**51.53**	**18**	*e*P		**P**	**23 16 58.2**	**+0.2**		
	comp=Z,119nm,1.1s									
BHPL	**Bhopal**	**52.19**	**304**	*e*P		**P**	**23 17 02.2**	**-1.2**		
BHPL				IAmb		IAmb	23 17 02.6			
	comp=Z,3μm,4.4s									
GOA	**Goa**	**52.45**	**293**	*e*P		**P**	**23 17 03.3**	**-2.0**		
YUK	**Yuzh-Kuril'sk**	**52.54**	**21**	*e*P		**P**	**23 17 05.3**	**-0.2**		
YUK							23 19 03.9			
YUK				*i* S		**S**	**23 24 30.8**	**+0.2**		
YUK				SS		**SS**	**23 28 00.6**	**-8.6**		
YUK				pmax		pmax				
	comp=Z,2μm,4.9s									
YUK				pmax		pmax				
	comp=Z,704nm,1.3s									
YUK				pmax		pmax				
	comp=E,232nm,0.7s									
YUK				pmax		pmax				
	comp=N,724nm,1.1s									
YUK				MLR		MLR				
	comp=Z,2μm,15.0s									
POO	**Poona**	**53.42**	**297**	*e*P		**P**	**23 17 11.1**	**-1.5**		
POO				IAmb		IAmb	23 17 15.4			
	comp=Z,37nm,1.0s									
POO				*e*PP		**PP**	**23 19 11.0**	**-2.3**		
HIA	**Hailar**	**53.60**	**357**	*e*P		**P**	**23 17 14.3**	**+1.0**		
HIA				pmax		pmax				
	comp=Z,550nm,1.6s									
HIA				MLR		MLR				
	comp=Z,8μm,20.0s									
HIA	**Hailar**	**53.60**	**357**	*e*P		**P**	**23 17 14.3**	**+1.0**		
	comp=Z,550nm,1.6s									
HIA				LR		LR				
	comp=Z,8μm,20.0s									
HABR	**Khabarovsk**	**53.80**	**10**	*e*P		**P**	**23 17 13.1**	**-1.6**		
HABR				*e**PP		**pP**	**23 17 23.1**	**-0.3**		
HABR				*e**SP		**sP**	**23 17 27.3**	**+0.5**		
HABR				*e*			23 18 17.6			
HABR				*e*			23 19 14.5			
HABR				*e*PPP		PPP	23 20 23.8			
HABR				*e*S		**S**	**23 24 47.5**	**-0.1**		
HABR				*e*			23 24 59.9			
HABR				*e**SS		**sS**	**23 25 04.5**	**+2.6**		
HABR				*e*			23 26 59.8			
HABR				*e*SS		**SS**	**23 28 30.7**	**+1.7**		
HABR				pmax		pmax				
	comp=Z,273nm,2.3s									
HABR				pmax		pmax				
	comp=Z,838nm,2.5s									
HABR				MLR		MLR				
	comp=Z,6μm,20.0s									
ULN	**Ulaanbaatar**	**53.95**	**347**⇑	*e*P		**P**	**23 17 15.2**	**-0.8**		
ULN				pmax		pmax				
	comp=Z,350nm,1.7s									
ULN				MLR		MLR				
	comp=Z,10μm,20.0s									
ULN	**Ulaanbaatar**	**53.95**	**347**	*e*P		**P**	**23 17 15.8**	**-0.3**		
	comp=Z,255nm,1.2s									
ULN				LR		LR				
	comp=Z,10μm,21.0s									
ULN	**Ulaanbaatar**	**53.95**	**347**	P		**P**	**23 17 14.8**	**-1.2**		
	SNR=95									
KLR	**Kul'dur**	**54.05**	**7**	P		**P**	**23 17 14.6**	**-1.9**		
	comp=Z,27nm,1.1s,baz=177,slow=5.7,SNR=18									
SONM	**Songino Array**	**54.07**	**346**	P		**P**	**23 17 15.4**	**-1.5**		
	comp=Z,83nm,1.0s,baz=169,slow=8.3,SNR=31									
SONA1	**Songino Array**	**54.08**	**346**	*e*P		**P**	**23 17 15.8**	**-1.2**		
YSS	**Yuzh-Sakhalins**	**54.15**	**17**	*e*P		**P**	**23 17 19.7**	**+2.4**		
YSS				*e*PPP		PPP	23 20 26.0			
YSS				*e*S		S	23 24 43.0	-9.3		
YSS				pmax		pmax				
	comp=Z,70nm,1.1s									
YSS				MLR		MLR				
	comp=Z,3μm,20.0s									
YSS	**Yuzh-Sakhalins**	**54.15**	**17**	*e*P		**P**	**23 17 18.4**	**+1.1**		
	comp=Z,105nm,1.2s									
YSS				LR		LR				
	comp=Z,1μm,21.0s									
KUR	**Kuril'sk**	**54.30**	**22**	*e*P		**P**	**23 17 21.4**	**+3.0**		
KUR				*e*PPP		PPP	23 20 28.9			
KUR				*e*S		**S**	**23 24 54.8**	**+0.4**		
KUR				pmax		pmax				
	comp=Z,148nm,1.7s									
NDI	**New Delhi**	**54.88**	**310**	*e*P		**P**	**23 17 20.5**	**-2.5**		
NDI				IAmb		IAmb	23 17 21.1			
DDI	**Dehra Dun**	**55.07**	**312**	*e*P		**P**	**23 17 22.4**	**-2.0**		
DDI				IAmb		IAmb	23 17 28.7			
	comp=Z,68nm,1.2s									
MSVF	**Nonsavu**	**55.53**	**108**⇓	*e*P		**P**	**23 17 27.8**	**-0.2**		
MSVF				pmax		pmax				
	comp=Z,14nm,0.7s									
MSVF				MLR		MLR				
	comp=Z,5μm,18.0s									
MSVF	**Nonsavu**	**55.53**	**108**	*e*P		**P**	**23 17 28.4**	**+0.4**		
	comp=Z,46nm,1.0s									
MSVF				LR		LR				
	comp=Z,4μm,19.0s									
FUNA	**Funafuti**	**56.08**	**97**	PFAKE			23 17 40.0	+8.2		
FUNA				LR		LR				
	comp=Z,14μm,19.0s									
SMLA	**Simla**	**56.14**	**312**	*i* P		**P**	**23 17 32.0**	**+0.1**		
SDNR	**Sundarnagar**	**56.47**	**313**	*ex*		**P**	**23 17 36.0**	**+1.6**		
CIT	**Chita**	**56.84**	**353**	*e*P		**P**	**23 17 38.2**	**+1.5**		
CIT				*e*			23 18 31.4			
CIT				pmax		pmax				
	comp=Z,265nm,2.8s									
ZAK	**Zakamensk**	**57.20**	**345**	*e*P		**P**	**23 17 37.9**	**-1.4**		
ZAK				pmax		pmax				
	comp=Z,78nm,1.5s									
DHRM	**DHARAMSHALA**	**57.34**	**313**	*e*P		**P**	**23 17 39.8**	**-1.0**		
DHRM				IAmb		IAmb	23 17 45.0			
LBZ	**Lake Benmore**	**57.41**	**141**	*e*P		**P**	**23 17 45.1**	**+4.3**		
	comp=Z,232nm,1.6s									
WMQ	**Urumqi**	**57.56**	**330**	P		**P**	**23 17 42.3**	**+0.3**		
WMQ				pP		pP	23 17 45.1	-5.6		
WMQ				sP		sP	23 17 49.5	-4.6		
WMQ				PcP		**PcP**	**23 18 33.3**	**-1.8**		
WMQ				ScP		**ScP**	**23 22 35.3**	**+2.0**		
WMQ				S		**S**	**23 25 37.8**	**-0.3**		
WMQ				sS		sS	23 25 44.8	-7.7		
WMQ				ScS		**ScS**	**23 27 29.1**	**-0.5**		
WMQ				SS		**SS**	**23 29 30.8**	**+2.2**		
WMQ				pmax		pmax				
	comp=Z,930nm,4.0s									
WMQ				LR		LR				
	comp=Z,4μm,19.2s									
WMQ				LR		LR				
	comp=Z,4μm,21.4s									
WMQ				LR		LR				
	comp=Z,4μm,25.6s									
RPZ	**Rata Peaks**	**57.63**	**140**	*e*P		**P**	**23 17 43.2**	**+0.8**		
	comp=Z,168nm,1.0s									
TYV	**Tymovskoe**	**57.69**	**15**	*e*P		**P**	**23 17 42.5**	**-0.1**		
TYV				pmax		pmax				
	comp=Z,26nm,1.0s									
THN	**Thein Dam**	**57.86**	**313**	*e*P		**P**	**23 17 43.5**	**-0.6**		
OXZ	**Oxford**	**58.08**	**139**	*e*P		**P**	**23 17 49.5**	**+3.9**		
	comp=Z,96nm,1.4s									
TLY	**Talaya**	**58.30**	**346**	P		**P**	**23 17 46.1**	**-0.9**		
	comp=Z,68nm,1.0s,baz=171,slow=8.0,SNR=32									
TLY	**Talaya**	**58.30**	**346**	*c* *i*P		**P**	**23 17 45.3**	**-1.6**		
TLY				*e*S		**S**	**23 25 46.3**	**-1.1**		
TLY				*e*			23 27 33.1			
TLY				*e*SS		**SS**	**23 29 45.5**	**+5.6**		
TLY				*e*SSS		SSS	23 32 07.1			
TLY				pmax		pmax				
	comp=Z,303nm,1.9s									
TLY	**Talaya**	**58.30**	**346**	*e*P		**P**	**23 17 47.3**	**+0.3**		
	comp=Z,234nm,1.3s									
TLY				LR		LR				
	comp=Z,5μm,19.0s									
IRK	**Irkutsk**	**58.68**	**347**	*e*P		**P**	**23 17 48.4**	**-1.1**		
IRK				*e*			23 26 00.7			
IRK				pmax		pmax				
	comp=Z,404nm,2.4s									
BHJ	**Bhuj**	**58.76**	**301**	*e*P		**P**	**23 17 49.5**	**-1.1**		
BHJ				IAmb		IAmb	23 17 52.9			
	comp=Z,1μm,3.1s									
MOY	**Mondy**	**58.97**	**344**	*e*P		**P**	**23 17 51.0**	**-0.7**		
MOY				pmax		pmax				
	comp=Z,493nm,2.3s									
SNZO	**South Karori**	**59.00**	**136**	PFAKE			23 18 00.0	+8.1		
SNZO				LR		LR				
	comp=Z,12μm,22.0s									
NKL	**Nikolayevsk**	**59.35**	**12**	*e*P		**P**	**23 17 55.0**	**+0.9**		
NKL				*e*S		**S**	**23 25 56.0**	**-4.9**		
NKL				pmax		pmax				
	comp=N,22nm,1.0s									
NKL				pmax		pmax				
	comp=Z,95nm,1.0s									
NKL				pmax		pmax				
	comp=N,500nm,14.0s									
NKL				pmax		pmax				
	comp=Z,1μm,14.0s									
NKL				smax		smax				
	comp=N,3μm,19.0s									
BKZ	**Black Stump Fm**	**59.44**	**133**	*e*P		**P**	**23 17 53.3**	**-1.9**		
	comp=N,144nm,1.6s									
URZ	**Urewera**	**59.57**	**132**	LR		LR	23 45 50.6			
	comp=N,14μm,18.6s,baz=306,slow=38									
RAO	**Raoul Island**	**61.08**	**121**	LR		LR	23 42 46.2			
	comp=N,9μm,21.8s,baz=291,slow=34									
RAO	**Raoul Island**	**61.08**	**121**	PFAKE			23 18 20.0	+14		
RAO				LR		LR				
	comp=Z,871μm,22.0s									
CLNS	**Chul'man**	**61.13**	**1**	*e*P		**P**	**23 18 09.5**	**+3.2**		
CLNS				*e**PP		**sP**	**23 18 19.1**	**+0.6**		
CLNS				*e*			23 18 46.8			
CLNS				*e*			23 20 25.0			
CLNS				*e*S		**S**	**23 26 30.5**	**+6.7**		
CLNS				*e*SS		**SS**	**23 30 22.1**	**-2.1**		
CLNS				pmax		pmax				
	comp=E,26nm,1.1s									
CLNS				pmax		pmax				
	comp=Z,51nm,1.3s									
CLNS				pmax		pmax				
	comp=N,37nm,1.3s									
CLNS				pmax		pmax				
	comp=Z,14nm,1.2s									
CLNS				pmax		pmax				
	comp=N,15nm,1.2s									
CLNS				pmax		pmax				
	comp=E,13nm,1.1s									
CLNS				smax		smax				
	comp=E,1μm,10.3s									
CLNS				smax		smax				
	comp=N,2μm,15.1s									
CLNS				MLR		MLR				
	comp=Z,2μm,16.0s									
CLNS				MLR		MLR				
	comp=N,1μm,18.0s									
CLNS				MLR		MLR				
	comp=E,3μm,18.0s									
SHLS	**Shalkode**	**61.26**	**325**	*i* P		**P**	**23 18 06.0**	**-1.7**		
	comp=E,147nm,0.9s									
SHLS				*i* S		**S**	**23 26 24.7**	**-1.6**		
SHLS				LR		LR	23 45 08.3			
	comp=E,483nm,12.9s									
KSH	**Kashi**	**61.45**	**320**	P		**P**	**23 18 10.5**	**+1.5**		
KSH				*e*pP		pP	23 18 15.1	-2.7		
KSH				*e*sP		sP	23 18 17.5	-3.6		
KSH				*e*ScP		**ScP**	**23 22 52.8**	**+2.0**		
KSH				S		**S**	**23 26 29.0**	**+0.3**		
KSH				ScS		**SKSac**	**23 27 58.9**	**+0.1**		
KSH				SS		**SS**	**23 30 31.8**	**+1.7**		
KSH				pmax		pmax				
	comp=E,160nm,1.3s									
KSH				pmax		pmax				
	comp=E,820nm,3.2s									
KSH				LR		LR				
	comp=E,7μm,22.4s									
KSH				LR		LR				
	comp=E,7μm,18.0s									
KSH				LR		LR				
	comp=E,11μm,21.4s									
PDGK	**Podgornoye**	**61.59**	**325**	*i* P		**P**	**23 18 08.2**	**-1.4**		
PDGK				pmax		pmax				
	comp=Z,121nm,1.2s									
ZSN	**Zaisan**	**61.78**	**331**	*i* P		**P**	**23 18 08.7**	**-2.2**		
	comp=Z,366nm,2.1s									
ZSN				*e*S		**S**	**23 26 32.1**	**-0.2**		
SKR	**Severo-Kuril's**	**61.93**	**23**	*e*P		**P**	**23 18 14.0**	**+2.3**		
SKR				*e*			23 18 52.0			
SKR				*e*S		**S**	**23 26 30.0**	**-3.9**		
SKR				pmax		pmax				
	comp=N,320nm,1.4s									
SKR				pmax		pmax				
	comp=Z,390nm,1.4s									
SKR				pmax		pmax				
	comp=E,110nm,1.0s									
SKR				pmax		pmax				
	comp=E,2μm,4.0s									
SKR				pmax		pmax				
	comp=Z,2μm,4.0s									
SKR				MLR		MLR				
	comp=N,3μm,16.0s									
SKR				MLR		MLR				
	comp=Z,3μm,16.0s									
SKR				MLR		MLR				
	comp=E,3μm,20.0s									
KPKS	**Kokpek**	**62.14**	**325**	*i* P		**P**	**23 18 11.8**	**-1.6**		
	comp=E,1μm,2.2s									
KPKS				*e*S		**S**	**23 26 35.9**	**-1.2**		
MK01	**Makanchi Array**	**62.34**	**330**	*e*P		**P**	**23 18 12.7**	**-2.0**		
MK31	**Makanchi Array**	**62.36**	**330**	*i* P		**P**	**23 18 12.6**	**-2.2**		
MK31				pmax		pmax				
	comp=Z,57nm,0.9s									
MK31	**Makanchi Array**	**62.36**	**330**	*e*P		**P**	**23 18 12.8**	**-2.0**		
MKAR	**Makanchi Array**	**62.36**	**330**	P		**P**	**23 18 12.8**	**-2.0**		
	comp=Z,22nm,0.7s,baz=132,slow=7.1,SNR=50									
MKAR				PKP2bc			23 47 35.3			
	comp=Z,0.1nm,0.3s,baz=270,slow=2.4,SNR=3.5									
MKAR				LR		LR	23 48 59.5			
	comp=Z,4μm,19.5s,baz=135,slow=40									
MKAR				P4KPbc			23 55 19.2			
	comp=Z,0.3nm,0.7s,baz=143,slow=4.2,SNR=3.6									
BOD	**Bodaibo**	**62.51**	**355**	*e*P		**P**	**23 18 13.4**	**-2.1**		
BOD				pmax		pmax				
	comp=Z,164nm,1.8s									
MDOK	**Medeo**	**62.90**	**324**⇓	*i*P		**P**	**23 18 16.8**	**-1.8**		
	comp=Z,136nm,2.4s									
MDOK				*e*S		**S**	**23 26 46.0**	**-0.9**		
MDOK				LR		LR	23 45 28.9			
	comp=Z,1μm,19.9s									
PAF	**Port-aux-Franc**	**62.98**	**216**	PFAKE			23 18 30.0	+11		
PAF				LR		LR				
	comp=Z,6μm,19.0s									
AAA	**Alma-Ata**	**63.02**	**324**	*e*P		**P**	**23 18 19.1**	**-0.2**		
	comp=Z,121nm,1.1s									
AAA				*e*S		**S**	**23 26 50.3**	**+2.1**		
AAA				LR		LR	23 45 56.1			
	comp=Z,1μm,19.1s									
TKM2	**Tokmak 2**	**63.62**	**323**	*e*P		**P**	**23 18 22.0**	**-1.5**		
TKM2				pmax		pmax				
	comp=Z,334nm,1.8s									
TKM2				MLR		MLR				
	comp=Z,5μm,20.0s									
TKM2	**Tokmak 2**	**63.62**	**323**	*e*P		**P**	**23 18 22.0**	**-1.5**		
	comp=Z,334nm,1.8s									
TKM2				LR		LR				
	comp=Z,5μm,20.0s									
BMNS	**Besmoynak**	**63.69**	**323**	*i* P		**P**	**23 18 23.6**	**-0.2**		
	comp=Z,441nm,0.8s									
BMNS				*e*S		**S**	**23 26 57.3**	**+0.7**		
BMNS				LR		LR	23 46 33.0			
	comp=Z,3μm,19.9s									
KUU	**Kurty**	**63.75**	**324**⇑	*i*P		**P**	**23 18 22.2**	**-1.9**		
	comp=Z,1μm,1.7s									
KUU				*e*S		**S**	**23 26 56.1**	**-1.1**		
KUU				LR		LR	23 46 50.8			
	comp=Z,1μm,14.7s									
KBL	**Kabul**	**63.77**	**312**	*e*P		**P**	**23 18 22.5**	**-2.1**		
KBL				pmax		pmax				
	comp=Z,276nm,1.3s									
KBL	**Kabul**	**63.77**	**312**	*e*P		**P**	**23 18 22.5**	**-2.1**		
	comp=Z,276nm,1.3s									
AAK	**Ala-Archa**	**64.13**	**322**	P		**P**	**23 18 25.4**	**-1.4**		
	comp=Z,20nm,0.8s,baz=116,slow=6.0,SNR=32									
AAK	**Ala-Archa**	**64.13**	**322**	*c* *i*P		**P**	**23 18 24.8**	**-2.0**		
AAK				pmax		pmax				
	comp=Z,514nm,2.4s									
AAK				MLR		MLR				
	comp=Z,26μm,23.0s									
AAK	**Ala-Archa**	**64.13**	**322**	*e*P		**P**	**23 18 25.6**	**-1.2**		
	comp=Z,212nm,1.5s									
AAK				LR		LR				
	comp=Z,7μm,20.0s									
FRU	**Bishkek**	**64.16**	**322**	*e*P		**P**	**23 18 25.0**	**-1.9**		
FRU				*e*S		**S**	**23 27 00.0**	**-2.4**		
FRU				pmax		pmax				
	comp=Z,650nm,2.4s									
PEA0	**Petropavlovsk-**	**64.44**	**22**	*e*P		**P**	**23 18 30.9**	**+2.5**		
PETK	**Petropavlovsk-**	**64.44**	**22**	P		**P**	**23 18 27.2**	**-1.1**		
	comp=Z,10nm,0.9s,baz=188,slow=3.4,SNR=3.2									
PETK				LR		LR	23 45 52.6			
	comp=Z,3μm,21.7s,baz=235,slow=36									
EKS2	**Erkin-Say**	**64.58**	**322**	*e*P		**P**	**23 18 28.3**	**-1.4**		
EKS2				pmax		pmax				
	comp=Z,72nm,1.1s									
EKS2				MLR		MLR				
	comp=Z,9μm,21.0s									
EKS2	**Erkin-Say**	**64.58**	**322**	*e*P		**P**	**23 18 28.2**	**-1.4**		
	comp=Z,72nm,1.1s									
EKS2				LR		LR				
	comp=Z,9μm,21.0s									
PET	**Petropavlovsk**	**64.74**	**23**	*e*P		**P**	**23 18 33.9**	**+3.6**		
PET				*e*S		**S**	**23 27 11.9**	**+3.0**		
PET				*e*SS		**SS**	**23 31 25.4**	**+4.8**		
PET				pmax		pmax				
	comp=Z,61nm,1.2s									
PET				MLR		MLR				
	comp=Z,5μm,22.0s									
PET				MLR		MLR				
	comp=Z,3μm,21.0s									
PET	**Petropavlovsk**	**64.74**	**23**	*e*P		**P**	**23 18 30.0**	**-0.4**		
	comp=Z,121nm,1.4s									
PET				LR		LR				
	comp=Z,4μm,22.0s									
AFI	**Afiamalu**	**65.03**	**103**	PFAKE			23 18 50.0	+17		
AFI				LR		LR				
	comp=Z,2μm,20.0s									
KRAR	**Krasnoyarsk**	**65.12**	**342**⇑	*e*P		**P**	**23 18 32.6**	**-0.1**		
KRAR				pmax		pmax				
	comp=Z,50nm,1.3s									
KRAR				MLR		MLR				
	comp=Z,10μm,22.0s									
MNAS	**Manas**	**65.28**	**321**	*i* P		**P**	**23 18 33.3**	**-1.0**		
MNAS				pmax		pmax				
	comp=Z,178nm,1.4s									
SEM	**Semipalatinsk**	**65.81**	**332**⇑	*i*P		**P**	**23 18 36.0**	**-1.3**		
	comp=Z,93nm,1.6s									
SEM				*e*S		**S**	**23 27 21.8**	**-0.3**		
SEM				LR		LR	23 47 22.5			
	comp=Z,2μm,16.6s									
MIDW	**Midway**	**66.01**	**57**	PFAKE			23 18 50.0	+11		
MIDW				LR		LR				
	comp=Z,3μm,20.0s									
ZAA0	**Zalesovo Array**	**66.33**	**337**	*e*P		**P**	**23 18 37.9**	**-2.7**		
ZALV	**Zalesovo Beam**	**66.33**	**337**	P		**P**	**23 18 38.2**	**-2.3**		
	comp=Z,50nm,0.9s,baz=127,slow=5.2,SNR=50									
ZALV				PKP2ab			23 47 19.1			
	comp=Z,0.5nm,0.5s,baz=311,slow=7.5,SNR=4.5									
ZALV				LR		LR	23 50 08.9			
	comp=Z,4μm,20.5s,baz=144,slow=38									
YAK	**Yakutsk**	**66.53**	**3**	P		**P**	**23 18 40.2**	**-1.5**		
	comp=Z,65nm,0.7s,baz=7.0,slow=0.8,SNR=10									
YAK	**Yakutsk**	**66.53**	**3**	*e*P		**P**	**23 18 42.4**	**+0.7**		
YAK				*e*			23 19 09.2			
YAK				*e*			23 21 10.3			
YAK				*e*PPP		PPP	23 22 41.5			
YAK				*e*S		**S**	**23 27 26.3**	**-4.2**		
YAK				*e**SS		sS	23 28 09.7	+25		
YAK				*e*			23 28 30.8			
YAK				pmax		pmax				
	comp=Z,92nm,0.9s									
YAK				pmax		pmax				
	comp=N,36nm,1.1s									
YAK				pmax		pmax				
	comp=E,9.0nm,1.0s									
YAK				pmax		pmax				
	comp=Z,516nm,5.2s									
YAK				pmax		pmax				
	comp=N,577nm,7.9s									
YAK				pmax		pmax				
	comp=E,117nm,4.7s									
YAK				smax		smax				
	comp=N,830nm,7.7s									
YAK				smax		smax				
	comp=E,2μm,8.6s									
YAK	**Yakutsk**	**66.53**	**3**	*e*P		**P**	**23 18 41.9**	**+0.3**		
	comp=E,143nm,0.9s									
YAK				LR		LR				
	comp=Z,5μm,22.0s									
IUG	**Iuzhnay**	**66.67**	**320**	*i* P		**P**	**23 18 41.3**	**-1.8**		
	comp=Z,214nm,0.9s									
IUG				*e*S		**S**	**23 27 31.9**	**-1.3**		
IUG				LR		LR	23 48 40.8			
	comp=Z,1μm,14.7s									
KURBB	**Kurchatov Arra**	**66.77**	**331**	P		**P**	**23 18 41.7**	**-1.8**		
	comp=Z,25nm,0.8s,baz=139,slow=5.5,SNR=38									
KURK	**Kurchatov**	**66.79**	**331**	*c* *i*P		**P**	**23 18 41.7**	**-1.9**		
KURK				pmax		pmax				
	comp=Z,782nm,2.5s									
KURK				MLR		MLR				
	comp=Z,5μm,20.0s									
KURK	**Kurchatov**	**66.79**	**331**	*e*P		**P**	**23 18 42.6**	**-1.0**		
	comp=Z,147nm,0.9s									
KURK				LR		LR				
	comp=Z,11μm,22.0s									
KK31	**Karatay Array**	**66.85**	**321**	*i* P		**P**	**23 18 42.0**	**-2.2**		
KK31				pmax		pmax				
	comp=Z,58nm,1.2s	

BRZS *i* S **S** **23 28 04.7 +0.1**
BRZS LR LR 23 48 53.2
comp=E,534nm,16.0s
JOHN **Johnston Islan** **70.02 71** PFAKE **23 19 20.0 +16**
JOHN LR LR
comp=Z,320nm,21.0s
ARQ **Araqi** **70.30 297** P **P** **23 19 06.1 0.0**
SNR=11
SEY **Seymchan** **70.86 14** P **P** **23 19 07.3 -1.4**
comp=Z,14nm,0.8s,baz=209,slow=5.3,SNR=30
SEY **Seymchan** **70.86 14**‖ *eP* **P** **23 19 08.4 -0.3**
UOSS **Minazif** **70.97 298** *eP* **P** **23 19 09.5 -0.7**
comp=Z,10nm,1.6s
HATD **Hatta, Dubai** **71.01 298** *i* P **P** **23 19 09.5 -0.9**
SNR=23
HATD **Hatta, Dubai** **71.01 298** P **P** **23 19 11.2 +0.8**
SNR=34
HATD P **P** **23 19 11.2 +0.8**
SNR=34
HATD **Hatta, Dubai** **71.01 298** P **P** **23 19 11.2 +0.8**
SNR=34
ASHO **Ashiyiah** **71.04 298** *i* P **P** **23 19 10.0 -0.6**
SNR=18
ASHO **Ashiyiah** **71.04 298** P **P** **23 19 11.8 +1.2**
SNR=21
ASHO P **P** **23 19 11.8 +1.2**
SNR=21
ASHO **Ashiyiah** **71.04 298** P **P** **23 19 11.8 +1.2**
SNR=21
BANOM **Banah** **71.14 299** *i* P **P** **23 19 09.8 -1.4**
SNR=16
BANOM **Banah** **71.14 299** P **P** **23 19 13.7 +2.5**
SNR=9.4
BANOM P **P** **23 19 13.7 +2.5**
SNR=9.4
BANOM **Banah** **71.14 299** P **P** **23 19 13.7 +2.5**
SNR=9.4
NAZ **Nazwa, Dubai** **71.46 298** *i* P **P** **23 19 12.4 -0.7**
SNR=13
NAZ **Nazwa, Dubai** **71.46 298** P **P** **23 19 13.5 +0.4**
SNR=10.0
NAZ P **P** **23 19 13.5 +0.4**
SNR=10.0
NAZ **Nazwa, Dubai** **71.46 298** P **P** **23 19 13.5 +0.4**
SNR=10.0
FAQ **Al Faqa, Dubai** **71.46 298** *i* P **P** **23 19 11.3 -1.8**
SNR=16
FAQ **Al Faqa, Dubai** **71.46 298** P **P** **23 19 12.5 -0.7**
SNR=17
FAQ P **P** **23 19 12.5 -0.7**
SNR=17
FAQ **Al Faqa, Dubai** **71.46 298** P **P** **23 19 12.5 -0.7**
SNR=17
BVAR **Borovoye Array** **72.24 330** P **P** **23 19 15.6 -1.7**
comp=Z,38nm,0.9s,baz=126,slow=7.5,SNR=35
BRVK **Borovoye** **72.31 330** *ceP* **P** **23 19 15.9 -1.8**
BRVK pmax pmax
comp=Z,236nm,2.5s
BRVK MLR MLR
comp=Z,7μm,24.0s
BRVK **Borovoye** **72.31 330** *eP* **P** **23 19 17.0 -0.7**
comp=Z,201nm,1.3s
BRVK LR LR
comp=Z,5μm,19.0s
CHKZ **Chkalovo** **72.50 330** *i* P **P** **23 19 16.5 -2.2**
CHKZ pmax pmax
comp=Z,152nm,1.2s
ZRNK **Zerenda** **72.90 329** *eP* **P** **23 19 18.9 -2.3**
ZRNK pmax pmax
comp=Z,114nm,0.8s
ZRNK **Zerenda** **72.90 329** *eP* **P** **23 19 18.9 -2.3**
comp=Z,114nm,0.8s
GEYT **Alibeck** **73.21 312** P **P** **23 19 21.6 -1.8**
comp=Z,5.8nm,0.7s,baz=139,slow=2.9,SNR=38
GEYT PP **PP** **23 22 05.9 -0.9**
comp=Z,6.9nm,1.0s,baz=108,slow=9.3,SNR=4.0
MAW **Mawson** **74.77 200** P **P** **23 19 33.0 +1.1**
comp=Z,4.0nm,0.8s,baz=97,slow=8.1,SNR=7.9
MAW **Mawson** **74.77 200** P **P** **23 19 33.5 +1.7**
baz=75,SNR=7.5
MAW **Mawson** **74.77 200** *eP* **P** **23 19 31.0 -0.8**
MAW pmax pmax
comp=Z,32nm,1.7s
MAW **Mawson** **74.77 200** *eP* **P** **23 19 31.0 -0.8**
comp=Z,32nm,1.7s
VNDA **Vanda** **75.86 172** P **P** **23 19 37.3 -0.7**
comp=Z,5.8nm,0.6s,baz=325,slow=6.3,SNR=24
VNDA LR LR 23 54 23.3
comp=Z,5μm,18.1s,baz=328,slow=37
VNDA **Vanda** **75.86 172** *eP* **P** **23 19 37.8 -0.2**
VNDA pmax pmax
comp=Z,49nm,1.4s
VNDA **Vanda** **75.86 172** *eP* **P** **23 19 37.8 -0.2**
comp=Z,49nm,1.4s
TIXI **Tiksi** **76.09 2** P **P** **23 19 37.0 -2.2**
comp=Z,36nm,1.0s,baz=166,slow=4.1,SNR=29
TIXI LR LR 23 55 36.9
comp=Z,6μm,21.8s,baz=196,slow=38
TIXI **Tiksi** **76.09 2** *ceP* **P** **23 19 38.9 -0.4**
TIXI pmax pmax
comp=Z,40nm,1.0s
TIXI MLR MLR
comp=Z,7μm,23.0s
TIXI **Tiksi** **76.09 2** *eP* **P** **23 19 37.0 -2.2**
comp=Z,243nm,1.6s
AB31 **Akbulak array** **76.19 323** *i* P **P** **23 19 39.2 -1.1**
AB31 pmax pmax
comp=Z,72nm,1.2s
ABKAR **Akbulak array** **76.19 323** *eP* **P** **23 19 38.5 -1.9**
RAR **Rarotonga** **76.62 111** PFAKE 23 20 00.0 +17
RAR LR LR
comp=Z,2μm,19.0s
SBA **Scott Base** **76.82 171** *eP* **P** **23 19 46.6 +3.2**
SBA pmax pmax
comp=Z,89nm,1.6s
SBA MLR MLR
comp=Z,5μm,20.0s
SBA **Scott Base** **76.82 171** *eP* **P** **23 19 46.6 +3.2**
comp=Z,89nm,1.6s
SBA LR LR
comp=Z,5μm,20.0s
NRIK **Noril'sk** **77.51 348** P **P** **23 19 45.5 -1.9**
comp=Z,23nm,0.9s,baz=147,slow=5.7,SNR=41
NRIK LR LR 23 57 23.6
comp=Z,4μm,18.7s,baz=152,slow=38
AKTO **Aktyubinsk** **77.80 324** P **P** **23 19 47.3 -2.1**
comp=Z,19nm,0.7s,baz=125,slow=6.5,SNR=28
AKTO **Aktyubinsk** **77.80 324** *i* P **P** **23 19 47.0 -2.4**
AKTO pmax pmax
comp=Z,110nm,1.3s
BILL **Bilibino** **78.43 15** *i* P **P** **23 19 52.7 +0.2**
BILL *i* 23 20 06.3
BILL *i* 23 22 53.2
BILL *i* S **S** **23 29 39.4 -6.9**
BILL MLR MLR
comp=Z,3μm,19.0s
BILL **Bilibino** **78.43 15** *eP* **P** **23 19 53.2 +0.7**
comp=Z,90nm,1.8s
BILL LR LR
comp=Z,3μm,20.0s
ARU **Arti** **79.88 329** P **P** **23 19 58.3 -2.4**
comp=Z,16nm,1.0s,baz=121,slow=1.4,SNR=14
ARU **Arti** **79.88 329** *c i*P **P** **23 19 58.8 -1.9**
ARU 23 22 58.5
ARU PPP PPP 23 24 47.2
ARU *eS* **S** **23 30 01.8 -0.4**
ARU pmax pmax
comp=Z,131nm,2.5s
ARU MLR MLR
comp=Z,5μm,26.0s
ARU **Arti** **79.88 329** *eP* **P** **23 19 58.6 -2.1**
comp=Z,169nm,1.4s
ARU LR LR
comp=Z,4μm,21.0s
XMAS **Kiritimati** **79.89 87** PFAKE 23 20 10.0 +8.4
XMAS LR LR
comp=Z,3.0nm,19.0s
DAMY **Dhamar** **80.01 286** *eP* **P** **23 20 02.7 +0.1**
comp=Z,121nm,1.7s
KIP **Kipapa** **81.54 68** PFAKE 23 20 20.0 +10
KIP LR LR
comp=Z,6μm,20.0s
SOKR **Solikamsk** **82.02 332** *d i*P **P** **23 20 11.1 -0.8**
SOKR S S 23 30 15.2 -9.0
SOKR pmax pmax
comp=Z,70nm,2.0s
SOKR MLR MLR
comp=Z,6μm,26.0s
GAMB **Gambell** **83.42 24** *eP* **P** **23 20 22.1 +2.9**
comp=Z,98nm,1.2s
SYO **Syowa Base** **83.43 201**‖ *eP* **P** **23 20 18.9 -0.3**
DGRG **David-gareji** **83.62 312** P **P** **23 20 24.5 +3.6**
DGRG **David-gareji** **83.62 312** P **P** **23 20 24.4 +3.6**
POHA **Pohakuloa** **83.62 70** PFAKE 23 20 30.0 +8.5
POHA LR LR
comp=Z,3μm,21.0s
GNI **Garni** **83.83 311** P **P** **23 20 20.9 -1.2**
comp=Z,15nm,1.0s,baz=237,slow=0.7,SNR=26
GNI **Garni** **83.83 311** *i* P **P** **23 20 21.4 -0.7**
SNR=27
GNI **Garni** **83.83 311** *c i*P **P** **23 20 21.4 -0.7**
GNI pmax pmax
comp=Z,70nm,1.2s
GNI MLR MLR
comp=Z,15μm,26.0s
GNI **Garni** **83.83 311** *eP* **P** **23 20 22.9 +0.8**
comp=Z,86nm,1.1s
GNI LR LR
comp=Z,4μm,20.0s
GNI **Garni** **83.83 311** P **P** **23 20 23.5 +1.4**
SNR=26
GNI **Garni** **83.83 311** P **P** **23 20 23.5 +1.4**
SNR=26
TBLG **Delisi** **84.14 313** P **P** **23 20 28.2 +4.7**
TBLG **Delisi** **84.14 313** P **P** **23 20 28.1 +4.7**
GUDG **Gudauri** **84.47 313** P **P** **23 20 29.2 +3.9**
ZEI **Tsey** **84.95 314** *eP* **P** **23 20 26.3 -1.5**
ZEI *eS* **S** **23 30 48.7 -6.4**
ZEI pmax pmax
comp=Z,165nm,1.0s
ZEI pmax pmax
comp=E,59nm,0.8s
ZEI pmax pmax
comp=N,124nm,0.9s
FURI **Furi** **84.96 279** P **P** **23 20 28.9 +0.4**
FURI S **S** **23 31 00.1 +3.6**
FURI **Furi** **84.96 279** *eP* **P** **23 20 32.3 +3.8**
comp=N,317nm,2.0s
AKH **Akhalkalaki** **85.00 312** P **P** **23 20 31.6 +3.6**
AKH **Akhalkalaki** **85.00 312** P **P** **23 20 31.6 +3.6**
ONI **Oni** **85.24 313** P **P** **23 20 32.4 +3.3**
ONI **Oni** **85.24 313** P **P** **23 20 32.3 +3.3**
NCK **Nalchik** **85.30 314**‖ *eP* **P** **23 20 31.2 +1.9**
NCK pmax pmax
comp=Z,131nm,1.9s
NCK MLR MLR
comp=Z,3μm,20.0s
QSPA **South Pole Qui** **85.48 180** *eP* **P** **23 20 29.7 -0.1**
comp=Z,294nm,1.3s
QSPA LR LR
comp=Z,7μm,20.0s
KMBO **Kilima Mbogo** **85.54 269** P **P** **23 20 29.6 -1.8**
comp=Z,3.2nm,0.9s,baz=98,slow=5.7,SNR=12
KMBO LR LR 23 54 48.1
comp=Z,5μm,21.7s,baz=94,slow=33
KMBO **Kilima Mbogo** **85.54 269** *i* P **P** **23 20 32.4 +1.0**
KMBO pmax pmax
comp=Z,3.0nm,0.9s
KMBO **Kilima Mbogo** **85.54 269** *eP* **P** **23 20 32.2 +0.9**
comp=Z,60nm,1.7s
KMBO **Kilima Mbogo** **85.54 269** P **P** **23 20 33.3 +2.0**
SNR=7.6
KMBO P **P** **23 20 33.3 +2.0**
SNR=7.6
KMBO **Kilima Mbogo** **85.54 269** P **P** **23 20 33.3 +2.0**
SNR=7.6
KBZ **Khabaz** **85.84 314** P **P** **23 20 30.4 -1.4**
comp=Z,34nm,0.9s,baz=97,slow=4.6,SNR=31
NEY **Neytrino** **85.89 314** *ceP* **P** **23 20 33.4 +1.0**
NEY pmax pmax
comp=Z,73nm,2.4s
GOF **Gofitskoye** **85.98 316**⇑ *iP* **P** **23 20 33.9 +1.4**
GOF *eS* **S** **23 31 05.5 +0.8**
GOF pmax pmax
comp=Z,158nm,1.2s
GOF smax smax
comp=E,64nm,2.5s
KVAR **Kislovodsk Arr** **86.03 314** P **P** **23 20 32.2 -0.8**
comp=E,19nm,1.0s,baz=87,slow=5.2,SNR=16
KIV **Kislovodsk** **86.03 314** *c i*P **P** **23 20 33.3 +0.3**
KIV *i* 23 23 52.1
KIV *i* S **S** **23 31 03.8 -1.7**
KIV *i* SS **SS** **23 36 43.2 -0.9**
KIV pmax pmax
comp=Z,25nm,1.0s
KIV **Kislovodsk** **86.03 314** *eP* **P** **23 20 34.0 +1.1**
comp=Z,42nm,1.0s
KIV LR LR
comp=Z,3μm,22.0s
CHVG **Ch'k'valeri** **86.26 313** P **P** **23 20 37.5 +3.5**
CHVG **Ch'k'valeri** **86.26 313**‖ *iP* **P** **23 20 37.3 +3.3**
MZRK **Al-Mazaregh** **86.30 306** *eP* **P** **23 20 36.3 +1.9**
MZRK **Al-Mazaregh** **86.30 306** *eP* **P** **23 20 34.8 +0.4**
PPT2 **Papeete2** **86.34 107** *eS* **S** **23 31 07.8 -1.7**
comp=Z,7μm,27.8s
PPT2 **Papeete2** **86.34 107** *e*LR LR 23 48 02.3
comp=Z,9μm,36.2s
SFNV **Sufian** **86.81 307** *eP* **P** **23 20 38.0 +1.0**
SFNV **Sufian** **86.81 307** *eP* **P** **23 20 36.9 0.0**
KSRV **Kasrt alli** **87.63 306** *eP* **P** **23 20 41.7 +0.8**
KSRV **Kasrt alli** **87.63 306** *eP* **P** **23 20 40.0 -0.8**
VRH **Novokhopyorsk** **87.92 322** *eP* **P** **23 20 42.9 +1.1**
VRH *eS* **SKSac** **23 31 06.0 -2.2**
VRH pmax pmax
comp=Z,40nm,1.2s
VRH pmax pmax
comp=Z,160nm,1.6s
VRH smax smax
comp=E,3μm,7.8s
SOC **Sochi** **88.10 314** *c i*P P 23 20 48.5 +5.6
SOC *e* 23 24 08.4
SOC *eS* S 23 31 15.3 -10
SOC pmax pmax
comp=Z,38nm,1.1s
SOC MLR MLR
comp=Z,3μm,21.0s
ZALF **Zalf** **88.66 303** *eP* **P** **23 20 45.2 -0.6**
ZALF **Zalf** **88.66 303** *eP* **P** **23 20 45.2 -0.6**
RABH **Abou Rabah** **88.93 304** *eP* **P** **23 20 48.0 +0.9**
RABH **Abou Rabah** **88.93 304** *eP* **P** **23 20 47.3 +0.2**
MARH **Ras Al Marh** **89.48 304** *eP* **P** **23 20 50.6 +0.6**
MARH **Ras Al Marh** **89.48 304** *eP* **P** **23 20 50.7 +0.6**
VSR **Storozhevoye** **89.51 321** *eP* **P** **23 20 49.0 -0.3**
VSR *eS* **SKSac** **23 31 12.7 -5.0**
VSR pmax pmax
comp=Z,30nm,0.9s
VSR pmax pmax
comp=Z,60nm,1.0s
VSR smax smax
comp=E,2μm,7.3s
VSR MLR MLR
comp=Z,3μm,20.0s
DRWC **Darouich** **89.59 307** *eP* **P** **23 20 52.0 +1.8**
BTCH **Batrach** **89.70 306** *eP* **P** **23 20 50.0 -0.7**
BTCH **Batrach** **89.70 306** *eP* **P** **23 20 50.4 -0.3**
TCHB **Talchebab** **89.78 303** *eP* **P** **23 20 49.2 -1.9**
SVW2 **Sparrevohn** **89.81 29** *eP* **P** **23 20 53.5 +2.9**
comp=Z,35nm,1.3s
LPSR **Galich'ya Gora** **89.84 323** *eP* **P** **23 20 51.0 +0.2**
LPSR *eS* **S** **23 31 37.7 -3.5**
LPSR pmax pmax
comp=Z,40nm,1.1s
LPSR pmax pmax
comp=Z,120nm,1.8s
LPSR smax smax
comp=N,540nm,5.0s
LPSR MLR MLR
comp=Z,4μm,26.0s
SLNF **Slenfeh** **89.85 306** *eP* **P** **23 20 51.8 +0.2**
SLNF **Slenfeh** **89.85 306** *eP* **P** **23 20 53.3 +1.8**
BRBR **Barbar** **89.86 303** *eP* **P** **23 20 52.6 +0.9**
BRBR **Barbar** **89.86 303** *eP* **P** **23 20 51.9 +0.3**
ANN **Anapa** **89.88 315** *eP* **P** **23 20 49.5 -1.7**
ANN *e**PP **pP** **23 20 58.6 -1.8**
ANN *e* 23 24 22.4
ANN *eS* **SKSac** **23 31 17.6 -2.5**
ANN pmax pmax
comp=Z,71nm,1.7s
TT01 **Tatalina** **89.91 27** *eP* **P** **23 20 53.2 +2.2**
TTA **Tatalina** **89.92 27** *eP* **P** **23 20 53.3 +2.2**
TTA pmax pmax
comp=Z,22nm,1.1s
TTA **Tatalina** **89.92 27** *eP* **P** **23 20 53.3 +2.2**
comp=Z,22nm,1.1s
ARNB **Al Arnab** **90.08 306** *eP* **P** **23 20 51.6 -0.9**
ARNB **Al Arnab** **90.08 306** *eP* **P** **23 20 52.0 -0.5**
KLMR **Klimovskoe** **90.64 331** *eP* **P** **23 20 52.8 -1.6**
KLMR *eS* **SKSac** **23 31 21.1 -2.7**
KLMR *e*SS **SS** **23 37 48.8 -1.2**
KLMR pmax pmax
comp=Z,69nm,1.4s
KLMR MLR MLR
comp=Z,5μm,21.0s
KDAK **Kodiak Island** **90.85 32** PFAKE 23 21 10.0 +15
KDAK LR LR
comp=Z,3μm,20.0s
MOS **Moscow** **90.99 326** *eP* **P** **23 20 55.7 -0.4**
MOS *e* 23 24 37.7
MOS *e*PPP PPP 23 26 33.4
MOS *eS* **SKSac** **23 31 25.7 -0.3**
MOS *e*PS **PS** **23 32 57.6 -5.5**
MOS pmax pmax
comp=Z,400nm,2.5s
MOS pmax pmax
comp=Z,50nm,1.1s
SPU **Mount Spurr** **91.52 29** *eP* **P** **23 21 00.5 +2.0**
OBN **Obninsk** **91.52 325** P **P** **23 20 56.3 -2.2**
comp=Z,12nm,0.8s,baz=72,slow=2.0,SNR=23
OBN **Obninsk** **91.52 325** *c i*P **P** **23 20 59.0 +0.4**
OBN *i* 23 21 16.4
OBN *eS* **S** **23 31 48.4 -8.0**
OBN *i* SS **SS** **23 38 03.2 +0.3**
OBN pmax pmax
comp=Z,39nm,1.4s
OBN **Obninsk** **91.52 325** *eP* **P** **23 20 59.8 +1.3**
comp=Z,100nm,1.4s
OBN LR LR
comp=Z,5μm,21.0s
PPLA **Purkeypile** **91.65 27** *eP* **P** **23 21 02.4 +3.2**
comp=Z,98nm,1.9s
TMCR **Tamitsa** **91.74 334** *eP* **P** **23 21 00.6 +1.2**
TMCR pmax pmax
comp=Z,13nm,0.5s
CAST **Castle Rocks** **91.76 27** *eP* **P** **23 21 01.7 +2.1**
comp=Z,54nm,1.7s
CAST *e*PP PP 23 24 49.6 +11
CSS **Mathiatis** **92.16 305** *eP* **P** **23 21 04.0 +2.0**
comp=Z,7.7nm,1.0s
CSS LR LR
comp=Z,1μm,20.0s
BR131 **Keskin Array S** **92.23 309** *eP* **P** **23 21 00.3 -2.2**
BRTR **Keskin Array B** **92.23 309** P **P** **23 21 00.1 -2.4**
comp=Z,6.3nm,0.8s,baz=136,slow=4.9,SNR=16
BRTR **Keskin Array B** **92.23 309** *i* P **P** **23 21 01.3 -1.2**
BRTR pmax pmax
comp=Z,14nm,1.0s
SIM **Simferopol'** **92.25 315** *eP* **P** **23 21 02.0 -0.2**
SIM *e* 23 24 45.0
SIM *i* 23 31 32.0
SIM *eS* **S** **23 32 08.0 +4.5**
SIM pmax pmax
comp=Z,200nm,9.9s
KTH **Kantishna Hill** **92.29 27** *eP* **P** **23 21 05.0 +2.9**
comp=Z,27nm,1.2s
BPAW **Bear Paw Mtn.** **92.31 26** *eP* **P** **23 21 04.2 +2.1**
comp=Z,37nm,1.6s
MLY **Manley** **92.50 25** *eP* **P** **23 21 05.0 +2.0**
comp=Z,18nm,1.2s
TRF **Thorofare Moun** **92.56 27** *eP* **P** **23 21 05.7 +2.2**
comp=Z,77nm,1.7s
NVL **N'lazarevskaya** **92.60 198** *eP* **P** **23 21 04.7 +1.4**
NVL *eS* **SKSac** **23 31 34.0 -0.7**
NVL *e*SP **SP** **23 33 16.7 +0.6**
NVL *e*SS **SS** **23 38 16.6 -0.8**
NVL MLR MLR
comp=Z,5μm,24.0s
RC01 **Rabbit Creek A** **92.63 29** *eP* **P** **23 21 06.6 +3.0**
comp=Z,64nm,1.5s
ANTO **Ankara** **92.89 310** *eP* **P** **23 21 08.0 +2.6**
ANTO pmax pmax
comp=Z,15nm,1.1s
ANTO **Ankara** **92.89 310** *eP* **P** **23 21 08.0 +2.6**
comp=Z,15nm,1.1s
ANTO LR LR
comp=Z,15nm,22.0s
COLD **Coldfoot** **92.91 23** *eP* **P** **23 21 04.0 -0.8**
comp=Z,23nm,0.9s
PMR **Palmer** **92.95 29** *eP* **P** **23 21 06.9 +1.8**
PMR pmax pmax
comp=Z,36nm,1.4s
PMR **Palmer** **92.95 29** *eP* **P** **23 21 06.9 +1.8**
comp=Z,36nm,1.4s
BWN **Browne** **92.98 26** *eP* **P** **23 21 08.6 +3.4**
comp=Z,53nm,1.2s
MCK **McKinley** **93.19 26** *eP* **P** **23 21 07.0 +0.8**
MCK pmax pmax
comp=Z,150nm,2.0s
MCK **McKinley** **93.19 26** *eP* **P** **23 21 07.0 +0.8**
comp=Z,150nm,2.0s
RND **Reindeer** **93.20 27** *eP* **P** **23 21 07.3 +1.0**
RND pmax pmax
comp=Z,35nm,1.0s
RND **Reindeer** **93.20 27** *eP* **P** **23 21 07.3 +1.0**
comp=Z,35nm,1.0s
LSZ **Lusaka** **93.33 254** *eP* **P** **23 21 08.1 +0.1**
LSZ pmax pmax
comp=Z,39nm,1.5s
LSZ MLR MLR
comp=Z,10μm,22.0s
LSZ **Lusaka** **93.33 254** *eP* **P** **23 21 08.1 +0.1**
comp=Z,39nm,1.5s
LSZ LR LR
comp=Z,10μm,22.0s
SML **Sawmill** **93.35 28** *eP* **P** **23 21 09.8 +2.8**
SML pmax pmax
comp=Z,44nm,1.0s
SML **Sawmill** **93.35 28** *eP* **P** **23 21 09.8 +2.8**
comp=Z,44nm,1.0s
LVZ **Lovozero** **93.44 338** PFAKE 23 21 20.0 +13
LVZ LR LR
comp=Z,5μm,21.0s
MDM **Murphy Dome** **93.56 25** *eP* **P** **23 21 10.4 +2.5**
comp=Z,15nm,1.3s
WRH **Wood River Hil** **93.60 26** *eP* **P** **23 21 08.9 +0.9**
comp=Z,99nm,1.8s
COLA **College** **93.72 25** *eP* **P** **23 21 09.5 +1.0**
COLA pmax pmax
comp=Z,18nm,1.5s
COLA MLR MLR
comp=Z,2μm,21.0s
COLA **College** **93.72 25** *eP* **P** **23 21 09.5 +1.0**
comp=Z,18nm,1.5s
COLA LR LR
comp=Z,2μm,21.0s
CCB **Clear Creek Bu** **93.73 26** *eP* **P** **23 21 08.8 +0.2**
comp=Z,61nm,1.6s
SCM **Sheep Creek Mo** **93.83 28** *eP* **P** **23 21 12.6 +3.4**
SCM pmax pmax
comp=Z,72nm,1.4s
SCM **Sheep Creek Mo** **93.83 28** *eP* **P** **23 21 12.6 +3.4**
comp=Z,72nm,1.4s
DHY **Denali Highway** **93.85 27** *eP* **P** **23 21 11.2 +1.8**
comp=Z,64nm,1.8s
APA **Apatity** **93.90 337**⇑ *iP* **P** **23 21 08.0 -1.3**
APA *i* 23 24 52.0
APA *i* 23 31 46.0
APA *i* S **S** **23 32 13.0 -4.2**
APA *i* PS **PS** **23 33 30.0 -5.0**
APA MLR MLR
comp=Z,5μm,14.0s
HDA **Harding Lake** **94.09 26** *eP* **P** **23 21 13.2 +3.0**
comp=Z,61nm,1.4s
ILAR **Eielson Array** **94.13 25** P **P** **23 21 11.4 +0.9**
comp=Z,5.9nm,1.1s,baz=272,slow=2.4,SNR=13
ILAR PP **PP** **23 24 57.6 +0.6**
comp=Z,3.8nm,1.0s,baz=256,slow=6.5,SNR=7.3
ILB **Eielson Array** **94.13 25** *eP* **P** **23 21 12.2 +1.8**
IL1 **Eielson Array** **94.13 25** *eP* **P** **23 21 10.6 +0.2**
KLU **Klutina** **94.49 29** *eP* **P** **23 21 15.9 +3.6**
comp=Z,34nm,1.5s
BOSA **Boshof** **94.54 241** P **P** **23 21 15.3 +1.9**
comp=Z,4.1nm,0.9s,baz=109,slow=10,SNR=2.7
BOSA LR LR 23 59 05.6
comp=Z,4μm,20.1s,baz=92,slow=33
DIV **Divide** **94.55 29** *eP* **P** **23 21 14.3 +1.7**
comp=Z,66nm,1.3s
ISP **Isparta** **94.57 307** *ceP* **P** **23 21 12.8 -0.4**
ISP pmax pmax

comp=Z,20nm,1.1s
ISP Isparta 94.57 307 *e*P **P 23 21 14.3 +1.1**
comp=Z,43nm,1.3s
ISP LR LR
comp=Z,4µm,21.0s
PAX Paxson 94.72 27 *e*P **P 23 21 15.8 +2.5**
PAX pmax pmax
comp=Z,116nm,1.6s
PAX Paxson 94.72 27 *e*P **P 23 21 15.8 +2.5**
comp=Z,116nm,1.6s
FYU Fort Yukon 94.84 24 *e*P **P 23 21 16.9 +3.3**
comp=Z,66nm,1.3s
BMRM Bremner River 95.12 29 *e*P **P 23 21 18.8 +3.6**
comp=Z,99nm,1.3s
DOT Dot Lake 95.35 27 *e*P **P 23 21 18.4 +2.2**
comp=Z,57nm,1.1s
MENT Mentasta 95.52 27 *e*P **P 23 21 20.3 +3.4**
comp=Z,70nm,0.2s
AKASG Malin Array Be 95.75 320 P **P 23 21 15.3 -2.8**
comp=Z,11nm,1.0s,baz=77,slow=4.5,SNR=31
AKASG PP **PP 23 25 16.0 +6.1**
comp=Z,0.2nm,0.3s,baz=76,slow=7.1,SNR=4.3
AKASG Malin Array Be 95.75 320 *i* P **P 23 21 18.2 +0.1**
AKASG pmax pmax
comp=Z,11nm,1.0s
AKBB Malin Array Si 95.75 320 *e*P **P 23 21 20.5 +2.3**
AKBB pmax pmax
comp=Z,17nm,0.9s
AKBB Malin Array Si 95.75 320 *e*P **P 23 21 20.4 +2.3**
comp=Z,17nm,0.9s
KIEV Kiev 95.76 320 *c i*P **P 23 21 19.7 +1.5**
KIEV pmax pmax
comp=Z,14nm,1.1s
KIEV Kiev 95.76 320 PFAKE 23 21 30.0 +12
KIEV LR LR
comp=Z,3µm,22.0s
AK11 Malin Array Si 95.78 320 *e*P **P 23 21 20.0 +1.7**
KIS Kishinev 96.01 317 *e*P **P 23 21 20.0 +0.6**
KIS Kishinev 96.01 317 *e*PP PP 23 25 08.0 -4.1
KIS *e*SKKS **S 23 32 37.0 +0.6**
KIS Kishinev 96.01 317 *e*P **P 23 21 20.0 +0.6**
KIS *e* 23 25 08.0
KIS *e* 23 27 20.0
KIS *e* 23 32 37.0
KIS *e*PS PS 23 34 30.0 +31
TAOE Nuku Hiva Isla 96.20 99 *e*S **S 23 32 35.7 -3.9**
comp=Z,3µm,30.6s
TAOE Nuku Hiva Isla 96.20 99 *e*LR LR 23 52 37.7
comp=Z,4µm,31.5s
KEV Kevo 96.21 340 PFAKE 23 21 30.0 +10
KEV LR LR
comp=Z,5µm,21.0s
SNAA Sanae 96.34 195⇑ *e*P **P 23 21 20.4 -0.2**
CFR Carcaliu 96.49 315⇓ *i*P **P 23 21 21.9 +0.3**
CFR Carcaliu 96.49 315 ⇓P **P 23 21 21.9 +0.3**
MICGM Minsk 96.52 324 *e*P **P 23 21 23.0 +1.4**
MICGM *e*PP **PP 23 25 22.0 +6.2**
MICGM *e*PPP PPP 23 27 21.0
MICGM *e*SKS **SKSac 23 32 02.0 +5.7**
MICGM *e*S **S 23 32 38.0 -2.4**
MICGM *e*PS **PS 23 34 02.0 -2.2**
MICGM *e*SS **SS 23 39 05.0 -9.3**
MICGM *e*SSS SSS 23 43 42.0
MICGM *e*LR LR 00 00 30.0
MICGM LRM MLR 00 06 14.0
comp=Z,6.4nm,24.0s
MNK Minsk 96.52 324 *e*P **P 23 21 23.0 +1.4**
MNK *e* 23 25 22.0
MNK *e*PPP PPP 23 27 21.0
MNK *e*S **S 23 32 38.0 -2.4**
MNK *e*PS **PS 23 34 02.0 -2.2**
MNK MLR MLR
comp=Z,6µm,24.0s
EGAK Eagle 96.58 25 *e*P **P 23 21 23.1 +1.4**
comp=Z,14nm,1.1s
EGAK LR LR
comp=Z,1µm,20.0s
ARA0 ARCESS Array S 96.75 339 *e*P **P 23 21 23.6 +1.2**
ARCES ARCESS Array B 96.75 339 P **P 23 21 20.6 -1.7**
comp=Z,10nm,1.1s,baz=348,slow=5.2,SNR=7.7
ARE0 ARCESS Array S 96.75 339 *e*P **P 23 21 24.1 +1.8**
comp=Z,72nm,1.8s
VSU Vasula 97.01 328⇓ *e*P **P 23 21 22.2 -1.5**
VSU pmax pmax
comp=Z,18nm,1.0s
NACGM Naroch 97.14 325 *e*PP PP 23 25 25.0 +4.4
NACGM *e*SKS **SKSac 23 32 00.0 +0.4**
NACGM *e*S **S 23 32 41.0 -4.8**
NACGM *e*PS PS 23 33 52.0 -19
NACGM *e*SS **SS 23 39 31.0 +7.9**
NACGM *e*SSS SSS 23 43 23.0
NACGM *e*LQ LQ 23 55 32.0
NACGM *e*LR LR 00 02 52.0
NACGM LRM MLR 00 12 19.0
comp=Z,4.1nm,20.0s
IDID Didziasalis 97.15 325 *e*P **P 23 21 24.1 -0.3**
IDID IAmb IAmb 23 21 27.8
comp=Z,18nm,1.4s
FINES FINESS Array B 97.16 331 P **P 23 21 23.2 -1.1**
comp=Z,0.6nm,0.7s,baz=133,slow=10,SNR=3.1
KARP Karpathos 97.22 305 *e*P Pdif 23 21 27.3 +1.9
comp=Z,40nm,1.2s
IZAR Zarasai 97.41 326 *e*P **P 23 21 25.4 -0.2**
IZAR IAmb IAmb 23 21 29.0
comp=Z,14nm,1.2s
VRI Vrincioaia 97.47 316⇓ *i*P Pdif 23 21 27.7 +1.5
VRI Vrincioaia 97.47 316 ⇓P Pdif 23 21 27.7 +1.5
ISAL Salakas 97.49 325 *e*P **P 23 21 25.6 -0.3**
ISAL IAmb IAmb 23 21 29.5
comp=Z,7.0nm,0.9s
TESR Tescani 97.51 316⇓ *i*P Pdif 23 21 26.5 +0.2
SPA0 Spitsbergen Ar 97.72 348 *e*P Pdif 23 21 28.5 +1.9
SPITS Spitsbergen Ar 97.72 348 P Pdif 23 21 26.5 -0.1
comp=Z,57nm,1.2s,baz=133,slow=13,SNR=6.8
SUR Sutherland 97.75 237 PFAKE 23 21 40.0 +12
SUR LR LR
comp=Z,8µm,20.0s
MLR Muntele Rosu 98.03 315 P **P 23 21 28.1 -0.7**
comp=Z,1.9nm,1.1s,baz=91,slow=2.7
MLR Muntele Rosu 98.03 315⇑ *i*P Pdif 23 21 30.1 +1.3
MLR Muntele Rosu 98.03 315 ⇑P Pdif 23 21 30.1 +1.3
MLR Muntele Rosu 98.03 315 *e*P Pdif 23 21 30.4 +1.5
comp=Z,36nm,1.5s
KBS Kingsbay 98.33 349 PFAKE 23 21 40.0 +11
KBS LR LR
comp=Z,5µm,20.0s
BURAR Bucovina Array 98.45 317⇓ *i*P Pdif 23 21 32.4 +1.8
BURAR Bucovina Array 98.45 317 ⇓P Pdif 23 21 32.4 +1.8
BUR08 Bucovina Ar. S 98.46 317 *e*P Pdif 23 21 32.7 +2.0
LAST Lasithi 98.60 305 *e*P Pdif 23 21 35.1 +3.6
comp=Z,73nm,1.4s
SANT Santorini 98.60 306 PFAKE 23 21 40.0 +8.5
SANT LR LR
comp=Z,2µm,22.0s
VOIR 98.66 315⇑ *i*P **P 23 21 28.9 -2.7**
VOIR 98.66 315 ⇑P **P 23 21 28.9 -2.7**
INK Inuvik 99.17 21 *e*P **Pdif 23 21 35.4 +2.2**
INK pmax pmax
comp=Z,28nm,1.5s
INK Inuvik 99.17 21 *e*P **Pdif 23 21 35.4 +2.2**
comp=Z,28nm,1.5s
SUW Suwalki 99.30 324 *e*P **Pdif 23 21 35.3 +1.2**
SUW LMZ LR 00 11 54.7
SUW Suwalki 99.30 324 *e*P **Pdif 23 21 35.3 +1.2**
RKT Rikitea 99.39 114 *e*SKSac **SKSac 23 32 05.8 -6.5**
comp=Z,2µm,28.0s
RKT Rikitea 99.39 114 *e*PS PS 23 34 36.8 +0.4
comp=Z,2µm,30.5s
RKT Rikitea 99.39 114 *e*LR LR 23 53 55.5
comp=Z,3µm,24.8s
LOT Lotru 99.56 315⇑ *i*P **Pdif 23 21 37.9 +2.3**
KWP Kalwaria Pacla 99.98 319 *e*P **Pdif 23 21 38.7 +1.4**
KWP LMZ LR 00 11 51.7
KWP Kalwaria Pacla 99.98 319⇓ *i*P **Pdif 23 21 39.4 +2.1**
KWP Kalwaria Pacla 99.98 319 ⇓P **Pdif 23 21 39.4 +2.1**
DRGR 100.20 317⇓ *i*P **Pdif 23 21 40.6 +2.2**
DRGR 100.20 317 ⇓P **Pdif 23 21 40.6 +2.2**
UZH Uzhgorod 100.33 318 *e*P **Pdif 23 21 36.7 -2.1**
UZH *e* 23 32 11.7
UZH *e*S **Sdif 23 33 06.1 -6.9**
UZH MLR MLR
comp=N,4µm,22.0s
UZH MLR MLR
comp=E,2µm,22.0s
UZH MLR MLR
comp=Z,1µm,22.0s
CRVS Cervenica-Dubn 100.86 319 *e*P **Pdif 23 21 43.8 +2.6**
STHS Stebnicka Huta 100.95 319 *e*P **Pdif 23 21 44.1 +2.5**
STHS *e* 23 25 26.1
BEL Belsk 100.97 322 *e*P **Pdif 23 21 43.9 +2.3**
BEL LMZ LR 00 10 24.7
BEL Belsk 100.97 322 *e*P **Pdif 23 21 43.9 +2.3**
BEL MLR MLR
comp=Z,6µm,25.0s
AGG Agios Georgios 100.99 309 *e*PP PP 23 25 49.3 -1.2
BZS Buzias 101.06 315⇓ *i*P **Pdif 23 21 42.9 +0.8**
BZS Buzias 101.06 315 ⇓P **Pdif 23 21 42.9 +0.8**
NIE Niedzica 101.56 319 *e*P **Pdif 23 21 46.3 +2.0**
NIE LMZ LR 00 12 46.2
NIE Niedzica 101.56 319 *e*P **Pdif 23 21 46.3 +2.0**
OJC Ojcow 101.79 320 *e*P **Pdif 23 21 47.1 +1.8**
OJC LMZ LR 00 12 27.4
OJC Ojcow 101.79 320 *e*P **Pdif 23 21 47.1 +1.8**
OJC Ojcow 101.79 320 *e*Pdif **Pdif 23 21 48.4 +3.2**
WRAK Wrangell Islan 101.88 33 PFAKE 23 22 00.0 +14
WRAK LR LR
comp=Z,2µm,21.0s
PSZ Piszkesteto 102.00 318⇓ *i*P **Pdif 23 21 48.2 +1.8**
PSZ Piszkesteto 102.00 318 ⇓P **Pdif 23 21 48.2 +1.8**
PSZ Piszkesteto 102.00 318 *e*Pdif **Pdif 23 21 48.8 +2.4**
PSZ LR LR
comp=Z,4µm,21.0s
TIR Tirane 102.70 311 PFAKE 23 22 00.0 +10
TIR LR LR
comp=Z,2µm,20.0s
TSUM Tsumeb 102.88 249 PFAKE 23 22 00.0 +9.0
TSUM LR LR
comp=Z,5µm,20.0s
OKC Ostrava-Krasne 102.89 320 *e*PDIFF **Pdif 23 21 53.7 +3.5**
OKC *e*PP **PKiKP 23 26 10.0 -0.4**
OKC *ex* x 23 32 09.4
OKC *e*SP SP 23 35 12.6 +3.9
OKC AMS AMS 00 12 30.0
comp=Z,3µm,23.1s
OKC Ostrava-Krasne 102.89 320 *i* P **Pdif 23 21 53.7 +3.5**
OKC *e* 23 26 10.0
OKC *e* 23 35 12.6
OKC MLR MLR
comp=Z,3µm,23.1s
PKSM Moragy 103.06 316⇑ *i*P **Pdif 23 21 53.3 +2.3**
PKSM Moragy 103.06 316 ⇑P **Pdif 23 21 53.3 +2.3**
MORC Moravsky Berou 103.29 320⇑ *i*P **Pdif 23 21 54.0 +2.0**
MORC Moravsky Berou 103.29 320 ⇑P **Pdif 23 21 54.0 +2.0**
MORC Moravsky Berou 103.29 320 *e*Pdif **Pdif 23 21 55.2 +3.2**
MORC *e*PP **PKiKP 23 26 12.8 +1.5**
HFS Hagfors 103.36 331 Pdiff **Pdif 23 21 51.0 -1.0**
comp=Z,1.9nm,1.0s,baz=94,slow=6.2,SNR=2.7
HFS Hagfors 103.36 331 P **Pdif 23 21 51.0 -1.0**
PTCN Pitcairn Islan 103.43 117 PFAKE 23 22 00.0 +6.8
PTCN LR LR
comp=Z,3µm,22.0s
KRLC Kraliky 103.73 320 *e*PDIFF **Pdif 23 21 56.5 +2.5**
KRLC *ex* x 23 22 10.5
KRLC Kraliky 103.73 320 *i* P **Pdif 23 21 56.5 +2.5**
KSP Ksiaz 103.90 321 *e*P **Pdif 23 21 56.5 +1.9**
KSP LMZ LR 00 11 42.3
KSP Ksiaz 103.90 321 *e*P **Pdif 23 21 56.6 +1.9**
KSP MLR MLR
comp=Z,5µm,25.8s
DPC Dobruska-Polom 103.97 321 *e*PDIFF **Pdif 23 21 57.6 +2.6**
DPC *e*PP **PKiKP 23 26 16.7 +4.2**
DPC *e*SKS 23 32 37.3
DPC AMS AMS 00 12 10.0
comp=Z,3µm,22.2s
DPC Dobruska-Polom 103.97 321 *i* P **Pdif 23 21 57.6 +2.6**
DPC *e* 23 26 16.7
DPC *e* 23 32 37.3
DPC MLR MLR
comp=Z,3µm,22.2s
VRAC Vranov 103.97 320⇓ *i*P **Pdif 23 21 57.3 +2.3**
VRAC Vranov 103.97 320 ⇓P **Pdif 23 21 57.3 +2.3**
UPC Upice 104.14 321 *e*PP PP 23 26 16.8 +3.1
UPC *e*SP SP 23 35 24.0 +2.2
UPC AMS AMS 00 11 50.0
comp=Z,4µm,22.3s
NOA NORSAR Array B 104.29 332 Pdiff **Pdif 23 21 55.5 -0.7**
comp=Z,0.4nm,0.8s,baz=45,slow=24,SNR=2.9
CONA Conrad Observa 104.68 318 *i* PKiKP **PKiKP 23 26 11.1 -2.8**
comp=Z,11nm,2.0s
TREC Trest 104.69 320 *e*PP PP 23 26 19.5 +1.7
TREC AMS AMS 00 12 30.0
comp=Z,4µm,25.9s
GOPC GO Pecny, Ondr 105.02 320 *e*PDIFF **Pdif 23 22 03.2 +3.5**
GOPC *ex* x 23 31 47.3
GOPC AMS AMS 00 12 40.0
comp=Z,4µm,23.9s
GOPC GO Pecny, Ondr 105.02 320 *i* P **Pdif 23 22 03.2 +3.5**
GOPC MLR MLR
comp=Z,4µm,23.9s
PRU Pruhonice 105.16 321 *e*PDIFF **Pdif 23 22 03.5 +3.2**
PRU *e*SKS **SKSac 23 32 43.8 +5.3**
PRU AMS AMS 00 12 40.0
comp=Z,5µm,27.4s
PRU Pruhonice 105.16 321 *i* P **Pdif 23 22 03.5 +3.2**
PRU MLR MLR
comp=Z,5µm,27.4s
PRA Prague 105.22 321 *e*SP SP 23 35 31.8 -1.2
PRA AMS AMS 00 12 50.0
comp=Z,5µm,25.7s
TIP Timpagrande 105.30 309 PFAKE 23 26 30.0
TIP LR LR
comp=Z,2µm,22.0s
PERS Pernice 105.41 317 *i* Pdiff **Pdif 23 22 06.5 +5.0**
BOJS Bojanci 105.50 316 *i* Pdiff **Pdif 23 22 04.7 +2.8**
CLL Collm 105.84 322 *e*Pdif **Pdif 23 22 03.0 -0.3**
comp=Z,12nm,1.6s
CLL *e*PKiKP **PKiKP 23 26 16.0 +0.2**
CLL *e*PP **PP 23 26 27.0 +0.8**
comp=Z,41nm,1.9s
CLL *e* 23 26 37.0
CLL *e*PPP PPP 23 28 36.0
CLL *e*PPPP 23 30 24.0
CLL *e*SKSac **SKSac 23 32 42.0 +0.5**
CLL *e*SKKSac **SKSdf 23 33 24.0 -1.7**
CLL *e*Sdif **Sdif 23 34 02.0 +3.1**
CLL *e*PS **PS 23 35 36.0 -7.7**
CLL *e*PPS PPS 23 36 24.0
CLL *e* 23 38 54.0
CLL *e*SS **SKKPbc 23 41 12.0 -10**
CLL *e*SSS SSS 23 44 48.0
CLL *e*SSSS 23 48 36.0
CLL LmV 00 22 00.0
comp=Z,3µm,19.7s
CLL Collm 105.84 322 *e*P **Pdif 23 22 03.0 -0.3**
CLL *e* 23 26 27.0
CLL *e* 23 32 42.0
CLL *e*S **Sdif 23 34 02.0 +3.1**
CLL pmax pmax
comp=Z,12nm,1.6s
CUC Castrocucco 105.92 310 PFAKE 23 26 30.0
CUC LR LR
comp=Z,1µm,20.0s
GERES GERESS Array B 105.93 320 Pdiff **Pdif 23 22 06.2 +2.3**
comp=Z,0.8nm,0.9s,baz=72,slow=4.3,SNR=5.4
GERES PKiKP **PKiKP 23 26 15.2 -1.0**
comp=Z,0.4nm,0.8s,baz=90,slow=2.7,SNR=3.4
GERES PP **PP 23 26 29.8 +2.7**
comp=Z,2.4nm,1.1s,baz=72,slow=8.6,SNR=4.5
GERES PKKPbc **PKKPbc 23 37 44.5 +3.9**
comp=Z,0.3nm,0.8s,baz=169,slow=1.4,SNR=3.6
GEA0 GERESS Array S 105.93 320 *e*Pdif **Pdif 23 22 06.6 +2.8**
KHC Kasperske Hory 105.95 320 *e*PDIFF **Pdif 23 22 06.1 +2.2**
KHC *ex* x 23 22 15.2
KHC *ex* x 23 25 10.0
KHC *ex* x 23 25 41.0
KHC *e*PP **PP 23 26 30.6 +3.4**
KHC *e*SKS **SKSac 23 32 39.1 -3.1**
KHC *e*SP **SP 23 35 43.2 +2.4**
KHC AMS AMS 00 14 40.0
comp=Z,5µm,21.7s
KHC Kasperske Hory 105.95 320 *i* P **Pdif 23 22 06.1 +2.2**
KHC *e* 23 26 30.6
KHC *e* 23 32 39.1
KHC *e* 23 35 43.2
KHC MLR MLR
comp=Z,5µm,21.7s
CEL Celeste 106.08 308 PFAKE 23 26 30.0
CEL LR LR
comp=Z,2µm,22.0s
JAVS Javornik 106.26 316 *i* Pdiff **Pdif 23 22 07.9 +2.5**
NKC Novy Kostel 106.43 321 *e*SKS **SKSac 23 32 42.6 -1.7**
NKC AMS AMS 00 15 20.0
comp=Z,5µm,23.2s
RES Resolute Bay 106.52 10 *e*PKP 23 26 17.5
AQU L'Aquila 107.36 313 PFAKE 23 26 30.0
AQU LR LR
comp=Z,3µm,21.0s
WDD Wied Dalam 107.46 306 PFAKE 23 26 30.0
WDD LR LR
comp=Z,2µm,20.0s
WATA Walderalm 107.64 318 *i* Pdiff **Pdif 23 22 14.2 +2.6**
comp=Z,3.9nm,1.2s
MOTA Moosalm 107.95 318 *i* Pdiff **Pdif 23 22 16.7 +3.8**
comp=Z,2.7nm,1.1s
CLTB Caltabellotta 108.27 308 PFAKE 23 26 30.0
CLTB LR LR
comp=Z,1µm,22.0s
YKA Yellowknife Ar 108.52 24 Pdiff **Pdif 23 22 19.2 +4.3**
comp=Z,0.8nm,0.9s,baz=298,slow=4.9,SNR=13
YKA PKiKP **PKiKP 23 26 21.9 +1.4**
comp=Z,0.5nm,0.7s,baz=316,slow=2.3,SNR=5.8
YKA PKKPbc **PKKPbc 23 37 35.6 +2.8**
comp=Z,1.0nm,1.1s,baz=109,slow=2.9,SNR=6.2
STU Stuttgart 108.84 320 *e*P **Pdif 23 22 12.9 -3.8**
STU Stuttgart 108.84 320 *e*Pdif **Pdif 23 22 12.9 -3.8**
NLWA Neilton Lookou 108.94 41 PFAKE 23 26 30.0
NLWA LR LR
comp=Z,2µm,22.0s
VLC Villacollemand 109.16 315 PFAKE 23 26 30.0
VLC LR LR
comp=Z,2µm,22.0s
TUE Stuetta 109.33 318 PFAKE 23 26 30.0
TUE LR LR
comp=Z,3µm,22.0s
BFO Black Forest 109.52 320 PFAKE 23 26 30.0
BFO LR LR
comp=Z,4µm,22.0s
WLF Walferdange 110.50 322 PFAKE 23 26 40.0
WLF LR LR
comp=Z,4µm,20.0s
PMSA Palmer Station 110.73 177 PFAKE 23 26 40.0
PMSA LR LR
comp=Z,5µm,20.0s
VSL Villasalto 110.89 311 PFAKE 23 26 40.0
VSL LR LR
comp=Z,1µm,19.0s
BNI Bardonecchia 111.50 317 PFAKE 23 26 40.0
BNI LR LR
comp=Z,4µm,22.0s
HAWA Hanford 112.07 41 PFAKE 23 26 40.0
HAWA LR LR
comp=Z,2µm,21.0s
SSB Saint Sauveur 112.89 318 PFAKE 23 26 40.0
SSB LR LR
comp=Z,2µm,19.0s
NEW Newport 113.01 39 PFAKE 23 26 40.0
NEW LR LR
comp=Z,2µm,21.0s
ESK Eskdalemuir 113.53 330 PFAKE 23 26 40.0
ESK LR LR
comp=Z,5µm,21.0s
BMO Blue Mountains 114.03 43 PFAKE 23 26 40.0 +8.4
BMO LR LR
comp=Z,2µm,22.0s
NVAR Mina Array Bea 115.19 49 PKP **PKPdf 23 26 33.6 -0.6**
comp=Z,0.6nm,0.4s,baz=258,slow=4.5,SNR=2.6
NVAR PP **PP 23 27 37.5 +3.2**
comp=Z,2.3nm,0.9s,baz=284,slow=6.0,SNR=4.6
HLID Hailey 116.43 43 *e*PKPdf **PKPdf 23 26 40.0 +3.7**
HLID LR LR
comp=Z,1µm,21.0s
TAM Tamanrasset 116.90 293 PFAKE 23 26 50.0 +12
TAM LR LR
comp=Z,4µm,22.0s
SFJD Kangerlussuaq 117.43 357 PFAKE 23 26 50.0 +13
SFJD LR LR
comp=Z,3µm,22.0s
BOZ Bozeman (W) 117.48 40 *e*PKIKP **PKPdf 23 26 38.9 +0.6**
BOZ MLR MLR
comp=Z,2µm,22.0s
BOZ Bozeman (W) 117.48 40 *e*PKPdf **PKPdf 23 26 38.9 +0.6**
BOZ LR LR
comp=Z,2µm,22.0s
EGMT Eagleton 117.64 37 P **PKPdf 23 26 39.5 +1.1**
baz=297
EGMT Eagleton 117.64 37 *e*PKPdf **PKPdf 23 26 42.4 +4.0**
EGMT LR LR
comp=Z,2µm,22.0s
PFO Pinyon Flats O 117.86 54 PFAKE 23 26 50.0 +11
PFO LR LR
comp=Z,3µm,20.0s
FFC Flin Flon 118.25 28 *e*PKIKP **PKPdf 23 26 40.8 +1.5**
FFC MLR MLR
comp=Z,2µm,22.0s
FFC Flin Flon 118.25 28 *e*PKPdf **PKPdf 23 26 40.8 +1.5**
FFC LR LR
comp=Z,2µm,22.0s
DUG Dugway, Tooele 118.72 46 *e*PKIKP **PKPdf 23 26 44.3 +3.5**
DUG MLR MLR
comp=Z,2µm,22.0s
DUG Dugway, Tooele 118.72 46 *e*PKPdf **PKPdf 23 26 44.3 +3.5**
DUG LR LR
comp=Z,2µm,22.0s
LKWY Lake 118.72 41 PFAKE 23 26 50.0 +9.2
LKWY LR LR
comp=Z,2µm,20.0s
REDW Red Top Meadow 118.91 42 *e*PKPdf **PKPdf 23 26 42.1 +0.9**
HOPE Hope Point 118.96 194 PFAKE 23 26 50.0 +9.4
HOPE LR LR
comp=Z,2µm,22.0s
LOHW Long Hollow 118.97 42 *e*PKPdf **PKPdf 23 26 43.9 +2.6**
AHID Auburn Hatcher 118.97 43 PFAKE 23 26 50.0 +8.7
AHID LR LR
comp=Z,2µm,22.0s
RLMT Red Lodge 119.22 40 PFAKE 23 26 50.0 +8.3
RLMT LR LR
comp=Z,2µm,22.0s
MSU Marysvale 119.75 48 *e*PKIKP **PKPdf 23 26 47.1 +4.2**
MSU Marysvale 119.75 48 *e*PKPdf **PKPdf 23 26 47.1 +4.2**
BW06 Boulder Array 120.02 42 PFAKE 23 27 00.0 +17
BW06 LR LR
comp=Z,3µm,22.0s
PDAR Pinedale Array 120.02 42 PKP **PKPdf 23 26 42.4 -1.0**
comp=Z,0.3nm,0.4s,baz=65,slow=8.8,SNR=4.6
PDAR PKKPab PKKPab 23 37 01.7 +8.0
comp=Z,0.9nm,0.9s,baz=122,slow=5.6,SNR=4.0
RPN Rapa Nui 120.63 125 PFAKE 23 27 00.0 +15
RPN LR LR
comp=Z,822nm,19.0s
DGMT Dagmar 120.66 34 PFAKE 23 27 00.0 +16
DGMT LR LR
comp=Z,2µm,22.0s
ESDC Sonseca Array 120.70 314 PKP **PKPdf 23 26 43.8 -0.7**
comp=Z,1.0nm,0.8s,baz=35,slow=2.5,SNR=2.4
ESDC PP **PP 23 28 11.9 -0.4**
comp=Z,3.2nm,1.1s,baz=60,slow=7.2,SNR=6.5
PAB San Pablo 121.03 314 PFAKE 23 27 00.0 +15
PAB LR LR
comp=Z,3µm,21.0s
TRIS Tristan da Cun 121.27 221 PFAKE 23 27 00.0 +14
TRIS LR LR
comp=Z,2µm,21.0s
TORD Torodi Ar. Bea 121.35 283 PKP **PKPdf 23 26 44.5 -1.8**
comp=Z,2.1nm,0.8s,baz=110,slow=1.4,SNR=16
TORD PKKPab **PKKPab 23 36 53.4 +5.3**
comp=Z,1.7nm,1.2s,baz=301,slow=3.1,SNR=3.6
WUAZ Wupatki 121.35 51 PFAKE 23 27 00.0 +14
WUAZ LR LR
comp=Z,2µm,22.0s
O20A White River Ci 121.99 45 P **PKPdf 23 26 49.8 +2.6**
baz=294
K22A Casper 122.08 41 P **PKPdf 23 26 49.7 +2.5**
baz=297
PV01 Paradox Valley 122.54 47 *e*PKPdf **PKPdf 23 26 50.9 +2.5**
TUC Tucson 122.80 54 PFAKE 23 27 00.0 +11
TUC LR LR
comp=Z,3µm,22.0s
MTE Manteigas 122.93 316 PFAKE 23 27 00.0 +11
MTE LR LR
comp=Z,3µm,21.0s
MVCO Mesa Verde 122.94 48 *e*PKPdf **PKPdf 23 26 54.0 +4.9**
MVCO LR LR
comp=Z,2µm,21.0s

RSSD	Black Hills	122.99	39	ePKIKP	PKPdf	23 26 52.4	+3.4		
RSSD	Black Hills	122.99	39	ePKPdf	PKPdf	23 26 52.4	+3.4		
I25A	Rochford	123.23	39	P	PKPdf	23 26 51.2	+1.8		
	baz=300								
G26A	Maurine	123.27	37	P	PKPdf	23 26 51.5	+2.2		
	baz=302								
SMCO	Snowmass	123.27	45	ePKPdf	PKPdf	23 26 53.2	+3.3		
F27A	Lemmon	123.30	36	P	PKPdf	23 26 51.1	+1.8		
	baz=303								
J25A	Sunshine Ranch	123.50	39	P	PKPdf	23 26 52.1	+2.2		
	baz=300								
G27A	Dupree	123.62	37	P	PKPdf	23 26 51.3	+1.4		
	baz=303								
S22A	4UR Ranch, Cre	123.95	47	P	PKPdf	23 26 53.0	+1.8		
	baz=294								
ISCO	Idaho Springs	123.96	44	ePKIKP	PKPdf	23 26 55.4	+4.3		
ISCO				MLR	MLR				
	comp=Z,2μm,20.0s								
ISCO	Idaho Springs	123.96	44	ePKPdf	PKPdf	23 26 55.4	+4.3		
ISCO				LR	LR				
	comp=Z,2μm,20.0s								
EFI	East Falkland	124.06	179	PFAKE		23 27 00.0	+9.5		
EFI				LR	LR				
	comp=Z,5μm,19.0s								
SDCO	Great Sand Dun	124.92	46	PFAKE		23 27 00.0	+7.0		
SDCO				LR	LR				
	comp=Z,2μm,20.0s								
RTC	Rabat Centre	124.93	309	PFAKE		23 27 00.0	+7.3		
RTC				LR	LR				
	comp=Z,7μm,20.0s								
AGMN	Agassiz Nation	125.25	31	PFAKE		23 27 00.0	+7.1		
AGMN				LR	LR				
	comp=Z,2μm,22.0s								
SHEL	Horse Pasture	125.26	247	PFAKE		23 27 10.0	+16		
SHEL				LR	LR				
	comp=Z,2μm,21.0s								
ANMO	Albuquerque	125.32	50	P	PKPdf	23 26 56.5	+2.8		
	baz=292								
ANMO	Albuquerque	125.32	50	ePKIKP	PKPdf	23 26 56.8	+3.1		
ANMO				MLR	MLR				
	comp=Z,2μm,22.0s								
ANMO	Albuquerque	125.32	50	ePKPdf	PKPdf	23 26 56.8	+3.1		
ANMO				LR	LR				
	comp=Z,2μm,22.0s								
G30A	Faulkton	125.39	36	P	PKPdf	23 26 55.6	+2.3		
	baz=305								
OGNE	Ogallala	125.85	41	PFAKE		23 27 10.0	+16		
OGNE				LR	LR				
	comp=Z,2μm,22.0s								
T25A	Trinidad	125.96	46	P	PKPdf	23 26 56.4	+1.5		
	baz=295								
H32A	Carlson Farm,	126.75	35	P	PKPdf	23 26 57.9	+1.9		
	baz=306								
MNTX	Cornudas Mount	127.34	53	P	PKPdf	23 27 00.5	+3.1		
	baz=291								
MNTX	Cornudas Mount	127.34	53	ePKPdf	PKPdf	23 27 00.5	+3.1		
MNTX				LR	LR				
	comp=Z,2μm,22.0s								
H34A	Spellman Lake,	127.59	34	P	PKPdf	23 26 59.8	+2.3		
	baz=308								
EYMN	Ely	127.64	29	PFAKE		23 27 10.0	+12		
EYMN				LR	LR				
	comp=Z,2μm,20.0s								
ECSD	EROS Data Cent	127.68	36	P	PKPdf	23 26 58.7	+1.0		
	baz=307								
ECSD	EROS Data Cent	127.68	36	ePKPdf	PKPdf	23 26 59.8	+2.0		
ECSD				LR	LR				
	comp=Z,2μm,21.0s								
DBIC	Dimbokro	127.94	275	PKP	PKPdf	23 26 59.6	+0.6		
	comp=Z,8.2nm,1.0s,baz=105,slow=8.6,SNR=2.9								
F36A	Milaca	128.05	32	P	PKPdf	23 27 00.4	+2.1		
	baz=311								
CBKS	Cedar Bluff	128.44	42	PFAKE		23 27 10.0	+11		
CBKS				LR	LR				
	comp=Z,2μm,22.0s								
SCHQ	Schefferville	129.19	7	PKP	PKPdf	23 27 01.1	+0.8		
	comp=Z,2.7nm,0.7s,baz=224,slow=6.8,SNR=2.7								
TXAR	Lajitas Array	129.55	55	PKP	PKPdf	23 26 58.7	-3.2		
	comp=Z,0.6nm,0.9s,baz=318,slow=1.2,SNR=3.3								
COWI	Conover	130.09	29	ePKPdf	PKPdf	23 27 05.3	+3.1		
COWI				LR	LR				
	comp=Z,2μm,20.0s								
WMOK	Wichita Mounta	131.12	47	PFAKE		23 27 20.0	+15		
WMOK				LR	LR				
	comp=Z,2μm,21.0s								
V34A	Guthrie	131.48	45	ePKPdf	PKPdf	23 27 07.4	+2.2		
JFWS	Jewell Farm	131.77	33	PFAKE		23 27 20.0	+14		
JFWS				LR	LR				
	comp=Z,2μm,22.0s								
JCT	Junction City	132.22	52	PFAKE		23 27 20.0	+13		
JCT				LR	LR				
	comp=Z,2μm,22.0s								
T38A	Diamond	133.03	41	P	PKPdf	23 27 09.5	+1.4		
	baz=305								
S39A	Bolivar	133.28	40	P	PKPdf	23 27 10.0	+1.5		
	baz=306								
PLCA	Paso Flores	133.35	166	PKP	PKPdf	23 27 07.4	-1.3		
	comp=Z,5.7nm,0.9s,baz=109,slow=6.5,SNR=3.1								
HDIL	Hopedale	133.90	34	PFAKE		23 27 20.0	+10		
HDIL				LR	LR				
	comp=Z,2μm,21.0s								
T40A	Mansfield	134.12	40	P	PKPdf	23 27 12.2	+2.1		
	baz=307								
V40A	Witts Springs	134.70	42	P	PKPdf	23 27 13.9	+2.6		
	baz=305								
MIAR	Mount Ida	134.90	44	P	PKPdf	23 27 13.8	+2.1		
	baz=303								
MIAR	Mount Ida	134.90	44	ePKIKP	PKPdf	23 27 13.0	+1.4		
MIAR				MLR	MLR				
	comp=Z,2μm,21.0s								
MIAR	Mount Ida	134.90	44	ePKPdf	PKPdf	23 27 13.0	+1.4		
MIAR				LR	LR				
	comp=Z,2μm,21.0s								
KVTX	Kingsville	134.93	55	PFAKE		23 27 20.0	+8.1		
KVTX				LR	LR				
	comp=Z,3μm,22.0s								
AAM	Ann Arbor	135.55	28	PFAKE		23 27 20.0	+7.4		
AAM				LR	LR				
	comp=Z,3μm,21.0s								
NATX	Nacogdoches	135.58	48	PFAKE		23 27 30.0	+17		
NATX				LR	LR				
	comp=Z,2μm,22.0s								
ASCN	Ascension	135.58	254	PFAKE		23 27 30.0	+17		
ASCN				LR	LR				
	comp=Z,6μm,19.0s								
CMLA	Cha da Macela	136.07	323	ePP	PP	23 29 54.2	+1.5		
CMLA	Cha da Macela	136.07	323	PFAKE		23 27 30.0	+16		
CMLA				LR	LR				
	comp=Z,2μm,20.0s								
PSET	Sete Cidades	136.15	323	ePP	PP	23 29 55.5	+2.3		
PSMN	Pico do Norte,	136.29	322	ePP	PP	23 29 55.5	+1.4		
PGRA	Graciosa	136.62	326	ePP	PP	23 29 57.2	+1.2		
ROSA	Rosais	136.98	326	ePP	PP	23 30 00.7	+2.4		
LONY	Lake Ozonia	137.19	18	PFAKE		23 27 30.0	+14		
LONY				LR	LR				
	comp=Z,2μm,22.0s								
TRQA	Tornquist	137.44	174	PFAKE		23 27 30.0	+14		
TRQA				LR	LR				
	comp=Z,3μm,22.0s								
ACSO	Alum Creek Sta	137.46	30	PFAKE		23 27 30.0	+14		
ACSO				LR	LR				
	comp=Z,2μm,22.0s								
NCB	Newcomb	137.88	18	PFAKE		23 27 30.0	+13		
NCB				LR	LR				
	comp=Z,3μm,22.0s								
PKME	Peaks-Kenny Pk	138.01	13	PFAKE		23 27 30.0	+13		
PKME				LR	LR				
	comp=Z,2μm,21.0s								
BINY	Binghamton	138.85	21	PFAKE		23 27 30.0	+11		
BINY				LR	LR				
	comp=Z,4μm,22.0s								
LRAL	Lakeview Retre	140.21	41	ePKPdf	PKPdf	23 27 20.4	-1.1		
BRAL	Brewton	141.32	43	PFAKE		23 27 40.0	+16		
BRAL				LR	LR				
	comp=Z,2μm,20.0s								
ASAL	Salagasta	141.49	164	*i* P	PKPpre	23 27 16.1			
CBN	Corbin Frederi	141.70	26	PFAKE		23 27 40.0	+16		
CBN				LR	LR				
	comp=Z,3μm,21.0s								
KMSC	Kings Mountain	142.16	33	ePKPdf	PKPdf	23 27 22.7	-2.3		
TIGA	Tifton	143.44	40	P	PKPdf	23 27 27.4	+0.1		
	baz=312								
TIGA	Tifton	143.44	40	ePKPdf	PKPdf	23 27 27.4	+0.1		
CNNC	Cliffs of the	143.87	29	ePKPdf	PKPdf	23 27 27.5	-0.5		
CNNC				LR	LR				
	comp=Z,3μm,21.0s								
LCO	Las Campanas	144.24	159	ePKPdf	PKPdf	23 27 28.9	-0.2		
LCO				LR	LR				
	comp=Z,3μm,20.0s								
NHSC	New Hope	144.31	34	ePKPdf	PKPdf	23 27 30.2	+1.4		
NHSC				LR	LR				
	comp=Z,3μm,22.0s								
AGUA	GUANDACOL	144.51	163	*i* P	PKPab	23 27 26.4	-1.3		
VCA	Vinchina	145.30	163	*i* P	PKPbc	23 27 30.0	-0.5		
TEIG	Tepich	145.90	60	PFAKE		23 27 40.0	+7.1		
TEIG				LR	LR				
	comp=Z,1μm,22.0s								
CYA	Choya	146.22	166	*i* P	PKPbc	23 27 33.7	+0.4		
PAYG	Puerto Ayora	146.49	98	PFAKE		23 27 40.0	+4.6		
PAYG				LR	LR				
	comp=Z,2μm,20.0s								
AHML	Horco Molle	147.92	166	*i* P	PKPdf	23 27 36.8	+1.6		
FSA	Cafayete	148.40	165	*i* P	PKPbc	23 27 39.3	-0.4		
CPUP	Villa Florida	149.37	180	*i* P	PKPdf	23 27 38.8	+1.3		
CPUP	Villa Florida	149.37	180	PKPbc	PKPbc	23 27 40.4	-1.4		
	comp=Z,33nm,1.2s,baz=204,slow=0.9,SNR=12								
AZAP	Zapla	150.44	165	*i* P	PKPbc	23 27 44.9	+0.1		
SPB	Sao Paulo	150.54	198	PFAKE		23 27 50.0	-1.2		
SPB				LR	LR				
	comp=Z,2μm,21.0s								
LVC	Limon Verde	150.72	157	ePKPdf	PKPdf	23 27 40.1	0.0		
LVC				ePKPbc	PKiKP	23 27 47.2	+0.9		
LVC				LR	LR				
	comp=Z,2μm,22.0s								
ALOL	LOMAS DE OLMED	151.09	167	*i* P	PKPbc	23 27 45.4	-0.7		
HJA	Humahuaca	151.32	164	*i* P	PKPdf	23 27 44.1	+3.0		
JTS	JuntasAbangare	151.83	77	ePKIKP	PKPdf	23 27 43.2	+1.6		
JTS				*e*		23 27 49.7			
JTS				MLR	MLR				
	comp=Z,4μm,19.0s								
JTS	JuntasAbangare	151.83	77	ePKPdf	PKPdf	23 27 43.2	+1.6		
JTS				ePKPbc	PKiKP	23 27 49.7	+1.3		
JTS				LR	LR				
	comp=Z,4μm,19.0s								
YJA	Yavi	152.27	163	*i* P	PKPbc	23 27 46.8	-2.5		
YJA				*i* P	PKiKP	23 27 48.0	-1.6		
NNA	Nana	154.47	130	PFAKE		23 28 00.0	+6.2		
NNA				LR	LR				
	comp=Z,2μm,20.0s								
MTDJ	Mount Denham	155.82	54	PFAKE		23 28 00.0	+13		
MTDJ				LR	LR				
	comp=Z,2μm,20.0s								
ATAH	Atahualpa	155.85	118	PKP	PKPdf	23 27 50.5	+2.7		
	comp=Z,8.9nm,0.9s,baz=230,slow=8.5,SNR=5.7								
RCBR	Riachuelo	156.45	244	PFAKE		23 28 00.0	+12		
RCBR				LR	LR				
	comp=Z,3μm,20.0s								
LPAZ	La Paz	156.67	152	PKP	PKPdf	23 27 51.1	+2.0		
	comp=Z,5.6nm,1.1s,baz=269,slow=0.7,SNR=14								
LPAZ				PKPab	PKPab	23 28 19.7	+1.6		
	comp=Z,7.0nm,1.0s,baz=88,slow=3.5,SNR=6.3								
GTBY	Guantanamo Bay	156.71	47	PFAKE		23 28 00.0	+12		
GTBY				LR	LR				
	comp=Z,2μm,22.0s								
BCIP	Isla Barro Col	156.99	77	PFAKE		23 28 00.0	+11		
BCIP				LR	LR				
	comp=Z,3μm,20.0s								
GRTK	Grand Turk	158.29	38	PFAKE		23 28 00.0	+10		
GRTK				LR	LR				
	comp=Z,2μm,19.0s								
OTAV	Otavalo	158.29	101	ePKPdf	PKPdf	23 27 52.7	+1.7		
OTAV				LR	LR				
	comp=Z,2μm,20.0s								
OTAV	Otavalo	158.29	101	eP	PKPdf	23 27 53.1	+2.1		
SIV	San Ignacio	159.29	169	PKP	PKPdf	23 27 51.8	+0.3		
	comp=Z,2.3nm,0.8s,baz=211,slow=5.0,SNR=5.2								
SIV				PKPab	PKPab	23 28 27.8	-0.8		
	comp=Z,4.4nm,0.8s,baz=186,slow=4.6,SNR=5.4								
SDDR	Presa de Saban	160.03	43	PFAKE		23 28 00.0	+7.6		
SDDR				LR	LR				
	comp=Z,2μm,21.0s								
MOTC	Monteria, Cord	161.11	76	eP	PKPdf	23 27 53.1	-0.5		
GUYC	Guyana, Colomb	161.80	87	eP	PKPdf	23 27 55.8	+0.8		
ROSC	El Rosal	162.87	88	PKP	PKPdf	23 27 56.7	+0.7		
	comp=Z,2.8nm,0.4s,baz=196,slow=15,SNR=4.8								
CHIC	Chiningaza	163.46	89	eP	PKPdf	23 27 58.4	+1.9		
SJG	San Juan	163.84	32	PFAKE		23 28 10.0	+14		
SJG				LR	LR				
	comp=Z,2μm,21.0s								
RUSC	La Rusia	164.06	84	eP	PKPdf	23 27 58.4	+1.3		
SAML	Samuel	165.36	156	ePKPdf	PKPdf	23 27 59.2	+1.5		
SAML				LR	LR				
	comp=Z,3μm,20.0s								
SDV	Santo Domingo	165.90	71	PFAKE		23 28 10.0	+12		
SDV				LR	LR				
	comp=Z,3μm,19.0s								
ANWB	Willy Bob	166.12	19	PFAKE		23 28 10.0	+12		
ANWB				LR	LR				
	comp=Z,2μm,21.0s								
FDF	Fort de France	169.07	21	PFAKE		23 28 10.0	+10		
FDF				LR	LR				
	comp=Z,2μm,20.0s								
BBGH	Gun Hill	171.07	15	PFAKE		23 28 10.0	+8.5		
BBGH				LR	LR				
	comp=Z,4μm,22.0s								
GRGR	Grenville	171.18	30	PFAKE		23 28 10.0	+8.5		
GRGR				LR	LR				
	comp=Z,2μm,22.0s								
PTGA	Pitinga	174.10	151	PKP	PKPdf	23 28 03.7	+0.8		
	comp=Z,1.4nm,0.2s,baz=40,slow=0.3,SNR=7.7								
PTGA				PKPab	PKPab	23 29 36.0	+2.1		
	comp=Z,1.2nm,0.6s,baz=130,slow=2.5,SNR=4.5								

NEIC ***24*** *23:10:42.8±3.4, 4.°31S×122.°89E, h6km±21km, mb4.9/8, Error ellipse: s-maj=7.5km s-min=5.7km az=57.0*
IDC ***24*** *23:10:42.1±0.5, 4.°29S×122.°90E, h0km, mb4.8/28, mb1 4.9/30, mb1mx4.7/55, mbtmp4.8/30, ML4.2/3, Error ellipse: s-maj=16.7km s-min=13.2km az=74.0*
ISCJB ***24*** *23:10:45.0±0.3, 4.°34S±0.°05×122.°91E±0.°04, h33km, mb4.8/34, Error ellipse: s-maj=7.0km s-min=5.5km az=171.4*

ISC 24 23:10:47.1±0.4, 4.°32S±0.°06×122.°86E±0.°06, h33km, n51, σ0s95/56, mb4.9/34, Sulawesi

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
KAPI	Kappang	3.18	257	Pn		Pn	Sn	23 11 33.9	-0.9 +1.1
	38nm,0.3s,baz=109,slow=3.4,SNR=7.7								
KAPI				Sn		Sn		23 12 12.6	+1.1
	55nm,0.3s,baz=158,slow=19,SNR=3.6								
SIJI	Sorong	9.07	68	Pn		Pn		23 12 57.1	+1.3
	11nm,0.3s,baz=270,slow=20,SNR=2.4								
SIJI				Sn		Sn		23 14 37.8	+1.0
	17nm,0.3s,baz=178,slow=14,SNR=2.7								
FITZ	Fitzroy Crossi	13.96	169	Pn		P		23 14 09.7	-0.6
	1.7nm,0.3s,baz=125,slow=15,SNR=3.5								
MBWA	Marble Bar	17.01	190	*e*Pn		Pn		23 14 41.3	-1.3
	103nm,1.3s								
JAY	Jayapura	17.90	85	P		Pn		23 14 52.4	-1.3
	0.1nm,0.3s,baz=231,slow=23,SNR=3.5								
WRAB	Tennant Creek	19.14	145	*e*P		P		23 15 06.6	-1.0
	74nm,0.9s								
WRA	Warramunga Arr	19.14	145	P		P		23 15 06.0	-1.6
	1.5nm,0.3s,baz=324,slow=12,SNR=7.4								
WRA				PcP		PcP		23 19 32.0	+0.9
	0.3nm,0.3s,baz=302,slow=2.6,SNR=2.2								
ASAR	Alice Springs	21.99	152	P		P		23 15 37.2	-1.4
	87nm,1.1s,baz=336,slow=13,SNR=7.8								
ASAR				PcP		PcP		23 19 36.1	-0.4
	2.7nm,0.6s,baz=345,slow=1.6,SNR=8.3								
KULM	Kulim	24.15	293	*e*P		P		23 16 00.5	0.0
	157nm,1.5s								
PSI	Prapat	24.95	286	P		P		23 16 08.2	+0.4
	66nm,1.0s,baz=127,slow=3.0,SNR=5.5								
CTAO	Charters Tower	27.65	126	*e*P		P		23 16 32.2	+0.1
	32nm,1.2s								
NWAO	Narrogin (SRO)	28.94	190	*e*P		P		23 16 43.6	+0.2
	7.0nm,0.8s								
JOW	Kunigami	31.41	9	P		P		23 17 05.5	+0.2
	18nm,0.9s,baz=241,slow=8.0,SNR=4.8								
CMAR	Chiang Mai Arr	32.68	315	P		P		23 17 16.4	-0.2
	21nm,1.0s,baz=141,slow=6.0,SNR=11								
CMAR				PcP		PcP		23 20 03.8	+1.7
	1.4nm,0.4s,baz=179,slow=2.1,SNR=6.5								
CBIJ	Chichi jima	36.39	30	P		P		23 17 49.3	+0.8
JCJ	Chichijima	36.39	30	P		P		23 17 49.3	+0.8
	87nm,0.9s,baz=220,slow=16,SNR=2.9								
ENH	Enshi	36.70	340	*e*P		P		23 17 51.4	+0.2
	12nm,0.7s								
HNR	Honiara	37.15	100	*e*P		P		23 17 55.2	0.0
	31nm,0.5s								
JNU	Nakatsue	38.01	11	P		P		23 18 01.9	-0.3
	22nm,1.0s,baz=222,slow=15,SNR=2.3								
KSAR	Wonju Array Be	41.81	6	P		P		23 18 34.3	+0.6
KSRS	Korea Array	41.83	6	P		P		23 18 34.3	+0.5
	7.3nm,0.8s,baz=184,slow=9.0,SNR=4.6								
MJAR	Matsushiro Arr	43.11	18	P		P		23 18 42.6	-1.7
	4.4nm,0.8s,baz=195,slow=8.5,SNR=3.7								
LSA	Lhasa	45.48	320	*e*P		P		23 19 02.8	-1.2
	3.9nm,0.5s								
USRK	Ussuriysk Ar.	48.99	9	P		P		23 19 29.9	-0.6
	11nm,0.8s,baz=192,slow=5.5,SNR=5.3								
SONM	Songino Array	53.91	346	P		P		23 20 06.9	-0.5
	11nm,0.8s,baz=170,slow=7.4,SNR=5.8								
RPZ	Rata Peaks	57.75	140	*e*P		P		23 20 35.5	+0.6
TLY	Talaya	58.15	346	P		P		23 20 38.6	+1.0
	5.2nm,0.8s,baz=233,slow=5.8,SNR=3.8								
MKAR	Makanchi Array	62.22	330	P		P		23 21 05.3	-0.3
	10nm,0.7s,baz=127,slow=6.9,SNR=8.6								
AAK	Ala-Archa	64.00	322	P		P		23 21 18.2	+0.6
	10nm,0.9s,baz=104,slow=7.9,SNR=4.1								
ZALV	Zalesovo Beam	66.18	337	P		P		23 21 29.9	-1.4
	20nm,0.9s,baz=130,slow=4.7,SNR=7.1								
KURBB	Kurchatov Arra	66.63	331	P		P		23 21 33.4	-0.8
	19nm,0.9s,baz=134,slow=5.6,SNR=7.5								
KURK	Kurchatov	66.65	331	P		P		23 21 33.4	-0.9
MA2	Magadan	67.41	15	P		P		23 21 37.7	-1.4
	2.2nm,0.4s,baz=194,slow=18,SNR=1.5								
WSAR	Wadi Sarin	68.32	297	P		P		23 21 45.3	-0.3
	20nm,1.1s,baz=108,slow=7.5,SNR=3.5								
BVAR	Borovoye Array	72.11	330	P		P		23 22 08.1	0.0
	12nm,0.9s,baz=141,slow=7.6,SNR=6.7								
GEYT	Alibeck	73.11	312	P		P		23 22 14.7	+0.3
	29nm,1.1s,baz=127,slow=3.9,SNR=6.7								
TIXI	Tiksi	75.93	2	P		P		23 22 30.1	0.0
	5.0nm,0.8s,baz=209,slow=4.0,SNR=2.8								
VNDA	Vanda	76.02	172	P		P		23 22 31.1	+0.5
	2.9nm,0.7s,baz=321,slow=8.0,SNR=4.7								
AKTO	Aktyubinsk	77.67	324	P		P		23 22 41.2	+0.8
	5.6nm,0.8s,baz=107,slow=5.8,SNR=4.4								
KMBO	Kilima Mbogo	85.54	269	P		P		23 23 24.7	+1.7
	1.3nm,0.3s,baz=112,slow=2.1,SNR=4.2								
KBZ	Khabaz	85.73	314	P		P		23 23 24.0	+1.0
	8.4nm,0.8s,baz=69,slow=2.5,SNR=5.0								
BRTR	Keskin Array B	92.13	309	P		P		23 23 53.5	-0.2
	2.4nm,0.9s,baz=111,slow=5.4,SNR=3.9								
ILAR	Eielson Array	93.98	25	P		P		23 24 00.9	-0.5
	0.7nm,0.9s,baz=235,slow=6.2,SNR=3.3								
BOSA	Boshof	94.61	241	P		P		23 24 06.2	+0.8
	4.6nm,1.1s,baz=76,slow=12,SNR=3.6								
AKASG	Malin Array Be	95.62	320	P		P		23 24 08.1	-1.2
	1.6nm,0.7s,baz=76,slow=4.3,SNR=5.1								
TIR	Tirane	102.60	311	*e*Pdif		Pdif		23 24 40.0	-0.7
YKA	Yellowknife Ar	108.38	24	PKKP		PKKPdf		23 40 40.6	+1.6
	0.3nm,1.0s,baz=117,slow=5.8,SNR=4.2								
TORD	Toroidi Ar. Bea	121.31	283	PKP		PKPdf		23 29 36.1	-1.8
	1.1nm,0.7s,baz=57,slow=2.5,SNR=4.4								
CPUP	Villa Florida	149.53	180	PKPbc		PKPbc		23 30 35.0	+1.2
	11nm,1.0s,baz=208,slow=2.4,SNR=4.2								
LPAZ	La Paz	156.82	152	PKPab		PKPab		23 31 11.0	+0.7
	3.9nm,1.0s,baz=180,slow=4.1,SNR=4.7								
SIV	San Ignacio	159.45	169	PKPab		PKPab		23 31 21.1	+0.2
	3.6nm,0.8s,baz=237,slow=2.5,SNR=4.3								

IDC ***24*** *23:20:04.5±2.7, 4.°91N×92.°45E, h0km, mb3.4/4, mb1 3.7/6, mb1mx3.4/64, mbtmp3.5/6, ML3.9/2, Error ellipse: s-maj=84.2km s-min=24.3km az=53.0*
ISCJB ***24*** *23:20:07.3±1.6, 5.°0N±0.°2×92.°6E±0.°2, h27km, mb3.6/4, Error ellipse: s-maj=32.7km s-min=10.1km az=39.6*

ISC 24 23:20:09.1±2.0, 5.°0N±0.°2×92.°6E±0.°2, h27km, n9, σ0s59/7, mb3.8/4, Off west coast of northern Sumatera

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
PSI	Prapat	6.70	109	Pn		Pn	Pn	23 21 46.8	+0.8
	3.4nm,0.3s,baz=307,slow=11,SNR=8.2								
PSI				Sn		Sn		23 23 01.2	-0.4
	1.3nm,0.3s,baz=6.7,slow=17,SNR=3.2								
CMAR	Chiang Mai Arr	14.72	24	Pn		Pn		23 23 35.5	-0.2
	0.1nm,0.3s,baz=212,slow=12,SNR=2.1								
H08S3	Diego Garcia H	23.67	238	T		T		23 50 35.2	
	baz=59,slow=76,SNR=17								
H08S2	Diego Garcia H	23.67	238	T		T		23 50 36.3	
	baz=59,slow=76,SNR=16								
H08S1	Diego Garcia H	23.69	238	T		T		23 50 36.8	
	baz=59,slow=76,SNR=19								
MKAR	Makanchi Array	42.54	350	P		P		23 28 02.5	0.0
	0.1nm,0.3s,baz=169,slow=8.4,SNR=2.1								
KURBB	Kurchatov Arra	46.94	348	P		P		23 28 37.5	0.0
	0.2nm,0.2s,baz=168,slow=7.1,SNR=4.1								
WRA	Warramunga Arr	47.97	122	P		P		23 28 45.4	-0.6
	0.4nm,0.3s,baz=300,slow=8.6,SNR=7.6								
ZALV	Zalesovo Beam	49.18

0.2nm,0.3s,baz=86,slow=8.6,SNR=2.7
KURK Kurchatov 45.90 308 P **P 23 29 05.3 -0.1**
KURBB Kurchatov Arra 45.97 308 P **P 23 29 05.3 -0.6**
1.0nm,0.7s,baz=82,slow=8.2,SNR=6.9
COLA College 48.85 32 *eP* **P 23 29 28.2 +0.1**
0.9nm,0.5s
EKS2 Erkin-Say 50.99 299 *eP* **P 23 29 45.1 +0.2**
0.8nm,0.6s
YKA Yellowknife Ar 63.58 30 P **P 23 31 13.6 +0.4**
0.2nm,0.7s,baz=303,slow=6.5,SNR=3.8
GEYT Alibeck 63.84 299 P **P 23 31 15.7 +0.2**
0.8nm,0.6s,baz=49,slow=6.6,SNR=2.5
ARCES ARCESS Array B 63.86 339 P **P 23 31 15.2 +0.2**
1.1nm,0.7s,baz=50,slow=8.4,SNR=3.6
FINES FINESS Array B 68.70 332 P **P 23 31 46.0 -0.1**
1.2nm,0.8s,baz=86,slow=7.1,SNR=4.0
NOA NORSAR Array B 74.05 337 P **P 23 32 18.8 +0.3**
0.9nm,0.9s,baz=37,slow=6.1,SNR=2.7
GERES GERESS Array B 82.61 328 P **P 23 33 05.7 -0.5**
0.2nm,0.5s,baz=23,slow=7.2,SNR=4.8
LPAZ La Paz 146.50 60 PKPbc **PKPdf 23 40 24.0 -0.1**
0.5nm,0.6s,baz=336,slow=2.7,SNR=2.9
LPAZ La Paz 146.50 60 PKPbc **PKPdf 23 40 24.0 -0.1**

*BJI **24** 23:25:08.2, 4.°20S×122.°60E, h10km, mb4.7/25, mB5.4/9, Ms5.3/10, Ms7 5.2/10*
*IDC **24** 23:25:09.1±0.4, 4.°10S×122.°55E, h0km, mb4.5/26, mb1 4.6/30, mb1mx4.5/45, mbtmp4.5/30, ML4.2/3, Error ellipse: s-maj=15.4km s-min=10.9km az=65.0*
*NEIC **24** 23:25:09.6±2.6, 4.°13S×122.°63E, h6km±16km, mb4.8/29, Error ellipse: s-maj=6.9km s-min=4.5km az=58.0*
NEIC Felt [III] at Kendari.
*ISCJB **24** 23:25:11.9±0.2, 4.°16S±0.°03×122.°66E±0.°02, h33km, mb4.7/65, MS5.3/3, Error ellipse: s-maj=3.6km s-min=3.3km az=167.4*
*MOS **24** 23:25:12.2±1.3, 4.°18S×122.°65E, h33km, mb4.9/21, Error ellipse: s-maj=12.2km s-min=6.9km az=120.5*
*DJA **24** 23:25:12.3±0.2, 4.°S±2.°×12.°3E±.°, h10km, M5.1/35, mB6.5/2, mb5.0/35, MLv5.1/23, Mw(mB)6.3/2*
ISC 24 23:25:14.3±0.3, 4.°20S±0.°04×122.°64E±0.°04, h35km, n162, σ1°52/164, mb4.7/65, MS5.2/3, 8C-8D, Sulawesi

Code	Station Name	Δ°	AZ°	Phase	ID	Time h m s	Res ISC
				Op	ISC		
SPSI	**Sidrap Palu**	**2.87**	**275**	P	**Pn**	**23 25 55.3**	**-2.3**
BSSI	**Bau Bau, Buton**	**2.88**	**228**	P	**Pn**	**23 25 57.7**	**0.0**
KAPI	**Kappang**	**2.98**	**254**	Pn	**Pn**	**23 25 58.3**	**-0.9**
	122nm,0.3s,baz=101,slow=8.3,SNR=76						
KAPI				Sn	**Sn**	**23 26 35.2**	**+1.4**
	47nm,0.3s,baz=233,slow=20,SNR=4.8						
TTSI	**Tana Toraja**	**3.04**	**292**	P	**Pn**	**23 25 57.0**	**-2.9**
SANI	**Sanana**	**3.97**	**58**	P	**Pn**	**23 26 11.2**	**-1.6**
MMRI	**Maumere**	**4.42**	**185**	P	**Pn**	**23 26 19.0**	**0.0**
MRSI	**Marisa**	**4.70**	**351**	P	**Pn**	**23 26 19.9**	**-2.9**
KMSI	**Cibinong**	**4.93**	**16**	P	**Pn**	**23 26 26.7**	**+0.7**
SOEI	**Soe**	**5.75**	**164**	P	Pn	23 26 41.7	+4.3
	302nm,1.1s,1.4nm						
LBMI	**Labuha**	**6.01**	**54**	P	**Pn**	**23 26 39.3**	**-1.6**
	387nm,3s,1.5nm						
MSAI	**Masohi**	**6.34**	**82**	P	**Pn**	**23 26 46.3**	**+1.0**
	65nm,0.9s,0.2nm						
BKB	**Balikpapan**	**6.43**	**297**	P	**Pn**	**23 26 46.9**	**+0.2**
	182nm,0.6s,1.2nm						
PLAI	**Plampang**	**6.66**	**226**	P	**Pn**	**23 26 51.2**	**+1.4**
	126nm,0.8s,0.5nm						
TNTI	**Ternate**	**6.84**	**44**	P	**Pn**	**23 26 49.9**	**-2.3**
	777nm,0.9s,2.2nm						
BNDI	**Bandanaira**	**7.26**	**93**	P	**Pn**	**23 26 59.3**	**+1.3**
	248nm,1.1s,1.6nm						
TWSI	**Taliwang, Sumb**	**7.28**	**231**	P	**Pn**	**23 26 59.6**	**+1.3**
	48nm,0.7s,0.3nm						
BBKI	**Banjar Baru**	**7.81**	**275**	P	**Pn**	**23 27 06.4**	**+0.8**
	38nm,0.7s,0.3nm						
SRBI	**Singaraja**	**8.33**	**242**	P	**Pn**	**23 27 12.8**	**+0.2**
	74nm,0.6s						
ABJI	**Asem Bagus**	**9.08**	**246**	P	**Pn**	**23 27 24.2**	**+1.1**
	59nm,1.7s						
SWI	**Sorong**	**9.23**	**69**	P	**Pn**	**23 27 25.2**	**+0.1**
	315nm,0.8s						
SIJI	**Sorong**	**9.24**	**69**	Pn	**Pn**	**23 27 25.3**	**+0.1**
	16nm,0.3s,baz=214,slow=7.3,SNR=3.3						
SIJI				Sn	**Sn**	**23 29 07.5**	**-0.5**
	24nm,0.3s,baz=180,slow=8.8,SNR=2.5						
FAKI	**Fak Fak**	**9.68**	**83**	P	**Pn**	**23 27 30.3**	**-0.9**
	102nm,0.8s						
GMJI	**Gumukmas**	**9.99**	**246**	P	**Pn**	**23 27 36.4**	**+0.9**
	44nm,1.0s						
MYLDM	**Lahad Datu**	**10.20**	**336**	*e*Pn	**Pn**	**23 27 37.4**	**-0.9**
MYLDM				*e*ScP	**ScP**	**23 37 10.5**	**-5.4**
DAV	**Davao City (W)**	**11.58**	**15**	Pn	Pn	23 27 52.0	-5.2
	32nm,0.3s,baz=232,slow=12,SNR=2.2						
DAV				Sn	**Sn**	**23 30 07.9**	**+2.6**
	49nm,0.3s,baz=239,slow=5.9,SNR=2.3						
STKI	**Sintang**	**11.93**	**291**	P	Pn	23 28 05.5	+3.5
	385nm,0.8s,20μm						
MTN	**Manton Dam**	**12.01**	**136**	*e*Pn	**Pn**	**23 28 02.4**	**-0.7**
FITZ	**Fitzroy Crossi**	**14.12**	**168**	Pn	**Pn**	**23 28 30.6**	**-1.4**
	0.3nm,0.3s,baz=344,slow=7.1,SNR=10						
FITZ				Sn	**Sn**	**23 31 10.5**	**+2.9**
	0.1nm,0.3s,baz=76,slow=17,SNR=2.0						
MBWA	**Marble Bar**	**17.09**	**189**	*e*Pn	**Pn**	**23 29 09.5**	**-1.1**
MBWA				*es*P	**pP**	**23 29 17.1**	**-4.1**
JAY	**Jayapura**	**18.12**	**85**	P	**Pn**	**23 29 22.3**	**-1.1**
	0.0nm,0.3s,baz=231,slow=20,SNR=3.1						
JAY	**Jayapura**	**18.12**	**85**	P	**P**	**23 29 26.0**	**+2.5**
	25nm,1.4s						
KASI	**Kota Agung**	**18.12**	**265**	P	**P**	**23 29 25.2**	**+1.7**
	33nm,1.1s						
MDSI	**Maura Dua**	**18.41**	**268**	P	**P**	**23 29 26.6**	**-0.1**
	43nm,1.4s						
LHSI	**Lahat**	**19.07**	**270**	P	**Pn**	**23 29 35.9**	**+0.9**
	71nm,1.0s						
WRAB	**Tennant Creek**	**19.36**	**145**	*ℓeP*	**P**	**23 29 36.2**	**-0.9**
WRAB				pmax	pmax		
	comp=Z,85nm,0.8s						
WRAB	**Tennant Creek**	**19.36**	**145**	*eP*	**P**	**23 29 36.6**	**-0.5**
	comp=Z,64nm,1.0s						
WRA	**Warramunga Arr**	**19.36**	**145**	P	**P**	**23 29 36.4**	**-0.8**
	comp=Z,0.7nm,0.3s,baz=318,slow=13,SNR=53						
WB2	**Warramunga Ar**	**19.37**	**145**	*eP*	**P**	**23 29 36.8**	**-0.4**
	comp=Z,62nm,1.0s						
MYKOM	**Kota Tinggi**	**19.69**	**287**	*eP*	**P**	**23 29 40.4**	**-0.5**
	comp=Z,22nm,1.2s						
MASI	**Maura Aman, Be**	**20.38**	**272**	P	Pn	23 29 51.9	+1.3
	comp=Z,144nm,1.0s						
AS31	**Alice Springs**	**22.20**	**152**	*eP*	**P**	**23 30 08.2**	**+0.3**
	comp=Z,12nm,1.0s						
ASAR	**Alice Springs**	**22.20**	**152**	P	**P**	**23 30 08.1**	**+0.3**
	comp=Z,24nm,1.0s,baz=338,slow=13,SNR=61						
ASAR				PcP	**PcP**	**23 34 04.2**	**+0.3**
	comp=Z,1.8nm,0.7s,baz=336,slow=1.1,SNR=4.5						
AS01	**Alice Springs**	**22.22**	**152**	*eP*	**P**	**23 30 07.6**	**-0.5**
COEN	**Coen**	**22.46**	**117**	*eP*	**P**	**23 30 09.4**	**-1.2**
	comp=Z,43nm,1.0s						
KULM	**Kulim**	**23.90**	**293**	*eP*	**P**	**23 30 24.1**	**-1.0**
	comp=Z,87nm,2.0s						
PSI	**Prapat**	**24.70**	**286**	P	**P**	**23 30 30.6**	**-1.9**
	comp=Z,7.6nm,0.8s,baz=102,slow=11,SNR=4.6						
PSI	**Prapat**	**24.70**	**286**	*eP*	**P**	**23 30 30.8**	**-1.8**
PSI				pmax	pmax		
	comp=Z,22nm,1.1s						
PSI	**Prapat**	**24.70**	**286**	*eP*	**P**	**23 30 30.8**	**-1.8**
	comp=Z,22nm,1.1s						
MANU	**Manus Island**	**24.79**	**86**	*eP*	**P**	**23 30 33.4**	**+0.1**
	comp=Z,49nm,1.4s						
PMG	**Port Moresby**	**24.89**	**103**	P	**P**	**23 30 35.0**	**+0.9**
	comp=Z,29nm,0.8s,baz=267,slow=7.6,SNR=7.8						
PMG	**Port Moresby**	**24.89**	**103**	*ℓeP*	**P**	**23 30 35.0**	**+0.9**
PMG				pmax	pmax		
	comp=Z,146nm,0.9s						
PMG	**Port Moresby**	**24.89**	**103**	*eP*	**P**	**23 30 34.0**	**-0.1**
	comp=Z,109nm,1.3s						
CTA	**Charters Tower**	**27.90**	**126**	P	**P**	**23 31 05.3**	**+3.9**
	comp=Z,6.6nm,0.8s,baz=305,slow=12,SNR=4.4						
BBOO	**Buckleboo**	**31.11**	**158**	*eP*	**P**	**23 31 29.3**	**-0.3**
	comp=Z,12nm,0.6s						
JOW	**Kunigami**	**31.33**	**10**	P	**P**	**23 31 30.4**	**-1.1**
	comp=Z,7.9nm,0.7s,baz=211,slow=5.9,SNR=3.8						
JOW	**Kunigami**	**31.33**	**10**	*eP*	**P**	**23 31 30.9**	**-0.7**
	comp=Z,21nm,1.2s						
CM01	**Chiang Mai Arr**	**32.40**	**315**	*eP*	**P**	**23 31 39.7**	**-1.4**
CMAR	**Chiang Mai Ar**	**32.44**	**315**	P	**P**	**23 31 41.6**	**+0.2**
	comp=Z,1.6nm,0.6s,baz=140,slow=7.2,SNR=9.7						
CHTO	**Chiang Mai**	**32.67**	**315**	*eP*	**P**	**23 31 42.5**	**-1.0**
CHTO				pmax	pmax		
	comp=Z,6.0nm,0.9s						
CHTO	**Chiang Mai**	**32.67**	**315**	*eP*	**P**	**23 31 42.5**	**-1.0**
	comp=Z,6.1nm,0.9s						
STKA	**Stephens Creek**	**32.78**	**149**	P	**P**	**23 31 44.9**	**+0.5**
	comp=Z,12nm,0.8s,baz=317,slow=9.7,SNR=25						
STKA	**Stephens Creek**	**32.78**	**149**	*eP*	**P**	**23 31 44.8**	**+0.5**
STKA				pmax	pmax		
	comp=Z,4.0nm,0.9s						
STKA	**Stephens Creek**	**32.78**	**149**	*eP*	**P**	**23 31 44.8**	**+0.5**
	comp=Z,3.7nm,0.9s						
KMI	**Kunming**	**34.98**	**327**	P	**P**	**23 32 06.8**	**+3.1**
KMI				pP	pP	23 32 12.3	-1.6
KMI				sP	sP	23 32 15.1	-3.0
KMI				pmax	pmax		
	comp=Z,6.0nm,1.0s						
HNR	**Honiara**	**37.39**	**100**	*eP*	**P**	**23 32 23.4**	**-0.9**
HNR				pmax	pmax		
	comp=Z,49nm,0.8s						
HNR	**Honiara**	**37.39**	**100**	*eP*	**P**	**23 32 23.4**	**-0.9**
	comp=Z,49nm,0.8s						
CD2	**Chengdu**	**39.30**	**334**	P	**P**	**23 32 39.9**	**-0.2**
CAN	**Canberra**	**39.41**	**145**	*eP*	**P**	**23 32 41.1**	**+0.1**
CAN				pmax	pmax		
	comp=Z,28nm,1.1s						
CAN	**Canberra**	**39.41**	**145**	*eP*	**P**	**23 32 41.0**	**+0.1**
	comp=Z,28nm,1.1s						
KS15	**Wonju Array Si**	**41.72**	**6**	*eP*	**P**	**23 32 59.2**	**-0.7**
KSAR	**Wonju Array Be**	**41.72**	**6**	P	**P**	**23 33 02.1**	**+2.1**
KSAR	**Wonju Array Be**	**41.72**	**6**	P	**P**	**23 33 02.0**	**+2.1**
KSRS	**Korea Array**	**41.73**	**6**	P	**P**	**23 33 02.0**	**+2.0**
	comp=Z,5.5nm,0.9s,baz=182,slow=9.7,SNR=11						
KS01	**Wonju Array Si**	**41.75**	**6**	*eP*	**P**	**23 33 00.0**	**-0.2**
MAJO	**Matsushiro**	**43.07**	**18**	*ℓeP*	**P**	**23 33 10.7**	**-0.3**
MAJO				pmax	pmax		
	comp=Z,67nm,1.1s						
MAJO	**Matsushiro**	**43.07**	**18**	*eP*	**P**	**23 33 10.3**	**-0.6**
	comp=Z,16nm,1.0s						
MJAR	**Matsushiro Arr**	**43.07**	**18**	P	**P**	**23 33 10.8**	**-0.2**
	comp=Z,4.7nm,0.8s,baz=192,slow=8.2,SNR=8.5						
MJB9	**Matsu-Tunnel**	**43.07**	**18**	*eP*	**P**	**23 33 10.2**	**-0.9**
	comp=Z,4.2nm,1.1s						
BJI	**Beijing**	**44.42**	**353**	P	**P**	**23 33 22.9**	**+1.1**
BJI				pmax	pmax		
	comp=Z,6.0nm,0.9s						
BJI				LR	LR		
	comp=Z,5μm,20.6s						
HHC	**Hu-ho-hao-te**	**45.97**	**348**	*eP*	**P**	**23 33 35.3**	**+1.1**
HHC				pmax	pmax		
	comp=Z,22nm,1.1s						
HHC				pmax	pmax		
	comp=Z,1μm,8.9s						
KWAJ	**Kwajalein Atol**	**46.67**	**74**	*eP*	**P**	**23 33 39.5**	**-0.5**
KWAJ	**Kwajalein Atol**	**46.67**	**74**	*eP*	**P**	**23 33 39.5**	**-0.5**
	comp=Z,171nm,1.3s						
GUN	**Gumba**	**47.68**	**314**	*eP*	P	23 33 41.7	-6.4
	comp=Z,18nm,0.7s						
PKIN	**Phulchoki**	**47.83**	**314**	*eP*	P	23 33 44.1	-5.1
DMN	**Daman**	**48.06**	**313**	*eP*	P	23 33 46.8	-4.2
	comp=Z,29nm,1.2s						
GTA	**Gaotai**	**48.23**	**336**	*eP*	P	23 33 48.0	-3.9
GTA				pmax	pmax		
	comp=Z,7.0nm,0.7s						
GKN	**Gorkha**	**48.63**	**313**	*eP*	P	23 33 51.7	-3.5
	comp=Z,21nm,1.0s						
USRK	**Ussuriysk Ar.**	**48.91**	**9**	P	**P**	**23 33 55.4**	**-1.5**
	comp=Z,27nm,0.9s,baz=200,slow=7.6,SNR=20						
MDJ	**Mudanjiang**	**49.00**	**7**	P	**P**	**23 33 58.3**	**+0.8**
MDJ				pP	pP	23 34 01.4	-6.6
MDJ				sP	sP	23 34 02.4	-10
MDJ				PP	**PP**	**23 35 53.0**	**+1.6**
MDJ				ScP	**ScP**	**23 39 15.8**	**+2.0**
MDJ				PcS	**PcS**	**23 39 17.8**	**+0.4**
MDJ				S	**S**	**23 41 04.4**	**+4.8**
MDJ				pmax	pmax		
	comp=Z,19nm,0.9s						
MDJ				LR	LR		
	comp=Z,2μm,20.3s						
MDJ				LR	LR		
	comp=Z,660nm,17.0s						
MDJ				LR	LR		
	comp=Z,3μm,17.9s						
MDJ	**Mudanjiang**	**49.00**	**7**	*eP*	**P**	**23 33 57.1**	**-0.4**
	comp=Z,17nm,0.8s						
KOLN	**Kolanda**	**49.25**	**313**	*eP*	**P**	**23 33 57.6**	**-2.5**
	comp=Z,15nm,0.7s						
PYUN	**Piuthan**	**49.88**	**313**	*eP*	**P**	**23 34 03.3**	**-1.6**
	comp=Z,42nm,0.8s						
TARA	**Tarawa**	**50.55**	**85**	*eP*	**P**	**23 34 08.6**	**-1.3**
	comp=Z,286nm,1.8s						
ASAJ	**Asahikawa**	**51.34**	**18**	*eP*	**P**	**23 34 14.8**	**-0.5**
	comp=Z,79nm,1.6s						
ULN	**Ulaanbaatar**	**53.63**	**347**	*eP*	**P**	**23 34 31.7**	**-0.7**
ULN				pmax	pmax		
	comp=Z,6.0nm,1.0s						
ULN	**Ulaanbaatar**	**53.63**	**347**	*eP*	**P**	**23 34 31.7**	**-0.7**
	comp=Z,6.3nm,1.0s						
SONM	**Songino Array**	**53.75**	**346**	P	**P**	**23 34 32.3**	**-1.0**
	comp=Z,3.4nm,0.8s,baz=176,slow=5.9,SNR=5.4						
SONA1	**Songino Array**	**53.76**	**346**	*eP*	**P**	**23 34 33.1**	**-0.2**
KLR	**Kul'dur**	**53.80**	**7**	P	**P**	**23 34 33.5**	**+0.1**
	comp=Z,5.1nm,1.0s,baz=255,slow=2.6,SNR=13						
KLR	**Kul'dur**	**53.80**	**7**	*ℓeP*	**P**	**23 34 34.0**	**+0.6**
ZAK	**Zakamensk**	**56.87**	**345**	*eP*	**P**	**23 34 56.0**	**+0.3**
ZAK				pmax	pmax		
	comp=Z,3.0nm,1.3s						
WMQ	**Urumqi**	**57.21**	**330**	*eP*	**P**	**23 34 57.5**	**-0.7**
WMQ				pmax	pmax		
	comp=Z,2.0nm,0.6s						
WMQ				LR	LR		
	comp=Z,2μm,19.6s						
WMQ				LR	LR		
	comp=Z,1μm,16.4s						
WMQ				LR	LR		
	comp=Z,1μm,21.2s						
TLY	**Talaya**	**57.98**	**346**	*eP*	**P**	**23 35 05.9**	**+2.5**
TLY				pmax	pmax		
	comp=Z,5.0nm,1.0s						
TLY	**Talaya**	**57.98**	**346**	*eP*	**P**	**23 35 03.0**	**-0.4**
	comp=Z,7.9nm,1.3s						
RPZ	**Rata Peaks**	**57.99**	**140**	P	**P**	**23 35 04.5**	**+0.9**
	comp=Z,15nm,0.8s,baz=344,slow=5.0,SNR=5.7						
URZ	**Urewera**	**59.93**	**132**	*eP*	**P**	**23 35 15.6**	**-1.5**
	comp=Z,86nm,1.5s						
KSH	**Kashi**	**61.10**	**320**	*eP*	**P**	**23 35 28.0**	**+2.7**
KSH				PcS	**PcS**	**23 40 11.0**	**+0.1**
KSH				S	**S**	**23 43 46.3**	**+4.1**
KSH				pmax	pmax		
	comp=Z,430nm,11.0s						
MK01	**Makanchi Array**	**61.98**	**330**	*eP*	**P**	**23 35 29.9**	**-1.1**
MK31	**Makanchi Array**	**62.01**	**330**	*eP*	**P**	**23 35 30.5**	**-0.6**
MK31	**Makanchi Array**	**62.01**	**330**	*eP*	**P**	**23 35 30.5**	**-0.6**
MKAR	**Makanchi Array**	**62.01**	**330**	P	**P**	**23 35 29.5**	**-1.6**
	comp=Z,1.4nm,0.6s,baz=131,slow=7.8,SNR=17						
MKAR	**Makanchi Array**	**62.01**	**330**	*ceP*	**P**	**23 35 30.1**	**-1.0**
MKAR				pmax	pmax		
	comp=Z,1.0nm,0.6s						
MKAR	**Makanchi Array**	**62.01**	**330**	*eP*	**P**	**23 35 30.5**	**-0.6**
BOD	**Bodaibo**	**62.21**	**355**	*eP*	**P**	**23 35 31.1**	**-1.1**
BOD				pmax	pmax		
	comp=Z,24nm,1.0s						
KBL	**Kabul**	**63.41**	**312**	*eP*	**P**	**23 35 39.1**	**-1.9**
KBL				pmax	pmax		
	comp=Z,10.0nm,0.8s						
KBL	**Kabul**	**63.41**	**312**	*eP*	**P**	**23 35 39.1**	**-1.9**
	comp=Z,9.5nm,0.8s						
AAK	**Ala-Archa**	**63.77**	**322**	*ℓeP*	**P**	**23 35 45.1**	**+2.0**
AAK				pmax	pmax		
	comp=Z,5.0nm,0.9s						
AAK	**Ala-Archa**	**63.77**	**322**	*eP*	**P**	**23 35 41.5**	**-1.6**
	comp=Z,4.5nm,0.9s						
PETK	**Petropavlovsk-**	**64.27**	**23**	P	P	23 35 42.4	-3.6
	comp=Z,8.5nm,1.1s,baz=196,slow=8.5,SNR=3.0						
ZALV	**Zalesovo Beam**	**65.98**	**337**	P	**P**	**23 35 55.3**	**-1.7**
	comp=Z,5.9nm,0.8s,baz=128,slow=5.4,SNR=23						
YAK	**Yakutsk**	**66.27**	**4**	P	**P**	**23 35 58.9**	**+0.2**
	comp=Z,26nm,0.6s,baz=248,slow=1.6,SNR=3.7						
KURK	**Kurchatov**	**66.44**	**331**	*ℓeP*	**P**	**23 36 01.2**	**+1.2**
KURK				pmax	pmax		
	comp=Z,8.0nm,1.7s						
KURK	**Kurchatov**	**66.44**	**331**	*eP*	**P**	**23 35 59.0**	**-1.0**
	comp=Z,18nm,1.0s						
NVS	**Novosibirsk**	**67.27**	**337**	*eP*	**P**	**23 36 05.2**	**0.0**
MA2	**Magadan**	**67.36**	**15**	P	**P**	**23 36 05.4**	**-0.3**
	comp=Z,2.9nm,0.3s,baz=204,slow=20,SNR=4.4						
SEY	**Seymchan**	**70.65**	**14**	P	**P**	**23 36 26.7**	**+0.6**
	comp=Z,3.3nm,0.8s,baz=203,slow=7.4,SNR=6.4						
SEY	**Seymchan**	**70.65**	**14**	*ℓeP*	**P**	**23 36 27.6**	**+1.5**
BRVK	**Borovoye**	**71.96**	**330**	*ℓeP*	**P**	**23 36 34.9**	**+0.7**
BRVK				pmax	pmax		
	comp=Z,10.0nm,1.0s						
BRVK	**Borovoye**	**71.96**	**330**	*eP*	**P**	**23 36 33.4**	**-0.8**
	comp=Z,11nm,1.1s						
ZRNK	**Zerenda**	**72.55**	**329**	*eP*	**P**	**23 36 36.2**	**-1.5**
ZRNK				pmax	pmax		
	comp=Z,13nm,0.8s						
ZRNK	**Zerenda**	**72.55**	**329**	*eP*	**P**	**23 36 36.2**	**-1.5**
	comp=Z,13nm,0.8s						
GEYT	**Alibeck**	**72.86**	**312**	P	**P**	**23 36 39.1**	**-0.9**
	comp=Z,4.4nm,0.8s,baz=122,slow=5.4,SNR=11						
MAW	**Mawson**	**74.95**	**200**	P	**P**	**23 36 53.2**	**+1.6**
	comp=Z,2.6nm,0.9s,baz=48,slow=12,SNR=2.5						
TIXI	**Tiksi**	**75.82**	**2**	*ℓeP*	**P**	**23 36 56.7**	**+0.3**
TIXI				pmax	pmax		
	comp=Z,6.0nm,0.8s						
TIXI	**Tiksi**	**75.82**	**2**	*eP*	**P**	**23 36 54.8**	**-1.7**
	comp=Z,10nm,1.0s						
ABKAR	**Akbulak array**	**75.83**	**323**	*eP*	**P**	**23 36 55.5**	**-1.5**
VNDA	**Vanda**	**76.16**	**172**	P	**P**	**23 36 59.5**	**+1.1**
	comp=Z,1.5nm,0.8s,baz=329,slow=7.7,SNR=4.1						
NRIK	**Noril'sk**	**77.20**	**348**	P	**P**	**23 37 04.5**	**+0.2**
	comp=Z,2.2nm,0.4s,baz=124,slow=5.0,SNR=8.2						
ARU	**Arti**	**79.53**	**329**	*ceP*	**P**	**23 37 18.5**	**+1.1**
ARU				S	**S**	**23 47 20.9**	**+4.4**
ARU				SS	**SS**	**23 52 26.5**	**+1.6**
ARU				pmax	pmax		
	comp=Z,11nm,1.7s						
ARU	**Arti**	**79.53**	**329**	*eP*	**P**	**23 37 16.7**	**-0.7**
	comp=Z,5.5nm,1.0s						
GNI	**Garni**	**83.48**	**311**	*ℓeP*	**P**	**23 37 38.5**	**-0.4**
GNI				pmax	pmax		
	comp=Z,13nm,1.1s						
SYO	**Syowa Base**	**83.60**	**201**	*ℓeP*	**P**	**23 37 38.0**	**-0.7**
ZEI	**Tsey**	**84.60**	**314**	*eP*	**P**	**23 37 43.0**	**-1.6**
ZEI				pmax	pmax		
	comp=Z,15nm,0.9s						
KMBO	**Kilima Mbogo**	**85.31**	**269**	P	**P**	**23 37 48.5**	**-0.4**
	comp=Z,1.4nm,0.8s,baz=36,slow=6.7,SNR=3.0						
KBZ	**Khabaz**	**85.49**	**314**	P	**P**	**23 37 49.2**	**+0.5**
	comp=Z,2.9nm,0.9s,baz=129,slow=4.4,SNR=9.1						
GOF	**Gofitskoye**	**85.62**	**316**	*ℓeP*	P	23 37 53.3	+3.9
GOF				pmax	pmax		
	comp=Z,11nm,0.9s						
VSR	**Storozhevoye**	**89.16**	**321**	*eP*	**P**	**23 38 07.0**	**+0.7**
VSR				pmax	pmax		
	comp=Z,4.0nm,0.8s						
LPSR	**Galich'ya Gora**	**89.48**	**323**	*eP*	**P**	**23 38 09.3**	**+1.5**
LPSR				pmax	pmax		
	comp=Z,7.0nm,0.9s						
KLMR	**Klimovskoe**	**90.28**	**331**	*eP*	**P**	**23 38 10.1**	**-1.3**
KLMR				pmax	pmax		
	comp=Z,10.0nm,1.5s						
BRTR	**Keskin Array B**	**91.88**	**310**	P	**P**	**23 38 18.0**	**-1.5**
	comp=Z,0.8nm,0.9s,baz=160,slow=4.4,SNR=5.0						
BRTR	**Keskin Array B**	**91.88**	**310**	*ceP*	**P**	**23 38 20.7**	**+1.2**
BRTR				pmax	pmax		
	comp=Z,1.0nm,0.9s						
BR231	**Keskin MP Arra**	**92.55**	**310**	*eP*	P	23 38 19.2	-3.4
ILAR	**Eielson Array**	**93.98**	**25**	P	**P**	**23 38 27.0**	**-1.4**
	comp=Z,0.3nm,0.7s,baz=233,slow=5.7,SNR=4.5						
AKASG	**Malin Array Be**	**95.39**	**320**	P	**P**	**23 38 33.5**	**-1.7**
	comp=Z,0.3nm,0.3s,baz=75,slow=4.7,SNR=6.8						
AKASG	**Malin Array Be**	**95.39**	**320**	*ceP*	**P**	**23 38 36.0**	**+0.8**
FINES	**FINESS Array B**	**96.81**	**331**	P	**P**	**23 38 39.2**	**-2.1**
	comp=Z,0.9nm,1.0s,baz=57,slow=5.1,SNR=2.4						
CLL	**Collm**	**105.49**	**322**	*e*PP	PP	23 43 44.0	+1.7
NVAR	**Mina Array Bea**	**115.19**	**49**	PKP	**PKPdf**	**23 43 54.1**	**+1.4**
	comp=Z,1.2nm,0.5s,baz=222,slow=6.6,SNR=3.4						
TORD	**Torodi Ar. Bea**	**121.06**	**283**	PKP	**PKPdf**	**23 44 03.2**	**-1.2**
	comp=Z,0.5nm,0.8s,baz=74,slow=1.7,SNR=3.5						
CPUP	**Villa Florida**	**149.65**	**180**	PKPbc	**PKPbc**	**23 45 02.4**	**+1.3**
	comp=Z,5.4nm,1.0s,baz=127,slow=3.8,SNR=5.4						
ATAH	**Atahualpa**	**156.18**	**118**	PKPbc	PKPbc	23 45 18.8	
	comp=Z,5.0nm,0.7s,baz=8.2,slow=4.7,SNR=3.7						
LPAZ	**La Paz**	**157.02**	**153**	PKP	**PKPdf**	**23 45 10.5**	**+2.4**
	comp=Z,0.5nm,0.7s,baz=201,slow=6.7,SNR=2.5						
LPAZ				PKPab	**PKPab**	**23 45 39.1**	**+0.9**
	comp=Z,1.2nm,0.8s,baz=218,slow=8.2,SNR=3.3			

3.1nm,0.4s
TLY Talaya 58.15 346 *e*P **P 23 44 30.5 +0.1**
0.4nm,0.5s
MKAR Makanchi Array 62.21 330 P **P 23 44 58.5 +0.1**
0.7nm,0.5s,baz=127,slow=7.4,SNR=12
ZALV Zalesovo Beam 66.17 337 P **P 23 45 23.6 -0.6**
2.0nm,0.9s,baz=133,slow=5.0,SNR=6.6
TORD Torodi Ar. Bea 121.28 283 PKP **PKPdf 23 53 31.4 +0.6**
0.2nm,0.6s,baz=85,slow=1.9,SNR=3.8
CPUP Villa Florida 149.53 180 PKPbc **PKPbc 23 54 26.9 +0.1**
3.8nm,1.2s,baz=270,slow=1.0,SNR=2.9

*NAO **24** 23:36:30.2±1.7, 67.66N×20.07E, ML2.0*
*CSEM **24** 23:36:32.8±0.2, 67.83N×20.20E, h2km, ML1.2, Error ellipse: s-maj=5.3km s-min=4.3km az=121.0, Mining explosion.*
*BER **24** 23:36:34.5±3.8, 67.79N×20.09E, h0km, ML1.6, ML2.0(NAO), Suspected explosion*

UPP 24 23:36:32.8, 67.85N×20.21E, h1km, ML1.2, Mining explosion., Sweden

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
KUA	**Kurravaara**	**0.11**	**26**	P	Pg	23 36 35.1	+0.1
KUA				S	Sg	23 36 36.7	+0.2
NIKU	**Nikkaluokta**	**0.44**	**273**	P	Pg	23 36 41.2	-0.1
LANU	**Lannavaara**	**0.70**	**73**	P	Pg	23 36 46.0	-0.2
SALU	**Saltoluokta**	**0.81**	**235**	P	Pg	23 36 47.8	-0.4
KIF	**Kilpisjarvi**	**1.18**	**10**	Pg	Pg	23 36 55.4	0.0
KIF				Lg	Lg	23 37 16.0	
KIF	**Kilpisjarvi**	**1.18**	**10**	*e*P	Pg	23 36 55.4	+0.1
KIF				*e*S	Sn	23 37 12.8	-0.2
KIF	**Kilpisjarvi**	**1.18**	**10**	*e*P	Pg	23 36 55.4	0.0
	SNR=70						
KIF				*e*S	Sn	23 37 12.8	-0.3
	SNR=70						
KIF				Lg	Lg	23 37 16.0	
PAJU	**Pajala**	**1.40**	**125**	P	Pn	23 36 58.3	-1.1
ERTU	**Ertsjaerv**	**1.52**	**148**	P	Pn	23 37 00.3	-0.8
KTK1	**Kautokeino**	**1.62**	**42**	*e*P	Pn	23 37 02.8	+0.3
KTK1				*e*S	Sg	23 37 26.0	+1.4
KTK1				IAML		23 37 33.8	
	comp=Z,8.4nm,0.3s						
KTK1	**Kautokeino**	**1.62**	**42**	*e*P	Pn	23 37 02.8	+0.3
	SNR=50						
KTK1				*e*S	Sg	23 37 26.0	+1.4
	SNR=50						
HARU	**Harads**	**1.72**	**170**	P	Pn	23 37 03.9	0.0
TRO	**Tromso**	**1.85**	**346**	*e*S	Sb	23 37 30.9	-0.1
TRO	**Tromso**	**1.85**	**346**	*e*S	Sb	23 37 30.9	0.0
	SNR=50						
SJUU	**Sjulsmark**	**2.42**	**166**	P	Pn	23 37 14.5	+1.1
ARA0	**ARCESS Array S**	**2.57**	**46**	Pn	Pn	23 37 16.0	+0.4
	baz=227,slow=14						
ARA0				Sn	Sb	23 37 50.0	-1.7
	baz=230,slow=22						
ARA0				Lg	Lg	23 37 56.6	
	baz=227,slow=28						
ARA0	**ARCESS Array S**	**2.57**	**46**	Pn	Pn	23 37 16.0	+0.4
	baz=227,slow=14						
ARA0				Sn	Sb	23 37 50.0	-1.7
	baz=230,slow=22						
ARA0				Lg	Lg	23 37 56.6	
	baz=227,slow=28						
ARA0	**ARCESS Array S**	**2.57**	**46**	Pn	Pn	23 37 16.0	+0.5
	SNR=50						
ARA0				Sn	Sb	23 37 50.0	-1.7
	SNR=50						
ARA0				Lg	Lg	23 37 56.6	
	SNR=50						
MOR8	**Moi Rana**	**2.82**	**236**	*e*Sg	Sb	23 37 57.0	-2.0
MOR8				IAML		23 38 05.0	
	comp=Z,9.1nm,0.5s						
APA0	**Apatity Array**	**4.87**	**87**	Pn	Pn	23 37 46.3	-0.8
APA0				Sn	Sn	23 38 44.5	+0.5
	baz=294,slow=22						
APA0				Lg	Lg	23 39 05.8	
	baz=279,slow=37						
APA0	**Apatity Array**	**4.87**	**87**	Pn	Pn	23 37 46.3	-0.8
APA0				Sn	Sn	23 38 44.5	+0.5
	baz=294,slow=22						
APA0				Lg	Lg	23 39 05.8	
	baz=279,slow=37						
APA0	**Apatity Array**	**4.87**	**87**	Pn	Pn	23 37 46.3	-0.8
	SNR=50						
APA0				Sn	Sn	23 38 44.5	+0.4
	SNR=50						
APA0				Lg	Lg	23 39 05.8	
	SNR=25						
FIA0	**FINESS Array S**	**6.91**	**156**	Pn	Pn	23 38 10.8	-4.2
FIA0	**FINESS Array S**	**6.91**	**156**	P	Pn	23 38 10.8	-4.2

*CSEM **24** 23:36:39.0, 67.86N×20.19E, h1km, ML1.6, Mining explosion.*

UPP 24 23:36:39.0, 67.86N×20.19E, h1km, ML1.6, Mining explosion., Sweden

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
KUA	**Kurravaara**	**0.11**	**30**	P	Pg	23 36 41.3	+0.2
KUA				S	Sg	23 36 42.9	+0.4
KUA	**Kurravaara**	**0.11**	**30**	P	Pg	23 36 41.3	+0.2
KUA				S	Sg	23 36 42.9	+0.4
NIKU	**Nikkaluokta**	**0.44**	**272**	P	Pg	23 36 47.3	-0.1
NIKU	**Nikkaluokta**	**0.44**	**272**	P	Pg	23 36 47.3	-0.1
SALU	**Saltoluokta**	**0.81**	**234**	P	Pg	23 36 54.1	-0.3
SALU	**Saltoluokta**	**0.81**	**234**	P	Pg	23 36 54.1	-0.3
PAJU	**Pajala**	**1.40**	**125**	P	Pn	23 37 04.2	-1.4
PAJU	**Pajala**	**1.40**	**125**	P	Pn	23 37 04.2	-1.5
ERTU	**Ertsjaerv**	**1.52**	**148**	P	Pn	23 37 07.5	+0.2
ERTU	**Ertsjaerv**	**1.52**	**148**	P	Pn	23 37 07.5	+0.2

*IDC **24** 23:38:41.0±1.5, 17.33N×99.60W, h48km±6km, mb3.6/9, mb1 3.8/13, mb1mx3.6/40, mbtmp3.8/13, Error ellipse: s-maj=33.0km s-min=12.8km az=18.0*
*MEX **24** 23:38:41.0±0.8, 17.20N×99.80W, h46km±7km, MD4.2*
*NEIC **24** 23:38:41.0, 17.20N×99.80W, h46km, MD4.2(MEX), After MEX.*

ISC 24 23:38:38.4±0.6, 17.21N±0.03×99.78W±0.03, h29km±3km, n52, σ1s04/75, mb3.9/9, Guerrero

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
ACX	**Acapulco**	**0.35**	**192**	*i* P	**Pb**	**23 38 44.7**	**-1.8**
ACX				*i* S	**Sb**	**23 38 51.4**	**-0.6**
ACX	**Acapulco**	**0.35**	**192**	*i* P	**Pb**	**23 38 44.7**	**-1.8**
ACX				*i* S	**Sb**	**23 38 51.4**	**-0.6**
ACP2	**Acapulco**	**0.35**	**197**	*i* P	**Pn**	**23 38 48.4**	**+0.9**
ACP2				*i* S	**Sn**	**23 38 55.2**	**+1.7**
CAIG	**El Cayaco**	**0.49**	**251**	*i* P	**Pn**	**23 38 50.0**	**+0.5**
CAIG				*i* S	**Sn**	**23 38 57.8**	**+0.7**
CAIG	**El Cayaco**	**0.49**	**251**	*i* P	**Pn**	**23 38 50.0**	**+0.5**
CAIG				*i* S	**Sn**	**23 38 57.8**	**+0.7**
MEIG	**Mezcala**	**0.73**	**12**	*i* P	**Pn**	**23 38 53.5**	**+0.6**
MEIG				*i* S	**Sb**	**23 39 02.7**	**+0.3**
MEIG	**Mezcala**	**0.73**	**12**	*i* P	**Pn**	**23 38 53.5**	**+0.6**
MEIG				*i* S	**Sb**	**23 39 02.7**	**+0.3**
ARIG	**Puente Sto Nin**	**1.19**	**333**	*i* P	**Pb**	**23 39 00.2**	**-0.3**
ARIG				*i* S	**Sn**	**23 39 15.1**	**+0.6**
HMTT	**Tlapaneco**	**1.30**	**63**	*e*P	**Pb**	**23 39 02.0**	**-0.4**
HMTT				*e*S	**Sn**	**23 39 18.1**	**+0.7**
ZIIG	**Zihuatanejo**	**1.66**	**284**	*e*P	**Pn**	**23 39 05.9**	**+0.3**
ZIIG				*e*S	**Sn**	**23 39 24.6**	**-1.2**
ZIIG	**Zihuatanejo**	**1.66**	**284**	*e*P	**Pn**	**23 39 05.9**	**+0.3**
ZIIG				*e*S	**Sn**	**23 39 24.6**	**-1.2**
MAVM	**Malinalco, Edo**	**1.76**	**9**	*e*P	**Pn**	**23 39 07.7**	**+0.5**
YAIG	**Yautepec**	**1.78**	**22**	*e*P	**Pn**	**23 39 07.7**	**+0.3**
YAIG	**Yautepec**	**1.78**	**22**	*e*P	**Pn**	**23 39 07.7**	**+0.3**
PNIG	**Pinotepa**	**1.78**	**117**	*e*P	**Pn**	**23 39 07.8**	**+0.5**
PNIG	**Pinotepa**	**1.78**	**117**	*e*P	**Pn**	**23 39 07.8**	**+0.5**
MZVM		**2.04**	**15**	*e*P	**Pn**	**23 39 12.0**	**+1.2**
TOVM	**TOLUCA**	**2.06**	**3**	*e*P	**Pn**	**23 39 12.5**	**+1.0**
PPM	**Popocatepetl**	**2.15**	**31**	*e*P	**Pn**	**23 39 13.3**	**+0.5**
PPM	**Popocatepetl**	**2.15**	**31**	*e*P	**Pn**	**23 39 13.3**	**+0.5**
PBVM	**Pinon**	**2.32**	**17**	*e*P	**Pb**	**23 39 17.5**	**-2.1**
PBVM	**Pinon**	**2.32**	**17**	*e*P	**Pb**	**23 39 17.5**	**-2.1**
PTVM	**Pico Tres Padr**	**2.46**	**15**	*e*P	**Pn**	**23 39 17.1**	**+0.3**
PTVM	**Pico Tres Padr**	**2.46**	**15**	*e*P	**Pn**	**23 39 17.1**	**+0.3**
ATVM	**ATLACOMULCO**	**2.54**	**359**	*e*P	**Pn**	**23 39 19.6**	**+1.6**
IIO	**Organos**	**2.57**	**23**	*e*P	**Pn**	**23 39 19.0**	**+0.4**
IIO	**Organos**	**2.57**	**23**	*e*P	**Pn**	**23 39 19.0**	**+0.4**
TPIG	**Tehuac#an**	**2.60**	**62**	*i* P	**Pn**	**23 39 19.6**	**+0.9**
TPIG				*i* S	**Sn**	**23 39 49.9**	**+0.5**
TPIG	**Tehuac#an**	**2.60**	**62**	*i* P	**Pn**	**23 39 19.6**	**+0.9**
TPIG				*i* S	**Sn**	**23 39 49.9**	**+0.5**
VTVM	**Tizayuca**	**2.72**	**20**	*e*P	**Pn**	**23 39 20.5**	**+0.1**
VHO	**Vista Hermosa**	**2.92**	**92**	*e*P	**Pn**	**23 39 24.9**	**+1.8**
VHO				*e*S	**Sn**	**23 39 56.8**	**-0.5**
VHO	**Vista Hermosa**	**2.92**	**92**	*e*P	**Pn**	**23 39 24.9**	**+1.8**
VHO				*e*S	**Sn**	**23 39 56.8**	**-0.5**
MMIG	**Aquila**	**3.56**	**288**	*e*P	**Pn**	**23 39 32.5**	**+0.7**
MMIG				*i* S	**Sn**	**23 40 12.8**	**-0.2**
MMIG	**Aquila**	**3.56**	**288**	*e*P	**Pn**	**23 39 32.5**	**+0.7**
MMIG				*i* S	**Sn**	**23 40 12.8**	**-0.2**
LVIG	**Laguna Verde**	**4.05**	**51**	*i* P	**Pn**	**23 39 37.5**	**-1.0**
LVIG	**Laguna Verde**	**4.05**	**51**	*i* P	**Pn**	**23 39 37.5**	**-1.0**
CMIG	**Matias Romero**	**4.68**	**91**	P	**Pn**	**23 39 48.4**	**+1.1**
	11nm,0.3s,baz=255,slow=11,SNR=101						
CMIG				S	**Sn**	**23 40 38.1**	**-2.5**
	19nm,0.3s,baz=351,slow=22,SNR=7.4						
CMIG				Lg	Lg	23 41 03.2	
	11nm,0.3s,baz=358,slow=20,SNR=4.0						
TEIG	**Tepich**	**11.31**	**73**	P	**Pn**	**23 41 17.8**	**-0.3**
	0.9nm,0.3s,baz=89,slow=24,SNR=8.0						
TEIG				S	Sn	23 43 16.1	-7.4
	1.4nm,0.3s,baz=307,slow=20,SNR=4.7						
TXAR	**Lajitas Array**	**12.58**	**344**	P	**Pn**	**23 41 36.9**	**+1.2**
	0.1nm,0.3s,baz=154,slow=13,SNR=3.3						
JTS	**JuntasAbangare**	**15.96**	**114**	P	**P**	**23 42 27.5**	**+3.1**
	0.5nm,0.3s,baz=294,slow=20,SNR=3.3						
ANMO	**Albuquerque**	**18.64**	**343**	P	**P**	**23 42 54.0**	**-0.2**
	0.2nm,0.3s,baz=148,slow=13,SNR=4.1						
TKL	**Tuckaleechee C**	**23.24**	**35**	P	**P**	**23 43 41.4**	**-2.1**
	2.8nm,0.6s,baz=216,slow=8.7,SNR=6.1						
NVAR	**Mina Array Bea**	**26.64**	**326**	P	**P**	**23 44 14.7**	**-0.2**
	0.4nm,0.3s,baz=138,slow=8.3,SNR=2.9						
PDAR	**Pinedale Array**	**26.80**	**344**	P	**P**	**23 44 16.9**	**+0.5**
	0.3nm,0.5s,baz=133,slow=11,SNR=4.1						
PDAR				pP	**sP**	**23 44 28.9**	**+0.4**
	1.1nm,0.9s,baz=138,slow=12,SNR=5.5						
PDAR				sP	pP	23 44 34.7	+10
	2.2nm,0.8s,baz=145,slow=11,SNR=11						
SCHQ	**Schefferville**	**45.26**	**26**	P	**P**	**23 46 52.0**	**-1.2**
	2.2nm,0.8s,baz=254,slow=7.4,SNR=3.9						
YKA	**Yellowknife Ar**	**46.41**	**351**	P	**P**	**23 47 01.0**	**-1.2**
	0.3nm,0.6s,baz=159,slow=7.2,SNR=7.9						
YKA				pP	**sP**	**23 47 14.4**	**0.0**
	0.3nm,0.5s,baz=158,slow=7.6,SNR=5.7						
INK	**Inuvik**	**55.36**	**345**	P	**P**	**23 48 09.5**	**+0.2**
	1.1nm,0.7s,baz=127,slow=9.0,SNR=5.5						
INK				pP	**sP**	**23 48 22.8**	**+1.0**
	0.8nm,0.6s,baz=109,slow=6.7,SNR=3.9						
INK				PcP	**PcP**	**23 49 08.6**	**-0.9**
	0.7nm,0.5s,baz=122,slow=6.2,SNR=2.3						
ILAR	**Eielson Array**	**57.01**	**338**	P	**P**	**23 48 20.9**	**-0.3**
	0.8nm,1.1s,baz=166,slow=5.2,SNR=4.3						
ILAR				pP	**sP**	**23 48 34.4**	**+0.6**
	1.9nm,1.1s,baz=137,slow=4.9,SNR=8.2						
SEY	**Seymchan**	**82.67**	**334**	P	**P**	**23 50 59.7**	**+0.7**
	1.5nm,0.6s,baz=54,slow=8.7,SNR=4.6						
ARCES	**ARCESS Array B**	**85.35**	**17**	P	**P**	**23 51 13.7**	**+1.1**
	3.5nm,0.9s,baz=310,slow=13,SNR=3.1						
WRA	**Warramunga Arr**	**128.81**	**258**	PKP	**PKPdf**	**23 57 43.7**	**-0.2**
	0.7nm,0.6s,baz=60,slow=1.0,SNR=4.0						
ASAR	**Alice Springs**	**129.52**	**253**	PKP	**PKPdf**	**23 57 44.8**	**-0.5**
	0.3nm,0.7s,baz=95,slow=2.3,SNR=3.2						

*DJA **24** 23:57:02.3±0.3, 4.5S×12.3E±*, h10km, M4.3/12, mb4.7/3, MLv4.2/12*
*IDC **24** 23:57:03.6±1.0, 4.17S×122.78E, h0km, mb3.8/5, mb1 4.0/7, mb1mx3.7/38, mbtmp3.8/7, ML3.4/2, Error ellipse: s-maj=34.0km s-min=17.8km az=52.0*
*NEIC **24** 23:57:04.7±0.6, 4.04S×122.90E, h10km, mb4.1/7, Error ellipse: s-maj=17.0km s-min=9.3km az=54.0*
*ISCJB **24** 23:57:06.0±0.5, 4.13S±0.06×122.87E±0.06, h33km, mb4.2/12, Error ellipse: s-maj=8.8km s-min=7.6km az=35.1*

ISC 24 23:57:08.7±0.7, 4.10S±0.08×122.80E±0.08, h35km, n26, σ1s10/22, mb4.0/12, Sulawesi

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
SPSI	**Sidrap Palu**	**3.03**	**272**	P	**Pn**	**23 57 54.2**	**0.0**
BSSI	**Bau Bau, Buton**	**3.07**	**228**	P	**Pn**	**23 57 54.9**	**+0.1**
TTSI	**Tana Toraja**	**3.15**	**289**	P	Pn	23 58 00.9	+5.0
KAPI	**Kappang**	**3.17**	**253**	Pn	**Pn**	**23 57 55.3**	**-0.9**
	7.9nm,0.3s,baz=159,slow=6.6,SNR=11						
KAPI				Sn	**Sn**	**23 58 33.3**	**+0.4**
	6.9nm,0.3s,baz=257,slow=23,SNR=6.7						
SANI	**Sanana**	**3.78**	**58**	P	Pn	23 57 57.0	-7.5
SANI				S	Sn	23 58 40.4	-7.4
MMRI	**Maumere**	**4.54**	**187**	P	Pn	23 58 10.4	-4.7
MRSI	**Marisa**	**4.62**	**349**	P	**Pn**	**23 58 15.8**	**-0.4**
SOEI	**Soe**	**5.81**	**166**	P	Pn	23 58 25.6	-7.0
	82nm,1.0s,0.3nm						
BASI	**Baing, Sumba**	**6.47**	**200**	P	Pn	23 58 37.1	-4.5
KKM	**Kota Kinabalu**	**12.03**	**327**	*e*Pn	**Pn**	**23 59 58.1**	**+0.2**
KSM	**Kuching**	**13.65**	**294**	*e*Pn	**Pn**	**00 00 19.9**	**-0.2**
FITZ	**Fitzroy Crossi**	**14.20**	**169**	Pn	**Pn**	**00 00 29.2**	**+1.8**
	0.1nm,0.3s,baz=354,slow=18,SNR=2.5						
WRAB	**Tennant Creek**	**19.35**	**145**	*e*P	**P**	**00 01 29.6**	**-1.8**
	3.6nm,0.9s						
WRA	**Warramunga Arr**	**19.36**	**145**	P	**P**	**00 01 29.5**	**-2.0**
	0.1nm,0.3s,baz=314,slow=13,SNR=11						
ASAR	**Alice Springs**	**22.21**	**152**	P	**P**	**00 02 00.4**	**-2.0**
	3.0nm,0.9s,baz=342,slow=16,SNR=24						
ASAR				PcP	**PcP**	**00 05 59.6**	**+1.3**
	0.3nm,0.7s,baz=318,slow=1.2,SNR=3.1						
KULM	**Kulim**	**24.01**	**293**	*e*P	**P**	**00 02 20.8**	**+0.2**
	0.7nm,0.4s						
COCO	**West Island**	**26.91**	**251**	*e*P	**P**	**00 02 46.3**	**-0.5**
	77nm,0.5s						
YHNB	**Yeheng**	**28.63**	**357**	*e*P	P	00 02 58.2	-3.9
	10nm,0.5s						
CMAR	**Chiang Mai Arr**	**32.48**	**314**	P	**P**	**00 03 34.6**	**-1.6**
	0.7nm,0.4s,baz=104,slow=7.5,SNR=3.3						
CHTO	**Chiang Mai**	**32.71**	**315**	*e*P	**P**	**00 03 38.2**	**0.0**
	0.7nm,0.5s						
STKA	**Stephens Creek**	**32.79**	**150**	P	**P**	**00 03 38.8**	**0.0**
	1.7nm,0.9s,baz=314,slow=8.6,SNR=3.5						
MKAR	**Makanchi Array**	**62.00**	**330**	P	**P**	**00 07 26.9**	**+1.4**
	0.5nm,0.6s,baz=130,slow=7.7,SNR=7.7						
ZALV	**Zalesovo Beam**	**65.95**	**337**	P	**P**	**00 07 52.0**	**+0.7**
	0.9nm,0.7s,baz=130,slow=6.4,SNR=4.9						
LSZ	**Lusaka**	**93.37**	**255**	*e*P	**P**	**00 10 21.0**	**-0.2**
	0.4nm,0.4s						
COLA	**College**	**93.40**	**25**	*e*P	**P**	**00 10 20.0**	**-0.1**
	0.7nm,0.4s						
PAX	**Paxson**	**94.41**	**27**	*e*P	**P**	**00 10 25.1**	**+0.2**
	1.5nm,0.3s						

*NEIC **25** 00:03:21.3, 38.41N×118.73W, h0km, ML3.3(REN), After REN.*

ISC 25 00:03:20.6±1.4, 38.41N±0.03×118.72W±0.04, h0km±16km, n14, σ1s09/27, California-Nevada border region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
MLAC	**Mammoth, Mammo**	**0.78**	**187**	P	**Pg**	**00 03 36.2**	**+0.6**
	baz=6.3						
MLAC				S	**Sb**	**00 03 47.5**	**-1.0**
	baz=6.3						
CMB	**Columbia Colle**	**1.36**	**255**	*e*Pn	**Pn**	**00 03 46.3**	**-0.6**
CMB				*e*S	**Sb**	**00 04 04.0**	**-1.1**
GRAC	**Grapevine Rang**	**1.77**	**142**	Pb	**Pb**	**00 03 54.4**	**+0.4**
	baz=323						
DAC	**Darwin (Calif)**	**2.31**	**157**	*e*Pn	**Pn**	**00 03 60.0**	**-0.1**
DAC				*e*Pg	**Pg**	**00 04 05.1**	**+0.2**
BMN	**Battle Mountai**	**2.33**	**29**	*e*Pn	**Pn**	**00 03 59.6**	**-0.8**
BMN				*e*Pb	**Pb**	**00 04 03.7**	**+0.2**
BMN				*e*Pg	**Pg**	**00 04 06.4**	**+1.2**
TPNV	**Topopah Spring**	**2.44**	**126**	Pb	**Pb**	**00 04 06.4**	**+0.9**
	baz=308						
R11A	**Troy Canyon, C**	**2.46**	**90**	Pb	**Pb**	**00 04 05.8**	**0.0**
	baz=272						
R11A				Sb	**Sg**	**00 04 38.9**	**-0.9**
	baz=272						
R11A	**Troy Canyon, C**	**2.46**	**90**	Pn	**Pn**	**00 04 02.3**	**+0.1**
R11A				*e*Pb	**Pb**	**00 04 05.5**	**-0.4**
R11A				*e*Sg	**Sg**	**00 04 39.8**	**0.0**
MPMC	**Manual Prospec**	**2.54**	**157**	Pb	**Pg**	**00 04 08.8**	**-0.5**
	baz=338						
ISA	**Isabella, Lake**	**2.75**	**176**	Pb	**Pb**	**00 04 11.3**	**+0.7**
	baz=356						
ISA				Sb	**Sb**	**00 04 47.1**	**+2.2**
	baz=356						
ELK	**Elko**	**3.56**	**48**	*e*Pn	**Pn**	**00 04 16.2**	**-1.1**
ELK				*e*Sg	**Sg**	**00 05 12.9**	**-2.1**
WDC	**Whiskeytown Da**	**3.67**	**307**	Pn	**Pn**	**00 04 17.0**	**-1.6**
MOD	**Modoc Plateau**	**3.69**	**341**	*e*Pn	**Pn**	**00 04 20.4**	**+1.4**
MOD				*e*Pb	**Pb**	**00 04 28.5**	**+1.6**
MOD				*e*Pg	**Pg**	**00 04 31.9**	**+0.5**
MOD				*e*Sg	**Sg**	**00 05 18.2**	**-1.2**
DUG	**Dugway, Tooele**	**4.92**	**67**	*e*Pg	**Pg**	**00 04 55.6**	**+0.8**

*CSEM **25** 00:03:45.7, 32.46N×48.73E, h6km, ML2.6*

TEH 25 00:03:45.7, 32.46N×48.73E, h6km, ML2.6, Western Iran

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
IKMR	**Kamar-syah**	**1.10**	**345**	*e*Sg	Sg	00 04 15.4	-5.6
IKMR				*e*Pg	Pg	00 04 02.5	-4.3
IKMR				*e*AMB	AMB	00 04 24.9	
	comp=Z,99nm,0.2s						
IKFM	**Kafar-mosalman**	**1.30**	**325**	*e*Sg	Sb	00 04 25.2	-2.2
IKFM				*e*Pg	Pn	00 04 07.1	-3.2
IKFM				*e*AMB	AMB	00 04 29.6	
	comp=Z,99nm,0.1s						
IPIR	**Pirpir**	**1.84**	**82**	*e*Pn	Pn	00 04 18.2	+0.1
IPIR				*e*Sg	Sb	00 04 43.4	+0.1
IPIR				*e*AMB	AMB	00 04 46.6	
	comp=Z,720nm,0.3s						
IPIR	**Pirpir**	**1.84**	**82**	*e*Pn	Pn	00 04 18.2	+0.1
IPIR				*e*Sg	Sb	00 04 43.1	-0.2
IPIR				*e*AMB	AMB	00 04 46.6	
	comp=Z,720nm,0.3s						
IPIR	**Pirpir**	**1.84**	**82**	*e*Pn	Pn	00 04 18.2	+0.1
IPIR				*e*Sg	Sb	00 04 43.1	-0.2
IBZA	**Bozab**	**2.13**	**340**	*e*Pn	Pn	00 04 22.6	+0.5
IBZA				*e*AMB	AMB	00 04 54.3	
	comp=E,640nm,0.2s						
IBZA	**Bozab**	**2.13**	**340**	*e*Pn	Pn	00 04 22.6	+0.5
IBZA				*e*AMB	AMB	00 04 54.3	
	comp=E,640nm,0.2s						
IBZA	**Bozab**	**2.13**	**340**	*e*Pn	Pn	00 04 22.6	+0.5
IKLH	**Kolahrood**	**2.54**	**70**	*e*Pn	Pn	00 04 27.2	-0.6
IKLH				*e*AMB	AMB	00 05 10.8	
	comp=Z,211nm,0.3s						
IKLH	**Kolahrood**	**2.54**	**70**	*e*Pn	Pn	00 04 27.3	-0.5
IKLH				*e*AMB	AMB	00 05 10.8	
	comp=Z,211nm,0.3s						
IKLH	**Kolahrood**	**2.54**	**70**	*e*Pn	Pn	00 04 27.3	-0.5
IGHG	**Ghaleghazi**	**2.60**	**316**	*e*Pn	Pn	00 04 27.9	-0.6
IGHG				*e*AMB	AMB	00 05 28.0	
	comp=Z,275nm,0.4s						
IGHG	**Ghaleghazi**	**2.60**	**316**	*e*Pn	Pn	00 04 27.8	-0.7
IGHG				*e*AMB	AMB	00 05 28.0	
	comp=Z,275nm,0.4s						
IGHG	**Ghaleghazi**	**2.60**	**316**	*e*Pn	Pn	00 04 27.8	-0.7
QAM	**Ghamsar**	**2.62**	**60**	*e*Pn	Pn	00 04 28.9	+0.2
QAM				*e*AMB	AMB	00 05 08.9	
	comp=Z,441nm,0.2s						
QAM	**Ghamsar**	**2.62**	**60**	*e*Pn	Pn	00 04 28.9	+0.2
QAM				*e*AMB	AMB	00 05 08.9	
	comp=Z,441nm,0.2s						
IDHR	**Dehrash**	**2.97**	**319**	*e*Pn	Pn	00 04 33.3	-0.3
IDHR				*e*AMB	AMB	00 05 10.4	
	comp=Z,196nm,0.1s						
IDHR	**Dehrash**	**2.97**	**319**	*e*Pn	Pn	00 04 33.3	-0.3
IDHR				*e*AMB	AMB	00 05 10.4	
	comp=Z,196nm,0.1s						
IDHR	**Dehrash**	**2.97**	**319**	*e*Pn	Pn	00 04 33.3	-0.3
IZEF	**Zefreh**	**3.07**	**81**	*e*Pn	Pn	00 04 34.6	-0.3
IZEF				*e*AMB	AMB	00 05 27.4	
	comp=Z,84nm,0.2s						
IZEF	**Zefreh**	**3.07**	**81**	*e*Pn	Pn	00 04 34.6	-0.3
IZEF				*e*AMB	AMB	00 05 27.4	
	comp=Z,84nm,0.2s						
IZEF	**Zefreh**	**3.07**	**81**	*e*Pn	Pn	00 04 34.6	-0.3
IRAZ	**Razeghan**	**3.10**	**18**	*e*Pn	Pn	00 04 33.9	-1.5
IRAZ				*e*AMB	AMB	00 04 39.8	
	comp=Z,129nm,0.2s						
IRAZ	**Razeghan**	**3.10**	**18**	*e*Pn	Pn	00 04 34.2	-1.2
IRAZ				*e*AMB	AMB	00 04 39.8	
	comp=Z,129nm,0.2s						
IRAZ	**Razeghan**	**3.10**	**18**	*e*Pn	Pn	00 04 34.2	-1.2
IRAM	**Ramesheh**	**3.16**	**101**	*e*Pn	Pn	00 04 35.6	-0.6
IRAM				*e*AMB	AMB	00 05 40.4	
	comp=Z,74nm,0.3s						
IRAM	**Ramesheh**	**3.16**	**101**	*e*Pn	Pn	00 04 35.6	-0.6
IRAM				*e*AMB	AMB	00 05 40.4	
	comp=Z,74nm,0.3s			

Error ellipse: s-maj=16.1km s-min=6.7km az=220.0
*DJA **25** 00:17:48.6±0.2,4°S:3°×12°3E±°, h10km,M4.7/19,mB5.3/2, mb4.8/10,MLv4.6/19,Mw(mB)4.7/2*

ISC 25 00:17:50.1±0.5,**4°44S**±0.07°×**122°89E**±0.06,**h33**km,**n40,** σ**09**:**94**/**41**,**mb4.3**/18,**Sulawesi**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BSSI	**Bau Bau, Buton**	**2.93**	**235**	P	**Pn**	**00 18 35.5**	**+1.0**
SPSI	**Sidrap Palu**	**3.15**	**278**	P	**Pn**	**00 18 36.6**	**-0.9**
KAPI	**Kappang**	**3.18**	**260**	Pn	**Pn**	**00 18 37.5**	**-0.4**
	21nm,0.3s,baz=141,slow=4.3,SNR=27						
KAPI				Sn	**Sn**	**00 19 15.8**	**+1.0**
	17nm,0.3s,baz=38,slow=21,SNR=8.1						
TTSI	**Tana Toraja**	**3.37**	**294**	P	**Pn**	**00 18 42.4**	**+2.0**
SANI	**Sanana**	**3.90**	**53**	P	**Pn**	**00 18 48.8**	**+1.1**
MMRI	**Maumere**	**4.22**	**189**	P	**Pn**	**00 18 52.5**	**+0.3**
MRSI	**Marisa**	**4.97**	**349**	P	**Pn**	**00 19 01.5**	**-1.1**
SOEI	**Soe**	**5.46**	**166**	P	**Pn**	**00 19 12.1**	**+2.8**
	191nm,0.8s,0.6nm						
LBMI	**Labuha**	**5.95**	**51**	P	**Pn**	**00 19 17.2**	**+1.2**
	114nm,0.8s,1μm0.3nm						
BASI	**Baing, Sumba**	**6.18**	**202**	P	**Pn**	**00 19 19.2**	**0.0**
	220nm,1.4s,1.0nm						
PLAI	**Plampang**	**6.70**	**229**	P	**Pn**	**00 19 26.2**	**0.0**
	56nm,1.0s,0.2nm						
TNTI	**Ternate**	**6.84**	**41**	P	**Pn**	**00 19 28.4**	**+0.2**
	307nm,0.7s,1.2nm						
TWSI	**Taliwang, Sumb**	**7.34**	**234**	P	**Pn**	**00 19 35.7**	**+0.6**
	22nm,0.9s,0.1nm						
SWI	**Sorong**	**9.08**	**67**	P	**Pn**	**00 20 00.0**	**+1.0**
FITZ	**Fitzroy Crossi**	**13.84**	**169**	Pn	**Pn**	**00 21 02.9**	**-1.3**
	0.1nm,0.3s,baz=5.2,slow=2.0,SNR=3.9						
LEM	**Lembang**	**15.38**	**260**	LR	LR	00 28 46.5	
	comp=Z,858nm,19.4s,baz=68,slow=43						
WRAB	**Tennant Creek**	**19.02**	**145**	*eP*	**P**	**00 22 07.0**	**-2.4**
	10nm,0.9s						
WRA	**Warramunga Arr**	**19.02**	**145**	P	**P**	**00 22 07.8**	**-1.7**
	0.1nm,0.3s,baz=319,slow=13,SNR=17						
ASAR	**Alice Springs**	**21.87**	**152**	P	**P**	**00 22 40.6**	**+0.3**
	12nm,0.9s,baz=345,slow=17,SNR=48						
ASAR				PcP	**PcP**	**00 26 39.4**	**0.0**
	0.4nm,0.6s,baz=329,slow=1.0,SNR=6.5						
PMG	**Port Moresby**	**24.58**	**103**	P	**P**	**00 23 07.3**	**-0.2**
	16nm,1.0s,baz=319,slow=9.0,SNR=3.3						
PSI	**Prapat**	**25.01**	**286**	P	**P**	**00 23 12.2**	**+0.8**
	1.7nm,0.3s,baz=343,slow=17,SNR=4.7						
STKA	**Stephens Creek**	**32.45**	**149**	P	**P**	**00 24 17.4**	**-0.1**
	1.2nm,0.8s,baz=326,slow=10,SNR=2.8						
CMAR	**Chiang Mai Arr**	**32.78**	**315**	P	**P**	**00 24 20.8**	**+0.2**
	3.0nm,0.8s,baz=141,slow=7.2,SNR=14						
KSAR	**Wonju Array Be**	**41.92**	**6**	P	**P**	**00 25 37.3**	**-0.4**
KSRS	**Korea Array**	**41.94**	**6**	P	**P**	**00 25 37.3**	**-0.5**
	0.8nm,0.5s,baz=98,slow=14,SNR=2.5						
USRK	**Ussuriysk Ar.**	**49.10**	**9**	P	**P**	**00 26 34.2**	**-0.2**
	2.7nm,0.8s,baz=197,slow=6.1,SNR=5.6						
ULN	**Ulaanbaatar**	**53.91**	**347**	*eP*	**P**	**00 27 10.9**	**+0.3**
	15nm,1.3s						
SONM	**Songino Array**	**54.04**	**346**	P	**P**	**00 27 11.7**	**+0.3**
	1.8nm,0.5s,baz=160,slow=9.0,SNR=3.2						
MKAR	**Makanchi Array**	**62.34**	**330**	P	**P**	**00 28 09.7**	**+0.2**
	1.6nm,0.6s,baz=132,slow=8.1,SNR=15						
AAK	**Ala-Archa**	**64.11**	**322**	P	**P**	**00 28 21.9**	**+0.5**
	1.6nm,0.6s,baz=131,slow=7.6,SNR=5.9						
AAK	**Ala-Archa**	**64.11**	**322**	*eP*	**P**	**00 28 21.7**	**+0.3**
	15nm,1.8s						
ZALV	**Zalesovo Beam**	**66.30**	**337**	P	**P**	**00 28 34.4**	**-0.8**
	5.4nm,0.9s,baz=130,slow=5.7,SNR=13						
KURBB	**Kurchatov Arra**	**66.75**	**331**	P	**P**	**00 28 38.1**	**+0.1**
	2.9nm,0.8s,baz=136,slow=5.9,SNR=21						
KURK	**Kurchatov**	**66.77**	**331**	P	**P**	**00 28 38.1**	**0.0**
KKAR	**Karatay Array**	**66.83**	**321**	*eP*	**P**	**00 28 39.0**	**+0.1**
	0.2nm,0.3s						
GEYT	**Alibeck**	**73.21**	**312**	P	**P**	**00 29 18.4**	**+0.3**
	0.9nm,0.7s,baz=197,slow=4.6,SNR=3.7						
ABKAR	**Akbulak array**	**76.17**	**323**	*eP*	**P**	**00 29 34.8**	**-0.2**
	1.5nm,0.8s						
KBZ	**Khabaz**	**85.84**	**314**	P	**P**	**00 30 26.7**	**+0.1**
	1.0nm,0.8s,baz=141,slow=6.6,SNR=4.4						
BRTR	**Keskin Array B**	**92.23**	**309**	P	**P**	**00 30 56.7**	**-0.5**
	0.4nm,0.8s,baz=91,slow=6.5,SNR=3.6						
TORD	**Torodi Ar. Bea**	**121.36**	**283**	PKP	**PKPdf**	**00 36 40.5**	**-0.5**
	0.5nm,0.9s,baz=208,slow=2.8,SNR=2.8						

IDC 25 00:18:35.1±2.9,**36°44N**×**143°93E**,**h0**km,**mb3.5**/3, **mb1 3.7**/4,**mb1mx3.3**/46,**mbtmp3.5**/4,**ML3.1**/1,**Error ellipse: s-maj=80.6km s-min=29.9km az=59.0,Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MJAR	**Matsushiro Arr**	**4.61**	**273**	Pn	Pn	00 19 45.8	-0.2
	0.8nm,0.3s,baz=96,slow=16,SNR=4.1						
H11N2	**WAKE ISLAND Hy**	**26.12**	**123**	T	T	00 51 35.1	
	baz=314,slow=75,SNR=5.8						
H11N1	**WAKE ISLAND Hy**	**26.13**	**123**	T	T	00 51 45.9	
	baz=314,slow=75,SNR=4.5						
H11N3	**WAKE ISLAND Hy**	**26.14**	**123**	T	T	00 51 35.0	
	baz=314,slow=75,SNR=4.1						
H11S1	**WAKE ISLAND Hy**	**26.86**	**126**	T	T	00 52 39.1	
	baz=129,slow=74,SNR=4.7						
H11S3	**WAKE ISLAND Hy**	**26.86**	**126**	T	T	00 52 38.3	
	baz=316,slow=74,SNR=3.5						
KURBB	**Kurchatov Arra**	**47.95**	**309**	P	P	00 27 14.9	-0.3
	0.5nm,0.7s,baz=83,slow=7.5,SNR=5.9						
WRA	**Warramunga Arr**	**56.80**	**191**	P	P	00 28 21.1	-0.1
	0.5nm,0.7s,baz=8.5,slow=7.4,SNR=2.9						
ASAR	**Alice Springs**	**60.52**	**191**	P	P	00 28 47.1	0.0
	0.4nm,0.7s,baz=15,slow=12,SNR=3.8						

NEIC 25 00:25:05.0,13°73S×**76°38W,h48**km,**mb4.0**/5,**After ARE.,Near coast of Peru**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
NNA	**Nana**	**1.79**	**345**	*e*Pn	Pn	00 25 35.5	+1.9
NNA				*e*Sn	Sn	00 25 55.3	+0.2
SAML	**Samuel**	**13.78**	**71**	*e*Pn	Pn	00 28 18.2	+0.4
SDV	**Santo Domingo**	**23.18**	**15**	*eP*	P	00 30 07.6	-0.4
	3.9nm,0.8s						
RSSD	**Black Hills**	**62.85**	**338**	*eP*	P	00 35 26.1	-0.1
	0.8nm,0.5s						
DUG	**Dugway, Tooele**	**63.43**	**329**	*eP*	P	00 35 26.4	-3.6
	6.7nm,0.7s						
HWUT	**Hardware Ranch**	**63.92**	**331**	*eP*	P	00 35 33.2	0.0
	0.7nm,0.3s						
NEW	**Newport**	**71.55**	**333**	*eP*	P	00 36 21.4	+0.3
	1.2nm,0.8s						

IDC 25 00:38:31.0±1.1,**3°62S**×**123°82E**,**h0**km,**mb3.5**/4, **mb1 3.7**/5,**mb1mx3.4**/46,**mbtmp3.5**/5,**ML4.0**/1,**Error ellipse: s-maj=232.5km s-min=21.7km az=62.0, Sulawesi**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**19.20**	**149**	P	P	00 42 55.1	-1.5
	0.5nm,0.3s,baz=318,slow=14,SNR=5.4						
ASAR	**Alice Springs**	**22.18**	**155**	P	P	00 43 30.1	+1.1
	1.4nm,0.8s,baz=337,slow=14,SNR=8.4						
MKAR	**Makanchi Array**	**62.11**	**329**	P	P	00 48 54.9	+1.0
	0.3nm,0.8s,baz=126,slow=7.3,SNR=3.3						
ZALV	**Zalesovo Beam**	**65.93**	**336**	P	P	00 49 18.6	-0.1
	0.3nm,0.3s,baz=148,slow=6.8,SNR=2.9						
KURBB	**Kurchatov Arra**	**66.49**	**330**	P	P	00 49 21.3	-1.1
	0.3nm,0.7s,baz=144,slow=5.1,SNR=4.7						

*ISCJB **25** 00:46:08.1±0.9,38°77N±0.05°×142°1E±0.1,h56km±6km, mb4.0/18,MS4.0/1,Error ellipse: s-maj=13.4km s-min=7.5km az=12.1*
*JMA **25** 00:46:08.7±0.1,38°80N×142°11E,h43km±2km,M3.9 JMA Felt II J1.*
*IDC **25** 00:46:11.1±2.2,38°65N×142°04E,h73km±21km,mb3.6/14, mb1 3.7/18,mb1mx3.5/60,mbtmp3.9/18,MS4.0/1, Ms1 4.0/1,ms1mx2.9/44,Error ellipse: s-maj=20.1km s-min=12.8km az=90.0*
*NEIC **25** 00:46:12.4±0.8,38°68N×142°02E,h85km±6km,mb4.4/4, Error ellipse: s-maj=9.9km s-min=6.3km az=118.0*

ISC 25 00:46:08.4±1.5,**38°76N**±0.05°×**142°1E**±0.1,**h44**km±12km, **n40,** σ**19**:**11**/**35**,**mb4.0**/18,**Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**0.47**	**313**	P	**Pn**	**00 46 18.9**	**-0.1**
OFUJ				S	**Sn**	**00 46 25.9**	**-0.6**
JIO	**Ouri**	**0.67**	**243**	P	**Pn**	**00 46 21.9**	**+0.3**
JIO				S	**Sn**	**00 46 30.8**	**-0.2**
JMK	**Ichinoseki**	**0.72**	**286**	P	**Pn**	**00 46 22.4**	**+0.1**
JMK				S	**Sn**	**00 46 32.0**	**-0.3**
JOM	**Ohasama**	**0.96**	**318**	P	**Pn**	**00 46 25.4**	**0.0**
JOM				S	**Sn**	**00 46 37.5**	**-0.4**
JOU	**Okura**	**1.20**	**251**	P	**Pn**	**00 46 29.5**	**+0.7**
JOU				*e*S	**Sn**	**00 46 43.1**	**-0.9**
JRG	**Rokugo**	**1.31**	**299**	P	**Pn**	**00 46 30.6**	**+0.3**
JYA	**Kaneyama**	**1.38**	**277**	P	**Pn**	**00 46 31.7**	**+0.5**
ERM	**Erimo**	**3.35**	**13**	*e*Pn	**Pn**	00 47 08.7	+5.5
MAJO	**Matsushiro**	**3.81**	**236**	*e*Pn	**Pn**	**00 47 07.8**	**+3.2**
MAT	**Matsushiro**	**3.81**	**236**	P	Pn	00 47 08.1	+3.5
MAT				*e*S	Sn	00 47 54.9	+6.8
MJAR	**Matsushiro Arr**	**3.81**	**236**	P	**Pn**	**00 47 07.1**	**+2.5**
	3.7nm,0.3s,baz=39,slow=11,SNR=18						
JHJ	**Hachijo jima 2**	**5.94**	**199**	P	**Pn**	**00 47 35.4**	**+1.6**
	baz=253,slow=19,SNR=1.8						
JHJ				S	**Sn**	**00 48 38.8**	**-1.7**
	9.3nm,0.3s,baz=253,slow=19,SNR=2.7						
USRK	**Ussuriysk Ar.**	**9.34**	**309**	P	**Pn**	**00 48 22.5**	**+2.2**
	0.4nm,0.3s,baz=127,slow=13,SNR=8.5						
MDJ	**Mudanjiang**	**11.04**	**306**	*e*Pn	Pn	00 48 47.1	+3.5
KLR	**Kul'dur**	**12.84**	**328**	P	Pn	00 49 12.4	+4.3
	0.1nm,0.3s,baz=159,slow=16,SNR=3.0						
YAK	**Yakutsk**	**24.52**	**346**	*eP*	**P**	**00 51 22.5**	**-0.8**
	18nm,0.5s						
SEY	**Seymchan**	**24.99**	**11**	P	**P**	**00 51 28.2**	**+0.6**
	1.6nm,0.6s,baz=209,slow=7.6,SNR=6.6						
H11N2	**WAKE ISLAND Hy**	**28.61**	**124**	T	T	01 22 26.6	
	baz=317,slow=75,SNR=916						
H11N1	**WAKE ISLAND Hy**	**28.62**	**124**	T	T	01 22 27.3	
	baz=317,slow=75,SNR=910						
H11N3	**WAKE ISLAND Hy**	**28.63**	**124**	T	T	01 22 27.9	
	baz=317,slow=75,SNR=879						
H11S1	**WAKE ISLAND Hy**	**29.38**	**126**	T	T	01 23 24.6	
	baz=318,slow=76,SNR=120						
H11S3	**WAKE ISLAND Hy**	**29.40**	**126**	T	T	01 23 25.5	
	baz=318,slow=76,SNR=124						
H11S2	**WAKE ISLAND Hy**	**29.40**	**126**	T	T	01 23 26.6	
	baz=318,slow=76,SNR=114						
ZALV	**Zalesovo Beam**	**41.18**	**311**	P	**P**	**00 53 48.5**	**+0.2**
	2.3nm,0.5s,baz=90,slow=7.6,SNR=13						
MKAR	**Makanchi Array**	**43.69**	**301**	P	**P**	**00 54 08.1**	**-0.8**
	0.9nm,0.5s,baz=86,slow=11,SNR=12						
KURK	**Kurchatov**	**45.32**	**307**	*eP*	**P**	**00 54 21.4**	**-0.4**
	8.6nm,0.7s						
KURBB	**Kurchatov Arra**	**45.40**	**307**	P	**P**	**00 54 21.4**	**-0.9**
	5.4nm,0.7s,baz=82,slow=8.3,SNR=42						
PPLA	**Purkeypile**	**45.44**	**36**	*eP*	**P**	**00 54 24.1**	**+1.4**
	1.7nm,0.6s						
COLA	**College**	**47.33**	**33**	*eP*	**P**	**00 54 38.0**	**+0.7**
	1.0nm,0.6s						
ILAR	**Eielson Array**	**47.74**	**33**	P	**P**	**00 54 40.5**	**0.0**
	0.7nm,0.6s,baz=266,slow=6.4,SNR=10.0						
BVAR	**Borovoye Array**	**49.84**	**311**	P	**P**	**00 54 57.0**	**+0.2**
	1.2nm,0.5s,baz=72,slow=7.9,SNR=12						
INK	**Inuvik**	**52.60**	**28**	P	**P**	**00 55 18.4**	**+1.2**
	1.7nm,0.9s,baz=271,slow=4.8,SNR=4.8						
PSI	**Prapat**	**53.16**	**239**	LR	LR	01 19 09.7	
	comp=Z,133nm,20.5s,baz=312,slow=37						
ARU	**Arti**	**55.44**	**318**	P	**P**	**00 55 38.1**	**-0.1**
	1.4nm,0.4s,baz=351,slow=1.5,SNR=4.9						
WRA	**Warramunga Arr**	**58.85**	**189**	P	**P**	**00 56 01.5**	**-1.0**
	1.1nm,0.6s,baz=6.0,slow=7.5,SNR=6.2						
YKA	**Yellowknife Ar**	**62.04**	**31**	P	**P**	**00 56 24.2**	**+0.4**
	0.2nm,0.6s,baz=302,slow=6.7,SNR=6.8						
ASAR	**Alice Springs**	**62.57**	**188**	P	**P**	**00 56 26.8**	**-1.1**
	0.4nm,0.7s,baz=11,slow=5.9,SNR=7.7						
FINES	**FINESS Array B**	**67.55**	**332**	P	**P**	**00 56 59.7**	**0.0**
	1.1nm,0.6s,baz=48,slow=8.5,SNR=6.2						
AKASG	**Malin Array Be**	**73.27**	**322**	P	**P**	**00 57 34.1**	**-0.7**
	0.4nm,0.4s,baz=45,slow=6.4,SNR=5.9						
BRTR	**Keskin Array B**	**78.12**	**312**	P	**P**	**00 58 03.2**	**+0.2**
	0.3nm,0.4s,baz=109,slow=4.0,SNR=7.4						

*IDC **25** 00:49:20.1±1.5,8°87N×82°41W,h0km,mb4.0/10, mb1 4.3/13,mb1mx4.0/33,mbtmp4.0/13,ML2.7/2,MS4.0/1, Ms1 4.0/1,ms1mx3.6/29,Error ellipse: s-maj=57.4km s-min=16.0km az=31.0*
*ISCJB **25** 00:49:22.3±0.3,8°51N±0.04°×82°73W±0.03,h28km, mb4.5/131,Error ellipse: s-maj=6.7km s-min=2.7km az=26.1*
*NEIC **25** 00:49:22.6±2.1,8°24N×82°83W,h26km±15km,mb4.5/123, MD4.5(HDC),Error ellipse: s-maj=9.4km s-min=5.9km az=213.0*
NEIC Felt [III] at Boquete and [II] at David, Panama. Also felt at Los Algarrobos. Felt at Burica, Corredor, Laurel and San Vito, Costa Rica.
*CASC **25** 00:49:22.9±3.0,8°41N×82°82W,h6km±11km,MD4.5, ML3.7*
*BJI **25** 00:49:23.4,8°30N×82°90W,h29km,mB5.0/1,Ms4.9/1, Ms7 4.4/1*

ISC 25 00:49:21.4±0.6,**8°24N**±0.06°×**82°86W**±0.04,**h20**km±2km, **n386,** σ**15**:**53**/403,**mb4.5**/131,**3C-1D,Panama-Costa Rica border region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ACR	**Cerro Adams**	**0.51**	**324**	*eP*	**Pg**	**00 49 30.8**	**-1.0**
ACR				*e*S	**Sg**	**00 49 37.1**	**-1.7**
BRU	**Baru**	**0.64**	**28**	*eP*	**Pg**	**00 49 33.3**	**-1.0**
BUS	**Buena Vista**	**1.58**	**326**	*eP*	**Pn**	**00 49 48.3**	**-0.4**
BUS				*e*S	**Sn**	**00 50 08.9**	**0.0**
QCR	**Quepos**	**1.75**	**313**	*eP*	**Pn**	**00 49 50.4**	**-0.2**
QCR				*e*S	**Sn**	**00 50 12.7**	**+0.4**
URSC	**Urasca**	**1.83**	**330**	*eP*	**Pn**	**00 49 52.2**	**+0.3**
URSC				*e*S	**Sn**	**00 50 14.7**	**+0.2**
HDC	**Heredia**	**2.15**	**325**	*eP*	**Pn**	**00 49 57.5**	**+1.3**
HDC				*e*S	**Sb**	**00 50 26.0**	**0.0**
HDC	**Heredia**	**2.15**	**325**	*e*Pn	**Pn**	**00 49 55.2**	**-1.0**
CGA2	**Cerro Gallo 2**	**2.37**	**318**	*eP*	**Pn**	**00 50 01.4**	**+2.1**
PNME	**Penonome**	**2.52**	**84**	*eP*	**Pn**	**00 50 00.7**	**-0.6**
PNME				*e*S	**Sn**	**00 50 30.5**	**-1.0**
JCR	**Jicaral**	**2.74**	**306**	*eP*	**Pn**	**00 50 05.8**	**+1.5**
JCR				*e*S	**Sn**	**00 50 38.2**	**+1.3**
JTS	**JuntasAbangare**	**2.90**	**315**	Pn	**Pn**	**00 50 08.7**	**+2.2**
	159nm,0.3s,baz=110,slow=12,SNR=118						
JTS				Sn	**Sb**	**00 50 45.5**	**-2.1**
	120nm,0.3s,baz=301,slow=20,SNR=9.6						
JTS				LR	LR	00 51 27.7	
	comp=Z,3μm,20.3s,baz=84,slow=44						
JTS	**JuntasAbangare**	**2.90**	**315**	*e*Pn	**Pn**	**00 50 06.7**	**+0.2**
JTS				Sn	**Sb**	**00 50 45.5**	**-2.1**
ZANG	**Zanguenga, Cho**	**3.05**	**76**	*eP*	**Pn**	**00 50 08.2**	**-0.3**
ZANG				*e*S	**Sn**	**00 50 48.0**	**+3.6**
BCIP	**Isla Barro Col**	**3.13**	**73**	*eP*	**Pn**	**00 50 09.5**	**-0.1**
BCIP				*e*S	**Sn**	**00 50 45.8**	**-0.7**
BCIP	**Isla Barro Col**	**3.13**	**73**	*e*Pn	**Pn**	**00 50 09.7**	**0.0**
VCR	**Vista de Mar**	**3.32**	**305**	*eP*	**Pn**	**00 50 12.8**	**+0.5**
UPA	**Univ. de Panam**	**3.38**	**77**	*eP*	**Pb**	**00 50 17.6**	**-2.9**
ESPN	**Las Esperanzas**	**4.18**	**340**	*eP*	**Pn**	**00 50 24.8**	**+0.7**
ESPN				AML	AML	00 51 41.4	
	comp=E,244nm,0.8s						
CRUN	**El Crucero**	**5.03**	**318**	*eP*	**Pn**	**00 50 39.6**	**+3.7**
MGAN	**Managua**	**5.12**	**320**	*eP*	**Pn**	**00 50 40.1**	**+3.1**
XAVN	**Gruta Xavier**	**5.17**	**319**	*eP*	**Pn**	**00 50 40.9**	**+3.2**
COPN	**Copaltepe**	**5.37**	**317**	*eP*	**Pn**	**00 50 42.9**	**+2.4**
MOMN	**Momotombo**	**5.50**	**319**	*eP*	**Pn**	**00 50 45.2**	**+2.8**
CNGN	**Cerro Negro**	**5.67**	**319**	*eP*	**Pn**	**00 50 47.5**	**+2.8**
TEL3	**Telica 3**	**5.82**	**318**	*eP*	**Pn**	**00 50 49.8**	**+3.1**
ESTN	**Estel**	**5.94**	**325**	*eP*	**Pn**	**00 50 51.3**	**+2.9**
CSGN	**Cosiguina Volc**	**6.59**	**316**	*eP*	**Pn**	**00 51 00.3**	**+3.0**
DBBC	**Dabeiba**	**6.71**	**100**	*eP*	**Pn**	**00 51 03.3**	**+4.4**
HELC	**Santa Helena**	**7.55**	**105**	*eP*	**Pn**	**00 51 14.1**	**+3.3**
GUYC	**Guyana, Colomb**	**8.00**	**111**	*eP*	**Pn**	**00 51 20.9**	**+3.9**
TOLC	**Tolima**	**8.33**	**115**	*eP*	**Pn**	**00 51 24.7**	**+3.3**
POPC	**Popayan, Colom**	**8.36**	**132**	*eP*	**Pn**	**00 51 25.4**	**+3.6**
NORC	**Norcasia**	**8.37**	**108**	*eP*	**Pn**	**00 51 25.4**	**+3.6**
CRUC	**La Cruz**	**8.86**	**138**	*eP*	Pn	00 51 33.9	+5.1
OTAV	**Otavalo**	**9.08**	**151**	*e*Pn	**Pn**	**00 51 31.6**	**-0.3**
PRAC	**Prado**	**9.12**	**119**	*eP*	**Pn**	**00 51 34.4**	**+2.4**
ROSC	**El Rosal**	**9.13**	**111**	Pn	**Pn**	**00 51 33.1**	**+0.6**
	comp=E,0.4nm,0.3s,baz=288,slow=19,SNR=2.0						
ROSC	**El Rosal**	**9.13**	**111**	*e*Pn	**Pn**	**00 51 36.4**	**+3.9**
CHIC	**Chingaza**	**9.76**	**111**	*eP*	**Pn**	**00 51 45.1**	**+4.0**
RUSC	**La Rusia**	**9.98**	**103**	*eP*	**Pn**	**00 51 48.0**	**+3.8**
MTDJ	**Mount Denham**	**11.20**	**27**	*e*Pn	**Pn**	**00 52 01.8**	**+1.2**
CMIG	**Matias Romero**	**14.65**	**308**	Pn	**Pn**	**00 52 48.0**	**+0.3**
	comp=E,0.3nm,0.3s,baz=145,slow=18,SNR=3.3						
SDDR	**Presa de Saban**	**15.50**	**45**	*e*Pn	**Pn**	**00 52 58.6**	**-0.5**
	comp=E,31nm,1.1s						
348A	**Jackson**	**23.53**	**349**	P	**P**	**00 54 31.9**	**+1.6**
	baz=168						
347A	**Saraland**	**23.65**	**348**	P	**P**	**00 54 32.9**	**+1.4**
	baz=166						
ZAIG	**Zacatecas**	**23.81**	**310**	*eP*	**P**	**00 54 35.3**	**+1.8**
	comp=E,11nm,1.3s						
442A	**Mamou**	**24.08**	**339**	P	**P**	**00 54 36.9**	**+1.3**
	baz=156						
248A	**Dixon Mills**	**24.17**	**350**	P	**P**	**00 54 37.1**	**+0.7**
	baz=168						
344A	**Westbrook Farm**	**24.24**	**343**	P	**P**	**00 54 37.3**	**+0.3**
	baz=161,SNR=8.9						
247A	**Quitman**	**24.29**	**348**	P	**P**	**00 54 38.6**	**+1.1**
	baz=166						
934A	**Benavides**	**24.30**	**324**	P	**P**	**00 54 40.5**	**+2.8**
	baz=140						
835A	**Beeville**	**24.44**	**327**	P	**P**	**00 54 39.3**	**+0.4**
	baz=142						
PTGA	**Pitinga**	**24.50**	**110**	P	**P**	**00 54 40.4**	**+0.7**
	comp=E,2.9nm,0.7s,baz=268,slow=12,SNR=5.0						
PTGA	**Pitinga**	**24.50**	**110**	*eP*	**P**	**00 54 42.0**	**+2.3**
	comp=E,6.9nm,1.0s						
245A	**Little AP, Sta**	**24.56**	**346**	P	**P**	**00 54 40.6**	**+0.6**
	baz=163,SNR=5.4						
342A	**Flagon Creek P**	**24.65**	**340**	P	**P**	**00 54 42.2**	**+1.3**
	baz=157						
244A	**Avery, Jackson**	**24.78**	**344**	P	**P**	**00 54 43.1**	**+1.1**
	baz=161						
HKT	**Hockley**	**24.79**	**332**	*eP*	**P**	**00 54 43.5**	**+1.5**
	comp=E,12nm,1.2s						
147A	**Livingston**	**24.83**	**349**	P	**P**	**00 54 43.4**	**+1.0**
	baz=167						
341A	**Kurthwood**	**24.91**	**339**	P	**P**	**00 54 43.9**	**+0.8**
	baz=155						
146A	**Union**	**24.95**	**348**	P	**P**	**00 54 44.0**	**+0.5**
	baz=165						
LRAL	**Lakeview Retre**	**24.97**	**352**	*eP*	**P**	**00 54 44.6**	**+0.8**
	comp=E,29nm,1.1s						
GOGA	**Godfrey**	**25.06**	**359**	*eP*	**P**	**00 54 45.3**	**+0.8**
	comp=E,14nm,0.9s						
832A	**Faith Ranch, C**	**25.66**	**323**	P	**P**	**00 54 49.4**	**-0.6**
	baz=138						
338A	**Crockett**	**25.77**	**335**	P	**P**	**00 54 51.7**	**+0.7**
	baz=151						
Y47A	**UCPARC, Winfie**	**25.95**	**350**	P	**P**	**00 54 53.2**	**+0.5**
	baz=169						
SAML	**Samuel**	**26.00**	**131**	*eP*	**P**	**00 54 52.5**	**-0.7**
SAML				*ep*P	**pP**	**00 54 55.1**	**-4.1**
239A	**Gary**	**26.01**	**337**	P	**P**	**00 54 52.8**	**-0.4**
	baz=153						
Y46A	**Houston**	**26.11**	**349**	P	**P**	**00 54 54.6**	**+0.5**
	baz=166,SNR=5.6						
534A	**Blanco**	**26.16**	**328**	P	**P**	**00 54 55.8**	**+1.3**
	baz=143						
Y45A	**Yeager Farm, C**	**26.24**	**347**	P	**P**	**00 54 55.3**	**+0.1**
	baz=165,SNR=5.1						
Z40A	**Long Farm, Mag**	**26.74**	**340**	P	**P**	**00 54 59.8**	**+0.1**
	baz=156						
KMSC	**Kings Mountain**	**26.82**	**3**	P	**P**	**00 55 01.0**	**+0.6**
	baz=183						
OXF	**Oxford**	**26.83**	**348**	*eP*	**P**	**00 55 02.0**	**+1.5**
	comp=E,13nm,0.9s						
CCAR	**Cane Creek**	**26.84**	**343**	*eP*	**P**	**00 55 04.1**	**+3.4**
	comp=E,22nm,0.6s						
SWET	**Sewanee**	**27.00**	**354**	*eP*	**P**	**00 55 02.6**	**+0.5**
	comp=E,2.7nm,0.9s						
WLAR	**White Oak Lake**	**27.04**	**341**	*eP*	**P**	**00 55 03.6**	**+1.2**
	comp=E,24nm,1.2s						
433A	**Art**	**27.05**	**328**	P	**P**	**00 55 02.9**	**+0.2**
	baz=143						
JCT	**Junction City**	**27.22**	**327**	*eP*	**P**	**00 55 05.7**	**+1.6**
	comp=E,6.3nm,0.9s						
Y40A	**Okolona**	**

R39A **Chumby, Stover** 31.32 344 P P 00 55 39.3 -1.2
baz=160
S37A **Fort Scott** 31.32 342 P P 00 55 39.0 -1.5
baz=157,SNR=5.6
MNTX **Cornudas Mount** 31.37 321 eP P 00 55 42.6 +1.6
comp=E,4.2nm,1.1s
R38A **Fenwick Farm,** 31.44 343 P P 00 55 40.4 -1.1
baz=159
SDMD **Soldier's Deli** 31.51 9 eP P 00 55 44.1 +2.1
comp=E,9.5nm,1.5s
S36A **Lake Cedric, C** 31.54 340 P P 00 55 41.1 -1.3
baz=155
Q40A **Laux Farm, Aux** 31.73 346 P P 00 55 42.7 -1.3
baz=162
S35A **Otter Creek Ra** 31.75 339 P P 00 55 42.9 -1.3
baz=154
R37A **Teagarden Farm** 31.83 342 P P 00 55 43.5 -1.5
baz=157
ACSO **Alum Creek Sta** 31.86 360 eP P 00 55 47.0 +1.8
comp=E,14nm,1.1s
R36A **Gordon, Harris** 32.05 341 P P 00 55 45.8 -1.1
baz=156
Q38A **Cooks Store, C** 32.08 344 P P 00 55 46.0 -1.2
baz=160
P40A **Paris** 32.23 347 P P 00 55 46.5 -1.9
baz=163,SNR=5.3
SFIN **Lafayette** 32.23 354 P P 00 55 47.2 -1.2
baz=172
SFIN **Lafayette** 32.23 354 eP P 00 55 48.2 -0.1
comp=E,9.8nm,0.8s
Q37A **Longview Farm,** 32.24 343 P P 00 55 47.1 -1.5
baz=158
R34A **Isabella, Hill** 32.63 339 P P 00 55 51.1 -0.8
baz=153
HDIL **Hopedale** 32.69 351 P P 00 55 51.6 -0.9
baz=168
HDIL **Hopedale** 32.69 351 eP P 00 55 55.2 +2.8
comp=E,14nm,0.8s
O40A **La Belle** 32.76 347 P P 00 55 52.2 -0.8
baz=163
P37A **Lathrop** 32.87 344 P P 00 55 53.1 -1.0
baz=159
R33A **Olander Ranch,** 32.90 338 P P 00 55 53.3 -1.1
baz=152
O39A **Kirksville** 33.03 346 P P 00 55 54.7 -0.8
baz=162
Q34A **Chapman** 33.07 340 P P 00 55 54.9 -0.9
baz=154
KSU1 **Kansas State U** 33.12 340 P P 00 55 55.0 -1.3
baz=155
KSU1 **Kansas State U** 33.12 340 eP P 00 55 55.3 -1.0
comp=E,8.8nm,0.8s
BRNJ **Basking Ridge** 33.15 12 eP P 00 55 59.9 +3.5
comp=E,48nm,1.5s
P36A **Good Intent, A** 33.15 342 P P 00 55 54.9 -1.6
baz=157,SNR=9.6
R32A **Long Quarter,** 33.28 337 P P 00 55 57.0 -0.6
baz=151
P35A **Duane Minner,** 33.32 341 P P 00 55 57.4 -0.5
baz=156
O37A **Wolven Farm, M** 33.35 344 P P 00 55 57.2 -1.0
baz=159
121A **Cookes Peak, D** 33.44 320 P P 00 56 01.5 +2.2
baz=131
Q33A **Connelly Farm,** 33.45 339 P P 00 55 58.4 -0.8
baz=152
P34A **Walnut Farm, R** 33.59 340 P P 00 55 59.6 -0.8
baz=154
SRIG **Santa Rosalia** 33.66 308 eP P 00 56 02.4 +1.4
comp=E,25nm,1.3s
319A **Douglas** 33.70 317 eP P 00 56 02.8 +1.2
comp=E,15nm,1.1s
319A epP sP 00 56 13.3 +3.2
N38A **Joes South For** 33.71 346 P P 00 56 01.2 -0.2
baz=161
Q32A **Meitler Ranch,** 33.72 338 P P 00 56 00.5 -1.0
baz=151
N37A **Lee Faris, Mou** 33.92 344 P P 00 56 02.1 -1.1
baz=160
LPM **Los Pinos Moun** 33.93 323 eP P 00 56 04.5 +0.9
AAM **Ann Arbor** 33.94 359 eP P 00 56 04.3 +1.1
comp=E,15nm,1.3s
Y22D **IRIS PASSCAL I** 33.94 323 eP P 00 56 04.2 +0.5
comp=E,19nm,0.4s
O35A **Humboldt** 33.95 342 P P 00 56 02.9 -0.6
baz=156
CBKS **Cedar Bluff** 34.02 336 eP P 00 56 05.4 +1.3
comp=E,17nm,0.8s
LENM **Lemitar** 34.04 323 eP P 00 56 04.5 -0.1
O34A **Beatrice** 34.13 341 P P 00 56 04.3 -0.7
baz=155
ANMO **Albuquerque** 34.28 324 P P 00 56 07.9 +1.2
baz=135
ANMO **Albuquerque** 34.28 324 eP P 00 56 06.6 0.0
comp=E,4.7nm,1.3s
P32A **Huiting Farm,** 34.28 338 P P 00 56 05.8 -0.6
baz=152
M38A **Pleasantville** 34.29 346 P P 00 56 05.5 -0.9
baz=162
LAZ **Ladron** 34.30 323 eP P 00 56 06.5 -0.3
M37A **Trindle Farm,** 34.49 345 P P 00 56 07.9 -0.3
baz=160
N34A **Lincoln** 34.66 342 P P 00 56 08.7 -0.9
baz=156
BUF **Buffalo** 34.73 5 eP P 00 56 11.8 +1.7
SCIA **State Center** 34.76 346 eP P 00 56 10.5 0.0
comp=E,62nm,0.6s
T25A **Trinidad** 34.79 329 P P 00 56 11.2 +0.2
baz=140
T25A **Trinidad** 34.79 329 eP P 00 56 11.0 0.0
comp=E,7.8nm,1.5s
L38A **Oak Wood Farm,** 34.92 347 P P 00 56 10.2 -1.7
baz=162,SNR=5.5
L37A **Phoenix Point,** 35.09 346 P P 00 56 12.6 -0.8
baz=161
JFWS **Jewell Farm** 35.15 351 eP P 00 56 15.9 +2.2
comp=E,7.4nm,0.7s
TUC **Tucson** 35.28 317 P P 00 56 17.4 +2.2
baz=127
TUC **Tucson** 35.28 317 eP P 00 56 16.8 +1.6
comp=E,7.6nm,1.1s
K38A **Parkersburg** 35.37 347 P P 00 56 14.7 -0.9
baz=163
M33A **Taylor Creek F** 35.55 341 P P 00 56 16.6 -0.7
baz=155
L35A **Bielow Farm, R** 35.55 344 P P 00 56 16.5 -0.8
baz=158
K37A **Belmond** 35.68 346 P P 00 56 17.2 -1.1
baz=162
BGNE **Belgrade** 35.71 340 P P 00 56 17.5 -1.2
baz=154
BGNE **Belgrade** 35.71 340 eP P 00 56 18.8 +0.2
comp=E,16nm,0.9s
K36A **Gilmore City** 35.75 345 P P 00 56 18.1 -0.9
baz=160
K35A **Storm Lake** 36.03 344 P P 00 56 20.4 -1.0
baz=159
X18A **Snowflake** 36.11 320 eP P 00 56 23.4 +1.0
comp=E,4.7nm,1.0s
J37A **Redenius Farm,** 36.17 347 P P 00 56 22.0 -0.6
baz=162
L32A **Elgin** 36.20 341 P P 00 56 22.5 -0.3
baz=154
J36A **Seneca 1, Swea** 36.37 346 P P 00 56 23.2 -1.1
baz=161
FFD **Franklin Falls** 36.44 14 eP P 00 56 27.4 +2.6
comp=E,58nm,1.5s
214A **Organ Pipe Nat** 36.48 314 P P 00 56 26.7 +1.2
baz=124,SNR=7.1
S22A **4UR Ranch, Cre** 36.51 327 P P 00 56 25.8 -0.1
baz=138
Q24A **Divide** 36.57 330 P P 00 56 26.6 +0.2
baz=141
Q24A **Divide** 36.57 330 eP P 00 56 26.8 +0.4
comp=E,4.9nm,0.9s
I38A **Scanlan Farm,** 36.61 349 P P 00 56 24.8 -1.5
baz=164
J35A **Milford** 36.63 345 P P 00 56 25.0 -1.4
baz=159
L31A **Butterfield Fa** 36.63 340 P P 00 56 25.6 -1.0
baz=153
OGNE **Ogallala** 36.76 335 eP P 00 56 28.1 +0.3
comp=E,36nm,1.2s
X16A **Lo Mia Camp, P** 37.00 319 eP P 00 56 30.6 +0.6
comp=E,5.8nm,0.9s
I35A **Creekview Farm** 37.03 345 P P 00 56 29.0 -0.9
baz=160
MVCO **Mesa Verde** 37.05 325 P P 00 56 30.6 +0.2
baz=135
MVCO **Mesa Verde** 37.05 325 eP P 00 56 31.5 +1.1
comp=E,11nm,1.3s
ECSD **EROS Data Cent** 37.35 344 P P 00 56 30.3 -2.3
baz=157,SNR=5.1
ECSD **EROS Data Cent** 37.35 344 eP P 00 56 32.2 -0.4
comp=E,9.0nm,1.4s
I34A **Hadley** 37.42 345 P P 00 56 32.1 -1.2
baz=159
ISCO **Idaho Springs** 37.44 331 P P 00 56 32.4 -1.4
baz=141
ISCO **Idaho Springs** 37.44 331 eP P 00 56 33.5 -0.3
comp=E,2.5nm,1.1s
H36A **Jessenland, He** 37.46 347 P P 00 56 32.7 -0.8
baz=162
113A **Mohawk Valley,** 37.61 315 eP P 00 56 35.2 +0.3
comp=E,12nm,1.1s
WUAZ **Wupatki** 37.64 320 eP P 00 56 35.0 -0.4
comp=E,9.1nm,1.1s
SMCO **Snowmass** 37.65 329 eP P 00 56 36.3 +0.6
comp=E,4.3nm,1.3s
PV01 **Paradox Valley** 37.74 326 eP P 00 56 36.2 -0.1
Y14A **Wickenburg** 37.75 317 eP P 00 56 37.8 +1.6
comp=E,38nm,1.0s
H35A **Sunnyside Ranc** 37.78 346 P P 00 56 34.5 -1.7
baz=160
SPMN **Marine on St.** 37.84 349 P P 00 56 34.9 -1.8
baz=164
SPMN **Marine on St.** 37.84 349 eP P 00 56 34.8 -1.9
comp=E,18nm,1.1s
J30A **Dallas** 37.87 340 P P 00 56 35.8 -1.2
baz=153
PV05 **Paradox Valley** 37.99 325 eP P 00 56 38.1 -0.3
PV10 **Paradox Valley** 38.17 326 eP P 00 56 39.8 -0.1
H33A **Prehn Over Nor** 38.26 344 P P 00 56 38.8 -1.5
baz=158
H32A **Carlson Farm,** 38.29 343 P P 00 56 38.9 -1.7
baz=156
PV09 **Paradox Valley** 38.31 326 eP P 00 56 41.4 +0.2
I30A **Oacoma** 38.37 341 P P 00 56 40.2 -1.1
baz=153
N23A **Red Feather La** 38.45 331 P P 00 56 41.2 -1.1
baz=142
N23A **Red Feather La** 38.45 331 eP P 00 56 43.0 +0.7
comp=E,6.3nm,1.1s
GLA **Glamis** 38.51 314 eP P 00 56 42.8 +0.2
comp=E,16nm,0.8s
PHWY **Pilot Hill** 38.55 332 eP P 00 56 44.0 +0.9
comp=E,13nm,2.0s
J28A **Allard Ranch,** 38.56 338 P P 00 56 42.4 -0.6
baz=150
F36A **Milaca** 38.60 348 P P 00 56 40.5 -2.6
baz=163,SNR=5.5
Y12C **Blythe** 38.68 316 P P 00 56 46.5 +2.5
baz=124
Y12C **Blythe** 38.68 316 eP P 00 56 44.9 +0.9
comp=E,15nm,1.3s
SUSD **Miller** 38.69 341 P P 00 56 42.9 -1.1
baz=154
J27A **Elkhorn Farm,** 38.70 337 P P 00 56 43.7 -0.5
baz=149
EMMW **East Machias** 38.72 18 eP P 00 56 40.0 -4.1
EMMW epP pP 00 56 45.4 -4.8
PDMCI **Parker Dam,Lak** 38.73 317 P P 00 56 45.9 +1.5
baz=125
I29A **Vivian Onida** 38.76 340 P P 00 56 43.4 -1.1
baz=152
U15A **North Rim** 38.79 321 eP P 00 56 44.3 -0.9
comp=E,4.7nm,1.0s
F35A **Swanville** 38.82 347 P P 00 56 43.4 -1.6
baz=161
G32A **Webster** 38.99 344 P P 00 56 44.9 -1.6
baz=157,SNR=7.1
O20A **White River Ci** 39.01 329 P P 00 56 47.4 +0.5
baz=138
O20A **White River Ci** 39.01 329 eP P 00 56 48.1 +1.1
comp=E,4.1nm,0.9s
W13A **Hualapai Mount** 39.01 318 eP P 00 56 47.2 +0.2
comp=E,6.5nm,1.0s
F33A **5 Mile Ranch,** 39.21 345 P P 00 56 46.4 -1.9
baz=159
G30A **Faulkton** 39.37 342 P P 00 56 47.4 -2.2
baz=154
PKCU **Pink Cliffs** 39.45 322 eP P 00 56 51.4 +0.6
comp=E,18nm,1.2s
KNB **Kanab** 39.49 321 eP P 00 56 52.5 +1.5
comp=E,3.2nm,1.0s
SRU **San Rafael Swe** 39.51 325 eP P 00 56 51.3 +0.2
comp=E,6.0nm,1.0s
D37A **Cotton** 39.63 350 P P 00 56 49.7 -2.1
baz=165
G29A **Hoven** 39.67 341 P P 00 56 50.2 -1.9
baz=153
P18A **Preston Nutter** 39.72 326 eP P 00 56 52.8 -0.1
comp=E,3.8nm,1.2s
LCMT **Little Creek M** 39.75 321 eP P 00 56 53.4 +0.3
comp=E,8.8nm,1.8s
MTPU **Mount Pierson** 39.76 323 eP P 00 56 53.5 +0.2
comp=E,4.0nm,0.7s
D36A **Goodland** 39.79 349 P P 00 56 51.2 -1.9
baz=164
BELC **Belle Mtn. Jos** 39.84 315 P P 00 56 56.1 +2.2
baz=122
P17A **Butcher Ranch,** 39.88 326 eP P 00 56 55.4 +1.2
comp=E,6.1nm,1.2s
H27A **Howes** 39.91 339 P P 00 56 53.4 -0.8
baz=150
PFO **Pinyon Flats O** 39.96 314 eP P 00 56 55.3 +0.4
comp=E,13nm,1.1s
F30A **Leola** 39.97 342 P P 00 56 53.1 -1.5
baz=155
I25A **Rochford** 40.02 336 P P 00 56 54.0 -1.3
baz=147,SNR=5.8
TMUT **Trail Mountain** 40.03 325 eP P 00 56 55.3 -0.2
comp=E,5.0nm,1.3s
K22A **Casper** 40.10 333 P P 00 56 55.3 -0.6
baz=142
K22A **Casper** 40.10 333 eP P 00 56 56.0 +0.1
comp=E,9.4nm,1.1s
C37A **Embarrass** 40.15 350 P P 00 56 54.3 -1.7
baz=166
RSSD **Black Hills** 40.23 336 P P 00 56 56.9 -0.1
baz=146
RSSD **Black Hills** 40.23 336 eP P 00 56 56.3 -0.7
comp=E,5.5nm,1.0s
C36A **Pine Crest Far** 40.29 350 P P 00 56 55.6 -1.6
baz=165
D33A **AnnSam, Waubun** 40.32 346 P P 00 56 55.4 -2.1
baz=160
HEC **Hector,Ludlow** 40.52 316 P P 00 57 00.6 +1.2
baz=123
E30A **Jud** 40.54 343 P P 00 56 58.0 -1.3
baz=155
F27A **Lemmon** 40.97 340 P P 00 57 01.2 -1.7
baz=150
D30A **Buchanan** 41.04 343 P P 00 57 02.1 -1.4
baz=156
PSUT **Pine Spring** 41.08 322 eP P 00 57 06.0 +1.9
comp=E,3.8nm,0.9s
GSC **Goldstone, Bar** 41.10 316 P P 00 57 06.6 +2.4
baz=123
BFSC **Mount Baldy Ra** 41.14 314 P P 00 57 06.5 +1.9
baz=121
F26A **Lodgepole** 41.18 339 P P 00 57 03.7 -0.9
baz=149
D29A **Pettibone, Tap** 41.24 343 P P 00 57 04.1 -1.0
baz=154
CTU **Camp Tracy** 41.29 326 eP P 00 57 06.9 +1.2
comp=E,7.0nm,1.0s
E27A **Carson** 41.30 340 P P 00 57 04.7 -0.9
baz=151
B34A **Aery, Baudette** 41.33 348 P P 00 57 04.2 -1.6
baz=162
TCUT **Toone Canyon** 41.39 327 eP P 00 57 07.0 +0.3
comp=E,16nm,1.1s
C31A **Landman Farms,** 41.40 345 P P 00 57 04.8 -1.5
baz=158
AGMN **Agassiz Nation** 41.41 347 P P 00 57 04.7 -1.8
baz=160
AGMN **Agassiz Nation** 41.41 347 eP P 00 57 04.7 -1.8
comp=E,26nm,1.7s
C30A **Mose, Pekin** 41.51 344 P P 00 57 06.1 -1.2
baz=156
DUG **Dugway, Tooele** 41.55 325 P P 00 57 08.4 +0.5
baz=132
DUG **Dugway, Tooele** 41.55 325 eP P 00 57 08.9 +1.0
comp=E,14nm,1.8s
BW06 **Boulder Array** 41.63 330 P P 00 57 07.1 -1.5
baz=138,SNR=5.3
BW06 **Boulder Array** 41.63 330 eP P 00 57 08.1 -0.5
PD31 **Pinedale Array** 41.63 330 eP P 00 57 08.1 -0.5
PDAR **Pinedale Array** 41.63 330 P P 00 57 06.8 -1.8
comp=E,2.5nm,1.0s,baz=139,slow=9.2,SNR=14
TPNV **Topopah Spring** 41.64 318 P P 00 57 10.6 +1.8
baz=125
TPNV **Topopah Spring** 41.64 318 eP P 00 57 09.3 +0.6
comp=E,6.1nm,1.0s
D28A **Regan** 41.66 342 P P 00 57 07.1 -1.4
baz=153
B32A **Ashes, Strandq** 41.66 346 P P 00 57 06.1 -2.4
baz=159,SNR=8.6
EDW2 **Edwards Air Fo** 41.71 315 P P 00 57 11.1 +1.9
baz=121
FURC **Furnace Creek,** 41.78 317 P P 00 57 11.7 +2.1
baz=124
HWUT **Hardware Ranch** 41.82 327 eP P 00 57 10.3 +0.2
comp=E,11nm,1.0s
A33A **Warroad** 41.91 348 P P 00 57 08.6 -2.0
baz=161,SNR=5.2
MPMC **Manual Prospec** 41.98 316 P P 00 57 12.8 +1.2
baz=123,SNR=5.3
E25A **Miller Ranch,** 42.00 339 P P 00 57 10.4 -1.0
baz=149
R11A **Troy Canyon, C** 42.04 321 P P 00 57 12.8 +0.9
baz=127
R11A **Troy Canyon, C** 42.04 321 eP P 00 57 12.2 +0.3
comp=E,1.6nm,0.8s
SPUT **South Promonto** 42.09 326 eP P 00 57 13.0 +0.6
comp=E,6.1nm,1.0s
B30A **Myrvik Farm, E** 42.16 345 P P 00 57 11.0 -1.5
baz=157
BGU **Big Grassy Mou** 42.16 325 eP P 00 57 13.5 +0.6
comp=E,6.6nm,1.1s
DAC **Darwin (Calif)** 42.17 317 eP P 00 57 14.9 +1.9
comp=E,5.2nm,1.1s
DAC epP sP 00 57 26.4 +4.8
GRAC **Grapevine Rang** 42.41 318 P P 00 57 16.4 +1.5
baz=124
C27A **Sayler Ranch,** 42.41 341 P P 00 57 13.5 -1.1
baz=152
B29A **Wagenman Farm,** 42.45 344 P P 00 57 14.1 -0.8
baz=155,SNR=6.9
D25A **Fairfield** 42.52 339 P P 00 57 14.1 -1.5
baz=149
HVU **Hansel Valley** 42.59 327 eP P 00 57 17.1 +0.7
comp=E,3.8nm,1.0s
REDW **Red Top Meadow** 42.71 330 eP P 00 57 17.5 +0.1
comp=E,13nm,1.1s
SNOW **Snow King Moun** 42.73 330 eP P 00 57 17.9 +0.2
comp=E,8.7nm,1.1s
LOHW **Long Hollow** 42.77 330 eP P 00 57 17.9 0.0
comp=E,6.6nm,1.3s
A29A **Manning Farm,** 42.83 344 P P 00 57 16.8 -1.2
baz=156
MOOW **Moose Ponds** 42.94 330 eP P 00 57 19.1 -0.2
comp=E,5.0nm,1.1s
FXWY **Fox Creek** 42.99 330 eP P 00 57 19.6 -0.2
comp=E,4.9nm,1.3s
IMW **Indian Meadow** 43.14 330 eP P 00 57 20.8 -0.2
comp=E,5.6nm,1.1s
FLWY **Flagg Ranch** 43.16 331 eP P 00 57 21.3 +0.3
comp=E,14nm,1.2s
ULM **Lac du Bonnet** 43.26 348 P P 00 57 18.7 -2.8
comp=E,10nm,1.0s,baz=166,slow=7.3,SNR=8.1
ULM **Lac du Bonnet** 43.26 348 eP P 00 57 19.2 -2.2
comp=E,13nm,1.0s
RLMT **Red Lodge** 43.27 333 P P 00 57 20.8 -1.0
baz=140,SNR=9.4
RLMT **Red Lodge** 43.27 333 eP P 00 57 21.2 -0.7
comp=E,12nm,1.2s
ELK **Elko** 43.31 324 eP P 00 57 23.2 +0.9
comp=E,3.5nm,1.0s
YFT **Old Faithful** 43.50 331 eP P 00 57 25.6 +1.8
comp=E,11nm,1.3s
YMR **Madison River** 43.72 331 eP P 00 57 26.6 +1.1
comp=E,10nm,1.1s
NVAR **Mina Array Bea** 43.82 319 P P 00 57 27.6 +1.2
comp=E,3.2nm,0.9s,baz=132,slow=6.8,SNR=6.2
DGMT **Dagmar** 43.96 340 P P 00 57 26.8 -0.4
baz=149
DGMT **Dagmar** 43.96 340 eP P 00 57 27.2 +0.1
comp=E,6.4nm,0.7s
GCMT **Greycliff** 43.96 333 eP P 00 57 26.7 -0.6
QLMT **Earthquake Lak** 44.06 331 eP P 00 57 29.5 +1.2
BMN **Battle Mountai** 44.30 322 eP P 00 57 31.2 +1.0
comp=E,11nm,0.9s
WAKR **Walker** 44.61 318 eP P 00 57 34.9 +2.1
HLID **Hailey** 44.69 327 P P 00 57 32.6 -0.8
baz=133,SNR=6.2
HLID **Hailey** 44.69 327 eP P 00 57 33.8 +0.4
comp=E,3.9nm,0.9s
BOZ **Bozeman (W)** 44.76 331 P P 00 57 32.9 -0.9
baz=138,SNR=6.2
BOZ **Bozeman (W)** 44.76 331 eP P 00 57 33.5 -0.3
comp=E,9.2nm,1.1s
MCMT **McKenzie Canyo** 44.76 330 eP P 00 57 34.8 +0.9
DLMT **Dillon** 45.02 330 eP P 00 57 36.8 +1.0
comp=E,14nm,1.4s
LRM **Limekiln Ridge** 45.28 331 eP P 00 57 38.2 +0.1
MFID **Camas Ranch** 45.36 326 eP P 00 57 39.5 +0.9
comp=E,7.0nm,1.1s
EGMT **Eagleton** 45.73 335 P P 00 57 40.6 -0.7
baz=141
EGMT **Eagleton** 45.73 335 eP P 00 57 41.2 -0.2
comp=E,9.2nm,1.1s
WVOR **Wild Horse Val** 46.35 323 eP P 00 57 47.0 +0.6
comp=E,7.5nm,0.9s
ORV **Oroville** 46.53 318 eP P 00 57 49.5 +1.9
comp=E,18nm,1.3s
MSO **Missoula** 46.72 331 P P 00 57 47.7 -1.5
baz=136,SNR=5.3
MSO **Missoula** 46.72 331 eP P 00 57 48.9 -0.3
comp=E,4.8nm,1.0s
O03D **Paynes Creek** 47.11 319 P P 00 57 52.7 +0.4
baz=122
JTMT **Jette** 47.54 332 eP P 00 57 55.5 -0.1
F10A **Beach Ranch, E** 47.79 328 eP P 00 57 58.3 +0.7
comp=E,9.3nm,1.3s
M04C **Macdoel** 47.93 321 P P 00 57 58.5 -0.3
baz=123
WALA **Waterton Lakes** 48.32 333 eP P 00 58 01.4 -0.2
comp=E,6.1nm,1.1s
KMRM **Mail Ridge** 48.33 318 eP P 00 58 03.9 +2.1
comp=E,24nm,1.1s
KHMM **Horse Mountain** 48.67 319 eP P 00 58 06.2 +1.7
comp=E,13nm,1.0s
FFC **Flin Flon** 48.82 345 eP P 00 58 05.0 -0.2
comp=E,3.8nm,0.9s
NEW **Newport** 49.27 330 P P 00 58 07.5 -1.3
baz=133
NEW **Newport** 49.27 330 eP P 00 58 08.7 -0.2
comp=E,4.8nm,1.1s
FCC **Fort Churchill** 51.14 353 eP P 00 58 21.5 -1.2
comp=E,16nm,1.2s
YKA **Yellowknife Ar** 58.88 343 P P 00 59 17.1 -1.5
comp=E,0.8nm,0.5s,baz=138,slow=7.0,SNR=31
RES **Resolute Bay** 66.77 357 eP P 01 00 09.3 -1.7
comp=E,3.5nm,0.7s
INK **Inuvik** 68.57 342 P P 01 00 22.2 -0.2
comp=E,6.1nm,1.1s,baz=131,slow=6.5,SNR=9.9
EGAK **Eagle** 69.42 337 eP P 01 00 27.7 -0.1
comp=E,6.4nm,1.2s
SUMG **Summit** 69.59 13 iP P 01 00 36.5 +7.3
DOT **Dot Lake** 70.11 335 eP P 01 00 32.4 +0.3
DOT epP sP 01 00 41.1 +0.2
IL1 **Eielson Array** 71.67 336 eP P 01 00 41.0 -0.6
ILAR **Eielson Array** 71.67 336 P P 01 00 41.1 -0.4
comp=E,1.8nm,1.0s,baz=108,slow=3.6,SNR=12
RND **Reindeer** 72.04 334 eP P 01 00 44.5 +0.6
comp=E,19nm,1.2s
BPAW **Bear Paw Mtn.** 73.15 335 eP P 01 00 50.4 0.0
comp=E,5.9nm,1.0s
MLY **Manley** 73.32 336 eP P 01 00 51.5 0.0
comp=E,11nm,1.3s
COLD **Coldfoot** 73.77 338 eP P 01 00 55.1 +1.1
comp=E,13nm,1.4s
COLD epP sP 01 01 03.1 +0.4
ESDC **Sonseca Array** 76.26 51 P P 01 01 07.1 -1.9
comp=E,0.4nm,0.6s,baz=277,slow=5.5,SNR=3.7
TORD **Torodi Ar. Bea** 82.90 78 P P 01 01 44.5 -1.0
comp=E,1.3nm,0.8s,baz=276,slow=4.0,SNR=6.6
WMQ **Urumqi** 127.48 9 ePKP PKPdf 01 08 25.4 0.0
KSH **Kashi** 128.60 21 ePKP PKPdf 01 08 27.6 -0.2
KSH esPKP 01 08 41.8
KSH ePP PP 01 10 40.0 +7.9

HHC	**Hu-ho-hao-te**	**129.38**	**346**	*e*PKP		**PKPdf**	**01 08 28.4**	**-0.8**
HHC				sPKP			01 08 43.9	
HHC				PP		**PP**	**01 10 41.5**	**+4.5**
HHC				SS		SS	01 27 56.6	-0.3
HHC				LR		LR		
	comp=E,80nm,14.8s							
HHC				LR		LR		
	comp=E,60nm,14.8s							
HHC				LR		LR		
	comp=E,59nm,16.0s							
CD2	**Chengdu**	**140.56**	**351**	PKP		**PKPdf**	**01 08 48.5**	**-1.7**
CMAR	**Chiang Mai Arr**	**153.42**	**356**	PKPbc		**PKPbc**	**01 09 18.6**	**-0.8**
	comp=E,0.5nm,0.3s,baz=320,slow=2.3,SNR=4.6							

*ISCJB **25** 00:49:43.4±0.6,38°.63N±0°.03×31°.17E±0°.04,h4km±9km, Error ellipse: s-maj=6.0km s-min=4.8km az=147.7*
*CSEM **25** 00:49:43.8±0.2,38°.64N×31°.18E,h10km,MD2.6,Error ellipse: s-maj=6.1km s-min=2.8km az=39.0*
*ISK **25** 00:49:43.2,38°.66N×31°.16E,h5km,MD2.6*
ISC 25 00:49:43.8±1.1,38°.63N±0°.03×31°.17E±0°.03,h10km±10km, n17,σ0s32/28,Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
KIZT	**Kizilcal**	**0.61**	**66**	*e*PG		**Pg**	**00 49 55.6**	**0.0**
KIZT	**Kizilcal**	**0.61**	**66**	*e*Pg		**Pg**	**00 49 55.6**	**0.0**
BAGO	**Egridir - ISPA**	**0.71**	**205**	*i* P		**Pg**	**00 49 57.3**	**-0.2**
BAGO				*i* S		**Sg**	**00 50 07.0**	**+0.2**
KDHN	**Kadinhani**	**0.75**	**98**	*i* P		**Pg**	**00 49 58.0**	**-0.4**
KDHN				*i* S		**Sg**	**00 50 08.5**	**+0.4**
KDHN	**Kadinhani**	**0.75**	**98**	P		**Pg**	**00 49 58.0**	**-0.4**
KDHN				S		**Sg**	**00 50 08.5**	**+0.4**
AUKIR	**K¨–rka- Seyitg**	**0.81**	**322**	*i* P		**Pg**	**00 49 59.4**	**-0.2**
AUKIR				*i* S		**Sb**	**00 50 10.9**	**-0.4**
AUKIR	**K¨–rka- Seyitg**	**0.81**	**322**	P		**Pg**	**00 49 59.4**	**-0.2**
AUKIR				S		**Sb**	**00 50 10.9**	**-0.4**
SVRH	**Sivrihisar-ESK**	**0.86**	**19**	*e*PG		**Pg**	**00 49 59.9**	**-0.5**
SVRH				*e*SG		**Sg**	**00 50 11.9**	**+0.3**
SVRH	**Sivrihisar-ESK**	**0.86**	**19**	*e*Pg		**Pg**	**00 49 59.9**	**-0.5**
SVRH				*e*Sg		**Sg**	**00 50 11.9**	**+0.3**
ESKT	**Eskisehir**	**0.92**	**344**	*i* P		**Pg**	**00 50 01.3**	**-0.3**
ESKT				*i* S		**Sb**	**00 50 14.3**	**-0.1**
SEYT	**Eskypehyr**	**0.92**	**344**	P		**Pg**	**00 50 01.3**	**-0.3**
SEYT				S		**Sb**	**00 50 14.3**	**-0.1**
LADK	**Ladik-KONYA**	**1.03**	**114**	*e*PG		**Pb**	**00 50 03.9**	**0.0**
LADK				*e*SG		**Sn**	**00 50 19.1**	**0.0**
LADK	**Ladik-KONYA**	**1.03**	**114**	*e*Pg		**Pb**	**00 50 03.9**	**0.0**
LADK				*e*Sg		**Sn**	**00 50 19.1**	**0.0**
KONT	**Konya--Tatoy**	**1.16**	**126**	*e*PN		**Pg**	**00 50 05.7**	**-0.4**
KONT	**Konya--Tatoy**	**1.16**	**126**	*e*Pn		**Pg**	**00 50 05.7**	**-0.4**
TVSB	**Tavsanli**	**1.56**	**302**	*e*PN		**Pn**	**00 50 12.1**	**+0.3**
TVSB	**Tavsanli**	**1.56**	**302**	*e*Pn		**Pn**	**00 50 12.1**	**+0.3**

*ISCJB **25** 00:54:30.5±0.3,36°.25N±0°.01×72°.22E±0°.02,h79km±3km, mb5.0/206,Error ellipse: s-maj=2.6km s-min=2.1km az=39.6*
*BJI **25** 00:54:31.2,36°.25N×72°.28E,h78km,mb5.1/64,mB5.1/32, Ms4.5/25,Ms7 4.2/19*
*NEIC **25** 00:54:33.0±0.5,36°.23N×72°.18E,h90km±4km,mb5.0/106, Error ellipse: s-maj=3.4km s-min=2.4km az=188.0*
NEIC Felt at Peshawar. Also felt at Asadabad and Kabul, Afghanistan.
*MOS **25** 00:54:33.4±0.9,36°.27N×72°.25E,h106km,mb5.1/62,Error ellipse: s-maj=4.9km s-min=3.3km az=118.0*
*IDC **25** 00:54:34.3±1.7,36°.24N×72°.16E,h102km±15km,mb4.6/43, mb1 4.7/49,mb1mx4.6/61,mbtmp5.0/49,MS3.7/2, Ms1 3.7/2,ms1mx3.2/41,Error ellipse: s-maj=9.5km s-min=7.0km az=177.0*
*NNC **25** 00:54:38.9±1.5,36°.62N×72°.13E,h167km±13km,mb4.7, mpv5.5,Error ellipse: s-maj=12.7km s-min=11.7km az=22.0*
ISC 25 00:54:33.6±0.4,36°.23N±0°.03×72°.21E±0°.03,h97km±3km, h97km:pP-P,n748,σ1s35/812,mb5.0/220,82C-67D, Afghanistan-Tajikistan border region

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
CEP	**Cherat**	**2.41**	**186**	⇓P		**Pn**	**00 55 12.6**	**+1.0**
CEP				S		**Sn**	**00 55 44.0**	**+3.4**
CHCP	**Chirah Chowk**	**2.71**	**161**	⇑P		**Pn**	**00 55 17.2**	**+1.8**
KBL	**Kabul**	**3.08**	**238**	*e*PN		**Pn**	**00 55 21.0**	**+0.4**
KBL	**Kabul**	**3.08**	**238**	*e*Pn		**Pn**	**00 55 21.0**	**+0.4**
THW	**Thamme Wali**	**3.44**	**187**	⇓P		**Pn**	**00 55 25.6**	**+0.3**
SFK	**Sufi-Kurgan**	**3.92**	**15**	⇓P		**Pn**	**00 55 34.1**	**+2.3**
	604nm,0.5s							
SFK				⇑S		**Sn**	**00 56 18.6**	**+1.7**
	1μm,0.4s							
SFK	**Sufi-Kurgan**	**3.92**	**15**	PN		**Pn**	**00 55 34.4**	**+2.6**
SFK				S		**Sn**	**00 56 18.5**	**+1.7**
SFK				smax	smax			
	comp=N,580nm,0.3s							
SARP	**Sargodha**	**4.31**	**175**	P		**Pn**	**00 55 36.4**	**-0.6**
KSH	**Kashi**	**4.43**	**41**	P		Pn	00 55 34.0	-4.7
KSH				S		Sn	00 56 17.4	-12
KSH				smax	smax			
	comp=N,5μm,0.3s							
KSH				smax	smax			
	comp=N,5μm,0.2s							
THN	**Thein Dam**	**4.77**	**141**	*e*P		**Pn**	**00 55 41.4**	**-1.7**
THN				*e*S		**Sn**	**00 56 32.6**	**-4.6**
DHRM	**DHARAMSHALA**	**5.22**	**138**	*e*P		**Pn**	**00 55 49.4**	**-0.1**
DHRM				*e*S		**Sn**	**00 56 46.0**	**-2.5**
DHRM				IAML			00 56 47.3	
	comp=N,9μm,0.3s							
DHRM				IAML			00 56 47.6	
	comp=E,8μm,0.4s							
SDNR	**Sundarnagar**	**6.16**	**139**	*e*P		**Pn**	**00 56 01.0**	**-1.0**
SDNR				*ex*		x	00 57 03.0	
MNAS	**Manas**	**6.26**	**2**	⇓P		**Pn**	**00 56 04.2**	**+0.8**
	comp=E,277nm,0.5s							
MNAS				⇓S		**Sn**	**00 57 10.2**	**-3.3**
	comp=E,816nm,0.7s							
MNAS	**Manas**	**6.26**	**2**	PN		**Pn**	**00 56 04.4**	**+1.0**
MNAS				pmax	pmax			
	comp=Z,196nm,0.4s							
EKS2	**Erkin-Say**	**6.54**	**10**	*e*PN		**Pn**	**00 56 08.2**	**+0.9**
EKS2	**Erkin-Say**	**6.54**	**10**	*e*Pn		**Pn**	**00 56 08.2**	**+0.9**
EKS2				*e*Sn		**Sn**	**00 57 19.2**	**-1.2**
SMLA	**Simla**	**6.55**	**139**	*i* P		**Pn**	**00 56 06.7**	**-0.7**
SMLA				*i* S		**Sn**	**00 57 15.3**	**-5.3**
SMLA				*i* S		**Sn**	**00 57 15.6**	**-5.0**
SMLA				IAML			00 57 17.5	
	comp=E,4μm,0.5s							
SMLA				IAML			00 57 19.0	
	comp=N,3μm,0.2s							
AAK	**Ala-Archa**	**6.64**	**15**	P		**Pn**	**00 56 09.9**	**+1.2**
	comp=N,77nm,0.3s,baz=172,slow=7.1,SNR=639							
AAK				S		**Sn**	**00 57 19.4**	**-3.4**
	comp=N,29nm,0.3s,baz=321,slow=18,SNR=28							
AAK	**Ala-Archa**	**6.64**	**15**	⇓P		**Pn**	**00 56 09.9**	**+1.2**
	comp=N,330nm,0.6s							
AAK				⇑S		**Sn**	**00 57 21.0**	**-1.9**
	comp=N,2μm,1.2s							
AAK	**Ala-Archa**	**6.64**	**15**	*d* iPN		**Pn**	**00 56 09.8**	**+1.2**
AAK				pmax	pmax			
	comp=Z,330nm,0.6s							
AAK	**Ala-Archa**	**6.64**	**15**	*e*Pn		**Pn**	**00 56 09.9**	**+1.2**
AAK				S		**Sn**	**00 57 19.4**	**-3.4**
AAK				*e*Sn		Sn	00 57 21.5	-1.3
FRU	**Bishkek**	**6.86**	**15**	⇓*i*PN		**Pn**	**00 56 12.0**	**+0.5**
FRU				pmax	pmax			
	comp=Z,570nm,1.8s							
KK31	**Karatay Array**	**6.99**	**350**	⇑P		**Pn**	**00 56 13.5**	**+0.2**
	comp=Z,184nm,0.7s,baz=172,slow=12,SNR=2259							
KK31				⇑S		**Sn**	**00 57 27.7**	**-3.6**
	comp=Z,69nm,0.3s,baz=170,slow=20,SNR=8.9							
KK31	**Karatay Array**	**6.99**	**350**	*e*PN		**Pn**	**00 56 13.7**	**+0.4**
KK31				pmax	pmax			
	comp=Z,130nm,0.5s							
KKAR	**Karatay Array**	**6.99**	**350**	*e*PN		**Pn**	**00 56 13.4**	**+0.1**
KKAR	**Karatay Array**	**6.99**	**350**	*e*Pn		**Pn**	**00 56 13.4**	**+0.1**
KKAR				*e*Sn		**Sn**	**00 57 28.6**	**-2.6**
TKM2	**Tokmak 2**	**7.18**	**20**	⇑P		**Pn**	**00 56 16.6**	**+0.5**
	comp=Z,83nm,0.5s							
TKM2				⇑S		**Sn**	**00 57 34.6**	**-1.5**
	comp=Z,440nm,1.1s							
TKM2	**Tokmak 2**	**7.18**	**20**	*e*PN		**Pn**	**00 56 16.3**	**+0.2**
TKM2	**Tokmak 2**	**7.18**	**20**	*e*Pn		**Pn**	**00 56 16.3**	**+0.2**
TKM2				*e*Sn		**Sn**	**00 57 35.9**	**-0.2**
KKR	**Kurukshetra**	**7.35**	**147**	*e*S		**Sn**	**00 57 35.1**	**-4.9**
DDI	**Dehra Dun**	**7.66**	**139**	*e*P		**Pn**	**00 56 22.0**	**-0.4**
KNDC	**Almaty**	**7.88**	**26**	⇑P		**Pn**	**00 56 26.6**	**+1.1**
KNDC	comp=Z,234nm,0.6s							
				⇓S		**Sn**	**00 57 53.0**	**-0.1**
	comp=Z,684nm,0.9s							
AAA	**Alma-Ata**	**7.93**	**26**	*i* PN		Pn	00 56 38.6	+13
AAA				pmax	pmax			
	comp=Z,228nm,0.3s							
RTK	**Rohtak**	**8.00**	**153**	*e*P		**Pn**	**00 56 24.8**	**-2.3**
BHGR	**Bahadurgarh**	**8.51**	**151**	*e*P		**Pn**	**00 56 32.0**	**-2.0**
NDI	**New Delhi**	**8.63**	**149**	*e*P		**Pn**	**00 56 33.0**	**-2.6**
NDI				*ex*		x	00 57 56.5	
KHET	**Khetri**	**8.68**	**158**	*e*P		**Pn**	**00 56 34.1**	**-2.3**
KHET				*e*S		Sn	00 58 03.7	-8.8
AYAN	**Aya Nagar**	**8.77**	**150**	*ex*		x	00 56 24.9	
KUDL	**Kundal**	**8.84**	**155**	*e*P		Pn	00 56 35.4	-3.1
KUDL				*e*S		Sn	00 58 07.2	-9.1
KUDL				IAML			00 58 09.2	
	comp=N,240nm,0.6s							
KUDL				IAML			00 58 09.2	
	comp=E,276nm,0.5s							
PDGK	**Podgornoye**	**9.04**	**36**	⇑P		**Pn**	**00 56 40.4**	**-0.6**
	comp=E,188nm,0.8s							
PDGK				⇓S		**Sn**	**00 58 19.5**	**-1.4**
	comp=E,503nm,1.0s							
PDGK	**Podgornoye**	**9.04**	**36**	PN		**Pn**	**00 56 40.6**	**-0.4**
PDGK				pmax	pmax			
	comp=Z,188nm,0.8s							
LGTI	**Lohaghat**	**9.56**	**133**	*e*P		Pn	00 56 54.9	+6.7
LGTI				*e*S		**Sn**	**00 58 31.1**	**-2.7**
GEYT	**Alibeck**	**11.38**	**283**	P		Pn	00 57 09.2	-3.8
	comp=Z,9.3nm,0.3s,baz=109,slow=11,SNR=86							
GEYT				S		Sn	00 59 08.7	-10
	comp=Z,48nm,0.3s,baz=114,slow=13,SNR=14							
GEYT				LR		LR	01 02 40.4	
	comp=Z,444nm,18.8s,baz=105,slow=43							
PYUN	**Piuthan**	**12.20**	**129**	*e*P		Pn	00 57 19.4	-4.8
	comp=Z,497nm,0.5s							
KOLN	**Koldanda**	**12.82**	**128**	*e*P		Pn	00 57 27.9	-4.5
	comp=Z,146nm,0.4s							
MK01	**Makanchi Array**	**12.96**	**33**	*e*Pn		**Pn**	**00 57 32.1**	**-1.8**
MK31	**Makanchi Array**	**12.97**	**32**	⇓P		**Pn**	**00 57 32.3**	**-1.8**
	comp=Z,77nm,0.6s							
MK31	**Makanchi Array**	**12.97**	**32**	P		**Pn**	**00 57 32.3**	**-1.8**
MK31				pmax	pmax			
	comp=Z,77nm,0.6s							
MK31	**Makanchi Array**	**12.97**	**32**	*e*Pn		**Pn**	**00 57 32.6**	**-1.5**
MKAR	**Makanchi Array**	**12.97**	**32**	P		**Pn**	**00 57 32.8**	**-1.3**
	comp=Z,2.3nm,0.3s,baz=218,slow=15,SNR=154							
MKAR				LR		LR	01 01 55.4	
	comp=Z,233nm,18.0s,baz=217,slow=34							
MKAR				ScP		**ScP**	**01 06 21.8**	**-2.2**
	baz=263,slow=1.0,SNR=5.1							
MKAR	**Makanchi Array**	**12.97**	**32**	*i* P		**Pn**	**00 57 32.4**	**-1.7**
MKAR				pmax	pmax			
	comp=Z,30nm,0.8s							
BHJ	**Bhuj**	**13.12**	**190**	*e*P		**Pn**	**00 57 33.6**	**-2.5**
BHJ				IAmb	IAmb		00 57 34.3	
	comp=Z,206nm,0.7s							
GKN	**Gorkha**	**13.34**	**124**	*e*P		Pn	00 57 34.1	-5.1
	comp=Z,468nm,0.5s							
BHPL	**Bhopal**	**13.71**	**159**	*e*P		Pn	00 57 40.2	-3.7
KKN	**Kakani**	**13.91**	**124**	*e*P		Pn	00 57 41.3	-5.4
	comp=Z,187nm,0.5s							
DMN	**Daman**	**13.91**	**125**	*e*P		Pn	00 57 41.9	-4.8
	comp=Z,129nm,0.4s							
WMQ	**Urumqi**	**14.07**	**53**	P		**Pn**	**00 57 46.1**	**-2.4**
WMQ				pP		P	00 58 01.1	+7.9
WMQ				S		Sn	01 00 16.9	-6.5
WMQ				sS		S	01 00 40.8	+2.8
WMQ				pmax	pmax			
	comp=Z,36nm,1.0s							
WMQ				pmax	pmax			
	comp=Z,250nm,5.6s							
PKIN	**Phulchoki**	**14.13**	**124**	*e*P		Pn	00 57 44.2	-5.3
	comp=Z,104nm,0.4s							
GUN	**Gumba**	**14.24**	**122**	*e*P		Pn	00 57 45.6	-5.5
	comp=Z,121nm,0.4s							
KURBB	**Kurchatov Arra**	**15.10**	**16**	P		**Pn**	**00 57 57.8**	**-3.6**
	comp=Z,0.4nm,0.3s,baz=204,slow=12,SNR=90							
KURBB				S		**S**	**01 00 53.6**	**-5.1**
	baz=202,slow=20,SNR=6.0							
KURBB	**Kurchatov Arra**	**15.10**	**16**	⇓P		**Pn**	**00 57 58.0**	**-3.4**
	comp=Z,258nm,0.6s							
KURK	**Kurchatov**	**15.20**	**16**	⇓P		**Pn**	**00 57 59.4**	**-3.4**
	comp=Z,466nm,0.9s							
KURK	**Kurchatov**	**15.20**	**16**	P		**Pn**	**00 57 59.4**	**-3.4**
KURK				pmax	pmax			
	comp=Z,466nm,0.9s							
KURK	**Kurchatov**	**15.20**	**16**	*e*Pn		**Pn**	**00 57 59.8**	**-3.0**
	comp=Z,201nm,0.8s							
KURK				S		**Sn**	**01 00 53.6**	**+3.2**
AB31	**Akbulak array**	**15.80**	**329**	⇑P		**Pn**	**00 58 07.3**	**-3.0**
	comp=Z,89nm,0.6s,baz=139,slow=12,SNR=1197							
AB31				S		**Sn**	**01 00 59.6**	**-5.4**
	comp=Z,14nm,0.6s,baz=146,slow=22,SNR=9.1							
AB31	**Akbulak array**	**15.80**	**329**	*i* P		**Pn**	**00 58 07.3**	**-3.0**
AB31				pmax	pmax			
	comp=Z,89nm,0.6s							
ABKAR	**Akbulak array**	**15.80**	**329**	*e*Pn		**Pn**	**00 58 08.2**	**-2.2**
VOSK	**Vostochnaya**	**16.52**	**357**	⇓P		**Pn**	**00 58 16.6**	**-2.6**
	comp=Z,26nm,0.9s							
BVA0	**Borovoye Array**	**16.85**	**356**	⇑P		**Pn**	**00 58 21.0**	**-2.2**
	comp=Z,25nm,0.8s,baz=159,slow=12,SNR=197							
BVA0				S		**Sn**	**01 01 24.1**	**-6.0**
	comp=Z,1.2nm,0.7s,baz=167,slow=17,SNR=8.9							
BVA0	**Borovoye Array**	**16.85**	**356**	*i* P		**Pn**	**00 58 20.3**	**-2.9**
BVA0				pmax	pmax			
	comp=Z,25nm,0.8s							
BVAR	**Borovoye Array**	**16.85**	**356**	P		**Pn**	**00 58 21.7**	**-1.5**
	comp=Z,2.8nm,0.3s,baz=161,slow=13,SNR=54							
BVAR				S		**Sn**	**01 01 29.8**	**-0.3**
	baz=162,slow=20,SNR=5.4							
ZRNK	**Zerenda**	**16.87**	**353**	*e*P		**Pn**	**00 58 22.0**	**-1.6**
ZRNK				pmax	pmax			
	comp=Z,37nm,0.9s							
ZRNK	**Zerenda**	**16.87**	**353**	*e*Pn		**Pn**	**00 58 22.0**	**-1.6**
	comp=Z,37nm,0.9s							
BRVK	**Borovoye**	**16.88**	**356**	*d* iP		**Pn**	**00 58 21.7**	**-2.0**
BRVK				pmax	pmax			
	comp=Z,44nm,1.2s							
BRVK	**Borovoye**	**16.88**	**356**	*e*Pn		**Pn**	**00 58 21.6**	**-2.0**
	comp=Z,32nm,0.8s							
BANOM	**Banah**	**17.04**	**237**	*i* P		**P**	**00 58 26.3**	**+0.2**
	SNR=26							
BANOM	**Banah**	**17.04**	**237**	P		**P**	**00 58 26.4**	**+0.2**
	SNR=26							
BOK	**Bokaro**	**17.12**	**133**	*ex*		**Pn**	**00 58 22.6**	**-4.2**
BOK				IAmb	IAmb		00 58 27.1	
	comp=Z,68nm,0.3s							
LSA	**Lhasa**	**17.17**	**107**	P		**Pn**	**00 58 25.5**	**-2.3**
LSA				pmax	pmax			
	comp=Z,35nm,0.9s							
LSA	**Lhasa**	**17.17**	**107**	*e*P		**Pn**	**00 58 25.6**	**-2.3**
LSA				pmax	pmax			
	comp=Z,51nm,0.7s							
LSA	**Lhasa**	**17.17**	**107**	*e*Pn		**Pn**	**00 58 25.6**	**-2.3**
	comp=Z,52nm,0.7s							
WSAR	**Wadi Sarin**	**17.48**	**226**	P		**P**	**00 58 30.9**	**-0.1**
	comp=Z,4.0nm,0.3s,baz=59,slow=11,SNR=20							
CHKZ	**Chkalovo**	**17.48**	**357**	⇑P		**P**	**00 58 29.1**	**-1.7**
	comp=Z,13nm,0.7s							
CHKZ	**Chkalovo**	**17.48**	**357**	P		**P**	**00 58 29.0**	**-1.7**
CHKZ				pmax	pmax			
	comp=Z,9.0nm,0.6s							
AKTO	**Aktyubinsk**	**17.51**	**329**	P		**P**	**00 58 30.4**	**-0.6**
	comp=Z,18nm,0.3s,baz=135,slow=12,SNR=190							
AKTO				S		Sn	01 01 35.6	-11
	comp=Z,1.6nm,0.3s,baz=9.0,slow=19,SNR=6.0							
AKTO	**Aktyubinsk**	**17.51**	**329**	⇑P		**P**	**00 58 28.8**	**-2.3**
	comp=Z,181nm,0.6s							
AKTO	**Aktyubinsk**	**17.51**	**329**	P		**P**	**00 58 30.8**	**-0.3**
AKTO				pmax	pmax			
	comp=Z,181nm,0.6s							
POO	**Poona**	**17.69**	**175**	⇓*i*P		**Pn**	**00 58 34.0**	**+0.2**
	comp=Z,88nm,1.2s							
UOSS	**Minazif**	**17.76**	**235**	*e*P		**P**	**00 58 33.1**	**-0.9**
	comp=Z,2.9nm,0.9s							
HATD	**Hatta, Dubai**	**17.89**	**235**	*i* P		**Pn**	**00 58 36.2**	**+0.1**
	SNR=12							
HATD	**Hatta, Dubai**	**17.89**	**235**	P		**Pn**	**00 58 36.2**	**+0.1**
	SNR=13							
HATD	**Hatta, Dubai**	**17.89**	**235**	P		**Pn**	**00 58 36.2**	**+0.1**
	SNR=13							
SMDO	**Samad**	**17.96**	**227**	P		**Pn**	**00 58 38.4**	**+1.3**
	SNR=8.6							
SMDO	**Samad**	**17.96**	**227**	P		**Pn**	**00 58 38.4**	**+1.3**
	SNR=8.6							
ASHO	**Ashiyiah**	**18.03**	**235**	*i* P		**Pn**	**00 58 37.8**	**-0.1**
	SNR=59							
ASHO	**Ashiyiah**	**18.03**	**235**	P		**Pn**	**00 58 39.0**	**+1.2**
	SNR=47							
SRSP	**Sriramsagar**	**18.06**	**161**	*e*P		**P**	**00 58 37.1**	**-0.3**
SRSP				IAmb	IAmb		00 58 38.6	
	comp=Z,25nm,0.8s							
SRSP				*e*S		**S**	**01 01 57.6**	**-1.7**
NAZ	**Nazwa, Dubai**	**18.09**	**236**	*i* P		**Pn**	**00 58 38.8**	**+0.3**
	SNR=16							
NAZ	**Nazwa, Dubai**	**18.09**	**236**	P		**Pn**	**00 58 39.7**	**+1.1**
	SNR=16							
FAQ	**Al Faqa, Dubai**	**18.30**	**236**	*i* P		**Pn**	**00 58 40.6**	**-0.4**
	SNR=20							
FAQ	**Al Faqa, Dubai**	**18.30**	**236**	P		**Pn**	**00 58 41.1**	**+0.1**
	SNR=11							
RPR	**Rampur**	**18.40**	**158**	*e*P		**P**	**00 58 41.7**	**+0.6**
RPR				IAmb	IAmb		00 58 43.0	
	comp=Z,30nm,1.3s							
RPR				*e*			01 02 00.1	
KLRI	**Killari**	**18.50**	**167**	*e*P		**P**	**00 58 42.5**	**+0.3**
KLRI				IAmb	IAmb		00 58 45.3	
	comp=Z,23nm,0.6s							
KLRI				*e*			01 01 54.8	
KLRI				*e*S		**S**	**01 02 08.6**	**+0.4**
ARQ	**Araqi**	**18.68**	**231**	P		**Pn**	**00 58 46.8**	**+1.2**
	SNR=16							
ARQ	**Araqi**	**18.68**	**231**	P		**Pn**	**00 58 46.8**	**+1.2**
	SNR=16							
HYBB	**Hyderabad (bro**	**19.56**	**162**	*e*P		**P**	**00 58 53.8**	**0.0**
HYBB				IAmb	IAmb		00 58 59.1	
	comp=Z,44nm,0.5s							
HYBB				*e*			01 02 24.6	
HYBB				*e*S		**S**	**01 02 31.8**	**+2.3**
HYB	**Hyderabad**	**19.56**	**162**	*i* P		**P**	**00 58 54.5**	**+0.7**
HYB				*e*			01 02 19.0	
HYB				*e*S		**S**	**01 02 27.0**	**-2.5**
ZAA0	**Zalesovo Array**	**19.78**	**22**	*e*P		**P**	**00 58 55.4**	**-0.4**
ZALV	**Zalesovo Beam**	**19.78**	**22**	P		**P**	**00 58 55.3**	**-0.6**
	comp=Z,13nm,0.3s,baz=220,slow=9.1,SNR=294							
ZALV	**Zalesovo Beam**	**19.78**	**22**	*i* P		**P**	**00 58 55.2**	**-0.6**
ZALV				pmax	pmax			
	comp=Z,119nm,0.6s							
NVS	**Novosibirsk**	**20.11**	**19**	⇑*i*P		**P**	**00 58 59.5**	**+0.2**
NVS				*i*			01 02 32.5	
NVS				pmax	pmax			
	comp=N,68nm,0.8s							
NVS				pmax	pmax			
	comp=Z,80nm,0.8s							
NVS				pmax	pmax			
	comp=E,30nm,1.0s							
NVS				smax	smax			
	comp=N,86nm,2.1s							
NVS				smax	smax			
	comp=E,53nm,2.1s							
CHLP	**Challavanipeta**	**20.52**	**146**	*e*P		Pn	00 59 05.9	-1.2
CHLP				IAmb	IAmb		00 59 13.6	
	comp=Z,21nm,0.8s							
CHLP				*e*			01 02 43.6	
CHLP				*e*S		**S**	**01 02 50.9**	**+2.6**
NJS	**Nagarjunasagar**	**20.59**	**160**	*e*P		**P**	**00 59 04.9**	**+0.1**
NJS				IAmb	IAmb		00 59 06.2	
	comp=Z,30nm,0.5s							
NJS				*e*			01 02 44.8	
NJS				*e*S		**S**	**01 02 51.6**	**+2.0**
PVM	**Polavaram**	**20.66**	**154**	*e*P		Pn	00 59 08.5	-0.3
PVM				IAmb	IAmb		00 59 17.3	
	comp=Z,33nm,0.8s							
PVM				*e*			01 02 44.6	
SRLM	**Srisailam**	**20.91**	**162**	*e*P		**P**	**00 59 08.3**	**-0.1**
SRLM				IAmb	IAmb		00 59 09.6	
	comp=Z,41nm,0.5s							
SRLM				*e*S		**S**	**01 02 56.4**	**+0.3**
ADKI	**Addanki**	**21.45**	**159**	*e*P		**P**	**00 59 15.1**	**+1.1**
ADKI				IAmb	IAmb		00 59 16.7	
	comp=Z,13nm,0.8s							
ADKI				*e*			01 02 51.5	
ADKI				*e*S		**S**	**01 03 06.4**	**-0.1**
DGRG	**David-gareji**	**21.50**	**292**	P		**P**	**00 59 16.2**	**+1.7**
DGRG	**David-gareji**	**21.50**	**292**	P		**P**	**00 59 16.2**	**+1.7**
RCLA	**Racherla**	**21.54**	**162**	*e*P		**P**	**00 59 15.7**	**+0.7**
RCLA				IAmb	IAmb		00 59 18.1	
	comp=Z,36nm,0.8s							
RCLA				*e*S		**S**	**01 03 07.4**	**-1.0**
URV	**Uravakonda**	**21.67**	**167**	*e*P		**P**	**00 59 16.4**	**0.0**
URV				IAmb	IAmb		00 59 18.6	
	comp=Z,47nm,1.0s							
URV				*e*S		**S**	**01 03 09.4**	**-1.4**
GNI	**Garni**	**21.90**	**289**	P		**P**	**00 59 20.2**	**+1.4**
	comp=Z,56nm,0.9s,baz=4.9,slow=2.7,SNR=62							
GNI	**Garni**

CHVG **Ch'k'valeri** 24.06 295 P **P** **00 59 42.9 +3.2**
VRTB **Varto-Mus** 24.45 286 *e*P **P** **00 59 46.6 +3.2**
EZM **Erzurum** 24.50 288 *e*P **P** **00 59 46.4 +2.4**
BNGB **Bing¶ll** 25.07 286 *e*P **P** **00 59 49.9 +1.0**
MAZI **Mazidag** 25.39 282 *e*P **P** **00 59 51.6 -0.4**
BAYT **Ayd¯–ntepe-Bay** 25.42 289 *e*P **P** **00 59 54.0 +1.7**
SOKR **Solikamsk** 25.44 342⇑*i*P **P** **00 59 50.9 -1.0**
SOKR pmax pmax
comp=Z,40nm,1.2s
LZH **Lanzhou** 25.49 81 *e*P **P** **00 59 54.8 +1.9**
LZH pP pP 01 00 07.6 -6.9
LZH sP sP 01 00 16.9 -9.0
LZH PP **PnPn** **01 00 37.0 +2.7**
LZH *e*S **S** **01 04 15.0 +1.8**
LZH SS **SnSn** **01 05 20.0 +3.3**
LZH pmax pmax
comp=Z,65nm,1.0s
LZH pmax pmax
comp=Z,270nm,4.2s
DYBB **Diyarbakir** 25.57 284 *e*P **P** **00 59 52.9 -0.6**
MOY **Mondy** 25.62 44 *e*P **P** **00 59 55.6 +1.7**
MOY pmax pmax
comp=Z,62nm,1.8s
SOC **Sochi** 25.86 297 *e*P P 01 00 02.4 +6.4
SOC *e*S **S** **01 04 20.4 +1.8**
SOC pmax pmax
comp=Z,50nm,0.9s
GUMT **Gumushane** 25.93 289 *e*P **P** **00 59 57.8 +1.0**
PTK **Pertek** 26.07 286 *e*P **P** **01 00 00.0 +1.8**
SVRC **Sivrice-ELAZID** 26.18 285 *e*P **P** **00 59 58.4 -0.8**
VRH **Novokhopyorsk** 26.40 314 *e*P **P** **01 00 00.9 +0.2**
VRH pmax pmax
comp=Z,60nm,0.8s
ZAK **Zakamensk** 26.44 48 *e*P **P** **01 00 02.3 +1.0**
ZAK pmax pmax
comp=Z,28nm,1.1s
CD2 **Chengdu** 26.75 92 P **P** **01 00 05.1 +0.9**
CD2 pP pP 01 00 26.9 +1.1
CD2 sP sP 01 00 38.5 +1.3
CD2 S **S** **01 04 34.3 +1.4**
CD2 pmax pmax
comp=Z,60nm,0.6s
CD2 pmax pmax
comp=Z,300nm,4.3s
CD2 LR LR
comp=Z,280nm,10.8s
CD2 LR LR
comp=Z,220nm,10.2s
KSRV **Kasrt alli** 26.78 279 *e*P **P** **01 00 05.4 +1.1**
TLY **Talaya** 27.13 45 P **P** **01 00 09.2 +1.8**
comp=Z,7.2nm,0.6s,baz=238,slow=8.4,SNR=11
TLY **Talaya** 27.13 45 *e*P **P** **01 00 08.2 +0.8**
TLY pmax pmax
comp=Z,16nm,1.0s
TLY **Talaya** 27.13 45 *e*P **P** **01 00 08.4 +1.1**
comp=Z,10nm,0.7s
DARE **Darende-Malaty** 27.59 285 *e*P **P** **01 00 12.2 +0.6**
ANN **Anapa** 27.62 299 *e*P **P** **01 00 11.6 -0.1**
ANN *i* *PP **pP** **01 00 36.5 +3.0**
ANN *e*S **S** **01 04 43.4 -2.8**
ANN pmax pmax
comp=Z,50nm,0.8s
SONM **Songino Array** 27.70 55 P **P** **01 00 13.8 +1.2**
comp=Z,17nm,0.7s,baz=253,slow=9.9,SNR=19
SONA1 **Songino Array** 27.70 55 *e*P **P** **01 00 13.7 +1.0**
IRK **Irkutsk** 27.71 45 *e*P **P** **01 00 13.1 +0.6**
IRK pmax pmax
comp=Z,53nm,1.7s
SVSK **Karacayir** 27.85 288 *e*P **P** **01 00 15.2 +1.4**
VSR **Storozhevoye** 27.90 313 *e*P **P** **01 00 14.2 0.0**
VSR pmax pmax
comp=Z,50nm,0.9s
ULN **Ulaanbaatar** 28.14 55*d*⇑*i*P **P** **01 00 17.0 +0.5**
ULN pmax pmax
comp=Z,17nm,0.9s
ULN **Ulaanbaatar** 28.14 55 *e*P **P** **01 00 16.8 +0.3**
comp=Z,16nm,0.9s
ULN **Ulaanbaatar** 28.14 55 P **P** **01 00 17.7 +1.2**
SNR=10
ULN **Ulaanbaatar** 28.14 55 P **P** **01 00 17.7 +1.2**
SNR=10
KMI **Kunming** 28.39 104 P P 01 00 24.0 +5.0
KMI pP pP 01 00 37.3 -3.5
KMI sP sP 01 00 46.6 -5.5
KMI pmax pmax
comp=Z,16nm,0.8s
KMI pmax pmax
comp=Z,110nm,4.4s
RABH **Abou Rabah** 28.52 277 *e*P **P** **01 00 20.9 +0.9**
LPSR **Galich'ya Gora** 28.53 316 *e*P **P** **01 00 20.1 +0.4**
LPSR pmax pmax
comp=Z,50nm,0.7s
CMAI **Chiengmai2** 28.58 117 P **P** **01 00 19.8 -0.9**
comp=Z,37nm,1.1s
BTCH **Batrach** 28.77 280 *e*P **P** **01 00 21.8 -0.4**
ZALF **Zalf** 28.81 274 *e*P **P** **01 00 23.1 +0.5**
BNN **Bunyan** 28.83 286 *e*P **P** **01 00 22.6 -0.2**
WRDH **Warideh** 28.92 279 *e*P **P** **01 00 23.1 -0.4**
TAHT **Tahtakopru-Hat** 28.93 281 *e*P **P** **01 00 23.4 -0.1**
MHMT **Maesarieng** 28.96 122 P **P** **01 00 24.8 +0.9**
comp=Z,29nm,0.7s
KOZT **Kozan** 29.03 283 *e*P **P** **01 00 25.6 +1.3**
DIKM **Dikmen** 29.09 292 *e*P **P** **01 00 23.7 -1.2**
BIDA **Albida** 29.10 278 *e*P **P** **01 00 23.9 -1.2**
SNOP **Sinop** 29.12 293 *e*P **P** **01 00 23.9 -1.2**
HAWK **Haweek** 29.14 277 *e*P **P** **01 00 26.0 +0.5**
MARH **Ras Al Marh** 29.20 276 *e*P **P** **01 00 27.1 +0.8**
CHTO **Chiang Mai** 29.23 119 P **P** **01 00 27.2 +0.8**
comp=Z,74nm,0.8s
CHTO **Chiang Mai** 29.23 119 *e*P **P** **01 00 27.0 +0.6**
CHTO pmax pmax
comp=Z,18nm,1.0s
CHTO **Chiang Mai** 29.23 119 *e*P **P** **01 00 27.0 +0.6**
comp=Z,18nm,1.0s
CMMT **Chiang Mai** 29.24 119 P **P** **01 00 27.2 +0.8**
comp=Z,17nm,0.8s
CRAI **Chiangrai** 29.35 115 P **P** **01 00 28.5 +1.1**
comp=Z,14nm,1.1s
ASF **Jabal al Asfar** 29.38 272 P **P** **01 00 27.8 +0.1**
comp=Z,4.1nm,0.7s,baz=38,slow=7.0,SNR=13
BYBT **Boyabat** 29.47 292 *e*P **P** **01 00 28.0 -0.1**
CM31 **Chiang Mai Arr** 29.47 120 *e*P **P** **01 00 28.9 +0.4**
CMAR **Chiang Mai Arr** 29.47 120 P **P** **01 00 28.4 -0.1**
comp=Z,14nm,0.7s,baz=303,slow=8.8,SNR=48
CMAR ScP **ScP** **01 07 03.1 -1.6**
comp=Z,1.1nm,0.7s,baz=290,slow=3.1,SNR=4.6
CM01 **Chiang Mai Arr** 29.51 120 *e*P **P** **01 00 28.8 +0.1**
CORM **Corum** 29.64 289 *e*P **P** **01 00 28.6 -1.4**
KARA **Karaisali** 29.67 283 *e*P **P** **01 00 30.5 +0.4**
BRBR **Barbar** 29.79 275 *e*P **P** **01 00 30.7 -0.7**
NIG **Nigde** 29.89 285 *e*P **P** **01 00 33.2 +0.9**
LAMP **Lampang** 29.91 119 P **P** **01 00 32.3 -0.1**
comp=Z,6.2nm,0.8s
SIM **Simferopol'** 29.98 299 *e*P **P** **01 00 32.9 +0.2**
SIM pmax pmax
comp=Z,11nm,0.7s
XAN **Xi'an** 30.00 83 P **P** **01 00 33.3 +0.3**
XAN pmax pmax
comp=Z,29nm,1.1s
BZK **Bozkurt** 30.02 293 *e*P **P** **01 00 33.2 +0.1**
TOS **Tosya** 30.05 291 *e*P **P** **01 00 34.6 +1.1**
GULA **Gulagac** 30.15 286 *e*P **P** **01 00 33.7 -0.7**
MERS **Mersin** 30.16 283 *e*P **P** **01 00 34.5 +0.1**
KAMT **Kaman** 30.43 288 *e*P **P** **01 00 37.5 +0.7**
BR131 **Keskin Array S** 30.44 288 *e*P **P** **01 00 37.3 +0.2**
BRTR **Keskin Array B** 30.44 288 P **P** **01 00 37.2 +0.2**
comp=Z,19nm,0.7s,baz=103,slow=9.3,SNR=190
MOS **Moscow** 30.49 321 *e*P **P** **01 00 36.8 -0.2**
MOS *e* 01 01 15.4
MOS *e* 01 01 41.7
MOS pmax pmax
comp=Z,51nm,0.8s
SERE **Sereflikochisa** 30.59 287 *e*P **P** **01 00 40.1 +1.8**
OBN **Obninsk** 30.78 319*c*⇑*i*P **P** **01 00 40.1 +0.5**
OBN *e**PP **pP** **01 01 01.6 +0.1**
OBN *e*S **S** **01 05 34.6 -0.9**
OBN pmax pmax
comp=Z,63nm,0.6s
OBN **Obninsk** 30.78 319 *e*P **P** **01 00 39.7 +0.1**
comp=Z,336nm,1.6s
GYA **Guiyang** 30.86 99⇑*i*P **P** **01 00 41.3 +0.5**
GYA pP pP 01 01 04.8 +2.1
GYA PP **PnPn** **01 01 46.6 +1.4**
GYA PcP **PcP** **01 03 37.4 +1.9**
GYA S **S** **01 05 38.6 +0.9**
GYA ScP **ScP** **01 07 10.6 +1.3**
GYA SS **SnSn** **01 07 27.8 +0.5**
GYA ScS **ScS** **01 11 04.5 -2.0**
GYA pmax pmax
comp=Z,20nm,0.8s
GYA pmax pmax
comp=Z,120nm,5.0s
GYA LR LR
comp=Z,690nm,17.4s
GYA LR LR
comp=Z,540nm,17.8s
GYA LR LR
comp=Z,610nm,17.3s
IKL **Isikli** 30.93 282 *e*P **P** **01 00 40.3 -0.9**
HHC **Hu-ho-hao-te** 30.95 69 *e*P **P** **01 00 43.3 +1.9**
HHC pP pP 01 01 05.4 +2.1
HHC S **S** **01 05 38.9 +0.1**
HHC pmax pmax
comp=Z,27nm,1.2s
HHC pmax pmax
comp=Z,110nm,6.7s
HHC LR LR
comp=Z,1μm,13.6s
HHC LR LR
comp=Z,1μm,13.8s
HHC LR LR
comp=Z,1μm,13.8s
SAFT **Safranbolu** 31.04 291 *e*P **P** **01 00 42.7 +0.6**
ANTO **Ankara** 31.08 289 *e*P **P** **01 00 42.2 -0.3**
ANTO pmax pmax
comp=Z,18nm,0.9s
ANTO **Ankara** 31.08 289 *e*P **P** **01 00 42.2 -0.3**
comp=Z,18nm,0.9s
UTTA **Uttaradit** 31.08 119 P **P** **01 00 42.9 +0.3**
comp=Z,12nm,0.7s
BR231 **Keskin MP Arra** 31.09 289 *e*P **P** **01 00 42.6 -0.1**
CHBY **Cihanbeyli** 31.16 286 *e*P **P** **01 00 45.7 +2.4**
LFK **Lefkose** 31.26 280 *e*P **P** **01 00 43.5 -0.6**
ENH **Enshi** 31.60 90 *e*P **P** **01 00 48.1 +1.0**
comp=Z,64nm,1.0s
KONT **Konya--Tatoy** 31.67 285 *e*P **P** **01 00 47.1 -0.6**
LEF **Lefka** 31.81 280 *e*P **P** **01 00 48.4 -0.5**
KIZT **Kizilcal** 31.90 287 *e*P **P** **01 00 50.1 +0.2**
TIY **Taiyuan** 32.01 75 *e*P **P** **01 00 52.4 +1.7**
TIY pmax pmax
comp=Z,54nm,0.7s
TIY pmax pmax
comp=Z,130nm,6.6s
SVRH **Sivrihisar-ESK** 32.10 288 *e*P **P** **01 00 52.2 +0.7**
PBKT **Sadao Pong** 32.17 120 P **P** **01 00 52.8 +0.7**
comp=Z,39nm,0.9s
KLMR **Klimovskoe** 32.20 330 *e*P **P** **01 00 49.4 -2.6**
KLMR *e*SP **sP** **01 01 25.1 -0.2**
KLMR pmax pmax
comp=Z,23nm,0.8s
GULT **Gulveren** 32.75 290 *e*P **P** **01 00 57.1 -0.1**
ISP **Isparta** 33.12 285⇑*i*P **P** **01 01 01.1 +0.6**
ISP **Isparta** 33.12 285⇑P **P** **01 01 01.1 +0.6**
ISP **Isparta** 33.12 285 *e*P **P** **01 01 00.7 +0.2**
comp=Z,9.9nm,0.7s
KHON **Khomkaen** 33.63 118 P **P** **01 01 05.5 +0.5**
comp=Z,47nm,0.7s
TVSB **Tavsanli** 33.68 289 *e*P **P** **01 01 06.4 +1.1**
TLCR 33.74 299⇑*i*P **P** **01 01 05.8 +0.2**
TLCR 33.74 299⇑P **P** **01 01 05.8 +0.2**
KIS **Kishinev** 33.78 302 *e*P **P** **01 01 07.0 +1.1**
KIS **Kishinev** 33.78 302⇑*i*P **P** **01 01 05.6 -0.3**
KIS **Kishinev** 33.78 302 *e*P **P** **01 01 07.0 +1.1**
KIS *e* 01 02 24.0
KIS *e* 01 06 20.0
ELL **Elmali** 33.81 284 *e*P **P** **01 01 06.7 +0.2**
AKASG **Malin Array Be** 33.87 309 P **P** **01 01 06.7 0.0**
comp=Z,54nm,0.6s,baz=80,slow=7.1,SNR=556
AKASG PP **PP** **01 02 24.6 -0.4**
comp=Z,34nm,0.9s,baz=87,slow=10,SNR=11
AKASG ScP **ScP** **01 07 15.0 -4.0**
comp=Z,1.2nm,0.8s,baz=80,slow=3.4,SNR=5.4
AKASG **Malin Array Be** 33.87 309*ce*P **P** **01 01 06.6 -0.1**
AKASG pmax pmax
comp=Z,54nm,0.6s
AKBB **Malin Array Si** 33.87 309 *e*P **P** **01 01 06.9 +0.2**
AKBB pmax pmax
comp=Z,67nm,0.6s
AKBB **Malin Array Si** 33.87 309 *e*P **P** **01 01 06.9 +0.2**
comp=Z,67nm,0.6s
KIEV **Kiev** 33.88 309*c*⇑*i*P **P** **01 01 06.6 -0.1**
KIEV pmax pmax
comp=Z,64nm,0.7s
KIEV **Kiev** 33.88 309 *e*P **P** **01 01 06.7 -0.1**
comp=Z,68nm,0.6s
EFOR **EFORIE** 33.89 297⇑*i*P **P** **01 01 09.0 +2.1**
AK11 **Malin Array Si** 33.91 309 *e*P **P** **01 01 06.8 -0.2**
MANR **Mangalia** 33.93 297⇑*i*P **P** **01 01 09.0 +1.7**
BGKT **Bogazkoy** 33.99 292 *e*P **P** **01 01 07.5 -0.3**
TIRR **Tirgusor** 34.04 298⇑*i*P **P** **01 01 09.1 +0.9**
TIRR **Tirgusor** 34.04 298⇑P **P** **01 01 09.1 +0.9**
TIRR **Tirgusor** 34.04 298 *e*P **P** **01 01 08.5 +0.3**
comp=Z,13nm,1.1s
SKNT **Sakolnakorn** 34.05 116 P **P** **01 01 08.4 -0.2**
LEOM **Leova** 34.16 301⇓*i*P **P** **01 01 09.8 +0.6**
LEOM **Leova** 34.16 301⇓P **P** **01 01 09.8 +0.6**
SORM **Soroca** 34.16 304⇓*i*P **P** **01 01 09.5 +0.3**
SORM **Soroca** 34.16 304⇓P **P** **01 01 09.5 +0.3**
GIUM **Giurgiulesti** 34.17 300⇑*i*P **P** **01 01 10.6 +1.3**
CFR **Carcaliu** 34.22 299⇓*i*P **P** **01 01 10.3 +0.5**
CFR **Carcaliu** 34.22 299⇓P **P** **01 01 10.3 +0.5**
NRIK **Noril'sk** 34.23 10 P **P** **01 01 11.0 +1.5**
comp=Z,7.9nm,0.6s,baz=215,slow=5.6,SNR=12
NRIK **Noril'sk** 34.23 10 P **P** **01 01 11.0 +1.5**
NRIK pmax pmax
comp=Z,8.0nm,0.6s
HARR **Harsova** 34.38 298⇑*i*P **P** **01 01 11.4 +0.3**
HARR **Harsova** 34.38 298⇑P **P** **01 01 11.4 +0.3**
KULA **Kula-Manisa** 34.45 287 *e*P **P** **01 01 11.3 -0.6**
KULA **Kula-Manisa** 34.45 287 P **P** **01 01 11.9 0.0**
KULA **Kula-Manisa** 34.45 287 P **P** **01 01 11.9 0.0**
FETY **Fethiye** 34.48 284 *e*P **P** **01 01 11.3 -0.9**
BJT **Baijiatuau** 34.53 70 *e*P **P** **01 01 14.1 +1.6**
BJT pmax pmax
comp=Z,12nm,0.6s
BJT **Baijiatuau** 34.53 70 *e*P **P** **01 01 14.1 +1.6**
comp=Z,12nm,0.6s
BJI **Beijing** 34.53 70 P **P** **01 01 14.3 +1.8**
BJI S **S** **01 06 35.0 +0.9**
BJI pmax pmax
comp=Z,24nm,0.9s
BJI pmax pmax
comp=Z,360nm,7.0s
BJI LR LR
comp=Z,160nm,20.6s
BJI LR LR
comp=Z,220nm,17.7s
TMCR **Tamitsa** 34.71 334 *e*P **P** **01 01 14.2 +0.5**
TMCR pmax pmax
comp=Z,23nm,0.4s
DALY **Dalyan (Mu'la** 34.78 284 *e*P **P** **01 01 11.6 -3.1**
AMRR **Amara** 34.80 298⇑*i*P **P** **01 01 16.7 +1.9**
AMRR **Amara** 34.80 298⇑P **P** **01 01 16.7 +1.9**
BOD **Bodaibo** 34.95 39 *e*P **P** **01 01 16.1 +0.2**
BOD pmax pmax
comp=Z,21nm,1.5s
GRER 35.04 299⇑*i*P **P** **01 01 19.1 +2.3**
PGOR **Pogoanele** 35.05 299⇓*i*P **P** **01 01 18.5 +1.6**
AYDB **Zeytinkoy-Aydi** 35.15 286 *e*P **P** **01 01 16.2 -1.8**
VRI **Vrincioaia** 35.21 300⇑*i*P **P** **01 01 19.4 +1.1**
VRI **Vrincioaia** 35.21 300⇑P **P** **01 01 19.4 +1.1**
TESR **Tescani** 35.26 301⇓*i*P **P** **01 01 19.6 +0.9**
PLOR **Plostina** 35.26 300⇑*i*P **P** **01 01 20.3 +1.5**
PLOR **Plostina** 35.26 300⇑P **P** **01 01 20.3 +1.5**
ISR **Istrita** 35.35 299⇓*i*P **P** **01 01 21.6 +2.0**
ISR **Istrita** 35.35 299⇓P **P** **01 01 21.6 +2.0**
MICGM **Minsk** 35.38 315 *e*P **P** **01 01 21.0 +1.4**
MICGM PM 01 01 22.0
comp=Z,0.1nm,1.0s
MNK **Minsk** 35.38 315 *e*P **P** **01 01 21.0 +1.4**
MNK pmax pmax
comp=Z,120nm,1.0s
WHN **Wuhan** 35.44 87 P **P** **01 01 20.4 0.0**
WHN pmax pmax
comp=Z,68nm,0.8s
PRAR **RASCA** 35.56 303⇓*i*P **P** **01 01 22.1 +0.8**
SULR 35.57 298⇑*i*P **P** **01 01 23.1 +1.7**
PUL **Pulkovo** 35.70 325*de*P **P** **01 01 22.9 +0.7**
PUL pmax pmax
comp=Z,77nm,0.6s
ERIK **Erikli-Kesan** 35.75 291 *e*P **P** **01 01 22.7 -0.2**
MLR **Muntele Rosu** 35.76 300⇓*i*P **P** **01 01 25.3 +2.1**
MLR **Muntele Rosu** 35.76 300⇓P **P** **01 01 25.3 +2.1**
MLR **Muntele Rosu** 35.76 300 *e*P **P** **01 01 24.4 +1.2**
comp=Z,59nm,0.8s
GELI **Tayfur-Gelibol** 35.82 291 *e*P **P** **01 01 23.0 -0.6**
TIA **Tai'an** 35.99 76 ⇓P **P** **01 01 26.5 +1.4**
TIA pmax pmax
comp=Z,50nm,1.1s
ALN **Alexandroupoli** 36.07 292 *e*P **P** **01 01 24.5 -1.2**
DOPR **Dopca** 36.14 300⇑*i*P **P** **01 01 27.3 +1.0**
ATD **Arta Tunnel** 36.14 235 P **P** **01 01 26.9 +0.3**
comp=Z,34nm,1.1s,baz=271,slow=20,SNR=9.3
IDID **Didziasalis** 36.20 316 *e*P **P** **01 01 27.6 +1.0**
IDID lAmb lAmb 01 01 28.8
comp=Z,33nm,0.8s
BURAR **Bucovina Array** 36.25 303⇓*i*P **P** **01 01 28.4 +1.1**
BURAR **Bucovina Array** 36.25 303⇓P **P** **01 01 28.4 +1.1**
KARP **Karpathos** 36.25 283 *e*P **P** **01 01 27.7 +0.3**
KARP **Karpathos** 36.25 283 P **P** **01 01 26.8 -0.6**
KARP **Karpathos** 36.25 283 *e*P **P** **01 01 27.6 +0.2**
comp=Z,68nm,0.9s
BUR08 **Bucovina Ar. S** 36.26 303 *e*P **P** **01 01 28.3 +0.9**
MTUR **Matau** 36.39 299⇑*i*P **P** **01 01 30.1 +1.6**
MTUR **Matau** 36.39 299⇑P **P** **01 01 30.1 +1.6**
GOLR 36.48 299⇑*i*P **P** **01 01 29.4 +0.2**
HUMR **Humele** 36.49 298⇑*i*P **P** **01 01 30.8 +1.6**
IZAR **Zarasai** 36.57 317 *e*P **P** **01 01 30.9 +1.1**
IZAR lAmb lAmb 01 01 32.0
comp=Z,40nm,0.7s
ISAL **Salakas** 36.60 317 *e*P **P** **01 01 31.1 +1.1**
ISAL lAmb lAmb 01 01 32.4
comp=Z,26nm,0.9s
ARR **Arges** 36.69 299⇓*i*P **P** **01 01 32.2 +1.2**
ARCR **ARCALIA** 36.84 302⇓*i*P **P** **01 01 34.3 +2.1**
VSU **Vasula** 37.00 321*c*⇓*i*P **P** **01 01 33.6 +0.2**
VSU pmax pmax
comp=Z,144nm,0.8s
LVV **L'vov** 37.10 307⇓*i*P **P** **01 01 34.9 +0.5**
APE **Apeiranthos** 37.16 286⇓*i*P **P** **01 01 35.2 +0.1**
APE **Apeiranthos** 37.16 286⇓P **P** **01 01 35.2 +0.1**
LOT **Lotru** 37.29 300⇑*i*P **P** **01 01 37.3 +1.1**
CJR **Cluj-Napoca** 37.36 302⇑*i*P **P** **01 01 38.7 +2.0**
CJR **Cluj-Napoca** 37.36 302⇑P **P** **01 01 38.7 +2.0**
BMR **Baia Mare** 37.41 303⇓*i*P **P** **01 01 38.7 +1.7**
BMR **Baia Mare** 37.41 303⇓P **P** **01 01 38.7 +1.7**
LAST **Lasithi** 37.68 283⇓*i*P **P** **01 01 39.5 0.0**
LAST **Lasithi** 37.68 283 *e*P **P** **01 01 39.3 -0.2**
comp=Z,70nm,1.0s
DEV **Deva** 37.88 300⇑*i*P **P** **01 01 42.9 +2.0**
DEV **Deva** 37.88 300⇑P **P** **01 01 42.9 +2.0**
KWP **Kalwaria Pacla** 37.95 306 *e*P **P** **01 01 42.4 +0.9**
KWP **Kalwaria Pacla** 37.95 306⇓*i*P **P** **01 01 42.9 +1.3**
KWP **Kalwaria Pacla** 37.95 306⇑*e*P **P** **01 01 42.5 +0.9**
DRGR 37.97 302⇑*i*P **P** **01 01 42.9 +1.1**
DRGR 37.97 302⇑P **P** **01 01 42.9 +1.1**
SUW **Suwalki** 38.01 314 *i* P **P** **01 01 41.9 0.0**
SUW **Suwalki** 38.01 314⇑*i*P **P** **01 01 42.0 0.0**
TRPA **Tarpa** 38.05 304⇓*e*P **P** **01 01 43.6 +1.2**
LVZ **Lovozero** 38.07 338 *e*P **P** **01 01 41.9 -0.4**
LVZ pmax pmax
comp=Z,120nm,1.9s
LVZ **Lovozero** 38.07 338 *e*P **P** **01 01 41.9 -0.4**
comp=Z,120nm,1.9s
PLG **Polygyros** 38.11 291 P **P** **01 01 43.1 +0.1**
PLG **Polygyros** 38.11 291 P **P** **01 01 43.1 +0.1**
PLG **Polygyros** 38.11 291 P **P** **01 01 43.1 +0.1**
IDI **Anoyia** 38.11 283⇑*i*P **P** **01 01 42.6 -0.5**
IDI **Anoyia** 38.11 283 P **P** **01 01 42.0 -1.1**
IDI **Anoyia** 38.11 283 *e*P **P** **01 01 42.3 -0.8**
comp=Z,93nm,1.7s
UZH **Uzhgorod** 38.22 305⇓*i*P **P** **01 01 44.3 +0.6**
KOLS **Kolonicke sedl** 38.23 305 *e*P **P** **01 01 44.7 +0.8**
KOLS *e*PP **PP** **01 03 14.1 +1.1**
SIVA **Sivas** 38.24 283⇑*i*P **P** **01 01 44.7 +0.5**
FIA1 **FINESS Array S** 38.25 326 *e*P **P** **01 01 44.3 +0.5**
FINES **FINESS Array B** 38.25 326 P **P** **01 01 44.4 +0.5**
comp=Z,18nm,0.4s,baz=120,slow=9.8,SNR=509
NJ2 **Nanjing** 38.55 82 *e*P **P** **01 01 47.8 +1.1**
NJ2 pmax pmax
comp=Z,36nm,0.7s
VAM **Vamos** 38.62 283 P **P** **01 01 47.2 -0.1**
VAM **Vamos** 38.62 283 P **P** **01 01 47.2 -0.1**
VAM **Vamos** 38.62 283 P **P** **01 01 47.2 -0.1**
IMMV **Iera Moni Meta** 38.78 284 P **P** **01 01 46.5 -2.1**
GRG **Griva** 38.79 293 P **P** **01 01 47.7 -1.0**
GRG **Griva** 38.79 293 P **P** **01 01 47.7 -1.0**
GRG **Griva** 38.79 293 P **P** **01 01 47.7 -1.0**
BZS **Buzias** 38.79 300⇑*i*P **P** **01 01 49.5 +0.9**
BZS **Buzias** 38.79 300⇑P **P** **01 01 49.5 +0.9**
GVD **Gavdhos** 38.87 283 P **P** **01 01 48.4 -1.0**
GVD **Gavdhos** 38.87 283 P **P** **01 01 48.4 -1.0**
STHS **Stebnicka Huta** 38.91 306 *e*P **P** **01 01 50.5 +0.9**
AGG **Agios Georgios** 39.21 290 P **P** **01 01 51.4 -0.8**
AGG **Agios Georgios** 39.21 290 *e*P **P** **01 01 52.3 +0.1**
AGG pmax pmax
comp=Z,82nm,1.6s
AGG **Agios Georgios** 39.21 290 *e*P **P** **01 01 52.3 +0.1**
comp=Z,82nm,1.6s
BEL **Belsk** 39.26 310 *e*P **P** **01 01 53.1 +0.7**
BEL **Belsk** 39.26 310 *e*P **P** **01 01 53.1 +0.7**
THL **Klokotos Trika** 39.34 290 P **P** **01 01 51.8 -1.4**
KECS **Kecovo** 39.42 305 *e*P **P** **01 01 55.4 +1.6**
NIE **Niedzica** 39.52 306 *e*P **P** **01 01 56.1 +1.4**
NIE **Niedzica** 39.52 306 *e*P **P** **01 01 56.2 +1.5**
SERG **Sergoula** 39.55 289 P **P** **01 01 53.9 -1.1**
FNA **Florina** 39.59 293 P **P** **01 01 54.4 -1.0**
FNA **Florina** 39.59 293 P **P** **01 01 54.4 -1.0**
FNA **Florina** 39.59 293 P **P** **01 01 54.4 -1.0**
ANX **Ano Chora** 39.61 289 P **P** **01 01 54.8 -0.8**
EVR **Evrytania** 39.63 290 P **P** **01 01 55.0 -0.8**
EVR **Evrytania** 39.63 290 P **P** **01 01 55.0 -0.8**
KPRO **Kipourio** 39.75 291 P **P** **01 01 54.5 -2.3**
PSZ **Piszkesteto** 39.83 304⇑*i*P **P** **01 01 59.1 +1.8**
PSZ **Piszkesteto** 39.83 304⇓*e*P **P** **01 01 58.5 +1.1**
PSZ **Piszkesteto** 39.83 304⇑P **P** **01 01 59.1 +1.8**
PSZ **Piszkesteto** 39.83 304 *e*P **P** **01 01 58.7 +1.3**
comp=Z,9.6nm,0.8s
OJC **Ojcow** 39.84 307 *e*P **P** **01 01 57.6 +0.3**
OJC **Ojcow** 39.84 307⇑*e*P **P** **01 01 57.7 +0.4**
OJC **Ojcow** 39.84 307 *e*P **P** **01 01 57.2 -0.1**
comp=Z,41nm,0.8s
NEST **Nestorio** 39.90 292 P **P** **01 01 57.3 -0.7**
LANS **Liptovska Anna** 40.07 306 *e*P **P** **01 02 01.2 +1.9**
DSL **Palaion Diasel** 40.12 290 P **P** **01 01 58.5 -1.3**
DSL **Palaion Diasel** 40.12 290 P **P** **01 01 58.5 -1.3**
PKS6 **Bocsa** 40.14 302⇓*e*P **P** **01 02 01.5 +1.7**
PDO **Prodromos** 40.17 289 P **P** **01 01 58.8 -1.4**
KCSI **Kotacane, Aceh** 40.19 138 P **P** **01 02 03.0 +2.5**
comp=Z,24nm,1.0s
KULM **Kulim** 40.37 133 *e*P **P** **01 02 02.6 +0.6**
KULM *e*pP **pP** **01 02 25.0 +0.4**
VYHS **Vyhne** 40.51 305 *e*P **P** **01 02 03.8 +0.9**
VYHS *e*PP **PP** **01 03 36.4 -1.4**
LKD2 **Lefkada island** 40.53 290 P **P** **01 02 01.7 -1.5**
LKD2 **Lefkada island** 40.53 290 P **P** **01 02 01.7 -1.5**
KFL **Anninata** 40.59 289 P **P** **01 02 03.3 -0.3**
TIR **Tirane** 40.61 294 *e*P **P** **01 02 04.3 +0.6**
TIR pmax pmax
comp=Z,27nm,1.6s
TIR **Tirane** 40.61 294 *e*P **P** **01 02 04.3 +0.6**
comp=Z,27nm,1.6s
IGT **Igoumenitsa** 40.62 291 P **P** **01 02 01.1 -2.7**
IGT **Igoumenitsa** 40.62 291 P **P** **01 02 01.1 -2.7**
IGT **Igoumenitsa** 40.62 291 P **P** **01 02 01.1 -2.7**
VLS **Valsamata** 40.72 289 P P 01 02 01.1 -3.6
VLS **Valsamata** 40.72 289 P P 01 02 01.1 -3.6
VLS **Valsamata** 40.72 289 P P 01 02 01.1 -3.6
PKSM **Moragy** 40.81 301⇑*i*P **P** **01 02 05.6 +0.3**
PKSM **Moragy** 40.81 301⇓*e*P **P** **01 02 06.0 +0.7**
PKSM **Moragy** 40.81 301⇑P **P** **01 02 05.6 +0.3**
FURI **Furi** 40.85 237 P **P** **01 02 09.1 +2.8**
FURI **Furi** 40.85 237 *e*P **P** **01 02 07.0 +0.7**
comp=Z,52nm,1.4s
PDG **Podgorica** 40.87 295⇑*i*P **P** **01 02 05.0 -0.8**
CN2 **Changchun** 40.87 62 *e*P **P** **01 02 06.6 +0.8**
PKSG 40.88 303⇓*e*P **P** **01 02 07.0 +1.1**
OKC **Ostrava-Krasne** 40.91 307 *e*P **P** **01 02 06.8 +0.7**
OKC *e*PP **PP** **01 03 38.8 -3.3**
OKC **Ostrava-Krasne** 40.91 307 *e*P **P** **01 02 06.8 +0.7**

OKC e 01 03 38.8
KEK Kerkira 40.98 291 P P 01 01 58.0 -8.8
PKS9 Tamasi 41.02 302‖ *e*P **P 01 02 08.1 +1.0**
IPM Ipoh 41.24 133 *e*P **P 01 02 08.6 -0.6**
comp=Z,55nm,1.1s
MORC Moravsky Berou 41.31 307‖ *i*P **P 01 02 10.7 +1.3**
MORC Moravsky Berou 41.31 307 ‖P **P 01 02 10.7 +1.3**
MORC Moravsky Berou 41.31 307 *e*P **P 01 02 10.3 +0.9**
comp=Z,112nm,0.8s
PSI Prapat 41.41 137 P **P 01 02 10.2 -0.5**
comp=Z,5.6nm,0.6s,baz=301,slow=11,SNR=6.3
PSI Prapat 41.41 137 *e*P **P 01 02 10.1 -0.6**
PSI *e**PP **pP 01 02 33.6 +0.2**
PSI Prapat 41.41 137 *e*P **P 01 02 10.1 -0.6**
PSI *e*pP **pP 01 02 33.6 +0.2**
KEV Kevo 41.42 338 *e*P **P 01 02 10.6 +0.7**
KEV Kevo 41.42 338 *e*P **P 01 02 10.6 +0.7**
KEV pmax pmax
comp=Z,43nm,1.5s
KEV Kevo 41.42 338 *e*P **P 01 02 10.6 +0.7**
comp=Z,42nm,1.5s
SMOL Smolenice 41.45 305 *e*P **P 01 02 11.7 +1.2**
ARA0 ARCESS Array S 41.77 337 *e*P **P 01 02 13.3 +0.5**
ARCES ARCESS Array B 41.77 337 P **P 01 02 13.1 +0.2**
comp=Z,13nm,0.4s,baz=113,slow=8.1,SNR=205
ARE0 ARCESS Array S 41.77 337 *e*P **P 01 02 13.7 +0.8**
ARE0 ARCESS Array S 41.77 337 *e*P **P 01 02 13.7 +0.8**
comp=Z,19nm,0.6s
KRLC Kraliky 41.79 307 *e*P **P 01 02 14.1 +0.8**
KRLC *ex* x 01 02 42.1
KRLC *e*PP **PP 01 03 54.2 +2.6**
KRLC Kraliky 41.79 307 *e*P **P 01 02 14.1 +0.8**
KRLC *e* 01 02 42.1
KRLC *e* 01 03 54.2
STON Ston 41.93 296 P **P 01 02 14.5 +0.1**
VRAC Vranov 41.95 306‖ *i*P **P 01 02 16.0 +1.4**
VRAC Vranov 41.95 306 ‖P **P 01 02 16.0 +1.4**
GSI Gunungsitoli 41.95 140 P **P 01 02 16.6 +1.7**
comp=Z,105nm,1.0s
KSP Ksiaz 42.07 308 *e*P **P 01 02 15.9 +0.4**
KSP Ksiaz 42.07 308 *e*P **P 01 02 16.0 +0.4**
DPC Dobruska-Polom 42.07 308 *i*P **P 01 02 16.8 +1.2**
DPC *e*PP **PP 01 03 56.6 +2.0**
DPC Dobruska-Polom 42.07 308 *i*P **P 01 02 16.8 +1.2**
DPC *e* 01 03 56.6
SOP Sopron 42.09 304‖ *e*P **P 01 02 16.5 +0.7**
KTK1 Kautokeino 42.26 336 *e*P **P 01 02 17.2 +0.4**
KTK1 IAmb IAmb 01 02 17.6
comp=Z,21nm,0.7s
UPC Upice 42.26 308 *e*P **P 01 02 18.2 +1.1**
UPC *e*PP **PP 01 03 57.6 +1.0**
UPC Upice 42.26 308 *e*P **P 01 02 18.2 +1.1**
UPC *e* 01 03 57.6
CONA Conrad Observa 42.54 304 *i*P **P 01 02 20.0 +0.5**
comp=Z,31nm,1.0s,SNR=23
TREC Trest 42.67 306 *e*P **P 01 02 21.5 +1.0**
TREC *e*PP **PP 01 04 01.0 -0.1**
TREC Trest 42.67 306 *e*P **P 01 02 21.5 +1.0**
TREC *e* 01 04 01.0
ARSA Arzberg 42.84 303 *i*P **P 01 02 22.2 +0.3**
comp=Z,8.8nm,1.2s,SNR=7.2
HAMF Hammerfest 42.84 338 *e*P **P 01 02 22.6 +1.1**
BSD Bornholm Skovb 42.89 315‖ *i*P **P 01 02 21.5 -0.6**
BSD Bornholm Skovb 42.89 315 ‖*i*P **P 01 02 21.5 -0.6**
UDBI Udbina 43.04 299 P **P 01 02 23.7 +0.1**
INCN Inchon 43.05 71 *e*P **P 01 02 24.3 +0.6**
comp=Z,39nm,1.1s
GOPC GO Pecny, Ondr 43.08 307 *e*P **P 01 02 24.7 +0.9**
GOPC GO Pecny, Ondr 43.08 307 *e*P **P 01 02 24.7 +0.9**
PVCC Panska Ves 43.18 308 *e*P **P 01 02 25.6 +1.1**
PVCC *e*PP **PP 01 04 04.9 -1.6**
PVCC Panska Ves 43.18 308 *e*P **P 01 02 25.6 +1.1**
PVCC *e* 01 04 04.9
PRU Pruhonice 43.23 307 *e*P **P 01 02 25.8 +0.8**
PRU *e*PP **PP 01 04 07.2 +0.2**
PRU Pruhonice 43.23 307 *e*P **P 01 02 25.8 +0.8**
PRU *e* 01 04 07.2
SOKA Soboth 43.24 302 *i*P **P 01 02 25.6 +0.5**
comp=Z,15nm,1.0s,SNR=11
PRA Prague 43.30 307 *e*P **P 01 02 26.5 +1.0**
PRA *e*PP **PP 01 04 08.0 +0.3**
PRA Prague 43.30 307 *e*P **P 01 02 26.5 +1.0**
PRA *e* 01 04 08.0
TIP Timpagrande 43.39 291⇑ *i*P **P 01 02 25.6 -0.9**
TIP Timpagrande 43.39 291 *e*P **P 01 02 26.1 -0.4**
comp=Z,23nm,1.3s
MNSI Mandailing Nat 43.44 138 P P 01 02 23.0 -4.0
comp=Z,72nm,0.9s,comp=Z,21µm
VISS Visnje 43.49 301 *i*P **P 01 02 27.5 +0.4**
VISS *e*PP **PcP 01 04 11.9 -1.6**
YHNB Yeheng 43.52 91 *e*P **P 01 02 28.2 +0.5**
comp=Z,14nm,0.7s
TPUB Ta-pu 43.55 93 *e*P **P 01 02 28.5 +0.6**
comp=Z,40nm,1.6s
BRG Berggiesshubel 43.56 309 *i*P **P 01 02 28.5 +0.9**
comp=Z,41nm,0.9s
BRG *e* 01 04 05.7
comp=Z,9.6nm,1.1s
BRG SCP ScP 01 08 11.8 +16
comp=Z,2.0nm,0.9s
SSLB Suanglung 43.58 93 *e*P **P 01 02 29.1 +0.9**
comp=Z,24nm,0.8s
OBKA Obir 43.59 302 *i*P **P 01 02 28.7 +0.7**
comp=Z,11nm,1.3s
MOA Molln 43.62 304 *i*P **P 01 02 28.3 +0.2**
comp=Z,22nm,1.0s,SNR=15
YAK Yakutsk 43.63 35 P **P 01 02 27.6 -0.3**
comp=Z,49nm,0.3s,baz=121,slow=0.5,SNR=14
YAK Yakutsk 43.63 35 *e*P **P 01 02 27.8 -0.1**
YAK *e**PP **pP 01 02 52.0 +1.2**
YAK *e* 01 04 11.2
YAK *e*PPP PPP 01 04 45.3
YAK *e*S **S 01 08 49.7 -0.2**
YAK *e*SS SS 01 11 59.3 -8.8
YAK *e* 01 12 12.8
YAK *e*SSS SSS 01 12 50.9
YAK pmax pmax
comp=Z,55nm,0.8s
YAK pmax pmax
comp=N,4.0nm,0.9s
YAK pmax pmax
comp=E,11nm,0.8s
YAK pmax pmax
comp=Z,143nm,4.0s
YAK pmax pmax
comp=N,60nm,4.4s
YAK pmax pmax
comp=E,33nm,1.7s
YAK smax smax
comp=N,75nm,1.5s
YAK smax smax
comp=E,140nm,1.9s
YAK Yakutsk 43.63 35 *e*P **P 01 02 27.9 -0.1**
comp=E,94nm,0.6s
NVLJ Novalja 43.66 299 P **P 01 02 27.9 -0.6**
LJU Ljubljana 43.67 302 *i*P **P 01 02 29.1 +0.6**
LJU *e*PP **PcP 01 04 13.4 -0.6**
RGN Rugen 43.81 314 *e*P **P 01 02 30.7 +1.3**
comp=E,125nm,1.0s
GEA0 GERESS Array S 43.88 306 *e*P **P 01 02 30.4 +0.1**
GEC2 GERESS Array S 43.88 306 *e*P **P 01 02 31.0 +0.7**
GEC2 pmax pmax
comp=Z,8.0nm,0.9s
GEC2 GERESS Array S 43.88 306 *e*P **P 01 02 31.0 +0.7**
comp=Z,7.6nm,0.9s
GERES GERESS Array B 43.88 306 P **P 01 02 29.7 -0.6**
comp=Z,2.2nm,0.5s,baz=83,slow=7.7,SNR=48
GERES PP **PP 01 04 13.9 -0.1**
comp=Z,5.6nm,1.0s,baz=79,slow=6.9,SNR=7.5
HFS Hagfors 43.88 322 P **P 01 02 30.3 +0.3**
comp=Z,156nm,0.5s,baz=98,slow=11,SNR=1384
HFS S **S 01 08 53.1 -0.6**
comp=Z,3.9nm,1.0s,baz=84,slow=18,SNR=4.1
CUC Castrocucco 43.90 293 *e*P **P 01 02 31.2 +0.6**
comp=Z,17nm,0.7s
TRO Tromso 43.91 336 *e*P **P 01 02 30.3 +0.2**
KHC Kasperske Hory 43.93 306 *e*P **P 01 02 31.6 +0.9**
KHC *ex* x 01 02 43.5
KHC *e*PP **PP 01 04 13.8 -0.8**
KHC Kasperske Hory 43.93 306 *e*P **P 01 02 31.6 +0.9**
KHC *e* 01 04 13.8
KHC Kasperske Hory 43.93 306 *e*P **P 01 02 31.4 +0.7**
comp=Z,4.6nm,1.0s
KS01 Wonju Array Si 44.02 71 *e*P **P 01 02 31.7 +0.3**
KS15 Wonju Array Si 44.02 71 *e*P **P 01 02 31.5 0.0**
KSAR Wonju Array Be 44.02 71 P **P 01 02 32.3 +0.8**
KSAR Wonju Array Be 44.02 71 P **P 01 02 32.3 +0.8**
YULB Yu-li 44.05 93 *e*P **P 01 02 32.1 +0.2**
comp=Z,18nm,0.9s
KSRS Korea Array 44.05 71 P **P 01 02 32.3 +0.7**
comp=Z,16nm,0.8s,baz=279,slow=7.2,SNR=28
CLL Collm 44.12 309⇑ *i*P **P 01 02 32.3 +0.3**
comp=Z,22nm,0.9s
CLL *i* PP **PP 01 04 18.3 +1.9**
comp=Z,19nm,1.2s
CLL LmV 01 30 00.0
comp=Z,500nm,20.5s
CLL Collm 44.12 309⇑ *i*P **P 01 02 32.3 +0.3**
CLL pmax pmax
comp=Z,22nm,0.9s
CLL Collm 44.12 309 *e*P **P 01 02 32.3 +0.3**
comp=Z,24nm,0.8s
TWG Pinlang 44.14 94 *e*P **P 01 02 33.6 +1.1**
comp=Z,127nm,0.8s
CADS Cadrg 44.19 302 *i*P **P 01 02 32.6 -0.1**
TRI Trieste 44.25 301 *e*P **P 01 02 32.7 -0.4**
TRI pmax pmax
comp=Z,9.0nm,0.7s
TRI Trieste 44.25 301 *e*P **P 01 02 32.7 -0.4**
comp=Z,8.7nm,0.7s
COP Copenhagen 44.32 316⇑ *i*P **P 01 02 34.6 +1.1**
comp=Z,40nm,0.9s
COP Copenhagen 44.32 316⇑ *i*P **P 01 02 34.6 +1.1**
COP pmax pmax
comp=Z,40nm,0.9s
KBA Koelnbreinsper 44.33 303 *i*P **P 01 02 34.0 0.0**
comp=Z,15nm,1.5s,SNR=6.0
KLR Kul'dur 44.52 54 *de*P **P 01 02 36.0 +0.7**
comp=Z,4.4nm,0.5s,baz=284,slow=7.6,SNR=36
KLR Kul'dur 44.52 54 *de*P **P 01 02 35.8 +0.5**
MOR8 Moi Rana 44.53 331⇑ *i*P **P 01 02 34.8 -0.3**
MOR8 IAmb IAmb 01 02 35.5
comp=Z,52nm,0.7s
NKC Novy Kostel 44.56 308 *e*P **P 01 02 36.4 +0.8**
NKC *ex* x 01 03 03.3
NKC *e*PP **PcP 01 04 18.9 +1.9**
NKC Novy Kostel 44.56 308 *e*P **P 01 02 36.4 +0.8**
NKC *e* 01 03 03.3
NKC *e* 01 04 18.9
STEI Steigen 44.66 333 *e*P **P 01 02 37.6 +1.5**
YOJ Yonaguni jima 44.93 90 *e*P **P 01 02 39.1 +0.2**
YOJ pmax pmax
comp=Z,60nm,1.1s
YOJ Yonaguni jima 44.93 90 *e*P **P 01 02 39.1 +0.2**
comp=Z,60nm,1.1s
NC405 NORSAR Array S 44.95 323 *e*P **P 01 02 38.8 +0.3**
NC602 NORSAR Array S 45.00 323 *e*P **P 01 02 38.8 -0.1**
NC602 IAmb IAmb 01 02 39.6
comp=Z,25nm,0.8s
NC602 NORSAR Array S 45.00 323 *e*P **P 01 02 38.8 -0.1**
MYKOM Kota Tinggi 45.07 132 *e*P **P 01 02 40.6 +0.7**
comp=Z,24nm,1.0s
KONS Konsvik 45.12 331 *e*P **P 01 02 40.4 +0.6**
NC303 NORSAR Array S 45.12 323 *e*P **P 01 02 40.1 +0.2**
AQU L'Aquila 45.14 297 *e*P **P 01 02 41.2 +0.8**
AQU pmax pmax
comp=Z,9.0nm,0.9s
AQU L'Aquila 45.14 297 *e*P **P 01 02 41.2 +0.8**
comp=Z,9.2nm,0.9s
NB201 NORSAR Array S 45.15 323 *e*P **P 01 02 40.2 +0.1**
NB2 NORSAR Subarra 45.18 323 P **P 01 02 40.3 -0.1**
comp=Z,63nm,0.6s,baz=94,slow=7.9
NB2 NORSAR Subarra 45.18 323 P **P 01 02 40.3 -0.1**
baz=94,slow=7.9
NOA NORSAR Array B 45.18 323 P **P 01 02 40.2 -0.2**
comp=Z,56nm,0.6s,baz=96,slow=7.7,SNR=439
NAO01 NORSAR Array S 45.33 323 *e*P **P 01 02 41.3 -0.3**
PDSI Padang 45.34 138 P **P 01 02 41.7 -0.5**
comp=Z,57nm,0.9s
OSL Oslo 45.35 322 *e*P **P 01 02 41.2 -0.4**
NBO02 NORSAR Array S 45.36 323 *e*P **P 01 02 41.6 -0.2**
NBO00 NORSAR Array S 45.40 323 *e*P **P 01 02 42.1 0.0**
GRFO Grafenberg 45.40 307 *e*P **P 01 02 43.2 +0.9**
GRFO pmax pmax
comp=Z,49nm,1.4s
GRFO Grafenberg 45.40 307 *e*P **P 01 02 43.2 +0.9**
comp=Z,49nm,1.4s
NC204 NORSAR Array S 45.42 323 *e*P **P 01 02 42.3 0.0**
USRK Ussuriysk Ar. 45.45 61 P **P 01 02 42.8 0.0**
comp=Z,7.3nm,1.0s,baz=292,slow=7.0,SNR=8.7
USRK PP **PP 01 04 33.5 +2.7**
comp=Z,2.4nm,0.8s,baz=267,slow=12,SNR=4.7
WTTA Wattenberg 45.46 304 *i*P **P 01 02 42.4 -0.5**
comp=Z,15nm,1.3s,SNR=6.4
WATA Walderalm 45.49 304 *i*P **P 01 02 42.2 -0.9**
comp=Z,10.0nm,1.1s,SNR=9.7
VLA Vladivostok 45.60 62‖ *e*P **P 01 02 44.6 +0.7**
VLA pmax pmax
comp=Z,54nm,0.8s
TIXI Tiksi 45.66 22 P **P 01 02 43.9 -0.2**
comp=Z,9.4nm,0.3s,baz=281,slow=4.5,SNR=9.6
TIXI Tiksi 45.66 22 *d i*P **P 01 02 43.8 -0.2**
TIXI pmax pmax
comp=Z,10.0nm,0.5s
TIXI Tiksi 45.66 22 *e*P **P 01 02 44.2 +0.2**
comp=Z,16nm,0.5s
MOTA Moosalm 45.80 304 *i*P **P 01 02 45.6 -0.1**
comp=Z,5.5nm,0.8s,SNR=8.8
KONO Kongsberg 45.91 321 *e*P **P 01 02 46.3 +0.2**
KONO IAmb IAmb 01 02 46.8
comp=Z,53nm,0.8s
KONO Kongsberg 45.91 321 *e*P **P 01 02 46.2 +0.2**
KONO pmax pmax
comp=Z,51nm,0.8s
KONO Kongsberg 45.91 321 *e*P **P 01 02 46.2 +0.2**
comp=Z,51nm,0.8s
RETA Reutte 46.01 304 *i*P **P 01 02 46.5 -0.6**
comp=Z,6.9nm,1.1s
FETA Feichten 46.11 303 *i*P **P 01 02 47.3 -0.7**
comp=Z,12nm,1.0s,SNR=8.0
MUD Monsted U'grnd 46.13 317⇑ *i*P **P 01 02 48.7 +0.8**
comp=Z,21nm,0.9s
MUD Monsted U'grnd 46.13 317⇑ *i*P **P 01 02 48.7 +0.8**
MUD pmax pmax
comp=Z,21nm,0.9s
HOMB Homborsund 46.46 319 *e*P **P 01 02 50.8 +0.4**
HOMB IAmb IAmb 01 02 51.3
comp=Z,35nm,0.7s
FUORN Ofenpass-Fuorn 46.49 303 *e*P **P 01 02 51.0 -0.2**
comp=Z,6.8nm,0.6s
DAVA Damuels 46.63 304 *i*P **P 01 02 51.7 -0.5**
comp=Z,40nm,1.0s,SNR=15
HABR Khabarovsk 46.78 54 *e*P **P 01 02 51.3 -1.8**
HABR *e**PP **pP 01 03 15.3 -0.9**
HABR *e**SP **sP 01 03 26.5 -0.7**
HABR *e* 01 04 23.3
HABR *e* 01 04 42.4
HABR *e*PPP PPP 01 05 28.7
HABR *e*S **S 01 09 33.8 -1.9**
HABR *e**SS **sS 01 10 14.5 -0.9**
HABR 01 12 35.9
HABR *e*SSS SSS 01 14 09.1
HABR pmax pmax
comp=Z,15nm,1.0s
HABR pmax pmax
comp=Z,6.0nm,0.4s
HABR pmax pmax
comp=E,11nm,0.6s
HABR MLR MLR
comp=Z,144nm,19.0s
STU Stuttgart 46.84 306 *e*P **P 01 02 54.4 +0.8**
STU pmax pmax
comp=Z,19nm,0.9s
STU Stuttgart 46.84 306 *e*P **P 01 02 54.4 +0.8**
comp=Z,19nm,0.9s
VLC Villacollemand 46.90 300 *e*P **P 01 02 54.6 +0.5**
comp=Z,7.8nm,0.9s
TUE Stuetta 47.14 303 *e*P **P 01 02 55.7 -0.5**
comp=Z,6.3nm,0.7s
SNART Snartemo 47.14 319 *e*P **P 01 02 56.5 +0.8**
SNART IAmb IAmb 01 02 57.0
comp=Z,25nm,0.6s
ODD1 Odda 47.41 321 *e*P **P 01 02 58.9 +1.0**
BFO Black Forest 47.48 306 *i*P **P 01 02 58.6 0.0**
BFO Black Forest 47.48 306 *e*P **P 01 02 57.8 -0.8**
comp=Z,7.7nm,0.9s
BLS5 Blasjo 47.51 321 *e*P **P 01 02 59.4 +0.8**
BLS5 IAmb IAmb 01 03 00.2
comp=Z,35nm,1.0s
HSPB Hornsund (broa 47.65 345 *e*P **P 01 03 01.0 +1.6**
LANF Langenberg 47.72 307‖ *e*P **P 01 03 01.4 +1.0**
JNU Nakatsue 47.72 76 P **P 01 03 02.0 +1.4**
comp=Z,38nm,1.0s,baz=278,slow=3.1,SNR=12
JNU Nakatsue 47.72 76 *e*P **P 01 03 02.1 +1.4**
comp=Z,62nm,1.1s
WTSB Winterswijk 47.90 311 *e*P **P 01 03 02.2 +0.6**
comp=Z,58nm,1.3s
STAV Stavanger 47.91 320 *e*P **P 01 03 02.0 +0.4**
SPA0 Spitsbergen Ar 47.98 347 *e*P **P 01 03 03.0 +1.0**
SPA0 Spitsbergen Ar 47.98 347 *e*P **P 01 03 02.2 +0.2**
BER Bergen 48.05 322 *e*P **P 01 03 03.3 +0.5**
JOW Kunigami 48.13 85 P **P 01 03 04.1 +0.3**
comp=Z,9.2nm,0.4s,baz=291,slow=8.5,SNR=7.9
JOW Kunigami 48.13 85 *e*P **P 01 03 04.1 +0.3**
comp=Z,92nm,1.8s
KMY Karmoy 48.14 321 *e*P **P 01 03 04.1 +0.7**
KMY IAmb IAmb 01 03 05.7
comp=Z,20nm,0.8s
ECH Echery 48.27 306 *e*P **P 01 03 05.5 +0.8**
MOF Molkenrain 48.36 305‖ *e*P **P 01 03 05.7 +0.3**
SENIN Lac Senin/Sane 48.55 303 *e*P **P 01 03 06.5 -0.6**
comp=Z,13nm,0.8s
MEM Membach 48.59 309 P **P 01 03 07.8 +0.8**
comp=Z,15nm,1.1s
HGN Heimansgroeve 48.62 309 *e*P **P 01 03 07.2 0.0**
comp=Z,9.8nm,0.9s
WLF Walferdange 48.66 308 P **P 01 03 08.8 +1.2**
comp=Z,30nm,1.3s
WLF Walferdange 48.66 308 *e*P **P 01 03 07.4 -0.2**
WLF pmax pmax
comp=Z,37nm,0.9s
WLF Walferdange 48.66 308 *e*P **P 01 03 07.4 -0.2**
comp=Z,37nm,0.9s
BEBN Eben Emael 48.77 309 P **P 01 03 09.0 +0.7**
VSL Villasalto 48.82 294 *e*P **P 01 03 09.2 +0.3**
comp=Z,89nm,1.6s
BCLA Clavier 49.07 309 P **P 01 03 11.5 +0.8**
KBS Kingsbay 49.09 347 *e*P **P 01 03 11.0 +0.5**
KBS Kingsbay 49.09 347 *e*P **P 01 03 11.0 +0.5**
KBS pmax pmax
comp=Z,14nm,0.6s
KBS Kingsbay 49.09 347 *e*P **P 01 03 11.0 +0.5**
comp=Z,14nm,0.6s
KMBO Kilima Mbogo 49.38 229 P **P 01 03 15.3 +1.6**
comp=Z,26nm,0.7s,baz=31,slow=10,SNR=79
KMBO Kilima Mbogo 49.38 229 *e*P **P 01 03 14.4 +0.7**
comp=Z,22nm,0.7s
KMBO Kilima Mbogo 49.38 229 P **P 01 03 15.3 +1.6**
SNR=6.4
KMBO Kilima Mbogo 49.38 229 P **P 01 03 15.3 +1.6**
SNR=6.4
DOU Dourbes 49.57 309 P **P 01 03 15.2 +0.6**
comp=Z,16nm,1.3s
NKL Nikolayevsk 49.58 47 *e*P **P 01 03 15.0 +0.5**
NKL pmax pmax
comp=N,22nm,1.0s
NKL pmax pmax
comp=E,20nm,1.0s
NKL pmax pmax
comp=Z,86nm,1.0s
SNF Seneffe 49.69 309 P **P 01 03 15.8 +0.4**
KEST Kesra 50.04 289 P **P 01 03 19.3 +0.9**
comp=Z,8.3nm,0.6s,baz=46,slow=0.8,SNR=38
MDSI Maura Dua 50.35 137 P **P 01 03 21.3 +0.6**
comp=Z,14nm,1.0s
SSB Saint Sauveur 50.68 302 *e*P **P 01 03 23.2 +0.2**
SSB pmax pmax
comp=Z,9.0nm,0.6s
SSB Saint Sauveur 50.68 302 *e*P **P 01 03 23.2 +0.2**
comp=Z,9.3nm,0.6s
PLDF La Plantade 51.13 303 *e*P **P 01 03 25.9 -0.5**
KASI Kota Agung 51.38 137 P **P 01 03 28.4 -0.1**
comp=Z,36nm,1.0s
AGO Saint Agoulin 51.44 304‖ *e*P **P 01 03 29.1 +0.4**
LBL Lubilhac 51.58 303‖ *e*P **P 01 03 30.1 +0.3**
PYM Petit Puy Mans 51.60 303 *e*P **P 01 03 30.1 +0.2**
INU Inuyama 51.67 71 *e*P **P 01 03 30.7 +0.2**
comp=Z,19nm,0.8s
MJB9 Matsu-Tunnel 52.14 69 *e*P **P 01 03 33.8 -0.3**
comp=Z,5.4nm,0.6s
MAT Matsushiro 52.15 69 P **P 01 03 34.2 +0.1**
MAJO Matsushiro 52.15 69 *d i*P **P 01 03 33.6 -0.5**
MAJO pmax pmax
comp=Z,86nm,0.8s
MAJO Matsushiro 52.15 69 *e*P **P 01 03 33.4 -0.6**
comp=Z,21nm,0.6s
MJAR Matsushiro Arr 52.15 69 P **P 01 03 34.8 +0.7**
comp=Z,13nm,0.7s,baz=288,slow=9.4,SNR=21
YSS Yuzh-Sakhalins 52.19 55‖ *e*P **P 01 03 35.2 +1.1**
YSS pmax pmax
comp=Z,30nm,1.7s
ESK Eskdalemuir 53.19 316 *i*P **P 01 03 41.8 +0.4**
ESK Eskdalemuir 53.19 316 *e*P **P 01 03 41.5 +0.1**
comp=Z,41nm,1.3s
COCO West Island 53.47 150 *e*P **P 01 03 44.7 +0.8**
COCO pmax pmax
comp=Z,77nm,1.0s
COCO West Island 53.47 150 *e*P **P 01 03 44.7 +0.8**
comp=Z,77nm,1.0s
SEY Seymchan 54.10 34 P **P 01 03 48.6 +0.7**
comp=Z,7.2nm,0.8s,baz=270,slow=8.0,SNR=19
SEY Seymchan 54.10 34⇑ *i*P **P 01 03 49.2 +1.2**
DAG Danmarks Havn 55.27 344 *i*P **P 01 03 56.6 +0.4**
comp=Z,16nm,0.9s
DAG Danmarks Havn 55.27 344 *i*P **P 01 03 56.6 +0.4**
DAG pmax pmax
comp=Z,14nm,0.9s
ES19 SONSECA Array 58.39 298 *e*P **P 01 04 18.6 -0.3**
BILL Bilibino 58.42 26‖ *e*P **P 01 04 18.9 +0.3**
BILL *e* 01 04 45.0
BILL *e* 01 06 31.7
BILL pmax pmax
comp=Z,7.0nm,0.9s
BILL Bilibino 58.42 26 *e*P **P 01 04 19.5 +0.9**
comp=Z,16nm,1.4s
ESDC Sonseca Array 58.44 298 P **P 01 04 18.8 -0.5**
comp=Z,6.3nm,0.7s,baz=52,slow=7.9,SNR=45
ESLA Sonseca Array 58.44 298 *e*P **P 01 04 18.9 -0.4**
comp=Z,10nm,0.9s
TAM Tamanrasset 58.53 276 *e*P **P 01 04 18.9 -1.4**
TAM pmax pmax
comp=Z,8.0nm,0.6s
TAM Tamanrasset 58.53 276 *e*P **P 01 04 18.9 -1.4**
comp=Z,7.7nm,0.6s
PAB San Pablo 58.77 298 *e*P **P 01 04 21.4 -0.2**
PAB pmax pmax
comp=Z,15nm,1.2s
PAB San Pablo 58.77 298 *e*P **P 01 04 21.4 -0.2**
comp=Z,15nm,1.2s
RER Riviere de l'E 59.16 198 *e*P **P 01 04 24.2 0.0**
comp=Z,54nm,0.8s
PEA0 Petropavlovsk- 59.49 44 *e*P **P 01 04 26.9 +0.7**
PEA0B Petropavlovsk- 59.49 44 *e*P **P 01 04 27.3 +1.1**
comp=Z,97nm,1.6s
PETK Petropavlovsk- 59.49 44 P **P 01 04 25.6 -0.5**
comp=Z,5.4nm,0.6s,baz=292,slow=4.0,SNR=7.9
PGAV Gavieira, Arco 60.54 302 *e*P **P 01 04 33.9 +0.2**
MTE Manteigas 60.68 300 *e*P **P 01 04 35.1 +0.5**
PVIS Viseu 60.79 301 *e*P **P 01 04 35.4 0.0**
PBAR Barrancos 61.24 298 *e*P **P 01 04 38.1 -0.3**
PESTR Estremoz 61.34 299 *e*P **P 01 04 39.0 -0.1**
PTOM Tomar 61.61 300 *e*P **P 01 04 40.8 0.0**
SUMG Summit 61.63 341 *i*P **P 01 04 42.0 +1.1**
comp=Z,20nm,0.7s
SUMG Summit 61.63 341 *i*P **P 01 04 42.0 +1.1**
SUMG pmax pmax
comp=Z,20nm,0.7s
SUMG Summit 61.63 341 *e*P **P 01 04 41.8 +0.9**
comp=Z,30nm,0.9s
PMTG Montargil 61.71 299 *e*P **P 01 04 41.2 -0.3**
EVO Evora 61.79 299 *e*P **P 01 04 41.7 -0.3**
PBEJ Beja 61.90 298 *e*P **P 01 04 42.8 0.0**
PBDV Barranco-do-Ve 62.28 297 *e*P **P 01 04 45.6 +0.2**
PNCL Nicolau / Gran 62.33 298 *e*P **P 01 04 45.9 +0.2**
LSZ Lusaka 65.98 227 *e*P **P 01 05 10.5 +0.7**
LSZ pmax pmax
comp=Z,56nm,1.3s
LSZ Lusaka 65.98 227 *e*P **P 01 05 10.5 +0.7**
comp=Z,56nm,1.3s
LSZ Lusaka 65.98 227 P **P 01 05 10.5 +0.7**
SNR=7.2
TOA0 Torodi Ar. Sit 66.69 269 *e*P **P 01 05 12.3 -2.0**
TORD Torodi Ar. Bea 66.69 269 P **P 01 05 12.3 -2.0**
comp=Z,23nm,0.6s,baz=48,slow=5.9,SNR=354
ILULI Ilulissat 66.98 341 *i*P **P 01 05 15.8 +0.5**

	comp=Z,21nm,0.7s									
ILULI	**Ilulissat**	**66.98**	**341**	*i* P		**P**		**01 05 15.8**	**+0.5**
ILULI				pmax		pmax				
	comp=Z,21nm,0.7s									
SFJD	**Kangerlussuaq**	**68.36**	**339**	*i* P		**P**		**01 05 23.5**	**-0.5**
SFJD	**Kangerlussuaq**	**68.36**	**339**	*i* P		**P**		**01 05 23.5**	**-0.5**
SFJD	**Kangerlussuaq**	**68.36**	**339**	*e*P		**P**		**01 05 24.3**	**+0.3**
	comp=Z,133nm,2.0s									
RES	**Resolute Bay**	**69.04**	**356**	*e*P		**P**		**01 05 28.5**	**+0.3**
RES				pmax		pmax				
	comp=Z,6.0nm,1.4s									
RES	**Resolute Bay**	**69.04**	**356**	*e*P		**P**		**01 05 28.5**	**+0.3**
	comp=Z,6.3nm,1.4s									
MATP	**Matopo**	**69.88**	**224**	*i* P		**P**		**01 05 34.8**	**+0.6**
COLD	**Coldfoot**	**71.97**	**16**	*e*P		**P**		**01 05 47.0**	**+0.9**
	comp=Z,7.2nm,0.8s									
MBWA	**Marble Bar**	**72.63**	**134**	*e*P		**P**		**01 05 51.0**	**+0.4**
	comp=Z,34nm,1.5s									
FYU	**Fort Yukon**	**73.59**	**15**	*e*P		**P**		**01 05 57.2**	**+1.6**
	comp=Z,46nm,1.7s									
MLY	**Manley**	**73.65**	**18**	*e*P		**P**		**01 05 56.9**	**+0.8**
	comp=Z,14nm,1.5s									
FITZ	**Fitzroy Crossi**	**73.95**	**127**	P		**P**		**01 05 58.7**	**+0.3**
	comp=Z,4.8nm,0.8s,baz=304,slow=7.3,SNR=7.4									
FITZ	**Fitzroy Crossi**	**73.95**	**127**	*e*P		**P**		**01 05 58.3**	**-0.1**
	comp=Z,25nm,1.2s									
INK	**Inuvik**	**74.01**	**10**	*e*P		**P**		**01 05 58.7**	**+0.6**
INK				pmax		pmax				
	comp=Z,29nm,1.3s									
INK	**Inuvik**	**74.01**	**10**	*e*P		**P**		**01 05 58.7**	**+0.6**
	comp=Z,30nm,1.3s									
MDM	**Murphy Dome**	**74.31**	**17**	*e*P		**P**		**01 06 00.9**	**+0.9**
	comp=Z,7.7nm,1.0s									
COLA	**College**	**74.47**	**17**	ǁ*e*P		**P**		**01 06 01.4**	**+0.6**
COLA				pmax		pmax				
	comp=Z,8.0nm,0.8s									
COLA	**College**	**74.47**	**17**	*e*P		**P**		**01 06 01.9**	**+1.1**
	comp=Z,12nm,0.8s									
CAST	**Castle Rocks**	**74.63**	**19**	*e*P		**P**		**01 06 02.7**	**+0.8**
	comp=Z,17nm,1.0s									
IL1	**Eielson Array**	**74.77**	**16**	*e*P		**P**		**01 06 01.8**	**-0.8**
ILAR	**Eielson Array**	**74.77**	**16**	P		**P**		**01 06 02.4**	**-0.3**
	comp=Z,2.2nm,0.8s,baz=319,slow=4.0,SNR=11									
LBTB	**Lobatse**	**75.14**	**223**	*e*P		**P**		**01 06 06.3**	**+1.0**
LBTB				pmax		pmax				
	comp=Z,120nm,0.8s									
LBTB	**Lobatse**	**75.14**	**223**	*e*P		**P**		**01 06 06.3**	**+1.0**
	comp=Z,120nm,0.8s									
RND	**Reindeer**	**75.46**	**18**	*e*P		**P**		**01 06 06.7**	**0.0**
RND				pmax		pmax				
	comp=Z,21nm,1.4s									
RND	**Reindeer**	**75.46**	**18**	*e*P		**P**		**01 06 06.7**	**0.0**
	comp=Z,20nm,1.4s									
TSUM	**Tsumeb**	**75.52**	**233**	*e*P		**P**		**01 06 08.1**	**+0.4**
	comp=Z,37nm,1.1s									
DBIC	**Dimbokro**	**75.66**	**268**	P		**P**		**01 06 06.8**	**-1.6**
	comp=Z,6.9nm,0.6s,baz=24,slow=7.3,SNR=19									
EGAK	**Eagle**	**75.98**	**14**	*e*P		**P**		**01 06 10.4**	**+0.9**
	comp=Z,8.5nm,1.0s									
DHY	**Denali Highway**	**76.10**	**17**	*e*P		**P**		**01 06 11.0**	**+0.6**
	comp=Z,8.1nm,0.7s									
DOT	**Dot Lake**	**76.37**	**16**	*e*P		**P**		**01 06 12.1**	**+0.3**
	comp=Z,75nm,2.0s									
PAX	**Paxson**	**76.64**	**17**	*e*P		**P**		**01 06 13.4**	**0.0**
PAX				pmax		pmax				
	comp=Z,4.0nm,0.7s									
PAX	**Paxson**	**76.64**	**17**	*e*P		**P**		**01 06 13.4**	**0.0**
	comp=Z,4.3nm,0.7s									
BOSA	**Boshof**	**78.17**	**221**	*i* P		**P**		**01 06 22.5**	**+0.1**
BOSA	**Boshof**	**78.17**	**221**	P		**P**		**01 06 22.1**	**-0.3**
	comp=Z,72nm,0.8s,baz=23,slow=3.9,SNR=132									
BOSA	**Boshof**	**78.17**	**221**	*e*P		**P**		**01 06 22.7**	**+0.3**
	comp=Z,79nm,0.8s									
KDAK	**Kodiak Island**	**79.08**	**23**	*i* P		**P**		**01 06 28.0**	**+1.2**
WRA	**Warramunga Arr**	**81.02**	**123**	P		**P**		**01 06 38.1**	**+0.3**
	comp=Z,4.3nm,0.7s,baz=324,slow=4.9,SNR=23									
WRAB	**Tennant Creek**	**81.02**	**123**	ǁ*e*P		**P**		**01 06 37.8**	**-0.1**
WRAB				pmax		pmax				
	comp=Z,9.0nm,0.7s									
WRAB	**Tennant Creek**	**81.02**	**123**	*e*P		**P**		**01 06 38.0**	**+0.2**
	comp=Z,12nm,1.0s									
WB2	**Warramunga Arr**	**81.03**	**123**	*e*P		**P**		**01 06 38.1**	**+0.3**
	comp=Z,9.8nm,0.9s									
YKW3	**Yellowknife Ar**	**81.40**	**3**	*e*P		**P**		**01 06 39.2**	**0.0**
	comp=Z,17nm,0.8s									
YKA	**Yellowknife Ar**	**81.47**	**3**	P		**P**		**01 06 39.6**	**+0.1**
	comp=Z,15nm,0.6s,baz=350,slow=5.4,SNR=435									
YKA				PKKPbc		**PKKPbc**		**01 25 10.2**	**-2.4**
	comp=Z,0.2nm,0.5s,baz=165,slow=2.5,SNR=8.6									
YKB5	**Yellowknife Ar**	**81.47**	**3**	*e*P		**P**		**01 06 38.8**	**-0.7**
SCHQ	**Schefferville**	**82.72**	**338**	P		**P**		**01 06 46.4**	**+0.1**
	comp=Z,6.2nm,0.6s,baz=22,slow=5.0,SNR=16									
AS31	**Alice Springs**	**83.30**	**126**	*e*P		**P**		**01 06 50.0**	**+0.2**
	comp=Z,1.9nm,0.4s									
ASAR	**Alice Springs**	**83.30**	**126**	P		**P**		**01 06 50.0**	**+0.3**
	comp=Z,3.3nm,0.7s,baz=316,slow=5.3,SNR=22									
PMG	**Port Moresby**	**83.59**	**106**	P		**P**		**01 06 52.2**	**+0.9**
	comp=Z,9.8nm,0.7s,baz=332,slow=9.0,SNR=4.1									
DLBC	**Dease Lake**	**83.87**	**12**	*e*P		**P**		**01 06 53.0**	**+0.8**
	comp=Z,8.3nm,1.0s									
FCC	**Fort Churchill**	**84.68**	**353**	*e*P		**P**		**01 06 56.5**	**+0.3**
FCC				pmax		pmax				
	comp=Z,12nm,0.9s									
FCC	**Fort Churchill**	**84.68**	**353**	*e*P		**P**		**01 06 56.5**	**+0.3**
	comp=Z,12nm,0.9s									
FFC	**Flin Flon**	**89.28**	**357**	*e*P		**P**		**01 07 18.7**	**+0.2**
FFC				pmax		pmax				
	comp=Z,12nm,0.9s									
FFC	**Flin Flon**	**89.28**	**357**	*e*P		**P**		**01 07 18.7**	**+0.2**
	comp=Z,12nm,0.9s									
CTA	**Charters Tower**	**89.54**	**115**	P		**P**		**01 07 21.7**	**+1.4**
	comp=Z,6.0nm,0.7s,baz=359,slow=5.8,SNR=6.0									
ULM	**Lac du Bonnet**	**93.25**	**352**	P		**P**		**01 07 36.1**	**-0.9**
	comp=Z,4.8nm,0.8s,baz=359,slow=5.1,SNR=7.5									
STKA	**Stephens Creek**	**93.85**	**127**	P		**P**		**01 07 40.0**	**+0.1**
	comp=Z,0.8nm,0.5s,baz=313,slow=6.2,SNR=3.7									
A33A	**Warroad**	**94.50**	**352**	P		**P**		**01 07 42.4**	**-0.4**
	baz=10.0									
A32A	**Rocking H Ranc**	**94.64**	**353**	P		**P**		**01 07 43.0**	**-0.4**
	baz=9.1									
A30A	**Hoffart Farm,**	**94.79**	**354**	P		**P**		**01 07 43.7**	**-0.4**
	baz=7.7									
B34A	**Aery, Baudette**	**94.85**	**351**	P		**P**		**01 07 44.0**	**-0.5**
	baz=11									
EYMN	**Ely**	**94.94**	**349**	P		**P**		**01 07 44.8**	**-0.1**
	baz=13									
B32A	**Ashes, Strandq**	**95.16**	**352**	P		**P**		**01 07 45.6**	**-0.2**
	baz=9.1									
AGMN	**Agassiz Nation**	**95.18**	**352**	P		**P**		**01 07 45.7**	**-0.3**
	baz=9.7									
AGMN	**Agassiz Nation**	**95.18**	**352**	*e*P		**P**		**01 07 45.8**	**-0.1**
	comp=Z,6.3nm,0.9s									
B29A	**Wagenman Farm,**	**95.35**	**354**	P		**P**		**01 07 46.7**	**0.0**
	baz=6.8									
C31A	**Landman Farms,**	**95.87**	**353**	P		**P**		**01 07 48.7**	**-0.4**
	baz=8.2									
C30A	**Mose, Pekin**	**96.03**	**354**	P		**P**		**01 07 50.0**	**+0.2**
	baz=7.6									
TXAR	**Lajitas Array**	**114.67**	**356**	PKKPbc		PKKPbc		01 23 40.1	-0.2
	comp=Z,0.6nm,0.8s,baz=185,slow=5.2,SNR=6.3									
SNAA	**Sanae**	**119.48**	**201**	PKP		**PKPdf**		**01 13 09.5**	**-1.2**
VNA2	**Neumayer--Watz**	**120.51**	**202**	PKP		**PKPdf**		**01 13 12.0**	**-0.5**
	baz=24,slow=4.0									
VNA1	**Neumayer--Stat**	**120.67**	**202**	PKP		**PKPdf**		**01 13 11.0**	**-1.8**
VNA3	**Neumayer Olymp**	**121.32**	**202**	PKP		**PKPdf**		**01 13 13.4**	**-0.7**
CPUP	**Villa Florida**	**136.18**	**268**	PKP		**PKPdf**		**01 13 41.7**	**-2.0**
	comp=Z,3.7nm,0.7s,baz=36,slow=1.8,SNR=11									
LPAZ	**La Paz**	**139.62**	**289**	PKP		**PKPdf**		**01 13 50.4**	**-0.7**
	comp=Z,1.0nm,0.5s,baz=188,slow=14,SNR=4.1									
PLCA	**Paso Flores**	**150.65**	**250**	PKPbc		**PKPbc**		**01 14 13.7**	**-0.4**
	comp=Z,21nm,0.9s,baz=160,slow=1.9,SNR=26									

*CSEM **25** 00:58:57.2, 46.35N×13.67E, h0km, ML0.1*
LJU 25 00:58:57.2, 46.35N×13.67E, h9km, ML0.1, Austria

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CADS	**Cadrg**	**0.13**	**159**	*i* Pg	Pg	00 59 00.0	-0.2
CADS				*i* Sg	Sg	00 59 02.2	-0.1
	comp=Z,3.0nm,0.1s						
CADS	**Cadrg**	**0.13**	**159**	*i* Pg	Pg	00 59 00.0	-0.2
CADS				*i* Sg	Sg	00 59 02.2	-0.1
	comp=Z,3.0nm,0.1s						
ROBS	**Robic**	**0.15**	**227**	*i* Pg	Pg	00 59 00.3	-0.2
ROBS				*i* Sg	Sg	00 59 03.2	+0.4
	comp=Z,1.0nm,0.0s						
ROBS	**Robic**	**0.15**	**227**	*i* Pg	Pg	00 59 00.3	-0.2
ROBS				*i* Sg	Sg	00 59 03.2	+0.4
	comp=Z,1.0nm,0.0s						
GORS	**Gorjuse**	**0.23**	**98**	*i* Pg	Pg	00 59 01.6	-0.3
GORS				*i* Sg	Sg	00 59 05.9	+0.8
	comp=Z,1.0nm,0.1s						
GORS	**Gorjuse**	**0.23**	**98**	*i* Pg	Pg	00 59 01.6	-0.3
GORS				*i* Sg	Sg	00 59 05.9	+0.8
	comp=Z,1.0nm,0.1s						
VOJS	**Vojsko**	**0.35**	**155**	*i* Sg	Sg	00 59 10.0	+1.2
	comp=Z,0.0nm,0.1s						
VOJS	**Vojsko**	**0.35**	**155**	*i* Sg	Sg	00 59 10.0	+1.2
CRNS	**Crni Vrh**	**0.49**	**123**	*i* Sg	Sg	00 59 14.1	+0.9
CRNS	**Crni Vrh**	**0.49**	**123**	*i* Sg	Sg	00 59 14.1	+0.9

*IDC **25** 01:04:49.3±0.9, 37.23N×142.92E, h0km, mb3.5/8, mb1 3.7/10, mb1mx3.5/47, mbtmp3.6/10, ML3.5/2, MS3.2/1, Ms1 3.2/1, ms1mx2.7/37, Error ellipse: s-maj=31.6km s-min=18.4km az=101.0*
*JMA **25** 01:04:50.2±0.3, 37.32N×142.53E, h3km±4km, M3.7*
ISC 25 01:04:49.9±2.2, 37.29N±0.0×142.52E±0.0, h1km±12km, n26, σ1.6s26/34, mb3.6/8, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**1.31**	**274**	P	**Pg**	**01 05 15.0**	**0.0**
JFK				*e*S	**Sg**	**01 05 32.0**	**0.0**
ONAJ	**Iwakimizuishiy**	**1.39**	**263**	P	**Pn**	**01 05 16.4**	**-0.1**
JIO	**Ouri**	**1.48**	**322**	P	**Pb**	**01 05 18.0**	**-0.3**
JIO				*e*S	**Sg**	**01 05 37.4**	**-0.2**
JMM	**Marumori**	**1.48**	**293**	P	**Pn**	**01 05 17.6**	**-0.2**
JMM				*e*S	**Sg**	**01 05 38.2**	**+0.6**
JHO	**Hitachi**	**1.70**	**247**	P	**Pn**	**01 05 21.5**	**+0.7**
JFT	**Otama**	**1.75**	**278**	P	**Pn**	**01 05 22.3**	**+0.8**
JFT				*e*S	**Sb**	**01 05 45.1**	**-0.3**
JOU	**Okura**	**1.82**	**307**	P	**Pn**	**01 05 23.0**	**+0.6**
JOU				*e*S	**Sn**	**01 05 45.9**	**-0.2**
OFUJ	**Ofunato**	**1.91**	**340**	P	**Pn**	**01 05 23.1**	**-0.5**
OFUJ				S	**Sn**	**01 05 47.9**	**-0.4**
JMK	**Ichinoseki**	**1.95**	**329**	P	**Pn**	**01 05 24.8**	**+0.6**
JMK				*e*S	**Sb**	**01 05 49.6**	**-1.4**
JYK	**Kaneyama**	**2.35**	**314**	P	**Pn**	**01 05 31.2**	**+1.5**
JOM	**Ohasama**	**2.38**	**337**	P	**Pn**	**01 05 30.1**	**0.0**
JOM				*e*S	**Sn**	**01 06 00.0**	**0.0**
JAG	**Ashikaga**	**2.60**	**252**	P	**Pn**	**01 05 35.1**	**+1.9**
JRY	**Ryogami san**	**3.17**	**247**	P	**Pn**	**01 05 43.0**	**+1.9**
JRY				*e*S	**Sn**	**01 06 17.8**	**-1.8**
JOD2	**Odawara 2**	**3.43**	**235**	P	**Pn**	**01 05 46.4**	**+1.8**
MJAR	**Matsushiro Arr**	**3.53**	**259**	Pn	Pn	01 05 49.4	+3.4
	2.5nm,0.3s,baz=89,slow=15,SNR=7.5						
MAT	**Matsushiro**	**3.53**	**259**	P	Pb	01 05 50.1	-3.2
MAT				*e*S	**Sb**	**01 06 33.2**	**-3.5**
JHJ	**Hachijo jima 2**	**4.73**	**209**	Pn	**Pn**	**01 06 02.3**	**0.0**
	7.6nm,0.3s,baz=246,slow=19,SNR=2.4						
JHJ				Sn	**Sn**	**01 06 56.6**	**-1.2**
	9.5nm,0.3s,baz=72,slow=17,SNR=3.6						
GUMO	**Guam**	**23.70**	**174**	LR	LR	01 17 16.6	
	comp=Z,69nm,22.0s,baz=129,slow=32						
SEY	**Seymchan**	**26.38**	**10**	P	**P**	**01 10 28.3**	**+0.8**
	2.0nm,0.7s,baz=190,slow=8.4,SNR=4.3						
MKAR	**Makanchi Array**	**44.73**	**302**	P	**P**	**01 13 07.0**	**+2.2**
	0.2nm,0.6s,baz=73,slow=9.7,SNR=2.5						
ILAR	**Eielson Array**	**48.80**	**32**	P	**P**	**01 13 34.1**	**-2.3**
	0.3nm,0.7s,baz=273,slow=5.1,SNR=4.3						
WRA	**Warramunga Arr**	**57.45**	**189**	P	**P**	**01 14 39.8**	**-0.7**
	0.4nm,0.3s,baz=7.0,slow=7.6,SNR=3.2						
ASAR	**Alice Springs**	**61.17**	**189**	P	**P**	**01 15 06.2**	**0.0**
	0.2nm,0.8s,baz=12,slow=14,SNR=3.3						
FINES	**FINESS Array B**	**68.99**	**333**	P	**P**	**01 15 57.5**	**+0.9**
	0.8nm,0.6s,baz=55,slow=7.7,SNR=4.3						
AKASG	**Malin Array Be**	**74.63**	**323**	P	**P**	**01 16 31.2**	**+0.5**
	0.4nm,0.5s,baz=45,slow=5.9,SNR=6.4						
GERES	**GERESS Array B**	**82.95**	**329**	P	**P**	**01 17 16.9**	**+0.3**
	0.2nm,0.5s,baz=40,slow=7.7,SNR=4.2						

*TIF **25** 01:15:26.0, 41.34N×43.94E, h10km±1km*
*CSEM **25** 01:15:27.3±0.3, 41.34N×43.87E, h2km, ML1.9, Error ellipse: s-maj=8.8km s-min=4.4km az=166.0*
*DDA **25** 01:15:31.9, 41.20N×43.54E, h7km, Md2.5*
ISC 25 01:15:26.9±1.2, 41.33N±0.0×43.88E±0.0, h10km±11km, n20, σ0.9s31/34, Turkey-Georgia-Armenia border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AKH	**Akhalkalaki**	**0.30**	**285**	P	**Pg**	**01 15 33.3**	**+0.2**
AKH				S	Sg	01 15 27.8	-9.5
AKH	**Akhalkalaki**	**0.30**	**285**	P	**Pg**	**01 15 33.3**	**+0.2**
EAK	**Akyaka**	**0.68**	**198**	*i* P	**Pg**	**01 15 40.2**	**+0.2**
EAK				*i* S	**Sb**	**01 15 50.5**	**+0.1**
EAK	**Akyaka**	**0.68**	**198**	P	**Pg**	**01 15 40.2**	**+0.2**
EAK				S	**Sb**	**01 15 50.5**	**+0.1**
TBLG	**Delisi**	**0.76**	**58**	P	**Pb**	**01 15 42.4**	**+0.2**
TBLG				S	**Sb**	**01 15 52.7**	**+0.1**
TBLG	**Delisi**	**0.76**	**58**	P	**Pb**	**01 15 42.4**	**+0.2**
TBLG				S	**Sb**	**01 15 52.7**	**+0.1**
SEAG	**Tbilisi Sea**	**0.82**	**58**	P	Pn	01 15 53.0	+8.5
EPOS	**Posof**	**0.89**	**282**	*i* P	**Pg**	**01 15 43.5**	**-0.5**
EPOS				*i* S	**Sg**	**01 15 55.6**	**0.0**
EPOS	**Posof**	**0.89**	**282**	P	**Pg**	**01 15 43.5**	**-0.5**
EPOS				S	**Sg**	**01 15 55.6**	**0.0**
DGRG	**David-gareji**	**1.13**	**83**	P	**Pb**	**01 15 48.0**	**-0.5**
DGRG				S	**Sn**	**01 16 04.4**	**0.0**
DGRG	**David-gareji**	**1.13**	**83**	P	**Pb**	**01 15 48.0**	**-0.5**
DGRG				S	**Sn**	**01 16 04.4**	**0.0**
GUDG	**Gudauri**	**1.22**	**21**	P	**Sb**	**01 16 06.3**	**+0.3**
ONI	**Oni**	**1.30**	**346**	P	**Sb**	**01 16 08.8**	**+0.6**
ARTV	**Artvin**	**1.48**	**265**	*i* P	**Pb**	**01 15 54.6**	**-0.1**
ARTV				*i* S	**Sb**	**01 16 13.9**	**+0.3**
ARTV	**Artvin**	**1.48**	**265**	P	**Pb**	**01 15 54.6**	**-0.1**
ARTV				S	**Sb**	**01 16 13.9**	**+0.3**
DAGI	**Agillar**	**1.51**	**261**	*i* P	**Pg**	**01 15 56.1**	**+0.3**
DAGI				*i* S	**Sb**	**01 16 14.3**	**+0.1**
DDEM	**Demirkent**	**1.67**	**256**	*i* P	**Pg**	**01 15 59.3**	**+0.3**
DDEM				*i* S	**Sb**	**01 16 18.7**	**-0.2**
DDEM	**Demirkent**	**1.67**	**256**	P	**Pg**	**01 15 59.3**	**+0.3**
DDEM				S	**Sb**	**01 16 18.7**	**-0.2**
DBAD	**Bademkaya**	**1.68**	**260**	*i* P	**Pg**	**01 15 58.8**	**-0.4**
DBAD				*i* S	**Sb**	**01 16 19.6**	**+0.3**
DBAD	**Bademkaya**	**1.68**	**260**	P	**Pg**	**01 15 58.8**	**-0.4**
DBAD				S	**Sb**	**01 16 19.6**	**+0.3**

*IDC **25** 01:16:10.8±1.2, 4.36S×122.88E, h0km, mb4.0/3, mb1 4.2/5, mb1mx3.8/33, mbtmp4.0/5, ML3.8/1, MS2.5/1, Ms1 2.5/1, ms1mx2.2/36, Error ellipse: s-maj=34.7km s-min=21.9km az=50.0*
*ISCJB **25** 01:16:14.6±0.4, 4.21S±0.0×122.84E±0.0, h35km, mb4.0/3, Error ellipse: s-maj=8.1km s-min=5.1km az=156.8*
*DJA **25** 01:16:14.7±0.2, 4°S±3°×12°3E±°, h10km, M4.3/20, mb4.6/14, mB5.1/4, MLv4.2/20, Mw(mB)4.5/4*
ISC 25 01:16:16.4±0.9, 4.20S±0.08×122.81E±0.07, h35km, n22, σ1.9s44/23, mb4.0/3, Sulawesi

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BSSI	**Bau Bau, Buton**	**3.01**	**230**	P	**Pn**	**01 17 02.3**	**+0.6**
SPSI	**Sidrap Palu**	**3.04**	**274**	P	**Pn**	**01 17 01.9**	**-0.2**
KAPI	**Kappang**	**3.15**	**255**	Pn	**Pn**	**01 17 03.0**	**-0.7**
	12nm,0.3s,baz=103,slow=3.0,SNR=21						
KAPI				Sn	**Sn**	**01 17 40.9**	**+0.8**
	12nm,0.3s,baz=38,slow=23,SNR=6.5						
KAPI				LR	LR	01 17 45.0	
	comp=Z,67nm,19.5s,baz=49,slow=30						
TTSI	**Tana Toraja**	**3.20**	**291**	P	**Pn**	**01 17 05.4**	**+1.1**
SANI	**Sanana**	**3.83**	**56**	P	**Pn**	**01 17 13.9**	**+1.0**
MMRI	**Maumere**	**4.44**	**187**	P	**Pn**	**01 17 19.9**	**-1.4**
MRSI	**Marisa**	**4.73**	**349**	P	**Pn**	**01 17 25.2**	**-0.1**
SOEI	**Soe**	**5.70**	**165**	P	**Pn**	**01 17 40.7**	**+1.9**
	74nm,0.9s,2µm0.2nm						
LBMI	**Labuha**	**5.87**	**53**	P	**Pn**	**01 17 41.9**	**+0.8**
	27nm,0.8s,0.1nm						
BASI	**Baing, Sumba**	**6.37**	**200**	P	**Pn**	**01 17 50.4**	**+2.5**
	180nm,1.4s,0.8nm						
TNTI	**Ternate**	**6.72**	**43**	P	**Pn**	**01 17 53.2**	**+0.5**
	79nm,0.7s,0.5nm						
PLAI	**Plampang**	**6.79**	**227**	P	**Pn**	**01 17 54.6**	**+0.9**
	22nm,1.1s,0.1nm						
BNDI	**Bandanaira**	**7.08**	**93**	P	**Pn**	**01 17 58.9**	**+1.3**
	230nm,0.7s,0.9nm						
TWSI	**Taliwang, Sumb**	**7.42**	**232**	P	**Pn**	**01 18 02.7**	**+0.5**
	9.6nm,1.1s,691nm0.1nm						
SRBI	**Singaraja**	**8.48**	**243**	P	**Pn**	**01 18 16.3**	**-0.6**
	24nm,0.9s,1µm						
SWI	**Sorong**	**9.07**	**69**	P	**Pn**	**01 18 24.3**	**-0.6**
	18nm,0.8s,988nm						
SAUI	**Saumlaki**	**9.24**	**114**	P	**Pn**	**01 18 29.0**	**+1.7**
	351nm,0.9s						
FAKI	**Fak Fak**	**9.51**	**83**	P	**Pn**	**01 18 30.4**	**-0.6**
WRA	**Warramunga Arr**	**19.26**	**145**	P	**P**	**01 20 34.6**	**-3.5**
	baz=316,slow=13,SNR=15						
ASAR	**Alice Springs**	**22.11**	**152**	P	**P**	**01 21 06.8**	**-2.2**
	4.6nm,0.8s,baz=317,slow=8.3,SNR=35						
MKAR	**Makanchi Array**	**62.10**	**330**	P	**P**	**01 26 35.0**	**+1.2**
	0.6nm,0.6s,baz=136,slow=7.7,SNR=6.5						
ZALV	**Zalesovo Beam**	**66.06**	**337**	P	**P**	**01 26 59.7**	**+0.1**
	0.7nm,0.4s,baz=142,slow=5.1,SNR=5.5						

JMA 25 01:18:58.3, 36.95N×140.60E, h9km±1km, M2.5, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.22**	**46**	P	Pg	01 19 03.0	+0.2
ONAJ				S	Sg	01 19 06.3	+0.4
JHO	**Hitachi**	**0.34**	**184**	P	Pg	01 19 05.0	0.0
JHO				S	Sg	01 19 10.0	+0.5
JFK	**Kawauchi**	**0.47**	**28**	P	Pg	01 19 07.3	-0.2
JFK				S	Sg	01 19 13.7	0.0
JFT	**Otama**	**0.60**	**340**	P	Pg	01 19 10.0	0.0
JFT				S	Sg	01 19 18.2	+0.2
JMM	**Marumori**	**0.93**	**9**	P	Pg	01 19 15.5	-0.6
JMM				S	Sg	01 19 27.9	-0.3
MAT	**Matsushiro**	**1.96**	**259**	P	Pg	01 19 36.5	+0.5
MAT				S	Sb	01 19 58.4	-0.5

*JMA **25** 01:24:51.9±0.1, 24.35N×122.51E, h61km±1km, M1.6*
*ISCJB **25** 01:24:52.1±0.9, 24.4N±0.1×122.52E±0.0, h59km±11km, Error ellipse: s-maj=18.1km s-min=4.2km az=0.7*
*TAP **25** 01:24:53.5, 24.56N×122.46E, h41km±1km, ML2.6, D*
ISC 25 01:24:52.4±1.6, 24.5N±0.1×122.51E±0.03, h59km±14km, n13, σ0.9s55/23, Taiwan region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JYNG	**Yonagunijimaku**	**0.40**	**91**	P	**Pn**	**01 25 03.1**	**0.0**
JYNG				S	**Sn**	**01 25 11.4**	**+0.4**
YOJ	**Yonaguni jima**	**0.46**	**89**	P	**Pn**	**01 25 03.6**	**-0.1**
YOJ				*e*S	**Sn**	**01 25 12.1**	**+0.1**
TWC	**Suao**	**0.62**	**284**	*e*P	**Pn**	**01 25 05.5**	**-0.1**
	baz=275						
TWC				S	**Sn**	**01 25 14.2**	**-1.0**
	baz=275						
ENA	**Nanau**	**0.70**	**268**	*e*P	**Pn**	**01 25 07.0**	**+0.4**
	baz=258						
ENA				*e*S	**Sn**	**01 25 17.6**	**+0.7**
	baz=258						
TWE	**Neicheng**	**0.81**	**289**	*e*P	**Pn**	**01 25 07.8**	**-0.1**
	baz=282						
ENTT	**Nioudou**	**0.88**	**282**	*e*P	**Pn**	**01 25 09.6**	**+0.7**
	baz=275						
NSK	**Sanguang**	**1.07**	**282**	P	**Pn**	**01 25 11.8**	**+0.5**
	baz=276						
NSK				*e*S	**Sn**	**01 25 25.4**	**-0.1**
	baz=276						
IRIF	**Iriomote-Funau**	**1.12**	**96**	P	**Pn**	**01 25 11.6**	**-0.3**
IRIF				S	**Sn**	**01 25 26.4**	**0.0**
WHF	**Hehuan Shan**	**1.18**	**255**	*e*P	**Pn**	**01 25 13.2**	**+0.1**
	baz=249						
WHF				*e*

*ISK **25** 01:43:54.6, 38°.53N×43°.73E, h7km, MD2.6*
*CSEM **25** 01:43:55.0±0.3, 38°.52N×43°.76E, h5km, MD2.6, Error ellipse: s-maj=6.9km s-min=3.9km az=89.0*
ISC 25 01:43:55.1±1.2, **38°.53N**±0°.03×**43°.75E**±0°.04, **h7**km±11km, **n18**, σ0**°55**/32, **Turkey**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
TVAN	**Van**	**0.27**	**270**	*i* P	**Pg**	**01 44 00.7**	**+0.1**
TVAN				*i* S	**Sb**	**01 44 06.7**	**-0.7**
TVAN	**Van**	**0.27**	**270**	P	**Pg**	**01 44 00.7**	**+0.1**
TVAN				S	**Sb**	**01 44 06.7**	**-0.7**
VANB	**Van**	**0.29**	**283**	*e*PG	**Pg**	**01 44 00.5**	**-0.4**
VANB				*e*SG	**Sg**	**01 44 05.0**	**+0.1**
VANB	**Van**	**0.29**	**283**	*e*Pg	**Pg**	**01 44 00.5**	**-0.4**
VANB				*e*Sg	**Sg**	**01 44 05.0**	**+0.1**
VMUR	**Van-Muradiye**	**0.48**	**343**	*i* P	**Pg**	**01 44 04.0**	**-0.5**
VMUR				*i* S	**Sb**	**01 44 12.9**	**-0.5**
VMUR	**Van-Muradiye**	**0.48**	**343**	P	**Pg**	**01 44 04.0**	**-0.5**
VMUR				S	**Sb**	**01 44 12.9**	**-0.5**
GEVA	**Gevas**	**0.59**	**248**	*i* P	**Pg**	**01 44 06.1**	**-0.4**
GEVA				*i* S	**Sb**	**01 44 17.6**	**+1.2**
GEVA	**Gevas**	**0.59**	**248**	P	**Pg**	**01 44 06.1**	**-0.4**
GEVA				S	**Sb**	**01 44 17.6**	**+1.2**
CLDR	**Caldiran**	**0.63**	**12**	*e*PG	**Pg**	**01 44 07.2**	**-0.1**
CLDR				*e*SG	**Sg**	**01 44 16.4**	**+0.9**
CLDR	**Caldiran**	**0.63**	**12**	*e*Pg	**Pg**	**01 44 07.2**	**-0.1**
CLDR				*e*Sg	**Sg**	**01 44 16.4**	**+0.9**
HAKT	**HAKKARI**	**0.97**	**182**	*i* P	**Pb**	**01 44 14.2**	**-0.3**
HAKT				*i* S	**Sb**	**01 44 27.1**	**-0.5**
HAKT	**HAKKARI**	**0.97**	**182**	P	**Pb**	**01 44 14.2**	**-0.3**
HAKT				S	**Sb**	**01 44 27.1**	**-0.5**
CUKT	**Cukurca**	**1.29**	**185**	*e*PN	**Pb**	**01 44 19.5**	**-0.2**
CUKT				*e*SN	**Sn**	**01 44 37.7**	**+0.5**
CUKT	**Cukurca**	**1.29**	**185**	*e*Pn	**Pb**	**01 44 19.5**	**-0.2**
CUKT				*e*Sn	**Sn**	**01 44 37.7**	**+0.5**
SIRT	**Sirnak**	**1.46**	**226**	*e*PN	**Pn**	**01 44 21.8**	**-0.2**
SIRT	**Sirnak**	**1.46**	**226**	*e*Pn	**Pn**	**01 44 21.8**	**-0.2**
EKAR	**Karacoban**	**1.50**	**299**	*i* P	**Pg**	**01 44 24.0**	**0.0**
EKAR	**Karacoban**	**1.50**	**299**	P	**Pg**	**01 44 24.0**	**0.0**

*ISCJB **25** 01:46:39.2±0.6, 25°.51N±0°.06×101°.92E±0°.06, h10km, mb3.7/11, MS3.9/2, Error ellipse: s-maj=9.1km s-min=6.1km az=42.0*
*IDC **25** 01:46:40.0±0.8, 25°.53N×101°.79E, h0km, mb3.8/11, mb1 3.9/11, mb1mx3.6/49, mbtmp3.8/11, MS3.8/2, Ms1 3.8/2, ms1mx3.1/41, Error ellipse: s-maj=26.8km s-min=16.4km az=67.0*
*BJI **25** 01:46:42.0, 25°.39N×101°.92E, h10km, ML3.9/16, Ms3.8/3, Ms7 3.7/3*
ISC 25 01:46:40.8±0.8, **25°.43N**±0°.06×**101°.90E**±0°.07, **h10**km, **n19**, σ1**°35**/19, **mb3.9**/11, **Yunnan**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
KMI	**Kunming**	**0.82**	**112**	Pg	**Pg**	**01 46 55.6**	**-1.1**
KMI				Sg	**Sg**	**01 47 06.4**	**-1.1**
KMI				smax	smax		
	comp=N,4μm,0.6s						
KMI				smax	smax		
	comp=E,3μm,0.6s						
GYA	**Guiyang**	**4.41**	**76**	Pn	**Pn**	**01 47 49.3**	**+1.3**
GYA				Pg	**Pb**	**01 47 57.9**	**-0.6**
GYA				smax	smax		
	comp=N,100nm,0.8s						
GYA				smax	smax		
	comp=E,60nm,0.8s						
CD2	**Chengdu**	**5.70**	**16**	Pn	Pn	01 48 09.0	+3.4
CD2				Pg	**Pg**	**01 48 28.1**	**-1.9**
CD2				Sn	Sb	01 49 18.9	-10
CD2				Sg	**Sg**	**01 49 46.0**	**+2.2**
CD2				smax	smax		
	comp=N,180nm,0.7s						
CD2				smax	smax		
	comp=E,200nm,1.1s						
CD2				LR	LR		
	comp=Z,320nm,9.0s						
CMAR	**Chiang Mai Arr**	**7.46**	**202**	Pg	Pg	01 48 59.0	-4.8
	1.6nm,0.3s,baz=6.7,slow=16,SNR=19						
CMAR				Lg	Lg	01 50 36.9	
	0.4nm,0.3s,baz=16,slow=30,SNR=4.3						
XAN	**Xi'an**	**10.52**	**34**	P	**Pn**	**01 49 11.9**	**+0.1**
XAN				S	Sn	01 51 16.3	+6.5
XAN				sS		01 51 21.9	
XAN				LR	LR		
	comp=N,220nm,7.3s						
XAN				LR	LR		
	comp=E,210nm,8.4s						
XAN				LR	LR		
	comp=Z,240nm,7.1s						
MKAR	**Makanchi Array**	**26.42**	**329**	P	**P**	**01 52 18.9**	**+1.2**
	0.2nm,0.4s,baz=118,slow=12,SNR=2.8						
AAK	**Ala-Archa**	**28.28**	**314**	P	**P**	**01 52 34.9**	**+0.3**
	0.6nm,0.3s,baz=182,slow=3.3,SNR=3.7						
USRK	**Ussuriysk Ar.**	**30.75**	**45**	P	**P**	**01 52 56.3**	**+0.1**
	0.9nm,0.4s,baz=258,slow=7.2,SNR=5.2						
ZALV	**Zalesovo Beam**	**31.20**	**340**	P	**P**	**01 53 00.9**	**+0.9**
	0.4nm,0.3s,baz=179,slow=9.8,SNR=3.6						
ASAJ	**Asahikawa**	**37.81**	**50**	LR	LR	02 10 02.3	
	comp=Z,154nm,19.0s,baz=229,slow=37						
WRA	**Warramunga Arr**	**55.03**	**142**	P	**P**	**01 56 15.8**	**+2.9**
	1.4nm,0.9s,baz=330,slow=8.0,SNR=5.3						
ASAR	**Alice Springs**	**57.82**	**145**	P	**P**	**01 56 34.0**	**+1.2**
	0.3nm,0.5s,baz=325,slow=7.0,SNR=6.3						
BRTR	**Keskin Array B**	**57.98**	**302**	P	**P**	**01 56 32.9**	**-1.0**
	0.4nm,0.6s,baz=114,slow=8.2,SNR=4.9						
FINES	**FINESS Array B**	**61.25**	**328**	P	**P**	**01 56 54.9**	**-1.0**
	1.1nm,0.6s,baz=94,slow=7.5,SNR=9.9						
ARCES	**ARCESS Array B**	**61.66**	**337**	P	**P**	**01 56 57.8**	**-0.8**
	0.4nm,0.4s,baz=89,slow=8.1,SNR=9.8						
NB2	**NORSAR Subarra**	**68.42**	**328**	P	**P**	**01 57 41.9**	**-0.7**
	comp=Z,1.5nm,0.9s,baz=78,slow=6.5						
NOA	**NORSAR Array B**	**68.42**	**328**	P	**P**	**01 57 42.0**	**-0.7**
	comp=Z,0.9nm,0.8s,baz=77,slow=6.2,SNR=4.6						
GERES	**GERESS Array B**	**70.16**	**315**	P	**P**	**01 57 53.4**	**-0.3**
	comp=Z,0.3nm,0.5s,baz=64,slow=6.1,SNR=6.4						
TORD	**Torodi Ar. Bea**	**93.41**	**286**	LR	LR	02 46 42.4	
	comp=Z,41nm,19.2s,baz=225,slow=39						

IDC 25 01:49:27.2±1.8, **32°.53N**×**142°.59E**, **h0**km, **mb3.7**/5, **mb1 3.8**/7, **mb1mx3.5**/43, **mbtmp3.7**/7, **ML3.4**/2, **Error ellipse: s-maj=60.5km s-min=21.2km az=67.0, Southeast of Honshu**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JHJ	**Hachijo jima 2**	**2.43**	**285**	Pn	Pn	01 50 07.3	-0.9
	20nm,0.3s,baz=30,slow=20,SNR=4.6						
MJAR	**Matsushiro Arr**	**5.39**	**319**	Pn	Pn	01 50 50.6	+1.7
	1.4nm,0.3s,baz=154,slow=11,SNR=6.6						
ZALV	**Zalesovo Beam**	**45.73**	**316**	P	P	01 57 49.7	-0.3
	0.6nm,0.5s,baz=113,slow=14,SNR=3.2						
MKAR	**Makanchi Array**	**47.43**	**306**	P	P	01 58 03.2	-0.3
	0.6nm,0.5s,baz=88,slow=10,SNR=6.5						
WRA	**Warramunga Arr**	**52.77**	**190**	P	P	01 58 44.0	-0.2
	0.7nm,0.4s,baz=6.2,slow=7.6,SNR=4.3						
ASAR	**Alice Springs**	**56.50**	**190**	P	P	01 59 11.4	+0.2
	0.3nm,0.4s,baz=4.6,slow=6.6,SNR=6.9						
FINES	**FINESS Array B**	**73.25**	**333**	P	P	02 00 59.6	-0.3
	0.7nm,0.7s,baz=28,slow=6.3,SNR=3.8						

IDC 25 01:54:23.3±5.4, **6°.45S**×**146°.69E**, **h142**km±40km, **mb3.0**/3, **mb1 3.2**/5, **mb1mx3.0**/28, **mbtmp3.5**/5, **Error ellipse: s-maj=52.4km s-min=48.6km az=171.0, Eastern New Guinea region**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PMG	**Port Moresby**	**2.97**	**171**	P	Pn	01 55 09.6	-0.5
	15nm,0.3s,baz=1.6,slow=5.6,SNR=34						
PMG				S	Sn	01 55 46.9	+0.7
	4.4nm,0.3s,baz=300,slow=20,SNR=6.8						
CTA	**Charters Tower**	**13.56**	**182**	P	P	01 57 34.0	-0.1
	0.7nm,0.3s,baz=359,slow=15,SNR=6.8						
WRA	**Warramunga Arr**	**17.99**	**221**	P	P	01 58 23.4	+0.2
	0.1nm,0.3s,baz=46,slow=12,SNR=4.1						
ASAR	**Alice Springs**	**21.07**	**214**	P	P	01 58 57.6	+1.1
	0.5nm,0.5s,baz=49,slow=8.2,SNR=14						
FITZ	**Fitzroy Crossi**	**23.57**	**239**	P	P	01 59 20.1	-1.1
	1.2nm,0.7s,baz=49,slow=9.3,SNR=3.3						
STKA	**Stephens Creek**	**25.74**	**190**	P	P	01 59 40.0	-0.7
	0.4nm,0.4s,baz=345,slow=12,SNR=3.0						
TORD	**Torodi Ar. Bea**	**144.90**	**284**	PKP	PKPdf	02 13 44.9	+0.3
	0.6nm,0.5s,baz=91,slow=2.9,SNR=9.6						

*SCB **25** 01:59:23.6±0.6, 20°.22S×72°.50W, h38km, Ml3.8/1, Error ellipse: s-maj=60.2km s-min=13.0km az=134.0*
*IDC **25** 01:59:44.1±1.8, 20°.23S×70°.93W, h29km±5km, mb4.0/2, mb1 4.1/4, mb1mx3.6/26, mbtmp4.0/4, ML3.7/2, MS3.3/2, Ms1 3.3/2, ms1mx3.0/24, Error ellipse: s-maj=61.4km s-min=35.2km az=4.0*
*GUC **25** 01:59:44.7±0.5, 19°.65S×70°.95W, h44km±1km, ML3.8*
ISC 25 01:59:44.2±1.1, **19°.68S**±0°.05×**71°.00W**±0°.08, **h22**km±6km, **n22**, σ2**°15**/25, **mb4.1**/3, **10C-1D, Near coast of northern Chile**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PSGC	**Pisagua**	**0.83**	**85**	*i* P	**Pn**	**01 59 59.8**	**-0.8**
PSGC				*i* S	**Sn**	**02 00 10.9**	**-1.3**
HMBC	**Humberstone**	**1.20**	**120**	⇑ *i* P	**Pb**	**02 00 06.2**	**-0.2**
HMBC				*i* S	**Sn**	**02 00 21.9**	**+0.4**
HMBC				IAML		02 00 33.2	
	comp=E,4μm,0.6s						
PB12	**IPOC Station P**	**1.23**	**31**	⇑ *i* P	**Pb**	**02 00 06.0**	**-0.9**
PB12				*i* S	**Sn**	**02 00 21.3**	**-0.9**
PB11	**IPOC Station P**	**1.27**	**94**	⇑ *i* P	**Pb**	**02 00 06.8**	**-0.6**
PB11				*i* S	**Sn**	**02 00 23.4**	**+0.3**
PATCX	**Punta Patache**	**1.39**	**145**	⇑ *i* P	**Pn**	**02 00 08.6**	**+0.3**
PATCX				*e*S	**Sn**	**02 00 24.2**	**-1.8**
PATCX				IAML		02 00 38.1	
	comp=E,2μm,0.7s						
MNMC	**Minye Minye**	**1.43**	**68**	*i* P	**Pb**	**02 00 08.7**	**-1.6**
MNMC				*e*S	**Sb**	**02 00 27.3**	**-1.0**
MNMC				IAML		02 00 30.6	
	comp=E,5μm,0.7s						
PB01	**IPOC Station P**	**1.96**	**134**	*i* P	**Pn**	**02 00 16.6**	**+0.4**
PB01				*e*S	**Sn**	**02 00 38.5**	**-1.7**
PB01				IAML		02 00 47.7	
	comp=E,950nm,0.4s						
BBOJ	**La Paz, Jacaqu**	**3.79**	**45**	⇑ *i* Pn	**Pb**	**02 00 46.2**	**-4.4**
BBOD	**La Paz, Gloria**	**3.79**	**37**	⇑ *i* Pn	Pb	02 00 45.2	-5.5
BBOD				⇑ *i* Sn	Sb	02 01 43.7	+7.3
	comp=E,53nm,0.6s						
BBOE	**La Paz, Chanca**	**4.04**	**46**	⇑ *i* Pn	Pb	02 00 49.3	-5.7
LPAZ	**La Paz**	**4.34**	**39**	Pn	Pb	02 00 54.9	-5.2
	comp=E,1.2nm,0.3s,baz=221,slow=6.0,SNR=24						
LPAZ				Lg	Lg	02 02 08.3	
	baz=325,slow=14,SNR=4.2						
LPAZ	**La Paz**	**4.34**	**39**	⇑ *i* Pn	**Pn**	**02 00 52.8**	**+3.5**
LPAZ				*e*Sn	**Sb**	**02 01 58.1**	**+5.9**
BBOB	**La Paz, Bander**	**4.45**	**38**	⇑ *i* Pn	**Pn**	**02 00 54.2**	**+3.4**
SIV	**San Ignacio**	**10.14**	**70**	Pn	**Pn**	**02 02 09.0**	**+0.5**
	comp=E,1.3nm,0.3s,baz=277,slow=9.3,SNR=13						
SIV				LR	LR	02 06 48.6	
	comp=E,200nm,18.0s,baz=212,slow=41						
CPUP	**Villa Florida**	**14.22**	**120**	LR	LR	02 09 09.9	
	comp=E,104nm,20.2s,baz=268,slow=41						
PTGA	**Pitinga**	**21.71**	**31**	P	**P**	**02 04 32.2**	**-1.6**
	comp=E,2.1nm,0.3s,baz=211,slow=12,SNR=7.1						
TORD	**Torodi Ar. Bea**	**78.61**	**72**	P	**P**	**02 11 44.0**	**-0.8**
	comp=E,2.0nm,0.6s,baz=249,slow=5.0,SNR=23						
TORD				pP	**PcP**	**02 11 53.0**	**-0.8**
	comp=E,0.9nm,0.8s,baz=258,slow=5.5,SNR=3.9						
YKA	**Yellowknife Ar**	**88.83**	**341**	P	**P**	**02 12 36.9**	**+1.0**
	comp=E,0.6nm,0.6s,baz=139,slow=4.4,SNR=21						
YKA				pP	**sP**	**02 12 45.8**	**-0.2**
	comp=E,0.6nm,0.6s,baz=132,slow=4.7,SNR=12						
H11S2	**WAKE ISLAND Hyd**	**25.69**	**279**	T	T	04 38 02.8	
	baz=101,slow=74,SNR=14						
H11S1	**WAKE ISLAND Hyd**	**25.69**	**279**	T	T	04 38 01.2	
	baz=101,slow=74,SNR=4.0						
H11S3	**WAKE ISLAND Hyd**	**25.70**	**279**	T	T	04 37 59.7	
	baz=101,slow=74,SNR=2.5						
MKAR	**Makanchi Array**	**145.24**	**33**	PKPbc	**PKPdf**	**02 19 20.5**	**+0.3**
	comp=E,0.5nm,0.5s,baz=338,slow=2.9,SNR=6.3						
MKAR				pPKPbc	pPKPbc	02 19 30.1	+2.6
	comp=E,1.2nm,0.5s,baz=311,slow=3.8,SNR=7.9						

*JMA **25** 02:12:28.8±0.4, 39°.86N×143°.60E, h2km±5km, M4.4*
*ISCJB **25** 02:12:29.5±0.6, 39°.75N±0°.05×143°.57E±0°.06, h6km, mb3.8/13, MS3.7/1, Error ellipse: s-maj=8.1km s-min=5.9km az=146.3*
*IDC **25** 02:12:30.7±1.0, 39°.79N×143°.40E, h0km, mb3.8/10, mb1 3.9/14, mb1mx3.7/38, mbtmp3.8/14, ML3.4/4, MS3.7/1, Ms1 3.7/1, ms1mx2.6/62, Error ellipse: s-maj=28.9km s-min=16.7km az=95.0*
*NEIC **25** 02:12:35.5±2.5, 39°.81N×143°.37E, h31km±17km, mb4.4/3, Error ellipse: s-maj=16.2km s-min=7.1km az=110.0*
ISC 25 02:12:31.7±0.8, **39°.79N**±0°.07×**143°.41E**±0°.07, **h6**km, **n38**, σ0**°67**/34, **mb3.9**/13, **Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JTH	**Tanohata**	**1.20**	**278**	P	**Pg**	**02 12 53.8**	**-0.8**
JTH				*e*S	**Sn**	**02 13 12.2**	**+0.7**
MIYJ	**Miyakonagasawa**	**1.24**	**261**	P	**Pg**	**02 12 55.2**	**-0.3**
OFUJ	**Ofunato**	**1.52**	**243**	P	**Pn**	**02 12 59.3**	**-0.1**
JANG	**Nango**	**1.56**	**293**	P	**Pn**	**02 12 59.1**	**-0.9**
JKZ	**Kuzumaki**	**1.61**	**278**	P	**Pn**	**02 13 00.6**	**-0.1**
JKZ				S	**Sb**	**02 13 22.8**	**+0.4**
JOM	**Ohasama**	**1.66**	**260**	P	**Pn**	**02 13 01.9**	**+0.5**
JMK	**Ichinoseki**	**1.89**	**244**	P	**Pn**	**02 13 04.7**	**+0.2**
JMK				S	**Sb**	**02 13 30.6**	**+0.2**
JTM	**Tenmabayashi**	**2.05**	**300**	P	**Pn**	**02 13 07.0**	**+0.3**
JIO	**Ouri**	**2.08**	**231**	P	**Pn**	**02 13 06.8**	**-0.3**
JAH	**Hinai**	**2.16**	**282**	P	**Pn**	**02 13 08.9**	**+0.6**
JRG	**Rokugo**	**2.18**	**261**	P	**Pn**	**02 13 09.2**	**+0.8**
ERM	**Erimo**	**2.23**	**355**	*e*Pn	**Pn**	**02 13 10.0**	**+0.8**
ASAJ	**Asahikawa**	**4.37**	**352**	Pn	**Pn**	**02 13 39.6**	**+1.1**
	2.0nm,0.3s,baz=215,slow=12,SNR=4.7						
MAJO	**Matsushiro**	**5.22**	**233**	*e*Pn	**Pn**	**02 13 51.8**	**+1.4**
	63nm,0.5s						
MJAR	**Matsushiro Arr**	**5.22**	**233**	Pn	**Pn**	**02 13 50.8**	**+0.5**
	2.1nm,0.3s,baz=35,slow=12,SNR=12						
JHJ	**Hachijo jima 2**	**7.27**	**205**	Pn	**Pn**	**02 14 18.3**	**-0.1**
	5.3nm,0.3s,baz=73,slow=19,SNR=3.6						
JHJ				Sn	Sn	02 15 33.8	-7.5
	6.0nm,0.3s,baz=73,slow=19,SNR=2.6						
USRK	**Ussuriysk Ar.**	**9.57**	**301**	Pn	**Pn**	**02 14 50.9**	**+0.9**
	0.6nm,0.3s,baz=91,slow=13,SNR=10						
SEY	**Seymchan**	**23.80**	**10**	P	**P**	**02 17 44.1**	**-0.8**
	2.3nm,0.7s,baz=194,slow=6.2,SNR=7.1						
H11N2	**WAKE ISLAND Hy**	**28.41**	**128**	T	T	02 48 13.6	
	baz=318,slow=75,SNR=38						
H11N1	**WAKE ISLAND Hy**	**28.42**	**128**	T	T	02 48 13.6	
	baz=318,slow=75,SNR=32						
H11N3	**WAKE ISLAND Hy**	**28.43**	**128**	T	T	02 48 13.6	
	baz=318,slow=75,SNR=31						
H11S1	**WAKE ISLAND Hy**	**29.23**	**130**	T	T	02 49 18.9	
	baz=322,slow=75,SNR=8.7						
H11S3	**WAKE ISLAND Hy**	**29.25**	**130**	T	T	02 49 29.3	
	baz=322,slow=75,SNR=6.8						
H11S2	**WAKE ISLAND Hy**	**29.25**	**130**	T	T	02 49 28.0	
	baz=322,slow=75,SNR=6.5						
ZALV	**Zalesovo Beam**	**41.28**	**310**	P	**P**	**02 20 17.6**	**+0.1**
	2.6nm,0.4s,baz=96,slow=8.1,SNR=13						
MKAR	**Makanchi Array**	**44.04**	**300**	P	**P**	**02 20 39.7**	**-0.4**
	1.0nm,0.7s,baz=83,slow=8.0,SNR=6.8						
KURK	**Kurchatov**	**45.52**	**306**	*e*P	**P**	**02 20 51.6**	**-0.2**
	3.3nm,0.6s						
ILAR	**Eielson Array**	**46.34**	**34**	P	**P**	**02 20 59.0**	**+1.0**
	0.4nm,0.7s,baz=264,slow=6.3,SNR=4.4						
TKM2	**Tokmak 2**	**49.74**	**297**	*e*P	**P**	**02 21 25.3**	**+0.4**
	2.6nm,0.6s						
ABKAR	**Akbulak array**	**57.38**	**309**	*e*P	**P**	**02 22 20.4**	**-0.3**
	1.0nm,0.5s						
AKTO	**Aktyubinsk**	**58.02**	**311**	LR	LR	02 47 17.4	
	comp=Z,59nm,18.5s,slow=36						
WRA	**Warramunga Arr**	**60.02**	**190**	P	**P**	**02 22 38.5**	**-0.8**
	0.5nm,0.7s,baz=8.0,slow=6.9,SNR=3.0						
ASAR	**Alice Springs**	**63.75**	**190**	P	**P**	**02 23 05.0**	**+0.7**
	0.2nm,0.6s,baz=11,slow=5.6,SNR=4.4						
FINES	**FINESS Array B**	**67.11**	**332**	P	**P**	**02 23 24.2**	**-1.4**
	1.2nm,0.8s,baz=66,slow=4.8,SNR=6.1						
KBZ	**Khabaz**	**70.29**	**311**	P	**P**	**02 23 46.0**	**+0.1**
	1.5nm,0.9s,baz=81,slow=19,SNR=4.5						
NB2	**NORSAR Subarra**	**72.24**	**338**	P	**P**	**02 23 57.2**	**-0.2**
	comp=Z,0.4nm,0.6s,baz=36,slow=6.2						
NOA	**NORSAR Array B**	**72.24**	**338**	P	**P**	**02 23 57.6**	**+0.2**
	comp=Z,1.0nm,0.8s,baz=37,slow=6.1,SNR=4.4						
GERES	**GERESS Array B**	**81.18**	**329**	P	**P**	**02 24 48.1**	**0.0**
	comp=Z,0.1nm,0.4s,baz=52,slow=6.9,SNR=4.7						

*ISCJB **25** 02:38:29.3±1.0, 59°.2N±0°.1×50°.3E±0°.2, h10km, mb2.9/1, MS3.0/1, Error ellipse: s-maj=20.2km s-min=7.7km az=34.4*
*IDC **25** 02:38:34.6±1.1, 59°.53N×50°.68E, h0km, mb2.9/1, mb1 3.4/7, mb1mx3.2/50, mbtmp3.4/7, ML2.5/4, MS3.2/1, Ms1 3.2/1, ms1mx2.4/24, Error ellipse: s-maj=23.4km s-min=9.6km az=28.0*
ISC 25 02:38:33.6±1.2, **59°.1N**±0°.2×**50°.02E**±0°.08, **h10**km, **n10**, σ1**°44**/8, **Baltic States-Belarus-Northwestern Russia**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ARU	**Arti**	**5.29**	**116**	Pn	**Pn**	**02 39 53.2**	**+0.7**
	0.0nm,0.3s,baz=286,slow=20,SNR=5.5						
ARU				Pg	**Pb**	**02 40 07.0**	**+1.0**
	0.0nm,0.3s,baz=282,slow=8.7,SNR=8.7						
ARU				Sn	**Sn**	**02 40 51.2**	**-2.3**
	0.0nm,0.3s,baz=87,slow=24,SNR=6.4						
ARU				Lg	Lg	02 41 13.7	
	0.1nm,0.3s,baz=116,slow=16,SNR=9.2						
AKTO	**Aktyubinsk**	**9.81**	**149**	Sn	**Sn**	**02 42 43.5**	**-1.1**
	0.2nm,0.3s,baz=311,slow=20,SNR=4.6						
FINES	**FINESS Array B**	**12.10**	**291**	Pn	**Pn**	**02 41 24.5**	**-1.2**
	0.1nm,0.3s,baz=95,slow=13,SNR=5.3						
FINES				Sn	Sn	02 43 33.1	-7.4
	0.5nm,0.3s,baz=87,slow=24,SNR=8.9						
BVAR	**Borovoye Array**	**12.87**	**109**	Sn	Sn	02 43 48.5	-11
	0.3nm,0.3s,baz=303,slow=27,SNR=3.5						
AKASG	**Malin Array Be**	**14.56**	**244**	Pn	**Pn**	**02 41 59.8**	**+0.4**
	0.5nm,0.3s,baz=47,slow=13,SNR=5.0						
ARCES	**ARCESS Array B**	**14.79**	**325**	Pn	Pn	02 41 58.5	-3.9
	0.1nm,0.3s,baz=121,slow=14,SNR=4.3						
KBZ	**Khabaz**	**15.99**	**199**	Pn	**P**	**02 42 21.9**	**+0.1**
	0.5nm,0.3s,baz=338,slow=0.6,SNR=11						
HFS	**Hagfors**	**18.27**	**289**	Pn	**P**	**02 42 47.7**	**+0.8**
	0.0nm,0.3s,baz=95,slow=12,SNR=2.7						
GEYT	**Alibeck**	**21.80**	**163**	LR	LR	02 54 39.7	
	comp=Z,64nm,21.1s,baz=205,slow=44						
BRTR	**Keskin Array B**	**22.00**	**216**	P	P	02 43 37.0	+9.3
	0.3nm,0.7s,baz=27,slow=8.1,SNR=3.9						

JMA 25 02:44:17.9, **33°.03N**×**130°.73E**, **h12**km, **M2.7**, **Kyushu**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JNU	**Nakatsue**	**0.15**	**54**	P	Pg	02 44 21.8	+0.2
JNU				S	Sg	02 44 24.5	+0.3
JTA	**Tamana**	**0.18**	**248**	P	Pg	02 44 21.9	0.0
JTA				S	Sg	02 44 24.7	0.0
JIU2	**Izumi 2**	**0.49**	**172**	P	Pg	02 44 27.3	-0.2
JIU2				S	Sg	02 44 33.8	-0.2

*ISCJB **25** 02:44:36.8±1.0, 39°.8N±0°.1×144°.1E±0°.2, h16km, mb3.5/7, Error ellipse: s-maj=25.5km s-min=16.9km az=23.3*
*IDC **25** 02:44:42.4±5.2, 39°.87N×144°.04E, h41km±47km, mb3.2/7, mb1 3.4/8, mb1mx3.2/39, mbtmp3.4/8, ML3.0/1, MS3.1/1, Ms1 3.1/1, ms1mx2.4/18, Error ellipse: s-maj=34.4km s-min=20.3km az=85.0*
ISC 25 02:44:38.9±1.2, **39°.9N**±0°.2×**144°.1E**±0°.2, **h16**km, **n9**, σ0**°55**/8, **mb3.5**/7, **Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MJAR	**Matsushiro Arr**	**5.72**	**236**	P	**Pn**	**02 46 03.5**	**+0.4**
	0.4nm,0.3s,baz=75,slow=13,SNR=4.4						
JHJ	**Hachijo jima 2**	**7.60**	**208**	LR	LR	02 48 49.6	
	comp=Z,158nm,21.7s,baz=103,slow=33						
MKAR	**Makanchi Array**	**44.44**	**300**	P	**P**	**02 52 48.9**	**-0.1**
	0.2nm,0.4s,baz=88,slow=9.4,SNR=2.6						
ILAR	**Eielson Array**	**45.95**	**34**	P	**P**	**02 53 01.3**	**+0.6**
	0.4nm,0.9s,baz=255,slow=5.6,SNR=3.0						
KURBB	**Kurchatov Arra**	**45.95**	**306**	P	**P**	**02 53 01.4**	**+0.5**
	0.7nm,0.6s,baz=78,slow=8.3,SNR=6.9						
WRA	**Warramunga Arr**	**60.22**	**191**	P	**P**	**02 54 45.8**	**-0.5**
	0.3nm,0.7s,baz=9.8,slow=7.0,SNR=2.4						
ASAR	**Alice Springs**	**63.94**	**190**	P	**P**	**02 55 11.2**	**0.0**
	0.3nm,0.8s,baz=13,slow=12,SNR=3.3						
FINES	**FINESS Array B**	**67.

BRTR	**Keskin Array B**	**67.02**	**55**	P		P	03 10 41.7	+0.7
	0.3nm,0.6s,baz=297,slow=4.2,SNR=3.5							
H09N1	**TRISTAN DA CUN**	**67.74**	**152**	T		T	04 24 32.9	
	SNR=2.9							
ILAR	**Eielson Array**	**73.83**	**334**	P		P	03 11 22.8	+0.9
	0.5nm,0.9s,baz=64,slow=4.7,SNR=4.8							
ZALV	**Zalesovo Beam**	**91.63**	**27**	P		P	03 12 56.6	+1.9
	0.4nm,0.5s,baz=350,slow=3.4,SNR=2.8							

*NEIC **25** 03:13:44.1, 19°.21N×64°.59W, h46km, MD3.5(RSPR), After RSPR.*

RSPR 25 03:13:44.1,19°.21N×64°.59W,h45km±9km,MD3.5/5, 14C-9D,Virgin Islands

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
ABV	**Anegada**	**0.54**	**153**	⇑*e*P			Pn	03 13 54.5	-1.1
ABV	**Anegada**	**0.54**	**153**	*e*S			Sn	03 14 03.1	-0.7
ABV	**Anegada**	**0.54**	**153**	⇓*e*P			Pn	03 13 54.5	-1.1
ABV				*e*S			Sn	03 14 03.1	-0.7
ABVI	**Anegada Island**	**0.54**	**153**	⇑*e*P			Pn	03 13 54.5	-1.1
ABVI				*e*S			Sn	03 14 03.1	-0.6
STVI	**Saint Thomas**	**0.93**	**202**	⇑*e*P			Pn	03 13 59.6	-1.2
STVI	**Saint Thomas**	**0.93**	**202**	*e*S			Sn	03 14 11.9	-1.0
STVI	**Saint Thomas**	**0.93**	**202**	⇓*e*P			Pn	03 13 59.6	-1.2
STVI				*e*S			Sn	03 14 11.9	-1.0
STVI	**Saint Thomas**	**0.93**	**202**	⇑*e*P			Pn	03 13 59.6	-1.2
STVI				*e*S			Sn	03 14 11.9	-1.0
MTP	**Monte Pirata**	**1.44**	**220**	*e*S			Sn	03 14 24.6	-0.9
MTP	**Monte Pirata**	**1.44**	**220**	⇓*e*P			Pn	03 14 07.3	-0.5
MTP				*e*S			Sn	03 14 24.6	-0.9
MTP	**Monte Pirata**	**1.44**	**220**	⇓*e*P			Pn	03 14 07.3	-0.5
MTP				*e*S			Sn	03 14 24.6	-0.9
CBYP	**Canovanas**	**1.52**	**232**	*e*S			Sn	03 14 26.8	-0.9
CBYP	**Canovanas**	**1.52**	**232**	⇑*e*P			Pn	03 14 08.0	-1.0
CBYP	**Canovanas**	**1.52**	**232**	⇑*e*P			Pn	03 14 08.0	-1.0
CBYP				*e*S			Sn	03 14 26.8	-0.9
CBYP	**Canovanas**	**1.52**	**232**	⇑*e*P			Pn	03 14 08.0	-1.0
CBYP				*e*S			Sn	03 14 26.8	-0.9
HUMP	**Col San Antoni**	**1.60**	**229**	*e*S			Sn	03 14 27.9	-1.6
HUMP	**Col San Antoni**	**1.60**	**229**	⇑*e*P			Pn	03 14 09.1	-0.9
HUMP	**Col San Antoni**	**1.60**	**229**	⇑*e*P			Pn	03 14 09.1	-0.9
HUMP				*e*S			Sn	03 14 27.9	-1.6
HUMP	**Col San Antoni**	**1.60**	**229**	⇑*e*P			Pn	03 14 09.1	-0.9
HUMP				*e*S			Sn	03 14 27.9	-1.6
SJG	**San Juan**	**1.84**	**234**	⇑*e*P			Pn	03 14 12.0	-1.3
SJG	**San Juan**	**1.84**	**234**	⇑*e*P			Pn	03 14 12.0	-1.3
SJG	**San Juan**	**1.84**	**234**	*e*Pn			Pn	03 14 12.2	-1.1
SJG				*e*S			Sn	03 14 31.5	-3.9
AOPR	**Arecibo Observ**	**2.23**	**248**	⇓*e*P			Pn	03 14 17.9	-0.7
AOPR	**Arecibo Observ**	**2.23**	**248**	⇓*e*P			Pn	03 14 17.9	-0.7
AOPR	**Arecibo Observ**	**2.23**	**248**	⇓*e*P			Pn	03 14 17.9	-0.7
CRPR	**Cabo Rojo, PR**	**2.68**	**244**	⇓*e*P			Pn	03 14 24.8	+0.1
CRPR	**Cabo Rojo, PR**	**2.68**	**244**	⇓*e*P			Pn	03 14 24.8	+0.1
CRPR	**Cabo Rojo, PR**	**2.68**	**244**	⇓*e*P			Pn	03 14 24.8	+0.1

*JMA **25** 03:16:10.4±0.1, 38°.44N×141°.79E, h53km±1km, MM3.8*
JMA Felt II J1.
*IDC **25** 03:16:12.1±1.6, 39°.17N×140°.45E, h0km, mb3.7/2, mb1 3.7/4, mb1mx3.3/50, mbtmp3.6/4, ML3.0/2, Error ellipse: s-maj=68.0km s-min=24.0km az=97.0*

ISC 25 03:16:08.0±1.5,38°.42N±0°.05×141°.95E±0°.09,h20km±8km, n13,σ1s00/21,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
JIO	**Ouri**	**0.47**	**275**	P			**Pn**	**03 16 20.2**	**+0.7**
JIO				S			**Sn**	**03 16 27.1**	**-0.1**
OFUJ	**Ofunato**	**0.70**	**342**	P			**Pn**	**03 16 23.5**	**+0.8**
OFUJ				S			**Sn**	**03 16 32.9**	**+0.1**
JMK	**Ichinoseki**	**0.78**	**313**	P			**Pn**	**03 16 24.3**	**+0.5**
JMK				S			**Sb**	**03 16 33.9**	**+0.9**
JOU	**Okura**	**1.01**	**267**	P			**Pn**	**03 16 26.8**	**-0.2**
JOU				S			**Sb**	**03 16 38.8**	**-0.8**
JMM	**Marumori**	**1.06**	**239**	P			**Pn**	**03 16 27.4**	**-0.3**
JMM				S			**Sb**	**03 16 40.0**	**-1.1**
JOM	**Ohasama**	**1.17**	**334**	P			**Pb**	**03 16 29.8**	**+0.3**
JOM				*e*S			**Sn**	**03 16 44.2**	**-0.4**
JYK	**Kaneyama**	**1.34**	**292**	P			**Pn**	**03 16 31.4**	**-0.1**
JYK				S			**Sn**	**03 16 47.0**	**-1.7**
JFK	**Kawauchi**	**1.35**	**219**	P			**Pn**	**03 16 31.9**	**+0.2**
JFK				S			**Sn**	**03 16 47.9**	**-1.1**
MJAR	**Matsushiro Arr**	**3.51**	**239**	Pn			**Pn**	**03 17 02.5**	**+1.1**
	1.1nm,0.3s,baz=38,slow=13,SNR=10								
MAT	**Matsushiro**	**3.52**	**239**	P			**Pn**	**03 17 02.9**	**+1.5**
MAT				*e*S			**Sn**	**03 17 44.5**	**+2.1**
ASAJ	**Asahikawa**	**5.71**	**5**	Pn			**Pn**	**03 17 31.1**	**-0.6**
	0.6nm,0.3s,baz=231,slow=12,SNR=6.4								
WRA	**Warramunga Arr**	**58.49**	**188**	P			P	03 26 14.3	+12
	0.7nm,1.0s,baz=7.1,slow=7.2,SNR=2.5								
FINES	**FINESS Array B**	**67.79**	**332**	P			**P**	**03 27 03.6**	**-0.3**
	0.4nm,0.3s,baz=60,slow=5.6,SNR=12								

IDC 25 03:16:14.4±5.9,22°.48S×179°.27E,h517km±40km,mb3.2/3, mb1 3.4/3,mb1mx2.9/30,mbtmp4.2/3,Error ellipse: s-maj=127.6km s-min=45.9km az=147.0,South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
STKA	**Stephens Creek**	**34.66**	**246**	P			P	03 22 19.9	-0.5
	0.4nm,0.4s,baz=108,slow=13,SNR=3.5								
ASAR	**Alice Springs**	**41.62**	**259**	P			P	03 23 16.9	-0.4
	2.5nm,0.8s,baz=96,slow=6.8,SNR=29								
ASAR				ScP			ScP	03 28 02.5	-0.7
	0.6nm,0.7s,baz=103,slow=4.6,SNR=5.9								
WRA	**Warramunga Arr**	**41.85**	**265**	P			P	03 23 19.4	+0.2
	4.0nm,0.5s,baz=96,slow=8.4,SNR=45								
AKASG	**Malin Array Be**	**143.42**	**328**	PKP			PKPbc	03 34 48.2	+0.2
	0.2nm,0.4s,baz=41,slow=4.4,SNR=10								
BRTR	**Keskin Array B**	**146.18**	**309**	PKPbc			PKPbc	03 34 56.9	-0.2
	0.6nm,0.6s,baz=87,slow=1.4,SNR=4.6								

CASC 25 03:19:15.9±2.2,8°.37N×82°.99W,h18km±76km,MD3.5, Panama-Costa Rica border region

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
TBS2		**0.54**	**38**	*e*P			Pn	03 19 28.6	-0.2
TBS2				*e*S			Sn	03 19 37.2	-0.2
BRU	**Baru**	**0.61**	**44**	*i* P			Pn	03 19 29.3	-0.7
BRU				*e*S			Sn	03 19 38.5	-1.0
BUS	**Buena Vista**	**1.40**	**327**	*e*P			Pn	03 19 40.4	-0.5
BUS				*e*S			Sb	03 19 59.4	-0.2
QCR	**Quepos**	**1.56**	**312**	*e*P			Pn	03 19 42.4	-0.4
QCR				*e*S			Sn	03 20 03.0	+0.4
URSC	**Urasca**	**1.65**	**332**	*e*P			Pn	03 19 44.3	+0.2
URSC				*e*S			Sb	03 20 06.3	-0.2
HDC	**Heredia**	**1.97**	**326**	*e*S			Sb	03 20 15.9	+0.4
JTS	**JuntasAbangare**	**2.72**	**315**	*e*S			Sn	03 20 31.5	+0.3

*IDC **25** 03:25:55.9±3.9, 18°.63N×122°.44E, h0km, mb3.5/3, mb1 3.7/3,mb1mx3.3/44,mbtmp3.5/3,MS3.0/1,Ms1 3.0/1, ms1mx2.3/30,Error ellipse: s-maj=307.7km s-min=27.9km az=62.0*
*ISCJB **25** 03:26:06.5±0.9, 18°.07N±0°.05×120°.32E±0°.07, h33km±10km, mb3.3/3,MS2.9/1,Error ellipse: s-maj=11.1km s-min=8.4km az=17.9*
*MAN **25** 03:26:06, 18°.05N×120°.40E, h26km, mb4.3,ML3.1,MS2.9*

ISC 25 03:26:06.8±1.3,18°.10N±0°.06×120°.37E±0°.07,h29km±8km, n12,σ1s02/15,mb3.4/3,2C-2D,Luzon

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
SIPP	**Brgy, Tapao**	**0.19**	**154**	⇓*i* P			**Pb**	**03 26 12.8**	**0.0**
SIPP				*e*S			**Sb**	**03 26 17.1**	**+0.3**
PIP	**Pasuquin**	**0.33**	**46**	⇑*e*P			**Pn**	**03 26 15.3**	**-0.3**
PIP				*e*S			**Sn**	**03 26 22.8**	**+1.4**
ABRA	**Dolores**	**0.55**	**144**	*e*P			**Pb**	**03 26 16.8**	**-1.2**
ABRA				*e*S			**Sb**	**03 26 25.8**	**+0.2**
APYP	**Conner**	**0.86**	**105**	*e*P			**Pb**	**03 26 21.6**	**-1.5**
APYP				*e*S			**Sb**	**03 26 34.1**	**-0.2**
CVP	**Callao Caves**	**1.44**	**106**	⇓*e*P			**Pn**	**03 26 30.6**	**-0.2**
CVP				*i* S			**Sn**	**03 26 50.6**	**+1.9**
BCPH	**Baguio City Da**	**1.72**	**173**	⇑*i* P			**Pn**	**03 26 35.9**	**+1.0**
BCPH				*i* S			**Sn**	**03 26 56.1**	**+0.1**

BOLP	**Bolinao**	**1.76**	**194**	*e*P		**Pn**	**03 26 34.3**	**-1.0**
BALP	**Baler**	**2.61**	**154**	*e*P		**Pn**	**03 26 47.4**	**+0.3**
ASAJ	**Asahikawa**	**31.97**	**31**	LR		LR	03 44 39.9	
	comp=Z,29nm,21.6s,baz=150,slow=37							
WRA	**Warramunga Arr**	**40.21**	**159**	P		P	03 33 32.2	-8.8
	0.5nm,1.0s,baz=344,slow=9.1,SNR=3.0							
MKAR	**Makanchi Array**	**42.38**	**321**	P		**P**	**03 33 58.7**	**+0.1**
	0.5nm,0.7s,baz=122,slow=9.3,SNR=4.0							
ASAR	**Alice Springs**	**43.56**	**162**	P		P	03 34 02.0	-6.3
	0.3nm,0.4s,baz=338,slow=7.2,SNR=12							

IDC 25 03:42:57.4±6.1,20°.08S×178°.55W,h557km±66km, mb3.1/6,mb1 3.4/6,mb1mx3.0/42,mbtmp4.0/6,5C,Error ellipse: s-maj=98.3km s-min=23.8km az=153.0,Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
ASAR	**Alice Springs**	**44.11**	**256**	P			P	03 50 16.9	-0.2
	1.3nm,0.5s,baz=96,slow=7.5,SNR=32								
ASAR				PcP			PcP	03 51 49.5	-0.5
	0.5nm,0.6s,baz=103,slow=4.1,SNR=6.2								
WRA	**Warramunga Arr**	**44.15**	**262**	P			P	03 50 17.3	-0.1
	0.9nm,0.4s,baz=98,slow=7.9,SNR=8.2								
YBH	**Yreka Blue Hor**	**80.28**	**39**	P			P	03 54 11.2	+0.3
	1.6nm,0.7s,baz=153,slow=0.5,SNR=7.1								
TXAR	**Lajitas Array**	**87.26**	**58**	P			P	03 54 45.8	+0.1
	0.4nm,0.7s,baz=206,slow=6.1,SNR=5.1								
ILAR	**Eielson Array**	**88.02**	**13**	P			P	03 54 47.6	-0.5
	0.6nm,0.5s,baz=214,slow=5.2,SNR=9.3								
PDAR	**Pinedale Array**	**89.01**	**43**	P			P	03 54 53.3	-0.4
	0.5nm,0.5s,baz=203,slow=2.6,SNR=5.7								
ARCES	**ARCESS Array B**	**128.41**	**349**	PKP		PKPdf		04 00 59.6	-0.9
	2.2nm,0.9s,baz=32,slow=3.4,SNR=4.8								
FINES	**FINESS Array B**	**135.22**	**343**	PKP		PKPdf		04 01 12.7	-0.9
	0.5nm,0.7s,baz=137,slow=3.9,SNR=3.9								
AKASG	**Malin Array Be**	**142.39**	**331**	PKhKP		PKPpre		04 01 23.3	
	2.6nm,0.5s,baz=43,slow=4.4,SNR=34								
SORM	**Soroca**	**144.57**	**328**	⇑*i* P		PKPbc		04 01 31.0	0.0
BRTR	**Keskin Array B**	**146.17**	**312**	PKPbc		PKPbc		04 01 35.9	-0.3
	0.9nm,0.5s,baz=127,slow=4.7,SNR=7.8								
BURAR	**Bucovina Array**	**146.44**	**330**	⇑*i* P		PKPbc		04 01 36.5	-0.1
DOPR	**Dopca**	**147.54**	**328**	⇑*i* P		PKPbc		04 01 40.3	+0.9
DPC	**Dobruska-Polom**	**147.57**	**342**	*e*PKP		PKPbc		04 01 40.1	+0.7
DPC				*ex*		x		04 01 45.2	
ARR	**Arges**	**148.34**	**328**	⇑*i* P		PKPbc		04 01 42.4	+0.9
PRU	**Pruhonice**	**148.38**	**344**	*e*PKP		PKPbc		04 01 41.2	-0.2
KHC	**Kasperske Hory**	**149.42**	**344**	*e*PKP		PKPbc		04 01 44.2	+0.2
KHC				*ex*		x		04 01 52.4	
GERES	**GERESS Array B**	**149.65**	**344**	PKPbc		PKPbc		04 01 44.4	-0.2
	0.6nm,0.6s,baz=39,slow=2.6,SNR=9.5								
PKSM	**Morogy**	**150.35**	**335**	⇑*i* P		PKPbc		04 01 45.9	-0.3

WEL 25 03:44:43.5±0.2,40°.76S×173°.37E,h151km±1km,ML3.7/15, 15C-6D,Error ellipse: s-maj=1.1km s-min=0.6km az=90.0,Cook Strait

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
DUWZ	**D'Urville Isla**	**0.42**	**96**	⇑PN			Pn	03 45 04.6	0.0
DUWZ				SN			Sn	03 45 19.9	-0.7
NNZ	**Nelson**	**0.46**	**179**	⇑PN			Pn	03 45 04.8	+0.1
NNZ				SN			Sn	03 45 20.4	-0.7
QRZ	**Quartz Range**	**0.64**	**263**	⇑PN			Pn	03 45 05.4	-0.3
TUWZ	**Tuamarina**	**0.80**	**147**	⇑PN			Pn	03 45 07.0	+0.3
TUWZ				AML			AML	03 45 07.7	
TUWZ				AML			AML	03 45 24.8	
TCW	**Tory Channel**	**0.82**	**124**	⇑PN			Pn	03 45 07.4	+0.5
TCW				AML			AML	03 45 24.3	
TCW				AML			AML	03 45 25.5	
BSWZ	**Blackbirch Sta**	**1.03**	**158**	⇑PN			Pn	03 45 08.9	+0.3
BSWZ				SN			Sn	03 45 26.6	-1.3
THZ	**Tophouse**	**1.06**	**199**	⇑PN			Pn	03 45 08.8	-0.1
KIW	**Kapiti Island**	**1.18**	**96**	⇑PN			Pn	03 45 09.9	0.0
KIW				SN			Sn	03 45 28.3	-1.8
KIW				AML			AML	03 45 29.4	
WEL	**Wellington**	**1.18**	**117**	⇑PN			Pn	03 45 10.0	+0.1
WEL				AML			AML	03 45 30.0	
BHW	**Baring Head**	**1.31**	**120**	PN			Pn	03 45 11.0	-0.1
BHW				AML			AML	03 45 31.1	
BHW				AML			AML	03 45 32.6	
CAW	**Cannon Point**	**1.33**	**106**	PN			Pn	03 45 11.3	-0.1
CAW				AML			AML	03 45 32.6	
CAW				AML			AML	03 45 34.4	
OGWZ	**Otaki Gorge**	**1.37**	**93**	PN			Pn	03 45 11.8	+0.1
OGWZ				SN			Sn	03 45 31.8	-1.5
NMEZ	**Namu Road**	**1.40**	**16**	PN			Pn	03 45 11.9	-0.2
LREZ	**Lake Rotokare**	**1.52**	**32**	PN			Pn	03 45 13.4	+0.1
NWEZ	**Newall Road**	**1.53**	**15**	PN			Pn	03 45 13.3	-0.1
PREZ	**Palmer Road**	**1.54**	**24**	PN			Pn	03 45 13.3	-0.3
DSZ	**Denniston Nort**	**1.54**	**229**	PN			Pn	03 45 12.9	-0.6
KHEZ	**Kahui Hut**	**1.54**	**19**	PN			Pn	03 45 13.3	-0.3
MSWZ	**Moikau Station**	**1.57**	**115**	PN			Pn	03 45 13.6	-0.2
MSWZ				AML			AML	03 45 35.6	
MSWZ				AML			AML	03 45 35.8	
OHWZ	**Ohakea**	**1.58**	**70**	PN			Pn	03 45 14.2	+0.3
NEZ	**North Egmont**	**1.59**	**21**	PN			Pn	03 45 13.4	-0.7
WAZ	**Wanganui**	**1.59**	**52**	PN			Pn	03 45 14.5	+0.4
PKE	**Pukeiti**	**1.63**	**17**	PN			Pn	03 45 14.3	-0.3
HOWZ	**Holdsworth Sta**	**1.64**	**96**	⇑PN			Pn	03 45 14.3	-0.2
PLWZ	**Palliser**	**1.64**	**120**	⇑PN			Pn	03 45 14.4	-0.2
KHZ	**Kahutara**	**1.66**	**176**	⇑PN			Pn	03 45 14.7	0.0
MTW	**Mount Morrison**	**1.67**	**105**	⇑PN			Pn	03 45 14.6	-0.2
MTW				AML			AML	03 45 38.1	
MTW				AML			AML	03 45 38.5	
PAWZ	**Paruwai Farm**	**1.68**	**113**	PN			Pn	03 45 14.7	-0.3
PAWZ				AML			AML	03 45 37.6	
PAWZ				AML			AML	03 45 39.0	
DREZ	**Durham Road**	**1.69**	**23**	PN			Pn	03 45 14.9	-0.3
DREZ				SN			Sn	03 45 38.8	-0.6
MHEZ	**Mangahewa**	**1.83**	**24**	SN			Sn	03 45 42.3	+0.1
TRWZ	**Traveller**	**1.87**	**111**	PN			Pn	03 45 14.9	-0.2
TRWZ				AML			AML	03 45 41.8	
TRWZ				AML			AML	03 45 43.4	
TIWZ	**Tintock**	**1.91**	**91**	PN			Pn	03 45 17.3	-0.3
TIWZ				AML			AML	03 45 43.1	
TIWZ				AML			AML	03 45 43.3	
TMWZ	**Te Maipa**	**1.94**	**101**	PN			Pn	03 45 17.8	-0.2
VRZ	**Vera Road**	**1.95**	**34**	⇓PN			Pn	03 45 17.3	-0.8
PRWZ	**Pori Road**	**1.99**	**85**	PN			Pn	03 45 18.6	+0.1
TSZ	**Takapari Road**	**2.10**	**71**	⇑PN			Pn	03 45 19.3	-0.5
TSZ				AML			AML	03 45 48.0	
TSZ				AML			AML	03 45 49.4	
PKVZ	**Pokaka**	**2.11**	**47**	PN			Pn	03 45 19.6	-0.4
MTVZ	**Mangateitei**	**2.12**	**50**	PN			Pn	03 45 19.7	-0.4
DVHZ	**Dannevirke**	**2.18**	**79**	PN			Pn	03 45 19.7	-1.0
LTZ	**Lake Taylor**	**2.18**	**202**	PN			Pn	03 45 20.2	-0.6
LTZ				SN			Sn	03 45 46.9	-2.8
BFZ	**Birch Farm**	**2.19**	**89**	PN			Pn	03 45 20.5	-0.3
BFZ				AML			AML	03 45 47.3	
BFZ				AML			AML	03 45 47.7	
BFZ				AML			AML	03 45 47.7	
BFZ				AML			AML	03 45 48.5	
TRVZ	**Turoa**	**2.22**	**50**	PN			Pn	03 45 20.9	-0.6
WNVZ	**Wahianoa**	**2.23**	**51**	PN			Pn	03 45 20.8	-0.8
MOVZ	**Moawhango**	**2.27**	**54**	PN			Pn	03 45 20.8	-1.1
TUVZ	**Tukino**	**2.30**	**51**	PN			Pn	03 45 21.7	-0.7
TWVZ	**Taurewa**	**2.32**	**44**	PN			Pn	03 45 21.5	-1.0
PNHZ	**Pukenui**	**2.32**	**70**	PN			Pn	03 45 21.6	-0.9
NGZ	**Ngauruhoe**	**2.33**	**48**	PN			Pn	03 45 22.0	-0.7
WTVZ	**West Tongariro**	**2.37**	**47**	PN			Pn	03 45 22.0	-1.1
ANWZ	**Angora Road**	**2.38**	**84**	PN			Pn	03 45 22.8	-0.4
ANWZ				SN			Sn	03 45 51.4	-2.4
KRVZ	**Karewarewa**	**2.41**	**47**	PN			Pn	03 45 22.6	-1.1
BHHZ	**Black Hill Sta**	**2.42**	**59**	PN			Pn	03 45 22.6	-1.1
INZ	**Inchbonnie**	**2.44**	**216**	PN			Pn	03 45 22.8	-1.0
WPHZ	**Waipukurau**	**2.45**	**75**	PN			Pn	03 45 22.8	-1.1
HIZ	**Hauiti**	**2.52**	**28**	⇓PN			Pn	03 45 23.5	-1.3
KATZ	**Kakaramea**	**2.52**	**46**	PN			Pn	03 45 23.9	-1.1
PRHZ	**Porangahau**	**2.54**	**80**	⇓PN			Pn	03 45 24.6	-0.4
KRHZ	**Kereru**	**2.56**	**65**	PN			Pn	03 45 24.2	-1.1
KWHZ	**Kaweka Forest**	**2.69**	**61**	PN			Pn	03 45 25.9	-1.1
OXZ	**Oxford**	**2.75**	**201**	⇓PN			Pn	03 45 26.1	-1.6
PXZ	**Pawanui**	**2.77**	**76**	⇑PN			Pn	03 45 27.1	-0.8
PXZ				AML			AML	03 46 02.4	
KAHZ	**Kahuranaki**	**2.85**	**71**	PN			Pn	03 45 28.3	-0.7
MCHZ	**McNeill Hill**	**2.87**	**64**	PN			Pn	03 45 28.3	-0.9
CRLZ	**Canterbury Las**	**2.87**	**191**	PN			Pn	03 45 27.5	-1.6
BKZ	**Black Stump Fm**	**2.88**	**58**	PN			Pn	03 45 27.9	-1.5
MQZ	**McQueen's Vall**	**3.00**	**190**	⇓PN			Pn	03 45 28.7	-2.0
MRHZ	**Matea Rd**	**3.03**	**52**	PN			Pn	03 45 29.3	-2.0
WVZ	**Waitaha Valley**	**3.04**	**219**	PN			Pn	03 45 29.7	-1.6
NMHZ	**Naumai**	**3.12**	**59**	PN			Pn	03 45 31.5	-1.0
ARHZ	**Aropaoanui**	**3.16**	**63**	PN			Pn	03 45 31.5	-1.4
WHHZ	**Waihua**	**3.41**	**62**	PN			Pn	03 45 34.6	-1.5
RPZ	**Rata Peaks**	**3.42**	**209**	PN			Pn	03 45 34.5	-1.7
KNZ	**Kokohu**	**3.74**	**64**	⇓PN			Pn	03 45 38.1	-2.2
URZ	**Urewera**	**3.82**	**50**	PN			Pn	03 45 38.6	-2.8
FOZ	**Fox Glacier**	**3.83**	**222**	PN			Pn	03 45 39.4	-2.0
MHGZ	**Mahia Peninsul**	**3.84**	**67**	PN			Pn	03 45 40.2	-1.4
PRGZ	**Paritu Road**	**3.93**	**64**	PN			Pn	03 45 40.7	-2.1
RIGZ	**Rimuhau**	**3.96**	**60**	PN			Pn	03 45 41.2	-2.0
MWZ	**Matawai**	**4.02**	**54**	PN			Pn	03 45 41.3	-2.7
TKGZ	**Te Karaka**	**4.16**	**58**	PN			Pn	03 45 43.6	-2.3
LBZ	**Lake Benmore**	**4.32**	**212**	PN			Pn	03 45 45.4	-2.5
TWGZ	**Tauwhareparae**	**4.40**	**56**	PN			Pn	03 45 46.9	-2.1
ODZ	**Otahua Downs**	**4.73**	**204**	PN			Pn	03 45 51.2	-2.0
JCZ	**Jackson Bay**	**4.74**	**224**	PN			Pn	03 45 50.8	-2.7
WMGZ	**Waiomatatini S**	**4.89**	**55**	PN			Pn	03 45 52.5	-2.9

*ISCJB **25** 04:13:32.2±0.5, 17°.99S±0°.03×177°.95W±0°.02, h595km±7km, mb4.8/252, Error ellipse: s-maj=5.3km s-min=3.0km az=157.7*
*BJI **25** 04:13:32.6, 17°.86S×177°.51W, h613km, mb4.7/31, mB4.8/15*
*MOS **25** 04:13:33.0±1.3, 17°.87S×177°.99W, h599km, mb4.8/39, Error ellipse: s-maj=9.1km s-min=7.0km az=46.3*
*NEIC **25** 04:13:33.6±0.1, 17°.94S×177°.97W, mb4.7/185, Error ellipse: s-maj=4.9km s-min=2.9km az=135.0*
*IDC **25** 04:13:34.0±0.5, 17°.92S×177°.94W, h602km±5km, mb4.2/31, mb1 4.4/34, mb1mx4.3/47, mbtmp5.2/34, Error ellipse: s-maj=9.1km s-min=7.3km az=149.0*

ISC 25 04:13:34.6±0.3,17°.95S±0°.05×177°.88W±0°.04, h613km±3km,h613km:pP-P,n897,σ1s17/960,mb4.7/252, 54C-13D,Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
MSVF	**Nonsavu**	**3.88**	**273**	*e*P			**P**	**04 15 01.7**	**+1.4**
MSVF	**Nonsavu**	**3.88**	**273**	*e*P			**P**	**04 15 01.7**	**+1.4**
MSVF				*e*S			**S**	**04 16 16.0**	**+5.8**
AFI	**Afiamalu**	**7.11**	**57**	P			**P**	**04 15 24.8**	**-1.6**
	57nm,0.3s,baz=35,slow=4.0,SNR=85								
AFI	**Afiamalu**	**7.11**	**57**	*e*P			**P**	**04 15 25.3**	**-1.1**
AFI				*e*S			**S**	**04 16 59.7**	**+1.9**
AFI	**Afiamalu**	**7.11**	**57**	*e*P			**P**	**04 15 25.3**	**-1.1**
AFI				*e*S			**S**	**04 16 59.6**	**+1.9**
NIUE	**Niue**	**7.63**	**100**	P			**P**	**04 15 31.8**	**+0.9**
	baz=7.6,SNR=6.9								
FUNA	**Funafuti**	**9.79**	**343**	*e*P			**P**	**04 15 50.1**	**-1.6**
DZM	**Mont Dzumac**	**15.29**	**252**	P			**P**	**04 16 45

CTAO Charters Tower 33.93 261 *e*P **P** **04 19 28.7 -0.3**
comp=Z,106nm,0.9s
CAN Canberra 34.08 233 *e*P **P** **04 19 30.7 +0.6**
CAN pmax pmax
comp=Z,170nm,0.9s
CAN Canberra 34.08 233 *e*P **P** **04 19 30.6 +0.6**
comp=Z,170nm,0.9s
YNG Young 34.18 235 P **P** **04 19 31.7 +0.8**
baz=34,SNR=7.4
MILA Mila 34.64 230 P **P** **04 19 35.2 +0.5**
baz=35,SNR=20
PMG Port Moresby 34.96 279 P **P** **04 19 37.5 -0.1**
comp=Z,165nm,0.9s,baz=84,slow=5.6,SNR=44
PMG ScP **ScP** **04 24 41.8 +1.3**
comp=Z,26nm,1.2s,baz=302,slow=8.4,SNR=3.3
PMG Port Moresby 34.96 279*d i*P **P** **04 19 37.8 +0.2**
PMG Port Moresby 34.96 279 *e*P **P** **04 19 38.5 +0.9**
comp=Z,214nm,0.9s
PMG ScP **ScP** **04 24 41.8 +1.3**
JOHN Johnston Islan 35.43 14 *e*P **P** **04 19 39.5 -1.8**
comp=Z,271nm,1.2s
CMSA Cobar Meteorol 35.57 241 P **P** **04 19 42.7 +0.3**
baz=36,SNR=198
MTSU Mount Surprise 35.90 264 P **P** **04 19 45.1 -0.2**
baz=36,SNR=43
QLP Quilpie 35.99 249 P **P** **04 19 45.9 -0.1**
baz=36,SNR=115
TOO Toolangi 37.53 231 P **P** **04 19 58.8 +0.4**
baz=38,SNR=67
MANU Manus Island 37.58 291 *e*P **P** **04 19 59.1 0.0**
comp=Z,49nm,0.7s
COEN Coen 37.61 270 P **P** **04 19 59.9 +0.6**
baz=38,SNR=148
COEN Coen 37.61 270 *e*P **P** **04 19 59.9 +0.6**
comp=Z,272nm,0.8s
MOO Moorlands 38.40 223 P **P** **04 20 06.0 +0.6**
baz=38,SNR=6.2
TAU Tasmania Unive 38.55 222 *e*P **P** **04 20 04.2 -2.2**
TAU pmax pmax
comp=Z,65nm,1.0s
TAU Tasmania Unive 38.55 222 *e*P **P** **04 20 04.2 -2.2**
comp=Z,65nm,1.0s
STKA Stephens Creek 39.05 241 P **P** **04 20 11.3 +0.6**
comp=Z,156nm,1.0s,baz=78,slow=8.6,SNR=222
STKA ScP **ScP** **04 24 58.3 +2.6**
comp=Z,7.3nm,0.9s,baz=132,slow=3.2,SNR=5.6
STKA Stephens Creek 39.05 241 P **P** **04 20 11.3 +0.6**
baz=39,SNR=126
STKA Stephens Creek 39.05 241 *e*P **P** **04 20 11.2 +0.6**
STKA pmax pmax
comp=Z,42nm,1.0s
STKA Stephens Creek 39.05 241 *e*P **P** **04 20 11.2 +0.5**
comp=Z,42nm,1.0s
STKA ScP **ScP** **04 24 58.3 +2.6**
ARPS Mount Arapiles 40.03 234 P **P** **04 20 18.5 +0.1**
baz=40,SNR=14
RKT Rikitea 40.41 105 *e*P **P** **04 20 22.9 +1.3**
comp=Z,119nm,1.1s
MCQ Macquarie Isla 40.60 201 *e*P **P** **04 20 22.0 -0.5**
MCQ Macquarie Isla 40.60 201 *e*P **P** **04 20 22.0 -0.5**
comp=Z,1µm,2.0s
HTT Hallett 41.56 240 P **P** **04 20 30.7 +0.1**
baz=42,SNR=82
JAY Jayapura 43.40 286 P **P** **04 20 44.7 -0.5**
comp=Z,15nm,0.7s,baz=276,slow=23,SNR=40
JAY Jayapura 43.40 286 P **P** **04 20 45.8 +0.6**
comp=Z,206nm,1.0s,comp=Z,2µm
KEKH Kekaha 43.49 25 *e*P **P** **04 20 45.8 +0.2**
comp=Z,149nm,1.2s
HPAH Hawaii Prepara 43.57 31 *e*P **P** **04 20 46.7 +0.3**
comp=Z,73nm,0.6s
KIP Kipapa 43.70 27||*e*P **P** **04 20 48.4 +1.1**
BBOO Buckleboo 43.83 241 P **P** **04 20 48.2 0.0**
baz=44,SNR=142
BBOO Buckleboo 43.83 241 *e*P **P** **04 20 48.2 0.0**
comp=Z,135nm,0.8s
GENI Genyem 43.86 285 P **P** **04 20 49.5 +0.8**
comp=Z,204nm,0.8s,comp=Z,3µm
WB2 Warramunga Arr 45.11 260 *e*P **P** **04 20 57.4 -0.8**
comp=Z,115nm,0.8s
WRAB Tennant Creek 45.11 260*d i*P **P** **04 20 57.1 -1.1**
WRAB Tennant Creek 45.11 260 *e*P **P** **04 20 57.5 -0.7**
WRA Warramunga Arr 45.12 260 P **P** **04 20 57.2 -1.0**
comp=Z,70nm,0.7s,baz=92,slow=7.1,SNR=302
WRA ScP **ScP** **04 25 22.6 +2.1**
comp=Z,6.5nm,0.8s,baz=86,slow=4.4,SNR=9.1
WRA S **S** **04 26 49.8 -4.8**
comp=Z,2.5nm,0.9s,baz=92,slow=13,SNR=5.1
AS01 Alice Springs 45.22 254 *e*P **P** **04 20 58.0 -1.0**
AS01 *e*PcP **PcP** **04 22 25.1 -0.7**
AS31 Alice Springs 45.26 254 *e*P **P** **04 20 58.9 -0.4**
comp=Z,58nm,0.8s
ASAR Alice Springs 45.26 254 P **P** **04 20 58.3 -1.1**
comp=Z,210nm,0.8s,baz=84,slow=8.7,SNR=943
ASAR PcP **PcP** **04 22 25.7 -0.2**
comp=Z,12nm,0.8s,baz=105,slow=3.8,SNR=6.8
ASAR ScP **ScP** **04 25 23.2 +2.2**
comp=Z,8.8nm,0.8s,baz=100,slow=4.0,SNR=14
ASAR S **S** **04 26 53.8 -2.8**
comp=Z,4.3nm,0.6s,baz=92,slow=14,SNR=16
KDU Kakadu 48.06 269 P **P** **04 21 20.0 -0.4**
baz=48,SNR=16
GUMO Guam 48.30 308 P **P** **04 21 22.1 +0.1**
comp=Z,50nm,0.5s,baz=109,slow=4.6,SNR=4.0
MTN Manton Dam 49.30 268 P **P** **04 21 28.8 -0.7**
baz=49,SNR=24
MTN Manton Dam 49.30 268 *e*P **P** **04 21 28.4 -1.1**
comp=Z,101nm,0.8s
KMPI Kaimana, Papua 49.46 281 P **P** **04 21 31.5 +0.8**
WRKA Warakurna 50.31 252 P **P** **04 21 36.3 -0.5**
baz=50,SNR=180
FAKI Fak Fak 51.08 281 P **P** **04 21 42.1 -0.4**
comp=Z,51nm,1.3s,comp=Z,879nm
SWI Sorong 52.74 286 P **P** **04 21 54.3 -0.1**
comp=Z,340nm,0.9s,comp=Z,3µm
FITZ Fitzroy Crossi 53.52 260 P **P** **04 21 59.4 -0.3**
comp=Z,17nm,0.8s,baz=82,slow=4.8,SNR=41
FITZ Fitzroy Crossi 53.52 260 P **P** **04 21 59.5 -0.3**
baz=54,SNR=20
FITZ Fitzroy Crossi 53.52 260 *e*P **P** **04 21 59.5 -0.3**
comp=Z,137nm,1.8s
KMBL Kambalda 55.74 244 P **P** **04 22 14.4 -0.7**
baz=56,SNR=13
SOEI Soe 56.57 270 P **P** **04 22 22.4 +1.2**
TNTI Ternate 56.96 283 P **P** **04 22 23.8 +0.1**
comp=Z,265nm,0.9s,comp=Z,3µm
SANI Sanana 57.24 279 P **P** **04 22 27.1 +1.5**
MBWA Marble Bar 58.55 256 *e*P **P** **04 22 33.5 -0.8**
comp=Z,78nm,0.9s
MMRI Maumere 58.80 271 P **P** **04 22 35.7 -0.4**
comp=Z,176nm,0.8s,comp=Z,4µm
KLBR Kellerberrin 59.26 244 P **P** **04 22 38.2 -0.7**
baz=59,SNR=29
NWAO Narrogin (SRO) 59.63 242 P **P** **04 22 41.2 -0.2**
comp=Z,42nm,1.0s,baz=271,slow=0.2,SNR=12
NWAO Narrogin (SRO) 59.63 242 P **P** **04 22 41.1 -0.2**
baz=60,SNR=12
NWAO Narrogin (SRO) 59.63 242 *e*P **P** **04 22 40.5 -0.8**
NWAO pmax pmax
comp=Z,48nm,1.0s
NWAO Narrogin (SRO) 59.63 242 *e*P **P** **04 22 40.5 -0.8**
comp=Z,48nm,1.0s
RKGY Rocky Gully 59.78 240 P **P** **04 22 42.7 +0.4**
baz=60,SNR=6.4
BLDU Ballidu 60.22 245 P **P** **04 22 44.4 -0.8**
baz=60,SNR=31
SBA Scott Base 60.41 184 *e*P **P** **04 22 47.1 +1.4**
SBA pmax pmax
comp=Z,25nm,0.9s
SBA Scott Base 60.41 184 *e*P **P** **04 22 47.1 +1.4**
comp=Z,25nm,0.9s
VNDA Vanda 60.45 185 P **P** **04 22 47.2 +1.3**
comp=Z,4.5nm,0.6s,baz=352,slow=6.0,SNR=21
VNDA ScP **ScP** **04 26 28.6 +2.7**
comp=Z,1.2nm,0.8s,baz=355,slow=5.6,SNR=4.0
VNDA Vanda 60.45 185 *e*P **P** **04 22 46.3 +0.4**
VNDA pmax pmax
comp=Z,7.0nm,0.9s
VNDA Vanda 60.45 185 *e*P **P** **04 22 46.3 +0.4**
comp=Z,7.4nm,0.9s
VNDA ScP **ScP** **04 26 28.6 +2.7**
MORW Morawa 60.92 246 P **P** **04 22 48.5 -1.4**
baz=61,SNR=8.5
MRSI Marisa 61.91 280 P **P** **04 22 56.5 0.0**
comp=Z,45nm,0.9s,comp=Z,2µm
KAPI Kappang 62.20 274 P **P** **04 22 57.7 -0.7**
comp=Z,30nm,1.0s,baz=87,slow=2.9,SNR=8.1
KAPI Kappang 62.20 274 *e*P **P** **04 22 58.4 0.0**
comp=Z,69nm,1.3s
TTSI Tana Toraja 62.74 276 P **P** **04 23 02.5 +0.6**
PLAI Plampang 62.99 269 P **P** **04 23 03.2 -0.3**
comp=Z,188nm,1.1s,comp=Z,2µm
GIRL Giralia 63.36 253 P **P** **04 23 06.5 +0.8**
baz=63,SNR=9.8
TWSI Taliwang, Sumb 63.87 269 P **P** **04 23 08.5 -0.6**
comp=Z,141nm,1.1s,comp=Z,1µm
SRBI Singaraja 65.64 269 P **P** **04 23 20.9 +0.8**
JAGI Jajag, Banyuwa 66.54 268 P **P** **04 23 24.4 -1.4**
ABJI Asem Bagus 66.65 269 P **P** **04 23 27.0 +0.6**
MYLDM Lahad Datu 66.81 284 *e*P **P** **04 23 27.6 +0.2**
comp=Z,90nm,1.4s
GMJI Gumukmas 67.27 268 P **P** **04 23 29.4 -0.8**
BBKI Banjar Baru 67.33 274 P **P** **04 23 31.6 +1.0**
MJAR Matsushiro Arr 68.24 323 P **P** **04 23 35.1 -0.5**
comp=Z,10nm,0.5s,baz=157,slow=5.9,SNR=21
MAJO Matsushiro 68.24 323||*e*P **P** **04 23 34.9 -0.7**
MAJO pmax pmax
comp=Z,102nm,1.0s
MAJO Matsushiro 68.24 323 *e*P **P** **04 23 33.4 -2.2**
comp=Z,34nm,1.1s
MJB9 Matsu-Tunnel 68.25 323 *e*P **P** **04 23 34.0 -1.6**
comp=Z,8.9nm,1.2s
PWJI Pagerwojo 68.90 268 P **P** **04 23 39.7 -0.3**
comp=Z,91nm,0.9s
NGJI Ngawi 69.41 269 P **P** **04 23 45.3 +2.2**
PCJI Pacitan 69.45 268 P **P** **04 23 43.5 +0.2**
comp=Z,424nm,0.7s,comp=Z,4µm
WOJI Wonogiri, Jawa 69.79 268 P **P** **04 23 45.5 +0.2**
comp=Z,168nm,0.9s,comp=Z,6µm
UGM Wanagama 70.15 268 P **P** **04 23 49.0 +1.5**
YOJ Yonaguni jima 71.38 304 *e*P **P** **04 23 53.3 -1.1**
YOJ pmax pmax
comp=Z,98nm,1.1s
YOJ Yonaguni jima 71.38 304 *e*P **P** **04 23 53.3 -1.1**
comp=Z,98nm,1.1s
ASAJ Asahikawa 71.55 331 P **P** **04 23 55.5 +0.5**
comp=Z,4.8nm,0.5s,baz=220,slow=9.0,SNR=4.1
STKI Sintang 71.63 276 P **P** **04 23 57.3 +1.2**
SBUM Sibu 71.71 279 *e*P **P** **04 23 56.1 -0.5**
comp=Z,30nm,1.0s
QSPA South Pole Qui 72.11 180 *e*P **P** **04 23 59.0 +0.9**
TWG Pinlang 72.12 302 *e*P **P** **04 23 56.5 -2.3**
comp=Z,87nm,0.6s
YULB Yu-li 72.21 303 *e*P **P** **04 23 58.1 -1.1**
comp=Z,15nm,0.6s
NACB Ninganchiao 72.36 303 *e*P **P** **04 23 59.6 -0.5**
comp=Z,51nm,0.9s
SSLB Suanglung 72.68 303 *e*P **P** **04 24 00.2 -1.7**
comp=Z,22nm,0.6s
TPUB Ta-pu 72.70 302 *e*P **P** **04 24 01.0 -1.1**
comp=Z,78nm,0.7s
YHNB Yeheng 72.77 304 *e*P **P** **04 24 02.2 -0.3**
comp=Z,31nm,0.9s
CISI Cisompet, Garu 72.82 267 P **P** **04 24 02.1 -1.0**
KSM Kuching 73.19 277 *e*P **P** **04 24 05.5 +0.4**
comp=Z,142nm,1.0s
LEM Lembang 73.22 268 P **P** 04 24 11.3 +5.8
CNJI Cibinong 73.54 268 P **P** **04 24 06.7 -0.4**
comp=Z,98nm,1.0s,comp=Z,855nm
YSS Yuzh-Sakhalins 73.68 333||*e*P **P** **04 24 08.0 +0.9**
YSS pmax pmax
comp=Z,20nm,0.7s
PETK Petropavlovsk- 73.85 345 P **P** **04 24 07.8 -0.2**
comp=Z,9.3nm,0.6s,baz=111,slow=9.1,SNR=13
PETK pP **pP** **04 26 12.7 -0.5**
comp=Z,13nm,1.0s,baz=232,slow=7.3,SNR=4.2
CBJI Citeko 74.06 268 P **P** **04 24 09.5 -0.5**
comp=Z,381nm,0.9s
SKJI Sukabumi 74.17 268 P **P** **04 24 11.5 +0.8**
KSRS Korea Array 75.06 318 P **P** **04 24 16.1 +1.0**
comp=Z,4.2nm,0.8s,baz=140,slow=6.2,SNR=8.7
KSAR Wonju Array Be 75.08 318 P **P** **04 24 16.1 +0.9**
KSAR Wonju Array Be 75.08 318 P **P** **04 24 16.1 +0.9**
KS01 Wonju Array Si 75.10 318 *e*P **P** **04 24 15.8 +0.5**
CGJI Cibinong 75.11 268 P **P** **04 24 14.6 -1.3**
PPBI Pangkal Pinang 76.00 272 P **P** **04 24 21.5 +0.7**
comp=Z,57nm,1.0s,comp=Z,8µm
SAO San Andreas Ge 76.11 44 *e*P **P** **04 24 21.0 +0.1**
SAO pmax pmax
comp=Z,23nm,0.8s
SAO San Andreas Ge 76.11 44 *e*P **P** **04 24 21.0 +0.1**
comp=Z,22nm,0.8s
PKM Mcpherson Peak 76.14 46 P **P** **04 24 22.4 +1.1**
baz=236
MSHR Mys Shultsa 76.33 324||*e*P **P** **04 24 23.2 +1.3**
KASI Kota Agung 76.56 268 P **P** **04 24 22.8 -1.1**
KMRM Mail Ridge 76.72 40 *e*P **P** **04 24 24.0 -0.3**
comp=Z,47nm,0.9s
PASC Pasadena Art C 76.88 47 *e*P **P** **04 24 24.2 -0.9**
comp=Z,21nm,0.9s
USRK Ussuriysk Ar. 76.93 325 P **P** **04 24 26.4 +1.2**
comp=Z,2.7nm,0.7s,baz=146,slow=4.6,SNR=7.9
USRK pP **pP** **04 26 31.3 -0.6**
comp=Z,1.1nm,0.8s,baz=134,slow=12,SNR=1.7
ARVC Arvin 76.95 46 P **P** **04 24 25.9 +0.4**
baz=237
109C Camp Elliot, M 76.97 49 P **P** **04 24 26.2 +0.6**
baz=238
MWC Mount Wilson 77.00 47 *e*P **P** **04 24 26.5 +0.5**
MWC pmax pmax
comp=Z,22nm,0.6s
MWC Mount Wilson 77.00 47 *e*P **P** **04 24 26.5 +0.5**
comp=Z,22nm,0.6s
KHMM Horse Mountain 77.11 39 *e*P **P** **04 24 27.1 +0.6**
comp=Z,28nm,1.2s
LWLI Liwa 77.12 269 P **P** **04 24 28.3 +1.2**
MDSI Maura Dua 77.17 269 P **P** **04 24 25.8 -1.4**
MURC Murrieta 77.28 48 P **P** **04 24 27.8 +0.4**
baz=238,SNR=6.3
BFSC Mount Baldy Ra 77.28 47 P **P** **04 24 28.1 +0.6**
baz=238,SNR=5.8
RCTC Rector, Farmer 77.31 45 P **P** **04 24 28.3 +0.8**
baz=236
EDW2 Edwards Air Fo 77.39 47 P **P** **04 24 28.9 +0.9**
baz=238,SNR=13
MONP2 Monument Peak 77.46 49 P **P** **04 24 29.9 +1.3**
baz=239
ISA Isabella, Lake 77.48 46 P **P** **04 24 29.4 +0.9**
baz=237,SNR=12
ISA Isabella, Lake 77.48 46 *e*P **P** **04 24 28.8 +0.3**
ISA pmax pmax
comp=Z,24nm,0.9s
ISA Isabella, Lake 77.48 46 *e*P **P** **04 24 28.8 +0.3**
comp=Z,24nm,0.9s
CMB Columbia Colle 77.53 43 *e*P **P** **04 24 27.7 -0.9**
CMB pmax pmax
comp=Z,16nm,0.8s
CMB Columbia Colle 77.53 43 *e*P **P** **04 24 27.7 -0.9**
comp=Z,16nm,0.8s
WDC Whiskeytown Da 77.65 40 *e*P **P** **04 24 28.4 -0.8**
WDC pmax pmax
comp=Z,26nm,1.4s
WDC Whiskeytown Da 77.65 40 *e*P **P** **04 24 28.4 -0.8**
comp=Z,26nm,1.4s
AFDM Forest Hills D 77.67 42 *e*P **P** **04 24 28.8 -0.5**
comp=Z,17nm,1.0s
ORV Oroville 77.69 41 *e*P **P** **04 24 28.9 -0.5**
ORV pmax pmax
comp=Z,11nm,0.9s
ORV Oroville 77.69 41 *e*P **P** **04 24 28.9 -0.5**
comp=Z,11nm,0.9s
N02D Trinity Center 77.79 39 P **P** **04 24 31.1 +1.1**
baz=233,SNR=6.7
PFO Pinyon Flats O 77.81 49 P **P** **04 24 31.1 +0.8**
comp=Z,5.6nm,0.7s,baz=270,slow=3.1,SNR=6.8
PFO Pinyon Flats O 77.81 49 P **P** **04 24 31.1 +0.8**
baz=239
SRIG Santa Rosalia 77.91 56 *e*P **P** **04 24 30.5 -0.3**
comp=Z,30nm,1.0s
LRMC Laurel Mtn Rad 77.93 46 P **P** **04 24 31.8 +0.8**
baz=238
O03D Paynes Creek 77.94 40 P **P** **04 24 31.9 +1.1**
baz=234
SWSC Sam W. Stewart 77.94 49 P **P** **04 24 31.8 +0.9**
baz=239
M02C Callahan 77.95 39 P **P** **04 24 32.0 +1.1**
baz=233,SNR=8.1
L02D Cave Junction, 77.97 38 P **P** **04 24 32.0 +1.1**
baz=232
DSRI Dabo 78.00 273 P **P** **04 24 33.7 +2.0**
SLBS Sierra La Lagu 78.14 60 *e*P **P** **04 24 33.4 +1.1**
comp=Z,35nm,1.1s
CWC Cottonwood Cre 78.17 45 P **P** **04 24 33.1 +0.8**
baz=237
YBH Yreka Blue Hor 78.24 39 *e*P **P** **04 24 32.5 +0.1**
YBH pmax pmax
comp=Z,14nm,0.8s
YBH Yreka Blue Hor 78.24 39 *e*P **P** **04 24 32.5 +0.1**
comp=Z,14nm,0.8s
HABR Khabarovsk 78.30 330 *e*P **P** **04 24 31.3 -1.1**
HABR 04 24 37.7
HABR *e**PP **pP** **04 26 39.4 -0.3**
HABR *e* 04 27 39.3
HABR *e**SP **sP** **04 27 42.3 +0.5**
HABR *e*S **S** **04 33 36.8 -1.8**
HABR *e* 04 33 54.6
HABR *e*SS **SS** **04 38 57.5 -2.6**
HABR *e*SSS SSS 04 42 29.8
HABR pmax pmax
comp=Z,16nm,0.9s
HABR MLR MLR
comp=Z,65nm,20.0s
MLAC Mammoth, Mammo 78.32 44 P **P** **04 24 34.1 +1.0**
baz=236
KDAK Kodiak Island 78.32 14 *i* P **P** **04 24 32.5 +0.2**
BELC Belle Mtn. Jos 78.33 48 P **P** **04 24 33.8 +0.6**
baz=239,SNR=12
MPMC Manual Prospec 78.37 46 P **P** **04 24 34.0 +0.6**
baz=238,SNR=12
TIN Tinemaha, Big 78.40 45 P **P** **04 24 34.2 +0.8**
baz=237
WAKR Walker 78.41 43 *e*P **P** **04 24 34.9 +1.3**
DAC Darwin (Calif) 78.42 46 *e*P **P** **04 24 33.5 -0.1**
DAC pmax pmax
comp=Z,6.0nm,0.9s
DAC Darwin (Calif) 78.42 46 *e*P **P** **04 24 33.5 -0.1**
comp=Z,6.3nm,0.9s
GSC Goldstone, Bar 78.44 47 P **P** **04 24 34.4 +0.7**
baz=238
GSC Goldstone, Bar 78.44 47 *e*P **P** **04 24 34.7 +1.0**
GSC pmax pmax
comp=Z,7.0nm,0.9s
GSC Goldstone, Bar 78.44 47 *e*P **P** **04 24 34.7 +1.0**
comp=Z,7.1nm,0.9s
MDJ Mudanjiang 78.51 325 P **P** **04 24 34.6 +1.0**
MDJ pmax pmax
comp=Z,23nm,1.0s
MDJ pmax pmax
comp=Z,61nm,3.8s
MDJ Mudanjiang 78.51 325 *e*P **P** **04 24 34.2 +0.6**
comp=Z,26nm,1.0s
HEC Hector,Ludlow 78.52 48 P **P** **04 24 34.9 +0.8**
baz=239
BC3 Big Chuckawall 78.55 49 P **P** **04 24 35.2 +0.9**
baz=239,SNR=5.3
HUMO Hull Mountain 78.62 38 *e*P **P** **04 24 35.9 +1.5**
comp=Z,21nm,1.1s
GLA Glamis 78.70 50 P **P** **04 24 36.1 +1.1**
baz=240
M04C Macdoel 78.79 39 P **P** **04 24 36.1 +0.7**
baz=234,SNR=6.0
GRAC Grapevine Rang 78.95 45 P **P** **04 24 37.2 +1.0**
baz=238,SNR=10
FURC Furnace Creek, 79.02 46 P **P** **04 24 37.2 +0.7**
baz=238,SNR=5.7
IRM Iron Mountain 79.02 49 P **P** **04 24 37.5 +0.9**
baz=240
I03D Drain, OR 79.06 37 P **P** **04 24 37.6 +1.1**
baz=232
NVAR Mina Array Bea 79.11 44 P **P** **04 24 38.3 +1.1**
comp=Z,17nm,0.8s,baz=225,slow=9.2,SNR=52
NVAR pP **pP** **04 26 44.6 -0.2**
comp=Z,1.9nm,0.8s,baz=231,slow=9.6,SNR=4.2
NV01 Mina Array Sit 79.11 44 *e*P **P** **04 24 37.8 +0.5**
SHOC Shoshone, Teco 79.12 47 P **P** **04 24 37.7 +0.6**
baz=238
TUQ Turquoise Moun 79.13 47 P **P** **04 24 38.2 +0.9**
baz=239
NV11 Mina Array Sit 79.20 44 *e*P **P** **04 24 38.5 +0.8**
comp=Z,16nm,0.8s
NV11 *e*pP **pP** **04 26 44.2 -1.1**
Y12C Blythe 79.27 49 P **P** **04 24 39.0 +1.1**
baz=240,SNR=7.5
Y12C Blythe 79.27 49 *e*P **P** **04 24 37.6 -0.2**
comp=Z,15nm,0.8s
113A Mohawk Valley, 79.33 50 *e*P **P** **04 24 38.7 +0.4**
comp=Z,14nm,0.9s
K04D Chiloquin, OR 79.34 39 P **P** **04 24 38.8 +0.6**
baz=234
MASI Maura Aman, Be 79.41 270 P **P** **04 24 41.1 +1.9**
214A Organ Pipe Nat 79.64 52 P **P** **04 24 41.1 +1.1**
baz=241
I04A Tendick Farm, 79.66 37 P **P** **04 24 40.2 +0.4**
baz=233
TPNV Topopah Spring 79.69 46 P **P** **04 24 41.2 +0.9**
baz=238,SNR=5.5
HSIG 79.70 55 *e*P **P** **04 24 40.6 +0.3**
comp=Z,10nm,0.8s
MOD Modoc Plateau 79.79 40 *e*P **P** **04 24 41.3 +0.6**
comp=Z,21nm,0.8s
MOD *e*pP **pP** **04 26 42.8 -5.8**
PDMCI Parker Dam,Lak 79.81 49 P **P** **04 24 41.7 +0.9**
baz=240
K05A Summer Lake 79.92 39 *e*P **P** **04 24 42.4 +1.0**
comp=Z,44nm,1.0s
G03D McMinnville, O 80.04 36 P **P** **04 24 42.5 +0.8**
baz=232
J05D Fort Rock, OR 80.04 38 P **P** **04 24 43.1 +1.1**
baz=234,SNR=31
H04A Detroit Lake 80.33 37 *e*P **P** **04 24 43.0 -0.2**
comp=Z,16nm,0.7s
CN2 Changchun 80.36 322⇑P **P** **04 24 44.3 +0.9**
CN2 pmax pmax
comp=Z,20nm,1.0s
W13A Hualapai Mount 80.39 48 *e*P **P** **04 24 44.2 +0.1**
comp=Z,5.4nm,0.8s
KLR Kul'dur 80.40 329*d i*P **P** **04 24 43.6 +0.1**
Y14A Wickenburg 80.46 50 *e*P **P** **04 24 43.5 -0.7**
comp=Z,45nm,0.9s
I05D Terrebonne, OR 80.60 37 P **P** **04 24 45.4 +0.7**
baz=234,SNR=8.7
F04D Rainier, OR 80.72 35 P **P** **04 24 46.5 +1.3**
baz=232
SDSI Sungai Dareh 80.86 272 P **P** **04 24 46.6 0.0**
comp=Z,162nm,0.7s,comp=Z,35µm
R11A Troy Canyon, C 80.87 45 P **P** **04 24 46.8 +0.4**
baz=239,SNR=16
R11A Troy Canyon, C 80.87 45 *e*P **P** **04 24 47.2 +0.8**
comp=Z,7.2nm,0.9s
BMN Battle Mountai 80.90 42 *e*P **P** **04 24 47.5 +1.1**
BMN pmax pmax
comp=Z,23nm,1.0s
BMN Battle Mountai 80.90 42 *e*P **P** **04 24 47.5 +1.1**
comp=Z,23nm,1.0s
F04A Amboy 80.95 36 *e*P **P** **04 24 45.3 -1.0**
comp=Z,42nm,1.4s
WHN Wuhan 81.03 306 P **P** **04 24 48.4 +1.3**
WHN pmax pmax
comp=Z,54nm,0.9s
WVOR Wild Horse Val 81.11 40 *e*P **P** **04 24 48.3 +0.8**
WVOR pmax pmax
comp=Z,28nm,1.0s
WVOR Wild Horse Val 81.11 40 *e*P **P** **04 24 48.2 +0.8**
comp=Z,28nm,1.0s
G05D Wamic, OR 81.15 37 P **P** **04 24 48.0 +0.6**
baz=234
TUC Tucson 81.33 52 P **P** **04 24 50.3 +1.5**
baz=242
TUC Tucson 81.33 52 *e*P **P** **04 24 50.4 +1.7**
TUC pmax pmax
comp=Z,26nm,0.9s
TUC Tucson 81.33 52 *e*P **P** **04 24 50.4 +1.7**
comp=Z,26nm,0.9s
MA2 Magadan 81.37 344 *e*P **P** **04 24 47.5 -0.7**
G06A Carlson Farm, 81.54 37 *e*P **P** **04 24 49.3 -0.1**
comp=Z,12nm,0.9s
LON Longmire 81.78 35 *e*P **P** **04 24 50.5 -0.2**
LON pmax pmax
comp=Z,5.0nm,0.7s
LON Longmire 81.78 35 *e*P **P** **04 24 50.5 -0.2**
comp=Z,4.7nm,0.7s
PDSI Padang 81.78 272 P **P** **04 24 50.6 -0.8**
LCMT Little Creek M 81.79 47 *e*P **P** **04 24 52.1 +1.1**
comp=Z,19nm,0.9s
X16A Lo Mia Camp, P 81.82 50 *e*P **P** **04 24 53.1 +1.7**
comp=Z,24nm,1.0s
X16A *e*pP **pP** **04 26 59.5 -0.7**
COCO West Island 81.91 260 *i* P **P** **04 24 53.9 +2.0**
319A Douglas 82.05 54 *e*P **P** **04 24 54.5 +2.1**
comp=Z,48nm,0.9s

319A					*e*P		**pP**	04 27 01.5	+0.2
PGC	**Sidney**	82.07	33	*e*P		**P**	04 24 52.8	+0.8	
	comp=Z,13nm,0.8s								
KNB	**Kanab**	82.09	47	*e*P		**P**	04 24 54.1	+1.5	
KNB				pmax		pmax			
	comp=Z,18nm,0.8s								
KNB	**Kanab**	82.09	47	*e*P		**P**	04 24 54.1	+1.5	
	comp=Z,18nm,0.8s								
PSUT	**Pine Spring**	82.13	45	*e*P		**P**	04 24 52.4	-0.5	
	comp=Z,13nm,0.7s								
U15A	**North Rim**	82.17	48	*e*P		**P**	04 24 54.8	+1.6	
	comp=Z,37nm,0.8s								
ELK	**Elko**	82.34	43	*e*P		**P**	04 24 54.8	+0.9	
ELK				pmax		pmax			
	comp=Z,14nm,0.9s								
ELK	**Elko**	82.34	43	*e*P		**P**	04 24 54.8	+0.9	
	comp=Z,14nm,0.9s								
WUAZ	**Wupatki**	82.39	49	P		**P**	04 24 55.3	+1.1	
	baz=242								
WUAZ	**Wupatki**	82.39	49	*e*P		**P**	04 24 55.5	+1.4	
	comp=Z,23nm,1.0s								
TT01	**Tatalina**	82.40	10	*e*P		**P**	04 24 53.5	+0.2	
TTA	**Tatalina**	82.43	10	*e*P		**P**	04 24 53.6	0.0	
TTA				pmax		pmax			
	comp=Z,11nm,0.9s								
TTA	**Tatalina**	82.43	10	*e*P		**P**	04 24 53.6	0.0	
	comp=Z,10nm,0.9s								
A04D	**Lummi Island**	82.50	33	P		**P**	04 24 54.8	+0.7	
	baz=232								
B05A	**Bryant**	82.54	34	P		**P**	04 24 54.8	+0.4	
	baz=233,SNR=6.6								
PKCU	**Pink Cliffs**	82.65	47	*e*P		**P**	04 24 57.3	+1.7	
	comp=Z,17nm,0.9s								
LTY	**Liberty**	82.71	35	*e*P		**P**	04 24 55.8	+0.4	
	comp=Z,9.8nm,0.9s								
RSW	**Rattlesnake Hi**	82.81	36	P		**P**	04 24 56.8	+0.9	
HAWA	**Hanford**	82.84	36	*e*P		**P**	04 24 57.0	+1.1	
	comp=Z,17nm,0.8s								
HAWA				*e*pP		**pP**	04 27 05.7	+0.5	
DIV	**Divide**	82.91	15	*e*P		**P**	04 24 55.8	-0.2	
	comp=Z,17nm,0.8s								
X18A	**Snowflake**	82.97	50	*e*P		**P**	04 24 57.9	+0.8	
	comp=Z,12nm,0.8s								
C06D	**Leavenworth**	82.98	35	P		**P**	04 24 57.2	+0.6	
	baz=234								
HPIG		83.02	59	*e*P		**P**	04 24 57.5	0.0	
	comp=Z,12nm,0.8s								
HPIG				*e*pP		**pP**	04 27 06.1	-0.8	
MTPU	**Mount Pierson**	83.03	46	*e*P		**P**	04 24 59.4	+1.9	
	comp=Z,15nm,0.8s								
SCM	**Sheep Creek Mo**	83.14	14	*e*P		**P**	04 24 56.3	-0.9	
SCM				pmax		pmax			
	comp=Z,23nm,0.6s								
SCM	**Sheep Creek Mo**	83.14	14	*e*P		**P**	04 24 56.3	-0.9	
	comp=Z,23nm,0.6s								
BMO	**Blue Mountains**	83.26	39	*e*P		**P**	04 24 58.7	+0.5	
BMO				pmax		pmax			
	comp=Z,6.0nm,0.8s								
BMO	**Blue Mountains**	83.26	39	*e*P		**P**	04 24 58.7	+0.5	
	comp=Z,6.3nm,0.8s								
MSU	**Marysvale**	83.26	46	*e*P		**P**	04 25 00.1	+1.6	
MSU				*e**PP		**pP**	04 27 08.9	+1.0	
MSU	**Marysvale**	83.26	46	*e*P		**P**	04 25 00.1	+1.6	
MSU				*e*pP		**pP**	04 27 08.9	+1.0	
WTV	**Waterville**	83.36	35	P		**P**	04 24 58.8	+0.2	
MFID	**Camas Ranch**	83.38	40	*e*P		**P**	04 24 59.8	+1.0	
	comp=Z,14nm,1.0s								
W18A	**Petrified Fore**	83.39	50	P		**P**	04 24 58.5	-0.7	
	baz=243								
KULM	**Kulm**	83.54	278	*e*P		**P**	04 25 00.4	+0.2	
	comp=Z,53nm,1.4s								
D08A	**Wollman Farm,**	83.56	36	*e*P		**P**	04 24 59.8	+0.3	
	comp=Z,14nm,0.8s								
CAST	**Castle Rocks**	83.57	11	*e*P		**P**	04 24 56.7	-2.5	
	comp=Z,17nm,0.8s								
DUG	**Dugway, Tooele**	83.66	44	P		**P**	04 25 00.7	+0.4	
	baz=240								
DUG	**Dugway, Tooele**	83.66	44	*e*P		**P**	04 25 00.6	+0.3	
DUG				pmax		pmax			
	comp=Z,18nm,1.8s								
DUG	**Dugway, Tooele**	83.66	44	*e*P		**P**	04 25 00.6	+0.3	
	comp=Z,18nm,1.8s								
121A	**Cookes Peak, D**	83.69	53	P		**P**	04 25 01.6	+0.8	
	baz=244								
BALM	**Baldy**	83.71	17	*e*P		**P**	04 25 00.1	0.0	
BALM				pmax		pmax			
	comp=Z,16nm,0.6s								
BALM	**Baldy**	83.71	17	*e*P		**P**	04 25 00.1	0.0	
	comp=Z,16nm,0.6s								
KTH	**Kantishna Hill**	83.91	12	*e*P		**P**	04 24 59.6	-1.3	
	comp=Z,11nm,0.8s								
F10A	**Beach Ranch, E**	83.92	38	*e*P		**P**	04 25 01.4	0.0	
	comp=Z,28nm,0.9s								
F10A				*e*pP		**pP**	04 27 07.9	-3.3	
SEY	**Seymchan**	83.93	347	P		**P**	04 25 00.3	-0.6	
	comp=Z,9.3nm,0.4s,baz=168,slow=5.8,SNR=34								
SEY	**Seymchan**	83.93	347	*e*P		**P**	04 24 59.8	-1.1	
TRF	**Thorofare Moun**	83.94	12	*e*P		**P**	04 25 00.3	-0.9	
	comp=Z,23nm,0.8s								
ZAIG	**Zacatecas**	83.98	64	*e*P		**P**	04 25 03.1	+0.6	
	comp=Z,15nm,1.0s								
MAW	**Mawson**	83.99	200	P		**P**	04 25 02.3	+1.0	
	comp=Z,7.4nm,0.8s,baz=140,slow=3.9,SNR=15								
MAW	**Mawson**	83.99	200	P		**P**	04 25 01.9	+0.7	
	baz=84,SNR=10								
MAW	**Mawson**	83.99	200	*e*P		**P**	04 25 00.9	-0.4	
MAW				pmax		pmax			
	comp=Z,3.0nm,1.0s								
MAW	**Mawson**	83.99	200	*e*P		**P**	04 25 00.9	-0.4	
	comp=Z,2.6nm,1.0s								
B08A	**Colville Reser**	84.08	35	*e*P		**P**	04 25 00.8	-1.2	
	comp=Z,13nm,0.8s								
B08A				*e*pP		**pP**	04 27 10.7	-1.2	
BJI	**Beijing**	84.17	315	P		**P**	04 25 03.4	+0.8	
BJI				pmax		pmax			
	comp=Z,15nm,1.1s								
RND	**Reindeer**	84.20	13	*e*P		**P**	04 25 01.9	-0.4	
RND				pmax		pmax			
	comp=Z,32nm,1.0s								
RND	**Reindeer**	84.20	13	*e*P		**P**	04 25 01.9	-0.4	
	comp=Z,32nm,1.0s								
DHY	**Denali Highway**	84.22	13	*e*P		**P**	04 25 02.1	-0.5	
	comp=Z,14nm,1.2s								
TMUT	**Trail Mountain**	84.30	46	*e*P		**P**	04 25 05.2	+1.4	
	comp=Z,12nm,0.8s								
HLID	**Hailey**	84.33	41	P		**P**	04 25 04.2	+0.6	
	baz=239,SNR=19								
HLID	**Hailey**	84.33	41	*e*P		**P**	04 25 04.5	+0.9	
	comp=Z,10nm,0.8s								
C09A	**Chrisman Ranch**	84.35	36	*e*P		**P**	04 25 03.7	+0.3	
	comp=Z,12nm,0.8s								
C09A				*e*pP		**pP**	04 27 13.5	+0.2	
MPU	**Maple Canyon**	84.36	45	*e*P		**P**	04 25 05.1	+1.3	
	comp=Z,4.3nm,0.9s								
PSI	**Prapat**	84.39	275	*e*P		**P**	04 25 03.4	-1.1	
PSI				pmax		pmax			
	comp=Z,52nm,0.9s								
PSI	**Prapat**	84.39	275	*e*P		**P**	04 25 03.4	-1.1	
	comp=Z,52nm,0.9s								
CHBT	**CHBT**	84.41	285	P		**P**	04 25 06.2	+1.9	
	comp=Z,34nm,1.1s								
HVU	**Hansel Valley**	84.47	43	*e*P		**P**	04 25 03.1	-1.2	
HVU				*e**PP		**pP**	04 27 11.9	-2.3	
HVU				pmax		pmax			
	comp=Z,6.0nm,0.9s								
HVU	**Hansel Valley**	84.47	43	*e*P		**P**	04 25 03.1	-1.2	
	comp=Z,6.1nm,0.9s								
HVU				*e*pP		**pP**	04 27 11.9	-2.3	
MCK	**McKinley**	84.47	12	*e*P		**P**	04 25 03.0	-0.6	
MCK				pmax		pmax			
	comp=Z,21nm,1.2s								
MCK	**McKinley**	84.47	12	*e*P		**P**	04 25 03.0	-0.6	
	comp=Z,21nm,1.2s								
CTU	**Camp Tracy**	84.61	44	*e*P		**P**	04 25 06.1	+1.1	
	comp=Z,6.0nm,0.8s								
SRU	**San Rafael Swe**	84.68	46	*e*P		**P**	04 25 06.2	+0.8	
SRU				pmax		pmax			
	comp=Z,10.0nm,0.7s								
SRU	**San Rafael Swe**	84.68	46	*e*P		**P**	04 25 06.2	+0.8	
	comp=Z,10.0nm,0.7s								
P17A	**Butcher Ranch,**	84.70	46	*e*P		**P**	04 25 06.2	+0.7	
	comp=Z,3.4nm,0.9s								
ENH	**Enshi**	84.71	304	*e*P		**P**	04 25 06.4	+0.8	
	comp=Z,54nm,0.9s								
JLU	**Jordanelle**	84.77	44	*e*P		**P**	04 25 05.8	0.0	
	comp=Z,4.4nm,0.9s								
MENT	**Mentasta**	84.96	15	*e*P		**P**	04 25 06.0	0.0	
	comp=Z,10.0nm,1.0s								
LAZ	**Ladron**	84.99	52	*e*P		**P**	04 25 08.2	+1.2	
LAZ				*e*pP		**pP**	04 27 15.1	-2.0	
TCUT	**Toone Canyon**	85.04	44	*e*P		**P**	04 25 08.3	+1.1	
	comp=Z,19nm,0.8s								
TCUT				*e*pP		**pP**	04 27 15.1	-2.3	
P18A	**Preston Nutter**	85.11	46	*e*P		**P**	04 25 07.2	-0.5	
	comp=Z,4.6nm,0.8s								
HWUT	**Hardware Ranch**	85.17	44	*e*P		**P**	04 25 07.8	0.0	
	comp=Z,4.0nm,0.8s								
HWUT				*e*pP		**pP**	04 27 15.3	-2.7	
MNTX	**Cornudas Mount**	85.19	55	P		**P**	04 25 09.1	+1.3	
	baz=246								
MNTX	**Cornudas Mount**	85.19	55	*e*P		**P**	04 25 09.0	+1.1	
	comp=Z,14nm,1.1s								
MNTX				*e*pP		**pP**	04 27 16.6	-1.5	
PV05	**Paradox Valley**	85.19	48	*e*P		**P**	04 25 07.9	0.0	
GSI	**Gunungsitoli**	85.20	273	P		**P**	04 25 09.6	+1.3	
MVCO	**Mesa Verde**	85.23	49	P		**P**	04 25 08.9	+0.7	
	baz=243								
NEW	**Newport**	85.25	36	P		**P**	04 25 07.7	0.0	
	baz=236								
NEW	**Newport**	85.25	36	*e*P		**P**	04 25 06.5	-1.3	
NEW				pmax		pmax			
	comp=Z,5.0nm,0.8s								
NEW	**Newport**	85.25	36	*e*P		**P**	04 25 06.5	-1.3	
	comp=Z,5.5nm,0.8s								
TRTT	**Trang**	85.25	280	P		**P**	04 25 09.8	+1.3	
	comp=Z,69nm,1.0s								
MLY	**Manley**	85.28	11	*e*P		**P**	04 25 06.3	-1.2	
	comp=Z,7.6nm,1.2s								
WRH	**Wood River Hil**	85.30	12	*e*P		**P**	04 25 06.8	-0.7	
	comp=Z,27nm,1.2s								
LPM	**Los Pinos Moun**	85.33	52	*e*P		**P**	04 25 08.6	-0.1	
PV09	**Paradox Valley**	85.36	47	*e*P		**P**	04 25 09.7	+0.9	
PV10	**Paradox Valley**	85.37	47	*e*P		**P**	04 25 09.2	+0.4	
HDA	**Harding Lake**	85.48	13	*e*P		**P**	04 25 07.9	-0.6	
	comp=Z,34nm,1.3s								
GYA	**Guiyang**	85.49	299	*e*P		**P**	04 25 10.0	+0.5	
GYA				pP		pP	04 27 21.3	+1.4	
GYA				sP		sP	04 28 21.0	-0.2	
GYA				PP		**PP**	04 28 42.6	+2.5	
GYA				SKS		**SKSac**	04 34 35.4	-2.1	
GYA				S		**S**	04 34 51.3	-0.1	
GYA				pmax		pmax			
	comp=Z,10.0nm,1.0s								
CCB	**Clear Creek Bu**	85.51	12	*e*P		**P**	04 25 07.7	-0.9	
	comp=Z,12nm,1.0s								
PV01	**Paradox Valley**	85.59	48	*e*P		**P**	04 25 10.4	+0.5	
TX31	**Lajitas Ar. Si**	85.59	57	*e*P		**P**	04 25 11.1	+1.2	
TX31				*e*pP		**pP**	04 27 16.6	-3.8	
TXAR	**Lajitas Array**	85.59	57	P		**P**	04 25 11.6	+1.6	
	comp=Z,25nm,0.8s,baz=222,slow=5.8,SNR=303								
DLBC	**Dease Lake**	85.67	23	*e*P		**P**	04 25 08.7	-0.8	
	comp=Z,5.3nm,0.8s								
MDM	**Murphy Dome**	85.70	12	*e*P		**P**	04 25 07.5	-2.0	
	comp=Z,16nm,1.0s								
KCSI	**Kotacane, Aceh**	85.70	275	P		**P**	04 25 10.6	-0.1	
COLA	**College**	85.70	12	*de*P		**P**	04 25 07.7	-1.7	
COLA				pmax		pmax			
	comp=Z,14nm,1.1s								
ANMO	**Albuquerque**	85.73	51	P		**P**	04 25 11.5	+0.9	
	baz=245								
ANMO	**Albuquerque**	85.73	51	*ce*P		**P**	04 25 11.3	+0.7	
ANMO				*e**PP		**pP**	04 27 20.3	-0.7	
ANMO				pmax		pmax			
	comp=Z,15nm,1.0s								
ANMO	**Albuquerque**	85.73	51	*e*P		**P**	04 25 11.0	+0.5	
	comp=Z,12nm,0.9s								
ANMO				*e*pP		**pP**	04 27 15.5	-5.5	
IL1	**Eielson Array**	85.81	13	*e*P		**P**	04 25 08.6	-1.4	
ILAR	**Eielson Array**	85.81	13	P		**P**	04 25 08.8	-1.2	
	comp=Z,3.1nm,0.4s,baz=221,slow=5.1,SNR=77								
ILB	**Eielson Array**	85.81	13	*e*P		**P**	04 25 09.1	-0.9	
MCMT	**McKenzie Canyo**	85.94	40	*e*P		**P**	04 25 12.3	+0.9	
AHID	**Auburn Hatcher**	86.03	43	*e*P		**P**	04 25 11.2	-0.6	
	comp=Z,9.9nm,0.9s								
TPTI		86.18	275	P		**P**	04 25 13.5	+0.6	
MSO	**Missoula**	86.31	38	P		**P**	04 25 12.7	-0.2	
	baz=239								
MSO	**Missoula**	86.31	38	*e*P		**P**	04 25 12.8	-0.2	
	comp=Z,3.7nm,0.6s								
BSMT	**Bassoo Peak**	86.35	37	P		**P**	04 25 13.2	0.0	
DLMT	**Dillon**	86.37	40	*e*P		**P**	04 25 14.1	+0.8	
	comp=Z,13nm,0.8s								
SURT	**Suratani**	86.45	281	P		**P**	04 25 16.0	+1.9	
	comp=Z,14nm,1.2s								
REDW	**Red Top Meadow**	86.48	42	*e*P		**P**	04 25 14.9	+1.0	
	comp=Z,19nm,1.0s								
FXWY	**Fox Creek**	86.50	42	*e*P		**P**	04 25 14.7	+0.6	
	comp=Z,6.8nm,0.9s								
BILL	**Bilibino**	86.52	354	*e*P		**P**	04 25 12.9	-0.3	
BILL				pmax		pmax			
	comp=Z,7.0nm,1.2s								
JTMT	**Jette**	86.58	37	*e*P		**P**	04 25 14.4	+0.2	
SNOW	**Snow King Moun**	86.59	42	*e*P		**P**	04 25 15.7	+1.2	
	comp=Z,20nm,0.9s								
SNOW				*e*pP		**pP**	04 27 22.2	-3.2	
S22A	**4UR Ranch, Cre**	86.66	49	P		**P**	04 25 15.5	+0.5	
	baz=244,SNR=17								
S22A	**4UR Ranch, Cre**	86.66	49	*e*P		**P**	04 25 15.8	+0.8	
	comp=Z,12nm,1.1s								
S22A				*e*pP		**pP**	04 27 22.0	-3.8	
IMW	**Indian Meadow**	86.68	42	*e*P		**P**	04 25 15.8	+0.9	
	comp=Z,20nm,0.9s								
XAN	**Xi'an**	86.68	307	P		**P**	04 25 16.0	+1.1	
XAN				pmax		pmax			
	comp=Z,31nm,1.0s								
XAN				pmax		pmax			
	comp=Z,57nm,7.5s								
LRM	**Limekiln Ridge**	86.69	40	*e*P		**P**	04 25 15.8	+0.9	
O20A	**White River Ci**	86.72	46	P		**P**	04 25 15.4	+0.3	
	baz=243,SNR=10.0								
O20A	**White River Ci**	86.72	46	*e*P		**P**	04 25 15.7	+0.6	
	comp=Z,15nm,1.1s								
O20A				*e*pP		**pP**	04 27 22.4	-3.6	
MOOW	**Moose Ponds**	86.73	42	*e*P		**P**	04 25 14.8	-0.3	
	comp=Z,5.5nm,0.9s								
CHMT	**Chamberlain Mo**	86.75	38	*e*P		**P**	04 25 15.3	+0.2	
LOHW	**Long Hollow**	86.76	42	*e*P		**P**	04 25 15.8	+0.5	
	comp=Z,7.3nm,0.8s								
YBMT	**Yellow Bay**	86.80	37	*e*P		**P**	04 25 13.8	-1.4	
QLMT	**Earthquake Lak**	86.82	41	*e*P		**P**	04 25 17.1	+1.6	
FLWY	**Flagg Ranch**	86.92	42	*e*P		**P**	04 25 17.4	+1.5	
	comp=Z,24nm,1.0s								
PBKT	**Sadao Pong**	86.92	288	P		**P**	04 25 18.0	+1.7	
	comp=Z,14nm,1.1s								
YFT	**Old Faithful**	87.01	41	*e*P		**P**	04 25 17.4	+1.0	
	comp=Z,15nm,0.9s								
YMR	**Madison River**	87.04	41	*e*P		**P**	04 25 17.6	+1.0	
	comp=Z,18nm,0.8s								
BW06	**Boulder Array**	87.04	43	P		**P**	04 25 16.9	+0.3	
	baz=242								
BW06	**Boulder Array**	87.04	43	*e*P		**P**	04 25 16.5	-0.1	
	comp=Z,11nm,0.8s								
BW06				*e*pP		**pP**	04 27 27.3	-0.3	
BW06				*e**PP		**PP**	04 28 49.6	-2.5	
PD31	**Pinedale Array**	87.04	43	*e*P		**P**	04 25 16.9	+0.3	
PD31				*e*pP		**pP**	04 27 25.7	-1.9	
PD31				*e*PP		**PP**	04 28 48.8	-3.3	
PDAR	**Pinedale Array**	87.04	43	P		**P**	04 25 16.9	+0.3	
	comp=Z,7.9nm,0.7s,baz=216,slow=3.0,SNR=79								
PDAR				pP		**pP**	04 27 26.6	-1.0	
	comp=Z,1.2nm,0.8s,baz=246,slow=2.9,SNR=3.6								
BOZ	**Bozeman (W)**	87.10	40	P		**P**	04 25 17.1	+0.4	
	baz=241,SNR=18								
BOZ	**Bozeman (W)**	87.10	40	*e*P		**P**	04 25 17.3	+0.6	
BOZ				pmax		pmax			
	comp=Z,11nm,1.0s								
BOZ	**Bozeman (W)**	87.10	40	*e*P		**P**	04 25 17.2	+0.6	
	comp=Z,11nm,1.0s								
EGAK	**Eagle**	87.12	15	*e*P		**P**	04 25 15.2	-0.9	
	comp=Z,6.7nm,0.8s								
H17A	**Grant Village**	87.15	41	P		**P**	04 25 19.3	+2.3	
	baz=242								
H17A	**Grant Village**	87.15	41	*e*P		**P**	04 25 19.4	+2.3	
	comp=Z,16nm,0.8s								
SMCO	**Snowmass**	87.17	47	*e*P		**P**	04 25 17.6	+0.1	
	comp=Z,5.5nm,0.9s								
LKWY	**Lake**	87.34	41	*e*P		**P**	04 25 19.8	+1.8	
LKWY				pmax		pmax			
	comp=Z,17nm,1.0s								
LKWY	**Lake**	87.34	41	*e*P		**P**	04 25 19.8	+1.8	
	comp=Z,17nm,1.0s								
COLD	**Coldfoot**	87.36	10	*e*P		**P**	04 25 15.6	-1.6	
	comp=Z,7.8nm,0.8s								
WALA	**Waterton Lakes**	87.47	36	*e*P		**P**	04 25 17.3	-1.0	
	comp=Z,7.0nm,0.8s								
SDCO	**Great Sand Dun**	87.61	49	P		**P**	04 25 19.9	+0.5	
	baz=245								
SDCO	**Great Sand Dun**	87.61	49	*e*P		**P**	04 25 18.3	-1.1	
	comp=Z,3.8nm,0.9s								
UTTA	**Uttaradit**	87.69	289	P		**P**	04 25 22.0	+2.2	
	comp=Z,2.9nm,1.2s								
NANT	**Nan**	87.91	290	P		**P**	04 25 22.2	+1.3	
MSTX	**Muleshoe**	88.11	53	P		**P**	04 25 22.2	+0.6	
	baz=247								
MSTX	**Muleshoe**	88.11	53	*e*P		**P**	04 25 22.3	+0.6	
	comp=Z,18nm,0.8s								
T25A	**Trinidad**	88.15	50	P		**P**	04 25 22.8	+0.9	
	baz=246								
T25A	**Trinidad**	88.15	50	*e*P		**P**	04 25 21.5	-0.4	
	comp=Z,6.6nm,0.8s								
832A	**Faith Ranch, C**	88.20	60	P		**P**	04 25 22.9	+0.9	
	baz=249,SNR=13								
KMI	**Kunming**	88.30	297	P		**P**	04 25 24.1	+1.3	
KMI				pP		pP	04 27 38.3	+4.0	
KMI				pmax		pmax			
	comp=Z,17nm,1.4s								
KMI				pmax		pmax			
	comp=Z,74nm,3.1s								
RLMT	**Red Lodge**	88.31	41	P		**P**	04 25 23.5	+1.0	
	baz=242,SNR=13								
RLMT	**Red Lodge**	88.31	41	*e*P		**P**	04 25 22.5	+0.1	
	comp=Z,13nm,0.9s								
Q24A	**Divide**	88.37	48	P		**P**	04 25 23.9	+0.9	
	baz=245								
GCMT	**Greycliff**	88.38	41	*e*P		**P**	04 25 23.1	+0.5	
ISCO	**Idaho Springs**	88.39	47	P		**P**	04 25 24.0	+1.0	
	baz=245								
ISCO	**Idaho Springs**	88.39	47	*e*P		**P**	04 25 24.4	+1.3	
ISCO				pmax		pmax			
	comp=Z,8.0nm,1.6s								
ISCO	**Idaho Springs**	88.39	47	*e*P		**P**	04 25 24.4	+1.3	
	comp=Z,8.3nm,1.6s								
933A	**Laredo**	88.53	60	P		**P**	04 25 24.7	+1.1	
	baz=249,SNR=7.6								
N23A	**Red Feather La**	88.62	46	P		**P**	04 25 24.5	+0.4	
	baz=245,SNR=9.4								
N23A	**Red Feather La**	88.62	46	*e*P		**P**	04 25 24.7	+0.6	
	comp=Z,13nm,1.1s								
CRAI	**Chiangrai**	88.68	292	P		**P**	04 25 26.7	+2.3	
	comp=Z,6.9nm,1.2s								
833A	**Chaparral WMA,**	88.69	60	P		**P**	04 25 25.3	+1.0	
	baz=249								
LAMP	**Lampang**	88.77	290	P		**P**	04 25 26.3	+1.4	
	comp=Z,11nm,0.9s								
034A	**Hebbronville**	88.83	61	P		**P**	04 25 27.2	+2.2	
	baz=249								
733A	**Divot King Ran**	88.91	59	P		**P**	04 25 25.8	+0.5	
	baz=249,SNR=7.0								
K22A	**Casper**	88.98	44	P		**P**	04 25 25.7	+0.1	
	baz=244,SNR=5.7								
K22A	**Casper**	88.98	44	*e*P		**P**	04 25 25.9	+0.3	
	comp=Z,8.6nm,0.8s								
PHWY	**Pilot Hill**	89.13	46	*e*P		**P**	04 25 25.4	-1.1	
	comp=Z,6.2nm,0.9s								
JCT	**Junction City**	89.13	58	P		**P**	04 25 26.8	+0.4	
	baz=249,SNR=5.5								
JCT	**Junction City**	89.13	58	*e*P		**P**	04 25 26.1	-0.3	
JCT				pmax		pmax			
	comp=Z,15nm,0.8s								
JCT	**Junction City**	89.13	58	*e*P		**P**	04 25 26.1	-0.3	
	comp=Z,15nm,0.8s								
934A	**Benavides**	89.15	61	P		**P**	04 25 28.2	+1.7	
	baz=249								
SYO	**Syowa Base**	89.23	193	*e*P		**P**	04 25 24.0	-2.0	
SYO	**Syowa Base**	89.23	193	*e*P		**P**	04 25 28.8	+2.8	
035A	**Encino**	89.27	61	P		**P**	04 25 28.4	+1.4	
	baz=250						

RSSD **Black Hills** 91.25 44 P P 04 25 36.6 +0.5
baz=246
RSSD **Black Hills** 91.25 44 *e*P P 04 25 35.1 -0.9
RSSD pmax pmax
comp=Z,9.0nm,0.8s
RSSD **Black Hills** 91.25 44 *e*P P 04 25 35.1 -0.9
comp=Z,9.3nm,0.8s
134A **White-Moore Ra** 91.25 56 P P 04 25 36.9 +0.8
baz=250
LZH **Lanzhou** 91.31 308 *e*P P 04 25 37.3 +0.8
LZH pP pP 04 27 47.3 -1.3
LZH pmax pmax
comp=Z,19nm,1.0s
335A **Moody** 91.33 58 P P 04 25 36.8 +0.4
baz=250
VNA1 **Neumayer--Stat** 91.34 177 P P 04 25 36.7 +1.0
I25A **Rochford** 91.41 44 P P 04 25 37.0 +0.3
baz=246,SNR=9.0
WMOK **Wichita Mounta** 91.46 54 *e*P P 04 25 37.5 +0.5
WMOK pmax pmax
comp=Z,11nm,1.7s
WMOK **Wichita Mounta** 91.46 54 *e*P P 04 25 37.5 +0.5
comp=Z,11nm,1.7s
V32A **Arapaho** 91.61 53 P P 04 25 38.5 +0.9
baz=249
X33A **Lawton** 91.61 54 P P 04 25 37.8 +0.1
baz=249
Z34A **Collier Ranch,** 91.66 56 P P 04 25 38.7 +0.8
baz=250
436A **Wall Ranch, Ga** 91.66 58 P P 04 25 39.4 +1.4
baz=250
H25A **Fruitdale** 91.73 43 P P 04 25 38.2 +0.1
baz=246,SNR=7.2
135A **Vickery Place,** 91.78 56 P P 04 25 39.4 +0.9
baz=250
INK **Inuvik** 91.80 15 P P 04 25 37.1 -0.6
comp=Z,6.2nm,0.7s,baz=222,slow=4.5,SNR=28
INK **Inuvik** 91.80 15 *e*P P 04 25 37.1 -0.6
INK pmax pmax
comp=Z,8.0nm,0.8s
INK **Inuvik** 91.80 15 *e*P P 04 25 37.1 -0.6
comp=Z,7.7nm,0.8s
537A **Green Hill Far** 91.82 59 P P 04 25 40.6 +1.9
baz=250
336A **Riesel** 91.83 58 P P 04 25 39.4 +0.7
baz=250
W33A **Caddo, Fort Co** 91.85 54 P P 04 25 39.6 +0.9
baz=249
U32A **Winter Ranch,** 91.88 52 P P 04 25 39.9 +1.0
baz=249
Y34A **Reagan Ranch,** 91.98 55 P P 04 25 39.9 +0.5
baz=250
I26A **New Underwood** 91.99 44 P P 04 25 40.2 +0.9
baz=247
G25A **Newell** 92.08 43 P P 04 25 40.4 +0.7
baz=247
X34A **Smith Ranch, M** 92.15 54 P P 04 25 40.9 +0.7
baz=250,SNR=5.1
Z35A **Perchaven, San** 92.16 56 P P 04 25 40.8 +0.6
baz=250
CBKS **Cedar Bluff** 92.20 50 P P 04 25 41.3 +0.9
baz=249
T32A **Huddler Ranch,** 92.22 52 P P 04 25 41.1 +0.6
baz=249
V33A **Lossen Ranch,** 92.22 53 P P 04 25 41.1 +0.6
baz=250
J27A **Elkhorn Farm,** 92.26 45 P P 04 25 41.2 +0.6
baz=248,SNR=9.7
H26A **Fairpoint** 92.27 44 P P 04 25 41.3 +0.7
baz=247
236A **Katherine and** 92.29 57 P P 04 25 42.1 +1.3
baz=250
F25A **Bowman** 92.35 42 P P 04 25 41.6 +0.7
baz=247
S32A **Newby Ranch, P** 92.39 51 P P 04 25 42.0 +0.8
baz=249
136A **Ennis** 92.45 57 P P 04 25 42.0 +0.4
baz=250
I27A **Quinn** 92.54 44 P P 04 25 42.3 +0.5
baz=248
U33A **Lingo Farm, Me** 92.56 53 P P 04 25 42.4 +0.4
baz=250
E25A **Miller Ranch,** 92.61 42 P P 04 25 42.8 +0.7
baz=247
G26A **Maurine** 92.65 43 P P 04 25 42.6 +0.3
baz=247
H27A **Howes** 92.74 44 P P 04 25 43.4 +0.7
baz=248
X35A **Drake** 92.75 55 P P 04 25 43.2 +0.3
baz=250
Z36A **Blue Ridge** 92.79 56 P P 04 25 44.1 +1.0
baz=250
R32A **Long Quarter,** 92.81 51 P P 04 25 43.4 +0.3
baz=249,SNR=18
F26A **Lodgepole** 92.82 43 P P 04 25 43.6 +0.6
baz=247
J28A **Allard Ranch,** 92.84 45 P P 04 25 44.0 +0.8
baz=248
237A **Washetta, Mont** 92.87 57 P P 04 25 45.1 +1.6
baz=251
DGMT **Dagmar** 92.90 40 P P 04 25 44.1 +0.8
baz=246,SNR=10
DGMT **Dagmar** 92.90 40 *e*P P 04 25 44.3 +0.9
comp=Z,28nm,0.9s
D25A **Fairfield** 92.92 41 P P 04 25 44.2 +0.7
baz=247,SNR=5.2
O31A **Woolen Ranch,** 92.98 49 P P 04 25 44.9 +1.1
baz=249
U34A **Anderson Ranch** 93.00 53 P P 04 25 44.9 +0.9
baz=250
S33A **Kaszmaul Farm,** 93.05 52 P P 04 25 45.1 +0.9
baz=250
W35A **Tecumseh** 93.08 54 P P 04 25 45.1 +0.7
baz=250
I28A **Midland** 93.10 45 P P 04 25 45.0 +0.7
baz=248
Y36A **Durant** 93.11 55 P P 04 25 45.6 +1.0
baz=251
G27A **Dupree** 93.12 43 P P 04 25 44.7 +0.3
baz=248
Q32A **Meitler Ranch,** 93.12 50 P P 04 25 44.8 +0.3
baz=250,SNR=8.6
E26A **Carlson Angus** 93.19 42 P P 04 25 45.3 +0.6
baz=247
F27A **Lemmon** 93.25 43 P P 04 25 45.5 +0.6
baz=248
V35A **Meyer Ranch, C** 93.31 54 P P 04 25 46.0 +0.6
baz=250
R33A **Olander Ranch,** 93.31 51 P P 04 25 45.9 +0.5
baz=250,SNR=6.3
P32A **Huiting Farm,** 93.31 49 P P 04 25 45.9 +0.5
baz=250
238A **Jacksonville** 93.42 58 P P 04 25 47.6 +1.6
baz=251
D26A **Manning** 93.43 42 P P 04 25 46.7 +1.0
baz=247,SNR=5.2
H28A **Mission Ridge** 93.45 44 P P 04 25 46.5 +0.5
baz=248
J29A **Okreek** 93.45 45 P P 04 25 46.0 0.0
baz=249,SNR=6.3
T34A **McClaskey Farm** 93.47 52 P P 04 25 47.0 +0.9
baz=250
ULN **Ulaanbaatar** 93.51 319 *ce*P P 04 25 45.9 -0.4
ULN pmax pmax
comp=Z,8.0nm,1.4s
ULN **Ulaanbaatar** 93.51 319 *e*P P 04 25 44.8 -1.4
comp=Z,9.5nm,1.4s
W36A **Wetumka** 93.57 54 P P 04 25 46.4 -0.2
baz=251
M31A **Lambtecht Ranc** 93.65 48 P P 04 25 48.1 +1.2
baz=249
Q33A **Connelly Farm,** 93.66 50 P P 04 25 47.4 +0.4
baz=250,SNR=6.6
339A **Huntington** 93.66 58 P P 04 25 47.2 +0.1
baz=251
G28A **Parade** 93.67 44 P P 04 25 47.3 +0.4
baz=248
K30A **Basset** 93.68 46 P P 04 25 48.0 +1.0
baz=249
I29A **Vivian Onida** 93.69 45 P P 04 25 47.4 +0.4
baz=249
A25A **Svangstu Ranch** 93.75 40 P P 04 25 48.8 +1.7
baz=247
S34A **Willow Spring** 93.75 52 P P 04 25 48.1 +0.7
baz=250
E27A **Carson** 93.75 42 P P 04 25 47.7 +0.4
baz=248,SNR=5.3
O32A **Brockman Farm,** 93.77 49 P P 04 25 48.0 +0.5
baz=250
R34A **Isabella, Hill** 93.85 51 P P 04 25 48.6 +0.7
baz=250
P33A **Williams Farm,** 93.91 50 P P 04 25 49.1 +1.0
baz=250
SONM **Songino Array** 93.91 319 P P 04 25 47.7 -0.4
comp=Z,1.5nm,0.5s,baz=170,slow=4.4,SNR=3.7
T35A **Sooner Cattle** 93.94 53 P P 04 25 48.9 +0.6
baz=251
C26A **Wahner Farm, P** 93.94 41 P P 04 25 48.7 +0.6
baz=248,SNR=10
239A **Gary** 93.95 58 P P 04 25 48.9 +0.5
baz=251
H29A **Onida** 93.97 44 P P 04 25 48.7 +0.4
baz=249
J30A **Dallas** 93.99 46 P P 04 25 48.5 +0.1
baz=249,SNR=5.0
F28A **McLaughlin** 94.03 43 P P 04 25 49.1 +0.6
baz=248
L31A **Butterfield Fa** 94.04 47 P P 04 25 49.5 +0.8
baz=250
X37A **Clayton** 94.06 55 P P 04 25 49.4 +0.5
baz=251
YKA **Yellowknife Ar** 94.16 25 P P 04 25 48.1 -0.5
comp=Z,2.1nm,0.7s,baz=243,slow=4.3,SNR=52
YKA PKKPbc **PKKPdf** 04 42 45.7 -2.0
comp=Z,0.1nm,0.5s,baz=32,slow=2.3,SNR=5.0
YKB5 **Yellowknife Ar** 94.16 25 *e*P P 04 25 47.5 -1.1
YKW3 **Yellowknife Ar** 94.19 25 *e*P P 04 25 48.1 -0.7
comp=Z,2.7nm,0.8s
O33A **Hebron** 94.20 49 P P 04 25 49.9 +0.5
baz=250,SNR=7.8
K31A **O'Neill** 94.25 47 P P 04 25 49.3 -0.3
baz=250,SNR=5.1
C27A **Sayler Ranch,** 94.27 41 P P 04 25 49.8 +0.2
baz=248
Q34A **Chapman** 94.29 51 P P 04 25 51.0 +1.2
baz=250
S35A **Otter Creek Ra** 94.34 52 P P 04 25 51.1 +1.1
baz=251
A26A **Wade Farm, Ken** 94.39 40 P P 04 25 50.7 +0.6
baz=248
T36A **Boggs Farm, Ca** 94.47 53 P P 04 25 51.0 +0.3
baz=251
X38A **Whitesboro** 94.50 55 P P 04 25 50.4 -0.5
baz=251
P34A **Walnut Farm, R** 94.58 50 P P 04 25 51.6 +0.5
baz=251,SNR=12
KSU1 **Kansas State U** 94.59 50 P P 04 25 51.8 +0.6
baz=251,SNR=6.4
KSU1 **Kansas State U** 94.59 50 *e*P P 04 25 52.3 +1.2
comp=Z,22nm,0.8s
V37A **Hulbert** 94.65 54 P P 04 25 51.8 +0.3
baz=251
U37A **Salina** 94.83 53 P P 04 25 52.7 +0.4
baz=251
G30A **Faulkton** 94.86 44 P P 04 25 52.4 +0.1
baz=250
W38A **Poteau** 94.87 55 P P 04 25 53.2 +0.6
baz=252
S36A **Lake Cedric, C** 94.90 52 P P 04 25 52.5 -0.1
baz=251
Q35A **Mercer Eighty,** 94.93 51 P P 04 25 53.4 +0.7
baz=251
M33A **Taylor Creek F** 94.98 48 P P 04 25 53.4 +0.5
baz=251
R36A **Gordon, Harris** 95.15 52 P P 04 25 54.3 +0.6
baz=251
P35A **Duane Minner,** 95.16 50 P P 04 25 54.5 +0.7
baz=251
T37A **Cheneyville 18** 95.21 53 P P 04 25 54.4 +0.4
baz=252
N34A **Lincoln** 95.24 49 P P 04 25 54.8 +0.7
baz=251
D29A **Pettibone, Tap** 95.24 42 P P 04 25 54.5 +0.5
baz=249
B28A **Dugan Ranch, T** 95.25 41 P P 04 25 54.8 +0.8
baz=249
Q36A **Arnold C. Orve** 95.39 51 P P 04 25 55.9 +1.1
baz=251
U38A **Gravette** 95.41 54 P P 04 25 55.8 +0.8
baz=252
O35A **Humboldt** 95.48 50 P P 04 25 56.5 +1.3
baz=251
S37A **Fort Scott** 95.48 52 P P 04 25 56.3 +1.0
baz=252
R37A **Teagarden Farm** 95.65 52 P P 04 25 57.2 +1.2
baz=252
T38A **Diamond** 95.66 53 P P 04 25 56.8 +0.7
baz=252
L34A **Svendsen Farm,** 95.69 48 P P 04 25 56.8 +0.7
baz=251
F31A **Hecla** 95.70 44 P P 04 25 56.1 +0.1
baz=250
P36A **Good Intent, A** 95.79 50 P P 04 25 57.7 +1.2
baz=252
H32A **Carlson Farm,** 95.79 45 P P 04 25 56.5 0.0
baz=251,SNR=5.8
N35A **Tabor** 95.86 49 Pdiff P 04 25 58.2 +1.3
baz=252
G32A **Webster** 96.00 44 Pdiff P 04 25 58.0 +0.5
baz=251
ECSD **EROS Data Cent** 96.10 46 Pdiff P 04 25 58.0 +0.1
baz=251
ECSD **EROS Data Cent** 96.10 46 *e*P P 04 25 57.8 -0.1
comp=Z,3.1nm,0.8s
Q37A **Longview Farm,** 96.11 51 Pdiff P 04 25 59.0 +1.0
baz=252
K34A **Le Mars** 96.12 47 Pdiff P 04 25 58.2 +0.2
baz=251
A29A **Manning Farm,** 96.12 41 Pdiff P 04 25 58.1 +0.3
baz=250
O36A **Bolckow** 96.12 50 Pdiff P 04 25 59.1 +1.1
baz=252
R38A **Fenwick Farm,** 96.31 52 Pdiff P 04 25 59.4 +0.5
baz=252
H33A **Prehn Over Nor** 96.32 45 Pdiff P 04 25 59.5 +0.6
baz=251
L35A **Bielow Farm, R** 96.33 48 Pdiff P 04 25 59.5 +0.6
baz=252
T39A **Clever** 96.36 53 Pdiff P 04 25 59.9 +0.7
baz=252
P37A **Lathrop** 96.41 51 Pdiff P 04 26 00.4 +1.0
baz=252
V40A **Witts Springs** 96.42 55 Pdiff P 04 25 59.4 -0.1
baz=253
S39A **Bolivar** 96.60 53 Pdiff P 04 26 01.1 +0.8
baz=252
C31A **Landman Farms,** 96.68 42 Pdiff P 04 26 00.1 -0.3
baz=251
G33A **Ortonville** 96.69 45 Pdiff P 04 26 00.3 -0.2
baz=251
A30A **Hoffart Farm,** 96.71 41 Pdiff P 04 26 00.5 0.0
baz=250
O37A **Wolven Farm, M** 96.73 50 Pdiff P 04 26 01.3 +0.5
baz=252
K35A **Storm Lake** 96.74 47 Pdiff P 04 26 01.2 +0.5
baz=252
445A **Amite** 96.93 60 Pdiff P 04 26 02.0 +0.2
baz=253
L36A **Harm Buss Farm** 96.94 48 Pdiff P 04 26 02.5 +0.8
baz=252
F33A **5 Mile Ranch,** 96.99 44 Pdiff P 04 26 02.6 +0.8
baz=252
R39A **Chumby, Stover** 97.00 52 Pdiff P 04 26 03.0 +1.0
244A **Avery, Jackson** 97.02 59 Pdiff Pdif 04 26 02.4 +0.2
baz=253
P38A **Dawn** 97.02 51 Pdiff Pdif 04 26 02.6 +0.5
baz=253
T40A **Mansfield** 97.05 53 Pdiff P 04 26 02.8 +0.5
baz=253
M37A **Trindle Farm,** 97.17 49 Pdiff P 04 26 03.7 +1.0
baz=252
S40A **Lebanon** 97.19 53 Pdiff P 04 26 04.1 +1.2
baz=253
O38A **Galt** 97.21 50 Pdiff P 04 26 03.7 +0.8
baz=253
G34A **Benson** 97.24 45 Pdiff P 04 26 03.7 +0.8
baz=252
Q39A **Willow Grove F** 97.26 51 Pdiff P 04 26 03.8 +0.6
baz=253
K36A **Gilmore City** 97.26 48 Pdiff P 04 26 03.9 +0.8
baz=252
546A **Slidell** 97.30 61 Pdiff P 04 26 03.8 +0.3
baz=254
J36A **Seneca 1, Swea** 97.55 47 Pdiff P 04 26 04.7 +0.3
baz=253
R40A **Maddies Statio** 97.57 52 Pdiff P 04 26 05.0 +0.5
baz=253
B32A **Ashes, Strandq** 97.64 42 Pdiff Pdif 04 26 04.6 0.0
baz=252
D33A **AnnSam, Waubun** 97.69 43 Pdiff Pdif 04 26 04.8 -0.1
baz=252
M38A **Pleasantville** 97.79 49 Pdiff P 04 26 05.9 +0.4
baz=253
A32A **Rocking H Ranc** 97.83 41 Pdiff Pdif 04 26 05.3 -0.1
baz=252
K37A **Belmond** 97.87 48 Pdiff P 04 26 06.6 +0.8
baz=253
Q40A **Laux Farm, Aux** 97.92 52 Pdiff P 04 26 07.0 +0.9
baz=253
O39A **Kirksville** 97.93 50 Pdiff P 04 26 07.1 +1.0
baz=253
J37A **Redenius Farm,** 98.09 47 Pdiff P 04 26 07.1 +0.3
baz=253
P40A **Paris** 98.09 51 Pdiff P 04 26 07.8 +1.0
baz=254
F35A **Swanville** 98.14 45 Pdiff P 04 26 07.4 +0.5
baz=253
L38A **Oak Wood Farm,** 98.17 48 Pdiff P 04 26 07.7 +0.5
baz=253
O40A **La Belle** 98.38 51 Pdiff P 04 26 09.0 +0.8
baz=254
A33A **Warroad** 98.53 41 Pdiff Pdif 04 26 08.4 -0.1
baz=253
F36A **Milaca** 98.84 45 Pdiff P 04 26 10.4 +0.3
baz=254
J38A **Wedel Dairy, R** 98.84 47 Pdiff P 04 26 10.3 +0.1
baz=254
Y46A **Houston** 99.00 57 Pdiff **Pdif** 04 26 11.1 +0.1
baz=254
I38A **Scanlan Farm,** 99.14 47 Pdiff **Pdif** 04 26 12.2 +0.8
baz=254
SPMN **Marine on St.** 99.15 45 Pdiff **Pdif** 04 26 11.6 +0.2
baz=254
E36A **McGregor** 99.20 44 Pdiff **Pdif** 04 26 12.0 +0.4
baz=254
B35A **Bob, Littlefor** 99.42 42 Pdiff **Pdif** 04 26 12.5 -0.1
baz=254
Z48A **Northport** 99.92 58 PKiKP PKiKP 04 30 56.7 +17
baz=255
D37A **Cotton** 99.93 44 Pdiff **Pdif** 04 26 16.2 +1.4
baz=254
LPAZ **La Paz** 102.92 112 Pdiff **Pdif** 04 26 32.5 +2.9
comp=Z,1.8nm,0.8s,baz=128,slow=1.9,SNR=8.2
N54A **Moraine State** 107.40 52 PKiKP **PKiKP** 04 30 51.9 -0.9
baz=261
O56A **Blue Knob Stat** 108.37 53 PKiKP **PKiKP** 04 30 54.7 +0.1
baz=262
ZALV **Zalesovo Beam** 108.58 322 PKKPbc PKKPbc 04 42 07.6 +0.3
comp=Z,0.8nm,0.6s,baz=69,slow=4.9,SNR=3.9
MKAR **Makanchi Array** 109.52 314 PKiKP **PKiKP** 04 30 54.8 -1.8
comp=Z,0.8nm,0.5s,baz=203,slow=1.5,SNR=7.4
MKAR PKKPbc **PKKPbc** 04 42 03.0 -1.1
comp=Z,1.8nm,1.0s,baz=273,slow=4.3,SNR=7.3
KURK **Kurchatov** 112.19 318 PKiKP **PKiKP** 04 31 00.5 -1.0
KURK 04 41 52.3
KURK **Kurchatov** 112.19 318 PKiKP **PKiKP** 04 31 00.5 -1.0
KURK PKKPbc **PKKPbc** 04 41 52.3 -3.3
KURBB **Kurchatov Arra** 112.25 318 PKiKP **PKiKP** 04 31 00.5 -1.1
comp=Z,0.2nm,0.3s,baz=66,slow=2.1,SNR=6.1
KURBB PKKPbc **PKKPbc** 04 41 52.3 -3.1
comp=Z,0.2nm,0.3s,baz=269,slow=3.8,SNR=5.0
AAK **Ala-Archa** 114.80 309 *e*PKiKP PKPdf 04 31 01.9 -5.1
AAK **Ala-Archa** 114.80 309 *e*PKPdf PKPdf 04 31 01.9 -5.1
BVAR **Borovoye Array** 117.19 321 PKP **PKPdf** 04 31 10.4 -0.7
comp=Z,1.0nm,0.5s,baz=96,slow=3.0,SNR=5.7
BRVK **Borovoye** 117.25 321 *i* PKiKP **PKPdf** 04 31 10.6 -0.6
BRVK pmax pmax
comp=Z,5.0nm,2.5s
ZRNK **Zerenda** 118.03 321 *e*PKiKP **PKPdf** 04 31 12.3 -0.4
ZRNK **Zerenda** 118.03 321 *e*PKPdf **PKPdf** 04 31 12.3 -0.4
SPITS **Spitsbergen Ar** 119.34 357 PKP **PKPdf** 04 31 14.5 -0.1
comp=Z,9.3nm,1.0s,baz=77,slow=3.8,SNR=5.0
ARU **Arti** 123.16 326 PKP **PKPdf** 04 31 21.8 -0.6
comp=Z,2.5nm,0.2s,baz=163,slow=2.4,SNR=4.2
ARU **Arti** 123.16 326 *i* PKiKP **PKPdf** 04 31 21.5 -0.9
ARU 04 33 12.5
ARU 04 37 34.8
ARU SS SS 04 49 09.6 -2.5
ABKAR **Akbulak array** 124.30 318 *e*PKPdf **PKPdf** 04 31 24.1 -0.8
AKTO **Aktyubinsk** 125.22 320 PKP **PKPdf** 04 31 26.4 -0.2
comp=Z,1.0nm,0.6s,baz=127,slow=3.2,SNR=4.1
ARCES **ARCESS Array B** 126.44 350 PKP **PKPdf** 04 31 27.4 -1.0
comp=Z,1.5nm,0.4s,baz=72,slow=1.1,SNR=45
GEYT **Alibeck** 127.48 304 PKP **PKPdf** 04 31 31.5 +0.1
comp=Z,1.9nm,0.3s,baz=325,slow=1.8,SNR=5.9
GEYT SKPbc SKPbc 04 33 54.1
comp=Z,1.4nm,0.3s,baz=288,slow=0.9,SNR=5.4
BOSA **Boshof** 128.59 206 SKPbc SKPbc 04 33 59.5
comp=Z,2.4nm,0.8s,baz=153,slow=6.9,SNR=4.2
BANOM **Banah** 129.41 289 P SKPab 04 34 02.7 +1.8
SNR=9.1
ASHO **Ashiyah** 129.56 287 P SKPab 04 34 02.7 +1.1
SNR=7.6
NAZ **Nazwa, Dubai** 129.94 288 P SKPab 04 34 03.4 +0.2
SNR=6.5
FAQ **Al Faqa, Dubai** 129.99 288 P SKPab 04 34 03.7 +0.3
SNR=7.3
FINES **FINESS Array B** 133.36 344 PKhKP PKPpre 04 31 29.6
comp=Z,0.2nm,0.4s,baz=98,slow=3.9,SNR=5.8
FINES SKPbc **SKPbc** 04 34 14.8 +1.2
comp=Z,2.5nm,0.6s,baz=82,slow=4.0,SNR=12
MATP **Matopo** 133.91 215 SKPbc **SKPbc** 04 34 18.4 +1.4
comp=Z,2.0nm,0.8s,baz=200,slow=5.8,SNR=5.0
OBN **Obninsk** 134.56 333 *e*PKiKP **PKPdf** 04 31 43.9 -0.2
OBN pmax pmax
comp=Z,10.0nm,0.5s
NB2 **NORSAR Subarra** 136.47 354 PKP PKPpre 04 31 39.0
comp=Z,0.3nm,0.4s,baz=16,slow=3.2
NOA **NORSAR Array B** 136.47 354 PKP **PKPdf** 04 31 48.0 +0.5
comp=Z,0.5nm,0.4s,baz=15,slow=3.9,SNR=5.5
NOA SKPbc **SKPbc** 04 34 24.1 +0.8
comp=Z,2.1nm,0.9s,baz=15,slow=4.6,SNR=6.9
HFS **Hagfors** 137.05 352 PKhKP PKPpre 04 31 36.1
comp=Z,0.8nm,0.5s,baz=90,slow=6.5,SNR=10
HFS SKPbc **SKPbc** 04 34 26.1 +1.1
comp=Z,4.1nm,1.0s,baz=70,slow=4.9,SNR=5.5
KMBO **Kilima Mbogo** 140.57 245 PKhKP PKPpre 04 31 52.2
comp=Z,1.2nm,0.5s,baz=306,slow=1.2,SNR=6.1
KMBO SKPbc **SKiKP** 04 34 38.0 -0.5
comp=Z,0.6nm,0.3s,baz=337,slow=5.0,SNR=5.4
KMBO **Kilima Mbogo** 140.57 245 *e*PKHKP PKPpre 04 31 47.0
KMBO **Kilima Mbogo** 140.57 245 *e*PKPpre PKPpre 04 31 47.0
KMBO *e*PKPdf PKPpre 04 31 51.6
KMBO SKPbc **SKiKP** 04 34 38.0 -0.5
AKASG **Malin Array Be** 140.83 333 PKhKP PKPpre 04 31 49.0
comp=Z,0.9nm,0.3s,baz=44,slow=4.1,SNR=20
AK11 **Malin Array Si** 140.87 333 *e*PKPpre PKPpre 04 31 47.5
SORM **Soroca** 143.07 330 ⇑*i*P PKPab 04 31 57.3 -0.4
SORM **Soroca** 143.07 330 ⇑PKiKP PKPab 04 31 57.3 -0.4
BEL **Belsk** 143.11 341 *e*PKP PKPab 04 31 57.8 +0.1
BEL **Belsk** 143.11 341 *e*PKiKP PKPab 04 31 57.9 +0.2
LVV **L'vov** 143.65 336 *e*PKiKP PKPbc 04 31 58.8 -1.1
LEOM **Leova** 144.30 329 ⇑*i*P **PKPab** 04 32 02.3 -0.2
LEOM **Leova** 144.30 329 ⇑PKiKP **PKPab** 04 32 02.3 -0.2
KWP **Kalwaria Pacla** 144.31 337 *e*PKP **PKPdf** 04 32 01.7 -0.2
KWP **Kalwaria Pacla** 144.31 337 ⇑*i*P PKPbc 04 32 02.1 +0.2
KWP **Kalwaria Pacla** 144.31 337 ⇑PKiKP PKPbc 04 32 02.1 +0.2
PRAR **RASCA** 144.62 331 ⇑*i*P PKPbc 04 32 02.9 -0.1
OJC **Ojcow** 144.82 340 *e*PKP **PKPdf** 04 32 03.1 +0.3
OJC **Ojcow** 144.82 340 *e*PKiKP **PKPdf** 04 32 03.1 +0.3
OJC **Ojcow** 144.82 340 *e*PKPdf **PKPdf** 04 32 02.5 -0.2
BUR08 **Bucovina Ar. S** 144.87 333 *e*PKPdf **PKPdf** 04 32 02.7 -0.4
BURAR **Bucovina Array** 144.88 333 ⇑*i*P **PKPab** 04 32 04.6 -0.3
BURAR **Bucovina Array** 144.88 333 ⇑PKiKP **PKPab** 04 32 04.6 -0.3
TLCR 144.88 326 ⇑*i*P PKPbc 04 32 03.8 0.0
TLCR 144.88 326 ⇑PKiKP PKPbc 04 32 03.8 0.0
STHS **Stebnicka Huta** 145.02 338 *e*PKP **PKPbc** 04 32 04.4 +0.3
STHS *e* 04 32 04.9
KOLS **Kolonicke sedl** 145.04 337 *e*PKP **PKPbc** 04 32 04.2 0.0
TESR **Tescani** 145.05 330 ⇑*i*P **PKPbc** 04 32 04.3 0.0
BR131 **Keskin Array S** 145.17 315 *e*PKPdf **PKPbc** 04 32 04.5 -0.5
BRTR **Keskin Array B** 145.17 315 PKPbc **PKPdf** 04 32 04.3 +0.5
comp=Z,6.0nm,0.5s,baz=134,slow=3.6,SNR=44
CWF **Charnwood Fore** 145.18 4 *e*PKPdf **PKPbc** 04 32 04.0 -0.4
CFR **Carcaliu** 145.24 327 ⇑*i*P **PKPbc** 04 32 05.3 +0.5
CFR **Carcaliu** 145.24 327 ⇑PKP2 **PKPbc** 04 32 05.3 +0.5
UZH **Uzhgorod** 145.28 336 ⇑*i*PKiKP **PKPbc** 04 32 04.5 -0.3
KSP **Ksiaz** 145.29 344 *e*PKP **PKPbc** 04 32 04.9 +0.1
KSP **Ksiaz** 145.29 344 *e*PKP2 **PKPbc** 04 32 04.9 +0.1
NIE **Niedzica** 145.34 339 *e*PKP **PKPbc** 04 32 05.3 +0.2

NIE	**Niedzica**	**145.34 339**	*e*PKP2	**PKPbc**	**04 32 05.3**	**+0.2**
CRVS	**Cervenica-Dubn**	**145.37 337**	*e*PKP	**PKPbc**	**04 32 05.4**	**+0.3**
ODBI	**Odobesti**	**145.38 329** ⇑	*i*P	**PKPab**	**04 32 06.4**	**-0.3**
SHEL	**Horse Pasture**	**145.43 167**	*i* PKP2	**PKPab**	**04 32 10.8**	**+3.1**
VRI	**Vrincioaia**	**145.47 329** ⇑	*i*P	**PKPbc**	**04 32 05.5**	**0.0**
VRI	**Vrincioaia**	**145.47 329** ⇑⇑	PKP2	**PKPbc**	**04 32 05.5**	**0.0**
PLOR	**Plostina**	**145.52 329** ⇑	*i*P	**PKPbc**	**04 32 05.9**	**+0.2**
PLOR	**Plostina**	**145.52 329** ⇑⇑	PKP2	**PKPbc**	**04 32 05.9**	**+0.2**
BMR	**Baia Mare**	**145.57 334** ⇑	*i*P	**PKPbc**	**04 32 06.4**	**+0.7**
BMR	**Baia Mare**	**145.57 334** ⇑⇑	PKP2	**PKPbc**	**04 32 06.4**	**+0.7**
TIRR	**Tirgusor**	**145.58 326** ⇑	*i*P	**PKPdf**	**04 32 04.4**	**+0.2**
TIRR	**Tirgusor**	**145.58 326** ⇑⇑	PKIKP	**PKPdf**	**04 32 04.4**	**+0.2**
TIRR	**Tirgusor**	**145.58 326**	*e*PKPbc	**PKPbc**	**04 32 05.8**	**0.0**
CLL	**Collm**	**145.61 348** ⇓	*i*PKPbc	**PKPbc**	**04 32 05.5**	**-0.2**
	comp=Z,22nm,0.8s						
CLL			*e*		04 32 12.0		
CLL			*e*PKPbc	pPKPbc	04 34 38.0	+14	
CLL			*e*SKPbc	**SKiKP**	**04 34 48.0**	**+0.7**
CLL	**Collm**	**145.61 348** ⇓	*i*PKIKP	**PKPbc**	**04 32 05.5**	**-0.2**
CLL			pmax	pmax			
	comp=Z,22nm,0.8s						
CLL	**Collm**	**145.61 348**	*e*PKPbc	**PKPbc**	**04 32 05.6**	**-0.2**
ANTO	**Ankara**	**145.66 316**	*e*PKP2	**PKPbc**	**04 32 06.6**	**+0.3**
ANTO	**Ankara**	**145.66 316**	*e*PKPbc	**PKPbc**	**04 32 06.6**	**+0.3**
ARCR	**ARCALIA**	**145.66 333** ⇑	*i*P	**PKPbc**	**04 32 06.6**	**+0.6**
UPC	**Upice**	**145.67 344**	*e*PKP	**PKPbc**	**04 32 06.1**	**+0.2**
UPC			*ex*	x	04 32 08.4		
UPC	**Upice**	**145.67 344**	*e*PKP2	**PKPbc**	**04 32 06.1**	**+0.2**
OKC	**Ostrava-Krasne**	**145.67 342**	*e*PKP	**PKPbc**	**04 32 06.1**	**+0.2**
OKC			*ex*	x	04 32 08.1		
OKC	**Ostrava-Krasne**	**145.67 342**	*e*PKP2	**PKPbc**	**04 32 06.1**	**+0.2**
HARR	**Harsova**	**145.68 327** ⇑	*i*P	**PKPbc**	**04 32 06.4**	**+0.3**
HARR	**Harsova**	**145.68 327** ⇑⇑	PKP2	**PKPbc**	**04 32 06.4**	**+0.3**
BR231	**Keskin MP Arra**	**145.68 316**	*e*PKPdf	**PKPbc**	**04 32 05.7**	**-0.8**
GRER		**145.69 328** ⇑	*i*P	**PKPbc**	**04 32 06.2**	**+0.1**
DPC	**Dobruska-Polom**	**145.73 344**	*e*PKP	**PKPbc**	**04 32 06.4**	**+0.2**
DPC			*ex*	x	04 32 09.0		
DPC			*ep*PKP	**pPKPdf**	**04 34 28.2**	**+2.3**
DPC	**Dobruska-Polom**	**145.73 344**	*e*PKP2	**PKPbc**	**04 32 06.4**	**+0.2**
BRG	**Berggiesshubel**	**145.82 347**	*e*PKP	**PKPdf**	**04 32 04.4**	**0.0**
	comp=Z,6.9nm,1.4s						
BRG			*i*		04 32 06.2		
	comp=Z,11nm,0.8s						
BRG			*e*		04 34 28.1		
	comp=Z,2.1nm,1.1s						
KRLC	**Kraliky**	**145.85 343**	*e*PKP	**PKPbc**	**04 32 06.5**	**0.0**
KRLC			*ex*	x	04 32 09.1		
KRLC	**Kraliky**	**145.85 343**	*e*PKP2	**PKPbc**	**04 32 06.5**	**0.0**
LANS	**Liptovska Anna**	**145.85 340**	*e*PKP	**PKPbc**	**04 32 07.5**	**+1.0**
MORC	**Moravsky Berou**	**145.91 342** ⇑	*i*P	**PKPbc**	**04 32 06.9**	**+0.2**
MORC	**Moravsky Berou**	**145.91 342** ⇑⇑	PKP2	**PKPbc**	**04 32 06.9**	**+0.2**
MORC	**Moravsky Berou**	**145.91 342**	*e*PKPdf	**PKPdf**	**04 32 03.5**	**-1.1**
MORC			*e*PKPbc	**PKPbc**	**04 32 06.6**	**-0.1**
MANR	**Mangalia**	**145.91 325** ⇑	*i*P	**PKPbc**	**04 32 07.7**	**+0.9**
PVCC	**Panska Ves**	**146.00 346**	*e*PKP	**PKPbc**	**04 32 07.1**	**+0.3**
PVCC			*ex*	x	04 32 09.6		
PVCC			*ep*PKP	**pPKPdf**	**04 34 29.8**	**+3.5**
PVCC	**Panska Ves**	**146.00 346**	*e*PKP2	**PKPbc**	**04 32 07.1**	**+0.3**
DOPR	**Dopca**	**146.04 330** ⇑	*i*P	**PKPab**	**04 32 08.5**	**-0.9**
KECS	**Kecovo**	**146.07 338**	*e*PKP	**PKPbc**	**04 32 07.4**	**+0.3**
KECS			*e*		04 32 10.4		
MLR	**Muntele Rosu**	**146.12 329** ⇑⇑	PKP2	**PKPbc**	**04 32 07.7**	**+0.2**
MLR	**Muntele Rosu**	**146.12 329**	*e*PKPdf	**PKPdf**	**04 32 04.1**	**-1.2**
MLR			*e*PKPbc	**PKPbc**	**04 32 07.3**	**-0.2**
CJR	**Cluj-Napoca**	**146.28 333** ⇑	*i*P	**PKPbc**	**04 32 08.7**	**+0.9**
CJR	**Cluj-Napoca**	**146.28 333** ⇑⇑	PKP2	**PKPbc**	**04 32 08.7**	**+0.9**
PRU	**Pruhonice**	**146.51 345**	*e*PKP	**PKPbc**	**04 32 08.2**	**0.0**
PRU			*ex*	x	04 32 11.0		
PRU			*ep*PKP	**pPKPdf**	**04 34 30.3**	**+3.2**
PRU	**Pruhonice**	**146.51 345**	*e*PKP2	**PKPbc**	**04 32 08.2**	**0.0**
MMAI	**Mount Meron Ar**	**146.59 303**	PKPbc	**PKPbc**	**04 32 09.5**	**+0.4**
	comp=Z,11nm,0.4s,baz=59,slow=3.7,SNR=15						
MMAI			SKPbc	**SKiKP**	**04 34 51.4**	**+1.4**
	comp=Z,2.0nm,0.7s,baz=88,slow=7.6,SNR=3.6						
DRGR		**146.60 334** ⇑	*i*P	**PKPbc**	**04 32 08.8**	**+0.1**
DRGR		**146.60 334** ⇑⇑	PKP2	**PKPbc**	**04 32 08.8**	**+0.1**
VRAC	**Vranov**	**146.60 343** ⇑	*i*P	**PKPbc**	**04 32 08.9**	**+0.4**
VRAC	**Vranov**	**146.60 343** ⇑⇑	PKP2	**PKPbc**	**04 32 08.9**	**+0.4**
VYHS	**Vyhne**	**146.63 340**	*e*PKP	**PKPbc**	**04 32 09.0**	**+0.4**
VYHS			*e*		04 32 11.9		
NKC	**Novy Kostel**	**146.74 348**	*e*PKP	**PKPbc**	**04 32 09.0**	**+0.1**
NKC			*ex*	x	04 34 32.4		
NKC	**Novy Kostel**	**146.74 348**	*e*PKP2	**PKPbc**	**04 32 09.0**	**+0.1**
PSZ	**Piszkesteto**	**146.76 338** ⇑	*i*P	**PKPbc**	**04 32 09.7**	**+0.6**
PSZ	**Piszkesteto**	**146.76 338** ⇑⇑	PKP2	**PKPbc**	**04 32 09.7**	**+0.6**
PSZ	**Piszkesteto**	**146.76 338**	*e*PKPbc	**PKPbc**	**04 32 09.1**	**0.0**
ARR	**Arges**	**146.84 330** ⇑	*i*P	**PKPbc**	**04 32 10.3**	**+0.9**
TREC	**Trest**	**146.91 344**	*e*PKP	**PKPbc**	**04 32 09.2**	**-0.2**
TREC	**Trest**	**146.91 344**	*e*PKP2	**PKPbc**	**04 32 09.2**	**-0.2**
SMOL	**Smolenice**	**147.06 341**	*e*PKP	**PKPbc**	**04 32 10.6**	**+0.8**
SMOL			*e*		04 32 14.7		
MEM	**Membach**	**147.27 355**	PKPbc	**PKPbc**	**04 32 10.2**	**0.0**
SIRR	**Siria**	**147.45 334** ⇓	*i*P	**PKPbc**	**04 32 11.4**	**+0.5**
SNF	**Seneffe**	**147.47 357**	PKPbc	**PKPbc**	**04 32 10.7**	**0.0**
SNF			PKPab	**PKPab**	**04 32 14.9**	**-0.1**
GRFO	**Grafenberg**	**147.50 349**	*e*PKPdf	**PKPdf**	**04 32 05.1**	**-2.2**
GRFO			*e*PKPbc	**PKPbc**	**04 32 11.4**	**+0.6**
CSS	**Mathiatis**	**147.50 308**	*e*PKPdf	**PKPdf**	**04 32 06.2**	**-1.6**
CSS			*e*PKPbc	**PKPbc**	**04 32 11.0**	**-0.4**
BCLA	**Clavier**	**147.50 356**	PKPbc	**PKPbc**	**04 32 10.6**	**-0.2**
BCLA			PKPab	**PKPab**	**04 32 14.8**	**-0.3**
KHC	**Kasperske Hory**	**147.54 346**	*e*PKP	**PKPdf**	**04 32 08.0**	**+0.6**
KHC			*ex*	x	04 32 11.1		
KHC			*ex*	x	04 32 15.4		
KHC			*ep*PKP	**pPKPdf**	**04 34 31.0**	**+2.0**
KHC	**Kasperske Hory**	**147.54 346**	*e*PKIKP	**PKPdf**	**04 32 08.0**	**+0.6**
KHC			*e*		04 32 15.4		
KHC	**Kasperske Hory**	**147.54 346**	*e*PKPdf	**PKPdf**	**04 32 07.0**	**-0.4**
KHC			*e*PKPbc	**PKPbc**	**04 32 11.1**	**+0.1**
GEC2	**GERESS Array S**	**147.78 346**	*e*PKPdf	**PKPdf**	**04 32 05.4**	**-2.5**
GEC2			*e*PKPbc	**PKPbc**	**04 32 11.6**	**-0.2**
GERES	**GERESS Array B**	**147.78 346**	PKPbc	**PKPbc**	**04 32 11.5**	**-0.2**
	comp=Z,5.5nm,0.4s,baz=26,slow=3.3,SNR=134						
GERES			PKPbc	**pPKPbc**	**04 34 27.8**	**-3.3**
	comp=Z,0.1nm,0.5s,baz=343,slow=1.0,SNR=0.9						
GEA0	**GERESS Array S**	**147.79 346**	*e*PKPbc	**PKPbc**	**04 32 11.5**	**-0.2**
DOU	**Dourbes**	**147.87 357**	PKPbc	**PKPbc**	**04 32 11.7**	**-0.1**
EIL	**Elat**	**147.88 297**	PKPbc	**PKPbc**	**04 32 12.2**	**-0.3**
	comp=Z,12nm,0.8s,baz=333,slow=4.6,SNR=7.0						
BZS	**Buzias**	**147.99 334** ⇑	*i*P	**PKPbc**	**04 32 12.6**	**+0.4**
BZS	**Buzias**	**147.99 334** ⇑⇑	PKP2	**PKPbc**	**04 32 12.6**	**+0.4**
CONA	**Conrad Observa**	**148.06 342**	*i* PKPbc	**PKPbc**	**04 32 12.4**	**0.0**
	comp=Z,7.4nm,0.6s,SNR=8.9						
WLF	**Walferdange**	**148.19 355**	PKPbc	**PKPbc**	**04 32 13.3**	**+0.7**
WLF	**Walferdange**	**148.19 355**	*e*PKIKP	**PKPdf**	**04 32 07.5**	**-0.9**
WLF	**Walferdange**	**148.19 355**	*e*PKPdf	**PKPdf**	**04 32 07.5**	**-0.9**
WLF			*e*PKPbc	**PKPbc**	**04 32 12.5**	**-0.1**
ISP	**Isparta**	**148.23 314** ⇑	*i*P	**PKPbc**	**04 32 12.7**	**-0.5**
MOA	**Molln**	**148.56 344**	*i* PKPbc	**PKPbc**	**04 32 13.5**	**-0.1**
	comp=Z,7.2nm,1.3s,SNR=5.3						
PKSM	**Moragy**	**148.66 338** ⇑	*i*P	**PKPbc**	**04 32 13.9**	**+0.1**
ARSA	**Arzberg**	**148.77 342**	*e*PKPbc	**PKPbc**	**04 32 13.6**	**-0.5**
	comp=Z,7.3nm,1.2s						
BFO	**Black Forest**	**149.28 352**	*i* PKHKP	**PKPbc**	**04 32 15.7**	**+0.4**
BFO	**Black Forest**	**149.28 352**	*e*PKPbc	**PKPbc**	**04 32 14.2**	**-1.2**
SOKA	**Soboth**	**149.43 342**	*i* PKPbc	**PKPbc**	**04 32 14.9**	**-0.9**
	comp=Z,11nm,1.3s,SNR=7.4						
KBA	**Koelnbreinsper**	**149.51 345**	*i* PKPbc	**PKPbc**	**04 32 14.9**	**-1.2**
	comp=Z,5.7nm,0.5s,SNR=6.3						
WATA	**Walderalm**	**149.68 347**	*i* PKPbc	**PKPbc**	**04 32 15.8**	**-0.7**
	comp=Z,6.4nm,0.5s,SNR=12						
RETA	**Reutte**	**149.70 348**	*i* PKPbc	**PKPbc**	**04 32 15.9**	**-0.5**
	comp=Z,3.1nm,0.5s						
OBKA	**Obir**	**149.72 343**	*e*PKPbc	**PKPbc**	**04 32 16.3**	**-0.2**
	comp=Z,4.4nm,1.1s						
WTTA	**Wattenberg**	**149.73 347**	*i* PKPbc	**PKPbc**	**04 32 16.3**	**-0.4**
	comp=Z,7.6nm,0.5s						
MOTA	**Moosalm**	**149.77 348**	*i* PKiKP	**PKPbc**	**04 32 17.0**	**+0.3**
	comp=Z,7.0nm,0.9s,SNR=6.3						
MYKA	**Terra Mystica**	**149.85 344**	*i* PKPbc	**PKPbc**	**04 32 15.6**	**-1.2**
	comp=Z,5.4nm,0.4s						
ABTA	**Abfaltersbach**	**150.03 346**	*i* PKPbc	**PKPbc**	**04 32 15.9**	**-1.3**
	comp=Z,12nm,0.6s,SNR=11						
DAVA	**Damuels**	**150.05 349**	*i* PKiKP	**PKPbc**	**04 32 17.6**	**+0.3**
	comp=Z,17nm,1.2s,SNR=5.1						
LJU	**Ljubljana**	**150.15 342**	*i* PKPbc	**PKPbc**	**04 32 16.9**	**-0.5**
FETA	**Feichten**	**150.15 348**	*i* PKPbc	**PKPbc**	**04 32 17.2**	**-0.4**
	comp=Z,10nm,0.9s,SNR=5.9						
CRNS	**Crni Vrh**	**150.19 343**	*i* PKPbc	**PKPbc**	**04 32 16.6**	**-1.0**
FUORN	**Ofenpass-Fuorn**	**150.62 349**	*e*PKPbc	**PKPbc**	**04 32 18.9**	**+0.1**
TUE	**Stuetta**	**150.93 350**	*e*PKPbc	**PKPbc**	**04 32 17.4**	**-2.1**
SENIN	**Lac Senin/Sane**	**151.34 353**	*e*PKPbc	**PKPbc**	**04 32 17.4**	**-3.0**
SENIN			*e*PKPab	**PKPab**	**04 32 31.2**	**-0.3**
PDG	**Podgorica**	**151.57 333** ⇑	*i*P	**PKPbc**	**04 32 20.2**	**-0.5**
ESDC	**Sonseca Array**	**157.72 12**	PKPab	**PKPab**	**04 32 58.6**	**-0.2**
	comp=Z,1.0nm,0.7s,baz=352,slow=3.5,SNR=6.9						
KEST	**Kesra**	**161.16 342**	PKPab	**PKPab**	**04 33 14.4**	**+0.3**
	comp=Z,4.8nm,0.8s,baz=287,slow=0.9,SNR=5.1						
MDT	**Midelt**	**164.00 21**	PKPab	**PKPab**	**04 33 27.4**	**+0.8**
	baz=300,slow=8.1						
DBIC	**Dimbokro**	**166.89 148**	PKPab	**PKPab**	**04 33 39.8**	**+0.1**
	comp=Z,2.3nm,0.7s,baz=184,slow=8.5,SNR=4.3						
TOA0	**Torodi Ar. Sit**	**175.21 175**	*e*PKPdf	**PKPdf**	**04 32 34.7**	**-1.4**
TOA0			*e*PKPab	**PKPab**	**04 34 11.9**	**-4.6**
TORD	**Torodi Ar. Bea**	**175.21 175**	PKP	**PKPdf**	**04 32 34.9**	**-1.2**
	comp=Z,1.3nm,1.0s,baz=311,slow=1.5,SNR=4.8						
TORD			PKPab	**PKPab**	**04 34 15.7**	**-0.7**
	comp=Z,2.4nm,0.8s,baz=201,slow=3.8,SNR=11						

IDC 25 04:22:21.9±1.2, 8.75N×39.41W, h0km, mb3.4/4, mb1 3.7/4, mb1mx3.3/57, mbtmp3.4/4, Error ellipse: s-maj=40.7km s-min=27.9km az=166.0, Central Mid-Atlantic Ridge

Code	Station Name	Δ°	AZ°	Phase	ID Op	ID ISC	Time h m s	Res ISC
LPAZ	**La Paz**	**37.78**	**229**	P	P		04 29 40.8	0.0
	0.7nm,0.7s,baz=37,slow=5.1,SNR=3.1							
TORD	**Torodi Ar. Bea**	**40.56**	**80**	P	P		04 30 03.3	-0.2
	0.3nm,0.9s,baz=275,slow=10,SNR=4.0							
TXAR	**Lajitas Array**	**63.35**	**298**	P	P		04 32 53.2	-0.3
	0.2nm,0.6s,baz=100,slow=7.4,SNR=3.0							
YKA	**Yellowknife Ar**	**75.46**	**332**	P	P		04 34 07.9	+0.3
	0.6nm,0.7s,baz=99,slow=5.6,SNR=12							

IDC 25 04:22:46.6±1.2, 8.66N×39.43W, h0km, mb3.8/6, mb1 4.0/6, mb1mx3.5/58, mbtmp3.8/6, Error ellipse: s-maj=42.3km s-min=26.7km az=164.0, Central Mid-Atlantic Ridge

Code	Station Name	Δ°	AZ°	Phase	ID Op	ID ISC	Time h m s	Res ISC
H10N3	**ASCENSION HYDR**	**29.77**	**123**	T	T		04 59 55.6	
	baz=302,slow=75,SNR=13							
H10N2	**ASCENSION HYDR**	**29.77**	**123**	T	T		05 00 02.8	
	baz=302,slow=75,SNR=13							
H10N1	**ASCENSION HYDR**	**29.79**	**123**	T	T		04 59 57.9	
	baz=302,slow=75,SNR=16							
H10S3	**ASCENSION HYDR**	**30.25**	**125**	T	T		05 00 14.1	
	baz=304,slow=75,SNR=8.9							
H10S1	**ASCENSION HYDR**	**30.25**	**125**	T	T		05 00 11.4	
	baz=304,slow=75,SNR=7.7							
H10S2	**ASCENSION HYDR**	**30.27**	**125**	T	T		05 00 14.0	
	baz=304,slow=75,SNR=9.1							
LPAZ	**La Paz**	**37.70**	**229**	P	P		04 30 04.9	+0.1
	0.8nm,0.7s,baz=60,slow=5.0,SNR=4.9							
TORD	**Torodi Ar. Bea**	**40.60**	**80**	P	P		04 30 27.4	-1.0
	0.9nm,0.8s,baz=271,slow=8.7,SNR=4.8							
TXAR	**Lajitas Array**	**63.37**	**298**	P	P		04 33 18.0	-0.3
	0.2nm,0.5s,baz=100,slow=7.2,SNR=4.0							
BRTR	**Keskin Array B**	**71.50**	**51**	P	P		04 34 10.8	+1.2
	1.2nm,0.9s,baz=234,slow=7.9,SNR=3.7							
YKA	**Yellowknife Ar**	**75.52**	**332**	P	P		04 34 32.4	-0.3
	1.0nm,0.8s,baz=101,slow=5.5,SNR=11							
ILAR	**Eielson Array**	**89.54**	**336**	P	P		04 35 45.9	+0.2
	0.5nm,0.8s,baz=60,slow=3.4,SNR=4.0							

JMA 25 04:25:00.5, 37.09N×140.66E, h9km±1km, M2.6, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID Op	ID ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.11**	**84**	P	P	g	04 25 03.2	0.0
ONAJ				S	S	g	04 25 05.2	+0.1
JFK	**Kawauchi**	**0.33**	**32**	P	P	g	04 25 07.1	+0.1
JFK				S	S	g	04 25 11.7	+0.4
JHO	**Hitachi**	**0.48**	**189**	P	P	g	04 25 09.8	-0.1
JFT	**Otama**	**0.50**	**329**	P	P	g	04 25 10.5	+0.3
JFT				S	S	g	04 25 17.3	+0.5
MAT	**Matsushiro**	**2.04**	**255**	P	P	b	04 25 36.8	-1.0
MAT				S	S	g	04 26 05.0	-1.1

IDC 25 04:29:50.4±5.6, 2.86S×102.20E, h0km, mb3.3/3, mb1 3.5/3, mb1mx3.2/65, mbtmp3.3/3, Error ellipse: s-maj=308.9km s-min=27.1km az=52.0, Southern Sumatera

Code	Station Name	Δ°	AZ°	Phase	ID Op	ID ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**35.67**	**121**	P	P		04 36 50.9	+0.2
	0.1nm,0.3s,baz=300,slow=8.4,SNR=8.0							
ASAR	**Alice Springs**	**36.98**	**127**	P	P		04 37 01.5	-0.3
	0.3nm,0.5s,baz=296,slow=7.9,SNR=5.2							
MKAR	**Makanchi Array**	**52.47**	**343**	P	P		04 39 05.1	+0.1
	0.1nm,0.4s,baz=145,slow=5.3,SNR=2.9							
TXAR	**Lajitas Array**	**143.98**	**40**	PKP	PKPbc		04 49 27.4	+0.8
	0.1nm,0.5s,baz=222,slow=1.5,SNR=4.9							

*ISCJB **25** 04:30:56.9±0.3, 11.93S±0.04×72.13W±0.04, h10km, mb4.5/29, MS3.5/2, Error ellipse: s-maj=5.3km s-min=4.9km az=139.9*

*IDC **25** 04:30:56.7±0.6, 11.88S×72.10W, h0km, mb4.1/9, mb1 4.3/14, mb1mx4.0/43, mbtmp4.2/14, ML4.0/5, MS3.5/6, Ms1 3.6/6, ms1mx3.3/28, Error ellipse: s-maj=21.4km s-min=12.3km az=43.0*

*NEIC **25** 04:31:00.5±1.4, 11.98S×72.18W, h24km±10km, mb4.8/21, ML4.7(ARE), Error ellipse: s-maj=6.7km s-min=5.1km az=222.0*

NEIC Felt at Urcos.

*BJI **25** 04:31:01.5, 11.90S×72.10W, h25km, mB4.9/4, Ms5.3/2, Ms7 5.3/1*

ISC 25 04:30:57.7±0.4, 11.88S±0.04×72.16W±0.04, h10km, n81, σ1s84/77, mb4.7/29, 2D, Central Peru

Code	Station Name	Δ°	AZ°	Phase	ID Op	ID ISC	Time h m s	Res ISC
PR05	**Cuzco--Tamboma**	**1.61**	**173**	*e*P	**Pn**		**04 31 25.7**	**-0.9**
PR05				*e*S	**Sg**		**04 31 48.3**	**-1.2**
AYAC	**Ayacucho**	**2.37**	**237**	*e*P	**Pn**		**04 31 37.1**	**+0.2**
AYAC				*e*S	**Sg**		**04 32 12.6**	**-1.3**
HUA	**Huancayo**	**3.10**	**267**	*e*P	**Pn**		**04 31 48.9**	**+1.8**
HUA				*e*S	**Sb**		**04 32 28.8**	**-2.5**
PT03	**Guadalupe**	**4.12**	**239**	*e*P	**Pn**		**04 32 00.1**	**-0.7**
PUC	**Pucallpa**	**4.25**	**324**	*e*P	**Pn**		**04 32 04.6**	**+2.1**
PUC				*e*S	**Sg**		**04 33 09.3**	**-4.9**
PT02	**Quilmana**	**4.31**	**255**	*e*P	**Pn**		**04 32 03.4**	**-0.1**
PT04	**Zamaca**	**4.36**	**230**	*e*P	**Pn**		**04 32 02.4**	**-1.7**
PT06	**Pisco**	**4.51**	**244**	*e*P	**Pn**		**04 32 05.7**	**-0.4**
NNA	**Nana**	**4.58**	**268**	Pn	**Pn**		**04 32 08.9**	**+1.7**
	6.5nm,0.3s,baz=88,slow=11,SNR=15							
NNA				LR	LR		04 34 04.2	
	comp=Z,667nm,19.2s,baz=3.0,slow=40							
NNA	**Nana**	**4.58**	**268**	*e*Pn	**Pn**		**04 32 08.8**	**+1.7**
NNA				*e*S	Sn		04 32 53.6	-6.9
ARE	**Arequipa**	**4.61**	**172**	*e*P	Pn		04 32 10.0	+2.3
LPAZ	**La Paz**	**5.88**	**139**	Pn	**Pn**		**04 32 26.8**	**+1.3**
	1.1nm,0.3s,baz=300,slow=6.8,SNR=17							
LPAZ				Pg	Pb		04 32 43.4	+2.7
	3.0nm,0.3s,baz=310,slow=16,SNR=17							
LPAZ				Lg	Lg		04 34 01.0	
	14nm,0.3s,baz=198,slow=20,SNR=3.1							
LPAZ				LR	LR		04 35 02.1	
	comp=Z,417nm,18.5s,baz=17,slow=42							
ATAH	**Atahualpa**	**7.74**	**307**	Pn	**Pn**		**04 32 52.5**	**+1.5**
	0.9nm,0.3s,baz=99,slow=14,SNR=5.3							
ATAH				Lg	Lg		04 35 02.1	
	1.9nm,0.3s,baz=73,slow=20,SNR=4.1							
SAML	**Samuel**	**9.30**	**73**	*e*Pn	Pn		04 33 15.2	+3.3
	0.1nm,0.2s							
SAML				*e*Sn	**Sn**		**04 35 00.1**	**+3.4**
LVC	**Limon Verde**	**11.12**	**164**	*e*Pn	**Pn**		**04 33 38.2**	**+1.1**
SIV	**San Ignacio**	**11.52**	**112**	Pn	**Pn**		**04 33 42.9**	**+0.6**
	2.4nm,0.3s,baz=299,slow=14,SNR=20							
SIV				Sn	**Sn**		**04 35 47.7**	**-3.5**
	2.8nm,0.3s,baz=358,slow=15,SNR=6.7							
SIV				Lg	Lg		04 37 00.6	
	8.9nm,0.3s,baz=208,slow=23,SNR=7.6							
SIV				LR	LR		04 38 29.6	
	comp=Z,218nm,19.6s,baz=284,slow=40							
OTAV	**Otavalo**	**13.56**	**332**	*e*Pn	**Pn**		**04 34 13.1**	**+2.4**
OTAV	**Otavalo**	**13.56**	**332**	*e*P	P		04 34 15.1	-4.8
CMBC	**Cumbal**	**13.92**	**336**	*e*P	P		04 34 19.5	-4.4
CRUC	**La Cruz**	**14.18**	**340**	*e*P	**Pn**		**04 34 20.7**	**+1.6**
POPC	**Popayan, Colom**	**15.01**	**342**	*e*P	**P**		**04 34 32.6**	**-3.1**
PTGA	**Pitinga**	**16.40**	**48**	Pn	**Pn**		**04 34 48.1**	**-0.2**
	4.2nm,0.3s,baz=237,slow=21,SNR=24							
PTGA				Sn	**Sn**		**04 37 43.3**	**-7.2**
	1.7nm,0.3s,baz=141,slow=21,SNR=5.6							
PTGA				Lg	Lg		04 39 36.6	
	2.2nm,0.3s,baz=137,slow=18,SNR=4.4							
PTGA				LR	LR		04 41 43.5	
	comp=Z,274nm,21.7s,baz=231,slow=40							
CHIC	**Chingaza**	**16.47**	**354**	*e*P	**Pn**		**04 34 49.6**	**+0.2**
CPUP	**Villa Florida**	**20.05**	**138**	P	**P**		**04 35 30.3**	**-0.8**
	3.4nm,0.9s,baz=320,slow=12,SNR=4.7							
JTS	**JuntasAbangare**	**25.43**	**330**	LR	LR		04 45 15.5	
	comp=Z,91nm,19.3s,baz=160,slow=34							
PLCA	**Paso Flores**	**28.78**	**177**	P	**P**		**04 36 55.5**	**-0.3**
	0.9nm,0.5s,baz=7.8,slow=4.9,SNR=5.5							
X201	**Greenbrier Sit**	**50.66**	**339**	*e*P	P		04 40 02.3	+4.9
	7.3nm,1.0s							
TXAR	**Lajitas Array**	**51.02**	**324**	P	**P**		**04 40 00.2**	**0.0**
	1.1nm,0.9s,baz=145,slow=9.1,SNR=11							
TX31	**Lajitas Ar. Si**	**51.02**	**324**	*e*P	**P**		**04 40 00.7**	**+0.5**
ABTX	**Abilene, Hawle**	**51.45**	**330**	*e*P	**P**		**04 40 04.3**	**+1.0**
	60nm,1.9s							
MNTX	**Cornudas Mount**	**53.76**	**325**	*e*P	**P**		**04 40 21.5**	**+1.0**
	7.4nm,1.4s							
T25A	**Trinidad**	**57.41**	**330**	*e*P	**P**		**04 40 48.9**	**+2.0**
	12nm,1.5s							
KSCO	**Kaye Shedlock'**	**58.05**	**332**	*e*P	**P**		**04 40 53.2**	**+2.0**
	34nm,1.7s							
SDCO	**Great Sand Dun**	**58.42**	**329**	*e*P	**P**		**04 40 55.4**	**+1.3**
	14nm,1.6s							
S22A	**4UR Ranch, Cre**	**59.10**	**328**	*e*P	**P**		**04 41 00.6**	**+1.8**
	19nm,1.9s							
X16A	**Lo Mia Camp, P**	**59.24**	**322**	*e*P	**P**		**04 41 00.3**	**+0.6**
	8.2nm,1.3s							
ECSD	**EROS Data Cent**	**59.66**	**340**	*e*P	**P**		**04 41 03.9**	**+1.6**
	31nm,2.0s							
SPMN	**Marine on St.**	**59.82**	**343**	*e*P	P		04 41 08.3	+5.0
	15nm,1.4s							
WUAZ	**Wupatki**	**59.97**	**323**	*e*P	**

JMM	**Marumori**	**1.97**	**265**	P	**Pn**	04 41 11.2	**-0.8**
JMM				*e*S	Sn	04 41 32.3	-3.1
JFK	**Kawauchi**	**2.03**	**250**	*e*S	**Sn**	**04 41 36.8**	**-0.1**
JOU	**Okura**	**2.07**	**279**	P	**Pn**	**04 41 13.4**	**0.0**
JOU				S	Sn	04 41 35.0	-3.0
JOM	**Ohasama**	**2.08**	**313**	P	**Pn**	**04 41 13.4**	**-0.1**
JFT	**Otama**	**2.39**	**257**	P	**Pn**	**04 41 17.7**	**-0.1**
JKZ	**Kuzumaki**	**2.43**	**322**	P	**Pn**	**04 41 18.0**	**-0.4**
JYK	**Kaneyama**	**2.43**	**291**	P	**Pn**	**04 41 18.5**	**+0.2**
JRG	**Rokugo**	**2.44**	**303**	P	**Pn**	**04 41 19.0**	**+0.5**
JYS	**Shirataka**	**2.53**	**274**	P	**Pn**	**04 41 20.1**	**+0.4**
JYS				*e*S	**Sn**	**04 41 47.5**	**-1.8**
JANG	**Nango**	**2.67**	**330**	*e*S	**Sn**	**04 41 52.4**	**-0.2**
MJAR	**Matsushiro Arr**	**4.32**	**251**	Pn	**Pn**	**04 41 45.2**	**+0.9**
	3.0nm,0.3s,baz=82,slow=14,SNR=12						
JHJ	**Hachijo jima 2**	**5.71**	**211**	Pn	Pn	04 42 00.3	-3.0
	30nm,0.3s,baz=353,slow=22,SNR=7.0						
JHJ				Sn	Sn	04 43 00.9	-6.7
	16nm,0.3s,baz=70,slow=18,SNR=3.5						
ASAJ	**Asahikawa**	**6.05**	**355**	LR	LR	04 44 59.3	
	comp=Z,999nm,21.5s,baz=176,slow=43						
USRK	**Ussuriysk Ar.**	**10.47**	**309**	Pn	Pn	04 43 12.4	+3.8
	baz=118,slow=13,SNR=2.3						
ZALV	**Zalesovo Beam**	**12.31**	**312**	P	**P**	**04 48 32.4**	**+1.1**
	0.5nm,0.4s,baz=96,slow=8.6,SNR=3.1						
MKAR	**Makanchi Array**	**44.82**	**302**	P	**P**	**04 48 51.9**	**+0.3**
	0.4nm,0.4s,baz=91,slow=9.9,SNR=4.8						
WRA	**Warramunga Arr**	**58.32**	**190**	P	**P**	**04 50 31.3**	**-1.2**
	1.9nm,0.9s,baz=6.0,slow=7.4,SNR=10						
ASAR	**Alice Springs**	**62.05**	**190**	P	**P**	**04 50 56.2**	**-1.9**
	0.6nm,0.9s,baz=8.5,slow=6.9,SNR=3.5						
FINES	**FINESS Array B**	**68.57**	**333**	P	**P**	**04 51 39.8**	**0.0**
	0.9nm,0.8s,baz=39,slow=9.0,SNR=4.2						
MLR	**Muntele Rosu**	**79.53**	**321**	LR	LR	05 34 01.0	
	comp=Z,6.1nm,18.3s,baz=254,slow=40						

*ISCJB **25** 04:56:59.6±1.0,37.°60N±0.°04×141.°7E±0.°1, h49km±8km, mb3.8/12, Error ellipse: s-maj=13.5km s-min=6.0km az=7.0*
*JMA **25** 04:57:00.9±0.1,37.°63N×141.°61E, h44km±2km, M4.0*
JMA Felt II J1.
*IDC **25** 04:57:01.5±0.6,37.°55N×141.°63E, h51km±5km, mb3.6/12, mb1 3.8/15,mb1mx3.6/57,mbtmp3.9/15,MS2.8/5, Ms1 2.8/5,ms1mx2.5/38,Error ellipse: s-maj=17.5km s-min=10.7km az=104.0*

ISC 25 04:56:59.8±0.6,37.°61N±0.°04×141.°67E±0.°06, h34km±1km, n34, σ0s89/39, mb3.7/12, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JFK	**Kawauchi**	**0.68**	**249**	P	**Pb**	**04 57 13.8**	**+0.5**
JFK				S	**Sn**	**04 57 22.1**	**-0.3**
JMM	**Marumori**	**0.74**	**290**	P	**Pb**	**04 57 14.4**	**+0.1**
JMM				S	**Sn**	**04 57 23.4**	**-0.5**
ONAJ	**Iwakimizuishiy**	**0.86**	**234**	P	**Pb**	**04 57 16.4**	**0.0**
ONAJ				*e*S	**Sb**	**04 57 27.5**	**-0.2**
JIO	**Ouri**	**0.88**	**343**	P	**Pb**	**04 57 16.5**	**-0.1**
JIO				S	**Sn**	**04 57 27.3**	**+0.1**
JFT	**Otama**	**1.06**	**265**	P	**Pb**	**04 57 19.5**	**-0.2**
JFT				S	**Sb**	**04 57 32.9**	**-0.5**
JOU	**Okura**	**1.09**	**314**	P	**Pn**	**04 57 19.2**	**+0.5**
JOU				S	**Sn**	**04 57 32.6**	**-0.1**
JHO	**Hitachi**	**1.33**	**222**	P	**Pn**	**04 57 22.6**	**+0.6**
JHO				S	**Sn**	**04 57 39.6**	**+1.1**
MJAR	**Matsushiro Arr**	**2.97**	**250**	P	**Pn**	**04 57 46.1**	**+1.6**
	8.7nm,0.3s,baz=43,slow=9.7,SNR=40						
MJAR				LR	LR	04 59 09.7	
	comp=Z,107nm,19.6s,baz=70,slow=44						
MAT	**Matsushiro**	**2.97**	**250**	P	**Pn**	**04 57 46.6**	**+2.1**
MAT				S	**Sb**	**04 58 26.8**	**-1.0**
JHJ	**Hachijo jima 2**	**4.74**	**200**	P	**Pn**	**04 58 09.6**	**+0.8**
	51nm,0.3s,baz=152,slow=23,SNR=18						
JHJ				S	**Sn**	**04 59 02.0**	**-0.6**
	60nm,0.3s,baz=248,slow=22,SNR=6.4						
ASAJ	**Asahikawa**	**6.53**	**6**	LR	LR	05 01 02.9	
	comp=Z,83nm,19.0s,baz=158,slow=36						
USRK	**Ussuriysk Ar.**	**9.84**	**315**	P	**Pn**	**04 59 20.8**	**+2.0**
	0.5nm,0.3s,baz=117,slow=14,SNR=5.8						
JNU	**Nakatsue**	**9.88**	**36**	LR	LR	05 03 21.2	
	comp=Z,54nm,20.6s,baz=108,slow=39						
KSRS	**Korea Array**	**10.92**	**273**	P	Pn	04 59 38.0	+4.4
	0.3nm,0.3s,baz=81,slow=15,SNR=4.4						
KLR	**Kul'dur**	**13.65**	**331**	P	**P**	**05 00 16.9**	**-2.3**
	0.1nm,0.3s,baz=142,slow=12,SNR=8.0						
KLR				LR	LR	05 05 11.2	
	comp=Z,44nm,19.0s,baz=144,slow=36						
PETK	**Petropavlovsk-**	**19.08**	**31**	LR	LR	05 09 31.8	
	comp=Z,27nm,19.4s,baz=203,slow=39						
H11N2	**WAKE ISLAND Hy**	**28.27**	**122**	T	T	05 33 01.8	
	baz=315,slow=75,SNR=275						
H11N1	**WAKE ISLAND Hy**	**28.28**	**122**	T	T	05 33 08.9	
	baz=315,slow=75,SNR=285						
H11N3	**WAKE ISLAND Hy**	**28.29**	**122**	T	T	05 33 13.1	
	baz=315,slow=75,SNR=274						
H11S1	**WAKE ISLAND Hy**	**29.01**	**124**	T	T	05 34 04.0	
	baz=317,slow=74,SNR=189						
H11S3	**WAKE ISLAND Hy**	**29.01**	**124**	T	T	05 34 06.3	
	baz=129,slow=74,SNR=219						
H11S2	**WAKE ISLAND Hy**	**29.02**	**124**	T	T	05 33 25.5	
	SNR=157						
ZALV	**Zalesovo Beam**	**41.68**	**312**	P	**P**	**05 04 45.1**	**+0.3**
	0.4nm,0.3s,baz=90,slow=7.4,SNR=3.9						
MKAR	**Makanchi Array**	**43.99**	**302**	P	**P**	**05 05 03.9**	**+0.2**
	0.9nm,0.6s,baz=88,slow=11,SNR=9.2						
KURBB	**Kurchatov Arra**	**45.81**	**308**	P	**P**	**05 05 18.1**	**0.0**
	2.7nm,0.2s,baz=84,slow=8.4,SNR=17						
ILAR	**Eielson Array**	**48.90**	**33**	P	**P**	**05 05 42.1**	**+0.2**
	0.6nm,0.8s,baz=271,slow=7.1,SNR=6.4						
ILAR				pP	**sP**	**05 05 56.8**	**+0.7**
	0.6nm,0.7s,baz=270,slow=6.7,SNR=4.1						
WRA	**Warramunga Arr**	**57.66**	**188**	P	**P**	**05 06 46.3**	**-0.5**
	2.3nm,0.5s,baz=7.8,slow=7.7,SNR=32						
ASAR	**Alice Springs**	**61.39**	**188**	P	**P**	**05 07 12.0**	**-0.5**
	1.3nm,0.7s,baz=12,slow=5.8,SNR=15						
YKA	**Yellowknife Ar**	**63.20**	**36**	P	**P**	**05 07 23.9**	**-0.3**
	0.2nm,0.7s,baz=301,slow=6.6,SNR=5.3						
YKA				pP	**sP**	**05 07 38.0**	**-0.5**
	0.2nm,0.6s,baz=302,slow=6.3,SNR=4.9						
ARCES	**ARCESS Array B**	**63.53**	**339**	P	**P**	**05 07 26.9**	**+0.7**
	1.9nm,1.0s,baz=62,slow=8.3,SNR=3.1						
ARCES				pP	**sP**	**05 07 41.7**	**+1.1**
	1.2nm,0.8s,baz=44,slow=7.5,SNR=1.3						
FINES	**FINESS Array B**	**68.40**	**332**	P	**P**	**05 07 57.5**	**-0.1**
	0.6nm,0.7s,baz=47,slow=6.5,SNR=7.3						
AKASG	**Malin Array Be**	**73.97**	**322**	P	**P**	**05 08 30.4**	**-1.1**
	0.3nm,0.4s,baz=46,slow=6.3,SNR=6.1						
AKASG				pP	**sP**	**05 08 44.8**	**-1.1**
	0.3nm,0.4s,baz=45,slow=6.1,SNR=3.8						
PDAR	**Pinedale Array**	**77.11**	**46**	P	**P**	**05 08 50.6**	**+0.6**
	0.3nm,0.7s,baz=251,slow=2.8,SNR=3.6						
PDAR				pP	**sP**	**05 09 04.4**	**-0.1**
	0.4nm,0.5s,baz=304,slow=1.0,SNR=6.0						
TXAR	**Lajitas Array**	**89.61**	**53**	P	**P**	**05 09 54.5**	**+0.2**
	0.2nm,0.7s,baz=284,slow=3.6,SNR=2.7						
TXAR				pP	**sP**	**05 10 09.9**	**+0.9**
	0.2nm,0.5s,baz=288,slow=2.9,SNR=2.8						

IDC 25 05:05:47.5±1.4,53.°27S×141.°30E, h0km, mb3.7/4, mb1 3.9/4, mb1mx3.8/25, mbtmp3.7/4, MS3.7/1, Ms1 3.7/1, ms1mx2.9/16, Error ellipse: s-maj=119.6km s-min=23.5km az=83.0, West of Macquarie Island

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
STKA	**Stephens Creek**	**21.38**	**1**	P	P	05 10 37.7	+1.3
	3.6nm,0.8s,baz=164,slow=13,SNR=7.9						
RPZ	**Rata Peaks**	**21.77**	**76**	LR	LR	05 17 07.6	
	comp=Z,189nm,18.2s,baz=332,slow=31						
VNDA	**Vanda**	**25.48**	**170**	P	P	05 11 16.6	-0.2
	1.5nm,0.8s,baz=324,slow=7.5,SNR=5.0						
H01W1	**Cape Leeuwin H**	**26.54**	**303**	T	T	05 39 03.9	
	baz=142,slow=75,SNR=3.3						
H01W2	**Cape Leeuwin H**	**26.54**	**303**	T	T	05 39 03.8	
	baz=142,slow=75,SNR=4.9						
H01W3	**Cape Leeuwin H**	**26.55**	**303**	T	T	05 39 06.5	
	baz=142,slow=75,SNR=3.7						
ASAR	**Alice Springs**	**30.09**	**346**	P	P	05 11 57.9	-0.6
	0.6nm,0.7s,baz=166,slow=10,SNR=9.4						
WRA	**Warramunga Arr**	**33.70**	**348**	P	P	05 12 29.6	-0.6
	1.2nm,0.8s,baz=172,slow=7.5,SNR=8.0						
YKA	**Yellowknife Ar**	**140.90**	**46**	PKP	PKPdf	05 25 16.6	-1.2
	0.1nm,0.7s,baz=240,slow=3.7,SNR=7.1						
GERES	**GERESS Array B**	**147.38**	**284**	PKPbc	PKPbc	05 25 32.2	-0.1
	0.7nm,0.9s,baz=147,slow=2.0,SNR=6.4						

*MOS **25** 05:15:43.8±1.3,37.°49N×71.°79E, h118km, mb4.4/13, Error ellipse: s-maj=8.6km s-min=4.8km az=90.5*
*IDC **25** 05:15:43.7±2.3,37.°44N×71.°83E, h108km±21km, mb3.8/22, mb1 3.9/28,mb1mx3.8/55,mbtmp4.2/28,MS2.7/1, Ms1 2.7/1,ms1mx2.2/39,Error ellipse: s-maj=14.9km s-min=11.6km az=166.0*
*ISCJB **25** 05:15:43.6±0.2,37.°42N±0.°02×71.°98E±0.°04, h130km, mb4.0/44, Error ellipse: s-maj=4.2km s-min=3.3km az=177.2*
*BJI **25** 05:15:43.8,37.°39N×71.°97E, h112km, mb4.5/19, mB4.5/10*
*NEIC **25** 05:15:44.5±0.8,37.°50N×71.°81E, h113km±7km, mb4.2/10, Error ellipse: s-maj=7.3km s-min=6.5km az=130.0*
*NNC **25** 05:15:47.3±1.4,37.°75N×71.°73E, h176km±14km, mb3.3, mpv4.2, Error ellipse: s-maj=14.8km s-min=10.8km az=46.0*

ISC 25 05:15:46.2±0.4,37.°54N±0.°05×71.°80E±0.°05, h130km, n143, σ1s60/143, mb4.1/43, 17C-12D, Afghanistan-Tajikistan border region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SFK	**Sufi-Kurgan**	**2.81**	**28**	⇓P	**Pn**	**05 16 30.8**	**+0.2**
	23nm,0.3s						
SFK				⇑S	**Sn**	**05 17 08.2**	**+3.4**
	213nm,0.5s						
SFK	**Sufi-Kurgan**	**2.81**	**28**	PN	**Pn**	**05 16 30.7**	**+0.2**
SFK						05 17 08.1	
SFK				pmax	pmax		
	comp=Z,23nm,0.3s						
SFK				pmax	pmax		
	comp=Z,55nm,0.4s						
SFK				pmax	pmax		
	comp=N,213nm,0.5s						
CEP	**Cherat**	**3.71**	**179**	P	**Pn**	**05 16 39.1**	**-3.1**
CEP				S	**Sn**	**05 17 21.0**	**-4.6**
KBL	**Kabul**	**3.73**	**218**	*e*PN	**Pn**	**05 16 39.6**	**-3.0**
KBL	**Kabul**	**3.73**	**218**	*e*Pn	**Pn**	**05 16 39.6**	**-3.0**
KSH	**Kashi**	**3.82**	**58**	P	Pn	05 16 38.8	-4.9
KSH				S	Sn	05 17 17.8	-10
KSH				smax	smax		
	comp=N,2μm,0.9s						
KSH				smax	smax		
	comp=N,1μm,0.6s						
CHCP	**Chirah Chowk**	**4.05**	**162**	P	**Pn**	**05 16 43.9**	**-2.8**
THW	**Thamme Wali**	**4.73**	**181**	P	Pn	05 16 51.5	-4.3
MNAS	**Manas**	**4.97**	**6**	⇑P	**Pn**	**05 16 58.7**	**-0.3**
	comp=N,22nm,0.4s						
MNAS				⇓S	**Sn**	**05 17 54.3**	**-1.4**
	comp=N,72nm,0.6s						
MNAS	**Manas**	**4.97**	**6**	PN	**Pn**	**05 16 58.2**	**-0.8**
MNAS				pmax	pmax		
	comp=Z,11nm,0.5s						
EKS2	**Erkin-Say**	**5.34**	**16**	*e*PN	**Pn**	**05 17 03.4**	**-0.5**
EKS2				*e*		05 18 04.3	
EKS2	**Erkin-Say**	**5.34**	**16**	*e*Pn	**Pn**	**05 17 03.4**	**-0.5**
EKS2				*e*Sn	**Sn**	**05 18 04.3**	**-0.1**
AAK	**Ala-Archa**	**5.49**	**21**	P	**Pn**	**05 17 05.8**	**-0.2**
	comp=Z,8.9nm,0.3s,baz=172,slow=5.5,SNR=54						
AAK				S	**Sn**	**05 18 06.4**	**-1.8**
	comp=Z,4.0nm,0.3s,baz=318,slow=18,SNR=12						
AAK	**Ala-Archa**	**5.49**	**21**	⇑P	**Pn**	**05 17 06.1**	**+0.1**
	comp=Z,13nm,0.4s						
AAK				⇑S	**Sn**	**05 18 06.6**	**-1.6**
	comp=Z,95nm,0.9s						
AAK	**Ala-Archa**	**5.49**	**21**	*e*Pn	**Pn**	**05 17 06.2**	**+0.1**
AAK				S	**Sn**	**05 18 06.4**	**-1.8**
AAK				*e*Sn	Sn	05 18 07.9	-0.3
KK31	**Karatay Array**	**5.65**	**350**	P	**Pn**	**05 17 07.2**	**-0.8**
	comp=Z,6.3nm,0.3s,baz=174,slow=11,SNR=240						
KK31				⇑S	**Sn**	**05 18 09.3**	**-2.4**
	comp=Z,14nm,0.3s						
KK31	**Karatay Array**	**5.65**	**350**	PN	**Pn**	**05 17 07.1**	**-0.8**
KK31				pmax	pmax		
	comp=Z,6.0nm,0.3s						
KKAR	**Karatay Array**	**5.65**	**350**	*e*Sn	**Sn**	**05 18 10.8**	**-0.9**
KKAR				*e*Sn	**Sn**	**05 18 10.8**	**-0.9**
SARP	**Sargodha**	**5.65**	**172**	P	Pn	05 17 03.0	-5.0
FRU	**Bishkek**	**5.71**	**21**	⇓*i*PN	**Pn**	**05 17 08.0**	**-0.8**
FRU				pmax	pmax		
	comp=Z,58nm,2.0s						
TKM2	**Tokmak 2**	**6.11**	**27**	⇑P	**Pn**	**05 17 13.5**	**-0.8**
	comp=Z,17nm,0.8s						
TKM2				⇑S	**Sn**	**05 18 21.7**	**-1.5**
	comp=Z,15nm,0.6s						
TKM2	**Tokmak 2**	**6.11**	**27**	PN	**Pn**	**05 17 13.5**	**-0.8**
TKM2				pmax	pmax		
	comp=Z,17nm,0.8s						
TKM2	**Tokmak 2**	**6.11**	**27**	*e*Pn	**Pn**	**05 17 13.7**	**-0.7**
TKM2				*e*Sn	**Sn**	**05 18 20.0**	**-3.1**
SDNR	**Sundarnagar**	**7.38**	**143**	*e*P	Pn	05 17 27.6	-3.7
SDNR				*e*S	Sn	05 18 41.6	-12
SMLA	**Simla**	**7.78**	**144**	*i* P	Pn	05 17 31.5	-5.2
SMLA				*i* S	Sn	05 18 49.9	-13
SMLA				*i* S	Sn	05 18 50.0	-13
SMLA				AML	AML	05 18 55.5	
	comp=E,3μm,0.3s						
SMLA				AML	AML	05 18 56.0	
	comp=N,3μm,0.3s						
PDGK	**Podgornoye**	**8.23**	**43**	⇓P	**Pn**	**05 17 41.3**	**-1.3**
	comp=N,11nm,1.0s						
PDGK	**Podgornoye**	**8.23**	**43**	PN	**Pn**	**05 17 41.3**	**-1.3**
PDGK				pmax	pmax		
	comp=Z,11nm,1.0s						
GEYT	**Alibeck**	**10.84**	**276**	P	Pn	05 18 12.1	-5.7
	comp=Z,2.0nm,0.3s,baz=109,slow=11,SNR=6.7						
GEYT				S	Sn	05 20 05.5	-12
	comp=Z,4.5nm,0.3s,baz=114,slow=15,SNR=14						
MK01	**Makanchi Array**	**12.07**	**37**	*e*Pn	**Pn**	**05 18 33.0**	**-0.9**
MK31	**Makanchi Array**	**12.08**	**37**	⇓P	**Pn**	**05 18 32.9**	**-1.2**
	comp=Z,3.1nm,0.8s,baz=205,slow=12,SNR=30						
MK31	**Makanchi Array**	**12.08**	**37**	*i* P	**Pn**	**05 18 32.8**	**-1.2**
MK31				pmax	pmax		
	comp=Z,3.0nm,0.8s						
MK31	**Makanchi Array**	**12.08**	**37**	*e*Pn	**Pn**	**05 18 33.5**	**-0.5**
MKAR	**Makanchi Array**	**12.08**	**37**	P	**Pn**	**05 18 32.5**	**-1.4**
	comp=Z,0.3nm,0.3s,baz=222,slow=14,SNR=26						
MKAR	**Makanchi Array**	**12.08**	**37**	*e*P	**Pn**	**05 18 33.5**	**-0.5**
MKAR	**Makanchi Array**	**12.08**	**37**	*e*Pn	**Pn**	**05 18 33.5**	**-0.5**
PYUN	**Piuthan**	**13.30**	**132**	*e*P	Pn	05 18 42.9	-7.2
	comp=Z,42nm,0.4s						
PYUN				*e*S	Sn	05 20 57.5	-20
WMQ	**Urumqi**	**13.59**	**58**	P	**Pn**	**05 18 52.0**	**-1.6**
WMQ				sP	P	05 19 27.0	+29
WMQ				pmax	pmax		
	comp=Z,5.0nm,0.6s						
WMQ				pmax	pmax		
	comp=Z,78nm,5.4s						
WMQ				LR	LR		
	comp=Z,48nm,6.8s						
WMQ				LR	LR		
	comp=Z,50nm,6.8s						
WMQ				LR	LR		
	comp=Z,10.0nm,12.8s						
KOLN	**Koldanda**	**13.90**	**131**	*e*P	Pn	05 18 51.2	-6.7
	comp=Z,20nm,0.3s						
KURBB	**Kurchatov Arra**	**13.94**	**18**	P	**P**	**05 19 01.2**	**-0.5**
	comp=Z,0.2nm,0.3s,baz=206,slow=10,SNR=6.8						
KURK	**Kurchatov**	**14.05**	**18**	P	**Pn**	**05 19 01.3**	**+2.0**
KURK	**Kurchatov**	**14.05**	**18**	*e*Pn	Pn	05 18 56.3	-3.0
	comp=Z,8.1nm,0.8s						
GKN	**Gorkha**	**14.38**	**128**	*e*P	Pn	05 18 57.2	-6.6
	comp=Z,30nm,0.3s						
AB31	**Akbulak array**	**14.52**	**328**	P	Pn	05 19 02.1	-3.2
	comp=Z,5.6nm,0.7s,baz=145,slow=12,SNR=88						
AB31				⇑S	Sn	05 21 40.7	-5.1
	comp=Z,7.7nm,0.6s						
AB31	**Akbulak array**	**14.52**	**328**	*e*P	Pn	05 19 02.1	-3.2
AB31				pmax	pmax		
	comp=Z,6.0nm,0.7s						
ABKAR	**Akbulak array**	**14.52**	**328**	*e*Pn	Pn	05 19 02.2	-3.1
ABKAR				*e*Sn	Sn	05 21 34.6	-11
KKN	**Kakani**	**14.93**	**127**	*e*P	Pn	05 19 04.4	-6.5
	comp=Z,49nm,0.7s						
DMN	**Daman**	**14.95**	**128**	*e*P	Pn	05 19 04.7	-6.4
	comp=Z,82nm,0.8s						
PKIN	**Phulchoki**	**15.15**	**127**	*e*P	Pn	05 19 07.3	-6.4
	comp=Z,34nm,0.5s						
GUN	**Gumba**	**15.23**	**125**	*e*P	Pn	05 19 08.6	-6.2
	comp=Z,134nm,0.8s						
BVA0	**Borovoye Array**	**15.52**	**357**	⇓P	**Pn**	**05 19 14.2**	**-3.6**
	comp=Z,5.6nm,1.2s,baz=156,slow=9.8,SNR=12						
BVA0	**Borovoye Array**	**15.52**	**357**	*i* P	**P**	**05 19 20.4**	**+1.1**
BVA0				pmax	pmax		
	comp=Z,6.0nm,1.2s						
BVAR	**Borovoye Array**	**15.52**	**357**	P	**Pn**	**05 19 15.8**	**-2.0**
	comp=Z,0.5nm,0.3s,baz=148,slow=8.7,SNR=10						
ZRNK	**Zerenda**	**15.54**	**354**	⇓P	**Pn**	**05 19 16.0**	**-2.0**
	comp=Z,10nm,1.0s						
ZRNK	**Zerenda**	**15.54**	**354**	P	**Pn**	**05 19 15.5**	**-2.5**
ZRNK				pmax	pmax		
	comp=Z,8.0nm,0.9s						
ZRNK	**Zerenda**	**15.54**	**354**	*e*Pn	**Pn**	**05 19 15.0**	**-3.0**
	comp=Z,11nm,0.9s						
BRVK	**Borovoye**	**15.56**	**357**	⇑P	**Pn**	**05 19 14.8**	**-3.4**
	comp=Z,14nm,1.4s						
BRVK	**Borovoye**	**15.56**	**357**	*c i*P	**P**	**05 19 20.4**	**+0.7**
BRVK	**Borovoye**	**15.56**	**357**	*e*Pn	**Pn**	**05 19 17.4**	**-0.8**
	comp=Z,11nm,1.3s						
CHKZ	**Chkalovo**	**16.16**	**357**	⇑P	**Pn**	**05 19 23.3**	**-2.4**
	comp=Z,2.2nm,0.9s						
CHKZ	**Chkalovo**	**16.16**	**357**	P	**Pn**	**05 19 24.4**	**-1.3**
CHKZ				pmax	pmax		
	comp=Z,2.0nm,0.9s						
AKTO	**Aktyubinsk**	**16.23**	**327**	P	**Pn**	**05 19 25.6**	**-0.9**
	comp=Z,4.7nm,0.3s,baz=132,slow=9.7,SNR=62						
AKTO				S	Sn	05 22 19.0	-7.9
	comp=Z,0.2nm,0.3s,baz=82,slow=17,SNR=5.7						
AKTO	**Aktyubinsk**	**16.23**	**327**	⇑P	**Pn**	**05 19 23.3**	**-3.3**
	comp=Z,34nm,0.7s						
AKTO				⇑S	**Sn**	**05 22 20.7**	**-6.2**
	comp=Z,7.4nm,0.7s						
AKTO	**Aktyubinsk**	**16.23**	**327**	P	**Pn**	**05 19 24.9**	**-1.7**
AKTO				S	Sn	05 22 13.7	-13
AKTO				pmax	pmax		
	comp=Z,34nm,0.7s						
AKTO				smax	smax		
	comp=N,7.0nm,0.7s						
LSA	**Lhasa**	**17.89**	**110**	*e*P	**P**	**05 19 45.8**	**-0.4**
LSA				pmax	pmax		
	comp=Z,13nm,0.8s						
LSA	**Lhasa**	**17.89**	**110**	*e*P	**P**	**05 19 45.8**	**-0.4**
	comp=Z,13nm,0.8s						
WSAR	**Wadi Sarin**	**18.20**	**222**	P	**P**	**05 19 48.1**	**-0.9**
	comp=Z,0.5nm,0.3s,baz=30,slow=3.8,SNR=6.3						
WSAR				LR	LR	05 28 41.9	
	comp=Z,24nm,18.2s,baz=180,slow=43						
ZAA0	**Zalesovo Array**	**18.71**	**25**	*e*P	**P**	**05 19 54.5**	**+0.1**
ZALV	**Zalesovo Beam**	**18.71**	**25**	P	**P**	**05 19 54.4**	**0.0**
	comp=Z,0.8nm,0.3s,baz=226,slow=11,SNR=14						
NVS	**Novosibirsk**	**18.99**	**21**	*e*P	**P**	**05 19 57.8**	**+0.4**
NVS				pmax	pmax		
	comp=Z,3.0nm,0.5s						
NVS				pmax	pmax		
	comp=N,2.0nm,0.4s						
SHL	**Shillong**	**20.82**	**119**	*e*P	**P**	**05 20 17.5**	**-0.1**
ARU	**Arti**	**20.88**	**339**	P	**P**	**05 20 18.0**	**+0.3**
	comp=N,4.6nm,0.2s,baz=156,slow=6.7,SNR=13						
ARU	**Arti**	**20.88**	**339**	*d i*P	**P**	**05 20 18.0**	**+0.3**
ARU						05 20 47.9	
ARU				S	**S**	**05 24 04.9**	**+1.8**
ARU				SS	Sn	05 24 40.5	+23
ARU				pmax	pmax		
	comp=Z,16nm,1.2s						
ARU	**Arti**	**20.88**	**339**	*e*P	**P**	**05 20 18.4**	**+0.7**
	comp=Z,9.3nm,0.8s						
GNI	**Garni**	**21.21**	**285**	P	**P**	**05 20 21.3**	**-0.3**
	comp=Z,13nm,0.5s,baz=301,slow=3.5,SNR=7.2						
GNI	**Garni**	**21.21**	**285**	*d i*P	**P**	**05 20 23.3**	**+1.7**
GNI				pmax	pmax		
	comp=Z,53nm,0.7s						
GNI	**Garni**	**21.21**	**285**	*e*P	**P**	**05 20 23.8**	**+2.2**
	comp=Z,19nm,0.7s						
ZEI	**Tsey**	**21.90**	**293**	*e*P	**P**	**05 20 32.4**	**+3.3**
ZEI				pmax	pmax		
	comp=Z,25nm,1.4s						
GTA	**Gaotai**	**21.98**	**76**	*e*P	**P**	**05 20 31.4**	**+1.6**
GTA				pmax	pmax		
	comp=Z,16nm,1.0s						
KBZ	**Khabaz**	**22.72**	**295**	P	**P**	**05 20 35.7**	**-1.2**
	comp=Z,2.5nm,0.9s,baz=120,slow=4.5,SNR=6.2						
NEY	**Neytrino**	**22.80**	**294**	⇑*e*P	**P**	**05 20 39.5**	**+1.5**
NEY				pmax	pmax		
	comp=Z,1.0nm,0.9s						
KIV	**Kislovodsk**	**22.89**	**295**	⇑*e*P	**P**	**05 20 38.1**	**-0.6**
KIV				*i* *PP	**pP**	**05 21 01.9**	**-1.6**
KIV				*e*S	**S**	**05 24 42.5**	**+4.0**
KIV				pmax	pmax		
	comp=Z,3.0nm,0.4s						
VRH	**Novokhopyorsk**	**25.26**	**312**	*e*P	**P**	**05 21 02.2**	**+2.2**
VRH				pmax	pmax		
	comp=Z,10.

MOA	**Molln**	**42.62**	**303**	*i* P		**P**	**05 23 30.2**	**+0.8**
	comp=Z,2.1nm,0.7s							
OBKA	**Obir**	**42.63**	**301**	*e*P		**P**	**05 23 30.8**	**+1.2**
	comp=Z,4.0nm,1.3s							
GERES	**GERESS Array B**	**42.86**	**304**	P		**P**	**05 23 31.8**	**+0.4**
	comp=Z,0.6nm,0.7s,baz=82,slow=7.0,SNR=6.7							
KHC	**Kasperske Hory**	**42.91**	**305**	*e*P		**P**	**05 23 33.1**	**+1.3**
KHC				*ex*		x	05 23 35.8	
KHC	**Kasperske Hory**	**42.91**	**305**	*e*P		**P**	**05 23 33.1**	**+1.3**
CLL	**Collm**	**43.05**	**308**	⇓*i*P		**P**	**05 23 33.3**	**+0.5**
	comp=Z,4.0nm,0.8s							
CLL				*e*PP		PcP	05 25 30.0	+10
CLL	**Collm**	**43.05**	**308**	⇓*i*P		**P**	**05 23 33.3**	**+0.5**
CLL				pmax		pmax		
	comp=Z,4.0nm,0.8s							
NC405	**NORSAR Array S**	**43.71**	**322**	*e*P		**P**	**05 23 38.5**	**+0.6**
NC303	**NORSAR Array S**	**43.88**	**323**	*e*P		**P**	**05 23 40.0**	**+0.6**
NB2	**NORSAR Subarra**	**43.94**	**322**	P		**P**	**05 23 39.8**	**-0.1**
	comp=Z,3.5nm,0.6s,baz=92,slow=7.9							
NOA	**NORSAR Array B**	**43.94**	**322**	P		**P**	**05 23 40.1**	**+0.2**
	comp=Z,3.7nm,0.6s,baz=94,slow=7.7,SNR=28							
KLR	**Kul'dur**	**44.02**	**55**	P		**P**	**05 23 41.0**	**+0.4**
	comp=Z,1.0nm,0.4s,baz=290,slow=9.2,SNR=7.7							
NBO00	**NORSAR Array S**	**44.16**	**322**	*e*P		**P**	**05 23 41.6**	**+0.1**
NC204	**NORSAR Array S**	**44.18**	**323**	*e*P		**P**	**05 23 42.1**	**+0.3**
TIXI	**Tiksi**	**44.57**	**22**	⇓*e*P		**P**	**05 23 46.6**	**+1.9**
TIXI				pmax		pmax		
	comp=Z,2.0nm,0.7s							
FUORN	**Ofenpass-Fuorn**	**45.52**	**302**	*e*P		**P**	**05 23 53.4**	**+0.6**
	comp=Z,3.0nm,0.8s							
DAVA	**Damuels**	**45.64**	**303**	*i* P		**P**	**05 23 53.8**	**+0.1**
	comp=Z,7.4nm,0.6s,SNR=9.5							
SPITS	**Spitsbergen Ar**	**46.63**	**346**	P		**P**	**05 24 01.1**	**+0.2**
	comp=Z,3.1nm,0.8s,baz=123,slow=9.1,SNR=5.0							
KEST	**Kesra**	**49.32**	**288**	P		**P**	**05 24 22.9**	**+0.7**
	comp=Z,6.4nm,1.0s,baz=313,slow=2.1,SNR=5.1							
KMBO	**Kilima Mbogo**	**50.00**	**228**	P		**P**	**05 24 27.1**	**-0.6**
	comp=Z,1.1nm,0.3s,baz=28,slow=7.7,SNR=6.5							
ES19	**SONSECA Array**	**57.48**	**298**	*e*P		**P**	**05 25 22.1**	**+0.4**
ESDC	**Sonseca Array**	**57.54**	**298**	P		**P**	**05 25 22.1**	**0.0**
	comp=Z,1.5nm,0.5s,baz=57,slow=7.3,SNR=12							
TORD	**Torodi Ar. Bea**	**86.38**	**269**	P		**P**	**05 26 19.8**	**-1.7**
	comp=Z,1.0nm,0.6s,baz=49,slow=6.0,SNR=26							
INK	**Inuvik**	**72.78**	**10**	P		**P**	**05 27 00.9**	**+1.1**
	comp=Z,1.7nm,0.5s,baz=348,slow=6.3,SNR=29							
ILAR	**Eielson Array**	**73.61**	**16**	P		**P**	**05 27 04.7**	**-0.1**
	comp=Z,0.2nm,0.5s,baz=297,slow=4.0,SNR=4.1							
YKA	**Yellowknife Ar**	**80.18**	**3**	P		**P**	**05 27 42.0**	**+0.4**
	comp=Z,1.2nm,0.4s,baz=350,slow=5.5,SNR=65							
SCHQ	**Schefferville**	**81.39**	**337**	P		**P**	**05 27 49.3**	**+1.1**
	comp=Z,1.0nm,0.6s,baz=305,slow=3.9,SNR=5.7							
WRA	**Warramunga Arr**	**82.00**	**123**	P		**P**	**05 27 49.7**	**-2.2**
	comp=Z,0.6nm,1.0s,baz=324,slow=5.0,SNR=5.1							
WRA	**Warramunga Arr**	**82.00**	**123**	*i* P		**P**	**05 27 50.5**	**-1.4**
WRA				pmax		pmax		
	comp=Z,1.0nm,0.8s							
WRAB	**Tennant Creek**	**82.00**	**123**	*e*P		P	05 27 48.0	-3.9
WRAB				pmax		pmax		
	comp=Z,8.0nm,1.2s							
WRAB	**Tennant Creek**	**82.00**	**123**	*e*P		P	05 27 48.0	-3.8
	comp=Z,8.4nm,1.2s							

NIED ***25*** *05:25:00.37˚.00N×141˚.70E,h44km,Mw3.7 Best double couple: M₀3.85000×10¹⁴ NP1:φ₈=223.00000°,δ37.00000°, λ-81.00000°. NP2:φ₈=32.00000°,δ53.00000°,λ-97.00000°.*

ISCJB ***25*** *05:25:37.0±1.5,36˚.91N±0˚.05×141˚.94E±0˚.07, h15km±9km, mb3.6/8, Error ellipse: s-maj=10.0km s-min=7.4km az=19.3*

JMA ***25*** *05:25:41.1±0.2,36˚.96N×141˚.71E, h36km±3km, M3.9*

IDC ***25*** *05:25:42.6±3.7,36˚.87N×141˚.80E, h40km±34km, mb3.4/8, mb1 3.7/10,mb1mx3.5/33,mbtmp3.6/10, ML3.8/2, MS2.7/2, Ms1 2.7/2,ms1mx2.4/26, Error ellipse: s-maj=30.7km s-min=15.9km az=88.0*

ISC 25 05:25:37.2±2.1,36˚.97N±0˚.05×141˚.90E±0˚.07, h4km±12km, n27,σ1°42/26,mb3.6/8, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.89**	**279**	P		**P**	**Pg**	**05 25 55.3**	**+1.1**
ONAJ				S		S	**Sg**	**05 26 05.1**	**-0.6**
JFK	**Kawauchi**	**0.91**	**296**	P		**P**	**Pg**	**05 25 55.6**	**+1.0**
JFK				*e*S		**Sg**		**05 26 06.1**	**-0.2**
JHO	**Hitachi**	**1.12**	**252**	P		**P**	**Pg**	**05 25 58.5**	**-0.2**
JHO				*e*S		**Sg**		**05 26 11.0**	**-2.2**
JMM	**Marumori**	**1.25**	**316**	P		**Pn**		**05 26 01.1**	**-0.4**
JFT	**Otama**	**1.36**	**294**	P		**Pn**		**05 26 03.2**	**+0.2**
JFT				S		**Sb**		**05 26 18.6**	**-2.4**
JIO	**Ouri**	**1.54**	**344**	P		**Pn**		**05 26 05.6**	**+0.1**
JIO				*e*S		**Sn**		**05 26 22.9**	**-3.1**
MJAR	**Matsushiro Arr**	**2.99**	**263**	P		**Pn**		**05 26 26.5**	**+1.1**
	8.7nm,0.3s,baz=90,slow=15,SNR=30								
MJAR				S		**Sn**		**05 27 03.2**	**+1.5**
	5.8nm,0.3s,baz=101,slow=13,SNR=6.6								
MAT	**Matsushiro**	**2.99**	**263**	P		**Pn**		**05 26 27.5**	**+2.1**
MAT				S		**Sn**		**05 27 03.2**	**+1.4**
JHJ	**Hachijo jima 2**	**4.21**	**205**	P		**Pn**		**05 26 42.6**	**+0.4**
	22nm,0.3s,baz=250,slow=19,SNR=4.7								
JHJ				S		**Sn**		**05 27 29.0**	**-2.9**
	51nm,0.3s,baz=68,slow=23,SNR=7.2								
JNU	**Nakatsue**	**9.81**	**250**	LR		LR		05 31 49.8	
	comp=Z,38nm,19.1s,baz=115,slow=38								
USRK	**Ussuriysk Ar.**	**10.43**	**317**	P		Pn		05 28 12.4	+4.9
	0.3nm,0.3s,baz=137,slow=14,SNR=4.8								
KSRS	**Korea Array**	**11.15**	**277**	LR		LR		05 32 58.5	
	comp=Z,42nm,18.0s,baz=10.0,slow=39								
H11N2	**WAKE ISLAND Hy**	**27.78**	**121**	T		T		06 01 06.9	
	baz=310,slow=75,SNR=204								
H11N1	**WAKE ISLAND Hy**	**27.79**	**121**	T		T		06 01 04.9	
	baz=310,slow=75,SNR=227								
H11N3	**WAKE ISLAND Hy**	**27.80**	**121**	T		T		06 01 04.9	
	baz=310,slow=75,SNR=197								
H11S1	**WAKE ISLAND Hy**	**28.50**	**123**	T		T		06 01 57.6	
	baz=312,slow=76,SNR=842								
H11S3	**WAKE ISLAND Hy**	**28.50**	**123**	T		T		06 01 57.1	
	baz=312,slow=76,SNR=599								
H11S2	**WAKE ISLAND Hy**	**28.52**	**123**	T		T		06 01 57.6	
	baz=312,slow=76,SNR=388								
ZALV	**Zalesovo Beam**	**42.24**	**312**	P		**P**		**05 33 31.6**	**+0.3**
	0.6nm,0.5s,baz=81,slow=8.9,SNR=3.3								
MKAR	**Makanchi Array**	**44.48**	**302**	P		**P**		**05 33 49.3**	**-0.2**
	0.3nm,0.3s,baz=81,slow=8.7,SNR=4.8								
ILAR	**Eielson Array**	**49.34**	**32**	P		**P**		**05 34 28.2**	**+0.9**
	0.6nm,0.7s,baz=254,slow=5.1,SNR=5.5								
WRA	**Warramunga Arr**	**57.05**	**188**	P		**P**		**05 35 23.4**	**-1.1**
	0.6nm,0.5s,baz=6.4,slow=7.4,SNR=16								
ASAR	**Alice Springs**	**60.78**	**189**	P		**P**		**05 35 50.3**	**0.0**
	0.3nm,0.6s,baz=14,slow=8.1,SNR=5.1								
YKA	**Yellowknife Ar**	**63.67**	**30**	P		**P**		**05 36 10.0**	**+0.8**
	0.2nm,0.8s,baz=305,slow=7.2,SNR=4.9								
NB2	**NORSAR Subarra**	**74.39**	**337**	P		**P**		**05 37 16.1**	**+0.1**
	comp=Z,0.4nm,0.6s,baz=39,slow=6.2								
NOA	**NORSAR Array B**	**74.39**	**337**	P		**P**		**05 37 16.1**	**+0.1**
	comp=Z,0.5nm,0.6s,baz=38,slow=5.9,SNR=3.8								
TXAR	**Lajitas Array**	**89.85**	**53**	P		**P**		**05 38 38.1**	**+0.4**
	comp=Z,0.3nm,0.8s,baz=293,slow=3.0,SNR=4.1								

NIED ***25*** *05:26:00.35˚.50N×141˚.10E,h17km,Mw3.6 Best double couple: M₀2.57000×10¹⁴ NP1:φ₈=98.00000°,δ54.00000°, λ-138.00000°. NP2:φ₈=340.00000°,δ57.00000°, λ-44.00000°.*

JMA 25 05:26:20.1±0.1,35˚.46N×140˚.98E, h19km±2km, M3.7,2C, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.26**	**338**	⇑P		Pb		05 26 26.0	-0.1
CHOJ				S		Sg		05 26 30.3	+0.1
KTR	**Katsuura**	**0.63**	**240**	P		Pb		05 26 32.0	-0.3
KTR				S		Sg		05 26 40.9	0.0
JCN	**Nagara**	**0.64**	**266**	P		Pg		05 26 33.0	+0.3
BSO4	**Boso 4**	**0.70**	**228**	P		Pg		05 26 34.2	+0.2
BSO3	**Boso 3**	**0.76**	**211**	⇑P		Pb		05 26 34.5	-0.1
BSO1	**Boso 1**	**0.81**	**180**	P		Pb		05 26 34.4	-0.7
JYT	**Yasato**	**1.00**	**320**	S		Sb		05 26 51.1	-0.4

WEL 25 05:27:30.1±0.2,37˚.23S×176˚.28E, h216km±2km, ML3.7/12, 9C-4D, Error ellipse: s-maj=3.8km s-min=3.7km az=90.0, North Island

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
URZ	**Urewera**	**1.23**	**148**	⇑P	N	Pn		05 28 03.1	+0.1
URZ					S	S		05 28 28.6	-0.1
MWZ	**Matawai**	**1.48**	**138**	P	N	Pn		05 28 04.9	-0.2
MWZ					S	S		05 28 32.2	-0.1
RAGZ	**Rawiri**	**1.56**	**145**	P	N	Pn		05 28 06.0	+0.2
TWGZ	**Tauwhareparae**	**1.65**	**126**	P	N	Pn		05 28 06.8	+0.3
TWGZ					S	S		05 28 34.7	-0.2
TKGZ	**Te Karaka**	**1.74**	**135**	⇓P	N	Pn		05 28 07.2	-0.1
SNGZ	**Shannon Statio**	**1.77**	**152**	P	N	Pn		05 28 07.6	0.0
WMGZ	**Waiomatatini S**	**1.80**	**110**	P	N	Pn		05 28 07.9	0.0
WMGZ					S	S		05 28 36.3	-0.8
RAHZ	**Arahi**	**1.80**	**160**	P	N	Pn		05 28 07.9	+0.2
RAHZ					S	S		05 28 37.0	-0.3
RIGZ	**Rimuhau**	**1.89**	**142**	⇑P	N	Pn		05 28 08.7	0.0
RIGZ					S	S		05 28 37.7	-1.1
NMHZ	**Naumai**	**1.91**	**168**	P	N	Pn		05 28 09.5	+0.5
BKZ	**Black Stump Fm**	**1.94**	**175**	P	N	Pn		05 28 08.8	-0.5
BKZ					S	S		05 28 38.1	-1.7
CNGZ	**Carnagh Statio**	**1.98**	**130**	P	N	Pn		05 28 09.6	0.0
WHHZ	**Waihua**	**2.00**	**158**	⇑P	N	Pn		05 28 09.6	-0.2
KNZ	**Kokohu**	**2.10**	**149**	⇑P	N	Pn		05 28 10.0	-0.8
KNZ					S	S		05 28 39.8	-2.6
ARHZ	**Aropaoanui**	**2.11**	**165**	⇑P	N	Pn		05 28 10.7	-0.2
PRGZ	**Parītu Road**	**2.12**	**144**	P	N	Pn		05 28 10.5	-0.5
WNVZ	**Wahianoa**	**2.16**	**194**	⇓P	N	Pn		05 28 11.8	+0.2
KWHZ	**Kaweka Forest**	**2.20**	**177**	⇑P	N	Pn		05 28 11.7	-0.2
MOVZ	**Moawhango**	**2.21**	**191**	P	N	Pn		05 28 11.7	-0.3
MCHZ	**McNeill Hill**	**2.24**	**172**	⇑P	N	Pn		05 28 12.0	-0.2
BHHZ	**Black Hill Sta**	**2.27**	**184**	⇑P	N	Pn		05 28 12.1	-0.4
MHGZ	**Mahia Peninsul**	**2.31**	**147**	P	N	Pn		05 28 12.0	-1.0
KRHZ	**Kereru**	**2.41**	**178**	P	N	Pn		05 28 13.2	-0.9
CKHZ	**Cape Kidnapper**	**2.51**	**166**	⇓P	N	Pn		05 28 14.0	-1.1
KAHZ	**Kahuranaki**	**2.61**	**170**	P	N	Pn		05 28 15.0	-1.2
PNHZ	**Pukenui**	**2.68**	**181**	P	N	Pn		05 28 15.7	-1.3
PXZ	**Pawanui**	**2.84**	**171**	⇓P	N	Pn		05 28 16.9	-1.7
PXZ					S	S		05 28 52.7	-3.9
TSZ	**Takapari Road**	**2.84**	**185**	⇑P	N	Pn		05 28 17.2	-1.5
PRHZ	**Porangahau**	**3.05**	**175**	P	N	Pn		05 28 19.1	-2.0
DVHZ	**Dannevirke**	**3.07**	**182**	P	N	Pn		05 28 19.3	-2.0
ANWZ	**Angora Road**	**3.23**	**177**	P	N	Pn		05 28 21.2	-2.0
BFZ	**Birch Farm**	**3.45**	**180**	P	N	Pn		05 28 23.2	-2.6
BFZ					S	S		05 29 03.5	-5.9
TIWZ	**Tintock**	**3.56**	**185**	AML	AML	AML		05 29 07.3	
TIWZ				AML	AML	AML		05 29 22.8	
OGWZ	**Otaki Gorge**	**3.69**	**193**	P	N	Pn		05 28 26.0	-2.6
OGWZ					S	S		05 29 08.7	-5.7
HOWZ	**Holdsworth Sta**	**3.71**	**189**		S	S		05 29 08.6	-6.4
KIW	**Kapiti Island**	**3.78**	**196**	P	N	Pn		05 28 27.1	-2.7
TMWZ	**Te Maipa**	**3.89**	**184**		S	S		05 29 13.1	-5.8
MTW	**Mount Morrison**	**3.97**	**188**	P	N	Pn		05 28 28.4	-3.6
CAW	**Cannon Point**	**3.99**	**193**	P	N	Pn		05 28 29.3	-2.9
DUWZ	**D'Urville Isla**	**4.01**	**206**	P	N	Pn		05 28 30.3	-2.3
MSWZ	**Moikau Station**	**4.26**	**190**	AML	AML	AML		05 29 36.1	
TCW	**Tory Channel**	**4.27**	**201**	P	N	Pn		05 28 33.0	-2.7
TUWZ	**Tuamarina**	**4.57**	**203**	P	N	Pn		05 28 36.6	-2.8
NNZ	**Nelson**	**4.58**	**209**	*e*P	N	Pn		05 28 36.7	-2.8
THZ	**Tophouse**	**5.23**	**209**	P	N	Pn		05 28 45.4	-2.4
INZ	**Inchbonnie**	**6.63**	**213**	*e*P	N	Pn		05 29 01.7	-3.8
MQZ	**McQueen's Vall**	**7.04**	**202**	SN		S		05 30 19.4	-12

MEX 25 05:34:32.2±0.8,15˚.57N×97˚.98W, h16km±22km, MD3.6, Near coast of Oaxaca

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
PNIG	**Pinotepa**	**0.83**	**350**	*e*P		Pb		05 34 45.4	-2.9
PNIG				*e*S		Sb		05 34 55.0	-4.3
HUIG	**Huatulco**	**1.81**	**83**	*e*P		Pn		05 34 59.5	-3.3
HUIG				*i* S		Sn		05 35 20.0	-5.5
VHO	**Vista Hermosa**	**1.92**	**38**	*e*P		Pn		05 35 01.9	-2.5
VHO				*e*S		Sn		05 35 24.3	-4.0

JMA 25 05:36:05.2±0.3,37˚.93N×144˚.22E, h31km, M3.6, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**2.31**	**301**	P		Pn		05 36 42.4	+1.3
JIO	**Ouri**	**2.32**	**284**	P		Pn		05 36 42.6	+1.3
JIO				S		Sn		05 37 10.3	+1.6
JMK	**Ichinoseki**	**2.57**	**294**	P		Pn		05 36 48.5	+1.9
JMK				*e*S		Sn		05 37 17.6	+2.8
JMM	**Marumori**	**2.71**	**270**	P		Pn		05 36 48.5	+1.9
JMM				S		Sn		05 37 19.9	+1.5
JFK	**Kawauchi**	**2.71**	**259**	P		Pn		05 36 47.4	+0.7
JFK				S		Sn		05 37 19.4	+0.9
JTH	**Tanohata**	**2.72**	**318**	P		Pn		05 36 48.0	+1.3
JOM	**Ohasama**	**2.76**	**305**	P		Pn		05 36 49.1	+1.8
JOM				S		Sn		05 37 22.2	+2.6
JOU	**Okura**	**2.84**	**280**	P		Pn		05 36 50.8	+2.4
JOU				*e*S		Sn		05 37 24.1	+2.6
JRG	**Rokugo**	**3.17**	**299**	*e*S		Sn		05 37 32.3	+2.7
JYK	**Kaneyama**	**3.19**	**289**	P		Pn		05 36 56.1	+2.9
JYK				*e*S		Sn		05 37 33.2	+3.1
JANG	**Nango**	**3.22**	**320**	P		Pn		05 36 55.6	+2.0
JANG				*e*S		Sn		05 37 30.5	-0.4
JTM	**Tenmabayashi**	**3.76**	**320**	S		Sn		05 37 44.1	0.0

KRSC 25 05:38:16.0±2.9,49˚.40N×157˚.03E, h6km±3km, ML3.9, East of Kuril Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
SKR	**Severo-Kuril's**	**1.41**	**336**	P		Pn		05 38 39.4	-2.8
SKR				S		Sb		05 39 59.2	-1.8
ASAK	**Asacha**	**3.04**	**10**	P		Pb		05 39 07.6	-2.9
RUS	**Russkaya**	**3.18**	**17**	P		Pn		05 39 09.2	+2.7
RUS				S		Sb		05 39 49.4	-2.4
KRMR	**Karymshinskiy**	**3.50**	**11**	P		Pn		05 39 14.4	+3.4
DALK	**Dalny**	**3.79**	**16**	P		Pn		05 39 18.7	+3.8
UGLR	**Uglovaya**	**3.98**	**16**	P		Pn		05 39 21.8	+4.2
AVH	**Avacha**	**4.01**	**15**	P		Pb		05 39 23.2	-4.0
SMAR	**Somma**	**4.02**	**15**	P		Pb		05 39 23.4	-4.0
SDLR	**Sedlovina**	**4.05**	**16**	P		Pn		05 39 22.3	+3.7
KRER	**Koryakskii**	**4.05**	**15**	P		Pn		05 39 22.7	+4.0
KRX	**Arik**	**4.09**	**14**	P		Pn		05 39 23.5	+4.3
GNL	**Ganaly**	**4.34**	**7**	P		Pn		05 39 26.3	+3.7
MKZ	**Mys Kozlova**	**5.92**	**28**	P		Pn		05 39 47.1	+3.0

JMA 25 05:39:51.0±0.2,38˚.05N×144˚.52E, h24km, M4.1, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**2.46**	**296**	P		Pn		05 40 31.1	+1.5
OFUJ				*e*S		Sn		05 41 00.5	+1.6
JIO	**Ouri**	**2.53**	**280**	P		Pn		05 40 31.8	+1.3
JIO				*e*S		Sn		05 41 01.7	+1.1
JMK	**Ichinoseki**	**2.74**	**290**	P		Pn		05 40 35.2	+1.7
JMK				*e*S		Sn		05 41 08.1	+2.3
JTH	**Tanohata**	**2.80**	**313**	P		Pn		05 40 35.6	+1.3
JTH				*e*S		Sn		05 41 07.9	+0.6
JOM	**Ohasama**	**2.90**	**300**	P		Pn		05 40 37.4	+1.8
JOM				*e*S		Sn		05 41 12.3	+2.6
JMM	**Marumori**	**2.95**	**268**	P		Pn		05 40 37.5	+1.1
JMM				S		Sn		05 41 11.9	+0.9
JFK	**Kawauchi**	**2.97**	**258**	*e*S		Sn		05 41 11.1	-0.5
JOU	**Okura**	**3.05**	**277**	P		Pn		05 40 40.0	+2.2
JOU				S		Sn		05 41 15.9	+2.3
JANG	**Nango**	**3.29**	**316**	P		Pn		05 40 42.8	+1.8
JRG	**Rokugo**	**3.32**	**295**	P		Pn		05 40 44.1	+2.6
JRG				S		Sn		05 41 23.4	+3.2
JFT	**Otama**	**3.36**	**262**	S		Sn		05 41 23.0	+2.0
JYK	**Kaneyama**	**3.38**	**286**	P		Pn		05 40 44.7	+2.5
JYK				S		Sn		05 41 24.7	+3.1
JTM	**Tenmabayashi**	**3.82**	**317**	P		Pn		05 40 49.5	+1.2
JTM				S		Sn		05 41 33.2	+0.7

IDC ***25*** *05:56:53.5±2.9,37˚.62N×142˚.83E, h0km, mb3.7/3, mb1 3.8/4,mb1mx3.4/37,mbtmp3.6/4,ML3.1/1,MS2.6/1, Ms1 2.6/1,ms1mx2.0/38, Error ellipse: s-maj=72.4km s-min=33.2km az=54.0*

JMA ***25*** *05:56:53.9±0.1,38˚.48N×142˚.30E, h30km±2km, M3.7*

ISCJB ***25*** *05:56:54.0±1.9,38˚.50N±0˚.05×142˚.3E±0˚.1, h14km, mb3.7/3, Error ellipse: s-maj=14.2km s-min=7.2km az=10.2*

ISC 25 05:56:52.7±1.8,38˚.52N±0˚.06×142˚.4E±0˚.1, h14km, n10, σ1°37/13, mb3.7/3, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**0.77**	**316**	P		**Pb**		**05 57 08.6**	**+0.7**
OFUJ				S		**Sb**		**05 57 18.8**	**+0.5**
JIO	**Ouri**	**0.79**	**265**	P		**Pb**		**05 57 08.0**	**-0.2**
JIO				S		**Sb**		**05 57 17.9**	**-0.9**
JMK	**Ichinoseki**	**0.98**	**296**	P		**Pb**		**05 57 11.5**	**0.0**
JOM	**Ohasama**	**1.26**	**319**	P		**Pn**		**05 57 16.0**	**+0.1**
JOM				S		**Sb**		**05 57 32.2**	**-0.1**
JOU	**Okura**	**1.33**	**264**	P		**Pn**		**05 57 16.2**	**-0.8**
JOU				S		**Sb**		**05 57 33.0**	**-1.5**
MJAR	**Matsushiro Arr**	**3.84**	**240**	Pn		**Pn**		**05 57 53.7**	**+2.3**
	1.4nm,0.3s,baz=73,slow=14,SNR=8.8								
MJAR				LR		LR		05 59 32.5	
	comp=Z,70nm,18.7s,baz=30,slow=42								
MAT	**Matsushiro**	**3.84**	**240**	P		**Pn**		**05 57 53.6**	**+2.1**
MAT				S		**Sn**		**05 58 37.8**	**+1.4**
MKAR	**Makanchi Array**	**43.98**	**301**	P		P		06 05 08.6	+9.2
	0.2nm,0.2s,baz=82,slow=8.8,SNR=3.7								
WRA	**Warramunga Arr**	**58.64**	**189**	P		P		06 06 45.7	-3.8
	0.8nm,0.6s,baz=6.2,slow=6.8,SNR=11								
ASAR	**Alice Springs**	**62.37**	**189**	P		**P**		**06 07 13.3**	**-1.6**
	0.4nm,0.7s,baz=13,slow=6.4,SNR=6.8								

SJA 25 06:06:45.8±0.7,30˚.43S×69˚.47W, h113km±5km, ML3.9, MW3.1, Chile-Argentina border region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
AMOG	**MOGNA**	**0.99**	**121**	*i* P		Pn		06 07 08.2	+1.0
AMOG				*i* S		Sn		06 07 24.3	+0.9
RTLL	**Cerro Villicun**	**1.25**	**137**	*i* P		Pn		06 07 10.5	+0.5
RTLL				*i* S		Sn		06 07 29.5	+1.2
AGUA	**GUANDACOL**	**1.27**	**43**	*i* P		Pn		06 07 11.3	+1.1
AGUA				*i* S		Sn		06 07 29.8	+1.1
SJA	**San Juan**	**1.35**	**145**	*i* P		Pn		06 07 11.8	+0.6
SJA				*i* S		Sn		06 07 31.4	+1.1
SJA				IAML				06 07 33.4	
	comp=Z,100nm,0.3s								
RTLS	**Leoncito**	**1.38**	**174**	*i* P		Pn		06 07 12.9	+1.2
RTLS				*i* S		Sn		06 07 32.9	+1.5
RTCV	**Cerro Valdivia**	**1.64**	**151**	*i* P		Pn		06 07 15.7	+1.2
RTCV				*i* S		Sn		06 07 37.6	+1.2
AVFE	**Valle Fertil**	**1.76**	**98**	*i* P		Pn		06 07 16.6	+0.6
AVFE				*i* S		Sn		06 07 40.0	+1.0
AUSP	**Uspallata**	**1.79**	**178**	*i* P		Pn		06 07 17.8	+1.1
AUSP				*i* S		Sn		06 07 41.7	+1.5
VCA	**Vinchina**	**2.01**	**34**	*i* P		Pn		06 07 20.6	+1.3
VCA				*i* S		Sn		06 07 46.0	+1.1
VCA				IAML				06 07 51.1	
	comp=Z,147nm,0.3s								
ASAL	**Salagasta**	**2.23**	**166**	*i* P		Pn		06 07 23.2	+1.3
ASAL				*i* S		Sn		06 07 50.5	+1.0
ARCO	**CERRO ARCO**	**2.45**	**169**	IAML				06 07 27.1	
	comp=Z,54nm,0.3s								
AAGR	**Agrelo**	**2.71**	**168**	*i* P		Pn		06 07 29.5	+1.3
AAGR				*i* S		Sn		06 08 02.3	+1.6

GUC ***25*** *06:10:54.5±0.3,37˚.46S×74˚.18W, h11km±6km, ML4.7*

ISCJB ***25*** *06:10:59.3±0.6,37˚.35S±

az=161.7
IDC ***25*** *06:11:31.8±2.2,29.˚56N×141.˚30E, h49km±24km, mb3.5/13, mb1 3.7/15, mb1mx3.6/33, mbtmp3.8/15, ML3.2/2, Error ellipse: s-maj=25.0km s-min=16.7km az=77.0*

ISC 25 06:11:30.6±0.6, 29.˚61N±0.˚09×141.˚3E±0.˚2, h35km, n20, σ1§04/18, mb3.7/13, Southeast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JCJ	**Chichijima**	**2.62**	**163**	P	**Pn**	**06 12 11.2**	**+0.9**
	16nm,0.3s,baz=270,slow=23,SNR=9.8						
JCJ				S	**Sn**	**06 12 41.5**	**+0.6**
	31nm,0.3s,baz=280,slow=22,SNR=6.6						
USRK	**Ussuriysk Ar.**	**16.35**	**336**	P	**Pn**	**06 15 20.1**	**+2.8**
	0.2nm,0.3s,baz=126,slow=15,SNR=3.9						
H11N2	**WAKE ISLAND Hy**	**25.20**	**107**	T	T	06 42 52.8	
	baz=297,slow=75,SNR=4.3						
H11N1	**WAKE ISLAND Hy**	**25.20**	**107**	T	T	06 42 58.8	
	baz=297,slow=75,SNR=4.4						
H11N3	**WAKE ISLAND Hy**	**25.21**	**107**	T	T	06 42 55.9	
	baz=297,slow=75,SNR=4.4						
WRA	**Warramunga Arr**	**49.72**	**189**	P	**P**	**06 20 18.4**	**-1.0**
	0.6nm,0.4s,baz=4.7,slow=7.5,SNR=9.4						
ASAR	**Alice Springs**	**53.44**	**188**	P	**P**	**06 20 46.8**	**-0.4**
	0.1nm,0.4s,baz=359,slow=5.5,SNR=4.9						
BVAR	**Borovoye Array**	**55.69**	**316**	P	**P**	**06 21 03.1**	**-0.2**
	0.9nm,0.5s,baz=119,slow=8.6,SNR=4.6						
ILAR	**Eielson Array**	**55.90**	**29**	P	**P**	**06 21 03.2**	**-1.4**
	0.4nm,0.8s,baz=256,slow=6.4,SNR=3.7						
YKA	**Yellowknife Ar**	**70.31**	**29**	P	**P**	**06 22 40.3**	**+0.2**
	0.1nm,0.7s,baz=297,slow=6.5,SNR=4.5						
ARCES	**ARCESS Array B**	**70.93**	**340**	P	**P**	**06 22 43.5**	**-0.3**
	1.5nm,0.6s,baz=62,slow=8.4,SNR=7.9						
FINES	**FINESS Array B**	**75.36**	**333**	P	**P**	**06 23 10.2**	**0.0**
	0.8nm,0.5s,baz=67,slow=6.3,SNR=15						
KBZ	**Khabaz**	**75.75**	**312**	P	**P**	**06 23 12.1**	**-0.6**
	0.6nm,0.5s,baz=86,slow=5.7,SNR=4.9						
NVAR	**Mina Array Bea**	**79.58**	**52**	P	**P**	**06 23 35.3**	**+0.9**
	0.3nm,0.5s,baz=298,slow=5.7,SNR=2.9						
AKASG	**Malin Array Be**	**80.15**	**323**	P	**P**	**06 23 36.7**	**-0.4**
	0.2nm,0.3s,baz=51,slow=5.5,SNR=2.8						
NOA	**NORSAR Array B**	**81.00**	**338**	P	**P**	**06 23 40.9**	**-0.6**
	0.6nm,0.7s,baz=45,slow=5.0,SNR=3.5						
BRTR	**Keskin Array B**	**83.74**	**312**	P	**P**	**06 23 56.8**	**+0.5**
	3.2nm,0.7s,baz=103,slow=3.9,SNR=21						
TXAR	**Lajitas Array**	**94.71**	**53**	P	**P**	**06 24 49.1**	**+0.4**
	0.2nm,0.7s,baz=256,slow=2.7,SNR=3.0						
TORD	**Torodi Ar. Bea**	**122.35**	**312**	PKP	**PKPdf**	**06 30 22.1**	**-0.7**
	0.3nm,0.7s,baz=173,slow=1.5,SNR=3.2						
LPAZ	**La Paz**	**149.92**	**70**	PKPbc	**PKPbc**	**06 31 17.4**	**-1.1**
	0.3nm,0.4s,baz=0.0,slow=3.0,SNR=3.1						

JMA 25 06:11:40.8±0.1, 37.˚38N×141.˚33E, h34km±1km, M3.5, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JFK	**Kawauchi**	**0.36**	**268**	P	Pb	06 11 49.2	-0.3
JFK				S	Sn	06 11 55.0	-0.4
ONAJ	**Iwakimizuishiy**	**0.51**	**237**	P	Pb	06 11 51.2	-0.4
ONAJ				S	Sb	06 11 58.4	-0.6
JMM	**Marumori**	**0.65**	**319**	P	Pn	06 11 53.2	-0.3
JMM				*e*S	Sn	06 12 02.0	-0.5
JFT	**Otama**	**0.80**	**280**	P	Pb	06 11 56.3	-0.1
JFT				S	Sb	06 12 07.0	0.0
JHO	**Hitachi**	**0.98**	**219**	P	Pn	06 11 57.4	-0.7
JIO	**Ouri**	**1.07**	**1**	P	Pn	06 11 59.3	-0.1
JIO				S	Sn	06 12 12.3	-0.8
JOU	**Okura**	**1.12**	**332**	P	Pn	06 12 00.6	+0.5
JOU				S	Sb	06 12 15.2	-0.7
MAT	**Matsushiro**	**2.64**	**252**	P	Pn	06 12 24.1	+3.1
MAT				S	Sb	06 12 55.8	-3.6

ISCJB ***25*** *06:24:18.7±0.6, 40.˚26N×0.˚05×28.˚92E±0.˚03, h3km±7km, Error ellipse: s-maj=8.0km s-min=3.7km az=17.1*
CSEM ***25*** *06:24:18.3±0.4, 40.˚27N×28.˚97E, h8km, MD2.5, Error ellipse: s-maj=7.5km s-min=3.8km az=40.0*
DDA ***25*** *06:24:18.0, 40.˚26N×28.˚91E, h7km, Md2.5*
ISK ***25*** *06:24:19.7, 40.˚30N×28.˚84E, h18km, MD2.6*

ISC 25 06:24:18.4±1.1, 40.˚26N±0.˚04×28.˚89E±0.˚04, h7km±10km, n21, σ0§40/37, Turkey

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
ULDT	**Uludag**	**0.22**	**123**	*i*P	**Pg**	**06 24 23.0**	**+0.1**
ULDT				*i*S	**Sg**	**06 24 25.9**	**0.0**
ULDT	**Uludag**	**0.22**	**123**	P	**Pg**	**06 24 23.0**	**+0.1**
IGD	**Bursa**	**0.24**	**89**	*i*P	**Pg**	**06 24 23.0**	**-0.1**
IGD				*i*S	**Sg**	**06 24 26.1**	**-0.1**
KCTX	**Karacabey (Bur**	**0.41**	**271**	*e*PG	**Pb**	**06 24 28.1**	**+0.2**
KCTX				*e*SG	**Sb**	**06 24 34.2**	**-0.2**
KCTX	**Karacabey (Bur**	**0.41**	**271**	*e*Pg	**Pb**	**06 24 28.1**	**+0.2**
KCTX				*e*Sg	**Sb**	**06 24 34.2**	**-0.2**
DURS	**Dursunbey**	**0.73**	**206**	*i*P	**Pg**	**06 24 32.2**	**-0.3**
DURS				*i*S	**Sg**	**06 24 42.1**	**+0.1**
DURS	**Dursunbey**	**0.73**	**206**	P	**Pg**	**06 24 32.2**	**-0.3**
DURS				S	**Sg**	**06 24 42.1**	**+0.1**
EDC	**Edincik**	**0.79**	**276**	*e*PG	**Pb**	**06 24 34.8**	**+0.4**
EDC				*e*SG	**Sb**	**06 24 45.8**	**+0.5**
EDC	**Edincik**	**0.79**	**276**	*e*Pg	**Pb**	**06 24 34.8**	**+0.4**
EDC				*e*Sg	**Sb**	**06 24 45.8**	**+0.5**
GONE	**Gonen-Balikesi**	**0.95**	**257**	*e*PG	**Pn**	**06 24 37.9**	**-0.1**
GONE				*e*SG	**Sn**	**06 24 51.2**	**-0.6**
GONE	**Gonen-Balikesi**	**0.95**	**257**	*e*Pg	**Pn**	**06 24 37.9**	**-0.1**
GONE				*e*Sg	**Sn**	**06 24 51.2**	**-0.6**
BALB	**Balikesir**	**0.99**	**232**	*e*PG	**Pn**	**06 24 39.2**	**+0.5**
BALB	**Balikesir**	**0.99**	**232**	*e*Pg	**Pn**	**06 24 39.2**	**+0.5**
MRMT	**Marmara Adasi**	**1.05**	**289**	*e*PG	**Pn**	**06 24 39.4**	**-0.1**
MRMT				*e*SG	**Sn**	**06 24 53.9**	**-0.4**
MRMT	**Marmara Adasi**	**1.05**	**289**	*e*Pg	**Pn**	**06 24 39.4**	**-0.1**
MRMT				*e*Sg	**Sn**	**06 24 53.9**	**-0.4**
DEMI	**Demirci**	**1.23**	**186**	*i*P	**Pb**	**06 24 41.2**	**-0.7**
DEMI				*i*S	**Sn**	**06 24 59.6**	**+0.8**
DEMI	**Demirci**	**1.23**	**186**	P	**Pb**	**06 24 41.2**	**-0.7**
DEMI				S	**Sn**	**06 24 59.6**	**+0.8**
GDZ	**Gediz**	**1.26**	**159**	*i*P	**Pg**	**06 24 42.6**	**+0.1**
GDZ				*i*S	**Sn**	**06 24 59.4**	**-0.2**
GDZ	**Gediz**	**1.26**	**159**	P	**Pg**	**06 24 42.6**	**+0.1**
GDZ				S	**Sn**	**06 24 59.4**	**-0.2**
RKY	**Sarkoy-Tekirda**	**1.37**	**289**	*e*PN	**Pn**	**06 24 44.0**	**0.0**
RKY	**Sarkoy-Tekirda**	**1.37**	**289**	*e*Pn	**Pn**	**06 24 44.0**	**0.0**

SOME ***25*** *06:27:50.0, 44.˚72N×82.˚15E, h15km*
ISCJB ***25*** *06:27:52.0±1.1, 44.˚74N±0.˚05×82.˚2E±0.˚1, h10km, Error ellipse: s-maj=12.4km s-min=4.6km az=28.2*
NNC ***25*** *06:27:52.1±1.2, 44.˚81N×81.˚98E, h0km, mb3.3, mpv2.8, Error ellipse: s-maj=19.8km s-min=2.9km az=115.0*

ISC 25 06:27:49.9±1.7, 44.˚75N±0.˚05×82.˚12E±0.˚08, h10km, n12, σ1§31/24, 4C-5D, Northern Xinjiang

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
DJR	**Jarkent**	**1.71**	**257**	*e*P	**Pb**	**06 28 21.5**	**0.0**
	17nm,0.2s						
DJR				*e*S	**Sb**	**06 28 43.9**	**+0.7**
	19nm,0.3s						
KTMS	**Ketmen**	**1.82**	**225**	*e*P	**Pb**	**06 28 23.4**	**0.0**
	5.9nm,0.2s						
KTMS				*e*S	**Sb**	**06 28 47.1**	**+0.9**
	54nm,0.4s						
KAPS	**Kapalarasan**	**2.03**	**286**	⇑*i*P	**Pb**	**06 28 26.9**	**0.0**
	7.2nm,0.4s						
KAPS				⇑*i*S	**Sb**	**06 28 52.9**	**+0.7**
	18nm,0.2s						
MK31	**Makanchi Array**	**2.05**	**3**	⇑P	**Pb**	**06 28 27.3**	**0.0**
	4.2nm,0.4s,baz=187,slow=18,SNR=54						
MK31				⇓S	**Sb**	**06 28 54.1**	**+1.3**
	2.1nm,0.2s,baz=32,slow=26,SNR=17						
MAKZ	**Makanchi**	**2.06**	**357**	⇓P	**Pb**	**06 28 27.0**	**-0.5**
	2.7nm,0.4s						
MAKZ				⇓S	**Sb**	**06 28 53.6**	**+0.4**
	6.4nm,0.6s						
SHLS	**Shalkode**	**2.26**	**226**	*e*P	**Pb**	**06 28 30.8**	**-0.2**
	13nm,0.2s						
SHLS				⇑*i*S	**Sb**	**06 29 00.7**	**+1.6**
	31nm,0.4s						
PDGK	**Podgornoye**	**2.37**	**234**	⇓P	**Pb**	**06 28 31.5**	**-1.1**
	3.8nm,0.5s						
PDGK				⇓S	**Sb**	**06 29 02.7**	**+0.8**
	17nm,0.5s						
MNBS	**Baschi**	**2.75**	**257**	*e*P	**Pb**	**06 28 38.1**	**-1.0**
	5.3nm,0.2s						
MNBS				*e*S	**Sb**	**06 29 12.5**	**-0.3**
	22nm,0.6s						
UZB	**Uzynbulak**	**2.75**	**236**	*e*P	**Pb**	**06 28 38.6**	**-0.6**
	2.2nm,0.2s						
UZB				*e*S	**Sb**	**06 29 14.3**	**+1.3**
	5.4nm,0.2s						
ARXS	**Arharly**	**3.12**	**262**	*e*P	**Pb**	**06 28 45.2**	**-0.2**
	5.0nm,0.4s						
ARXS				*e*S	**Sb**	**06 29 24.8**	**+1.3**
	10nm,0.3s						
CHKK	**Chushkaly**	**3.78**	**258**	*e*P	**Pb**	**06 28 57.0**	**+0.4**
	3.1nm,0.6s						
CHKK				*e*S	**Sb**	**06 29 45.2**	**+2.7**
	8.1nm,0.3s						
KTBS	**Karatobe**	**4.04**	**257**	*e*P	**Pb**	**06 29 03.7**	**+2.5**
KTBS				*e*S	**Sg**	**06 29 56.6**	**-3.0**

JMA 25 06:34:26.9±0.1, 36.˚30N×140.˚93E, h38km±1km, M3.0, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JHO	**Hitachi**	**0.42**	**317**	P	Pn	06 34 36.3	-0.1
JHO				*e*S	Sn	06 34 43.1	-0.2
JYT	**Yasato**	**0.60**	**263**	P	Pn	06 34 39.0	0.0
JYT				S	Sn	06 34 47.1	-0.4
ONAJ	**Iwakimizuishiy**	**0.81**	**353**	P	Pn	06 34 41.5	-0.3
ONAJ				S	Sn	06 34 51.7	-1.0
JFK	**Kawauchi**	**1.06**	**358**	P	Pn	06 34 44.9	-0.4
JFK				S	Sn	06 34 57.4	-1.5
MAT	**Matsushiro**	**2.21**	**277**	P	Pn	06 35 03.3	+2.3
MAT				S	Sn	06 35 29.7	+2.6

GUC ***25*** *06:35:16.7±0.5, 37.˚10S×74.˚75W, h21km±38km, ML4.0*
IDC ***25*** *06:35:32.2±5.2, 37.˚19S×73.˚12W, h35km±39km, mb3.7/5, mb1 3.9/7, mb1mx3.7/21, mbtmp3.8/7, ML3.7/2, MS3.6/4, Ms1 3.5/4, ms1mx3.1/30, Error ellipse: s-maj=45.7km s-min=22.2km az=79.0*

ISC 25 06:35:29.1±1.0, 37.˚26S±0.˚06×73.˚5W±0.˚1, h23km, n15, σ1§85/16, mb3.9/5, Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
COCH	**Cobquecura**	**1.26**	**27**	*i*P	**Pn**	**06 35 48.1**	**-3.2**
COCH				*i*S	**Sb**	**06 36 11.5**	**+3.5**
COCH				IAML		06 36 23.3	
	comp=E,2μm,0.9s						
CCHI	**Chillan**	**1.31**	**60**	*i*P	**Pb**	**06 35 53.9**	**+0.8**
CCHI				*i*S	Sb	06 36 22.0	+13
PSCH	**Puerto Saavedr**	**1.54**	**177**	*i*P	Pn	06 35 50.4	-4.8
PSCH				*i*S	**Sb**	**06 36 16.5**	**+0.6**
PLCA	**Paso Flores**	**4.16**	**147**	Pn	**Pn**	**06 36 31.1**	**-0.1**
	comp=E,0.9nm,0.3s,baz=331,slow=14,SNR=19						
PLCA				Lg	Lg	06 37 42.2	
	comp=E,4.4nm,0.3s,baz=251,slow=21,SNR=6.4						
PLCA				LR	LR	06 37 50.9	
	comp=E,133nm,20.7s,baz=340,slow=34						
CPUP	**Villa Florida**	**17.51**	**56**	P	**Pn**	**06 39 29.4**	**-2.4**
	comp=E,0.1nm,0.3s,baz=256,slow=12,SNR=2.0						
CPUP				LR	LR	06 47 27.3	
	comp=E,122nm,19.7s,baz=235,slow=42						
USHA	**Ushuaia**	**17.91**	**170**	LR	LR	06 47 42.6	
	comp=E,2μm,18.9s,baz=70,slow=41						
LPAZ	**La Paz**	**21.42**	**14**	P	**P**	**06 40 16.8**	**+0.6**
	comp=E,2.8nm,1.0s,baz=188,slow=7.5,SNR=8.6						
SIV	**San Ignacio**	**23.87**	**31**	P	**P**	**06 40 41.0**	**0.0**
	comp=E,1.4nm,0.6s,baz=212,slow=4.1,SNR=2.5						
SIV				LR	LR	06 52 01.3	
	comp=E,167nm,19.7s,baz=194,slow=42						
VNA3	**Neumayer Olymp**	**46.82**	**157**	P	**P**	**06 43 55.1**	**-1.5**
VNA2	**Neumayer--Watz**	**47.50**	**156**	P	**P**	**06 44 00.7**	**-1.2**
	baz=277,slow=8.4						
TXAR	**Lajitas Array**	**72.03**	**333**	P	**P**	**06 46 53.3**	**+2.1**
	comp=E,1.3nm,1.0s,baz=152,slow=8.2,SNR=7.9						
BOSA	**Boshof**	**79.60**	**118**	P	**P**	**06 47 36.5**	**+1.7**
	comp=E,2.3nm,0.9s,baz=233,slow=10,SNR=3.4						
TORD	**Torodi Ar. Bea**	**86.42**	**71**	P	**P**	**06 48 09.4**	**-0.6**
	comp=E,0.7nm,0.7s,baz=210,slow=3.3,SNR=3.9						
BVAR	**Borovoye Array**	**150.43**	**46**	PKPbc	**PKPbc**	**06 55 17.6**	**-0.5**
	comp=E,0.7nm,0.6s,baz=290,slow=5.7,SNR=3.6						
BVAR				PKPab	**PKPab**	**06 55 23.4**	**-1.3**
	comp=E,1.0nm,0.6s,baz=321,slow=2.1,SNR=5.5						
CD2	**Chengdu**	**173.27**	**159**	PKP	**PKPdf**	**06 55 37.8**	**+1.2**

IDC ***25*** *06:37:57.8±5.0, 30.˚49N×70.˚13E, h0km, mb3.5/3, mb1 3.5/4, mb1mx3.2/52, mbtmp3.4/4, ML3.2/1, MS2.8/1, Ms1 2.8/1, ms1mx2.4/30, Error ellipse: s-maj=132.3km s-min=79.0km az=121.0*

ISC 25 06:37:58.5±1.4, 30.˚5N±0.˚1×69.˚9E±0.˚1, h10km, n7, σ1§10/7, mb3.3/3, 1D, Pakistan

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
THN	**Thein Dam**	**5.35**	**67**	*e*P	**Pn**	**06 39 19.2**	**+0.8**
THN				*e*S	**Sn**	**06 40 19.8**	**-0.3**
POO	**Poona**	**12.41**	**162**	*ex*	**Pn**	**06 40 55.0**	**-0.4**
MKAR	**Makanchi Array**	**18.93**	**27**	P	**Pn**	**06 42 18.2**	**-1.8**
	0.1nm,0.3s,baz=210,slow=10,SNR=3.0						
MKAR				LR	LR	06 50 13.6	
	comp=Z,27nm,18.6s,baz=130,slow=39						
AKTO	**Aktyubinsk**	**21.85**	**339**	⇓S	Sn	06 47 04.7	+2.5
	1.4nm,0.8s						
BVAR	**Borovoye Array**	**22.55**	**1**	P	**P**	**06 42 58.7**	**+0.1**
	0.4nm,0.4s,baz=177,slow=13,SNR=4.6						
ZALV	**Zalesovo Beam**	**25.84**	**20**	P	**P**	**06 43 30.4**	**+0.6**
	1.0nm,0.4s,baz=214,slow=9.5,SNR=3.5						
YKA	**Yellowknife Ar**	**87.30**	**2**	P	**P**	**06 50 45.7**	**+0.6**
	0.1nm,0.6s,baz=346,slow=5.1,SNR=4.7						

NIED ***25*** *06:41:00, 36.˚80N×141.˚70E, h23km, Mw4.6 Best double couple: M0 8.26000×10^15 NP1:Φ=209.00000°, δ=17.00000°, λ=97.00000°. NP2:Φ=22.00000°, δ=73.00000°, λ=88.00000°.*
JMA ***25*** *06:41:23.5±0.2, 36.˚76N×141.˚69E, h47km±3km, M4.5*
JMA Felt II J1.
BJI ***25*** *06:41:23.2, 36.˚81N×141.˚70E, h43km, mb4.7/62, mB4.9/39, Ms4.4/41, Ms7 4.2/36*
ISCJB ***25*** *06:41:23.4±0.5, 36.˚75N±0.˚03×141.˚71E±0.˚03, h36km±3km, mb4.6/116, MS4.0/30, Error ellipse: s-maj=5.2km s-min=3.6km az=43.6*
MOS ***25*** *06:41:24.0±0.9, 36.˚84N×141.˚62E, h38km, mb5.0/47, Error ellipse: s-maj=7.8km s-min=4.3km az=105.3*
IDC ***25*** *06:41:25.6±1.9, 36.˚75N×141.˚72E, h42km±16km, mb4.3/29, mb1 4.4/34, mb1mx4.3/50, mbtmp4.5/34, ML4.1/5, MS3.9/24, Ms1 3.9/24, ms1mx3.7/47, Error ellipse: s-maj=13.1km s-min=10.0km az=116.0*
NEIC ***25*** *06:41:25.4±0.6, 36.˚74N×141.˚66E, h39km±5km, mb4.6/44, Error ellipse: s-maj=5.2km s-min=4.5km az=121.0*

ISC 25 06:41:23.1±0.7, 36.˚70N±0.˚04×141.˚81E±0.˚04, h26km±4km, n327, σ1§57/347, mb4.7/118, MS4.1/30, 24C-22D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.91**	**297**	P	**Pb**	**06 41 38.2**	**-2.1**
ONAJ				*e*S	**Sb**	**06 41 49.0**	**-3.0**
JFK	**Kawauchi**	**1.00**	**312**	P	**Pn**	**06 41 39.4**	**-2.1**
JHO	**Hitachi**	**1.00**	**265**	P	**Pn**	**06 41 39.7**	**-1.8**
JMM	**Marumori**	**1.42**	**325**	P	**Pn**	**06 41 45.7**	**-1.5**
JFT	**Otama**	**1.43**	**305**	P	**Pn**	**06 41 46.9**	**-0.5**
JIO	**Ouri**	**1.79**	**348**	P	**Pn**	**06 41 50.9**	**-1.4**
JIO				*e*S	**Sn**	**06 42 11.2**	**-2.9**
JFY	**Yanaizu**	**1.83**	**293**	P	**Pn**	**06 41 52.4**	**-0.5**
JOU	**Okura**	**1.90**	**332**	P	**Pn**	**06 41 53.7**	**-0.1**
JOU				*e*S	**Sn**	**06 42 15.3**	**-1.5**
JAG	**Ashikaga**	**1.92**	**262**	P	**Pn**	**06 41 53.3**	**-0.8**
JAG				*e*S	**Sn**	**06 42 16.1**	**-1.3**
JYS	**Shirataka**	**2.06**	**318**	P	**Pn**	**06 41 55.8**	**-0.2**
MJAR	**Matsushiro Arr**	**2.90**	**268**	P	**Pn**	**06 42 08.1**	**+0.4**
	109nm,0.3s,baz=100,slow=10,SNR=285						
MJAR				S	**Sn**	**06 42 41.1**	**-0.6**
	61nm,0.3s,baz=102,slow=17,SNR=5.9						
MJAR				LR	LR	06 43 30.6	
	comp=Z,2μm,18.6s,baz=100,slow=45						
MAJO	**Matsushiro**	**2.90**	**268**	*e*P	**Pn**	**06 42 08.6**	**+0.9**
MAJO				*e*		06 42 37.5	
MAJO	**Matsushiro**	**2.90**	**268**	*e*Pn	**Pn**	**06 42 08.6**	**+0.9**
MAJO				*e*Sn	**Sn**	**06 42 37.5**	**-4.2**
MAT	**Matsushiro**	**2.90**	**268**	P	**Pn**	**06 42 08.5**	**+0.8**
MAT				S	**Sn**	**06 42 42.6**	**+0.9**
MJB9	**Matsu-Tunnel**	**2.91**	**268**	*e*Pn	**Pn**	**06 42 08.7**	**+1.0**
JHJ2	**Mitsune**	**3.94**	**205**	*e*Pn	**Pn**	**06 42 22.7**	**+0.8**
JHJ	**Hachijo jima 2**	**3.94**	**206**	P	**Pn**	**06 42 23.8**	**+1.8**
	52nm,0.3s,baz=287,slow=20,SNR=21						
JHJ				S	**Sn**	**06 43 05.6**	**-1.7**
	100nm,0.3s,baz=41,slow=23,SNR=9.2						
INU	**Inuyama**	**4.11**	**252**	*e*Pn	**Pn**	**06 42 26.5**	**+2.3**
ERM	**Erimo**	**5.41**	**11**	*i*P	**Pn**	**06 42 42.8**	**+0.8**
ASAJ	**Asahikawa**	**7.43**	**4**	P	**Pn**	**06 43 09.7**	**-0.2**
	3.1nm,0.3s,baz=219,slow=12,SNR=8.8						
ASAJ				S	**Sn**	**06 44 27.7**	**-5.5**
	2.9nm,0.3s,baz=74,slow=18,SNR=2.1						
ASAJ	**Asahikawa**	**7.43**	**4**	*e*Pn	**Pn**	**06 43 09.3**	**-0.5**
ASAJ				*e*Sn	**Sn**	**06 44 32.8**	**-0.4**
YUK	**Yuzh-Kuril'sk**	**7.95**	**22**	P	**Pn**	**06 43 19.4**	**+2.5**
YUK				*e*S	**Sn**	**06 44 39.4**	**-6.5**
YUK				pmax	pmax		
	comp=Z,127nm,0.5s						
YUK				pmax	pmax		
	comp=N,69nm,0.4s						
YUK				pmax	pmax		
	comp=E,69nm,0.5s						
SHO	**Shikotan**	**8.12**	**27**	P	**Pn**	**06 43 19.4**	**+0.1**
SHO				pmax	pmax		
	comp=Z,46nm,0.6s						
SHO				pmax	pmax		
	comp=E,26nm,0.5s						
SHO				pmax	pmax		
	comp=N,42nm,0.6s						
CBIJ	**Chichi jima**	**9.58**	**178**	*e*Pn	**Pn**	**06 43 40.0**	**+0.6**
CBIJ				*e*Sn	**Sn**	**06 45 21.1**	**-5.1**
JNU	**Nakatsue**	**9.66**	**252**	P	**Pn**	**06 43 43.0**	**+2.5**
	comp=N,1.2nm,0.3s,baz=72,slow=4.8,SNR=11						
JNU				LR	LR	06 47 36.3	
	comp=N,503nm,18.4s,baz=308,slow=39						
JNU	**Nakatsue**	**9.66**	**252**	*e*Pn	**Pn**	**06 43 42.2**	**+1.7**
KUR	**Kuril'sk**	**9.67**	**26**	P	**Pn**	**06 43 43.2**	**+2.7**
KUR				*e*S	**Sn**	**06 45 21.5**	**-6.7**
KUR				pmax	pmax		
	comp=Z,54nm,0.5s						
VLA	**Vladivostok**	**9.96**	**313**	⇑eP	Pn	06 43 50.4	+6.0
MSHR	**Mys Shultsa**	**10.10**	**309**	*ce*P	Pn	06 43 51.3	+5.0
YSS	**Yuzh-Sakhalins**	**10.27**	**4**	⇑*e*P	**Pn**	**06 43 49.1**	**+0.4**
YSS				pmax	pmax		
	comp=Z,20nm,1.0s						
USRK	**Ussuriysk Ar.**	**10.58**	**318**	P	**Pn**	**06 43 56.6**	**+3.6**
	comp=Z,1.3nm,0.3s,baz=131,slow=12,SNR=33						
USRK				LR	LR	06 47 49.4	
	comp=Z,851nm,18.0s,baz=121,slow=37						
KSRS	**Korea Array**	**11.12**	**278**	P	**Pn**	**06 44 04.5**	**+4.1**
	comp=Z,1.0nm,0.3s,baz=88,slow=14,SNR=17						
KSRS				LR	LR	06 48 20.0	
	comp=Z,755nm,18.3s,baz=94,slow=37						
KS15	**Wonju Array Si**	**11.15**	**278**	*e*Pn	**Pn**	**06 44 04.9**	**+4.1**
KSAR	**Wonju Array Be**	**11.15**	**278**	P	**Pn**	**06 44 04.6**	**+3.7**
KSAR	**Wonju Array Be**	**11.15**	**278**	P	**Pn**	**06 44 04.5**	**+3.7**
MDJ	**Mudanjiang**	**12.18**	**314**	P	**Pn**	**06 44 15.5**	**+0.6**
MDJ				pmax	pmax		
	comp=Z,5.0nm,0.5s						
MDJ				pmax	pmax		
	comp=Z,53nm,3.7s						
HABR	**Khabarovsk**	**12.77**	**339**	*e*P	**Pn**	**06 44 24.1**	**+1.3**
HABR				*e*S	**Sn**	**06 46 50.8**	**+6.8**
HABR				pmax	pmax		
	comp=Z,44nm,1.9s						
HABR				MLR	MLR		
	comp=Z,204nm,12.0s						
TYV	**Tymovskoe**	**14.17**	**2**	*e*P	**Pn**	**06 44 43.0**	**+1.0**
TYV				pmax	pmax		
	comp=Z,31nm,1.0s						
CN2	**Changchun**	**14.36**	**305**	*e*P	**Pn**	**06 44 46.0**	**+1.4**
CN2				*e*S	**Sn**	**06 47 25.0**	**+2.2**
CN2				LR	LR		
	comp=Z,500nm,14.0s						
CN2				LR	LR		
	comp=Z,600nm,14.0s						
KLR	**Kul'dur**	**14.51**	**333**	P	**Pn**	**06 44 46.2**	**-0.4**
	comp=Z,0.3nm,0.3s,baz=146,slow=11,SNR=6.6						
KLR	**Kul'dur**	**14.51**	**333**	*i*P	**P**	**06 44 52.1**	**-0.9**
JOW	**Kunigami**	**15.13**	**233**	*e*Pn	**Pn**	**06 44 53.4**	**-1.7**
	comp=Z,31nm,1.2s						
JOW				*e*Sn	**Sn**	**06 47 42.6**	**+0.7**
DL2	**Dalian**	**16.11**	**284**	P	**Pn**	**06 45 07.5**	**-0.2**
DL2				*e*S	**Sn**	**06 48 02.5**	**-2.9**
DL2				pmax	pmax		
	comp=Z,25nm,0.7s						
DL2				pmax	pmax		
	comp=Z,120nm,4.5s						
DL2		

YAK pmax pmax
comp=E,6.0nm,0.6s
YAK smax smax
comp=N,23nm,1.8s
YAK smax smax
comp=E,56nm,2.7s
XAN Xi'an 26.88 274 P **P** **06 47 01.0 -0.9**
XAN pP sP 06 47 12.5 -0.3
XAN sP pP 06 47 18.0 +8.4
XAN PP **PnPn** **06 47 51.5 +7.4**
XAN S **S** **06 51 39.5 +2.5**
XAN pmax pmax
comp=E,7.0nm,0.6s
XAN LR LR
comp=E,130nm,14.2s
XAN LR LR
comp=E,270nm,13.1s
XAN LR LR
comp=E,270nm,13.5s
SEY Seymchan 27.06 11 P **P** **06 47 04.2 +1.2**
comp=E,9.3nm,0.8s,baz=196,slow=5.8,SNR=26
H11N2 WAKE ISLAND Hy 27.70 121 T T 07 16 29.5
baz=313,slow=75,SNR=152
H11N1 WAKE ISLAND Hy 27.71 121 T T 07 16 29.3
baz=313,slow=75,SNR=149
H11N3 WAKE ISLAND Hy 27.72 121 T T 07 16 28.0
baz=313,slow=75,SNR=128
ULN Ulaanbaatar 27.81 305*ce*P **P** **06 47 09.0 -1.2**
ULN pmax pmax
comp=E,22nm,1.0s
ULN Ulaanbaatar 27.81 305 *e*P **P** **06 47 09.8 -0.3**
comp=E,16nm,0.9s
BOD Bodaibo 27.98 328 *e*P **P** **06 47 10.3 -1.1**
BOD pmax pmax
comp=E,12nm,1.2s
SONM Songino Array 28.24 304 P **P** **06 47 13.4 -0.5**
comp=E,21nm,0.7s,baz=102,slow=9.2,SNR=16
SONM LR LR 06 58 50.3
comp=E,192nm,19.1s,baz=70,slow=37
H11S1 WAKE ISLAND Hy 28.41 123 T T 07 17 21.7
baz=315,slow=74,SNR=116
H11S3 WAKE ISLAND Hy 28.41 123 T T 07 17 25.5
baz=131,slow=74,SNR=101
H11S2 WAKE ISLAND Hy 28.43 123 T T 07 18 23.1
SNR=96
LZH Lanzhou 30.44 280 *e*P **P** **06 47 33.5 -0.2**
LZH pmax pmax
comp=E,24nm,1.0s
LZH pmax pmax
comp=E,74nm,5.7s
LZH LR LR
comp=E,430nm,13.6s
LZH LR LR
comp=E,1μm,19.5s
LZH LR LR
comp=E,730nm,15.8s
ZAK Zakamensk 30.73 309 *e*P **P** **06 47 35.0 -1.0**
ZAK pmax pmax
comp=E,7.0nm,1.1s
TLY Talaya 30.79 311 *e*P **P** **06 47 36.3 -0.2**
TLY pmax pmax
comp=E,11nm,1.3s
TLY MLR MLR
comp=E,250nm,14.0s
TLY Talaya 30.79 311 *e*P **P** **06 47 36.2 -0.2**
comp=E,7.4nm,0.9s
GYA Guiyang 31.48 261 *e*P **P** **06 47 45.0 +2.1**
GYA pmax pmax
comp=E,10.0nm,0.8s
CD2 Chengdu 32.00 271 P **P** **06 47 46.0 -1.3**
CD2 pmax pmax
comp=E,1.0nm,0.5s
MOY Mondy 32.40 311 *e*P **P** **06 47 50.5 -0.2**
GTA Gaotai 32.97 288 *e*P **P** **06 47 55.5 -0.3**
GTA pmax pmax
comp=E,6.0nm,0.8s
BILL Bilibino 34.26 16*ce*P **P** **06 48 06.3 -0.2**
BILL pmax pmax
comp=E,11nm,2.5s
BILL MLR MLR
comp=E,97nm,15.0s
KMI Kunming 35.23 262 P **P** **06 48 14.8 -0.9**
KMI pP sP 06 48 26.3 -0.4
KMI sP pP 06 48 33.0 +9.5
KMI pmax pmax
comp=E,25nm,1.0s
KMI pmax pmax
comp=E,120nm,4.1s
KMI LR LR
comp=E,220nm,16.7s
KMI LR LR
comp=E,180nm,21.4s
KMI LR LR
comp=E,290nm,20.0s
TIXI Tiksi 35.66 353 P **P** **06 48 18.0 -0.6**
comp=Z,1.8nm,0.3s,baz=145,slow=5.7,SNR=3.7
TIXI Tiksi 35.66 353*ce*P **P** **06 48 17.6 -0.9**
TIXI pmax pmax
comp=Z,4.0nm,1.2s
TIXI Tiksi 35.66 353 *e*P **P** **06 48 17.7 -0.8**
comp=Z,2.7nm,0.8s
SKNT Sakolnakorn 38.73 250 P **P** **06 48 45.5 +0.3**
comp=Z,34nm,1.0s,comp=Z,5μm
CRAI Chiangrai 39.62 257 P **P** **06 48 54.2 +1.5**
comp=Z,16nm,0.7s,comp=Z,9μm
UTTA Uttaradit 40.88 254 P **P** **06 49 03.8 +0.7**
comp=Z,3.3nm,1.1s,comp=Z,51nm
LAMP Lampang 41.15 256 P **P** **06 49 06.4 +1.1**
comp=Z,5.4nm,0.7s,comp=Z,234nm
PBKT Sadao Pong 41.26 252 P **P** **06 49 07.0 +0.8**
comp=Z,20nm,0.8s
WMQ Urumqi 41.27 297 P **P** **06 49 07.8 +1.6**
WMQ pP sP 06 49 19.5 +2.2
WMQ sP pP 06 49 24.5 +10
WMQ pmax pmax
comp=Z,14nm,0.8s
WMQ pmax pmax
comp=Z,34nm,3.6s
CMMT Chiang Mai 41.52 256 P **P** **06 49 09.3 +0.9**
comp=Z,13nm,1.1s
CHTO Chiang Mai 41.52 256 P **P** **06 49 09.4 +1.0**
comp=Z,56nm,1.1s
CHTO Chiang Mai 41.52 256 *e*P **P** **06 49 08.6 +0.2**
CHTO pmax pmax
comp=Z,8.0nm,0.9s
CHTO Chiang Mai 41.52 256 *e*P **P** **06 49 08.6 +0.2**
comp=Z,8.3nm,0.9s
CMAR Chiang Mai Arr 41.72 256 P **P** **06 49 10.1 0.0**
comp=Z,2.4nm,0.4s,baz=55,slow=5.3,SNR=11
CMAR PcP **PcP** **06 51 06.9 +0.6**
comp=Z,1.3nm,0.3s,baz=70,slow=3.0,SNR=3.5
CMAR LR LR 07 08 37.7
comp=Z,154nm,19.3s,baz=50,slow=39
ZAA0 Zalesovo Array 42.37 313 *e*P **P** **06 49 14.7 -0.2**
ZALV Zalesovo Beam 42.37 313 P **P** **06 49 14.6 -0.3**
comp=Z,12nm,0.6s,baz=93,slow=6.5,SNR=48
ZALV PcP **PcP** **06 51 07.6 -0.3**
comp=Z,4.4nm,0.6s,baz=100,slow=3.1,SNR=5.9
ZALV LR LR 07 07 39.4
comp=Z,218nm,18.5s,baz=64,slow=37
NVS Novosibirsk 43.30 314⇓*iP* **P** **06 49 22.1 -0.3**
NVS pmax pmax
comp=Z,17nm,1.0s
NVS pmax pmax
comp=E,10.0nm,1.1s
NRIK Noril'sk 43.70 335 P **P** **06 49 25.1 -0.3**
comp=E,6.0nm,0.9s,baz=116,slow=8.1,SNR=8.1
NRIK LR LR 07 08 50.1
comp=E,216nm,18.2s,baz=100,slow=38
KHLT Khaolaem Dam 44.15 252 P **P** **06 49 31.2 +1.5**
comp=E,18nm,1.6s
MK01 Makanchi Array 44.56 302 *e*P **P** **06 49 32.1 -0.6**
MK31 Makanchi Array 44.57 302 *e*P **P** **06 49 32.4 -0.4**
MK31 Makanchi Array 44.57 302 *e*P **P** **06 49 32.4 -0.4**
MKAR Makanchi Array 44.57 302 P **P** **06 49 32.3 -0.5**
comp=E,10nm,0.8s,baz=88,slow=9.4,SNR=85
MKAR LR LR 07 08 17.8
comp=E,149nm,20.6s,baz=92,slow=36
KAPI Kappang 46.34 211 *e*P **P** **06 49 48.7 +1.6**
KURK Kurchatov 46.39 308 *e*P **P** **06 49 46.3 -0.8**
KURK pmax pmax
comp=Z,25nm,0.8s
KURK Kurchatov 46.39 308 *e*P **P** **06 49 46.3 -0.8**
comp=Z,25nm,0.8s
PDGK Podgornoye 47.22 298 P **P** **06 49 53.2 -0.4**
PDGK pmax pmax
comp=Z,26nm,1.2s

GUN Gumba 47.51 276 *e*P **P** **06 49 56.6 0.0**
MLY Manley 47.96 32 *e*P **P** **06 50 00.9 +1.7**
comp=Z,5.1nm,1.1s
PKIN Phulchoki 48.04 276 *e*P **P** **06 49 59.7 -0.9**
KKN Kakani 48.04 276 *e*P **P** **06 50 00.4 -0.1**
comp=Z,43nm,0.8s
DMN Daman 48.26 276 *e*P **P** **06 50 02.2 0.0**
GKN Gorkha 48.46 277 *e*P **P** **06 50 03.6 -0.1**
comp=Z,94nm,1.0s
HNR Honiara 48.95 156 LR LR 07 09 57.2
comp=Z,72nm,19.4s,baz=340,slow=35
MDM Murphy Dome 49.03 32 *e*P **P** **06 50 09.3 +1.9**
comp=Z,7.4nm,1.0s
COLA College 49.19 32 *i*P **P** **06 50 09.8 +1.3**
COLA pmax pmax
comp=Z,11nm,2.3s
KOLN Koldanda 49.39 277 *e*P **P** **06 50 10.7 -0.2**
ILAR Eielson Array 49.60 32 P **P** **06 50 12.2 +0.5**
comp=Z,1.3nm,0.8s,baz=269,slow=6.8,SNR=16
ILB Eielson Array 49.60 32 *e*P **P** **06 50 11.7 -0.1**
IL1 Eielson Array 49.60 32 *e*P **P** **06 50 11.2 -0.5**
PYUN Piuthan 49.73 278 *e*P **P** **06 50 13.5 0.0**
TKM2 Tokmak 2 50.07 299 P **P** **06 50 16.1 +0.2**
TKM2 pmax pmax
comp=Z,10.0nm,0.7s
TKM2 Tokmak 2 50.07 299 *e*P **P** **06 50 16.4 +0.5**
comp=Z,37nm,1.4s
CHKZ Chkalovo 50.77 313 P **P** **06 50 19.5 -1.2**
CHKZ pmax pmax
comp=Z,12nm,1.2s
FRU Bishkek 50.78 299 *e*P **P** **06 50 18.0 -3.1**
KSH Kashi 50.83 294 P **P** **06 50 25.5 +3.9**
KSH *es*P sP 06 50 43.5 +11
KSH *e*PcP **PcP** **06 51 41.5 +3.4**
KSH PcS **PcS** **06 55 37.0 +1.3**
KSH S **S** **06 57 37.5 +1.4**
KSH ScS **ScS** **07 00 08.5 -2.2**
KSH pmax pmax
comp=Z,7.0nm,0.8s
KSH LR LR
comp=Z,370nm,16.2s
KSH LR LR
comp=Z,110nm,9.3s
KSH LR LR
comp=Z,360nm,16.0s
AAK Ala-Archa 50.93 299 P **P** **06 50 21.8 -0.5**
AAK pmax pmax
comp=Z,8.0nm,1.3s
AAK Ala-Archa 50.93 299 *e*P **P** **06 50 22.3 -0.1**
comp=Z,6.1nm,1.0s
BVA0 Borovoye Array 51.03 313 P **P** **06 50 21.1 -1.6**
BVA0 pmax pmax
comp=Z,10.0nm,1.4s
BVAR Borovoye Array 51.03 313 P **P** **06 50 22.4 -0.4**
comp=Z,2.4nm,0.5s,baz=79,slow=7.7,SNR=17
BVAR PcP **PcP** **06 51 38.7 +0.3**
comp=Z,6.1nm,0.8s,baz=101,slow=4.3,SNR=6.8
BRVK Borovoye 51.09 313 P **P** **06 50 22.0 -1.1**
BRVK pmax pmax
comp=Z,13nm,1.2s
BRVK Borovoye 51.09 313 *e*P **P** **06 50 22.8 -0.4**
comp=Z,5.2nm,0.8s
EKS2 Erkin-Say 51.43 299 *e*P **P** **06 50 25.8 -0.2**
EKS2 pmax pmax
comp=Z,4.0nm,0.7s
EKS2 Erkin-Say 51.43 299 *e*P **P** **06 50 25.8 -0.2**
comp=Z,4.1nm,0.7s
ZRNK Zerenda 51.87 313 P **P** **06 50 27.8 -1.2**
ZRNK pmax pmax
comp=Z,10.0nm,0.9s
ZRNK Zerenda 51.87 313 *e*P **P** **06 50 28.6 -0.3**
comp=Z,26nm,1.5s
PSI Prapat 51.90 240 P **P** **06 50 29.5 -0.3**
comp=Z,3.4nm,0.5s,baz=59,slow=12
MNAS Manas 52.37 299 P **P** **06 50 32.9 -0.2**
MNAS pmax pmax
comp=Z,12nm,0.8s
SFK Sufi-Kurgan 52.47 296 P **P** **06 50 32.6 -1.3**
SFK pmax pmax
comp=Z,13nm,0.8s
KKAR Karatay Array 53.57 300 *e*P **P** **06 50 41.3 -0.4**
KKAR Karatay Array 53.57 300 *e*P **P** **06 50 41.3 -0.4**
INK Inuvik 54.54 27 P **P** **06 50 49.2 +0.9**
comp=Z,1.5nm,0.8s,baz=280,slow=7.6,SNR=7.2
FITZ Fitzroy Crossi 56.61 198 P **P** **06 51 04.6 +0.9**
comp=Z,2.3nm,0.5s,baz=18,slow=6.2,SNR=9.2
WB2 Warramunga Arr 56.78 188 *e*P **P** **06 51 05.8 +0.8**
comp=Z,11nm,0.9s
WRA Warramunga Arr 56.78 188 P **P** **06 51 04.7 -0.2**
comp=Z,4.0nm,1.0s,baz=6.2,slow=7.3,SNR=12
WRA Warramunga Arr 56.78 188 *i*P **P** **06 51 04.6 -0.4**
WRA pmax pmax
comp=Z,4.0nm,1.0s
ARU Arti 56.82 319 LR LR 07 17 47.8
comp=Z,178nm,18.0s,baz=73,slow=38
ARU Arti 56.82 319*d i*P **P** **06 51 04.3 -0.6**
ARU 06 53 08.4
ARU S **S** **06 58 59.7 +3.3**
ARU SS **SS** **07 02 48.2 +4.2**
ARU pmax pmax
comp=Z,16nm,1.2s
ARU Arti 56.82 319 *e*P **P** **06 51 04.6 -0.4**
ABKAR Akbulak array 58.40 310 *e*P **P** **06 51 15.5 -0.7**
HYB Hyderabad 58.52 269 *i*P **P** **06 51 17.0 -0.5**
AKTO Aktyubinsk 59.13 312 LR LR 07 17 35.7
comp=Z,116nm,19.3s,slow=37
AKTO Aktyubinsk 59.13 312 P **P** **06 51 19.7 -1.6**
AKTO pmax pmax
comp=Z,7.0nm,0.9s
AS01 Alice Springs 60.50 188 *e*P **P** **06 51 30.6 -0.2**
ASAR Alice Springs 60.50 188 P **P** **06 51 30.9 +0.1**
comp=Z,2.2nm,0.8s,baz=9.4,slow=6.4,SNR=10
ASAR Alice Springs 60.50 188 P **P** **06 51 31.0 +0.1**
RES Resolute Bay 62.84 14 *e*P **P** **06 51 46.1 +0.1**
RES pmax pmax
comp=Z,3.0nm,0.9s
RES Resolute Bay 62.84 14 *e*P **P** **06 51 46.1 +0.1**
comp=Z,2.9nm,0.9s
DZM Mont Dzumac 62.91 154 LR LR 07 17 01.3
comp=Z,119nm,20.5s,baz=319,slow=34
TMCR Tamitsa 63.19 332 *e*P **P** **06 51 48.5 0.0**
TMCR pmax pmax
comp=Z,27nm,1.1s
YKA Yellowknife Ar 63.94 30 P **P** **06 51 53.9 +0.5**
comp=Z,1.3nm,0.8s,baz=299,slow=6.7,SNR=21
YKB5 Yellowknife Ar 63.94 30 *e*P **P** **06 51 52.7 -0.7**
KLMR Klimovskoe 64.21 328 *e*P **P** **06 51 53.3 -1.9**
KLMR *e* 06 52 25.6
KLMP *e* 06 54 15.5
KLMR pmax pmax
comp=Z,10.0nm,0.8s
GEYT Alibeck 64.28 299 P **P** **06 51 56.5 +0.3**
comp=Z,6.3nm,0.8s,baz=0.0,slow=3.0,SNR=8.9
GEYT LR LR 07 21 16.7
comp=Z,76nm,18.7s,baz=60,slow=37
ARCES ARCESS Array B 64.42 340 P **P** **06 51 55.5 -1.0**
comp=Z,4.3nm,0.8s,baz=61,slow=9.9,SNR=11
ARCES LR LR 07 24 07.7
comp=Z,132nm,18.0s,baz=44,slow=40
DAG Danmarks Havn 66.13 355 *i*P **P** **06 52 06.4 -1.1**
comp=Z,1.9nm,0.6s
DAG Danmarks Havn 66.13 355 *e*P **P** **06 52 06.4 -1.1**
DAG pmax pmax
comp=Z,1.0nm,0.6s
VRH Novokhopyorsk 68.04 318 *e*P **P** **06 52 19.1 -0.9**
VRH pmax pmax
comp=Z,10.0nm,0.6s
STKA Stephens Creek 68.22 180 P **P** **06 52 21.9 +0.7**
comp=Z,0.9nm,0.5s,baz=17,slow=7.3,SNR=3.3
OBN Obninsk 68.55 323⇑*iP* **P** **06 52 22.7 -0.4**
OBN *e* 06 52 33.7
OBN pmax pmax
comp=Z,5.0nm,0.4s
OBN MLR MLR
comp=Z,105nm,14.0s
LPSR Galich'ya Gora 68.76 320 *e*P **P** **06 52 23.8 -0.7**
LPSR pmax pmax
comp=Z,10.0nm,0.8s
FIA1 FINESS Array S 69.25 332 *e*P **P** **06 52 27.5 +0.1**
FINES FINESS Array B 69.26 332 P **P** **06 52 27.4 0.0**
comp=Z,9.4nm,0.7s,baz=58,slow=7.6,SNR=46
FINES LR LR 07 25 10.5
comp=Z,110nm,19.4s,baz=32,slow=38
VSR Storozhevoye 69.39 319 *e*P **P** **06 52 28.0 -0.4**
VSR pmax pmax
comp=Z,10.0nm,0.6s

VSU Vasula 70.90 330*ce*P **P** **06 52 37.5 0.0**
VSU pmax pmax
comp=Z,24nm,0.8s
SUMG Summit 71.02 0 *i*P **P** **06 52 39.1 +0.5**
comp=Z,6.0nm,1.0s
SUMG Summit 71.02 0 *i*P **P** **06 52 39.1 +0.5**
SUMG pmax pmax
comp=Z,6.0nm,1.0s
ZEI Tsey 71.26 310 *e*P **P** **06 52 38.2 -2.1**
ZEI pmax pmax
comp=Z,7.0nm,0.7s
KBZ Khabaz 71.36 311 P **P** **06 52 41.1 +0.5**
comp=Z,8.1nm,0.8s,baz=58,slow=3.2,SNR=28
KIV Kislovodsk 71.36 311*c iP* **P** **06 52 40.8 0.0**
KIV *e* 06 52 57.7
KIV pmax pmax
comp=Z,24nm,1.0s
KIV MLR MLR
comp=Z,110nm,17.0s
KIV Kislovodsk 71.36 311 *e*P **P** **06 52 42.0 +1.2**
comp=Z,18nm,0.8s
NEY Neytrino 71.73 311 *i*P **P** **06 52 41.7 -1.4**
NEY pmax pmax
comp=Z,1.0nm,0.6s
GNI Garni 72.16 307⇑*e*P **P** **06 52 45.4 -0.3**
GNI pmax pmax
comp=Z,54nm,1.4s
FFC Flin Flon 73.81 33 *e*P **P** **06 52 55.8 +0.8**
FFC pmax pmax
comp=Z,4.0nm,0.9s
FFC Flin Flon 73.81 33 *e*P **P** **06 52 55.8 +0.8**
comp=Z,3.8nm,0.9s
FCC Fort Churchill 74.16 27 *e*P **P** **06 52 57.4 +0.5**
FCC pmax pmax
comp=Z,21nm,1.8s
FCC Fort Churchill 74.16 27 *e*P **P** **06 52 57.4 +0.5**
comp=Z,21nm,1.8s
LRM Limekiln Ridge 74.16 44 *e*P **P** **06 52 59.1 +1.5**
DLMT Dillon 74.35 45 *e*P **P** **06 53 00.4 +1.9**
comp=Z,14nm,1.7s
NC405 NORSAR Array S 74.41 337 *e*P **P** **06 52 58.8 +0.4**
NC204 NORSAR Array S 74.57 338 *e*P **P** **06 52 59.9 +0.5**
NB201 NORSAR Array S 74.58 337 *e*P **P** **06 52 59.5 +0.1**
NB2 NORSAR Subarra 74.62 337 P **P** **06 52 59.5 -0.1**
comp=Z,11nm,0.9s,baz=39,slow=5.9
NOA NORSAR Array B 74.62 337 P **P** **06 52 59.6 -0.1**
comp=Z,6.9nm,0.7s,baz=39,slow=5.8,SNR=41
NOA LR LR 07 28 14.4
comp=Z,121nm,21.8s,baz=160,slow=38
NBO02 NORSAR Array S 74.72 338 *e*P **P** **06 53 00.2 0.0**
BOZ Bozeman (W) 74.73 44 *e*P **P** **06 53 02.3 +1.5**
BOZ pmax pmax
comp=Z,22nm,2.0s
BOZ Bozeman (W) 74.73 44 *e*P **P** **06 53 02.2 +1.5**
comp=Z,22nm,2.0s
AKASG Malin Array Be 74.75 323 P **P** **06 53 00.1 -0.5**
comp=Z,7.1nm,0.5s,baz=46,slow=6.0,SNR=83
AKASG LR LR 07 28 51.4
comp=Z,114nm,18.8s,baz=55,slow=38
AKBB Malin Array Si 74.75 323 *e*P **P** **06 53 00.5 -0.1**
AKBB pmax pmax
comp=Z,14nm,0.8s
AKBB Malin Array Si 74.75 323 *e*P **P** **06 53 00.5 -0.1**
comp=Z,14nm,0.8s
NBO00 NORSAR Array S 74.76 338 *e*P **P** **06 53 00.9 +0.4**
KIEV Kiev 74.77 323*c iP* **P** **06 53 00.2 -0.4**
KIEV Kiev 74.77 323 *e*P **P** **06 53 00.1 -0.6**
comp=Z,14nm,0.9s
AK11 Malin Array Si 74.80 323 *e*P **P** **06 53 00.1 -0.7**
NAO01 NORSAR Array S 74.87 337 *e*P **P** **06 53 00.8 -0.3**
NVAR Mina Array Bea 74.93 53 P **P** **06 53 02.6 +0.5**
comp=Z,0.7nm,0.4s,baz=304,slow=6.5,SNR=5.0
NVAR LR LR 07 18 46.8
comp=Z,30nm,21.8s,baz=278,slow=30
SUW Suwalki 75.34 328 *e*P **P** **06 53 03.8 -0.1**
SUW Suwalki 75.34 328 *e*P **P** **06 53 03.8 -0.1**
SIM Simferopol' 75.79 316 *e*P **P** **06 53 06.9 +0.3**
SIM pmax pmax
comp=Z,12nm,0.5s
H17A Grant Village 76.08 45 *e*P **P** **06 53 09.3 +0.7**
comp=Z,5.3nm,1.1s
R11A Troy Canyon, C 76.72 52 *e*P **P** **06 53 13.9 +1.7**
comp=Z,12nm,1.9s
SORM Soroca 76.85 321⇑*iP* **P** **06 53 12.2 -0.4**
SORM Soroca 76.85 321⇑P **P** **06 53 12.2 -0.4**
PDAR Pinedale Array 77.67 46 P **P** **06 53 17.9 +0.3**
comp=Z,0.5nm,0.7s,baz=279,slow=2.9,SNR=5.6
LVV L'vov 77.83 324 *e*P **P** **06 53 18.8 +0.7**
BEL Belsk 77.90 327 *e*P **P** **06 53 19.1 +0.7**
BEL Belsk 77.90 327 *e*P **P** **06 53 19.1 +0.7**
KWP Kalwaria Pacla 78.58 325 *e*P **P** **06 53 23.1 +0.8**
KWP Kalwaria Pacla 78.58 325 *e*P **P** **06 53 23.2 +0.9**
BUR08 Bucovina Ar. S 78.76 322 *e*P **P** **06 53 23.7 +0.3**
BURAR Bucovina Array 78.77 322⇑*iP* **P** **06 53 23.7 +0.3**
BURAR Bucovina Array 78.77 322 ⇑P **P** **06 53 23.7 +0.3**
TESR Tescani 78.79 320⇓*iP* **P** **06 53 23.8 +0.3**
CFR Carcaliu 78.91 319⇓*iP* **P** **06 53 24.1 0.0**
CFC Carcaliu 78.91 319 ⇓P **P** **06 53 24.1 0.0**
LCMT Little Creek M 79.00 52 *e*P **P** **06 53 27.4 +2.5**
comp=Z,6.0nm,1.3s
MTPU Mount Pierson 79.03 51 *e*P **P** **06 53 28.0 +2.6**
comp=Z,3.9nm,1.1s
VRI Vrincioaia 79.19 320⇓*iP* **P** **06 53 26.4 +0.8**
VRI Vrincioaia 79.19 320 ⇓P **P** **06 53 26.4 +0.8**
P18A Preston Nutter 79.23 48 *e*P **P** **06 53 28.0 +1.6**
comp=Z,14nm,1.8s
TIRR Tirgusor 79.23 318⇓*iP* **P** **06 53 25.8 -0.1**
TIRR Tirgusor 79.23 318 ⇓P **P** **06 53 25.8 -0.1**
PLOR Plostina 79.24 320⇓*iP* **P** **06 53 26.5 +0.5**
PLOR Plostina 79.24 320 ⇓P **P** **06 53 26.5 +0.5**
KNB Kanab 79.27 52 *e*P **P** **06 53 29.1 +2.6**
KNB pmax pmax
comp=Z,10.0nm,1.3s
KNB Kanab 79.27 52 *e*P **P** **06 53 29.1 +2.6**
comp=Z,10nm,1.3s
KOLS Kolonicke sedl 79.28 324 *e*P **P** **06 53 26.2 +0.1**
BR131 Keskin Array S 79.31 312 *e*P **P** **06 53 26.6 0.0**
BRTR Keskin Array B 79.31 312 P **P** **06 53 26.5 -0.1**
comp=Z,5.0nm,1.0s,baz=97,slow=3.9,SNR=18
SRU San Rafael Swe 79.39 49 *e*P **P** **06 53 29.0 +1.9**
SRU pmax pmax
comp=Z,5.0nm,0.9s
SRU San Rafael Swe 79.39 49 *e*P **P** **06 53 28.9 +1.9**
comp=Z,4.5nm,0.9s
STHS Stebnicka Huta 79.41 325 *e*P **P** **06 53 27.7 +0.9**
UZH Uzhgorod 79.48 324 *e*P **P** **06 53 27.1 0.0**
UZH *e* 06 53 38.3
OJC Ojcow 79.49 326 *e*P **P** **06 53 27.7 +0.5**
OJC Ojcow 79.49 326 *e*P **P** **06 53 27.5 +0.3**
OJC pmax pmax
comp=Z,18nm,1.0s
OJC Ojcow 79.49 326 *e*P **P** **06 53 27.5 +0.3**
comp=Z,18nm,1.0s
CRVS Cervenica-Dubn 79.68 325 *e*P **P** **06 53 28.1 -0.2**
RAR Rarotonga 79.71 126 LR LR 07 21 02.8
comp=Z,156nm,19.9s,baz=348,slow=30
BR231 Keskin MP Arra 79.75 312 *e*P **P** **06 53 27.2 -1.7**
MLR Muntele Rosu 79.84 320⇓*iP* **P** **06 53 29.8 +0.4**
MLR Muntele Rosu 79.84 320 ⇓P **P** **06 53 29.8 +0.4**
NIE Niedzica 79.84 326 *e*P **P** **06 53 30.0 +0.9**
NIE Niedzica 79.84 326 *e*P **P** **06 53 30.1 +0.9**
O20A White River Ci 80.10 47 *e*P **P** **06 53 32.5 +1.5**
comp=Z,25nm,1.9s
LANS Liptovska Anna 80.42 326 *e*P **P** **06 53 33.3 +1.0**
KECS Kecovo 80.43 325 *e*P **P** **06 53 31.2 -1.1**
OKC Ostrava-Krasne 80.50 327 *e*P **P** **06 53 33.0 +0.3**
OKC Ostrava-Krasne 80.50 327 *e*P **P** **06 53 33.0 +0.3**
KSP Ksiaz 80.55 328 *e*P **P** **06 53 33.2 +0.3**
KSP Ksiaz 80.55 328 *e*P **P** **06 53 33.2 +0.3**
DRGR 80.57 323⇑*iP* **P** **06 53 33.0 -0.2**
DRGR 80.57 323 ⇑P **P** **06 53 33.0 -0.2**
ARR Arges 80.60 321⇓*iP* **P** **06 53 34.9 +1.5**
PV10 Paradox Valley 80.75 49 *e*P **P** **06 53 36.7 +2.1**
MORC Moravsky Berou 80.81 327⇓*iP* **P** **06 53 35.0 +0.6**
MORC Moravsky Berou 80.81 327 ⇓P **P** **06 53 35.0 +0.6**
MORC Moravsky Berou 80.81 327 *e*P **P** **06 53 35.1 +0.6**
comp=Z,41nm,1.1s
DPC Dobruska-Polom 80.91 328 *e*P **P** **06 53 35.5 +0.6**
DPC *e*PCP **PcP** **06 53 41.0 -0.4**
DPC *e*pP **pP** **06 53 44.3 +0.9**
DPC Dobruska-Polom 80.91 328 *e*P **P** **06 53 35.5 +0.6**
DPC *e* 06 53 44.3
KRLC Kraliky 80.92 328 *e*P **P** **06 53 35.4 +0.4**
KRLC Kraliky 80.92 328 *e*P **P** **06 53 35.4 +0.4**

LOT	**Lotru**	**80.99**	**321**	⇑*iP*	**P**		**06 53 39.7**	**+4.2**
PSZ	**Piszkesteto**	**81.11**	**325**	⇓*iP*	**P**		**06 53 36.7**	**+0.6**
PSZ	**Piszkesteto**	**81.11**	**325**	⇓P	**P**		**06 53 36.7**	**+0.6**
PSZ	**Piszkesteto**	**81.11**	**325**	*eP*	**P**		**06 53 37.0**	**+0.9**
	comp=Z,11nm,0.9s							
VYHS	**Vyhne**	**81.18**	**326**	*eP*	**P**		**06 53 36.9**	**+0.6**
BRG	**Berggiesshubel**	**81.50**	**330**	*eP*	**P**		**06 53 37.9**	**0.0**
	comp=Z,5.8nm,0.9s							
BRG				*e*			06 53 47.8	
	comp=Z,6.2nm,1.1s							
PVCC	**Panska Ves**	**81.51**	**329**	*eP*	**P**		**06 53 38.7**	**+0.7**
PVCC	**Panska Ves**	**81.51**	**329**	*eP*	**P**		**06 53 38.7**	**+0.7**
CLL	**Collm**	**81.54**	**330**	⇑*iP*	**P**		**06 53 38.0**	**-0.2**
	comp=Z,12nm,1.0s							
CLL				*i*			06 53 47.8	
CLL				*i*			06 53 51.2	
CLL				*i*			06 54 01.1	
CLL	**Collm**	**81.54**	**330**	⇑*iP*	**P**		**06 53 38.0**	**-0.2**
CLL				*i*			06 53 47.8	
CLL				*i*			06 53 51.2	
CLL				pmax	pmax			
	comp=Z,12nm,1.0s							
CLL	**Collm**	**81.54**	**330**	*eP*	**P**		**06 53 38.0**	**-0.2**
	comp=Z,12nm,0.9s							
VRAC	**Vranov**	**81.57**	**327**	⇑*iP*	**P**		**06 53 39.1**	**+0.7**
VRAC	**Vranov**	**81.57**	**327**	⇑P	**P**		**06 53 39.1**	**+0.7**
X16A	**Lo Mia Camp, P**	**81.76**	**53**	*eP*	**P**		**06 53 42.7**	**+2.8**
	comp=Z,2.2nm,0.9s							
SMOL	**Smolenice**	**81.80**	**326**	*eP*	**P**		**06 53 40.5**	**+0.9**
GOPC	**GO Pecny, Ondr**	**81.89**	**329**	*eP*	**P**		**06 53 40.7**	**+0.6**
GOPC	**GO Pecny, Ondr**	**81.89**	**329**	*eP*	**P**		**06 53 40.7**	**+0.6**
PRU	**Pruhonice**	**81.93**	**329**	*eP*	**P**		**06 53 40.5**	**+0.2**
PRU				epP	**pP**		**06 53 49.8**	**+1.1**
PRU	**Pruhonice**	**81.93**	**329**	*eP*	**P**		**06 53 40.5**	**+0.2**
PRU				*e*			06 53 49.8	
BZS	**Buzias**	**81.94**	**322**	⇓*iP*	**P**		**06 53 39.4**	**-1.0**
BZS	**Buzias**	**81.94**	**322**	⇓P	**P**		**06 53 39.4**	**-1.0**
TREC	**Trest**	**82.06**	**328**	*eP*	**P**		**06 53 41.3**	**+0.3**
TREC	**Trest**	**82.06**	**328**	*eP*	**P**		**06 53 41.3**	**+0.3**
S22A	**4UR Ranch, Cre**	**82.49**	**48**	*eP*	**P**		**06 53 46.1**	**+2.3**
	comp=Z,3.6nm,1.1s							
CSS	**Mathiatis**	**82.52**	**308**	*eP*	**P**		**06 53 43.8**	**+0.2**
	comp=Z,2.1nm,0.9s							
CONA	**Conrad Observa**	**82.93**	**327**	*eP*	**P**		**06 53 46.0**	**+0.4**
	comp=Z,6.2nm,0.9s							
PKSM	**Moragy**	**82.94**	**324**	⇓*iP*	**P**		**06 53 45.4**	**-0.2**
PKSM	**Moragy**	**82.94**	**324**	⇓P	**P**		**06 53 45.4**	**-0.2**
KHC	**Kasperske Hory**	**82.99**	**329**	*eP*	**P**		**06 53 46.2**	**+0.3**
KHC				epP	**pP**		**06 53 55.8**	**+1.4**
KHC	**Kasperske Hory**	**82.99**	**329**	*eP*	**P**		**06 53 46.2**	**+0.3**
KHC				*e*			06 53 55.8	
KHC	**Kasperske Hory**	**82.99**	**329**	*eP*	**P**		**06 53 46.2**	**+0.3**
	comp=Z,4.1nm,0.9s							
GEC2	**GERESS Array S**	**83.16**	**328**	*eP*	**P**		**06 53 47.0**	**+0.2**
GEC2				pmax	pmax			
	comp=Z,4.0nm,0.7s							
GEC2	**GERESS Array S**	**83.16**	**328**	*eP*	**P**		**06 53 47.0**	**+0.2**
	comp=Z,4.1nm,0.7s							
GERES	**GERESS Array B**	**83.16**	**328**	P	**P**		**06 53 46.9**	**0.0**
	comp=Z,3.4nm,0.7s,baz=36,slow=5.6,SNR=30							
GERES				LR	LR		07 32 46.8	
	comp=Z,99nm,18.6s,baz=32,slow=37							
GEA0	**GERESS Array S**	**83.17**	**328**	*eP*	**P**		**06 53 46.5**	**-0.4**
GRFO	**Grafenberg**	**83.52**	**330**	*eP*	**P**		**06 53 49.0**	**+0.5**
GRFO				pmax	pmax			
	comp=Z,12nm,1.0s							
GRFO	**Grafenberg**	**83.52**	**330**	*eP*	**P**		**06 53 49.0**	**+0.5**
	comp=Z,12nm,1.0s							
PMOR	**Pomariorio Ree**	**83.75**	**114**	*eT*	T		08 26 23.3	
	comp=Z,2.5nm,0.2s							
PPT	**Papeete**	**84.20**	**117**	LR	LR		07 29 16.1	
	comp=Z,45nm,19.8s,baz=340,slow=34							
PPT2	**Papeete2**	**84.21**	**117**	*eLR*	LR		07 20 18.3	
	comp=Z,170nm,26.2s							
PERS	**Pernice**	**84.24**	**326**	*iP*	**P**		**06 53 52.3**	**-0.1**
SOKA	**Soboth**	**84.25**	**326**	*iP*	**P**		**06 53 52.4**	**0.0**
	comp=Z,9.6nm,1.1s,SNR=7.3							
ANMO	**Albuquerque**	**84.56**	**50**	*eP*	**P**		**06 53 55.9**	**+1.6**
ANMO				pmax	pmax			
	comp=Z,4.0nm,1.0s							
ANMO	**Albuquerque**	**84.56**	**50**	*eP*	**P**		**06 53 55.9**	**+1.6**
	comp=Z,3.8nm,1.0s							
KBA	**Koelnbreinsper**	**84.68**	**327**	*i* PcP	**P**		**06 53 54.9**	**+0.2**
	comp=Z,4.7nm,1.0s							
CRES	**Cresnjev**	**84.71**	**326**	*iP*	**P**		**06 53 54.1**	**-0.6**
WATA	**Walderalm**	**85.23**	**329**	*i* PcP	**P**		**06 53 59.1**	**+1.7**
	comp=Z,1.5nm,0.6s							
JAVS	**Javornik**	**85.28**	**326**	*iP*	**P**		**06 53 56.4**	**-1.2**
ABTA	**Abfaltersbach**	**85.30**	**328**	*iP*	**P**		**06 53 56.0**	**-1.7**
	comp=Z,3.8nm,1.2s							
PDG	**Podgorica**	**85.42**	**321**	⇑*iP*	**P**		**06 53 58.0**	**-0.3**
RETA	**Reutte**	**85.45**	**329**	*iP*	**P**		**06 53 58.2**	**-0.3**
	comp=Z,6.6nm,0.8s							
BFO	**Black Forest**	**85.75**	**331**	*iP*	**P**		**06 53 59.9**	**+0.1**
BFO	**Black Forest**	**85.75**	**331**	*eP*	**P**		**06 53 59.8**	**-0.1**
	comp=Z,13nm,1.0s							
DAVA	**Damuels**	**85.97**	**329**	*iP*	**P**		**06 54 00.7**	**-0.4**
	comp=Z,7.9nm,0.9s							
FUORN	**Ofenpass-Fuorn**	**86.35**	**329**	*eP*	**P**		**06 54 03.4**	**+0.3**
	comp=Z,14nm,1.2s							
TX31	**Lajitas Ar. Si**	**90.07**	**53**	*eP*	**P**		**06 54 21.9**	**+0.9**
TXAR	**Lajitas Array**	**90.07**	**53**	P	**PKPdf**		**07 00 06.6**	**-1.0**
	comp=Z,0.7nm,0.8s,baz=297,slow=3.2,SNR=8.0							
TORD	**Torodi Ar. Bea**	**117.79**	**315**	PKP	**PKPdf**		**07 00 06.6**	**-1.0**
	comp=Z,0.3nm,0.7s,baz=32,slow=2.3,SNR=3.0							
NNA	**Nana**	**137.47**	**65**	*i* PKHKP	PKPpre		07 00 35.8	
LPAZ	**La Paz**	**146.58**	**61**	PKPbc	**PKPbc**		**07 01 03.6**	**+0.2**
	comp=Z,2.4nm,0.8s,baz=326,slow=3.9,SNR=15							

MAN 25 06:42:53,7.26N×125.29E,h29km,mb4.8,ML3.7,MS3.7, 1C-3D,Mindanao

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
DMPH	**Davao City--Mi**	**0.28**	**129**	⇓*eP*		Pn	06 43 03.0	+1.9
DMPH				*eS*		Sn	06 43 18.8	+12
KCP	**Kidapawan**	**0.32**	**219**	⇓*iP*		Pn	06 43 01.9	+0.1
KCP				*i* S		Sn	06 43 09.6	+2.2
BUKP	**Musuan**	**0.66**	**340**	*eP*		Pb	06 43 05.1	-0.9
MATI	**Mati**	**1.01**	**108**	*eP*		Pn	06 43 10.8	-0.5
MATI				*eS*		Sb	06 43 25.7	+0.9
CTBH	**Cotabato--PC H**	**1.04**	**268**	*eP*		Pb	06 43 13.7	+1.3
CGP	**Cagayan de Oro**	**1.33**	**334**	⇑*eP*		Pn	06 43 16.2	+0.5
CGP				*eS*		Sb	06 43 41.1	+7.1
BIPH	**Bislig**	**1.41**	**49**	⇓*eP*		Pn	06 43 16.0	-0.7
BIPH				*i* S		Sb	06 43 42.6	+6.5
PAGZ	**Pagadian**	**1.98**	**287**	*eP*		Pb	06 43 28.5	+0.1

SKHL 25 06:43:18.6±0.2,54.07N×142.28E,h10km,mb4.7/2, Sakhalin Island

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
OKH	**Okha**	**0.65**	**143**	*ePg*		Pg	06 43 29.8	-1.3
OKH				AMB		AMB	06 43 30.3	
	250nm,0.2s							
OKH				*eSg*		Sg	06 43 37.8	-1.8
OKH				A		A	06 43 38.8	
	1μm,0.4s							
NKL	**Nikolayevsk**	**1.33**	**227**	*ePg*		Pg	06 43 44.8	+0.8
NKL				AMB		AMB	06 43 45.6	
	34nm,0.4s							
NKL				AMB		AMB	06 43 45.6	
	430nm,0.4s							
NKL				*eSg*		Sg	06 44 03.0	+1.8
NKL				A		A	06 44 04.4	
	240nm,0.4s							
EKMR	**Ekimchan**	**5.65**	**264**	*eSg*		Sg	06 46 29.0	+9.2
EKMR				A		A	06 46 32.0	
	4.0nm,0.7s							

DJA 25 06:45:00.8±0.4,4.5°±5°×12.3°E±°,h10km,M3.9/4,MLv3.9/4, Sulawesi

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
SPSI	**Sidrap Palu**	**2.94**	**273**	P		Pn	06 45 47.4	-0.2
SPSI				S		Sn	06 46 24.6	+1.7
BSSI	**Bau Bau, Buton**	**2.99**	**228**	P		Pn	06 45 48.6	+0.3
TTSI	**Tana Toraja**	**3.08**	**290**	P		Pn	06 45 49.9	+0.4
SANI	**Sanana**	**3.87**	**58**	P		Pn	06 46 00.5	+0.1
SANI				S		Sn	06 46 41.7	-4.2
MMRI	**Maumere**	**4.51**	**186**	P		Pn	06 46 08.9	-0.3
MRSI	**Marisa**	**4.63**	**350**	P		Pn	06 46 09.5	-1.4

MAN 25 06:45:50,10.18N×125.09E,h47km,mb4.2,ML3.0,MS2.8, 4C-1D,Leyte

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
SCPH	**Surigao**	**0.56**	**135**	⇑*iP*		Pn	06 46 03.6	+1.8
SCPH				*i* S		Sn	06 46 13.2	+2.9
PLP	**Palo**	**0.98**	**354**	⇓*eP*		Pn	06 46 08.4	+0.9
PLP				*i* S		Sn	06 46 22.1	+1.8
LLP	**Lapu-Lapu**	**1.12**	**277**	*eP*		Pn	06 46 08.5	-0.8
LLP				*i* S		Sn	06 46 22.4	-1.1
TBP	**Tagbilaran**	**1.30**	**248**	⇑*iP*		Pn	06 46 12.6	+0.7
TBP				*i* S		Sn	06 46 29.6	+1.5
CGP	**Cagayan de Oro**	**1.76**	**193**	⇑*eP*		Pn	06 46 19.5	+1.5
CGP				*eS*		Sn	06 46 40.9	+1.6
RCP	**Roxas**	**2.68**	**301**	⇑*eP*		Pn	06 46 32.1	+1.4

IDC 25 07:01:08.6±10.0,17.62S×178.60W,h688km±107km, mb3.1/3,mb1 3.2/4,mb1mx2.8/29,mbtmp4.2/4,Error ellipse: s-maj=123.6km s-min=62.7km az=125.0,Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op		ISC	h m s	ISC
DZM	**Mont Dzumac**	**14.75**	**250**	P		P	07 04 12.3	+0.2
	0.2nm,0.3s,baz=72,slow=20,SNR=4.1							
STKA	**Stephens Creek**	**38.61**	**241**	P		P	07 07 37.1	0.0
	1.5nm,0.7s,baz=94,slow=8.8,SNR=5.3							
WRA	**Warramunga Arr**	**44.50**	**259**	P		P	07 08 23.0	-0.2
	1.5nm,0.4s,baz=95,slow=7.1,SNR=84							
WRA				PcP		PcP	07 09 49.5	-1.0
	0.2nm,0.4s,baz=94,slow=3.6,SNR=3.0							
ASAR	**Alice Springs**	**44.69**	**254**	P		P	07 08 24.8	+0.2
	3.3nm,0.4s,baz=90,slow=7.9,SNR=86							
ASAR				PcP		PcP	07 09 51.1	0.0
	0.6nm,0.6s,baz=99,slow=4.1,SNR=5.5							
BRTR	**Keskin Array B**	**144.44**	**315**	PKP		PKPbc	07 19 30.1	+0.1
	0.3nm,0.3s,baz=48,slow=2.1,SNR=3.4							
GERES	**GERESS Array B**	**147.28**	**345**	PKPbc		PKPbc	07 19 36.8	-0.7
	0.1nm,0.3s,baz=15,slow=4.1,SNR=4.1							
DAVOX	**Davos/Dischmat**	**150.08**	**348**	PKPbc		PKPbc	07 19 44.1	-0.4
	1.3nm,0.5s,baz=230,slow=7.9,SNR=3.6							

IDC 25 07:04:32.5±7.6,22.58S×177.25W,h0km,mb3.2/2, mb1 3.4/2,mb1mx3.3/25,mbtmp3.2/2,Error ellipse: s-maj=396.7km s-min=109.7km az=158.0,South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op		ISC	h m s	ISC
ASAR	**Alice Springs**	**44.76**	**259**	P		P	07 12 48.8	+0.6
	0.2nm,0.8s,baz=90,slow=6.8,SNR=3.2							
WRA	**Warramunga Arr**	**45.04**	**264**	P		P	07 12 49.5	-0.9
	0.4nm,0.8s,baz=105,slow=8.0,SNR=4.3							
NB2	**NORSAR Subarra1**	**41.11**	**353**	PKP		PKPdf	07 24 03.8	-0.7
	comp=Z,0.4nm,0.6s,baz=2.1,slow=3.6							
NOA	**NORSAR Array B1**	**41.11**	**353**	PKP		PKPdf	07 24 04.1	-0.4
	comp=Z,0.1nm,0.5s,baz=2.4,slow=3.6,SNR=4.8							

IDC 25 07:07:32.7±1.9,17.25S×178.33W,h594km±24km, mb3.0/7,mb1 3.3/8,mb1mx3.1/32,mbtmp3.9/8,Error ellipse: s-maj=91.0km s-min=12.8km az=153.0,Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op		ISC	h m s	ISC
AFI	**Afiamalu**	**7.14**	**63**	P		P	07 09 22.9	-1.0
	2.0nm,0.3s,baz=227,slow=3.9,SNR=3.6							
WRA	**Warramunga Arr**	**44.83**	**259**	P		P	07 14 55.8	+0.4
	0.9nm,0.4s,baz=94,slow=7.3,SNR=27							
ASAR	**Alice Springs**	**45.04**	**254**	P		P	07 14 57.1	+0.1
	2.2nm,0.6s,baz=88,slow=8.2,SNR=32							
ASAR				PcP		PcP	07 16 23.6	-1.4
	0.3nm,0.5s,baz=100,slow=4.2,SNR=5.2							
ASAR				S		S	07 20 52.9	-0.9
	0.3nm,0.7s,baz=95,slow=14,SNR=4.9							
NVAR	**Mina Array Bea**	**78.90**	**44**	P		P	07 18 35.9	-0.1
	0.7nm,0.7s,baz=221,slow=8.3,SNR=6.3							
ILAR	**Eielson Array**	**85.23**	**13**	P		P	07 19 06.8	-0.2
	0.7nm,0.7s,baz=218,slow=5.0,SNR=8.8							
TXAR	**Lajitas Array**	**85.58**	**58**	P		P	07 19 10.7	+1.0
	0.3nm,0.8s,baz=229,slow=4.8,SNR=6.8							
PDAR	**Pinedale Array**	**86.83**	**43**	P		P	07 19 14.4	-0.9
	0.5nm,0.7s,baz=225,slow=1.9,SNR=4.7							
YKA	**Yellowknife Ar**	**93.71**	**25**	P		P	07 19 45.9	-0.5
	0.3nm,0.7s,baz=246,slow=4.7,SNR=5.1							
BRTR	**Keskin Array B**	**144.37**	**315**	PKP		PKPbc	07 26 02.6	+0.1
	0.8nm,0.6s,baz=112,slow=3.3,SNR=5.2							
GERES	**GERESS Array B**	**147.00**	**345**	PKPbc		PKPbc	07 26 09.4	-0.2
	0.9nm,0.6s,baz=43,slow=2.4,SNR=6.5							

*JMA **25** 07:08:56.4,24.15N×121.73E,h53km±1km,M2.6*
*ISCJB **25** 07:08:57.6±0.4,24.18N±0.03×121.80E±0.02,h49km±5km, Error ellipse: s-maj=4.9km s-min=3.3km az=154.1*
*TAP **25** 07:08:57.5,24.21N×121.75E,h47km,ML3.2,D*

ISC 25 07:08:58.1±1.2,24.19N±0.03×121.78E±0.03,h45km±8km, n33,σ0.9 71/56,7D,Taiwan

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
TWD	**Chiawan**	**0.20**	**238**	⇓*iP*		**Pn**	**07 09 05.6**	**-0.3**
	baz=226							
TWD				S		**Sn**	**07 09 11.7**	**+0.3**
	baz=226							
ENA	**Nanau**	**0.24**	**351**	⇓*iP*		**Pn**	**07 09 05.9**	**-0.4**
ENA				*eS*		**Sn**	**07 09 13.6**	**+1.5**
HWA	**Hwalien**	**0.26**	**218**	*eP*		**Pn**	**07 09 06.5**	**+0.1**
	baz=207							
HWA				*eS*		**Sn**	**07 09 13.1**	**+0.8**
	baz=207							
TWC	**Suao**	**0.42**	**8**	⇓*iP*		**Pn**	**07 09 08.1**	**-0.1**
	baz=14							
TWC				S		**Sn**	**07 09 16.0**	**+0.7**
	baz=14							
NNS	**Nan Shan**	**0.45**	**304**	P		**Pn**	**07 09 07.8**	**-0.8**
	baz=304							
NNS				S		**Sn**	**07 09 15.4**	**-0.6**
	baz=304							
WHF	**Hehuan Shan**	**0.47**	**265**	⇓*iP*		**Pn**	**07 09 08.4**	**-0.8**
	baz=261							
WHF				S		**Sn**	**07 09 16.2**	**-0.7**
	baz=261							
ESL	**Shilin**	**0.49**	**221**	*eP*		**Pn**	**07 09 09.7**	**+0.7**
	baz=215							
ESL				*eS*		**Sn**	**07 09 15.6**	**-1.0**
	baz=215							
ENTT	**Nioudou**	**0.49**	**337**	⇓P		**Pn**	**07 09 08.4**	**-0.6**
	baz=340							
ENTT				S		**Sn**	**07 09 16.7**	**-0.1**
	baz=340							
TWE	**Neicheng**	**0.54**	**349**	P		**Pn**	**07 09 09.2**	**-0.4**
	baz=353							
TWE				S		**Sn**	**07 09 17.9**	**+0.1**
	baz=353							
TWT	**Tachien**	**0.56**	**277**	⇓P		**Pn**	**07 09 09.8**	**-0.2**
	baz=274							
TWT				S		**Sn**	**07 09 18.5**	**+0.1**
	baz=274							
NSK	**Sanguang**	**0.62**	**322**	P		**Pn**	**07 09 10.0**	**-0.7**
	baz=323							
NSK				*eS*		**Sn**	**07 09 18.6**	**-1.1**
	baz=323							
EGS		**0.67**	**12**	*eP*		**Pn**	**07 09 12.1**	**+0.8**
	baz=15							
WDT	**Danda**	**0.73**	**234**	⇓P		**Pn**	**07 09 11.8**	**-0.6**
	baz=230							
WDT				S		**Sn**	**07 09 22.3**	**-0.4**
	baz=230							
NSTT	**Nanjuang**	**0.84**	**302**	*eP*		**Pn**	**07 09 13.1**	**-0.4**
	baz=302							
NSTT				*eS*		**Sn**	**07 09 24.6**	**-0.2**
	baz=302							
TWB1	**Santiao Chiao**	**0.84**	**13**	*eP*		**Pn**	**07 09 13.5**	**0.0**
	baz=16							
TWB1				*eS*		**Sn**	**07 09 25.9**	**+1.1**
	baz=16							
SMLT	**Sun Moon Lake**	**0.86**	**250**	*eP*		**Pn**	**07 09 14.3**	**+0.4**
	baz=247							
SMLT				*eS*		**Sn**	**07 09 25.7**	**+0.2**
	baz=247							
NWF	**Wu-fen Shan**	**0.88**	**360**	P		**Pn**	**07 09 14.3**	**+0.2**
	baz=2.0							
NWF				*eS*		**Sn**	**07 09 27.1**	**+1.2**
	baz=2.0							
TYC	**Yuchr**	**0.89**	**252**	*eP*		**Pn**	**07 09 14.3**	**+0.2**
	baz=249							
TWQ1	**Liyutan**	**0.94**	**280**	*eP*		**Pn**	**07 09 14.6**	**-0.2**
	baz=279							
TWQ1				*eS*		**Sn**	**07 09 27.6**	**+0.5**
	baz=279							
TWF1	**Yuli**	**0.94**	**208**	*eP*		**Pn**	**07 09 14.4**	**-0.5**
	baz=205							
TCU	**Taichung**	**1.01**	**268**	*eP*		**Pn**	**07 09 16.1**	**+0.3**
	baz=266							
YUS	**Yu-Shan**	**1.03**	**228**	*eP*		**Pn**	**07 09 15.0**	**-1.5**
	baz=225							
JYNG	**Yonagunijimaku**	**1.09**	**76**	P		**Pn**	**07 09 16.7**	**-0.2**
JYNG				S		**Sn**	**07 09 30.9**	**0.0**
ALS	**Alishan**	**1.12**	**233**	*eP*		**Pn**	**07 09 18.6**	**+1.0**
	baz=230							
YOJ	**Yonaguni jima**	**1.15**	**76**	P		**Pn**	**07 09 17.6**	**-0.2**
YOJ				*eS*		**Sn**	**07 09 32.0**	**-0.4**
CHN4	**Tsaushan**	**1.37**	**233**	*eP*		**Pn**	**07 09 22.0**	**+1.2**
	baz=231							
WTP	**Ta-pu**	**1.42**	**229**	*eP*		**Pn**	**07 09 22.2**	**+0.7**
	baz=227							
TWK	**Hsinying**	**1.50**	**233**	*eP*		**Pn**	**07 09 23.7**	**+1.1**
	baz=230							
IRIF	**Iriomote-Funau**	**1.78**	**85**	P		**Pn**	**07 09 26.1**	**-0.3**
IRIF				S		**Sn**	**07 09 47.4**	**-0.5**
HATJ	**Hateruma jima**	**1.85**	**94**	S		**Sn**	**07 09 50.1**	**+0.5**
JKRS	**Kuro-shima**	**2.03**	**88**	P		**Pn**	**07 09 30.4**	**+0.6**
JKRS				S		**Sn**	**07 09 54.8**	**+0.8**
JIJ	**Ishigaki jima**	**2.16**	**85**	P		**Pn**	**07 09 31.3**	**-0.3**
JIJ				S		**Sn**	**07 09 55.6**	**-1.6**
JISG	**Ishigakijimahi**	**2.34**	**80**	P		**Pn**	**07 09 33.6**	**-0.4**
JISG				S		**Sn**	**07 10 00.8**	**-0.8**

TRN 25 07:15:10.3,15.43N×60.30W,h8km,MD3.5,Leeward Islands

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op		ISC	h m s	ISC
BAMF	**Morne Balai**	**1.02**	**234**	*eP*		Pn	07 15 32.4	+1.5
CXM	**Morne La Croix**	**1.04**	**234**	*eP*		Pn	07 15 33.8	+2.5
MVM	**Montagne Vaucl**	**1.04**	**214**	*eP*		Pn	07 15 33.4	+2.2
GBMF	**Grand Be**	**1.05**	**233**	*eP*		Pn	07 15 33.6	+2.3
LPMF	**Morne Lapointe**	**1.07**	**217**	*eP*		Pn	07 15 32.2	+0.7
PML	**Morne Lenard**	**1.07**	**233**	*eP*		Pn	07 15 33.4	+1.8
PCM	**Pelee Case Pet**	**1.07**	**235**	*eP*		Pn	07 15 33.4	+1.8
FDF	**Fort de France**	**1.07**	**230**	*eP*		Pn	07 15 33.7	+2.0
FDF				*eS*		Sn	07 15 50.6	+3.8
MGG	**Marie-Galante**	**1.09**	**296**	*eP*		Pn	07 15 33.7	+1.8
MGG				*eS*		Sn	07 15 51.7	+4.5
DEG	**La Desirade**	**1.15**	**320**	*eP*		Pn	07 15 33.5	+0.9
DEG				*eS*		Sn	07 15 51.7	+3.2
TRMF	**Trois Ilets**	**1.15**	**219**	*eP*		Pn	07 15 34.8	+2.2
TBG	**Guadaloupe-3**	**1.36**	**288**	*e*		Pn	07 15 26.6	-9.1
TBG	**Guadaloupe-3**	**1.36**	**288**	*eP*		Pg	07 15 37.6	+1.1
TBG				*eS*		Sg	07 15 57.3	+3.1

IDC 25 07:18:25.2±7.1,6.21S×149.49E,h62km±51km,mb3.5/4, mb1 3.8/5,mb1mx3.4/41,mbtmp3.9/5,ML2.2/1,MS3.1/1, Ms1 3.1/1,ms1mx2.3/23,Error ellipse: s-maj=61.8km s-min=47.7km az=124.0,New Britain region

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op		ISC	h m s	ISC
PMG	**Port Moresby**	**3.93**	**216**	P		Pn	07 19 23.8	+0.7
	12nm,0.3s,baz=31,slow=12,SNR=22							
PMG				S		Sn	07 20 08.1	+0.2
	8.0nm,0.3s,baz=110,slow=17,SNR=5.7							
WRA	**Warramunga Arr**	**20.08**	**226**	P		P	07 22 54.5	+0.6
	1.1nm,0.3s,baz=52,slow=11,SNR=24							
ASAR	**Alice Springs**	**22.94**	**219**	P		P	07 23 25.4	+1.0
	1.5nm,0.6s,baz=57,slow=9.2,SNR=52							
FITZ	**Fitzroy Crossi**	**26.10**	**241**	P		P	07 23 52.6	-0.9
	1.3nm,0.5s,baz=50,slow=7.1,SNR=6.0							
FITZ				LR		LR	07 34 10.1	
	comp=Z,48nm,21.6s,baz=196,slow=36							
STKA	**Stephens Creek**	**26.58**	**195**	P		P	07 23 57.4	-0.3
	1.1nm,0.7s,baz=0.0,slow=8.1,SNR=3.9							

*IDC **25** 07:19:21.5±0.7,0.45S×19.96W,h0km,mb4.1/14, mb1 4.3/16,mb1mx4.0/47,mbtmp4.2/16,ML4.8/2,MS3.9/18, Ms1 3.9/18,ms1mx3.7/38,Error ellipse: s-maj=33.2km s-min=14.4km az=139.0*
*BJI **25** 07:19:21.0,0.50S×20.00W,h10km*
*ISCJB **25** 07:19:22.3±0.4,0.56S±0.05×19.90W±0.05,h19km, mb4.3/20,MS3.9/15,Error ellipse: s-maj=8.0km s-min=7.7km az=136.4*
*NEIC **25** 07:19:22.7±0.3,0.52S×19.99W,h10km,mb4.6/8,Error ellipse: s-maj=11.1km s-min=6.8km az=142.0*

**ISC 25 07:19:24.0±0.5,0.53S±0.08×19.

LPAZ	La Paz	49.96	249	P		P	07 28 18.5	+0.5	
	2.5nm,0.6s,baz=81,slow=4.5,SNR=15								
LPAZ				LR		LR	07 49 17.6		
	comp=Z,126nm,18.1s,baz=86,slow=36								
LPAZ	La Paz	49.96	249	*e*P		P	07 28 18.6	+0.5	
	3.7nm,0.8s								
BOSA	Boshof	51.43	127	P		P	07 28 32.8	+4.4	
	5.5nm,1.0s,baz=302,slow=9.0,SNR=4.6								
BOSA				LR		LR	07 47 18.6		
	comp=Z,84nm,18.1s,baz=303,slow=33								
GEA0	GERESS Array S	57.12	26	*e*P		P	07 29 09.1	-0.4	
GEC2	GERESS Array S	57.13	26	*e*P		P	07 29 09.2	-0.3	
	5.2nm,1.2s								
GERES	GERESS Array B	57.13	26	P		P	07 29 08.9	-0.6	
	1.2nm,0.8s,baz=205,slow=5.9,SNR=8.6								
KMBO	Kilima Mbogo	57.23	91	LR		LR	07 52 03.3		
	comp=Z,240nm,18.2s,baz=271,slow=34								
VYHS	Vyhne	59.24	29	*e*P		P	07 29 23.8	-0.4	
MORC	Moravsky Berou	59.53	27	*e*P		P	07 29 26.4	+0.3	
	52nm,2.0s								
KECS	Kecovo	60.05	30	*e*P		P	07 29 30.2	+0.5	
PLCA	Paso Flores	60.75	222	LR		LR	07 53 15.9		
	comp=Z,71nm,20.6s,baz=181,slow=33								
MLR	Muntele Rosu	61.14	35	*e*P		P	07 29 37.5	+0.1	
	13nm,1.3s								
BR231	Keskin MP Arra	62.61	44	*e*P		P	07 29 50.1	+2.7	
BRTR	Keskin Array B	63.16	44	P		P	07 29 51.3	+0.2	
	4.2nm,1.1s,baz=228,slow=4.8,SNR=14								
BRTR				LR		LR	07 59 32.7		
	comp=Z,23nm,18.8s,baz=236,slow=38								
AK11	Malin Array Si	65.86	32	*e*P		P	07 30 07.8	-0.5	
KIEV	Kiev	65.89	32	*e*P		P	07 30 07.9	-0.6	
	7.2nm,1.0s								
AKASG	Malin Array Be	65.90	32	P		P	07 30 07.8	-0.8	
	3.5nm,0.9s,baz=235,slow=6.6,SNR=17								
AKASG				LR		LR	08 00 34.1		
	comp=Z,65nm,18.0s,baz=265,slow=38								
NB2	NORSAR Subarra	65.90	16	P		P	07 30 08.3	-0.2	
	comp=Z,0.3nm,0.6s,baz=210,slow=6.5								
NOA	NORSAR Array B	65.90	16	P		P	07 30 08.3	-0.2	
	comp=Z,0.9nm,0.9s,baz=211,slow=6.6,SNR=4.0								
FINES	FINESS Array B	71.01	21	P		P	07 30 40.7	+0.4	
	comp=Z,2.3nm,0.9s,baz=157,slow=6.2,SNR=5.5								
KBZ	Khabaz	71.09	43	P		P	07 30 41.7	+0.5	
	comp=Z,6.3nm,0.9s,baz=243,slow=4.9,SNR=15								
OLIL	Olney	73.39	311	*e*P		P	07 30 55.6	+0.5	
ARCES	ARCESS Array B	76.23	11	LR		LR	08 07 18.9		
	comp=Z,55nm,18.1s,baz=222,slow=38								
GEYT	Alibeck	80.94	52	LR		LR	08 10 34.0		
	comp=Z,59nm,19.1s,baz=245,slow=38								
ABKAR	Akbulak array	83.82	40	*e*P		P	07 31 52.6	+0.3	
TXAR	Lajitas Array	84.75	299	P		P	07 31 58.1	+0.5	
	comp=Z,1.0nm,0.8s,baz=122,slow=6.2,SNR=10								
TX31	Lajitas Ar. Si	84.75	299	*e*P		P	07 31 58.1	+0.5	
PDAR	Pinedale Array	90.04	313	LR		LR	08 05 49.1		
	comp=Z,38nm,21.7s,baz=104,slow=31								
YKA	Yellowknife Ar	92.61	332	P		P	07 32 32.8	-1.4	
	2.0nm,0.7s,baz=89,slow=5.3,SNR=7.5								
KSH	Kashi	94.94	51	*e*P		P	07 32 46.0	+0.3	
KSH				*e*pP		pP	07 32 50.8	-1.2	
KSH				SKS		SKSac	07 43 19.3	-1.5	
KSH				S		S	07 43 56.5	-2.9	
NRIK	Noril'sk	96.63	20	LR		LR	08 21 16.8		
	comp=Z,31nm,18.1s,baz=119,slow=38								
CD2	Chengdu	118.82	55	PKP		PKPdf	07 38 11.3	-0.6	
HHC	Hu-ho-hao-te	120.60	41	*e*PKP		PKPdf	07 38 16.5	+1.3	
HHC				AMB		AMB			
	comp=Z,48nm,3.2s								
ASAR	Alice Springs	145.04	135	PKPbc		PKPab	07 39 00.7	+0.2	
	comp=Z,4.8nm,0.7s,baz=225,slow=2.6,SNR=78								
WRA	Warramunga Arr	147.64	130	PKPbc		PKPbc	07 39 08.1	-0.2	
	comp=Z,0.8nm,0.8s,baz=233,slow=2.2,SNR=5.4								

SJA 25 07:25:15.5±1.0, 28.°95S×67.°41W, h133km±6km, ML4.1, MW3.3, La Rioja Province

Code	Station Name	Δ°	AZ°	Phase ID		ISC	Time	Res
				Op			h m s	ISC
VCA	Vinchina	0.73	287	*i* P		Pn	07 25 37.8	+1.2
VCA				*i* S		Sn	07 25 52.9	+0.4
VCA				IAML			07 25 56.4	
	comp=Z,5μm,0.2s							
CYA	Choya	1.50	71	*i* P		Pn	07 25 44.9	+1.1
CYA				IAML			07 26 06.6	
	comp=Z,524nm,0.2s							
AVFE	Valle Fertil	1.71	181	*i* P		Pn	07 25 47.4	+1.2
AVFE				*i* S		Sn	07 26 10.6	+0.9
RTLL	Cerro Villicun	2.54	201	*i* P		Pn	07 25 57.8	+1.3
RTLL				*i* S		Sn	07 26 28.4	+0.5
SJA	San Juan	2.76	201	*i* P		Pn	07 26 00.8	+1.6
SJA				AMP			07 26 03.8	
	comp=Z,832nm,0.3s							
SJA				*i* S		Sn	07 26 33.0	+0.2
AHML	Horco Molle	2.83	41	*i* P		Pn	07 26 00.7	+0.6
RTCV	Cerro Valdivia	3.06	198	*i* P		Pn	07 26 04.8	+1.7
RTCV				*i* S		Sn	07 26 40.1	+0.3
FSA	Cafayete	3.10	25	*i* P		Pn	07 26 05.3	+1.6
FSA				*i* S		Sn	07 26 41.0	+0.1
RTLS	Leoncito	3.27	209	*i* P		Pn	07 26 07.9	+1.8
RTLS				*i* S		Sn	07 26 45.9	+0.8
ACAN	Cantantal	3.32	177	*i* P		Pn	07 26 07.7	+1.3
ACAN				*i* S		Sn	07 26 45.3	-0.5
AUSP	Uspallata	3.68	207	*i* P		Pn	07 26 12.6	+1.2
AUSP				*i* S		Sn	07 26 54.9	+0.2
ASAL	Salagasta	3.83	198	*i* P		Pn	07 26 13.8	+0.7
ASAL				*i* S		Sn	07 26 57.6	-0.3
AAGR	Agrelo	4.30	196	*i* P		Pn	07 26 20.4	+1.1
AAGR				*i* S		Sn	07 27 08.7	-0.3

*IDC **25** 07:39:53.1±0.9, 49.°48N×28.°54W, h0km, mb3.7/12, mb1 3.9/14, mb1mx3.7/54, mbtmp3.7/14, ML4.0/2, MS3.6/4, Ms1 3.6/4, ms1mx3.0/46, Error ellipse: s-maj=29.1km s-min=15.1km az=14.0*

*ISCJB **25** 07:39:54.1±0.7, 49.5N±0.1×28.5W±0.1, h17km, mb3.8/14, MS3.5/4, Error ellipse: s-maj=20.0km s-min=9.7km az=12.2*

*NEIC **25** 07:39:54.9±0.5, 49.51N×28.49W, h10km, mb4.4/2, Error ellipse: s-maj=16.1km s-min=8.1km az=192.0*

*CSEM **25** 07:39:54.9, 49.51N×28.49W, h10km, mb4.4/2*

ISC 25 07:39:56.1±0.8, 49.5N±0.2×28.48W±0.1, h17km, n27, σ0.94/24, mb3.9/14, MS3.5/4, 3C, Northern Mid-Atlantic Ridge

Code	Station Name	Δ°	AZ°	Phase ID		ISC	Time	Res
				Op			h m s	ISC
EKA	Eskdalemuir Ar	16.45	60	Pn		Pn	07 43 45.4	-0.5
	baz=257,slow=12,SNR=3.3							
ESDC	Sonseca Array	19.96	110	P		P	07 44 27.5	+0.2
	0.2nm,0.3s,baz=306,slow=12,SNR=3.8							
DAVOX	Davos/Dischmat	25.55	81	P		P	07 45 24.9	+0.8
	1.6nm,0.8s,baz=321,slow=14,SNR=2.6							
DAVOX				LR		LR	07 53 21.0	
	comp=Z,124nm,19.0s,baz=265,slow=32							
FRB	Frobisher Bay	25.69	319	P		P	07 45 25.4	+0.5
	2.4nm,0.8s,baz=103,slow=11,SNR=3.2							
GERES	GERESS Array B	27.32	75	P		P	07 45 40.8	+0.9
	0.7nm,1.0s,baz=270,slow=6.7,SNR=3.8							
GERES				LR		LR	07 55 42.3	
	comp=Z,123nm,18.0s,baz=282,slow=35							
VRAC	Vranov	28.99	73	LR		LR	07 56 10.2	
	comp=Z,90nm,18.0s,baz=261,slow=34							
FINES	FINESS Array B	32.13	47	P		P	07 46 21.8	-0.4
	1.0nm,0.8s,baz=242,slow=9.0,SNR=3.8							
ARCES	ARCESS Array B	32.35	32	P		P	07 46 23.4	-0.6
	1.0nm,0.7s,baz=260,slow=7.9,SNR=3.6							
BURAR	Bucovina Array	34.95	72	*i* P		P	07 46 47.9	+0.8
PLOR	Plostina	36.59	74	*i* P		P	07 47 07.4	+6.3
VRI	Vrincioaia	36.63	74	*i* P		P	07 47 08.3	+6.9
H05N1	Guadeloupe/Mar	42.35	230	T		T	08 32 45.1	
	SNR=3.2							
H05S1	Guadeloupe/Mar	43.86	228	T		T	08 32 37.1	
	SNR=16							
TORD	Torodi Ar. Bea	43.93	135	P		P	07 48 01.5	-0.5
	0.7nm,0.8s,baz=335,slow=8.6,SNR=4.0							
YKA	Yellowknife Ar	46.19	320	P		P	07 48 18.8	-0.7
	1.5nm,1.0s,baz=61,slow=7.4,SNR=9.7							
YKA				PcP		PcP	07 49 55.0	0.0
	0.4nm,0.7s,baz=55,slow=4.1,SNR=7.6							
YKA	Yellowknife Ar	46.19	320	PcP		PcP	07 49 55.0	0.0
INK	Inuvik	50.11	332	P		P	07 48 50.2	+0.5
	1.6nm,0.9s,baz=63,slow=6.6,SNR=4.4							
PDAR	Pinedale Array	54.02	296	P		P	07 49 18.1	-1.3
	1.5nm,0.9s,baz=57,slow=7.6,SNR=9.3							
ILAR	Eielson Array	56.46	333	P		P	07 49 37.6	+1.2
	0.9nm,1.0s,baz=42,slow=4.5,SNR=6.4							
DUG	Dugway, Tooele	57.53	295	*e*P		P	07 49 45.9	+1.4
	1.7nm,1.0s							
DUG	Dugway, Tooele	57.53	295	*e*P		P	07 49 45.9	+1.4
	1.7nm,1.0s							
TXAR	Lajitas Array	58.99	280	P		P	07 49 54.3	-0.6
	0.5nm,0.7s,baz=69,slow=6.9,SNR=6.9							
TXAR				LR		LR	08 14 07.1	
	comp=Z,43nm,20.7s,baz=0.0,slow=35							
WVOR	Wild Horse Val	59.43	301	*e*P		P	07 49 57.9	+0.1
	14nm,1.7s							
WVOR	Wild Horse Val	59.43	301	*e*P		P	07 49 57.9	+0.1
	14nm,1.7s							
MKAR	Makanchi Array	66.90	44	P		P	07 50 47.0	-0.1
	0.6nm,0.7s,baz=324,slow=6.0,SNR=8.0							
WRA	Warramunga Arr	147.44	31	PKPbc		PKPdf	07 59 38.4	+1.8
	0.6nm,0.8s,baz=329,slow=3.2,SNR=5.2							
ASAR	Alice Springs	150.72	35	PKPbc		PKPbc	07 59 46.5	-0.8
	1.6nm,0.8s,baz=348,slow=1.9,SNR=18							
ASAR				PKPab		PKPab	07 59 52.5	-1.8
	1.2nm,0.8s,baz=338,slow=2.1,SNR=8.7							

*DDA **25** 07:43:22.8, 39.°13N×27.°45E, h7km, Md2.6*

*CSEM **25** 07:43:25.8±0.3, 39.°09N×27.°69E, h8km, MD2.4, Error ellipse: s-maj=7.1km s-min=4.6km az=166.0*

*ISK **25** 07:43:25.8, 39.°05N×27.°67E, h6km, MD2.4*

ISC 25 07:43:25.9±1.1, 39.°10N±0.°03×27.°66E±0.°02, h13km±9km, n24, σ0.83/42, Turkey

Code	Station Name	Δ°	AZ°	Phase ID		ISC	Time	Res
				Op			h m s	ISC
AKHS	Akhisar	0.25	151	*i* P		Pg	07 43 30.3	-0.9
AKHS				*i* S		Sb	07 43 36.8	+0.3
AKHS	Akhisar	0.25	151	P		Pg	07 43 30.3	-0.9
AKHS				S		Sb	07 43 36.8	+0.3
AKS	Akhisar	0.25	151	*e*PG		Pg	07 43 30.6	-0.6
AKS	Akhisar	0.25	151	*e*Pg		Pg	07 43 30.6	-0.6
DKL	Dikili	0.59	268	*e*PG		Pb	07 43 37.8	-0.2
DKL				*e*SG		Sb	07 43 46.6	+0.4
DKL	Dikili	0.59	268	*e*Pg		Pb	07 43 37.8	-0.2
DKL				*e*Sg		Sb	07 43 46.6	+0.4
IZM	Izmir	0.76	204	*e*PG		Pg	07 43 40.2	-0.5
IZM				*e*SG		Sg	07 43 50.8	+0.1
IZM	Izmir	0.76	204	*e*Pg		Pg	07 43 40.2	-0.5
IZM				*e*Sg		Sg	07 43 50.8	+0.1
DURS	Dursunbey	0.81	51	*i* P		Pg	07 43 40.4	-1.2
DURS				*i* S		Sn	07 43 54.8	-0.3
DURS	Dursunbey	0.81	51	P		Pg	07 43 40.4	-1.2
DURS				S		Sn	07 43 54.8	-0.3
DEMI	Demirci	0.83	93	*i* P		Pg	07 43 41.1	-0.8
DEMI				*i* S		Sn	07 43 55.3	-0.1
DEMI	Demirci	0.83	93	P		Pg	07 43 41.1	-0.8
DEMI				S		Sn	07 43 55.3	-0.1
BLCB	Balcova	0.86	214	*e*PG		Pg	07 43 42.1	-0.4
BLCB				*e*SG		Sb	07 43 54.2	+0.2
BLCB	Balcova	0.86	214	*e*Pg		Pg	07 43 42.1	-0.4
BLCB				*e*Sg		Sb	07 43 54.2	+0.2
KULA	Kula-Manisa	0.97	126	*e*PG		Pb	07 43 44.2	-0.3
KULA				*e*SG		Sb	07 43 57.9	+0.3
KULA	Kula-Manisa	0.97	126	*e*Pg		Pb	07 43 44.3	-0.4
KULA				*e*Sg		Sb	07 43 57.9	+0.3
AYDB	Zeytinkoy-Aydi	1.16	171	*e*PN		Pb	07 43 47.3	-0.6
AYDB	Zeytinkoy-Aydi	1.16	171	*e*Pn		Pb	07 43 47.3	-0.6
SIGR	SIGRI	1.41	275	*e*PN		Pg	07 43 52.8	-0.2
SIGR	SIGRI	1.41	275	*e*Pn		Pg	07 43 52.8	-0.2
GDZ	Gediz	1.42	90	*i* P		Pb	07 43 51.9	-0.4
GDZ				*i* S		Sg	07 44 13.8	+2.1
GDZ	Gediz	1.42	90	P		Pb	07 43 51.9	-0.4
GDZ				S		Sg	07 44 13.8	+2.1
KHAL	Karahalli	1.61	116	*i* P		Pg	07 43 56.1	-0.7
KHAL				*i* S		Sg	07 44 19.4	+1.7
KHAL	Karahalli	1.61	116	P		Pg	07 43 56.1	-0.7
KHAL				S		Sg	07 44 19.4	+1.7

*ISCJB **25** 07:44:11.5±0.3, 38.°43N±0.°02×13.°58E±0.°02, h29km±4km, mb3.7/5, Error ellipse: s-maj=4.0km s-min=3.0km az=16.2*

*ROM **25** 07:44:12.1±0.1, 38.°39N×13.°67E, h24km±2km, MI3.8/41, Error ellipse: s-maj=2.0km s-min=1.9km az=51.0*

*CSEM **25** 07:44:12.2±0.1, 38.°39N×13.°61E, h20km, ML4.6/4, Error ellipse: s-maj=2.8km s-min=2.4km az=25.0*

*THE **25** 07:44:12.2, 38.°24N×13.°76E, h18km±14km, ML3.6/3, Error ellipse: s-maj=18.6km s-min=1.2km az=259.0*

*LDG **25** 07:44:13.7±0.1, 38.°33N×13.°73E, h30km, MI3.6/7, Error ellipse: s-maj=3.9km s-min=2.8km az=39.0*

*IDC **25** 07:44:15.6±1.9, 38.°42N×13.°61E, h36km±21km, mb3.2/6, mb1 3.4/11, mb1mx3.3/45, mbtmp3.4/11, ML3.5/5, Error ellipse: s-maj=23.6km s-min=17.2km az=85.0*

ISC 25 07:44:12.2±1.0, 38.°40N±0.°03×13.°64E±0.°02, h20km±5km, n203, σ1.06/217, mb3.9/5, 7C-1D, Sicily

Code	Station Name	Δ°	AZ°	Phase ID		ISC	Time	Res
				Op			h m s	ISC
SOLUN	Solunto	0.32	195	Pg		Pg	07 44 18.4	-0.8
SOLUN				Sg		Sg	07 44 23.9	-0.1
	22μm,0.5s							
SOLUN	Solunto	0.32	195	Pg		Pg	07 44 18.4	-0.8
SOLUN				Sg		Sg	07 44 23.9	-0.1
	22μm,0.5s							
USI	Ustica	0.47	311	Pg		Pb	07 44 22.6	+0.7
USI				Sg		Sn	07 44 31.1	-0.6
	39μm,0.4s							
USI	Ustica	0.47	311	Pg		Pb	07 44 22.6	+0.7
GIB	Gibilmanna	0.51	143	Pg		Pg	07 44 22.0	-0.6
GIB				Sg		Sb	07 44 30.1	+0.5
	23μm,0.5s							
GIB	Gibilmanna	0.51	143	Pg		Pg	07 44 22.0	-0.6
GIB				Sg		Sb	07 44 30.1	+0.5
	23μm,0.5s							
CORL	Corleone	0.57	208	Pg		Pb	07 44 23.1	-0.4
CORL				Sg		Sb	07 44 31.8	+0.6
	4μm,0.4s							
CORL	Corleone	0.57	208	Pg		Pb	07 44 23.1	-0.4
CORL				Sg		Sb	07 44 31.8	+0.6
	4μm,0.4s							
PLLN	Pollina	0.57	136	Pg		Pb	07 44 23.2	-0.3
PLLN				Sg		Sb	07 44 32.1	+0.9
	14μm,0.5s							
PLLN	Pollina	0.57	136	Pg		Pb	07 44 23.2	-0.3
PLLN				Sg		Sb	07 44 32.1	+0.9
	14μm,0.5s							
IACL	Alicudi	0.58	76	Pg		Pg	07 44 23.9	+0.1
	10μm,0.4s							
IACL	Alicudi	0.58	76	Pg		Pg	07 44 23.9	+0.1
	10μm,0.4s							
IFIL	Filicudi I Eol	0.75	77	Pg		Pb	07 44 26.4	-0.1
	7μm,0.4s							
IFIL	Filicudi I Eol	0.75	77	Pg		Pb	07 44 26.4	-0.1
	7μm,0.4s							
CRJA	Costa Raja	0.78	220	Pg		Pb	07 44 27.1	0.0
CRJA	Costa Raja	0.78	220	Pg		Pb	07 44 27.1	0.0
RESU	Resuttano	0.82	156	Pg		Pn	07 44 29.1	+0.4
	4μm,0.5s							
RESU	Resuttano	0.82	156	Pg		Pn	07 44 29.1	+0.4
	4μm,0.5s							
MTGR	Montagna Grand	0.86	234	Pg		Pb	07 44 28.8	+0.3
MTGR	Montagna Grand	0.86	234	Pg		Pb	07 44 28.8	+0.3
CLTB	Caltabellotta	0.89	202	Pg		Pn	07 44 30.5	+0.9
	16μm,0.5s							
CLTB	Caltabellotta	0.89	202	Pg		Pn	07 44 30.5	+0.9
	16μm,0.5s							
MMGO	Monte Magaggia	0.90	216	Pg		Pb	07 44 28.8	-0.4
MMGO	Monte Magaggia	0.90	216	Pg		Pb	07 44 28.8	-0.4
GALF	Gagliano Caste	1.00	133	Pg		Pn	07 44 31.5	+0.2
	3μm,0.5s							
GALF	Gagliano Caste	1.00	133	Pg		Pn	07 44 31.5	+0.2
	3μm,0.5s							
LLI	Lipari	1.03	87	Pg		Pb	07 44 30.7	-0.7
	11μm,0.4s							
LLI	Lipari	1.03	87	Pg		Pb	07 44 30.7	-0.7
	11μm,0.4s							
VPL	Vulcano Piano	1.06	91	Pg		Pb	07 44 30.7	-1.2
	9μm,0.7s							
VPL	Vulcano Piano	1.06	91	Pg		Pb	07 44 30.7	-1.2
	9μm,0.7s							
VAE	Valguarnera	1.10	146	Pn		Pg	07 44 34.9	+1.2
	53nm,0.3s,baz=330,slow=6.9,SNR=56							
NOV	Novara	1.24	107	Pg		Pn	07 44 34.7	+0.2
	4μm,0.5s							
NOV	Novara	1.24	107	Pg		Pn	07 44 34.7	+0.2
	4μm,0.5s							
MILZ	Milazzo	1.26	95	Pg		Pn	07 44 33.4	-1.3
	3μm,0.9s							
MILZ	Milazzo	1.26	95	Pg		Pn	07 44 33.4	-1.3
	3μm,0.9s							
RAFF	Raffo Rosso	1.31	154	Pg		Pg	07 44 37.1	-0.4
	2μm,0.4s							
RAFF	Raffo Rosso	1.31	154	Pg		Pg	07 44 37.1	-0.4
	2μm,0.4s							
STR3	STROMBOLI 3	1.31	72	Pg		Pn	07 44 35.1	-0.3
STR3	STROMBOLI 3	1.31	72	Pg		Pn	07 44 35.1	-0.3
MMME	Mongiuffi-Meli	1.36	110	Pg		Pn	07 44 36.0	-0.1
	2μm,0.5s							
MMME	Mongiuffi-Meli	1.36	110	Pg		Pn	07 44 36.0	-0.1
	2μm,0.5s							
MPNC	Port Mandanici	1.37	100	Pg		Pn	07 44 35.4	-0.9
	4μm,0.5s							
MPNC	Port Mandanici	1.37	100	Pg		Pn	07 44 35.4	-0.9
	4μm,0.5s							
HLNI	Lentini	1.43	137	Pg		Pn	07 44 37.3	+0.2
	1μm,0.6s							
HLNI	Lentini	1.43	137	Pg		Pn	07 44 37.3	+0.2
	1μm,0.6s							
MSRU	Castanea	1.48	95	Pg		Pn	07 44 36.8	-0.9
	1μm,0.4s							
MSRU	Castanea	1.48	95	Pg		Pn	07 44 36.8	-0.9
	1μm,0.4s							
HVZN	Vizzini	1.49	145	Pg		Pn	07 44 38.3	+0.4
	7μm,0.9s							
HVZN	Vizzini	1.49	145	Pg		Pn	07 44 38.3	+0.4
	7μm,0.9s							
HCRL	Carlentini	1.57	135	Pg		Pn	07 44 39.2	+0.3
	3μm,0.5s							
HCRL	Carlentini	1.57	135	Pg		Pn	07 44 39.2	+0.3
	3μm,0.5s							
HAGA	Augusta	1.64	132	Pg		Pn	07 44 40.4	+0.5
	989nm,0.5s							
HAGA	Augusta	1.64	132	Pg		Pn	07 44 40.4	+0.5
	989nm,0.5s							
SSY	Sortino	1.69	137	Pg		Pn	07 44 41.0	+0.4
	2μm,0.3s							
SSY	Sortino	1.69	137	Pg		Pn	07 44 41.0	+0.4
	2μm,0.3s							
AGST	Augusta-Monte	1.70	132	Pg		Pn	07 44 40.9	+0.2
	902nm,0.4s							
AGST	Augusta-Monte	1.70	132	Pg		Pn	07 44 40.9	+0.2
	902nm,0.4s							
MSCL	Scilla	1.70	95	Pg		Pn	07 44 39.8	-1.0
	2μm,0.6s							
MSCL	Scilla	1.70	95	Pg		Pn	07 44 39.8	-1.0
	2μm,0.6s							
HMDC	Modica	1.70	147	Pg		Pn	07 44 41.3	+0.5
	1μm,0.3s							
HMDC	Modica	1.70	147	Pg		Pn	07 44 41.3	+0.5
	1μm,0.3s							
JOPP	Joppolo	1.77	83	Pg		Pn	07 44 41.0	-0.8
	601nm,0.4s							
JOPP	Joppolo	1.77	83	Pg		Pn	07 44 41.0	-0.8
	601nm,0.4s							
CEL	Celeste	1.78	94	Pg		Pn	07 44 41.0	-0.9
	581nm,0.5s							
CEL	Celeste	1.78	94	Pg		Pn	07 44 41.0	-0.9
	581nm,0.5s							
HAVL	Avola	1.86	140	Pg		Pn	07 44 43.2	+0.2
	2μm,0.3s							
HAVL	Avola	1.86	140	Pg		Pn	07 44 43.2	+0.2
	2μm,0.3s							
MPAZ	Palizzi	1.92	103	Pg		Pn	07 44 44.0	+0.2
	1μm,0.7s							
MPAZ	Palizzi	1.92	103	Pg		Pn	07 44 44.0	+0.2
	1μm,0.7s							
SOI	Samo	1.93	99	Pg		Pn	07 44 43.4	-0.5
SOI	Samo	1.93	99	Pg		Pn	07 44 43.4	-0.5
BULG	Bulgheria - Ca	2.15	38	Pg		Pn	07 44 47.2	+0.1
	86nm,0.4s							
BULG	Bulgheria - Ca	2.15	38	Pg		Pn	07 44 47.2	+0.1
	86nm,0.4s							
CAR1	CAROLEI	2.18	66	Pg		Pn	07 44 47.1	-0.4
	388nm,0.7s							
CAR1	CAROLEI	2.18	66	Pg		Pn	07 44 47.1	-0.4
	388nm,0.7s							
PLAC	Placanica	2.20	88	Pg		Pn	07 44 47.5	-0.2
	329nm,0.6s							
PLAC	Placanica	2.20	88	Pg		Pn	07 44 47.5	-0.2
	329nm,0.6s							
MGR	Morigerati	2.29	40	Pg		Pn	07 44 48.6	-0.2
	40nm,0.4s							
MGR	Morigerati	2.29	40	Pg		Pn	07 44 48.6	-0.2
	40nm,0.4s							
CUC	Castrocucco	2.32	46	Pg		Pn	07 44 49.3	-0.1
	70nm,0.4s							
CUC	Castrocucco	2.32	46	Pg		Pn	07 44 49.3	-0.1
	70nm,0.4s							
CDRU	Civita di Ruta	2.45	31	Pg		Pn	07 44 51.8	+0.6
	35nm,0.5s							
CDRU	Civita di Ruta	2.45	31	Pg		Pn	07 44 51.8	+0.6
	35nm,0.5s							
SERS	Sersale	2.47	74	Pg

PYL	**PYLOS**	6.60	101	P		Pn	07 45 47.9	-0.2
SERG	**Sergoula**	6.61	87	P		Pn	07 45 48.1	-0.2
SERG	**Sergoula**	6.61	87	P		Pn	07 45 48.1	-0.2
THL	**Klokotos Trika**	6.63	77	P		Pn	07 45 49.1	+0.6
THL	**Klokotos Trika**	6.63	77	P		Pn	07 45 49.1	+0.6
KALE	**Kalithea**	6.68	87	P		Pn	07 45 49.8	+0.6
KALE	**Kalithea**	6.68	87	P		Pn	07 45 49.8	+0.6
KLV	**Kalavryta, Ach**	6.71	90	P		Pn	07 45 50.5	+0.8
KLV	**Kalavryta, Ach**	6.71	90	P		Pn	07 45 50.5	+0.8
AGG	**Agios Georgios**	6.83	82	P		Pn	07 45 51.8	+0.6
AGG	**Agios Georgios**	6.83	82	P		Pn	07 45 51.8	+0.6
BLY	**Banja Luka**	6.88	22	*i*P		Pn	07 45 56.0	+4.1
IVAS	**Ivanjica**	7.14	42	*e*P		Pn	07 45 57.8	+2.2
SBF	**Sospel**	7.19	321	*e*Pn		Pn	07 45 56.0	-0.2
SBF				*e*Sn		Sn	07 47 13.9	-3.4
	7.5nm,0.4s							
SBF	**Sospel**	7.19	321	*e*Pn		Pn	07 45 56.0	-0.2
SBF				*e*Sn		Sn	07 47 13.9	-3.4
	3.8nm,0.4s							
LMR	**La Mourre**	7.31	315	*e*Pn		Pn	07 45 57.9	+0.1
LMR				*e*Sn		Sn	07 47 16.5	-3.7
	3.6nm,0.4s							
LMR	**La Mourre**	7.31	315	*e*Pn		Pn	07 45 57.9	+0.1
FRF	**La Foret Royal**	7.38	316	*e*Pn		Pn	07 45 59.2	+0.4
FRF				*e*Sn		Sn	07 47 18.3	-3.7
	8.6nm,0.8s							
FRF	**La Foret Royal**	7.38	316	*e*Pn		Pn	07 45 59.2	+0.4
DIVS	**Divibare**	7.44	38	*i* P		Pn	07 46 01.2	+1.6
VAY	**Valandovo**	7.46	64	P		Pn	07 46 01.4	+1.5
VAY	**Valandovo**	7.46	64	*i* Pn		Pn	07 46 01.8	+1.8
VAY	**Valandovo**	7.46	64	P		Pn	07 46 01.4	+1.5
VAY	**Valandovo**	7.46	64	*i* Pn		Pn	07 46 01.7	+1.8
BARS	**Barje**	7.62	52	*e*P		Pn	07 46 03.5	+1.3
DID	**Didima**	7.64	94	P		Pn	07 46 02.4	0.0
DID	**Didima**	7.64	94	P		Pn	07 46 02.4	0.0
KNT	**Kendrikon**	7.64	66	P		Pn	07 46 04.0	+1.5
KNT	**Kendrikon**	7.64	66	P		Pn	07 46 04.0	+1.5
GRUS	**Gruza**	7.65	42	*e*P		Pn	07 46 03.6	+1.1
ATH	**Athens Observa**	7.95	90	P		Pn	07 46 07.0	+0.4
ATH	**Athens Observa**	7.95	90	P		Pn	07 46 07.0	+0.4
MBDF	**Montbardon**	8.15	323	*e*Pn		Pn	07 46 08.9	-0.6
MBDF	**Montbardon**	8.15	323	*e*Pn		Pn	07 46 08.9	-0.6
SMRF	**Simiane la Rot**	8.24	315	*e*Pn		Pn	07 46 11.3	+0.6
SMRF	**Simiane la Rot**	8.24	315	*e*Pn		Pn	07 46 11.3	+0.6
ZAPS	**Zavoj**	8.38	52	*i* P		Pn	07 46 14.6	+2.1
ORIF	**Oris-en-Rattie**	8.72	321	*e*Pn		Pn	07 46 17.6	+0.3
ORIF	**Oris-en-Rattie**	8.72	321	*e*Pn		Pn	07 46 17.6	+0.3
LPG	**La Plagne**	8.75	326	*e*Pn		Pn	07 46 17.3	-0.5
LPG	**La Plagne**	8.75	326	*e*Pn		Pn	07 46 17.3	-0.5
LPL	**La Plagne**	8.77	326	*e*Pn		Pn	07 46 17.7	-0.4
LPL	**La Plagne**	8.77	326	*e*Pn		Pn	07 46 17.7	-0.4
DAVOX	**Davos/Dischmat**	8.82	343	Pn		Pn	07 46 24.2	+5.5
	0.3nm,0.3s,baz=176,slow=19,SNR=4.1							
LASF	**Ste Croix**	9.29	311	*e*Pn		Pn	07 46 24.3	-0.8
LASF	**Ste Croix**	9.29	311	*e*Pn		Pn	07 46 24.3	-0.8
VIVF	**Saint-Julien-l**	9.30	317	*e*Pn		Pn	07 46 24.4	-0.8
VIVF	**Saint-Julien-l**	9.30	317	*e*Pn		Pn	07 46 24.4	-0.8
BZS	**Buzias**	9.34	37	*i*P		Pn	07 46 29.9	+4.3
IDI	**Anoyia**	9.54	106	Pn		Pn	07 46 27.9	-0.5
	0.5nm,0.3s,baz=234,slow=14,SNR=3.6							
CABF	**La Chapelle**	9.91	328	*e*Pn		Pn	07 46 32.6	-1.0
CABF	**La Chapelle**	9.91	328	*e*Pn		Pn	07 46 32.6	-1.0
MTLF	**Montolieu**	9.96	303	*e*Pn		Pn	07 46 33.3	-0.8
MTLF				*e*Sn		Sn	07 48 19.9	-5.3
	4.2nm,0.6s							
MTLF	**Montolieu**	9.96	303	*e*Pn		Pn	07 46 33.3	-0.8
GERES	**GERESS Array B**	10.44	0	Pn		Pn	07 46 41.8	+1.0
	0.2nm,0.3s,baz=181,slow=12,SNR=4.9							
KHC	**Kasperske Hory**	10.73	360	*e*P		Pn	07 46 50.0	+5.3
KHC				*ex*		x	07 46 55.4	
ARR	**Arges**	10.75	46	⇓*i*P		Pn	07 46 47.6	+2.6
VYHS	**Vyhne**	10.77	19	*e*PN		Pn	07 46 49.0	+3.8
CAF	**Calviac**	10.83	311	*e*Pn		Pn	07 46 45.3	-0.8
CAF	**Calviac**	10.83	311	*e*Pn		Pn	07 46 45.3	-0.8
EPF	**Esparros**	11.10	299	*e*Pn		Pn	07 46 48.9	-0.9
EPF	**Esparros**	11.10	299	*e*Pn		Pn	07 46 48.9	-0.9
MLR	**Muntele Rosu**	11.57	48	Pn		Pn	07 46 58.6	+2.2
	0.1nm,0.3s,baz=177,slow=13,SNR=8.0							
MLR	**Muntele Rosu**	11.57	48	⇑*i*P		Pn	07 46 59.3	+2.9
ETSF	**Etsaut**	11.68	297	*e*Pn		Pn	07 46 56.9	-0.9
ETSF	**Etsaut**	11.68	297	*e*Pn		Pn	07 46 56.9	-0.9
BRTR	**Keskin Array B**	16.53	79	Pn		Pn	07 47 52.5	+1.5
	0.1nm,0.3s,baz=259,slow=12,SNR=3.8							
AKASG	**Malin Array Be**	16.53	37	Pn		P	07 48 04.2	-1.0
	0.3nm,0.3s,baz=231,slow=11,SNR=6.2							
HFS	**Hagfors**	21.75	0	P		P	07 49 04.1	+1.8
	1.4nm,0.7s,baz=171,slow=10,SNR=4.5							
NB2	**NORSAR Subarra**	22.71	357	P		P	07 49 18.5	+5.9
	comp=Z,1.9nm,0.9s,baz=173,slow=11							
NOA	**NORSAR Array B**	22.71	357	P		P	07 49 13.8	+1.2
	comp=Z,0.3nm,0.5s,baz=218,slow=12,SNR=2.5							
FINES	**FINESS Array B**	24.33	15	P		P	07 49 29.8	+1.4
	comp=Z,2.1nm,0.6s,baz=183,slow=9.5,SNR=13							
ZALV	**Zalesovo Beam**	49.55	47	P		P	07 53 02.6	+1.1
	comp=Z,1.0nm,0.5s,baz=278,slow=10,SNR=4.0							
MKAR	**Makanchi Array**	49.76	57	P		P	07 53 04.3	+1.1
	comp=Z,0.6nm,0.5s,baz=282,slow=6.9,SNR=9.2							
YKA	**Yellowknife Ar**	71.21	337	P		P	07 55 28.9	-0.4
	comp=Z,0.0nm,0.3s,baz=32,slow=3.6,SNR=4.5							

IDC ***25*** *07:54:30.3±34.0, 38.09N×143.67E, h0km, mb3.4/2, mb1 3.6/3, mb1mx3.2/28, mbtmp3.4/3, ML3.5/1, MS3.1/2, Ms1 3.1/2, ms1mx2.7/22, Error ellipse: s-maj=733.1km s-min=54.5km az=12.0*

ISCJB ***25*** *07:54:53.0±1.3, 35.22N±0.06×141.3E±0.1, h10km, mb3.5/2, MS3.1/1, Error ellipse: s-maj=12.7km s-min=7.1km az=157.2*

JMA ***25*** *07:54:54.8±0.1, 35.27N×141.21E, h39km±3km, M2.9*

ISC 25 07:54:54.4±1.5, 35.25N±0.08×141.26E±0.10, h10km, n11, σ1s03/11, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	0.56	324	P		Pb		07 55 05.7	-0.5
CHOJ				S		Sb		07 55 13.7	-0.5
BSO1	**Boso 1**	0.64	201	P		Pg		07 55 07.2	+0.6
BSO1				X				07 55 16.2	
BSO3	**Boso 3**	0.76	234	P		Pg		07 55 09.0	0.0
BSO3				X				07 55 19.4	
KTR	**Katsuura**	0.78	263	S		Sg		07 55 18.6	-0.9
BSO4	**Boso 4**	0.80	251	P		Pg		07 55 09.7	0.0
BSO4				*e*X				07 55 20.8	
MJAR	**Matsushiro Arr**	2.79	298	Pn		Pn		07 55 39.5	+0.5
	2.1nm,0.3s,baz=109,slow=7.9,SNR=12								
MAT	**Matsushiro**	2.79	298	P		Pn		07 55 39.9	+0.8
MAT				*e*S		Sn		07 56 14.7	+1.8
KSRS	**Korea Array**	10.97	285	LR		LR		08 01 46.0	
	comp=Z,50nm,18.8s,baz=74,slow=35								
SONM	**Songino Array**	28.71	307	LR		LR		08 12 14.5	
	comp=Z,53nm,20.4s,baz=22,slow=37								
WRA	**Warramunga Arr**	55.28	188	P		P		08 04 26.4	-1.6
	0.6nm,0.8s,baz=23,slow=7.2,SNR=12								
ASAR	**Alice Springs**	59.01	188	P		P		08 04 54.8	+0.4
	0.2nm,0.8s,baz=3.5,slow=7.6,SNR=4.1								

ISCJB ***25*** *07:59:03.8±0.5, 36.27N±0.02×36.12E±0.03, h3km±6km, Error ellipse: s-maj=4.6km s-min=3.6km az=26.6*

DDA ***25*** *07:59:03.2, 36.27N×36.07E, h7km, Md2.6*

NSSC ***25*** *07:59:03.5±0.6, 36.29N×36.11E, h4km±10km, ML2.0*

CSEM ***25*** *07:59:03.8±0.1, 36.25N×36.13E, h5km, MD2.5, Error ellipse: s-maj=3.3km s-min=2.8km az=79.0*

ISK ***25*** *07:59:03.7, 36.30N×36.12E, h4km, MD2.5*

ISC 25 07:59:03.7±0.9, 36.26N±0.02×36.10E±0.02, h7km±9km, n31, σ0s42/47, Jordan-Syria region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
TAHT	**Tahtakopru-Hat**	0.13	30	*e*PG		Pg		07 59 06.2	-0.4
TAHT	**Tahtakopru-Hat**	0.13	30	*e*Pg		Pg		07 59 06.2	-0.4
YAYL	**Yayladag**	0.23	179	*i* P		Pg		07 59 07.7	-0.6
YAYL				*i* S		Sg		07 59 12.3	+0.9
YAYL	**Yayladag**	0.23	179	P		Pg		07 59 07.7	-0.6
YAYL				S		Sg		07 59 12.3	+0.9
BTCH	**Batrack**	0.36	128	*i* P		Pg		07 59 10.8	-0.1
BTCH				*e*S		Sg		07 59 16.5	+0.8
	comp=N,188nm,0.5s								
BTCH				AML		AML		07 59 20.9	
	comp=E,194nm,0.2s								
BTCH	**Batrack**	0.36	128	*i* P		Pg		07 59 10.8	-0.1
BTCH				*e*S		Sg		07 59 16.5	+0.8
	comp=E,194nm,0.2s								
ARNB	**Al Arnab**	0.41	195	*i* P		Pg		07 59 11.9	+0.1
ARNB				*e*S		Sb		07 59 18.8	-1.1
ARNB				AML		AML		07 59 20.0	
	comp=N,77nm,0.3s								
ARNB				AML		AML		07 59 21.8	
	comp=E,71nm,0.4s								
ARNB	**Al Arnab**	0.41	195	*i* P		Pg		07 59 11.9	+0.1
DRWC	**Darouich**	0.58	52	*i* P		Pg		07 59 14.6	-0.3
DRWC				*e*S		Sg		07 59 22.1	-0.4
DRWC				AML		AML		07 59 25.7	
	comp=E,126nm,0.3s								
DRWC				AML		AML		07 59 26.2	
	comp=N,70nm,0.3s								
DRWC	**Darouich**	0.58	52	*i* P		Pg		07 59 14.6	-0.3
YURE	**YUREGIR**	0.68	326	*i* P		Pb		07 59 18.2	+0.3
YURE	**YUREGIR**	0.68	326	P		Pb		07 59 18.2	+0.3
WRDH	**Warideh**	0.79	162	*i* P		Pg		07 59 19.1	+0.1
WRDH				*e*S		Sb		07 59 30.3	-0.5
WRDH				AML		AML		07 59 33.0	
	comp=N,108nm,0.2s								
WRDH				AML		AML		07 59 35.0	
	comp=E,44nm,0.2s								
WRDH	**Warideh**	0.79	162	*i* P		Pg		07 59 19.1	+0.1
CEYT	**Ceyhan**	0.80	339	*e*PG		Pg		07 59 19.4	+0.3
CEYT				*e*SG		Sb		07 59 30.6	-0.3
CEYT	**Ceyhan**	0.80	339	*e*Pg		Pg		07 59 19.4	+0.3
CEYT				*e*Sg		Sb		07 59 30.6	-0.3
KUZU	**Kuzuini**	0.93	57	*i* P		Pg		07 59 21.8	+0.1
KUZU				*i* S		Sb		07 59 35.0	+0.1
KUZU	**Kuzuini**	0.93	57	P		Pg		07 59 21.8	+0.1
KUZU				S		Sb		07 59 35.0	+0.1
KAMA	**Osmaniye**	1.03	26	*i* P		Pg		07 59 23.5	0.0
KAMA				*i* S		Sg		07 59 36.7	-0.2
HCB	**Kahramanmara¯**	1.26	31	*i* P		Pg		07 59 28.4	+0.5
HCB				*i* S		Sn		07 59 44.7	-0.2
DED	**Mersin**	1.26	304	*i* P		Pn		07 59 27.7	0.0
DED				*i* S		Sb		07 59 44.0	-0.2
GAZ	**Gaziantep**	1.27	44	*e*PN		Pb		07 59 28.0	0.0
GAZ	**Gaziantep**	1.27	44	*e*Pn		Pb		07 59 28.0	0.0
KMRS	**Kahramanmaras**	1.40	27	*e*PN		Pb		07 59 30.1	0.0
KMRS	**Kahramanmaras**	1.40	27	*e*Pn		Pb		07 59 30.2	0.0
MERS	**Mersin**	1.41	296	*e*PN		Pg		07 59 30.8	0.0
MERS	**Mersin**	1.41	296	*e*Pn		Pg		07 59 30.8	0.0
GULE	**Gulek**	1.47	314	*i* S		Sg		07 59 51.6	+0.4
GULE	**Gulek**	1.47	314	S		Sg		07 59 51.6	+0.4
KIZK	**Mersin**	1.60	278	*i* P		Pn		07 59 32.3	0.0
KIZK				*i* S		Sg		07 59 54.8	-0.2
KIZK	**Mersin**	1.60	278	P		Pn		07 59 32.3	0.0
KIZK				S		Sg		07 59 54.8	-0.2

JMA 25 08:09:38.6±0.1, 38.15N×142.03E, h49km±1km, M3.7, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	0.62	300	P		Pn		08 09 51.4	+0.2
JIO				S		Sn		08 10 00.3	0.0
OFUJ	**Ofunato**	0.97	343	P		Pn		08 09 55.9	0.0
OFUJ				S		Sn		08 10 08.6	0.0
JMM	**Marumori**	1.02	254	P		Pn		08 09 56.4	-0.1
JMM				S		Sn		08 10 09.7	0.0
JMK	**Ichinoseki**	1.02	322	P		Pn		08 09 57.0	+0.4
JMK				S		Sn		08 10 10.3	+0.5
JOU	**Okura**	1.10	282	P		Pn		08 09 58.2	+0.6
JOU				S		Sn		08 10 12.4	+0.7
JFK	**Kawauchi**	1.20	230	P		Pn		08 09 58.8	-0.3
JFK				*e*S		Sn		08 10 13.5	-0.8
MIYJ	**Miyakonagasawa**	1.43	353	P		Pn		08 10 02.3	+0.1
MIYJ				S		Sn		08 10 19.4	-0.5
JOM	**Ohasama**	1.44	337	P		Pn		08 10 03.0	+0.7
JOM				*e*S		Sn		08 10 21.0	+0.9
JFT	**Otama**	1.48	245	P		Pn		08 10 03.8	+0.9
JFT				*e*S		Sn		08 10 22.3	+1.2
JYK	**Kaneyama**	1.52	301	P		Pn		08 10 04.2	+0.9
JYK				*e*S		Sn		08 10 23.3	+1.4
JYS	**Shirataka**	1.55	273	P		Pn		08 10 04.6	+0.8
JYS				*e*S		Sn		08 10 23.9	+1.2
JRG	**Rokugo**	1.66	319	P		Pn		08 10 06.2	+1.0

SOME ***25*** *08:11:07.9, 39.37N×72.80E, h0km, MS3.5*

BJI ***25*** *08:11:07.0, 39.30N×72.20E, h5km, mb4.2/3, ML3.6/3, Ms3.7/1, Ms7 3.5/1*

KRNET ***25*** *08:11:10.0±0.1, 39.38N×72.91E, h15km, mb3.7*

NNC ***25*** *08:11:12.5±1.3, 39.40N×73.07E, h0km, mb4.4, mpv4.1, Error ellipse: s-maj=12.9km s-min=6.2km az=136.0*

MOS ***25*** *08:11:14.6±1.8, 39.43N×72.83E, h32km, mb4.1/6, Error ellipse: s-maj=12.5km s-min=6.2km az=91.9*

IDC ***25*** *08:11:15.9±3.1, 39.36N×72.97E, h38km±21km, mb3.5/11, mb1 3.7/18, mb1mx3.6/54, mbtmp3.8/18, ML3.5/8, MS3.3/5, Ms1 3.3/5, ms1mx2.8/46, Error ellipse: s-maj=30.8km s-min=14.4km az=162.0*

ISC 25 08:11:13.5±1.3, 39.59N±0.05×72.79E±0.02, h5km±8km, n94, σ1s91/127, mb3.6/13, 37C-26D, Kyrgyzstan

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
SFK	**Sufi-Kurgan**	0.69	52	⇑*i*P		Pg		08 11 25.7	-1.1
	baz=35								
SFK				⇑*i*S		Sg		08 11 36.4	+0.6
	baz=35								
SFK	**Sufi-Kurgan**	0.69	52	⇑P		Pg		08 11 25.7	-1.1
SFK	231nm,0.4s			⇓S		Sg		08 11 36.3	+0.4
	1um,0.4s								
SFK	**Sufi-Kurgan**	0.69	52	PG		Pg		08 11 25.7	-1.1
SFK				S		Sg		08 11 36.2	+0.4
SFK				pmax	pmax				
	comp=Z,231nm,0.4s								
SFK				smax	smax				
	comp=N,1µm,0.3s								
OHH	**Osh**	0.93	360	⇓*i*P		Pn		08 11 33.0	-0.4
	baz=355								
OHH				⇓*i*S		Sn		08 11 49.1	+1.9
	baz=355								
BTK	**Batken**	1.59	288	⇑*e*P		Pb		08 11 42.7	-0.8
	baz=293								
BTK				⇑*e*S		Sg		08 12 06.9	+2.2
	baz=293								
ARK	**Arkit**	2.29	344	⇑*e*P		Pb		08 11 55.1	-0.4
	baz=344								
ARK				⇑*i*S		Sg		08 12 26.9	-0.3
	baz=344								
KSH	**Kashi**	2.46	91	Pn		Pn		08 11 49.5	-4.9
KSH				Sn		Sn		08 12 18.5	-6.4
KSH				smax	smax				
	comp=N,600nm,0.6s								
KSH				smax	smax				
	comp=N,390nm,0.6s								
AML	**Almayashu**	2.63	15	⇑*i*P		Pb		08 12 00.6	-0.7
	baz=12								
AML				⇑*i*S		Sg		08 12 36.6	-1.4
	baz=12								
MNAS	**Manas**	2.90	356	⇓*e*P		Pb		08 12 03.4	-2.5
	baz=355								
MNAS				⇓*e*S		Sb		08 12 41.2	-0.5
	baz=355								
MNAS	**Manas**	2.90	356	⇓Pn		Pb		08 12 03.9	-1.9
	comp=N,50nm,0.5s								
MNAS				⇑Lg		Lg		08 12 50.3	
	comp=N,131nm,0.5s								
MNAS	**Manas**	2.90	356	PN		Pb		08 12 03.9	-1.9
MNAS								08 12 48.3	
MNAS				pmax	pmax				
	comp=Z,50nm,0.5s								
MNAS				pmax	pmax				
	comp=N,339nm,1.1s								
UCH	**Uchtor**	2.94	26	⇑*i*P		Pn		08 12 03.5	+2.2
	baz=23								
UCH				⇑*i*S		Sb		08 12 41.9	-1.2
	baz=23								
NRN	**Naryn**	3.06	52	⇓*e*P		Pn		08 12 02.8	0.0
	baz=48								
NRN				⇓*e*S		Sn		08 12 39.8	-0.2
	baz=48								
KZA	**Kyzart**	3.11	36	⇑*i*P		Pn		08 12 04.5	+0.9
	baz=33								
KZA				⇑*i*S		Sn		08 12 43.6	+2.3
	baz=33								
EKS2	**Erkin-Say**	3.16	13	⇓*i*P		Pb		08 12 07.9	-2.3
	baz=11								
EKS2				⇓*i*S		Sb		08 12 49.4	+0.4
	baz=11								
MRKS	**Merke**	3.17	6	*e*P		Pb		08 12 11.2	+0.8
	comp=N,46nm,0.3s								
MRKS				⇓*i*S		Sg		08 12 57.2	+1.9
	comp=N,298nm,0.5s								
AAK	**Ala-Archa**	3.30	22	Pn		Pb		08 12 10.0	-2.7
	comp=N,43nm,0.3s,baz=181,slow=6.9,SNR=288								
AAK				Sn		Sb		08 12 53.5	+0.4
	comp=N,8.4nm,0.3s,baz=348,slow=17,SNR=6.1								
AAK				Lg		Lg		08 13 00.8	
	comp=N,20nm,0.3s,baz=58,slow=19,SNR=9.1								
AAK				LR		LR		08 13 45.6	
	comp=N,143nm,20.3s,baz=231,slow=43								
AAK	**Ala-Archa**	3.30	22	⇑*i*P		Pb		08 12 09.5	-3.1
	baz=20								
AAK				⇑*i*S		Sb		08 12 53.2	0.0
	baz=20								
AAK	**Ala-Archa**	3.30	22	⇓Pn		Pb		08 12 09.5	-3.1
	comp=N,88nm,0.5s								
AAK				⇑Lg		Lg		08 12 59.2	
	comp=N,153nm,0.6s								
AAK	**Ala-Archa**	3.30	22	*d i*PN		Pb		08 12 09.6	-3.1
IUG	**Iuzhnay**	3.30	322	*e*P		Pb		08 12 09.6	-3.1
	comp=N,102nm,0.4s								
IUG				*e*S		Sb		08 12 53.5	+0.3
	comp=N,329nm,0.4s								
DZA	**Taraz**	3.48	342	*e*P		Pb		08 12 13.9	-1.7
	comp=N,224nm,0.4s								
DZA				⇑*i*S		Sg		08 13 03.0	-2.2
	comp=N,496nm,0.3s								
JBG	**Jabagly**	3.51	35	*e*P		Pb		08 12 14.1	-2.1
	comp=N,85nm,0.6s								
JBG				*e*S		Sb		08 13 02.3	+3.1
	comp=N,298nm,0.4s								
FRU	**Bishkek**	3.52	22	*e*PN		Pn		08 12 11.5	+2.6
FRU				*e*S		Sn		08 12 54.0	+3.1
FRU				*i*				08 13 08.0	
FRU				pmax	pmax				
	comp=Z,60nm,1.3s								
FRU				pmax	pmax				
	comp=E,680nm,1.8s								
KK31	**Karatay Array**	3.91	335	Pn		Pn		08 12 18.1	+3.8
	comp=E,12nm,0.3s,baz=146,slow=13,SNR=279								
KK31				⇓Pg		Pg		08 12 27.0	-1.4
	comp=E,11nm,0.3s,baz=151,slow=14,SNR=6.8								
KK31				⇓Sn		Sb		08 13 08.7	-1.8
	comp=E,49nm,0.5s,baz=146,slow=22,SNR=5.3								
KK31				⇓Lg		Lg		08 13 26.6	
	comp=E,90nm,0.5s								
KK31	**Karatay Array**	3.91	335	*e*PN		Pn		08 12 18.0	+3.8
KK31				pmax	pmax				
	comp=Z,12nm,0.3s								
TKM2	**Tokmak 2**	3.94	32	⇓Pn		Pn		08 12 17.8	+3.0
	comp=Z,19nm,0.4s								
TKM2				⇓Lg		Lg		08 13 19.7	
	comp=Z,91nm,0.8s								
TKM2	**Tokmak 2**	3.94	32	PN		Pn		08 12 17.8	+3.0
TKM2								08 13 19.6	
TKM2				pmax	pmax				
	comp=Z,19nm,0.4s								
TKM2				pmax	pmax				
	comp=N,91nm,0.8s								
BRLS	**Borolday**	3.96	325	*e*P		Pb		08 12 24.9	+1.0
	comp=N,13nm,0.3s								
BRLS				*e*S		Sg		08 13 22.7	+1.9
	comp=N,62nm,0.3s								
BMNS	**Besmoynak**	4.13	31	*e*P		Pb		08 12 29.1	+2.3
	comp=N,109nm,0.6s								
BMNS				*e*S		Sg		08 13 27.0	+1.0
	comp=N,269nm,0.8s								
KST	**Kastek**	4.19	34	*e*P		Pb		08 12 29.2	+1.4
	comp=N,9.4nm,0.6s								
KST				⇑*i*S		Sg		08 13 29.6	+1.4
	comp=N,129nm,0.6s								
DGS	**Degeres**	4.28	31	*e*P		Pb		08 12 31.3	+2.0
	comp=N,23nm,0.7s								
DGS				*e*S		Sg		08 13 31.5	+0.5
	comp=N,199nm,0.8s								
MTBS	**Maitube**	4.47	37	*e*P		Pb		08 12 32.7	+0.2
	comp=N,24nm,0.5s								
MTBS				⇑*i*S		Sg		08 13 36.4	-0.7
	comp=N,74nm,0.4s								
IZV	**Izvestkoviy**	4.49	39	*e*P		Pb		08 12 33.5	+0.6
	comp=N,20nm,0.6s								
IZV				*e*S		Sg		08 13 35.3	-2.3
	comp=N,262nm,1.0s								
TNSS	**Tian-Shan**	4.65	41	*e*P		Pb		08 12 36.6	+0.7
	comp=N,19nm,1.1

comp=Z,1.0nm,0.3s,baz=227,slow=17,SNR=3.4
KURBB Kurchatov Arra 11.75 18 Pn **Pn** 08 14 01.8 +0.1
comp=Z,0.1nm,0.3s,baz=208,slow=13,SNR=8.1
KURBB Lg Lg 08 17 25.5
comp=Z,0.1nm,0.3s,baz=203,slow=30,SNR=4.9
KURK Kurchatov 11.86 18 ⇑Lg Lg 08 17 31.7
comp=Z,41nm,1.2s
KURK Kurchatov 11.86 18 P **Pn** 08 14 01.8 -1.3
AB31 Akbulak array 13.31 321 ⇑Pn **Pn** 08 14 22.7 -0.4
comp=Z,2.0nm,0.4s
AB31 ⇓Sn **Sn** 08 16 50.3 -1.1
comp=Z,2.6nm,0.6s
AB31 Akbulak array 13.31 321 P **Pn** 08 14 22.1 -0.9
AB31 S Sn 08 16 44.9 -6.5
AB31 pmax pmax
comp=Z,2.0nm,0.4s
AB31 smax smax
comp=N,3.0nm,0.6s
BVA0 Borovoye Array 13.54 354 Pn **Pn** 08 14 24.5 -1.6
comp=N,3.1nm,0.5s,baz=225,slow=38,SNR=8.9
BVA0 ⇑Lg Lg 08 18 28.5
comp=N,6.5nm,0.8s,baz=170,slow=27,SNR=3.5
BVAR Borovoye Array 13.54 354 Pn **Pn** 08 14 25.8 -0.3
comp=N,0.3nm,0.3s,baz=155,slow=18,SNR=8.3
BRVK Borovoye 13.58 354 *i* P Pn 08 14 29.7 +3.0
BRVK pmax pmax
comp=Z,3.0nm,0.7s
ZRNK Zerenda 13.62 350 ⇑Pn **Pn** 08 14 27.0 -0.2
comp=Z,3.2nm,0.8s
ZRNK ⇑Lg Lg 08 18 33.3
comp=Z,26nm,1.9s
ZRNK Zerenda 13.62 350 P **Pn** 08 14 26.9 -0.2
ZRNK pmax pmax
comp=Z,3.0nm,0.8s
AKTO Aktyubinsk 15.03 321 Pn **Pn** 08 14 45.7 -0.8
comp=Z,0.9nm,0.3s,baz=126,slow=12,SNR=11
AKTO LR LR 08 20 55.2
comp=Z,49nm,18.3s,baz=161,slow=38
AKTO Aktyubinsk 15.03 321 ⇑Pn **Pn** 08 14 47.5 +1.1
comp=Z,12nm,1.1s
AKTO ⇑Sn **Sn** 08 17 32.0 -1.2
comp=Z,4.7nm,1.1s
AKTO Aktyubinsk 15.03 321 P **Pn** 08 14 47.4 +1.0
AKTO pmax pmax
comp=Z,12nm,1.1s
ZALV Zalesovo Beam 16.52 26 Pn **Pn** 08 15 05.7 -0.1
comp=Z,0.4nm,0.3s,baz=223,slow=12,SNR=7.1
ZALV Zalesovo Beam 16.52 26 *eP* **P** 08 15 09.5 +1.0
NVS Novosibirsk 16.79 21 *eP* **P** 08 15 12.0 +0.5
ARU Arti 19.29 336 P **Pn** 08 15 40.8 +0.9
comp=Z,0.0nm,0.3s,baz=116,slow=10.0,SNR=5.0
ARU LR LR 08 23 48.7
comp=Z,66nm,19.9s,baz=244,slow=38
ARU Arti 19.29 336 *d iP* **P** 08 15 39.1 +0.2
ARU S **S** 08 19 18.7 +1.2
ARU pmax pmax
comp=Z,18nm,2.5s
GTA Gaotai 20.83 82 *eP* Pn 08 16 01.0 +2.5
GTA pP sP 08 16 05.0 +6.9
GTA sP pP 08 16 08.5 +11
GTA pmax pmax
comp=Z,4.0nm,0.9s
ZEI Tsey 21.93 288 *eP* **P** 08 16 09.2 +1.3
ZEI pmax pmax
comp=Z,3.0nm,0.6s
KBZ Khabaz 22.65 290 P **P** 08 16 17.7 +2.3
comp=Z,0.8nm,0.5s,baz=133,slow=10,SNR=3.8
ULN Ulaanbaatar 25.93 60 *ceP* **P** 08 16 51.2 +4.5
ULN pmax pmax
comp=Z,2.0nm,1.2s
ASF Jabal al Asfar 29.86 267 LR LR 08 30 35.8
comp=Z,111nm,21.8s,baz=218,slow=39
BRTR Keskin Array B 29.98 283 P **P** 08 17 23.2 +0.2
comp=Z,0.4nm,0.6s,baz=84,slow=8.5,SNR=3.0
CMAR Chiang Mai Arr 30.89 125 *ceP* **P** 08 17 29.7 -1.3
CMAR pmax pmax
comp=Z,3.0nm,0.4s
FINES FINESS Array B 35.78 323 P **P** 08 18 13.3 +0.1
comp=Z,1.1nm,0.4s,baz=114,slow=9.7,SNR=14
ARCES ARCESS Array B 38.87 336 P **P** 08 18 39.5 +0.1
comp=Z,0.6nm,0.5s,baz=114,slow=9.6,SNR=11
KLR Kul'dur 42.22 57 P **P** 08 19 05.5 -1.8
comp=Z,0.9nm,0.5s,baz=301,slow=6.7,SNR=7.4
GERES GERESS Array B 42.38 303 P **P** 08 19 08.3 -0.4
comp=Z,0.4nm,0.4s,baz=64,slow=9.2,SNR=4.4
CLL Collm 42.42 306 *e*(P) **P** 08 19 08.0 -0.9
CLL Collm 42.42 306 *eP* **P** 08 19 08.0 -0.9
NB2 NORSAR Subarra 42.82 321 P **P** 08 19 10.8 -1.3
comp=Z,0.5nm,0.5s,baz=90,slow=7.9
NOA NORSAR Array B 42.82 321 P **P** 08 19 10.9 -1.1
comp=Z,0.6nm,0.5s,baz=91,slow=7.8,SNR=5.4
NOA NORSAR Array B 42.82 321 *eP* **P** 08 19 14.5 +2.4
NOA pmax pmax
comp=Z,1.0nm,0.5s
TORD Torodi Ar. Bea 67.21 268 P **P** 08 22 06.1 -2.9
comp=Z,0.3nm,0.4s,baz=55,slow=6.2,SNR=6.3
BATI Baumata 68.39 125 LR LR 08 56 15.2
comp=Z,146nm,19.5s,baz=120,slow=40
INK Inuvik 70.63 10 P **P** 08 22 28.6 -0.8
comp=Z,0.6nm,0.4s,baz=346,slow=6.9,SNR=11
ILAR Eielson Array 71.42 17 P **P** 08 22 31.9 -2.4
comp=Z,0.3nm,0.8s,baz=298,slow=3.9,SNR=4.5
YKA Yellowknife Ar 78.09 4 P **P** 08 23 11.4 -1.5
comp=Z,0.3nm,0.5s,baz=350,slow=5.5,SNR=10

*ISCJB **25** 08:16:44.3±0.5, 12.°44N±0.°09×141.°6E±0.°1, h33km, mb4.3/19, MS3.3/12, Error ellipse: s-maj=14.8km s-min=12.4km az=28.0*
*IDC **25** 08:16:46.0±6.2, 12.°48N×141.°57E, h33km±47km, mb4.0/12, mb1 4.2/13, mb1mx3.9/38, mbtmp4.2/13, ML3.3/1, MS3.3/12, Ms1 3.3/12, ms1mx3.1/47, Error ellipse: s-maj=23.2km s-min=15.1km az=95.0*
*NEIC **25** 08:16:46.4±0.3, 12.°46N×141.°58E, h35km, mb4.5/7, Error ellipse: s-maj=10.4km s-min=8.8km az=108.0*
ISC 25 08:16:45.9±0.6, 12.°4N±0.°1×141.°6E±0.°1, h33km, n30, σ0s79/23, mb4.3/19, MS3.3/12, South of Mariana Islands

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
GUMO	**Guam**	**3.40**	**70**	Pn	**Pn**	**08 17 35.9**	**-0.8**
	2.7nm,0.3s,baz=129,slow=8.7,SNR=2.9						
JNU	**Nakatsue**	**22.81**	**336**	LR	LR	08 29 43.1	
	comp=Z,50nm,19.2s,baz=124,slow=34						
MJAR	**Matsushiro Arr**	**24.20**	**353**	LR	LR	08 30 20.4	
	comp=Z,35nm,22.0s,baz=150,slow=34						
KSRS	**Korea Array**	**27.76**	**336**	LR	LR	08 31 59.1	
	comp=Z,32nm,19.4s,baz=176,slow=33						
ASAJ	**Asahikawa**	**31.59**	**1**	LR	LR	08 35 09.4	
	comp=Z,41nm,21.1s,baz=178,slow=35						
WRA	**Warramunga Arr**	**32.95**	**193**	P	**P**	**08 23 18.0**	**+0.3**
	3.4nm,0.7s,baz=13,slow=9.6,SNR=34						
WRA				LR	LR	08 35 57.6	
	comp=Z,74nm,19.7s,baz=210,slow=35						
ASAR	**Alice Springs**	**36.66**	**192**	P	**P**	**08 23 50.6**	**+1.0**
	0.6nm,0.5s,baz=22,slow=11,SNR=16						
ASAR				PcP	**PcP**	**08 26 10.6**	**-1.7**
	0.3nm,0.7s,baz=38,slow=2.7,SNR=4.3						
KLR	**Kul'dur**	**37.58**	**349**	P	**P**	**08 23 58.1**	**+0.9**
	1.5nm,0.6s,baz=191,slow=2.9,SNR=6.9						
CMAR	**Chiang Mai Arr**	**41.47**	**284**	P	**P**	**08 24 29.3**	**-0.8**
	0.9nm,0.4s,baz=90,slow=6.1,SNR=3.8						
CMAR				LR	LR	08 40 12.2	
	comp=Z,17nm,21.3s,baz=215,slow=34						
DZM	**Mont Dzumac**	**42.07**	**144**	LR	LR	08 40 06.7	
	comp=Z,91nm,18.5s,baz=227,slow=33						
PETK	**Petropavlovsk-**	**42.57**	**14**	LR	LR	08 40 41.8	
	comp=Z,35nm,19.2s,baz=242,slow=34						
STKA	**Stephens Creek**	**44.05**	**180**	P	**P**	**08 24 50.7**	**-0.1**
	0.9nm,0.4s,baz=2.0,slow=8.3,SNR=9.6						
STKA				LR	LR	08 44 48.3	
	comp=Z,77nm,18.9s,baz=212,slow=38						
YAK	**Yakutsk**	**50.26**	**353**	LR	LR	08 44 58.5	
	comp=Z,36nm,22.0s,baz=175,slow=34						
MKAR	**Makanchi Array**	**60.13**	**317**	P	**P**	**08 26 50.7**	**+0.4**
	1.1nm,0.6s,baz=91,slow=8.3,SNR=7.0						
MKAR				LR	LR	08 54 07.5	
	comp=Z,23nm,18.5s,baz=25,slow=37						
ZALV	**Zalesovo Beam**	**60.73**	**325**	P	**P**	**08 26 53.3**	**-0.9**
	1.2nm,0.5s,baz=96,slow=6.4,SNR=4.6						
RPZ	**Rata Peaks**	**62.00**	**156**	LR	LR	08 54 04.7	
	comp=Z,82nm,18.4s,baz=1.0,slow=36						
KURK	**Kurchatov**	**63.43**	**321**	*eP*	**P**	**08 27 12.7**	**+0.4**
	11nm,0.9s						
COLD	**Coldfoot**	**70.23**	**23**	*eP*	**P**	**08 27 56.5**	**+1.0**
	1.7nm,0.8s						
ILAR	**Eielson Array**	**70.98**	**25**	P	**P**	**08 27 59.0**	**-1.0**
	2.0nm,0.7s,baz=247,slow=5.9,SNR=21						
PAX	**Paxson**	**71.27**	**27**	*eP*	**P**	**08 28 02.1**	**+0.2**
	3.3nm,0.6s						
DOT	**Dot Lake**	**72.00**	**27**	*eP*	**P**	**08 28 06.2**	**0.0**
	94nm,1.8s						
ABKAR	**Akbulak array**	**75.25**	**318**	*eP*	**P**	**08 28 25.7**	**+0.1**
	1.2nm,0.6s						
DLBC	**Dease Lake**	**78.67**	**32**	*eP*	**P**	**08 28 45.6**	**+0.8**
	2.1nm,0.8s						
YKA	**Yellowknife Ar**	**85.34**	**27**	P	**P**	**08 29 19.6**	**0.0**
	1.3nm,0.7s,baz=290,slow=5.2,SNR=20						
RES	**Resolute Bay**	**86.39**	**13**	*eP*	**P**	**08 29 24.9**	**+0.4**
	3.4nm,0.8s						
ARCES	**ARCESS Array B**	**87.18**	**342**	P	**P**	**08 29 28.4**	**-0.1**
	1.1nm,0.5s,baz=67,slow=6.8,SNR=22						
NVAR	**Mina Array Bea**	**90.13**	**51**	P	**P**	**08 29 43.8**	**+0.4**
	0.7nm,0.7s,baz=260,slow=6.2,SNR=4.8						
FINES	**FINESS Array B**	**90.84**	**334**	P	**P**	**08 29 44.7**	**-1.2**
	4.1nm,0.6s,baz=64,slow=5.2,SNR=30						
LCO	**Las Campanas**	**145.74**	**124**	*e*PKPbc	**PKPab**	**08 36 23.3**	**+0.3**
LPAZ	**La Paz**	**150.97**	**101**	PKPbc	**PKPbc**	**08 36 37.9**	**+0.8**
	5.2nm,0.7s,baz=334,slow=1.4,SNR=23						

*ISK **25** 08:31:17.5, 37.°29N×28.°20E, h7km, MD2.5, ML2.3*
*ISCJB **25** 08:31:18.2±0.6, 37.°28N±0.°03×28.°22E±0.°05, h0km, Error ellipse: s-maj=6.2km s-min=3.3km az=141.5*
*CSEM **25** 08:31:18.4±0.2, 37.°28N×28.°22E, h1km, MD2.5, Error ellipse: s-maj=7.8km s-min=3.3km az=54.0, Suspected Mining explosion.*
*DDA **25** 08:31:18.1, 37.°25N×28.°22E, h7km, Md2.5, Suspected Mining explosion.*
ISC 25 08:31:17.0±0.8, 37.°22N±0.°03×28.°05E±0.°03, h0km, n14, σ0s65/27, Turkey

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
YER	**Yerkesik**	**0.20**	**114**	PG	**Pg**	**08 31 21.5**	**+0.5**
YER				*e*SG	**Sg**	**08 31 24.4**	**+0.8**
YER	**Yerkesik**	**0.20**	**114**	*i* Pg	**Pg**	**08 31 21.5**	**+0.5**
YER				*e*Sg	**Sg**	**08 31 24.4**	**+0.8**
AYDN	**Tasoluk**	**0.46**	**343**	*i* P	**Pb**	**08 31 28.2**	**+0.1**
AYDN				*i* S	**Sb**	**08 31 34.9**	**-0.6**
AYDN	**Tasoluk**	**0.46**	**343**	P	**Pb**	**08 31 28.2**	**+0.1**
AYDN				S	**Sb**	**08 31 34.9**	**-0.6**
BDRM	**Kayabasi**	**0.51**	**253**	*i* P	**Pg**	**08 31 27.4**	**+0.7**
BDRM				*i* S	**Sn**	**08 31 40.4**	**-0.6**
BDRM	**Kayabasi**	**0.51**	**253**	P	**Pg**	**08 31 27.5**	**+0.7**
TURN	**Turunc**	**0.56**	**128**	*i* P	**Pg**	**08 31 27.6**	**-0.2**
TURN				*i* S	**Sg**	**08 31 34.8**	**-0.2**
TURN	**Turunc**	**0.56**	**128**	P	**Pg**	**08 31 27.6**	**-0.2**
TURN				S	**Sg**	**08 31 34.8**	**-0.2**
BODT	**Bodrum**	**0.61**	**255**	*e*PG	**Pn**	**08 31 32.4**	**-0.6**
BODT				*e*SG	**Sn**	**08 31 43.2**	**-0.4**
BODT	**Bodrum**	**0.61**	**255**	*e*Pg	**Pn**	**08 31 32.4**	**-0.6**
BODT				*e*Sg	**Sn**	**08 31 43.2**	**-0.4**
DALY	**Dalyan (Mu˘la**	**0.63**	**129**	*e*PG	**Pg**	**08 31 29.6**	**+0.5**
DALY				*e*SG	**Sg**	**08 31 38.3**	**+1.1**
DALY	**Dalyan (Mu˘la**	**0.63**	**129**	*e*Pg	**Pg**	**08 31 29.6**	**+0.5**
DALY				*e*Sg	**Sg**	**08 31 38.3**	**+1.1**
AYDB	**Zeytinkoy-Aydi**	**0.74**	**350**	*e*PG	**Pg**	**08 31 31.4**	**+0.2**
AYDB				*e*SG	**Sg**	**08 31 41.7**	**+1.0**
AYDB	**Zeytinkoy-Aydi**	**0.74**	**350**	*e*Pg	**Pg**	**08 31 31.4**	**+0.2**
AYDB				*e*Sg	**Sg**	**08 31 41.7**	**+1.0**

*NIED **25** 08:31:00, 38.°70N×142.°20E, h62km, Mw4.5 Best double couple: M07.41000×1015 NP1:φ8.114.00000°, δ45.00000°, λ63.00000°. NP2:φ329.00000°, δ51.00000°, λ114.00000°.*
*JMA **25** 08:31:43.8±0.1, 38.°74N×142.°21E, h31km±1km, M3.8*
JMA Felt II J1.
*IDC **25** 08:31:48.0±2.7, 38.°77N×142.°05E, h61km±24km, mb3.2/12, mb1 3.4/15, mb1mx3.3/58, mbtmp3.5/15, ML3.2/2, Error ellipse: s-maj=24.1km s-min=15.8km az=107.0*
ISC 25 08:31:42.9±4.0, 38.°76N±0.°05×142.°21E±0.°07, h17km±25km, n30, σ1s16/29, mb3.6/12, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
OFUJ	**Ofunato**	**0.53**	**307**	P	**Pn**	**08 31 54.8**	**-0.8**
JIO	**Ouri**	**0.74**	**246**	P	**Pn**	**08 31 57.6**	**-0.9**
JIO				S	**Sb**	**08 32 06.8**	**-0.3**
JMK	**Ichinoseki**	**0.79**	**284**	P	**Pn**	**08 31 58.8**	**-0.4**
JMK				S	**Sb**	**08 32 09.2**	**+0.6**
JOM	**Ohasama**	**1.00**	**315**	P	**Pb**	**08 32 02.0**	**+0.2**
JOM				S	**Sb**	**08 32 15.5**	**+0.8**
JOU	**Okura**	**1.27**	**252**	P	**Pb**	**08 32 06.1**	**-0.3**
JOU				S	**Sb**	**08 32 22.2**	**-0.3**
JRG	**Rokugo**	**1.38**	**298**	P	**Pb**	**08 32 07.8**	**-0.4**
JRG				S	**Sb**	**08 32 26.3**	**+0.8**
JMM	**Marumori**	**1.43**	**232**	P	**Pn**	**08 32 07.6**	**-0.4**
JYK	**Kaneyama**	**1.45**	**277**	P	**Pn**	**08 32 08.7**	**+0.4**
MJAR	**Matsushiro Arr**	**3.87**	**236**	P	**Pn**	**08 32 43.9**	**+2.2**
	1.2nm,0.3s,baz=43,slow=12,SNR=8.1						
MAT	**Matsushiro**	**3.87**	**236**	P	**Pn**	**08 32 43.6**	**+2.0**
MAT				*e*S	**Sn**	**08 33 29.9**	**+3.2**
ASAJ	**Asahikawa**	**5.36**	**3**	P	**Pn**	**08 33 03.4**	**+1.5**
	1.0nm,0.3s,baz=202,slow=16,SNR=7.9						
USRK	**Ussuriysk Ar.**	**9.39**	**309**	P	Pn	08 34 01.0	+3.6
	0.1nm,0.3s,baz=114,slow=14,SNR=2.3						
SEY	**Seymchan**	**24.97**	**11**	P	**P**	**08 37 06.2**	**+1.0**
	0.3nm,0.3s,baz=144,slow=4.7,SNR=4.4						
H11N2	**WAKE ISLAND Hy**	**28.55**	**125**	T	T	09 07 57.1	
	baz=317,slow=75,SNR=138						
H11N1	**WAKE ISLAND Hy**	**28.56**	**125**	T	T	09 08 01.1	
	baz=317,slow=75,SNR=201						
H11N3	**WAKE ISLAND Hy**	**28.57**	**125**	T	T	09 07 58.4	
	baz=317,slow=75,SNR=124						
H11S1	**WAKE ISLAND Hy**	**29.33**	**127**	T	T	09 08 55.7	
	baz=319,slow=76,SNR=49						
H11S3	**WAKE ISLAND Hy**	**29.33**	**127**	T	T	09 08 52.7	
	baz=319,slow=76,SNR=71						
H11S2	**WAKE ISLAND Hy**	**29.34**	**127**	T	T	09 09 01.1	
	baz=319,slow=76,SNR=43						
ZALV	**Zalesovo Beam**	**41.24**	**311**	P	**P**	**08 39 24.9**	**-1.7**
	1.0nm,0.5s,baz=84,slow=9.2,SNR=4.0						
MKAR	**Makanchi Array**	**43.76**	**301**	P	**P**	**08 39 46.5**	**-0.8**
	0.5nm,0.6s,baz=88,slow=8.5,SNR=3.9						
ILAR	**Eielson Array**	**47.70**	**33**	P	**P**	**08 40 18.6**	**+0.5**
	0.5nm,0.7s,baz=268,slow=6.9,SNR=4.6						
INK	**Inuvik**	**52.56**	**28**	P	**P**	**08 40 55.4**	**+0.5**
	0.3nm,0.4s,baz=284,slow=2.9,SNR=3.2						
WRA	**Warramunga Arr**	**58.86**	**189**	P	**P**	**08 41 39.5**	**-1.1**
	0.5nm,0.9s,baz=6.4,slow=6.9,SNR=4.9						
YKA	**Yellowknife Ar**	**62.00**	**31**	P	**P**	**08 42 01.8**	**+0.2**
	0.1nm,0.6s,baz=285,slow=9.4,SNR=3.3						
ASAR	**Alice Springs**	**62.59**	**189**	P	**P**	**08 42 05.9**	**-0.1**
	0.3nm,0.8s,baz=10,slow=7.7,SNR=3.4						
FINES	**FINESS Array B**	**67.58**	**332**	P	**P**	**08 42 37.1**	**-0.9**
	0.6nm,0.7s,baz=80,slow=8.6,SNR=3.1						
NOA	**NORSAR Array B**	**72.83**	**337**	P	**P**	**08 43 09.6**	**-0.6**
	0.3nm,0.6s,baz=45,slow=9.8,SNR=3.0						
AKASG	**Malin Array Be**	**73.31**	**322**	P	**P**	**08 43 12.3**	**-0.9**
	0.2nm,0.4s,baz=43,slow=6.3,SNR=3.7						
TXAR	**Lajitas Array**	**88.57**	**53**	P	**P**	**08 44 35.0**	**-0.1**
	0.2nm,0.6s,baz=335,slow=4.0,SNR=2.9						

*ISCJB **25** 08:36:39.5±0.8, 26.°8N±0.°1×143.°85E±0.°09, h10km, mb3.7/7, Error ellipse: s-maj=16.1km s-min=11.2km az=11.4*
*IDC **25** 08:36:39.7±0.8, 26.°81N×143.°91E, h0km, mb3.7/7, mb1 4.0/7, mb1mx3.6/57, mbtmp3.7/7, Error ellipse: s-maj=29.1km s-min=18.6km az=110.0*
ISC 25 08:36:41.2±0.9, 26.°8N±0.°2×143.°78E±0.°10, h10km, n8, σ0s62/9, mb3.6/7, Bonin Islands region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JCJ	**Chichijima**	**1.45**	**281**	Pn	**Pb**	**08 37 08.8**	**+0.5**
	10nm,0.3s,baz=222,slow=15,SNR=5.4						
JCJ				Sn	**Sn**	**08 37 25.8**	**-0.8**
	70nm,0.3s,baz=275,slow=22,SNR=28						
KLR	**Kul'dur**	**24.23**	**141**	P	**P**	**08 41 58.3**	**+0.2**
	1.0nm,0.7s,baz=162,slow=6.4,SNR=4.1						
WRA	**Warramunga Arr**	**47.39**	**192**	P	**P**	**08 45 15.6**	**-0.2**
	1.9nm,0.7s,baz=14,slow=8.7,SNR=15						
FITZ	**Fitzroy Crossi**	**48.01**	**203**	P	**P**	**08 45 21.3**	**+0.7**
	3.3nm,0.8s,baz=13,slow=14,SNR=5.5						
ASAR	**Alice Springs**	**51.10**	**192**	P	**P**	**08 45 43.8**	**-0.4**
	0.2nm,0.6s,baz=15,slow=5.7,SNR=7.6						
INK	**Inuvik**	**62.68**	**25**	P	**P**	**08 47 05.2**	**-0.5**
	0.6nm,0.5s,baz=286,slow=5.4,SNR=7.7						
YKA	**Yellowknife Ar**	**71.69**	**29**	P	**P**	**08 48 03.6**	**+0.6**
	0.2nm,0.6s,baz=296,slow=6.0,SNR=4.6						
NVAR	**Mina Array Bea**	**79.56**	**52**	P	**P**	**08 48 48.6**	**-0.3**
	0.4nm,0.6s,baz=289,slow=6.2,SNR=5.0						

IDC 25 08:42:03.3±2.3, 16.°74S×179.°03W, h485km±34km, mb3.1/6, mb1 3.4/7, mb1mx3.1/43, mbtmp4.0/7, Error ellipse: s-maj=83.1km s-min=15.1km az=150.0, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
AFI	**Afiamalu**	**7.54**	**69**	P	P	08 43 54.9	+0.2
	2.9nm,0.3s,baz=274,slow=14,SNR=6.6						
STKA	**Stephens Creek**	**38.69**	**240**	P	P	08 48 44.4	-0.2
	1.9nm,0.4s,baz=90,slow=9.9,SNR=12						
WRA	**Warramunga Arr**	**44.27**	**258**	P	P	08 49 29.0	-0.3
	0.7nm,0.7s,baz=94,slow=8.0,SNR=13						
ASAR	**Alice Springs**	**44.55**	**253**	P	P	08 49 31.4	+0.1
	5.4nm,0.7s,baz=88,slow=8.0,SNR=101						
ILAR	**Eielson Array**	**84.89**	**13**	P	P	08 53 45.7	-0.1
	0.3nm,0.4s,baz=224,slow=5.2,SNR=7.1						
TXAR	**Lajitas Array**	**85.88**	**58**	P	P	08 53 51.7	+0.1
	0.3nm,0.7s,baz=231,slow=7.9,SNR=4.8						
YKA	**Yellowknife Ar**	**93.53**	**25**	P	P	08 54 25.5	-0.7
	0.2nm,0.7s,baz=237,slow=4.5,SNR=3.9						
BRTR	**Keskin Array B**	**143.54**	**316**	PKP	PKPbc	09 00 41.5	+0.3
	0.6nm,0.5s,baz=76,slow=2.4,SNR=5.2						
GERES	**GERESS Array B**	**146.33**	**345**	PKPbc	PKPbc	09 00 49.2	0.0
	0.7nm,0.6s,baz=46,slow=5.6,SNR=4.9						

*CSEM **25** 08:42:11.8±0.1, 40.°60N×21.°23E, h5km, ML2.5, Error ellipse: s-maj=2.8km s-min=2.2km az=108.0*
*ATH **25** 08:42:11.2, 40.°60N×21.°22E, h21km±2km, ML2.5/2, Error ellipse: s-maj=2.7km s-min=1.0km az=321.0*
*SKO **25** 08:42:11.5, 40.°64N×21.°21E, h22km, ML2.2*
*THE **25** 08:42:12.0, 40.°59N×21.°23E, h1km±1km, ML2.2/8, Error ellipse: s-maj=1.8km s-min=0.5km az=38.0*
ISC 25 08:42:11.7±0.8, 40.°60N±0.°02×21.°23E±0.°02, h15km±6km, n34, σ0s56/61, Greece

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
FNA	**Florina**	**0.21**	**32**	P	**Pg**	**08 42 16.7**	**+0.1**
FNA				S	**Sg**	**08 42 20.2**	**+0.4**
FNA	**Florina**	**0.21**	**32**	P	**Pg**	**08 42 16.7**	**+0.1**
FNA				S	**Sg**	**08 42 20.2**	**+0.4**
FNA	**Florina**	**0.21**	**32**	P	**Pb**	**08 42 16.9**	**-0.5**
FNA				S	**Sb**	**08 42 20.3**	**-0.8**
FNA				AML	AML	08 42 21.7	
	comp=N,2866μm,0.2s						
FNA				AML	AML	08 42 21.8	
	comp=E,3807μm,0.2s						
NEST	**Nestorio**	**0.23**	**216**	P	**Pg**	**08 42 16.7**	**-0.3**
NEST				S	**Sg**	**08 42 20.2**	**-0.3**
NEST	**Nestorio**	**0.23**	**216**	P	**Pg**	**08 42 16.7**	**-0.3**
NEST				S	**Sg**	**08 42 20.2**	**-0.3**
NEST	**Nestorio**	**0.23**	**216**	P	**Pg**	**08 42 16.7**	**-0.3**
NEST				S	**Sg**	**08 42 21.1**	**+0.6**
NEST				AML	AML	08 42 21.5	
	comp=E,3068μm,0.1s						
NEST				AML	AML	08 42 21.6	
	comp=N,2999μm,0.2s						
BIA	**Bitola**	**0.42**	**10**	P	**Pg**	**08 42 19.8**	**-0.4**
BIA				S	**Sb**	**08 42 26.4**	**-0.8**
BIA	**Bitola**	**0.42**	**10**	*i* Pg	**Pg**	**08 42 20.0**	**-0.3**
BIA				*i* Sg	**Sb**	**08 42 26.9**	**-0.4**
BIA	**Bitola**	**0.42**	**10**	*i* Pg	**Pg**	**08 42 19.9**	**-0.3**
BIA				S	**Sb**	**08 42 26.4**	**-0.8**
KZN	**Kozani**	**0.51**	**126**	P	**Pg**	**08 42 21.7**	**-0.1**
KZN				S	**Sb**	**08 42 29.4**	**-0.3**
KZN	**Kozani**	**0.51**	**126**	P	**Pg**	**08 42 21.8**	**-0.1**
KZN				S	**Sb**	**08 42 29.4**	**-0.3**
OHR	**Ohrid**	**0.60**	**327**	*i* Pg	**Pg**	**08 42 23.1**	**-0.6**
OHR				*i* Sg	**Sb**	**08 42 32.3**	**-0.1**
OHR				*e*Lg	Lg	08 42 33.3	
	comp=E,196nm,0.4s						
OHR	**Ohrid**	**0.60**	**327**	*i* Pg	**Pg**	**08 42 23.0**	**-0.6**
OHR				*i* Sg	**Sb**	**08 42 32.3**	**-0.1**
OHR				*e*Lg	Lg	08 42 33.2	
	comp=E,196nm,0.4s						
KPRO	**Kipourio**	**0.66**	**171**	P	**Pg**	**08 42 23.6**	**-1.0**
KPRO				S	**Sg**	**08 42 33.3**	**0.0**
KPRO	**Kipourio**	**0.66**	**171**	P	**Pg**	**08 42 23.6**	**-1.0**
KPRO				S	**Sg**	**08 42 33.3**	**0.0**
KPRO	**Kipourio**	**0.66**	**171**	P	**Pg**	**08 42 23.6**	**-1.0**
GRG	**Griva**	**0.96**	**68**	P	**Pn**	**08 42 30.9**	**+0.2**
GRG	**Griva**	**0.96**	**68**	P	**Pn**	**08 42 30.9**	**+0.2**
LIT	**Litokhoron**	**1.09**	**117**	P	**Pg**	**08 42 32.7**	**0.0**
LIT				S	**Sn**	**08 42 47.9**	**+0.6**
LIT	**Litokhoron**	**1.09**	**117**	P	**Pg**	**08 42 32.7**	**0.0**
LIT				S	**Sn**	**08 42 47.9**	**+0.6**
THL	**Klokotos Trika**	**1.20**	**150**	P	**Pn**	**08 42 33.5**	**-0.5**
THL				S	**Sg**	**08 42 51.2**	**+0.7**
THL	**Klokotos Trika**	**1.20**	**150**	P	**Pn**	**08 42 33.7**	**-0.3**
THL				S	**Sg**	**08 42 50.6**	**+0.1**
VAY	**Valandovo**	**1.24**	**54**	P	**Pg**	**08 42 35.4**	**-0.3**
VAY	**Valandovo**	**1.24**	**54**	*e*Pg	**Pg**	**08 42 35.7**	**0.0**
VAY				*i* Sg	**Sg**	**08 42 52.5**	**+0.6**
VAY				*e*Lg	Lg	08 42 52.7	
	comp=E,16nm,0.5s						
VAY	**Valandovo**	**1.24**	**54**	*e*Pg	**Pg**	**08 42 35.6**	**0.0**
VAY				*i* Sg	**Sg**	**08 42 52.5**	**+0.6**
VAY			

KRSC 25 08:45:45.0±1.6, 54.58N×158.70E, h313km±15km, ML3.8, Kamchatka Peninsula

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
GNL	**Ganaly**	**0.99**	**207**	*e*P	Pn	08 46 26.8	-0.1
KRER	**Koryakskii**	**1.28**	**179**	*e*S	S	08 47 03.0	0.0
KOK	**Koryaka**	**1.29**	**182**	*e*S	S	08 47 03.7	+0.8
SDLR	**Sedlovina**	**1.31**	**175**	P	Pn	08 46 30.6	+2.1
SMAR	**Somma**	**1.32**	**177**	P	Pn	08 46 29.9	+1.2
UGLR	**Uglovaya**	**1.38**	**177**	P	Pn	08 46 30.4	+1.6
MKZ	**Mys Kozlova**	**1.76**	**90**	P	Pn	08 46 31.9	+0.9
MKZ				*e*S	S	08 47 06.7	-1.1
RUS	**Russkaya**	**2.15**	**183**	P	Pn	08 46 34.5	+0.4
RUS				*e*S	S	08 47 11.7	-1.7

IDC 25 08:46:09.5±17.0, 18.19S×174.89W, h0km, mb4.3/6, mb1 4.4/6, mb1mx3.9/42, mbtmp4.3/6, Error ellipse: s-maj=318.5km s-min=89.8km az=77.0, Tonga Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CTA	**Charters Tower**	**36.71**	**261**	P	P	08 53 20.6	+1.9
	6.9nm,1.1s,baz=82,slow=11,SNR=3.9						
PMG	**Port Moresby**	**37.81**	**278**	P	P	08 53 26.4	-1.7
	12nm,0.5s,baz=352,slow=7.1,SNR=7.3						
STKA	**Stephens Creek**	**41.45**	**242**	P	P	08 53 56.6	-1.6
	0.4nm,0.3s,baz=95,slow=11,SNR=5.0						
WRA	**Warramunga Arr**	**47.88**	**259**	P	P	08 54 49.8	0.0
	1.4nm,0.3s,baz=96,slow=7.7,SNR=35						
ASAR	**Alice Springs**	**47.94**	**254**	P	P	08 54 50.0	-0.2
	2.7nm,0.6s,baz=95,slow=7.5,SNR=40						
FITZ	**Fitzroy Crossi**	**56.28**	**260**	P	P	08 55 53.1	+0.7
	1.1nm,0.5s,baz=100,slow=6.1,SNR=3.3						

DDA ***25*** *08:55:46.8, 36.94N×34.59E, h7km, Md2.6*
ISK ***25*** *08:55:46.8, 36.96N×34.52E, h4km, MD2.2*
ISCJB ***25*** *08:55:47.2±0.7, 36.89N±0.05×34.60E±0.06, h11km±6km, Error ellipse: s-maj=10.1km s-min=4.6km az=138.6*
CSEM ***25*** *08:55:47.6±0.2, 36.92N×34.55E, h8km, MD2.2, Error ellipse: s-maj=6.7km s-min=3.8km az=129.0*

ISC 25 08:55:47.0±0.9, 36.92N±0.04×34.59E±0.04, h9km±6km, n15, σ0926/26, Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MERS	**Mersin**	**0.08**	**225**	*e*PG	**Pg**	**08 55 49.2**	**0.0**
MERS				*e*SG	**Sg**	**08 55 50.9**	**+0.1**
MERS	**Mersin**	**0.08**	**225**	*e*Pg	**Pg**	**08 55 49.2**	**0.0**
MERS				*e*Sg	**Sg**	**08 55 50.9**	**+0.1**
DED	**Mersin**	**0.17**	**77**	*i* P	**Pg**	**08 55 50.4**	**-0.3**
DED				*i* S	**Sg**	**08 55 53.6**	**+0.4**
GULE	**Gulek**	**0.39**	**23**	*i* P	**Pg**	**08 55 55.3**	**+0.5**
GULE				*i* S	**Sb**	**08 56 02.6**	**+0.1**
GULE	**Gulek**	**0.39**	**23**	P	**Pg**	**08 55 55.3**	**+0.5**
GULE				S	**Sb**	**08 56 02.6**	**+0.1**
KARA	**Karaisali**	**0.50**	**48**	*e*PG	**Pb**	**08 55 57.7**	**-0.4**
KARA				*e*SG	**Sb**	**08 56 05.5**	**0.0**
KARA	**Karaisali**	**0.50**	**48**	*e*Pg	**Pb**	**08 55 57.7**	**-0.4**
KARA				*e*Sg	**Sb**	**08 56 05.5**	**0.0**
KIZK	**Mersin**	**0.57**	**219**	*i* P	**Pg**	**08 55 58.2**	**+0.2**
KIZK				*i* S	**Sb**	**08 56 07.3**	**0.0**
KIZK	**Mersin**	**0.57**	**219**	P	**Pg**	**08 55 58.2**	**+0.2**
KIZK				S	**Sb**	**08 56 07.3**	**0.0**
KERG	**Konya-Eregli**	**0.62**	**323**	*i* P	**Pg**	**08 55 58.7**	**-0.2**
KERG				*i* S	**Sb**	**08 56 09.0**	**+0.1**
KERG	**Konya-Eregli**	**0.62**	**323**	P	**Pg**	**08 55 58.7**	**-0.2**
KERG				S	**Sb**	**08 56 09.0**	**+0.1**
CEYT	**Ceyhan**	**0.93**	**84**	*e*PG	**Pn**	**08 56 06.3**	**0.0**
CEYT	**Ceyhan**	**0.93**	**84**	*e*Pg	**Pn**	**08 56 06.3**	**0.0**
IKL	**Isikli**	**1.00**	**227**	*e*PG	**Pb**	**08 56 06.3**	**-0.1**
IKL	**Isikli**	**1.00**	**227**	*e*Pg	**Pb**	**08 56 06.3**	**-0.1**

NIED ***25*** *09:00:00, 36.20N×141.10E, h20km, Mw5.0 Best double couple: M03.54000×10^16 NP1:φs26.00000°, δ26.00000°, λ-70.00000°. NP2:φs184.00000°, δ66.00000°, λ-99.00000°.*
IDC ***25*** *09:00:15.8±0.4, 36.16N×140.95E, h0km, mb4.6/37, mb1 4.7/41, mb1mx4.6/52, mbtmp4.6/41, ML4.6/4, MS4.3/31, Ms1 4.3/31, ms1mx4.2/50, Error ellipse: s-maj=12.6km s-min=10.0km az=88.0*
BJI ***25*** *09:00:16.6, 36.05N×141.09E, h26km, mb4.8/65, mB5.0/48, Ms4.8/74, Ms7 4.7/68*
JMA ***25*** *09:00:18.5±0.1, 36.17N×141.03E, h39km±1km, M5.0*
JMA Felt IV J1.
ISCJB ***25*** *09:00:19.6±0.5, 36.31N±0.02×140.95E±0.02, h29km±3km, mb4.9/219, MS4.5/50, Error ellipse: s-maj=4.0km s-min=2.6km az=165.2*
MOS ***25*** *09:00:20.9±0.8, 36.54N×140.89E, h30km, mb5.2/81, MS4.5/15, Error ellipse: s-maj=6.6km s-min=4.4km az=105.5*
NEIC ***25*** *09:00:21.6±1.2, 36.22N×140.89E, h34km±8km, mb5.1/149, Error ellipse: s-maj=4.0km s-min=2.9km az=144.0*
NEIC Recorded [4 JMA] in Chiba and Ibaraki.
GCMT ***25*** *09:00:21.6±0.2, 36.25N×140.91E, h27km, MW5.1/87, Moment Tensor Solution. s41,c53; s87,c137; Duration: 0 Moment tensor: Scale 10^16Nm; Mrr-4.05±.19; Mθθ0.43±.13; Mφφ3.62±.13; Mrθ0.82±.24; Mrφ1.53±.09; Mθφ3.73±.23; Best double couple: M05.63600×10^16 NP1:φs195.00000°, δ66.00000°, λ-95.00000°. NP2: φs29.00000°, δ24.00000°, λ-78.00000°. Principal axes: T 5.7010, Plg21.0000°, Azm290.0000°; N -0.1300, Plg5.0000°, Azm198.0000°; P -5.5710, Plg68.0000°, Azm95.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

ISC 25 09:00:20.1±0.4, 36.24N±0.03×141.07E±0.03, h26km±2km, h25km:pP-P, n803, σ1s48/806, mb5.0/225, MS4.5/50, 25C-18D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JHO	**Hitachi**	**0.55**	**313**	⇑P	**Pb**	**09 00 30.0**	**-1.1**
JHO				S	**Sb**	**09 00 38.7**	**+0.1**
CHOJ	**Chosi**	**0.56**	**198**	⇑P	**Pb**	**09 00 29.0**	**-2.4**
CHOJ				S	**Sb**	**09 00 36.2**	**-2.9**
JYT	**Yasato**	**0.71**	**269**	⇑P	**Pb**	**09 00 31.6**	**-2.2**
JYT				S	**Sb**	**09 00 41.7**	**-1.4**
ONAJ	**Iwakimizuishiy**	**0.88**	**346**	P	**Pb**	**09 00 35.2**	**-1.6**
I30JP	**ISUMI INFRASON**	**1.12**	**214**	Pn	**Pn**	**09 00 40.0**	**0.0**
	baz=33,slow=18,SNR=1.0						
JFK	**Kawauchi**	**1.13**	**352**	P	**Pn**	**09 00 38.6**	**-1.7**
JAG	**Ashikaga**	**1.32**	**278**	P	**Pn**	**09 00 40.7**	**-2.1**
MJAR	**Matsushiro Arr**	**2.33**	**278**	Pn	**Pn**	**09 00 55.5**	**-1.2**
	245nm,0.3s,baz=90,slow=8.7,SNR=812						
MJAR				LR	LR	09 01 23.6	
	comp=Z,2μm,20.7s,baz=115,slow=31						
MAJO	**Matsushiro**	**2.33**	**278**	*c i*P	**Pn**	**09 00 55.5**	**-1.2**
MAJO				pmax	pmax		
	comp=Z,1μm,1.0s						
MAJO	**Matsushiro**	**2.33**	**278**	*e*Pn	**Pn**	**09 00 56.1**	**-0.7**
MAT	**Matsushiro**	**2.33**	**278**	P	**Pn**	**09 00 55.9**	**-0.8**
MAT				S	**Sn**	**09 01 23.5**	**-1.0**
MJB9	**Matsu-Tunnel**	**2.33**	**278**	*e*Pn	**Pn**	**09 00 56.2**	**-0.6**
JHJ2	**Mitsune**	**3.29**	**199**	*e*Pn	**Pn**	**09 01 12.8**	**+2.9**
JHJ	**Hachijo jima 2**	**3.29**	**199**	Pn	**Pn**	**09 01 09.6**	**-0.4**
	comp=Z,140nm,0.3s,baz=249,slow=6.9,SNR=15						
JHJ				Sn	**Sn**	**09 01 44.5**	**-3.8**
	comp=Z,186nm,0.3s,baz=60,slow=23,SNR=6.1						
JHJ				LR	LR	09 02 32.4	
	comp=Z,3μm,21.1s,baz=72,slow=43						
INU	**Inuyama**	**3.41**	**256**	*e*Pn	**Pn**	**09 01 12.0**	**+0.3**
ERM	**Erimo**	**5.99**	**15**	*e*P	**Pn**	**09 01 46.2**	**-0.8**
ERM	**Erimo**	**5.99**	**15**	*e*Pn	**Pn**	**09 01 47.6**	**+0.6**
ASAJ	**Asahikawa**	**7.95**	**8**	Pn	**Pn**	**09 02 12.7**	**-1.2**
	comp=Z,6.0nm,0.3s,baz=219,slow=9.2,SNR=31						
ASAJ	**Asahikawa**	**7.95**	**8**	*e*Pn	**Pn**	**09 02 13.1**	**-0.9**
YUK	**Yuzh-Kuril'sk**	**8.60**	**24**	*e*P	**Pn**	**09 02 21.9**	**-1.0**
YUK				*e*S	**Sn**	**09 03 54.1**	**-4.9**
YUK				pmax	pmax		
	comp=Z,111nm,0.5s						
YUK				pmax	pmax		
	comp=N,27nm,0.3s						
YUK				pmax	pmax		
	comp=E,79nm,0.2s						
YUK				MLR	MLR		
	comp=Z,2μm,16.0s						
YUK				MLR	MLR		
	comp=N,3μm,13.0s						
YUK				MLR	MLR		
	comp=E,2μm,13.0s						
SHO	**Shikotan**	**8.80**	**28**	*e*P	**Pn**	**09 02 22.2**	**-3.4**
SHO				*e*S	Sn	09 03 54.6	-9.4
SHO				pmax	pmax		
	comp=Z,82nm,0.5s						
SHO				pmax	pmax		
	comp=N,68nm,0.7s						
SHO				pmax	pmax		
	comp=E,49nm,0.3s						
JNU	**Nakatsue**	**8.95**	**253**	Pn	**Pn**	**09 02 27.6**	**-0.1**
	comp=E,1.2nm,0.3s,baz=78,slow=11,SNR=12						
JNU				LR	LR	09 06 13.0	
	comp=E,7μm,19.0s,baz=69,slow=40						
JNU	**Nakatsue**	**8.95**	**253**	*e*Pn	**Pn**	**09 02 30.7**	**+3.0**
CBIJ	**Chichi jima**	**9.17**	**174**	*e*Pn	**Pn**	**09 02 27.5**	**-3.2**
CBIJ				*e*Sn	Sn	09 04 03.0	-10
JCJ	**Chichijima**	**9.17**	**174**	Pn	**Pn**	**09 02 26.5**	**-4.2**
	comp=E,47nm,0.3s,baz=64,slow=9.3,SNR=39						
JCJ				Sn	Sn	09 04 01.6	-11
	comp=E,31nm,0.3s,baz=297,slow=22,SNR=3.8						
VLA	**Vladivostok**	**9.86**	**317**	*c i*P	**Pn**	**09 02 39.4**	**-0.7**
KUR	**Kuril'sk**	**10.35**	**28**	*e*P	**Pn**	**09 02 44.9**	**-1.9**
KUR				*e*S	**Sn**	**09 04 34.3**	**-7.6**
KUR				pmax	pmax		
	comp=E,62nm,0.4s						
KUR				MLR	MLR		
	comp=Z,2μm,17.0s						
KUR				MLR	MLR		
	comp=E,3μm,14.0s						
USRK	**Ussuriysk Ar.**	**10.55**	**322**	Pn	**Pn**	**09 02 52.5**	**+3.0**
	comp=E,1.8nm,0.3s,baz=140,slow=13,SNR=27						
USRK				LR	LR	09 06 41.8	
	comp=E,2μm,20.2s,baz=128,slow=37						
KSRS	**Korea Array**	**10.60**	**280**	Pn	**Pn**	**09 02 53.2**	**+2.9**
	comp=E,0.9nm,0.3s,baz=91,slow=14,SNR=10						
KSRS				LR	LR	09 06 57.1	
	comp=E,2μm,18.4s,baz=84,slow=38						
KSAR	**Wonju Array Be**	**10.63**	**280**	P	**Pn**	**09 02 53.3**	**+2.5**
KSAR	**Wonju Array Be**	**10.63**	**280**	Pn	**Pn**	**09 02 53.2**	**+2.5**
YSS	**Yuzh-Sakhalins**	**10.78**	**6**	⇑*e*P	**Pn**	**09 02 52.3**	**-0.3**
YSS				*e*S	Sn	09 04 41.9	-10
YSS				pmax	pmax		
	comp=Z,20nm,0.8s						
YSS				MLR	MLR		
	comp=N,2μm,14.0s						
YSS				MLR	MLR		
	comp=Z,3μm,14.0s						
YSS				MLR	MLR		
	comp=E,1μm,13.0s						
YSS	**Yuzh-Sakhalins**	**10.78**	**6**	*e*Pn	**Pn**	**09 02 52.4**	**-0.2**
INCN	**Inchon**	**11.63**	**280**	Pn	**Pn**	**09 03 03.9**	**-0.5**
MDJ	**Mudanjiang**	**12.09**	**317**	P	**Pn**	**09 03 14.3**	**+3.7**
MDJ				S	**Sn**	**09 05 27.8**	**+3.3**
MDJ				PcP	**PcP**	**09 08 54.0**	**-0.3**
MDJ				ScP	**ScP**	**09 12 28.5**	**+3.1**
MDJ				ScS	**ScS**	**09 16 03.0**	**+1.8**
MDJ				pmax	pmax		
	comp=E,18nm,1.2s						
MDJ				pmax	pmax		
	comp=E,250nm,4.7s						
MDJ				LR	LR		
	comp=E,2μm,15.0s						
MDJ				LR	LR		
	comp=E,1μm,14.7s						
MDJ				LR	LR		
	comp=E,3μm,15.3s						
MDJ	**Mudanjiang**	**12.09**	**317**	*e*Pn	**Pn**	**09 03 14.9**	**+4.3**
HABR	**Khabarovsk**	**13.00**	**342**	*e*P	**Pn**	**09 03 20.0**	**-3.0**
HABR				*e*S	**Sn**	**09 05 42.6**	**-4.1**
HABR				pmax	pmax		
	comp=Z,31nm,2.0s						
HABR				pmax	pmax		
	comp=E,30nm,2.1s						
HABR				pmax	pmax		
	comp=N,40nm,2.1s						
HABR				MLR	MLR		
	comp=Z,1μm,14.0s						
CN2	**Changchun**	**14.14**	**307**	*e*P	**Pn**	**09 03 40.0**	**+1.4**
CN2				*e*S	**Sn**	**09 06 15.8**	**+1.3**
CN2				pmax	pmax		
	comp=Z,10.0nm,0.5s						
CN2				pmax	pmax		
	comp=Z,200nm,3.0s						
CN2				LR	LR		
	comp=Z,1μm,14.0s						
CN2				LR	LR		
	comp=Z,2μm,14.0s						
CN2				LR	LR		
	comp=Z,2μm,14.0s						
JOW	**Kunigami**	**14.38**	**233**	Pn	**Pn**	**09 03 44.6**	**+2.7**
	comp=Z,0.6nm,0.3s,baz=37,slow=14,SNR=3.1						
JOW	**Kunigami**	**14.38**	**233**	*e*P	**P**	**09 03 47.4**	**-1.3**
KLR	**Kul'dur**	**14.66**	**335**	Pn	**Pn**	**09 03 44.9**	**-0.8**
	comp=Z,0.4nm,0.3s,baz=136,slow=8.7,SNR=8.6						
KLR				LR	LR	09 09 22.7	
	comp=Z,1μm,18.6s,baz=150,slow=37						
KLR	**Kul'dur**	**14.66**	**335**	*e*P	**Pn**	**09 03 45.1**	**-0.5**
TYV	**Tymovskoe**	**14.66**	**4**	*e*P	**Pn**	**09 03 43.8**	**-1.9**
TYV				*e*S	**Sn**	**09 06 33.0**	**+5.8**
TYV				pmax	pmax		
	comp=Z,33nm,0.8s						
TYV				smax	smax		
	comp=E,1μm,12.0s						
TYV				MLR	MLR		
	comp=E,2μm,18.0s						
TYV				MLR	MLR		
	comp=Z,2μm,18.0s						
SNY	**Shenyang**	**14.69**	**298**	⇓P	**Pn**	**09 03 47.0**	**+1.0**
SNY				S	**Sn**	**09 06 33.0**	**+5.1**
SNY				pmax	pmax		
	comp=Z,19nm,1.7s						
SNY				pmax	pmax		
	comp=Z,260nm,5.2s						
SNY				LR	LR		
	comp=Z,3μm,14.1s						
SNY				LR	LR		
	comp=Z,3μm,14.8s						
SNY				LR	LR		
	comp=Z,4μm,16.7s						
DL2	**Dalian**	**15.64**	**286**	P	**Pn**	**09 03 59.0**	**+0.3**
DL2				S	**Sn**	**09 06 47.5**	**-3.7**
DL2				pmax	pmax		
	comp=Z,33nm,0.8s						
DL2				pmax	pmax		
	comp=Z,520nm,4.8s						
DL2				LR	LR		
	comp=Z,2μm,14.5s						
DL2				LR	LR		
	comp=Z,2μm,13.5s						
DL2				LR	LR		
	comp=Z,3μm,15.7s						
NKL	**Nikolayevsk**	**16.91**	**359**	*e*P	**P**	**09 04 15.7**	**-0.8**
NKL				MLR	MLR		
	comp=E,1μm,26.0s						
NKL				MLR	MLR		
	comp=N,600nm,18.0s						
NKL				MLR	MLR		
	comp=Z,2μm,18.0s						
SSE	**Sheshan**	**17.32**	**258**	P	**Pn**	**09 04 19.0**	**-1.0**
SSE				S	**Sn**	**09 07 31.3**	**-0.7**
SSE				pmax	pmax		
	comp=Z,52nm,1.0s						
SSE				pmax	pmax		
	comp=Z,200nm,6.0s						
SSE				LR	LR		
	comp=Z,820nm,20.5s						
SSE				LR	LR		
	comp=Z,1μm,20.5s						
SSE				LR	LR		
	comp=Z,2μm,20.0s						
NJ2	**Nanjing**	**18.85**	**264**	*e*P	**P**	**09 04 37.0**	**-1.1**
NJ2				S	**Sn**	**09 08 09.5**	**+0.6**
NJ2				pmax	pmax		
	comp=Z,12nm,0.5s						
NJ2				LR	LR		
	comp=Z,2μm,16.3s						
NJ2				LR	LR		
	comp=Z,2μm,19.5s						
NJ2				LR	LR		
	comp=Z,1μm,16.3s						
TIA	**Tai'an**	**19.31**	**277**	⇑P	**P**	**09 04 40.8**	**-2.4**
TIA				pmax	pmax		
	comp=Z,40nm,1.2s						
TIA				pmax	pmax		
	comp=Z,380nm,5.0s						
TIA				LR	LR		
	comp=Z,950nm,14.3s						
TIA				LR	LR		
	comp=Z,1μm,17.0s						
TIA				LR	LR		
	comp=Z,2μm,16.0s						
BJI	**Beijing**	**19.92**	**288**	P	**P**	**09 04 48.5**	**-1.3**
BJI				S	**S**	**09 08 25.5**	**-7.2**
BJI				pmax	pmax		
	comp=Z,27nm,1.5s						
BJI				pmax	pmax		
	comp=Z,220nm,3.4s						
BJI				LR	LR		
	comp=Z,520nm,16.0s						
BJI				LR	LR		
	comp=Z,1μm,12.8s						
BJT	**Baijiatuau**	**19.93**	**288**	*e*P	**P**	**09 04 49.0**	**-0.9**
BJT				pmax	pmax		
	comp=Z,43nm,0.7s						
BJT	**Baijiatuau**	**19.93**	**288**	*e*P	**P**	**09 04 49.0**	**-0.9**
	comp=Z,43nm,0.7s						
YHNB	**Yeheng**	**20.48**	**241**	*e*P	**P**	**09 04 53.8**	**-2.2**
	comp=Z,28nm,1.0s						
PETK	**Petropavlovsk-**	**20.51**	**30**	P	Pn	09 04 57.7	-0.7
	comp=Z,4.7nm,0.6s,baz=177,slow=11,SNR=3.6						
PETK				LR	LR	09 12 20.1	
	comp=Z,810nm,21.9s,baz=213,slow=35						
PET	**Petropavlovsk**	**20.84**	**31**	*e*P	Pn	09 05 03.1	+1.0
PET				*e*S	**S**	**09 08 49.5**	**-1.1**
PET				pmax	pmax		
	comp=Z,300nm,13.6s						
PET				MLR	MLR		
	comp=Z,1μm,17.0s						
PET				MLR	MLR		
	comp=Z,800nm,15.0s						
YULB	**Yu-li**	**21.36**	**239**	*e*P	**P**	**09 05 10.0**	**+4.5**
	comp=Z,12nm,0.6s						
TPUB	**Ta-pu**	**21.88**	**239**	*e*P	**P**	**09 05 11.9**	**+0.8**
	comp=Z,70nm,1.4s						
QZH	**Quanzhou**	**22.33**	**246**	⇑*i*P	**P**	**09 05 12.3**	**-3.6**
QZH				S	S	09 09 05.8	-14
QZH				LR	LR		
	comp=Z,2μm,15.0s						
QZH				LR	LR		
	comp=Z,3μm,16.8s						
QZH				LR	LR		
	comp=Z,4μm,18.6s						
WHN	**Wuhan**	**22.98**	**263**	P	**P**	**09 05 19.5**	**-3.3**
WHN				S	**S**	**09 09 25.8**	**-5.8**
WHN				pmax	pmax		
	comp=Z,310nm,4.0s						
WHN				LR	LR		
	comp=Z,2μm,11.9s						
WHN				LR	LR		
	comp=Z,2μm,14.3s						
WHN				LR	LR		
	comp=Z,4μm,13.3s						
HHC	**Hu-ho-hao-te**	**23.47**	**290**	*e*P	**P**	**09 05 28.0**	**+0.3**
HHC				pP	pP	09 05 35.0	0.0
HHC				sP	sP	09 05 38.0	-0.3
HHC				PP	**PnPn**	**09 06 03.0**	**+8.5**
HHC				S	**S**	**09 09 35.8**	**-4.0**
HHC				SS	**SnSn**	**09 10 18.5**	**+2.2**
HHC				pmax	pmax		
	comp=Z,21nm,1.1s						
HHC				pmax	pmax		
	comp=Z,110nm,2.7s						
HHC				LR	LR		
	comp=Z,3μm,14.8s						
HHC				LR	LR		
	comp=Z,2μm,13.6s						
HHC				LR	LR		
	comp=Z,2μm,14.8s						
MA2	**Magadan**	**24.18**	**12**	P	**P**	**09 05 34.8**	**+0.7**
	comp=Z,13nm,0.7s,baz=223,slow=8.0,SNR=16						
XAN	**Xi'an**	**26.32**	**275**	P	**P**	**09 05 51.3**	**-2.5**
XAN				pP	pP	09 05 58.3	-3.1
XAN				sP	sP	09 06 01.8	-2.8
XAN				PP	**PnPn**	**09 06 34.5**	**+1.1**
XAN				S	**S**	**09 10 21.3**	**-3.9**
XAN				sS	sS	09 10 33.0	-4.7
XAN				SS	**SnSn**	**09 11 33.8**	**+7.8**
XAN				pmax	pmax		
	comp=Z,22nm,1.1s						
XAN				pmax	pmax		
	comp=Z,95nm,5.9s						
XAN				LR	LR		
	comp=Z,410nm,13.2s						
XAN				LR	LR		
	comp=Z,920nm,14.6s						
XAN				LR	LR		
	comp=Z,1μm,14.6s						
YAK	**Yakutsk**	**26.78**	**348**	P	**P**	**09 05 57.2**	**-0.4**
	comp=Z,18nm,0.4s,baz=343,slow=16,SNR=6.4						
YAK	**Yakutsk**	**26.78**	**348**	*e*P	**P**	**09 05 57.1**	**-0.5**
YAK				*e**PP	**pP**	**09 06 06.6**	**+1.4**
YAK				*e*		09 06 39.4	
YAK				*e*		09 09 16.2	
YAK				*e*S	**S**	**09 10 30.0**	**-1.8**
YAK				*e*SS	**SnSn**	**09 11 34.6**	**-2.1**
YAK				pmax	pmax		
	comp=Z,16nm,1.0s						
YAK				pmax	pmax		
	comp=N,13nm,1.1s						
YAK				pmax	pmax		
	comp=E,5.0nm,1.1s						
YAK				pmax	pmax		
	comp=Z,116nm,2.9s						
YAK				pmax	pmax		
	comp=N,75nm,2.4s						
YAK				pmax	pmax		
	comp=E,18nm,1.1s						
YAK				smax	smax		
	comp=N,261nm,3.3s						
YAK				smax	smax		
	comp=E,123nm,3.5s						
ENH	**Enshi**	**27.00**	**266**	*e*P	**P**	**09 05 58.1**	**-1.8**
	comp=E,34nm,0.8s						
ULN	**Ulaanbaatar**	**27.58**	**306**	*i* P	**P**	**09 06 03.7**	**-1.5**
ULN				pmax	pmax		
	comp=Z,18nm,1.2s						
ULN	**Ulaanbaatar**	**27.58**	**306**	*e*P	**P**	**09 06 04.6**	**-0.6**
	comp=Z,31nm,1.4s						
SEY	**Seymchan**	**27.62**	**11**	P	**P**	**09 06 06.0**	**+0.8**
	comp=Z,5.8nm,0.9s,baz=202,slow=9.7,SNR=17						
SEY	**Seymchan**	**27.62**	**11**	*e*P	**P**	**09 06 06.1**	**+1.0**
H11N2	**WAKE ISLAND Hy**	**28.00**	**119**	T	T	09 35 23.2	
	baz=312,slow=75,SNR=512						
H11N1	**WAKE ISLAND Hy**	**28.00**	**119**	T	T	09 35 27.0	
	baz=312,slow=75,SNR=774						
SONA1	**Songino Array**	**28.00**	**305**	*e*P	**P**	**09 06 05.1**	**-3.9**
SONM	**Songino Array**	**28.00**	**305**	P	**P**	**09 06 07.4**	**-1.5**
	comp=Z,2.8nm,0.7s,baz=21,slow=9.3,SNR=3.8						
SONM				LR	LR	09 17 56.5	
	comp=Z,1μm,18.1s,baz=72,slow=38						
H11N3	**WAKE ISLAND Hy**	**28.01**	**119**	T	T	09 35 28.3	
	baz=312,slow=75,SNR=641						
BOD	**Bodaibo**	**28.05**	**329**	*e*P	**P**	**09 06 08.1**	**-1.0**
BOD				pmax	pmax		
	comp=Z,24nm,0.9s						
H11S1	**WAKE ISLAND Hy**	**28.68**	**121**	T	T	09 36 08.9	
	baz=314,slow=76,SNR=1169						
H11S3	**WAKE ISLAND Hy**	**28.68**	**121**	T	T	09 36 15.2	
	baz=314,slow=76,SNR=1080						
H11S2	**WAKE ISLAND Hy**	**28.69**	**121**	T	T	09 36 13.0	
	baz=314,slow=76,SNR=1232						
LZH	**Lanzhou**	**29.93**	**281**	*e*P	**P**	**09 06 29.5**	**+3.3**
LZH				pP	sP	09 06 36.3	-0.7
LZH				sP	pP	09 06 39.8	+6.0
LZH				PP	**PnPn**	**09 07 27.0**	**+4.1**
LZH				*e*S	**S**	**09 11 20.0**	**-2.4**
LZH				SS	**SnSn**	**09 12 59.3**	**+5.0**
LZH				pmax	pmax		
	comp=Z,26nm,1.0s						
LZH				pmax	pmax		
	comp=Z,120nm,4.0s						
LZH				LR	LR		
	comp=Z,1μm,14.6s						
LZH				LR	LR		
	comp=Z,2μm,15.6s						
LZH				LR	LR		
	comp=Z,2μm,17.4s						
ZAK	**Zakamensk**	**30.55**	**309**	*e*P	**P**	**09 06 29.7**	**-1.7**
ZAK				*e*		09 09 29.4	

ZAK pmax pmax
comp=Z,5.0nm,1.6s
ZAK pmax pmax
comp=Z,5.0nm,1.6s
TLY Talaya 30.65 312 P **P** **09 06 32.8 +0.7**
comp=Z,2.6nm,0.6s,baz=129,slow=9.0,SNR=5.0
TLY Talaya 30.65 312 *eP* **P** **09 06 32.1 -0.1**
TLY *eS* **S** **09 11 28.6 -4.3**
TLY pmax pmax
comp=Z,13nm,1.6s
TLY MLR MLR
comp=Z,1μm,20.0s
GYA Guiyang 30.82 261⇑ *i*P **P** **09 06 34.8 +0.7**
GYA pP pP 09 06 42.8 +1.1
GYA PP **PnPn** **09 07 37.0 +2.4**
GYA PcP **PcP** **09 09 32.5 +1.6**
GYA S **S** **09 11 34.5 -1.8**
GYA sS sS 09 11 48.0 -0.9
GYA ScP **ScP** **09 13 12.3 +0.5**
GYA SS **SnSn** **09 13 18.5 +2.5**
GYA ScS **ScS** **09 17 08.3 -0.5**
GYA pmax pmax
comp=Z,20nm,0.8s
GYA pmax pmax
comp=Z,120nm,5.0s
GYA LR LR
comp=Z,640nm,17.6s
GYA LR LR
comp=Z,560nm,17.9s
GYA LR LR
comp=Z,580nm,17.8s
CD2 Chengdu 31.40 271 P **P** **09 06 37.5 -1.6**
CD2 sP sP 09 06 48.8 -1.1
CD2 S **S** **09 11 43.3 -1.9**
CD2 sS sS 09 11 56.8 -1.0
CD2 pmax pmax
comp=Z,50nm,2.2s
CD2 LR LR
comp=Z,1μm,19.2s
CD2 LR LR
comp=Z,1μm,16.8s
QIZ Qiongzhong 32.35 246 P **P** **09 06 48.0 +0.5**
QIZ S **S** **09 12 01.3 +1.2**
QIZ LR LR
comp=Z,320nm,15.3s
QIZ LR LR
comp=Z,390nm,18.6s
GTA Gaotai 32.54 288 *eP* **P** **09 06 48.3 -0.8**
GTA pP pP 09 06 55.3 -1.4
GTA sP sP 09 06 59.0 -0.9
GTA S **S** **09 12 01.5 -1.4**
GTA sS sS 09 12 13.5 -2.0
GTA SS **SnSn** **09 13 59.3 +1.8**
GTA pmax pmax
comp=Z,14nm,1.2s
GTA pmax pmax
comp=Z,92nm,5.9s
GTA LR LR
comp=Z,880nm,20.9s
GTA LR LR
comp=Z,1μm,16.2s
GTA LR LR
comp=Z,610nm,17.1s
KMI Kunming 34.57 262 P **P** **09 07 04.5 -2.5**
KMI pP pP 09 07 13.8 -0.9
KMI sP sP 09 07 18.5 +0.6
KMI S **S** **09 12 30.0 -4.9**
KMI sS sS 09 12 48.0 +0.5
KMI pmax pmax
comp=Z,10.0nm,1.4s
KMI pmax pmax
comp=Z,110nm,3.3s
KMI LR LR
comp=Z,770nm,15.0s
KMI LR LR
comp=Z,1μm,16.5s
KMI LR LR
comp=Z,1μm,16.0s
BILL Bilibino 34.86 16⇑ *eP* **P** **09 07 08.6 -0.2**
BILL *i* 09 07 18.6
BILL pmax pmax
comp=Z,13nm,1.7s
BILL MLR MLR
comp=Z,422nm,17.0s
BILL Bilibino 34.86 16 *eP* **P** **09 07 09.5 +0.7**
comp=Z,41nm,1.6s
TIXI Tiksi 36.04 353 P **P** **09 07 18.4 -0.4**
comp=Z,4.1nm,0.5s,baz=144,slow=6.3,SNR=11
TIXI Tiksi 36.04 353 *i*P **P** **09 07 18.2 -0.6**
TIXI pmax pmax
comp=Z,2.0nm,0.8s
TIXI Tiksi 36.04 353 *eP* **P** **09 07 18.4 -0.4**
comp=Z,7.1nm,0.9s
MYLDM Lahad Datu 37.22 219 *eP* **P** **09 07 32.3 +2.8**
TNTI Ternate 37.51 203 P **P** **09 07 33.9 +1.9**
KRAR Krasnoyarsk 37.85 317 *eP* **P** **09 07 34.5 +0.1**
KRAR pmax pmax
comp=Z,12nm,0.7s
SWI Sorong 38.03 196 P **P** **09 07 38.5 +2.2**
JAY Jayapura 38.56 181 LR LR 09 21 32.4
comp=Z,16nm,20.3s,baz=0.0,slow=33
JAY Jayapura 38.56 181 P **P** **09 07 42.2 +1.4**
LBMI Labuha 38.80 202 P **P** **09 07 45.8 +3.0**
MRSI Marisa 39.77 211 P **P** **09 07 52.1 +1.2**
FAKI Fak Fak 39.82 194 P **P** **09 07 52.6 +1.3**
SANI Sanana 40.61 204 P **P** **09 07 57.9 0.0**
comp=Z,43nm,1.2s
WMQ Urumqi 40.95 298 P **P** **09 08 01.5 +0.9**
WMQ pP pP 09 08 09.0 +0.7
WMQ sP sP 09 08 12.0 +0.5
WMQ PP **PP** **09 09 35.5 +0.4**
WMQ S **S** **09 14 12.3 +1.3**
WMQ SS **SS** **09 17 09.3 -3.6**
WMQ pmax pmax
comp=Z,15nm,1.4s
WMQ pmax pmax
comp=Z,160nm,4.2s
WMQ LR LR
comp=Z,390nm,15.4s
WMQ LR LR
comp=Z,360nm,16.8s
WMQ LR LR
comp=Z,220nm,18.2s
MSAI Masohi 40.98 199 P **P** **09 08 03.0 +2.0**
CMAR Chiang Mai Arr 41.03 256 P **P** **09 07 58.6 -2.8**
comp=Z,0.7nm,0.5s,baz=59,slow=7.5,SNR=2.5
CMAR LR LR 09 26 53.4
comp=Z,330nm,18.1s,baz=58,slow=39
LSA Lhasa 42.01 276 *eP* **P** **09 08 12.7 +2.8**
LSA pmax pmax
comp=Z,17nm,0.8s
LSA Lhasa 42.01 276 *eP* **P** **09 08 12.7 +2.8**
comp=Z,17nm,0.8s
ZAA0 Zalesovo Array 42.25 313 *eP* **P** **09 08 10.0 -1.0**
ZAA0 *eP* pP 09 08 10.7 -8.0
ZALV Zalesovo Beam 42.25 313 P **P** **09 08 10.6 -0.3**
comp=Z,8.5nm,0.6s,baz=91,slow=6.1,SNR=37
SHL Shillong 43.12 270 *eP* **P** **09 08 15.5 -3.1**
NVS Novosibirsk 43.19 314⇑ *i*P **P** **09 08 18.6 +0.1**
NVS pmax pmax
comp=Z,38nm,1.2s
NVS pmax pmax
comp=N,9.0nm,1.5s
NVS pmax pmax
comp=E,29nm,1.5s
TTSI Tana Toraja 43.84 212 P **P** **09 08 27.5 +3.4**
NRIK Noril'sk 43.87 336 P **P** **09 08 22.4 -1.5**
comp=E,3.7nm,0.5s,baz=123,slow=7.2,SNR=7.2
MK01 Makanchi Array 44.30 303 *eP* **P** **09 08 26.5 -1.2**
MK31 Makanchi Array 44.31 303 P **P** **09 08 27.3 -0.4**
MK31 pmax pmax
comp=Z,31nm,1.4s
MK31 Makanchi Array 44.31 303 *eP* **P** **09 08 27.8 0.0**
MKAR Makanchi Array 44.31 303 P **P** **09 08 27.8 +0.1**
comp=Z,12nm,1.0s,baz=82,slow=9.2,SNR=55
MKAR LR LR 09 27 42.7
comp=Z,725nm,19.9s,baz=84,slow=37
MKAR Makanchi Array 44.31 303 *i* P **P** **09 08 27.7 0.0**
MKAR pmax pmax
comp=Z,12nm,1.0s
MAKZ Makanchi 44.52 303 P **P** **09 08 28.3 -1.1**
MAKZ pmax pmax
comp=Z,31nm,1.5s
MAKZ Makanchi 44.52 303 *eP* **P** **09 08 29.5 +0.1**
comp=Z,15nm,0.9s

SPSI Sidrap Palu 44.68 211 P **P** **09 08 33.8 +2.9**
SAUI Saumlaki 44.94 194 P **P** **09 08 34.3 +1.4**
KAPI Kappang 45.64 210 P **P** **09 08 39.6 +1.0**
comp=Z,4.6nm,0.5s,baz=281,slow=10,SNR=3.2
KAPI Kappang 45.64 210 *eP* **P** **09 08 37.5 -1.0**
KAPI P **P** **09 08 39.6 +1.0**
PMG Port Moresby 45.77 172 P **P** **09 08 38.9 -0.6**
comp=Z,5.8nm,0.7s,baz=28,slow=15,SNR=2.7
PMG Port Moresby 45.77 172 *eP* **P** **09 08 40.9 +1.4**
PMG pmax pmax
comp=Z,68nm,1.1s
KURK Kurchatov 46.20 309 *eP* **P** **09 08 41.7 -1.0**
KURK pmax pmax
comp=Z,24nm,0.8s
KURK Kurchatov 46.20 309 *eP* **P** **09 08 41.7 -1.0**
comp=Z,24nm,0.8s
TT01 Tatalina 46.22 34 *eP* **P** **09 08 43.4 +0.8**
TTA Tatalina 46.23 34 *eP* **P** **09 08 44.3 +1.5**
TTA pmax pmax
comp=Z,12nm,1.3s
TTA Tatalina 46.23 34 *eP* **P** **09 08 44.3 +1.5**
comp=Z,12nm,1.3s
KURBB Kurchatov Arra 46.27 309 P **P** **09 08 42.4 -0.8**
comp=Z,12nm,0.5s,baz=83,slow=7.8,SNR=61
BBKI Banjar Baru 46.48 217 P **P** **09 08 47.4 +2.2**
PDGK Podgornoye 46.91 298 P **P** **09 08 47.8 -0.4**
PDGK pmax pmax
comp=Z,77nm,1.5s
GUN Gumba 46.96 276 *eP* **P** **09 08 48.7 -0.6**
PKIN Phulchoki 47.49 276 *eP* **P** **09 08 52.5 -0.9**
comp=Z,39nm,0.9s
KKN Kakani 47.49 276 *eP* **P** **09 08 52.7 -0.6**
RSO Redoubt South 47.70 38 *eP* **P** **09 08 56.0 +1.6**
DMN Daman 47.71 276 *eP* **P** **09 08 54.4 -0.7**
KDAK Kodiak Island 47.87 41 P P 09 09 10.9 +15
comp=Z,7.7nm,0.6s,baz=264,slow=4.5,SNR=11
KDAK Kodiak Island 47.87 41 *i* P **P** **09 08 56.1 +0.5**
GKN Gorkha 47.92 277 *eP* **P** **09 08 56.0 -0.6**
comp=Z,280nm,1.1s
PPLA Purkeypile 47.98 35 *eP* **P** **09 08 58.9 +2.3**
comp=Z,137nm,2.0s
MMRI Maumere 48.03 205 P **P** **09 08 58.8 +1.6**
SPU Mount Spurr 48.03 37 *eP* **P** **09 08 58.5 +1.7**
CAST Castle Rocks 48.04 34 *eP* **P** **09 08 58.9 +2.0**
comp=Z,99nm,2.0s
BPAW Bear Paw Mtn. 48.54 33 *eP* **P** **09 09 02.5 +1.8**
comp=Z,8.1nm,1.0s
KTH Kantishna Hill 48.56 34 *eP* **P** **09 09 02.6 +1.7**
comp=Z,56nm,1.7s
MLY Manley 48.67 32 *eP* **P** **09 09 03.1 +1.4**
comp=Z,100nm,1.9s
KOLN Koldanda 48.85 277 *eP* **P** **09 09 03.3 -0.5**
comp=Z,39nm,0.7s
COLD Coldfoot 48.98 29 *eP* **P** **09 09 05.7 +1.7**
comp=Z,31nm,1.8s
BATI Baumata 49.02 203 P **P** **09 09 07.7 +2.8**
PYUN Piuthan 49.20 278 *eP* **P** **09 09 06.6 +0.1**
comp=Z,372nm,1.1s
PMR Palmer 49.43 36 *eP* **P** **09 09 08.4 +1.0**
PMR pmax pmax
comp=Z,14nm,0.9s
PMR Palmer 49.43 36 *eP* **P** **09 09 08.4 +1.0**
comp=Z,14nm,0.9s
MCK McKinley 49.45 33 *eP* **P** **09 09 09.1 +1.5**
MCK pmax pmax
comp=Z,11nm,0.9s
MCK McKinley 49.45 33 *eP* **P** **09 09 09.1 +1.5**
comp=Z,11nm,0.9s
RND Reindeer 49.49 34 *eP* **P** **09 09 09.2 +1.2**
RND pmax pmax
comp=Z,92nm,1.9s
RND Reindeer 49.49 34 *eP* **P** **09 09 09.2 +1.2**
comp=Z,92nm,1.9s
MTN Manton Dam 49.71 193 *eP* **P** **09 09 08.4 -1.7**
comp=Z,87nm,1.6s
MDM Murphy Dome 49.73 32 *eP* **P** **09 09 11.6 +1.8**
comp=Z,149nm,1.8s
TKM2 Tokmak 2 49.77 299 P **P** **09 09 10.9 +0.3**
TKM2 pmax pmax
comp=Z,82nm,1.8s
TKM2 Tokmak 2 49.77 299 *eP* **P** **09 09 11.1 +0.5**
comp=Z,172nm,1.8s
SML Sawmill 49.79 36 *eP* **P** **09 09 11.9 +1.5**
SML pmax pmax
comp=Z,13nm,0.8s
SML Sawmill 49.79 36 *eP* **P** **09 09 11.8 +1.5**
comp=Z,13nm,0.8s
WRH Wood River Hil 49.80 32 *eP* **P** **09 09 11.2 +1.0**
comp=Z,38nm,1.7s
COLA College 49.90 32 *i* P **P** **09 09 11.7 +0.7**
COLA pmax pmax
comp=Z,36nm,1.7s
COLA College 49.90 32 *eP* **P** **09 09 12.5 +1.6**
comp=Z,16nm,0.8s
CCB Clear Creek Bu 49.92 32 *eP* **P** **09 09 12.5 +1.3**
comp=Z,26nm,1.9s
DHY Denali Highway 50.17 34 *eP* **P** **09 09 14.5 +1.2**
comp=Z,27nm,1.6s
SCM Sheep Creek Mo 50.27 36 *eP* **P** **09 09 15.7 +1.7**
SCM pmax pmax
comp=Z,89nm,1.8s
SCM Sheep Creek Mo 50.27 36 *eP* **P** **09 09 15.7 +1.7**
comp=Z,89nm,1.8s
IL1 Eielson Array 50.31 32 *eP* **P** **09 09 13.5 -0.6**
ILAR Eielson Array 50.31 32 P **P** **09 09 14.8 +0.6**
comp=Z,8.9nm,0.6s,baz=265,slow=5.7,SNR=140
ILB Eielson Array 50.31 32 *eP* **P** **09 09 15.2 +1.0**
KSH Kashi 50.48 295 P **P** **09 09 20.0 +4.0**
KSH *ep*P sP 09 09 27.5 +0.5
KSH *es*P pP 09 09 30.8 +6.9
KSH *ep*PcP **PcP** **09 10 38.0 +4.1**
KSH S **S** **09 16 31.8 +3.5**
KSH pmax pmax
comp=Z,13nm,0.8s
KSH pmax pmax
comp=Z,140nm,3.9s
KSH LR LR
comp=Z,700nm,14.2s
KSH LR LR
comp=Z,430nm,13.7s
KSH LR LR
comp=Z,780nm,16.2s
FRU Bishkek 50.48 299 *eP* **P** **09 09 15.0 -0.8**
FRU *i* 09 09 22.0
FRU *e* 09 10 38.0
FRU *e* 09 16 30.0
FRU pmax pmax
comp=Z,90nm,2.0s
ABJI Asem Bagus 50.55 215 P **P** **09 09 18.1 +1.6**
AAK Ala-Archa 50.62 299 LR LR 09 32 01.0
comp=Z,1μm,18.5s,baz=62,slow=38
AAK Ala-Archa 50.62 299 *eP* **P** **09 09 17.3 +0.2**
AAK pmax pmax
comp=Z,21nm,1.1s
AAK Ala-Archa 50.62 299 *eP* **P** **09 09 17.3 +0.2**
comp=Z,21nm,1.1s
CHKZ Chkalovo 50.65 314 P **P** **09 09 16.3 -0.6**
CHKZ pmax pmax
comp=Z,41nm,1.3s
LHMI Lhok Sumawe 50.86 243 P **P** **09 09 20.2 +1.3**
BVA0 Borovoye Array 50.90 313 *i* P **P** **09 09 18.5 -0.3**
BVA0 pmax pmax
comp=Z,29nm,1.8s
BVAR Borovoye Array 50.90 313 P **P** **09 09 17.9 -0.9**
comp=Z,3.5nm,0.8s,baz=106,slow=13,SNR=8.5
FYU Fort Yukon 50.93 30 *eP* **P** **09 09 21.3 +2.5**
comp=Z,162nm,2.0s
BRVK Borovoye 50.96 313*c* *i*P **P** **09 09 18.5 -0.7**
BRVK pmax pmax
comp=Z,21nm,2.5s
BRVK Borovoye 50.96 313 *eP* **P** **09 09 19.4 +0.1**
comp=Z,44nm,1.6s
KLU Klutina 50.97 36 *eP* **P** **09 09 21.1 +1.8**
comp=Z,46nm,1.6s
PAX Paxson 51.04 34 *eP* **P** **09 09 21.5 +1.7**
PAX pmax pmax
comp=Z,39nm,1.9s
PAX Paxson 51.04 34 *eP* **P** **09 09 21.5 +1.7**
comp=Z,39nm,1.9s
DIV Divide 51.08 37 *eP* **P** **09 09 22.0 +1.9**
comp=Z,32nm,1.2s
EKS2 Erkin-Say 51.12 299 *eP* **P** **09 09 20.7 -0.1**
EKS2 pmax pmax
comp=Z,12nm,1.0s
EKS2 Erkin-Say 51.12 299 *eP* **P** **09 09 20.7 -0.1**
comp=Z,12nm,1.0s

RGRI Rengat 51.17 233 P **P** **09 09 23.8 +2.6**
JMBI JAMBI 51.31 231 P **P** **09 09 24.9 +2.6**
DOT Dot Lake 51.62 33 *eP* **P** **09 09 24.7 +0.7**
comp=Z,30nm,0.8s
BMRM Bremner River 51.66 37 *eP* **P** **09 09 26.4 +2.0**
comp=Z,21nm,0.8s
ZRNK Zerenda 51.74 313 P **P** **09 09 23.8 -1.2**
ZRNK pmax pmax
comp=Z,53nm,1.7s
ZRNK Zerenda 51.74 313 *eP* **P** **09 09 24.8 -0.3**
comp=Z,21nm,1.0s
MENT Mentasta 51.84 34 *eP* **P** **09 09 27.7 +1.9**
comp=Z,9.2nm,0.8s
TPTI 52.05 241 P **P** **09 09 28.0 +0.2**
MNAS Manas 52.07 299 P **P** **09 09 27.7 -0.2**
MNAS pmax pmax
comp=Z,32nm,1.2s
SFK Sufi-Kurgan 52.13 296 P **P** **09 09 28.4 -0.1**
SFK pmax pmax
comp=Z,43nm,1.5s
EGAK Eagle 52.76 32 *eP* **P** **09 09 33.3 +0.8**
comp=Z,62nm,1.8s
KK31 Karatay Array 53.28 301 *i* P **P** **09 09 36.8 +0.1**
KK31 pmax pmax
comp=Z,34nm,1.3s
KKAR Karatay Array 53.28 301 *eP* **P** **09 09 36.7 0.0**
KKAR Karatay Array 53.28 301 *eP* **P** **09 09 36.7 0.0**
INK Inuvik 55.22 27 P **P** **09 09 51.6 +1.3**
comp=Z,9.5nm,0.5s,baz=298,slow=6.7,SNR=143
INK Inuvik 55.22 27 *eP* **P** **09 09 51.5 +1.2**
INK pmax pmax
comp=Z,13nm,0.6s
INK Inuvik 55.22 27 *eP* **P** **09 09 51.5 +1.2**
comp=Z,13nm,0.6s
FITZ Fitzroy Crossi 55.99 198 P **P** **09 09 55.8 -0.6**
comp=Z,2.8nm,0.5s,baz=27,slow=11,SNR=12
FITZ Fitzroy Crossi 55.99 198 *eP* **P** **09 09 58.9 +2.5**
comp=Z,68nm,1.8s
WRAB Tennant Creek 56.23 188⇑ *i*P **P** **09 09 57.0 -1.1**
WRAB pmax pmax
comp=Z,34nm,2.5s
WRAB Tennant Creek 56.23 188 *eP* **P** **09 09 56.7 -1.4**
comp=Z,33nm,0.9s
WB2 Warramunga Arr 56.24 188 *eP* **P** **09 09 57.0 -1.2**
comp=Z,29nm,0.8s
WRA Warramunga Arr 56.24 188 P **P** **09 09 56.6 -1.5**
comp=Z,3.7nm,0.4s,baz=6.7,slow=7.5,SNR=77
WRA LR LR 09 33 21.3
comp=Z,178nm,19.6s,baz=10.0,slow=35
ARU Arti 56.77 319*c* *i*P **P** **09 10 01.3 -0.3**
ARU 09 12 06.2
ARU S **S** **09 17 53.4 +0.6**
ARU SS **SS** **09 21 37.2 -3.2**
ARU pmax pmax
comp=Z,27nm,1.4s
ARU MLR MLR
comp=Z,472nm,15.0s
ARU Arti 56.77 319 *eP* **P** **09 10 01.4 -0.2**
comp=Z,26nm,0.8s
SOKR Solikamsk 56.78 323*d* *i*P **P** **09 10 00.5 -1.1**
SOKR pmax pmax
comp=Z,19nm,1.3s
SOKR MLR MLR
comp=Z,565nm,17.0s
HYB Hyderabad 57.91 269 *i* P **P** **09 10 10.0 -0.2**
AB31 Akbulak array 58.24 310 P **P** **09 10 11.6 -0.5**
AB31 pmax pmax
comp=Z,6.0nm,0.6s
ABKAR Akbulak array 58.24 310 *eP* **P** **09 10 11.6 -0.5**
AKTO Aktyubinsk 59.00 312 LR LR 09 37 05.2
comp=Z,294nm,18.5s,slow=38
AKTO Aktyubinsk 59.00 312 P **P** **09 10 16.8 -0.6**
AKTO pmax pmax
comp=Z,31nm,2.1s
DLBC Dease Lake 59.42 38 *eP* **P** **09 10 22.6 +2.4**
comp=Z,19nm,1.3s
AS01 Alice Springs 59.96 188 *eP* **P** **09 10 22.7 -1.5**
AS31 Alice Springs 59.97 188 *eP* **P** **09 10 23.0 -1.3**
comp=Z,2.3nm,0.8s
ASAR Alice Springs 59.97 188 P **P** **09 10 23.0 -1.3**
comp=Z,2.9nm,0.7s,baz=21,slow=6.9,SNR=46
ASAR LR LR 09 35 25.7
comp=Z,145nm,20.3s,baz=356,slow=35
ASAR PKP2bc 09 40 00.5
comp=Z,0.4nm,0.9s,baz=182,slow=2.6,SNR=5.3
MBWA Marble Bar 60.55 203 *eP* **P** **09 10 27.9 -0.4**
comp=Z,20nm,0.8s
SPITS Spitsbergen Ar 61.24 349 LR LR 09 39 50.8
comp=Z,215nm,18.6s,baz=40,slow=39
DZM Mont Dzumac 62.77 153 P **P** **09 10 44.0 +0.7**
comp=Z,16nm,1.2s,baz=131,slow=16,SNR=3.7
APA Apatity 63.29 336⇑ *i*P **pP** **09 10 55.0 +0.7**
APA MLR MLR
comp=Z,600nm,15.0s
TMCR Tamitsa 63.31 331 *eP* **P** **09 10 47.2 +0.9**
TMCR pmax pmax
comp=Z,51nm,1.5s
RES Resolute Bay 63.44 14 P **P** **09 10 47.5 +0.5**
comp=Z,6.2nm,0.8s,baz=314,slow=6.8,SNR=44
RES Resolute Bay 63.44 14 *eP* **P** **09 10 47.3 +0.3**
RES pmax pmax
comp=Z,12nm,1.0s
RES Resolute Bay 63.44 14 *eP* **P** **09 10 47.3 +0.3**
comp=Z,12nm,1.0s
GEYT Alibeck 63.98 299 P **P** **09 10 52.0 +0.7**
comp=Z,2.5nm,0.2s,baz=69,slow=4.9,SNR=5.2
GEYT LR LR 09 40 43.0
comp=Z,422nm,18.6s,baz=70,slow=38
MSVF Nonsavu 64.07 140 *eP* **P** **09 10 54.1 +2.1**
MSVF pmax pmax
comp=Z,27nm,1.3s
MSVF Nonsavu 64.07 140 *eP* **P** **09 10 54.1 +2.1**
comp=Z,27nm,1.3s
KLMR Klimovskoe 64.28 328 *eP* **P** **09 10 51.4 -1.3**
KLMR *e* 09 11 24.8
KLMR *e* 09 13 12.5
KLMR pmax pmax
comp=Z,25nm,1.0s
YKW3 Yellowknife Ar 64.59 30 *eP* **P** **09 10 54.9 +0.2**
comp=Z,32nm,1.8s
YKA Yellowknife Ar 64.63 30 P **P** **09 10 55.5 +0.5**
comp=Z,3.9nm,0.7s,baz=303,slow=6.7,SNR=57
YKA PKP2bc 09 39 48.2
comp=Z,0.1nm,0.2s,baz=108,slow=2.0,SNR=5.5
YKB5 Yellowknife Ar 64.63 30 *eP* **P** **09 10 54.4 -0.6**
ARCES ARCESS Array B 64.64 339 P **P** **09 10 54.9 -0.2**
comp=Z,2.2nm,0.8s,baz=53,slow=8.2,SNR=12
DAG Danmarks Havn 66.54 355 *i* P pP 09 11 16.9 +1.6
comp=Z,24nm,1.4s
DAG Danmarks Havn 66.54 355 *i* P **pP** **09 11 16.9 +1.6**
DAG pmax pmax
comp=Z,56nm,1.4s
MOS Moscow 67.72 324 *eP* **pP** **09 11 22.3 -0.8**
MOS *e* 09 11 46.7
MOS *eS* S 09 20 27.2 +16
MOS pmax pmax
comp=Z,24nm,0.8s
STKA Stephens Creek 67.77 180 P **P** **09 11 14.4 -1.0**
comp=Z,3.5nm,1.1s,baz=9.9,slow=10.0,SNR=3.4
STKA Stephens Creek 67.77 180 *eP* **P** **09 11 14.9 -0.5**
STKA pmax pmax
comp=Z,5.0nm,1.5s
STKA Stephens Creek 67.77 180 *eP* **P** **09 11 14.8 -0.5**
comp=Z,5.2nm,1.5s
VRH Novokhopyorsk 67.98 318 *eP* **P** **09 11 15.9 -0.8**
VRH pmax pmax
comp=Z,9.0nm,0.7s
B05A Bryant 68.06 46 P **P** **09 11 18.3 +1.1**
baz=300
OBN Obninsk 68.56 323 LR LR 09 42 04.2
comp=Z,139nm,19.7s,baz=72,slow=37
OBN Obninsk 68.56 323‖ *eP* **P** **09 11 20.4 +0.2**
OBN *i* 09 11 28.8
OBN pmax pmax
comp=Z,4.0nm,0.5s
OBN MLR MLR
comp=Z,508nm,16.0s
LPSR Galich'ya Gora 68.73 320 *eP* **P** **09 11 18.2 -3.1**
LPSR pmax pmax
comp=Z,4.0nm,0.5s
G03D McMinnville, O 68.91 49 P **P** **09 11 24.0 +1.4**
baz=301
C06D Leavenworth 68.93 46 P **P** **09 11 23.7 +1.0**
baz=301
F04A Amboy 69.05 48 *eP* **P** **09 11 25.2 +1.8**
comp=Z,14nm,0.6s

VSR Storozhevoye 69.34 319 *e*P **P 09 11 25.6 +0.4**
VSR pmax pmax
comp=Z,10.0nm,1.0s
FIA1 FINESS Array S 69.38 332 *e*P **P**
FIA1 eP **P 09 11 25.1 -0.2**
FINES FINESS Array B 69.38 332 P **P 09 11 25.2 +0.2**
comp=Z,8.0nm,1.0s,baz=65,slow=5.8,SNR=14 **09 11 25.3 +0.1**
LTY Liberty 69.40 46 *e*P **P**
comp=Z,34nm,1.6s **09 11 26.8 +1.0**
B08A Colville Reser 69.59 45 *e*P **P**
comp=Z,18nm,1.4s **09 11 27.7 +0.8**
I03D Drain, OR 69.62 50 P **P 09 11 28.8 +1.7**
baz=301
TDH Tom, Dick, Har 69.76 48 P **P 09 11 29.6 +1.5**
H04A Detroit Lake 69.83 49 *e*P **P**
comp=Z,55nm,1.9s **09 11 29.6 +1.2**
G05D Wamic, OR 70.07 48 P **P**
baz=302 **09 11 30.6 +0.7**
I04A Tendick Farm, 70.16 50 P **P**
baz=302 **09 11 31.0 +0.6**
G06A Carlson Farm, 70.48 48 *e*P **P 09 11 34.0 +1.6**
comp=Z,12nm,1.1s
C09A Chrisman Ranch 70.49 45 *e*P **P**
comp=Z,60nm,1.8s **09 11 32.6 +0.3**
D08A Wollman Farm, 70.52 46 *e*P **P**
comp=Z,9.7nm,0.8s **09 11 33.0 +0.5**
I05D Terrebonne, OR 70.53 49 P **P**
baz=302 **09 11 33.4 +0.7**
WSAR Wadi Sarin 70.80 285 LR LR 09 45 33.6
comp=Z,148nm,20.4s,slow=38
NEW Newport 70.89 44 P **P 09 11 35.4 +0.5**
baz=303
NEW Newport 70.89 44 *e*P **P**
NEW pmax pmax **09 11 36.0 +1.2**
comp=Z,6.0nm,0.8s
NEW Newport 70.89 44 *e*P **P 09 11 36.0 +1.2**
comp=Z,6.3nm,0.8s
ZEI Tsey 71.09 309 *e*P **P 09 11 32.5 -3.8**
ZEI pmax pmax
comp=Z,38nm,1.5s
M02C Callahan 71.14 52 P **P 09 11 37.7 +1.2**
baz=302
J05D Fort Rock, OR 71.15 50 P **P 09 11 37.6 +1.0**
baz=302
K04D Chiloquin, OR 71.18 51 P **P 09 11 37.8 +1.0**
baz=302
KBZ Khabaz 71.21 311 P **P 09 11 37.3 +0.6**
comp=Z,4.9nm,0.9s,baz=46,slow=2.7,SNR=9.2
KBZ LR LR 09 47 20.1
comp=Z,209nm,18.4s,baz=49,slow=40
KVAR Kislovodsk Arr 71.21 311 LR LR 09 45 02.7
comp=Z,182nm,18.2s,slow=38
KIV Kislovodsk 71.21 311 ⇓*i*P **P 09 11 37.6 +0.7**
KIV *i* 09 11 44.0
KIV *i* 09 11 51.3
KIV *e* 09 14 14.4
KIV pmax pmax
comp=Z,25nm,1.2s
KIV MLR MLR
comp=Z,351nm,16.0s
KIV Kislovodsk 71.21 311 *e*P **P 09 11 38.3 +1.4**
KIV *e*pP **pP 09 11 45.0 -0.1**
N02D Trinity Center 71.45 53 P **P 09 11 39.8 +1.5**
baz=302
SUMG Summit 71.47 360 *i* P **P 09 11 38.6 +0.2**
SUMG Summit 71.47 360 *i* P **P 09 11 38.6 +0.2**
SUMG Summit 71.47 360 *e*P **P 09 11 39.7 +1.4**
comp=Z,72nm,1.9s
NEY Neytrino 71.57 310 *e*P **P 09 11 38.4 -0.8**
M04C Macdoel 71.57 51 P **P 09 11 40.2 +1.0**
baz=302
K05A Summer Lake 71.66 50 *e*P **P 09 11 41.6 +1.8**
comp=Z,69nm,1.7s
UOSS Minazif 71.78 288 *e*P **P 09 11 41.5 +0.9**
comp=Z,0.9nm,0.8s
GNI Garni 71.95 307 LR LR 09 46 14.9
comp=Z,256nm,18.6s,baz=48,slow=38
GNI Garni 71.95 307 *e*P **P 09 11 40.0 -1.5**
GNI pmax pmax
comp=Z,28nm,1.1s
AKH Akhalkalaki 72.08 308 ⇓*i*P P 09 11 52.1 +10
F10A Beach Ranch, E 72.09 46 *e*P **P 09 11 43.5 +1.3**
comp=Z,28nm,1.9s
WALA Waterton Lakes 72.21 42 *e*P **P 09 11 43.9 +1.0**
comp=Z,38nm,1.8s
CHVG Ch'k'valeri 72.25 310 ⇑*i*P P 09 11 52.6 +10
O03D Paynes Creek 72.40 53 P **P 09 11 44.8 +0.7**
baz=303,SNR=7.0
BSMT Bassoo Peak 72.42 43 *e*P **P 09 11 45.0 +0.8**
MOD Modoc Plateau 72.48 51 *e*P **P 09 11 45.7 +1.1**
comp=Z,6.0nm,0.8s
JTMT Jette 72.76 43 *e*P **P 09 11 47.4 +1.2**
YBMT Yellow Bay 72.84 43 *e*P **P 09 11 48.1 +1.4**
MICGM Minsk 72.99 326 *e* sP 09 11 57.0 -1.5
MNK Minsk 72.99 326 *e*P sP 09 11 57.0 -1.5
ORV Oroville 72.99 53 *e*P **P 09 11 48.1 +0.6**
ORV pmax pmax
comp=Z,33nm,1.8s
ORV Oroville 72.99 53 *e*P **P 09 11 48.1 +0.6**
comp=Z,33nm,1.8s
SWMT Swartz Lake 73.05 43 *e*P **P 09 11 48.8 +0.9**
WVOR Wild Horse Val 73.22 50 *e*P **P 09 11 50.0 +1.0**
WVOR pmax pmax
comp=Z,19nm,1.4s
WVOR Wild Horse Val 73.22 50 *e*P **P 09 11 50.0 +1.0**
comp=Z,19nm,1.4s
NACGM Naroch 73.23 327 *e* pP 09 11 56.0 -0.8
MSO Missoula 73.48 44 P **P 09 11 50.7 +0.3**
baz=306
MSO Missoula 73.48 44 *e*P **P 09 11 51.0 +0.5**
comp=Z,34nm,1.9s
AFDM Forest Hills D 73.67 54 *e*P **P 09 11 52.7 +1.1**
comp=Z,17nm,1.6s
CHMT Chamberlain Mo 73.81 43 *e*P **P 09 11 53.0 +0.5**
ANN Anapa 73.88 314 *e*P P 09 11 59.3 +6.7
ANN pmax pmax
comp=Z,48nm,1.0s
MFID Camas Ranch 74.36 47 *e*P **P 09 11 56.7 +1.0**
comp=Z,19nm,1.4s
FFC Flin Flon 74.52 32 *e*P **P 09 11 56.7 +0.5**
FFC pmax pmax
comp=Z,10.0nm,0.8s
FFC Flin Flon 74.52 32 *e*P **P 09 11 56.7 +0.5**
comp=Z,9.9nm,0.8s
CMB Columbia Colle 74.56 54 *e*P **P 09 11 57.7 +0.9**
CMB pmax pmax
comp=Z,31nm,1.6s
CMB Columbia Colle 74.56 54 *e*P **P 09 11 57.7 +0.9**
comp=Z,31nm,1.6s
NC405 NORSAR Array S 74.59 337 *e*P **P 09 11 56.7 +0.2**
NC303 NORSAR Array S 74.62 337 *e*P **P 09 11 56.4 -0.3**
AKASG Malin Array Be 74.75 322 P **P 09 11 57.0 -0.6**
comp=Z,2.0nm,0.4s,baz=46,slow=6.0,SNR=22
AKASG LR LR 09 47 42.5
comp=Z,298nm,18.7s,baz=60,slow=38
AKASG Malin Array Be 74.75 322 P **P 09 11 57.0 -0.6**
AKBB Malin Array Si 74.75 322 *e*P **P 09 11 56.9 -0.7**
AKBB pmax pmax
comp=Z,14nm,0.8s
AKBB Malin Array Si 74.75 322 *e*P **P 09 11 56.9 -0.7**
comp=Z,14nm,0.8s
KIEV Kiev 74.76 322 *i* P **P 09 11 57.1 -0.5**
KIEV pmax pmax
comp=Z,8.0nm,1.2s
KIEV Kiev 74.76 322 *e*P **P 09 11 57.1 -0.5**
comp=Z,15nm,0.8s
NC204 NORSAR Array S 74.77 338 *e*P **P 09 11 57.7 +0.1**
NB201 NORSAR Array S 74.78 337 *e*P **P 09 11 57.5 -0.1**
AK11 Malin Array Si 74.79 322 *e*P **P 09 11 57.3 -0.5**
NB2 NORSAR Subarra 74.81 337 P **P 09 11 57.5 -0.3**
comp=Z,4.4nm,0.5s,baz=41,slow=5.9
NOA NORSAR Array B 74.81 337 P **P 09 11 57.6 -0.2**
comp=Z,3.7nm,0.7s,baz=40,slow=5.8,SNR=22
FCC Fort Churchill 74.83 26 *e*P **P 09 11 58.1 +0.2**
FCC pmax pmax
comp=Z,46nm,1.6s
FCC Fort Churchill 74.83 26 *e*P **P 09 11 58.1 +0.2**
comp=Z,46nm,1.6s
LRM Limekiln Ridge 74.91 44 *e*P **P 09 11 59.9 +1.0**
NBO02 NORSAR Array S 74.91 337 *e*P **P 09 11 58.2 -0.2**
WAKR Walker 74.91 53 *e*P **P 09 12 00.3 +1.3**
NBO00 NORSAR Array S 74.95 337 *e*P **P 09 11 59.5 +0.9**
EGMT Eagleton 75.05 41 P **P 09 12 00.2 +0.7**
baz=308
EGMT Eagleton 75.05 41 *e*P **P 09 12 00.2 +0.7**
comp=Z,66nm,1.7s
NAO01 NORSAR Array S 75.06 337 *e*P **P 09 12 01.8 +2.5**
DLMT Dillon 75.10 44 *e*P **P 09 12 01.1 +1.1**
comp=Z,59nm,1.6s
HLID Hailey 75.11 47 P **P 09 12 01.0 +0.9**
baz=306
HLID Hailey 75.11 47 *e*P **P 09 12 01.2 +1.1**
comp=Z,13nm,1.5s
BMN Battle Mountai 75.23 51 *e*P **P 09 12 02.2 +1.4**
BMN pmax pmax
comp=Z,51nm,1.6s
BMN Battle Mountai 75.23 51 *e*P **P 09 12 02.2 +1.4**
comp=Z,51nm,1.6s
BOZ Bozeman (W) 75.47 44 P **P 09 12 02.7 +0.6**
baz=307
BOZ Bozeman (W) 75.47 44 *e*P **P**
BOZ pmax pmax **09 12 03.1 +1.0**
comp=Z,51nm,1.8s
BOZ Bozeman (W) 75.47 44 *e*P **P 09 12 03.1 +1.0**
comp=Z,51nm,1.8s
NV01 Mina Array Sit 75.69 53 *e*P **P 09 12 04.0 +0.4**
NVAR Mina Array Bea 75.69 53 P **P 09 12 04.7 +1.1**
comp=Z,3.9nm,0.6s,baz=294,slow=5.4,SNR=35
NVAR LR LR 09 40 46.0
comp=Z,135nm,20.3s,baz=296,slow=32
NV11 Mina Array Sit 75.78 53 *e*P **P 09 12 05.4 +1.4**
comp=Z,16nm,1.4s
MLAC Mammoth, Mammo 75.80 54 P **P 09 12 05.2 +1.0**
baz=305
QLMT Earthquake Lak 76.08 44 *e*P **P 09 12 07.2 +1.5**
ELK Elko 76.27 49 *e*P **P 09 12 08.3 +1.4**
ELK pmax pmax
comp=Z,4.0nm,0.7s
ELK Elko 76.27 49 *e*P **P 09 12 08.2 +1.4**
comp=Z,4.1nm,0.7s
SMMC Simmler 76.35 56 P **P 09 12 08.0 +0.9**
baz=305
YMR Madison River 76.44 44 *e*P **P**
comp=Z,40nm,1.7s **09 12 09.5 +1.8**
GCMT Greycliff 76.47 43 *e*P **P 09 12 09.2 +1.5**
MCID Moose Creek 76.61 45 *e*P **P 09 12 10.8 +2.1**
YFT Old Faithful 76.65 44 *e*P **P 09 12 12.0 +3.1**
comp=Z,44nm,1.9s
PKM Mcpherson Peak 76.71 57 P **P 09 12 09.8 +0.5**
baz=305
H17A Grant Village 76.83 44 P **P 09 12 12.8 +2.9**
baz=308
H17A Grant Village 76.83 44 *e*P **P**
comp=Z,42nm,1.4s **09 12 12.8 +2.9**
IMW Indian Meadow 76.93 45 *e*P **P**
comp=Z,49nm,1.9s **09 12 12.3 +1.8**
FLWY Flagg Ranch 76.95 45 *e*P **P**
comp=Z,48nm,1.6s **09 12 12.9 +2.3**
RLMT Red Lodge 77.11 43 P **P**
baz=309 **09 12 12.5 +1.0**
RLMT Red Lodge 77.11 43 *e*P **P**
comp=Z,9.8nm,0.9s **09 12 12.8 +1.4**
MOOW Moose Ponds 77.13 45 *e*P **P**
comp=Z,19nm,1.5s **09 12 13.2 +1.5**
HVU Hansel Valley 77.15 47 *e*P **P**
HVU pmax pmax **09 12 13.4 +1.7**
comp=Z,53nm,1.9s
HVU Hansel Valley 77.15 47 *e*P **P**
comp=Z,52nm,1.9s **09 12 13.4 +1.7**
LOHW Long Hollow 77.29 45 *e*P **P**
comp=Z,9.5nm,1.4s **09 12 13.3 +0.8**
SNOW Snow King Moun 77.30 45 *e*P **P**
comp=Z,14nm,1.4s **09 12 14.4 +1.8**
REDW Red Top Meadow 77.31 45 *e*P **P**
comp=Z,13nm,1.2s **09 12 14.2 +1.6**
KIS Kishinev 77.31 320 *e*P **P 09 12 16.0 +3.7**
KIS *e*S **S 09 22 03.0 +2.4**
KIS Kishinev 77.31 320 *e*P **P 09 12 16.0 +3.7**
KIS *e* 09 12 21.0
KIS *e* 09 12 33.0
KIS *e*S **S 09 22 03.0 +2.4**
KIS MLR MLR
comp=N,900nm,16.0s
KIS MLR MLR
comp=E,600nm,16.0s
KIS MLR MLR
comp=Z,1μm,16.0s
KIS MLR MLR
comp=Z,1μm,16.0s
R11A Troy Canyon, C 77.47 52 P **P**
baz=306,SNR=16 **09 12 14.2 +0.6**
R11A Troy Canyon, C 77.47 52 *e*P **P**
comp=Z,20nm,1.5s **09 12 14.5 +0.9**
AHID Auburn Hatcher 77.53 46 *e*P **P**
comp=Z,5.4nm,0.8s **09 12 15.1 +1.3**
MPMC Manual Prospec 77.58 54 P **P**
baz=306 **09 12 14.8 +0.5**
DGMT Dagmar 77.63 38 P **P**
baz=311 **09 12 14.9 +0.8**
FURC Furnace Creek, 77.76 54 P **P**
baz=306 **09 12 15.7 +0.8**
LRMC Laurel Mtn Rad 77.80 55 P **P**
baz=306 **09 12 15.5 +0.1**
LVV L'vov 77.85 324 ⇓*i*P **pP**
LVV MLR MLR **09 12 23.9 +0.4**
comp=N,400nm,15.0s
LVV MLR MLR
comp=E,200nm,15.0s
LVV MLR MLR
comp=Z,400nm,15.0s
HWUT Hardware Ranch 77.97 47 *e*P **P**
comp=Z,28nm,1.4s **09 12 17.6 +1.2**
BSD Bornholm Skovb 78.01 332 *i* P pP 09 12 24.2 0.0
comp=Z,22nm,0.8s
BSD Bornholm Skovb 78.01 332 *i* P **pP**
BSD pmax pmax **09 12 24.2 0.0**
comp=Z,22nm,0.8s
DUG Dugway, Tooele 78.08 49 P **P**
baz=308,SNR=8.9 **09 12 18.1 +1.2**
DUG Dugway, Tooele 78.08 49 *e*P **P**
DUG pmax pmax **09 12 18.2 +1.3**
comp=Z,54nm,1.9s
DUG Dugway, Tooele 78.08 49 *e*P **P**
comp=Z,54nm,1.9s **09 12 18.2 +1.3**
TCUT Toone Canyon 78.36 47 *e*P **P**
comp=Z,84nm,1.8s **09 12 20.1 +1.6**
A26A Wade Farm, Ken 78.41 37 P **P**
baz=313 **09 12 19.0 +0.6**
BW06 Boulder Array 78.42 45 P **P**
baz=309 **09 12 19.2 +0.4**
BW06 Boulder Array 78.42 45 *e*P **P**
BW06 *e*P **P 09 12 19.3 +0.5**
PD31 Pinedale Array 78.42 45 *e*P **P 09 12 19.4 +0.5**
PDAR Pinedale Array 78.42 45 P **P 09 12 19.2 +0.4**
comp=Z,4.1nm,0.6s,baz=265,slow=2.0,SNR=74
PSUT Pine Spring 78.45 51 *e*P **P**
comp=Z,14nm,1.4s **09 12 20.4 +1.3**
GSC Goldstone, Bar 78.48 55 P **P**
baz=306 **09 12 19.4 +0.3**
COP Copenhagen 78.50 333 *i* P pP 09 12 26.3 -0.6
COP Copenhagen 78.50 333 *e*P pP 09 12 26.3 -0.6
C25A Freed Ranch, W 78.61 38 P **P**
baz=312 **09 12 19.9 +0.4**
JLU Jordanelle 78.66 48 *e*P **P**
comp=Z,33nm,1.8s **09 12 21.4 +1.2**
NLU North Lily Min 78.68 49 *e*P **P**
comp=Z,4.7nm,0.8s **09 12 21.8 +1.5**
BUR08 Bucovina Ar. S 78.75 322 *e*P **P 09 12 20.2 -0.1**
BURAR Bucovina Array 78.76 322 ⇓*i*P **P 09 12 20.5 +0.1**
BURAR Bucovina Array 78.76 322 ⇓P **P 09 12 20.5 +0.1**
TESR Tescani 78.76 320 ⇑*i*P **P 09 12 20.5 +0.2**
CFR Carcaliu 78.85 318 ⇑*i*P **P 09 12 22.4 +1.6**
CFR Carcaliu 78.85 318 ⇑P **P 09 12 22.4 +1.6**
TUQ Turquoise Moun 78.98 54 P **P**
baz=307 **09 12 22.4 +0.5**
HEC Hector Ludlow 79.07 55 P **P**
baz=307 **09 12 23.0 +0.7**
VRI Vrincioaia 79.15 320 ⇓*i*P **P 09 12 24.3 +1.8**
VRI Vrincioaia 79.15 320 ⇓P **P 09 12 24.3 +1.8**
BRTR Keskin Array B 79.17 311 P **P 09 12 23.2 +0.3**
comp=Z,2.3nm,0.7s,baz=92,slow=3.7,SNR=9.2
BRTR LR LR 09 49 43.8
comp=Z,78nm,21.3s,baz=40,slow=38
MURC Murrieta 79.22 56 P **P**
baz=306 **09 12 23.7 +0.5**
A28A Rude Farm, Bot 79.25 36 P **P**
baz=314 **09 12 23.7 +0.7**
KOLS Kolonicke sedl 79.30 324 *e* sP 09 12 32.1 -2.4
KOLS Kolonicke sedl 79.30 324 *e*P **sP 09 12 33.1 -1.4**
KOLS *e*PP **PP 09 15 23.9 +1.4**
E25A Miller Ranch, 79.34 39 P **P**
baz=312 **09 12 24.3 +0.7**
STHS Stebnicka Huta 79.44 325 *e* pP 09 12 33.4 +1.1
C27A Sayler Ranch, 79.48 38 P **P**
baz=313 **09 12 24.7 +0.4**
D26A Manning 79.48 39 P **P**
baz=313 **09 12 24.6 +0.3**
UZH Uzhgorod 79.50 324 *e*P **pP**
UZH *e* 09 12 40.1 **09 12 32.9 +0.4**
MSU Marysvale 79.50 50 *e*P **P 09 12 26.3 +1.5**
MSU Marysvale 79.50 50 *e*P **P 09 12 26.3 +1.5**
B28A Dugan Ranch, T 79.53 36 P **P**
baz=314 **09 12 25.1 +0.6**
OJC Ojcow 79.54 326 *e*P **P**
OJC *e* 09 12 34.1 **09 12 24.9 +0.4**
OJC Ojcow 79.54 326 *e*P **P**
OJC *e* 09 12 34.2 **09 12 24.9 +0.4**
OJC Ojcow 79.54 326 *e*P **P**
comp=Z,72nm,1.7s **09 12 24.6 +0.1**
GMRC Granite Mounta 79.54 55 P **P**
baz=307 **09 12 25.4 +0.4**
TMUT Trail Mountain 79.61 49 *e*P **P**
comp=Z,12nm,1.1s **09 12 26.9 +1.4**
BR231 Keskin MP Arra 79.61 312 *e*P **P 09 12 23.7 -1.5**
F25A Bowman 79.70 40 P **P**
baz=312 **09 12 25.7 +0.2**
CRVS Cervenica-Dubn 79.70 324 *e*P **P**
CRVS *e* 09 12 35.7 **09 12 27.7 +2.3**
PFO Pinyon Flats O 79.71 56 P **P**
baz=307 **09 12 26.6 +0.6**
A29A Manning Farm, 79.73 36 P **P**
baz=315,SNR=5.6 **09 12 25.8 +0.2**
LCMT Little Creek M 79.76 52 *e*P **P**
comp=Z,30nm,1.7s **09 12 27.8 +1.6**
P17A Butcher Ranch, 79.78 48 *e*P **P**
comp=Z,54nm,1.6s **09 12 27.6 +1.3**
MTPU Mount Pierson 79.79 50 *e*P **P**
comp=Z,36nm,1.9s **09 12 28.2 +1.7**
MLR Muntele Rosu 79.81 320 ⇓*i*P sP 09 12 36.7 -0.8
E26A Carlson Angus 79.84 39 P **P**
baz=313 **09 12 26.6 +0.3**
NIE Niedzica 79.88 325 *e*P **P**
NIE *e* 09 12 36.4 **09 12 27.0 +0.6**
NIE Niedzica 79.88 325 *e*P **P**
NIE *e* 09 12 36.4 **09 12 27.0 +0.6**
P18A Preston Nutter 79.99 48 *e*P **P**
comp=Z,37nm,1.6s **09 12 29.0 +1.5**
B29A Wagenman Farm, 80.00 36 P **P**
baz=315 **09 12 27.2 +0.2**
KNB Kanab 80.02 51 *e*P **P**
KNB pmax pmax **09 12 29.5 +1.9**
comp=Z,42nm,1.7s
KNB Kanab 80.02 51 *e*P **P**
comp=Z,42nm,1.7s **09 12 29.5 +1.9**
SRU San Rafael Swe 80.14 49 *e*P **P**
SRU pmax pmax **09 12 29.3 +1.0**
comp=Z,10.0nm,0.6s
SRU San Rafael Swe 80.14 49 *e*P **P**
comp=Z,9.8nm,0.6s **09 12 29.3 +1.0**
A30A Hoffart Farm, 80.16 35 P **P**
baz=315,SNR=5.3 **09 12 28.2 +0.3**
F26A Lodgepole 80.16 40 P **P**
baz=313 **09 12 28.2 +0.2**
MONP2 Monument Peak 80.16 56 P **P**
baz=307 **09 12 28.9 +0.4**
G25A Newell 80.21 40 P **P**
baz=312 **09 12 28.4 0.0**
K22A Casper 80.21 44 P **P**
baz=311 **09 12 28.5 -0.1**
K22A Casper 80.21 44 *e*P **P**
comp=Z,34nm,1.8s **09 12 29.3 +0.8**
IRM Iron Mountain 80.26 55 P **P**
baz=307 **09 12 28.9 +0.1**
ULM Lac du Bonnet 80.32 33 P **P**
comp=Z,1.8nm,0.5s,baz=210,slow=0.5,SNR=3.8 **09 12 28.0 -0.7**
ULM LR LR 09 46 48.6
comp=Z,89nm,21.9s,baz=328,slow=35
ULM Lac du Bonnet 80.32 33 *e*P **P**
ULM pmax pmax **09 12 28.8 +0.1**
comp=Z,28nm,1.6s
ULM Lac du Bonnet 80.32 33 *e*P **P**
comp=Z,28nm,1.6s **09 12 28.8 +0.1**
E27A Carson 80.33 39 P **P**
baz=313 **09 12 29.1 +0.2**
BC3 Big Chuckawall 80.36 55 P **P**
baz=307 **09 12 29.3 -0.1**
LANS Liptovska Anna 80.45 325 *e*P **P**
LANS *e* 09 12 39.7 **09 12 30.7 +1.2**
KECS Kecovo 80.46 324 *e* sP 09 12 40.0 -0.8
F27A Lemmon 80.47 39 P **P**
baz=313 **09 12 30.0 +0.3**
B30A Myrvik Farm, E 80.49 36 P **P**
baz=315,SNR=5.3 **09 12 30.0 +0.3**
H25A Fruitdale 80.50 41 P **P**
baz=312 **09 12 30.2 +0.3**
SWSC Sam W. Stewart 80.55 56 P **P**
baz=307 **09 12 31.1 +0.8**
OKC Ostrava-Krasne 80.56 327 *e*P **P**
OKC *e*pP **pP 09 12 39.6 +1.3**
OKC AMS AMS 09 52 10.0
OKC Ostrava-Krasne 80.56 327 *e*P **P**
OKC *e* 09 12 39.6 **09 12 32.5 +2.5**
G26A Maurine 80.57 40 P **P**
baz=313,SNR=6.8 **09 12 30.4 +0.2**
ARR Arges 80.57 320 ⇓*i*P **P 09 12 33.1 +2.8**
RSSD Black Hills 80.60 41 P **P**
baz=312 **09 12 30.5 -0.2**
RSSD Black Hills 80.60 41 *e*P **P**
RSSD pmax pmax **09 12 31.2 +0.5**
comp=Z,22nm,1.5s
RSSD Black Hills 80.60 41 *e*P **P**
comp=Z,22nm,1.5s **09 12 31.2 +0.5**
KSP Ksiaz 80.63 328 *e*P **P**
KSP *e* 09 12 40.0 **09 12 32.8 +2.4**
KSP Ksiaz 80.63 328 *e*P **P**
KSP *e* 09 12 40.1 **09 12 32.8 +2.4**
U15A North Rim 80.72 52 *e*P **P**
comp=Z,4.4nm,0.8s **09 12 33.2 +1.8**
PDMCI Parker Dam,Lak 80.83 54 P **P**
baz=308 **09 12 32.0 +0.3**
I25A Rochford 80.83 41 P **P**
baz=312 **09 12 31.7 -0.1**
O20A White River Ci 80.85 47 P **P**
baz=310,SNR=5.7 **09 12 32.2 +0.2**
O20A White River Ci 80.85 47 *e*P **P**
comp=Z,43nm,1.8s **09 12 33.0 +1.0**
G27A Dupree 80.86 39 P **P**
baz=313,SNR=7.1 **09 12 32.2 +0.4**
MORC Moravsky Berou 80.87 327 ⇑*i*P **P 09 12 32.3 +0.6**
MORC Moravsky Berou 80.87 327 ⇑P **P 09 12 32.4 +0.7**
MORC Moravsky Berou 80.87 327 *e*P **P**
comp=Z,89nm,1.4s **09 12 32.2 +0.4**
Y12C Blythe 80.92 55 P **P**
baz=308 **09 12 32.8 +0.5**
H26A Fairpoint 80.94 40 P **P**
baz=313 **09 12 32.5 +0.3**
C30A Mose, Pekin 80.95 36 P **P**
baz=315 **09 12 32.5 +0.3**
DPC Dobruska-Polom 80.98 328 *e*P **P**
DPC *e*pP **pP 09 12 41.7 +1.1**
DPC *e*PP **PP 09 15 32.8 -3.6**
DPC AMS AMS 09 53 00.0
comp=Z,800nm,15.4s
DPC Dobruska-Polom 80.98 328 *e*P **P**
DPC *e* 09 12 41.7 **09 12 33.0 +0.7**
DPC *e* 09 15 32.8
DPC MLR MLR
comp=Z,800nm,15.4s
KRLC Kraliky 80.98 327 *e*P **P**
KRLC *e*pP **pP 09 12 41.6 +1.0**
KRLC Kraliky 80.98 327 *e*P **P**
KRLC *e* 09 12 41.6 **09 12 32.8 +0.4**
UPC Upice 81.00 328 *e*P **P**
UPC *e*pP **pP 09 12 41.9 +1.3**
UPC AMS AMS 09 53 00.0
comp=Z,800nm,18.7s
UPC Upice 81.00 328 *e*P **P**
UPC *e* 09 12 41.9 **09 12 33.3 +0.9**
UPC MLR MLR
comp=Z,800nm,18.7s
A32A Rocking H Ranc 81.00 34 P **P**
baz=316 **09 12 31.7 -0.7**
F28A McLaughlin 81.11 39 P **P**
baz=314 **09 12 33.1 0.0**
PSZ Piszkesteto 81.14 324 ⇓*i*P pP 09 12 42.0 +0.5
PSZ Piszkesteto 81.14 324 *e*P **P**
PSZ pmax pmax **09 12 35.8 +2.5**

comp=Z,38nm,1.4s
PSZ Piszkesteto 81.14 324 *e*P **P** **09 12 35.8 +2.5**
comp=Z,38nm,1.4s
GLA Glamis 81.14 56 P **P** **09 12 33.5 0.0**
baz=308
GLA Glamis 81.14 56 *e*P **P** **09 12 33.6 +0.1**
GLA pmax pmax
comp=Z,9.0nm,0.8s
GLA Glamis 81.14 56 *e*P **P** **09 12 33.6 +0.1**
comp=Z,8.9nm,0.8s
VYHS Vyhne 81.22 325 *e*P **P** **09 12 36.1 +2.5**
VYHS *e* 09 12 42.9
D30A Buchanan 81.24 37 P **P** **09 12 33.8 +0.1**
baz=315
C31A Landman Farms, 81.24 36 P **P** **09 12 33.6 -0.1**
baz=316
I26A New Underwood 81.29 41 P **P** **09 12 34.5 +0.4**
baz=313,SNR=5.6
H27A Howes 81.29 40 P **P** **09 12 34.1 0.0**
baz=313,SNR=10
B32A Ashes, Strandq 81.36 35 P **P** **09 12 34.3 -0.1**
baz=316,SNR=5.7
PV09 Paradox Valley 81.37 48 *e*P **P** **09 12 36.1 +1.1**
A33A Warroad 81.49 34 P **P** **09 12 34.8 -0.2**
baz=317
PV10 Paradox Valley 81.50 48 *e*P **P** **09 12 37.1 +1.4**
PV04 Paradox Valley 81.58 48 *e*P **P** **09 12 36.6 +0.7**
G28A Parade 81.59 39 P **P** **09 12 35.9 +0.3**
baz=314,SNR=5.3
BRG Berggiesshubel 81.59 329 *e*P **P** **09 12 36.5 +1.0**
comp=Z,3.8nm,1.0s
BRG *i* 09 12 44.4
comp=Z,8.6nm,0.9s
BRG *e* 09 15 46.7
comp=Z,2.1nm,0.8s
comp=N,611nm,16.6s
comp=E,294nm,14.9s
comp=Z,653nm,17.8s
PVCC Panska Ves 81.59 329 *e*pP pP 09 12 45.2 +1.4
F29A Eureka 81.61 38 P **P** **09 12 36.3 +0.5**
baz=315
VRAC Vranov 81.63 327⇓ *i*P pP 09 12 44.8 +0.7
CLL Collm 81.64 330 *e*P **P** **09 12 35.0 -0.7**
comp=Z,8.0nm,1.2s
CLL *i* 09 12 44.3
comp=Z,13nm,0.8s
CLL *e* 09 12 50.0
CLL *e* 09 12 54.0
CLL *e* 09 13 00.0
CLL *e*PP **PP** **09 15 40.0 -1.8**
CLL Collm 81.64 330 *e*P **P** **09 12 35.0 -0.7**
CLL *i* 09 12 44.3
CLL pmax pmax
comp=Z,8.0nm,1.2s
CLL Collm 81.64 330 *e*P **P** **09 12 36.1 +0.4**
comp=Z,110nm,1.9s
PV05 Paradox Valley 81.66 49 *e*P **P** **09 12 37.6 +1.2**
J26A Sides Ranch, S 81.66 42 P **P** **09 12 37.1 +1.0**
baz=313
N23A Red Feather La 81.69 45 P **P** **09 12 37.2 +0.7**
baz=311,SNR=7.5
N23A Red Feather La 81.69 45 *e*P **P** **09 12 38.1 +1.5**
comp=Z,28nm,1.4s
I27A Quinn 81.69 41 P **P** **09 12 36.5 +0.3**
baz=313,SNR=7.6
PHWY Pilot Hill 81.70 44 *e*P **P** **09 12 36.9 +0.3**
comp=Z,4.7nm,0.8s
AGMN Agassiz Nation 81.74 34 P **P** **09 12 36.3 -0.1**
baz=317
AGMN Agassiz Nation 81.74 34 *e*P **P** **09 12 36.2 -0.1**
comp=Z,24nm,1.8s
Y14A Wickenburg 81.80 54 *e*P **P** **09 12 37.8 +0.8**
comp=Z,81nm,1.6s
SMOL Smolenice 81.84 326 *e* sP 09 12 47.1 -1.1
WUAZ Wupatki 81.87 52 P **P** **09 12 38.5 +1.0**
baz=309
WUAZ Wupatki 81.87 52 *e*P **P** **09 12 38.6 +1.1**
comp=Z,26nm,1.8s
BZS Buzias 81.93 322⇓ *i*P pP 09 12 45.4 -0.3
BZS Buzias 81.93 322⇓ P pP 09 12 45.4 -0.3
PV01 Paradox Valley 81.94 48 *e*P **P** **09 12 38.9 +1.0**
GOPC GO Pecny, Ondr 81.96 328 *e*pP pP 09 12 46.5 +0.7
GOPC GO Pecny, Ondr 81.96 328 *e*P pP 09 12 46.5 +0.7
PRU Pruhonice 82.01 328 *e*pP **pP** **09 12 47.0 +1.0**
PRU AMS AMS 09 53 00.0
PRU Pruhonice 82.01 328 *e*P pP 09 12 47.0 +1.0
E31A Nome 82.05 37 P **P** **09 12 38.1 0.0**
baz=316
TREC Trest 82.13 327 AMS AMS 09 53 20.0
B34A Aery, Baudette 82.15 34 P **P** **09 12 38.0 -0.5**
baz=318
C33A Trail 82.18 35 P **P** **09 12 37.9 -0.7**
baz=317
MMAI Mount Meron Ar 82.19 305 LR LR 09 53 14.4
comp=Z,250nm,18.6s,baz=45,slow=39
I28A Midland 82.20 40 P **P** **09 12 39.3 +0.4**
baz=314,SNR=7.4
SMCO Snowmass 82.22 47 *e*P **P** **09 12 40.4 +0.9**
comp=Z,5.8nm,1.0s
H29A Onida 82.26 39 P **P** **09 12 39.3 +0.2**
baz=314
J27A Elkhorn Farm, 82.27 41 P **P** **09 12 40.0 +0.6**
baz=314,SNR=5.8
F31A Hecla 82.37 37 P **P** **09 12 40.0 +0.3**
baz=316
G30A Faulkton 82.45 38 P **P** **09 12 40.2 0.0**
baz=315,SNR=6.1
X16A Lo Mia Camp, P 82.51 53 *e*P **P** **09 12 42.4 +1.5**
comp=Z,16nm,1.7s
J28A Allard Ranch, 82.56 41 P **P** **09 12 41.3 +0.5**
baz=314
MVCO Mesa Verde 82.58 49 P **P** **09 12 41.5 +0.2**
baz=310
MVCO Mesa Verde 82.58 49 *e*P **P** **09 12 42.2 +0.9**
comp=Z,36nm,1.9s
ISCO Idaho Springs 82.60 46 P **P** **09 12 42.2 +0.7**
baz=312,SNR=7.3
ISCO Idaho Springs 82.60 46 *e*P **P** **09 12 42.4 +1.0**
ISCO pmax pmax
comp=Z,20nm,1.8s
ISCO Idaho Springs 82.60 46 *e*P **P** **09 12 42.4 +1.0**
comp=Z,20nm,1.8s
I29A Vivian Onida 82.63 40 P **P** **09 12 41.3 +0.2**
baz=314
B35A Bob, Littlefor 82.66 33 P **P** **09 12 40.3 -0.8**
baz=318
G31A Conde 82.84 38 P **P** **09 12 42.6 +0.4**
baz=316
D34A Park Rapids 82.94 35 P **P** **09 12 42.3 -0.4**
baz=318
PKSM Moragy 82.96 324⇑ *i*P pP 09 12 52.6 +1.6
PKSM Moragy 82.96 324⇑⇑ P pP 09 12 52.6 +1.6
CONA Conrad Observa 82.98 326 *i* PcP **P** **09 12 45.4 +2.5**
comp=Z,22nm,1.3s,SNR=6.8
E33A Westby DABS, E 82.99 36 P **P** **09 12 43.2 +0.3**
baz=317
SUSD Miller 83.03 39 P **P** **09 12 43.3 +0.2**
baz=315
C35A Jirik Farms, M 83.04 34 P **P** **09 12 42.4 -0.7**
baz=318
J29A Okreek 83.05 40 P **P** **09 12 43.4 0.0**
baz=315
KHC Kasperske Hory 83.07 328 *e*P **P** **09 12 43.6 +0.3**
KHC *e*pP **pP** **09 12 52.3 +0.7**
KHC *ex* x 09 13 03.3
KHC AMS AMS 09 54 20.0
comp=Z,500nm,16.9s
KHC Kasperske Hory 83.07 328 *e*P **P** **09 12 43.6 +0.3**
KHC *e* 09 12 52.3
KHC MLR MLR
comp=Z,500nm,16.9s
KHC Kasperske Hory 83.07 328 *e*P **P** **09 12 43.6 +0.3**
comp=Z,24nm,1.9s
I30A Oacoma 83.16 39 P **P** **09 12 43.9 0.0**
baz=315,SNR=7.1
GEC2 GERESS Array S 83.23 328 *e*P **P** **09 12 44.8 +0.5**
GEC2 pmax pmax
comp=Z,36nm,2.0s
GEC2 GERESS Array S 83.23 328 *e*P **P** **09 12 44.8 +0.5**
comp=Z,36nm,2.0s
GERES GERESS Array B 83.23 328 P **P** **09 12 44.0 -0.2**
comp=Z,0.6nm,0.4s,baz=38,slow=6.1,SNR=14
GERES LR LR 09 52 06.8
comp=Z,153nm,21.0s,baz=25,slow=37
S22A 4UR Ranch, Cre 83.24 48 P **P** **09 12 46.0 +1.3**
baz=311,SNR=9.6
S22A 4UR Ranch, Cre 83.24 48 *e*P **P** **09 12 46.0 +1.3**
comp=Z,25nm,1.7s
GEA0 GERESS Array S 83.24 328 *e*P **P** **09 12 43.7 -0.6**
F33A 5 Mile Ranch, 83.33 36 P **P** **09 12 45.0 +0.3**
baz=317
C36A Pine Crest Far 83.51 33 P **P** **09 12 45.3 -0.2**
baz=319
J30A Dallas 83.54 40 P **P** **09 12 45.8 -0.1**
baz=315
GRFO Grafenberg 83.62 330 *e*P **P** **09 12 48.6 +2.5**
GRFO pmax pmax
comp=Z,106nm,1.8s
GRFO Grafenberg 83.62 330 *e*P **P** **09 12 48.6 +2.5**
comp=Z,106nm,1.8s
ARSA Arzberg 83.64 326 *i* P **P** **09 12 46.6 +0.3**
comp=Z,11nm,1.2s,SNR=6.9
E35A Pequot Lakes 83.69 35 P **P** **09 12 46.3 -0.2**
baz=318
G33A Ortonville 83.73 37 P **P** **09 12 46.9 +0.2**
baz=317
MOA Molln 83.75 327 P **P** **09 12 47.1 +0.3**
comp=Z,14nm,1.4s
D36A Goodland 83.80 34 P **P** **09 12 47.1 0.0**
baz=319
C37A Embarrass 83.82 33 P **P** **09 12 46.8 -0.4**
baz=320
K30A Basset 83.94 40 P **P** **09 12 47.9 0.0**
baz=315
EYMN Ely 83.95 32 P **P** **09 12 47.3 -0.5**
baz=320
H33A Prehn Over Nor 83.96 37 P **P** **09 12 47.8 -0.1**
baz=317,SNR=6.5
SDCO Great Sand Dun 84.03 47 P **P** **09 12 49.6 +0.8**
baz=312,SNR=8.2
SDCO Great Sand Dun 84.03 47 *e*P **P** **09 12 49.8 +1.0**
comp=Z,14nm,1.5s
G34A Benson 84.08 36 P **P** **09 12 48.6 0.0**
baz=317
PMOR Pomariorio Ree 84.12 113 *e*T T 10 45 19.4
comp=Z,31nm,0.2s
F35A Swanville 84.14 35 P **P** **09 12 48.2 -0.6**
baz=318
C38A Sawbill Land. 84.22 32 P **P** **09 12 49.0 -0.3**
baz=320
E36A McGregor 84.25 34 P **P** **09 12 49.3 -0.1**
baz=319
TUC Tucson 84.27 54 P **P** **09 12 50.4 +0.6**
baz=310
TUC Tucson 84.27 54 *e*P **P** **09 12 51.0 +1.2**
TUC pmax pmax
comp=Z,16nm,1.7s
TUC Tucson 84.27 54 *e*P **P** **09 12 51.0 +1.2**
comp=Z,16nm,1.7s
SOKA Soboth 84.29 326 *e*PcP **P** **09 12 50.8 +1.1**
comp=Z,40nm,1.5s
J32A Parkston 84.35 39 P **P** **09 12 50.2 +0.3**
baz=316
I33A Coleman 84.39 38 P **P** **09 12 50.3 +0.1**
baz=317
K31A O'Neill 84.42 40 P **P** **09 12 50.4 0.0**
baz=316
H34A Spellman Lake, 84.44 37 P **P** **09 12 50.4 0.0**
baz=317
VAY Valandovo 84.45 318 *i* P sP 09 13 00.6 -1.2
PPT Papeete 84.53 116 LR LR 09 44 36.4
comp=Z,220nm,20.6s,baz=346,slow=32
PPT2 Papeete2 84.55 116 *e*LR LR 09 39 23.6
comp=Z,567nm,25.8s,baz=310
PPT2 Papeete2 84.55 116 *e*T T 10 45 48.5
comp=Z,3.5nm,0.3s
EIL Elat 84.57 303 LR LR 09 54 53.9
comp=Z,56nm,18.8s,baz=55,slow=39
SKO Skopje 84.60 319 *i* P sP 09 13 01.9 -0.6
G35A Watkins 84.65 36 P **P** **09 12 51.9 +0.5**
baz=318
TIAR Tiarei 84.69 116 *e*T T 10 45 58.9
comp=Z,3.0nm,0.3s
L31A Butterfield Fa 84.70 40 P **P** **09 12 52.0 +0.2**
baz=316
ECSD EROS Data Cent 84.71 38 P **P** **09 12 51.7 -0.1**
baz=317
ECSD EROS Data Cent 84.71 38 *e*P **P** **09 12 51.7 -0.1**
comp=Z,40nm,1.9s
ECSD *e*pP **pP** **09 12 59.0 -1.1**
KBA Koelnbreinsper 84.74 327 *e*PcP **P** **09 12 53.2 +1.2**
comp=Z,7.1nm,0.7s,SNR=6.1
KSCO Kaye Shedlock' 84.84 45 P **P** **09 12 52.9 +0.2**
baz=314
H35A Sunnyside Ranc 84.87 36 P **P** **09 12 52.8 +0.3**
baz=318
MYKA Terra Mystica 84.95 327 *i* PcP **P** **09 12 55.2 +2.2**
comp=Z,7.6nm,0.6s,SNR=5.3
T25A Trinidad 85.08 47 P **P** **09 12 54.7 +0.7**
baz=313,SNR=10
T25A Trinidad 85.08 47 *e*P **P** **09 12 55.2 +1.2**
comp=Z,49nm,1.7s
M31A Lambtecht Ranc 85.22 41 P **P** **09 12 54.3 -0.1**
baz=316
L32A Elgin 85.25 40 P **P** **09 12 54.5 0.0**
baz=316
ANMO Albuquerque 85.31 50 P **P** **09 12 55.7 +0.6**
baz=312
ANMO Albuquerque 85.31 50 *i* P **P** **09 12 55.8 +0.6**
ANMO pmax pmax
comp=Z,9.0nm,1.2s
ANMO Albuquerque 85.31 50 *e*P **P** **09 12 56.5 +1.3**
comp=Z,13nm,1.4s
H36A Jessenland, He 85.39 36 P **P** **09 12 55.4 +0.3**
baz=319
PDG Podgorica 85.40 321⇑ *i*P **P** **09 12 55.3 +0.1**
I35A Creekview Farm 85.42 37 P **P** **09 12 55.5 +0.1**
baz=318
SPMN Marine on St. 85.43 35 P **P** **09 12 55.5 +0.1**
baz=319
RETA Reutte 85.53 329 *i* PcP **P** **09 12 57.1 +1.2**
comp=Z,24nm,1.6s,SNR=5.4
LANF Langenberg 85.54 331 *e*P pP 09 13 04.9 +0.8
OHR Ohrid 85.55 319 *i* P pP 09 13 05.6 +1.2
BGNE Belgrade 85.60 40 P **P** **09 12 56.2 -0.1**
baz=316
BGNE Belgrade 85.60 40 *e*P **P** **09 12 56.4 +0.1**
comp=Z,18nm,0.7s
J35A Milford 85.67 37 P **P** **09 12 56.5 -0.1**
baz=318
K34A Le Mars 85.73 38 P **P** **09 12 56.8 -0.1**
baz=317
I36A Fitzsimmons Fa 85.77 36 P **P** **09 12 57.5 +0.5**
baz=318
MEH Mehetia 85.83 116 *e*T T 10 47 24.5
comp=Z,14nm,0.2s
BFO Black Forest 85.86 331 *i* P **P** **09 12 58.1 +0.7**
BFO Black Forest 85.86 331 *e*P **P** **09 12 56.5 -0.9**
comp=Z,19nm,1.0s
H37A Dirke Farm, C 85.87 35 P **P** **09 12 57.8 +0.2**
baz=319
O31A Woolen Ranch, 85.87 42 P **P** **09 12 57.9 +0.3**
baz=315
M33A Taylor Creek F 85.98 40 P **P** **09 12 58.1 -0.1**
baz=317
DAVA Damuels 86.06 329 *e*PcP **P** **09 12 59.7 +1.0**
comp=Z,20nm,1.3s
121A Cookes Peak, D 86.06 52 P **P** **09 12 59.0 +0.1**
baz=311
I37A Lemond, Waseca 86.07 36 P **P** **09 12 58.4 -0.1**
baz=319
L34A Svendsen Farm, 86.12 39 P **P** **09 12 58.6 -0.2**
baz=317
J36A Seneca 1, Swea 86.13 37 P **P** **09 12 58.6 -0.3**
baz=318
K35A Storm Lake 86.14 38 P **P** **09 12 58.9 0.0**
baz=318
SCHQ Schefferville 86.17 16 P **P** **09 12 59.1 +0.3**
comp=Z,3.3nm,0.6s,baz=344,slow=5.4,SNR=13
SCHQ LR LR 09 53 50.7
comp=Z,188nm,20.4s,baz=334,slow=37
TAOE Nuku Hiva Isla 86.25 104 *e*LR LR 09 40 08.0
comp=Z,586nm,27.1s
ECH Echery 86.41 331⇓ *e*P pP 09 13 09.0 +0.5
FUORN Ofenpass-Fuorn 86.43 328 *e*P **P** **09 13 01.0 +0.4**
comp=Z,51nm,1.6s
DAVOX Davos/Dischmat 86.46 329 P **P** **09 13 01.0 +0.4**
comp=Z,0.5nm,0.4s,baz=76,slow=8.3,SNR=2.9
J37A Redenius Farm, 86.52 37 P **P** **09 13 00.4 -0.4**
baz=319
I38A Scanlan Farm, 86.55 35 P **P** **09 13 00.5 -0.4**
baz=320
K36A Gilmore City 86.59 38 P **P** **09 13 00.6 -0.5**
baz=318
CBKS Cedar Bluff 86.60 43 P **P** **09 13 00.7 -0.6**
baz=315
P32A Huiting Farm, 86.64 42 P **P** **09 13 00.6 -0.9**
baz=316
MOF Molkenrain 86.72 331⇓ *e*P pP 09 13 10.3 +0.2
M35A Neola 86.83 39 P **P** **09 13 02.2 -0.1**
baz=318
N34A Lincoln 86.88 40 P **P** **09 13 02.0 -0.6**
baz=317
K37A Belmond 86.89 37 P **P** **09 13 02.4 -0.1**
baz=319
TUE Stuetta 86.93 329 *e*P **P** **09 13 02.7 -0.3**
comp=Z,14nm,1.4s
J38A Wedel Dairy, R 87.03 36 P **P** **09 13 03.1 -0.1**
baz=320
Q32A Meitler Ranch, 87.12 42 P **P** **09 13 03.2 -0.6**
baz=316
O34A Beatrice 87.25 40 P **P** **09 13 03.7 -0.7**
baz=317
P33A Williams Farm, 87.26 42 P **P** **09 13 03.8 -0.7**
baz=316
M36A Felix, Anita 87.29 39 P **P** **09 13 04.8 +0.2**
baz=318
N35A Tabor 87.30 39 P **P** **09 13 04.8 +0.1**
baz=318
K38A Parkersburg 87.40 37 P **P** **09 13 05.5 +0.5**
baz=319
Q33A Connelly Farm, 87.50 42 P **P** **09 13 05.3 -0.4**
baz=316
O35A Humboldt 87.60 40 P **P** **09 13 06.3 +0.3**
baz=318
P34A Walnut Farm, R 87.65 41 P **P** **09 13 06.2 -0.1**
baz=317
N36A Muff Farm, Cla 87.68 39 P **P** **09 13 07.3 +0.9**
baz=318
L38A Oak Wood Farm, 87.69 37 P **P** **09 13 06.4 0.0**
baz=319
M37A Trindle Farm, 87.70 38 P **P** **09 13 06.9 +0.4**
baz=319
Q34A Chapman 88.04 41 P **P** **09 13 08.3 +0.1**
baz=317
KSU1 Kansas State U 88.09 41 P **P** **09 13 07.9 -0.5**
baz=317
KSU1 Kansas State U 88.09 41 *e*P **P** **09 13 08.6 +0.2**
comp=Z,8.7nm,0.6s
P35A Duane Minner, 88.09 41 P **P** **09 13 08.3 -0.1**
baz=317
M38A Pleasantville 88.12 38 P **P** **09 13 08.4 -0.1**
baz=319
MNTX Cornudas Mount 88.14 51 P **P** **09 13 07.7 -1.1**
baz=312
O36A Bolckow 88.19 40 P **P** **09 13 08.5 -0.4**
baz=318
T32A Huddler Ranch, 88.21 44 P **P** **09 13 08.3 -0.8**
baz=316
MSTX Muleshoe 88.21 48 P **P** **09 13 09.5 +0.2**
baz=314
AMTX Amarillo 88.23 47 P **P** **09 13 09.5 +0.2**
baz=314
P36A Good Intent, A 88.44 40 P **P** **09 13 10.0 -0.1**
baz=318
Q35A Mercer Eighty, 88.57 41 P **P** **09 13 10.8 +0.1**
baz=317
O37A Wolven Farm, M 88.58 39 P **P** **09 13 11.2 +0.5**
baz=319
U32A Winter Ranch, 88.73 44 P **P** **09 13 10.6 -1.0**
baz=316
N39A Derby Farms, D 88.87 38 P **P** **09 13 12.3 +0.2**
baz=320
P37A Lathrop 88.91 40 P **P** **09 13 12.3 0.0**
baz=318
V32A Arapaho 89.18 45 P **P** **09 13 14.5 +0.9**
baz=316
S35A Otter Creek Ra 89.28 42 P **P** **09 13 14.2 +0.1**
baz=317,SNR=5.6
T34A McClaskey Farm 89.28 43 P **P** **09 13 14.2 +0.1**
baz=317
P38A Dawn 89.30 39 P **P** **09 13 14.5 +0.4**
baz=319
W32A Sentinel 89.49 45 P **P** **09 13 15.8 +0.6**
baz=316
PLDF La Plantade 89.63 332 *e*P pP 09 13 25.3 +1.3
S36A Lake Cedric, C 89.64 41 P **P** **09 13 15.6 -0.1**
baz=318
AGO Saint Agoulin 89.75 332 *e*P pP 09 13 24.3 -0.2
Q38A Cooks Store, C 89.75 40 P **P** **09 13 16.1 -0.1**
baz=319
O40A La Belle 89.76 38 P **P** **09 13 16.9 +0.7**
baz=320
W33A Caddo, Fort Co 89.91 45 P **P** **09 13 17.9 +0.8**
baz=316
V34A Guthrie 89.96 44 P **P** **09 13 17.7 +0.4**
baz=317
V34A Guthrie 89.96 44 *e*P **P** **09 13 17.8 +0.4**
comp=Z,64nm,1.9s
X32A Elmer 89.96 46 P **P** **09 13 17.6 +0.3**
baz=316
T36A Boggs Farm, Ca 89.97 42 P **P** **09 13 17.4 +0.1**
baz=318,SNR=7.6
S37A Fort Scott 90.02 41 P **P** **09 13 17.8 +0.2**
baz=318
Q39A Willow Grove F 90.02 39 P **P** **09 13 17.7 +0.2**
baz=319
WMOK Wichita Mounta 90.03 45 *e*P **P** **09 13 18.2 +0.5**
WMOK pmax pmax
comp=Z,28nm,1.8s
WMOK Wichita Mounta 90.03 45 *e*P **P** **09 13 18.2 +0.5**
comp=Z,28nm,1.8s
PYM Petit Puy Mans 90.05 332 *e*P pP 09 13 28.3 +2.3
P40A Paris 90.12 38 P **P** **09 13 18.0 +0.1**
baz=320
R38A Fenwick Farm, 90.19 40 P **P** **09 13 17.9 -0.4**
baz=319
X33A Lawton 90.33 45 P **P** **09 13 19.3 +0.3**
baz=316
T37A Cheneyville 18 90.44 41 P **P** **09 13 19.4 -0.1**
baz=318
Q40A Laux Farm, Aux 90.52 39 P **P** **09 13 19.5 -0.3**
baz=320
R39A Chumby, Stover 90.54 40 P **P** **09 13 19.8 -0.2**
baz=319
U36A Oologah 90.54 42 P **P** **09 13 19.4 -0.6**
baz=318
S38A Stockton 90.60 41 P **P** **09 13 19.3 -0.9**
baz=319
Y33A Hilltop Ranch, 90.64 46 P **P** **09 13 20.6 +0.2**
baz=316
X34A Smith Ranch, M 90.67 45 P **P** **09 13 21.5 +0.9**
baz=316
W35A Tecumseh 90.81 44 P **P** **09 13 21.4 +0.1**
baz=317
TX31 Lajitas Ar. Si 90.82 52 *e*P **P** **09 13 21.8 +0.3**
TX31 *e*P **P** **09 13 22.0 +0.5**
TXAR Lajitas Array 90.82 52 P **P** **09 13 22.2 +0.7**
comp=Z,1.0nm,0.6s,baz=300,slow=3.0,SNR=25
TXAR LR LR 09 52 11.9
comp=Z,157nm,19.2s,baz=0.0,slow=34
T38A Diamond 90.84 41 P **P** **09 13 21.1 -0.3**
baz=318,SNR=8.6
S39A Bolivar 90.86 40 P **P** **09 13 20.8 -0.7**
baz=319,SNR=5.0
TUL1 Leonard 90.86 43 P **P** **09 13 21.6 +0.1**
baz=318
TUL1 Leonard 90.86 43 *e*P **P** **09 13 21.9 +0.5**
comp=Z,8.2nm,0.6s
U37A Salina 90.87 42 P **P** **09 13 21.5 0.0**
baz=318
V36A Jenks 90.87 43 P **P** **09 13 21.6 +0.1**
baz=318
R40A Maddies Statio 90.95 39 P **P** **09 13 21.9 +0.1**
baz=320
ABTX Abilene, Hawle 91.03 47 P **P** **09 13 22.6 +0.3**
baz=315
Z33A Whitaker Ranch 91.07 46 P **P** **09 13 22.6 0.0**
baz=316
HPIG 91.14 55 *e*P **P** **09 13 24.2 +1.0**
comp=Z,20nm,1.9s
W36A Wetumka 91.19 44 P **P** **09 13 22.9 -0.1**
baz=317
U38A Gravette 91.24 42 P **P** **09 13 23.1 -0.2**
baz=318
V37A Hulbert 91.24 42 P **P** **09 13 23.3 +0.1**
baz=318
X35A Drake 91.31 45 P **P** **09 13 23.3 -0.2**
baz=317
T39A Clever 91.33 41 P **P** **09 13 23.0 -0.7**
baz=319
S40A Lebanon 91.36 40 P **P** **09 13 23.2 -0.6**
baz=320

133A	**Hamilton Ranch** baz=316	**91.47**	**47**	P		**P**	**09 13 24.1**	**-0.2**
Z34A	**Collier Ranch,** baz=316	**91.51**	**46**	P		**P**	**09 13 25.0**	**+0.5**
X36A	**Centrahoma** baz=317	**91.53**	**44**	P		**P**	**09 13 25.0**	**+0.4**
Y35A	**Marietta** baz=317	**91.63**	**45**	P		**P**	**09 13 24.6**	**-0.5**
W37B	**Quinton** baz=318	**91.63**	**43**	P		**P**	**09 13 25.7**	**+0.6**
V38A	**Canehill** baz=318,SNR=5.3	**91.65**	**42**	P		**P**	**09 13 24.9**	**-0.3**
T40A	**Mansfield** baz=320	**91.69**	**40**	P		**P**	**09 13 24.2**	**-1.1**
U39A	**Green Forest** baz=319,SNR=6.9	**91.76**	**41**	P		**P**	**09 13 25.4**	**-0.3**
233A	**Rising Star** baz=316	**91.90**	**47**	P		**P**	**09 13 26.4**	**0.0**
Z35A	**Perchaven, San** baz=317	**91.92**	**45**	P		**P**	**09 13 26.4**	**0.0**
134A	**White-Moore Ra** baz=316	**91.99**	**46**	P		**P**	**09 13 26.2**	**-0.6**
X37A	**Clayton** baz=318	**92.07**	**43**	P		**P**	**09 13 27.1**	**0.0**
V39A	**Pettigrew** baz=319	**92.08**	**42**	P		**P**	**09 13 27.0**	**-0.2**
U40A	**Yellville** baz=319,SNR=7.3	**92.11**	**41**	P		**P**	**09 13 26.6**	**-0.7**
W38A	**Poteau** baz=318	**92.18**	**43**	P		**P**	**09 13 28.1**	**+0.5**
X38A	**Whitesboro** baz=318	**92.31**	**43**	P		**P**	**09 13 28.7**	**+0.5**
333A	**Richland Sprin** baz=316	**92.34**	**48**	P		**P**	**09 13 28.9**	**+0.5**
234A	**Clairette** baz=316	**92.36**	**47**	P		**P**	**09 13 29.1**	**+0.6**
Y37A	**Hugo** baz=318	**92.38**	**44**	P		**P**	**09 13 29.1**	**+0.6**
Z36A	**Blue Ridge** baz=317	**92.44**	**45**	P		**P**	**09 13 28.4**	**-0.4**
W39A	**Magazine** baz=319	**92.49**	**42**	P		**P**	**09 13 29.1**	**+0.1**
H06N1	**SOCORRO T-PHAS** SNR=12	**92.68**	**64**	T		T	10 56 46.9	
433A	**Art** baz=316	**92.68**	**48**	P		**P**	**09 13 29.9**	**-0.1**
H06E1	**SOCORRO T-PHAS** SNR=14	**92.77**	**64**	T		T	10 56 50.9	
334A	**Lometa** baz=316	**92.78**	**47**	P		**P**	**09 13 30.2**	**-0.2**
X39A	**Fountain Ranch** baz=319	**92.82**	**43**	P		**P**	**09 13 31.3**	**+0.7**
W40A	**Ferguson Farm,** baz=319	**92.88**	**42**	P		**P**	**09 13 31.5**	**+0.7**
MIAR	**Mount Ida** baz=319	**93.09**	**42**	P		**P**	**09 13 32.2**	**+0.5**
MIAR	**Mount Ida** comp=Z,30nm,1.5s	**93.09**	**42**	*e*P		**P**	**09 13 32.3**	**+0.5**
MIAR					pmax	pmax		
MIAR	**Mount Ida** comp=Z,30nm,1.5s	**93.09**	**42**	*e*P		**P**	**09 13 32.3**	**+0.5**
533A	**Kerrville** baz=316	**93.20**	**49**	P		**P**	**09 13 32.2**	**-0.3**
WHAR	**Wooly Hollow** comp=Z,24nm,1.6s	**93.22**	**41**	*e*P		**P**	**09 13 33.1**	**+0.7**
Y39A	**Lockesburg** baz=319	**93.26**	**43**	P		**P**	**09 13 32.8**	**+0.2**
Z38A	**Mt. Pleasant** baz=318	**93.27**	**44**	P		**P**	**09 13 32.5**	**-0.2**
633A	**Saathoff Ranch** baz=316	**93.55**	**49**	P		**P**	**09 13 33.9**	**-0.1**
534A	**Blanco** baz=316	**93.57**	**49**	P		**P**	**09 13 34.1**	**0.0**
636A	**Smothers Creek** baz=317	**94.82**	**48**	P		**P**	**09 13 40.0**	**+0.1**
934A	**Benavides** baz=316	**95.27**	**50**	P		**P**	**09 13 42.8**	**+0.9**
244A	**Avery, Jackson** baz=320	**96.56**	**42**	P		**P**	**09 13 47.7**	**0.0**
RKT	**Rikitea** comp=Z,402nm,24.8s,baz=304	**98.71**	**112**	*e*LR		LR	09 45 51.1	
TOA0	**Torodi Ar. Sit**	**117.69**	**314**	*e*PKPdf		**PKPdf**	**09 19 03.8**	**-0.7**
TORD	**Torodi Ar. Bea** comp=Z,0.3nm,0.4s,baz=27,slow=1.9,SNR=7.7	**117.69**	**314**	PKP		**PKPdf**	**09 19 03.3**	**-1.2**
QSPA	**South Pole Qui**	**125.99**	**180**	*e*PKPdf		**PKPdf**	**09 19 18.8**	**0.0**
DBIC	**Dimbokro** comp=Z,1.6nm,0.5s,baz=11,slow=4.2,SNR=3.3	**126.67**	**316**	PKP		**PKPdf**	**09 19 21.8**	**+0.1**
SYO	**Syowa Base**	**127.38**	**206**	*e*PP		PP	09 21 21.2	-0.9
SNAA	**Sanae**	**139.91**	**197**	PKP		**PKPdf**	**09 19 42.5**	**-2.4**
VNA2	**Neumayer--Watz** baz=84,slow=2.3	**141.48**	**196**	PKP		PKPpre	09 19 41.6	
SAML	**Samuel**	**145.00**	**45**	*e*PKPbc		**PKPbc**	**09 19 54.6**	**-0.3**
LPAZ	**La Paz** comp=Z,8.1nm,0.5s,baz=345,slow=3.2,SNR=65	**147.33**	**60**	PKPbc		**PKPbc**	**09 20 02.5**	**-0.1**
LPAZ	**La Paz**	**147.33**	**60**	*e*PKPdf		**PKPbc**	**09 20 02.1**	**-0.5**
PB01	**IPOC Station P**	**149.36**	**69**	*e*PKPbc		**PKPbc**	**09 20 07.5**	**+0.3**
RCBR	**Riachuelo** comp=Z,7.2nm,0.8s,baz=121,slow=3.3,SNR=3.3	**149.60**	**354**	PKPbc		**PKPbc**	**09 20 07.4**	**-0.5**
LVC	**Limon Verde**	**150.70**	**71**	*e*PKPdf		**PKPdf**	**09 20 05.7**	**+0.5**
SIV	**San Ignacio** comp=Z,5.4nm,0.5s,baz=281,slow=3.5,SNR=19	**151.81**	**50**	PKPbc		**PKPbc**	**09 20 13.1**	**0.0**
SIV				PKPab		**PKPab**	**09 20 21.4**	**-0.6**
	comp=Z,5.0nm,0.5s,baz=298,slow=4.2,SNR=6.8							

DDA ***25*** *09:06:42.5,37.˚28N×31.˚78E,h6km,Md2.8*
CSEM ***25*** *09:06:43.1±0.2,37.˚26N×31.˚80E,h2km,MD2.8, Error ellipse: s-maj=5.2km s-min=3.1km az=83.0*
ISK ***25*** *09:06:43.5,37.˚34N×31.˚84E,h5km,MD2.6*
ISC 25 09:06:43.3±1.5, 37˚26N±0˚.03×31˚80E±0˚.05, h0km±15km, n19, σ0˚49/31, Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
KMER	**Konya-Meram**	**0.68**	**41**	*i* P		**Pg**	**09 06 55.8**	**-0.6**
KMER				*i* S		**Sg**	**09 07 05.4**	**+0.2**
KMER	**Konya-Meram**	**0.68**	**41**	P		**Pg**	**09 06 55.8**	**-0.6**
KMER				S		**Sg**	**09 07 05.4**	**+0.2**
KONT	**Konya--Tatoy**	**0.82**	**33**	*e*PG		**Pg**	**09 06 58.6**	**-0.4**
KONT				*e*SG		**Sg**	**09 07 10.0**	**+0.4**
KONT	**Konya--Tatoy**	**0.82**	**33**	*e*Pg		**Pg**	**09 06 58.6**	**-0.4**
KONT				*e*Sg		**Sg**	**09 07 10.0**	**+0.4**
LADK	**Ladik-KONYA**	**1.04**	**25**	*e*PG		**Pg**	**09 07 03.0**	**-0.3**
LADK				*e*SG		**Sg**	**09 07 17.0**	**+0.2**
LADK	**Ladik-KONYA**	**1.04**	**25**	*e*Pg		**Pg**	**09 07 03.0**	**-0.3**
LADK				*e*Sg		**Sg**	**09 07 17.0**	**+0.2**
ERMK	**Ermenek**	**1.08**	**124**	*i* P		**Pg**	**09 07 03.5**	**-0.6**
ERMK				*i* S		**Sb**	**09 07 19.7**	**-0.1**
ERMK	**Ermenek**	**1.08**	**124**	P		**Pg**	**09 07 03.5**	**-0.6**
ERMK				S		**Sb**	**09 07 19.7**	**-0.1**
GAZI	**Gazipasa**	**1.10**	**158**	*i* P		**Pg**	**09 07 04.1**	**-0.4**
GAZI				*i* S		**Sb**	**09 07 20.2**	**0.0**
GAZI	**Gazipasa**	**1.10**	**158**	P		**Pg**	**09 07 04.1**	**-0.4**
GAZI				S		**Sb**	**09 07 20.2**	**0.0**
ISP	**Isparta**	**1.16**	**299**	*e*PN		**Pb**	**09 07 06.6**	**+0.3**
ISP	**Isparta**	**1.16**	**299**	*e*Pn		**Pb**	**09 07 06.6**	**+0.3**
CHBY	**Cihanbeyli**	**1.58**	**33**	*e*PN		**Pn**	**09 07 12.5**	**-0.1**
CHBY	**Cihanbeyli**	**1.58**	**33**	*e*Pn		**Pn**	**09 07 12.5**	**-0.1**
KIZT	**Kizilcal**	**1.62**	**2**	*e*PN		**Pn**	**09 07 13.1**	**-0.1**
KIZT	**Kizilcal**	**1.62**	**2**	*e*Pn		**Pn**	**09 07 13.1**	**-0.1**
KERG	**Konya-Eregli**	**1.86**	**85**	*i* P		**Pn**	**09 07 16.4**	**-0.1**
KERG				*i* S		**Sg**	**09 07 43.2**	**+0.1**
KERG	**Konya-Eregli**	**1.86**	**85**	P		**Pn**	**09 07 16.4**	**-0.1**
GULE	**Gulek**	**2.37**	**89**	*i* P		**Pb**	**09 07 27.0**	**0.0**
GULE				*i* S		**Sg**	**09 08 01.5**	**+1.9**

IDC 25 09:07:47.8±2.5, 39˚31N×142˚95E, h0km, mb3.7/4, mb1 3.7/5, mb1mx3.4/46, mbtmp3.6/5, ML2.7/1, Error ellipse: s-maj=69.8km s-min=26.9km az=65.0, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
MJAR	**Matsushiro Arr** 0.4nm,0.3s,baz=41,slow=11,SNR=4.3	**4.66**	**235**	Pn		Pn	09 08 58.9	-0.5
MKAR	**Makanchi Array** 0.5nm,0.8s,baz=80,slow=7.9,SNR=2.5	**43.98**	**300**	P		P	09 15 56.8	+0.1
KURBB	**Kurchatov Arra** 0.9nm,0.2s,baz=80,slow=8.2,SNR=4.7	**45.60**	**306**	P		P	09 16 09.1	-0.4
WRA	**Warramunga Arr** 0.3nm,0.5s,baz=9.2,slow=7.0,SNR=4.9	**59.49**	**189**	P		P	09 17 52.1	-0.5
ASAR	**Alice Springs** 0.4nm,0.9s,baz=7.8,slow=7.5,SNR=2.9	**63.21**	**189**	P		P	09 18 18.4	+0.5

NIED ***25*** *09:09:00,37.˚50N×143.˚70E,h8km,Mw4.8 Best double couple: M0 1.54000×10^16 NP1:φ=34.00000°,δ=35.00000°, λ=-84.00000°. NP2:φ=207.00000°,δ=55.00000°, λ=-94.00000°.*
ISCJB ***25*** *09:09:30.1±1.0,37.˚42N±0˚.03×143.˚80E±0˚.02,h14km±6km, mb4.8/222,MS4.3/18,Error ellipse: s-maj=4.9km s-min=2.6km az=171.3*
NEIC ***25*** *09:09:32.8±1.9,37.˚40N×143.˚83E,h19km±11km, mb5.0/148,Error ellipse: s-maj=5.0km s-min=3.2km az=144.0*
GCMT ***25*** *09:09:32.8±0.3,37.˚52N×143.˚90E,h19km±1km,MW4.9/78, Moment Tensor Solution. s16,c17; s78,c118; Duration: 0 Moment tensor: Scale 10^16Nm; Mrr=3.29±.21; Mθθ 1.19±.12; Mφφ 2.10±.13; Mrθ 0.36±.27; Mrφ 1.25±.06; Mθφ 0.01±.24; Best double couple: M0 3.15200×10^16 NP1:φ=220.00000°,δ47.00000°,λ=-84.00000°. NP2: φ=30.00000°,δ43.00000°,λ=-97.00000°. Principal axes: T 2.9830, Plg2.0000°, Azm305.0000°; N 0.3390, Plg5.0000°, Azm35.0000°; P -3.3210, Plg85.0000°, Azm192.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
IDC ***25*** *09:09:32.7±6.4,37.˚34N×143.˚89E,h23km±41km,mb4.4/30, mb1 4.5/36,mb1mx4.5/46,mbtmp4.5/36,ML3.9/5,MS4.1/11, Ms1 4.1/11,ms1mx3.8/41 Error ellipse: s-maj=14.1km s-min=10.7km az=127.0*
JMA ***25*** *09:09:32.5±0.3,37.˚46N×143.˚72E,h50km,M4.6*
MOS ***25*** *09:09:35.0±0.9,37.˚84N×143.˚65E,h33km,mb5.1/75, MS4.0/5,Error ellipse: s-maj=7.7km s-min=5.4km az=100.5*
BJI ***25*** *09:09:39.7,37.˚92N×143.˚13E,h40km,mb4.6/50,mB5.0/33, Ms4.6/30,Ms7 4.4/30*
ISC 25 09:09:33.5±0.5, 37˚47N±0˚.04×143˚80E±0˚.04, h27km±2km, h26km:pP-P, n779, σ1s29/800, mb4.9/225, MS4.4/18, 20C-25D, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
JIO	**Ouri**	**2.17**	**298**	P		**Pn**	**09 10 06.6**	**-1.3**
JIO				*e*S		**Sn**	**09 10 31.7**	**-2.2**
OFUJ	**Ofunato**	**2.32**	**314**	P		**Pn**	**09 10 08.4**	**-1.6**
JFK	**Kawauchi**	**2.33**	**268**	P		**Pn**	**09 10 08.6**	**-1.5**
JFK				S		**Sn**	**09 10 34.8**	**-3.1**
JMK	**Ichinoseki**	**2.51**	**307**	P		**Pn**	**09 10 11.3**	**-1.3**
JFT	**Otama**	**2.75**	**272**	P		**Pn**	**09 10 15.3**	**-0.6**
JFT				S		**Sn**	**09 10 46.3**	**-2.0**
JOM	**Ohasama**	**2.81**	**316**	P		**Pn**	**09 10 15.6**	**-1.0**
JOM				S		**Sn**	**09 10 48.1**	**-1.5**
JYK	**Kaneyama**	**3.07**	**299**	P		**Pn**	**09 10 19.6**	**-0.7**
JANG	**Nango**	**3.40**	**329**	P		**Pn**	**09 10 23.8**	**-1.0**
BSO1	**Boso 1**	**3.62**	**220**	P		**Pn**	**09 10 25.8**	**-1.5**
JAG	**Ashikaga**	**3.63**	**255**	P		**Pn**	**09 10 27.1**	**-0.9**
JAG				S		**Sn**	**09 11 06.4**	**-3.6**
JAW	**Awa shima**	**3.73**	**287**	P		**Pn**	**09 10 29.4**	**+0.1**
JRY	**Ryogami san**	**4.19**	**251**	P		**Pn**	**09 10 34.6**	**-1.1**
JRY				S		**Sn**	**09 11 18.9**	**-4.9**
JOD2	**Odawara 2**	**4.39**	**241**	P		**Pn**	**09 10 37.2**	**-1.3**
JOT	**Ohata**	**4.45**	**332**	P		**Pn**	**09 10 38.6**	**-0.6**
ERM	**Erimo**	**4.57**	**354**	*e*P		**Pn**	**09 10 39.0**	**-1.8**
ERM	**Erimo**	**4.57**	**354**	*e*Pn		**Pn**	**09 10 39.0**	**-1.8**
MJAR	**Matsushiro Arr** 30nm,0.3s,baz=90,slow=15,SNR=1.36	**4.57**	**260**	Pn		**Pn**	**09 10 41.1**	**+0.3**
MJAR				Sn		**Sn**	**09 11 33.1**	**0.0**
	14nm,0.3s,baz=82,slow=18,SNR=3.5							
MJAR				LR		LR	09 12 35.4	
	comp=Z,993nm,20.1s,baz=85,slow=40							
MAJO	**Matsushiro**	**4.57**	**260**	*i* P		**Pn**	**09 10 41.3**	**+0.4**
MAJO	**Matsushiro**	**4.57**	**260**	*e*Pn		**Pn**	**09 10 41.8**	**+0.9**
MAT	**Matsushiro**	**4.57**	**260**	P		**Pn**	**09 10 41.0**	**+0.1**
MAT				S		**Sn**	**09 11 31.2**	**-1.9**
MJB9	**Matsu-Tunnel**	**4.57**	**260**	*e*Pn		**Pn**	**09 10 41.8**	**+0.9**
JKB	**Kayabe**	**4.90**	**335**	P		**Pn**	**09 10 44.6**	**-0.8**
JCH	**Churui**	**5.15**	**356**	P		**Pn**	**09 10 46.6**	**-2.2**
JHJ2	**Mitsune**	**5.43**	**218**	*e*Pn		**Pn**	**09 10 50.0**	**-2.8**
JHJ	**Hachijo jima 2**	**5.44**	**218**	Pn		**Pn**	**09 10 50.9**	**-2.0**
JHJ				Sn		**Sn**	**09 11 45.8**	**-8.8**
	162nm,0.3s,baz=36,slow=20,SNR=14							
INU	**Inuyama**	**5.86**	**251**	*e*Pn		**Pn**	**09 11 00.1**	**+1.4**
ASAJ	**Asahikawa** 17nm,0.3s,baz=203,slow=17,SNR=74	**6.70**	**353**	Pn		**Pn**	**09 11 08.7**	**-1.5**
ASAJ				Sn		**Sn**	**09 12 18.8**	**-6.7**
	3.4nm,0.3s,baz=69,slow=34,SNR=4.9							
YUK	**Yuzh-Kuril'sk**	**6.74**	**13**	*e*P		**Pn**	**09 11 07.7**	**-3.0**
YUK				*e*S		**Sn**	**09 12 18.4**	**-8.1**
YUK				pmax		pmax		
	comp=Z,155nm,0.4s							
YUK				pmax		pmax		
	comp=N,54nm,0.2s							
YUK				pmax		pmax		
	comp=E,40nm,0.1s							
SHO	**Shikotan**	**6.79**	**19**	*e*P		**Pn**	**09 11 07.2**	**-4.2**
SHO				*e*S		Sn	09 12 17.9	-10
SHO				pmax		pmax		
	comp=Z,294nm,0.6s							
SHO				pmax		pmax		
	comp=N,106nm,0.4s							
SHO				pmax		pmax		
	comp=E,41nm,0.3s							
KUR	**Kuril'sk**	**8.34**	**20**	*e*P		**Pn**	**09 11 30.5**	**-2.0**
KUR				*e*S		Sn	09 12 56.2	-10
KUR				pmax		pmax		
	comp=Z,42nm,0.8s							
KUR				smax		smax		
	comp=N,74nm,0.5s							
KUR				smax		smax		
	comp=E,156nm,0.5s							
YSS	**Yuzh-Sakhalins**	**9.51**	**356**	*e*P		**Pn**	**09 11 47.0**	**-1.6**
YSS				*e*			09 13 26.8	
YSS				pmax		pmax		
	comp=Z,80nm,1.1s							
YSS				MLR		MLR		
	comp=Z,700nm,13.0s							
YSS	**Yuzh-Sakhalins**	**9.51**	**356**	*e*Pn		**Pn**	**09 11 47.0**	**-1.6**
CBIJ	**Chichi jima**	**10.43**	**188**	Pn		Pn	09 11 56.1	-5.3
CBIJ				*e*Sn		Sn	09 13 45.5	-12
JCJ	**Chichijima**	**10.43**	**188**	Pn		Pn	09 11 56.1	-5.3
JCJ				Sn		Sn	09 13 45.1	-12
	comp=Z,53nm,0.3s,baz=290,slow=22,SNR=12							
VLA	**Vladivostok**	**10.70**	**306**	*e*P		**Pn**	**09 12 04.8**	**-0.1**
MSHR	**Mys Shultsa**	**10.95**	**302**	*i* P		**Pn**	**09 12 07.9**	**-0.5**
USRK	**Ussuriysk Ar.** comp=Z,1.1nm,0.3s,baz=116,slow=13,SNR=28	**11.18**	**311**	Pn		**Pn**	**09 12 12.5**	**+1.0**
USRK				LR		LR	09 16 06.3	
	comp=Z,688nm,20.7s,baz=121,slow=35							
JNU	**Nakatsue** comp=Z,0.4nm,0.3s,baz=85,slow=5.9,SNR=4.2	**11.41**	**251**	Pn		**Pn**	**09 12 16.5**	**+1.7**
KSRS	**Korea Array** comp=Z,0.5nm,0.3s,baz=85,slow=13,SNR=12	**12.62**	**275**	Pn		**Pn**	**09 12 33.6**	**+2.4**
KSRS				LR		LR	09 17 50.4	
	comp=Z,781nm,18.2s,baz=68,slow=39							
KS01	**Wonju Array Si**	**12.64**	**275**	*e*Pn		**Pn**	**09 12 33.8**	**+2.3**
KSAR	**Wonju Array Be**	**12.65**	**275**	P		**Pn**	**09 12 33.6**	**+2.0**
KSAR	**Wonju Array Be**	**12.65**	**275**	Pn		**Pn**	**09 12 33.6**	**+2.0**
HABR	**Khabarovsk**	**12.71**	**333**	*ce*P		**Pn**	**09 12 29.6**	**-2.8**
HABR				*e*S		**Sn**	**09 14 49.4**	**-3.6**
HABR				pmax		pmax		
	comp=N,32nm,1.5s							
HABR				pmax		pmax		
	comp=E,62nm,1.5s							
HABR				pmax		pmax		
	comp=Z,55nm,1.5s							
HABR				MLR		MLR		
	comp=Z,223nm,15.0s							
MDJ	**Mudanjiang**	**12.87**	**308**	P		**Pn**	**09 12 34.8**	**+0.2**
MDJ				pmax		pmax		
	comp=Z,26nm,1.1s							
MDJ				pmax		pmax		
	comp=Z,190nm,7.9s							
MDJ	**Mudanjiang**	**12.87**	**308**	*e*Pn		**Pn**	**09 12 35.0**	**+0.4**
TYV	**Tymovskoe**	**13.41**	**357**	*e*P		**Pn**	**09 12 40.0**	**-2.0**
TYV				pmax		pmax		
	comp=Z,26nm,1.0s							
KLR	**Kul'dur** comp=Z,0.3nm,0.3s,baz=127,slow=12,SNR=23	**14.64**	**327**	Pn		**Pn**	**09 12 56.0**	**-2.7**
KLR				LR		LR	09 19 09.3	
	comp=Z,1μm,19.3s,baz=145,slow=39							
CN2	**Changchun**	**15.29**	**300**	*e*P		**P**	**09 13 11.8**	**-0.2**
NKL	**Nikolayevsk**	**15.83**	**353**	*e*P		**Pn**	**09 13 12.0**	**-2.3**
NKL				pmax		pmax		
	comp=N,30nm,1.2s							
NKL				pmax		pmax		
	comp=Z,70nm,1.2s							
NKL				MLR		MLR		
	comp=N,900nm,18.0s							
NKL				MLR		MLR		
	comp=E,1μm,18.0s							
NKL				MLR		MLR		
	comp=Z,1μm,18.0s							
SKR	**Severo-Kuril's**	**15.87**	**30**	*e*P		**Pn**	**09 13 09.6**	**-5.3**
PETK	**Petropavlovsk-** comp=Z,0.1nm,0.3s,baz=219,slow=11,SNR=3.5	**18.39**	**27**	P		**Pn**	**09 13 47.3**	**+0.9**
PETK				LR		LR	09 21 10.6	
	comp=Z,261nm,20.5s,baz=223,slow=38							
NJ2	**Nanjing**	**21.17**	**263**	*e*P		**P**	**09 14 17.8**	**+1.2**
NJ2				pmax		pmax		
	comp=Z,15nm,0.7s							
TIA	**Tai'an**	**21.36**	**275**	⇓P		**P**	**09 14 17.8**	**-1.0**
TIA				pmax		pmax		
	comp=Z,30nm,1.1s							
BJI	**Beijing**	**21.66**	**285**	P		**P**	**09 14 21.0**	**-0.9**
BJI				pmax		pmax		
	comp=Z,22nm,1.4s							
BJI				LR		LR		
	comp=Z,660nm,15.4s							
BJI				LR		LR		
	comp=Z,330nm,15.8s							
BJI				LR		LR		
	comp=Z,330nm,24.2s							
BJT	**Baijiatuan**	**21.67**	**285**	*e*P		**P**	**09 14 21.5**	**-0.5**
BJT				pmax		pmax		
	comp=Z,62nm,1.4s							
BJT	**Baijiatuan** comp=Z,62nm,1.4s	**21.67**	**285**	*e*P		**P**	**09 14 21.4**	**-0.5**
MA2	**Magadan** comp=Z,2.3nm,0.4s,baz=222,slow=8.5,SNR=6.1	**22.57**	**9**	P		**P**	**09 14 31.5**	**0.0**
CLNS	**Chul'man**	**23.11**	**333**	*e*P		**P**	**09 14 39.7**	**+2.6**
CLNS				pmax		pmax		
	comp=N,29nm,1.1s							
CLNS				pmax		pmax		
	comp=E,22nm,1.1s							
CLNS				pmax		pmax		
	comp=Z,43nm,1.0s							
GUMO	**Guam** comp=Z,238nm,22.0s,baz=14,slow=31	**23.80**	**177**	LR		LR	09 21 42.5	
TPUB	**Ta-pu** comp=Z,43nm,1.1s	**24.39**	**241**	*e*P		**P**	**09 14 50.4**	**+0.7**
HHC	**Hu-ho-hao-te**	**25.14**	**288**	*e*P		**P**	**09 14 57.8**	**+1.3**
HHC				S		**S**	**09 19 17.3**	**-2.5**
HHC				pmax		pmax		
	comp=Z,22nm,1.0s							
HHC				pmax		pmax		
	comp=Z,650nm,3.5s							
HHC				LR		LR		
	comp=Z,1μm,14.8s							
HHC				LR		LR		
	comp=Z,2μm,16.0s							
HHC				LR		LR		
	comp=Z,2μm,17.3s							
SEY	**Seymchan** comp=Z,22nm,0.9s,baz=190,slow=6.6,SNR=45	**26.03**	**9**	P		**P**	**09 15 05.1**	**+1.0**
YAK	**Yakutsk** comp=Z,360nm,18.8s,baz=152,slow=38	**26.10**	**345**	LR		LR	09 26 17.2	
YAK	**Yakutsk**	**26.10**	**345**	*e*P		P	09 15 12.4	+7.6
YAK				*e**PP		sP	09 15 23.6	+7.7
YAK				*e*			09 15 47.1	
YAK				*e*			09 18 37.2	
YAK				*e*SS			09 20 36.7	
YAK				*e*			09 26 00.5	
YAK				pmax		pmax		
	comp=Z,47nm,1.1s							
YAK				pmax		pmax		
	comp=N,25nm,1.1s							
YAK				pmax		pmax		
	comp=E,12nm,1.5s							
YAK				pmax		pmax		
	comp=Z,120nm,2.7s							
YAK				pmax		pmax		
	comp=N,89nm,2.7s							
YAK				pmax		pmax		
	comp=E,84nm,3.0s							
H11N2	**WAKE ISLAND Hy** baz=317,slow=75,SNR=3.6	**26.79**	**125**	T		T	09 43 12.3	
H11N1	**WAKE ISLAND Hy** baz=317,slow=75,SNR=4.3	**26.79**	**125**	T		T	09 43 12.8	
H11N3	**WAKE ISLAND Hy** baz=317,slow=75,SNR=37	**26.80**	**125**	T		T	09 42 56.1	
H11S1	**WAKE ISLAND Hy** baz=318,slow=76,SNR=8.4	**27.55**	**127**	T		T	09 44 05.4	
H11S3	**WAKE ISLAND Hy** baz=318,slow=76,SNR=12	**27.55**	**127**	T		T	09 44 05.8	
H11S2	**WAKE ISLAND Hy** baz=318,slow=76,SNR=8.0	**27.57**	**127**	T		T	09 44 06.7	
BOD	**Bodaibo** comp=Z,23nm,1.6s	**28.21**	**326**	*e*P		**P**	**09 15 23.7**	**0.0**
BOD				pmax		pmax		
ULN	**Ulaanbaatar**	**28.70**	**303**	*i* P		**P**	**09 15 28.7**	**+0.3**
ULN				pmax		pmax		
	comp=Z,18nm,1.2s							
ULN	**Ulaanbaatar** comp=Z,28nm,1.2s	**28.70**	**303**	*e*P		**P**	**09 15 32.8**	**+4.3**
SONA1	**Songino Array**	**29.13**	**303**	*e*P		**P**	**09 15 34.5**	**+2.3**
SONM	**Songino Array** comp=Z,6.0nm,0.9s,baz=101,slow=7.7,SNR=6.2	**29.14**	**303**	P		**P**	**09 15 34.2**	**+1.9**
SONM				LR		LR	09 27 24.0	
	comp=Z,293nm,19.3s,baz=62,slow=37							
ENH	**Enshi** comp=Z,79nm,1.5s	**29.26**	**266**	*e*P		**P**	**09 15 36.4**	**+2.9**
TLY	**Talaya** comp=Z,2.2nm,0.5s,baz=89,slow=9.4,SNR=3.5	**31.50**	**310**	P		**P**	**09 15 56.9**	**+3.9**
TLY	**Talaya**	**31.50**	**310**	*e*P		**P**	**09 15 57.3**	**+4.3**
TLY				pmax		pmax		
	comp=Z,11nm,1.1s							
TLY				MLR		MLR		
	comp=Z,370nm,12.0s							
TLY	**Talaya**	**31.50**	**310**	*e*P		**P**	**09 15 57.0**	**+4.0**
TLY				*e*pP		**pP**	**09 16 01.9**	**+1.1**
ZAK	**Zakamensk**	**31.51**	**307**	*e*P		**P**	**09 15 54.7**	**+1.5**
ZAK				pmax		pmax		
	comp=Z,10.0nm,1.2s							
LZH	**Lanzhou**	**31.87**	**280**	*e*P		**P**	**09 16 00.8**	**+4.2**
LZH				pP		sP	09 16 09.3	+1.6
LZH				sP		pP	09 16 12.3	+7.9
LZH				pmax		pmax		
	comp=Z,21nm,1.0s							
LZH				pmax		pmax		
	comp=Z,110nm,5.1s							
BILL	**Bilibino**	**33.09**	**15**	*d i*P		**P**	**09 16 06.4**	**-0.3**
BILL				*i*			09 16 18.6	
BILL				pmax		pmax		
	comp=Z,

comp=Z,740nm,15.6s
GTA Gaotai 34.25 287 *e*P **P** **09 16 13.0 -4.3**
GTA pP pP 09 16 25.3 +0.1
GTA sP sP 09 16 31.0 +2.5
GTA S **S** **09 21 36.0 -6.7**
GTA sS sS 09 21 56.0 +0.2
GTA SS **SnSn** **09 23 46.5 -5.9**
GTA pmax pmax
comp=Z,4.0nm,0.7s
GTA pmax pmax
comp=Z,110nm,6.2s
GTA LR LR
comp=N,570nm,19.5s
GTA LR LR
comp=E,1μm,18.3s
GTA LR LR
comp=Z,560nm,17.3s
TIXI Tiksi 35.11 352 P **P** **09 16 23.1 -1.0**
comp=Z,1.7nm,0.8s,baz=161,slow=6.3,SNR=3.0
TIXI Tiksi 35.11 352 *i* P **P** **09 16 22.5 -1.6**
TIXI pmax pmax
comp=Z,2.0nm,1.0s
KMI Kunming 36.91 263 P **P** **09 16 40.5 +0.2**
KMI pP sP 09 16 51.8 +0.3
KMI sP pP 09 16 56.5 +8.2
KMI pmax pmax
comp=Z,7.0nm,1.1s
KMI pmax pmax
comp=Z,91nm,6.3s
KMI LR LR
comp=Z,440nm,14.0s
KMI LR LR
comp=Z,160nm,16.2s
KMI LR LR
comp=Z,260nm,23.3s
WMQ Urumqi 42.34 297 P **P** **09 17 28.0 +2.8**
WMQ pP sP 09 17 39.5 +3.0
WMQ sP pP 09 17 44.0 +11
WMQ pmax pmax
comp=Z,4.0nm,0.6s
WMQ pmax pmax
comp=Z,64nm,4.8s
WMQ LR LR
comp=Z,94nm,19.4s
WMQ LR LR
comp=Z,59nm,23.4s
WMQ LR LR
comp=Z,96nm,19.4s
ZAA0 Zalesovo Array 43.03 312 *e*P **P** **09 17 31.2 +0.6**
ZAA0 *e*P **pP** **09 17 34.2 -4.4**
ZALV Zalesovo Beam 43.03 312 P **P** **09 17 30.8 +0.2**
comp=Z,12nm,0.7s,baz=104,slow=6.3,SNR=6.8
ZALV PcP **PcP** **09 19 20.3 -0.1**
comp=Z,5.9nm,0.8s,baz=88,slow=3.7,SNR=4.7
CHTO Chiang Mai 43.24 257 *e*P **P** **09 17 33.9 +1.2**
CHTO *e**PP **sP** **09 17 45.7 +1.7**
CHTO Chiang Mai 43.24 257 *e*P **P** **09 17 33.9 +1.2**
CHTO *ep*P **sP** **09 17 45.7 +1.7**
CMAR Chiang Mai Arr 43.45 257 P **P** **09 17 34.5 +0.1**
comp=Z,5.3nm,0.4s,baz=33,slow=8.6,SNR=12
CMAR PcP **PcP** **09 19 22.9 +0.5**
comp=Z,1.1nm,0.3s,baz=0.8,slow=3.4,SNR=7.1
CMAR Chiang Mai Arr 43.45 257 *ce*P **P** **09 17 36.2 +1.8**
CMAR pmax pmax
comp=Z,2.0nm,0.3s
CM01 Chiang Mai Arr 43.46 257 *e*P **P** **09 17 35.0 +0.6**
NRIK Noril'sk 43.68 335 P **P** **09 17 37.5 +1.9**
comp=Z,5.4nm,0.7s,baz=117,slow=7.8,SNR=4.5
NRIK LR LR 09 36 34.2
comp=Z,455nm,19.4s,baz=108,slow=37
NVS Novosibirsk 43.92 313 *e*P **P** **09 17 42.2 +4.5**
NVS pmax pmax
comp=Z,19nm,1.1s
NVS pmax pmax
comp=E,13nm,1.3s
TT01 Tatalina 43.97 35 *e*P **P** **09 17 38.2 +0.2**
TTA Tatalina 43.98 35 *e*P **P** **09 17 39.5 +1.3**
TTA pmax pmax
comp=Z,15nm,1.1s
TTA Tatalina 43.98 35 *e*P **P** **09 17 39.5 +1.3**
comp=Z,15nm,1.1s
SVW2 Sparrevohn 44.02 38 *e*P **P** **09 17 39.1 +0.6**
comp=Z,38nm,1.1s
SHL Shillong 45.31 270 *e*P **P** **09 17 47.5 -1.9**
MK01 Makanchi Array 45.50 302 *e*P **P** **09 17 50.8 +0.3**
MK31 Makanchi Array 45.50 302 P **P** **09 17 51.3 +0.8**
MK31 pmax pmax
comp=Z,17nm,1.1s
MK31 Makanchi Array 45.50 302 *e*P **P** **09 17 51.9 +1.4**
MKAR Makanchi Array 45.50 302 P **P** **09 17 50.8 +0.3**
comp=Z,0.9nm,0.4s,baz=80,slow=11,SNR=11
MKAR Makanchi Array 45.50 302 *ce*P **P** **09 17 51.7 +1.2**
MKAR pmax pmax
comp=Z,2.0nm,0.8s
MKAR Makanchi Array 45.50 302 *e*P **P** **09 17 51.9 +1.4**
KDAK Kodiak Island 45.50 42 P P 09 18 05.4 +15
comp=Z,27nm,0.8s,baz=266,slow=5.9,SNR=12
KDAK Kodiak Island 45.50 42 *i* P **P** **09 17 50.2 0.0**
MAKZ Makanchi 45.71 302 *e*P **P** **09 17 53.6 +1.5**
MAKZ pmax pmax
comp=Z,13nm,1.0s
MAKZ Makanchi 45.71 302 *e*P **P** **09 17 53.6 +1.5**
comp=Z,13nm,1.0s
PPLA Purkeypile 45.72 35 *e*P **P** **09 17 53.8 +1.7**
comp=Z,65nm,1.4s
SPU Mount Spurr 45.73 38 *e*P **P** **09 17 53.2 +1.1**
CAST Castle Rocks 45.79 34 *e*P **P** **09 17 53.9 +1.3**
comp=Z,81nm,1.8s
BPAW Bear Paw Mtn. 46.31 33 *e*P **P** **09 17 58.1 +1.4**
comp=Z,45nm,1.7s
KTH Kantishna Hill 46.32 34 *e*P **P** **09 17 58.2 +1.5**
comp=Z,41nm,1.1s
MLY Manley 46.47 32 *e*P **P** **09 17 59.0 +1.1**
comp=Z,29nm,1.0s
TRF Thorofare Moun 46.60 34 *e*P **P** **09 17 60.0 +0.9**
comp=Z,25nm,1.2s
COLD Coldfoot 46.85 29 *e*P **P** **09 18 02.0 +1.3**
comp=Z,13nm,1.4s
BWN Browne 46.98 33 *e*P **P** **09 18 04.0 +2.1**
comp=Z,88nm,1.0s
PMR Palmer 47.14 37 *e*P **P** **09 18 03.4 +0.3**
PMR pmax pmax
comp=Z,28nm,1.1s
PMR Palmer 47.14 37 *e*P **P** **09 18 03.4 +0.3**
comp=Z,28nm,1.1s
KURK Kurchatov 47.16 308 *e*P **P** **09 18 03.8 +0.4**
KURK pmax pmax
comp=Z,33nm,1.0s
KURK Kurchatov 47.16 308 *e*P **P** **09 18 03.8 +0.4**
comp=Z,33nm,1.0s
MCK McKinley 47.21 34 *e*P **P** **09 18 04.4 +0.7**
MCK pmax pmax
comp=Z,24nm,1.0s
MCK McKinley 47.21 34 *e*P **P** **09 18 04.4 +0.7**
comp=Z,24nm,1.0s
KURBB Kurchatov Arra 47.23 308 P **P** **09 18 03.8 -0.2**
comp=Z,4.3nm,0.6s,baz=82,slow=8.2,SNR=25
RND Reindeer 47.25 34 *e*P **P** **09 18 04.5 +0.5**
RND pmax pmax
comp=Z,40nm,1.1s
RND Reindeer 47.25 34 *e*P **P** **09 18 04.5 +0.5**
comp=Z,40nm,1.1s
SML Sawmill 47.51 37 *e*P **P** **09 18 07.0 +0.9**
SML pmax pmax
comp=Z,26nm,1.0s
SML Sawmill 47.51 37 *e*P **P** **09 18 07.0 +0.9**
comp=Z,26nm,1.0s
MDM Murphy Dome 47.53 32 *e*P **P** **09 18 07.2 +1.0**
comp=Z,46nm,0.9s
WRH Wood River Hil 47.59 33 *e*P **P** **09 18 07.2 +0.7**
comp=Z,11nm,0.8s
COLA College 47.69 32 *d i*P **P** **09 18 08.2 +0.9**
COLA pmax pmax
comp=Z,13nm,0.9s
COLA College 47.69 32 *e*P **P** **09 18 08.5 +1.2**
comp=Z,18nm,0.7s
CCB Clear Creek Bu 47.71 33 *e*P **P** **09 18 08.1 +0.6**
comp=Z,8.1nm,1.0s
DHY Denali Highway 47.92 35 *e*P **P** **09 18 09.9 +0.6**
comp=Z,13nm,1.1s
SCM Sheep Creek Mo 47.99 37 *e*P **P** **09 18 10.5 +0.7**
SCM pmax pmax
comp=Z,70nm,1.2s
SCM Sheep Creek Mo 47.99 37 *e*P **P** **09 18 10.5 +0.7**
comp=Z,70nm,1.2s
IL1 Eielson Array 48.10 33 *e*P **P** **09 18 10.2 -0.3**
ILAR Eielson Array 48.10 33 P **P** **09 18 10.4 -0.1**
comp=Z,18nm,0.8s,baz=265,slow=6.4,SNR=141
ILB Eielson Array 48.10 33 *e*P **P** **09 18 10.9 +0.3**
PDGK Podgornoye 48.25 298 P **P** **09 18 12.8 +0.8**
PDGK pmax pmax
comp=Z,19nm,1.3s
KLU Klutina 48.68 37 *e*P **P** **09 18 16.3 +1.2**
comp=Z,30nm,1.0s
DIV Divide 48.78 37 *e*P **P** **09 18 17.2 +1.3**
comp=Z,48nm,1.1s
FYU Fort Yukon 48.78 30 *e*P **P** **09 18 17.4 +1.7**
comp=Z,86nm,1.4s
PAX Paxson 48.79 35 *e*P **P** **09 18 16.9 +0.9**
PAX pmax pmax
comp=Z,12nm,1.1s
PAX Paxson 48.79 35 *e*P **P** **09 18 16.9 +0.9**
comp=Z,12nm,1.1s
BMRM Bremner River 49.36 38 *e*P **P** **09 18 21.7 +1.4**
comp=Z,26nm,1.1s
DOT Dot Lake 49.38 34 *e*P **P** **09 18 20.8 +0.4**
comp=Z,26nm,0.9s
RAGM Ragged Mountai 49.38 38 *e*P **P** **09 18 22.5 +2.0**
comp=Z,37nm,1.2s
MENT Mentasta 49.59 35 *e*P **P** **09 18 23.3 +1.2**
comp=Z,20nm,1.0s
EGAK Eagle 50.56 32 *e*P **P** **09 18 29.3 +0.1**
comp=Z,42nm,1.9s
TKM2 Tokmak 2 51.09 299 *e*P **P** **09 18 35.6 +1.7**
TKM2 pmax pmax
comp=Z,19nm,0.9s
TKM2 Tokmak 2 51.09 299 *e*P **P** **09 18 35.6 +1.7**
comp=Z,19nm,0.9s
CHKZ Chkalovo 51.40 313 P **P** **09 18 34.8 -1.0**
CHKZ pmax pmax
comp=Z,18nm,1.3s
MTN Manton Dam 51.44 196 *e*P **P** **09 18 35.7 -0.7**
comp=Z,39nm,1.2s
BVA0 Borovoye Array 51.68 312 *i* P **P** **09 18 38.9 +1.0**
BVA0 pmax pmax
comp=Z,11nm,1.2s
BRVK Borovoye 51.74 313 P **P** **09 18 38.6 +0.3**
BRVK pmax pmax
comp=Z,24nm,1.6s
BRVK Borovoye 51.74 313 *e*P **P** **09 18 39.3 +1.0**
comp=Z,8.2nm,0.9s
AAK Ala-Archa 51.95 299 *i* P **P** **09 18 40.3 0.0**
AAK pmax pmax
comp=Z,15nm,1.9s
AAK Ala-Archa 51.95 299 *e*P **P** **09 18 44.5 +4.2**
comp=Z,9.4nm,1.3s
KSH Kashi 51.96 295 *e*P P 09 18 45.5 +5.2
KSH *es*P sP 09 19 03.3 +12
KSH *e*PcP **PcP** **09 19 56.0 +3.4**
KSH S **S** **09 26 06.5 +4.5**
KSH ScS **ScS** **09 28 26.8 -2.0**
KSH pmax pmax
comp=Z,150nm,4.6s
KSH LR LR
comp=Z,200nm,7.9s
KSH LR LR
comp=Z,190nm,11.2s
KSH LR LR
comp=Z,180nm,11.4s
ZRNK Zerenda 52.51 313 P **P** **09 18 44.4 +0.3**
ZRNK pmax pmax
comp=Z,18nm,1.2s
ZRNK Zerenda 52.51 313 *e*P **P** **09 18 44.6 +0.5**
comp=Z,66nm,2.0s
INK Inuvik 53.13 27 P **P** **09 18 49.1 +0.7**
comp=Z,12nm,0.9s,baz=294,slow=7.0,SNR=56
INK Inuvik 53.13 27 *e*P **P** **09 18 49.0 +0.7**
comp=Z,18nm,1.0s
MNAS Manas 53.39 299 P **P** **09 18 51.4 +0.5**
MNAS pmax pmax
comp=Z,18nm,1.3s
SFK Sufi-Kurgan 53.56 296 P **P** **09 18 53.4 +1.1**
SFK pmax pmax
comp=Z,20nm,1.2s
SKAG Skagway 54.18 38 *e*P **P** **09 18 58.0 +1.8**
comp=Z,15nm,1.1s
KK31 Karatay Array 54.55 301 *i* P **P** **09 18 59.5 +0.3**
KK31 pmax pmax
comp=Z,9.0nm,1.2s
KKAR Karatay Array 54.55 301 *e*P **P** **09 18 59.9 +0.7**
KKAR Karatay Array 54.55 301 *e*P **P** **09 18 59.9 +0.7**
DLBC Dease Lake 57.10 39 P **P** **09 19 19.1 +1.7**
comp=Z,7.5nm,0.9s,baz=282,slow=7.9,SNR=15
DLBC Dease Lake 57.10 39 *e*P **P** **09 19 19.0 +1.7**
comp=Z,13nm,1.0s
SOKR Solikamsk 57.13 323 *c i*P **P** **09 19 17.2 -0.1**
SOKR pmax pmax
comp=Z,13nm,1.2s
ARU Arti 57.29 319 LR LR 09 46 54.6
comp=Z,507nm,18.2s,baz=70,slow=39
ARU Arti 57.29 319 *d i*P **P** **09 19 18.8 +0.2**
ARU 09 21 23.4
ARU S **S** **09 27 14.3 +1.5**
ARU SS **SS** **09 31 04.2 +2.5**
ARU pmax pmax
comp=Z,27nm,1.7s
ARU MLR MLR
comp=Z,743nm,17.0s
ARU Arti 57.29 319 *e*P **P** **09 19 19.0 +0.4**
ARU *ep*P **sP** **09 19 30.3 +0.3**
WRAB Tennant Creek 57.78 191 *d i*P **P** **09 19 20.7 -1.7**
WRAB pmax pmax
comp=Z,97nm,1.7s
WRAB Tennant Creek 57.78 191 *e*P **P** **09 19 20.9 -1.4**
comp=Z,65nm,1.6s
WB2 Warramunga Arr 57.79 191 *e*P **P** **09 19 21.1 -1.3**
comp=Z,68nm,1.6s
WRA Warramunga Arr 57.80 191 P **P** **09 19 21.0 -1.5**
comp=Z,11nm,0.9s,baz=11,slow=7.3,SNR=50
WRA Warramunga Arr 57.80 191 P **P** **09 19 21.0 -1.5**
FITZ Fitzroy Crossi 57.86 200 *e*P **P** **09 19 22.8 -0.2**
comp=Z,25nm,1.3s
AB31 Akbulak array 59.11 311 P **P** **09 19 31.8 +0.4**
AB31 pmax pmax
comp=Z,21nm,1.4s
ABKAR Akbulak array 59.11 311 *e*P **P** **09 19 31.7 +0.3**
AKTO Aktyubinsk 59.79 312 P **P** **09 19 36.4 +0.3**
AKTO pmax pmax
comp=Z,15nm,1.3s
AS01 Alice Springs 61.51 190 *e*P **P** **09 19 46.8 -1.2**
AS31 Alice Springs 61.52 190 *e*P **P** **09 19 47.2 -0.8**
comp=Z,2.2nm,0.9s
ASAR Alice Springs 61.52 190 P **P** **09 19 47.0 -1.1**
comp=Z,6.8nm,0.9s,baz=9.7,slow=5.2,SNR=36
ASAR Alice Springs 61.52 190 P **P** **09 19 47.0 -1.1**
RES Resolute Bay 61.70 15 P **P** **09 19 48.8 +0.1**
comp=Z,15nm,1.0s,baz=300,slow=6.4,SNR=41
RES Resolute Bay 61.70 15 *e*P **P** **09 19 48.6 0.0**
RES pmax pmax
comp=Z,23nm,1.0s
RES Resolute Bay 61.70 15 *e*P **P** **09 19 48.6 0.0**
comp=Z,23nm,1.0s
YKW3 Yellowknife Ar 62.43 31 *e*P **P** **09 19 53.6 -0.2**
comp=Z,11nm,1.2s
YKA Yellowknife Ar 62.47 31 P **P** **09 19 53.8 -0.2**
comp=Z,3.9nm,0.9s,baz=296,slow=6.6,SNR=46
YKB5 Yellowknife Ar 62.47 31 *e*P **P** **09 19 52.9 -1.1**
MBWA Marble Bar 62.57 205 *e*P **P** **09 19 54.8 -0.3**
comp=Z,28nm,1.4s
TMCR Tamitsa 63.27 332 *e*P **P** **09 20 00.0 +0.7**
ARCES ARCESS Array B 64.25 340 P **P** **09 20 06.7 +0.9**
comp=Z,2.8nm,1.0s,baz=45,slow=8.2,SNR=3.4
KLMR Klimovskoe 64.40 328 *e*P **P** **09 20 04.8 -2.0**
KLMR *e**SP **sP** **09 20 18.8 +0.5**
KLMR *e* 09 22 25.9
KLMR pmax pmax
comp=Z,18nm,1.6s
NLWA Neilton Lookou 65.01 49 *e*P **P** **09 20 13.0 +1.9**
comp=Z,62nm,1.4s
GEYT Alibeck 65.28 300 P **P** **09 20 13.7 +0.7**
comp=Z,2.4nm,0.4s,baz=5.7,slow=1.5,SNR=4.7
DAG Danmarks Havn 65.49 356 *i* P **P** **09 20 13.6 -0.1**
comp=Z,12nm,1.1s
DAG Danmarks Havn 65.49 356 *i* P **P** **09 20 13.6 -0.1**
DAG pmax pmax
comp=Z,16nm,1.1s
AFI Afiamalu 65.98 132 *e*P **P** **09 20 14.7 -3.0**
AFI Afiamalu 65.98 132 *e*P **P** **09 20 14.7 -3.0**
comp=Z,225nm,0.5s
F04A Amboy 66.60 49 *e*P **P** **09 20 22.1 +0.8**
comp=Z,27nm,1.4s
LTY Liberty 66.97 47 *e*P **P** **09 20 24.1 +0.4**
comp=Z,42nm,2.0s
I03D Drain, OR 67.15 52 P **P** **09 20 26.3 +1.4**
baz=300
B08A Colville Reser 67.18 46 *e*P **P** **09 20 25.8 +0.7**
comp=Z,11nm,1.4s
H04A Detroit Lake 67.37 50 *e*P **P** **09 20 27.2 +0.9**
comp=Z,24nm,1.4s
I04A Tendick Farm, 67.69 51 P **P** **09 20 29.1 +0.7**
baz=301
MOS Moscow 68.02 324 *e*P **P** **09 20 31.3 +1.2**
MOS *e* 09 20 56.8
MOS *e* 09 22 57.1
NEW Newport 68.48 45 P **P** **09 20 33.5 +0.3**
baz=302
NEW Newport 68.48 45 *e*P **P** **09 20 34.0 +0.7**
NEW pmax pmax
comp=Z,6.0nm,1.0s
NEW Newport 68.48 45 *e*P **P** **09 20 34.0 +0.7**
comp=Z,5.8nm,1.0s
YBH Yreka Blue Hor 68.56 53 *e*P **P** **09 20 35.0 +1.1**
YBH Yreka Blue Hor 68.56 53 *e*P **P** **09 20 35.0 +1.1**
M02C Callahan 68.65 54 P **P** **09 20 35.5 +1.0**
baz=302
J05D Fort Rock, OR 68.68 51 P **P** **09 20 35.4 +0.7**
baz=302
OBN Obninsk 68.87 324 *i*P **P** **09 20 35.4 0.0**
OBN *i* 09 20 47.5
OBN pmax pmax
comp=Z,11nm,0.5s
OBN MLR MLR
comp=Z,191nm,14.0s
N02D Trinity Center 68.97 54 P **P** **09 20 37.3 +0.9**
baz=302
STKA Stephens Creek 69.02 182 P **P** **09 20 35.1 -1.4**
comp=Z,3.6nm,0.8s,baz=352,slow=6.5,SNR=12
STKA Stephens Creek 69.02 182 *e*P **P** **09 20 35.7 -0.8**
STKA pmax pmax
comp=Z,1.0nm,0.8s
STKA Stephens Creek 69.02 182 *e*P **P** **09 20 35.7 -0.8**
comp=Z,1.0nm,0.8s
M04C Macdoel 69.09 53 P **P** **09 20 38.0 +0.7**
baz=302
LPSR Galich'ya Gora 69.17 321 *e*P **P** **09 20 36.6 -0.8**
LPSR pmax pmax
comp=Z,8.0nm,1.0s
K05A Summer Lake 69.19 52 *e*P **P** **09 20 39.5 +1.6**
comp=Z,39nm,1.3s
WDC Whiskeytown Da 69.28 54 *e*P **P** **09 20 39.5 +1.2**
WDC pmax pmax
comp=Z,12nm,1.0s
WDC Whiskeytown Da 69.28 54 *e*P **P** **09 20 39.5 +1.2**
comp=Z,12nm,1.0s
FIA1 FINESS Array S 69.30 333 *e*P **P** **09 20 38.0 0.0**
FIA1 *e*P pP 09 20 38.5 -7.9
FINES FINESS Array B 69.30 333 P **P** **09 20 38.3 +0.3**
comp=Z,6.1nm,0.9s,baz=46,slow=8.2,SNR=15
FINES LR LR 09 54 05.9
comp=Z,310nm,18.6s,baz=29,slow=38
FINES FINESS Array B 69.30 333 *i* P **P** **09 20 38.2 +0.2**
FINES pmax pmax
comp=Z,6.0nm,0.9s
WALA Waterton Lakes 69.83 43 *e*P **P** **09 20 42.3 +0.6**
comp=Z,7.3nm,1.2s
VSR Storozhevoye 69.84 320 *e*P **P** **09 20 41.5 0.0**
VSR pmax pmax
comp=Z,10.0nm,1.0s
O03D Paynes Creek 69.91 54 P **P** **09 20 42.8 +0.5**
baz=302
SUMG Summit 70.24 1 *i* P **P** **09 20 44.6 +0.5**
comp=Z,23nm,1.1s
SUMG Summit 70.24 1 *i* P **P** **09 20 44.6 +0.5**
SUMG pmax pmax
comp=Z,23nm,1.1s
SUMG Summit 70.24 1 *e*P **P** **09 20 44.7 +0.6**
comp=Z,17nm,1.0s
JTMT Jette 70.36 45 *e*P **P** **09 20 45.8 +0.8**
ORV Oroville 70.50 55 *e*P **P** **09 20 46.2 +0.4**
ORV pmax pmax
comp=Z,10.0nm,1.2s
ORV Oroville 70.50 55 *e*P **P** **09 20 46.2 +0.4**
comp=Z,10.0nm,1.2s
SWMT Swartz Lake 70.65 45 *e*P **P** **09 20 47.1 +0.4**
WVOR Wild Horse Val 70.75 51 *e*P **P** **09 20 48.6 +1.1**
WVOR pmax pmax
comp=Z,13nm,1.4s
WVOR Wild Horse Val 70.75 51 *e*P **P** **09 20 48.5 +1.1**
comp=Z,13nm,1.4s
VSU Vasula 71.03 330 *i* P **P** **09 20 48.5 -0.1**
VSU pmax pmax
comp=Z,78nm,1.7s
MSO Missoula 71.07 45 P **P** **09 20 48.7 -0.5**
baz=305
MSO Missoula 71.07 45 *e*P **P** **09 20 49.6 +0.3**
comp=Z,8.7nm,1.4s
AFDM Forest Hills D 71.17 55 *e*P **P** **09 20 51.2 +1.3**
comp=Z,12nm,1.4s
ZEI Tsey 71.98 310 *e*P **P** **09 20 52.2 -2.8**
ZEI pmax pmax
comp=Z,13nm,1.0s
KIV Kislovodsk 72.05 312 *i*P **P** **09 20 56.6 +1.5**
KIV *i* 09 21 09.5
KIV pmax pmax
comp=Z,29nm,1.0s
KIV Kislovodsk 72.05 312 *e*P **P** **09 20 56.7 +1.5**
comp=Z,44nm,1.1s
KBZ Khabaz 72.05 312 P **P** **09 20 56.4 +1.3**
comp=Z,9.3nm,1.0s,baz=355,slow=0.6,SNR=17
CMB Columbia Colle 72.06 56 *e*P **P** **09 20 55.9 +0.6**
CMB pmax pmax
comp=Z,20nm,1.4s
CMB Columbia Colle 72.06 56 *e*P **P** **09 20 55.9 +0.6**
comp=Z,20nm,1.4s
FFC Flin Flon 72.30 34 *e*P **P** **09 20 56.4 +0.1**
FFC pmax pmax
comp=Z,17nm,1.0s
FFC Flin Flon 72.30 34 *e*P **P** **09 20 56.4 +0.1**
comp=Z,17nm,1.0s
NEY Neytrino 72.43 311 *e*P **P** **09 20 57.2 -0.4**
NEY pmax pmax
comp=Z,2.0nm,1.2s
LRM Limekiln Ridge 72.50 45 *e*P **P** **09 20 58.4 +0.4**
HLID Hailey 72.67 48 P **P** **09 20 59.2 +0.2**
baz=305
HLID Hailey 72.67 48 *e*P **P** **09 21 00.1 +1.1**
comp=Z,3.1nm,0.9s
EGMT Eagleton 72.68 42 P **P** **09 20 58.4 -0.5**
baz=307
EGMT Eagleton 72.68 42 *e*P **P** **09 20 59.2 +0.4**
comp=Z,8.9nm,1.1s
DLMT Dillon 72.68 46 *e*P **P** **09 20 59.8 +0.8**
comp=Z,8.9nm,0.9s
FCC Fort Churchill 72.75 28 *e*P **P** **09 20 58.6 -0.3**
FCC pmax pmax
comp=Z,33nm,1.2s
FCC Fort Churchill 72.75 28 *e*P **P** **09 20 58.6 -0.3**
comp=Z,33nm,1.2s
BMN Battle Mountai 72.75 52 *e*P **P** **09 21 00.5 +0.9**
BMN pmax pmax
comp=Z,17nm,1.4s
BMN Battle Mountai 72.75 52 *e*P **P** **09 21 00.5 +0.9**
comp=Z,17nm,1.4s
MCMT McKenzie Canyo 72.85 46 *e*P **P** **09 21 02.8 +2.6**
BOZ Bozeman (W) 73.06 45 P **P** **09 21 01.6 +0.3**
baz=306
BOZ Bozeman (W) 73.06 45 *e*P **P** **09 21 01.9 +0.6**
BOZ pmax pmax
comp=Z,8.0nm,0.9s
BOZ Bozeman (W) 73.06 45 *e*P **P** **09 21 01.9 +0.6**
comp=Z,8.4nm,0.9s
NV01 Mina Array Sit 73.20 54 *e*P **P** **09 21 02.8 +0.5**
NVAR Mina Array Bea 73.20 54 P **P** **09 21 02.9 +0.6**
comp=Z,7.2nm,1.0s,baz=284,slow=6.4,SNR=30
NV11 Mina Array Sit 73.29 54 *e*P **P** **09 21 03.7 +1.0**
comp=Z,9.7nm,1.2s
NACGM Naroch 73.39 328 *e* **P** **09 21 02.0 -0.8**
QLMT Earthquake Lak 73.66 46 *e*P **P** **09 21 05.9 +1.0**
YMR Madison River 74.03 46 *e*P **P** **09 21 08.2 +1.1**
comp=Z,6.4nm,0.9s
GCMT Greycliff 74.08 44 *e*P **P** **09 21 08.1 +0.8**
PKM Mcpherson Peak 74.21 58 P **P** **09 21 08.4 +0.2**
baz=305
YFT Old Faithful 74.23 46 *e*P **P** **09 21 11.2 +2.9**
comp=Z,8.8nm,0.9s
NC405 NORSAR Array S 74.30 338 *e*P P 09 21 13.1 +5.0
LKWY Lake 74.41 46 *e*P **P** **09 21 09.6 +0.2**
LKWY pmax pmax

LKWY **Lake** 74.41 46 *e*P P 09 21 09.6 +0.2
comp=Z,8.2nm,1.0s
H17A **Grant Village** 74.41 46 P P 09 21 11.5 +2.1
baz=307
H17A **Grant Village** 74.41 46 *e*P P 09 21 11.6 +2.2
comp=Z,18nm,0.9s
NC204 **NORSAR Array S** 74.45 338 *e*P P 09 21 09.6 +0.6
NB2 **NORSAR Subarra** 74.50 338 P P 09 21 09.0 -0.3
comp=Z,6.1nm,1.0s,baz=38,slow=6.2
NOA **NORSAR Array B** 74.50 338 P P 09 21 09.7 +0.3
comp=Z,3.5nm,0.9s,baz=38,slow=5.8,SNR=11
IMW **Indian Meadow** 74.51 46 *e*P P 09 21 11.2 +1.2
comp=Z,12nm,0.9s
FLWY **Flagg Ranch** 74.53 46 *e*P P 09 21 11.7 +1.7
comp=Z,15nm,1.3s
NBO02 **NORSAR Array S** 74.60 338 *e*P P 09 21 09.9 +0.1
GRAC **Grapevine Rang** 74.63 55 P P 09 21 11.2 +0.7
baz=305
HVU **Hansel Valley** 74.70 49 *e*P P 09 21 11.7 +0.8
HVU pmax pmax
comp=Z,9.0nm,1.3s
HVU **Hansel Valley** 74.70 49 *e*P P 09 21 11.7 +0.8
comp=Z,8.9nm,1.3s
MOOW **Moose Ponds** 74.71 46 *e*P P 09 21 12.1 +1.0
comp=Z,7.7nm,1.0s
RLMT **Red Lodge** 74.71 45 P P 09 21 10.9 -0.1
baz=308
RLMT **Red Lodge** 74.71 45 *e*P P 09 21 11.6 +0.6
comp=Z,13nm,1.5s
ARVC **Arvin** 74.73 57 P P 09 21 10.7 -0.3
baz=305
LOHW **Long Hollow** 74.87 46 *e*P P 09 21 13.2 +1.2
comp=Z,7.1nm,1.3s
SNOW **Snow King Moun** 74.88 47 *e*P P 09 21 13.5 +1.4
comp=Z,6.0nm,0.8s
REDW **Red Top Meadow** 74.88 47 *e*P P 09 21 13.2 +1.2
comp=Z,13nm,1.1s
DAC **Darwin (Calif)** 74.89 56 *e*P P 09 21 12.8 +0.6
DAC pmax pmax
comp=Z,6.0nm,1.1s
DAC **Darwin (Calif)** 74.89 56 *e*P P 09 21 12.8 +0.6
comp=Z,5.9nm,1.1s
R11A **Troy Canyon, C** 74.99 53 P P 09 21 12.7 0.0
baz=306
R11A **Troy Canyon, C** 74.99 53 *e*P P 09 21 13.0 +0.3
comp=Z,7.1nm,1.1s
MPMC **Manual Prospec** 75.09 56 P P 09 21 13.6 +0.3
baz=306
OSI **Osito Audit: C** 75.10 58 P P 09 21 13.6 +0.3
baz=305
AKASG **Malin Array Be** 75.10 323 P P 09 21 12.8 -0.1
comp=Z,8.4nm,1.0s,baz=43,slow=6.2,SNR=28
AKBB **Malin Array Si** 75.10 323 *e*P P 09 21 13.8 +0.9
AKBB pmax pmax
comp=Z,12nm,1.0s
AKBB **Malin Array Si** 75.10 323 *e*P P 09 21 13.8 +0.9
comp=Z,12nm,1.0s
KIEV **Kiev** 75.11 323 *e*P P 09 21 12.0 -0.9
KIEV pmax pmax
comp=Z,10.0nm,1.0s
KIEV **Kiev** 75.11 323 *e*P P 09 21 12.0 -0.9
comp=Z,10nm,1.0s
AK11 **Malin Array Si** 75.14 323 *e*P P 09 21 13.3 +0.2
BLG **Laguna Peak, P** 75.16 58 P P 09 21 14.4 +0.9
baz=305
FURC **Furnace Creek,** 75.26 55 P P 09 21 14.5 +0.5
baz=306
SFJD **Kangerlussuaq** 75.28 6 *i* P P 09 21 13.5 -0.1
comp=Z,24nm,1.1s
SFJD **Kangerlussuaq** 75.28 6 *i* P P 09 21 13.5 -0.1
SFJD pmax pmax
comp=Z,24nm,1.1s
SFJD **Kangerlussuaq** 75.28 6 *e*P P 09 21 13.9 +0.3
comp=Z,14nm,1.0s
LRMC **Laurel Mtn Rad** 75.30 57 P P 09 21 14.3 -0.1
baz=306
DGMT **Dagmar** 75.30 40 P P 09 21 14.5 +0.3
baz=310
TPNV **Topopah Spring** 75.38 55 P P 09 21 15.0 +0.1
baz=306
EDW2 **Edwards Air Fo** 75.44 57 P P 09 21 14.6 -0.6
baz=306
HWUT **Hardware Ranch** 75.53 49 *e*P P 09 21 16.8 +1.1
comp=Z,14nm,1.3s
DUG **Dugway, Tooele** 75.62 50 P P 09 21 16.1 -0.1
baz=307
DUG **Dugway, Tooele** 75.62 50 *e*P P 09 21 16.9 +0.6
DUG pmax pmax
comp=Z,8.0nm,1.0s
DUG **Dugway, Tooele** 75.62 50 *e*P P 09 21 16.9 +0.6
comp=Z,7.6nm,1.0s
PSUT **Pine Spring** 75.97 52 *e*P P 09 21 19.3 +0.9
comp=Z,5.9nm,1.1s
SHOC **Shoshone, Teco** 75.98 56 P P 09 21 17.9 -0.4
baz=306
GSC **Goldstone, Bar** 75.98 56 P P 09 21 17.4 -1.0
baz=306
BW06 **Boulder Array** 75.99 47 P P 09 21 18.1 -0.4
baz=308
BW06 **Boulder Array** 75.99 47 *e*P P 09 21 17.5 -1.0
BW06 *e*P P 09 21 18.3 -0.2
PD31 **Pinedale Array** 75.99 47 *e*P P 09 21 18.6 +0.1
PDAR **Pinedale Array** 75.99 47 P P 09 21 18.4 -0.1
comp=Z,7.7nm,0.8s,baz=267,slow=2.3,SNR=29
BFSC **Mount Baldy Ra** 76.03 58 P P 09 21 19.2 +0.5
baz=306
JLU **Jordanelle** 76.20 49 *e*P P 09 21 20.7 +1.0
comp=Z,7.5nm,1.2s
NLU **North Lily Min** 76.22 50 *e*P P 09 21 20.6 +0.9
comp=Z,3.3nm,0.9s
B26A **Jensen Ranch,** 76.35 39 P P 09 21 20.5 +0.3
baz=312
TUQ **Turquoise Moun** 76.48 56 P P 09 21 21.4 +0.1
baz=306
HEC **Hector,Ludlow** 76.57 56 P P 09 21 21.5 -0.2
baz=306
D25A **Fairfield** 76.61 40 P P 09 21 21.9 +0.3
baz=311
MURC **Murrieta** 76.72 58 P P 09 21 22.3 -0.1
baz=306
C26A **Wahner Farm, P** 76.78 39 P P 09 21 22.7 +0.1
baz=312
A28A **Rude Farm, Bot** 76.96 38 P P 09 21 23.7 +0.1
baz=313
E25A **Miller Ranch,** 77.00 41 P P 09 21 23.9 0.0
baz=311,SNR=6.3
MSU **Marysvale** 77.03 51 *e*P P 09 21 25.8 +1.4
MSU **Marysvale** 77.03 51 *e*P P 09 21 25.8 +1.4
GMRC **Granite Mounta** 77.04 56 P P 09 21 23.9 -0.5
baz=307
D26A **Manning** 77.14 40 P P 09 21 24.1 -0.6
baz=312
C27A **Sayler Ranch,** 77.16 39 P P 09 21 24.3 -0.4
baz=312
PFO **Pinyon Flats O** 77.21 58 P P 09 21 25.1 -0.3
baz=306
PFO **Pinyon Flats O** 77.21 58 *e*P P 09 21 25.7 +0.4
PFO pmax pmax
comp=Z,12nm,1.3s
PFO **Pinyon Flats O** 77.21 58 *e*P P 09 21 25.7 +0.4
comp=Z,12nm,1.3s
B28A **Dugan Ranch, T** 77.23 38 P P 09 21 24.9 -0.1
baz=313
LCMT **Little Creek M** 77.27 53 *e*P P 09 21 26.8 +1.1
comp=Z,5.2nm,1.0s
MTPU **Mount Pierson** 77.32 52 *e*P P 09 21 27.6 +1.4
comp=Z,4.9nm,0.9s
P17A **Butcher Ranch,** 77.33 50 *e*P P 09 21 26.7 +0.7
comp=Z,10nm,1.0s
F25A **Bowman** 77.34 41 P P 09 21 25.6 -0.2
baz=311
P18A **Preston Nutter** 77.53 50 *e*P P 09 21 28.2 +0.9
comp=Z,5.5nm,1.0s
KNB **Kanab** 77.54 53 *e*P P 09 21 28.6 +1.4
KNB pmax pmax
comp=Z,25nm,1.5s
KNB **Kanab** 77.54 53 *e*P P 09 21 28.6 +1.4
comp=Z,25nm,1.5s
MONP2 **Monument Peak** 77.66 58 P P 09 21 27.8 -0.2
baz=307
SRU **San Rafael Swe** 77.68 50 *e*P P 09 21 28.7 +0.7
SRU pmax pmax
comp=Z,10.0nm,0.9s
SRU **San Rafael Swe** 77.68 50 *e*P P 09 21 28.7 +0.7
comp=Z,10nm,0.9s
B29A **Wagenman Farm,** 77.70 37 P P 09 21 27.8 +0.1
baz=313

C28A **Hausauer Farms** 77.71 38 P P 09 21 27.8 0.0
baz=313
KIS **Kishinev** 77.78 321 *e*PS 09 23 54.0
KIS LRM MLR 09 49 16.0
comp=Z,1μm,16.0s
K22A **Casper** 77.80 45 P P 09 21 28.1 -0.5
baz=310
K22A **Casper** 77.80 45 *e*P P 09 21 29.0 +0.4
comp=Z,11nm,1.1s
F26A **Lodgepole** 77.81 41 P P 09 21 28.2 -0.2
baz=312,SNR=5.1
G25A **Newell** 77.85 42 P P 09 21 27.9 -0.7
baz=311
BC3 **Big Chuckawall** 77.86 57 P P 09 21 29.0 0.0
baz=307
A30A **Hoffart Farm,** 77.88 37 P P 09 21 28.4 -0.2
baz=314
E27A **Carson** 77.99 40 P P 09 21 29.4 0.0
baz=312
ULM **Lac du Bonnet** 78.08 34 P P 09 21 29.3 -0.4
comp=Z,3.3nm,0.9s,baz=306,slow=9.8,SNR=3.5
F27A **Lemmon** 78.13 41 P P 09 21 29.6 -0.6
baz=312,SNR=6.0
H25A **Fruitdale** 78.13 42 P P 09 21 29.6 -0.6
baz=311
LVV **L'vov** 78.13 325 ⇓*i*P P 09 21 30.9 +0.9
B30A **Myrvik Farm, E** 78.21 37 P P 09 21 30.1 -0.4
baz=314
G26A **Maurine** 78.22 41 P P 09 21 30.2 -0.5
baz=312,SNR=8.4
RSSD **Black Hills** 78.22 43 P P 09 21 30.4 -0.6
baz=311
PDMCI **Parker Dam,Lak** 78.33 56 P P 09 21 31.2 -0.2
baz=307
E28A **Huff** 78.33 39 P P 09 21 30.8 -0.4
baz=313
O20A **White River Ci** 78.41 48 P P 09 21 31.7 -0.3
baz=309
O20A **White River Ci** 78.41 48 *e*P P 09 21 32.4 +0.3
comp=Z,8.6nm,1.1s
Y12C **Blythe** 78.42 56 P P 09 21 31.8 -0.1
baz=307
I25A **Rochford** 78.46 43 P P 09 21 31.4 -0.8
baz=311
G27A **Dupree** 78.51 41 P P 09 21 31.8 -0.5
baz=312
B31A **Greenbush Farm** 78.55 37 P P 09 21 31.5 -0.8
baz=314
H26A **Fairpoint** 78.57 42 P P 09 21 32.3 -0.4
baz=312
C30A **Mose, Pekin** 78.66 38 P P 09 21 32.7 -0.3
baz=314
A32A **Rocking H Ranc** 78.75 36 P P 09 21 32.8 -0.6
baz=315
F28A **McLaughlin** 78.78 40 P P 09 21 33.4 -0.3
baz=313
E29A **Napoleon** 78.87 39 P P 09 21 33.7 -0.6
baz=314
PV09 **Paradox Valley** 78.91 50 *e*P P 09 21 35.8 +0.8
I26A **New Underwood** 78.92 42 P P 09 21 34.1 -0.5
baz=312
D30A **Buchanan** 78.93 38 P P 09 21 33.9 -0.6
baz=314
H27A **Howes** 78.93 42 P P 09 21 34.0 -0.6
baz=312,SNR=6.9
C31A **Landman Farms,** 78.95 37 P P 09 21 33.7 -0.9
baz=315
PV10 **Paradox Valley** 79.05 50 *e*P P 09 21 36.7 +1.0
B32A **Ashes, Strandq** 79.10 36 P P 09 21 34.8 -0.6
baz=315
BUR08 **Bucovina Ar. S** 79.12 323 *e*P P 09 21 36.6 +1.0
BURAR **Bucovina Array** 79.13 323 ⇑*i*P P 09 21 36.8 +1.1
BURAR **Bucovina Array** 79.13 323 ⇑P P 09 21 36.8 +1.1
PV05 **Paradox Valley** 79.20 50 *e*P P 09 21 37.4 +1.0
TESR **Tescani** 79.20 321 ⇓*i*P P 09 21 34.9 -1.1
A33A **Warroad** 79.24 35 P P 09 21 35.8 -0.3
baz=316
G28A **Parade** 79.24 41 P P 09 21 36.0 -0.3
baz=313
N23A **Red Feather La** 79.27 46 P P 09 21 36.9 +0.1
baz=311
N23A **Red Feather La** 79.27 46 *e*P P 09 21 37.2 +0.4
comp=Z,13nm,1.1s
F29A **Eureka** 79.28 40 P P 09 21 35.9 -0.6
baz=314
J26A **Sids Ranch, S** 79.28 43 P P 09 21 36.5 -0.2
baz=312
I27A **Quinn** 79.33 42 P P 09 21 36.4 -0.4
baz=312,SNR=7.2
CFR **Carcaliu** 79.37 320 ⇑*i*P P 09 21 37.7 +0.8
CFR **Carcaliu** 79.37 320 ⇑P P 09 21 37.7 +0.8
WUAZ **Wupatki** 79.38 53 P P 09 21 37.3 -0.1
baz=309
WUAZ **Wupatki** 79.38 53 *e*P P 09 21 38.4 +1.0
comp=Z,8.5nm,1.2s
H28A **Mission Ridge** 79.46 41 P P 09 21 37.5 0.0
baz=313
AGMN **Agassiz Nation** 79.48 36 P P 09 21 37.0 -0.5
baz=316
AGMN **Agassiz Nation** 79.48 36 *e*P P 09 21 36.9 -0.5
comp=Z,8.1nm,1.1s
PV01 **Paradox Valley** 79.49 50 *e*P P 09 21 38.7 +0.7
KOLS **Kolonicke sedl** 79.57 325 *e*P P 09 21 38.9 +0.9
KOLS *e*PP PP 09 24 41.3 +3.3
VRI **Vrincioaia** 79.61 321 ⇓*i*P P 09 21 40.4 +2.1
VRI **Vrincioaia** 79.61 321 ⇓P P 09 21 40.4 +2.1
PLOR **Plostina** 79.66 321 ⇑*i*P P 09 21 40.1 +1.5
PLOR **Plostina** 79.66 321 ⇑P P 09 21 40.1 +1.5
STHS **Stebnicka Huta** 79.68 326 *e*P P 09 21 40.0 +1.4
F30A **Leola** 79.69 39 P P 09 21 38.1 -0.6
baz=314
OJC **Ojcow** 79.72 327 *e*P P 09 21 39.6 +0.8
OJC **Ojcow** 79.72 327 *e*P P 09 21 39.5 +0.8
OJC pmax pmax
comp=Z,35nm,1.2s
OJC **Ojcow** 79.72 327 *e*P P 09 21 39.5 +0.7
comp=Z,34nm,1.2s
E31A **Nome** 79.75 38 P P 09 21 38.7 -0.3
baz=315
SMCO **Snowmass** 79.78 48 *e*P P 09 21 40.1 +0.3
comp=Z,5.5nm,1.2s
UZH **Uzhgorod** 79.78 325 *e*P P 09 21 40.3 +1.2
UZH *e* 09 21 46.1
UZH *e* 09 21 52.3
I28A **Midland** 79.84 42 P P 09 21 39.1 -0.5
baz=313,SNR=13
J27A **Elkhorn Farm,** 79.90 43 P P 09 21 39.8 -0.2
baz=312
B34A **Aery, Baudette** 79.91 35 P P 09 21 39.1 -0.7
baz=316
C33A **Trail** 79.91 36 P P 09 21 39.0 -0.9
baz=316
H29A **Onida** 79.91 41 P P 09 21 39.6 -0.3
baz=313,SNR=5.6
ARCR **ARCALIA** 79.92 323 ⇓*i*P P 09 21 41.5 +1.6
CRVS **Cervenica-Dubn** 79.96 326 *e*P P 09 21 41.0 +0.9
BR131 **Keskin Array S** 79.97 313 *e*P P 09 21 41.9 +1.4
BRTR **Keskin Array B** 79.97 313 P P 09 21 41.3 +0.8
comp=Z,2.1nm,1.0s,baz=122,slow=4.5,SNR=13
BRTR **Keskin Array B** 79.97 313 *e*P P 09 21 41.2 +0.8
BRTR pmax pmax
comp=Z,3.0nm,1.1s
X16A **Lo Mia Camp, P** 80.02 54 *e*P P 09 21 41.6 +0.6
comp=Z,27nm,1.9s
F31A **Hecla** 80.06 39 P P 09 21 39.9 -0.8
baz=314
NIE **Niedzica** 80.10 326 *e*P P 09 21 42.4 +1.6
NIE **Niedzica** 80.10 326 *e*P P 09 21 42.4 +1.6
G30A **Faulkton** 80.11 40 P P 09 21 40.6 -0.4
baz=314
MVCO **Mesa Verde** 80.12 51 P P 09 21 41.6 +0.1
baz=310
MVCO **Mesa Verde** 80.12 51 *e*P P 09 21 42.2 +0.7
comp=Z,7.3nm,1.1s
ISCO **Idaho Springs** 80.17 47 P P 09 21 41.6 -0.2
baz=311
ISCO **Idaho Springs** 80.17 47 *e*P P 09 21 42.3 +0.5
ISCO pmax pmax
comp=Z,3.0nm,0.9s
ISCO **Idaho Springs** 80.17 47 *e*P P 09 21 42.3 +0.5
comp=Z,3.2nm,0.9s
J28A **Allard Ranch,** 80.20 42 P P 09 21 40.3 -1.3
baz=313,SNR=7.3
MLR **Muntele Rosu** 80.27 321 ⇓*i*P P 09 21 42.7 +0.7
MLR **Muntele Rosu** 80.27 321 ⇓P P 09 21 42.7 +0.7
MLR **Muntele Rosu** 80.27 321 *e*P P 09 21 42.8 +0.9
comp=Z,13nm,1.4s

I29A **Vivian Onida** 80.28 41 P P 09 21 41.2 -0.7
baz=314,SNR=8.0
D33A **AnnSam, Waubun** 80.32 37 P P 09 21 41.3 -0.8
baz=316
C34A **RKJ Ranch, Bem** 80.39 36 P P 09 21 41.9 -0.5
baz=316
BR231 **Keskin MP Arra** 80.40 313 *e*P P 09 21 40.9 -1.9
B35A **Bob, Littlefor** 80.42 35 P P 09 21 41.8 -0.7
baz=317
G31A **Conde** 80.52 39 P P 09 21 43.3 +0.1
baz=315
LANS **Liptovska Anna** 80.66 327 *e*P P 09 21 46.6 +2.7
D34A **Park Rapids** 80.67 36 P P 09 21 43.3 -0.7
baz=316
SUSD **Miller** 80.69 40 P P 09 21 43.8 -0.3
baz=314
J29A **Okreek** 80.69 42 P P 09 21 43.1 -1.1
baz=314,SNR=5.6
E33A **Westby DABS, E** 80.70 37 P P 09 21 43.3 -0.8
baz=316
KECS **Kecovo** 80.71 326 *e*P P 09 21 45.2 +1.1
OKC **Ostrava-Krasne** 80.71 328 *e*P P 09 21 45.0 +0.9
OKC *ex* x 09 21 57.9
OKC **Ostrava-Krasne** 80.71 328 *e*P P 09 21 45.0 +0.9
OKC *e* 09 21 57.9
KSP **Ksiaz** 80.72 329 *e*P P 09 21 44.9 +0.9
KSP **Ksiaz** 80.72 329 *e*P P 09 21 45.0 +0.9
C35A **Jirik Farms, M** 80.79 35 P P 09 21 43.7 -0.9
baz=317
S22A **4UR Ranch, Cre** 80.79 49 P P 09 21 45.4 +0.3
baz=311
S22A **4UR Ranch, Cre** 80.79 49 *e*P P 09 21 45.6 +0.5
comp=Z,8.2nm,1.1s
I30A **Oacoma** 80.81 41 P P 09 21 44.2 -0.6
baz=314,SNR=11
G32A **Webster** 80.86 39 P P 09 21 44.7 -0.3
baz=315
H31A **Wolsey** 80.91 40 P P 09 21 44.6 -0.7
baz=314
DRGR 80.92 323 ⇓*i*P P 09 21 46.8 +1.5
DRGR 80.92 323 ⇓P P 09 21 46.8 +1.5
Q24A **Divide** 80.99 47 P P 09 21 46.0 -0.2
baz=311
ARR **Arges** 81.01 321 ⇑*i*P P 09 21 48.1 +2.3
MORC **Moravsky Berou** 81.01 328 ⇓*i*P P 09 21 47.5 +1.7
MORC **Moravsky Berou** 81.01 328 ⇓P P 09 21 47.5 +1.7
MORC **Moravsky Berou** 81.01 328 *e*P P 09 21 46.9 +1.2
comp=Z,70nm,1.1s
F33A **5 Mile Ranch,** 81.04 38 P P 09 21 45.5 -0.4
baz=316
DPC **Dobruska-Polom** 81.08 329 *e*P P 09 21 47.0 +0.9
DPC *e*pP PcP 09 21 50.8 -1.7
DPC *e*sP sP 09 21 57.7 -0.1
DPC *ex* x 09 22 00.0
DPC *e*PP PP 09 24 52.5 +2.0
DPC **Dobruska-Polom** 81.08 329 *e*P P 09 21 47.0 +0.9
DPC *e* 09 21 57.7
DPC *e* 09 22 00.0
DPC *e* 09 24 52.5
E34A **Wadena** 81.09 37 P P 09 21 45.7 -0.5
baz=316
KRLC **Kraliky** 81.10 329 *e*P P 09 21 47.2 +0.9
KRLC *ex* x 09 22 00.1
KRLC **Kraliky** 81.10 329 *e*P P 09 21 47.2 +0.9
KRLC *e* 09 22 00.1
J30A **Dallas** 81.19 41 P P 09 21 46.0 -0.8
baz=314,SNR=5.4
D35A **Remer** 81.21 36 P P 09 21 46.2 -0.6
baz=317
C36A **Pine Crest Far** 81.27 35 P P 09 21 46.0 -1.1
baz=318
PSZ **Piszkesteto** 81.39 326 ⇓*i*P P 09 21 48.6 +0.8
PSZ **Piszkesteto** 81.39 326 ⇓P P 09 21 48.6 +0.8
PSZ **Piszkesteto** 81.39 326 *e*P P 09 21 48.8 +0.9
comp=Z,28nm,1.2s
H32A **Carlson Farm,** 81.42 39 P P 09 21 47.8 -0.2
baz=315
G33A **Ortonville** 81.43 38 P P 09 21 47.7 -0.3
baz=316
VYHS **Vyhne** 81.43 327 *e*P P 09 21 49.1 +1.1
D36A **Goodland** 81.55 35 P P 09 21 48.2 -0.4
baz=318
F34A **Alexandria** 81.57 37 P P 09 21 48.1 -0.7
baz=316
K30A **Basset** 81.58 42 P P 09 21 48.7 -0.2
baz=314,SNR=6.7
C37A **Embarrass** 81.58 34 P P 09 21 48.0 -0.8
baz=318
SDCO **Great Sand Dun** 81.59 49 P P 09 21 49.3 -0.1
baz=311
SDCO **Great Sand Dun** 81.59 49 *e*P P 09 21 50.2 +0.8
comp=Z,6.4nm,1.3s
J31A **Geddes** 81.61 41 P P 09 21 48.8 -0.2
baz=314
BRG **Berggiesshubel** 81.63 331 *e*P P 09 21 49.5 +0.5
comp=Z,13nm,1.1s
BRG *e* 09 22 02.2
comp=Z,8.6nm,1.1s
H33A **Prehn Over Nor** 81.64 39 P P 09 21 49.0 -0.2
baz=316
CLL **Collm** 81.65 331 ⇓*i*P P 09 21 49.1 +0.1
comp=Z,24nm,1.1s
CLL *i* 09 21 52.3
CLL *i* 09 22 02.0
CLL *e*(PP) 09 25 01.0
CLL Lm MLR 09 57 00.0
comp=Z,300nm,18.6s
CLL **Collm** 81.65 331 ⇓*i*P P 09 21 49.1 +0.1
CLL *i* 09 22 02.0
CLL pmax pmax
comp=Z,24nm,1.1s
CLL MLR MLR
comp=Z,300nm,18.6s
CLL **Collm** 81.65 331 *e*P P 09 21 48.5 -0.5
comp=Z,22nm,1.0s
EYMN **Ely** 81.73 34 P P 09 21 49.4 -0.1
baz=319
EYMN **Ely** 81.73 34 *e*P P 09 21 52.6 +3.0
comp=Z,21nm,1.4s
VRAC **Vranov** 81.77 328 ⇓*i*P P 09 21 51.0 +1.2
VRAC **Vranov** 81.77 328 ⇓P P 09 21 51.0 +1.2
TUC **Tucson** 81.77 56 P P 09 21 50.2 0.0
baz=309
G34A **Benson** 81.78 38 P P 09 21 49.6 -0.3
baz=316
F35A **Swanville** 81.85 37 P P 09 21 49.8 -0.4
baz=317
D37A **Cotton** 81.90 35 P P 09 21 50.6 +0.1
baz=318
E36A **McGregor** 81.99 36 P P 09 21 50.2 -0.8
baz=318
C38A **Sawbill Land.** 82.00 34 P P 09 21 50.1 -0.9
baz=319
J32A **Parkston** 82.01 40 P P 09 21 50.6 -0.6
baz=315
SMOL **Smolenice** 82.03 327 *e*P P 09 21 53.5 +2.4
I33A **Coleman** 82.07 39 P P 09 21 51.2 -0.2
baz=316
K31A **O'Neill** 82.07 41 P P 09 21 50.9 -0.6
baz=315,SNR=8.8
PRU **Pruhonice** 82.08 330 *e*P P 09 21 52.1 +0.7
PRU *ex* x 09 22 05.0
PRU **Pruhonice** 82.08 330 *e*P P 09 21 52.1 +0.7
PRU *e* 09 22 05.0
H34A **Spellman Lake,** 82.13 38 P P 09 21 50.9 -0.8
baz=316
TREC **Trest** 82.24 329 *e*P P 09 21 53.0 +0.8
TREC *ex* x 09 22 05.8
TREC **Trest** 82.24 329 *e*P P 09 21 53.0 +0.8
TREC *e* 09 22 05.8
L31A **Butterfield Fa** 82.33 42 P P 09 21 52.4 -0.5
baz=315,SNR=12
F36A **Milaca** 82.35 36 P P 09 21 52.3 -0.5
baz=318
G35A **Watkins** 82.36 37 P P 09 21 52.7 -0.2
baz=317
ECSD **EROS Data Cent** 82.38 39 P P 09 21 52.6 -0.5
baz=316
ECSD **EROS Data Cent** 82.38 39 *e*P P 09 21 52.5 -0.6
comp=Z,6.9nm,0.9s
KSCO **Kaye Shedlock'** 82.42 46 P P 09 21 53.4 -0.1
baz=313
C39A **Grand Marais** 82.43 33 P P 09 21 53.0 -0.3
baz=320
K32A **Verdigre** 82.45 41 P P 09 21 53.4 -0.1
baz=315

I34A **Hadley** 82.54 39 P P 09 21 53.3 -0.6
baz=316
H35A **Sunnyside Ranc** 82.57 38 P P 09 21 54.1 +0.1
baz=317
T25A **Trinidad** 82.64 48 P P 09 21 55.2 +0.4
baz=312
T25A **Trinidad** 82.64 48 eP P 09 21 55.5 +0.7
comp=Z,8.9nm,1.0s
NKC **Novy Kostel** 82.72 331 eP P 09 21 55.7 +1.0
NKC **Novy Kostel** 82.72 331 eP P 09 21 55.7 +1.0
ANMO **Albuquerque** 82.84 51 P P 09 21 55.9 0.0
baz=311
ANMO **Albuquerque** 82.84 51 i P P 09 21 56.0 +0.1
ANMO pmax pmax
comp=Z,11nm,1.7s
ANMO **Albuquerque** 82.84 51 eP P 09 21 56.7 +0.9
comp=Z,7.5nm,1.1s
L32A **Elgin** 82.89 41 P P 09 21 55.6 -0.2
baz=315
K33A **Hardington** 82.99 40 P P 09 21 55.8 -0.5
baz=316
H36A **Jessenland, He** 83.10 37 P P 09 21 56.8 +0.1
baz=317
I35A **Creekview Farm** 83.11 39 P P 09 21 56.0 -0.8
baz=317
CONA **Conrad Observa** 83.15 328 i P P 09 21 58.2 +1.1
comp=Z,14nm,1.1s,SNR=15
KHC **Kasperske Hory** 83.15 330 eP P 09 21 57.6 +0.6
KHC ex x 09 22 10.5
KHC ePP PP 09 25 08.6 +1.1
KHC **Kasperske Hory** 83.15 330 eP P 09 21 57.6 +0.6
KHC e 09 22 10.5
KHC e 09 25 08.6
KHC **Kasperske Hory** 83.15 330 eP P 09 21 57.6 +0.6
comp=Z,5.8nm,1.0s
SPMN **Marine on St.** 83.16 36 P P 09 21 56.7 -0.4
baz=318
N31A **Bailey Ranch,** 83.22 43 P P 09 21 56.6 -0.9
baz=315
PKSM **Moragy** 83.24 325 i P P 09 21 57.3 -0.1
PKSM **Moragy** 83.24 325 iP P 09 21 57.4 0.0
BGNE **Belgrade** 83.24 42 P P 09 21 57.2 -0.4
baz=315
BGNE **Belgrade** 83.24 42 eP P 09 21 57.8 +0.2
comp=Z,44nm,1.4s
BNM **Barren Site** 83.26 52 eP P 09 21 58.9 +0.8
GEC2 **GERESS Array S** 83.32 329 eP P 09 21 58.6 +0.6
GEC2 pmax pmax
comp=Z,7.0nm,1.1s
GEC2 **GERESS Array S** 83.32 329 eP P 09 21 58.5 +0.6
comp=Z,7.2nm,1.1s
GERES **GERESS Array B** 83.32 329 P P 09 21 58.4 +0.4
comp=Z,3.3nm,0.9s,baz=42,slow=6.2,SNR=20
GEA0 **GERESS Array S** 83.33 329 eP P 09 21 58.0 0.0
319A **Douglas** 83.35 55 eP P 09 21 59.1 +0.7
comp=Z,12nm,1.0s
J35A **Milford** 83.36 39 P P 09 21 57.8 -0.3
baz=317
K34A **Le Mars** 83.40 40 P P 09 21 57.8 -0.6
baz=316
I36A **Fitzsimmons Fa** 83.47 38 P P 09 21 57.6 -1.0
baz=317
121A **Cookes Peak, D** 83.58 54 P P 09 22 00.1 +0.4
baz=311
121A **Cookes Peak, D** 83.58 54 eP P 09 22 00.0 +0.4
comp=Z,7.1nm,0.8s
H37A **Dierke Farm, C** 83.58 37 P P 09 21 59.1 -0.2
baz=318
GRFO **Grafenberg** 83.62 331 eP P 09 22 00.7 +1.3
GRFO pmax pmax
comp=Z,22nm,1.2s
GRFO **Grafenberg** 83.62 331 eP P 09 22 00.7 +1.3
comp=Z,22nm,1.2s
I37A **Lemond, Waseca** 83.77 38 P P 09 22 00.3 +0.1
baz=318
L34A **Svendsen Farm,** 83.77 41 P P 09 21 59.6 -0.7
baz=316
K35A **Storm Lake** 83.81 39 P P 09 21 59.6 -0.8
baz=317
ARSA **Arzberg** 83.82 327 eP P 09 22 01.0 +0.6
comp=Z,5.1nm,1.0s
J36A **Seneca 1, Swea** 83.82 39 P P 09 22 00.3 -0.2
baz=317
MOA **Molln** 83.88 329 i PcP P 09 22 02.5 +1.7
comp=Z,12nm,1.4s,SNR=5.6
J37A **Redenius Farm,** 84.22 38 P P 09 22 02.2 -0.3
baz=318
P32A **Huiting Farm,** 84.26 43 P P 09 22 01.9 -0.9
baz=315
K36A **Gilmore City** 84.27 39 P P 09 22 02.6 -0.2
baz=317
I38A **Scanlan Farm,** 84.27 37 P P 09 22 02.5 -0.3
baz=318
SCHQ **Schefferville** 84.38 17 P P 09 22 03.1 0.0
comp=Z,4.9nm,0.9s,baz=287,slow=3.9,SNR=5.1
SOKA **Soboth** 84.47 327 i P P 09 22 04.2 +0.3
comp=Z,17nm,1.2s,SNR=15
M35A **Neola** 84.49 41 P P 09 22 03.5 -0.5
baz=316
N34A **Lincoln** 84.52 41 P P 09 22 03.8 -0.4
baz=316
K37A **Belmond** 84.58 39 P P 09 22 03.9 -0.5
baz=318
J38A **Wedel Dairy, R** 84.74 38 P P 09 22 04.7 -0.4
baz=318
MEM **Membach** 84.76 335 P P 09 22 05.6 +0.5
comp=Z,11nm,1.6s
OBKA **Obir** 84.81 328 i P P 09 22 05.6 0.0
comp=Z,3.1nm,0.8s
KBA **Koelnbreinsper** 84.87 329 i PcP P 09 22 07.5 +1.5
comp=Z,12nm,1.6s,SNR=6.7
P33A **Williams Farm,** 84.88 43 P P 09 22 05.2 -0.8
baz=316
O34A **Beatrice** 84.89 42 P P 09 22 05.0 -1.0
baz=316
N35A **Tabor** 84.95 41 P P 09 22 06.6 +0.3
baz=317
M36A **Felix, Anita** 84.96 40 P P 09 22 06.2 -0.1
baz=317
L37A **Phoenix Point,** 85.00 39 P P 09 22 06.3 -0.2
baz=318
MYKA **Terra Mystica** 85.10 328 eP P 09 22 06.8 -0.3
comp=Z,6.2nm,1.0s
Q33A **Connelly Farm,** 85.12 43 P P 09 22 06.3 -0.9
baz=315
STU **Stuttgart** 85.14 332 eP P 09 22 07.3 +0.2
STU pmax pmax
comp=Z,22nm,1.0s
STU **Stuttgart** 85.14 332 eP P 09 22 07.3 +0.2
comp=Z,22nm,1.0s
BCLA **Clavier** 85.16 335 P P 09 22 07.7 +0.6
comp=Z,11nm,1.4s
CWF **Charnwood Fore** 85.17 340 eP P 09 22 08.6 +1.5
comp=Z,18nm,1.2s
O35A **Humboldt** 85.24 42 P P 09 22 06.8 -1.0
baz=316
P34A **Walnut Farm, R** 85.27 43 P P 09 22 07.2 -0.7
baz=316,SNR=5.1
N36A **Muff Farm, Cla** 85.34 41 P P 09 22 07.9 -0.3
baz=317
M37A **Trindle Farm,** 85.37 40 P P 09 22 07.5 -0.8
baz=318
L38A **Oak Wood Farm,** 85.38 39 P P 09 22 07.3 -1.1
baz=318
SNF **Seneffe** 85.42 335 P P 09 22 09.0 +0.6
ABTA **Abfaltersbach** 85.48 329 eP P 09 22 07.8 -1.2
comp=Z,7.5nm,1.3s
LANF **Langenberg** 85.49 333 eP P 09 22 09.8 +1.0
WLF **Walferdange** 85.50 334 P P 09 22 10.7 +1.8
comp=Z,12nm,1.7s
WLF **Walferdange** 85.50 334 eP P 09 22 10.4 +1.6
WLF pmax pmax
comp=Z,33nm,1.5s
WLF **Walferdange** 85.50 334 eP P 09 22 10.4 +1.6
comp=Z,33nm,1.5s
MOTA **Moosalm** 85.57 330 i PcP P 09 22 10.5 +1.1
comp=Z,11nm,1.0s,SNR=6.9
RETA **Reutte** 85.59 330 i P P 09 22 09.8 +0.4
comp=Z,20nm,1.1s,SNR=9.8
MNTX **Cornudas Mount** 85.66 53 P P 09 22 09.6 -0.4
baz=312
MNTX **Cornudas Mount** 85.66 53 eP P 09 22 10.3 +0.3
comp=Z,7.6nm,1.1s
Q34A **Chapman** 85.66 43 P P 09 22 10.1 +0.3
baz=316
DOU **Dourbes** 85.67 335 P P 09 22 10.2 +0.6
KSU1 **Kansas State U** 85.71 43 P P 09 22 09.3 -0.9
baz=316
KSU1 **Kansas State U** 85.71 43 eP P 09 22 09.6 -0.5
comp=Z,12nm,0.9s
P35A **Duane Minner,** 85.72 42 P P 09 22 09.3 -0.9
baz=316
MSTX **Muleshoe** 85.76 50 P P 09 22 09.9 -0.6
baz=313
MSTX **Muleshoe** 85.76 50 eP P 09 22 10.6 0.0
comp=Z,8.2nm,1.2s
N37A **Lee Faris, Mou** 85.77 40 P P 09 22 10.4 0.0
baz=318
AMTX **Amarillo** 85.79 49 P P 09 22 10.2 -0.5
baz=314
T32A **Huddler Ranch,** 85.80 45 P P 09 22 10.2 -0.4
baz=315
M38A **Pleasantville** 85.80 39 P P 09 22 09.9 -0.6
baz=318
PDG **Podgorica** 85.80 322 i P P 09 22 11.1 +0.7
BFO **Black Forest** 85.83 332 i P P 09 22 11.1 +0.5
BFO **Black Forest** 85.83 332 eP P 09 22 10.9 +0.3
comp=Z,22nm,1.1s
O36A **Bolckow** 85.84 41 P P 09 22 10.4 -0.3
baz=317
FETA **Feichten** 85.98 330 i P P 09 22 11.6 +0.1
comp=Z,10.0nm,1.1s,SNR=5.0
P36A **Good Intent, A** 86.08 42 P P 09 22 11.2 -0.7
baz=317
DAVA **Damuels** 86.10 331 i P P 09 22 12.2 +0.2
comp=Z,19nm,1.0s,SNR=7.9
Q35A **Mercer Eighty,** 86.19 43 P P 09 22 11.4 -1.1
baz=316
O37A **Wolven Farm, M** 86.24 41 P P 09 22 12.2 -0.5
baz=318
N38A **Joes South For** 86.24 40 P P 09 22 12.0 -0.7
baz=318
S34A **Willow Spring** 86.44 44 P P 09 22 13.0 -0.7
baz=316
FUORN **Ofenpass-Fuorn** 86.49 330 eP P 09 22 14.9 +0.7
comp=Z,19nm,1.0s
R35A **Emporia Munici** 86.49 43 P P 09 22 13.9 -0.1
baz=316
N39A **Derby Farms, D** 86.55 39 P P 09 22 13.7 -0.5
baz=318
P37A **Lathrop** 86.56 41 P P 09 22 13.2 -1.1
baz=317
O38A **Galt** 86.62 40 P P 09 22 14.0 -0.6
baz=318
MOF **Molkenrain** 86.68 332 eP P 09 22 15.2 +0.4
V32A **Arapaho** 86.76 46 P P 09 22 15.2 -0.2
baz=315
R36A **Gordon, Harris** 86.87 43 P P 09 22 15.5 -0.4
baz=317,SNR=5.2
T34A **McClaskey Farm** 86.89 45 P P 09 22 14.9 -1.0
baz=316
S35A **Otter Creek Ra** 86.89 44 P P 09 22 15.3 -0.6
baz=316,SNR=5.7
P38A **Dawn** 86.96 41 P P 09 22 15.6 -0.6
baz=318
O39A **Kirksville** 87.00 40 P P 09 22 15.7 -0.7
baz=318
W32A **Sentinel** 87.06 47 P P 09 22 17.0 +0.2
baz=315
V33A **Lossen Ranch,** 87.12 46 P P 09 22 17.0 -0.1
baz=315
LOMF **Lomont** 87.21 332 eP P 09 22 17.9 +0.5
S36A **Lake Cedric, C** 87.26 43 P P 09 22 17.4 -0.4
baz=317
Q38A **Cooks Store, C** 87.40 41 P P 09 22 18.2 -0.2
baz=318
O40A **La Belle** 87.43 39 P P 09 22 18.3 -0.2
baz=319
W33A **Caddo, Fort Co** 87.49 47 P P 09 22 19.1 +0.2
baz=315
X32A **Elmer** 87.53 48 P P 09 22 19.1 0.0
baz=315
V34A **Guthrie** 87.55 46 P P 09 22 18.5 -0.6
baz=316
V34A **Guthrie** 87.55 46 eP P 09 22 19.4 +0.3
comp=Z,19nm,1.1s
T36A **Boggs Farm, Ca** 87.58 44 P P 09 22 18.7 -0.6
baz=317
WMOK **Wichita Mounta** 87.60 47 eP P 09 22 19.4 -0.1
WMOK pmax pmax
comp=Z,8.0nm,1.4s
WMOK **Wichita Mounta** 87.60 47 eP P 09 22 19.4 -0.1
comp=Z,8.0nm,1.4s
U35A **Pawnee** 87.61 45 P P 09 22 18.8 -0.6
baz=316
S37A **Fort Scott** 87.65 43 P P 09 22 19.0 -0.6
baz=317
Q39A **Willow Grove F** 87.67 41 P P 09 22 19.5 -0.2
baz=318
P40A **Paris** 87.79 40 P P 09 22 19.8 -0.5
baz=319
R38A **Fenwick Farm,** 87.83 42 P P 09 22 19.7 -0.7
baz=318
W34A **Bridge Creek,** 87.83 46 P P 09 22 20.9 +0.3
baz=316
X33A **Lawton** 87.90 47 P P 09 22 20.4 -0.5
baz=315
T37A **Cheneyville 18** 88.06 43 P P 09 22 20.8 -0.7
baz=317
U36A **Oologah** 88.15 44 P P 09 22 21.6 -0.4
baz=317
Q40A **Laux Farm, Aux** 88.18 40 P P 09 22 21.5 -0.6
baz=319
R39A **Chumby, Stover** 88.19 41 P P 09 22 20.4 -1.7
baz=318
Y33A **Hilltop Ranch,** 88.21 47 P P 09 22 21.3 -1.0
baz=315
S38A **Stockton** 88.23 42 P P 09 22 21.1 -1.2
baz=318
X34A **Smith Ranch, M** 88.25 47 P P 09 22 23.1 +0.6
baz=316
TX31 **Lajitas Ar. Si** 88.34 54 eP P 09 22 22.8 -0.4
TX31 eP P 09 22 22.9 -0.3
TXAR **Lajitas Array** 88.34 54 P P 09 22 23.2 0.0
comp=Z,2.8nm,0.8s,baz=300,slow=3.1,SNR=35
HDIL **Hopedale** 88.38 38 P P 09 22 22.3 -0.7
baz=320
MATE **Matera** 88.40 323 i P P 09 22 22.7 -0.3
W35A **Tecumseh** 88.40 46 P P 09 22 22.5 -0.8
baz=316
TUL1 **Leonard** 88.47 44 P P 09 22 23.1 -0.4
baz=317
T38A **Diamond** 88.47 43 P P 09 22 23.1 -0.4
baz=318
V36A **Jenks** 88.47 45 P P 09 22 23.3 -0.2
baz=317
U37A **Salina** 88.48 44 P P 09 22 22.9 -0.6
baz=317
S39A **Bolivar** 88.50 42 P P 09 22 22.5 -1.1
baz=318
ABTX **Abilene, Hawle** 88.58 49 P P 09 22 23.7 -0.4
baz=315
R40A **Maddies Statio** 88.61 41 P P 09 22 23.4 -0.7
baz=319
Z33A **Whitaker Ranch** 88.64 48 P P 09 22 23.0 -1.4
baz=315
HPIG 88.64 57 eP P 09 22 24.7 -0.1
comp=Z,5.5nm,1.1s
Y34A **Reagan Ranch,** 88.75 47 P P 09 22 24.5 -0.4
baz=316
W36A **Wetumka** 88.78 45 P P 09 22 24.6 -0.4
baz=316
V37A **Hulbert** 88.85 44 P P 09 22 24.7 -0.6
baz=317
U38A **Gravette** 88.85 43 P P 09 22 24.8 -0.5
baz=318
X35A **Drake** 88.89 46 P P 09 22 25.1 -0.4
baz=316
T39A **Clever** 88.97 42 P P 09 22 25.6 -0.3
baz=318
S40A **Lebanon** 89.00 41 P P 09 22 25.3 -0.8
baz=319
133A **Hamilton Ranch** 89.02 49 P P 09 22 25.7 -0.5
baz=315
Z34A **Collier Ranch,** 89.08 47 P P 09 22 25.8 -0.6
baz=316
X36A **Centrahoma** 89.12 46 P P 09 22 26.6 0.0
baz=316
W37B **Quinton** 89.23 45 P P 09 22 25.7 -1.4
baz=317
V38A **Canehill** 89.27 44 P P 09 22 26.6 -0.6
baz=318,SNR=5.6
T40A **Mansfield** 89.33 42 P P 09 22 26.4 -1.1
baz=319
U39A **Green Forest** 89.39 43 P P 09 22 27.0 -0.9
baz=318
233A **Rising Star** 89.45 49 P P 09 22 27.8 -0.4
baz=315
Z35A **Perchaven, San** 89.49 47 P P 09 22 28.1 -0.3
baz=316
134A **White-Moore Ra** 89.55 48 P P 09 22 28.3 -0.4
baz=316
SFIN **Lafayette** 89.57 36 P P 09 22 28.1 -0.5
baz=322
X37A **Clayton** 89.66 45 P P 09 22 28.5 -0.6
baz=317
V39A **Pettigrew** 89.70 43 P P 09 22 28.7 -0.7
baz=318
U40A **Yellville** 89.74 42 P P 09 22 28.6 -0.9
baz=318,SNR=7.4
W38A **Poteau** 89.79 44 P P 09 22 29.8 +0.1
baz=317
333A **Richland Sprin** 89.89 50 P P 09 22 30.0 -0.3
baz=315
X38A **Whitesboro** 89.91 45 P P 09 22 30.3 0.0
baz=317
234A **Clairette** 89.92 49 P P 09 22 30.2 -0.2
baz=316
Y37A **Hugo** 89.96 46 P P 09 22 30.4 -0.1
baz=317
JCT **Junction City** 89.98 51 P P 09 22 30.3 -0.5
baz=315
Z36A **Blue Ridge** 90.01 47 P P 09 22 30.3 -0.5
baz=316
W39A **Magazine** 90.10 44 P P 09 22 30.9 -0.3
baz=318
V40A **Witts Springs** 90.17 43 P P 09 22 31.1 -0.4
baz=318
433A **Art** 90.22 50 P P 09 22 31.5 -0.4
baz=315
WHTX **Lake Whitney,** 90.33 48 P P 09 22 32.2 -0.1
baz=316
334A **Lometa** 90.33 49 P P 09 22 32.1 -0.3
baz=315
OLIL **Olney** 90.37 38 eP P 09 22 32.7 +0.4
comp=Z,15nm,1.1s
X39A **Fountain Ranch** 90.42 44 P P 09 22 32.8 +0.1
baz=318
W40A **Ferguson Farm,** 90.49 43 P P 09 22 32.8 -0.2
baz=318
434A **Burnet** 90.68 49 P P 09 22 33.1 -0.9
baz=315
MIAR **Mount Ida** 90.70 44 P P 09 22 33.2 -0.8
baz=318,SNR=7.2
MIAR **Mount Ida** 90.70 44 eP P 09 22 33.7 -0.3
MIAR pmax pmax
comp=Z,15nm,1.1s
MIAR **Mount Ida** 90.70 44 eP P 09 22 33.7 -0.3
comp=Z,15nm,1.1s
X201 **Greenbrier Sit** 90.80 43 eP P 09 22 34.3 -0.2
comp=Z,9.5nm,1.1s
X301 **Greenbrier Sit** 90.82 43 eP P 09 22 34.8 +0.2
comp=Z,9.2nm,1.0s
WHAR **Wooly Hollow** 90.84 43 eP P 09 22 34.5 -0.1
comp=Z,14nm,1.0s
Y39A **Lockesburg** 90.86 45 P P 09 22 34.7 0.0
baz=318
W41B **Gary Mavity, V** 90.95 43 P P 09 22 33.9 -1.2
baz=319
534A **Blanco** 91.11 50 P P 09 22 35.3 -0.7
baz=315
435B **Jarrell** 91.12 49 P P 09 22 35.2 -0.8
baz=316
X40A **Basin Creek Fa** 91.15 44 P P 09 22 34.8 -1.3
baz=318
138A **Matatall Enter** 91.23 46 P P 09 22 35.5 -1.0
baz=317
Y40A **Okolona** 91.25 44 P P 09 22 35.7 -0.9
baz=318
Z39A **Irene McRaven,** 91.32 45 P P 09 22 36.9 0.0
baz=318
832A **Faith Ranch, C** 91.41 52 P P 09 22 36.6 -0.8
baz=314
733A **Divot King Ran** 91.53 52 P P 09 22 37.4 -0.5
baz=315
139A **Bunkhouse Ranc** 91.61 46 P P 09 22 38.4 +0.1
baz=318
833A **Chaparral WMA,** 91.74 52 P P 09 22 39.3 +0.3
baz=315
Z40A **Long Farm, Mag** 91.75 45 P P 09 22 38.8 0.0
baz=318
Y42A **Garnett, Star** 92.21 43 P P 09 22 40.7 -0.3
baz=319
933A **Laredo** 92.32 52 P P 09 22 41.9 +0.3
baz=315
636A **Smothers Creek** 92.36 50 P P 09 22 41.1 -0.6
baz=316
034A **Hebbronville** 93.08 52 P P 09 22 45.3 +0.2
baz=315
ZAIG **Zacatecas** 93.52 58 eP P 09 22 48.5 +1.0
comp=Z,9.4nm,1.2s
540A **Vidor** 93.67 47 P P 09 22 46.5 -1.3
baz=318
Y46A **Houston** 93.75 42 P P 09 22 46.6 -1.4
baz=321
244A **Avery, Jackson** 94.17 44 P P 09 22 49.8 -0.2
baz=320
TORD **Torodi Ar. Bea** 118.34 317 PKP PKPdf 09 28 19.9 +0.9
comp=Z,0.5nm,0.8s,baz=37,slow=2.9,SNR=3.2
QSPA **South Pole Qui** 127.21 180 ePKPdf PKPdf 09 28 34.0 -0.4
SAML **Samuel** 142.57 48 ePKPpre PKPpre 09 29 01.5
VNA2 **Neumayer--Watz** 143.25 195 PKP PKPbc 09 29 00.9 -0.3
baz=108,slow=3.4
VNA3 **Neumayer Olymp** 143.46 194 PKP PKPab 09 29 00.9 +0.2
VNA1 **Neumayer--Stat** 143.65 195 PKP PKPbc 09 29 02.3 0.0
LPAZ **La Paz** 144.82 62 PKP PKPab 09 29 07.8 -0.4
comp=Z,4.0nm,0.9s,baz=292,slow=2.1,SNR=7.3
LPAZ **La Paz** 144.82 62 PKIKP PKPab 09 29 07.8 -0.4
LPAZ pmax pmax
comp=Z,2.0nm,0.8s
LPAZ **La Paz** 144.82 62 ePKPdf PKPbc 09 29 08.7 +0.5
SIV **San Ignacio** 149.33 52 PKPbc PKPdf 09 29 18.3 +2.3
comp=Z,10nm,0.8s,baz=320,slow=1.9,SNR=13
LCO **Las Campanas** 150.07 84 ePKPbc PKPbc 09 29 22.3 +0.2

IDC ***25*** *09:20:33.2±1.1,37°38N×143°83E,h0km,mb3.6/4, mb1 3.8/7,mb1mx3.5/48,mbtmp3.8/7,ML3.7/3,Error ellipse: s-maj=34.5km s-min=21.0km az=102.0*
ISCJB ***25*** *09:20:36.3±0.8,37°43N±0°04×143°71E±0°05,h33km, mb3.7/4,Error ellipse: s-maj=6.2km s-min=5.3km az=30.6*
JMA ***25*** *09:20:37.8±0.2,37°48N×143°64E,h46km,M3.8*
ISC 25 09:20:38.0±1.2,37°44N±0°05×143°72E±0°09,h35km,n23,
σ1s47/37,mb3.8/4,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**2.13**	**299**	P	**Pn**	**09 21 11.0**	**0.0**
JIO				S	**Sn**	**09 21 35.6**	**-0.6**
JFK	**Kawauchi**	**2.27**	**269**	P	**Pn**	**09 21 13.0**	**+0.1**
JFK				eS	**Sn**	**09 21 39.0**	**-0.7**
OFUJ	**Ofunato**	**2.30**	**316**	P	**Pn**	**09 21 12.8**	**-0.6**
OFUJ				eS	**Sn**	**09 21 39.0**	**-1.5**
ONAJ	**Iwakimizuishiy**	**2.35**	**263**	S	**Sn**	**09 21 41.1**	**-0.8**
JMM	**Marumori**	**2.36**	**281**	P	**Pn**	**09 21 14.2**	**0.0**
JMM				eS	**Sn**	**09 21 41.2**	**-0.7**
JMK	**Ichinoseki**	**2.48**	**308**	P	**Pn**	**09 21 15.8**	**-0.1**
JMK				eS	**Sn**	**09 21 44.4**	**-0.5**
JOU	**Okura**	**2.59**	**292**	P	**Pn**	**09 21 17.9**	**+0.5**
JOU				S	**Sn**	**09 21 47.5**	**-0.1**
JHO	**Hitachi**	**2.65**	**253**	eS	**Sn**	**09 21 48.2**	**-0.9**
JFT	**Otama**	**2.69**	**273**	S	**Sn**	**09 21 50.8**	**+0.7**
JOM	**Ohasama**	**2.78**	**318**	P	**Pn**	**09 21 19.9**	**-0.2**
JOM				S	**Sn**	**09 21 51.8**	**-0.6**
JYK	**Kaneyama**	**3.03**	**300**	P	**Pn**	**09 21 24.3**	**+0.9**
JYK				S	**Sn**	**09 21 59.4**	**+0.9**
JANG	**Nango**	**3.40**	**330**	P	**Pn**	**09 21 27.9**	**-0.6**
JANG				eS	**Sn**	**09 22 05.5**	**-2.1**
JAG	**Ashikaga**	**3.56**	**255**	P	**Pn**	**09 21 31.5**	**+0.7**
JAG				S	**Sn**	**09 22 10.8**	**-0.8**
JRY	**Ryogami san**	**4.12**	**251**	P	**Pn**	**09 21 39.1**	**+0.6**
JRY				S	**Sn**	**09 22 23.5**	**-1.9**
JOD2	**Odawara 2**	**4.32**	**241**	eS	**Sn**	**09 22 28.5**	**-1.9**
MJAR	**Matsushiro Arr**	**4.50**	**260**	Pn	**Pn**	**09 21 45.5**	**+1.9**
	2.3nm,0.3s,baz=90,slow=15,SNR=16						
MJAR				Sn	**Sn**	**09 22 32.2**	**-2.5**
	baz=14,slow=21,SNR=2.2						
MAT	**Matsushiro**	**4.50**	**260**	P	Pn	09 21 46.2	+2.5
MAT				eS	**Sn**	**09 22 36.4**	**+1.6**
JHJ	**Hachijo jima 2**	**5.38**	**218**	Pn	**Pn**	**09 21 53.1**	**-2.6**
	4.0nm,0.3s,baz=66,slow=12,SNR=3.5						

JHJ				Sn		**Sn**	**09 22 51.9**	**-4.5**
	10.0nm,0.3s,baz=46,slow=18,SNR=4.1							
ASAJ	**Asahikawa**	**6.73**	**353**	Pn		**Pn**	**09 22 13.3**	**-0.9**
	2.6nm,0.3s,baz=205,slow=14,SNR=20							
ASAJ				Sn		**Sn**	**09 23 26.4**	**-3.2**
	0.8nm,0.3s,baz=292,slow=19,SNR=3.0							
KURBB	**Kurchatov Arra**	**47.20**	**308**	P		**P**	**09 29 07.9**	**+0.8**
	0.4nm,0.3s,baz=82,slow=8.3,SNR=4.8							
ILAR	**Eielson Array**	**48.17**	**33**	P		**P**	**09 29 15.1**	**+0.7**
	0.6nm,0.8s,baz=264,slow=6.9,SNR=6.2							
WRA	**Warramunga Arr**	**57.75**	**190**	P		**P**	**09 30 25.6**	**+0.1**
	0.6nm,0.6s,baz=11,slow=7.3,SNR=10							
ASAR	**Alice Springs**	**61.48**	**190**	P		**P**	**09 30 51.5**	**+0.4**
	0.5nm,0.9s,baz=9.2,slow=7.5,SNR=3.9							

IDC ***25*** *09:33:37.3±4.6, 35°.99N×70°.80E, h167km±30km, mb3.2/5, mb1 3.2/10, mb1mx2.9/61, mbtmp3.7/10, Error ellipse: s-maj=57.1km s-min=21.6km az=150.0*

NNC ***25*** *09:33:47.0±1.6, 36°.85N×70°.59E, h180km±26km, mb2.8, mpv3.8, Error ellipse: s-maj=19.6km s-min=12.0km az=59.0*

ISC 25 09:33:37.0±1.7, 36°.1N±0°.2×70°.8E±0°.1, h150km, n19, σ1§45/20, mb3.5/4, 7C-3D, Hindu Kush region

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
SFK	**Sufi-Kurgan**	**4.45**	**28**	⇓P		Pn	09 34 47.0	+3.8
	7.6nm,0.3s							
SFK				⇓S		**Sn**	**09 35 35.0**	**+0.1**
	15nm,0.3s							
THN	**Thein Dam**	**5.50**	**131**	*e*P		Pn	09 35 05.0	+8.0
THN				*e*S		Sn	09 36 08.0	+8.5
MNAS	**Manas**	**6.50**	**11**	⇑P		**Pn**	**09 35 12.0**	**+1.6**
	3.3nm,0.3s							
MNAS				⇑S		Sn	09 36 19.2	-4.4
	16nm,0.4s							
KK31	**Karatay Array**	**6.98**	**358**	⇑P		**Pn**	**09 35 17.5**	**+0.8**
	2.6nm,0.3s,baz=169,slow=11,SNR=95							
KK31				S		Sn	09 36 28.3	-6.5
	14nm,0.7s,baz=193,slow=26,SNR=13							
AAK	**Ala-Archa**	**7.12**	**23**	P		**Pn**	**09 35 20.6**	**+1.9**
	1.7nm,0.3s,baz=182,slow=6.6,SNR=8.7							
AAK				S		**Sn**	**09 36 36.0**	**-2.4**
	0.7nm,0.3s,baz=166,slow=24,SNR=7.7							
AAK	**Ala-Archa**	**7.12**	**23**	⇑P		**Pn**	**09 35 20.3**	**+1.7**
	2.1nm,0.4s							
AAK				⇑S		**Sn**	**09 36 35.4**	**-3.0**
	5.7nm,0.7s							
TKM2	**Tokmak 2**	**7.75**	**27**	⇑P		**Pn**	**09 35 28.7**	**+1.6**
	4.8nm,0.5s							
GEYT	**Alibeck**	**10.28**	**284**	P		**Pn**	**09 36 01.1**	**+0.4**
	0.9nm,0.3s,baz=84,slow=15,SNR=2.6							
MK31	**Makanchi Array**	**13.71**	**35**	P		**P**	**09 36 49.2**	**+0.5**
	0.3nm,0.5s,baz=202,slow=8.2,SNR=4.5							
MKAR	**Makanchi Array**	**13.71**	**35**	P		**Pn**	**09 36 46.4**	**+1.3**
	0.1nm,0.3s,baz=198,slow=7.4,SNR=4.5							
AB31	**Akbulak array**	**15.33**	**332**	⇓P		**Pn**	**09 37 06.9**	**+1.6**
	1.2nm,0.6s,baz=144,slow=11,SNR=18							
KURBB	**Kurchatov Arra**	**15.54**	**19**	P		**Pn**	**09 37 08.6**	**+0.7**
	0.0nm,0.3s,baz=192,slow=11,SNR=3.2							
AKTO	**Aktyubinsk**	**17.02**	**331**	P		**P**	**09 37 25.6**	**+0.3**
	0.3nm,0.3s,baz=132,slow=11,SNR=6.3							
AKTO	**Aktyubinsk**	**17.02**	**331**	⇑P		**P**	**09 37 25.2**	**-0.1**
	1.3nm,0.6s							
ZALV	**Zalesovo Beam**	**20.34**	**24**	P		**P**	**09 38 01.4**	**+0.1**
	0.7nm,0.3s,baz=225,slow=13,SNR=5.9							
FINES	**FINESS Array B**	**37.70**	**326**	P		**P**	**09 40 37.4**	**-0.1**
	0.4nm,0.4s,baz=114,slow=8.5,SNR=4.7							
ARCES	**ARCESS Array B**	**41.43**	**338**	P		**P**	**09 41 07.7**	**-0.6**
	1.5nm,0.9s,baz=119,slow=7.3,SNR=3.6							
TORD	**Torodi Ar. Bea**	**65.53**	**269**	P		**P**	**09 44 03.3**	**-1.3**
	0.6nm,0.6s,baz=49,slow=6.0,SNR=6.4							
YKA	**Yellowknife Ar**	**81.63**	**3**	P		**P**	**09 45 36.7**	**-1.2**
	0.1nm,0.3s,baz=354,slow=5.5,SNR=6.3							

IDC 25 09:43:01.9±3.0, 53°.68N×87°.88E, h0km, mb1 3.3/2, mb1mx3.0/54, mbtmp3.3/2, ML3.0/2, Error ellipse: s-maj=24.8km s-min=15.3km az=60.0, Southwestern Siberia

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
I46RU	**ZALESOVO INFRA**	**1.83**	**280**	*i*			09 55 50.0	
	baz=93,slow=326,SNR=48							
ZALV	**Zalesovo Beam**	**1.83**	**280**	Pg		Pn	09 43 34.7	0.0
	6.5nm,0.3s,baz=96,slow=16,SNR=85							
ZALV				Lg		Lg	09 44 00.8	
	21nm,0.3s,baz=97,slow=29,SNR=31							
KURBB	**Kurchatov Arra**	**6.52**	**246**	Pn		Pn	09 44 40.1	+1.1
	0.4nm,0.3s,baz=62,slow=14,SNR=30							
KURBB				Sn		Sn	09 45 51.8	-2.2
	0.1nm,0.3s,baz=60,slow=25,SNR=2.6							
MKAR	**Makanchi Array**	**7.77**	**210**	Pn		Pn	09 44 57.4	+1.2
	0.2nm,0.3s,baz=31,slow=14,SNR=6.0							
MKAR				Sn		Sn	09 46 24.5	-0.4
	0.3nm,0.3s,baz=30,slow=26,SNR=3.8							
MKAR				Lg		Lg	09 47 07.9	
	0.2nm,0.3s,baz=28,slow=34,SNR=3.1							

MAN 25 09:44:29, 8°.95N×125°.62E, h15km, mb4.1, ML2.9, MS2.7, 3C-2D, Mindanao

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
SCPH	**Surigao**	**0.83**	**351**	⇓*i*P		Pb	09 44 43.4	-1.9
SCPH				*i* S		Sg	09 44 55.9	-0.3
CGP	**Cagayan de Oro**	**1.03**	**242**	⇓*e*P		Pb	09 44 48.1	-0.5
CGP				*e*S		Sn	09 45 03.3	0.0
BUKP	**Musuan**	**1.20**	**207**	*e*P		Pb	09 44 51.6	+0.2
BUKP				*e*S		Sb	09 45 00.4	-6.4
DMPH	**Davao City--Mi**	**1.86**	**183**	⇑*e*P		Pb	09 45 03.3	+0.6
DMPH				*e*S		Sg	09 45 36.5	+7.6
TBP	**Tagbilaran**	**1.88**	**293**	⇑*i*P		Pn	09 45 00.5	-0.2
TBP				*i* S		Sg	09 45 28.2	-1.4
MATI	**Mati**	**2.09**	**162**	*e*P		Pn	09 45 04.0	+0.4
CTBH	**Cotabato--PC H**	**2.19**	**218**	*e*P		Pn	09 45 05.1	+0.2
PLP	**Palo**	**2.29**	**344**	⇑*i*P		Pn	09 45 06.3	+0.1
PLP				*i* S		Sb	09 45 36.3	-1.9
PAGZ	**Pagadian**	**2.47**	**244**	*e*P		Pn	09 45 10.9	+2.2

IDC ***25*** *09:48:57.3±2.9, 53°.55N×87°.72E, h0km, mb1 3.2/2, mb1mx3.0/45, mbtmp3.2/2, ML2.9/2, Error ellipse: s-maj=24.2km s-min=14.8km az=59.0*

ISC 25 09:49:01.3±3.9, 53°.6N±0°.1×87°.7E±0°.2, h35km, n6, σ1§23/9, 4C-2D, Southwestern Siberia

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
I46RU	**ZALESOVO INFRA**	**1.71**	**282**	*i*			10 00 39.8	
	baz=99,slow=326,SNR=7.8							
ZALV	**Zalesovo Beam**	**1.71**	**282**	Pg		**Pn**	**09 49 28.6**	**+0.1**
	2.6nm,0.3s,baz=103,slow=15,SNR=21							
ZALV				Lg		Lg	09 49 53.0	
	4.8nm,0.3s,baz=108,slow=25,SNR=16							
KURK	**Kurchatov**	**6.28**	**246**	⇓Pn		**Pn**	**09 50 29.5**	**-1.7**
	3.6nm,0.6s							
KURK				⇑Sn		**Sn**	**09 51 40.5**	**-1.2**
	2.9nm,0.5s							
KURK				⇑Lg		Lg	09 52 11.6	
	12nm,1.1s							
KURBB	**Kurchatov Arra**	**6.37**	**245**	Pn		**Pn**	**09 50 33.3**	**+0.7**
	0.2nm,0.3s,baz=63,slow=15,SNR=12							
KURBB				Sn		**Sn**	**09 51 46.0**	**+2.0**
	0.1nm,0.3s,baz=83,slow=23,SNR=6.7							
KURBB				Lg		Lg	09 52 18.4	
	0.1nm,0.3s,baz=63,slow=33,SNR=5.9							
MK31	**Makanchi Array**	**7.66**	**209**	⇑Pn		**Pn**	**09 50 50.3**	**0.0**
	0.3nm,0.3s,baz=24,slow=13,SNR=5.8							
MK31				⇑Sn		**Sn**	**09 52 16.0**	**+0.2**
	0.5nm,0.6s							
MK31				⇓Lg		Lg	09 52 58.4	
	4.9nm,1.1s,baz=36,slow=31,SNR=5.6							
MKAR	**Makanchi Array**	**7.66**	**209**	Pn		**Pn**	**09 50 50.6**	**+0.3**
	0.3nm,0.3s,baz=27,slow=13,SNR=5.5							
MKAR				Sn		**Sn**	**09 52 15.4**	**-0.4**
	0.2nm,0.3s,baz=27,slow=26,SNR=4.0							
MKAR				Lg		Lg	09 52 57.0	
	0.2nm,0.3s,baz=28,slow=34,SNR=9.4							

IDC 25 09:59:31.3±60.0, 19°.63S×179°.91W, h0km, mb4.1/3, mb1 4.2/3, mb1mx3.7/35, mbtmp4.1/3, Error ellipse: s-maj=1078.0km s-min=143.2km az=81.0, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
STKA	**Stephens Creek**	**36.57**	**243**	P		P	10 06 39.0	-0.1
	0.5nm,0.4s,baz=73,slow=14,SNR=2.8							
WRA	**Warramunga Arr**	**42.95**	**262**	P		P	10 07 32.5	+0.1
	1.4nm,0.3s,baz=97,slow=7.6,SNR=98							
ASAR	**Alice Springs**	**42.98**	**256**	P		P	10 07 32.2	-0.4
	2.0nm,0.5s,baz=92,slow=7.8,SNR=68							

MEX 25 10:04:45.6±0.7, 15°.41N×94°.80W, h22km±61km, MD3.7, Near coast of Oaxaca

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
HUIG	**Huatulco**	**1.31**	**286**	*e*P		Pn	10 05 06.1	-2.5
HUIG				*i* S		Sn	10 05 20.8	-4.7
PCIG		**1.55**	**79**	*i* P		Pn	10 05 08.9	-3.0
PCIG				*i* S		Sn	10 05 27.2	-4.1
TGIG		**2.11**	**50**	*e*P		Pn	10 05 17.6	-2.0
TGIG				*i* S		Sn	10 05 42.3	-3.0
VHO	**Vista Hermosa**	**2.49**	**312**	*e*P		Pn	10 05 22.0	-3.0
VHO				*e*S		Sn	10 05 52.1	-2.7

NIED ***25*** *10:06:00, 39°.70N×143°.60E, h17km, Mw4.2 Best double couple: M0 2.34000×10^15 NP1:ϕ=224.00000°, δ=29.00000°, λ=117.00000°. NP2:ϕ=14.00000°, δ=64.00000°, λ=76.00000°.*

ISCJB ***25*** *10:06:42.9±1.1, 39°.69N±0°.03×143°.59E±0°.04, h9km±7km, mb4.1/34, MS3.5/6, Error ellipse: s-maj=6.5km s-min=4.2km az=145.1*

IDC ***25*** *10:06:43.9±0.7, 39°.72N×143°.36E, h0km, mb3.9/19, mb1 4.0/23, mb1mx3.9/59, mbtmp3.9/23, ML3.7/4, MS3.5/8, Ms1 3.5/8, ms1mx3.1/41, Error ellipse: s-maj=17.5km s-min=14.8km az=109.0*

JMA ***25*** *10:06:43.5±0.3, 39°.71N×143°.58E, h14km±4km, M4.3*

MOS ***25*** *10:06:46.7±0.9, 39°.79N×143°.50E, h33km, mb4.4/13, Error ellipse: s-maj=10.0km s-min=6.3km az=95.0*

NEIC ***25*** *10:06:49.1±0.8, 39°.74N×143°.40E, h35km±7km, mb4.2/4, Error ellipse: s-maj=9.5km s-min=6.2km az=113.0*

ISC 25 10:06:43.3±1.7, 39°.73N±0°.05×143°.53E±0°.05, h0km±9km, n107, σ1§29/103, mb4.2/34, MS3.6/6, 4C, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
JTH	**Tanohata**	**1.30**	**280**	P		**Pg**	**10 07 07.7**	**-0.5**
JTH				S		**Sg**	**10 07 25.2**	**+0.2**
MIYJ	**Miyakonagasawa**	**1.33**	**264**	P		**Pg**	**10 07 08.3**	**-0.5**
MIYJ				*e*S		**Sg**	**10 07 26.0**	**0.0**
OFUJ	**Ofunato**	**1.58**	**246**	P		**Pn**	**10 07 11.9**	**-0.6**
OFUJ				*e*S		**Sn**	**10 07 33.5**	**-0.2**
JANG	**Nango**	**1.67**	**293**	P		**Pn**	**10 07 12.8**	**-1.0**
JKZ	**Kuzumaki**	**1.71**	**279**	P		**Pn**	**10 07 14.1**	**-0.3**
JOM	**Ohasama**	**1.75**	**262**	P		**Pn**	**10 07 14.9**	**+0.1**
JOM				*e*S		**Sn**	**10 07 36.4**	**-1.4**
JMK	**Ichinoseki**	**1.95**	**247**	P		**Pn**	**10 07 17.4**	**-0.2**
JIO	**Ouri**	**2.12**	**234**	P		**Pn**	**10 07 19.4**	**-0.6**
JTM	**Tenmabayashi**	**2.16**	**300**	P		**Pn**	**10 07 20.3**	**-0.1**
JTM				*e*S		**Sn**	**10 07 48.6**	**+0.7**
JRG	**Rokugo**	**2.26**	**262**	P		**Pn**	**10 07 22.5**	**+0.6**
JAH	**Hinai**	**2.27**	**282**	P		**Pn**	**10 07 22.2**	**+0.2**
JAH				*e*S		**Sb**	**10 07 52.6**	**-1.1**
ERM	**Erimo**	**2.30**	**353**	*e*P		**Pn**	**10 07 23.1**	**+0.8**
ERM	**Erimo**	**2.30**	**353**	*e*Pn		**Pb**	**10 07 24.4**	**-1.2**
JEM	**Erimo**	**2.30**	**353**	P		**Pn**	**10 07 22.6**	**+0.2**
JOT	**Ohata**	**2.51**	**312**	P		**Pn**	**10 07 25.2**	**0.0**
JYW	**Yuwa**	**2.57**	**267**	P		**Pn**	**10 07 26.8**	**+0.7**
JYK	**Kaneyama**	**2.59**	**253**	P		**Pn**	**10 07 26.9**	**+0.5**
JNBK	**Urakawa-nobuka**	**2.61**	**347**	P		**Pn**	**10 07 27.8**	**+1.1**
JOU	**Okura**	**2.62**	**239**	P		**Pn**	**10 07 27.4**	**+0.6**
JSI2	**Shiura 2**	**2.72**	**300**	P		**Pn**	**10 07 27.9**	**-0.3**
JIW	**Iwasaki**	**2.83**	**289**	P		**Pn**	**10 07 31.0**	**+1.2**
JMM	**Marumori**	**2.84**	**230**	P		**Pn**	**10 07 29.1**	**-0.7**
JYS	**Shirataka**	**3.09**	**242**	P		**Pn**	**10 07 33.7**	**+0.4**
JTB	**Tobi-shima**	**3.12**	**261**	P		**Pn**	**10 07 32.5**	**-1.2**
JFK	**Kawauchi**	**3.15**	**222**	P		**Pn**	**10 07 33.8**	**-0.3**
ASAJ	**Asahikawa**	**4.43**	**351**	Pn		**Pn**	**10 07 53.3**	**+1.5**
	3.0nm,0.3s,baz=203,slow=18,SNR=14							
ASAJ	**Asahikawa**	**4.43**	**351**	*e*Pn		**Pn**	**10 07 53.1**	**+1.4**
ASAJ				Pn		**Pn**	**10 07 53.3**	**+1.5**
YUK	**Yuzh-Kuril'sk**	**4.64**	**21**	*e*P		**Pn**	**10 07 54.6**	**+0.1**
YUK				*e*S		**Sn**	**10 08 45.2**	**-3.8**
YUK				pmax	pmax			
	comp=Z,80nm,0.6s							
YUK				pmax	pmax			
	comp=E,46nm,0.2s							
YUK				pmax	pmax			
	comp=N,113nm,0.5s							
SHO	**Shikotan**	**4.81**	**30**	*e*P		**Pn**	**10 07 55.6**	**-1.3**
SHO				*e*S		Sn	10 08 46.9	-6.4
SHO				pmax	pmax			
	comp=Z,35nm,0.5s							
SHO				pmax	pmax			
	comp=E,30nm,0.7s							
SHO				pmax	pmax			
	comp=N,16nm,0.4s							
MJAR	**Matsushiro Arr**	**5.27**	**234**	Pn		**Pn**	**10 08 04.3**	**+1.1**
	comp=N,2.8nm,0.3s,baz=41,slow=12,SNR=19							
MJAR				LR		LR	10 10 17.7	
	comp=N,264nm,20.4s,baz=40,slow=42							
MAJO	**Matsushiro**	**5.27**	**234**	*e*P		**Pn**	**10 08 04.0**	**+0.8**
MAJO	**Matsushiro**	**5.27**	**234**	*e*Pn		**Pn**	**10 08 04.5**	**+1.2**
	comp=N,49nm,0.6s							
KUR	**Kuril'sk**	**6.36**	**29**	*e*P		**Pn**	**10 08 18.7**	**+0.5**
KUR				*e*S		**Sn**	**10 09 26.8**	**-4.7**
KUR				pmax	pmax			
	comp=Z,17nm,0.5s							
KUR				pmax	pmax			
	comp=E,12nm,0.4s							
KUR				pmax	pmax			
	comp=N,11nm,0.5s							
KUR				smax	smax			
	comp=N,47nm,0.6s							
KUR				smax	smax			
	comp=E,56nm,0.6s							
YSS	**Yuzh-Sakhalins**	**7.24**	**356**	*e*P		**Pn**	**10 08 32.1**	**+1.9**
YSS				*e*S		**Sn**	**10 09 58.9**	**+5.8**
YSS				pmax	pmax			
	comp=Z,10.0nm,0.5s							
YSS				MLR	MLR			
	comp=Z,300nm,13.0s							
YSS				MLR	MLR			
	comp=N,400nm,15.0s							
YSS				MLR	MLR			
	comp=E,300nm,17.0s							
JHJ2	**Mitsune**	**7.25**	**205**	*e*Pn		**Pn**	**10 08 30.4**	**-0.1**
JHJ	**Hachijo jima 2**	**7.26**	**206**	Pn		**Pn**	**10 08 29.8**	**-0.8**
	comp=E,12nm,0.3s,baz=351,slow=21,SNR=6.2							
JHJ				Sn		Sn	10 09 44.6	-9.0
	comp=E,30nm,0.3s,baz=61,slow=22,SNR=5.6							
USRK	**Ussuriysk Ar.**	**9.68**	**301**	Pn		Pn	10 09 07.5	+3.7
	comp=E,0.6nm,0.3s,baz=102,slow=12,SNR=12							
USRK				LR		LR	10 12 46.8	
	comp=E,246nm,18.2s,baz=117,slow=38							
JNU	**Nakatsue**	**12.13**	**241**	LR		LR	10 14 34.9	
	comp=E,319nm,18.2s,baz=130,slow=39							
KSRS	**Korea Array**	**12.42**	**264**	Pn		Pn	10 09 45.5	+4.2
	comp=E,0.4nm,0.3s,baz=70,slow=14,SNR=4.6							
KSRS				LR		LR	10 14 09.0	
	comp=E,233nm,18.6s,baz=72,slow=36							
KSAR	**Wonju Array Be**	**12.46**	**264**	P		Pn	10 09 45.5	+3.8
KSAR	**Wonju Array Be**	**12.46**	**264**	Pn		Pn	10 09 45.5	+3.7
KLR	**Kul'dur**	**12.67**	**322**	Pn		**Pn**	**10 09 45.2**	**+0.6**
	comp=E,0.1nm,0.3s,baz=148,slow=13,SNR=3.6							
MA2	**Magadan**	**20.38**	**11**	P		Pn	10 11 22.9	-0.4
	comp=E,6.3nm,0.7s,baz=236,slow=5.4,SNR=6.9							
SEY	**Seymchan**	**23.84**	**10**	P		**P**	**10 11 57.6**	**-0.1**
	comp=E,4.9nm,0.8s,baz=208,slow=4.9,SNR=12							
YAK	**Yakutsk**	**23.87**	**344**	LR		LR	10 21 49.5	
	comp=E,49nm,20.8s,baz=78,slow=38							
GUMO	**Guam**	**26.07**	**177**	LR		LR	10 21 14.5	
	comp=E,36nm,21.4s,baz=36,slow=33							
BOD	**Bodaibo**	**26.24**	**323**	*e*P		**P**	**10 12 19.4**	**-0.3**
BOD				pmax	pmax			
	comp=Z,8.0nm,1.0s							
ULN	**Ulaanbaatar**	**27.35**	**299**	*e*P		**P**	**10 12 29.2**	**-0.8**
ULN				pmax	pmax			
	comp=Z,3.0nm,0.8s							
ULN	**Ulaanbaatar**	**27.35**	**299**	*e*P		**P**	**10 12 29.2**	**-0.8**
	comp=Z,2.9nm,0.8s							
SONM	**Songino Array**	**27.79**	**299**	P		**P**	**10 12 33.3**	**-0.6**
	comp=Z,1.9nm,0.6s,baz=90,slow=7.4,SNR=4.0							
H11N2	**WAKE ISLAND Hy**	**28.30**	**128**	T		T	10 43 34.1	
	baz=318,slow=75,SNR=141							
H11N1	**WAKE ISLAND Hy**	**28.31**	**128**	T		T	10 43 37.2	
	baz=318,slow=75,SNR=154							
H11N3	**WAKE ISLAND Hy**	**28.32**	**128**	T		T	10 43 37.7	
	baz=318,slow=75,SNR=146							
H11S1	**WAKE ISLAND Hy**	**29.12**	**130**	T		T	10 44 01.1	
	SNR=23							
H11S3	**WAKE ISLAND Hy**	**29.12**	**130**	T		T	10 44 34.8	
	baz=250,slow=74,SNR=17							
H11S2	**WAKE ISLAND Hy**	**29.14**	**130**	T		T	10 44 10.3	
	baz=318,slow=74,SNR=16							
TLY	**Talaya**	**29.93**	**307**	*e*P		**P**	**10 12 53.9**	**+1.1**
TLY				pmax	pmax			
	comp=Z,3.0nm,0.9s							
TLY				MLR	MLR			
	comp=Z,85nm,13.0s							
ZAK	**Zakamensk**	**30.02**	**304**	*e*P		**P**	**10 12 51.1**	**-2.6**
ZAK				pmax	pmax			
	comp=Z,4.0nm,1.4s							
ZALV	**Zalesovo Beam**	**41.39**	**310**	P		**P**	**10 14 30.9**	**+0.1**
	comp=Z,2.7nm,0.5s,baz=100,slow=7.3,SNR=11							
ZALV	**Zalesovo Beam**	**41.39**	**310**	P		**P**	**10 14 31.0**	**+0.1**
SIJI	**Sorong**	**41.94**	**199**	LR		LR	10 28 02.2	
	comp=Z,208nm,20.1s,baz=114,slow=30							
MKAR	**Makanchi Array**	**44.15**	**300**	P		**P**	**10 14 53.5**	**0.0**
	comp=Z,2.0nm,0.7s,baz=82,slow=9.9,SNR=15							
MKAR	**Makanchi Array**	**44.15**	**300**	*ce*P		P	10 14 59.4	+5.9
MKAR				pmax	pmax			
	comp=Z,3.0nm,0.7s							
KURK	**Kurchatov**	**45.63**	**306**	*e*P		**P**	**10 15 04.8**	**-0.3**
KURK				pmax	pmax			
	comp=Z,24nm,1.0s							
KURK	**Kurchatov**	**45.63**	**306**	*e*P		**P**	**10 15 04.8**	**-0.3**
	comp=Z,24nm,1.0s							
KURK				P		**P**	**10 15 05.5**	**+0.4**
KURBB	**Kurchatov Arra**	**45.70**	**306**	P		**P**	**10 15 05.5**	**-0.2**
	comp=Z,2.8nm,0.2s,baz=76,slow=8.7,SNR=15							
ILAR	**Eielson Array**	**46.33**	**34**	P		**P**	**10 15 11.6**	**+1.1**
	comp=Z,0.5nm,0.7s,baz=271,slow=6.6,SNR=6.8							
TKM2	**Tokmak 2**	**49.85**	**297**	*e*P		**P**	**10 15 38.5**	**+0.2**
TKM2				pmax	pmax			
	comp=Z,11nm,0.7s							
TKM2	**Tokmak 2**	**49.85**	**297**	*e*P		**P**	**10 15 38.5**	**+0.2**
	comp=Z,11nm,0.7s							
BVAR	**Borovoye Array**	**50.02**	**311**	P		**P**	**10 15 39.7**	**+0.5**
	comp=Z,1.4nm,0.5s,baz=69,slow=9.2,SNR=8.1							
BRVK	**Borovoye**	**50.08**	**311**	⇑*e*P		**P**	**10 15 39.8**	**+0.2**
BRVK				pmax	pmax			
	comp=Z,2.0nm,1.2s							
AAK	**Ala-Archa**	**50.71**	**297**	*i* P		**P**	**10 15 43.1**	**-1.7**
AAK				pmax	pmax			
	comp=Z,3.0nm,0.7s							
EKS2	**Erkin-Say**	**51.19**	**297**	*e*P		**P**	**10 15 48.4**	**+0.1**
EKS2				pmax	pmax			
	comp=Z,4.0nm,0.7s							
EKS2	**Erkin-Say**	**51.19**	**297**	*e*P		**P**	**10 15 48.4**	**+0.1**
	comp=Z,3.7nm,0.7s							
INK	**Inuvik**	**51.23**	**28**	P		**P**	**10 15 50.0**	**+1.9**
	comp=Z,0.6nm,0.7s,baz=291,slow=4.8,SNR=5.1							
INK	**Inuvik**	**51.23**	**28**	P		**P**	**10 15 50.0**	**+1.9**
KKAR	**Karatay Array**	**53.24**	**299**	*e*P		**P**	**10 16 03.1**	**-0.4**
KKAR				pmax	pmax			
	comp=Z,1.0nm,0.6s							
KKAR	**Karatay Array**	**53.24**	**299**	*e*P		**P**	**10 16 03.1**	**-0.4**
	comp=Z,0.7nm,0.6s							
ARU	**Arti**	**55.46**	**318**	*c i*P		**P**	**10 16 19.3**	**-0.1**
ARU							10 18 22.1	
ARU				S		**S**	**10 24 03.2**	**-1.8**
ARU				SS		**SS**	**10 27 46.4**	**-2.6**
ARU				pmax	pmax			
	comp=Z,8.0nm,1.7s							
ABKAR	**Akbulak array**	**57.49**	**309**	*e*P		**P**	**10 16 33.9**	**0.0**
	comp=Z,3.0nm,0.6s							
AKTO	**Aktyubinsk**	**58.13**	**311**	P		**P**	**10 16 38.4**	**0.0**
	comp=Z,0.8nm,0.5s,baz=70,slow=12,SNR=5.3							
WRA	**Warramunga Arr**	**59.98**	**190**	P		**P**	**10 16 51.1**	**-0.4**
	comp=Z,1.6nm,0.8s,baz=7.6,slow=6.9,SNR=9.5							
WRA	**Warramunga Arr**	**59.98**	**190**	*i* P		**P**	**10 16 52.5**	**+1.0**
WRA				pmax	pmax			
	comp=Z,2.0nm,0.8s							
ASAR	**Alice Springs**	**63.71**	**190**	P		**P**	**10 17 17.2**	**+0.6**
	comp=Z,0.3nm,0.8s,baz=9.6,slow=5.9,SNR=7.3							
OBN	**Obninsk**	**66.93**	**323**	*e*P		**P**	**10 17 36.9**	**-0.2**
OBN				*e*			10 17 51.9	
OBN				pmax	pmax			
	comp=Z,11nm,0.9s							
FINES	**FINESS Array B**	**67.20**	**332**	P		**P**	**10 17 38.9**	**+0.2**
	com

VNDA	**Vanda**	**14.42**	**179**	Pn	Pn	10 17 03.5	+0.5
	0.2nm,0.3s,baz=358,slow=16,SNR=7.2							
VNDA				LR	LR	10 21 08.9		
	comp=Z,98nm,18.1s,baz=19,slow=31							
H01W1	**Cape Leeuwin H**	**40.19**	**292**	T	T	11 06 35.3		
	baz=147,slow=75,SNR=7.7							
H01W2	**Cape Leeuwin H**	**40.19**	**292**	T	T	11 06 35.5		
	baz=147,slow=75,SNR=7.3							
H01W3	**Cape Leeuwin H**	**40.21**	**292**	T	T	11 06 36.4		
	baz=147,slow=75,SNR=7.6							
ASAR	**Alice Springs**	**43.37**	**323**	P	P	10 21 42.0	+0.1	
	0.3nm,0.7s,baz=161,slow=8.5,SNR=5.2							
MKAR	**Makanchi Array**	**125.80**	**304**	PKP	PKPdf	10 32 39.9	-0.5	
	0.2nm,0.2s,baz=149,slow=3.4,SNR=2.4							

*ISCJB **25** 10:18:04.8±0.4, 9°.89S×0°.04×107°.71E±0°.04, h23km, mb4.2/13, MS3.4/3, Error ellipse: s-maj=6.5km s-min=4.3km az=35.6*

*IDC **25** 10:18:04.2±1.2, 9°.78S×107°.86E, h0km, mb4.2/10, mb1 4.3/11, mb1mx4.0/50, mbtmp4.2/11, ML3.5/1, MS3.3/4, Ms1 3.4/4, ms1mx2.9/36, Error ellipse: s-maj=53.9km s-min=15.2km az=52.0*

*DJA **25** 10:18:07.1±1.3, 10°.S±3°×10°.8E±°, h15km±16km, M4.8/12, mb5.2/7, mB5.3/4, MLv4.5/12, Mw(mB)4.7/4*

*NEIC **25** 10:18:08.9±1.1, 10°.14S×107°.58E, h42km±11km, mb4.6/3, Error ellipse: s-maj=14.3km s-min=9.2km az=222.0*

ISC 25 10:18:07.0±0.6, **9°.88S**±0°.05×**107°.67E**±0°.07, **h23**km, **n54,** σ1**s32**/56, **mb4.4**/13, **MS3.1**/3, **1D, South of Jawa**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
XMIS	**Christmas Isla**	**2.07**	**253**	*e*Pn	**Pn**	**10 18 38.9**	**-1.5**
CMJI	**Cimerak**	**2.22**	**20**	P	**Pn**	**10 18 39.9**	**-2.6**
CMJI				S	**Sn**	**10 19 09.0**	**-0.3**
CISI	**Cisompet, Garu**	**2.32**	**4**	P	**Pn**	**10 18 41.6**	**-2.2**
CNJI	**Cibinong**	**2.61**	**348**	P	**Pn**	**10 18 46.2**	**-1.6**
CNJI				S	**Sn**	**10 19 18.5**	**-0.4**
LEM	**Lembang**	**3.04**	**359**	Pn	**Pb**	**10 18 59.0**	**-1.5**
	61nm,0.3s,baz=302,slow=2.0,SNR=61							
LEM				Sn	**Sb**	**10 19 35.0**	**-2.2**
	14nm,0.3s,baz=343,slow=19,SNR=3.7							
LEM	**Lembang**	**3.04**	**359**	P	**Pn**	**10 18 53.6**	**-0.2**
SKJI	**Sukabumi**	**3.06**	**339**	P	**Pn**	**10 18 53.7**	**-0.4**
SKJI				S	**Sn**	**10 19 28.2**	**-1.8**
UGM	**Wanagama**	**3.44**	**55**	P	**Pn**	**10 18 56.9**	**-2.3**
CGJI	**Cibinong**	**3.79**	**329**	P	**Pn**	**10 19 04.5**	**+0.4**
WOJI	**Wonogiri, Jawa**	**3.81**	**58**	P	**Pn**	**10 19 02.2**	**-2.1**
TNG	**Tangerang**	**3.82**	**345**	P	**Pn**	**10 19 03.4**	**-1.1**
TNG				P	Pb	10 19 05.4	-8.4
PCJI	**Pacitan**	**3.85**	**64**	P	**Pn**	**10 19 02.8**	**-2.1**
SMRI	**Semarang**	**3.93**	**44**	P	**Pn**	**10 19 06.9**	**+0.9**
PWJI	**Pagerwojo**	**4.49**	**66**	P	**Pn**	**10 19 12.5**	**-1.1**
NGJI	**Ngawi**	**4.51**	**57**	P	**Pn**	**10 19 13.4**	**-0.5**
KASI	**Kota Agung**	**5.35**	**324**	P	**Pn**	**10 19 26.2**	**+0.7**
GMJI	**Gumukmas**	**5.92**	**75**	P	**Pn**	**10 19 33.7**	**+0.3**
	110nm,0.8s,0.3nm							
LWLI	**Liwa**	**6.01**	**323**	P	**Pn**	**10 19 34.8**	**+0.1**
MDSI	**Maura Dua**	**6.38**	**327**	P	**Pn**	**10 19 39.8**	**+0.1**
JAGI	**Jajag, Banyuwa**	**6.55**	**78**	P	**Pn**	**10 19 40.9**	**-1.2**
	168nm,0.6s,3µm							
ABJI	**Asem Bagus**	**6.81**	**73**	P	**Pn**	**10 19 45.6**	**0.0**
MNAI	**Manna**	**7.21**	**319**	P	**Pn**	**10 19 51.6**	**+0.5**
LHSI	**Lahat**	**7.29**	**325**	P	**Pn**	**10 19 52.1**	**-0.1**
DNP	**Denpasar**	**7.54**	**81**	P	**Pn**	**10 19 56.3**	**+0.7**
SRBI	**Singaraja**	**7.67**	**77**	P	**Pn**	**10 19 57.4**	**+0.1**
TWSI	**Taliwang, Sumb**	**9.17**	**84**	P	**Pn**	**10 20 18.2**	**+0.3**
	94nm,0.7s,1µm							
PLAI	**Plampang**	**10.03**	**85**	P	**Pn**	**10 20 28.6**	**-1.2**
	147nm,0.8s,1µm							
KAPI	**Kappang**	**12.92**	**69**	LR	LR	10 27 06.3		
	comp=Z,88nm,18.0s,baz=248,slow=43							
KAPI	**Kappang**	**12.92**	**69**	Pn	Pn	10 21 12.6	+3.2	
TTSI	**Tana Toraja**	**13.85**	**61**	P	P	10 21 35.6	+5.4	
MBWA	**Marble Bar**	**16.14**	**135**	*e*Pn	**Pn**	**10 21 50.1**	**-2.4**	
MRSI	**Marisa**	**17.54**	**55**	P	**Pn**	**10 22 10.1**	**-0.1**	
FITZ	**Fitzroy Crossi**	**19.24**	**117**	P	**P**	**10 22 29.1**	**-0.8**	
	0.1nm,0.3s,baz=319,slow=9.3,SNR=3.5							
FITZ	**Fitzroy Crossi**	**19.24**	**117**	P	**P**	**10 22 29.1**	**-0.8**	
FITZ				P	**Pn**	**10 22 30.4**	**-0.6**	
SANI	**Sanana**	**19.80**	**68**	P	**Pn**	**10 22 39.4**	**+1.7**	
LBMI	**Labuha**	**21.76**	**66**	P	**P**	**10 23 01.1**	**+3.8**	
WRA	**Warramunga Arr**	**27.61**	**114**	P	**P**	**10 23 52.2**	**-0.7**	
	2.0nm,0.9s,baz=285,slow=11,SNR=12							
WRA				PcP	**PcP**	**10 27 11.0**	**+0.6**	
	0.5nm,0.6s,baz=299,slow=2.1,SNR=5.1							
ASAR	**Alice Springs**	**28.55**	**122**	P	**P**	**10 24 01.2**	**-0.1**	
	1.2nm,0.6s,baz=297,slow=8.7,SNR=27							
ASAR				PcP	**PcP**	**10 27 13.4**	**+0.7**	
	0.6nm,0.8s,baz=284,slow=2.5,SNR=4.6							
CMAR	**Chiang Mai Arr**	**29.45**	**343**	P	**P**	**10 24 09.9**	**+0.7**	
	0.9nm,0.3s,baz=174,slow=7.9,SNR=6.7							
CMAR				LR	LR	10 38 41.8		
	comp=Z,40nm,18.7s,baz=138,slow=42							
STKA	**Stephens Creek**	**38.26**	**130**	P	**P**	**10 25 26.0**	**+0.3**	
	3.5nm,0.5s,baz=307,slow=8.8,SNR=23							
KSRS	**Korea Array**	**50.77**	**21**	LR	LR	10 50 27.0		
	comp=Z,16nm,18.2s,baz=160,slow=38							
SONM	**Songino Array**	**57.47**	**359**	P	**P**	**10 27 55.5**	**+1.2**	
	2.9nm,0.8s,baz=159,slow=6.3,SNR=4.4							
ULN	**Ulaanbaatar**	**57.49**	**360**	*e*P	**P**	**10 27 54.6**	**+0.2**	
	3.5nm,0.6s							
TKM2	**Tokmak 2**	**60.16**	**333**	*e*P	**P**	**10 28 15.4**	**+2.2**	
	4.5nm,0.9s							
MKAR	**Makanchi Array**	**60.80**	**340**	P	**P**	**10 28 17.9**	**+0.7**	
	3.4nm,0.8s,baz=146,slow=7.6,SNR=20							
KLR	**Kul'dur**	**62.55**	**18**	P	**P**	**10 28 27.4**	**-1.6**	
	2.1nm,0.6s,baz=242,slow=4.6,SNR=8.3							
ZALV	**Zalesovo Beam**	**66.47**	**346**	P	**P**	**10 28 56.9**	**+2.4**	
	0.5nm,0.4s,baz=129,slow=4.7,SNR=3.9							
ABKAR	**Akbulak array**	**72.21**	**329**	*e*P	**P**	**10 29 30.3**	**+0.1**	
	3.7nm,0.7s							
SYO	**Syowa Base**	**73.04**	**200**	‖*e*P	**P**	**10 29 34.8**	**0.0**	
SEY	**Seymchan**	**80.29**	**19**	P	**P**	**10 30 15.6**	**-0.2**	
	0.7nm,0.5s,baz=62,slow=22,SNR=4.7							
BRTR	**Keskin Array B**	**84.23**	**312**	P	**P**	**10 30 37.0**	**-0.1**	
	0.9nm,0.8s,baz=133,slow=8.1,SNR=4.6							
ARCES	**ARCESS Array B**	**96.45**	**339**	LR	LR	11 21 44.7		
	comp=Z,46nm,18.3s,baz=229,slow=40							
YKA	**Yellowknife Ar**	**119.31**	**21**	PKP	**PKPdf**	**10 36 53.6**	**-0.5**	
	0.1nm,0.5s,baz=327,slow=2.0,SNR=5.7							
TXAR	**Lajitas Array**	**144.89**	**52**	PKP	**PKPdf**	**10 37 43.5**	**+0.4**	
	0.5nm,0.7s,baz=294,slow=0.9,SNR=5.8							

*NIED **25** 10:22:00, 36°.20N×141°.00E, h20km, Mw3.7 Best double couple: M₀4.21000×10¹⁴ NP1:φs32.00000°, δ32.00000°, λ-62.00000°. NP2:φs180.00000°, δ62.00000°, λ-106.00000°.*

*IDC **25** 10:22:35.3±0.7, 36°.11N×141°.08E, h0km, mb3.7/11, mb1 3.9/13, mb1mx3.7/59, mbtmp3.7/13, ML3.5/2, Error ellipse: s-maj=23.3km s-min=18.1km az=114.0*

*JMA **25** 10:22:38.2, 36°.16N×140°.99E, h39km±1km, M3.9*

JMA Felt II J1.

ISC 25 10:22:36.4±1.5, **36°.26N**±0°.04×**141°.01E**±0°.06, **h5**km±10km, **n23,** σ0**s96**/28, **mb3.8**/11, **Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JHO	**Hitachi**	**0.50**	**315**	P	**Pn**	**10 22 49.4**	**-0.8**
JHO				S	**Sn**	**10 22 57.8**	**-1.5**
CHOJ	**Chosi**	**0.57**	**193**	P	**Pb**	**10 22 48.5**	**-0.3**
CHOJ				S	**Sg**	**10 22 55.2**	**+0.5**
JYT	**Yasato**	**0.66**	**268**	P	**Pb**	**10 22 50.8**	**+0.4**
JYT				S	**Sb**	**10 23 00.2**	**+0.3**
ONAJ	**Iwakimizuishiy**	**0.86**	**349**	P	**Pn**	**10 22 54.7**	**-0.5**
JFK	**Kawauchi**	**1.11**	**354**	P	**Pb**	**10 22 58.0**	**-0.2**
JFK				S	**Sg**	**10 23 11.9**	**-0.3**
JAG	**Ashikaga**	**1.27**	**278**	P	**Pg**	**10 22 59.8**	**-0.9**
MJAR	**Matsushiro Arr**	**2.28**	**278**	Pn	**Pn**	**10 23 14.9**	**+0.2**
	9.2nm,0.3s,baz=101,slow=8.1,SNR=56							
MAT	**Matsushiro**	**2.28**	**278**	P	**Pn**	**10 23 14.8**	**+0.1**
MAT				S	**Sn**	**10 23 42.1**	**-1.1**
ASAJ	**Asahikawa**	**7.94**	**8**	Pn	**Pn**	**10 24 31.8**	**-0.7**
	0.8nm,0.3s,baz=216,slow=8.8,SNR=8.7							
ASAJ				Sn	**Sn**	**10 26 02.8**	**+0.1**
	0.2nm,0.3s,baz=252,slow=20,SNR=2.8							
USRK	**Ussuriysk Ar.**	**10.51**	**322**	Pn	Pn	10 25 13.2	+5.7	
	0.2nm,0.3s,baz=119,slow=12,SNR=2.5							
MKAR	**Makanchi Array**	**44.26**	**303**	P	**P**	**10 30 48.0**	**+1.2**	
	0.2nm,0.3s,baz=86,slow=10,SNR=2.3							
ILAR	**Eielson Array**	**50.32**	**32**	P	**P**	**10 31 34.4**	**+0.6**	
	1.4nm,0.8s,baz=263,slow=6.5,SNR=14							
INK	**Inuvik**	**55.23**	**27**	P	**P**	**10 32 11.0**	**+1.1**	
	1.2nm,0.6s,baz=308,slow=6.8,SNR=13							
WRA	**Warramunga Arr**	**56.25**	**188**	P	**P**	**10 32 16.1**	**-1.6**	
	0.7nm,0.7s,baz=5.5,slow=7.5,SNR=8.7							
ASAR	**Alice Springs**	**59.98**	**188**	P	**P**	**10 32 42.3**	**-1.6**	
	0.4nm,0.7s,baz=23,slow=11,SNR=5.9							
RES	**Resolute Bay**	**63.43**	**14**	P	**P**	**10 33 06.1**	**-0.4**	
	1.0nm,0.8s,baz=318,slow=8.7,SNR=4.1							
YKA	**Yellowknife Ar**	**64.64**	**30**	P	**P**	**10 33 14.7**	**+0.1**	
	0.4nm,0.6s,baz=305,slow=7.0,SNR=8.5							
FINES	**FINESS Array B**	**69.35**	**332**	P	**P**	**10 33 43.9**	**-0.7**	
	0.4nm,0.5s,baz=58,slow=5.6,SNR=2.5							
NB2	**NORSAR Subarra**	**74.78**	**337**	P	**P**	**10 34 16.8**	**-0.4**	
	comp=Z,0.9nm,0.7s,baz=40,slow=6.2							
NOA	**NORSAR Array B**	**74.78**	**337**	P	**P**	**10 34 19.4**	**+2.2**	
	comp=Z,0.2nm,0.6s,baz=29,slow=4.6,SNR=2.6							
NVAR	**Mina Array Bea**	**75.71**	**53**	P	**P**	**10 34 24.0**	**+0.8**	
	comp=Z,0.5nm,0.6s,baz=288,slow=6.7,SNR=4.6							
PDAR	**Pinedale Array**	**78.44**	**45**	P	**P**	**10 34 38.7**	**+0.1**	
	comp=Z,0.5nm,0.6s,baz=234,slow=2.3,SNR=5.3							
LPAZ	**La Paz**	**147.36**	**60**	PKPbc	**PKPdf**	**10 42 21.1**	**+1.1**	
	comp=Z,0.7nm,0.5s,baz=260,slow=6.1,SNR=4.3							

*NIED **25** 10:29:00, 36°.20N×141°.00E, h26km, Mw3.7 Best double couple: M₀3.92000×10¹⁴ NP1:φs30.00000°, δ36.00000°, λ-92.00000°. NP2:φs212.00000°, δ54.00000°, λ-89.00000°.*

*IDC **25** 10:29:50.1±0.8, 36°.05N×141°.04E, h0km, mb3.6/11, mb1 3.8/14, mb1mx3.7/48, mbtmp3.6/14, ML3.1/3, MS2.9/3, Ms1 2.9/3, ms1mx2.5/42, Error ellipse: s-maj=20.6km s-min=19.2km az=117.0*

*ISCJB **25** 10:29:53.1±0.6, 36°.23N±0°.04×141°.07E±0°.06, h31km, mb3.6/11, MS3.4/1, Error ellipse: s-maj=7.1km s-min=6.4km az=8.3*

*JMA **25** 10:29:53.0±0.1, 36°.17N×141°.02E, h39km±1km, M3.7*

JMA Felt I J1.

ISC 25 10:29:53.6±1.0, **36°.24N**±0°.05×**140°.98E**±0°.09, **h31**km, **n30,** σ1**s27**/16, **mb3.6**/11, **Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JHO	**Hitachi**	**0.50**	**318**	P	**Pn**	**10 30 04.4**	**-0.2**
JHO				S	**Sn**	**10 30 12.3**	**0.0**
CHOJ	**Chosi**	**0.54**	**191**	P	**Pb**	**10 30 03.4**	**-1.3**
JYT	**Yasato**	**0.64**	**270**	P	**Pn**	**10 30 05.9**	**-0.6**
ONAJ	**Iwakimizuishiy**	**0.88**	**350**	P	**Pb**	**10 30 09.5**	**-0.9**
JFK	**Kawauchi**	**1.13**	**356**	P	**Pb**	**10 30 12.9**	**-1.7**
JFK				S	**Sn**	**10 30 26.6**	**-1.3**
MJAR	**Matsushiro Arr**	**2.26**	**279**	Pn	**Pn**	**10 30 29.4**	**+0.6**
	12nm,0.3s,baz=87,slow=9.2,SNR=103							
MAT	**Matsushiro**	**2.26**	**279**	P	**Pn**	**10 30 30.2**	**+1.4**
MAT				S	**Sb**	**10 31 00.1**	**-1.2**
ASAJ	**Asahikawa**	**7.97**	**8**	Pn	Pn	10 31 49.2	+2.0
	0.5nm,0.3s,baz=108,slow=20,SNR=5.3							
ASAJ				Sn	**Sn**	**10 33 17.7**	**+1.5**
	0.1nm,0.3s,baz=307,slow=20,SNR=2.6							
JNU	**Nakatsue**	**8.88**	**252**	LR	LR	10 36 05.9		
	comp=Z,48nm,18.8s,baz=301,slow=42							
USRK	**Ussuriysk Ar.**	**10.51**	**322**	Pn	Pn	10 32 26.3	+4.3	
	0.2nm,0.3s,baz=124,slow=12,SNR=3.1							
KSRS	**Korea Array**	**10.54**	**281**	LR	LR	10 36 31.8		
	comp=Z,29nm,21.9s,baz=85,slow=38							
H11N2	**WAKE ISLAND Hy**	**28.05**	**119**	T	T	11 04 59.3		
	baz=312,slow=75,SNR=23							
H11N1	**WAKE ISLAND Hy**	**28.06**	**119**	T	T	11 04 59.4		
	baz=312,slow=75,SNR=25							
H11N3	**WAKE ISLAND Hy**	**28.07**	**119**	T	T	11 05 02.3		
	baz=312,slow=75,SNR=23							
H11S1	**WAKE ISLAND Hy**	**28.73**	**121**	T	T	11 05 48.9		
	baz=314,slow=76,SNR=97							
H11S3	**WAKE ISLAND Hy**	**28.73**	**121**	T	T	11 05 43.9		
	baz=314,slow=76,SNR=50							
H11S2	**WAKE ISLAND Hy**	**28.75**	**121**	T	T	11 05 54.8		
	baz=314,slow=76,SNR=59							
ZALV	**Zalesovo Beam**	**42.20**	**313**	P	**P**	**10 37 45.0**	**+1.7**	
	0.9nm,0.6s,baz=99,slow=9.2,SNR=3.9							
MKAR	**Makanchi Array**	**44.26**	**303**	P	**P**	**10 38 02.1**	**+2.1**	
	0.2nm,0.3s,baz=87,slow=8.8,SNR=3.7							
ILAR	**Eielson Array**	**50.35**	**32**	P	P	10 38 49.1	+1.9	
	0.8nm,0.8s,baz=272,slow=7.0,SNR=8.0							
INK	**Inuvik**	**55.25**	**27**	P	P	10 39 25.8	+2.5	
	0.7nm,0.5s,baz=349,slow=5.0,SNR=6.2							
WRA	**Warramunga Arr**	**56.22**	**188**	P	**P**	**10 39 30.7**	**-0.1**	
	0.3nm,0.6s,baz=5.9,slow=7.3,SNR=7.5							
AKTO	**Aktyubinsk**	**58.95**	**312**	LR	LR	11 08 56.9		
	comp=Z,29nm,20.3s,baz=339,slow=40							
ASAR	**Alice Springs**	**59.95**	**188**	P	**P**	**10 39 56.9**	**0.0**	
	0.3nm,0.8s,baz=15,slow=5.9,SNR=5.3							
YKA	**Yellowknife Ar**	**64.67**	**30**	P	P	10 40 29.6	+1.6	
	0.3nm,0.7s,baz=300,slow=6.6,SNR=4.6							
AKASG	**Malin Array Be**	**74.72**	**322**	P	P	10 41 32.8	+2.7	
	0.3nm,0.4s,baz=49,slow=6.3,SNR=3.2							
NVAR	**Mina Array Bea**	**75.74**	**53**	P	P	10 41 39.1	+2.5	
	0.6nm,0.9s,baz=247,slow=6.0,SNR=4.5							
PDAR	**Pinedale Array**	**78.47**	**45**	P	P	10 41 53.5	+1.6	
	0.3nm,0.6s,baz=267,slow=3.0,SNR=3.9							
TXAR	**Lajitas Array**	**90.88**	**52**	P	P	10 42 57.1	+2.6	
	0.2nm,0.7s,baz=319,slow=3.6,SNR=2.9							
LPAZ	**La Paz**	**147.39**	**60**	PKPbc	**PKPab**	**10 49 36.7**	**-0.7**	
	0.8nm,0.6s,baz=18,slow=6.4,SNR=3.1							

*ISCJB **25** 10:30:41.8±0.7, 13°.17N±0°.07×89°.57W±0°.06, h68km±7km, mb3.7/3, Error ellipse: s-maj=14.9km s-min=5.1km az=37.9*

*CASC **25** 10:30:41.8±1.6, 13°.09N×89°.59W, h25km±11km, ML3.6*

*IDC **25** 10:30:45.5±2.4, 13°.32N×89°.32W, h82km±19km, mb3.2/4, mb1 3.6/7, mb1mx3.3/38, mbtmp3.6/7, MS3.2/4, Ms1 3.2/4, ms1mx2.8/19, Error ellipse: s-maj=43.4km s-min=19.0km az=34.0*

ISC 25 10:30:43.3±1.2, **13°.22N**±0°.09×**89°.51W**±0°.07, **h60**km±10km, **n41,** σ1**s45**/46, **mb3.8**/3, **4D, El Salvador**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
COLS	**Colinas**	**0.49**	**25**	‖*i* P	**Pn**	**10 30 54.5**	**-0.8**
SNET	**Serv Nac Est T**	**0.54**	**30**	*e*P	**Pn**	**10 30 55.0**	**-0.8**
SNET				*e*S	**Sn**	**10 31 05.1**	**+0.2**
SNET				AML	AML	10 31 07.9		
	comp=Z,4µm,0.1s							
BOQS	**Boqueron**	**0.56**	**23**	*i* P	**Pn**	**10 30 55.5**	**-0.8**
LFRS	**El Faro**	**0.59**	**47**	‖*i* P	**Pn**	**10 30 56.0**	**-0.5**
SBLS	**San Blas**	**0.63**	**350**	*i* P	**Pn**	**10 30 56.1**	**-0.9**
MONT	**Ecomontaæa**	**0.65**	**348**	*i* P	**Pn**	**10 30 56.5**	**-0.8**
LFU	**La Fuente**	**0.65**	**36**	‖*i* P	**Pn**	**10 30 57.0**	**-0.1**
SNJE	**San Jose**	**0.66**	**352**	*i* P	**Pn**	**10 30 56.5**	**-0.7**
LBRS	**Las Brisas**	**0.69**	**41**	‖*i* P	**Pn**	**10 30 57.5**	**-0.1**
RTR	**El Retiro**	**0.69**	**349**	*i* P	**Pn**	**10 30 57.0**	**-0.7**
SNVI	**San Vicente**	**0.76**	**59**	*e*P	**Pn**	**10 30 58.2**	**-0.2**
SNVI				*e*S	**Sn**	**10 31 11.1**	**+1.5**
RBDL	**Robledal**	**0.91**	**349**	*i* P	**Pn**	**10 31 00.2**	**-0.1**
PACA	**Pacayal**	**1.18**	**78**	*e*P	**Pn**	**10 31 04.4**	**+0.6**
LCY	**Lacayo**	**1.20**	**80**	*e*P	**Pn**	**10 31 04.5**	**+0.4**
LCY				*e*S	**Sn**	**10 31 22.7**	**+3.1**
VSM	**San Miguel**	**1.22**	**80**	*i* P	**Pn**	**10 31 04.8**	**+0.3**
CAHU	**Cacaotique**	**1.38**	**66**	*e*P	**Pn**	**10 31 06.6**	**+0.1**
CNCH	**Conchagua**	**1.63**	**88**	*e*P	**Pn**	**10 31 09.8**	**-0.1**
CSGN	**Cosiguina Volc**	**1.92**	**97**	*e*P	**Pn**	**10 31 13.7**	**0.0**
CSGN				*e*S	**Sn**	**10 31 36.9**	**+0.1**
TEL3	**Telica 3**	**2.68**	**104**	*e*P	**Pn**	**10 31 24.4**	**+0.4**
TELN	**Telica**	**2.68**	**103**	*e*P	**Pn**	**10 31 24.4**	**+0.3**
CNGN	**Cerro Negro**	**2.83**	**104**	*e*P	**Pn**	**10 31 26.5**	**+0.4**
CNGN				*e*S	**Sn**	**10 32 00.9**	**+1.8**
CNGN				AML	AML	10 32 08.7		
	comp=E,230nm,0.3s							
MOMN	**Momotombo**	**3.01**	**105**	*e*P	**Pn**	**10 31 27.3**	**-1.2**
COPN	**Copaltepe**	**3.03**	**110**	*e*P	**Pn**	**10 31 27.8**	**-1.0**
ESTN	**Estel**	**3.06**	**92**	*e*P	**Pn**	**10 31 29.5**	**+0.2**
XAVN	**Gruta Xavier**	**3.28**	**109**	*e*P	**Pn**	**10 31 32.9**	**+0.7**
TISN	**Laguna Tiscapa**	**3.34**	**108**	*e*P	**Pn**	**10 31 33.8**	**+0.8**
VCR	**Vista de Mar**	**4.88**	**129**	*e*P	**Pn**	**10 31 54.5**	**+0.2**
JTS	**JuntasAbangare**	**5.33**	**123**	P	**Pn**	**10 32 00.9**	**+0.6**
	comp=E,1.1nm,0.3s,baz=310,slow=21,SNR=6.7							
CMIG	**Matias Romero**	**6.46**	**307**	P	**Pn**	**10 32 17.8**	**+2.0**
	comp=E,0.6nm,0.3s,baz=99,slow=11,SNR=10							
CMIG				S	**Sn**	**10 33 33.5**	**+5.3**	
	comp=E,1.1nm,0.3s,baz=270,slow=20,SNR=3.8							
CMIG				LR	LR	10 34 48.8		
	comp=E,69nm,21.7s,baz=58,slow=37							
URSC	**Urasca**	**6.54**	**120**	*e*P	**Pn**	**10 32 18.8**	**+1.6**	
URSC				*e*S	**Sn**	**10 33 29.8**	**-0.8**	
BUS	**Buena Vista**	**6.71**	**122**	*e*P	**Pn**	**10 32 22.0**	**+2.3**	
BUS				*e*S	**Sn**	**10 33 31.1**	**-3.9**	
TEIG	**Tepich**	**7.07**	**9**	P	**Pn**	**10 32 26.0**	**+1.9**	
	comp=E,1.2nm,0.3s,baz=89,slow=24,SNR=19							
TXAR	**Lajitas Array**	**20.73**	**323**	P	Pn	10 35 21.9	-0.1	
	comp=E,0.8nm,0.6s,baz=142,slow=11,SNR=13							
TKL	**Tuckaleechee C**	**22.94**	**12**	LR	LR	10 44 49.1		
	comp=E,76nm,18.6s,baz=193,slow=37							
SADO	**Sadowa**	**32.67**	**14**	LR	LR	10 50 55.3		
	comp=E,42nm,18.7s,baz=188,slow=37							
NVAR	**Mina Array Bea**	**35.81**	**320**	P	**P**	**10 37 36.8**	**-0.4**	
	comp=E,0.4nm,0.6s,baz=131,slow=8.1,SNR=3.8							
NVAR				LR	LR	10 55 27.1		
	comp=E,60nm,18.0s,baz=318,slow=41							
YKA	**Yellowknife Ar**	**52.36**	**346**	P	**P**	**10 39 48.1**	**-0.8**	
	comp=E,0.6nm,0.6s,baz=145,slow=7.8,SNR=13							
RES	**Resolute Bay**	**61.53**	**358**	P	**P**	**10 40 52.1**	**-1.5**	
	comp=E,0.7nm,0.6s,baz=205,slow=6.4,SNR=4.4							
INK	**Inuvik**	**61.88**	**343**	P	**P**	**10 40 55.5**	**-0.6**	
	baz=120,slow=4.0							
WRA	**Warramunga Arr**	**137.54**	**255**	PKP	**PKPdf**	**10 50 02.5**	**+1.2**	
	comp=E,0.2nm,0.7s,baz=76,slow=1.5,SNR=4.5							
CMAR	**Chiang Mai Arr**	**147.44**	**345**	PKPbc	**PKPbc**	**10 50 21.0**	**-0.3**	
	comp=E,0.9nm,0.5s,baz=352,slow=3.4,SNR=5.1							

MEX 25 10:38:27.2±0.8, **15°.67N**×**94°.52W**, **h16**km±8km, **MD3.7, Near coast of Oaxaca**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
PCIG		**1.26**	**88**	*e*P	Pn	10 38 46.6	-3.5
PCIG				*e*S	Sb	10 39 01.0	-5.5
HUIG	**Huatulco**	**1.53**	**274**	*e*P	Pn	10 38 50.6	-3.3
HUIG				*i* S	Sn	10 39 07.9	-5.5
TGIG		**1.74**	**50**	*e*P	Pn	10 38 52.6	-4.2
TGIG				*e*S	Sn	10 39 14.2	-4.6
VHO	**Vista Hermosa**	**2.54**	**304**	*e*P	Pn	10 39 04.9	-3.1
VHO				*e*S	Sn	10 39 34.2	-4.5

JMA 25 10:43:17.1, 36°.93N×140°.69E, h5km±2km, **M1.9, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.19**	**27**	P	Pg	10 43 21.4	+0.5
ONAJ				S	Sg	10 43 24.3	+0.8
JHO	**Hitachi**	**0.33**	**197**	P	Pg	10 43 23.6	0.0
JHO				S	Sg	10 43 28.4	+0.5
JFK	**Kawauchi**	**0.46**	**19**	P	Pg	10 43 26.2	+0.2
JFK				S	Sg	10 43 32.7	+0.7
JFT	**Otama**	**0.65**	**334**	P	Pg	10 43 30.0	+0.4
JFT				S	Sg	10 43 39.1	+1.0
JFY	**Yanaizu**	**0.92**	**301**	P	Pg	10 43 35.0

λ-151.00000°. NP2:φs138.00000°, δ75.00000°, λ-60.00000°.

IDC 25 11:16:39.4±0.7, 35°.33N×141°.07E, h0km, mb3.7/10, mb1 3.9/14, mb1mx3.7/62, mbtmp3.8/14, ML3.8/4, MS3.0/6, Ms1 3.0/6, ms1mx2.7/42, Error ellipse: s-maj=23.2km s-min=14.8km az=103.0

ISCJB 25 11:16:42.2±0.5, 35°.31N±0°.03×141°.03E±0°.06, h33km, mb3.7/10, MS3.0/3, Error ellipse: s-maj=7.5km s-min=5.0km az=173.4

JMA 25 11:16:42.4±0.1, 35°.39N×140°.99E, h23km±2km, M3.9

JMA Felt I J1.

ISC 25 11:16:43.6±0.7, 35°.36N±0°.05×140°.99E±0°.07, h33km, n29, σ1ᵍ51/28, mb3.7/10, MS3.0/3, 3C, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CHOJ	**Chosi**	**0.36 343**		⇑P	**Pb**	**11 16 49.7**	**-2.4**
CHOJ				S	**Sb**	**11 16 55.2**	**-2.7**
KTR	**Katsuura**	**0.59 249**		P	**Pb**	**11 16 54.3**	**-1.3**
JCN	**Nagara**	**0.64 275**		P	**Pn**	**11 16 55.5**	**-0.9**
BSO4	**Boso 4**	**0.65 235**		⇑P	**Pn**	**11 16 55.7**	**-0.6**
BSO3	**Boso 3**	**0.68 215**		⇑P	**Pn**	**11 16 55.9**	**-0.8**
BSO1	**Boso 1**	**0.71 181**		P	**Pn**	**11 16 55.5**	**-1.3**
JYT	**Yasato**	**1.08 324**		P	**Pn**	**11 17 01.6**	**-0.8**
JYT				S	**Sn**	**11 17 15.5**	**-0.7**
JHO	**Hitachi**	**1.29 345**		P	**Pn**	**11 17 06.0**	**+0.6**
JIM2	**Oshima 3**	**1.43 244**		P	**Pn**	**11 17 05.5**	**-1.7**
JHJ	**Hachijo jima 2**	**2.45 204**		Pn	**Pn**	**11 17 19.7**	**-1.5**
	29nm,0.3s,baz=303,slow=17,SNR=13						
JHJ				Sn	**Sn**	**11 17 47.7**	**-2.3**
	38nm,0.3s,baz=74,slow=23,SNR=7.5						
JHJ				LR	LR	11 18 29.3	
	comp=Z,154nm,19.4s,baz=97,slow=45						
MJAR	**Matsushiro Arr**	**2.54 298**		Pn	**Pn**	**11 17 24.0**	**+1.4**
	4.5nm,0.3s,baz=297,slow=14,SNR=25						
MAT	**Matsushiro**	**2.54 298**		P	**Pn**	**11 17 24.7**	**+2.1**
MAT				S	**Sn**	**11 17 53.8**	**+1.3**
JCJ	**Chichijima**	**8.30 173**		Pn	**Pn**	**11 18 40.9**	**-0.8**
	10.0nm,0.3s,baz=286,slow=14,SNR=6.3						
JNU	**Nakatsue**	**8.66 258**		LR	LR	11 22 21.9	
	comp=Z,75nm,22.0s,baz=123,slow=39						
ASAJ	**Asahikawa**	**8.83 8**		Pn	**Pn**	**11 18 46.7**	**-2.2**
	0.9nm,0.3s,baz=266,slow=11,SNR=8.9						
KSRS	**Korea Array**	**10.73 285**		LR	LR	11 23 30.2	
	comp=Z,88nm,20.4s,baz=84,slow=38						
PETK	**Petropavlovsk-**	**21.31 28**		LR	LR	11 29 46.3	
	comp=Z,21nm,20.7s,baz=235,slow=37						
CMAR	**Chiang Mai Arr**	**40.76 257**		LR	LR	11 42 54.1	
	comp=Z,19nm,19.9s,baz=190,slow=39						
ZALV	**Zalesovo Beam**	**42.80 314**		P	**P**	**11 24 38.3**	**+0.3**
	0.3nm,0.3s,baz=91,slow=7.9,SNR=2.6						
MKAR	**Makanchi Array**	**44.73 303**		P	**P**	**11 24 55.0**	**+1.4**
	0.3nm,0.3s,baz=89,slow=11,SNR=2.5						
ILAR	**Eielson Array**	**51.09 32**		P	**P**	**11 25 43.7**	**+1.1**
	1.0nm,0.6s,baz=265,slow=6.1,SNR=17						
WRA	**Warramunga Arr**	**55.36 188**		P	**P**	**11 26 14.2**	**-0.2**
	2.5nm,0.5s,baz=1.7,slow=7.4,SNR=24						
INK	**Inuvik**	**56.03 27**		P	**P**	**11 26 20.2**	**+1.5**
	0.5nm,0.5s,baz=310,slow=6.1,SNR=7.1						
ASAR	**Alice Springs**	**59.09 188**		P	**P**	**11 26 41.9**	**+1.2**
	0.2nm,0.3s,baz=17,slow=11,SNR=9.5						
RES	**Resolute Bay**	**64.30 14**		P	**P**	**11 27 16.1**	**+0.9**
	0.9nm,0.8s,baz=270,slow=8.1,SNR=3.3						
YKA	**Yellowknife Ar**	**65.43 30**		P	**P**	**11 27 21.6**	**-1.1**
	0.3nm,0.9s,baz=306,slow=7.4,SNR=4.2						
AKASG	**Malin Array Be**	**75.41 322**		LR	LR	12 05 46.1	
	comp=Z,31nm,19.3s,baz=280,slow=39						
PDAR	**Pinedale Array**	**79.09 45**		P	**P**	**11 28 46.4**	**+1.4**
	0.2nm,0.5s,baz=208,slow=3.1,SNR=3.2						
TXAR	**Lajitas Array**	**91.42 52**		P	**P**	**11 29 48.2**	**+1.4**
	0.2nm,0.7s,baz=320,slow=3.6,SNR=3.7						

IDC 25 11:18:58.4±0.8, 27°.37N×140°.96E, h342km±21km, mb3.0/2, mb1 3.3/5, mb1mx2.8/59, mbtmp4.2/5, Error ellipse: s-maj=87.4km s-min=17.4km az=77.0, Bonin Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JCJ	**Chichijima**	**1.12 104**		P	Pn	11 19 45.4	+1.5
	baz=285,slow=19						
JCJ				S	S	11 20 20.4	+0.2
	44nm,0.3s,baz=266,slow=22,SNR=20						
JHJ	**Hachijo jima 2**	**5.82 350**		P	Pn	11 20 27.1	+0.3
	5.7nm,0.3s,baz=72,slow=20,SNR=4.8						
JHJ				S	S	11 21 34.9	-3.4
	5.7nm,0.3s,baz=73,slow=19,SNR=2.5						
KSRS	**Korea Array**	**14.89 316**		P	Pn	11 22 14.2	+0.1
	0.3nm,0.3s,baz=131,slow=12,SNR=10						
USRK	**Ussuriysk Ar.**	**18.28 339**		P	P	11 22 47.6	-0.9
	0.3nm,0.3s,baz=157,slow=12,SNR=7.1						
WRA	**Warramunga Arr**	**47.47 188**		P	P	11 26 59.9	-0.1
	0.6nm,0.5s,baz=5.8,slow=7.7,SNR=2.5						
FINES	**FINESS Array B**	**77.22 333**		P	P	11 30 14.7	-0.2
	0.4nm,0.4s,baz=102,slow=6.1,SNR=4.4						

IDC 25 11:20:45.3±8.4, 7°.34S×125°.16E, h348km±61km, mb3.1/1, mb1 2.9/5, mb1mx2.7/41, mbtmp3.6/5, Error ellipse: s-maj=123.5km s-min=118.3km az=1.0, Banda Sea

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
BATI	**Baumata**	**3.21 207**		P	Pn	11 21 46.5	0.0
	baz=197,slow=19						
FITZ	**Fitzroy Crossi**	**10.71 178**		P	Pn	11 23 11.7	-0.1
	0.1nm,0.3s,baz=16,slow=7.4,SNR=5.6						
WRA	**Warramunga Arr**	**15.37 146**		P	P	11 24 04.2	-0.1
	0.4nm,0.3s,baz=318,slow=13,SNR=22						
ASAR	**Alice Springs**	**18.28 154**		P	P	11 24 35.2	-0.3
	0.1nm,0.3s,baz=329,slow=9.6,SNR=12						
STKA	**Stephens Creek**	**28.83 150**		P	P	11 26 12.8	0.0
	0.4nm,0.3s,baz=311,slow=7.2,SNR=3.8						

ISCJB 25 11:23:15.2±0.8, 20°.2S±0°.2×177°.5W±0°.2, h500km, mb3.5/8, Error ellipse: s-maj=28.2km s-min=10.8km az=142.0

IDC 25 11:23:18.4±6.7, 20°.11S×177°.75W, h507km, 71km, mb3.2/8, mb1 3.4/8, mb1mx3.1/40, mbtmp4.0/8, Error ellipse: s-maj=68.9km s-min=30.9km az=154.0

ISC 25 11:23:17.4±1.0, 20°.3S±0°.3×177°.6W±0°.2, h500km, n14, σ1ᵍ08/12, mb3.7/8, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
AFI	**Afiamalu**	**8.45 42**		S	S	11 26 50.4	-7.8
	6.9nm,0.3s,baz=98,slow=21,SNR=8.4						
CTA	**Charters Tower**	**33.85 264**		P	**P**	**11 29 18.1**	**+0.2**
	3.0nm,0.3s,baz=90,slow=11,SNR=14						
STKA	**Stephens Creek**	**38.19 244**		P	**P**	**11 29 54.0**	**+0.3**
	1.1nm,0.5s,baz=88,slow=11,SNR=7.8						
ASAR	**Alice Springs**	**44.90 256**		P	**P**	**11 30 46.8**	**-0.3**
	5.7nm,0.8s,baz=92,slow=7.9,SNR=4.7						
ASAR				PcP	**PcP**	**11 32 17.4**	**-0.8**
	0.8nm,0.6s,baz=103,slow=3.6,SNR=7.4						
WRA	**Warramunga Arr**	**44.96 262**		P	**P**	**11 30 46.8**	**-0.9**
	1.4nm,0.4s,baz=97,slow=8.0,SNR=48						
FITZ	**Fitzroy Crossi**	**53.39 262**		P	**P**	**11 31 50.0**	**-0.1**
	1.0nm,0.6s,baz=198,slow=4.1,SNR=5.1						
TXAR	**Lajitas Array**	**86.65 57**		P	**P**	**11 35 08.9**	**+0.9**
	0.2nm,0.7s,baz=246,slow=6.8,SNR=3.1						
ILAR	**Eielson Array**	**88.02 13**		P	**P**	**11 35 11.9**	**-1.5**
	0.1nm,0.4s,baz=222,slow=5.4,SNR=3.3						
VNA3	**Neumayer Olymp**	**88.34 176**		P	P	11 35 12.6	-2.5
VNA2	**Neumayer--Watz**	**88.79 177**		P	**P**	**11 35 16.7**	**-0.4**
	baz=189,slow=2.4						
CMAR	**Chiang Mai Arr**	**90.36 289**		P	**P**	**11 35 26.5**	**+1.2**
	1.0nm,0.8s,baz=135,slow=3.0,SNR=6.6						
AKASG	**Malin Array Be**	**142.98 331**		PKhKP	PKPpre	11 41 49.7	
	1.3nm,0.5s,baz=38,slow=4.3,SNR=7.8						
BRTR	**Keskin Array B**	**146.93 313**		PKPbc	**PKPdf**	**11 42 02.9**	**+1.9**
	1.0nm,0.6s,baz=133,slow=4.6,SNR=6.3						
GERES	**GERESS Array B**	**150.07 345**		PKPbc	**PKPbc**	**11 42 10.6**	**-0.7**
	0.7nm,0.8s,baz=357,slow=2.8,SNR=5.8						

IDC 25 11:24:00.1±7.7, 6°.33S×149°.13E, h50km±63km, mb3.2/2, mb1 3.5/4, mb1mx3.2/38, mbtmp3.5/4, ML3.6/1, Error ellipse: s-maj=103.3km s-min=54.9km az=125.0, New Britain region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PMG	**Port Moresby**	**3.62 212**		P	Pn	11 24 55.0	+1.2
	3.2nm,0.3s,baz=11,slow=4.0,SNR=9.2						
PMG				S	Sn	11 25 36.1	+0.8
	24nm,0.3s,baz=227,slow=0.6,SNR=20						
WRA	**Warramunga Arr**	**19.73 225**		P	P	11 28 24.7	-1.2
	0.2nm,0.3s,baz=51,slow=11,SNR=8.4						
ASAR	**Alice Springs**	**22.61 219**		P	P	11 28 56.5	-0.5
	0.3nm,0.4s,baz=57,slow=9.3,SNR=11						
FITZ	**Fitzroy Crossi**	**25.72 241**		P	P	11 29 25.7	-0.4
	0.6nm,0.4s,baz=49,slow=9.9,SNR=4.8						
TORD	**Torodi Ar. Bea**	**147.22 284**		PKPbc	PKPbc	11 43 39.3	+0.2
	0.2nm,0.5s,baz=76,slow=2.5,SNR=4.7						

MEX 25 11:44:56.8±1.4, 17°.23N×94°.86W, h143km±33km, MD3.7, Chiapas

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
TGIG		**1.73 105**		*i* P	Pn	11 45 27.0	-1.4
TGIG				*i* S	Sn	11 45 50.3	-2.2
VHO	**Vista Hermosa**	**1.79 265**		*e*P	Pn	11 45 27.6	-1.7
VHO				*e*S	Sn	11 45 52.9	-1.2
HUIG	**Huatulco**	**1.88 220**		*e*P	Pn	11 45 27.9	-2.2
HUIG				*e*S	Sn	11 45 53.6	-2.0
PCIG		**2.19 134**		*e*P	Pn	11 45 33.7	-0.1
PCIG				*i* S	Sn	11 46 00.3	-1.8

IDC 25 11:52:00.1±1.6, 17°.08N×120°.16E, h0km, mb3.6/3, mb1 3.8/3, mb1mx3.3/41, mbtmp3.6/3, MS3.9/1, Ms1 3.9/1, ms1mx2.5/61, Error ellipse: s-maj=313.9km s-min=27.7km az=71.0, Luzon

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SONM	**Songino Array**	**32.69 343**		P	P	11 58 34.2	0.0
	1.4nm,0.5s,baz=169,slow=8.1,SNR=3.5						
ASAJ	**Asahikawa**	**32.94 30**		LR	LR	12 13 36.6	
	comp=Z,170nm,18.6s,baz=296,slow=39						
WRA	**Warramunga Arr**	**39.34 159**		P	P	11 59 30.8	-0.5
	0.4nm,0.9s,baz=339,slow=8.6,SNR=2.7						
ASAR	**Alice Springs**	**42.66 161**		P	P	11 59 58.9	+0.2
	0.4nm,0.6s,baz=337,slow=6.9,SNR=12						

IDC 25 12:02:15.8±13.0, 39°.70N×144°.02E, h0km, mb3.4/2, mb1 3.6/3, mb1mx3.2/59, mbtmp3.3/3, ML2.7/1, MS4.0/1, Ms1 4.0/1, ms1mx2.2/32, Error ellipse: s-maj=283.5km s-min=66.7km az=177.0, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MJAR	**Matsushiro Arr**	**5.56 237**		Pn	Pn	12 03 39.9	+0.2
	0.2nm,0.3s,baz=54,slow=14,SNR=4.4						
ARU	**Arti**	**55.74 318**		LR	LR	12 37 41.0	
	comp=Z,137nm,19.3s,baz=186,slow=38						
WRA	**Warramunga Arr**	**60.02 191**		P	P	12 12 24.6	+0.4
	0.3nm,0.5s,baz=11,slow=7.1,SNR=5.3						
ASAR	**Alice Springs**	**63.74 190**		P	P	12 12 48.8	-0.5
	0.2nm,0.7s,baz=5.8,slow=8.5,SNR=4.7						

NIED 25 12:05:00, 36°.80N×142°.10E, h29km, Mw3.5 Best double couple: Mo1.77000×10¹⁴ NP1:φs174.00000°, δ53.00000°, λ-48.00000°. NP2:φs297.00000°, δ53.00000°, λ-132.00000°.

JMA 25 12:05:32.8±0.2, 36°.79N×142°.11E, h48km, M3.5, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**1.10 287**		P	Pn	12 05 52.3	+0.5
ONAJ				*e*S	Sn	12 06 06.1	+0.2
JFK	**Kawauchi**	**1.14 301**		P	Pn	12 05 52.2	-0.3
JHO	**Hitachi**	**1.25 262**		P	Pn	12 05 54.0	+0.1
JFT	**Otama**	**1.59 298**		P	Pn	12 05 59.9	+1.3
JFT				*e*S	Sn	12 06 18.8	+0.8
JYT	**Yasato**	**1.64 251**		P	Pn	12 06 00.1	+0.9
JYT				*e*S	Sn	12 06 19.9	+0.8
JSB	**Shiboa**	**1.77 276**		P	Pn	12 06 00.8	-0.1
JFY	**Yanaizu**	**2.02 288**		P	Pn	12 06 05.8	+1.4
JAG	**Ashikaga**	**2.17 261**		P	Pn	12 06 07.6	+1.2
JAG				*e*S	Sn	12 06 32.6	+0.5
MAT	**Matsushiro**	**3.15 267**		P	Pn	12 06 22.5	+2.6
MAT				S	Sn	12 07 02.1	+5.9

ATH 25 12:11:07.8, 36°.01N×27°.88E, h60km±3km, ML3.3/10, Error ellipse: s-maj=3.1km s-min=1.2km az=38.0

DDA 25 12:11:07.7, 36°.01N×27°.85E, h53km, Md3.0

ISK 25 12:11:08.2, 36°.09N×27°.88E, h14km, MD2.8, ML3.2

CSEM 25 12:11:08.2±0.1, 35°.92N×27°.94E, h60km, ML3.4, Error ellipse: s-maj=3.0km s-min=2.5km az=36.0

THE 25 12:11:09.6, 36°.01N×27°.89E, h50km±2km, ML3.4/9, Error ellipse: s-maj=2.4km s-min=0.6km az=91.0

NIC 25 12:11:12.2±0.2, 36°.12N×28°.43E, h86km, mb4.3, ML3.9

GII 25 12:11:12.4±0.0, 35°.60N×28°.28E, h20km±1km, MD3.2/1

ISC 25 12:11:07.9±1.1, 35°.94N±0°.03×27°.94E±0°.03, h53km±10km, n141, σ1ᵍ60/228, Dodecanese Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ARG	**Arkhangelos**	**0.31 29**		P	**Pn**	**12 11 18.3**	**+0.9**
ARG				S	**Sn**	**12 11 25.1**	**+0.9**
ARG	**Arkhangelos**	**0.31 29**		P	**Pn**	**12 11 18.5**	**+1.1**
ARG				S	**Sn**	**12 11 24.6**	**+0.4**
KARP	**Karpathos**	**0.75 238**		*e*PG	**Pn**	**12 11 24.3**	**+1.9**
KARP				*e*SG	**Sn**	**12 11 35.0**	**+2.1**
KARP	**Karpathos**	**0.75 238**		P	**Pn**	**12 11 23.1**	**+0.7**
KARP				S	**Sn**	**12 11 34.0**	**+1.1**
KARP	**Karpathos**	**0.75 238**		P	**Pn**	**12 11 24.1**	**+1.7**
KARP				S	**Sn**	**12 11 34.5**	**+1.6**
KARP				*e*Sg	**Sn**	**12 11 35.0**	**+2.1**
KARP	**Karpathos**	**0.75 238**		P	**Pn**	**12 11 24.1**	**+1.7**
KARP				S	**Sn**	**12 11 34.5**	**+1.6**
KARP				AML	AML	12 11 35.5	
	comp=N,4599μm,0.1s						
KARP				AML	AML	12 11 35.8	
	comp=E,6973μm,0.1s						
NIS1	**Nisyros Isl.**	**0.90 317**		*e*PG	**Pn**	**12 11 24.0**	**-0.4**
NIS1	**Nisyros Isl.**	**0.90 317**		P	**Pn**	**12 11 24.2**	**-0.1**
NIS1				S	**Sn**	**12 11 35.6**	**-0.9**
NIS1	**Nisyros Isl.**	**0.90 317**		*e*Pg	**Pn**	**12 11 24.0**	**-0.4**
NIS1	**Nisyros Isl.**	**0.90 317**		P	**Pn**	**12 11 24.3**	**-0.1**
NIS1				S	**Sn**	**12 11 37.7**	**+1.2**
NIS1	**Nisyros Isl.**	**0.90 317**		P	**Pn**	**12 11 24.3**	**-0.1**
NIS1				S	**Sn**	**12 11 37.7**	**+1.2**
NIS1				AML	AML	12 11 40.0	
	comp=E,2593μm,0.4s						
NIS1				AML	AML	12 11 40.3	
	comp=N,2512μm,0.3s						
DALY	**Dalyan (Mu˘la**	**1.05 33**		*e*PG	**Pn**	**12 11 27.2**	**+1.0**
DALY				*e*SG	**Sn**	**12 11 41.0**	**+1.1**
DALY	**Dalyan (Mu˘la**	**1.05 33**		*e*Pg	**Pn**	**12 11 27.3**	**+1.0**
DALY				*e*Sg	**Sn**	**12 11 41.0**	**+1.1**
TURN	**Turunc**	**1.07 30**		*i* P	**Pn**	**12 11 24.9**	**-1.7**
TURN				*i* S	**Sn**	**12 11 37.4**	**-3.1**
TURN	**Turunc**	**1.07 30**		P	**Pn**	**12 11 24.9**	**-1.7**
TURN				S	**Sn**	**12 11 37.4**	**-3.1**
FETY	**Fethiye**	**1.15 53**		*e*PN	**Pn**	**12 11 29.2**	**+1.5**
FETY	**Fethiye**	**1.15 53**		P	**Pn**	**12 11 29.1**	**+1.3**
FETY				S	**Sn**	**12 11 43.3**	**+0.8**
FETY	**Fethiye**	**1.15 53**		P	**Pn**	**12 11 29.1**	**+1.3**
FETY				S	**Sn**	**12 11 43.3**	**+0.8**
BDRM	**Kayabasi**	**1.19 341**		*i* P	**Pn**	**12 11 28.3**	**0.0**
BDRM				*i* S	**Sn**	**12 11 42.9**	**-0.5**
BDRM	**Kayabasi**	**1.19 341**		P	**Pn**	**12 11 28.3**	**0.0**
BDRM				S	**Sn**	**12 11 42.9**	**-0.5**
YER	**Yerkesik**	**1.22 13**		*e*PN	**Pn**	**12 11 30.3**	**+1.6**
YER	**Yerkesik**	**1.22 13**		P	**Pn**	**12 11 29.7**	**+1.0**
YER				S	**Sn**	**12 11 44.6**	**+0.4**
YER	**Yerkesik**	**1.22 13**		P	**Pn**	**12 11 29.7**	**+1.0**
YER	**Yerkesik**	**1.22 13**		*e*Pn	**Pn**	**12 11 30.3**	**+1.6**
YER				S	**Sn**	**12 11 44.6**	**+0.4**
BODT	**Bodrum**	**1.23 336**		*e*PG	**Pn**	**12 11 28.4**	**-0.4**
BODT	**Bodrum**	**1.23 336**		P	**Pn**	**12 11 28.6**	**-0.2**
BODT				S	**Sn**	**12 11 43.3**	**-1.0**
BODT	**Bodrum**	**1.23 336**		P	**Pn**	**12 11 28.6**	**-0.2**
BODT				S	**Sn**	**12 11 43.3**	**-1.0**
KSL	**Kastellorizon**	**1.35 81**		P	**Pn**	**12 11 32.2**	**+1.9**
KSL				S	**Sn**	**12 11 48.8**	**+1.7**
KSL	**Kastellorizon**	**1.35 81**		P	**Pn**	**12 11 32.2**	**+1.9**
KSL				S	**Sn**	**12 11 48.8**	**+1.7**
KSL	**Kastellorizon**	**1.35 81**		P	**Pn**	**12 11 32.5**	**+2.2**
KSL				S	**Sn**	**12 11 48.9**	**+1.7**
KSL				AML	AML	12 11 50.8	
	comp=N,496μm,0.4s						
KSL				AML	AML	12 11 51.6	
	comp=E,1237μm,0.7s						
AKAS	**Kas**	**1.38 77**		*i* P	**Pn**	**12 11 32.8**	**+1.9**
AKAS				*i* S	**Sn**	**12 11 51.0**	**+2.9**
AKAS	**Kas**	**1.38 77**		P	**Pn**	**12 11 32.8**	**+1.9**
AKAS				S	**Sn**	**12 11 51.0**	**+2.9**
ZKR	**Zakros**	**1.63 240**		P	**Pn**	**12 11 36.6**	**+2.4**
ZKR				S	**Sn**	**12 11 55.6**	**+1.5**
ZKR	**Zakros**	**1.63 240**		P	**Pn**	**12 11 36.6**	**+2.4**
ZKR				S	**Sn**	**12 11 55.3**	**+1.2**
ZKR	**Zakros**	**1.63 240**		P	**Pn**	**12 11 37.1**	**+2.8**
ZKR				S	**Sn**	**12 11 55.3**	**+1.2**
ZKR				AML	AML	12 12 01.9	
	comp=N,1389μm,0.8s						
ZKR				AML	AML	12 12 01.9	
	comp=E,1374μm,0.5s						
AYDN	**Tasoluk**	**1.72 358**		*i* P	**Pn**	**12 11 36.2**	**+0.8**
AYDN				*i* S	**Sn**	**12 11 57.1**	**+0.8**
AYDN	**Tasoluk**	**1.72 358**		P	**Pn**	**12 11 36.2**	**+0.8**
AYDN				S	**Sn**	**12 11 57.1**	**+0.8**
ELL	**Elmali**	**1.78 63**		*e*PN	**Pn**	**12 11 38.8**	**+2.4**
ELL	**Elmali**	**1.78 63**		*e*Pn	**Pn**	**12 11 38.8**	**+2.4**
GCAM	**G?zelcaml?**	**1.84 342**		*i* P	**Pn**	**12 11 37.6**	**+0.5**
GCAM				*i* S	**Sn**	**12 11 58.7**	**-0.5**
GCAM	**G?zelcaml?**	**1.84 342**		P	**Pn**	**12 11 37.6**	**+0.5**
GCAM				S	**Sn**	**12 11 58.7**	**-0.5**
SMG	**Samos**	**1.97 334**		P	**Pn**	**12 11 38.8**	**-0.1**
SMG				S	**Sn**	**12 12 02.2**	**-0.3**
SMG	**Samos**	**1.97 334**		P	**Pn**	**12 11 38.8**	**-0.1**
SMG				S	**Sn**	**12 12 02.2**	**-0.3**
SMG	**Samos**	**1.97 334**		P	**Pn**	**12 11 38.5**	**-0.4**
SMG				S	**Sn**	**12 12 01.5**	**-1.0**
SMG				AML	AML	12 12 02.3	
	comp=N,413μm,0.4s						
SMG				AML	AML	12 12 03.6	
	comp=E,601μm,0.4s						
AYDB	**Zeytinkoy-Aydi**	**2.00 359**		*e*PN	**Pn**	**12 11 39.8**	**+0.4**
AYDB	**Zeytinkoy-Aydi**	**2.00 359**		*e*Pn	**Pn**	**12 11 39.8**	**+0.4**
DENT	**Denizli**	**2.01 26**		*e*PN	**Pn**	**12 11 41.5**	**+2.1**
DENT	**Denizli**	**2.01 26**		*e*Pn	**Pn**	**12 11 41.5**	**+2.1**
NPS	**Neapolis**	**2.02 251**		P	**Pn**	**12 11 40.5**	**+1.0**
NPS				S	**Sn**	**12 12 03.9**	**+0.4**
NPS	**Neapolis**	**2.02 251**		P	**Pn**	**12 11 40.5**	**+1.0**
NPS				S	**Sn**	**12 12 03.9**	**+0.4**
NPS	**Neapolis**	**2.02 251**		P	**Pn**	**12 11 40.5**	**+1.0**
NPS				S	**Sn**	**12 12 03.6**	**+0.1**
NPS				AML	AML	12 12 04.8	
	comp=E,2759μm,0.5s						
NPS				AML	AML	12 12 06.4	
	comp=N,2570μm,0.5s						
SANT	**Santorini**	**2.05 283**		P	**Pn**	**12 11 40.4**	**+0.4**
SANT	**Santorini**	**2.05 283**		P	**Pn**	**12 11 40.4**	**+0.4**
SANT				S	**Sn**	**12 12 00.8**	**-3.7**
SANT	**Santorini**	**2.05 283**		P	**Pn**	**12 11 40.4**	**+0.4**
SANT				S	**Sn**	**12 12 00.8**	**-3.7**
SANT				AML	AML	12 12 03.6	
	comp=N,677μm,0.2s						
SANT				AML	AML	12 12 07.8	
	comp=E,1848μm,0.3s						
THR2	**Thira island,**	**2.09 285**		P	**Pn**	**12 11 40.9**	**+0.5**
THR2	**Thira island,**	**2.09 285**		P	**Pn**	**12 11 40.9**	**+0.5**
THR6	**Thira Island,**	**2.10 282**		P	**Pn**	**12 11 41.0**	**+0.4**
THR6	**Thira Island,**	**2.10 282**		P	**Pn**	**12 11 41.0**	**+0.4**
LAST	**Lasithi**	**2.15 249**		P	**Pn**	**12 11 42.6**	**+1.2**
LAST				S	**Sn**	**12 12 07.4**	**+0.4**
LAST	**Lasithi**	**2.15 249**		P	**Pn**	**12 11 42.6**	**+1.2**
LAST				S	**Sn**	**12 12 07.4**	**+0.4**
LAST	**Lasithi**	**2.15 249**		P	**Pn**	**12 11 42.7**	**+1.2**
KORT	**Korkueli**	**2.21 61**		*i* P	**Pn**	**12 11 45.4**	**+3.1**
KORT				*i* S	**Sn**	**12 12 12.6**	**+4.1**
KORT	**Korkueli**	**2.21 61**		P	**Pn**	**12 11 45.4**	**+3.1**
KORT				S	**Sn**	**12 12 12.6**	**+4.1**
APE	**Apeiranthos**	**2.24 301**		P	**Pn**	**12 11 42.9**	**+0.3**
APE				S	**Sn**	**12 12 07.8**	**-1.4**
APE	**Apeiranthos**	**2.24 301**		P	**Pn**	**12 11 42.9**	**+0.3**
APE				S	**Sn**	**12 12 07.8**	**-1.4**
APE	**Apeiranthos**	**2.24 301**		P	**Pn**	**12 11 42.7**	**+0.1**
APE				S	**Sn**	**12 12 07.0**	**-2.2**
APE				AML	AML	12 12 08.6	
	comp=E,193μm,0.2s						
APE				AML	AML	12 12 09.7	
	comp=N,245μm,0.2s						
ZEY	**˘zmir**	**2.56 334**		*i* P	**Pn**	**12 11 46.7**	**-0.3**
ZEY				*i* S	**Sn**	**12 12 16.0**	**-0.9**
IDI	**Anoyia**	**2.57 256**		P	**Pn**	**12 11 47.0**	**-0.1**
IDI				S	**Sn**	**12 12 15.7**	**-1.5**
IDI	**Anoyia**	**

CSS	**Mathiatis**	**4.51**	**101**	Pn	**Pn**	**12**	**12**	**14.5 +0.9**
CSS				Sn	**Sn**	**12**	**13**	**02.0 -2.8**
CSS				S	**Sn**	**12**	**13**	**05.1 +0.3**
HMAT	**Matruh**	**4.89**	**189**	P	**Pn**	**12**	**12**	**19.0 +0.2**
SLUM	**Salum**	**4.99**	**208**	P	**Pn**	**12**	**12**	**20.9 +0.7**
HNTI	**Hanita**	**6.62**	**113**	Sn	**Sn**	**12**	**13**	**54.2 -2.4**
HNTI	**Hanita**	**6.62**	**113**	Sn	**Sn**	**12**	**13**	**54.2 -2.4**
HNAT	**Natroun**	**6.68**	**160**	P	**Pn**	**12**	**12**	**42.8 -0.7**
MMA0B	**Mount Meron ar**	**6.82**	**113**	Pn	**Pn**	**12**	**12**	**44.9 -0.5**
MMA0B				Sn	**Sn**	**12**	**13**	**58.4 -3.3**
MMA0B	**Mount Meron ar**	**6.82**	**113**	Pn	**Pn**	**12**	**12**	**44.9 -0.5**
KOT	**Kottamia**	**6.83**	**150**	P	**Pn**	**12**	**12**	**45.2 -0.3**
HHAG	**Hagoal**	**6.92**	**149**	P	**Pn**	**12**	**12**	**46.5 -0.2**
KSDI	**Kefar Szold**	**6.93**	**111**	Pn	**Pn**	**12**	**12**	**46.7 -0.2**
KSDI				Sn	**Sn**	**12**	**14**	**01.0 -3.3**
KSDI	**Kefar Szold**	**6.93**	**111**	Pn	**Pn**	**12**	**12**	**46.7 -0.2**
HSAF	**As Saff**	**7.00**	**153**	P	**Pn**	**12**	**12**	**47.5 -0.3**
SWA2		**7.00**	**198**	P	**Pn**	**12**	**12**	**48.4 +0.6**
GLL	**Jalalah**	**7.09**	**152**	P	**Pn**	**12**	**12**	**48.9 -0.3**
MMLI	**Mount Malkishu**	**7.12**	**117**	Pn	**Pn**	**12**	**12**	**48.6 -0.8**
MMLI				Sn	**Sn**	**12**	**14**	**05.4 -3.5**
MMLI	**Mount Malkishu**	**7.12**	**117**	Pn	**Pn**	**12**	**12**	**48.6 -0.8**
AMAZ	**Amatzia**	**7.29**	**125**	Pn	**Pn**	**12**	**12**	**51.3 -0.4**
AMAZ				Sn	**Sn**	**12**	**14**	**09.0 -4.1**
AMAZ	**Amatzia**	**7.29**	**125**	Pn	**Pn**	**12**	**12**	**51.3 -0.4**
HMDT	**Nahal Hemdat**	**7.29**	**118**	Pn	**Pn**	**12**	**12**	**52.1 +0.4**
HMDT				Sn	**Sn**	**12**	**14**	**10.4 -2.7**
HMDT	**Nahal Hemdat**	**7.29**	**118**	Pn	**Pn**	**12**	**12**	**52.1 +0.4**
HMDT				Sn	**Sn**	**12**	**14**	**10.4 -2.7**
SUZ	**Suez**	**7.34**	**145**	P	**Pn**	**12**	**12**	**52.7 +0.2**
REVI	**Revivim**	**7.48**	**129**	Pn	**Pn**	**12**	**12**	**53.4 -1.0**
REVI				Sn	**Sn**	**12**	**14**	**13.6 -4.2**
REVI	**Revivim**	**7.48**	**129**	Pn	**Pn**	**12**	**12**	**53.4 -1.0**
DSI	**Dead Sea**	**7.57**	**123**	Pn	**Pn**	**12**	**12**	**54.8 -0.9**
DSI	**Dead Sea**	**7.57**	**123**	Pn	**Pn**	**12**	**12**	**54.8 -0.9**
MZDA	**Masada**	**7.72**	**125**	Pn	**Pn**	**12**	**12**	**57.7 +0.1**
MZDA				Sn	**Sn**	**12**	**14**	**20.6 -3.1**
MZDA	**Masada**	**7.72**	**125**	Pn	**Pn**	**12**	**12**	**57.7 +0.1**
HNKL	**Nakhl**	**7.86**	**138**	P	**Pn**	**12**	**12**	**58.8 -0.7**
ZFRI	**Zfri**	**8.10**	**130**	Pn	**Pn**	**12**	**13**	**01.9 -0.9**
ZFRI				Sn	**Sn**	**12**	**14**	**28.9 -4.1**
ZFRI	**Zfri**	**8.10**	**130**	Pn	**Pn**	**12**	**13**	**01.9 -0.9**
PRNI	**Paran**	**8.13**	**131**	Pn	**Pn**	**12**	**13**	**02.4 -0.9**
PRNI				Sn	**Sn**	**12**	**14**	**29.7 -4.2**
PRNI	**Paran**	**8.13**	**131**	Pn	**Pn**	**12**	**13**	**02.4 -0.9**
HRFI	**Mount Harif**	**8.38**	**133**	Pn	**Pn**	**12**	**13**	**06.2 -0.5**
HRFI				Sn	**Sn**	**12**	**14**	**35.2 -4.7**
HRFI	**Mount Harif**	**8.38**	**133**	Pn	**Pn**	**12**	**13**	**06.2 -0.5**
MBRI	**Mt Berech**	**8.48**	**134**	Pn	**Pn**	**12**	**13**	**07.8 -0.4**
MBRI	**Mt Berech**	**8.48**	**134**	Pn	**Pn**	**12**	**13**	**07.8 -0.4**
EIL	**Elat**	**8.60**	**135**	Pn	**Pn**	**12**	**13**	**08.7 -1.0**
EIL	**Elat**	**8.60**	**135**	Pn	**Pn**	**12**	**13**	**08.7 -1.0**

NEIC ***25*** *12:13:53.7±0.7,41.00N×71.58E,h10km,mb4.4/1,Error ellipse: s-maj=12.3km s-min=8.1km az=167.0*
KRNET ***25*** *12:13:53.4±0.1,41.08N×71.60E,h15km,mb3.4*
IDC ***25*** *12:13:54.1±0.7,40.94N×71.75E,h16km±2km,mb3.8/18, mb1 3.9/26,mb1mx3.8/68,mbtmp3.9/26,ML3.4/8,Error ellipse: s-maj=13.6km s-min=8.4km az=155.0*
SOME ***25*** *12:13:56.1,41.10N×71.65E,h10km,MS3.0*
MOS ***25*** *12:13:56.0±1.6,41.13N×71.47E,h33km,mb4.2/7,Error ellipse: s-maj=9.2km s-min=5.6km az=86.7*
NNC ***25*** *12:13:57.2±1.0,41.10N×71.63E,h19km±5km,mb4.4, mpv4.1,Error ellipse: s-maj=6.1km s-min=3.1km az=66.0*
ISC 25 12:13:54.2±0.4,41.09N±0.02×71.66E±0.02,h13km±2km, n127,σ2s00/193,mb3.9/22,43C-30D,Kyrgyzstan

Code	Station Name	Δ°	AZ°	Phase	ID	Time h m s	Res ISC
ARK	**Arkit**	**0.74**	**18**	⇓*e*P	**Pg**	**12 14 08.0**	**-0.6**
	baz=22						
ARK				⇓*i*S	**Sb**	**12 14 18.9**	**-0.3**
	baz=22						
OHH	**Osh**	**1.03**	**123**	⇑*e*P	**Pn**	**12 14 14.8**	**+0.4**
	baz=121						
OHH				⇑*e*S	**Sn**	**12 14 28.7**	**0.0**
	baz=121						
BTK	**Batken**	**1.21**	**212**	⇓*e*P	**Pg**	**12 14 17.4**	**-0.1**
	baz=211						
BTK				⇓*i*S	**Sb**	**12 14 32.4**	**-0.3**
	baz=211						
TOKL	**Toktogul**	**1.25**	**47**	⇑*i*P	**Pg**	**12 14 19.2**	**+1.0**
	baz=47						
TOKL				⇑*i*S	**Sg**	**12 14 36.0**	**+1.6**
	baz=47						
MNAS	**Manas**	**1.53**	**24**	⇓*e*P	**Pb**	**12 14 22.9**	**+0.4**
	baz=25						
MNAS				⇓*e*S	**Sg**	**12 14 43.8**	**+0.3**
	baz=25						
MNAS	**Manas**	**1.53**	**24**	⇓P	**Pg**	**12 14 23.1**	**-0.5**
	90nm,0.4s						
MNAS				⇑S	**Sg**	**12 14 43.8**	**+0.3**
	739nm,1.0s						
MNAS	**Manas**	**1.53**	**24**	PN	**Pg**	**12 14 23.1**	**-0.5**
MNAS				S	**Sg**	**12 14 43.8**	**+0.3**
MNAS				pmax	pmax		
	comp=Z,90nm,0.4s						
MNAS				smax	smax		
	comp=N,739nm,1.0s						
IUG	**Iuzhnay**	**1.61**	**311**	*e*P	**Pb**	**12 14 24.1**	**+0.2**
	comp=N,3μm,0.2s						
IUG				*e*S	**Sg**	**12 14 48.0**	**+2.0**
	comp=N,10μm,0.6s						
SFK	**Sufi-Kurgan**	**1.77**	**127**	⇓*i*P	**Pb**	**12 14 27.2**	**+0.5**
	baz=125						
SFK				⇓*i*S	**Sg**	**12 14 51.0**	**-0.3**
	baz=125						
SFK	**Sufi-Kurgan**	**1.77**	**127**	⇓P	**Pb**	**12 14 27.0**	**+0.3**
	comp=N,190nm,0.6s						
SFK				⇑S	**Sg**	**12 14 50.8**	**-0.5**
	comp=N,1μm,0.4s						
SFK	**Sufi-Kurgan**	**1.77**	**127**	PN	**Pb**	**12 14 27.2**	**+0.5**
SFK				S	**Sg**	**12 14 50.7**	**-0.5**
SFK				pmax	pmax		
	comp=Z,242nm,0.6s						
SFK				smax	smax		
	comp=N,1μm,0.4s						
DZA	**Taraz**	**1.81**	**352**	*e*P	**Pg**	**12 14 28.6**	**-0.4**
	comp=N,886nm,0.3s						
DZA				*e*S	**Sg**	**12 14 53.1**	**+0.5**
	comp=N,3μm,0.3s						
AML	**Almayashu**	**1.85**	**55**	⇑*i*P	**Pb**	**12 14 28.4**	**+0.3**
	baz=55						
AML				⇑*i*S	**Sg**	**12 14 54.9**	**+1.2**
	baz=55						
CHM	**Chimkent**	**1.97**	**309**	*e*P	**Pg**	**12 14 32.0**	**+0.1**
	comp=N,489nm,0.4s						
CHM				*e*S	**Sg**	**12 14 57.4**	**0.0**
	comp=N,2μm,0.3s						
MRKS	**Merke**	**2.03**	**35**	⇑*i*P	**Pg**	**12 14 32.4**	**-0.6**
	comp=N,211nm,0.6s						
MRKS				*e*S	**Sg**	**12 15 00.1**	**+0.8**
	comp=N,1μm,0.6s						
KK31	**Karatay Array**	**2.18**	**337**	⇓Pn	**Pb**	**12 14 33.1**	**-0.4**
	comp=N,161nm,0.3s,baz=136,slow=13,SNR=1549						
KK31				Sn	**Sb**	**12 15 00.9**	**+0.4**
	comp=N,286nm,0.3s,baz=152,slow=29,SNR=10						
KK31	**Karatay Array**	**2.18**	**337**	*e*PN	**Pb**	**12 14 33.1**	**-0.4**
KK31						12 15 02.6	
KK31				pmax	pmax		
	comp=Z,161nm,0.4s						
KK31				smax	smax		
	comp=N,286nm,0.4s						
KKAR	**Karatay Array**	**2.18**	**337**	*e*PN	**Pb**	**12 14 33.1**	**-0.5**
KKAR	**Karatay Array**	**2.18**	**337**	*e*Pn	**Pb**	**12 14 33.1**	**-0.5**
EKS2	**Erkin-Say**	**2.23**	**45**	⇑*i*P	**Pb**	**12 14 34.1**	**-0.3**
	baz=45						
EKS2				⇑*i*S	**Sg**	**12 15 06.1**	**+0.2**
	baz=45						
EKS2	**Erkin-Say**	**2.23**	**45**	*e*PN	**Pb**	**12 14 34.1**	**-0.3**
EKS2	**Erkin-Say**	**2.23**	**45**	*e*Pn	**Pb**	**12 14 34.1**	**-0.3**
EKS2				eSn	**Sn**	**12 14 58.8**	**+0.4**
BRLS	**Boroldaу**	**2.24**	**320**	⇑*i*P	**Pb**	**12 14 35.0**	**+0.5**
	comp=N,246nm,0.3s						
BRLS				⇑*i*S	**Sg**	**12 15 05.3**	**-1.0**
	comp=N,903nm,0.3s						
UCH	**Uchtor**	**2.42**	**61**	⇑*i*P	**Pb**	**12 14 36.5**	**-1.4**
	baz=61						
UCH				⇑*i*S	**Sb**	**12 15 09.4**	**+1.5**
	baz=61						
AAK	**Ala-Archa**	**2.62**	**53**	Pn	**Pb**	**12 14 38.9**	**-2.2**
	comp=N,6.0nm,0.3s,baz=212,slow=4.3,SNR=32						
AAK				Lg	Lg	12 15 17.6	
	comp=N,25nm,0.3s,baz=70,slow=16,SNR=13						
AAK	**Ala-Archa**	**2.62**	**53**	⇑*i*P	**Pb**	**12 14 39.2**	**-1.9**
	baz=53						
AAK				⇑*i*S	**Sb**	**12 15 15.2**	**+1.9**
	baz=53						
AAK	**Ala-Archa**	**2.62**	**53**	⇑Pn	**Pb**	**12 14 39.3**	**-1.9**
	comp=N,17nm,0.5s						
AAK				⇓Pg	**Pg**	**12 14 46.0**	**+1.6**
	comp=N,56nm,0.4s						
AAK				⇑Lg	Lg	12 15 21.0	
	comp=N,142nm,0.6s						
AAK	**Ala-Archa**	**2.62**	**53**	Pn	**Pb**	**12 14 38.9**	**-2.2**
AAK				*e*Pn	**Pn**	**12 14 39.5**	**+3.1**
AAK				Lg	Lg	12 15 17.6	
FRU	**Bishkek**	**2.81**	**51**	*e*PN	**Pb**	**12 14 43.0**	**-1.3**
FRU				*i*		12 14 53.0	
FRU				*i* S	**Sg**	**12 15 22.0**	**-2.5**
FRU				pmax	pmax		
	comp=Z,120nm,1.4s						
FRU				smax	smax		
	comp=N,790nm,2.0s						
KZA	**Kyzart**	**2.87**	**69**	⇑*i*P	**Pb**	**12 14 43.1**	**-2.4**
	baz=69						
KZA				⇑*i*S	**Sb**	**12 15 20.2**	**-0.5**
	baz=69						
KBK	**Karagaybulak**	**2.91**	**56**	⇑*i*P	**Pb**	**12 14 44.1**	**-2.0**
	baz=57						
KBK				⇑*i*S	**Sb**	**12 15 22.3**	**+0.6**
	baz=57						
NRN	**Naryn**	**3.29**	**83**	⇑*e*P	**Pn**	**12 14 48.3**	**+2.5**
	baz=83						
NRN				⇑*e*S	**Sn**	**12 15 27.4**	**+2.5**
	baz=83						
TKM2	**Tokmak 2**	**3.46**	**57**	⇓Pn	**Pn**	**12 14 51.0**	**+3.1**
	comp=N,5.6nm,0.4s						
TKM2				⇑Pg	**Pg**	**12 15 01.4**	**+0.9**
	comp=N,31nm,0.5s						
TKM2				⇓Lg	Lg	12 15 48.5	
	comp=N,72nm,0.5s						
TKM2	**Tokmak 2**	**3.46**	**57**	PN	**Pn**	**12 14 51.0**	**+3.1**
TKM2						12 15 01.0	
TKM2						12 15 42.6	
TKM2				pmax	pmax		
	comp=Z,6.0nm,0.4s						
TKM2				pmax	pmax		
	comp=Z,31nm,0.5s						
TKM2				pmax	pmax		
	comp=N,72nm,0.5s						
TKM2	**Tokmak 2**	**3.46**	**57**	*e*Pn	**Pn**	**12 14 50.8**	**+2.9**
BOOM	**Boomskoye usch**	**3.50**	**65**	⇓*e*P	**Pn**	**12 14 51.3**	**+2.9**
	baz=65						
BOOM				⇓*e*S	**Sn**	**12 15 33.1**	**+3.4**
	baz=65						
BMNS	**Besmoynak**	**3.60**	**55**	*e*P	**Pg**	**12 15 01.7**	**-1.5**
	comp=N,76nm,0.5s						
BMNS				*e*S	**Sg**	**12 15 48.7**	**-1.2**
	comp=N,318nm,0.6s						
ULHL	**Ulahol**	**3.62**	**70**	⇑*i*P	**Pn**	**12 14 53.0**	**+2.8**
	baz=70						
ULHL				⇑*i*S	**Sn**	**12 15 35.7**	**+2.8**
	baz=70						
KSH	**Kashi**	**3.66**	**114**	Pn	**Pn**	**12 14 52.0**	**+1.4**
KSH				Sn	**Sn**	**12 15 33.8**	**+0.2**
KSH				smax	smax		
	comp=N,250nm,0.9s						
KSH				smax	smax		
	comp=E,260nm,0.9s						
DGS	**Degeres**	**3.74**	**54**	*e*P	**Pb**	**12 15 02.2**	**+2.1**
	comp=E,28nm,0.5s						
DGS				*e*S	**Sb**	**12 15 48.4**	**+3.0**
	comp=E,321nm,1.0s						
KST	**Kastek**	**3.75**	**57**	⇓*i*P	**Pg**	**12 15 06.1**	**+0.1**
	comp=E,15nm,0.5s						
KST				⇓*i*S	**Sg**	**12 15 54.7**	**0.0**
	comp=E,344nm,0.5s						
MTBS	**Maitube**	**4.09**	**59**	*e*P	**Pg**	**12 15 11.3**	**-1.3**
	comp=E,13nm,0.4s						
MTBS				⇑*i*S	**Sg**	**12 16 03.9**	**-1.8**
	comp=E,79nm,0.5s						
IZV	**Izvestkoviy**	**4.17**	**61**	*e*P	**Pg**	**12 15 12.4**	**-1.6**
	comp=E,23nm,0.5s						
IZV				*e*S	**Sg**	**12 16 04.7**	**-3.4**
	comp=E,150nm,0.7s						
KDJ	**Kajisay**	**4.27**	**74**	⇓*i*P	**Pn**	**12 15 02.4**	**+3.3**
	baz=74						
KDJ				⇓*e*S	**Sn**	**12 15 51.7**	**+2.9**
	baz=74						
TNSS	**Tian-Shan**	**4.39**	**62**	*e*P	**Pg**	**12 15 16.4**	**-1.9**
	comp=E,36nm,0.7s						
TNSS				*e*S	**Sg**	**12 16 13.4**	**-1.8**
	comp=E,33nm,0.7s						
KUU	**Kurty**	**4.45**	**50**	*e*P	**Pg**	**12 15 16.9**	**-2.5**
	comp=E,75nm,0.5s						
KUU				⇓*i*S	**Sg**	**12 16 13.9**	**-3.2**
	comp=E,105nm,0.6s						
KNDC	**Almaty**	**4.48**	**60**	⇓Pg	**Pg**	**12 15 19.8**	**-0.2**
KNDC				⇑Lg	Lg	12 16 21.2	
AAA	**Alma-Ata**	**4.50**	**59**	*e*P	**Pg**	**12 15 17.0**	**-3.3**
	comp=E,104nm,0.2s						
AAA				⇓*i*S	**Sg**	**12 16 15.8**	**-2.7**
	comp=E,122nm,0.2s						
MDOK	**Medeo**	**4.51**	**61**	*e*P	**Pg**	**12 15 17.7**	**-2.9**
	comp=E,17nm,0.5s						
MDOK				*e*S	**Sg**	**12 16 16.4**	**-2.6**
	comp=E,75nm,0.8s						
KTBS	**Karatobe**	**4.55**	**53**	*e*P	**Pg**	**12 15 19.0**	**-2.3**
KTBS				*e*S	**Sg**	**12 16 17.3**	**-2.9**
KOTS	**Kotyrbulak**	**4.59**	**60**	*e*P	**Pg**	**12 15 20.0**	**-2.0**
KOTS				*e*S	**Sg**	**12 16 19.5**	**-1.9**
CHKK	**Chushkaly**	**4.83**	**53**	*e*P	**Pg**	**12 15 23.4**	**-3.3**
	comp=E,5.8nm,0.7s						
CHKK				*e*S	**Sg**	**12 16 27.4**	**-1.8**
	comp=E,80nm,0.6s						
KURS	**Kuram**	**5.39**	**61**	*e*P	**Pg**	**12 15 34.0**	**-3.4**
	comp=E,11nm,0.7s						
KURS				⇓*i*S	**Sg**	**12 16 43.8**	**-3.5**
	comp=E,29nm,0.9s						
ARXS	**Arharly**	**5.52**	**54**	*e*P	**Pg**	**12 15 35.9**	**-3.9**
	comp=E,7.7nm,0.8s						
ARXS				*e*S	**Sg**	**12 16 47.3**	**-3.9**
	comp=E,124nm,0.7s						
KPKS	**Kokpek**	**5.73**	**63**	*e*P	**Pb**	**12 15 38.2**	**+4.2**
	comp=E,34nm,2.5s						
KPKS				*e*S	**Sg**	**12 16 53.4**	**-4.6**
	comp=E,86nm,1.1s						
MNBS	**Baschi**	**5.80**	**57**	*e*P	**Pg**	**12 15 43.9**	**-1.4**
	comp=E,3.7nm,0.6s						
MNBS				*e*S	**Sg**	**12 17 02.0**	**+1.5**
	comp=E,100nm,0.5s						
UZB	**Uzynbulak**	**5.85**	**67**	*e*P	**Pg**	**12 15 41.6**	**-4.6**
	comp=E,7.3nm,0.4s						
UZB				*e*S	**Sg**	**12 16 57.0**	**-5.0**
	comp=E,22nm,0.8s						
PDGK	**Podgornoye**	**6.23**	**66**	⇑Pg	**Pg**	**12 15 52.1**	**-1.3**
	comp=E,9.9nm,0.6s						
PDGK				⇑Lg	Lg	12 17 15.5	
	comp=E,58nm,1.1s						
PDGK	**Podgornoye**	**6.23**	**66**	PN	**Pb**	**12 15 45.5**	**+3.1**
PDGK						12 17 10.1	
PDGK				pmax	pmax		
	comp=Z,4.0nm,0.6s						
PDGK				pmax	pmax		
	comp=Z,10.0nm,0.6s						
PDGK				pmax	pmax		
	comp=N,58nm,1.1s						
TDK	**Taldyqorghan**	**6.30**	**49**	*e*P	**Pg**	**12 15 52.4**	**-2.4**
	comp=N,38nm,0.5s						
TDK				*e*S	**Sg**	**12 17 12.8**	**-3.6**
	comp=N,146nm,1.0s						
SHLS	**Shalkode**	**6.46**	**69**	⇑*i*P	**Pg**	**12 15 58.1**	**+0.4**
	comp=N,13nm,0.9s						
DJR	**Jarkent**	**6.81**	**59**	*e*P	**Pg**	**12 16 01.2**	**-3.4**
	comp=N,13nm,0.5s						
DJR				*e*S	**Sg**	**12 17 30.6**	**-2.1**
	comp=N,20nm,0.7s						
KTMS	**Ketmen**	**6.87**	**67**	*e*P	**Pg**	**12 16 03.9**	**-1.7**
	comp=N,4.2nm,0.7s						
KTMS				*e*S	**Sg**	**12 17 36.2**	**+1.7**
	comp=N,28nm,1.2s						
MK31	**Makanchi Array**	**9.55**	**50**	⇑Pn	**Pn**	**12 16 13.4**	**+1.9**
	comp=N,1.8nm,0.8s,baz=234,slow=13,SNR=12						
MK31				⇓Pg		12 16 52.6	
	comp=N,1.3nm,0.5s,baz=238,slow=14,SNR=3.4						
MK31				⇑Lg	Lg	12 19 01.4	
	comp=N,8.1nm,0.7s,baz=241,slow=20,SNR=3.6						
MK31	**Makanchi Array**	**9.55**	**50**	*i* P	**Pn**	**12 16 13.3**	**+1.9**
MK31				pmax	pmax		
	comp=Z,2.0nm,0.8s						
MKAR	**Makanchi Array**	**9.55**	**50**	Pn	**Pn**	**12 16 13.9**	**+2.5**
	comp=Z,0.2nm,0.3s,baz=237,slow=13,SNR=10.0						
MKAR				Lg	Lg	12 18 55.5	
	comp=Z,0.4nm,0.3s,baz=222,slow=23,SNR=4.4						
MKAR	**Makanchi Array**	**9.55**	**50**	*i* P	**Pn**	**12 16 13.6**	**+2.2**
MKAR				pmax	pmax		
	comp=Z,2.0nm,0.9s						
KURBB	**Kurchatov Arra**	**10.66**	**24**	Pn	**Pn**	**12 16 27.0**	**+0.5**
	comp=Z,0.1nm,0.3s,baz=215,slow=13,SNR=8.4						
KURBB				Lg	Lg	12 19 31.1	
	comp=Z,0.3nm,0.3s,baz=211,slow=28,SNR=9.0						
KURK	**Kurchatov**	**10.77**	**24**	P	**Pn**	**12 16 27.0**	**-1.0**
KURK	**Kurchatov**	**10.77**	**24**	Pn	**Pn**	**12 16 27.0**	**-1.0**
KURK				Lg	Lg	12 19 31.1	
GEYT	**Alibeck**	**10.93**	**258**	Pn	**Pn**	**12 16 30.1**	**-0.1**
	comp=Z,1.8nm,0.3s,baz=74,slow=12,SNR=4.6						
AB31	**Akbulak array**	**11.61**	**319**	P	**Pn**	**12 16 38.6**	**-0.9**
	comp=Z,1.6nm,0.3s,baz=128,slow=14,SNR=121						
AB31				⇓S	**Sn**	**12 18 43.9**	**-4.8**
	comp=Z,6.9nm,0.5s						
AB31	**Akbulak array**	**11.61**	**319**	P	**Pn**	**12 16 38.5**	**-0.9**
AB31				S	**Sn**	**12 18 41.2**	**-7.6**
AB31				pmax	pmax		
	comp=Z,2.0nm,0.3s						
AB31				smax	smax		
	comp=N,7.0nm,0.5s						
ABKAR	**Akbulak array**	**11.61**	**319**	*e*Pn	**Pn**	**12 16 38.5**	**-0.9**
	comp=N,4.9nm,0.3s						
BVA0	**Borovoye Array**	**11.97**	**356**	⇑Pn	**Pn**	**12 16 45.8**	**+1.4**
	comp=N,3.2nm,0.6s,baz=163,slow=13,SNR=5.9						
BVA0				⇑Sn	**Sn**	**12 19 01.0**	**+3.3**
	comp=N,12nm,1.2s,baz=165,slow=25,SNR=11						
BVA0				⇑Lg	Lg	12 20 19.1	
	comp=N,26nm,1.4s,baz=170,slow=20,SNR=3.7						
BVA0	**Borovoye Array**	**11.97**	**356**	*i* P	**Pn**	**12 16 44.0**	**-0.4**
BVA0				pmax	pmax		
	comp=Z,2.0nm,0.7s						
BVAR	**Borovoye Array**	**11.97**	**356**	Pn	**Pn**	**12 16 44.4**	**0.0**
	comp=Z,0.6nm,0.3s,baz=167,slow=13,SNR=5.9						
BVAR				Sn	**Sn**	**12 18 53.2**	**-4.5**
	comp=Z,1.2nm,0.3s,baz=160,slow=22,SNR=12						
BVAR				Lg	Lg	12 20 16.3	
	comp=Z,0.4nm,0.3s,baz=178,slow=19,SNR=4.7						
ZRNK	**Zerenda**	**12.00**	**352**	⇓Pn	**Pn**	**12 16 43.7**	**-1.1**
	comp=Z,2.3nm,0.6s						
ZRNK				⇓Sn	**Sn**	**12 19 00.4**	**+2.0**
	comp=Z,7.5nm,0.6s						
ZRNK				⇓Lg	Lg	12 20 18.7	
	comp=Z,65nm,1.5s						
ZRNK	**Zerenda**	**12.00**	**352**	P	**Pn**	**12 16 43.7**	**-1.1**
ZRNK						12 18 52.0	
ZRNK				pmax	pmax		
	comp=Z,2.0nm,0.5s						
ZRNK				smax	smax		
	comp=N,8.0nm,0.6s						
ZRNK				pmax	pmax		
	comp=N,65nm,1.5s						
BRVK	**Borovoye**	**12.01**	**356**	*ce*P	**Pn**	**12 16 44.9**	**0.0**
BRVK				pmax	pmax		
	comp=Z,2.0nm,0.6s						
BRVK	**Borovoye**	**12.01**	**356**	*e*Pn	**Pn**	**12 16 45.2**	**+0.3**
	comp=Z,3.9nm,0.5s						
AKTO	**Aktyubinsk**	**13.32**	**319**	Pn	**Pn**	**12 17 02.4**	**-0.5**
	comp=Z,1.3nm,0.3s,baz=113,slow=12,SNR=18						
AKTO				Sn	**Sn**	**12 19 25.1**	**-5.6**
	comp=Z,0.7nm,0.3s,baz=359,slow=4.2,SNR=8.2						
AKTO	**Aktyubinsk**	**13.32**	**319**	⇑P	**Pn**	**12 17 02.0**	**-0.9**
	comp=Z,5.7nm,0.6s						
AKTO				⇓S	**Sn**	**12 19 28.4**	**-2.3**
	comp=Z,9.7nm,0.8s						
AKTO	**Aktyubinsk**	**13.32**	**319**	P	**Pn**	**12 17 01.9**	**-0.9**
AKTO				S	**Sn**	**12 19 23.8**	**-6.9**
AKTO				pmax	pmax		
	comp=Z,6.0nm,0.6s						
AKTO				smax	smax		
	comp=N,10.0nm,0.8s						
ZALV	**Zalesovo Beam**	**15.60**	**30**	Pn	**Pn**	**12 17 34.6**	**+1.0**
	comp=N,0.2nm,0.3s,baz=213,slow=15,SNR=5.7						
NVS	**Novosibirsk**	**15.76**	**25**	*e*P	**P**	**12 17 38.9**	**-0.6**
NVS				*e*		12 20 38.9	
ARU	**Arti**	**17.56**	**335**	Pn	**Pn**	**12 17 57.9**	**-0.6**
	comp=N,0.0nm,0.3s,baz=157,slow=5.6,SNR=3.8						
ARU	**Arti**	**17.56**	**335**	*c* P	**Pn**	**12 17 58.0**	**-0.4**
ARU				S	**Sn**	**12 21 14.4**	**+0.8**
ARU				pmax	pmax		
	comp=Z,2.0nm,0.9s						
ARU	**Arti**	**17.56**	**335**	Pn	**Pn**	**12 17 57.9**	**-0.6**
ARU				*e*Pn	**P**	**12 17 58.8**	**-0.7**
ZEI	**Tsey**	**20.68**	**284**	*e*P	**P**	**12 18 33.0**	**-1.0**
ZEI				pmax	pmax		
	comp=Z,4.0nm,0.6s						
KBZ	**Khabaz**	**21.35**	**287**	P	**P**	**12 18 42.8**	**+1.9**
	comp=Z,1.0nm,0.4s,baz=48,slow=2.8,SNR=4.2						
ULN	**Ulaanbaatar**	**25.98**	**63**	*ce*P	**P**	**12 19 28.0**	**+1.4**
ULN				pmax	pmax		
	comp=Z,3.0nm,1.2s						
BRTR	**Keskin Array B**	**28.83**	**280**	P	**P**	**12 19 53.3**	**+1.0**
	comp=Z,0.6nm,0.6s,baz=

comp=Z,1.7nm,0.7s,baz=47,slow=5.6,SNR=9.5
COLD Coldfoot 67.42 16 *e*P **P 12 24 48.9 0.0**
comp=Z,2.5nm,0.9s
INK Inuvik 69.30 10 P **P 12 25 01.2 +0.7**
comp=Z,1.2nm,0.6s,baz=342,slow=8.4,SNR=11
INK pP **sP 12 25 06.2 -0.2**
comp=Z,1.2nm,0.6s,baz=354,slow=8.7,SNR=5.7
ILAR Eielson Array 70.23 16 P **P 12 25 05.8 -0.7**
comp=Z,0.5nm,0.8s,baz=329,slow=5.6,SNR=4.4
DBIC Dimbokro 75.48 266 P **P 12 25 37.3 -1.1**
comp=Z,1.6nm,0.6s,baz=0.0,slow=8.1,SNR=3.9
YKA Yellowknife Ar 76.64 3 P **P 12 25 44.2 +0.1**
comp=Z,0.4nm,0.7s,baz=349,slow=5.7,SNR=7.3
YKA pP **sP 12 25 50.0 0.0**
comp=Z,0.3nm,0.5s,baz=352,slow=6.1,SNR=6.4
WRA Warramunga Arr 84.01 123 P **P 12 26 22.6 -1.9**
comp=Z,0.2nm,0.5s,baz=320,slow=5.9,SNR=6.1
WRA Warramunga Arr 84.01 123 *e*P **P 12 26 24.1 -0.3**
FFC Flin Flon 84.40 356 *i* P **P 12 26 26.9 +0.9**
ASAR Alice Springs 86.48 126 P **P 12 26 35.9 -0.8**
comp=Z,0.5nm,0.7s,baz=316,slow=4.9,SNR=12

*IDC **25** 12:46:13.9±1.7,36°.74N×141°.05E,h0km,mb3.6/2, mb1 3.8/3,mb1mx3.3/47,mbtmp3.5/3,ML3.3/1, Error ellipse: s-maj=40.9km s-min=37.7km az=173.0*
*ISCJB **25** 12:46:17.5±0.6,37°.04N±0°.03×140°.63E±0°.07,h10km±6km, mb3.8/2,Error ellipse: s-maj=9.0km s-min=4.6km az=10.9*
*JMA **25** 12:46:17.7,37°.04N×140°.61E,h9km±2km,M3.2*
ISC 25 12:46:17.0±0.9,37°.02N±0°.03×140°.64E±0°.05,h16km±8km, n13,σ0s41/21,4C,Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.15**	**58**	⇑P	**Pg**	**12 46 21.2**	**+0.1**
ONAJ				S	**Sg**	**12 46 23.8**	**0.0**
JFK	**Kawauchi**	**0.39**	**28**	⇑P	**Pg**	**12 46 25.2**	**+0.2**
JHO	**Hitachi**	**0.41**	**188**	⇑P	**Pb**	**12 46 25.9**	**0.0**
JHO				S	**Sb**	**12 46 32.0**	**0.0**
JFT	**Otama**	**0.55**	**334**	P	**Pg**	**12 46 28.1**	**+0.1**
JFT				S	**Sg**	**12 46 35.2**	**-0.2**
JSB	**Shiboa**	**0.58**	**265**	⇑P	**Pb**	**12 46 29.2**	**+0.4**
JSB				S	**Sb**	**12 46 37.2**	**+0.4**
JFY	**Yanaizu**	**0.84**	**298**	P	**Pb**	**12 46 33.2**	**0.0**
JFY				S	**Sb**	**12 46 43.9**	**-0.4**
JMM	**Marumori**	**0.85**	**8**	P	**Pb**	**12 46 33.2**	**-0.2**
JMM				S	**Sg**	**12 46 44.9**	**+0.1**
JYT	**Yasato**	**0.87**	**205**	P	**Pg**	**12 46 34.0**	**+0.1**
JYT				S	**Sg**	**12 46 45.3**	**-0.1**
MJAR	**Matsushiro Arr**	**2.01**	**257**	Pn	**Pb**	**12 46 52.6**	**-0.5**
MJAR	8.4nm,0.3s,baz=87,slow=16,SNR=48			Sn	**Sb**	**12 47 17.4**	**-0.5**
	17nm,0.3s,baz=49,slow=25,SNR=15						
MAT	**Matsushiro**	**2.01**	**257**	P	**Pb**	**12 46 52.6**	**-0.6**
MAT				S	**Sb**	**12 47 18.9**	**+0.9**
WRA	**Warramunga Arr**	**56.97**	**187**	P	**P**	**12 56 01.3**	**-0.3**
	0.4nm,0.6s,baz=2.7,slow=7.2,SNR=4.9						
ASAR	**Alice Springs**	**60.70**	**187**	P	P	12 56 24.2	-3.3
	0.6nm,0.5s,baz=8.2,slow=8.8,SNR=25						
LPAZ	**La Paz**	**147.23**	**59**	PKPbc	**PKPdf**	**13 05 59.1**	**+0.6**
	1.2nm,0.4s,baz=264,slow=5.1,SNR=9.1						

*IDC **25** 12:49:44.9±0.7,55°.98S×27°.23W,h0km,mb4.3/8, mb1 4.4/9,mb1mx4.0/22,mbtmp4.3/9,ML5.0/1,Error ellipse: s-maj=28.1km s-min=21.2km az=119.0*
*ISCJB **25** 12:49:52.1±0.7,56°.01S±0°.09×27°.2W±0°.2,h63km,mb4.3/8, Error ellipse: s-maj=17.8km s-min=12.2km az=0.7*
ISC 25 12:49:53.4±0.7,56°.0S±0°.1×27°.2W±0°.2,h63km,n21, σ0s85/16,mb4.4/7,South Sandwich Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
VNA3	**Neumayer Olymp**	**17.02**	**161**	P	**Pn**	**12 53 45.6**	**-1.3**
VNA2	**Neumayer--Watz**	**17.22**	**158**	P	**P**	**12 53 50.9**	**+0.8**
	baz=314,slow=13						
SNAA	**Sanae**	**18.77**	**156**	P	**P**	**12 54 07.3**	**+0.2**
PMSA	**Palmer Station**	**19.94**	**229**	Pn	**P**	**12 54 20.2**	**+0.4**
	0.5nm,0.3s,baz=22,slow=5.4,SNR=2.3						
VNDA	**Vanda**	**46.61**	**183**	P	**P**	**12 58 14.6**	**0.0**
	2.9nm,0.7s,baz=188,slow=5.1,SNR=14						
H10S2	**ASCENSION HYDR**	**47.96**	**17**	T	T	13 51 13.5	
	baz=189,slow=75,SNR=20						
H10S3	**ASCENSION HYDR**	**47.96**	**17**	T	T	13 51 13.8	
	baz=189,slow=75,SNR=24						
H10S1	**ASCENSION HYDR**	**47.97**	**17**	T	T	13 51 14.8	
	baz=189,slow=75,SNR=18						
LBTB	**Lobatse**	**48.98**	**73**	P	**P**	**12 58 33.5**	**-0.1**
	3.3nm,1.0s,baz=218,slow=13,SNR=3.6						
H10N3	**ASCENSION HYDR**	**49.08**	**17**	T	T	13 52 32.8	
	baz=190,slow=74,SNR=10						
H10N2	**ASCENSION HYDR**	**49.09**	**17**	T	T	13 52 05.2	
	baz=265,slow=74,SNR=7.4						
TSUM	**Tsumeb**	**49.65**	**61**	P	**P**	**12 58 39.0**	**+0.3**
	1.3nm,0.7s,baz=163,slow=11,SNR=4.1						
LPAZ	**La Paz**	**50.37**	**305**	P	**P**	**12 58 45.1**	**+0.3**
	1.7nm,0.3s,baz=165,slow=3.8,SNR=14						
DBIC	**Dimbokro**	**65.12**	**25**	P	**P**	**13 00 27.8**	**+0.4**
	2.5nm,0.5s,baz=147,slow=4.6,SNR=7.0						
TORD	**Torodi Ar. Bea**	**73.01**	**29**	P	**P**	**13 01 16.7**	**+0.4**
	2.4nm,0.4s,baz=199,slow=6.4,SNR=33						
STKA	**Stephens Creek**	**91.94**	**170**	P	**P**	**13 02 55.9**	**+1.0**
	1.3nm,0.8s,baz=199,slow=4.4,SNR=3.3						
ASAR	**Alice Springs**	**99.02**	**162**	P	**Pdif**	**13 03 27.9**	**+0.6**
	0.3nm,0.6s,baz=180,slow=3.7,SNR=9.3						
FINES	**FINESS Array B**	**124.34**	**28**	PKP	**PKPdf**	**13 08 42.2**	**-1.3**
	0.7nm,0.5s,baz=169,slow=1.9,SNR=12						
ARCES	**ARCESS Array B**	**130.90**	**22**	PKP	**PKPdf**	**13 08 54.9**	**-1.0**
	3.6nm,1.1s,baz=29,slow=2.8,SNR=7.9						
YKA	**Yellowknife Ar**	**136.15**	**318**	PKP	**PKPdf**	**13 09 04.8**	**-1.1**
	0.3nm,0.5s,baz=132,slow=2.1,SNR=6.1						
ILAR	**Eielson Array**	**150.10**	**312**	PKPbc	**PKPbc**	**13 09 34.5**	**-0.9**
	1.9nm,0.7s,baz=142,slow=2.3,SNR=18						

*ISCJB **25** 13:06:14.1±0.5,22°.37S±0°.08×171°.62E±0°.07,h98km, mb4.4/17,Error ellipse: s-maj=11.8km s-min=8.3km az=31.9*
*IDC **25** 13:06:17.3±3.3,22°.31S×171°.57E,h111km±27km, mb4.0/12,mb1 4.2/15,mb1mx4.1/26,mbtmp4.5/15,MS3.5/4, Ms1 3.5/4,ms1mx3.0/27,Error ellipse: s-maj=23.2km s-min=15.5km az=68.0*
*NEIC **25** 13:06:18.3±1.1,22°.33S×171°.59E,h122km±11km,mb4.8/8, Error ellipse: s-maj=11.2km s-min=10.5km az=224.0*
ISC 25 13:06:16.3±0.6,22°.41S±0°.09×171°.59E±0°.08,h98km,n33, σ1s35/31,mb4.2/17,2D,Southeast of Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**4.78**	**273**	P	**Pn**	**13 07 27.8**	**+1.8**
	71nm,0.3s,baz=171,slow=1.9,SNR=2281						
DZM				S	**Sn**	**13 08 20.8**	**+0.5**
	116nm,0.3s,baz=146,slow=22,SNR=20						
MSVF	**Nonsavu**	**7.64**	**54**	*e*Pn	**Pn**	**13 08 07.2**	**+2.2**
	19nm,1.0s						
URZ	**Urewera**	**16.50**	**165**	P	**Pn**	**13 10 02.6**	**+0.9**
	1.0nm,0.3s,baz=182,slow=16,SNR=3.7						
URZ				LR	LR	13 15 40.2	
	comp=Z,168nm,19.5s,baz=340,slow=34						
HNR	**Honiara**	**17.06**	**317**	P	**P**	**13 10 09.4**	**+0.3**
	6.0nm,0.3s,baz=232,slow=3.0,SNR=9.4						
HNR				LR	LR	13 15 29.3	
	comp=Z,86nm,20.1s,baz=154,slow=32						
HNR	**Honiara**	**17.06**	**317**	P	**P**	**13 10 09.0**	**-0.1**
HNR	**Honiara**	**17.06**	**317**	*e*P	**Pn**	**13 10 07.7**	**-1.2**
	60nm,0.7s						
RPZ	**Rata Peaks**	**21.26**	**181**	P	**P**	**13 10 56.2**	**+1.7**
	36nm,1.1s,baz=265,slow=1.7,SNR=4.2						
RPZ				LR	LR	13 17 40.0	
	comp=Z,228nm,19.3s,baz=354,slow=32						
CTA	**Charters Tower**	**23.72**	**271**	P	**P**	**13 11 21.3**	**+1.8**
	5.3nm,0.8s,baz=81,slow=13,SNR=5.6						
CTAO	**Charters Tower**	**23.72**	**271**	*e*P	**P**	**13 11 21.6**	**+2.1**
	5.0nm,0.6s						
RAR	**Rarotonga**	**26.60**	**93**	LR	LR	13 20 28.6	
	comp=Z,66nm,18.6s,baz=266,slow=32						
STKA	**Stephens Creek**	**28.23**	**244**	P	**P**	**13 12 01.0**	**+0.9**
	3.6nm,0.8s,baz=87,slow=12,SNR=10						
ASAR	**Alice Springs**	**34.64**	**260**	P	**P**	**13 12 55.8**	**-0.6**
	10.0nm,0.9s,baz=86,slow=8.8,SNR=93						
WRAB	**Tennant Creek**	**34.76**	**267**	*e*P	**P**	**13 12 55.4**	**-2.1**
	1.9nm,0.5s						
WRA	**Warramunga Arr**	**34.77**	**267**	P	**P**	**13 12 56.0**	**-1.5**
	1.3nm,0.3s,baz=98,slow=8.7,SNR=69						
FITZ	**Fitzroy Crossi**	**43.20**	**267**	*e*P	**P**	**13 14 07.8**	**0.0**
	18nm,0.9s						
VNDA	**Vanda**	**55.37**	**183**	P	**P**	**13 15 39.6**	**0.0**
	1.9nm,0.9s,baz=6.9,slow=8.0,SNR=7.7						
SBA	**Scott Base**	**55.55**	**181**	*e*P	**P**	**13 15 41.3**	**+0.4**
	29nm,1.0s						
KSM	**Kuching**	**64.22**	**283**	*e*P	**P**	**13 16 40.8**	**-0.5**
	9.5nm,0.8s						
MJAR	**Matsushiro Arr**	**66.57**	**331**	P	**P**	**13 16 54.0**	**-1.9**
	2.3nm,0.8s,baz=166,slow=6.4,SNR=5.9						
QSPA	**South Pole Qui**	**67.67**	**180**	*e*P	**P**	**13 17 01.7**	**-0.9**
	43nm,0.9s						
KSRS	**Korea Array**	**72.35**	**325**	P	**P**	**13 17 30.8**	**-0.7**
	3.8nm,0.9s,baz=151,slow=6.4,SNR=9.9						
KSAR	**Wonju Array Be**	**72.36**	**325**	P	**P**	**13 17 30.8**	**-0.8**
PETK	**Petropavlovsk-**	**76.16**	**351**	P	**P**	**13 17 52.6**	**-0.6**
	5.5nm,0.9s,baz=129,slow=14,SNR=3.5						
MAW	**Mawson**	**76.34**	**202**	P	**P**	**13 17 54.4**	**+0.2**
	2.2nm,0.6s,baz=132,slow=4.1,SNR=7.2						
CMAR	**Chiang Mai Arr**	**81.79**	**294**	P	**P**	**13 18 25.4**	**+0.6**
	0.7nm,0.3s,baz=129,slow=3.7,SNR=8.8						
SYO	**Syowa Base**	**82.51**	**196**	*e*P	P	13 18 24.4	-3.3
SYO	**Syowa Base**	**82.51**	**196**	*e*PcP	**PcP**	**13 18 30.4**	**-2.1**
VNA3	**Neumayer Olymp**	**86.60**	**180**	P	**P**	**13 18 46.1**	**-2.3**
VNA2	**Neumayer--Watz**	**86.92**	**180**	P	**P**	**13 18 48.3**	**-1.5**
	baz=183,slow=3.7						
VNA1	**Neumayer--Stat**	**87.20**	**180**	P	**P**	**13 18 49.7**	**-1.5**
NVAR	**Mina Array Bea**	**89.27**	**48**	P	**P**	**13 19 01.4**	**-0.3**
	0.3nm,0.3s,baz=236,slow=6.4,SNR=7.6						
MLR	**Muntele Rosu**	**143.78**	**318**	PKP	PKPab	13 25 37.1	0.0
	0.4nm,0.5s,baz=180,slow=1.0,SNR=4.3						
GERES	**GERESS Array B**	**148.31**	**332**	PKPbc	**PKPdf**	**13 25 49.0**	**+1.4**
	0.6nm,0.7s,baz=75,slow=1.5,SNR=5.5						

*HEL **25** 13:09:44.8±0.4,67°.71N×33°.84E,h0km,ML2.1,Explosion*
*NAO **25** 13:09:44.9±1.5,67°.64N×33°.78E,ML2.7*
*CSEM **25** 13:09:46.5±0.5,67°.52N×33°.25E,h1km,ML2.7,Error ellipse: s-maj=9.7km s-min=8.4km az=121.0,Mining explosion.*
ISC 25 13:09:46.2±1.5,67°.67N±0°.04×33°.48E±0°.07,h0km,n33, σ0s92/53,Baltic States-Belarus-Northwestern Russia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
APZ9	**Apatity**	**0.11**	**196**	Pg	**Pg**	**13 09 48.3**	**+0.1**
APZ9				Lg	Lg	13 09 50.6	
APZ9	**Apatity**	**0.11**	**196**	Pg	**Pg**	**13 09 48.3**	**+0.1**
APZ9				Lg	Lg	13 09 50.6	
APZ9	**Apatity**	**0.11**	**196**	Pg	**Pg**	**13 09 48.3**	**+0.1**
	SNR=91						
APZ9				Lg	Lg	13 09 50.7	
APA0	**Apatity Array**	**0.20**	**251**	Pg	**Pg**	**13 09 50.5**	**+0.6**
	baz=92,slow=16						
APA0				Lg	Lg	13 09 54.6	
	baz=81,slow=37						
APA0				Rg	Rg	13 09 56.0	
	baz=83,slow=37						
APA0	**Apatity Array**	**0.20**	**251**	Pg	**Pg**	**13 09 50.5**	**+0.6**
	baz=92,slow=16						
APA0				Lg	Lg	13 09 54.6	
	baz=81,slow=37						
APA0				Rg	Rg	13 09 56.0	
	baz=83,slow=37						
APA0	**Apatity Array**	**0.20**	**251**	Pg	**Pg**	**13 09 50.5**	**+0.6**
	SNR=90						
APA0				Lg	Lg	13 09 54.6	
	SNR=353						
VRF	**Varrio**	**1.48**	**275**	PG	**Pn**	**13 10 13.4**	**-0.6**
VRF				MSG		13 10 33.0	
	comp=Z,20nm,0.2s						
VRF				SG	**Sn**	**13 10 33.8**	**-0.2**
VRF	**Varrio**	**1.48**	**275**	Pg	**Pn**	**13 10 13.4**	**-0.6**
VRF				Sg	**Sn**	**13 10 33.8**	**-0.2**
KUG	**Riekki**	**2.18**	**222**	PB	**Pn**	**13 10 23.8**	**+0.2**
KUG				MSG		13 10 53.0	
	comp=Z,7.2nm,0.2s						
KUG				SG	**Sg**	**13 10 54.5**	**-1.6**
KUG	**Riekki**	**2.18**	**222**	Pb	**Pn**	**13 10 23.8**	**+0.2**
KUG				Sg	**Sg**	**13 10 54.4**	**-1.6**
MSF	**Maaselka**	**2.49**	**227**	PB	**Pb**	**13 10 30.6**	**-1.2**
MSF				SB	**Sb**	**13 11 03.3**	**+0.3**
MSF	**Maaselka**	**2.49**	**227**	Pb	**Pb**	**13 10 30.6**	**-1.2**
MSF				Sb	**Sb**	**13 11 03.3**	**+0.3**
SGF	**Sodankyl**	**2.68**	**268**	PB	**Pb**	**13 10 33.1**	**-1.8**
SGF				SG	**Sg**	**13 11 11.6**	**-0.5**
SGF	**Sodankyl**	**2.68**	**268**	Pb	**Pb**	**13 10 33.1**	**-1.8**
SGF				Sg	**Sg**	**13 11 11.6**	**-0.5**
RNF	**Rovaniemi**	**3.10**	**253**	PN	**Pn**	**13 10 36.7**	**+0.4**
RNF				SN	**Sn**	**13 11 15.4**	**+1.4**
RNF	**Rovaniemi**	**3.10**	**253**	Pn	**Pn**	**13 10 36.7**	**+0.4**
KEV	**Kevo**	**3.15**	**315**	SN	**Sn**	**13 11 16.2**	**+0.9**
KEV				MSG		13 11 19.6	
	comp=Z,6.6nm,0.2s						
KEV	**Kevo**	**3.15**	**315**	Sn	**Sn**	**13 11 16.2**	**+0.9**
ARA0	**ARCESS Array S**	**3.47**	**306**	Pn	**Pn**	**13 10 41.4**	**+0.1**
	baz=122,slow=14						
ARA0				Pg	**Pb**	**13 10 48.8**	**+0.4**
	baz=114,slow=16						
ARA0				Sn	**Sn**	**13 11 22.8**	**-0.3**
	baz=118,slow=28						
ARA0				Lg	Lg	13 11 34.0	
	baz=110,slow=37						
ARA0	**ARCESS Array S**	**3.47**	**306**	Pn	**Pn**	**13 10 41.4**	**+0.1**
	baz=122,slow=14						
ARA0				Pg	**Pb**	**13 10 48.8**	**+0.4**
	baz=114,slow=16						
ARA0				Sn	**Sn**	**13 11 22.8**	**-0.3**
	baz=118,slow=28						
ARA0				Lg	Lg	13 11 34.0	
	baz=110,slow=37						
ARA0	**ARCESS Array S**	**3.47**	**306**	Pn	**Pn**	**13 10 41.4**	**+0.1**
	SNR=50						
ARA0				Sn	**Sn**	**13 11 22.8**	**-0.3**
	SNR=50						
ARA0				Lg	Lg	13 11 34.0	
	SNR=3.7						
ARE0	**ARCESS Array S**	**3.47**	**306**	PN	**Pn**	**13 10 41.0**	**-0.3**
	baz=120						
ARE0				SN	**Sn**	**13 11 22.3**	**-0.8**
ARE0	**ARCESS Array S**	**3.47**	**306**	Pn	**Pn**	**13 10 41.0**	**-0.3**
ARE0				Sn	**Sn**	**13 11 22.3**	**-0.8**
HEF	**Hetta**	**3.76**	**286**	PN	**Pn**	**13 10 45.7**	**+0.3**
HEF				SN	**Sn**	**13 11 31.7**	**+1.4**
HEF	**Hetta**	**3.76**	**286**	Pn	**Pn**	**13 10 45.6**	**+0.3**
HEF				Sn	**Sn**	**13 11 31.7**	**+1.4**
TOF	**Tornio**	**3.95**	**250**	PG	**Pb**	**13 10 57.7**	**+1.2**
TOF				SN	**Sn**	**13 11 35.1**	**+0.3**
TOF	**Tornio**	**3.95**	**250**	Pg	**Pb**	**13 10 57.7**	**+1.2**
TOF				Sn	**Sn**	**13 11 35.1**	**+0.3**
OUL	**Oulu**	**4.01**	**233**	PG	**Pb**	**13 10 59.6**	**+2.1**
OUL	**Oulu**	**4.01**	**233**	Pg	**Pb**	**13 10 59.6**	**+2.1**
LANU	**Lannavaara**	**4.37**	**280**	PN	**Pn**	**13 10 53.2**	**-0.5**
LANU				SN	**Sn**	**13 11 44.1**	**-1.1**
LANU	**Lannavaara**	**4.37**	**280**	Pn	**Pn**	**13 10 53.1**	**-0.5**
LANU				Sn	**Sn**	**13 11 44.1**	**-1.1**
FIA0	**FINESS Array S**	**7.01**	**210**	Lg	Lg	13 13 20.3	
	baz=27,slow=37						
FIA0	**FINESS Array S**	**7.01**	**210**	Lg	Lg	13 13 20.3	
	baz=27,slow=37						

*IDC **25** 13:10:19.3±1.9,14°.01N×60°.01W,h33km±13km,mb4.0/22, mb1 4.2/23,mb1mx4.0/49,mbtmp4.2/23,ML4.9/2,MS3.1/3, Ms1 3.1/3,ms1mx2.7/35,Error ellipse: s-maj=14.3km s-min=12.8km az=93.0*
*NEIC **25** 13:10:21.8,14°.04N×60°.10W,h70km,mb4.6/46, MD4.2(TRN),After TRN.*
NEIC Felt [IV] at Le Robert and [II] at Fort-de-France, Martinique. Also felt at Ducos, Le Francois, Le Lamentin, Saint-Pierre, Sainte-Luce, Sainte-Marie and Schoelcher. Felt at Castries, Saint Lucia and at Biabou, Saint Vincent.
*BJI **25** 13:10:21.9,14°.10N×60°.10W,h67km*
*TRN **25** 13:10:21.8,14°.03N×60°.11W,h68km,MD4.3*
TRN Felt in Saint Lucia MMI III, and St. VincentMMI II and III.
*ISCJB **25** 13:10:22.3±0.3,14°.01N±0°.02×60°.14W±0°.03,h76km±2km, mb4.4/65,Error ellipse: s-maj=4.8km s-min=2.6km az=171.4*
*FUNV **25** 13:10:23.7,13°.91N×59°.80W,h72km,MW4.3*
ISC 25 13:10:23.1±0.8,14°.03N±0°.03×60°.12W±0°.05,h69km±7km, n412,σ0s85/440,mb4.5/65,2C-17D,Windward Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
H05S1	**Guadeloupe/Mar**	**0.80**	**299**	Pg	**Pn**	**13 10 38.4**	**-0.6**
H05S1				Lg	Lg	13 10 50.1	
MCLT	**Moule a Chique**	**0.86**	**248**	*e*P	**Pn**	**13 10 41.1**	**+1.3**
MCLT				*e*S	**Sn**	**13 10 52.8**	**+0.5**
MCLT	**Moule a Chique**	**0.86**	**248**	*e*P	**Pn**	**13 10 39.6**	**-0.2**
MCLT				*e*S	**Sn**	**13 10 52.5**	**+0.3**
MVM	**Montagne Vaucl**	**0.92**	**305**	⇑*i*P	**Pn**	**13 10 40.2**	**-0.2**
LPMF	**Morne Lapointe**	**0.98**	**303**	⇓*i*P	**Pn**	**13 10 41.2**	**-0.1**
ZAM	**Aeronautique**	**1.03**	**301**	⇓*e*P	**Pn**	**13 10 41.9**	**0.0**
TRMF	**Trois Ilets**	**1.03**	**299**	⇓*i*P	**Pn**	**13 10 41.9**	**0.0**
BBGH	**Gun Hill**	**1.04**	**148**	⇓*e*P	**Pn**	**13 10 41.9**	**-0.1**
BBGH				*e*S	**Sn**	**13 10 56.1**	**0.0**
BBGH	**Gun Hill**	**1.04**	**148**	*e*Pn	**Pn**	**13 10 41.8**	**-0.1**
BIM	**Bigot**	**1.04**	**298**	⇓*e*P	**Pn**	**13 10 42.0**	**-0.1**
BIM				*e*S	**Sn**	**13 10 56.8**	**+0.6**
BBSP	**Saint Philip**	**1.12**	**145**	*e*P	**Pn**	**13 10 43.6**	**+0.5**
BBSP				*e*S	**Sn**	**13 10 58.6**	**+0.6**
BBSP	**Saint Philip**	**1.12**	**145**	*e*Pn	**Pn**	**13 10 43.6**	**+0.5**
BBSP				*e*S	**Sn**	**13 10 58.6**	**+0.6**
FDF	**Fort de France**	**1.22**	**305**	⇓*i*P	**Pn**	**13 10 44.2**	**-0.2**
FDF				*e*S	**Sn**	**13 10 58.8**	**-1.5**
FDF	**Fort de France**	**1.22**	**305**	*e*Pn	**Pn**	**13 10 44.1**	**-0.2**
BAMF	**Morne Balai**	**1.27**	**308**	⇓*e*P	**Pn**	**13 10 45.0**	**+0.1**
GBMF	**Grand Be**	**1.27**	**307**	⇓*e*P	**Pn**	**13 10 45.0**	**0.0**
PML	**Morne Lenard**	**1.27**	**306**	⇓*e*P	**Pn**	**13 10 45.2**	**+0.1**
CXM	**Morne La Croix**	**1.28**	**307**	⇓*i*P	**Pn**	**13 10 45.4**	**+0.1**
CXM				*e*S	**Sn**	**13 11 02.5**	**+0.7**
SVV	**Soufriere Volc**	**1.28**	**236**	⇓*i*P	**Pn**	**13 10 45.3**	**+0.2**
SVV	**Soufriere Volc**	**1.28**	**236**	*i* P	**Pn**	**13 10 45.4**	**+0.2**
SVV				*e*S	**Sn**	**13 11 02.3**	**+0.6**
SVV	**Soufriere Volc**	**1.28**	**236**	⇓*i*Pn	**Pn**	**13 10 45.3**	**+0.2**
SVV				*e*S	**Sn**	**13 11 03.9**	**+2.2**
SVN	**Savane Anatole**	**1.30**	**308**	⇓*i*P	**Pn**	**13 10 45.3**	**0.0**
PCM	**Pelee Case Pet**	**1.31**	**306**	⇓*e*P	**Pn**	**13 10 44.8**	**-0.8**
PCM	**Pelee Case Pet**	**1.31**	**306**	⇓*e*P	**Pn**	**13 10 45.7**	**+0.1**
SVB	**Belmont**	**1.34**	**236**	*i* P	**Pn**	**13 10 46.0**	**+0.1**
SVB				*e*S	**Sn**	**13 11 03.3**	**+0.3**
SVB	**Belmont**	**1.34**	**236**	*e*Pn	**Pn**	**13 10 45.8**	**-0.1**
FCV	**Fort Charlotte**	**1.40**	**232**	*e*P	**Pn**	**13 10 46.8**	**+0.1**
FCV				*e*S	**Sn**	**13 11 04.6**	**+0.1**
DSHT	**Scott's Head**	**1.69**	**314**	*e*P	**Pn**	**13 10 51.1**	**+0.6**
DSHT				*e*S	**Sn**	**13 11 12.5**	**+1.2**
DLPL	**La Plaine**	**1.69**	**320**	*e*P	**Pn**	**13 10 50.8**	**+0.2**
DLPL				*e*S	**Sn**	**13 11 12.0**	**+0.6**
DPMT	**Pointe Michel**	**1.73**	**315**	*e*P	**Pn**	**13 10 51.2**	**+0.2**
DPMT				*e*S	**Sn**	**13 11 12.6**	**+0.4**
MDN	**Morne-Daniel**	**1.78**	**316**	*e*P	**Pn**	**13 10 52.6**	**+0.9**
MDN				*e*S	**Sn**	**13 11 13.5**	**+0.1**
MDN	**Morne-Daniel**	**1.78**	**316**	*e*P	**Pn**	**13 10 52.6**	**+0.9**
MDN				*e*S	**Sn**	**13 11 13.5**	**+0.1**
DWS	**Wesley**	**1.91**	**323**	*e*P	**Pn**	**13 10 54.0**	**+0.5**
DWS				*e*S	**Sn**	**13 11 16.3**	**-0.4**
MGG	**Marie-Galante**	**2.20**	**328**	⇓*i*P	**Pn**	**13 10 56.8**	**-0.6**
MGG	**Marie-Galante**	**2.20**	**328**	*i* P	**Pn**	**13 10 56.9**	**-0.6**
MGG				*e*S	**Sn**	**13 11 23.7**	**0.0**
GRGR	**Grenville**	**2.41**	**219**	*e*P	**Pn**	**13 11 01.1**	**+0.8**
GRGR	**Grenville**	**2.41**	**219**	*e*Pn	**Pn**	**13 11 01.0**	**+0.8**
DEG	**La Desirade**	**2.44**	**338**	⇓*i*P	**Pn**	**13 11 00.0**	**-0.7**
H05N1	**Guadeloupe/Mar**	**2.44**	**338**	Pn	**Pn**	**13 10 59.7**	**-1.0**
H05N1				Sn	**Sn**	**13 11 28.0**	**-1.6**
GDHS	**Morne Mazeau,**	**2.74**	**325**	*e*Pn	**Pn**	**13 11 04.8**	**+0.1**
TOSP	**Speyside**	**2.75**	**189**	⇑*i*P	**Pn**	**13 11 04.7**	**-0.1**
TOSP				*e*S	**Sn**	**13 11 36.9**	**-0.1**
BPA	**Boggy Peak**	**3.43**	**331**	*e*P	**Pn**	**13 11 14.4**	**+0.2**
BPA				*e*S	**Sn**	**13 11 53.0**	**-0.8**
BPA	**Boggy Peak**	**3.43**	**331**	*e*P	**Pn**	**13 11 14.4**	**+0.2**
TRN	**Trinidad (W)**	**3.59**	**201**	*e*P	**Pn**	**13 11 17.1**	**+0.8**
TRN				*e*S	**Sn**	**13 11 57.4**	**-0.2**
TRN	**Trinidad (W)**	**3.59**	**201**	*e*P	**Pn**	**13 11 17.8**	**+1.5**
TRN				*e*S	**Sn**	**13 11 57.4**	**-0.2**
TBH	**Brigand Hill**	**3.65**	**195**	*e*P	**Pn**	**13 11 17.1**	**-0.1**
TBH				*e*S	**Sn**	**13 11 57.5**	**-1.5**
TBH	**Brigand Hill**	**3.65**	**195**	*e*P	**Pn**	**13 11 17.1**	**-0.1**
TBH				*e*S	**Sn**	**13 11 57.5**	**-

Z44A	Pea Ridge, Bel baz=118	33.55 310	P	P	13 16 56.6	+0.2
SADO	Sadowa 10nm,0.9s,baz=180,slow=7.6,SNR=8.7	34.65 336	P	P	13 17 06.0	+0.2
SADO	Sadowa 8.8nm,0.8s	34.65 336	eP	P	13 17 05.7	0.0
Y42A	Garnett, Star baz=117	34.81 310	P	P	13 17 08.5	+1.2
W41A	Tony Mavity, V baz=118	35.76 312	P	P	13 17 15.7	+0.3
W41B	Gary Mavity, V baz=118	35.76 312	P	P	13 17 16.0	+0.5
X40A	Basin Creek Fa baz=116	35.87 310	P	P	13 17 17.2	+0.7
X301	Greenbrier Sit 8.9nm,1.1s	35.90 312	eP	P	13 17 17.1	+0.5
339A	Huntington baz=111	35.94 304	P	P	13 17 17.7	+0.7
239A	Gary baz=112	36.12 306	P	P	13 17 19.4	+0.8
NATX	Nacogdoches baz=111	36.18 305	P	P	13 17 19.9	+0.8
Z39A	Irene McRaven, baz=114	36.37 308	P	P	13 17 21.0	+0.3
MIAR	Mount Ida baz=116	36.45 310	P	P	13 17 22.0	+0.6
V40A	Witts Springs baz=118	36.47 312	P	P	13 17 21.9	+0.3
338A	Crockett baz=110	36.55 304	P	P	13 17 23.3	+1.0
238A	Jacksonville baz=111	36.63 305	P	P	13 17 23.5	+0.5
U40A	Yellville baz=119	36.75 313	P	P	13 17 24.5	+0.5
637A	Eagle Lake baz=107	36.79 301	P	P	13 17 25.4	+1.1
X39A	Fountain Ranch baz=115	36.84 310	P	P	13 17 25.3	+0.6
138A	Matatall Enter baz=112	36.84 306	P	P	13 17 25.3	+0.5
W39A	Magazine baz=116	36.89 311	P	P	13 17 26.0	+0.9
T40A	Mansfield baz=120	36.91 315	P	P	13 17 25.8	+0.5
537A	Green Hill Far baz=108	36.96 302	P	P	13 17 26.5	+0.7
437A	Phantom Ranch, baz=109	37.05 303	P	P	13 17 27.4	+0.9
V39A	Pettigrew baz=117	37.08 312	P	P	13 17 27.3	+0.5
S40A	Lebanon baz=121	37.12 315	P	P	13 17 27.3	+0.3
237A	Washetta, Mont baz=110	37.17 305	P	P	13 17 28.2	+0.6
U39A	Green Forest baz=118	37.21 313	P	P	13 17 28.3	+0.5
R40A	Maddies Statio baz=122	37.32 316	P	P	13 17 28.9	+0.2
W38A	Poteau baz=116	37.38 310	P	P	13 17 29.7	+0.5
636A	Smothers Creek baz=106	37.41 300	P	P	13 17 30.3	+0.7
X38A	Whitesboro baz=115	37.44 309	P	P	13 17 30.6	+0.8
Q40A	Laux Farm, Aux baz=123	37.56 317	P	P	13 17 31.0	+0.2
V38A	Canehill baz=116	37.64 311	P	P	13 17 31.7	+0.2
035A	Encino baz=102	37.68 296	P	P	13 17 32.2	+0.3
S39A	Bolivar baz=120	37.73 315	P	P	13 17 32.4	+0.1
236A	Katherine and baz=110	37.75 305	P	P	13 17 33.0	+0.5
P40A	Paris baz=123	37.84 318	P	P	13 17 33.4	+0.3
R39A	Chumby, Stover baz=121	37.85 316	P	P	13 17 33.4	+0.2
O40A	La Belle baz=124	38.05 319	P	P	13 17 35.1	+0.2
W37B	Quinton baz=115	38.08 310	P	P	13 17 35.5	+0.3
T38A	Diamond baz=118	38.09 313	P	P	13 17 35.8	+0.5
S38A	Stockton baz=119	38.10 314	P	P	13 17 35.6	+0.3
Z36A	Blue Ridge baz=112	38.12 307	P	P	13 17 35.4	-0.1
V37A	Hulbert baz=116	38.18 311	P	P	13 17 36.4	+0.3
Q39A	Willow Grove F baz=122	38.18 317	P	P	13 17 36.3	+0.3
335A	Moody baz=108	38.24 303	P	P	13 17 36.9	+0.3
834A	Tilden baz=104	38.33 298	P	P	13 17 37.6	+0.3
R38A	Fenwick Farm, baz=120	38.38 315	P	P	13 17 38.0	+0.4
U37A	Salina baz=116	38.39 312	P	P	13 17 38.3	+0.5
WHTX	Lake Whitney, baz=109	38.49 304	P	P	13 17 38.7	0.0
734A	La Parita Cree baz=104	38.51 299	P	P	13 17 38.6	-0.2
X36A	Centrahoma baz=113	38.55 308	P	P	13 17 39.0	-0.1
O39A	Kirksville baz=124	38.55 319	P	P	13 17 39.9	+0.8
Q38A	Cooks Store, C baz=121	38.57 316	P	P	13 17 39.7	+0.4
T37A	Cheneyville 18 baz=117	38.57 313	P	P	13 17 39.4	+0.1
135A	Vickery Place, baz=110	38.64 305	P	P	13 17 40.4	+0.5
TUL1	Leonard baz=115	38.67 311	P	P	13 17 40.5	+0.3
TUL1	Leonard 15nm,0.9s	38.67 311	eP	P	13 17 39.7	-0.5
V36A	Jenks baz=115	38.73 310	P	P	13 17 40.8	+0.2
534A	Blanco baz=106	38.74 301	P	P	13 17 40.6	-0.3
Z35A	Perchaven, San baz=111	38.78 306	P	P	13 17 41.9	+0.7
434A	Burnet baz=107	38.79 302	P	P	13 17 40.8	-0.5
933A	Laredo baz=102	38.84 297	P	P	13 17 40.9	-0.8
P38A	Dawn baz=122	38.85 317	P	P	13 17 41.9	+0.3
N39A	Derby Farms, D baz=124	38.87 320	P	P	13 17 42.0	+0.2
334A	Lometa baz=108	38.92 303	P	P	13 17 42.3	0.0
234A	Clairette baz=108	39.04 304	P	P	13 17 43.1	-0.2
O38A	Galt baz=122	39.08 318	P	P	13 17 43.6	+0.1
Q37A	Longview Farm, baz=120	39.09 316	P	P	13 17 43.7	+0.1
833A	Chaparral WMA, baz=103	39.10 298	P	P	13 17 43.3	-0.5
733A	Divot King Ran baz=104	39.10 298	P	P	13 17 43.5	-0.4
W35A	Tecumseh baz=113	39.17 309	P	P	13 17 44.2	-0.1
134A	White-Moore Ra baz=109,SNR=5.5	39.18 305	P	P	13 17 44.0	-0.4
633A	Saathoff Ranch baz=105	39.18 300	P	P	13 17 44.4	-0.1
533A	Kerrville baz=105	39.22 301	P	P	13 17 44.7	-0.2
T36A	Boggs Farm, Ca baz=116	39.23 312	P	P	13 17 45.0	+0.2
N38A	Joes South For baz=123	39.29 319	P	P	13 17 45.5	+0.3
P37A	Lathrop baz=121	39.38 317	P	P	13 17 46.6	+0.6
V35A	Meyer Ranch, C baz=114	39.38 310	P	P	13 17 45.7	-0.5
Y34A	Reagan Ranch, baz=111,SNR=8.7	39.40 307	P	P	13 17 46.5	+0.2
433A	Art baz=106,SNR=13	39.45 302	P	P	13 17 46.0	-0.7
333A	Richland Sprin baz=107,SNR=10	39.52 302	P	P	13 17 46.5	-0.9
O37A	Wolven Farm, M baz=122	39.54 318	P	P	13 17 47.6	+0.3
R36A	Gordon, Harris baz=118	39.54 314	P	P	13 17 48.1	+0.7
U35A	Pawnee baz=115	39.56 311	P	P	13 17 47.3	-0.2
832A	Faith Ranch, C baz=103	39.59 298	P	P	13 17 47.4	-0.5
M38A	Pleasantville baz=124	39.61 320	P	P	13 17 48.2	+0.3
T35A	Sooner Cattle baz=116	39.63 312	P	P	13 17 48.4	+0.3
233A	Rising Star baz=108,SNR=12	39.66 304	P	P	13 17 48.0	-0.5
X34A	Smith Ranch, M baz=112	39.69 308	P	P	13 17 49.2	+0.5
Q36A	Arnold C. Orve baz=119	39.82 315	P	P	13 17 49.3	-0.4
S35A	Otter Creek Ra baz=116	39.82 313	P	P	13 17 50.1	+0.3
133A	Hamilton Ranch baz=108,SNR=5.1	39.86 304	P	P	13 17 49.7	-0.5
L38A	Oak Wood Farm, baz=125	39.87 321	P	P	13 17 50.3	+0.2
W34A	Bridge Creek, baz=112	39.88 309	P	P	13 17 50.5	+0.2
Z33A	Whitaker Ranch baz=109	39.96 305	P	P	13 17 50.0	-0.9
JCT	Junction City baz=105	39.97 301	P	P	13 17 50.6	-0.5
JCT	Junction City 17nm,1.2s	39.97 301	eP	P	13 17 49.2	-1.9
K38A	Parkersburg baz=126	40.05 322	P	P	13 17 52.0	+0.5
O36A	Bolckow baz=121	40.06 317	P	P	13 17 52.4	+0.8
T34A	McClaskey Farm baz=115	40.16 312	P	P	13 17 52.8	+0.3
U34A	Anderson Ranch baz=114	40.17 311	P	P	13 17 52.6	-0.1
X33A	Lawton baz=111,SNR=5.3	40.18 307	P	P	13 17 52.2	-0.5
CPUP	Villa Florida 3.8nm,0.9s,baz=11,slow=5.3,SNR=7.3	40.21 176	P	P	13 17 52.7	-0.2
J38A	Wedel Dairy, R baz=127	40.26 323	P	P	13 17 53.3	0.0
ABTX	Abilene, Hawle baz=108	40.45 304	P	P	13 17 54.8	-0.2
ABTX	Abilene, Hawle 12nm,0.7s	40.45 304	eP	P	13 17 53.9	-1.1
WMOK	Wichita Mounta 7.3nm,0.6s	40.47 308	eP	P	13 17 54.3	-0.8
P35A	Duane Minner, baz=119	40.47 316	P	P	13 17 54.5	-0.5
V33A	Lossen Ranch, baz=113	40.49 309	P	P	13 17 54.9	-0.4
U33A	Lingo Farm, Me baz=113	40.60 310	P	P	13 17 56.4	+0.2
I38A	Scanlan Farm, baz=127	40.61 324	P	P	13 17 56.3	+0.1
K37A	Belmond baz=125	40.64 321	P	P	13 17 56.6	+0.2
M36A	Felix, Anita baz=122	40.64 319	P	P	13 17 56.0	-0.5
X32A	Elmer baz=110	40.75 307	P	P	13 17 57.0	-0.4
R34A	Isabella, Hill baz=116	40.75 313	P	P	13 17 57.1	-0.3
J37A	Redenius Farm, baz=125	40.90 322	P	P	13 17 58.9	+0.3
W32A	Sentinel baz=111,SNR=5.5	40.96 308	P	P	13 17 59.0	-0.2
S33A	Kaszmaul Farm, baz=115	40.99 312	P	P	13 17 59.0	-0.4
P34A	Walnut Farm, R baz=118	41.03 315	P	P	13 17 59.0	-0.7
SCHQ	Schefferville 4.4nm,0.9s,baz=150,slow=8.6,SNR=4.8	41.05 354	P	P	13 18 00.0	+0.5
SCHQ			LR	LR	13 38 19.8	
	comp=Z,19nm,18.7s,baz=42,slow=41					
I37A	Lemond, Waseca baz=126	41.22 323	P	P	13 18 01.4	+0.2
R33A	Olander Ranch, baz=116	41.28 313	P	P	13 18 01.8	0.0
J36A	Seneca 1, Swea baz=124	41.38 322	P	P	13 18 02.6	+0.1
L35A	Bielow Farm, R baz=122	41.46 319	P	P	13 18 03.3	+0.1
Q33A	Connelly Farm, baz=116	41.47 314	P	P	13 18 03.6	+0.3
K35A	Storm Lake baz=123	41.59 320	P	P	13 18 04.4	+0.2
SPMN	Marine on St. baz=126	41.60 325	P	P	13 18 04.4	+0.1
H36A	Jessenland, He baz=126	41.85 323	P	P	13 18 06.4	+0.1
C39A	Grand Marais baz=133	41.89 330	P	P	13 18 07.4	+0.8
J35A	Milford baz=124	41.92 321	P	P	13 18 07.2	+0.3
K34A	Le Mars baz=122	42.11 320	P	P	13 18 07.9	-0.6
C38A	Sawbill Land. baz=132	42.39 329	P	P	13 18 10.8	+0.2
F36A	Milaca baz=128	42.40 325	P	P	13 18 10.8	+0.1
G35A	Watkins baz=126	42.55 324	P	P	13 18 12.1	+0.1
D37A	Cotton baz=130,SNR=10	42.62 327	P	P	13 18 13.4	+0.9
E36A	McGregor baz=126,SNR=7.6	42.65 326	P	P	13 18 13.1	+0.2
EYMN	Ely baz=132	42.66 329	P	P	13 18 13.5	+0.7
AMTX	Amarillo baz=108	42.76 307	P	P	13 18 14.0	+0.1
C37A	Embarrass baz=131	42.86 328	P	P	13 18 14.9	+0.4
TXAR	Lajitas Array 1.6nm,0.5s,baz=106,slow=6.9,SNR=21	42.97 298	P	P	13 18 15.9	+0.1
TXAR			PcP	PcP	13 20 06.9	+1.7
	0.6nm,0.7s,baz=116,slow=5.7,SNR=3.6					
TX31	Lajitas Ar. Si	42.98 298	eP	P	13 18 15.3	-0.5
ECSD	EROS Data Cent baz=122,SNR=8.9	42.98 321	P	P	13 18 15.7	+0.1
ECSD	EROS Data Cent 7.4nm,0.7s	42.98 321	eP	P	13 18 15.5	0.0
J33A	Davis baz=122	42.98 320	P	P	13 18 15.9	+0.4
C36A	Pine Crest Far baz=130	43.22 328	P	P	13 18 17.5	+0.1
E35A	Pequot Lakes baz=127	43.30 325	P	P	13 18 18.0	0.0
F34A	Alexandria baz=126	43.33 324	P	P	13 18 18.2	0.0
MSTX	Muleshoe baz=107,SNR=10	43.35 305	P	P	13 18 18.4	-0.4
MSTX	Muleshoe 20nm,0.8s	43.35 305	eP	P	13 18 18.4	-0.4
H33A	Prehn Over Nor baz=123	43.57 322	P	P	13 18 20.7	+0.4
L31A	Butterfield Fa baz=118	43.61 318	P	P	13 18 21.3	+0.7
G33A	Ortonville baz=124	43.67 323	P	P	13 18 21.0	-0.1
E34A	Wadena baz=126	43.70 325	P	P	13 18 21.5	+0.2
K31A	O'Neill baz=119	43.77 318	P	P	13 18 22.9	+0.9
C35A	Jirik Farms, M baz=129,SNR=13	43.77 327	P	P	13 18 21.8	0.0
H32A	Carlson Farm, baz=122,SNR=5.7	43.90 321	P	P	13 18 22.9	0.0
F33A	5 Mile Ranch, baz=124	43.95 324	P	P	13 18 23.1	-0.2
D34A	Park Rapids baz=127	44.05 326	P	P	13 18 23.9	-0.2
B35A	Bob, Littlefor baz=130,SNR=5.2	44.06 328	P	P	13 18 24.0	-0.1
E33A	Westby DABS, E baz=125	44.16 324	P	P	13 18 25.4	+0.4
C34A	RKJ Ranch, Bem baz=128,SNR=6.6	44.24 326	P	P	13 18 25.6	0.0
HPIG		44.33 294	eP	P	13 18 26.9	0.0
	19nm,0.7s					
J30A	Dallas baz=119	44.58 319	P	P	13 18 29.0	+0.6
B34A	Aery, Baudette baz=128,SNR=7.6	44.62 328	P	P	13 18 28.6	0.0
SUSD	Miller	44.79 320	P	P	13 18 30.2	+0.1
	baz=120					
MNTX	Cornudas Mount baz=102,SNR=11	44.91 301	P	P	13 18 31.4	+0.3
MNTX	Cornudas Mount 8.6nm,0.9s	44.91 301	eP	P	13 18 31.2	+0.1
B33A	Robert and Kas baz=127	44.98 327	P	P	13 18 31.4	0.0
F31A	Hecla baz=122	45.10 322	P	P	13 18 32.9	+0.4
AGMN	Agassiz Nation baz=127,SNR=14	45.14 327	P	P	13 18 32.7	-0.1
AGMN	Agassiz Nation 15nm,0.6s	45.14 327	eP	P	13 18 32.6	-0.1
G30A	Faulkton baz=121	45.26 321	P	P	13 18 34.1	+0.4
E31A	Nome baz=123	45.27 323	P	P	13 18 34.3	+0.5
A33A	Warroad baz=128,SNR=8.7	45.28 328	P	P	13 18 33.9	+0.1
F30A	Leola baz=121	45.55 322	P	P	13 18 36.1	+0.1
B32A	Ashes, Strandq baz=126	45.56 326	P	P	13 18 36.1	+0.1
T25A	Trinidad baz=108	45.57 309	P	P	13 18 36.5	-0.1
H29A	Onida baz=119	45.67 320	P	P	13 18 37.2	+0.2
J28A	Allard Ranch, baz=117	45.75 318	P	P	13 18 38.2	+0.5
E30A	Jud baz=122	45.83 323	P	P	13 18 38.1	-0.1
C31A	Landman Farms, baz=124,SNR=5.8	45.87 325	P	P	13 18 38.4	-0.1
I28A	Midland baz=118	45.97 319	P	P	13 18 39.6	+0.1
F29A	Eureka baz=121	46.03 322	P	P	13 18 39.8	0.0
D30A	Buchanan baz=123	46.07 324	P	P	13 18 40.5	+0.4
J27A	Elkhorn Farm, baz=116	46.18 317	P	P	13 18 41.7	+0.6
C30A	Mose, Pekin baz=124	46.23 325	P	P	13 18 41.8	+0.4
E29A	Napoleon baz=121	46.30 323	P	P	13 18 42.1	+0.2
G28A	Parade baz=119	46.32 320	P	P	13 18 42.7	+0.5
ULM	Lac du Bonnet 11nm,0.5s,baz=126,slow=7.6,SNR=16	46.34 329	P	P	13 18 41.8	-0.4
ULM	Lac du Bonnet 9.9nm,0.6s	46.34 329	eP	P	13 18 41.6	-0.5
BNM	Barren Site	46.48 304	eP	P	13 18 44.5	+0.7
D29A	Pettibone, Tap baz=122	46.53 323	P	P	13 18 43.8	+0.1
ANMO	Albuquerque baz=105	46.54 305	P	P	13 18 44.6	+0.3
B30A	Myrvik Farm, E baz=124	46.57 325	P	P	13 18 44.3	+0.3
SDCO	Great Sand Dun baz=108	46.59 309	P	P	13 18 44.7	0.0
SDCO	Great Sand Dun 6.0nm,1.4s	46.59 309	eP	P	13 18 44.4	-0.3
A30A	Hoffart Farm, baz=125,SNR=8.5	46.83 326	P	P	13 18 45.9	-0.1
H27A	Howes baz=117	46.84 319	P	P	13 18 46.7	+0.5
121A	Cookes Peak, D baz=102	47.07 301	P	P	13 18 49.3	+0.9
G27A	Dupree baz=118,SNR=7.5	47.10 320	P	P	13 18 49.0	+0.8
B29A	Wagenman Farm, baz=123	47.14 325	P	P	13 18 48.7	+0.3
A29A	Manning Farm, baz=124,SNR=6.3	47.33 326	P	P	13 18 49.7	-0.2
C28A	Hausauer Farms baz=122	47.33 324	P	P	13 18 50.7	+0.7
ISCO	Idaho Springs baz=110	47.33 312	P	P	13 18 50.9	+0.4
ISCO	Idaho Springs 2.2nm,0.8s	47.33 312	eP	P	13 18 50.5	+0.1
F27A	Lemmon baz=118,SNR=5.5	47.38 321	P	P	13 18 51.1	+0.6
J25A	Sunshine Ranch baz=114	47.42 317	P	P	13 18 51.4	+0.5
G26A	Maurine baz=117,SNR=18	47.48 320	P	P	13 18 51.5	+0.4
S22A	4UR Ranch, Cre baz=107	47.59 309	P	P	13 18 52.7	+0.3
I25A	Rochford baz=115	47.64 318	P	P	13 18 53.2	+0.5
D27A	Center baz=120	47.69 322	P	P	13 18 53.3	+0.6
F26A	Lodgepole baz=118	47.78 320	P	P	13 18 54.0	+0.5
H25A	Fruitdale baz=116	47.81 318	P	P	13 18 54.2	+0.4
A28A	Rude Farm, Bot baz=122	47.89 325	P	P	13 18 54.7	+0.4
N23A	Red Feather La baz=110	47.95 313	P	P	13 18 55.1	0.0
G25A	Newell baz=116	47.95 319	P	P	13 18 55.4	+0.6
C27A	Sayler Ranch, baz=120	47.98 323	P	P	13 18 55.5	+0.6
319A	Douglas 6.8nm,0.8s	48.11 300	eP	P	13 18 57.3	+0.9
D26A	Manning baz=119	48.19 322	P	P	13 18 56.8	+0.2
F25A	Bowman baz=117	48.30 320	P	P	13 18 57.9	+0.3
C26A	Wahner Farm, P baz=120	48.38 323	P	P	13 18 58.5	+0.4
E25A	Miller Ranch, baz=117	48.53 321	P	P	13 18 59.6	+0.4
D25A	Fairfield baz=118	48.78 322	P	P	13 19 01.8	+0.6
A26A	Wade Farm, Ken baz=121	48.88 324	P	P	13 19 02.6	+0.7
X18A	Snowflake 7.8nm,1.1s	49.25 304	eP	P	13 19 06.1	+1.0
TUC	Tucson baz=99	49.53 301	P	P	13 19 07.2	0.0
TUC	Tucson 15nm,1.8s	49.53 301	eP	P	13 19 07.7	+0.5
DGMT	Dagmar baz=118	49.92 323	P	P	13 19 10.4	+0.5
H10N3	ASCENSION HYDR baz=295,slow=75,SNR=62	50.21 113	T	T	14 14 34.1	
H10N2	ASCENSION HYDR baz=295,slow=75,SNR=47	50.22 113	T	T	14 14 32.5	
H10N1	ASCENSION HYDR baz=295,slow=75,SNR=54	50.23 113	T	T	14 14 33.5	
H10S3	ASCENSION HYDR baz=296,slow=74,SNR=32	50.55 114	T	T	14 14 57.4	
H10S1	ASCENSION HYDR baz=296,slow=74,SNR=28	50.56 114	T	T	14 14 59.5	
H10S2	ASCENSION HYDR baz=296,slow=74,SNR=24	50.57 114	T	T	14 15 01.3	
WUAZ	Wupatki baz=102	50.59 305	P	P	13 19 15.8	+0.6
P18A	Preston Nutter 3.7nm,0.6s	50.69 310	eP	P	13 19 16.8	+0.7
SRU	San Rafael Swe 3.1nm,0.6s	50.76 309	eP	P	13 19 17.0	+0.5
BW06	Boulder Array baz=109,SNR=9.3	51.12 314	P	P	13 19 19.4	+0.2
BW06	Boulder Array	51.12 314	eP	P	13 19 19.1	-0.1
PD31	Pinedale Array	51.12 314	eP	P	13 19 19.1	-0.1
PDAR	Pinedale Array 3.7nm,0.7s,baz=112,slow=9.0,SNR=27	51.12 314	P	P	13 19 19.4	+0.2
PDAR			LR	LR	13 42 18.1	
	comp=Z,15nm,18.2s,baz=350,slow=38					
FCC	Fort Churchill 5.5nm,0.6s	51.31 338	eP	P	13 19 19.9	-0.1
RLMT	Red Lodge baz=111	51.71 317	P	P	13 19 24.1	+0.6
RLMT	Red Lodge 6.8nm,1.1s	51.71 317	eP	P	13 19 24.0	+0.4
MTPU	Mount Pierson 12nm,1.8s	51.76 308	eP	P	13 19 25.0	+0.8
FFC	Flin Flon 2.9nm,0.9s	52.01 331	eP	P	13 19 24.9	-0.4
REDW	Red Top Meadow	52.20 314	eP	P	13 19 27.4	+0.1
PDMCI	Parker Dam,Lak baz=99	52.62 303	P	P	13 19 31.0	+0.9
DUG	Dugway, Tooele baz=104	52.74 310	P	P	13 19 31.7	+0.5
DUG	Dugway, Tooele	52.74 310	eP	P	13 19 31.6	+0.4

5.8nm,0.9s
BGU Big Grassy Mou 53.08 311 *e*P **P 13 19 34.0 +0.3**
5.8nm,0.7s
EGMT Eagleton 53.09 320 P **P 13 19 34.5 +0.9**
baz=112,SNR=14
EGMT Eagleton 53.09 320 *e*P **P 13 19 34.3 +0.7**
15nm,0.8s
HVU Hansel Valley 53.11 312 *e*P **P 13 19 34.0 0.0**
3.7nm,0.8s
PSUT Pine Spring 53.15 308 *e*P **P 13 19 35.4 +1.1**
5.8nm,0.9s
BOZ Bozeman (W) 53.46 317 P **P 13 19 36.9 +0.5**
baz=109
BOZ Bozeman (W) 53.46 317 *e*P **P 13 19 36.9 +0.5**
3.2nm,1.0s
GMRC Granite Mounta 53.93 303 P **P 13 19 40.3 +0.3**
baz=98
TUQ Turquoise Moun 54.23 304 P **P 13 19 43.1 +0.9**
baz=98
MONP2 Monument Peak 54.32 300 P **P 13 19 43.6 +0.7**
baz=96
TPNV Topopah Spring 54.73 305 P **P 13 19 44.6 -1.2**
baz=99
TPNV Topopah Spring 54.73 305 *e*P **P 13 19 44.2 -1.6**
3.6nm,0.8s
HLID Hailey 54.75 314 P **P 13 19 44.6 -1.2**
baz=105
HLID Hailey 54.75 314 *e*P **P 13 19 44.2 -1.6**
2.5nm,0.8s
GSC Goldstone, Bar 54.93 303 P **P 13 19 47.3 +0.1**
baz=98
ESDC Sonseca Array 55.22 51 P **P 13 19 48.4 -0.8**
0.2nm,0.3s,baz=266,slow=7.5,SNR=4.5
PLCA Paso Flores 55.34 190 P **P 13 19 50.5 +0.7**
1.6nm,0.9s,baz=13,slow=14,SNR=2.5
MPMC Manual Prospec 55.58 304 P **P 13 19 52.2 +0.2**
baz=98
SWMT Swartz Lake 55.60 318 *e*P **P 13 19 51.6 -0.2**
YBMT Yellow Bay 55.72 319 *e*P **P 13 19 53.2 +0.5**
EDW2 Edwards Air Fo 55.84 303 P **P 13 19 53.8 +0.1**
baz=97
JTMT Jette 55.86 319 *e*P **P 13 19 54.6 +0.9**
BMN Battle Mountai 56.08 309 *e*P **P 13 19 56.0 +0.5**
3.7nm,0.8s
NV01 Mina Array Sit 56.56 307 *e*P **P 13 19 59.5 +0.5**
NVAR Mina Array Bea 56.56 307 P **P 13 20 00.0 +1.0**
2.3nm,0.7s,baz=102,slow=7.1,SNR=8.9
NEW Newport 57.83 319 P **P 13 20 07.9 +0.3**
baz=106
NEW Newport 57.83 319 *e*P **P 13 20 07.4 -0.1**
10nm,0.7s
ORV Oroville 59.19 308 *e*P **P 13 20 17.0 -0.1**
4.1nm,0.9s
TORD Torodi Ar. Bea 59.93 83 P **P 13 20 21.8 -0.8**
0.3nm,0.6s,baz=282,slow=7.2,SNR=2.6
YKA Yellowknife Ar 61.63 335 P **P 13 20 32.9 -0.4**
3.1nm,0.6s,baz=106,slow=7.5,SNR=64
YKB5 Yellowknife Ar 61.63 335 *e*P **P 13 20 32.7 -0.6**
DAVOX Davos/Dischmat 66.22 45 P **P 13 21 04.7 +0.7**
1.8nm,0.8s,baz=287,slow=9.8,SNR=6.6
NOA NORSAR Array B 68.80 30 P **P 13 21 20.3 +0.5**
0.7nm,0.8s,baz=261,slow=5.9,SNR=3.2
GEA0 GERESS Array S 68.93 43 *e*P **P 13 21 20.6 -0.3**
GERES GERESS Array B 68.93 43 P **P 13 21 21.2 +0.3**
1.1nm,0.8s,baz=264,slow=4.8,SNR=11
VRAC Vranov 70.84 42 P **P 13 21 32.7 +0.2**
1.5nm,0.7s,baz=292,slow=5.4,SNR=3.4
INK Inuvik 70.93 338 *e*P **P 13 21 32.1 -0.5**
5.8nm,0.8s
EGAK Eagle 73.59 334 *e*P **P 13 21 49.0 +0.4**
5.3nm,1.0s
MENT Mentasta 74.71 332 *e*P **P 13 21 56.2 +0.9**
9.4nm,0.6s
ARCES ARCESS Array B 75.43 21 P **P 13 22 00.4 +1.2**
2.2nm,0.9s,baz=15,slow=3.0,SNR=3.8
FINES FINESS Array B 75.98 30 P **P 13 22 02.8 +0.3**
0.9nm,0.6s,baz=278,slow=5.6,SNR=6.6
IL1 Eielson Array 76.05 334 *e*P **P 13 22 02.2 -0.6**
ILAR Eielson Array 76.05 334 P **P 13 22 02.7 -0.1**
1.6nm,0.6s,baz=82,slow=5.2,SNR=28
ILB Eielson Array 76.05 334 *e*P **P 13 22 02.4 -0.4**
MDM Murphy Dome 76.61 334 *e*P **P 13 22 06.0 0.0**
6.4nm,0.8s
BUR08 Bucovina Ar. S 76.64 44 *e*P **P 13 22 07.6 +1.0**
MCK McKinley 77.02 333 *e*P **P 13 22 08.7 +0.3**
COLD Coldfoot 77.21 336 *e*P **P 13 22 10.6 +1.3**
13nm,1.8s
TRF Thorofare Moun 77.64 333 *e*P **P 13 22 12.3 +0.3**
10nm,0.8s
MLY Manley 77.66 334 *e*P **P 13 22 12.0 0.0**
3.7nm,0.8s
BPAW Bear Paw Mtn. 77.88 333 *e*P **P 13 22 12.8 -0.3**
5.3nm,0.8s
BR231 Keskin MP Arra 83.34 51 *e*P **P 13 22 41.2 -1.8**
BRTR Keskin Array B 84.01 51 P **P 13 22 46.6 +0.2**
1.2nm,0.6s,baz=255,slow=6.3,SNR=8.1
WMQ Urumqi 115.36 25 *e*PKP **PKPdf 13 28 56.0 -1.2**
CD2 Chengdu 132.70 19 PKP **PKPdf 13 29 28.3 -2.5**
STKA Stephens Creek 153.35 225 PKPbc **PKPbc 13 30 14.3 +0.3**
1.5nm,0.7s,baz=297,slow=1.5,SNR=5.8
ASAR Alice Springs 163.65 232 PKP **PKPdf 13 30 19.4 +0.4**
0.4nm,1.0s,baz=139,slow=0.5,SNR=4.1
WRA Warramunga Arr 164.98 245 PKP **PKPdf 13 30 19.6 -0.6**
0.7nm,0.9s,baz=205,slow=1.2,SNR=4.5
WRA PKPab **PKPab 13 31 16.5 -0.5**
0.6nm,0.9s,baz=100,slow=4.5,SNR=7.2

*SOME **25** 13:37:47.7, 49˚.93N×78˚.73E*
*ISCJB **25** 13:37:50.3±0.7, 50˚.00N±0˚.05×78˚.56E±0˚.07, h0km, Error ellipse: s-maj=7.9km s-min=5.8km az=39.0*
*NNC **25** 13:37:51.6±0.6, 50˚.04N×78˚.65E, h0km, mb3.5, mpv3.2, Error ellipse: s-maj=6.0km s-min=3.7km az=88.0, Suspected Mining explosion.*
*IDC **25** 13:37:52.1±0.8, 50˚.06N×78˚.79E, h0km, mb1 3.4/3, mb1mx3.1/47, mbtmp3.4/3, ML3.2/3, Error ellipse: s-maj=11.5km s-min=6.3km az=57.0*

ISC 25 13:37:52.1±0.9, 50˚.09N±0˚.06×78˚.80E±0˚.06, h0km, n13, σ1°9/09, 8C-9D, Eastern Kazakhstan

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
KURBB	**Kurchatov Arra**	**0.56**	**342**	Pg	**Pg**	**13 38 03.4**	**+0.5**
	8.9nm,0.3s,baz=164,slow=19,SNR=106						
KURBB				Lg	Lg	13 38 11.3	
	7.2nm,0.3s,baz=166,slow=31,SNR=45						
KURK	**Kurchatov**	**0.64**	**350**	⇓P	**Pg**	**13 38 04.7**	**+0.3**
	62nm,0.4s						
KURK				⇓S	**Sb**	**13 38 14.3**	**-1.3**
	125nm,0.5s						
MK31	**Makanchi Array**	**4.03**	**143**	Pn	**Pn**	**13 38 55.1**	**0.0**
	0.5nm,0.2s,baz=329,slow=11,SNR=138						
MK31				Pg	**Pb**	**13 39 05.3**	**+1.3**
	1.6nm,0.3s,baz=322,slow=14,SNR=26						
MK31				⇓Lg	Lg	13 40 01.5	
	14nm,0.5s,baz=334,slow=32,SNR=17						
MKAR	**Makanchi Array**	**4.03**	**143**	Pn	**Pn**	**13 38 54.7**	**-0.4**
	1.3nm,0.3s,baz=322,slow=10,SNR=214						
MKAR				Pg	**Pb**	**13 39 02.5**	**-1.4**
	2.8nm,0.3s,baz=338,slow=13,SNR=26						
MKAR				Lg	Lg	13 39 57.5	
	3.2nm,0.3s,baz=334,slow=30,SNR=17						
ZALV	**Zalesovo Beam**	**5.36**	**42**	Pn	**Pn**	**13 39 15.4**	**+2.2**
	2.7nm,0.3s,baz=229,slow=14,SNR=25						
ZALV				Sn	**Sn**	**13 40 14.7**	**-1.0**
	0.1nm,0.3s,baz=206,slow=22,SNR=2.0						
ZALV				Lg	Lg	13 40 46.1	
	1.0nm,0.3s,baz=223,slow=26,SNR=8.0						
I46RU	**ZALESOVO INFRA**	**5.37**	**42**	*i*		14 07 45.0	
	baz=225,slow=334,SNR=5.6						
VOSK	**Vostochnaya**	**5.56**	**301**	⇓Pn	**Pn**	**13 39 15.8**	**-0.2**
	0.7nm,0.3s						
VOSK				⇑Pg	**Pb**	**13 39 31.2**	**+1.2**
	1.4nm,0.6s						
VOSK				⇓Sn	**Sn**	**13 40 20.0**	**-0.6**
	1.3nm,0.3s						
VOSK				⇓Lg	Lg	13 40 47.1	
	4.6nm,0.8s						
BVA0	**Borovoye Array**	**6.01**	**303**	⇑Pn	**Pn**	**13 39 21.4**	**-0.8**
	1.0nm,0.5s,baz=111,slow=13,SNR=15						
BVA0				⇑Pg	**Pb**	**13 39 39.0**	**+1.4**
	0.7nm,0.3s,baz=103,slow=14,SNR=8.9						
BVA0				⇑Sn	**Sn**	**13 40 31.9**	**+0.2**
	2.4nm,0.6s,baz=108,slow=27,SNR=4.7						
BVA0				⇑Lg	Lg	13 41 00.5	
	4.7nm,0.9s,baz=108,slow=27,SNR=4.7						
BVAR	**Borovoye Array**	**6.01**	**303**	Pn	**Pn**	**13 39 22.0**	**-0.2**
	0.8nm,0.3s,baz=105,slow=14,SNR=14						
BVAR				Sn	**Sn**	**13 40 30.3**	**-1.4**
	1.1nm,0.3s,baz=115,slow=22,SNR=6.6						
CHKZ	**Chkalovo**	**6.21**	**309**	⇓Lg	Lg	13 41 07.7	
	4.2nm,0.7s						
ZRNK	**Zerenda**	**6.75**	**299**	⇑Pn	**Pn**	**13 39 32.0**	**-0.4**
	0.7nm,0.3s						
ZRNK				⇑Sn	**Sn**	**13 40 48.9**	**-1.0**
	1.5nm,0.5s						
ZRNK				⇓Lg	Lg	13 41 23.5	
	2.2nm,0.7s						
PDGK	**Podgornoye**	**6.78**	**176**	⇑Lg	Lg	13 41 27.1	
	9.5nm,0.7s						
TKM2	**Tokmak 2**	**7.50**	**198**	⇓Lg	Lg	13 41 48.6	
	7.3nm,0.8s						

*IDC **25** 13:38:51.4±0.6, 15˚.82S×173˚.15E, h0km, mb4.9/25, mb1 5.0/26, mb1mx4.9/40, mbtmp4.9/26, ML4.2/1, MS4.0/32, Ms1 4.0/32, ms1mx3.9/42, Error ellipse: s-maj=19.4km s-min=13.3km az=127.0*
*BJI **25** 13:38:52.6, 15˚.47S×173˚.07E, h9km, mb5.2/58, mB5.3/37, Ms5.0/22, Ms7 4.7/17*
*ISCJB **25** 13:38:55.4±0.1, 15˚.81S±0˚.04×173˚.01E±0˚.03, h33km, mb5.2/202, MS4.2/37, Error ellipse: s-maj=6.3km s-min=3.4km az=157.3*
*MOS **25** 13:38:56.1±1.0, 15˚.79S×173˚.01E, h41km, mb5.4/57, Error ellipse: s-maj=8.5km s-min=7.9km az=144.6*
*NEIC **25** 13:38:57.8±0.8, 15˚.83S×173˚.02E, h45km±7km, mb5.2/148, Error ellipse: s-maj=5.9km s-min=3.5km az=164.0*
*GCMT **25** 13:38:57.8±0.2, 15˚.79S×173˚.09E, h12km, MW5.2/108, Moment Tensor Solution. s71,c104; s108,c195; Duration: 0 Moment tensor: Scale 10^16Nm; Mrr=6.57±.11; Mθθ=6.55±.10; Mφφ=0.02±.10; Mrθ=-2.41±.31; Mrφ=-1.07±.10; Mθφ=0.41±.37; Best double couple: Mo=7.08×10^16 NP1:φs=99.00000°, δ35.00000°, λ=-90.00000°. NP2: φs=279.00000°, δ35.00000°, λ=-90.00000°. Principal axes: T 7.1560, Plg10.0000°, Azm189.0000°; N -0.1490, Plg0.0000°, Azm279.0000°; P -7.0060, Plg80.0000°, Azm10.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

ISC 25 13:38:55.7±0.7, 15˚.80S±0˚.06×173˚.17E±0˚.06, h29km±4km, n555, σ1°24/562, mb5.2/202, MS4.2/38, 4C-18D, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MSVF	**Nonsavu**	**5.05**	**113**	*e*P	**Pn**	**13 40 12.1**	**+2.5**
MSVF	**Nonsavu**	**5.05**	**113**	*e*Pn	**Pn**	**13 40 12.1**	**+2.5**
DZM	**Mont Dzumac**	**8.91**	**225**	Pn	**Pn**	**13 41 02.1**	**-0.4**
	2.7nm,0.3s,baz=72,slow=18,SNR=39						
FUNA	**Funafuti**	**9.33**	**40**	*e*Pn	**Pn**	**13 41 04.9**	**-3.3**
HNR	**Honiara**	**14.37**	**295**	LR	LR	13 47 12.1	
	comp=Z,247nm,18.8s,baz=134,slow=35						
HNR	**Honiara**	**14.37**	**295**	*e*P	**Pn**	**13 42 18.9**	**+1.6**
HNR	**Honiara**	**14.37**	**295**	*e*Pn	**Pn**	**13 42 18.9**	**+1.6**
AFI	**Afiamalu**	**14.67**	**85**	LR	LR	13 46 39.9	
	comp=Z,502nm,21.7s,baz=252,slow=32						
RAO	**Raoul Island**	**15.70**	**150**	LR	LR	13 47 19.8	
	comp=Z,744nm,20.6s,baz=320,slow=32						
URZ	**Urewera**	**22.64**	**172**	P	**P**	**13 43 55.4**	**+1.0**
	27nm,0.8s,baz=19,slow=7.1,SNR=6.8						
URZ				LR	LR	13 50 50.4	
	comp=Z,904nm,18.2s,baz=340,slow=32						
URZ	**Urewera**	**22.64**	**172**	*e*P	**P**	**13 43 54.8**	**+0.5**
	112nm,1.4s						
ARMA	**Armidale**	**24.52**	**230**	P	**P**	**13 44 13.2**	**+0.3**
	baz=25,SNR=4.3						
ARMA	**Armidale**	**24.52**	**230**	*e*P	**P**	**13 44 11.9**	**-1.0**
	35nm,1.3s						
BFZ	**Birch Farm**	**24.93**	**174**	*e*P	**P**	**13 44 15.0**	**-1.3**
	111nm,0.9s						
RMQ	**Roma**	**25.08**	**241**	P	**P**	**13 44 19.6**	**+1.7**
	baz=25,SNR=13						
CTA	**Charters Tower**	**25.95**	**257**	P	**P**	**13 44 26.3**	**+0.5**
	20nm,1.1s,baz=87,slow=12,SNR=9.1						
CTAO	**Charters Tower**	**25.95**	**257**	*e*P	**P**	**13 44 26.3**	**+0.5**
CTAO				pmax	pmax		
	comp=Z,31nm,1.1s						
CTAO	**Charters Tower**	**25.95**	**257**	*e*P	**P**	**13 44 26.3**	**+0.5**
	comp=Z,31nm,1.1s						
PMG	**Port Moresby**	**26.15**	**281**	P	**P**	**13 44 28.0**	**+0.3**
	comp=Z,30nm,1.0s,baz=97,slow=7.2,SNR=5.0						
PMG				LR	LR	13 53 41.7	
	comp=Z,273nm,18.6s,baz=130,slow=34						
PMG	**Port Moresby**	**26.15**	**281**	*ce*P	**P**	**13 44 27.3**	**-0.4**
PMG				pmax	pmax		
	comp=Z,140nm,1.0s						
PMG	**Port Moresby**	**26.15**	**281**	*e*P	**P**	**13 44 24.7**	**-3.0**
	comp=Z,44nm,1.1s						
RAR	**Rarotonga**	**26.20**	**106**	LR	LR	13 54 34.5	
	comp=Z,37nm,19.1s,baz=280,slow=36						
MTSU	**Mount Surprise**	**27.68**	**261**	P	**P**	**13 44 42.4**	**+0.9**
	baz=28,SNR=4.2						
RPZ	**Rata Peaks**	**27.88**	**183**	LR	LR	13 55 01.7	
	comp=Z,218nm,20.5s,baz=28,slow=35						
QLP	**Quilpie**	**28.97**	**243**	P	**P**	**13 44 53.1**	**+0.3**
	baz=29,SNR=9.0						
CMSA	**Cobar Meteorol**	**29.53**	**233**	P	**P**	**13 44 58.0**	**+0.3**
	baz=30,SNR=18						
TOO	**Toolangi**	**32.68**	**223**	P	**P**	**13 45 26.2**	**+0.7**
	baz=33,SNR=4.7						
STKA	**Stephens Creek**	**32.86**	**235**	P	**P**	**13 45 27.8**	**+0.6**
	comp=Z,20nm,0.9s,baz=62,slow=8.3,SNR=27						
STKA				PcP	**PcP**	**13 48 11.6**	**0.0**
	comp=Z,3.3nm,0.8s,baz=65,slow=8.1,SNR=3.4						
STKA				LR	LR	13 56 48.4	
	comp=Z,368nm,22.0s,baz=66,slow=33						
STKA	**Stephens Creek**	**32.86**	**235**	P	**P**	**13 45 27.8**	**+0.6**
	baz=33,SNR=15						
STKA	**Stephens Creek**	**32.86**	**235**	*e*P	**P**	**13 45 27.5**	**+0.4**
STKA						13 48 11.6	
STKA				pmax	pmax		
	comp=Z,6.0nm,1.0s						
STKA	**Stephens Creek**	**32.86**	**235**	*e*P	**P**	**13 45 27.5**	**+0.4**
	comp=Z,5.5nm,1.0s						
STKA				PcP	**PcP**	**13 48 11.6**	**0.0**
MOO	**Moorlands**	**34.66**	**215**	P	**P**	**13 45 43.5**	**+0.9**
	baz=35,SNR=6.5						
ARPS	**Mount Arapiles**	**34.76**	**227**	P	**P**	**13 45 43.7**	**+0.2**
	baz=35,SNR=7.0						
HTT	**Hallett**	**35.52**	**234**	P	**P**	**13 45 51.0**	**+0.7**
	baz=36,SNR=5.0						
WB2	**Warramunga Arr**	**37.12**	**258**	*e*P	**P**	**13 46 02.0**	**-2.0**
	comp=Z,19nm,1.1s						
WRAB	**Tennant Creek**	**37.12**	**258**	*ce*P	**P**	**13 46 02.7**	**-1.3**
WRAB				pmax	pmax		
	comp=Z,65nm,1.7s						
WRAB	**Tennant Creek**	**37.12**	**258**	*e*P	**P**	**13 46 02.0**	**-2.0**
	comp=Z,19nm,1.1s						
WRA	**Warramunga Arr**	**37.13**	**258**	P	**P**	**13 46 02.8**	**-1.3**
	comp=Z,9.4nm,0.9s,baz=88,slow=7.9,SNR=38						
WRA				PcP	**PcP**	**13 48 24.4**	**+0.2**
	comp=Z,5.1nm,1.0s,baz=87,slow=3.0,SNR=6.9						
WRA				LR	LR	14 00 02.1	
	comp=Z,135nm,18.9s,baz=70,slow=34						
WRA	**Warramunga Arr**	**37.13**	**258**	*i* P	**P**	**13 46 02.2**	**-1.9**
WRA				pmax	pmax		
	comp=Z,9.0nm,0.9s						
BBOO	**Buckleboo**	**37.59**	**236**	P	**P**	**13 46 08.1**	**+0.3**
	baz=38,SNR=7.1						
BBOO	**Buckleboo**	**37.59**	**236**	*e*P	**P**	**13 46 07.5**	**-0.3**
	comp=Z,34nm,1.2s						
AS01	**Alice Springs**	**37.64**	**252**	*e*P	**P**	**13 46 06.4**	**-2.0**
AS01				*e*PcP	**PcP**	**13 48 25.2**	**-0.6**
AS31	**Alice Springs**	**37.68**	**252**	*e*P	**P**	**13 46 07.1**	**-1.7**
	comp=Z,8.7nm,0.6s						
ASAR	**Alice Springs**	**37.68**	**252**	P	**P**	**13 46 07.7**	**-1.1**
	comp=Z,24nm,0.7s,baz=81,slow=8.7,SNR=479						
ASAR				PcP	**PcP**	**13 48 25.4**	**-0.4**
	comp=Z,4.5nm,0.9s,baz=97,slow=3.5,SNR=9.5						
ASAR				LR	LR	14 00 37.2	
	comp=Z,217nm,19.3s,baz=80,slow=35						
KDU	**Kakadu**	**39.53**	**269**	P	**P**	**13 46 24.1**	**-0.2**
	baz=40,SNR=6.4						
MTN	**Manton Dam**	**40.79**	**269**	P	**P**	**13 46 34.4**	**-0.4**
	baz=41,SNR=6.4						
MTN	**Manton Dam**	**40.79**	**269**	*e*P	**P**	**13 46 34.0**	**-0.7**
	comp=Z,48nm,1.0s						
WRKA	**Warakurna**	**42.88**	**250**	P	**P**	**13 46 51.2**	**-0.7**
	baz=43,SNR=13						
SWI	**Sorong**	**43.91**	**286**	P	**P**	**13 47 00.4**	**+0.2**
	comp=Z,72nm,1.2s,comp=Z,926nm						
FITZ	**Fitzroy Crossi**	**45.43**	**260**	P	**P**	**13 47 12.1**	**-0.2**
	baz=45,SNR=14						
FITZ	**Fitzroy Crossi**	**45.43**	**260**	*e*P	**P**	**13 47 12.1**	**-0.2**
	comp=Z,74nm,1.1s						
LBMI	**Labuha**	**47.49**	**284**	P	**P**	**13 47 30.5**	**+1.9**
	comp=Z,28nm,1.2s						
SANI	**Sanana**	**48.43**	**282**	P	**P**	**13 47 37.6**	**+1.8**
	comp=Z,46nm,1.0s						
KMBL	**Kambalda**	**49.07**	**242**	P	**P**	**13 47 39.9**	**-0.6**
	baz=49,SNR=7.5						
MBWA	**Marble Bar**	**50.77**	**255**	*e*P	**P**	**13 47 53.1**	**-0.5**
	comp=Z,61nm,1.1s						
KLBR	**Kellerberrin**	**52.60**	**242**	P	**P**	**13 48 06.2**	**-0.9**
	baz=53,SNR=12						
NWAO	**Narrogin (SRO)**	**53.14**	**241**	P	**P**	**13 48 10.6**	**-0.5**
	baz=53,SNR=8.3						
NWAO	**Narrogin (SRO)**	**53.14**	**241**	*e*P	**P**	**13 48 10.2**	**-0.9**
NWAO				pmax	pmax		
	comp=Z,49nm,1.0s						
NWAO	**Narrogin (SRO)**	**53.14**	**241**	*e*P	**P**	**13 48 10.2**	**-0.9**
	comp=Z,49nm,1.0s						
KAPI	**Kappang**	**53.48**	**276**	*e*P	**P**	**13 48 12.4**	**-1.5**
	comp=Z,29nm,1.1s						
MORW	**Morawa**	**53.97**	**245**	P	**P**	**13 48 16.7**	**-0.6**
	baz=54,SNR=7.3						
TWSI	**Taiwang, Sumb**	**55.32**	**270**	P	**P**	**13 48 26.9**	**-0.3**
	comp=Z,26nm,1.3s						
MYLDM	**Lahad Datu**	**57.98**	**287**	*e*P	**P**	**13 48 45.9**	**-0.2**
	comp=Z,54nm,1.2s						
BBKI	**Banjar Baru**	**58.62**	**276**	P	**P**	**13 48 51.4**	**+0.8**
	comp=Z,39nm,1.2s						
MJAR	**Matsushiro Arr**	**61.65**	**328**	P	**P**	**13 49 10.9**	**0.0**
	comp=Z,12nm,1.0s,baz=161,slow=7.4,SNR=21						
MJAR				LR	LR	14 13 01.8	
	comp=Z,35nm,20.6s,baz=195,slow=33						
MAJO	**Matsushiro**	**61.65**	**328**	*e*P	**P**	**13 49 09.6**	**-1.3**
MAJO				pmax	pmax		
	comp=Z,23nm,1.0s						
MAJO	**Matsushiro**	**61.65**	**328**	*e*P	**P**	**13 49 09.6**	**-1.3**
	comp=Z,23nm,1.0s						
MAT	**Matsushiro**	**61.65**	**328**	P	**P**	**13 49 10.3**	**-0.6**
MJB9	**Matsu-Tunnel**	**61.65**	**328**	*e*P	**P**	**13 49 09.5**	**-1.4**
	comp=Z,5.8nm,1.0s						
VNDA	**Vanda**	**62.00**	**183**	LR	LR	14 11 24.6	
	comp=Z,381nm,21.8s,baz=8.0,slow=32						
SBA	**Scott Base**	**62.15**	**182**	*e*P	**P**	**13 49 13.3**	**-0.4**
SBA				pmax	pmax		
	comp=Z,78nm,1.9s						
SBA	**Scott Base**	**62.15**	**182**	*e*P	**P**	**13 49 13.3**	**-0.4**
	comp=Z,78nm,1.9s						
STKI	**Sintang**	**62.86**	**278**	P	**P**	**13 49 20.9**	**+1.4**
	comp=Z,32nm,1.0s						
SBUM	**Sibu**	**62.90**	**281**	*e*P	**P**	**13 49 19.5**	**-0.3**
	comp=Z,12nm,1.1s						
KSM	**Kuching**	**64.40**	**279**	*e*P	**P**	**13 49 29.7**	**0.0**
	comp=Z,27nm,0.9s						
TPUB	**Ta-pu**	**64.41**	**306**	*e*P	**P**	**13 49 27.6**	**-2.0**
	comp=Z,21nm,0.9s						
YHNB	**Yeheng**	**64.57**	**308**	*e*P	**P**	**13 49 28.3**	**-2.4**
	comp=Z,41nm,1.4s						
LEM	**Lembang**	**64.69**	**270**	P	P	13 49 37.2	+5.5
	comp=Z,7.2nm,0.4s,baz=175,slow=21,SNR=7.0						
ASAJ	**Asahikawa**	**65.84**	**336**	P	**P**	**13 49 40.1**	**+1.8**
	comp=Z,14nm,0.9s,baz=201,slow=12,SNR=5.9						
QZH	**Quanzhou**	**66.86**	**306**	⇓*i*P	**P**	**13 49 41.3**	**-4.0**
QZH				S	**S**	**13 58 35.0**	**-1.4**
QZH				pmax	pmax		
	comp=Z,320nm,6.6s						
KSRS	**Korea Array**	**67.94**	**322**	P	**P**	**13 49 52.9**	**+1.0**
	comp=Z,7.4nm,1.1s,baz=144,slow=6.2,SNR=16						
KSRS				LR	LR	14 17 54.2	
	comp=Z,51nm,19.2s,baz=128,slow=34						
KSAR	**Wonju Array Be**	**67.96**	**322**	P	**P**	**13 49 52.9**	**+0.9**
KSAR	**Wonju Array Be**	**67.96**	**322**	P	**P**	**13 49 52.9**	**+0.9**
KS01	**Wonju Array Si**	**67.98**	**322**	*e*P	**P**	**13 49 52.3**	**+0.1**
YSS	**Yuzh-Sakhalins**	**68.19**	**338**	*e*P	**P**	**13 49 53.8**	**+0.6**
YSS				*e**SP	**sP**	**13 50 06.4**	**+0.7**
YSS				*e*		13 50 18.7	
YSS				*e*S	**S**	**13 58 43.8**	**-7.7**
YSS				*e*SS	**SS**	**14 03 12.2**	**-3.0**
YSS				pmax	pmax		
	comp=Z,20nm,1.2s						
YSS	**Yuzh-Sakhalins**	**68.19**	**338**	*e*P	**P**	**13 49 53.5**	**+0.3**
	comp=Z,15nm,0.9s						
PEA0	**Petropavlovsk-**	**69.91**	**350**	*e*P	**P**	**13 50 03.0**	**-0.8**
PETK	**Petropavlovsk-**	**69.91**	**350**	P	**P**	**13 50 04.5**	**+0.7**
	comp=Z,17nm,0.9s,baz=128,slow=9.6,SNR=8.9						
PETK				LR	LR	14 15 39.7	
	comp=Z,257nm,20.4s,baz=152,slow=32						
NJ2	**Nanjing**	**70.49**	**313**	*e*P	**P**	**13 50 08.5**	**+0.7**
NJ2				pmax	pmax		
	comp=Z,21nm,0.5s						
USRK	**Ussuriysk Ar.**	**70.54**	**330**	P	**P**	**13 50 08.8**	**+1.0**
	comp=Z,8.7nm,1.0s,baz=127,slow=5.0,SNR=14						
USRK				LR	LR	14 16 15.8	
	comp=Z,125nm,21.2s,baz=126,slow=32						
UNV	**Unalaska Valle**	**71.53**	**13**	*e*P	**P**	**13 50 11.7**	**-1.8**
	comp=Z,146nm,1.8s						
MDJ	**Mudanjiang**	**72.02**	**329**	P	**P**	**13 50 17.5**	**+0.7**
MDJ				pP	pP	13 50 20.8	-5.2
MDJ				sP	sP	13 50 22.0	-7.4
MDJ				PcP	**PcP**	**13 50 35.5**	**+0.3**
MDJ				PP	**PP**	**13 52 54.8**	**-2.5**
MDJ				S	**S**	**13 59 37.8**	**+1.2**
MDJ				ScS	**ScS**	**14 00 22.5**	**+1.7**
MDJ				SS	**SS**	**14 04 17.5**	**+3.2**
MDJ				pmax	pmax		
	comp=Z,29nm,1.1s						
MDJ				pmax	pmax		
	comp=Z,120nm,4.9s						
MDJ				LR	LR		
	comp=Z,91nm,22.9s						
MDJ				LR	LR		
	comp=Z,120nm,26.0s						
MDJ	**Mudanjiang**	**72.02**	**329**	*e*P	**P**	**13 50 18.1**	**+1.3**
	comp=Z,44nm,1.2s						
HABR	**Khabarovsk**	**72.42**	**334**	*e*P	**P**	**13 50 17.4**	**-1.7**
HABR				*e**PP	**pP**	**13 50 27.7**	**-0.5**
HABR				*e*		13 50 35.0	
HABR				*e*		13 52 58.3	
HABR				*e*PPP	PPP	13 54 42.5	
HABR				*e*S	**S**	**13 59 39.3**	**-1.6**
HABR				*e*		14 00 21.3	
HABR				*e*SS	**SS**	**14 04 18.3**	**-1.9**
HABR				pmax	pmax		
	comp=E,53nm,1.4s						
HABR				pmax	pmax		
	comp=N,21nm,1.4s						
HABR				pmax	pm

BJI S **S** **14 00 32.3 +2.6**
BJI SS **SS** **14 05 31.0 +4.5**
BJI pmax pmax
comp=Z,31nm,1.2s
BJI pmax pmax
comp=Z,180nm,4.6s
BJI LR LR
comp=Z,110nm,11.2s
BJI LR LR
comp=Z,120nm,11.4s
CHAI Chaiyaphum 76.99 291 P **P** **13 50 47.1 +0.8**
comp=Z,4.7nm,1.0s
NAYO Nakonayok 77.04 289 P **P** **13 50 48.1 +1.5**
comp=Z,20nm,0.8s
GYA Guiyang 77.05 302 P **P** **13 50 47.3 +0.7**
GYA S **S** **14 00 33.5 -0.3**
GYA SKS **SKSac** **14 00 54.5 -3.1**
GYA SS **SS** **14 05 33.3 +1.5**
GYA pmax pmax
comp=Z,20nm,1.0s
GYA pmax pmax
comp=Z,130nm,5.9s
GYA LR LR
comp=Z,620nm,20.4s
GYA LR LR
comp=Z,540nm,21.0s
GYA LR LR
comp=Z,580nm,20.8s
MA2 Magadan 77.29 349 P **P** **13 50 46.5 -0.5**
comp=Z,11nm,1.0s,baz=158,slow=8.7,SNR=5.0
PBKT Sadao Pong 78.14 291 P **P** **13 50 53.9 +1.2**
comp=Z,17nm,1.3s
KDAK Kodiak Island 78.59 18 *i* P **P** **13 50 55.2 +0.9**
XAN Xi'an 78.67 310 P **P** **13 50 55.0 -0.3**
XAN pmax pmax
comp=Z,25nm,1.3s
XAN pmax pmax
comp=Z,92nm,4.5s
UTTA Uttaradit 78.92 292 P **P** **13 50 58.3 +1.3**
comp=Z,6.6nm,1.0s,comp=Z,91nm
KMI Kunming 79.75 300 P **P** **13 51 03.0 +1.4**
KMI pP PcP 13 51 10.0 +0.7
KMI sP pP 13 51 12.8 +1.9
KMI PP **PP** **13 54 00.0 -3.2**
KMI S **S** **14 01 04.8 +1.8**
KMI pmax pmax
comp=Z,24nm,1.2s
KMI pmax pmax
comp=Z,100nm,3.7s
KMI LR LR
comp=Z,110nm,20.2s
KMI LR LR
comp=Z,62nm,14.6s
CRAI Chiangrai 79.96 294 P **P** **13 51 04.7 +2.1**
comp=Z,18nm,1.1s,comp=Z,7µm
LAMP Lampang 80.02 292 P **P** **13 51 04.5 +1.5**
comp=Z,18nm,0.9s,comp=Z,137nm
SEY Seymchan 80.15 351 P **P** **13 51 03.0 +0.4**
comp=Z,8.8nm,0.8s,baz=160,slow=6.1,SNR=23
SEY Seymchan 80.15 351 *ce*P **P** **13 51 01.9 -0.8**
HHC Hu-ho-hao-te 80.16 317 *e*P **P** **13 51 04.3 +0.9**
HHC PP **PP** **13 54 11.0 +4.8**
HHC pmax pmax
comp=Z,38nm,1.2s
HHC pmax pmax
comp=Z,140nm,4.0s
HOM Homer 80.43 17 *e*P **P** **13 51 05.4 +1.2**
comp=Z,180nm,1.0s
CM01 Chiang Mai Arr 80.58 292 *e*P **P** **13 51 06.9 +0.9**
CM31 Chiang Mai Arr 80.61 292 *e*P **P** **13 51 07.2 +1.1**
CMAR Chiang Mai Arr 80.61 292 P **P** **13 51 07.6 +1.5**
comp=Z,21nm,0.9s,baz=120,slow=3.9,SNR=114
CMAR LR LR 14 24 23.5
comp=Z,16nm,21.9s,baz=150,slow=34
CMMT Chiang Mai 80.72 293 P **P** **13 51 07.7 +0.9**
comp=Z,34nm,1.1s,comp=Z,439nm
CHTO Chiang Mai 80.73 293 P **P** **13 51 07.8 +1.0**
comp=Z,164nm,1.1s,comp=Z,2µm
CHTO Chiang Mai 80.73 293 *e*P **P** **13 51 07.8 +1.0**
CHTO pmax pmax
comp=Z,32nm,1.0s
CHTO Chiang Mai 80.73 293 *e*P **P** **13 51 07.8 +1.0**
comp=Z,32nm,1.0s
BRLK Bradley Lake 80.73 18 *e*P **P** **13 51 06.6 +0.7**
comp=Z,72nm,1.0s
SAO San Andreas Ge 80.75 48 *e*P **P** **13 51 08.0 +1.5**
SAO pmax pmax
comp=Z,26nm,1.1s
SAO San Andreas Ge 80.75 48 *e*P **P** **13 51 08.0 +1.5**
comp=Z,26nm,1.1s
RSO Redoubt South 80.79 16 *e*P **P** **13 51 06.7 +0.3**
SBC Santa Barbara 80.97 50 P **P** **13 51 09.1 +1.4**
baz=244
CMAI Chiengmai2 81.02 294 P **P** **13 51 09.6 +1.1**
comp=Z,75nm,0.8s
PKM Mcpherson Peak 81.09 50 P **P** **13 51 10.4 +1.8**
baz=244
CD2 Chengdu 81.22 305 P **P** **13 51 07.5 -1.7**
CD2 Chengdu 81.22 305 P **P** **13 51 09.8 +0.6**
CD2 sP PcP 13 51 15.0 -0.4
CD2 PP **PP** **13 54 14.8 -0.3**
CD2 S **S** **14 01 20.3 +2.4**
CD2 sS SKSac 14 01 26.5 -0.2
CD2 SS **SS** **14 06 35.0 +0.9**
CD2 pmax pmax
comp=Z,30nm,1.1s
CD2 pmax pmax
comp=Z,120nm,4.2s
CD2 LR LR
comp=Z,150nm,6.6s
CD2 LR LR
comp=Z,160nm,6.6s
MHMT Maesarieng 81.42 292 P **P** **13 51 12.2 +1.8**
comp=Z,14nm,1.1s
SEW Seward 81.43 18 *e*P **P** **13 51 10.1 +0.6**
comp=Z,41nm,0.9s
SPU Mount Spurr 81.58 16 *e*P **P** **13 51 09.4 -1.1**
WDC Whiskeytown Da 81.79 44 *e*P **P** **13 51 13.0 +1.0**
WDC pmax pmax
comp=Z,26nm,1.3s
WDC Whiskeytown Da 81.79 44 *e*P **P** **13 51 13.0 +1.0**
comp=Z,26nm,1.3s
N02D Trinity Center 81.88 43 P **P** **13 51 14.3 +1.8**
baz=241
ARVC Arvin 81.92 50 P **P** **13 51 14.1 +1.4**
baz=244
M02C Callahan 81.98 43 P **P** **13 51 14.8 +1.8**
baz=241
ORV Oroville 82.01 45 *e*P **P** **13 51 14.3 +1.2**
ORV pmax pmax
comp=Z,17nm,1.0s
ORV Oroville 82.01 45 *e*P **P** **13 51 14.3 +1.2**
comp=Z,17nm,1.0s
TT01 Tatalina 82.07 14 *e*P **P** **13 51 13.7 +0.7**
CMB Columbia Colle 82.08 47 *e*P **P** **13 51 14.3 +0.7**
CMB pmax pmax
comp=Z,16nm,0.9s
CMB Columbia Colle 82.08 47 *e*P **P** **13 51 14.3 +0.7**
comp=Z,16nm,0.9s
AFDM Forest Hills D 82.09 46 *e*P **P** **13 51 14.6 +0.9**
comp=Z,23nm,1.0s
TTA Tatalina 82.09 14 *e*P **P** **13 51 14.0 +0.9**
TTA pmax pmax
comp=Z,30nm,1.0s
TTA Tatalina 82.09 14 *e*P **P** **13 51 13.9 +0.9**
comp=Z,30nm,1.0s
RC01 Rabbit Creek A 82.15 17 *e*P **P** **13 51 13.9 +0.5**
comp=Z,53nm,1.1s
O03D Paynes Creek 82.15 44 P **P** **13 51 15.0 +1.0**
baz=242
YBH Yreka Blue Hor 82.24 43 *e*P **P** **13 51 15.9 +1.5**
YBH pmax pmax
comp=Z,39nm,1.3s
YBH Yreka Blue Hor 82.24 43 *e*P **P** **13 51 15.9 +1.5**
comp=Z,39nm,1.3s
109C Camp Elliot, M 82.28 53 P **P** **13 51 15.8 +1.2**
baz=246
ISA Isabella, Lake 82.41 50 P **P** **13 51 17.0 +1.5**
baz=244
ISA Isabella, Lake 82.41 50 *e*P **P** **13 51 17.0 +1.5**
ISA pmax pmax
comp=Z,47nm,1.4s
ISA Isabella, Lake 82.41 50 *e*P **P** **13 51 17.0 +1.5**
comp=Z,47nm,1.4s
BFSC Mount Baldy Ra 82.41 51 P **P** **13 51 16.5 +0.9**
baz=245

EDW2 Edwards Air Fo 82.43 51 P **P** **13 51 16.6 +1.0**
baz=245,SNR=8.3
MURC Murrieta 82.50 52 P **P** **13 51 17.3 +1.4**
baz=246
PMR Palmer 82.73 17 *e*P **P** **13 51 16.2 -0.1**
PMR pmax pmax
comp=Z,70nm,1.3s
PMR Palmer 82.73 17 *e*P **P** **13 51 16.2 -0.1**
comp=Z,70nm,1.3s
MONP2 Monument Peak 82.80 53 P **P** **13 51 18.7 +1.0**
baz=246,SNR=6.2
M04C Macdoel 82.83 43 P **P** **13 51 18.9 +1.3**
baz=242
LRMC Laurel Mtn Rad 82.92 50 P **P** **13 51 19.1 +1.0**
baz=245,SNR=5.6
WAKR Walker 82.96 47 *e*P **P** **13 51 19.5 +1.1**
MAW Mawson 82.99 201 P **P** **13 51 17.8 0.0**
comp=Z,8.4nm,1.0s,baz=108,slow=5.5,SNR=5.6
MAW LR LR 14 24 26.6
comp=Z,116nm,19.0s,baz=66,slow=33
MAW Mawson 82.99 201 *e*P **P** **13 51 18.3 +0.5**
MAW pmax pmax
comp=Z,3.0nm,1.1s
MAW Mawson 82.99 201 *e*P **P** **13 51 18.3 +0.5**
comp=Z,3.3nm,1.1s
MLAC Mammoth, Mammo 83.00 48 P **P** **13 51 20.0 +1.4**
baz=244
PFO Pinyon Flats O 83.06 52 LR LR 14 19 26.1
comp=Z,112nm,20.9s,baz=275,slow=29
PFO Pinyon Flats O 83.06 52 P **P** **13 51 20.3 +1.3**
baz=246
PFO Pinyon Flats O 83.06 52 *e*P **P** **13 51 20.3 +1.3**
PFO pmax pmax
comp=Z,14nm,1.3s
PFO Pinyon Flats O 83.06 52 *e*P **P** **13 51 20.3 +1.3**
comp=Z,14nm,1.3s
SML Sawmill 83.13 17 *e*P **P** **13 51 18.8 +0.3**
SML pmax pmax
comp=Z,49nm,1.2s
SML Sawmill 83.13 17 *e*P **P** **13 51 18.8 +0.3**
comp=Z,49nm,1.2s
RAGM Ragged Mountai 83.13 20 *e*P **P** **13 51 19.4 +0.9**
comp=Z,38nm,1.1s
RRX Edison Barstow 83.17 51 P **P** **13 51 20.9 +1.5**
baz=246
TIN Tinemaha, Big 83.19 49 P **P** **13 51 21.0 +1.5**
baz=244
SWSC Sam W. Stewart 83.30 53 P **P** **13 51 21.4 +1.4**
baz=246
MPMC Manual Prospec 83.30 50 P **P** **13 51 21.2 +1.0**
baz=245,SNR=14
LZH Lanzhou 83.31 310 *e*P **P** **13 51 22.0 +1.8**
LZH pP PcP 13 51 25.8 +1.2
LZH sP pP 13 51 27.3 -2.2
LZH pmax pmax
comp=Z,38nm,1.0s
LZH pmax pmax
comp=Z,160nm,4.0s
DAC Darwin (Calif) 83.32 50 *e*P **P** **13 51 21.5 +1.2**
DAC pmax pmax
comp=Z,23nm,1.3s
DAC Darwin (Calif) 83.32 50 *e*P **P** **13 51 21.5 +1.2**
comp=Z,23nm,1.3s
DIV Divide 83.36 19 *e*P **P** **13 51 20.0 +0.3**
comp=Z,50nm,0.9s
I04A Tendick Farm, 83.43 41 P **P** **13 51 21.4 +0.8**
baz=241
SCM Sheep Creek Mo 83.44 18 *e*P **P** **13 51 20.7 +0.5**
SCM pmax pmax
comp=Z,60nm,0.9s
SCM Sheep Creek Mo 83.44 18 *e*P **P** **13 51 20.6 +0.5**
comp=Z,60nm,0.9s
CAST Castle Rocks 83.45 15 *e*P **P** **13 51 19.5 -0.6**
comp=Z,52nm,0.9s
GSC Goldstone, Bar 83.49 51 P **P** **13 51 21.9 +0.8**
baz=246,SNR=7.1
GSC Goldstone, Bar 83.49 51 *e*P **P** **13 51 22.2 +1.1**
GSC pmax pmax
comp=Z,31nm,1.4s
GSC Goldstone, Bar 83.49 51 *e*P **P** **13 51 22.2 +1.1**
comp=Z,31nm,1.4s
BELC Belle Mtn. Jos 83.57 52 P **P** **13 51 22.3 +0.7**
baz=246,SNR=6.8
KLU Klutina 83.59 18 *e*P **P** **13 51 21.3 +0.3**
comp=Z,24nm,0.9s
G03D McMinnville, O 83.60 40 P **P** **13 51 23.0 +1.7**
baz=240
BMRM Bremner River 83.60 19 *e*P **P** **13 51 21.4 +0.4**
comp=Z,38nm,0.9s
HEC Hector,Ludlow 83.65 51 P **P** **13 51 22.8 +0.9**
baz=246,SNR=9.6
NV01 Mina Array Sit 83.73 47 *e*P **P** **13 51 22.8 +0.4**
NVAR Mina Array Bea 83.73 47 P **P** **13 51 23.6 +1.3**
comp=Z,9.1nm,0.9s,baz=228,slow=8.5,SNR=43
NVAR LR LR 14 20 19.2
comp=Z,252nm,21.7s,baz=251,slow=30
BILL Bilibino 83.76 357 *e*P **P** **13 51 20.9 -0.6**
BILL pmax pmax
comp=Z,21nm,1.4s
BILL Bilibino 83.76 357 *e*P **P** **13 51 20.9 -0.6**
comp=Z,21nm,1.4s
GRAC Grapevine Rang 83.79 49 P **P** **13 51 23.6 +1.1**
baz=245
NV11 Mina Array Sit 83.83 47 *e*P **P** **13 51 24.0 +1.1**
comp=Z,39nm,1.3s
BC3 Big Chuckawall 83.85 53 P **P** **13 51 23.9 +0.9**
baz=247,SNR=7.9
KTH Kantishna Hill 83.85 15 *e*P **P** **13 51 21.5 -0.7**
comp=Z,27nm,1.0s
K05A Summer Lake 83.90 43 *e*P **P** **13 51 24.7 +1.6**
comp=Z,42nm,0.9s
MOD Modoc Plateau 83.91 44 *e*P **P** **13 51 24.0 +0.9**
comp=Z,64nm,1.4s
TRF Thorofare Moun 83.93 16 *e*P **P** **13 51 22.4 -0.4**
comp=Z,26nm,1.0s
FURC Furnace Creek, 83.93 50 P **P** **13 51 24.4 +1.3**
baz=245,SNR=5.7
J05D Fort Rock, OR 83.94 42 P **P** **13 51 24.5 +1.3**
baz=242
GLA Glamis 84.09 53 P **P** **13 51 26.0 +1.9**
baz=247
GLA Glamis 84.09 53 *e*P **P** **13 51 25.9 +1.8**
GLA pmax pmax
comp=Z,24nm,1.1s
GLA Glamis 84.09 53 *e*P **P** **13 51 25.9 +1.8**
comp=Z,24nm,1.1s
SHOC Shoshone, Teco 84.13 50 P **P** **13 51 25.3 +1.0**
baz=246
GMRC Granite Mounta 84.14 52 P **P** **13 51 25.0 +0.5**
baz=246,SNR=11
TUQ Turquoise Moun 84.21 51 P **P** **13 51 25.7 +0.9**
baz=246,SNR=13
RND Reindeer 84.27 16 *e*P **P** **13 51 24.5 +0.2**
RND pmax pmax
comp=Z,59nm,1.1s
RND Reindeer 84.27 16 *e*P **P** **13 51 24.5 +0.2**
comp=Z,59nm,1.1s
IRM Iron Mountain 84.28 52 P **P** **13 51 25.3 +0.2**
baz=247,SNR=14
BPAW Bear Paw Mtn. 84.29 15 *e*P **P** **13 51 23.4 -0.9**
comp=Z,10.0nm,1.0s
I05D Terrebonne, OR 84.37 41 P **P** **13 51 26.0 +0.7**
baz=242
DHY Denali Highway 84.41 17 *e*P **P** **13 51 25.1 0.0**
comp=Z,14nm,0.9s
F04A Amboy 84.47 39 *e*P **P** **13 51 26.7 +1.1**
comp=Z,52nm,1.3s
MCK McKinley 84.51 16 *e*P **P** **13 51 25.1 -0.4**
MCK pmax pmax
comp=Z,43nm,1.3s
MCK McKinley 84.51 16 *e*P **P** **13 51 25.1 -0.4**
comp=Z,42nm,1.3s
LPIG La Paz 84.54 63 LR LR 14 19 34.6
comp=Z,202nm,21.5s,baz=213,slow=29
BBB Bella Bella 84.58 32 LR LR 14 20 53.2
comp=Z,105nm,21.9s,baz=246,slow=30
TPNV Topopah Spring 84.58 49 P **P** **13 51 27.7 +1.0**
baz=246,SNR=15
TPNV Topopah Spring 84.58 49 *e*P **P** **13 51 27.6 +1.0**
TPNV pmax pmax
comp=Z,27nm,1.2s
TPNV Topopah Spring 84.58 49 *e*P **P** **13 51 27.6 +1.0**
comp=Z,27nm,1.2s
Y12C Blythe 84.60 53 P **P** **13 51 28.0 +1.3**
baz=247
Y12C Blythe 84.60 53 *e*P **P** **13 51 28.1 +1.5**
comp=Z,30nm,1.1s

BWN Browne 84.73 15 *e*P **P** **13 51 26.7 +0.1**
comp=Z,57nm,1.0s
YAK Yakutsk 84.80 341 P **P** **13 51 27.0 +0.1**
comp=Z,13nm,0.7s,baz=107,slow=2.5,SNR=7.3
YAK LR LR 14 23 36.2
comp=Z,182nm,21.8s,baz=90,slow=32
YAK Yakutsk 84.80 341 *e*P **P** **13 51 26.3 -0.6**
YAK pmax pmax
comp=Z,14nm,0.9s
YAK Yakutsk 84.80 341 *e*P **P** **13 51 26.7 -0.2**
comp=Z,17nm,0.8s
113A Mohawk Valley, 84.81 54 *e*P **P** **13 51 28.5 +0.8**
comp=Z,21nm,1.3s
G05D Wamic, OR 84.81 40 P **P** **13 51 29.0 +1.5**
baz=242
PAX Paxson 84.87 18 *e*P **P** **13 51 27.0 -0.5**
PAX pmax pmax
comp=Z,11nm,1.1s
PAX Paxson 84.87 18 *e*P **P** **13 51 27.0 -0.5**
comp=Z,12nm,1.1s
NEE2 Needles Airpor 84.92 52 P **P** **13 51 29.5 +1.2**
baz=247
WRAK Wrangell Islan 85.08 27 *e*P **P** **13 51 28.8 +0.3**
comp=Z,21nm,1.0s
PDMCI Parker Dam,Lak 85.11 52 P **P** **13 51 30.4 +1.2**
baz=247
MLY Manley 85.11 15 *e*P **P** **13 51 27.6 -1.0**
comp=Z,13nm,1.1s
PGC Sidney 85.21 37 *e*P **P** **13 51 30.2 +0.9**
comp=Z,41nm,1.3s
WVOR Wild Horse Val 85.25 44 *e*P **P** **13 51 30.8 +0.9**
WVOR pmax pmax
comp=Z,33nm,1.1s
WVOR Wild Horse Val 85.25 44 *e*P **P** **13 51 30.8 +0.9**
comp=Z,33nm,1.1s
214A Organ Pipe Nat 85.25 55 P **P** **13 51 31.4 +1.4**
baz=248
WRH Wood River Hil 85.33 16 *e*P **P** **13 51 28.8 -0.7**
comp=Z,20nm,1.0s
BMN Battle Mountai 85.34 46 *e*P **P** **13 51 31.2 +0.8**
BMN pmax pmax
comp=Z,35nm,1.1s
BMN Battle Mountai 85.34 46 *e*P **P** **13 51 31.2 +0.8**
comp=Z,35nm,1.1s
MENT Mentasta 85.37 18 *e*P **P** **13 51 30.0 +0.2**
comp=Z,14nm,1.0s
CCB Clear Creek Bu 85.54 16 *e*P **P** **13 51 29.2 -1.3**
comp=Z,17nm,1.0s
HDA Harding Lake 85.58 16 *e*P **P** **13 51 30.4 -0.5**
comp=Z,38nm,1.0s
W13A Hualapai Mount 85.61 52 *e*P **P** **13 51 33.2 +1.3**
comp=Z,18nm,1.4s
R11A Troy Canyon, C 85.63 48 P **P** **13 51 32.4 +0.5**
baz=246,SNR=10
R11A Troy Canyon, C 85.63 48 *e*P **P** **13 51 32.6 +0.7**
comp=Z,19nm,1.4s
A04D Lummi Island 85.67 37 P **P** **13 51 32.6 +1.0**
baz=240
MDM Murphy Dome 85.68 15 *e*P **P** **13 51 30.2 -1.2**
comp=Z,24nm,1.0s
HSIG 85.69 58 *e*P **P** **13 51 31.6 -0.6**
comp=Z,21nm,1.4s
COLA College 85.71 16 ⇓ *i*P **P** **13 51 30.4 -1.0**
COLA pmax pmax
comp=Z,36nm,1.1s
COLA College 85.71 16 *e*P **P** **13 51 30.6 -0.8**
comp=Z,30nm,0.9s
SKAG Skagway 85.79 24 *e*P **P** **13 51 33.0 +1.0**
comp=Z,20nm,1.1s
B05A Bryant 85.80 37 P **P** **13 51 33.4 +1.1**
baz=241
DOT Dot Lake 85.80 18 *e*P **P** **13 51 31.7 -0.3**
comp=Z,62nm,0.8s
Y14A Wickenburg 85.84 53 *e*P **P** **13 51 33.6 +0.7**
comp=Z,56nm,1.4s
IL1 Eielson Array 85.88 16 *e*P **P** **13 51 31.1 -1.3**
ILAR Eielson Array 85.88 16 P **P** **13 51 31.2 -1.1**
comp=Z,18nm,0.9s,baz=234,slow=5.4,SNR=106
ILAR PKKP **PKKPbc** **14 09 34.6 -1.8**
comp=Z,0.3nm,0.7s,baz=142,slow=2.4,SNR=4.5
ILAR LR LR 14 22 59.0
comp=Z,157nm,21.2s,baz=222,slow=31
ILB Eielson Array 85.88 16 *e*P **P** **13 51 30.8 -1.5**
LTY Liberty 86.16 39 *e*P **P** **13 51 34.8 +0.6**
comp=Z,13nm,1.1s
C06D Leavenworth 86.34 38 P **P** **13 51 35.7 +0.7**
baz=242
ULN Ulaanbaatar 86.42 322 *e*P **P** **13 51 35.8 +0.2**
ULN pmax pmax
comp=Z,20nm,1.1s
ULN Ulaanbaatar 86.42 322 *e*P **P** **13 51 35.8 +0.2**
comp=Z,20nm,1.1s
HAWA Hanford 86.45 40 *e*P **P** **13 51 36.4 +0.8**
comp=Z,18nm,1.0s
SONA1 Songino Array 86.80 322 *e*P **P** **13 51 37.0 -0.4**
SONM Songino Array 86.80 322 P **P** **13 51 37.7 +0.3**
comp=Z,6.7nm,0.9s,baz=138,slow=4.5,SNR=14
SONM LR LR 14 25 52.0
comp=Z,51nm,21.5s,baz=74,slow=32
LCMT Little Creek M 86.82 50 *e*P **P** **13 51 39.3 +1.5**
comp=Z,14nm,1.2s
ELK Elko 86.85 46 LR LR 14 23 25.4
comp=Z,137nm,21.6s,baz=315,slow=31
ELK Elko 86.85 46 *e*P **P** **13 51 38.3 +0.3**
ELK pmax pmax
comp=Z,19nm,1.2s
ELK Elko 86.85 46 *e*P **P** **13 51 38.2 +0.3**
comp=Z,19nm,1.2s
PSUT Pine Spring 86.95 49 *e*P **P** **13 51 39.3 +0.8**
comp=Z,13nm,1.1s
TUC Tucson 86.98 55 P **P** **13 51 40.3 +1.7**
baz=249
TUC Tucson 86.98 55 *e*P **P** **13 51 40.5 +1.9**
TUC pmax pmax
comp=Z,8.0nm,1.3s
TUC Tucson 86.98 55 *e*P **P** **13 51 40.5 +1.9**
comp=Z,7.8nm,1.3s
COLD Coldfoot 87.05 13 *e*P **P** **13 51 38.3 +0.3**
comp=Z,11nm,1.0s
KNB Kanab 87.13 50 *e*P **P** **13 51 40.4 +1.1**
KNB pmax pmax
comp=Z,63nm,1.9s
KNB Kanab 87.13 50 *e*P **P** **13 51 40.4 +1.1**
comp=Z,63nm,1.9s
D08A Wollman Farm, 87.13 39 *e*P **P** **13 51 39.8 +1.0**
comp=Z,14nm,1.1s
X16A Lo Mia Camp, P 87.22 53 *e*P **P** **13 51 41.4 +1.6**
comp=Z,7.4nm,1.0s
DLBC Dease Lake 87.30 26 LR LR 14 22 04.8
comp=Z,166nm,21.9s,baz=228,slow=30
DLBC Dease Lake 87.30 26 *e*P **P** **13 51 40.4 +0.9**
comp=Z,11nm,1.0s
E09A Wood Farm, Sta 87.37 40 *e*P **P** **13 51 41.0 +1.0**
comp=Z,38nm,1.5s
B08A Colville Reser 87.47 38 *e*P **P** **13 51 40.8 +0.3**
comp=Z,16nm,1.0s
EGAK Eagle 87.50 18 *e*P **P** **13 51 40.0 -0.2**
comp=Z,20nm,1.0s
MFID Camas Ranch 87.53 44 *e*P **P** **13 51 42.1 +1.1**
comp=Z,25nm,1.1s
GTA Gaotai 87.56 312 *e*P **P** **13 51 42.3 +1.0**
GTA pP PcP 13 51 46.5 +3.2
GTA sP pP 13 51 49.5 -1.2
GTA S **S** **14 02 20.5 -0.6**
GTA sS ScS 14 02 28.5 +0.5
GTA SS **SS** **14 08 09.8 +2.1**
GTA pmax pmax
comp=Z,29nm,1.3s
GTA pmax pmax
comp=Z,120nm,4.8s
GTA LR LR
comp=Z,67nm,12.8s
GTA LR LR
comp=Z,96nm,13.3s
GTA LR LR
comp=Z,130nm,14.0s
WUAZ Wupatki 87.67 52 P **P** **13 51 43.6 +1.7**
baz=249
WUAZ Wupatki 87.67 52 *e*P **P** **13 51 43.3 +1.4**
comp=Z,12nm,1.0s
F10A Beach Ranch, E 87.70 41 *e*P **P** **13 51 42.5 +0.7**
comp=Z,26nm,1.0s
319A Douglas 87.86 57 *e*P **P** **13 51 44.6 +1.7**
comp=Z,13nm,1.0s
BOD Bodaibo 87.97 333 *e*P **P** **13 51 41.9 -0.7**
BOD pmax pmax
comp=Z,10.0nm,1.5s

MTPU	**Mount Pierson**	87.98	50	*e*P		P		13 51 45.5	+1.9
	comp=Z,36nm,1.5s								
MSU	**Marysvale**	88.16	49	*e*P		P		13 51 45.8	+1.5
MSU	**Marysvale**	88.16	49	*e*P		P		13 51 45.8	+1.5
DUG	**Dugway, Tooele**	88.33	47	P		P		13 51 46.1	+1.1
	baz=248								
DUG	**Dugway, Tooele**	88.33	47	*e*P		P		13 51 46.0	+1.1
DUG					pmax	pmax			
	comp=Z,35nm,1.5s								
DUG	**Dugway, Tooele**	88.33	47	*e*P		P		13 51 46.0	+1.1
	comp=Z,35nm,1.5s								
X18A	**Snowflake**	88.41	54	*e*P		P		13 51 46.6	+1.1
	comp=Z,13nm,1.2s								
BGU	**Big Grassy Mou**	88.46	47	*e*P		P		13 51 46.7	+1.2
	comp=Z,23nm,1.3s								
HLID	**Hailey**	88.53	44	P		P		13 51 47.3	+1.4
	baz=247								
HLID	**Hailey**	88.53	44	*e*P		P		13 51 47.0	+1.1
	comp=Z,19nm,1.0s								
NEW	**Newport**	88.75	39	LR		LR		14 23 55.2	
	comp=Z,79nm,19.8s,baz=270,slow=30								
NEW	**Newport**	88.75	39	P		P		13 51 47.3	+0.6
	baz=245								
NEW	**Newport**	88.75	39	*e*P		P		13 51 47.2	+0.6
NEW					pmax	pmax			
	comp=Z,12nm,1.1s								
NEW	**Newport**	88.75	39	*e*P		P		13 51 47.2	+0.6
	comp=Z,12nm,1.1s								
NLU	**North Lily Min**	88.77	48	*e*P		P		13 51 47.5	+0.4
	comp=Z,24nm,1.5s								
W18A	**Petrified Fore**	88.78	53	P		P		13 51 48.6	+1.3
	baz=250								
W18A	**Petrified Fore**	88.78	53	*e*P		P		13 51 49.0	+1.8
HVU	**Hansel Valley**	88.96	46	*e*P		P		13 51 49.2	+1.3
HVU					pmax	pmax			
	comp=Z,41nm,1.1s								
HVU	**Hansel Valley**	88.96	46	*e*P		P		13 51 49.2	+1.3
	comp=Z,41nm,1.1s								
TMUT	**Trail Mountain**	89.15	49	*e*P		P		13 51 50.8	+1.7
	comp=Z,19nm,1.2s								
SYO	**Syowa Base**	89.24	195	ǁ*e*X				13 51 44.0	
CTU	**Camp Tracy**	89.27	47	*e*P		P		13 51 50.6	+1.1
	comp=Z,29nm,1.2s								
121A	**Cookes Peak, D**	89.44	56	P		P		13 51 51.7	+1.2
	baz=251								
JLU	**Jordanelle**	89.45	47	*e*P		P		13 51 51.7	+1.3
	comp=Z,26nm,1.3s								
SRU	**San Rafael Swe**	89.58	49	*e*P		P		13 51 51.5	+0.6
SRU					pmax	pmax			
	comp=Z,20nm,1.3s								
SRU	**San Rafael Swe**	89.58	49	*e*P		P		13 51 51.5	+0.6
	comp=Z,20nm,1.3s								
TCUT	**Toone Canyon**	89.67	47	*e*P		P		13 51 51.0	-0.4
	comp=Z,35nm,1.0s								
HWUT	**Hardware Ranch**	89.74	46	*e*P		P		13 51 51.5	-0.1
	comp=Z,12nm,1.1s								
ZAK	**Zakamensk**	89.77	323	*e*P		P		13 51 50.7	-0.7
ZAK					pmax	pmax			
	comp=Z,9.0nm,1.3s								
P18A	**Preston Nutter**	89.97	49	*e*P		P		13 51 53.8	+0.9
	comp=Z,9.3nm,1.1s								
BSMT	**Bassoo Peak**	90.01	40	P		P		13 51 53.4	+0.7
IRK	**Irkutsk**	90.02	325	*e*P		P		13 51 49.9	-2.5
IRK					pmax	pmax			
	comp=Z,23nm,1.4s								
MCMT	**McKenzie Canyo**	90.06	43	P		P		13 51 54.4	+1.3
TLY	**Talaya**	90.12	324	P		P		13 51 53.4	+0.4
	comp=Z,5.4nm,0.6s,baz=202,slow=2,2,SNR=7.3								
TLY	**Talaya**	90.12	324	*e*P		P		13 51 52.1	-0.8
TLY					pmax	pmax			
	comp=Z,9.0nm,0.8s								
TLY	**Talaya**	90.12	324	*e*P		P		13 51 52.1	-0.8
	comp=Z,9.3nm,0.8s								
MSO	**Missoula**	90.13	41	P		P		13 51 54.1	+0.9
	baz=247								
MSO	**Missoula**	90.13	41	*e*P		P		13 51 53.1	-0.1
	comp=Z,10nm,1.3s								
PV05	**Paradox Valley**	90.27	50	*e*P		P		13 51 55.9	+1.7
JTMT	**Jette**	90.28	40	*e*P		P		13 51 53.9	0.0
SWMT	**Swartz Lake**	90.36	40	*e*P		P		13 51 54.3	+0.1
PV09	**Paradox Valley**	90.39	50	*e*P		P		13 51 55.9	+1.0
PV10	**Paradox Valley**	90.42	50	*e*P		P		13 51 55.6	+0.7
DLMT	**Dillon**	90.43	43	*e*P		P		13 51 55.4	+0.7
	comp=Z,26nm,1.1s								
MVCO	**Mesa Verde**	90.43	51	P		P		13 51 56.2	+1.2
	baz=250								
MVCO	**Mesa Verde**	90.43	51	*e*P		P		13 51 56.0	+1.0
	comp=Z,11nm,1.3s								
YBMT	**Yellow Bay**	90.49	40	*e*P		P		13 51 54.9	0.0
PV04	**Paradox Valley**	90.52	50	*e*P		P		13 51 56.2	+0.8
LAZ	**Ladron**	90.56	54	*e*P		P		13 51 57.0	+1.3
CHMT	**Chamberlain Mo**	90.60	41	*e*P		P		13 51 56.0	+0.4
PV01	**Paradox Valley**	90.69	51	*e*P		P		13 51 57.0	+0.8
LRM	**Limekiln Ridge**	90.70	42	*e*P		P		13 51 56.8	+0.8
REDW	**Red Top Meadow**	90.86	45	*e*P		P		13 51 57.9	+1.0
	comp=Z,26nm,1.4s								
BNM	**Barren Site**	90.88	55	*e*P		P		13 51 58.2	+1.0
LSA	**Lhasa**	90.98	300	*e*P		P		13 51 59.5	+1.5
LSA					pmax	pmax			
	comp=Z,10.0nm,1.1s								
LSA	**Lhasa**	90.98	300	*e*P		P		13 51 59.5	+1.5
	comp=Z,10nm,1.1s								
IMW	**Indian Meadow**	90.99	45	*e*P		P		13 51 58.9	+1.4
	comp=Z,8.7nm,1.0s								
QLMT	**Earthquake Lak**	91.00	44	*e*P		P		13 51 59.1	+1.7
WALA	**Waterton Lakes**	91.02	39	*e*P		P		13 51 58.3	+1.0
	comp=Z,10nm,1.1s								
MOOW	**Moose Ponds**	91.07	45	*e*P		P		13 51 59.0	+1.2
	comp=Z,4.7nm,1.2s								
MNTX	**Cornudas Mount**	91.12	57	P		P		13 51 59.2	+1.1
	baz=252								
MNTX	**Cornudas Mount**	91.12	57	*e*P		P		13 51 59.0	+0.9
	comp=Z,10nm,1.1s								
LOHW	**Long Hollow**	91.12	45	*e*P		P		13 51 59.1	+1.1
	comp=Z,2.7nm,0.8s								
BOZ	**Bozeman (W)**	91.17	43	P		P		13 51 59.6	+1.4
	baz=249								
BOZ	**Bozeman (W)**	91.17	43	*e*P		P		13 51 58.5	+0.4
BOZ					pmax	pmax			
	comp=Z,20nm,1.3s								
BOZ	**Bozeman (W)**	91.17	43	*e*P		P		13 51 58.5	+0.4
	comp=Z,20nm,1.3s								
FLWY	**Flagg Ranch**	91.22	44	*e*P		P		13 51 59.8	+1.3
	comp=Z,8.6nm,1.1s								
YMR	**Madison River**	91.25	44	*e*P		P		13 52 00.4	+1.7
	comp=Z,11nm,1.2s								
ANMO	**Albuquerque**	91.26	54	LR		LR		14 25 41.8	
	comp=Z,69nm,20.9s,baz=233,slow=31								
ANMO	**Albuquerque**	91.26	54	P		P		13 52 00.1	+1.3
	baz=252								
ANMO	**Albuquerque**	91.26	54	ǁ*e*P		P		13 51 59.8	+0.9
ANMO					pmax	pmax			
	comp=Z,13nm,1.1s								
ANMO	**Albuquerque**	91.26	54	*e*P		P		13 51 59.7	+0.9
	comp=Z,11nm,1.0s								
H17A	**Grant Village**	91.42	44	P		P		13 52 01.8	+2.4
	baz=249								
H17A	**Grant Village**	91.42	44	*e*P		P		13 52 01.6	+2.1
	comp=Z,4.9nm,0.8s								
BW06	**Boulder Array**	91.54	46	P		P		13 52 00.5	+0.5
	baz=250								
BW06	**Boulder Array**	91.54	46	*e*P		P		13 52 00.0	0.0
PD31	**Pinedale Array**	91.54	46	*e*P		P		13 52 00.3	+0.3
PDAR	**Pinedale Array**	91.54	46	P		P		13 52 00.7	+0.7
	comp=Z,1.4nm,0.9s,baz=227,slow=3.7,SNR=12								
PDAR					LR	LR		14 26 20.2	
	comp=Z,68nm,20.6s,baz=266,slow=31								
O20A	**White River Ci**	91.59	49	P		P		13 52 01.8	+1.5
	baz=251								
O20A	**White River Ci**	91.59	49	*e*P		P		13 52 01.4	+1.1
	comp=Z,14nm,1.3s								
MOY	**Mondy**	91.62	324	*e*P		P		13 52 00.4	+0.4
TX31	**Lajitas Ar. Si**	91.82	60	*e*P		P		13 52 02.2	+0.7
TXAR	**Lajitas Array**	91.82	60	P		P		13 52 03.0	+1.5
	comp=Z,3.5nm,0.8s,baz=222,slow=5.1,SNR=35								
TXAR					LR	LR		14 24 26.6	
	comp=Z,114nm,21.1s,baz=0.0,slow=30								
S22A	**4UR Ranch, Cre**	91.86	51	P		P		13 52 03.2	+1.5
	baz=252								
S22A	**4UR Ranch, Cre**	91.86	51	*e*P		P		13 52 03.3	+1.6
	comp=Z,26nm,1.6s								
SMCO	**Snowmass**	92.21	50	*e*P		P		13 52 04.5	+1.1
	comp=Z,4.6nm,0.9s								
TIXI	**Tiksi**	92.21	347	P		P		13 52 01.6	-0.6
	comp=Z,6.7nm,1.0s,baz=139,slow=4.5,SNR=18								
TIXI	**Tiksi**	92.21	347	ǁ*e*P		P		13 52 01.5	-0.6
TIXI					pmax	pmax			
	comp=Z,11nm,1.1s								
TIXI	**Tiksi**	92.21	347	*e*P		P		13 52 01.6	-0.6
	comp=Z,11nm,1.1s								
RLMT	**Red Lodge**	92.54	44	P		P		13 52 06.0	+1.4
	baz=250								
RLMT	**Red Lodge**	92.54	44	*e*P		P		13 52 05.9	+1.3
	comp=Z,5.5nm,1.0s								
SNAA	**Sanae**	92.70	181	P		P		13 52 03.9	-0.8
SNAA	**Sanae**	92.70	181	⇑*e*P		P		13 52 04.1	-0.6
SNAA					pmax	pmax			
	comp=Z,1μm,1.3s								
SNAA	**Sanae**	92.70	181	*e*P		P		13 52 03.5	-1.3
	comp=Z,1μm,1.3s								
SDCO	**Great Sand Dun**	92.86	52	P		P		13 52 07.3	+0.9
	baz=252								
SDCO	**Great Sand Dun**	92.86	52	*e*P		P		13 52 07.0	+0.7
	comp=Z,4.6nm,1.4s								
VNA3	**Neumayer Olymp**	93.15	179	P		P		13 52 05.8	-0.9
EGMT	**Eagleton**	93.21	41	P		P		13 52 08.7	+1.3
	baz=250								
EGMT	**Eagleton**	93.21	41	*e*P		P		13 52 08.2	+0.7
	comp=Z,9.3nm,1.1s								
ISCO	**Idaho Springs**	93.40	50	P		P		13 52 09.6	+0.8
	baz=252								
N23A	**Red Feather La**	93.49	49	P		P		13 52 10.4	+1.3
	baz=252								
VNA2	**Neumayer--Watz**	93.49	180	P		P		13 52 07.7	-0.6
	baz=155,slow=3.8								
T25A	**Trinidad**	93.51	53	P		P		13 52 10.0	+0.7
	baz=253								
VNA1	**Neumayer--Stat**	93.76	180	P		P		13 52 08.8	-0.7
MSTX	**Muleshoe**	93.88	56	P		P		13 52 11.1	+0.3
	baz=254								
832A	**Faith Ranch, C**	94.65	62	P		P		13 52 15.1	+0.7
	baz=255								
AMTX	**Amarillo**	95.00	55	P		P		13 52 16.4	+0.4
	baz=254								
RSSD	**Black Hills**	95.78	46	P		P		13 52 20.6	+1.1
	baz=254								
RSSD	**Black Hills**	95.78	46	*e*P		P		13 52 19.4	-0.1
RSSD					pmax	pmax			
	comp=Z,6.0nm,1.1s								
RSSD	**Black Hills**	95.78	46	*e*P		P		13 52 19.4	-0.1
	comp=Z,6.3nm,1.1s								
YKA	**Yellowknife Ar**	95.93	26	P		P		13 52 19.7	+0.3
	comp=Z,5.6nm,0.8s,baz=253,slow=4.7,SNR=89								
YKB5	**Yellowknife Ar**	95.93	26	*e*P		P		13 52 19.2	-0.2
YKW3	**Yellowknife Ar**	95.95	26	*e*P		P		13 52 18.9	-0.5
	comp=Z,8.8nm,0.9s								
I25A	**Rochford**	95.97	46	P		P		13 52 21.2	+0.9
	baz=254								
433A	**Art**	96.03	60	P		P		13 52 21.0	+0.3
	baz=255								
ABTX	**Abilene, Hawle**	96.05	58	P		P		13 52 21.2	+0.5
	baz=255								
CMIG	**Mas Romero**	96.33	74	LR		LR		14 31 00.8	
	comp=Z,57nm,18.1s,baz=189,slow=32								
233A	**Rising Star**	96.50	59	P		P		13 52 23.2	+0.4
	baz=256								
434A	**Burnet**	96.73	60	P		P		13 52 25.1	+1.3
	baz=256								
J27A	**Elkhorn Farm,**	96.97	47	P		P		13 52 26.2	+1.4
	baz=255								
WMQ	**Urumqi**	97.57	313	*e*P		P		13 52 27.3	-0.1
WMQ					pP	Pdif		13 52 31.3	+3.8
WMQ					sP	pP		13 52 34.0	-2.8
WMQ					pmax	pmax			
	comp=Z,5.0nm,1.0s								
WMQ					pmax	pmax			
	comp=Z,35nm,4.0s								
WMQ					LR	LR			
	comp=Z,23nm,21.0s								
WMQ					LR	LR			
	comp=Z,37nm,24.0s								
WMQ					LR	LR			
	comp=Z,34nm,24.0s								
F27A	**Lemmon**	97.63	45	P		Pdif		13 52 28.7	+1.1
	baz=255								
WHTX	**Lake Whitney,**	97.69	59	P		Pdif		13 52 28.6	+0.5
	baz=256								
PLCA	**Paso Flores**	98.51	136	LR		LR		14 29 14.0	
	comp=Z,42nm,18.1s,baz=232,slow=31								
ZAA0	**Zalesovo Array**	101.65	323	*e*Pdif		**Pdif**		13 52 44.3	-1.0
ZALV	**Zalesovo Beam**	101.65	323	P		**Pdif**		13 52 45.0	-0.2
	comp=Z,1.9nm,0.9s,baz=102,slow=6.8,SNR=7.2								
MK01	**Makanchi Array**	101.92	315	*e*Pdif		**Pdif**		13 52 46.5	-0.2
MKAR	**Makanchi Array**	101.94	315	P		**Pdif**		13 52 47.4	+0.6
	comp=Z,2.5nm,1.0s,baz=111,slow=5.3,SNR=12								
MKAR	**Makanchi Array**	101.94	315	*e*P		**Pdif**		13 52 46.9	+0.1
MKAR	**Makanchi Array**	101.94	315	*e*Pdif		**Pdif**		13 52 46.9	+0.1
T40A	**Mansfield**	102.74	55	Pdiff		**Pdif**		13 52 51.9	+1.4
	baz=260								
KURK	**Kurchatov**	104.92	319	PKiKP		**PKiKP**		13 57 13.1	-1.6
KURBB	**Kurchatov Arra**	104.97	319	PKiKP		**PKiKP**		13 57 13.1	-1.7
	comp=Z,0.5nm,0.9s,baz=89,slow=2.6,SNR=5.8								
KSH	**Kashi**	105.36	307	*e*Pdif		**Pdif**		13 53 06.8	+4.5
KSH				*e*PP		PP		13 57 32.0	+7.8
KSH				S		**Sdif**		14 05 01.3	+5.1
KSH				AMB		AMB			
	comp=Z,20nm,5.1s								
KSH				LR		LR			
	comp=Z,100nm,5.1s								
KSH				LR		LR			
	comp=Z,130nm,7.5s								
KSH				LR		LR			
	comp=Z,180nm,5.5s								
AKTO	**Aktyubinsk**	118.02	319	PKP		**PKPdf**		13 57 39.3	-0.3
	comp=Z,1.7nm,0.7s,baz=310,slow=2.6,SNR=3.8								
GEYT	**Alibeck**	119.21	305	PKP		**PKPdf**		13 57 42.4	0.0
	comp=Z,3.4nm,0.9s,baz=11,slow=0.8,SNR=5.7								
ARCES	**ARCESS Array B**	122.64	347	PKP		**PKPdf**		13 57 47.8	-0.2
	comp=Z,2.7nm,0.7s,baz=350,slow=3.7,SNR=5.9								
KLMR	**Klimovskoe**	124.14	335	*e*PKIKP		**PKPdf**		13 57 49.4	-1.6
KLMR					pmax	pmax			
	comp=Z,6.0nm,1.0s								
VRH	**Novokhopyorsk**	127.68	323	*e*PKIKP		**PKPdf**		13 57 57.2	-0.9
VRH					pmax	pmax			
	comp=Z,10.0nm,0.6s								
OBN	**Obninsk**	128.56	330	*e*PKIKP		**PKPdf**		13 57 59.7	+0.1
OBN				*e*				14 00 03.7	
OBN					pmax	pmax			
	comp=Z,13nm,1.2s								
LPSR	**Galich'ya Gora**	128.62	326	*e*PKIKP		**PKPdf**		13 57 59.9	+0.1
LPSR					pmax				
	comp=Z,4.0nm,0.6s								
FIA1	**FINESS Array S**	128.73	340	*e*PKPdf		**PKPdf**		13 57 59.4	-0.4
FINES	**FINESS Array B**	128.73	340	PKP		**PKPdf**		13 58 00.4	+0.6
	comp=Z,2.6nm,0.9s,baz=56,slow=8.1,SNR=6.1								
VSR	**Storozhevoye**	129.13	324	*e*PKIKP		**PKPdf**		13 58 00.2	-0.7
VSR					pmax	pmax			
	comp=Z,6.0nm,0.6s								
ZEI	**Tsey**	129.18	313	*i* PKIKP		**PKPdf**		13 58 01.4	-0.1
ZEI					pmax	pmax			
	comp=Z,8.0nm,1.1s								
NB2	**NORSAR Subarra**	132.99	348	PKPdf		PKPdf		13 57 59.8	-8.2
	comp=Z,3.3nm,1.0s,baz=33,slow=1.9								
NOA	**NORSAR Array B**	132.99	348	PKP		**PKPdf**		13 58 08.0	0.0
	comp=Z,0.9nm,0.8s,baz=33,slow=2.0,SNR=4.6								
KMBO	**Kilima Mbogo**	133.32	253	PKP		**PKPdf**		13 58 09.6	-0.7
	comp=Z,0.9nm,0.3s,baz=6.6,slow=4.7,SNR=5.2								
AKASG	**Malin Array Be**	134.73	328	PKP		**PKPdf**		13 58 10.9	-0.6
	comp=Z,1.7nm,0.8s,baz=52,slow=2.5,SNR=6.5								
AKASG	**Malin Array Be**	134.73	328	*i* PKIKP		**PKPdf**		13 58 16.1	+4.6
AK11	**Malin Array Si**	134.78	328	*e*PKPdf		**PKPdf**		13 58 10.7	-0.8
BRTR	**Keskin Array B**	137.49	312	PKP		**PKPdf**		13 58 16.1	-1.1
	comp=Z,1.1nm,0.8s,baz=90,slow=2.5,SNR=6.3								
BR231	**Keskin MP Arra**	138.05	313	*e*PKPdf		**PKPdf**		13 58 16.8	-1.4
KOLS	**Kolonicke sedl**	139.30	331	*e*PKP		**PKPdf**		13 58 20.9	+0.9
DPC	**Dobruska-Polom**	140.79	337	*e*PKP		**PKPdf**		13 58 20.0	-2.7
DPC				*ex*		x		13 58 24.0	
DPC	**Dobruska-Polom**	140.79	337	*e*PKIKP		**PKPdf**		13 58 20.0	-2.7
CLL	**Collm**	141.18	340	ǁ*i*PKPdf		PKPpre		13 58 18.2	
	comp=Z,5.0nm,1.1s								
CLL				*e*				13 58 23.0	
CLL				*i*				13 58 25.5	
	comp=Z,9.0nm,1.2s								
CLL				*e*PP		**PP**		14 01 27.0	+2.4
CLL				LmV				14 55 00.0	
	comp=Z,200nm,19.6s								
CLL	**Collm**	141.18	340	ǁ*i*PKIKP		PKPpre		13 58 18.2	
CLL				*i*				13 58 25.5	
	comp=Z,5.0nm,1.1s								
CLL				MLR		MLR			
	comp=Z,200nm,19.6s								
BRG	**Berggiesshubel**	141.23	339	*e*P		**PKPdf**		13 58 23.9	+0.5
	comp=Z,6.3nm,1.3s								
KHC	**Kasperske Hory**	142.82	338	*e*PKP		**PKPdf**		13 58 22.9	-3.5
KHC	**Kasperske Hory**	142.82	338	*e*PKIKP		**PKPdf**		13 58 22.9	-3.5
CONA	**Conrad Observa**	142.90	335	*e*PKPdf		**PKPdf**		13 58 25.4	-1.2
	comp=Z,7.0nm,1.2s								
GERES	**GERESS Array B**	143.01	337	PKhKP		PKPpre		13 58 23.2	
	comp=Z,1.2nm,0.8s,baz=58,slow=3.3,SNR=6.2								
GEA0	**GERESS Array S**	143.02	337	*e*PKPpre		PKPpre		13 58 23.4	
SRS	**Serrai**	143.56	320	P		PKPab		13 58 24.5	+0.1
MOA	**Molln**	143.61	336	*i* PKPdf		PKPbc		13 58 26.1	+0.9
	comp=Z,8.6nm,0.9s,SNR=5.2								
VAY	**Valandovo**	144.07	321	*i* P		**PKPab**		**13 58 26.3**	**0.0**
SOKA	**Soboth**	144.24	334	*i* PKPdf		**PKPdf**		**13 58 28.3**	**-0.7**
	comp=Z,15nm,1.1s,SNR=14								
SKO	**Skopje**	144.35	323	P		PKPbc		13 58 28.1	+0.5
SKO	**Skopje**	144.35	323	*i* P		PKPbc		13 58 28.2	+0.6
OBKA	**Obir**	144.57	334	*e*PKPdf		PKPbc		13 58 29.0	+0.6
	comp=Z,5.4nm,1.1s								
STU	**Stuttgart**	144.59	342	*e*PKIKP		**PKPab**		**13 58 27.5**	**-0.5**
STU	**Stuttgart**	144.59	342	*e*PKPdf		**PKPab**		**13 58 27.5**	**-0.5**
KBA	**Koelnbreinsper**	144.60	336	*i* PKPdf		**PKPab**		**13 58 28.1**	**-0.2**
	comp=Z,19nm,1.3s,SNR=10								
PLE	**Pljevlja**	144.61	326	ǁ*i*PKP		**PKPdf**		**13 58 30.0**	**+0.2**
WLF	**Walferdange**	144.61	345	PKP		**PKPdf**		**13 58 29.5**	**0.0**
WLF	**Walferdange**	144.61	345	*e*PKIKP		**PKPdf**		**13 58 29.1**	**-0.4**
WLF	**Walferdange**	144.61	345	*e*PKPdf		**PKPdf**		**13 58 29.1**	**-0.4**
IVA	**Berane**	144.65	325	ǁ*i*PKP		**PKPdf**		**13 58 29.9**	**0.0**
PVY	**Plav**	144.79	325	ǁ*i*PKP		**PKPdf**		**13 58 31.1**	**+0.9**
LANF	**Langenberg**	144.81	343	PKP		**PKPdf**		**13 58 29.9**	**0.0**
LIT	**Litokhoron**	144.83	319	P		**PKPab**		**13 58 28.6**	**-0.6**
MYKA	**Terra Mystica**	144.85	335	*i* PKPdf		**PKPab**		**13 58 28.7**	**-0.4**
	comp=Z,24nm,1.1s,SNR=14								
UPM	**Unac-Piva**	144.96	326	ǁ*i*PKP		**PKPab**		**13 58 29.3**	**-0.5**
BIA	**Bitola**	145.00	322	*i* P		**PKPbc**		**13 58 29.5**	**-0.3**
WATA	**Waldcralm**	145.05	338	*i* PKPdf		**PKPbc**		**13 58 29.8**	**-0.1**
	comp=Z,25nm,1.0s,SNR=12								
WTTA	**Wattenberg**	145.09	338	*i* PKPdf		**PKPbc**		**13 58 30.1**	**0.0**
	comp=Z,28nm,1.0s,SNR=12								
FNA	**Florina**	145.12	321	P		**PKPbc**		**13 58 29.7**	**-0.5**
NKY	**Niksic**	145.18	326	ǁ*i*PKP		**PKPab**		**13 58 30.7**	**+0.2**
ABTA	**Abfaltersbach**	145.20	336	*i* PKPdf		**PKPbc**		**13 58 29.8**	**-0.5**
	comp=Z,54nm,1.0s,SNR=34								
RETA	**Reute**	145.21	339	*i* PKPdf		**PKPdf**		**13 58 30.7**	**0.0**
	comp=Z,59nm,1.3s,SNR=24								
MOTA	**Moosalm**	145.21	338	*i* PKPdf		**PKPdf**		**13 58 31.6**	**+0.8**
	comp=Z,58nm,1.0s,SNR=35								
BFO	**Black Forest**	145.25	342	*i* PKIKP		**PKPdf**		**13 58 31.0**	**+0.3**
BFO	**Black Forest**	145.25	342	*e*PKPbc		**PKPbc**		**13 58 30.5**	**+0.1**
OHR	**Ohrid**	145.26	322	*i* P		**PKPbc**		**13 58 30.7**	**+0.1**
LAST	**Lasithi**	145.27	310	P		**PKPab**		**13 58 31.1**	**+0.1**
LAST	**Lasithi**	145.27	310	*e*S		**PKPab**		**13 58 31.4**	**+0.4**
LAST	**Lasithi**	145.27	310	*e*S		**PKPab**		**13 58 31.4**	**+0.4**
PDG	**Podgorica**	145.29	325	P		**PKPdf**		**13 58 31.1**	**+0.3**
TTG	**Podgorica**	145.29	325	ǁ*i*PKP		**PKPab**		**13 58 30.8**	**+0.1**
LKR	**Lokris**	145.31	317	P		**PKPbc**		**13 58 28.8**	**-2.0**
BRY	**Bratogost**	145.36	326	ǁ*i*PKP		**PKPbc**		**13 58 31.0**	**0.0**
NEST	**Nestorio**	145.54	321	P		**PKPdf**		**13 58 31.5**	**0.0**
AGG	**Agios Georgios**	145.54	318	*e*PKIKP		**PKPdf**		**13 58 30.6**	**-0.9**
AGG	**Agios Georgios**	145.54	318	*e*PKPdf		**P

IRAM				Sg	Sb			13 50 34.6	+0.7
IGAR	**Gharneh**	**2.76**	**10**	*e*Pn	**Pn**			13 50 10.0	+1.4
IGAR				*e*AMB	AMB			13 50 54.4	
	comp=Z,3μm,0.3s								
ISAD	**Sadrabad**	**2.93**	**40**	*e*Pn	**Pn**			13 50 13.0	+2.0
ISAD				*e*AMB	AMB			13 51 04.7	
	comp=Z,4μm,0.3s								
ISAD	**Sadrabad**	**2.93**	**40**	*e*Pn	**Pn**			13 50 13.0	+2.0
ISAD	**Sadrabad**	**2.93**	**40**	Pn	**Pn**			13 50 12.9	+2.0
IPIR	**Pirpir**	**3.04**	**351**	*e*Pn	**Pn**			13 50 13.5	+1.0
IPIR				*e*AMB	AMB			13 50 26.5	
	comp=Z,2μm,0.2s								
IPIR	**Pirpir**	**3.04**	**351**	*e*Pn	**Pn**			13 50 13.5	+1.0
IPIR	**Pirpir**	**3.04**	**351**	Pn	**Pn**			13 50 13.4	+1.0
IMEH	**Mehriz**	**3.20**	**57**	*e*Pn	**Pn**			13 50 16.8	+2.2
IMEH				*e*AMB	AMB			13 51 24.8	
	comp=Z,3μm,0.4s								
IMEH	**Mehriz**	**3.20**	**57**	*e*Pn	**Pn**			13 50 16.8	+2.2
IZEF	**Zefreh**	**3.29**	**13**	*e*Pn	**Pn**			13 50 17.1	+1.2
IZEF				*e*AMB	AMB			13 50 31.1	
	comp=Z,2μm,0.3s								
IZEF	**Zefreh**	**3.29**	**13**	*e*Pn	**Pn**			13 50 17.1	+1.2
NASN	**Na'in**	**3.31**	**20**	*e*Pn	**Pn**			13 50 16.7	+0.4
NASN	**Na'in**	**3.31**	**20**	*e*Pn	**Pn**			13 50 16.7	+0.4
ICHK	**Chekchek**	**3.59**	**44**	*e*Pn	**Pn**			13 50 21.4	+1.4
ICHK				*e*AMB	AMB			13 50 36.8	
	comp=Z,2μm,0.2s								
ICHK	**Chekchek**	**3.59**	**44**	*e*Pn	**Pn**			13 50 21.4	+1.4
ICHK	**Chekchek**	**3.59**	**44**	Pn	**Pn**			13 50 21.4	+1.4
IKLH	**Kolahrood**	**3.63**	**1**	*e*Pn	**Pn**			13 50 21.4	+0.8
IKLH				*e*AMB	AMB			13 50 25.8	
	comp=Z,2μm,0.1s								
IKLH	**Kolahrood**	**3.63**	**1**	*e*Pn	**Pn**			13 50 21.4	+0.8
IKLH	**Kolahrood**	**3.63**	**1**	Pn	**Pn**			13 50 21.3	+0.7
IBAF	**Bafgh**	**4.01**	**61**	*e*Pn	**Pn**			13 50 27.4	+1.7
IBAF				*e*AMB	AMB			13 50 42.9	
	comp=Z,2μm,0.3s								
IBAF	**Bafgh**	**4.01**	**61**	*e*Pn	**Pn**			13 50 27.4	+1.7
IBAF	**Bafgh**	**4.01**	**61**	Pn	**Pn**			13 50 27.3	+1.6
QAM	**Ghamsar**	**4.07**	**360**	*e*Pn	**Pn**			13 50 27.5	+0.9
QAM				*e*AMB	AMB			13 51 20.0	
	comp=Z,2μm,0.2s								
KHMZ	**Khomeyn**	**4.25**	**343**	*e*Pn	**Pn**			13 50 30.1	+1.0
KHMZ	**Khomeyn**	**4.25**	**343**	*e*Pn	**Pn**			13 50 30.0	+1.0
KRBR	**Kerman**	**4.60**	**85**	*e*Pn	**Pn**			13 50 34.5	+0.5
KRBR				AML	AML			13 51 33.2	
	comp=N,117nm,1.0s								
KRBR	**Kerman**	**4.60**	**85**	*e*Pn	**Pn**			13 50 34.5	+0.5
BNDS	**Bandar-Abbas**	**4.71**	**118**	*e*Pn	**Pn**			13 50 36.1	+0.7
BNDS				AML	AML			13 51 40.9	
	comp=E,80nm,1.1s								
BNDS	**Bandar-Abbas**	**4.71**	**118**	*e*Pn	**Pn**			13 50 36.1	+0.7
NSR	**Nassriya**	**4.80**	**287**	*e*Pn	Pn			13 50 33.0	-3.4
NSR				*e*Sn	Sn			13 51 25.0	-6.1
IVRN	**Varamin**	**5.30**	**2**	*e*Pn	**Pn**			13 50 43.2	-0.2
IVRN				*e*AMB	AMB			13 50 50.5	
	comp=Z,704nm,0.1s								
IVRN	**Varamin**	**5.30**	**2**	*e*Pn	**Pn**			13 50 43.2	-0.2
IVRN	**Varamin**	**5.30**	**2**	Pn	**Pn**			13 50 43.2	-0.2
IBZA	**Bozab**	**5.68**	**328**	*e*AMB	AMB			13 54 04.5	
	comp=Z,932nm,0.2s								
IBDR	**Badra**	**5.84**	**307**	*e*PN4	Pn			13 50 48.0	-2.8
IBDR				*e*SN4	Sn			13 51 49.0	-7.9
IRAZ	**Razeghan**	**5.86**	**348**	*e*Pn	**Pn**			13 50 51.1	0.0
IRAZ				*e*AMB	AMB			13 52 14.4	
	comp=Z,517nm,0.3s								
IRAZ	**Razeghan**	**5.86**	**348**	*e*Pn	**Pn**			13 50 51.1	0.0
IDMV	**Damavand**	**5.90**	**4**	*e*Pn	**Pn**			13 50 52.2	+0.4
IDMV				*e*AMB	AMB			13 50 53.3	
	comp=Z,576nm,0.1s								
IDMV	**Damavand**	**5.90**	**4**	*e*Pn	**Pn**			13 50 52.2	+0.4
IFIR	**Firoozkooh**	**6.04**	**10**	*e*Pn	**Pn**			13 50 54.2	+0.5
IFIR				*e*AMB	AMB			13 50 56.5	
	comp=Z,680nm,0.1s								
IFIR	**Firoozkooh**	**6.04**	**10**	*e*Pn	**Pn**			13 50 54.2	+0.5
IANJ	**Anjilo**	**6.13**	**19**	*e*Pn	**Pn**			13 50 54.9	0.0
IANJ				*e*AMB	AMB			13 50 57.0	
	comp=Z,334nm,0.1s								
IANJ	**Anjilo**	**6.13**	**19**	*e*Pn	**Pn**			13 50 54.9	0.0
IAFJ	**Afjeh**	**6.16**	**2**	*e*Pn	**Pn**			13 50 55.6	+0.2
IAFJ				*e*AMB	AMB			13 51 23.6	
	comp=Z,503nm,0.2s								
IAFJ	**Afjeh**	**6.16**	**2**	*e*Pn	**Pn**			13 50 55.6	+0.2
IGHG	**Ghaleghazi**	**6.23**	**319**	*e*Pn	**Pn**			13 50 56.6	+0.2
IGHG				*e*AMB	AMB			13 52 18.8	
	comp=Z,1μm,0.3s								
IGHG	**Ghaleghazi**	**6.23**	**319**	*e*Pn	**Pn**			13 50 56.6	+0.2
IGHG	**Ghaleghazi**	**6.23**	**319**	Pn	**Pn**			13 50 56.5	+0.2
UOSS	**Minazif**	**6.32**	**137**	*e*Pn	**Pn**			13 50 57.3	0.0
SNGE	**Sanandaj**	**6.43**	**328**	*e*Pn	**Pn**			13 51 00.8	+1.9
ILIN	**Lien**	**6.47**	**325**	*e*Pn	**Pn**			13 50 59.3	-0.3
ILIN				*e*AMB	AMB			13 51 05.5	
	comp=Z,1μm,0.1s								
ILIN	**Lien**	**6.47**	**325**	*e*Pn	**Pn**			13 50 59.3	-0.3
IDHR	**Dehrash**	**6.61**	**321**	*e*Pn	**Pn**			13 51 01.7	+0.3
IDHR				*e*AMB	AMB			13 52 25.9	
	comp=Z,2μm,0.1s								
IDHR	**Dehrash**	**6.61**	**321**	*e*Pn	**Pn**			13 51 01.7	+0.3
IKOO	**Kooshah**	**7.01**	**65**	*e*Pn	**Pn**			13 51 08.3	+1.2
IKOO				*e*AMB	AMB			13 53 48.4	
	comp=Z,789nm,0.0s								
IKOO	**Kooshah**	**7.01**	**65**	*e*Pn	**Pn**			13 51 08.3	+1.2
BHD	**Baghdad**	**7.04**	**302**	*e*PN4	Pn			13 51 05.0	-2.1
BHD				*e*SN4	Sn			13 52 19.0	-7.2
IKRK	**Kirkuk**	**8.29**	**315**	*e*PN4	Pn			13 51 22.0	-2.4
IKRK				*e*SN4	Sn			13 52 48.0	-9.2
WSAR	**Wadi Sarin**	**9.07**	**133**	Pn	**Pn**			13 51 34.5	-0.6
	comp=Z,1.4nm,0.3s,baz=326,slow=8.9,SNR=14								
WSAR				Sn	**Sn**			13 53 12.2	-4.0
	comp=Z,1.0nm,0.3s,baz=93,slow=19,SNR=4.1								
GEYT	**Alibeck**	**9.91**	**32**	Pn	**Pn**			13 51 48.1	+1.6
	comp=Z,0.6nm,0.3s,baz=237,slow=14,SNR=4.1								
GEYT				LR	LR			13 55 56.2	
	comp=Z,104nm,18.2s,baz=225,slow=39								
RTB	**Rutbah**	**10.12**	**292**	*e*PN4	Pn			13 51 49.0	-0.4
RTB				*i* Sn	Sn			13 53 35.0	-7.0
GNI	**Garni**	**11.81**	**334**	*e*P	Pn			13 52 20.5	+7.8
ASF	**Jabal al Asfar**	**12.76**	**285**	Pn	**Pn**			13 52 25.0	-0.7
	comp=Z,0.9nm,0.3s,baz=14,slow=4.2,SNR=4.6								
ASF				Sn	**Sn**			13 54 41.0	-5.9
	comp=Z,0.5nm,0.3s,baz=247,slow=14,SNR=3.8								
MMAI	**Mount Meron Ar**	**14.13**	**288**	Pn	**Pn**			13 52 46.2	+1.8
	comp=Z,0.6nm,0.3s,baz=95,slow=15,SNR=3.2								
MMAI				Sn	**Sn**			13 55 20.1	-0.2
	comp=Z,0.6nm,0.3s,baz=274,slow=12,SNR=3.6								
EIL	**Elat**	**14.37**	**274**	Pn	**Pn**			13 52 47.9	+0.3
	comp=Z,0.3nm,0.3s,baz=109,slow=18,SNR=2.0								
ZEI	**Tsey**	**14.43**	**337**	*e*P	**Pn**			13 52 49.6	+1.1
ZEI				pmax	pmax				
	comp=Z,26nm,1.0s								
NCK	**Nalchik**	**15.16**	**338**	*i* P	**P**			13 53 03.1	+0.1
NCK				pmax	pmax				
	comp=Z,8.0nm,0.9s								
NCK	**Nalchik**	**15.16**	**338**	*i* P	**P**			13 53 03.1	+0.1
	comp=Z,8.0nm,0.9s								
NEY	**Neytrino**	**15.25**	**335**	*i* P	**P**			13 53 06.4	+2.3
NEY				pmax	pmax				
	comp=Z,1.0nm,0.6s								
NEY	**Neytrino**	**15.25**	**335**	*i* P	**P**			13 53 06.4	+2.3
	comp=Z,1.0nm,0.6s								
KBZ	**Khabaz**	**15.60**	**336**	Pn	**Pn**			13 53 05.2	+1.3
	comp=Z,0.2nm,0.3s,baz=142,slow=9.2,SNR=9.9								
KVAR	**Kislovodsk Arr**	**15.87**	**336**	Pn	**P**			13 53 09.4	-1.6
	baz=321,slow=6.5,SNR=10								
KIV	**Kislovodsk**	**15.88**	**336**	*d* iP	**P**			13 53 12.4	+1.4
KIV				pmax	pmax				
	comp=Z,25nm,1.0s								
KIV	**Kislovodsk**	**15.88**	**336**	*i* P	**P**			13 53 12.4	+1.4
	comp=Z,25nm,1.0s								
KIV	**Kislovodsk**	**15.88**	**336**	*e*Pn	**P**			13 53 11.1	+0.1
	comp=Z,64nm,1.5s								
BR131	**Keskin Array S**	**17.73**	**309**	*e*Pn	**P**			13 53 31.5	-0.1
BR131	**Keskin Array S**	**17.73**	**309**	*e*Pn	**P**			13 53 31.5	-0.1
BRTR	**Keskin Array B**	**17.73**	**309**	P	**P**			13 53 32.1	+0.5
	comp=Z,0.1nm,0.3s,baz=123,slow=14,SNR=5.8								
BRTR	**Keskin Array B**	**17.73**	**309**	*i* P	**P**			13 53 35.2	+3.5
BRTR				pmax	pmax				
	comp=Z,1.0nm,0.6s								
ABKAR	**Akbulak array**	**20.59**	**16**	*e*P	**P**			13 54 02.3	-0.3
ABKAR	**Akbulak array**	**20.59**	**16**	*e*P	**P**			13 54 02.3	-0.3
AKTK	**Aktyubinsk**	**21.31**	**12**	P	**P**			13 54 10.6	+0.2
AKTO	**Aktyubinsk**	**21.31**	**12**	P	**P**			13 54 10.6	+0.2
	comp=Z,1.4nm,0.4s,baz=177,slow=10,SNR=6.3								
KSH	**Kashi**	**22.37**	**57**	P	**P**			13 54 18.8	-3.2
AAK	**Ala-Archa**	**22.55**	**49**	P	**P**			13 54 24.7	+0.6
	comp=Z,2.0nm,0.8s,baz=228,slow=12,SNR=3.6								
AAK	**Ala-Archa**	**22.55**	**49**	*i* P	**P**			13 54 25.1	+1.1
AAK	**Ala-Archa**	**22.55**	**49**	*i* P	**P**			13 54 25.1	+1.1
AAK	**Ala-Archa**	**22.55**	**49**	*e*P	**P**			13 54 26.4	+2.4
	comp=Z,3.3nm,0.8s								
LAST	**Lasithi**	**22.59**	**291**	*e*P	**P**			13 54 26.7	+2.3
	comp=Z,49nm,1.4s								
LAST	**Lasithi**	**22.59**	**291**	*e*P	**P**			13 54 26.7	+2.3
	comp=Z,49nm,1.4s								
VRH	**Novokhopyorsk**	**22.70**	**344**	*e*P	**P**			13 54 30.0	+4.7
VRH				pmax	pmax				
	comp=Z,10.0nm,0.4s								
IDI	**Anoyia**	**23.08**	**291**	P	**P**			13 54 30.3	+0.8
	comp=Z,4.1nm,0.4s,baz=85,slow=11,SNR=8.3								
VSR	**Storozhevoye**	**23.40**	**340**	*e*P	**P**			13 54 32.3	-0.1
VSR				pmax	pmax				
	comp=Z,3.0nm,0.6s								
VSR	**Storozhevoye**	**23.40**	**340**	*e*P	**P**			13 54 32.3	-0.1
	comp=Z,3.0nm,0.6s								
CFR	**Carcaliu**	**24.02**	**316**	⇓*i*P	**P**			13 54 40.0	+1.6
CFR	**Carcaliu**	**24.02**	**316**	⇓P	**P**			13 54 40.0	+1.6
CFR	**Carcaliu**	**24.02**	**316**	P	**P**			13 54 40.0	+1.6
VRI	**Vrincioaia**	**25.23**	**317**	⇓*i*P	**P**			13 54 54.8	+5.4
VRI	**Vrincioaia**	**25.23**	**317**	⇓P	**P**			13 54 54.8	+5.4
PLOR	**Plostina**	**25.26**	**317**	⇑*i*P	**P**			13 54 51.8	+2.0
PLOR	**Plostina**	**25.26**	**317**	⇑P	**P**			13 54 51.8	+2.0
PLOR	**Plostina**	**25.26**	**317**	P	**P**			13 54 51.8	+2.0
MLR	**Muntele Rosu**	**25.51**	**315**	P	**P**			13 54 53.7	+1.6
	comp=Z,0.7nm,0.5s,baz=336,slow=20,SNR=5.9								
MLR	**Muntele Rosu**	**25.51**	**315**	⇓*i*P	**P**			13 54 55.3	+3.2
MLR	**Muntele Rosu**	**25.51**	**315**	⇓P	**P**			13 54 55.3	+3.2
MLR	**Muntele Rosu**	**25.51**	**315**	*e*P	**P**			13 54 54.0	+1.9
	comp=Z,7.4nm,0.7s								
MLR	**Muntele Rosu**	**25.51**	**315**	*e*P	**P**			13 54 54.0	+1.9
	comp=Z,7.4nm,0.7s								
SORM	**Soroca**	**25.59**	**322**	⇑*i*P	**P**			13 54 52.0	-0.6
SORM	**Soroca**	**25.59**	**322**	⇑P	**P**			13 54 52.1	-0.6
SORM	**Soroca**	**25.59**	**322**	P	**P**			13 54 52.1	-0.6
TESR	**Tescani**	**25.61**	**318**	⇓*i*P	**P**			13 54 53.7	+0.8
TESR	**Tescani**	**25.61**	**318**	⇓*i*P	**P**			13 54 53.7	+0.8
VOIR		**26.04**	**314**	⇑*i*P	**P**			13 54 58.7	+1.9
VOIR		**26.04**	**314**	⇑P	**P**			13 54 58.7	+1.9
VOIR		**26.04**	**314**	P	**P**			13 54 58.7	+1.9
ARR	**Arges**	**26.26**	**314**	⇓*i*P	**P**			13 54 58.9	0.0
ARR	**Arges**	**26.26**	**314**	⇓*i*P	**P**			13 54 58.9	0.0
AKASG	**Malin Array Be**	**26.83**	**328**	P	**P**			13 55 02.9	-0.9
	comp=Z,0.6nm,0.3s,baz=132,slow=9.1,SNR=11								
AKASG	**Malin Array Be**	**26.83**	**328**	*ce*P	**P**			13 55 05.1	+1.3
AKASG				pmax	pmax				
	comp=Z,1.0nm,0.4s								
AKASG	**Malin Array Be**	**26.83**	**328**	*e*P	**P**			13 55 05.1	+1.3
	comp=Z,1.0nm,0.4s								
BURAR	**Bucovina Array**	**27.03**	**319**	⇑*i*P	**P**			13 55 06.8	+1.0
BURAR	**Bucovina Array**	**27.03**	**319**	⇑P	**P**			13 55 06.8	+1.0
BURAR	**Bucovina Array**	**27.03**	**319**	⇑*i*P	**P**			13 55 06.8	+1.0
BUR08	**Bucovina Ar. S**	**27.05**	**319**	*e*P	**P**			13 55 05.4	-0.6
BUR08	**Bucovina Ar. S**	**27.05**	**319**	*e*P	**P**			13 55 05.4	-0.6
BVAR	**Borovoye Array**	**27.14**	**25**	P	**P**			13 55 07.5	+0.9
	comp=Z,1.5nm,0.4s,baz=219,slow=8.6,SNR=8.8								
PYUN	**Piuthan**	**27.60**	**85**	*e*P	**P**			13 55 11.9	+0.7
	comp=Z,11nm,0.5s								
DRGR		**28.11**	**315**	⇓*i*P	**P**			13 55 15.9	+0.5
DRGR		**28.11**	**315**	⇓P	**P**			13 55 15.9	+0.5
DRGR		**28.11**	**315**	P	**P**			13 55 15.9	+0.5
GKN	**Gorkha**	**29.04**	**85**	*e*P	**P**			13 55 24.5	+0.4
	comp=Z,7.1nm,0.3s								
KURBB	**Kurchatov Arra**	**29.14**	**37**	P	**P**			13 55 25.9	+1.5
	comp=Z,2.6nm,0.8s,baz=235,slow=9.0,SNR=27								
KURBB				ScP	**ScP**			14 02 11.2	-0.2
	comp=Z,0.3nm,0.7s,baz=219,slow=4.1,SNR=4.1								
MAKZ	**Makanchi**	**29.18**	**46**	*e*P	**P**			13 55 25.2	+0.3
MAKZ				pmax	pmax				
	comp=Z,1.0nm,0.6s								
MAKZ	**Makanchi**	**29.18**	**46**	*e*P	**P**			13 55 25.2	+0.3
	comp=Z,1.4nm,0.6s								
MAKZ	**Makanchi**	**29.18**	**46**	*e*P	**P**			13 55 25.2	+0.3
	comp=Z,1.4nm,0.6s								
KURK	**Kurchatov**	**29.24**	**36**	P	**P**			13 55 25.9	+0.5
KURK								14 02 11.2	
KURK				pmax	pmax				
	comp=Z,3.0nm,0.8s								
KURK	**Kurchatov**	**29.24**	**36**	P	**P**			13 55 25.9	+0.5
	comp=Z,3.0nm,0.8s								
KURK	**Kurchatov**	**29.24**	**36**	*e*P	**P**			13 55 22.8	-2.6
	comp=Z,6.6nm,0.6s								
KURK				ScP	**ScP**			14 02 11.2	-0.5
MK01	**Makanchi Array**	**29.37**	**46**	*e*P	**P**			13 55 26.4	-0.2
MK01	**Makanchi Array**	**29.37**	**46**	*e*P	**P**			13 55 26.4	-0.2
MK31	**Makanchi Array**	**29.37**	**46**	*e*P	**P**			13 55 27.0	+0.4
MK31	**Makanchi Array**	**29.37**	**46**	*e*P	**P**			13 55 27.0	+0.4
MK31	**Makanchi Array**	**29.37**	**46**	*e*P	**P**			13 55 26.9	+0.4
MKAR	**Makanchi Array**	**29.37**	**46**	P	**P**			13 55 27.2	+0.5
	comp=Z,1.0nm,0.7s,baz=238,slow=6.9,SNR=9.1								
MKAR	**Makanchi Array**	**29.37**	**46**	*e*P	**P**			13 55 27.1	+0.4
KOLS	**Kolonicke sedl**	**29.39**	**319**	*e*P	**P**			13 55 27.3	+0.5
KOLS	**Kolonicke sedl**	**29.39**	**319**	*e*P	**P**			13 55 27.3	+0.5
DMN	**Daman**	**29.53**	**86**	*e*P	**P**			13 55 28.3	-0.2
	comp=Z,7.1nm,0.4s								
KKN	**Kakani**	**29.64**	**85**	*e*P	**P**			13 55 29.7	+0.2
	comp=Z,10nm,0.3s								
PKIN	**Phulchoki**	**29.79**	**86**	*e*P	**P**			13 55 30.8	0.0
	comp=Z,4.3nm,0.4s								
GUN	**Gumba**	**30.14**	**85**	*e*P	**P**			13 55 34.7	+0.7
	comp=Z,6.2nm,0.3s								
PKSM	**Moragy**	**30.43**	**312**	⇑*i*P	**P**			13 55 36.7	+0.8
PKSM	**Moragy**	**30.43**	**312**	⇑P	**P**			13 55 36.7	+0.8
PKSM	**Moragy**	**30.43**	**312**	P	**P**			13 55 36.7	+0.8
WMQ	**Urumqi**	**32.00**	**54**	*e*P	**P**			13 55 51.0	+1.1
WMQ				pP	sP			13 56 01.0	-0.5
WMQ				sP	pP			13 56 05.5	+7.4
WMQ				pmax	pmax				
	comp=Z,4.0nm,0.8s								
WMQ				pmax	pmax				
	comp=Z,27nm,4.6s								
DPC	**Dobruska-Polom**	**33.48**	**318**	*e*P	**P**			13 56 02.7	0.0
DPC	**Dobruska-Polom**	**33.48**	**318**	*e*P	**P**			13 56 02.7	0.0
DPC	**Dobruska-Polom**	**33.48**	**318**	*e*P	**P**			13 56 02.7	0.0
ZALV	**Zalesovo Beam**	**34.20**	**35**	P	**P**			13 56 09.3	+0.4
	comp=Z,4.4nm,0.6s,baz=247,slow=9.2,SNR=23								
GERES	**GERESS Array B**	**34.49**	**314**	P	**P**			13 56 11.1	-0.5
	comp=Z,0.3nm,0.4s,baz=97,slow=11,SNR=4.6								
KHC	**Kasperske Hory**	**34.66**	**315**	*e*P	**P**			13 56 13.5	+0.5
KHC	**Kasperske Hory**	**34.66**	**315**	*e*P	**P**			13 56 13.5	+0.5
KHC	**Kasperske Hory**	**34.66**	**315**	*e*P	**P**			13 56 13.5	+0.5
KHC	**Kasperske Hory**	**34.66**	**315**	*e*P	**P**			13 56 13.1	+0.1
	comp=Z,3.0nm,1.4s								
CLL	**Collm**	**35.79**	**318**	*i* P	**P**			13 56 22.9	+0.3
	comp=Z,4.0nm,1.0s								
CLL	**Collm**	**35.79**	**318**	*i* P	**P**			13 56 22.9	+0.3
CLL				pmax	pmax				
	comp=Z,4.0nm,1.0s								
CLL	**Collm**	**35.79**	**318**	*i* P	**P**			13 56 22.9	+0.3
	comp=Z,4.0nm,1.0s								
FINES	**FINESS Array B**	**35.93**	**339**	P	**P**			13 56 23.1	-0.6
	comp=Z,0.4nm,0.3s,baz=148,slow=12,SNR=6.7								
FINES	**FINESS Array B**	**35.93**	**339**	*i* P	**P**			13 56 25.7	+2.1
FINES				pmax	pmax				
	comp=Z,1.0nm,0.4s								
NB2	**NORSAR Subarra**	**41.10**	**331**	P	**P**			13 57 05.8	-1.4
	comp=Z,0.6nm,0.6s,baz=122,slow=8.6								
NB2	**NORSAR Subarra**	**41.10**	**331**	P	**P**			13 57 05.8	-1.4
	comp=Z,0.6nm,0.6s,SNR=3.9								
NOA	**NORSAR Array B**	**41.10**	**331**	P	**P**			13 57 05.8	-1.4
	comp=Z,0.3nm,0.4s,baz=122,slow=8.4,SNR=3.1								
ARCES	**ARCESS Array B**	**42.58**	**347**	P	**P**			13 57 18.5	-0.6
	comp=Z,1.4nm,0.7s,baz=161,slow=7.4,SNR=14								
CMAR	**Chiang Mai Arr**	**44.48**	**93**	P	**P**			13 57 35.2	+0.1
	comp=Z,0.8nm,0.4s,baz=287,slow=8.7,SNR=6.5								
CD2	**Chengdu**	**44.81**	**75**	P	**P**			13 57 36.3	-1.4
CD2				pmax	pmax				
	comp=Z,1.0nm,0.5s								
KMI	**Kunming**	**45.44**	**83**	P	**P**			13 57 43.0	+0.1
KMI				pmax	pmax				
	comp=Z,12nm,0.6s								
ULN	**Ulaanbaatar**	**45.94**	**51**	*ce*P	**P**			13 57 47.2	+0.7
ULN				pmax	pmax				
	comp=Z,2.0nm,1.0s								
ULN	**Ulaanbaatar**	**45.94**	**51**	*e*P	**P**			13 57 47.2	+0.7
	comp=Z,2.0nm,1.0s								
ESDC	**Sonseca Array**	**46.03**	**298**	P	**P**			13 57 47.9	+0.7
	comp=Z,0.4nm,0.5s,baz=81,slow=9.2,SNR=3.2								
TORD	**Torodi Ar. Bea**	**48.80**	**261**	P	**P**			13 58 09.0	+0.1
	comp=Z,1.7nm,0.6s,baz=57,slow=8.0,SNR=10								
HHC	**Hu-ho-hao-te**	**49.44**	**60**	*e*P	**P**			13 58 15.5	+1.8
HHC				sP	sP			13 58 28.8	+3.2
HHC				S	**S**			14 05 20.3	+0.9
HHC				ScS	**ScS**			14 08 00.5	-3.3
HHC				SS	**SS**			14 08 44.8	-6.3
HHC				pmax	pmax				
	comp=Z,30nm,1.2s								
HHC				pmax	pmax				
	comp=Z,120nm,3.3s								
HHC				LR	LR				
	comp=Z,170nm,14.8s								
HHC				LR	LR				
	comp=Z,110nm,14.8s								
HHC				LR	LR				
	comp=Z,120nm,14.8s								
BOD	**Bodaibo**	**50.88**	**38**	*e*P	**P**			13 58 24.4	+0.2
BOD				pmax	pmax				
	comp=Z,4.0nm,1.1s								
BOD	**Bodaibo**	**50.88**	**38**	*e*P	**P**			13 58 24.4	+0.2
	comp=Z,4.0nm,1.1s								
BJI	**Beijing**	**53.04**	**60**	P	**P**			13 58 39.8	-0.8
BJI				pmax	pmax				
	comp=Z,5.0nm,0.6s								
DBIC	**Dimbokro**	**57.58**	**258**	P	**P**			13 59 13.4	-0.3
	comp=Z,1.8nm,0.6s,baz=225,slow=1.4,SNR=3.5								
TIXI	**Tiksi**	**58.17**	**21**	P	**P**			13 59 16.9	0.0
	baz=309,slow=2.1								
KLR	**Kul'dur**	**62.07**	**47**	*i* P	**P**			13 59 43.2	-0.8
KLR	**Kul'dur**	**62.07**	**47**	*i* P	**P**			13 59 43.2	-0.8
KSAR	**Wonju Array Be**	**62.55**	**61**	P	**P**			13 59 47.1	-0.3
KSAR	**Wonju Array Be**	**62.55**	**61**	P	**P**			13 59 47.1	-0.3
KSAR	**Wonju Array Be**	**62.55**	**61**	P	**P**			13 59 47.1	-0.3
KSRS	**Korea

WESE	**West Dahl East**	**3.91**	**255**	P		**Pn**	**14 18 29.5**	**+1.2**
FOPK	**Fourpeaked Vol**	**3.99**	**37**	P		**Pn**	**14 18 29.8**	**+0.4**
CDD	**Cape Douglas**	**4.07**	**35**	P		**Pn**	**14 18 30.4**	**-0.1**
AUH	**Augustine H**	**4.47**	**32**	P		**Pn**	**14 18 37.0**	**+0.9**
AKSA	**Akutan Strait**	**4.64**	**254**	P		**Pn**	**14 18 39.6**	**+1.4**
AKUT	**Akutan**	**4.68**	**254**	*e*Pn		**Pn**	**14 18 39.2**	**+0.4**
UNV	**Unalaska Valle**	**5.19**	**253**	P		**Pn**	**14 18 46.8**	**+1.1**
CKL	**Chakachamna La**	**6.31**	**26**	P		**Pn**	**14 19 02.1**	**+0.8**
SPWE	**Spurr West**	**6.33**	**25**	P		**Pn**	**14 19 02.0**	**+0.5**
RC01	**Rabbit Creek A**	**6.99**	**36**	*e*Pn		**Pn**	**14 19 11.7**	**+1.2**
PPLA	**Purkeypile** 23nm,1.0s	**7.85**	**20**	*e*Pn		**Pn**	**14 19 25.2**	**+2.8**
DIV	**Divide**	**8.47**	**45**	*e*Pn		**Pn**	**14 19 30.4**	**-0.5**
KTH	**Kantishna Hill** 17nm,1.0s	**8.70**	**22**	*e*Pn		**Pn**	**14 19 34.1**	**+0.1**
TRF	**Thorofare Moun** 9.4nm,0.8s	**8.75**	**24**	*e*Pn		**Pn**	**14 19 35.1**	**+0.4**
BMRM	**Bremner River**	**8.86**	**48**	*e*Pn		**Pn**	**14 19 35.4**	**-0.9**
BPAW	**Bear Paw Mtn.** 1.9nm,0.7s	**9.17**	**20**	*e*Pn		**Pn**	**14 19 40.7**	**+0.3**
MCK	**McKinley** 7.6nm,0.8s	**9.31**	**26**	*e*Pn		**Pn**	**14 19 43.4**	**+1.1**
PAX	**Paxson** 7.4nm,0.7s	**9.74**	**36**	*e*Pn		**Pn**	**14 19 48.7**	**+0.4**
DOT	**Dot Lake** 5.9nm,0.6s	**10.67**	**36**	*e*Pn		**Pn**	**14 20 02.0**	**+1.1**
ILAR	**Eielson Array** 0.4nm,0.3s,baz=219,slow=13,SNR=37	**10.68**	**27**	Pn		**Pn**	**14 20 00.3**	**-0.6**
COLD	**Coldfoot** 6.8nm,1.4s	**12.18**	**15**	*e*Pn		**Pn**	**14 20 22.2**	**+0.7**
EGAK	**Eagle** 4.5nm,0.9s	**12.38**	**36**	*e*Pn		**Pn**	**14 20 24.7**	**+0.6**
INK	**Inuvik** 0.4nm,0.3s,baz=202,slow=11,SNR=17	**16.96**	**32**	Pn		**Pn**	**14 21 24.4**	**-0.7**
INK	**Inuvik** 6.9nm,0.8s	**16.96**	**32**	*e*P		**Pn**	**14 21 24.4**	**-0.7**
YKA	**Yellowknife Ar** 0.6nm,0.6s,baz=272,slow=9.5,SNR=12	**22.98**	**55**	P		**P**	**14 22 32.2**	**-0.2**
USRK	**Ussuriysk Ar.** comp=Z,32nm,20.6s,baz=33,slow=36	**44.55**	**286**	LR		LR	14 43 58.5	
TXAR	**Lajitas Array** 0.5nm,0.8s,baz=318,slow=1.7,SNR=4.5	**46.43**	**101**	P		**P**	**14 25 56.7**	**+1.9**
ARCES	**ARCESS Array B** 3.1nm,0.9s,baz=9.2,slow=6.8,SNR=3.5	**55.07**	**358**	P		**P**	**14 26 58.7**	**-0.5**
MKAR	**Makanchi Array** 0.2nm,0.3s,baz=19,slow=4.8,SNR=3.4	**66.01**	**319**	P		**P**	**14 28 14.2**	**-0.1**
AKASG	**Malin Array Be** 0.3nm,0.4s,baz=4.4,slow=5.9,SNR=4.0	**73.82**	**355**	P		**P**	**14 29 01.0**	**-1.1**
CMAR	**Chiang Mai Arr** 0.3nm,0.3s,baz=9.8,slow=5.9,SNR=2.9	**82.01**	**291**	P	P		14 29 45.2	-2.9
ESDC	**Sonseca Array** comp=Z,43nm,18.4s,baz=345,slow=39	**82.50**	**20**	LR		LR	15 11 22.2	
BRTR	**Keskin Array B** 1.1nm,0.8s,baz=35,slow=4.5,SNR=5.6	**84.44**	**351**	P	P		14 30 06.8	+6.2

*IDC **25** 14:29:41.9±1.0,25°.46N×134°.21E,h0km,mb3.9/10, mb1 3.9/13,mb1mx3.7/56,mbtmp3.9/13,ML3.7/3,MS3.0/6, Ms1 3.0/6,ms1mx2.7/44,Error ellipse: s-maj=33.6km s-min=19.0km az=74.0*

*NEIC **25** 14:29:43.3±0.6,25°.47N×134°.26E,h10km,mb4.2/2,Error ellipse: s-maj=14.2km s-min=9.8km az=83.0*

*ISCJB **25** 14:29:45.3±0.6,25°.57N±0°.07×134°.21E±0°.04,h33km, mb3.9/12,MS3.4/2,Error ellipse: s-maj=10.5km s-min=5.1km az=8.9*

ISC 25 14:29:47.2±0.9,25°.53N±0°.10×134°.25E±0°.08,h35km,n38, σ0s86/41,mb4.0/12,West of Bonin Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
JMZ	**Minamidaito 2**	**2.74**	**277**	P		P	**Pn**	**14 30 29.2**	**+0.5**
JMZ				S		S	**Sn**	**14 31 01.7**	**+1.1**
JZK	**Kikaishima**	**4.71**	**307**	P		P	**Pn**	**14 30 57.4**	**+1.6**
JAM	**Amami Oshima**	**5.04**	**306**	P		P	**Pn**	**14 31 00.1**	**-0.1**
JAM				S		S	**Sn**	**14 31 56.7**	**-0.5**
JTK	**Tokunoshima**	**5.24**	**297**	P		P	**Pn**	**14 31 02.9**	**-0.1**
JTK				*e*S		S	**Sn**	**14 32 03.0**	**+0.7**
JAMN	**Amaminishikomi**	**5.27**	**302**	P		P	**Pn**	**14 31 03.3**	**-0.1**
JAMN				S		S	**Sn**	**14 32 02.2**	**-0.8**
JOKE	**Okinoerabujima**	**5.40**	**291**	P		P	**Pn**	**14 31 05.6**	**+0.3**
JOKE				*e*S		S	**Sn**	**14 32 05.7**	**-0.6**
JOW	**Kunigami** 8.7nm,0.3s,baz=119,slow=25,SNR=16	**5.52**	**285**	Pn		P	**Pn**	**14 31 06.8**	**0.0**
JOW				Sn		S	**Sn**	**14 32 08.0**	**-1.2**
	50nm,0.3s,baz=145,slow=25,SNR=34								
JOW	**Kunigami**	**5.52**	**285**	P		P	**Pn**	**14 31 07.2**	**+0.3**
JOW				S		S	**Sn**	**14 32 09.9**	**+0.8**
JOW	**Kunigami** 11nm,0.3s	**5.52**	**285**	*e*Pn		P	**Pn**	**14 31 06.1**	**-0.7**
JOW				Sn		S	**Sn**	**14 32 08.0**	**-1.2**
JNTH	**Nagotoyohara**	**5.68**	**281**	P		P	**Pn**	**14 31 09.0**	**-0.1**
JNTH				S		S	**Sn**	**14 32 11.7**	**-1.5**
JTAJ	**Takarajima**	**5.75**	**310**	P		P	**Pn**	**14 31 09.4**	**-0.7**
JIH	**Iheya**	**5.83**	**286**	P		P	**Pn**	**14 31 11.9**	**+0.8**
JIH				*e*S		S	**Sn**	**14 32 16.8**	**0.0**
JJT2	**Tamagusuku 2**	**5.89**	**277**	S		S	**Sn**	**14 32 18.4**	**+0.2**
JAGN	**Aguni-jima**	**6.39**	**281**	P		P	**Pn**	**14 31 19.2**	**+0.5**
JAGN				S		S	**Sn**	**14 32 31.3**	**+0.9**
JKE	**Kume jima 2**	**6.76**	**278**	S		S	**Sn**	**14 32 37.4**	**-2.3**
JCJ	**Chichijima** 4.7nm,0.3s,baz=281,slow=22,SNR=1.6	**7.29**	**76**	Sn		S	Sn	14 32 38.2	-15
JNU	**Nakatsue** 0.4nm,0.3s,baz=141,slow=4.5,SNR=4.7	**8.11**	**340**	Pn		Pn	**Pn**	**14 31 42.3**	**-0.2**
JNU				Sn		Sn	Sn	14 33 06.5	-6.5
	0.8nm,0.3s,baz=237,slow=0.5,SNR=4.9								
JNU				LR		LR	LR	14 34 53.9	
	comp=Z,49nm,19.7s,baz=123,slow=38								
JHJ	**Hachijo jima 2** comp=Z,64nm,19.1s,baz=260,slow=32	**8.97**	**31**	LR		LR	LR	14 34 36.4	
MJAR	**Matsushiro Arr** 0.6nm,0.3s,baz=206,slow=16,SNR=5.0	**11.49**	**16**	Pn		Pn	**Pn**	**14 32 27.6**	**-1.1**
MJAR				LR		LR	LR	14 36 16.5	
	comp=Z,41nm,20.4s,baz=190,slow=34								
KSRS	**Korea Array** comp=Z,31nm,19.6s,baz=70,slow=37	**13.05**	**337**	LR		LR	LR	14 37 43.3	
H11S3	**WAKE ISLAND Hy** baz=290	**30.82**	**97**	T		T	T	15 07 28.9	
H11S1	**WAKE ISLAND Hy** baz=290	**30.83**	**97**	T		T	T	15 07 37.9	
H11S2	**WAKE ISLAND Hy** baz=290	**30.84**	**97**	T		T	T	15 07 32.8	
TLY	**Talaya** comp=Z,22nm,20.7s,baz=342,slow=35	**34.95**	**326**	LR		LR	LR	14 49 56.8	
WRA	**Warramunga Arr** 0.3nm,0.5s,baz=355,slow=8.8,SNR=4.9	**45.20**	**180**	P		P	**14 38 00.3**	**-0.6**
ZALV	**Zalesovo Beam** 2.7nm,1.1s,baz=94,slow=5.9,SNR=3.9	**46.12**	**321**	P		P	**14 38 08.1**	**+0.2**
ASAR	**Alice Springs** 0.3nm,0.7s,baz=3.8,slow=5.6,SNR=6.6	**49.91**	**180**	P		P	**14 38 28.8**	**-1.0**
KURK	**Kurchatov**	**49.07**	**316**	P		P	**14 38 31.5**	**+0.7**
KURBB	**Kurchatov Arra** 1.4nm,0.6s,baz=99,slow=7.9,SNR=22	**49.11**	**316**	P		P	**14 38 31.5**	**+0.4**
BVAR	**Borovoye Array** 4.1nm,0.6s,baz=90,slow=8.9,SNR=26	**54.40**	**318**	P		P	**14 39 11.1**	**+0.5**
BRVK	**Borovoye** 5.3nm,0.8s	**54.47**	**318**	*e*P		P	**14 39 11.5**	**+0.5**
ABKAR	**Akbulak array** 0.3nm,0.3s	**61.05**	**314**	*e*P		P	**14 39 57.3**	**-0.1**
ARU	**Arti** 1.0nm,0.4s,baz=147,slow=3.5,SNR=4.5	**61.28**	**322**	P		P	**14 39 58.0**	**-0.7**
AFI	**Afiamalu** comp=Z,69nm,20.0s,baz=190,slow=29	**65.57**	**120**	LR		LR	15 01 45.9	
KBZ	**Khabaz** 2.9nm,0.8s,baz=103,slow=3.0,SNR=9.3	**73.75**	**311**	P		P	**14 41 18.6**	**+0.8**
FINES	**FINESS Array B** 0.4nm,0.4s,baz=62,slow=6.1,SNR=7.5	**76.08**	**332**	P		P	**14 41 30.0**	**-0.9**
YKA	**Yellowknife Ar** 0.1nm,0.5s,baz=295,slow=5.9,SNR=3.3	**76.80**	**26**	P		P	**14 41 36.7**	**+1.7**
BRTR	**Keskin Array B** 0.7nm,0.8s,baz=79,slow=4.0,SNR=4.3	**81.69**	**310**	P		P	**14 42 02.5**	**+0.2**

*NIED **25** 14:51:00,36°.70N×139°.60E,h8km,Mw3.7 Best double couple: M₀4.41000×10¹⁴ NP1:φs157.00000°,δ36.00000°, λ35.00000°. NP2:φs37.00000°,δ70.00000°,λ121.00000°.*

*IDC **25** 14:51:10.0±0.6,36°.65N×139°.59E,h0km,mb3.9/17, mb1 4.0/19,mb1mx3.9/47,mbtmp3.9/19,ML3.5/2,Error ellipse: s-maj=13.6km s-min=10.8km az=152.0*

*ISCJB **25** 14:51:11.9±0.5,36°.65N±0°.03×139°.62E±0°.04,h24km±3km, mb3.9/20,Error ellipse: s-maj=6.4km s-min=4.2km az=27.3*

*JMA **25** 14:51:12.4,36°.67N×139°.58E,h10km±1km,M3.8 Broadband fault plane solution: P waves. NP1: φs33.00000°,δ66.00000°,λ119.00000°. NP2: φs160.00000°,δ37.00000°,λ43.00000°. Principal axes: T Plg59.0000°, Azm344.0000°; N Plg26.0000°, Azm200.0000°; P Plg16.0000°, Azm102.0000°;*

JMA Felt III J1.

*NEIC **25** 14:51:15.7±0.9,36°.60N×139°.51E,h40km±8km,mb4.4/3 Error ellipse: s-maj=10.6km s-min=7.5km az=96.0*

ISC 25 14:51:12.6±0.9,36°.66N±0°.03×139°.54E±0°.04,h16km±5km, n40,σ0s81/46,mb3.9/20,2C-4D,Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
JAG	**Ashikaga**	**0.24**	**196**	⇑P		P	**Pg**	**14 51 17.9**	**-0.2**
JAG				S		S	**Sg**	**14 51 21.6**	**-0.2**
JKT	**Katashina**	**0.25**	**295**	⇓P		P	**Pg**	**14 51 18.3**	**0.0**
JKT				S		S	**Sg**	**14 51 22.4**	**+0.2**
JSB	**Shiboa**	**0.44**	**45**	⇓P		P	**Pg**	**14 51 20.8**	**-0.7**
JSB				S		S	**Sg**	**14 51 26.4**	**-1.0**
JHK	**Hiroka**	**0.72**	**325**	⇓P		P	**Pg**	**14 51 26.7**	**0.0**
JFY	**Yanaizu**	**0.76**	**10**	⇑P		P	**Pg**	**14 51 26.6**	**-0.8**
JFY				S		S	**Sg**	**14 51 35.9**	**-1.6**
JRY	**Ryogami san**	**0.82**	**219**	⇓P		P	**Pb**	**14 51 28.4**	**-0.2**
JRY				S		S	**Sn**	**14 51 40.4**	**-1.0**
MJAR	**Matsushiro Arr** 316nm,0.3s,baz=82,slow=18,SNR=2364	**1.07**	**264**	Pg		P	**Pb**	**14 51 32.6**	**-0.3**
MJAR				Lg		Lg		14 51 46.3	
	388nm,0.3s,baz=80,slow=30,SNR=40								
MAJO	**Matsushiro**	**1.07**	**264**	*e*Pg		P	**Pn**	**14 51 33.0**	**0.0**
MAJO				*e*Sg		S	**Sg**	**14 51 47.4**	**-0.1**
MAT	**Matsushiro**	**1.07**	**264**	P		P	**Pn**	**14 51 33.0**	**-0.1**
MAT				S		S	**Sg**	**14 51 47.1**	**-0.4**
JHJ	**Hachijo jima 2** 44nm,0.3s,baz=142,slow=23,SNR=19	**3.54**	**177**	Pn		P	**Pn**	**14 52 07.5**	**+0.6**
JHJ				Sn		S	**Sn**	**14 52 48.5**	**0.0**
	37nm,0.3s,baz=58,slow=22,SNR=8.1								
JHJ2	**Mitsune**	**3.55**	**176**	*e*Pn		P	**Pn**	**14 52 07.2**	**+0.1**
ASAJ	**Asahikawa** 0.4nm,0.3s,baz=280,slow=32,SNR=4.9	**7.80**	**16**	Pn		P	**Pn**	**14 53 06.5**	**+1.0**
KSRS	**Korea Array** 0.2nm,0.3s,baz=90,slow=14,SNR=3.1	**9.32**	**278**	Pn		Pn		14 53 30.7	+4.4
KSAR	**Wonju Array Be**	**9.35**	**278**	Pn		Pn		14 53 30.7	+4.0
USRK	**Ussuriysk Ar.** 0.2nm,0.3s,baz=138,slow=15,SNR=3.0	**9.47**	**325**	Pn		Pn		14 53 32.6	+4.3
KLR	**Kul'dur** 0.1nm,0.3s,baz=116,slow=8.3,SNR=3.5	**13.79**	**338**	Pn		P	**Pn**	**14 54 30.1**	**+2.9**
SEY	**Seymchan** 1.8nm,0.3s,baz=184,slow=13,SNR=17	**27.47**	**13**	P		P	**14 56 59.2**	**+1.5**
SEY	**Seymchan**	**27.47**	**13**	P		P	**14 56 59.2**	**+1.5**
TIXI	**Tiksi** 0.6nm,0.5s,baz=133,slow=4.8,SNR=6.3	**35.49**	**354**	P		P	**14 58 07.2**	**-0.9**
CHTO	**Chiang Mai**	**39.74**	**255**	*e*P		P	**14 58 44.2**	**-0.4**
ZALV	**Zalesovo Beam** 0.5nm,0.5s,baz=111,slow=3.3,SNR=3.6	**41.06**	**313**	P		P	**14 58 55.1**	**0.0**
ZALV				PcP		PcP	**15 00 54.8**	**+0.2**
	0.4nm,0.3s,baz=159,slow=4.3,SNR=3.2								
KURK	**Kurchatov** 7.4nm,0.9s	**44.98**	**308**	*e*P		P	**14 59 26.2**	**-0.7**
KURBB	**Kurchatov Arra** 1.7nm,0.5s,baz=84,slow=8.0,SNR=26	**45.04**	**308**	P		P	**14 59 27.3**	**-0.2**
ILAR	**Eielson Array** 0.9nm,0.7s,baz=266,slow=6.5,SNR=11	**50.61**	**32**	P		P	**15 00 10.9**	**+0.5**
ILAR	**Eielson Array**	**50.61**	**32**	P		P	**15 00 11.0**	**+0.6**
INK	**Inuvik** 0.9nm,0.6s,baz=262,slow=6.3,SNR=4.1	**55.40**	**27**	P		P	**15 00 46.4**	**+0.8**
WRAB	**Tennant Creek** 1.7nm,0.4s	**56.50**	**186**	*e*P		P	**15 00 53.2**	**-0.8**
WRA	**Warramunga Arr** 1.6nm,0.3s,baz=1.2,slow=7.5,SNR=78	**56.51**	**186**	P		P	**15 00 53.6**	**-0.5**
ABKAR	**Akbulak array** 0.7nm,0.5s	**57.02**	**310**	*e*P		P	**15 00 57.3**	**-0.2**
ASAR	**Alice Springs** 0.6nm,0.8s,baz=17,slow=13,SNR=14	**60.24**	**186**	P		P	**15 01 20.0**	**-0.1**
ARCES	**ARCESS Array B** 1.7nm,1.0s,baz=40,slow=7.9,SNR=4.5	**63.81**	**339**	P		P	**15 01 43.2**	**-0.3**
STKA	**Stephens Creek** 0.8nm,0.9s,baz=9.4,slow=5.2,SNR=2.9	**68.21**	**178**	P		P	**15 02 11.5**	**-0.7**
FINES	**FINESS Array B** 0.3nm,0.5s,baz=79,slow=8.6,SNR=3.8	**68.44**	**332**	P		P	**15 02 13.4**	**0.0**
AKASG	**Malin Array Be** 0.7nm,0.4s,baz=47,slow=6.1,SNR=12	**73.66**	**322**	P		P	**15 02 44.5**	**-0.7**
HFS	**Hagfors** 0.6nm,0.5s,baz=152,slow=6.7,SNR=5.7	**73.80**	**335**	P		P	**15 02 45.8**	**-0.1**
NB2	**NORSAR Subarra** comp=Z,2.4nm,0.8s,baz=41,slow=6.2	**73.94**	**337**	P		P	**15 02 46.3**	**-0.5**
NOA	**NORSAR Array B** comp=Z,2.1nm,0.8s,baz=40,slow=5.9,SNR=11	**73.94**	**337**	P		P	**15 02 46.6**	**-0.2**
NVAR	**Mina Array Bea** comp=Z,0.8nm,0.8s,baz=297,slow=5.2,SNR=4.3	**76.41**	**52**	P		P	**15 03 02.3**	**+0.6**
BRTR	**Keskin Array B** comp=Z,0.4nm,0.6s,baz=68,slow=5.1,SNR=3.2	**77.96**	**311**	P		P	**15 03 10.3**	**+0.1**
GERES	**GERESS Array B** comp=Z,0.4nm,0.5s,baz=37,slow=6.9,SNR=5.0	**82.22**	**327**	P		P	**15 03 31.6**	**-1.4**

*ISCJB **25** 14:53:15.7±0.4,47°.22N±0°.05×153°.25E±0°.06,h59km, mb3.9/23,MS3.6/3,Error ellipse: s-maj=7.9km s-min=3.6km az=139.8*

*MOS **25** 14:53:17.5±1.9,47°.22N×153°.27E,h78km,mb4.2/15,Error ellipse: s-maj=10.8km s-min=6.9km az=70.5*

*SKHL **25** 14:53:17.3±0.4,47°.17N×153°.43E,h75km±5km,mb4.8/10*

*IDC **25** 14:53:22.3±2.2,47°.38N×152°.95E,h99km±19km,mb3.6/17, mb1 3.8/23,mb1mx3.7/47,mbtmp4.0/23,MS3.6/2, Ms1 3.5/2,ms1mx2.8/43,Error ellipse: s-maj=17.4km s-min=11.7km az=136.0*

*BJI **25** 14:53:42.2,47°.50N×150°.70E,h212km,mb4.1/10,mB4.6/4*

ISC 25 14:53:17.3±0.6,47°.23N±0°.06×153°.23E±0°.07,h59km,n83, σ1s55/84,mb3.9/23,MS3.6/3,1C-3D,Kuril Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
SKR	**Severo-Kuril's**	**3.94**	**28**	*i* P		P	**Pn**	**14 54 15.2**	**0.0**
SKR					AMB	AMB		14 54 17.7	
	100nm,0.7s								
SKR					AMB	AMB		14 54 18.3	
	1μm,3.0s								
SKR				*i* S		Sn		**14 54 58.9**	**-1.2**
SKR					A	A		14 55 01.6	
	200nm,0.3s								
SKR					A	A		14 55 09.0	
	2μm,4.0s								
SKR					A	A		14 55 09.0	
	2μm,4.0s								
SKR	**Severo-Kuril's**	**3.94**	**28**	*e*PN		Pn		**14 54 15.2**	**0.0**
SKR				*e*S		Sn		**14 54 56.9**	**-3.2**
SKR					pmax	pmax			
	comp=Z,80nm,0.5s								
SKR					smax	smax			
	comp=N,280nm,0.3s								
SKR					smax	smax			
	comp=E,200nm,0.3s								
KUR	**Kuril'sk**	**4.22**	**244**	*i* P		Pn		**14 54 20.8**	**+1.7**
KUR					AMB	AMB		14 54 21.8	
	comp=E,700nm,4.0s								
KUR					AMB	AMB		14 54 21.8	
	comp=E,10.0nm,0.4s								
KUR					AMB	AMB		14 54 21.8	
	comp=E,20nm,0.4s								
KUR					AMB	AMB		14 54 21.8	
	comp=E,100nm,0.4s								
KUR				*i* S		Sn		**14 55 08.1**	**+1.1**
KUR					A	A		14 55 11.5	
	comp=E,1μm,5.0s								
KUR					A	A		14 55 27.7	
	comp=E,180nm,0.4s								
KUR					A	A		14 55 27.7	
	comp=E,80nm,0.4s								
KUR	**Kuril'sk**	**4.22**	**244**	*c* iPN		Pn		**14 54 20.8**	**+1.7**
KUR				*i* S		Sn		**14 55 09.7**	**+2.7**
KUR					pmax	pmax			
	comp=Z,189nm,0.4s								
KUR					pmax	pmax			
	comp=N,42nm,0.3s								
KUR					pmax	pmax			
	comp=E,21nm,0.2s								
KUR					smax	smax			
	comp=N,353nm,0.3s								
KUR					smax	smax			
	comp=E,139nm,0.4s								
PAU	**Pauzhetka**	**4.84**	**28**	*i* P		Pn		**14 54 28.7**	**+1.2**
PAU					AMB	AMB		14 54 36.2	
	comp=E,100nm,0.9s								
PAU				*i* S		Sn		**14 55 22.3**	**+0.1**
PAU					A	A		14 55 24.5	
	comp=E,200nm,0.4s								

SHO	**Shikotan**	**5.61**	**235**	*i* P		Pn		**14 54 36.8**	**-1.3**
SHO					AMB	AMB		14 54 41.5	
	comp=E,50nm,0.6s								
SHO				*i* S		Sn		**14 55 39.6**	**-1.5**
SHO					A	A		14 55 59.2	
	comp=E,320nm,0.7s								
SHO					A	A		14 55 59.2	
	comp=E,150nm,0.7s								
SHO	**Shikotan**	**5.61**	**235**	*d* iPN		Pn		**14 54 36.6**	**-1.5**
SHO				*i* S		Sn		**14 55 39.6**	**-1.5**
SHO					pmax	pmax			
	comp=Z,52nm,0.6s								
SHO					pmax	pmax			
	comp=E,47nm,0.3s								
SHO					pmax	pmax			
	comp=N,24nm,0.7s								
SHO					smax	smax			
	comp=E,148nm,0.6s								
SHO					smax	smax			
	comp=N,317nm,0.9s								
YUK	**Yuzh-Kuril'sk**	**6.07**	**241**	*i* P		Pn		**14 54 45.4**	**+1.0**
YUK					AMB	AMB		14 54 47.1	
	comp=N,90nm,0.4s								
YUK				*e*S		Sn		**14 55 53.0**	**+0.5**
YUK					A	A		14 56 07.9	
	comp=N,50nm,0.4s								
YUK					A	A		14 56 07.9	
	comp=N,220nm,0.4s								
YUK	**Yuzh-Kuril'sk**	**6.07**	**241**	*d* iPN		Pn		**14 54 45.4**	**+1.0**
YUK				*e*S		Sn		**14 55 53.9**	**+1.4**
YUK					pmax	pmax			
	comp=N,66nm,0.4s								
YUK					pmax	pmax			
	comp=Z,87nm,0.4s								
YUK					pmax	pmax			
	comp=E,61nm,0.1s								
YUK					smax	smax			
	comp=E,215nm,0.4s								
YUK					smax	smax			
	comp=N,51nm,0.2s								
PETK	**Petropavlovsk-** comp=N,0.7nm,0.3s,baz=181,slow=11,SNR=15	**6.54**	**24**	P		Pn		**14 54 53.2**	**+2.4**
PET	**Petropavlovsk**	**6.76**	**29**	*e*P		Pn		14 54 57.1	+3.3
PET				*e*S		Sn		**14 56 08.9**	**-0.4**
PET					A	A		14 56 34.6	
	comp=N,50nm,0.6s								
PET	**Petropavlovsk**	**6.76**	**29**	*e*PN		Pn		14 54 57.1	+3.3
YSS	**Yuzh-Sakhalins**	**7.15**	**272**	*e*P		Pn		**14 55 02.3**	**+3.1**
YSS					AMB	AMB		14 55 04.1	
	comp=N,30nm,0.3s								
YSS				*e*S		Sn		**14 56 19.6**	**+0.6**
YSS					A	A		14 56 23.8	
	comp=N,20nm,0.6s								
YSS					A	A		14 56 23.8	
	comp=N,30nm,0.6s								
YSS	**Yuzh-Sakhalins**	**7.15**	**272**	⇓*e*PN		Pn		**14 55 02.3**	**+3.1**
YSS					pmax	pmax			
	comp=Z,30nm,0.2s								
UGL	**Uglegorsk**	**7.69**	**288**	*e*P		Pn		14 55 10.0	+3.5
UGL					AMB	AMB		14 55 11.0	
	comp=Z,80nm,0.9s								
TYV	**Tymovskoe**	**7.83**	**301**	*e*P		Pn		**14 55 11.5**	**+3.0**
TYV					AMB	AMB		14 55 23.0	
	comp=Z,40nm,1.0s								
TYV				*e*S		Sn		**14 56 36.8**	**+1.2**
TYV	**Tymovskoe**	**7.83**	**301**	*e*PN		Pn		**14 55 11.5**	**+3.0**
TYV					pmax	pmax			
	comp=Z,40nm,1.0s								
JKA	**Kamikawa-asahi**	**8.07**	**251**	*e*P		Pn		14 55 15.9	+4.2
ASAJ	**Asahikawa** comp=Z,1.8nm,0.3s,baz=88,slow=23,SNR=9.7	**8.07**	**251**	P		Pn		14 55 15.8	+4.1
ERM	**Erimo**	**8.87**	**238**	*e*PN		Pn		**14 55 22.1**	**-0.6**
NKL	**Nikolayevsk**	**9.98**	**311**	*e*P		Pn		**14 55 40.2**	**+2.4**
NKL	**Nikolayevsk**	**9.98**	**311**	*e*PN		Pn		**14 55 40.2**	**+2.4**
GRNR	**Gornyy**	**11.59**	**294**	*e*P		Pn		**14 56 02.2**	**+2.4**
MA2	**Magadan** comp=Z,3.6nm,0.3s,baz=190,slow=12,SNR=28	**12.45**	**354**	P		Pn		**14 56 13.1**	**+1.6**
EKMR	**Ekimchan**	**14.23**	**302**	*e*P		Pn		**14 56 37.5**	**+2.0**
EKMR					AMB	AMB		14 56 47.1	
	comp=Z,4.0nm,0.5s								
KLR	**Kul'dur** comp=Z,0.2nm,0.3s,baz=88,slow=12,SNR=12	**14.45**	**286**	P		Pn		**14 56 40.9**	**+2.5**
KLR	**Kul'dur**	**14.45**	**286**	*e*P		P		**14 56 43.1**	**-0.6**
USRK	**Ussuriysk Ar.** comp=Z,0.7nm,0.3s,baz=69,slow=13,SNR=11	**15.13**	**266**	P		Pn		**14 56 47.7**	**+0.3**
MAJO	**Matsushiro**	**15.44**	**232**	*e*P		Pn		**14 56 50.0**	**-1.3**
MAJO	**Matsushiro**	**15.44**	**232**	*e*P		P		**14 56 55.5**	**+0.8**
MAT	**Matsushiro**	**15.44**	**232**	P		P		**14 56 55.3**	**+0.6**
MJAR	**Matsushiro Arr** comp=Z,0.6nm,0.3s,baz=33,slow=9.0,SNR=7.5	**15.44**	**232**	P		P		**14 56 55.5**	**+0.8**
BMKR	**Bomnak**	**17.02**	**305**	*e*P		Pn		**14 57 11.1**	**0.0**
BMKR					AMB	AMB		14 57 15.9	
	comp=Z,5.0nm,0.5s								
KROS	**Kirovskiy**	**18.01**	**303**	*e*P		Pn		**14 57 26.3**	**+3.1**
KROS					AMB	AMB		14 57 27.1	
	comp=Z,3.0nm,0.5s								
YAK	**Yakutsk**	**19.96**	**327**	*e*P		Pn		**14 57 47.2**	**+0.8**
KSRS	**Korea Array** comp=Z,2.3nm,0.8s,baz=55,slow=10,SNR=7.4	**21.02**	**251**	P		P		**14 57 56.8**	**+0.9**
BILL	**Bilibino**	**21.90**	**13**	*e*P		P		**14 58 02.8**	**-2.3**
BILL	**Bilibino**	**21.90**	**13**	*e*P		P		**14 58 02.8**	**-2.3**
BILL					pmax	pmax			
	comp=Z,2.0nm,1.0s								
BJI	**Beijing**	**27.56**	**269**	P		P		14 58 53.5	-5.0
BJI					pmax	pmax			
	comp=Z,4.0nm,0.9s								
BJI					LR	LR			
	comp=Z,140nm,8.4s								

	comp=Z,2.0nm,0.7s							
GUN	**Gumba**	**55.04**	**275**	*e*P		**P**	**15 02 43.2**	**-0.1**
PKIN	**Phulchoki**	**55.58**	**275**	*e*P		**P**	**15 02 47.2**	**+0.1**
DMN	**Daman**	**55.75**	**275**	*e*P		**P**	**15 02 47.9**	**-0.4**
	comp=Z,4.7nm,0.4s							
GKN	**Gorkha**	**55.82**	**276**	*e*P		**P**	**15 02 48.6**	**-0.1**
	comp=Z,4.7nm,0.4s							
KOLN	**Koldanda**	**56.67**	**276**	*e*P		**P**	**15 02 54.6**	**-0.2**
PYUN	**Piuthan**	**56.87**	**277**	*e*P		**P**	**15 02 56.3**	**+0.1**
ARCES	**ARCESS Array B**	**57.42**	**341**	P		**P**	**15 02 59.0**	**-0.2**
	comp=Z,0.7nm,0.7s,baz=22,slow=9.7,SNR=3.9							
FINES	**FINESS Array B**	**63.63**	**335**	P		**P**	**15 03 40.0**	**-1.6**
	comp=Z,1.3nm,0.4s,baz=33,slow=7.6,SNR=20							
FINES	**FINESS Array B**	**63.63**	**335**	*i* P		**P**	**15 03 41.0**	**-0.6**
FINES				pmax	pmax			
	comp=Z,1.0nm,0.4s							
PDAR	**Pinedale Array**	**64.40**	**54**	P		**P**	**15 03 48.9**	**+1.6**
	comp=Z,0.2nm,0.4s,baz=249,slow=4.5,SNR=3.2							
NB2	**NORSAR Subarra**	**67.79**	**341**	P		**P**	**15 04 07.9**	**-0.6**
	comp=Z,0.7nm,0.6s,baz=24,slow=6.5							
NOA	**NORSAR Array B**	**67.79**	**341**	P		**P**	**15 04 08.1**	**-0.4**
	comp=Z,1.3nm,0.7s,baz=26,slow=6.4,SNR=7.5							
WRA	**Warramunga Arr**	**69.00**	**199**	P		**P**	**15 04 16.2**	**-0.1**
	comp=Z,0.7nm,0.7s,baz=17,slow=6.7,SNR=7.0							
KBZ	**Khabaz**	**70.58**	**314**	P		**P**	**15 04 25.3**	**-0.6**
	comp=Z,0.9nm,0.7s,baz=104,slow=6.9,SNR=3.8							
AKASG	**Malin Array Be**	**71.19**	**326**	P		**P**	**15 04 28.5**	**-1.0**
	comp=Z,1.1nm,0.5s,baz=31,slow=6.3,SNR=5.9							
ASAR	**Alice Springs**	**72.68**	**199**	P		**P**	**15 04 39.7**	**+1.0**
	comp=Z,1.9nm,0.7s,baz=12,slow=5.3,SNR=29							
SCHQ	**Schefferville**	**72.83**	**23**	LR		LR	15 39 20.6	
	comp=Z,34nm,21.7s,baz=58,slow=38							
TXAR	**Lajitas Array**	**77.19**	**61**	P		**P**	**15 05 05.8**	**+0.9**
	comp=Z,1.0nm,0.5s,baz=299,slow=4.6,SNR=16							
KHC	**Kasperske Hory**	**77.83**	**334**	*e*P		**P**	**15 05 07.8**	**-0.3**
KHC	**Kasperske Hory**	**77.83**	**334**	*e*P		**P**	**15 05 07.8**	**-0.3**
KHC	**Kasperske Hory**	**77.83**	**334**	*e*P		**P**	**15 05 07.8**	**-0.3**
GERES	**GERESS Array B**	**78.05**	**334**	P		**P**	**15 05 08.8**	**-0.6**
	comp=Z,0.7nm,0.4s,baz=25,slow=5.5,SNR=10							
BRTR	**Keskin Array B**	**78.09**	**317**	P		**P**	**15 05 09.9**	**+0.1**
	comp=Z,0.6nm,0.7s,baz=57,slow=4.6,SNR=4.5							
BRTR	**Keskin Array B**	**78.09**	**317**	*i* P		**P**	**15 05 10.8**	**+0.9**
BRTR				pmax	pmax			
	comp=Z,1.0nm,0.7s							
BFO	**Black Forest**	**80.04**	**337**	*i* P		**P**	**15 05 20.8**	**+0.6**
H06S1	**SOCORRO T**	**80.32**	**73**	T		T	16 32 45.1	
	SNR=11							

IDC 25 14:55:16.0±2.6, 16°78S×175°56W, h238km±45km, mb3.1/4, mb1 3.4/5, mb1mx3.1/36, mbtmp3.8/5, Error ellipse: s-maj=155.5km s-min=26.6km az=139.0, Tonga Islands

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op		ISC	h m s	ISC
AFI	**Afiamalu**	**4.64**	**52**	P		Pn	14 56 27.1	0.0
	3.5nm,0.3s,baz=171,slow=1.4,SNR=15							
AFI				S		S	14 57 19.3	-4.1
	19nm,0.3s,baz=266,slow=13,SNR=14							
STKA	**Stephens Creek**	**41.55**	**241**	P		P	15 02 40.7	+0.1
	0.9nm,0.6s,baz=64,slow=6.2,SNR=5.3							
WRA	**Warramunga Arr**	**47.51**	**258**	P		P	15 03 27.6	-0.2
	0.5nm,0.5s,baz=96,slow=7.8,SNR=8.9							
ASAR	**Alice Springs**	**47.71**	**253**	P		P	15 03 29.2	-0.1
	2.9nm,0.8s,baz=88,slow=8.6,SNR=37							
ILAR	**Eielson Array**	**84.21**	**12**	P		P	15 07 20.2	-0.1
	0.2nm,0.6s,baz=229,slow=5.5,SNR=4.4							

*JMA **25** 14:55:44.6±0.2, 39°.75N×143°.61E, h6km, M4.1*
*ISCJB **25** 14:55:45.3±0.5, 39°.62N±0°.05×143°.61E±0°.06, h11km, mb3.8/16, MS3.4/5, Error ellipse: s-maj=8.1km s-min=5.8km az=155.7*
*IDC **25** 14:55:51.5±2.6, 39°.66N×143°.42E, h40km±22km, mb3.6/16, mb1 3.8/21, mb1mx3.7/45, mbtmp3.9/21, ML3.7/4, MS3.3/11, Ms1 3.4/11, ms1mx3.1/42, Error ellipse: s-maj=21.5km s-min=14.7km az=108.0*

ISC 25 14:55:47.6±0.8, 39°.66N±0°.07×143°.49E±0°.07, h11km, n42, σ1§02/38, mb4.0/16, MS3.5/5, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op		ISC	h m s	ISC
JTH	**Tanohata**	**1.29**	**283**	P		**Pn**	**14 56 09.9**	**-1.6**
JTH				S		**Sb**	**14 56 28.2**	**-0.1**
MIYJ	**Miyakonagasawa**	**1.29**	**267**	P		**Pn**	**14 56 10.5**	**-1.1**
MIYJ				S		**Sn**	**14 56 29.1**	**+0.2**
OFUJ	**Ofunato**	**1.53**	**248**	P		**Pn**	**14 56 14.0**	**-0.8**
JANG	**Nango**	**1.68**	**296**	P		**Pn**	**14 56 15.0**	**-1.9**
JKZ	**Kuzumaki**	**1.70**	**282**	P		**Pn**	**14 56 16.6**	**-0.6**
JOM	**Ohasama**	**1.77**	**265**	P		**Pn**	**14 56 17.0**	**-0.3**
JMK	**Ichinoseki**	**1.90**	**249**	P		**Pn**	**14 56 19.6**	**-0.3**
JIO	**Ouri**	**2.06**	**335**	P		**Pn**	**14 56 21.5**	**-0.5**
JTM	**Tenmabayashi**	**2.17**	**302**	P		**Pn**	**14 56 22.8**	**-0.9**
JRG	**Rokugo**	**2.23**	**264**	P		**Pn**	**14 56 24.7**	**+0.3**
JAH	**Hinai**	**2.26**	**285**	P		**Pn**	**14 56 24.6**	**-0.3**
ASAJ	**Asahikawa**	**4.51**	**352**	Pn		**Pn**	**14 56 56.5**	**+0.7**
	2.3nm,0.3s,baz=202,slow=14,SNR=8.7							
ASAJ				LR		LR	14 58 17.7	
	comp=Z,87nm,20.1s,baz=167,slow=32							
MJAR	**Matsushiro Arr**	**5.20**	**235**	Pn		**Pn**	**14 57 06.4**	**+1.1**
	2.7nm,0.3s,baz=41,slow=12,SNR=13							
MJAR				LR		LR	14 59 19.1	
	comp=Z,281nm,18.6s,baz=45,slow=40							
MAT	**Matsushiro**	**5.20**	**235**	P		**Pn**	**14 57 06.7**	**+1.4**
MAT				*e*S		Sb	14 58 27.1	+6.1
JHJ	**Hachijo jima 2**	**7.18**	**206**	Pn		**Pn**	**14 57 31.8**	**-0.6**
	7.6nm,0.3s,baz=248,slow=19,SNR=2.7							
JHJ				Sn		Sn	14 58 47.8	-6.1
	8.2nm,0.3s,baz=92,slow=23,SNR=3.9							
JHJ				LR		LR	15 00 38.9	
	comp=Z,197nm,18.3s,baz=90,slow=40							
USRK	**Ussuriysk Ar.**	**9.70**	**302**	Pn		**Pn**	**14 58 09.4**	**+2.4**
	0.3nm,0.3s,baz=104,slow=15,SNR=7.7							
USRK				LR		LR	15 01 39.9	
	comp=Z,125nm,19.8s,baz=101,slow=36							
JNU	**Nakatsue**	**12.07**	**241**	LR		LR	15 03 36.8	
	comp=Z,270nm,18.4s,baz=72,slow=39							
KSRS	**Korea Array**	**12.39**	**265**	Pn		**Pn**	**14 58 45.5**	**+1.8**
	0.3nm,0.3s,baz=77,slow=13,SNR=4.0							
KSRS				LR		LR	15 03 10.9	
	comp=Z,206nm,18.1s,baz=63,slow=36							
KLR	**Kul'dur**	**12.71**	**323**	Pn		Pn	14 58 53.3	+5.1
	0.1nm,0.3s,baz=118,slow=14,SNR=2.3							
MA2	**Magadan**	**20.46**	**11**	P		**P**	**15 00 24.7**	**-0.2**
	4.0nm,0.8s,baz=180,slow=18,SNR=4.1							
SEY	**Seymchan**	**23.92**	**10**	P		**P**	**15 01 00.9**	**-0.2**
	3.8nm,0.8s,baz=198,slow=9.1,SNR=7.3							
YAK	**Yakutsk**	**23.94**	**344**	P		**P**	**15 01 03.7**	**+2.4**
	12nm,0.4s,baz=140,slow=1.8,SNR=6.1							
GUMO	**Guam**	**25.99**	**177**	LR		LR	15 10 28.6	
	comp=Z,34nm,21.6s,baz=18,slow=34							
SONM	**Songino Array**	**27.80**	**299**	P		**P**	**15 01 36.3**	**-0.4**
	1.0nm,0.4s,baz=69,slow=8.1,SNR=4.5							
ZALV	**Zalesovo Beam**	**41.41**	**310**	P		**P**	**15 03 33.1**	**-0.7**
	1.9nm,0.4s,baz=95,slow=8.8,SNR=7.6							
NRIK	**Noril'sk**	**41.61**	**334**	LR		LR	15 22 34.4	
	comp=Z,66nm,18.3s,baz=359,slow=39							
CMAR	**Chiang Mai Arr**	**43.76**	**254**	P		**P**	**15 03 52.8**	**-0.4**
	0.3nm,0.6s,baz=46,slow=7.8,SNR=3.0							
CMAR				LR		LR	15 24 15.9	
	comp=Z,45nm,18.2s,baz=152,slow=39							
MKAR	**Makanchi Array**	**44.16**	**300**	P		**P**	**15 03 55.8**	**-0.5**
	2.0nm,0.9s,baz=76,slow=10,SNR=9.8							
KURBB	**Kurchatov Arra**	**45.73**	**306**	P		**P**	**15 04 07.3**	**-1.2**
	3.6nm,1.0s,baz=80,slow=8.4,SNR=18							
ILAR	**Eielson Array**	**46.41**	**34**	P		**P**	**15 04 13.9**	**+0.2**
	0.6nm,0.9s,baz=274,slow=6.1,SNR=4.7							
WRA	**Warramunga Arr**	**59.90**	**190**	P		**P**	**15 05 53.0**	**-0.5**
	1.1nm,0.8s,baz=8.3,slow=5.8,SNR=7.3							
YKA	**Yellowknife Ar**	**60.72**	**31**	P		**P**	**15 05 59.3**	**+0.6**
	0.3nm,0.9s,baz=293,slow=6.1,SNR=3.5							
ASAR	**Alice Springs**	**63.63**	**190**	P		**P**	**15 06 18.6**	**+0.1**
	0.4nm,0.6s,baz=13,slow=5.5,SNR=4.2							
FINES	**FINESS Array B**	**67.25**	**332**	P		**P**	**15 06 41.1**	**-0.5**
	1.3nm,0.7s,baz=33,slow=7.7,SNR=5.1							
KBZ	**Khabaz**	**70.43**	**311**	P		**P**	**15 07 01.9**	**+0.2**
	2.4nm,0.9s,baz=20,slow=4.1,SNR=5.8							
NB2	**NORSAR Subarra**	**72.39**	**338**	P		**P**	**15 07 12.7**	**-0.6**
	comp=Z,2.4nm,1.0s,baz=41,slow=6.2							
NOA	**NORSAR Array B**	**72.39**	**338**	P		**P**	**15 07 12.9**	**-0.5**
	comp=Z,1.7nm,0.9s,baz=44,slow=5.5,SNR=3.9							
NOA				LR		LR	15 42 14.0	
	comp=Z,22nm,19.3s,baz=205,slow=38							
BRTR	**Keskin Array B**	**78.32**	**312**	P		**P**	**15 07 46.4**	**-1.6**
	comp=Z,0.4nm,0.7s,baz=49,slow=5.6,SNR=3.8							

DPC	**Dobruska-Polom**	**79.09**	**329**	*e*P		**P**	**15 07 52.9**	**+1.0**
KHC	**Kasperske Hory**	**81.15**	**329**	*e*P		P	15 07 55.3	-7.7
KHC				*ex*		x	15 08 03.3	
GERES	**GERESS Array B**	**81.33**	**329**	P		**P**	**15 08 03.8**	**-0.2**
	comp=Z,0.2nm,0.4s,baz=31,slow=5.9,SNR=3.4							
PPT	**Papeete**	**84.38**	**118**	LR		LR	15 40 24.5	
	comp=Z,41nm,19.6s,baz=340,slow=32							

*ISCJB **25** 14:57:36.3±0.6, 44°.72N±0°.03×79°.14E±0°.04, h5km±5km, Error ellipse: s-maj=4.5km s-min=4.1km az=32.7*
*SOME **25** 14:57:36.6, 44°.70N×79°.08E, h15km*
*NNC **25** 14:57:36.4±0.7, 44°.72N×79°.03E, h14km±7km, mb2.8, mpv2.3, Error ellipse: s-maj=8.6km s-min=2.8km az=108.0*

ISC 25 14:57:36.4±1.1, 44°.69N±0°.03×79°.09E±0°.03, h9km±11km, n22, σ0§78/41, 8C-11D, Eastern Kazakhstan

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op		ISC	h m s	ISC
TDK	**Taldyqorghan**	**0.58**	**304**	*e*P		**Pg**	**14 57 48.0**	**+0.4**
	9.6nm,0.1s							
TDK				*e*S		**Sb**	**14 57 56.2**	**-0.9**
	37nm,0.2s							
DJR	**Jarkent**	**0.62**	**125**	⇓*i*P		**Pg**	**14 57 48.2**	**-0.2**
	30nm,0.5s							
DJR				⇓*i*S		**Sg**	**14 57 56.3**	**-0.2**
	100nm,0.6s							
KAPS	**Kapalarasan**	**0.63**	**18**	⇓*i*P		**Pg**	**14 57 48.2**	**-0.4**
	10.0nm,0.1s							
KAPS				⇓*i*S		**Sg**	**14 57 56.5**	**-0.4**
	35nm,0.2s							
MNBS	**Baschi**	**0.78**	**219**	*e*P		**Pb**	**14 57 52.3**	**+0.1**
	9.8nm,1.1s							
MNBS				*e*S		**Sb**	**14 58 03.6**	**+0.6**
	59nm,0.4s							
ARXS	**Arharly**	**1.02**	**243**	*e*P		**Pb**	**14 57 56.0**	**-0.2**
	4.0nm,0.3s							
ARXS				*e*S		**Sg**	**14 58 09.8**	**+0.6**
	100nm,0.2s							
KPKS	**Kokpek**	**1.25**	**193**	*e*P		**Pn**	**14 58 00.0**	**-0.2**
	20nm,0.1s							
KPKS				*e*S		**Sg**	**14 58 17.3**	**+0.5**
	80nm,0.9s							
KURS	**Kuram**	**1.37**	**209**	⇑*i*P		**Pb**	**14 58 02.4**	**+0.2**
	3.9nm,0.2s							
KURS				⇓*i*S		**Sg**	**14 58 21.1**	**+0.7**
	9.0nm,0.4s							
PDGK	**Podgornoye**	**1.39**	**168**	⇓P		**Pb**	**14 58 02.1**	**-0.4**
	1.3nm,0.4s							
PDGK				⇑S		**Sb**	**14 58 20.9**	**+0.6**
	17nm,0.3s							
KTMS	**Ketmen**	**1.54**	**143**	*e*P		**Pb**	**14 58 04.5**	**-0.7**
	3.4nm,0.3s							
KTMS				*e*S		**Sb**	**14 58 24.5**	**-0.4**
	58nm,0.1s							
UZB	**Uzynbulak**	**1.54**	**182**	⇑*i*P		**Pb**	**14 58 04.9**	**-0.3**
	5.8nm,0.2s							
UZB				⇓*i*S		**Sb**	**14 58 25.6**	**+0.8**
	19nm,0.3s							
ZHN	**Zhinishke**	**1.59**	**197**	*e*P		**Pb**	**14 58 05.6**	**-0.4**
	7.0nm,0.1s							
ZHN				*e*S		**Sb**	**14 58 25.6**	**-0.7**
	58nm,0.2s							
SHLS	**Shalkode**	**1.63**	**159**	⇑*i*P		**Pb**	**14 58 06.6**	**-0.2**
	5.7nm,0.2s							
SHLS				⇓*i*S		**Sg**	**14 58 28.7**	**-0.2**
	52nm,0.5s							
CHKK	**Chushkaly**	**1.71**	**242**	*e*P		**Pb**	**14 58 07.3**	**-0.6**
	2.9nm,0.2s							
CHKK				*e*S		**Sb**	**14 58 30.3**	**+0.8**
	20nm,0.3s							
KTBS	**Karatobe**	**1.98**	**241**	*e*P		**Pb**	**14 58 11.8**	**-0.9**
KTBS				*e*S		**Sb**	**14 58 37.0**	**-0.5**
KOTS	**Kotyrbulak**	**2.03**	**225**	*e*P		**Pb**	**14 58 13.0**	**-0.7**
KOTS				*e*S		**Sb**	**14 58 38.9**	**-0.2**
MDOK	**Medeo**	**2.12**	**225**	*e*P		**Pb**	**14 58 14.4**	**-0.7**
	4.5nm,0.3s							
MDOK				*e*S		**Sb**	**14 58 41.6**	**+0.1**
	9.1nm,0.3s							
KUU	**Kurty**	**2.13**	**249**	⇓*i*P		**Pb**	**14 58 13.8**	**-1.4**
	2.9nm,0.3s							
KUU				⇓*i*S		**Sb**	**14 58 39.8**	**-1.8**
	15nm,0.3s							
TNSS	**Tian-Shan**	**2.26**	**224**	*e*P		**Pb**	**14 58 17.2**	**-0.4**
	1.7nm,0.1s							
TNSS				*e*S		**Sb**	**14 58 47.4**	**+1.6**
	4.3nm,0.3s							
DGS	**Degeres**	**2.79**	**240**	*e*P		**Pb**	**14 58 26.6**	**0.0**
	0.8nm,0.7s							
DGS				*e*S		**Sb**	**14 59 02.5**	**+1.6**
	9.3nm,0.4s							
MK31	**Makanchi Array**	**3.08**	**46**	Pg		**Pb**	**14 58 32.9**	**+1.5**
	0.3nm,0.4s,baz=233,slow=16,SNR=7.2							
MK31				⇑Sn		**Sn**	**14 59 02.2**	**0.0**
	0.6nm,0.3s,baz=222,slow=24,SNR=6.6							
MK31				⇓Lg		Lg	14 59 13.3	
	0.5nm,0.5s,baz=221,slow=27,SNR=5.4							
TKM2	**Tokmak 2**	**3.08**	**236**	⇑Pg		**Pb**	**14 58 32.7**	**+1.2**
	0.7nm,0.4s							
TKM2				⇑Lg		Lg	14 59 13.1	
	1.1nm,0.3s							
AAK	**Ala-Archa**	**3.91**	**240**	⇑Lg		Lg	14 59 39.5	
	3.2nm,1.0s							

*ISCJB **25** 15:08:16.6±1.0, 35°.69N±0°.05×141°.20E±0°.09, h37km±8km, mb3.6/7, Error ellipse: s-maj=12.4km s-min=7.6km az=170.7*
*JMA **25** 15:08:18.8±0.1, 35°.74N×141°.01E, h35km±1km, M3.1*
JMA Felt I J1.
*IDC **25** 15:08:19.1±2.5, 35°.73N×141°.21E, h42km±21km, mb3.5/7, mb1 3.7/11, mb1mx3.4/50, mbtmp3.8/11, ML3.5/4, Error ellipse: s-maj=41.1km s-min=16.1km az=76.0*

ISC 25 15:08:16.4±1.6, 35°.68N±0°.05×141°.21E±0°.08, h26km±10km, n24, σ1§44/25, mb3.8/7, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op		ISC	h m s	ISC
CHOJ	**Chosi**	**0.29**	**275**	P		**Pn**	**15 08 24.8**	**-0.2**
CHOJ				*e*S		**Sb**	**15 08 29.2**	**+1.1**
JCN	**Nagara**	**0.86**	**253**	P		**Pn**	**15 08 33.6**	**+0.7**
JCN				*e*S		**Sb**	**15 08 42.8**	**-1.1**
JYT	**Yasato**	**0.99**	**304**	P		**Pn**	**15 08 33.6**	**-1.1**
JYT				*e*S		**Sb**	**15 08 44.8**	**-2.8**
BSO3	**Boso 3**	**1.04**	**214**	P		**Pb**	**15 08 37.1**	**+1.4**
JHO	**Hitachi**	**1.07**	**331**	P		**Pn**	**15 08 35.6**	**-0.1**
MJAR	**Matsushiro Arr**	**2.58**	**290**	P		**Pn**	**15 08 57.3**	**+0.7**
	6.3nm,0.3s,baz=93,slow=9.0,SNR=31							
MAT	**Matsushiro**	**2.58**	**290**	P		**Pn**	**15 08 57.2**	**+0.6**
MAT				*e*S		**Sn**	**15 09 27.7**	**+0.6**
JHJ	**Hachijo jima 2**	**2.81**	**205**	P		**Pb**	**15 09 03.8**	**-2.2**
	11nm,0.3s,baz=131,slow=23,SNR=7.0							
JHJ				S		**Sn**	**15 09 32.6**	**-0.2**
	30nm,0.3s,baz=246,slow=20,SNR=7.0							
ASAJ	**Asahikawa**	**8.50**	**7**	P		**Pn**	**15 10 18.6**	**+0.8**
	0.4nm,0.3s,baz=290,slow=10.0,SNR=5.9							
ASAJ				S		**Sn**	**15 11 51.0**	**-1.7**
	0.2nm,0.3s,baz=320,slow=21,SNR=1.2							
JCJ	**Chichijima**	**8.60**	**174**	P		**Pn**	**15 10 20.4**	**+1.2**
	2.9nm,0.3s,baz=301,slow=11,SNR=3.8							
JCJ				S		**Sn**	**15 11 51.5**	**-3.8**
	2.5nm,0.3s,baz=281,slow=23,SNR=1.4							
H11N2	**WAKE ISLAND Hy**	**27.62**	**118**	T		T	15 43 09.4	
	baz=311,slow=75,SNR=42							
H11N1	**WAKE ISLAND Hy**	**27.63**	**118**	T		T	15 43 12.2	
	baz=311,slow=75,SNR=30							
H11N3	**WAKE ISLAND Hy**	**27.64**	**118**	T		T	15 43 07.6	
	baz=311,slow=75,SNR=36							
H11S3	**WAKE ISLAND Hy**	**28.29**	**121**	T		T	15 43 55.7	
	baz=312,slow=75,SNR=41							
H11S1	**WAKE ISLAND Hy**	**28.29**	**120**	T		T	15 43 57.0	
	baz=312,slow=75,SNR=43							
H11S2	**WAKE ISLAND Hy**	**28.30**	**121**	T		T	15 44 01.2	
	baz=312,slow=75,SNR=29							
ZALV	**Zalesovo Beam**	**42.72**	**313**	P		**P**	**15 16 11.1**	**0.0**
	2.0nm,0.9s,baz=92,slow=6.0,SNR=5.9							
MKAR	**Makanchi Array**	**44.71**	**303**	P		**P**	**15 16 27.4**	**+0.1**
	1.2nm,0.7s,baz=91,slow=9.2,SNR=14							
WRA	**Warramunga Arr**	**55.70**	**188**	P		**P**	**15 17 50.9**	**+0.2**
	0.2nm,0.4s,baz=5.7,slow=8.1,SNR=5.8							
ASAR	**Alice Springs**	**59.42**	**188**	P		**P**	**15 18 18.0**	**+1.1**
	0.2nm,0.8s,baz=20,slow=11,SNR=3.7							
FINES	**FINESS Array B**	**69.94**	**332**	P		**P**	**15 19 25.6**	**+0.6**
	0.7nm,0.7s,baz=252,slow=1.2,SNR=3.9							

KBZ	**Khabaz**	**71.66**	**311**	P		**P**	**15 19 36.4**	**+0.6**
	0.5nm,0.4s,baz=4.9,slow=4.0,SNR=4.7							
NB2	**NORSAR Subarra**	**75.37**	**337**	P		**P**	**15 19 58.2**	**+0.9**
	comp=Z,0.5nm,0.5s,baz=37,slow=6.2							
NOA	**NORSAR Array B**	**75.37**	**337**	P		**P**	**15 19 58.3**	**+0.9**
	comp=Z,0.8nm,0.8s,baz=39,slow=5.8,SNR=4.6							

*CSEM **25** 15:12:41.8±0.3, 39°.24N×37°.44E, h15km, MD2.9, Error ellipse: s-maj=5.9km s-min=5.6km az=30.0*
*ISK **25** 15:12:41.6, 39°.22N×37°.44E, h18km, MD2.5*
*ISCJB **25** 15:12:42.4±0.7, 39°.25N±0°.04×37°.41E±0°.06, h21km±6km, Error ellipse: s-maj=7.8km s-min=7.1km az=34.0*
*DDA **25** 15:12:43.2, 39°.23N×37°.60E, h7km, Md2.9*

ISC 25 15:12:42.6±0.9, 39°.23N±0°.03×37°.47E±0°.04, h18km±5km, n18, σ1§15/30, Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op		ISC	h m s	ISC
CUKAN	**kangal_SIVAS**	**0.08**	**356**	*i* P		**Pg**	**15 12 45.3**	**-1.0**
CUKAN				*i* S		**Sg**	**15 12 50.1**	**+1.3**
CUKAN	**kangal_SIVAS**	**0.08**	**356**	P		**Pg**	**15 12 45.3**	**-1.0**
CUKAN				S		**Sg**	**15 12 50.1**	**+1.3**
DARE	**Darende-Malaty**	**0.66**	**179**	*e*PG		**Pg**	**15 12 54.8**	**-0.9**
DARE				*e*SG		**Sg**	**15 13 04.3**	**-0.3**
DARE	**Darende-Malaty**	**0.66**	**179**	*e*Pg		**Pg**	**15 12 54.8**	**-0.9**
DARE				*e*Sg		**Sg**	**15 13 04.3**	**-0.3**
SVSK	**Karacayir**	**0.78**	**332**	*e*PG		**Pg**	**15 12 57.4**	**-0.4**
SVSK	**Karacayir**	**0.78**	**332**	*e*Pg		**Pg**	**15 12 57.4**	**-0.4**
KEMA	**Kemaliye**	**0.79**	**87**	*i* P		**Pg**	**15 12 56.8**	**-1.3**
KEMA				*i* S		**Sb**	**15 13 07.8**	**-0.6**
KEMA	**Kemaliye**	**0.79**	**87**	P		**Pg**	**15 12 56.8**	**-1.3**
KEMA				S		**Sb**	**15 13 07.8**	**-0.6**
ILIC	**ilic-Erzincan**	**0.88**	**75**	*e*PG		**Pb**	**15 12 59.2**	**-0.2**
ILIC				*e*SG		**Sn**	**15 13 12.8**	**+0.2**
ILIC	**ilic-Erzincan**	**0.88**	**75**	*e*Pg		**Pb**	**15 12 59.2**	**-0.2**
ILIC				*e*Sg		**Sn**	**15 13 12.8**	**+0.2**
AKCD	**Akcadag**	**1.00**	**159**	*i* P		**Pg**	**15 13 00.8**	**-1.3**
AKCD				*i* S		**Sb**	**15 13 16.4**	**+1.9**
AKCD	**Akcadag**	**1.00**	**159**	P		**Pg**	**15 13 00.8**	**-1.3**
AKCD				S		**Sb**	**15 13 16.4**	**+1.9**
BNN	**Bunyan**	**1.32**	**254**	*e*PN		**Pn**	**15 13 05.3**	**-1.1**
BNN	**Bunyan**	**1.32**	**254**	*e*Pn		**Pn**	**15 13 05.3**	**-1.1**
ELZG	**Elazig**	**1.39**	**121**	*i* P		**Pn**	**15 13 07.2**	**-0.1**
ELZG				*i* S		**Sn**	**15 13 27.5**	**+2.1**
ELZG	**Elazig**	**1.39**	**121**	P		**Pn**	**15 13 07.2**	**-0.1**
ELZG				S		**Sn**	**15 13 27.5**	**+2.1**
PTK	**Pertek**	**1.53**	**102**	*e*PN		**Pn**	**15 13 09.3**	**0.0**
PTK	**Pertek**	**1.53**	**102**	*e*Pn		**Pn**	**15 13 09.3**	**0.0**

*NIED **25** 15:13:00.36°.90N×140°.60E, h5km, Mw4.0 Best double couple: M0 1.03000×10^15 NP1:φs246.00000°, δ44.00000°, λ-91.00000°. NP2:φs67.00000°, δ46.00000°, λ-89.00000°.*
*IDC **25** 15:13:17.9±0.5, 36°.96N×140°.62E, h0km, mb4.1/23, mb1 4.2/25, mb1mx4.1/45, mbtmp4.1/25, ML3.9/2, MS2.9/6, Ms1 2.9/6, ms1mx2.8/39, Error ellipse: s-maj=15.6km s-min=11.9km az=107.0*
*ISCJB **25** 15:13:18.7±0.5, 36°.93N±0°.02×140°.79E±0°.04, h18km±3km, mb4.1/35, MS3.5/5, Error ellipse: s-maj=6.0km s-min=3.4km az=25.8*
*JMA **25** 15:13:19.5, 36°.95N×140°.63E, h5km±2km, M4.3 Broadband fault plane solution: P waves. NP1: φs254.00000°, δ55.00000°, λ-107.00000°. NP2: φs102.00000°, δ39.00000°, λ-68.00000°

	comp=Z,3.8nm,0.4s,baz=108,slow=1.8,SNR=4.4							
YAK	**Yakutsk**	**26.04**	**348**	*e*P		**P**	**15 18 52.0**	**-0.2**
YAK				pmax		pmax		
	comp=Z,9.0nm,1.0s							
ULN	**Ulaanbaatar**	**26.92**	**305**	*ce*P		**P**	**15 19 01.5**	**+0.9**
ULN				pmax		pmax		
	comp=Z,6.0nm,2.5s							
SEY	**Seymchan**	**27.00**	**12**	P		**P**	**15 19 01.6**	**+0.7**
	comp=Z,4.3nm,0.9s,baz=192,slow=6.8,SNR=8.3							
SEY	**Seymchan**	**27.00**	**12**	*ce*P		**P**	**15 19 01.8**	**+0.9**
SONM	**Songino Array**	**27.35**	**304**	P		**P**	**15 19 04.0**	**-0.4**
	comp=Z,2.1nm,0.7s,baz=96,slow=11,SNR=4.3							
H11N2	**WAKE ISLAND Hy**	**28.61**	**120**	T		T	15 49 03.2	
	baz=313,slow=75,SNR=139							
H11N1	**WAKE ISLAND Hy**	**28.62**	**120**	T		T	15 49 03.8	
	baz=313,slow=75,SNR=159							
H11N3	**WAKE ISLAND Hy**	**28.63**	**120**	T		T	15 49 04.5	
	baz=313,slow=75,SNR=194							
H11S1	**WAKE ISLAND Hy**	**29.31**	**122**	T		T	15 49 55.3	
	baz=314,slow=76,SNR=182							
H11S3	**WAKE ISLAND Hy**	**29.31**	**122**	T		T	15 49 55.5	
	baz=314,slow=76,SNR=93							
H11S2	**WAKE ISLAND Hy**	**29.32**	**122**	T		T	15 49 57.5	
	baz=314,slow=76,SNR=146							
CD2	**Chengdu**	**31.08**	**270**	P		**P**	**15 19 36.5**	**-1.1**
CD2				pmax		pmax		
	comp=Z,1.0nm,0.5s							
BILL	**Bilibino**	**34.29**	**17**	⇓*e*P		**P**	**15 20 05.4**	**+0.3**
BILL				*e*			15 20 09.4	
BILL				pmax		pmax		
	comp=Z,4.0nm,1.0s							
BILL				MLR		MLR		
	comp=Z,58nm,19.0s							
BILL	**Bilibino**	**34.29**	**17**	*e*P		**P**	**15 20 05.5**	**+0.3**
	comp=Z,3.0nm,0.9s							
TIXI	**Tiksi**	**35.32**	**354**	LR		LR	15 35 12.9	
	comp=Z,34nm,18.6s,baz=204,slow=37							
TIXI	**Tiksi**	**35.32**	**354**	*ce*P		**P**	**15 20 13.1**	**-0.9**
TIXI				pmax		pmax		
	comp=Z,4.0nm,1.7s							
TIXI	**Tiksi**	**35.32**	**354**	*e*P		**P**	**15 20 13.3**	**-0.7**
	comp=Z,2.6nm,1.1s							
WMQ	**Urumqi**	**40.36**	**297**	P		**P**	**15 20 58.3**	**+1.3**
WMQ				pP		sP	15 21 08.0	+5.7
WMQ				sP		pP	15 21 13.3	+13
WMQ				pmax		pmax		
	comp=Z,6.0nm,0.6s							
WMQ				pmax		pmax		
	comp=Z,45nm,4.0s							
WMQ				LR		LR		
	comp=N,26nm,17.0s							
WMQ				LR		LR		
	comp=E,37nm,19.8s							
WMQ				LR		LR		
	comp=Z,20nm,14.2s							
ZAA0	**Zalesovo Array**	**41.54**	**312**	*e*P		**P**	**15 21 05.4**	**-1.1**
ZALV	**Zalesovo Beam**	**41.54**	**312**	P		**P**	**15 21 05.8**	**-0.7**
	comp=Z,1.2nm,0.5s,baz=97,slow=6.5,SNR=8.0							
ZALV				PcP		**PcP**	**15 23 02.5**	**-1.2**
	comp=Z,1.0nm,0.5s,baz=115,slow=3.7,SNR=4.7							
MK01	**Makanchi Array**	**43.67**	**302**	*e*P		**P**	**15 21 23.9**	**-0.1**
MK31	**Makanchi Array**	**43.67**	**302**	*e*P		**P**	**15 21 24.0**	**0.0**
MK31	**Makanchi Array**	**43.67**	**302**	*e*P		**P**	**15 21 24.0**	**0.0**
MKAR	**Makanchi Array**	**43.67**	**302**	P		**P**	**15 21 24.3**	**+0.4**
	comp=Z,0.7nm,0.6s,baz=89,slow=9.7,SNR=12							
MKAR	**Makanchi Array**	**43.67**	**302**	*i* P		**P**	**15 21 24.2**	**+0.2**
MKAR				pmax		pmax		
	comp=Z,1.0nm,0.6s							
MKAR	**Makanchi Array**	**43.67**	**302**	*e*P		**P**	**15 21 24.0**	**0.0**
KURK	**Kurchatov**	**45.53**	**308**	*e*P		**P**	**15 21 36.0**	**-2.7**
KURK				pmax		pmax		
	comp=Z,6.0nm,1.1s							
KURK	**Kurchatov**	**45.53**	**308**	*e*P		**P**	**15 21 36.0**	**-2.7**
	comp=Z,5.6nm,1.1s							
ILAR	**Eielson Array**	**49.89**	**32**	P		**P**	**15 22 13.4**	**+1.1**
	comp=Z,1.1nm,0.7s,baz=267,slow=6.0,SNR=16							
ILB	**Eielson Array**	**49.89**	**32**	*e*P		**P**	**15 22 13.0**	**+0.7**
BRVK	**Borovoye**	**50.26**	**312**	*ce*P		**P**	**15 22 14.6**	**-0.7**
BRVK				pmax		pmax		
	comp=Z,3.0nm,1.0s							
ZRNK	**Zerenda**	**51.03**	**312**	*e*P		**P**	**15 22 20.8**	**-0.4**
ZRNK				pmax		pmax		
	comp=Z,3.0nm,0.8s							
ZRNK	**Zerenda**	**51.03**	**312**	*e*P		**P**	**15 22 20.8**	**-0.4**
	comp=Z,3.0nm,0.8s							
INK	**Inuvik**	**54.74**	**27**	P		**P**	**15 22 49.3**	**+1.1**
	comp=Z,1.3nm,0.8s,baz=252,slow=8.5,SNR=6.3							
ARU	**Arti**	**56.04**	**318**	P		**P**	**15 22 56.9**	**-0.9**
WB2	**Warramunga Arr**	**56.89**	**187**	*e*P		**P**	**15 23 04.4**	**+0.2**
	comp=Z,6.6nm,0.8s							
WRA	**Warramunga Ar**	**56.89**	**187**	P		**P**	**15 23 04.3**	**+0.1**
	comp=Z,4.6nm,0.7s,baz=4.2,slow=7.3,SNR=60							
AS01	**Alice Springs**	**60.61**	**187**	*e*P		**P**	**15 23 30.4**	**+0.4**
AS31	**Alice Springs**	**60.61**	**187**	*e*P		**P**	**15 23 30.2**	**+0.1**
	comp=Z,0.8nm,0.6s							
ASAR	**Alice Springs**	**60.61**	**187**	P		**P**	**15 23 30.6**	**+0.5**
	comp=Z,2.0nm,0.7s,baz=18,slow=6.3,SNR=31							
GEYT	**Alibeck**	**63.36**	**299**	P		**P**	**15 23 49.2**	**+0.6**
	comp=Z,1.0nm,0.6s,baz=270,slow=5.9,SNR=4.4							
ARCES	**ARCESS Array B**	**63.88**	**339**	P		**P**	**15 23 51.9**	**+0.4**
	comp=Z,1.8nm,0.9s,baz=62,slow=8.4,SNR=4.4							
YKA	**Yellowknife Ar**	**64.19**	**30**	P		**P**	**15 23 54.2**	**+0.6**
	comp=Z,0.7nm,0.7s,baz=302,slow=6.6,SNR=14							
STKA	**Stephens Creek**	**68.46**	**179**	P		**P**	**15 24 21.7**	**+0.5**
	comp=Z,1.5nm,0.8s,baz=356,slow=6.9,SNR=6.0							
FIA1	**FINESS Array S**	**68.62**	**332**	*e*P		**P**	**15 24 21.7**	**-0.3**
FINES	**FINESS Array B**	**68.62**	**332**	P		**P**	**15 24 21.9**	**-0.1**
	comp=Z,2.7nm,0.8s,baz=42,slow=8.8,SNR=11							
FINES	**FINESS Array B**	**68.62**	**332**	*i* P		**P**	**15 24 22.2**	**+0.2**
FINES				pmax		pmax		
	comp=Z,3.0nm,0.8s							
KBZ	**Khabaz**	**70.52**	**310**	P		**P**	**15 24 34.1**	**+0.1**
	comp=Z,0.7nm,0.5s,baz=153,slow=1.1,SNR=4.6							
AKASG	**Malin Array Be**	**74.01**	**322**	P		**P**	**15 24 54.0**	**-0.8**
	comp=Z,0.2nm,0.3s,baz=47,slow=6.3,SNR=6.7							
AKASG	**Malin Array Be**	**74.01**	**322**	*i* P		**P**	**15 24 53.7**	**-1.0**
NB2	**NORSAR Subarra**	**74.05**	**337**	P		**P**	**15 24 54.7**	**-0.2**
	comp=Z,1.1nm,0.7s,baz=40,slow=6.2							
NOA	**NORSAR Array B**	**74.05**	**337**	P		**P**	**15 24 54.6**	**-0.2**
	comp=Z,1.6nm,0.9s,baz=39,slow=5.9,SNR=5.0							
EGMT	**Eagleton**	**74.73**	**41**	*e*P		**P**	**15 25 00.5**	**+1.3**
	comp=Z,4.0nm,0.8s							
NVAR	**Mina Array Bea**	**75.52**	**53**	P		**P**	**15 25 04.2**	**+0.2**
	comp=Z,1.1nm,0.8s,baz=291,slow=7.2,SNR=5.8							
TPNV	**Topopah Spring**	**77.71**	**53**	*e*P		**P**	**15 25 17.1**	**+0.7**
TPNV	**Topopah Spring**	**77.71**	**53**	*e*P		**P**	**15 25 17.1**	**+0.7**
PDAR	**Pinedale Array**	**78.16**	**45**	P		**P**	**15 25 19.3**	**+0.5**
	comp=Z,0.6nm,0.7s,baz=294,slow=4.7,SNR=5.7							
BRTR	**Keskin Array B**	**78.47**	**311**	P		**P**	**15 25 21.1**	**+0.6**
	comp=Z,0.6nm,0.6s,baz=123,slow=4.6,SNR=3.8							
CLL	**Collm**	**80.89**	**330**	*e*P		**P**	**15 25 32.0**	**-1.2**
CLL				*e*			15 25 42.0	
CLL	**Collm**	**80.89**	**330**	*e*P		**P**	**15 25 32.0**	**-1.2**
CLL				*e*			15 25 42.0	
GERES	**GERESS Array B**	**82.48**	**328**	P		**P**	**15 25 41.9**	**+0.1**
	comp=Z,0.5nm,0.5s,baz=35,slow=5.8,SNR=7.0							
TX31	**Lajitas Ar. Si**	**90.65**	**52**	*e*P		**P**	**15 26 23.3**	**+1.1**
TXAR	**Lajitas Array**	**90.65**	**52**	P		**P**	**15 26 23.0**	**+0.8**
	comp=Z,0.9nm,0.7s,baz=289,slow=3.8,SNR=6.3							
LPAZ	**La Paz**	**147.25**	**59**	PKPbc		**PKPbc**	**15 33 04.8**	**+0.8**
	comp=Z,3.5nm,0.8s,baz=349,slow=5.1,SNR=15							

JMA 25 15:18:55.7, 36.84N×140.65E, h5km±1km, M2.6, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
JHO	**Hitachi**	**0.24**	**196**	P		P	Pg	15 19 00.4	+0.1
JHO				S		Sg		15 19 03.9	+0.4
ONAJ	**Iwakimizuishiy**	**0.29**	**24**	P		P	Pg	15 19 01.4	+0.1
ONAJ				S		eSg		15 19 05.8	+0.7
MAT	**Matsushiro**	**1.99**	**262**	P		P	Pn	15 19 30.7	+0.7
MAT				S		Sb		15 19 56.9	-0.5

*ISCJB **25** 15:21:28.0±1.2, 39.03N±0.03×29.85E±0.08, h3km±14km, Error ellipse: s-maj=11.0km s-min=5.5km az=170.1*
*DDA **25** 15:21:28.6, 39.02N×29.81E, h7km, Md2.7*
*CSEM **25** 15:21:28.0±0.3, 39.04N×29.68E, h2km, MD2.7, Error ellipse: s-maj=5.4km s-min=2.8km az=90.0*
*ISK **25** 15:21:28.4, 39.03N×29.77E, h5km, MD2.3*
ISC 25 15:21:28.7±1.4, **39.02N**±0.03×**29.82E**±0.06, **h11**km±11km, **n14**, σ**0.34**/26, **Turkey**

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
GDZ	**Gediz**	**0.27**	**284**	*i* P		**P**	**Pg**	**15 21 34.0**	**-0.4**
GDZ				*i* S		**Sg**		**15 21 38.7**	**+0.5**
GDZ	**Gediz**	**0.27**	**284**	P		**P**	**Pg**	**15 21 34.0**	**-0.4**
GDZ				S		**Sg**		**15 21 38.7**	**+0.5**
TVSB	**Tavsanli**	**0.51**	**327**	*e*PG		**P**	**Pg**	**15 21 38.3**	**-0.4**
TVSB				*e*SG		**Sg**		**15 21 45.5**	**0.0**
TVSB	**Tavsanli**	**0.51**	**327**	*e*Pg		**P**	**Pg**	**15 21 38.3**	**-0.4**
TVSB				*e*Sg		**Sg**		**15 21 45.5**	**0.0**
KHAL	**Karahalli**	**0.70**	**202**	*i* P		**P**	**Pg**	**15 21 42.2**	**-0.1**
KHAL				*i* S		**Sb**		**15 21 52.3**	**-0.4**
KHAL	**Karahalli**	**0.70**	**202**	P		**P**	**Pg**	**15 21 42.2**	**-0.1**
KHAL				S		**Sb**		**15 21 52.3**	**-0.4**
KHL	**Karahalli**	**0.74**	**199**	*e*PG		**P**	**Pg**	**15 21 42.9**	**-0.1**
KHL				*e*SG		**Sb**		**15 21 53.5**	**-0.2**
KHL	**Karahalli**	**0.74**	**199**	*e*Pg		**P**	**Pg**	**15 21 42.9**	**-0.1**
KHL				*e*Sg		**Sb**		**15 21 53.5**	**-0.2**
DEMI	**Demirci**	**0.86**	**272**	*i* P		**P**	**Pb**	**15 21 46.1**	**+0.3**
DEMI				*i* S		**Sb**		**15 21 57.4**	**+0.1**
DEMI	**Demirci**	**0.86**	**272**	P		**P**	**Pb**	**15 21 46.1**	**+0.3**
DEMI				S		**Sb**		**15 21 57.4**	**+0.1**
KULA	**Kula-Manisa**	**1.04**	**241**	*e*PG		**P**	**Pg**	**15 21 48.2**	**-0.6**
KULA				*e*SG		**Sb**		**15 22 02.5**	**+0.1**
KULA	**Kula-Manisa**	**1.04**	**241**	*e*Pg		**P**	**Pg**	**15 21 48.2**	**-0.6**
KULA				*e*Sg		**Sb**		**15 22 02.6**	**+0.1**
CAVI	**Cavuskoy**	**1.18**	**1**	*e*PN		**P**	**Pg**	**15 21 51.3**	**-0.1**
CAVI	**Cavuskoy**	**1.18**	**1**	*e*Pn		**P**	**Pg**	**15 21 51.3**	**-0.1**

*MOS **25** 15:22:40.1±1.5, 56.60N×121.48E, h9km, mb4.5/6, Error ellipse: s-maj=10.9km s-min=8.2km az=49.8*
*IDC **25** 15:22:41.0±0.7, 56.64N×121.38E, h0km, mb3.6/11, mb1 3.9/16, mb1mx3.7/42, mbtmp3.8/16, ML3.9/4, MS2.9/5, Ms1 2.9/5, ms1mx2.6/54, Error ellipse: s-maj=16.9km s-min=10.7km az=136.0*
*BJI **25** 15:22:41.9, 56.95N×121.00E, h5km, mb4.2/11, mB4.4/6, Ms4.1/6, Ms7 4.0/4*
*BYKL **25** 15:22:41.1±0.3, 56.62N×121.56E*
*YARS **25** 15:22:41.0±0.2, 56.60N±0.01×121.52E±0.02, h10km*
*NEIC **25** 15:22:42.3±0.4, 56.72N×121.44E, h10km, mb4.5/3, Error ellipse: s-maj=11.2km s-min=6.8km az=157.0*
ISC 25 15:22:40.6±1.2, **56.69N**±0.03×**121.49E**±0.02, **h1**km±8km, **n118**, σ**1.88**/140, **mb3.8**/18, **MS3.0**/3, **3C-9D, Southeastern Siberia**

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
KHNR	**Khani**	**0.86**	**286**	⇓*i*Pg		**P**	**Pg**	**15 22 57.8**	**+0.8**
KHNR				*e*Sg		**Sb**		**15 23 09.9**	**-0.5**
KHN	**Khani**	**0.96**	**285**	*e*P		**P**	**Pg**	**15 22 57.8**	**-1.2**
KHN				*e*S		**Sg**		**15 23 10.0**	**-1.4**
CRS	**Chara**	**1.78**	**278**	⇓*i*Pg		**P**	**Pb**	**15 23 14.0**	**-0.1**
CRS				Pmax				15 23 16.0	
	3μm,0.9s								
CRS				*e*Sg		**Sg**		**15 23 38.3**	**+0.6**
CRS				Smax				15 23 40.6	
	6μm,1.1s								
CRS	**Chara**	**1.78**	**278**	*e*P		**P**	**Pb**	**15 23 14.4**	**+0.4**
CRS	**Chara**	**1.78**	**278**	*e*P		**P**	**Pb**	**15 23 13.9**	**-0.1**
CRS				*e*S		**Sg**		**15 23 38.4**	**+0.7**
CLNS	**Chul'man**	**1.88**	**84**	⇓*i*Pg		**P**	**Pn**	**15 23 15.0**	**+1.1**
CLNS				*e*				15 23 32.5	
CLNS				*e*Sg		**Sn**		**15 23 39.3**	**+1.0**
CLNS	**Chul'man**	**1.88**	**84**	*e*P		**P**	**Pn**	**15 23 15.0**	**+1.1**
CLNS				*e*				15 23 39.3	
CLNS				pmax		pmax			
	comp=Z,360nm,0.3s								
CLNS				pmax		pmax			
	comp=N,169nm,0.3s								
CLNS				pmax		pmax			
	comp=E,177nm,0.3s								
CLNS				smax		smax			
	comp=N,1μm,0.3s								
CLNS				smax		smax			
	comp=Z,686nm,0.4s								
CLNS				smax		smax			
	comp=E,791nm,0.4s								
CLNS	**Chul'man**	**1.88**	**84**	*e*P		**Pn**		**15 23 15.1**	**+1.1**
CLNS				*e*S		**Sn**		**15 23 39.7**	**+1.4**
IENR	**Ienghra**	**1.93**	**103**	*e*Pn		**Pn**		**15 23 14.2**	**-0.4**
IENR				⇑*i*Pg		**Pb**		**15 23 15.6**	**-0.9**
IENR				*e*Sg		**Sn**		**15 23 40.0**	**+0.5**
IENR	**Ienghra**	**1.93**	**103**	*e*P		**Pn**		**15 23 14.9**	**+0.3**
IENR				*e*S		**Sn**		**15 23 40.6**	**+1.1**
TNDR	**Tynda**	**2.39**	**129**	⇓*i*Pn		**Pn**		**15 23 20.4**	**-0.5**
TNDR				*e*Pg		Pb		15 23 22.1	-2.3
TNDR				*e*Sg		**Sn**		**15 23 51.9**	**+1.1**
TNDR	**Tynda**	**2.39**	**129**	*e*P		**Pn**		**15 23 20.3**	**-0.6**
TNDR				*e*P		Pb		15 23 22.2	-2.2
TNDR				*e*S		**Sn**		**15 23 51.8**	**+1.0**
TUP	**Tupik**	**2.43**	**202**	⇓*i*Pn		Pn		15 23 10.0	-11
TUP				*e*Pg		Pb		15 23 22.9	-2.2
TUP				Pmax				15 23 26.3	
	comp=E,810nm,1.0s								
TUP				*e*Sg		**Sn**		**15 23 54.1**	**+2.2**
TUP				Smax				15 23 55.7	
	comp=E,9μm,0.6s								
TUP	**Tupik**	**2.43**	**202**	*e*P		**Pn**		**15 23 19.9**	**-1.5**
TUP				*e*S		**Sn**		**15 23 49.3**	**-2.5**
TUP				pmax		pmax			
	comp=Z,633nm,0.4s								
TUP				smax		smax			
	comp=E,10μm,0.6s								
TUP	**Tupik**	**2.43**	**202**	*e*P		**Pn**		**15 23 19.9**	**-1.5**
TUP				*e*P		Pb		15 23 22.9	-2.2
TUP				*e*S		**Sn**		**15 23 49.3**	**-2.5**
TUP				*e*S		**Sn**		**15 23 54.0**	**+2.2**
ALDR	**Aldan**	**2.86**	**46**	*e*Pn		**Pn**		**15 23 27.5**	**+0.2**
ALDR				*e*Pg		**Pb**		**15 23 31.6**	**-0.7**
ALDR				*e*				15 24 04.5	
ALDR				*e*Sg		**Sb**		**15 24 09.7**	**+1.9**
ALDR	**Aldan**	**2.86**	**46**	*e*P		**Pb**		**15 23 32.8**	**+0.5**
ALDR				*e*S		**Sb**		**15 24 10.0**	**+2.2**
NLYR	**Nelyaty**	**3.20**	**269**	*e*P		**Pn**		**15 23 32.8**	**+0.8**
NLYR				*e*				15 24 19.4	
NLYR				pmax		pmax			
	comp=Z,332nm,1.0s								
NLYR				smax		smax			
	comp=N,3μm,1.1s								
NLYR	**Nelyaty**	**3.20**	**269**	*e*P		**Pn**		**15 23 33.1**	**+1.1**
NLYR				*e*P		**Pb**		**15 23 38.4**	**+0.2**
NLYR				*e*S		**Sb**		**15 24 19.8**	**+2.1**
OLMR	**Olekminsk**	**3.73**	**352**	*e*P		**Pn**		**15 23 40.6**	**+1.3**
OLMR				*e*P		**Pb**		**15 23 50.3**	**+3.1**
OLMR				*e*S		**Sn**		**15 24 24.7**	**+0.9**
OLMR				*e*S		**Sg**		**15 24 40.1**	**-0.3**
BOD	**Bodaibo**	**4.22**	**289**	*e*Pn		**Pn**		**15 23 46.6**	**+0.7**
BOD				*e*Pg		**Pb**		**15 23 56.1**	**+0.6**
BOD				Pmax				15 23 59.6	
	comp=N,56nm,0.6s								
BOD				*e*				15 24 30.9	
BOD				*e*Sg		**Sb**		**15 24 51.0**	**+4.1**
BOD				Smax				15 24 57.7	
	comp=N,796nm,1.2s								
BOD	**Bodaibo**	**4.22**	**289**	*e*P		**Pn**		**15 23 46.7**	**+0.8**
BOD				pmax		pmax			
	comp=Z,57nm,0.6s								
SVKR	**Severomuysk**	**4.44**	**266**	*e*		**Pb**		**15 23 59.5**	**+0.2**
SVKR				*e*Pg		Pg		15 24 01.4	-4.2
SVKR				Pmax				15 24 07.8	
	comp=Z,190nm,0.5s								
SVKR				*e*Sg		**Sg**		**15 25 00.1**	**-3.0**
SVKR				Smax				15 25 11.3	
	comp=Z,2μm,0.8s								
UKT	**Uakit**	**4.56**	**258**	*i* Pn		**Pn**		**15 23 51.2**	**+0.4**
UKT				⇓*e*Pg		**Pb**		**15 24 02.0**	**+0.6**
UKT				*e*				15 24 04.1	
UKT				max				15 24 09.6	
	comp=Z,136nm,1.2s								
UKT				*e*				15 24 26.7	
UKT				*e*Sg		**Sb**		**15 25 01.6**	**+4.7**
UKT				Smax				15 25 08.8	
	comp=Z,694nm,1.0s								
UKT	**Uakit**	**4.56**	**258**	*e*P		**Pb**		**15 24 01.2**	**-0.2**
BMKR	**Bomnak**	**4.61**	**112**	*e*P		**Pn**		**15 23 50.4**	**-0.9**
BMKR				*e*P		**Pb**		**15 24 02.5**	**+0.3**
BMKR				*e*S		**Sn**		**15 24 41.0**	**-4.5**
BMKR				*e*S		**Sb**		**15 25 04.0**	**+5.8**
CGD	**Chagda**	**5.31**	**63**	*e*P		**Pn**		**15 24 01.4**	**+0.5**
CGD				*e*P		**Pb**		**15 24 16.0**	**+1.9**
CGD				*e*S		**Sn**		**15 24 59.4**	**-3.3**
CGD				*e*S		Sb		15 25 25.4	+7.1
YOA	**Uoyan**	**5.45**	**268**	*e*		**Sb**		**15 25 18.7**	**-3.6**
YOA				*e*Sg		**Sg**		**15 25 31.1**	**-4.3**
YOA				*e*				15 25 36.3	
YOA				max				15 25 37.2	
	comp=Z,3μm,1.4s								
YOA	**Uoyan**	**5.45**	**268**	*e*P		**Pb**		**15 24 19.2**	**+2.7**
VTMR	**Vitim**	**5.49**	**304**	*e*S		**Sg**		**15 25 33.8**	**-2.8**
KMO	**Kumora**	**5.79**	**266**	⇓*i*Pn		**Pn**		**15 24 08.6**	**+1.1**
KMO				*e*				15 24 16.5	
KMO				*e*Pg		**Pb**		**15 24 24.9**	**+2.7**
KMO				Pmax				15 24 30.2	
	comp=Z,66nm,1.3s								
KMO				*e*Sg		**Sg**		**15 25 41.3**	**-4.9**
KMO				Smax				15 25 47.9	
	comp=Z,1μm,1.3s								
KMO				*e*				15 25 57.2	
KMO	**Kumora**	**5.79**	**266**	*e*P		**Pn**		**15 24 08.4**	**+0.9**
KMO				pmax		pmax			
	comp=Z,66nm,0.7s								
YLYR	**Ulyunkhan**	**6.10**	**257**	⇓*i*Pn		**Pn**		**15 24 12.2**	**+0.4**
YLYR				*e*				15 24 21.6	
YLYR				*e*Pg		Pb		15 24 31.6	+4.0
YLYR				Pmax				15 24 36.7	
	comp=Z,41nm,1.7s								
YLYR				*e*				15 25 42.8	
YLYR				*e*Sg		Sg		15 25 50.5	-5.9
YLYR				Smax				15 26 05.6	
	comp=Z,515nm,1.5s								
YLYR	**Ulyunkhan**	**6.10**	**257**	*e*P		**Pn**		**15 24 12.4**	**+0.6**
YLYR				pmax		pmax			
	comp=Z,29nm,0.5s								
CIT	**Chita**	**6.58**	**228**	*e*Sg		Sb		15 26 03.0	+8.0
CIT				Smax				15 26 08.7	
	comp=Z,2μm,1.4s								
TBGR	**Tabaga**	**6.63**	**36**	*e*P		**Pn**		**15 24 18.3**	**-0.6**
TBGR				*e*S		Sg		15 26 06.5	-6.6
NIZ	**Nizh Angarsk**	**6.72**	**267**	*e*Pn		**Pn**		**15 24 21.5**	**+1.2**
NIZ				*e*				15 24 30.5	
NIZ				*e*Pg		Pb		15 24 43.2	+5.0
NIZ				Pmax				15 24 47.1	
	comp=Z,43nm,0.9s								
NIZ				*e*Sg		Sg		15 26 11.0	-5.3
NIZ				Smax				15 26 21.7	
	comp=Z,273nm,1.7s								
NBS	**Nizhniy Bestya**	**6.79**	**36**	*e*P		**Pn**		**15 24 22.0**	**+0.8**
NBS				*e*P		Pb		15 24 43.9	+4.7
NBS				*e*S		**Sn**		**15 25 36.9**	**-2.1**
NBS				*e*S		Sg		15 26 11.5	-6.9
YAK	**Yakutsk**	**6.80**	**35**	Pn		**Pn**		**15 24 21.3**	**0.0**
	comp=Z,0.0nm,0.3s,baz=217,slow=6.7,SNR=26								
YAK				Sn		**Sn**		**15 25 36.9**	**-2.3**
	comp=Z,0.1nm,0.3s,baz=308,slow=21,SNR=12								
YAK				Lg		Lg		15 26 08.5	
	comp=Z,0.1nm,0.3s,baz=325,slow=22,SNR=16								
YAK				LR		LR		15 27 08.5	
	comp=Z,83nm,20.7s,baz=222,slow=39								
YAK	**Yakutsk**	**6.80**	**35**	*e*P		**Pn**		**15 24 21.0**	**-0.3**
YAK				*e*				15 25 36.8	
YAK				pmax		pmax			
	comp=E,1.0nm,0.2s								
YAK				pmax		pmax			
	comp=N,2.0nm,0.2s								
YAK				pmax		pmax			
	comp=Z,37nm,0.4s								
YAK				smax		smax			
	comp=N,58nm,0.4s								
YAK				smax		smax			
	comp=E,46nm,0.4s								
YAK				MLR		MLR			
	comp=Z,223nm,6.3s								
YAK	**Yakutsk**	**6.80**	**35**	*e*P		**Pn**		**15 24 20.8**	**-0.5**
YAK				*e*S		**Sn**		**15 25 37.2**	**-2.0**
YAK				*e*S		Sg		15 26 12.6	-6.0
YAK	**Yakutsk**	**6.80**	**35**	*e*Pn		**Pn**		**15 24 20.5**	**-0.7**
YAK				Sn		**Sn**		**15 25 36.9**	**-2.3**
YAK				Lg		Lg		15 26 08.5	
SYVR	**Suvo**	**7.24**	**250**	*e*Pn		**Pn**		**15 24 26.4**	**-1.1**
SYVR				*e*				15 24 36.1	
SYVR				*e*Pg		Pb		15 24 52.8	+5.8
SYVR				Pmax				15 24 53.4	
	comp=Z,19nm,1.0s								
SYVR				*e*				15 26 01.4	
SYVR				*e*Sg		Sg		15 26 27.3	-5.7
SYVR				Smax				15 26 40.0	
	comp=Z

ARS					*e*Sg			15 28 55.1	
ARS					Smax			15 29 15.7	
	comp=N,254nm,1.5s								
ULN	**Ulaanbaatar**	**12.47**	**231**	*i* P		**Pn**		**15 25 39.2**	**0.0**
ZAK	**Zakamensk**	**12.51**	**247**	*e*Pn		**Pn**		**15 25 42.4**	**+2.7**
ZAK				*e*Sg				15 29 08.1	
ZAK				Smax				15 29 38.3	
	comp=N,198nm,2.0s								
ZAK	**Zakamensk**	**12.51**	**247**	*e*P		**Pn**		**15 25 39.0**	**-0.7**
ZAK				pmax		pmax			
	comp=Z,2.0nm,1.6s								
BTGS	**Batagay**	**12.56**	**24**	*e*S				15 29 12.2	
SONM	**Songino Array**	**12.78**	**232**	Pn		**Pn**		**15 25 43.2**	**-0.2**
	comp=Z,0.4nm,0.3s,baz=36,slow=12,SNR=4.0								
SONM				Lg		Lg		15 29 18.8	
	comp=Z,3.3nm,0.3s,baz=54,slow=26,SNR=9.8								
MOY	**Mondy**	**12.99**	**256**	*e*Pn		**Pn**		**15 25 46.6**	**+0.3**
MOY				*e*				15 25 59.5	
MOY				*e*				15 26 25.9	
MOY				*e*Sg				15 29 23.6	
MOY				Smax				15 29 57.8	
	comp=Z,105nm,2.3s								
MOY	**Mondy**	**12.99**	**256**	*e*P		**Pn**		**15 25 49.2**	**+2.9**
UNR	**Ust'-Nera**	**13.21**	**44**	*e*P		**Pn**		**15 25 49.8**	**+0.8**
UNR				*e*S		Sn		15 28 09.5	-6.9
UNR				*e*S		S		15 29 30.9	+49
ORL	**Orlik**	**13.21**	**261**	*e*Pn		**Pn**		**15 25 50.1**	**+0.9**
ORL				*e*				15 26 00.3	
ORL				*e*				15 28 32.2	
ORL				*e*				15 29 15.4	
ORL				*e*Sg		S		15 29 31.1	+49
ORL				Smax				15 29 52.5	
	comp=Z,93nm,1.6s								
ATKR	**Artyk**	**13.80**	**47**	*e*S		S		15 29 49.2	+55
MOMR	**Moma**	**14.16**	**37**	*e*P		Pn		15 25 53.9	-8.0
MOMR				*e*S		S		15 30 02.2	+61
USRK	**Ussuriysk Ar.**	**14.16**	**148**	Lg		Lg		15 30 03.2	
	comp=Z,0.2nm,0.3s,baz=327,slow=14,SNR=5.4								
DEPR	**Deputatskiy**	**15.13**	**25**	*e*P		**Pn**		**15 26 15.9**	**+0.7**
DEPR				*e*S		S		15 30 31.1	+70
TIXI	**Tiksi**	**15.34**	**9**	Pn		**Pn**		**15 26 13.9**	**-4.0**
	comp=Z,3.8nm,0.3s,baz=198,slow=11,SNR=63								
TIXI				Sn		Sn		15 28 55.2	-13
	comp=Z,1.0nm,0.3s,baz=312,slow=16,SNR=4.3								
TIXI	**Tiksi**	**15.34**	**9**	*e*S		**Sn**		**15 29 01.6**	**-6.5**
TIXI	**Tiksi**	**15.34**	**9**	*e*Pn		Pn		15 26 13.0	-4.8
TIXI				Sn		Sn		15 28 55.2	-13
SEY	**Seymchan**	**16.62**	**55**	Pn		**Pn**		**15 26 35.5**	**+1.0**
	comp=Z,0.5nm,0.3s,baz=257,slow=8.8,SNR=19								
SEY				Lg		Lg		15 31 11.9	
	comp=Z,0.2nm,0.3s,baz=222,slow=8.1,SNR=3.7								
BJI	**Beijing**	**17.02**	**194**	P		**P**		**15 26 45.8**	**+4.2**
BJI				S		**S**		**15 29 59.0**	**-0.6**
BJI				pmax		pmax			
	comp=Z,9.0nm,0.8s								
BJI				LR		LR			
	comp=Z,200nm,12.4s								
BJI				LR		LR			
	comp=Z,310nm,9.2s								
HHC	**Hu-ho-hao-te**	**17.12**	**206**	*e*P		**P**		**15 26 47.5**	**+4.7**
HHC				S		**S**		**15 30 02.5**	**+0.7**
HHC				pmax		pmax			
	comp=Z,18nm,1.3s								
HHC				LR		LR			
	comp=Z,380nm,11.1s								
HHC				LR		LR			
	comp=Z,580nm,12.3s								
HHC				LR		LR			
	comp=Z,170nm,12.3s								
NRIK	**Noril'sk**	**19.58**	**324**	P		**Pn**		**15 27 11.0**	**+0.2**
	comp=Z,0.7nm,0.3s,baz=132,slow=11,SNR=7.5								
NRIK				Lg		Lg		15 33 01.6	
	comp=Z,0.2nm,0.3s,baz=210,slow=22,SNR=7.3								
NRIK	**Noril'sk**	**19.58**	**324**	P		**Pn**		**15 27 11.0**	**+0.2**
NRIK				pmax		pmax			
	comp=Z,1.0nm,0.3s								
KSRS	**Korea Array**	**19.72**	**165**	LR		LR		15 35 34.3	
	comp=Z,22nm,21.7s,baz=14,slow=39								
ZAA0	**Zalesovo Array**	**20.88**	**278**	*e*P		**P**		**15 27 23.9**	**+0.1**
ZALV	**Zalesovo Beam**	**20.88**	**278**	P		**P**		**15 27 24.5**	**+0.7**
	comp=Z,2.8nm,0.9s,baz=79,slow=7.9,SNR=11								
PETK	**Petropavlovsk-**	**20.97**	**84**	P		Pn		15 27 28.0	+0.6
	comp=Z,1.9nm,0.6s,baz=306,slow=6.9,SNR=4.1								
PETK	**Petropavlovsk-**	**20.97**	**84**	P		Pn		15 27 28.0	+0.7
NVS	**Novosibirsk**	**21.41**	**281**	*e*P		**P**		**15 27 32.9**	**+3.3**
GTA	**Gaotai**	**22.39**	**229**	*e*P		**P**		**15 27 40.0**	**-0.3**
GTA				pP				15 27 44.5	
GTA				sP				15 27 47.8	
GTA				pmax		pmax			
	comp=Z,3.0nm,1.0s								
BILL	**Bilibino**	**23.07**	**43**	*e*P		**P**		**15 27 47.3**	**+0.2**
BILL				pmax		pmax			
	comp=Z,6.0nm,1.7s								
BILL	**Bilibino**	**23.07**	**43**	*e*P		**P**		**15 27 47.0**	**-0.1**
	comp=Z,11nm,1.7s								
JNU	**Nakatsue**	**24.44**	**161**	LR		LR		15 37 42.5	
	comp=Z,50nm,18.4s,baz=120,slow=37								
WMQ	**Urumqi**	**24.86**	**253**	*e*P		**P**		**15 28 06.5**	**+2.1**
WMQ				pmax		pmax			
	comp=Z,3.0nm,0.6s								
WMQ				pmax		pmax			
	comp=Z,37nm,4.0s								
WMQ				LR		LR			
	comp=Z,32nm,18.2s								
WMQ				LR		LR			
	comp=Z,34nm,16.8s								
KURK	**Kurchatov**	**25.73**	**275**	P		**P**		**15 28 13.3**	**+1.2**
KURK	**Kurchatov**	**25.73**	**275**	P		**P**		**15 28 13.3**	**+1.2**
KURBB	**Kurchatov Arra**	**25.82**	**275**	P		**P**		**15 28 13.3**	**+0.3**
	comp=Z,0.5nm,0.6s,baz=61,slow=9.6,SNR=2.9								
MK31	**Makanchi Array**	**25.87**	**264**	*e*P		**P**		**15 28 13.1**	**-0.5**
MK31	**Makanchi Array**	**25.87**	**264**	*e*P		**P**		**15 28 13.1**	**-0.5**
MKAR	**Makanchi Array**	**25.87**	**264**	P		**P**		**15 28 13.4**	**-0.1**
	comp=Z,1.1nm,0.7s,baz=58,slow=12,SNR=9.7								
MK01	**Makanchi Array**	**25.88**	**264**	*e*P		**P**		**15 28 13.4**	**-0.2**
JHJ	**Hachijo jima 2**	**26.73**	**144**	LR		LR		15 38 36.2	
	comp=Z,26nm,18.5s,baz=146,slow=36								
CD2	**Chengdu**	**28.60**	**213**	P		P		15 28 41.5	+3.3
CD2				pmax		pmax			
	comp=Z,1.0nm,0.5s								
BVAR	**Borovoye Array**	**29.08**	**285**	P		**P**		**15 28 42.4**	**+0.2**
	comp=Z,0.6nm,0.7s,baz=40,slow=9.8,SNR=3.5								
AAK	**Ala-Archa**	**32.80**	**265**	*i* P		**P**		**15 29 16.3**	**+1.0**
AAK				pmax		pmax			
	comp=Z,8.0nm,2.1s								
ARU	**Arti**	**33.59**	**297**	*c i*P		**P**		**15 29 19.9**	**-2.0**
ARU								15 30 30.6	
ARU				S		**S**		**15 34 44.2**	**-0.6**
ARU				SS		**SnSn**		**15 36 44.7**	**-2.1**
ARU				pmax		pmax			
	comp=Z,8.0nm,2.5s								
LSA	**Lhasa**	**34.37**	**231**	*e*P		**P**		**15 29 30.9**	**+1.5**
LSA				pmax		pmax			
	comp=Z,4.0nm,0.4s								
LSA	**Lhasa**	**34.37**	**231**	*e*P		**P**		**15 29 30.9**	**+1.5**
	comp=Z,3.7nm,0.4s								
COLA	**College**	**41.28**	**40**	*i* P		**P**		**15 30 27.1**	**+0.2**
COLA				pmax		pmax			
	comp=Z,4.0nm,0.5s								
IL1	**Eielson Array**	**41.69**	**40**	*e*P		**P**		**15 30 30.9**	**+0.7**
ILAR	**Eielson Array**	**41.69**	**40**	P		**P**		**15 30 31.1**	**+0.9**
	comp=Z,1.0nm,0.5s,baz=295,slow=4.1,SNR=16								
ILB	**Eielson Array**	**41.69**	**40**	*e*P		**P**		**15 30 30.5**	**+0.3**
CMAR	**Chiang Mai Arr**	**41.74**	**213**	*i* P		P		15 30 28.1	-3.0
CMAR				pmax		pmax			
	comp=Z,1.0nm,0.3s								
DOT	**Dot Lake**	**43.34**	**40**	*e*P		**P**		**15 30 43.3**	**-0.5**
	comp=Z,6.5nm,0.7s								
FINES	**FINESS Array B**	**45.05**	**317**	P		**P**		**15 30 57.9**	**+0.5**
	comp=Z,0.5nm,0.4s,baz=42,slow=8.9,SNR=6.7								
NB2	**NORSAR Subarra**	**50.54**	**324**	P		**P**		**15 31 38.5**	**-1.5**
	comp=Z,1.1nm,0.8s,baz=41,slow=7.4								
NOA	**NORSAR Array B**	**50.54**	**324**	P		**P**		**15 31 39.0**	**-1.0**
	comp=Z,0.6nm,0.7s,baz=43,slow=8.0,SNR=3.8								
YKA	**Yellowknife Ar**	**53.43**	**29**	P		**P**		**15 32 01.5**	**+0.1**
	comp=Z,0.4nm,0.6s,baz=332,slow=6.8,SNR=3.9								
WRA	**Warramunga Arr**	**77.10**	**168**	P		**P**		**15 34 33.9**	**-1.4**
	comp=Z,0.5nm,0.7s,baz=351,slow=6.5,SNR=7.0								
ASAR	**Alice Springs**	**80.73**	**168**	P		**P**		**15 34 57.5**	**+2.3**
	comp=Z,0.2nm,0.7s,baz=357,slow=5.2,SNR=4.7								

*ISCJB **25** 15:23:30.5±0.7, 6°.80N±0°.05×73°.06W±0°.06, h162km±6km, Error ellipse: s-maj=11.4km s-min=4.7km az=37.7*

*FUNV **25** 15:23:30.8, 6°.86N×73°.16W, h179km, MW2.8*
*RSNC **25** 15:23:33.0±1.2, 6°.78N×73°.11W, h146km±8km, ML2.6*
ISC 25 15:23:29.8±1.5, 6°.83N±0°.05×73°.07W±0°.06, h167km±8km, n22, σ1°35/34, 2C, Northern Colombia

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
BTLC	**Betulia, Santa**	**0.21**	**295**	*i* P		**Pn**	**15 23 52.8**	**+0.3**
BARC	**Barichara**	**0.26**	**205**	*e*P		**Pn**	**15 23 52.7**	**+0.1**
BARC				*e*S		**Sn**	**15 24 07.9**	**-2.1**
BARC				*i*			15 24 09.5	
	comp=Z,180nm,0.3s							
PAMC	**Pamplona, Colo**	**0.63**	**36**	*e*P		**Pn**	**15 23 55.4**	**+1.0**
PAMC				*e*S		**Sn**	**15 24 12.8**	**-0.4**
PAMC				*i*			15 24 14.9	
	comp=Z,33nm,0.3s							
BRRC	**Barranca, Sant**	**0.69**	**294**	*i* P		**Pn**	**15 23 54.5**	**+0.4**
BRRC				*e*S		**Sn**	**15 24 12.0**	**-0.7**
BRRC				*i*			15 24 14.2	
	comp=Z,146nm,0.1s							
GRMC	**Gramalote, San**	**0.93**	**17**	*e*P		**Pn**	**15 23 58.5**	**+2.6**
GRMC				*i*			15 23 60.0	
	comp=Z,107nm,0.3s							
GRMC				*e*S		**Sn**	**15 24 16.3**	**+0.4**
CBRI	**Barrientos, No**	**0.93**	**17**	*e*P		**Pn**	**15 23 57.2**	**+1.3**
CBRI				*i*			15 24 23.4	
	comp=Z,46nm,0.4s							
RUSC	**La Rusia**	**0.93**	**181**	*e*P		**Pn**	**15 23 56.5**	**+0.2**
RUSC				*e*S		**Sn**	**15 24 14.9**	**-1.7**
RUSC				*i*			15 24 16.6	
	comp=Z,62nm,0.3s							
CAPV	**Capacho**	**1.28**	**36**	*e*P		**Pn**	**15 24 00.5**	**+1.7**
CAPV				*e*S		**Sn**	**15 24 21.9**	**+0.7**
OCAC	**Ocana**	**1.42**	**350**	*e*P		**Pn**	**15 24 00.9**	**+0.7**
OCAC				*i*			15 24 29.4	
	comp=Z,78nm,0.3s							
YOPC	**Yopal, Colombi**	**1.60**	**156**	*e*P		**Pn**	**15 24 02.9**	**+1.0**
YOPC				*i*			15 24 35.1	
	comp=Z,19nm,0.3s							
NORC	**Norcasia**	**2.18**	**235**	*e*P		**Pn**	**15 24 08.5**	**+0.3**
NORC				*e*S		**Sn**	**15 24 35.8**	**-2.0**
CHIC	**Chingaza**	**2.28**	**197**	*e*P		**Pn**	**15 24 10.6**	**+0.9**
CHIC				*e*S		**Sn**	**15 24 39.8**	**-0.6**
CHIC				*i*			15 24 48.2	
	comp=Z,27nm,0.4s							
HELC	**Santa Helena**	**2.52**	**256**	*e*P		**Pn**	**15 24 14.3**	**+1.9**
HELC				*i*			15 24 51.1	
	comp=Z,30nm,0.2s							
VIGV	**El Vigia**	**2.62**	**40**	*e*P		**Pn**	**15 24 14.9**	**+1.6**
VIGV				*e*S		**Sn**	**15 24 46.7**	**-0.4**
SOCV	**Socops**	**2.63**	**56**	*e*P		**Pn**	**15 24 14.8**	**+1.4**
SOCV				*e*S		**Sn**	**15 24 46.9**	**-0.4**
DBBC	**Dabeiba**	**3.12**	**274**	*e*P		**Pn**	**15 24 20.9**	**+1.4**
TOLC	**Tolima**	**3.16**	**225**	*e*P		**Pn**	**15 24 22.0**	**+1.8**
PRAC	**Prado**	**3.58**	**210**	*e*P		**Pn**	**15 24 26.0**	**+0.7**
PRAC				*e*S		**Sn**	**15 25 08.3**	**-0.1**
VIRV	**Villa del Rosa**	**3.71**	**10**	*e*P		**Pn**	**15 24 26.2**	**-0.7**
VIRV				*e*S		**Sn**	**15 25 08.2**	**-3.2**
QARV	**Quebrada Arrib**	**4.20**	**37**	*e*P		**Pn**	**15 24 33.3**	**+0.1**
CURV	**Curarigua**	**4.42**	**44**	*e*P		**Pn**	**15 24 37.1**	**+1.0**
BAUV	**El Baul**	**5.41**	**67**	*e*P		**Pn**	**15 24 48.4**	**-0.5**

*IDC **25** 15:29:29.4±2.2, 35°.44N×143°.04E, h0km, mb3.3/3, mb1 3.5/6, mb1mx3.3/39, mbtmp3.5/6, ML3.3/3, Error ellipse: s-maj=42.2km s-min=28.4km az=77.0*
*ISCJB **25** 15:29:32.4±0.9, 35°.57N±0°.04×142°.96E±0°.07, h59km, mb3.4/3, Error ellipse: s-maj=8.5km s-min=5.6km az=24.0*
*JMA **25** 15:29:33.1±0.3, 35°.57N×142°.85E, h81km, M3.6*
ISC 25 15:29:34.1±1.5, 35°.52N±0°.06×142°.95E±0°.09, h59km, n19, σ1°55/26, mb3.4/3, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
BSO3	**Boso 3**	**2.13**	**251**	P		**Pn**	**15 30 06.9**	**-0.1**
BSO3				S		**Sn**	**15 30 32.6**	**+0.5**
KTR	**Katsuura**	**2.19**	**261**	S		**Sn**	**15 30 33.0**	**-1.0**
BSO4	**Boso 4**	**2.21**	**257**	P		**Pn**	**15 30 07.9**	**-0.3**
JFT	**Otama**	**2.90**	**314**	P		**Pn**	**15 30 17.3**	**-0.6**
JFT				S		**Sn**	**15 30 50.3**	**-1.3**
JAG	**Ashikaga**	**2.98**	**289**	P		**Pn**	**15 30 17.8**	**-1.1**
JOD2	**Odawara 2**	**3.17**	**267**	P		**Pn**	**15 30 20.3**	**-1.2**
JOD2				S		**Sn**	**15 30 56.6**	**-1.5**
JRY	**Ryogami san**	**3.33**	**280**	P		**Pn**	**15 30 23.4**	**-0.3**
JHJ2	**Mitsune**	**3.54**	**228**	P		**Pn**	**15 30 26.2**	**-0.3**
JHJ	**Hachijo jima 2**	**3.55**	**229**	Pn		**Pn**	**15 30 25.8**	**-0.9**
	6.3nm,0.3s,baz=303,slow=15,SNR=1.2							
JHJ				Sn		**Sn**	**15 31 02.6**	**-4.9**
	23nm,0.3s,baz=88,slow=22,SNR=2.1							
JYN	**Shimob**	**3.60**	**271**	P		**Pn**	**15 30 26.7**	**-0.7**
JYN				S		**Sn**	**15 31 07.5**	**-1.2**
JMK	**Ichinoseki**	**3.70**	**339**	P		**Pn**	**15 30 27.9**	**-0.8**
JMK				S		**Sn**	**15 31 09.0**	**-2.0**
MJAR	**Matsushiro Arr**	**3.98**	**286**	Pn		**Pn**	**15 30 32.5**	**-0.1**
	2.4nm,0.3s,baz=90,slow=11,SNR=8.7							
MJAR				Sn		**Sn**	**15 31 19.8**	**+1.8**
	0.3nm,0.3s,baz=253,slow=26,SNR=1.7							
MAT	**Matsushiro**	**3.98**	**286**	P		**Pn**	**15 30 32.9**	**+0.3**
MAT				*e*S		**Sn**	**15 31 20.1**	**+2.1**
MAT	**Matsushiro**	**3.98**	**286**	P		**Pn**	**15 30 33.0**	**+0.3**
JOM	**Ohasama**	**4.16**	**342**	P		**Pn**	**15 30 34.9**	**-0.2**
JOM				S		**Sn**	**15 31 20.7**	**-1.7**
ASAJ	**Asahikawa**	**8.59**	**358**	Pn		**Pn**	**15 31 35.5**	**-0.1**
	0.4nm,0.3s,baz=204,slow=12,SNR=2.2							
MKAR	**Makanchi Array**	**45.98**	**304**	P		P	15 37 55.0	+3.7
	0.1nm,0.3s,baz=85,slow=8.3,SNR=1.3							
KURBB	**Kurchatov Arra**	**47.92**	**309**	P		P	15 38 10.3	+4.0
	0.3nm,0.6s,baz=82,slow=7.7,SNR=1.5							
WRA	**Warramunga Arr**	**55.76**	**190**	P		**P**	**15 39 07.2**	**+2.3**
	0.3nm,0.7s,baz=7.7,slow=7.4,SNR=2.0							

KRSC 25 15:31:21.2±1.7, 49°.81N×159°.62E, h46km±18km, ML3.6, East of Kuril Islands

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
SKR	**Severo-Kuril's**	**2.41**	**293**	P		Pn	15 32 00.2	+2.1
SKR				S		Sn	15 32 27.3	+0.9
PAU	**Pauzhetka**	**2.44**	**314**	P		Pn	15 32 01.9	+3.4
PAU				S		Sn	15 32 30.4	+3.3
RUS	**Russkaya**	**2.72**	**346**	P		Pn	15 32 05.5	+3.2
RUS				S		Sn	15 32 37.3	+3.3
ASAK	**Asacha**	**2.80**	**338**	P		Pn	15 32 07.2	+3.7
MTVR	**Mutnovka**	**2.83**	**342**	S		Sn	15 32 40.6	+3.8
KRMR	**Karymshinskiy**	**3.17**	**343**	P		Pn	15 32 12.4	+3.9
KRMR				S		Sn	15 32 50.0	+5.0
DALK	**Dalny**	**3.27**	**351**	P		Pn	15 32 13.4	+3.5
DALK				S		Sn	15 32 50.7	+3.1
PET	**Petropavlovsk**	**3.28**	**350**	P		Pn	15 32 13.6	+3.6
PET				S		Sn	15 32 51.7	+4.0
NLC	**Nalytchevo**	**3.37**	**357**	S		Sn	15 32 56.1	+6.1
UGLR	**Uglovaya**	**3.44**	**352**	P		Pn	15 32 16.0	+3.6
APC	**Apacha**	**3.48**	**335**	P		Pn	15 32 17.4	+4.6
SMAR	**Somma**	**3.50**	**352**	P		Pn	15 32 17.5	+4.3
AVH	**Avacha**	**3.50**	**351**	P		Pn	15 32 17.2	+4.0
SDLR	**Sedlovina**	**3.50**	**353**	P		Pn	15 32 16.7	+3.4
KRER	**Koryakskii**	**3.54**	**352**	P		Pn	15 32 17.7	+3.8
GNL	**Ganaly**	**4.03**	**346**	P		Pn	15 32 25.1	+4.7
MKZ	**Mys Kozlova**	**4.93**	**14**	P		Pn	15 32 35.8	+3.2

*ISN **25** 15:33:28.7±0.3, 34°.82N×44°.67E, h0km, ML2.9*
*CSEM **25** 15:33:30.2, 34°.75N×44°.70E, h4km, ML2.9*
TEH 25 15:33:30.2, 34°.75N×44°.70E, h4km, ML2.9, Iraq

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
IKRK	**Kirkuk**	**0.71**	**335**	*e*Pg		Pg	15 33 43.0	-0.9
	baz=155							
IKRK				*e*Sg		Sg	15 33 53.0	-0.2
IDHR	**Dehrash**	**1.39**	**92**	*e*Pg		Pn	15 33 55.2	-1.4
IDHR				*e*Sg		Sg	15 34 13.6	-1.2
IDHR				*e*AMB		AMB	15 34 20.4	
	comp=Z,2μm,0.1s							
IDHR	**Dehrash**	**1.39**	**92**	*e*Pg		Pn	15 33 55.2	-1.4
IDHR				*e*Sg		Sg	15 34 13.6	-1.2
IGHG	**Ghaleghazi**	**1.60**	**105**	*e*Pn		Pn	15 33 59.2	-0.3
IGHG				*e*AMB		AMB	15 34 29.5	
	comp=Z,1μm,0.2s							
IGHG	**Ghaleghazi**	**1.60**	**105**	*e*Pn		Pn	15 33 59.2	-0.3
ILIN	**Lien**	**1.87**	**84**	*e*Sg		Sb	15 34 28.3	-0.6
ILIN				*e*Pn		Pn	15 34 03.1	-0.1
ILIN				*e*AMB		AMB	15 34 31.3	
	comp=Z,870nm,0.2s							
IBZA	**Bozab**	**2.62**	**95**	*e*Pn		Pn	15 34 13.4	-0.2
IBZA				*e*AMB		AMB	15 34 56.5	
	comp=Z,463nm,0.2s							
IBZA	**Bozab**	**2.62**	**95**	*e*Pn		Pn	15 34 13.4	-0.2

*IDC **25** 15:45:05.1±0.9, 3°.04N×129°.04E, h0km, mb3.8/8, mb1 4.0/8, mb1mx3.7/39, mbtmp3.8/8, MS3.2/4, Ms1 3.2/4, ms1mx2.7/43, Error ellipse: s-maj=40.1km s-min=16.1km az=77.0*
*ISCJB **25** 15:45:09.4±0.6, 2°.95N±0°.08×128°.8E±0°.1, h44km, mb3.8/11, MS3.2/3, Error ellipse: s-maj=20.7km s-min=10.9km az=171.8*
*NEIC **25** 15:45:10.1±0.5, 2°.96N×128°.91E, h35km, mb4.0/4, Error ellipse: s-maj=16.3km s-min=8.6km az=82.0*
ISC 25 15:45:10.9±0.8, 2°.94N±0°.10×128°.9E±0°.2, h44km, n16, σ0°89/13, mb3.9/11, MS3.1/3, Halmahera

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
KAPI	**Kappang**	**12.06**	**229**	Pn		**Pn**	**15 47 59.5**	**-0.8**
GUMO	**Guam**	**19.02**	**55**	LR		LR	15 55 24.3	
	comp=Z,34nm,18.8s,baz=204,slow=33							
FITZ	**Fitzroy Crossi**	**21.15**	**189**	P		**P**	**15 49 52.0**	**-0.4**
	0.9nm,0.4s,baz=359,slow=5.7,SNR=6.7							
FITZ	**Fitzroy Crossi**	**21.15**	**189**	*e*P		**P**	**15 49 51.6**	**-0.8**
	1.7nm,0.7s							
PMG	**Port Moresby**	**21.96**	**124**	LR		LR	16 00 21.9	
	comp=Z,79nm,19.1s,baz=228,slow=42							
WRAB	**Tennant Creek**	**23.36**	**167**	*e*P		**P**	**15 50 16.0**	**+0.3**
	5.0nm,0.6s							
WRA	**Warramunga Arr**	**23.36**	**167**	P		**P**	**15 50 16.6**	**+0.9**
	3.3nm,0.8s,baz=347,slow=10,SNR=31							
ASAR	**Alice Springs**	**26.89**	**170**	P		**P**	**15 50 48.8**	**+0.8**
	0.7nm,0.6s,baz=353,slow=7.6,SNR=24							
CMAR	**Chiang Mai Arr**	**33.12**	**300**	P		**P**	**15 51 44.6**	**+1.4**
	0.5nm,0.5s,baz=121,slow=7.7,SNR=5.0							
MJAR	**Matsushiro Arr**	**34.53**	**13**	P		**P**	**15 51 53.8**	**-1.4**
	1.8nm,0.7s,baz=181,slow=9.5,SNR=8.1							
MJAR				LR		LR	16 04 47.9	
	comp=Z,22nm,21.6s,baz=40,slow=34							
STKA	**Stephens Creek**	**36.67**	**162**	P		**P**	**15 52 14.1**	**+0.5**
	1.7nm,0.6s,baz=336,slow=8.9,SNR=17							
ASAJ	**Asahikawa**	**42.77**	**15**	LR		LR	16 10 27.0	
	comp=Z,95nm,20.3s,baz=278,slow=36							
ULN	**Ulaanbaatar**	**48.55**	**340**	*e*P		**P**	**15 53 50.4**	**+0.4**
	1.5nm,0.3s							
MKAR	**Makanchi Array**	**59.43**	**325**	P		**P**	**15 55 09.6**	**+0.3**
	0.6nm,0.5s,baz=119,slow=8.3,SNR=12							
ABKAR	**Akbulak array**	**74.12**	**321**	P		**P**	**15 56 42.2**	**-0.5**
	0.2nm,0.3s							
ILAR	**Eielson Array**	**84.90**	**25**	P		**P**	**15 57 41.0**	**0.0**
	0.2nm,0.4s,baz=247,slow=5.1,SNR=4.2							

IDC 25 15:50:51.3±5.9, 1°.59N×99°.28E, h0km, mb3.5/4, mb1 3.6/4, mb1mx3.3/55, mbtmp3.5/4, Error ellipse: s-maj=305.8km s-min=23.2km az=56.0, Northern Sumatera

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
WRA	**Warramunga Arr**	**40.50**	**124**	P		P	15 58 32.4	0.0
	0.4nm,0.4s,baz=302,slow=9.1,SNR=9.7							
ASAR	**Alice Springs**	**42.00**	**129**	P		P	15 58 44.4	-0.3
	0.1nm,0.4s,baz=301,slow=7.8,SNR=6.5							
MKAR	**Makanchi Array**	**47.40**	**344**	P		P	15 59 27.9	+0.5
	0.3nm,0.4s,baz=152,slow=7.8,SNR=4.2							
ZALV	**Zalesovo Beam**	**53.53**	**349**	P		P	16 00 13.0	-0.6
	0.3nm,0.4s,baz=180,slow=3.6,SNR=2.3							

*NIED **25** 15:59:00.38°.40N×141°.90E, h59km, Mw3.8 Best double couple: M0≤5.45000×10^14 NP1:φ≈201.00000°, δ40.00000°, λ84.00000°. NP2:φ≈29.00000°, δ50.00000°, λ95.00000°.*
*ISCJB **25** 15:59:23.9±0.8, 38°.41N±0°.04×142°.0E±0°.1, h67km±6km, mb3.8/12, Error ellipse: s-maj=14.1km s-min=5.6km az=17.4*
*JMA **25** 15:59:25.1±0.1, 38°.42N×141°.92E, h63km±1km, M4.0*
JMA Felt II J1.
*I

RPZ	**Rata Peaks**	**85.87**	**159**	LR	LR	16 47 27.4			
	comp=Z,98nm,20.2s,baz=199,slow=34								
LPAZ	**La Paz**	**145.59**	**59**	PKPbc	**PKPdf**	**16 18 57.5**	**0.0**		
	comp=Z,0.7nm,0.5s,baz=0.4,slow=5.3,SNR=4.7								

IDC ***25*** *16:11:15.1±1.1, 8˚.34S×116˚.02E, h0km, mb3.8/6, mb1 4.0/8, mb1mx3.7/38, mbtmp3.9/8, ML3.8/2, MS2.9/1, Ms1 3.1/1, ms1mx2.5/40, Error ellipse: s-maj=37.3km s-min=19.0km az=51.0*

DJA ***25*** *16:11:19.5±0.4, 8˚.5S 7˚×11˚.6E±˚, h20km±6km, M4.1/10, MLv4.1/10*

ISC 25 16:11:16.0±2.3, **8˚.28S**±0˚.07×**116˚.05E**±0˚.03, **h5**km±16km, **n16**, σ0**86**/22, **mb3.7**/6, **Sumbawa region**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SRBI	**Singaraja**	**0.85**	**283**	P	**Pn**	**16 11 34.3**	**-0.3**
SRBI				S	**Sn**	**16 11 46.8**	**-0.6**
DNP	**Denpasar**	**0.92**	**244**	P	**Pn**	**16 11 35.8**	**+0.2**
DNP				S	**Sn**	**16 11 48.7**	**-0.5**
TWSI	**Taliwang, Sumb**	**0.94**	**119**	P	**Pb**	**16 11 35.0**	**+0.1**
TWSI				S	**Sn**	**16 11 50.3**	**+0.5**
PLAI	**Plampang**	**1.79**	**108**	P	**Pb**	**16 11 49.3**	**-0.1**
PLAI				S	**Sg**	**16 12 13.2**	**-0.5**
ABJI	**Asem Bagus**	**1.86**	**285**	P	**Pb**	**16 11 50.4**	**-0.1**
JAGI	**Jajag, Banyuwa**	**1.89**	**264**	P	**Pn**	**16 11 49.3**	**+0.4**
JAGI				S	**Sn**	**16 12 12.1**	**-1.0**
GMJI	**Gumukmas**	**2.58**	**270**	P	**Pn**	**16 11 59.4**	**+1.0**
PWJI	**Pagerwojo**	**4.21**	**273**	P	**Pn**	**16 12 21.9**	**+1.0**
KAPI	**Kappang**	**4.90**	**49**	Pn	**Pn**	**16 12 31.3**	**+0.9**
	4.1nm,0.3s,baz=214,slow=2.6,SNR=14						
KAPI				Sn	**Sn**	**16 13 25.6**	**-1.9**
	3.2nm,0.3s,baz=40,slow=17,SNR=7.3						
FITZ	**Fitzroy Crossi**	**13.50**	**137**	Pn	**Pn**	**16 14 27.8**	**-0.6**
	0.4nm,0.3s,baz=328,slow=10,SNR=11						
FITZ				Sn	Sn	16 16 51.1	-7.8
	0.1nm,0.3s,baz=133,slow=23,SNR=2.5						
WRA	**Warramunga Arr**	**21.16**	**125**	P	**P**	**16 16 02.2**	**-0.1**
	2.4nm,0.5s,baz=299,slow=12,SNR=32						
ASAR	**Alice Springs**	**22.95**	**134**	P	**P**	**16 16 21.1**	**-0.3**
	1.7nm,0.9s,baz=312,slow=9.6,SNR=42						
CMAR	**Chiang Mai Arr**	**31.48**	**328**	P	**P**	**16 17 40.6**	**+1.7**
	0.4nm,0.9s,baz=156,slow=7.7,SNR=4.1						
CMAR				LR	LR	16 30 46.6	
	comp=Z,24nm,20.6s,baz=170,slow=37						
SONM	**Songino Array**	**56.52**	**352**	P	**P**	**16 20 59.7**	**+0.4**
	1.8nm,0.6s,baz=193,slow=6.1,SNR=3.9						
MKAR	**Makanchi Array**	**62.52**	**335**	P	**P**	**16 21 39.8**	**-0.8**
	0.1nm,0.3s,baz=143,slow=8.1,SNR=2.9						
BOSA	**Boshof**	**86.78**	**242**	P	**P**	**16 24 01.9**	**-0.2**
	3.8nm,1.1s,baz=131,slow=6.4,SNR=3.9						

MAN ***25*** *16:18:54, 13˚.36N×120˚.23E, h22km, mb4.2, ML3.0, MS2.8*

IDC ***25*** *16:19:22.2±2.4, 10˚.41N×123˚.26E, h0km, mb3.5/3, mb1 3.8/3, mb1mx3.3/47, mbtmp3.5/3, Error ellipse: s-maj=223.3km s-min=25.4km az=63.0*

ISC 25 16:18:53.4±1.4, **13˚.39N**±0˚.08×**120˚.2E**±0˚.1, **h21**km±5km, **n11**, σ0**77**/16, **3C, Mindoro**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PGP	**Puerto Galera**	**0.72**	**81**⇑	*e*P	**Pb**	**16 19 07.4**	**+0.1**
PGP				*i* S	**Sb**	**16 19 17.3**	**+0.5**
TGY	**Tagaytay City**	**0.99**	**45**⇑	*i*P	**Pn**	**16 19 12.3**	**+0.2**
TGY				*i* S	**Sn**	**16 19 27.2**	**+1.6**
SJMP	**San Jose**	**1.28**	**136**	*e*P	**Pb**	**16 19 16.9**	**+0.1**
SJMP				*e*S	**Sb**	**16 19 32.7**	**+0.1**
BUSP	**Coron**	**1.38**	**181**	*e*P	**Pb**	**16 19 18.1**	**-0.4**
BUSP				*e*S	**Sb**	**16 19 35.5**	**-0.2**
LQP	**Lukban**	**1.47**	**61**⇑	*e*P	**Pn**	**16 19 18.4**	**-0.4**
BOAC	**Boac**	**1.58**	**87**	*e*P	**Pb**	**16 19 21.3**	**-0.7**
BOAC				*e*S	**Sn**	**16 19 40.8**	**+0.8**
ENPP	**El Nido**	**2.31**	**200**	*e*P	**Pn**	**16 19 30.6**	**+0.5**
AUQP	**San Andres**	**2.39**	**91**	*e*P	**Pb**	**16 19 34.7**	**-1.1**
CUYO	**Cuyo Island**	**2.64**	**163**	*e*P	**Pn**	**16 19 35.2**	**+0.4**
WRA	**Warramunga Arr**	**35.92**	**157**	P	**P**	**16 25 51.4**	**-1.1**
	1.1nm,0.5s,baz=340,slow=9.3,SNR=14						
ASAR	**Alice Springs**	**39.19**	**160**	P	**P**	**16 26 19.9**	**-0.1**
	0.7nm,0.7s,baz=343,slow=7.2,SNR=14						

NIED ***25*** *16:24:00, 39˚.70N×143˚.50E, h20km, Mw3.6 Best double couple: M₀2.43000×10¹⁴ NP1:φ₀±147.00000°, δ40.00000°, λ34.00000°. NP2:φ₀30.00000°, δ69.00000°, λ125.00000°.*

JMA ***25*** *16:24:48.0±0.2, 39˚.74N×143˚.51E, h7km±3km, M3.7*

ISC 25 16:24:46.2±2.6, **39˚.82N**±0˚.07×**143˚.56E**±0˚.10, **h1**km±13km, **n14**, σ0**86**/24, **Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JTH	**Tanohata**	**1.31**	**276**	P	**Pb**	**16 25 11.8**	**+0.1**
JTH				S	**Sn**	**16 25 29.4**	**-0.5**
MIYJ	**Miyakonagasawa**	**1.37**	**260**	P	**Pg**	**16 25 12.7**	**+0.3**
MIYJ				*e*S	**Sg**	**16 25 29.6**	**-0.5**
OFUJ	**Ofunato**	**1.64**	**244**	P	**Pn**	**16 25 16.2**	**0.0**
OFUJ				*e*S	**Sn**	**16 25 37.2**	**-0.8**
JANG	**Nango**	**1.67**	**290**	P	**Pb**	**16 25 17.3**	**-0.4**
JANG				*e*S	**Sg**	**16 25 39.3**	**-0.4**
JKZ	**Kuzumaki**	**1.73**	**276**	P	**Pb**	**16 25 18.6**	**-0.1**
JKZ				S	**Sg**	**16 25 41.5**	**-0.2**
JOM	**Ohasama**	**1.79**	**260**	P	**Pn**	**16 25 19.2**	**+1.0**
JOM				S	**Sb**	**16 25 42.3**	**-0.4**
JMK	**Ichinoseki**	**2.01**	**245**	P	**Pn**	**16 25 21.7**	**+0.4**
JMK				S	**Sn**	**16 25 48.0**	**+0.9**
JTM	**Tenmabayashi**	**2.14**	**298**	P	**Pb**	**16 25 25.4**	**-0.4**
JIO	**Ouri**	**2.20**	**232**	P	**Pn**	**16 25 23.7**	**-0.1**
JAH	**Hinai**	**2.28**	**280**	P	**Pn**	**16 25 26.7**	**+1.7**
JAH				*e*S	**Sb**	**16 25 56.8**	**0.0**
JRG	**Rokugo**	**2.30**	**260**	P	**Pn**	**16 25 26.8**	**+1.5**
JRG				*e*S	**Sb**	**16 25 56.1**	**-1.4**
JOT	**Ohata**	**2.47**	**310**	P	**Pb**	**16 25 31.2**	**-0.2**
JNBK	**Urakawa-nobuka**	**2.53**	**346**	P	**Pb**	**16 25 32.4**	**-0.1**
JNBK				*e*S	**Sb**	**16 26 02.8**	**-1.4**
JYK	**Kaneyama**	**2.64**	**251**	P	**Pn**	**16 25 31.3**	**+1.3**

KRSC ***25*** *16:26:05.7±0.8, 59˚.55N×164˚.24E, h7km±3km, ML5.0*

IDC ***25*** *16:26:05.7±0.5, 59˚.78N×163˚.82E, h0km, mb4.3/36, mb1 4.5/40, mb1mx4.4/63, mbtmp4.3/40, ML4.2/3, MS3.6/6, Ms1 3.6/6, ms1mx3.3/27, Error ellipse: s-maj=13.5km s-min=8.9km az=166.0*

MOS ***25*** *16:26:06.1±0.9, 59˚.87N×163˚.73E, h12km, mb4.8/55, Error ellipse: s-maj=7.9km s-min=4.3km az=86.3*

BJI ***25*** *16:26:07.2, 59˚.80N×163˚.70E, h29km, mb4.7/49, mB4.9/32, Ms4.5/32, Ms7 4.2/31*

ISCJB ***25*** *16:26:07.0±0.7, 59˚.83N±0˚.03×163˚.76E±0˚.03, h20km±5km, mb4.7/183, MS4.0/15, Error ellipse: s-maj=4.3km s-min=2.3km az=163.4*

NEIC ***25*** *16:26:09.6±1.2, 59˚.83N×163˚.70E, h25km±8km, mb4.7/121, Error ellipse: s-maj=4.7km s-min=2.1km az=172.0*

ISC 25 16:26:08.8±0.8, **59˚.77N**±0˚.03×**163˚.75E**±0˚.04, **h19**km±3km, **n630**, σ0**95**/656, **mb4.7**/183, **MS3.8**/15, **15C-20D, Kamchatka Peninsula**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
OSSR	**Ossora**	**0.63**	**214**	*e*P	**Pb**	**16 26 18.7**	**-2.4**
OSSR				*e*S	**Sb**	**16 26 27.6**	**-1.9**
TILK	**Tilichiki**	**1.37**	**60**	*e*P	**Pn**	**16 26 30.2**	**-2.6**
TILK				*e*S	**Sn**	**16 26 48.0**	**-2.4**
KMSK	**Kamenskaya**	**2.95**	**23**	*e*P	**Pn**	**16 26 53.0**	**-1.5**
KMSK				*e*S	**Sb**	**16 27 37.2**	**+0.9**
SRKR	**Sorokina**	**3.42**	**205**	*e*P	**Pn**	**16 27 02.4**	**+1.4**
SRKR	**Sorokina**	**3.42**	**205**	PN	**Pn**	**16 27 02.4**	**+1.4**
SMKR	**Semkarok**	**3.42**	**202**	*e*P	**Pn**	**16 27 01.5**	**+0.4**
SMKR	**Semkarok**	**3.42**	**202**	PN	**Pn**	**16 27 01.5**	**+0.4**
BDR	**Baidarnaya**	**3.49**	**204**	*e*P	**Pn**	**16 27 02.5**	**+0.5**
KBG	**Krutoberegovo**	**3.57**	**189**	*e*P	**Pn**	**16 27 02.6**	**-0.4**
KBG				*e*S	**Sn**	**16 27 43.6**	**-1.0**
KLY	**Klyuchi**	**3.84**	**207**	*e*P	**Pn**	**16 27 08.0**	**+1.3**
KRSR	**Krestovskiy**	**3.95**	**207**	*e*P	**Pn**	**16 27 09.9**	**+1.6**
KRSR	**Krestovskiy**	**3.95**	**207**	PN	**Pn**	**16 27 09.9**	**+1.6**
CIRR	**Tsirk**	**4.00**	**205**	*e*P	**Pn**	**16 27 10.1**	**+1.0**
CIRR	**Tsirk**	**4.00**	**205**	PN	**Pn**	**16 27 10.1**	**+1.0**
LGNR	**Loginova**	**4.05**	**205**	*e*P	**Pn**	**16 27 12.1**	**+2.3**
LGNR	**Loginova**	**4.05**	**205**	PN	**Pn**	**16 27 12.1**	**+2.3**
ESO	**Esso**	**4.71**	**217**	*e*P	**Pn**	**16 27 20.0**	**+1.3**
ESO	**Esso**	**4.71**	**217**	PN	**Pn**	**16 27 20.0**	**+1.3**
BKI	**Bering**	**4.74**	**164**	*e*P	**Pn**	**16 27 17.8**	**-1.2**
BKI				*e*S	**Sn**	**16 28 09.4**	**-3.9**
BKI	**Bering**	**4.74**	**164**	PN	**Pn**	**16 27 17.8**	**-1.2**
MKZ	**Mys Kozlova**	**5.35**	**193**	*e*P	**Pn**	**16 27 26.9**	**-0.5**
MKZ	**Mys Kozlova**	**5.35**	**193**	PN	**Pn**	**16 27 26.9**	**-0.5**
SEY	**Seymchan**	**6.32**	**305**	Pn	**Pn**	**16 27 38.5**	**-2.2**
	0.8nm,0.3s,baz=123,slow=13,SNR=25						
SEY				Lg	Lg	16 29 21.3	
	4.2nm,0.3s,baz=51,slow=10,SNR=2.1						
SEY	**Seymchan**	**6.32**	**305**	*e*PN	**Pn**	**16 27 40.3**	**-0.4**
MA2	**Magadan**	**6.58**	**274**	Pn	**Pn**	**16 27 44.4**	**0.0**
	3.3nm,0.3s,baz=107,slow=11,SNR=19						
MA2				Lg	Lg	16 29 30.1	
	1.5nm,0.3s,baz=27,slow=12,SNR=1.6						
MA2				LR	LR	16 30 28.1	
	comp=Z,729nm,19.6s,baz=122,slow=40						
GNL	**Ganaly**	**6.88**	**210**	*e*P	Pn	16 27 52.1	+3.5
GNL	**Ganaly**	**6.88**	**210**	PN	Pn	16 27 52.1	+3.5
SDLR	**Sedlovina**	**7.05**	**205**	*e*P	Pn	16 27 53.8	+2.9
SDLR	**Sedlovina**	**7.05**	**205**	PN	Pn	16 27 53.8	+2.9
PET	**Petropavlovsk**	**7.33**	**205**	*e*PN	**Pb**	**16 28 16.2**	**+0.9**
PET				MLR	MLR		
	comp=Z,2μm,12.0s						
PET				MLR	MLR		
	comp=Z,2μm,14.0s						
PET	**Petropavlovsk**	**7.33**	**205**	*e*Pn	**Pn**	**16 27 56.2**	**+1.5**
PETK	**Petropavlovsk-**	**7.47**	**209**	LR	LR	16 30 48.4	
	comp=Z,377nm,21.4s,baz=14,slow=38						
BILL	**Bilibino**	**8.37**	**7**⇑	*i*PN	**Pn**	**16 28 07.9**	**-0.9**
BILL				pmax	pmax		
	comp=Z,13nm,0.8s						
BILL				MLR	MLR		
	comp=Z,141nm,9.0s						
BILL	**Bilibino**	**8.37**	**7**	*e*Pn	**Pn**	**16 28 08.4**	**-0.4**
SMY	**Shemya**	**9.10**	**136**	*e*PN	Pn	16 28 14.3	-4.6
SMY	**Shemya**	**9.10**	**136**	*e*Pn	Pn	16 28 14.3	-4.6
SKR	**Severo-Kuril's**	**10.09**	**209**	*e*PN	Pn	16 28 37.1	+4.6
YAK	**Yakutsk**	**16.61**	**292**	Pn	**Pn**	**16 29 59.7**	**-0.5**
	comp=Z,0.0nm,0.3s,baz=261,slow=0.5,SNR=23						
YAK	**Yakutsk**	**16.61**	**292**	*e*P	**Pn**	**16 30 00.2**	**+0.1**
YAK				*e*S	**Sn**	**16 33 04.4**	**+0.6**
YAK				pmax	pmax		
	comp=Z,38nm,0.8s						
YAK				pmax	pmax		
	comp=N,3.0nm,0.9s						
YAK				pmax	pmax		
	comp=E,44nm,1.3s						
YAK				pmax	pmax		
	comp=Z,77nm,1.3s						
YAK				pmax	pmax		
	comp=N,31nm,2.4s						
YAK				pmax	pmax		
	comp=E,121nm,1.7s						
YAK				smax	smax		
	comp=N,50nm,3.5s						
YAK				smax	smax		
	comp=E,39nm,3.5s						
YAK				MLR	MLR		
	comp=Z,247nm,7.0s						
YAK				MLR	MLR		
	comp=E,141nm,7.0s						
YAK				MLR	MLR		
	comp=N,331nm,7.0s						
YAK	**Yakutsk**	**16.61**	**292**	*e*Pn	**Pn**	**16 29 58.8**	**-1.3**
	comp=N,79nm,0.9s						
UNV	**Unalaska Valle**	**17.23**	**97**	Pn	**Pn**	**16 30 08.1**	**+0.1**
YSS	**Yuzh-Sakhalins**	**17.83**	**233**	*e*P	**P**	**16 30 17.1**	**+1.0**
YSS				*e*S	**Sn**	**16 33 26.8**	**-6.7**
YSS				MLR	MLR		
	comp=Z,400nm,11.0s						
YSS				MLR	MLR		
	comp=N,400nm,12.0s						
YSS				MLR	MLR		
	comp=E,400nm,16.0s						
TIXI	**Tiksi**	**18.27**	**325**	P	**Pn**	**16 30 20.7**	**+0.1**
	comp=E,0.3nm,0.3s,baz=113,slow=14,SNR=12						
TIXI				PcP	**PcP**	**16 34 51.6**	**-0.2**
	comp=E,0.2nm,0.3s,baz=64,slow=3.7,SNR=4.6						
TIXI				LR	LR	16 37 06.9	
	comp=E,145nm,21.6s,baz=125,slow=36						
TIXI	**Tiksi**	**18.27**	**325**	*i*P	**Pn**	**16 30 20.4**	**-0.2**
TIXI				pmax	pmax		
	comp=Z,16nm,1.7s						
TIXI	**Tiksi**	**18.27**	**325**	*e*Pn	**P**	**16 30 21.2**	**+0.5**
	comp=Z,44nm,2.0s						
TIXI				PcP	**PcP**	**16 34 51.6**	**-0.2**
TT01	**Tatalina**	**19.32**	**63**	*e*P	**Pn**	**16 30 33.2**	**-0.2**
TTA	**Tatalina**	**19.32**	**63**	*e*P	**Pn**	**16 30 33.5**	**0.0**
TTA				pmax	pmax		
	comp=Z,24nm,1.3s						
TTA	**Tatalina**	**19.32**	**63**	*e*P	**Pn**	**16 30 33.5**	**0.0**
	comp=Z,24nm,1.3s						
TTA				*e*PcP	**PcP**	**16 34 57.8**	**+3.9**
SVW2	**Sparrevohn**	**19.89**	**69**	*e*P	**P**	**16 30 39.2**	**+0.6**
SVW2				*e*Pn	**pP**	**16 30 44.7**	**+0.6**
HABR	**Khabarovsk**	**20.09**	**249**	*e*P	**P**	**16 30 40.2**	**-0.6**
HABR				*e**PP	**sP**	**16 30 48.9**	**+0.1**
HABR				*e*		16 30 57.1	
HABR				*e*S	**S**	**16 34 25.1**	**-0.3**
HABR				*e*		16 34 53.7	
HABR				*e*SSS	SSS	16 34 58.7	
HABR				*e*		16 42 10.1	
HABR				pmax	pmax		
	comp=Z,144nm,1.9s						
HABR				pmax	pmax		
	comp=N,22nm,0.9s						
HABR				pmax	pmax		
	comp=E,31nm,0.9s						
HABR				MLR	MLR		
	comp=Z,210nm,16.0s						
CAST	**Castle Rocks**	**20.99**	**61**	*e*P	**P**	**16 30 50.0**	**-0.5**
	comp=Z,8.8nm,0.9s						
CAST				*e*ScS	ScS	16 42 14.4	-1.0
PPLA	**Purkeypile**	**21.05**	**62**	*e*P	**P**	**16 30 50.4**	**-0.9**
	comp=Z,83nm,1.8s						
KLR	**Kul'dur**	**21.15**	**254**	P	**P**	**16 30 53.0**	**+0.7**
	comp=Z,4.1nm,0.8s,baz=42,slow=12,SNR=11						
KLR	**Kul'dur**	**21.15**	**254**	*i* P	**P**	**16 30 53.4**	**+1.1**
MLY	**Manley**	**21.33**	**56**	*e*P	**P**	**16 30 54.6**	**+0.4**
	comp=Z,16nm,1.0s						
BPAW	**Bear Paw Mtn.**	**21.36**	**59**	*e*P	**P**	**16 30 55.0**	**+0.5**
	comp=Z,11nm,1.0s						
COLD	**Coldfoot**	**21.37**	**50**	*e*P	**P**	**16 30 55.0**	**+0.4**
	comp=Z,17nm,1.0s						
RSO	**Redoubt South**	**21.39**	**69**	*e*P	**P**	**16 30 56.8**	**+1.8**
KTH	**Kantishna Hill**	**21.48**	**60**	*e*P	**P**	**16 30 56.8**	**+1.0**
	comp=Z,42nm,1.4s						
SPU	**Mount Spurr**	**21.52**	**67**	*e*P	**P**	**16 30 56.8**	**+0.6**
TRF	**Thorofare Moun**	**21.78**	**61**	*e*P	**P**	**16 30 59.6**	**+0.4**
	comp=Z,27nm,1.1s						
BWN	**Browne**	**22.00**	**58**	*e*P	**P**	**16 31 00.9**	**-0.4**
	comp=Z,55nm,1.0s						
MCK	**McKinley**	**22.32**	**59**	*e*P	**P**	**16 31 04.7**	**-0.1**
MCK				*e*		16 42 21.0	
MCK				pmax	pmax		
	comp=Z,19nm,1.0s						
MCK	**McKinley**	**22.32**	**59**	*e*P	**P**	**16 31 04.7**	**-0.1**
	comp=Z,19nm,1.0s						
MCK				*e*ScS	ScS	16 42 20.9	+0.8
MDM	**Murphy Dome**	**22.39**	**56**	*e*P	**P**	**16 31 05.8**	**+0.2**
	comp=Z,18nm,1.1s						
RND	**Reindeer**	**22.42**	**60**	*e*P	**P**	**16 31 05.8**	**-0.1**
RND				pmax	pmax		
	comp=Z,12nm,1.0s						
RND	**Reindeer**	**22.42**	**60**	*e*P	**P**	**16 31 05.8**	**-0.1**
	comp=Z,12nm,1.0s						
WRH	**Wood River Hil**	**22.54**	**57**	*e*P	**P**	**16 31 07.4**	**+0.3**
	comp=Z,22nm,1.0s						
COLA	**College**	**22.57**	**56**	*i* P	**P**	**16 31 06.7**	**-0.7**
COLA				pmax	pmax		
	comp=Z,14nm,1.0s						
CCB	**Clear Creek Bu**	**22.63**	**57**	*e*P	**P**	**16 31 07.8**	**-0.2**
	comp=Z,18nm,1.1s						
IL1	**Eielson Array**	**22.99**	**56**	*e*P	**P**	**16 31 11.6**	**-0.3**
IL1				*e*ScS	ScS	16 42 20.4	-2.2
ILAR	**Eielson Array**	**22.99**	**56**	P	**P**	**16 31 11.6**	**-0.2**
	comp=Z,5.7nm,0.9s,baz=249,slow=6.3,SNR=42						
ILB	**Eielson Array**	**22.99**	**56**	*e*P	**P**	**16 31 11.6**	**-0.2**
HDA	**Harding Lake**	**23.04**	**57**	*e*P	**P**	**16 31 12.0**	**-0.3**
	comp=Z,22nm,1.2s						
SML	**Sawmill**	**23.05**	**64**	*e*P	**P**	**16 31 12.4**	**-0.2**
SML				pmax	pmax		
	comp=Z,22nm,1.2s						
SML	**Sawmill**	**23.05**	**64**	*e*P	**P**	**16 31 12.4**	**-0.2**
	comp=Z,22nm,1.2s						
SML				*e*Sn	Sn	16 35 45.6	+6.7
DHY	**Denali Highway**	**23.15**	**61**	*e*P	**P**	**16 31 12.3**	**-1.3**
	comp=Z,13nm,1.1s						
FYU	**Fort Yukon**	**23.38**	**52**	*e*P	**P**	**16 31 16.0**	**+0.3**
	comp=Z,18nm,0.9s						
SCM	**Sheep Creek Mo**	**23.50**	**64**	*e*P	**P**	**16 31 16.4**	**-0.7**
SCM				pmax	pmax		
	comp=Z,38nm,1.3s						
SCM	**Sheep Creek Mo**	**23.50**	**64**	*e*P	**P**	**16 31 16.4**	**-0.7**
	comp=Z,38nm,1.3s						
SCM				*e*Sn	Sn	16 35 46.0	-3.7
PAX	**Paxson**	**24.01**	**60**	*e*P	**P**	**16 31 20.7**	**-1.3**
PAX				pmax	pmax		
	comp=Z,21nm,1.4s						
PAX	**Paxson**	**24.01**	**60**	*e*P	**P**	**16 31 20.7**	**-1.3**
	comp=Z,21nm,1.4s						
KLU	**Klutina**	**24.25**	**64**	*e*P	**P**	**16 31 23.4**	**-0.8**
	comp=Z,17nm,1.0s						
KLU				*e*S	**S**	**16 35 48.4**	**+6.9**
DOT	**Dot Lake**	**24.45**	**58**	*e*P	**P**	**16 31 24.6**	**-1.3**
	comp=Z,32nm,0.9s						
EYAK	**Cordova Ski Ar**	**24.64**	**66**	*e*P	**P**	**16 31 27.4**	**-0.2**
	comp=Z,31nm,1.1s						
USRK	**Ussuriysk Ar.**	**24.68**	**245**	P	**P**	**16 31 28.4**	**+0.3**
	comp=Z,8.4nm,1.0s,baz=44,slow=9.2,SNR=7.7						
MENT	**Mentasta**	**24.79**	**60**	*e*P	**P**	**16 31 28.6**	**-0.4**
	comp=Z,12nm,1.0s						
BMRM	**Bremner River**	**25.02**	**65**	*e*P	**P**	**16 31 30.9**	**-0.3**
	comp=Z,27nm,1.0s						
BOD	**Bodaibo**	**25.36**	**288**	*e*P	**P**	**16 31 34.3**	**+0.1**
BOD				pmax	pmax		
	comp=Z,66nm,1.2s						
EGAK	**Eagle**	**25.39**	**55**	*e*P	**P**	**16 31 32.5**	**-1.8**
	comp=Z,18nm,0.9s						
MDJ	**Mudanjiang**	**25.48**	**249**	P	**P**	**16 31 36.0**	**+0.7**
MDJ				pP	pP	16 31 42.0	+0.8
MDJ				sP	sP	16 31 44.8	+1.2
MDJ				S	**S**	**16 36 02.0**	**+0.7**
MDJ				ScP	**ScP**	**16 38 46.5**	**+2.1**
MDJ				pmax	pmax		
	comp=Z,10.0nm,1.2s						
MDJ				pmax	pmax		
	comp=Z,120nm,7.1s						
MDJ				LR	LR		
	comp=Z,250nm,16.1s						
MDJ				LR	LR		
	comp=Z,310nm,16.7s						
MDJ				LR	LR		
	comp=Z,390nm,15.5s						
INK	**Inuvik**	**27.51**	**46**	P	**P**	**16 31 52.8**	**-0.7**
	comp=Z,2.6nm,0.9s,baz=298,slow=7.0,SNR=10						
INK	**Inuvik**	**27.51**	**46**	*e*P	**P**	**16 31 52.7**	**-0.7**
INK				pmax	pmax		
	comp=Z,7.0nm,1.0s						
INK	**Inuvik**	**27.51**	**46**	*e*P	**P**	**16 31 52.7**	**-0.7**
	comp=Z,7.3nm,1.0s						
MJAR	**Matsushiro Arr**	**28.48**	**227**	P	**P**	**16 32 03.6**	**+1.2**
	comp=Z,2.4nm,1.1s,baz=358,slow=7.2,SNR=4.1						
MJAR				LR	LR	16 43 32.1	
	comp=Z,160nm,21.7s,baz=20,slow=37						
NRIK	**Noril'sk**	**31.87**	**319**	P	**P**	**16 32 32.1**	**+0.1**
	comp=Z,3.6nm,1.0s,baz=87,slow=5.1,SNR=6.2						
KS01	**Wonju Array Si**	**31.92**	**242**	*e*P	**P**	**16 32 31.6**	**-1.2**
KSRS	**Korea Array**	**31.92**	**242**	P	**P**	**16 32 32.9**	**+0.1**
	comp=Z,5.3nm,1.1s,baz=33,slow=8.6,SNR=6.9						
KSRS				PcP	**PcP**	**16 35 21.1**	**-1.6**
	comp=Z,0.9nm,0.8s,baz=20,slow=4.0,SNR=4.2						
KSRS	**Korea Array**	**31.92**	**242**	P	**P**	**16 32 32.9**	**+0.1**
KSRS						16 35 21.1	
KSRS				pmax	pmax		
	comp=Z,4.0nm,1.1s						
KSRS				pmax	pmax		
	comp=Z,1.0nm,0.8s						
KSAR	**Wonju Array Be**	**31.95**	**242**	P	**P**	**16 32 32.9**	**-0.2**
KSAR						16 35 21.1	
KSAR	**Wonju Array Be**	**31.95**	**242**	P	**P**	**16 32 32.9**	**-0.2**
KSAR				PcP	**PcP**	**16 35 21.1**	**-1.7**
DLBC	**Dease Lake**	**32.76**	**63**	*e*P	**P**	**16 32 41.1**	**+1.0**
	comp=Z,9.1nm,0.9s						
IRK	**Irkutsk**	**33.05**	**284**	*e*P	**P**	**16 32 42.7**	**+0.1**
IRK				pmax	pmax		
	comp=Z,20nm,2.5s						
TLY	**Talaya**	**33.70**	**283**	P	**P**	**16 32 49.1**	**+0.8**
	comp=Z,3.9nm,0.8s,baz=30,slow=9.6,SNR=7.6						
TLY	**Talaya**	**33.70**	**283**	*e*P	**P**	**16 32 49.5**	**+1.3**
TLY				pmax	pmax		
	comp=Z,8.0nm,1.1s						
TLY				MLR	MLR		
	comp=Z,136nm,15.0s						
TLY	**Talaya**	**33.70**	**283**	*e*P	**P**	**16 32 49.0**	**+0.8**
	comp=Z,5.8nm,0.9s						
ULN	**Ulaanbaatar**	**34.44**	**276**⇑	*i*P	**P**	**16 32 55.7**	**+0.9**
ULN				pmax	pmax		
	comp=Z,6.0nm,1.2s						
ULN	**Ulaanbaatar**	**34.44**	**276**	*e*P	**P**	**16

GTA **Gaotai** 44.14 272 *e*P P 16 34 16.0 +0.1
GTA pP sP 16 34 23.3 -1.0
GTA sP pP 16 34 26.5 +4.6
GTA S **S** **16 40 43.5 -4.1**
GTA sS sS 16 40 59.5 +1.9
GTA SS SS 16 43 54.8 -10
GTA pmax pmax
comp=Z,10.0nm,0.9s
GTA pmax pmax
comp=Z,100nm,4.5s
GTA LR LR
comp=Z,200nm,16.4s
GTA LR LR
comp=Z,190nm,13.3s
GTA LR LR
comp=Z,180nm,14.7s
LZH **Lanzhou** 44.66 266 *e*P P 16 34 21.0 +0.9
LZH pP sP 16 34 28.3 -0.2
LZH sP pP 16 34 33.0 +6.8
LZH pmax pmax
comp=Z,31nm,1.1s
LZH pmax pmax
comp=Z,71nm,5.7s
LZH LR LR
comp=Z,230nm,14.0s
LZH LR LR
comp=Z,210nm,12.1s
LZH LR LR
comp=Z,230nm,14.6s
NEW **Newport** 45.13 68 P P 16 34 22.8 -0.7
baz=316
I03D **Drain, OR** 45.43 77 P P 16 34 25.6 -0.3
baz=317
I04A **Tendick Farm,** 45.82 76 P P 16 34 29.3 +0.2
baz=318
WALA **Waterton Lakes** 46.05 65 *e*P P 16 34 30.8 -0.1
comp=Z,19nm,1.4s
KURK **Kurchatov** 46.12 299 P P 16 34 31.5 +0.2
KURK pmax pmax
comp=Z,96nm,1.3s
KURK **Kurchatov** 46.12 299 *e*P P 16 34 31.3 +0.1
comp=Z,38nm,1.1s
KURBB **Kurchatov Arra** 46.23 298 P P 16 34 32.4 +0.3
comp=Z,20nm,1.0s,baz=42,slow=7.6,SNR=119
BSMT **Bassoo Peak** 46.51 67 *e*P P 16 34 35.1 +0.4
F10A **Beach Ranch, E** 46.73 70 *e*P P 16 34 36.3 +0.1
comp=Z,7.5nm,0.8s
J05D **Fort Rock, OR** 46.78 75 P P 16 34 37.7 +1.0
baz=318
WMQ **Urumqi** 46.89 286 P P 16 34 39.0 +1.5
WMQ pP sP 16 34 47.8 +1.8
WMQ sP pP 16 34 51.5 +7.9
WMQ PP **PP** **16 36 27.8 +0.2**
WMQ pmax pmax
comp=Z,7.0nm,1.2s
WMQ pmax pmax
comp=Z,26nm,5.2s
WMQ LR LR
comp=Z,73nm,14.4s
WMQ LR LR
comp=Z,27nm,18.0s
WMQ LR LR
comp=Z,27nm,18.0s
FFC **Flin Flon** 47.10 52 *e*P P 16 34 38.3 -0.6
FFC pmax pmax
comp=Z,5.0nm,1.0s
FFC **Flin Flon** 47.10 52 *e*P P 16 34 38.2 -0.6
comp=Z,4.9nm,1.0s
FCC **Fort Churchill** 47.11 44 *e*P P 16 34 38.2 -0.6
FCC pmax pmax
comp=Z,5.0nm,0.9s
FCC **Fort Churchill** 47.11 44 *e*P P 16 34 38.2 -0.6
comp=Z,5.4nm,0.9s
MK31 **Makanchi Array** 47.29 292 *i*P P 16 34 39.6 -0.9
MK31 pmax pmax
comp=Z,6.0nm,0.8s
MK31 **Makanchi Array** 47.29 292 *e*P P 16 34 39.8 -0.7
MKAR **Makanchi Array** 47.29 292 P P 16 34 40.1 -0.4
comp=Z,5.4nm,0.7s,baz=48,slow=7.3,SNR=60
MKAR **Makanchi Array** 47.29 292 *e*P P 16 34 39.7 -0.8
MK01 **Makanchi Array** 47.30 292 *e*P P 16 34 39.8 -0.8
M02C **Callahan** 47.39 78 P P 16 34 42.0 +0.6
baz=319
CHKZ **Chkalovo** 47.40 306 P P 16 34 40.7 -0.5
CHKZ pmax pmax
comp=Z,21nm,1.7s
MAKZ **Makanchi** 47.42 293 *e*P P 16 34 40.8 -0.8
MAKZ pmax pmax
comp=Z,9.0nm,0.9s
MAKZ **Makanchi** 47.42 293 *e*P P 16 34 40.8 -0.8
comp=Z,8.7nm,0.9s
BMO **Blue Mountains** 47.52 71 *e*P P 16 34 42.0 -0.4
comp=Z,6.8nm,0.9s
ARCES **ARCESS Array B** 47.57 341 P P 16 34 41.5 -0.8
comp=Z,5.4nm,0.9s,baz=20,slow=12,SNR=7.8
M04C **Macdoel** 47.60 77 P P 16 34 44.3 +1.2
baz=319
MSO **Missoula** 47.65 67 P P 16 34 44.0 +0.6
baz=318
MSO **Missoula** 47.65 67 *e*P P 16 34 43.4 0.0
comp=Z,10nm,1.3s
N02D **Trinity Center** 47.78 79 P P 16 34 45.9 +1.4
baz=319
VOSK **Vostochnaya** 47.95 305 P P 16 34 45.1 -0.4
VOSK pmax pmax
comp=Z,6.0nm,1.0s
BVA0 **Borovoye Array** 47.97 306 *i*P P 16 34 45.8 +0.1
BVA0 pmax pmax
comp=Z,8.0nm,0.8s
BVAR **Borovoye Array** 47.97 306 P P 16 34 46.0 +0.3
comp=Z,7.5nm,0.8s,baz=54,slow=8.1,SNR=34
BVAR PcP **PcP** **16 36 13.6 +0.1**
comp=Z,2.1nm,0.8s,baz=168,slow=1.4,SNR=4.4
BRVK **Borovoye** 47.99 306 ‖ *i*P P 16 34 45.3 -0.5
BRVK pmax pmax
comp=Z,16nm,1.2s
BRVK **Borovoye** 47.99 306 *e*P P 16 34 45.7 -0.1
comp=Z,32nm,1.6s
WDC **Whiskeytown Da** 48.16 79 *e*P P 16 34 47.3 0.0
WDC pmax pmax
comp=Z,17nm,1.1s
WDC **Whiskeytown Da** 48.16 79 *e*P P 16 34 47.3 0.0
comp=Z,17nm,1.1s
ZRNK **Zerenda** 48.59 306 *e*P P 16 34 50.1 -0.4
ZRNK pmax pmax
comp=Z,24nm,1.5s
ZRNK **Zerenda** 48.59 306 *e*P P 16 34 50.1 -0.4
comp=Z,24nm,1.5s
WVOR **Wild Horse Val** 48.68 74 *e*P P 16 34 51.8 +0.3
WVOR pmax pmax
comp=Z,7.0nm,0.9s
WVOR **Wild Horse Val** 48.68 74 *e*P P 16 34 51.8 +0.3
comp=Z,6.8nm,0.9s
EGMT **Eagleton** 48.69 63 P P 16 34 51.4 0.0
baz=318
EGMT **Eagleton** 48.69 63 *e*P P 16 34 51.3 -0.1
comp=Z,7.1nm,0.9s
CD2 **Chengdu** 48.83 261 P P 16 34 51.0 -1.6
CD2 pmax pmax
comp=Z,1.0nm,0.5s
MFID **Camas Ranch** 49.30 71 *e*P P 16 34 56.3 +0.1
comp=Z,9.2nm,0.8s
BOZ **Bozeman (W)** 49.61 66 P P 16 34 58.9 +0.4
baz=319,SNR=5.3
BOZ **Bozeman (W)** 49.61 66 *e*P P 16 34 58.9 +0.4
BOZ pmax pmax
comp=Z,7.0nm,1.1s
BOZ **Bozeman (W)** 49.61 66 *e*P P 16 34 58.9 +0.4
comp=Z,7.0nm,1.1s
MCMT **McKenzie Canyo** 49.65 68 *e*P P 16 34 58.4 -0.6
HLID **Hailey** 49.87 70 P P 16 35 01.0 +0.4
baz=319
HLID **Hailey** 49.87 70 *e*P P 16 35 00.6 0.0
comp=Z,4.3nm,0.8s
ARU **Arti** 49.94 316 P P 16 35 00.7 0.0
comp=Z,4.5nm,0.7s,baz=53,slow=3.4,SNR=10
ARU PcP **PcP** **16 36 20.5 -0.1**
comp=Z,1.9nm,0.6s,baz=324,slow=1.0,SNR=4.4
ARU **Arti** 49.94 316 *d i*P P 16 35 00.0 -0.7
ARU 16 36 20.2
ARU 16 36 52.9
ARU S **S** **16 42 07.9 -1.7**
ARU pmax pmax
comp=Z,11nm,1.0s
ARU **Arti** 49.94 316 *e*P P 16 35 00.5 -0.3
comp=Z,8.5nm,0.9s
ARU PcP **PcP** **16 36 20.5 -0.1**
GCMT **Greycliff** 50.40 65 *e*P P 16 35 05.2 +0.7
YMR **Madison River** 50.65 67 *e*P P 16 35 07.3 +0.7
comp=Z,11nm,1.3s
LKWY **Lake** 50.99 67 *e*P P 16 35 10.7 +1.5
LKWY pmax pmax
comp=Z,5.0nm,0.9s
LKWY **Lake** 50.99 67 *e*P P 16 35 10.7 +1.5
comp=Z,4.7nm,0.9s
H17A **Grant Village** 51.04 67 P P 16 35 10.9 +1.3
baz=320,SNR=7.5
H17A **Grant Village** 51.04 67 *e*P P 16 35 10.6 +1.1
comp=Z,9.9nm,1.1s
RLMT **Red Lodge** 51.09 65 P P 16 35 10.6 +0.8
baz=320
RLMT **Red Lodge** 51.09 65 *e*P P 16 35 10.2 +0.4
comp=Z,14nm,1.0s
PDGK **Podgornoye** 51.20 291 P P 16 35 10.6 +0.3
PDGK pmax pmax
comp=Z,14nm,1.0s
FLWY **Flagg Ranch** 51.22 67 *e*P P 16 35 11.6 +0.8
comp=Z,12nm,0.9s
IMW **Indian Meadow** 51.25 67 *e*P P 16 35 12.1 +1.0
comp=Z,6.7nm,0.9s
A26A **Wade Farm, Ken** 51.42 57 P P 16 35 11.9 -0.1
baz=320
MOOW **Moose Ponds** 51.45 67 *e*P P 16 35 13.1 +0.5
comp=Z,3.6nm,1.3s
LOHW **Long Hollow** 51.62 67 *e*P P 16 35 14.4 +0.5
comp=Z,5.9nm,0.9s
REDW **Red Top Meadow** 51.70 68 *e*P P 16 35 15.3 +0.8
comp=Z,5.8nm,0.9s
NVAR **Mina Array Bea** 51.91 77 P P 16 35 16.6 +0.5
comp=Z,6.0nm,1.0s,baz=311,slow=6.9,SNR=4.7
HVU **Hansel Valley** 52.01 71 *e*P P 16 35 17.5 +0.8
HVU pmax pmax
comp=Z,8.0nm,0.9s
HVU **Hansel Valley** 52.01 71 *e*P P 16 35 17.5 +0.8
comp=Z,8.0nm,0.9s
KLMR **Klimovskoe** 52.21 329 *e*P P 16 35 15.7 -1.9
KLMR pmax pmax
comp=Z,10.0nm,1.1s
D25A **Fairfield** 52.21 60 P P 16 35 18.5 +0.6
baz=320
C26A **Wahner Farm, P** 52.22 58 P P 16 35 18.0 0.0
baz=320
B28A **Dugan Ranch, T** 52.48 57 P P 16 35 20.8 +1.0
baz=321
A29A **Manning Farm,** 52.59 56 P P 16 35 20.9 +0.3
baz=321
E25A **Miller Ranch,** 52.67 60 P P 16 35 21.9 +0.5
baz=321
D26A **Manning** 52.69 59 P P 16 35 21.6 +0.1
baz=321
HWUT **Hardware Ranch** 52.72 70 *e*P P 16 35 22.6 +0.6
comp=Z,12nm,1.1s
BW06 **Boulder Array** 52.76 67 P P 16 35 22.4 +0.1
baz=321,SNR=14
BW06 **Boulder Array** 52.76 67 *e*P P 16 35 22.4 +0.1
comp=Z,9.4nm,0.9s
PD31 **Pinedale Array** 52.76 67 *e*P P 16 35 22.4 0.0
PDAR **Pinedale Array** 52.76 67 P P 16 35 22.6 +0.2
comp=Z,5.7nm,0.8s,baz=319,slow=2.9,SNR=55
B29A **Wagenman Farm,** 52.89 56 P P 16 35 23.1 +0.2
baz=321
ULM **Lac du Bonnet** 52.92 52 P P 16 35 22.7 -0.4
comp=Z,6.6nm,1.0s,baz=310,slow=8.2,SNR=5.0
ULM LR LR 16 58 01.1
comp=Z,94nm,20.2s,baz=9.5,slow=36
ULM **Lac du Bonnet** 52.92 52 P P 16 35 22.7 -0.4
ULM pmax pmax
comp=Z,4.0nm,0.7s
ULM MLR MLR
comp=Z,94nm,20.2s
ULM **Lac du Bonnet** 52.92 52 *e*P P 16 35 23.5 +0.4
comp=Z,14nm,1.3s
F25A **Bowman** 53.09 61 P P 16 35 25.4 +0.8
baz=321
DUG **Dugway, Tooele** 53.21 72 P P 16 35 25.0 -0.6
baz=321,SNR=7.5
DUG **Dugway, Tooele** 53.21 72 *e*P P 16 35 24.7 -0.9
DUG pmax pmax
comp=Z,10.0nm,0.8s
DUG **Dugway, Tooele** 53.21 72 *e*P P 16 35 24.7 -0.9
comp=Z,10nm,0.8s
TKM2 **Tokmak 2** 53.33 294 P P 16 35 27.2 +0.7
TKM2 pmax pmax
comp=Z,8.0nm,1.0s
TKM2 **Tokmak 2** 53.33 294 *e*P P 16 35 26.6 +0.1
comp=Z,8.2nm,0.9s
B30A **Myrvik Farm, E** 53.33 55 P P 16 35 25.5 -0.7
baz=322
CTU **Camp Tracy** 53.34 71 *e*P P 16 35 27.1 +0.6
comp=Z,9.3nm,1.0s
SMMC **Simmler** 53.51 81 P P 16 35 29.3 +1.7
baz=322
JLU **Jordanelle** 53.55 71 *e*P P 16 35 28.5 +0.3
comp=Z,5.5nm,1.0s
CWC **Cottonwood Cre** 53.57 79 P P 16 35 28.8 +0.5
baz=322
A32A **Rocking H Ranc** 53.72 54 P P 16 35 29.4 +0.4
baz=322
NLU **North Lily Min** 53.76 71 *e*P P 16 35 29.8 +0.1
comp=Z,11nm,0.8s
F27A **Lemmon** 53.77 60 P P 16 35 29.6 +0.2
baz=321
E28A **Huff** 53.79 58 P P 16 35 30.1 +0.5
baz=322
FRU **Bishkek** 53.85 294 ‖ *i*P P 16 35 30.0 -0.1
FRU pmax pmax
comp=Z,68nm,2.0s
C30A **Mose, Pekin** 53.85 56 P P 16 35 30.5 +0.5
baz=322
D29A **Pettibone, Tap** 53.88 57 P P 16 35 30.8 +0.5
baz=322
PKM **Mcpherson Peak** 53.93 81 P P 16 35 31.6 +0.6
baz=323
G26A **Maurine** 53.96 61 P P 16 35 31.2 +0.3
baz=322
H25A **Fruitdale** 54.05 62 P P 16 35 31.9 +0.3
baz=322
AAK **Ala-Archa** 54.06 294 P P 16 35 32.7 +0.9
comp=Z,13nm,0.8s,baz=125,slow=4.2,SNR=24
AAK **Ala-Archa** 54.06 294 P P 16 35 32.5 +0.7
AAK pmax pmax
comp=Z,18nm,1.0s
AAK **Ala-Archa** 54.06 294 *e*P P 16 35 32.4 +0.7
comp=Z,18nm,0.9s
TPNV **Topopah Spring** 54.08 77 P P 16 35 33.1 +1.1
baz=322
C31A **Landman Farms,** 54.09 55 P P 16 35 32.1 +0.3
baz=322
KMI **Kunming** 54.09 258 P P 16 35 32.0 -0.3
KMI pP pP 16 35 37.8 -0.7
KMI sP sP 16 35 40.8 0.0
KMI S **S** **16 43 09.0 +1.2**
KMI pmax pmax
comp=Z,7.0nm,0.9s
KMI pmax pmax
comp=Z,79nm,3.1s
KMI LR LR
comp=Z,150nm,15.5s
KMI LR LR
comp=Z,99nm,15.2s
KMI LR LR
comp=Z,86nm,21.0s
B32A **Ashes, Strandq** 54.11 54 P P 16 35 32.3 +0.4
baz=322
A33A **Warroad** 54.15 53 P P 16 35 32.4 +0.2
baz=322
MPMC **Manual Prospec** 54.17 79 P P 16 35 33.5 +0.9
baz=322,SNR=5.9
RSSD **Black Hills** 54.24 62 P P 16 35 33.2 +0.1
baz=322
RSSD **Black Hills** 54.24 62 *e*P P 16 35 33.1 -0.1
RSSD pmax pmax
comp=Z,8.0nm,0.8s
RSSD **Black Hills** 54.24 62 *e*P P 16 35 33.1 -0.1
comp=Z,8.3nm,0.8s
K22A **Casper** 54.26 65 P P 16 35 33.6 +0.4
baz=322
K22A **Casper** 54.26 65 *e*P P 16 35 33.1 -0.2
comp=Z,17nm,1.2s
EKS2 **Erkin-Say** 54.37 295 *e*P P 16 35 34.7 +0.7
EKS2 pmax pmax
comp=Z,20nm,0.9s
EKS2 **Erkin-Say** 54.37 295 *e*P P 16 35 34.7 +0.7
comp=Z,20nm,0.9s
I25A **Rochford** 54.46 62 P P 16 35 35.1 +0.5
baz=322
AGMN **Agassiz Nation** 54.47 54 P P 16 35 34.7 +0.2
baz=322
AGMN **Agassiz Nation** 54.47 54 *e*P P 16 35 34.2 -0.2
comp=Z,12nm,1.1s
LRMC **Laurel Mtn Rad** 54.53 79 P P 16 35 36.1 +0.8
baz=323
D31A **Mcclaflin, Tow** 54.68 56 P P 16 35 35.8 -0.3
baz=322
TMUT **Trail Mountain** 54.69 71 *e*P P 16 35 37.2 +0.7
comp=Z,10.0nm,1.1s
H27A **Howes** 54.71 61 P P 16 35 36.9 +0.5
baz=322
F29A **Eureka** 54.75 58 P P 16 35 37.1 +0.6
baz=322
FINES **FINESS Array B** 54.78 337 P P 16 35 35.2 -1.3
comp=Z,2.1nm,0.9s,baz=38,slow=9.6,SNR=6.4
MSU **Marysvale** 54.84 73 *e*P P 16 35 38.0 +0.4
MSU **Marysvale** 54.84 73 *e*P P 16 35 38.0 +0.4
EDW2 **Edwards Air Fo** 54.85 80 P P 16 35 38.3 +0.8
baz=323
AKTO **Aktyubinsk** 54.87 311 P P 16 35 37.7 +0.4
comp=Z,5.2nm,0.8s,baz=34,slow=6.1,SNR=14
AKTO **Aktyubinsk** 54.87 311 P P 16 35 37.0 -0.4
AKTO pmax pmax
comp=Z,19nm,1.5s
P18A **Preston Nutter** 54.89 70 *e*P P 16 35 38.4 +0.3
comp=Z,8.8nm,1.3s
SHOC **Shoshone, Teco** 54.89 78 P P 16 35 39.0 +1.3
baz=323
J25A **Sunshine Ranch** 54.92 63 P P 16 35 37.9 -0.1
baz=322
BLG **Laguna Peak, P** 54.93 81 P P 16 35 39.1 +1.1
baz=323
E31A **Nome** 55.00 56 P P 16 35 38.4 0.0
baz=322
AB31 **Akbulak array** 55.08 309 *i*P P 16 35 38.0 -0.8
AB31 pmax pmax
comp=Z,6.0nm,0.9s
MNAS **Manas** 55.09 296 P P 16 35 40.5 +1.3
MNAS pmax pmax
comp=Z,34nm,1.2s
GSC **Goldstone, Bar** 55.10 79 P P 16 35 40.4 +1.0
baz=323,SNR=6.2
GSC **Goldstone, Bar** 55.10 79 *e*P P 16 35 40.3 +1.0
GSC pmax pmax
comp=Z,14nm,0.9s
GSC **Goldstone, Bar** 55.10 79 *e*P P 16 35 40.2 +0.9
comp=Z,14nm,0.9s
SRU **San Rafael Swe** 55.16 71 *e*P P 16 35 40.5 +0.6
SRU pmax pmax
comp=Z,15nm,0.9s
SRU **San Rafael Swe** 55.16 71 *e*P P 16 35 40.5 +0.6
comp=Z,15nm,0.9s
I27A **Quinn** 55.17 61 P P 16 35 39.9 +0.3
baz=322
B35A **Bob, Littlefor** 55.28 52 P P 16 35 40.2 -0.1
baz=323
O20A **White River Ci** 55.44 68 P P 16 35 41.8 -0.1
baz=322,SNR=9.0
O20A **White River Ci** 55.44 68 *e*P P 16 35 42.2 +0.3
comp=Z,13nm,0.9s
TUQ **Turquoise Moun** 55.44 78 P P 16 35 42.9 +1.1
baz=323
LCMT **Little Creek M** 55.50 75 *e*P P 16 35 43.7 +1.4
comp=Z,9.4nm,1.1s
KK31 **Karatay Array** 55.50 297 *i*P P 16 35 42.6 +0.5
KK31 pmax pmax
comp=Z,22nm,1.0s
KKAR **Karatay Array** 55.50 297 *e*P P 16 35 42.5 +0.5
KKAR **Karatay Array** 55.50 297 *e*P P 16 35 42.5 +0.5
BFSC **Mount Baldy Ra** 55.53 80 P P 16 35 43.7 +1.2
baz=323
H29A **Onida** 55.53 59 P P 16 35 42.7 +0.5
baz=323
G30A **Faulkton** 55.60 58 P P 16 35 43.1 +0.4
baz=323
I28A **Midland** 55.61 61 P P 16 35 43.2 +0.4
baz=322
D34A **Park Rapids** 55.70 54 P P 16 35 43.6 +0.2
baz=323
KNB **Kanab** 55.70 74 *e*P P 16 35 44.8 +1.0
KNB pmax pmax
comp=Z,7.0nm,0.8s
KNB **Kanab** 55.70 74 *e*P P 16 35 44.8 +1.0
comp=Z,7.2nm,0.8s
C35A **Jirik Farms, M** 55.71 53 P P 16 35 43.4 0.0
baz=323
HEC **Hector,Ludlow** 55.71 79 P P 16 35 44.4 +0.6
baz=323
KSH **Kashi** 55.82 291 P P 16 35 49.3 +4.8
KSH *es*P sP 16 36 03.3 +10
KSH *e*PcP **PcP** **16 36 46.5 +3.2**
KSH *e*PP PP 16 37 56.5 +7.8
KSH PcS **PcS** **16 40 46.0 +2.3**
KSH S **S** **16 43 35.0 +4.5**
KSH ScS **ScS** **16 45 33.3 +0.9**
KSH SS **SS** **16 47 21.3 +5.8**
KSH pmax pmax
comp=Z,19nm,1.1s
KSH pmax pmax
comp=Z,140nm,6.3s
KSH LR LR
comp=Z,150nm,8.3s
KSH LR LR
comp=Z,190nm,7.3s
KSH LR LR
comp=Z,280nm,14.1s
E33A **Westby DABS, E** 55.83 55 P P 16 35 44.7 +0.4
baz=323
N23A **Red Feather La** 55.91 66 P P 16 35 45.7 +0.4
baz=322
N23A **Red Feather La** 55.91 66 *e*P P 16 35 45.8 +0.5
comp=Z,4.7nm,0.9s
I29A **Vivian Onida** 55.98 60 P P 16 35 45.4 0.0
baz=323
J28A **Allard Ranch,** 56.04 61 P P 16 35 46.3 +0.4
baz=323
GMRC **Granite Mounta** 56.08 78 P P 16 35 47.2 +0.8
baz=323,SNR=5.9
C36A **Pine Crest Far** 56.12 52 P P 16 35 46.1 -0.3
baz=324
LSA **Lhasa** 56.16 272 *e*P P 16 35 48.2 +0.7
LSA pmax pmax
comp=Z,6.0nm,0.9s
LSA **Lhasa** 56.16 272 *e*P P 16 35 48.2 +0.7
comp=Z,6.3nm,0.9s
D35A **Remer** 56.17 54 P P 16 35 46.5 -0.2
baz=324
F33A **5 Mile Ranch,** 56.24 56 P P 16 35 47.6 +0.3
baz=323
PV09 **Paradox Valley** 56.31 70 *e*P P 16 35 48.9 +0.7
C37A **Embarrass** 56.40 52 P P 16 35 48.1 -0.3
baz=324
PV10 **Paradox Valley** 56.45 70 *e*P P 16 35 50.4 +1.2
J29A **Okreek** 56.45 60 P P 16 35 48.7 -0.2
baz=323
EYMN **Ely** 56.50 51 P P 16 35 48.7 -0.4
baz=324
PV04 **Paradox Valley** 56.50 70 *e*P P 16 35 50.1 +0.6
BELC **Belle Mtn. Jos** 56.54 79 P P 16 35 50.2 +0.5
baz=324
PFO **Pinyon Flats O** 56.62 80 P P 16 35 51.0 +0.6
baz=324
PV05 **Paradox Valley** 56.66 71 *e*P P 16 35 51.2 +0.6
G33A **Ortonville** 56.70 56 P P 16 35 50.7 +0.1
baz=324,SNR=5.2
W13A **Hualapai Mount** 56.71 76 *e*P P 16 35 51.7 +0.7
comp=Z,4.3nm,1.0s
D37A **Cotton** 56.77 52 P P 16 35 50.6 -0.4
baz=324,SNR=7.3
C38A **Sawbill Land.** 56.77 51 P P 16 35 49.9 -1.1
baz=324,SNR=5.2
SMCO **Snowmass** 56.79 68 *e*P P 16 35 51.9 +0.2
comp=Z,7.6nm,1.0s
H32A **Carlson Farm,** 56.83 58 P P 16 35 51.6 +0.1
baz=324
IRM **Iron Mountain** 56.84 78 P P 16 35 53.0 +1.2
baz=324,SNR=8.8
PV01 **Paradox Valley** 56.87 70 *e*P P 16 35 52.7 +0.6
comp=Z,867nm,0.9s
ISCO **Idaho Springs** 56.93 67 P P 16 35 53.6 +0.9
baz=323
ISCO **Idaho Springs** 56.93 67 *e*P P 16 35 53.4 +0.8
ISCO pmax pmax

comp=Z,8.0nm,1.3s
ISCO **Idaho Springs** 56.93 67 *e*P P 16 35 53.4 +0.8
comp=Z,7.9nm,1.3s
E36A **McGregor** 56.95 53 P P 16 35 52.3 0.0
baz=324
H33A **Prehn Over Nor** 56.98 57 P P 16 35 52.6 0.0
baz=324
G34A **Benson** 57.00 56 P P 16 35 52.9 +0.2
baz=324
BC3 **Big Chuckawall** 57.09 79 P P 16 35 53.8 +0.2
baz=324
PDMCI **Parker Dam,Lak** 57.22 77 P P 16 35 55.3 +1.0
baz=324
K30A **Basset** 57.35 60 P P 16 35 55.3 0.0
baz=324
F36A **Milaca** 57.37 54 P P 16 35 54.9 -0.4
baz=324
H34A **Spellman Lake,** 57.40 56 P P 16 35 56.0 +0.5
baz=324
Y12C **Blythe** 57.47 78 P P 16 35 57.3 +1.1
baz=324
Y12C **Blythe** 57.47 78 *e*P P 16 35 57.0 +0.9
comp=Z,9.1nm,1.0s
G35A **Watkins** 57.50 55 P P 16 35 56.2 +0.1
baz=324
NC405 **NORSAR Array S** 57.52 344 *e*P P 16 35 55.8 -0.3
WUAZ **Wupatki** 57.60 74 P P 16 35 58.1 +0.8
baz=324
WUAZ **Wupatki** 57.60 74 *e*P P 16 35 58.4 +1.1
comp=Z,12nm,1.1s
NB201 **NORSAR Array S** 57.63 345 *e*P P 16 35 56.3 -0.7
MVCO **Mesa Verde** 57.64 71 P P 16 35 58.1 +0.5
baz=323
NB2 **NORSAR Subarra** 57.65 345 P P 16 35 56.5 -0.6
comp=Z,17nm,1.2s,baz=16,slow=7.4
NOA **NORSAR Array B** 57.65 345 P P 16 35 56.6 -0.5
comp=Z,5.1nm,0.8s,baz=16,slow=7.1,SNR=13
OGNE **Ogallala** 57.66 63 P P 16 35 58.0 +0.5
baz=324
NBO02 **NORSAR Array S** 57.69 345 *e*P P 16 35 56.4 -0.9
ECSD **EROS Data Cent** 57.80 58 P P 16 35 58.3 -0.1
baz=324,SNR=7.5
ECSD **EROS Data Cent** 57.80 58 *e*P P 16 35 57.8 -0.6
comp=Z,11nm,1.0s
Q24A **Divide** 57.81 67 P P 16 35 59.9 +1.0
baz=324
GLA **Glamis** 57.88 79 P P 16 35 59.8 +0.7
baz=324
OBN **Obninsk** 57.97 327⇓*e*P P 16 35 59.3 0.0
OBN *e* 16 36 52.0
OBN *e* 16 38 07.1
OBN pmax pmax
comp=Z,10.0nm,1.1s
S22A **4UR Ranch, Cre** 58.00 69 P P 16 36 01.5 +1.3
baz=324,SNR=14
S22A **4UR Ranch, Cre** 58.00 69 *e*P P 16 36 01.3 +1.1
comp=Z,12nm,0.9s
SPMN **Marine on St.** 58.19 54 P P 16 36 01.1 +0.1
baz=325
H36A **Jessenland, He** 58.25 55 P P 16 36 02.3 +0.8
baz=325
SDCO **Great Sand Dun** 58.63 68 P P 16 36 05.8 +1.2
baz=324
SDCO **Great Sand Dun** 58.63 68 *e*P P 16 36 05.2 +0.6
comp=Z,7.0nm,1.0s
K34A **Le Mars** 58.87 58 P P 16 36 06.0 +0.2
baz=325
I37A **Lemond, Waseca** 58.93 55 P P 16 36 06.7 +0.5
baz=325
KSCO **Kaye Shedlock'** 58.94 65 P P 16 36 07.0 +0.5
baz=324
KSCO **Kaye Shedlock'** 58.94 65 *e*P P 16 36 07.0 +0.5
comp=Z,16nm,0.6s
BGNE **Belgrade** 59.02 60 P P 16 36 07.5 +0.6
baz=324
BGNE **Belgrade** 59.02 60 *e*P P 16 36 06.9 0.0
comp=Z,21nm,0.6s
X18A **Snowflake** 59.09 74 *e*P P 16 36 08.9 +1.2
comp=Z,9.9nm,0.9s
I38A **Scanlan Farm,** 59.35 54 P P 16 36 09.0 -0.2
baz=325
J37A **Redenius Farm,** 59.44 56 P P 16 36 10.2 +0.4
baz=325
LPSR **Galich'ya Gora** 59.51 324 *e*P P 16 36 08.2 -1.9
LPSR pmax pmax
comp=Z,10.0nm,1.1s
O31A **Woolen Ranch,** 59.52 62 P P 16 36 10.2 -0.2
baz=324
L35A **Bielow Farm, R** 59.58 58 P P 16 36 10.7 0.0
baz=325
K36A **Gilmore City** 59.61 57 P P 16 36 10.7 -0.3
baz=325
M34A **Aspy Farms, Fr** 59.63 59 P P 16 36 11.4 +0.3
baz=325
214A **Organ Pipe Nat** 59.77 78 P P 16 36 13.4 +1.2
baz=325
K37A **Belmond** 59.85 56 P P 16 36 12.8 +0.2
baz=325
J38A **Wedel Dairy, R** 59.88 55 P P 16 36 12.5 -0.3
baz=326
M35A **Neola** 60.04 59 P P 16 36 14.2 +0.3
baz=325
N34A **Lincoln** 60.20 60 P P 16 36 15.1 +0.1
baz=325
P32A **Huiting Farm,** 60.27 62 P P 16 36 14.5 -1.0
baz=325
GUN **Gumba** 60.28 275 *e*P P 16 36 15.5 -0.7
comp=Z,46nm,0.8s
L37A **Phoenix Point,** 60.33 57 P P 16 36 15.0 -0.9
baz=326
O33A **Hebron** 60.35 61 P P 16 36 16.1 0.0
baz=325
CBKS **Cedar Bluff** 60.42 63 P P 16 36 16.1 -0.6
baz=325
CBKS **Cedar Bluff** 60.42 63 *e*P P 16 36 16.0 -0.6
CBKS pmax pmax
comp=Z,21nm,0.9s
CBKS **Cedar Bluff** 60.42 63 *e*P P 16 36 16.0 -0.6
comp=Z,21nm,0.9s
ANMO **Albuquerque** 60.44 71 P P 16 36 17.7 +0.7
baz=325
ANMO **Albuquerque** 60.44 71 *ce*P P 16 36 17.0 0.0
ANMO pmax pmax
comp=Z,3.0nm,0.8s
ANMO **Albuquerque** 60.44 71 *e*P P 16 36 17.1 +0.1
comp=Z,4.3nm,0.9s
TUC **Tucson** 60.48 76 P P 16 36 18.3 +1.2
baz=325
N35A **Tabor** 60.56 59 P P 16 36 18.0 +0.5
baz=325
L38A **Oak Wood Farm,** 60.65 56 P P 16 36 18.0 -0.1
baz=326
O34A **Beatrice** 60.66 60 P P 16 36 17.6 -0.5
baz=325
VSR **Storozhevoye** 60.66 324 *e*P P 16 36 16.2 -1.8
VSR pmax pmax
comp=Z,10.0nm,1.5s
KKN **Kakani** 60.69 275 *e*P P 16 36 18.2 -0.6
PKIN **Phulchoki** 60.80 275 *e*P P 16 36 18.7 -0.9
comp=Z,13nm,0.8s
GKN **Gorkha** 60.83 276 *e*P P 16 36 18.8 -0.9
comp=Z,41nm,1.1s
DMN **Daman** 60.92 275 *e*P P 16 36 19.4 -1.0
comp=Z,23nm,1.1s
P34A **Walnut Farm, R** 61.12 61 P P 16 36 20.7 -0.6
baz=325,SNR=11
Q33A **Connelly Farm,** 61.12 62 P P 16 36 21.0 -0.3
baz=325
M38A **Pleasantville** 61.15 57 P P 16 36 21.6 +0.2
baz=326
R32A **Long Quarter,** 61.20 63 P P 16 36 22.1 +0.2
baz=325
N37A **Lee Faris, Mou** 61.26 58 P P 16 36 22.3 +0.1
baz=326
CHTO **Chiang Mai** 61.28 258 *e*P P 16 36 21.8 -0.8
CHTO pmax pmax
comp=Z,11nm,1.5s
CHTO **Chiang Mai** 61.28 258 *e*P P 16 36 21.8 -0.8
comp=Z,11nm,1.5s
P35A **Duane Minner,** 61.49 60 P P 16 36 23.9 +0.1
baz=326
KOLN **Koldanda** 61.55 277 *e*P P 16 36 23.2 -1.4
comp=Z,20nm,0.8s
KSU1 **Kansas State U** 61.58 61 P P 16 36 24.0 -0.4
baz=326
PYUN **Piuthan** 61.58 277 *e*P P 16 36 24.2 -0.6
comp=Z,61nm,0.9s
CMAR **Chiang Mai Arr** 61.59 258 P P 16 36 24.4 -0.3
comp=Z,0.9nm,0.9s,baz=14,slow=6.8,SNR=9.2
CMAR PcP PcP 16 37 06.7 +0.5
comp=Z,1.4nm,0.9s,baz=7.8,slow=4.2,SNR=6.1
CM01 **Chiang Mai Arr** 61.61 258 *e*P P 16 36 24.2 -0.6
R33A **Olander Ranch,** 61.62 62 P P 16 36 24.3 -0.5
baz=326
S32A **Newby Ranch, P** 61.69 63 P P 16 36 24.9 -0.3
baz=326
P36A **Good Intent, A** 61.77 59 P P 16 36 25.3 -0.3
baz=326
O37A **Wolven Farm, M** 61.78 58 P P 16 36 25.3 -0.4
baz=326
N39A **Derby Farms, D** 61.89 57 P P 16 36 26.0 -0.5
baz=326
R34A **Isabella, Hill** 61.96 62 P P 16 36 26.1 -0.9
baz=326
Q35A **Mercer Eighty,** 62.03 60 P P 16 36 26.1 -1.3
baz=326
P37A **Lathrop** 62.17 59 P P 16 36 28.2 -0.1
baz=326
S33A **Kaszmaul Farm,** 62.20 63 P P 16 36 28.6 -0.1
baz=326
Q36A **Arnold C. Orve** 62.20 60 P P 16 36 28.7 +0.1
baz=326
O39A **Kirksville** 62.39 57 P P 16 36 29.5 -0.4
baz=326
P38A **Dawn** 62.49 58 P P 16 36 30.1 -0.4
baz=326
S34A **Willow Spring** 62.51 62 P P 16 36 30.2 -0.5
baz=326
T33A **Patterson Ranc** 62.51 63 P P 16 36 30.0 -0.7
baz=326
R36A **Gordon, Harris** 62.71 60 P P 16 36 31.1 -0.9
baz=326
Q37A **Longview Farm,** 62.71 59 P P 16 36 31.1 -0.9
baz=326
AMTX **Amarillo** 62.74 67 *e*P P 16 36 29.9 -2.5
comp=Z,12nm,0.8s
O40A **La Belle** 62.78 57 P P 16 36 32.2 -0.2
baz=327
S35A **Otter Creek Ra** 62.88 61 P P 16 36 32.6 -0.5
baz=326
MSTX **Muleshoe** 62.98 69 P P 16 36 34.0 0.0
baz=326
Q38A **Cooks Store, C** 63.00 59 P P 16 36 34.2 +0.2
baz=326
R37A **Teagarden Farm** 63.01 60 P P 16 36 33.7 -0.3
baz=326
T34A **McClaskey Farm** 63.04 62 P P 16 36 34.1 -0.1
baz=326
U33A **Lingo Farm, Me** 63.11 64 P P 16 36 34.1 -0.6
baz=326
S36A **Lake Cedric, C** 63.17 61 P P 16 36 34.5 -0.6
baz=326
P40A **Paris** 63.20 57 P P 16 36 34.5 -0.7
baz=327
Q39A **Willow Grove F** 63.21 58 P P 16 36 35.2 -0.1
baz=327
U34A **Anderson Ranch** 63.37 63 P P 16 36 36.3 -0.1
baz=326
T35A **Sooner Cattle** 63.43 62 P P 16 36 36.0 -0.8
baz=326
S37A **Fort Scott** 63.48 60 P P 16 36 36.2 -0.8
baz=326
HDIL **Hopedale** 63.50 55 P P 16 36 36.8 -0.4
baz=327
R38A **Fenwick Farm,** 63.52 59 P P 16 36 36.1 -1.3
baz=327
V33A **Lossen Ranch,** 63.53 64 P P 16 36 37.2 -0.3
baz=326
T36A **Boggs Farm, Ca** 63.59 61 P P 16 36 37.5 -0.4
baz=326
MNTX **Cornudas Mount** 63.61 72 P P 16 36 38.6 +0.5
baz=326
Q40A **Laux Farm, Aux** 63.64 57 P P 16 36 37.7 -0.5
baz=327
W32A **Sentinel** 63.67 65 P P 16 36 38.6 +0.1
baz=326
U35A **Pawnee** 63.78 63 P P 16 36 38.8 -0.4
baz=326
R39A **Chumby, Stover** 63.79 59 P P 16 36 38.6 -0.6
baz=327
V34A **Guthrie** 63.87 63 P P 16 36 39.3 -0.4
baz=326
AKASG **Malin Array Be** 63.89 330 P P 16 36 39.0 -0.6
comp=Z,4.4nm,0.9s,baz=28,slow=6.7,SNR=20
KIEV **Kiev** 63.90 330 *d*iP P 16 36 39.5 -0.2
KIEV pmax pmax
comp=Z,9.0nm,1.3s
KIEV **Kiev** 63.90 330 *e*P P 16 36 38.5 -1.2
comp=Z,7.2nm,1.1s
AK11 **Malin Array Si** 63.93 330 *e*P P 16 36 39.3 -0.5
T37A **Cheneyville 18** 63.97 61 P P 16 36 39.5 -0.8
baz=327
S38A **Stockton** 63.98 60 P P 16 36 39.4 -1.0
baz=327
R40A **Maddies Statio** 64.14 58 P P 16 36 40.8 -0.7
baz=327
S39A **Bolivar** 64.19 59 P P 16 36 40.9 -0.9
baz=327
WMOK **Wichita Mounta** 64.20 65 *e*P P 16 36 41.8 -0.2
WMOK pmax pmax
comp=Z,17nm,1.0s
WMOK **Wichita Mounta** 64.20 65 *e*P P 16 36 41.8 -0.2
comp=Z,17nm,1.0s
X32A **Elmer** 64.23 66 P P 16 36 42.0 -0.1
baz=326
T38A **Diamond** 64.31 60 P P 16 36 42.0 -0.6
baz=327
U37A **Salina** 64.47 61 P P 16 36 42.5 -1.2
baz=327
SFIN **Lafayette** 64.54 53 P P 16 36 42.9 -1.1
baz=328
TUL1 **Leonard** 64.59 62 P P 16 36 43.5 -0.9
baz=327
V36A **Jenks** 64.62 62 P P 16 36 43.8 -0.8
baz=327
S40A **Lebanon** 64.62 59 P P 16 36 43.8 -0.9
baz=327
T39A **Clever** 64.72 60 P P 16 36 44.4 -0.9
baz=327
W35A **Tecumseh** 64.73 63 P P 16 36 45.6 +0.3
baz=327
X34A **Smith Ranch, M** 64.75 64 P P 16 36 45.0 -0.6
baz=327
U38A **Gravette** 64.77 61 P P 16 36 45.2 -0.4
baz=327
GOF **Gofitskoye** 64.83 318⇑*i*P P 16 36 46.3 +0.5
GOF pmax pmax
comp=Z,46nm,1.4s
Y33A **Hilltop Ranch,** 64.88 65 P P 16 36 46.4 0.0
baz=327
V37A **Hulbert** 64.90 62 P P 16 36 45.5 -0.9
baz=327
T40A **Mansfield** 64.99 59 P P 16 36 46.0 -1.1
baz=327
HHAR **Hobbs** 65.10 60 *e*P P 16 36 45.3 -2.5
comp=Z,21nm,0.9s
GEYT **Aibek** 65.16 303 P P 16 36 49.0 +0.9
comp=Z,7.1nm,0.8s,baz=2.9,slow=5.9,SNR=16
U39A **Green Forest** 65.22 60 P P 16 36 47.6 -0.9
baz=327
V38A **Canehill** 65.24 61 P P 16 36 48.5 -0.2
baz=327
X35A **Drake** 65.31 64 P P 16 36 49.2 0.0
baz=327
Y34A **Reagan Ranch,** 65.32 65 P P 16 36 49.4 +0.2
baz=327
W37B **Quinton** 65.39 62 P P 16 36 49.4 -0.3
baz=327
X36A **Centrahoma** 65.45 63 P P 16 36 50.3 +0.3
baz=327
U40A **Yellville** 65.51 60 P P 16 36 50.0 -0.4
baz=327
ABTX **Abilene, Hawle** 65.56 67 P P 16 36 51.1 +0.3
baz=327
V39A **Pettigrew** 65.60 61 P P 16 36 50.4 -0.7
baz=327
Y35A **Marietta** 65.69 64 P P 16 36 51.8 +0.2
baz=327
Z34A **Collier Ranch,** 65.74 65 P P 16 36 51.6 -0.3
baz=327
W38A **Poteau** 65.86 62 P P 16 36 52.7 0.0
baz=327
X37A **Clayton** 65.88 63 P P 16 36 52.8 0.0
baz=327
133A **Hamilton Ranch** 65.91 66 P P 16 36 52.8 -0.3
baz=327
KIV **Kislovodsk** 65.92 317 *c*iP P 16 36 53.4 +0.4
KIV *i* 16 37 02.2
KIV *e* 16 37 23.7
KIV pmax pmax
comp=Z,12nm,1.3s
KIV MLR MLR
comp=Z,97nm,16.0s
V40A **Witts Springs** 65.99 60 P P 16 36 53.1 -0.5
baz=328
NCK **Nalchik** 66.01 316⇑*e*P P 16 36 54.2 +0.7
NCK pmax pmax
comp=Z,4.0nm,0.7s
Y36A **Durant** 66.04 64 P P 16 36 53.9 +0.1
baz=327
KBZ **Khabaz** 66.04 317 P P 16 36 55.1 +1.4
comp=Z,8.0nm,0.9s,baz=54,slow=3.9,SNR=24
X38A **Whitesboro** 66.05 62 P P 16 36 53.9 -0.1
baz=327
W39A **Magazine** 66.08 61 P P 16 36 53.6 -0.5
baz=328
Y37A **Hugo** 66.28 63 P P 16 36 55.7 +0.4
baz=327
134A **White-Moore Ra** 66.33 66 P P 16 36 55.4 -0.3
baz=327
TX31 **Lajitas Ar. Si** 66.39 72 *e*P P 16 36 56.3 0.0
TXAR **Lajitas Array** 66.39 72 P P 16 36 57.0 +0.7
comp=Z,2.8nm,0.9s,baz=314,slow=4.9,SNR=20
W40A **Ferguson Farm,** 66.39 60 P P 16 36 55.6 -0.5
baz=328
233A **Rising Star** 66.41 67 P P 16 36 56.2 -0.2
baz=327
KWP **Kalwaria Pacla** 66.45 334 *e*P P 16 36 57.4 +1.1
KWP **Kalwaria Pacla** 66.45 334 *e*P P 16 36 57.4 +1.1
M54A **Oil Creek Stat** 66.46 47 P P 16 36 55.1 -1.3
baz=331
X39A **Fountain Ranch** 66.51 62 P P 16 36 57.1 +0.3
baz=328
ZEI **Tsey** 66.52 316 *e*P P 16 36 56.4 -0.7
ZEI pmax pmax
comp=Z,23nm,1.0s
NEY **Neytrino** 66.53 317⇓*i*P P 16 36 57.2 +0.1
NEY pmax pmax
comp=Z,1.0nm,0.8s
OJC **Ojcow** 66.53 336 *e*P P 16 36 57.4 +0.7
OJC **Ojcow** 66.53 336 *e*P P 16 36 57.5 +0.7
OJC **Ojcow** 66.53 336 *e*P P 16 36 56.8 0.0
comp=Z,12nm,1.1s
X201 **Greenbrier Sit** 66.62 60 *e*P P 16 36 56.5 -1.1
comp=Z,7.9nm,0.9s
KSP **Ksiaz** 66.63 338 *e*P P 16 36 57.6 +0.2
KSP **Ksiaz** 66.63 338 *e*P P 16 36 57.7 +0.3
X301 **Greenbrier Sit** 66.65 60 *e*P P 16 36 56.5 -1.2
comp=Z,9.5nm,0.9s
WHAR **Wooly Hollow** 66.66 60 *e*P P 16 36 56.9 -0.9
comp=Z,12nm,0.9s
MIAR **Mount Ida** 66.72 61 P P 16 36 58.3 +0.1
baz=328
MIAR **Mount Ida** 66.72 61 *e*P P 16 36 57.8 -0.4
MIAR pmax pmax
comp=Z,9.0nm,1.1s
MIAR **Mount Ida** 66.72 61 *e*P P 16 36 57.8 -0.4
comp=Z,8.9nm,1.1s
W41A **Tony Mavity, V** 66.77 60 P P 16 36 58.1 -0.4
baz=328
W41B **Gary Mavity, V** 66.77 60 P P 16 36 58.0 -0.5
baz=328
CLL **Collm** 66.77 341⇑*i*P P 16 36 57.7 -0.6
comp=Z,8.0nm,1.1s
CLL **Collm** 66.77 341⇑*i*P P 16 36 57.7 -0.6
CLL pmax pmax
comp=Z,8.0nm,1.1s
CLL **Collm** 66.77 341 *e*P P 16 36 57.4 -0.8
comp=Z,8.2nm,1.0s
N54A **Moraine State** 66.81 48 P P 16 36 57.6 -1.1
baz=331
333A **Richland Sprin** 66.95 67 P P 16 36 59.5 -0.3
baz=327
STHS **Stebnicka Huta** 66.98 334 *e*P P 16 37 00.9 +1.2
STHS *e* 16 37 03.7
Y39A **Lockesburg** 67.00 62 P P 16 36 59.3 -0.6
baz=328
BRG **Berggiesshubel** 67.03 340 *e*P P 16 37 00.1 +0.2
comp=Z,12nm,1.7s
X40A **Basin Creek Fa** 67.09 61 P P 16 37 00.5 0.0
baz=328
DPC **Dobruska-Polom** 67.10 338 *e*P P 16 37 00.7 +0.3
DPC **Dobruska-Polom** 67.10 338 *e*P P 16 37 00.7 +0.3
NIE **Niedzica** 67.18 335 *e*P P 16 37 01.9 +0.9
NIE **Niedzica** 67.18 335 *e*P P 16 37 01.9 +0.9
KOLS **Kolonicke sedl** 67.21 334 *e*P P 16 37 01.3 +0.2
KRLC **Kraliky** 67.27 338 *e*P P 16 37 01.7 +0.2
KRLC *ex* x 16 37 05.2
KRLC **Kraliky** 67.27 338 *e*P P 16 37 01.7 +0.2
KRLC *e* 16 37 05.2
JCT **Junction City** 67.27 68 P P 16 37 01.6 -0.2
baz=327
334A **Lometa** 67.29 67 P P 16 37 02.0 +0.1
baz=327
Y40A **Okolona** 67.30 61 P P 16 37 01.8 0.0
baz=328
137A **Heron Place, G** 67.37 64 P P 16 37 02.7 +0.4
baz=328
433A **Art** 67.38 68 P P 16 37 02.5 0.0
baz=327
MRSI **Marisa** 67.41 226 P P 16 37 03.1 +0.4
MORC **Moravsky Berou** 67.41 337⇓*i*P P 16 37 02.9 +0.5
MORC **Moravsky Berou** 67.41 337⇓P P 16 37 02.9 +0.5
MORC **Moravsky Berou** 67.41 337 *e*P P 16 37 02.4 0.0
comp=Z,20nm,1.0s
236A **Katherine and** 67.52 65 P P 16 37 03.1 -0.2
baz=328
LANS **Liptovska Anna** 67.61 336 *e*P P 16 37 05.1 +1.4
LANS *e* 16 37 08.5
138A **Matatall Enter** 67.62 64 P P 16 37 04.3 +0.3
baz=328
434A **Burnet** 67.71 67 P P 16 37 04.2 -0.4
baz=327
BUR08 **Bucovina Ar. S** 67.73 331 *e*P P 16 37 04.7 +0.1
BURAR **Bucovina Array** 67.75 331⇑*i*P P 16 37 04.0 -0.7
BURAR **Bucovina Array** 67.75 331⇑P P 16 37 04.0 -0.7
PRU **Pruhonice** 67.77 339 *e*P P 16 37 04.9 +0.3
PRU **Pruhonice** 67.77 339 *e*P P 16 37 04.9 +0.3
WVT **Waverly** 67.85 56 *e*P P 16 37 04.6 -0.8
WVT pmax pmax
comp=Z,13nm,0.9s
WVT **Waverly** 67.85 56 *e*P P 16 37 04.5 -0.8
comp=Z,13nm,0.9s
O56A **Blue Knob Stat** 67.94 47 P P 16 37 04.9 -1.0
baz=331
KECS **Kecovo** 68.03 335 *e*P P 16 37 06.6 +0.3
VRAC **Vranov** 68.04 337⇓*i*P P 16 37 06.8 +0.4
VRAC **Vranov** 68.04 337⇓P P 16 37 06.8 +0.4
TREC **Trest** 68.27 338 *e*P P 16 37 08.3 +0.5
TREC **Trest** 68.27 338 *e*P P 16 37 08.3 +0.5
534A **Blanco** 68.28 68 P P 16 37 08.1 0.0
baz=328
VYHS **Vyhne** 68.37 336 *e*P P 16 37 09.0 +0.6
N59A **State Game Lan** 68.39 45 P P 16 37 07.5 -1.2
baz=332
TESR **Tescani** 68.42 330⇓*i*P P 16 37 09.0 +0.3
MEM **Membach** 68.50 345 P P 16 37 09.1 0.0
comp=Z,8.9nm,1.0s
GNI **Garni** 68.54 314 *ce*P P 16 37 11.2 +1.4
GNI pmax pmax
comp=Z,96nm,1.3s
Y44A **Strider, Charl** 68.69 59 P P 16 37 10.4 -0.1
baz=329
KHC **Kasperske Hory** 68.77 339 *e*P P 16 37 11.5 +0.5
KHC *ex* x 16 37 14.1
KHC **Kasperske Hory** 68.77 339 *e*P P 16 37 11.5 +0.5
KHC *e* 16 37 14.1
KHC **Kasperske Hory** 68.77 339 *e*P P 16 37 10.6 -0.3
comp=Z,3.7nm,1.3s
BCLA **Clavier** 68.78 345 P P 16 37 10.6 -0.3
339A **Huntington** 68.98 64 P P 16 37 12.8 +0.3
baz=328
GEC2 **GERESS Array S** 69.02 339 *e*P P 16 37 12.1 -0.5
GEC2 pmax pmax
comp=Z,8.0nm,1.3s
GEC2 **GERESS Array S** 69.02 339 *e*P P 16 37 12.1 -0.5
comp=Z,8.3nm,1.3s
GERES **GERESS Array B** 69.02 339 P P 16 37 12.7 +0.1
comp=Z,1.6nm,0.7s,baz=35,slow=4.9,SNR=11
GEA0 **GERESS Array S** 69.03 339 *e*P P 16 37 12.0 -0.7
Y45A **Yeager Farm, C** 69.06 59 P P 16 37 12.6 -0.3

	baz=329								
DRGR		**69.12**	**332**	↓*i*P		**P**	**16 37 13.0**	**-0.2**
DRGR		**69.12**	**332**	↓P		**P**	**16 37 13.0**	**-0.2**
CFR	**Carcaliu**	**69.27**	**328**	↓*i*P		**P**	**16 37 14.4**	**+0.4**
CFR	**Carcaliu**	**69.27**	**328**	↓P		**P**	**16 37 14.4**	**+0.4**
Y46A	**Houston**	**69.34**	**58**	P		**P**	**16 37 14.4**	**-0.2**
	baz=329								
SWET	**Sewanee**	**69.43**	**55**	*e*P		**P**	**16 37 13.4**	**-1.8**
	comp=Z,3.4nm,1.0s								
SBUM	**Sibu**	**69.45**	**237**	*e*P		**P**	**16 37 14.3**	**-1.1**
	comp=Z,13nm,0.9s								
MLR	**Muntele Rosu**	**69.55**	**330**	↑*i*P		**P**	**16 37 17.8**	**+1.9**
MLR	**Muntele Rosu**	**69.55**	**330**	↑P		**P**	**16 37 17.8**	**+1.9**
Y47A	**UCPARC, Winfie**	**69.75**	**57**	P		**P**	**16 37 16.2**	**-1.0**
	baz=329								
VOIR		**69.82**	**330**	↓*i*P		**P**	**16 37 18.7**	**+1.1**
VOIR		**69.82**	**330**	↓P		**P**	**16 37 18.7**	**+1.1**
SIRR	**Siria**	**69.86**	**333**	↑*i*P		**P**	**16 37 18.3**	**+0.6**
BLA	**Blacksburg**	**69.91**	**50**	*e*P		**P**	**16 37 17.8**	**-0.4**
BLA				pmax	pmax				
	comp=Z,17nm,0.9s								
BLA	**Blacksburg**	**69.91**	**50**	*e*P		**P**	**16 37 17.8**	**-0.4**
	comp=Z,17nm,0.9s								
145A	**Houston Renfro**	**69.97**	**60**	P		**P**	**16 37 18.2**	**-0.3**
	baz=329								
Z47A	**Carrollton**	**70.26**	**58**	P		**P**	**16 37 19.3**	**-1.0**
	baz=330								
737A	**Port Lavaca**	**70.29**	**67**	P		**P**	**16 37 19.9**	**-0.7**
	baz=328								
Z48A	**Northport**	**70.33**	**57**	P		**P**	**16 37 20.2**	**-0.5**
	baz=330								
BZS	**Buzias**	**70.48**	**333**	↓*i*P		**P**	**16 37 21.3**	**-0.2**
BZS	**Buzias**	**70.48**	**333**	↓P		**P**	**16 37 21.3**	**-0.2**
147A	**Livingston**	**70.62**	**58**	P		**P**	**16 37 22.3**	**-0.2**
	baz=330								
LRAL	**Lakeview Retre**	**70.86**	**57**	*e*P		**P**	**16 37 22.3**	**-1.7**
	comp=Z,5.3nm,0.7s								
KSM	**Kuching**	**71.14**	**238**	*e*P		**P**	**16 37 25.6**	**-0.2**
	comp=Z,7.1nm,0.8s								
KMSC	**Kings Mountain**	**71.36**	**52**	P		**P**	**16 37 26.2**	**-0.8**
	baz=331								
KMSC	**Kings Mountain**	**71.36**	**52**	*e*P		**P**	**16 37 25.8**	**-1.2**
	comp=Z,14nm,0.9s								
546A	**Slidell**	**72.09**	**61**	P		**P**	**16 37 30.6**	**-0.8**
	baz=330								
IPM	**Ipoh**	**72.66**	**248**	*e*P		**P**	**16 37 33.7**	**-1.3**
	comp=Z,13nm,1.0s								
BR131	**Keskin Array S**	**72.68**	**322**	*e*P		**P**	**16 37 35.5**	**+0.5**
BRTR	**Keskin Array B**	**72.68**	**322**	P		**P**	**16 37 35.9**	**+0.9**
	comp=Z,1.9nm,0.9s,baz=57,slow=4.6,SNR=12								
BR231	**Keskin MP Arra**	**72.84**	**323**	*e*P		**P**	**16 37 36.0**	**+0.1**
TIGA	**Tifton**	**73.67**	**55**	P		**P**	**16 37 39.8**	**-1.0**
	baz=331								
TIGA	**Tifton**	**73.67**	**55**	*e*P		**P**	**16 37 40.1**	**-0.7**
	comp=Z,35nm,1.0s								
BBKI	**Banjar Baru**	**73.73**	**232**	P		**P**	**16 37 42.4**	**+1.1**
PDSI	**Padang**	**77.66**	**246**	P		**P**	**16 38 04.7**	**+0.9**
LEM	**Lembang**	**79.74**	**237**	LR	LR		17 12 49.5	
	comp=Z,28nm,21.8s,slow=35								
ES19	**SONSECA Array**	**80.36**	**350**	*e*P		**P**	**16 38 17.6**	**-0.8**
ESDC	**Sonseca Array**	**80.39**	**350**	P		**P**	**16 38 18.1**	**-0.5**
	comp=Z,0.2nm,0.4s,baz=5.8,slow=6.4,SNR=5.9								
WRAB	**Tennant Creek**	**82.97**	**208**	*e*P		**P**	**16 38 31.8**	**-0.4**
WRAB				pmax	pmax				
	comp=Z,10.0nm,0.9s								
WRAB	**Tennant Creek**	**82.97**	**208**	*e*P		**P**	**16 38 31.8**	**-0.4**
	comp=Z,10nm,0.9s								
WRA	**Warramunga Arr**	**82.98**	**208**	P		**P**	**16 38 31.4**	**-0.8**
	comp=Z,6.9nm,0.8s,baz=20,slow=5.8,SNR=23								
FITZ	**Fitzroy Crossi**	**83.56**	**216**	P		**P**	**16 38 34.6**	**-0.5**
	comp=Z,3.9nm,0.9s,baz=3.3,slow=8,SNR=4.9								
AS01	**Alice Springs**	**86.66**	**207**	*e*P		**P**	**16 38 50.3**	**-0.4**
ASAR	**Alice Springs**	**86.67**	**207**	P		**P**	**16 38 50.5**	**-0.2**
	comp=Z,1.6nm,1.0s,baz=14,slow=5.1,SNR=7.8								
STKA	**Stephens Creek**	**93.13**	**199**	P		**P**	**16 39 20.7**	**-0.2**
	comp=Z,3.2nm,1.0s,baz=321,slow=14,SNR=3.9								
PLCA	**Paso Flores**	**141.72**	**85**	PKhKP	PKPpre		16 45 29.3		
	comp=Z,1.7nm,0.8s,baz=230,slow=17,SNR=2.6								
MAW	**Mawson**	**146.44**	**223**	PKPbc	**PKPbc**		**16 45 46.7**	**+0.1**
	comp=Z,10nm,1.0s,baz=39,slow=6.5,SNR=6.2								

IDC 25 16:26:56.6±1.3, 59°.78N×163°.70E, h0km, mb4.1/5, mb1 4.3/5, mb1mx3.7/59, mbtmp4.1/5, MS3.5/2, Ms1 3.5/2, ms1mx3.0/25, Error ellipse: s-maj=46.2km s-min=33.8km az=2.0, Kamchatka Peninsula

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
KURBB	**Kurchatov Arra**	**46.21**	**298**	P	P	16 35 22.0	-0.8
	4.0nm,1.0s,baz=45,slow=7.6,SNR=1.6						
MKAR	**Makanchi Array**	**47.26**	**292**	P	P	16 35 31.8	+0.6
	2.1nm,0.7s,baz=56,slow=7.5,SNR=2.7						
PDAR	**Pinedale Array**	**52.79**	**67**	P	P	16 36 13.4	-0.1
	1.4nm,0.7s,baz=315,slow=3.0,SNR=3.7						
SCHQ	**Schefferville**	**58.84**	**31**	LR	LR	17 03 28.1	
	comp=Z,39nm,20.1s,baz=42,slow=37						
DAV	**Davao City (W)**	**59.97**	**225**	LR	LR	17 00 08.4	
	comp=Z,49nm,21.8s,baz=266,slow=33						
WRA	**Warramunga Arr**	**82.97**	**208**	P	P	16 39 23.4	+0.2
	2.2nm,0.8s,baz=16,slow=5.2,SNR=3.1						
ASAR	**Alice Springs**	**86.66**	**207**	P	P	16 39 41.4	-0.3
	0.5nm,0.8s,baz=21,slow=6.2,SNR=1.7						

*IDC **25** 16:29:46.1±0.9, 9°.34S×157°.94E, h0km, mb4.1/7, mb1 4.3/7, mb1mx3.8/42, mbtmp4.0/7, MS3.7/4, Ms1 3.6/4, ms1mx3.0/29, Error ellipse: s-maj=29.7km s-min=18.1km az=157.0*

*ISCJB **25** 16:29:48.6±0.6, 9°.4S±0°.1×157°.89E±0°.06, h27km, mb4.0/9, MS3.5/2, Error ellipse: s-maj=20.3km s-min=8.4km az=172.6*

*NEIC **25** 16:29:51.0±0.5, 9°.42S×157°.99E, h35km, mb4.4/2, Error ellipse: s-maj=19.0km s-min=10.1km az=155.0*

ISC 25 16:29:50.2±0.8, 9°.4S±0°.2×157°.94E±0°.09, h27km, n13, σ1°80/12, mb4.0/9, Bougainville-Solomon Islands region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
HNR	**Honiara**	**1.98**	**92**	Pn	**Pn**	**16 30 21.3**	**-0.6**
	71nm,0.3s,baz=220,slow=6.3,SNR=38						
HNR				Sn	**Sn**	**16 30 47.1**	**+1.2**
	71nm,0.3s,baz=336,slow=23,SNR=11						
HNR				LR	LR	16 31 15.6	
	comp=Z,987nm,21.2s,baz=272,slow=45						
HNR	**Honiara**	**1.98**	**92**	*e*P	**Pn**	**16 30 21.0**	**-0.9**
HNR				*e*S	Sn	16 30 24.0	-22
PMG	**Port Moresby**	**10.64**	**269**	LR	LR	16 36 08.6	
	comp=Z,396nm,18.3s,baz=164,slow=36						
DZM	**Mont Dzumac**	**15.04**	**148**	LR	LR	16 37 54.8	
	comp=Z,200nm,18.8s,baz=318,slow=32						
WRAB	**Tennant Creek**	**25.09**	**243**	*e*P	**P**	**16 35 12.3**	**-0.5**
	6.6nm,1.0s						
WRA	**Warramunga Arr**	**25.10**	**243**	P	**P**	**16 35 12.8**	**-0.2**
	4.8nm,1.0s,baz=68,slow=9.7,SNR=28						
ASAR	**Alice Springs**	**27.02**	**235**	P	**P**	**16 35 29.6**	**-0.7**
	2.0nm,0.8s,baz=63,slow=9.2,SNR=12						
ASAR				LR	LR	16 47 01.2	
	comp=Z,96nm,18.5s,baz=234,slow=38						
STKA	**Stephens Creek**	**27.05**	**212**	P	**P**	**16 35 31.0**	**+0.6**
	7.6nm,0.9s,baz=40,slow=14,SNR=20						
STKA				LR	LR	16 46 14.1	
	comp=Z,191nm,18.7s,baz=29,slow=36						
CMAR	**Chiang Mai Arr**	**64.43**	**296**	P	**P**	**16 40 25.8**	**+1.1**
	0.8nm,0.9s,baz=109,slow=5.7,SNR=6.6						
MCK	**McKinley**	**83.18**	**21**	*e*P	**P**	**16 42 13.0**	**-0.6**
	6.8nm,1.0s						
ILAR	**Eielson Array**	**84.52**	**21**	P	**P**	**16 42 20.1**	**-0.3**
	1.0nm,0.9s,baz=274,slow=4.2,SNR=7.8						
MKAR	**Makanchi Array**	**87.10**	**318**	P	**P**	**16 42 33.2**	**-0.4**
	0.6nm,0.7s,baz=98,slow=5.5,SNR=7.5						
YKA	**Yellowknife Ar**	**97.06**	**28**	P	**P**	**16 43 19.7**	**+0.3**
	0.4nm,0.9s,baz=254,slow=4.3,SNR=3.8						

*SCB **25** 16:37:09.0±0.1, 17°.25S×64°.77W, h55km, Ml3.9/3, Error ellipse: s-maj=4.3km s-min=3.0km az=11.0*

*ISCJB **25** 16:37:10.4±0.5, 17°.30S±0°.04×64°.67W±0°.04, h33km, mb4.0/4, MS3.8/1, Error ellipse: s-maj=6.9km s-min=4.6km az=136.3*

*IDC **25** 16:37:12.5±3.4, 17°.06S×64°.71W, h35km±28km, mb3.8/3, mb1 4.0/6, mb1mx3.7/28, mbtmp3.8/6, ML3.6/3, MS2.9/3, Ms1 2.9/3, ms1mx2.7/30, Error ellipse: s-maj=32.6km s-min=20.6km az=4.0*

*NEIC **25** 16:37:13.1±0.7, 17°.23S×64°.77W, h43km±8km, mb4.1/1, Error ellipse: s-maj=9.9km s-min=9.4km az=154.0*

ISC 25 16:37:12.0±0.8, 17°.33S±0°.05×64°.71W±0°.06, h35km, n25, σ1°49/32, mb4.0/4, 5C-2D, Central Bolivia

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
BBOE	**La Paz, Chanca**	**3.17**	**279**	↑*i*Pn	**Pn**	**16 38 00.2**	**+0.3**
BBOJ	**La Paz, Jacaqu**	**3.34**	**276**	↑*i*Pn	**Pn**	**16 38 03.4**	**+1.1**
LPAZ	**La Paz**	**3.43**	**287**	*i* P	**Pn**	**16 38 03.3**	**-0.2**
LPAZ				*i* S	**Sn**	**16 38 44.0**	**+0.6**
LPAZ	**La Paz**	**3.43**	**287**	Pn	**Pn**	**16 38 03.5**	**0.0**
	2.6nm,0.3s,baz=98,slow=8.9,SNR=96						
LPAZ				Lg	Lg	16 38 53.0	
	52nm,0.3s,baz=352,slow=18,SNR=10						
LPAZ				LR	LR	16 39 43.6	
	comp=Z,87nm,20.8s,baz=204,slow=45						
LPAZ	**La Paz**	**3.43**	**287**	↑*e*Pn	**Pn**	**16 38 03.4**	**-0.2**
LPAZ				*e*Sn	**Sn**	**16 38 43.5**	**+0.1**
BBOB	**La Paz, Bander**	**3.48**	**289**	↑*i*Pn	**Pn**	**16 38 03.9**	**-0.3**
BBOB				*e*Sn	**Sn**	**16 38 45.0**	**+0.5**
	77nm,0.2s						
SIV	**San Ignacio**	**3.73**	**70**	Pn	**Pn**	**16 38 08.7**	**+1.5**
	4.3nm,0.3s,baz=284,slow=8.6,SNR=72						
SIV				Lg	Lg	16 39 07.7	
	31nm,0.3s,baz=355,slow=23,SNR=12						
SIV				LR	LR	16 39 11.7	
	comp=Z,47nm,19.2s,baz=192,slow=33						
SIV	**San Ignacio**	**3.73**	**70**	↓*i*Pn	**Pn**	**16 38 08.9**	**+1.7**
BBOD	**La Paz, Gloria**	**3.78**	**280**	↑*i*Pn	**Pn**	**16 38 09.9**	**+1.6**
BBOD				*e*Sn	**Sn**	**16 38 52.0**	**+0.1**
	127nm,0.6s						
MOCB	**Mochara**	**4.00**	**192**	↓*i*Pn	**Pn**	**16 38 13.6**	**+2.4**
MOCB				*e*Sn	**Sn**	**16 39 00.3**	**+3.2**
	33nm,0.3s						
YJA	**Yavi**	**4.88**	**189**	*i* P	**Pn**	**16 38 25.2**	**+1.8**
YJA				*i* S	**Sn**	**16 39 17.8**	**-1.1**
YJA				IAML		16 39 47.3	
	comp=Z,24nm,0.5s						
HJA	**Humahuaca**	**5.89**	**186**	*i* P	**Pn**	**16 38 38.0**	**+0.9**
HJA				*i* S	**Sn**	**16 39 41.3**	**-2.3**
HJA				IAML		16 39 49.6	
	comp=Z,34nm,0.5s						
ALOL	**LOMAS DE OLMED**	**6.49**	**174**	*i* P	**Pn**	**16 38 45.0**	**0.0**
LVC	**Limon Verde**	**6.57**	**216**	*e*Pn	**Pn**	**16 38 48.2**	**+1.7**
ASTB	**Santa Barbara**	**6.59**	**178**	*i* P	**Pn**	**16 38 46.5**	**-0.1**
ASTB				*i* S	**Sn**	**16 39 56.8**	**-3.8**
AZAP	**Zapla**	**6.87**	**183**	*i* P	**Pn**	**16 38 49.4**	**-1.1**
SAML	**Samuel**	**8.46**	**10**	*e*Pn	**Pn**	**16 39 11.8**	**-0.4**
	comp=Z,7.6nm,0.5s						
CPUP	**Villa Florida**	**11.28**	**144**	Pn	**Pn**	**16 39 53.3**	**+2.6**
	comp=Z,0.2nm,0.3s,baz=325,slow=8.9,SNR=3.0						
CPUP				Lg	Lg	16 43 19.6	
	comp=Z,0.1nm,0.3s,baz=227,slow=18,SNR=3.8						
TORD	**Torodi Ar. Bea**	**72.21**	**70**	P	**P**	**16 48 33.7**	**-0.3**
	comp=Z,0.6nm,0.4s,baz=268,slow=5.7,SNR=5.8						
PDAR	**Pinedale Array**	**72.64**	**327**	P	**P**	**16 48 35.5**	**-0.8**
	comp=Z,0.5nm,0.6s,baz=132,slow=7.4,SNR=4.9						
HLID	**Hailey**	**75.77**	**325**	*e*P	**P**	**16 48 55.0**	**+0.5**
	comp=Z,1.5nm,0.6s						
YKA	**Yellowknife Ar**	**88.65**	**339**	P	**P**	**16 50 00.5**	**-0.6**
	comp=Z,1.2nm,0.6s,baz=123,slow=4.5,SNR=33						
DAVOX	**Davos/Dischmat**	**92.33**	**42**	LR	LR	17 29 33.2	
	comp=Z,30nm,18.4s,baz=262,slow=34						
ZALV	**Zalesovo Beam**	**136.50**	**26**	PKP	**PKPdf**	**16 56 30.9**	**+0.8**
	comp=Z,0.5nm,0.4s,baz=347,slow=1.0,SNR=3.4						
WRA	**Warramunga Arr**	**138.50**	**208**	PKP	**PKPdf**	**16 56 34.4**	**-0.5**
	comp=Z,0.9nm,1.1s,baz=112,slow=11,SNR=3.3						

*IDC **25** 16:42:02.6±0.9, 9°.22S×157°.92E, h0km, mb4.1/8, mb1 4.2/9, mb1mx4.0/28, mbtmp4.1/9, ML4.4/1, MS3.5/17, Ms1 3.5/17, ms1mx3.3/33, Error ellipse: s-maj=27.6km s-min=18.3km az=157.0*

*ISCJB **25** 16:42:05.3±0.5, 9°.3S±0°.1×157°.92E±0°.06, h27km, mb4.1/12, MS3.6/15, Error ellipse: s-maj=17.5km s-min=8.9km az=172.8*

*NEIC **25** 16:42:06.9±6.6, 9°.36S×158°.03E, h29km±49km, mb4.4/4, Error ellipse: s-maj=23.5km s-min=11.5km az=145.0*

ISC 25 16:42:06.5±0.8, 9°.4S±0°.2×158°.09E±0°.06, h27km, n29, σ1°63/18, mb4.3/12, MS3.6/15, Bougainville-Solomon Islands region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
HNR	**Honiara**	**1.83**	**92**	Pn	**Pn**	**16 42 37.8**	**+1.6**
	124nm,0.3s,baz=237,slow=4.2,SNR=43						
HNR				Sn	**Sb**	**16 43 03.2**	**+1.4**
	113nm,0.3s,baz=323,slow=23,SNR=8.6						
HNR				LR	LR	16 43 31.9	
	comp=Z,1μm,20.8s,baz=284,slow=44						
HNR	**Honiara**	**1.83**	**92**	*e*P	**Pn**	**16 42 37.0**	**+0.8**
HNR				*e*S	**Sn**	**16 42 54.0**	**-4.5**
HNR	**Honiara**	**1.83**	**92**	*e*Pn	**Pn**	**16 42 37.3**	**+1.1**
HNR				Sn	**Sb**	**16 43 03.2**	**+1.4**
PMG	**Port Moresby**	**10.79**	**269**	LR	LR	16 48 44.3	
	comp=Z,339nm,20.2s,baz=148,slow=38						
DZM	**Mont Dzumac**	**14.95**	**149**	LR	LR	16 50 20.7	
	comp=Z,176nm,19.1s,baz=239,slow=33						
WRAB	**Tennant Creek**	**25.22**	**243**	*e*P	**P**	**16 47 30.0**	**-0.3**
	8.5nm,1.0s						
WRA	**Warramunga Arr**	**25.23**	**243**	P	**P**	**16 47 28.9**	**-1.5**
	8.1nm,1.0s,baz=66,slow=9.7,SNR=16						
GUMO	**Guam**	**26.33**	**300**	LR	LR	16 57 44.1	
	comp=Z,37nm,18.4s,baz=138,slow=36						
STKA	**Stephens Creek**	**27.12**	**212**	P	**P**	**16 47 47.8**	**+0.4**
	4.7nm,0.9s,baz=20,slow=12,SNR=11						
STKA				LR	LR	16 57 26.0	
	comp=Z,178nm,21.3s,baz=32,slow=34						
ASAR	**Alice Springs**	**27.13**	**235**	P	**P**	**16 47 48.2**	**+0.6**
	1.9nm,1.0s,baz=64,slow=9.6,SNR=11						
FITZ	**Fitzroy Crossi**	**32.65**	**251**	LR	LR	17 00 40.1	
	comp=Z,100nm,20.2s,slow=34						
KAPI	**Kappang**	**38.27**	**274**	LR	LR	17 08 56.9	
	comp=Z,31nm,18.3s,baz=140,slow=42						
JOW	**Kunigami**	**46.19**	**322**	LR	LR	17 08 14.6	
	comp=Z,327nm,18.7s,slow=34						
MJAR	**Matsushiro Arr**	**49.36**	**339**	LR	LR	17 10 18.9	
	comp=Z,14nm,21.2s,baz=115,slow=34						
KSRS	**Korea Array**	**54.49**	**331**	LR	LR	17 14 55.2	
	comp=Z,23nm,18.5s,baz=138,slow=36						
ASAJ	**Asahikawa**	**55.07**	**346**	LR	LR	17 13 00.1	
	comp=Z,66nm,20.1s,baz=174,slow=34						
USRK	**Ussuriysk Ar.**	**58.34**	**338**	LR	LR	17 15 24.3	
	comp=Z,20nm,19.5s,baz=167,slow=34						
PETK	**Petropavlovsk-**	**62.24**	**360**	LR	LR	17 15 27.9	
	comp=Z,49nm,21.8s,baz=144,slow=32						
KLR	**Kul'dur**	**62.78**	**341**	LR	LR	17 16 14.1	
	comp=Z,30nm,21.8s,baz=146,slow=33						
CMAR	**Chiang Mai Arr**	**64.57**	**296**	P	**P**	**16 52 40.4**	**-1.5**
	0.4nm,0.7s,baz=116,slow=5.0,SNR=5.6						
CHTO	**Chiang Mai**	**64.70**	**296**	*e*P	**P**	**16 52 44.1**	**+1.4**
	3.6nm,1.2s						
VNDA	**Vanda**	**68.15**	**179**	LR	LR	17 16 49.5	
	comp=Z,80nm,21.8s,baz=340,slow=30						
BILL	**Bilibino**	**77.44**	**3**	*e*P	**P**	**16 53 59.8**	**+0.8**
	6.2nm,1.1s						
MCK	**McKinley**	**83.14**	**21**	*e*P	**P**	**16 54 29.4**	**-0.3**
	17nm,1.0s						
ILAR	**Eielson Array**	**84.48**	**21**	P	**P**	**16 54 36.5**	**-0.1**
	1.7nm,0.9s,baz=255,slow=4.5,SNR=12						
ILAR				LR	LR	17 28 29.3	
	comp=Z,35nm,19.1s,baz=248,slow=33						
MKAR	**Makanchi Array**	**87.21**	**318**	P	**P**	**16 54 50.3**	**-0.3**
	1.3nm,0.7s,baz=104,slow=5.3,SNR=15						
ZALV	**Zalesovo Beam**	**87.86**	**325**	P	**P**	**16 54 51.9**	**-1.5**
	0.7nm,0.7s,baz=155,slow=29,SNR=3.7						
ZALV				LR	LR	17 33 37.9	
	comp=Z,27nm,20.6s,baz=70,slow=35						
YKA	**Yellowknife Ar**	**97.00**	**28**	P	**P**	**16 55 36.2**	**+0.7**
	0.1nm,0.3s,baz=266,slow=4.6,SNR=5.0						
PMSA	**Palmer Station**	**99.63**	**163**	LR	LR	17 38 01.5	
	comp=Z,512nm,18.3s,baz=340,slow=34						

WEL 25 16:48:49.2±0.1, 43°.62S×172°.25E, h5km, ML2.9/5, 2C-3D, Error ellipse: s-maj=1.2km s-min=1.0km az=90.0, South Island

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
CRLZ	**Canterbury Las**	**0.28**	**81**	↓PG	Pg	16 48 54.8	+0.3
CRLZ				AML	AML	16 48 59.4	
CRLZ				AML	AML	16 48 59.7	
MQZ	**McQueen's Vall**	**0.31**	**107**	PG	Pg	16 48 55.2	0.0
MQZ				SG	Sg	16 48 59.5	+0.3
MQZ				AML	AML	16 49 00.5	
OXZ	**Oxford**	**0.33**	**332**	↑PG	Pg	16 48 55.3	-0.2
OXZ				SG	Sg	16 48 59.8	-0.1
LTZ	**Lake Taylor**	**0.83**	**1**	↑P*	Pg	16 49 05.2	0.0
LTZ				S*	Sg	16 49 16.4	+0.4
LTZ				AML	AML	16 49 17.4	
RPZ	**Rata Peaks**	**0.87**	**263**	↓P*	Pg	16 49 05.6	-0.3
RPZ				S*	Sg	16 49 17.4	+0.2
RPZ				AML	AML	16 49 23.7	
RPZ	**Rata Peaks**	**0.87**	**263**	P	Pg	16 49 05.7	-0.2
	98nm,0.5s						
INZ	**Inchbonnie**	**1.07**	**326**	↓P*	Pb	16 49 10.0	-0.1
WVZ	**Waitaha Valley**	**1.23**	**296**	*e*P*	Pg	16 49 11.6	-1.1
WVZ				AML	AML	16 49 26.4	
WVZ				AML	AML	16 49 52.8	
KHZ	**Kahutara**	**1.53**	**39**	PN	Pn	16 49 14.9	-2.2
KHZ				SN	Sn	16 49 34.5	-2.9
LBZ	**Lake Benmore**	**1.68**	**242**	*e*PN	Pn	16 49 19.7	+0.6
ODZ	**Otahua Downs**	**1.83**	**218**	*e*PN	Pn	16 49 19.3	-2.0

*IDC **25** 16:54:47.4±2.0, 36°.28N×143°.40E, h0km, mb3.6/3, mb1 3.7/6, mb1mx3.4/41, mbtmp3.6/6, ML3.4/3, Error ellipse: s-maj=48.2km s-min=27.7km az=78.0*

*ISCJB **25** 16:54:49.3±1.2, 36°.23N±0°.10×143°.4E±0°.2, h29km, mb3.6/3, Error ellipse: s-maj=20.0km s-min=13.5km az=12.5*

ISC 25 16:54:51.5±1.3, 36°.2N±0°.1×143°.3E±0°.1, h29km, n7, σ1°55/8, mb3.7/3, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
MJAR	**Matsushiro Arr**	**4.16**	**276**	Pn	**Pn**	**16 55 53.7**	**+0.7**
	1.0nm,0.3s,baz=107,slow=9.6,SNR=5.9						
MAT	**Matsushiro**	**4.16**	**276**	P	**Pn**	**16 55 54.9**	**+1.9**
JHJ	**Hachijo jima 2**	**4.25**	**225**	Pn	**Pn**	**16 55 55.0**	**+0.7**
	5.6nm,0.3s,baz=226,slow=23,SNR=1.5						
JHJ				Sn	**Sn**	**16 56 41.2**	**-1.8**
	8.8nm,0.3s,baz=92,slow=22,SNR=1.1						
ASAJ	**Asahikawa**	**7.92**	**356**	Pn	**Pn**	**16 56 45.0**	**+0.4**
	0.8nm,0.3s,baz=226,slow=12,SNR=2.1						
MKAR	**Makanchi Array**	**45.87**	**303**	P	**P**	**17 03 09.6**	**-1.5**
	0.1nm,0.2s,baz=88,slow=8.8,SNR=1.3						
WRA	**Warramunga Arr**	**56.49**	**190**	P	**P**	**17 04 32.1**	**+1.2**
	0.7nm,0.6s,baz=14,slow=7.3,SNR=3.7						
ASAR	**Alice Springs**	**60.22**	**190**	P	**P**	**17 04 57.6**	**+0.7**
	0.4nm,0.7s,baz=14,slow=8.6,SNR=3.0						

JMA 25 16:55:17.7±0.1, 36°.31N×141°.02E, h46km±1km, M2.6, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JHO	**Hitachi**	**0.47**	**310**	P	Pn	16 55 28.1	-0.3
JHO				S	Sn	16 55 35.4	-0.6
JYT	**Yasato**	**0.67**	**263**	P	Pn	16 55 31.0	+0.1
JYT				S	Sn	16 55 40.3	-0.1
ONAJ	**Iwakimizuishiy**	**0.81**	**347**	P	Pn	16 55 32.4	-0.4
ONAJ				*e*S	Sn	16 55 42.5	-1.3
JFK	**Kawauchi**	**1.06**	**354**	P	Pn	16 55 35.7	-0.5
JFK				S	Sn	16 55 48.3	-1.6
JAG	**Ashikaga**	**1.27**	**276**	P	Pn	16 55 39.9	+0.9
JAG				S	Sn	16 55 55.5	+0.6
JFT	**Otama**	**1.32**	**336**	P	Pn	16 55 41.2	+1.4
JFT				S	Sn	16 55 57.4	+1.1
JKT	**Katashina**	**1.50**	**288**	P	Pn	16 55 44.2	+2.0
JKT				S	Sn	16 56 01.9	+1.3
MAT	**Matsushiro**	**2.28**	**277**	*e*S	Sn	16 56 22.5	+2.7

IDC 25 16:58:52.4±2.1, 6°.44S×129°.65E, h0km, mb3.5/2, mb1 3.9/5, mb1mx3.6/34, mbtmp3.7/5, ML3.8/3, MS4.4/1, Ms1 4.4/1, ms1mx2.7/26, Error ellipse: s-maj=79.9km s-min=25.2km az=72.0, Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
FITZ	**Fitzroy Crossi**	**12.23**	**198**	Pn	Pn	17 01 48.6	+0.6
	0.5nm,0.3s,baz=32,slow=12,SNR=22						
FITZ				Sn	Sn	17 03 50.8	-14
	0.4nm,0.3s,baz=66,slow=18,SNR=3.9						
WRA	**Warramunga Arr**	**14.18**	**162**	Pn	Pn	17 02 13.9

NKC	**Novy Kostel**	**2.64 242**	Pn	**Pn**	**17 01 05.9**	**+0.3**
NKC	**Novy Kostel**	**2.64 242**	Pg	**Pg**	**17 01 12.2**	**-0.1**
NKC			Sg	**Sg**	**17 01 47.0**	**+0.4**
	comp=Z,9.8nm,0.4s					
KHC	**Kasperske Hory**	**2.89 215**	*e*PN	**Pn**	**17 01 08.9**	**-0.1**
KHC			*e*PG	**Pb**	**17 01 15.3**	**+1.2**
KHC			*e*SN	**Sn**	**17 01 43.8**	**-0.6**
KHC			*e*SG	**Sg**	**17 01 54.1**	**-0.4**
	comp=Z,2.4nm,0.3s					
KHC	**Kasperske Hory**	**2.89 215**	Pn	**Pn**	**17 01 08.9**	**-0.1**
LANS	**Liptovska Anna**	**3.22 136**	*e*Sg	**Sg**	**17 02 03.9**	**-1.2**
LANS	**Liptovska Anna**	**3.22 136**	*e*SG	**Sg**	**17 02 03.9**	**-1.2**
VYHS	**Vyhne**	**3.52 149**	*e*Sg	**Sg**	**17 02 19.1**	**+4.4**
VYHS	**Vyhne**	**3.52 149**	*e*SG	**Sg**	**17 02 19.1**	**+4.4**
STHS	**Stebnicka Huta**	**3.92 121**	*e*SG	Sg	17 02 33.9	+6.4

*IDC **25** 17:13:45.2±5.5,24°.96S×66°.12W,h0km,mb3.9/1, mb1 4.1/2,mb1mx3.7/25,mbtmp4.0/2,ML4.2/1,Error ellipse: s-maj=166.5km s-min=50.6km az=54.0*
*ISCJB **25** 17:14:25.6±0.9,21°.85S×0°.1×65°.3W±0°.3,h250km,mb3.5/1, Error ellipse: s-maj=45.0km s-min=11.8km az=166.5*
*SJA **25** 17:14:25.1±1.1,22°.03S×66°.06W,h256km±13km,ML2.9, MW3.3*

ISC 25 17:14:25.8±1.3,21°.9S±0°.1×65°.4W±0°.4,h250km,n8, σ1°67/9,Southern Bolivia

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
YJA	**Yavi**	**0.27**	**197**	*e*P	**Pn**	**17 15 00.5**	**+1.7**
YJA				IAML		17 15 00.8	
	comp=Z,166nm,0.4s						
YJA				*e*S	**S**	**17 15 25.1**	**+0.5**
HJA	**Humahuaca**	**1.29**	**179**	*e*P	**Pn**	**17 15 04.3**	**+1.2**
HJA				IAML		17 15 04.9	
	comp=Z,45nm,0.3s						
ASTB	**Santa Barbara**	**2.22**	**156**	*e*P	**Pn**	**17 15 12.3**	**+1.9**
AZAP	**Zapla**	**2.32**	**172**	*e*P	**Pn**	**17 15 12.1**	**+0.5**
AZAP				*e*S	**S**	**17 15 47.7**	**-0.1**
FSA	**Cafayete**	**4.21**	**187**	*e*P	**Pn**	**17 15 30.4**	**-1.8**
FSA				IAML		17 15 32.4	
	comp=Z,3.7nm,0.6s						
LPAZ	**La Paz**	**6.15**	**335**	Pn	**Pn**	**17 15 54.8**	**-1.8**
	comp=Z,1.1nm,0.3s,baz=149,slow=5.9,SNR=21						
TORD	**Torodi Ar. Bea**	**74.47**	**69**	P	P	17 25 35.7	-1.6
	comp=Z,0.5nm,0.4s,baz=255,slow=5.5,SNR=13						
MKAR	**Makanchi Array**	**144.00**	**39**	PKPbc	**PKPab**	**17 33 28.2**	**-1.4**
	comp=Z,0.4nm,0.4s,baz=327,slow=3.3,SNR=6.3						

JMA 25 17:18:40.9±0.3,37°.14N×143°.70E,h46km,M3.5,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JFK	**Kawauchi**	**2.27**	**277**	P	Pn	17 19 16.8	+0.9
JFK				S	Sn	17 19 44.0	+1.4
JIO	**Ouri**	**2.28**	**306**	P	Pn	17 19 17.6	+1.6
JIO				*e*S	Sn	17 19 43.4	+0.6
ONAJ	**Iwakimizuishiy**	**2.32**	**270**	P	Pn	17 19 18.0	+1.4
ONAJ				S	Sn	17 19 45.7	+1.7
JMM	**Marumori**	**2.42**	**288**	P	Pn	17 19 19.4	+1.4
JMM				*e*S	Sn	17 19 47.3	+0.9
JHO	**Hitachi**	**2.56**	**259**	P	Pn	17 19 21.2	+1.2
JMK	**Ichinoseki**	**2.67**	**313**	P	Pn	17 19 22.6	+1.3
JMK				S	Sn	17 19 52.9	+0.5
JOU	**Okura**	**2.70**	**298**	*e*S	Sn	17 19 55.0	+1.7
JFT	**Otama**	**2.71**	**279**	S	Sn	17 19 56.3	+2.8
JOM	**Ohasama**	**3.00**	**322**	P	Pn	17 19 27.6	+1.6
JOM				S	Sn	17 20 01.0	+0.3
JAG	**Ashikaga**	**3.48**	**259**	P	Pn	17 19 34.4	+1.8
JRY	**Ryogami san**	**4.02**	**255**	P	Pn	17 19 41.2	+1.2
JRY				*e*S	Sn	17 20 25.6	-0.2
MAT	**Matsushiro**	**4.45**	**264**	P	Pn	17 19 48.8	+3.0
MAT				*e*S	Sn	17 20 39.0	+2.7

*GUC **25** 17:36:18.3±0.4,29°.42S×67°.57W,h102km±4km,ML4.8*
*ISCJB **25** 17:36:19.6±0.3,29°.50S±0°.03×67°.72W±0°.04,h127km±4km, mb3.8/6,Error ellipse: s-maj=6.9km s-min=4.0km az=25.9*
*SJA **25** 17:36:19.9±0.9,29°.50S×67°.68W,h121km±5km,ML5.0, MW4.2*
*IDC **25** 17:36:21.6±1.0,29°.44S×67°.70W,h120km±6km,mb3.7/6, mb1 3.9/8,mb1mx3.6/30,mbtmp4.0/8,Error ellipse: s-maj=27.8km s-min=23.9km az=19.0*

ISC 25 17:36:20.7±0.7,29°.47S±0°.04×67°.75W±0°.05,h120km±6km, n35,σ1°18/52,mb3.8/5,1D,La Rioja Province

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
VCA	**Vinchina**	**0.83**	**331**	*i* P	**Pn**	**17 36 42.3**	**+0.9**
VCA				*i* S	**Sn**	**17 36 57.7**	**+0.9**
VCA				IAML		17 37 00.4	
	comp=Z,25μm,0.2s						
AVFE	**Valle Fertil**	**1.21**	**168**	*i* P	**Pn**	**17 36 45.3**	**+0.3**
AVFE				*i* S	**Sn**	**17 37 02.7**	**-0.8**
RTLL	**Cerro Villicun**	**1.96**	**198**	*i* P	**Pn**	**17 36 53.8**	**+0.1**
RTLL				*i* S	**Sn**	**17 37 18.9**	**0.0**
CYA	**Choya**	**1.99**	**60**	*i* P	**Pn**	**17 36 54.0**	**-0.1**
CYA				*i* S	**Sn**	**17 37 18.6**	**-0.9**
SJA	**San Juan**	**2.17**	**199**	*i* P	**Pn**	**17 36 56.9**	**+0.6**
SJA				*i* S	**Sn**	**17 37 23.5**	**-0.1**
RTCV	**Cerro Valdivia**	**2.48**	**196**	*i* P	**Pn**	**17 37 00.4**	**+0.1**
RTCV				*i* S	**Sn**	**17 37 29.8**	**-0.9**
LCO	**Las Campanas**	**2.62**	**279**	*i*,*e*P	**Pn**	**17 37 01.8**	**-0.5**
LCO				*e*S	**Sn**	**17 37 34.8**	**+0.6**
TLL	**Tololo Astrono**	**2.74**	**255**	*e*P	**Pn**	**17 37 03.5**	**-0.4**
TLL				*e*S	**Sn**	**17 37 38.0**	**+1.0**
TLL				IAML		17 37 42.1	
	comp=N,3μm,0.7s						
AUSP	**Uspallata**	**3.08**	**207**	*i* P	**Pn**	**17 37 09.1**	**+0.7**
AHML	**Horco Molle**	**3.42**	**39**	*i* P	**Pn**	**17 37 11.8**	**-0.8**
AHML				*i* P	**Pn**	**17 37 12.1**	**-0.5**
AHML				*i* P	**Pn**	**17 37 12.2**	**-0.5**
ARCO	**CERRO ARCO**	**3.51**	**196**	*i* P	**Pn**	**17 37 14.2**	**+0.3**
ARCO				*i* S	**Sn**	**17 37 54.1**	**-0.9**
FSA	**Cafayete**	**3.69**	**26**	*i* P	**Pn**	**17 37 17.5**	**+1.1**
PEL	**Peldehue**	**4.44**	**214**	*e*P	**Pn**	**17 37 25.2**	**-1.0**
PEL				*e*S	**Sn**	**17 38 16.1**	**-0.9**
ROCH	**El Roble**	**4.47**	**218**	*e*P	**Pn**	**17 37 26.2**	**-0.6**
ROCH				*e*S	**Sn**	**17 38 17.7**	**-0.3**
SUCO	**SUCO**	**4.58**	**148**	*i* P	**Pn**	**17 37 27.5**	**-0.5**
ANTU	**Antumapu**	**4.77**	**210**	*e*P	**Pn**	**17 37 29.2**	**-1.4**
ANTU				*e*S	**Sn**	**17 38 23.6**	**-1.4**
PB14	**IPOC Station P**	**5.37**	**333**	*e*P	**Pn**	**17 37 36.8**	**-2.2**
PB14				*e*S	**Sn**	**17 38 36.2**	**-3.7**
AZAP	**Zapla**	**5.75**	**25**	*i* P	**Pn**	**17 37 44.0**	**0.0**
HJA	**Humahuaca**	**6.58**	**19**	*i* P	**Pn**	**17 37 55.6**	**+0.2**
YJA	**Yavi**	**7.54**	**16**	*i* P	**Pn**	**17 38 08.9**	**+0.5**
CPUP	**Villa Florida**	**9.73**	**74**	P	**Pn**	**17 38 36.5**	**-1.1**
	comp=N,0.6nm,0.3s,baz=250,slow=10,SNR=6.1						
PLCA	**Paso Flores**	**11.47**	**191**	P	**Pn**	**17 38 57.8**	**-3.1**
	comp=N,0.3nm,0.3s,baz=42,slow=12,SNR=7.2						
LPAZ	**La Paz**	**13.12**	**358**	P	**Pn**	**17 39 22.8**	**-0.5**
	comp=N,0.9nm,0.3s,baz=176,slow=4.8,SNR=14						
SIV	**San Ignacio**	**14.76**	**26**	P	**Pn**	**17 39 40.7**	**-2.9**
	comp=N,0.6nm,0.3s,baz=215,slow=14,SNR=18						
PTGA	**Pitinga**	**29.53**	**16**	P	**P**	**17 42 13.4**	**-0.6**
	comp=N,2.8nm,0.5s,baz=195,slow=11,SNR=6.2						
TXAR	**Lajitas Array**	**67.78**	**326**	P	**P**	**17 47 06.9**	**+1.1**
	comp=N,0.3nm,0.6s,baz=146,slow=8.6,SNR=2.6						
DBIC	**Dimbokro**	**70.23**	**70**	P	**P**	**17 47 21.9**	**+0.7**
	comp=N,1.3nm,0.6s,baz=230,slow=7.9,SNR=3.0						
BOSA	**Boshof**	**78.87**	**117**	pP	pP	17 48 41.8	+0.3
	comp=N,1.6nm,0.7s,baz=257,slow=11,SNR=1.9						
TORD	**Torodi Ar. Bea**	**79.19**	**68**	P	**P**	**17 48 14.1**	**+1.3**
	comp=N,0.4nm,0.5s,baz=271,slow=7.2,SNR=5.5						
TORD				pP	**pP**	**17 48 42.7**	**-0.4**
	comp=N,0.8nm,0.7s,baz=276,slow=5.4,SNR=3.8						
PDAR	**Pinedale Array**	**81.52**	**330**	P	**P**	**17 48 26.4**	**+1.4**
	comp=N,0.8nm,0.5s,baz=128,slow=7.3,SNR=2.5						
YKA	**Yellowknife Ar**	**99.01**	**340**	P	**Pdif**	**17 49 46.5**	**-0.7**
	comp=N,0.2nm,0.6s,baz=136,slow=4.4,SNR=6.9						
ASAR	**Alice Springs**	**123.21**	**204**	PKP	**PKPdf**	**17 55 03.3**	**-0.7**
	comp=N,0.5nm,0.5s,baz=132,slow=1.7,SNR=17						
WRA	**Warramunga Arr**	**126.46**	**206**	PKP	**PKPdf**	**17 55 10.3**	**0.0**
	comp=N,1.5nm,0.6s,baz=163,slow=1.7,SNR=36						
ZALV	**Zalesovo Beam**	**148.46**	**31**	PKPbc	**PKPbc**	**17 55 54.3**	**+1.4**
	comp=N,4.3nm,0.4s,baz=304,slow=3.6,SNR=22						
ZALV				pPKPbc	**pPKPbc**	**17 56 25.9**	**+0.9**
	comp=N,1.5nm,0.6s,baz=307,slow=5.3,SNR=3.4						
MKAR	**Makanchi Array**	**151.01**	**45**	PKPbc	**PKPbc**	**17 56 00.5**	**+1.1**
	comp=N,2.4nm,0.6s,baz=288,slow=2.2,SNR=34						
MKAR				pPKPbc	**pPKPbc**	**17 56 32.4**	**+0.9**
	comp=N,1.0nm,0.8s,baz=336,slow=2.7,SNR=4.1						

MAN 25 17:41:12,12°.83N×123°.02E,h12km,mb4.1,ML2.9,MS2.6, 1D,Luzon

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
AUQP	**San Andres**	**0.60**	**326**	*e*P	Pb	17 41 24.6	+0.2
GQP	**Guinayangan**	**1.21**	**332**	*e*P	Pn	17 41 34.3	-0.4
GQP				*e*S	Sn	17 41 52.2	+1.1
BOAC	**Boac**	**1.31**	**299**	*e*P	Pn	17 41 35.8	-0.3
SJMP	**San Jose**	**1.89**	**259**	*e*P	Pn	17 41 45.0	+0.8

IDC 25 17:51:58.2±2.3,6°.73S×129°.15E,h0km,mb3.1/1, mb1 3.4/4,mb1mx3.3/26,mbtmp3.2/4,ML3.2/3,Error ellipse: s-maj=82.8km s-min=31.0km az=76.0,Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
FITZ	**Fitzroy Crossi**	**11.81**	**197**	Pn	Pn	17 54 50.1	+2.1
	0.1nm,0.3s,baz=64,slow=13,SNR=1.5						
FITZ				Sn	Sn	17 56 50.8	-10
	0.3nm,0.3s,baz=247,slow=19,SNR=2.1						
WRA	**Warramunga Arr**	**14.06**	**159**	Pn	Pn	17 55 17.2	-1.7
	0.1nm,0.3s,baz=337,slow=12,SNR=4.7						
WRA				Sn	Sn	17 57 39.1	-17
	0.3nm,0.3s,baz=329,slow=22,SNR=3.7						
ASAR	**Alice Springs**	**17.45**	**165**	Pn	Pn	17 56 02.6	-0.6
	0.1nm,0.3s,baz=343,slow=9.4,SNR=4.6						
MKAR	**Makanchi Array**	**67.54**	**327**	P	P	18 02 56.4	0.0
	0.1nm,0.7s,baz=134,slow=8.0,SNR=1.6						

*ISCJB **25** 18:05:19.5±1.0,36°.13N±0°.06×142°.44E±0°.10,h23km, mb3.4/3,Error ellipse: s-maj=11.3km s-min=7.9km az=3.9*
*IDC **25** 18:05:19.9±1.7,36°.03N×142°.37E,h0km,mb3.3/3, mb1 3.5/7,mb1mx3.3/48,mbtmp3.5/7,ML3.2/4,Error ellipse: s-maj=35.6km s-min=22.7km az=62.0*
*JMA **25** 18:05:24.1±0.2,36°.17N×142°.08E,h58km,M3.0*

ISC 25 18:05:21.2±1.6,36°.08N±0°.07×142°.5E±0°.1,h23km,n19, σ1°35/18,mb3.4/3,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
CHOJ	**Chosi**	**1.34**	**254**	P	**Pn**	**18 05 43.7**	**-0.8**
JHO	**Hitachi**	**1.61**	**290**	P	**Pn**	**18 05 45.7**	**-2.4**
ONAJ	**Iwakimizuishiy**	**1.67**	**308**	P	**Pn**	**18 05 47.3**	**-1.8**
BSO1	**Boso 1**	**1.86**	**221**	P	**Pb**	**18 05 52.2**	**-2.0**
BSO1				*e*S	**Sn**	**18 06 14.3**	**+0.6**
BSO3	**Boso 3**	**2.03**	**232**	P	**Pn**	**18 05 54.2**	**+0.5**
JOD2	**Odawara 2**	**2.85**	**254**	P	**Pn**	**18 06 05.0**	**-0.3**
JRY	**Ryogami san**	**2.87**	**270**	P	**Pn**	**18 06 04.4**	**-1.2**
MJAR	**Matsushiro Arr**	**3.45**	**279**	Pn	**Pn**	**18 06 13.4**	**-0.1**
MJAR	2.2nm,0.3s,baz=111,slow=8.5,SNR=14			Sn	**Sn**	**18 06 54.9**	**+1.2**
	1.3nm,0.3s,baz=146,slow=4.5,SNR=4.6						
MAT	**Matsushiro**	**3.46**	**279**	P	**Pn**	**18 06 13.5**	**-0.1**
MAT				S	**Sb**	**18 07 04.6**	**+1.4**
JHJ	**Hachijo jima 2**	**3.68**	**217**	Pn	**Pn**	**18 06 16.7**	**0.0**
	5.1nm,0.3s,baz=59,slow=22,SNR=6.0						
JHJ				Sn	**Sn**	**18 06 57.9**	**-1.4**
	16nm,0.3s,baz=290,slow=23,SNR=6.4						
ASAJ	**Asahikawa**	**8.03**	**1**	Pn	**Pn**	**18 07 16.4**	**+0.1**
	0.4nm,0.3s,baz=205,slow=14,SNR=6.0						
KSRS	**Korea Array**	**11.73**	**281**	Pn	**Pn**	**18 08 06.7**	**-0.4**
	0.2nm,0.3s,baz=107,slow=37,SNR=2.9						
H11N2	**WAKE ISLAND Hy**	**26.95**	**121**	T	T	18 39 34.0	
	baz=313,slow=75,SNR=5.6						
H11N1	**WAKE ISLAND Hy**	**26.95**	**121**	T	T	18 39 34.0	
	baz=313,slow=75,SNR=5.1						
H11N3	**WAKE ISLAND Hy**	**26.96**	**121**	T	T	18 39 40.0	
	baz=313,slow=75,SNR=4.0						
H11S1	**WAKE ISLAND Hy**	**27.64**	**123**	T	T	18 40 28.7	
	SNR=6.7						
MKAR	**Makanchi Array**	**45.33**	**303**	P	P	18 13 41.1	+3.7
	0.3nm,0.6s,baz=90,slow=11,SNR=5.1						
WRA	**Warramunga Arr**	**56.24**	**189**	P	**P**	**18 15 01.4**	**+1.7**
	0.3nm,0.7s,baz=4.4,slow=7.2,SNR=4.2						
ASAR	**Alice Springs**	**59.97**	**189**	P	**P**	**18 15 27.6**	**+1.8**
	0.3nm,1.0s,baz=8.9,slow=6.6,SNR=4.0						

IDC 25 18:07:13.5±2.0,5°.20N×124°.89E,h0km,mb3.4/4, mb1 3.6/4,mb1mx3.3/44,mbtmp3.4/4,MS3.4/3,Ms1 3.5/3, ms1mx2.8/29,Error ellipse: s-maj=115.0km s-min=21.8km az=58.0,Mindanao

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
WRA	**Warramunga Arr**	**26.66**	**160**	P	P	18 12 54.9	+0.6
	0.3nm,0.3s,baz=335,slow=9.6,SNR=6.6						
CMAR	**Chiang Mai Arr**	**28.55**	**300**	P	P	18 13 11.8	+0.5
	0.3nm,0.9s,baz=111,slow=4.9,SNR=3.1						
CMAR				LR	LR	18 25 38.9	
	comp=Z,25nm,18.1s,baz=188,slow=39						
ASAR	**Alice Springs**	**30.01**	**163**	P	P	18 13 23.5	-0.7
	0.1nm,0.4s,baz=335,slow=8.3,SNR=5.8						
MKAR	**Makanchi Array**	**55.31**	**326**	P	P	18 16 48.6	-0.4
	0.4nm,0.3s,baz=127,slow=7.8,SNR=9.3						
URZ	**Urewera**	**64.86**	**137**	LR	LR	18 47 54.8	
	comp=Z,78nm,18.4s,baz=184,slow=38						
AFI	**Afiamalu**	**65.64**	**108**	LR	LR	18 43 22.6	
	comp=Z,27nm,19.3s,baz=78,slow=33						

*IDC **25** 18:07:57.4±1.1,37°.53N×143°.76E,h0km,mb3.7/5, mb1 3.9/9,mb1mx3.5/46,mbtmp3.8/9,ML3.7/4,Error ellipse: s-maj=25.6km s-min=19.5km az=99.0*
*JMA **25** 18:08:00.8±0.2,37°.71N×143°.50E,h39km,M3.6*
*NIED **25** 18:08:00,37°.70N×143°.50E,h5km,Mw3.7 Best double couple: M0 4.62000×10^14 NP1:φ=48.00000°,δ 18.00000°, λ=-98.00000°. NP2:φ=236.00000°,δ 73.00000°, λ=-88.00000°.*

ISC 25 18:07:58.1±3.4,37°.70N±0°.06×143°.59E±0°.08,h4km±23km, n28,σ1°43/34,mb3.8/5,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**1.92**	**294**	P	**Pn**	**18 08 31.2**	**-0.3**
JIO				*e*S	**Sn**	**18 08 53.6**	**-2.5**
OFUJ	**Ofunato**	**2.04**	**313**	P	**Pn**	**18 08 32.7**	**-0.5**
JFK	**Kawauchi**	**2.18**	**262**	P	**Pn**	**18 08 34.8**	**-0.4**
JMM	**Marumori**	**2.22**	**275**	P	**Pn**	**18 08 35.2**	**-0.5**
JMM				*e*S	Sn	18 09 00.3	-3.2
JMK	**Ichinoseki**	**2.24**	**305**	P	**Pn**	**18 08 36.2**	**+0.2**
JOU	**Okura**	**2.40**	**287**	P	**Pn**	**18 08 38.7**	**+0.5**
JOU				*e*S	**Sn**	**18 09 05.9**	**-2.2**
JOM	**Ohasama**	**2.52**	**315**	P	**Pn**	**18 08 39.9**	**0.0**
JOM				S	**Sn**	**18 09 09.5**	**-1.5**
JFT	**Otama**	**2.59**	**267**	P	**Pn**	**18 08 40.6**	**-0.1**
JFT				*e*S	**Sn**	**18 09 10.6**	**-2.0**
JTH	**Tanohata**	**2.61**	**329**	P	**Pn**	**18 08 42.0**	**+1.0**
JYK	**Kaneyama**	**2.81**	**297**	P	**Pn**	**18 08 44.6**	**+0.7**
JYK				*e*S	**Sn**	**18 09 16.9**	**-1.3**
JRG	**Rokugo**	**2.87**	**307**	P	**Pn**	**18 08 45.1**	**+0.5**
JTM	**Tenmabayashi**	**3.65**	**328**	S	**Sn**	**18 09 36.0**	**-2.8**
JRY	**Ryogami san**	**4.12**	**247**	P	**Pn**	**18 09 01.4**	**-0.4**
JRY				S	Sn	18 09 46.1	-4.3
MJAR	**Matsushiro Arr**	**4.45**	**257**	Pn	**Pn**	**18 09 08.2**	**+1.8**
	4.4nm,0.3s,baz=90,slow=16,SNR=19						
MJAR				Sn	**Sn**	**18 09 59.1**	**+0.5**
	0.7nm,0.3s,baz=85,slow=28,SNR=3.0						
MAT	**Matsushiro**	**4.45**	**257**	P	**Pn**	**18 09 08.2**	**+1.8**
MAT				S	**Sn**	**18 09 58.7**	**+0.1**
JNBK	**Urakawa-nobuka**	**4.62**	**352**	P	**Pn**	**18 09 10.2**	**+1.5**
JNBK				S	**Sn**	**18 10 01.9**	**-0.8**
JCH	**Churui**	**4.91**	**358**	P	**Pn**	**18 09 11.7**	**-1.0**
JCH				S	Sn	18 10 06.2	-3.7
JHJ	**Hachijo jima 2**	**5.52**	**215**	Pn	**Pn**	**18 09 19.8**	**-1.3**
	9.5nm,0.3s,baz=136,slow=21,SNR=7.4						
JHJ				Sn	Sn	18 10 18.1	-7.0
	24nm,0.3s,baz=65,slow=20,SNR=5.2						
ASAJ	**Asahikawa**	**6.46**	**354**	Pn	**Pn**	**18 09 34.8**	**+0.9**
	1.8nm,0.3s,baz=196,slow=16,SNR=21						
KSRS	**Korea Array**	**12.43**	**274**	Pn	**Pn**	**18 10 58.1**	**+2.3**
	0.1nm,0.3s,baz=94,slow=12,SNR=3.0						
KLR	**Kul'dur**	**14.36**	**327**	Pn	**Pn**	**18 11 21.2**	**-0.8**
	0.1nm,0.3s,baz=107,slow=10,SNR=3.5						
H11N2	**WAKE ISLAND Hy**	**27.05**	**125**	T	T	18 41 56.0	
	baz=322,slow=75,SNR=6.3						
H11N3	**WAKE ISLAND Hy**	**27.07**	**125**	T	T	18 42 02.9	
	baz=312,slow=75,SNR=5.7						
ZALV	**Zalesovo Beam**	**42.75**	**312**	P	**P**	**18 15 59.1**	**+2.8**
	1.0nm,0.5s,baz=79,slow=8.3,SNR=5.9						
MKAR	**Makanchi Array**	**45.23**	**302**	P	**P**	**18 16 16.8**	**+0.4**
	0.4nm,0.8s,baz=84,slow=11,SNR=4.7						
ILAR	**Eielson Array**	**48.00**	**33**	P	**P**	**18 16 38.3**	**+0.5**
	0.3nm,0.7s,baz=278,slow=6.3,SNR=3.4						
WRA	**Warramunga Arr**	**57.99**	**190**	P	**P**	**18 17 50.6**	**-1.3**
	3.3nm,0.7s,baz=10,slow=7.4,SNR=30						
ASAR	**Alice Springs**	**61.72**	**190**	P	**P**	**18 18 16.4**	**-1.1**
	0.5nm,0.7s,baz=8.9,slow=11,SNR=9.7						

*KRSC **25** 18:08:28.9±0.8,59°.72N×164°.00E,h9km±3km,ML4.7*
*ISCJB **25** 18:08:30.1±0.3,59°.82N±0°.03×163°.76E±0°.07,h10km, mb3.8/17,MS3.2/5,Error ellipse: s-maj=5.8km s-min=3.4km az=35.0*
*IDC **25** 18:08:30.1±0.8,59°.72N×163°.88E,h0km,mb3.6/11, mb1 3.9/15,mb1mx3.7/48,mbtmp3.8/15,ML4.1/3,MS3.2/7, Ms1 3.3/7,ms1mx3.0/42,Error ellipse: s-maj=21.4km s-min=10.3km az=179.0*
*MOS **25** 18:08:30.2±0.7,59°.82N×163°.79E,h12km,mb4.7/2,Error ellipse: s-maj=17.7km s-min=7.0km az=82.0*
*NEIC **25** 18:08:31.7±0.4,59°.77N×163°.82E,h10km,mb4.0/4,Error ellipse: s-maj=10.7km s-min=5.7km az=170.0*

ISC 25 18:08:31.6±0.5,59.79N±0°.05×163.84E±0°.05,h10km,n62, σ0°.97/63,mb4.0/17,MS3.2/5,Kamchatka Peninsula

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
OSSR	**Ossora**	**0.67**	**216**	*e*P	**Pg**	**18 08 42.8**	**-1.8**
OSSR				*e*S	**Sg**	**18 08 51.7**	**-1.6**
TILK	**Tilichiki**	**1.33**	**59**	*e*P	**Pn**	**18 08 54.6**	**-1.6**
TILK				*e*S	**Sb**	**18 09 14.0**	**+0.3**
PALN	**Palana**	**2.10**	**252**	*e*P	**Pn**	**18 09 05.5**	**-1.3**
PALN				*e*S	**Sb**	**18 09 35.4**	**-0.4**
KMSK	**Kamenskaya**	**2.92**	**22**	*e*P	**Pn**	**18 09 17.6**	**-0.5**
KMSK				*e*S	**Sn**	**18 09 51.7**	**-1.5**
SRKR	**Sorokina**	**3.45**	**205**	*e*P	**Pn**	**18 09 25.6**	**+0.2**
SRKR	**Sorokina**	**3.45**	**205**	PN	**Pn**	**18 09 25.6**	**+0.2**
SMKR	**Semkarok**	**3.45**	**202**	*e*P	**Pn**	**18 09 25.7**	**+0.2**
SMKR	**Semkarok**	**3.45**	**202**	PN	**Pn**	**18 09 25.7**	**+0.2**
BDR	**Baidarnaya**	**3.52**	**204**	*e*P	**Pn**	**18 09 26.7**	**+0.3**
KBG	**Krutoberegovo**	**3.60**	**190**	*e*P	**Pn**	**18 09 26.6**	**-0.7**
KBG				*e*S	**Sn**	**18 10 10.0**	**+0.2**
KLY	**Klyuchi**	**3.88**	**207**	*e*P	**Pn**	**18 09 31.4**	**+0.2**
KRSR	**Krestovskiy**	**3.98**	**207**	*e*P	**Pn**	**18 09 32.0**	**-0.8**
KRSR	**Krestovskiy**	**3.98**	**207**	PN	**Pn**	**18 09 32.0**	**-0.8**
LGNR	**Loginova**	**4.08**	**206**	*e*P	**Pn**	**18 09 34.3**	**+0.1**
LGNR	**Loginova**	**4.08**	**206**	PN	**Pn**	**18 09 34.3**	**+0.1**
ZLN	**Zelenaya**	**4.12**	**204**	*e*P	**Pn**	**18 09 35.6**	**+1.0**
ZLN	**Zelenaya**	**4.12**	**204**	PN	**Pn**	**18 09 35.6**	**+1.0**
BKI	**Bering**	**4.74**	**165**	*e*P	**Pn**	**18 09 41.9**	**-1.1**
BKI	**Bering**	**4.74**	**165**	PN	**Pn**	**18 09 41.9**	**-1.1**
ESO	**Esso**	**4.75**	**218**	*e*P	**Pn**	**18 09 45.7**	**+2.5**
ESO	**Esso**	**4.75**	**218**	PN	**Pn**	**18 09 45.7**	**+2.5**
SEY	**Seymchan**	**6.34**	**305**	Pn	**Pn**	**18 10 04.4**	**-0.6**
	0.8nm,0.3s,baz=112,slow=15,SNR=25						
SEY				Lg	Lg	18 11 51.9	
	2.3nm,0.3s,baz=74,slow=16,SNR=4.2						
MA2	**Magadan**	**6.62**	**274**	Pn	**Pn**	**18 10 08.7**	**-0.2**
	2.8nm,0.3s,baz=98,slow=15,SNR=17						
MA2				Sn	**Sn**	**18 11 25.0**	**+0.6**
	2.6nm,0.3s,baz=206,slow=16,SNR=2.6						
MA2				LR	LR	18 12 52.6	
	comp=Z,93nm,20.8s,baz=112,slow=40						
GNL	**Ganaly**	**6.91**	**210**	*e*P	**Pn**	**18 10 15.0**	**+2.0**
GNL	**Ganaly**	**6.91**	**210**	PN	**Pn**	**18 10 15.0**	**+2.0**
BILL

n127,σ1s27/146, mb4.2/46, MS2.9/3, 3C-3D, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
OFUJ	**Ofunato**	**1.45**	**272**	P	**Pn**	**18 37 55.8**	**-1.0**
OFUJ				*e*S	**Sn**	**18 38 13.4**	**-1.8**
JTH	**Tanohata**	**1.57**	**306**	P	**Pn**	**18 37 57.7**	**-0.9**
JOM	**Ohasama**	**1.79**	**285**	P	**Pn**	**18 38 01.1**	**-0.4**
JOM				S	**Sn**	**18 38 24.2**	**+0.5**
JIO	**Ouri**	**1.80**	**252**	P	**Pn**	**18 38 00.3**	**-1.3**
JMK	**Ichinoseki**	**1.80**	**268**	P	**Pn**	**18 38 01.0**	**-0.7**
JMK				*e*S	**Sn**	**18 38 22.4**	**-1.5**
JANG	**Nango**	**2.05**	**311**	P	**Pn**	**18 38 04.3**	**-0.8**
JRG	**Rokugo**	**2.28**	**280**	P	**Pn**	**18 38 08.1**	**-0.1**
JOU	**Okura**	**2.34**	**254**	P	**Pn**	**18 38 08.4**	**-0.7**
JOU				*e*S	**Sn**	**18 38 36.5**	**-0.7**
JMM	**Marumori**	**2.44**	**242**	P	**Pn**	**18 38 09.2**	**-1.3**
JYK	**Kaneyama**	**2.47**	**268**	P	**Pn**	**18 38 10.8**	**-0.1**
JTM	**Tenmabayashi**	**2.58**	**314**	P	**Pn**	**18 38 11.5**	**-0.9**
JTM				*e*S	**Sn**	**18 38 42.7**	**-0.4**
JFK	**Kawauchi**	**2.67**	**232**	P	**Pn**	**18 38 11.7**	**-2.0**
JFT	**Otama**	**2.93**	**240**	P	**Pn**	**18 38 16.6**	**-0.7**
ERM	**Erimo**	**2.99**	**355**	*e*P	**Pn**	**18 38 17.5**	**-0.5**
ERM	**Erimo**	**2.99**	**355**	*e*P	**Pn**	**18 38 18.0**	**-0.1**
JOT	**Ohata**	**3.02**	**322**	P	**Pn**	**18 38 19.6**	**+1.2**
JNBK	**Urakawa-nobuka**	**3.30**	**350**	P	**Pn**	**18 38 22.2**	**0.0**
JNBK				*e*S	**Sn**	**18 39 00.2**	**-0.7**
JKB	**Kayabe**	**3.43**	**327**	P	**Pn**	**18 38 24.5**	**+0.5**
JKB				*e*S	**Sn**	**18 39 02.5**	**-1.6**
JCH	**Churui**	**3.58**	**358**	P	**Pn**	**18 38 25.4**	**-0.7**
JCH				S	**Sn**	**18 39 05.3**	**-2.5**
MJAR	**Matsushiro Arr**	**4.89**	**241**	Pn	**Pn**	**18 38 44.4**	**+0.2**
	5.2nm,0.3s,baz=63,slow=11,SNR=67						
MAJO	**Matsushiro**	**4.89**	**241**	*d*P	**Pn**	**18 38 45.0**	**+0.8**
MAJO	**Matsushiro**	**4.89**	**241**	*e*P	**Pn**	**18 38 43.8**	**-0.5**
MAT	**Matsushiro**	**4.89**	**241**	P	**Pn**	**18 38 44.7**	**+0.5**
MAT				*e*S	**Sn**	**18 39 37.6**	**-2.7**
ASAJ	**Asahikawa**	**5.13**	**352**	Pn	**Pn**	**18 38 48.2**	**+0.9**
	4.0nm,0.3s,baz=202,slow=10,SNR=54						
ASAJ	**Asahikawa**	**5.13**	**352**	*e*P	**Pn**	**18 38 46.8**	**-0.6**
	11nm,0.7s						
YUK	**Yuzh-Kuril'sk**	**5.29**	**19**	*e*P	**Pn**	**18 38 48.1**	**-1.6**
YUK				*e*S	**Sn**	**18 39 45.9**	**-4.2**
YUK				pmax	pmax		
	comp=Z,90nm,0.3s						
SHO	**Shikotan**	**5.43**	**26**	*e*P	**Pn**	**18 38 49.3**	**-2.3**
SHO				*e*S	Sn	18 39 47.7	-5.8
SHO				pmax	pmax		
	comp=Z,35nm,0.5s						
JHJ	**Hachijo jima 2**	**6.63**	**208**	Pn	**Pn**	**18 39 05.8**	**-2.4**
	comp=Z,18nm,0.3s,baz=355,slow=21,SNR=7.7						
JHJ				Sn	Sn	18 40 15.2	-8.0
	comp=Z,3.8nm,0.3s,baz=57,slow=22,SNR=3.4						
JHJ				LR	LR	18 42 10.2	
	comp=Z,116nm,18.2s,baz=62,slow=43						
KUR	**Kuril'sk**	**6.98**	**26**	*e*P	**Pn**	**18 39 10.9**	**-2.0**
KUR				*e*S	**Sn**	**18 40 27.8**	**-3.9**
KUR				pmax	pmax		
	comp=Z,20nm,0.6s						
KUR				smax	smax		
	comp=N,21nm,0.6s						
KUR				smax	smax		
	comp=E,41nm,0.4s						
YSS	**Yuzh-Sakhalins**	**7.94**	**356**	*e*P	**Pn**	**18 39 27.1**	**+1.2**
YSS				MLR	MLR		
	comp=Z,200nm,17.0s						
USRK	**Ussuriysk Ar.**	**10.06**	**305**	Pn	Pn	18 39 58.9	+3.8
	comp=Z,0.9nm,0.3s,baz=97,slow=14,SNR=14						
USRK				LR	LR	18 43 35.0	
	comp=Z,32nm,21.6s,baz=118,slow=36						
JNU	**Nakatsue**	**11.81**	**244**	Pn	**Pn**	**18 40 21.4**	**+2.3**
	comp=Z,0.3nm,0.3s,baz=22,slow=16,SNR=6.4						
KSRS	**Korea Array**	**12.37**	**268**	Pn	**Pn**	**18 40 28.7**	**+2.0**
	comp=Z,0.3nm,0.3s,baz=76,slow=13,SNR=4.9						
KSRS				LR	LR	18 44 50.2	
	comp=Z,50nm,18.2s,baz=119,slow=35						
KSAR	**Wonju Array Be**	**12.40**	**268**	P	**Pn**	**18 40 28.7**	**+1.5**
KSAR	**Wonju Array Be**	**12.40**	**268**	Pn	**Pn**	**18 40 28.7**	**+1.5**
KLR	**Kul'dur**	**13.23**	**324**	Pn	**Pn**	**18 40 38.5**	**+0.1**
	comp=Z,0.1nm,0.3s,baz=133,slow=14,SNR=5.9						
KLR				LR	LR	18 45 41.4	
	comp=Z,69nm,18.3s,baz=136,slow=37						
KLR	**Kul'dur**	**13.23**	**324**	*e*P	**Pn**	**18 40 37.3**	**-1.1**
PETK	**Petropavlovsk-**	**17.12**	**30**	LR	LR	18 46 42.3	
	comp=Z,38nm,21.8s,baz=154,slow=32						
MA2	**Magadan**	**21.07**	**10**	P	**P**	**18 42 16.8**	**+2.4**
	comp=Z,5.4nm,0.7s,baz=213,slow=6.8,SNR=4.0						
MA2				pP	**sP**	**18 42 22.9**	**+0.3**
	comp=Z,10nm,0.8s,baz=198,slow=12,SNR=5.6						
SEY	**Seymchan**	**24.52**	**10**	P	**P**	**18 42 51.8**	**+2.1**
	comp=Z,9.3nm,0.8s,baz=181,slow=8.2,SNR=28						
SEY				pP	**sP**	**18 42 59.5**	**+1.4**
	comp=Z,7.0nm,0.9s,baz=215,slow=18,SNR=7.5						
SEY	**Seymchan**	**24.52**	**10**	*i* P	**P**	**18 42 50.6**	**+1.0**
YAK	**Yakutsk**	**24.54**	**344**	P	**P**	**18 42 49.6**	**-0.2**
	comp=Z,9.4nm,0.6s,baz=338,slow=1.7,SNR=12						
YAK				pP	**sP**	**18 42 57.4**	**-0.8**
	comp=Z,7.4nm,0.5s,baz=334,slow=8.6,SNR=6.1						
YAK				LR	LR	18 52 36.7	
	comp=Z,42nm,21.3s,baz=132,slow=37						
YAK	**Yakutsk**	**24.54**	**344**	*e*P	**P**	**18 42 48.8**	**-1.0**
YAK				pmax	pmax		
	comp=Z,12nm,0.9s						
YAK	**Yakutsk**	**24.54**	**344**	*e*P	**P**	**18 42 48.9**	**-0.9**
	comp=Z,14nm,0.8s						
YAK				pP	**sP**	**18 42 57.5**	**-0.8**
GUMO	**Guam**	**25.37**	**177**	LR	LR	18 50 54.0	
	comp=Z,16nm,21.8s,baz=337,slow=32						
BOD	**Bodaibo**	**26.81**	**324**	*e*P	**P**	**18 43 10.3**	**0.0**
BOD				pmax	pmax		
	comp=Z,6.0nm,1.3s						
ULN	**Ulaanbaatar**	**27.70**	**301**	*i* P	**P**	**18 43 19.5**	**+0.9**
ULN				pmax	pmax		
	comp=Z,4.0nm,1.0s						
ULN	**Ulaanbaatar**	**27.70**	**301**	*e*P	**P**	**18 43 19.2**	**+0.6**
	comp=Z,2.3nm,0.6s						
H11N2	**WAKE ISLAND Hy**	**27.87**	**127**	T	T	19 12 23.9	
	baz=319,slow=76,SNR=98						
H11N1	**WAKE ISLAND Hy**	**27.88**	**127**	T	T	19 12 19.5	
	baz=319,slow=76,SNR=82						
H11N3	**WAKE ISLAND Hy**	**27.89**	**127**	T	T	19 12 21.9	
	baz=319,slow=76,SNR=103						
SONM	**Songino Array**	**28.14**	**300**	P	**P**	**18 43 23.6**	**+1.0**
	comp=Z,2.7nm,0.6s,baz=93,slow=8.8,SNR=6.6						
SONM				PcP	**PcP**	**18 46 32.7**	**-3.5**
	comp=Z,0.6nm,0.4s,baz=16,slow=12,SNR=2.6						
H11S1	**WAKE ISLAND Hy**	**28.68**	**129**	T	T	19 13 28.2	
	baz=320,slow=76,SNR=17						
H11S3	**WAKE ISLAND Hy**	**28.68**	**129**	T	T	19 13 29.3	
	baz=320,slow=76,SNR=12						
H11S2	**WAKE ISLAND Hy**	**28.69**	**129**	T	T	19 13 28.9	
	baz=320,slow=76,SNR=16						
ENH	**Enshi**	**29.20**	**263**	*e*P	**P**	**18 43 31.9**	**-0.2**
	comp=Z,7.4nm,0.6s						
ZAK	**Zakamensk**	**30.41**	**305**	*e*P	**P**	**18 43 42.1**	**-0.6**
ZAK				pmax	pmax		
	comp=Z,3.0nm,1.0s						
BILL	**Bilibino**	**31.64**	**16**	*e*P	**P**	**18 43 52.1**	**-1.1**
BILL				pmax	pmax		
	comp=Z,2.0nm,1.1s						
ZALV	**Zalesovo Beam**	**41.84**	**311**	P	**P**	**18 45 20.1**	**+0.1**
	comp=Z,2.2nm,0.4s,baz=88,slow=7.5,SNR=11						
ZALV				PcP	**PcP**	**18 47 15.8**	**+0.1**
	comp=Z,0.7nm,0.5s,baz=82,slow=5.2,SNR=3.1						
CHTO	**Chiang Mai**	**43.41**	**255**	*e*P	**P**	**18 45 33.6**	**+0.4**
CHTO				pmax	pmax		
	comp=Z,2.0nm,0.9s						
CHTO	**Chiang Mai**	**43.41**	**255**	*e*P	**P**	**18 45 33.6**	**+0.4**
	comp=Z,2.0nm,0.9s						
CMAR	**Chiang Mai Arr**	**43.62**	**255**	P	**P**	**18 45 35.2**	**+0.3**
	comp=Z,0.8nm,0.7s,baz=46,slow=7.1,SNR=10						
LSA	**Lhasa**	**43.71**	**274**	*e*P	**P**	**18 45 38.7**	**+2.6**
LSA				pmax	pmax		
	comp=Z,3.0nm,0.8s						
LSA	**Lhasa**	**43.71**	**274**	*e*P	**P**	**18 45 38.7**	**+2.6**
	comp=Z,2.7nm,0.8s						
KDAK	**Kodiak Island**	**44.50**	**43**	*i* P	**P**	**18 45 43.4**	**+1.9**
MKAR	**Makanchi Array**	**44.50**	**301**	P	**P**	**18 45 41.8**	**+0.1**
	comp=Z,2.1nm,0.6s,baz=84,slow=9.4,SNR=35						
MKAR	**Makanchi Array**	**44.50**	**301**	*c**e*P	**P**	**18 45 41.7**	**0.0**
MKAR				pmax	pmax		
	comp=Z,2.0nm,0.6s						
KURK	**Kurchatov**	**46.04**	**307**	*e*P	**P**	**18 45 53.4**	**-0.4**
KURK				pmax	pmax		
	comp=Z,11nm,0.7s						
KURK	**Kurchatov**	**46.04**	**307**	*e*P	**P**	**18 45 53.4**	**-0.4**
COLA	**College**	**46.50**	**33**	*e*P	**P**	**18 45 57.5**	**+0.3**
COLA				pmax	pmax		
	comp=Z,2.0nm,0.7s						
ILAR	**Eielson Array**	**46.91**	**33**	P	**P**	**18 46 02.0**	**+1.5**
	comp=Z,3.1nm,0.7s,baz=264,slow=6.6,SNR=34						
ILAR				pP	**sP**	**18 46 09.3**	**+0.2**
	comp=Z,3.2nm,0.7s,baz=258,slow=6.7,SNR=14						
GUN	**Gumba**	**48.63**	**275**	*e*P	**P**	**18 46 15.3**	**+0.6**
	comp=Z,19nm,0.7s						
KKN	**Kakani**	**49.16**	**275**	*e*P	**P**	**18 46 18.8**	**+0.2**
	comp=Z,17nm,0.7s						
PKIN	**Phulchoki**	**49.17**	**275**	*e*P	**P**	**18 46 18.5**	**-0.3**
GKN	**Gorkha**	**49.55**	**276**	*e*P	**P**	**18 46 21.3**	**-0.3**
TKM2	**Tokmak 2**	**50.17**	**298**	*e*P	**P**	**18 46 26.6**	**+0.5**
TKM2				pmax	pmax		
	comp=Z,5.0nm,0.5s						
TKM2	**Tokmak 2**	**50.17**	**298**	*e*P	**P**	**18 46 26.6**	**+0.5**
	comp=Z,4.6nm,0.5s						
BRVK	**Borovoye**	**50.53**	**312**	*i* P	**P**	**18 46 28.7**	**+0.2**
BRVK				pmax	pmax		
	comp=Z,2.0nm,0.6s						
BRVK	**Borovoye**	**50.53**	**312**	*e*P	**P**	**18 46 29.1**	**+0.6**
	comp=Z,2.9nm,0.8s						
PYUN	**Piuthan**	**50.78**	**277**	*e*P	**P**	**18 46 28.1**	**-2.8**
AAK	**Ala-Archa**	**51.03**	**298**	*e*P	**P**	**18 46 31.9**	**-0.7**
AAK				pmax	pmax		
	comp=Z,3.0nm,0.9s						
AAK	**Ala-Archa**	**51.03**	**298**	*e*P	**P**	**18 46 32.4**	**-0.2**
	comp=Z,2.3nm,0.8s						
EKS2	**Erkin-Say**	**51.51**	**298**	*e*P	**P**	**18 46 36.2**	**0.0**
EKS2				pmax	pmax		
	comp=Z,3.0nm,0.8s						
EKS2	**Erkin-Say**	**51.51**	**298**	*e*P	**P**	**18 46 36.2**	**0.0**
	comp=Z,2.7nm,0.8s						
INK	**Inuvik**	**51.85**	**28**	P	**P**	**18 46 39.5**	**+1.4**
	comp=Z,0.7nm,0.5s,baz=298,slow=6.0,SNR=14						
INK				pP	**sP**	**18 46 46.6**	**-0.1**
	comp=Z,1.7nm,0.4s,baz=300,slow=5.4,SNR=10						
INK				LR	LR	19 11 20.1	
	comp=Z,66nm,20.3s,baz=141,slow=39						
KKAR	**Karatay Array**	**53.58**	**299**	*e*P	**P**	**18 46 50.9**	**-0.5**
KKAR				pmax	pmax		
	comp=Z,2.0nm,0.9s						
KKAR	**Karatay Array**	**53.58**	**299**	*e*P	**P**	**18 46 50.9**	**-0.5**
	comp=Z,2.5nm,0.9s						
ARU	**Arti**	**55.98**	**318**	*c i*P	**P**	**18 47 08.9**	**+0.4**
ARU						18 49 10.7	
ARU				S	**S**	**18 54 55.1**	**-0.2**
ARU				SS	**SS**	**18 58 36.9**	**-3.9**
ARU				pmax	pmax		
	comp=Z,9.0nm,1.0s						
ARU	**Arti**	**55.98**	**318**	*e*P	**P**	**18 47 08.8**	**+0.3**
	comp=Z,3.3nm,0.8s						
ABKAR	**Akbulak array**	**57.94**	**310**	*e*P	**P**	**18 47 22.7**	**+0.2**
	comp=Z,2.9nm,0.6s						
WRAB	**Tennant Creek**	**59.28**	**190**	*e*P	**P**	**18 47 30.7**	**-1.3**
WRAB	**Tennant Creek**	**59.28**	**190**	*e*P	**P**	**18 47 30.7**	**-1.3**
WRA	**Warramunga Arr**	**59.29**	**190**	P	**P**	**18 47 30.9**	**-1.2**
	comp=Z,1.4nm,0.9s,baz=8.2,slow=7.0,SNR=15						
WRA				pP	**pP**	**18 47 38.6**	**+0.1**
	comp=Z,2.5nm,0.7s,baz=8.5,slow=7.1,SNR=15						
YKA	**Yellowknife Ar**	**61.24**	**31**	P	**P**	**18 47 46.0**	**+1.0**
	comp=Z,0.3nm,0.8s,baz=300,slow=6.5,SNR=7.3						
YKA				pP	**sP**	**18 47 52.7**	**-1.0**
	comp=Z,0.2nm,0.5s,baz=302,slow=6.6,SNR=6.0						
ARCES	**ARCESS Array B**	**62.71**	**340**	P	**P**	**18 47 55.4**	**+0.5**
	comp=Z,1.2nm,0.8s,baz=50,slow=9.6,SNR=7.1						
ASAR	**Alice Springs**	**63.02**	**190**	P	**P**	**18 47 57.4**	**+0.1**
	comp=Z,0.6nm,0.9s,baz=15,slow=5.9,SNR=5.6						
ASAR				pP	**pP**	**18 48 03.6**	**0.0**
	comp=Z,0.4nm,0.5s,baz=7.3,slow=5.9,SNR=9.1						
GEYT	**Alibeck**	**64.33**	**299**	P	**P**	**18 48 06.3**	**+0.3**
	comp=Z,2.5nm,0.7s,baz=31,slow=3.8,SNR=9.8						
OBN	**Obninsk**	**67.49**	**323**	*e*P	**P**	**18 48 26.7**	**+0.7**
OBN				pmax	pmax		
	comp=Z,6.0nm,0.8s						
FINES	**FINESS Array B**	**67.82**	**333**	P	**P**	**18 48 28.4**	**+0.5**
	comp=Z,3.2nm,0.8s,baz=53,slow=7.6,SNR=16						
GOF	**Gofitskoye**	**70.00**	**312**⇑	*e*P	**P**	**18 48 43.7**	**+1.8**
GOF				pmax	pmax		
	comp=Z,15nm,0.7s						
NCK	**Nalchik**	**70.58**	**311**	*e*P	**P**	**18 48 46.3**	**+0.8**
NCK				pmax	pmax		
	comp=Z,6.0nm,1.1s						
ZEI	**Tsey**	**70.81**	**310**	*e*P	**P**	**18 48 46.5**	**-0.6**
ZEI				pmax	pmax		
	comp=Z,10.0nm,1.1s						
KIV	**Kislovodsk**	**70.85**	**311**	*i* P	**P**	**18 48 46.2**	**-1.0**
KIV				*e*		18 48 58.0	
KIV				pmax	pmax		
	comp=Z,20nm,1.0s						
KIV	**Kislovodsk**	**70.85**	**311**	*e*P	**P**	**18 48 48.0**	**+0.8**
	comp=Z,14nm,0.7s						
KBZ	**Khabaz**	**70.86**	**311**	P	**P**	**18 48 48.4**	**+1.3**
	comp=Z,6.0nm,0.9s,baz=49,slow=2.9,SNR=20						
NEY	**Neytrino**	**71.24**	**311**	*e*P	**P**	**18 48 50.5**	**+0.8**
NEY				pmax	pmax		
	comp=Z,1.0nm,0.9s						
NB2	**NNSAR Subarra**	**72.98**	**338**	P	**P**	**18 48 59.9**	**+0.3**
	comp=Z,3.0nm,0.7s,baz=38,slow=6.2						
NOA	**NORSAR Array B**	**72.98**	**338**	P	**P**	**18 49 00.3**	**+0.7**
	comp=Z,3.3nm,0.9s,baz=38,slow=6.0,SNR=9.3						
AKASG	**Malin Array Be**	**73.73**	**323**	P	**P**	**18 49 04.2**	**+0.1**
	comp=Z,1.9nm,0.5s,baz=44,slow=6.3,SNR=19						
AKASG				pP	**sP**	**18 49 13.5**	**+0.6**
	comp=Z,0.2nm,0.3s,baz=44,slow=6.3,SNR=4.8						
KIEV	**Kiev**	**73.74**	**323**	*e*P	**P**	**18 49 03.3**	**-0.9**
KIEV				pmax	pmax		
	comp=Z,2.0nm,0.9s						
PDAR	**Pinedale Array**	**75.08**	**47**	P	**P**	**18 49 13.6**	**+1.1**
	comp=Z,0.3nm,0.5s,baz=251,slow=0.7,SNR=3.9						
PDAR				pP	**sP**	**18 49 20.6**	**-0.6**
	comp=Z,0.7nm,0.6s,baz=281,slow=2.9,SNR=6.0						
KOLS	**Kolonicke sedl**	**78.17**	**325**	*e*P	**P**	**18 49 30.9**	**+1.4**
BRTR	**Keskin Array B**	**78.76**	**312**	P	**P**	**18 49 34.0**	**+0.8**
	comp=Z,0.8nm,0.7s,baz=76,slow=5.2,SNR=4.9						
BRTR	**Keskin Array B**	**78.76**	**312**	P	**P**	**18 49 34.0**	**+0.8**
DPC	**Dobruska-Polom**	**79.64**	**329**	*e*P	**P**	**18 49 39.1**	**+1.5**
DPC				epP	**PcP**	**18 49 45.1**	**-0.3**
DPC	**Dobruska-Polom**	**79.64**	**329**	*e*P	**P**	**18 49 39.1**	**+1.5**
DPC				*e*		18 49 45.1	
KRLC	**Kraliky**	**79.66**	**328**	*e*P	**P**	**18 49 39.0**	**+1.3**
KRLC	**Kraliky**	**79.66**	**328**	*e*P	**P**	**18 49 39.0**	**+1.3**
VYHS	**Vyhne**	**80.01**	**326**	*e*P	**P**	**18 49 41.0**	**+1.4**
CLL	**Collm**	**80.18**	**331**⇓	*i*P	**P**	**18 49 40.8**	**+0.4**
	comp=Z,5.0nm,1.0s						
CLL	**Collm**	**80.18**	**331**⇓	*i*P	**P**	**18 49 40.8**	**+0.4**
CLL				pmax	pmax		
	comp=Z,5.0nm,1.0s						
PRU	**Pruhonice**	**80.63**	**329**	*e*P	**P**	**18 49 44.2**	**+1.3**
PRU	**Pruhonice**	**80.63**	**329**	*e*P	**P**	**18 49 44.2**	**+1.3**
KHC	**Kasperske Hory**	**81.69**	**329**	*e*P	**P**	**18 49 49.9**	**+1.3**
KHC	**Kasperske Hory**	**81.69**	**329**	*e*P	**P**	**18 49 49.9**	**+1.3**
GERES	**GERESS Array B**	**81.87**	**329**	P	**P**	**18 49 50.4**	**+0.7**
	comp=Z,0.7nm,0.5s,baz=35,slow=6.1,SNR=9.5						
TXAR	**Lajitas Array**	**87.59**	**54**	P	**P**	**18 50 19.7**	**+0.9**
	comp=Z,0.2nm,0.5s,baz=330,slow=1.7,SNR=3.6						
TXAR				pP	**sP**	**18 50 27.2**	**-0.5**
	comp=Z,0.5nm,0.7s,baz=308,slow=4.6,SNR=4.7						

*ISCJB **25** 18:39:34.8±0.5, 37.87N±0.03×27.44E±0.04, h10km±6km, Error ellipse: s-maj=5.6km s-min=4.7km az=145.5*
*DDA **25** 18:39:34.4, 37.86N×27.44E, h7km, Md2.7*
*CSEM **25** 18:39:34.9±0.2, 37.88N×27.43E, h10km, MD2.7, Error ellipse: s-maj=6.2km s-min=4.6km az=74.0*
*ISK **25** 18:39:35.2, 37.92N×27.48E, h8km, MD2.3*
ISC 25 18:39:34.9±1.0, **37.86N**±0.03×**27.43E**±0.03, **h11**km±10km, **n19**, σ0**s30/30, Turkey**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
GCAM	**G?zelcaml?**	**0.23**	**225**	*i* P	**Pg**	**18 39 39.5**	**-0.1**
GCAM				*i* S	**Sg**	**18 39 42.9**	**+0.1**
GCAM	**G?zelcaml?**	**0.23**	**225**	P	**Pg**	**18 39 39.5**	**-0.1**
GCAM				S	**Sg**	**18 39 42.9**	**+0.1**
AYDB	**Zeytinkoy-Aydi**	**0.37**	**76**	*e*PG	**Pg**	**18 39 42.2**	**-0.2**
AYDB				*e*SG	**Sg**	**18 39 47.4**	**0.0**
AYDB	**Zeytinkoy-Aydi**	**0.37**	**76**	*e*Pg	**Pg**	**18 39 42.2**	**-0.2**
AYDB				*e*Sg	**Sg**	**18 39 47.4**	**0.0**
AYDN	**Tasoluk**	**0.41**	**119**	*i* P	**Pg**	**18 39 43.1**	**+0.1**
AYDN				*i* S	**Sg**	**18 39 48.5**	**+0.1**
AYDN	**Tasoluk**	**0.41**	**119**	P	**Pg**	**18 39 43.1**	**+0.1**
AYDN				S	**Sg**	**18 39 48.5**	**+0.1**
IZM	**Izmir**	**0.55**	**346**	*e*PG	**Pg**	**18 39 45.5**	**-0.3**
IZM				*e*SG	**Sg**	**18 39 53.1**	**0.0**
IZM	**Izmir**	**0.55**	**346**	*e*Pg	**Pg**	**18 39 45.5**	**-0.3**
IZM				*e*Sg	**Sg**	**18 39 53.1**	**0.0**
BLCB	**Balcova**	**0.61**	**330**	*e*PG	**Pg**	**18 39 46.9**	**+0.1**
BLCB	**Balcova**	**0.61**	**330**	*e*Pg	**Pg**	**18 39 46.9**	**+0.1**
BDRM	**Kayabasi**	**0.79**	**179**	*i* P	**Pg**	**18 39 49.5**	**-0.7**
BDRM				*i* S	**Sg**	**18 40 00.9**	**+0.3**
BDRM	**Kayabasi**	**0.79**	**179**	P	**Pg**	**18 39 49.5**	**-0.7**
BDRM				S	**Sg**	**18 40 00.9**	**+0.3**
BODT	**Bodrum**	**0.80**	**187**	*e*PG	**Pn**	**18 39 52.4**	**+0.2**
BODT	**Bodrum**	**0.80**	**187**	*e*Pg	**Pn**	**18 39 52.4**	**+0.2**
ZEY	**˙zmir**	**0.83**	**298**	*i* P	**Pb**	**18 39 51.2**	**-0.1**
ZEY				*i* S	**Sg**	**18 40 01.6**	**0.0**
YER	**Yerkesik**	**0.99**	**137**	*e*PG	**Pn**	**18 39 55.1**	**+0.3**
YER	**Yerkesik**	**0.99**	**137**	*e*Pg	**Pn**	**18 39 55.1**	**+0.3**
KULA	**Kula-Manisa**	**1.17**	**56**	*e*PN	**Pg**	**18 39 56.9**	**-0.5**
KULA	**Kula-Manisa**	**1.17**	**56**	*e*Pn	**Pg**	**18 39 56.9**	**-0.5**

*CSEM **25** 18:47:14.0±0.5, 77.10N×18.86E, h8km, ML1.1, Error ellipse: s-maj=10.3km s-min=7.4km az=11.0*
BER 25 18:47:16.4±1.4, **76.95N**×**18.38E, h16**km±11km, **MD1.5, ML1.1, Svalbard region**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
HSPB	**Hornsund (broa**	**0.65**	**276**	*e*P	Pg	**18 47 27.5**	**-1.6**
HSPB				*e*S	Sg	18 47 37.0	-0.7
HSPB				IAML		18 47 41.1	
	comp=Z,5.0nm,0.2s						
HSPB	**Hornsund (broa**	**0.65**	**276**	*e*P	Pb	18 47 29.6	+0.3
HSPB				*e*		18 47 40.9	
HSPB	**Hornsund (broa**	**0.65**	**276**	*e*P	Pg	**18 47 27.5**	**-1.6**
	SNR=96						
HSPB	**Hornsund (broa**	**0.65**	**276**	*e*Pg	Pb	18 47 29.6	+0.3
HSPB				*e*S	Sg	18 47 37.0	-0.7
	SNR=96						
HSPB				*e*Sn	Sb	18 47 38.2	+0.2
HSPB				*e*Sg	Sn	18 47 40.9	+0.2
SPA0	**Spitsbergen Ar**	**1.31**	**342**	*e*P	Pn	18 47 37.7	-2.3
SPA0				*e*S	Sn	18 47 54.8	-2.4
SPA0				IAML		18 47 58.3	
	comp=Z,3.0nm,0.5s						
SPA0	**Spitsbergen Ar**	**1.31**	**342**	*e*P	Pn	18 47 37.7	-2.3
	SNR=55						
SPA0				*e*S	Sn	18 47 54.8	-2.4
	SNR=55						
HOPEN	**Hopen**	**1.59**	**103**	*e*P	Pn	18 47 41.5	-2.2
HOPEN				*e*S	Sn	18 48 01.9	-2.0
HOPEN				IAML		18 48 05.3	
	comp=Z,6.4nm,0.2s						
HOPEN	**Hopen**	**1.59**	**103**	*e*P	Pn	18 47 41.5	-2.3
	SNR=55						
HOPEN				*e*S	Sn	18 48 01.9	-2.0
	SNR=55						
KBS	**Kingsbay**	**2.41**	**329**	*e*Pg	Pb	18 47 58.1	-1.1
KBS				*e*Sg	Sb	18 48 27.8	-0.8
KBS				IAML		18 48 34.2	
	comp=Z,3.3nm,0.5s						
KBS	**Kingsbay**	**2.41**	**329**	*e*Pg	Pb	18 47 58.1	-1.1
	SNR=91						
KBS				*e*Sg	Sb	18 48 27.8	-0.7
	SNR=91						

IDC 25 18:48:14.8±2.3, **36.98N**×**143.45E, h0**km, **mb3.4**/4, **mb1 3.5**/6, **mb1mx3.3**/54, **mbtmp3.5**/6, **ML3.1**/2, **Error ellipse: s-maj=57.1km s-min=24.7km az=65.0, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
MJAR	**Matsushiro Arr**	**4.23**	**266**	Pn	Pn	18 49 20.2	-0.4
	0.5nm,0.3s,baz=88,slow=15,SNR=4.3						
JHJ

SBLS San Blas 4.17 301 eP Pn 18 52 17.9 +0.7
SNJE San Jose 4.17 302 eP Pn 18 52 18.5 +1.3
TBS2 4.34 131 eP Pn 18 52 20.6 +1.2
BRU Baru 4.40 130 eP Pn 18 52 22.3 +1.9
BRU eS S 18 53 13.4 +0.7
CMIG Matias Romero 10.18 303 P Pn 18 53 34.7 0.0
comp=Z,2.7nm,0.3s,baz=140,slow=8.3,SNR=17
MOTC Monteria, Cord 10.53 105 eP P 18 53 55.9 +10
GUYC Guyana, Colomb 12.26 121 eP Pn 18 54 01.9 0.0
GUYC eP P 18 54 05.4 -0.7
GUYC eP P 18 54 08.5 +2.4
NORC Norcasia 12.53 118 eP P 18 54 11.2 +2.5
BRRC Barranca, Sant 12.90 110 eP Pn 18 54 05.4 -4.1
OCAC Ocana 12.91 104 eP Pn 18 54 10.7 +1.1
ROSC El Rosal 13.37 120 P P 18 54 20.6 +2.2
comp=Z,1.6nm,0.3s,baz=329,slow=7.6,SNR=17
ROSC El Rosal 13.37 120 eP P 18 54 19.4 +1.0
CMBC Cumbal 13.39 142 eP P 18 54 21.8 +3.1
PRAC Prado 13.53 125 eP Pn 18 54 18.4 +1.1
GRMC Gramalote, San 13.55 106 eP Pn 18 54 18.5 +0.8
CBRI Barrientos, No 13.55 106 eP Pn 18 54 19.4 +1.6
BARC Barichara 13.59 111 eP P 18 54 22.5 +1.9
OTAV Otavalo 13.60 146 eP Pn 18 54 19.4 +0.7
comp=Z,5.7nm,0.6s
OTAV Otavalo 13.60 146 eP P 18 54 20.4 -0.6
PAMC Pamplona, Colo 13.77 107 eP Pn 18 54 19.9 -0.8
RUSC La Rusia 13.96 113 eP P 18 54 25.5 +0.5
TOLC Tolima 13.96 113 eP Pn 18 54 13.8 -9.3
CHIC Chingaza 13.98 119 eP Pn 18 54 24.2 +0.9
CHIC eP Pn 18 54 24.2 +0.9
CHIC eP P 18 54 28.2 +3.0
VILC Villavicencio, 14.28 121 eP P 18 54 30.1 +1.9
FLOC Florencia 14.33 134 eP Pn 18 54 28.0 +0.8
SJAC San Juan de Ar 14.54 124 eP P 18 54 32.8 +1.8
YOPC Yopal, Colombi 14.78 114 eP P 18 54 35.3 +1.5
SDV Santo Domingo 15.33 99 P P 18 54 41.3 +1.4
comp=Z,2.7nm,0.3s,baz=310,slow=3.8,SNR=6.0
034A Hebbronville 19.42 324 P Pn 18 55 27.5 -0.3
baz=140
934A Benavides 19.73 325 P Pn 18 55 30.5 -1.2
baz=141
TIGA Tifton 19.77 6 P Pn 18 55 30.8 -1.1
baz=187
540A Vidor 19.87 339 P P 18 55 30.6 +1.5
baz=156
736A Circle Diamond 20.06 330 P Pn 18 55 34.4 -1.3
baz=147
344A Westbrook Farm 20.15 348 P P 18 55 34.7 +2.7
baz=166
834A Tilden 20.16 326 P P 18 55 34.2 +2.1
baz=142
SJG San Juan 20.16 69 P P 18 55 32.9 +0.7
comp=Z,22nm,0.6s,baz=296,slow=4.6,SNR=11
ATAH Atahualpa 20.16 158 P Pn 18 55 36.2 -1.1
comp=Z,12nm,0.9s,baz=335,slow=8.1,SNR=6.3
933A Laredo 20.17 324 P P 18 55 35.0 +2.7
baz=139
735A Kenedy 20.35 329 P P 18 55 36.1 +1.9
baz=145
247A Quitman 20.41 354 P P 18 55 36.0 +1.2
baz=173
342A Flagon Creek P 20.45 344 P P 18 55 35.5 +0.3
baz=162
636A Smothers Creek 20.50 331 P P 18 55 37.7 +2.0
baz=148
245A Little AP, Sta 20.56 350 P P 18 55 37.2 +0.8
baz=169
341A Kurthwood 20.65 342 P P 18 55 38.1 +0.7
baz=160
537A Green Hill Far 20.67 334 P P 18 55 40.1 +2.5
baz=150
244A Avery, Jackson 20.71 349 P P 18 55 39.9 +1.9
baz=167
734A La Parita Cree 20.73 327 P P 18 55 40.7 +2.5
baz=143
635A Leesville 20.77 330 P P 18 55 40.8 +2.3
baz=146
833A Chaparral WMA, 20.78 325 P P 18 55 39.6 +0.8
baz=140
VBMS Vicksburg 20.85 349 P P 18 55 40.9 +1.5
baz=168
340A Bronson 20.95 341 P P 18 55 41.5 +1.0
baz=158
147A Livingston 20.99 355 P P 18 55 42.1 +1.3
baz=174,SNR=7.2
733A Divot King Ran 21.03 326 P P 18 55 42.1 +0.7
baz=141
832A Faith Ranch, C 21.08 324 P P 18 55 42.8 +0.9
baz=139
145A Houston Renfro 21.13 351 P P 18 55 42.7 +0.4
baz=169
LRAL Lakeview Retre 21.26 358 eP P 18 55 45.1 +1.3
comp=Z,49nm,1.0s
Z47A Carrollton 21.49 355 P P 18 55 47.3 +1.2
baz=174
633A Saathoff Ranch 21.54 327 P P 18 55 46.7 0.0
baz=143
534A Blanco 21.64 329 P P 18 55 47.9 +0.2
baz=145,SNR=12
GOGA Godfrey 21.73 6 eP P 18 55 50.1 +1.5
comp=Z,38nm,0.9s
435B Jarrell 21.84 332 P P 18 55 50.7 +1.1
baz=148
533A Kerrville 21.96 328 P P 18 55 51.5 +0.6
baz=144
336A Riesel 22.03 334 P P 18 55 51.8 +0.3
baz=151
Y47A UCPARC, Winfie 22.17 356 P P 18 55 53.2 +0.3
baz=175,SNR=5.5
434A Burnet 22.18 331 P P 18 55 53.2 +0.2
baz=147
335A Moody 22.19 333 P P 18 55 53.5 +0.4
baz=149
Y46A Houston 22.24 354 P P 18 55 54.1 +0.6
baz=173,SNR=8.3
Y45A Yeager Farm, C 22.31 352 P P 18 55 55.0 +0.9
baz=171
236A Katherine and 22.44 336 P P 18 55 56.0 +0.7
baz=152
138A Matatall Enter 22.49 340 P P 18 55 56.3 +0.5
baz=156
Z40A Long Farm, Mag 22.52 344 P P 18 55 55.6 -0.4
baz=161
433A Art 22.54 329 P P 18 55 56.9 +0.6
baz=145
334A Lometa 22.60 332 P P 18 55 57.1 +0.2
baz=147
JCT Junction City 22.68 328 P P 18 55 58.5 +0.9
baz=143
WHTX Lake Whitney, 22.81 334 P P 18 55 59.3 +0.6
baz=150
136A Ennis 22.86 336 P P 18 55 59.9 +0.9
baz=153
333A Richland Sprin 22.95 330 P P 18 56 00.0 +0.1
baz=146,SNR=7.6
234A Clairette 23.12 333 P P 18 56 01.7 +0.2
baz=148
Y40A Okolona 23.20 344 P P 18 56 02.6 +0.5
baz=162
135A Vickery Place, 23.28 335 P P 18 56 03.0 +0.1
baz=151
Y39A Lockesburg 23.36 343 P P 18 56 03.7 +0.1
baz=160
233A Rising Star 23.48 331 P P 18 56 05.4 +0.6
baz=147
X40A Basin Creek Fa 23.54 346 P P 18 56 05.9 +0.7
baz=163
134A White-Moore Ra 23.58 334 P P 18 56 05.9 +0.2
baz=149
KMSC Kings Mountain 23.71 9 P P 18 56 08.5 +1.7
baz=191,SNR=16
KMSC Kings Mountain 23.71 9 eP P 18 56 08.3 +1.5
comp=Z,50nm,0.8s
GRGR Grenville 23.78 86 eP P 18 56 07.0 -0.6
comp=Z,135nm,0.9s
MIAR Mount Ida 23.78 344 P P 18 56 07.8 +0.4
baz=161,SNR=21
MIAR Mount Ida 23.78 344 eP P 18 56 07.2 -0.2
comp=Z,32nm,0.8s
Y37A Hugo 23.88 340 P P 18 56 08.4 +0.1
baz=156
X39A Fountain Ranch 23.90 343 P P 18 56 09.1 +0.6
baz=160
TKL Tuckaleechee C 23.94 4 P P 18 56 10.4 +1.5
comp=Z,20nm,0.7s,baz=181,slow=12,SNR=10
133A Hamilton Ranch 23.98 332 P P 18 56 11.4 +2.1
baz=148

W41A Tony Mavity, V 24.06 347 P P 18 56 10.0 0.0
baz=165,SNR=11
W41B Gary Mavity, V 24.06 347 P P 18 56 10.0 0.0
baz=165,SNR=11
TXAR Lajitas Array 24.09 319 P P 18 56 11.5 +1.0
comp=Z,7.7nm,0.7s,baz=140,slow=9.9,SNR=31
TXAR pP pP 18 56 49.6 +1.0
comp=Z,1.4nm,0.8s,baz=142,slow=11,SNR=2.4
TXAR PcP PcP 18 59 47.7 +1.4
comp=Z,1.8nm,0.8s,baz=156,slow=6.7,SNR=7.8
TXAR ScP ScP 19 03 08.7 +2.8
comp=Z,1.0nm,0.9s,baz=131,slow=5.1,SNR=5.0
Z34A Collier Ranch, 24.20 335 P P 18 56 11.5 +0.2
baz=150
X38A Whitesboro 24.26 342 P P 18 56 11.9 +0.1
baz=159
Y35A Marietta 24.32 337 P P 18 56 13.0 +0.7
baz=153
X37A Clayton 24.35 341 P P 18 56 12.9 +0.3
baz=157,SNR=6.8
W39A Magazine 24.45 344 P P 18 56 14.2 +0.7
baz=161,SNR=5.9
Z33A Whitaker Ranch 24.49 333 P P 18 56 15.1 +1.2
baz=149
W38A Poteau 24.54 343 P P 18 56 15.1 +0.8
baz=160,SNR=7.0
Y34A Reagan Ranch, 24.64 336 P P 18 56 15.8 +0.5
baz=152
X36A Centrahoma 24.66 339 P P 18 56 15.9 +0.5
baz=155
X35A Drake 24.73 338 P P 18 56 16.6 +0.5
baz=154
V40A Witts Springs 24.80 347 P P 18 56 17.2 +0.5
baz=164
W37B Quinton 24.88 341 P P 18 56 18.0 +0.7
baz=158
V39A Pettigrew 25.02 345 P P 18 56 19.3 +0.5
baz=162
Y33A Hilltop Ranch, 25.05 334 P P 18 56 19.0 +0.1
baz=150
W36A Wetumka 25.14 340 P P 18 56 19.9 +0.2
baz=156
X34A Smith Ranch, M 25.24 337 P P 18 56 20.9 +0.2
baz=152
V38A Canehill 25.25 344 P P 18 56 20.6 -0.2
baz=160
U40A Yellville 25.33 347 P P 18 56 21.5 0.0
baz=164,SNR=9.9
X33A Lawton 25.45 335 P P 18 56 22.7 +0.1
baz=150
V37A Hulbert 25.48 342 P P 18 56 22.7 0.0
baz=159
U39A Green Forest 25.50 346 P P 18 56 22.9 -0.1
baz=163
V36A Jenks 25.63 341 P P 18 56 23.9 -0.3
baz=157
X32A Elmer 25.68 334 P P 18 56 24.4 -0.3
baz=149
TUL1 Leonard 25.70 341 P P 18 56 24.7 -0.1
baz=158
W34A Bridge Creek, 25.77 337 P P 18 56 25.4 -0.1
baz=153
W34A Bridge Creek, 25.77 337 eP P 18 56 25.3 -0.2
comp=Z,21nm,0.8s
V35A Meyer Ranch, C 25.91 339 P P 18 56 26.5 -0.2
baz=155
U37A Salina 25.96 343 P P 18 56 26.7 -0.3
baz=159
T40A Mansfield 26.02 348 P P 18 56 27.7 0.0
baz=165
T39A Clever 26.09 346 P P 18 56 28.2 -0.1
baz=163
V34A Guthrie 26.21 338 P P 18 56 29.1 -0.3
baz=154
V34A Guthrie 26.21 338 eP P 18 56 29.2 -0.2
comp=Z,15nm,0.8s
W32A Sentinel 26.26 335 P P 18 56 30.0 +0.1
baz=150
T38A Diamond 26.32 345 P P 18 56 30.6 +0.2
baz=162
WCI Wyandotte Cave 26.42 359 eP P 18 56 31.9 +0.7
comp=Z,102nm,0.8s
S40A Lebanon 26.45 348 P P 18 56 31.8 +0.3
baz=166
V33A Lossen Ranch, 26.49 337 P P 18 56 32.2 +0.3
baz=152
T37A Cheneyville 18 26.57 344 P P 18 56 32.6 0.0
baz=160,SNR=9.8
S39A Bolivar 26.72 347 P P 18 56 33.7 -0.1
baz=164
U34A Anderson Ranch 26.76 339 P P 18 56 33.7 -0.6
baz=154
MNTX Cornudas Mount 26.79 321 P P 18 56 35.1 +0.5
baz=134
T36A Boggs Farm, Ca 26.79 342 P P 18 56 34.1 -0.5
baz=158,SNR=5.0
S38A Stockton 26.79 346 P P 18 56 34.4 -0.2
baz=163
T35A Sooner Cattle 26.85 341 P P 18 56 35.3 +0.2
baz=157
R40A Maddies Statio 27.08 349 P P 18 56 36.9 -0.2
baz=166
S37A Fort Scott 27.15 344 P P 18 56 37.3 -0.4
baz=161,SNR=5.9
AMTX Amarillo 27.16 331 P P 18 56 37.6 -0.4
baz=145
T34A McClaskey Farm 27.17 340 P P 18 56 37.0 -0.9
baz=156
R39A Chumby, Stover 27.25 348 P P 18 56 38.0 -0.7
baz=165,SNR=8.5
S36A Lake Cedric, C 27.32 343 P P 18 56 39.4 +0.2
baz=159
R38A Fenwick Farm, 27.32 346 P P 18 56 38.7 -0.6
baz=163
S35A Otter Creek Ra 27.50 342 P P 18 56 40.6 -0.2
baz=158
T33A Patterson Ranc 27.59 338 P P 18 56 41.6 0.0
baz=153
R37A Teagarden Farm 27.67 345 P P 18 56 42.0 -0.3
baz=161
Q40A Laux Farm, Aux 27.73 350 P P 18 56 43.0 +0.1
baz=167
S34A Willow Spring 27.76 341 P P 18 56 42.0 -1.2
baz=156
R36A Gordon, Harris 27.86 344 P P 18 56 43.9 -0.1
baz=160
Q39A Willow Grove F 27.95 348 P P 18 56 44.1 -0.7
baz=165
Q38A Cooks Store, C 28.00 347 P P 18 56 45.2 -0.1
baz=164
P40A Paris 28.24 350 P P 18 56 47.6 +0.2
baz=167
R34A Isabella, Hill 28.35 341 P P 18 56 48.4 0.0
baz=156
Q36A Arnold C. Orve 28.44 344 P P 18 56 49.3 +0.1
baz=160
Q35A Meer Eighty, 28.50 343 P P 18 56 50.1 +0.3
baz=159
ACSO Alum Creek Sta 28.54 5 eP P 18 56 50.9 +0.8
comp=Z,41nm,0.7s
SFIN Lafayette 28.59 358 P P 18 56 50.4 0.0
baz=178,SNR=5.5
R33A Olander Ranch, 28.60 340 P P 18 56 50.5 -0.2
baz=155
PTGA Pitinga 28.61 114 P P 18 56 51.3 +0.3
comp=Z,3.8nm,0.7s,baz=311,slow=9.5,SNR=6.1
P38A Dawn 28.62 348 P P 18 56 50.4 -0.4
baz=164,SNR=8.4
P37A Lathrop 28.76 346 P P 18 56 52.2 +0.2
baz=163
O40A La Belle 28.79 351 P P 18 56 52.3 +0.1
baz=168
KSU1 Kansas State U 28.89 343 P P 18 56 53.1 -0.1
baz=158
HDIL Hopedale 28.90 355 P P 18 56 53.3 +0.1
baz=173,SNR=8.0
HDIL Hopedale 28.90 355 eP P 18 56 53.2 0.0
comp=Z,66nm,0.9s
P36A Good Intent, A 29.00 345 P P 18 56 54.7 +0.6
baz=161
P35A Duane Minner, 29.12 344 P P 18 56 55.1 -0.1
baz=160
Q33A Connelly Farm, 29.17 341 P P 18 56 55.9 +0.2
baz=156
O56A Blue Knob Stat 29.20 12 P P 18 56 57.6 +1.7
baz=195,SNR=7.4
O37A Wolven Farm, M 29.27 347 P P 18 56 56.3 -0.2
baz=164

P34A Walnut Farm, R 29.37 343 P P 18 56 57.4 0.0
baz=158
Q32A Meitler Ranch, 29.41 340 P P 18 56 57.9 +0.2
baz=154
O36A Bolckow 29.42 346 P P 18 56 57.3 -0.5
baz=162
N54A Moraine State 29.62 9 P P 18 57 00.5 +0.9
baz=192
N39A Derby Farms, D 29.63 350 P P 18 57 00.1 +0.5
baz=167,SNR=9.8
SSPA Standing Stone 29.69 12 eP P 18 57 01.4 +1.2
comp=Z,76nm,0.9s
ANMO Albuquerque 29.71 325 P P 18 57 01.2 +0.4
baz=136
O34A Beatrice 29.92 343 P P 18 57 02.2 0.0
baz=159
P32A Huiting Farm, 29.99 340 P P 18 57 03.1 +0.2
baz=155,SNR=6.9
O33A Hebron 30.08 342 P P 18 57 03.9 +0.2
baz=157
M54A Oil Creek Stat 30.20 9 P P 18 57 05.9 +1.1
baz=192
N35A Tabor 30.28 345 P P 18 57 05.5 +0.1
baz=161
M38A Pleasantville 30.28 349 P P 18 57 04.8 -0.6
baz=166,SNR=5.7
T25A Trinidad 30.28 330 P P 18 57 06.2 +0.5
baz=142
M37A Trindle Farm, 30.43 348 P P 18 57 06.9 +0.1
baz=164
N59A State Game Lan 30.45 15 P P 18 57 08.7 +1.7
baz=200,SNR=8.4
O32A Brockman Farm, 30.46 341 P P 18 57 07.5 +0.4
baz=156
SAML Samuel 30.55 131 eP P 18 57 06.7 -1.3
comp=Z,6.1nm,0.8s
O31A Woolen Ranch, 30.71 340 P P 18 57 09.5 +0.3
baz=154
M35A Neola 30.86 346 P P 18 57 10.0 -0.5
baz=161
L38A Oak Wood Farm, 30.94 350 P P 18 57 11.0 -0.2
baz=167,SNR=16
SDCO Great Sand Dun 31.30 329 P P 18 57 15.6 +0.9
baz=141,SNR=5.6
JFWS Jewell Farm 31.33 354 eP P 18 57 14.6 +0.1
comp=Z,28nm,1.0s
M33A Taylor Creek F 31.35 344 P P 18 57 15.0 +0.2
baz=159
K38A Parkersburg 31.40 350 P P 18 57 14.8 -0.4
baz=167,SNR=6.5
BGNE Belgrade 31.47 342 P P 18 57 15.6 -0.3
baz=157
BINY Binghamton 31.61 14 eP P 18 57 18.1 +1.1
comp=Z,32nm,0.9s
K37A Belmond 31.67 349 P P 18 57 17.0 -0.6
baz=166,SNR=7.2
S22A 4UR Ranch, Cre 31.98 328 P P 18 57 20.4 -0.3
baz=139
J38A Wedel Dairy, R 32.01 351 P P 18 57 19.7 -0.9
baz=168,SNR=5.9
J37A Redenius Farm, 32.18 350 P P 18 57 21.5 -0.6
baz=166
J36A Seneca 1, Swea 32.35 349 P P 18 57 23.1 -0.4
baz=165,SNR=6.5
MVCO Mesa Verde 32.49 325 P P 18 57 25.9 +0.8
baz=136
I38A Scanlan Farm, 32.70 351 P P 18 57 25.7 -0.8
baz=168
I37A Lemond, Waseca 32.84 350 P P 18 57 27.2 -0.5
baz=167,SNR=7.9
LPAZ La Paz 32.92 147 P P 18 57 29.9 +0.5
comp=Z,1.1nm,0.6s,baz=323,slow=5.0,SNR=3.8
I35A Creekview Farm 32.98 348 P P 18 57 28.5 -0.5
baz=164
K30A Basset 33.08 341 P P 18 57 29.6 -0.3
baz=155
ECSD EROS Data Cent 33.23 346 P P 18 57 30.0 -1.1
baz=161,SNR=6.7
ECSD EROS Data Cent 33.23 346 eP P 18 57 29.7 -1.4
comp=Z,4.7nm,0.4s
H36A Jessenland, He 33.48 350 P P 18 57 32.9 -0.3
baz=166
J30A Dallas 33.63 342 P P 18 57 34.5 -0.1
baz=156
H35A Sunnyside Ranc 33.76 349 P P 18 57 35.2 -0.5
baz=164
H34A Spellman Lake, 33.92 347 P P 18 57 36.7 -0.4
baz=163
SPMN Marine on St. 33.92 351 P P 18 57 36.2 -0.9
baz=168,SNR=5.8
SPMN Marine on St. 33.92 351 eP P 18 57 36.0 -1.1
comp=Z,26nm,0.8s
J29A Okreek 33.96 341 P P 18 57 37.0 -0.5
baz=154
N23A Red Feather La 33.99 332 P P 18 57 38.2 +0.1
baz=143
Y12C Blythe 34.10 315 P P 18 57 39.9 +1.2
baz=124
PDMCI Parker Dam,Lak 34.14 316 P P 18 57 41.0 +1.9
baz=125
I30A Oacoma 34.15 343 P P 18 57 39.0 0.0
baz=156
H32A Carlson Farm, 34.15 345 P P 18 57 38.8 -0.3
baz=160
H33A Prehn Over Nor 34.15 346 P P 18 57 38.8 -0.3
baz=161
LONY Lake Ozonia 34.23 14 eP P 18 57 40.1 +0.4
comp=Z,12nm,0.7s
J28A Aland Ranch, 34.27 340 P P 18 57 40.6 +0.4
baz=153
O20A White River Ci 34.50 329 P P 18 57 42.2 -0.2
baz=139
I29A Vivian Onida 34.51 342 P P 18 57 41.9 -0.3
baz=155
G33A Ortonville 34.57 347 P P 18 57 42.1 -0.5
baz=162
F36A Milaca 34.66 351 P P 18 57 42.5 -0.9
baz=167,SNR=12
I28A Midland 34.76 341 P P 18 57 44.0 -0.3
baz=153
F35A Swanville 34.83 349 P P 18 57 44.8 -0.1
baz=165
G32A Webster 34.87 346 P P 18 57 44.7 -0.6
baz=160
G31A Conde 35.02 345 P P 18 57 45.4 -1.1
baz=159
F33A 5 Mile Ranch, 35.15 347 P P 18 57 46.4 -1.2
baz=162,SNR=8.9
G30A Faulkton 35.18 344 P P 18 57 47.1 -0.7
baz=157
E36A McGregor 35.25 351 P P 18 57 47.2 -1.3
baz=168,SNR=5.3
BELC Belle Mtn. Jos 35.27 314 P P 18 57 50.1 +1.1
baz=122
PFO Pinyon Flats O 35.39 313 P P 18 57 51.6 +1.7
baz=121
GMRC Granite Mounta 35.45 315 P P 18 57 51.3 +0.8
baz=123
E35A Pequot Lakes 35.48 350 P P 18 57 49.6 -0.8
baz=166
E34A Wadena 35.57 349 P P 18 57 50.2 -0.9
baz=164
E33A Westby DABS, E 35.72 348 P P 18 57 52.0 -0.5
baz=163
D37A Cotton 35.77 352 P P 18 57 52.5 -0.4
baz=169
D36A Goodland 35.88 352 P P 18 57 52.8 -1.0
baz=168
MURC Murrieta 35.92 312 P P 18 57 55.9 +1.5
baz=120
D35A Remer 35.93 351 P P 18 57 52.8 -1.4
baz=166,SNR=7.5
F29A Eureka 36.02 343 P P 18 57 53.8 -1.2
baz=157
D34A Park Rapids 36.13 349 P P 18 57 54.9 -1.0
baz=165
C39A Grand Marais 36.18 355 P P 18 57 54.9 -1.4
baz=173
C38A Sawbill Land. 36.18 354 P P 18 57 56.3 -0.1
baz=171
E31A Nome 36.19 346 P P 18 57 55.6 -0.8
baz=160
G27A Dupree 36.24 341 P P 18 57 56.4 -0.5
baz=153
C37A Embarrass 36.30 353 P P 18 57 56.6 -0.8
baz=170
D33A AnnSam, Waubun 36.30 349 P P 18 57 56.6 -0.8
baz=164

G26A	**Maurine** baz=152	**36.38**	**340**	P		**P**	**18 57 57.9**	**-0.3**
E30A	**Jud** baz=158	**36.39**	**345**	P		**P**	**18 57 57.5**	**-0.6**
C36A	**Pine Crest Far** baz=169	**36.41**	**352**	P		**P**	**18 57 57.6**	**-0.7**
EYMN	**Ely** baz=171	**36.43**	**354**	P		**P**	**18 57 57.7**	**-0.8**
EYMN	**Ely**	**36.43**	**354**	*e*P		**P**	**18 57 56.9**	**-1.6**
C35A	**Jirik Farms, M** baz=167,SNR=8.5	**36.52**	**351**	P		**P**	**18 57 58.1**	**-1.1**
D31A	**Mcclaflin, Tow** baz=160,SNR=7.2	**36.61**	**346**	P		**P**	**18 57 58.8**	**-1.2**
C34A	**RKJ Ranch, Bem** baz=165	**36.62**	**350**	P		**P**	**18 57 59.0**	**-1.0**
E29A	**Napoleon** baz=157	**36.64**	**344**	P		**P**	**18 57 59.1**	**-1.2**
D30A	**Buchanan** baz=159	**36.91**	**345**	P		**P**	**18 58 01.8**	**-0.8**
SIV	**San Ignacio** comp=Z,26nm,0.7s,baz=316,slow=8.7,SNR=61	**36.92**	**138**	P		**P**	**18 58 03.1**	**+0.1**
E28A	**Huff** baz=156	**36.94**	**343**	P		**P**	**18 58 01.9**	**-0.9**
TPNV	**Topopah Spring** baz=125	**37.05**	**318**	P		**P**	**18 58 05.7**	**+1.6**
BW06	**Boulder Array** baz=140	**37.14**	**331**	P		**P**	**18 58 04.8**	**0.0**
PDAR	**Pinedale Array** comp=Z,1.1nm,0.6s,baz=132,slow=8.3,SNR=13	**37.14**	**331**	P		**P**	**18 58 04.8**	**0.0**
PDAR	comp=Z,0.5nm,0.8s,baz=116,slow=13,SNR=2.4			PcP		**PcP**	**19 00 20.6**	**0.0**
HWUT	**Hardware Ranch** comp=Z,5.3nm,0.6s	**37.29**	**328**	*e*P		**P**	**18 58 06.2**	**+0.2**
B34A	**Aery, Baudette** baz=166,SNR=11	**37.39**	**350**	P		**P**	**18 58 05.4**	**-1.1**
MPMC	**Manual Prospec** baz=123,SNR=6.4	**37.40**	**316**	P		**P**	**18 58 08.3**	**+1.3**
C30A	**Mose, Pekin** baz=160	**37.40**	**346**	P		**P**	**18 58 05.2**	**-1.5**
AGMN	**Agassiz Nation** baz=164,SNR=7.7	**37.42**	**349**	P		**P**	**18 58 05.9**	**-0.9**
AGMN	**Agassiz Nation** comp=Z,6.7nm,0.3s	**37.42**	**349**	*e*P		**P**	**18 58 05.4**	**-1.3**
R11A	**Troy Canyon, C** baz=127	**37.45**	**320**	P		**P**	**18 58 08.4**	**+1.0**
D28A	**Regan** baz=156	**37.47**	**344**	P		**P**	**18 58 06.7**	**-0.5**
B32A	**Ashes, Strandq** baz=163,SNR=10	**37.64**	**348**	P		**P**	**18 58 07.8**	**-0.8**
A33A	**Warroad** baz=165,SNR=8.0	**37.95**	**350**	P		**P**	**18 58 10.2**	**-1.0**
B30A	**Myrvik Farm, E** baz=160	**38.07**	**347**	P		**P**	**18 58 11.3**	**-0.9**
A32A	**Rocking H Ranc** baz=163,SNR=5.4	**38.13**	**349**	P		**P**	**18 58 11.5**	**-1.2**
C27A	**Sayler Ranch,** baz=155	**38.20**	**343**	P		**P**	**18 58 12.4**	**-1.0**
REDW	**Red Top Meadow** comp=Z,3.5nm,0.7s	**38.21**	**330**	*e*P		**P**	**18 58 13.9**	**+0.2**
B29A	**Wagenman Farm,** baz=159	**38.33**	**346**	P		**P**	**18 58 14.0**	**-0.3**
C26A	**Wahner Farm, P** baz=154	**38.48**	**342**	P		**P**	**18 58 15.7**	**0.0**
B28A	**Dugan Ranch, T** baz=157	**38.56**	**345**	P		**P**	**18 58 16.0**	**-0.4**
A29A	**Manning Farm,** baz=159	**38.72**	**346**	P		**P**	**18 58 16.8**	**-0.9**
RLMT	**Red Lodge** baz=142	**38.82**	**333**	P		**P**	**18 58 18.4**	**-0.4**
NVAR	**Mina Array Bea** comp=Z,4.8nm,0.6s,baz=132,slow=7.2,SNR=9.5	**39.23**	**318**	P		**P**	**18 58 24.7**	**+2.4**
NVAR	comp=Z,3.1nm,0.7s,baz=124,slow=4.9,SNR=7.0			PcP		**PcP**	**19 00 28.7**	**+1.5**
ULM	**Lac du Bonnet** comp=Z,4.8nm,0.8s,baz=171,slow=9.3,SNR=5.7	**39.30**	**350**	P		**P**	**18 58 20.9**	**-1.4**
ULM	comp=Z,1.0nm,0.4s,baz=11,slow=0.8,SNR=3.0			PcP		**PcP**	**19 00 26.8**	**-0.1**
A26A	**Wade Farm, Ken** baz=155	**39.43**	**343**	P		**P**	**18 58 22.6**	**-1.0**
DGMT	**Dagmar** baz=151	**39.70**	**341**	P		**P**	**18 58 25.0**	**-0.7**
HLID	**Hailey** baz=134	**40.16**	**328**	P		**P**	**18 58 29.0**	**-0.8**
EGMT	**Eagleton** baz=143	**41.33**	**336**	P		**P**	**18 58 37.8**	**-1.4**
O03D	**Paynes Creek** baz=122	**42.52**	**318**	P		**P**	**18 58 47.9**	**-1.1**
YBH	**Yreka Blue Hor** comp=Z,1.5nm,0.7s,baz=218,slow=4.0,SNR=3.5	**43.87**	**320**	P		**P**	**18 58 59.3**	**-0.5**
SCHQ	**Schefferville** comp=Z,26nm,0.7s,baz=211,slow=6.8,SNR=18	**45.59**	**15**	P		**P**	**18 59 12.3**	**-0.7**
F04D	**Rainier, OR** baz=126	**46.48**	**325**	P		P	18 59 16.7	-3.3
CPUP	**Villa Florida** comp=Z,1.8nm,0.6s,baz=320,slow=9.8,SNR=4.9	**46.94**	**144**	P		**P**	**18 59 23.3**	**-0.6**
FCC	**Fort Churchill** comp=Z,6.4nm,0.9s	**47.37**	**354**	*e*P		**P**	**18 59 25.6**	**-1.1**
PLCA	**Paso Flores** comp=Z,7.4nm,1.0s,baz=13,slow=8.4,SNR=9.4	**54.08**	**166**	P		**P**	**19 00 16.9**	**-0.3**
PLCA	comp=Z,1.5nm,0.6s,baz=10.0,slow=10,SNR=4.6			PcP		**PcP**	**19 01 03.2**	**+1.0**
PLCA	comp=Z,3.5nm,0.8s,baz=325,slow=4.8,SNR=4.9			PcP		**PcP**	**19 01 20.6**	**+1.3**
YKA	**Yellowknife Ar** comp=Z,1.0nm,0.4s,baz=142,slow=6.9,SNR=28	**54.73**	**344**	P		**P**	**19 00 20.2**	**-1.2**
YKA	comp=Z,1.8nm,0.8s,baz=137,slow=7.5,SNR=14			PcP		**PcP**	**19 01 07.1**	**+0.6**
YKA	comp=Z,0.6nm,0.7s,baz=145,slow=4.5,SNR=7.4			PcP		**PcP**	**19 01 20.8**	**-0.5**
RES	**Resolute Bay** comp=Z,4.1nm,0.7s,baz=181,slow=8.7,SNR=16	**63.17**	**357**	P		**P**	**19 01 17.6**	**-1.6**
RES	comp=Z,2.0nm,1.0s,baz=176,slow=6.2,SNR=4.4			PcP		**PcP**	**19 02 05.4**	**-0.3**
INK	**Inuvik** comp=Z,2.0nm,0.9s,baz=116,slow=7.2,SNR=8.0	**64.36**	**342**	P		**P**	**19 01 26.5**	**-0.6**
INK	comp=Z,2.0nm,1.0s,baz=228,slow=9.5,SNR=4.3			PcP		**PcP**	**19 02 13.6**	**-0.1**
DOT	**Dot Lake** comp=Z,5.3nm,0.7s	**65.72**	**335**	*e*P		**P**	**19 01 35.8**	**-0.2**
ILAR	**Eielson Array** comp=Z,1.7nm,0.7s,baz=134,slow=4.4,SNR=20	**67.30**	**336**	P		**P**	**19 01 45.3**	**-0.6**
ILAR	comp=Z,0.6nm,0.8s,baz=106,slow=4.8,SNR=4.3			PcP		**PcP**	**19 02 32.8**	**-0.1**
BPAW	**Bear Paw Mtn.** comp=Z,0.9nm,0.8s	**68.75**	**335**	*e*P		**P**	**19 01 54.0**	**-1.0**
PPLA	**Purkeypile** comp=Z,26nm,1.6s	**68.91**	**333**	*e*P		**P**	**19 01 55.1**	**-1.1**
ESDC	**Sonseca Array** comp=Z,1.6nm,0.6s,baz=283,slow=5.6,SNR=12	**76.50**	**52**	P		**P**	**19 02 40.1**	**-1.1**
ESDC	comp=Z,0.2nm,0.3s,baz=259,slow=4.8,SNR=4.8			PcP		**PcP**	**19 03 29.1**	**-0.3**
NOA	**NORSAR Array B** comp=Z,0.8nm,0.9s,baz=285,slow=5.1,SNR=3.3	**83.31**	**29**	P		**P**	**19 03 17.0**	**-0.3**
TORD	**Torodi Ar. Bea** comp=Z,0.3nm,0.5s,baz=273,slow=6.6,SNR=3.3	**85.14**	**78**	P		**P**	**19 03 25.1**	**-2.2**
ARCES	**ARCESS Array B** comp=Z,1.4nm,0.8s,baz=305,slow=4.3,SNR=5.6	**86.41**	**19**	P		**P**	**19 03 30.3**	**-2.2**
GERES	**GERESS Array B** comp=Z,0.4nm,0.6s,baz=285,slow=5.1,SNR=6.3	**87.55**	**41**	P		**P**	**19 03 38.6**	**0.0**
FINES	**FINESS Array B** comp=Z,0.8nm,0.8s,baz=329,slow=3.3,SNR=4.0	**89.99**	**26**	P		**P**	**19 03 48.2**	**-1.3**
KSRS	**Korea Array** comp=Z,1.6nm,0.7s,baz=22,slow=1.1,SNR=6.9	**121.68**	**329**	PKP		**PKPdf**	**19 09 43.3**	**-0.1**
KSAR	**Wonju Array Be**	**121.71**	**329**	PKP		**PKPdf**	**19 09 43.3**	**-0.2**
STKA	**Stephens Creek** comp=Z,2.7nm,0.6s,baz=86,slow=2.6,SNR=14	**131.94**	**238**	PKP		**PKPdf**	**19 10 03.9**	**+0.8**
STKA	comp=Z,0.8nm,0.7s,baz=148,slow=9.3,SNR=2.6			pPKP		**pPKPdf**	**19 10 55.1**	**-0.1**
ASAR	**Alice Springs** comp=Z,2.5nm,0.8s,baz=114,slow=3.6,SNR=30	**140.34**	**247**	PKhKP	PKPpre		19 10 11.8	
ASAR	comp=Z,3.8nm,0.7s,baz=104,slow=1.9,SNR=27			PKP		**PKPdf**	**19 10 19.7**	**+0.7**
ASAR	comp=Z,0.5nm,0.9s,baz=108,slow=1.7,SNR=2.2			pPKP	pPKPdf		19 11 09.7	-1.4
WRAB	**Tennant Creek**	**140.45**	**253**	*e*PKPpre	PKPpre		19 10 14.0	
WRA	**Warramunga Arr** comp=Z,1.5nm,0.5s,baz=92,slow=2.9,SNR=7.4	**140.46**	**253**	PKhKP	PKPpre		19 10 14.4	
WRA	comp=Z,5.6nm,0.7s,baz=94,slow=2.2,SNR=10.0			PKP		**PKPdf**	**19 10 19.9**	**+0.6**
WRA	comp=Z,2.0nm,0.9s,baz=83,slow=1.9,SNR=3.7			pPKP	pPKPdf		19 11 10.8	-0.6
CMAR	**Chiang Mai Arr** comp=Z,0.9nm,0.8s,baz=324,slow=1.5,SNR=6.0	**149.65**	**351**	PKP		**PKPdf**	**19 10 34.5**	**-0.5**
CMAR	comp=Z,1.7nm,0.9s,baz=340,slow=3.3,SNR=15			PKPbc		**PKPbc**	**19 10 39.5**	**-0.4**
CMAR				pPKPbc		**pPKPbc**	**19 11 32.1**	**+0.5**

comp=Z,1.4nm,0.9s,baz=333,slow=3.1,SNR=6.7

IDC 25 18:55:06.7±6.6, 22.98S×173.22W, h0km, mb4.0/5, mb1 4.2/5, mb1mx3.8/42, mbtmp4.0/5, MS3.4/1, Ms1 3.4/1, ms1mx2.6/40, Error ellipse: s-maj=176.6km s-min=83.8km az=133.0, Tonga Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
HNR	**Honiara**	**29.00**	**293**	LR	LR	19 12 03.2	
	comp=Z,66nm,20.0s,baz=219,slow=35						
CTA	**Charters Tower**	**37.72**	**267**	P	P	19 02 25.4	+1.0
	3.5nm,0.5s,baz=86,slow=14,SNR=3.6						
STKA	**Stephens Creek**	**40.83**	**247**	P	P	19 02 49.5	-0.7
	0.6nm,0.5s,baz=85,slow=8.1,SNR=4.2						
ASAR	**Alice Springs**	**48.32**	**258**	P	P	19 03 49.4	-0.9
	0.6nm,0.3s,baz=94,slow=7.5,SNR=53						
WRA	**Warramunga Arr**	**48.69**	**263**	P	P	19 03 53.0	-0.1
	1.1nm,0.5s,baz=99,slow=6.8,SNR=39						
CMAR	**Chiang Mai Arr**	**95.11**	**288**	P	P	19 08 32.5	+0.2
	0.2nm,0.7s,baz=90,slow=2.7,SNR=3.2						

*TIF **25** 18:56:16.2, 43.31N×41.46E, h9km±1km*
*CSEM **25** 18:56:17.8±1.0, 43.24N×41.41E, h5km, ML2.8, Error ellipse: s-maj=19.7km s-min=14.0km az=155.0*

ISC 25 18:56:16.1±3.2, 43.1N±0.1×41.2E±0.1, h3km±15km, n11, σ0s52/22, Western Caucasus

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CHVG	**Ch'k'valeri**	**0.73**	**121**	P	**Pb**	**18 56 31.8**	**+0.3**
CHVG				S	**Sb**	**18 56 42.7**	**+0.8**
CHVG	**Ch'k'valeri**	**0.73**	**121**	P	**Pb**	**18 56 31.8**	**+0.3**
CHVG				S	**Sb**	**18 56 42.7**	**+0.8**
ONI	**Oni**	**1.71**	**106**	P	**Pn**	**18 56 46.9**	**0.0**
ONI				S	**Sn**	**18 57 08.5**	**-0.8**
ONI	**Oni**	**1.71**	**106**	P	**Pn**	**18 56 46.9**	**0.0**
ONI				S	**Sn**	**18 57 08.5**	**-0.8**
ARTV	**Artvin**	**1.98**	**165**	*i* P	**Pb**	**18 56 53.4**	**+0.5**
ARTV				*i* S	**Sb**	**18 57 18.3**	**+0.3**
ARTV	**Artvin**	**1.98**	**165**	P	**Pb**	**18 56 53.4**	**+0.5**
ARTV				S	**Sb**	**18 57 18.3**	**+0.3**
DAGI	**Agillar**	**2.08**	**166**	*i* P	**Pg**	**18 56 55.9**	**-0.1**
DAGI				*i* S	**Sg**	**18 57 23.4**	**+0.4**
DBAD	**Bademkaya**	**2.11**	**170**	*i* P	**Pb**	**18 56 55.5**	**+0.5**
DBAD				*i* S	**Sg**	**18 57 23.2**	**-0.6**
DBAD	**Bademkaya**	**2.11**	**170**	P	**Pb**	**18 56 55.5**	**+0.5**
DBAD				S	**Sg**	**18 57 23.2**	**-0.6**
DDEM	**Demirkent**	**2.24**	**170**	*i* P	**Pg**	**18 56 58.7**	**-0.3**
DDEM				*i* S	**Sb**	**18 57 25.5**	**+0.2**
DDEM	**Demirkent**	**2.24**	**170**	P	**Pg**	**18 56 58.7**	**-0.3**
DDEM				S	**Sb**	**18 57 25.5**	**+0.2**

WEL 25 19:05:29.3±0.3, 38.13S×176.15E, h150km±4km, ML3.5/6, 1C-1D, Error ellipse: s-maj=5.6km s-min=3.4km az=90.0, North Island

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
URZ	**Urewera**	**0.77**	**100**	⇓PN	Pn	19 05 52.1	0.0
URZ				SN	Sn	19 06 09.6	0.0
BKZ	**Black Stump Fm**	**1.06**	**166**	⇑PN	Pn	19 05 54.7	0.0
BKZ				SN	Sn	19 06 13.9	-0.2
BKZ				AML	AML	19 06 18.1	
MWZ	**Matawai**	**1.10**	**101**	PN	Pn	19 05 55.1	+0.1
MWZ				SN	Sn	19 06 14.3	-0.3
WNVZ	**Wahianoa**	**1.27**	**200**	PN	Pn	19 05 56.7	0.0
KWHZ	**Kaweka Forest**	**1.31**	**171**	PN	Pn	19 05 57.1	+0.2
KWHZ				SN	Sn	19 06 18.5	+0.4
MOVZ	**Moawhango**	**1.31**	**194**	PN	Pn	19 05 56.5	-0.4
PNHZ	**Pukenui**	**1.78**	**179**	PN	Pn	19 06 01.1	-0.7
DVHZ	**Dannevirke**	**2.16**	**180**	PN	Pn	19 06 04.9	-1.4
POWZ	**Post Office Ro**	**2.27**	**187**	PN	Pn	19 06 06.1	-1.5
MRZ	**Mangatainoka R**	**2.56**	**190**	PN	Pn	19 06 08.6	-2.5
HOWZ	**Holdsworth Sta**	**2.80**	**190**	PN	Pn	19 06 11.6	-2.6
KIW	**Kapiti Island**	**2.89**	**199**	PN	Pn	19 06 12.6	-2.6
CAW	**Cannon Point**	**3.09**	**195**	PN	Pn	19 06 14.9	-2.8
MSWZ	**Moikau Station**	**3.35**	**192**	PN	Pn	19 06 17.7	-3.3
MSWZ				AML	AML	19 06 44.4	
KHZ	**Kahutara**	**4.72**	**204**	PN	Pn	19 06 34.7	-4.2
KHZ				SN	Sn	19 07 27.8	-5.4
MQZ	**McQueen's Vall**	**6.16**	**204**	SN	Sn	19 07 56.9	-11

IDC 25 19:08:51.3±2.4, 8.22S×119.85E, h0km, mb3.5/3, mb1 3.6/4, mb1mx3.4/34, mbtmp3.5/4, ML3.5/1, Error ellipse: s-maj=225.4km s-min=24.2km az=53.0, Flores region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
WRA	**Warramunga Arr**	**18.24**	**131**	P	P	19 13 06.8	+0.4
	0.2nm,0.3s,baz=306,slow=13,SNR=7.1						
WRA				S	Sn	19 16 22.0	-8.6
	0.2nm,0.3s,baz=288,slow=21,SNR=6.9						
ASAR	**Alice Springs**	**20.43**	**140**	P	P	19 13 30.1	-0.3
	0.3nm,0.4s,baz=317,slow=11,SNR=10						
ASAR				S	S	19 17 14.7	-5.6
	0.5nm,0.8s,baz=323,slow=24,SNR=4.8						
MKAR	**Makanchi Array**	**64.15**	**332**	P	P	19 19 28.0	+0.4
	0.5nm,0.5s,baz=154,slow=6.0,SNR=11						
ZALV	**Zalesovo Beam**	**68.61**	**339**	P	P	19 19 55.6	-0.4
	0.5nm,0.3s,baz=132,slow=6.5,SNR=3.1						

*IDC **25** 19:09:48.8±1.1, 53.18N×115.98W, h0km, mb3.7/1, mb1 3.6/5, mb1mx3.3/56, mbtmp3.4/5, ML3.1/4, Error ellipse: s-maj=25.2km s-min=8.8km az=95.0*

ISC 25 19:09:49.8±1.2, 53.33N±0.08×116.1W±0.2, h10km, n6, σ0s79/7, Alberta

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
NEW	**Newport**	**5.12**	**188**	Pg	**Pb**	**19 11 19.0**	**-0.4**
	1.4nm,0.3s,baz=9.2,slow=14,SNR=12						
NEW				Lg	Lg	19 12 23.6	
	2.3nm,0.3s,baz=249,slow=23,SNR=6.9						
YKA	**Yellowknife Ar**	**9.22**	**4**	Pn	**Pn**	**19 12 02.0**	**-0.6**
	0.6nm,0.3s,baz=187,slow=12,SNR=19						
YKA				Sn	**Sn**	**19 13 45.9**	**-0.4**
	0.4nm,0.3s,baz=184,slow=22,SNR=5.8						
YKA				Lg	Lg	19 14 39.6	
	0.3nm,0.3s,baz=181,slow=29,SNR=7.3						
DLBC	**Dease Lake**	**9.35**	**309**	Pn	**Pn**	**19 12 04.5**	**-0.1**
	0.0nm,0.3s,baz=90,slow=19,SNR=2.7						
INK	**Inuvik**	**17.15**	**338**	Pn	**Pn**	**19 13 48.6**	**-0.5**
	0.1nm,0.3s,baz=148,slow=8.0,SNR=4.5						
ILAR	**Eielson Array**	**19.31**	**318**	P	**Pn**	**19 14 16.1**	**+0.3**
	0.0nm,0.3s,baz=150,slow=5.5,SNR=4.5						
FINES	**FINESS Array B**	**61.69**	**20**	P	**P**	**19 20 08.6**	**+1.2**
	0.7nm,0.7s,baz=346,slow=10.0,SNR=2.7						

*NNC **25** 19:10:17.5±1.6, 44.64N×79.26E, h0km, mb2.5, mpv2.5, Error ellipse: s-maj=21.4km s-min=6.8km az=104.0*
*SOME **25** 19:10:18.9, 44.53N×79.63E, h10km*

ISC 25 19:10:18.5±1.2, 44.53N±0.03×79.65E±0.03, h5km±10km, n22, σ0s96/36, 5C-8D, Eastern Kazakhstan

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
DJR	**Jarkent**	**0.22**	**153**	*e*P	**Pg**	**19 10 23.5**	**+0.7**
	195nm,0.1s						
DJR				*e*S	**Sg**	**19 10 26.7**	**+1.1**
	289nm,0.2s						
KAPS	**Kapalarasan**	**0.79**	**345**	⇓*i* P	**Pg**	**19 10 33.5**	**-0.1**
	9.7nm,0.1s						
KAPS				⇓*i* S	**Sg**	**19 10 43.8**	**-0.1**
	34nm,0.3s						
MNBS	**Baschi**	**1.00**	**244**	*e*P	**Pg**	**19 10 37.4**	**-0.4**
	1.2nm,0.2s						
MNBS				*e*S	**Sg**	**19 10 50.7**	**0.0**
	30nm,0.5s						
KTMS	**Ketmen**	**1.19**	**155**	*e*P	**Pb**	**19 10 40.8**	**-0.8**
	4.3nm,0.1s						
KTMS				*e*S	**Sb**	**19 10 56.4**	**-1.0**
	33nm,0.1s						
PDGK	**Podgornoye**	**1.20**	**186**	⇑P	**Pn**	**19 10 41.1**	**-0.8**
	3.7nm,0.3s						
PDGK				⇓S	**Sn**	**19 11 00.8**	**+2.1**
	12nm,0.4s						

KPKS	**Kokpek** 101nm,0.2s	**1.27**	**214**	*e*P		**Pn**	**19 10 42.5**	**-0.5**
ARXS	**Arharly** 2.8nm,0.3s	**1.34**	**257**	*e*P		**Pb**	**19 10 44.0**	**-0.3**
ARXS	44nm,0.2s			*e*S		**Sg**	**19 11 02.2**	**+0.5**
SHLS	**Shalkode** 6.3nm,0.1s	**1.38**	**173**	⇓*i*P		**Pn**	**19 10 44.4**	**-0.2**
SHLS	8.3nm,0.2s			*e*S		**Sb**	**19 11 02.4**	**-0.5**
UZB	**Uzynbulak** 16nm,0.1s	**1.45**	**199**	⇓*i*P		**Pn**	**19 10 45.6**	**+0.1**
UZB	10nm,0.3s			*e*S		**Sn**	**19 11 04.6**	**-0.5**
KURS	**Kuram** 15nm,1.1s	**1.49**	**226**	⇑*i*P		**Pb**	**19 10 46.5**	**-0.2**
ZHN	**Zhinishke** 12nm,0.1s	**1.62**	**213**	*e*P		**Pb**	**19 10 48.4**	**-0.5**
ZHN	97nm,0.2s			*e*S		**Sb**	**19 11 10.0**	**+0.3**
CHKK	**Chushkaly** 3.3nm,0.2s	**2.02**	**252**	*e*P		**Pb**	**19 10 55.5**	**-0.2**
CHKK	35nm,0.3s			*e*S		**Sg**	**19 11 22.4**	**-0.8**
KOTS	**Kotyrbulak**	**2.25**	**236**	*e*P		**Pb**	**19 10 59.0**	**-0.7**
KOTS				*e*S		**Sb**	**19 11 28.0**	**+0.2**
KTBS	**Karatobe**	**2.29**	**250**	*e*P		**Pb**	**19 10 59.5**	**-0.8**
KTBS				*e*S		**Sb**	**19 11 28.8**	**-0.1**
MDOK	**Medeo** 2.4nm,0.2s	**2.32**	**235**	*e*P		**Pb**	**19 11 01.8**	**+0.8**
MDOK	16nm,0.5s			⇓*i*S		**Sg**	**19 11 32.0**	**-1.2**
TNSS	**Tian-Shan** 0.9nm,0.5s	**2.46**	**234**	*e*P		**Pb**	**19 11 03.8**	**+0.4**
TNSS	24nm,0.4s			*e*S		**Sg**	**19 11 36.0**	**-1.5**
KUU	**Kurty** 4.4nm,0.4s	**2.46**	**256**	*e*P		**Pb**	**19 11 03.5**	**+0.2**
KUU	11nm,0.6s			⇑*i*S		**Sb**	**19 11 34.9**	**+0.9**
MK31	**Makanchi Array** 0.4nm,0.5s,baz=216,slow=12,SNR=15	**2.93**	**38**	Pn		**Pn**	**19 11 07.5**	**+1.8**
MK31	0.5nm,0.2s,baz=216,slow=26,SNR=14			⇑Sn		**Sb**	**19 11 44.8**	**-2.5**
DGS	**Degeres** 0.8nm,0.5s	**3.08**	**247**	*e*P		**Pb**	**19 11 13.7**	**-0.2**
DGS	32nm,0.6s			*e*S		**Sb**	**19 11 53.4**	**+1.5**
TKM2	**Tokmak 2** 1.5nm,0.3s	**3.35**	**243**	⇓Lg		Lg	19 11 59.4	
AAK	**Ala-Archa** 1.9nm,0.7s	**4.20**	**245**	⇓Lg		Lg	19 12 25.9	
KURK	**Kurchatov** 4.1nm,1.0s	**6.23**	**354**	⇑Lg		Lg	19 13 32.3	

KRSC 25 19:14:30.7±0.6, 59.60N×164.08E, h4km±4km, ML3.5, Kamchatka Peninsula

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
OSSR	**Ossora**	**0.63**	**236**	*e*P	Pb	19 14 43.6	-0.6
OSSR				*e*S	Sb	19 14 52.3	-1.0
TILK	**Tilichiki**	**1.34**	**50**	*e*P	Pn	19 14 56.1	0.0
TILK				*e*S	Sn	19 15 14.7	+0.3
PALN	**Palana**	**2.17**	**258**	*e*P	Pb	19 15 09.9	-0.5
PALN				*e*S	Sb	19 15 37.3	-0.3
KMSK	**Kamenskaya**	**3.06**	**19**	*e*P	Pn	19 15 22.2	+2.5

*ISCJB **25** 19:19:11.5±0.8, 6.82N±0.05×73.07W±0.06, h157km±7km, Error ellipse: s-maj=12.0km s-min=4.9km az=43.4*
*FUNV **25** 19:19:11.9, 6.71N×73.16W, h151km, MW2.9*
*RSNC **25** 19:19:14.1±0.9, 6.79N×73.10W, h142km±6km, ML2.4*

ISC 25 19:19:11.1±1.4, 6.79N±0.06×73.03W±0.06, h160km±8km, n17, σ1s33/30, Northern Colombia

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
BARC	**Barichara**	**0.25**	**217**	*e*P	**Pn**	**19 19 33.2**	**+0.1**
BARC				*e*S	**Sn**	**19 19 47.6**	**-2.2**
BARC				*i*		19 19 49.3	
	comp=Z,61nm,0.2s						
BTLC	**Betulia, Santa**	**0.26**	**298**	*e*P	**Pn**	**19 19 33.3**	**+0.2**
PAMC	**Pamplona, Colo**	**0.64**	**31**	*e*P	**Pn**	**19 19 36.1**	**+1.2**
PAMC				*e*S	**Sn**	**19 19 52.7**	**-0.5**
BRRC	**Barranca, Sant**	**0.74**	**295**	*e*P	**Pn**	**19 19 35.0**	**0.0**
BRRC				*e*S	**Sn**	**19 19 51.9**	**-1.3**
BRRC				*i*		19 19 56.2	
	comp=Z,58nm,0.2s						
RUSC	**La Rusia**	**0.90**	**183**	*e*P	**Pn**	**19 19 36.9**	**+0.2**
RUSC				*e*S	**Sn**	**19 19 56.0**	**-0.3**
RUSC				*i*		19 19 57.7	
	comp=Z,32nm,0.5s						
GRMC	**Gramalote, San**	**0.94**	**14**	*e*P	**Pn**	**19 19 39.1**	**+2.4**
GRMC				*e*S	**Sn**	**19 19 58.0**	**+1.7**
GRMC				*i*		19 20 01.3	
	comp=Z,38nm,0.4s						
CBRI	**Barrientos, No**	**0.95**	**14**	*e*P	**Pn**	**19 19 37.8**	**+1.1**
CBRI				*i*		19 19 58.4	
	comp=Z,30nm,0.4s						
CAPV	**Capacho**	**1.28**	**34**	*e*P	**Pn**	**19 19 41.1**	**+1.5**
CAPV				*e*S	**Sn**	**19 20 00.1**	**-1.3**
OCAC	**Ocana**	**1.46**	**349**	*e*P	**Pn**	**19 19 41.7**	**+0.4**
OCAC				*i*		19 20 06.7	
	comp=Z,34nm,0.1s						
NORC	**Norcasia**	**2.20**	**236**	*e*P	**Pn**	**19 19 49.4**	**+0.2**
NORC				*e*S	**Sn**	**19 20 18.2**	**-0.4**
HELC	**Santa Helena**	**2.55**	**257**	*e*P	**Pn**	**19 19 55.3**	**+1.5**
HELC				*e*S	**Sn**	**19 20 25.8**	**-0.8**
HELC				*i*		19 20 32.4	
	comp=Z,16nm,0.4s						
SOCV	**Socops**	**2.62**	**55**	*e*P	**Pn**	**19 19 55.6**	**+1.4**
SOCV				*e*S	**Sn**	**19 20 27.8**	**+0.2**
VIGV	**El Vigia**	**2.62**	**39**	*e*P	**Pn**	**19 19 55.3**	**+1.0**
VIGV				*e*S	**Sn**	**19 20 28.2**	**+0.5**
PRAC	**Prado**	**3.57**	**211**	*e*P	**Pn**	**19 20 07.4**	**+1.1**
PRAC				*e*S	**Sn**	**19 20 49.2**	**+0.1**
VIRV	**

ODZ				AML	AML	19 21 02.1		
ODZ				AML	AML	19 21 10.3		
ODZ				AML	AML	19 21 10.3		
ODZ				AML	AML	19 21 11.5		
FOZ	**Fox Glacier**	**2.11**	**270**	*e*PN	Pn	19 20 28.0	+0.2	
FOZ				AML	AML	19 20 54.6		
FOZ				AML	AML	19 21 11.5		
NNZ	**Nelson**	**2.40**	**12**	*e*PN	Pn	19 20 30.8	-0.9	
NNZ				AML	AML	19 22 19.8		
QRZ	**Quartz Range**	**2.75**	**357**	*e*PN	Pn	19 20 35.4	-1.1	
QRZ				AML	AML	19 21 08.8		
QRZ				AML	AML	19 21 24.9		
WKZ	**Wanaka**	**2.95**	**243**	PN	Pn	19 20 38.7	-0.6	
WKZ				AML	AML	19 21 32.9		
WKZ				AML	AML	19 21 33.4		
EAZ	**Earnscleugh**	**2.96**	**235**	*e*PN	Pn	19 20 38.2	-1.2	
EAZ				AML	AML	19 21 32.9		
EAZ				AML	AML	19 21 32.9		
EAZ				AML	AML	19 21 33.4		
EAZ				AML	AML	19 21 37.0		
TUZ	**Tuapeka**	**3.25**	**222**	*e*PN	Pn	19 20 41.6	-1.8	
TUZ				AML	AML	19 21 47.8		
TUZ				AML	AML	19 21 48.6		
MLZ	**Mavora Lakes**	**3.75**	**240**	*e*PN	Pn	19 20 48.6	-1.8	
SYZ	**Scrubby Hill**	**3.91**	**219**	AML	AML	19 23 24.8		

NEIC ***25*** *19:20:06.6±1.0, 22.46S×68.31W, h109km±9km, mb4.5/1, Error ellipse: s-maj=38.7km s-min=11.7km az=101.0*
GUC ***25*** *19:20:06.9±0.4, 22.14S×68.67W, h124km±3km, ML3.5*
ISCJB ***25*** *19:20:07.1±0.9, 22.17S±0.05×68.6W±0.1, h120km±8km, mb4.1/3, Error ellipse: s-maj=19.9km s-min=8.9km az=2.7*
IDC ***25*** *19:20:09.7±6.4, 22.11S×68.30W, h128km±49km, mb3.9/3, mb1 4.0/4, mb1mx3.5/35, mbtmp4.2/4, Error ellipse: s-maj=49.6km s-min=42.8km az=21.0*

ISC 25 19:20:07.8±1.1, **22.19S**±0.06×**68.6W**±0.1, **h115**km±9km, **n16**, **σ0876/22**, **mb3.9/3**, **4C-2D**, **Northern Chile**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
LVC	**Limon Verde**	**0.49**	**213**	*e*Pn	**Pn**	**19 20 24.9**	**-0.7**
PB09	**IPOC Station P**	**0.70**	**304**↑	*e*P	**Pn**	**19 20 27.0**	**+0.1**
PB09				*e*S	**Sn**	**19 20 41.9**	**+0.6**
PB06	**IPOC Station P**	**1.02**	**240**↑	*e*P	**Pn**	**19 20 30.1**	**+0.2**
PB06				*e*S	**Sn**	**19 20 47.6**	**+1.2**
PB06				IAML		19 20 48.1	
	comp=E,835nm,0.6s						
PB07	**IPOC Station P**	**1.27**	**291**↑	*e*P	**Pn**	**19 20 32.1**	**-0.4**
PB07				*e*S	**Sn**	**19 20 51.5**	**+0.4**
PB07				IAML		19 20 55.1	
	comp=E,1μm,0.6s						
PB01	**IPOC Station P**	**1.40**	**325**↓	*e*P	**Pn**	**19 20 33.6**	**-0.3**
PB01				*e*S	**Sn**	**19 20 53.4**	**-0.3**
PB01				IAML		19 20 58.6	
	comp=E,493nm,0.2s						
PATCX	**Punta Patache**	**1.98**	**313**↓	*e*P	**Pn**	**19 20 40.4**	**-0.4**
PATCX				*e*S	**Sn**	**19 21 05.7**	**-0.3**
PATCX				IAML		19 21 14.4	
	comp=N,516nm,0.1s						
MNMC	**Minye Minye**	**3.18**	**343**↑	*e*P	**Pn**	**19 20 56.2**	**-0.4**
MNMC				*e*S	**Sn**	**19 21 34.0**	**-0.2**
LPAZ	**La Paz**	**5.89**	**5**	P	**Pn**	**19 21 35.2**	**+1.8**
	comp=N,2.2nm,0.3s,baz=166,slow=4.7,SNR=54						
LPAZ				S	**Sn**	**19 22 39.4**	**-0.6**
	comp=N,0.2nm,0.3s,baz=115,slow=6.9,SNR=1.8						
LCO	**Las Campanas**	**7.04**	**195**	*e*Pn	Pn	19 21 44.0	-4.6
	comp=N,16nm,0.8s						
TORD	**Torodi Ar. Bea**	**77.33**	**70**	P	**P**	**19 31 49.0**	**-1.4**
	comp=N,1.1nm,0.5s,baz=252,slow=5.2,SNR=20						
YKA	**Yellowknife Ar**	**91.93**	**340**	P	**P**	**19 33 02.9**	**+0.2**
	comp=N,0.3nm,0.6s,baz=132,slow=4.5,SNR=8.7						
RES	**Resolute Bay**	**98.12**	**353**	P	**P**	**19 33 31.3**	**+0.6**
	comp=N,2.5nm,1.2s,baz=338,slow=9.7,SNR=2.8						
ASAR	**Alice Springs**	**129.42**	**207**	PKP	**PKPdf**	**19 39 03.5**	**-0.1**
	comp=N,0.5nm,0.9s,baz=129,slow=1.6,SNR=5.5						
WRA	**Warramunga Arr**	**132.49**	**210**	PKP	**PKPdf**	**19 39 09.7**	**+0.2**
	comp=N,0.4nm,0.7s,baz=155,slow=1.7,SNR=5.5						
MKAR	**Makanchi Array**	**146.03**	**37**	PKPbc	**PKPdf**	**19 39 34.1**	**+0.9**
	comp=N,0.5nm,0.7s,baz=312,slow=2.7,SNR=6.2						
CMAR	**Chiang Mai Arr**	**167.75**	**105**	PKP	**PKPdf**	**19 40 00.5**	**-0.7**
	comp=N,0.1nm,0.4s,baz=264,slow=3.4,SNR=2.8						

IDC ***25*** *19:22:57.2±1.7, 35.68N×141.95E, h0km, mb3.5/3, mb1 3.5/6, mb1mx3.4/46, mbtmp3.5/6, ML3.0/3, MS2.6/2, Ms1 2.6/2, ms1mx2.1/33, Error ellipse: s-maj=44.8km s-min=23.9km az=76.0*
ISCJB ***25*** *19:22:58.2±0.9, 35.77N±0.06×142.00E±0.07, h22km, mb3.5/3, MS2.9/1, Error ellipse: s-maj=9.0km s-min=7.9km az=141.7*
JMA ***25*** *19:23:01.1±0.3, 35.77N×141.83E, h35km±5km, M2.9*

ISC 25 19:23:00.7±1.1, **35.69N**±0.06×**141.87E**±0.08, **h22**km, **n18**, **σ1903/15**, **mb3.6/3**, **Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
CHOJ	**Chosi**	**0.82**	**271**	P	**Pb**	**19 23 15.9**	**-0.3**
CHOJ				S	**Sb**	**19 23 26.4**	**-0.4**
BSO1	**Boso 1**	**1.26**	**215**	P	**Pb**	**19 23 23.2**	**-0.3**
BSO1				*e*S	**Sb**	**19 23 41.1**	**+2.0**
BSO3	**Boso 3**	**1.42**	**232**	P	**Pn**	**19 23 25.6**	**+0.7**
JYT	**Yasato**	**1.46**	**292**	*e*S	**Sn**	**19 23 43.5**	**-0.6**
MJAR	**Matsushiro Arr**	**3.08**	**287**	Pn	**Pn**	**19 23 47.7**	**-0.3**
	0.9nm,0.3s,baz=93,slow=10.0,SNR=9.9						
MJAR				LR	LR	19 25 07.6	
	comp=Z,32nm,18.4s,baz=135,slow=42						
MAT	**Matsushiro**	**3.08**	**287**	P	**Pn**	**19 23 47.8**	**-0.2**
MAT				*e*S	**Sn**	**19 24 25.9**	**+1.7**
JHJ	**Hachijo jima 2**	**3.09**	**214**	Pn	**Pn**	**19 23 47.9**	**-0.2**
	14nm,0.3s,baz=350,slow=21,SNR=12						
JHJ				Sn	**Sn**	**19 24 22.2**	**-2.1**
	35nm,0.3s,baz=281,slow=24,SNR=9.7						
ASAJ	**Asahikawa**	**8.44**	**4**	Pn	**Pn**	**19 25 01.3**	**-0.2**
	0.2nm,0.3s,baz=197,slow=32,SNR=3.4						
H11N2	**WAKE ISLAND Hy**	**27.16**	**119**	T	T	19 57 06.6	
H11N1	**WAKE ISLAND Hy**	**27.17**	**119**	T	T	19 57 06.6	
H11N3	**WAKE ISLAND Hy**	**27.18**	**119**	T	T	19 57 06.6	
H11S1	**WAKE ISLAND Hy**	**27.84**	**121**	T	T	19 57 57.2	
H11S3	**WAKE ISLAND Hy**	**27.84**	**121**	T	T	19 57 57.2	
H11S2	**WAKE ISLAND Hy**	**27.85**	**121**	T	T	19 57 57.2	
DAV	**Davao City (W)**	**32.16**	**212**	LR	LR	19 40 43.2	
	comp=Z,24nm,20.0s,baz=344,slow=33						
MKAR	**Makanchi Array**	**45.15**	**303**	P	**P**	**19 31 15.6**	**0.0**
	0.3nm,0.7s,baz=81,slow=10,SNR=3.6						
WRA	**Warramunga Arr**	**55.79**	**189**	P	**P**	**19 32 35.9**	**-0.2**
	0.6nm,0.6s,baz=7.4,slow=7.0,SNR=8.4						
ASAR	**Alice Springs**	**59.51**	**188**	P	**P**	**19 33 02.2**	**-0.1**
	0.3nm,0.6s,baz=2.2,slow=7.2,SNR=11						

BJI ***25*** *19:29:10.7, 59.14N×152.75W, h57km, mb4.9/54, mB4.9/32, Ms4.7/20, Ms7 4.4/19*
MOS ***25*** *19:29:13.2±0.8, 59.22N×152.94W, h59km, mb5.1/38, Error ellipse: s-maj=10.3km s-min=4.3km az=91.5*
ISCJB ***25*** *19:29:14.4±0.2, 59.23N±0.02×152.75W±0.03, h70km±1km, mb4.7/150, Error ellipse: s-maj=3.5km s-min=2.3km az=157.0*
NEIC ***25*** *19:29:15.9, 59.06N×152.53W, h57km, mb4.9/65, MW4.9, ML4.8(AEIC), Moment Tensor Solution. s43 Moment tensor: Scale 10^{16}Nm; M_{rr}0.48; $M_{\theta\theta}$-1.79; $M_{\phi\phi}$ 1.31; $M_{r\theta}$0.67; $M_{\theta\phi}$2.14; $M_{r\phi}$0.78; Best double couple: M_o2.90000×10^{16} NP1:ϕs340.00000°, δ71.00000°, λ166.00000°. NP2:ϕs74.00000°, δ77.00000°, λ20.00000°. Principal axes: T 2.8300, Plg23.0000°, Azm298.0000°; N 0.0700, Plg66.0000°, Azm106.0000°; P -2.9000, Plg4.0000°, Azm206.0000°; After AEIC.*
NEIC Felt [III] at Anchor Point and Homer. Also felt at King Salmon and Ninilchik.
IDC ***25*** *19:29:15.8±1.9, 59.27N×152.84W, h66km±17km, mb4.3/38, mb1 4.4/43, mb1mx4.4/60, mbtmp4.6/43, MS3.7/18, Ms1 3.7/18, ms1mx3.5/43 Error ellipse: s-maj=12.9km s-min=8.9km az=1.0*
GCMT ***25*** *19:29:15.9±0.3, 59.08N×152.76W, h82km±3km, MW5.0/74, Moment Tensor Solution. s40,c53; s74,c104; Duration: 0 Moment tensor: Scale 10^{16}Nm; M_{rr}1.54±.16; $M_{\theta\theta}$-4.48±.18; $M_{\phi\phi}$2.94±.15; $M_{r\theta}$-0.28±.14; $M_{\theta\phi}$2.18±.12; $M_{r\phi}$1.40±.09; Best double couple: M_o4.65000×10^{16} NP1:ϕs327.00000°, δ76.00000°, λ157.00000°. NP2: ϕs63.00000°, δ68.00000°, λ15.00000°. Principal axes: T 4.1660, Plg26.0000°, Azm283.0000°; N 0.9690, Plg63.0000°, Azm117.0000°; P -5.1350, Plg6.0000°, Azm16.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

ISC 25 19:29:15.0±0.3, **59.10N**±0.04×**152.65W**±0.03, **h65**km±2km, **h65**km:**pP-P, n526**, **σ1949/555**, **mb4.8/150**, **17C-30D**, **Southern Alaska**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
AUE	**Augustine Isla**	**0.45**	**305**	P	**Pn**	**19 29 27.7**	**+0.8**
AUSE	**Augustine SEas**	**0.45**	**302**	P	**Pn**	**19 29 27.4**	**+0.5**
AUI	**Augustine Isla**	**0.46**	**301**	P	**Pn**	**19 29 27.5**	**+0.5**
AUL	**Augustine Lava**	**0.49**	**305**	P	**Pn**	**19 29 28.0**	**+0.7**
AUL				S	**Sn**	**19 29 37.9**	**+1.6**
CDD	**Cape Douglas**	**0.54**	**252**	P	**Pn**	**19 29 28.2**	**+0.3**
FOPK	**Fourpeaked Vol**	**0.55**	**231**	P	**Pn**	**19 29 27.8**	**-0.1**
FOSS	**Fourpeaked Sta**	**0.62**	**241**	P	**Pn**	**19 29 29.1**	**+0.5**
HOM	**Homer**	**0.76**	**42**	*e*Pn	**Pn**	**19 29 30.6**	**+0.4**
MCNL	**McNeil River**	**0.87**	**276**	P	**Pn**	**19 29 31.8**	**+0.2**
BRLK	**Bradley Lake**	**1.12**	**53**	P	**Pn**	**19 29 34.4**	**-0.4**
BRLK				S	**Sn**	**19 29 49.6**	**0.0**
KAHC	**Katmai Hardscr**	**1.30**	**251**	P	**Pn**	**19 29 37.6**	**+0.3**
KDAK	**Kodiak Island**	**1.32**	**178**	P	Pn	19 29 52.1	+15
	836nm,0.3s,baz=47,slow=6.6,SNR=5264						
KDAK	**Kodiak Island**	**1.32**	**178**	*i* P	**Pn**	**19 29 36.7**	**-0.7**
KDAK	**Kodiak Island**	**1.32**	**178**	P	**Pn**	**19 29 37.1**	**-0.3**
KDAK				S	**Sn**	**19 29 52.4**	**-1.8**
KAWH	**Katmai**	**1.33**	**238**	P	**Pn**	**19 29 38.1**	**+0.5**
RSO	**Redoubt South**	**1.37**	**358**	P	**Pn**	**19 29 38.8**	**+0.6**
NCT	**North Crescent**	**1.47**	**355**	P	**Pn**	**19 29 40.2**	**+0.7**
KAKN	**Katmai Knife C**	**1.49**	**238**	P	**Pn**	**19 29 40.2**	**+0.4**
KAKN				S	**Sn**	**19 29 59.0**	**+0.6**
RDJH	**Redoubt Jeurge**	**1.50**	**357**	P	**Pn**	**19 29 40.5**	**+0.7**
KABR	**Katmai Barrier**	**1.56**	**232**	P	**Pn**	**19 29 40.7**	**+0.2**
KVTA	**Katmai Vly 10**	**1.56**	**243**	P	**Pn**	**19 29 41.1**	**+0.6**
KABU	**Katmai Buttres**	**1.61**	**240**	P	**Pn**	**19 29 42.2**	**+0.9**
KABU				S	**Sn**	**19 30 01.4**	**+0.2**
KELA	**Mount Kelaz**	**1.74**	**249**	P	**Pn**	**19 29 43.4**	**+0.4**
SLKM	**Skilak Lake**	**1.87**	**40**	P	**Pn**	**19 29 44.6**	**-0.1**
SLKM	**Skilak Lake**	**1.87**	**40**	P	**Pn**	**19 29 44.6**	**-0.1**
SEW	**Seward**	**1.91**	**57**	P	**Pn**	**19 29 44.4**	**-0.9**
OHAK	**Old Harbor**	**1.92**	**190**	P	**Pn**	**19 29 45.0**	**-0.3**
CKL	**Chakachamna La**	**2.11**	**4**	P	**Pn**	**19 29 49.2**	**+1.2**
SPU	**Mount Spurr**	**2.11**	**8**	*e*Pn	**Pn**	**19 29 48.8**	**+0.9**
SPCR	**Spurr Chakacha**	**2.12**	**6**	P	**Pn**	**19 29 49.2**	**+1.1**
SPWE	**Spurr West**	**2.18**	**1**	P	**Pn**	**19 29 50.3**	**+1.3**
PLK3	**Peulik 3**	**2.37**	**235**	P	**Pn**	**19 29 52.3**	**+0.8**
FIB	**Fire Island**	**2.41**	**30**	P	**Pn**	**19 29 53.6**	**+1.6**
FIB	**Fire Island**	**2.41**	**30**	P	**Pn**	**19 29 53.6**	**+1.6**
STLK	**Strandline Lak**	**2.44**	**9**	P	**Pn**	**19 29 53.7**	**+1.3**
PLK1	**Peulik 1**	**2.45**	**240**	P	**Pn**	**19 29 53.8**	**+1.3**
PLK5	**Peulik 5**	**2.48**	**245**	P	**Pn**	**19 29 54.5**	**+1.6**
SVW2	**Sparrevohn**	**2.48**	**325**	P	**Pn**	**19 29 53.5**	**+0.5**
VMT	**TAPS TI Valdez**	**3.72**	**55**	P	**Pn**	**19 30 09.3**	**-0.5**
VLZ	**Valdez**	**3.76**	**55**	P	**Pn**	**19 30 09.6**	**-0.8**
EYAK	**Cordova Ski Ar**	**3.78**	**64**	P	**Pn**	**19 30 09.5**	**-1.1**
SCM	**Sheep Creek Mo**	**3.80**	**42**	P	**Pn**	**19 30 10.9**	**-0.2**
SCM	**Sheep Creek Mo**	**3.80**	**42**	P	**Pn**	**19 30 10.9**	**-0.2**
PPLA	**Purkeypile**	**3.81**	**3**	P	**Pn**	**19 30 12.6**	**+1.3**
DIV	**Divide**	**4.00**	**56**	P	**Pn**	**19 30 12.7**	**-1.1**
KLU	**Klutina**	**4.12**	**52**	P	**Pn**	**19 30 14.7**	**-0.7**
TT01	**Tatalina**	**4.16**	**338**	P	**Pn**	**19 30 16.4**	**+0.7**
HUR	**Hurricane**	**4.16**	**19**	P	**Pn**	**19 30 17.0**	**+1.2**
TTA	**Tatalina**	**4.17**	**338**	P	**Pn**	**19 30 16.8**	**+0.7**
TTA	**Tatalina**	**4.17**	**338**	P	**Pn**	**19 30 16.8**	**+0.7**
RAGM	**Ragged Mountai**	**4.24**	**69**	*e*Pn	**Pn**	**19 30 16.6**	**-0.4**
RAGM				*e*ScS	ScS	19 44 29.9	-4.5
CAST	**Castle Rocks**	**4.34**	**3**	P	**Pn**	**19 30 19.3**	**+1.0**
TRF	**Thorofare Moun**	**4.51**	**14**	P	**Pn**	**19 30 20.8**	**0.0**
VNHG	**Veniaminof 1**	**4.54**	**233**	P	**Pn**	**19 30 22.2**	**+1.2**
KTH	**Kantishna Hill**	**4.54**	**10**	P	**Pn**	**19 30 21.7**	**+0.5**
NICHA	**Nichawak Mount**	**4.55**	**72**	P	**Pn**	**19 30 20.8**	**-0.4**
SUCK	**Suckling Hills**	**4.62**	**74**	P	**Pn**	**19 30 21.4**	**-0.7**
PS11	**TAPS Pump St11**	**4.63**	**47**	P	**Pn**	**19 30 22.1**	**-0.2**
RND	**Reindeer**	**4.69**	**21**	P	**Pn**	**19 30 23.5**	**+0.3**
RND	**Reindeer**	**4.69**	**21**	P	**Pn**	**19 30 23.5**	**+0.3**
DHY	**Denali Highway**	**4.74**	**30**	P	**Pn**	**19 30 23.9**	**0.0**
CHUM	**Lake Minchumin**	**4.80**	**2**	P	**Pn**	**19 30 25.8**	**+1.2**
GRIN	**Grindle Hills**	**4.88**	**72**	P	**Pn**	**19 30 25.3**	**-0.4**
KHIT	**Khitrov Hills**	**4.94**	**70**	P	**Pn**	**19 30 25.7**	**-0.9**
VRDI	**Verde Repeater**	**5.07**	**61**	P	**Pn**	**19 30 27.2**	**-1.2**
KULT	**Kultieth River**	**5.16**	**73**	P	**Pn**	**19 30 29.1**	**-0.5**
TGL	**Tana Glacier**	**5.21**	**67**	P	**Pn**	**19 30 29.5**	**-0.8**
PAX	**Paxson**	**5.22**	**39**	P	**Pn**	**19 30 30.1**	**-0.3**
PAX	**Paxson**	**5.22**	**39**	P	**Pn**	**19 30 30.1**	**-0.3**
BWN	**Browne**	**5.31**	**15**	P	**Pn**	**19 30 32.5**	**+0.9**
MCARA	**McCarthy VSAT**	**5.32**	**60**	P	**Pn**	**19 30 30.6**	**-1.1**
ISLE	**Juniper Island**	**5.41**	**69**	P	**Pn**	**19 30 32.5**	**-0.6**
PS10	**TAPS Pump St10**	**5.46**	**35**	P	**Pn**	**19 30 34.0**	**+0.3**
KIAG	**Kiagna River**	**5.48**	**66**	P	**Pn**	**19 30 32.9**	**-1.1**
PTPK	**Patty Peak**	**5.50**	**63**	P	**Pn**	**19 30 33.5**	**-0.9**
BAGL	**Bagley Icefiel**	**5.51**	**71**	P	**Pn**	**19 30 34.3**	**0.0**
BALM	**Baldy**	**5.51**	**65**	P	**Pn**	**19 30 33.2**	**-1.3**
BALM	**Baldy**	**5.51**	**65**	P	**Pn**	**19 30 33.2**	**-1.3**
MESA	**MESA**	**5.54**	**74**	P	**Pn**	**19 30 34.5**	**-0.4**
MENT	**Mentasta**	**5.80**	**45**	P	**Pn**	**19 30 38.3**	**0.0**
WRH	**Wood River Hil**	**5.80**	**25**	P	**Pn**	**19 30 38.4**	**-0.5**
BARN	**Barnard Glacie**	**5.84**	**66**	P	**Pn**	**19 30 38.5**	**-0.5**
RKAV	**Rock Avalanche**	**5.85**	**73**	P	**Pn**	**19 30 39.0**	**-0.1**
TABL	**Table Mountain**	**5.97**	**72**	P	**Pn**	**19 30 40.7**	**0.0**
CTGM	**Chitina Glacie**	**5.97**	**67**	P	**Pn**	**19 30 40.5**	**-0.3**
HDA	**Harding Lake**	**5.97**	**25**	P	**Pn**	**19 30 40.6**	**0.0**
CCB	**Clear Creek Bu**	**6.02**	**20**	P	**Pn**	**19 30 40.5**	**-0.7**
MLY	**Manley**	**6.02**	**8**	P	**Pn**	**19 30 41.5**	**+0.2**
LOGN	**Logan Glacier**	**6.10**	**69**	P	**Pn**	**19 30 41.6**	**-1.0**
PS08	**TAPS Pump Stn8**	**6.12**	**24**	P	**Pn**	**19 30 42.5**	**-0.1**
COLA	**College**	**6.22**	**19**	*d* iP	**Pn**	**19 30 43.3**	**-0.6**
MDM	**Murphy Dome**	**6.23**	**18**	P	**Pn**	**19 30 43.5**	**-0.7**
PN7A	**Pavlof North-7**	**6.26**	**238**	P	**Pn**	**19 30 45.0**	**+0.3**
IL1	**Eielson Array**	**6.30**	**23**	P	**Pn**	**19 30 44.5**	**-0.7**
ILAR	**Eielson Array**	**6.30**	**23**	P	**Pn**	**19 30 44.5**	**-0.7**
	27nm,0.3s,baz=211,slow=14,SNR=637						
ILAR				S	**Sn**	**19 31 54.5**	**-1.2**
	29nm,0.3s,baz=162,slow=42,SNR=4.8						
ILB	**Eielson Array**	**6.30**	**23**	P	**Pn**	**19 30 44.4**	**-0.7**
DTNA	**Dutton South F**	**6.56**	**237**	P	**Pn**	**19 30 48.5**	**-0.2**
DT1	**Dutton Round H**	**6.60**	**237**	P	**Pn**	**19 30 49.4**	**+0.2**
BCA3	**Beaver Creek A**	**6.60**	**48**	P	**Pn**	**19 30 48.9**	**-0.3**
IM3	**Indian Mountai**	**6.93**	**356**	P	**Pn**	**19 30 54.1**	**+0.5**
SSLW	**Shishaldin Wes**	**7.62**	**240**	P	**Pn**	**19 31 03.0**	**-0.3**
EGAK	**Eagle**	**7.85**	**39**	P	**Pn**	**19 31 05.6**	**-0.6**
DAWY	**Dawson**	**8.04**	**46**	P	**Pn**	**19 31 08.8**	**-0.1**
FYU	**Fort Yukon**	**8.22**	**21**	P	**Pn**	**19 31 10.4**	**-0.9**
AKUT	**Akutan**	**8.77**	**241**	*e*Pn	**Pn**	**19 31 22.8**	**+3.9**
BM3	**Burnt Mountain**	**9.09**	**20**	P	**Pn**	**19 31 21.9**	**-1.3**
UNV	**Unalaska Valle**	**9.29**	**241**	*e*Pn	**Pn**	**19 31 26.9**	**+1.0**
GAMB	**Gambell**	**10.23**	**305**	*e*Pn	**Pn**	**19 31 40.6**	**+1.9**
WRAK	**Wrangell Islan**	**11.16**	**95**	*e*Pn	**Pn**	**19 31 49.8**	**-1.6**
CRAG	**Craig**	**11.16**	**101**	*e*Pn	**Pn**	**19 31 48.6**	**-2.9**
DLBC	**Dease Lake**	**11.75**	**84**	P	**Pn**	**19 32 01.6**	**+2.0**
INK	**Inuvik**	**12.47**	**34**	P	**Pn**	**19 32 07.7**	**-1.5**
	1.4nm,0.3s,baz=220,slow=14,SNR=74						
INK	**Inuvik**	**12.47**	**34**	*e*P	**Pn**	**19 32 07.6**	**-1.6**
INK	**Inuvik**	**12.47**	**34**	*e*Pn	**Pn**	**19 32 07.6**	**-1.6**
H02N1	**VAN INLET T-PH**	**12.62**	**109**	P	**Pn**	**19 32 09.0**	**-2.4**
	SNR=47						
H02N1				S	**Sn**	**19 34 26.8**	**-3.2**
	SNR=16						
H02S1	**DAWSON INLET T**	**12.68**	**109**	P	**Pn**	**19 32 10.2**	**-1.9**
	SNR=100						
H02S1				S	**Sn**	**19 34 24.0**	**-7.3**
BBB	**Bella Bella**	**15.42**	**106**	P	**Pn**	**19 32 48.9**	**+0.6**
	0.5nm,0.3s,baz=305,slow=15,SNR=9.9						
BBB				S	**Sn**	**19 35 33.6**	**-4.4**
	0.2nm,0.3s,baz=191,slow=22,SNR=5.1						
YKW3	**Yellowknife Ar**	**18.67**	**63**	*e*P	**P**	**19 33 26.7**	**-0.6**
	24nm,0.9s						
YKA	**Yellowknife Ar**	**18.68**	**63**	P	**P**	**19 33 27.8**	**+0.4**
	1.6nm,0.3s,baz=275,slow=9.9,SNR=211						
YKA				PcP	**PcP**	**19 37 53.3**	**+0.6**
	0.1nm,0.3s,baz=269,slow=1.3,SNR=4.3						
YKB5	**Yellowknife Ar**	**18.68**	**63**	*e*P	**P**	**19 33 26.1**	**-1.3**
BILL	**Bilibino**	**19.95**	**314**	*c* iP	**P**	**19 33 41.1**	**-0.1**
BILL				pmax	pmax		
	comp=Z,11nm,1.2s						
BILL				MLR	MLR		
	comp=Z,289nm,18.0s						
BILL	**Bilibino**	**19.95**	**314**	*e*P	**P**	**19 33 40.8**	**-0.4**
	comp=Z,73nm,0.9s						
LON	**Longmire**	**22.09**	**110**	*e*P	pP	19 34 22.2	+3.7
LON	**Longmire**	**22.09**	**110**	*e*pP	pP	19 34 22.2	+3.7
B08A	**Colville Reser**	**22.21**	**104**	*e*P	**P**	**19 34 08.0**	**+2.3**
	comp=Z,40nm,1.1s						
LTY	**Liberty**	**22.29**	**108**	*e*P	**P**	**19 34 08.8**	**+2.1**
	comp=Z,101nm,1.8s						
F04A	**Amboy**	**22.39**	**113**	*es*P	sP	19 34 30.6	+0.9
C09A	**Chrisman Ranch**	**23.11**	**104**	*e*pP	pP	19 34 27.6	-1.7
D08A	**Wollman Farm,**	**23.29**	**106**	*e*pP	pP	19 34 31.7	+0.4
NEW	**Newport**	**23.38**	**102**	P	**P**	**19 34 19.8**	**+2.1**
	comp=Z,5.9nm,0.8s,baz=297,slow=7.8,SNR=7.8						
NEW	**Newport**	**23.38**	**102**	*e*P	**P**	**19 34 19.9**	**+2.2**
NEW				*e**PP	**pP**	**19 34 34.9**	**+2.6**
NEW	**Newport**	**23.38**	**102**	*e*P	**P**	**19 34 19.9**	**+2.2**
NEW				*e*pP	**pP**	**19 34 34.9**	**+2.6**
HAWA	**Hanford**	**23.45**	**108**	*e*pP	pP	19 34 35.8	+2.7
E09A	**Wood Farm, Sta**	**24.05**	**106**	*e*pP	pP	19 34 41.2	+2.0
WALA	**Waterton Lakes**	**24.50**	**97**	*e*pP	pP	19 34 44.7	+1.1
BSMT	**Bassoo Peak**	**24.83**	**100**	*e*P	**P**	**19 34 33.1**	**+2.1**
BSMT				*e*pP	**pP**	**19 34 44.3**	**-2.4**
F10A	**Beach Ranch, E**	**24.89**	**106**	*e*P	**P**	**19 34 33.7**	**+2.3**
	comp=Z,38nm,1.5s						
BLMT	**Blacktail Moun**	**24.95**	**99**	*e*pP	pP	19 34 50.0	+2.3
JTMT	**Jette**	**25.16**	**100**	*e*P	**P**	**19 34 36.5**	**+2.6**
JTMT				*e*pP	**pP**	**19 34 51.3**	**+1.8**
YBMT	**Yellow Bay**	**25.22**	**99**	*e*P	**P**	**19 34 38.4**	**+3.9**
YBMT				*e*pP	**pP**	**19 34 50.8**	**+0.8**
SWMT	**Swartz Lake**	**25.46**	**100**	*e*P	**P**	**19 34 38.5**	**+1.9**
YBH	**Yreka Blue Hor**	**25.48**	**120**	*e*pP	pP	19 34 55.7	+3.3
BMO	**Blue Mountains**	**25.65**	**108**	*e*P	**P**	**19 34 40.9**	**+2.6**
BMO				*e*pP	**pP**	**19 34 55.6**	**+1.7**
MSO	**Missoula**	**25.94**	**101**	*e*pP	pP	19 34 58.1	+1.5
RES	**Resolute Bay**	**25.98**	**31**	P	**P**	**19 34 41.2**	**+0.3**
	comp=Z,3.2nm,0.8s,baz=250,slow=2.4,SNR=11						
RES	**Resolute Bay**	**25.98**	**31**	*e*P	**P**	**19 34 41.4**	**+0.5**
RES				pmax	pmax		
	comp=Z,19nm,1.1s						
RES	**Resolute Bay**	**25.98**	**31**	*e*P	**P**	**19 34 41.4**	**+0.5**
	comp=Z,19nm,1.1s						
SEY	**Seymchan**	**26.21**	**302**	P	**P**	**19 34 42.2**	**-0.9**
	comp=Z,18nm,0.9s,baz=79,slow=7.5,SNR=32						
SEY				S	**S**	**19 39 09.0**	**-1.1**
	comp=Z,0.6nm,0.3s,baz=92,slow=22,SNR=3.1						
CHMT	**Chamberlain Mo**	**26.24**	**100**	*e*P	**P**	**19 34 46.0**	**+2.2**
CHMT				*e*pP	**pP**	**19 34 54.7**	**-4.7**
WDC	**Whi

YAK PcP PcP 19 38 33.8 -0.6
comp=Z,9.4nm,0.7s,baz=138,slow=2.3,SNR=2.0
YAK Yakutsk 36.16 309 *c* iP **P** 19 36 09.4 -1.1
YAK *e**PP **sP** 19 36 32.1 -2.0
YAK *e* 19 37 33.6
YAK *e* 19 38 33.8
YAK *e*S **S** 19 41 41.0 -4.1
YAK *e* 19 46 13.7
YAK pmax pmax
comp=Z,48nm,0.8s
YAK pmax pmax
comp=N,10.0nm,0.9s
YAK pmax pmax
comp=E,36nm,0.9s
YAK pmax pmax
comp=Z,41nm,3.8s
YAK pmax pmax
comp=N,137nm,4.4s
YAK pmax pmax
comp=E,155nm,5.2s
YAK smax smax
comp=N,57nm,2.6s
YAK smax smax
comp=E,33nm,1.4s
YAK Yakutsk 36.16 309 *e*P **P** 19 36 09.3 -1.1
comp=E,139nm,0.7s
YAK *e*PcP **PcP** 19 38 34.2 -0.3
S22A 4UR Ranch, Cre 36.17 106 *e*pP pP 19 36 29.9 +2.6
NKL Nikolayevsk 36.21 291 *i* P **P** 19 36 11.0 +0.1
NKL pmax pmax
comp=N,22nm,0.9s
NKL pmax pmax
comp=E,20nm,0.9s
NKL pmax pmax
comp=Z,80nm,0.9s
X16A Lo Mia Camp, P 36.59 114 *e*pP **pP** 19 36 33.7 +3.0
X16A *e*ScP **ScP** 19 42 19.6 +2.5
TYV Tymovskoe 36.64 286 *e*P **P** 19 36 15.0 +0.4
TYV pmax pmax
comp=N,44nm,1.0s
TYV pmax pmax
comp=Z,97nm,1.0s
EYMN Ely 36.73 80 *e*P **P** 19 36 16.6 +1.1
comp=Z,17nm,1.2s
SDCO Great Sand Dun 36.84 104 *e*P **P** 19 36 13.9 -2.9
comp=Z,37nm,1.8s
X18A Snowflake 37.21 112 *e*pP pP 19 36 38.8 +2.7
ANMO Albuquerque 38.57 108 *e*P P 19 36 26.3 -5.0
ANMO pmax pmax
comp=Z,1.0nm,1.1s
ANMO Albuquerque 38.57 108 *e*pP pP 19 36 49.9 +2.4
TUC Tucson 38.64 115 *e*pP pP 19 36 50.6 +2.6
BNM Barren Site 39.12 109 *e*pP pP 19 36 54.9 +2.7
YSS Yuzh-Sakhalins 39.13 281⇑ *e*P **P** 19 36 35.8 +0.1
YSS pmax pmax
comp=Z,40nm,0.9s
YSS Yuzh-Sakhalins 39.13 281 *e*P **P** 19 36 35.9 +0.3
comp=Z,43nm,0.9s
319A Douglas 40.12 114 *e*pP pP 19 37 03.2 +2.8
ASAJ Asahikawa 41.17 278 P **P** 19 36 54.0 +1.4
comp=Z,10nm,0.8s,baz=91,slow=6.6,SNR=7.1
DAG Danmarks Havn 41.33 15 *i* P **P** 19 36 52.8 -0.6
comp=Z,8.7nm,0.7s
DAG Danmarks Havn 41.33 15 *i* P **P** 19 36 52.8 -0.6
DAG pmax pmax
comp=Z,6.0nm,0.7s
MNTX Cornudas Mount 41.72 110 *e*P **P** 19 37 00.7 +3.4
comp=Z,13nm,0.8s
HABR Khabarovsk 41.95 288 *c e*P **P** 19 36 56.3 -2.5
HABR *e**PP **pP** 19 37 11.7 -3.5
HABR *e**SP **sP** 19 37 18.8 -3.9
HABR 19 38 34.4
HABR *e* 19 38 50.4
HABR *e*PPP PPP 19 39 05.7
HABR *e* 19 46 53.1
HABR pmax pmax
comp=E,31nm,1.7s
HABR pmax pmax
comp=Z,50nm,1.7s
HABR pmax pmax
comp=N,5.0nm,0.9s
HABR MLR MLR
comp=Z,169nm,20.0s
WMOK Wichita Mounta 42.57 100 *e*P **P** 19 37 06.2 +2.0
WMOK *e**PP **pP** 19 37 18.3 -2.2
WMOK Wichita Mounta 42.57 100 *e*P **P** 19 37 06.2 +2.0
WMOK *e*pP **pP** 19 37 18.3 -2.2
KLR Kul'dur 43.03 291 P **P** 19 37 07.7 0.0
comp=Z,32nm,0.8s,baz=48,slow=8.1,SNR=104
KLR LR LR 19 57 22.8
comp=Z,76nm,19.4s,baz=4.5,slow=39
KLR Kul'dur 43.03 291 *c* iP **P** 19 37 06.7 -1.0
SCHQ Schefferville 43.91 56 P **P** 19 37 14.6 -0.1
comp=Z,3.0nm,0.5s,baz=305,slow=7.9,SNR=3.2
SCHQ LR LR 19 54 47.0
comp=Z,92nm,19.5s,baz=281,slow=35
TX31 Lajitas Ar. Si 44.50 110 *e*P **P** 19 37 22.8 +3.0
TXAR Lajitas Array 44.50 110 P **P** 19 37 22.6 +2.8
comp=Z,1.5nm,0.9s,baz=336,slow=5.9,SNR=6.1
TXAR PcP **PcP** 19 39 00.2 -1.9
comp=Z,1.9nm,0.9s,baz=234,slow=4.3,SNR=3.5
TXAR LR LR 19 54 38.1
comp=Z,89nm,19.9s,baz=0.0,slow=34
NRIK Noril'sk 44.78 334 P **P** 19 37 20.4 -1.0
comp=Z,5.5nm,0.3s,baz=53,slow=7.0,SNR=9.7
NRIK PcP **PcP** 19 39 02.2 0.0
comp=Z,6.9nm,0.7s,baz=271,slow=1.6,SNR=3.8
NRIK ScP **ScP** 19 42 48.7 +0.2
comp=Z,1.2nm,0.3s,baz=12,slow=2.8,SNR=3.6
BOD Bodaibo 44.97 311 *e*P **P** 19 37 21.4 -1.6
BOD pmax pmax
comp=Z,42nm,0.9s
JCT Junction City 45.47 105 *e*P **P** 19 37 29.6 +2.3
JCT *e**PP **pP** 19 37 45.7 +1.9
JCT Junction City 45.47 105 *e*P **P** 19 37 29.6 +2.3
JCT *e*pP **pP** 19 37 45.7 +1.9
SCO Scoresbysund 46.08 21 *i* P **P** 19 37 32.7 +1.1
SCO Scoresbysund 46.08 21 *e*P **P** 19 37 32.7 +1.1
USRK Ussuriysk Ar. 46.46 286 P **P** 19 37 33.7 -1.2
comp=Z,9.4nm,0.7s,baz=52,slow=8.2,SNR=22
USRK PcP **PcP** 19 39 08.7 +0.3
comp=Z,3.0nm,0.8s,baz=257,slow=1.0,SNR=6.3
USRK LR LR 19 58 49.0
comp=Z,88nm,18.9s,baz=50,slow=38
MDJ Mudanjiang 47.33 288 P **P** 19 37 41.5 -0.3
MDJ pP pP 19 37 57.0 -1.4
MDJ sP sP 19 38 04.0 -1.8
MDJ PP **PP** 19 39 32.3 -0.8
MDJ S **S** 19 44 33.0 +2.7
MDJ pmax pmax
comp=Z,15nm,0.9s
MDJ pmax pmax
comp=Z,54nm,2.9s
MDJ LR LR
comp=Z,94nm,26.7s
MDJ LR LR
comp=Z,71nm,28.2s
MDJ LR LR
comp=Z,120nm,28.6s
MDJ Mudanjiang 47.33 288 *e*P **P** 19 37 41.3 -0.5
comp=Z,26nm,1.3s
MSHR Mys Shultsa 48.05 285 *i* P **P** 19 37 46.2 -1.1
BINY Binghamton 48.57 75 *e*P **P** 19 37 52.6 +1.2
comp=Z,21nm,1.0s
MJB9 Matsu-Tunnel 49.02 275 *e*P **P** 19 37 55.2 +0.3
comp=Z,6.1nm,0.8s
MAJO Matsushiro 49.02 275 *e*P **P** 19 37 55.0 +0.1
MAJO pmax pmax
comp=Z,25nm,0.8s
MAJO Matsushiro 49.02 275 *e*P **P** 19 37 55.0 +0.1
comp=Z,25nm,0.8s
MAT Matsushiro 49.02 275 P **P** 19 37 54.0 -0.9
MJAR Matsushiro Arr 49.02 275 P **P** 19 37 54.8 -0.1
comp=Z,6.3nm,0.8s,baz=14,slow=6.7,SNR=12
CIT Chita 49.28 306 *e*P **P** 19 37 56.8 +0.1
CIT *e* 19 38 09.0
CIT *e* 19 38 23.7
CIT pmax pmax
comp=Z,73nm,1.5s
CN2 Changchun 49.95 291 *e*P **P** 19 38 02.0 +0.2
CN2 pmax pmax
comp=Z,60nm,0.7s
LUPA Lehigh Univers 50.08 76 *e*P **P** 19 38 06.3 +3.5
comp=Z,24nm,1.0s
ODNJ Ogdensburg 50.09 75 *e*pP pP 19 38 21.1 +1.5

EMMW East Machias 50.85 66 *e*P **P** 19 38 08.3 -0.3
comp=Z,52nm,0.9s
ARCES ARCESS Array B 51.65 1 P **P** 19 38 13.4 -0.9
comp=Z,1.6nm,0.4s,baz=17,slow=5.7,SNR=32
TLY Talaya 53.55 311 P **P** 19 38 28.9 +0.3
comp=Z,2.9nm,0.5s,baz=18,slow=1.9,SNR=5.6
TLY Talaya 53.55 311 *e*P **P** 19 38 28.3 -0.2
TLY pmax pmax
comp=Z,17nm,1.4s
TLY MLR MLR
comp=Z,90nm,18.0s
KS01 Wonju Array Si 53.55 284 *e*P **P** 19 38 27.5 -1.2
KSRS Korea Array 53.55 283 P **P** 19 38 28.9 +0.2
comp=Z,12nm,0.9s,baz=42,slow=6.6,SNR=26
KSRS LR LR 20 03 39.6
comp=Z,22nm,18.6s,baz=70,slow=39
KSAR Wonju Array Be 53.58 283 P **P** 19 38 28.9 -0.1
KSAR Wonju Array Be 53.58 283 P **P** 19 38 28.9 -0.1
KRAR Krasnoyarsk 53.94 321 *e*P **P** 19 38 30.5 -0.8
KRAR pmax pmax
comp=Z,32nm,1.1s
CBIJ Chichi jima 54.46 264 P **P** 19 38 34.6 -0.8
JCJ Chichijima 54.46 264 P **P** 19 38 34.6 -0.8
comp=Z,77nm,0.6s,baz=328,slow=21,SNR=5.7
MOY Mondy 54.57 313 *e*P **P** 19 38 36.2 +0.1
ZAK Zakamensk 54.71 310 *e*P **P** 19 38 35.8 -1.3
ZAK *e* 19 39 34.7
ZAK pmax pmax
comp=Z,4.0nm,1.1s
ZAK pmax pmax
comp=Z,8.0nm,1.2s
ULN Ulaanbaatar 55.17 306 *c* iP **P** 19 38 40.0 -0.5
ULN pmax pmax
comp=Z,14nm,1.0s
ULN Ulaanbaatar 55.17 306 *e*P **P** 19 38 40.1 -0.4
comp=Z,16nm,1.0s
JNU Nakatsue 55.45 278 P **P** 19 38 40.5 -2.1
comp=Z,7.9nm,0.9s,baz=159,slow=15,SNR=4.3
SONA1 Songino Array 55.45 307 *e*P **P** 19 38 42.1 -0.4
SONM Songino Array 55.47 307 P **P** 19 38 42.9 +0.2
comp=Z,22nm,0.9s,baz=42,slow=7.4,SNR=37
SONM LR LR 20 03 23.3
comp=Z,148nm,21.6s,baz=64,slow=37
BJT Baijiatuau 57.28 294 *e*P **P** 19 38 55.9 +0.4
BJT pmax pmax
comp=Z,18nm,0.6s
BJT Baijiatuau 57.28 294 *e*P **P** 19 38 55.9 +0.4
comp=Z,18nm,0.6s
NVS Novosibirsk 57.91 326 *e*P **P** 19 38 58.2 -1.4
ZAA0 Zalesovo Array 58.21 324 *e*P **P** 19 39 01.2 -0.5
ZALV Zalesovo Beam 58.21 324 P **P** 19 39 01.1 -0.6
comp=Z,5.7nm,0.6s,baz=28,slow=6.7,SNR=23
ZALV LR LR 20 05 09.6
comp=Z,76nm,18.9s,baz=65,slow=37
HHC Hu-ho-hao-te 58.76 298 *e*P **P** 19 39 08.0 +2.1
HHC S **S** 19 47 06.0 +0.1
HHC ScS **ScS** 19 48 49.5 -0.1
HHC pmax pmax
comp=Z,23nm,1.4s
HHC pmax pmax
comp=Z,71nm,2.9s
HHC LR LR
comp=Z,170nm,14.8s
HHC LR LR
comp=Z,150nm,13.6s
HHC LR LR
comp=Z,130nm,16.0s
NC204 NORSAR Array S 59.27 9 *e*P **P** 19 39 08.8 -0.3
NC303 NORSAR Array S 59.37 9 *e*P **P** 19 39 09.8 +0.1
NBO02 NORSAR Array S 59.50 9 *e*P **P** 19 39 10.2 -0.4
NC405 NORSAR Array S 59.50 9 *e*P **P** 19 39 10.4 -0.2
NB201 NORSAR Array S 59.53 9 *e*P **P** 19 39 10.5 -0.4
NB2 NORSAR Subarra 59.54 9 P **P** 19 39 10.2 -0.7
comp=Z,11nm,0.9s,baz=350,slow=6.9
NOA NORSAR Array B 59.54 9 P **P** 19 39 10.6 -0.4
comp=Z,4.7nm,0.6s,baz=351,slow=6.8,SNR=19
FIA1 FINESS Array S 59.78 1 *e*P **P** 19 39 11.2 -1.3
FINES FINESS Array B 59.78 1 P **P** 19 39 12.0 -0.5
comp=Z,1.8nm,0.5s,baz=358,slow=9.0,SNR=24
KONO Kongsberg 60.77 10 *e*P **P** 19 39 19.5 +0.2
KONO pmax pmax
comp=Z,16nm,0.9s
KONO Kongsberg 60.77 10 *e*P **P** 19 39 19.5 +0.2
comp=Z,16nm,0.9s
JOW Kunigami 61.84 276 P **P** 19 39 27.4 +0.4
comp=Z,55nm,0.9s,baz=357,slow=2.5,SNR=11
JOW Kunigami 61.84 276 *e*P **P** 19 39 27.4 +0.4
comp=Z,64nm,0.9s
ARU Arti 62.16 341 P **P** 19 39 28.8 +0.1
comp=Z,6.9nm,0.5s,baz=360,slow=3.2,SNR=18
ARU PcP **PcP** 19 40 08.2 0.0
comp=Z,5.6nm,0.7s,baz=358,slow=4.0,SNR=6.9
ARU Arti 62.16 341 *d* iP **P** 19 39 27.9 -0.8
ARU *P **pP** 19 39 46.3 +0.3
ARU 19 40 04.9
ARU 19 41 41.7
ARU S **S** 19 47 51.4 +2.8
ARU SS **SS** 19 51 50.5 -0.8
ARU pmax pmax
comp=Z,10.0nm,0.8s
ARU Arti 62.16 341 *e*P **P** 19 39 27.4 -1.3
comp=Z,10nm,0.5s
ARU PcP **PcP** 19 40 08.2 0.0
CHKZ Chkalovo 62.30 333 P **P** 19 39 29.1 -0.5
CHKZ pmax pmax
comp=Z,9.0nm,0.7s
NJ2 Nanjing 62.36 287 *e*P **P** 19 39 30.0 -0.4
NJ2 pmax pmax
comp=Z,21nm,0.5s
VSU Vasula 62.78 0 *i* P **P** 19 39 31.8 -1.0
VSU pmax pmax
comp=Z,62nm,2.5s
KURK Kurchatov 62.87 326 *e*P **P** 19 39 32.7 -0.9
KURK 19 40 10.9
KURK 19 41 53.9
KURK pmax pmax
comp=Z,9.0nm,0.9s
KURK Kurchatov 62.87 326 *e*P **P** 19 39 32.7 -0.9
comp=Z,9.4nm,0.9s
KURK PcP **PcP** 19 40 10.9 -0.4
KURK PP **PP** 19 41 53.9 +2.0
BRVK Borovoye 62.94 333 *d* iP **P** 19 39 32.6 -1.4
BRVK pmax pmax
comp=Z,10.0nm,0.8s
BRVK Borovoye 62.94 333 *e*P **P** 19 39 33.3 -0.7
comp=Z,8.9nm,0.7s
BVA0 Borovoye Array 62.95 332 *i* P **P** 19 39 33.7 -0.3
BVA0 pmax pmax
comp=Z,9.0nm,0.6s
BVAR Borovoye Array 62.95 332 P **P** 19 39 33.6 -0.4
comp=Z,9.7nm,0.6s,baz=34,slow=5.7,SNR=65
BVAR PcP **PcP** 19 40 12.7 +1.1
comp=Z,9.0nm,1.0s,baz=29,slow=3.4,SNR=3.5
KURBB Kurchatov Arra 62.98 326 P **P** 19 39 33.4 -0.9
comp=Z,2.8nm,0.5s,baz=27,slow=6.2,SNR=29
KURBB PcP **PcP** 19 40 10.9 -0.8
comp=Z,5.8nm,0.9s,baz=28,slow=4.3,SNR=11
KURBB PP **PP** 19 41 53.9 +1.1
comp=Z,0.9nm,0.7s,baz=36,slow=8.9,SNR=4.1
VOSK Vostochnaya 63.08 332 P **P** 19 39 34.0 -0.9
VOSK pmax pmax
comp=Z,4.0nm,0.5s
ZRNK Zerenda 63.34 333 P **P** 19 39 35.7 -1.0
ZRNK pmax pmax
comp=Z,9.0nm,0.7s
ZRNK Zerenda 63.34 333 *e*P **P** 19 39 35.6 -1.0
comp=Z,12nm,0.6s
MUD Monsted U'grnd 63.88 11 *i* P P 19 39 46.6 +6.5
comp=Z,2.3nm,0.4s
MUD Monsted U'grnd 63.88 11 *i* P P 19 39 46.6 +6.5
MUD pmax pmax
comp=Z,2.0nm,0.4s
GTA Gaotai 65.09 305 *e*P **P** 19 39 47.5 -1.0
GTA pP pP 19 40 03.8 -2.0
GTA sP sP 19 40 11.0 -2.1
GTA S **S** 19 48 22.5 -3.3
GTA sS sS 19 48 49.5 -5.7
GTA SS **SS** 19 52 36.3 -1.8
GTA pmax pmax
comp=Z,14nm,1.2s
GTA pmax pmax
comp=Z,49nm,4.8s
GTA LR LR
comp=Z,100nm,15.4s
GTA LR LR
comp=Z,110nm,14.7s
GTA LR LR
comp=Z,88nm,15.7s
MK31 Makanchi Array 65.25 322 P **P** 19 39 47.7 -1.5
MK31 pmax pmax
comp=Z,1.0nm,0.6s
MK31 Makanchi Array 65.25 322 *e*P **P** 19 39 48.4 -0.8
MKAR Makanchi Array 65.25 322 P **P** 19 39 48.0 -1.2
comp=Z,1.2nm,0.5s,baz=37,slow=6.1,SNR=28
MKAR LR LR 20 09 20.8
comp=Z,63nm,19.1s,baz=16,slow=37
MKAR Makanchi Array 65.25 322 *e*P **P** 19 39 48.4 -0.8
MKAR Makanchi Array 65.25 322 *e*P **P** 19 39 48.4 -0.8
MK01 Makanchi Array 65.27 322 *e*P **P** 19 39 48.1 -1.2
MAKZ Makanchi 65.33 322 P **P** 19 39 48.6 -1.2
MAKZ pmax pmax
comp=Z,2.0nm,0.5s
XAN Xi'an 65.52 295 P **P** 19 39 49.8 -1.4
XAN pmax pmax
comp=Z,8.0nm,0.8s
XAN pmax pmax
comp=Z,39nm,5.6s
BSD Bornholm Skovb 65.70 8 *i* P **P** 19 39 52.1 +0.2
comp=Z,1.4nm,0.4s
BSD Bornholm Skovb 65.70 8 *i* P **P** 19 39 52.1 +0.2
BSD pmax pmax
comp=Z,1.0nm,0.4s
OBN Obninsk 65.89 354⇑ *e*P **P** 19 39 53.1 -0.1
OBN *e* 19 40 22.9
OBN pmax pmax
comp=Z,31nm,1.6s
WMQ Urumqi 66.03 316 P **P** 19 39 55.5 +1.1
WMQ pP pP 19 40 12.3 +0.5
WMQ sP sP 19 40 17.5 -1.6
WMQ PcP **PcP** 19 40 25.3 +0.8
WMQ PP **PP** 19 42 24.8 +5.0
WMQ pmax pmax
comp=Z,4.0nm,1.0s
WMQ pmax pmax
comp=Z,71nm,4.8s
WMQ LR LR
comp=Z,21nm,19.2s
WMQ LR LR
comp=Z,60nm,17.0s
WMQ LR LR
comp=Z,29nm,19.2s
LZH Lanzhou 66.13 301 *e*P **P** 19 39 54.5 -0.7
LZH pP pP 19 40 06.0 -6.6
LZH sP sP 19 40 11.0 -8.9
LZH pmax pmax
comp=Z,28nm,1.0s
LZH pmax pmax
comp=Z,100nm,5.7s
SUW Suwalki 67.19 3 *e*P **P** 19 40 01.0 -0.4
SUW Suwalki 67.19 3 *e*P **P** 19 40 01.0 -0.4
AKTO Aktyubinsk 68.00 339 P **P** 19 40 05.6 -1.0
comp=Z,3.0nm,0.4s,baz=28,slow=8.9,SNR=13
AKTO Aktyubinsk 68.00 339 P **P** 19 40 05.2 -1.4
AKTO pmax pmax
comp=Z,10.0nm,1.2s
SSLB Suanglung 68.08 280 *e*P **P** 19 40 06.8 -0.8
comp=Z,11nm,0.9s
AB31 Akbulak array 68.76 338 P **P** 19 40 09.9 -1.5
AB31 pmax pmax
comp=Z,3.0nm,0.5s
ABKAR Akbulak array 68.76 338 *e*P **P** 19 40 10.6 -0.9
MEM Membach 69.27 14 P **P** 19 40 15.1 +0.6
CLL Collm 69.33 10⇑ *i* P **P** 19 40 14.6 -0.3
comp=Z,11nm,1.1s
CLL *i* 19 40 33.1
CLL *i* 19 40 39.6
CLL *i* 19 40 46.2
CLL Collm 69.33 10 ⇑ *i* P **P** 19 40 14.6 -0.3
CLL *i* 19 40 33.1
CLL pmax pmax
comp=Z,11nm,1.1s
CLL Collm 69.33 10 *e*P **P** 19 40 14.8 -0.1
comp=Z,10nm,1.0s
BCLA Clavier 69.37 15 P **P** 19 40 15.7 +0.6
VRH Novokhopyorsk 69.43 350 *e*P **P** 19 40 12.6 -2.9
VRH pmax pmax
comp=Z,8.0nm,0.5s
DOU Dourbes 69.59 15 P **P** 19 40 16.7 +0.2
VSR Storozhevoye 69.62 352 *e*P **P** 19 40 15.1 -1.6
VSR pmax pmax
comp=Z,4.0nm,0.5s
BRG Berggiesshubel 69.84 9 *e*P **P** 19 40 18.2 +0.1
comp=Z,14nm,1.1s
BRG *e* 19 40 37.6
comp=Z,5.3nm,1.1s
KSP Ksiaz 70.04 7 *e*P **P** 19 40 19.9 +0.6
KSP Ksiaz 70.04 7 *e*P **P** 19 40 19.9 +0.6
WLF Walferdange 70.22 14 P **P** 19 40 21.8 +1.4
comp=Z,11nm,1.6s
PVCC Panska Ves 70.23 9 *e*P **P** 19 40 20.9 +0.4
PVCC Panska Ves 70.23 9 *e*P **P** 19 40 20.9 +0.4
NKC Novy Kostel 70.35 10 *e*P **P** 19 40 21.6 +0.4
NKC Novy Kostel 70.35 10 *e*P **P** 19 40 21.6 +0.4
UPC Upice 70.36 8 *e*P **P** 19 40 21.4 +0.2
UPC *e*pP **PcP** 19 40 41.0 -1.4
UPC Upice 70.36 8 *e*P **P** 19 40 21.4 +0.2
UPC *e* 19 40 41.0
CD2 Chengdu 70.51 298 P **P** 19 40 22.0 -0.5
CD2 pmax pmax
comp=Z,2.0nm,0.6s
DPC Dobruska-Polom 70.54 7 *e*P **P** 19 40 22.9 +0.5
DPC *e*pP **PcP** 19 40 42.4 -0.8
DPC *e*sP **sP** 19 40 50.3 +3.1
DPC Dobruska-Polom 70.54 7 *e*P **P** 19 40 22.9 +0.5
DPC *e* 19 40 42.4
DPC *e* 19 40 50.3
AKASG Malin Array Be 70.55 359 P **P** 19 40 21.6 -0.8
comp=Z,3.3nm,0.5s,baz=3.1,slow=5.9,SNR=20
KIEV Kiev 70.55 359 *e*P **P** 19 40 21.7 -0.7
KIEV pmax pmax
comp=Z,8.0nm,0.6s
KIEV Kiev 70.55 359 *e*P **P** 19 40 21.7 -0.7
comp=Z,8.4nm,0.6s
PRU Pruhonice 70.77 9 *e*P **P** 19 40 24.0 +0.3
PRU Pruhonice 70.77 9 *e*P **P** 19 40 24.0 +0.3
GRFO Grafenberg 70.77 11 *e*P **P** 19 40 24.7 +0.9
GRFO pmax pmax
comp=Z,14nm,1.1s
GRFO Grafenberg 70.77 11 *e*P **P** 19 40 24.7 +0.9
comp=Z,14nm,1.1s
KRLC Kraliky 70.84 7 *e*P **P** 19 40 24.5 +0.3
KRLC *e*pP **PcP** 19 40 44.0 -0.5
KRLC Kraliky 70.84 7 *e*P **P** 19 40 24.5 +0.3
KRLC *e* 19 40 44.0
OJC Ojcow 70.86 5 *e*P **P** 19 40 23.7 -0.6
OJC Ojcow 70.86 5 *e*P **P** 19 40 23.7 -0.6
OJC Ojcow 70.86 5 *e*P **P** 19 40 23.6 -0.6
comp=Z,6.0nm,0.8s
OKC Ostrava-Krasne 71.16 6 *e*P **P** 19 40 26.2 +0.1
OKC *e*pP **pP** 19 40 44.6 +0.9
OKC Ostrava-Krasne 71.16 6 *e*P **P** 19 40 26.2 +0.1
OKC *e* 19 40 44.6
FRU Bishkek 71.18 325 *e*P **P** 19 40 25.0 -1.4
MORC Moravsky Berou 71.19 7 ⇓ *i* P **P** 19 40 26.4 +0.1
MORC Moravsky Berou 71.19 7 ⇓ *e*P **P** 19 40 26.4 +0.1
MORC Moravsky Berou 71.19 7 *e*P **P** 19 40 26.7 +0.3
comp=Z,73nm,1.4s
AAK Ala-Archa 71.40 325 P **P** 19 40 27.2 -0.7
comp=Z,1.5nm,0.4s,baz=82,slow=3.6,SNR=5.4
AAK PP **PP** 19 43 05.9 -0.3
comp=Z,2.8nm,0.8s,baz=46,slow=7.2,SNR=5.2
AAK Ala-Archa 71.40 325 P **P** 19 40 27.2 -0.7
AAK pmax pmax
comp=Z,4.0nm,0.9s
AAK Ala-Archa 71.40 325 *e*P **P** 19 40 28.1 +0.2
comp=Z,4.1nm,0.8s
AAK PP **PP** 19 43 05.9 -0.3
TREC Trest 71.53 8 *e*P **P** 19 40 28.6 +0.2
TREC Trest 71.53 8 *e*P **P** 19 40 28.6 +0.2
KHC Kasperske Hory 71.54 9 *e*P **P** 19 40 29.1 +0.6
KHC *e*pP **PcP** 19 40 48.9 +1.4
KHC *e*sP **sP** 19 40 56.5 +3.2
KHC Kasperske Hory 71.54 9 *e*P **P** 19 40 29.1 +0.6
KHC pmax pmax
comp=Z,7.0nm,1.1s
KHC Kasperske Hory 71.54 9 *e*P **P** 19 40 29.1 +0.6
comp=Z,7.1nm,1.1s
KWP Kalwaria Pacla 71.56 3 *e*P **P** 19 40 29.0 +0.5
KWP Kalwaria Pacla 71.56 3 ⇓ *i* P **P** 19 40 29.0 +0.5
KWP Kalwaria Pacla 71.56 3 *e*P **P** 19 40 29.0 +0.5

EKS2	**Erkin-Say**	**71.58**	**326**	*e*P		**P**	**19 40 28.8**	**-0.1**
EKS2				pmax	pmax			
	comp=Z,11nm,1.3s							
EKS2	**Erkin-Say**	**71.58**	**326**	*e*P		**P**	**19 40 28.8**	**-0.1**
	comp=Z,11nm,1.3s							
VRAC	**Vranov**	**71.59**	**7**	⇓*i*P		**P**	**19 40 29.4**	**+0.7**
VRAC	**Vranov**	**71.59**	**7**	⇓P		**P**	**19 40 29.4**	**+0.7**
NIE	**Niedzica**	**71.69**	**5**	*e*P		**P**	**19 40 29.9**	**+0.6**
NIE	**Niedzica**	**71.69**	**5**	*e*P		**P**	**19 40 30.0**	**+0.6**
STHS	**Stebnicka Huta**	**71.73**	**4**	*e*P		**P**	**19 40 30.4**	**+0.8**
BFO	**Black Forest**	**71.80**	**13**	*i*P		**P**	**19 40 30.6**	**+0.6**
BFO	**Black Forest**	**71.80**	**13**	*e*P		**P**	**19 40 30.1**	**+0.1**
	comp=Z,6.7nm,1.0s							
GEC2	**GERESS Array S**	**71.83**	**9**	*e*P		**P**	**19 40 30.7**	**+0.4**
GEC2				pmax	pmax			
	comp=Z,7.0nm,1.0s							
GEC2	**GERESS Array S**	**71.83**	**9**	*e*P		**P**	**19 40 30.6**	**+0.4**
	comp=Z,6.9nm,1.0s							
GERES	**GERESS Array B**	**71.83**	**9**	P		**P**	**19 40 30.5**	**+0.2**
	comp=Z,3.5nm,0.8s,baz=1.8,slow=4.3,SNR=32							
GEA0	**GERESS Array S**	**71.84**	**9**	*e*P		**P**	**19 40 30.3**	**-0.1**
LANS	**Liptovska Anna**	**71.92**	**5**	*e*P		**P**	**19 40 31.1**	**+0.4**
KK31	**Karatay Array**	**72.09**	**328**	*i*P		**P**	**19 40 30.7**	**-1.1**
KK31				pmax	pmax			
	comp=Z,4.0nm,1.0s							
KKAR	**Karatay Array**	**72.09**	**328**	*e*P		**P**	**19 40 31.4**	**-0.5**
KKAR	**Karatay Array**	**72.09**	**328**	*e*P		**P**	**19 40 31.4**	**-0.5**
KOLS	**Kolonicke sedl**	**72.25**	**4**	*e*P		**P**	**19 40 32.8**	**+0.1**
CRVS	**Cervenica-Dubn**	**72.25**	**4**	*e*P		**P**	**19 40 33.0**	**+0.3**
VYHS	**Vyhne**	**72.54**	**6**	*e*P		**P**	**19 40 34.5**	**+0.1**
VYHS				*e*			19 40 52.6	
UZH	**Uzhgorod**	**72.55**	**4**	⇑*i*P		**P**	**19 40 34.1**	**-0.3**
UZH				*e*			19 40 49.7	
KECS	**Kecovo**	**72.63**	**5**	*e*P		**P**	**19 40 35.0**	**+0.1**
KECS				*e*			19 40 46.1	
MOA	**Molln**	**72.87**	**9**	*i*P		**P**	**19 40 36.5**	**+0.1**
	comp=Z,10nm,1.5s,SNR=6.0							
MOA	**Molln**	**72.87**	**9**	*i*P		**P**	**19 40 36.5**	**+0.1**
	comp=Z,10nm,1.5s,SNR=6.0							
RETA	**Reutte**	**72.90**	**12**	*e*P		**P**	**19 40 37.8**	**+1.2**
	comp=Z,8.4nm,1.3s							
RETA	**Reutte**	**72.90**	**12**	*e*P		**P**	**19 40 37.8**	**+1.2**
	comp=Z,8.4nm,1.3s							
CONA	**Conrad Observa**	**72.92**	**8**	*i*P		**P**	**19 40 37.2**	**+0.5**
	comp=Z,18nm,1.3s							
CONA	**Conrad Observa**	**72.92**	**8**	*i*P		**P**	**19 40 37.2**	**+0.5**
	comp=Z,18nm,1.3s							
MOTA	**Moosalm**	**73.08**	**11**	*i*P		**P**	**19 40 39.0**	**+1.2**
	comp=Z,10nm,1.0s,SNR=9.8							
MOTA	**Moosalm**	**73.08**	**11**	*i*P		**P**	**19 40 39.0**	**+1.2**
	comp=Z,10nm,1.0s,SNR=9.8							
SORM	**Soroca**	**73.12**	**359**	⇑*i*P		**P**	**19 40 37.0**	**-0.8**
SORM	**Soroca**	**73.12**	**359**	⇑P		**P**	**19 40 37.0**	**-0.8**
WATA	**Walderalm**	**73.14**	**11**	*i*P		**P**	**19 40 38.4**	**+0.3**
	comp=Z,15nm,1.0s,SNR=8.9							
WATA	**Walderalm**	**73.14**	**11**	*i*P		**P**	**19 40 38.4**	**+0.3**
	comp=Z,15nm,1.0s,SNR=8.9							
PSZ	**Piszkesteto**	**73.17**	**5**	⇓*i*P		**P**	**19 40 39.1**	**+0.9**
PSZ	**Piszkesteto**	**73.17**	**5**	⇓*e*P		**P**	**19 40 39.0**	**+0.9**
PSZ	**Piszkesteto**	**73.17**	**5**	⇓P		**P**	**19 40 39.1**	**+0.9**
PSZ	**Piszkesteto**	**73.17**	**5**	*e*P		**P**	**19 40 38.5**	**+0.3**
	comp=Z,15nm,1.0s							
WTTA	**Wattenberg**	**73.21**	**11**	*i*P		**P**	**19 40 39.3**	**+0.7**
	comp=Z,8.9nm,0.7s,SNR=6.4							
WTTA	**Wattenberg**	**73.21**	**11**	*i*P		**P**	**19 40 39.3**	**+0.7**
	comp=Z,8.9nm,0.7s,SNR=6.4							
FETA	**Feichten**	**73.36**	**12**	*i*P		**P**	**19 40 40.1**	**+0.7**
	comp=Z,9.3nm,1.0s,SNR=6.5							
FETA	**Feichten**	**73.36**	**12**	*i*P		**P**	**19 40 40.1**	**+0.7**
	comp=Z,9.3nm,1.0s,SNR=6.5							
KBA	**Koelnbreinsper**	**73.56**	**10**	*i*P		**P**	**19 40 41.4**	**+0.8**
	comp=Z,30nm,1.1s,SNR=17							
KBA	**Koelnbreinsper**	**73.56**	**10**	*i*P		**P**	**19 40 41.4**	**+0.8**
	comp=Z,30nm,1.1s,SNR=17							
ARSA	**Arzberg**	**73.56**	**8**	*i*P		**P**	**19 40 41.1**	**+0.6**
	comp=Z,6.5nm,0.9s,SNR=5.9							
ARSA	**Arzberg**	**73.56**	**8**	*i*P		**P**	**19 40 41.1**	**+0.6**
	comp=Z,6.5nm,0.9s,SNR=5.9							
BUR08	**Bucovina Ar. S**	**73.60**	**2**	*e*P		**P**	**19 40 40.9**	**+0.1**
BURAR	**Bucovina Array**	**73.63**	**2**	⇓*i*P		**P**	**19 40 40.8**	**-0.2**
BURAR	**Bucovina Array**	**73.63**	**2**	⇓P		**P**	**19 40 40.8**	**-0.2**
FUORN	**Ofenpass-Fuorn**	**73.70**	**12**	*e*P		**P**	**19 40 42.5**	**+0.9**
	comp=Z,27nm,1.4s							
TUE	**Stuetta**	**73.75**	**13**	*e*P		**P**	**19 40 43.0**	**+1.1**
	comp=Z,6.2nm,0.8s							
KSH	**Kashi**	**73.80**	**323**	*e*P		**P**	**19 40 44.8**	**+2.7**
ABTA	**Abfaltersbach**	**73.81**	**11**	*i*P		**P**	**19 40 41.4**	**-0.6**
	comp=Z,9.6nm,1.1s,SNR=6.7							
ABTA	**Abfaltersbach**	**73.81**	**11**	*i*P		**P**	**19 40 41.4**	**-0.6**
	comp=Z,9.6nm,1.1s,SNR=6.7							
SOKA	**Soboth**	**74.10**	**9**	*i*P		**P**	**19 40 43.9**	**+0.2**
	comp=Z,18nm,1.2s,SNR=17							
SOKA	**Soboth**	**74.10**	**9**	*i*P		**P**	**19 40 43.9**	**+0.2**
	comp=Z,18nm,1.2s,SNR=17							
OBKA	**Obir**	**74.22**	**9**	*i*P		**P**	**19 40 44.8**	**+0.3**
	comp=Z,28nm,0.7s,SNR=23							
OBKA	**Obir**	**74.22**	**9**	*i*P		**P**	**19 40 44.8**	**+0.3**
	comp=Z,28nm,0.7s,SNR=23							
GROS	**Grobnik**	**74.35**	**8**	*i*P		**P**	**19 40 45.0**	**-0.1**
CADS	**Cadrg**	**74.44**	**10**	*i*P		**P**	**19 40 44.9**	**-0.7**
PKSM	**Moragy**	**74.80**	**6**	⇓*i*P		**P**	**19 40 48.0**	**+0.3**
PKSM	**Moragy**	**74.80**	**6**	⇓*e*P		**P**	**19 40 47.7**	**0.0**
PKSM	**Moragy**	**74.80**	**6**	⇓P		**P**	**19 40 48.0**	**+0.3**
VRI	**Vrincioaia**	**75.39**	**0**	⇓*i*P		**P**	**19 40 51.1**	**0.0**
VRI	**Vrincioaia**	**75.39**	**0**	⇓P		**P**	**19 40 51.1**	**0.0**
GOF	**Gofitskoye**	**75.40**	**349**	⇑*e*P		**P**	**19 40 50.8**	**-0.3**
GOF				pmax	pmax			
	comp=Z,47nm,1.4s							
PLOR	**Plostina**	**75.41**	**1**	⇑*i*P		**P**	**19 40 51.2**	**0.0**
PLOR	**Plostina**	**75.41**	**1**	⇑P		**P**	**19 40 51.2**	**0.0**
BZS	**Buzias**	**75.54**	**4**	⇓*i*P		**P**	**19 40 51.6**	**-0.3**
BZS	**Buzias**	**75.54**	**4**	⇓P		**P**	**19 40 51.6**	**-0.3**
MLR	**Muntele Rosu**	**75.76**	**1**	⇓*i*P		**P**	**19 40 53.3**	**-0.1**
MLR	**Muntele Rosu**	**75.76**	**1**	⇓P		**P**	**19 40 53.3**	**-0.1**
MLR	**Muntele Rosu**	**75.76**	**1**	*e*P		**P**	**19 40 52.9**	**-0.4**
	comp=Z,21nm,1.5s							
VOIR		**75.81**	**2**	⇓*i*P		**P**	**19 40 53.7**	**+0.1**
VOIR		**75.81**	**2**	⇓P		**P**	**19 40 53.7**	**+0.1**
KMI	**Kunming**	**75.90**	**295**	P		**P**	**19 40 53.8**	**-0.8**
KMI				S		**S**	**19 50 35.8**	**+3.8**
KMI				pmax	pmax			
	comp=Z,13nm,0.5s							
KMI				LR	LR			
	comp=Z,87nm,19.9s							
KMI				LR	LR			
	comp=Z,84nm,22.0s							
KMI				LR	LR			
	comp=Z,95nm,24.2s							
CFR	**Carcaliu**	**76.08**	**359**	⇓*i*P		**P**	**19 40 54.8**	**-0.2**
CFR	**Carcaliu**	**76.08**	**359**	⇓P		**P**	**19 40 54.8**	**-0.2**
PPT	**Papeete**	**76.43**	**177**	LR		LR	20 06 50.3	
	comp=Z,68nm,20.9s,baz=360,slow=29							
KIV	**Kislovodsk**	**76.52**	**349**	⇑*i*P		**P**	**19 40 57.3**	**-0.4**
KIV				*e*			19 41 07.4	
KIV				pmax	pmax			
	comp=Z,14nm,1.2s							
KIV	**Kislovodsk**	**76.52**	**349**	*e*P		**P**	**19 40 58.0**	**+0.3**
	comp=Z,9.3nm,1.0s							
KBZ	**Khabaz**	**76.73**	**348**	P		**P**	**19 40 58.2**	**-0.4**
	comp=Z,3.0nm,0.8s,baz=340,slow=6.3,SNR=9.8							
KBZ				LR		LR	20 17 18.0	
	comp=Z,44nm,19.0s,baz=6.5,slow=38							
TIRR	**Tirgusor**	**76.80**	**359**	⇓*i*P		**P**	**19 40 59.0**	**0.0**
TIRR	**Tirgusor**	**76.80**	**359**	⇓P		**P**	**19 40 59.0**	**0.0**
TIRR	**Tirgusor**	**76.80**	**359**	*e*P		**P**	**19 40 58.8**	**-0.3**
	comp=Z,10.0nm,1.1s							
NCK	**Nalchik**	**76.88**	**348**	*e*P		**P**	**19 40 59.9**	**+0.3**
NCK				pmax	pmax			
	comp=Z,19nm,1.1s							
LSA	**Lhasa**	**77.06**	**307**	P		**P**	**19 41 01.5**	**+0.1**
LSA				pmax	pmax			
	comp=Z,15nm,0.9s							
LSA	**Lhasa**	**77.06**	**307**	*e*P		**P**	**19 41 01.2**	**-0.2**
LSA				pmax	pmax			
	comp=Z,12nm,0.8s							
LSA	**Lhasa**	**77.06**	**307**	*e*P		**P**	**19 41 01.2**	**-0.2**
	comp=Z,12nm,0.8s							
NEY	**Neytrino**	**77.22**	**349**	*e*P		**P**	**19 41 01.2**	**-0.5**
NEY				pmax	pmax			
	comp=Z,1.0nm,1.0s							
ZEI	**Tsey**	**77.55**	**348**	*e*P		**P**	**19 41 01.1**	**-2.5**
ZEI				pmax	pmax			
	comp=Z,12nm,1.0s							
ES19	**SONSECA Array**	**78.19**	**24**	*e*P		**P**	**19 41 08.3**	**+1.2**
ESDC	**Sonseca Array**	**78.21**	**24**	P		**P**	**19 41 07.6**	**+0.5**
	comp=Z,0.5nm,0.4s,baz=339,slow=5.5,SNR=9.3							
PDG	**Podgorica**	**78.61**	**6**	⇑*i*P		**P**	**19 41 08.9**	**-0.2**
GEYT	**Alibeck**	**80.00**	**336**	P		**P**	**19 41 16.9**	**+0.1**
	comp=Z,3.4nm,0.9s,baz=305,slow=5.2,SNR=8.8							
GEYT				LR		LR	20 22 11.0	
	comp=Z,85nm,18.1s,baz=20,slow=40							
GNI	**Garni**	**80.06**	**347**	*e*P		**P**	**19 41 16.8**	**-0.5**
GNI				pmax	pmax			
	comp=Z,35nm,1.0s							
MATE	**Matera**	**80.22**	**8**	⇓*i*P		**P**	**19 41 18.3**	**+0.4**
GUN	**Gumba**	**80.77**	**310**	*e*P		**P**	**19 41 21.1**	**-0.5**
	comp=Z,53nm,0.9s							
KKN	**Kakani**	**81.11**	**311**	*e*P		**P**	**19 41 22.8**	**-0.4**
	comp=Z,17nm,0.9s							
GKN	**Gorkha**	**81.17**	**311**	*e*P		**P**	**19 41 22.7**	**-0.8**
	comp=Z,58nm,1.0s							
DANN	**Dangsing**	**81.20**	**312**	*e*P		**P**	**19 41 23.5**	**-0.3**
PKIN	**Phulchoki**	**81.26**	**310**	*e*P		**P**	**19 41 23.3**	**-0.8**
	comp=Z,24nm,0.9s							
BR231	**Kekin MP Arra**	**81.31**	**356**	*e*P		**P**	**19 41 23.2**	**-0.8**
DMN	**Daman**	**81.34**	**311**	*e*P		**P**	**19 41 24.2**	**-0.3**
	comp=Z,33nm,0.9s							
BR131	**Keskin Array S**	**81.39**	**355**	*e*P		**P**	**19 41 24.3**	**-0.2**
BRTR	**Keskin Array B**	**81.39**	**355**	P		**P**	**19 41 24.2**	**-0.2**
	comp=Z,6.8nm,1.1s,baz=29,slow=2.8,SNR=25							
BRTR				LR		LR	20 22 56.6	
	comp=Z,13nm,18.0s,baz=356,slow=40							
PYUN	**Piuthan**	**81.72**	**313**	*e*P		**P**	**19 41 25.7**	**-0.7**
	comp=Z,86nm,1.0s							
KOLN	**Kolonnda**	**81.78**	**312**	*e*P		**P**	**19 41 25.9**	**-0.8**
CMAI	**Chiengmai2**	**82.08**	**296**	P		**P**	**19 41 27.7**	**-0.6**
	comp=Z,87nm,0.9s							
CHTO	**Chiang Mai**	**83.09**	**295**	*e*P		**P**	**19 41 32.1**	**-1.3**
CHTO				pmax	pmax			
	comp=Z,4.0nm,1.0s							
CHTO	**Chiang Mai**	**83.09**	**295**	*e*P		**P**	**19 41 32.1**	**-1.3**
	comp=Z,3.6nm,1.0s							
KHON	**Khomkaen**	**83.39**	**291**	P		**P**	**19 41 35.4**	**+0.5**
	comp=Z,6.4nm,0.8s							
CM31	**Chiang Mai Arr**	**83.40**	**295**	*e*P		**P**	**19 41 34.3**	**-0.7**
CMAR	**Chiang Mai Arr**	**83.40**	**295**	P		**P**	**19 41 34.0**	**-1.1**
	comp=Z,4.3nm,1.1s,baz=13,slow=5.6,SNR=32							
CMAR				LR		LR	20 20 23.2	
	comp=Z,66nm,19.2s,baz=21,slow=37							
CMAR	**Chiang Mai Arr**	**83.40**	**295**	P		**P**	**19 41 34.0**	**-1.1**
CM01	**Chiang Mai Arr**	**83.43**	**295**	*e*P		**P**	**19 41 32.8**	**-2.4**
PBKT	**Sadao Pong**	**84.08**	**292**	P		**P**	**19 41 38.3**	**-0.1**
	comp=Z,4.1nm,1.3s							
KEST	**Kesra**	**84.34**	**15**	P		**P**	**19 41 41.2**	**+1.5**
	comp=Z,15nm,1.1s,baz=55,slow=2.2,SNR=5.5							
MYLDM	**Lahad Datu**	**85.00**	**272**	*e*P		**P**	**19 41 44.2**	**+1.1**
	comp=Z,61nm,1.8s							
KKM	**Kota Kinabalu**	**85.44**	**274**	*e*P		**P**	**19 41 45.1**	**-0.4**
	comp=Z,38nm,1.0s							
SRAK	**Srakaew**	**85.76**	**290**	P		**P**	**19 41 45.4**	**-1.5**
	comp=Z,35nm,1.0s,comp=Z,387nm							
LAST	**Lasithi**	**86.08**	**2**	⇓*i*P		**P**	**19 41 47.9**	**-0.4**
LAST	**Lasithi**	**86.08**	**2**	*e*P		**P**	**19 41 47.7**	**-0.7**
	comp=Z,34nm,1.0s							
MMAI	**Mount Meron Ar**	**87.98**	**353**	LR		LR	20 30 04.6	
	comp=Z,21nm,18.1s,baz=190,slow=42							
SBUM	**Sibu**	**90.56**	**276**	*e*P		**P**	**19 42 09.9**	**+0.1**
	comp=Z,14nm,0.9s							
EIL	**Elat**	**91.34**	**353**	LR		LR	20 32 42.7	
	comp=Z,28nm,18.6s,baz=62,slow=42							
KSM	**Kuching**	**92.37**	**277**	*e*P		**P**	**19 42 17.8**	**-0.4**
	comp=Z,22nm,1.0s							
PSI	**Prapat**	**96.97**	**287**	*e*P		**P**	**19 42 38.5**	**-0.9**
PSI				pmax	pmax			
	comp=Z,9.0nm,0.9s							
PSI	**Prapat**	**96.97**	**287**	*e*P		**P**	**19 42 38.5**	**-0.9**
	comp=Z,8.5nm,0.9s							
WRA	**Warramunga Arr**	**98.54**	**245**	P		**P**	**19 42 45.1**	**-1.0**
	comp=Z,1.5nm,1.0s,baz=36,slow=4.9,SNR=7.8							
ASAR	**Alice Springs**	**101.95**	**244**	P		**Pdif**	**19 43 02.4**	**+1.2**
	comp=Z,0.5nm,0.8s,baz=32,slow=6.4,SNR=7.1							
KMBO	**Kilima Mbogo**	**121.67**	**348**	PKP		**PKPdf**	**19 48 01.6**	**0.0**
	comp=Z,1.3nm,0.5s,baz=12,slow=5.5,SNR=5.0							
LBTB	**Lobatse**	**145.91**	**3**	*e*PKP2		**PKPab**	**19 48 47.1**	**-0.2**
LBTB	**Lobatse**	**145.91**	**3**	*e*PKPdf		**PKPab**	**19 48 47.0**	**-0.2**
BOSA	**Boshof**	**149.49**	**4**	PKPbc		**PKPbc**	**19 48 55.7**	**-0.6**
	comp=Z,7.6nm,0.8s,baz=4.0,slow=3.0,SNR=12							
MAW	**Mawson**	**162.20**	**227**	PKP		**PKPdf**	**19 49 03.9**	**-3.2**
	comp=Z,1.4nm,0.3s,baz=288,slow=22,SNR=6.4							
MAW				PKPab		**PKPab**	**19 49 55.3**	**+0.7**
	comp=Z,6.2nm,0.9s,baz=104,slow=2.4,SNR=5.0							

*NIED **25** 19:33:00,38˚.10N×144˚.00E,h8km,Mw3.5 Best double couple: M₀1.92000×10¹⁴ NP1:φ=255.00000°, δ82.00000°, λ=-5.00000°. NP2:φ=345.00000°, δ85.00000°, λ=-172.00000°.*

*IDC **25** 19:33:11.2±1.4,38˚.05N×144˚.52E,h0km,mb3.9/2, mb1 4.0/5,mb1mx3.4/55,mbtmp3.8/5,ML3.4/3,MS4.0/1, Ms1 4.0/1,ms1mx2.5/38, Error ellipse: s-maj=42.9km s-min=26.3km az=117.0*

*ISCJB **25** 19:33:14.7±0.8,38˚.16N±0˚.05×144˚.06E±0˚.07,h33km, mb3.9/2,MS3.8/1,Error ellipse: s-maj=7.4km s-min=6.5km az=169.5*

*JMA **25** 19:33:15.7±0.2,38˚.13N×143˚.97E,h43km,M3.6*

ISC 25 19:33:15.6±1.7,38˚.14N±0˚.08×144˚.1E±0˚.2,h35km,n23, σ1s30/15,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
					Op	ISC	h m s	ISC
OFUJ	**Ofunato**	**2.14**	**297**	P		**Pn**	**19 33 48.6**	**-0.2**
OFUJ				S		Sn	19 34 13.5	-0.5
JIO	**Ouri**	**2.20**	**279**	P		**Pn**	**19 33 49.3**	**-0.3**
JIO				S		Sn	19 34 13.4	-2.2
JMK	**Ichinoseki**	**2.41**	**291**	P		**Pn**	**19 33 52.7**	**+0.2**
JMK				*e*S		Sn	19 34 20.2	-0.6
JOM	**Ohasama**	**2.58**	**302**	P		**Pn**	**19 33 55.1**	**+0.3**
JOM				S		Sn	19 34 24.5	-0.5
JANG	**Nango**	**3.01**	**319**	P		**Pn**	**19 34 01.3**	**+0.5**
JANG				*e*S		Sn	19 34 34.6	-1.0
JYK	**Kaneyama**	**3.05**	**286**	P		**Pn**	**19 34 02.0**	**+0.7**
JYK				*e*S		Sn	19 34 36.2	-0.3
JFT	**Otama**	**3.06**	**260**	P		**Pn**	**19 34 02.1**	**+0.7**
JFT				S		Sn	19 34 35.8	-0.9
JOT	**Ohata**	**4.01**	**325**	*e*S		Sn	19 34 58.5	-1.8
JAG	**Ashikaga**	**4.09**	**247**	P		**Pn**	**19 34 16.0**	**+0.3**
JNBK	**Urakawa-nobuka**	**4.27**	**346**	P		**Pn**	**19 34 19.2**	**+1.1**
JNBK				*e*S		**Sn**	**19 35 05.2**	**-1.4**
JRY	**Ryogami san**	**4.67**	**245**	P		**Pn**	**19 34 23.6**	**-0.1**
JRY				S		Sn	19 35 13.1	-3.6
MJAR	**Matsushiro Arr**	**4.97**	**253**	Pn		**Pn**	**19 34 30.5**	**+2.8**
	0.5nm,0.3s,baz=85,slow=15,SNR=4.7							
ASAJ	**Asahikawa**	**6.08**	**350**	Pn		**Pn**	**19 34 45.7**	**+2.7**
	0.9nm,0.3s,baz=186,slow=11,SNR=13							
JHJ	**Hachijo jima 2**	**6.12**	**216**	Pn		**Pn**	**19 34 43.3**	**-0.3**
	4.1nm,0.3s,baz=86,slow=23,SNR=3.3							
MA2	**Magadan**	**21.89**	**9**	LR		LR	19 45 13.4	
	comp=Z,380nm,20.6s,baz=169,slow=33							
H11N2	**WAKE ISLAND Hy**	**26.97**	**126**	T		T	20 05 39.0	
	baz=310,slow=76,SNR=4.5							
H11N1	**WAKE ISLAND Hy**	**26.98**	**126**	T		T	20 05 38.9	
	baz=310,slow=76,SNR=6.8							
H11N3	**WAKE ISLAND Hy**	**26.99**	**126**	T		T	20 05 39.4	
	baz=310,slow=76,SNR=4.6							
H11S1	**WAKE ISLAND Hy**	**27.76**	**129**	T		T	20 06 28.3	
	baz=312,slow=75,SNR=12							
H11S3	**WAKE ISLAND Hy**	**27.76**	**129**	T		T	20 06 32.7	
	baz=312,slow=75,SNR=7.4							
H11S2	**WAKE ISLAND Hy**	**27.77**	**129**	T		T	20 06 29.5	
	baz=312,slow=75,SNR=8.1							
WRA	**Warramunga Arr**	**58.50**	**191**	P		P	19 43 09.6	+1.3
	1.3nm,0.7s,baz=11,slow=7.3,SNR=13							
TXAR	**Lajitas Array**	**87.74**	**54**	P		**P**	**19 46 00.6**	**-0.6**
	0.3nm,0.5s,baz=282,slow=5.4,SNR=3.5							

*ISCJB **25** 19:34:23.7±0.8,36˚.87N±0˚.05×71˚.2E±0˚.1,h100km, mb3.1/2, Error ellipse: s-maj=12.6km s-min=5.7km az=163.7*

*IDC **25** 19:34:28.1±7.0,37˚.20N×70˚.93E,h96km±48km,mb3.1/2, mb1 3.1/5,mb1mx2.8/50,mbtmp3.3/5, Error ellipse: s-maj=126.2km s-min=34.2km az=136.0*

*NNC **25** 19:34:30.7±4.6,37˚.53N×70˚.74E,h12km±129km,mb3.5, mpv3.1, Error ellipse: s-maj=127.1km s-min=18.1km az=16.0*

ISC 25 19:34:24.2±1.2,36˚.89N±0˚.07×71˚.0E±0˚.1,h100km,n16, σ2s38/21,2C-6D,Afghanistan-Tajikistan border region

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
					Op	ISC	h m s	ISC
SFK	**Sufi-Kurgan**	**3.68**	**31**	⇓P		**Pn**	**19 35 21.9**	**+2.7**
	1.2nm,0.3s							
SFK				⇑S		**Sn**	**19 36 02.8**	**+1.0**
	4.8nm,0.2s							
MNAS	**Manas**	**5.71**	**11**	⇓P		**Pn**	**19 35 47.1**	**+0.5**
	1.3nm,0.5s							
MNAS				⇑S		**Sn**	**19 36 47.0**	**-3.7**
	2.9nm,0.5s							
THN	**Thein Dam**	**5.89**	**138**	*e*P		**Pn**	**19 35 49.1**	**+0.1**
THN				*e*S		**Sn**	**19 36 55.8**	**+0.6**
KK31	**Karatay Array**	**6.22**	**357**	P		**Pn**	**19 35 54.6**	**+1.3**
	1.3nm,0.2s,baz=171,slow=12,SNR=92							
KK31				⇓S		**Sn**	**19 36 59.1**	**-4.0**
	1.2nm,0.3s,baz=188,slow=22,SNR=3.9							
AAK	**Ala-Archa**	**6.33**	**24**	P		**Pn**	**19 35 57.5**	**+2.4**
	0.7nm,0.3s,baz=158,slow=7.2,SNR=5.1							
AAK				S		**Sn**	**19 37 03.8**	**-2.2**
	0.5nm,0.3s,baz=340,slow=19,SNR=4.1							
AAK	**Ala-Archa**	**6.33**	**24**	⇓P		**Pn**	**19 35 58.2**	**+3.1**
	0.7nm,0.4s							
AAK				⇓S		**Sn**	**19 37 04.5**	**-1.5**
	4.0nm,0.9s							
MKAR	**Makanchi Array**	**12.97**	**37**	P		**Pn**	**19 37 25.0**	**+0.4**
	0.0nm,0.3s,baz=218,slow=15,SNR=2.8							
PYUN	**Piuthan**	**13.37**	**128**	*e*P		**Pn**	**19 37 27.9**	**-2.2**
GKN	**Gorkha**	**14.51**	**124**	*e*P		**Pn**	**19 37 42.3**	**-2.4**
AB31	**Akbulak array**	**14.75**	**330**	⇓P		**Pn**	**19 37 47.7**	**+0.2**
	0.2nm,0.2s,baz=138,slow=14,SNR=22							
KKN	**Kakani**	**15.07**	**123**	*e*P		**Pn**	**19 37 49.5**	**-2.5**
DMN	**Daman**	**15.08**	**124**	*e*P		**Pn**	**19 37 50.3**	**-1.8**
PKIN	**Phulchoki**	**15.29**	**123**	*e*P		**Pn**	**19 37 53.1**	**-1.7**
ZALV	**Zalesovo Beam**	**19.56**	**25**	P		**Pn**	**19 38 44.5**	**-1.6**
	0.3nm,0.3s,baz=209,slow=9.0,SNR=5.0							
TORD	**Torodi Ar. Bea**	**65.74**	**268**	P		P	19 45 02.3	+3.7
	0.2nm,0.5s,baz=55,slow=7.0,SNR=3.2							
YKA	**Yellowknife Ar**	**80.86**	**3**	P		**P**	**19 46 30.2**	**+3.6**
	0.1nm,0.4s,baz=353,slow=5.5,SNR=5.4							

*DDA **25** 19:36:30.5,37˚.07N×27˚.58E,h7km,Md2.7*

*ISK **25** 19:36:30.0,37˚.09N×27˚.57E,h5km,MD2.6*

*ISCJB **25** 19:36:31.2±0.6,37˚.08N±0˚.03×27˚.59E±0˚.05,h1km±19km, Error ellipse: s-maj=7.7km s-min=4.6km az=32.6*

*CSEM **25** 19:36:31.3±0.1,37˚.08N×27˚.58E,h2km,MD2.7, Error ellipse: s-maj=3.6km s-min=3.0km az=123.0*

ISC 25 19:36:31.3±1.0,37˚.08N±0˚.03×27˚.56E±0˚.03,h7km±9km, n19,σ0s36/28,Turkey

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
					Op	ISC	h m s	ISC
BDRM	**Kayabasi**	**0.10**	**259**	*i*P		**Pg**	**19 36 33.3**	**-0.2**
BDRM				*i*S		**Sg**	**19 36 35.2**	**+0.2**
BDRM	**Kayabasi**	**0.10**	**259**	P		**Pg**	**19 36 33

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TAHT	**Tahtakopru-Hat**	**0.37**	**224**	*e*PG	**Pg**	**19 59 46.2**	**-0.1**
TAHT				*e*SG	**Sg**	**19 59 51.2**	**+0.1**
TAHT	**Tahtakopru-Hat**	**0.37**	**224**	*e*Pg	**Pg**	**19 59 46.2**	**-0.1**
TAHT				*e*Sg	**Sg**	**19 59 51.2**	**+0.1**
KUZU	**Kuzuini**	**0.48**	**74**	*i* P	**Pg**	**19 59 48.9**	**+0.6**
KUZU				*i* S	**Sb**	**19 59 58.1**	**+0.5**
KUZU	**Kuzuini**	**0.48**	**74**	P	**Pg**	**19 59 48.9**	**+0.6**
KUZU				S	**Sb**	**19 59 58.1**	**+0.5**
KAMA	**Osmaniye**	**0.56**	**13**	*i* P	**Pg**	**19 59 50.5**	**+0.5**
KAMA				*i* S	**Sg**	**19 59 57.2**	**-0.1**
YAYL	**Yayladag**	**0.68**	**208**	*i* P	**Pg**	**19 59 51.9**	**-0.4**
YAYL	**Yayladag**	**0.68**	**208**	P	**Pg**	**19 59 51.9**	**-0.4**
CEYT	**Ceyhan**	**0.71**	**302**	*e*PG	**Pb**	**19 59 54.0**	**-0.1**
CEYT				*e*SG	**Sb**	**20 00 04.2**	**0.0**
CEYT	**Ceyhan**	**0.71**	**302**	*e*Pg	**Pb**	**19 59 54.0**	**-0.1**
CEYT				*e*Sg	**Sb**	**20 00 04.2**	**0.0**
YURE	**YUREGIR**	**0.72**	**285**	*i* P	**Pg**	**19 59 53.3**	**+0.2**
YURE	**YUREGIR**	**0.72**	**285**	P	**Pg**	**19 59 53.3**	**+0.2**
HCB	**Kahramanmara¯**	**0.77**	**25**	*i* P	**Pg**	**19 59 54.0**	**0.0**
GAZ	**Gaziantep**	**0.78**	**47**	*e*PG	**Pn**	**19 59 56.4**	**-0.6**
GAZ	**Gaziantep**	**0.78**	**47**	*e*Pg	**Pn**	**19 59 56.4**	**-0.6**
KMRS	**Kahramanmaras**	**0.92**	**20**	*e*PG	**Pn**	**19 59 58.6**	**-0.3**
KMRS	**Kahramanmaras**	**0.92**	**20**	*e*Pg	**Pn**	**19 59 58.6**	**-0.3**
GZT	**Gaziantep**	**1.11**	**50**	*i* P	**Pg**	**20 00 00.3**	**-0.2**
GZT				*i* S	**Sn**	**20 00 18.1**	**+0.6**
KARA	**Karaisali**	**1.32**	**299**	*e*PN	**Pb**	**20 00 05.2**	**+0.7**
KARA	**Karaisali**	**1.32**	**299**	*e*Pn	**Pb**	**20 00 05.2**	**+0.7**
DED	**Mersin**	**1.41**	**284**	*i* P	**Pn**	**20 00 05.7**	**+0.1**
DED				*i* S	**Sb**	**20 00 23.9**	**-0.3**
MERS	**Mersin**	**1.61**	**279**	*e*PN	**Pb**	**20 00 09.1**	**-0.4**
MERS	**Mersin**	**1.61**	**279**	*e*Pn	**Pb**	**20 00 09.1**	**-0.4**
URFA	**Urfa**	**2.02**	**66**	*e*PN	**Pb**	**20 00 16.1**	**-0.4**
URFA	**Urfa**	**2.02**	**66**	*e*Pn	**Pb**	**20 00 16.1**	**-0.4**
KERG	**Konya-Eregli**	**2.06**	**293**	*i* P	**Pn**	**20 00 14.3**	**-0.3**
KERG				*i* S	**Sb**	**20 00 42.7**	**-0.4**
KERG	**Konya-Eregli**	**2.06**	**293**	P	**Pn**	**20 00 14.3**	**-0.3**
KERG				S	**Sb**	**20 00 42.7**	**-0.4**
DARE	**Darende-Malaty**	**2.08**	**22**	*e*PN	**Pb**	**20 00 17.4**	**-0.1**
DARE	**Darende-Malaty**	**2.08**	**22**	*e*Pn	**Pb**	**20 00 17.4**	**-0.1**
BNN	**Bunyan**	**2.27**	**347**	*e*PN	**Pb**	**20 00 19.9**	**-0.9**
BNN	**Bunyan**	**2.27**	**347**	*e*Pn	**Pb**	**20 00 19.9**	**-0.9**
IKL	**Isikli**	**2.31**	**261**	*e*PN	**Pn**	**20 00 18.8**	**+0.8**
IKL	**Isikli**	**2.31**	**261**	*e*Pn	**Pn**	**20 00 18.8**	**+0.8**

NIED ***25*** *20:11:00,36°.30N×141°.30E,h41km,Mw4.0 Best double couple: M₀1.27000×10¹⁵ NP1:φ₀230.00000°,δ37.00000°, λ175.00000°. NP2:φ₀324.00000°,δ87.00000°,λ53.00000°.*
IDC ***25*** *20:11:27.3±0.6,36°.24N×141°.37E,h0km,mb3.8/15, mb1 4.0/18,mb1mx3.8/63,mbtmp3.8/18,ML4.1/3,MS2.7/7, Ms1 2.7/7,ms1mx2.6/38,Error ellipse: s-maj=16.6km s-min=14.3km az=106.0*
NEIC ***25*** *20:11:31.8±2.5,36°.21N×141°.29E,h29km±18km,mb4.2/2, Error ellipse: s-maj=9.1km s-min=7.4km az=108.0*
JMA ***25*** *20:11:32.0±0.1,36°.32N×141°.26E,h49km±2km,M4.1*
JMA Felt I J1.

ISC 25 20:11:28.9±1.9,36°.29N±0°.04×141°.35E±0°.06,h9km±12km, n48,σ0°87/44,mb3.9/17,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHO	**Hitachi**	**0.71**	**297**	P	**Pn**	**20 11 44.7**	**-0.3**
JHO				S	**Sb**	**20 11 53.1**	**-0.1**
CHOJ	**Chosi**	**0.71**	**215**	P	**Pn**	**20 11 45.7**	**+0.7**
CHOJ				S	**Sn**	**20 11 56.5**	**+0.4**
ONAJ	**Iwakimizuishiy**	**0.92**	**331**	P	**Pb**	**20 11 47.6**	**+0.5**
JYT	**Yasato**	**0.94**	**266**	P	**Pn**	**20 11 48.1**	**-0.1**
JFK	**Kawauchi**	**1.14**	**340**	P	**Pg**	**20 11 50.7**	**-0.1**
JFT	**Otama**	**1.47**	**327**	P	**Pb**	**20 11 56.6**	**+0.2**
JFT				*e*S	**Sn**	**20 12 14.1**	**-0.8**
JAG	**Ashikaga**	**1.54**	**276**	P	**Pn**	**20 11 56.6**	**+0.1**
JMM	**Marumori**	**1.63**	**344**	P	**Pn**	**20 11 58.1**	**+0.3**
JMM				S	**Sn**	**20 12 17.3**	**-1.6**
JKT	**Katashina**	**1.76**	**286**	P	**Pb**	**20 12 00.5**	**-0.9**
JKT				S	**Sn**	**20 12 21.5**	**-0.6**
MJAR	**Matsushiro Arr**	**2.55**	**277**	Pn	**Pn**	**20 12 09.8**	**-0.5**
	34nm,0.3s,baz=265,slow=18,SNR=170						
MJAR				Sn	**Sn**	**20 12 41.9**	**+0.4**
	22nm,0.3s,baz=178,slow=32,SNR=7.1						
MJAR				LR	LR	20 13 17.6	
	comp=Z,177nm,19.6s,baz=90,slow=44						
MAJO	**Matsushiro**	**2.55**	**277**	*e*Pn	**Pn**	**20 12 11.9**	**+1.5**
MAT	**Matsushiro**	**2.55**	**277**	P	**Pn**	**20 12 11.5**	**+1.1**
MAT				S	**Sn**	**20 12 43.2**	**+1.7**
JHJ	**Hachijo jima 2**	**3.42**	**203**	Pn	**Pn**	**20 12 24.1**	**+1.8**
	113nm,0.3s,baz=330,slow=19,SNR=50						
JHJ				LR	LR	20 13 01.2	
	comp=Z,40nm,20.0s,baz=68,slow=28						
JHJ				Sn	**Sn**	**20 13 02.9**	**0.0**
	65nm,0.3s,baz=113,slow=21,SNR=4.5						
ASAJ	**Asahikawa**	**7.87**	**7**	Pn	**Pn**	**20 13 24.9**	**+1.4**
	1.5nm,0.3s,baz=217,slow=13,SNR=13						
ASAJ				LR	LR	20 16 38.7	
	comp=Z,88nm,18.5s,baz=186,slow=39						
JNU	**Nakatsue**	**9.19**	**253**	LR	LR	20 17 20.7	
	comp=Z,88nm,21.4s,baz=314,slow=38						
CBIJ	**Chichi jima**	**9.20**	**175**	Pn	**Pn**	**20 13 40.8**	**-0.9**
JCJ	**Chichijima**	**9.20**	**175**	Pn	**Pn**	**20 13 40.8**	**-0.9**
	12nm,0.3s,baz=285,slow=22,SNR=10						
USRK	**Ussuriysk Ar.**	**10.65**	**321**	Pn	Pn	20 14 07.1	+5.5
	0.2nm,0.3s,baz=143,slow=42,SNR=2.8						
KSRS	**Korea Array**	**10.82**	**280**	Pn	Pn	20 14 09.5	+5.6
	0.2nm,0.3s,baz=100,slow=14,SNR=5.3						
KSRS				LR	LR	20 17 51.7	
	comp=Z,49nm,20.0s,baz=70,slow=35						
KSAR	**Wonju Array Be**	**10.85**	**280**	Pn	Pn	20 14 09.5	+5.2
PETK	**Petropavlovsk-**	**20.35**	**29**	P	Pn	20 16 08.7	+1.3
	2.9nm,0.6s,baz=222,slow=15,SNR=2.6						
PETK				LR	LR	20 25 00.5	
	comp=Z,17nm,19.3s,baz=174,slow=40						
MA2	**Magadan**	**24.09**	**12**	LR	LR	20 26 02.1	
	comp=Z,27nm,20.1s,baz=240,slow=36						
ENH	**Enshi**	**27.23**	**267**	*e*P	**P**	**20 17 12.1**	**-1.1**
H11N2	**WAKE ISLAND Hy**	**27.82**	**119**	T	T	20 46 44.2	
	baz=312,slow=75,SNR=65						
H11N1	**WAKE ISLAND Hy**	**27.82**	**120**	T	T	20 46 40.9	
	baz=312,slow=75,SNR=66						
H11N3	**WAKE ISLAND Hy**	**27.84**	**119**	T	T	20 46 45.0	
	baz=312,slow=75,SNR=52						
SONM	**Songino Array**	**28.17**	**305**	P	**P**	**20 17 21.6**	**+0.1**
	1.0nm,0.6s,baz=102,slow=12,SNR=2.7						
H11S1	**WAKE ISLAND Hy**	**28.50**	**122**	T	T	20 47 35.2	
	baz=314,slow=75,SNR=103						
H11S3	**WAKE ISLAND Hy**	**28.50**	**122**	T	T	20 47 26.9	
	baz=314,slow=75,SNR=85						
H11S2	**WAKE ISLAND Hy**	**28.52**	**122**	T	T	20 47 36.4	
	baz=314,slow=75,SNR=70						
CMAR	**Chiang Mai Arr**	**41.27**	**256**	P	**P**	**20 19 13.8**	**-0.7**
	0.4nm,0.9s,baz=64,slow=6.3,SNR=3.4						
ZALV	**Zalesovo Beam**	**42.38**	**313**	P	**P**	**20 19 23.2**	**0.0**
	0.6nm,0.5s,baz=99,slow=9.6,SNR=3.6						
MKAR	**Makanchi Array**	**44.48**	**303**	P	**P**	**20 19 41.1**	**+0.8**
	0.2nm,0.2s,baz=91,slow=8.5,SNR=5.2						
KURK	**Kurchatov**	**46.35**	**309**	*e*P	**P**	**20 19 54.0**	**-1.1**
	5.6nm,0.8s						
KTH	**Kantishna Hill**	**48.39**	**34**	*e*P	**P**	**20 20 11.7**	**+0.9**
ILAR	**Eielson Array**	**50.15**	**32**	P	**P**	**20 20 24.7**	**+0.6**
	1.5nm,0.6s,baz=270,slow=6.8,SNR=22						
INK	**Inuvik**	**55.07**	**27**	P	**P**	**20 21 01.6**	**+1.1**
	0.5nm,0.4s,baz=279,slow=6.7,SNR=6.3						
WRAB	**Tennant Creek**	**56.31**	**188**	*e*P	**P**	**20 21 09.6**	**-0.4**
WRA	**Warramunga Arr**	**56.32**	**188**	P	**P**	**20 21 09.3**	**-0.8**
	2.0nm,0.6s,baz=5.2,slow=7.1,SNR=23						
ABKAR	**Akbulak array**	**58.38**	**310**	*e*P	**P**	**20 21 25.0**	**+0.6**
	0.4nm,0.4s						
ASAR	**Alice Springs**	**60.05**	**188**	P	**P**	**20 21 36.0**	**-0.2**
	1.0nm,0.8s,baz=15,slow=6.6,SNR=12						
YKA	**Yellowknife Ar**	**64.47**	**30**	P	**P**	**20 22 05.1**	**-0.2**
	0.3nm,0.8s,baz=296,slow=6.5,SNR=5.0						
STKA	**Stephens Creek**	**67.81**	**180**	P	**P**	**20 22 27.0**	**0.0**
	0.8nm,0.8s,baz=338,slow=6.6,SNR=2.6						
FINES	**FINESS Array B**	**69.45**	**332**	P	**P**	**20 22 36.5**	**-0.5**
	1.1nm,1.0s,baz=120,slow=29,SNR=2.3						
HFS	**Hagfors**	**74.74**	**336**	P	**P**	**20 23 09.7**	**+1.0**
	0.9nm,0.8s,baz=70,slow=8.5,SNR=2.6						
NVAR	**Mina Array Bea**	**75.47**	**53**	P	**P**	**20 23 12.1**	**-1.6**
	1.0nm,0.3s,baz=63,slow=24,SNR=3.4						
PDAR	**Pinedale Array**	**78.22**	**45**	P	**P**	**20 23 29.5**	**+0.4**
	0.3nm,0.5s,baz=222,slow=4.0,SNR=2.9						
TXAR	**Lajitas Array**	**90.61**	**52**	P	**P**	**20 24 32.5**	**+0.5**
	0.6nm,0.8s,baz=128,slow=45,SNR=3.4						

NIED ***25*** *20:24:00,37°.10N×141°.10E,h26km,Mw3.5 Best double couple: M₀2.30000×10¹⁴ NP1:φ₀83.00000°,δ39.00000°, λ-42.00000°. NP2:φ₀208.00000°,δ65.00000°, λ-121.00000°.*
ISCJB ***25*** *20:24:36.0±1.2,37°.06N±0°.04×141°.31E±0°.06,h15km±8km, mb3.5/8,Error ellipse: s-maj=9.0km s-min=5.8km az=21.9*
IDC ***25*** *20:24:35.5±0.8,37°.05N×141°.33E,h0km,mb3.5/8, mb1 3.6/11,mb1mx3.5/37,mbtmp3.5/11,ML3.3/3,MS2.6/1, Ms1 2.6/1,ms1mx2.2/32,Error ellipse: s-maj=22.0km s-min=15.9km az=114.0*
JMA ***25*** *20:24:38.8±0.1,37°.09N×141°.09E,h32km±1km,M3.9*
JMA Felt III J1.

ISC 25 20:24:37.3±1.5,37°.09N±0°.04×141°.18E±0°.05,h9km±9km, n27,σ0°80/29,mb3.5/8,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.30**	**272**	P	**Pb**	**20 24 45.5**	**+0.7**
ONAJ				S	**Sb**	**20 24 50.0**	**+0.1**
JFK	**Kawauchi**	**0.36**	**319**	P	**Pb**	**20 24 46.5**	**+0.6**
JFK				S	**Sb**	**20 24 51.7**	**0.0**
JHO	**Hitachi**	**0.68**	**226**	P	**Pg**	**20 24 50.9**	**+0.5**
JHO				S	**Sg**	**20 24 59.0**	**-0.4**
JFT	**Otama**	**0.79**	**303**	P	**Pb**	**20 24 53.4**	**+0.2**
JFT				S	**Sb**	**20 25 03.5**	**-0.5**
JMM	**Marumori**	**0.83**	**339**	P	**Pg**	**20 24 53.4**	**+0.1**
JMM				S	**Sg**	**20 25 03.9**	**-0.2**
JSB	**Shiboa**	**1.01**	**263**	S	**Sg**	**20 25 09.9**	**0.0**
JFY	**Yanaizu**	**1.22**	**285**	P	**Pg**	**20 24 59.7**	**-0.9**
JFY				S	**Sg**	**20 25 15.3**	**-1.1**
MJAR	**Matsushiro Arr**	**2.44**	**258**	Pn	**Pn**	**20 25 17.5**	**+0.2**
	4.2nm,0.3s,baz=81,slow=16,SNR=22						
MJAR				Sn	**Sb**	**20 25 50.9**	**-0.6**
	12nm,0.3s,baz=116,slow=35,SNR=7.8						
MAT	**Matsushiro**	**2.44**	**258**	P	**Pn**	**20 25 17.7**	**+0.4**
MAT				S	**Sn**	**20 25 49.3**	**+2.0**
JHJ	**Hachijo jima 2**	**4.12**	**196**	Pn	**Pn**	**20 25 41.1**	**+0.7**
	10nm,0.3s,baz=332,slow=19,SNR=10						
JHJ				Sn	**Sn**	**20 26 27.7**	**-1.0**
	11nm,0.3s,baz=252,slow=24,SNR=5.6						
ASAJ	**Asahikawa**	**7.10**	**8**	Pn	**Pn**	**20 26 21.9**	**+0.7**
	0.5nm,0.3s,baz=215,slow=14,SNR=4.1						
KSRS	**Korea Array**	**10.57**	**276**	LR	LR	20 31 27.2	
	comp=Z,32nm,18.7s,baz=355,slow=38						
H11N2	**WAKE ISLAND Hy**	**28.34**	**121**	T	T	21 00 11.3	
	baz=314,slow=75,SNR=102						
H11N1	**WAKE ISLAND Hy**	**28.35**	**121**	T	T	21 00 08.0	
	baz=314,slow=75,SNR=100						
H11N3	**WAKE ISLAND Hy**	**28.36**	**121**	T	T	21 00 13.9	
	baz=314,slow=75,SNR=102						
H11S1	**WAKE ISLAND Hy**	**29.05**	**123**	T	T	21 01 06.4	
	baz=315,slow=76,SNR=47						
H11S3	**WAKE ISLAND Hy**	**29.05**	**123**	T	T	21 00 59.0	
	baz=315,slow=76,SNR=38						
H11S2	**WAKE ISLAND Hy**	**29.07**	**123**	T	T	21 01 11.2	
	baz=315,slow=76,SNR=33						
ZALV	**Zalesovo Beam**	**41.73**	**312**	P	**P**	**20 32 26.3**	**-0.1**
	0.4nm,0.5s,baz=106,slow=9.6,SNR=2.3						
MKAR	**Makanchi Array**	**43.93**	**302**	P	**P**	**20 32 45.4**	**+1.1**
	0.2nm,0.2s,baz=83,slow=10.0,SNR=3.1						
ILAR	**Eielson Array**	**49.55**	**32**	P	**P**	**20 33 27.7**	**-0.3**
	0.6nm,0.7s,baz=274,slow=6.7,SNR=7.6						
WRA	**Warramunga Arr**	**57.09**	**188**	P	**P**	**20 34 22.4**	**-1.5**
	0.4nm,0.6s,baz=5.0,slow=7.5,SNR=6.5						
ASAR	**Alice Springs**	**60.82**	**188**	P	**P**	**20 34 49.8**	**0.0**
	0.2nm,0.8s,baz=12,slow=6.6,SNR=3.1						
YKA	**Yellowknife Ar**	**63.85**	**30**	P	**P**	**20 35 08.0**	**-1.6**
	0.2nm,0.7s,baz=308,slow=6.6,SNR=4.3						
FINES	**FINESS Array B**	**68.67**	**332**	P	**P**	**20 35 41.0**	**+0.4**
	1.2nm,1.0s,baz=198,slow=36,SNR=2.4						
PDAR	**Pinedale Array**	**77.76**	**45**	P	**P**	**20 36 35.0**	**+0.1**
	0.2nm,0.6s,baz=46,slow=2.6,SNR=3.4						
LPAZ	**La Paz**	**146.83**	**59**	PKPbc	**PKPdf**	**20 44 19.5**	**+0.3**
	0.7nm,0.5s,baz=25,slow=6.5,SNR=3.5						

ISCJB ***25*** *20:27:06.8±0.7,38°.59N±0°.03×31°.22E±0°.05,h5km±12km, Error ellipse: s-maj=6.9km s-min=4.9km az=29.4*
DDA ***25*** *20:27:06.4,38°.62N×31°.20E,h7km,Md2.6*
CSEM ***25*** *20:27:07.3±0.1,38°.59N×31°.21E,h10km,MD2.7,Error ellipse: s-maj=3.3km s-min=2.3km az=27.0*
ISK ***25*** *20:27:10.1,38°.70N×31°.44E,h30km,MD2.7*

ISC 25 20:27:06.8±1.1,38°.60N±0°.03×31°.20E±0°.03,h8km±13km, n15,σ0°28/30,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KIZT	**Kizilcal**	**0.60**	**62**	*e*PG	**Pb**	**20 27 19.5**	**-0.2**
KIZT				*e*SG	**Sg**	**20 27 26.3**	**0.0**
KIZT	**Kizilcal**	**0.60**	**62**	*e*Pg	**Pb**	**20 27 19.5**	**-0.2**
KIZT				*e*Sg	**Sg**	**20 27 26.3**	**0.0**
BAGO	**Egridir - ISPA**	**0.69**	**208**	*i* P	**Pg**	**20 27 19.1**	**-0.2**
BAGO				*i* S	**Sb**	**20 27 30.4**	**-0.3**
KDHN	**Kadinhani**	**0.72**	**96**	*i* P	**Pg**	**20 27 20.6**	**-0.1**
KDHN				*i* S	**Sb**	**20 27 31.1**	**-0.7**
KDHN	**Kadinhani**	**0.72**	**96**	P	**Pg**	**20 27 20.6**	**-0.1**
KDHN				S	**Sb**	**20 27 31.1**	**-0.7**
SVRH	**Sivrihisar-ESK**	**0.89**	**16**	*e*PG	**Pb**	**20 27 24.8**	**+0.3**
SVRH				*e*SG	**Sg**	**20 27 35.6**	**+0.2**
SVRH	**Sivrihisar-ESK**	**0.89**	**16**	*e*Pg	**Pb**	**20 27 24.8**	**+0.3**
SVRH				*e*Sg	**Sg**	**20 27 35.6**	**+0.2**
LADK	**Ladik-KONYA**	**1.00**	**113**	*e*PG	**Pb**	**20 27 26.8**	**+0.4**
LADK				*e*SG	**Sg**	**20 27 38.9**	**+0.1**
LADK	**Ladik-KONYA**	**1.00**	**113**	*e*Pg	**Pb**	**20 27 26.8**	**+0.4**
LADK				*e*Sg	**Sg**	**20 27 38.9**	**+0.1**
KONT	**Konya--Tatoy**	**1.12**	**125**	*e*PG	**Pn**	**20 27 29.1**	**+0.3**
KONT				*e*SG	**Sg**	**20 27 42.9**	**+0.1**
KONT	**Konya--Tatoy**	**1.12**	**125**	*e*Pg	**Pn**	**20 27 29.1**	**+0.3**
KONT				*e*Sg	**Sg**	**20 27 42.9**	**+0.1**
KHAL	**Karahalli**	**1.36**	**261**	*i* P	**Pn**	**20 27 32.4**	**+0.2**
KHAL				*i* S	**Sg**	**20 27 50.5**	**-0.1**
KHAL	**Karahalli**	**1.36**	**261**	P	**Pn**	**20 27 32.4**	**+0.2**
KHAL				S	**Sg**	**20 27 50.5**	**-0.1**
BORA	**Eskisehir**	**1.41**	**336**	*i* P	**Pn**	**20 27 33.0**	**+0.1**
BORA				*i* S	**Sg**	**20 27 52.1**	**0.0**
BORA	**Eskisehir**	**1.41**	**336**	P	**Pn**	**20 27 33.0**	**+0.1**
BORA				S	**Sg**	**20 27 52.1**	**0.0**

ISCJB ***25*** *20:37:51.5±1.0,26°.8N±0°.1×144°.19E±0°.10,h10km, mb3.4/7,Error ellipse: s-maj=18.7km s-min=12.4km az=178.0*
IDC ***25*** *20:37:51.7±1.3,26°.78N×144°.21E,h0km,mb3.5/7, mb1 3.7/8,mb1mx3.5/36,mbtmp3.5/8,ML3.8/1,Error ellipse: s-maj=28.9km s-min=25.3km az=112.0*

ISC 25 20:37:53.5±1.2,26.8N±0°.1×144°.1E±0°.1,h10km,n9, σ0°47/10,mb3.6/7,Bonin Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JCJ	**Chichijima**	**1.75**	**280**	Pn	**Pn**	**20 38 23.4**	**-0.5**
	15nm,0.3s,baz=272,slow=23,SNR=31						
JCJ				Sn	**Sn**	**20 38 46.0**	**-0.3**
MJAR	**Matsushiro Arr**	**10.94**	**334**	Pn	**Pn**	**20 40 30.3**	**+0.1**
	0.7nm,0.3s,baz=143,slow=14,SNR=4.9						
CMAR	**Chiang Mai Arr**	**42.34**	**268**	P	**P**	**20 45 48.4**	**+0.4**
	0.2nm,0.4s,baz=2.4,slow=4.6,SNR=4.2						
TIXI	**Tiksi**	**45.70**	**353**	P	**P**	**20 46 13.9**	**-0.3**
	0.4nm,0.5s,baz=122,slow=4.2						
WRA	**Warramunga Arr**	**47.41**	**193**	P	**P**	**20 46 28.2**	**-0.1**
	0.5nm,0.6s,baz=18,slow=8.8,SNR=5.8						
MKAR	**Makanchi Array**	**52.00**	**310**	P	**P**	**20 47 03.8**	**+0.7**
	0.1nm,0.3s,baz=81,slow=7.5,SNR=3.8						
KURBB	**Kurchatov Arra**	**54.48**	**315**	P	**P**	**20 47 21.2**	**0.0**
	0.3nm,0.5s,baz=90,slow=7.9,SNR=7.7						
BVAR	**Borovoye Array**	**59.43**	**318**	P	**P**	**20 47 56.7**	**+0.4**
	0.5nm,0.6s,baz=112,slow=9.5,SNR=2.8						
YKA	**Yellowknife Ar**	**71.59**	**29**	P	**P**	**20 49 14.2**	**-0.5**
	0.2nm,0.5s,baz=295,slow=6.4,SNR=5.0						

NIED ***25*** *20:51:00,35°.90N×141°.10E,h8km,Mw3.4 Best double couple: M₀1.47000×10¹⁴ NP1:φ₀197.00000°,δ36.00000°, λ-113.00000°. NP2:φ₀44.00000°,δ57.00000°, λ-74.00000°.*
JMA ***25*** *20:51:13.7±0.2,35°.92N×141°.12E,h21km±2km,M3.5*
JMA Felt I J1.

IDC ***25*** *20:51:15.3±1.2,35°.89N×140°.60E,h0km,mb3.3/5, mb1 3.5/6,mb1mx3.3/44,mbtmp3.3/6,ML3.0/1,MS2.7/3, Ms1 2.7/3,ms1mx2.3/19,Error ellipse: s-maj=30.9km s-min=21.5km az=55.0*

ISC 25 20:51:15.0±1.9,35°.99N±0°.07×140°.74E±0°.08,h1km±15km, n19,σ1°35/15,mb3.5/5,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.30**	**162**	P	**Pg**	**20 51 20.3**	**-0.5**
CHOJ				S	**Sg**	**20 51 25.1**	**+0.4**
JYT	**Yasato**	**0.50**	**298**	P	**Pn**	**20 51 28.5**	**-0.8**
JYT				S	**Sn**	**20 51 39.3**	**+0.6**
JHO	**Hitachi**	**0.63**	**347**	P	**Pb**	**20 51 28.7**	**-0.2**
JHO				S	**Sn**	**20 51 40.7**	**-1.2**
MJAR	**Matsushiro Arr**	**2.12**	**286**	Pn	**Pn**	**20 51 52.1**	**+0.4**
	5.9nm,0.3s,baz=103,slow=9.1,SNR=50						
MJAR				Sn	**Sn**	**20 52 16.0**	**-2.6**
	3.3nm,0.3s,baz=103,slow=15,SNR=6.4						
MAT	**Matsushiro**	**2.12**	**286**	P	**Pn**	**20 51 52.6**	**+0.9**
MAT				S	**Sb**	**20 52 22.8**	**+1.6**
JNU	**Nakatsue**	**8.63**	**253**	LR	LR	20 56 45.5	
	comp=Z,28nm,20.2s,baz=118,slow=39						
PETK	**Petropavlovsk-**	**20.86**	**30**	LR	LR	21 04 40.6	
	comp=Z,12nm,20.7s,baz=57,slow=38						
H11N2	**WAKE ISLAND Hy**	**28.11**	**118**	T	T	21 26 01.6	
	baz=311,slow=75,SNR=74						
H11N1	**WAKE ISLAND Hy**	**28.11**	**118**	T	T	21 26 03.2	
	baz=311,slow=75,SNR=74						
H11N3	**WAKE ISLAND Hy**	**28.12**	**118**	T	T	21 25 58.5	
	baz=311,slow=75,SNR=73						
H11S1	**WAKE ISLAND Hy**	**28.77**	**120**	T	T	21 26 51.0	
	baz=313,slow=76,SNR=31						
H11S3	**WAKE ISLAND Hy**	**28.77**	**120**	T	T	21 26 53.7	
	baz=313,slow=76,SNR=30						
H11S2	**WAKE ISLAND Hy**	**28.79**	**120**	T	T	21 26 53.1	
	baz=313,slow=76,SNR=28						
MKAR	**Makanchi Array**	**44.22**	**303**	P	**P**	**20 59 26.0**	**+0.3**
	0.2nm,0.3s,baz=95,slow=9.8,SNR=5.5						
KURBB	**Kurchatov Arra**	**46.22**	**309**	P	**P**	**20 59 40.4**	**-1.1**
	0.3nm,0.5s,baz=81,slow=7.4,SNR=4.7						
INK	**Inuvik**	**55.56**	**27**	LR	LR	21 27 30.0	
	comp=Z,19nm,18.0s,baz=329,slow=39						
WRA	**Warramunga Arr**	**55.96**	**187**	P	**P**	**21 00 55.2**	**+0.3**
	0.4nm,0.7s,baz=4.2,slow=7.4,SNR=5.6						
ASAR	**Alice Springs**	**59.69**	**187**	P	**P**	**21 01 19.8**	**-1.3**
	0.2nm,0.7s,baz=342,slow=12,SNR=3.0						
YKA	**Yellowknife Ar**	**64.98**	**30**	P	**P**	**21 01 57.9**	**+1.8**
	0.1nm,0.5s,baz=295,slow=5.2,SNR=3.8						

DDA ***25*** *21:02:27.9,38°.98N×37°.88E,h13km,Md3.2*
ISK ***25*** *21:02:27.8,38°.96N×37°.90E,h4km,MD3.6*
CSEM ***25*** *21:02:28.5±0.1,38°.95N×37°.88E,h2km,MD3.2,Error ellipse: s-maj=3.1km s-min=2.8km az=153.0*

ISC 25 21:02:28.5±1.1,38°.96N±0°.02×37°.90E±0°.02,h1km±11km, n83,σ0°61/115,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CUKAN	**kangal_SIVAS**	**0.49**	**317**	*i* P	**Pg**	**21 02 37.2**	**-0.6**
CUKAN				*i* S	**Sg**	**21 02 43.9**	**-0.3**
CUKAN	**kangal_SIVAS**	**0.49**	**317**	P	**Pg**	**21 02 37.2**	**-0.6**
CUKAN				S	**Sg**	**21 02 43.9**	**-0.3**
DARE	**Darende-Malaty**	**0.51**	**220**	*e*PG	**Pg**	**21 02 38.0**	**-0.2**
DARE				*e*SG	**Sg**	**21 02 45.1**	**+0.9**
DARE	**Darende-Malaty**	**0.51**	**

MAZI	**Mazidag**	**2.50**	**126**	*e*PN	**Pn**	**21**	**03**	**11.0**	**+0.5**
MAZI	**Mazidag**	**2.50**	**126**	*e*Pn	**Pn**	**21**	**03**	**11.0**	**+0.5**
KVT	**Kavak**	**2.55**	**327**	*e*PN	**Pn**	**21**	**03**	**11.3**	**+0.3**
KVT	**Kavak**	**2.55**	**327**	*e*Pn	**Pn**	**21**	**03**	**11.4**	**+0.3**
CORM	**Corum**	**2.80**	**297**	*e*PN	**Pn**	**21**	**03**	**15.0**	**+0.4**
CORM	**Corum**	**2.80**	**297**	*e*Pn	**Pn**	**21**	**03**	**15.0**	**+0.4**
EZM	**Erzurum**	**2.84**	**70**	*e*PN	**Pn**	**21**	**03**	**15.7**	**+0.4**
TAHT	**Tahtakopru-Hat**	**2.92**	**208**	*e*PN	**Pn**	**21**	**03**	**16.0**	**0.0**
TAHT	**Tahtakopru-Hat**	**2.92**	**208**	*e*Pn	**Pn**	**21**	**03**	**16.0**	**0.0**
DIKM	**Dikmen**	**3.36**	**324**	*e*PN	**Pn**	**21**	**03**	**22.3**	**+0.2**
DIKM	**Dikmen**	**3.36**	**324**	*e*Pn	**Pn**	**21**	**03**	**22.3**	**+0.2**
SNOP	**Sinop**	**3.68**	**327**	*e*PN	**Pn**	**21**	**03**	**27.3**	**+0.8**
SNOP	**Sinop**	**3.68**	**327**	*e*Pn	**Pn**	**21**	**03**	**27.3**	**+0.8**
AFSR	**Af˙ar-Bala (A**	**3.78**	**279**	*e*PN	**Pn**	**21**	**03**	**28.9**	**+0.9**
AFSR	**Af˙ar-Bala (A**	**3.78**	**279**	*e*Pn	**Pn**	**21**	**03**	**28.9**	**+0.9**

JMA ***25*** *21:12:50.6±0.3, 35˚50N×140˚99E, h36km±3km, M2.6*
IDC ***25*** *21:12:51.0±6.5, 35˚71N×140˚90E, h72km±41km, mb3.0/3, mb1 3.2/5, mb1mx2.9/41, mbtmp3.3/5, ML2.9/2, Error ellipse: s-maj=86.4km s-min=16.3km az=76.0*
ISC 25 21:12:43.9±1.6, 35˚90N±0˚09×141˚4E±0˚1, h26km, n12, σ1§43/15, mb3.3/3, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time			Res
				Op	ISC	h	m	s	ISC
CHOJ	**Chosi**	**0.48**	**246**	P	**Pn**	**21**	**12**	**57.7**	**+2.6**
CHOJ				S	**Sn**	**21**	**13**	**02.6**	**0.0**
JCN	**Nagara**	**1.08**	**244**	P	**Pb**	**21**	**13**	**04.4**	**+0.4**
BSO4	**Boso 4**	**1.25**	**224**	P	**Pn**	**21**	**13**	**04.8**	**-0.8**
BSO1	**Boso 1**	**1.29**	**196**	P	**Pn**	**21**	**13**	**05.5**	**-0.2**
BSO3	**Boso 3**	**1.31**	**214**	P	**Pn**	**21**	**13**	**05.3**	**-1.0**
JOD2	**Odawara 2**	**1.98**	**252**	P	**Pn**	**21**	**13**	**16.9**	**+1.1**
MJAR	**Matsushiro Arr**	**2.66**	**285**	P	**Pb**	**21**	**13**	**28.8**	**-2.0**
	3.1nm,0.3s,baz=98,slow=8.5,SNR=23								
MAT	**Matsushiro**	**2.66**	**285**	P	**Pb**	**21**	**13**	**31.0**	**+0.2**
MAT				S	**Sb**	**21**	**14**	**02.0**	**-1.0**
JHJ	**Hachijo jima 2**	**3.08**	**206**	P	**Pn**	**21**	**13**	**32.3**	**+1.5**
	5.0nm,0.3s,baz=145,slow=22,SNR=13								
JHJ				S	**Sn**	**21**	**14**	**04.9**	**-1.8**
	22nm,0.3s,baz=242,slow=23,SNR=6.5								
MKAR	**Makanchi Array**	**44.72**	**303**	P	**P**	**21**	**20**	**54.2**	**-0.5**
	0.1nm,0.3s,baz=96,slow=9.2,SNR=3.6								
KURBB	**Kurchatov Arra**	**46.70**	**309**	P	**P**	**21**	**21**	**09.4**	**-0.9**
	0.2nm,0.5s,baz=81,slow=7.8,SNR=3.1								
WRA	**Warramunga Arr**	**55.94**	**188**	P	**P**	**21**	**22**	**21.5**	**+1.7**
	0.1nm,0.3s,baz=18,slow=8.9,SNR=6.0								

NIED ***25*** *21:14:00, 36˚90N×142˚20E, h23km, Mw4.9 Best double couple: M0 2.25000×10^16 NP1:φs167.00000°, δ14.00000°, λ73.00000°. NP2:φs5.00000°, δ76.00000°, λ94.00000°.*
IDC ***25*** *21:14:10.9±0.5, 36˚83N×142˚12E, h0km, mb4.8/30, mb1 4.8/36, mb1mx4.8/43, mbtmp4.8/36, ML4.6/4, MS4.1/18, Ms1 4.1/18, ms1mx4.0/28, Error ellipse: s-maj=13.8km s-min=11.1km az=94.0*
ISCJB ***25*** *21:14:11.0±0.8, 36˚85N±0˚02×142˚18E±0˚02, h10km±4km, mb4.9/234, MS4.5/31, Error ellipse: s-maj=3.3km s-min=2.4km az=164.7*
JMA ***25*** *21:14:12.9±0.2, 36˚87N×142˚22E, h25km±4km, M5.0*
JMA Felt II J1.
BJI ***25*** *21:14:12.1, 36˚86N×141˚72E, h7km, mb5.2/75, mB5.0/48, Ms4.6/84, Ms7 4.6/77*
GCMT ***25*** *21:14:14.4±0.4, 36˚84N×142˚07E, h15km, MW5.1/65, Moment Tensor Solution. s23,c24; s65,c84; Duration: 0 Moment tensor: Scale 10^16Nm; Mrr1.00±.11; Mθθ0.09±.09; Mφφ-1.09±.07; Mrθ0.53±.27; Mθφ0.30±.05; Mφr5.02±.24; Best double couple: Mo5.16400×10^16 NP1:φs6.00000°, δ84.00000°, λ95.00000°. NP2: φs147.00000°, δ7.00000°, λ51.00000°. Principal axes: T 5.1520, Plg50.0000°, Azm281.0000°; N 0.0200, Plg5.0000°, Azm185.0000°; P -5.1750, Plg39.0000°, Azm91.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
NEIC ***25*** *21:14:14.4±1.1, 36˚85N×142˚17E, h22km±8km, mb4.9/140 Error ellipse: s-maj=4.0km s-min=2.8km az=138.0*
MOS ***25*** *21:14:14.3±1.0, 36˚93N×142˚12E, h31km, mb5.2/78, MS4.4/11, Error ellipse: s-maj=6.6km s-min=4.1km az=109.3*
ISC 25 21:14:10.7±0.7, 36˚83N±0˚03×142˚23E±0˚03, h2km±4km, n602, σ1§54/653, mb5.0/236, MS4.4/34, 42C-20D, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time			Res
				Op	ISC	h	m	s	ISC
ONAJ	**Iwakimizuishiy**	**1.18**	**284**	⇓P	**Pb**	**21**	**14**	**33.4**	**-0.5**
JFK	**Kawauchi**	**1.21**	**297**	⇓P	**Pb**	**21**	**14**	**33.7**	**-0.7**
JHO	**Hitachi**	**1.35**	**261**	⇓P	**Pg**	**21**	**14**	**36.0**	**-0.7**
JHO				S	**Sb**	**21**	**14**	**53.8**	**-0.8**
JMM	**Marumori**	**1.54**	**312**	⇑P	**Pn**	**21**	**14**	**38.9**	**-0.3**
JMM				*e*S	**Sb**	**21**	**14**	**57.9**	**-2.1**
JFT	**Otama**	**1.66**	**295**	⇓P	**Pb**	**21**	**14**	**41.2**	**-0.9**
JFT				*e*S	**Sn**	**21**	**15**	**01.5**	**-1.3**
JIO	**Ouri**	**1.77**	**337**	P	**Pn**	**21**	**14**	**42.3**	**0.0**
JIO				S	**Sn**	**21**	**15**	**03.1**	**-2.2**
JOU	**Okura**	**1.97**	**321**	P	**Pn**	**21**	**14**	**45.9**	**+0.7**
JOU				S	**Sn**	**21**	**15**	**09.5**	**-1.0**
JFY	**Yanaizu**	**2.10**	**287**	⇑P	**Pn**	**21**	**14**	**47.8**	**+0.9**
JFY				S	**Sn**	**21**	**15**	**13.0**	**-0.6**
JYS	**Shirataka**	**2.21**	**309**	P	**Pn**	**21**	**14**	**49.1**	**+0.7**
JYS				S	**Sn**	**21**	**15**	**16.8**	**+0.5**
JMK	**Ichinoseki**	**2.26**	**340**	P	**Pn**	**21**	**14**	**49.6**	**+0.5**
JMK				S	**Sn**	**21**	**15**	**16.3**	**-1.3**
MJAR	**Matsushiro Arr**	**3.25**	**266**	Pn	**Pn**	**21**	**15**	**04.2**	**+1.5**
	132nm,0.3s,baz=77,slow=12,SNR=337								
MJAR				LR	LR	21	16	33.7	
	comp=Z,8μm,19.5s,baz=100,slow=46								
MAJO	**Matsushiro**	**3.25**	**266**	*d*P	**Pn**	**21**	**15**	**04.8**	**+2.1**
MAJO	**Matsushiro**	**3.25**	**266**	*e*Pn	**Pn**	**21**	**15**	**04.9**	**+2.1**
MAJO				*e*Sn	**Sn**	**21**	**15**	**41.5**	**-0.4**
MAT	**Matsushiro**	**3.25**	**266**	P	**Pn**	**21**	**15**	**04.7**	**+2.0**
MAT				S	**Sb**	**21**	**15**	**46.2**	**-2.9**
MJB9	**Matsu-Tunnel**	**3.25**	**266**	*e*Pn	**Pn**	**21**	**15**	**04.9**	**+2.1**
MJB9				*e*Sn	**Sn**	**21**	**15**	**41.8**	**-0.2**
JHJ2	**Mitsune**	**4.21**	**209**	*e*Pn	**Pn**	**21**	**15**	**16.6**	**+0.7**
JHJ2				*e*Sn	**Sn**	**21**	**16**	**04.0**	**-1.5**
JHJ	**Hachijo jima 2**	**4.21**	**209**	Pn	**Pn**	**21**	**15**	**16.4**	**+0.5**
	143nm,0.3s,baz=343,slow=3.4,SNR=23								
JHJ				Sn	**Sn**	**21**	**16**	**03.3**	**-2.4**
	388nm,0.3s,baz=73,slow=23,SNR=8.0								
JHJ				LR	LR	21	16	26.9	
	comp=Z,437nm,19.1s,baz=54,slow=33								
INU	**Inuyama**	**4.47**	**252**	*e*Pn	**Pn**	**21**	**15**	**22.5**	**+3.0**
INU				*e*Sn	**Sn**	**21**	**16**	**11.5**	**-0.7**
ERM	**Erimo**	**5.23**	**8**	*ce*P	**Pn**	**21**	**15**	**30.5**	**+0.7**
ERM				pmax	pmax				
	comp=Z,54nm,0.7s								
ERM	**Erimo**	**5.23**	**8**	*e*Pn	**Pn**	**21**	**15**	**29.4**	**-0.4**
ERM				*e*Sn	**Sn**	**21**	**16**	**30.0**	**-0.6**
ASAJ	**Asahikawa**	**7.28**	**2**	Pn	**Pn**	**21**	**15**	**58.3**	**+0.2**
	comp=Z,9.5nm,0.3s,baz=209,slow=9.7,SNR=45								
ASAJ				Sn	**Sn**	**21**	**17**	**20.4**	**-0.8**
	comp=Z,14nm,0.3s,baz=235,slow=22,SNR=5.5								
YUK	**Yuzh-Kuril'sk**	**7.71**	**20**	*e*P	**Pn**	**21**	**16**	**01.9**	**-2.0**
YUK				*e*S	**Sn**	**21**	**17**	**23.5**	**-8.2**
YUK				pmax	pmax				
	comp=Z,360nm,0.5s								
YUK				pmax	pmax				
	comp=N,186nm,0.3s								
YUK				pmax	pmax				
	comp=E,127nm,0.4s								
YUK				MLR	MLR				
	comp=Z,2μm,18.0s								
YUK				MLR	MLR				
	comp=E,2μm,16.0s								
YUK				MLR	MLR				
	comp=N,3μm,15.0s								
SHO	**Shikotan**	**7.86**	**25**	*e*P	**Pn**	**21**	**16**	**03.2**	**-2.7**
SHO				pmax	pmax				
	comp=Z,206nm,0.7s								
SHO				pmax	pmax				
	comp=N,171nm,0.5s								
SHO				pmax	pmax				
	comp=E,84nm,0.6s								
KUR	**Kuril'sk**	**9.41**	**25**	*e*P	**Pn**	**21**	**16**	**25.6**	**-1.6**
KUR				*e*S	**Sn**	**21**	**18**	**05.3**	**-8.2**
KUR				pmax	pmax				
	comp=Z,30nm,0.2s								
KUR				smax	smax				
	comp=N,113nm,0.2s								
KUR				smax	smax				
	comp=E,63nm,0.2s								
CBIJ	**Chichi jima**	**9.71**	**180**	*e*Pn	**Pn**	**21**	**16**	**31.1**	**-0.3**
CBIJ				*e*Sn	**Sn**	**21**	**18**	**13.6**	**-7.4**
JCJ	**Chichijima**	**9.71**	**180**	Pn	**Pn**	**21**	**16**	**30.6**	**-0.8**
	comp=E,17nm,0.3s,baz=11,slow=20,SNR=17								
JCJ				Sn	**Sn**	**21**	**18**	**13.6**	**-7.4**
JNU	**Nakatsue**	**10.02**	**252**	Pn	**Pn**	**21**	**16**	**38.1**	**+2.4**
	comp=E,3.2nm,0.3s,baz=67,slow=6.5,SNR=28								
JNU				LR	LR	21	20	39.6	
	comp=E,2μm,19.4s,baz=80,slow=39								
JNU	**Nakatsue**	**10.02**	**252**	*e*Pn	**Pn**	**21**	**16**	**37.2**	**+1.5**
YSS	**Yuzh-Sakhalins**	**10.12**	**2**	⇑*e*P	**Pn**	**21**	**16**	**36.9**	**-0.1**
YSS				pmax	pmax				
	comp=Z,50nm,0.6s								
YSS				smax	smax				
	comp=N,70nm,0.7s								
YSS				MLR	MLR				
	comp=Z,800nm,14.0s								
YSS				MLR	MLR				
	comp=N,900nm,15.0s								
YSS				MLR	MLR				
	comp=E,1μm,18.0s								
YSS	**Yuzh-Sakhalins**	**10.12**	**2**	*e*Pn	**Pn**	**21**	**16**	**37.0**	**0.0**
MSHR	**Mys Shultsa**	**10.28**	**307**	*e*P	**Pn**	**21**	**16**	**41.0**	**+1.8**
USRK	**Ussuriysk Ar.**	**10.72**	**317**	Pn	**Pn**	**21**	**16**	**46.5**	**+1.3**
	comp=E,2.4nm,0.3s,baz=132,slow=14,SNR=39								
USRK				LR	LR	21	20	36.4	
	comp=E,2μm,20.0s,baz=125,slow=36								
KSRS	**Korea Array**	**11.44**	**277**	Pn	**Pn**	**21**	**16**	**58.5**	**+3.4**
	comp=E,1.2nm,0.3s,baz=90,slow=14,SNR=42								
KSRS				Sn	**Sn**	**21**	**19**	**01.5**	**-1.9**
	comp=E,0.8nm,0.3s,baz=78,slow=14,SNR=4.2								
KSRS				LR	LR	21	21	12.2	
	comp=E,3μm,19.4s,baz=80,slow=37								
KS01	**Wonju Array Si**	**11.46**	**278**	*e*Pn	**Pn**	**21**	**16**	**57.8**	**+2.4**
KS15	**Wonju Array Si**	**11.47**	**277**	*e*Pn	**Pn**	**21**	**16**	**58.0**	**+2.5**
KS15				*e*Sn	**Sn**	**21**	**19**	**01.5**	**-2.7**
KSAR	**Wonju Array Be**	**11.47**	**277**	P	**Pn**	**21**	**16**	**58.5**	**+3.0**
KSAR						21	19	01.5	
KSAR	**Wonju Array Be**	**11.47**	**277**	Pn	**Pn**	**21**	**16**	**58.5**	**+3.0**
KSAR				Sn	**Sn**	**21**	**19**	**01.5**	**-2.7**
MDJ	**Mudanjiang**	**12.34**	**313**	P	**Pn**	**21**	**17**	**09.5**	**+2.2**
MDJ				S	**Sn**	**21**	**19**	**28.3**	**+3.0**
MDJ				PcP	**PcP**	**21**	**22**	**48.8**	**-0.3**
MDJ				ScP	**ScP**	**21**	**26**	**23.0**	**0.0**
MDJ				ScS	**ScS**	**21**	**30**	**00.5**	**+1.6**
MDJ				pmax	pmax				
	comp=E,37nm,0.7s								
MDJ				pmax	pmax				
	comp=E,130nm,4.9s								
MDJ				LR	LR				
	comp=E,870nm,16.7s								
MDJ				LR	LR				
	comp=E,640nm,18.4s								
MDJ				LR	LR				
	comp=E,2μm,18.9s								
MDJ	**Mudanjiang**	**12.34**	**313**	*e*Pn	Pn	21	17	13.0	+5.7
INCN	**Inchon**	**12.47**	**278**	*e*Pn	**Pn**	**21**	**17**	**09.6**	**+0.5**
HABR	**Khabarovsk**	**12.77**	**338**	*e*P	**Pn**	**21**	**17**	**11.2**	**-2.0**
HABR				*e*S	**Sn**	**21**	**19**	**31.8**	**-4.0**
HABR				pmax	pmax				
	comp=N,18nm,1.4s								
HABR				pmax	pmax				
	comp=E,42nm,1.4s								
HABR				pmax	pmax				
	comp=Z,20nm,1.4s								
HABR				MLR	MLR				
	comp=Z,1μm,13.0s								
TYV	**Tymovskoe**	**14.03**	**1**	*e*P	**Pn**	**21**	**17**	**30.2**	**-0.2**
TYV				pmax	pmax				
	comp=Z,24nm,0.8s								
TYV				MLR	MLR				
	comp=N,1μm,16.0s								
TYV				MLR	MLR				
	comp=Z,1μm,16.0s								
KLR	**Kul'dur**	**14.55**	**332**	Pn	**Pn**	**21**	**17**	**36.2**	**-1.4**
	comp=Z,0.8nm,0.3s,baz=150,slow=10.0,SNR=23								
KLR	**Kul'dur**	**14.55**	**332**	*e*P	**Pn**	**21**	**17**	**35.9**	**-1.7**
CN2	**Changchun**	**14.56**	**304**	*e*P	**Pn**	**21**	**17**	**36.3**	**-1.4**
CN2				*e*S	**Sn**	**21**	**20**	**19.0**	**-0.6**
CN2				LR	LR				
	comp=Z,1μm,15.0s								
CN2				LR	LR				
	comp=Z,2μm,15.0s								
CN2				LR	LR				
	comp=Z,1μm,19.0s								
SNY	**Shenyang**	**15.27**	**295**	⇑P	**Pn**	**21**	**17**	**46.5**	**-0.7**
SNY				pmax	pmax				
	comp=Z,21nm,0.9s								
SNY				LR	LR				
	comp=Z,920nm,16.9s								
SNY				LR	LR				
	comp=Z,3μm,16.1s								
SNY				LR	LR				
	comp=Z,4μm,16.7s								
JOW	**Kunigami**	**15.48**	**234**	LR	LR	21	23	43.7	
	comp=Z,1μm,21.4s,baz=96,slow=37								
JOW	**Kunigami**	**15.48**	**234**	*e*Pn	**Pn**	**21**	**17**	**52.1**	**+2.0**
	comp=Z,53nm,0.9s								
NKL	**Nikolayevsk**	**16.36**	**357**	*e*P	**Pn**	**21**	**17**	**57.0**	**-4.2**
NKL				pmax	pmax				
	comp=Z,20nm,1.0s								
NKL				MLR	MLR				
	comp=N,450nm,16.0s								
NKL				MLR	MLR				
	comp=E,600nm,16.0s								
NKL				MLR	MLR				
	comp=Z,800nm,16.0s								
DL2	**Dalian**	**16.40**	**284**	P	**Pn**	**21**	**18**	**02.0**	**0.0**
DL2				*e*S	**Sn**	**21**	**21**	**04.0**	**-0.4**
DL2				pmax	pmax				
	comp=Z,77nm,0.8s								
DL2				pmax	pmax				
	comp=Z,230nm,5.2s								
DL2				LR	LR				
	comp=Z,2μm,19.6s								
DL2				LR	LR				
	comp=Z,2μm,19.4s								
SSE	**Sheshan**	**18.36**	**258**	P	**Pn**	**21**	**18**	**24.5**	**-1.9**
SSE				pmax	pmax				
	comp=Z,70nm,1.0s								
SSE				pmax	pmax				
	comp=Z,200nm,11.2s								
SSE				LR	LR				
	comp=Z,780nm,14.4s								
SSE				LR	LR				
	comp=Z,1μm,14.4s								
SSE				LR	LR				
	comp=Z,2μm,14.7s								
PEA0	**Petropavlovsk-**	**19.54**	**29**	*e*P	**P**	**21**	**18**	**40.0**	**+0.6**
PETK	**Petropavlovsk-**	**19.54**	**29**	P	**Pn**	**21**	**18**	**40.9**	**+0.3**
	comp=Z,0.3nm,0.3s,baz=205,slow=6.6,SNR=8.1								
PETK				LR	LR	21	26	58.8	
	comp=Z,340nm,19.6s,baz=218,slow=39								
PEA1	**Petropavlovsk-**	**19.55**	**29**	*e*P	**Pn**	**21**	**18**	**40.9**	**+0.2**
NJ2	**Nanjing**	**19.85**	**263**	*e*P	**P**	**21**	**18**	**41.5**	**-1.4**
NJ2				pmax	pmax				
	comp=Z,24nm,0.5s								
NJ2				LR	LR				
	comp=Z,1μm,19.5s								
NJ2				LR	LR				
	comp=Z,1μm,19.5s								
NJ2				LR	LR				
	comp=Z,2μm,19.5s								
HIA	**Hailar**	**20.51**	**314**	*e*P	**P**	**21**	**18**	**49.6**	**-0.5**
HIA				pmax	pmax				
	comp=Z,23nm,0.6s								
HIA	**Hailar**	**20.51**	**314**	*e*P	**P**	**21**	**18**	**49.5**	**-0.5**
	comp=Z,23nm,0.6s								
YOJ	**Yonaguni jima**	**20.58**	**239**	*e*P	**P**	**21**	**18**	**48.1**	**-2.8**
YOJ				pmax	pmax				
	comp=Z,63nm,1.0s								
YOJ	**Yonaguni jima**	**20.58**	**239**	*e*P	**P**	**21**	**18**	**48.1**	**-2.8**
	comp=Z,63nm,1.0s								
BJI	**Beijing**	**20.64**	**287**	P	**P**	**21**	**18**	**48.8**	**-2.6**
BJI				pmax	pmax				
	comp=Z,32nm,1.0s								
BJI				pmax	pmax				
	comp=Z,180nm,3.8s								
BJI				LR	LR				
	comp=E,870nm,15.2s								
BJI				LR	LR				
	comp=Z,470nm,20.4s								
BJI				LR	LR				
	comp=Z,680nm,23.4s								
BJT	**Baijiatuau**	**20.64**	**287**	*e*P	**P**	**21**	**18**	**48.6**	**-2.9**
BJT				pmax	pmax				
	comp=Z,38nm,0.8s								
BJT	**Baijiatuau**	**20.64**	**287**	*e*P	**P**	**21**	**18**	**48.6**	**-2.9**
	comp=Z,38nm,0.8s								
YHNB	**Yeheng**	**21.59**	**242**	*e*P	**P**	**21**	**19**	**00.8**	**-1.1**
	comp=Z,22nm,0.7s								
NACB	**Ninganchiao**	**21.75**	**240**	*e*P	**P**	**21**	**19**	**04.9**	**+1.4**
	comp=Z,20nm,0.7s								
SSLB	**Suanglung**	**22.44**	**241**	*e*P	**P**	**21**	**19**	**08.5**	**-2.5**
	comp=Z,27nm,0.7s								
YULB	**Yu-li**	**22.46**	**239**	*e*P	**P**	**21**	**19**	**07.8**	**-3.4**
	comp=Z,18nm,0.8s								
TPUB	**Ta-pu**	**22.98**	**240**	*e*P	**P**	**21**	**19**	**14.1**	**-2.6**
	comp=Z,51nm,0.7s								
TWG	**Pinlang**	**23.00**	**238**	*e*P	**P**	**21**	**19**	**15.6**	**-1.3**
	comp=Z,137nm,0.6s								
CLNS	**Chul'man**	**23.14**	**335**	*e*P	**P**	**21**	**19**	**16.5**	**-1.5**
CLNS				pmax	pmax				
	comp=Z,30nm,1.0s								
CLNS				pmax	pmax				
	comp=N,27nm,1.3s								
CLNS				pmax	pmax				
	comp=E,9.0nm,1.3s								
GUMO	**Guam**	**23.27**	**173**	*e*P	**P**	**21**	**19**	**19.4**	**-0.2**
GUMO				pmax	pmax				
	comp=Z,240nm,1.4s								
GUMO	**Guam**	**23.27**	**173**	*e*P	**P**	**21**	**19**	**19.4**	**-0.2**
	comp=Z,240nm,1.4s								
MA2	**Magadan**	**23.42**	**11**	P	**P**	**21**	**19**	**21.7**	**+0.8**
	comp=Z,18nm,0.7s,baz=210,slow=9.0,SNR=11								
TIY	**Taiyuan**	**23.69**	**281**	*e*P	**P**	**21**	**19**	**21.5**	**-2.3**
TIY				S	**S**	**21**	**23**	**34.3**	**-5.2**
TIY				pmax	pmax				
	comp=Z,32nm,0.5s								
TIY				LR	LR				
	comp=Z,380nm,11.4s								
TIY				LR	LR				
	comp=Z,2μm,14.8s								
TIY				LR	LR				
	comp=Z,2μm,14.8s								
WHN	**Wuhan**	**23.98**	**263**	⇓P	**P**	**21**	**19**	**25.5**	**-1.1**
WHN				pmax	pmax				
	comp=Z,95nm,0.9s								
WHN				LR	LR				
	comp=Z,2μm,14.1s								
WHN				LR	LR				
	comp=Z,1μm,11.3s								
WHN				LR	LR				
	comp=Z,4μm,17.8s								
HHC	**Hu-ho-hao-te**	**24.16**	**289**	*e*P	**P**	**21**	**19**	**26.0**	**-2.3**
HHC				sP	sP	21	19	39.8	+10
HHC				PP	**PnPn**	**21**	**20**	**00.0**	**+2.8**
HHC				S	**S**	**21**	**23**	**40.8**	**-6.3**
HHC				sS	sS	21	23	49.5	+1.3
HHC				pmax	pmax				
	comp=Z,28nm,1.1s								
HHC				pmax	pmax				
	comp=Z,110nm,3.5s								
HHC				LR	LR				
	comp=Z,3μm,14.8s								
HHC				LR	LR				
	comp=Z,2μm,12.3s								
HHC				LR	LR				
	comp=Z,2μm,13.6s								
CIT	**Chita**	**25.28**	**316**	*e*P	**P**	**21**	**19**	**38.4**	**+0.1**
CIT				pmax	pmax				
	comp=Z,214nm,3.4s								
YAK	**Yakutsk**	**26.41**	**347**	P	**P**	**21**	**19**	**48.4**	**0.0**
	comp=Z,62nm,0.7s,baz=355,slow=4.0,SNR=21								
YAK	**Yakutsk**	**26.41**	**347**	*c i*P	**P**	**21**	**19**	**48.0**	**-0.4**
YAK				*e**PP	sP	21	19	57.1	+7.7
YAK				*e*		21	20	28.6	
YAK				*e*PPP	PPP	21	20	40.1	
YAK				*e*		21	23	10.4	
YAK				*e*S	**S**	**21**	**24**	**20.2**	**-2.1**
YAK				*e*SS	**SnSn**	**21**	**25**	**24.3**	**+1.9**
YAK				*e*SSS	SSS	21	25	41.9	
YAK				pmax	pmax				
	comp=Z,39nm,0.8s								
YAK				pmax	pmax				
	comp=N,17nm,0.9s								
YAK				pmax	pmax				
	comp=E,7.0nm,0.9s								
YAK				pmax	pmax				
	comp=Z,35nm,1.3s								
YAK				pmax	pmax				
	comp=N,46nm,1.4s								
YAK				pmax	pmax				
	comp=E,18nm,1.3s								
YAK				smax	smax				
	comp=N,75nm,2.3s								
YAK				smax	smax				
	comp=E,54nm,1.9s								
YAK				MLR	MLR				
	comp=Z,629nm,14.0s								
YAK				MLR	MLR				
	comp=N,585nm,16.0s								
YAK				MLR	MLR				
	comp=E,342nm,18.0s								
YAK	**Yakutsk**	**26.41**	**347**	*e*P	**P**	**21**	**19**	**48.4**	**0.0**
	comp=E,87nm,0.8s								
SEY	**Seymchan**	**26.87**	**10**	P	**P**	**21**	**19**	**54.0**	**+1.5**
	comp=E,14nm,0.7s,baz=196,slow=7.0,SNR=28								
SEY	**Seymchan**	**26.87**	**10**	*ce*P	**P**	**21**	**19**	**54.9**	**+2.4**
XAN	**Xi'an**	**27.21**	**274**	P	**P**	**21**	**19**	**55.0**	**-0.9**
XAN				pP	sP	21	19	58.8	+1.9
XAN				sP	pP	21	20	01.5	+4.9
XAN				PP	**PnPn**	**21**	**20**	**44.0**	**+5.1**
XAN				S	**S**	**21**	**24**	**37.5**	**+1.9**
XAN				sS	sS	21	24	44.0	+7.2
XAN				pmax	pmax				
	comp=E,25nm,0.9s								
XAN				pmax	pmax				
	comp=E,79nm,5.6s								
XAN				LR	LR				
	comp=E,

LZH LR LR
comp=Z,2µm,15.8s
LZH LR LR
comp=Z,2µm,16.5s
ZAK Zakamensk 30.91 308 *e*P **P 21 20 28.2 -0.5**
ZAK pmax pmax
comp=Z,46nm,1.2s
TLY Talaya 30.96 311 P **P 21 20 29.7 +0.6**
comp=Z,17nm,0.7s,baz=101,slow=4.3,SNR=7.4
TLY Talaya 30.96 311 *e*P **P 21 20 29.4 +0.4**
TLY *e* 21 21 44.9
TLY *e*S **S 21 25 33.4 -0.8**
TLY pmax pmax
comp=Z,54nm,1.1s
TLY MLR MLR
comp=Z,779nm,19.0s
GYA Guiyang 31.84 261⇑ *i*P **P 21 20 36.3 -0.8**
GYA PP **PP 21 21 45.0 -3.9**
GYA PcP **PcP 21 23 30.5 +2.4**
GYA S **S 21 25 45.0 -3.5**
GYA ScP **ScP 21 27 12.8 +0.4**
GYA ScS **ScS 21 31 09.5 -1.4**
GYA pmax pmax
comp=Z,80nm,0.6s
GYA pmax pmax
comp=Z,130nm,4.7s
GYA LR LR
comp=Z,560nm,19.2s
GYA LR LR
comp=Z,640nm,20.7s
GYA LR LR
comp=Z,770nm,20.5s
CD2 Chengdu 32.33 271 P **P 21 20 40.8 -0.6**
CD2 sP sP 21 20 44.8 +2.4
CD2 S **S 21 25 56.0 0.0**
CD2 sS sS 21 26 00.5 +3.3
CD2 pmax pmax
comp=Z,90nm,0.9s
CD2 pmax pmax
comp=Z,110nm,10.8s
CD2 LR LR
comp=Z,970nm,16.8s
CD2 LR LR
comp=Z,1µm,16.8s
MOY Mondy 32.57 310 *e*P **P 21 20 43.0 -0.3**
MOY pmax pmax
comp=Z,42nm,2.2s
GTA Gaotai 33.25 288 *e*P **P 21 20 49.0 -0.4**
GTA pP sP 21 20 53.5 +3.0
GTA sP pP 21 20 56.5 +6.3
GTA PcP **PcP 21 23 32.5 +0.7**
GTA S **S 21 26 08.5 -1.9**
GTA sS sS 21 26 18.0 +6.4
GTA pmax pmax
comp=Z,37nm,0.8s
GTA pmax pmax
comp=Z,130nm,5.2s
GTA LR LR
comp=Z,500nm,16.2s
GTA LR LR
comp=Z,520nm,16.9s
GTA LR LR
comp=Z,470nm,17.1s
QIZ Qiongzhong 33.45 247 P **P 21 20 52.8 +1.6**
QIZ S **S 21 26 17.5 +4.0**
QIZ pmax pmax
comp=Z,18nm,1.0s
QIZ LR LR
comp=Z,95nm,14.4s
QIZ LR LR
comp=Z,190nm,20.8s
BILL Bilibino 34.04 16*ce*P **P 21 20 56.7 +0.9**
BILL pmax pmax
comp=Z,16nm,1.7s
BILL Bilibino 34.04 16 *e*P **P 21 20 56.0 +0.2**
comp=Z,16nm,1.3s
TIXI Tiksi 35.57 353 P **P 21 21 08.9 0.0**
comp=Z,3.3nm,0.7s,baz=135,slow=5.5,SNR=15
TIXI Tiksi 35.57 353*ce*P **P 21 21 08.9 0.0**
TIXI pmax pmax
comp=Z,4.0nm,0.8s
TIXI Tiksi 35.57 353 *e*P **P 21 21 08.6 -0.3**
comp=Z,6.6nm,0.8s
KMI Kunming 35.58 262 P **P 21 21 09.5 -0.4**
KMI pP sP 21 21 13.0 +2.1
KMI sP pP 21 21 15.0 +4.4
KMI S **S 21 26 45.0 -1.8**
KMI pmax pmax
comp=Z,56nm,0.8s
KMI pmax pmax
comp=Z,120nm,3.1s
KMI LR LR
comp=Z,370nm,19.7s
KMI LR LR
comp=Z,760nm,18.5s
KMI LR LR
comp=Z,990nm,18.5s
KWAJ Kwajalein Atol 36.18 134 *e*P **P 21 21 13.3 -1.4**
KWAJ Kwajalein Atol 36.18 134 *e*P **P 21 21 13.3 -1.4**
comp=Z,608nm,1.7s
KRAR Krasnoyarsk 38.06 316 *e*P **P 21 21 29.9 -0.5**
KRAR pmax pmax
comp=Z,34nm,0.9s
MYLDM Lahad Datu 38.27 220 *e*P **P 21 21 34.9 +2.3**
comp=Z,73nm,1.0s
TNTI Ternate 38.43 204 P P 21 21 43.2 +9.4
comp=Z,75nm,1.0s,comp=Z,1µm
PANO Nakornpanom 38.51 250 P **P 21 21 36.1 +1.6**
comp=Z,26nm,1.4s
SDKM Sandakan 38.58 222⇓ P **P 21 21 36.8 +1.6**
NONG Nongkai 39.07 252 P **P 21 21 40.0 +0.8**
comp=Z,54nm,0.8s,comp=Z,6µm
SKNT Sakolnakorn 39.09 250 P **P 21 21 40.1 +0.7**
comp=Z,33nm,1.0s
TSM Tawau 39.35 220⇓ P **P 21 21 43.1 +1.5**
LBMI Labuha 39.71 203 P P 21 21 54.7 +10
comp=Z,58nm,0.9s,comp=Z,1µm
CRAI Chiangrai 39.98 257 P **P 21 21 48.3 +1.5**
comp=Z,170nm,0.8s,comp=Z,11µm
KHON Khomkaen 40.35 250 P **P 21 21 51.3 +1.3**
comp=Z,19nm,0.8s
MRSI Marisa 40.76 212 P P 21 22 01.5 +8.2
comp=Z,65nm,1.3s
UTTA Uttaradit 41.24 254 P **P 21 21 57.7 +0.4**
comp=Z,11nm,0.9s,comp=Z,81nm
CHAI Chaiyaphum 41.26 251 P **P 21 21 57.6 +0.2**
comp=Z,17nm,0.8s,comp=Z,137nm
LAMP Lampang 41.51 256 P **P 21 22 00.2 +0.7**
comp=Z,13nm,0.8s,comp=Z,96nm
WMQ Urumqi 41.52 297 P **P 21 22 01.0 +1.6**
WMQ pP sP 21 22 04.8 +4.4
WMQ sP pP 21 22 07.0 +6.9
WMQ PP **PnPn 21 23 39.0 -0.7**
WMQ PcP **PcP 21 23 57.5 +0.6**
WMQ S **S 21 28 18.5 +2.7**
WMQ ScS **ScS 21 32 02.3 -1.9**
WMQ pmax pmax
comp=Z,25nm,1.0s
WMQ pmax pmax
comp=Z,140nm,3.6s
WMQ LR LR
comp=Z,400nm,19.0s
WMQ LR LR
comp=Z,290nm,18.0s
WMQ LR LR
comp=Z,190nm,23.2s
SANI Sanana 41.53 205 P P 21 22 09.3 +10
comp=Z,107nm,0.8s,comp=Z,862nm
PBKT Sadao Pong 41.62 252 P **P 21 22 00.8 +0.4**
comp=Z,44nm,1.0s
MSAI Masohi 41.85 200 P P 21 22 12.7 +10
comp=Z,15nm,1.2s,comp=Z,536nm
CMMT Chiang Mai 41.88 257 P **P 21 22 02.6 +0.1**
comp=Z,26nm,1.0s,comp=Z,248nm
CHTO Chiang Mai 41.88 257 P **P 21 22 02.6 +0.1**
comp=Z,114nm,1.1s,comp=Z,1µm
CHTO Chiang Mai 41.88 257 *e*P **P 21 22 02.7 +0.1**
CHTO pmax pmax
comp=Z,23nm,0.9s
CHTO Chiang Mai 41.88 257 *e*P **P 21 22 02.7 +0.1**
comp=Z,23nm,0.9s
CHTO Chiang Mai 41.88 257 P **P 21 22 02.7 +0.1**
SNR=12
CM31 Chiang Mai Arr 42.08 256 *e*P **P 21 22 04.9 +0.7**
CMAR Chiang Mai Arr 42.08 256 P **P 21 22 04.5 +0.3**
comp=Z,7.6nm,0.7s,baz=47,slow=6.2,SNR=64
CMAR LR LR 21 41 39.9
comp=Z,775nm,18.9s,baz=57,slow=39
CM01 Chiang Mai Arr 42.09 256 *e*P **P 21 22 03.9 -0.3**
CM01 *e*pP **sP 21 22 05.0 -0.3**
SRAK Srakaew 42.40 248 P **P 21 22 04.1 -2.6**
comp=Z,83nm,0.8s,comp=Z,601nm
SDPT Sand Point 42.48 45 *e*P **P 21 22 07.6 +0.7**
comp=Z,86nm,1.0s
ZAA1 Zalesovo Array 42.53 313 *e*P **P 21 22 07.5 0.0**
ZALV Zalesovo Beam 42.53 313 P **P 21 22 07.5 0.0**
comp=Z,27nm,0.6s,baz=94,slow=6.0,SNR=94
ZALV LR LR 21 40 27.1
comp=Z,452nm,19.8s,baz=70,slow=37
NAYO Nakonayok 42.74 249 P **P 21 22 10.7 +1.1**
comp=Z,117nm,1.0s,comp=Z,21µm
LSA Lhasa 42.88 276 P **P 21 22 11.8 +0.6**
LSA pmax pmax
comp=Z,13nm,1.2s
LSA Lhasa 42.88 276 *e*P **P 21 22 12.1 +0.9**
LSA pmax pmax
comp=Z,22nm,0.8s
LSA Lhasa 42.88 276 *e*P **P 21 22 12.1 +0.9**
comp=Z,22nm,0.8s
BTM Bintulu 42.88 226⇑ P **P 21 22 11.9 +1.2**
CHBT CHBT 42.99 247 P **P 21 22 12.8 +1.2**
comp=Z,49nm,1.0s
MHMT Maesarieng 43.03 257 P **P 21 22 12.6 +0.7**
comp=Z,22nm,1.1s,comp=Z,228nm
NVS Novosibirsk 43.45 314⇑ P **P 21 22 14.6 -0.3**
NVS *e* 21 24 10.1
NVS pmax pmax
comp=Z,49nm,1.2s
NVS pmax pmax
comp=N,10.0nm,1.3s
NVS pmax pmax
comp=E,46nm,1.3s
NRIK Noril'sk 43.73 335 P **P 21 22 16.9 0.0**
comp=E,7.8nm,0.5s,baz=142,slow=3.7,SNR=11
PATY Pattaya 43.97 248 P P 21 22 24.4 +5.0
comp=E,4.8nm,0.8s
SBUM Sibu 43.99 226⇑ P **P 21 22 20.8 +1.2**
SBUM Sibu 43.99 226 *e*P **P 21 22 20.3 +0.7**
comp=E,15nm,1.0s
SHL Shillong 44.06 270 *e*P **P 21 22 21.0 +0.6**
SRDT SRDT 44.38 251 P **P 21 22 24.6 +1.8**
comp=E,63nm,1.2s
MK01 Makanchi Array 44.78 302 *e*P **P 21 22 24.9 -0.8**
MK31 Makanchi Array 44.78 302 *e*P **P 21 22 25.2 -0.5**
MK31 Makanchi Array 44.78 302 *e*P **P 21 22 25.1 -0.5**
MK32 Makanchi Array 44.78 302 *e*P **P 21 22 25.6 -0.2**
MKAR Makanchi Array 44.78 302 P **P 21 22 25.6 -0.2**
comp=E,16nm,0.6s,baz=87,slow=10,SNR=168
MKAR LR LR 21 41 15.1
comp=E,322nm,19.8s,baz=88,slow=36
MKAR Makanchi Array 44.78 302 *e*P **P 21 22 25.1 -0.6**
MAKZ Makanchi 44.99 302 *e*P **P 21 22 27.1 -0.3**
MAKZ pmax pmax
comp=Z,22nm,0.8s
MAKZ Makanchi 44.99 302 *e*P **P 21 22 27.1 -0.3**
comp=Z,22nm,0.8s
TT01 Tatalina 45.21 35 *e*P **P 21 22 29.8 +0.9**
TTA Tatalina 45.21 35 *e*P **P 21 22 29.4 +0.4**
TTA pmax pmax
comp=Z,12nm,1.4s
TTA Tatalina 45.21 35 *e*P **P 21 22 29.4 +0.4**
comp=Z,12nm,1.4s
SVW2 Sparrevohn 45.28 37 *e*P **P 21 22 30.2 +0.7**
comp=Z,14nm,1.0s
SPSI Sidrap Palu 45.68 212 P P 21 22 41.0 +8.0
comp=Z,25nm,1.2s
KSM Kuching 45.89 227⇓ P **P 21 22 36.1 +1.4**
KSM Kuching 45.89 227 *e*P **P 21 22 36.1 +1.4**
comp=Z,19nm,0.8s
STKI Sintang 46.36 225 P P 21 22 44.1 +5.7
comp=Z,30nm,0.4s,comp=Z,19µm
KURK Kurchatov 46.57 308 *e*P **P 21 22 39.3 -0.5**
KURK pmax pmax
comp=Z,59nm,0.8s
KURK Kurchatov 46.57 308 *e*P **P 21 22 39.3 -0.5**
comp=Z,59nm,0.8s
KAPI Kappang 46.63 212 *e*P **P 21 22 41.8 +1.3**
comp=Z,40nm,1.0s
KURBB Kurchatov Arra 46.64 308 P **P 21 22 40.0 -0.3**
comp=Z,39nm,0.7s,baz=83,slow=8.3,SNR=281
RSO Redoubt South 46.66 38 *e*P **P 21 22 40.9 +0.4**
KDAK Kodiak Island 46.81 42 *i*P **P 21 22 42.1 +0.6**
KDAK Kodiak Island 46.81 42 *e*P **P 21 22 41.9 +0.4**
comp=Z,33nm,1.0s
JOHN Johnston Islan 46.94 102 *e*P **P 21 22 42.3 -0.6**
comp=Z,162nm,0.8s
PPLA Purkeypile 46.96 35 *e*P **P 21 22 43.7 +0.9**
comp=Z,17nm,1.0s
SPU Mount Spurr 47.00 37 *e*P **P 21 22 43.2 +0.2**
CAST Castle Rocks 47.02 34 *e*P **P 21 22 45.1 +1.9**
comp=Z,42nm,1.9s
BBKI Banjar Baru 47.52 219 P P 21 22 54.9 +7.4
comp=Z,55nm,0.8s
BPAW Bear Paw Mtn. 47.53 33 *e*P **P 21 22 47.3 +0.1**
comp=Z,37nm,1.8s
KTH Kantishna Hill 47.55 34 *e*P **P 21 22 47.4 +0.1**
comp=Z,18nm,1.0s
MLY Manley 47.67 32 *e*P **P 21 22 50.0 +1.8**
comp=Z,14nm,1.0s
GUN Gumba 47.83 276 *e*P **P 21 22 50.6 +0.3**
comp=Z,102nm,0.6s
TRF Thorofare Moun 47.83 34 *e*P **P 21 22 50.5 +0.9**
comp=Z,7.9nm,0.9s
SURT Suratani 48.09 246 P **P 21 22 53.6 +1.6**
comp=Z,11nm,1.2s
RC01 Rabbit Creek A 48.12 37 *e*P **P 21 22 52.4 +0.6**
comp=Z,18nm,1.0s
TRTT Trang 48.20 244 P **P 21 22 55.6 +2.8**
comp=Z,19nm,1.2s,comp=Z,590nm
BWN Browne 48.20 33 *e*P **P 21 22 53.2 +0.9**
comp=Z,33nm,1.0s
KKN Kakani 48.36 276 *e*P **P 21 22 54.2 -0.1**
comp=Z,89nm,0.7s
PKIN Phulchoki 48.36 276 *e*P **P 21 22 54.0 -0.3**
comp=Z,22nm,0.5s
PMR Palmer 48.40 37 *e*P **P 21 22 53.9 +0.1**
PMR pmax pmax
comp=Z,16nm,1.0s
PMR Palmer 48.40 37 *e*P **P 21 22 53.9 +0.1**
comp=Z,16nm,1.0s
MCK McKinley 48.44 34 *e*P **P 21 22 55.4 +1.3**
MCK pmax pmax
comp=Z,10.0nm,0.9s
MCK McKinley 48.44 34 *e*P **P 21 22 55.4 +1.3**
comp=Z,9.9nm,0.9s
RND Reindeer 48.48 34 *e*P **P 21 22 54.9 +0.4**
RND pmax pmax
comp=Z,17nm,1.0s
RND Reindeer 48.48 34 *e*P **P 21 22 54.9 +0.4**
comp=Z,17nm,1.0s
DMN Daman 48.58 276 *e*P **P 21 22 56.0 0.0**
comp=Z,32nm,0.6s
MDM Murphy Dome 48.74 32 *e*P **P 21 22 57.0 +0.5**
comp=Z,23nm,1.0s
SML Sawmill 48.77 36 *e*P **P 21 22 57.0 +0.3**
SML pmax pmax
comp=Z,14nm,0.8s
SML Sawmill 48.77 36 *e*P **P 21 22 57.0 +0.3**
comp=Z,14nm,0.8s
GKN Gorkha 48.78 277 *e*P **P 21 22 57.5 +0.1**
comp=Z,197nm,1.0s
WRH Wood River Hil 48.80 33 *e*P **P 21 22 57.5 +0.6**
comp=Z,5.8nm,0.6s
COLA College 48.90 32 *e*P **P 21 22 57.3 -0.3**
COLA pmax pmax
comp=Z,5.0nm,0.8s
CCB Clear Creek Bu 48.92 32 *e*P **P 21 22 58.8 +1.0**
comp=Z,5.2nm,1.2s
PKDT Phuket 49.14 245 P **P 21 23 01.7 +1.6**
comp=Z,47nm,1.1s
DHY Denali Highway 49.16 35 *e*P **P 21 22 59.8 -0.1**
comp=Z,6.0nm,0.8s
SCM Sheep Creek Mo 49.24 36 *e*P **P 21 23 01.0 +0.6**
SCM pmax pmax
comp=Z,18nm,1.0s
SCM Sheep Creek Mo 49.24 36 *e*P **P 21 23 01.0 +0.6**
comp=Z,18nm,1.0s
KULM Kulim 49.29 241⇓ P **P 21 23 02.3 +1.1**
KULM Kulim 49.29 241 *e*P **P 21 23 01.4 +0.2**
comp=Z,36nm,1.6s
HDA Harding Lake 49.30 33 *e*P **P 21 23 00.5 -0.2**
comp=Z,10nm,0.9s
ILAR Eielson Array 49.31 32 P **P 21 23 01.4 +0.5**
comp=Z,7.3nm,0.7s,baz=265,slow=6.4,SNR=87
ILAR LR LR 21 44 53.7
comp=Z,64nm,21.4s,baz=278,slow=37
ILB Eielson Array 49.31 32 *e*P **P 21 23 01.4 +0.5**
IL1 Eielson Array 49.31 32 *e*P **P 21 23 01.4 +0.6**
SOEI Soe 49.32 204 P P 21 23 11.9 +10
IPM Ipoh 49.60 240 *e*P **P 21 23 03.8 +0.1**
comp=Z,18nm,0.7s
MYKOM Kota Tinggi 49.67 234 *e*P **P 21 23 04.7 +0.5**
comp=Z,22nm,1.4s
KOLN Koldanda 49.71 277 *e*P **P 21 23 04.9 +0.3**
KLU Klutina 49.94 37 *e*P **P 21 23 07.2 +1.5**
comp=Z,23nm,1.2s
FYU Fort Yukon 49.96 30 *e*P **P 21 23 08.3 +2.6**
comp=Z,52nm,1.6s
PAX Paxson 50.03 35 *e*P **P 21 23 08.4 +2.0**
PAX pmax pmax
comp=Z,21nm,1.7s
PAX Paxson 50.03 35 *e*P **P 21 23 08.3 +2.0**
comp=Z,21nm,1.7s
DIV Divide 50.04 37 *e*P **P 21 23 06.8 +0.4**
comp=Z,48nm,1.4s
PYUN Piuthan 50.05 278 *e*P **P 21 23 07.3 +0.1**
comp=Z,253nm,1.0s
TKM2 Tokmak 2 50.30 299 *e*P **P 21 23 09.4 +0.5**
TKM2 pmax pmax
comp=Z,34nm,0.7s
TKM2 Tokmak 2 50.30 299 *e*P **P 21 23 09.4 +0.5**
comp=Z,34nm,0.7s
MTN Manton Dam 50.50 194 *e*P **P 21 23 11.0 +0.7**
comp=Z,38nm,0.8s
DOT Dot Lake 50.61 34 *e*P **P 21 23 11.4 +0.7**
comp=Z,59nm,1.7s
BMRM Bremner River 50.62 37 *e*P **P 21 23 12.8 +1.9**
comp=Z,17nm,1.0s
VOSK Vostochnaya 50.90 312*ce*P **P 21 23 12.5 -0.5**
VOSK pmax pmax
comp=Z,24nm,0.7s
VOSK Vostochnaya 50.90 312 *e*P **P 21 23 12.6 -0.5**
comp=Z,27nm,0.8s
CHKZ Chkalovo 50.93 313 *i*P **P 21 23 12.6 -0.6**
CHKZ pmax pmax
comp=Z,16nm,0.6s
FRU Bishkek 51.02 299 *e*P **P 21 23 13.0 -1.1**
FRU *i* 21 23 18.0
FRU pmax pmax
comp=Z,52nm,1.4s
KSH Kashi 51.09 294 P **P 21 23 19.0 +4.2**
KSH *e*PcP **PcP 21 24 35.0 +4.4**
KSH PcS **PcS 21 28 30.8 +2.5**
KSH S **S 21 30 37.5 +4.2**
KSH ScS **ScS 21 33 08.8 +2.2**
KSH pmax pmax
comp=Z,18nm,1.1s
KSH pmax pmax
comp=Z,210nm,6.0s
KSH LR LR
comp=Z,840nm,14.0s
KSH LR LR
comp=Z,410nm,10.2s
KSH LR LR
comp=Z,1µm,14.4s
AAK Ala-Archa 51.16 299*ce*P **P 21 23 14.8 -0.6**
AAK pmax pmax
comp=Z,9.0nm,0.7s
AAK Ala-Archa 51.16 299 *e*P **P 21 23 15.4 0.0**
comp=Z,9.7nm,0.7s
BRVK Borovoye 51.25 313*ce*P **P 21 23 15.8 +0.2**
BRVK pmax pmax
comp=Z,18nm,0.7s
BRVK Borovoye 51.25 313 *e*P **P 21 23 15.7 +0.1**
comp=Z,18nm,0.8s
CRQM Cirque 51.36 37 *e*P **P 21 23 18.6 +2.0**
comp=Z,18nm,0.9s
LGTI Lohaghat 51.64 281 *e*P P 21 23 30.2 +11
EKS2 Erkin-Say 51.66 299 *e*P **P 21 23 18.6 -0.4**
EKS2 pmax pmax
comp=Z,9.0nm,0.8s
EKS2 Erkin-Say 51.66 299 *e*P **P 21 23 18.6 -0.4**
comp=Z,9.1nm,0.8s
EGAK Eagle 51.76 32 *e*P **P 21 23 19.9 +0.6**
comp=Z,12nm,1.4s
ZRNK Zerenda 52.03 313 *i*P **P 21 23 21.4 0.0**
ZRNK pmax pmax
comp=Z,19nm,0.7s
ZRNK Zerenda 52.03 313 *e*P **P 21 23 21.5 0.0**
comp=Z,37nm,1.2s
PSI Prapat 52.26 240 *e*P **P 21 23 23.4 -0.4**
PSI pmax pmax
comp=Z,15nm,0.9s
PSI Prapat 52.26 240 *e*P **P 21 23 23.4 -0.4**
comp=Z,15nm,0.9s
KKAR Karatay Array 53.79 300 *e*P **P 21 23 34.8 +0.1**
KKAR Karatay Array 53.79 300 *e*P **P 21 23 34.8 +0.1**
INK Inuvik 54.27 27 P **P 21 23 38.9 +1.2**
comp=Z,5.0nm,0.6s,baz=294,slow=6.9,SNR=34
INK Inuvik 54.27 27 *e*P **P 21 23 38.9 +1.2**
INK pmax pmax
comp=Z,8.0nm,0.8s
INK Inuvik 54.27 27 *e*P **P 21 23 38.9 +1.2**
comp=Z,8.2nm,0.8s
FITZ Fitzroy Crossi 56.84 199 *e*P **P 21 23 57.6 +0.9**
comp=Z,58nm,1.8s
SOKR Solikamsk 56.88 323*di*P **P 21 23 55.7 -0.9**
SOKR pmax pmax
comp=Z,27nm,1.1s
SOKR MLR MLR
comp=Z,301nm,17.0s
ARU Arti 56.95 319*c i*P **P 21 23 56.9 -0.2**
ARU 21 24 52.7
ARU 21 25 58.9
ARU S **S 21 31 51.3 -0.4**
ARU SS **SS 21 35 37.7 -1.7**
ARU pmax pmax
comp=Z,59nm,1.0s
ARU MLR MLR
comp=Z,561nm,17.0s
ARU Arti 56.95 319 *e*P **P 21 23 57.1 -0.1**
comp=Z,76nm,1.2s
WRAB Tennant Creek 56.95 189*ce*P **P 21 23 58.1 +0.6**
WRAB pmax pmax
comp=Z,32nm,1.2s
WRAB Tennant Creek 56.95 189 *e*P **P 21 23 57.8 +0.3**
comp=Z,24nm,0.8s
WB2 Warramunga Arr 56.95 189 *e*P **P 21 23 57.5 0.0**
WR1 Warramunga Arr 56.96 189 *e*P **P 21 23 57.4 -0.1**
WRA Warramunga Arr 56.96 189 P **P 21 23 57.4 -0.1**
comp=Z,6.5nm,0.6s,baz=6.7,slow=7.2,SNR=54
KBL Kabul 58.10 291 *e*P **P 21 24 05.5 -0.4**
KBL pmax pmax
comp=Z,38nm,1.0s
KBL Kabul 58.10 291 *e*P **P 21 24 05.5 -0.4**
comp=Z,38nm,1.0s
DLBC Dease Lake 58.38 38 *e*P **P 21 24 09.0 +1.7**
comp=Z,6.1nm,0.9s
ABKAR Akbulak array 58.57 310 *e*P **P 21 24 08.2 -0.5**
HYB Hyderabad 58.85 269 *i*P **P 21 24 10.0 -1.1**
HYB *e* 21 24 23.0
AS01 Alice Springs 60.68 189 *e*P **P 21 24 23.4 0.0**
AS31 Alice Springs 60.68 189 *e*P **P 21 24 23.8 +0.3**
comp=Z,4.4nm,0.7s
ASAR Alice Springs 60.68 189 P **P 21 24 23.8 +0.3**
comp=Z,4.9nm,0.7s,baz=16,slow=7.5,SNR=75
ASAR LR LR 21 49 44.8
comp=Z,151nm,21.2s,baz=270,slow=35
MBWA Marble Bar 61.47 204 *e*P **P 21 24 29.4 +0.6**
comp=Z,16nm,0.8s
LVZ Lovozero 62.56 336*ce*P **P 21 24 38.0 +2.3**
LVZ pmax pmax
comp=Z,37nm,2.5s
RES Resolute Bay 62.63 15 *e*P **P 21 24 36.6 +0.6**
RES pmax pmax
comp=Z,11nm,1.0s
RES Resolute Bay 62.63 15 *e*P **P 21 24 36.6 +0.6**
comp=Z,11nm,1.0s
APA Apatity 63.14 336⇑ *i*P **P 21 24 40.0 +0.5**
APA MLR MLR
comp=Z,900nm,18.0s
TMCR Tamitsa 63.24 332 *e*P **P 21 24 40.1 0.0**
TMCR pmax pmax
comp=Z,19nm,0.8s
YKW3 Yellowknife Ar 63.62 30 *e*P **P 21 24 43.3 +0.6**
comp=Z,13nm,1.6s
YKA Yellowknife Ar 63.65 30 P **P 21 24 43.3 +0.4**
comp=Z,2.1nm,0.7s,baz=302,slow=6.7,SNR=9.2
YKB5 Yellowknife Ar 63.65 30 *e*P **P 21 24 43.4 +0.4**

ARA0	ARCESS Array S	64.42	340	*e*P		P		21 24 48.3	+0.4
ARCES	ARCESS Array B	64.42	340	P		P		21 24 48.3	+0.4
	comp=Z,3.7nm,0.8s,baz=56,slow=7.7,SNR=14								
GEYT	Alibeck	64.51	299	P		P		21 24 49.1	+0.1
	comp=Z,13nm,0.7s,baz=28,slow=3.5,SNR=37								
DAG	Danmarks Havn	66.03	355	*i* P		P		21 24 58.9	+0.7
DAG	Danmarks Havn	66.03	355	*e*P		P		21 24 58.9	+0.7
ALST	Alston	67.50	49	*e*P		P		21 25 05.4	-2.7
MOS	Moscow	67.80	324	*e*P		P		21 25 08.7	-1.1
VRH	Novokhopyorsk	68.17	318	*e*P		P		21 25 11.3	-0.9
VRH				pmax	pmax				
	comp=Z,20nm,1.1s								
STKA	Stephens Creek	68.35	181	P		P		21 25 14.1	+0.7
	comp=Z,1.7nm,0.7s,baz=334,slow=7.0,SNR=9.2								
STKA	Stephens Creek	68.35	181	*e*P		P		21 25 14.1	+0.7
STKA				pmax	pmax				
	comp=Z,1.0nm,0.9s								
STKA	Stephens Creek	68.35	181	*e*P		P		21 25 14.1	+0.7
	comp=Z,1.2nm,0.9s								
OBN	Obninsk	68.65	324	⇑*i*P		P		21 25 14.8	-0.3
OBN				*i*				21 25 27.9	
OBN				*e*				21 25 39.8	
OBN				*e*				21 27 44.9	
OBN				pmax	pmax				
	comp=Z,27nm,1.2s								
OBN				MLR	MLR				
	comp=Z,261nm,16.0s								
LPSR	Galich'ya Gora	68.88	320	*e*P		P		21 25 16.3	-0.3
LPSR				pmax	pmax				
	comp=Z,30nm,0.9s								
FIA1	FINESS Array S	69.30	333	*e*P		P		21 25 19.1	+0.1
FIA0	FINESS Array S	69.30	333	*e*P		P		21 25 19.0	-0.1
FIA0	FINESS Array S	69.30	333	*e*P		P		21 25 19.0	-0.1
FINES	FINESS Array B	69.30	333	P		P		21 25 19.0	-0.1
	comp=Z,10nm,0.8s,baz=59,slow=7.8,SNR=46								
VSR	Storozhevoye	69.52	319	*e*P		P		21 25 19.8	-0.8
VSR				pmax	pmax				
	comp=Z,30nm,1.2s								
GOF	Gofitskoye	70.72	312	⇑*i*P		P		21 25 28.3	+0.2
GOF				pmax	pmax				
	comp=Z,37nm,1.1s								
SUMG	Summit	70.89	0	*i* P		P		21 25 30.5	+1.3
SUMG	Summit	70.89	0	*e*P		P		21 25 29.8	+0.6
SUMG				pmax	pmax				
	comp=Z,10.0nm,0.9s								
SUMG	Summit	70.89	0	*e*P		P		21 25 29.8	+0.6
	comp=Z,10nm,0.9s								
VSU	Vasula	70.96	330	*ce*P		P		21 25 29.8	+0.5
VSU				pmax	pmax				
	comp=Z,46nm,1.2s								
NCK	Nalchik	71.23	311	*e*P		P		21 25 31.0	-0.3
NCK				pmax	pmax				
	comp=Z,12nm,1.1s								
DGRG	David-gareji	71.24	308	P		P		21 25 31.3	-0.1
DGRG	David-gareji	71.24	308	P		P		21 25 31.3	-0.1
GUDG	Gudauri	71.25	309	P		P		21 25 33.0	+1.3
ZEI	Tsey	71.43	310	*e*P		P		21 25 31.3	-1.5
ZEI				pmax	pmax				
	comp=Z,13nm,0.6s								
TBLG	Delisi	71.49	309	P		P		21 25 34.5	+1.6
TBLG	Delisi	71.49	309	P		P		21 25 34.5	+1.6
KBZ	Khabaz	71.53	311	P		P		21 25 33.3	+0.3
	comp=Z,16nm,0.9s,baz=44,slow=3.3,SNR=51								
KIV	Kislovodsk	71.53	311	*c* *i*P		P		21 25 33.4	+0.2
KIV				*i*				21 25 39.2	
KIV				*i*				21 25 50.9	
KIV				pmax	pmax				
	comp=Z,50nm,1.0s								
KIV				MLR	MLR				
	comp=Z,277nm,16.0s								
KIV	Kislovodsk	71.53	311	*e*P		P		21 25 33.5	+0.2
	comp=Z,45nm,1.0s								
ONI	Oni	71.82	310	P		P		21 25 35.6	+0.7
ONI	Oni	71.82	310	P		P		21 25 35.6	+0.7
ORV	Oroville	71.89	54	*e*P		P		21 25 36.6	+1.3
ORV				pmax	pmax				
	comp=Z,10.0nm,1.1s								
ORV	Oroville	71.89	54	*e*P		P		21 25 36.6	+1.3
	comp=Z,9.6nm,1.1s								
BANOM	Banah	71.89	289	*i* P		P		21 25 35.8	+0.2
	SNR=11								
BANOM	Banah	71.89	289	P		P		21 25 35.8	+0.2
	SNR=11								
NEY	Neytrino	71.90	311	*e*P		P		21 25 35.8	+0.3
NEY				pmax	pmax				
	comp=Z,2.0nm,1.2s								
SWMT	Swartz Lake	71.98	44	*e*P		P		21 25 37.5	+1.6
SMDO	Samad	72.10	286	P		P		21 25 37.5	+0.5
	SNR=5.8								
GNI	Garni	72.35	307	*ce*P		P		21 25 39.9	+1.6
GNI				pmax	pmax				
	comp=Z,88nm,1.2s								
MSO	Missoula	72.41	44	*e*P		P		21 25 38.0	-0.4
	comp=Z,9.2nm,1.4s								
AKH	Akhalkalaki	72.45	309	⇑*i*P		P		21 25 39.8	+1.0
UOSS	Minazif	72.50	288	*e*P		P		21 25 39.4	+0.2
	comp=Z,1.7nm,0.8s								
CHVG	Ch'k'valeri	72.59	311	⇓*i*P		P		21 25 40.2	+0.8
HATD	Hatta, Dubai	72.61	288	*i* P		P		21 25 40.1	+0.2
	SNR=12								
HATD	Hatta, Dubai	72.61	288	P		P		21 25 40.1	+0.2
	SNR=12								
ASHO	Ashiyiah	72.75	288	*i* P		P		21 25 40.8	+0.1
	SNR=8.7								
ASHO	Ashiyiah	72.75	288	P		P		21 25 41.7	+1.0
	SNR=8.7								
EPOS	Posof	72.87	309	*i* P		P		21 25 41.9	+0.6
NAZ	Nazwa, Dubai	72.88	289	P		P		21 25 41.3	-0.2
FAQ	Al Faqa, Dubai	73.07	288	*i* P		P		21 25 42.3	-0.2
	SNR=7.1								
ARQ	Araqi	73.13	287	P		P		21 25 43.0	+0.1
	SNR=7.4								
NACGM	Naroch	73.25	327	*e*		P		21 25 42.0	-1.1
MFID	Camas Ranch	73.27	48	*e*P		P		21 25 45.5	+1.9
	comp=Z,14nm,1.4s								
CMB	Columbia Colle	73.45	55	*e*P		P		21 25 44.3	-0.4
CMB				*e*				21 25 55.4	
CMB				pmax	pmax				
	comp=Z,9.0nm,1.1s								
CMB	Columbia Colle	73.45	55	*e*P		P		21 25 44.3	-0.4
	comp=Z,9.4nm,1.1s								
CMB				*e*PcP		PcP		21 25 55.4	-5.5
FFC	Flin Flon	73.52	33	*e*P		P		21 25 45.5	+0.8
FFC				pmax	pmax				
	comp=Z,7.0nm,0.8s								
FFC	Flin Flon	73.52	33	*e*P		P		21 25 45.5	+0.8
	comp=Z,6.9nm,0.8s								
SOC	Sochi	73.52	312	*e*P		P		21 25 50.9	+6.0
SOC				*e*S		SKiKP		21 35 16.6	+0.2
SOC				pmax	pmax				
	comp=Z,8.0nm,0.6s								
SOC				MLR	MLR				
	comp=Z,390nm,19.0s								
ARTV	Artvin	73.55	309	*i* P		P		21 25 45.1	-0.3
DBAD	Bademkaya	73.79	309	*i* P		P		21 25 47.3	+0.6
LRM	Limekiln Ridge	73.83	45	*e*P		P		21 25 47.6	+0.6
FCC	Fort Churchill	73.89	27	*e*P		P		21 25 47.3	+0.6
FCC				pmax	pmax				
	comp=Z,16nm,1.4s								
FCC	Fort Churchill	73.89	27	*e*P		P		21 25 47.3	+0.6
	comp=Z,16nm,1.4s								
EGMT	Eagleton	73.99	42	P		P		21 25 48.6	+0.9
	baz=308								
HLID	Hailey	74.03	47	P		P		21 25 49.7	+1.6
	baz=306								
HLID	Hailey	74.03	47	*e*P		P		21 25 49.1	+1.0
	comp=Z,7.6nm,1.2s								
ANN	Anapa	74.14	314	*e*P		P		21 25 49.0	+0.5
ANN				*e*S		S		21 35 24.6	+2.2
ANN				pmax	pmax				
	comp=Z,26nm,0.9s								
ANN				MLR	MLR				
	comp=N,390nm,16.0s								
BOZ	Bozeman (W)	74.40	44	P		P		21 25 51.5	+1.3
	baz=307								
BOZ	Bozeman (W)	74.40	44	*e*P		P		21 25 50.8	+0.5
BOZ				pmax	pmax				
	comp=Z,7.0nm,0.9s								
BOZ	Bozeman (W)	74.40	44	*e*P		P		21 25 50.8	+0.5
	comp=Z,6.8nm,0.9s								
NC405	NORSAR Array S	74.41	337	*e*P		P		21 25 50.5	+0.6
NC204	NORSAR Array S	74.58	338	*e*P		P		21 25 51.3	+0.4
NV01	Mina Array Sit	74.58	53	*e*P		P		21 25 53.5	+2.0
NVAR	Mina Array Bea	74.58	53	P		P		21 25 53.5	+2.0
	comp=Z,3.2nm,0.6s,baz=291,slow=6.1,SNR=4.8								
NVAR				LR		LR		21 52 44.9	
	comp=Z,88nm,21.8s,baz=269,slow=31								
NB201	NORSAR Array S	74.59	338	*e*P		P		21 25 51.4	+0.5
NB2	NORSAR Subarra	74.62	338	P		P		21 25 50.9	-0.2
	comp=Z,14nm,1.2s,baz=40,slow=6.2								
NB200	NORSAR Array S	74.62	338	*e*P		P		21 25 51.2	+0.1
NOA	NORSAR Array B	74.62	338	P		P		21 25 51.2	+0.1
	comp=Z,5.3nm,0.8s,baz=39,slow=5.8,SNR=19								
NV11	Mina Array Sit	74.68	53	*e*P		P		21 25 53.6	+1.6
	comp=Z,8.1nm,1.2s								
NBO02	NORSAR Array S	74.73	338	*e*P		P		21 25 51.9	+0.2
AKASG	Malin Array Be	74.86	323	P		P		21 25 52.3	-0.3
	comp=Z,7.0nm,0.5s,baz=46,slow=6.1,SNR=46								
AKASG	Malin Array Be	74.86	323	*ce*P		P		21 25 52.2	-0.3
AKASG				pmax	pmax				
	comp=Z,8.0nm,0.5s								
AKBB	Malin Array Si	74.86	323	*e*P		P		21 25 52.3	-0.3
AKBB				pmax	pmax				
	comp=Z,14nm,0.8s								
AKBB	Malin Array Si	74.86	323	*e*P		P		21 25 52.3	-0.3
	comp=Z,14nm,0.8s								
KIEV	Kiev	74.87	323	*e*P		P		21 25 51.1	-1.5
KIEV				pmax	pmax				
	comp=Z,12nm,1.0s								
KIEV	Kiev	74.87	323	*e*P		P		21 25 52.4	-0.2
	comp=Z,13nm,0.9s								
AK11	Malin Array Si	74.90	323	*e*P		P		21 25 52.7	-0.1
SUW	Suwalki	75.41	328	*e*P		P		21 25 56.0	+0.3
SUW	Suwalki	75.41	328	*e*P		P		21 25 56.0	+0.3
PKM	Mcpherson Peak	75.61	57	P		P		21 25 59.3	+1.8
	baz=305								
H17A	Grant Village	75.75	45	P		P		21 26 01.1	+2.9
	baz=308								
H17A	Grant Village	75.75	45	*e*P		P		21 26 01.5	+3.3
	comp=Z,24nm,1.4s								
IMW	Indian Meadow	75.85	46	*e*P		P		21 25 58.9	+0.1
	comp=Z,22nm,1.5s								
FLWY	Flagg Ranch	75.87	45	*e*P		P		21 26 02.3	+3.4
	comp=Z,21nm,1.4s								
SIM	Simferopol'	75.93	316	*e*P		P		21 25 58.9	0.0
SIM				pmax	pmax				
	comp=Z,13nm,0.8s								
FXWY	Fox Creek	75.96	46	*e*P		P		21 25 59.5	+0.2
	comp=Z,6.8nm,1.1s								
MOOW	Moose Ponds	76.05	46	*e*P		P		21 25 59.5	-0.4
	comp=Z,11nm,1.4s								
HVU	Hansel Valley	76.06	48	*e*P		P		21 26 00.1	+0.2
HVU				pmax	pmax				
	comp=Z,10.0nm,1.1s								
HVU	Hansel Valley	76.06	48	*e*P		P		21 26 00.1	+0.2
	comp=Z,9.5nm,1.1s								
LOHW	Long Hollow	76.21	46	*e*P		P		21 26 00.8	0.0
	comp=Z,13nm,1.5s								
SNOW	Snow King Moun	76.22	46	*e*P		P		21 26 00.8	-0.1
	comp=Z,8.5nm,0.6s								
REDW	Red Top Meadow	76.22	46	*e*P		P		21 26 01.2	+0.4
	comp=Z,15nm,1.4s								
DAC	Darwin (Calif)	76.28	55	*e*P		P		21 26 01.3	0.0
DAC				pmax	pmax				
	comp=Z,11nm,1.3s								
DAC	Darwin (Calif)	76.28	55	*e*P		P		21 26 01.3	0.0
	comp=Z,11nm,1.3s								
R11A	Troy Canyon, C	76.37	52	P		P		21 26 03.2	+1.5
	baz=306								
R11A	Troy Canyon, C	76.37	52	*e*P		P		21 26 03.2	+1.5
	comp=Z,12nm,1.1s								
MPMC	Manual Prospec	76.48	55	P		P		21 26 03.6	+1.1
	baz=306								
TPNV	Topopah Spring	76.77	54	P		P		21 26 04.9	+1.0
	baz=306								
TPNV	Topopah Spring	76.77	54	*e*P		P		21 26 05.0	+1.0
TPNV				pmax	pmax				
	comp=Z,14nm,1.1s								
TPNV	Topopah Spring	76.77	54	*e*P		P		21 26 05.0	+1.0
	comp=Z,14nm,1.1s								
HWUT	Hardware Ranch	76.88	48	*e*P		P		21 26 05.7	+1.1
	comp=Z,19nm,1.3s								
SORM	Soroca	76.96	321	⇑*i*P		P		21 26 05.0	+0.4
DUG	Dugway, Tooele	76.99	49	P		P		21 26 06.4	+1.3
	baz=307								
DUG	Dugway, Tooele	76.99	49	*e*P		P		21 25 57.9	-7.3
DUG				pmax	pmax				
	comp=Z,16nm,1.3s								
DUG	Dugway, Tooele	76.99	49	*e*P		P		21 25 57.9	-7.3
	comp=Z,16nm,1.3s								
ERBA	Erbaa	77.01	311	*i* P		P		21 26 05.5	+0.3
BW06	Boulder Array	77.34	46	P		P		21 26 08.5	+1.3
	baz=309								
BW06	Boulder Array	77.34	46	*e*P		P		21 26 07.3	+0.1
PD31	Pinedale Array	77.34	46	*e*P		P		21 26 08.2	+1.0
PDAR	Pinedale Array	77.34	46	P		P		21 26 08.2	+1.0
	comp=Z,1.5nm,0.7s,baz=267,slow=3.0,SNR=7.6								
PDAR				LR		LR		21 54 50.1	
	comp=Z,53nm,21.8s,baz=346,slow=32								
PSUT	Pine Spring	77.35	51	*e*P		P		21 26 07.0	-0.3
	comp=Z,11nm,1.1s								
CUKAN	kangal_SIVAS	77.41	310	*i* P		P		21 26 08.4	+0.9
BFSC	Mount Baldy Ra	77.43	57	P		P		21 26 08.7	+1.0
	baz=306								
SFNV	Sufian	77.47	306	*e*P		P		21 26 08.5	+0.6
NLU	North Lily Min	77.59	49	*e*P		P		21 26 09.1	+0.5
	comp=Z,10.0nm,1.2s								
AKCD	Akcadag	77.74	309	*i* P		P		21 26 10.3	+0.9
MPU	Maple Canyon	77.82	49	*e*P		P		21 26 11.9	+2.0
	comp=Z,12nm,1.2s								
LVV	L'vov	77.93	324	*e*P		P		21 26 09.9	-0.1
BEL	Belsk	77.97	327	*e*P		P		21 26 11.0	+0.8
BEL	Belsk	77.97	327	*e*P		P		21 26 11.1	+0.8
CUSAR	Sarkisla-SIVAS	78.09	310	*i* P		P		21 26 11.6	+0.2
COAL	Corum-Alaca	78.34	312	*i* P		P		21 26 13.0	+0.4
MSU	Marysvale	78.41	50	*e*P		P		21 26 13.5	+0.3
MSU	Marysvale	78.41	50	*e*P		P		21 26 13.5	+0.3
KSRV	Kasrt alli	78.52	306	*e*P		P		21 26 14.3	+0.7
GZT	Gaziantep	78.54	308	*i* P		P		21 26 14.5	+0.6
LCMT	Little Creek M	78.66	52	*e*P		P		21 26 15.0	+0.5
	comp=Z,11nm,1.0s								
KWP	Kalwaria Pacla	78.67	325	*e*P		P		21 26 14.9	+0.7
KWP	Kalwaria Pacla	78.67	325	*e*P		P		21 26 14.9	+0.7
MTPU	Mount Pierson	78.69	51	*e*P		P		21 26 15.8	+0.8
	comp=Z,8.4nm,1.0s								
BUR08	Bucovina Ar. S	78.86	322	*e*P		P		21 26 15.9	+0.5
TESR	Tescani	78.91	321	⇓*i*P		P		21 26 15.7	+0.2
KNB	Kanab	78.92	52	*e*P		P		21 26 18.4	+2.4
KNB				pmax	pmax				
	comp=Z,39nm,1.5s								
KNB	Kanab	78.92	52	*e*P		P		21 26 18.4	+2.4
	comp=Z,39nm,1.5s								
CFR	Carcaliu	79.03	319	⇓*i*P		P		21 26 17.3	+1.1
SRU	San Rafael Swe	79.05	49	*e*P		P		21 26 17.0	+0.3
SRU				pmax	pmax				
	comp=Z,11nm,0.9s								
SRU	San Rafael Swe	79.05	49	*e*P		P		21 26 17.0	+0.3
	comp=Z,11nm,0.9s								
CDAG	Cicekdag	79.10	312	*i* P		P		21 26 16.6	-0.2
IRM	Iron Mountain	79.15	55	P		P		21 26 18.2	+1.1
	baz=307								
BC3	Big Chuckawall	79.25	56	P		P		21 26 18.7	+0.9
	baz=307								
VRI	Vrincioaia	79.30	320	⇑*i*P		P		21 26 19.6	+1.9
ULM	Lac du Bonnet	79.31	34	P		P		21 26 17.3	-0.3
	comp=Z,0.7nm,0.3s,baz=231,slow=4.5,SNR=2.2								
ULM				LR		LR		21 59 48.7	
	comp=Z,50nm,21.9s,baz=332,slow=34								
PLOR	Plostina	79.35	320	⇑*i*P		P		21 26 19.9	+1.9
TIRR	Tirgusor	79.36	318	⇓*i*P		P		21 26 18.0	0.0
KOLS	Kolonicke sedl	79.37	324	*e*P		P		21 26 18.5	+0.5
KOLS				*e*PP		PP		21 29 15.7	-1.6
W13A	Hualapai Mount	79.41	54	*e*P		P		21 26 20.1	+1.3
	comp=Z,4.1nm,1.0s								
BR101	Keskin Array S	79.47	312	*e*P		P		21 26 19.1	+0.2
BR131	Keskin Array S	79.48	312	*e*P		P		21 26 19.4	+0.4
BRTR	Keskin Array B	79.48	312	P		P		21 26 19.1	+0.2
	comp=Z,8.0nm,1.1s,baz=103,slow=4.4,SNR=31								
STHS	Stebnicka Huta	79.50	325	*e*P		P		21 26 19.3	+0.6
RSSD	Black Hills	79.54	42	P		P		21 26 19.9	+0.6
	baz=312								
DRWC	Darouich	79.56	308	*e*P		P		21 26 20.5	+1.1
OJC	Ojcow	79.57	327	*e*P		P		21 26 19.5	+0.4
OJC	Ojcow	79.57	327	*e*P		P		21 26 19.2	+0.1
OJC				pmax	pmax				
	comp=Z,15nm,1.0s								
OJC	Ojcow	79.57	327	*e*P		P		21 26 19.2	+0.1
	comp=Z,15nm,1.0s								
UZH	Uzhgorod	79.57	324	*e*P		P		21 26 16.9	-2.2
UZH				*e*				21 26 26.5	
U15A	North Rim	79.62	52	*e*P		P		21 26 22.2	+2.2
	comp=Z,21nm,1.5s								
ARCR	ARCALIA	79.67	322	⇓*i*P		P		21 26 21.3	+1.6
CRVS	Cervenica-Dubn	79.77	325	*e*P		P		21 26 20.7	+0.5
O20A	White River Ci	79.77	47	P		P		21 26 22.1	+1.5
	baz=310								
ISR	Istrita	79.91	320	⇓*i*P		P		21 26 22.6	+1.5
BR231	Keskin MP Arra	79.91	312	*e*P		P		21 26 19.4	-1.9
DOPR	Dopca	79.92	321	⇓*i*P		P		21 26 22.4	+1.3
NIE	Niedzica	79.93	326	*e*P		P		21 26 22.2	+1.1
NIE	Niedzica	79.93	326	*e*P		P		21 26 22.2	+1.1
MLR	Muntele Rosu	79.96	320	⇓*i*P		P		21 26 21.9	+0.4
MLR	Muntele Rosu	79.96	320	*e*P		P		21 26 21.9	+0.4
MLR				pmax	pmax				
	comp=Z,8.0nm,1.0s								
MLR	Muntele Rosu	79.96	320	*e*P		P		21 26 21.9	+0.4
	comp=Z,7.7nm,1.0s								
PV09	Paradox Valley	80.28	49	*e*P		P		21 26 21.6	-1.9
GULE	Gulek	80.33	309	*i* P		P		21 26 23.6	0.0
PV10	Paradox Valley	80.41	49	*e*P		P		21 26 25.8	+1.6
VOIR		80.46	321	⇑*i*P		P		21 26 25.3	+1.2
ARNB	Al Arnab	80.47	308	*e*P		P		21 26 24.9	+0.6
A33A	Warroad	80.48	34	P		P		21 26 24.7	+0.7
	baz=317								
BTAS	Taskesti	80.48	314	*i* P		P		21 26 24.2	-0.1
LANS	Liptovska Anna	80.50	326	*e*P		P		21 26 25.5	+1.3
LANS				*e*PP		PP		21 29 28.0	+1.4
KECS	Kecovo	80.52	325	*e*PP		PP		21 29 27.1	+0.3
PV05	Paradox Valley	80.57	49	*e*P		P		21 26 25.4	+0.5
OKC	Ostrava-Krasne	80.58	327	*e*P		P		21 26 24.9	+0.4
OKC				*e*pP		PcP		21 26 33.9	+2.5
OKC	Ostrava-Krasne	80.58	327	*e*P		P		21 26 24.9	+0.4
OKC				*e*				21 26 33.9	
N23A	Red Feather La	80.61	46	P		P		21 26 27.3	+2.0
	baz=311								
N23A	Red Feather La	80.61	46	*e*P		P		21 26 27.7	+2.5
	comp=Z,14nm,1.2s								
KSP	Ksiaz	80.62	329	*e*P		P		21 26 25.7	+1.0
KSP	Ksiaz	80.62	329	*e*P		P		21 26 25.7	+1.0
Y14A	Wickenburg	80.69	55	*e*P		P		21 26 26.9	+1.4
	comp=Z,24nm,0.8s								
ARR	Arges	80.72	321	⇓*i*P		P		21 26 27.2	+1.8
WUAZ	Wupatki	80.77	52	P		P		21 26 27.3	+1.2
	baz=309								
WUAZ	Wupatki	80.77	52	*e*P		P		21 26 26.5	+0.5
	comp=Z,12nm,1.0s								
MORC	Moravsky Berou	80.89	327	⇑*i*P		P		21 26 26.4	+0.2
MORC	Moravsky Berou	80.89	327	*e*P		P		21 26 27.1	+0.9
MORC				pmax	pmax				
	comp=Z,39nm,1.2s								
MORC	Moravsky Berou	80.89	327	*e*P		P		21 26 27.1	+0.9
	comp=Z,39nm,1.2s								
DPC	Dobruska-Polom	80.98	328	*e*P		P		21 26 27.6	+0.9
DPC				*es*P		PcP		21 26 37.7	+4.5
DPC				*e*PP		PP		21 29 22.5	-8.1
DPC	Dobruska-Polom	80.98	328	*e*P		P		21 26 27.6	+0.9
DPC				*e*				21 26 37.7	
KRLC	Kraliky	80.99	328	*e*P		P		21 26 27.3	+0.5
KRLC				*e*pP		PcP		21 26 36.1	+2.8
KRLC				*es*P		sP		21 26 38.0	+10
KRLC	Kraliky	80.99	328	*e*P		P		21 26 27.3	+0.5
KRLC				*e*				21 26 36.1	
KRLC				*e*				21 26 38.0	
HAWK	Haweek	81.02	306	*e*P		P		21 26 28.3	+1.0
SMCO	Snowmass	81.13	47	*e*P		P		21 26 30.0	+1.8
	comp=Z,7.2nm,1.1s								
I28A	Midland	81.14	41	P		P		21 26 28.1	+0.4
	baz=314								
PSZ	Piszkesteto	81.20	325	⇑*i*P		P		21 26 28.7	+0.7
PSZ	Piszkesteto	81.20	325	*e*P		P		21 26 28.2	+0.2
PSZ				pmax	pmax				
	comp=Z,13nm,1.0s								
PSZ	Piszkesteto	81.20	325	*e*P		P		21 26 28.2	+0.2
	comp=Z,13nm,1.0s								
VYHS	Vyhne	81.26	326	*e*P		P		21 26 28.6	+0.4
VYHS				*e*PP		PP		21 29 33.7	+0.7
ZALF	Zalf	81.41	305	*e*P		P		21 26 29.5	+0.2
MVCO	Mesa Verde	81.49	50	P		P		21 26 30.8	+0.9
	baz=310								
MVCO	Mesa Verde	81.49	50	*e*P		P		21 26 30.4	+0.4
	comp=Z,7.7nm,1.0s								
BRG	Berggiesshubel	81.56	330	*e*P		P		21 26 29.3	-0.4
	comp=Z,5.1nm,1.0s								
BRG				*e*				21 29 35.9	
	comp=Z,3.8nm,1.1s								
	comp=N,464nm,21.4s								
	comp=E,227nm,16.6s								
	comp=Z,584nm,18.9s								
PVCC	Panska

	comp=Z,0.8nm,0.8s,baz=46,slow=7.6,SNR=3.9									
GEA0	**GERESS Array S**	**83.23**	**329**	*e*P		**P**		**21 26 38.3**	**-0.3**
E36A	**McGregor**	**83.23**	**35**	P		**P**		**21 26 39.5**	**+0.9**
	baz=318									
PMOR	**Pomariorio Ree**	**83.50**	**114**	*e*T		T		22 58 38.2		
	comp=Z,5.6nm,0.2s									
GRFO	**Grafenberg**	**83.57**	**330**	*e*P		**P**		**21 26 41.3**	**+1.0**
GRFO					pmax	pmax				
	comp=Z,10.0nm,0.9s									
GRFO	**Grafenberg**	**83.57**	**330**	*e*P		**P**		**21 26 41.3**	**+1.0**
	comp=Z,10nm,0.9s									
ARSA	**Arzberg**	**83.67**	**327**	*i* P		**P**		**21 26 40.8**	**-0.1**
	comp=Z,2.8nm,0.9s									
MOA	**Molln**	**83.76**	**328**	*i* PcP		**P**		**21 26 42.6**	**+1.3**
	comp=Z,2.8nm,0.9s									
PPT	**Papeete**	**83.96**	**117**	LR		LR		22 03 31.5		
	comp=Z,119nm,18.5s,baz=337,slow=35									
PPT2	**Papeete2**	**83.97**	**117**	*e*LR		LR		21 53 06.9		
	comp=Z,400nm,28.0s									
T25A	**Trinidad**	**83.99**	**48**	P		**P**		**21 26 43.3**	**+0.4**
	baz=312									
T25A	**Trinidad**	**83.99**	**48**	*e*P		**P**		**21 26 44.7**	**+1.8**
	comp=Z,11nm,1.0s									
AKAS	**Kas**	**84.16**	**311**	*i* P		**P**		**21 26 40.4**	**-3.3**
ANMO	**Albuquerque**	**84.21**	**50**	P		**P**		**21 26 45.6**	**+1.5**
	baz=312									
ANMO	**Albuquerque**	**84.21**	**50**	*ce*P		**P**		**21 26 46.0**	**+1.9**
ANMO					pmax	pmax				
	comp=Z,11nm,1.2s									
ANMO	**Albuquerque**	**84.21**	**50**	*e*P		**P**		**21 26 44.0**	**-0.1**
	comp=Z,8.8nm,1.0s									
AYDN	**Tasoluk**	**84.23**	**313**	*i* P		**P**		**21 26 41.3**	**-2.6**
GROS	**Grobnik**	**84.28**	**326**	*i* P		**P**		**21 26 43.5**	**-0.5**
SOKA	**Soboth**	**84.33**	**327**	*i* P		**P**		**21 26 44.2**	**0.0**
	comp=Z,8.4nm,1.0s									
319A	**Douglas**	**84.74**	**55**	*e*P		**P**		**21 26 48.4**	**+1.7**
	comp=Z,11nm,1.1s									
KBA	**Koelnbreinsper**	**84.75**	**328**	*i* PcP		**P**		**21 26 47.6**	**+1.1**
	comp=Z,4.8nm,1.0s									
LEGS	**Legarje**	**84.76**	**326**	*i* P		**P**		**21 26 45.9**	**-0.5**
SCHQ	**Schefferville**	**85.35**	**16**	P		**P**		**21 26 47.5**	**-1.7**
	comp=Z,3.2nm,0.5s,baz=239,slow=12,SNR=3.1									
SCHQ	**Schefferville**	**85.35**	**16**	*e*P		**P**		**21 26 47.5**	**-1.7**
	comp=Z,57nm,1.9s									
ABTA	**Abfaltersbach**	**85.37**	**328**	*i* P		**P**		**21 26 49.4**	**-0.2**
	comp=Z,4.5nm,1.0s									
TAOE	**Nuku Hiva Isla**	**85.48**	**104**	*e*LR		LR		21 53 55.7		
	comp=Z,472nm,24.1s									
RETA	**Reutte**	**85.51**	**329**	*i* P		**P**		**21 26 50.3**	**+0.1**
	comp=Z,8.7nm,0.9s									
PDG	**Podgorica**	**85.53**	**321**	⇑*i* P		**P**		**21 26 50.5**	**+0.2**
BFO	**Black Forest**	**85.80**	**331**	*ce*P		**P**		**21 26 51.9**	**+0.3**
BFO	**Black Forest**	**85.80**	**331**	*e*P		**P**		**21 26 51.6**	**0.0**
	comp=Z,12nm,0.9s									
K37A	**Belmond**	**85.85**	**38**	P		**P**		**21 26 52.4**	**+0.5**
	baz=318									
DAVA	**Damuels**	**86.03**	**330**	*i* P		**P**		**21 26 52.7**	**-0.2**
	comp=Z,14nm,0.9s									
FUORN	**Ofenpass-Fuorn**	**86.41**	**329**	*e*P		**P**		**21 26 55.0**	**0.0**
	comp=Z,11nm,0.9s									
L38A	**Oak Wood Farm,**	**86.65**	**38**	P		**P**		**21 26 56.0**	**+0.1**
	baz=319									
R33A	**Olander Ranch,**	**86.85**	**43**	P		**P**		**21 26 57.4**	**+0.4**
	baz=316									
MNTX	**Cornudas Mount**	**87.04**	**52**	P		**P**		**21 26 59.4**	**+1.5**
	baz=312									
N37A	**Lee Fairs, Mou**	**87.06**	**39**	P		**P**		**21 26 58.6**	**+0.8**
	baz=318									
MATE	**Matera**	**88.13**	**322**	⇑*i* P		**P**		**21 27 02.8**	**-0.2**
AQU	**L'Aquila**	**88.41**	**325**	*e*P		**P**		**21 27 04.9**	**+0.5**
AQU					pmax	pmax				
	comp=Z,11nm,0.9s									
AQU	**L'Aquila**	**88.41**	**325**	*e*P		**P**		**21 27 04.9**	**+0.5**
	comp=Z,11nm,0.9s									
O40A	**La Belle**	**88.72**	**38**	P		**P**		**21 27 06.5**	**+0.8**
	baz=320									
P40A	**Paris**	**89.08**	**39**	P		**P**		**21 27 08.2**	**+0.7**
	baz=320									
R39A	**Chumby, Stover**	**89.49**	**40**	P		**P**		**21 27 09.6**	**+0.2**
	baz=319									
LTX	**Lajitas**	**89.72**	**53**	*e*P		**P**		**21 27 11.8**	**+1.0**
LTX	**Lajitas**	**89.72**	**53**	*e*P		**P**		**21 27 11.8**	**+1.0**
TX31	**Lajitas Ar. Si**	**89.72**	**53**	*e*P		**P**		**21 27 11.8**	**+1.0**
TXAR	**Lajitas Array**	**89.72**	**53**	P		**P**		**21 27 11.8**	**+1.0**
	comp=Z,3.1nm,0.7s,baz=296,slow=3.4,SNR=18									
TXAR					LR	LR		22 02 48.3		
	comp=Z,101nm,20.4s,baz=0.0,slow=32									
S39A	**Bolivar**	**89.81**	**41**	P		**P**		**21 27 10.6**	**-0.3**
	baz=319									
V37A	**Hulbert**	**90.17**	**43**	P		**P**		**21 27 12.9**	**+0.2**
	baz=318									
X36A	**Centrahoma**	**90.46**	**45**	P		**P**		**21 27 14.9**	**+0.8**
	baz=317									
W37B	**Quinton**	**90.56**	**44**	P		**P**		**21 27 14.5**	**0.0**
	baz=318									
T40A	**Mansfield**	**90.63**	**41**	P		**P**		**21 27 14.7**	**-0.2**
	baz=319									
X38A	**Whitesboro**	**91.24**	**44**	P		**P**		**21 27 18.7**	**+1.0**
	baz=318									
333A	**Richland Sprin**	**91.25**	**49**	P		**P**		**21 27 18.0**	**+0.2**
	baz=316									
334A	**Lometa**	**91.69**	**48**	P		**P**		**21 27 20.3**	**+0.4**
	baz=316									
MIAR	**Mount Ida**	**92.02**	**43**	*e*P		**P**		**21 27 22.5**	**+1.2**
MIAR					pmax	pmax				
	comp=Z,9.0nm,0.5s									
MIAR	**Mount Ida**	**92.02**	**43**	*e*P		**P**		**21 27 22.5**	**+1.2**
	comp=Z,9.5nm,0.5s									
WHAR	**Wooly Hollow**	**92.16**	**42**	*e*P		**P**		**21 27 23.0**	**+1.0**
	comp=Z,9.9nm,1.0s									
FURI	**Furi**	**95.40**	**285**	*e*P		**P**		**21 27 40.0**	**+2.5**
	comp=Z,12nm,1.1s									
ES19	**SONSECA Array**	**97.71**	**334**	*e*P		**P**		**21 27 47.2**	**-0.1**
ESDC	**Sonseca Array**	**97.76**	**334**	P		**P**		**21 27 46.8**	**-0.7**
	comp=Z,0.6nm,0.7s,baz=4.8,slow=4.1,SNR=4.3									
TOA1	**Torodi Ar. Sit**	**117.93**	**316**	*e*PKPdf		**PKPdf**		**21 32 58.9**	**-0.7**
TORD	**Torodi Ar. Bea**	**117.94**	**316**	PKP		**PKPdf**		**21 32 58.8**	**-0.7**
	comp=Z,0.8nm,1.1s,baz=94,slow=0.9,SNR=4.9									
VNA2	**Neumayer--Watz**	**142.30**	**196**	PKP		**PKPdf**		**21 33 39.9**	**-3.8**
	baz=82,slow=2.2									
VNA3	**Neumayer Olymp**	**142.54**	**195**	PKP		**PKPdf**		**21 33 40.1**	**-4.0**
VNA1	**Neumayer--Stat**	**142.70**	**196**	PKP		**PKPdf**		**21 33 41.2**	**-3.2**
LPAZ	**La Paz**	**146.22**	**61**	PKPbc		**PKPbc**		**21 33 54.5**	**+0.6**
	comp=Z,3.5nm,0.6s,baz=8.4,slow=4.5,SNR=17									
LCO	**Las Campanas**	**151.38**	**84**	*e*PKPab		**PKPab**		**21 34 18.9**	**+4.1**
PLCA	**Paso Flores**	**154.23**	**109**	PKPab		**PKPab**		**21 34 27.1**	**+0.9**
	comp=Z,3.9nm,1.1s,baz=157,slow=1.6,SNR=4.5									

*ISCJB **25** 21:16:21.9±0.6,38°.32N±0°.04×141°.90E±0°.07,h71km±4km, mb4.5/24, Error ellipse: s-maj=9.7km s-min=5.4km az=20.7*
*JMA **25** 21:16:23.2±0.1,38°.35N×141°.87E,h64km±1km,M4.5*
JMA Felt III J1.
*NEIC **25** 21:16:24.5±0.9,38°.31N×141°.85E,h79km±8km,mb4.7/11, Error ellipse: s-maj=8.8km s-min=6.8km az=127.0*
NEIC Recorded [3 JMA] in Iwate and Miyagi.
*IDC **25** 21:16:24.8±2.6,38°.29N×141°.88E,h79km±24km,mb4.1/15, mb1 4.3/18,mb1mx4.0/41,mbtmp4.5/18, Error ellipse: s-maj=19.0km s-min=15.1km az=67.0*
ISC 25 21:16:22.5±1.1,38°.29N±0°.05×141°.96E±0°.07,h62km±9km, n49,σ0°84/56,mb4.5/24,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**0.51**	**289**	P	**Pn**	**21 16 34.7**	**+0.1**
JIO				*i* S	**Sn**	**21 16 42.8**	**-0.7**
OFUJ	**Ofunato**	**0.82**	**344**	P	**Pn**	**21 16 38.2**	**-0.1**
OFUJ				S	**Sn**	**21 16 49.1**	**-0.9**
JMK	**Ichinoseki**	**0.88**	**319**	P	**Pn**	**21 16 39.0**	**0.0**
JMK				S	**Sn**	**21 16 50.4**	**-0.8**
JMM	**Marumori**	**1.01**	**246**	P	**Pn**	**21 16 40.7**	**0.0**
JMM				S	**Sn**	**21 16 53.7**	**-0.5**
JOU	**Okura**	**1.02**	**275**	P	**Pn**	**21 16 40.9**	**0.0**
JOU				S	**Sn**	**21 16 54.0**	**-0.5**
JFK	**Kawauchi**	**1.26**	**223**	P	**Pn**	**21 16 44.6**	**+0.6**
JFK				S	**Sn**	**21 16 57.4**	**+0.3**
JOM	**Ohasama**	**1.29**	**336**	P	**Pn**	**21 16 44.3**	**-0.1**
JOM				S	**Sn**	**21 17 00.2**	**-0.6**
JYK	**Kaneyama**	**1.40**	**297**	P	**Pn**	**21 16 45.7**	**-0.2**
JYK				S	**Sn**	**21 17 03.5**	**+0.1**
JYS	**Shirataka**	**1.49**	**268**	P	**Pn**	**21 16 47.3**	**+0.2**
JYS				S	**Sn**	**21 17 05.7**	**+0.1**
JFT	**Otama**	**1.50**	**240**	S	**Sn**	**21 17 06.2**	**+0.5**
JRG	**Rokugo**	**1.51**	**317**	P	**Pn**	**21 16 47.3**	**-0.1**
MJAR	**Matsushiro Arr**	**3.46**	**241**	P	**Pn**	**21 17 16.6**	**+2.7**
	baz=44,slow=14,SNR=4.6						
JHJ	**Hachijo jima 2**	**5.45**	**200**	P	**Pn**	**21 17 42.1**	**+0.9**
	23nm,0.3s,baz=328,slow=22,SNR=2.6						
JHJ				S	**Sn**	**21 18 40.0**	**-2.5**
	116nm,0.3s,baz=261,slow=23,SNR=5.6						
YSS	**Yuzh-Sakhalins**	**8.68**	**4**	*e*P	**Pn**	**21 18 25.1**	**-0.1**
USRK	**Ussuriysk Ar.**	**9.55**	**311**	P	**Pn**	**21 18 37.7**	**+0.5**
	6.6nm,0.3s,baz=121,slow=14,SNR=54						
JNU	**Nakatsue**	**10.38**	**244**	*e*Pn	**Pn**	**21 18 49.8**	**+1.2**
HIA	**Hailar**	**19.36**	**312**	*e*P	**P**	**21 20 43.6**	**+0.6**
	6.4nm,0.5s						
BJT	**Baijiatuan**	**20.06**	**283**	*e*P	**P**	**21 20 50.1**	**-0.5**
	12nm,0.4s						
ULN	**Ulaanbaatar**	**27.03**	**302**	*e*P	**P**	**21 21 58.1**	**-0.8**
	4.3nm,0.4s						
SONM	**Songino Array**	**27.47**	**302**	P	**P**	**21 22 03.6**	**+0.8**
	5.3nm,0.5s,baz=105,slow=7.8,SNR=5.7						
ENH	**Enshi**	**27.89**	**263**	*e*P	**P**	**21 22 05.0**	**-1.7**
	16nm,0.6s						
H11N3	**WAKE ISLAND Hy**	**28.47**	**124**	T	T	21 50 59.0		
	SNR=75						
H11S1	**WAKE ISLAND Hy**	**29.21**	**126**	T	T	21 53 36.2		
	baz=318,slow=76,SNR=49						
H11S3	**WAKE ISLAND Hy**	**29.21**	**126**	T	T	21 53 33.5		
	baz=318,slow=76,SNR=86						
H11S2	**WAKE ISLAND Hy**	**29.22**	**126**	T	T	21 53 32.0		
	baz=318,slow=76,SNR=83						
ZALV	**Zalesovo Beam**	**41.40**	**311**	P	**P**	**21 24 03.2**	**+0.7**
	15nm,0.5s,baz=88,slow=8.5,SNR=18						
LSA	**Lhasa**	**42.54**	**274**	*e*P	**P**	**21 24 12.0**	**-0.7**
	4.9nm,0.6s						
MKAR	**Makanchi Array**	**43.83**	**301**	P	**P**	**21 24 22.6**	**+0.3**
	11nm,0.7s,baz=83,slow=11,SNR=6.6						
KURK	**Kurchatov**	**45.51**	**307**	*e*P	**P**	**21 24 34.6**	**-1.0**
	28nm,0.4s						
OHAK	**Old Harbor**	**45.55**	**44**	*e*P	**P**	**21 24 36.2**	**+0.5**
	158nm,1.8s						
KURBB	**Kurchatov Arra**	**45.58**	**307**	P	**P**	**21 24 36.9**	**+0.7**
	12nm,0.3s,baz=78,slow=7.7,SNR=33						
PPLA	**Purkeypile**	**45.90**	**36**	*e*P	**P**	**21 24 39.7**	**+1.0**
ILAR	**Eielson Array**	**48.21**	**33**	P	**P**	**21 24 57.1**	**+0.6**
	2.9nm,0.7s,baz=268,slow=6.2,SNR=3.5						
TKM2	**Tokmak 2**	**49.42**	**298**	*e*P	**P**	**21 25 06.4**	**0.0**
	11nm,0.5s						
EKS2	**Erkin-Say**	**50.77**	**298**	*e*P	**P**	**21 25 15.3**	**-1.2**
ABKAR	**Akbulak array**	**57.47**	**310**	*e*P	**P**	**21 26 04.0**	**-0.9**
	2.4nm,0.3s						
FITZ	**Fitzroy Crossi**	**58.15**	**198**	*e*P	**P**	**21 26 09.2**	**-0.7**
	3.9nm,0.8s						
WRAB	**Tennant Creek**	**58.35**	**188**	*e*P	**P**	**21 26 10.6**	**-0.7**
	6.7nm,0.8s						
WRA	**Warramunga Arr**	**58.36**	**188**	P	**P**	**21 26 11.0**	**-0.4**
	3.2nm,0.5s,baz=6.3,slow=7.3,SNR=5.0						
ASAR	**Alice Springs**	**62.09**	**188**	P	**P**	**21 26 37.3**	**+0.5**
	1.2nm,0.7s,baz=6.9,slow=6.0,SNR=3.3						
YKA	**Yellowknife Ar**	**62.51**	**31**	P	**P**	**21 26 39.6**	**+0.4**
	0.6nm,0.8s,baz=301,slow=6.8,SNR=4.7						
YKA				PcP	**PcP**	**21 27 18.3**	**+0.5**
	0.6nm,0.5s,baz=304,slow=3.7,SNR=4.1						
ARCES	**ARCESS Array B**	**62.98**	**339**	P	**P**	**21 26 41.9**	**-0.3**
	1.1nm,0.5s,baz=50,slow=6.8,SNR=4.4						
FINES	**FINESS Array B**	**67.91**	**332**	P	**P**	**21 27 13.5**	**-0.6**
	3.0nm,0.7s,baz=62,slow=8.9,SNR=2.7						
NOA	**NORSAR Array B**	**73.20**	**337**	P	**P**	**21 27 46.0**	**-0.5**
	2.5nm,0.7s,baz=38,slow=5.9,SNR=3.8						
NVAR	**Mina Array Bea**	**73.89**	**54**	P	**P**	**21 27 52.7**	**+1.5**
	1.2nm,0.3s,baz=304,slow=8.6,SNR=3.3						
PDAR	**Pinedale Array**	**76.48**	**46**	P	**P**	**21 28 06.5**	**+0.5**
	3.1nm,0.5s,baz=284,slow=1.4,SNR=15						
GERES	**GERESS Array B**	**81.87**	**328**	P	**P**	**21 28 34.6**	**-0.5**
	0.5nm,0.6s,baz=44,slow=6.1,SNR=4.1						
TXAR	**Lajitas Array**	**89.02**	**53**	P	**P**	**21 29 11.8**	**+0.8**
	0.6nm,0.6s,baz=295,slow=2.7,SNR=6.0						
LPAZ	**La Paz**	**145.68**	**59**	PKPbc	**PKPbc**	**21 35 55.6**	**+0.1**
	3.7nm,0.5s,baz=3.4,slow=3.9,SNR=7.5						

*DDA **25** 21:30:17.9,38°.96N×37°.88E,h7km,Md3.0*
*ISK **25** 21:30:17.7,38°.96N×37°.92E,h5km,MD2.5*
*CSEM **25** 21:30:18.3±0.2,38°.97N×37°.90E,h2km,MD3.0,Error ellipse: s-maj=4.5km s-min=4.1km az=102.0*
ISC 25 21:30:17.7±1.1,38°.95N±0°.03×37°.88E±0°.03,h16km±9km, n24,σ0°44/38,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CUKAN	**kangal_SIVAS**	**0.49**	**319**	*i* P	**Pg**	**21 30 27.2**	**-0.3**
CUKAN				*i* S	**Sg**	**21 30 34.1**	**0.0**
CUKAN	**kangal_SIVAS**	**0.49**	**319**	P	**Pg**	**21 30 27.2**	**-0.3**
CUKAN				S	**Sg**	**21 30 34.1**	**0.0**
DARE	**Darende-Malaty**	**0.49**	**220**	*e*PG	**Pb**	**21 30 28.2**	**+0.1**
DARE				*e*SG	**Sb**	**21 30 35.8**	**+0.7**
DARE	**Darende-Malaty**	**0.49**	**220**	*e*Pg	**Pb**	**21 30 28.2**	**+0.1**
DARE				*e*Sg	**Sb**	**21 30 35.8**	**+0.7**
KEMA	**Kemaliye**	**0.57**	**56**	*i* P	**Pg**	**21 30 29.1**	**+0.1**
KEMA				*i* S	**Sb**	**21 30 37.1**	**-0.3**
KEMA	**Kemaliye**	**0.57**	**56**	P	**Pg**	**21 30 29.1**	**+0.1**
KEMA				S	**Sb**	**21 30 37.1**	**-0.3**
AKCD	**Akcadag**	**0.66**	**177**	*i* P	**Pb**	**21 30 31.1**	**+0.2**
AKCD				*i* S	**Sn**	**21 30 41.9**	**-0.7**
AKCD	**Akcadag**	**0.66**	**177**	P	**Pb**	**21 30 31.1**	**+0.2**
AKCD				S	**Sn**	**21 30 41.9**	**-0.7**
ILIC	**ilic-Erzincan**	**0.73**	**47**	*e*PG	**Pg**	**21 30 31.7**	**-0.3**
ILIC				*e*SG	**Sb**	**21 30 42.0**	**0.0**
ILIC	**ilic-Erzincan**	**0.73**	**47**	*e*Pg	**Pg**	**21 30 31.7**	**-0.3**
ILIC				*e*Sg	**Sb**	**21 30 42.0**	**0.0**
CUZAR	**Zara_SIVAS**	**0.94**	**355**	*i* P	**Pn**	**21 30 36.3**	**-0.2**
CUZAR				*i* S	**Sn**	**21 30 49.6**	**-0.1**
CUZAR	**Zara_SIVAS**	**0.94**	**355**	P	**Pn**	**21 30 36.3**	**-0.2**
CUZAR				S	**Sn**	**21 30 49.6**	**-0.1**
ELZG	**Elazig**	**0.97**	**117**	*i* P	**Pn**	**21 30 36.8**	**-0.1**
ELZG				*i* S	**Sn**	**21 30 50.5**	**0.0**
ELZG	**Elazig**	**0.97**	**117**	P	**Pn**	**21 30 36.8**	**-0.1**
ELZG				S	**Sn**	**21 30 50.5**	**0.0**
PTK	**Pertek**	**1.18**	**92**	*e*PN	**Pg**	**21 30 40.3**	**-0.2**
PTK	**Pertek**	**1.18**	**92**	*e*Pn	**Pg**	**21 30 40.3**	**-0.2**
SVSK	**Karacayir**	**1.18**	**325**	*e*PN	**Pg**	**21 30 41.1**	**+0.6**
SVSK	**Karacayir**	**1.18**	**325**	*e*Pn	**Pg**	**21 30 41.1**	**+0.6**
EZZC	**Erzincan**	**1.39**	**54**	*e*Pn	**Pg**	**21 30 46.3**	**+1.8**
RSDY	**Resadiye-TOKAT**	**1.51**	**344**	*e*PN	**Pg**	**21 30 46.7**	**0.0**
RSDY	**Resadiye-TOKAT**	**1.51**	**344**	*e*Pn	**Pg**	**21 30 46.7**	**0.0**
ERZN	**Erzincan**	**1.56**	**65**	*e*PN	**Pb**	**21 30 46.3**	**-0.1**
BNN	**Bunyan**	**1.59**	**267**	*e*PN	**Pg**	**21 30 48.0**	**-0.2**
BNN	**Bunyan**	**1.59**	**267**	*e*Pn	**Pg**	**21 30 48.1**	**-0.2**

*ISCJB **25** 21:35:36.9±1.4,39°.17N±0°.04×142°.46E±0°.09,h25km±8km, mb3.4/5, Error ellipse: s-maj=11.8km s-min=7.2km az=1.9*
*JMA **25** 21:35:37.8±0.1,39°.18N×142°.40E,h33km±1km,M3.8*
*IDC **25** 21:35:40.9±3.0,38°.98N×142°.75E,h47km±30km,mb3.2/5, mb1 3.4/7,mb1mx3.2/33,mbtmp3.4/7,ML3.0/2, Error ellipse: s-maj=31.3km s-min=20.5km az=101.0*
ISC 25 21:35:37.6±2.3,39°.18N±0°.05×142°.4E±0°.1,h23km±15km, n25,σ0°71/22,mb3.5/5,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**0.57**	**260**	P	**Pb**	**21 35 49.3**	**+0.3**
OFUJ				S	**Sb**	**21 35 57.3**	**+0.5**
MIYJ	**Miyakonagasawa**	**0.60**	**312**	P	**Pn**	**21 35 49.5**	**-1.2**
MIYJ				S	**Sb**	**21 35 57.6**	**+0.2**
JOM	**Ohasama**	**0.90**	**289**	P	**Pn**	**21 35 54.5**	**-0.4**
JOM				S	**Sb**	**21 36 06.6**	**+0.4**
JMK	**Ichinoseki**	**0.94**	**256**	P	**Pn**	**21 35 54.9**	**-0.5**
JMK				S	**Sn**	**21 36 07.5**	**-0.6**
JIO	**Ouri**	**1.09**	**229**	P	**Pn**	**21 35 56.4**	**-1.1**
JKZ	**Kuzumaki**	**1.15**	**315**	P	**Pb**	**21 35 58.5**	**-0.3**
JKZ				S	**Sb**	**21 36 13.2**	**-0.2**
JANG	**Nango**	**1.37**	**331**	P	**Pn**	**21 36 01.4**	**+0.1**
JANG				S	**Sn**	**21 36 18.5**	**-0.2**
JRG	**Rokugo**	**1.38**	**279**	P	**Pb**	**21 36 02.4**	**-0.4**
JRG				S	**Sb**	**21 36 19.7**	**-0.3**
JOU	**Okura**	**1.58**	**240**	P	**Pn**	**21 36 04.7**	**+0.5**
JYK	**Kaneyama**	**1.61**	**261**	P	**Pn**	**21 36 05.0**	**+0.4**
JMM	**Marumori**	**1.82**	**224**	P	**Pn**	**21 36 07.2**	**-0.2**
MJAR	**Matsushiro Arr**	**4.23**	**233**	P	Pn	21 36 44.0	+3.3
	1.3nm,0.3s,baz=39,slow=11,SNR=21						
MAT	**Matsushiro**	**4.23**	**233**	P	Pn	21 36 43.3	+2.6
MAT				S	Sb	21 37 50.8	+8.8
ASAJ	**Asahikawa**	**4.93**	**2**	P	Pn	21 36 55.0	+4.7
	0.4nm,0.3s,baz=194,slow=17,SNR=5.1						
SONM	**Songino Array**	**27.30**	**300**	P	P	21 41 25.6	+5.2
	0.4nm,0.5s,baz=100,slow=13,SNR=2.4						
H11N2	**WAKE ISLAND Hy**	**28.67**	**125**	T	T	22 11 55.6		
	baz=318,slow=75,SNR=83						
H11N1	**WAKE ISLAND Hy**	**28.68**	**126**	T	T	22 11 56.3		
	baz=318,slow=75,SNR=52						
H11N3	**WAKE ISLAND Hy**	**28.69**	**125**	T	T	22 12 04.1		
	baz=318,slow=75,SNR=75						
H11S1	**WAKE ISLAND Hy**	**29.46**	**127**	T	T	22 12 59.3		
	baz=320,slow=76,SNR=12						
H11S3	**WAKE ISLAND Hy**	**29.46**	**127**	T	T	22 12 53.2		
	baz=320,slow=76,SNR=15						
H11S2	**WAKE ISLAND Hy**	**29.48**	**127**	T	T	22 12 55.1		
	baz=320,slow=76,SNR=9.3						
MKAR	**Makanchi Array**	**43.67**	**300**	P	**P**	**21 43 41.9**	**+1.5**
	0.1nm,0.3s,baz=86,slow=9.1,SNR=2.8						
ILAR	**Eielson Array**	**47.27**	**33**	P	**P**	**21 44 09.2**	**+0.5**
	0.3nm,0.6s,baz=254,slow=5.5,SNR=3.4						
WRA	**Warramunga Arr**	**59.29**	**189**	P	**P**	**21 45 36.9**	**-0.6**
	0.3nm,0.6s,baz=5.0,slow=4.9,SNR=7.1						
ASAR	**Alice Springs**	**63.02**	**189**	P	**P**	**21 46 01.6**	**-1.1**
	0.4nm,0.8s,baz=351,slow=5.8,SNR=4.5						

*IDC **25** 21:42:14.3±0.9,36°.97N×140°.63E,h0km,mb3.5/7, mb1 3.7/7,mb1mx3.5/45,mbtmp3.5/7,Error ellipse: s-maj=24.8km s-min=19.5km az=141.0*
*ISCJB **25** 21:42:15.5±0.8,36°.65N±0°.04×140°.73E±0°.06,h18km±5km, mb3.5/7,Error ellipse: s-maj=9.4km s-min=5.6km az=36.4*
*JMA **25** 21:42:17.1,36°.70N×140°.60E,h7km±1km,M3.4*
JMA Felt II J1.
ISC 25 21:42:16.0±0.9,36°.73N±0°.05×140°.55E±0°.05,h14km±6km, n18,σ1°21/22,mb3.6/7,2C,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHO	**Hitachi**	**0.12**	**172**	⇑P	**Pg**	**21 42 19.3**	**-0.1**
JHO				S	**Sg**	**21 42 20.8**	**-0.8**
ONAJ	**Iwakimizuishiy**	**0.42**	**28**	P	**Pb**	**21 42 25.4**	**+0.1**
ONAJ				S	**Sg**	**21 42 31.2**	**+0.9**
JSB	**Shiboa**	**0.56**	**296**	⇑P	**Pn**	**21 42 29.5**	**-0.1**
JSB				S	**Sn**	**21 42 37.9**	**-0.8**
JYT	**Yasato**	**0.57**	**210**	P	**Pb**	**21 42 28.0**	**+0.2**
JFK	**Kawauchi**	**0.69**	**22**	P	**Pb**	**21 42 30.2**	**+0.4**
JFK				S	**Sg**	**21 42 39.4**	**+0.8**
JFT	**Otama**	**0.81**	**348**	P	**Pn**	**21 42 33.4**	**+0.4**
JFT				S	**Sn**	**21 42 44.4**	**-0.4**
MJAR	**Matsushiro Arr**	**1.89**	**265**	Pn	**Pn**	**21 42 48.6**	**+0.7**
	9.4nm,0.3s,baz=296,slow=16,SNR=4.2						
MJAR				Sn	**Sb**	**21 43 14.8**	**+1.0**
	19nm,0.3s,baz=109,slow=20,SNR=15						
MAT	**Matsushiro**	**1.89**	**265**	P	**Pb**	**21 42 50.5**	**+0.2**
MAT				S	**Sg**	**21 43 16.5**	**-0.4**
H11N2	**WAKE ISLAND Hy**	**28.59**	**119**	T	T	22 17 56.7		
	baz=313,slow=75,SNR=42						
H11N1	**WAKE ISLAND Hy**	**28.60**	**119**	T	T	22 17 57.4		
	baz=313,slow=75,SNR=61						
H11N3	**WAKE ISLAND Hy**	**28.61**	**119**	T	T	22 17 58.2		
	baz=313,slow=75,SNR=56						

comp=N,2μm,0.4s
CLNS Chul'man 1.88 81 *e*P Pn **22 14 23.5 +1.3**
CLNS *e*S **Sb** **22 14 48.8 +0.9**
IENR Iengra 1.89 100 *e*Pn Pn **22 14 22.7 +0.3**
IENR *e*Pg **Pb** **22 14 23.9 -0.4**
IENR *e*Sg **Sn** **22 14 48.5 +1.6**
IENR Iengra 1.89 100 *e*P Pn **22 14 22.5 +0.1**
IENR *e*P **Pb** **22 14 23.7 -0.6**
IENR *e*S **Sn** **22 14 45.4 -1.5**
IENR *e*S **Sn** **22 14 48.5 +1.6**
TNDR Tynda 2.32 128 *e*Pg Pn **22 14 31.2 +3.0**
TNDR *e*Sg **Sb** **22 15 01.1 +0.5**
TNDR Tynda 2.32 128 *e*P Pn **22 14 28.5 +0.3**
TNDR *e*P **Pb** **22 14 30.5 -1.1**
TNDR *e*S **Sn** **22 14 56.4 -0.9**
TNDR *e*S **Sb** **22 15 01.1 +0.5**
TUP Tupik 2.35 203 *e*Pn Pn **22 14 28.5 -0.3**
TUP ⇓*i*Pg **Pb** **22 14 31.4 -0.8**
TUP *e* 22 14 34.1
TUP max 22 14 34.4
comp=N,2μm,0.9s
TUP *e*Sg **Sb** **22 15 02.8 +1.1**
TUP Smax 22 15 04.3
comp=N,17μm,0.6s
TUP Tupik 2.35 203 ⇑*i*P Pn **22 14 28.5 -0.3**
TUP *e* 22 14 58.4
TUP pmax pmax
comp=Z,2μm,1.0s
TUP smax smax
comp=N,18μm,1.0s
TUP Tupik 2.35 203 *e*P Pn **22 14 28.4 -0.3**
TUP *e*P **Pb** **22 14 31.4 -0.8**
TUP *e*S **Sn** **22 14 57.8 -0.4**
TUP *e*S **Sb** **22 15 02.6 +0.9**
ALDR Aldan 2.91 44 ⇑*i*Pn Pn **22 14 36.0 -0.3**
ALDR *e*Pg Pb 22 14 39.8 -1.8
ALDR *e* 22 15 11.6
ALDR *e*Sg **Sb** **22 15 17.6 +0.1**
ALDR Aldan 2.91 44 *e*P Pn **22 14 36.6 +0.3**
ALDR *e*P **Pb** **22 14 41.5 -0.1**
ALDR *e*S **Sn** **22 15 11.6 -0.2**
ALDR *e*S **Sb** **22 15 18.4 +0.9**
NLYR Nelyaty 3.22 270 *e*P Pn **22 14 41.5 +0.9**
NLYR *e* 22 15 27.5
NLYR pmax pmax
comp=Z,661nm,1.1s
NLYR smax smax
comp=N,7μm,1.1s
OLMR Olekminsk 3.83 352 *e*P Pn **22 14 48.9 0.0**
OLMR *e*P **Pb** **22 14 58.5 +1.3**
OLMR *e*S **Sn** **22 15 32.6 -1.8**
OLMR *e*S **Sb** **22 15 46.9 +3.0**
BOD Bodaibo 4.26 290 ⇓*i*Pn Pn **22 14 55.0 +0.1**
BOD *e*Pg **Pb** **22 15 04.3 -0.4**
BOD Pmax 22 15 08.1
comp=N,113nm,0.7s
BOD *e* 22 15 38.5
BOD *e*Sg **Sb** **22 15 59.6 +3.1**
BOD Smax 22 16 10.5
comp=N,2μm,1.5s
BOD Bodaibo 4.26 290 *e*P Pn **22 14 54.6 -0.3**
BOD pmax pmax
comp=Z,113nm,0.7s
SVKR Severomuysk 4.45 267 *e* 11 15 14.6
SVKR *e*Pg **Pb** **22 15 08.8 +0.9**
SVKR Pmax 22 15 12.7
comp=Z,559nm,1.2s
SVKR *e*Sg **Sg** **22 16 08.5 -3.5**
SVKR *e* 22 16 18.5
SVKR max 22 16 19.9
comp=Z,5μm,0.8s
BMKR Bomnak 4.56 111 *e*P Pn **22 14 58.9 -0.1**
BMKR *e*P **Pb** **22 15 10.6 +0.9**
BMKR *e*S **Sn** **22 15 49.4 -3.1**
BMKR *e*S Sb 22 16 12.4 +7.4
UKT Uakit 4.56 259 ⇓*i*Pn Pn **22 14 59.7 +0.6**
UKT *e*Pg **Pb** **22 15 10.1 +0.3**
UKT *e* 22 15 12.8
UKT max 22 15 18.2
comp=Z,311nm,1.3s
UKT *e*Sg **Sb** **22 16 10.0 +4.8**
UKT *e* 22 16 16.9
UKT max 22 16 18.4
comp=Z,2μm,1.2s
UKT Uakit 4.56 259 *e*P Pb **22 15 09.8 0.0**
CGD Chagda 5.34 62 *e*P Pn **22 15 10.5 +0.9**
CGD *e*S Sb 22 16 34.4 +7.0
YOA Uoyan 5.46 269 *e* Pb 22 15 29.3 +4.2
YOA max 22 15 42.7
comp=Z,555nm,1.2s
YOA *e*Sg Sg 22 16 39.5 -4.9
YOA Smax 22 16 47.5
comp=Z,8μm,1.3s
YOA Uoyan 5.46 269 *e*P Pb **22 15 25.3 +0.2**
VTMR Vitim 5.55 305 *e*S **Sn** **22 16 15.3 -1.5**
VTMR *e*S Sg 22 16 42.3 -4.9
KMO Kumora 5.80 267 ⇓*i*Pn Pn **22 15 16.9 +0.9**
KMO *e* 22 15 24.7
KMO *e*Pg **Pb** **22 15 32.0 +1.2**
KMO Pmax 22 15 38.7
comp=Z,158nm,1.3s
KMO *e* 22 16 15.0
KMO *e*Sg Sb 22 16 47.5 +6.9
KMO Smax 22 16 56.4
comp=Z,3μm,1.3s
KMO Kumora 5.80 267 *e*P Pn **22 15 16.9 +0.9**
KMO *e*S **Sn** **22 16 21.1 -1.9**
KMO pmax pmax
comp=Z,159nm,0.7s
KMO smax smax
comp=N,3μm,1.1s
YLYR Ulyunkhan 6.10 258 ⇓*i*Pn Pn **22 15 20.8 +0.7**
YLYR *e* 22 15 30.0
YLYR *e*Pg **Pb** **22 15 38.1 +2.2**
YLYR Pmax 22 15 45.2
comp=N,93nm,1.5s
YLYR *e* 22 16 46.1
YLYR *e*Sg Sg 22 16 57.6 -7.2
YLYR Smax 22 17 08.1
comp=N,1μm,1.2s
YLYR Ulyunkhan 6.10 258 *e*P Pn **22 15 20.9 +0.8**
YLYR *e*S **Sn** **22 16 27.1 -3.3**
YLYR pmax pmax
comp=Z,81nm,0.6s
YLYR smax smax
comp=E,1μm,1.1s
CIT Chita 6.54 229 *e*Sg Sg 22 17 12.4 -6.4
CIT Smax 22 17 17.3
comp=E,5μm,1.4s
CIT *e* 22 17 19.5
TBGR Tabaga 6.69 35 *e*P Pn **22 15 27.3 -0.9**
TBGR *e*S **Sn** **22 16 40.2 -4.6**
TBGR *e*S Sb 22 17 14.4 +8.2
NIZ Nizh Angarsk 6.74 268 ⇑*i*Pn Pn **22 15 30.0 +1.1**
NIZ *e* 22 15 38.8
NIZ *e*Pg Pb 22 15 50.0 +3.2
NIZ Pmax 22 15 55.6
comp=E,113nm,1.1s
NIZ *e*Sn Sn 22 16 52.6 +6.5
NIZ *e*Sg Sg 22 17 19.0 -6.2
NIZ Smax 22 17 30.3
comp=E,657nm,1.7s
NBS Nizhniy Bestya 6.85 35 *e*P Pn **22 15 30.4 0.0**
NBS *e*S **Sn** **22 16 44.3 -4.5**
NBS *e*S Sb 22 17 20.0 +9.2
YAK Yakutsk 6.86 34 Pn Pn **22 15 30.5 0.0**
comp=E,0.0nm,0.3s,baz=30,slow=4.1,SNR=4.5
YAK Sn **Sn** **22 16 44.2 -4.8**
comp=E,0.1nm,0.3s,baz=245,slow=20,SNR=10
YAK Lg Lg 22 17 16.4
comp=E,0.1nm,0.3s,baz=326,slow=23,SNR=14
YAK LR LR 22 18 16.1
comp=E,238nm,20.1s,baz=228,slow=38
YAK Yakutsk 6.86 34 *e*P Pn **22 15 30.8 +0.3**
YAK *e* 22 16 45.3
YAK pmax pmax
comp=Z,12nm,0.7s
YAK pmax pmax
comp=N,3.0nm,0.8s
YAK pmax pmax
comp=E,7.0nm,1.0s
YAK smax smax
comp=N,115nm,1.2s
YAK smax smax
comp=E,399nm,0.8s
YAK MLR MLR
comp=Z,577nm,6.2s
YAK Yakutsk 6.86 34 *e*S **Sn** **22 16 44.9 -4.1**
YAK *e*S Sb 22 17 20.6 +10
YAK Yakutsk 6.86 34 *e*Pn Pn 22 15 27.9 -2.6
YAK *e*Sn **Sn** **22 16 46.4 -2.7**
SYVR Suvo 7.23 251 *e*P **Pn** **22 15 35.7 0.0**
HIA Hailar 7.42 189 *e*P **Pn** **22 15 36.0 -2.4**
HIA Hailar 7.42 189 *e*Pn **Pn** **22 15 36.0 -2.4**
HIA *e*Sb Sg 22 17 41.5 -5.7
OGRR Ongureny 8.51 255 ⇓*i*Pn **Pn** **22 15 52.9 -0.3**
OGRR *e*Pg 22 16 23.0
OGRR Pmax 22 16 27.3
comp=Z,29nm,1.4s
OGRR *e*Sn Sn 22 17 38.1 +8.4
OGRR *e*Sg 22 18 13.6
OGRR Smax 22 18 22.1
comp=Z,563nm,1.4s
OGRR Ongureny 8.51 255 *e*P **Pn** **22 15 53.6 +0.4**
KPC Khapcheranga 8.82 222 *e*Pn **Pn** **22 15 56.2 -1.3**
KPC *e*Pg Pg 22 16 29.1 -8.7
KPC Pmax 22 16 53.2
comp=Z,12nm,0.6s
KPC *e*Sg Sn 22 18 23.9 +47
KPC Smax 22 18 30.6
comp=Z,2μm,1.3s
ZRHB Zarechye 9.27 250 *e*Sn Sn 22 18 04.8 +16
ZRHB *e*Sg 22 18 38.1
ZRHB Smax 22 18 53.8
comp=Z,4μm,1.8s
UUDB Ulan-Yde 9.39 246 *e* Pn 22 16 10.1 +4.8
UUDB max 22 16 41.4
comp=Z,24nm,1.4s
UUDB *e* 22 18 15.0
UUDB *e*Sg Sn 22 18 41.0 +50
UUDB Smax 22 18 52.0
comp=Z,2μm,1.4s
TRG Tyrgan 9.59 253 *e*Pn **Pn** **22 16 07.9 -0.1**
TRG max 22 16 08.9
comp=Z,13nm,0.6s
TRG *e*Sn Sn 22 18 12.5 +16
TRG *e*Sg 22 18 46.6
TRG Smax 22 19 09.4
comp=Z,464nm,1.3s
KLR Kul'dur 9.62 136 Pn **Pn** **22 16 08.7 +0.3**
comp=Z,4.3nm,0.3s,baz=324,slow=13,SNR=53
KLR Sn Sn 22 17 48.3 -8.6
comp=Z,4.3nm,0.3s,baz=46,slow=11,SNR=10
KLR Lg Lg 22 18 49.1
comp=Z,5.1nm,0.3s,baz=54,slow=22,SNR=7.0
KLR LR LR 22 20 17.1
comp=Z,124nm,18.6s,baz=323,slow=40
KLR Kul'dur 9.62 136 *e*P **Pn** **22 16 09.1 +0.7**
KAB Kabansk 9.80 249 *e* 22 18 08.2
KAB *e*Sg Sn 22 18 53.5 +52
KAB *e* 22 19 10.3
KAB max 22 19 22.1
comp=Z,4μm,1.4s
HRMR Khuramsha 9.89 246 *e*Pn **Pn** **22 16 12.0 -0.1**
HRMR *e* 22 16 20.8
HRMR *e* 22 16 29.5
HRMR *e*Pg 22 16 47.6
HRMR Pmax 22 17 02.2
comp=Z,29nm,0.7s
HRMR *e*Sg Sn 22 18 55.5 +52
HRMR Smax 22 19 12.6
comp=Z,3μm,1.0s
LSTR Listvyanka 10.85 251 *e*Pn **Pn** **22 16 25.2 0.0**
LSTR *e* 22 16 33.4
LSTR Pg 22 17 05.1
LSTR *e*Sn Sn 22 18 35.1 +8.1
LSTR *e*Sg 22 19 24.3
LSTR Smax 22 19 45.5
comp=Z,333nm,1.4s
IRK Irkutsk 10.95 254 *e* 22 18 45.9
IRK *e*Sg 22 19 30.5
IRK Smax 22 19 47.4
comp=Z,503nm,1.3s
IRK Irkutsk 10.95 254 *e*P **Pn** **22 16 27.6 +1.1**
IRK pmax pmax
comp=Z,121nm,0.1s
NKL Nikolayevsk 11.56 99 *e*P **Pn** **22 16 36.4 +1.6**
NKL MLR MLR
comp=N,500nm,6.0s
NKL MLR MLR
comp=Z,700nm,6.0s
HABR Khabarovsk 11.56 129 *e*P Pn 22 16 31.9 -3.1
HABR *e*S **Sn** **22 18 40.6 -3.9**
HABR pmax pmax
comp=E,27nm,0.9s
HABR pmax pmax
comp=N,21nm,1.4s
HABR pmax pmax
comp=Z,38nm,1.4s
HABR MLR MLR
comp=Z,114nm,15.0s
TLY Talaya 11.57 252 Lg Lg 22 19 50.1
comp=Z,0.0nm,0.3s,baz=31,slow=19,SNR=4.1
TLY LR LR 22 20 49.1
comp=Z,182nm,19.2s,baz=43,slow=36
TLY Talaya 11.57 252 *e* 22 18 36.4
TLY *e* 22 19 36.5
TLY *e*Sg 22 19 47.9
TLY Smax 22 20 15.3
comp=Z,199nm,1.2s
ARS Arshan 12.09 255 *e*Sg 22 20 05.2
ARS Smax 22 20 24.3
comp=Z,658nm,1.4s
ARS *e* 22 20 28.9
ULN Ulaanbaatar 12.43 231 *e* 22 19 00.6
ULN *e*Sg 22 20 14.6
ULN *e* 22 20 23.3
ULN *e* 22 20 41.9
ULN Ulaanbaatar 12.43 231 *e*P **Pn** **22 16 46.1 -0.9**
ULN Ulaanbaatar 12.43 231 *e*Pn **Pn** **22 16 44.4 -2.6**
ULN *e*Sn Sn 22 18 44.0 -22
ZAK Zakamensk 12.50 248 *e* 22 18 34.4
ZAK *e*Sg 22 20 17.2
ZAK Smax 22 20 46.9
comp=Z,549nm,1.6s
ZAK Zakamensk 12.50 248 *e*P **Pn** **22 16 47.2 -0.6**
ZAK pmax pmax
comp=Z,3.0nm,1.4s
BTGS Batagay 12.63 23 *e*S 22 20 19.6
SONA1 Songino Array 12.73 233 *e*Pn **Pn** **22 16 49.7 -1.3**
SONA0 Songino Array 12.74 233 *e*Pn **Pn** **22 16 49.0 -2.2**
SONA0 *e*Sn Sn 22 19 06.5 -7.0
SONM Songino Array 12.74 233 Pn **Pn** **22 16 49.0 -2.2**
comp=Z,0.6nm,0.3s,baz=35,slow=14,SNR=6.5
SONM Sn Sn 22 19 06.5 -7.0
comp=Z,1.4nm,0.3s,baz=35,slow=16,SNR=3.9
SONM Lg Lg 22 20 27.7
comp=Z,8.6nm,0.3s,baz=46,slow=24,SNR=6.9
MOY Mondy 12.99 256 *e*Pn **Pn** **22 16 55.3 +0.8**
MOY *e* 22 17 37.7
MOY *e* 22 19 50.3
MOY *e*Sg 22 20 31.6
MOY Smax 22 21 06.4
comp=Z,237nm,2.3s
MOY Mondy 12.99 256 *e*P **Pn** **22 16 55.7 +1.2**
MOY *e*S **Sn** **22 19 22.3 +2.7**
CN2 Changchun 13.05 167 *e*P P 22 17 02.0 -3.9
CN2 *e*S Sn 22 19 32.0 +11
CN2 LR LR
comp=Z,700nm,10.0s
CN2 LR LR
comp=Z,300nm,10.0s
CN2 LR LR
comp=Z,400nm,11.0s
ORL Orlik 13.21 261 *e*Pn **Pn** **22 16 58.3 +0.7**
ORL *e* 22 19 40.5
ORL *e*Sg S 22 20 39.1 +49
ORL Smax 22 21 01.0
comp=Z,197nm,1.6s
ORL *e* 22 21 12.2
UNR Ust'-Nera 13.26 44 *e*S S 22 20 39.2 +48
ATKR Artyk 13.85 47 *e*S S 22 20 57.4 +54
USRK Ussuriysk Ar. 14.07 147 Pn **Pn** **22 17 10.9 +1.7**
comp=Z,0.1nm,0.3s,baz=350,slow=13,SNR=2.2
USRK Lg Lg 22 21 12.1
comp=Z,0.3nm,0.3s,baz=335,slow=17,SNR=5.5
USRK LR LR 22 23 06.2
comp=Z,99nm,19.0s,baz=330,slow=39
DEPR Deputatskiy 15.21 25 *e*S S 22 21 38.6 +68
TIXI Tiksi 15.42 9 Pn Pn 22 17 22.5 -4.8
comp=Z,3.8nm,0.3s,baz=227,slow=12,SNR=43
TIXI Sn Sn 22 20 06.6 -12
comp=Z,2.2nm,0.3s,baz=315,slow=11,SNR=6.6
TIXI LR LR 22 23 54.5
comp=Z,146nm,18.1s,baz=202,slow=39
TIXI Tiksi 15.42 9 *e*P Pn 22 17 22.7 -4.6
TIXI Tiksi 15.42 9 *e*P **Pn** **22 17 30.5 +3.2**
TIXI *e*S Sn 22 20 10.6 -7.8
TIXI *e*S S 22 21 46.9 +72
TIXI Tiksi 15.42 9 *e*Pn Pn 22 17 22.5 -4.8
comp=Z,8.9nm,0.7s
TIXI *e*Sn Sn 22 20 06.6 -12
MA2 Magadan 15.69 67 LR LR 22 23 31.3
comp=Z,139nm,20.5s,baz=294,slow=37
KRAR Krasnoyarsk 15.86 280 *e*P **Pn** **22 17 31.9 -1.2**
KRAR pmax pmax
comp=Z,9.0nm,0.6s
SEY Seymchan 16.66 55 Pn **Pn** **22 17 43.0 -0.3**
comp=Z,0.8nm,0.3s,baz=260,slow=9.9,SNR=23
SEY Lg Lg 22 22 29.6
comp=Z,0.4nm,0.3s,baz=337,slow=17,SNR=13
SEY Seymchan 16.66 55 *e*P **Pn** **22 17 40.9 -2.4**
ASAJ Asahikawa 18.26 124 LR LR 22 24 26.6
comp=Z,72nm,18.1s,baz=292,slow=35
KSRS Korea Array 19.63 165 P **Pn** **22 18 20.1 +0.2**
comp=Z,0.2nm,0.3s,baz=0.4,slow=11,SNR=3.3
KSRS Lg Lg 22 24 19.5
comp=Z,0.2nm,0.3s,baz=350,slow=30,SNR=5.4
KSRS LR LR 22 25 47.5
comp=Z,66nm,20.7s,baz=348,slow=36
KS15 Wonju Array Si 19.64 165 *e*P **Pn** **22 18 20.1 +0.1**
KSAR Wonju Array Be 19.64 165 P **Pn** **22 18 20.1 +0.1**
KSAR Wonju Array Be 19.64 165 P **Pn** **22 18 20.1 +0.1**
KSAR Lg Lg 22 24 19.5
NRIK Noril'sk 19.66 324 P **P** **22 18 17.0 -1.7**
comp=Z,0.9nm,0.3s,baz=126,slow=9.1,SNR=7.1
NRIK Lg Lg 22 24 12.6
comp=Z,0.4nm,0.3s,baz=209,slow=23,SNR=7.7
NRIK LR LR 22 26 52.7
comp=Z,70nm,20.2s,baz=106,slow=40
ZAA1 Zalesovo Array 20.91 278 *e*P **P** **22 18 32.2 -0.2**
ZAA0 Zalesovo Array 20.91 278 *e*P **P** **22 18 32.3 -0.2**
ZALV Zalesovo Beam 20.91 278 P **P** **22 18 32.2 -0.2**
comp=Z,4.7nm,1.0s,baz=75,slow=6.4,SNR=15
ZALV Lg Lg 22 24 47.2
comp=Z,2.1nm,0.8s,baz=55,slow=22,SNR=3.8
ZALV LR LR 22 27 00.4
comp=Z,89nm,19.9s,baz=66,slow=38
PETK Petropavlovsk- 20.96 84 LR LR 22 26 47.1
comp=Z,109nm,18.4s,baz=275,slow=37
NVS Novosibirsk 21.45 281 *e*P **P** **22 18 38.3 0.0**
NVS *e* 22 22 42.4
GTA Gaotai 22.35 229 *e*P **P** **22 18 48.5 +0.3**
GTA pmax pmax
comp=Z,6.0nm,1.0s
MAT Matsushiro 22.99 144 P P 22 19 00.2 +5.3
MJAR Matsushiro Arr 23.00 144 P **P** **22 18 56.4 +1.5**
comp=Z,1.0nm,0.3s,baz=344,slow=7.9,SNR=2.8
MJAR LR LR 22 28 26.0
comp=Z,30nm,19.8s,baz=325,slow=38
BILL Bilibino 23.12 42 *e*P P 22 19 01.2 +5.3
BILL *e* 22 19 19.7
BILL pmax pmax
comp=Z,2.0nm,1.1s
BILL MLR MLR
comp=Z,138nm,19.0s
JNU Nakatsue 24.35 161 LR LR 22 29 51.8
comp=Z,30nm,21.0s,baz=140,slow=39
KURK Kurchatov 25.75 275 *e*P **P** **22 19 20.7 0.0**
KURK Kurchatov 25.75 275 *e*P **P** **22 19 20.7 0.0**
KURBB Kurchatov Arra 25.85 275 P **P** **22 19 20.7 -0.9**
comp=Z,1.3nm,0.9s,baz=62,slow=9.8,SNR=6.8
MK31 Makanchi Array 25.88 265 *e*P **P** **22 19 22.4 +0.4**
MK31 Makanchi Array 25.88 265 *e*P **P** **22 19 22.4 +0.4**
MK32 Makanchi Array 25.88 265 *e*P **P** **22 19 22.1 +0.1**
MKAR Makanchi Array 25.88 265 P **P** **22 19 22.1 +0.1**
comp=Z,1.9nm,0.7s,baz=61,slow=7.5,SNR=15
MKAR LR LR 22 30 02.9
comp=Z,225nm,19.4s,baz=20,slow=38
MKAR Makanchi Array 25.88 265 *e*P **P** **22 19 22.4 +0.4**
MK01 Makanchi Array 25.89 264 *e*P **P** **22 19 22.0 0.0**
MAKZ Makanchi 26.04 265 *e*P **P** **22 19 23.6 +0.2**
MAKZ pmax pmax
comp=Z,2.0nm,0.9s
MAKZ Makanchi 26.04 265 *e*P **P** **22 19 23.6 +0.2**
comp=Z,2.2nm,0.9s
JHJ Hachijo jima 2 26.64 144 LR LR 22 29 15.1
comp=Z,74nm,18.6s,baz=110,slow=34
BVAR Borovoye Array 29.12 285 P **P** **22 19 50.8 -0.1**
comp=Z,1.8nm,0.8s,baz=75,slow=6.1,SNR=5.5
ZRNK Zerenda 29.89 286 *e*P **P** **22 19 58.0 +0.3**
ZRNK Zerenda 29.89 286 *e*P **P** **22 19 58.0 +0.3**
TKM2 Tokmak 2 32.01 265 *e*P **P** **22 20 18.1 +1.3**
TKM2 pmax pmax
comp=Z,2.0nm,0.8s
TKM2 Tokmak 2 32.01 265 *e*P **P** **22 20 18.1 +1.3**
comp=Z,2.4nm,0.8s
AAK Ala-Archa 32.81 265 *e*P **P** **22 20 22.4 -1.3**
AAK pmax pmax
comp=Z,8.0nm,1.0s
AAK Ala-Archa 32.81 265 *e*P **P** **22 20 25.0 +1.3**
comp=Z,4.1nm,1.0s
EKS2 Erkin-Say 33.19 266 *e*P **P** **22 20 28.4 +1.4**
EKS2 pmax pmax
comp=Z,2.0nm,0.9s
EKS2 Erkin-Say 33.19 266 *e*P **P** **22 20 28.4 +1.4**
comp=Z,2.3nm,0.9s
KKAR Karatay Array 34.70 269 *e*P **P** **22 20 40.9 +0.9**
KKAR Karatay Array 34.70 269 *e*P **P** **22 20 40.9 +0.9**
ABKAR Akbulak array 36.69 285 *e*P **P** **22 20 57.3 +0.3**
AKTO Aktyubinsk 37.03 288 LR LR 22 36 48.8
comp=Z,109nm,20.2s,slow=37
COLD Coldfoot 39.30 38 *e*P **P** **22 21 20.1 +1.4**
comp=Z,2.9nm,1.0s
ARA0 ARCESS Array S 40.58 327 *e*P **P** **22 21 29.8 +0.4**
ARCES ARCESS Array B 40.58 327 P **P** **22 21 29.8 +0.4**
comp=Z,2.1nm,1.0s,baz=48,slow=14,SNR=2.4
ARCES LR LR 22 41 13.5
comp=Z,62nm,18.3s,baz=62,slow=40
TRF Thorofare Moun 41.23 43 *e*P **P** **22 21 37.8 +2.8**
comp=Z,17nm,0.8s
CM31 Chiang Mai Arr 41.68 213 *e*P **P** **22 21 39.6 +0.7**
CMAR Chiang Mai Arr 41.68 213 P **P** **22 21 39.6 +0.7**
comp=Z,0.6nm,0.3s,baz=8.3,slow=5,SNR=7.7
IL1 Eielson Array 41.74 40 *e*P **P** **22 21 39.4 +0.5**
ILAR Eielson Array 41.74 40 P **P** **22 21 39.7 +0.7**
comp=Z,1.7nm,0.5s,baz=294,slow=4.3,SNR=23
ILB Eielson Array 41.74 40 *e*P **P** **22 21 39.7 +0.7**
DHY Denali Highway 42.53 42 *e*P **P** **22 21 46.8 +1.2**
comp=Z,35nm,2.0s
DOT Dot Lake 43.40 40 *e*P **P** **22 21 52.1 -0.4**
comp=Z,12nm,0.8s
EGAK Eagle 43.73 38 *e*P P 22 21 58.3 +3.2
comp=Z,10nm,1.4s
INK Inuvik 43.92 31 P **P** **22 21 58.3 +1.8**
comp=Z,2.2nm,1.1s,baz=282,slow=7.6,SNR=4.8
INK Inuvik 43.92 31 *e*P **P** **22 21 58.3 +1.8**
INK pmax pmax
comp=Z,7.0nm,1.4s
INK Inuvik 43.92 31 *e*P **P** **22 21 58.3 +1.8**
comp=Z,7.3nm,1.4s
VRH Novokhopyorsk 44.83 299 *e*P **P** **22 22 02.0 -2.0**
VRH pmax pmax
comp=Z,6.0nm,0.6s
FIA0 FINESS Array S 45.13 318 *e*P **P** **22 22 05.2 -1.1**
FIA0 FINESS Array S 45.13 318 *e*P **P** **22 22 05.2 -1.1**
FINES FINESS Array B 45.13 318 P **P** **22 22 05.2 -1.1**
comp=Z,0.7nm,0.5s,baz=41,slow=10,SNR=11
VSR Storozhevoye 46.05 300 *e*P **P** **22 22 12.4 -1.3**
VSR pmax pmax
comp=Z,6.0nm,1.0s
KIV Kislovodsk 49.18 291 *e*P **P** **22 22 38.0 -0.3**
KIV pmax pmax
comp=Z,9.0nm,1.1s
KIV Kislovodsk 49.18 291 *e*P **P** **22 22 38.9 +0.7**
comp=Z,10nm,1.1s
KBZ Khabaz 49.23 290 P **P** **22 22 38.8 +0.3**
comp=Z,1.0nm,0.8s,baz=284,slow=3.7,SNR=3.7
NEY Neytrino 49.66 290 *e*P **P** **22 22 40.3 -1.7**
NEY pmax pmax
comp=Z,1.0nm,0.9s
NB2 NORSAR Subarra 50.62 324 P **P** **22 22 48.2 -0.7**
comp=Z,2.1nm,0.8s,baz=40,slow=7.4

NB200	NORSAR Array S	50.62	324	*e*P		P		22 22 48.3	-0.7
NOA	NORSAR Array B	50.62	324	P		P		22 22 48.3	-0.7
	comp=Z,0.9nm,0.6s,baz=43,slow=7.9,SNR=5.9								
AKASG	Malin Array Be	51.03	305	P		P		22 22 50.4	-1.6
	comp=Z,0.2nm,0.3s,baz=38,slow=9.1,SNR=4.5								
AKBB	Malin Array Si	51.03	305	*e*P		P		22 22 50.4	-1.6
AKBB				pmax	pmax				
	comp=Z,6.0nm,0.6s								
AKBB	Malin Array Si	51.03	305	*e*P		P		22 22 50.4	-1.6
	comp=Z,5.5nm,0.6s								
YKA	Yellowknife Ar	53.50	29	P		P		22 23 10.2	-0.1
	comp=Z,0.7nm,0.7s,baz=330,slow=7.4,SNR=11								
YKB5	Yellowknife Ar	53.50	29	*e*P		P		22 23 10.2	-0.1
BR101	Keskin Array S	56.90	293	*e*P		P		22 23 34.1	-1.2
BRTR	Keskin Array B	56.90	293	P		P		22 23 34.1	-1.2
	comp=Z,0.9nm,0.7s,baz=72,slow=3.1,SNR=6.4								
BR231	Keskin MP Arra	57.25	294	*e*P		P		22 23 36.0	-1.7
CLL	Collm	57.43	315	*e*P		P		22 23 38.0	-0.7
CLL	Collm	57.43	315	*e*P		P		22 23 38.0	-0.7
GERES	GERESS Array B	59.09	313	P		P		22 23 49.0	-1.5
	comp=Z,0.4nm,0.9s,baz=20,slow=6.5,SNR=2.2								
OBSR	Observation Ro	64.14	43	*e*P		P		22 24 27.6	+2.8
LON	Longmire	64.27	43	*e*P		P		22 24 29.1	+3.7
LON				pmax	pmax				
	comp=Z,21nm,0.9s								
LON	Longmire	64.27	43	*e*P		P		22 24 29.1	+3.7
	comp=Z,21nm,0.9s								
F10A	Beach Ranch, E	66.61	41	*e*P		P		22 24 43.2	+2.6
	comp=Z,22nm,1.0s								
MCMT	McKenzie Canyo	69.14	38	*e*P		P		22 24 59.9	+3.2
PD31	Pinedale Array	72.07	37	*e*P		P		22 25 14.1	-0.6
PDAR	Pinedale Array	72.07	37	P		P		22 25 14.1	-0.6
	comp=Z,0.4nm,0.5s,baz=354,slow=3.6,SNR=5.0								
HWUT	Hardware Ranch	72.42	39	*e*P		P		22 25 19.9	+3.2
	comp=Z,5.9nm,0.9s								
ESDC	Sonseca Array	73.62	319	P		P		22 25 24.9	+1.3
	comp=Z,0.4nm,0.7s,baz=22,slow=6.4,SNR=3.7								
SMCO	Snowmass	76.16	37	*e*P		P		22 25 42.9	+4.2
	comp=Z,6.8nm,1.5s								
WR1	Warramunga Arr	77.01	168	*e*P		P		22 25 42.0	-1.1
WRA	Warramunga Arr	77.01	168	P		P		22 25 42.0	-1.1
	comp=Z,0.9nm,0.7s,baz=351,slow=6.7,SNR=6.8								
WRA	Warramunga Arr	77.01	168	P		P		22 25 42.0	-1.1
WRA	Warramunga Arr	77.01	168	P		P		22 25 42.0	-1.1
SDCO	Great Sand Dun	77.94	36	*e*P		P		22 25 51.6	+2.9
	comp=Z,7.1nm,1.3s								
EMMW	East Machias	78.78	7	*e*P		P		22 25 50.9	-1.9
	comp=Z,73nm,1.3s								
AS31	Alice Springs	80.63	169	*e*P		P		22 26 02.1	-0.9
	comp=Z,2.6nm,1.5s								
ASAR	Alice Springs	80.64	169	P		P		22 26 02.1	-0.9
	comp=Z,0.4nm,0.8s,baz=359,slow=4.6,SNR=3.4								
WMOK	Wichita Mounta	82.81	32	*e*P		P		22 26 17.2	+2.6
WMOK				pmax	pmax				
	comp=Z,3.0nm,0.8s								
WMOK	Wichita Mounta	82.81	32	*e*P		P		22 26 17.2	+2.6
	comp=Z,3.3nm,0.8s								

NIED ***25*** *22:14:00,36.60N×143.70E,h35km,Mw3.6 Best double couple: M₀2.60000×10¹⁴ NP1:φs350.00000°,δ41.00000°, λ160.00000°. NP2:φs96.00000°,δ77.00000°,λ51.00000°.*
IDC ***25*** *22:14:23.6±1.9,36.49N×144.20E,h0km,mb3.3/3, mb1 3.6/6,mb1mx3.4/46,mbtmp3.6/6,ML3.8/3,Error ellipse: s-maj=46.8km s-min=26.1km az=79.0*
ISCJB ***25*** *22:14:28.0±0.9,36.48N±0.05×143.86E±0.06,h33km, mb3.5/3,Error ellipse: s-maj=7.8km s-min=7.4km az=13.7*
JMA ***25*** *22:14:30.6±0.3,36.61N×143.74E,h57km,M3.6*
ISC 25 22:14:28.9±1.4**,36.55N**±0.06×**143.95E**±0.10**,h35**km**,n24,** σ1s**67/28,mb3.5/3,Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	Iwakimizuishiy	2.59	283	P	Pn	22 15 08.9	+0.6
ONAJ				*e*S	Sn	22 15 37.1	-1.4
JFK	Kawauchi	2.59	289	P	Pn	22 15 08.8	+0.4
JFK				S	Sn	22 15 37.0	-1.7
CHOJ	Chosi	2.64	252	P	Pn	22 15 09.7	+0.8
JHO	Hitachi	2.72	272	*e*S	Sn	22 15 40.2	-1.5
JFT	Otama	3.05	290	P	Pn	22 15 15.7	+1.1
JFT				S	Sn	22 15 49.1	-0.7
JMK	Ichinoseki	3.23	319	P	Pn	22 15 18.0	+0.9
JOM	Ohasama	3.59	325	P	Pn	22 15 22.9	+0.8
JOM				*e*S	Sn	22 16 01.9	-1.4
JAG	Ashikaga	3.62	269	*e*S	Sn	22 16 00.8	-3.2
JYK	Kaneyama	3.70	311	P	Pn	22 15 24.8	+1.3
JRY	Ryogami san	4.11	264	P	Pn	22 15 29.9	+0.7
JRY				*e*S	Sn	22 16 14.6	-1.5
JOD2	Odawara 2	4.15	253	P	Pn	22 15 30.4	+0.7
JOD2				*e*S	Sn	22 16 15.6	-1.4
MJAR	Matsushiro Arr	4.62	272	Pn	Pn	22 15 37.7	+1.5
	1.4nm,0.3s,baz=92,slow=7.5,SNR=7.5						
MJAR				Sn	Sn	22 16 30.3	+1.7
	0.8nm,0.3s,baz=207,slow=14,SNR=3.6						
MAT	Matsushiro	4.62	272	P	Pn	22 15 38.0	+1.8
MAT				*e*S	Sn	22 16 30.2	+1.5
JHJ	Hachijo jima 2	4.84	226	Pn	Pn	22 15 38.1	-1.1
	23nm,0.3s,baz=132,slow=22,SNR=15						
JHJ				Sn	Sn	22 16 31.1	-2.9
	9.5nm,0.3s,baz=96,slow=19,SNR=3.2						
ASAJ	Asahikawa	7.63	353	Pn	Pn	22 16 16.8	-0.7
	1.6nm,0.3s,baz=209,slow=9.2,SNR=12						
ASAJ				Sn	Sn	22 17 38.7	-4.0
	0.1nm,0.3s,baz=32,slow=19,SNR=1.7						
H11N2	WAKE ISLAND Hy	26.17	124	T	T	22 47 06.6	
	baz=316,slow=75,SNR=10.0						
H11N1	WAKE ISLAND Hy	26.18	124	T	T	22 47 11.6	
	baz=316,slow=75,SNR=6.5						
H11N3	WAKE ISLAND Hy	26.19	124	T	T	22 47 03.6	
	baz=316,slow=75,SNR=9.6						
H11S1	WAKE ISLAND Hy	26.91	126	T	T	22 48 06.2	
	baz=317,slow=76,SNR=5.4						
H11S3	WAKE ISLAND Hy	26.91	126	T	T	22 48 09.3	
	baz=317,slow=76,SNR=5.3						
H11S2	WAKE ISLAND Hy	26.92	126	T	T	22 48 07.7	
	baz=317,slow=76,SNR=4.6						
KURBB	Kurchatov Arra	47.90	309	P	P	22 23 04.7	+1.3
	0.3nm,0.6s,baz=86,slow=8.0,SNR=2.9						
WRA	Warramunga Arr	56.91	191	P	P	22 24 11.0	+0.5
	0.6nm,0.9s,baz=9.2,slow=7.5,SNR=8.1						
ASAR	Alice Springs	60.63	191	P	P	22 24 35.5	-0.9
	0.3nm,0.8s,baz=19,slow=9.9,SNR=3.3						

ISCJB ***25*** *22:22:08.3±0.2,2.89S±0.03×78.06W±0.04,h10km, mb4.8/122,MS4.2/13,Error ellipse: s-maj=6.2km s-min=3.3km az=160.1*
IDC ***25*** *22:22:09.4±0.6,2.89S×78.00W,h0km,mb4.4/19, mb1 4.6/24,mb1mx4.4/45,mbtmp4.4/24,ML4.1/5,MS4.1/16, Ms1 4.1/16,ms1mx3.8/38,Error ellipse: s-maj=26.1km s-min=12.4km az=52.0*
IGQ ***25*** *22:22:11,2.66S×78.12W,h12km±3km,Mb4.4,Error ellipse: s-maj=3.9km s-min=3.1km az=9.1*
NEIC ***25*** *22:22:16.7±1.0,2.91S×77.63W,h41km±9km,mb4.8/115, MD4.6(IGQ),Error ellipse: s-maj=12.0km s-min=5.6km az=61.0*
NEIC Felt at Banos and Macas, Ecuador.
BJI ***25*** *22:22:21.4,2.90S×77.40W,h69km,mB5.4/5,Ms5.3/4, Ms7 5.0/3*
ISC 25 22:22:10.0±1.2**,2.78S**±0.03×**78.07W**±0.05**,h8**km±7km**,n360,**σ2s**23/315,mb4.8**/121**,MS4.2**/13**,4C-16D,Ecuador**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PAT1	Patacocha	1.32	344	⇓P	Pb	22 22 33.3	-2.1
	baz=344						
BPAT	Tungurahua Vol	1.32	344	⇓P	Pb	22 22 33.3	-2.1
	baz=344						
BPAT				⇓S	Sn	22 22 51.0	-2.3
	baz=344						
ARRY	Arrayan	1.32	343	⇓P	Pb	22 22 33.1	-2.3
	baz=343						
BMAS	Trigal station	1.33	342	⇓P	Pb	22 22 33.4	-2.2
	baz=342						
BULB	Ulba Tungurahu	1.38	345	⇓P	Pn	22 22 34.2	-1.8
	baz=346						
BULB				⇓S	Sn	22 22 53.5	-1.1
	baz=346						
BBIL	Ulba Tungurahu	1.39	342	P	Pg	22 22 35.8	-0.9
	baz=343						
BIL2	Estacion Bilba	1.39	342	P	Pg	22 22 35.7	-1.0
	baz=342						
BRUN	Tungurahua Vol	1.39	346	P	Pn	22 22 34.4	-1.7
	baz=346						
RUN5	Runtun	1.40	345	P	Pn	22 22 34.2	-2.0
	baz=346						
IGUA	Igualata	1.40	336	⇓P	Pg	22 22 36.5	-0.5
	baz=336						
POND	Pondoa	1.40	344	⇓P	Pg	22 22 35.6	-1.5
	baz=345						
JUI6	Juive	1.41	343	⇓P	Pn	22 22 34.5	-1.8
	baz=344						
PISA	Pisayambo	1.74	349	P	Pg	22 22 41.8	-1.7
	baz=350						
BMOR	Cotopaxi Volca	2.07	349	⇓P	Pg	22 22 47.7	-2.1
	baz=350						
MOV1	Cotopaxi Vol s	2.09	350	P	Pb	22 22 47.0	-1.6
	baz=350						
BTAM	Cotopaxi Volca	2.12	351	⇓P	Pb	22 22 47.2	-1.8
	baz=352						
BTAM				⇓S	Sg	22 23 17.9	-0.3
	baz=352						
COV1	Cotopaxi Volc	2.12	352	P	Pb	22 22 48.3	-0.9
	baz=351						
CAMI	Rancho Maria	2.13	348	P	Pb	22 22 48.0	-1.3
	baz=349						
BNAS	Cotopaxi Volca	2.13	349	⇓P	Pg	22 22 48.9	-2.1
	baz=349						
VC1	Cotopaxi 1	2.15	351	⇓P	Pb	22 22 48.9	-0.7
	baz=352						
NAS2	Nasa	2.16	349	⇑P	Pg	22 22 49.7	-1.8
	baz=350						
AQUE	Quevedo	2.23	320	P	Pb	22 22 50.3	-0.4
	baz=321						
AQUE				S	Sg	22 23 20.2	-1.7
	baz=321						
PITA	Cotopaxi Volc	2.24	351	P	Pg	22 22 50.8	-2.2
	baz=351						
ANTI	Antisana	2.32	358	⇓P	Pb	22 22 50.8	-1.6
	baz=358						
JUA2	San Juan 2	2.60	348	P	Pb	22 22 57.0	-0.4
	baz=348						
PINO	Pino	2.66	348	P	Pb	22 22 56.5	-1.9
	baz=349						
YANA	Yana	2.69	349	P	Pb	22 22 58.8	0.0
	baz=350						
CHAR	Charly	2.70	8	P	Pn	22 22 55.1	+0.8
	baz=9.0						
LAV4	Lava4-Reventad	2.70	9	P	Pb	22 22 55.5	-3.4
	baz=10.0						
ASDO	Santo Domingo	2.71	337	P	Pg	22 23 00.7	-1.5
	baz=337						
CONE	Cono NE Rev Vo	2.72	9	⇑P	Pb	22 22 55.9	-3.4
	baz=10.0						
ELAGU	Cayambe Volc	2.74	2	P	Pb	22 22 57.0	-2.6
	baz=2.0						
PECV	Mancha de Ca P	2.81	315	P	Pg	22 23 01.4	-2.6
	baz=309						
CAYA	Cayambe	2.83	2	⇑P	Pb	22 22 58.1	-3.2
	baz=2.0						
OTAV	Otavalo	3.02	353	P	Pb	22 23 02.9	-1.6
	baz=353						
OTAV	Otavalo	3.02	353	*e*Pn	Pb	22 23 03.5	-1.0
OTAV				*e*Sn	Sb	22 23 39.5	-2.2
OTAV	Otavalo	3.02	353	*e*P	Pb	22 23 01.4	-3.0
CUIC	Cuicocha-Domo	3.08	354	⇑P	Pb	22 23 03.0	-2.3
	baz=355						
COTA	Cotachi	3.10	355	P	Pb	22 23 05.7	-0.2
	baz=355						
MAG1	Magdalena	3.19	328	P	Pn	22 23 02.3	+1.7
	baz=327						
URCU	Urcuqui	3.20	357	P	Pb	22 23 05.7	-1.8
	baz=357						
AMANT	Manta	3.23	304	P	Pb	22 23 06.5	-1.3
	baz=303						
JAMA	Jama	3.29	319	P	Pb	22 23 06.1	-2.7
	baz=319						
ATUL	Tulc¨jn	3.54	6	P	Pb	22 23 13.1	-0.2
	baz=6.0						
CMBC	Cumbal	3.70	4	*e*P	Pb	22 23 12.7	-3.3
ATAH	Atahualpa	4.34	184	Pn	Pn	22 23 18.8	+2.0
	83nm,0.3s,baz=11,slow=8.0,SNR=226						
ATAH				Sn	Sn	22 24 09.6	+1.8
	78nm,0.3s,baz=119,slow=22,SNR=3.7						
ATAH				LR	LR	22 25 14.6	
	comp=Z,4μm,20.1s,baz=13,slow=44						
POPC	Popayan, Colom	5.46	15	*e*P	Pn	22 23 36.5	+4.4
GRGC	Isla de Gorgon	5.74	359	*e*P	Pn	22 23 38.8	+3.0
MALC	Bahia Malaga	6.79	6	*e*P	Pn	22 23 55.2	+5.1
PRAC	Prado	7.19	26	*e*Pn	Pn	22 23 59.2	+3.6
PRAC				*e*Sn	Sn	22 25 18.1	+0.5
PRAC				*e*ScP	ScP	22 34 17.0	+1.1
ROSC	El Rosal	8.44	26	Pn	Pn	22 24 20.0	+6.8
	2.0nm,0.3s,baz=204,slow=12,SNR=4.7						
ROSC				Lg	Lg	22 26 39.1	
	15nm,0.3s,baz=180,slow=20,SNR=3.8						
ROSC				LR	LR	22 27 33.1	
	comp=Z,896nm,20.6s,baz=212,slow=38						
ROSC	El Rosal	8.44	26	*e*Pn	Pn	22 24 20.0	+6.8
ROSC				*e*Sn	Sn	22 25 55.6	+6.7
NNA	Nana	9.23	173	Pn	Pn	22 24 22.9	-0.8
	12nm,0.3s,baz=332,slow=13,SNR=15						
NNA				Sn	Sn	22 26 02.9	-5.0
	9.5nm,0.3s,baz=270,slow=20,SNR=3.9						
NNA				LR	LR	22 27 38.0	
	comp=Z,716nm,19.0s,baz=334,slow=36						
NNA	Nana	9.23	173	*e*Pn	Pn	22 24 24.2	+0.5
NNA				*e*Sn	Sn	22 26 03.4	-4.4
HELC	Santa Helena	9.26	16	*e*Pn	Pn	22 24 27.5	+3.1
BCIP	Isla Barro Col	12.00	352	*e*Pn	Pn	22 25 02.0	+0.5
SDV	Santo Domingo	13.75	33	Pn	Pn	22 25 28.7	+2.9
	2.4nm,0.3s,baz=312,slow=3.9,SNR=3.6						
SDV				Lg	Lg	22 29 34.6	
	2.6nm,0.3s,baz=43,slow=19,SNR=2.4						
JTS	JuntasAbangare	14.68	332	Pn	P	22 25 41.3	-3.3
	0.2nm,0.3s,baz=157,slow=16,SNR=2.8						
JTS				LR	LR	22 30 35.3	
	comp=Z,663nm,18.5s,baz=151,slow=34						
SAML	Samuel	16.02	113	*e*Pn	Pn	22 25 49.6	-6.3
	64m,0.8s						
LPAZ	La Paz	16.61	145	Pn	Pn	22 26 02.9	-1.1
	0.4nm,0.3s,baz=324,slow=10.0,SNR=42						
LPAZ	La Paz	16.61	145	*e*Pn	Pn	22 26 02.9	-1.1
	38nm,0.8s						
PTGA	Pitinga	18.20	84	P	Pn	22 26 23.0	-0.4
	1.1nm,0.3s,baz=288,slow=22,SNR=6.3						
PTGA				S	Sn	22 29 41.2	-5.8
	1.8nm,0.3s,baz=348,slow=22,SNR=5.8						
PTGA				Lg	Lg	22 31 42.2	
	2.4nm,0.3s,baz=359,slow=21,SNR=4.0						
PTGA				LR	LR	22 34 20.0	
	comp=Z,322nm,18.1s,baz=268,slow=40						
PTGA	Pitinga	18.20	84	*e*Pn	Pn	22 26 21.6	-1.8
	12nm,0.8s						
PTGA				*e*Sn	Sn	22 29 41.2	-5.8
PB11	IPOC Station P	18.77	155	*e*P	P	22 26 28.9	-1.1
	40nm,0.7s						
PB11				*e*ScP	ScP	22 34 26.8	-7.3
PB01	IPOC Station P	19.98	156	*e*P	P	22 26 45.1	+1.9
	20nm,1.0s						
MTDJ	Mount Denham	20.88	1	*e*P	Pn	22 26 58.2	+2.7
	65nm,0.9s						
SIV	San Ignacio	21.26	129	P	P	22 26 56.1	-1.0
	18nm,0.9s,baz=319,slow=11,SNR=21						
SIV				LR	LR	22 36 07.3	
	comp=Z,1μm,21.7s,baz=325,slow=40						
GTBY	Guantanamo Bay	22.75	7	*e*P	P	22 27 12.3	-0.6
	36nm,1.0s						
SJG	San Juan	23.85	29	LR	LR	22 37 57.9	
	comp=Z,882nm,20.5s,baz=232,slow=40						
FDF	Fort de France	24.16	43	*e*P	P	22 27 25.3	-1.8
	54nm,1.0s						
CMIG	Matias Romero	25.80	321	P	P	22 27 43.1	+1.3
	13nm,0.9s,baz=121,slow=6.2,SNR=4.1						
LCO	Las Campanas	27.01	166	*e*P	P	22 27 51.1	-2.0
	72nm,2.0s						
CPUP	Vila Florida	30.73	142	P	P	22 28 24.0	-1.9
	2.1nm,0.7s,baz=311,slow=9.4,SNR=5.1						
CPUP				LR	LR	22 43 25.5	
	comp=Z,462nm,18.2s,baz=317,slow=42						
ROC1	El Roble	30.76	168	*e*P	P	22 28 24.1	-2.3
	14nm,0.8s						
NHSC	New Hope	35.75	357	*e*P	P	22 29 14.1	+4.5
	49nm,0.9s						
LRAL	Lakeview Retre	36.61	347	*e*P	P	22 29 15.8	-1.1
	12nm,1.1s						
VBMS	Vicksburg	36.76	342	*e*P	P	22 29 16.4	-1.8
	77nm,0.3s						
NATX	Nacogdoches	37.80	337	P	P	22 29 26.3	-0.7
	baz=152						
KMSC	Kings Mountain	37.85	356	*e*P	P	22 29 30.9	+3.5
	12nm,1.0s						
PLCA	Paso Flores	38.39	171	P	P	22 29 31.2	-0.9
	3.4nm,0.7s,baz=18,slow=11,SNR=5.5						
PLCA				LR	LR	22 43 06.6	
	comp=Z,130nm,19.7s,baz=16,slow=33						
PLCA	Paso Flores	38.39	171	*e*P	P	22 29 31.2	-0.9
	18nm,1.3s						
CPCT	Cooper Cave	38.51	352	*e*P	P	22 29 32.6	-0.4
	6.3nm,0.9s						
SWET	Sewanee	38.51	350	*e*P	P	22 29 32.1	-1.0
	3.0nm,0.8s						
TKL	Tuckaleechee C	38.61	353	P	P	22 29 34.0	+0.1
	2.3nm,0.6s,baz=130,slow=10,SNR=3.6						
TKL				LR	LR	22 45 47.7	
	comp=Z,132nm,20.1s,baz=132,slow=37						
TKL	Tuckaleechee C	38.61	353	*e*P	P	22 29 34.0	+0.1
	36nm,1.9s						
TZTN	Tazewell	39.45	353	*e*P	P	22 29 43.5	+2.6
	7.1nm,0.6s						
UALR	University of	39.69	341	*e*P	P	22 29 46.9	+4.0
	31nm,1.3s						
BLA	Blacksburg	39.85	357	*e*P	P	22 29 47.9	+3.6
	13nm,0.8s						
X301	Greenbrier Sit	40.14	342	*e*P	P	22 29 50.0	+3.4
	13nm,1.1s						
WHAR	Wooly Hollow	40.15	342	*e*P	P	22 29 46.2	-0.6
	19nm,1.3s						
X201	Greenbrier Sit	40.17	342	*e*P	P	22 29 46.5	-0.4
	19nm,1.2s						
UTMT	University of	40.20	346	*e*P	P	22 29 46.0	-1.1
	48nm,0.4s						
LTX	Lajitas	40.27	324	*e*P	P	22 29 48.3	+0.4
LTX				*e*PcP	PcP	22 31 53.7	+1.9
TXAR	Lajitas Array	40.27	324	P	P	22 29 48.3	+0.4
	1.1nm,0.7s,baz=143,slow=9.1,SNR=5.3						
TXAR				PcP	PcP	22 31 53.7	+1.9
	0.9nm,0.7s,baz=140,slow=5.7,SNR=6.0						
TX31	Lajitas Ar. Si	40.27	324	*e*P	P	22 29 49.5	+1.6
ABTX	Abilene, Hawle	40.71	332	P	P	22 29 51.2	-0.3
	baz=146						
ABTX	Abilene, Hawle	40.71	332	*e*P	P	22 29 53.1	+1.6
	16nm,0.8s						
PBMO	Poplar Bluff	41.01	345	*e*P	P	22 29 52.5	-1.3
	19nm,0.8s						
WCI	Wyandotte Cave	41.51	350	*e*P	P	22 30 00.3	+2.4
	11nm,0.8s						
HHAR	Hobbs	41.59	341	*e*P	P	22 30 02.6	+4.0
	14nm,1.1s						
SIUC	Southern Illin	41.60	347	*e*P	P	22 29 56.9	-1.7
	36nm,0.8s						
TUL1	Leonard	41.91	338	*e*P	P	22 30 05.8	+4.6
	23nm,1.4s						
WMOK	Wichita Mounta	42.09	334	*e*P	P	22 30 02.5	-0.3
	14nm,0.8s						
OLIL	Olney	42.33	348	*e*P	P	22 30 02.9	-1.7
	26nm,0.8s						
V34A	Guthrie	42.50	336	*e*P	P	22 30 05.7	-0.4
	36nm,0.8s						
MNTX	Cornudas Mount	43.01	325	P	P	22 30 10.4	+0.1
	baz=138						
MNTX	Cornudas Mount	43.01	325	*e*P	P	22 30 11.6	+1.3
	14nm,1.5s						
U34A	Anderson Ranch	43.03	337	*e*P	P	22 30 14.2	+3.9
	29nm,0.8s						
SSPA	Standing Stone	43.21	0	*e*P	P	22 30 11.9	+0.2
	12nm,0.8s						
AMTX	Amarillo	43.53	331	*e*P	P	22 30 19.6	+5.1
	19nm,0.8s						
N59A	State Game Lan	43.54	3	P	P	22 30 12.1	-2.3
	baz=183						
N54A	Moraine State	43.57	358	P	P	22 30 12.5	-2.1
	baz=177						
M54A	Oil Creek Stat	44.10	358	P	P	22 30 15.0	-3.9
	baz=177,SNR=6.2						
HDIL	Hopedale	44.33	348	P	P	22 30 17.8	-3.0
	baz=164,SNR=8.1						
BINY	Binghamton	44.81	2	*e*P	P	22 30 25.3	+0.7
	10nm,0.8s						
KSU1	Kansas State U	45.04	340	*e*P	P	22 30 26.0	-0.4
	20nm,0.8s						
N39A	Derby Farms, D	45.41	345	P	P	22 30 27.1	-2.2
	baz=159						
BNM	Barren Site	45.52	326	*e*P	P	22 30 36.5	+5.8
N38A	Joes South For	45.53	344	P	P	22 30 27.9	-2.4
	baz=158						
CBKS	Cedar Bluff	45.97	336	P	P	22 30 31.2	-2.7
	baz=149						
CBKS	Cedar Bluff	45.97	336	*e*P	P	22 30 38.6	+4.7
	38nm,0.9s						
ANMO	Albuquerque	46.02	327	P	P	22 30 35.8	+1.2
	11nm,0.9s,baz=153,slow=7.0,SNR=18						
ANMO	Albuquerque	46.02	327	*e*P	P	22 30 35.8	+1.2
	12nm,0.8s						
M38A	Pleasantville	46.10	344	P	P	22 30 32.1	-2.7
	baz=158						
T25A	Trinidad	46.66	331	*e*P	P	22 30 41.9	+2.3
	16nm,1.0s						
L38A	Oak Wood Farm,	46.71	345	P	P	22 30 37.1	-2.5
	baz=159						
JFWS	Jewell Farm	46.80	348	*e*P	P	22 30 38.5	-1.8
	19nm,0.8s						
M35A	Neola	46.87	342	P	P	22 30 38.5	-2.3
	baz=155						
L36A	Harm Buss Farm	47.14	343	P	P	22 30 41.1	-1.9
	baz=157						
M34A	Aspy Farms, Fr	47.19	341	P	P	22 30 41.3	-2.1
	baz=154						
LONY	Lake Ozonia	47.29	3	*e*P	P	22 30 49.7	+5.6
	9.3nm,1.0s						
KSCO	Kaye Shedlock'	47.35	334	*e*P	P	22 30 49.8	+5.0
	18nm,0.8s						
SADO	Sadowa	47.35	359	*e*P	P	22 30 43.1	-1.4
	18nm,1.0s						
FRNY	Flat Rock	47.57	4	*e*P	P	22 30 49.7	+3.5
	58nm,2.0s						
K36A	Gilmore City	47.58	344	P	P	22 30 44.5	-1.8
	baz=157

K30A	**Basset**	49.26 339	P	P	22 30 57.2	-2.2
	baz=151					
ISCO	**Idaho Springs**	49.34 332	P	P	22 30 58.2	-2.2
	baz=142,SNR=7.7					
ISCO	**Idaho Springs**	49.34 332	*e*P	P	22 31 05.2	+4.8
	4.9nm,0.8s					
SMCO	**Snowmass**	49.51 330	*e*P	P	22 31 03.7	+1.9
	14nm,1.4s					
PV01	**Paradox Valley**	49.53 328	*e*P	P	22 31 07.0	+5.2
PV05	**Paradox Valley**	49.77 328	*e*P	P	22 31 08.3	+4.7
J30A	**Dallas**	49.79 340	P	P	22 31 01.9	-1.5
	baz=151					
PV10	**Paradox Valley**	49.96 328	*e*P	P	22 31 09.7	+4.6
H33A	**Prehn Over Nor**	50.11 343	P	P	22 31 03.3	-2.6
	baz=155					
J29A	**Okreek**	50.15 339	P	P	22 31 03.9	-2.2
	baz=150,SNR=8.1					
H32A	**Carlson Farm,**	50.16 342	P	P	22 31 03.7	-2.5
	baz=154					
F36A	**Milaca**	50.34 346	P	P	22 31 04.6	-2.9
	baz=160,SNR=6.5					
N23A	**Red Feather La**	50.36 333	P	P	22 31 05.5	-2.6
	baz=142,SNR=7.5					
N23A	**Red Feather La**	50.36 333	*e*P	P	22 31 12.8	+4.7
	10nm,1.0s					
W13A	**Hualapai Mount**	50.47 322	*e*P	P	22 31 11.4	+2.5
	6.1nm,0.8s					
PHWY	**Pilot Hill**	50.47 333	*e*P	P	22 31 13.5	+4.6
	8.7nm,0.8s					
PHWY			*e*ScP	ScP	22 36 19.3	-4.4
G33A	**Ortonville**	50.49 343	P	P	22 31 05.7	-2.9
	baz=156					
I29A	**Vivian Onida**	50.68 339	P	P	22 31 08.0	-2.2
	baz=150					
E36A	**McGregor**	50.89 347	P	P	22 31 09.2	-2.4
	baz=160					
F33A	**5 Mile Ranch,**	51.04 344	P	P	22 31 10.7	-2.1
	baz=156					
KNB	**Kanab**	51.10 324	*e*P	P	22 31 19.8	+6.1
	5.1nm,0.8s					
J26A	**Sides Ranch, S**	51.11 337	P	P	22 31 11.5	-2.0
	baz=147,SNR=6.0					
G30A	**Faulkton**	51.26 341	P	P	22 31 12.4	-2.1
	baz=152,SNR=6.8					
D37A	**Cotton**	51.31 347	P	P	22 31 12.2	-2.6
	baz=161					
GMRC	**Granite Mounta**	51.39 320	P	P	22 31 14.2	-1.5
	baz=129					
J25A	**Sunshine Ranch**	51.47 336	P	P	22 31 14.3	-1.9
	baz=146					
C39A	**Grand Marais**	51.48 350	P	P	22 31 13.8	-2.3
	baz=164					
D36A	**Goodland**	51.49 347	P	P	22 31 13.9	-2.2
	baz=160					
H28A	**Mission Ridge**	51.51 339	P	P	22 31 13.9	-2.4
	baz=150					
P18A	**Preston Nutter**	51.52 328	*e*P	P	22 31 22.1	+5.3
	9.3nm,1.3s					
C38A	**Sawbill Land.**	51.60 349	P	P	22 31 13.8	-3.2
	baz=163					
F31A	**Hecla**	51.63 342	P	P	22 31 15.1	-2.2
	baz=154					
P17A	**Butcher Ranch,**	51.66 328	*e*P	P	22 31 22.7	+4.9
	8.1nm,1.0s					
MSU	**Marysvale**	51.76 326	*e*P	P	22 31 23.6	+5.0
C37A	**Embarrass**	51.80 348	P	P	22 31 15.9	-2.5
	baz=162					
EYMN	**Ely**	51.87 349	P	P	22 31 16.2	-2.7
	baz=163					
D34A	**Park Rapids**	51.89 345	P	P	22 31 16.9	-2.3
	baz=158					
C36A	**Pine Crest Far**	51.97 347	P	P	22 31 17.4	-2.3
	baz=161,SNR=14					
I25A	**Rochford**	51.97 337	P	P	22 31 19.2	-0.8
	baz=146,SNR=11					
K22A	**Casper**	52.02 334	*e*P	P	22 31 20.3	-0.1
	84nm,0.3s					
F29A	**Eureka**	52.11 341	P	P	22 31 19.8	-1.1
	baz=152					
C35A	**Jirik Farms, M**	52.17 346	P	P	22 31 19.5	-1.7
	baz=160					
RSSD	**Black Hills**	52.17 336	*e*P	P	22 31 23.0	+1.4
	15nm,0.8s					
RSSD			*e*ScP	ScP	22 36 30.1	-0.8
C34A	**RKJ Ranch, Bem**	52.35 346	P	P	22 31 21.5	-1.1
	baz=158					
E30A	**Jud**	52.41 342	P	P	22 31 22.3	-0.7
	baz=153					
H25A	**Fruitdale**	52.42 337	P	P	22 31 22.7	-0.5
	baz=147					
G27A	**Dupree**	52.44 339	P	P	22 31 22.9	-0.4
	baz=149					
G26A	**Maurine**	52.61 338	P	P	22 31 22.8	-1.7
	baz=148					
PSUT	**Pine Spring**	52.73 325	*e*P	P	22 31 31.7	+5.9
	3.0nm,0.9s					
B35A	**Bob, Littlefor**	52.73 347	P	P	22 31 23.5	-1.9
	baz=160					
JLU	**Jordanelle**	52.86 328	*e*P	P	22 31 32.2	+5.4
	7.1nm,0.8s					
F27A	**Lemmon**	52.90 339	P	P	22 31 25.9	-0.8
	baz=149					
EDW2	**Edwards Air Fo**	52.97 319	P	P	22 31 27.3	-0.1
	baz=126					
E28A	**Huff**	53.05 341	P	P	22 31 26.6	-1.2
	baz=151					
B34A	**Aery, Baudette**	53.06 346	P	P	22 31 26.6	-1.2
	baz=159,SNR=6.7					
D29A	**Pettibone, Tap**	53.12 342	P	P	22 31 27.4	-0.9
	baz=152					
AGMN	**Agassiz Nation**	53.19 345	P	P	22 31 27.3	-1.4
	baz=157,SNR=16					
TCUT	**Toone Canyon**	53.21 329	*e*P	P	22 31 34.7	+5.4
	26nm,0.8s					
E27A	**Carson**	53.22 340	P	P	22 31 27.8	-1.2
	baz=150,SNR=5.7					
C31A	**Landman Farms,**	53.23 344	P	P	22 31 27.7	-1.3
	baz=155					
BLG	**Laguna Peak, P**	53.23 317	P	P	22 31 29.5	+0.2
	baz=125					
C30A	**Mose, Pekin**	53.36 343	P	P	22 31 29.4	-0.6
	baz=154					
BW06	**Boulder Array**	53.52 331	P	P	22 31 31.2	-0.4
	baz=139					
BW06	**Boulder Array**	53.52 331	*e*P	P	22 31 35.7	+4.1
PD31	**Pinedale Array**	53.52 331	*e*P	P	22 31 35.5	+4.0
PDAR	**Pinedale Array**	53.52 331	P	P	22 31 31.5	0.0
	5.2nm,1.0s,baz=142,slow=7.5,SNR=17					
D28A	**Regan**	53.55 341	P	P	22 31 30.5	-1.0
	baz=151					
SCZ2	**Santa Cruz Isl**	53.55 317	P	P	22 31 32.1	+0.4
	baz=124					
E26A	**Carlson Angus**	53.57 339	P	P	22 31 30.4	-1.2
	baz=149					
R11A	**Troy Canyon, C**	53.62 324	*e*P	P	22 31 38.1	+5.7
	5.2nm,1.1s					
HWUT	**Hardware Ranch**	53.65 329	*e*P	P	22 31 33.0	+0.5
	11nm,0.8s					
A33A	**Warroad**	53.66 346	P	P	22 31 31.2	-1.0
	baz=158,SNR=7.3					
D27A	**Center**	53.79 340	P	P	22 31 32.6	-0.6
	baz=150					
GRAC	**Grapevine Rang**	53.85 321	P	P	22 31 33.0	-0.8
	baz=128					
A32A	**Rocking H Ranc**	53.92 345	P	P	22 31 32.6	-1.5
	baz=157					
E25A	**Miller Ranch,**	53.93 339	P	P	22 31 32.8	-1.5
	baz=148					
B30A	**Myrvik Farm, E**	53.99 343	P	P	22 31 33.0	-1.6
	baz=154					
D26A	**Manning**	54.04 340	P	P	22 31 33.6	-1.5
	baz=149					
PKM	**Mcpherson Peak**	54.18 318	P	P	22 31 35.8	-0.7
	baz=125					
B29A	**Wagenman Farm,**	54.30 343	P	P	22 31 35.9	-1.0
	baz=153,SNR=30					
C27A	**Sayler Ranch,**	54.31 341	P	P	22 31 35.9	-1.2
	baz=150					
HVU	**Hansel Valley**	54.40 328	*e*P	P	22 31 42.8	+4.8
	10nm,1.3s					
A30A	**Hoffart Farm,**	54.43 344	P	P	22 31 36.3	-1.6
	baz=155					
REDW	**Red Top Meadow**	54.59 331	*e*P	P	22 31 44.0	+4.6
	11nm,1.2s					
REDW			*e*pP	pP	22 31 51.9	+10
SNOW	**Snow King Moun**	54.62 331	*e*P	P	22 31 45.8	+6.2
	25nm,1.4s					
LOHW	**Long Hollow**	54.66 331	*e*P	P	22 31 43.9	+4.1
	7.8nm,1.0s					
A29A	**Manning Farm,**	54.68 343	P	P	22 31 38.5	-1.2
	baz=154,SNR=25					
MOOW	**Moose Ponds**	54.83 331	*e*P	P	22 31 42.0	+0.9
	4.7nm,0.9s					
FXWY	**Fox Creek**	54.88 331	*e*P	P	22 31 41.8	+0.4
	5.4nm,1.1s					
A28A	**Rude Farm, Bot**	54.98 342	P	P	22 31 40.4	-1.4
	baz=152					
ULM	**Lac du Bonnet**	55.00 346	P	P	22 31 42.5	+0.6
	5.8nm,0.7s,baz=155,slow=8.0,SNR=3.5					
ULM	**Lac du Bonnet**	55.00 346	*e*P	P	22 31 43.6	+1.7
	25nm,1.4s					
FLWY	**Flagg Ranch**	55.05 332	*e*P	P	22 31 47.4	+4.7
	12nm,0.8s					
RLMT	**Red Lodge**	55.19 333	P	P	22 31 43.7	0.0
	baz=141,SNR=8.5					
RLMT	**Red Lodge**	55.19 333	*e*P	P	22 31 47.4	+3.7
	9.8nm,0.8s					
H17A	**Grant Village**	55.23 332	P	P	22 31 43.8	-0.3
	baz=139					
H17A	**Grant Village**	55.23 332	*e*P	P	22 31 50.1	+6.0
	6.2nm,0.9s					
LKWY	**Lake**	55.28 332	*e*P	P	22 31 50.2	+5.8
	45nm,1.7s					
NV01	**Mina Array Sit**	55.32 322	*e*P	P	22 31 48.1	+3.3
NVAR	**Mina Array Bea**	55.32 322	P	P	22 31 48.1	+3.3
	1.1nm,0.3s,baz=128,slow=5.8,SNR=2.8					
YFT	**Old Faithful**	55.40 332	*e*P	P	22 31 51.5	+6.3
	12nm,1.0s					
A26A	**Wade Farm, Ken**	55.52 341	P	P	22 31 45.6	-0.1
	baz=150					
YMR	**Madison River**	55.62 332	*e*P	P	22 31 52.4	+5.6
	7.2nm,0.8s					
GCMT	**Greycliff**	55.89 334	*e*ScP	ScP	22 36 45.6	-1.4
A25A	**Svangstu Ranch**	55.91 340	P	P	22 31 48.6	0.0
	baz=143					
QLMT	**Earthquake Lak**	55.96 332	*e*P	P	22 31 54.6	+5.4
HLID	**Hailey**	56.51 329	P	P	22 31 53.5	+0.4
	baz=135,SNR=8.3					
HLID	**Hailey**	56.51 329	*e*P	P	22 31 57.9	+4.8
	8.9nm,1.1s					
MCMT	**McKenzie Canyo**	56.64 331	*e*P	P	22 31 59.0	+4.8
BOZ	**Bozeman (W)**	56.67 332	P	P	22 31 54.7	+0.5
	baz=138,SNR=25					
BOZ	**Bozeman (W)**	56.67 332	*e*P	P	22 31 55.3	+1.1
	13nm,0.9s					
DLMT	**Dillon**	56.91 332	*e*P	P	22 32 01.0	+5.1
	24nm,0.8s					
MFID	**Camas Ranch**	57.15 328	*e*P	P	22 31 59.2	+1.5
	20nm,1.0s					
LRM	**Limekiln Ridge**	57.18 332	*e*P	P	22 32 02.6	+4.6
ORV	**Oroville**	57.98 321	*e*P	P	22 32 09.3	+5.9
	10nm,1.0s					
WVOR	**Wild Horse Val**	58.04 325	*e*P	P	22 32 08.9	+4.9
	16nm,0.9s					
MSO	**Missoula**	58.62 332	P	P	22 32 08.6	+0.7
	baz=137,SNR=9.0					
MSO	**Missoula**	58.62 332	*e*P	P	22 32 11.0	+3.2
	11nm,0.9s					
YBMT	**Yellow Bay**	59.41 333	*e*P	P	22 32 18.0	+4.7
JTMT	**Jette**	59.45 332	*e*P	P	22 32 18.3	+4.7
BLMT	**Blacktail Moun**	59.68 333	*e*P	P	22 32 20.1	+4.7
BSMT	**Bassoo Peak**	59.76 332	*e*P	P	22 32 20.5	+4.6
YBH	**Yreka Blue Hor**	60.00 323	P	P	22 32 20.5	+3.0
	3.2nm,0.9s,baz=104,slow=3.9,SNR=3.9					
YBH	**Yreka Blue Hor**	60.00 323	*e*P	P	22 32 20.5	+3.0
	43nm,1.8s					
WALA	**Waterton Lakes**	60.24 334	*e*P	P	22 32 23.3	+4.2
	9.3nm,0.9s					
FFC	**Flin Flon**	60.63 344	*e*P	P	22 32 20.9	-0.5
	8.8nm,1.0s					
NEW	**Newport**	61.16 331	P	P	22 32 27.9	+2.6
	10nm,0.8s,baz=145,slow=6.1,SNR=12					
NEW	**Newport**	61.16 331	*e*P	P	22 32 29.4	+4.2
	12nm,0.8s					
LTY	**Liberty**	62.26 329	*e*P	P	22 32 37.5	+4.9
	13nm,1.1s					
B08A	**Colville Reser**	62.30 330	*e*P	P	22 32 37.2	+4.3
	5.5nm,1.0s					
FCC	**Fort Churchill**	62.66 351	*e*P	P	22 32 37.1	+2.1
	7.5nm,1.1s					
YKA	**Yellowknife Ar**	70.73 343	P	P	22 33 24.9	-1.6
	0.9nm,0.6s,baz=136,slow=5.9,SNR=18					
YKB5	**Yellowknife Ar**	70.73 343	*e*P	P	22 33 28.7	+2.2
YKW3	**Yellowknife Ar**	70.79 343	*e*P	P	22 33 29.3	+2.5
	29nm,2.0s					
DLBC	**Dease Lake**	73.58 334	*e*P	P	22 33 47.7	+4.0
	8.7nm,0.8s					
DBIC	**Dimbokro**	73.68 82	P	P	22 33 46.1	+1.0
	7.0nm,1.0s,baz=221,slow=3.6,SNR=6.9					
DBIC			LR	LR	23 02 08.0	
	comp=Z,104nm,21.4s,baz=242,slow=33					
DBIC	**Dimbokro**	73.68 82	*e*P	P	22 33 46.1	+1.0
	53nm,1.8s					
RES	**Resolute Bay**	78.02 355	P	P	22 34 10.1	+1.4
	2.8nm,1.0s,baz=177,slow=6.4,SNR=6.5					
RES	**Resolute Bay**	78.02 355	*e*P	P	22 34 10.1	+1.4
	4.5nm,1.1s					
SUMG	**Summit**	79.29 11	*e*P	P	22 34 19.4	+3.1
	6.7nm,0.9s					
ESDC	**Sonseca Array**	79.60 49	P	P	22 34 20.1	+1.9
	0.7nm,0.8s,baz=262,slow=6.1,SNR=3.9					
ES19	**SONSECA Array**	79.65 49	*e*P	P	22 34 20.8	+2.2
INK	**Inuvik**	80.45 342	P	P	22 34 22.2	+0.2
	13nm,0.8s,baz=107,slow=3.8,SNR=13					
INK			LR	LR	23 12 02.0	
	comp=Z,160nm,21.3s,baz=106,slow=37					
INK	**Inuvik**	80.45 342	*e*P	P	22 34 22.2	+0.2
	20nm,1.0s					
VNA3	**Neumayer Olymp**	80.53 162	P	P	22 34 22.4	-0.2
TOA1	**Torodi Ar. Sit**	80.67 76	*e*P	P	22 34 23.6	-0.8
	9.4nm,1.4s					
TOA0	**Torodi Ar. Sit**	80.67 76	*e*P	P	22 34 26.1	+1.7
TORD	**Torodi Ar. Bea**	80.67 76	P	P	22 34 23.6	-0.8
	1.7nm,0.8s,baz=279,slow=5.8,SNR=17					
VNA1	**Neumayer--Stat**	80.77 162	P	P	22 34 26.7	+2.9
VNA2	**Neumayer--Watz**	81.13 162	P	P	22 34 25.3	-0.4
	baz=293,slow=5.0					
RAR	**Rarotonga**	81.27 249	LR	LR	23 01 55.1	
	comp=Z,103nm,21.2s,baz=97,slow=29					
EGAK	**Eagle**	81.36 337	*e*P	P	22 34 26.5	-0.6
	11nm,0.8s					
DOT	**Dot Lake**	82.06 336	*e*P	P	22 34 34.3	+3.5
	11nm,0.9s					
SNAA	**Sanae**	82.75 162	P	P	22 34 33.7	-0.7
SNAA	**Sanae**	82.75 162	*e*P	P	22 34 33.9	-0.4
	8.7nm,1.2s					
HDA	**Harding Lake**	83.52 336	*e*P	P	22 34 41.7	+3.3
	6.6nm,0.7s					
IL1	**Eielson Array**	83.62 336	*e*P	P	22 34 41.8	+2.9
ILAR	**Eielson Array**	83.62 336	P	P	22 34 38.7	-0.2
	2.4nm,0.8s,baz=102,slow=6.2,SNR=8.2					
ILB	**Eielson Array**	83.62 336	*e*P	P	22 34 42.4	+3.5
CCB	**Clear Creek Bu**	83.95 336	*e*P	P	22 34 43.5	+3.0
	11nm,1.7s					
RND	**Reindeer**	83.98 335	*e*P	P	22 34 41.3	+0.5
	7.2nm,0.8s					
KDAK	**Kodiak Island**	84.14 329	LR	LR	23 13 26.2	
	comp=Z,1µm,21.9s,baz=144,slow=36					
MDM	**Murphy Dome**	84.22 336	*e*P	P	22 34 44.9	+2.9
	5.0nm,0.8s					
BPAW	**Bear Paw Mtn.**	85.09 335	*e*P	P	22 34 49.4	+3.1
	7.3nm,0.8s					
TAM	**Tamanrasset**	85.16 67	*e*P	P	22 34 51.2	+3.5
	3.9nm,1.0s					
MLY	**Manley**	85.26 336	*e*P	P	22 34 47.0	-0.3
	4.6nm,0.7s					
CAST	**Castle Rocks**	85.37 334	*e*P	P	22 34 46.8	-1.0
	6.9nm,0.8s					
COLD	**Coldfoot**	85.70 338	*e*P	P	22 34 54.0	+4.6
	4.4nm,1.2s					
QSPA	**South Pole Qui**	87.29 180	*e*P	P	22 34 57.6	+0.2
VNDA	**Vanda**	93.55 191	LR	LR	23 09 39.6	
	comp=Z,88nm,19.2s,baz=44,slow=30					
ARA0	**ARCESS Array S**	97.33 20	*e*P	Pdif	22 35 45.5	+1.8
ARCES	**ARCESS Array B**	97.33 20	P	Pdif	22 35 45.5	+1.8
	0.5nm,0.6s,baz=306,slow=3.2,SNR=3.5					
ARCES			LR	LR	23 15 35.9	
	comp=Z,61nm,18.7s,baz=275,slow=33					
FINES	**FINESS Array B**	99.18 28	LR	LR	23 16 46.1	
	comp=Z,80nm,20.3s,baz=267,slow=33					
ABKAR	**Akbulak array**	121.52 31	*e*PKPdf	PKPdf	22 41 09.2	+4.7
BVAR	**Borovoye Array**	123.54 22	PKP	PKPdf	22 41 09.5	+1.3
	0.5nm,0.8s,baz=291,slow=4.5,SNR=3.3					
GEYT	**Alibeck**	126.83 43	PKP	PKPdf	22 41 17.2	+2.1
	0.6nm,0.4s,baz=258,slow=4.4,SNR=4.0					
KURK	**Kurchatov**	128.34 19	*e*PKPdf	PKPdf	22 41 21.7	+4.2
MK32	**Makanchi Array**	132.95 18	*e*PKPdf	PKPdf	22 41 27.7	+1.3
MKAR	**Makanchi Array**	132.95 18	PKP	PKPdf	22 41 27.7	+1.3
	0.3nm,0.3s,baz=284,slow=2.4,SNR=6.4					
MK01	**Makanchi Array**	132.97 18	*e*PKPdf	PKPdf	22 41 29.6	+3.2
AAK	**Ala-Archa**	133.37 28	*e*PKPdf	PKPdf	22 41 33.1	+5.6
WMQ	**Urumqi**	137.22 15	*e*PKP	PKPdf	22 41 34.3	-0.2
WMQ			LR	LR		
	comp=N,33nm,19.8s					
WMQ			LR	LR		
	comp=E,45nm,22.4s					
KSRS	**Korea Array**	138.05 329	PKP	PKPdf	22 41 35.3	-0.8
	1.2nm,0.7s,baz=333,slow=2.2,SNR=3.6					
KS15	**Wonju Array Si**	138.07 329	*e*PKPdf	PKPdf	22 41 35.3	-0.9
KSAR	**Wonju Array Be**	138.07 329	PKP	PKPdf	22 41 35.3	-0.9
AS31	**Alice Springs**	139.26 228	*e*PKPpre	PKPpre	22 41 31.6	
AS31			*e*PKPdf	PKPdf	22 41 39.6	+0.8
ASAR	**Alice Springs**	139.26 228	PKhKP	PKPpre	22 41 31.6	
	0.3nm,0.5s,baz=120,slow=3.3,SNR=6.8					
ASAR			PKP	PKPdf	22 41 39.6	+0.8
	0.6nm,0.8s,baz=128,slow=3.2,SNR=6.0					
WR1	**Warramunga Arr**	140.99 233	*e*PKPpre	PKPpre	22 41 33.6	
WR1			*e*PKPdf	PKPdf	22 41 41.8	-0.2
WRA	**Warramunga Arr**	140.99 233	PKhKP	PKPpre	22 41 33.6	
	0.9nm,0.8s,baz=107,slow=3.1,SNR=5.0					
WRA			PKP	PKPdf	22 41 41.8	-0.2
	0.4nm,0.6s,baz=107,slow=2.7,SNR=4.0					
HHC	**Hu-ho-hao-te**	141.12 348	*e*PKP	PKPdf	22 41 36.0	-5.8
HHC			PP	PP	22 44 43.3	+1.5
LZH	**Lanzhou**	146.81 357	*e*PKPbc	PKPab	22 41 58.0	+3.2
LZH			pPKP	PKiKP	22 42 15.0	+19
LZH			sPKP		22 42 21.3	
LZH			PP	PP	22 45 28.0	+12
LZH			AMB	AMB		
	comp=Z,160nm,5.9s					
XAN	**Xi'an**	148.22 349	PKPbc	PKPab	22 42 00.3	0.0
FITZ	**Fitzroy Crossi**	148.76 227	*e*PKPdf	PKPbc	22 41 58.6	-0.6
PYUN	**Piuthan**	149.00 34	*e*P	PKPbc	22 41 59.3	-0.6
GKN	**Gorkha**	149.97 32	*e*P	PKPbc	22 42 01.0	-1.2
	29nm,1.0s					
KKN	**Kakani**	150.47 31	*e*P	PKPbc	22 42 02.3	-1.2
DMN	**Daman**	150.53 31	*e*P	PKPbc	22 42 01.8	-1.9
GUN	**Gumba**	150.68 30	*e*P	PKPbc	22 42 02.9	-1.2
	28nm,0.9s					
PKIN	**Phulchoki**	150.71 31	*e*P	PKPbc	22 42 02.4	-1.7
CD2	**Chengdu**	151.97 357	PKPbc	PKPdf	22 41 58.8	-1.4

IDC ***25*** *22:30:32.4±1.3,2°.65S×78°.30W,h0km,mb3.4/3,mb1 3.9/4, mb1mx3.5/39,mbtmp3.7/4,ML4.6/2,MS3.1/1,Ms1 3.1/1, ms1mx2.8/26,Error ellipse: s-maj=58.8km s-min=23.8km az=84.0*

ISC 25 22:30:33.5±0.9,2°.59S±0°.07×78°.1W±0°.3,h9km,n8,σ1§56/8, mb3.5/3,Ecuador

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CMBC	**Cumbal**	3.51	4	*e*P	**Pb**	**22 31 34.9**	**-1.2**
CRUC	**La Cruz**	4.27	15	*e*P	**Pb**	**22 31 48.4**	**-0.7**
ATAH	**Atahualpa**	4.53	184	Pn	**Pn**	**22 31 42.9**	**+0.2**
	44nm,0.3s,baz=8.4,slow=10.0,SNR=116						
ATAH				Sn	**Sn**	**22 32 36.0**	**+0.2**
	14nm,0.3s,baz=312,slow=23,SNR=9.8						
ATAH				LR	LR	22 33 38.1	
	comp=Z,225nm,20.3s,baz=21,slow=42						
ROSC	**El Rosal**	8.27	27	Lg	Lg	22 35 00.2	
	3.1nm,0.3s,baz=232,slow=21,SNR=3.6						
NNA	**Nana**	9.42	173	Pn	**Pn**	**22 32 47.3**	**-2.3**
	6.1nm,0.3s,baz=342,slow=16,SNR=6.3						
NNA				Sn	Sn	22 34 28.7	-7.0
	3.1nm,0.3s,baz=245,slow=19,SNR=3.6						
NNA				Lg	Lg	22 35 19.7	
	9.7nm,0.3s,baz=187,slow=14,SNR=4.4						
YKA	**Yellowknife Ar**	70.55	343	P	**P**	**22 41 48.2**	**-0.4**
	0.2nm,0.5s,baz=138,slow=5.6,SNR=4.7						
TORD	**Torodi Ar. Bea**	80.62	76	P	**P**	**22 42 49.4**	**+1.9**
	0.1nm,0.4s,baz=278,slow=5.5,SNR=5.3						
ILAR	**Eielson Array**	83.45	336	P	**P**	**22 43 02.3**	**+1.1**
	0.3nm,0.7s,baz=128,slow=4.1,SNR=2.6						

JMA 25 22:30:46.6±0.1,37°.12N×138°.64E,h16km±2km,M1.2, Near west coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JHK	**Hiroka**	0.33	67	P	Pg	22 30 53.4	-0.1
JHK				S	Sg	22 30 58.5	+0.4
JJN	**Nakama**	0.38	268	P	Pg	22 30 54.4	0.0
JJN				S	Sg	22 31 00.1	+0.4
JIZZ	**Izumozaki**	0.41	8	P	Pg	22 30 54.6	-0.4
MAT	**Matsushiro**	0.67	211	P	Pg	22 30 58.8	-1.0
MAT				S	Sg	22 31 07.7	-1.0
MAT	**Matsushiro**	0.67	211	P	Pg	22 30 59.2	-0.6

JMA 25 22:37:52.7±0.2,36°.81N×143°.65E,h12km,M3.5,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JFT	**Otama**	2.74	286	P	Pn	22 38 37.7	+1.2
JFT				S	Sn	22 39 11.4	+1.9
BSO1	**Boso 1**	3.06	226	*e*S	Sn	22 39 20.0	+3.4
JAG	**Ashikaga**	3.40	265	P	Pn	22 38 47.3	+1.8
JAG				S	Sn	22 39 26.8	+1.0
JRY	**Ryogami san**	3.91	260	P	Pn	22 38 54.2	+1.6
JRY				*e*S	Sn	22 39 39.9	+1.4
JOD2	**Odawara 2**	4.01	249	S	Sn	22 39 41.7	+0.9
JYN	**Shimob**	4.33	254	P	Pn	22 39 00.9	+2.4
JYN				*e*S	Sn	22 39 50.6	+1.6
MAT	**Matsushiro**	4.38	268	P	Pn	22 39 01.6	+2.5
MAT				*e*S	Sn	22 39 54.2	+4.1
JHJ2	**Mitsune**	4.85	222	P	Pn	22 39 07.2	+1.7

IDC 25 22:38:53.3±2.3,10°.44N×124°.94E,h0km,mb3.5/3, mb1 3.6/3,mb1mx3.3/42,mbtmp3.5/3,Error ellipse: s-maj=294.1km s-min=34.1km az=70.0,Leyte

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
WRA	**Warramunga Arr**	31.58	163	P	P	22 45 17.1	-0.8
	0.2nm,0.6s,baz=342,slow=9.2,SNR=2.9						
ASAR	**Alice Springs**	35.01	166	P	P	22 45 48.2	+0.4
	0.3nm,0.3s,baz=346,slow=7.3,SNR=11				

SMLN				SN	Sn	22 44 55.2	-6.4
SMLN				Trac		22 45 00.5	
	comp=Z,3.9nm,0.1s						
FRB	**Frobisher Bay**	**9.00**	**177**	PN	Pn	22 43 33.3	-1.1
FRB				SN	Sn	22 45 07.7	-7.4
FRB				Trac		22 45 14.6	
	comp=Z,5.0nm,0.2s						
SUMG	**Summit**	**9.23**	**76** *i*	P	Pn	22 43 37.6	-0.3
BULN	**Bullion Camp,**	**10.31**	**244**	PN	Pn	22 43 50.6	-1.7
BULN				SN	Sn	22 45 37.5	-10
BULN				Trac		22 45 44.3	
	comp=Z,3.0nm,0.2s						
MCMN	**McManaman Lake**	**12.59**	**233**	PN	Pn	22 44 22.5	-0.9
MCMN				SN	Sn	22 46 31.6	-11
MCMN				Trac		22 46 34.8	
	comp=Z,20nm,0.8s						
YBKN	**Baker Lake, Hu**	**12.69**	**242**	PN	Pn	22 44 27.6	+2.9
YBKN				SN	Sn	22 46 30.7	-15
DAG	**Danmarks Havn**	**13.59**	**50** *i*	P	Pn	22 44 34.1	-2.9
ARVN	**Arviat, NU**	**14.93**	**231**	PN	Pn	22 44 56.8	+1.6
ARVN				SN	Sn	22 47 27.1	-13
HPLN	**Hepburn Lake,**	**16.80**	**271**	PN	Pn	22 45 17.4	-2.1
HPLN				SN	Sn	22 48 11.7	-14
FCC	**Fort Churchill**	**17.01**	**228**	PN	P	22 45 25.5	+1.6
FCC				SN	Sn	22 48 13.6	-17
SNLN	**Sandy Lake, NW**	**17.09**	**254**	PN	P	22 45 26.0	+1.4
SNLN				SN	Sn	22 48 18.5	-14
WHFN	**White Fish Lak**	**17.15**	**253**	PN	Pn	22 45 24.2	+0.4
WHFN				SN	Sn	22 48 16.9	-17

NIED ***25*** *22:42:00,36˚.90N×140˚.70E,h5km,Mw3.6 Best double couple: M₀3.06000×10¹⁴ NP1:φ=2.00000°, δ33.00000°, λ-51.00000°. NP2:φ=138.00000°, δ65.00000°, λ-112.00000°.*

IDC ***25*** *22:42:28.7±2.1,36˚.90N×140˚.92E,h0km,mb3.5/3, mb1 3.7/4,mb1mx3.4/46,mbtmp3.5/4,ML3.7/1,MS2.8/2, Ms1 2.8/2,ms1mx2.4/44,Error ellipse: s-maj=43.8km s-min=26.1km az=44.0*

ISCJB ***25*** *22:42:30.3±1.1,36˚.79N±0˚.04×140˚.90E±0˚.09,h19km±6km, mb3.4/3,MS3.4/1,Error ellipse: s-maj=12.1km s-min=6.4km az=21.8*

JMA ***25*** *22:42:32.4,36˚.85N×140˚.69E,h9km±1km,M3.8*

JMA Felt II J1.

ISC 25 22:42:29.9±2.3, 36˚.84N±0˚.05×140˚.86E±0˚.10, h7km±15km, n11, σ0§90/15, mb3.5/3, 1C-1D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.27**	**349**	P	**Pb**	**22 42 37.6**	**+0.5**
ONAJ				S	**Sb**	**22 42 41.7**	**-0.2**
JHO	**Hitachi**	**0.33**	**226** ⇑	P	**Pb**	**22 42 37.7**	**-0.3**
JHO				S	**Sg**	**22 42 41.3**	**+0.7**
JFK	**Kawauchi**	**0.53**	**1** ⇓	P	**Pn**	**22 42 42.5**	**-1.4**
JFK				S	**Sb**	**22 42 50.3**	**+0.9**
JFT	**Otama**	**0.80**	**329**	S	**Sb**	**22 42 56.1**	**-1.0**
JYT	**Yasato**	**0.81**	**222**	P	**Pb**	**22 42 46.2**	**-0.1**
MJAR	**Matsushiro Arr**	**2.15**	**263**	Pn	**Pn**	**22 43 05.2**	**-1.0**
	24nm,0.3s,baz=86,slow=16,SNR=82						
MJAR				Sn	**Sn**	**22 43 33.9**	**+0.8**
	30nm,0.3s,baz=78,slow=26,SNR=11						
MJAR				LR	LR	22 44 10.6	
	comp=Z,66nm,21.4s,baz=225,slow=47						
MAT	**Matsushiro**	**2.15**	**263**	P	**Pn**	**22 43 05.4**	**-0.8**
MAT				S	**Sn**	**22 43 34.0**	**+0.8**
MKAR	**Makanchi Array**	**43.85**	**302**	P	**P**	**22 50 36.8**	**+0.2**
	0.2nm,0.3s,baz=93,slow=9.8,SNR=5.1						
HNR	**Honiara**	**49.39**	**155**	LR	LR	23 09 30.2	
	comp=Z,39nm,19.3s,baz=142,slow=33						
WRA	**Warramunga Arr**	**56.81**	**187**	P	**P**	**22 52 15.9**	**+1.0**
	0.2nm,0.3s,baz=20,slow=7.1,SNR=4.2						
ASAR	**Alice Springs**	**60.53**	**187**	P	**P**	**22 52 40.6**	**-0.3**
	0.4nm,1.0s,baz=10,slow=5.7,SNR=3.1						

IDC ***25*** *22:42:32.0±0.7,4˚.86N×82˚.61W,h0km,mb4.3/19, mb1 4.5/23,mb1mx4.4/40,mbtmp4.3/23,ML4.0/4,MS3.8/18, Ms1 3.8/18,ms1mx3.6/37,Error ellipse: s-maj=25.1km s-min=11.6km az=54.0*

ISCJB ***25*** *22:42:33.2±0.2,5˚.01N±0˚.02×82˚.53W±0˚.02,h12km, mb4.5/79,MS3.8/13,Error ellipse: s-maj=4.0km s-min=2.7km az=38.1*

BJI ***25*** *22:42:34.9,4˚.54N×83˚.60W,h29km,mB5.1/3,Ms5.3/2, Ms7 5.0/2*

CASC ***25*** *22:42:34.9±2.4,5˚.02N×82˚.81W,h20km±73km,MD4.5, mb4.7(NEIC)*

NEIC ***25*** *22:42:36.7±1.9,4˚.87N×82˚.54W,h26km±14km,mb4.7/69, Error ellipse: s-maj=8.0km s-min=4.9km az=47.0*

ISC 25 22:42:34.2±0.4, 4.88N±0.05×82.64W±0.05, h12km, n316, σ1§65/328, mb4.6/81, MS3.8/13, 3C-1D, South of Panama

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TBS2		**3.89**	**360**	*e*S	**Sn**	**22 44 18.6**	**-1.1**
BRU2	**Volcan**	**3.89**	**359**	*i* P	**Pn**	**22 43 31.4**	**-2.6**
BRU2				*e*S	**Sn**	**22 44 17.2**	**-2.5**
BRU	**Baru**	**3.90**	**1**	*e*P	**Pn**	**22 43 32.5**	**-1.9**
BRU				*e*S	**Sn**	**22 44 16.1**	**-4.3**
QCR	**Quepos**	**4.76**	**342** ⇑	*e*P	**Pn**	**22 43 42.6**	**-3.2**
QCR				*e*S	**Sn**	**22 44 35.6**	**-5.5**
BUS	**Buena Vista**	**4.78**	**347** ⇑	*e*P	**Pn**	**22 43 44.0**	**-2.4**
BUS				*e*S	**Sn**	**22 44 38.6**	**-3.5**
GRGC	**Isla de Gorgon**	**4.83**	**113**	*e*P	**Pn**	**22 43 44.3**	**-2.4**
ZANG	**Zanguenga, Cho**	**4.89**	**34**	*e*P	**Pn**	**22 43 48.2**	**+0.5**
URSC	**Urasca**	**5.05**	**347** ⇓	*e*P	**Pn**	**22 43 48.3**	**-1.7**
URSC				*e*S	**Sn**	**22 44 45.6**	**-2.8**
BCIP	**Isla Barro Col**	**5.08**	**33**	*e*P	**Pn**	**22 43 49.6**	**-0.7**
BCIP				*e*S	**Sn**	**22 44 49.6**	**+0.6**
BCIP	**Isla Barro Col**	**5.08**	**33**	*e*Pn	**Pn**	**22 43 49.9**	**-0.3**
BCIP				*e*Sn	**Sn**	**22 44 45.7**	**-3.3**
UPA	**Univ. de Panam**	**5.11**	**37**	*i* P	**Pn**	**22 43 50.4**	**-0.1**
UPA				*e*S	**Sn**	**22 44 45.6**	**-3.9**
HDC	**Heredia**	**5.30**	**344**	*e*P	**Pn**	**22 43 51.2**	**-2.1**
HDC				*e*S	**Sn**	**22 44 51.5**	**-2.9**
HDC	**Heredia**	**5.30**	**344**	*e*Pn	**Pn**	**22 43 51.7**	**-1.6**
HDC				*e*Sn	**Sn**	**22 44 51.5**	**-2.9**
MALC	**Bahia Malaga**	**5.35**	**99**	*e*P	**Pn**	**22 43 53.7**	**-0.2**
JCR	**Jicaral**	**5.52**	**334** ⇑	*e*P	**Pn**	**22 43 53.9**	**-2.4**
JCR				*e*S	**Sn**	**22 44 54.4**	**-5.4**
JTS	**JuntasAbangare**	**5.85**	**337**	Pn	**Pn**	**22 43 58.5**	**-2.2**
	26nm,0.3s,baz=97,slow=11,SNR=93						
JTS				Sn	**Sn**	**22 45 03.2**	**-4.6**
	37nm,0.3s,baz=287,slow=23,SNR=18						
JTS				LR	LR	22 45 50.5	
	comp=Z,898nm,21.7s,baz=156,slow=34						
JTS	**JuntasAbangare**	**5.85**	**337**	*i* P	**Pn**	**22 43 58.1**	**-2.7**
JTS				*e*S	**Sn**	**22 45 06.1**	**-1.8**
JTS	**JuntasAbangare**	**5.85**	**337**	*e*Pn	**Pn**	**22 43 59.0**	**-1.8**
JTS				*e*Sn	**Sn**	**22 45 02.4**	**-5.4**
VCR	**Vista de Mar**	**6.00**	**331**	*e*P	**Pn**	**22 44 00.8**	**-2.2**
VCR				*e*S	**Sn**	**22 45 06.7**	**-5.0**
OTAV	**Otavalo**	**6.22**	**138**	*e*Pn	**Pn**	**22 44 05.3**	**-1.0**
OTAV				*e*Sn	**Sn**	**22 45 12.4**	**-5.2**
POPC	**Popayan, Colom**	**6.38**	**111**	*e*P	**Pn**	**22 44 06.2**	**-2.1**
CRUC	**La Cruz**	**6.56**	**120**	*e*P	**Pn**	**22 44 11.0**	**+0.1**
DBBC	**Dabeiba**	**6.74**	**71**	*e*P	**Pn**	**22 44 13.0**	**0.0**
HELC	**Santa Helena**	**7.19**	**79**	*e*Pn	**Pn**	**22 44 17.8**	**-1.8**
HELC				*e*Sn	**Sn**	**22 45 37.2**	**-4.3**
GUYC	**Guyana, Colomb**	**7.22**	**87**	*e*P	**Pn**	**22 44 22.1**	**+1.9**
TOLC	**Tolima**	**7.30**	**92**	*e*P	**Pn**	**22 44 21.5**	**+0.5**
NORC	**Norcasia**	**7.76**	**85**	*e*P	**Pn**	**22 44 28.3**	**+1.1**
PRAC	**Prado**	**7.81**	**98**	*e*Pn	**Pn**	**22 44 29.1**	**+1.3**
PRAC				*e*Sn	**Sn**	**22 45 55.0**	**-1.4**
PRAC	**Prado**	**7.81**	**98**	*e*P	**Pn**	**22 44 29.4**	**+1.6**
MOTC	**Monteria, Cord**	**7.93**	**60**	*e*P	**Pn**	**22 44 30.5**	**+1.1**
ROSC	**El Rosal**	**8.29**	**90**	Pn	**Pn**	**22 44 37.0**	**+2.4**
	7.7nm,0.3s,baz=93,slow=13,SNR=16						
ROSC				Sn	**Sn**	**22 46 14.3**	**+5.9**
	0.5nm,0.3s,baz=307,slow=22,SNR=2.7						
ROSC				LR	LR	22 47 14.7	
	comp=Z,259nm,19.3s,baz=14,slow=34						
ROSC	**El Rosal**	**8.29**	**90**	*e*P	**Pn**	**22 44 37.9**	**+3.3**
SJAC	**San Juan de Ar**	**8.81**	**100**	*e*P	**Pn**	**22 44 43.0**	**+1.4**
PAYG	**Puerto Ayora**	**9.43**	**234**	*e*Pn	**Pn**	**22 44 52.9**	**+3.0**
BTLC	**Betulia, Santa**	**9.54**	**77**	*e*P	**Pn**	**22 44 54.9**	**+3.2**
BARC	**Barichara**	**9.56**	**79**	*e*P	**Pn**	**22 44 53.2**	**+1.2**
GRMC	**Gramalote, San**	**10.17**	**73**	*e*P	**Pn**	**22 45 01.7**	**+1.4**
CBRI	**Barrientos, No**	**10.18**	**73**	*e*P	**Pn**	**22 45 01.2**	**+0.8**
TGUH	**Tegucigalpa,Un**	**10.20**	**334**	*e*Pn	**Pn**	**22 45 05.0**	**+4.5**
SDV	**Santo Domingo**	**12.56**	**71**	Pn	**Pn**	**22 45 33.2**	**+0.1**
	1.6nm,0.3s,baz=246,slow=13,SNR=3.6						
SDV				Sn	**Sn**	**22 47 50.7**	**-2.4**
	2.3nm,0.3s,baz=302,slow=6.4,SNR=3.4						
ATAH	**Atahualpa**	**12.66**	**160**	Pn	**Pn**	**22 45 37.5**	**+2.9**
	0.4nm,0.3s,baz=44,slow=6.8,SNR=5.8						
ATAH				LR	LR	22 50 05.6	
	comp=Z,1µm,20.5s,baz=337,slow=36						
TEIG	**Tepich**	**16.21**	**341**	LR	LR	22 52 03.7	
	comp=Z,152nm,19.0s,baz=192,slow=35						
CMIG	**Matias Romero**	**17.07**	**316**	P	**Pn**	**22 46 32.3**	**-0.5**
	0.2nm,0.3s,baz=132,slow=10,SNR=6.8						
CMIG				LR	LR	22 52 05.9	
	comp=Z,318nm,18.9s,baz=185,slow=34						
NNA	**Nana**	**17.72**	**161**	P	**Pn**	**22 46 41.2**	**+0.2**
	0.9nm,0.3s,baz=3.1,slow=14,SNR=4.1						
NNA				LR	LR	22 52 59.0	
	comp=Z,204nm,20.4s,baz=316,slow=35						
SDDR	**Presa de Saban**	**17.86**	**37**	*e*Pn	**P**	**22 46 44.8**	**+1.3**
	24nm,0.8s						
CELP	**Cerrillos**	**20.46**	**49**	*e*P	Pn	22 47 13.4	-0.6
SJG	**San Juan**	**20.80**	**49**	P	Pn	22 47 16.6	-1.4
	37nm,0.9s,baz=253,slow=6.6,SNR=11						
SJG				LR	LR	22 54 45.6	
	comp=Z,137nm,21.0s,baz=244,slow=35						
SJG	**San Juan**	**20.80**	**49**	*e*P	Pn	22 47 17.5	-0.5
HUMP	**Cd San Antoni**	**21.05**	**50**	*e*P	**P**	**22 47 19.1**	**+0.9**
	51nm,1.1s						
CBYP	**Canovanas**	**21.12**	**50**	*e*P	**P**	**22 47 20.0**	**+1.0**
	51nm,1.0s						
PTGA	**Pitinga**	**23.32**	**103**	P	**P**	**22 47 41.7**	**-0.8**
	1.8nm,0.5s,baz=298,slow=10,SNR=3.6						
PTGA				LR	LR	22 56 16.8	
	comp=Z,133nm,19.8s,baz=282,slow=35						
SAML	**Samuel**	**23.76**	**125**	*e*P	**P**	**22 47 43.5**	**-3.3**
	31nm,0.9s						
LPAZ	**La Paz**	**25.46**	**146**	P	**P**	**22 48 03.5**	**+0.5**
	6.8nm,0.7s,baz=339,slow=7.8,SNR=29						
LPAZ				LR	LR	22 59 24.4	
	comp=Z,322nm,21.1s,baz=304,slow=40						
LPAZ	**La Paz**	**25.46**	**146**	*e*P	**P**	**22 48 02.7**	**-0.2**
LPAZ				*ep*P	**P**	**22 48 03.5**	**+0.5**
936A	**North Padre Is**	**26.42**	**330**	P	**P**	**22 48 13.4**	**+2.5**
	baz=145						
035A	**Encino**	**26.44**	**328**	P	**P**	**22 48 13.9**	**+2.8**
	baz=143						
034A	**Hebbronville**	**26.86**	**327**	P	**P**	**22 48 18.8**	**+4.0**
	baz=142,SNR=7.0						
737A	**Port Lavaca**	**27.13**	**333**	P	**P**	**22 48 20.9**	**+3.6**
	baz=148						
933A	**Laredo**	**27.61**	**327**	P	**P**	**22 48 23.9**	**+2.3**
	baz=142						
PB11	**IPOC Station P**	**27.61**	**153**	*e*P	**P**	**22 48 22.0**	**+0.1**
	17nm,1.0s						
LRAL	**Lakeview Retre**	**28.31**	**352**	*e*P	**P**	**22 48 28.2**	**+0.4**
	9.6nm,0.9s						
Z47A	**Carrollton**	**28.63**	**350**	P	**P**	**22 48 31.0**	**+0.4**
	baz=168						
PB01	**IPOC Station P**	**28.81**	**154**	*e*P	**P**	**22 48 32.8**	**+0.4**
	17nm,1.3s						
Y47A	**UCPARC, Winfie**	**29.28**	**351**	P	**P**	**22 48 36.6**	**+0.1**
	baz=169						
Y46A	**Houston**	**29.43**	**349**	P	**P**	**22 48 37.9**	**+0.2**
	baz=167						
336A	**Riesel**	**29.56**	**335**	P	**P**	**22 48 39.5**	**+0.6**
	baz=150						
SIV	**San Ignacio**	**29.75**	**135**	P	**P**	**22 48 40.4**	**-0.5**
	4.1nm,0.8s,baz=316,slow=8.9,SNR=6.3						
SIV				LR	LR	23 00 45.1	
	comp=Z,490nm,18.1s,baz=0.0,slow=37						
433A	**Art**	**30.05**	**331**	P	**P**	**22 48 44.1**	**+0.8**
	baz=146						
334A	**Lometa**	**30.12**	**333**	P	**P**	**22 48 44.7**	**+0.7**
	baz=148						
KMSC	**Kings Mountain**	**30.14**	**2**	P	**P**	**22 48 44.7**	**+0.7**
	baz=182						
KMSC	**Kings Mountain**	**30.14**	**2**	*e*P	**P**	**22 48 44.5**	**+0.4**
	9.2nm,1.0s						
333A	**Richland Sprin**	**30.46**	**332**	P	**P**	**22 48 49.3**	**+2.3**
	baz=146						
PB10	**IPOC Station P**	**30.58**	**158**	*e*P	**P**	**22 48 48.7**	**+0.6**
	46nm,1.3s						
H06E1	**SOCORRO T-PHAS**	**30.87**	**299**	T	T	23 21 15.1	
	SNR=4.6						
134A	**White-Moore Ra**	**31.11**	**334**	P	**P**	**22 48 52.5**	**-0.1**
	baz=149						
MIAR	**Mount Ida**	**31.21**	**342**	P	**P**	**22 48 53.4**	**-0.1**
	baz=158						
X39A	**Fountain Ranch**	**31.35**	**342**	P	**P**	**22 48 54.6**	**-0.1**
	baz=158						
Y37A	**Hugo**	**31.37**	**339**	P	**P**	**22 48 55.4**	**+0.5**
	baz=154						
W41A	**Tony Mavity, V**	**31.43**	**345**	P	**P**	**22 48 55.3**	**-0.1**
	baz=161						
W41B	**Gary Mavity, V**	**31.43**	**345**	P	**P**	**22 48 55.6**	**+0.2**
	baz=161						
LTX	**Lajitas**	**31.43**	**323**	*e*P	**P**	**22 48 56.4**	**+0.8**
TXAR	**Lajitas Array**	**31.43**	**323**	P	**P**	**22 48 56.4**	**+0.8**
	1.0nm,0.7s,baz=146,slow=9.1,SNR=5.9						
TXAR				LR	LR	23 00 49.8	
	comp=Z,63nm,19.9s,baz=0.0,slow=35						
TX31	**Lajitas Ar. Si**	**31.43**	**323**	*e*P	**P**	**22 48 54.9**	**-0.8**
WVT	**Waverly**	**31.47**	**352**	*e*P	**P**	**22 48 54.7**	**-1.0**
	6.5nm,0.9s						
133A	**Hamilton Ranch**	**31.51**	**333**	P	**P**	**22 48 56.3**	**+0.1**
	baz=148						
X301	**Greenbrier Sit**	**31.53**	**345**	*e*P	**P**	**22 48 55.0**	**-1.3**
	10.0nm,1.2s						
WHAR	**Wooly Hollow**	**31.55**	**345**	*e*P	**P**	**22 48 54.8**	**-1.7**
	16nm,1.4s						
Y35A	**Marietta**	**31.84**	**337**	P	**P**	**22 48 60.0**	**+0.9**
	baz=152						
W39A	**Magazine**	**31.88**	**343**	P	**P**	**22 48 59.3**	**-0.1**
	baz=158						
Z33A	**Whitaker Ranch**	**32.02**	**334**	P	**P**	**22 49 00.5**	**-0.1**
	baz=148						
X36A	**Centrahoma**	**32.16**	**338**	P	**P**	**22 49 01.5**	**-0.4**
	baz=154						
Y34A	**Reagan Ranch,**	**32.17**	**336**	P	**P**	**22 49 02.1**	**+0.2**
	baz=151						
X35A	**Drake**	**32.25**	**337**	P	**P**	**22 49 02.6**	**-0.1**
	baz=152						
SLBS	**Sierra La Lagu**	**32.28**	**308**	*e*P	**P**	**22 49 01.0**	**-2.2**
	42nm,1.5s						
W37B	**Quinton**	**32.35**	**340**	P	**P**	**22 49 03.2**	**-0.4**
	baz=156						
PBMO	**Poplar Bluff**	**32.55**	**348**	*e*P	**P**	**22 49 05.0**	**-0.2**
	24nm,0.9s						
U40A	**Yellville**	**32.71**	**345**	P	**P**	**22 49 06.0**	**-0.6**
	baz=161						
X34A	**Smith Ranch, M**	**32.76**	**336**	P	**P**	**22 49 07.7**	**+0.5**
	baz=151						
LPIG	**La Paz**	**32.78**	**308**	LR	LR	22 59 20.4	
	comp=Z,126nm,21.7s,baz=184,slow=31						
U39A	**Green Forest**	**32.90**	**344**	P	**P**	**22 49 08.4**	**+0.1**
	baz=160						
V37A	**Hulbert**	**32.94**	**341**	P	**P**	**22 49 09.0**	**+0.4**
	baz=157						
X33A	**Lawton**	**32.98**	**336**	P	**P**	**22 49 09.2**	**+0.2**
	baz=150						
V36A	**Jenks**	**33.12**	**340**	P	**P**	**22 49 11.2**	**+1.0**
	baz=155						
WMOK	**Wichita Mounta**	**33.26**	**335**	*e*P	**P**	**22 49 11.1**	**-0.5**
	5.8nm,0.8s						
T40A	**Mansfield**	**33.37**	**346**	P	**P**	**22 49 11.7**	**-0.8**
	baz=162						
V35A	**Meyer Ranch, C**	**33.41**	**339**	P	**P**	**22 49 12.1**	**-0.7**
	baz=154						
V34A	**Guthrie**	**33.72**	**338**	P	**P**	**22 49 14.6**	**-0.9**
	baz=152						
S40A	**Lebanon**	**33.79**	**346**	P	**P**	**22 49 15.7**	**-0.4**
	baz=162						
U35A	**Pawnee**	**33.92**	**339**	P	**P**	**22 49 16.9**	**-0.3**
	baz=154						
T37A	**Cheneyville 18**	**34.01**	**342**	P	**P**	**22 49 17.6**	**-0.4**
	baz=158						
OLIL	**Olney**	**34.06**	**352**	*e*P	**P**	**22 49 18.2**	**-0.2**
	24nm,1.4s						
S39A	**Bolivar**	**34.09**	**345**	P	**P**	**22 49 17.9**	**-0.8**
	baz=161						
MNTX	**Cornudas Mount**	**34.16**	**324**	P	**P**	**22 49 18.6**	**-0.8**
	baz=137,SNR=6.0						
MNTX	**Cornudas Mount**	**34.16**	**324**	*e*P	**P**	**22 49 20.6**	**+1.1**
	7.1nm,0.8s						
S38A	**Stockton**	**34.19**	**344**	P	**P**	**22 49 19.0**	**-0.5**
	baz=160						
V32A	**Arapaho**	**34.22**	**336**	P	**P**	**22 49 19.7**	**-0.1**
	baz=150						
T36A	**Boggs Farm, Ca**	**34.25**	**341**	P	**P**	**22 49 19.2**	**-0.9**
	baz=156						
U34A	**Anderson Ranch**	**34.26**	**338**	P	**P**	**22 49 19.5**	**-0.7**
	baz=153						
T35A	**Sooner Cattle**	**34.33**	**340**	P	**P**	**22 49 20.1**	**-0.7**
	baz=155						
R40A	**Maddies Statio**	**34.40**	**347**	P	**P**	**22 49 20.4**	**-0.9**
	baz=163						
S37A	**Fort Scott**	**34.57**	**343**	P	**P**	**22 49 21.8**	**-1.0**
	baz=158						
R39A	**Chumby, Stover**	**34.60**	**346**	P	**P**	**22 49 22.0**	**-1.1**
	baz=161						
T34A	**McClaskey Farm**	**34.66**	**339**	P	**P**	**22 49 22.3**	**-1.3**
	baz=154						
AMTX	**Amarillo**	**34.67**	**332**	P	**P**	**22 49 22.4**	**-1.5**
	baz=145						
R38A	**Fenwick Farm,**	**34.71**	**344**	P	**P**	**22 49 22.8**	**-1.3**
	baz=160						
S36A	**Lake Cedric, C**	**34.77**	**342**	P	**P**	**22 49 23.9**	**-0.7**
	baz=157						
U32A	**Winter Ranch,**	**34.77**	**337**	P	**P**	**22 49 24.6**	**0.0**
	baz=150						
S35A	**Otter Creek Ra**	**34.96**	**341**	P	**P**	**22 49 25.9**	**-0.3**
	baz=156						
Q40A	**Laux Farm, Aux**	**35.02**	**347**	P	**P**	**22 49 26.2**	**-0.5**
	baz=163						
R37A	**Teagarden Farm**	**35.08**	**343**	P	**P**	**22 49 27.0**	**-0.3**
	baz=158						
S34A	**Willow Spring**	**35.24**	**340**	P	**P**	**22 49 28.6**	**-0.1**
	baz=154						
R36A	**Gordon, Harris**	**35.29**	**342**	P	**P**	**22 49 29.0**	**-0.1**
	baz=157						
Q38A	**Cooks Store, C**	**35.36**	**345**	P	**P**	**22 49 29.3**	**-0.4**
	baz=161						
P40A	**Paris**	**35.53**	**347**	P	**P**	**22 49 30.4**	**-0.8**
	baz=164						
R34A	**Isabella, Hill**	**35.83**	**340**	P	**P**	**22 49 33.6**	**-0.1**
	baz=154						
Q36A	**Arnold C. Orve**	**35.87**	**343**	P	**P**	**22 49 34.0**	**0.0**
	baz=158						
R33A	**Olander Ranch,**	**36.09**	**339**	P	**P**	**22 49 36.0**	**0.0**
	baz=153,SNR=6.2						
P37A	**Lathrop**	**36.14**	**345**	P	**P**	**22 49 36.1**	**-0.3**
	baz=160						
121A	**Cookes Peak, D**	**36.19**	**323**	P	**P**	**22 49 39.5**	**+2.4**
	baz=134,SNR=10						
Q34A	**Chapman**	**36.29**	**341**	P	**P**	**22 49 37.4**	**-0.2**
	baz=155						
O39A	**Kirksville**	**36.33**	**347**	P	**P**	**22 49 37.8**	**-0.1**
	baz=163						
319A	**Douglas**	**36.34**	**320**	*e*P	**P**	**22 49 40.7**	**+2.3**
	21nm,1.3s						
KSU1	**Kansas State U**	**36.35**	**342**	P	**P**	**22 49 38.1**	**-0.1**
	baz=156						
P36A	**Good Intent, A**	**36.41**	**344**	P	**P**	**22 49 38.6**	**0.0**
	baz=158						
R32A	**Long Quarter,**	**36.45**	**339**	P	**P**	**22 49 39.1**	**0.0**
	baz=152						
M54A	**Oil Creek Stat**	**36.57**	**4**	P	**P**	**22 49 39.8**	**-0.1**
	baz=185						
Q33A	**Connelly Farm,**	**36.66**	**340**	P	**P**	**22 49 40.7**	**-0.1**
	baz=154						
BNM	**Barren Site**	**36.66**	**326**	*e*P	**P**	**22 49 43.6**	**+2.4**
P34A	**Walnut Farm, R**	**36.82**	**342**	P	**P**	**22 49 42.2**	**0.0**
	baz=156						
Q32A	**Meitler Ranch,**	**36.90**	**339**	P	**P**	**22 49 43.3**	**+0.4**
	baz=153						
N39A	**Derby Farms, D**	**36.92**	**348**	P	**P**	**22 49 42.7**	**-0.3**
	baz=163						
N38A	**Joes South For**	**37.00**	**347**	P	**P**	**22 49 43.7**	**0.0**
	baz=162						
LAZ	**Ladron**	**37.14**	**325**	*e*P	**P**	**22 49 48.2**	**+3.0**
ANMO	**Albuquerque**	**37.16**	**327**	*e*P	**P**	**22 49 47.3**	**+2.0**
	13nm,1.0s						
O35A	**Humboldt**	**37.21**	**343**	P	**P**	**22 49 45.0**	**-0.4**
	baz=158						
AAM	**Ann Arbor**	**37.27**	**359**	*e*P	**P**	**22 49 41.3**	**-4.6**
AAM				*ep*P	sP	22 50 01.8	+11
O34A	**Beatrice**	**37.36**	**342**	P	**P**	**22 49 46.7**	**-0.1**
	baz=156						
P32A	**Huiting Farm,**	**37.48**	**340**	P	**P**	**22 49 47.7**	**-0.1**
	baz=153						
O33A	**Hebron**	**37.55**	**341**	P	**P**	**22 49 48.3**	**0.0**
	baz=155						
N35A	**Tabor**	**37.68**	**344**	P	**P**	**22 49 49.0**	**-0.4**
	baz=158						
T25A	**Trinidad**	**37.79**	**331**	P	**P**	**22 49 51.1**	**+0.4**
	baz=143,SNR=5.7						
T25A	**Trinidad**	**37.79**	**331**	*e*P	**P**	**22 49 52.8**	**+2.1**
	7.1nm,1.0s						
TUC	**Tucson**	**37.92**	**319**	P	**P**	**22 49 52.0**	**+0.3**
	baz=130						
TUC	**Tucson**	**37.92**	**319**	*e*P	**P**	**22 49 53.5**	**+1.8**
	6.1nm,1.0s						
O31A	**Woolen Ranch,**	**38.20**	**339**	P	**P**	**22 49 53.8**	**-0.2**
	baz=152						
KSCO	**Kaye Shedlock'**	**38.51**	**335**	P	**P**	**22 49 58.0**	**+1.4**
	baz=147						
SDCO	**Great Sand Dun**	**38.80**	**331**	P	**P**	**22 50 00.

21nm,1.5s
BC3 Big Chuckawall 41.84 317 P **P 22 50 24.3 0.0**
baz=126
IRM Iron Mountain 41.93 318 P **P 22 50 25.2 +0.2**
baz=127
I29A Vivian Onida 41.98 341 P **P 22 50 25.5 +0.3**
baz=153
BELC Belle Mtn. Jos 42.41 317 P **P 22 50 29.4 +0.5**
baz=126
SRU San Rafael Swe 42.42 327 *eP* **P 22 50 30.7 +1.6**
11nm,1.0s
F33A 5 Mile Ranch, 42.50 346 P **P 22 50 28.3 -1.1**
baz=160
LCMT Little Creek M 42.52 323 *eP* **P 22 50 32.8 +3.0**
3.3nm,0.8s
G30A Faulkton 42.61 343 P **P 22 50 30.4 +0.1**
baz=155
I27A Quinn 42.61 339 P **P 22 50 30.8 +0.4**
baz=151
GMRC Granite Mounta 42.64 319 P **P 22 50 30.9 0.0**
baz=127
I26A New Underwood 42.87 338 P **P 22 50 33.0 +0.5**
baz=150
MSU Marysvale 42.91 325 *eP* **P 22 50 35.0 +1.9**
D37A Cotton 42.96 350 P **P 22 50 32.7 -0.3**
baz=166
H27A Howes 43.11 340 P **P 22 50 35.1 +0.6**
baz=151,SNR=7.9
K22A Casper 43.18 334 P **P 22 50 35.7 +0.5**
baz=144
I25A Rochford 43.18 338 P **P 22 50 35.9 +0.7**
baz=148
RSSD Black Hills 43.38 338 P **P 22 50 37.7 +0.9**
baz=148
RSSD Black Hills 43.38 338 *eP* **P 22 50 38.4 +1.6**
18nm,1.4s
C37A Embarrass 43.47 351 P **P 22 50 37.0 -0.2**
baz=166
C36A Pine Crest Far 43.61 350 P **P 22 50 37.7 -0.6**
baz=165
H25A Fruitdale 43.65 338 P **P 22 50 39.6 +0.8**
baz=149
MPU Maple Canyon 43.66 327 *eP* **P 22 50 40.6 +1.4**
4.9nm,0.9s
BFSC Mount Baldy Ra 43.67 316 P **P 22 50 39.5 +0.3**
baz=124
LMQ La Malbaie 43.81 12 *eP* **P 22 50 40.6 +0.7**
16nm,1.1s
PSUT Pine Spring 43.89 324 *eP* **P 22 50 43.0 +2.0**
13nm,1.4s
EDW2 Edwards Air Fo 44.26 317 P **P 22 50 44.2 +0.4**
baz=124
D29A Pettibone, Tap 44.50 343 P **P 22 50 45.6 +0.1**
baz=155
B34A Aery, Baudette 44.65 349 P **P 22 50 45.8 -0.9**
baz=163
BW06 Boulder Array 44.65 332 P **P 22 50 45.7 -1.4**
baz=140
BW06 Boulder Array 44.65 332 *eP* **P 22 50 47.9 +0.8**
PD31 Pinedale Array 44.65 332 *eP* **P 22 50 47.6 +0.6**
PD31 *ep*P **sP 22 50 56.3 +4.0**
PDAR Pinedale Array 44.65 332 P **P 22 50 47.6 +0.6**
1.4nm,0.8s,baz=120,slow=10,SNR=13
PDAR LR LR 23 11 22.8
comp=Z,67nm,18.5s,baz=148,slow=39
C31A Landman Farms, 44.68 346 P **P 22 50 46.3 -0.6**
baz=158
AGMN Agassiz Nation 44.72 347 *eP* **P 22 50 46.5 -0.7**
baz=161
HWUT Hardware Ranch 44.77 329 *eP* **P 22 50 49.1 +1.1**
8.7nm,0.9s
C30A Mose, Pekin 44.78 345 P **P 22 50 47.5 -0.3**
baz=157
R11A Troy Canyon, C 44.80 323 P **P 22 50 49.5 +1.3**
baz=130,SNR=8.1
R11A Troy Canyon, C 44.80 323 *eP* **P 22 50 50.1 +1.9**
6.0nm,1.0s
B32A Ashes, Strandq 44.96 347 P **P 22 50 49.0 -0.1**
baz=160
BGU Big Grassy Mou 45.06 327 *eP* **P 22 50 51.6 +1.4**
7.7nm,1.0s
A33A Warroad 45.23 348 P **P 22 50 50.2 -1.0**
baz=162
D26A Manning 45.34 341 P **P 22 50 52.2 0.0**
baz=152
B30A Myrvik Farm, E 45.44 345 P **P 22 50 52.7 -0.3**
baz=158
B29A Wagenman Farm, 45.72 344 P **P 22 50 55.5 +0.3**
baz=156
REDW Red Top Meadow 45.72 331 *eP* **P 22 50 56.6 +1.1**
14nm,1.2s
MOOW Moose Ponds 45.96 332 *eP* **P 22 50 58.1 +0.7**
3.0nm,1.0s
A29A Manning Farm, 46.11 345 P **P 22 50 58.3 +0.1**
baz=157
ELK Elko 46.16 325 *eP* **P 22 51 00.4 +1.3**
5.1nm,1.1s
FLWY Flagg Ranch 46.19 332 *eP* **P 22 51 00.5 +1.2**
13nm,1.5s
RLMT Red Lodge 46.35 334 P **P 22 51 00.4 -0.1**
baz=142
RLMT Red Lodge 46.35 334 *eP* **P 22 51 01.3 +0.8**
10nm,1.4s
A28A Rude Farm, Bot 46.37 344 P **P 22 51 00.4 0.0**
baz=155
NV11 Mina Array Sit 46.43 321 *eP* **P 22 51 03.0 +1.9**
14nm,1.1s
NV01 Mina Array Sit 46.52 321 *eP* **P 22 51 03.0 +1.0**
NVAR Mina Array Bea 46.52 321 P **P 22 51 03.0 +1.0**
6.4nm,0.7s,baz=139,slow=7.2,SNR=12
NVAR LR LR 23 10 43.2
comp=Z,120nm,18.7s,baz=92,slow=36
YFT Old Faithful 46.54 332 *eP* **P 22 51 05.7 +3.7**
20nm,1.5s
ULM Lac du Bonnet 46.57 348 P **P 22 51 00.2 -1.6**
3.3nm,0.7s,baz=132,slow=4.4,SNR=4.4
ULM Lac du Bonnet 46.57 348 *eP* **P 22 51 00.4 -1.4**
9.3nm,1.2s
PLCA Paso Flores 46.72 167 P **P 22 51 02.3 -0.9**
4.7nm,1.0s,baz=336,slow=9.2,SNR=5.8
PLCA Paso Flores 46.72 167 *eP* **P 22 51 02.3 -0.9**
22nm,1.4s
YMR Madison River 46.76 332 *eP* **P 22 51 05.5 +1.7**
34nm,2.0s
A26A Wade Farm, Ken 46.87 343 P **P 22 51 04.4 +0.2**
baz=153
QLMT Earthquake Lak 47.10 332 *eP* **P 22 51 08.4 +2.1**
DGMT Dagmar 47.17 341 P **P 22 51 06.6 0.0**
baz=150
DGMT Dagmar 47.17 341 *eP* **P 22 51 06.3 -0.4**
15nm,0.8s
A25A Svangstu Ranch 47.23 342 P **P 22 51 07.1 0.0**
baz=152
WAKR Walker 47.28 320 *eP* **P 22 51 09.8 +1.9**
HLID Hailey 47.64 329 P **P 22 51 11.0 +0.5**
baz=135
HLID Hailey 47.64 329 *eP* **P 22 51 11.2 +0.7**
2.1nm,0.8s
BOZ Bozeman (W) 47.81 333 P **P 22 51 11.8 0.0**
baz=139,SNR=5.9
BOZ Bozeman (W) 47.81 333 *eP* **P 22 51 12.4 +0.6**
10nm,1.3s
WVOR Wild Horse Val 49.19 325 *eP* **P 22 51 23.3 +0.9**
17nm,1.0s
ORV Oroville 49.20 320 *eP* **P 22 51 24.3 +1.9**
10nm,0.9s
MSO Missoula 49.76 332 P **P 22 51 27.2 +0.5**
baz=137
MSO Missoula 49.76 332 *eP* **P 22 51 27.4 +0.7**
14nm,1.4s
O03D Paynes Creek 49.81 321 P **P 22 51 26.8 -0.4**
baz=124
YBH Yreka Blue Hor 51.19 322 P **P 22 51 36.0 -1.6**
4.3nm,1.0s,baz=150,slow=20,SNR=4.2
YBH Yreka Blue Hor 51.19 322 *eP* **P 22 51 36.0 -1.6**
41nm,1.8s
WALA Waterton Lakes 51.41 334 *eP* **P 22 51 40.0 +0.9**
4.4nm,0.9s
SCHQ Schefferville 51.42 12 P **P 22 51 37.8 -1.2**
9.0nm,0.9s,baz=173,slow=6.3,SNR=5.1
SCHQ Schefferville 51.42 12 *eP* **P 22 51 37.8 -1.2**
18nm,1.1s
FFC Flin Flon 52.11 346 *eP* **P 22 51 44.4 +0.3**
12nm,1.4s
YKA Yellowknife Ar 62.14 344 P **P 22 52 54.5 -0.4**
2.2nm,0.8s,baz=137,slow=6.6,SNR=17
YKB5 Yellowknife Ar 62.14 344 *eP* **P 22 52 54.5 -0.4**
DLBC Dease Lake 64.75 335 P **P 22 53 13.3 +0.9**
7.3nm,0.9s,baz=134,slow=2.4
INK Inuvik 71.81 342 P **P 22 53 56.9 +0.5**
5.6nm,1.0s,baz=114,slow=6.7,SNR=14
INK Inuvik 71.81 342 *eP* **P 22 53 56.8 +0.5**
7.1nm,1.0s
EGAK Eagle 72.59 337 *eP* **P 22 54 01.4 +0.3**
3.9nm,0.8s
HDA Harding Lake 74.71 336 *eP* **P 22 54 16.6 +3.0**
16nm,1.4s
IL1 Eielson Array 74.82 336 *eP* **P 22 54 13.7 -0.5**
ILAR Eielson Array 74.82 336 P **P 22 54 13.8 -0.4**
2.0nm,0.9s,baz=120,slow=4.2,SNR=14
ILAR LR LR 23 30 06.5
comp=Z,46nm,18.2s,baz=128,slow=38
ILB Eielson Array 74.82 336 *eP* **P 22 54 13.8 -0.4**
RND Reindeer 75.15 335 *eP* **P 22 54 17.2 +0.9**
10nm,0.9s
RSO Redoubt South 76.04 331 *eP* **P 22 54 21.9 +0.3**
BPAW Bear Paw Mtn. 76.27 335 *eP* **P 22 54 22.9 +0.3**
5.1nm,1.1s
CAST Castle Rocks 76.54 334 *eP* **P 22 54 23.9 -0.2**
18nm,1.7s
COLD Coldfoot 76.95 338 *eP* **P 22 54 27.8 +1.5**
5.6nm,1.1s
ESDC Sonseca Array 78.18 51 P **P 22 54 33.6 -0.2**
2.5nm,1.0s,baz=276,slow=6.1,SNR=7.1
ES19 SONSECA Array 78.23 51 *eP* **P 22 54 34.4 +0.3**
TOA1 Torodi Ar. Sit 83.39 77 *eP* **P 22 55 01.4 -0.7**
19nm,1.9s
TORD Torodi Ar. Bea 83.40 77 P **P 22 55 01.4 -0.7**
0.6nm,1.0s,baz=296,slow=5.6,SNR=6.2
KEST Kesra 88.79 54 LR LR 23 33 31.3
comp=Z,46nm,20.3s,baz=258,slow=34
AFI Afiamalu 90.33 256 LR LR 23 25 49.4
comp=Z,96nm,18.5s,baz=352,slow=29
GERES GERESS Array B 90.53 41 P **P 22 55 35.8 -0.6**
0.4nm,0.8s,baz=318,slow=1.8,SNR=3.9
H11N3 WAKE ISLAND Hy 107.44 292 T T 00 57 02.0
baz=79,slow=75,SNR=23
H11N2 WAKE ISLAND Hy 107.45 292 T T 00 57 02.3
baz=79,slow=75,SNR=32
H11N1 WAKE ISLAND Hy 107.46 292 T T 00 57 08.8
baz=79,slow=75,SNR=25
WMQ Urumqi 130.75 9 *e*PKP **PKPdf 23 01 44.8 -1.0**
KSH Kashi 131.62 22 *e*PKP **PKPdf 23 01 48.5 +0.9**
KSH *e*PP PP 23 04 14.0 +8.1
KSH AMB AMB
comp=Z,42nm,4.5s
HHC Hu-ho-hao-te 132.67 345 *e*PKP **PKPdf 23 01 48.8 -0.8**
HHC PP **PP 23 04 18.5 +6.1**
HHC SKKS 23 11 04.0
HHC SS **SS 23 21 52.8 +0.7**
HHC AMB AMB
comp=Z,32nm,4.9s
HHC LR LR
comp=N,200nm,14.8s
HHC LR LR
comp=E,190nm,14.8s
HHC LR LR
comp=Z,210nm,18.5s
CD2 Chengdu 143.89 351 PKP PKPbc 23 02 08.5 +0.6
GKN Gorkha 145.08 20 *e*P **PKPdf 23 02 13.3 +0.7**
19nm,1.0s
GUN Gumba 145.57 18 *e*P **PKPbc 23 02 13.6 -0.2**
43nm,1.0s
DMN Daman 145.60 19 *e*P **PKPbc 23 02 13.6 -0.1**
22nm,0.9s
PKIN Phulchoki 145.73 19 *e*P **PKPbc 23 02 13.9 -0.3**

IDC 25 22:47:07.2±6.0, 18°28S×178°05W, h0km, mb3.7/3, mb1 3.9/3, mb1mx3.6/39, mbtmp3.6/3, Error ellipse: s-maj=307.0km s-min=40.3km az=147.0, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
WRA	**Warramunga Arr**	**44.90**	**260**	P	P	22 55 25.3	+1.4
	0.5nm,0.3s,baz=92,slow=8.3,SNR=4.9						
ASAR	**Alice Springs**	**45.02**	**255**	P	P	22 55 23.3	-1.5
	0.3nm,0.4s,baz=97,slow=7.3,SNR=7.9						
YKA	**Yellowknife Ar**	**94.53**	**25**	P	P	23 00 28.7	-0.5
	0.1nm,0.4s,baz=259,slow=5.4,SNR=3.1						
BRTR	**Keskin Array B**	**145.29**	**315**	PKPbc	PKPbc	23 06 46.7	-0.4
	0.3nm,0.6s,baz=4.4,slow=1.9,SNR=3.4						

*NIED **25** 22:51:00, 35°60N×141°10E, h32km, Mw4.1 Best double couple: M0 1.47000×10^15 NP1:φ=295.00000°, δ=46.00000°, λ=-135.00000°. NP2:φ=169.00000°, δ=59.00000°, λ=-54.00000°.*
*IDC **25** 22:51:51.2±0.6, 35°51N×141°19E, h0km, mb3.9/18, mb1 4.0/21, mb1mx3.9/50, mbtmp3.9/21, ML3.8/4, MS3.1/5, Ms1 3.1/5, ms1mx2.8/42, Error ellipse: s-maj=18.8km s-min=13.1km az=93.0*
*ISCJB **25** 22:51:54.3±0.4, 35°55N±0°03×141°17E±0°05, h33km, mb4.0/24, Error ellipse: s-maj=6.2km s-min=4.6km az=13.0*
*JMA **25** 22:51:54.2±0.2, 35°61N×141°07E, h23km±1km, M3.6*
*NEIC **25** 22:51:56.9±0.3, 35°48N×141°13E, h40km, mb4.4/10, Error ellipse: s-maj=9.1km s-min=7.4km az=68.0*
ISC 25 22:51:56.2±0.5, 35°52N±0°04×141°09E±0°06, h33km, n67, σ1§45/64, mb4.1/24, 2C-1D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CHOJ	**Chosi**	**0.26**	**313**	P	Pb	22 51 59.4	-4.1
CHOJ				S	**Sn**	**22 52 03.3**	**-4.7**
JCN	**Nagara**	**0.73**	**262**	P	**Pn**	**22 52 09.3**	**-0.9**
KTR	**Katsuura**	**0.74**	**240**	*e*S	**Sn**	**22 52 20.0**	**-0.3**
BSO4	**Boso 4**	**0.81**	**229**	↑P	**Pn**	**22 52 10.3**	**-1.0**
BSO4				*e*X		22 52 21.0	
BSO3	**Boso 3**	**0.86**	**214**	↑P	**Pn**	**22 52 10.7**	**-1.1**
BSO1	**Boso 1**	**0.87**	**186**	P	**Pn**	**22 52 10.6**	**-1.1**
JYT	**Yasato**	**1.01**	**314**	↓P	**Pn**	**22 52 11.0**	**-3.1**
JYT				*e*S	**Sn**	**22 52 24.9**	**-2.3**
JAG	**Ashikaga**	**1.60**	**305**	P	**Pn**	**22 52 19.6**	**-2.6**
MJAR	**Matsushiro Arr**	**2.55**	**294**	Pn	**Pn**	**22 52 33.5**	**-1.7**
	5.7nm,0.3s,baz=91,slow=8.3,SNR=40						
MJAR				LR	LR	22 53 33.9	
	comp=Z,298nm,18.8s,baz=115,slow=40						
MAJO	**Matsushiro**	**2.55**	**294**	*e*Pn	**Pn**	**22 52 34.4**	**-0.9**
MAT	**Matsushiro**	**2.55**	**294**	P	**Pn**	**22 52 34.4**	**-0.8**
MAT				*e*S	**Sn**	**22 53 08.1**	**+2.9**
JHJ	**Hachijo jima 2**	**2.63**	**205**	Pn	**Pn**	**22 52 34.2**	**-2.1**
	12nm,0.3s,baz=321,slow=23,SNR=9.1						
JHJ				Sn	**Sn**	**22 53 08.6**	**+1.5**
	62nm,0.3s,baz=250,slow=23,SNR=6.9						
JHJ				LR	LR	22 53 43.4	
	comp=Z,210nm,21.6s,baz=116,slow=42						
ERM	**Erimo**	**6.68**	**13**	*e*Pn	**Pn**	**22 53 31.7**	**-0.2**
ERM				*e*Sn	**Sn**	**22 54 46.3**	**-0.6**
CBIJ	**Chichi jima**	**8.45**	**173**	*e*Pn	**Pn**	**22 53 53.6**	**-2.8**
CBIJ				*e*Sn	**Sn**	**22 55 27.3**	**-3.3**
JCJ	**Chichijima**	**8.45**	**173**	Pn	**Pn**	**22 53 53.6**	**-2.8**
	5.6nm,0.3s,baz=282,slow=10,SNR=4.8						
JCJ				Sn	**Sn**	**22 55 27.3**	**-3.3**
	3.1nm,0.3s,baz=270,slow=20,SNR=2.5						
JCJ				LR	LR	22 56 50.3	
	comp=Z,55nm,22.0s,baz=318,slow=36						
ASAJ	**Asahikawa**	**8.66**	**7**	Pn	Pn	22 53 55.9	-3.3
	1.7nm,0.3s,baz=244,slow=8.2,SNR=8.1						
JNU	**Nakatsue**	**8.78**	**257**	LR	LR	22 57 49.8	
	comp=Z,378nm,18.3s,baz=118,slow=40						
KSRS	**Korea Array**	**10.78**	**284**	LR	LR	22 58 41.1	
	comp=Z,93nm,21.2s,baz=112,slow=38						
H11N2	**WAKE ISLAND Hy**	**27.64**	**118**	T	T	23 26 39.4	
	baz=311,slow=75,SNR=242						
H11N1	**WAKE ISLAND Hy**	**27.64**	**118**	T	T	23 26 41.1	
	baz=311,slow=75,SNR=236						
H11N3	**WAKE ISLAND Hy**	**27.65**	**118**	T	T	23 26 40.4	
	baz=311,slow=75,SNR=215						
H11S1	**WAKE ISLAND Hy**	**28.29**	**120**	T	T	23 27 24.1	
	baz=312,slow=75,SNR=714						
H11S3	**WAKE ISLAND Hy**	**28.29**	**120**	T	T	23 27 30.2	
	baz=312,slow=75,SNR=560						
H11S2	**WAKE ISLAND Hy**	**28.31**	**120**	T	T	23 27 28.5	
	baz=312,slow=75,SNR=359						
SONA0	**Songino Array**	**28.44**	**306**	*e*P	**P**	**22 57 48.8**	**+0.8**
	16nm,2.0s						
SONM	**Songino Array**	**28.44**	**306**	P	**P**	**22 57 48.8**	**+0.8**
	0.9nm,0.6s,baz=108,slow=9.5,SNR=3.6						
ZAA0	**Zalesovo Array**	**42.75**	**314**	*e*P	**P**	**22 59 50.4**	**+0.2**
ZAA1	**Zalesovo Array**	**42.75**	**314**	*e*P	**P**	**22 59 50.1**	**-0.1**
ZALV	**Zalesovo Beam**	**42.75**	**314**	P	**P**	**22 59 50.1**	**-0.1**
	1.2nm,0.4s,baz=90,slow=4.9,SNR=9.1						
MK01	**Makanchi Array**	**44.71**	**303**	*e*P	**P**	**23 00 06.8**	**+0.7**
MK31	**Makanchi Array**	**44.72**	**303**	*e*P	**P**	**23 00 07.2**	**+1.1**
MK32	**Makanchi Array**	**44.72**	**303**	*e*P	**P**	**23 00 06.5**	**+0.4**
MKAR	**Makanchi Array**	**44.72**	**303**	P	**P**	**23 00 06.5**	**+0.4**
	1.3nm,0.7s,baz=86,slow=9.4,SNR=15						
MKAR	**Makanchi Array**	**44.72**	**303**	*e*P	**P**	**23 00 07.2**	**+1.1**
MAKZ	**Makanchi**	**44.93**	**303**	*e*P	**P**	**23 00 08.6**	**+0.8**
	2.5nm,1.0s						
KURK	**Kurchatov**	**46.67**	**309**	*e*P	**P**	**23 00 21.9**	**+0.4**
	7.4nm,1.2s						
ILAR	**Eielson Array**	**50.91**	**32**	P	**P**	**23 00 53.5**	**-0.3**
	0.8nm,0.7s,baz=268,slow=6.2,SNR=9.6						
ILB	**Eielson Array**	**50.91**	**32**	*e*P	**P**	**23 00 53.5**	**-0.3**
BVAR	**Borovoye Array**	**51.40**	**313**	P	**P**	**23 00 59.7**	**+2.0**
	0.7nm,0.7s,baz=90,slow=7.2,SNR=3.5						
WR1	**Warramunga Arr**	**55.53**	**188**	*e*P	**P**	**23 01 28.5**	**+0.2**
WRA	**Warramunga Arr**	**55.53**	**188**	P	**P**	**23 01 28.5**	**+0.2**
	3.6nm,0.7s,baz=6.1,slow=7.6,SNR=22						
INK	**Inuvik**	**55.85**	**27**	P	**P**	**23 01 29.2**	**-0.7**
	0.5nm,0.5s,baz=343,slow=9.9,SNR=5.0						
INK	**Inuvik**	**55.85**	**27**	*e*P	**P**	**23 01 29.2**	**-0.7**
	7.0nm,1.5s						
ARU	**Arti**	**57.32**	**319**	*e*P	**P**	**23 01 42.7**	**+2.1**
	3.0nm,0.8s						
ABKAR	**Akbulak array**	**58.72**	**311**	*e*P	**P**	**23 01 50.9**	**+0.4**
AS31	**Alice Springs**	**59.26**	**188**	*e*P	**P**	**23 01 54.0**	**-0.5**
	4.7nm,2.0s						
ASAR	**Alice Springs**	**59.26**	**188**	P	**P**	**23 01 54.0**	**-0.5**
	0.5nm,0.7s,baz=16,slow=14,SNR=7.6						
RES	**Resolute Bay**	**64.13**	**14**	P	**P**	**23 02 26.7**	**0.0**
	0.8nm,0.6s,baz=265,slow=11,SNR=4.0						
RES	**Resolute Bay**	**64.13**	**14**	*e*P	**P**	**23 02 26.7**	**0.0**
	7.8nm,1.6s						
YKA	**Yellowknife Ar**	**65.24**	**30**	P	**P**	**23 02 34.1**	**-0.1**
	0.4nm,0.8s,baz=301,slow=6.7,SNR=8.1						
YKB5	**Yellowknife Ar**	**65.24**	**30**	*e*P	**P**	**23 02 34.0**	**-0.1**
STKA	**Stephens Creek**	**67.05**	**180**	P	**P**	**23 02 46.3**	**+0.4**
	1.4nm,0.8s,baz=2.6,slow=8.9,SNR=4.3						
STKA	**Stephens Creek**	**67.05**	**180**	*e*P	**P**	**23 02 46.3**	**+0.4**
	3.7nm,1.8s						
FIA0	**FINESS Array S**	**70.03**	**332**	*e*P	**P**	**23 03 04.2**	**0.0**
FINES	**FINESS Array B**	**70.03**	**332**	P	**P**	**23 03 04.2**	**0.0**
	1.3nm,0.8s,baz=44,slow=5.8,SNR=6.9						
KBZ	**Khabaz**	**71.69**	**311**	P	**P**	**23 03 15.8**	**+1.1**
	2.0nm,0.9s,baz=116,slow=2.8,SNR=8.5						
AKASG	**Malin Array Be**	**75.33**	**322**	P	**P**	**23 03 36.0**	**0.0**
	0.8nm,0.4s,baz=46,slow=5.9,SNR=4.5						
AKBB	**Malin Array Si**	**75.33**	**322**	*e*P	**P**	**23 03 36.0**	**0.0**
	6.5nm,0.6s						
NB200	**NORSAR Array S**	**75.48**	**337**	*e*P	**P**	**23 03 36.0**	**-0.7**
NOA	**NORSAR Array B**	**75.48**	**337**	P	**P**	**23 03 36.0**	**-0.7**
	0.8nm,0.7s,baz=39,slow=5.9,SNR=3.1						
PD31	**Pinedale Array**	**78.91**	**45**	*e*P	**P**	**23 03 56.6**	**0.0**
PDAR	**Pinedale Array**	**78.91**	**45**	P	**P**	**23 03 56.6**	**0.0**
	0.4nm,0.6s,baz=264,slow=1.8,SNR=3.4						
BR101	**Keskin Array S**	**79.66**	**312**	*e*P	**P**	**23 04 02.0**	**+1.4**
BRTR	**Keskin Array B**	**79.66**	**312**	P	**P**	**23 04 02.0**	**+1.4**
	0.4nm,0.7s,baz=108,slow=4.7,SNR=3.3						
SCHQ	**Schefferville**	**86.86**	**16**	P	**P**	**23 04 37.5**	**+0.2**
	2.1nm,0.6s,baz=256,slow=13,SNR=4.6						
SCHQ	**Schefferville**	**86.86**	**16**	*e*P	**P**	**23 04 37.5**	**+0.2**
	18nm,1.5s						
LPAZ	**La Paz**	**147.66**	**61**	PKPbc	**PKPbc**	**23 11 39.1**	**+0.6**
	0.5nm,0.5s,baz=9.5,slow=6.1,SNR=3.4						

*ISK **25** 22:52:26.9, 38°.00N×29°.38E, h5km, MD2.5*
*ISCJB **25** 22:52:27.4±0.5, 38°.00N±0°.02×29°.37E±0°.03, h3km±5km, Error ellipse: s-maj=4.3km s-min=3.6km az=19.9*
*DDA **25** 22:52:27.2, 38°.02N×29°.43E, h7km, Md2.7*
*CSEM **25** 22:52:27.4±0.1, 38°.01N×29°.38E, h10km, MD2.5, Error ellipse: s-maj=3.7km s-min=2.9km az=101.0*
ISC 25 22:52:27.5±1.0, 38°.01N±0°.02×29°.37E±0°.02, h9km±9km, n31, σ0§78/52, Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
KHL	**Karahalli**	**0.34**	**20**	*e*PG	**Pg**	**22 52 34.1**	**-0.2**
KHL				*e*SG	**Sg**	**22 52 39.8**	**+1.0**
KHL	**Karahalli**	**0.34**	**20**	*e*Pg	**Pg**	**22 52 34.1**	**-0.2**
KHL				*e*Sg	**Sg**	**22 52 39.8**	**+1.0**
DENT	**Denizli**	**0.37**	**227**	*e*PG	**Pg**	**22 52 34.7**	**-0.1**
DENT				*e*SG	**Sg**	**22 52 40.2**	**+0.5**
DENT	**Denizli**	**0.37**	**227**	*e*Pg	**Pg**	**22 52 34.7**	**-0.1**
DENT				*e*Sg	**Sg**	**22 52 40.2**	**+0.5**
KHAL	**Karahalli**	**0.38**	**14**	*i* P	**Pg**	**22 52 34.8**	**-0.2**
KHAL				*i* S	**Sg**	**22 52 40.3**	**+0.3**
KHAL	**Karahalli**	**0.38**	**14**	P	**Pg**	**22 52 34.8**	**-0.2**
KHAL				S	**Sg**	**22 52 40.3**	**+0.3**
KULA	**Kula-Manisa**	**0.76**	**312**	*e*PG	**Pg**	**22 52 42.3**	**+0.1**
KULA				*e*SG	**Sb**	**22 52 53.4**	**0.0**
KULA	**Kula-Manisa**	**0.76**	**312**	*e*Pg	**Pg**	**22 52 42.3**	**+0.1**
KULA				*e*Sg	**Sb**	**22 52 53.4**	**0.0**
GOLH	**Golhisar**	**0.78**	**169**	*i* P	**Pg**	**22 52 41.8**	**-0.8**
GOLH				*i* S	**Sb**	**22 52 54.5**	**+0.4**
GOLH	**Golhisar**	**0.78**	**169**	P	**Pg**	**22 52 41.8**	**-0.8**
GOLH				S	**Sb**	**22 52 54.5**	**+0.4**
ISP	**Isparta**	**0.93**	**101**	*e*PG	**Pg**	**22 52 45.1**	**-0.3**
ISP				*e*SG	**Sb**	**22 52 58.3**	**0.0**
ISP	**Isparta**	**0.93**	**101**	*e*Pg	**Pg**	**22 52 45.1**	**-0.3**
ISP				*e*Sg	**Sb**	**22 52 58.3**	**0.0**
GDZ	**Gediz**	**1.08**	**4**	*i* P	**Pb**	**22 52 46.7**	**-1.9**
GDZ				*i* S	**Sg**	**22 53 02.9**	**+0.4**
GDZ	**Gediz**	**1.08**	**4**	P	**Pb**	**22 52 46.7**	**-1.9**
GDZ				S	**Sg**	**22 53 02.9**	**+0.4**
BAGO	**Egridir - ISPA**	**1.12**	**90**	*i* P	**Pb**	**22 52 46.7**	**-2.4**
BAGO				*i* S	**Sn**	**22 53 06.5**	**+1.5**
DEMI	**Demirci**	**1.16**	**334**	*i* P	**Pb**	**22 52 49.6**	**-0.2**
DEMI				*i* S	**Sg**	**22 53 04.8**	**0.0**
DEMI	**Demirci**	**1.16**	**334**	P	**Pb**	**22 52 49.6**	**-0.2**
DEMI				S	**Sg**	**22 53 04.8**	**0.0**
AYDB	**Zeytinkoy-Aydi**	**1.17**	**268**	*e*PN	**Pn**	**22 52 49.9**	**-0.3**
AYDB	**Zeytinkoy-Aydi**	**1.17**	**268**	*e*Pn	**Pn**	**22 52 49.9**	**-0.3**
YER	**Yerkesik**	**1.23**	**225**	*e*PN	**Pb**	**22 52 50.8**	**-0.1**
YER	**Yerkesik**	**1.23**	**225**	*e*Pn	**Pb**	**22 52 50.8**	**-0.1**
AYDN	**Tasoluk**	**1.23**	**254**	*i* P	**Pn**	**22 52 50.3**	**-0.7**
AYDN				*i* S	**Sn**	**22 53 08.2**	**+0.5**
AYDN	**Tasoluk**	**1.23**	**254**	P	**Pn**	**22 52 50.3**	**-0.7**
AYDN				S	**Sn**	**22 53 08.2**	**+0.5**
ELL	**Elmali**	**1.33**	**161**	*e*PN	**Pb**	**22 52 52.4**	**-0.2**
ELL	**Elmali**	**1.33**	**161**	*e*Pn	**Pb**	**22 52 52.4**	**-0.2**
FETY	**Fethiye**	**1.39**	**190**	*e*PN	**Pb**	**22 52 53.5**	**-0.2**
FETY	**Fethiye**	**1.39**	**190**	*e*Pn	**Pb**	**22 52 53.5**	**-0.2**
BOLV	**Bolvadin**	**1.43**	**60**	*i* P	**Pb**	**22 52 54.4**	**0.0**
BOLV				*i* S	**Sg**	**22 53 15.4**	**+1.9**
BOLV	**Bolvadin**	**1.43**	**60**	P	**Pb**	**22 52 54.4**	**0.0**
BOLV				S	**Sg**	**22 53 15.4**	**+1.9**
TVSB	**Tavsanli**	**1.44**	**3**	*e*PN	**Pb**	**22 52 54.7**	**0.0**
TVSB	**Tavsanli**	**1.44**	**3**	*e*Pn	**Pb**	**22 52 54.7**	**0.0**

MDD 25 22:57:11.9±3.9, 34°.42N×2°.35W, h0km, mb3.7/2, Error ellipse: s-maj=70.3km s-min=32.9km az=84.0, PRXIMO SIN SOLUCIN, Morocco

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
EBER	**Berja**	**2.52**	**350**	P	Pn	22 57 51.7	-2.5
	0.6nm,0.4s,SNR=5.3						
EBER				S	Sn	22 58 21.7	-3.9
	0.9nm,0.3s						
EQES	**Quesada**	**3.43**	**350**	P	Pn	22 58 06.8	+0.1
	3.4nm,0.3s,SNR=12						
EQES				S	Sn	22 58 46.7	-1.5
	0.5nm,0.2s						
SESP	**Santiago Espad**	**3.70**	**358**	P	Pn	22 58 09.5	-1.0
	4.8nm,0.4s,SNR=7.9						
SESP				S	Sn	22 58 52.4	-2.5
	0.5nm,0.2s,SNR=7.9						
ETOB	**Tobarra**	**4.27**	**8**	P	Pn	22 58 16.6	-1.6
	0.7nm,0.3s,SNR=

mb4.1/11,MS3.5/3,Error ellipse: s-maj=18.1km s-min=10.0km az=156.7

*NEIC **25** 22:58:59.2±0.5, 15°.01S×173°.58W,h35km,mb4.7/2,Error ellipse: s-maj=18.4km s-min=11.6km az=156.0*

ISC 25 22:58:59.0±0.6, 15°.05S±0°.1×173°.41W±0°.09,h30km,n26, σ2s17/21,mb4.1/11,MS3.5/3,Samoa Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
AFI	**Afiamalu**	**1.91**	**56**	Pn	**Pn**	**22 59 29.3**	**-0.3**
	237nm,0.3s,baz=172,slow=1.8,SNR=180						
AFI				Sn	**Sn**	**22 59 48.7**	**-4.0**
	1μm,0.3s,baz=226,slow=23,SNR=32						
AFI				LR	LR	23 00 12.2	
	comp=Z,543nm,19.2s,baz=238,slow=37						
AFI	**Afiamalu**	**1.91**	**56**	*e*Pn	**Pn**	**22 59 28.6**	**-1.0**
AFI				*e*Sn	**Sn**	**22 59 50.2**	**-2.5**
MSVF	**Nonsavu**	**8.64**	**250**	*e*Pn	**Pn**	**23 01 03.5**	**+1.4**
	30nm,1.4s						
RAR	**Rarotonga**	**14.37**	**118**	Pn	**Pn**	**23 02 22.3**	**+1.9**
	2.5nm,0.3s,baz=137,slow=4.8,SNR=2.9						
DZM	**Mont Dzumac**	**20.34**	**247**	LR	LR	23 09 41.7	
	comp=Z,148nm,20.5s,baz=240,slow=32						
URZ	**Urewera**	**24.65**	**198**	*e*P	**P**	**23 04 15.1**	**-1.9**
	165nm,1.4s						
H11S2	**WAKE ISLAND Hy**	**38.60**	**329**	T	T	23 47 08.7	
	baz=146,slow=76,SNR=8.7						
H11S3	**WAKE ISLAND Hy**	**38.61**	**329**	T	T	23 47 10.1	
	baz=146,slow=76,SNR=7.4						
H11S1	**WAKE ISLAND Hy**	**38.62**	**329**	T	T	23 47 12.8	
	baz=146,slow=76,SNR=5.9						
H11N3	**WAKE ISLAND Hy**	**39.55**	**330**	T	T	23 48 51.4	
	baz=150,slow=76,SNR=7.1						
H11N1	**WAKE ISLAND Hy**	**39.55**	**330**	T	T	23 48 49.3	
	baz=150,slow=76,SNR=7.4						
H11N2	**WAKE ISLAND Hy**	**39.56**	**330**	T	T	23 48 51.3	
	baz=150,slow=76,SNR=6.9						
STKA	**Stephens Creek**	**44.23**	**240**	P	**P**	**23 07 03.7**	**-2.1**
	0.9nm,0.6s,baz=96,slow=11,SNR=3.8						
WRAB	**Tennant Creek**	**49.92**	**256**	*e*P	**P**	**23 07 48.4**	**-2.0**
	1.3nm,0.7s						
WRA	**Warramunga Arr**	**49.93**	**256**	P	**P**	**23 07 48.0**	**-2.4**
	1.1nm,0.8s,baz=90,slow=7.0,SNR=4.6						
ASAR	**Alice Springs**	**50.23**	**252**	P	**P**	**23 07 50.5**	**-2.2**
	3.4nm,0.6s,baz=86,slow=8.2,SNR=70						
FITZ	**Fitzroy Crossi**	**58.28**	**258**	*e*P	**P**	**23 08 48.4**	**-3.0**
VNDA	**Vanda**	**63.79**	**186**	P	**P**	**23 09 28.0**	**+0.2**
	1.4nm,0.8s,baz=344,slow=7.3,SNR=5.0						
VNDA				LR	LR	23 32 25.3	
	comp=Z,35nm,21.9s,baz=350,slow=32						
YBH	**Yreka Blue Hor**	**73.28**	**37**	P	**P**	**23 10 27.9**	**+0.3**
	3.7nm,0.9s,baz=221,slow=4.6,SNR=4.2						
YBH				LR	LR	23 35 35.4	
	comp=Z,39nm,18.8s,baz=195,slow=30						
QSPA	**South Pole Qui**	**75.06**	**180**	*e*P	**P**	**23 10 37.4**	**-0.4**
	16nm,0.7s						
TXAR	**Lajitas Array**	**80.39**	**56**	P	**P**	**23 11 09.4**	**+1.3**
	0.7nm,0.9s,baz=202,slow=4.6,SNR=3.2						
ILAR	**Eielson Array**	**82.04**	**11**	P	**P**	**23 11 18.8**	**+2.9**
	0.4nm,1.0s,baz=218,slow=5.7,SNR=4.1						
YKA	**Yellowknife Ar**	**89.72**	**23**	P	**P**	**23 11 54.8**	**+0.9**
	0.2nm,0.8s,baz=229,slow=4.7,SNR=4.1						
KHC	**Kasperske Hory**	**145.47**	**352**	*e*PKP	**PKPab**	**23 18 38.0**	**+3.6**
KHC				*ex*	x	23 18 53.1	
GERES	**GERESS Array B**	**145.73**	**352**	PKPbc	**PKPab**	**23 18 36.1**	**+0.7**
	0.1nm,0.3s,baz=339,slow=3.4,SNR=3.8						
BRTR	**Keskin Array B**	**145.83**	**321**	PKPbc	**PKPab**	**23 18 36.6**	**+0.4**
	1.1nm,0.8s,baz=109,slow=2.8,SNR=9.7						

*IDC **25** 23:05:24.9±1.3, 10°.01S×160°.58E,h0km,mb4.0/6, mb1 4.2/6,mb1mx3.8/44,mbtmp4.0/6,MS3.5/2,Ms1 3.5/2, ms1mx3.0/28,Error ellipse: s-maj=25.2km s-min=20.2km az=77.0*

*ISCJB **25** 23:05:28.7±1.0, 10°.09S±0°.09×160°.5E±0°.1,h37km, mb3.8/6,MS3.4/1,Error ellipse: s-maj=19.7km s-min=11.7km az=155.2*

ISC 25 23:05:30.5±1.1, 10°.0S±0°.1×160°.6E±0°.1,h37km,n16, σ1s21/11,mb3.8/6,Bougainville-Solomon Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
HNR	**Honiara**	**0.80**	**311**	Pn	**Pn**	**23 05 44.3**	**-0.8**
	539nm,0.3s,baz=187,slow=6.5,SNR=46						
HNR				Sn	**Sn**	**23 05 57.9**	**+2.1**
	2μm,0.3s,baz=15,slow=19,SNR=30						
HNR	**Honiara**	**0.80**	**311**	*i* P	**Pn**	**23 05 43.5**	**-1.6**
HNR				*i* S	**Sn**	**23 05 55.5**	**-0.3**
PMG	**Port Moresby**	**13.22**	**271**	LR	LR	23 13 12.3	
	comp=Z,232nm,21.3s,baz=110,slow=35						
CTA	**Charters Tower**	**17.08**	**232**	P	**P**	**23 09 29.5**	**+1.5**
	0.3nm,0.3s,baz=59,slow=8.8,SNR=5.5						
WRA	**Warramunga Arr**	**27.16**	**246**	P	**P**	**23 11 10.3**	**-0.3**
	2.5nm,0.6s,baz=74,slow=9.8,SNR=11						
STKA	**Stephens Creek**	**28.00**	**216**	P	**P**	**23 11 17.7**	**-0.2**
	1.4nm,0.9s,baz=43,slow=14,SNR=4.4						
ASAR	**Alice Springs**	**28.85**	**238**	P	**P**	**23 11 24.9**	**-0.8**
	0.9nm,0.6s,baz=62,slow=10.0,SNR=14						
ASAR				LR	LR	23 22 05.3	
	comp=Z,89nm,18.8s,baz=162,slow=35						
H11S2	**WAKE ISLAND Hy**	**28.91**	**12**	T	T	23 40 17.0	
	baz=194,slow=76,SNR=17						
H11S3	**WAKE ISLAND Hy**	**28.91**	**12**	T	T	23 40 16.3	
	baz=194,slow=76,SNR=9.2						
H11S1	**WAKE ISLAND Hy**	**28.93**	**12**	T	T	23 40 16.9	
	baz=194,slow=76,SNR=4.8						
H11N1	**WAKE ISLAND Hy**	**30.14**	**12**	T	T	23 41 49.9	
	baz=193,slow=76,SNR=8.1						
H11N3	**WAKE ISLAND Hy**	**30.15**	**12**	T	T	23 41 52.1	
	baz=193,slow=76,SNR=5.3						
H11N2	**WAKE ISLAND Hy**	**30.16**	**12**	T	T	23 41 49.1	
	baz=193,slow=76,SNR=4.7						
SONM	**Songino Array**	**74.83**	**326**	P	**P**	**23 17 07.5**	**+0.3**
	1.2nm,0.7s,baz=103,slow=5.0,SNR=2.5						
ILAR	**Eielson Array**	**84.18**	**20**	P	**P**	**23 17 58.3**	**+0.8**
	0.3nm,0.5s,baz=262,slow=5.3,SNR=7.9						
YKA	**Yellowknife Ar**	**96.38**	**28**	P	**P**	**23 18 54.8**	**-0.3**
	0.3nm,0.7s,baz=262,slow=4.7,SNR=4.9						

*NNC **25** 23:08:04.8±4.8, 44°.86N×76°.27E,h0km,mb3.1,mpv2.8, Error ellipse: s-maj=34.4km s-min=22.9km az=171.0*

*KRNET **25** 23:08:06.7±0.1, 41°.63N×77°.27E,h14km,mb2.2*

*SOME **25** 23:08:07.5, 41°.63N×77°.33E,h10km*

*KNET **25** 23:08:08.6±0.8, 41°.64N×77°.13E,h7km±4km,ml2.1,Error ellipse: s-maj=6.7km s-min=5.1km az=68.0*

ISC 25 23:08:06.6±1.4, 41°.61N±0°.04×77°.28E±0°.02,h6km±11km, n38,σ0s72/75,41C-17D,Kyrgyzstan-Xinjiang border region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
KDJ	**Kajisay**	**0.52**	**351**	⇑*i* P	**Pg**	**23 08 17.0**	**+0.2**
	baz=352						
KDJ				⇑*i* S	**Sg**	**23 08 23.8**	**+0.2**
	baz=352						
NRN	**Naryn**	**0.98**	**260**	⇑*e* P	**Pg**	**23 08 25.6**	**+0.1**
	baz=258						
NRN				⇑*e* S	**Sg**	**23 08 39.2**	**+1.0**
	baz=258						
ULHL	**Ulahol**	**1.00**	**309**	⇑*i* P	**Pg**	**23 08 25.6**	**-0.3**
	baz=308						
ULHL				⇑*i* S	**Sg**	**23 08 39.2**	**+0.3**
	baz=308						
ULHL	**Ulahol**	**1.00**	**309**	⇑P	**Pg**	**23 08 25.9**	**0.0**
	5.8nm,0.1s						
ULHL				⇓S	**Sb**	**23 08 39.5**	**-0.5**
	28nm,0.2s						
ANVS	**Anan'yevo**	**1.20**	**14**	⇓*e* P	**Pb**	**23 08 29.5**	**-0.4**
	baz=14						
ANVS				⇓*i* S	**Sb**	**23 08 45.2**	**-0.6**
	baz=14						
PRZ	**Przheval'sk**	**1.20**	**43**	⇑*e* P	**Pb**	**23 08 29.5**	**-0.4**
	baz=45						
PRZ				⇑*e* S	**Sb**	**23 08 45.2**	**-0.6**
	baz=45						
BOOM	**Boomskoye usch**	**1.33**	**312**	⇑*e* P	**Pn**	**23 08 31.7**	**-0.2**
	baz=311						
BOOM				⇑*i* S	**Sg**	**23 08 49.3**	**-0.1**
	baz=311						
TNSS	**Tian-Shan**	**1.45**	**350**	⇓*i* P	**Pb**	**23 08 34.4**	**+0.1**
	12nm,0.2s						
TNSS				*e* S	**Sn**	**23 08 52.9**	**-0.5**
	6.7nm,0.1s						
MDOK	**Medeo**	**1.56**	**354**	⇓*i* P	**Pb**	**23 08 35.8**	**-0.2**
	19nm,0.2s						
MDOK				⇑*i* S	**Sg**	**23 08 56.6**	**-0.2**
	14nm,0.6s						
KZA	**Kyzart**	**1.59**	**288**	⇑*i* P	**Pn**	**23 08 36.3**	**+0.6**
	baz=287						
KZA				⇑*i* S	**Sb**	**23 08 56.9**	**-0.2**
	baz=287						
KZA	**Kyzart**	**1.59**	**288**	⇓P	**Pb**	**23 08 36.5**	**-0.1**
	10nm,0.2s						
KZA				⇓S	**Sg**	**23 08 58.1**	**+0.3**
	10nm,0.2s						
KNDC	**Almaty**	**1.62**	**352**	⇑*i* P	**Pb**	**23 08 37.3**	**+0.3**
	14nm,0.6s						
KNDC				⇓S	**Sg**	**23 09 00.5**	**+1.8**
	23nm,0.4s						
KOTS	**Kotyrbulak**	**1.63**	**356**	*e*P	**Pb**	**23 08 37.3**	**+0.2**
KOTS				*e*S	**Sg**	**23 08 58.3**	**-0.6**
MTBS	**Maitube**	**1.64**	**338**	⇑*i* P	**Pb**	**23 08 37.5**	**+0.1**
	12nm,0.2s						
MTBS				*e*S	**Sg**	**23 08 59.4**	**-0.1**
	19nm,0.3s						
KST	**Kastek**	**1.73**	**326**	⇓*i* P	**Pg**	**23 08 39.7**	**-0.1**
	4.1nm,0.1s						
KST				⇑*i* S	**Sg**	**23 09 02.4**	**0.0**
	148nm,0.3s						
TKM2	**Tokmak 2**	**1.81**	**317**	⇑*i* P	**Pb**	**23 08 40.5**	**+0.2**
	baz=317						
TKM2				⇑*i* S	**Sg**	**23 09 04.6**	**-0.2**
	baz=317						
TKM2	**Tokmak 2**	**1.81**	**317**	⇑P	**Pb**	**23 08 40.7**	**+0.4**
	2.0nm,0.3s						
TKM2				⇓S	**Sg**	**23 09 05.1**	**+0.2**
	9.9nm,0.3s						
TKM2	**Tokmak 2**	**1.81**	**317**	⇑P	**Pb**	**23 08 40.7**	**+0.4**
	3.8nm,0.2s						
TKM2				⇓S	**Sg**	**23 09 05.3**	**+0.5**
	26nm,0.1s						
DGS	**Degeres**	**1.98**	**326**	*e*P	**Pb**	**23 08 43.5**	**+0.4**
	2.0nm,0.3s						
DGS				*e*S	**Sg**	**23 09 09.0**	**-1.1**
	48nm,0.4s						
KURS	**Kuram**	**1.99**	**19**	⇑*i* P	**Pb**	**23 08 43.4**	**+0.2**
	3.1nm,0.7s						
KURS				⇓*i* S	**Sg**	**23 09 09.8**	**-0.6**
	8.4nm,0.4s						
UZB	**Uzynbulak**	**2.00**	**39**	⇓*i* P	**Pb**	**23 08 43.6**	**0.0**
	3.5nm,0.3s						
UZB				⇑*i* S	**Sg**	**23 09 10.1**	**-0.9**
	16nm,0.5s						
KBK	**Karagaybulak**	**2.03**	**302**	⇑*i* P	**Pb**	**23 08 43.4**	**-0.6**
	baz=301						
KBK				⇑*i* S	**Sb**	**23 09 09.9**	**+0.4**
	baz=301						
KBK	**Karagaybulak**	**2.03**	**302**	⇑P	**Pg**	**23 08 45.1**	**-0.4**
	2.6nm,0.2s						
KBK				⇓S	**Sg**	**23 09 12.3**	**+0.5**
	9.3nm,0.2s						
KTBS	**Karatobe**	**2.15**	**348**	*e*P	**Pb**	**23 08 46.1**	**+0.2**
KTBS				*e*S	**Sb**	**23 09 13.6**	**+0.8**
UCH	**Uchtor**	**2.16**	**287**	⇑*i* P	**Pb**	**23 08 45.7**	**-0.6**
	baz=287						
UCH				⇑*i* S	**Sb**	**23 09 13.4**	**-0.1**
	baz=287						
CHKK	**Chushkaly**	**2.27**	**355**	*e*P	**Pb**	**23 08 48.3**	**+0.3**
	24nm,0.3s						
CHKK				*e*S	**Sg**	**23 09 18.4**	**-1.0**
	54nm,0.2s						
AAK	**Ala-Archa**	**2.31**	**297**	⇑*i* P	**Pb**	**23 08 47.6**	**-1.2**
	baz=297						
AAK				⇑*i* S	**Sb**	**23 09 16.8**	**-0.9**
	baz=297						
AAK	**Ala-Archa**	**2.31**	**297**	⇑Pn	**Pb**	**23 08 49.6**	**+0.7**
	1.4nm,0.4s						
AAK				⇓Sn	**Sg**	**23 09 19.8**	**-1.1**
	7.0nm,0.6s						
CHMS	**Chumysh**	**2.33**	**307**	⇑*i* P	**Pb**	**23 08 48.4**	**-0.7**
	baz=307						
CHMS				⇑*i* S	**Sb**	**23 09 17.9**	**-0.3**
	baz=307						
PDGK	**Podgornoye**	**2.36**	**43**	⇑*i* P	**Pb**	**23 08 49.3**	**-0.3**
	baz=43						
PDGK				⇑*i* S	**Sb**	**23 09 20.3**	**+1.3**
	baz=43						
PDGK	**Podgornoye**	**2.36**	**43**	⇑Pn	**Pb**	**23 08 49.5**	**-0.1**
	1.8nm,0.3s						
PDGK				⇑Sn	**Sg**	**23 09 21.8**	**-0.8**
KUU	**Kurty**	**2.38**	**343**	⇑*i* P	**Pb**	**23 08 49.9**	**-0.1**
	28nm,0.3s						
KUU				⇑*i* S	**Sb**	**23 09 20.5**	**+0.9**
	19nm,0.4s						
SHLS	**Shalkode**	**2.47**	**50**	⇓*i* P	**Pb**	**23 08 52.0**	**+0.5**
	9.1nm,0.3s						
SHLS				⇑*i* S	**Sg**	**23 09 25.0**	**-0.9**
	27nm,0.5s						
MNBS	**Baschi**	**2.60**	**18**	*e*P	**Pb**	**23 08 52.5**	**-1.1**
MNBS				*e*S	**Sb**	**23 09 24.5**	**-1.4**
ARXS	**Arharly**	**2.63**	**9**	*e*P	**Pb**	**23 08 54.2**	**0.0**
	2.3nm,0.4s						
ARXS				*e*S	**Sb**	**23 09 27.3**	**+0.5**
	55nm,0.7s						
KTMS	**Ketmen**	**2.92**	**50**	*e*P	**Pb**	**23 08 59.1**	**0.0**
	2.4nm,0.4s						
KTMS				*e*S	**Sb**	**23 09 35.9**	**+0.8**
	43nm,0.4s						
MNAS	**Manas**	**3.67**	**285**	⇓Pg	**Pb**	**23 09 12.0**	**+0.1**
	1.0nm,0.8s						
MNAS				⇑Lg	Lg	23 10 00.7	
	2.0nm,0.8s						
KAPS	**Kapalarasan**	**3.97**	**22**	*e*P	**Pb**	**23 09 17.9**	**+0.9**
	1.5nm,0.3s						
KAPS				*e*S	**Sb**	**23 10 08.3**	**+3.0**
	4.9nm,0.4s						

*NIED **25** 23:12:00, 37°.50N×143°.50E,h32km,Mw3.5 Best double couple: M0 1.78000×10^14 NP1:φs326.00000°,δ79.00000°, λ179.00000°. NP2:φs57.00000°,δ89.00000°,λ11.00000°.*

JMA 25 23:12:55.2±0.2, 37°.47N×143°.49E,h33km,M3.6,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**1.96**	**301**	P	Pn	23 13 27.4	+1.3
JIO				S	Sn	23 13 51.1	+1.6
JFK	**Kawauchi**	**2.08**	**268**	P	Pn	23 13 29.1	+1.2
JFK				S	Sn	23 13 54.0	+1.3
JMM	**Marumori**	**2.18**	**281**	P	Pn	23 13 30.4	+1.3
JMM				*e*S	Sn	23 13 56.7	+1.8
ONAJ	**Iwakimizuishiy**	**2.18**	**261**	P	Pn	23 13 30.5	+1.3
ONAJ				S	Sn	23 13 56.0	+1.0
JMK	**Ichinoseki**	**2.32**	**310**	P	Pn	23 13 32.6	+1.5
JMK				S	Sn	23 14 00.0	+1.6
JOU	**Okura**	**2.41**	**293**	P	Pn	23 13 34.3	+2.0
JOU				S	Sn	23 14 03.0	+2.4
JFT	**Otama**	**2.51**	**272**	P	Pn	23 13 36.2	+2.5
JFT				*e*S	Sn	23 14 06.1	+3.0
JOM	**Ohasama**	**2.64**	**320**	P	Pn	23 13 36.9	+1.4
JOM				S	Sn	23 14 07.8	+1.4
JYK	**Kaneyama**	**2.86**	**301**	P	Pn	23 13 40.5	+2.0
JYK				*e*S	Sn	23 14 14.8	+3.1
JAG	**Ashikaga**	**3.40**	**253**	P	Pn	23 13 47.8	+1.9
BSO1	**Boso 1**	**3.47**	**217**	S	Sn	23 14 24.0	-2.0
JRY	**Ryogami san**	**3.96**	**250**	P	Pn	23 13 55.1	+1.4
JRY				S	Sn	23 14 38.7	-0.3

*NIED **25** 23:15:00, 38°.40N×142°.20E,h26km,Mw3.8 Best double couple: M0 5.40000×10^14 NP1:φs132.00000°,δ21.00000°, λ-76.00000°. NP2:φs297.00000°,δ70.00000°, λ-95.00000°.*

*JMA **25** 23:15:03.7±0.1, 38°.44N×142°.25E,h29km±2km,M3.8*

JMA Felt I J1.

*IDC **25** 23:15:07.2±2.4, 38°.34N×142°.31E,h52km±22km,mb3.5/11, mb1 3.6/16,mb1mx3.4/49,mbtmp3.7/16,ML3.6/4,MS2.9/3, Ms1 2.9/3,ms1mx2.5/34,Error ellipse: s-maj=24.5km s-min=14.2km az=107.0*

ISC 25 23:15:02.0±2.4, 38°.41N±0°.04×142°.30E±0°.07,h12km±13km, n27,σ1s26/35,mb3.8/11,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**0.75**	**274**	P	**Pb**	**23 15 17.4**	**+0.4**
JIO				S	**Sg**	**23 15 26.5**	**+0.2**
OFUJ	**Ofunato**	**0.83**	**324**	P	**Pb**	**23 15 18.3**	**-0.2**
OFUJ				S	**Sg**	**23 15 28.5**	**-0.6**
JMK	**Ichinoseki**	**1.01**	**303**	P	**Pb**	**23 15 21.0**	**-0.4**
JMK				S	**Sb**	**23 15 33.7**	**-0.9**
JOU	**Okura**	**1.29**	**269**	P	**Pn**	**23 15 25.8**	**0.0**
JOU				S	**Sb**	**23 15 42.3**	**-0.4**
JMM	**Marumori**	**1.31**	**246**	P	**Pn**	**23 15 25.4**	**-0.7**
JMM				S	**Sb**	**23 15 41.9**	**-1.3**
JOM	**Ohasama**	**1.32**	**324**	P	**Pn**	**23 15 25.9**	**-0.4**
JOM				S	**Sn**	**23 15 42.3**	**-1.6**
JFK	**Kawauchi**	**1.53**	**228**	P	**Pn**	**23 15 28.2**	**-1.0**
JFK				S	**Sn**	**23 15 46.5**	**-2.6**
JYK	**Kaneyama**	**1.60**	**289**	P	**Pn**	**23 15 30.3**	**+0.1**
JYK				S	**Sn**	**23 15 50.5**	**-0.3**
JRG	**Rokugo**	**1.63**	**308**	P	**Pn**	**23 15 31.3**	**+0.7**
MJAR	**Matsushiro Arr**	**3.75**	**241**	P	**Pn**	**23 16 01.5**	**+1.8**
	1.6nm,0.3s,baz=64,slow=10,SNR=19						
MJAR				LR	LR	23 17 58.3	
	comp=Z,101nm,19.7s,baz=85,slow=46						
MAT	**Matsushiro**	**3.75**	**242**	P	**Pn**	**23 16 01.7**	**+2.0**
MAT				*e*S	**Sn**	**23 16 47.6**	**+3.8**
JHJ	**Hachijo jima 2**	**5.66**	**202**	P	**Pn**	**23 16 27.5**	**+1.6**
	8.3nm,0.3s,baz=127,slow=20,SNR=3.0						
JHJ				S	**Sn**	**23 17 29.6**	**-1.2**
	9.8nm,0.3s,baz=73,slow=19,SNR=2.7						
ASAJ	**Asahikawa**	**5.71**	**2**	P	**Pn**	**23 16 28.6**	**+2.0**
	2.3nm,0.3s,baz=204,slow=17,SNR=5.8						
ASAJ				S	**Sn**	**23 17 32.3**	**+0.3**
	0.1nm,0.3s,baz=177,slow=19,SNR=1.9						
ASAJ				LR	LR	23 19 09.3	
	comp=Z,99nm,19.4s,baz=215,slow=42						
USRK	**Ussuriysk Ar.**	**9.68**	**310**	P	Pn	23 17 26.1	+5.1
	0.2nm,0.3s,baz=122,slow=16,SNR=2.3						
JNU	**Nakatsue**	**10.67**	**244**	LR	LR	23 22 02.1	
	comp=Z,119nm,18.8s,baz=118,slow=39						
KSRS	**Korea Array**	**11.40**	**270**	P	Pn	23 17 49.1	+4.5
	0.2nm,0.3s,baz=80,slow=14,SNR=2.6						
SEY	**Seymchan**	**25.31**	**11**	P	**P**	**23 20 29.2**	**+1.0**
	2.1nm,0.5s,baz=197,slow=5.3,SNR=6.6						
ZALV	**Zalesovo Beam**	**41.52**	**311**	P	**P**	**23 22 49.0**	**0.0**
	0.8nm,0.5s,baz=94,slow=8.7,SNR=3.7						
CMAR	**Chiang Mai Arr**	**42.53**	**255**	P	**P**	**23 22 57.2**	**-0.4**
	0.8nm,0.3s,baz=73,slow=6.1,SNR=2.8						
MKAR	**Makanchi Array**	**44.00**	**301**	P	**P**	**23 23 09.9**	**+0.7**
	1.0nm,0.5s,baz=74,slow=8.9,SNR=4.2						
ILAR	**Eielson Array**	**47.96**	**33**	P	**P**	**23 23 40.2**	**0.0**
	0.3nm,0.7s,baz=268,slow=6.8,SNR=4.1						
INK	**Inuvik**	**52.85**	**28**	P	**P**	**23 24 18.3**	**+1.4**
	0.4nm,0.6s,baz=261,slow=9.6,SNR=3.2						
WRA	**Warramunga Arr**	**58.52**	**189**	P	**P**	**23 24 57.4**	**-0.8**
	1.7nm,0.7s,baz=6.9,slow=7.3,SNR=9.0						
ASAR	**Alice Springs**	**62.25**	**189**	P	**P**	**23 25 23.4**	**-0.3**
	1.0nm,0.7s,baz=7.6,slow=6.5,SNR=12						
YKA	**Yellowknife Ar**	**62.27**	**31**	P	**P**	**23 25 23.3**	**-0.1**
	0.1nm,0.7s,baz=296,slow=6.1,SNR=3.8						
FINES	**FINESS Array B**	**67.93**	**332**	P	**P**	**23 26 00.1**	**-0.1**
	0.7nm,0.5s,baz=38,slow=5.3,SNR=3.4						
AKASG	**Malin Array Be**	**73.64**	**322**	P	**P**	**23 26 34.8**	**-0.4**
	0.2nm,0.3s,baz=60,slow=37,SNR=3.5						

*NIED **25** 23:24:00, 36°.30N×141°.10E,h38km,Mw4.4 Best double couple: M0 3.84000×10^15 NP1:φs169.00000°,δ18.00000°, λ50.00000°. NP2:φs31.00000°,δ76.00000°,λ102.00000°.*

*ISCJB **25** 23:24:50.6±0.6, 36°.32N±0°.03×141°.10E±0°.06,h42km±4km, mb4.3/41,Error ellipse: s-maj=7.9km s-min=4.8km az=8.0*

*JMA **25** 23:24:50.8±0.1, 36°.32N×141°.06E,h48km±1km,M4.1*

JMA Felt II J1.

*NEIC **25** 23:24:52.0±0.8, 36°.23N×141°.11E,h44km±7km,mb4.6/13, Error ellipse: s-maj=8.0km s-min=7.4km az=117.0*

*IDC **25** 23:24:54.4±1.7, 36°.24N×140°.99E,h62km±16km,mb3.9/27, mb1 4.1/32,mb1mx4.0/49,mbtmp4.2/32,MS2.8/1, Ms1 2.8/1,ms1mx2.7/13,Error ellipse: s-maj=14.5km s-min=10.7km az=86.0*

ISC 25 23:24:50.6±0.8, 36°.31N±0°.04×141°.17E±0°.06,h29km±4km, n78,σ1s14/84,mb4.4/41,1D,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JHO	**Hitachi**	**0.57**	**302**	P	**Pb**	**23 25 01.5**	**-0.6**
JHO				S	**Sb**	**23 25 09.1**	**-0.8**
CHOJ	**Chosi**	**0.66**	**202**	P	**Pn**	**23 25 03.6**	**-0.3**
CHOJ				S	**Sn**	**23 25 12.9**	**-0.4**
JYT	**Yasato**	**0.79**	**264**	P	**Pn**	**23 25 04.6**	**-1.1**
JYT				S	**Sn**	**23 25 14.0**	**-2.6**
ONAJ	**Iwakimizuishiy**	**0.84**	**340**	P	**Pn**	**23 25 05.7**	**-0.8**
ONAJ				S	**Sn**	**23 25 16.0**	**-1.9**
JFK	**Kawauchi**	**1.08**	**348**	P	**Pn**	**23 25 09.0**	**-0.8**
JFK				S	**Sn**	**23 25 21.6**	**-2.1**
JFT	**Otama**	**1.38**	**331**	S	**Sn**	**23 25 30.7**	**-0.3**
MJAR	**Matsushiro Arr**	**2.40**	**276**	P	**Pn**	**23 25 27.9**	**0.0**
	23nm,0.3s,baz=107,slow=8.6,SNR=372						
MJAR				S	**Sb**	**23 26 04.9**	**+2.7**
	22nm,0.3s,baz=103,slow=17,SNR=8.1						
MAJO	**Matsushiro**	**2.40**	**276**	*e*Pn	**Pn**	**23 25 28.2**	**+0.3**
MAT	**Matsushiro**	**2.40**	**276**	P	**Pn**	**23 25 28.3**	**+0.4**
MAT				S	**Sn**	**23 25 56.6**	**+0.3**
JHJ	**Hachijo jima 2**	**3.38**	**200**	P	**Pn**	**23 25 42.9**	**+1.5**
	22nm,0.3s,baz=111,slow=21,SNR=12						
JHJ				S	**Sn**	**23 26 20.9**	**+0.4**
	101nm,0.3s,baz=80,slow=20,SNR=9.7						
JHJ				LR	LR	23 27 03.0	
	comp=Z,165nm,20.4s,baz=114,slow=39			

66nm,1.1s
TKM2 Tokmak 2 49.80 299 *e*P **P 23 33 40.3 -0.6**
4.5nm,0.6s
ILAR Eielson Array 50.21 32 P **P 23 33 44.5 +1.2**
2.4nm,0.7s,baz=267,slow=6.1,SNR=30
AAK Ala-Archa 50.66 299 *e*P **P 23 33 47.0 -0.3**
1.7nm,0.7s
BVAR Borovoye Array 50.91 313 P **P 23 33 48.8 0.0**
2.9nm,0.5s,baz=76,slow=6.9,SNR=18
BRVK Borovoye 50.97 313 *e*P **P 23 33 48.4 -0.8**
4.5nm,0.8s
KKAR Karatay Array 53.32 300 *e*P **P 23 34 06.0 -0.9**
9.1nm,1.0s
INK Inuvik 55.12 27 P **P 23 34 21.1 +1.5**
2.5nm,0.6s,baz=297,slow=6.9,SNR=22
WRAB Tennant Creek 56.31 188 *e*P **P 23 34 27.6 -1.0**
2.9nm,0.7s
WRA Warramunga Arr 56.32 188 P **P 23 34 28.6 -0.2**
0.7nm,0.4s,baz=7.0,slow=7.5,SNR=4.8
ARU Arti 56.77 319 *e*P **P 23 34 31.2 -0.4**
18nm,1.2s
ABKAR Akbulak array 58.25 310 *e*P **P 23 34 41.4 -0.8**
5.0nm,0.8s
ASAR Alice Springs 60.05 188 P **P 23 34 55.2 +0.4**
0.5nm,0.7s,baz=17,slow=6.9,SNR=5.4
RES Resolute Bay 63.35 14 P **P 23 35 17.3 +0.9**
4.1nm,1.0s,baz=314,slow=7.6,SNR=8.4
GEYT Alibeck 64.01 299 P **P 23 35 20.8 -0.7**
1.1nm,0.5s,baz=60,slow=8.8,SNR=4.3
YKA Yellowknife Ar 64.53 30 P **P 23 35 25.3 +0.9**
0.6nm,0.7s,baz=300,slow=6.5,SNR=15
ARCES ARCESS Array B 64.60 339 P **P 23 35 24.9 +0.1**
2.2nm,0.9s,baz=107,slow=4.2,SNR=3.8
FINES FINESS Array B 69.36 332 P **P 23 35 55.0 -0.1**
3.4nm,0.8s,baz=49,slow=8.6,SNR=14
KBZ Khabaz 71.22 311 P **P 23 36 06.0 -0.8**
2.9nm,0.9s,baz=59,slow=3.3,SNR=12
KIV Kislovodsk 71.23 311 *e*P **P 23 36 06.2 -0.8**
9.6nm,1.1s
FCC Fort Churchill 74.73 26 *e*P **P 23 36 27.7 +0.4**
3.5nm,1.1s
AKASG Malin Array Be 74.75 322 P **P 23 36 27.0 -0.5**
2.9nm,0.6s,baz=46,slow=6.2,SNR=15
KIEV Kiev 74.76 322 *e*P **P 23 36 27.1 -0.5**
2.5nm,0.6s
NB2 NORSAR Subarra 74.77 337 P **P 23 36 27.3 -0.3**
comp=Z,3.5nm,0.8s,baz=40,slow=5.9
NOA NORSAR Array B 74.77 337 P **P 23 36 27.6 +0.1**
comp=Z,3.8nm,0.9s,baz=39,slow=5.8,SNR=8.5
PDAR Pinedale Array 78.31 45 P **P 23 36 49.3 +1.1**
comp=Z,0.4nm,0.5s,baz=270,slow=1.9,SNR=8.4
BRTR Keskin Array B 79.18 312 P **P 23 36 52.5 -0.5**
comp=Z,2.1nm,1.0s,baz=98,slow=3.7,SNR=12
DPC Dobruska-Polom 80.96 328 *e*P **P 23 37 02.7 +0.5**
DPC *e*pP **sP 23 37 15.1 +0.1**
KRLC Kraliky 80.97 327 *e*P **P 23 37 02.4 +0.2**
KRLC *e*PCP **PcP 23 37 07.1 -1.6**
CLL Collm 81.62 330 *i* P **P 23 37 05.3 -0.3**
comp=Z,6.0nm,0.9s
CLL ⇓*i* 23 37 17.6
comp=Z,9.0nm,1.1s
PRU Pruhonice 81.99 328 *e*P **P 23 37 07.7 +0.1**
PRU *e*pP **sP 23 37 20.3 -0.1**
KHC Kasperske Hory 83.05 328 *e*P **P 23 37 13.6 +0.4**
KHC *e*pP **sP 23 37 25.4 -0.6**
GERES GERESS Array B 83.22 328 P **P 23 37 14.1 -0.1**
comp=Z,0.8nm,0.6s,baz=34,slow=5.5,SNR=10
TXAR Lajitas Array 90.72 52 P **P 23 37 50.3 -0.7**
comp=Z,0.2nm,0.5s,baz=324,slow=4.5,SNR=2.4
TORD Torodi Ar. Bea 117.69 314 PKP **PKPdf 23 43 32.8 -1.7**
comp=Z,0.9nm,1.1s,baz=73,slow=1.5,SNR=2.8
LPAZ La Paz 147.22 60 PKPbc **PKPdf 23 44 30.4 +0.5**
comp=Z,0.8nm,0.6s,baz=8.7,slow=5.9,SNR=4.8

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*NIED **25** 23:26:00, 42˚.00N× 142˚.60E, h59km, Mw4.7 Best double couple: M₀1.35000×10¹⁶ NP1:φ₀≅210.00000°, δ28.00000°, λ94.00000°. NP2:φ₀≅26.00000°, δ62.00000°, λ88.00000°.*
*BJI **25** 23:26:30.5, 41˚.93N× 142˚.74E, h62km, mb4.9/63, mB4.9/40, Ms4.1/37, Ms7 4.0/37*
*MOS **25** 23:26:33.5± 1.0, 42˚.09N× 142˚.50E, h66km, mb5.2/57, Error ellipse: s-maj=6.4km s-min=4.1km az=98.8*
*ISCJB **25** 23:26:33.5± 0.2, 42˚.05N± 0˚.02× 142˚.51E± 0˚.03, h65km± 2km, mb4.7/228, Error ellipse: s-maj=4.2km s-min=2.4km az=145.7*
*JMA **25** 23:26:34.1± 0.1, 42˚.02N× 142˚.59E, h61km± 2km, M4.6 Broadband fault plane solution: P waves. NP1: φ₀≅25.00000°, δ67.00000°, λ91.00000°. NP2:φ₀≅202.00000°, δ23.00000°, λ87.00000°. Principal axes: T Plg68.0000°, Azm297.0000°; N Plg1.0000°, Azm204.0000°; P Plg22.0000°, Azm114.0000°;*
JMA Felt II J1.
*NEIC **25** 23:26:35.2± 0.4, 42˚.05N× 142˚.47E, h68km± 4km, mb4.8/143 Error ellipse: s-maj=4.7km s-min=3.0km az=147.0*
NEIC Recorded [2 JMA] in southern and southwestern Hokkaido. Also recorded [2 JMA] in Aomori, Honshu.
*IDC **25** 23:26:36.4± 1.3, 42˚.09N× 142˚.53E, h80km± 10km, mb4.4/32, mb1 4.5/41, mb1mx4.5/49, mbtmp4.7/41, MS3.7/2, Ms1 3.8/2, ms1mx3.3/8, Error ellipse: s-maj=11.6km s-min=8.2km az=123.0*

ISC 25 23:26:34.7± 0.4, 42˚.06N± 0˚.04× 142˚.57E± 0˚.03, h67km± 3km, h67km:pP-P, n579, σ1§45/626, mb4.8/229, 35C-34D, Hokkaido region

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
JNBK	**Urakawa-nobuka**	**0.26**	**31**	⇑P			**Pn**	**23 26 44.1**	**-1.2**
JNBK				*e*S			**Sn**	**23 26 51.8**	**-1.2**
ERM	**Erimo**	**0.44**	**95**	*i* PN			**Pn**	**23 26 45.5**	**-1.1**
ERM	**Erimo**	**0.44**	**95**	*e*Pn			**Pn**	**23 26 45.8**	**-0.8**
ERM				*e*Sn			**Sn**	**23 26 53.6**	**-1.8**
JEM	**Erimo**	**0.44**	**95**	⇑P			**Pn**	**23 26 45.5**	**-1.1**
JBT2	**Biratori 2**	**0.74**	**348**	⇓P			**Pn**	**23 26 49.1**	**-0.7**
JBT2				*e*S			**Sn**	**23 27 00.9**	**-0.1**
JCH	**Churui**	**0.81**	**46**	⇑P			**Pn**	**23 26 50.0**	**-0.7**
JCH				*e*S			**Sn**	**23 27 01.6**	**-0.9**
JFR	**Furan**	**1.11**	**1**	⇓P			**Pn**	**23 26 53.8**	**-0.6**
JEW	**Eniwo**	**1.14**	**314**	⇓P			**Pn**	**23 26 54.5**	**-0.3**
JKB	**Kayabe**	**1.16**	**262**	⇓P			**Pn**	**23 26 54.0**	**-1.0**
JKB				*e*S			**Sn**	**23 27 09.1**	**-1.1**
JNB	**Noboribetsu**	**1.21**	**291**	⇓P			**Pn**	**23 26 54.4**	**-1.3**
JOB	**Onbets**	**1.26**	**47**	⇑P			**Pn**	**23 26 56.8**	**+0.4**
JOT	**Ohata**	**1.32**	**240**	⇓P			**Pn**	**23 26 56.2**	**-0.9**
JOT				*e*S			**Sn**	**23 27 12.7**	**-1.3**
JAB	**Ashibetsu**	**1.47**	**350**	P			**Pn**	**23 26 59.2**	**+0.1**
JAR	**Ashorobuto**	**1.52**	**35**	P			**Pn**	**23 26 59.6**	**-0.2**
JAR				*e*S			**Sn**	**23 27 19.0**	**+0.2**
ASAJ	**Asahikawa**	**2.06**	**1**	P			**Pn**	**23 27 07.7**	**+0.7**
	126nm,0.3s,baz=215,slow=14,SNR=211								
ASAJ				S			**Sn**	**23 27 34.2**	**+2.5**
	118nm,0.3s,baz=0.0,slow=20,SNR=14								
YUK	**Yuzh-Kuril'sk**	**3.12**	**50**	*d* iPN			**Pn**	**23 27 22.0**	**+0.6**
YUK				*i* S			**Sn**	**23 27 57.2**	**-0.3**
YUK					pmax	pmax			
	comp=Z,693nm,0.3s								
YUK					pmax	pmax			
	comp=N,391nm,0.2s								
YUK					pmax	pmax			
	comp=E,248nm,0.3s								
YUK					smax	smax			
	comp=N,2μm,0.4s								
YUK					smax	smax			
	comp=E,865nm,0.3s								
SHO	**Shikotan**	**3.62**	**58**	*d* iPN			**Pn**	**23 27 27.3**	**-0.9**
SHO				*i* S			**Sn**	**23 28 07.0**	**-2.6**
SHO					pmax	pmax			
	comp=Z,332nm,0.4s								
SHO					pmax	pmax			
	comp=N,174nm,0.3s								
SHO					pmax	pmax			
	comp=E,153nm,0.3s								
SHO					smax	smax			
	comp=E,3μm,0.5s								
SHO					smax	smax			
	comp=N,2μm,0.3s								
YSS	**Yuzh-Sakhalins**	**4.90**	**1**	⇑*i* PN			**Pn**	**23 27 48.3**	**+2.6**
YSS				*e*S			**Sn**	**23 28 42.0**	**+1.0**
YSS					pmax	pmax			
	comp=Z,300nm,1.0s								
YSS					pmax	pmax			
	comp=Z,200nm,0.8s								
YSS					smax	smax			
	comp=E,400nm,4.0s								
YSS					MLR	MLR			
	comp=Z,600nm,14.0s								
YSS	**Yuzh-Sakhalins**	**4.90**	**1**	*e*Pn			**Pn**	**23 27 48.2**	**+2.6**
KUR	**Kuril'sk**	**4.99**	**49**	*d* iPN			**Pn**	**23 27 47.7**	**+0.8**
KUR				*i* S			**Sn**	**23 28 45.1**	**+1.9**
KUR					pmax	pmax			
	comp=Z,213nm,0.5s								
KUR					pmax	pmax			
	comp=N,115nm,0.3s								
KUR					pmax	pmax			
	comp=E,122nm,0.3s								
KUR					smax	smax			
	comp=N,177nm,0.2s								
KUR					smax	smax			
	comp=E,289nm,0.5s								
MJB9	**Matsu-Tunnel**	**6.46**	**213**	*e*Pn			**Pn**	**23 28 05.9**	**-1.2**
MAJO	**Matsushiro**	**6.46**	**213**	*i* PN			**Pn**	**23 28 07.1**	**0.0**
MAJO	**Matsushiro**	**6.46**	**213**	*e*Pn			**Pn**	**23 28 08.3**	**+1.2**
MAT	**Matsushiro**	**6.46**	**213**	P			**Pn**	**23 28 08.0**	**+0.9**
MAT				*e*S			**Sn**	**23 29 23.3**	**+3.9**
MJAR	**Matsushiro Arr**	**6.46**	**213**	P			**Pn**	**23 28 08.4**	**+1.3**
	comp=E,2.7nm,0.3s,baz=18,slow=14,SNR=8.9								
INU	**Inuyama**	**7.98**	**215**	*e*Pn			**Pn**	**23 28 30.3**	**+2.5**
USRK	**Ussuriysk Ar.**	**8.03**	**289**	P			**Pn**	**23 28 28.4**	**-0.1**
	comp=E,2.2nm,0.3s,baz=92,slow=14,SNR=33								
HABR	**Khabarovsk**	**8.32**	**323**	*e*PN			**Pn**	**23 28 30.6**	**-1.9**
HABR					pmax	pmax			
	comp=N,22nm,1.4s								
HABR					pmax	pmax			
	comp=Z,51nm,1.4s								
HABR					pmax	pmax			
	comp=E,59nm,1.4s								
HABR					MLR	MLR			
	comp=Z,378nm,16.0s								
MSHR	**Mys Shultsa**	**8.47**	**277**	*i* PN			**Pn**	**23 28 35.9**	**+1.3**
TYV	**Tymovskoe**	**8.81**	**0**	*e*PN			**Pn**	**23 28 42.5**	**+3.4**
TYV					pmax	pmax			
	comp=Z,44nm,1.0s								
JHJ	**Hachijo jima 2**	**9.19**	**195**	P			**Pn**	**23 28 43.1**	**-1.3**
	comp=Z,16nm,0.3s,baz=39,slow=22,SNR=3.1								
JHJ				S			Sn	23 30 16.9	-9.3
	comp=Z,11nm,0.3s,baz=41,slow=22,SNR=4.7								
JHJ2	**Mitsune**	**9.19**	**195**	*e*Pn			**Pn**	**23 28 41.8**	**-2.6**
JHJ2				*e*Sn			Sn	23 30 15.1	-11
MDJ	**Mudanjiang**	**9.80**	**290**	P			**Pn**	**23 28 54.5**	**+1.8**
MDJ					pmax	pmax			
	comp=Z,9.0nm,0.8s								
MDJ					pmax	pmax			
	comp=Z,43nm,4.8s								
MDJ	**Mudanjiang**	**9.80**	**290**	*e*Pn			**Pn**	**23 28 54.4**	**+1.8**
KLR	**Kul'dur**	**10.43**	**317**	P			**Pn**	**23 29 02.3**	**+1.1**
	comp=Z,0.7nm,0.3s,baz=120,slow=15,SNR=18								
KLR	**Kul'dur**	**10.43**	**317**	*d* iPN			**Pn**	**23 29 03.4**	**+2.2**
KSRS	**Korea Array**	**12.17**	**253**	P			**Pn**	**23 29 26.9**	**+1.8**
	comp=Z,2.9nm,0.3s,baz=65,slow=14,SNR=39								
KSRS				S			**Sn**	**23 31 45.0**	**+6.1**
	comp=Z,1.4nm,0.3s,baz=64,slow=24,SNR=6.1								
KS01	**Wonju Array Si**	**12.18**	**253**	*e*Pn			**Pn**	**23 29 25.7**	**+0.5**
KS15	**Wonju Array Si**	**12.20**	**253**	*e*Pn			**Pn**	**23 29 30.1**	**+4.6**
KS15				*e*Sn			**Sn**	**23 31 45.0**	**+5.2**
KSAR	**Wonju Array Be**	**12.20**	**253**	PN			**Pn**	**23 29 26.9**	**+1.4**
KSAR	**Wonju Array Be**	**12.20**	**253**	P			**Pn**	**23 29 26.9**	**+1.4**
CN2	**Changchun**	**12.67**	**284**	*e*P			**Pn**	**23 29 32.5**	**+0.6**
CN2					pmax	pmax			
	comp=Z,10.0nm,0.9s								
JNU	**Nakatsue**	**12.85**	**230**	P			**Pn**	**23 29 37.0**	**+2.5**
	comp=Z,1.0nm,0.3s,baz=47,slow=7.5,SNR=7.1								
JNU	**Nakatsue**	**12.85**	**230**	*e*Pn			**Pn**	**23 29 33.6**	**-0.8**
CBIJ	**Chichi jima**	**14.93**	**181**	*e*Pn			**Pn**	**23 29 57.8**	**-4.1**
CBIJ				*e*Sn			Sn	23 32 31.7	-14
JCJ	**Chichijima**	**14.93**	**181**	P			**Pn**	**23 30 02.2**	**+0.4**
JCJ				S			Sn	23 32 31.7	-14
	comp=Z,2.9nm,0.3s,baz=104,slow=23,SNR=4.0								
PETK	**Petropavlovsk-**	**15.01**	**37**	P			**P**	**23 30 05.2**	**-1.6**
	comp=Z,3.3nm,0.3s,baz=197,slow=7.5,SNR=4.1								
PETK	**Petropavlovsk-**	**15.01**	**37**	P			**P**	**23 30 05.2**	**-1.6**
PEA1	**Petropavlovsk-**	**15.02**	**37**	*e*Pn			**P**	**23 30 05.2**	**-1.6**
HIA	**Hailar**	**17.47**	**302**	*e*P			**Pn**	**23 30 28.5**	**-5.2**
HIA					pmax	pmax			
	comp=Z,99nm,1.8s								
HIA	**Hailar**	**17.47**	**302**	*e*Pn			**Pn**	**23 30 28.5**	**-5.2**
	comp=Z,99nm,1.8s								
MA2	**Magadan**	**18.27**	**13**	P			**P**	**23 30 41.0**	**-1.5**
	comp=Z,1.2nm,0.3s,baz=223,slow=10,SNR=11								
CLNS	**Chul'man**	**18.65**	**329**	*e*P			Pn	23 31 00.3	+12
CLNS					pmax	pmax			
	comp=Z,39nm,1.2s								
CLNS					pmax	pmax			
	comp=E,22nm,1.0s								
CLNS					pmax	pmax			
	comp=N,31nm,1.1s								
CLNS					MLR	MLR			
	comp=Z,223nm,13.0s								
CLNS					MLR	MLR			
	comp=N,154nm,14.0s								
CLNS					MLR	MLR			
	comp=E,129nm,13.0s								
JOW	**Kunigami**	**19.18**	**222**	*e*P			**P**	**23 30 51.2**	**-1.7**
	comp=E,41nm,1.2s								
BJI	**Beijing**	**19.98**	**273**	P			**P**	**23 30 59.5**	**-2.0**
BJI				S			**S**	**23 34 41.3**	**-1.2**
BJI				sS			**sS**	**23 35 03.8**	**-1.6**
BJI					pmax	pmax			
	comp=E,52nm,0.9s								
BJI					pmax	pmax			
	comp=E,160nm,4.0s								
BJI					LR	LR			
	comp=E,250nm,15.3s								
BJI					LR	LR			
	comp=E,190nm,21.4s								
BJI					LR	LR			
	comp=E,370nm,31.8s								
BJT	**Baijiatuau**	**20.00**	**273**	*e*P			**P**	**23 30 59.8**	**-1.8**
BJT					pmax	pmax			
	comp=Z,41nm,0.8s								
BJT	**Baijiatuau**	**20.00**	**273**	*e*P			**P**	**23 30 59.8**	**-1.8**
	comp=Z,41nm,0.8s								
TIA	**Tai'an**	**20.55**	**262**	⇓P			**P**	**23 31 05.8**	**-1.8**
TIA					pmax	pmax			
	comp=Z,80nm,0.8s								
NJ2	**Nanjing**	**21.34**	**250**	*e*P			**P**	**23 31 15.8**	**-0.3**
NJ2					pmax	pmax			
	comp=Z,21nm,0.5s								
YAK	**Yakutsk**	**21.44**	**343**	*e*P			**P**	**23 31 12.2**	**-4.7**
YAK				*e*'PP			**pP**	**23 31 35.5**	**+4.3**
YAK				*e*S			**S**	**23 35 03.4**	**-7.5**
YAK				*e*				23 35 14.8	
YAK					pmax	pmax			
	comp=Z,20nm,0.8s								
YAK					pmax	pmax			
	comp=E,4.0nm,1.0s								
YAK					pmax	pmax			
	comp=N,6.0nm,0.8s								
YAK					smax	smax			
	comp=N,85nm,2.0s								
YAK					smax	smax			
	comp=E,45nm,1.4s								
YAK	**Yakutsk**	**21.44**	**343**	*e*P			**P**	**23 31 12.2**	**-4.7**
	comp=E,57nm,0.8s								
SEY	**Seymchan**	**21.70**	**12**	P			**P**	**23 31 18.1**	**-1.6**
	comp=E,18nm,0.8s,baz=207,slow=8.6,SNR=19								
SEY	**Seymchan**	**21.70**	**12**	*i* P			**P**	**23 31 20.4**	**+0.7**
HHC	**Hu-ho-hao-te**	**23.21**	**277**	*e*P			**P**	**23 31 34.8**	**-1.1**
HHC				PP			**PnPn**	**23 32 07.5**	**+3.2**
HHC				S			**S**	**23 35 39.8**	**-2.8**
HHC				SS			**SnSn**	**23 36 28.0**	**+5.7**
HHC					pmax	pmax			
	comp=E,16nm,1.2s								
HHC					pmax	pmax			
	comp=E,91nm,3.4s								
HHC					LR	LR			
	comp=E,1μm,16.0s								
HHC					LR	LR			
	comp=E,1μm,12.3s								
HHC					LR	LR			
	comp=E,1μm,17.3s								
YOJ	**Yonaguni jima**	**23.89**	**229**	*e*P			**P**	**23 31 39.4**	**-2.7**
YOJ					pmax	pmax			
	comp=Z,55nm,1.0s								
YOJ	**Yonaguni jima**	**23.89**	**229**	*e*P			**P**	**23 31 39.4**	**-2.7**
	comp=Z,54nm,1.0s								
BOD	**Bodaibo**	**23.97**	**321**	*e*P			**P**	**23 31 39.5**	**-3.0**
BOD					pmax	pmax			
	comp=Z,7.0nm,1.0s								
YHNB	**Yeheng**	**24.67**	**232**	*e*P			**P**	**23 31 46.5**	**-2.8**
	comp=Z,21nm,0.9s								
SSLB	**Suanglung**	**25.59**	**231**	*e*P			**P**	**23 31 56.1**	**-1.5**
	comp=Z,7.6nm,0.9s								
ULN	**Ulaanbaatar**	**25.64**	**295**	*d* iP			**P**	**23 31 57.4**	**-0.6**
ULN					pmax	pmax			
	comp=Z,22nm,1.2s								
ULN	**Ulaanbaatar**	**25.64**	**295**	*e*P			**P**	**23 31 56.3**	**-1.7**
	comp=Z,14nm,0.9s								
YULB	**Yu-li**	**25.70**	**230**	*e*P			**P**	**23 31 56.5**	**-2.0**
	comp=Z,8.3nm,0.8s								
SONA1	**Songino Array**	**26.07**	**295**	*e*P			**P**	**23 32 01.7**	**-0.2**
SONA0	**Songino Array**	**26.08**	**295**	*e*P			**P**	**23 32 02.3**	**+0.3**
	comp=Z,14nm,0.8s								
SONA0				*e*PcP			**PcP**	**23 35 28.2**	**+0.3**
SONM	**Songino Array**	**26.08**	**295**	P			**P**	**23 32 02.3**	**+0.3**
	comp=Z,11nm,0.7s,baz=81,slow=9.8,SNR=18								
SONM				PcP			**PcP**	**23 35 28.2**	**+0.3**
	comp=Z,1.6nm,0.6s,baz=134,slow=4.2,SNR=3.1								
QZH	**Quanzhou**	**26.15**	**237**	⇑P			**P**	**23 31 59.5**	**-3.1**
QZH				S			S	23 36 17.5	-12
QZH					pmax	pmax			
	comp=Z,90nm,0.9s								
TPUB	**Ta-pu**	**26.16**	**231**	*e*P			**P**	**23 32 03.6**	**+0.9**
	comp=Z,16nm,1.0s								
XAN	**Xi'an**	**27.55**	**264**	P			**P**	**23 32 15.5**	**+0.4**
XAN					pmax	pmax			
	comp=Z,22nm,0.7s								
XAN					pmax	pmax			
	comp=Z,21nm,5.1s								
TLY	**Talaya**	**28.00**	**304**	P			**P**	**23 32 19.3**	**+0.3**
	comp=Z,11nm,0.8s,baz=125,slow=3.6,SNR=18								
TLY	**Talaya**	**28.00**	**304**	*e*P			**P**	**23 32 19.1**	**+0.1**
TLY				*e*S			**S**	**23 36 57.8**	**-0.5**
TLY					pmax	pmax			
	comp=Z,5.0nm,0.5s								
TLY					MLR	MLR			
	comp=Z,133nm,20.0s								
TLY	**Talaya**	**28.00**	**304**	*e*P			**P**	**23 32 19.3**	**+0.3**
	comp=Z,1.7nm,0.9s								
ZAK	**Zakamensk**	**28.15**	**301**	*e*P			P	23 32 15.7	-4.8
ZAK					pmax	pmax			
	comp=Z,8.0nm,1.4s								
BILL	**Bilibino**	**28.97**	**18**	⇑*e*P			**P**	**23 32 27.1**	**-0.3**
BILL				*i*				23 32 47.4	
BILL				*e*S			**S**	**23 37 13.8**	**+0.6**
BILL					pmax	pmax			
	comp=Z,2.0nm,0.8s								
BILL					MLR	MLR			
	comp=Z,116nm,20.0s								
ENH	**Enshi**	**29.01**	**257**	*e*P			**P**	**23 32 26.9**	**-1.3**
	comp=Z,26nm,0.6s								
H11N2	**WAKE ISLAND Hy**	**30.32**	**130**	T			T	00 05 24.8	
	baz=322,slow=76,SNR=3.8								
H11N1	**WAKE ISLAND Hy**	**30.33**	**130**	T			T	00 05 26.0	
	baz=322,slow=76,SNR=4.6								
H11N3	**WAKE ISLAND Hy**	**30.34**	**130**	T			T	00 05 27.0	
	baz=322,slow=76,SNR=4.4								
TIXI	**Tiksi**	**30.44**	**351**	P			**P**	**23 32 39.5**	**-0.8**
	comp=Z,1.3nm,0.4s,baz=132,slow=8.3,SNR=3.1								
TIXI					PcP		**PcP**	**23 35 38.2**	**+0.1**
	comp=Z,1.0nm,0.5s,baz=87,slow=3.8,SNR=3.8								
TIXI	**Tiksi**	**30.44**	**351**	⇓*e*P			**P**	**23 32 42.1**	**+1.8**
TIXI					pmax	pmax			
	comp=Z,6.0nm,1.6s								
LZH	**Lanzhou**	**30.46**	**272**	*e*P			**P**	**23 32 42.0**	**+0.9**
LZH					pP	pP		23 32 56.3	-1.0
LZH					sP	sP		23 33 04.3	-0.8
LZH					pmax	pmax			
	comp=Z,20nm,1.0s								
LZH					pmax	pmax			
	comp=Z,120nm,4.0s								
LZH					LR	LR			
	comp=Z,220nm,16.7s								
LZH					LR	LR			
	comp=Z,420nm,18.2s								
LZH					LR	LR			
	comp=Z,320nm,17.7s								
H11S1	**WAKE ISLAND Hy**	**31.18**	**131**	T			T	00 05 22.1	
	baz=325,slow=76,SNR=625								
H11S3	**WAKE ISLAND Hy**	**31.19**	**132**	T			T	00 05 23.8	
	baz=325,slow=76,SNR=351								
H11S2	**WAKE ISLAND Hy**	**31.20**	**131**	T			T	00 05 16.6	
	baz=325,slow=76,SNR=355								
GTA	**Gaotai**	**32.26**	**280**	*e*P			**P**	**23 32 53.5**	**-3.4**
GTA					pP	pP		23 33 07.3	-5.8
GTA					sP	sP		23 33 14.5	-6.4
GTA					S	**S**		**23 37 59.8**	**-5.7**
GTA					sS	sS		23 38 27.0	-6.2
GTA					pmax	pmax			
	comp=Z,6.0nm,0.7s								
GTA					pmax	pmax			
	comp=Z,76nm,6.4s								
GTA					LR	LR			
	comp=Z,140nm,15.2s								
GTA					LR	LR			
	comp=Z,110nm,15.2s								
GTA					LR	LR			
	comp=Z,180nm,10.9s								
CD2	**Chengdu**	**32.87**	**263**	P			**P**	**23 33 01.0**	**-1.2**
CD2					pmax	pmax			
	comp=Z,1.0nm,0.5s								
GYA	**Guiyang**	**33.23**	**254**	P			**P**	**23 33 06.8**	**+1.4**
GYA					pP	pP		23 33 22.8	+1.1
GYA					sP	sP		23 33 30.0	+0.5
GYA					PP	**PnPn**		**23 34 19.3**	**+1.7**
GYA					PcP	**PcP**		**23 35 49.0**	**+2.4**
GYA					S	**S**		**23 38 21.5**	**+0.8**
GYA					sS	sS		23 38 48.5	0.0
GYA					ScP	**ScP**		**23 39 27.0**	**+2.1**
GYA					SS	**SnSn**		**23 40 24.5**	**-1.9**
GYA					ScS	**ScS**		**23 43 25.5**	**-0.4**
GYA					pmax	pmax			
	comp=Z,20nm,0.6s								
GYA					pmax	pmax			
	comp=Z,130nm,4.9s								
GYA					LR	LR			
	comp=Z,560nm,17.2s								
GYA					LR	LR			
	comp=Z,540nm,18.0s								
GYA					LR	LR			
	comp=Z,510nm,17.5s								
GAMB	**Gambell**	**34.02**	**35**	*e*P			**P**	**23 33 11.0**	**-0.7**
	comp=Z,89nm,1.9s								
KMI	**Kunming**	**36.85**	**256**	P			**P**	**23 33 37.0**	**+0.3**
KMI					pP	pP		23 33 52.8	-0.3
KMI					sP	sP		23 33 58.8	-2.1
KMI					S	**S**		**23 39 19.5**	**+2.9**
KMI					SS	**SnSn**		**23 41 44.0**	**-10**
KMI					pmax	pmax			
	comp=Z,16nm,0.9s								
KMI					pmax	pmax			
	comp=Z,97nm,5.2s								
KMI					LR	LR			

TTA Tatalina 40.85 38 *e*P P 23 34 09.3 -0.3
TTA pmax pmax
comp=Z,7.0nm,1.3s
TTA Tatalina 40.85 38 *e*P P 23 34 09.2 -0.3
comp=Z,7.3nm,1.3s
SVW2 Sparrevohn 41.06 41 *e*P P 23 34 11.4 +0.2
comp=Z,22nm,1.8s
SKNT Sakolnakorn 41.35 245 P P 23 34 14.7 +0.7
comp=Z,37nm,1.0s
CRAI Chiangrai 41.62 252 P P 23 34 18.3 +2.0
comp=Z,210nm,0.8s
MK31 Makanchi Array 42.39 298 *e*P P 23 34 22.7 +0.4
MK31 Makanchi Array 42.39 298 *e*P P 23 34 22.6 +0.4
MK32 Makanchi Array 42.39 298 *e*P P 23 34 22.2 0.0
MK32 *e*PcP PcP 23 36 14.3 0.0
MKAR Makanchi Array 42.39 298 P P 23 34 22.2 0.0
comp=Z,27nm,0.9s,baz=79,slow=9.1,SNR=49
MKAR PcP PcP 23 36 14.3 -0.1
comp=Z,2.2nm,0.5s,baz=63,slow=2.1,SNR=4.5
MKAR Makanchi Array 42.39 298 *e*P P 23 34 22.6 +0.4
MK01 Makanchi Array 42.39 298 *e*P P 23 34 22.1 -0.2
MYLDM Lahad Datu 42.52 217 *e*P P 23 34 21.2 -2.3
comp=Z,17nm,1.2s
OHAK Old Harbor 42.55 46 *e*P P 23 34 22.8 -0.6
comp=Z,141nm,1.8s
KHON Khomkaen 42.58 245 P P 23 34 24.9 +0.8
comp=Z,31nm,0.8s,comp=Z,1µm
MAKZ Makanchi 42.59 298 *i*P P 23 34 23.7 -0.2
MAKZ pmax pmax
comp=Z,40nm,0.9s
MAKZ Makanchi 42.59 298 *e*P P 23 34 24.0 +0.1
comp=Z,44nm,1.0s
PPLA Purkeypile 42.60 38 *e*P P 23 34 25.8 +1.8
comp=Z,11nm,1.1s
CAST Castle Rocks 42.63 37 *e*P P 23 34 25.4 +1.4
comp=Z,7.7nm,0.8s
CMAI Chiengmai2 42.76 253 P P 23 34 27.3 +1.6
comp=Z,126nm,1.1s,comp=Z,10µm
SPU Mount Spurr 42.77 40 *e*P P 23 34 25.7 +0.6
KDAK Kodiak Island 42.85 45 *i*P P 23 34 26.3 +0.5
KDAK Kodiak Island 42.85 45 *e*P P 23 34 24.7 -1.1
comp=Z,75nm,1.7s
LSA Lhasa 42.86 270 P P 23 34 28.0 +1.2
LSA pmax pmax
comp=Z,16nm,1.1s
LSA Lhasa 42.86 270 *e*P P 23 34 28.3 +1.5
LSA pmax pmax
comp=Z,35nm,1.3s
LSA Lhasa 42.86 270 *e*P P 23 34 28.3 +1.5
comp=Z,35nm,1.3s
BPAW Bear Paw Mtn. 43.09 36 *e*P P 23 34 29.1 +1.3
comp=Z,5.3nm,0.8s
KTH Kantishna Hill 43.14 37 *e*P P 23 34 29.5 +1.3
comp=Z,14nm,0.9s
UTTA Uttaradit 43.16 249 P P 23 34 29.5 +0.8
comp=Z,12nm,0.8s,comp=Z,91nm
MLY Manley 43.17 35 *e*P P 23 34 29.8 +1.4
comp=Z,12nm,1.5s
LAMP Lampang 43.28 251 P P 23 34 30.9 +1.2
comp=Z,11nm,0.8s,comp=Z,81nm
COLD Coldfoot 43.37 32 *e*P P 23 34 30.3 +0.4
comp=Z,4.9nm,1.0s
TRF Thorofare Moun 43.43 37 *e*P P 23 34 31.4 +0.7
comp=Z,12nm,1.1s
BRLK Bradley Lake 43.48 42 *e*P P 23 34 31.3 +0.4
comp=Z,126nm,2.0s
CMMT Chiang Mai 43.56 251 P P 23 34 32.6 +0.5
comp=Z,35nm,0.8s,comp=Z,308nm
CHTO Chiang Mai 43.57 251 P P 23 34 32.7 +0.6
comp=Z,153nm,0.8s,comp=Z,1µm
CHTO Chiang Mai 43.57 251 *e*P P 23 34 32.9 +0.8
CHTO pmax pmax
comp=Z,23nm,0.6s
CHTO Chiang Mai 43.57 251 *e*P P 23 34 32.9 +0.8
comp=Z,23nm,0.6s
PBKT Sadao Pong 43.68 247 P P 23 34 33.5 +0.6
comp=Z,17nm,0.9s
KURK Kurchatov 43.69 304 P P 23 34 33.2 +0.5
KURK pmax pmax
comp=Z,31nm,0.5s
KURK Kurchatov 43.69 304 *e*P P 23 34 32.8 +0.1
comp=Z,45nm,0.8s
BWN Browne 43.75 36 *e*P P 23 34 35.2 +2.2
comp=Z,26nm,1.0s
KURBB Kurchatov Arra 43.77 304 P P 23 34 33.1 -0.2
comp=Z,31nm,0.5s,baz=76,slow=8.9,SNR=73
CM31 Chiang Mai Arr 43.80 251 *e*P P 23 34 35.2 +1.2
CM31 *e*PP PcP 23 36 20.8 +1.2
CMAR Chiang Mai Arr 43.80 251 P P 23 34 35.2 +1.2
comp=Z,4.2nm,0.5s,baz=43,slow=7.2,SNR=24
CMAR PcP PcP 23 36 20.8 +1.2
comp=Z,2.3nm,0.6s,baz=20,slow=1.4,SNR=6.5
CMAR LR LR 23 54 15.5
comp=Z,114nm,18.5s,baz=52,slow=38
CM01 Chiang Mai Arr 43.82 251 *e*P P 23 34 32.2 -1.9
MCK McKinley 44.02 37 *e*P P 23 34 35.8 +0.6
MCK pmax pmax
comp=Z,6.0nm,0.9s
MCK McKinley 44.02 37 *e*P P 23 34 35.8 +0.6
comp=Z,6.4nm,0.9s
RND Reindeer 44.08 37 *e*P P 23 34 36.0 +0.3
RND pmax pmax
comp=Z,8.0nm,1.0s
RND Reindeer 44.08 37 *e*P P 23 34 36.0 +0.3
comp=Z,8.3nm,1.0s
MDM Murphy Dome 44.24 35 *e*P P 23 34 37.8 +0.9
comp=Z,6.2nm,0.8s
WRH Wood River Hil 44.33 35 *e*P P 23 34 37.9 +0.3
comp=Z,7.4nm,0.8s
CCB Clear Creek Bu 44.44 35 *e*P P 23 34 38.9 +0.4
comp=Z,3.0nm,0.8s
SML Sawmill 44.48 39 *e*P P 23 34 39.6 +0.7
SML pmax pmax
comp=Z,13nm,0.9s
SML Sawmill 44.48 39 *e*P P 23 34 39.6 +0.7
comp=Z,12nm,0.9s
MHMT Maesarieng 44.71 252 P P 23 34 42.3 +1.1
comp=Z,27nm,0.7s,comp=Z,342nm
SRAK Srakaew 44.76 244 P P 23 34 39.6 -2.0
comp=Z,81nm,0.9s,comp=Z,718nm
DHY Denali Highway 44.78 37 *e*P P 23 34 41.4 0.0
comp=Z,7.3nm,0.8s
IL1 Eielson Array 44.82 35 *e*P P 23 34 41.2 -0.4
ILAR Eielson Array 44.82 35 P P 23 34 41.2 -0.3
comp=Z,5.9nm,0.9s,baz=270,slow=7.0,SNR=20
ILAR PcP PcP 23 36 21.4 -0.8
comp=Z,1.3nm,0.6s,baz=280,slow=3.2,SNR=4.7
ILB Eielson Array 44.82 35 *e*P P 23 34 41.2 -0.3
ILB *e*PcP PcP 23 36 21.4 -0.8
HDA Harding Lake 44.83 35 *e*P P 23 34 41.4 -0.2
comp=Z,6.1nm,0.7s
SCM Sheep Creek Mo 44.95 39 *e*P P 23 34 43.1 +0.4
SCM pmax pmax
comp=Z,67nm,2.0s
SCM Sheep Creek Mo 44.95 39 *e*P P 23 34 43.1 +0.4
comp=Z,67nm,2.0s
NAYO Nakonayok 45.03 245 P P 23 34 45.1 +1.4
comp=Z,211nm,0.7s
FYU Fort Yukon 45.35 32 *e*P P 23 34 43.9 -1.8
comp=Z,12nm,1.1s
MRSI Marisa 45.37 210 P P 23 34 47.4 +1.0
comp=Z,36nm,1.3s
CHBT CHBT 45.49 242 P P 23 34 48.5 +1.1
comp=Z,44nm,1.0s
PAX Paxson 45.65 37 *e*P P 23 34 47.5 -0.8
PAX pmax pmax
comp=Z,8.0nm,0.8s
PAX Paxson 45.65 37 *e*P P 23 34 47.5 -0.8
comp=Z,7.7nm,0.8s
KLU Klutina 45.66 40 *e*P P 23 34 49.4 +1.0
comp=Z,11nm,0.9s
KLU *es*P sP 23 35 12.3 -0.6
DOT Dot Lake 46.18 36 *e*P P 23 34 52.3 0.0
comp=Z,9.4nm,0.8s
PATY Pattaya 46.34 244 P P 23 34 55.4 +1.4
comp=Z,7.6nm,0.9s
BMRM Bremner River 46.38 40 *e*P P 23 34 54.0 0.0
comp=Z,19nm,1.2s
MENT Mentasta 46.45 37 *e*P P 23 34 54.5 +0.1
comp=Z,8.9nm,1.1s
EGAK Eagle 47.26 35 *e*P P 23 35 01.0 +0.3
comp=Z,7.7nm,0.8s
BALM Baldy 47.45 40 *e*P P 23 35 02.0 -0.3
BALM pmax pmax
comp=Z,41nm,2.0s
BALM Baldy 47.45 40 *e*P P 23 35 02.0 -0.3
comp=Z,41nm,2.0s

CHKZ Chkalovo 47.65 310 *i*P P 23 35 03.9 +0.1
CHKZ pmax pmax
comp=Z,40nm,1.0s
VOSK Vostochnaya 47.72 309 *ce*P P 23 35 04.4 0.0
VOSK pmax pmax
comp=Z,20nm,0.7s
VOSK Vostochnaya 47.72 309 *e*P P 23 35 04.9 +0.5
comp=Z,26nm,1.0s
GUN Gumba 47.73 272 *e*P P 23 35 05.6 +0.4
comp=Z,224nm,0.5s
BVAR Borovoye Array 47.97 309 P P 23 35 06.7 +0.3
comp=Z,18nm,0.5s,baz=73,slow=8.1,SNR=46
BVAR PcP PcP 23 36 33.4 -0.2
comp=Z,5.7nm,0.7s,baz=56,slow=3.7,SNR=5.0
BRVK Borovoye 48.02 309 ⇓*i*P P 23 35 06.7 0.0
BRVK pmax pmax
comp=Z,25nm,1.0s
BRVK Borovoye 48.02 309 *e*P P 23 35 07.2 +0.5
comp=Z,18nm,0.7s
TKM2 Tokmak 2 48.18 295 *i*P P 23 35 09.1 +0.8
TKM2 pmax pmax
comp=Z,64nm,0.7s
TKM2 Tokmak 2 48.18 295 *e*P P 23 35 09.2 +0.8
comp=Z,67nm,0.8s
KKN Kakani 48.24 272 *e*P P 23 35 09.4 +0.4
comp=Z,95nm,0.8s
PKIN Phulchoki 48.27 272 *e*P P 23 35 09.4 +0.1
comp=Z,25nm,0.5s
DMN Daman 48.46 272 *e*P P 23 35 11.2 +0.4
comp=Z,77nm,0.8s
GKN Gorkha 48.60 273 *e*P P 23 35 11.9 +0.2
comp=Z,25nm,0.4s
ZRNK Zerenda 48.79 310 *i*P P 23 35 12.9 +0.2
ZRNK pmax pmax
comp=Z,38nm,0.7s
FRU Bishkek 48.87 295 ⇑*i*P P 23 35 13.0 -0.5
AAK Ala-Archa 49.04 295 *i*P P 23 35 14.7 -0.2
AAK pmax pmax
comp=Z,26nm,0.6s
AAK Ala-Archa 49.04 295 *e*P P 23 35 14.9 0.0
comp=Z,13nm,0.8s
KSH Kashi 49.33 291 P P 23 35 21.5 +4.4
KSH *ep*P pP 23 35 37.0 +2.8
KSH S **S** 23 42 23.5 +4.9
KSH ScS **ScS** 23 45 03.5 +0.8
KSH pmax pmax
comp=Z,19nm,0.9s
KSH pmax pmax
comp=Z,110nm,4.6s
KSH LR LR
comp=Z,200nm,10.1s
KSH LR LR
comp=Z,88nm,5.3s
KSH LR LR
comp=Z,200nm,7.4s
KOLN Koldanda 49.50 273 *e*P P 23 35 19.1 +0.5
comp=Z,31nm,0.4s
EKS2 Erkin-Say 49.51 295 *e*P P 23 35 18.4 0.0
EKS2 pmax pmax
comp=Z,24nm,0.6s
EKS2 Erkin-Say 49.51 295 *e*P P 23 35 18.4 0.0
comp=Z,24nm,0.6s
INK Inuvik 49.54 29 P P 23 35 18.2 +0.1
comp=Z,2.7nm,0.4s,baz=304,slow=12,SNR=19
INK Inuvik 49.54 29 *e*P P 23 35 18.2 +0.1
INK pmax pmax
comp=Z,4.0nm,0.7s
INK Inuvik 49.54 29 *e*P P 23 35 18.2 +0.1
comp=Z,4.4nm,0.7s
KSM Kuching 49.71 224 *e*P P 23 35 21.6 +1.5
comp=Z,16nm,0.7s
PYUN Piuthan 49.77 274 *e*P P 23 35 21.3 +0.6
comp=Z,72nm,0.7s
SURT Suratani 50.62 242 P P 23 35 28.7 +1.8
comp=Z,10nm,0.9s
TRTT Trang 50.87 240 P P 23 35 30.6 +1.8
comp=Z,24nm,1.1s
LGTI Lohaghat 51.09 277 *e*P P 23 35 42.2 +12
KKAR Karatay Array 51.51 297 *e*P P 23 35 33.1 -0.3
KKAR Karatay Array 51.51 297 *e*P P 23 35 33.1 -0.3
PKDT Phuket 51.71 242 P P 23 35 36.9 +1.8
comp=Z,67nm,0.8s,comp=Z,13µm
BBKI Banjar Baru 51.83 216 P P 23 35 30.3 -5.7
KULM Kulim 52.20 237 *e*P P 23 35 39.8 +1.0
comp=Z,16nm,0.8s
SOKR Solikamsk 52.95 321 *d i*P P 23 35 42.8 -0.9
SOKR pmax pmax
comp=Z,24nm,0.9s
ARU Arti 53.27 316 *d i*P P 23 35 45.7 -0.4
ARU *PP pP 23 36 03.8 +0.4
ARU 23 36 50.9
ARU 23 37 44.7
ARU S **S** 23 43 13.9 +1.7
ARU SS **SS** 23 46 52.9 +0.9
ARU pmax pmax
comp=Z,36nm,1.0s
ARU Arti 53.27 316 *e*P P 23 35 45.5 -0.7
comp=Z,30nm,0.9s
NDI New Delhi 53.73 278 *e*P P 23 35 46.0 -4.0
DLBC Dease Lake 54.17 40 P P 23 35 54.2 +1.4
comp=Z,2.7nm,0.9s,baz=283,slow=11,SNR=5.7
DLBC Dease Lake 54.17 40 *e*P P 23 35 54.2 +1.4
comp=Z,11nm,1.5s
ABKAR Akbulak array 55.47 308 *e*P P 23 36 02.5 +0.2
KBL Kabul 56.56 288 *e*P P 23 36 09.6 -0.9
KBL pmax pmax
comp=Z,20nm,0.8s
KBL Kabul 56.56 288 *e*P P 23 36 09.6 -0.9
comp=Z,20nm,0.8s
RES Resolute Bay 57.52 15 P P 23 36 15.9 -0.5
comp=Z,12nm,0.6s,baz=304,slow=6.8,SNR=43
MDSI Maura Dua 57.99 227 P P 23 36 21.2 +0.8
TMCR Tamitsa 58.80 330 *e*P P 23 36 24.8 -0.7
TMCR pmax pmax
comp=Z,29nm,1.2s
YKW3 Yellowknife Ar 59.01 32 *e*P P 23 36 27.5 +0.6
comp=Z,3.7nm,0.7s
YKA Yellowknife Ar 59.05 32 P P 23 36 27.4 +0.2
comp=Z,2.3nm,0.8s,baz=306,slow=6.4,SNR=21
YKB5 Yellowknife Ar 59.05 32 *e*P P 23 36 27.4 +0.2
KEV Kevo 59.09 339 *e*P P 23 36 27.0 -0.4
KEV pmax pmax
comp=Z,58nm,1.9s
KEV Kevo 59.09 339 *e*P P 23 36 27.0 -0.4
comp=Z,58nm,1.9s
HYB Hyderabad 59.33 266 *i*P P 23 36 30.0 +0.1
HYB *e* 23 36 50.0
HAMF Hammerfest 59.39 340 *e*P P 23 36 28.7 -0.8
ARA0 ARCESS Array S 59.63 339 *e*P P 23 36 30.9 -0.3
ARCES ARCESS Array B 59.63 339 P P 23 36 30.9 -0.3
comp=Z,1.7nm,0.5s,baz=45,slow=8.1,SNR=21
KTK1 Kautokeino 60.59 339 *e*P P 23 36 37.5 -0.2
DAG Danmarks Havn 60.85 355 *i*P P 23 36 38.8 -0.6
comp=Z,3.7nm,0.6s
DAG Danmarks Havn 60.85 355 *i*P P 23 36 38.8 -0.6
DAG pmax pmax
comp=Z,3.0nm,0.6s
TRO Tromso 61.27 341 *e*P P 23 36 42.0 -0.3
WB2 Warramunga Arr 62.15 189 *e*P P 23 36 48.7 -0.1
comp=Z,11nm,0.9s
WR1 Warramunga Arr 62.15 189 *e*P P 23 36 48.4 -0.4
comp=Z,14nm,1.1s
WRA Warramunga Arr 62.15 189 P P 23 36 48.4 -0.4
comp=Z,7.7nm,0.8s,baz=4.7,slow=7.0,SNR=23
GEYT Aldeck 62.26 297 P P 23 36 49.6 +0.1
comp=Z,16nm,1.0s,baz=29,slow=3.4,SNR=24
VRH Novokhopyorsk 64.50 317 *e*P P 23 37 03.0 -1.0
VRH pmax pmax
comp=Z,10.0nm,0.7s
LTY Liberty 64.60 48 *e*P P 23 37 06.8 +1.9
comp=Z,9.1nm,0.5s
OBN Obninsk 64.64 322 ⇑*e*P P 23 37 04.3 -0.6
OBN *i* 23 37 24.6
OBN *i* 23 37 38.1
OBN *e* 23 39 28.2
OBN pmax pmax
comp=Z,17nm,0.7s
OBN MLR MLR
comp=Z,133nm,18.0s
OBN Obninsk 64.64 322 *e*P P 23 37 04.6 -0.3
comp=Z,21nm,0.9s
FIA1 FINESS Array S 64.81 332 *e*P P 23 37 05.5 -0.4
FIA0 FINESS Array S 64.81 332 *e*P P 23 37 05.4 -0.4
FIA0 FINESS Array S 64.81 332 *e*P P 23 37 05.4 -0.4
FINES FINESS Array B 64.81 332 P P 23 37 05.4 -0.4
comp=Z,24nm,0.6s,baz=50,slow=7.6,SNR=73

MOR8 Moi Rana 64.98 339 *e*P P 23 37 05.3 -1.6
MOR8 IAmb IAmb 23 37 05.8
comp=Z,28nm,0.6s
LPSR Galich'ya Gora 65.06 319 *e*P P 23 37 07.2 -0.4
LPSR pmax pmax
comp=Z,20nm,0.8s
C09A Chrisman Ranch 65.61 47 *e*P P 23 37 12.2 +0.9
comp=Z,6.3nm,0.8s
SUMG Summit 65.67 0 *i*P P 23 37 12.3 +0.5
comp=Z,12nm,0.7s
SUMG Summit 65.67 0 *e*P P 23 37 12.3 +0.5
SUMG pmax pmax
comp=Z,15nm,0.9s
SUMG Summit 65.67 0 *e*P P 23 37 12.3 +0.5
comp=Z,15nm,0.9s
VSR Storozhevoye 65.78 318 *e*P P 23 37 11.7 -0.6
VSR pmax pmax
comp=Z,10.0nm,0.6s
AS01 Alice Springs 65.87 189 *e*P P 23 37 13.2 0.0
AS31 Alice Springs 65.88 189 *e*P P 23 37 13.5 +0.3
comp=Z,3.6nm,1.5s
ASAR Alice Springs 65.88 189 P P 23 37 13.5 +0.3
comp=Z,2.6nm,0.8s,baz=9.6,slow=6.9,SNR=14
VSU Vasula 66.60 329 *c i*P P 23 37 17.3 -0.1
VSU pmax pmax
comp=Z,76nm,1.0s
WALA Waterton Lakes 67.16 44 *e*P P 23 37 22.6 +1.3
comp=Z,6.1nm,0.9s
GOF Gofitskoye 67.45 311 ⇑*i*P P 23 37 23.8 +0.7
GOF pmax pmax
comp=Z,52nm,0.8s
JTMT Jette 67.78 45 *e*P P 23 37 27.1 +1.8
SWMT Swartz Lake 68.08 45 *e*P P 23 37 28.7 +1.5
SWMT *ep*P pP 23 37 45.9 +0.9
GUDG Gudauri 68.20 308 P P 23 37 29.6 +1.5
DGRG David-gareji 68.29 307 P P 23 37 28.6 +0.2
DGRG David-gareji 68.29 307 P P 23 37 28.6 +0.2
KIV Kislovodsk 68.33 310 *c i*P P 23 37 29.6 +0.9
KIV pmax pmax
comp=Z,73nm,1.2s
KIV MLR MLR
comp=Z,74nm,16.0s
KIV Kislovodsk 68.33 310 *e*P P 23 37 29.7 +0.9
comp=Z,40nm,0.8s
ZEI Tsey 68.34 308 *e*P P 23 37 27.9 -1.1
ZEI pmax pmax
comp=Z,27nm,0.6s
KBZ Khabaz 68.35 310 P P 23 37 29.5 +0.8
comp=Z,16nm,0.9s,baz=39,slow=6.3,SNR=23
TBLU Trondheim 68.39 339 *e*P P 23 37 27.7 -0.9
TBLG Delisi 68.49 307 P P 23 37 31.9 +2.1
TBLG Delisi 68.49 307 P P 23 37 31.8 +2.1
ONI Oni 68.72 309 P P 23 37 32.0 +0.8
ONI Oni 68.72 309 P P 23 37 32.0 +0.8
NEY Neytrino 68.74 309 ⇓*i*P P 23 37 32.5 +1.1
NEY pmax pmax
comp=Z,2.0nm,0.9s
FFC Flin Flon 69.03 34 *e*P P 23 37 33.3 +0.5
FFC pmax pmax
comp=Z,11nm,1.0s
FFC Flin Flon 69.03 34 *e*P P 23 37 33.3 +0.5
comp=Z,11nm,1.0s
NACGM Naroch 69.04 326 *e* P 23 37 32.0 -0.8
FCC Fort Churchill 69.13 28 *e*P P 23 37 33.6 +0.3
FCC pmax pmax
comp=Z,32nm,1.8s
FCC Fort Churchill 69.13 28 *e*P P 23 37 33.6 +0.3
comp=Z,32nm,1.8s
AKH Akhalkalaki 69.43 307 ⇓*i*P P 23 37 37.5 +1.8
CHVG Ch'k'valeri 69.44 309 ⇓*i*P P 23 37 37.2 +1.6
GNI Garni 69.46 306 *e*P P 23 37 37.8 +1.9
GNI pmax pmax
comp=Z,40nm,1.4s
GNI Garni 69.46 306 *e*P P 23 37 37.8 +1.9
comp=Z,40nm,1.4s
NC405 NORSAR Array S 69.70 337 *e*P P 23 37 36.8 -0.1
NC303 NORSAR Array S 69.72 337 *e*P P 23 37 37.0 +0.1
EPOS Posof 69.82 308 *i*P P 23 37 38.3 +0.2
NC204 NORSAR Array S 69.85 337 *e*P P 23 37 37.8 0.0
NB201 NORSAR Array S 69.88 337 *e*P P 23 37 38.1 +0.1
NB2 NORSAR Subarra 69.91 337 P P 23 37 37.7 -0.4
comp=Z,18nm,0.7s,baz=37,slow=6.5
NB2 NORSAR Subarra 69.91 337 P P 23 37 37.7 -0.4
baz=37,slow=6.5
NB200 NORSAR Array S 69.91 337 *e*P P 23 37 37.8 -0.4
NOA NORSAR Array B 69.91 337 P P 23 37 37.8 -0.4
comp=Z,16nm,0.7s,baz=37,slow=6.2,SNR=49
EGMT Eagleton 69.95 43 *e*P P 23 37 39.7 +1.0
comp=Z,14nm,1.0s
NBO02 NORSAR Array S 70.00 337 *e*P P 23 37 38.4 -0.3
NBO00 NORSAR Array S 70.04 337 *e*P P 23 37 39.0 +0.1
NAO01 NORSAR Array S 70.16 337 *e*P P 23 37 39.8 +0.1
SOC Sochi 70.24 311 *e*P P 23 37 47.8 +7.4
SOC pmax pmax
comp=Z,11nm,0.6s
CMB Columbia Colle 70.28 56 *e*P P 23 37 42.6 +1.7
CMB pmax pmax
comp=Z,6.0nm,0.8s
CMB Columbia Colle 70.28 56 *e*P P 23 37 42.6 +1.7
comp=Z,6.0nm,0.8s
BANOM Banah 70.50 288 P P 23 37 42.5 +0.2
DAGI Agillar 70.56 308 *i*P P 23 37 43.6 +0.9
DBAD Bademkaya 70.73 308 *i*P P 23 37 44.7 +1.1
DDEM Demirkent 70.78 308 *i*P P 23 37 45.1 +1.2
AKASG Malin Array Be 70.89 322 P P 23 37 43.9 -0.3
comp=Z,15nm,0.6s,baz=44,slow=6.1,SNR=38
AKBB Malin Array Si 70.89 322 *e*P P 23 37 43.9 -0.3
AKBB pmax pmax
comp=Z,18nm,0.8s
AKBB Malin Array Si 70.89 322 *e*P P 23 37 43.9 -0.3
comp=Z,18nm,0.8s
KIEV Kiev 70.90 322 *i*P P 23 37 43.5 -0.8
KIEV pmax pmax
comp=Z,17nm,0.7s
KIEV Kiev 70.90 322 *e*P P 23 37 44.0 -0.3
comp=Z,18nm,0.8s
AK11 Malin Array Si 70.93 322 *e*P P 23 37 44.3 -0.2
SUW Suwalki 71.15 327 *e*P P 23 37 45.6 -0.2
SUW Suwalki 71.15 327 *e*P P 23 37 45.7 -0.1
UOSS Minazif 71.17 287 *e*P P 23 37 46.7 +0.3
comp=Z,1.1nm,0.6s
HATD Hatta, Dubai 71.30 287 *i*P P 23 37 47.6 +0.4
SNR=8.9
NV01 Mina Array Sit 71.32 55 *e*P P 23 37 48.7 +1.4
NVAR Mina Array Bea 71.32 55 P P 23 37 48.7 +1.4
comp=Z,3.3nm,0.7s,baz=300,slow=5.9,SNR=6.9
ASHO Ashiyiah 71.44 287 *i*P P 23 37 48.2 +0.2
SNR=5.6
YMR Madison River 71.52 46 *e*P P 23 37 50.4 +1.9
comp=Z,6.6nm,0.4s
H17A Grant Village 71.91 46 *e*P P 23 37 54.1 +3.2
comp=Z,5.8nm,0.8s
IMW Indian Meadow 72.05 47 *e*P P 23 37 54.0 +2.3
comp=Z,3.9nm,0.7s
FXWY Fox Creek 72.17 47 *e*P P 23 37 54.6 +2.2
comp=Z,5.0nm,1.1s
MOOW Moose Ponds 72.25 47 *e*P P 23 37 55.0 +2.1
comp=Z,6.5nm,1.3s
MOOW *ep*P pP 23 38 12.2 +1.4
SIM Simferopol' 72.39 315 *e*P P 23 37 53.7 +0.3
SIM pmax pmax
comp=Z,13nm,0.9s
REDW Red Top Meadow 72.45 47 *e*P P 23 37 56.2 +2.1
comp=Z,5.0nm,1.0s
KELT Kelkit 72.71 309 *i*P P 23 37 56.4 +0.7
GRSN GIRESUNGRSN 72.78 310 *i*P P 23 37 53.9 -1.9
SORM Soroca 73.09 320 ⇓*i*P P 23 37 57.6 +0.2
DAC Darwin (Calif) 73.12 56 *e*P P 23 37 59.6 +1.5
DAC pmax pmax
comp=Z,4.0nm,0.9s
DAC Darwin (Calif) 73.12 56 *e*P P 23 37 59.6 +1.5
comp=Z,4.1nm,0.9s
HWUT Hardware Ranch 73.21 49 *e*P P 23 37 59.6 +1.0
comp=Z,5.4nm,1.0s
NAIU Northern Antel 73.23 50 *e*P P 23 38 02.6 +4.0
BSD Bornholm Skovb 73.45 332 *i*P P 23 37 59.3 -0.1
comp=Z,14nm,1.0s
BSD Bornholm Skovb 73.45 332 *i*P P 23 37 59.3 -0.1
BSD pmax pmax
comp=Z,14nm,1.0s
BW06 Boulder Array 73.55 47 *e*P P 23 38 01.5 +0.9
PD31 Pinedale Array 73.55 47 *e*P P 23 38 01.4 +0.8
PDAR Pinedale Array 73.55 47 P P 23 38 01.4 +0.8
comp=Z,3.3nm,0.7s,baz=267,slow=2.7,SNR=22
PDAR LR LR 00 09 41.8

comp=Z,33nm,21.7s,baz=311,slow=35
STKA Stephens Creek 73.57 181 P P 23 38 00.9 +0.6
comp=Z,1.4nm,0.6s,baz=306,slow=5.3,SNR=5.2
STKA Stephens Creek 73.57 181 *e*P **P 23 38 00.9 +0.6**
STKA pmax pmax
comp=Z,4.0nm,1.6s
STKA Stephens Creek 73.57 181 *e*P **P 23 38 00.9 +0.6**
comp=Z,3.9nm,1.6s
TCUT Toone Canyon 73.63 49 *e*P **P 23 38 02.9 +1.8**
comp=Z,9.4nm,0.7s
BEL Belsk 73.74 327 *e*P **P 23 38 00.8 -0.4**
BEL Belsk 73.74 327 *e*P **P 23 38 00.8 -0.4**
ERBA Erbaa 73.80 310 *i* P **P 23 38 01.9 +0.1**
LVV L'vov 73.86 324 ⇓ *i*P **P 23 38 02.3 +0.3**
KBSD Kabsdagh 74.00 305 *e*P **P 23 38 04.4 +1.4**
NLU North Lily Min 74.02 50 *e*P **P 23 38 05.1 +1.8**
comp=Z,6.3nm,0.9s
IAS Iasi 74.14 320 ⇑ *i*P **P 23 38 03.8 +0.2**
MPU Maple Canyon 74.23 50 *e*P **P 23 38 06.4 +1.8**
comp=Z,7.0nm,0.7s
CUKAN kangal_SIVAS 74.30 309 *i* P **P 23 38 05.3 +0.4**
LEOM Leova 74.32 319 ⇑ *i*P **P 23 38 05.4 +0.8**
BOYT Boyabat 74.34 312 *i* P **P 23 38 05.6 +0.7**
KWP Kalwaria Pacla 74.58 324 *e*P **P 23 38 07.0 +0.8**
KWP Kalwaria Pacla 74.58 324 ⇓ *i*P **P 23 38 07.3 +1.1**
KWP Kalwaria Pacla 74.58 324 *e*P **P 23 38 07.0 +0.8**
PRAR RASCA 74.65 321 ⇑ *i*P **P 23 38 07.2 +0.6**
AKCD Akcadag 74.71 308 *i* P **P 23 38 07.9 +0.6**
CUALT Altinyayla-SIV 74.74 309 *i* P **P 23 38 08.3 +0.8**
ULM Lac du Bonnet 74.84 35 P **P 23 38 07.1 -0.5**
comp=Z,5.3nm,0.8s,baz=336,slow=4.5,SNR=6.1
ULM Lac du Bonnet 74.84 35 *e*P **P 23 38 08.0 +0.4**
ULM pmax pmax
comp=Z,8.0nm,1.0s
ULM Lac du Bonnet 74.84 35 *e*P **P 23 38 08.0 +0.4**
comp=Z,8.3nm,1.0s
BUR08 Bucovina Ar. S 74.92 322 *e*P **P 23 38 08.7 +0.3**
BURAR Bucovina Array 74.94 322 ⇓ *i*P **P 23 38 09.2 +0.8**
CUSAR Sarkisla-SIVAS 74.94 310 *i* P **P 23 38 08.9 +0.3**
TLCR 74.95 318 ⇑ *i*P **P 23 38 08.7 +0.4**
TMUT Trail Mountain 74.96 50 *e*P **P 23 38 11.0 +2.0**
comp=Z,4.3nm,0.8s
TESR Tescani 75.06 320 ⇓ *i*P **P 23 38 09.7 +0.7**
COAL Corum-Alaca 75.09 311 *i* P **P 23 38 10.6 +1.2**
MTPU Mount Pierson 75.23 52 *e*P **P 23 38 13.3 +2.7**
comp=Z,6.5nm,0.5s
P18A Preston Nutter 75.28 50 *e*P **P 23 38 12.7 +1.9**
comp=Z,8.8nm,1.3s
KOLS Kolonicke sedl 75.29 324 *e*P **P 23 38 10.7 +0.4**
CFR Carcaliu 75.29 318 ⇑ *i*P **P 23 38 10.5 +0.2**
STHS Stebnicka Huta 75.37 325 *e*P **P 23 38 12.1 +1.3**
OJC Ojcow 75.38 326 *e*P **P 23 38 11.4 +0.7**
OJC Ojcow 75.38 326 *e*P **P 23 38 11.3 +0.6**
OJC pmax pmax
comp=Z,27nm,0.9s
OJC Ojcow 75.38 326 *e*P **P 23 38 11.3 +0.6**
comp=Z,27nm,0.9s
SRU San Rafael Swe 75.48 50 *e*P **P 23 38 13.4 +1.6**
SRU pmax pmax
comp=Z,10.0nm,0.8s
SRU San Rafael Swe 75.48 50 *e*P **P 23 38 13.4 +1.6**
comp=Z,9.5nm,0.8s
VRI Vrincioaia 75.49 319 ⇑ *i*P **P 23 38 12.1 +0.6**
RSSD Black Hills 75.52 43 *e*P **P 23 38 12.6 +0.6**
RSSD pmax pmax
comp=Z,6.0nm,0.8s
RSSD Black Hills 75.52 43 *e*P **P 23 38 12.6 +0.6**
comp=Z,5.5nm,0.8s
CRVS Cervenica-Dubn 75.67 324 *e*P **P 23 38 13.0 +0.6**
TIRR Tirgusor 75.67 318 ⇓ *i*P **P 23 38 13.2 +0.7**
TIRR Tirgusor 75.67 318 *e*P **P 23 38 12.9 +0.4**
TIRR pmax pmax
comp=Z,6.0nm,0.9s
TIRR Tirgusor 75.67 318 *e*P **P 23 38 12.9 +0.4**
comp=Z,6.2nm,0.9s
KSRV Kasrt alli 75.68 305 *e*P **P 23 38 13.2 +0.5**
ARCR ARCALIA 75.72 322 ⇓ *i*P **P 23 38 14.4 +1.6**
HARR Harsova 75.74 318 ⇓ *i*P **P 23 38 13.6 +0.7**
TRPA Tarpa 75.77 323 ⇑ *e*P **P 23 38 13.9 +0.9**
NIE Niedzica 75.78 325 *e*P **P 23 38 14.0 +1.0**
NIE Niedzica 75.78 325 *e*P **P 23 38 14.1 +1.0**
CDAG Cicekdag 75.86 311 *i* P **P 23 38 14.2 +0.4**
CVDA Cernavoda 75.94 318 ⇑ *i*P **P 23 38 14.8 +0.8**
HCB Kahramanmara 75.94 308 *i* P **P 23 38 14.8 +0.5**
PGOR Pogoanele 76.05 319 ⇑ *i*P **P 23 38 16.7 +2.0**
O20A White River Ci 76.06 48 *e*P **P 23 38 16.4 +1.2**
comp=Z,8.7nm,1.3s
MLR Muntele Rosu 76.14 320 ⇑ *i*P **P 23 38 15.9 +0.6**
MLR Muntele Rosu 76.14 320 *e*P **P 23 38 15.8 +0.5**
MLR pmax pmax
comp=Z,27nm,1.8s
MLR Muntele Rosu 76.14 320 *e*P **P 23 38 15.8 +0.5**
comp=Z,27nm,1.8s
AVNS Nevsehir-Avano 76.15 310 *i* P **P 23 38 16.1 +0.6**
BR101 Keskin Array S 76.20 311 *e*P **P 23 38 16.2 +0.4**
BR131 Keskin Array S 76.20 311 *e*P **P 23 38 16.3 +0.5**
BRTR Keskin Array B 76.20 311 P **P 23 38 16.2 +0.4**
comp=Z,6.2nm,0.7s,baz=76,slow=3.9,SNR=31
KSP Ksiaz 76.31 328 *e*P **P 23 38 16.6 +0.6**
KSP Ksiaz 76.31 328 *e*P **P 23 38 16.7 +0.7**
BCAM Yenicaga 76.32 313 *i* P **P 23 38 16.8 +0.3**
AGMN Agassiz Nation 76.32 36 *e*P **P 23 38 16.3 +0.1**
comp=Z,6.5nm,0.8s
LANS Liptovska Anna 76.33 326 *e*P **P 23 38 17.5 +1.3**
CJR Cluj-Napoca 76.35 322 ⇓ *i*P **P 23 38 17.8 +1.4**
OKC Ostrava-Krasne 76.35 327 *e*P **P 23 38 16.9 +0.6**
OKC *e*pP **pP 23 38 35.3 +0.8**
OKC Ostrava-Krasne 76.35 327 *e*P **P 23 38 16.9 +0.6**
OKC *e* 23 38 35.3
KECS Kecovo 76.41 325 *e*P **P 23 38 17.2 +0.6**
DRWC Darouich 76.57 307 *e*P **P 23 38 18.8 +0.9**
ANTO Ankara 76.58 312 *e*P **P 23 38 19.1 +1.2**
ANTO pmax pmax
comp=Z,27nm,0.8s
ANTO Ankara 76.58 312 *e*P **P 23 38 19.1 +1.2**
comp=Z,27nm,0.8s
SULR 76.58 319 ⇓ *i*P **P 23 38 18.7 +1.1**
BR231 Keskin MP Arra 76.60 312 *e*P **P 23 38 16.8 -1.3**
VOIR 76.61 320 ⇑ *i*P **P 23 38 19.4 +1.5**
MORC Moravsky Berou 76.64 327 ⇓ *i*P **P 23 38 19.2 +1.2**
MORC Moravsky Berou 76.64 327 *e*P **P 23 38 18.8 +0.8**
MORC pmax pmax
comp=Z,48nm,0.8s
MORC Moravsky Berou 76.64 327 *e*P **P 23 38 18.8 +0.8**
comp=Z,48nm,0.8s
UPC Upice 76.68 328 *e*P **P 23 38 18.9 +0.7**
UPC Upice 76.68 328 *e*P **P 23 38 18.9 +0.7**
DPC Dobruska-Polom 76.68 328 *e*P **P 23 38 19.2 +1.0**
DPC *ex* x 23 38 24.0
DPC *e*pP **pP 23 38 38.4 +2.0**
DPC Dobruska-Polom 76.68 328 *e*P **P 23 38 19.2 +1.0**
DPC *e* 23 38 24.0
DPC *e* 23 38 38.4
PV09 Paradox Valley 76.69 50 *e*P **P 23 38 20.6 +1.8**
KRLC Kraliky 76.72 328 *e*P **P 23 38 19.1 +0.7**
KRLC *e*pP **pP 23 38 38.2 +1.6**
KRLC Kraliky 76.72 328 *e*P **P 23 38 19.1 +0.7**
KRLC *e* 23 38 38.2
N23A Red Feather La 76.80 46 *e*P **P 23 38 21.1 +1.8**
comp=Z,11nm,1.3s
PV10 Paradox Valley 76.83 50 *e*P **P 23 38 21.5 +2.0**
ARR Arges 76.86 320 ⇓ *i*P **P 23 38 21.1 +1.8**
PV05 Paradox Valley 77.00 50 *e*P **P 23 38 22.3 +1.8**
BTCH Batrach 77.09 307 *e*P **P 23 38 20.5 -0.3**
PSZ Piszkesteto 77.09 324 ⇓ *i*P **P 23 38 21.9 +1.3**
PSZ Piszkesteto 77.09 324 ⇑ *e*P **P 23 38 21.4 +0.8**
PSZ Piszkesteto 77.09 324 *e*P **P 23 38 21.7 +1.1**
PSZ *e**PP **pP 23 38 40.2 +1.4**
PSZ pmax pmax
comp=Z,19nm,1.2s
PSZ Piszkesteto 77.09 324 *e*P **P 23 38 21.7 +1.1**
comp=Z,18nm,1.2s
PSZ *e*pP **pP 23 38 40.2 +1.4**
VYHS Vyhne 77.10 325 *e*P **P 23 38 21.3 +0.7**
VYHS *e* 23 38 39.6
BRG Berggiesshubel 77.19 329 *e*P **P 23 38 21.1 +0.1**
comp=Z,4.1nm,0.8s
BRG Berggiesshubel 77.19 329 *e*P **P 23 38 21.0 +0.1**
comp=Z,4.1nm,0.8s
CLL Collm 77.19 330 ⇑ *i*P **P 23 38 21.1 +0.1**
comp=Z,18nm,1.0s
CLL *e* 23 38 26.0
CLL *i* 23 38 39.6
CLL Collm 77.19 330 ⇑ *i*P **P 23 38 21.1 +0.1**
CLL *i* 23 38 39.6
CLL pmax pmax
comp=Z,18nm,1.0s
CLL Collm 77.19 330 *e*P **P 23 38 20.9 0.0**
comp=Z,15nm,0.8s
LOT Lotru 77.21 321 ⇑ *i*P **P 23 38 22.4 +1.1**
PVCC Panska Ves 77.22 329 *e*P **P 23 38 22.0 +0.8**
PVCC *e*pP **pP 23 38 41.0 +1.6**
PVCC Panska Ves 77.22 329 *e*P **P 23 38 22.0 +0.8**
PVCC *e* 23 38 41.0
VRAC Vranov 77.39 327 ⇑ *i*P **P 23 38 23.2 +1.0**
SMCO Snowmass 77.43 48 *e*P **P 23 38 24.4 +1.3**
comp=Z,5.9nm,0.9s
WRDH Warideh 77.48 307 *e*P **P 23 38 22.0 -1.0**
Y14A Wickenburg 77.49 56 *e*P **P 23 38 24.9 +1.8**
comp=Z,16nm,0.8s
KERG Konya-Eregli 77.52 309 *i* P **P 23 38 23.2 0.0**
SIRR Siria 77.57 322 ⇑ *i*P **P 23 38 24.4 +1.2**
GOPC GO Pecny, Ondr 77.63 328 *e*P **P 23 38 24.1 +0.6**
GOPC *e*pP **pP 23 38 43.6 +1.9**
GOPC GO Pecny, Ondr 77.63 328 *e*P **P 23 38 24.1 +0.6**
GOPC *e* 23 38 43.6
PRU Pruhonice 77.67 329 *e*P **P 23 38 24.4 +0.7**
PRU *e*pP **pP 23 38 43.7 +1.8**
PRU Pruhonice 77.67 329 *e*P **P 23 38 24.4 +0.7**
PRU *e* 23 38 43.7
SMOL Smolenice 77.68 326 *e*P **P 23 38 25.2 +1.4**
RABH Abou Rabah 77.73 305 *e*P **P 23 38 20.6 -3.8**
ISCO Idaho Springs 77.75 47 *e*P **P 23 38 26.2 +1.5**
ISCO pmax pmax
comp=Z,4.0nm,0.9s
ISCO Idaho Springs 77.75 47 *e*P **P 23 38 26.2 +1.5**
comp=Z,3.6nm,0.9s
BZS Buzias 78.08 322 ⇓ *i*P **P 23 38 26.5 +0.5**
PKS7 Kunszentmiklos 78.08 324 *e*P **P 23 38 26.8 +0.8**
X16A Lo Mia Camp, P 78.12 54 *e*P **P 23 38 28.8 +2.0**
comp=Z,4.9nm,0.9s
PKSG 78.15 325 *e*P **P 23 38 27.7 +1.3**
HAWK Haweek 78.15 306 *e*P **P 23 38 22.8 -4.0**
CSKK Cs̈tkako 78.22 325 *e*P **P 23 38 27.9 +1.1**
NKC Novy Kostel 78.27 330 *e*P **P 23 38 27.2 +0.2**
NKC *e*pP **pP 23 38 46.0 +0.7**
NKC Novy Kostel 78.27 330 *e*P **P 23 38 27.2 +0.2**
NKC *e* 23 38 46.0
PKST T̈s 78.40 325 *e*P **P 23 38 28.4 +0.6**
EYMN Ely 78.45 34 *e*P **P 23 38 28.5 +0.4**
comp=Z,14nm,0.8s
SOP Sopron 78.69 326 ⇑ *e*P **P 23 38 30.3 +0.9**
KHC Kasperske Hory 78.73 329 *e*P **P 23 38 30.2 +0.6**
KHC *ex* x 23 38 34.2
KHC *e*pP **pP 23 38 49.2 +1.3**
KHC Kasperske Hory 78.73 329 *e*P **P 23 38 30.2 +0.6**
KHC *e* 23 38 34.2
KHC *e* 23 38 49.2
KHC Kasperske Hory 78.73 329 *e*P **P 23 38 30.1 +0.6**
comp=Z,4.8nm,0.7s
CONA Conrad Observa 78.78 327 *i* P **P 23 38 30.9 +0.9**
comp=Z,5.0nm,0.7s
PKS9 Tamasi 78.82 324 ⇓ *e*P **P 23 38 30.5 +0.4**
GEC2 GERESS Array S 78.91 328 *e*P **P 23 38 31.2 +0.5**
GEC2 pmax pmax
comp=Z,4.0nm,0.7s
GEC2 GERESS Array S 78.91 328 *e*P **P 23 38 31.1 +0.5**
comp=Z,4.1nm,0.7s
GERES GERESS Array B 78.91 328 P **P 23 38 30.8 0.0**
comp=Z,3.5nm,0.7s,baz=34,slow=5.9,SNR=27
GEA0 GERESS Array S 78.92 328 *e*P **P 23 38 30.6 -0.1**
PKSM Moragy 78.96 324 ⇑ *i*P **P 23 38 31.4 +0.6**
BAGO Egridir - ISPA 79.00 312 *i* P **P 23 38 27.1 -4.3**
GRFO Grafenberg 79.17 330 *e*P **P 23 38 32.3 +0.4**
GRFO pmax pmax
comp=Z,21nm,0.8s
GRFO Grafenberg 79.17 330 *e*P **P 23 38 32.3 +0.4**
comp=Z,21nm,0.8s
BRBR Barbar 79.19 305 *e*P P 23 38 28.0 -4.6
SALA Sala 79.19 304 *e*P P 23 38 26.5 -6.1
SDCO Great Sand Dun 79.26 48 *e*P **P 23 38 33.8 +0.7**
comp=Z,4.4nm,0.8s
ECSD EROS Data Cent 79.44 39 *e*P **P 23 38 33.9 +0.3**
comp=Z,11nm,0.8s
KHAL Karahalli 79.45 313 *i* P **P 23 38 34.0 +0.1**
ARSA Arzberg 79.46 326 *i* P **P 23 38 34.1 +0.5**
comp=Z,5.0nm,1.0s
MOA Molln 79.49 327 *i* P **P 23 38 34.3 +0.5**
comp=Z,2.5nm,0.7s
CSS Mathiatis 79.68 308 *e*P **P 23 38 35.2 +0.2**
comp=Z,3.4nm,0.8s
GROS Grobnik 80.10 326 *i* P **P 23 38 37.0 -0.2**
SOKA Soboth 80.12 326 *i* P **P 23 38 37.8 +0.5**
comp=Z,13nm,0.7s,SNR=9.9
BEBN Eben Emael 80.17 334 P **P 23 38 37.4 +0.1**
MEM Membach 80.22 334 P **P 23 38 37.8 +0.1**
comp=Z,8.0nm,1.2s
SCHQ Schefferville 80.27 17 P **P 23 38 37.5 -0.4**
comp=Z,5.5nm,0.7s,baz=10,slow=8.2,SNR=7.0
SCHQ Schefferville 80.27 17 *e*P **P 23 38 37.5 -0.4**
comp=Z,11nm,0.9s
T25A Trinidad 80.30 48 *e*P **P 23 38 39.9 +1.3**
comp=Z,6.8nm,0.9s
T25A *e*pP **pP 23 38 57.0 0.0**
OBKA Obir 80.46 327 *i* P **P 23 38 39.3 +0.2**
comp=Z,8.8nm,0.7s,SNR=6.0
BGNE Belgrade 80.46 42 *e*P **P 23 38 39.8 +0.7**
comp=Z,22nm,0.8s
KBA Koelnbreinsper 80.48 328 *i* P **P 23 38 39.6 +0.3**
comp=Z,10nm,0.9s,SNR=8.5
LEGS Legarje 80.59 326 *i* P **P 23 38 40.3 +0.6**
BCLA Clavier 80.62 334 P **P 23 38 39.4 -0.3**
STU Stuttgart 80.67 331 *e*P **P 23 38 40.3 +0.2**
STU pmax pmax
comp=Z,16nm,0.8s
STU Stuttgart 80.67 331 *e*P **P 23 38 40.3 +0.2**
comp=Z,16nm,0.8s
ANMO Albuquerque 80.70 51 *e*P **P 23 38 42.8 +2.0**
ANMO pmax pmax
comp=Z,4.0nm,1.0s
ANMO Albuquerque 80.70 51 *e*P **P 23 38 42.8 +2.0**
comp=Z,4.1nm,1.0s
MYKA Terra Mystica 80.73 327 *i* P **P 23 38 40.4 -0.1**
comp=Z,6.2nm,0.5s
LJU Ljubljana 80.84 326 *i* P **P 23 38 40.9 -0.1**
AYDN Tasoluk 80.84 313 *i* P **P 23 38 42.3 +1.1**
SNF Seneffe 80.87 335 P **P 23 38 41.1 +0.1**
COWI Conover 80.90 34 *e*P **P 23 38 41.6 +0.2**
comp=Z,5.4nm,0.8s
WATA Walderalm 80.97 329 *i* P **P 23 38 42.2 +0.3**
comp=Z,6.3nm,0.6s,SNR=7.5
WLF Walferdange 80.98 333 P **P 23 38 42.1 +0.4**
WTTA Wattenberg 81.01 329 *i* P **P 23 38 42.7 +0.6**
comp=Z,8.7nm,0.7s
ABTA Abfaltersbach 81.09 328 *i* P **P 23 38 42.7 +0.3**
comp=Z,5.8nm,1.5s
DOU Dourbes 81.13 334 P **P 23 38 42.2 -0.2**
MOTA Moosalm 81.14 329 *i* P **P 23 38 44.1 +1.3**
comp=Z,20nm,0.8s,SNR=18
RETA Reutte 81.16 329 *i* P **P 23 38 43.2 +0.4**
comp=Z,13nm,0.8s,SNR=7.3
BFO Black Forest 81.36 331 *i* P **P 23 38 44.1 +0.3**
BFO Black Forest 81.36 331 *e*P **P 23 38 43.7 0.0**
comp=Z,19nm,1.5s
BDRM Kayabasi 81.51 313 *i* P **P 23 38 44.4 -0.4**
319A Douglas 81.53 55 *e*P **P 23 38 47.0 +1.9**
comp=Z,6.6nm,0.9s
FETA Feichten 81.56 329 *i* P **P 23 38 45.4 +0.4**
comp=Z,9.1nm,0.8s,SNR=8.7
PDG Podgorica 81.62 321 ⇑ *i*P **P 23 38 46.0 +0.8**
DAVA Damuels 81.66 330 *i* P **P 23 38 45.8 +0.2**
comp=Z,16nm,0.8s,SNR=8.7
NVLJ Novalja 81.89 325 P **P 23 38 46.1 -0.5**
STON Ston 81.99 322 P **P 23 38 46.3 -0.8**
FUORN Ofenpass-Fuorn 82.07 329 *e*P **P 23 38 48.5 +0.6**
comp=Z,25nm,0.8s
TIR Tirane 82.17 320 ⇑ *i*P **P 23 38 49.3 +1.2**
TUE Stuetta 82.54 329 *e*P **P 23 38 50.0 -0.2**
comp=Z,8.4nm,0.7s
SENIN Lac Senin/Sane 83.39 331 *e*P **P 23 38 55.0 +0.3**
comp=Z,7.6nm,0.7s
MSTX Muleshoe 83.52 49 *e*P **P 23 38 53.5 -1.9**
MSTX *e*PP **PP 23 42 04.2 -3.7**
LAST Lasithi 83.99 313 ⇑ *i*P **P 23 38 58.8 +1.1**
LAST Lasithi 83.99 313 *e*P **P 23 38 57.8 +0.1**
comp=Z,53nm,0.9s
IDI Anoyia 84.22 313 *e*P **P 23 38 57.8 -1.1**
comp=Z,29nm,0.9s
AQU L'Aquila 84.30 325 *e*P **P 23 39 00.0 +0.8**
AQU pmax pmax
comp=Z,17nm,0.9s
AQU L'Aquila 84.30 325 *e*P **P 23 38 60.0 +0.8**
comp=Z,17nm,0.9s
U34A Anderson Ranch 84.53 45 *e*P **P 23 39 01.8 +1.4**
comp=Z,18nm,1.1s
WMOK Wichita Mounta 85.15 46 *e*P **P 23 39 04.6 +1.1**
WMOK pmax pmax
comp=Z,5.0nm,0.9s
WMOK Wichita Mounta 85.15 46 *e*P **P 23 39 04.6 +1.1**
comp=Z,4.9nm,0.9s
HDIL Hopedale 85.31 37 *e*P **P 23 39 05.0 +0.8**
comp=Z,21nm,0.8s
SSB Saint Sauveur 85.31 332 *e*P **P 23 39 04.4 +0.2**
SSB pmax pmax
comp=Z,6.0nm,0.8s
SSB Saint Sauveur 85.31 332 *e*P **P 23 39 04.4 +0.2**
comp=Z,6.3nm,0.8s
PMOR Pomariorio Ree 85.42 115 *e*T T 01 12 51.8
comp=Z,19nm,0.2s
PPT2 Papeete2 86.14 118 *e*LR LR 00 06 03.5
comp=Z,180nm,24.5s
PPT2 Papeete2 86.14 118 *e*T T 01 13 45.9
comp=Z,3.9nm,0.3s
TX31 Lajitas Ar. Si 86.37 53 *e*P **P 23 39 10.8 +1.1**
LTX Lajitas 86.38 53 *e*P **P 23 39 11.2 +1.4**
LTX Lajitas 86.38 53 *e*P **P 23 39 11.2 +1.4**
TXAR Lajitas Array 86.38 53 P **P 23 39 11.2 +1.4**
comp=Z,3.1nm,0.7s,baz=287,slow=3.6,SNR=18
TAOE Nuku Hiva Isla 86.56 105 *e*LR LR 00 06 45.8
comp=Z,277nm,25.4s
OLIL Olney 87.32 37 *e*P **P 23 39 15.1 +1.0**
comp=Z,18nm,1.0s
SIUC Southern Illin 87.64 39 *e*P **P 23 39 16.7 +1.1**
comp=Z,32nm,0.8s
PBMO Poplar Bluff 87.82 40 *e*P **P 23 39 17.5 +1.0**
comp=Z,15nm,0.9s
WHAR Wooly Hollow 88.10 42 *e*P **P 23 39 18.7 +0.8**
comp=Z,10.0nm,0.8s
WCI Wyandotte Cave 88.54 36 *e*P **P 23 39 21.0 +1.0**
WCI pmax pmax
comp=Z,12nm,0.8s
WCI Wyandotte Cave 88.54 36 *e*P **P 23 39 21.0 +1.0**
comp=Z,12nm,0.8s
LMN Caledonia Moun 89.14 19 *e*P **P 23 39 23.2 +0.7**
comp=Z,12nm,0.8s
SSPA Standing Stone 89.90 30 *e*P **P 23 39 27.2 +0.9**
comp=Z,15nm,0.9s
ES19 SONSECA Array 93.11 335 *e*P **P 23 39 41.5 +0.3**
ESDC Sonseca Array 93.16 335 P **P 23 39 41.2 -0.3**
comp=Z,2.0nm,0.8s,baz=17,slow=3.5,SNR=11
KMBO Kilima Mbogo 102.11 280 *i* P **Pdif 23 40 23.3 +0.9**
KMBO pmax pmax
comp=Z,1.0nm,0.2s
TOA1 Torodi Ar. Sit 114.33 318 *e*PKiKP **PKiKP 23 45 06.1 -1.0**
TOA0 Torodi Ar. Sit 114.33 318 *e*PP **PP 23 45 60.0 -2.7**
TORD Torodi Ar. Bea 114.33 318 PKP PKPdf 23 45 06.1 -1.0
comp=Z,0.5nm,0.5s,baz=30,slow=1.9,SNR=8.7
MATP Matopo 121.09 270 PKP **PKPdf 23 45 19.6 -0.4**
comp=Z,0.9nm,0.4s,baz=282,slow=0.8,SNR=7.2
DBIC Dimbokro 123.12 320 PKP **PKPdf 23 45 23.2 -0.8**
comp=Z,3.9nm,1.0s,baz=356,slow=5.5,SNR=6.1
LPAZ La Paz 143.23 55 PKP **PKPdf 23 46 01.4 -0.8**
comp=Z,0.7nm,0.6s,baz=255,slow=5.0,SNR=2.1
SNAA Sanae 145.80 199 PKP **PKPbc 23 46 05.0 +0.1**
VNA2 Neumayer--Watz 147.38 198 PKP **PKPbc 23 46 10.1 +0.6**
baz=98,slow=1.5
VNA3 Neumayer Olymp 147.64 196 PKP **PKPbc 23 46 09.7 -0.5**
VNA1 Neumayer--Stat 147.77 198 PKP **PKPbc 23 46 11.6 +1.2**

*IDC **25** 23:35:42.9±2.1, 30.˚98S×59.˚08E, h0km, mb3.9/4, mb1 4.1/5, mb1mx3.6/30, mbtmp3.9/5, ML3.7/1, MS3.6/3, Ms1 3.6/3, ms1mx3.0/38, Error ellipse: s-maj=77.3km s-min=29.4km az=36.0*
*ISCJB **25** 23:35:43.4±2.1, 30.˚9S±0.˚5×59.˚3E±0.˚4, h10km, mb3.9/4, MS3.8/2, Error ellipse: s-maj=78.0km s-min=18.1km az=33.4*

ISC 25 23:35:45.8±2.0, 30.˚8S±0.˚5×59.˚3E±0.˚3, h10km, n15, σ0.˚77/7, mb4.0/4, Southwest Indian Ridge

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
OPO	**Ambohidratompo**	**16.36**	**315**	Pn	**Pn**	**23 39 35.5**	**-0.3**
	0.3nm,0.3s,baz=125,slow=16,SNR=2.6						
OPO				Sn	Sn	23 42 26.1	-12
	0.3nm,0.3s,baz=336,slow=18,SNR=2.6						
OPO				LR	LR	23 44 26.3	
	comp=Z,81nm,20.7s,baz=198,slow=32						
H08S1	**Diego Carcia H**	**26.13**	**31**	T	T	00 08 31.2	
	baz=210,slow=76,SNR=5.2						
H08S2	**Diego Garcia H**	**26.14**	**31**	T	T	00 08 43.8	
	baz=210						
H08S3	**Diego Garcia H**	**26.15**	**31**	T	T	00 08 41.2	
	baz=210,slow=76,SNR=5.3						
H08N3	**Diego Garcia H**	**26.69**	**27**	T	T	00 09 04.9	
	baz=203,slow=76,SNR=8.9						
H08N1	**Diego Garcia H**	**26.70**	**27**	T	T	00 09 06.4	
	baz=203,slow=76,SNR=4.1						
H08N2	**Diego Garcia H**	**26.71**	**27**	T	T	00 09 06.5	
	baz=203,slow=76,SNR=7.4						
MATP	**Matopo**	**29.51**	**283**	LR	LR	23 51 58.0	
	comp=Z,54nm,18.7s,baz=138,slow=33						
CMAR	**Chiang Mai Arr**	**62.06**	**43**	P	**P**	**23 46 07.2**	**+0.3**
	1.2nm,0.3s,baz=231,slow=7.4,SNR=11						
ASAR	**Alice Springs**	**65.65**	**104**	P	**P**	**23 46 29.9**	**-0.7**
	0.5nm,0.8s,baz=237,slow=6.5,SNR=5.9						
WRA	**Warramunga Arr**	**67.59**	**100**	P	**P**	**23 46 42.7**	**-0.3**
	1.6nm,0.9s,baz=244,slow=5.4,SNR=4.2						
BRTR	**Keskin Array B**	**74.08**	**340**	P	**P**	**23 47 21.6**	**-0.4**
	0.6nm,0.8s,baz=150,slow=6.0,SNR=5.5						
CTA	**Charters Tower**	**77.51**	**106**	LR	LR	00 18 52.9	
	comp=Z,216nm,21.5s,baz=220,slow=33						
ILAR	**Eielson Array**	**142.30**	**18**	PKP	**PKPdf**	**23 55 18.3**	**+0.5**
	0.3nm,0.4s,baz=201,slow=4.7,SNR=8.4						
YKA	**Yellowknife Ar**	**148.03**	**355**	PKPbc	**PKPdf**	**23 55 28.7**	**+1.1**
	0.6nm,0.7s,baz=357,slow=2.9,SNR=20						

JMA 25 23:38:01.0±0.2, 39.˚13N×142.˚96E, h33km±4km, M3.6, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MIYJ	**Miyakonagasawa**	**0.99**	**297**	P	Pn	23 38 18.8	+0.2
MIYJ				S	Sn	23 38 31.2	-0.2
OFUJ	**Ofunato**	**1.01**	**268**	P	Pn	23 38 19.1	+0.3
OFUJ				S	Sn	23 38 31.8	0.0
JTH	**Tanohata**	**1.17**	**314**	P	Pn	23 38 21.2	+0.1
JTH				*e*S	Sb	23 38 37.0	-0.6
JOM	**Ohasama**	**1.34**	**285**	P	Pn	23 38 24.3	+0.9
JOM				S	Sn	23 38 40.6	+0.6
JMK	**Ichinoseki**	**1.37**	**263**	P	Pn	23 38 24.6	+0.9
JIO	**Ouri**	**1.43**	**242**	P	Pn	23 38 25.0	+0.4
JKZ	**Kuzumaki**	**1.52**	**305**	P	Pn	23 38 27.2	+1.3
JANG	**Nango**	**1.67**	**319**	P	Pn	23 38 28.7	+0.8
MAT	**Matsushiro**	**4.56**	**237**	P	Pn	23 39 10.8	+3.1
MAT				*e*S	Sn	23 40 04.0	+4.4

*JMA **25** 23:55:32.9±0.1, 36.˚48N×140.˚93E, h33km±1km, M3.1*
*IDC **25** 23:55:35.4±3.1, 36.˚72N×142.˚00E, h0km, mb3.5/3, mb1 3.6/4, mb1mx3.3/35, mbtmp3.5/4, ML3.3/1, MS3.5/2, Ms1 3.5/2, ms1mx2.6/36, Error ellipse: s-maj=74.0km s-min=35.4km az=57.0*

ISC 25 23:55:31.7±3.8, 36.˚5N±0.˚1×141.˚0E±0.˚2, h10km, n11, σ0.˚54/7, mb3.5/3, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JHO	**Hitachi**	**0.37**	**292**	P	**Pb**	**23 55 40.6**	**+0.3**
JHO				S	**Sb**	**23 55 45.6**	**-0.6**
ONAJ	**Iwakimizuishiy**	**0.65**	**346**	P	**Pg**	**23 55 44.7**	**+0.5**
ONAJ				S	**Sg**	**23 55 53.0**	**+0.3**
JYT	**Yasato**	**0.69**	**249**	P	**Pg**	**23 55 45.1**	**0.0**
JYT				S	**Sg**	**23 55 54.1**	**0.0**
JFK	**Kawauchi**	**0.90**	**354**	P	**Pg**	**23 55 48.3**	**-0.6**
MJAR	**Matsushiro Arr**	**2.25**	**273**	Pn	Pg	23 56 24.5	+10
	3.6nm,0.3s,baz=84,slow=9.8,SNR=19						
MAT	**Matsushiro**	**2.25**	**273**	P	Pg	23 56 25.2	+10
MAT				S	Sg	23 57 03.9	+20
SONM	**Songino Array**	**27.82**	**305**	P	P	00 01 31.6	+10
	0.9nm,0.5s,baz=106,slow=9.2,SNR=2.7						

MKAR	**Makanchi Array**	**44.13**	**303**	P	P	00 03 49.3	+9.0
	0.2nm,0.6s,baz=84,slow=9.7,SNR=3.1						
BATI	**Baumata**	**49.22**	**203**	LR	LR	00 27 05.7	
	comp=Z,45nm,18.9s,baz=278,slow=38						
WRA	**Warramunga Arr**	**56.46**	**188**	P	P	00 05 21.5	+7.8
	0.5nm,1.0s,baz=7.0,slow=7.6,SNR=2.4						
AFI	**Afiamalu**	**67.04**	**129**	LR	LR	00 34 35.7	
	comp=Z,32nm,18.3s,baz=330,slow=35						

NIED ***26*** *00:05:00,37.10N×140.70E,h20km,Mw3.3 Best double couple: M₀9.15000×10¹³ NP1:ϕs195.00000°,δ54.00000°, λ37.00000°. NP2:ϕs82.00000°,δ61.00000°,λ138.00000°.*
JMA 26 00:05:20.4,37.05N×140.64E,h14km±1km,M3.6,1C-3D Broadband fault plane solution: P waves. NP1: ϕs201.00000°,δ60.00000°,λ35.00000°. **NP2:**ϕs91.00000°, δ60.00000°,λ145.00000°. **Principal axes:** T Plg45.0000°, Azm56.0000°; N Plg45.0000°, Azm236.0000°; P Plg0.0000°, Azm326.0000°; **Eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.14**	**68**	⇓P	Pg	00 05 24.0	-0.1
ONAJ				S	Sg	00 05 26.5	0.0
JFK	**Kawauchi**	**0.37**	**31**	⇑P	Pg	00 05 27.6	-0.3
JFK				S	Sg	00 05 32.7	-0.2
JHO	**Hitachi**	**0.44**	**187**	⇓P	Pg	00 05 28.9	-0.3
JHO				S	Sg	00 05 34.9	-0.3
JFT	**Otama**	**0.53**	**333**	⇓P	Pg	00 05 30.7	-0.1
JFT				S	Sg	00 05 37.8	0.0
JSB	**Shiboa**	**0.58**	**262**	P	Pg	00 05 32.1	+0.3
JSB				S	Sg	00 05 39.8	+0.2
JMM	**Marumori**	**0.82**	**8**	P	Pg	00 05 35.4	-1.0
JMM				S	Sg	00 05 46.2	-1.0
JFY	**Yanaizu**	**0.83**	**296**	P	Pg	00 05 35.9	-0.6
JFY				S	Sg	00 05 46.5	-0.8
MAT	**Matsushiro**	**2.02**	**256**	P	Pn	00 05 53.9	-0.1
MAT				S	Sb	00 06 22.2	+0.4

ISK ***26*** *00:07:06.5,38.74N×26.69E,h9km,MD2.4*
ISCJB ***26*** *00:07:07.2±0.6,38.75N±0.03×26.68E±0.05,h4km±9km, Error ellipse: s-maj=7.2km s-min=4.8km az=175.7*
CSEM ***26*** *00:07:07.3±0.2,38.74N×26.68E,h8km,MD2.8,Error ellipse: s-maj=6.3km s-min=4.8km az=77.0*
DDA ***26*** *00:07:09.3,38.56N×26.87E,h7km,Md2.8*
ISC 26 00:07:07.2±1.0,38.74N±0.03×26.69E±0.04,h13km±12km, n15,σ0s0.28/26,Aegean Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DKL	**Dikili**	**0.37**	**27**	*e*PG	**Pg**	**00 07 14.3**	**-0.3**
DKL				*e*SG	**Sg**	**00 07 20.0**	**+0.4**
DKL	**Dikili**	**0.37**	**27**	*e*Pg	**Pg**	**00 07 14.3**	**-0.3**
DKL				*e*Sg	**Sg**	**00 07 20.0**	**+0.4**
URLA	**Izmir**	**0.39**	**191**	*i* P	**Pg**	**00 07 14.9**	**-0.1**
URLA				*i* S	**Sb**	**00 07 22.1**	**+0.2**
URLA	**Izmir**	**0.39**	**191**	P	**Pg**	**00 07 14.9**	**-0.1**
URLA				S	**Sb**	**00 07 22.1**	**+0.2**
BLCB	**Balcova**	**0.45**	**142**	*e*PG	**Pg**	**00 07 15.7**	**-0.4**
BLCB				*e*SG	**Sg**	**00 07 22.4**	**+0.3**
BLCB	**Balcova**	**0.45**	**142**	*e*Pg	**Pg**	**00 07 15.7**	**-0.4**
BLCB				*e*Sg	**Sg**	**00 07 22.4**	**+0.3**
ZEY	**¯zmir**	**0.52**	**197**	*i* P	**Pg**	**00 07 17.0**	**-0.5**
ZEY				*i* S	**Sb**	**00 07 25.5**	**-0.2**
SIGR	**SIGRI**	**0.80**	**306**	*e*PG	**Pg**	**00 07 22.5**	**-0.3**
SIGR				*e*SG	**Sb**	**00 07 34.0**	**+0.1**
SIGR	**SIGRI**	**0.80**	**306**	*e*Pg	**Pg**	**00 07 22.5**	**-0.3**
SIGR				*e*Sg	**Sb**	**00 07 34.0**	**+0.1**
AYDB	**Zeytinkoy-Aydi**	**1.23**	**130**	*e*PN	**Pb**	**00 07 30.4**	**0.0**
AYDB	**Zeytinkoy-Aydi**	**1.23**	**130**	*e*Pn	**Pb**	**00 07 30.4**	**0.0**
BALB	**Balikesir**	**1.29**	**45**	*e*PN	**Pb**	**00 07 31.2**	**-0.1**
BALB	**Balikesir**	**1.29**	**45**	*e*Pn	**Pb**	**00 07 31.2**	**-0.1**
DEMI	**Demirci**	**1.61**	**79**	*i* P	**Pb**	**00 07 37.1**	**+0.2**
DEMI				*i* S	**Sg**	**00 07 59.1**	**+0.1**
DEMI	**Demirci**	**1.61**	**79**	P	**Pb**	**00 07 37.1**	**+0.2**
DEMI				S	**Sg**	**00 07 59.1**	**+0.1**

IDC ***26*** *00:12:07.7±0.7,17.34S×174.22W,h0km,mb4.3/9, mb1 4.5/9,mb1mx4.3/31,mbtmp4.3/9,MS2.5/1,Ms1 2.5/1, ms1mx2.3/35,Error ellipse: s-maj=29.0km s-min=17.9km az=137.0*
BJI ***26*** *00:12:16.7,17.40S×174.40W,h63km,mb5.1/13, mB5.2/11,Ms5.4/7,Ms7 5.0/7*
NEIC ***26*** *00:12:16.1±1.4,17.42S×174.35W,h62km±13km,mb5.3/29, Error ellipse: s-maj=12.2km s-min=6.6km az=129.0*
ISCJB ***26*** *00:12:18.8±0.3,17.52S±0.06×174.37W±0.07,h100km, mb5.0/41,Error ellipse: s-maj=9.7km s-min=7.4km az=27.0*
ISC 26 00:12:21.8±0.5,17.67S±0.10×174.24W±0.09,h100km, n90,σ2s12/74,mb5.2/41,Tonga Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AFI	**Afiamalu**	**4.43**	**33**	Pn	Pn	00 13 20.1	-6.8
	27nm,0.3s,baz=51,slow=1.2,SNR=23						
AFI				Sn	Sn	00 14 03.6	-14
	108nm,0.3s,baz=35,slow=23,SNR=32						
AFI				LR	LR	00 14 10.5	
	comp=Z,58nm,18.5s,baz=108,slow=30						
AFI	**Afiamalu**	**4.43**	**33**	*e*Pn	Pn	00 13 19.4	-7.5
AFI				*e*Sn	Sn	00 14 00.3	-17
RAR	**Rarotonga**	**14.09**	**107**	*e*Pn	**Pn**	**00 15 36.3**	**-0.7**
DZM	**Mont Dzumac**	**18.68**	**253**	P	**P**	**00 16 33.3**	**+1.0**
	0.3nm,0.3s,baz=90,slow=20,SNR=2.5						
OUZ	**Omahuta**	**20.56**	**209**	*e*P	**P**	**00 16 50.6**	**-1.9**
	276nm,1.9s						
URZ	**Urewera**	**21.87**	**199**	P	**P**	**00 17 04.1**	**-2.3**
	17nm,0.4s,baz=10.0,slow=2.6,SNR=14						
URZ	**Urewera**	**21.87**	**199**	*e*P	**P**	**00 17 03.7**	**-2.7**
	424nm,1.9s						
HIZ	**Hauiti**	**22.85**	**202**	*e*P	**P**	**00 17 13.7**	**-2.9**
	238nm,1.5s						
BKZ	**Black Stump Fm**	**22.89**	**199**	*e*P	**P**	**00 17 16.3**	**-0.7**
	294nm,2.0s						
BFZ	**Birch Farm**	**24.36**	**198**	*e*P	**P**	**00 17 27.8**	**-2.6**
	150nm,1.3s						
THZ	**Tophouse**	**26.42**	**202**	*e*P	**P**	**00 17 48.6**	**-0.5**
	382nm,1.9s						
KHZ	**Kahutara**	**26.78**	**200**	*e*P	**P**	**00 17 51.8**	**-0.4**
	270nm,2.0s						
LTZ	**Lake Taylor**	**27.54**	**202**	*e*P	**P**	**00 18 00.8**	**+1.6**
	191nm,1.9s						
LTZ				*e*pP	**P**	**00 18 03.9**	**+4.7**
OXZ	**Oxford**	**28.10**	**202**	*e*P	**P**	**00 18 04.7**	**+0.6**
	118nm,1.7s						
RPZ	**Rata Peaks**	**28.79**	**202**	P	**P**	**00 18 14.0**	**+3.8**
	18nm,0.7s,baz=331,slow=1.9,SNR=6.7						
RPZ	**Rata Peaks**	**28.79**	**202**	*e*P	**P**	**00 18 14.0**	**+3.8**
	104nm,1.6s						
FOZ	**Fox Glacier**	**29.10**	**204**	*e*P	**P**	**00 18 13.4**	**+0.5**
	392nm,1.9s						
ODZ	**Otahua Downs**	**30.09**	**202**	*e*P	**P**	**00 18 22.8**	**+1.1**
	99nm,1.8s						
WKZ	**Wanaka**	**30.50**	**204**	*e*P	**P**	**00 18 24.0**	**-1.3**
	92nm,1.4s						
MLZ	**Mavora Lakes**	**31.30**	**204**	*e*P	**P**	**00 18 31.6**	**-0.8**
	180nm,1.8s						
ARMA	**Armidale**	**33.52**	**241**	*e*P	**P**	**00 18 51.5**	**-0.6**
	77nm,1.8s						
CTA	**Charters Tower**	**37.40**	**260**	P	P	00 19 22.9	-2.5
	6.0nm,0.7s,baz=93,slow=13,SNR=6.4						
CTAO	**Charters Tower**	**37.40**	**260**	*e*P	P	00 19 23.4	-2.0
	89nm,1.8s						
COEN	**Coen**	**41.08**	**269**	*e*P	P	00 19 52.3	-3.7
	62nm,1.7s						
TAU	**Tasmania Unive**	**41.12**	**224**	*e*P	P	00 19 53.0	-3.0
	48nm,1.6s						
STKA	**Stephens Creek**	**42.23**	**242**	P	**P**	**00 20 04.7**	**-0.6**
	5.9nm,0.5s,baz=89,slow=9.1,SNR=22						
BBOO	**Buckleboo**	**47.00**	**241**	*e*P	**P**	**00 20 42.0**	**-1.1**
WB2	**Warramunga Arr**	**48.57**	**259**	*e*P	P	00 20 53.4	-2.0
WRAB	**Tennant Creek**	**48.57**	**259**	*e*P	P	00 20 52.4	-3.0
	31nm,0.9s						
WR1	**Warramunga Arr**	**48.58**	**259**	*e*P	P	00 20 53.7	-1.8
	8.2nm,0.5s						
WR1				*e*PcP	**PcP**	**00 22 19.4**	**-0.4**
WRA	**Warramunga Arr**	**48.58**	**259**	P	P	00 20 53.7	-1.9
	4.7nm,0.4s,baz=95,slow=7.8,SNR=30						
WRA				PcP	**PcP**	**00 22 19.4**	**-0.4**
	0.6nm,0.3s,baz=91,slow=3.6,SNR=5.0						
AS01	**Alice Springs**	**48.63**	**254**	*e*P	P	00 20 53.8	-2.1
AS31	**Alice Springs**	**48.67**	**254**	*e*P	**P**	**00 20 54.6**	**-1.6**
	13nm,0.5s						
ASAR	**Alice Springs**	**48.67**	**254**	P	**P**	**00 20 54.8**	**-1.5**
	50nm,0.6s,baz=90,slow=8.2,SNR=914						
MTN	**Manton Dam**	**52.78**	**267**	*e*P	P	00 21 24.3	-2.8
	43nm,1.5s						
FITZ	**Fitzroy Crossi**	**56.98**	**260**	P	**P**	**00 21 56.0**	**-1.4**
	1.5nm,0.5s,baz=102,slow=8.9,SNR=6.2						
FITZ	**Fitzroy Crossi**	**56.98**	**260**	*e*P	P	00 21 54.4	-3.0
	16nm,1.7s						
SBA	**Scott Base**	**60.94**	**185**	*e*P	**P**	**00 22 25.6**	**+1.9**
	54nm,2.0s						
VNDA	**Vanda**	**61.05**	**186**	P	**P**	**00 22 26.4**	**+1.9**
	2.9nm,0.8s,baz=357,slow=6.7,SNR=10						
VNDA	**Vanda**	**61.05**	**186**	*e*P	**P**	**00 22 26.0**	**+1.4**
	3.8nm,0.8s						
MBWA	**Marble Bar**	**61.98**	**255**	*e*P	P	00 22 29.3	-2.4
	42nm,1.9s						
QSPA	**South Pole Qui**	**72.39**	**180**	*e*P	**P**	**00 23 38.0**	**+1.1**
NJ2	**Nanjing**	**80.89**	**308**	*e*P	P	00 24 20.8	-4.4
NJ2				pmax	pmax		
	comp=Z,24nm,0.5s						
CN2	**Changchun**	**82.31**	**321**	*e*P	P	00 24 29.0	-3.3
WRH	**Wood River Hil**	**84.32**	**11**	*e*P	**P**	**00 24 40.7**	**-1.5**
	5.2nm,1.0s						
BW06	**Boulder Array**	**84.48**	**42**	*e*P	P	00 24 41.7	-2.1
PD31	**Pinedale Array**	**84.48**	**42**	*e*P	P	00 24 41.2	-2.6
PDAR	**Pinedale Array**	**84.48**	**42**	P	**P**	**00 24 42.2**	**-1.6**
	1.9nm,0.7s,baz=217,slow=3.6,SNR=23						
BOZ	**Bozeman (W)**	**84.68**	**39**	*e*P	**P**	**00 24 44.1**	**-0.6**
	20nm,2.0s						
IL1	**Eielson Array**	**84.81**	**11**	*e*P	P	00 24 41.4	-3.2
ILAR	**Eielson Array**	**84.81**	**11**	P	P	00 24 42.4	-2.3
	1.1nm,0.9s,baz=204,slow=5.4,SNR=8.4						
ILB	**Eielson Array**	**84.81**	**11**	*e*P	P	00 24 42.4	-2.3
MSTX	**Muleshoe**	**85.18**	**52**	*e*PP	PP	00 28 02.9	-3.5
EGAK	**Eagle**	**86.00**	**14**	*e*P	**P**	**00 24 49.5**	**-1.0**
	4.1nm,1.0s						
GYA	**Guiyang**	**88.40**	**298**	P	**P**	**00 25 02.0**	**-1.2**
GYA				pP	pP	00 25 20.5	-9.0
GYA				sP	sP	00 25 28.3	-12
GYA				PP	**PP**	**00 28 32.3**	**-0.2**
GYA				SKS	**SKSac**	**00 35 22.0**	**-1.5**
GYA				S	**SKKSac**	**00 35 38.5**	**+4.0**
GYA				sS	sS	00 36 09.8	-16
GYA				pmax	pmax		
	comp=Z,20nm,1.0s						
GYA				pmax	pmax		
	comp=Z,120nm,5.9s						
HHC	**Hu-ho-hao-te**	**89.98**	**313**	*e*P	**P**	**00 25 09.8**	**-0.4**
HHC				sP	pP	00 25 34.0	-2.6
HHC				S	**S**	**00 35 55.3**	**+0.4**
HHC				pmax	pmax		
	comp=Z,15nm,1.1s						
HHC				pmax	pmax		
	comp=Z,95nm,9.3s						
HHC				LR	LR		
	comp=N,120nm,14.8s						
HHC				LR	LR		
	comp=E,620nm,14.8s						
HHC				LR	LR		
	comp=Z,80nm,14.8s						
SNAA	**Sanae**	**90.69**	**177**	P	P	00 25 11.3	-1.8
VNA2	**Neumayer--Watz**	**91.17**	**176**	P	**P**	**00 25 15.0**	**-0.2**
	baz=190,slow=2.3						
KMI	**Kunming**	**91.28**	**296**	P	P	00 25 15.0	-1.8
KMI				pmax	pmax		
	comp=Z,11nm,0.6s						
KMI				pmax	pmax		
	comp=Z,58nm,5.7s						
KMI				LR	LR		
	comp=N,53nm,5.0s						
KMI				LR	LR		
	comp=E,55nm,5.2s						
KMI				LR	LR		
	comp=Z,64nm,4.8s						
CD2	**Chengdu**	**92.30**	**302**	P	P	00 25 18.3	-2.9
CD2				pP	PcP	00 25 35.8	+14
CD2				sP	pP	00 25 43.0	-4.6
CD2				PP	PP	00 28 58.5	-4.8
CD2				SKS	**SKSac**	**00 35 45.3**	**-0.4**
CD2				S	**S**	**00 36 15.3**	**-1.0**
CD2				sS	sS	00 36 46.0	-16
CD2				SS	**SS**	**00 42 27.0**	**-2.5**
CD2				pmax	pmax		
	comp=Z,10.0nm,0.5s						
CD2				pmax	pmax		
	comp=Z,110nm,5.7s						
CD2				LR	LR		
	comp=N,180nm,7.8s						
CD2				LR	LR		
	comp=Z,140nm,8.4s						
YKA	**Yellowknife Ar**	**92.49**	**24**	P	P	00 25 16.8	-4.4
	0.1nm,0.5s,baz=245,slow=4.5,SNR=4.3						
YKB5	**Yellowknife Ar**	**92.49**	**24**	*e*P	P	00 25 16.8	-4.4
LZH	**Lanzhou**	**93.92**	**307**	*e*P	**P**	**00 25 31.0**	**+2.3**
LZH				pP	pP	00 25 49.5	-5.6
LZH				sP	sP	00 25 55.8	-10
LZH				pmax	pmax		
	comp=Z,10.0nm,1.0s						
GTA	**Gaotai**	**97.96**	**309**	*e*P	P	00 25 44.3	-2.6
GTA				pP	Pdif	00 26 02.0	+15
GTA				sP	pP	00 26 08.0	-5.4
GTA				pmax	pmax		
	comp=Z,4.0nm,0.8s						
SWET	**Sewanee**	**98.63**	**56**	*e*PP	PP	00 29 57.7	+5.4
KURK	**Kurchatov**	**114.30**	**318**	*e*PP	**PP**	**00 31 49.3**	**+2.6**
KSH	**Kashi**	**116.16**	**306**	*e*PKP	**PKPdf**	**00 30 57.3**	**+3.6**
KSH				PKS	**PKSdf**	**00 34 32.8**	**+2.3**
KSH				AMB	AMB		
	comp=Z,160nm,5.8s						
KSH				LR	LR		
	comp=N,100nm,7.8s						
KSH				LR	LR		
	comp=E,170nm,6.4s						
KSH				LR	LR		
	comp=Z,250nm,6.5s						
ARA0	**ARCESS Array S**	**126.73**	**351**	*e*PKPdf	**PKPdf**	**00 31 11.6**	**-1.3**
ARCES	**ARCESS Array B**	**126.73**	**351**	PKP	**PKPdf**	**00 31 11.6**	**-1.4**
	0.6nm,0.5s,baz=16,slow=1.8,SNR=10						
CLL	**Collm**	**145.95**	**352**	*i* P	**PKPdf**	**00 31 47.9**	**-0.9**
	comp=Z,8.0nm,1.0s						
CLL				*i*		00 31 52.8	
CLL				*e*		00 32 21.0	
CLL	**Collm**	**145.95**	**352**	*e*PKPdf	**PKPdf**	**00 31 47.8**	**-1.0**
BUR08	**Bucovina Ar. S**	**146.12**	**336**	*e*PKPdf	**PKPdf**	**00 31 49.7**	**+0.3**
BRG	**Berggiesshubel**	**146.23**	**351**	*e*P	**PKPdf**	**00 31 48.6**	**-0.8**
	comp=Z,2.0nm,0.9s						
DPC	**Dobruska-Polom**	**146.31**	**348**	*e*PKP	**PKPdf**	**00 31 50.2**	**+0.6**
DPC				*ex*	x	00 32 23.0	
PRU	**Pruhonice**	**146.99**	**350**	*e*PKP	**PKPdf**	**00 31 51.2**	**+0.5**
BR101	**Keskin Array S**	**147.35**	**318**	*e*PKPbc	**PKPdf**	**00 31 53.0**	**+1.3**
BR131	**Keskin Array S**	**147.35**	**318**	*e*PKPdf	**PKPdf**	**00 31 53.1**	**+1.3**
BRTR	**Keskin Array B**	**147.35**	**318**	PKPbc	**PKPdf**	**00 31 53.0**	**+1.3**
	comp=Z,2.6nm,1.1s,baz=137,slow=3.8,SNR=8.4						
VYHS	**Vyhne**	**147.46**	**344**	*e*PKP	**PKPdf**	**00 31 53.4**	**+1.9**
BR231	**Keskin MP Arra**	**147.83**	**319**	*e*PKPbc	**PKPdf**	**00 31 53.8**	**+1.3**
KHC	**Kasperske Hory**	**147.98**	**350**	*e*PKP	**PKPdf**	**00 31 54.8**	**+2.4**
KHC				*ex*	x	00 31 59.4	
KHC				*ex*	x	00 32 27.5	
GERES	**GERESS Array B**	**148.24**	**350**	PKPbc	**PKPdf**	**00 31 54.9**	**+2.0**
	comp=Z,1.0nm,0.7s,baz=22,slow=3.0,SNR=11						
GEA0	**GERESS Array S**	**148.25**	**350**	*e*PKPbc	**PKPdf**	**00 31 54.2**	**+1.3**
PERS	**Pernice**	**150.09**	**347**	*i* PKPbc	**PKPdf**	**00 31 59.2**	**+3.3**
FUORN	**Ofenpass-Fuorn**	**150.89**	**354**	*i* PKPbc	**PKPdf**	**00 32 02.5**	**+5.1**
VISS	**Visnje**	**150.94**	**347**	*i* PKPbc	**PKPdf**	**00 32 01.7**	**+4.5**
JAVS	**Javornik**	**151.02**	**348**	*i* PKPbc	**PKPdf**	**00 32 01.6**	**+4.2**
BOJS	**Bojanci**	**151.14**	**346**	*i* PKPbc	**PKPdf**	**00 32 02.4**	**+4.9**
TORD	**Torodi Ar. Bea**	**174.04**	**138**	PKP	**PKPdf**	**00 32 18.0**	**-2.6**
	comp=Z,0.9nm,0.9s,baz=219,slow=2.4,SNR=4.5						
TORD				PKPab	**PKPab**	**00 33 50.6**	**-1.4**
	comp=Z,0.7nm,1.1s,baz=224,slow=4.0,SNR=3.3						
TOA1	**Torodi Ar. Sit**	**174.04**	**138**	*e*PKPdf	**PKPdf**	**00 32 18.0**	**-2.6**
TOA1				*e*PKPab	**PKPab**	**00 33 50.6**	**-1.4**

ISCJB ***26*** *00:17:25.7±0.7,38.98N±0.03×29.85E±0.04,h5km±7km, Error ellipse: s-maj=5.7km s-min=5.0km az=24.6*
DDA ***26*** *00:17:25.7,39.00N×29.86E,h7km,Md2.6*
CSEM ***26*** *00:17:25.9±0.1,38.99N×29.85E,h8km,MD2.6,Error ellipse: s-maj=3.2km s-min=2.1km az=126.0*

ISK ***26*** *00:17:26.2,38.99N×29.75E,h12km,MD2.4*
ISC 26 00:17:25.6±1.1,38.98N±0.04×29.86E±0.03,h13km±9km, n18,σ0s0.24/36,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GDZ	**Gediz**	**0.32**	**291**	*i* P	**Pg**	**00 17 32.2**	**0.0**
GDZ				*i* S	**Sg**	**00 17 36.7**	**+0.1**
GDZ	**Gediz**	**0.32**	**291**	P	**Pg**	**00 17 32.2**	**0.0**
GDZ				S	**Sg**	**00 17 36.7**	**+0.1**
TVSB	**Tavsanli**	**0.57**	**327**	*e*PG	**Pg**	**00 17 36.6**	**-0.1**
TVSB				*e*SG	**Sg**	**00 17 44.4**	**+0.1**
TVSB	**Tavsanli**	**0.57**	**327**	*e*Pg	**Pg**	**00 17 36.7**	**-0.1**
TVSB				*e*Sg	**Sg**	**00 17 44.4**	**+0.1**
KHAL	**Karahalli**	**0.67**	**206**	*i* P	**Pb**	**00 17 39.5**	**+0.2**
KHAL				*i* S	**Sb**	**00 17 48.4**	**-0.1**
KHAL	**Karahalli**	**0.67**	**206**	P	**Pb**	**00 17 39.5**	**+0.2**
KHAL				S	**Sb**	**00 17 48.4**	**-0.1**
KHL	**Karahalli**	**0.70**	**202**	*e*PG	**Pb**	**00 17 39.8**	**0.0**
KHL				*e*SG	**Sb**	**00 17 49.8**	**+0.4**
KHL	**Karahalli**	**0.70**	**202**	*e*Pg	**Pb**	**00 17 39.8**	**0.0**
KHL				*e*Sg	**Sb**	**00 17 49.8**	**+0.4**
DEMI	**Demirci**	**0.90**	**275**	*i* P	**Pg**	**00 17 42.9**	**0.0**
DEMI				*i* S	**Sb**	**00 17 54.9**	**-0.1**
DEMI	**Demirci**	**0.90**	**275**	P	**Pg**	**00 17 42.9**	**0.0**
DEMI				S	**Sb**	**00 17 54.9**	**-0.1**
ESKT	**Eskisehir**	**0.94**	**54**	*i* P	**Pg**	**00 17 43.5**	**-0.3**
ESKT				*i* S	**Sb**	**00 17 56.7**	**+0.5**
SEYT	**Eskypehyr**	**0.94**	**54**	P	**Pg**	**00 17 43.5**	**-0.3**
SEYT				S	**Sb**	**00 17 56.7**	**+0.5**
BORA	**Eskisehir**	**1.01**	**27**	*i* P	**Pn**	**00 17 45.5**	**-0.1**
BORA				*i* S	**Sg**	**00 17 58.4**	**0.0**
BORA	**Eskisehir**	**1.01**	**27**	P	**Pn**	**00 17 45.5**	**-0.1**
BORA				S	**Sg**	**00 17 58.4**	**0.0**
KULA	**Kula-Manisa**	**1.05**	**244**	*e*PG	**Pb**	**00 17 45.3**	**-0.3**
KULA				*e*SG	**Sb**	**00 17 59.2**	**-0.1**
KULA	**Kula-Manisa**	**1.05**	**244**	*e*Pg	**Pb**	**00 17 45.3**	**-0.3**
KULA				*e*Sg	**Sb**	**00 17 59.2**	**-0.1**
DURS	**Dursunbey**	**1.25**	**300**	*i* P	**Pg**	**00 17 50.1**	**+0.5**
DURS				*i* S	**Sn**	**00 18 05.5**	**0.0**
DURS	**Dursunbey**	**1.25**	**300**	P	**Pg**	**00 17 50.1**	**+0.5**
DURS				S	**Sn**	**00 18 05.5**	**0.0**

JMA 26 00:20:40.3±0.2,38.35N×143.74E,h11km,M3.5,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**1.78**	**295**	P	Pn	00 21 11.6	+0.6
JIO	**Ouri**	**1.88**	**274**	P	Pn	00 21 13.0	+0.6
JIO				*e*S	Sn	00 21 36.6	+0.5
MIYJ	**Miyakonagasawa**	**1.93**	**310**	P	Pn	00 21 13.5	+0.4
MIYJ				*e*S	Sn	00 21 38.2	+0.8
JMK	**Ichinoseki**	**2.06**	**288**	P	Pn	00 21 15.9	+1.0
JOM	**Ohasama**	**2.21**	**301**	P	Pn	00 21 17.9	+0.9
JOM				*e*S	Sb	00 21 46.4	-1.4
JANG	**Nango**	**2.66**	**320**	P	Pn	00 21 23.5	+0.4
JANG				*e*S	Sn	00 21 55.9	+0.6
JYK	**Kaneyama**	**2.71**	**283**	P	Pn	00 21 25.6	+1.8
JYK				*e*S	Sn	00 21 59.0	+2.5
JFT	**Otama**	**2.82**	**254**	P	Pn	00 21 26.3	+1.0

ISCJB ***26*** *00:30:46.5±1.0,36.67N±0.05×140.69E±0.09,h11km±4km, mb3.5/2,Error ellipse: s-maj=14.4km s-min=5.2km az=33.4*
IDC ***26*** *00:30:46.8±2.5,36.72N×140.59E,h0km,mb3.5/2, mb1 3.7/2,mb1mx3.2/51,mbtmp3.5/2,Error ellipse: s-maj=46.0km s-min=33.4km az=32.0*
JMA ***26*** *00:30:47.4,36.71N×140.60E,h6km±1km,M3.2*
JMA Felt I J1.
ISC 26 00:30:47.4±1.1,36.70N±0.05×140.63E±0.08,h7km±8km, n9,σ0s0.34/15,5C,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHO	**Hitachi**	**0.10**	**209**	⇑P	**Pg**	**00 30 49.7**	**0.0**
JHO				S	**Sg**	**00 30 51.3**	**+0.1**
ONAJ	**Iwakimizuishiy**	**0.42**	**19**	⇑P	**Pg**	**00 30 55.6**	**-0.1**
ONAJ				*e*S	**Sg**	**00 31 01.7**	**+0.5**
JYT	**Yasato**	**0.59**	**217**	⇑P	**Pg**	**00 30 58.5**	**-0.3**
JYT				S	**Sg**	**00 31 06.5**	**+0.1**
JSB	**Shiboa**	**0.63**	**295**	⇑P	**Pg**	**00 30 59.6**	**0.0**
JFK	**Kawauchi**	**0.69**	**16**	⇑P	**Pg**	**00 31 00.4**	**-0.4**
JFK				S	**Sg**	**00 31 09.9**	**+0.1**
MJAR	**Matsushiro Arr**	**1.95**	**266**	Pn	**Pn**	**00 31 20.8**	**-0.3**
	15nm,0.3s,baz=84,slow=10,SNR=80						
MJAR				Sn	**Sn**	**00 31 45.4**	**-0.5**
	15nm,0.3s,baz=44,slow=18,SNR=12						
MAT	**Matsushiro**	**1.96**	**266**	P	**Pn**	**00 31 21.0**	**-0.1**
MAT				S	**Sn**	**00 31 46.5**	**+0.5**
ZALV	**Zalesovo Beam**	**41.68**	**313**	P	**P**	**00 38 36.4**	**-0.1**
	0.6nm,0.5s,baz=97,slow=6.0,SNR=1.2						
WRA	**Warramunga Arr**	**56.65**	**187**	P	**P**	**00 40 31.8**	**+0.4**
	0.3nm,0.6s,baz=4.7,slow=7.4,SNR=1.6						

IDC ***26*** *00:31:41.6±0.8,13.51N×92.60E,h0km,mb3.8/14, mb1 4.0/15,mb1mx3.8/49,mbtmp3.8/15,ML

*ISCJB **26** 00:41:13.1±0.9, 7°.1S±0°.2×117°.1E±0°.2, h611km, mb3.6/6, Error ellipse: s-maj=34.5km s-min=14.4km az=154.2*
*IDC **26** 00:41:14.5±1.6, 7°.04S×117°.19E, h609km±22km, mb2.9/6, mb1 3.1/8, mb1mx2.8/30, mbtmp4.0/8, Error ellipse: s-maj=40.8km s-min=14.1km az=65.0*
ISC 26 00:41:14.6±1.0, 7°.1S±0°.2×117°.2E±0°.3, h611km, n10, σ0s59/10, mb3.7/5, Bali Sea

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
KAPI	**Kappang**	**3.23**	**51**	P	**P**	**00 42 36.0**	**-0.1**
	11nm,0.3s,baz=215,slow=2.7,SNR=24						
FITZ	**Fitzroy Crossi**	**13.71**	**144**	P	**P**	**00 44 09.3**	**-1.1**
	1.2nm,0.3s,baz=330,slow=6.5,SNR=28						
WRA	**Warramunga Arr**	**20.97**	**129**	P	**P**	**00 45 17.0**	**+0.3**
	0.9nm,0.4s,baz=308,slow=9.8,SNR=7.3						
ASAR	**Alice Springs**	**23.01**	**138**	P	**P**	**00 45 35.1**	**+0.3**
	1.7nm,0.4s,baz=313,slow=8.1,SNR=37						
NWAO	**Narrogin (SRO)**	**25.75**	**180**	P	**P**	**00 45 59.0**	**+0.2**
	5.7nm,0.7s,baz=109,slow=0.0,SNR=2.8						
STKA	**Stephens Creek**	**33.56**	**141**	P	**P**	**00 47 06.8**	**+0.9**
	0.9nm,0.4s,baz=319,slow=11,SNR=4.4						
MKAR	**Makanchi Array**	**61.94**	**334**	P	**P**	**00 50 36.7**	**+0.3**
	0.3nm,0.3s,baz=142,slow=5.5,SNR=5.4						
ZALV	**Zalesovo Beam**	**66.61**	**340**	P	**P**	**00 51 05.3**	**-0.3**
	0.3nm,0.3s,baz=151,slow=3.3,SNR=2.7						
YKA	**Yellowknife Ar**	**113.13**	**23**	PKiKP	**PKiKP**	**00 58 43.4**	**0.0**
	0.1nm,0.4s,baz=305,slow=1.8,SNR=4.9						
TORD	**Torodi Ar. Bea**	**116.38**	**281**	PKP	**PKPdf**	**00 58 50.6**	**-0.4**
	0.2nm,0.5s,baz=74,slow=1.3,SNR=6.2						

*NIED **26** 00:53:00, 30°.00N×131°.30E, h23km, Mw4.0 Best double couple: M0 1.07000×10^15 NP1:φs207.00000°, δ26.00000°, λ92.00000°. NP2:φs24.00000°, δ64.00000°, λ89.00000°.*
*JMA **26** 00:53:09.9±0.2, 29°.95N×131°.28E, h27km±2km, M3.6*
*ISCJB **26** 00:53:12.0±0.8, 30°.03N±0°.04×131°.15E±0°.09, h49km±7km, mb3.7/11, MS2.9/1, Error ellipse: s-maj=14.0km s-min=5.0km az=19.9*
*IDC **26** 00:53:14.3±2.1, 30°.14N×130°.96E, h45km±18km, mb3.5/11, mb1 3.6/14, mb1mx3.5/33, mbtmp3.7/14, ML3.3/3, MS3.0/1, Ms1 3.2/1, ms1mx2.4/34, Error ellipse: s-maj=32.8km s-min=14.1km az=92.0*
ISC 26 00:53:12.0±1.7, 30°.05N±0°.05×131°.16E±0°.08, h31km±11km, n29, σ0s92/36, mb3.8/11, Kyushu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JYAK	**Yakushimahirau**	**0.59**	**289**	P	**Pb**	**00 53 23.5**	**-0.5**
JYAK				*e*S	**Sn**	**00 53 33.0**	**+0.1**
JTN	**Tanegashima 3**	**0.62**	**346**	P	**Pb**	**00 53 24.0**	**-0.6**
JTN				*e*S	**Sn**	**00 53 34.5**	**+0.7**
JKC	**Kuchinoerabu**	**0.93**	**297**	P	**Pb**	**00 53 29.6**	**0.0**
JKC				*e*S	**Sb**	**00 53 42.7**	**+1.1**
JNN	**Nakanoshima**	**1.13**	**260**	P	**Pn**	**00 53 31.8**	**0.0**
JTSR	**Tashiro 2**	**1.13**	**350**	P	**Pn**	**00 53 31.9**	**0.0**
JTSR				*e*S	**Sb**	**00 53 47.7**	**+0.2**
JNAR	**Kushima--Naru**	**1.48**	**4**	P	**Pn**	**00 53 36.7**	**+0.2**
JNAR				*e*S	**Sb**	**00 53 56.6**	**-0.7**
JSU	**Suzuyama**	**1.57**	**338**	P	**Pn**	**00 53 38.4**	**+0.5**
JSU				*e*S	**Sb**	**00 53 59.4**	**-0.7**
JTZ	**Takazaki**	**1.85**	**358**	P	**Pn**	**00 53 42.0**	**+0.3**
JTAJ	**Takarajima**	**1.92**	**243**	P	**Pn**	**00 53 43.5**	**+0.9**
JAM	**Amami Oshima**	**2.12**	**220**	P	**Pn**	**00 53 45.8**	**+0.4**
JAM				*e*S	**Sn**	**00 54 10.8**	**+0.2**
JZO	**Okuchi**	**2.14**	**347**	P	**Pn**	**00 53 46.1**	**+0.4**
JNU	**Nakatsue**	**3.08**	**356**	P	**Pn**	**00 53 59.1**	**+0.6**
	5.5nm,0.3s,baz=0.7,slow=1.9,SNR=19						
JNU				S	**Sn**	**00 54 34.4**	**+0.1**
	3.6nm,0.3s,baz=252,slow=20,SNR=3.8						
JOW	**Kunigami**	**4.09**	**219**	P	**Pn**	**00 54 12.7**	**+0.3**
	3.5nm,0.3s,baz=122,slow=23,SNR=11						
JOW				S	**Sn**	**00 54 57.6**	**-1.6**
	12nm,0.3s,baz=153,slow=25,SNR=8.2						
KSRS	**Korea Array**	**7.86**	**341**	P	**Pn**	**00 55 06.2**	**+1.9**
	0.5nm,0.3s,baz=156,slow=14,SNR=4.4						
MJAR	**Matsushiro Arr**	**8.76**	**40**	P	Pn	00 55 26.8	+10
	0.6nm,0.3s,baz=235,slow=15,SNR=4.3						
USRK	**Ussuriysk Ar.**	**14.14**	**2**	P	**P**	**00 56 39.1**	**+1.8**
	0.2nm,0.3s,baz=180,slow=6.6,SNR=3.6						
KLR	**Kul'dur**	**19.16**	**1**	P	**P**	**00 57 33.1**	**+0.2**
	0.2nm,0.3s,baz=171,slow=7.6,SNR=3.9						
CMAR	**Chiang Mai Arr**	**31.45**	**256**	LR	LR	01 14 04.6	
	comp=Z,26nm,18.0s,baz=100,slow=40						
MKAR	**Makanchi Array**	**41.07**	**308**	P	**P**	**01 00 51.2**	**-1.6**
	0.4nm,0.5s,baz=86,slow=11,SNR=5.1						
NRIK	**Noril'sk**	**46.48**	**340**	P	**P**	**01 01 34.4**	**-1.5**
	1.9nm,0.5s,baz=140,slow=7.4,SNR=2.8						
WRA	**Warramunga Arr**	**49.79**	**176**	P	**P**	**01 02 03.3**	**+1.2**
	0.5nm,1.0s,baz=6.8,slow=11,SNR=2.7						
ASAR	**Alice Springs**	**53.47**	**177**	P	**P**	**01 02 31.2**	**+1.7**
	0.3nm,0.7s,baz=11,slow=14,SNR=4.9						
GEYT	**Alibeck**	**59.67**	**299**	P	**P**	**01 03 14.1**	**+0.5**
	1.0nm,0.6s,baz=114,slow=1.8,SNR=3.7						
ARCES	**ARCESS Array B**	**67.41**	**338**	P	**P**	**01 04 03.3**	**-0.9**
	1.0nm,0.7s,baz=52,slow=7.9,SNR=4.7						
KBZ	**Khabaz**	**68.76**	**309**	P	**P**	**01 04 13.4**	**+0.4**
	0.7nm,0.5s,baz=21,slow=3.2,SNR=4.5						
FINES	**FINESS Array B**	**70.82**	**331**	P	**P**	**01 04 24.6**	**-0.8**
	0.8nm,0.4s,baz=64,slow=6.3,SNR=12						
YKA	**Yellowknife Ar**	**73.98**	**26**	P	**P**	**01 04 44.6**	**+0.4**
	0.3nm,0.8s,baz=300,slow=6.0,SNR=5.6						
BRTR	**Keskin Array B**	**76.72**	**308**	P	**P**	**01 04 59.8**	**-0.9**
	0.6nm,0.7s,baz=88,slow=4.7,SNR=4.7						
NOA	**NORSAR Array B**	**77.02**	**334**	P	**P**	**01 05 01.2**	**-0.5**
	0.5nm,0.5s,baz=51,slow=5.6,SNR=3.4						

*NIED **26** 01:05:00, 39°.20N×142°.40E, h35km, Mw3.7 Best double couple: M0 3.90000×10^14 NP1:φs247.00000°, δ44.00000°, λ-81.00000°. NP2:φs55.00000°, δ47.00000°, λ-98.00000°.*
JMA 26 01:05:54.1±0.1, 39°.21N×142°.42E, h35km±2km, M3.6, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MIYJ	**Miyakonagasawa**	**0.59**	**308**	P	Pn	01 06 05.6	-0.4
MIYJ				S	Sn	01 06 13.6	-0.9
OFUJ	**Ofunato**	**0.60**	**258**	P	Pn	01 06 06.0	-0.1
OFUJ				S	Sn	01 06 14.3	-0.3
JOM	**Ohasama**	**0.91**	**287**	P	Pn	01 06 10.8	+0.4
JOM				S	Sn	01 06 22.7	+0.3
JMK	**Ichinoseki**	**0.97**	**255**	P	Pn	01 06 11.6	+0.4
JMK				S	Sn	01 06 24.4	+0.7
JIO	**Ouri**	**1.13**	**228**	P	Pn	01 06 13.3	0.0
JIO				S	Sn	01 06 27.1	-0.5
JKZ	**Kuzumaki**	**1.14**	**313**	P	Pn	01 06 14.5	+0.8
JKZ				S	Sn	01 06 29.0	+0.9
JANG	**Nango**	**1.35**	**329**	P	Pn	01 06 17.1	+0.6
JANG				S	Sn	01 06 34.0	+0.7
JRG	**Rokugo**	**1.40**	**278**	P	Pn	01 06 18.4	+1.3
JOU	**Okura**	**1.61**	**239**	P	Pn	01 06 21.4	+1.4

*CSEM **26** 01:07:19.5, 46°.32N×13°.64E, h0km, ML0.5*
LJU 26 01:07:19.5, 46°.32N×13°.64E, h8km, ML0.5, 1C, Austria

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CADS	**Cadrg**	**0.11**	**145**	*i*Pg	Pg	01 07 22.0	-0.1
CADS				*i* Sg	Sg	01 07 23.9	+0.1
	comp=Z,13nm,0.1s						
CADS	**Cadrg**	**0.11**	**145**	Pg	Pg	01 07 22.0	-0.1
CADS				*i* Sg	Sg	01 07 23.9	+0.1
	comp=Z,13nm,0.1s						
ROBS	**Robic**	**0.12**	**230**	*i* Pg	Pg	01 07 22.1	0.0
ROBS				*i* Sg	Sg	01 07 24.1	+0.2
	comp=Z,14nm,0.1s						
ROBS	**Robic**	**0.12**	**230**	*i* Pg	Pg	01 07 22.1	0.0
ROBS				*i* Sg	Sg	01 07 24.1	+0.1
	comp=Z,14nm,0.1s						
GORS	**Gorjuse**	**0.24**	**91**	*i* Pg	Pg	01 07 24.2	-0.1
GORS				*i* Sg	Sg	01 07 28.1	+0.4
	comp=Z,4.0nm,0.1s						
GORS	**Gorjuse**	**0.24**	**91**	*i* Pg	Pg	01 07 24.2	-0.2
GORS				*i* Sg	Sg	01 07 28.1	+0.4
	comp=Z,4.0nm,0.1s						
VOJS	**Vojsko**	**0.33**	**150**	*i* Pg	Pg	01 07 26.0	-0.1
VOJS				*i* Sg	Sg	01 07 31.5	+1.0
	comp=Z,1.0nm,0.1s						
VOJS	**Vojsko**	**0.33**	**150**	*i* Pg	Pg	01 07 26.0	-0.1
VOJS				*i* Sg	Sg	01 07 31.5	+1.0
	comp=Z,1.0nm,0.1s						
CRNS	**Crni Vrh**	**0.49**	**119**	*i* Pg	Pg	01 07 29.0	-0.1
CRNS				*i* Sg	Sg	01 07 36.5	+1.1
	comp=Z,1.0nm,0.1s						
CRNS	**Crni Vrh**	**0.49**	**119**	*i* Pg	Pg	01 07 29.0	0.0
CRNS				*i* Sg	Sg	01 07 36.5	+1.0
JAVS	**Javornik**	**0.52**	**145**	*i* Sg	Sg	01 07 37.4	+1.1
	comp=Z,0.0nm,0.1s						
JAVS	**Javornik**	**0.52**	**145**	*i* Sg	Sg	01 07 37.4	+1.1
MOZS	**Mozjanca**	**0.56**	**92**	*i* Pg	Pg	01 07 30.8	+0.6
	comp=Z,0.0nm,0.1s						
MOZS	**Mozjanca**	**0.56**	**92**	*i* Pg	Pg	01 07 30.8	+0.6

*NIED **26** 01:07:00, 36°.50N×140°.90E, h11km, Mw3.6 Best double couple: M0 2.82000×10^14 NP1:φs190.00000°, δ44.00000°, λ-51.00000°. NP2:φs322.00000°, δ57.00000°, λ-122.00000°.*
*IDC **26** 01:07:44.8±1.1, 36°.33N×140°.99E, h0km, mb3.3/6, mb1 3.5/7, mb1mx3.4/40, mbtmp3.3/7, ML3.3/1, MS3.2/3, Ms1 3.2/3, ms1mx2.6/25, Error ellipse: s-maj=24.8km s-min=24.1km az=58.0*
*ISCJB **26** 01:07:46.2±1.1, 36°.45N±0°.05×141°.05E±0°.07, h19km±8km, mb3.3/6, MS3.8/1, Error ellipse: s-maj=9.7km s-min=6.9km az=32.4*
*JMA **26** 01:07:47.8±0.1, 36°.48N×140°.92E, h32km±1km, M3.9*
JMA Felt II J1.
ISC 26 01:07:46.5±1.9, 36°.47N±0°.06×140°.95E±0°.06, h8km±12km, n22, σ0s84/19, mb3.4/6, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JHO	**Hitachi**	**0.34**	**295**	P	**Pb**	**01 07 55.3**	**+0.6**
JHO				S	**Sb**	**01 08 00.4**	**+0.2**
ONAJ	**Iwakimizuishiy**	**0.65**	**349**	P	**Pb**	**01 07 59.8**	**-0.2**
ONAJ				*e*S	**Sg**	**01 08 07.9**	**+0.5**
JYT	**Yasato**	**0.65**	**249**	P	**Pb**	**01 08 00.2**	**+0.1**
JYT				S	**Sb**	**01 08 08.6**	**-0.7**
JFK	**Kawauchi**	**0.90**	**356**	P	**Pg**	**01 08 03.3**	**-0.5**
MJAR	**Matsushiro Art**	**2.21**	**273**	Pn	**Pn**	**01 08 23.8**	**+0.4**
	8.0nm,0.3s,baz=95,slow=9.5,SNR=28						
MJAR				Sn	**Sn**	**01 08 51.3**	**+0.5**
	17nm,0.3s,baz=79,slow=14,SNR=4.8						
MAT	**Matsushiro**	**2.21**	**273**	P	**Pn**	**01 08 23.7**	**+0.3**
MAT				S	**Sb**	**01 08 53.0**	**-1.2**
JHJ	**Hachijo jima 2**	**3.48**	**196**	Pn	**Pn**	**01 08 42.0**	**+1.2**
	14nm,0.3s,baz=233,slow=20,SNR=1.7						
JHJ				Sn	**Sn**	**01 09 22.4**	**+0.3**
	8.3nm,0.3s,baz=53,slow=20,SNR=1.3						
KSRS	**Korea Array**	**10.47**	**279**	LR	LR	01 14 28.5	
	comp=Z,27nm,18.9s,baz=115,slow=38						
JOW	**Kunigami**	**14.44**	**222**	LR	LR	01 15 16.3	
	comp=Z,129nm,21.7s,baz=139,slow=31						
H11N2	**WAKE ISLAND Hy**	**28.19**	**119**	T	T	01 43 34.2	
	baz=312,slow=75,SNR=79						
H11N1	**WAKE ISLAND Hy**	**28.20**	**119**	T	T	01 43 34.6	
	baz=312,slow=75,SNR=41						
H11N3	**WAKE ISLAND Hy**	**28.21**	**119**	T	T	01 43 35.5	
	baz=312,slow=75,SNR=59						
H11S1	**WAKE ISLAND Hy**	**28.88**	**121**	T	T	01 44 23.7	
	baz=314,slow=76,SNR=101						
H11S3	**WAKE ISLAND Hy**	**28.88**	**121**	T	T	01 44 20.6	
	baz=314,slow=76,SNR=74						
H11S2	**WAKE ISLAND Hy**	**28.89**	**121**	T	T	01 44 23.0	
	baz=314,slow=76,SNR=65						
SIJI	**Sorong**	**38.22**	**196**	LR	LR	01 28 50.2	
	comp=Z,177nm,21.6s,baz=326,slow=33						
ZALV	**Zalesovo Beam**	**42.02**	**313**	P	**P**	**01 15 37.6**	**-0.5**
	0.4nm,0.4s,baz=77,slow=4.4,SNR=2.1						
MKAR	**Makanchi Array**	**44.10**	**303**	P	**P**	**01 15 56.1**	**+1.0**
	0.1nm,0.4s,baz=74,slow=11,SNR=1.8						
ILAR	**Eielson Array**	**50.17**	**32**	P	**P**	**01 16 42.9**	**+0.8**
	0.1nm,0.5s,baz=265,slow=6.2,SNR=1.4						
WRA	**Warramunga Arr**	**56.45**	**187**	P	**P**	**01 17 27.0**	**-1.8**
	1.0nm,0.8s,baz=5.9,slow=7.3,SNR=5.7						
ASAR	**Alice Springs**	**60.18**	**187**	P	**P**	**01 17 53.7**	**-1.1**
	0.3nm,0.6s,baz=13,slow=7.9,SNR=6.0						
YKA	**Yellowknife Ar**	**64.48**	**30**	P	**P**	**01 18 23.3**	**+0.1**
	0.1nm,0.5s,baz=281,slow=6.9,SNR=1.2						

*CSEM **26** 01:08:28.9±0.3, 50°.31N×18°.77E, h2km, Error ellipse: s-maj=7.3km s-min=3.3km az=8.0*
PRU 26 01:08:29.6, 50°.28N×18°.76E, h0km, 2C, Poland

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CHZP	**Chorzow**	**0.15**	**86**	*e*Pg	Pg	01 08 32.1	-0.3
CHZP				*e*Sg	Sg	01 08 35.0	+0.6
OKC	**Ostrava-Krasne**	**0.59**	**222**	*e*PG	Pg	01 08 41.6	+0.7
OKC				*e*SG	Sg	01 08 50.1	+1.5
	comp=Z,4.7nm,0.2s						
OKC	**Ostrava-Krasne**	**0.59**	**222**	Pg	Pg	01 08 41.6	+0.7
OKC				Sg	Sg	01 08 50.1	+1.5
	4.7nm,0.2s						
OJC	**Ojcow**	**0.67**	**95**	*i* Pg	Pg	01 08 41.5	-0.9
OJC				*e*Sg	Sg	01 08 50.4	-0.7
OJC	**Ojcow**	**0.67**	**95**	*i* Pg	Pg	01 08 41.5	-0.9
OJC				*e*Sg	Sg	01 08 50.4	-0.7
MORC	**Moravsky Berou**	**0.93**	**238**	*e*Pg	Pg	01 08 47.1	-0.4
MORC				*e*Sg	Sg	01 09 00.2	+0.7
LANS	**Liptovska Anna**	**1.22**	**158**	*e*Sg	Sg	01 09 08.5	-0.3
LANS	**Liptovska Anna**	**1.22**	**158**	*e*PG	Pg	01 08 52.4	-0.6
LANS				*e*SG	Sg	01 09 08.5	-0.3
KRLC	**Kraliky**	**1.29**	**262**	*e*PG	Pg	01 08 53.6	-0.7
KRLC				*e*SG	Sg	01 09 10.5	-0.5
KRLC	**Kraliky**	**1.29**	**262**	Pg	Pg	01 08 53.6	-0.7
KRLC				Sg	Sg	01 09 10.5	-0.5
NIE	**Niedzica**	**1.32**	**130**	*e*Pg	Pg	01 08 53.8	-1.0
NIE				*e*Sg	Sg	01 09 12.2	+0.3
NIE	**Niedzica**	**1.32**	**130**	*e*Pg	Pg	01 08 53.8	-1.0
NIE				*e*Sg	Sg	01 09 12.2	+0.3
DPC	**Dobruska-Polom**	**1.56**	**274**	*e*PG	Pn	01 08 57.9	-0.8
DPC				*e*SG	Sn	01 09 19.4	-0.3
	comp=Z,1.7nm,0.2s						
DPC	**Dobruska-Polom**	**1.56**	**274**	Pg	Pn	01 08 57.9	-0.8
DPC				Sg	Sn	01 09 19.4	-0.3
	1.7nm,0.2s						
KSP	**Ksiaz**	**1.67**	**291**	*e*Pg	Pb	01 09 01.2	0.0
KSP				*e*Sg	Sg	01 09 23.6	+0.3
KSP	**Ksiaz**	**1.67**	**291**	*e*Pg	Pb	01 09 01.2	0.0
KSP				*e*Sg	Sg	01 09 23.6	+0.3
VRAC	**Vranov**	**1.71**	**236**	*e*Pn	Pn	01 09 00.7	+0.1
VRAC				*e*Sg	Sn	01 09 22.5	-0.7
STHS	**Stebnicka Huta**	**1.82**	**117**	*e*Pn	Pn	01 09 02.6	+0.3
STHS	**Stebnicka Huta**	**1.82**	**117**	*e*PN	Pn	01 09 02.6	+0.3
STHS				*e*LG	Lg	01 09 41.7	
KHC	**Kasperske Hory**	**3.56**	**253**	*e*SG	Sg	01 10 20.9	-2.8

*ISCJB **26** 01:18:50.4±0.6, 12°.7S±0°.1×169°.3E±0°.1, h650km, mb3.8/15, Error ellipse: s-maj=14.9km s-min=12.4km az=34.6*
*IDC **26** 01:18:52.1±1.3, 12°.80S×169°.16E, h653km±16km, mb3.4/15, mb1 3.6/18, mb1mx3.3/47, mbtmp4.5/18, Error ellipse: s-maj=16.5km s-min=10.5km az=135.0*
ISC 26 01:18:51.8±0.7, 12°.8S±0°.1×169°.2E±0°.1, h650km, n24, σ1s16/27, mb4.0/15, Santa Cruz Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
DZM	**Mont Dzumac**	**9.61**	**195**	P	**P**	**01 21 08.5**	**+0.5**
	6.4nm,0.3s,baz=266,slow=10,SNR=49						
HNR	**Honiara**	**9.66**	**289**	P	**P**	**01 21 08.6**	**+0.1**
	25nm,0.3s,baz=176,slow=3.3,SNR=3.4						
AFI	**Afiamalu**	**18.55**	**96**	P	**P**	**01 22 30.4**	**-0.2**
	2.4nm,0.3s,baz=353,slow=20,SNR=4.1						
STKA	**Stephens Creek**	**31.68**	**229**	P	**P**	**01 24 26.0**	**+0.7**
	2.0nm,0.5s,baz=54,slow=9.9,SNR=13						
WRA	**Warramunga Ar**	**34.14**	**253**	P	**P**	**01 24 45.9**	**-0.2**
	0.8nm,0.4s,baz=85,slow=8.9,SNR=8.8						
WRA				S	**S**	**01 29 26.4**	**-2.5**
	1.3nm,0.9s,baz=85,slow=14,SNR=4.7						
WRA				ScP	**ScP**	**01 29 50.3**	**+2.1**
	0.7nm,0.7s,baz=87,slow=4.7,SNR=4.1						
ASAR	**Alice Springs**	**35.13**	**247**	P	**P**	**01 24 54.1**	**-0.1**
	3.1nm,0.6s,baz=73,slow=9.3,SNR=62						
ASAR				S	**S**	**01 29 41.2**	**-2.4**
	0.5nm,0.8s,baz=76,slow=16,SNR=4.5						
ASAR				ScP	**ScP**	**01 29 53.6**	**+1.8**
	0.3nm,0.5s,baz=78,slow=3.9,SNR=5.1						
FITZ	**Fitzroy Crossi**	**42.24**	**257**	P	**P**	**01 25 51.7**	**+0.6**
	2.2nm,0.9s,baz=72,slow=9.6,SNR=2.5						
KSRS	**Korea Array**	**63.23**	**324**	P	**P**	**01 28 19.5**	**+0.6**
	0.8nm,0.7s,baz=138,slow=6.3,SNR=4.4						
VNDA	**Vanda**	**64.85**	**182**	P	**P**	**01 28 28.5**	**-0.1**
	1.3nm,0.8s,baz=347,slow=6.1,SNR=8.7						
USRK	**Ussuriysk Ar.**	**66.03**	**332**	P	**P**	**01 28 36.9**	**+0.6**
	2.2nm,0.6s,baz=138,slow=7.7,SNR=8.4						
PETK	**Petropavlovsk-**	**66.36**	**352**	P	**P**	**01 28 38.2**	**0.0**
	5.7nm,0.7s,baz=143,slow=5.0,SNR=5.9						
KLR	**Kul'dur**	**70.01**	**335**	P	**P**	**01 29 00.9**	**+0.7**
	3.2nm,0.7s,baz=148,slow=3.0						
CMAR	**Chiang Mai Arr**	**75.89**	**293**	P	**P**	**01 29 35.8**	**+1.4**
	1.6nm,0.3s,baz=113,slow=4.4,SNR=6.9						
SEY	**Seymchan**	**76.59**	**352**	P	**P**	**01 29 37.4**	**+0.2**
	5.7nm,0.6s,baz=142,slow=6.8,SNR=14						
SONM	**Songino Array**	**82.06**	**323**	P	**P**	**01 30 06.3**	**0.0**
	1.0nm,0.5s,baz=139,slow=5.7,SNR=4.0						
ILAR	**Eielson Array**	**84.11**	**17**	P	**P**	**01 30 14.4**	**-1.5**
	3.2nm,0.7s,baz=237,slow=5.1,SNR=34						
YKA	**Yellowknife Ar**	**94.97**	**27**	P	**P**	**01 31 05.2**	**-1.2**
	0.9nm,0.8s,baz=256,slow=4.6,SNR=22						
MKAR	**Makanchi Array**	**97.09**	**316**	P	**P**	**01 31 16.4**	**+0.1**
	0.7nm,0.5s,baz=87,slow=5.7,SNR=8.6						
ARCES	**ARCESS Array B**	**118.83**	**346**	PKP	**PKPdf**	**01 36 26.8**	**-0.7**
	0.6nm,0.4s,baz=72,slow=2.3,SNR=13						
NOA	**NORSAR Array B**	**129.21**	**346**	PP	PP	01 39 11.3	+5.0
	4.0nm,0.8s,baz=30,slow=3.0,SNR=12						
AKASG	**Malin Array Be**	**130.13**	**328**	SKPbc	**SKPab**	**01 39 14.2**	**+0.2**
	2.0nm,0.7s,baz=42,slow=4.4,SNR=11						
BRTR	**Keskin Array B**	**132.61**	**313**	SKPab	**SKPab**	**01 39 25.1**	**-0.1**
	0.6nm,0.8s,baz=120,slow=5.2,SNR=4.4						
GERES	**GERESS Array B**	**138.71**	**335**	SKPbc	**SKiKP**	**01 39 42.0**	**-2.0**
	0.6nm,0.7s,baz=28,slow=4.4,SNR=8.5						
ESDC	**Sonseca Array**	**152.53**	**348**	PKPab	**PKPab**	**01 37 51.0**	**+0.5**
	0.2nm,0.4s,baz=7.2,slow=3.8,SNR=5.8						

MEX 26 01:20:46.5±0.6, 17°.37N×101°.22W, h23km±9km, MD3.7, Near coast of Guerrero

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ZIIG	**Zihuatanejo**	**0.34**	**315**	*e*P	Pb	01 20 52.7	-1.3
ZIIG				*i* S	Sb	01 20 57.8	-1.3
CAIG	**El Cayaco**	**0.96**	**109**	*e*P	Pb	01 21 01.2	-3.3
CAIG				*e*S	Sb	01 21 13.5	-3.3
ARIG	**Puente Sto Nin**	**1.23**	**42**	*i* P	Pn	01 21 05.0	-3.3
ARIG				*e*S	Sn	01 21 20.0	-4.2
MEIG	**Mezcala**	**1.62**	**70**	*e*P	Pn	01 21 12.0	-1.7
MEIG				*i* S	Sn	01 21 30.8	-3.1

*ISCJB **26** 01:21:16.0±0.6, 11°.64N±0°.07×42°.87E±0°.07, h18km±8km, Error ellipse: s-maj=13.9km s-min=8.3km az=141.3*
*DHMR **26** 01:21:15.8±0.3, 11°.89N×42°.96E, h6km±4km, ML3.9*
*ARO **26** 01:21:17.1, 11°.6N±0°.2×42°.9E±0°.2, h4km, ML3.6*
ISC 26 01:21:16.1±0.9, 11°.63N±0°.06×42°.91E±0°.06, h14km±7km, n13, σ0s51/17, Ethiopia

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ATD	**Arta Tunnel**	**0.12**	**209**	*e*P	**Pg**	**01 21 19.7**	**+0.1**
ATD				*e*S	**Sg**	**01 21 21.6**	**-0.2**
ARO	**Arta Observato**	**0.12**	**209**	*e*P	**Pg**	**01 21 19.8**	**+0.1**
ARO				*e*S	**Sg**	**01 21 21.9**	**-0.1**
TDD	**Tadjoura Ara**	**0.17**	**1**	*e*P	**Pb**	**01 21 21.2**	**0.0**
MCAD	**Moucha**	**0.32**	**72**	*e*P	**Pb**	**01 21 23.7**	**+0.1**
SGH	**Sud-Ghoubbet**	**0.33**	**234**	*e*P	**Pg**	**01 21 23.2**	**+0.2**
ATA	**Atar**	**0.34**	**121**	*e*P	**Pb**	**01 21 24.1**	**0.0**
LDLD	**Lac de Lave**	**0.40**	**263**	*e*P	**Pg**	**01 21 24.2**	**0.0**
OBO	**Obock**	**0.52**	**47**	*e*P	**Pb**	**01 21 27.2**	**+0.2**
GBR	**Grand-Bara**	**0.65**	**222**	*e*P	**Pg**	**01 21 28.5**	**-0.3**
UDYN	**Al 'Udayn**	**2.54**	**24**	*i* P	**Pn**	**01 21 56.1**	**-1.1**
UDYN				*i* S	**Sn**	**01 22 27.6**	**-0.4**
DHBB	**Dhamar BB**	**3.26**	**26**	*i* P	**Pn**	**01 22 07.2**	**0.0**
DHBB				*i* S	**Sn**

PET MLR MLR
comp=Z,2μm,15.0s
SDPT Sand Point 12.82 63 *e*Pn **Pn 01 31 34.0 -0.9**
PETK Petropavlovsk- 13.31 286 Pn **Pn 01 31 44.1 +2.4**
comp=Z,1.5nm,0.3s,baz=97,slow=20,SNR=15
PETK Sn **Sn 01 34 06.5 -1.7**
comp=Z,1.1nm,0.3s,baz=195,slow=27,SNR=5.5
PETK LR LR 01 36 44.9
comp=Z,3μm,21.6s,baz=94,slow=37
GAMB Gambell 13.45 18 *e*Pn **Pn 01 31 46.4 +2.9**
CHGN Chignik 14.14 60 *e*Pn **Pn 01 31 51.3 -1.6**
SKR Severo-Kuril's 14.54 277 *e*P **Pn 01 31 58.5 +0.2**
SKR MLR MLR
comp=E,5μm,18.0s
SKR MLR MLR
comp=Z,6μm,18.0s
SVW2 Sparrevohn 17.04 45 *e*Pn **P 01 32 33.1 +1.3**
comp=Z,46nm,1.3s
OHAK Old Harbor 17.08 59 *e*Pn **Pn 01 32 27.6 -3.3**
comp=Z,66nm,0.6s
KDAK Kodiak Island 17.55 57 P P 01 32 49.5 +12
comp=Z,6.5nm,0.3s,baz=227,slow=2.2,SNR=52
KDAK S S 01 35 59.3 +2.0
comp=Z,0.2nm,0.3s,baz=270,slow=19,SNR=2.9
KDAK Kodiak Island 17.55 57 *i*P **Pn 01 32 34.6 -2.1**
KDAK Kodiak Island 17.55 57 *e*Pn **Pn 01 32 35.1 -1.6**
comp=Z,36nm,0.8s
KDAK S **S 01 35 59.3 +1.9**
TT01 Tatalina 17.68 39 *e*Pn **P 01 32 39.9 +1.1**
TTA Tatalina 17.69 39 *e*P **P 01 32 40.3 +1.2**
TTA pmax pmax
comp=Z,48nm,1.0s
TTA Tatalina 17.69 39 *e*Pn **P 01 32 40.3 +1.2**
comp=Z,48nm,1.0s
BILL Bilibino 17.98 344⇑ *i*P **P 01 32 44.5 +2.4**
BILL pmax pmax
comp=Z,33nm,0.8s
BILL MLR MLR
comp=Z,2μm,16.0s
BILL Bilibino 17.98 344 *e*P **P 01 32 43.5 +1.4**
comp=Z,30nm,0.8s
MA2 Magadan 18.03 309 P **P 01 32 45.6 +2.9**
comp=Z,0.9nm,0.3s,baz=164,slow=7.4,SNR=2.9
MA2 LR LR 01 39 16.2
comp=Z,4μm,19.5s,baz=133,slow=36
SEY Seymchan 18.50 319 P **Pn 01 32 49.9 +1.5**
comp=Z,0.3nm,0.3s,baz=106,slow=13,SNR=7.9
SEY Seymchan 18.50 319 *ce*P **Pn 01 32 50.9 +2.5**
PPLA Purkeypile 19.24 42 *e*P **Pn 01 32 58.8 +1.4**
comp=Z,99nm,1.2s
CAST Castle Rocks 19.50 40 *e*P **P 01 32 59.0 +0.1**
comp=Z,42nm,0.8s
SEW Seward 19.60 51 *e*P **Pn 01 33 02.3 +0.8**
comp=Z,33nm,0.8s
KTH Kantishna Hill 20.03 41 *e*P **P 01 33 05.5 +0.8**
comp=Z,93nm,0.8s
PMR Palmer 20.13 47 *e*P Pn 01 33 07.3 -0.4
PMR pmax pmax
comp=Z,25nm,1.0s
PMR Palmer 20.13 47 *e*P Pn 01 33 07.3 -0.4
comp=Z,25nm,1.0s
BPAW Bear Paw Mtn. 20.23 39 *e*P **P 01 33 07.9 +1.1**
comp=Z,169nm,1.8s
TRF Thorofare Moun 20.25 41 *e*P **P 01 33 07.7 +0.5**
comp=Z,65nm,0.8s
SML Sawmill 20.55 47 *e*P **P 01 33 09.9 -0.5**
SML *e*S **S 01 36 55.0 -2.7**
SML pmax pmax
comp=Z,39nm,0.8s
SML Sawmill 20.55 47 *e*P **P 01 33 09.9 -0.5**
comp=Z,40nm,0.8s
SML *e*S **S 01 36 55.0 -2.7**
MLY Manley 20.74 37 *e*P **P 01 33 13.5 +1.1**
comp=Z,47nm,1.0s
RND Reindeer 20.83 42 *e*P **P 01 33 12.5 -0.8**
RND *e*S Sn 01 37 08.0 -2.1
RND pmax pmax
comp=Z,43nm,0.9s
RND Reindeer 20.83 42 *e*P **P 01 33 12.5 -0.8**
comp=Z,43nm,0.9s
RND *e*S Sn 01 37 08.0 -2.1
BWN Browne 20.87 40 *e*P Pn 01 33 15.3 -1.0
comp=Z,137nm,1.1s
MCK McKinley 20.92 41 *e*P **P 01 33 14.3 +0.1**
MCK pmax pmax
comp=Z,37nm,1.0s
MCK McKinley 20.92 41 *e*P **P 01 33 14.3 +0.1**
comp=Z,37nm,1.0s
SCM Sheep Creek Mo 21.02 47 *e*P **P 01 33 14.7 -0.7**
SCM pmax pmax
comp=Z,66nm,0.9s
SCM Sheep Creek Mo 21.02 47 *e*P **P 01 33 14.7 -0.7**
comp=Z,66nm,0.9s
DHY Denali Highway 21.35 44 *e*P **P 01 33 18.6 -0.4**
comp=Z,62nm,0.8s
DHY *e*S **S 01 37 12.8 -1.0**
EYAK Cordova Ski Ar 21.49 51 *e*P **P 01 33 19.8 -0.5**
comp=Z,33nm,1.0s
WRH Wood River Hil 21.54 40 *e*P **P 01 33 20.8 -0.1**
comp=Z,16nm,0.7s
KLU Klutina 21.59 48 *e*P **P 01 33 19.3 -2.2**
comp=Z,24nm,0.6s
KLU *e*S Sn 01 37 26.2 -2.1
MDM Murphy Dome 21.67 38 *e*P **P 01 33 22.4 +0.1**
comp=Z,85nm,1.1s
CCB Clear Creek Bu 21.72 39 *e*P **P 01 33 24.0 +1.3**
comp=Z,26nm,0.8s
COLA College 21.79 39 *e*P **P 01 33 24.1 +0.6**
COLA pmax pmax
comp=Z,34nm,0.8s
COLA College 21.79 39 *e*P **P 01 33 24.1 +0.6**
comp=Z,34nm,0.8s
HDA Harding Lake 21.98 40 *e*P **P 01 33 28.7 +3.1**
comp=Z,20nm,0.9s
RAGM Ragged Mountai 21.99 51 *e*P **P 01 33 27.1 +1.3**
comp=Z,50nm,0.9s
COLD Coldfoot 22.01 32 *e*P **P 01 33 27.8 +1.8**
comp=Z,28nm,1.0s
BMRM Bremner River 22.12 50 *e*P **P 01 33 28.8 +1.6**
comp=Z,32nm,0.8s
IL1 Eielson Array 22.13 39 *e*P **P 01 33 29.9 +2.7**
IL1 *e*S **S 01 37 24.0 -4.4**
ILAR Eielson Array 22.13 39 P **P 01 33 25.8 -1.5**
comp=Z,2.0nm,0.5s,baz=236,slow=8.3,SNR=23
ILAR PcP **PcP 01 37 22.6 -0.3**
comp=Z,1.6nm,0.6s,baz=276,slow=3.1,SNR=8.6
ILAR ScP **ScP 01 40 57.4 +0.7**
comp=Z,2.0nm,0.7s,baz=283,slow=3.5,SNR=13
ILB Eielson Array 22.13 39 *e*P **P 01 33 28.0 +0.8**
PAX Paxson 22.16 44 *e*P **P 01 33 27.3 -0.3**
PAX *e*S **S 01 37 30.0 +1.0**
PAX pmax pmax
comp=Z,23nm,0.7s
PAX Paxson 22.16 44 *e*P **P 01 33 27.3 -0.3**
comp=Z,23nm,0.7s
PAX *e*S **S 01 37 30.0 +1.0**
TYV Tymovskoe 22.82 283 *e*P **P 01 33 36.0 +1.4**
TYV *e*S **S 01 37 38.0 -2.8**
TYV pmax pmax
comp=Z,64nm,1.2s
TYV pmax pmax
comp=Z,1μm,10.0s
TYV smax smax
comp=N,2μm,16.0s
TYV MLR MLR
comp=E,2μm,16.0s
TYV MLR MLR
comp=Z,1μm,16.0s
MENT Mentasta 22.92 45 *e*P **P 01 33 35.7 0.0**
comp=Z,26nm,0.6s
DOT Dot Lake 22.95 43 *e*P **P 01 33 35.3 -0.6**
comp=Z,55nm,0.9s
BALM Baldy 23.21 50 *e*P **P 01 33 38.6 -0.1**
BALM pmax pmax
comp=Z,92nm,2.0s
BALM Baldy 23.21 50 *e*P **P 01 33 38.6 -0.1**
comp=Z,92nm,2.0s
YUK Yuzh-Kuril'sk 23.43 265 *c i*P **P 01 33 39.5 -1.3**
YUK *e*S **S 01 37 52.7 +1.7**
YUK *e*SS **SnSn 01 38 30.0 +1.2**
YUK pmax pmax
comp=E,318nm,1.1s
YUK pmax pmax
comp=Z,533nm,1.1s
YUK pmax pmax
comp=N,166nm,0.5s
YUK pmax pmax
comp=Z,759nm,3.8s
YUK MLR MLR
comp=Z,707nm,16.0s
FYU Fort Yukon 23.45 36 *e*P **P 01 33 41.1 +0.3**
comp=Z,99nm,1.1s
NKL Nikolayevsk 23.49 290 *i*P **P 01 33 41.0 -0.2**
NKL *e*S **S 01 37 53.0 +1.2**
NKL pmax pmax
comp=E,450nm,5.0s
NKL pmax pmax
comp=Z,900nm,5.5s
NKL pmax pmax
comp=E,40nm,1.1s
NKL pmax pmax
comp=Z,55nm,1.1s
NKL smax smax
comp=N,1μm,10.0s
NKL smax smax
comp=E,900nm,10.0s
NKL MLR MLR
comp=N,450nm,23.0s
NKL MLR MLR
comp=E,2μm,23.0s
NKL MLR MLR
comp=Z,2μm,20.0s
YSS Yuzh-Sakhalins 24.07 274 *ce*P **P 01 33 47.7 +0.9**
YSS *e*SP **sP 01 34 04.8 +2.1**
YSS *e*S **S 01 37 59.8 -1.4**
YSS pmax pmax
comp=Z,60nm,0.9s
YSS pmax pmax
comp=Z,500nm,8.0s
YSS MLR MLR
comp=Z,2μm,18.0s
YSS Yuzh-Sakhalins 24.07 274 *e*P **P 01 33 47.9 +1.2**
comp=Z,66nm,1.0s
EGAK Eagle 24.47 41 *e*P **P 01 33 49.7 -0.6**
comp=Z,72nm,1.1s
ASAJ Asahikawa 25.44 268 P **P 01 33 59.4 +0.1**
comp=Z,62nm,0.7s,baz=77,slow=8.4,SNR=15
ASAJ LR LR 01 43 58.3
comp=Z,990nm,20.6s,baz=62,slow=36
ASAJ Asahikawa 25.44 268 *e*P **P 01 33 59.9 +0.7**
comp=Z,96nm,0.9s
ERM Erimo 26.18 264 *ce*P **P 01 34 08.8 +2.9**
ERM pmax pmax
comp=Z,80nm,1.2s
ERM Erimo 26.18 264 *e*P **P 01 34 07.9 +2.0**
comp=Z,84nm,1.2s
HABR Khabarovsk 28.27 282 *e*P **P 01 34 23.5 -1.1**
HABR *e**PP **pP 01 34 32.9 -2.8**
HABR *e**SP **sP 01 34 37.3 -3.3**
HABR *e* 01 35 13.3
HABR *e* 01 37 34.8
HABR *e*S **S 01 39 09.0 +1.3**
HABR *e*SS **SnSn 01 40 29.5 +2.8**
HABR *e*SSS SSS 01 40 45.6
HABR *e* 01 45 06.4
HABR pmax pmax
comp=Z,17nm,0.8s
HABR pmax pmax
comp=Z,45nm,1.1s
HABR pmax pmax
comp=N,10.0nm,0.6s
HABR MLR MLR
comp=Z,618nm,18.0s
INK Inuvik 28.28 35 P **P 01 34 24.2 -0.3**
comp=Z,4.3nm,0.6s,baz=254,slow=13,SNR=14
INK PcP **PcP 01 37 36.0 -0.6**
comp=Z,3.1nm,0.7s,baz=263,slow=3.5,SNR=3.9
INK ScP **ScP 01 41 13.7 -0.3**
comp=Z,2.5nm,0.8s,baz=81,slow=3.3,SNR=5.7
INK LR LR 01 47 19.7
comp=Z,796nm,19.0s,baz=250,slow=40
INK Inuvik 28.28 35 *e*P **P 01 34 24.1 -0.4**
comp=Z,29nm,1.0s
INK *e*PcP **PcP 01 37 31.4 -5.1**
INK ScP **ScP 01 41 13.7 -0.3**
YAK Yakutsk 28.55 311 P **P 01 34 25.5 -1.5**
comp=Z,26nm,0.6s,baz=213,slow=2.1,SNR=4.8
YAK LR LR 01 45 50.2
comp=Z,2μm,19.5s,baz=98,slow=36
YAK Yakutsk 28.55 311 *e*P **P 01 34 27.0 0.0**
YAK *e**PP **sP 01 34 43.4 +0.4**
YAK *e* 01 35 18.2
YAK *e*S **S 01 39 06.4 -5.5**
YAK pmax pmax
comp=Z,28nm,0.9s
YAK pmax pmax
comp=E,22nm,1.4s
YAK pmax pmax
comp=N,5.0nm,1.0s
YAK pmax pmax
comp=Z,15nm,0.4s
YAK smax smax
comp=E,150nm,16.7s
YAK MLR MLR
comp=Z,2μm,20.0s
YAK MLR MLR
comp=N,1μm,17.0s
YAK MLR MLR
comp=E,1μm,16.0s
DLBC Dease Lake 29.47 56 P **P 01 34 37.1 +1.8**
comp=E,1.4nm,0.8s,baz=68,slow=16,SNR=4.1
DLBC LR LR 01 46 22.3
comp=E,2μm,21.1s,baz=277,slow=36
KLR Kul'dur 30.00 285 P **P 01 34 40.1 +0.1**
comp=E,24nm,0.6s,baz=70,slow=7.5,SNR=63
KLR LR LR 01 48 22.9
comp=E,548nm,18.1s,baz=73,slow=40
TIXI Tiksi 30.12 331 P **P 01 34 41.4 +0.6**
comp=E,1.9nm,0.4s,baz=117,slow=10,SNR=3.6
TIXI PcP **PcP 01 37 41.5 +0.3**
comp=E,3.3nm,0.5s,baz=46,slow=1.0,SNR=4.9
TIXI ScP **ScP 01 41 20.9 +1.0**
comp=E,3.7nm,0.9s,baz=297,slow=4.6,SNR=5.2
TIXI LR LR 01 47 23.2
comp=E,2μm,18.9s,baz=110,slow=38
TIXI Tiksi 30.12 331 *ce*P **P 01 34 40.3 -0.5**
TIXI pmax pmax
comp=Z,7.0nm,1.7s
USRK Ussuriysk Ar. 32.06 276 P **P 01 34 57.6 -0.5**
comp=Z,4.4nm,0.6s,baz=58,slow=8.7,SNR=16
USRK PcP **PcP 01 37 46.5 -0.3**
comp=Z,2.2nm,0.9s,baz=103,slow=3.1,SNR=6.6
USRK LR LR 01 47 03.2
comp=Z,814nm,21.5s,baz=57,slow=35
MJAR Matsushiro Arr 32.52 259 P **P 01 35 01.7 -0.6**
comp=Z,6.3nm,1.0s,baz=58,slow=6.4,SNR=9.4
MJAR LR LR 01 46 02.9
comp=Z,864nm,21.9s,baz=55,slow=32
MAJO Matsushiro 32.52 259 *i*P **P 01 35 03.7 +1.4**
MAJO Matsushiro 32.52 259 *e*P **P 01 35 04.0 +1.7**
comp=Z,23nm,1.0s
MAT Matsushiro 32.52 259 P **P 01 35 03.5 +1.2**
MJB9 Matsu-Tunnel 32.52 259 *e*P **P 01 35 02.6 +0.3**
comp=Z,6.1nm,1.1s
H11N2 WAKE ISLAND Hy 32.92 202 T T 02 10 20.3
baz=12,slow=77
H11N3 WAKE ISLAND Hy 32.93 202 T T 02 10 06.9
baz=12,slow=77
H11N1 WAKE ISLAND Hy 32.94 202 T T 02 10 16.8
baz=12,slow=77
MDJ Mudanjiang 33.34 278 P **P 01 35 08.8 -0.6**
MDJ pP pP 01 35 19.3 -1.3
MDJ sP sP 01 35 25.0 -0.5
MDJ S **S 01 40 21.5 -5.7**
MDJ sS sS 01 40 44.5 -1.3
MDJ pmax pmax
comp=Z,5.0nm,1.1s
MDJ pmax pmax
comp=Z,180nm,4.9s
MDJ LR LR
comp=N,560nm,20.0s
MDJ LR LR
comp=E,860nm,22.2s
MDJ LR LR
comp=Z,1μm,22.7s
MSHR Myrs Shultsa 33.41 274 *ce*P **P 01 35 11.2 +1.3**
H11S1 WAKE ISLAND Hy 34.15 201 T T 02 11 44.2
baz=19,slow=76,SNR=180
H11S2 WAKE ISLAND Hy 34.16 201 T T 02 11 47.3
baz=19,slow=76,SNR=130
H11S3 WAKE ISLAND Hy 34.16 201 T T 02 11 45.2
baz=19,slow=76,SNR=106
YKW3 Yellowknife Ar 36.20 46 *e*P **P 01 35 33.2 -0.6**
comp=Z,14nm,0.8s
YKA Yellowknife Ar 36.23 46 P **P 01 35 33.2 -0.8**
comp=Z,10nm,0.8s,baz=283,slow=7.9,SNR=56
YKA PcP **PcP 01 37 57.6 -0.7**
comp=Z,2.9nm,0.7s,baz=294,slow=3.3,SNR=8.8
YKA ScP **ScP 01 41 42.6 +1.4**
comp=Z,4.0nm,0.7s,baz=295,slow=3.2,SNR=32
YKB5 Yellowknife Ar 36.23 46 *e*P **P 01 35 32.6 -1.4**
YKB5 *e*PcP **PcP 01 37 57.0 -1.4**
CBIJ Chichi jima 36.89 243 P **P 01 35 39.9 -0.1**
JCJ Chichijima 36.89 243 P **P 01 35 39.9 -0.1**
comp=Z,36nm,0.7s,baz=203,slow=13
JCJ LR LR 01 47 51.4
comp=Z,527nm,22.0s,baz=358,slow=32
BOD Bodaibo 37.03 306⇓ *i*P **P 01 35 39.9 -1.1**
BOD pmax pmax
comp=Z,31nm,1.0s
SWID South Whidbey 37.10 71 *e*P **P 01 35 40.7 -0.9**
B05A Bryant 37.17 71 P **P 01 35 43.3 +1.1**
baz=297
LON Longmire 38.06 73 *e*P **P 01 35 52.1 +2.2**
LON pmax pmax
comp=Z,9.0nm,0.8s
LON Longmire 38.06 73 *e*P **P 01 35 52.0 +2.2**
comp=Z,9.4nm,0.8s
F04A Amboy 38.09 74 *e*P **P 01 35 51.9 +1.8**
comp=Z,24nm,0.8s
KSRS Korea Array 38.38 269 P **P 01 35 52.3 -0.2**
comp=Z,8.6nm,0.9s,baz=55,slow=8.3,SNR=17
KSRS PcP **PcP 01 38 05.5 +0.1**
comp=Z,3.5nm,0.8s,baz=40,slow=2.3,SNR=7.8
KSRS LR LR 01 50 34.2
comp=Z,383nm,21.3s,baz=55,slow=34
KS01 Wonju Array Si 38.38 269 *e*P **P 01 35 51.9 -0.6**
KS01 *e*PcP **PcP 01 38 01.9 -3.5**
KSAR Wonju Array Be 38.41 269 P **P 01 35 52.3 -0.5**
KSAR 01 38 05.5
KSAR Wonju Array Be 38.41 269 P **P 01 35 52.3 -0.5**
KSAR PcP **PcP 01 38 05.5 0.0**
LTY Liberty 38.50 72 *e*P **P 01 35 57.5 +4.0**
comp=Z,17nm,1.2s
B08A Colville Reser 38.76 69 *e*P **P 01 35 56.8 +1.1**
comp=Z,9.2nm,0.8s
H04A Detroit Lake 38.87 76 *e*P **P 01 35 58.7 +2.0**
comp=Z,22nm,0.9s
G05D Wamic, OR 39.11 75 P **P 01 35 58.7 +0.1**
baz=301
I04A Tendick Farm, 39.20 77 P **P 01 36 00.3 +0.8**
baz=302
JNU Nakatsue 39.31 262 P **P 01 36 01.4 +1.0**
comp=Z,9.4nm,0.9s,baz=82,slow=14,SNR=4.6
I05D Terrebonne, OR 39.57 76 P **P 01 36 02.5 -0.1**
baz=302
HAWA Hanford 39.60 72 *e*P **P 01 36 03.9 +1.2**
comp=Z,18nm,0.8s
D08A Wollman Farm, 39.63 71 *e*P **P 01 36 05.0 +2.1**
comp=Z,10.0nm,0.8s
C09A Chrisman Ranch 39.65 70 *e*P **P 01 36 04.7 +1.6**
comp=Z,10.0nm,0.6s
NEW Newport 40.10 68 P **P 01 36 06.2 -0.7**
comp=Z,8.9nm,0.7s,baz=288,slow=10,SNR=11
NEW Newport 40.10 68 P **P 01 36 06.5 -0.4**
baz=299,SNR=6.7
NEW Newport 40.10 68 *e*P **P 01 36 06.7 -0.2**
NEW pmax pmax
comp=Z,13nm,0.8s
NEW Newport 40.10 68 *e*P **P 01 36 06.7 -0.2**
comp=Z,13nm,0.8s
YBH Yreka Blue Hor 40.14 80 P **P 01 36 07.0 -0.3**
comp=Z,4.0nm,1.1s,baz=146,slow=11,SNR=2.8
J05D Fort Rock, OR 40.20 77 P **P 01 36 08.1 +0.2**
baz=303
K04D Chiloquin, OR 40.24 79 P **P 01 36 08.8 +0.6**
baz=304
E09A Wood Farm, Sta 40.37 71 *e*P **P 01 36 09.1 0.0**
comp=Z,17nm,0.9s
RES Resolute Bay 40.37 24 P **P 01 36 08.5 -0.2**
comp=Z,3.5nm,0.6s,baz=301,slow=8.1,SNR=16
RES ScP **ScP 01 41 57.4 +0.6**
comp=Z,3.0nm,0.8s,baz=212,slow=1.5,SNR=7.5
RES Resolute Bay 40.37 24 *e*P **P 01 36 09.0 +0.3**
comp=Z,8.4nm,0.9s
RES ScP **ScP 01 41 57.4 +0.6**
N02D Trinity Center 40.58 81 P **P 01 36 11.0 0.0**
baz=305
M04C Macdoel 40.66 80 P **P 01 36 12.6 +1.0**
baz=304
K05A Sumner Lake 40.71 78 *e*P **P 01 36 13.4 +1.2**
comp=Z,54nm,1.6s
F10A Beach Ranch, E 41.19 72 *e*P **P 01 36 16.4 +0.4**
comp=Z,12nm,0.9s
DL2 Dalian 41.45 276 P **P 01 36 17.8 -0.2**
DL2 S **S 01 42 30.0 -0.2**
DL2 pmax pmax
comp=Z,38nm,0.7s
DL2 pmax pmax
comp=Z,190nm,4.7s
DL2 LR LR
comp=N,740nm,16.3s
DL2 LR LR
comp=E,550nm,17.8s
DL2 LR LR
comp=Z,890nm,17.5s
O03D Paynes Creek 41.53 81 P **P 01 36 19.6 +0.8**
baz=306
WALA Waterton Lakes 41.57 66 *e*P **P 01 36 18.8 -0.3**
comp=Z,12nm,0.8s
BSMT Basso Peak 41.67 68 *e*P **P 01 36 20.4 +0.4**
BMO Blue Mountains 41.74 73 *e*P **P 01 36 22.5 +2.1**
BMO pmax pmax
comp=Z,14nm,0.9s
BMO Blue Mountains 41.74 73 *e*P **P 01 36 22.5 +2.1**
comp=Z,14nm,0.9s
BLMT Blacktail Moun 41.84 67 *e*P **P 01 36 21.2 -0.1**
YBMT Yellow Bay 42.11 67 *e*P **P 01 36 24.1 +0.6**
SWMT Swartz Lake 42.30 68 *e*P **P 01 36 26.4 +1.4**
MSO Missoula 42.69 69 P **P 01 36 28.6 +0.4**
baz=302
MSO Missoula 42.69 69 *e*P **P 01 36 28.1 0.0**
comp=Z,13nm,0.8s
CHMT Chamberlain Mo 43.05 68 *e*P **P 01 36 32.0 +0.8**
MFID Camas Ranch 43.41 74 *e*P **P 01 36 34.7 +0.6**
comp=Z,11nm,1.2s
CMB Columbia Colle 43.76 83 *e*P **P 01 36 37.6 +0.7**
CMB pmax pmax
comp=Z,5.0nm,0.9s
CMB Columbia Colle 43.76 83 *e*P **P 01 36 37.6 +0.7**
comp=Z,4.9nm,0.9s
NRIK Noril'sk 43.87 329 P **P 01 36 37.3 0.0**
comp=Z,19nm,0.8s,baz=78,slow=7.4,SNR=16
NRIK PcP **PcP 01 38 22.3 -0.5**
comp=Z,10nm,0.9s,baz=344,slow=7.4,SNR=3.2
NRIK LR LR 01 56 12.2
comp=Z,1μm,18.4s,baz=78,slow=38
WAKR Walker 44.07 82 *e*P **P 01 36 40.8 +1.3**
LRM Limekiln Ridge 44.10 69 *e*P **P 01 36 39.5 -0.2**
BJI Beijing 44.16 281 P **P 01 36 39.3 -0.7**
BJI pP **pP 01 36 51.0 -0.4**
BJI sP **sP 01 36 56.5 +0.3**
BJI PP **PcP 01 38 25.5 +1.3**
BJI S **S 01 43 09.0 -1.0**
BJI sS **sS 01 43 24.5 -4.5**
BJI SS **SS 01 46 27.0 -1.3**
BJI pmax pmax
comp=Z,14nm,1.0s
BJI pmax pmax
comp=Z,340nm,8.9s
BJI LR LR
comp=N,850nm,20.8s
BJI LR LR
comp=E,740nm,19.2s
BJI LR LR
comp=Z,970nm,21.9s
BJT Baijiatuau 44.18 281 *e*P **P 01 36 39.8 -0.3**
BJT pmax pmax
comp=Z,23nm,1.0s
BJT Baijiatuau 44.18 281 *e*P **P 01 36 39.8 -0.3**
comp=Z,23nm,1.0s
HLID Hailey 44.18 73 P **P 01 36 40.5 +0.1**
baz=304,SNR=25
HLID Hailey 44.18 73 *e*P **P 01 36 40.3 -0.1**
comp=Z,18nm,0.9s
MCMT McKenzie Canyo 44.41 70 *e*P **P 01 36 42.5 +0.2**
EGMT Eagleton 44.48 65 P **P 01 36 43.3 +0.7**
baz=302
EGMT Eagleton 44.48 65 *e*P **P 01 36 44.5 +2.0**
comp=Z,17nm,0.8s

BOZ	**Bozeman (W)**	**44.68**	**69**	P	**P**	**01 36 44.2**	**0.0**
	baz=303,SNR=24						
BOZ	**Bozeman (W)**	**44.68**	**69**	*e*P	**P**	**01 36 44.0**	**-0.2**
BOZ				pmax	pmax		
	comp=Z,15nm,0.8s						
BOZ	**Bozeman (W)**	**44.68**	**69**	*e*P	**P**	**01 36 44.0**	**-0.2**
	comp=Z,15nm,0.8s						
NV01	**Mina Array Sit**	**44.82**	**81**	*e*P	**P**	**01 36 46.4**	**+0.9**
NVAR	**Mina Array Bea**	**44.82**	**81**	P	**P**	**01 36 46.0**	**+0.5**
	comp=Z,5.3nm,0.9s,baz=294,slow=7.9,SNR=8.5						
NVAR				LR	LR	01 53 21.5	
	comp=Z,619nm,19.9s,baz=274,slow=33						
NV11	**Mina Array Sit**	**44.91**	**81**	*e*P	**P**	**01 36 47.6**	**+1.4**
	comp=Z,9.7nm,1.0s						
ULN	**Ulaanbaatar**	**45.18**	**295**	*e*P	**P**	**01 36 48.6**	**+0.4**
ULN				pmax	pmax		
	comp=Z,11nm,0.8s						
ULN	**Ulaanbaatar**	**45.18**	**295**	*e*P	**P**	**01 36 48.6**	**+0.4**
	comp=Z,11nm,0.8s						
FFC	**Flin Flon**	**45.23**	**53**	*e*P	**P**	**01 36 50.2**	**+1.9**
FFC				*e*		01 38 28.3	
FFC	**Flin Flon**	**45.23**	**53**	*e*P	**P**	**01 36 50.2**	**+1.9**
FFC				*e*PcP	**PcP**	**01 38 28.3**	**+0.6**
QLMT	**Earthquake Lak**	**45.25**	**70**	*e*P	**P**	**01 36 49.1**	**+0.2**
JOW	**Kunigami**	**45.31**	**257**	P	**P**	**01 36 49.6**	**+0.4**
	comp=Z,25nm,1.0s,baz=180,slow=3.8						
ELK	**Elko**	**45.31**	**77**	*e*P	**P**	**01 36 49.6**	**+0.1**
ELK				pmax	pmax		
	comp=Z,7.0nm,0.6s						
ELK	**Elko**	**45.31**	**77**	*e*P	**P**	**01 36 49.6**	**+0.1**
	comp=Z,7.3nm,0.6s						
YMC	**Maple Creek**	**45.54**	**70**	*e*P	**P**	**01 36 51.0**	**-0.2**
SONA1	**Songino Array**	**45.55**	**296**	*e*P	**P**	**01 36 51.4**	**+0.2**
SONM	**Songino Array**	**45.57**	**296**	P	**P**	**01 36 51.4**	**+0.2**
	comp=Z,8.9nm,0.6s,baz=62,slow=9.2,SNR=22						
SONM				PcP	**PcP**	**01 38 29.8**	**+0.6**
	comp=Z,2.3nm,0.6s,baz=62,slow=3.6,SNR=3.8						
SONM				ScP	**ScP**	**01 42 20.4**	**+1.9**
	comp=Z,0.7nm,0.7s,baz=31,slow=3.4,SNR=3.1						
SONM				LR	LR	01 57 46.0	
	comp=Z,2μm,18.1s,baz=65,slow=39						
YHH	**Holmes Hill**	**45.61**	**69**	*e*P	**P**	**01 36 51.9**	**0.0**
YMR	**Madison River**	**45.61**	**70**	*e*P	**P**	**01 36 51.5**	**-0.2**
	comp=Z,20nm,0.9s						
YFT	**Old Faithful**	**45.81**	**70**	*e*P	**P**	**01 36 54.5**	**+1.2**
	comp=Z,23nm,0.9s						
TIA	**Tai'an**	**45.92**	**276**	⇑P	**P**	**01 36 54.0**	**0.0**
TIA				S	S	01 43 47.8	+12
TIA				pmax	pmax		
	comp=Z,40nm,1.0s						
TIA				pmax	pmax		
	comp=Z,240nm,9.5s						
TIA				LR	LR		
	comp=N,370nm,17.0s						
TIA				LR	LR		
	comp=E,610nm,17.0s						
TIA				LR	LR		
	comp=Z,410nm,23.0s						
ZAK	**Zakamensk**	**45.93**	**300**	*e*P	**P**	**01 36 54.3**	**+0.3**
ZAK				pmax	pmax		
	comp=Z,11nm,1.4s						
H17A	**Grant Village**	**46.00**	**70**	P	**P**	**01 36 55.3**	**+0.5**
	baz=305,SNR=13						
H17A	**Grant Village**	**46.00**	**70**	*e*P	**P**	**01 36 56.2**	**+1.4**
	comp=Z,20nm,0.8s						
LKWY	**Lake**	**46.00**	**69**	*e*P	**P**	**01 36 53.7**	**-1.2**
LKWY				pmax	pmax		
	comp=Z,14nm,0.9s						
LKWY	**Lake**	**46.00**	**69**	*e*P	**P**	**01 36 53.7**	**-1.2**
	comp=Z,14nm,0.9s						
IMW	**Indian Meadow**	**46.07**	**70**	*e*P	**P**	**01 36 55.9**	**+0.5**
	comp=Z,14nm,0.9s						
FLWY	**Flagg Ranch**	**46.10**	**70**	*e*P	**P**	**01 36 56.1**	**+0.5**
	comp=Z,28nm,0.9s						
FXWY	**Fox Creek**	**46.16**	**71**	*e*P	**P**	**01 36 56.4**	**+0.3**
	comp=Z,4.2nm,0.9s						
CWC	**Cottonwood Cre**	**46.19**	**83**	P	**P**	**01 36 55.9**	**-0.4**
	baz=309						
HVU	**Hansel Valley**	**46.20**	**74**	*e*P	**P**	**01 36 56.9**	**+0.6**
HVU				pmax	pmax		
	comp=Z,17nm,0.8s						
HVU	**Hansel Valley**	**46.20**	**74**	*e*P	**P**	**01 36 56.9**	**+0.6**
	comp=Z,17nm,0.8s						
MOOW	**Moose Ponds**	**46.27**	**71**	*e*P	**P**	**01 36 57.0**	**+0.1**
	comp=Z,4.7nm,0.8s						
GRAC	**Grapevine Rang**	**46.29**	**82**	P	**P**	**01 36 58.0**	**+1.1**
	baz=309						
RLMT	**Red Lodge**	**46.35**	**68**	P	**P**	**01 36 57.2**	**-0.3**
	baz=305,SNR=12						
RLMT	**Red Lodge**	**46.35**	**68**	*e*P	**P**	**01 36 57.8**	**+0.2**
	comp=Z,17nm,0.8s						
REDW	**Red Top Meadow**	**46.43**	**71**	*e*P	**P**	**01 36 58.2**	**0.0**
	comp=Z,19nm,1.3s						
SNOW	**Snow King Moun**	**46.43**	**71**	*e*P	**P**	**01 37 00.7**	**+2.5**
	comp=Z,10nm,1.0s						
LOHW	**Long Hollow**	**46.43**	**71**	*e*P	**P**	**01 36 58.4**	**+0.2**
	comp=Z,4.9nm,0.8s						
ISA	**Isabella, Lake**	**46.44**	**84**	P	**P**	**01 36 59.0**	**+0.8**
	baz=310						
MOY	**Mondy**	**46.47**	**303**	*e*P	**P**	**01 37 00.2**	**+1.9**
HHC	**Hu-ho-hao-te**	**46.50**	**285**	*e*P	**P**	**01 36 59.5**	**+0.8**
HHC				pP	pP	01 37 11.8	+1.6
HHC				sP	sP	01 37 17.5	+2.5
HHC				S	**S**	**01 43 43.5**	**-0.6**
HHC				sS	sS	01 44 02.3	-0.9
HHC				SS	**ScS**	**01 46 59.5**	**+9.5**
HHC				pmax	pmax		
	comp=Z,29nm,1.0s						
HHC				pmax	pmax		
	comp=Z,290nm,8.9s						
HHC				LR	LR		
	comp=N,880nm,13.6s						
HHC				LR	LR		
	comp=E,1μm,13.6s						
HHC				LR	LR		
	comp=Z,490nm,15.2s						
R11A	**Troy Canyon, C**	**46.55**	**80**	P	**P**	**01 36 59.7**	**+0.5**
	baz=308						
R11A	**Troy Canyon, C**	**46.55**	**80**	*e*P	**P**	**01 36 58.8**	**-0.4**
	comp=Z,5.6nm,0.8s						
BGU	**Big Grassy Mou**	**46.55**	**75**	*e*P	**P**	**01 36 59.4**	**+0.3**
	comp=Z,8.3nm,0.8s						
AHID	**Auburn Hatcher**	**46.63**	**72**	*e*P	**P**	**01 36 59.8**	**+0.1**
	comp=Z,21nm,1.0s						
GUMO	**Guam**	**46.67**	**229**	LR	LR	01 54 11.9	
	comp=Z,441nm,19.7s,baz=74,slow=33						
SSE	**Sheshan**	**46.73**	**268**	P	**P**	**01 36 58.0**	**-2.4**
SSE				S	**S**	**01 43 46.5**	**-0.7**
SSE				sS	**sS**	**01 44 02.5**	**-3.9**
SSE				pmax	pmax		
	comp=Z,37nm,1.0s						
SSE				pmax	pmax		
	comp=Z,210nm,5.8s						
SSE				LR	LR		
	comp=N,350nm,24.0s						
SSE				LR	LR		
	comp=E,200nm,24.0s						
SSE				LR	LR		
	comp=Z,390nm,18.0s						
RCWM	**Renegade Canyo**	**46.77**	**84**	*e*P	**P**	**01 36 56.7**	**-4.1**
MPMC	**Manual Prospec**	**46.80**	**83**	P	**P**	**01 37 01.6**	**+0.5**
	baz=310						
FURC	**Furnace Creek,**	**46.94**	**82**	P	**P**	**01 37 02.4**	**+0.5**
	baz=310						
FCC	**Fort Churchill**	**46.95**	**45**	*e*P	**P**	**01 37 01.0**	**-0.7**
FCC				pmax	pmax		
	comp=Z,7.0nm,0.8s						
FCC	**Fort Churchill**	**46.95**	**45**	*e*P	**P**	**01 37 01.0**	**-0.7**
	comp=Z,6.9nm,0.8s						
TPNV	**Topopah Spring**	**47.01**	**81**	P	**P**	**01 37 02.9**	**+0.1**
	baz=309,SNR=15						
TPNV	**Topopah Spring**	**47.01**	**81**	*e*P	**P**	**01 37 03.9**	**+1.1**
TPNV				pmax	pmax		
	comp=Z,26nm,0.8s						
TPNV	**Topopah Spring**	**47.01**	**81**	*e*P	**P**	**01 37 03.9**	**+1.1**
	comp=Z,26nm,0.8s						
HWUT	**Hardware Ranch**	**47.03**	**73**	*e*P	**P**	**01 37 03.4**	**+0.5**
	comp=Z,13nm,0.9s						
DUG	**Dugway, Tooele**	**47.12**	**76**	P	**P**	**01 37 03.5**	**-0.1**
	baz=307,SNR=20						
DUG	**Dugway, Tooele**	**47.12**	**76**	*e*P	**P**	**01 37 04.4**	**+0.8**
DUG				pmax	pmax		
	comp=Z,17nm,0.8s						
DUG	**Dugway, Tooele**	**47.12**	**76**	*e*P	**P**	**01 37 04.4**	**+0.8**
	comp=Z,17nm,0.8s						
EDW2	**Edwards Air Fo**	**47.24**	**85**	P	**P**	**01 37 04.9**	**+0.4**
	baz=311						
TCUT	**Toone Canyon**	**47.42**	**74**	*e*P	**P**	**01 37 06.5**	**+0.5**
	comp=Z,26nm,0.7s						
CTU	**Camp Tracy**	**47.47**	**75**	*e*P	**P**	**01 37 06.1**	**-0.2**
	comp=Z,8.3nm,0.7s						
PSUT	**Pine Spring**	**47.50**	**78**	*e*P	**P**	**01 37 08.5**	**+1.8**
	comp=Z,18nm,0.7s						
BW06	**Boulder Array**	**47.54**	**71**	P	**P**	**01 37 06.6**	**-0.3**
	baz=306,SNR=32						
BW06	**Boulder Array**	**47.54**	**71**	*e*P	**P**	**01 37 06.6**	**-0.3**
	comp=Z,24nm,0.9s						
PD31	**Pinedale Array**	**47.54**	**71**	*e*P	**P**	**01 37 06.9**	**-0.1**
PDAR	**Pinedale Array**	**47.54**	**71**	P	**P**	**01 37 06.8**	**-0.1**
	comp=Z,18nm,0.8s,baz=314,slow=4.6,SNR=50						
PDAR				ScP	**ScP**	**01 42 30.4**	**+3.5**
	comp=Z,0.3nm,0.5s,baz=289,slow=4.5,SNR=3.6						
PDAR				LR	LR	01 54 54.5	
	comp=Z,519nm,21.9s,baz=318,slow=33						
NJ2	**Nanjing**	**47.55**	**270**	*e*P	**P**	**01 37 09.0**	**+2.2**
NJ2				pmax	pmax		
	comp=Z,26nm,0.8s						
NJ2				LR	LR		
	comp=Z,630nm,24.4s						
SHOC	**Shoshone, Teco**	**47.66**	**83**	P	**P**	**01 37 08.4**	**+0.8**
	baz=310						
A25A	**Svangstu Ranch**	**47.69**	**61**	P	**P**	**01 37 08.4**	**+0.7**
	baz=304						
JLU	**Jordanelle**	**47.70**	**74**	*e*P	**P**	**01 37 08.0**	**-0.3**
	comp=Z,10nm,0.9s						
GSC	**Goldstone, Bar**	**47.72**	**84**	P	**P**	**01 37 09.2**	**+1.1**
	baz=310						
GSC	**Goldstone, Bar**	**47.72**	**84**	*e*P	**P**	**01 37 08.2**	**0.0**
GSC				pmax	pmax		
	comp=Z,9.0nm,0.6s						
GSC	**Goldstone, Bar**	**47.72**	**84**	*e*P	**P**	**01 37 08.2**	**0.0**
	comp=Z,8.6nm,0.6s						
NLU	**North Lily Min**	**47.72**	**76**	*e*P	**P**	**01 37 08.7**	**+0.4**
	comp=Z,8.8nm,0.8s						
BFSC	**Mount Baldy Ra**	**47.87**	**85**	P	**P**	**01 37 10.3**	**+0.9**
	baz=311						
TIY	**Taiyuan**	**47.89**	**281**	*e*P	**P**	**01 37 09.0**	**-0.5**
TIY				PP	**PP**	**01 38 55.8**	**-5.6**
TIY				S	**S**	**01 44 09.5**	**+5.7**
TIY				pmax	pmax		
	comp=Z,47nm,0.8s						
TIY				pmax	pmax		
	comp=Z,280nm,5.3s						
TIY				LR	LR		
	comp=N,530nm,15.3s						
TIY				LR	LR		
	comp=E,430nm,15.9s						
TIY				LR	LR		
	comp=Z,550nm,14.7s						
MPU	**Maple Canyon**	**47.95**	**75**	*e*P	**P**	**01 37 10.4**	**+0.4**
	comp=Z,6.0nm,0.6s						
KRAR	**Krasnoyarsk**	**48.22**	**311**	*i*P	**P**	**01 37 12.2**	**+0.6**
KRAR				pmax	pmax		
	comp=Z,57nm,0.6s						
A26A	**Wade Farm, Ken**	**48.30**	**60**	P	**P**	**01 37 12.6**	**+0.2**
	baz=304						
MSU	**Marysvale**	**48.55**	**77**	*e*P	**P**	**01 37 15.6**	**+0.9**
MSU	**Marysvale**	**48.55**	**77**	*e*P	**P**	**01 37 15.6**	**+0.9**
TMUT	**Trail Mountain**	**48.65**	**76**	*e*P	**P**	**01 37 17.0**	**+1.4**
	comp=Z,18nm,0.7s						
GMRC	**Granite Mounta**	**48.77**	**83**	P	**P**	**01 37 16.6**	**+0.3**
	baz=311						
LCMT	**Little Creek M**	**48.84**	**79**	*e*P	**P**	**01 37 17.7**	**+0.9**
	comp=Z,9.4nm,0.9s						
MTPU	**Mount Pierson**	**48.84**	**78**	*e*P	**P**	**01 37 17.9**	**+0.8**
	comp=Z,5.8nm,0.7s						
C26A	**Wahner Farm, P**	**48.88**	**61**	P	**P**	**01 37 17.0**	**+0.1**
	baz=305						
P18A	**Preston Nutter**	**49.03**	**75**	*e*P	**P**	**01 37 19.1**	**+0.6**
	comp=Z,16nm,0.8s						
KNB	**Kanab**	**49.09**	**79**	*e*P	**P**	**01 37 22.1**	**+3.2**
KNB				pmax	pmax		
	comp=Z,25nm,1.3s						
KNB	**Kanab**	**49.09**	**79**	*e*P	**P**	**01 37 22.1**	**+3.2**
	comp=Z,25nm,1.3s						
SRU	**San Rafael Swe**	**49.18**	**75**	*e*P	**P**	**01 37 19.9**	**+0.4**
SRU				pmax	pmax		
	comp=Z,14nm,0.8s						
SRU	**San Rafael Swe**	**49.18**	**75**	*e*P	**P**	**01 37 19.9**	**+0.4**
	comp=Z,14nm,0.8s						
K22A	**Casper**	**49.41**	**69**	P	**P**	**01 37 20.7**	**-0.4**
	baz=307						
K22A	**Casper**	**49.41**	**69**	*e*P	**P**	**01 37 20.1**	**-1.1**
	comp=Z,11nm,0.8s						
IRM	**Iron Mountain**	**49.50**	**84**	P	**P**	**01 37 21.9**	**+0.1**
	baz=311						
MONP2	**Monument Peak**	**49.53**	**86**	P	**P**	**01 37 22.9**	**+0.6**
	baz=312						
W13A	**Hualapai Mount**	**49.67**	**82**	*e*P	**P**	**01 37 22.8**	**-0.5**
	comp=Z,5.8nm,0.8s						
U15A	**North Rim**	**49.80**	**79**	*e*P	**P**	**01 37 24.6**	**+0.2**
	comp=Z,14nm,0.8s						
A29A	**Manning Farm,**	**49.80**	**59**	P	**P**	**01 37 24.2**	**+0.3**
	baz=306						
KBS	**Kingsbay**	**49.85**	**357**	*e*P	**P**	**01 37 25.1**	**+1.3**
KBS				pmax	pmax		
	comp=Z,20nm,0.8s						
KBS	**Kingsbay**	**49.85**	**357**	*e*P	**P**	**01 37 25.1**	**+1.3**
	comp=Z,20nm,0.8s						
H25A	**Fruitdale**	**49.92**	**66**	P	**P**	**01 37 25.0**	**+0.1**
	baz=307						
O20A	**White River Ci**	**49.92**	**73**	P	**P**	**01 37 25.0**	**-0.2**
	baz=308,SNR=12						
O20A	**White River Ci**	**49.92**	**73**	*e*P	**P**	**01 37 24.9**	**-0.2**
	comp=Z,19nm,0.6s						
RSSD	**Black Hills**	**49.97**	**66**	P	**P**	**01 37 24.8**	**-0.7**
	baz=307						
B29A	**Wagenman Farm,**	**50.01**	**59**	P	**P**	**01 37 26.1**	**+0.7**
	baz=306						
PDMCI	**Parker Dam,Lak**	**50.03**	**83**	P	**P**	**01 37 26.6**	**+0.8**
	baz=311						
G26A	**Maurine**	**50.08**	**64**	P	**P**	**01 37 26.5**	**+0.3**
	baz=307						
Y12C	**Blythe**	**50.15**	**84**	*e*P	**P**	**01 37 27.3**	**+0.6**
	comp=Z,8.8nm,0.9s						
SPA0	**Spitsbergen Ar**	**50.40**	**355**	*e*P	**P**	**01 37 28.1**	**+0.1**
G27A	**Dupree**	**50.41**	**64**	P	**P**	**01 37 29.3**	**+0.7**
	baz=307						
PV09	**Paradox Valley**	**50.41**	**75**	*e*P	**P**	**01 37 29.7**	**+0.7**
GLA	**Glamis**	**50.43**	**84**	P	**P**	**01 37 29.7**	**+0.8**
	baz=312						
PV10	**Paradox Valley**	**50.55**	**75**	*e*P	**P**	**01 37 31.4**	**+1.4**
B30A	**Myrvik Farm, E**	**50.56**	**59**	P	**P**	**01 37 29.6**	**-0.1**
	baz=306						
PV05	**Paradox Valley**	**50.70**	**76**	*e*P	**P**	**01 37 31.2**	**+0.1**
D29A	**Pettibone, Tap**	**50.70**	**61**	P	**P**	**01 37 31.1**	**+0.3**
	baz=307						
ULM	**Lac du Bonnet**	**50.80**	**56**	P	**P**	**01 37 32.5**	**+1.2**
	comp=Z,1.8nm,0.4s,baz=308,slow=9.7,SNR=2.9						
ULM				PcP	**PcP**	**01 38 47.5**	**-0.2**
	comp=Z,4.8nm,0.7s,baz=320,slow=5.0,SNR=3.8						
ULM				LR	LR	01 59 02.7	
	comp=Z,992nm,21.2s,baz=305,slow=36						
N23A	**Red Feather La**	**50.83**	**71**	P	**P**	**01 37 32.6**	**+0.6**
	baz=309						
N23A	**Red Feather La**	**50.83**	**71**	*e*P	**P**	**01 37 29.4**	**-2.6**
	comp=Z,9.0nm,0.9s						
C30A	**Mose, Pekin**	**50.93**	**60**	P	**P**	**01 37 33.4**	**+1.0**
	baz=307						
WUAZ	**Wupatki**	**50.95**	**80**	P	**P**	**01 37 33.4**	**+0.4**
	baz=311						
WUAZ	**Wupatki**	**50.95**	**80**	*e*P	**P**	**01 37 35.8**	**+2.8**
	comp=Z,13nm,0.7s						
Y14A	**Wickenburg**	**50.98**	**82**	*e*P	**P**	**01 37 35.6**	**+2.6**
	comp=Z,19nm,0.9s						
PV01	**Paradox Valley**	**50.98**	**75**	*e*P	**P**	**01 37 33.5**	**+0.2**
I27A	**Quinn**	**51.13**	**65**	P	**P**	**01 37 34.4**	**+0.3**
	baz=308						
A32A	**Rocking H Ranc**	**51.27**	**57**	P	**P**	**01 37 35.2**	**+0.3**
	baz=307						
SMCO	**Snowmass**	**51.29**	**73**	*e*P	**P**	**01 37 36.6**	**+0.9**
	comp=Z,18nm,0.8s						
F29A	**Eureka**	**51.31**	**62**	P	**P**	**01 37 35.0**	**-0.4**
	baz=307						
WHN	**Wuhan**	**51.40**	**272**	P	**P**	**01 37 36.5**	**+0.4**
WHN				PP	**PP**	**01 39 36.8**	**+3.5**
WHN				S	**S**	**01 44 54.3**	**+1.5**
WHN				ScS	**ScS**	**01 47 21.0**	**-2.0**
WHN	**Wuhan**	**51.40**	**272**	SS	**SS**	**01 48 28.3**	**-0.3**
WHN				pmax	pmax		
	comp=Z,390nm,4.4s						
WHN				pmax	pmax		
	comp=Z,400nm,10.1s						
WHN				LR	LR		
	comp=N,1μm,15.9s						
WHN				LR	LR		
	comp=E,1μm,19.0s						
WHN				LR	LR		
	comp=Z,1μm,16.2s						
B32A	**Ashes, Strandq**	**51.56**	**58**	P	**P**	**01 37 37.0**	**-0.1**
	baz=307						
MVCO	**Mesa Verde**	**51.62**	**76**	P	**P**	**01 37 37.7**	**-0.3**
	baz=310						
MVCO	**Mesa Verde**	**51.62**	**76**	*e*P	**P**	**01 37 39.5**	**+1.5**
	comp=Z,46nm,1.9s						
X16A	**Lo Mia Camp, P**	**51.63**	**81**	*e*P	**P**	**01 37 39.0**	**+0.9**
	comp=Z,6.0nm,0.8s						
I28A	**Midland**	**51.68**	**65**	P	**P**	**01 37 38.6**	**+0.5**
	baz=308						
ISCO	**Idaho Springs**	**51.71**	**72**	P	**P**	**01 37 38.5**	**-0.2**
	baz=309,SNR=6.4						
ISCO	**Idaho Springs**	**51.71**	**72**	*e*P	**P**	**01 37 39.2**	**+0.4**
ISCO				pmax	pmax		
	comp=Z,9.0nm,0.8s						
ISCO	**Idaho Springs**	**51.71**	**72**	*e*P	**P**	**01 37 39.2**	**+0.4**
	comp=Z,8.7nm,0.8s						
D31A	**Mcclaflin, Tow**	**51.73**	**60**	P	**P**	**01 37 37.7**	**-0.8**
	baz=308						
DAG	**Danmarks Havn**	**51.74**	**5**	*i*P	**P**	**01 37 37.3**	**-0.7**
	comp=Z,7.0nm,0.6s						
DAG	**Danmarks Havn**	**51.74**	**5**	*i*P	**P**	**01 37 37.3**	**-0.7**
DAG				pmax	pmax		
	comp=Z,5.0nm,0.6s						
A33A	**Warroad**	**51.84**	**57**	P	**P**	**01 37 39.7**	**+0.6**
	baz=307						
H29A	**Onida**	**51.84**	**64**	P	**P**	**01 37 40.7**	**+1.4**
	baz=308						
C32A	**Crookston**	**51.91**	**58**	P	**P**	**01 37 39.3**	**-0.4**
	baz=308						
AGMN	**Agassiz Nation**	**51.97**	**58**	P	**P**	**01 37 40.8**	**+0.6**
	baz=308						
AGMN	**Agassiz Nation**	**51.97**	**58**	*e*P	**P**	**01 37 43.4**	**+3.2**
J28A	**Allard Ranch,**	**52.00**	**65**	P	**P**	**01 37 40.9**	**+0.3**
	baz=308						
SSLB	**Suanglung**	**52.05**	**261**	*e*P	**P**	**01 37 41.4**	**+0.3**
	comp=Z,23nm,0.9s						
G30A	**Faulkton**	**52.12**	**63**	P	**P**	**01 37 41.0**	**-0.4**
	baz=308						
YULB	**Yu-li**	**52.12**	**260**	*e*P	**P**	**01 37 39.9**	**-1.7**
	comp=Z,48nm,1.6s						
W18A	**Petrified Fore**	**52.22**	**79**	P	**P**	**01 37 42.8**	**+0.3**
	baz=311						
S22A	**4UR Ranch, Cre**	**52.29**	**74**	P	**P**	**01 37 43.1**	**0.0**
	baz=310,SNR=12						
S22A	**4UR Ranch, Cre**	**52.29**	**74**	*e*P	**P**	**01 37 44.0**	**+0.9**
	comp=Z,8.8nm,1.1s						
214A	**Organ Pipe Nat**	**52.42**	**84**	P	**P**	**01 37 43.8**	**0.0**
	baz=313						
XAN	**Xi'an**	**52.44**	**280**	P	**P**	**01 37 43.3**	**-0.6**
XAN				pP	pP	01 37 56.8	+1.2
XAN				S	**S**	**01 45 13.8**	**+6.7**
XAN				pmax	pmax		
	comp=Z,24nm,1.0s						
XAN				LR	LR		
	comp=N,410nm,19.5s						
XAN				LR	LR		
	comp=E,540nm,21.6s						
XAN				LR	LR		
	comp=Z,730nm,22.2s						
X18A	**Snowflake**	**52.48**	**80**	*e*P	**P**	**01 37 44.1**	**-0.3**
	comp=Z,7.3nm,0.9s						
B34A	**Aery, Baudette**	**52.50**	**57**	P	**P**	**01 37 43.7**	**-0.4**
	baz=308						
Q24A	**Divide**	**52.52**	**72**	P	**P**	**01 37 44.8**	**+0.1**
	baz=310						
J29A	**Okreek**	**52.53**	**65**	P	**P**	**01 37 44.3**	**-0.2**
	baz=309						
QZH	**Quanzhou**	**52.68**	**264**	⇑*i*P	**P**	**01 37 42.5**	**-3.2**
QZH				S	**S**	**01 45 09.0**	**-1.4**
QZH				pmax	pmax		
	comp=Z,400nm,4.1s						
QZH				LR	LR		
	comp=Z,800nm,23.9s						
D33A	**AnnSam, Waubun**	**52.69**	**59**	P	**P**	**01 37 45.5**	**-0.1**
	baz=308						
G32A	**Webster**	**52.96**	**62**	P	**P**	**01 37 47.5**	**0.0**
	baz=309						
B35A	**Bob, Littlefor**	**53.06**	**56**	P	**P**	**01 37 47.8**	**-0.4**
	baz=308						
D34A	**Park Rapids**	**53.07**	**58**	P	**P**	**01 37 48.0**	**-0.4**
	baz=308						
SDCO	**Great Sand Dun**	**53.09**	**74**	P	**P**	**01 37 49.2**	**+0.2**
	baz=311,SNR=14						
SDCO	**Great Sand Dun**	**53.09**	**74**	*e*P	**P**	**01 37 49.7**	**+0.7**
	comp=Z,7.3nm,0.9s						
ZALV	**Zalesovo Beam**	**53.19**	**313**	P	**P**	**01 37 48.5**	**-0.6**
	comp=Z,5.5nm,0.6s,baz=48,slow=6.7,SNR=17						
ZALV				PcP	**PcP**	**01 38 57.0**	**+0.4**
	comp=Z,7.6nm,0.8s,baz=17,slow=3.6,SNR=6.8						
ZALV				LR	LR	02 02 02.9	
	comp=Z,1μm,18.7s,baz=62,slow=38						
F33A	**5 Mile Ranch,**	**53.26**	**60**	P	**P**	**01 37 50.0**	**+0.2**
	baz=309						
C35A	**Jirik Farms, M**	**53.34**	**57**	P	**P**	**01 37 50.2**	**-0.1**
	baz=309						
NVS	**Novosibirsk**	**53.35**	**314**	*e*P	**P**	**01 37 49.5**	**-0.8**
NVS				pmax	pmax		
	comp=N,7.0nm,0.7s						
NVS				pmax	pmax		
	comp=E,8.0nm,0.7s						
NVS				pmax	pmax		
	comp=Z,16nm,0.7s						
TUC	**Tucson**	**53.45**	**82**	P	**P**	**01 37 51.8**	**+0.4**
	baz=313						
TUC	**Tucson**	**53.45**	**82**	*e*P	**P**	**01 37 50.5**	**-0.9**
TUC				pmax	pmax		
	comp=Z,5.0nm,1.0s						
TUC	**Tucson**	**53.45**	**82**	*e*P	**P**	**01 37 50.5**	**-0.9**
	comp=Z,5.4nm,1.0s						
D35A	**Remer**	**53.69**	**58**	P	**P**	**01 37 52.4**	**-0.4**
	baz=309						
SUMG	**Summit**	**53.71**	**13**	*i*P	**P**	**01 37 53.2**	**+0.1**
	comp=Z,30nm,1.0s						
SUMG	**Summit**	**53.71**	**13**	*i*P	**P**	**01 37 53.2**	**+0.1**
SUMG				pmax	pmax		
	comp=Z,30nm,1.0s						
SUMG	**Summit**	**53.71**	**13**	*e*P	**P**	**01 37 53.1**	**-0.1**
	comp=Z,26nm,0.9s						
H33A	**Prehn Over Nor**	**53.74**	**62**	P	**P**	**01 37 52.9**	**-0.4**

baz=310
ECSD EROS Data Cent 54.41 62 *e*P **P 01 37 59.8 +1.5**
comp=Z,7.2nm,0.8s
GTA Gaotai 54.43 291 ⇑P **P 01 37 59.0 +0.4**
GTA pP pP 01 38 10.5 +0.2
GTA sP sP 01 38 16.0 +0.9
GTA S **S 01 45 33.3 -0.9**
GTA sS sS 01 45 55.5 +1.8
GTA Gaotai 54.43 291 SS **SS 01 49 15.3 -1.1**
GTA pmax pmax
comp=Z,12nm,0.9s
GTA pmax pmax
comp=Z,210nm,6.7s
GTA LR LR
comp=N,310nm,17.1s
GTA LR LR
comp=E,330nm,16.6s
GTA LR LR
comp=Z,320nm,17.1s
D37A Cotton 54.50 57 P **P 01 37 59.8 +1.0**
baz=310
ENH Enshi 54.64 276 *e*P **P 01 37 59.9 -0.1**
comp=Z,30nm,1.0s
ENH *e*PcP **PcP 01 39 01.1 -1.5**
F36A Milaca 54.74 59 P **P 01 38 00.9 +0.3**
baz=310
H35A Sunnyside Ranc 54.78 61 P **P 01 38 01.2 +0.3**
baz=310
BGNE Belgrade 55.04 66 P **P 01 38 03.6 +0.7**
baz=311
121A Cookes Peak, D 55.16 80 P **P 01 38 05.0 +1.1**
baz=313
H36A Jessenland, He 55.35 60 P **P 01 38 05.3 +0.3**
baz=310
K34A Le Mars 55.38 63 P **P 01 38 05.2 0.0**
baz=311
L34A Svendsen Farm, 55.69 64 P **P 01 38 07.1 -0.3**
baz=311
CBKS Cedar Bluff 55.82 69 P **P 01 38 08.6 +0.1**
baz=312
CBKS Cedar Bluff 55.82 69 *e*P **P 01 38 09.3 +0.8**
CBKS pmax pmax
comp=Z,23nm,0.8s
CBKS Cedar Bluff 55.82 69 *e*P **P 01 38 09.2 +0.8**
comp=Z,23nm,0.8s
P32A Huiting Farm, 55.95 67 P **P 01 38 09.7 +0.3**
baz=311
I37A Lemond, Waseca 56.00 60 P **P 01 38 10.1 +0.5**
baz=311
SFJD Kangerlussuaq 56.22 21 *i* P **P 01 38 10.3 -0.5**
SFJD Kangerlussuaq 56.22 21 *e*P **P 01 38 10.3 -0.5**
K36A Gilmore City 56.33 62 P **P 01 38 12.0 0.0**
baz=311
N34A Lincoln 56.36 65 P **P 01 38 12.0 -0.3**
baz=311
Q32A Meitler Ranch, 56.39 68 P **P 01 38 12.6 +0.1**
baz=312
M35A Neola 56.40 64 P **P 01 38 12.6 +0.1**
baz=311
O34A Beatrice 56.68 66 P **P 01 38 14.3 -0.3**
baz=312
K37A Belmond 56.69 62 P **P 01 38 14.9 +0.4**
baz=311
Q33A Connelly Farm, 56.81 68 P **P 01 38 15.6 +0.1**
baz=312
N35A Tabor 56.83 65 P **P 01 38 15.6 0.0**
baz=312,SNR=8.3
COWI Conover 56.91 56 *e*P **P 01 38 18.5 +2.4**
comp=Z,34nm,2.0s
P34A Walnut Farm, R 57.03 66 P **P 01 38 17.5 +0.4**
baz=312
L37A Phoenix Point, 57.05 62 P **P 01 38 17.3 +0.2**
baz=312
R33A Olander Ranch, 57.18 68 P **P 01 38 18.5 +0.4**
baz=312
MNTX Cornudas Mount 57.21 79 P **P 01 38 19.2 +0.8**
baz=314
MNTX Cornudas Mount 57.21 79 *e*P **P 01 38 19.6 +1.2**
comp=Z,6.6nm,1.0s
MSTX Muleshoe 57.26 75 P **P 01 38 18.7 -0.2**
baz=313
MSTX Muleshoe 57.26 75 *e*P **P 01 38 18.5 -0.3**
comp=Z,12nm,1.1s
AMTX Amarillo 57.29 74 P **P 01 38 18.4 -0.7**
baz=313
AMTX Amarillo 57.29 74 *e*P **P 01 38 21.3 +2.2**
comp=Z,11nm,0.8s
M37A Trindle Farm, 57.36 63 P **P 01 38 19.9 +0.5**
baz=312
Q34A Chapman 57.38 67 P **P 01 38 20.0 +0.5**
baz=312
T32A Huddler Ranch, 57.39 70 P **P 01 38 20.4 +0.8**
baz=312
KSU1 Kansas State U 57.45 67 P **P 01 38 20.4 +0.4**
baz=312
L38A Oak Wood Farm, 57.48 62 P **P 01 38 20.2 0.0**
baz=312
SCO Scoresbysund 57.61 8 *i* P **P 01 38 21.0 +0.4**
SCO Scoresbysund 57.61 8 *e*P **P 01 38 21.0 +0.4**
R34A Isabella, Hill 57.62 68 P **P 01 38 21.1 -0.1**
baz=312
N37A Lee Faris, Mou 57.71 64 P **P 01 38 21.6 -0.2**
baz=312
CD2 Chengdu 57.76 280 P **P 01 38 21.5 -0.8**
CD2 pmax pmax
comp=Z,1.0nm,0.5s
M38A Pleasantville 57.84 63 P **P 01 38 22.3 -0.3**
baz=312
U32A Winter Ranch, 57.88 71 P **P 01 38 22.9 -0.2**
baz=313
P36A Good Intent, A 57.91 65 P **P 01 38 23.3 +0.1**
baz=312
ARCES ARCESS Array B 57.98 349 P **P 01 38 21.9 -1.3**
comp=Z,3.9nm,0.8s,baz=30,slow=8.9,SNR=15
ARCES LR LR 02 06 59.1
comp=Z,526nm,18.1s,baz=5.0,slow=40
ARCES ARCESS Array B 57.98 349 P **P 01 38 22.0 -1.3**
O37A Wolven Farm, M 58.14 64 P **P 01 38 24.2 -0.6**
baz=312
KURK Kurchatov 58.18 313 P **P 01 38 25.8 +0.9**
KURK 01 39 17.0
KURK pmax pmax
comp=Z,24nm,0.5s
KURK pmax pmax
comp=Z,6.0nm,0.6s
KURK Kurchatov 58.18 313 *e*P **P 01 38 25.1 +0.2**
comp=Z,26nm,0.6s
KURK PcP **PcP 01 39 17.0 +1.0**
N38A Joes South For 58.23 63 P **P 01 38 25.0 -0.4**
baz=312
KURBB Kurchatov Arra 58.29 313 P **P 01 38 25.8 +0.1**
comp=Z,24nm,0.5s,baz=42,slow=6.5,SNR=89
KURBB PcP **PcP 01 39 17.0 +0.6**
comp=Z,5.6nm,0.6s,baz=54,slow=3.4,SNR=5.5
WMQ Urumqi 58.34 302 P **P 01 38 29.0 +2.8**
WMQ pP sP 01 38 41.5 -1.3
WMQ sP pP 01 38 45.3 +7.2
WMQ PP **PP 01 40 36.5 +1.3**
WMQ S **S 01 46 25.5 -0.2**
WMQ sS sS 01 46 48.3 +2.9
WMQ ScS **ScS 01 48 08.8 -3.6**
WMQ pmax pmax
comp=Z,12nm,0.6s
WMQ pmax pmax
comp=Z,130nm,4.8s
WMQ LR LR
comp=N,600nm,22.4s
WMQ LR LR
comp=E,390nm,25.0s
WMQ LR LR
comp=Z,140nm,27.4s
P37A Lathrop 58.42 65 P **P 01 38 26.8 +0.1**
baz=313
JFWS Jewell Farm 58.45 60 *e*P **P 01 38 27.2 +0.3**
JFWS pmax pmax
comp=Z,12nm,0.9s
JFWS Jewell Farm 58.45 60 *e*P **P 01 38 27.2 +0.3**
comp=Z,12nm,0.9s
T34A McClaskey Farm 58.52 69 P **P 01 38 27.3 -0.2**
baz=313
O38A Galt 58.55 64 P **P 01 38 27.8 +0.1**
baz=313
S35A Otter Creek Ra 58.57 68 P **P 01 38 27.7 -0.2**
baz=313
N39A Derby Farms, D 58.59 63 P **P 01 38 28.3 +0.4**
baz=313
R36A Gordon, Harris 58.61 67 P **P 01 38 27.9 -0.2**
baz=313
V33A Lossen Ranch, 58.69 71 P **P 01 38 27.9 -0.8**
baz=313
U34A Anderson Ranch 58.71 70 P **P 01 38 28.7 -0.2**
baz=313
U34A Anderson Ranch 58.71 70 *e*P **P 01 38 28.3 -0.5**
comp=Z,19nm,0.8s
P38A Dawn 58.85 64 P **P 01 38 29.2 -0.6**
baz=313
S36A Lake Cedric, C 58.97 67 P **P 01 38 30.5 -0.1**
baz=313
R37A Teagarden Farm 59.01 66 P **P 01 38 30.7 -0.2**
baz=313
W33A Caddo, Fort Co 59.04 71 P **P 01 38 31.4 +0.2**
baz=314
X32A Elmer 59.05 72 P **P 01 38 31.2 -0.1**
baz=314
GYA Guiyang 59.08 275 *e*P **P 01 38 34.0 +2.3**
GYA pP pP 01 38 45.5 +2.0
GYA sP sP 01 38 52.0 +3.8
GYA PcP **PcP 01 39 21.5 +1.4**
GYA PP **PP 01 40 47.5 +5.2**
GYA ScP **ScP 01 43 18.0 +0.8**
GYA S **S 01 46 35.5 -0.3**
GYA sS sS 01 46 55.3 -0.2
GYA pmax pmax
comp=Z,20nm,1.0s
MK31 Makanchi Array 59.11 307 *e*P **P 01 38 31.1 -0.4**
MK31 Makanchi Array 59.11 307 *e*P **P 01 38 31.1 -0.4**
MKAR Makanchi Array 59.11 307 P **P 01 38 31.0 -0.5**
comp=Z,9.9nm,0.5s,baz=52,slow=5.7,SNR=72
MKAR PcP **PcP 01 39 20.5 +0.7**
comp=Z,1.6nm,0.6s,baz=73,slow=5.3,SNR=1.7
MKAR LR LR 02 04 37.6
comp=Z,1μm,20.1s,baz=42,slow=37
MK01 Makanchi Array 59.12 307 *e*P **P 01 38 30.6 -1.0**
V34A Guthrie 59.13 70 P **P 01 38 31.6 -0.1**
baz=314
V34A Guthrie 59.13 70 *e*P **P 01 38 31.4 -0.3**
comp=Z,17nm,1.0s
WMOK Wichita Mounta 59.13 72 *e*P **P 01 38 32.6 +0.8**
WMOK pmax pmax
comp=Z,9.0nm,0.9s
WMOK Wichita Mounta 59.13 72 *e*P **P 01 38 32.6 +0.8**
comp=Z,9.3nm,0.9s
T36A Boggs Farm, Ca 59.25 68 P **P 01 38 32.8 +0.2**
baz=313
MAKZ Makanchi 59.26 308 *e*P **P 01 38 32.0 -0.5**
MAKZ pmax pmax
comp=Z,18nm,0.6s
MAKZ Makanchi 59.26 308 *e*P **P 01 38 32.0 -0.5**
comp=Z,18nm,0.6s
Q38A Cooks Store, C 59.26 65 P **P 01 38 31.3 -1.3**
baz=313
S37A Fort Scott 59.38 67 P **P 01 38 33.6 +0.1**
baz=313
W34A Bridge Creek, 59.39 71 P **P 01 38 34.2 +0.6**
baz=314
X33A Lawton 59.44 72 P **P 01 38 34.2 +0.3**
baz=314
O40A La Belle 59.45 63 P **P 01 38 33.4 -0.5**
baz=313,SNR=12
Q39A Willow Grove F 59.56 64 P **P 01 38 34.1 -0.6**
baz=313,SNR=9.4
V35A Meyer Ranch, C 59.58 70 P **P 01 38 35.1 +0.2**
baz=314
CHKZ Chkalovo 59.59 319 *i* P **P 01 38 34.5 -0.1**
CHKZ pmax pmax
comp=Z,25nm,1.0s
R38A Fenwick Farm, 59.62 66 P **P 01 38 34.2 -0.9**
baz=314
Y33A Hilltop Ranch, 59.73 72 P **P 01 38 36.2 +0.3**
baz=314
P40A Paris 59.76 64 P **P 01 38 35.2 -0.8**
baz=314,SNR=7.8
T37A Cheneyville 18 59.77 67 P **P 01 38 36.3 +0.2**
baz=314
X34A Smith Ranch, M 59.79 71 P **P 01 38 35.9 -0.5**
baz=314
TXAR Lajitas Array 59.92 80 P **P 01 38 37.6 +0.2**
comp=Z,7.1nm,0.5s,baz=308,slow=4.4,SNR=9.5
TXAR PcP **PcP 01 39 23.6 +0.2**
comp=Z,1.9nm,0.7s,baz=308,slow=4.4,SNR=2.0
TXAR LR LR 02 04 35.6
comp=Z,552nm,18.4s,baz=0.0,slow=36
W35A Tecumseh 59.98 70 P **P 01 38 36.8 -0.8**
baz=314
S38A Stockton 60.00 66 P **P 01 38 36.1 -1.7**
baz=314,SNR=6.7
R39A Chumby, Stover 60.03 65 P **P 01 38 37.4 -0.6**
baz=314
ABTX Abilene, Hawle 60.08 74 P **P 01 38 37.9 -0.4**
baz=314
ABTX Abilene, Hawle 60.08 74 *e*P **P 01 38 38.8 +0.4**
comp=Z,20nm,1.1s
V36A Jenks 60.09 69 P **P 01 38 38.1 -0.3**
baz=314
TUL1 Leonard 60.09 69 P **P 01 38 38.5 +0.1**
baz=314
TUL1 Leonard 60.09 69 *e*P **P 01 38 38.5 +0.1**
comp=Z,15nm,1.1s
Q40A Laux Farm, Aux 60.11 64 P **P 01 38 37.5 -1.0**
baz=314
VOSK Vostochnaya 60.13 318 *ce*P **P 01 38 37.9 -0.5**
VOSK pmax pmax
comp=Z,20nm,0.7s
VOSK Vostochnaya 60.13 318 *e*P **P 01 38 38.6 +0.2**
comp=Z,20nm,0.8s
Z33A Whitaker Ranch 60.15 73 P **P 01 38 38.4 -0.4**
baz=314
BVA0 Borovoye Array 60.16 319 *i* P **P 01 38 38.8 +0.2**
BVA0 pmax pmax
comp=Z,34nm,0.7s
BRVK Borovoye 60.18 319 *e*P **P 01 38 39.2 +0.5**
BRVK pmax pmax
comp=Z,35nm,0.6s
BRVK Bovoye 60.18 319 *e*P **P 01 38 39.2 +0.5**
comp=Z,35nm,0.6s
T38A Diamond 60.19 67 P **P 01 38 38.5 -0.6**
baz=314
Y34A Reagan Ranch, 60.28 72 P **P 01 38 39.3 -0.4**
baz=314
S39A Bolivar 60.30 66 P **P 01 38 39.6 -0.2**
baz=314
W36A Wetumka 60.37 70 P **P 01 38 40.2 -0.1**
baz=314
X35A Drake 60.44 71 P **P 01 38 40.4 -0.4**
baz=314
R40A Maddies Statio 60.49 65 P **P 01 38 39.8 -1.3**
baz=314
V37A Hulbert 60.49 69 P **P 01 38 41.0 -0.2**
baz=314
133A Hamilton Ranch 60.53 74 P **P 01 38 41.6 +0.1**
baz=314,SNR=10.0
U38A Gravette 60.55 68 P **P 01 38 41.7 +0.2**
baz=314
HDIL Hopedale 60.58 61 P **P 01 38 41.6 -0.1**
baz=314
HDIL Hopedale 60.58 61 *e*P **P 01 38 42.9 +1.2**
comp=Z,17nm,0.6s
X36A Centrahoma 60.69 70 P **P 01 38 42.4 -0.1**
baz=314
T39A Clever 60.73 66 P **P 01 38 42.2 -0.6**
baz=314
Y35A Marietta 60.75 71 P **P 01 38 43.2 +0.3**
baz=314
ZRNK Zerenda 60.78 319 *i* P **P 01 38 42.5 -0.3**
ZRNK pmax pmax
comp=Z,45nm,0.7s
ZRNK Zerenda 60.78 319 *e*P **P 01 38 43.3 +0.5**
comp=Z,42nm,0.7s
S40A Lebanon 60.83 65 P **P 01 38 43.5 +0.1**
baz=314
W37B Quinton 60.84 69 P **P 01 38 43.7 +0.2**
baz=314
SCHQ Schefferville 60.87 37 P **P 01 38 43.2 -0.3**
comp=Z,7.7nm,0.9s,baz=333,slow=8.3,SNR=7.8
SCHQ LR LR 02 07 18.2
comp=Z,535nm,18.8s,baz=321,slow=38
SCHQ Schefferville 60.87 37 P **P 01 38 43.2 -0.3**
comp=Z,16nm,1.1s
V38A Canehill 60.94 68 P **P 01 38 43.9 -0.3**
baz=314
233A Rising Star 60.95 74 P **P 01 38 44.6 +0.3**
baz=315
134A White-Moore Ra 61.06 73 P **P 01 38 45.1 +0.1**
baz=315,SNR=10
U39A Green Forest 61.11 67 P **P 01 38 45.5 +0.1**
baz=314
T40A Mansfield 61.13 66 P **P 01 38 44.9 -0.6**
baz=314
Y36A Durant 61.20 71 P **P 01 38 46.2 +0.3**
baz=315
X37A Clayton 61.26 70 P **P 01 38 46.6 +0.2**
baz=314
333A Richland Sprin 61.38 75 P **P 01 38 47.4 +0.1**
baz=315
V39A Pettigrew 61.40 68 P **P 01 38 47.8 +0.5**
baz=314
234A Clairette 61.42 74 P **P 01 38 47.8 +0.3**
baz=315
W38A Poteau 61.42 69 P **P 01 38 47.7 +0.2**
baz=315
135A Vickery Place, 61.47 73 P **P 01 38 48.1 +0.3**
baz=315
JCT Junction City 61.48 76 P **P 01 38 48.3 +0.4**
baz=315
U40A Yellville 61.49 67 P **P 01 38 47.8 -0.1**
baz=314
X38A Whitesboro 61.52 69 P **P 01 38 48.4 +0.2**
baz=315
Y37A Hugo 61.54 70 P **P 01 38 48.5 +0.3**
baz=315
433A Art 61.72 75 P **P 01 38 49.9 +0.4**
baz=315
W39A Magazine 61.77 68 P **P 01 38 50.0 +0.2**
baz=315
334A Lometa 61.83 74 P **P 01 38 50.6 +0.3**
baz=315
WHTX Lake Whitney, 61.84 73 P **P 01 38 49.9 -0.3**
baz=315
WHTX Lake Whitney, 61.84 73 *e*P **P 01 38 50.7 +0.4**
comp=Z,16nm,0.8s
V40A Witts Springs 61.90 67 P **P 01 38 51.2 +0.5**
baz=315
SFIN Lafayette 61.91 60 P **P 01 38 50.1 -0.5**
baz=315,SNR=5.8
SFIN Lafayette 61.91 60 *e*P **P 01 38 49.6 -1.0**
comp=Z,16nm,0.7s
ARU Arti 62.03 327 *d i*P **P 01 38 51.6 +0.4**
ARU 01 39 29.7
ARU S **S 01 47 16.2 +3.7**
ARU SS **SS 01 51 10.5 -4.0**
ARU pmax pmax
comp=Z,16nm,0.6s
ARU MLR MLR
comp=Z,1μm,22.0s
ARU Arti 62.03 327 *e*P **P 01 38 51.8 +0.6**
comp=Z,20nm,0.5s
X39A Fountain Ranch 62.05 69 P **P 01 38 51.2 -0.5**
baz=315
136A Ennis 62.05 72 P **P 01 38 51.7 0.0**
baz=315
Y38A Idabel 62.10 70 P **P 01 38 51.9 -0.1**
baz=315
434A Burnet 62.18 75 P **P 01 38 52.6 0.0**
baz=315
W40A Ferguson Farm, 62.19 68 P **P 01 38 52.9 +0.4**
baz=315
MIAR Mount Ida 62.34 69 P **P 01 38 53.2 -0.5**
baz=315
MIAR Mount Ida 62.34 69 *e*P **P 01 38 53.6 0.0**
MIAR pmax pmax
comp=Z,23nm,1.0s
MIAR Mount Ida 62.34 69 *e*P **P 01 38 53.6 0.0**
comp=Z,23nm,1.0s
236A Katherine and 62.39 73 P **P 01 38 54.6 +0.6**
baz=315
Y39A Lockesburg 62.47 69 P **P 01 38 55.1 +0.6**
baz=315
KMI Kunming 62.49 276 P **P 01 38 56.8 +1.8**
KMI pP pP 01 39 08.8 +1.9
KMI sP sP 01 39 14.0 +2.4
KMI PP **PP 01 41 17.0 +4.5**
KMI S **S 01 47 18.8 -0.8**
KMI Kunming 62.49 276 SS SS 01 51 27.0 +3.4
KMI pmax pmax
comp=Z,15nm,0.6s
KMI pmax pmax
comp=Z,150nm,10.6s
KMI LR LR
comp=N,390nm,19.7s
KMI LR LR
comp=E,300nm,17.7s
KMI LR LR
comp=Z,380nm,23.7s
QIZ Qiongzhong 62.50 266 P **P 01 38 56.3 +1.5**
QIZ S **S 01 47 21.3 +2.0**
QIZ LR LR
comp=N,120nm,4.1s
QIZ LR LR
comp=E,39nm,18.6s
OLIL Olney 62.52 62 *e*P **P 01 38 55.3 +0.6**
comp=E,14nm,0.7s
X301 Greenbrier Sit 62.54 67 *e*P **P 01 38 55.2 +0.3**
comp=E,11nm,0.7s
WHAR Wooly Hollow 62.57 67 *e*P **P 01 38 56.4 +1.3**
comp=E,10nm,0.7s
PBMO Poplar Bluff 62.59 65 *e*P **P 01 38 54.4 -0.9**
comp=E,18nm,0.6s
534A Blanco 62.61 75 P **P 01 38 55.6 0.0**
baz=316
435B Jarrell 62.62 74 P **P 01 38 56.2 +0.7**
baz=316
336A Riesel 62.63 73 P **P 01 38 55.6 0.0**
baz=315
W41A Tony Mavity, V 62.67 67 P **P 01 38 55.2 -0.6**
baz=315
W41B Gary Mavity, V 62.67 67 P **P 01 38 55.4 -0.4**
baz=315
138A Matatall Enter 62.78 71 P **P 01 38 56.9 +0.3**
baz=315
X40A Basin Creek Fa 62.82 68 P **P 01 38 57.0 +0.2**
baz=315
Y40A Okolona 62.89 69 P **P 01 38 57.6 +0.3**
baz=315
PDGK Podgornoye 62.96 306 P **P 01 38 57.9 +0.3**
PDGK pmax pmax
comp=Z,16nm,0.9s
340A Bronson 64.38 71 P **P 01 39 07.1 0.0**
baz=316
WVT Waverly 64.52 64 *e*P **P 01 39 08.7 +0.7**
WVT pmax pmax
comp=Z,7.0nm,0.9s
WVT Waverly 64.52 64 *e*P **P 01 39 08.7 +0.7**
comp=Z,6.6nm,0.9s
LMQ La Malbaie 64.96 44 *e*P **P 01 39 08.6 -2.1**
comp=Z,51nm,1.9s
M54A Oil Creek Stat 65.02 54 P **P 01 39 12.1 +1.0**
baz=317
PLAL Pickwick Lake 65.20 65 *e*P **P 01 39 12.4 -0.1**
comp=Z,12nm,0.6s
TKM2 Tokmak 2 65.21 308 *i* P **P 01 39 12.5 -0.1**
TKM2 pmax pmax
comp=Z,16nm,1.0s
TKM2 Tokmak 2 65.21 308 *e*P **P 01 39 13.2 +0.6**
comp=Z,10nm,0.8s
N54A Moraine State 65.25 55 P **P 01 39 12.6 -0.1**
baz=317
Y46A Houston 65.55 66 P **P 01 39 14.6 -0.1**
baz=316,SNR=12
FIA1 FINESS Array S 65.61 346 *e*P **P 01 39 14.4 -0.2**
FINES FINESS Array B 65.61 346 P **P 01 39 13.1 -1.5**
comp=Z,4.6nm,0.8s,baz=27,slow=8.8,SNR=11
FINES LR LR 02 08 59.7
comp=Z,543nm,21.2s,baz=16,slow=37
FRU Bishkek 65.75 309 *e*P **P 01 39 16.0 0.0**
FRU pmax pmax
comp=Z,32nm,2.0s
244A Avery, Jackson 65.82 69 P **P 01 39 17.5 +1.0**
baz=317
AAK Ala-Archa 65.96 309 *c i*P **P 01 39 18.0 +0.5**
AAK pmax pmax
comp=Z,46nm,1.2s
AAK Ala-Archa 65.96 309 *e*P **P 01 39 17.1 -0.3**
comp=Z,12nm,0.6s
Y47A UCPARC, Winfie 66.11 65 P **P 01 39 18.9 +0.6**
baz=317
LSA Lhasa 66.29 288 P **P 01 39 21.5 +1.4**
LSA pmax pmax
comp=Z,11nm,0.7s
LSA Lhasa 66.29 288 *e*P **P 01 39 20.8 +0.7**
LSA pmax pmax
comp=Z,14nm,0.7s

LSA	**Lhasa**		**66.29**	**288**	*e*P		**P**	**01 39 20.8**	**+0.7**
	comp=Z,14nm,0.7s								
EKS2	**Erkin-Say**		**66.29**	**309**	*e*P		**P**	**01 39 20.4**	**+0.9**
EKS2					pmax		pmax		
	comp=Z,13nm,0.6s								
EKS2	**Erkin-Say**		**66.29**	**309**	*e*P		**P**	**01 39 20.4**	**+0.9**
	comp=Z,13nm,0.6s								
146A	**Union**		**66.34**	**67**	P		**P**	**01 39 20.8**	**+1.0**
	baz=317								
Z47A	**Carrollton**		**66.50**	**66**	P		**P**	**01 39 20.5**	**-0.3**
	baz=317,SNR=5.8								
AKTO	**Aktyubinsk**		**67.04**	**324**	P		**P**	**01 39 24.7**	**+0.7**
AKTO					pmax		pmax		
	comp=Z,41nm,1.0s								
MNAS	**Manas**		**67.04**	**310**	P		**P**	**01 39 24.9**	**+0.6**
MNAS					pmax		pmax		
	comp=Z,21nm,0.9s								
AB31	**Akbulak array**		**67.26**	**322**	*i* P		**P**	**01 39 25.8**	**+0.4**
AB31					pmax		pmax		
	comp=Z,6.0nm,0.5s								
ABKAR	**Akbulak array**		**67.26**	**322**	*e*P		**P**	**01 39 26.2**	**+0.8**
N59A	**State Game Lan**		**67.42**	**52**	P		**P**	**01 39 26.4**	**-0.2**
	baz=319								
NC204	**NORSAR Array S**		**67.43**	**354**	*e*P		**P**	**01 39 25.9**	**-0.4**
NC303	**NORSAR Array S**		**67.44**	**354**	*e*P		**P**	**01 39 26.1**	**-0.3**
248A	**Dixon Mills**		**67.50**	**67**	P		**P**	**01 39 27.4**	**+0.3**
	baz=317								
KK31	**Karatay Array**		**67.53**	**311**	*i* P		**P**	**01 39 27.4**	**+0.2**
KK31					pmax		pmax		
	comp=Z,12nm,0.6s								
KKAR	**Karatay Array**		**67.53**	**311**	*e*P		**P**	**01 39 27.9**	**+0.7**
KKAR	**Karatay Array**		**67.53**	**311**	*e*P		**P**	**01 39 27.9**	**+0.7**
NC405	**NORSAR Array S**		**67.53**	**353**	*e*P		**P**	**01 39 26.6**	**-0.4**
347A	**Saraland**		**67.54**	**68**	P		**P**	**01 39 27.9**	**+0.4**
	baz=317								
KSH	**Kashi**		**67.55**	**305**	P		**P**	**01 39 31.5**	**+3.9**
KSH					*e*pP		sP	01 39 44.5	+0.2
KSH					*e*sP		PcP	01 39 50.0	-4.6
KSH					*e*ScP			01 43 57.0	
KSH					S		**S**	**01 48 24.3**	**+3.1**
KSH					ScS		**ScS**	**01 49 22.5**	**-0.1**
KSH	**Kashi**		**67.55**	**305**	SS		SS	01 52 47.0	+5.7
KSH					pmax		pmax		
	comp=Z,24nm,0.6s								
KSH					pmax		pmax		
	comp=Z,190nm,5.1s								
KSH					LR		LR		
	comp=N,580nm,12.6s								
KSH					LR		LR		
	comp=E,360nm,12.2s								
KSH					LR		LR		
	comp=Z,1μm,16.7s								
CRAI	**Chiangrai**		**67.55**	**275**	P		**P**	**01 39 23.5**	**-4.2**
	comp=Z,14nm,1.1s,comp=Z,18μm								
CRAI					P		pP	01 39 29.2	-11
	comp=Z,14nm,1.1s,comp=Z,18μm								
NB201	**NORSAR Array S**		**67.62**	**354**	*e*P		**P**	**01 39 27.2**	**-0.3**
NB2	**NORSAR Subarra**		**67.64**	**354**	P		**P**	**01 39 26.9**	**-0.8**
	comp=Z,5.6nm,0.6s,baz=8.1,slow=6.2								
NOA	**NORSAR Array B**		**67.64**	**354**	P		**P**	**01 39 26.9**	**-0.8**
	comp=Z,6.7nm,0.7s,baz=8.3,slow=6.3,SNR=24								
NOA					LR		LR	02 10 44.8	
	comp=Z,238nm,18.8s,baz=15,slow=38								
SKNT	**Sakolnakorn**		**67.71**	**270**	P		**P**	**01 39 30.0**	**+1.3**
	comp=Z,13nm,1.2s								
SFK	**Sufi-Kurgan**		**68.42**	**307**	P		**P**	**01 39 33.0**	**-0.2**
CMAI	**Chiengmai2**		**68.60**	**275**	P		**P**	**01 39 35.7**	**+1.2**
	comp=Z,112nm,1.4s								
KMSC	**Kings Mountain**		**68.84**	**60**	P		**P**	**01 39 35.3**	**-0.3**
	baz=318								
KMSC	**Kings Mountain**		**68.84**	**60**	*e*P		**P**	**01 39 34.8**	**-0.7**
	comp=Z,13nm,1.1s								
SHL	**Shillong**		**68.87**	**285**	*e*P		**P**	**01 39 38.0**	**+1.9**
KONO	**Kongsberg**		**69.13**	**354**	*e*P		**P**	**01 39 36.8**	**-0.1**
KONO					pmax		pmax		
	comp=Z,13nm,0.9s								
KONO	**Kongsberg**		**69.13**	**354**	*e*P		**P**	**01 39 36.8**	**-0.1**
	comp=Z,13nm,0.9s								
UTTA	**Uttaradit**		**69.29**	**273**	P		**P**	**01 39 40.1**	**+1.6**
	comp=Z,5.6nm,0.8s								
TAOE	**Nuku Hiva Isla**		**69.39**	**137**	*e*LR		LR	02 00 39.3	
	comp=Z,2μm,22.7s								
TAOE	**Nuku Hiva Isla**		**69.39**	**137**	*e*T		T	02 55 15.1	
	comp=Z,60nm,0.3s								
CMMT	**Chiang Mai**		**69.50**	**275**	P		**P**	**01 39 41.6**	**+1.7**
	comp=Z,15nm,0.9s								
CHTO	**Chiang Mai**		**69.50**	**275**	P		**P**	**01 39 41.6**	**+1.7**
	comp=Z,67nm,1.1s								
CHTO	**Chiang Mai**		**69.50**	**275**	*e*P		**P**	**01 39 39.8**	**0.0**
CHTO					pmax		pmax		
	comp=Z,9.0nm,0.7s								
CHTO	**Chiang Mai**		**69.50**	**275**	*e*P		**P**	**01 39 39.8**	**0.0**
	comp=Z,8.7nm,0.7s								
OBN	**Obninsk**		**69.52**	**338**	*de*P		**P**	**01 39 40.2**	**+0.8**
OBN					*e**PP		**pP**	**01 39 53.0**	**+1.5**
OBN					*e*			01 40 01.0	
OBN					*e*			01 42 14.2	
OBN					*e*S		SKiKP	01 49 07.4	-17
OBN					pmax		pmax		
	comp=Z,11nm,0.6s								
OBN					MLR		MLR		
	comp=Z,2μm,18.0s								
OBN	**Obninsk**		**69.52**	**338**	*e*P		**P**	**01 39 38.9**	**-0.5**
	comp=Z,13nm,0.6s								
CMAR	**Chiang Mai Arr**		**69.77**	**274**	P		**P**	**01 39 41.4**	**-0.1**
	comp=Z,4.9nm,0.5s,baz=26,slow=7.8,SNR=14								
CMAR					LR		LR	02 11 00.3	
	comp=Z,193nm,20.2s,baz=40,slow=37								
CMAR	**Chiang Mai Arr**		**69.77**	**274**	*ce*P		**P**	**01 39 41.0**	**-0.5**
CMAR					pmax		pmax		
	comp=Z,5.0nm,0.5s								
GUN	**Gumba**		**70.72**	**291**	*e*P		**P**	**01 39 48.3**	**+0.6**
	comp=Z,118nm,0.7s								
KKN	**Kakani**		**71.17**	**291**	*e*P		**P**	**01 39 50.9**	**+0.7**
	comp=Z,82nm,0.6s								
SRAK	**Srakaew**		**71.17**	**269**	P		**P**	**01 39 49.1**	**-0.9**
	comp=Z,38nm,1.0s								
LPSR	**Galich'ya Gora**		**71.23**	**336**	*e*P		**P**	**01 39 50.0**	**+0.1**
LPSR					pmax		pmax		
	comp=Z,6.0nm,0.7s								
PKIN	**Phulchoki**		**71.26**	**291**	*e*P		**P**	**01 39 51.2**	**+0.4**
	comp=Z,92nm,1.0s								
GKN	**Gorkha**		**71.38**	**292**	*e*P		**P**	**01 39 52.0**	**+0.6**
	comp=Z,76nm,0.6s								
NAYO	**Nakonayok**		**71.39**	**270**	P		**P**	**01 39 53.4**	**+2.0**
	comp=Z,18nm,2.0s								
DMN	**Daman**		**71.40**	**291**	*e*P		**P**	**01 39 52.4**	**+0.7**
	comp=Z,50nm,0.7s								
VRH	**Novokhopyorsk**		**71.74**	**333**	*e*P		**P**	**01 39 53.1**	**+0.1**
VRH					pmax		pmax		
	comp=Z,10.0nm,0.5s								
PMOR	**Pomariorio Ree**		**71.96**	**146**	*e*T		T	02 58 28.1	
	comp=Z,27nm,0.2s								
KOLN	**Koldanda**		**72.16**	**292**	*e*P		**P**	**01 39 56.5**	**+0.3**
	comp=Z,41nm,0.9s								
PYUN	**Piuthan**		**72.27**	**293**	*e*P		**P**	**01 39 57.2**	**+0.4**
	comp=Z,99nm,1.0s								
VSR	**Storozhevoye**		**72.42**	**335**	*e*P		**P**	**01 39 56.5**	**-0.6**
VSR					pmax		pmax		
	comp=Z,6.0nm,0.5s								
PPT	**Papeete**		**73.79**	**149**	LR		LR	02 04 20.3	
	comp=Z,630nm,21.1s,baz=351,slow=29								
PPT2	**Papeete2**		**73.81**	**149**	*e*S		**S**	**01 49 37.7**	**+3.7**
	comp=Z,2μm,27.2s								
PPT2	**Papeete2**		**73.81**	**149**	*e*LR		LR	02 02 32.3	
	comp=Z,1μm,25.0s,baz=344								
PPT2	**Papeete2**		**73.81**	**149**	*e*T		T	03 00 46.7	
	comp=Z,8.7nm,0.3s								
TIAR	**Tiarei**		**73.86**	**149**	*e*T		T	03 00 49.6	
	comp=Z,4.9nm,0.3s								
PAE	**Paea**		**73.88**	**149**	*e*T		T	03 00 51.3	
	comp=Z,2.5nm,0.3s								
MEH	**Mehetia**		**74.58**	**148**	*e*T		T	03 01 43.7	
	comp=Z,18nm,0.3s								
KBL	**Kabul**		**74.91**	**307**	*e*P		**P**	**01 40 11.8**	**-0.4**
KBL					pmax		pmax		
	comp=Z,19nm,0.8s								
KBL	**Kabul**		**74.91**	**307**	*e*P		**P**	**01 40 11.8**	**-0.4**
	comp=Z,19nm,0.8s								
AKASG	**Malin Array Be**		**75.26**	**341**	P		**P**	**01 40 12.7**	**-0.9**
	comp=Z,4.7nm,0.5s,baz=23,slow=6.2,SNR=20								
AKASG					LR		LR	02 17 11.4	
	comp=Z,1μm,20.0s,baz=0.0,slow=39								
AKASG	**Malin Array Be**		**75.26**	**341**	*ce*P		**P**	**01 40 13.0**	**-0.7**
AKASG					pmax		pmax		
	comp=Z,5.0nm,0.5s								
AKBB	**Malin Array Si**		**75.26**	**341**	*e*P		**P**	**01 40 13.1**	**-0.6**
AKBB					pmax		pmax		
	comp=Z,11nm,0.5s								
AKBB	**Malin Array Si**		**75.26**	**341**	*e*P		**P**	**01 40 13.1**	**-0.6**
	comp=Z,11nm,0.5s								
KIEV	**Kiev**		**75.27**	**341**	*e*P		**P**	**01 40 12.9**	**-0.8**
KIEV					pmax		pmax		
	comp=Z,10.0nm,0.9s								
KIEV	**Kiev**		**75.27**	**341**	*e*P		**P**	**01 40 12.8**	**-0.8**
	comp=Z,9.6nm,0.9s								
AK11	**Malin Array Si**		**75.29**	**341**	*e*P		**P**	**01 40 13.7**	**-0.2**
CCIG	**Comitan**		**76.66**	**81**	*e*P		**P**	**01 40 22.2**	**-0.2**
	comp=Z,8.1nm,0.7s								
GOF	**Gofitskoye**		**76.84**	**330**⇑	*e*P		**P**	**01 40 22.9**	**+0.1**
GOF					pmax		pmax		
	comp=Z,48nm,1.0s								
CLL	**Collm**		**77.14**	**351**	*e*P		**P**	**01 40 22.0**	**-2.3**
CLL					*e*			01 40 37.0	
CLL					*e*PP		PP	01 43 27.0	+9.5
CLL					*e*S		S	01 50 26.0	+16
CLL					*e*			01 59 30.0	
CLL					LmV			02 17 00.0	
	comp=N,300nm,19.8s								
CLL					LmV			02 17 00.0	
	comp=E,100nm,21.8s								
CLL					LmV			02 17 00.0	
	comp=Z,500nm,18.6s								
CLL	**Collm**		**77.14**	**351**	*e*P		**P**	**01 40 22.0**	**-2.3**
CLL					*e*S		S	01 50 26.0	+16
CLL					MLR		MLR		
	comp=Z,500nm,18.6s								
GEYT	**Alibeck**		**77.31**	**316**	P		**P**	**01 40 25.9**	**+0.3**
	comp=Z,11nm,1.0s,baz=343,slow=4.6,SNR=16								
GEYT					PP		**PP**	**01 43 20.5**	**+1.0**
	comp=Z,2.4nm,0.8s,baz=64,slow=8.2,SNR=4.7								
GEYT					LR		LR	02 19 46.9	
	comp=Z,2μm,18.1s,baz=20,slow=40								
OJC	**Ojcow**		**77.39**	**347**	*e*P		**P**	**01 40 28.0**	**+2.2**
OJC					pmax		pmax		
	comp=Z,13nm,1.4s								
OJC	**Ojcow**		**77.39**	**347**	*e*P		**P**	**01 40 28.0**	**+2.2**
	comp=Z,13nm,1.4s								
KWP	**Kalwaria Pacla**		**77.50**	**345**	*e*P		**P**	**01 40 26.3**	**-0.1**
KWP	**Kalwaria Pacla**		**77.50**	**345**⇓	*i*P		**P**	**01 40 27.0**	**+0.6**
KWP	**Kalwaria Pacla**		**77.50**	**345**⇓	P		**P**	**01 40 27.0**	**+0.6**
DPC	**Dobruska-Polom**		**77.72**	**349**	*e*P		**P**	**01 40 29.5**	**+1.8**
DPC					AMS		AMS	02 22 40.0	
	comp=Z,700nm,19.5s								
DPC	**Dobruska-Polom**		**77.72**	**349**	*e*P		**P**	**01 40 29.5**	**+1.8**
DPC					MLR		MLR		
	comp=Z,700nm,19.5s								
SORM	**Soroca**		**77.88**	**340**⇑	*i*P		**P**	**01 40 28.3**	**-0.2**
SORM	**Soroca**		**77.88**	**340**	⇑P		**P**	**01 40 28.3**	**-0.2**
KRLC	**Kraliky**		**77.94**	**349**	*e*P		**P**	**01 40 28.5**	**-0.4**
KRLC					*ex*		x	01 40 35.9	
KRLC	**Kraliky**		**77.94**	**349**	*e*P		**P**	**01 40 28.5**	**-0.4**
KRLC					*e*			01 40 35.9	
KIV	**Kislovodsk**		**77.94**	**329**	*de*P		**P**	**01 40 29.7**	**+0.6**
KIV					*e*			01 40 36.5	
KIV					*e**PP		**sP**	**01 40 45.5**	**-0.5**
KIV					S		**S**	**01 50 16.0**	**-3.3**
KIV					*e*			01 50 58.4	
KIV					pmax		pmax		
	comp=Z,13nm,0.9s								
KIV					MLR		MLR		
	comp=Z,549nm,19.0s								
KIV	**Kislovodsk**		**77.94**	**329**	*e*P		**P**	**01 40 30.1**	**+1.0**
	comp=Z,12nm,0.9s								
STHS	**Stebnicka Huta**		**77.95**	**345**	*e*P		**P**	**01 40 31.4**	**+2.5**
OKC	**Ostrava-Krasne**		**77.99**	**348**	*e*P		**P**	**01 40 29.8**	**+0.7**
OKC					AMS		AMS	02 21 10.0	
	comp=Z,900nm,20.4s								
OKC	**Ostrava-Krasne**		**77.99**	**348**	*e*P		**P**	**01 40 29.8**	**+0.7**
OKC					MLR		MLR		
	comp=Z,900nm,20.4s								
NCK	**Nalchik**		**78.06**	**329**⇑	*e*P		**P**	**01 40 31.3**	**+1.6**
NCK					pmax		pmax		
	comp=Z,18nm,0.6s								
KBZ	**Khabaz**		**78.08**	**329**	P		**P**	**01 40 30.4**	**+0.7**
	comp=Z,7.6nm,0.9s,baz=76,slow=2.0,SNR=18								
KBZ					LR		LR	02 19 16.0	
	comp=Z,937nm,21.2s,baz=25,slow=39								
KOLS	**Kolonicke sedl**		**78.25**	**345**	*e*P		**P**	**01 40 32.5**	**+1.9**
NKC	**Novy Kostel**		**78.26**	**351**	*e*P		**P**	**01 40 30.6**	**0.0**
NKC	**Novy Kostel**		**78.26**	**351**	*e*P		**P**	**01 40 30.6**	**0.0**
GOPC	**GO Pecny, Ondr**		**78.33**	**350**	AMS		AMS	02 23 20.0	
	comp=Z,600nm,18.2s								
MEM	**Membach**		**78.34**	**356**	P		**P**	**01 40 32.8**	**+1.7**
CRVS	**Cervenica-Dubn**		**78.41**	**345**	*e*P		**P**	**01 40 32.5**	**+1.0**
LANS	**Liptovska Anna**		**78.48**	**347**	*e*P		**P**	**01 40 32.2**	**+0.3**
NEY	**Neytrino**		**78.56**	**329**	*i* P		**P**	**01 40 31.8**	**-0.9**
NEY					pmax		pmax		
	comp=Z,2.0nm,2.1s								
ZEI	**Tsey**		**78.59**	**328**	*e*P		**P**	**01 40 32.2**	**-0.7**
ZEI					pmax		pmax		
	comp=Z,22nm,0.6s								
VRAC	**Vranov**		**78.71**	**348**⇑	*i*P		**P**	**01 40 33.7**	**+0.5**
VRAC	**Vranov**		**78.71**	**348**	⇑P		**P**	**01 40 33.7**	**+0.5**
ANN	**Anapa**		**78.76**	**333**	*e*P		**P**	**01 40 31.8**	**-1.6**
ANN					*e**PP		**PcP**	**01 40 41.8**	**-0.4**
ANN					*e*			01 43 27.4	
ANN					*e*PPP		PPP	01 45 18.0	
ANN					*e*S		S	**01 50 26.4**	**-1.3**
ANN					*e*SS		**SS**	**01 55 29.7**	**-1.6**
ANN					pmax		pmax		
	comp=Z,56nm,1.5s								
ANN					MLR		MLR		
	comp=N,1μm,18.0s								
ANN					MLR		MLR		
	comp=Z,399nm,18.0s								
ANN					MLR		MLR		
	comp=E,266nm,18.0s								
TREC	**Trest**		**78.86**	**349**	AMS		AMS	02 21 40.0	
	comp=E,500nm,19.3s								
DOU	**Dourbes**		**78.92**	**356**	P		**P**	**01 40 35.8**	**+1.6**
BUR08	**Bucovina Ar. S**		**78.97**	**342**	*e*P		**P**	**01 40 35.0**	**+0.3**
BURAR	**Bucovina Array**		**79.00**	**342**⇑	*i*P		**P**	**01 40 35.3**	**+0.4**
BURAR	**Bucovina Array**		**79.00**	**342**	⇑P		**P**	**01 40 35.3**	**+0.4**
PRAR	**RASCA**		**79.05**	**342**⇓	*i*P		**P**	**01 40 36.2**	**+1.2**
VYHS	**Vyhne**		**79.21**	**347**	*e*P		**P**	**01 40 35.8**	**-0.1**
KHC	**Kasperske Hory**		**79.23**	**350**	*e*P		**P**	**01 40 35.9**	**-0.1**
KHC	**Kasperske Hory**		**79.23**	**350**	*e*P		**P**	**01 40 35.9**	**-0.1**
KHC	**Kasperske Hory**		**79.23**	**350**	*e*P		**P**	**01 40 35.9**	**-0.1**
	comp=E,2.3nm,1.2s								
CHVG	**Ch'k'valeri**		**79.25**	**329**⇑	*i*P		**P**	**01 40 38.3**	**+2.1**
LEOM	**Leova**		**79.48**	**340**⇓	*i*P		**P**	**01 40 39.5**	**+2.2**
LEOM	**Leova**		**79.48**	**340**⇓	P		**P**	**01 40 39.5**	**+2.2**
GERES	**GERESS Array B**		**79.50**	**350**	P		**P**	**01 40 37.1**	**-0.5**
	comp=E,0.8nm,0.6s,baz=28,slow=6.0,SNR=7.8								
GEA0	**GERESS Array S**		**79.51**	**350**	*e*P		**P**	**01 40 37.2**	**-0.4**
PSZ	**Piszkesteto**		**79.62**	**346**⇓	*i*P		**P**	**01 40 39.0**	**+0.8**
PSZ	**Piszkesteto**		**79.62**	**346**⇓	P		**P**	**01 40 39.0**	**+0.8**
ARCR	**ARCALIA**		**79.67**	**343**⇑	*i*P		**P**	**01 40 39.8**	**+1.4**
TESR	**Tescani**		**79.77**	**341**⇑	*i*P		**P**	**01 40 39.7**	**+0.7**
CONA	**Conrad Observa**		**80.16**	**349**	*i* P		**P**	**01 40 41.2**	**+0.1**
	comp=E,6.3nm,1.3s								
DRGR			**80.25**	**344**⇓	*i*P		**P**	**01 40 42.7**	**+1.1**
DRGR			**80.25**	**344**⇓	P		**P**	**01 40 42.7**	**+1.1**
VRI	**Vrincioaia**		**80.38**	**341**⇑	*i*P		**P**	**01 40 43.0**	**+0.7**
VRI	**Vrincioaia**		**80.38**	**341**	⇑P		**P**	**01 40 43.0**	**+0.7**
PLOR	**Plostina**		**80.41**	**341**⇓	*i*P		**P**	**01 40 45.3**	**+2.8**
PLOR	**Plostina**		**80.41**	**341**⇓	P		**P**	**01 40 45.3**	**+2.8**
DOPR	**Dopca**		**80.55**	**342**⇑	*i*P		**P**	**01 40 45.7**	**+2.5**
GNI	**Garni**		**80.66**	**326**	P		**P**	**01 40 43.5**	**-0.6**
	comp=E,4.2nm,0.8s,baz=234,slow=19,SNR=2.0								
GNI	**Garni**		**80.66**	**326**	*i* P		**P**	**01 40 43.4**	**-0.6**
GNI					pmax		pmax		
	comp=Z,59nm,1.6s								
GNI	**Garni**		**80.66**	**326**	*e*P		**P**	**01 40 44.2**	**+0.1**
	comp=Z,9.3nm,0.9s								
CFR	**Carcaliu**		**80.73**	**340**⇓	*i*P		**P**	**01 40 45.0**	**+0.9**
CFR	**Carcaliu**		**80.73**	**340**	⇓P		**P**	**01 40 45.0**	**+0.9**
GRER			**80.79**	**341**⇓	*i*P		**P**	**01 40 46.7**	**+2.2**
MLR	**Muntele Rosu**		**80.89**	**341**⇓	*i*P		**P**	**01 40 47.3**	**+2.1**
MLR	**Muntele Rosu**		**80.89**	**341**⇓	P		**P**	**01 40 47.3**	**+2.1**
MLR	**Muntele Rosu**		**80.89**	**341**	*e*P		**P**	**01 40 46.2**	**+1.0**
	comp=Z,7.1nm,0.7s								
SIRR	**Siria**		**80.94**	**344**⇓	*i*P		**P**	**01 40 48.0**	**+2.7**
WRAB	**Tennant Creek**		**81.05**	**222**	*e*P		**P**	**01 40 44.9**	**-1.1**
WRAB					pmax		pmax		
	comp=Z,13nm,0.7s								
WRAB	**Tennant Creek**		**81.05**	**222**	*e*P		**P**	**01 40 44.9**	**-1.1**
	comp=Z,13nm,0.7s								
WRA	**Warramunga Arr**		**81.06**	**222**	P		**P**	**01 40 44.5**	**-1.6**
	comp=Z,4.8nm,0.7s,baz=32,slow=6.1,SNR=20								
WRA					PKKPbc		**PKKPbc**	**01 59 19.9**	**-1.7**
	comp=Z,0.4nm,0.6s,baz=222,slow=2.6,SNR=2.8								
WRA					LR		LR	02 14 26.9	
	comp=Z,175nm,20.0s,baz=10.0,slow=34								
WRA	**Warramunga Arr**		**81.06**	**222**	*i* P		**P**	**01 40 46.7**	**+0.6**
WRA					pmax		pmax		
	comp=Z,5.0nm,0.7s								
MOTA	**Moosalm**		**81.24**	**352**	*i* P		**P**	**01 40 48.4**	**+1.3**
	comp=Z,7.2nm,1.1s								
KBA	**Koelnbreinsper**		**81.29**	**350**	*i* P		**P**	**01 40 47.8**	**+0.5**
	comp=Z,7.9nm,0.6s								
LOT	**Lotru**		**81.36**	**343**⇓	*i*P		**P**	**01 40 50.3**	**+2.7**
TIRR	**Tirgusor**		**81.36**	**339**⇑	*i*P		**P**	**01 40 49.0**	**+1.5**
TIRR	**Tirgusor**		**81.36**	**339**	⇑P		**P**	**01 40 49.0**	**+1.5**
TIRR	**Tirgusor**		**81.36**	**339**	*e*P		**P**	**01 40 48.9**	**+1.4**
	comp=Z,5.4nm,0.7s								
SOKA	**Soboth**		**81.49**	**349**	*i* P		**P**	**01 40 48.5**	**+0.3**
	comp=Z,11nm,1.1s								
BZS	**Buzias**		**81.58**	**344**⇑	*i*P		**P**	**01 40 48.8**	**+0.2**
BZS	**Buzias**		**81.58**	**344**	⇑P		**P**	**01 40 48.8**	**+0.2**
FETA	**Feichten**		**81.60**	**352**	*e*P		**P**	**01 40 49.4**	**+0.5**
	comp=Z,6.5nm,1.0s								
ABTA	**Abfaltersbach**		**81.70**	**351**	*i* P		**P**	**01 40 48.8**	**-0.6**
	comp=Z,5.5nm,0.9s								
PSI	**Prapat**		**81.73**	**264**	*e*P		**P**	**01 40 49.4**	**-0.6**
PSI					pmax		pmax		
	comp=Z,15nm,0.8s								
PSI	**Prapat**		**81.73**	**264**	*e*P		**P**	**01 40 49.4**	**-0.6**
	comp=Z,15nm,0.8s								
FUORN	**Ofenpass-Fuorn**		**82.03**	**352**	*e*P		**P**	**01 40 51.7**	**+0.3**
	comp=Z,4.4nm,0.8s								
HYB	**Hyderabad**		**83.07**	**289**	*i* P		**P**	**01 40 57.0**	**+0.1**
BLY	**Banja Luka**		**83.11**	**347**⇓	*i*P		**P**	**01 40 58.3**	**+1.6**
FITZ	**Fitzroy Crossi**		**83.41**	**230**	P		**P**	**01 40 58.4**	**0.0**
	comp=Z,2.6nm,0.7s,baz=352,slow=3.8,SNR=6.6								
RKT	**Rikitea**		**84.30**	**138**	*e*LR		LR	02 07 42.9	
	comp=Z,923nm,24.5s,baz=330								
BR131	**Keskin Array S**		**84.52**	**334**	*e*P		**P**	**01 41 04.5**	**+0.4**
BRTR	**Keskin Array B**		**84.52**	**334**	P		**P**	**01 41 03.5**	**-0.6**
	comp=Z,5.5nm,0.7s,baz=40,slow=2.6,SNR=31								
BRTR	**Keskin Array B**		**84.52**	**334**	*ce*P		**P**	**01 41 04.0**	**-0.1**
BRTR					pmax		pmax		
	comp=Z,6.0nm,0.6s								
AS01	**Alice Springs**		**84.54**	**221**	*e*P		**P**	**01 41 01.9**	**-2.1**
ASAR	**Alice Springs**		**84.56**	**221**	P		**P**	**01 41 03.9**	**-0.3**
	comp=Z,3.0nm,0.7s,baz=25,slow=4.8,SNR=20								
ASAR					LR		LR	02 16 34.5	
	comp=Z,200nm,21.0s,baz=32,slow=34								
BR231	**Keskin MP Arra**		**84.64**	**335**	*e*P		**P**	**01 41 04.0**	**-0.7**
PDG	**Podgorica**		**85.07**	**345**⇓	*i*P		**P**	**01 41 07.1**	**+0.5**
UOSS	**Minazif**		**89.10**	**310**	*e*P		**P**	**01 41 26.7**	**+0.2**
	comp=Z,12nm,0.9s								
STKA	**Stephens Creek**		**89.16**	**211**	P		**P**	**01 41 26.0**	**-0.3**
	comp=Z,2.6nm,1.0s,baz=340,slow=12,SNR=4.7								
STKA					LR		LR	02 16 08.7	
	comp=Z,468nm,20.1s,baz=15,slow=32								
STKA	**Stephens Creek**		**89.16**	**211**	P		**P**	**01 41 26.0**	**-0.3**
ES19	**SONSECA Array**		**89.38**	**2**	*e*P		**P**	**01 41 26.9**	**-0.7**
ESDC	**Sonseca Array**		**89.40**	**2**	P		**P**	**01 41 26.5**	**-1.2**
	comp=Z,1.1nm,0.7s,baz=349,slow=4.2,SNR=8.2								
ESDC					LR		LR	02 23 05.3	
	comp=Z,180nm,19.4s,baz=5.0,slow=37								
ASF	**Jabal al Asfar**		**90.54**	**329**	P		**P**	**01 41 34.8**	**+1.6**
	comp=Z,2.0nm,0.7s,baz=4.3,slow=5.2								
LAST	**Lasithi**		**90.89**	**339**⇑	*i*P		**P**	**01 41 33.3**	**-1.5**
KEST	**Kesra**		**92.92**	**352**	LR		LR	02 28 32.1	
	comp=Z,106nm,18.3s,baz=309,slow=39								
TOA0	**Torodi Ar. Sit**		**115.83**	**357**	*e*PKPdf		**PKPdf**	**01 47 13.3**	**-0.5**
TORD	**Torodi Ar. Bea**		**115.83**

DHBB				*i* S		**Sn**	**01 36 26.6**	**+3.0**
HAJJ	**Hajjah**	**4.10**	**10**	*i* P		Pn	01 35 48.5	-7.2
HAJJ				*i* S		**Sn**	**01 36 39.5**	**-4.3**
HAJJ				AML		AML	01 37 09.1	
	comp=Z,600nm,0.5s							

NIED ***26*** *01:35:00,38.˚40N×142.˚10E,h35km,Mw4.0 Best double couple: M₀1.06000×10¹⁵ NP1:ϕs99.00000°, δ32.00000°, λ-129.00000°. NP2:ϕs322.00000°, δ66.00000°, λ-69.00000°.*

JMA 26 01:35:08.5±0.1,38.˚41N×142.˚12E,h35km±1km, M4.1, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
JIO	**Ouri**	**0.61**	**274**	P		Pn	01 35 20.6	0.0
JIO				S		Sn	01 35 28.9	-0.3
OFUJ	**Ofunato**	**0.76**	**332**	P		Pn	01 35 22.5	-0.2
OFUJ				S		Sn	01 35 32.5	-0.4
JMK	**Ichinoseki**	**0.89**	**308**	P		Pn	01 35 24.7	+0.2
JMK				S		Sn	01 35 36.4	+0.3
JOU	**Okura**	**1.15**	**268**	P		Pn	01 35 28.6	+0.6
JOU				S		Sn	01 35 43.5	+1.0
JMM	**Marumori**	**1.18**	**243**	P		Pn	01 35 28.2	-0.3
JMM				S		Sn	01 35 43.2	-0.1
JOM	**Ohasama**	**1.24**	**329**	P		Pn	01 35 30.0	+0.6
JOM				S		Sn	01 35 45.9	+1.0
MAT	**Matsushiro**	**3.63**	**240**	P		Pn	01 36 02.5	+0.3
MAT				*e*S		Sn	01 36 44.2	+0.4

JMA 26 01:40:25.5±0.1,35.˚40N×140.˚99E,h20km±2km, M3.0, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
CHOJ	**Chosi**	**0.32**	**341**	P		Pb	01 40 32.4	-0.1
CHOJ				S		Sb	01 40 37.7	+0.4
BSO4	**Boso 4**	**0.67**	**233**	P		Pn	01 40 39.2	-0.6
BSO3	**Boso 3**	**0.71**	**214**	P		Pb	01 40 39.4	+0.3
BSO1	**Boso 1**	**0.74**	**181**	P		Pb	01 40 38.9	-0.5
MAT	**Matsushiro**	**2.53**	**298**	P		Pn	01 41 06.1	+0.7
MAT				*e*S		Sb	01 41 48.2	+7.3

MAN 26 01:40:36,15.˚54N×120.˚01E,h10km,mb4.2,ML3.0,MS2.8, 1D,Luzon

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
BOLP	**Bolinao**	**0.84**	**354**	*e*P		Pg	01 40 52.5	+0.2
BOLP				*e*S		Sb	01 41 05.3	+1.0
PCPH	**Palayan**	**1.05**	**88‖**	*e*P		Pg	01 40 45.6	-11
PCPH				*e*S		Sg	01 41 09.4	-0.4
BALP	**Baler**	**1.52**	**82**	*e*P		Pn	01 41 03.3	0.0
APYP	**Conner**	**2.60**	**27**	*e*P		Pb	01 41 22.1	-0.6

IDC ***26*** *01:43:24.1±1.4,26.˚71N×55.˚43E,h0km,mb3.6/8, mb1 3.7/11,mb1mx3.5/47,mbtmp3.6/11,ML3.4/3,Error ellipse: s-maj=29.5km s-min=22.2km az=6.0*
DSN ***26*** *01:43:25.2±0.9,26.˚94N×55.˚76E,h15km,ML3.5,Error ellipse: s-maj=9.3km s-min=5.6km az=53.0*
ISCJB ***26*** *01:43:25.8±0.4,26.˚70N±0.˚03×55.˚36E±0.˚04,h10km, mb3.5/8,Error ellipse: s-maj=4.9km s-min=4.3km az=178.7*
OMAN ***26*** *01:43:27.0,26.˚74N×55.˚46E,h17km*
TEH ***26*** *01:43:27.0,26.˚74N×55.˚46E,h17km,ML3.2*
CSEM ***26*** *01:43:28.1±0.2,26.˚68N×55.˚47E,h15km,ML3.2,Error ellipse: s-maj=7.0km s-min=4.6km az=90.0*

ISC 26 01:43:26.2±0.6,26.˚67N±0.˚03×55.˚46E±0.˚04,h10km,n53, σt¹s48/63,mb3.5/8,Southern Iran

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
BNDS	**Bandar-Abbas**	**0.96**	**41**	*e*Pg		**Pn**	**01 43 45.7**	**-0.2**
BNDS				*e*Sg		**Sn**	**01 44 00.7**	**+0.9**
GENO	**Geno**	**0.96**	**41**	*e*Pg		**Pn**	**01 43 45.9**	**0.0**
GENO	**Geno**	**0.96**	**41**	*e*Pg		**Pn**	**01 43 45.9**	**0.0**
BANOM	**Banah**	**1.06**	**135**	*e*P		**Pn**	**01 43 47.3**	**+0.2**
	SNR=402							
BANOM				S		**Sn**	**01 44 01.8**	**-0.1**
BANOM	**Banah**	**1.06**	**135**	P		**Pn**	**01 43 47.3**	**+0.2**
	SNR=402							
BANOM				S		**Sn**	**01 44 01.8**	**-0.1**
BANOM				Sb		**Sn**	**01 44 02.1**	**+0.2**
	SNR=5.6							
BANOM	**Banah**	**1.06**	**135**	Pb		**Pn**	**01 43 47.3**	**+0.2**
	SNR=402							
BANOM				Sb		**Sn**	**01 44 02.1**	**+0.2**
	SNR=5.6							
BANOM	**Banah**	**1.06**	**135**	P		**Pn**	**01 43 47.3**	**+0.2**
	SNR=402							
BANOM				S		**Sn**	**01 44 02.1**	**+0.2**
	SNR=5.6							
IBND	**Bandar-abas**	**1.23**	**51**	*e*Pg		**Pg**	**01 43 51.0**	**+1.1**
IBND				*e*Sg		**Sn**	**01 44 07.0**	**+0.8**
IBND				*e*AMB		AMB	01 44 34.7	
	comp=Z,11μm,0.3s							
IBND	**Bandar-abas**	**1.23**	**51**	*e*Pg		**Pg**	**01 43 51.0**	**+1.1**
IBND				*e*Sg		**Sn**	**01 44 07.0**	**+0.8**
KHSK	**Kohestak**	**1.43**	**86**	*e*Pn		**Pg**	**01 43 53.9**	**+0.4**
KHSK	**Kohestak**	**1.43**	**86**	*e*Pn		**Pg**	**01 43 53.9**	**+0.4**
NIAN	**Nian**	**1.51**	**54**	*e*Pn		**Pb**	**01 43 53.9**	**-0.4**
NIAN	**Nian**	**1.51**	**54**	*e*Pn		**Pb**	**01 43 53.9**	**-0.4**
NAZ	**Nazwa, Dubai**	**1.68**	**174**	*e*P		**Pb**	**01 43 57.5**	**+0.2**
	SNR=22							
NAZ				S		**Sg**	**01 44 23.2**	**+2.9**
NAZ	**Nazwa, Dubai**	**1.68**	**174**	P		**Pb**	**01 43 57.5**	**+0.2**
	SNR=22							
NAZ				S		**Sg**	**01 44 23.2**	**+2.9**
NAZ	**Nazwa, Dubai**	**1.68**	**174**	P		**Pb**	**01 43 57.7**	**+0.4**
UOSS	**Minazif**	**1.84**	**159**	P		**Pn**	**01 43 58.8**	**+0.9**
	SNR=29							
FAQ	**Al Faqa, Dubai**	**1.92**	**176**	*e*P		**Pn**	**01 44 00.6**	**+1.7**
	SNR=7.4							
FAQ	**Al Faqa, Dubai**	**1.92**	**176**	P		**Pn**	**01 44 00.6**	**+1.7**
FAQ	**Al Faqa, Dubai**	**1.92**	**176**	P		**Pn**	**01 44 00.6**	**+1.7**
HATD	**Hatta, Dubai**	**1.93**	**162**	*e*P		**Pn**	**01 44 00.8**	**+1.7**
	SNR=11							
HATD	**Hatta, Dubai**	**1.93**	**162**	P		**Pn**	**01 44 00.8**	**+1.7**
	SNR=11							
HATD	**Hatta, Dubai**	**1.93**	**162**	P		**Pb**	**01 44 01.1**	**-0.4**
ASHO	**Ashiyiah**	**2.05**	**165**	*e*P		**Pn**	**01 44 02.2**	**+1.5**
	SNR=86							
ASHO	**Ashiyiah**	**2.05**	**165**	Pn		**Pn**	**01 44 02.3**	**+1.5**
	SNR=86							
ASHO	**Ashiyiah**	**2.05**	**165**	Pn		**Pn**	**01 44 02.3**	**+1.5**
	SNR=86							
ASHO	**Ashiyiah**	**2.05**	**165**	P		**Pn**	**01 44 02.3**	**+1.5**
	SNR=86							
GHIR	**Ghir-Karzin**	**2.73**	**307**	*e*Pn		**Pn**	**01 44 09.4**	**-0.7**
NGRK	**Negar Kerman**	**3.17**	**20**	*e*Pn		**Pn**	**01 44 18.2**	**+1.8**
NGRK	**Negar Kerman**	**3.17**	**20**	*e*Pn		**Pn**	**01 44 18.2**	**+1.8**
KRBR	**Kerman**	**3.49**	**19**	*e*Pn		**Pn**	**01 44 22.1**	**+1.3**
TVBK	**TV Kerman**	**3.50**	**19**	*e*Pn		**Pn**	**01 44 23.4**	**+2.5**
TVBK	**TV Kerman**	**3.50**	**19**	*e*Pn		**Pn**	**01 44 23.4**	**+2.5**
CHMN	**Cheshme madani**	**3.67**	**29**	*e*Pn		**Pn**	**01 44 26.1**	**+2.8**
CHMN	**Cheshme madani**	**3.67**	**29**	*e*Pn		**Pn**	**01 44 26.1**	**+2.8**
KHGB	**Koh Gabri**	**3.80**	**13**	*e*Pn		**Pn**	**01 44 27.5**	**+2.5**
KHGB	**Koh Gabri**	**3.80**	**13**	*e*Pn		**Pn**	**01 44 27.5**	**+2.5**
IPAR	**Pars**	**3.81**	**327**	*e*Pn		**Pn**	**01 44 27.3**	**+2.1**
IPAR				*e*AMB		AMB	01 45 49.0	
	comp=Z,260nm,0.4s							
IPAR	**Pars**	**3.81**	**327**	*e*Pn		**Pn**	**01 44 27.3**	**+2.1**
IKAZ	**Kazeroun**	**4.45**	**315**	*e*Pn		**Pn**	**01 44 35.8**	**+1.8**
IKAZ				*e*AMB		AMB	01 45 28.9	
	comp=Z,302nm,0.1s							
IKAZ	**Kazeroun**	**4.45**	**315**	*e*Pn		**Pn**	**01 44 35.8**	**+1.8**
WSAR	**Wadi Sarin**	**4.46**	**139**	Pn		**Pn**	**01 44 34.7**	**+0.8**
	comp=Z,1.3nm,0.3s,baz=330,slow=6.4,SNR=24							
WSAR				Sn		**Sn**	**01 45 23.2**	**-2.8**
	comp=Z,1.7nm,0.3s,baz=92,slow=21,SNR=11							
MMAI	**Mount Meron Ar**	**18.50**	**295**	P		**P**	**01 47 43.1**	**+0.5**
	comp=Z,0.1nm,0.3s,baz=116,slow=16,SNR=2.4							
KBZ	**Khabaz**	**19.84**	**332**	P		**P**	**01 47 57.6**	**+0.6**
	comp=Z,0.2nm,0.3s,baz=140,slow=9.8,SNR=13							
KVAR	**Kislovodsk Arr**	**20.11**	**332**	P		Pn	01 48 01.9	-0.1
	comp=Z,5.7nm,0.6s,baz=132,slow=0.7,SNR=7.6							
BRTR	**Keskin Array B**	**22.36**	**311**	P		**P**	**01 48 23.4**	**-1.1**
	comp=Z,1.0nm,0.8s,baz=138,slow=14,SNR=7.9							
MKAR	**Makanchi Array**	**29.19**	**39**	P		**P**	**01 49 27.7**	**-0.1**
	comp=Z,0.1nm,0.4s,baz=224,slow=6.0,SNR=2.3							
KURBB	**Kurchatov Arra**	**29.71**	**30**	P		**P**	**01 49 30.6**	**-1.6**
	comp=Z,0.2nm,0.2s,baz=231,slow=8.9,SNR=3.6							
ZALV	**Zalesovo Beam**	**34.80**	**31**	P		**P**	**01 50 16.2**	**-0.7**
	comp=Z,1.3nm,0.5s,baz=263,slow=10.0,SNR=5.1							
GERES	**GERESS Array B**	**39.10**	**316**	P		**P**	**01 50 52.3**	**-1.3**
	comp=Z,0.2nm,0.4s,baz=95,slow=9.0,SNR=2.8							
FINES	**FINESS Array B**	**39.99**	**338**	P		**P**	**01 50 59.5**	**-1.2**
	comp=Z,1.1nm,0.5s,baz=134,slow=8.2,SNR=7.4							
NOA	**NORSAR Array B**	**45.41**	**332**	P		**P**	**01 51 43.0**	**-1.8**
	comp=Z,0.6nm,0.6s,baz=116,slow=8.0,SNR=3.6							
TORD	**Torodi Ar. Bea**	**51.97**	**266**	P		**P**	**01 52 34.5**	**-1.4**
	comp=Z,0.4nm,0.6s,baz=65,slow=7.9,SNR=5.5							

KRSC 26 01:44:00.0±1.2,50.˚81N×157.˚43E,h40km±20km,ML3.8, Kuril Islands

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
SKR	**Severo-Kuril's**	**0.84**	**262**	*i* P		Pn	01 44 15.8	+0.4
SKR				*i* S		Sn	01 44 27.0	+0.4
ASAK	**Asacha**	**1.60**	**10**	*e*P		Pn	01 44 28.3	+2.4
MTVR	**Mutnovka**	**1.74**	**15**	*e*P		Pn	01 44 30.3	+2.4
MTVR				*e*S		Sn	01 44 52.2	+3.3
RUS	**Russkaya**	**1.76**	**22**	*e*P		Pn	01 44 29.7	+1.7
RUS				*e*S		Sn	01 44 51.2	+2.0
KRMR	**Karymshinskiy**	**2.07**	**12**	*e*P		Pn	01 44 35.3	+3.0
KRMR				*e*S		Sn	01 45 00.3	+3.5
DALK	**Dalny**	**2.37**	**20**	*e*P		Pn	01 44 39.3	+2.9
DALK				*e*S		Sn	01 45 07.4	+3.2
UGLR	**Uglovaya**	**2.56**	**19**	*e*P		Pn	01 44 42.0	+3.0
AVH	**Avacha**	**2.59**	**18**	*e*P		Pn	01 44 43.1	+3.6
SMAR	**Somma**	**2.60**	**18**	*e*P		Pn	01 44 43.2	+3.5
SDLR	**Sedlovina**	**2.63**	**19**	*e*P		Pn	01 44 42.8	+2.7
NLC	**Nalytchevo**	**2.65**	**26**	*e*P		Pn	01 44 42.2	+2.1
NLC				*e*S		Sn	01 45 12.7	+1.8
KRX	**Arik**	**2.66**	**16**	*e*P		Pn	01 44 44.3	+3.8
GNL	**Ganaly**	**2.91**	**6**	*e*P		Pn	01 44 47.2	+3.3

CSEM ***26*** *01:49:53.7±0.4,37.˚90N×38.˚10E,h2km,MD2.6,Error ellipse: s-maj=8.9km s-min=8.3km az=57.0*
ISK ***26*** *01:49:54.4,38.˚00N×38.˚19E,h7km,MD2.6*
ISCJB ***26*** *01:49:55.1±0.6,38.˚02N±0.˚05×38.˚22E±0.˚05,h6km±9km, Error ellipse: s-maj=8.6km s-min=5.2km az=34.9*
DDA ***26*** *01:49:55.1,38.˚05N×38.˚24E,h3km,Md2.7*

ISC 26 01:49:55.3±1.1,38.˚00N±0.˚03×38.˚19E±0.˚03,h8km±12km, n13,σt⁰s52/22,Turkey

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
AKCD	**Akcadag**	**0.37**	**324**	*i* P		**Pg**	**01 50 02.5**	**-0.1**
AKCD				*i* S		**Sg**	**01 50 07.8**	**+0.4**
AKCD	**Akcadag**	**0.37**	**324**	P		**Pg**	**01 50 02.5**	**-0.1**
AKCD				S		**Sg**	**01 50 07.8**	**+0.4**
URFA	**Urfa**	**0.75**	**138**	*e*PG		**Pg**	**01 50 09.2**	**-0.5**
URFA				*e*SG		**Sg**	**01 50 20.0**	**+0.6**
URFA	**Urfa**	**0.75**	**138**	*e*Pg		**Pg**	**01 50 09.2**	**-0.5**
URFA				*e*Sg		**Sg**	**01 50 20.0**	**+0.6**
DARE	**Darende-Malaty**	**0.80**	**316**	*e*PG		**Pg**	**01 50 10.2**	**-0.6**
DARE				*e*SG		**Sg**	**01 50 21.7**	**+0.5**
DARE	**Darende-Malaty**	**0.80**	**316**	*e*Pg		**Pg**	**01 50 10.2**	**-0.6**
DARE				*e*Sg		**Sg**	**01 50 21.7**	**+0.5**
GZT	**Gaziantep**	**0.81**	**218**	*i* P		**Pn**	**01 50 13.4**	**+0.1**
GZT				*i* S		**Sn**	**01 50 26.3**	**+0.7**
SVRC	**Sivrice-ELAZID**	**0.95**	**66**	*e*PG		**Pg**	**01 50 13.3**	**-0.4**
SVRC				*e*SG		**Sg**	**01 50 26.5**	**+0.4**
SVRC	**Sivrice-ELAZID**	**0.95**	**66**	*e*Pg		**Pg**	**01 50 13.3**	**-0.4**
SVRC				*e*Sg		**Sg**	**01 50 26.5**	**+0.4**
KMRS	**Kahramanmaras**	**1.14**	**245**	*e*PN		**Pg**	**01 50 16.5**	**-0.7**
KMRS	**Kahramanmaras**	**1.14**	**245**	*e*Pn		**Pg**	**01 50 16.5**	**-0.7**
ILIC	**ilic-Erzincan**	**1.48**	**11**	*e*PN		**Pn**	**01 50 22.1**	**-0.3**
ILIC	**ilic-Erzincan**	**1.48**	**11**	*e*Pn		**Pn**	**01 50 22.1**	**-0.3**

IDC ***26*** *01:57:52.2±0.8,38.˚46N×143.˚28E,h0km,mb3.6/9, mb1 3.9/11,mb1mx3.7/34,mbtmp3.7/11,ML3.8/2,Error ellipse: s-maj=32.3km s-min=16.7km az=113.0*
JMA ***26*** *01:57:53.8±0.2,38.˚49N×142.˚96E,h13km±3km,M3.8*
ISCJB ***26*** *01:57:54.1±0.5,38.˚48N±0.˚04×143.˚04E±0.˚06,h23km, mb3.7/11,Error ellipse: s-maj=6.8km s-min=6.1km az=34.5*
NEIC ***26*** *01:57:57.8±1.8,38.˚46N×143.˚08E,h38km±17km,mb4.1/2, Error ellipse: s-maj=26.9km s-min=11.1km az=116.0*

ISC 26 01:57:55.5±0.7,38.˚51N±0.˚05×142.˚90E±0.˚06,h23km,n33, σt¹s94/32,mb3.6/11,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
OFUJ	**Ofunato**	**1.11**	**301**	P		**Pn**	**01 58 15.4**	**-0.3**
OFUJ				S		**Sn**	**01 58 30.8**	**+0.4**
JIO	**Ouri**	**1.22**	**268**	P		**Pn**	**01 58 16.8**	**-0.3**
JIO				S		**Sb**	**01 58 33.2**	**+0.1**
MIYJ	**Miyakonagasawa**	**1.35**	**322**	P		**Pn**	**01 58 18.5**	**-0.5**
JMK	**Ichinoseki**	**1.38**	**289**	P		**Pn**	**01 58 19.5**	**+0.1**
JOM	**Ohasama**	**1.58**	**308**	P		**Pb**	**01 58 22.9**	**-1.1**
JOU	**Okura**	**1.76**	**266**	P		**Pb**	**01 58 26.1**	**-1.0**
JMM	**Marumori**	**1.78**	**249**	P		**Pn**	**01 58 25.0**	**+0.1**
JKZ	**Kuzumaki**	**1.91**	**321**	P		**Pn**	**01 58 27.8**	**+1.1**
JFK	**Kawauchi**	**1.97**	**235**	P		**Pn**	**01 58 27.5**	**0.0**
JRG	**Rokugo**	**1.97**	**297**	P		**Pb**	**01 58 29.5**	**-1.2**
ERM	**Erimo**	**3.50**	**3**	*e*Pn		**Pn**	**01 58 47.4**	**-1.2**
ERM				*e*S		**Sn**	**01 59 26.4**	**-2.8**
MJAR	**Matsushiro Arr**	**4.21**	**244**	Pn		**Pn**	**01 59 01.3**	**+2.9**
	3.1nm,0.3s,baz=72,slow=14,SNR=9.2							
MAJO	**Matsushiro**	**4.22**	**244**	*e*P		**Pn**	**01 59 01.2**	**+2.8**
MAT	**Matsushiro**	**4.22**	**244**	P		**Pn**	**01 59 01.7**	**+3.3**
MAT				*e*S		**Sb**	**01 59 56.8**	**-2.7**
ASAJ	**Asahikawa**	**5.60**	**358**	Pn		Pn	01 59 22.0	+4.6
	1.3nm,0.3s,baz=243,slow=14,SNR=4.0							
ASAJ				Sn		**Sn**	**02 00 25.8**	**+4.8**
	0.3nm,0.3s,baz=344,slow=20,SNR=2.4							
JHJ	**Hachijo jima 2**	**5.95**	**206**	Pn		**Pn**	**01 59 24.6**	**+2.4**
	11nm,0.3s,baz=52,slow=19,SNR=4.6							
JHJ				Sn		**Sn**	**02 00 25.6**	**-3.9**
	14nm,0.3s,baz=73,slow=19,SNR=1.9							
SEY	**Seymchan**	**25.12**	**10**	P		**P**	**02 03 20.1**	**+1.8**
	1.7nm,0.5s,baz=187,slow=8.4,SNR=4.4							
H11N2	**WAKE ISLAND Hy**	**27.96**	**125**	T		T	02 32 47.9	
	baz=318,slow=76,SNR=64							
H11N1	**WAKE ISLAND Hy**	**27.97**	**125**	T		T	02 32 53.5	
	baz=318,slow=76,SNR=57							
H11N3	**WAKE ISLAND Hy**	**27.98**	**125**	T		T	02 32 54.5	
	baz=318,slow=76,SNR=69							
H11S1	**WAKE ISLAND Hy**	**28.75**	**127**	T		T	02 33 52.2	
	baz=319,slow=76,SNR=25							
H11S3	**WAKE ISLAND Hy**	**28.75**	**127**	T		T	02 33 53.8	
	baz=319,slow=76,SNR=20							
H11S2	**WAKE ISLAND Hy**	**28.76**	**127**	T		T	02 33 52.3	
	baz=319,slow=76,SNR=23							
MKAR	**Makanchi Array**	**44.35**	**301**	P		**P**	**02 06 06.2**	**+2.4**
	0.2nm,0.3s,baz=86,slow=16,SNR=2.5							
ILAR	**Eielson Array**	**47.62**	**33**	P		**P**	**02 06 26.9**	**-2.4**
	0.2nm,0.5s,baz=287,slow=9.5,SNR=3.6							
ABKAR	**Akbulak array**	**57.89**	**310**	*e*P		**P**	**02 07 45.6**	**+0.1**
	0.2nm,0.4s							
WRAB	**Tennant Creek**	**58.69**	**189**	*e*P		**P**	**02 07 51.0**	**-0.2**
	5.4nm,1.3s							
WRA	**Warramunga Arr**	**58.70**	**189**	P		**P**	**02 07 51.0**	**-0.3**
	1.9nm,0.6s,baz=7.5,slow=7.0,SNR=21							
YKA	**Yellowknife Ar**	**61.94**	**31**	P		**P**	**02 08 13.0**	**0.0**
	0.1nm,0.6s,baz=302,slow=5.9,SNR=3.1							
ASAR	**Alice Springs**	**62.42**	**189**	P		**P**	**02 08 17.0**	**+0.3**
	0.9nm,0.7s,baz=10,slow=6.3,SNR=14							
FINES	**FINESS Array B**	**68.05**	**332**	P		**P**	**02 08 53.1**	**+0.4**
	0.4nm,0.6s,baz=21,slow=12,SNR=1.9							
PDAR	**Pinedale Array**	**75.79**	**46**	P		**P**	**02 09 39.5**	**-0.4**
	0.3nm,0.5s,baz=311,slow=4.3,SNR=2.7							
TXAR	**Lajitas Array**	**88.29**	**53**	P		**P**	**02 10 46.2**	**+0.7**
	0.1nm,0.5s,baz=350,slow=3.7,SNR=2.6							

ISK ***26*** *02:01:23.5,37.˚84N×26.˚89E,h5km,MD2.5*
DDA ***26*** *02:01:23.7,37.˚81N×26.˚87E,h7km,Md3.0*
ISCJB ***26*** *02:01:24.0±0.6,37.˚83N±0.˚03×26.˚90E±0.˚04,h9km±5km, Error ellipse: s-maj=6.0km s-min=3.7km az=150.8*
CSEM ***26*** *02:01:24.2±0.1,37.˚83N×26.˚90E,h8km,MD3.0,Error ellipse: s-maj=3.0km s-min=2.0km az=72.0*

ISC 26 02:01:24.1±1.0,37.˚84N±0.˚02×26.˚90E±0.˚03,h13km±11km, n24,σt⁰s32/42,Dodecanese Islands

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
GCAM	**G?zelcaml?**	**0.29**	**117**	*i* P		**Pg**	**02 01 30.3**	**+0.1**
GCAM				*i* S		**Sb**	**02 01 35.5**	**-0.5**
GCAM	**G?zelcaml?**	**0.29**	**117**	P		**Pg**	**02 01 30.3**	**+0.1**
GCAM				S		**Sb**	**02 01 35.5**	**-0.5**
ZEY	**˙zmir**	**0.51**	**322**	*i* P		**Pg**	**02 01 33.7**	**-0.6**
ZEY				*i* S		**Sb**	**02 01 41.9**	**-0.4**
BLCB	**Balcova**	**0.56**	**11**	*e*PG		**Pg**	**02 01 34.9**	**-0.2**
BLCB				*e*SG		**Sg**	**02 01 43.0**	**+0.4**
BLCB	**Balcova**	**0.56**	**11**	*e*Pg		**Pg**	**02 01 34.9**	**-0.2**
BLCB				*e*Sg		**Sg**	**02 01 43.0**	**+0.4**
URLA	**Izmir**	**0.58**	**335**	*i* P		**Pg**	**02 01 35.4**	**-0.1**
URLA				*i* S		**Sb**	**02 01 44.3**	**0.0**
URLA	**Izmir**	**0.58**	**335**	P		**Pg**	**02 01 35.4**	**-0.1**
URLA				S		**Sb**	**02 01 44.3**	**0.0**
IZM	**Izmir**	**0.63**	**27**	*e*PG		**Pg**	**02 01 36.3**	**-0.1**
IZM				*e*SG		**Sb**	**02 01 45.6**	**-0.2**
IZM	**Izmir**	**0.63**	**27**	*e*Pg		**Pg**	**02 01 36.3**	**-0.1**
IZM				*e*Sg		**Sb**	**02 01 45.6**	**-0.2**
AYDB	**Zeytinkoy-Aydi**	**0.79**	**82**	*e*PG		**Pg**	**02 01 39.3**	**-0.1**
AYDB				*e*SG		**Sb**	**02 01 50.8**	**+0.4**
AYDB	**Zeytinkoy-Aydi**	**0.79**	**82**	*e*Pg		**Pg**	**02 01 39.3**	**-0.1**
AYDB				*e*Sg		**Sb**	**02 01 50.8**	**+0.4**
AYDN	**Tasoluk**	**0.79**	**102**	*i* P		**Pg**	**02 01 39.4**	**-0.1**
AYDN				*i* S		**Sg**	**02 01 49.4**	**-0.5**
AYDN	**Tasoluk**	**0.79**	**102**	P		**Pg**	**02 01 39.4**	**-0.1**
AYDN				S		**Sg**	**02 01 49.4**	**-0.5**
BODT	**Bodrum**	**0.84**	**157**	*e*PG		**Pg**	**02 01 40.1**	**-0.2**
BODT				*e*SG		**Sb**	**02 01 52.2**	**+0.6**
BODT	**Bodrum**	**0.84**	**157**	*e*Pg		**Pg**	**02 01 40.1**	**-0.2**
BODT				*e*Sg		**Sb**	**02 01 52.2**	**+0.6**
BDRM	**Kayabasi**	**0.88**	**151**	*i* P		**Pg**	**02 01 40.7**	**-0.5**
BDRM				*i* S		**Sg**	**02 01 52.7**	**0.0**
BDRM	**Kayabasi**	**0.88**	**151**	P		**Pg**	**02 01 40.7**	**-0.5**
BDRM				S		**Sg**	**02 01 52.7**	**0.0**
DKL	**Dikili**	**1.23**	**0**	*e*PN		**Pb**	**02 01 47.4**	**+0.1**
DKL	**Dikili**	**1.23**	**0**	*e*Pn		**Pb**	**02 01 47.4**	**+0.1**
APE	**Apeiranthos**	**1.33**	**235**	*e*PN		**Pb**	**02 01 49.2**	**+0.3**
APE	**Apeiranthos**	**1.33**	**235**	*e*Pn		**Pb**	**02 01 49.3**	**+0.3**
KULA	**Kula-Manisa**	**1.54**	**63**	*e*PN		**Pb**	**02 01 52.6**	**0.0**
KULA	**Kula-Manisa**	**1.54**	**63**	*e*Pn		**Pb**	**02 01 52.6**	**0.0**
DEMI	**Demirci**	**1.86**	**49**	*i* P		**Pg**	**02 02 00.2**	**+0.3**
DEMI				*i* S		**Sb**	**02 02 21.1**	**-0.3**

NIED ***26*** *02:16:00,39.˚90N×142.˚30E,h35km,Mw3.8 Best double couple: M₀6.63000×10¹⁴ NP1:ϕs253.00000°, δ31.00000°, λ156.00000°. NP2:ϕs4.00000°, δ78.00000°, λ61.00000°.*
ISCJB ***26*** *02:16:42.7±0.7,39.˚91N±0.˚04×142.˚28E±0.˚09, h55km±5km, mb3.7/14,Error ellipse: s-maj=12.2km s-min=5.9km az=6.7*
JMA ***26*** *02:16:43.0±0.1,39.˚95N×142.˚31E,h42km±1km,M3.7*
IDC ***26*** *02:16:45.6±2.2,39.˚93N×142.˚30E,h66km±18km,mb3.5/14, mb1 3.6/18,mb1mx3.5/41,mbtmp3.8/18,MS2.8/2, Ms1 2.8/2,ms1mx2.5/42,Error ellipse: s-maj=22.6km s-min=13.6km az=103.0*

ISC 26 02:16:43.6±1.1,39.˚89N±0.˚04×142.˚24E±0.˚08,h46km±8km, n37,σt⁰s84/36,mb3.9/14,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
JTH	**Tanohata**	**0.29**	**280**	P		**Pn**	**02 16 52.0**	**-0

ILAR	**Eielson Array**	**48.02**	**33**	P		**P**	**02 26 13.0**	**0.0**
	0.4nm,0.7s,baz=263,slow=6.5,SNR=2.3							
WRA	**Warramunga Arr**	**58.09**	**190**	P		**P**	**02 27 27.9**	**+0.2**
	1.2nm,0.5s,baz=13,slow=7.2,SNR=5.3							
ASAR	**Alice Springs**	**61.81**	**190**	P		**P**	**02 27 53.3**	**+0.1**
	0.4nm,0.8s,baz=8.9,slow=5.8,SNR=2.5							
YKA	**Yellowknife Ar**	**62.36**	**31**	P		**P**	**02 27 56.3**	**-0.1**
	0.1nm,0.6s,baz=304,slow=6.3,SNR=2.6							
FINES	**FINESS Array B**	**68.78**	**333**	P		**P**	**02 28 37.7**	**-0.2**
	1.5nm,1.0s,baz=64,slow=6.7,SNR=2.0							
KBZ	**Khabaz**	**71.49**	**311**	P		**P**	**02 28 54.2**	**-0.6**
	0.3nm,0.4s,baz=70,slow=12,SNR=1.7							

CASC 26 02:23:15.6±1.2, 13.19N×89.70W, h33km±3km, MD3.8, ML3.6,1C-6D, El Salvador

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
COLS	**Colinas**	**0.61**	**40**	⇓*eP*	Pb	02 23 28.3	+0.1
COLS				*eS*	Sn	02 23 37.9	+1.0
SBLS	**San Blas**	**0.65**	**7**	*eP*	Pb	02 23 28.9	+0.1
SBLS				*eS*	Sn	02 23 38.8	+0.8
SNET	**Serv Nac Est T**	**0.67**	**43**	*eP*	Pn	02 23 28.9	+0.1
SNET				*eS*	Sn	02 23 39.1	+0.8
SNET				AML	AML	02 23 41.2	
	comp=Z,5μm,0.2s						
BOQS	**Boqueron**	**0.68**	**37**	⇑*iP*	Pb	02 23 29.4	0.0
BOQS				*eS*	Sn	02 23 39.8	+1.1
SNJE	**San Jose**	**0.68**	**8**	*eP*	Pb	02 23 29.2	-0.1
RTR	**El Retiro**	**0.71**	**4**	⇓*eP*	Pb	02 23 29.7	0.0
LFRS	**El Faro**	**0.76**	**55**	⇓*iP*	Pn	02 23 30.1	+0.1
LFU	**La Fuente**	**0.80**	**46**	⇓*iP*	Pb	02 23 31.0	-0.2
LFU				*eS*	Sb	02 23 42.3	+0.6
LBRS	**Las Brisas**	**0.84**	**49**	*eP*	Pb	02 23 31.6	-0.3
SNVI	**San Vicente**	**0.94**	**63**	*eP*	Pn	02 23 32.6	0.0
SNVI				*eS*	Sb	02 23 45.6	-0.2
TECA	**Tecapa**	**1.21**	**75**	⇓*eP*	Pn	02 23 36.1	-0.3
PACA	**Pacayal**	**1.37**	**78**	⇓*eP*	Pn	02 23 38.9	+0.4
LCY	**Lacayo**	**1.39**	**80**	*eP*	Pn	02 23 39.1	+0.3
LCY				*eS*	Sn	02 23 56.6	+0.6
VSM	**San Miguel**	**1.41**	**80**	*eP*	Pn	02 23 39.4	+0.2
CSGN	**Cosiguina Volc**	**2.10**	**96**	*eP*	Pn	02 23 48.1	-0.4
TGUH	**Tegucigalpa,Un**	**2.51**	**70**	*eP*	Pn	02 23 53.7	-0.4
TEL3	**Telica 3**	**2.85**	**102**	*eP*	Pn	02 23 59.5	+0.7
CNGN	**Cerro Negro**	**3.01**	**103**	*eP*	Pn	02 24 00.5	-0.5
CNGN				AML	AML	02 24 39.3	
	comp=N,124nm,0.2s						
MOMN	**Momotombo**	**3.18**	**104**	*eP*	Pn	02 24 03.1	-0.3
COPN	**Copaltepe**	**3.20**	**108**	*eP*	Pn	02 24 02.9	-0.6
ESTN	**Estel**	**3.25**	**91**	*eP*	Pn	02 24 04.1	-0.2
APYN	**Apoyeque**	**3.41**	**106**	*eP*	Pn	02 24 06.5	+0.1
BOAB	**BOACO BROADBAN**	**3.00**	**100**	*eP*	Pn	02 24 13.7	-1.0
JTS	**JuntasAbangare**	**5.47**	**121**	*eP*	Pn	02 24 35.4	+0.5
JCR	**Jicaral**	**5.59**	**126**	*eP*	Pn	02 24 37.3	+0.8
URSC	**Urasca**	**6.69**	**119**	*eP*	Pn	02 24 52.9	+1.1
URSC				*eS*	Sn	02 26 10.3	+3.2
BUS	**Buena Vista**	**6.86**	**121**	*eP*	Pn	02 24 56.7	+2.4

JMA 26 02:24:57.9, 36.99N×140.77E, h10km±1km, M3.0, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.11**	**11**	P	Pg	02 25 00.7	-0.1
ONAJ				*eS*	Sg	02 25 02.9	+0.1
JFK	**Kawauchi**	**0.39**	**12**	P	Pg	02 25 05.4	-0.1
JHO	**Hitachi**	**0.41**	**203**	P	Pg	02 25 05.8	-0.2
JHO				S	Sg	02 25 11.6	+0.2
JFT	**Otama**	**0.63**	**327**	P	Pg	02 25 10.3	+0.2
JFT				S	Sg	02 25 18.8	+0.4
JMM	**Marumori**	**0.88**	**1**	P	Pg	02 25 14.3	-0.5
JMM				S	Sg	02 25 26.0	-0.2
MAT	**Matsushiro**	**2.11**	**259**	P	Pb	02 25 34.9	-1.3
MAT				S	Sb	02 26 02.7	+0.3

NIED ***26*** *02:25:00, 36.80N×140.60E, h5km, Mw3.9 Best double couple: M₀8.43000×10¹⁴ NP1:φ₀356.00000°, δ23.00000°, λ-90.00000°. NP2:φ₀176.00000°, δ67.00000°, λ-90.00000°.*

ISCJB ***26*** *02:25:53.3±0.7, 36.70N±0.04×140.73E±0.06, h17km±4km, mb3.8/18, Error ellipse: s-maj=9.3km s-min=5.1km az=29.0*

JMA ***26*** *02:25:54.3, 36.75N×140.59E, h4km±1km, M3.7*

JMA Felt II J1.

IDC ***26*** *02:25:58.4±2.8, 36.75N×140.52E, h38km±24km, mb3.6/18, mb1 3.8/21,mb1mx3.7/36, mbtmp3.8/21, ML3.5/3, Error ellipse: s-maj=18.1km s-min=15.0km az=103.0*

ISC 26 02:25:54.5±0.9, 36.74N±0.04×140.62E±0.05, h11km±6km, n37, σ1°01/36, mb3.9/18, 1C, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHO	**Hitachi**	**0.13**	**197**	⇑P	**Pg**	**02 25 57.3**	**-0.4**
JHO				S	**Sg**	**02 25 59.4**	**-0.6**
ONAJ	**Iwakimizuishiy**	**0.39**	**22**	P	**Pg**	**02 26 02.0**	**-0.3**
ONAJ				S	**Sg**	**02 26 07.4**	**-0.1**
JSB	**Shiboa**	**0.60**	**292**	P	**Pg**	**02 26 06.2**	**-0.1**
JYT	**Yasato**	**0.61**	**214**	P	**Pg**	**02 26 06.2**	**-0.2**
JYT				S	**Sg**	**02 26 14.8**	**+0.3**
MJAR	**Matsushiro Arr**	**1.95**	**265**	Pn	**Pn**	**02 26 27.9**	**+0.4**
	39nm,0.3s,baz=84,slow=12,SNR=83						
MJAR				Sn	**Sn**	**02 26 51.5**	**-0.4**
	62nm,0.3s,baz=213,slow=36,SNR=11						
MAT	**Matsushiro**	**1.95**	**265**	P	**Pn**	**02 26 28.0**	**+0.5**
MAT				S	**Sb**	**02 26 54.3**	**0.0**
JHJ	**Hachijo jima 2**	**3.68**	**191**	Pn	**Pn**	**02 26 53.0**	**+1.7**
	14nm,0.3s,baz=72,slow=19,SNR=3.9						
JHJ				Sn	**Sn**	**02 27 32.1**	**-2.4**
	8.1nm,0.3s,baz=41,slow=19,SNR=3.3						
ASAJ	**Asahikawa**	**7.52**	**11**	Pn	**Pn**	**02 27 44.1**	**+0.1**
	1.3nm,0.3s,baz=252,slow=16,SNR=2.9						
ASAJ				Sn	**Sn**	**02 29 06.1**	**-3.1**
	1.0nm,0.3s,baz=232,slow=19,SNR=2.1						
JNU	**Nakatsue**	**8.77**	**249**	Sn	Sn	02 29 30.5	-10
	0.2nm,0.3s,baz=37,slow=20,SNR=2.1						
USRK	**Ussuriysk Ar.**	**9.93**	**321**	Pn	Pn	02 28 22.9	+5.8
	0.2nm,0.3s,baz=129,slow=15,SNR=4.1						
KSRS	**Korea Array**	**10.17**	**278**	Pn	Pn	02 28 26.1	+5.8
	0.2nm,0.3s,baz=95,slow=13,SNR=4.0						
KLR	**Kul'dur**	**14.06**	**335**	Pn	**Pn**	**02 29 15.0**	**+1.6**
	0.1nm,0.3s,baz=204,slow=20,SNR=1.9						
SEY	**Seymchan**	**27.21**	**12**	P	**P**	**02 31 38.7**	**+0.8**
	0.9nm,0.3s,baz=176,slow=9.3,SNR=4.3						
SONM	**Songino Array**	**27.42**	**305**	P	**P**	**02 31 39.5**	**-0.7**
	1.8nm,0.8s,baz=102,slow=8.7,SNR=6.6						
H11N2	**WAKE ISLAND Hy**	**28.55**	**119**	T	T	03 01 34.3	
	baz=310,slow=75						
H11N1	**WAKE ISLAND Hy**	**28.56**	**119**	T	T	03 01 34.9	
	baz=310						
H11N3	**WAKE ISLAND Hy**	**28.57**	**119**	T	T	03 01 35.7	
	baz=310,slow=75						
H11S1	**WAKE ISLAND Hy**	**29.24**	**121**	T	T	03 02 26.3	
	baz=314,slow=76,SNR=293						
H11S3	**WAKE ISLAND Hy**	**29.24**	**121**	T	T	03 02 27.7	
	baz=314,slow=76,SNR=251						
H11S2	**WAKE ISLAND Hy**	**29.26**	**121**	T	T	03 02 24.7	
	baz=314,slow=76,SNR=177						
ZALV	**Zalesovo Beam**	**41.64**	**313**	P	**P**	**02 33 42.7**	**+0.2**
	1.7nm,0.5s,baz=108,slow=7.1,SNR=7.1						
MKAR	**Makanchi Array**	**43.74**	**302**	P	**P**	**02 34 00.0**	**+0.4**
	0.4nm,0.5s,baz=87,slow=9.8,SNR=5.2						
ILAR	**Eielson Array**	**50.08**	**32**	P	**P**	**02 34 49.1**	**+0.1**
	0.6nm,0.8s,baz=271,slow=7.0,SNR=8.1						
INK	**Inuvik**	**54.94**	**27**	P	**P**	**02 35 25.0**	**+0.2**
	1.0nm,0.8s,baz=304,slow=7.0,SNR=5.0						
WRA	**Warramunga Arr**	**56.69**	**187**	P	**P**	**02 35 36.9**	**-1.1**
	1.2nm,0.8s,baz=3.8,slow=7.4,SNR=8.7						
ASAR	**Alice Springs**	**60.41**	**187**	P	**P**	**02 36 04.1**	**+0.2**
	1.1nm,0.8s,baz=9.3,slow=5.5,SNR=9.0						
ARCES	**ARCESS Array B**	**64.05**	**339**	P	**P**	**02 36 26.9**	**-0.8**
	1.7nm,0.9s,baz=51,slow=9.4,SNR=3.0						
YKA	**Yellowknife Ar**	**64.38**	**30**	P	**P**	**02 36 29.9**	**-0.1**
	0.4nm,0.7s,baz=303,slow=6.6,SNR=9.9						
YKA				PcP	**PcP**	**02 37 05.4**	**+1.0**
	0.3nm,0.6s,baz=302,slow=4.0,SNR=7.1						
FINES	**FINESS Array B**	**68.78**	**332**	P	**P**	**02 36 57.0**	**-1.1**
	0.9nm,0.6s,baz=54,slow=7.5,SNR=4.2						
KBZ	**Khabaz**	**70.61**	**310**	P	**P**	**02 37 09.7**	**0.0**
	0.7nm,0.7s,baz=90,slow=6.1,SNR=3.1						
AKASG	**Malin Array Be**	**74.14**	**322**	P	**P**	**02 37 29.8**	**-0.8**
	0.5nm,0.4s,baz=45,slow=5.9,SNR=4.0						
NOA	**NORSAR Array B**	**74.21**	**337**	P	**P**	**02 37 29.8**	**-1.1**
	0.9nm,0.8s,baz=44,slow=5.9,SNR=2.6						
PDAR	**Pinedale Array**	**78.33**	**45**	P	**P**	**02 37 55.9**	**+0.9**
	0.6nm,0.7s,baz=261,slow=3.8,SNR=6.4						
BRTR	**Keskin Array B**	**78.57**	**311**	P	**P**	**02 37 56.4**	**+0.2**
	0.4nm,0.7s,baz=113,slow=3.7,SNR=3.3						
GERES	**GERESS Array B**	**82.62**	**328**	P	**P**	**02 38 17.4**	**-0.3**
	0.3nm,0.4s,baz=40,slow=6.9,SNR=5.0						
TXAR	**Lajitas Array**	**90.81**	**52**	P	**P**	**02 38 59.3**	**+1.2**
	0.5nm,0.7s,baz=308,slow=3.6,SNR=8.8						
LPAZ	**La Paz**	**147.39**	**59**	PKPbc	**PKPbc**	**02 45 39.2**	**-0.3**
	1.1nm,0.6s,baz=308,slow=1.2,SNR=5.1						

NIED ***26*** *02:27:00, 36.80N×140.60E, h5km, Mw4.1 Best double couple: M₀1.48000×10¹⁵ NP1:φ₀2.00000°, δ30.00000°, λ-102.00000°. NP2:φ₀195.00000°, δ61.00000°, λ-83.00000°.*

ISCJB ***26*** *02:27:16.4±0.6, 36.69N±0.03×140.78E±0.04, h18km±4km, mb4.2/35, MS3.2/1, Error ellipse: s-maj=6.2km s-min=4.1km az=19.9*

JMA ***26*** *02:27:17.9, 36.76N×140.60E, h4km±1km, M3.9*

JMA Felt II J1.

NEIC ***26*** *02:27:17.5±0.3, 36.75N×140.60E, h10km, mb4.1/4, Error ellipse: s-maj=7.3km s-min=7.2km az=69.0*

MOS ***26*** *02:27:18.8±1.2, 36.77N×140.75E, h33km, mb4.4/13, Error ellipse: s-maj=10.5km s-min=7.8km az=109.3*

IDC ***26*** *02:27:23.1±2.1, 36.71N×140.53E, h53km±19km, mb3.8/20, mb1 4.0/21,mb1mx3.9/33,mbtmp4.1/21, ML3.9/1, MS3.2/3, Ms1 3.3/3, ms1mx2.8/56, Error ellipse: s-maj=14.9km s-min=10.3km az=58.0*

ISC 26 02:27:18.1±0.7, 36.74N±0.03×140.60E±0.05, h15km±4km, n74, σ0.92/75, mb4.2/35, 10C-2D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHO	**Hitachi**	**0.14**	**189**	P	**Pg**	**02 27 20.9**	**-0.8**
JHO				S	**Sg**	**02 27 23.1**	**-1.1**
ONAJ	**Iwakimizuishiy**	**0.39**	**24**	P	**Pg**	**02 27 25.3**	**-0.7**
ONAJ				*eS*	**Sg**	**02 27 30.8**	**-0.7**
JSB	**Shiboa**	**0.59**	**293**	⇑P	**Pb**	**02 27 29.8**	**-0.3**
JYT	**Yasato**	**0.61**	**212**	⇑P	**Pg**	**02 27 29.7**	**-0.3**
JFK	**Kawauchi**	**0.66**	**20**	S	**Sg**	**02 27 38.9**	**-0.9**
MJAR	**Matsushiro Arr**	**1.93**	**265**	P	**Pb**	**02 27 51.7**	**-1.3**
	60nm,0.3s,baz=84,slow=7.8,SNR=14						
MJAR				S	**Sn**	**02 28 15.3**	**+0.9**
	132nm,0.3s,baz=57,slow=18,SNR=16						
MJAR				LR	LR	02 28 52.5	
	comp=Z,483nm,20.3s,baz=90,slow=48						
MAJO	**Matsushiro**	**1.93**	**265**	*c iP*	**Pb**	**02 27 51.7**	**-1.3**
MAJO	**Matsushiro**	**1.93**	**265**	*ePn*	**Pb**	**02 27 52.2**	**-0.8**
MAJO				*eS*	**Sb**	**02 28 17.8**	**+0.8**
MAT	**Matsushiro**	**1.93**	**265**	P	**Pb**	**02 27 51.9**	**-1.1**
MAT				S	**Sb**	**02 28 17.7**	**+0.7**
JHJ	**Hachijo jima 2**	**3.68**	**191**	P	**Pn**	**02 28 17.4**	**+3.0**
	25nm,0.3s,baz=52,slow=18,SNR=2.6						
JHJ				S	**Sn**	**02 28 57.9**	**+0.3**
	17nm,0.3s,baz=240,slow=20,SNR=3.0						
CBIJ	**Chichi jima**	**9.71**	**172**	*ePn*	**Pn**	**02 29 37.0**	**-0.3**
CBIJ				S	**Sn**	**02 31 24.4**	**-1.8**
JCJ	**Chichijima**	**9.71**	**172**	S	**Sn**	**02 31 24.4**	**-1.8**
	baz=73,slow=19						
USRK	**Ussuriysk Ar.**	**9.92**	**321**	P	Pn	02 29 46.0	+5.9
	0.2nm,0.3s,baz=116,slow=13,SNR=5.0						
KSRS	**Korea Array**	**10.15**	**278**	P	Pn	02 29 49.6	+6.4
	0.2nm,0.3s,baz=96,slow=12,SNR=4.9						
KSRS				LR	LR	02 33 33.7	
	comp=Z,158nm,18.6s,baz=56,slow=37						
KSAR	**Wonju Array Be**	**10.18**	**278**	P	Pn	02 29 49.6	+5.9
KSAR	**Wonju Array Be**	**10.18**	**278**	P	Pn	02 29 49.6	+6.0
YSS	**Yuzh-Sakhalins**	**10.33**	**8**	⇓*eP*	**Pn**	**02 29 46.0**	**+0.3**
YSS				*eS*	**Sn**	**02 31 42.0**	**+0.9**
YSS				pmax	pmax		
	comp=Z,20nm,0.8s						
KLR	**Kul'dur**	**14.04**	**335**	P	**P**	**02 30 42.5**	**-1.8**
	comp=Z,0.1nm,0.3s,baz=134,slow=13,SNR=4.9						
KLR				LR	LR	02 35 18.4	
	comp=Z,96nm,19.9s,baz=144,slow=34						
TYV	**Tymovskoe**	**14.19**	**5**	*eP*	**Pn**	**02 30 38.0**	**-0.4**
MA2	**Magadan**	**23.78**	**13**	P	**P**	**02 32 30.7**	**+0.8**
	comp=Z,4.6nm,0.3s,baz=245,slow=8.2,SNR=3.5						
ULN	**Ulaanbaatar**	**26.98**	**305**	*ceP*	**P**	**02 32 58.9**	**-0.4**
ULN				pmax	pmax		
	comp=Z,2.0nm,1.0s						
SEY	**Seymchan**	**27.20**	**12**	P	**P**	**02 33 01.5**	**+0.5**
	comp=Z,2.8nm,0.7s,baz=162,slow=5.2,SNR=4.7						
SEY	**Seymchan**	**27.20**	**12**	*ceP*	**P**	**02 33 01.0**	**0.0**
SONM	**Songino Array**	**27.41**	**305**	P	**P**	**02 33 02.3**	**-0.9**
	comp=Z,3.3nm,0.8s,baz=108,slow=9.5,SNR=8.7						
H11N2	**WAKE ISLAND Hy**	**28.57**	**119**	T	T	03 02 58.8	
	baz=312,slow=75,SNR=58						
H11N1	**WAKE ISLAND Hy**	**28.58**	**119**	T	T	03 02 58.9	
	baz=312,slow=75,SNR=92						
H11N3	**WAKE ISLAND Hy**	**28.59**	**119**	T	T	03 02 59.7	
	baz=312,slow=75,SNR=103						
H11S1	**WAKE ISLAND Hy**	**29.26**	**121**	T	T	03 03 50.0	
	baz=314,slow=75,SNR=390						
H11S3	**WAKE ISLAND Hy**	**29.26**	**121**	T	T	03 03 50.2	
	baz=314,slow=75,SNR=238						
H11S2	**WAKE ISLAND Hy**	**29.28**	**121**	T	T	03 03 49.9	
	baz=314,slow=75,SNR=294						
BILL	**Bilibino**	**34.49**	**17**	⇑*eP*	**P**	**02 34 05.4**	**+0.2**
BILL				*e*PP	**sP**	**02 34 13.4**	**+1.9**
BILL				*SP	pP	02 34 18.0	+8.3
BILL				pmax	pmax		
	comp=Z,13nm,2.5s						
TIXI	**Tiksi**	**35.50**	**354**	*eP*	**P**	**02 34 13.0**	**-0.8**
TIXI				pmax	pmax		
	comp=Z,1.0nm,0.9s						
CMAR	**Chiang Mai Arr**	**40.79**	**255**	LR	LR	02 51 27.9	
	comp=Z,33nm,18.3s,baz=280,slow=36						
ZALV	**Zalesovo Beam**	**41.63**	**313**	P	**P**	**02 35 05.8**	**+0.3**
	comp=Z,3.2nm,0.6s,baz=100,slow=7.0,SNR=10.0						
ZALV				PcP	**PcP**	**02 37 02.4**	**+0.2**
	comp=Z,0.8nm,0.6s,baz=79,slow=3.1,SNR=3.1						
MKAR	**Makanchi Array**	**43.72**	**302**	P	**P**	**02 35 21.8**	**-0.8**
	comp=Z,1.5nm,0.7s,baz=102,slow=8.4,SNR=8.4						
MKAR	**Makanchi Array**	**43.72**	**302**	*ceP*	**P**	**02 35 24.7**	**+2.1**
MKAR				pmax	pmax		
	comp=Z,2.0nm,0.7s						
KURK	**Kurchatov**	**45.59**	**308**	*eP*	**P**	**02 35 37.5**	**0.0**
KURK				pmax	pmax		
	comp=Z,13nm,0.7s						
KURK	**Kurchatov**	**45.59**	**308**	*eP*	**P**	**02 35 37.5**	**0.0**
	comp=Z,13nm,0.7s						
TKM2	**Tokmak 2**	**49.19**	**298**	*eP*	**P**	**02 36 06.6**	**+0.8**
TKM2				pmax	pmax		
	comp=Z,2.0nm,0.8s						
TKM2	**Tokmak 2**	**49.19**	**298**	*eP*	**P**	**02 36 06.6**	**+0.8**
	comp=Z,2.0nm,0.8s						
AAK	**Ala-Archa**	**50.05**	**298**	*eP*	**P**	**02 36 13.4**	**+1.0**
AAK				pmax	pmax		
	comp=Z,4.0nm,0.9s						
AAK	**Ala-Archa**	**50.05**	**298**	*eP*	**P**	**02 36 12.8**	**+0.4**
	comp=Z,1nm,1.0s						
ILAR	**Eielson Array**	**50.09**	**32**	P	**P**	**02 36 12.5**	**+0.3**
	comp=Z,0.9nm,0.8s,baz=274,slow=6.5,SNR=7.7						
BRVK	**Borovoye**	**50.34**	**312**	*ceP*	**P**	**02 36 14.2**	**0.0**
BRVK				pmax	pmax		
	comp=Z,3.0nm,0.8s						
KKAR	**Karatay Array**	**52.70**	**300**	*eP*	**P**	**02 36 31.9**	**-0.2**
KKAR				pmax	pmax		
	comp=Z,1.0nm,0.6s						
KKAR	**Karatay Array**	**52.70**	**300**	*eP*	**P**	**02 36 31.9**	**-0.2**
	comp=Z,0.9nm,0.6s						
INK	**Inuvik**	**54.94**	**27**	P	**P**	**02 36 47.6**	**-0.4**
	comp=Z,1.5nm,0.9s,baz=270,slow=7.1,SNR=5.0						
ARU	**Arti**	**56.14**	**319**	*d iP*	**P**	**02 36 56.1**	**-0.7**
ARU						02 38 58.6	
ARU				S	**S**	**02 44 45.1**	**-0.1**
ARU				pmax	pmax		
	comp=Z,5.0nm,0.8s						
WRAB	**Tennant Creek**	**56.68**	**187**	*eP*	**P**	**02 37 01.7**	**+0.8**
WRAB	**Tennant Creek**	**56.68**	**187**	*eP*	**P**	**02 37 01.7**	**+0.8**
WRA	**Warramunga Arr**	**56.69**	**187**	P	**P**	**02 37 00.8**	**-0.3**
	comp=Z,1.3nm,0.6s,baz=2.9,slow=7.6,SNR=15						
ABKAR	**Akbulak array**	**57.62**	**310**	*eP*	**P**	**02 37 07.4**	**0.0**
	comp=Z,2.9nm,0.8s						
POHA	**Pohakuloa**	**57.77**	**88**	*eP*	**P**	**02 37 10.0**	**+0.8**
	comp=Z,1μm,0.8s						
ASAR	**Alice Springs**	**60.42**	**187**	P	**P**	**02 37 26.3**	**-0.7**
	comp=Z,1.6nm,0.9s,baz=5.9,slow=5.8,SNR=11						
YKA	**Yellowknife Ar**	**64.39**	**30**	P	**P**	**02 37 53.9**	**+0.8**
	comp=Z,0.5nm,0.7s,baz=303,slow=6.7,SNR=8.7						
YKA				PcP	**PcP**	**02 38 28.2**	**+0.8**
	comp=Z,0.5nm,0.7s,baz=306,slow=4.2,SNR=7.8						
STKA	**Stephens Creek**	**68.27**	**179**	P	**P**	**02 38 18.6**	**+0.4**
	comp=Z,1.2nm,0.7s,baz=3.5,slow=19,SNR=3.1						
FINES	**FINESS Array B**	**68.76**	**332**	P	**P**	**02 38 21.2**	**+0.1**
	comp=Z,2.5nm,0.9s,baz=46,slow=5.5,SNR=6.9						
KBZ	**Khabaz**	**70.59**	**310**	P	**P**	**02 38 33.1**	**+0.5**
	comp=Z,0.7nm,0.6s,baz=270,slow=3.0,SNR=3.7						
KIV	**Kislovodsk**	**70.60**	**311**	⇑*eP*	**P**	**02 38 33.1**	**+0.2**
KIV				*e*		02 38 43.2	
KIV				pmax	pmax		
	comp=Z,4.0nm,1.0s						
AKASG	**Malin Array Be**	**74.12**	**322**	P	**P**	**02 38 53.6**	**-0.1**
	comp=Z,1.7nm,0.6s,baz=45,slow=6.0,SNR=9.1						
AKASG	**Malin Array Be**	**74.12**	**322**	*ceP*	**P**	**02 38 53.5**	**-0.1**
AKASG				pmax	pmax		
	comp=Z,1.0nm,0.5s						
KIEV	**Kiev**	**74.14**	**322**	*eP*	**P**	**02 38 52.8**	**-0.9**
KIEV				pmax	pmax		
	comp=Z,2.0nm,0.8s						
NB2	**NORSAR Subarra**	**74.20**	**337**	P	**P**	**02 38 53.8**	**-0.1**
	comp=Z,0.8nm,0.8s,baz=39,slow=5.9						
NOA	**NORSAR Array B**	**74.20**	**337**	P	**P**	**02 38 53.8**	**-0.1**
	comp=Z,1.8nm,0.9s,baz=38,slow=5.9,SNR=4.2						
NVAR	**Mina Array Bea**	**75.69**	**53**	P	**P**	**02 39 02.8**	**-0.4**
	comp=Z,0.9nm,0.5s,baz=284,slow=8.7,SNR=4.5						
PDAR	**Pinedale Array**	**78.33**	**45**	P	**P**	**02 39 19.3**	**+1.2**
	comp=Z,1.0nm,0.8s,baz=284,slow=3.4,SNR=7.9						
BRTR	**Keskin Array B**	**78.55**	**311**	P	**P**	**02 39 17.2**	**-2.0**
	comp=Z,0.5nm,0.8s,baz=34,slow=13,SNR=4.6						
CLL	**Collm**	**81.02**	**330**	*eP*	**P**	**02 39 32.0**	**-0.1**
	comp=Z,3.0nm,0.8s						
CLL	**Collm**	**81.02**	**330**	*eP*	**P**	**02 39 32.0**	**-0.1**
CLL				pmax	pmax		
	comp=Z,3.0nm,0.8s						
GERES	**GERESS Array B**	**82.61**	**328**	P	**P**	**02 39 40.5**	**-0.3**
	comp=Z,0.5nm,0.5s,baz=45,slow=5.8,SNR=6.2						
ANMO	**Albuquerque**	**85.27**	**49**	*eP*	**P**	**02 39 53.5**	**-1.2**
ANMO				pmax	pmax		
	comp=Z,2.0nm,1.0s						
TXAR	**Lajitas Array**	**90.82**	**52**	P	**P**	**02 40 22.3**	**+1.0**
	comp=Z,0.8nm,0.7s,baz=308,slow=3.0,SNR=9.4						
KEST	**Kesra**	**94.85**	**322**	P	**P**	**02 40 39.3**	**-0.4**
	comp=Z,6.9nm,1.0s,baz=297,slow=8,SNR=2.4						
LPAZ	**La Paz**	**147.40**	**59**	PKPbc	**PKPbc**	**02 47 03.2**	**+0.7**
	comp=Z,1.5nm,0.6s,baz=328,slow=5.9,SNR=6.9						

MEX 26 02:32:18.0±0.7, 14.08N×91.95W, h20km, MD3.6, Guatemala

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PCIG		**2.03**	**323**	*eP*	Pn	02 32 48.8	-2.2
PCIG				*eS*	Sn	02 33 12.3	-3.5
CCIG	**Comitan**	**2.19**	**355**	*eP*	Pn	02 32 51.5	-2.0
CCIG				*eS*	Sn	02 33 17.7	-2.5

JMA ***26*** *02:38:17.4±0.1, 38.49N×142.15E, h27km±1km, M4.1*

JMA Felt I J1.

IDC ***26*** *02:38:23.7±3.9, 38.42N×142.01E, h78km±36km, mb3.3/11, mb1 3.4/12,mb1mx3.3/46, mbtmp3.5/12, Error ellipse: s-maj=25.0km s-min=16.5km az=95.0*

ISC 26 02:38:15.2±1.7, 38.37N±0.04×142.14E±0.06, h12km±10km, n30, σ1°05/31, mb3.6/11, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**0.63**	**278**	P	**Pn**	**02 38 29.7**	**-0.2**
JIO				S	**Sb**	**02 38 38.1**	**+1.3**
OFUJ	**Ofunato**	**0.80**	**333**	P	**Pg**	**02 38 30.6**	**0.0**
OFUJ				S	**Sg**	**02 38 39.7**	**-1.3**
JMK	**Ichinoseki**	**0.92**	**309**	P	**Pb**	**02 38 33.4**	**+0.3**
JMK				S	**Sb**	**02 38 44.8**	**-0.6**
**JO

MRKS Merke 6.56 19 *e*P **Pn 02 52 50.9 +0.4**
19nm,0.3s
MRKS *e*S **S 02 54 02.7 -2.7**
53nm,0.4s
AAK Ala-Archa 6.85 26 P **Pn 02 52 54.9 +0.5**
2.5nm,0.3s,baz=179,slow=6.1,SNR=25
AAK S **S 02 54 10.0 -2.3**
5.7nm,0.3s,baz=303,slow=23,SNR=35
AAK Ala-Archa 6.85 26 ⇑P **Pn 02 52 54.8 +0.5**
4.4nm,0.5s
AAK ⇑S **S 02 54 09.9 -2.4**
42nm,0.5s
SDNR Sundarnagar 7.43 131 *e*P **Pn 02 53 05.0 +3.1**
SDNR *e*S S 02 54 18.0 -8.1
BMNS Besmoynak 7.70 30 *e*P **Pn 02 53 05.8 +0.4**
26nm,0.4s
BMNS *e*S **S 02 54 31.6 -1.0**
33nm,0.9s
KST Kastek 7.77 32 *e*P **Pn 02 53 06.6 +0.3**
1.3nm,0.1s
KST *e*S **S 02 54 32.1 -2.0**
8.1nm,0.8s
DGS Degeres 7.86 30 *e*P **Pn 02 53 06.9 -0.5**
DGS *e*S **S 02 54 30.4 -5.7**
TNSS Tian-Shan 8.21 36 *e*P **Pn 02 53 12.4 +0.2**
GEYT Alibeck 9.88 282 P **Pn 02 53 33.2 -0.4**
0.8nm,0.3s,baz=108,slow=12,SNR=6.1
GEYT S **S 02 55 21.8 -2.5**
0.4nm,0.3s,baz=61,slow=28,SNR=2.6
MK31 Makanchi Array 13.54 37 P **Pn 02 54 20.2 +0.3**
1.2nm,0.6s,baz=224,slow=17,SNR=6.1
MKAR Makanchi Array 13.54 37 P **Pn 02 54 19.5 -0.5**
0.2nm,0.3s,baz=225,slow=16,SNR=7.8
PYUN Piuthan 13.58 125 *e*P **Pn 02 54 19.0 -1.8**
10nm,0.3s
PYUN *e*S S 02 56 37.8 -14
KOLN Koldanda 14.20 124 *e*P **Pn 02 54 26.7 -1.8**
4.5nm,0.3s
GKN Gorkha 14.75 121 *e*P **Pn 02 54 35.6 +0.4**
19nm,0.4s
AB31 Akbulak array 14.80 332 P **P 02 54 35.5 -0.7**
4.6nm,0.5s,baz=147,slow=12,SNR=96
KURBB Kurchatov Arra 15.24 20 P **Pn 02 54 39.8 -0.9**
0.2nm,0.3s,baz=210,slow=10,SNR=9.2
KURBB Kurchatov Arra 15.24 20 ⇑P **Pn 02 54 38.4 -2.3**
0.8nm,0.3s
DMN Daman 15.32 121 *e*P **Pn 02 54 42.1 -0.1**
7.5nm,0.3s
KKN Kakani 15.33 121 *e*P **Pn 02 54 42.4 +0.1**
19nm,0.4s
PKIN Phulchoki 15.54 121 *e*P **Pn 02 54 45.5 +0.6**
16nm,0.4s
GUN Gumba 15.67 119 *e*P **Pn 02 54 48.1 +1.5**
8.3nm,0.3s
VOSK Vostochnaya 16.17 1 ⇑P **Pn 02 54 51.6 -0.4**
1.7nm,0.5s
ZRNK Zerenda 16.43 357 ⇓P **Pn 02 54 56.1 +1.1**
2.5nm,0.4s
BVA0 Borovoye Array 16.47 0 ⇓P **Pn 02 54 55.7 +0.2**
2.0nm,0.4s,baz=174,slow=12,SNR=5.5
BVAR Borovoye Array 16.47 0 P **Pn 02 54 56.3 +0.8**
1.3nm,0.3s,baz=177,slow=12,SNR=15
AKTO Aktyubinsk 16.49 331 P **Pn 02 54 57.0 +1.2**
1.6nm,0.3s,baz=139,slow=10,SNR=43
AKTO Aktyubinsk 16.49 331 ⇑P **Pn 02 54 57.0 +1.2**
14nm,0.8s
ZALV Zalesovo Beam 20.07 25 P **P 02 55 33.6 0.0**
2.6nm,0.4s,baz=219,slow=10,SNR=9.9
ARU Arti 21.43 342 P **P 02 55 49.9 +2.1**
2.1nm,0.3s,baz=131,slow=3.2,SNR=6.1
FINES FINESS Array B 37.16 326 P **P 02 58 08.8 +1.9**
0.8nm,0.4s,baz=123,slow=9.2,SNR=11
ARCES ARCESS Array B 40.91 338 P **P 02 58 39.7 +1.8**
1.8nm,0.5s,baz=110,slow=8.1,SNR=24
NB2 NORSAR Subarra 44.04 323 P **P 02 59 04.5 +1.3**
comp=Z,0.7nm,0.5s,baz=97,slow=7.9
NOA NORSAR Array B 44.04 323 P **P 02 59 03.8 +0.5**
comp=Z,1.2nm,0.8s,baz=149,slow=21,SNR=4.0
TORD Torodi Ar. Bea 65.23 268 P **P 03 01 34.7 -1.2**
comp=Z,0.4nm,0.5s,baz=49,slow=6.7,SNR=15
INK Inuvik 73.93 9 P **P 03 02 29.4 +1.2**
comp=Z,0.5nm,0.7s,baz=321,slow=6.5,SNR=3.5
YKA Yellowknife Ar 81.21 2 P **P 03 03 09.3 +0.7**
comp=Z,0.1nm,0.4s,baz=347,slow=5.2,SNR=5.5

*IDC **26** 03:08:04.9±1.2,37.°65N×144.°27E, h0km, mb3.4/4, mb1 3.7/5, mb1mx3.3/37, mbtmp3.4/5, ML3.6/1, Error ellipse: s-maj=38.0km s-min=26.7km az=112.0*
*ISCJB **26** 03:08:08.1±0.8,37.°69N±0.°05×144.°04E±0.°06, h33km, mb3.5/4, Error ellipse: s-maj=7.6km s-min=6.8km az=145.9*
*JMA **26** 03:08:08.2±0.2,37.°81N×144.°02E, h28km, M3.5*
ISC 26 03:08:10.0±1.2,37.°74N±0.°07×144.°06E±0.°09, h35km, n15, σ0s94/24, mb3.5/4, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**2.25**	**289**	P	**Pn**	**03 08 44.1**	**-0.6**
JIO				*e*S	**Sn**	**03 09 10.2**	**-1.0**
OFUJ	**Ofunato**	**2.30**	**306**	P	**Pn**	**03 08 43.8**	**-1.6**
OFUJ				S	**Sn**	**03 09 12.1**	**-0.4**
JMK	**Ichinoseki**	**2.54**	**299**	P	**Pn**	**03 08 48.4**	**-0.2**
JMK				S	**Sn**	**03 09 18.1**	**-0.1**
JOM	**Ohasama**	**2.77**	**309**	P	**Pn**	**03 08 51.7**	**-0.1**
JOM				S	**Sn**	**03 09 24.3**	**+0.3**
JFT	**Otama**	**2.96**	**267**	P	**Pn**	**03 08 55.1**	**+0.6**
JFT				*e*S	**Sn**	**03 09 28.9**	**+0.1**
JYK	**Kaneyama**	**3.13**	**293**	P	**Pn**	**03 08 57.2**	**+0.3**
JYK				*e*S	**Sn**	**03 09 33.9**	**+0.9**
JANG	**Nango**	**3.29**	**324**	*e*S	**Sn**	**03 09 35.4**	**-1.4**
JAG	**Ashikaga**	**3.91**	**252**	P	**Pn**	**03 09 06.7**	**-0.8**
JAG				*e*S	**Sn**	**03 09 51.3**	**-0.8**
JRY	**Ryogami san**	**4.48**	**249**	P	**Pn**	**03 09 14.9**	**-0.4**
JRY				S	**Sn**	**03 10 04.0**	**-2.2**
MJAR	**Matsushiro Arr**	**4.82**	**257**	Pn	**Pn**	**03 09 20.6**	**+0.6**
	2.4nm,0.3s,baz=86,slow=14,SNR=15						
MAT	**Matsushiro**	**4.82**	**257**	P	**Pn**	**03 09 21.6**	**+1.5**
MAT				*e*S	**Sn**	**03 10 14.4**	**-0.3**
KURBB	**Kurchatov Arra**	**47.23**	**308**	P	**P**	**03 16 40.7**	**+1.4**
	0.1nm,0.4s,baz=82,slow=7.6,SNR=1.3						
ILAR	**Eielson Array**	**47.77**	**33**	P	**P**	**03 16 43.1**	**-0.1**
	0.6nm,0.8s,baz=256,slow=6.4,SNR=8.1						
WRA	**Warramunga Arr**	**58.10**	**191**	P	**P**	**03 17 59.6**	**-0.3**
	0.4nm,0.7s,baz=12,slow=7.5,SNR=2.7						
ASAR	**Alice Springs**	**61.83**	**191**	P	**P**	**03 18 25.3**	**-0.1**
	0.2nm,0.6s,baz=7.8,slow=7.5,SNR=2.5						

BJI 26 03:15:52.7, 39.°35N×113.°02E, h8km, ML3.7/15, Northeastern China

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
TIY	**Taiyuan**	**1.70**	**196**	Pg	Pb	03 16 23.5	-0.7
TIY				Sg	Sb	03 16 46.0	+0.3
TIY				*s*max	*s*max		
	comp=N,520nm,0.5s						
TIY				*s*max	*s*max		
	comp=E,1μm,0.6s						
HHC	**Hu-ho-hao-te**	**1.87**	**324**	*e*Pg	Pn	03 16 26.0	+0.9
HHC				Sg	Sg	03 16 53.0	+0.2
HHC				*s*max	*s*max		
	comp=N,370nm,0.2s						
HHC				*s*max	*s*max		
	comp=E,520nm,0.3s						
BJI	**Beijing**	**2.53**	**73**	Pn	Pn	03 16 32.5	-1.5
BJI				Pg	Pb	03 16 36.0	-2.3
BJI				Sn	Sn	03 17 04.3	-0.7
BJI				*s*max	*s*max		
	comp=N,460nm,0.7s						
BJI				*s*max	*s*max		
	comp=E,170nm,0.4s						
BTO	**Baotou**	**2.62**	**300**	*e*Pg	Pb	03 16 39.0	-1.0
BTO				Sg	Sb	03 17 12.8	+0.4
TIA	**Tai'an**	**4.51**	**133**	Pg	Pb	03 17 12.0	-0.2
TIA				Sg	Sb	03 18 10.0	+3.2
TIA				*s*max	*s*max		
	comp=N,80nm,0.7s						
TIA				*s*max	*s*max		
	comp=E,90nm,0.7s						

*NIED **26** 03:16:00, 20.°60N×120.°30E, h71km, Mw4.9 Best double couple: M0 2.40000×10^16 NP1:φs=44.00000°, δ39.00000°, λ91.00000°. NP2:φs=222.00000°, δ51.00000°, λ89.00000°.*
*BKK **26** 03:16:20.6±1.4,21.°1N×16.°12E±1.°2, h10km, M4.4/15, mB5.0/4, mb4.5/15, Mw(mB)4.4/4*
*IDC **26** 03:16:22.6±0.5,20.°37N×120.°28E, h0km, mb4.2/30, mb1 4.3/31, mb1mx4.2/58, mbtmp4.2/31, ML3.8/1, MS3.7/21, Ms1 3.7/21, ms1mx3.6/45, Error ellipse: s-maj=17.7km s-min=12.5km az=70.0*
*BJI **26** 03:16:23.3, 20.°67N×120.°06E, h6km, mb4.5/26, mB4.6/20, Ms4.3/25, Ms7 4.1/23*
*MAN **26** 03:16:25, 20.°40N×120.°11E, h32km, mb5.3, ML4.3, MS4.5*
*ISCJB **26** 03:16:25.5±1.0, 20.°46N±0.°02×120.°29E±0.°03, h30km±8km, mb4.4/66, MS3.7/21, Error ellipse: s-maj=4.9km s-min=2.7km az=16.3*
*NEIC **26** 03:16:27.8±0.2, 20.°43N×120.°16E, h35km, mb4.7/36, Error ellipse: s-maj=7.3km s-min=4.6km az=111.0*
*JMA **26** 03:16:28.5±0.4, 20.°60N×120.°28E, h85km, M4.1*
ISC 26 03:16:25.9±0.8, 20.°46N±0.°03×120.°13E±0.°05, h23km±6km, n140, σ2s02/155, mb4.4/65, MS3.7/23, 3C, Philippine Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PIP	**Pasuquin**	**2.17**	**168**	⇑*i*P	**Pn**	**03 16 58.7**	**-1.9**
PIP				*e*S	**Sn**	**03 17 24.5**	**-2.3**
TWG	**Pinlang**	**2.51**	**20**	*e*Pn	**Pn**	**03 17 05.4**	**0.0**
TWG				*e*S	**Sn**	**03 17 33.9**	**-1.4**
SIPP	**Brgy, Tapao**	**2.54**	**173**	⇑*e*P	**Pb**	**03 17 09.9**	**-0.9**
SIPP				*e*S	**Sb**	**03 17 36.7**	**-4.9**
APYP	**Conner**	**2.79**	**158**	*e*P	**Pn**	**03 17 08.0**	**-1.1**
APYP				*e*S	**Sn**	**03 17 41.4**	**-0.6**
SGCP	**Mt. Cagua**	**2.85**	**140**	*e*P	**Pn**	**03 17 09.1**	**-0.9**
TPUB	**Ta-pu**	**2.87**	**9**	*e*Pn	**Pn**	**03 17 09.2**	**-1.1**
TPUB				*e*S	**Sn**	**03 17 37.7**	**-6.4**
YULB	**Yu-li**	**3.12**	**20**	*e*Pn	**Pn**	**03 17 14.1**	**+0.4**
YULB				*e*S	**Sn**	**03 17 49.4**	**-0.9**
CVP	**Callao Caves**	**3.17**	**149**	⇑*e*P	**Pn**	**03 17 14.6**	**+0.2**
CVP				*i* S	**Sn**	**03 17 50.8**	**-0.7**
SSLB	**Suanglung**	**3.40**	**13**	*e*Pn	**Pn**	**03 17 16.7**	**-1.0**
SSLB				*e*S	**Sn**	**03 17 56.1**	**-1.3**
CAUP	**Cauayan**	**3.84**	**155**	*e*P	Pb	03 17 26.5	-6.6
NACB	**Ninganchiao**	**3.94**	**20**	*e*Pn	**Pn**	**03 17 25.6**	**+0.6**
NACB				*e*S	**Sn**	**03 18 01.9**	**-8.7**
BOLP	**Bolinao**	**4.06**	**183**	*e*P	**Pn**	**03 17 26.3**	**-0.3**
YHNB	**Yeheng**	**4.35**	**15**	*e*Pn	**Pn**	**03 17 30.3**	**-0.4**
YHNB				*e*S	**Sn**	**03 18 20.3**	**-0.4**
TATO	**Taipei**	**4.67**	**15**	Pn	**Pn**	**03 17 34.2**	**-0.8**
TATO				*e*S	**Sn**	**03 18 29.3**	**+0.7**
QZH	**Quanzhou**	**4.69**	**343**	*e*Pn	Pn	03 17 29.5	-5.7
QZH				Sn	**Sn**	**03 18 20.3**	**-8.6**
QZH				LR	LR		
	comp=N,2μm,10.8s						
QZH				LR	LR		
	comp=E,3μm,11.1s						
QZH				LR	LR		
	comp=Z,3μm,9.2s						
JYNG	**Yonagunijimaku**	**4.76**	**33**	P	**Pn**	**03 17 36.0**	**-0.2**
JYNG				S	**Sn**	**03 18 28.4**	**-2.2**
YOJ	**Yonaguni jima**	**4.80**	**33**	P	**Pn**	**03 17 37.5**	**+0.7**
YOJ				S	**Sn**	**03 18 29.1**	**-2.5**
YOJ	**Yonaguni jima**	**4.80**	**33**	*e*Pn	**Pn**	**03 17 37.4**	**+0.7**
YOJ				*e*S	**Sn**	**03 18 27.9**	**-3.7**
BALP	**Baler**	**4.89**	**163**	*e*P	**Pn**	**03 17 39.7**	**+1.7**
HATJ	**Hateruma jima**	**4.95**	**43**	S	**Sn**	**03 18 32.0**	**-3.3**
IRIF	**Iriomote-Funau**	**5.10**	**40**	P	**Pn**	**03 17 41.5**	**+0.6**
IRIF				S	**Sn**	**03 18 36.6**	**-2.5**
JKRS	**Kuro-shima**	**5.20**	**43**	P	**Pn**	**03 17 42.6**	**+0.3**
JKRS				S	**Sn**	**03 18 38.4**	**-3.3**
JIJ	**Ishigaki jima**	**5.38**	**43**	P	**Pn**	**03 17 45.6**	**+0.8**
JIJ				S	**Sn**	**03 18 42.0**	**-4.0**
JISG	**Ishigakijimahi**	**5.65**	**42**	P	**Pn**	**03 17 48.4**	**0.0**
JISG				S	**Sn**	**03 18 49.5**	**-3.0**
JTJ	**Tarama**	**5.94**	**45**	P	**Pn**	**03 17 54.2**	**+1.8**
JTJ				S	**Sn**	**03 18 56.7**	**-3.0**
MCO	**Taipa Grande**	**6.34**	**286**	P	**Pn**	**03 17 57.0**	**-1.0**
JIRB	**Irabujima**	**6.38**	**46**	S	**Sn**	**03 19 06.7**	**-3.9**
NJ2	**Nanjing**	**11.61**	**355**	*e*P	**Pn**	**03 19 08.0**	**-2.1**
NJ2				*p*max	*p*max		
	comp=Z,19nm,0.7s						
DAV	**Davao City (W)**	**14.32**	**158**	LR	LR	03 26 08.8	
	comp=Z,184nm,18.0s,baz=322,slow=41						
PANO	**Nakornpanom**	**15.05**	**260**	P	**P**	**03 20 05.7**	**+3.3**
	81nm,0.9s						
MYLDM	**Lahad Datu**	**15.27**	**186**	*e*Pn	**P**	**03 20 02.8**	**-2.0**
	17nm,1.0s						
SKNT	**Sakolnakorn**	**15.68**	**260**	P	**P**	**03 20 09.2**	**-0.2**
	20nm,1.0s						
JNU	**Nakatsue**	**15.84**	**35**	Pn	**P**	**03 20 11.8**	**+0.7**
	0.9nm,0.3s,baz=192,slow=8.4,SNR=7.9						
JNU				LR	LR	03 26 47.1	
	comp=Z,139nm,18.1s,baz=295,slow=40						
JNU	**Nakatsue**	**15.84**	**35**	*e*Pn	**P**	**03 20 10.3**	**-0.8**
	46nm,1.1s						
NONG	**Nongkai**	**16.21**	**264**	P	**P**	**03 20 17.8**	**+2.5**
	53nm,1.0s						
KMI	**Kunming**	**16.69**	**289**	P	**P**	**03 20 18.0**	**-2.8**
KMI				*p*max	*p*max		
	comp=Z,5.0nm,0.5s						
KMI				*p*max	*p*max		
	comp=Z,84nm,6.0s						
KMI				LR	LR		
	comp=N,450nm,11.6s						
KMI				LR	LR		
	comp=E,600nm,12.9s						
KMI				LR	LR		
	comp=Z,530nm,14.3s						
CD2	**Chengdu**	**18.04**	**309**	P	**Pn**	**03 20 31.8**	**-3.3**
CD2				*s*P	pP	03 20 39.0	-2.9
CD2				PP	**sP**	**03 20 48.0**	**+3.1**
CD2				S	**S**	**03 23 59.5**	**-1.8**
CD2				SS	**SnSn**	**03 24 12.5**	**+3.0**
CD2				*p*max	*p*max		
	comp=Z,20nm,0.8s						
CD2				*p*max	*p*max		
	comp=Z,90nm,4.7s						
CD2				LR	LR		
	comp=N,870nm,12.0s						
CD2				LR	LR		
	comp=Z,950nm,13.2s						
KSAR	**Wonju Array Be**	**18.22**	**20**	P	**Pn**	**03 20 37.7**	**+0.4**
KSRS	**Korea Array**	**18.25**	**20**	P	**Pn**	**03 20 37.7**	**+0.1**
	0.3nm,0.3s,baz=201,slow=12,SNR=18						
KSRS				LR	LR	03 28 39.7	
	comp=Z,171nm,18.9s,baz=205,slow=40						
KS01	**Wonju Array Si**	**18.26**	**20**	*e*Pn	**Pn**	**03 20 38.3**	**+0.6**
PBKT	**Sadao Pong**	**18.57**	**261**	P	**Pn**	**03 20 43.7**	**+2.0**
	28nm,0.8s,3μm						
CHBT	**CHBT**	**18.68**	**249**	P	**Pn**	**03 20 46.1**	**+3.0**
	84nm,1.2s,3μm						
NAYO	**Nakonayok**	**18.95**	**254**	P	**Pn**	**03 20 49.2**	**+2.9**
	16nm,1.5s						
SBUM	**Sibu**	**19.49**	**204**	*e*P	**Pn**	**03 20 51.6**	**-1.2**
	14nm,1.1s						
BJI	**Beijing**	**19.81**	**351**	P	**Pn**	**03 20 55.8**	**-0.6**
BJI				LR	LR		
	comp=N,450nm,12.6s						
BJI				LR	LR		
	comp=E,430nm,14.2s						
BJI				LR	LR		
	comp=Z,160nm,19.7s						
CMMT	**Chiang Mai**	**20.02**	**269**	P	**Pn**	**03 20 59.3**	**+0.2**
	11nm,1.4s						
CHTO	**Chiang Mai**	**20.02**	**269**	P	**Pn**	**03 20 59.4**	**+0.3**
	50nm,1.4s						
CHTO	**Chiang Mai**	**20.02**	**269**	*e*P	**Pn**	**03 20 56.6**	**-2.5**
	15nm,1.3s						
CMAR	**Chiang Mai Arr**	**20.07**	**268**	P	Pn	03 20 59.4	-0.4
	1.1nm,0.4s,baz=76,slow=9.0,SNR=8.5						
CMAR				LR	LR	03 29 14.8	
	comp=Z,300nm,18.4s,baz=80,slow=38						
SRDT	**SRDT**	**20.93**	**257**	P	Pn	03 21 12.2	+2.4
	67nm,1.5s						
INU	**Inuyama**	**21.00**	**42**	*e*P	**P**	**03 21 08.4**	**+0.6**
	114nm,1.7s						
PHET	**Kaeng Krachan**	**21.00**	**252**	P	**P**	**03 21 11.0**	**+3.1**
	4.9nm,1.1s						
KSM	**Kuching**	**21.16**	**208**	*e*P	**P**	**03 21 09.6**	**0.0**
CBIJ	**Chichi jima**	**21.23**	**68**	*e*P	**P**	**03 21 11.1**	**+0.8**
	166nm,1.3s						
HHC	**Hu-ho-hao-te**	**21.60**	**342**	*e*P	**P**	**03 21 13.8**	**-0.5**
HHC				*s*P	pP	03 21 20.8	0.0
HHC				S	**S**	**03 25 08.3**	**-4.2**
HHC				*p*max	*p*max		
	comp=Z,42nm,0.8s						
HHC				*p*max	*p*max		
	comp=Z,120nm,8.5s						
HHC				LR	LR		
	comp=N,380nm,12.3s						
HHC				LR	LR		
	comp=E,560nm,12.3s						
HHC				LR	LR		
	comp=Z,290nm,12.3s						
MAJO	**Matsushiro**	**22.51**	**41**	*e*P	**P**	**03 21 24.1**	**+0.2**
	29nm,1.1s						
MJAR	**Matsushiro Arr**	**22.51**	**41**	P	**P**	**03 21 23.0**	**-1.0**
	7.2nm,0.8s,baz=222,slow=8.7,SNR=12						
MJAR				LR	LR	03 30 16.1	
	comp=Z,64nm,21.7s,baz=250,slow=37						
MJB9	**Matsu-Tunnel**	**22.51**	**41**	*e*P	**P**	**03 21 23.8**	**-0.2**
CN2	**Changchun**	**23.70**	**10**	*e*P	**P**	**03 21 35.3**	**-0.7**
CN2				*p*max	*p*max		
	comp=Z,10.0nm,1.5s						
CN2				*p*max	*p*max		
	comp=Z,200nm,3.0s						
CN2				LR	LR		
	comp=N,300nm,14.0s						
CN2				LR	LR		
	comp=E,400nm,14.0s						
CN2				LR	LR		
	comp=Z,300nm,14.0s						
KULM	**Kulim**	**24.20**	**234**	*e*P	**P**	**03 21 39.0**	**-1.9**
	13nm,1.0s						
MYKOM	**Kota Tinggi**	**24.43**	**223**	*e*P	**P**	**03 21 41.7**	**-1.3**
	24nm,1.1s						
KAPI	**Kappang**	**25.31**	**181**	LR	LR	03 33 50.0	
	comp=Z,70nm,18.8s,baz=8.8,slow=42						
MDJ	**Mudanjiang**	**25.34**	**16**	P	**P**	**03 21 51.5**	**+0.5**
MDJ				*s*P	pP	03 21 55.8	-2.2
MDJ				S	**S**	**03 26 18.3**	**+2.3**
MDJ				*s*S	*s*S	03 26 24.3	-3.2
MDJ				*p*max	*p*max		
	comp=Z,19nm,1.3s						
MDJ				LR	LR		
	comp=N,110nm,38.2s						
MDJ				LR	LR		
	comp=E,130nm,25.2s						
MDJ	**Mudanjiang**	**25.34**	**16**	*e*P	**P**	**03 21 52.0**	**+1.0**
	40nm,1.2s						
USRK	**Ussuriysk Ar.**	**25.66**	**20**	P	**P**	**03 21 55.2**	**+1.4**
	5.5nm,0.9s,baz=210,slow=6.9,SNR=11						
USRK				LR	LR	03 32 34.8	
	comp=Z,128nm,18.3s,baz=189,slow=38						
GTA	**Gaotai**	**25.72**	**322**	*e*P	**P**	**03 21 54.5**	**-0.1**
GTA				*p*P	pP	03 21 58.8	-2.8
GTA				*s*P	sP	03 22 01.5	-3.0
GTA				PcS	**PcS**	**03 29 03.3**	**-2.0**
GTA				*p*max	*p*max		
	comp=Z,5.0nm,1.1s						
PSI	**Prapat**	**27.12**	**232**	*e*P	**P**	**03 22 06.5**	**-1.0**
	10nm,1.1s						
ERM	**Erimo**	**28.98**	**37**	*e*P	**P**	**03 22 23.9**	**+0.2**
	60nm,1.3s						
SONM	**Songino Array**	**29.49**	**341**	P	**P**	**03 22 30.5**	**+2.1**
	1.6nm,0.7s,baz=156,slow=6.2,SNR=3.7						
SONM				LR	LR	03 34 33.8	
	comp=Z,148nm,19.0s,baz=78,slow=37						
KLR	**Kul'dur**	**30.18**	**15**	P	**P**	**03 22 34.8**	**+0.5**
	3.8nm,0.8s,baz=212,slow=6.1,SNR=11						
YSS	**Yuzh-Sakhalins**	**32.22**	**30**	*e*P	**P**	**03 22 52.1**	**-0.2**
	93nm,2.0s						
TLY	**Talaya**	**33.73**	**341**	*e*P	**P**	**03 23 06.8**	**+1.4**
	4.0nm,0.9s						
XMIS	**Christmas Isla**	**33.88**	**206**	*e*P	**P**	**03 23 07.0**	**-0.1**
	64nm,1.3s						
WMQ	**Urumqi**	**35.65**	**318**	*e*P	**P**	**03 23 18.0**	**-4.2**
WMQ				*p*max	*p*max		
	comp=Z,2.0nm,0.6s						
WMQ				*p*max	*p*max		
	comp=Z,29nm,3.8s						
WMQ				LR	LR		
	comp=N,40nm,18.6s						
WMQ				LR	LR		
	comp=E,33nm,15.6s						
WMQ				LR	LR		
	comp=Z,42nm,15.6s						
MK01	**Makanchi Array**	**40.41**	**319**	*e*P	**P**	**03 23 59.3**	**-3.0**
MKAR	**Makanchi Array**	**40.42**	**319**	P	**P**	**03 24 04.4**	**+2.0**
	1.7nm,0.6s,baz=113,slow=9.3,SNR=5.7						
MKAR				LR	LR	03 43 58.8	
	comp=Z,96nm,18.5s,baz=125,slow=41						
MAKZ	**Makanchi**	**40.62**	**319**	*e*P	**P**	**03 24 02.0**	**-2.0**
	5.8nm,1.1s						
YAK	**Yakutsk**	**42.07**	**7**	LR	LR	03 44 11.1	
	comp=Z,74nm,18.5s,baz=266,slow=40						
KSH	**Kashi**	**42.22**	**307**	*e*P	P	03 24 20.3	+2.9
KSH				*e*S	*s*P	03 24 27.5	+0.1
KSH				S	**S**	**03 30 39.8**	**+3.3**
KSH				SS	**SS**	**03 33 45.0**	**+0.1**
KSH				*p*max	*p*max		
	comp=Z,130nm,5.6s						
KSH				LR	LR		
	comp=N,180nm,10.0s						
KSH				LR	LR		
	comp=E,100nm,7.2s						
KSH				LR	LR		
	comp=Z,190nm,5.5s						
WRAB	**Tennant Creek**	**42.49**	**160**	*e*P	**P**	**03 24 18.6**	**-0.9**
	22nm,1.2s						
WRA	**Warramunga Arr**	**42.49**	**160**	P	**P**	**03 24 18.5**	**-1.0**
	4.1nm,0.5s,baz=343,slow=9.0,SNR=20						
WRA				PcP	**PcP**	**03 26 12.6**	**+0.4**
	1.9nm,0.7s,baz=350,slow=3.7,SNR=5.2						
WB2	**Warramunga Arr**	**42.50**	**160**	*e*P	**P**	**03 24 19.1**	**-0.5**
ZALV	**Zalesovo Beam**	**42.90**	**330**	P	**P**	**03 24 23.3**	**+0.8**
	2.6nm,0.7s,baz=120,slow=8.5,SNR=8.2						
ZALV				LR	LR	03 45 30.9	
	comp=Z,55nm,19.3s,baz=68,slow=41						
PETK	**Petropavlovsk-**	**43.51**	**32**	LR	LR	03 42 17.4	
	comp=Z,70nm,18.4s,baz=232,slow=36						
KURK	**Kurchatov**	**44.39**	**323**	P	**P**	**03 24 36.3**	**+1.8**
KURBB	**Kurchatov Arra**	**44.40**	**323**	P	**P**	**03 24 36.3**	**+1.7**
	3.4nm,0.7s,baz=126,slow=7.5,SNR=25						
MA2	**Magadan**	**44.79**	**22**	LR	LR	03 44 12.2	
	comp=Z,150nm,20.4s,baz=277,slow=37						
AS31	**Alice Springs**	**45.86**	**162**	*e*P	**P**	**03 24 47.1**	**+0.6**
	1.6nm,0.8s						
ASAR	**Alice Springs**	**45.86**	**162**	P	**P**	**03 24 46.3**	**-0.3**
	6.1nm,1.1s,baz=337,slow=6.4,SNR=29						
ASAR				PcP	**PcP**	**03 26 22.5**	**-1.1**
	1.4nm,1.0s,baz=358,slow=2.8,SNR=2.7						
AS01	**Alice Springs**	**45.88**	**162**	*e*P	**P**	**03 24 46.0**	**-0.6**
KKAR	**Karatay Array**	**47.04**	**310**	*e*P	**P**	**03 24 56.9**	**+1.3**
	1.5nm,0.4s						
CTAO	**Charters Tower**	**47.73**	**146**	*e*P	P	03 25 03.6	+2.4
	31nm,1.2s						
SEY	**Seymchan**	**47.80**	**19**	P	**P**	**03 25 02.1**	**+0.9**
	0.9nm,0.4s,baz=100,slow=2.3,SNR=4.5						
BVAR	**Borovoye Array**	**49.99**	**323**	P	**P**	**03 25 19.7**	**+1.5**
	1.2nm,0.7s,baz=112,slow=4.0,SNR=8.1						
BVAR				PcP	**PcP**	**03 26 38.2**	**+0.2**
	0.7nm,0.7s,baz=108,slow=7.7,SNR=3.5						
BRVK	**Borovoye**	**50.06**	**323**	*e*P	**P**	**03 25 18.8**	**+0.1**
	0.4nm,0.6s						
TIXI	**Tiksi**	**51

KVAR	**Kislovodsk Arr**	**67.19**	**310**	P		**P**	**03 27 20.2**	**+1.8**
	1.7nm,0.4s,baz=230,slow=18,SNR=2.9							
TT01	**Tatalina**	**69.22**	**29**	*e*P		**P**	**03 27 32.1**	**+1.5**
TTA	**Tatalina**	**69.22**	**29**	*e*P		**P**	**03 27 32.7**	**+2.0**
	7.8nm,1.1s							
SVW2	**Sparrevohn**	**69.58**	**31**	*e*P		**P**	**03 27 32.9**	**0.0**
	9.6nm,1.0s							
CAST	**Castle Rocks**	**70.94**	**28**	*e*P		**P**	**03 27 42.1**	**+0.9**
	15nm,1.2s							
SPU	**Mount Spurr**	**71.27**	**31**	*e*P		**P**	**03 27 43.3**	**+0.1**
MLY	**Manley**	**71.30**	**27**	*e*P		**P**	**03 27 43.8**	**+0.4**
	10.0nm,1.2s							
BPAW	**Bear Paw Mtn.**	**71.33**	**28**	*e*P		**P**	**03 27 44.8**	**+1.2**
	30nm,1.5s							
MCK	**McKinley**	**72.28**	**28**	*e*P		**P**	**03 27 49.8**	**+0.5**
	13nm,1.2s							
MDM	**Murphy Dome**	**72.37**	**27**	*e*P		**P**	**03 27 50.2**	**+0.5**
	8.4nm,1.0s							
RND	**Reindeer**	**72.38**	**28**	*e*P		**P**	**03 27 50.3**	**+0.4**
ARCES	**ARCESS Array B**	**72.62**	**338**	P		**P**	**03 27 52.5**	**+1.3**
	2.2nm,0.9s,baz=58,slow=10,SNR=4.0							
ILAR	**Eielson Array**	**72.97**	**27**	P		**P**	**03 27 54.0**	**+0.7**
	0.6nm,0.6s,baz=267,slow=4.8,SNR=14							
ILAR					LR	LR	04 03 21.3	
	comp=Z,31nm,18.1s,baz=300,slow=39							
SCM	**Sheep Creek Mo**	**73.38**	**30**	*e*P		**P**	**03 27 57.6**	**+1.7**
	38nm,1.3s							
FINES	**FINESS Array B**	**74.17**	**330**	P		**P**	**03 28 01.8**	**+1.5**
	3.3nm,0.9s,baz=72,slow=6.2,SNR=10.0							
DOT	**Dot Lake**	**74.42**	**27**	*e*P		**P**	**03 28 01.4**	**-0.4**
	5.9nm,0.9s							
BRTR	**Keskin Array B**	**74.61**	**307**	P		**P**	**03 28 05.4**	**+1.8**
	0.4nm,0.7s,baz=98,slow=6.4,SNR=4.3							
BRTR					LR	LR	04 03 53.2	
	comp=Z,41nm,18.4s,baz=116,slow=38							
AKASG	**Malin Array Be**	**75.00**	**319**	P		**P**	**03 28 05.4**	**0.0**
	0.6nm,0.5s,baz=62,slow=5.7,SNR=6.5							
AFI	**Afiamalu**	**75.13**	**11**	LR		LR	03 59 29.7	
	comp=Z,31nm,18.3s,baz=338,slow=34							
EGAK	**Eagle**	**75.34**	**26**	*e*P		**P**	**03 28 07.4**	**+0.3**
	4.8nm,0.9s							
INK	**Inuvik**	**77.03**	**21**	*e*P		**P**	**03 28 16.8**	**+0.1**
	4.3nm,1.0s							
MLR	**Muntele Rosu**	**78.53**	**314**	P		**P**	**03 28 27.3**	**+1.7**
	0.3nm,0.7s,baz=182,slow=7.1,SNR=3.9							
HFS	**Hagfors**	**80.33**	**331**	P		**P**	**03 28 35.6**	**+0.7**
	1.8nm,0.7s,baz=134,slow=4.3,SNR=5.5							
NOA	**NORSAR Array B**	**81.05**	**332**	LR		LR	04 10 05.8	
	comp=Z,98nm,18.6s,baz=55,slow=40							
RES	**Resolute Bay**	**82.48**	**9**	*e*P		**P**	**03 28 46.1**	**0.0**
	6.0nm,0.8s							
VRAC	**Vranov**	**83.16**	**320**	P		**P**	**03 28 52.4**	**+2.2**
	2.0nm,0.7s,baz=19,slow=6.2,SNR=3.2							
KMBO	**Kilima Mbogo**	**83.71**	**266**	LR		LR	04 05 21.5	
	comp=Z,33nm,20.1s,baz=84,slow=35							
GERES	**GERESS Array B**	**85.09**	**321**	P		**P**	**03 29 01.3**	**+1.2**
	0.4nm,0.7s,baz=42,slow=4.2,SNR=6.8							
GEA0	**GERESS Array S**	**85.09**	**320**	*e*P		**P**	**03 29 01.4**	**+1.3**
YKA	**Yellowknife Ar**	**86.77**	**22**	P		**P**	**03 29 08.9**	**+0.9**
	4.1nm,0.9s,baz=314,slow=4.7,SNR=47							
LSZ	**Lusaka**	**96.98**	**256**	LR		LR	04 10 13.9	
	comp=Z,54nm,21.6s,baz=74,slow=33							
MATP	**Matopo**	**98.37**	**251**	LR		LR	04 10 05.0	
	comp=Z,49nm,18.6s,baz=109,slow=33							

*SOME **26** 03:21:49.2, 44˚.50N×79˚.28E, h10km*
*NNC **26** 03:21:51.3±1.0, 44˚.35N×79˚.82E, h0km, mb3.0, mpv2.8,*
Error ellipse: s-maj=15.3km s-min=5.8km az=111.0
ISC 26 03:21:46.1±1.1, 44˚.60N±0˚.03×79˚.54E±0˚.04, h17km±10km, n24, σ1°08/46, 3C-6D, Eastern Kazakhstan

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
					Op	ISC	h m s	ISC
DJR	**Jarkent**	**0.33**	**146**	*e*P		**Pn**	**03 21 56.5**	**+0.3**
	353nm,0.1s							
DJR				*e*S		**Sn**	**03 22 01.6**	**-1.0**
	466nm,0.2s							
KAPS	**Kapalarasan**	**0.69**	**350**	*e*P		Pn	03 22 04.2	+3.0
	21nm,0.1s							
KAPS				*e*S		**Sn**	**03 22 14.9**	**+3.3**
	110nm,0.1s							
TDK	**Taldyqorghan**	**0.90**	**297**	*e*P		**Pg**	**03 22 04.0**	**+0.4**
	21nm,0.1s							
TDK				*e*S		**Sb**	**03 22 15.0**	**0.0**
	221nm,0.2s							
MNBS	**Baschi**	**0.97**	**238**	*e*P		**Pb**	**03 22 04.4**	**-0.1**
	5.5nm,0.2s							
MNBS				*e*S		**Sb**	**03 22 15.0**	**-2.0**
	445nm,0.4s							
PDGK	**Podgornoye**	**1.28**	**182**	⇓P		**Pg**	**03 22 10.6**	**-0.1**
	9.2nm,0.3s							
PDGK				⇑S		**Sb**	**03 22 26.1**	**+0.4**
	15nm,0.2s							
ARXS	**Arharly**	**1.28**	**253**	*e*P		**Pb**	**03 22 10.0**	**+0.2**
	11nm,0.1s							
ARXS				*e*S		**Sn**	**03 22 24.6**	**-1.6**
	182nm,0.2s							
KPKS	**Kokpek**	**1.29**	**209**	*e*P		**Pb**	**03 22 10.1**	**+0.1**
	105nm,0.1s							
KPKS				*e*S		**Sn**	**03 22 25.4**	**-0.9**
	309nm,0.3s							
KTMS	**Ketmen**	**1.30**	**153**	*e*P		**Pg**	**03 22 12.4**	**+1.2**
KTMS				*e*S		**Sg**	**03 22 28.9**	**+0.8**
SHLS	**Shalkode**	**1.47**	**170**	*e*P		**Pg**	**03 22 14.3**	**-0.1**
	16nm,0.1s							
SHLS				*e*S		**Sg**	**03 22 33.0**	**-0.5**
	219nm,0.2s							
KURS	**Kuram**	**1.49**	**222**	*e*P		**Pb**	**03 22 13.7**	**+0.4**
KURS				*e*S		**Sn**	**03 22 30.8**	**-0.4**
UZB	**Uzynbulak**	**1.50**	**194**	*e*P		**Pb**	**03 22 14.0**	**+0.4**
	81nm,0.2s							
UZB				*e*S		**Sb**	**03 22 32.2**	**-0.2**
	83nm,0.3s							
ZHN	**Zhinishke**	**1.64**	**209**	*e*P		**Pb**	**03 22 16.2**	**+0.2**
	38nm,0.1s							
ZHN				*e*S		**Sb**	**03 22 35.7**	**-0.7**
	134nm,0.2s							
CHKK	**Chushkaly**	**1.96**	**249**	*e*P		**Pb**	**03 22 21.4**	**0.0**
	31nm,0.1s							
CHKK				*e*S		**Sb**	**03 22 44.7**	**-0.9**
	204nm,0.3s							
KOTS	**Kotyrbulak**	**2.22**	**233**	*e*P		**Pb**	**03 22 26.0**	**+0.1**
KOTS				*e*S		**Sb**	**03 22 53.1**	**-0.1**
KTBS	**Karatobe**	**2.24**	**248**	*e*P		**Pb**	**03 22 25.7**	**-0.4**
KTBS				*e*S		**Sb**	**03 22 52.8**	**-0.7**
MDOK	**Medeo**	**2.30**	**232**	*e*P		**Pb**	**03 22 26.8**	**-0.4**
	4.6nm,0.2s							
MDOK				*e*S		**Sb**	**03 22 54.1**	**-1.4**
	60nm,0.6s							
KUU	**Kurty**	**2.40**	**254**	*e*P		**Pb**	**03 22 28.7**	**-0.2**
	12nm,0.1s							
KUU				*e*S		**Sb**	**03 22 57.7**	**-0.5**
	51nm,0.3s							
TNSS	**Tian-Shan**	**2.44**	**231**	*e*P		**Pb**	**03 22 29.9**	**+0.1**
	3.0nm,0.2s							
TNSS				*e*S		**Sb**	**03 22 59.7**	**0.0**
	180nm,0.5s							
IZV	**Izvestkoviy**	**2.63**	**234**	*e*P		**Pb**	**03 22 33.8**	**+1.0**
	2.4nm,0.2s							
IZV				*e*S		**Sb**	**03 23 05.9**	**+0.9**
	116nm,0.2s							
MAKZ	**Makanchi**	**2.79**	**37**	⇑Pn		**Pg**	**03 22 39.0**	**-0.6**
	0.6nm,0.5s							
MAKZ				⇓Lg		Lg	03 23 18.9	
	0.9nm,0.3s							
MK31	**Makanchi Array**	**2.92**	**40**	Pn		**Pg**	**03 22 42.4**	**+0.4**
	0.7nm,0.3s,baz=214,slow=15,SNR=9.3							
MK31					Pg	Pb	03 22 47.5	+10
	1.1nm,0.4s,baz=215,slow=16,SNR=5.9							
MK31					Sn	**Sg**	**03 23 16.8**	**-3.1**
	1.0nm,0.3s,baz=217,slow=26,SNR=5.8							
MK31				⇓Lg		Lg	03 23 26.2	
	0.8nm,0.2s,baz=220,slow=32,SNR=12							
DGS	**Degeres**	**3.04**	**245**	*e*P		**Pb**	**03 22 39.8**	**0.0**
	2.1nm,0.4s							
DGS				*e*S		**Sb**	**03 23 16.4**	**-0.2**
	103nm,0.5s							
TKM2	**Tokmak 2**	**3.31**	**241**	⇓Pn		**Pb**	**03 22 46.7**	**+2.2**
	1.9nm,0.5s							
TKM2				⇓Sn		**Sb**	**03 23 24.7**	**+0.2**
	2.9nm,0.2s							
AAK	**Ala-Archa**	**4.16**	**243**	⇑Pn		**Pb**	**03 23 00.5**	**+1.7**
	2.2nm,0.5s							
AAK				⇓Sn		**Sb**	**03 23 50.3**	**+1.5**
	6.2nm,0.6s							

IDC 26 03:23:41.9±12.0, 0˚.77N×97˚.86W, h0km, mb3.5/3, mb1 4.0/3, mb1mx3.6/30, mbtmp3.5/3, Ms3.6/6, Ms1 3.6/6, ms1mx3.3/23, Error ellipse: s-maj=548.4km s-min=210.5km az=70.0, West of Galapagos Islands

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
					Op	ISC	h m s	ISC
CMIG	**Matias Romero**	**16.48**	**10**	LR		LR	03 32 02.2	
	comp=Z,292nm,21.2s,baz=185,slow=30							
TEIG	**Tepich**	**21.49**	**25**	LR		LR	03 35 43.3	
	comp=Z,66nm,20.5s,baz=347,slow=34							
LPIG	**La Paz**	**26.14**	**333**	LR		LR	03 36 35.7	
	comp=Z,106nm,19.5s,baz=196,slow=30							
TXAR	**Lajitas Array**	**28.94**	**349**	P		P	03 29 43.7	+0.6
	0.6nm,0.8s,baz=179,slow=11,SNR=6.6							
TXAR						LR	03 39 27.5	
	comp=Z,105nm,19.1s,baz=0.0,slow=33							
PDAR	**Pinedale Array**	**43.11**	**347**	P		P	03 31 43.6	-0.6
	0.8nm,1.0s,baz=141,slow=5.8,SNR=4.6							
PDAR						LR	03 48 36.6	
	comp=Z,58nm,18.1s,baz=134,slow=35							
YKA	**Yellowknife Ar**	**62.85**	**351**	P		P	03 34 09.2	-0.1
	0.5nm,0.9s,baz=159,slow=7.0,SNR=5.3							
RAR	**Rarotonga**	**64.25**	**246**	LR		LR	03 54 44.8	
	comp=Z,101nm,19.2s,baz=126,slow=29							

*NIED **26** 03:39:00, 36˚.80N×140˚.60E, h5km, Mw3.9 Best double couple: M0 8.34000×10^14 NP1:φs23.00000°, δ36.00000°, λ-88.00000°. NP2:φs200.00000°, δ54.00000°, λ-92.00000°.*
*ISCJB **26** 03:39:32.7±0.6, 36˚.76N±0˚.03×140˚.71E±0˚.05, h13km±3km, mb3.8/19, MS2.9/1, Error ellipse: s-maj=7.1km s-min=4.3km az=31.0*
*IDC **26** 03:39:32.4±0.6, 36˚.77N×140˚.55E, h0km, mb3.9/18, mb1 4.1/20, mb1mx4.0/41, mbtmp3.9/20, ML3.5/2, MS3.0/3, Ms1 3.0/3, ms1mx2.6/38, Error ellipse: s-maj=16.7km s-min=13.9km az=133.0*
*JMA **26** 03:39:33.3, 36˚.76N×140˚.59E, h4km±1km, M3.8 Broadband fault plane solution: P waves. NP1: φs53.00000°, δ51.00000°, λ-70.00000°. NP2:φs203.00000°, δ43.00000°, λ-113.00000°. Principal axes: T Plg4.0000°, Azm129.0000°; N Plg15.0000°, Azm220.0000°; P Plg74.0000°, Azm24.0000°;*
JMA Felt I J1.
*NEIC **26** 03:39:36.2±2.2, 36˚.79N×140˚.52E, h26km±15km, mb4.1/1 Error ellipse: s-maj=11.2km s-min=6.4km az=139.0*
ISC 26 03:39:33.4±1.1, 36.77N±0˚.03×140˚.53E±0˚.05, h5km±7km, n43, σ1°13/43, mb3.9/19, 3C, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
					Op	ISC	h m s	ISC
JHO	**Hitachi**	**0.16**	**169**	⇑P		**Pg**	**03 39 36.4**	**-0.2**
JHO				S		**Sg**	**03 39 38.8**	**0.0**
ONAJ	**Iwakimizuishiy**	**0.39**	**33**	P		**Pg**	**03 39 40.9**	**-0.1**
ONAJ				S		**Sg**	**03 39 46.3**	**+0.1**
JSB	**Shiboa**	**0.53**	**292**	⇑P		**Pb**	**03 39 45.2**	**+0.1**
JFK	**Kawauchi**	**0.65**	**25**	P		**Pg**	**03 39 45.5**	**-0.5**
JFT	**Otama**	**0.76**	**348**	⇑P		**Pg**	**03 39 48.4**	**+0.4**
JFT				S		**Sb**	**03 39 59.1**	**-0.7**
MJAR	**Matsushiro Arr**	**1.88**	**264**	Pn		**Pn**	**03 40 07.0**	**+0.8**
	20nm,0.3s,baz=79,slow=9.2,SNR=121							
MJAR					Sn	**Sb**	**03 40 32.7**	**+0.7**
	44nm,0.3s,baz=104,slow=26,SNR=21							
MJAR					LR	LR	03 41 08.2	
	comp=Z,270nm,21.1s,baz=80,slow=51							
MAJO	**Matsushiro**	**1.88**	**264**	*e*Pn		**Pb**	**03 40 07.6**	**-0.6**
MAJO				*e*S		**Sb**	**03 40 32.6**	**+0.6**
MAT	**Matsushiro**	**1.88**	**264**	P		**Pn**	**03 40 07.1**	**+0.9**
MAT				S		**Sg**	**03 40 33.4**	**-0.4**
JHJ	**Hachijo jima 2**	**3.70**	**190**	Pn		**Pn**	**03 40 31.7**	**+0.6**
	5.1nm,0.3s,baz=72,slow=19,SNR=3.9							
JHJ					Sn	**Sn**	**03 41 17.0**	**+2.0**
	8.9nm,0.3s,baz=53,slow=20,SNR=3.0							
ERM	**Erimo**	**5.62**	**20**	*e*Pn		**Pn**	**03 40 57.1**	**-0.4**
ERM				*e*S		**Sn**	**03 42 06.9**	**+4.5**
ASAJ	**Asahikawa**	**7.50**	**11**	Pn		**Pn**	**03 41 23.6**	**+0.2**
	1.1nm,0.3s,baz=187,slow=33,SNR=7.7							
ASAJ					Sn	**Sn**	**03 42 47.9**	**-0.9**
	0.1nm,0.3s,baz=151,slow=19,SNR=2.3							
USRK	**Ussuriysk Ar.**	**9.86**	**321**	Pn		**Pn**	**03 41 58.9**	**+3.1**
	baz=134,slow=42,SNR=2.4							
KSRS	**Korea Array**	**10.09**	**278**	Pn		Pn	03 42 04.5	+5.6
	0.2nm,0.3s,baz=95,slow=14,SNR=4.3							
KSRS						LR	03 45 37.7	
	comp=Z,80nm,21.3s,baz=145,slow=36							
KSAR	**Wonju Array Be**	**10.12**	**278**	Pn		Pn	03 42 04.5	+5.2
KLR	**Kul'dur**	**14.00**	**336**	LR		LR	03 48 05.3	
	comp=Z,56nm,19.1s,baz=141,slow=37							
MA2	**Magadan**	**23.76**	**13**	P		**P**	**03 44 46.3**	**-0.1**
	3.4nm,0.4s,baz=211,slow=19,SNR=3.2							
SEY	**Seymchan**	**27.19**	**12**	P		**P**	**03 45 17.8**	**+0.2**
	0.8nm,0.2s,baz=205,slow=9.3,SNR=4.0							
SONM	**Songino Array**	**27.35**	**305**	P		**P**	**03 45 18.6**	**-0.8**
	1.1nm,0.8s,baz=106,slow=10,SNR=5.7							
H11N2	**WAKE ISLAND Hy**	**28.63**	**119**	T		T	04 15 13.8	
	baz=313,slow=75,SNR=88							
H11N1	**WAKE ISLAND Hy**	**28.64**	**119**	T		T	04 15 14.3	
	baz=313,slow=75,SNR=92							
H11N3	**WAKE ISLAND Hy**	**28.65**	**119**	T		T	04 15 14.7	
	baz=313,slow=75,SNR=70							
H11S1	**WAKE ISLAND Hy**	**29.32**	**121**	T		T	04 16 04.7	
	baz=314,slow=76,SNR=415							
H11S3	**WAKE ISLAND Hy**	**29.32**	**121**	T		T	04 16 04.2	
	baz=314,slow=76,SNR=281							
H11S2	**WAKE ISLAND Hy**	**29.34**	**121**	T		T	04 16 05.9	
	baz=314,slow=76,SNR=338							
TLY	**Talaya**	**29.97**	**312**	LR		LR	03 58 02.2	
	comp=Z,30nm,21.6s,baz=172,slow=37							
ZALV	**Zalesovo Beam**	**41.57**	**313**	P		**P**	**03 47 21.8**	**0.0**
	2.0nm,0.8s,baz=94,slow=7.5,SNR=5.7							
MKAR	**Makanchi Array**	**43.66**	**302**	P		**P**	**03 47 38.3**	**-0.6**
	0.8nm,0.7s,baz=96,slow=9.9,SNR=5.1							
ILAR	**Eielson Array**	**50.09**	**32**	P		**P**	**03 48 28.8**	**-0.2**
	0.7nm,0.8s,baz=273,slow=6.6,SNR=9.6							
WRA	**Warramunga Arr**	**56.71**	**187**	P		**P**	**03 49 16.6**	**-1.4**
	1.0nm,0.8s,baz=2.8,slow=7.8,SNR=6.7							
ABKAR	**Akbulak array**	**57.56**	**310**	*e*P		**P**	**03 49 22.9**	**-1.0**
	1.6nm,0.8s							
ASAR	**Alice Springs**	**60.44**	**187**	P		**P**	**03 49 43.4**	**-0.6**
	0.6nm,0.8s,baz=15,slow=5.0,SNR=5.8							
GEYT	**Alibeck**	**63.34**	**299**	P		**P**	**03 50 04.9**	**+1.3**
	2.0nm,0.5s,baz=62,slow=6.7,SNR=3.0							
YKA	**Yellowknife Ar**	**64.39**	**30**	P		**P**	**03 50 09.6**	**-0.3**
	0.4nm,0.7s,baz=304,slow=6.7,SNR=13							
YKA					PcP	**PcP**	**03 50 44.5**	**+0.1**
	0.3nm,0.7s,baz=303,slow=3.7,SNR=8.6							
FINES	**FINESS Array B**	**68.71**	**332**	P		**P**	**03 50 36.7**	**-0.9**
	1.6nm,0.8s,baz=69,slow=6.5,SNR=5.1							
KBZ	**Khabaz**	**70.53**	**310**	P		**P**	**03 50 49.1**	**0.0**
	0.4nm,0.5s,baz=105,slow=12,SNR=2.8							
AKASG	**Malin Array Be**	**74.07**	**322**	P		**P**	**03 51 09.0**	**-1.2**
	0.2nm,0.3s,baz=48,slow=5.9,SNR=6.3							
AKASG	**Malin Array Be**	**74.07**	**322**	P		**P**	**03 51 09.0**	**-1.2**
NVAR	**Mina Array Bea**	**75.71**	**53**	P		**P**	**03 51 20.9**	**+0.7**
	1.1nm,0.6s,baz=306,slow=5.0,SNR=5.2							
PDAR	**Pinedale Array**	**78.35**	**45**	P		**P**	**03 51 35.3**	**+0.3**
	0.8nm,0.8s,baz=276,slow=2.8,SNR=7.5							
ULM	**Lac du Bonnet**	**80.11**	**33**	P		**P**	**03 51 44.0**	**-0.2**
	0.8nm,0.3s,baz=211,slow=2.8,SNR=2.1							
GERES	**GERESS Array B**	**82.56**	**328**	P		**P**	**03 51 56.6**	**-0.7**
	0.3nm,0.5s,baz=44,slow=4.4,SNR=4.5							
TXAR	**Lajitas Array**	**90.84**	**52**	P		**P**	**03 52 38.0**	**-0.3**
	0.7nm,0.7s,baz=300,slow=3.2,SNR=10							
LPAZ	**La Paz**	**147.44**	**59**	PKPbc		**PKPbc**	**03 59 19.2**	**-0.3**
	1.0nm,0.7s,baz=15,slow=7.5,SNR=4.9							

*ISCJB **26** 03:42:30.6±0.8, 36˚.72N±0˚.04×140˚.69E±0˚.07, h7km±4km, mb3.4/3, MS2.8/1, Error ellipse: s-maj=10.5km s-min=5.0km az=28.9*
*IDC **26** 03:42:30.5±1.1, 36˚.52N×140˚.66E, h0km, mb3.3/3, mb1 3.7/4, mb1mx3.4/42, mbtmp3.4/4, ML3.3/1, MS2.9/1, Ms1 2.9/1, ms1mx2.4/20, Error ellipse: s-maj=30.3km s-min=22.4km az=144.0*
*JMA **26** 03:42:31.3, 36˚.76N×140˚.59E, h5km±1km, M3.3 Broadband fault plane solution: P waves. NP1: φs8.00000°, δ61.00000°, λ-103.00000°. NP2:φs214.00000°, δ32.00000°, λ-68.00000°. Principal axes: T Plg15.0000°, Azm108.0000°; N Plg11.0000°, Azm15.0000°; P Plg71.0000°, Azm249.0000°;*
JMA Felt I J1.
ISC 26 03:42:31.2±1.2, 36.72N±0˚.04×140˚.67E±0˚.06, h6km±8km, n13, σ1°06/17, mb3.4/3, 2C, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
					Op	ISC	h m s	ISC
JHO	**Hitachi**	**0.14**	**216**	⇑P		**Pg**	**03 42 34.3**	**+0.2**
JHO				S		**Sg**	**03 42 36.7**	**+0.7**
ONAJ	**Iwakimizuishiy**	**0.39**	**15**	P		**Pg**	**03 42 38.8**	**0.0**
ONAJ				S		**Sg**	**03 42 44.2**	**+0.2**
JYT	**Yasato**	**0.63**	**218**	S		**Sg**	**03 42 51.4**	**0.0**
JSB	**Shiboa**	**0.65**	**292**	⇑P		**Pg**	**03 42 43.1**	**-0.6**
JFK	**Kawauchi**	**0.66**	**14**	P		**Pg**	**03 42 43.5**	**-0.5**
MJAR	**Matsushiro Arr**	**1.99**	**265**	Pn		**Pn**	**03 43 05.1**	**-0.3**
	14nm,0.3s,baz=88,slow=15,SNR=15							
MJAR					Sn	**Sn**	**03 43 30.5**	**-0.1**
	38nm,0.3s,baz=162,slow=20,SNR=19							
MAT	**Matsushiro**	**1.99**	**266**	P		**Pn**	**03 43 05.5**	**0.0**
MAT				S		**Sn**	**03 43 31.5**	**+0.8**
JHJ	**Hachijo jima 2**	**3.67**	**192**	Pn		**Pn**	**03 43 26.8**	**-1.7**
	6.7nm,0.3s,baz=38,slow=18,SNR=2.3							
JHJ					Sn	**Sn**	**03 44 13.9**	**+1.7**
	7.6nm,0.3s,baz=255,slow=20,SNR=1.3							
DAV	**Davao City (W)**	**32.57**	**209**	LR		LR	04 04 07.5	
	comp=Z,20nm,18.4s,baz=220,slow=40							
WRA	**Warramunga Arr**	**56.68**	**187**	P		**P**	**03 52 13.4**	**-2.1**
	0.2nm,0.5s,baz=4.6,slow=7.6,SNR=3.9							
YKA	**Yellowknife Ar**	**64.37**	**30**	P		**P**	**03 53 08.7**	**+1.1**
	0.1nm,0.5s,baz=301,slow=4.9,SNR=3.8							
TXAR	**Lajitas Array**	**90.78**	**52**	P		**P**	**03 55 36.6**	**+0.9**
	0.4nm,0.9s,baz=300,slow=2.5,SNR=4.1							
LPAZ	**La Paz**	**147.36**	**59**	PKPbc		**PKPbc**	**04 02 17.6**	**+0.5**
	0.5nm,0.6s,baz=20,slow=4.9,SNR=2.5							

*NIED **26** 03:52:00, 36˚.10N×143˚.70E, h5km, Mw3.5 Best double couple: M0 2.27000×10^14 NP1:φs348.00000°, δ39.00000°, λ-161.00000°. NP2:φs243.00000°, δ78.00000°, λ-52.00000°.*
*IDC **26** 03:52:24.8±1.2, 36˚.08N×143˚.95E, h0km, mb3.5/6, mb1 3.7/9, mb1mx3.5/41, mbtmp3.7/9, ML3.8/3, MS2.1/1, Ms1 2.1/1, ms1mx1.9/37, Error ellipse: s-maj=31.2km s-min=20.7km az=83.0*
*ISCJB **26** 03:52:26.8±0.8, 36˚.00N±0˚.06×143˚.81E±0˚.07, h33km, mb3.5/6, Error ellipse: s-maj=8.9km s-min=7.8km az=5.2*
*JMA **26** 03:52:28.5±0.5, 36˚.13N×143˚.72E, h59km, M3.9*
ISC 26 03:52:27.7±0.9, 36.00N±0˚.06×143˚.93E±0˚.08, h35km, n25, σ2°15/26, mb3.5/6, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
					Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**2.75**	**294**	P		**Pn**	**03 53 08.5**	**-0.5**
JHO	**Hitachi**	**2.78**	**284**	P		**Pn**	**03 53 08.9**	**-0.8**
JFT	**Otama**	**3.26**	**299**	P		**Pn**	**03 53 16.5**	**+0.3**
JFT				*e*S		**Sn**	**03 53 51.2**	**-2.6**
JMK	**Ichinoseki**	**3.65**	**325**	P		**Pn**	**03 53 20.7**	**-0.9**
JMK				S		**Sn**	**03 53 59.6**	**-3.8**
JOD2	**Odawara 2**	**4.01**	**261**	P		**Pn**	**03 53 26.6**	**0.0**
JRY	**Ryogami san**	**4.08**	**272**	P		**Pn**	**03 53 27.4**	**-0.1**
JRY				*e*S		**Sn**	**03 54 12.4**	**-1.6**
JHJ2	**Mitsune**	**4.45**	**231**	P		**Pn**	**03 53 31.5**	**-1.2**
JHJ2				S		**Sn**	**03 54 19.6**	**-3.6**
JHJ	**Hachijo jima 2**	**4.47**	**231**	Pn		**Pn**	**03 53 32.4**	**-0.5**
	32nm,0.3s,baz=112,slow=23,SNR=7.9							
JHJ					Sn	**Sn**	**03 54 19.1**	**-4.5**
	42nm,0.3s,baz=233,slow=24,SNR=10							
MJAR	**Matsushiro Arr**	**4.65**	**278**	Pn		**Pn**	**03 53 35.2**	**-0.2**
	4.8nm,0.3s,baz=93,slow=12,SNR=30							
MJAR					Sn	**Sn**	**03 54 28.4**	**+0.1**
	baz=98,slow=13,SNR=3.2							
MJAR					LR	LR	03 55 32.8	
	comp=Z,26nm,21.8s,baz=110,slow=41							
MAT	**Matsushiro**	**4.66**	**278**	P		**Pn**	**03 53 36.4**	**+0.9**
MAT				S		**Sn**	**03 54 28.3**	**0.0**
ASAJ	**Asahikawa**	**8.17**	**353**	Pn		**Pn**	**03 54 23.0**	**-0.7**
	0.7nm,0.3s,baz=192,slow=15,SNR=2.3							
ASAJ					Sn	**Sn**	**03 55 51.7**	**-3.0**
	0.6nm,0.3s,baz=30,slow=20,SNR=1.8							
JCJ	**Chichijima**	**9.00**	**190**	Pn		**Pn**	**03 54 33.0**	**-2.1**

TCHB Talchebab 0.66 155 *i* P **Pn 03 59 46.4 -0.6**
TCHB *e*S **Sg 03 59 53.9 +0.3**
TCHB AML AML 03 59 57.3
comp=N,29nm,0.3s
TCHB AML AML 04 00 06.0
comp=E,18nm,0.4s
TCHB Talchebab 0.66 155 *i* P **Pn 03 59 46.4 -0.6**
TCHB *e*S **Sg 03 59 53.9 +0.3**
comp=E,29nm,0.3s
HWQ Hawqa 1.04 14 *e*P **Pb 03 59 52.1 +0.1**
HWQ Hawqa 1.04 14 *e*P **Pb 03 59 52.1 +0.1**
SALA Sala 1.07 121 *i* P **Pg 03 59 53.1 +0.3**
SALA *e*S **Sb 04 00 06.5 +0.1**
SALA AML AML 04 00 08.8
comp=N,18nm,0.3s
SALA AML AML 04 00 08.8
comp=E,0.9nm,0.4s
SALA Sala 1.07 121 *i* P **Pg 03 59 53.1 +0.3**
SALA *e*S **Sb 04 00 06.5 +0.1**
ZALF Zalf 1.46 103 *i* P **Pb 03 59 59.1 0.0**
ZALF *e*S **Sb 04 00 17.5 0.0**
ZALF AML AML 04 00 23.1
comp=N,5.8nm,0.4s
ZALF AML AML 04 00 23.2
comp=E,5.6nm,0.3s
ZALF Zalf 1.46 103 *i* P **Pb 03 59 59.1 0.0**
ZALF *e*S **Sb 04 00 17.5 0.0**

BJI ***26*** *04:00:04.1,48.˚12N×130.˚69E,h6km,ML3.7/9*
SKHL ***26*** *04:00:06.1±0.8,48.˚21N×130.˚77E,h15km±4km,mb4.2/3*
ISC 26 04:00:05.8±1.3,48.˚24N±0.˚05×130.˚81E±0.˚08,h10km,n8,
σ3§15/10,Priamurye-Northeastern China border region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
KHBR	**Khabarovsk**	**2.84**	**84**	*e*Sg	**Sb**	**04 01 35.0**	**+3.7**
GRNR	**Gornyy**	**4.45**	**53**	*e*Pg	**Pg**	**04 01 29.0**	**-1.9**
GRNR	19nm,0.5s			AMB	AMB	04 01 30.0	
GRNR				*e*Sg	**Sg**	**04 02 26.9**	**-1.6**
GRNR	168nm,0.7s			A	A	04 02 32.0	
GRTR	**Gornotajezhnoj**	**4.63**	**168**	*e*Sg	**Sg**	**04 02 30.9**	**-3.3**
EKMR	**Ekimchan**	**5.03**	**15**	*e*Pn	**Pn**	**04 01 21.3**	**+0.1**
EKMR				*e*Pg	**Pb**	**04 01 36.9**	**+3.1**
EKMR	17nm,0.3s			AMB	AMB	04 01 39.4	
EKMR				*e*Sg	**Sg**	**04 02 43.0**	**-4.0**
EKMR	78nm,0.7s			A	A	04 02 48.4	
TEY	**Ternei**	**5.12**	**127**	*e*Pn	**Pn**	**04 01 23.5**	**+1.1**
TEY				*e*rx	rx	04 02 43.0	
TEY				*e*Sg	Sg	04 02 44.0	-5.9
TEY	35nm,0.5s			A	A	04 02 50.0	
KROS	**Kirovskiy**	**6.65**	**340**	*e*Pn	**Pn**	**04 01 44.0**	**+0.5**
KROS				*e*Sg	Sg	04 03 34.0	-5.2
KROS	20nm,0.5s			A	A	04 03 44.6	
NKL	**Nikolayevsk**	**7.96**	**48**	*e*Pg	Pb	04 02 31.2	+7.5
NKL				*e*Sg	**Sg**	**04 04 17.8**	**-3.3**
NKL	40nm,0.9s			A	A	04 04 31.1	
GTA	**Gaotai**	**23.91**	**260**	P	P	04 05 13.3	-6.4
GTA				pP	pP	04 05 16.8	-5.9
GTA				sP	sP	04 05 19.5	-4.5
GTA	comp=Z,13nm,0.9s			pmax	pmax		

NIED ***26*** *04:01:00,37.˚30N×141.˚30E,h5km,Mw4.8 Best couple: M₀2.10000×10¹⁶ NP1:φ=83.00000°,δ44.00000°, λ-95.00000°. NP2:φ=270.00000°,δ46.00000°, λ-85.00000°.*
IDC ***26*** *04:01:45.9±0.4,37.˚28N×141.˚14E,h0km,mb4.7/29, mb1 4.8/33,mb1mx4.7/41,mbtmp4.7/33,ML4.1/3,MS4.2/33, Ms1 4.2/33,ms1mx4.1/43,Error ellipse: s-maj=13.9km s-min=10.6km az=101.0*
ISCJB ***26*** *04:01:46.8±0.6,37.˚28N±0.˚02×141.˚26E±0.˚02,h13km±3km, mb4.8/221,MS4.4/43,Error ellipse: s-maj=3.8km s-min=2.6km az=149.7*
JMA ***26*** *04:01:47.3,37.˚29N×141.˚25E,h13km±1km,M5.2*
JMA Felt III J1.
MOS ***26*** *04:01:50.3±1.0,37.˚44N×141.˚17E,h35km,mb5.1/62, MS4.2/10,Error ellipse: s-maj=6.6km s-min=4.7km az=96.6*
NEIC ***26*** *04:01:51.6±0.5,37.˚30N×141.˚19E,h37km±4km,mb4.9/162, Error ellipse: s-maj=4.3km s-min=2.8km az=139.0*
NEIC Recorded [3 JMA] in Fukushima.
ISC 26 04:01:49.8±0.4,37.˚29N±0.˚03×141.˚30E±0.˚03,h24km±2km,
h24km:pP-P,n689,σ1§59/744,mb4.9/227,MS4.4/43,
28C-22D,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JFK	**Kawauchi**	**0.35**	**283**	P	**Pb**	**04 01 53.6**	**-3.9**
JFK				S	**Sb**	**04 01 58.3**	**-4.5**
ONAJ	**Iwakimizuishiy**	**0.45**	**245**	P	**Pb**	**04 01 55.3**	**-3.8**
ONAJ				S	**Sb**	**04 02 01.2**	**-4.2**
JMM	**Marumori**	**0.70**	**325**	P	**Pb**	**04 02 00.5**	**-2.9**
JMM				S	**Sb**	**04 02 09.7**	**-3.0**
JFT	**Otama**	**0.80**	**287**	⇓P	**Pb**	**04 02 02.0**	**-3.1**
JFT				S	**Sb**	**04 02 12.6**	**-2.9**
JHO	**Hitachi**	**0.90**	**221**	P	**Pb**	**04 02 03.3**	**-3.4**
JHO				S	**Sb**	**04 02 14.6**	**-3.6**
MJAR	**Matsushiro Arr**	**2.59**	**254**	Pn	**Pn**	**04 02 29.9**	**-0.3**
MJAR	91nm,0.3s,baz=156,slow=9.3,SNR=36			Sn	**Sb**	**04 03 05.6**	**-1.3**
MAJO	**Matsushiro**	**2.59**	**254**	⇓*e*Pn	**Pn**	**04 02 30.3**	**+0.1**
MAJO	**Matsushiro**	**2.59**	**254**	*e*Pn	**Pn**	**04 02 30.5**	**+0.4**
MAJO				*e*Sn	**Sn**	**04 03 03.0**	**+2.1**
MAT	**Matsushiro**	**2.59**	**254**	P	**Pn**	**04 02 30.2**	**0.0**
MAT				S	**Sb**	**04 03 05.2**	**-1.7**
MJB9	**Matsu-Tunnel**	**2.59**	**254**	*e*Pn	**Pn**	**04 02 30.6**	**+0.4**
MJB9				*e*Sn	**Sn**	**04 03 03.7**	**+2.8**
INU	**Inuyama**	**3.97**	**242**	*e*Pn	**Pn**	**04 02 50.0**	**+1.0**
INU				*e*Sn	**Sn**	**04 03 26.3**	**-8.4**
JHJ	**Hachijo jima 2**	**4.34**	**197**	Pn	**Pn**	**04 02 53.7**	**-0.5**
JHJ	68nm,0.3s,baz=76,slow=10,SNR=14			Sn	**Sn**	**04 03 43.9**	**-0.2**
JHJ	58nm,0.3s,baz=112,slow=19,SNR=4.6			LR	LR	04 04 46.5	
JHJ2	**Mitsune**	**4.34**	**197**	*e*Pn	**Pn**	**04 02 53.8**	**-0.5**
JHJ2	comp=Z,4μm,20.8s,baz=102,slow=42			*e*Sn	**Sn**	**04 03 43.8**	**-0.2**
ERM	**Erimo**	**4.93**	**16**	*ce*P	**Pn**	**04 03 02.0**	**-0.3**
ERM	comp=Z,120nm,0.8s			pmax	pmax		
ERM	**Erimo**	**4.93**	**16**	*e*Pn	**Pn**	**04 03 02.1**	**-0.2**
ERM				*e*Sn	**Sn**	**04 04 00.3**	**+1.8**
ASAJ	**Asahikawa**	**6.89**	**8**	Pn	**Pn**	**04 03 29.1**	**-0.1**
ASAJ	comp=Z,7.1nm,0.3s,baz=221,slow=9.1,SNR=14			Sn	**Sn**	**04 04 55.4**	**+8.6**
ASAJ	**Asahikawa**	**6.89**	**8**	*e*Pn	**Pn**	**04 03 28.3**	**-0.9**
ASAJ	comp=Z,5.2nm,0.3s,baz=148,slow=19,SNR=2.5			Sn	**Sn**	**04 04 55.4**	**+8.6**
YUK	**Yuzh-Kuril'sk**	**7.58**	**26**	*e*P	**Pn**	**04 03 38.7**	**+0.1**
YUK				*e*S	**Sn**	**04 05 00.6**	**-3.0**
YUK	comp=Z,231nm,0.7s			pmax	pmax		
YUK	comp=N,139nm,0.3s			pmax	pmax		
YUK	comp=E,165nm,0.3s			pmax	pmax		
YUK	comp=Z,2μm,16.0s			MLR	MLR		
YUK	comp=N,2μm,15.0s			MLR	MLR		
YUK	comp=E,2μm,13.0s			MLR	MLR		
SHO	**Shikotan**	**7.80**	**31**	*e*P	**Pn**	**04 03 39.4**	**-2.3**
SHO				*e*S	**Sn**	**04 05 01.8**	**-7.4**
SHO	comp=N,64nm,0.7s			pmax	pmax		
SHO	comp=E,119nm,0.7s			pmax	pmax		
SHO	comp=Z,110nm,0.7s			pmax	pmax		
KUR	**Kuril'sk**	**9.35**	**30**	P	**Pn**	**04 04 02.0**	**-0.8**
KUR				*e*S	**Sn**	**04 05 41.8**	**-5.3**
KUR	comp=Z,53nm,0.6s			pmax	pmax		
KUR	comp=N,62nm,0.9s			smax	smax		
KUR	comp=E,41nm,0.9s			smax	smax		
MSHR	**Mys Shultsa**	**9.41**	**307**	*i* P	**Pn**	**04 04 06.2**	**+2.4**
JNU	**Nakatsue**	**9.49**	**247**	LR	LR	04 08 00.6	
JNU	comp=E,3μm,19.5s,baz=103,slow=40			*e*Sn	Sn	04 05 35.1	-16
JNU	**Nakatsue**	**9.49**	**247**	*e*Pn	**Pn**	**04 04 03.6**	**-1.3**
YSS	**Yuzh-Sakhalins**	**9.72**	**6**	*e*P	**Pn**	**04 04 09.1**	**+1.2**
YSS				*e*S	**Sn**	**04 05 54.9**	**-1.3**
YSS	comp=Z,60nm,0.8s			pmax	pmax		
YSS	comp=N,4μm,13.0s			MLR	MLR		
YSS	comp=Z,4μm,13.0s			MLR	MLR		
YSS	**Yuzh-Sakhalins**	**9.72**	**6**	*e*Pn	**Pn**	**04 04 07.3**	**-0.6**
YSS				*e*Sn	Sn	04 05 47.5	-8.7
USRK	**Ussuriysk Ar.**	**9.87**	**317**	Pn	Pn	04 04 14.1	+4.0
USRK	comp=Z,0.1nm,0.3s,baz=130,slow=14,SNR=20			LR	LR	04 07 39.8	
CBIJ	**Chichi jima**	**10.19**	**176**	*e*Pn	**Pn**	**04 04 11.9**	**-2.6**
CBIJ				*e*Sn	Sn	04 05 56.6	-11
JCJ	**Chichijima**	**10.19**	**176**	Pn	**Pn**	**04 04 12.4**	**-2.2**
KSRS	**Korea Array**	**10.65**	**275**	Pn	**Pn**	**04 04 23.6**	**+2.8**
KSRS	comp=Z,0.6nm,0.3s,baz=91,slow=13,SNR=38			LR	LR	04 07 53.6	
KS01	**Wonju Array Si**	**10.67**	**275**	*e*Pn	**Pn**	**04 04 23.6**	**+2.5**
KS01	comp=Z,387nm,21.1s,baz=75,slow=35			*e*Sn	Sn	04 06 05.8	-14
KSAR	**Wonju Array Be**	**10.68**	**275**	P	**Pn**	**04 04 23.6**	**+2.4**
KSAR	**Wonju Array Be**	**10.68**	**275**	Pn	**Pn**	**04 04 23.6**	**+2.4**
MDJ	**Mudanjiang**	**11.48**	**313**	P	**Pn**	**04 04 32.8**	**+0.7**
MDJ				S	**Sn**	**04 06 32.0**	**-7.5**
MDJ				ScP	**ScP**	**04 13 54.5**	**0.0**
MDJ				PcS	**PcS**	**04 13 58.5**	**+1.3**
MDJ	comp=Z,6.0nm,0.9s			pmax	pmax		
MDJ	comp=Z,310nm,6.0s			pmax	pmax		
MDJ	comp=N,2μm,21.0s			LR	LR		
MDJ	comp=E,2μm,20.2s			LR	LR		
MDJ	comp=Z,1μm,24.6s			LR	LR		
MDJ	**Mudanjiang**	**11.48**	**313**	*e*Pn	Pn	04 04 36.0	+4.0
HABR	**Khabarovsk**	**12.07**	**340**	*de*P	**Pn**	**04 04 37.8**	**-2.4**
HABR				*e*S	**Sn**	**04 06 49.9**	**-4.0**
HABR	comp=Z,68nm,2.2s			pmax	pmax		
HABR	comp=Z,2μm,13.0s			MLR	MLR		
CN2	**Changchun**	**13.69**	**303**	*e*P	**Pn**	**04 05 06.3**	**+4.0**
CN2				*e*PP	P	04 05 17.5	+6.7
CN2				*e*S	**Sn**	**04 07 39.5**	**+6.0**
CN2	comp=Z,10.0nm,1.3s			pmax	pmax		
CN2	comp=Z,300nm,6.0s			pmax	pmax		
CN2	comp=N,3μm,11.0s			LR	LR		
CN2	comp=E,1μm,11.0s			LR	LR		
CN2	comp=Z,900nm,12.0s			LR	LR		
KLR	**Kul'dur**	**13.80**	**333**	LR	LR	04 10 15.9	
SNY	**Shenyang**	**14.40**	**294**	⇓P	**P**	**04 05 16.5**	**-2.2**
SNY	comp=Z,1μm,20.0s,baz=146,slow=37			S	**S**	**04 08 03.8**	**-6.6**
SNY	comp=Z,18nm,2.1s			pmax	pmax		
SNY	comp=Z,330nm,11.0s			pmax	pmax		
SNY	comp=N,4μm,11.0s			LR	LR		
SNY	comp=E,1μm,13.1s			LR	LR		
SNY	comp=Z,2μm,16.6s			LR	LR		
JOW	**Kunigami**	**15.17**	**230**	*e*Pn	**Pn**	**04 05 24.6**	**+2.1**
DL2	**Dalian**	**15.58**	**282**	⇑P	**Pn**	**04 05 29.8**	**+2.1**
DL2	comp=Z,37nm,1.0s			S	**Sn**	**04 08 25.5**	**+6.1**
DL2	comp=Z,31nm,0.9s			pmax	pmax		
DL2	comp=Z,330nm,6.1s			pmax	pmax		
DL2	comp=N,1μm,10.3s			LR	LR		
DL2	comp=E,2μm,13.0s			LR	LR		
DL2	comp=Z,1μm,10.2s			LR	LR		
SSE	**Sheshan**	**17.74**	**256**	P	**Pn**	**04 05 52.0**	**-3.0**
SSE				S	**Sn**	**04 09 08.0**	**-4.0**
SSE	comp=Z,29nm,1.0s			pmax	pmax		
SSE	comp=Z,200nm,7.4s			pmax	pmax		
SSE	comp=N,2μm,14.0s			LR	LR		
SSE	comp=E,630nm,14.0s			LR	LR		
SSE	comp=Z,1μm,13.4s			LR	LR		
NJ2	**Nanjing**	**19.17**	**261**	*e*P	**Pn**	**04 06 13.8**	**+1.3**
NJ2				S	**S**	**04 09 47.3**	**0.0**
NJ2	comp=Z,25nm,0.6s			pmax	pmax		
NJ2	comp=N,1μm,13.0s			LR	LR		
NJ2	comp=E,1μm,13.6s			LR	LR		
NJ2	comp=Z,1μm,13.6s			LR	LR		
TIA	**Tai'an**	**19.40**	**274**	⇑P	**P**	**04 06 11.5**	**-2.5**
TIA				S	S	04 09 37.8	-14
TIA	comp=Z,30nm,1.5s			pmax	pmax		
TIA	comp=N,750nm,11.3s			LR	LR		
TIA	comp=E,1μm,12.5s			LR	LR		
TIA	comp=Z,1μm,14.0s			LR	LR		
PEA0	**Petropavlovsk-**	**19.51**	**31**	*e*P	**P**	**04 06 12.9**	**-2.2**
PETK	**Petropavlovsk-**	**19.51**	**31**	P	**P**	**04 06 14.8**	**-0.2**
PETK	comp=Z,0.3nm,0.3s,baz=206,slow=8.3,SNR=10			LR	LR	04 14 28.1	
BJI	**Beijing**	**19.80**	**286**	P	**P**	**04 06 17.0**	**-1.3**
BJI	comp=Z,612nm,18.1s,baz=219,slow=39			pP	**sP**	**04 06 29.5**	**+1.4**
BJI				S	**Sn**	**04 10 02.0**	**+0.4**
BJI				sS	sS	04 10 19.8	+9.1
BJI	comp=Z,17nm,1.8s			pmax	pmax		
BJI	comp=Z,190nm,4.1s			pmax	pmax		
BJI	comp=N,2μm,13.3s			LR	LR		
BJI	comp=E,480nm,13.0s			LR	LR		
BJI	comp=Z,220nm,18.4s			LR	LR		
PET	**Petropavlovsk**	**19.85**	**32**	*c* *i*P	**Pn**	**04 06 25.2**	**+4.8**
PET	comp=Z,300nm,12.7s			pmax	pmax		
PET	comp=Z,700nm,16.0s			MLR	MLR		
PET	**Petropavlovsk**	**19.85**	**32**	*e*P	**Pn**	**04 06 19.9**	**-0.5**
SSLB	**Suanglung**	**22.04**	**238**	*e*P	**P**	**04 06 42.0**	**-0.6**
YULB	**Yu-li**	**22.07**	**237**	*e*P	**P**	**04 06 43.2**	**+0.2**
CLNS	**Chul'man**	**22.41**	**336**	*e*P	**P**	**04 06 45.2**	**-1.2**
CLNS	comp=Z,11nm,0.8s			pmax	pmax		
CLNS	comp=N,11nm,0.9s			pmax	pmax		
CLNS	comp=E,12nm,0.8s			pmax	pmax		
CLNS	comp=Z,2μm,13.0s			MLR	MLR		
CLNS	comp=N,1μm,13.0s			MLR	MLR		
CLNS	comp=E,702nm,11.0s			MLR	MLR		
TPUB	**Ta-pu**	**22.58**	**238**	*e*P	**P**	**04 06 46.0**	**-2.5**
QZH	**Quanzhou**	**22.95**	**244**	⇑*i*P	P	04 06 44.0	-8.2
QZH	comp=E,21nm,0.8s			S	S	04 10 50.0	-11
QZH	comp=N,2μm,13.9s			LR	LR		
QZH	comp=E,1μm,12.7s			LR	LR		
QZH	comp=Z,2μm,12.8s			LR	LR		
MA2	**Magadan**	**23.12**	**12**	P	**P**	**04 06 53.2**	**-0.5**
MA2	comp=Z,34nm,0.7s,baz=214,slow=9.1,SNR=17			LR	LR	04 15 44.5	
HHC	**Hu-ho-hao-te**	**23.31**	**288**	*e*P	**P**	**04 06 56.3**	**+0.4**
HHC	comp=Z,2μm,21.0s,baz=123,slow=36			sP	sP	04 07 09.5	+3.5
HHC				S	**S**	**04 11 03.8**	**-3.3**
HHC				sS	sS	04 11 18.5	-0.5
HHC	comp=Z,35nm,0.8s			pmax	pmax		
HHC	comp=Z,110nm,4.4s			pmax	pmax		
HHC	comp=N,600nm,13.6s			LR	LR		
HHC	comp=E,1μm,12.3s			LR	LR		
HHC	comp=Z,790nm,12.3s			LR	LR		
WHN	**Wuhan**	**23.31**	**261**	P	**P**	**04 06 58.0**	**+2.1**
WHN				S	**S**	**04 11 12.3**	**+5.3**
WHN	comp=N,1μm,9.4s			LR	LR		
WHN	comp=E,2μm,11.9s			LR	LR		
WHN	comp=Z,3μm,12.9s			LR	LR		
YAK	**Yakutsk**	**25.80**	**347**	P	**P**	**04 07 18.4**	**-0.2**
YAK	comp=Z,16nm,0.3s,baz=157,slow=3.2,SNR=5.3			LR	LR	04 17 37.5	
YAK	**Yakutsk**	**25.80**	**347**	*e*P	**P**	**04 07 17.7**	**-0.9**
YAK	comp=Z,2μm,18.6s,baz=140,slow=37			*e**PP	**pP**	**04 07 23.6**	**-2.2**
YAK				*e*		04 07 56.8	
YAK				*e*PPP	PPP	04 08 15.3	
YAK				*e*S	**S**	**04 11 50.3**	**+4.0**
YAK				*e*SS	**SnSn**	**04 12 45.3**	**+2.7**
YAK	comp=E,12nm,1.0s			pmax	pmax		
YAK	comp=Z,17nm,1.0s			pmax	pmax		
YAK	comp=N,17nm,1.4s			pmax	pmax		
YAK	comp=Z,19nm,0.4s			smax	smax		
YAK	comp=N,223nm,2.2s			smax	smax		
YAK	comp=E,117nm,1.7s			MLR	MLR		
YAK	comp=E,766nm,21.0s			MLR	MLR		
YAK	comp=Z,1μm,18.0s			MLR	MLR		
YAK	comp=N,1μm,17.0s			MLR	MLR		
YAK	**Yakutsk**	**25.80**	**347**	*e*P	**P**	**04 07 17.7**	**-0.9**
XAN	**Xi'an**	**26.44**	**273**	P	**P**	**04 07 22.5**	**-2.2**
XAN	comp=N,75nm,1.0s			pP	pP	04 07 32.0	0.0
XAN	comp=Z,7.0nm,1.0s			pmax	pmax		
XAN	comp=N,880nm,11.8s			LR	LR		
XAN	comp=E,630nm,11.8s			LR	LR		
XAN	comp=Z,850nm,13.2s			LR	LR		
SEY	**Seymchan**	**26.56**	**11**	P	**P**	**04 07 25.4**	**-0.1**
SEY	**Seymchan**	**26.56**	**11**	*ce*P	**P**	**04 07 25.9**	**+0.5**
ULN	**Ulaanbaatar**	**27.14**	**304**	*ce*P	**P**	**04 07 29.8**	**-1.3**
ULN	comp=Z,13nm,1.7s			pmax	pmax		
ULN	**Ulaanbaatar**	**27.14**	**304**	*e*P	**P**	**04 07 29.4**	**-1.7**
ENH	**Enshi**	**27.27**	**265**	*e*P	**P**	**04 07 30.9**	**-1.3**
SONA1	**Songino Array**	**27.57**	**304**	*e*P	**P**	**04 07 33.5**	**-1.4**
SONM	**Songino Array**	**27.57**	**304**	P	**P**	**04 07 33.4**	**-1.5**
SONM	comp=Z,5.4nm,0.7s,baz=106,slow=8.2,SNR=21			PcP	**PcP**	**04 10 51.7**	**-0.5**
SONM	comp=Z,1.7nm,0.8s,baz=121,slow=1.3,SNR=4.1			LR	LR	04 18 28.0	
H11N2	**WAKE ISLAND Hy 28.36 121**			T	T	04 37 18.5	
H11N1	**WAKE ISLAND Hy 28.36 121**			T	T	04 37 19.1	
H11N3	**WAKE ISLAND Hy 28.37 121**			T	T	04 37 19.8	
H11S1	**WAKE ISLAND Hy 29.07 123**			T	T	04 38 21.1	
H11S3	**WAKE ISLAND Hy 29.07 123**			T	T	04 38 18.9	
H11S2	**WAKE ISLAND Hy 29.09 123**			T	T	04 38 24.4	
TGY	**Tagaytay City**	**29.37**	**224**	LR	LR	04 19 37.2	
LZH	**Lanzhou**	**29.94**	**279**	*e*P	**P**	**04 07 57.8**	**+1.7**
LZH				pP	sP	04 08 06.8	+0.4
LZH				sP	pP	04 08 11.8	+8.4
LZH				PP	PP	04 09 43.0	+39
LZH				*e*S	S	04 14 27.0	+95
LZH				sS	ScP	04 14 47.0	+8.2
LZH				SS	ScS	04 17 41.5	-53
LZH	comp=Z,37nm,1.2s			pmax	pmax		
LZH	comp=Z,130nm,4.4s			pmax	pmax		
LZH	comp=N,1μm,13.3s			LR	LR		
LZH	comp=E,760nm,12.8s			LR	LR		
LZH	comp=Z,2μm,14.2s			LR	LR		
ZAK	**Zakamensk**	**30.04**	**308**	*e*P	**P**	**04 07 55.4**	**-1.4**
ZAK	comp=Z,5.0nm,1.1s			pmax	pmax		
TLY	**Talaya**	**30.10**	**311**	P	**P**	**04 07 56.1**	**-1.1**
TLY	**Talaya**	**30.10**	**311**	*e*P	**P**	**04 07 56.6**	**-0.6**
TLY	comp=Z,10.0nm,1.4s			pmax	pmax		
TLY	**Talaya**	**30.10**	**311**	*e*P	**P**	**04 07 57.2**	**+0.1**
GYA	**Guiyang**	**31.18**	**260**	P	**P**	**04 08 09.0**	**+1.9**
GYA	comp=Z,3.1nm,0.6s,baz=114,slow=7.4,SNR=5.7			pP	sP	04 08 18.5	+1.1
GYA				PP	**PnPn**	**04 09 12.3**	**+3.2**
GYA				PcP	**PcP**	**04 11 04.8**	**+3.1**
GYA				S	**S**	**04 13 12.0**	**+0.2**
GYA				sS	sS	04 13 29.5	+5.6
GYA				ScP	**ScP**	**04 14 44.3**	**+1.3**
GYA				SS	**SnSn**	**04 14 59.0**	**+4.4**
GYA	**Guiyang**	**31.18**	**260**	ScS	ScS	04 18 38.5	-2.0
GYA	comp=Z,20nm,0.8s			pmax	pmax		
GYA	comp=Z,120nm,4.9s			pmax	pmax		
GYA	comp=N,520nm,15.9s			LR	LR		
GYA	comp=E,500nm,16.0s			LR	LR		
GYA	comp=Z,550nm,15.8s			LR	LR		
CD2	**Chengdu**	**31.59**	**270**	P	**P**	**04 08 11.3**	**+0.7**
CD2				sP	sP	04 08 25.5	+4.6
CD2				PP	**PP**	**04 09 22.8**	**+0.8**
CD2				S	**S**	**04 13 18.3**	**+0.3**

CD2 sS sS 04 13 35.3 +5.3
CD2 SS **SS** **04 15 35.0 +1.5**
CD2 pmax pmax
comp=Z,30nm,0.6s
CD2 pmax pmax
comp=Z,120nm,5.1s
CD2 LR LR
comp=N,1µm,15.6s
CD2 LR LR
comp=Z,790nm,13.2s
MOY Mondy 31.71 310 *e*P **P** **04 08 11.9 +0.4**
GTA Gaotai 32.40 287 *e*P **P** **04 08 22.0 +4.2**
GTA pP sP 04 08 31.5 +3.4
GTA sP pP 04 08 35.5 +10
GTA PcP **PcP** **04 11 07.3 +2.5**
GTA S **S** **04 13 35.5 +4.7**
GTA sS sS 04 13 51.5 +8.7
GTA SS **SnSn** **04 15 36.0 +12**
GTA pmax pmax
comp=Z,6.0nm,0.9s
GTA pmax pmax
comp=Z,82nm,5.0s
GTA LR LR
comp=N,970nm,18.5s
GTA LR LR
comp=E,1µm,20.0s
GTA LR LR
comp=Z,600nm,13.8s
BILL Bilibino 33.81 17⇓ *e*P **P** **04 08 30.0 +0.5**
BILL *e**PP **sP** **04 08 38.8 -1.0**
BILL *e**SP pP 04 08 44.1 +7.3
BILL 04 11 09.0
BILL S **S** **04 13 53.0 +1.3**
BILL pmax pmax
comp=Z,11nm,1.2s
BILL MLR MLR
comp=Z,550nm,15.0s
BILL Bilibino 33.81 17 *e*P **P** **04 08 29.5 0.0**
comp=Z,18nm,1.5s
KMI Kunming 34.91 261 P **P** **04 08 41.0 +1.2**
KMI pP sP 04 08 49.5 -0.7
KMI sP pP 04 08 52.5 +5.3
KMI PP **PP** **04 09 59.0 -0.1**
KMI S **S** **04 14 06.3 -3.8**
KMI sS sS 04 14 19.3 -2.9
KMI SS **SnSn** **04 16 29.0 +3.6**
KMI pmax pmax
comp=Z,15nm,1.1s
KMI pmax pmax
comp=Z,130nm,5.5s
KMI LR LR
comp=N,690nm,14.0s
KMI LR LR
comp=E,410nm,14.5s
KMI LR LR
comp=Z,680nm,14.0s
TIXI Tiksi 35.02 353 P **P** **04 08 39.9 -0.1**
comp=Z,3.2nm,0.4s,baz=154,slow=7.2,SNR=7.1
TIXI LR LR 04 22 45.6
comp=Z,585nm,20.4s,baz=168,slow=36
TIXI Tiksi 35.02 353 *i* P **P** **04 08 40.7 +0.7**
TIXI Tiksi 35.02 353 *e*P **P** **04 08 38.4 -1.5**
comp=Z,5.4nm,0.8s
NIKH Nikolski High 37.68 49 *e*P **P** **04 09 01.3 -1.6**
comp=Z,129nm,1.3s
PANO Nakornpanom 37.98 248 P P 04 09 10.9 +5.1
comp=Z,16nm,1.5s
MYLDM Lahad Datu 38.16 219 *e*P **P** **04 09 07.5 +0.2**
comp=Z,23nm,1.1s
NONG Nongkai 38.51 251 P **P** **04 09 11.9 +1.7**
comp=Z,17nm,0.9s,comp=Z,3µm
CRAI Chiangrai 39.36 256 P **P** **04 09 20.1 +2.7**
comp=Z,8.1nm,1.2s
WMQ Urumqi 40.65 297 P **P** **04 09 29.3 +1.4**
WMQ pP sP 04 09 39.5 +1.2
WMQ sP pP 04 09 44.3 +9.0
WMQ PP **PnPn** **04 11 07.0 +1.4**
WMQ pmax pmax
comp=Z,12nm,0.8s
WMQ pmax pmax
comp=Z,78nm,4.6s
WMQ LR LR
comp=N,920nm,16.2s
WMQ LR LR
comp=E,170nm,14.8s
WMQ LR LR
comp=Z,170nm,16.2s
CHAI Chaiyaphum 40.71 249 P **P** **04 09 30.2 +1.6**
comp=Z,6.9nm,1.1s
PBKT Sadao Pong 41.06 251 P P 04 09 37.1 +5.6
comp=Z,9.6nm,0.9s
CMAR Chiang Mai Arr 41.48 255 P **P** **04 09 34.1 -0.8**
comp=Z,1.3nm,0.3s,baz=50,slow=7.4,SNR=3.5
CMAR PcP **PcP** **04 11 33.5 +1.1**
comp=Z,1.2nm,0.4s,baz=20,slow=2.6,SNR=3.8
CMAR LR LR 04 27 40.2
comp=Z,259nm,19.6s,baz=51,slow=38
ZAA0 Zalesovo Array 41.68 312 *e*P **P** **04 09 35.5 -0.6**
ZAA0 *e*PcP **PcP** **04 11 31.8 -0.6**
ZALV Zalesovo Beam 41.68 312 P **P** **04 09 35.1 -1.1**
comp=Z,26nm,0.9s,baz=97,slow=6.9,SNR=26
ZALV PcP **PcP** **04 11 32.3 -0.2**
comp=Z,2.8nm,0.6s,baz=116,slow=3.0,SNR=2.7
ZALV LR LR 04 27 18.2
comp=Z,264nm,18.5s,baz=70,slow=37
SRAK Srakaew 41.88 247 P **P** **04 09 35.4 -2.8**
comp=Z,45nm,1.0s,comp=Z,1µm
NAYO Nakonayok 42.22 248 P **P** **04 09 43.7 +2.7**
comp=Z,7.3nm,1.9s,comp=Z,847nm
CHBT CHBT 42.50 245 P P 04 09 50.2 +6.9
comp=Z,32nm,1.1s,comp=Z,25µm
NVS Novosibirsk 42.60 314 *e*P **P** **04 09 42.5 -1.1**
NVS pmax pmax
comp=E,23nm,1.2s
NVS pmax pmax
comp=Z,36nm,1.2s
NRIK Noril'sk 43.00 335 P **P** **04 09 45.7 -0.9**
comp=Z,2.9nm,0.4s,baz=122,slow=6.2,SNR=3.8
NRIK LR LR 04 28 31.0
comp=Z,380nm,20.6s,baz=114,slow=37
SBUM Sibu 43.78 225 *e*P **P** **04 09 52.9 -0.7**
comp=Z,13nm,1.0s
MK01 Makanchi Array 43.91 302 *e*P **P** **04 09 53.8 -0.5**
MK31 Makanchi Array 43.91 302 *e*P **P** **04 09 54.0 -0.4**
MK31 Makanchi Array 43.91 302 *e*P **P** **04 09 54.0 -0.4**
MKAR Makanchi Array 43.91 302 P **P** **04 09 53.5 -0.9**
comp=Z,14nm,0.8s,baz=88,slow=9.8,SNR=53
MKAR LR LR 04 27 27.5
comp=Z,156nm,21.0s,baz=86,slow=35
MKAR Makanchi Array 43.91 302 *e*P **P** **04 09 53.9 -0.5**
MKAR Makanchi Array 43.91 302 *e*P **P** **04 09 53.9 -0.5**
MAKZ Makanchi 44.12 302 *e*P **P** **04 09 55.5 -0.5**
MAKZ pmax pmax
comp=Z,22nm,1.0s
MAKZ Makanchi 44.12 302 *e*P **P** **04 09 55.5 -0.5**
comp=Z,22nm,1.0s
TT01 Tatalina 45.26 35 *e*P **P** **04 10 05.8 +0.9**
SVW2 Sparrevohn 45.37 38 *e*P **P** **04 10 07.2 +1.4**
comp=Z,10nm,1.0s
KSM Kuching 45.67 226 *e*P **P** **04 10 09.2 +0.6**
comp=Z,23nm,0.9s
KURK Kurchatov 45.70 308 *e*P **P** **04 10 08.1 -0.5**
KURK pmax pmax
comp=Z,53nm,0.9s
KURK Kurchatov 45.70 308 *e*P **P** **04 10 08.1 -0.5**
comp=Z,53nm,0.9s
KURBB Kurchatov Arra 45.77 308 P **P** **04 10 08.1 -1.0**
comp=Z,27nm,0.8s,baz=84,slow=8.1,SNR=101
TARA Tarawa 46.12 133 *e*P **P** **04 10 11.1 -1.1**
comp=Z,143nm,1.3s
KAPI Kappang 46.64 210 *e*P **P** **04 10 18.1 +1.9**
comp=Z,104nm,1.7s
RSO Redoubt South 46.76 38 *e*P **P** **04 10 18.0 +1.0**
KDAK Kodiak Island 46.97 42 *e*P **P** **04 10 17.9 -0.5**
KDAK pmax pmax
comp=Z,110nm,1.8s
KDAK Kodiak Island 46.97 42 *e*P **P** **04 10 17.9 -0.5**
comp=Z,110nm,1.8s
PPLA Purkeypile 47.01 35 *e*P **P** **04 10 20.1 +1.3**
comp=Z,57nm,1.6s
CAST Castle Rocks 47.06 34 *e*P **P** **04 10 19.6 +0.5**
comp=Z,11nm,1.0s
SPU Mount Spurr 47.08 37 *e*P **P** **04 10 20.1 +0.8**
BPAW Bear Paw Mtn. 47.56 33 *e*P **P** **04 10 22.2 -0.7**
comp=Z,5.2nm,0.9s
KTH Kantishna Hill 47.59 34 *e*P **P** **04 10 24.3 +1.1**
comp=Z,12nm,0.9s
MLY Manley 47.68 32 *e*P **P** **04 10 24.8 +0.9**
comp=Z,10nm,0.9s
BRLK Bradley Lake 47.72 39 *e*P **P** **04 10 25.0 +0.7**
comp=Z,50nm,1.6s
TRF Thorofare Moun 47.87 34 *e*P **P** **04 10 26.9 +1.4**
comp=Z,8.8nm,0.8s
COLD Coldfoot 47.97 29 *e*P **P** **04 10 26.8 +0.7**
comp=Z,31nm,1.8s
RC01 Rabbit Creek A 48.21 37 *e*P **P** **04 10 28.9 +0.9**
comp=Z,14nm,0.8s
BWN Browne 48.23 33 *e*P **P** **04 10 30.2 +2.1**
comp=Z,80nm,1.4s
SEW Seward 48.42 39 *e*P **P** **04 10 28.9 -0.7**
comp=Z,29nm,1.2s
MCK McKinley 48.47 34 *e*P **P** **04 10 30.6 +0.6**
MCK pmax pmax
comp=Z,11nm,0.9s
MCK McKinley 48.47 34 *e*P **P** **04 10 30.6 +0.6**
comp=Z,11nm,0.9s
PMR Palmer 48.47 37 *e*P **P** **04 10 29.6 -0.4**
PMR pmax pmax
comp=Z,11nm,0.8s
PMR Palmer 48.47 37 *e*P **P** **04 10 29.6 -0.4**
comp=Z,11nm,0.8s
RND Reindeer 48.52 34 *e*P **P** **04 10 31.6 +1.1**
RND pmax pmax
comp=Z,65nm,1.8s
RND Reindeer 48.52 34 *e*P **P** **04 10 31.6 +1.1**
comp=Z,65nm,1.8s
MDM Murphy Dome 48.75 32 *e*P **P** **04 10 33.4 +1.3**
comp=Z,21nm,1.0s
WRH Wood River Hil 48.82 33 *e*P **P** **04 10 33.6 +1.0**
comp=Z,39nm,1.9s
SML Sawmill 48.84 36 *e*P **P** **04 10 34.4 +1.5**
SML pmax pmax
comp=Z,18nm,0.8s
SML Sawmill 48.84 36 *e*P **P** **04 10 34.4 +1.5**
comp=Z,18nm,0.8s
COLA College 48.91 32⇓ *i*P **P** **04 10 34.6 +1.3**
COLA pmax pmax
comp=Z,11nm,0.8s
COLA College 48.91 32 *e*P **P** **04 10 34.7 +1.4**
comp=Z,11nm,0.6s
CCB Clear Creek Bu 48.94 33 *e*P **P** **04 10 34.6 +1.0**
comp=Z,4.4nm,0.7s
IPM Ipoh 49.20 238 *e*P **P** **04 10 36.4 +0.2**
comp=Z,13nm,1.0s
DHY Denali Highway 49.20 35 *e*P **P** **04 10 35.5 -0.2**
DHY *e*PcP **PcP** **04 11 58.2 -0.5**
SCM Sheep Creek Mo 49.31 36 *e*P **P** **04 10 37.2 +0.6**
SCM pmax pmax
comp=Z,20nm,0.9s
SCM Sheep Creek Mo 49.31 36 *e*P **P** **04 10 37.2 +0.6**
comp=Z,20nm,0.9s
HDA Harding Lake 49.32 33 *e*P **P** **04 10 37.4 +1.0**
comp=Z,11nm,1.0s
IL1 Eielson Array 49.33 32 *e*P **P** **04 10 36.5 0.0**
ILAR Eielson Array 49.33 32 P **P** **04 10 37.1 +0.6**
comp=Z,9.3nm,0.8s,baz=270,slow=6.2,SNR=7.2
ILAR LR LR 04 33 29.0
comp=Z,156nm,19.2s,baz=296,slow=38
ILB Eielson Array 49.33 32 *e*P **P** **04 10 37.2 +0.6**
MYKOM Kota Tinggi 49.34 233 *e*P **P** **04 10 36.8 -0.4**
comp=Z,22nm,1.4s
TKM2 Tokmak 2 49.43 298 *e*P **P** **04 10 38.1 +0.2**
TKM2 pmax pmax
comp=Z,27nm,1.1s
TKM2 Tokmak 2 49.43 298 *e*P **P** **04 10 38.1 +0.2**
comp=Z,27nm,1.1s
FYU Fort Yukon 49.93 30 *e*P **P** **04 10 43.8 +2.7**
comp=Z,88nm,1.8s
KLU Klutina 50.01 37 *e*P **P** **04 10 43.7 +1.8**
comp=Z,13nm,0.9s
VOSK Vostochnaya 50.05 312 *e*P **P** **04 10 41.3 -0.9**
VOSK *e* 04 12 33.4
VOSK pmax pmax
comp=Z,15nm,0.9s
VOSK Vostochnaya 50.05 312 *e*P **P** **04 10 41.3 -0.9**
comp=Z,15nm,0.9s
VOSK *e*PP **PP** **04 12 33.4 -3.6**
PAX Paxson 50.08 35 *e*P **P** **04 10 43.4 +1.0**
PAX pmax pmax
comp=Z,5.0nm,0.9s
PAX Paxson 50.08 35 *e*P **P** **04 10 43.4 +1.0**
comp=Z,4.6nm,0.9s
DIV Divide 50.12 37 *e*P **P** **04 10 43.9 +1.1**
comp=Z,17nm,1.0s
FRU Bishkek 50.15 298⇑ *i*P **P** **04 10 42.0 -1.1**
FRU pmax pmax
comp=Z,50nm,2.0s
EYAK Cordova Ski Ar 50.21 38 *e*P **P** **04 10 43.2 0.0**
comp=Z,44nm,1.4s
KSH Kashi 50.22 294 *e*P **P** **04 10 47.5 +3.6**
KSH *e*pP sP 04 10 55.5 +1.1
KSH *e*PcP **PcP** **04 12 05.3 +2.5**
KSH *e*PP **PP** **04 12 42.0 +2.9**
KSH S **S** **04 17 55.0 +0.3**
KSH Kashi 50.22 294 SS **SS** **04 21 24.3 -3.6**
KSH pmax pmax
comp=Z,130nm,5.2s
KSH LR LR
comp=N,680nm,14.9s
KSH LR LR
comp=E,740nm,16.7s
KSH LR LR
comp=Z,390nm,12.2s
AAK Ala-Archa 50.29 298⇓ *e*P **P** **04 10 43.5 -0.9**
AAK pmax pmax
comp=Z,38nm,1.8s
AAK Ala-Archa 50.29 298 *e*P **P** **04 10 43.7 -0.7**
comp=Z,26nm,1.7s
BRVK Borovoye 50.39 312 *ce*P **P** **04 10 43.4 -1.4**
BRVK pmax pmax
comp=Z,34nm,2.5s
BRVK Borovoye 50.39 312 *e*P **P** **04 10 44.0 -0.7**
comp=Z,13nm,1.0s
DOT Dot Lake 50.64 34 *e*P **P** **04 10 47.6 +1.1**
comp=Z,23nm,0.8s
BMRM Bremner River 50.71 37 *e*P **P** **04 10 47.7 +0.6**
comp=Z,14nm,0.8s
RAGM Ragged Mountai 50.76 38 *e*P **P** **04 10 47.6 +0.2**
comp=Z,39nm,1.2s
MTN Manton Dam 50.77 193 *e*P **P** **04 10 47.8 -0.2**
comp=Z,26nm,1.3s
EKS2 Erkin-Say 50.79 298 *e*P **P** **04 10 46.8 -1.3**
EKS2 pmax pmax
comp=Z,4.0nm,0.6s
EKS2 Erkin-Say 50.79 298 *e*P **P** **04 10 46.8 -1.3**
comp=Z,4.0nm,0.6s
MENT Mentasta 50.87 35 *e*P **P** **04 10 50.7 +2.3**
comp=Z,15nm,0.9s
COEN Coen 51.00 178 *e*P **P** **04 10 50.4 +0.7**
comp=Z,56nm,1.6s
ZRNK Zerenda 51.17 312 *e*P **P** **04 10 50.1 -0.5**
ZRNK pmax pmax
comp=Z,12nm,0.8s
ZRNK Zerenda 51.17 312 *e*P **P** **04 10 50.1 -0.5**
comp=Z,12nm,0.8s
EGAK Eagle 51.77 32 *e*P **P** **04 10 55.8 +0.8**
comp=Z,7.2nm,0.8s
BALM Baldy 51.79 37 *e*P **P** **04 10 55.2 -0.1**
BALM pmax pmax
comp=Z,10.0nm,1.1s
BALM Baldy 51.79 37 *e*P **P** **04 10 55.2 -0.1**
comp=Z,10nm,1.1s
PSI Prapat 51.85 239 P **P** **04 10 55.0 -1.3**
baz=90,slow=7.1
PSI Prapat 51.85 239 *e*P **P** **04 10 56.0 -0.3**
PSI *e* 04 12 10.1
PSI pmax pmax
comp=Z,9.0nm,0.9s
PSI Prapat 51.85 239 *e*P **P** **04 10 56.0 -0.3**
comp=Z,9.4nm,0.9s
PSI *e*PcP **PcP** **04 12 10.1 +1.0**
KKAR Karatay Array 52.92 300 *e*P **P** **04 11 04.0 +0.2**
KKAR Karatay Array 52.92 300 *e*P **P** **04 11 04.0 +0.2**
INK Inuvik 54.20 27 *e*P **P** **04 11 12.6 -0.2**
INK pmax pmax
comp=Z,13nm,1.1s
INK Inuvik 54.20 27 *e*P **P** **04 11 12.6 -0.2**
comp=Z,13nm,1.1s
KIP Kipapa 54.34 89 *e*P **P** **04 11 14.9 +0.4**
KIP pmax pmax
comp=Z,192nm,1.8s
KIP Kipapa 54.34 89 *e*P **P** **04 11 14.8 +0.4**
comp=Z,192nm,1.8s
SKAG Skagway 55.55 38 *e*P **P** **04 11 23.3 +0.6**
comp=Z,8.9nm,1.0s
ARU Arti 56.11 318 *d i*P **P** **04 11 25.8 -1.0**
ARU 04 13 26.5
ARU S **S** **04 19 14.0 0.0**
ARU SS **SS** **04 22 52.7 -7.2**
ARU pmax pmax
comp=Z,29nm,1.7s
ARU Arti 56.11 318 *e*P **P** **04 11 26.1 -0.7**
comp=Z,17nm,1.0s
FITZ Fitzroy Crossi 57.04 198 *e*P **P** **04 11 33.6 -0.1**
comp=Z,35nm,1.8s
KBL Kabul 57.24 291 *e*P **P** **04 11 34.9 -0.5**
KBL pmax pmax
comp=Z,7.0nm,0.8s
KBL Kabul 57.24 291 *e*P **P** **04 11 34.9 -0.5**
comp=Z,6.7nm,0.8s
WRAB Tennant Creek 57.29 188 *ce*P **P** **04 11 34.5 -1.0**
WRAB pmax pmax
comp=Z,28nm,1.2s
WRAB Tennant Creek 57.29 188 *e*P **P** **04 11 35.0 -0.5**
comp=Z,12nm,0.9s
WB2 Warramunga Arr 57.30 188 *e*P **P** **04 11 35.0 -0.5**
comp=Z,22nm,1.3s
WRA Warramunga Arr 57.30 188 P **P** **04 11 34.8 -0.8**
comp=Z,4.7nm,0.6s,baz=5.1,slow=7.1,SNR=40
UWE Uwekahuna 57.56 89 *e*P **P** **04 11 37.6 -0.2**
comp=Z,297nm,1.6s
ABKAR Akbulak array 57.71 310 *e*P **P** **04 11 37.5 -0.7**
HYB Hyderabad 58.12 268 *i* P **P** **04 11 43.0 +1.4**
DLBC Dease Lake 58.48 38 *e*P **P** **04 11 44.8 +1.3**
comp=Z,22nm,1.4s
AS01 Alice Springs 61.02 188 *e*P **P** **04 12 00.7 -0.6**
AS01 *e*PcP **PcP** **04 12 44.5 +0.2**
AS31 Alice Springs 61.03 188 *e*P **P** **04 12 01.0 -0.3**
comp=Z,1.9nm,0.8s
ASAR Alice Springs 61.03 188 P **P** **04 12 01.0 -0.4**
comp=Z,3.4nm,0.9s,baz=6.1,SNR=24
ASAR LR LR 04 38 00.8
comp=Z,149nm,20.2s,baz=1.5,slow=36
RES Resolute Bay 62.38 14 *e*P **P** **04 12 09.9 +0.1**
RES pmax pmax
comp=Z,6.0nm,0.8s
RES Resolute Bay 62.38 14 *e*P **P** **04 12 09.9 +0.1**
comp=Z,5.8nm,0.8s
TMCR Tamitsa 62.48 331 *e*P **P** **04 12 11.7 +1.1**
TMCR pmax pmax
comp=Z,12nm,0.4s
YKW3 Yellowknife Ar 63.59 30 *e*P **P** **04 12 18.4 +0.4**
comp=Z,4.7nm,0.8s
YKA Yellowknife Ar 63.63 30 P **P** **04 12 18.5 +0.2**
comp=Z,3.2nm,0.7s,baz=304,slow=6.8,SNR=79
YKB5 Yellowknife Ar 63.63 30 *e*P **P** **04 12 18.6 +0.3**
GEYT Alibeck 63.63 299 P **P** **04 12 18.7 -0.2**
comp=Z,3.8nm,0.5s,baz=46,slow=4.2,SNR=6.7
GEYT LR LR 04 41 15.9
comp=Z,114nm,19.1s,baz=310,slow=37
ARCES ARCESS Array B 63.73 339 P **P** **04 12 18.5 -0.4**
comp=Z,4.6nm,0.9s,baz=62,slow=7.5,SNR=18
ARCES LR LR 04 42 12.4
comp=Z,247nm,21.0s,baz=41,slow=38
DAG Danmarks Havn 65.51 355 *i* P **P** **04 12 30.2 -0.2**
comp=Z,9.7nm,0.9s
DAG Danmarks Havn 65.51 355 *i* P **P** **04 12 30.2 -0.2**
DAG pmax pmax
comp=Z,8.0nm,0.9s
MOS Moscow 66.99 323 *e*P **P** **04 12 38.7 -1.5**
MOS *e* 04 12 53.1
MOS pmax pmax
comp=Z,38nm,1.1s
B05A Bryant 67.20 46 P **P** **04 12 43.3 +1.6**
baz=301
VRH Novokhopyorsk 67.33 318 *e*P **P** **04 12 41.0 -1.4**
VRH pmax pmax
comp=Z,10.0nm,0.8s
OBN Obninsk 67.84 323 *ce*P **P** **04 12 45.8 +0.3**
OBN *e**PP **sP** **04 12 55.3 -0.9**
OBN *e**SP **pP** **04 12 58.2 +4.9**
OBN *e* 04 13 11.3
OBN *e*SS SS 04 26 05.3 +2.3
OBN pmax pmax
comp=Z,52nm,1.9s
OBN MLR MLR
comp=Z,185nm,17.0s
LPSR Galich'ya Gora 68.05 320 *e*P **P** **04 12 45.2 -1.7**
LPSR pmax pmax
comp=Z,10.0nm,0.8s
FIA1 FINESS Array S 68.55 332 *e*P **P** **04 12 49.8 -0.1**
FINES FINESS Array B 68.55 332 P **P** **04 12 49.5 -0.4**
comp=Z,13nm,0.8s,baz=58,slow=7.2,SNR=30
FINES LR LR 04 45 01.6
comp=Z,486nm,18.2s,baz=36,slow=38
VSR Storozhevoye 68.68 319 *e*P **P** **04 12 50.5 -0.4**
VSR pmax pmax
comp=Z,10.0nm,0.6s
B08A Colville Reser 68.72 45 *e*P **P** **04 12 52.1 +0.8**
comp=Z,6.1nm,1.1s
B08A *e*PP PP 04 15 13.2 -10
STKA Stephens Creek 68.81 180 P **P** **04 12 51.5 -0.2**
comp=Z,2.9nm,0.8s,baz=353,slow=8.1,SNR=9.1
STKA LR LR 04 40 54.9
comp=Z,146nm,21.5s,baz=12,slow=34
STKA Stephens Creek 68.81 180 *e*P **P** **04 12 51.1 -0.7**
comp=Z,1.1nm,1.0s
G05D Wamic, OR 69.23 49 P **P** **04 12 55.9 +1.4**
baz=302
I04A Tendick Farm, 69.34 50 P **P** **04 12 56.6 +1.4**
baz=302
C09A Chrisman Ranch 69.62 45 *e*P **P** **04 12 58.0 +1.2**
comp=Z,7.1nm,0.8s
C09A *e*PP PP 04 15 17.8 -13
I05D Terrebonne, OR 69.70 49 P **P** **04 12 58.5 +1.0**
baz=303
GOF Gofitskoye 69.86 312⇑ *e*P **P** **04 12 57.1 -1.2**
GOF pmax pmax
comp=Z,21nm,0.7s
BBOO Buckleboo 69.91 185 *e*P **P** **04 12 58.5 -0.1**
comp=Z,14nm,1.0s
NEW Newport 70.01 44 P **P** **04 13 00.4 +1.1**
baz=304
NEW Newport 70.01 44 *e*P **P** **04 13 00.9 +1.6**
NEW pmax pmax
comp=Z,6.0nm,0.7s
NEW Newport 70.01 44 *e*P **P** **04 13 00.9 +1.6**
comp=Z,6.0nm,0.7s
VSU Vasula 70.19 329 *ce*P **P** **04 12 59.8 -0.3**
VSU pmax pmax
comp=Z,70nm,1.7s
J05D Fort Rock, OR 70.34 50 P **P** **04 13 02.8 +1.2**
baz=303
SUMG Summit 70.43 360 *i* P **P** **04 13 02.3 +0.4**
SUMG Summit 70.43 360 *e*P **P** **04 13 01.9 0.0**
SUMG pmax pmax
comp=Z,19nm,1.4s
SUMG Summit 70.43 360 *e*P **P** **04 13 01.9 0.0**
comp=Z,19nm,1.4s
ZEI Tsey 70.57 309 *e*P **P** **04 13 01.1 -1.9**
ZEI pmax pmax
comp=Z,13nm,0.6s
KBZ Khabaz 70.67 311 P **P** **04 13 02.9 -0.4**
comp=Z,1.1nm,0.9s,baz=55,slow=3.7,SNR=17
KBZ LR LR 04 45 13.2
comp=Z,239nm,19.4s,baz=42,slow=37
KIV Kislovodsk 70.67 311 *d i*P **P** **04 13 03.2 -0.3**
KIV *e**PP **sP** **04 13 13.8 -0.4**
KIV *e**SP **PcP** **04 13 19.3 -5.1**
KIV *e* 04 13 23.1
KIV *e*PPP PPP 04 17 15.9
KIV pmax pmax
comp=Z,36nm,1.0s
KIV MLR MLR
comp=Z,234nm,16.0s
KIV Kislovodsk 70.67 311 *e*P **P** **04 13 03.5 0.0**
comp=Z,25nm,0.7s
M04C Macdoel 70.78 52 P **P** **04 13 05.9 +1.6**
baz=303
K05A Summer Lake 70.85 51 *e*P **P** **04 13 03.5 -1.2**
comp=Z,15nm,0.9s
NEY Neytrino 71.04 310⇑ *e*P **P** **04 13 06.4 +0.6**
NEY pmax pmax
comp=Z,2.0nm,0.9s
WALA Waterton Lakes 71.31 42 *e*P **P** **04 13 08.0 +0.7**
comp=Z,6.4nm,0.6s
GNI Garni 71.48 307 *ce*P **P** **04 13 09.4 +0.9**
GNI pmax pmax
comp=Z,67nm,1.2s

AKH **Akhalkalaki** 71.58 308⇑*iP* P 04 13 09.4 +0.3
O03D **Paynes Creek** 71.62 53 P P 04 13 10.8 +1.6
baz=304
UOSS **Minazif** 71.65 288 *e*P P 04 13 09.6 0.0
comp=Z,1.4nm,1.2s
CHVG **Ch'k'valeri** 71.72 310⇓*iP* P 04 13 13.0 +3.2
SCO **Scoresbysund** 71.85 354 *i* P P 04 13 11.1 +1.1
SCO **Scoresbysund** 71.85 354 *e*P P 04 13 11.1 +1.1
JTMT **Jette** 71.87 43 *e*P P 04 13 11.4 +0.7
SWMT **Swartz Lake** 72.16 44 *e*P P 04 13 13.6 +1.2
NAGGM **Naroch** 72.46 327 *e* P 04 13 17.0 +3.1
MSO **Missoula** 72.60 44 P P 04 13 16.4 +1.4
baz=306
MSO **Missoula** 72.60 44 *e*P P 04 13 16.8 +1.8
comp=Z,3.3nm,0.8s
ANN **Anapa** 73.29 314 *e*P P 04 13 16.4 -2.6
ANN *e**PP pP 04 13 26.6 -0.2
ANN *e* 04 13 31.3
ANN *e* 04 15 58.5
ANN *e*S S 04 22 42.4 -3.6
ANN pmax pmax
comp=Z,42nm,1.4s
MFID **Camas Ranch** 73.52 48 *e*P P 04 13 22.1 +1.5
comp=Z,7.1nm,0.8s
NC405 **NORSAR Array S** 73.70 337 *e*P P 04 13 21.4 +0.3
CMB **Columbia Colle** 73.79 54 *e*P P 04 13 22.2 0.0
CMB pmax pmax
comp=Z,6.0nm,1.0s
CMB **Columbia Colle** 73.79 54 *e*P P 04 13 22.1 0.0
comp=Z,5.8nm,1.0s
FCC **Fort Churchill** 73.81 27 *e*P P 04 13 21.7 -0.1
FCC pmax pmax
comp=Z,10.0nm,1.1s
FCC **Fort Churchill** 73.81 27 *e*P P 04 13 21.7 -0.1
comp=Z,9.8nm,1.1s
NC204 **NORSAR Array S** 73.87 338 *e*P P 04 13 22.6 +0.4
NB2 **NORSAR Subarra** 73.92 337 P P 04 13 22.0 -0.5
comp=Z,16nm,1.1s,baz=39,slow=6.2
NOA **NORSAR Array B** 73.92 337 P P 04 13 22.2 -0.3
comp=Z,12nm,1.0s,baz=39,slow=5.9,SNR=17
NOA LR LR 04 49 06.8
comp=Z,351nm,20.3s,baz=40,slow=38
NBO02 **NORSAR Array S** 74.02 337 *e*P P 04 13 22.8 -0.2
LRM **Limekiln Ridge** 74.03 44 *e*P P 04 13 24.9 +1.3
AKASG **Malin Array Be** 74.04 322 P P 04 13 22.6 -0.7
comp=Z,2.6nm,0.4s,baz=46,slow=6.4,SNR=26
AKASG LR LR 04 48 08.9
comp=Z,282nm,18.8s,baz=35,slow=38
AKBB **Malin Array Si** 74.04 322 *e*P P 04 13 23.1 -0.2
AKBB pmax pmax
comp=Z,12nm,1.0s
AKBB **Malin Array Si** 74.04 322 *e*P P 04 13 23.1 -0.2
comp=Z,12nm,1.0s
AKBB *e*PP PP 04 16 02.4 -5.7
KIEV **Kiev** 74.05 322⇓*iP* P 04 13 22.4 -1.0
KIEV pmax pmax
comp=Z,29nm,1.8s
KIEV **Kiev** 74.05 322 *e*P P 04 13 22.9 -0.4
comp=Z,13nm,1.0s
KIEV *e*PP PP 04 16 08.3 +0.1
AK11 **Malin Array Si** 74.08 322 *e*P P 04 13 23.1 -0.5
EGMT **Eagleton** 74.14 41 P P 04 13 25.1 +1.1
baz=308
EGMT **Eagleton** 74.14 41 *e*P P 04 13 25.3 +1.2
comp=Z,28nm,1.3s
DLMT **Dillon** 74.22 45 *e*P P 04 13 23.4 -1.3
comp=Z,10nm,0.7s
HLID **Hailey** 74.26 47 P P 04 13 26.2 +1.2
baz=307
HLID **Hailey** 74.26 47 *e*P P 04 13 25.6 +0.6
comp=Z,4.0nm,1.0s
BOZ **Bozeman (W)** 74.59 44 P P 04 13 28.2 +1.3
baz=308
BOZ **Bozeman (W)** 74.59 44 *e*P P 04 13 28.4 +1.6
BOZ pmax pmax
comp=Z,10.0nm,0.8s
BOZ **Bozeman (W)** 74.59 44 *e*P P 04 13 28.4 +1.6
comp=Z,10nm,0.8s
NV01 **Mina Array Sit** 74.91 53 *e*P P 04 13 29.3 +0.4
NVAR **Mina Array Bea** 74.91 53 P P 04 13 30.3 +1.4
comp=Z,4.0nm,0.7s,baz=284,slow=5.4,SNR=16
NVAR LR LR 04 41 44.7
comp=Z,48nm,19.9s,baz=264,slow=32
NV11 **Mina Array Sit** 75.00 53 *e*P P 04 13 30.8 +1.5
comp=Z,7.1nm,1.1s
QLMT **Earthquake Lak** 75.20 45 *e*P P 04 13 31.3 +0.8
ELK **Elko** 75.45 50 *e*P P 04 13 32.5 +0.5
ELK pmax pmax
comp=Z,3.0nm,0.8s
ELK **Elko** 75.45 50 *e*P P 04 13 32.5 +0.5
comp=Z,3.3nm,0.8s
YMR **Madison River** 75.56 45 *e*P P 04 13 33.0 +0.4
comp=Z,9.7nm,0.7s
GCMT **Greycliff** 75.58 43 *e*P P 04 13 33.1 +0.6
YFT **Old Faithful** 75.77 45 *e*P P 04 13 35.3 +1.5
comp=Z,11nm,0.8s
H17A **Grant Village** 75.95 45 P P 04 13 37.8 +2.9
baz=309
H17A **Grant Village** 75.95 45 *e*P P 04 13 35.3 +0.5
comp=Z,10nm,0.7s
IMW **Indian Meadow** 76.06 45 *e*P P 04 13 36.5 +1.1
comp=Z,11nm,0.8s
FLWY **Flagg Ranch** 76.08 45 *e*P P 04 13 37.6 +2.2
comp=Z,46nm,1.8s
SORM **Soroca** 76.14 321⇑*iP* P 04 13 35.1 -0.3
FXWY **Fox Creek** 76.17 45 *e*P P 04 13 37.0 +1.0
comp=Z,5.2nm,0.8s
RLMT **Red Lodge** 76.22 43 P P 04 13 37.5 +1.3
baz=309
RLMT **Red Lodge** 76.22 43 *e*P P 04 13 37.2 +0.9
comp=Z,7.0nm,0.8s
MOOW **Moose Ponds** 76.26 45 *e*P P 04 13 38.6 +2.1
comp=Z,7.9nm,1.1s
MOOW *e*PP PP 04 16 18.5 -8.9
HVU **Hansel Valley** 76.30 48 *e*P P 04 13 37.7 +0.9
HVU pmax pmax
comp=Z,8.0nm,0.9s
HVU **Hansel Valley** 76.30 48 *e*P P 04 13 37.6 +0.9
comp=Z,7.6nm,0.9s
GRAC **Grapevine Rang** 76.35 54 P P 04 13 38.6 +1.6
baz=307
LOHW **Long Hollow** 76.42 45 *e*P P 04 13 37.9 +0.4
comp=Z,18nm,1.8s
SNOW **Snow King Moun** 76.43 45 *e*P P 04 13 37.6 0.0
comp=Z,4.5nm,0.8s
REDW **Red Top Meadow** 76.44 46 *e*P P 04 13 37.8 +0.2
comp=Z,6.4nm,1.1s
DAC **Darwin (Calif)** 76.63 55 *e*P P 04 13 38.8 +0.1
DAC pmax pmax
comp=Z,5.0nm,0.9s
DAC **Darwin (Calif)** 76.63 55 *e*P P 04 13 38.8 +0.1
comp=Z,5.2nm,0.9s
AHID **Auburn Hatcher** 76.67 46 *e*P P 04 13 39.1 +0.2
comp=Z,5.8nm,0.8s
R11A **Troy Canyon, C** 76.67 52 P P 04 13 40.1 +1.2
baz=307,SNR=6.0
R11A **Troy Canyon, C** 76.67 52 *e*P P 04 13 39.4 +0.5
comp=Z,6.8nm,1.1s
DGMT **Dagmar** 76.69 38 P P 04 13 39.5 +0.9
baz=312
DGMT **Dagmar** 76.69 38 *e*P P 04 13 39.3 +0.6
comp=Z,9.8nm,0.7s
MPMC **Manual Prospec** 76.83 55 P P 04 13 40.9 +1.1
baz=307
FURC **Furnace Creek,** 76.99 54 P P 04 13 42.0 +1.5
baz=307
TPNV **Topopah Spring** 77.09 53 P P 04 13 41.7 +0.4
baz=307,SNR=6.4
TPNV **Topopah Spring** 77.09 53 *e*P P 04 13 41.8 +0.5
TPNV pmax pmax
comp=Z,8.0nm,0.9s
TPNV **Topopah Spring** 77.09 53 *e*P P 04 13 41.8 +0.5
comp=Z,8.0nm,0.9s
HWUT **Hardware Ranch** 77.12 47 *e*P P 04 13 41.6 +0.2
comp=Z,21nm,1.5s
DUG **Dugway, Tooele** 77.25 49 P P 04 13 43.1 +1.0
baz=308,SNR=8.8
DUG **Dugway, Tooele** 77.25 49 *e*P P 04 13 44.0 +1.9
DUG pmax pmax
comp=Z,8.0nm,0.8s
DUG **Dugway, Tooele** 77.25 49 *e*P P 04 13 44.0 +1.9
comp=Z,8.2nm,0.8s
A26A **Wade Farm, Ken** 77.46 37 P P 04 13 44.0 +1.0
baz=313
TCUT **Toone Canyon** 77.52 48 *e*P P 04 13 43.9 +0.1
comp=Z,14nm,0.7s
BW06 **Boulder Array** 77.55 45 P P 04 13 44.1 +0.2
baz=310,SNR=8.7
BW06 **Boulder Array** 77.55 45 *e*P P 04 13 44.0 +0.2
comp=Z,4.9nm,0.6s
PD31 **Pinedale Array** 77.55 45 *e*P P 04 13 43.0 -0.8
PDAR **Pinedale Array** 77.55 45 P P 04 13 44.5 +0.6
comp=Z,3.9nm,0.6s,baz=260,slow=1.7,SNR=37
CTU **Camp Tracy** 77.58 48 *e*P P 04 13 44.9 +0.9
comp=Z,7.4nm,0.9s
PSUT **Pine Spring** 77.64 51 *e*P P 04 13 44.2 -0.2
comp=Z,5.8nm,0.9s
C25A **Freed Ranch, W** 77.67 39 P P 04 13 45.9 +1.7
baz=313
B26A **Jensen Ranch,** 77.72 38 P P 04 13 45.8 +1.4
baz=313
A27A **Ledoux Ranch,** 77.80 37 P P 04 13 46.1 +1.3
baz=314
JLU **Jordanelle** 77.82 48 *e*P P 04 13 44.5 -0.9
comp=Z,30nm,2.0s
NLU **North Lily Min** 77.85 49 *e*P P 04 13 46.3 +0.8
comp=Z,5.2nm,0.8s
KWP **Kalwaria Pacla** 77.87 324 *e*P P 04 13 45.8 +0.6
KWP **Kalwaria Pacla** 77.87 324⇑*iP* P 04 13 46.3 +1.1
D25A **Fairfield** 78.02 39 P P 04 13 47.2 +1.1
baz=313
BUR08 **Bucovina Ar. S** 78.04 322 *e*P P 04 13 45.5 -0.8
BUR08 *e*PP PP 04 16 42.6 +0.5
MPU **Maple Canyon** 78.07 49 *e*P P 04 13 46.0 -0.8
comp=Z,7.2nm,0.8s
MPU *e*PP PP 04 16 45.4 +2.7
TESR **Tescani** 78.08 320⇓*iP* P 04 13 46.9 +0.5
C26A **Wahner Farm, P** 78.17 38 P P 04 13 47.9 +1.0
baz=313
CFR **Carcaliu** 78.20 318⇑*iP* P 04 13 48.4 +1.4
A28A **Rude Farm, Bot** 78.30 36 P P 04 13 49.1 +1.5
baz=314
VRI **Vrincioaia** 78.47 320⇑*iP* P 04 13 49.8 +1.2
PLOR **Plostina** 78.53 320⇓*iP* P 04 13 49.9 +1.0
C27A **Sayler Ranch,** 78.53 38 P P 04 13 48.7 -0.2
baz=314
D26A **Manning** 78.54 39 P P 04 13 49.1 +0.1
baz=313
KOLS **Kolonicke sedl** 78.56 324 *e*P P 04 13 49.5 +0.4
B28A **Dugan Ranch, T** 78.57 37 P P 04 13 49.5 +0.4
baz=314,SNR=5.1
BR131 **Keskin Array S** 78.61 311 *e*P P 04 13 48.7 -1.0
BR131 *e*PP PP 04 16 48.7 +1.5
BRTR **Keskin Array B** 78.62 311 P P 04 13 49.4 -0.3
comp=Z,2.1nm,0.7s,baz=96,slow=3.5,SNR=12
BRTR LR LR 04 50 39.9
comp=Z,95nm,18.4s,baz=30,slow=37
MSU **Marysvale** 78.69 50 *e*P P 04 13 51.0 +0.8
MSU **Marysvale** 78.69 50 *e*P P 04 13 51.0 +0.8
STHS **Stebnicka Huta** 78.70 325 *e*P P 04 13 50.9 +1.1
UZH **Uzhgorod** 78.77 324⇑*iP* P 04 13 50.9 +0.8
UZH *i* 04 13 58.7
A29A **Manning Farm,** 78.77 36 P P 04 13 51.0 +0.8
baz=315,SNR=5.9
OJC **Ojcow** 78.78 326 *e*P P 04 13 50.4 +0.2
OJC **Ojcow** 78.78 326 *e*P P 04 13 50.8 +0.6
OJC pmax pmax
comp=Z,20nm,1.1s
OJC **Ojcow** 78.78 326 *e*P P 04 13 50.8 +0.6
comp=Z,20nm,1.1s
E26A **Carlson Angus** 78.91 39 P P 04 13 51.2 +0.1
baz=313
D27A **Center** 78.94 38 P P 04 13 51.3 +0.1
baz=314
P17A **Butcher Ranch,** 78.95 49 *e*P P 04 13 51.8 +0.2
comp=Z,9.5nm,0.8s
CRVS **Cervenica-Dubn** 78.96 324 *e*P P 04 13 51.1 -0.2
MTPU **Mount Pierson** 78.98 50 *e*P P 04 13 51.3 -0.7
comp=Z,7.6nm,0.8s
TRPA **Tarpa** 79.00 323⇓*e*SKKPdf P 04 13 52.1 +0.7
B29A **Wagenman Farm,** 79.04 36 P P 04 13 51.6 -0.1
baz=315
BR231 **Keskin MP Arra** 79.06 312 *e*P P 04 13 50.2 -1.8
BR231 *e*PP PP 04 16 48.7 -2.1
DOPR **Dopca** 79.09 320⇑*iP* P 04 13 53.1 +1.1
NIE **Niedzica** 79.13 325 *e*P P 04 13 52.4 +0.2
MLR **Muntele Rosu** 79.13 320⇓*iP* P 04 13 53.5 +1.1
MLR **Muntele Rosu** 79.13 320 *e*P P 04 13 51.8 -0.6
MLR pmax pmax
comp=Z,16nm,1.4s
MLR **Muntele Rosu** 79.13 320 *e*P P 04 13 51.8 -0.6
comp=Z,16nm,1.4s
P18A **Preston Nutter** 79.15 48 *e*P P 04 13 53.5 +0.7
comp=Z,49nm,2.0s
A30A **Hoffart Farm,** 79.19 35 P P 04 13 53.2 +0.6
baz=316,SNR=6.9
KNB **Kanab** 79.22 52 *e*P P 04 13 53.9 +0.8
KNB pmax pmax
comp=Z,30nm,1.5s
KNB **Kanab** 79.22 52 *e*P P 04 13 53.9 +0.8
comp=Z,30nm,1.5s
F26A **Logopole** 79.23 40 P P 04 13 53.4 +0.6
baz=313
SRU **San Rafael Swe** 79.31 49 *e*P P 04 13 53.8 +0.2
SRU pmax pmax
comp=Z,10.0nm,0.7s
SRU **San Rafael Swe** 79.31 49 *e*P P 04 13 53.8 +0.2
comp=Z,9.8nm,0.7s
SRU *e*PP PP 04 16 41.7 -11
K22A **Casper** 79.33 44 P P 04 13 53.3 -0.3
baz=311
K22A **Casper** 79.33 44 *e*P P 04 13 52.5 -1.0
comp=Z,5.5nm,0.9s
ULM **Lac du Bonnet** 79.34 33 P P 04 13 53.4 +0.1
comp=Z,3.0nm,0.6s,baz=320,slow=4.6,SNR=4.5
ULM LR LR 04 51 30.9
comp=Z,48nm,19.3s,baz=74,slow=38
ULM **Lac du Bonnet** 79.34 33 *e*P P 04 13 53.9 +0.6
comp=Z,52nm,1.8s
E27A **Carson** 79.39 39 P P 04 13 54.5 +0.8
baz=314
B30A **Myrvik Farm, E** 79.53 36 P P 04 13 55.0 +0.6
baz=316,SNR=8.5
F27A **Lemmon** 79.55 39 P P 04 13 55.1 +0.6
baz=314
BC3 **Big Chuckawall** 79.61 56 P P 04 13 55.3 +0.1
baz=308
G26A **Maurine** 79.65 40 P P 04 13 55.3 +0.2
baz=313,SNR=7.9
RSSD **Black Hills** 79.70 42 P P 04 13 55.7 +0.1
baz=313
LANS **Liptovska Anna** 79.70 325 *e*P P 04 13 56.8 +1.5
KECS **Kecovo** 79.72 324 *e*P P 04 13 57.3 +1.9
E28A **Huff** 79.72 38 P P 04 13 56.0 +0.5
baz=314
KSP **Ksiaz** 79.84 328 *e*P P 04 13 56.3 +0.3
B31A **Greenbush Farm** 79.86 35 P P 04 13 56.8 +0.7
baz=316
ARR **Arges** 79.89 320⇑*iP* P 04 13 57.7 +1.2
D29A **Pettibone, Tap** 79.92 37 P P 04 13 56.5 0.0
baz=315
U15A **North Rim** 79.92 52 *e*P P 04 13 57.4 +0.3
comp=Z,7.8nm,1.0s
I25A **Rochford** 79.93 42 P P 04 13 57.4 +0.5
baz=313
G27A **Dupree** 79.93 40 P P 04 13 56.7 +0.1
baz=314,SNR=6.7
C30A **Mose, Pekin** 80.00 36 P P 04 13 56.8 -0.1
baz=316
O20A **White River Ci** 80.00 47 P P 04 13 57.8 +0.5
baz=311,SNR=5.7
O20A **White River Ci** 80.00 47 *e*P P 04 13 58.8 +1.5
comp=Z,6.8nm,0.9s
H26A **Fairpoint** 80.02 41 P P 04 13 57.0 -0.2
baz=313
A32A **Rocking H Ranc** 80.04 35 P P 04 13 57.0 -0.1
baz=317
PDMCI **Parker Dam,Lak** 80.07 54 P P 04 13 57.6 +0.1
baz=309
MORC **Moravsky Berou** 80.10 327⇑*iP* P 04 13 58.0 +0.5
MORC **Moravsky Berou** 80.10 327 *e*P P 04 13 58.2 +0.7
MORC pmax pmax
comp=Z,43nm,1.1s
MORC **Moravsky Berou** 80.10 327 *e*P P 04 13 58.2 +0.7
comp=Z,43nm,1.1s
F28A **McLaughlin** 80.18 39 P P 04 13 58.0 +0.1
baz=314
DPC **Dobruska-Polom** 80.19 328 *e*P P 04 13 58.7 +0.7
DPC **Dobruska-Polom** 80.19 328 *e*P P 04 13 58.7 +0.7
KRLC **Kraliky** 80.20 327 *e*P P 04 13 58.4 +0.4
KRLC **Kraliky** 80.20 327 *e*P P 04 13 58.4 +0.4
LOT **Lotru** 80.27 321⇑*iP* P 04 14 00.3 +1.7
C31A **Landman Farms,** 80.28 36 P P 04 13 58.3 -0.1
baz=316
D30A **Buchanan** 80.29 37 P P 04 13 58.4 -0.1
baz=316
H27A **Howes** 80.37 40 P P 04 13 59.0 0.0
baz=314,SNR=9.1
I26A **New Underwood** 80.38 41 P P 04 13 59.2 0.0
baz=313,SNR=5.6
B32A **Ashes, Strandq** 80.40 35 P P 04 13 59.1 0.0
baz=317,SNR=9.4
PSZ **Piszkesteto** 80.40 324⇓*iP* P 04 14 00.6 +1.5
PSZ **Piszkesteto** 80.40 324⇓*e*SKKPdf P 04 14 00.0 +0.8
PSZ **Piszkesteto** 80.40 324 *e*P P 04 13 59.9 +0.8
PSZ pmax pmax
comp=Z,27nm,1.3s
PSZ **Piszkesteto** 80.40 324 *e*P P 04 13 59.9 +0.8
comp=Z,27nm,1.3s
VYHS **Vyhne** 80.46 325 *e*P P 04 13 59.9 +0.5
A33A **Warroad** 80.52 34 P P 04 13 59.9 +0.3
baz=318,SNR=6.6
PV09 **Paradox Valley** 80.53 49 *e*P P 04 14 02.3 +2.0
E30A **Jud** 80.65 37 P P 04 14 00.3 -0.1
baz=316
G28A **Parade** 80.66 39 P P 04 14 00.5 0.0
baz=314
F29A **Eureka** 80.67 38 P P 04 14 00.7 +0.1
baz=315
PV10 **Paradox Valley** 80.67 49 *e*P P 04 14 02.9 +1.9
I27A **Quinn** 80.77 41 P P 04 14 01.3 +0.1
baz=314,SNR=7.9
AGMN **Agassiz Nation** 80.78 35 P P 04 14 00.8 -0.2
baz=317
AGMN **Agassiz Nation** 80.78 35 *e*P P 04 14 01.4 +0.3
comp=Z,24nm,1.5s
BRG **Berggiesshubel** 80.79 329 *e*P P 04 14 00.8 -0.2
comp=Z,27nm,2.0s
BRG *e* 04 14 14.8
comp=Z,6.1nm,0.9s
comp=N,589nm,11.2s
comp=E,421nm,17.9s
comp=Z,741nm,19.3s
PVCC **Panska Ves** 80.79 329 *e*P P 04 14 01.8 +0.7
PVCC **Panska Ves** 80.79 329 *e*P P 04 14 01.8 +0.7
C32A **Crookston** 80.82 35 P P 04 14 00.8 -0.5
baz=317
N23A **Red Feather La** 80.82 45 P P 04 14 01.1 -0.7
baz=312
N23A **Red Feather La** 80.82 45 *e*P P 04 14 02.4 +0.6
comp=Z,6.3nm,0.9s
D31A **Mcclaflin, Tow** 80.82 36 P P 04 14 01.2 -0.1
baz=316
PV05 **Paradox Valley** 80.83 49 *e*P P 04 14 04.0 +2.1
CLL **Collm** 80.83 330⇓*iP* P 04 14 01.1 -0.2
comp=Z,54nm,2.0s
CLL *i* 04 14 05.1
comp=Z,11nm,0.9s
CLL *i* 04 14 07.7
CLL *i* 04 14 14.4
CLL **Collm** 80.83 330⇓*iP* P 04 14 01.1 -0.2
CLL *i* 04 14 07.7
CLL *i* 04 14 14.4
CLL pmax pmax
comp=Z,54nm,2.0s
CLL **Collm** 80.83 330 *e*P P 04 14 01.4 +0.1
comp=Z,11nm,0.8s
VRAC **Vranov** 80.86 327⇓*iP* P 04 14 03.0 +1.5
H28A **Mission Ridge** 80.89 40 P P 04 14 02.1 +0.3
baz=314,SNR=6.1
Y14A **Wickenburg** 81.03 54 *e*P P 04 14 03.4 +0.6
comp=Z,17nm,0.9s
F30A **Leola** 81.06 38 P P 04 14 02.6 -0.2
baz=316
D32A **Dogwood Acres,** 81.09 36 P P 04 14 02.1 -0.7
baz=317
E31A **Nome** 81.10 37 P P 04 14 03.0 +0.1
baz=316
PV01 **Paradox Valley** 81.11 49 *e*P P 04 14 03.9 +0.6
GOPC **GO Pecny, Ondr** 81.17 328 AMS AMS 04 56 00.0
comp=Z,600nm,15.6s
B34A **Aery, Baudette** 81.18 34 P P 04 14 02.9 -0.4
baz=318
C33A **Trail** 81.21 35 P P 04 14 03.3 -0.1
baz=318
PRU **Pruhonice** 81.22 328 *e*P P 04 14 03.8 +0.4
PRU *e*pP sP 04 14 17.1 +2.9
PRU **Pruhonice** 81.22 328 *e*P P 04 14 03.8 +0.4
PRU *e* 04 14 17.1
BZS **Buzias** 81.23 322⇑*iP* P 04 14 03.5 0.0
I28A **Midland** 81.28 40 P P 04 14 04.4 +0.5
baz=314,SNR=7.1
H29A **Onida** 81.33 39 P P 04 14 03.9 -0.3
baz=315
TREC **Trest** 81.34 328 *e*P P 04 14 04.4 +0.3
TREC *e*pP sP 04 14 17.9 +3.0
TREC **Trest** 81.34 328 *e*P P 04 14 04.4 +0.3
TREC *e* 04 14 17.9
J27A **Elkhorn Farm,** 81.36 41 P P 04 14 05.7 +1.3
baz=314,SNR=5.4
SMCO **Snowmass** 81.37 47 *e*P P 04 14 05.7 +0.8
comp=Z,4.2nm,0.8s
F31A **Hecla** 81.42 38 P P 04 14 04.1 -0.5
baz=316
G30A **Faulkton** 81.51 39 P P 04 14 05.7 +0.6
baz=316,SNR=11
D33A **AnnSam, Waubun** 81.63 35 P P 04 14 05.3 -0.4
baz=318
J28A **Allard Ranch,** 81.65 41 P P 04 14 05.9 +0.1
baz=314
B35A **Bob, Littlefor** 81.68 34 P P 04 14 05.4 -0.5
baz=319
C34A **RKJ Ranch, Bem** 81.69 35 P P 04 14 05.4 -0.5
baz=318
I29A **Vivian Onida** 81.71 40 P P 04 14 05.6 -0.5
baz=315
X16A **Lo Mia Camp, P** 81.73 53 *e*P P 04 14 06.4 -0.2
comp=Z,4.1nm,0.8s
ISCO **Idaho Springs** 81.74 46 P P 04 14 08.1 +1.4
baz=312,SNR=6.9
ISCO **Idaho Springs** 81.74 46 *e*P P 04 14 08.7 +1.9
ISCO pmax pmax
comp=Z,5.0nm,0.8s
ISCO **Idaho Springs** 81.74 46 *e*P P 04 14 08.7 +1.9
comp=Z,4.7nm,0.8s
MVCO **Mesa Verde** 81.75 49 P P 04 14 07.4 +0.6
baz=311
MVCO **Mesa Verde** 81.75 49 *e*P P 04 14 07.5 +0.7
comp=Z,6.0nm,0.9s
G31A **Conde** 81.90 38 P P 04 14 07.6 +0.5
baz=316
F32A **Veblen** 81.96 37 P P 04 14 07.4 0.0
baz=317
D34A **Park Rapids** 81.97 35 P P 04 14 08.2 +0.7
baz=318,SNR=7.2
E33A **Westby DABS, E** 82.03 36 P P 04 14 07.9 +0.1
baz=318,SNR=8.0
C35A **Jirik Farms, M** 82.07 34 P P 04 14 07.9 0.0
baz=319
SOP **Sopron** 82.09 326⇓*e*SKKPdf P 04 14 09.2 +1.2
SUSD **Miller** 82.09 39 P P 04 14 08.3 +0.1
baz=316,SNR=5.0
J29A **Okreek** 82.13 40 P P 04 14 08.5 +0.1
baz=315
CONA **Conrad Observa** 82.22 326 *i* PcP P 04 14 10.0 +1.2
comp=Z,19nm,1.5s
G32A **Webster** 82.23 38 P P 04 14 09.3 +0.5
baz=317
PKSM **Moragy** 82.23 324⇓*iP* P 04 14 09.3 +0.5
I30A **Oacoma** 82.23 40 P P 04 14 09.5 +0.6
baz=316,SNR=11
KHC **Kasperske Hory** 82.28 328 *e*P P 04 14 09.3 +0.2
KHC *e*pP sP 04 14 22.3 +2.4
KHC **Kasperske Hory** 82.28 328 *e*P P 04 14 09.3 +0.2
KHC *e* 04 14 22.3
KHC **Kasperske Hory** 82.28 328 *e*P P 04 14 09.2 +0.2
comp=Z,3.4nm,0.9s
F33A **5 Mile Ranch,** 82.38 37 P P 04 14 09.6 0.0
baz=317
S22A **4UR Ranch, Cre** 82.40 48 P P 04 14 11.6 +1.4
baz=312,SNR=8.0
S22A **4UR Ranch, Cre** 82.40 48 *e*P P 04 14 11.2 +1.0
comp=Z,4.9nm,0.8s
GEC2 **GERESS Array S** 82.45 328 *e*P P 04 14 09.2 -0.8
GEC2 pmax pmax
comp=Z,25nm,1.9s
GEC2 **GERESS Array S** 82.45 328 *e*P P 04 14 09.2 -0.8
comp=Z,25nm,1.9s
GERES **GERESS Array B** 82.45 328 P P 04 14 09.9 -0.1

comp=Z,2.3nm,0.6s,baz=36,slow=5.4,SNR=12
GERES LR LR 04 54 03.0
comp=Z,256nm,18.0s,baz=26,slow=38
GEA0 GERESS Array S 82.45 328 *e*P **P 04 14 09.7 -0.4**
D35A Remer 82.50 35 P **P 04 14 09.9 -0.3**
baz=319
C36A Pine Crest Far 82.53 33 P **P 04 14 10.1 -0.3**
baz=320
X18A Snowflake 82.60 52 *e*P **P 04 14 08.7 -2.5**
comp=Z,6.0nm,1.0s
J30A Dallas 82.62 40 P **P 04 14 11.0 +0.1**
baz=316
E35A Pequot Lakes 82.73 35 P **P 04 14 11.3 -0.1**
baz=319
G33A Ortonville 82.78 37 P **P 04 14 12.2 +0.5**
baz=317,SNR=9.0
H32A Carlson Farm, 82.80 38 P **P 04 14 11.7 -0.2**
baz=317
GRFO Grafenberg 82.81 330 *e*P **P 04 14 12.2 +0.5**
GRFO pmax pmax
comp=Z,32nm,1.3s
GRFO Grafenberg 82.81 330 *e*P **P 04 14 12.2 +0.5**
comp=Z,32nm,1.3s
D36A Goodland 82.83 34 P **P 04 14 11.3 -0.6**
baz=319
C37A Embarrass 82.84 33 P **P 04 14 11.6 -0.4**
baz=320
F34A Alexandria 82.90 36 P **P 04 14 12.2 -0.1**
baz=318
EYMN Ely 82.97 33 P **P 04 14 12.5 -0.1**
baz=320
MOA Molln 82.97 327 *i* PcP **P 04 14 14.0 +1.4**
comp=Z,12nm,1.5s
H33A Prehn Over Nor 83.01 38 P **P 04 14 13.4 +0.5**
baz=317,SNR=7.1
K30A Basset 83.02 40 P **P 04 14 13.1 +0.1**
baz=316
G34A Benson 83.13 37 P **P 04 14 13.5 0.0**
baz=318
D37A Cotton 83.17 34 P **P 04 14 13.5 -0.1**
baz=320
F35A Swanville 83.17 36 P **P 04 14 13.8 +0.1**
baz=318
SDCO Great Sand Dun 83.18 47 P **P 04 14 15.4 +1.1**
baz=313
SDCO Great Sand Dun 83.18 47 *e*P **P 04 14 15.0 +0.7**
comp=Z,3.6nm,0.9s
C38A Sawbill Land. 83.24 33 P **P 04 14 14.2 +0.1**
baz=320
E36A McGregor 83.28 35 P **P 04 14 14.6 +0.4**
baz=319
J32A Parkston 83.42 39 P **P 04 14 15.2 +0.1**
baz=317
H34A Spellman Lake, 83.49 37 P **P 04 14 15.5 +0.1**
baz=318
K31A O'Neill 83.50 40 P **P 04 14 15.6 +0.1**
baz=316
TUC Tucson 83.50 54 P **P 04 14 16.4 +0.6**
baz=310
SOKA Soboth 83.53 326 *i* P **P 04 14 16.0 +0.3**
comp=Z,22nm,1.2s
ECSD EROS Data Cent 83.77 38 P **P 04 14 16.9 +0.1**
baz=317
ECSD EROS Data Cent 83.77 38 *e*P **P 04 14 17.6 +0.8**
comp=Z,5.3nm,0.8s
L31A Butterfield Fa 83.78 40 P **P 04 14 17.1 +0.2**
baz=316
H35A Sunnyside Ranc 83.92 37 P **P 04 14 18.1 +0.5**
baz=318
KBA Koelnbreinsper 83.97 327 *i* PcP **P 04 14 18.9 +0.9**
comp=Z,8.8nm,0.9s
MYKA Terra Mystica 84.18 327 *e*PcP **P 04 14 19.5 +0.5**
comp=Z,18nm,2.1s
T25A Trinidad 84.23 47 P **P 04 14 20.3 +0.7**
baz=313
T25A Trinidad 84.23 47 *e*P **P 04 14 20.4 +0.7**
comp=Z,9.3nm,0.8s
PMOR Pomariorio Ree 84.36 114 *e*T T 05 47 16.6
comp=Z,22nm,0.2s
K33A Hardington 84.40 39 P **P 04 14 20.1 0.0**
baz=317
H36A Jessenland, He 84.44 36 P **P 04 14 20.8 +0.6**
baz=319
SPMN Marine on St. 84.47 35 *e*P **P 04 14 22.0 +1.7**
comp=Z,28nm,1.9s
ANMO Albuquerque 84.49 50 P **P 04 14 22.3 +1.4**
baz=312
ANMO Albuquerque 84.49 50 *ce*P **P 04 14 22.4 +1.4**
ANMO pmax pmax
comp=Z,7.0nm,1.2s
ANMO Albuquerque 84.49 50 *e*P **P 04 14 21.3 +0.4**
comp=Z,6.8nm,1.1s
BGNE Belgrade 84.69 41 P **P 04 14 21.3 -0.3**
baz=317
PDG Podgorica 84.71 321 ⇑ *i*P **P 04 14 22.7 +1.1**
J35A Milford 84.73 38 P **P 04 14 21.9 +0.2**
baz=318
RETA Reutte 84.74 329 *i* PcP **P 04 14 22.2 +0.5**
comp=Z,24nm,1.5s
WLF Walferdange 84.77 333 P **P 04 14 23.3 +1.5**
comp=Z,16nm,2.0s
K34A Le Mars 84.80 39 P **P 04 14 22.0 0.0**
baz=318
PPT Papeete 84.83 116 LR LR 04 45 22.5
comp=Z,75nm,20.8s,baz=311,slow=31
PPT2 Papeete2 84.84 117 *e*LR LR 04 40 41.4
comp=Z,184nm,27.8s
PPT2 Papeete2 84.84 117 *e*T T 05 47 52.3
comp=Z,4.5nm,0.3s
H37A Dierke Farm, C 84.91 36 P **P 04 14 22.8 +0.2**
baz=320
BNM Barren Site 84.92 50 *e*P **P 04 14 23.5 +0.4**
TIAR Tiarei 84.98 116 *e*T T 05 48 02.1
comp=Z,3.2nm,0.3s
BFO Black Forest 85.04 331 *e*P **P 04 14 22.8 -0.4**
BFO pmax pmax
comp=Z,18nm,1.1s
BFO Black Forest 85.04 331 *e*P **P 04 14 22.8 -0.4**
comp=Z,18nm,1.1s
N32A Stulken Farm, 85.08 41 P **P 04 14 24.0 +0.4**
baz=316
I37A Lemond, Waseca 85.11 36 P **P 04 14 24.0 +0.3**
baz=319
SCHQ Schefferville 85.11 16 P **P 04 14 23.5 +0.1**
comp=Z,2.2nm,0.9s,baz=304,slow=15,SNR=2.7
SCHQ LR LR 04 53 52.3
comp=Z,152nm,20.9s,baz=331,slow=37
FETA Feichten 85.12 329 *i* PcP **P 04 14 24.0 +0.2**
comp=Z,7.5nm,0.9s
121A Cookes Peak, D 85.27 52 P **P 04 14 25.9 +1.1**
baz=312
I38A Scanlan Farm, 85.59 36 P **P 04 14 26.2 +0.2**
baz=320
FUORN Ofenpass-Fuorn 85.63 329 *e*P **P 04 14 26.8 +0.3**
comp=Z,14nm,0.8s
K36A Gilmore City 85.64 38 P **P 04 14 27.3 +1.0**
baz=319
CBKS Cedar Bluff 85.70 43 P **P 04 14 26.7 -0.1**
baz=316
P32A Huiting Farm, 85.74 42 P **P 04 14 26.9 +0.1**
baz=316
M35A Neola 85.90 39 P **P 04 14 28.3 +0.7**
baz=318
L36A Harm Buss Farm 85.94 38 P **P 04 14 27.7 0.0**
baz=319
K37A Belmond 85.94 37 P **P 04 14 28.0 +0.2**
baz=319
O33A Hebron 85.95 41 P **P 04 14 27.8 -0.1**
baz=317
N34A Lincoln 85.95 40 P **P 04 14 28.1 +0.2**
baz=318
MEH Mehetia 86.11 116 *e*T T 05 49 26.7
comp=Z,43nm,0.3s
TUE Stuetta 86.13 329 *e*P **P 04 14 29.1 +0.2**
comp=Z,39nm,1.9s
O34A Beatrice 86.34 41 P **P 04 14 30.0 +0.2**
baz=318
M36A Felix, Anita 86.36 39 P **P 04 14 30.6 +0.7**
baz=319
L37A Phoenix Point, 86.37 38 P **P 04 14 30.2 +0.3**
baz=319
N35A Tabor 86.38 40 P **P 04 14 30.5 +0.6**
baz=318
Q33A Connelly Farm, 86.60 42 P **P 04 14 31.2 +0.1**
baz=317
O35A Humboldt 86.68 40 P **P 04 14 32.0 +0.6**
baz=318
P34A Walnut Farm, R 86.73 41 P **P 04 14 32.2 +0.4**
baz=318
L38A Oak Wood Farm, 86.74 37 P **P 04 14 32.2 +0.5**
baz=320
N36A Muff Farm, Cla 86.75 39 P **P 04 14 32.8 +1.0**
baz=319
P35A Duane Minner, 87.17 41 P **P 04 14 34.2 +0.3**
baz=318
N37A Lee Faris, Mou 87.17 39 P **P 04 14 34.3 +0.5**
baz=319
KSU1 Kansas State U 87.17 41 P **P 04 14 34.2 +0.3**
baz=318
KSU1 Kansas State U 87.17 41 *e*P **P 04 14 32.7 -1.2**
comp=Z,9.0nm,0.6s
M38A Pleasantville 87.18 38 P **P 04 14 34.4 +0.6**
baz=320
O36A Bolckow 87.26 40 P **P 04 14 34.6 +0.3**
baz=319
T32A Huddler Ranch, 87.32 44 P **P 04 14 34.8 +0.1**
baz=316
MNTX Cornudas Mount 87.34 52 P **P 04 14 35.5 +0.6**
baz=313
MNTX Cornudas Mount 87.34 52 *e*P **P 04 14 35.8 +1.0**
comp=Z,5.8nm,1.3s
MSTX Muleshoe 87.38 48 P **P 04 14 35.1 0.0**
baz=314
AMTX Amarillo 87.39 47 P **P 04 14 35.5 +0.4**
baz=315
AMTX Amarillo 87.39 47 *e*P **P 04 14 36.8 +1.7**
comp=Z,10.0nm,1.0s
O37A Wolven Farm, M 87.65 39 P **P 04 14 36.8 +0.6**
baz=319
Q35A Mercer Eighty, 87.66 41 P **P 04 14 36.6 +0.3**
baz=318
U32A Winter Ranch, 87.86 45 P **P 04 14 36.2 -1.0**
baz=316
N39A Derby Farms, D 87.93 38 P **P 04 14 36.6 -0.9**
baz=320
P37A Lathrop 87.98 40 P **P 04 14 38.5 +0.7**
baz=319
V32A Arapaho 88.31 45 P **P 04 14 39.8 +0.4**
baz=316
U33A Lingo Farm, Me 88.31 44 P **P 04 14 39.9 +0.5**
baz=317
R36A Gordon, Harris 88.33 41 P **P 04 14 39.8 +0.3**
baz=318
P38A Dawn 88.37 39 P **P 04 14 40.0 +0.5**
baz=320
S35A Otter Creek Ra 88.37 42 P **P 04 14 39.9 +0.2**
baz=318
O39A Kirksville 88.38 38 P **P 04 14 39.7 +0.1**
baz=320
T34A McClaskey Farm 88.39 43 P **P 04 14 40.5 +0.7**
baz=317
U34A Anderson Ranch 88.63 44 P **P 04 14 41.8 +1.0**
baz=317
V33A Lossen Ranch, 88.66 45 P **P 04 14 41.6 +0.6**
baz=317
S36A Lake Cedric, C 88.73 42 P **P 04 14 42.9 +1.6**
baz=318
O40A La Belle 88.81 38 P **P 04 14 42.9 +1.2**
baz=320
W33A Caddo, Fort Co 89.04 45 P **P 04 14 41.3 -1.5**
baz=317
V34A Guthrie 89.08 44 P **P 04 14 43.0 0.0**
baz=317
U35A Pawnee 89.12 43 P **P 04 14 43.0 -0.2**
baz=318
WMOK Wichita Mounta 89.16 46 *e*P **P 04 14 45.5 +2.0**
WMOK pmax pmax
comp=Z,20nm,1.8s
WMOK Wichita Mounta 89.16 46 *e*P **P 04 14 45.5 +2.0**
comp=Z,20nm,1.8s
P40A Paris 89.18 38 P **P 04 14 43.6 +0.2**
baz=320
R38A Fenwick Farm, 89.27 40 P **P 04 14 44.0 +0.2**
baz=319
V35A Meyer Ranch, C 89.50 44 P **P 04 14 44.1 -0.9**
baz=318
T37A Cheneyville 18 89.53 42 P **P 04 14 44.7 -0.4**
baz=319
R39A Chumby, Stover 89.61 40 P **P 04 14 45.0 -0.4**
baz=320
HDIL Hopedale 89.71 36 P **P 04 14 45.2 -0.7**
baz=322
T38A Diamond 89.93 41 P **P 04 14 47.0 +0.1**
baz=319
W35A Tecumseh 89.93 44 P **P 04 14 46.6 -0.4**
baz=318
S39A Bolivar 89.94 40 P **P 04 14 46.7 -0.3**
baz=320
TUL1 Leonard 89.97 43 P **P 04 14 46.5 -0.7**
baz=318
TUL1 Leonard 89.97 43 *e*P **P 04 14 46.3 -0.9**
comp=Z,12nm,1.2s
V36A Jenks 89.98 43 P **P 04 14 46.7 -0.5**
baz=318
R40A Maddies Statio 90.02 39 P **P 04 14 46.9 -0.4**
baz=320
TX31 Lajitas Ar. Si 90.03 52 *e*P **P 04 14 46.9 -0.8**
TXAR Lajitas Array 90.03 52 P **P 04 14 48.8 +1.0**
comp=Z,2.7nm,0.7s,baz=297,slow=3.4,SNR=38
TXAR LR LR 04 49 16.4
comp=Z,64nm,21.7s,baz=0.0,slow=32
ABTX Abilene, Hawle 90.18 48 P **P 04 14 48.3 +0.1**
baz=316
Z33A Whitaker Ranch 90.22 47 P **P 04 14 48.0 -0.4**
baz=316
W36A Wetumka 90.30 44 P **P 04 14 48.2 -0.5**
baz=318
X35A Drake 90.43 45 P **P 04 14 49.4 +0.1**
baz=318
S40A Lebanon 90.43 40 P **P 04 14 49.5 +0.2**
baz=320
133A Hamilton Ranch 90.62 47 P **P 04 14 50.4 +0.1**
baz=316
Z34A Collier Ranch, 90.64 46 P **P 04 14 50.1 -0.3**
baz=317
X36A Centrahoma 90.65 44 P **P 04 14 50.6 +0.2**
baz=318
W37B Quinton 90.74 43 P **P 04 14 51.0 +0.2**
baz=318
V38A Canehill 90.75 42 P **P 04 14 50.9 0.0**
baz=319
T40A Mansfield 90.77 40 P **P 04 14 50.8 -0.1**
baz=320
U39A Green Forest 90.85 41 P **P 04 14 51.1 -0.2**
baz=320
233A Rising Star 91.05 48 P **P 04 14 53.1 +0.8**
baz=316
Z35A Perchaven, San 91.05 46 P **P 04 14 52.0 -0.3**
baz=317
134A White-Moore Ra 91.13 47 P **P 04 14 52.7 +0.1**
baz=317
V39A Pettigrew 91.17 42 P **P 04 14 52.6 -0.3**
baz=319
X37A Clayton 91.18 44 P **P 04 14 52.3 -0.5**
baz=318
Y36A Durant 91.18 45 P **P 04 14 52.8 0.0**
baz=318
U40A Yellville 91.20 41 P **P 04 14 52.8 -0.1**
baz=320
W38A Poteau 91.28 43 P **P 04 14 53.0 -0.3**
baz=319
X38A Whitesboro 91.42 43 P **P 04 14 53.2 -0.7**
baz=319
333A Richland Sprin 91.50 48 P **P 04 14 53.9 -0.6**
baz=316
WHTX Lake Whitney, 91.91 47 P **P 04 14 56.6 +0.3**
baz=317
X39A Fountain Ranch 91.92 43 P **P 04 14 56.6 +0.3**
baz=319
334A Lometa 91.94 48 P **P 04 14 56.4 -0.1**
baz=317
MIAR Mount Ida 92.19 43 P **P 04 14 57.3 -0.2**
baz=319
MIAR Mount Ida 92.19 43 *e*P **P 04 14 57.8 +0.3**
MIAR pmax pmax
comp=Z,5.0nm,0.6s
MIAR Mount Ida 92.19 43 *e*P **P 04 14 57.8 +0.3**
comp=Z,4.9nm,0.6s
W41A Tony Mavity, V 92.42 41 P **P 04 14 58.5 -0.1**
baz=320
W41B Gary Mavity, V 92.42 41 P **P 04 14 58.5 -0.1**
baz=320
338A Crockett 93.62 46 P **P 04 15 03.3 -0.8**
baz=318
KEST Kesra 94.77 323 LR LR 05 03 39.4
comp=Z,146nm,19.3s,baz=334,slow=39
ESDC Sonseca Array 97.02 334 LR LR 05 03 10.2
comp=Z,171nm,21.0s,baz=340,slow=38
TORD Torodi Ar. Bea 117.09 315 PKP **PKPdf 04 20 32.5 -0.7**
comp=Z,0.4nm,0.6s,baz=43,slow=1.9,SNR=11
TORD PP PP 04 21 33.5 -8.8
comp=Z,0.6nm,0.8s,baz=43,slow=7.8,SNR=3.2
DBIC Dimbokro 126.04 317 PKP **PKPdf 04 20 50.0 -0.4**
comp=Z,2.4nm,0.6s,baz=14,slow=1.2,SNR=6.1
DBIC Dimbokro 126.04 317 PKIKP **PKPdf 04 20 50.0 -0.4**
QSPA South Pole Qui 127.03 180 *e*PKPdf **PKPdf 04 20 50.3 -0.4**
SAML Samuel 144.13 44 *e*PKPdf **PKPab 04 21 21.8 +0.3**
LPAZ La Paz 146.64 59 PKPbc **PKPbc 04 21 30.7 +0.2**
comp=Z,5.2nm,0.8s,baz=350,slow=3.0,SNR=12
LPAZ La Paz 146.64 59 *e*PKP2 **PKPbc 04 21 30.5 0.0**
LPAZ La Paz 146.64 59 *e*PKPdf **PKPbc 04 21 30.5 0.0**
PB11 IPOC Station P 147.88 66 *e*PKPbc **PKPbc 04 21 32.7 -0.6**
SIV San Ignacio 150.98 49 PKPbc **PKPbc 04 21 41.5 +0.5**
comp=Z,12nm,0.9s,baz=323,slow=0.7,SNR=9.4
LCO Las Campanas 152.06 82 *e*PKPbc **PKPbc 04 21 44.7 +1.2**

ROM 26 04:10:28.3±0.4, 35.76N×14.97E, h18km±3km, MI3.5/7,
Error ellipse: s-maj=10.9km s-min=5.4km az=81.0,
Central Mediterranean Sea

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
HAVL	**Avola**	**1.21**	**6**	Pn	Pn	04 10 50.3	0.0
HAVL				Sn	Sg	04 11 07.2	-0.2
HMDC	**Modica**	**1.21**	**353**	Pn	Pn	04 10 50.0	-0.3
HMDC				Sn	Sb	04 11 06.0	+0.1
SSY	**Sortino**	**1.39**	**3**	Pn	Pb	04 10 53.6	-0.2
SSY				Sn	Sb	04 11 12.2	+0.9
	1μm,0.6s						
HVZN	**Vizzini**	**1.43**	**352**	Pn	Pb	04 10 54.1	-0.4
HVZN				Sn	Sb	04 11 12.9	+0.5
	731nm,0.6s						
AGST	**Augusta-Monte**	**1.51**	**8**	Pn	Pb	04 10 56.1	+0.4
AGST				Sn	Sb	04 11 15.0	+0.5
	345nm,0.4s						
HCRL	**Carlentini**	**1.52**	**2**	Pn	Pn	04 10 55.0	+0.4
HCRL				Sn	Sb	04 11 14.8	-0.1
	1μm,0.3s						
HAGA	**Augusta**	**1.53**	**5**	Pn	Pn	04 10 55.2	+0.5
HAGA				Sn	Sb	04 11 15.3	+0.2
	719nm,0.9s						
RAFF	**Raffo Rosso**	**1.54**	**342**	Pn	Pn	04 10 55.5	+0.6
RAFF				Sn	Sg	04 11 17.0	-1.1
	297nm,0.7s						
HLNI	**Lentini**	**1.59**	**357**	Pn	Pn	04 10 55.7	+0.2
HLNI				Sg	Sb	04 11 16.3	-0.5
	227nm,0.3s						
GALF	**Gagliano Caste**	**1.98**	**351**	Pn	Pb	04 11 02.6	-1.1

NIED ***26*** *04:14:00, 38.30N×141.80E, h62km, Mw4.1 Best double couple: M0 1.76000×10^15 NP1:φs67.00000°, δ75.00000°, λ-167.00000°. NP2:φs333.00000°, δ77.00000°, λ-16.00000°.*
ISCJB ***26*** *04:14:40.7±0.6, 38.28N±0.04×141.81E±0.07, h65km±4km, mb3.8/15, Error ellipse: s-maj=10.1km s-min=5.1km az=22.3*
JMA ***26*** *04:14:42.0, 38.29N×141.76E, h56km±1km, M4.2*
JMA Felt II J1.
IDC ***26*** *04:14:43.4±2.4, 38.23N×141.72E, h74km±22km, mb3.6/15, mb1 3.8/19, mb1mx3.7/41, mbtmp4.0/19, Error ellipse: s-maj=18.3km s-min=14.2km az=85.0*
ISC 26 04:14:41.5±1.2, 38.28N±0.05×141.84E±0.08, h54km±9km, n46, σ1s21/52, mb3.8/15, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**0.42**	**295**	P	**Pn**	**04 14 52.4**	**+0.2**
JIO				S	**Sn**	**04 14 59.7**	**-0.1**
OFUJ	**Ofunato**	**0.81**	**351**	P	**Pn**	**04 14 57.1**	**+0.2**
OFUJ				S	**Sn**	**04 15 08.2**	**+0.1**
JMK	**Ichinoseki**	**0.83**	**324**	P	**Pn**	**04 14 57.4**	**+0.3**
JMK				S	**Sn**	**04 15 08.3**	**-0.1**
JMM	**Marumori**	**0.92**	**244**	P	**Pn**	**04 14 58.0**	**-0.3**
JMM				S	**Sn**	**04 15 09.8**	**-0.8**
JOU	**Okura**	**0.93**	**276**	P	**Pn**	**04 14 58.4**	**0.0**
JOU				S	**Sn**	**04 15 10.6**	**-0.2**
JFK	**Kawauchi**	**1.19**	**220**	P	**Pn**	**04 15 01.9**	**0.0**
JFK				S	**Sn**	**04 15 16.9**	**-0.2**
JOM	**Ohasama**	**1.27**	**341**	P	**Pn**	**04 15 03.3**	**+0.4**
JOM				S	**Sn**	**04 15 19.3**	**+0.4**
JYK	**Kaneyama**	**1.32**	**299**	P	**Pn**	**04 15 03.8**	**+0.1**
JYK				S	**Sn**	**04 15 20.2**	**0.0**
JYS	**Shirataka**	**1.40**	**268**	P	**Pn**	**04 15 04.9**	**+0.2**
JYS				S	**Sn**	**04 15 22.3**	**+0.3**
JFT	**Otama**	**1.41**	**238**	P	**Pn**	**04 15 05.3**	**+0.4**
JFT				S	**Sn**	**04 15 22.3**	**-0.1**
MJAR	**Matsushiro Arr**	**3.37**	**240**	P	**Pn**	**04 15 33.1**	**+1.5**
	16nm,0.3s,baz=348,slow=6.0,SNR=63						
MAT	**Matsushiro**	**3.37**	**240**	P	**Pn**	**04 15 33.5**	**+1.8**
MAT				S	**Sn**	**04 16 15.4**	**+5.0**
JHJ	**Hachijo jima 2**	**5.41**	**199**	P	**Pn**	**04 15 59.0**	**-0.6**
	78nm,0.3s,baz=92,slow=15,SNR=12						
JHJ				S	**Sn**	**04 16 57.1**	**-3.5**
	34nm,0.3s,baz=307,slow=20,SNR=3.2						
ASAJ	**Asahikawa**	**5.86**	**5**	P	**Pn**	**04 16 05.1**	**-0.6**
	6.9nm,0.3s,baz=220,slow=12,SNR=14						
ASAJ				S	**Sn**	**04 17 09.9**	**-1.6**
	baz=165,slow=20,SNR=2.1						
USRK	**Ussuriysk Ar.**	**9.48**	**312**	P	**Pn**	**04 16 56.2**	**+0.9**
	1.4nm,0.3s,baz=122,slow=14,SNR=11						
KSRS	**Korea Array**	**11.03**	**270**	P	**Pn**	**04 17 18.7**	**+2.2**
	0.7nm,0.3s,baz=80,slow=14,SNR=4.4						
JCJ	**Chichijima**	**11.16**	**178**	P	Pn	04 17 15.0	-3.3
	8.8nm,0.3s,baz=49,slow=20,SNR=11						
SEY	**Seymchan**	**25.50**	**11**	P	**P**	**04 20 05.8**	**+1.4**
	1.7nm,0.5s,baz=209,slow=13,SNR=5.0						
SONM	**Songino Array**	**27.39**	**302**	P	**P**	**04 20 21.4**	**-0.5**
	0.9nm,0.6s,baz=122,slow=10,SNR=5.8						
H11N2	**WAKE ISLAND Hy**	**28.52**	**123**	T	T	04 50 55.2	
	baz=316,slow=75,SNR=155						
H11N1	**WAKE ISLAND Hy**	**28.53**	**123**	T	T	04 51 12.3	
	baz=316,slow=75,SNR=174						
H11N3	**WAKE ISLAND Hy**	**28.54**	**123**	T	T	04 51 02.5	
	baz=316,slow=75,SNR=91						
H11S1	**WAKE ISLAND Hy**	**29.28**	**125**	T	T	04 51 48.0	
	baz=318,slow=76,SNR=183						
H11S3	**WAKE ISLAND Hy**	**29.28**	**125**	T	T	04 51 44.1	
	baz=318,slow=76,SNR=186						
H11S2	**WAKE ISLAND Hy**	**29.30**	**125**	T	T	04 51 53.6	
	baz=318,slow=76,SNR=163						
ZALV	**Zalesovo Beam**	**41.33**	**311**	P	**P**	**04 22 21.1**	**-0.6**
	2.1nm,0.4s,baz=83,slow=8.1,SNR=6.6						
MKAR	**Makanchi Array**	**43.75**	**301**	P	**P**	**04 22 40.9**	**-0.6**
	2.2nm,0.6s,baz=85,slow=9.9,SNR=17						
KURBB	**Kurchatov Arra**	**45.51**	**307**	P	**P**	**04 22 54.6**	**-0.8**
	4.1nm,0.6s,baz=82,slow=8.3,SNR=27						
GUN	**Gumba**	**47.38**	**275**	*e*P	**P**	**04 23 10.2**	**-0.5**
	21nm,0.5s						
KKN	**Kakani**	**47.90**	**275**	*e*P	**P**	**04 23 13.6**	**-1.1**
PKIN	**Phulchoki**	**47.91**	**275**	*e*P	**P**	**04 23 12.9**	**-1.9**
	7.4nm,0.5s						
DMN	**Daman**	**48.12**	**275**	*e*P	**P**	**04 23 13.7**	**-2.7**
	8.0nm,0.4s						
ILAR	**Eielson Array**	**48.27**	**33**	P	**P**	**04 23 16.9**	**+0.2**
	0.5nm,0.6s,baz=270,slow=6.9,SNR=8.6						
GKN	**Gorkha**	**48.31**	**276**	*e*P	**P**	**04 23 17.4**	**-0.3**
	11nm,0.4s						
KOLN	**Koldanda**	**49.23**	**276**	*e*P	**P**	**04 23 24.6**	**-0.2**
	6.8nm,0.4s						
PYUN	**Piuthan**	**49.55**	**277**	*e*P	**P**	**04 23 27.2**	**-0.1**
	13nm,0.4s						
INK	**Inuvik**	**53.13**	**28**	P	**P**	**04 23 53.4**	**+0.2**
	1.2nm,0.8s,baz=295,slow=4.8,SNR=7.9						
WRA	**Warramunga Arr**	**58.34**	**188**	P	**P**	**04 24 30.3**	**-0.7**
	1.1nm,0.5s,baz=6.3,slow=7.1,SNR=18						
ASAR	**Alice Springs**	**62.07**	**188**	P	**P**	**04 24 56.1**	**-0.4**
	0.6nm,0.7s,baz=13,slow=9.9,SNR=8.2						
YKA	**Yellowknife Ar**	**92.56**	**31**	P	**P**	**04 24 59.5**	**+0.1**
	0.3nm,0.6s,baz=302,slow=6.6,SNR=8.3						
ARCES	**ARCESS Array B**	**62.95**	**339**	P	**P**	**04 25 01.9**	**0.0**
	1.3nm,0.9s,baz=50,slow=8.4,SNR=3.7						
FINES	**FINESS Array B**	**67.87**	**332**	P	**P**	**04 25 33.5**	**-0.2**
	0.9nm,0.9s,baz=32,slow=8.2,SNR=2.4						
AKASG	**Malin Array Be**	**73.52**	**322**	P	**P**	**04 26 07.8**	**-0.5**
	0.3nm,0.3s,baz=45,slow=6.4,SNR=3.9						
PDAR	**Pinedale Array**	**76.56**	**46**	P	**P**	**04 26 26.7**	**+0.4**
	0.5nm,0.5s,baz=284,slow=1.9,SNR=7.3						

TXAR	**Lajitas Array**	**89.10**	**53**	P		**P**	**04 27 31.3**	**+0.1**
	0.5nm,0.7s,baz=293,slow=3.2,SNR=7.2							
LPAZ	**La Paz**	**145.76**	**59**	PKPbc	**PKPbc**		**04 34 15.7**	**0.0**
	0.6nm,0.5s,baz=42,slow=4.0,SNR=5.3							

*ISCJB **26** 04:24:24.0±0.6,37.45N±0.03×20.77E±0.03,h16km±4km, Error ellipse: s-maj=5.5km s-min=3.3km az=136.7*
*ATH **26** 04:24:24.6,37.51N×20.89E,h22km±1km,ML3.3/10,Error ellipse: s-maj=1.9km s-min=0.9km az=43.0*
*CSEM **26** 04:24:24.9±0.2,37.50N×20.87E,h10km,ML3.3,Error ellipse: s-maj=4.6km s-min=2.8km az=46.0*
*THE **26** 04:24:24.5,37.51N×20.88E,h0km±1km,ML3.4/16,Error ellipse: s-maj=1.4km s-min=0.5km az=234.0*

ISC 26 04:24:25.6±0.9,37.51N±0.03×20.90E±0.03,h16km±6km, n129,σ1≥15/177,Ionian Sea

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ZKS	**Zakynthos**	**0.20**	**333**	P	**Pg**	**04 24 30.4**	**0.0**
ZKS				S	**Sg**	**04 24 34.9**	**+1.2**
ZKS	**Zakynthos**	**0.20**	**333**	P	**Pg**	**04 24 31.1**	**+0.6**
ZKS				S	**Sg**	**04 24 34.7**	**+1.0**
ZKS				AML	AML	04 24 37.2	
	comp=E,77582μm,0.5s						
ZKS				AML	AML	04 24 37.7	
	comp=N,61406μm,0.4s						
VTN	**Vitineika**	**0.46**	**29**	P	**Pb**	**04 24 34.2**	**-1.2**
VTN	**Vitineika**	**0.46**	**29**	P	**Pb**	**04 24 34.2**	**-1.2**
KFL	**Anninata**	**0.60**	**351**	P	**Pg**	**04 24 36.2**	**-1.3**
KFL				S	**Sb**	**04 24 45.4**	**-0.7**
KFL	**Anninata**	**0.60**	**351**	P	**Pg**	**04 24 36.1**	**-1.4**
KFL				S	**Sb**	**04 24 45.4**	**-0.7**
KFL	**Anninata**	**0.60**	**351**	P	**Pg**	**04 24 36.1**	**-1.4**
AMT	**Artemida-Makis**	**0.64**	**88**	P	**Pg**	**04 24 37.2**	**-1.0**
AMT				S	**Sb**	**04 24 46.4**	**-0.8**
AMT	**Artemida-Makis**	**0.64**	**88**	P	**Pg**	**04 24 37.2**	**-1.0**
AMT				S	**Sb**	**04 24 46.4**	**-0.8**
AMT	**Artemida-Makis**	**0.64**	**88**	P	**Pb**	**04 24 37.8**	**-0.6**
AMT				S	**Sb**	**04 24 47.7**	**+0.4**
AMT				AML	AML	04 24 52.0	
	comp=N,6148μm,0.4s						
AMT				AML	AML	04 24 53.1	
	comp=E,6570μm,0.5s						
RLS	**Riolos of Patr**	**0.70**	**39**	P	**Pg**	**04 24 38.1**	**-1.3**
RLS				S	**Sb**	**04 24 48.2**	**-0.8**
RLS	**Riolos of Patr**	**0.70**	**39**	P	**Pg**	**04 24 38.3**	**-1.1**
RLS				S	**Sb**	**04 24 48.2**	**-0.8**
RLS	**Riolos of Patr**	**0.70**	**39**	S	**Sb**	**04 24 48.0**	**-1.0**
RLS				AML	AML	04 24 56.3	
	comp=N,2100μm,0.5s						
RLS				AML	AML	04 24 58.7	
	comp=E,1550μm,0.4s						
VLS	**Valsamata**	**0.71**	**340**	P	**Pg**	**04 24 37.8**	**-1.7**
VLS				S	**Sb**	**04 24 48.9**	**-0.2**
VLS	**Valsamata**	**0.71**	**340**	P	**Pg**	**04 24 37.8**	**-1.7**
VLS				S	**Sb**	**04 24 48.9**	**-0.2**
DRO	**Drossia**	**0.78**	**55**	P	**Pg**	**04 24 39.3**	**-1.4**
DRO				S	**Sb**	**04 24 50.9**	**-0.2**
DRO	**Drossia**	**0.78**	**55**	P	**Pg**	**04 24 39.6**	**-1.1**
DRO				S	**Sb**	**04 24 50.9**	**-0.2**
DRO	**Drossia**	**0.78**	**55**	P	**Pg**	**04 24 39.4**	**-1.3**
DRO				S	**Sb**	**04 24 51.6**	**+0.5**
DRO				AML	AML	04 24 59.2	
	comp=N,6261μm,0.4s						
DRO				AML	AML	04 24 59.3	
	comp=E,4213μm,0.4s						
AXS	**Araxos**	**0.78**	**29**	P	**Pg**	**04 24 39.5**	**-1.3**
AXS				S	**Sb**	**04 24 51.4**	**+0.3**
AXS	**Araxos**	**0.78**	**29**	P	**Pg**	**04 24 39.5**	**-1.3**
AXS				S	**Sb**	**04 24 51.4**	**+0.3**
ITM	**Ithomi**	**0.88**	**112**	P	**Pg**	**04 24 41.2**	**-1.5**
ITM				S	**Sb**	**04 24 54.9**	**+0.8**
ITM	**Ithomi**	**0.88**	**112**	P	**Pg**	**04 24 41.2**	**-1.5**
ITM				S	**Sb**	**04 24 54.9**	**+0.8**
ITM	**Ithomi**	**0.88**	**112**	P	**Pg**	**04 24 40.9**	**-1.8**
ITM				S	**Sn**	**04 24 56.2**	**+0.3**
ITM				AML	AML	04 24 59.9	
	comp=E,1804μm,0.4s						
ITM				AML	AML	04 25 03.9	
	comp=N,2096μm,0.4s						
PYL	**PYLOS**	**0.91**	**132**	P	**Pg**	**04 24 41.5**	**-1.8**
PYL				S	**Sb**	**04 24 55.8**	**+0.8**
PYL	**PYLOS**	**0.91**	**132**	P	**Pg**	**04 24 41.4**	**-1.8**
PYL				S	**Sg**	**04 24 54.3**	**-0.9**
PYL	**PYLOS**	**0.91**	**132**	P	**Pg**	**04 24 41.4**	**-1.8**
PYL				S	**Sg**	**04 24 54.3**	**-0.9**
PYL				AML	AML	04 24 59.0	
	comp=E,2156μm,0.5s						
PYL				AML	AML	04 25 07.9	
	comp=N,1235μm,0.5s						
PDO	**Prodromos**	**1.10**	**11**	P	**Pg**	**04 24 45.0**	**-2.0**
PDO				S	**Sn**	**04 25 01.9**	**+0.5**
PDO	**Prodromos**	**1.10**	**11**	P	**Pg**	**04 24 45.0**	**-2.0**
PDO				S	**Sn**	**04 25 01.9**	**+0.5**
PDO	**Prodromos**	**1.10**	**11**	P	**Pg**	**04 24 44.6**	**-2.4**
PDO				S	**Sn**	**04 25 02.5**	**+1.1**
PDO				AML	AML	04 25 05.3	
	comp=N,6040μm,0.3s						
PDO				AML	AML	04 25 06.8	
	comp=E,5310μm,0.4s						
LAKA	**Lakka**	**1.12**	**49**	P	**Pg**	**04 24 45.4**	**-1.8**
LAKA				S	**Sn**	**04 25 02.8**	**+1.0**
LAKA	**Lakka**	**1.12**	**49**	P	**Pg**	**04 24 45.4**	**-1.8**
LAKA				S	**Sn**	**04 25 02.8**	**+1.0**
LAKA	**Lakka**	**1.12**	**49**	P	**Pg**	**04 24 45.1**	**-2.1**
KLV	**Kalavryta, Ach**	**1.12**	**61**	P	**Pg**	**04 24 45.7**	**-1.6**
KLV				S	**Sn**	**04 25 02.7**	**+0.8**
KLV	**Kalavryta, Ach**	**1.12**	**61**	P	**Pg**	**04 24 45.7**	**-1.6**
KLV				S	**Sn**	**04 25 02.7**	**+0.8**
KLV	**Kalavryta, Ach**	**1.12**	**61**	P	**Pg**	**04 24 44.9**	**-2.4**
KLV				AML	AML	04 25 09.3	
	comp=N,986μm,0.7s						
KLV				AML	AML	04 25 12.5	
	comp=E,892μm,0.6s						
VLX	**Vlachokerasia**	**1.18**	**97**	P	**Pg**	**04 24 46.6**	**-1.9**
VLX				S	**Sn**	**04 25 04.4**	**+0.9**
VLX	**Vlachokerasia**	**1.18**	**97**	P	**Pg**	**04 24 46.6**	**-1.9**
VLX				S	**Sn**	**04 25 04.4**	**+0.9**
VLX	**Vlachokerasia**	**1.18**	**97**	P	**Pn**	**04 24 48.1**	**+0.5**
PVO	**Paravola**	**1.21**	**24**	P	**Pg**	**04 24 47.0**	**-1.9**
PVO				S	**Sn**	**04 25 05.1**	**+1.2**
PVO	**Paravola**	**1.21**	**24**	P	**Pb**	**04 24 47.9**	**-0.2**
PVO				S	**Sn**	**04 25 05.1**	**+1.2**
PVO	**Paravola**	**1.21**	**24**	P	**Pb**	**04 24 47.9**	**-0.2**
EFP	**Efpalio**	**1.21**	**41**	P	**Pb**	**04 24 47.7**	**-0.4**
EFP	**Efpalio**	**1.21**	**41**	P	**Pb**	**04 24 47.7**	**-0.4**
LKD2	**Lefkada island**	**1.29**	**351**	P	**Pg**	**04 24 48.0**	**-2.4**
LKD2				S	**Sn**	**04 25 07.8**	**+1.8**
LKD2	**Lefkada island**	**1.29**	**351**	P	**Pg**	**04 24 48.0**	**-2.4**
LKD2				S	**Sn**	**04 25 06.6**	**+0.6**
LKD2	**Lefkada island**	**1.29**	**351**	P	Pg	04 24 47.1	-3.3
LKD2				S	**Sn**	**04 25 06.6**	**+0.6**
LKD2				AML	AML	04 25 12.7	
	comp=N,3219μm,0.5s						
LKD2				AML	AML	04 25 15.2	
	comp=E,2580μm,0.6s						
KALE	**Kalithea**	**1.31**	**48**	P	**Pn**	**04 24 49.9**	**+0.5**
KALE				S	**Sn**	**04 25 09.2**	**+2.6**
KALE	**Kalithea**	**1.31**	**48**	P	**Pn**	**04 24 49.9**	**+0.5**
KALE				S	**Sn**	**04 25 09.2**	**+2.6**
KALE	**Kalithea**	**1.31**	**48**	P	**Pn**	**04 24 50.5**	**+1.1**
ANX	**Ano Chora**	**1.34**	**36**	P	**Pg**	**04 24 49.4**	**-2.1**
ANX				S	**Sn**	**04 25 10.4**	**+2.9**
ANX	**Ano Chora**	**1.34**	**36**	P	**Pg**	**04 24 49.4**	**-2.1**
ANX				S	**Sn**	**04 25 10.4**	**+2.9**
THAL	**Thalero**	**1.49**	**69**	P	**Pg**	**04 24 54.0**	**-0.2**
THAL	**Thalero**	**1.49**	**69**	P	**Pg**	**04 24 54.0**	**-0.2**
DSF	**Desfina**	**1.56**	**55**	P	**Pn**	**04 24 53.4**	**+0.5**
DSF	**Desfina**	**1.56**	**55**	P	**Pn**	**04 24 53.4**	**+0.5**
DSF	**Desfina**	**1.56**	**55**	P	**Pg**	**04 24 55.6**	**-0.1**
EVR	**Evrytania**	**1.57**	**27**	P	**Pg**	**04 24 56.9**	**+1.1**
DSL	**Palaion Diasel**	**1.62**	**5**	P	**Pn**	**04 24 53.7**	**0.0**
DSL				S	**Sg**	**04 25 16.3**	**-1.7**
DSL	**Palaion Diasel**	**1.62**	**5**	P	**Pn**	**04 24 53.7**	**0.0**
DSL				S	**Sg**	**04 25 16.3**	**-1.7**
DSL	**Palaion Diasel**	**1.62**	**5**	P	**Pn**	**04 24 53.4**	**-0.2**
LTK	**Loutraki**	**1.71**	**72**	P	**Pn**	**04 24 55.6**	**+0.7**
LTK	**Loutraki**	**1.71**	**72**	P	**Pn**	**04 24 55.6**	**+0.7**
LTK	**Loutraki**	**1.71**	**72**	P	**Pn**	**04 24 55.8**	**+0.9**
PROD	**Prodromos**	**1.75**	**64**	P	**Pb**	**04 24 56.9**	**-0.4**
PROD	**Prodromos**	**1.75**	**64**	P	**Pb**	**04 24 56.9**	**-0.4**
VLI	**Veliai**	**1.81**	**115**	P	**Pn**	**04 24 57.4**	**+1.2**
VLI	**Veliai**	**1.81**	**115**	P	**Pn**	**04 24 57.4**	**+1.2**
DID	**Didima**	**1.85**	**90**	P	**Pn**	**04 24 57.4**	**+0.6**
DID	**Didima**	**1.85**	**90**	P	**Pn**	**04 24 57.2**	**+0.4**
DID				S	**Sn**	**04 25 19.7**	**-0.3**
DID	**Didima**	**1.85**	**90**	P	**Pn**	**04 24 57.2**	**+0.4**
DID				S	**Sn**	**04 25 19.7**	**-0.3**
DID				AML	AML	04 25 26.3	
	comp=N,1105μm,0.5s						
DID				AML	AML	04 25 27.6	
	comp=E,1082μm,1.0s						
AGG	**Agios Georgios**	**1.88**	**36**	P	**Pb**	**04 24 59.2**	**-0.4**
AGG	**Agios Georgios**	**1.88**	**36**	P	**Pb**	**04 24 59.2**	**-0.4**
VIL2	**Platees**	**2.00**	**69**	P	**Pn**	**04 24 59.1**	**+0.3**
LKR	**Lokris**	**2.01**	**55**	P	**Pn**	**04 24 59.5**	**+0.6**
LKR				S	**Sb**	**04 25 26.3**	**-0.2**
LKR	**Lokris**	**2.01**	**55**	P	**Pn**	**04 24 59.5**	**+0.6**
LKR				S	**Sb**	**04 25 26.3**	**-0.2**
LKR	**Lokris**	**2.01**	**55**	P	**Pn**	**04 24 59.9**	**+1.0**
VILL	**Villia**	**2.01**	**70**	P	**Pn**	**04 24 59.5**	**+0.5**
VILL				S	**Sb**	**04 25 26.3**	**-0.5**
VILL	**Villia**	**2.01**	**70**	P	**Pn**	**04 24 59.5**	**+0.5**
VILL				S	**Sb**	**04 25 26.3**	**-0.5**
IGT	**Igoumenitsa**	**2.06**	**348**	P	**Pn**	**04 25 00.9**	**+1.2**
IGT	**Igoumenitsa**	**2.06**	**348**	P	**Pn**	**04 25 00.9**	**+1.2**
KYTH	**Kithira**	**2.11**	**125**	P	**Pn**	**04 25 01.6**	**+1.3**
KYTH	**Kithira**	**2.11**	**125**	P	**Pn**	**04 25 01.6**	**+1.3**
SGD	**Sagiada**	**2.16**	**346**	P	**Pn**	**04 25 01.4**	**+0.4**
SGD	**Sagiada**	**2.16**	**346**	P	**Pn**	**04 25 01.4**	**+0.4**
SGD	**Sagiada**	**2.16**	**346**	P	**Pn**	**04 25 02.5**	**+1.5**
THL	**Klokotos Trika**	**2.23**	**23**	P	**Pn**	**04 25 02.8**	**+0.9**
THL	**Klokotos Trika**	**2.23**	**23**	P	**Pn**	**04 25 02.8**	**+0.9**
SMIA	**Simia**	**2.27**	**52**	P	**Pn**	**04 25 03.5**	**+1.0**
SMIA	**Simia**	**2.27**	**52**	P	**Pn**	**04 25 03.5**	**+1.0**
SMIA	**Simia**	**2.27**	**52**	P	**Pn**	**04 25 03.7**	**+1.1**
VLY	**Voula,Athens**	**2.32**	**81**	P	**Pn**	**04 25 03.3**	**+0.1**
VLY				S	**Sn**	**04 25 34.1**	**+2.7**
VLY	**Voula,Athens**	**2.32**	**81**	P	**Pn**	**04 25 03.6**	**+0.5**
VLY				S	**Sn**	**04 25 34.1**	**+2.7**
VLY	**Voula,Athens**	**2.32**	**81**	P	**Pn**	**04 25 03.6**	**+0.5**
ATHU	**Athens Univers**	**2.33**	**78**	P	**Pn**	**04 25 02.4**	**-0.9**
ATHU	**Athens Univers**	**2.33**	**78**	P	**Pn**	**04 25 02.4**	**-0.9**
KEK	**Kerkira**	**2.36**	**339**	P	**Pn**	**04 25 03.9**	**+0.1**
KEK	**Kerkira**	**2.36**	**339**	P	**Pn**	**04 25 03.9**	**+0.1**
FYTO	**Fytoko, Volos**	**2.48**	**40**	P	**Pn**	**04 25 05.6**	**+0.3**
FYTO	**Fytoko, Volos**	**2.48**	**40**	P	**Pn**	**04 25 05.6**	**+0.3**
ANKY	**Antikythira Is**	**2.53**	**130**	P	**Pn**	**04 25 07.2**	**+1.1**
ANKY	**Antikythira Is**	**2.53**	**130**	P	**Pn**	**04 25 07.2**	**+1.1**
SKIA	**Skiathos**	**2.60**	**50**	P	**Pn**	**04 25 07.5**	**+0.4**
SKIA	**Skiathos**	**2.60**	**50**	P	**Pn**	**04 25 08.0**	**+0.9**
SKIA	**Skiathos**	**2.60**	**50**	P	**Pn**	**04 25 08.0**	**+0.9**
PAIG	**Paliouri**	**3.24**	**41**	P	**Pn**	**04 25 15.8**	**-0.1**
PAIG	**Paliouri**	**3.24**	**41**	P	**Pn**	**04 25 15.8**	**-0.1**
VAM	**Vamos**	**3.39**	**127**	P	**Pn**	**04 25 18.7**	**+0.8**
VAM	**Vamos**	**3.39**	**127**	P	**Pn**	**04 25 18.7**	**+0.8**
OHR	**Ohrid**	**3.59**	**359**	*e*Pn	**Pn**	**04 25 20.3**	**-0.5**
OHR	**Ohrid**	**3.59**	**359**	*e*Pn	**Pn**	**04 25 20.3**	**-0.5**
TIP	**Timpagrande**	**3.66**	**298**	P	**Pn**	**04 25 21.3**	**-0.4**
TIP	**Timpagrande**	**3.66**	**298**	P	**Pn**	**04 25 21.3**	**-0.4**
OUR	**Ouranopolis**	**3.70**	**39**	P	**Pn**	**04 25 22.5**	**+0.4**
OUR	**Ouranopolis**	**3.70**	**39**	P	**Pn**	**04 25 22.5**	**+0.4**
SOH	**Sokhos**	**3.81**	**29**	P	**Pn**	**04 25 24.0**	**+0.2**
SOH	**Sokhos**	**3.81**	**29**	P	**Pn**	**04 25 24.0**	**+0.2**
KNT	**Kendrikon**	**3.96**	**22**	P	**Pn**	**04 25 26.4**	**+0.7**
KNT	**Kendrikon**	**3.96**	**22**	P	**Pn**	**04 25 26.4**	**+0.7**
TAR1	**Taranto**	**4.12**	**318**	*e*Pn	**Pn**	**04 25 28.0**	**+0.1**
CHOS	**Chios island**	**4.16**	**76**	P	**Pn**	**04 25 28.9**	**+0.3**
CHOS	**Chios island**	**4.16**	**76**	P	**Pn**	**04 25 28.9**	**+0.3**
LAST	**Lasithi**	**4.38**	**121**	P	**Pn**	**04 25 32.1**	**+0.6**
LAST	**Lasithi**	**4.38**	**121**	P	**Pn**	**04 25 32.1**	**+0.6**
BARS	**Barje**	**5.34**	**7**	*e*Pn	**Pn**	**04 25 44.3**	**-0.4**
STON	**Ston**	**5.89**	**336**	*e*Pn	Pn	04 25 49.3	-2.8
STON					Sn	04 26 52.7	-6.6
UDBI	**Udbina**	**8.01**	**333**	*e*Pn	**Pn**	**04 26 21.3**	**-0.2**
UDBI					Sn	04 27 46.6	-5.1
UDBI	**Udbina**	**8.01**	**333**	*e*Pn	**Pn**	**04 26 21.2**	**-0.2**
NVLJ	**Novalja**	**8.39**	**329**	*e*Pn	**Pn**	**04 26 25.5**	**-1.0**
NVLJ					Sn	04 27 55.4	-5.4
NVLJ	**Novalja**	**8.39**	**329**	*e*Pn	**Pn**	**04 26 25.4**	**-1.0**

*NIED **26** 04:35:00,37.20N×144.10E,h5km,Mw3.8 Best double couple: M0≤5.79000×10^14 NP1:φ≥25.00000°,δ≥39.00000°, λ=79.00000°. NP2:φ≤191.00000°,δ≤52.00000°, λ=99.00000°.*
*IDC **26** 04:35:53.2±0.7,37.14N×144.35E,h0km,mb3.8/14, mb1 4.0/19,mb1mx3.9/39,mbtmp3.9/19,ML3.9/3,MS3.2/3, Ms1 3.2/3,ms1mx2.7/44,Error ellipse: s-maj=19.3km s-min=15.2km az=117.0*
*NEIC **26** 04:35:54.8±0.3,37.19N×144.37E,h10km,mb4.2/3,Error ellipse: s-maj=7.9km s-min=6.1km az=116.0*
*ISCJB **26** 04:35:56.7±0.4,37.23N±0.04×144.17E±0.04,h35km, mb3.8/17,MS4.1/1,Error ellipse: s-maj=5.8km s-min=4.5km az=4.7*
*JMA **26** 04:35:57.5±0.4,37.19N×144.08E,h47km,M4.3*

ISC 26 04:35:58.7±0.6,37.24N±0.05×144.20E±0.07,h35km,n42, σ1≥83/49,mb3.9/17,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**2.56**	**299**	P	**Pn**	**04 36 37.3**	**-0.3**
JIO				S	**Sn**	**04 37 06.0**	**-1.5**
JFK	**Kawauchi**	**2.65**	**274**	P	**Pn**	**04 36 37.2**	**-1.8**
JFK				S	**Sn**	**04 37 08.3**	**-1.6**
OFUJ	**Ofunato**	**2.71**	**313**	P	**Pn**	**04 36 39.1**	**-0.6**
OFUJ				S	**Sn**	**04 37 08.9**	**-2.4**
ONAJ	**Iwakimizuishiy**	**2.72**	**268**	*e*X		04 36 39.1	
JMK	**Ichinoseki**	**2.90**	**307**	P	**Pn**	**04 36 43.1**	**+0.7**
JMK				*e*S	**Sn**	**04 37 14.5**	**-1.5**
JFT	**Otama**	**3.09**	**276**	P	**Pn**	**04 36 42.7**	**-2.2**
JFT				S	**Sn**	**04 37 19.9**	**-0.7**
JOM	**Ohasama**	**3.19**	**315**	S	**Sn**	**04 37 21.1**	**-2.0**
JYK	**Kaneyama**	**3.46**	**300**	P	**Pn**	**04 36 50.1**	**+0.1**
JYK				*e*S	**Sn**	**04 37 29.0**	**-0.8**
BSO1	**Boso 1**	**3.67**	**226**	P	**Pn**	**04 36 51.5**	**-1.0**
JRY	**Ryogami san**	**4.43**	**256**	P	**Pn**	**04 37 02.9**	**-0.5**
ERM	**Erimo**	**4.83**	**351**	*e*Pn	**Pn**	**04 37 07.5**	**-1.3**
ERM				*e*S	**Sn**	**04 37 56.2**	**-7.4**
MJAR	**Matsushiro Arr**	**4.85**	**264**	Pn	**Pn**	**04 37 09.9**	**+0.7**
	7.7nm,0.3s,baz=121,slow=9.8,SNR=28						
MJAR				Sn	**Sn**	**04 38 03.9**	**-0.3**
	3.3nm,0.3s,baz=99,slow=13,SNR=6.0						
MJAR				LR	LR	04 39 12.0	
	comp=Z,108nm,20.1s,baz=115,slow=40						
MAJO	**Matsushiro**	**4.85**	**264**	*e*Pn	**Pn**	**04 37 10.2**	**+0.9**
MAJO				*e*S	**Sn**	**04 38 05.9**	**+1.7**
MAT	**Matsushiro**	**4.85**	**264**	P	**Pn**	**04 37 10.5**	**+1.3**
MAT				S	**Sn**	**04 38 03.6**	**-0.6**
JHJ	**Hachijo jima 2**	**5.48**	**223**	Pn	**Pn**	**04 37 16.1**	**-1.7**
	7.1nm,0.3s,baz=72,slow=20,SNR=5.5						
JHJ				Sn	**Sn**	**04 38 13.6**	**-5.9**
	50nm,0.3s,baz=223,slow=23,SNR=8.3						
ASAJ	**Asahikawa**	**6.97**	**350**	Pn	**Pn**	**04 37 36.4**	**-1.9**
	1.9nm,0.3s,baz=154,slow=16,SNR=4.3						
ASAJ				Sn	**Sn**	**04 38 54.5**	**-1.9**
	0.4nm,0.3s,baz=338,slow=19,SNR=2.8						
CBIJ	**Chichi jima**	**10.26**	**190**	Pn	**Pn**	**04 38 21.8**	**-1.6**
USRK	**Ussuriysk Ar.**	**11.52**	**311**	Pn	**Pn**	**04 38 42.1**	**+0.9**
	0.1nm,0.3s,baz=121,slow=14,SNR=3.0						
KSRS	**Korea Array**	**12.96**	**276**	Pn	**Pn**	**04 39 02.0**	**+1.8**
	0.0nm,0.3s,baz=84,slow=14,SNR=2.9						
KSRS				LR	LR	04 43 44.3	
	comp=Z,26nm,18.6s,baz=120,slow=36						
KSAR	**Wonju Array Be**	**12.99**	**276**	Pn	**Pn**	**04 39 02.0**	**+1.4**
KLR	**Kul'dur**	**15.00**	**327**	Pn	**P**	**04 39 33.3**	**+0.3**
	0.1nm,0.3s,baz=117,slow=9.1,SNR=6.5						
SEY	**Seymchan**	**26.21**	**8**	P	**P**	**04 41 30.5**	**+0.7**
	2.2nm,0.6s,baz=172,slow=8.2,SNR=7.1						
H11N2	**WAKE ISLAND Hy**	**26.39**	**125**	T	T	05 08 46.5	
	baz=317,slow=74,SNR=11						
H11N1	**WAKE ISLAND Hy**	**26.40**	**125**	T	T	05 08 31.1	
	baz=317,slow=74,SNR=0.8						
H11N3	**WAKE ISLAND Hy**	**26.41**	**125**	T	T	05 08 47.4	
	baz=317,slow=74,SNR=10						
SONM	**Songino Array**	**29.53**	**303**	P	**P**	**04 42 00.8**	**+0.9**
	0.3nm,0.5s,baz=96,slow=7.3,SNR=2.0						
MKAR	**Makanchi Array**	**45.89**	**302**	P	**P**	**04 44 18.6**	**+0.9**
	0.3nm,0.3s,baz=95,slow=8.8,SNR=3.4						
ILAR	**Eielson Array**	**48.13**	**32**	P	**P**	**04 44 35.1**	**+0.3**

	1.1nm,0.8s,baz=263,slow=6.1,SNR=11							
INK	**Inuvik**	**53.18**	**27**	P		**P**	**04 45 13.4**	**+0.6**
	1.1nm,0.6s,baz=305,slow=6.6,SNR=14							
CTA	**Charters Tower**	**57.05**	**178**	LR	LR		05 06 56.4	
	comp=Z,152nm,20.6s,slow=33							
WRAB	**Tennant Creek**	**57.62**	**191**	*e*P		**P**	**04 45 44.0**	**-1.2**
	2.1nm,0.6s							
WRA	**Warramunga Arr**	**57.63**	**191**	P		**P**	**04 45 44.3**	**-1.0**
	2.0nm,0.6s,baz=10,slow=7.1,SNR=19							
ABKAR	**Akbulak array**	**59.50**	**311**	*e*P		**P**	**04 45 59.2**	**+1.1**
	0.6nm,0.6s							
ASAR	**Alice Springs**	**61.35**	**191**	P		**P**	**04 46 10.2**	**-0.8**
	1.1nm,0.7s,baz=15,slow=12,SNR=15							
RES	**Resolute Bay**	**61.83**	**15**	*e*P		**P**	**04 46 13.7**	**+0.1**
	0.9nm,0.5s							
YKA	**Yellowknife Ar**	**62.50**	**31**	P		**P**	**04 46 18.0**	**-0.2**
	0.1nm,0.6s,baz=302,slow=6.7,SNR=7.4							
FINES	**FINESS Array B**	**69.65**	**333**	P		**P**	**04 47 04.6**	**+0.4**
	0.9nm,0.7s,baz=46,slow=12,SNR=3.2							
NVAR	**Mina Array Bea**	**73.07**	**54**	P		**P**	**04 47 25.6**	**+0.1**
	1.1nm,0.7s,baz=289,slow=5.1,SNR=4.5							
NOA	**NORSAR Array B**	**74.83**	**338**	P		**P**	**04 47 36.0**	**+0.8**
	0.7nm,0.7s,baz=36,slow=6.0,SNR=2.9							
AKASG	**Malin Array Be**	**75.47**	**323**	P		**P**	**04 47 39.8**	**+0.8**
	1.3nm,0.6s,baz=45,slow=5.8,SNR=11							
BRTR	**Keskin Array B**	**80.36**	**313**	P		**P**	**04 48 07.0**	**+0.5**
	0.3nm,0.5s,baz=103,slow=4.6,SNR=3.8							
TXAR	**Lajitas Array**	**88.22**	**54**	P		**P**	**04 48 46.1**	**-0.4**
	0.4nm,0.8s,baz=294,slow=4.0,SNR=4.4							

*ISCJB **26** 04:39:39.3±0.4,37.63S±0.04×176.58E±0.06,h202km±4km, mb4.0/8,Error ellipse: s-maj=8.0km s-min=5.6km az=12.7*
*IDC **26** 04:39:39.3±1.3,37.96S×176.97E,h198km±12km,mb3.9/3, mb1 4.1/4,mb1mx3.7/27,mbtmp4.6/4,MS3.6/1,Ms1 3.5/1, ms1mx2.8/31,Error ellipse: s-maj=48.0km s-min=22.8km az=126.0*
*WEL **26** 04:39:40.9±0.2,37.43S×176.73E,h178km±1km,ML5.2/20, Error ellipse: s-maj=1.8km s-min=1.7km az=0.0*
*NEIC **26** 04:39:41.2,37.44S×176.72E,h174km,mb4.4/8,After WEL.*

ISC 26 04:39:40.7±0.8,37.56S±0.06×176.62E±0.06,h187km±6km, n124,σ1≥38/116,mb4.2/8,23C-10D,North Island

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
OPRZ	**Ohinepanea**	**0.28**	**190**	PN	**Pn**	**04 40 05.0**	**-0.7**
OPRZ				SN	**Sn**	**04 40 24.6**	**-0.5**
MARZ	**Manawahe**	**0.42**	**174**	PN	**Pn**	**04 40 05.7**	**-0.4**
EDRZ	**Edgecumbe**	**0.55**	**170**	PN	**Pn**	**04 40 06.3**	**-0.3**
RRRZ	**Republican Roa**	**0.78**	**186**	PN	**Pn**	**04 40 07.5**	**-0.2**
URZ	**Urewera**	**0.80**	**151**	P	**Pn**	**04 40 07.0**	**-0.8**
	114nm,0.3s,baz=302,slow=2.9,SNR=350						
URZ				S	**Sn**	**04 40 27.1**	**-1.9**
	395nm,0.3s,baz=173,slow=22,SNR=64						
URZ	**Urewera**	**0.80**	**151**	PN	**Pn**	**04 40 07.0**	**-0.8**
URZ				SN	**Sn**	**04 40 27.2**	**-1.7**
URZ				AML	AML	04 40 31.7	
URZ	**Urewera**	**0.80**	**151**	*e*Pn	**Pn**	**04 40 06.9**	**-0.9**
URZ				*e*S	**Sn**	**04 40 27.6**	**-1.3**
TOZ	**Tahuroa Road**	**0.90**	**259**	PN	**Pn**	**04 40 08.6**	**+0.2**
MUGZ	**Murupara**	**0.92**	**172**	PN	**Pn**	**04 40 08.6**	**0.0**
HAZ	**Te Kaha**	**0.95**	**102**	PN	**Pn**	**04 40 07.

MTW				AML	AML	04 41 24.2	
MTW				AML	AML	04 41 26.8	
CAW	**Cannon Point**	**3.74**	**198**	PN	**Pn**	**04 40 37.2**	**-1.5**
CAW				AML	AML	04 41 25.2	
CAW				AML	AML	04 41 28.8	
DUWZ	**D'Urville Isla**	**3.85**	**212**	⇓PN	**Pn**	**04 40 38.8**	**-1.4**
TRWZ	**Traveller**	**3.90**	**190**	⇑PN	**Pn**	**04 40 39.1**	**-1.6**
TRWZ				AML	AML	04 41 29.2	
TRWZ				AML	AML	04 41 30.5	
PAWZ	**Paruwai Farm**	**3.92**	**193**	PN	**Pn**	**04 40 39.2**	**-1.8**
PAWZ				AML	AML	04 41 28.8	
PAWZ				AML	AML	04 41 29.1	
WEL	**Wellington**	**3.98**	**200**	PN	**Pn**	**04 40 40.1**	**-1.6**
MSWZ	**Moikau Station**	**3.99**	**195**	⇑PN	**Pn**	**04 40 40.0**	**-1.9**
MSWZ				AML	AML	04 41 30.9	
MSWZ				AML	AML	04 41 32.9	
SNZO	**South Karori**	**4.02**	**201**	*e*Pn	**Pn**	**04 40 40.6**	**-1.7**
SNZO				*e*S	**Sn**	**04 41 28.6**	**-2.0**
TCW	**Tory Channel**	**4.07**	**206**	PN	**Pn**	**04 40 41.2**	**-1.6**
TCW				AML	AML	04 41 33.1	
TCW				AML	AML	04 41 36.3	
BHW	**Baring Head**	**4.07**	**199**	PN	**Pn**	**04 40 40.9**	**-2.0**
BHW				AML	AML	04 41 30.6	
BHW				AML	AML	04 41 30.7	
PLWZ	**Palliser**	**4.14**	**194**	⇑PN	**Pn**	**04 40 41.7**	**-2.1**
TUWZ	**Tuamarina**	**4.38**	**207**	PN	**Pn**	**04 40 44.9**	**-1.9**
TUWZ				AML	AML	04 41 37.5	
TUWZ				AML	AML	04 41 39.3	
NNZ	**Nelson**	**4.43**	**213**	⇓PN	**Pn**	**04 40 45.2**	**-2.2**
QRZ	**Quartz Range**	**4.55**	**223**	PN	**Pn**	**04 40 46.8**	**-2.1**
BSWZ	**Blackbirch Sta**	**4.66**	**206**	PN	**Pn**	**04 40 48.2**	**-2.1**
BSWZ				AML	AML	04 41 45.7	
BSWZ				AML	AML	04 41 46.8	
THZ	**Tophouse**	**5.08**	**213**	⇓PN	**Pn**	**04 40 53.7**	**-2.1**
KHZ	**Kahutara**	**5.39**	**205**	⇓PN	**Pn**	**04 40 57.6**	**-2.2**
KHZ	**Kahutara** 1µm,0.4s	**5.39**	**205**	*e*Pn	**Pn**	**04 40 57.6**	**-2.2**
KHZ				*e*S	**Sn**	**04 41 56.9**	**-5.2**
DSZ	**Denniston Nort**	**5.59**	**220**	PN	Pn	04 40 59.7	-2.7
LTZ	**Lake Taylor**	**6.18**	**211**	PN	Pn	04 41 07.2	-3.0
INZ	**Inchbonnie**	**6.50**	**216**	PN	Pn	04 41 11.6	-2.7
OXZ	**Oxford**	**6.73**	**210**	PN	Pn	04 41 13.3	-3.9
MQZ	**McQueen's Vall**	**6.84**	**205**	⇑PN	Pn	04 41 14.6	-4.0
WVZ	**Waitaha Valley**	**7.10**	**217**	PN	Pn	04 41 18.7	-3.4
RPZ	**Rata Peaks** 24nm,0.3s,baz=26,slow=5.6,SNR=51	**7.46**	**213**	*e*Pn	Pn	04 41 24.2	-2.6
RPZ				S	Sn	04 42 44.8	-6.1
	23nm,0.3s,baz=29,slow=19,SNR=14						
RPZ	**Rata Peaks**	**7.46**	**213**	PN	Pn	04 41 23.8	-3.0
RPZ	**Rata Peaks** 49nm,0.3s	**7.46**	**213**	*e*Pn	Pn	04 41 24.3	-2.5
RPZ				S	Sn	04 42 44.8	-6.1
FOZ	**Fox Glacier**	**7.89**	**219**	PN	Pn	04 41 28.5	-3.9
CTZ	**Chatham Island**	**8.03**	**142**	PN	**Pn**	**04 41 38.2**	**+4.0**
LBZ	**Lake Benmore**	**8.37**	**213**	PN	Pn	04 41 35.6	-3.2
ODZ	**Otahua Downs**	**8.72**	**209**	PN	Pn	04 41 40.1	-3.2
ODZ	**Otahua Downs** 14nm,0.3s	**8.72**	**209**	*e*Pn	Pn	04 41 40.5	-2.8
ODZ				*e*S	Sn	04 43 11.2	-10
JCZ	**Jackson Bay**	**8.80**	**220**	PN	Pn	04 41 41.2	-3.3
WKZ	**Wanaka**	**9.24**	**216**	PN	Pn	04 41 46.2	-4.0
EAZ	**Earnscleugh**	**9.42**	**213**	PN	Pn	04 41 48.7	-3.7
TUZ	**Tuapeka**	**9.87**	**210**	PN	**Pn**	**04 41 55.9**	**-2.4**
WHZ	**Wether Hill Ro**	**10.54**	**215**	PN	Pn	04 42 03.3	-3.7
MSVF	**Nonsavu** 11nm,0.8s	**19.80**	**4**	*e*P	**P**	**04 43 56.5**	**-0.4**
CAN	**Canberra** 6.0nm,0.7s	**22.30**	**267**	*e*P	**P**	**04 44 25.5**	**+2.7**
STKA	**Stephens Creek** 4.1nm,0.8s,baz=97,slow=10,SNR=12	**29.23**	**271**	P	**P**	**04 45 25.9**	**+0.9**
STKA				LR	LR	04 55 15.5	
	comp=Z,116nm,20.7s,baz=200,slow=32						
BBOO	**Buckleboo** 1.7nm,0.5s	**33.30**	**266**	*e*P	**P**	**04 46 01.4**	**+0.8**
ASAR	**Alice Springs** 3.9nm,0.7s,baz=121,slow=8.3,SNR=64	**38.95**	**278**	P	**P**	**04 46 49.0**	**+0.3**
WRAB	**Tennant Creek** 3.8nm,0.7s	**40.62**	**284**	*e*P	**P**	**04 47 02.1**	**-0.4**
WRA	**Warramunga Arr** 2.3nm,0.4s,baz=121,slow=8.4,SNR=59	**40.63**	**284**	P	**P**	**04 47 02.5**	**0.0**
FITZ	**Fitzroy Crossi** 1.8nm,0.5s	**48.44**	**279**	*e*P	**P**	**04 48 04.4**	**+0.1**
QSPA	**South Pole Qui** 16nm,0.9s	**52.56**	**180**	*e*P	**P**	**04 48 37.8**	**+3.1**
ARCES	**ARCESS Array B** 1.9nm,0.9s,baz=35,slow=2.2,SNR=4.6	**144.39**	**343**	PKP	**PKPab**	**04 58 49.0**	**-3.0**

*DDA **26** 04:45:06.0,38.61°N×31.15°E,h7km,Md2.7*
*ISCJB **26** 04:45:06.2±0.5,38.62°N±0.02×31.17°E±0.03,h5km±6km, Error ellipse: s-maj=4.2km s-min=4.0km az=172.0*
*CSEM **26** 04:45:06.2±0.1,38.62°N×31.16E,h5km,MD2.7,Error ellipse: s-maj=2.7km s-min=2.0km az=12.0*
*ISK **26** 04:45:06.0,38.62°N×31.16E,h9km,MD2.7*
ISC 26 04:45:06.2±1.0,38.62N±0.02×31.17E±0.02,h9km±8km, n27,σ0s31/46,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BOLV	**Bolvadin**	**0.20**	**300**	*i* P	**Pg**	**04 45 10.1**	**-0.3**
BOLV				*i* S	**Sg**	**04 45 13.4**	**+0.1**
BOLV	**Bolvadin**	**0.20**	**300**	P	**Pg**	**04 45 10.1**	**-0.3**
BOLV				S	**Sg**	**04 45 13.4**	**+0.1**
KIZT	**Kizilcal**	**0.61**	**65**	*e*PG	**Pg**	**04 45 18.5**	**+0.4**
KIZT				*e*SG	**Sb**	**04 45 27.6**	**-0.3**
KIZT	**Kizilcal**	**0.61**	**65**	*e*Pg	**Pg**	**04 45 18.5**	**+0.4**
KIZT				*e*Sg	**Sb**	**04 45 27.6**	**-0.3**
BAGO	**Egridir - ISPA**	**0.69**	**206**	*i* P	**Pg**	**04 45 19.4**	**-0.2**
BAGO				*i* S	**Sb**	**04 45 29.8**	**-0.5**
KDHN	**Kadinhani**	**0.75**	**97**	*i* P	**Pg**	**04 45 20.6**	**0.0**
KDHN	**Kadinhani**	**0.75**	**97**	P	**Pg**	**04 45 20.6**	**0.0**
AUKIR	**K¯rka- Seyitg**	**0.82**	**323**	*i* P	**Pg**	**04 45 22.2**	**+0.1**
AUKIR				*i* S	**Sg**	**04 45 33.2**	**+0.3**
AUKIR	**K¯rka- Seyitg**	**0.82**	**323**	P	**Pg**	**04 45 22.2**	**+0.1**
AUKIR				S	**Sg**	**04 45 33.2**	**+0.3**
SVRH	**Sivrihisar-ESK**	**0.87**	**18**	*e*PG	**Pb**	**04 45 23.4**	**-0.1**
SVRH				*e*SG	**Sb**	**04 45 36.0**	**+0.7**
SVRH	**Sivrihisar-ESK**	**0.87**	**18**	*e*Pg	**Pb**	**04 45 23.4**	**-0.1**
SVRH				*e*Sg	**Sb**	**04 45 36.0**	**+0.7**
ISP	**Isparta**	**0.94**	**213**	*e*PG	**Pg**	**04 45 24.5**	**+0.2**
ISP				*e*SG	**Sb**	**04 45 38.0**	**+0.6**
ISP	**Isparta**	**0.94**	**213**	*e*Pg	**Pg**	**04 45 24.5**	**+0.2**
ISP				*e*Sg	**Sb**	**04 45 38.0**	**+0.6**
LADK	**Ladik-KONYA**	**1.03**	**114**	*e*PG	**Pb**	**04 45 26.2**	**0.0**
LADK				*e*SG	**Sn**	**04 45 40.9**	**-0.5**
LADK	**Ladik-KONYA**	**1.03**	**114**	*e*Pg	**Pb**	**04 45 26.2**	**0.0**
LADK				*e*Sg	**Sn**	**04 45 40.9**	**-0.5**
KONT	**Konya--Tatoy**	**1.15**	**125**	*e*PN	**Pn**	**04 45 28.5**	**0.0**
KONT	**Konya--Tatoy**	**1.15**	**125**	*e*Pn	**Pn**	**04 45 28.5**	**0.0**
KHAL	**Karahalli**	**1.34**	**260**	*i* P	**Pb**	**04 45 31.6**	**+0.1**
KHAL				*i* S	**Sg**	**04 45 49.6**	**+0.3**
KHAL	**Karahalli**	**1.34**	**260**	P	**Pb**	**04 45 31.6**	**+0.1**
KHAL				S	**Sg**	**04 45 49.6**	**+0.3**
CHBY	**Cihanbeyli**	**1.35**	**91**	*e*PN	**Pg**	**04 45 31.9**	**-0.1**
CHBY	**Cihanbeyli**	**1.35**	**91**	*e*Pn	**Pg**	**04 45 32.0**	**-0.1**
BORA	**Eskisehir**	**1.38**	**336**	*i* P	**Pb**	**04 45 32.0**	**-0.2**
BORA				*i* S	**Sb**	**04 45 49.6**	**-0.3**
BORA	**Eskisehir**	**1.38**	**336**	P	**Pb**	**04 45 32.0**	**-0.2**
BORA				S	**Sb**	**04 45 49.6**	**-0.3**
GDZ	**Gediz**	**1.40**	**290**	*i* P	**Pn**	**04 45 31.9**	**-0.1**
GDZ				*i* S	**Sg**	**04 45 51.1**	**-0.1**
GDZ	**Gediz**	**1.40**	**290**	P	**Pn**	**04 45 31.9**	**-0.1**
GDZ				S	**Sg**	**04 45 51.2**	**-0.1**
TVSB	**Tavsanli**	**1.57**	**302**	*e*PN	**Pn**	**04 45 34.6**	**+0.3**
TVSB	**Tavsanli**	**1.57**	**302**	*e*Pn	**Pn**	**04 45 34.6**	**+0.3**

JMA 26 04:52:19.4,36.88N×140.69E,h5km,M1.5,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.24**	**21**	*e*S	Sg	04 52 27.5	+0.3
JHO	**Hitachi**	**0.29**	**200**	P	Pg	04 52 25.1	+0.2
JHO				S	Sg	04 52 29.2	+0.5

*NIED **26** 04:52:00,38.30N×141.80E,h50km,Mw4.0 Best double couple: M0 1.01000×10^15 NP1:φs209.00000°,δ23.00000°, λ88.00000°. NP2:φs32.00000°,δ67.00000°,λ91.00000°.*
*ISCJB **26** 04:52:18.7±0.8,38.27N±0.04×141.89E±0.09,h53km±6km, mb3.8/19,MS2.6/1, Error ellipse: s-maj=12.0km s-min=5.2km az=17.1*
*JMA **26** 04:52:19.9±0.1,38.30N×141.84E,h46km±1km,M3.7*
JMA Felt I J1.
*IDC **26** 04:52:20.3±0.6,38.23N×141.82E,h52km±5km, mb3.6/19, mb1 3.8/23,mb1mx3.7/52,mbtmpb3.9/23,MS2.9/5, Ms1 2.9/5,ms1mx2.6/44,Error ellipse: s-maj=15.8km s-min=10.3km az=107.0*
ISC 26 04:52:20.2±0.7,38.29N±0.04×141.87E±0.07,h49km±5km, n43,σ0s81/45,mb3.9/19,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**0.44**	**292**	P	**Pn**	**04 52 30.0**	**-0.6**
JIO				S	**Sn**	**04 52 37.0**	**-1.1**
OFUJ	**Ofunato**	**0.80**	**349**	P	**Pn**	**04 52 34.6**	**-0.7**
OFUJ				S	**Sn**	**04 52 45.1**	**-1.1**
JMK	**Ichinoseki**	**0.83**	**323**	P	**Pn**	**04 52 35.3**	**-0.3**
JMK				S	**Sn**	**04 52 46.0**	**-0.9**
JMM	**Marumori**	**0.95**	**244**	P	**Pn**	**04 52 36.2**	**-0.9**
JMM				S	**Sn**	**04 52 48.3**	**-1.3**
JOU	**Okura**	**0.95**	**275**	P	**Pn**	**04 52 36.9**	**-0.3**
JOU				S	**Sn**	**04 52 49.4**	**-0.3**
JFK	**Kawauchi**	**1.21**	**221**	P	**Pn**	**04 52 40.1**	**-0.7**
JFK				S	**Sn**	**04 52 55.1**	**-0.9**
JOM	**Ohasama**	**1.26**	**339**	P	**Pn**	**04 52 41.3**	**-0.2**
MJAR	**Matsushiro Arr** 1.7nm,0.3s,baz=58,slow=10.0,SNR=20	**3.39**	**240**	P	**Pn**	**04 53 10.7**	**0.0**
MJAR				LR	LR	04 54 42.8	
	comp=Z,151nm,18.2s,baz=50,slow=43						
MAT	**Matsushiro**	**3.39**	**240**	P	**Pn**	**04 53 11.9**	**+1.3**
MAT				S	**Sn**	**04 53 52.4**	**+2.7**
JHJ	**Hachijo jima 2** 6.7nm,0.3s,baz=330,slow=5.9,SNR=4.2	**5.43**	**199**	P	**Pn**	**04 53 39.0**	**+0.4**
JHJ				S	**Sn**	**04 54 38.4**	**-1.3**
	12nm,0.3s,baz=60,slow=20,SNR=4.1						
ASAJ	**Asahikawa** 2.1nm,0.3s,baz=138,slow=3.1,SNR=6.2	**5.85**	**5**	P	**Pn**	**04 53 45.3**	**+1.1**
USRK	**Ussuriysk Ar.** comp=Z,46nm,21.5s,baz=214,slow=33	**9.49**	**312**	P	**Pn**	**04 54 35.1**	**+0.9**
SEY	**Seymchan** 1.2nm,0.3s,baz=187,slow=4.7,SNR=6.1	**25.49**	**11**	P	**P**	**04 57 44.5**	**+1.0**
SONM	**Songino Array** 0.6nm,0.8s,baz=67,slow=11,SNR=3.7	**27.41**	**302**	P	**P**	**04 58 01.2**	**+0.1**
SONM				LR	LR	05 10 04.2	
	comp=Z,15nm,19.0s,baz=92,slow=39						
H11N2	**WAKE ISLAND Hy** baz=316,slow=75,SNR=284	**28.51**	**123**	T	T	05 28 27.0	
H11N1	**WAKE ISLAND Hy** baz=316,slow=75,SNR=334	**28.52**	**123**	T	T	05 28 27.7	
H11N3	**WAKE ISLAND Hy** 0.6nm,0.8s,baz=75,slow=4.8,SNR=254	**28.53**	**123**	T	T	05 28 28.4	
H11S1	**WAKE ISLAND Hy** baz=318,slow=76,SNR=164	**29.27**	**125**	T	T	05 29 22.8	
H11S3	**WAKE ISLAND Hy** baz=318,slow=76,SNR=206	**29.27**	**125**	T	T	05 29 25.1	
H11S2	**WAKE ISLAND Hy** baz=318,slow=76,SNR=171	**29.28**	**125**	T	T	05 29 24.0	
ZALV	**Zalesovo Beam** 1.4nm,0.5s,baz=107,slow=9.5,SNR=1.6	**41.34**	**311**	P	**P**	**05 00 00.9**	**-0.1**
MKAR	**Makanchi Array** 1.6nm,0.7s,baz=87,slow=9.8,SNR=11	**43.77**	**301**	P	**P**	**05 00 20.6**	**-0.2**
KURBB	**Kurchatov Arra** 4.0nm,0.8s,baz=82,slow=8.2,SNR=36	**45.52**	**307**	P	**P**	**05 00 34.3**	**-0.4**
ILAR	**Eielson Array** 0.6nm,0.8s,baz=273,slow=7.1,SNR=7.9	**48.25**	**33**	P	**P**	**05 00 56.0**	**+0.3**
BVAR	**Borovoye Array** 0.5nm,0.5s,baz=76,slow=4.8,SNR=3.5	**50.00**	**312**	P	**P**	**05 01 09.2**	**-0.2**
INK	**Inuvik** 0.3nm,0.4s,baz=258,slow=5.0,SNR=3.9	**53.11**	**28**	P	**P**	**05 01 33.1**	**+0.8**
WRA	**Warramunga Arr** 0.7nm,0.6s,baz=6.3,slow=7.1,SNR=9.6	**58.35**	**188**	P	**P**	**05 02 09.6**	**-0.8**
WRA				pP	**pP**	**05 02 23.6**	**-0.3**
	1.7nm,0.8s,baz=6.3,slow=7.4,SNR=7.0						
ASAR	**Alice Springs** 0.5nm,0.7s,baz=9.3,slow=5.9,SNR=8.7	**62.08**	**188**	P	**P**	**05 02 35.3**	**-0.5**
YKA	**Yellowknife Ar** 0.3nm,0.7s,baz=304,slow=6.7,SNR=9.6	**62.55**	**31**	P	**P**	**05 02 38.7**	**+0.1**
YKA				pP	**pP**	**05 02 53.1**	**+0.8**
	0.2nm,0.7s,baz=306,slow=6.9,SNR=3.9						
ARCES	**ARCESS Array B** 1.5nm,0.8s,baz=52,slow=7.9,SNR=8.1	**62.95**	**339**	P	**P**	**05 02 41.1**	**-0.1**
FINES	**FINESS Array B** 1.6nm,0.7s,baz=41,slow=6.1,SNR=6.6	**67.87**	**332**	P	**P**	**05 03 12.7**	**-0.4**
KBZ	**Khabaz** 0.8nm,0.7s,baz=329,slow=4.0,SNR=4.4	**70.36**	**311**	P	**P**	**05 03 28.8**	**+0.1**
NB2	**NORSAR Subarra** comp=Z,1.2nm,0.7s,baz=40,slow=5.9	**73.17**	**337**	P	**P**	**05 03 45.1**	**-0.3**
NOA	**NORSAR Array B** comp=Z,2.1nm,0.8s,baz=38,slow=5.9,SNR=7.3	**73.17**	**337**	P	**P**	**05 03 45.4**	**0.0**
AKASG	**Malin Array Be** comp=Z,0.6nm,0.4s,baz=48,slow=6.3,SNR=5.4	**73.53**	**322**	P	**P**	**05 03 47.2**	**-0.4**
PDAR	**Pinedale Array** comp=Z,0.3nm,0.6s,baz=291,slow=2.8,SNR=3.4	**76.53**	**46**	P	**P**	**05 04 05.2**	**-0.2**
PDAR				pP	**pP**	**05 04 20.3**	**+0.8**
	comp=Z,0.5nm,0.5s,baz=266,slow=2.4,SNR=5.9						
GERES	**GERESS Array B** comp=Z,0.3nm,0.2s,baz=46,slow=5.6,SNR=3.8	**81.83**	**328**	P	**P**	**05 04 33.3**	**-0.7**
TXAR	**Lajitas Array** comp=Z,0.3nm,0.7s,baz=312,slow=3.6,SNR=4.0	**89.07**	**53**	P	**P**	**05 05 10.8**	**+0.4**
TXAR				pP	**pP**	**05 05 25.5**	**+0.7**
	comp=Z,0.5nm,0.6s,baz=299,slow=3.5,SNR=7.1						
LPAZ	**La Paz** comp=Z,0.9nm,0.6s,baz=270,slow=1.0,SNR=4.4	**145.74**	**59**	PKPbc	**PKPbc**	**05 11 54.9**	**0.0**

JMA 26 05:06:26.0,37.00N×140.60E,h10km±1km,M3.2,4C-1D Broadband fault plane solution: P waves. NP1: φs128.00000°,δ62.00000°,λ-70.00000°. **NP2:** φs271.00000°,δ34.00000°,λ-122.00000°. **Principal axes:** T Plg15.0000°, Azm204.0000°; N Plg17.0000°, Azm299.0000°; P Plg67.0000°, Azm76.0000°; **Eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.19**	**57**	⇑P	Pg	05 06 30.1	+0.1
ONAJ				S	Sg	05 06 33.1	+0.3
JHO	**Hitachi**	**0.39**	**184**	⇑P	Pg	05 06 33.5	-0.2
JFK	**Kawauchi**	**0.43**	**31**	⇑P	Pg	05 06 34.2	-0.2
JFK				S	Sg	05 06 40.3	+0.2
JFT	**Otama**	**0.56**	**338**	⇑P	Pg	05 06 37.0	+0.1
JFY	**Yanaizu**	**0.82**	**300**	⇓P	Pg	05 06 41.8	-0.1
JFY				S	Sg	05 06 52.3	-0.3
MAT	**Matsushiro**	**1.98**	**257**	P	Pn	05 07 00.6	+1.1
MAT				S	Sb	05 07 27.3	+0.6

IDC 26 05:10:25.4±1.4,14.08N×145.11E,h51km±14km,mb3.2/5, mb1 3.5/5,mb1mx3.2/43,mbtmpb3.4/5 Error ellipse: s-maj=59.1km s-min=22.2km az=112.0,Mariana Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GUMO	**Guam** 772nm,0.3s,baz=34,slow=3.6,SNR=183	**0.55**	**206**	P	Pn	05 10 39.1	+1.9
GUMO				S	Sn	05 10 47.9	+2.1
	1µm,0.3s,baz=16,slow=20,SNR=81						
WRA	**Warramunga Arr** 0.4nm,0.5s,baz=20,slow=9.5,SNR=7.1	**35.44**	**198**	P	P	05 17 16.9	0.0
ASAR	**Alice Springs** 0.1nm,0.5s,baz=17,slow=11,SNR=5.0	**39.09**	**196**	P	P	05 17 48.3	+0.5
ILAR	**Eielson Array** 0.3nm,0.4s,baz=251,slow=5.8,SNR=5.4	**68.02**	**25**	P	P	05 21 19.5	+0.3
YKA	**Yellowknife Ar** 0.1nm,0.4s,baz=285,slow=5.1,SNR=6.6	**82.31**	**27**	P	P	05 22 41.3	-0.1
NVAR	**Mina Array Bea** 0.2nm,0.3s,baz=270,slow=3.6,SNR=2.3	**86.43**	**51**	P	P	05 23 02.0	-1.1

*JMA **26** 05:12:21.3±0.1,37.77N×141.95E,h14km±2km,M3.6*
*IDC **26** 05:12:24.7±3.3,36.89N×142.54E,h0km,mb3.5/2, mb1 3.5/3,mb1mx3.2/41,mbtmpb3.3/3,ML2.8/1,Error ellipse: s-maj=79.4km s-min=37.2km az=54.0*
ISC 26 05:12:19.7±2.6,37.76N±0.05×142.0E±0.1,h4km±14km,n9, σ1s14/14,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**0.84**	**326**	P	**Pb**	**05 12 37.0**	**+0.1**
JIO				S	**Sg**	**05 12 47.5**	**+0.7**
JMM	**Marumori**	**0.92**	**277**	P	**Pb**	**05 12 38.6**	**+0.4**
JMM				S	**Sg**	**05 12 50.5**	**+1.2**
JFK	**Kawauchi**	**0.94**	**246**	P	**Pb**	**05 12 39.1**	**+0.6**
ONAJ	**Iwakimizuishiy**	**1.12**	**235**	P	**Pb**	**05 12 42.2**	**+0.5**
ONAJ				S	**Sg**	**05 12 57.1**	**+1.3**
JOU	**Okura**	**1.18**	**301**	P	**Pn**	**05 12 43.2**	**+0.2**
JOU				S	**Sg**	**05 12 58.3**	**+0.6**
JFT	**Otama**	**1.30**	**260**	P	**Pb**	**05 12 45.3**	**+0.6**
JFT				S	**Sn**	**05 13 03.1**	**+0.7**
MJAR	**Matsushiro Arr** 0.9nm,0.3s,baz=82,slow=16,SNR=4.7	**3.22**	**249**	Pn	**Pg**	**05 13 20.2**	**-1.3**
MJAR				Sn	**Sb**	**05 13 54.7**	**-2.4**
	0.8nm,0.3s,baz=311,slow=48,SNR=3.2						
MKAR	**Makanchi Array** 0.3nm,0.3s,baz=92,slow=9.0,SNR=2.7	**44.10**	**302**	P	P	05 20 41.4	+13
WRA	**Warramunga Arr** 0.6nm,0.9s,baz=5.6,slow=7.0,SNR=6.1	**57.83**	**188**	P	**P**	**05 22 12.5**	**+0.1**

*NIED **26** 05:14:00,36.30N×143.90E,h11km,Mw3.9 Best double couple: M0 6.98000×10^14 NP1:φs26.00000°,δ22.00000°, λ-89.00000°. NP2:φs205.00000°,δ68.00000°, λ-91.00000°.*
*IDC **26** 05:14:14.5±0.6,36.18N×144.19E,h0km,mb3.9/15, mb1 4.1/20,mb1mx4.0/45,mbtmpb4.0/20,ML3.8/5,MS2.8/4, Ms1 2.9/4,ms1mx2.5/46,Error ellipse: s-maj=17.8km s-min=14.7km az=103.0*
*ISCJB **26** 05:14:17.8±0.5,36.22N±0.04×143.99E±0.04,h33km, mb3.9/17,MS2.8/1, Error ellipse: s-maj=6.5km s-min=4.5km az=159.0*
*NEIC **26** 05:14:19.8±0.4,36.20N×144.11E,h35km,mb4.3/2,Error ellipse: s-maj=9.1km s-min=7.5km az=110.0*
*JMA **26** 05:14:19.4±0.4,36.32N×143.89E,h82km,M3.8*
ISC 26 05:14:19.8±0.6,36.24N±0.06×144.01E±0.07,h35km,n50, σ1s14/47,mb3.9/17,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**2.61**	**259**	P	**Pn**	**05 14 59.6**	**+0.1**
CHOJ				*e*S	**Sn**	**05 15 29.5**	**-0.6**
ONAJ	**Iwakimizuishiy**	**2.72**	**289**	P	**Pn**	**05 15 00.6**	**-0.5**
JFK	**Kawauchi**	**2.76**	**295**	P	**Pn**	**05 15 00.3**	**-1.3**
JHO	**Hitachi**	**2.80**	**279**	P	**Pn**	**05 15 01.3**	**-0.8**
BSO1	**Boso 1**	**2.94**	**238**	P	**Pn**	**05 15 03.2**	**-0.4**
JFT	**Otama**	**3.21**	**294**	P	**Pn**	**05 15 07.2**	**-0.6**
JMK	**Ichinoseki**	**3.50**	**322**	*e*S	**Sn**	**05 15 49.4**	**-2.5**
JAG	**Ashikaga**	**3.69**	**274**	P	**Pn**	**05 15 14.2**	**-0.1**
JAG				*e*S	**Sn**	**05 15 55.0**	**-1.5**
JOD2	**Odawara 2**	**4.12**	**258**	P	**Pn**	**05 15 20.7**	**+0.4**
JOD2				*e*S	**Sn**	**05 16 06.9**	**-0.4**
JRY	**Ryogami san**	**4.14**	**268**	P	**Pn**	**05 15 20.3**	**-0.3**
JRY				*e*S	**Sn**	**05 16 06.0**	**-1.9**
JHJ2	**Mitsune**	**4.66**	**229**	*e*S	**Sn**	**05 16 18.5**	**-2.0**
JHJ2	**Mitsune**	**4.66**	**229**	*e*Pn	**Pn**	**05 15 27.3**	**-0.4**
JHJ	**Hachijo jima 2** 26nm,0.3s,baz=69,slow=21,SNR=6.4	**4.67**	**229**	Pn	**Pn**	**05 15 26.6**	**-1.3**
JHJ				Sn	**Sn**	**05 16 18.3**	**-2.6**
	34nm,0.3s,baz=37,slow=23,SNR=8.8						
MJAR	**Matsushiro Arr** 8.4nm,0.3s,baz=93,slow=14,SNR=27	**4.69**	**275**	Pn	**Pn**	**05 15 28.3**	**+0.2**
MJAR				Sn	**Sn**	**05 16 21.4**	**+0.1**
	1.8nm,0.3s,baz=141,slow=22,SNR=4.6						
MJAR				LR	LR	05 17 17.9	
	comp=Z,65nm,21.1s,baz=95,slow=38						
MAJO	**Matsushiro**	**4.69**	**275**	*e*Pn	**Pn**	**05 15 29.3**	**+1.1**
MAT	**Matsushiro**	**4.69**	**275**	P	**Pn**	**05 15 29.0**	**+0.8**
MAT				S	**Sn**	**05 16 22.3**	**+0.9**
ERM	**Erimo**	**5.80**	**354**	Pn	**Pn**	**05 15 44.0**	**+0.6**
JKB	**Kayabe**	**6.10**	**339**	P	**Pn**	**05 15 45.5**	**-1.9**
JCH	**Churui**	**6.39**	**356**	P	Pn	05 15 47.4	-4.0
JCH				*e*S	Sn	05 16 52.9	-10
NEM2	**Nemuro 2**	**7.24**	**10**	*e*S	Sn	05 17 12.7	-11
JTKR	**Abashiri--Toko**	**7.72**	**359**	P	Pn	05 16 05.5	-4.2
ASAJ	**Asahikawa** 2.1nm,0.3s,baz=215,slow=16,SNR=6.2	**7.94**	**353**	Pn	**Pn**	**05 16 10.3**	**-2.4**
ASAJ				Sn	Sn	05 17 34.0	-7.3
	0.9nm,0.3s,baz=30,slow=20,SNR=2.8						
ASAJ	**Asahikawa**	**7.94**	**353**	Pn	**Pn**	**05 16 10.3**	**-2.4**
ASAJ				Pn	Pn	05 16 11.4	-1.3
ASAJ				Sn	Sn	05 17 34.0	-7.3
USRK	**Ussuriysk Ar.** 0.9nm,0.3s,baz=124,slow=13,SNR=13	**12.14**	**315**	Pn	**Pn**	**05 17 11.1**	**+0.9**
KSRS	**Korea Array** comp=Z,58nm,18.1s,baz=58,slow=36	**12.95**	**280**	LR	LR	05 22 12.3	
KLR	**Kul'dur** 0.3nm,0.3s,baz=144,slow=10,SNR=11	**15.77**	**329**	Pn	**P**	**05 18 01.5**	**-1.2**
KLR				LR	LR	05 24 09.0	
	comp=Z,49nm,19.2s,baz=131,slow=37						
H11N2	**WAKE ISLAND Hy** baz=316,slow=75	**25.96**	**123**

TRVZ	**Turoa**	**0.36**	**95**	⇓P*	Pb	05 14 33.4	-0.3	
TRVZ				AML	AML	05 14 39.4		
TRVZ				AML	AML	05 14 39.8		
FWVZ	**Far West T-bar**	**0.36**	**88**	⇓P*	Pb	05 14 33.5	-0.2	
FWVZ				AML	AML	05 14 39.6		
FWVZ				AML	AML	05 14 39.7		
DRZ	**Dome Shelter**	**0.37**	**91**	P*	Pb	05 14 33.5	-0.4	
DRZ				AML	AML	05 14 41.4		
DRZ				AML	AML	05 14 42.8		
WHVZ	**Whangaehu Hut**	**0.39**	**92**	P*	Pb	05 14 33.7	-0.4	
WNVZ	**Wahianoa**	**0.40**	**99**	⇑P*	Pb	05 14 33.9	-0.4	
WNVZ				S*	Sb	05 14 40.1	-0.1	
NGZ	**Ngauruhoe**	**0.41**	**77**	P*	Pb	05 14 34.0	-0.3	
NGZ				S*	Sb	05 14 40.6	+0.1	
NGZ				AML	AML	05 14 42.2		
TUVZ	**Tukino**	**0.44**	**90**	P*	Pb	05 14 34.7	-0.1	
TUVZ				AML	AML	05 14 41.8		
TUVZ				AML	AML	05 14 42.0		
OTVZ	**Oturere**	**0.46**	**77**	P*	Pb	05 14 34.6	-0.6	
OTVZ				AML	AML	05 14 42.4		
OTVZ				AML	AML	05 14 44.8		
WAZ	**Wanganui**	**0.49**	**189**	⇑P*	Pb	05 14 34.8	-0.8	
WAZ				AML	AML	05 14 43.0		
WAZ				AML	AML	05 14 43.1		
MOVZ	**Moawhango**	**0.54**	**105**	⇑P*	Pb	05 14 35.5	-0.8	
MOVZ				AML	AML	05 14 42.8		
MOVZ				AML	AML	05 14 42.9		
LREZ	**Lake Rotokare**	**0.56**	**250**	⇓P*	Pb	05 14 36.2	-0.4	
MHEZ	**Mangahewa**	**0.62**	**288**	P*	Pb	05 14 37.6	-0.1	
RATZ	**Rangitukua**	**0.67**	**53**	P*	Pb	05 14 38.1	-0.4	
RATZ				AML	AML	05 14 47.2		
RATZ				AML	AML	05 14 50.8		
RITZ	**Rihia Road**	**0.67**	**64**	P*	Pn	05 14 38.9	-0.2	
WATZ	**Wairara**	**0.76**	**42**	P*	Pb	05 14 39.4	-0.6	
WATZ				AML	AML	05 14 50.1		
WATZ				AML	AML	05 14 50.5		
NEZ	**North Egmont**	**0.77**	**270**	PN	Pb	05 14 39.6	-0.6	
HIZ	**Hauiti**	**0.78**	**347**	⇑PN	Pb	05 14 39.7	-0.6	
HIZ				AML	AML	05 14 53.6		
HIZ				AML	AML	05 14 54.7		
PKE	**Pukeiti**	**0.85**	**275**	PN	Pn	05 14 41.2	-0.3	
PKE				AML	AML	05 14 54.7		
PKE				AML	AML	05 14 54.8		
OHWZ	**Ohakea**	**0.95**	**169**	PN	Pn	05 14 41.8	-1.1	
TLZ	**Tolley Road**	**1.00**	**21**	PN	Pn	05 14 42.5	-1.1	
KRHZ	**Kereru**	**1.06**	**111**	PN	Pn	05 14 44.1	-0.3	
PNHZ	**Pukenui**	**1.08**	**127**	PN	Pn	05 14 43.6	-1.1	
BKZ	**Black Stump Fm**	**1.10**	**85**	PN	Pn	05 14 44.1	-0.8	
BKZ				AML	AML	05 15 12.4		
BKZ				AML	AML	05 15 26.6		
POWZ	**Post Office Ro**	**1.24**	**155**	PN	Pn	05 14 46.5	-0.4	
WPHZ	**Waipukurau**	**1.31**	**128**	PN	Pn	05 14 48.5	+0.7	
DVHZ	**Dannevirke**	**1.32**	**141**	PN	Pn	05 14 48.4	+0.3	
MRZ	**Mangatainoka R**	**1.44**	**165**	PN	Pn	05 14 49.5	-0.1	
OGWZ	**Otaki Gorge**	**1.55**	**178**	PN	Pn	05 14 50.7	-0.4	
TOZ	**Tahuroa Road**	**1.57**	**12**	⇓PN	Pn	05 14 50.3	-1.0	
TOZ				AML	AML	05 15 22.1		
KIW	**Kapiti Island**	**1.60**	**185**	PN	Pn	05 14 51.0	-0.8	
KIW				AML	AML	05 15 11.1		
KIW				AML	AML	05 15 15.1		
HOWZ	**Holdsworth Sta**	**1.66**	**169**	PN	Pn	05 14 52.7	0.0	
BFZ	**Birch Farm**	**1.67**	**148**	PN	Pn	05 14 53.1	+0.3	
BFZ				AML	AML	05 15 02.0		
DUWZ	**D'Urville Isla**	**1.77**	**210**	PN	Pn	05 14 54.0	-0.2	
DUWZ				AML	AML	05 15 21.5		
DUWZ				AML	AML	05 15 45.7		
CAW	**Cannon Point**	**1.84**	**180**	PN	Pn	05 14 55.4	+0.4	
CAW				AML	AML	05 15 21.1		
CAW				AML	AML	05 15 25.2		
TCW	**Tory Channel**	**2.04**	**197**	PN	Pn	05 14 58.0	+0.2	
TCW				AML	AML	05 15 27.1		
TCW				AML	AML	05 15 29.3		
MSWZ	**Moikau Station**	**2.15**	**177**	ePN	Pn	05 14 58.9	-0.5	
MKAZ	**Moumakai**	**2.16**	**2**	PN	Pn	05 14 58.6	-0.9	
MKAZ				AML	AML	05 16 03.3		
KBAZ	**Karaka Road Bo**	**2.18**	**356**	PN	Pn	05 14 59.6	-0.1	
AWAZ	**Awhitu Peninsu**	**2.23**	**351**	PN	Pn	05 15 00.5	+0.1	
TUWZ	**Tuamarina**	**2.33**	**202**	PN	Pn	05 15 02.5	+0.7	
NNZ	**Nelson**	**2.34**	**213**	PN	Pn	05 15 02.5	+0.5	
QRZ	**Quartz Range**	**2.50**	**231**	PN	Pn	05 15 03.0	-1.2	
BSWZ	**Blackbirch Sta**	**2.61**	**200**	ePN	Pn	05 15 06.3	+0.6	
THZ	**Tophouse**	**2.99**	**213**	PN	Pn	05 15 12.4	+1.4	
THZ				AML	AML	05 16 21.9		
THZ				AML	AML	05 16 32.7		
MQZ	**McQueen's Vall**	**4.79**	**202**	PN	Pn	05 15 33.3	-2.4	

*NEIC **26** 05:26:57.1, 51.°23N×179.°15E, h20km, ML3.4(AEIC), After AEIC.*
*IDC **26** 05:27:16.9±12.0, 52.°36N×176.°13W, h0km, mb3.4/4, mb1 3.7/5, mb1mx3.4/57, mbtmp3.3/5, ML3.2/1, MS3.2/1, Ms1 3.2/1, ms1mx2.4/36, Error ellipse: s-maj=241.0km s-min=57.0km az=75.0*
ISC 26 05:27:02.3±1.4, 52.°0N±0.°3×179.°32E±0.°06, h35km, n21, σ2s02/25, mb3.5/4, Rat Islands

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
GANE	**Gareloi Northe**	**1.19**	**96**	P	**Pn**	**05 27 21.3**	**-1.1**
GANE				S	**Sn**	**05 27 40.3**	**+3.0**
GALAA	**Gareloi Lava P**	**1.20**	**99**	P	**Pn**	**05 27 21.2**	**-1.4**
GALAA				S	**Sn**	**05 27 40.6**	**+3.1**
GAEA	**Gareloi East**	**1.21**	**98**	P	**Pn**	**05 27 21.5**	**-1.2**
TANG	**Tanaga North**	**1.58**	**91**	P	**Pn**	**05 27 27.3**	**-0.5**
TASE	**Tanaga Southea**	**1.64**	**93**	P	**Pn**	**05 27 28.1**	**-0.6**
TAFP	**Tanaga Falls P**	**1.67**	**91**	P	**Pn**	**05 27 28.4**	**-0.6**
TAFP				S	**Sn**	**05 27 53.4**	**+4.2**
TAPA	**Tanaga Point A**	**1.78**	**93**	P	**Pn**	**05 27 29.7**	**-0.9**
TAPA				S	**Sn**	**05 27 54.9**	**+2.8**
KIKV	**Kanaga Island**	**2.17**	**91**	P	**Pn**	**05 27 35.0**	**-0.9**
KINC	**Kanaga Island**	**2.20**	**89**	P	**Pn**	**05 27 36.7**	**+0.5**
ADAG	**Mount Adagdak**	**2.52**	**88**	P	**Pn**	**05 27 40.8**	**+0.1**
ETKA	**Kagalaska Isla**	**2.65**	**90**	P	**Pn**	**05 27 41.3**	**-1.1**
GSTD	**Great Sitkin T**	**2.81**	**86**	P	**Pn**	**05 27 45.8**	**+1.2**
GSMY	**Great Sitkin M**	**2.86**	**86**	P	**Pn**	**05 27 44.8**	**-0.5**
SMY	**Shemya**	**3.29**	**286**	P	**Pn**	**05 27 50.6**	**-0.6**
SMY				S	**Sn**	**05 28 33.5**	**+4.3**
KOWE	**Korovin West**	**3.98**	**82**	P	**Pn**	**05 28 00.9**	**+0.1**
ILAR	**Eielson Array**	**21.54**	**40**	P	**P**	**05 31 45.1**	**-3.0**
	0.0nm,0.3s,baz=241,slow=9.0,SNR=2.8						
INK	**Inuvik**	**27.67**	**36**	P	**P**	**05 32 47.8**	**+1.5**
	0.3nm,0.3s,baz=244,slow=8.6,SNR=5.7						
YKA	**Yellowknife Ar**	**35.68**	**47**	P	**P**	**05 33 56.1**	**-0.6**
	0.3nm,0.5s,baz=281,slow=8.2,SNR=9.6						
TLY	**Talaya**	**44.76**	**301**	LR	LR	05 55 09.8	
	comp=Z,25nm,18.2s,baz=338,slow=36						
PDAR	**Pinedale Array**	**47.24**	**72**	P	**P**	**05 35 29.7**	**-2.3**
	0.8nm,0.6s,baz=302,slow=3.8,SNR=9.8						
TXAR	**Lajitas Array**	**59.72**	**80**	P	**P**	**05 37 03.5**	**+0.2**
	0.1nm,0.5s,baz=316,slow=7.6,SNR=3.2						

CASC 26 05:31:12.2±1.4, 13.°07N×89.°35W, h35km±999km, MD3.7, ML3.1, 3C-7D, El Salvador

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
COLS	**Colinas**	**0.60**	**5**	⇓eP	Pn	05 31 24.4	0.0
COLS				eS	Sn	05 31 33.9	+1.0
LFRS	**El Faro**	**0.62**	**27**	⇓iP	Pn	05 31 24.7	0.0
SNET	**Serv Nac Est T**	**0.63**	**11**	⇓iP	Pn	05 31 24.6	-0.2
SNET				eS	Sn	05 31 34.2	+0.5
SNET				AML	AML	05 31 36.7	
	comp=Z,4μm,0.2s						
BOQS	**Boqueron**	**0.67**	**6**	⇑iP	Pn	05 31 25.5	0.0
BOQS				eS	Sn	05 31 35.7	+0.9
LFU	**La Fuente**	**0.72**	**19**	⇓eP	Pn	05 31 26.1	+0.2
LFU				eS	Sn	05 31 36.5	+0.7
LBRS	**Las Brisas**	**0.73**	**24**	⇑iP	Pn	05 31 26.5	+0.4
LBRS				eS	Sn	05 31 36.9	+0.8
SNVI	**San Vicente**	**0.74**	**42**	eP	Pn	05 31 26.1	-0.2
SBLS	**San Blas**	**0.81**	**341**	⇓eP	Pn	05 31 27.2	-0.2
SBLS				eS	Sn	05 31 39.3	+0.9
SNJE	**San Jose**	**0.84**	**343**	eP	Pn	05 31 27.4	-0.3
MONT	**Ecomontaæa**	**0.84**	**340**	⇑eP	Pn	05 31 27.6	-0.2
MONT				eS	Sn	05 31 40.3	+1.3
RTR	**El Retiro**	**0.88**	**341**	⇓iP	Pn	05 31 28.2	0.0
TECA	**Tecapa**	**0.93**	**63**	eP	Pn	05 31 28.8	-0.1
PACA	**Pacayal**	**1.08**	**68**	⇓eP	Pn	05 31 31.7	+0.8
LCY	**Lacayo**	**1.09**	**71**	eP	Pn	05 31 31.8	+0.7
LCY				eS	Sn	05 31 45.8	+0.8
RBDL	**Robledal**	**1.09**	**343**	eP	Pn	05 31 31.0	-0.1
VSM	**San Miguel**	**1.11**	**71**	eP	Pn	05 31 32.1	+0.6
CSGN	**Cosiguina Volc**	**1.75**	**93**	eP	Pn	05 31 40.5	+0.4
CSGN				eS	Sn	05 32 01.0	-0.2
TGUH	**Tegucigalpa,Un**	**2.25**	**64**	eP	Pn	05 31 46.8	-0.1
TEL3	**Telica 3**	**2.49**	**101**	eP	Pn	05 31 51.6	+1.3
CNGN	**Cerro Negro**	**2.65**	**102**	eP	Pn	05 31 52.7	+0.3
CNGN				eS	Sn	05 32 22.0	-1.4
MOMN	**Momotombo**	**2.82**	**103**	eP	Pn	05 31 55.0	+0.2
COPN	**Copaltepe**	**2.83**	**108**	eP	Pn	05 31 55.1	+0.1
ESTN	**Estel**	**2.91**	**89**	eP	Pn	05 31 56.0	0.0
ESTN				AML	AML	05 32 34.3	
	comp=N,16nm,0.5s						
APYN	**Apoyeque**	**3.04**	**105**	eP	Pn	05 31 57.9	0.0
TISN	**Laguna Tiscapa**	**3.15**	**107**	eP	Pn	05 31 59.9	+0.6
MGAN	**Managua**	**3.16**	**106**	eS	Sn	05 32 34.3	-1.8
BOAB	**BOACO BROADBAN**	**3.65**	**99**	eP	Pn	05 32 05.5	-0.6
JTS	**JuntasAbangare**	**5.12**	**122**	eP	Pn	05 32 27.4	+1.0

*ISCJB **26** 05:37:20.0±0.3, 6.°27S±0.°03×130.°43E±0.°05, h124km, mb4.3/20, Error ellipse: s-maj=6.7km s-min=4.3km az=1.6*
*NEIC **26** 05:37:21.1±2.0, 6.°30S×130.°41E, h118km±20km, mb4.4/6, Error ellipse: s-maj=18.6km s-min=11.3km az=48.0*
*IDC **26** 05:37:22.3±2.1, 6.°22S×130.°44E, h124km±19km, mb3.8/12, mb1 4.0/15, mb1mx3.8/31, mbtmp4.3/15, Error ellipse: s-maj=18.5km s-min=11.4km az=83.0*
*DJA **26** 05:37:23.4±0.4, 6.°S±2.°×13.°1E±.°, h121km±7km, M4.8/12, mb4.9/6, mB5.3/5, MLv4.8/11, MLv4.8/12, Mw(mB)4.7/5*
ISC 26 05:37:22.1±0.5, 6.°24S±0.°04×130.°45E±0.°06, h124km, n50, σ1s36/50, mb4.2/20, Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
BNDI	**Bandanaira**	**1.79**	**342**	P	**Pn**	**05 37 56.4**	**+3.2**
BNDI				S	**Sn**	**05 38 20.1**	**+3.1**
SAUI	**Saumlaki**	**1.92**	**154**	P	**Pn**	**05 37 57.6**	**+2.8**
SAUI				S	**Sn**	**05 38 20.2**	**+0.4**
MSAI	**Masohi**	**3.25**	**332**	P	Pn	05 38 15.4	+3.6
MSAI				S	**Sn**	**05 38 53.9**	**+3.6**
FAKI	**Fak Fak**	**3.76**	**29**	P	**Pn**	**05 38 19.5**	**+1.0**
FAKI				S	**Sn**	**05 39 00.5**	**-1.7**
NLAI	**Namlea**	**4.48**	**312**	P	Pn	05 38 31.4	+3.3
SIJI	**Sorong**	**5.40**	**9**	P	**Pn**	**05 38 41.5**	**+1.0**
	5.7nm,0.3s,baz=354,slow=19,SNR=3.9						
SIJI				S	**Sn**	**05 39 37.9**	**-3.8**
	10nm,0.3s,baz=90,slow=23,SNR=6.6						
SWI	**Sorong**	**5.41**	**9**	P	**Pn**	**05 38 41.0**	**+0.4**
	65nm,0.6s,6μm0.8nm						
SWI				S	**Sn**	**05 39 40.7**	**-1.0**
	65nm,0.6s,6μm0.8nm						
RKPI	**Ransiki, Papua**	**5.99**	**38**	P	**Pn**	**05 38 49.9**	**+1.4**
	341nm,0.8s,4μm3.0nm						
SANI	**Sanana**	**6.10**	**313**	P	Pn	05 38 54.9	+5.0
LBMI	**Labuha**	**6.30**	**332**	S	**Sn**	**05 40 01.8**	**-1.5**
SOEI	**Soe**	**7.05**	**240**	P	**Pn**	**05 39 04.2**	**+1.4**
	80nm,0.8s,2μm0.6nm0.6nm						
BATI	**Baumata**	**7.79**	**239**	P	**Pn**	**05 39 14.2**	**+1.5**
	baz=108,slow=19						
BATI				S	**Sn**	**05 40 38.4**	**-1.0**
	baz=107,slow=20						
BATI	**Baumata**	**7.79**	**239**	P	**Pn**	**05 39 14.8**	**+2.1**
BATI				S	**Sn**	**05 40 38.5**	**-0.9**
FITZ	**Fitzroy Crossi**	**12.69**	**201**	P	Pn	05 40 14.1	-4.1
	2.4nm,0.3s,baz=38,slow=10,SNR=46						
FITZ				S	Sn	05 42 27.2	-11
	3.7nm,0.3s,baz=338,slow=19,SNR=6.7						
FITZ	**Fitzroy Crossi**	**12.69**	**201**	P	Pn	05 40 14.1	-4.1
FITZ				ePn	P	05 40 14.8	-10
FITZ				S	Sn	05 42 27.2	-11
WRAB	**Tennant Creek**	**14.13**	**165**	ePn	Pn	05 40 33.7	-3.0
	7.1nm,0.6s						
WRA	**Warramunga Arr**	**14.13**	**165**	P	Pn	05 40 32.7	-4.1
	1.2nm,0.3s,baz=333,slow=14,SNR=42						
WRA				S	Sn	05 42 59.6	-13
	8.8nm,0.3s,baz=355,slow=22,SNR=9.0						
COEN	**Coen**	**14.68**	**122**	ePn	**Pn**	**05 40 45.1**	**+1.3**
	22nm,0.7s						
ASAR	**Alice Springs**	**17.64**	**170**	P	**P**	**05 41 19.2**	**-0.2**
	1.7nm,0.3s,baz=349,slow=9.7,SNR=136						
ASAR				S	S	05 44 25.8	-11
	1.9nm,0.3s,baz=354,slow=28,SNR=15						
CTA	**Charters Tower**	**20.61**	**133**	P	**P**	**05 41 51.6**	**-0.1**
	3.1nm,0.5s,baz=315,slow=14,SNR=3.3						
STKA	**Stephens Creek**	**27.55**	**159**	P	**P**	**05 42 57.7**	**+0.4**
	0.8nm,0.3s,baz=328,slow=9.1,SNR=6.9						
PSI	**Prapat**	**32.74**	**285**	P	P	05 43 41.0	-2.5
	3.4nm,0.5s,baz=74,slow=7.8,SNR=3.9						
PANO	**Nakornpanom**	**34.53**	**313**	P	**P**	**05 43 59.2**	**+0.4**
	32nm,0.8s,1μm						
SKNT	**Sakolnakorn**	**34.88**	**312**	P	**P**	**05 44 02.0**	**+0.1**
	11nm,1.0s						
UTTA	**Uttaradit**	**37.94**	**309**	P	**P**	**05 44 28.2**	**+0.4**
	3.1nm,0.9s						
CMAR	**Chiang Mai Arr**	**39.60**	**309**	P	**P**	**05 44 41.6**	**-0.1**
	2.8nm,0.6s,baz=141,slow=7.7,SNR=15						
CMMT	**Chiang Mai**	**39.80**	**309**	P	**P**	**05 44 43.6**	**+0.2**
	9.0nm,0.9s,481nm						
CHTO	**Chiang Mai**	**39.80**	**309**	P	**P**	**05 44 43.6**	**+0.2**
	40nm,0.9s						
CHTO	**Chiang Mai**	**39.80**	**309**	eP	**P**	**05 44 42.9**	**-0.5**
	7.5nm,0.9s						
MJAR	**Matsushiro Arr**	**43.18**	**9**	P	**P**	**05 45 10.1**	**-0.6**
	0.6nm,0.4s,baz=195,slow=8.6,SNR=4.3						
USRK	**Ussuriysk Ar.**	**50.23**	**1**	P	**P**	**05 46 05.1**	**-0.3**
	1.4nm,0.6s,baz=173,slow=5.8,SNR=5.3						
GUN	**Gumba**	**54.80**	**311**	eP	**P**	**05 46 39.3**	**-0.5**
	19nm,0.6s						
KKN	**Kakani**	**55.19**	**310**	eP	**P**	**05 46 41.5**	**-1.0**
	12nm,0.8s						
DMN	**Daman**	**55.23**	**310**	eP	**P**	**05 46 42.0**	**-0.9**
	6.5nm,0.3s						
GKN	**Gorkha**	**55.79**	**310**	eP	**P**	**05 46 46.4**	**-0.3**
	11nm,0.5s						
KOLN	**Koldanda**	**56.47**	**309**	eP	**P**	**05 46 51.3**	**-0.3**
	20nm,0.9s						
PYUN	**Piuthan**	**57.10**	**309**	eP	**P**	**05 46 56.0**	**-0.1**
ULN	**Ulaanbaatar**	**57.69**	**342**	eP	**P**	**05 46 59.2**	**-0.6**
	4.7nm,0.7s						
SONM	**Songino Array**	**57.87**	**341**	P	**P**	**05 47 01.5**	**+0.5**
	1.8nm,0.6s,baz=160,slow=7.2,SNR=12						
PETK	**Petropavlovsk-**	**63.47**	**18**	P	**P**	**05 47 38.8**	**+0.1**
	2.2nm,0.6s,baz=202,slow=3.1,SNR=4.1						
MKAR	**Makanchi Array**	**67.84**	**326**	P	**P**	**05 48 07.5**	**+0.5**
	8.2nm,0.4s,baz=117,slow=8.3,SNR=74						
TKM2	**Tokmak 2**	**69.69**	**320**	eP	**P**	**05 48 18.3**	**-0.4**
	3.3nm,0.5s						
ZALV	**Zalesovo Beam**	**71.11**	**333**	P	**P**	**05 48 26.2**	**-0.6**
	2.5nm,0.5s,baz=123,slow=4.9,SNR=9.2						
VNDA	**Vanda**	**73.14**	**173**	P	**P**	**05 48 39.1**	**+0.5**
	0.6nm,0.6s,baz=317,slow=9.3,SNR=4.4						
MAW	**Mawson**	**75.81**	**201**	P	**P**	**05 48 54.7**	**+0.6**
	2.2nm,0.7s,baz=48,slow=6.9,SNR=7.8						
ABKAR	**Akbulak array**	**82.20**	**321**	eP	**P**	**05 49 28.4**	**-0.9**
	0.8nm,0.6s						
ILAR	**Eielson Array**	**92.48**	**25**	P	**P**	**05 50 17.3**	**-1.4**
	0.7nm,0.9s,baz=289,slow=4.3,SNR=4.8						
TORD	**Torodi Ar. Bea**	**129.10**	**282**	PKP	**PKPdf**	**05 56 16.0**	**-0.5**
	0.8nm,0.7s,baz=82,slow=1.6,SNR=5.2						
DBIC	**Dimbokro**	**135.60**	**273**	PKP	**PKPdf**	**05 56 28.9**	**+0.1**
	2.6nm,0.9s,baz=90,slow=3.0,SNR=2.8						
LPAZ	**La Paz**	**151.03**	**141**	PKPbc	**PKPbc**	**05 57 03.1**	**+0.9**
	1.3nm,0.4s,baz=38,slow=3.1,SNR=15						

*ISCJB **26** 05:51:45.9±0.3, 45.°18N±0.°06×141.°55E±0.°08, h291km±3km, mb3.5/12, Error ellipse: s-maj=9.1km s-min=8.7km az=166.2*
*IDC **26** 05:51:46.6±0.5, 45.°22N×141.°51E, h284km±5km, mb3.3/12, mb1 3.5/18, mb1mx3.3/49, mbtmp4.0/18, Error ellipse: s-maj=13.2km s-min=10.8km az=169.0*
*JMA **26** 05:51:46.2±0.2, 45.°20N×141.°53E, h290km±2km, M3.7*
ISC 26 05:51:46.7±0.6, 45.°12N±0.°07×141.°59E±0.°07, h290km±6km, n39, σ1s05/47, mb3.6/12, 8D, Hokkaido region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JRR	**Rishiri**	**0.20**	**277**	P	**Pn**	**05 52 23.7**	**+0.2**
JWK2	**Keihoku**	**0.30**	**47**	⇓P	**Pn**	**05 52 23.3**	**-0.3**
JWK2				eS	**S**	**05 52 52.1**	**-0.8**
JSE	**Soyaes**	**0.72**	**102**	⇓P	**Pn**	**05 52 24.5**	**-0.2**
JSE				eS	**S**	**05 52 54.0**	**-0.9**
JSS	**Shosan**	**0.74**	**165**	eS	**S**	**05 52 55.7**	**+0.5**
ASAJ	**Asahikawa**	**1.23**	**144**	P	**Pn**	**05 52 27.5**	**+0.2**
	42nm,0.3s,baz=311,slow=4.6,SNR=158						
ASAJ				S	**S**	**05 52 59.6**	**+0.2**
	2.3nm,0.3s,baz=323,slow=20,SNR=12						
ASAJ	**Asahikawa**	**1.23**	**144**	⇓P	**Pn**	**05 52 27.4**	**+0.2**
ASAJ				eS	**S**	**05 52 59.4**	**0.0**
JHR	**Hokuryu**	**1.38**	**176**	eS	**S**	**05 53 01.5**	**+0.5**
JKK2	**Kamakawa 2**	**1.49**	**146**	⇓P	**Pn**	**05 52 29.3**	**+0.4**
JMP	**Maruseppu**	**1.68**	**131**	⇓P	**Pn**	**05 52 30.6**	**+0.4**
JTKR	**Abashiri--Toko**	**2.01**	**124**	⇓P	**Pn**	**05 52 33.3**	**+0.7**
JTKR				eS	**S**	**05 53 10.0**	**+0.8**
JEW	**Eniwo**	**2.28**	**183**	P	**Pn**	**05 52 35.5**	**+0.6**
JEW				eS	**S**	**05 53 14.2**	**+0.9**
JAR	**Ashorobuto**	**2.40**	**138**	⇓P	**Pn**	**05 52 36.7**	**+0.7**
JAR				eS	**S**	**05 53 16.6**	**+1.3**
JRA	**Rausu**	**2.79**	**114**	⇓P	**Pn**	**05 52 40.8**	**+1.2**
JCH	**Churui**	**2.81**	**152**	P	**Pn**	**05 52 38.7**	**-1.2**
JCH				eS	**S**	**05 53 19.3**	**-3.0**
JAK	**Akkeshi**	**3.08**	**132**	eS	**S**	**05 53 24.9**	**-2.2**
JKB	**Kayabe**	**3.25**	**187**	P	**Pn**	**05 52 43.5**	**-0.8**
NEM2	**Nemuro 2**	**3.46**	**119**	eS	**S**	**05 53 31.1**	**-3.1**
USRK	**Ussuriysk Ar.**	**6.91**	**266**	P	**Pn**	**05 53 26.5**	**-0.2**
	0.7nm,0.3s,baz=78,slow=12,SNR=7.8						
KLR	**Kul'dur**	**7.87**	**305**	P	**Pn**	**05 53 37.2**	**-1.2**
	0.2nm,0.3s,baz=113,slow=14,SNR=11						
MJAR	**Matsushiro Arr**	**8.94**	**198**	P	**Pn**	**05 53 51.1**	**-0.8**
	0.8nm,0.3s,baz=9.7,slow=12,SNR=5.8						
PETK	**Petropavlovsk-**	**13.22**	**47**	P	**P**	**05 54 44.5**	**+0.1**
	0.3nm,0.3s,baz=229,slow=6.8,SNR=5.4						
MA2	**Magadan**	**15.51**	**18**	P	**P**	**05 55 09.8**	**+0.3**
	1.6nm,0.3s,baz=218,slow=11,SNR=6.8						
SEY	**Seymchan**	**18.89**	**15**	P	**P**	**05 55 45.6**	**-0.5**
	1.5nm,0.3s,baz=202,slow=11,SNR=21						
SONM	**Songino Array**	**24.26**	**289**	P	**P**	**05 56 38.0**	**0.0**
	1.7nm,0.4s,baz=81,slow=9.0,SNR=17						
ZALV	**Zalesovo Beam**	**36.97**	**305**	P	**P**	**05 58 27.6**	**-0.8**
	0.6nm,0.4s,baz=90,slow=7.2,SNR=2.2						
MKAR	**Makanchi Array**	**40.41**	**294**	P	**P**	**05 58 56.7**	**-0.3**
	2.6nm,0.7s,baz=79,slow=9.3,SNR=19						
ILAR	**Eielson Array**	**42.76**	**37**	P	**P**	**05 59 14.9**	**-0.8**
	0.8nm,0.4s,baz=260,slow=6.5,SNR=15						
GUN	**Gumba**	**47.01**	**268**	eP	**P**	**05 59 50.4**	**+0.5**
	8.9nm,0.4s						
GKN	**Gorkha**	**47.84**	**269**	eP	**P**	**05 59 56.2**	**+0.2**
	7.4nm,0.5s						
KOLN	**Koldanda**	**48.71**	**270**	eP	**P**	**06 00 02.5**	**-0.2**
	5.3nm,0.4s						
PYUN	**Piuthan**	**48.95**	**271**	eP	**P**	**06 00 05.3**	**+0.9**
	9.9nm,0.3s						
YKA	**Yellowknife Ar**	**56.84**	**33**	P	**P**	**06 01 01.2**	**+0.2**
	1.0nm,0.6s,baz=306,slow=6.7,SNR=40						
FINES	**FINESS Array B**	**61.79**	**331**	P	**P**	**06 01 33.1**	**-1.5**
	1.6nm,0.9s,baz=27,slow=9.6,SNR=3.5						
WRA	**Warramunga Arr**	**65.08**	**188**	P	**P**	**06 01 56.9**	**+0.4**
	0.8nm,1.1s,baz=1.9,slow=6.7,SNR=4.8						
KBZ	**Khabaz**	**65.87**	**308**	P	**P**	**06 02 02.0**	**+0.7**
	2.2nm,0.8s,baz=35,slow=5.8,SNR=7.9						
ASAR	**Alice Springs**	**68.81**	**188**	P	**P**	**06 02 21.8**	**+1.9**
	0.4nm,0.9s,baz=0.8,slow=5.7,SNR=7.0						
NVAR	**Mina Array Bea**	**70.15**	**55**	P	**P**	**06 02 29.5**	**+1.1**
	0.8nm,0.5s,baz=286,slow=6.9,SNR=5.3						
PDAR	**Pinedale Array**	**71.98**	**47**	P	**P**	**06 02 39.7**	**+0.5**
	0.9nm,0.6s

comp=N,1μm,0.2s
PB06 IPOC Station P 3.15 265 *i* P **Pn** **06 20 46.7 +1.9**
PB06 *i* S **S** **06 21 26.7 -0.5**
PB01 IPOC Station P 3.40 294 *i* P **Pn** **06 20 49.3 +1.7**
PB01 *i* S **S** **06 21 32.0 -0.3**
PB01 IAML 06 21 34.3
comp=N,1μm,0.3s
PB07 IPOC Station P 3.52 282⇑ *i* P **Pn** **06 20 50.6 +1.5**
PB07 *i* S **S** **06 21 33.9 -1.1**
PB07 IAML 06 21 35.1
comp=N,884nm,0.3s
FSA Cafayete 3.61 177 *i* P **Pn** **06 20 51.0 +1.0**
FSA *i* S **S** **06 21 34.5 -2.3**
PB04 IPOC Station P 3.68 272 *i* P **Pn** **06 20 51.8 +0.9**
PB04 *e*S **S** **06 21 35.5 -2.7**
PB04 IAML 06 21 39.7
comp=N,988nm,0.2s
PATCX Punta Patache 4.05 293 *i* P **Pn** **06 20 56.2 +1.0**
PATCX *i* S **S** **06 21 44.6 -1.5**
PATCX IAML 06 21 48.0
comp=E,1μm,0.2s
AHML Horco Molle 4.34 170 *i* P **Pn** **06 20 59.0 +0.5**
BBOE La Paz, Chanca 5.90 343⇑ *i*Pn **Pn** **06 21 19.8 +1.5**
CYA Choya 5.94 177 *i* P **Pn** **06 21 19.2 +1.0**
CYA IAML 06 21 20.7
comp=Z,94nm,0.7s
CYA *i* S **S** **06 22 23.2 -4.6**
BBOD La Paz, Gloria 6.25 338⇓ *i*Pn **Pn** **06 21 23.8 +1.1**
BBOD ⇑ *i*Sn **S** **06 22 32.7 -3.3**
comp=Z,30nm,0.7s
LPAZ La Paz 6.44 343 P **Pn** **06 21 26.3 +1.1**
comp=Z,3.8nm,0.3s,baz=153,slow=7.1,SNR=74
LPAZ S **S** **06 22 40.0 -0.4**
comp=Z,0.9nm,0.3s,baz=310,slow=16,SNR=9.9
LPAZ La Paz 6.44 343⇑ *i*Pn **Pn** **06 21 25.6 +0.4**
LPAZ *e*Sn **S** **06 22 37.2 -3.2**
VCA Vinchina 6.48 196 *i* P **Pn** **06 21 26.0 +0.8**
VCA IAML 06 21 28.8
comp=Z,319nm,0.2s
VCA *i* S **S** **06 22 35.6 -4.9**
BBOB La Paz, Bander 6.58 343⇑ *i*Pn **Pn** **06 21 27.3 +0.5**
BBOB ⇑ *i*Sn **S** **06 22 39.8 -3.6**
comp=Z,108nm,1.0s
SIV San Ignacio 8.06 38 P **Pn** **06 21 44.7 -0.5**
comp=Z,2.0nm,0.3s,baz=289,slow=2.9,SNR=61
SIV S S 06 23 04.4 -13
comp=Z,0.3nm,0.3s,baz=237,slow=18,SNR=3.9
SIV San Ignacio 8.06 38 *e*Pn **Pn** **06 21 44.9 -0.3**
PLCA Paso Flores 18.56 190 P **P** **06 23 50.8 +0.7**
comp=Z,0.4nm,0.3s,baz=26,slow=10,SNR=12
PTGA Pitinga 22.46 16 P **P** **06 24 29.1 -0.8**
comp=Z,2.1nm,0.2s,baz=187,slow=12,SNR=4.7
TXAR Lajitas Array 62.91 323 P **P** **06 29 52.2 +0.4**
comp=Z,0.1nm,0.4s,baz=151,slow=8.7,SNR=6.5
DBIC Dimbokro 66.61 72 P **P** **06 30 15.3 -0.5**
comp=Z,1.1nm,0.4s,baz=205,slow=7.9,SNR=6.1
TORD Torodi Ar. Bea 75.32 69 P **P** **06 31 06.9 -1.2**
comp=Z,1.5nm,0.4s,baz=256,slow=5.7,SNR=28
NVAR Mina Array Bea 77.85 321 P **P** **06 31 23.2 +1.2**
comp=Z,0.5nm,0.4s,baz=119,slow=6.6,SNR=4.3
YKA Yellowknife Ar 92.98 340 P **P** **06 32 36.6 +0.5**
comp=Z,0.8nm,0.6s,baz=130,slow=4.8,SNR=32
WRA Warramunga Arr 133.31 207 PKP **PKPdf** **06 38 38.9 +0.1**
comp=Z,0.2nm,0.8s,baz=158,slow=1.9,SNR=6.3
MKAR Makanchi Array 144.88 39 PKP **PKPdf** **06 38 59.3 +0.4**
comp=Z,1.4nm,0.7s,baz=316,slow=3.3,SNR=11

BJI ***26*** *06:39:32.9,8.°00S×108.°50E,h79km,mb5.3/85,mB5.3/62, Ms5.0/82,Ms7 4.7/76*

NEIC ***26*** *06:39:34.0±0.0,8.°43S×108.°69E,h79km,Moment Tensor Solution. s19 Moment tensor: Scale 10^{17}Nm; M_{rr}1.70; $M_{\theta\theta}$0.30; $M_{\phi\phi}$-2.00; $M_{r\theta}$1.00; $M_{r\phi}$-0.40; $M_{\theta\phi}$-2.50; Best double couple: M_o3.00000×10^{17} NP1:ϕ_s164.00000°, δ73.00000°,λ72.00000°. NP2:ϕ_s32.00000°,δ23.00000°, λ135.00000°. Principal axes: T 3.0000, Plg57.0000°, Azm50.0000°; N 0.0000, Plg16.0000°, Azm169.0000°; P -3.0000, Plg26.0000°, Azm267.0000°:*

DJA ***26*** *06:39:35.2±0.2,8.°S±2.°×10.°8E±.°,h66km±2km,M5.8/79, mb5.8/79,mB6.1/69,MLv6.3/35,Mw(mB)5.8/69,Mwp5.8/12*

KLM ***26*** *06:39:35.5,8.°33S×108.°09E,h115km,mb5.6,ML5.9, MS6.5*

ISCJB ***26*** *06:39:35.3±0.2,8.°08S±0.°02×108.°50E±0.°02,h98km±2km, mb5.5/181,Error ellipse: s-maj=3.8km s-min=2.2km az=27.4*

NEIC ***26*** *06:39:36.5±0.8,8.°08S×108.°48E,h95km±6km,mb5.7/65, MW5.6,MW5.6,Error ellipse: s-maj=5.2km s-min=3.8km az=50.0,Moment Tensor Solution. s29 Moment tensor: Scale 10^{17}Nm; M_{rr}2.35; $M_{\theta\theta}$0.29; $M_{\phi\phi}$-2.64; $M_{r\theta}$0.84; $M_{r\phi}$-0.44; $M_{\theta\phi}$-1.88; Best double couple: M_o3.30000×10^{17} NP1:ϕ_s169.00000°,δ65.00000°,λ71.00000°. NP2: ϕ_s28.00000°,δ31.00000°,λ125.00000°. Principal axes: T 3.2700, Plg64.0000°, Azm46.0000°; N 0.0000, Plg17.0000°, Azm177.0000°; P -3.2700, Plg18.0000°, Azm273.0000°:*

NEIC Felt [IV] at Pangandaran; [III] at Bogor, Cilacap Karangkates and Yogyakarta; [II] at Bandung and Jakarta. Also felt at Banjaran, Karawang, Kebumen, Magelang, Padalarang, Purwokerto, Tasikmalaya and Wonosobo.

MOS ***26*** *06:39:36.9±1.1,7.°92S×108.°57E,h108km,mb5.7/60, MS4.6/9 Error ellipse: s-maj=7.9km s-min=5.0km az=111.8*

GCMT ***26*** *06:39:38.0±0.1,8.°38S×108.°40E,h82km,MW5.6/122, Moment Tensor Solution. s117,c220; s122,c258; Duration: 1ᵍ6 Moment tensor: Scale 10^{17}Nm; M_{rr}2.34±.04; $M_{\theta\theta}$0.45±.04; $M_{\phi\phi}$-2.80±.05; $M_{r\theta}$1.10±.03; $M_{\theta\phi}$-0.25±.04; $M_{r\phi}$-1.85±.03; Best double couple: M_o3.38500×10^{17} NP1:ϕ_s163.00000°,δ66.00000°, λ69.00000°. NP2:ϕ_s26.00000°,δ32.00000°,λ129.00000°. Principal axes: T 3.3700, Plg63.0000°, Azm38.0000°; N 0.0220, Plg20.0000°, Azm172.0000°; P -3.3990, Plg18.0000°, Azm268.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface/mantle waves, cutoff=50s.*

IDC ***26*** *06:39:40.7±0.7,8.°03S×108.°62E,h131km±5km,mb5.0/36, mb1 5.1/38,mb1mx5.1/41,mbtmp5.4/38,MS4.5/34, Ms1 4.5/34,ms1mx4.4/40 Error ellipse: s-maj=8.5km s-min=6.8km az=62.0*

ISC 26 06:39:35.1±0.3,8.°06S±0.°03×108.°49E±0.°03,h86km±2km, h85km:pP-P,n1076,σ1ᵍ65/1088,mb5.6/203,70C-20D, Jawa

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CMJI	**Cimerak**	**0.28**	**352**	P	**Pn**	**06 39 48.5**	**+0.6**
CISI	**Cisompet, Garu**	**0.83**	**307**	P	**Pn**	**06 39 53.5**	**+0.8**
LEM	**Lembang**	**1.50**	**325**	P	Pn	06 40 10.0	+9.2
	2μm,0.3s,baz=156,slow=0.7,SNR=473						
LEM				S	Sn	06 40 32.4	+12
	3μm,0.3s,baz=125,slow=23,SNR=7.2						
LEM	**Lembang**	**1.50**	**325**	P	**Pn**	**06 40 04.1**	**+3.3**
CNJI	**Cibinong**	**1.54**	**299**	P	**Pn**	**06 40 01.8**	**+0.6**
CNJI				S	**Sn**	**06 40 22.3**	**+1.4**
UGM	**Wanagama**	**2.02**	**86**	P	**Pn**	**06 40 08.1**	**+0.6**
SMRI	**Semarang**	**2.18**	**63**	P	**Pn**	**06 40 13.2**	**+3.6**
SKJI	**Sukabumi**	**2.18**	**298**	P	**Pn**	**06 40 11.4**	**+1.8**
SKJI				S	**Sn**	**06 40 39.5**	**+3.5**
WOJI	**Wonogiri, Jawa**	**2.42**	**85**	P	**Pn**	**06 40 12.8**	**0.0**
WOJI				S	**Sn**	**06 40 41.8**	**+0.1**
TNG	**Tangerang**	**2.62**	**316**	P	**Pn**	**06 40 19.4**	**+4.0**
TNG				P	**Pn**	**06 40 19.4**	**+4.0**
PCJI	**Pacitan**	**2.67**	**93**	P	**Pn**	**06 40 16.7**	**+0.6**
PCJI				S	**Sn**	**06 40 48.5**	**+1.0**
NGJI	**Ngawi**	**3.02**	**77**	P	**Pn**	**06 40 24.1**	**+3.2**
SBJI	**Serang**	**3.03**	**309**	P	**Pn**	**06 40 24.6**	**+3.6**
CGJI	**Cibinong**	**3.12**	**297**	P	**Pn**	**06 40 23.2**	**+1.0**
CGJI				S	**Sn**	**06 41 00.3**	**+1.7**
PWJI	**Pagerwojo**	**3.28**	**90**	P	**Pn**	**06 40 25.2**	**+0.8**
TBJI	**Tambak Boyo**	**3.55**	**70**	P	**Pn**	**06 40 30.7**	**+2.7**
BLSI	**Bandar Lampung**	**4.18**	**309**	P	**Pn**	**06 40 39.4**	**+2.7**
KASI	**Kota Agung**	**4.70**	**302**	P	**Pn**	**06 40 45.6**	**+2.0**
KASI				S	**Sn**	**06 41 37.1**	**+0.2**
KLI	**Kotabumi**	**4.81**	**311**	P	**Pn**	**06 40 47.9**	**+2.8**
	4μm,0.7s,38μm23nm						
GMJI	**Gumukmas**	**4.91**	**93**	P	**Pn**	**06 40 47.6**	**+1.1**
	2μm,1.0s,34μm80μm14nm						
LWLI	**Liwa**	**5.34**	**304**	P	**Pn**	**06 40 56.0**	**+3.5**
	3μm,0.8s,88μm49nm						
JAGI	**Jajag, Banyuwa**	**5.62**	**95**	P	**Pn**	**06 40 56.6**	**+0.4**
	3μm,1.0s,70μm96μm27nm						
ABJI	**Asem Bagus**	**5.70**	**88**	P	**Pn**	**06 40 58.4**	**+1.1**
	3μm,0.7s,38μm13nm						
PBKI	**Pangkalan Bun**	**6.19**	**31**	P	Pn	06 41 09.3	+5.3
PMBI	**Palembang**	**6.30**	**324**	P	**Pn**	**06 41 10.2**	**+4.7**
	3μm,1.2s,54μm12nm						
PPBI	**Pangkal Pinang**	**6.31**	**338**	P	Pn	06 41 10.7	+5.1
	984nm,0.8s,10μm4.7nm						
LHSI	**Lahat**	**6.48**	**310**	P	**Pn**	**06 41 10.7**	**+2.7**
MNAI	**Manna**	**6.61**	**303**	P	**Pn**	**06 41 11.7**	**+1.9**
	6μm,0.6s,106μm24nm						
SRBI	**Singaraja**	**6.66**	**91**	P	**Pn**	**06 41 11.9**	**+1.5**
DNP	**Denpasar**	**6.68**	**96**	P	**Pn**	**06 41 11.1**	**+0.4**
	5μm,0.5s,82μm63μm58nm						
BBKI	**Banjar Baru**	**7.79**	**55**	P	Pn	06 41 31.9	+6.0
	824nm,0.8s,15μm5.2nm						
MASI	**Maura Aman, Be**	**7.91**	**308**	P	**Pn**	**06 41 29.6**	**+2.1**
	4μm,1.0s,39μm						
JMBI	**JAMBI**	**8.00**	**323**	P	**Pn**	**06 41 32.2**	**+3.5**
	2μm,1.3s,21μm						
TWSI	**Taliwang, Sumb**	**8.33**	**95**	P	**Pn**	**06 41 32.8**	**-0.4**
	1μm,0.6s,24μm						
DSRI	**Dabo**	**8.48**	**332**	P	Pn	06 41 40.5	+5.3
	1μm,1.2s,14μm						
STKI	**Sintang**	**8.60**	**20**	P	Pn	06 41 43.7	+6.8
	406nm,1.4s,28μm2.3nm						
PLAI	**Plampang**	**9.22**	**95**	P	**Pn**	**06 41 45.0**	**-0.4**
KSM	**Kuching**	**9.64**	**11**	⇑P	Pn	06 41 56.4	+5.3
KSM	**Kuching**	**9.64**	**11**	*e*Pn	**Pn**	**06 41 55.5**	**+4.4**
KSM				*e*Sn	**Sn**	**06 43 39.0**	**+1.3**
TPRI	**Tanjung Pinang**	**9.75**	**336**	P	**Pn**	**06 41 56.9**	**+4.3**
	360nm,0.8s,10μm						
PPSI	**Pulau Pagai**	**9.94**	**301**	P	**Pn**	**06 41 53.8**	**-1.4**
	4μm,0.5s,52μm						
SDSI	**Sungai Dareh**	**9.98**	**315**	P	**Pn**	**06 41 55.8**	**+0.1**
	232nm,1.6s,31μm						
PDSI	**Padang**	**10.69**	**311**	P	**Pn**	**06 42 04.8**	**-0.7**
MYKOM	**Kota Tinggi**	**10.82**	**334**	*e*Pn	**Pn**	**06 42 10.0**	**+2.8**
SBUM	**Sibu**	**11.08**	**20**	⇑P	Pn	06 42 17.8	+7.1
SBUM	**Sibu**	**11.08**	**20**	*e*Pn	Pn	06 42 17.3	+6.5
BKNI	**Bangkinang**	**11.16**	**318**	P	**Pn**	**06 42 12.7**	**+0.9**
	910nm,1.2s,8μm						
KAPI	**Kappang**	**11.59**	**76**	P	**Pn**	**06 42 20.5**	**+2.9**
	12nm,0.3s,baz=279,slow=5.7,SNR=44						
KAPI				S	**Sn**	**06 44 28.0**	**+2.8**
	1.4nm,0.3s,baz=270,slow=12,SNR=1.5						
KAPI				LR	LR	06 47 37.2	
	comp=Z,6μm,18.9s,baz=261,slow=42						
BSSI	**Bau Bau, Buton**	**12.06**	**82**	P	**Pn**	**06 42 26.3**	**+2.3**
BTM	**Bintulu**	**12.09**	**22**	⇓P	**P**	**06 42 30.8**	**-2.8**
BASI	**Baing, Sumba**	**12.13**	**101**	P	**Pn**	**06 42 22.5**	**-2.4**
COCO	**West Island**	**12.18**	**249**	*i* P	**Pn**	**06 42 24.9**	**-0.7**
COCO	**West Island**	**12.18**	**249**	*e*Pn	**Pn**	**06 42 22.3**	**-3.4**
COCO				*e*Sn	Sn	06 44 24.5	-15
TTSI	**Tana Toraja**	**12.32**	**67**	P	**P**	**06 42 33.2**	**-3.1**
	499nm,1.1s,8μm						
EDFI	**Ende, Flores**	**13.08**	**94**	P	**Pn**	**06 42 35.4**	**-2.4**
	487nm,0.8s,7μm355μm						
FRIM	**Kepong**	**13.14**	**328**	⇑P	**Pn**	**06 42 40.9**	**+2.4**
MMRI	**Maumere**	**13.62**	**93**	P	**Pn**	**06 42 42.0**	**-2.7**
GSI	**Gunungsitoli**	**14.31**	**310**	P	**Pn**	**06 42 50.5**	**-3.3**
KTGM	**Kuala Trenggan**	**14.33**	**338**	⇑P	**P**	**06 42 57.1**	**-1.5**
PSI	**Prapat**	**14.40**	**318**	P	**Pn**	**06 42 50.8**	**-4.2**
	baz=161,slow=13						
PSI				LR	LR	06 49 08.8	
	comp=Z,2μm,18.7s,baz=123,slow=40						
PSI	**Prapat**	**14.40**	**318**	P	**Pn**	**06 42 50.8**	**-4.2**
PSI				*e*P	**P**	**06 42 57.3**	**-2.2**
IPM	**Ipoh**	**14.51**	**329**	⇓P	**Pn**	**06 42 57.4**	**+1.0**
IPM	**Ipoh**	**14.51**	**329**	*e*Pn	**Pn**	**06 42 57.5**	**+1.2**
BATI	**Baumata**	**15.13**	**99**	P	**Pn**	**06 43 01.6**	**-2.7**
	baz=52,slow=20						
BATI				S	**Sn**	**06 45 41.8**	**-10**
	baz=49,slow=19						
BATI	**Baumata**	**15.13**	**99**	P	**Pn**	**06 43 05.1**	**+0.7**
KULM	**Kulim**	**15.39**	**329**	⇑P	**Pn**	**06 43 08.0**	**+0.4**
KULM	**Kulim**	**15.39**	**329**	*e*Pn	**Pn**	**06 43 07.4**	**-0.2**
	127nm,1.1s						
KULM				*e*Sn	**Sn**	**06 45 59.0**	**+1.4**
TSM	**Tawau**	**15.43**	**38**	⇑P	**P**	**06 43 13.4**	**+2.6**
GIRL	**Giralia**	**15.52**	**160**	P	**Pn**	**06 43 02.6**	**-6.6**
	baz=16,SNR=86						
SOEI	**Soe**	**15.68**	**97**	P	**Pn**	**06 43 08.3**	**-3.1**
	2μm,0.9s,14μm						
MRSI	**Marisa**	**15.87**	**58**	P	**P**	**06 43 17.4**	**+1.8**
TPTI		**15.93**	**314**	P	**Pn**	**06 43 08.4**	**-5.9**
KKM	**Kota Kinabalu**	**15.99**	**29**	⇓P	**P**	**06 43 19.1**	**+2.0**
KKM	**Kota Kinabalu**	**15.99**	**29**	*e*P	**P**	**06 43 18.6**	**+1.5**
	1μm,1.5s						
SDKM	**Sandakan**	**16.14**	**33**	⇓P	**P**	**06 43 21.6**	**+2.8**
MYLDM	**Lahad Datu**	**16.51**	**38**	*e*Pn	**P**	**06 43 27.9**	**+5.1**
	914nm,1.3s						
MBWA	**Marble Bar**	**16.95**	**141**	*e*Pn	**Pn**	**06 43 21.5**	**-5.5**
	86nm,0.8s						
MBWA				*e*Sn	Sn	06 46 11.9	-23
MBWA	**Marble Bar**	**16.95**	**141**	Pn	**Pn**	**06 43 22.5**	**-4.6**
	SNR=9.8						
SKLT	**Songkhla**	**17.04**	**332**	P	**P**	**06 43 31.8**	**+3.2**
	101nm,0.9s,1μm						
KDM	**Kudat**	**17.04**	**29**	⇓P	**P**	**06 43 32.2**	**+3.6**
MLSI	**Meulaboh, Aceh**	**17.18**	**315**	P	**Pn**	**06 43 26.4**	**-3.5**
TRTT	**Trang**	**18.06**	**331**	P	**Pn**	**06 43 40.6**	**0.0**
	82nm,1.2s,3μm						
SANI	**Sanana**	**18.42**	**72**	P	**Pn**	**06 43 47.8**	**+2.9**
	430nm,0.9s,6μm19μm						
PKDT	**Phuket**	**18.80**	**327**	P	**P**	**06 43 48.6**	**+0.6**
	120nm,0.9s						
NLAI	**Namlea**	**19.12**	**77**	P	**Pn**	**06 43 55.1**	**+1.8**
FITZ	**Fitzroy Crossi**	**19.44**	**123**	P	**P**	**06 43 55.6**	**+0.6**
	2.7nm,0.3s,baz=296,slow=8.1,SNR=84						
FITZ				S	S	06 47 15.9	-15
	4.4nm,0.3s,baz=146,slow=18,SNR=3.6						
FITZ	**Fitzroy Crossi**	**19.44**	**123**	P	**P**	**06 43 55.3**	**+0.4**
	baz=20,SNR=197						
FITZ	**Fitzroy Crossi**	**19.44**	**123**	*e*P	**P**	**06 43 55.4**	**+0.4**
	198nm,1.0s						
FITZ				S	S	06 47 15.9	-15
SURT	**Suratani**	**19.47**	**330**	P	**P**	**06 43 54.9**	**-0.4**
	47nm,1.0s,993nm						
LBMI	**Labuha**	**20.33**	**70**	P	Pn	06 44 06.8	-0.6
	2μm,1.1s,17μm						
TNTI	**Ternate**	**20.77**	**66**	P	Pn	06 44 13.4	+0.9
	2μm,1.1s,24μm17μm						
CMBY	**CAMPBELL BAY**	**20.85**	**315**	*e*P	**P**	**06 44 11.0**	**+0.7**
MSAI	**Masohi**	**20.86**	**78**	P	Pn	06 44 12.4	-1.3
	165nm,0.6s,2μm						
BNDI	**Bandanaira**	**21.57**	**82**	P	**P**	**06 44 21.0**	**+3.0**
	689nm,1.1s,8μm						
PAGZ	**Pagadian**	**21.68**	**44**	*e*P	**P**	**06 44 23.4**	**+4.3**
MORW	**Morawa**	**22.08**	**162**	P	**P**	**06 44 22.0**	**-1.2**
	baz=22,SNR=4.3						
PATY	**Pattaya**	**22.18**	**340**	P	**P**	**06 44 30.5**	**+6.1**
	23nm,0.9s						
SAUI	**Saumlaki**	**22.59**	**91**	P	**P**	**06 44 34.3**	**+5.5**
	74nm,0.7s						
PHET	**Kaeng Krachan**	**22.61**	**337**	P	**P**	**06 44 30.6**	**+1.6**
	22nm,0.6s,293nm						
DAV	**Davao City (W)**	**22.72**	**49**	P	**P**	**06 44 33.0**	**+2.9**
	378nm,0.4s,baz=128,slow=1.9,SNR=33						
DAV	**Davao City (W)**	**22.72**	**49**	P	**P**	**06 44 31.2**	**+1.0**
	SNR=40						
DAV	**Davao City (W)**	**22.72**	**49**	P	**P**	**06 44 31.2**	**+1.0**
	SNR=40						
MTN	**Manton Dam**	**22.76**	**104**	P	**P**	**06 44 30.2**	**-0.4**
	baz=23,SNR=52						
MTN	**Manton Dam**	**22.76**	**104**	*e*P	**P**	**06 44 30.4**	**-0.2**
	687nm,1.4s						
SRAK	**Srakaew**	**22.84**	**344**	P	**P**	**06 44 30.7**	**-0.6**
	122nm,0.9s,2μm						
BUKP	**Musuan**	**22.88**	**47**	*e*P	**P**	**06 44 33.7**	**+1.9**
CGP	**Cagayan de Oro**	**23.02**	**45**⇓	*e*P	**P**	**06 44 37.7**	**+4.5**
MATI	**Mati**	**23.15**	**50**	*e*P	**P**	**06 44 37.3**	**+2.8**
BLDU	**Ballidu**	**23.72**	**162**	P	**P**	**06 44 39.0**	**-0.5**
	baz=24,SNR=7.0						
SWI	**Sorong**	**23.79**	**74**	P	**P**	**06 44 43.6**	**+3.4**
	184nm,0.8s,3μm						
KDU	**Kakadu**	**24.03**	**103**	P	**P**	**06 44 42.4**	**0.0**
	baz=24,SNR=29						
RCP	**Roxas**	**24.10**	**36**⇑	*e*P	**P**	**06 44 44.9**	**+1.9**
FAKI	**Fak Fak**	**24.19**	**79**	P	**P**	**06 44 44.7**	**+0.8**
	271nm,0.8s,4μm						
CHAI	**Chaiyaphum**	**24.66**	**345**	P	**P**	**06 44 48.8**	**+0.8**
	42nm,0.6s,355nm						
KHLT	**Khaolaem Dam**	**24.74**	**337**	P	**P**	**06 44 52.1**	**+3.3**
	29nm,1.0s,556nm						
OCLP	**Ormoc**	**24.85**	**40**	*e*P	**P**	**06 44 52.1**	**+2.3**
KLBR	**Kellerberrin**	**24.96**	**161**	P	**P**	**06 44 50.6**	**0.0**
	baz=25,SNR=6.6						
PBA	**Port Blair**	**25.08**	**321**	*e*P	P	06 44 51.9	0.0
TGY	**Tagaytay City**	**25.25**	**29**	P	**P**	**06 44 55.6**	**+2.2**
	140nm,0.3s,baz=246,slow=1.8,SNR=6.6						
PANO	**Nakornpanom**	**25.34**	**351**	P	**P**	**06 44 55.5**	**+1.3**
	44nm,1.0s,1μm						
WRKA	**Warakurna**	**25.35**	**134**	P	**P**	**06 44 53.6**	**-0.7**
	baz=26,SNR=70						
LQP	**Lukban**	**25.55**	**31**	*e*P	**P**	**06 44 57.4**	**+1.0**
NWAO	**Narrogin (SRO)**	**26.04**	**163**	P	**P**	**06 44 59.0**	**-1.5**
	15nm,0.7s,baz=243,slow=0.0,SNR=8.4						
NWAO	**Narrogin (SRO)**	**26.04**	**163**	P	**P**	**06 44 59.3**	**-1.1**
	baz=26,SNR=5.3						
NWAO	**Narrogin (SRO)**	**26.04**	**163**	*e*P	**P**	**06 44 59.1**	**-1.4**
NWAO	**Narrogin (SRO)**	**26.04**	**163**	*e*P	**P**	**06 44 59.1**	**-1.4**
KMBL	**Kambalda**	**26.34**	**153**	P	**P**	**06 45 01.9**	**-1.4**
	baz=26,SNR=10						
RKPI	**Ransiki, Papua**	**26.40**	**77**	P	**P**	**06 45 06.4**	**+2.5**
	596nm,0.8s,7μm						
NONG	**Nongkai**	**26.48**	**349**	P	**P**	**06 45 05.0**	**+0.4**
	61nm,0.8s						
UTTA	**Uttaradit**	**26.81**	**343**	P	**P**	**06 45 08.2**	**+0.7**
	9.7nm,0.7s,107nm						
QIZ	**Qiongzhong**	**26.95**	**3**	P	**P**	**06 45 12.5**	**+3.8**
QIZ				*e*P	**P**	**06 45 31.3**	**+3.1**
QIZ				S	**S**	**06 49 44.0**	**+4.2**
QIZ				*e*S	**S**	**06 50 10.5**	**-3.2**
QIZ				pmax	pmax		
	comp=Z,13nm,1.8s						
QIZ				LR	LR		
	comp=N,320nm,17.1s						
QIZ				LR	LR		
	comp=E,470nm,12.3s						
H01W3	**Cape Leeuwin H**	**27.20**	**170**	T	T	07 12 50.6	
	baz=341,slow=76,SNR=11						
H01W1	**Cape Leeuwin H**	**27.21**	**170**	T	T	07 12 52.2	
	baz=341,slow=76,SNR=12						
H01W2	**Cape Leeuwin H**	**27.21**	**170**	T	T	07 12 50.7	
	baz=341,slow=76,SNR=8.6						
WRA	**Warramunga Arr**	**27.68**	**118**	P	**P**	**06 45 15.2**	**-0.1**
	80nm,0.9s,baz=293,slow=11,SNR=162						
WRA				PcP	**PcP**	**06 48 30.5**	**-0.2**
	18nm,0.6s,baz=301,slow=1.7,SNR=6.5						
WRA				LR	LR	06 55 50.7	
	comp=Z,1μm,20.7s,baz=285,slow=35						
WRA				P3KPbc		07 17 43.7	
	0.6nm,0.8s,baz=104,slow=4.5,SNR=5.4						
WRAB	**Tennant Creek**	**27.68**	**118**	*e*P	**P**	**06 45 15.2**	**-0.2**
WRAB				pmax	pmax		
	comp=Z,127nm,0.9s						
WRAB	**Tennant Creek**	**27.68**	**118**	*e*P	**P**	**06 45 15.2**	**-0.2**
	comp=Z,127nm,0.9s						
WB2	**Warramunga Arr**	**27.69**	**118**	*e*P	**P**	**06 45 15.2**	**-0.2**
	comp=Z,140nm,0.9s						
LAMP	**Lampang**	**27.82**	**342**	P	**P**	**06 45 17.6**	**+1.1**
	comp=Z,29nm,0.7s,comp=Z,229nm						
CM01	**Chiang Mai Arr**	**27.94**	**340**	*e*P	**P**	**06 45 17.0**	**-0.6**
CMAR	**Chiang Mai Arr**	**27.98**	**340**	P	**P**	**06 45 18.4**	**+0.5**
	comp=Z,11nm,0.7s,baz=178,slow=8.9,SNR=46						
CMAR				PcP	**PcP**	**06 48 31.4**	**0.0**
	comp=Z,15nm,0.7s,baz=206,slow=3.2,SNR=8.7						
CMAR				S	**S**	**06 49 55.1**	**-1.1**
	comp=Z,4.1nm,0.7s,baz=171,slow=14,SNR=6.0						
CMAR				ScP	**ScP**	**06 52 06.7**	**+2.0**
	comp=Z,2.4nm,0.5s,baz=196,slow=4.0,SNR=4.8						
CMAR				LR	LR	06 58 00.8	
	comp=Z,2μm,18.4s,baz=169,slow=39						
CMAR	**Chiang Mai Arr**	**27.98**	**340**	*i* P	**P**	**06 45 18.8**	**+0.8**
CMAR				pmax	pmax		
	comp=Z,10.0nm,0.5s						
MHMT	**Maesariang**	**28.07**	**338**	P	**P**	**06 45 20.2**	**+1.4**
	comp=Z,23nm,0.7s,comp=Z,983nm						
CHTO	**Chiang Mai**	**28.31**	**341**	P	**P**	**06 45 21.3**	**+0.4**
	comp=Z,108nm,0.8s,comp=Z,2μm						
CHTO	**Chiang Mai**	**28.31**	**341**	*e*P	**P**	**06 45 21.1**	**+0.2**
CHTO				pmax	pmax		
	comp=Z,37nm,1.1s						
CHTO	**Chiang Mai**	**28.31**	**341**	*e*P	**P**	**06 45 21.1**	**+0.2**
	comp=Z,37nm,1.1s						
CHTO	**Chiang Mai**	**28.31**	**341**	P	**P**	**06 45 20.7**	**-0.3**
	SNR=8.5						
CHTO	**Chiang Mai**	**28.31**	**341**	P	**P**	**06 45 20.7**	**-0.3**
	SNR=8.5						
AS31	**Alice Springs**	**28.88**	**125**	*e*P	**P**	**06 45 25.4**	**-0.6**
	comp=Z,17nm,0.6s						
ASAR	**Alice Springs**	**28.88**	**125**	P	**P**	**06 45 25.6**	**-0.5**
	comp=Z,50nm,0.8s,baz=302,slow=8.5,SNR=239						
ASAR				PcP	**PcP**	**06 48 33.7**	**+0.1**
	comp=Z,32nm,0.8s,baz=312,slow=2.0,SNR=14						
ASAR				LR	LR	06 57 11.4	
	comp=Z,2μm,20.9s,baz=303,slow=36						
ASAR				P3KPbc		07 17 34.4	
	com

COEN **Coen** 34.52 103 *e*P P 06 46 15.7 +0.1
comp=E,219nm,0.8s
YHNB **Yeheng** 34.87 21 *e*P P 06 46 19.2 +0.7
comp=E,212nm,1.7s
MDRS **Chennai** 35.04 307 *e*P P 06 46 19.8 -0.1
MDRS IAmb IAmb 06 46 26.2
comp=Z,89nm,1.1s
TATO **Taipei** 35.19 21 *e*P P 06 46 23.0 +1.8
comp=Z,79nm,0.8s
YOJ **Yonaguni jima** 35.29 23 *e*P P 06 46 22.6 +0.6
YOJ pmax pmax
comp=Z,134nm,0.7s
YOJ **Yonaguni jima** 35.29 23 *e*P P 06 46 22.6 +0.6
comp=Z,134nm,0.7s
TRD **Trivandrum** 35.47 297 *e*P P 06 46 25.4 +1.7
BBOO **Buckleboo** 35.48 138 P P 06 46 22.6 -1.0
baz=36,SNR=128
BBOO **Buckleboo** 35.48 138 *e*P P 06 46 22.6 -1.0
comp=Z,97nm,1.0s
H08S2 **Diego Garcia H** 35.65 268 T T 07 24 07.1
baz=93,slow=76,SNR=72
H08S3 **Diego Garcia H** 35.66 268 T T 07 24 05.0
baz=93,slow=76,SNR=54
H08S1 **Diego Carcia H** 35.67 268 T T 07 24 17.0
baz=93,slow=76,SNR=62
VIS **Vishakhapatnam** 35.69 316 *e*P P 06 46 26.4 +0.9
DGAR **Diego Garcia** 35.71 269⇓ *e*P P 06 46 26.5 +0.7
CHLP **Challavanipeta** 35.75 318 *e*P P 06 46 26.9 +1.0
CHLP IAmb IAmb 06 46 28.5
comp=Z,47nm,0.7s
CHLP *e*S S 06 51 53.4 -3.6
CHLP IVMs_BB IVMs_BB 06 58 28.9
comp=Z,577nm,29.5s
SKHT **Srikalahasti** 35.85 307 *e*P P 06 46 27.6 +0.7
SKHT IAmb IAmb 06 46 29.1
comp=Z,57nm,0.8s
SKHT *e*S S 06 51 57.9 -0.8
SKHT IVMs_BB IVMs_BB 06 57 48.8
comp=Z,696nm,35.4s
BWNR **Bhubaneshwar** 35.94 322 *e*P P 06 46 29.9 +2.3
MTSU **Mount Surprise** 36.24 110 P P 06 46 31.6 +1.3
baz=36,SNR=482
PVM **Polavaram** 36.57 314 *e*P P 06 46 33.7 +0.7
PVM IAmb IAmb 06 46 35.2
comp=Z,438nm,1.8s
PVM *e*S S 06 52 08.2 -1.4
PVM IVMs_BB IVMs_BB 06 58 22.5
comp=Z,356nm,30.0s
ADKI **Addanki** 36.90 310 *e*P P 06 46 36.4 +0.6
ADKI IAmb IAmb 06 46 37.9
comp=Z,244nm,1.7s
ADKI *e*S S 06 52 13.7 -1.1
ADKI IVMs_BB IVMs_BB 06 58 21.9
comp=Z,614nm,33.2s
SHL **Shillong** 37.12 335 *e*P P 06 46 38.5 +0.7
SHL IAmb IAmb 06 46 40.1
comp=Z,48nm,0.7s
SHL *ex* x 06 52 16.0
RCLA **Racherla** 37.44 309 *e*P P 06 46 40.6 +0.1
RCLA IAmb IAmb 06 46 52.9
comp=Z,60nm,0.7s
RCLA *e*S S 06 52 21.9 -1.1
RCLA IVMs_BB IVMs_BB 06 58 54.2
comp=Z,682nm,28.2s
HTT **Hallett** 37.78 136 P P 06 46 42.8 -0.4
baz=38,SNR=59
NJS **Nagarjunasagar** 37.84 310 *e*P P 06 46 43.8 0.0
NJS IAmb IAmb 06 46 45.4
comp=Z,266nm,1.7s
NJS *e*S S 06 52 26.8 -2.1
NJS IVMs_BB IVMs_BB 06 58 49.0
comp=Z,486nm,37.4s
SRLM **Srisailam** 37.88 309 *e*P P 06 46 44.4 +0.2
SRLM IAmb IAmb 06 46 45.8
comp=Z,197nm,1.5s
SRLM *e*S S 06 52 27.9 -1.8
SRLM IVMs_BB IVMs_BB 06 58 51.0
comp=Z,592nm,36.4s
ENH **Enshi** 38.12 1 *e*P P 06 46 47.0 +1.0
comp=Z,54nm,0.7s
PMG **Port Moresby** 38.23 95 *e*P P 06 46 47.7 +0.5
PMG pmax pmax
comp=Z,146nm,0.8s
PMG **Port Moresby** 38.23 95 *e*P P 06 46 47.7 +0.5
comp=Z,146nm,0.8s
CTA **Charters Tower** 38.43 112 P P 06 46 49.6 +0.8
comp=Z,110nm,0.9s,baz=277,slow=12,SNR=51
CTAO **Charters Tower** 38.43 112 *e*P P 06 46 50.0 +1.2
CTAO pmax pmax
comp=Z,142nm,0.9s
CTAO **Charters Tower** 38.43 112 *e*P P 06 46 50.0 +1.2
comp=Z,142nm,0.9s
URV **Uravakonda** 38.48 306 *e*P P 06 46 49.3 0.0
URV IAmb IAmb 06 46 51.3
comp=Z,51nm,1.0s
URV *e*S S 06 52 37.0 -1.8
URV IVMs_BB IVMs_BB 06 59 03.5
comp=Z,532nm,34.8s
QLP **Quilpie** 38.59 123 P P 06 46 51.1 +1.1
baz=39,SNR=100
WHN **Wuhan** 38.79 8 P P 06 46 53.5 +2.0
WHN pmax pmax
comp=Z,310nm,1.6s
WHN pmax pmax
comp=Z,780nm,5.2s
WHN LR LR
comp=Z,780nm,9.6s
WHN LR LR
comp=Z,2μm,11.9s
WHN LR LR
comp=Z,3μm,24.8s
STKA **Stephens Creek** 38.84 132 P P 06 46 52.2 +0.1
comp=Z,399nm,0.8s,baz=304,slow=8.6,SNR=436
STKA PcP PcP 06 49 02.5 +0.7
comp=Z,36nm,0.7s,baz=316,slow=10,SNR=3.2
STKA LR LR 07 04 28.1
comp=Z,1μm,20.5s,baz=288,slow=38
STKA **Stephens Creek** 38.84 132 P P 06 46 52.1 +0.1
baz=39,SNR=302
STKA **Stephens Creek** 38.84 132 *e*P P 06 46 52.1 +0.1
comp=Z,74nm,0.8s
STKA PcP PcP 06 49 02.5 +0.7
HYB **Hyderabad** 38.93 311⇑ *i*P P 06 46 53.5 +0.5
HYB *e* 06 47 05.0
HYB *e*S S 06 52 44.0 -1.6
HYB **Hyderabad** 38.93 311 *e*P P 06 46 53.6 +0.6
HYB IAmb IAmb 06 46 55.2
comp=Z,87nm,1.1s
HYBB **Hyderabad (bro** 38.94 311 *e*P P 06 46 53.5 +0.4
HYBB IAmb IAmb 06 46 55.3
comp=Z,81nm,1.1s
HYBB *e*S S 06 52 43.6 -2.0
HYBB IVMs_BB IVMs_BB 06 59 25.2
comp=Z,458nm,25.0s
CD2 **Chengdu** 39.01 354 P P 06 46 53.5 0.0
CD2 pP pP 06 47 12.3 -1.4
CD2 sP sP 06 47 21.8 -1.7
CD2 PP **PP** **06 48 25.0 +0.4**
CD2 S **S** **06 52 48.5 +2.2**
CD2 sS sS 06 53 21.5 +0.5
CD2 pmax pmax
comp=Z,60nm,0.9s
CD2 pmax pmax
comp=Z,380nm,9.6s
CD2 LR LR
comp=Z,2μm,17.4s
CD2 LR LR
comp=Z,1μm,15.0s
MANU **Manus Island** 39.16 83 *e*P P 06 46 54.5 -0.5
comp=Z,83nm,0.8s
RPR **Rampur** 39.30 313 *e*P P 06 46 56.6 +0.6
RPR IAmb IAmb 06 46 57.5
comp=Z,395nm,1.8s
RPR *e*S S 06 52 43.6 -7.3
RPR IVMs_BB IVMs_BB 07 00 27.1
comp=Z,428nm,27.4s
JOW **Kunigami** 39.64 28 *e*P P 06 47 00.3 +1.6
comp=Z,175nm,0.8s
SRSP **Sriramsagar** 40.03 312 *e*P P 06 47 02.5 +0.4
SRSP IAmb IAmb 06 47 04.5
comp=Z,88nm,0.7s
SRSP *e*S S 06 52 60.0 -1.9
SRSP IVMs_BB IVMs_BB 07 00 17.8
comp=Z,398nm,22.4s
SSE **Sheshan** 40.79 17 P P 06 47 07.5 -0.6
SSE S S 06 53 15.0 +2.3
SSE sS sS 06 53 49.5 +1.9
SSE pmax pmax
comp=Z,66nm,1.0s
SSE pmax pmax
comp=Z,400nm,9.0s
SSE LR LR
comp=Z,470nm,23.6s
SSE LR LR
comp=Z,520nm,23.6s
SSE LR LR
comp=Z,550nm,18.0s
KLRI **Killari** 40.81 310 *e*P P 06 47 08.9 +0.4
KLRI IAmb IAmb 06 47 21.1
comp=Z,123nm,0.8s
KLRI *e*S S 06 53 11.6 -2.0
KLRI IVMs_BB IVMs_BB 07 00 43.6
comp=Z,769nm,28.2s
LSA **Lhasa** 41.08 337 P P 06 47 11.8 +0.7
LSA pmax pmax
comp=Z,21nm,0.7s
LSA LR LR
comp=Z,410nm,39.7s
LSA LR LR
comp=Z,1μm,31.1s
LSA LR LR
comp=Z,1μm,39.7s
LSA **Lhasa** 41.08 337 *e*P P 06 47 11.8 +0.7
LSA pmax pmax
comp=Z,44nm,0.6s
LSA **Lhasa** 41.08 337 *e*P P 06 47 11.8 +0.7
comp=Z,44nm,0.6s
NJ2 **Nanjing** 41.09 13 *e*P P 06 47 12.8 +2.2
NJ2 pP **pP** **06 47 32.0 +1.0**
NJ2 PcP **PcP** **06 49 10.3 +1.5**
NJ2 S **S** **06 53 19.0 +1.7**
NJ2 pmax pmax
comp=Z,58nm,0.7s
NJ2 pmax pmax
comp=Z,560nm,5.3s
NJ2 LR LR
comp=Z,1μm,21.9s
NJ2 LR LR
comp=Z,2μm,22.9s
NJ2 LR LR
comp=Z,1μm,22.6s
GOA **Goa** 41.56 304 *e*P P 06 47 15.7 +1.0
GOA IAmb IAmb 06 47 16.7
ARPS **Mount Arapiles** 41.65 138 P P 06 47 15.3 +0.1
baz=42,SNR=20
CMSA **Cobar Meteorol** 41.76 129 P P 06 47 16.7 +0.6
baz=42,SNR=118
XAN **Xi'an** 41.87 1 P P 06 47 17.5 +0.5
XAN pP pP 06 47 35.5 -1.9
XAN S **S** **06 53 24.5 -4.3**
XAN pmax pmax
comp=Z,42nm,0.7s
XAN pmax pmax
comp=Z,360nm,9.9s
XAN LR LR
comp=Z,2μm,19.3s
XAN LR LR
comp=Z,2μm,21.3s
PKIN **Phulchoki** 41.89 329 *e*P P 06 47 17.3 -0.2
comp=Z,27nm,0.5s
GUN **Gumba** 41.91 329 *e*P P 06 47 17.5 -0.3
comp=Z,143nm,0.5s
GUMO **Guam** 42.04 59 LR LR 07 04 44.4
comp=Z,273nm,19.9s,baz=233,slow=36
GUMO **Guam** 42.04 59 *e*P P 06 47 17.6 -1.0
GUMO pmax pmax
comp=Z,359nm,0.7s
GUMO **Guam** 42.04 59 *e*P P 06 47 17.6 -1.0
comp=Z,359nm,0.7s
DMN **Daman** 42.06 328 *e*P P 06 47 19.6 +0.6
comp=Z,80nm,0.6s
KKN **Kakani** 42.12 329 *e*P P 06 47 19.8 +0.4
comp=Z,68nm,0.7s
RMQ **Roma** 42.36 121 P P 06 47 22.8 +1.7
baz=42,SNR=16
GKN **Gorkha** 42.63 328 *e*P P 06 47 22.7 -0.7
comp=Z,88nm,0.4s
KOLN **Koldanda** 42.99 327 *e*P P 06 47 25.8 -0.6
POO **Poona** 43.20 308 *e*P P 06 47 28.4 +0.4
POO IAmb IAmb 06 47 30.3
comp=Z,141nm,1.1s
BHPL **Bhopal** 43.48 316 *e*P P 06 47 29.7 -0.5
BHPL IAmb IAmb 06 47 32.1
comp=Z,170nm,0.6s
PYUN **Piuthan** 43.58 327 *e*P P 06 47 31.8 +0.6
comp=Z,101nm,0.5s
LZH **Lanzhou** 44.12 355 *e*P P 06 47 37.5 +2.2
LZH pP pP 06 47 54.5 -1.4
LZH sP sP 06 48 05.0 -0.6
LZH PcP **PP** **06 49 21.0 +1.2**
LZH ScP **ScP** **06 53 06.5 +3.0**
LZH PcS **PcS** **06 53 15.3 +2.9**
LZH *e*S **S** **06 54 03.5 +1.5**
LZH sS sS 06 54 38.0 +0.7
LZH SS **SS** **06 57 16.3 -6.5**
LZH pmax pmax
comp=Z,86nm,1.0s
LZH pmax pmax
comp=Z,360nm,5.0s
LZH LR LR
comp=Z,690nm,13.0s
LZH LR LR
comp=Z,970nm,13.3s
LZH LR LR
comp=Z,950nm,18.0s
TOO **Toolangi** 44.53 137 P P 06 47 39.7 +1.3
baz=45,SNR=18
TIA **Tai'an** 44.78 10 ⇑P P 06 47 40.8 +0.5
TIA PP **PcP** **06 49 21.8 +0.7**
TIA S **S** **06 54 11.8 +0.6**
TIA SS **ScS** **06 57 30.5 +0.9**
TIA pmax pmax
comp=Z,150nm,0.7s
TIA pmax pmax
comp=Z,530nm,8.0s
TIA LR LR
comp=Z,470nm,15.5s
TIA LR LR
comp=Z,1μm,24.0s
YNG **Yonag** 45.01 131 P P 06 47 43.0 +0.6
baz=45,SNR=38
TIY **Taiyuan** 45.68 4 *e*P P 06 47 48.5 +1.0
TIY S **S** **06 54 22.0 -2.3**
TIY pmax pmax
comp=Z,160nm,0.6s
TIY pmax pmax
comp=Z,530nm,3.8s
TIY LR LR
comp=Z,840nm,17.9s
TIY LR LR
comp=Z,1μm,16.2s
TIY LR LR
comp=Z,1μm,34.9s
CAN **Canberra** 45.91 132 *e*P P 06 47 50.1 +0.6
CAN pmax pmax
comp=Z,71nm,0.8s
CAN **Canberra** 45.91 132 *e*P P 06 47 50.1 +0.6
comp=Z,71nm,0.8s
ARMA **Armidale** 46.03 125 P P 06 47 52.4 +1.9
baz=46,SNR=5.8
ARMA **Armidale** 46.03 125 *e*P P 06 47 53.9 +3.4
comp=Z,94nm,1.4s
JNU **Nakatsue** 46.16 26 P P 06 47 51.4 +0.1
comp=Z,73nm,0.8s,baz=183,slow=6.0,SNR=23
JNU PcP **PcP** **06 49 27.1 +1.0**
comp=Z,23nm,0.6s,baz=289,slow=3.2,SNR=5.2
JNU **Nakatsue** 46.16 26 *e*P P 06 47 50.8 -0.5
comp=Z,166nm,1.1s
JNU PcP **PcP** **06 49 27.1 +1.0**
CNB **Canberra Magne** 46.17 132 P P 06 47 51.7 +0.2
baz=46,SNR=8.6
MGCD **Mangrove Creek** 46.62 129 P P 06 47 56.8 +1.8
baz=47,SNR=4.8
SONA **Sohna** 47.15 321 *e*P P 06 47 58.7 -0.4
NDI **New Delhi** 47.38 322 *e*P P 06 47 59.8 -1.1
KUDL **Kundal** 47.45 321 *e*P P 06 48 00.8 -0.6
KUDL IAmb IAmb 06 48 02.6
comp=Z,161nm,1.2s
BHGR **Bahadurgarh** 47.55 321 *e*P P 06 48 01.5 -0.7
CBIJ **Chichi jima** 47.83 42 *e*P P 06 48 02.9 -1.4
comp=Z,198nm,0.7s
JCJ **Chichijima** 47.83 42 P P 06 48 02.8 -1.6
comp=Z,140nm,0.5s,baz=229,slow=5.7,SNR=24
KHET **Khetri** 47.83 320 *e*P P 06 48 04.0 -0.5
KHET IAmb IAmb 06 48 05.5
comp=Z,45nm,0.7s
GTA **Gaotai** 47.91 351 ⇑P P 06 48 06.0 +1.0
GTA pP pP 06 48 24.8 -1.0
GTA sP sP 06 48 33.5 -1.9
GTA PcP **PcP** **06 49 33.8 +1.6**
GTA ScP **ScP** **06 53 20.5 +1.4**
GTA PcS **PcS** **06 53 27.8 -0.2**
GTA S **S** **06 54 57.8 +1.7**
GTA sS sS 06 55 29.8 -1.9
GTA ScS **ScS** **06 57 48.3 -1.9**
GTA SS **SS** **06 58 20.5 -5.6**
GTA pmax pmax
comp=Z,16nm,1.4s
GTA pmax pmax
comp=Z,300nm,5.5s
GTA LR LR
comp=Z,870nm,19.0s
GTA LR LR
comp=Z,1μm,22.8s
GTA LR LR
comp=Z,1μm,18.5s
DDI **Dehra Dun** 48.06 324 *e*P P 06 48 05.3 -0.9
DDI IAmb IAmb 06 48 26.6
comp=Z,210nm,1.5s
RTK **Rohtak** 48.12 321 *e*P P 06 48 05.9 -0.7
RTK IAmb IAmb 06 48 08.9
comp=Z,87nm,0.4s
MOO **Moorlands** 48.27 142 P P 06 48 08.5 +0.9
baz=48,SNR=6.5
DL2 **Dalian** 48.29 14 ⇑P P 06 48 08.0 +0.2
DL2 PcP **PcP** **06 49 35.0 +1.6**
DL2 PcS **PcS** **06 53 29.3 0.0**
DL2 S **S** **06 54 58.0 -3.3**
DL2 ScS **ScS** **06 57 52.8 +0.4**
DL2 pmax pmax
comp=Z,97nm,0.7s
DL2 pmax pmax
comp=Z,390nm,6.2s
DL2 LR LR
comp=Z,620nm,18.8s
DL2 LR LR
comp=Z,630nm,17.1s
DL2 LR LR
comp=Z,850nm,19.9s
BJT **Baijiatuau** 48.36 8 *e*P P 06 48 09.2 +1.0
BJT pmax pmax
comp=Z,154nm,0.5s
BJT **Baijiatuau** 48.36 8 *e*P P 06 48 09.2 +1.0
comp=Z,154nm,0.5s
INCN **Inchon** 48.38 19 *e*P P 06 48 09.2 +0.7
comp=Z,367nm,1.8s
BJI **Beijing** 48.38 8 P P 06 48 09.3 +0.9
BJI sP **sP** **06 48 37.0 -1.9**
BJI PcP **PcP** **06 49 34.8 +1.1**
BJI PP **PP** **06 50 04.5 +2.6**
BJI S **S** **06 55 02.3 -0.2**
BJI ScS **ScS** **06 57 52.5 -0.4**
BJI pmax pmax
comp=Z,780nm,3.2s
BJI LR LR
comp=Z,520nm,18.3s
BJI LR LR
comp=Z,970nm,17.2s
BJI LR LR
comp=Z,1μm,35.5s
BTO **Baotou** 48.44 2 *e*P P 06 48 10.0 +1.0
KKR **Kurukshetra** 48.53 323 *e*P P 06 48 09.0 -0.8
KKR IAmb IAmb 06 48 11.5
comp=Z,1μm,0.1s
TAU **Tasmania Unive** 48.61 142 *e*P P 06 48 10.9 +0.7
TAU pmax pmax
comp=Z,31nm,0.8s
TAU **Tasmania Unive** 48.61 142 *e*P P 06 48 10.9 +0.7
comp=Z,31nm,0.8s
HHC **Hu-ho-hao-te** 48.75 3 *e*P P 06 48 12.8 +1.4
HHC pP pP 06 48 31.3 -0.9
HHC sP sP 06 48 40.0 -1.9
HHC S **S** **06 55 09.5 +1.6**
HHC sS sS 06 55 44.3 +0.8
HHC pmax pmax
comp=Z,53nm,1.0s
HHC pmax pmax
comp=Z,430nm,8.5s
HHC LR LR
comp=Z,1μm,14.8s
HHC LR LR
comp=Z,1μm,14.8s
HHC LR LR
comp=Z,580nm,13.6s
KS15 **Wonju Array Si** 48.77 21 *e*P P 06 48 12.7 +1.3
KSAR **Wonju Array Be** 48.77 21 P P 06 48 12.3 +0.9
KSAR 06 49 36.6
KSAR **Wonju Array Be** 48.77 21 P P 06 48 12.3 +0.9
KSAR PcP **PcP** **06 49 36.6 +1.4**
KSRS **Korea Array** 48.79 21 P P 06 48 12.3 +0.7
comp=Z,21nm,0.6s,baz=203,slow=8.5,SNR=38
KSRS PcP **PcP** **06 49 36.6 +1.4**
comp=Z,23nm,0.7s,baz=209,slow=3.1,SNR=19
KSRS LR LR 07 10 04.4
comp=Z,142nm,21.4s,baz=208,slow=37
KS01 **Wonju Array Si** 48.80 21 *e*P P 06 48 11.7 +0.1
BHJ **Bhuj** 49.10 310 *e*P P 06 48 15.6 +1.4
BHJ IAmb IAmb 06 48 17.6
comp=Z,116nm,1.2s
SMLA **Simla** 49.17 324 *i*P P 06 48 14.6 0.0
SDNR **Sundarnagar** 49.56 324 *e*P P 06 48 17.6 0.0
JASL **Jaisalmer** 50.36 315 *e*P P 06 48 23.8 0.0
DHRM **DHARAMSHALA** 50.49 324 *e*P P 06 48 23.9 -1.0
DHRM IAmb IAmb 06 48 29.0
HNR **Honiara** 50.84 96 *e*P P 06 48 27.0 -0.6
HNR **Honiara** 50.84 96 *e*P P 06 48 28.0 +0.4
HNR **Honiara** 50.84 96 *e*P P 06 48 28.0 +0.4
comp=Z,761nm,0.8s
INU **Inuyama** 50.88 30 *e*P P 06 48 26.9 -0.6
comp=Z,51nm,0.9s
THN **Thein Dam** 50.97 324 *e*P P 06 48 26.0 -2.2
THN *ex* x 06 55 33.6
SNY **Shenyang** 51.53 14 ⇑P P 06 48 31.3 -0.9
SNY S **S** **06 55 43.3 -3.0**
SNY ScS **ScS** **06 58 13.8 -0.5**
SNY pmax pmax
comp=Z,65nm,2.2s
SNY pmax pmax
comp=Z,690nm,7.4s
SNY LR LR
comp=Z,510nm,17.7s
SNY LR LR
comp=Z,460nm,17.7s
SNY LR LR
comp=Z,840nm,26.9s
MAJO **Matsushiro** 52.41 30*c* *i*P P 06 48 37.6 -1.3
MAJO pmax pmax
comp=Z,771nm,1.2s
MAJO **Matsushiro** 52.41 30 *e*P P 06 48 37.9 -1.0
comp=Z,99nm,1.0s
MAT **Matsushiro** 52.41 30 P P 06 48 37.7 -1.2
MAT S **S** **06 55 56.6 -2.0**
MJAR **Matsushiro Arr** 52.41 30 P P 06 48 37.9 -1.0
comp=Z,30nm,0.8s,baz=207,slow=7.4,SNR=58
MJAR LR LR 07 11 41.7
comp=Z,273nm,19.7s,baz=220,slow=37
MJB9 **Matsu-Tunnel** 52.41 30 *e*P P 06 48 38.0 -0.9
comp=Z,26nm,1.1s
RER **Riviere de l'E** 52.44 250 *e*P P 06 48 41.7 +2.1
CN2 **Changchun** 53.86 15 *e*P P 06 48 47.0 -2.4
CN2 *e*pP pP 06 49 07.0 -3.6
CN2 PcP **PcP** **06 49 52.0 -2.0**
CN2 *e*S **S** **06 56 10.5 -7.4**
CN2 ScS **ScS** **06 58 31.5 +0.9**
CN2 pmax pmax
comp=Z,60nm,0.8s
CN2 pmax pmax
comp=Z,200nm,3.0s
CN2 LR LR
comp=Z,500nm,17.0s
MSHR **Mys Shultsa** 54.48 20 P P 06 48 53.0 -0.9
WMQ **Urumqi** 54.97 342 P P 06 48 58.5 +1.0
WMQ pP pP 06 49 17.5 -1.3
WMQ sP sP 06 49 26.0 -2.4
WMQ PcP **PcP** **06 50 00.3 +1.9**
WMQ PP **PP** **06 51 03.0 +1.4**
WMQ ScP **ScP** **06 53 50.5 +1.1**

WMQ S **S** **06 56 32.3 -0.8**
WMQ ScS **ScS** **06 58 37.5 -1.2**
WMQ pmax pmax
comp=Z,19nm,0.8s
WMQ pmax pmax
comp=Z,85nm,4.0s
WMQ LR LR
comp=Z,410nm,26.8s
WMQ LR LR
comp=Z,520nm,31.6s
WMQ LR LR
comp=Z,460nm,26.8s
SONM Songino Array 55.68 358 P **P** **06 49 03.2 +0.6**
comp=Z,33nm,0.5s,baz=176,slow=8.5,SNR=147
SONM PcP **PcP** **06 50 01.9 +0.8**
comp=Z,32nm,0.5s,baz=184,slow=3.8,SNR=24
SONM ScP **ScP** **06 53 53.6 +1.1**
comp=Z,7.8nm,0.7s,baz=169,slow=4.0,SNR=7.7
SONM LR LR 07 14 34.6
comp=Z,1μm,21.5s,baz=176,slow=38
SONM P4KPbc 07 26 15.8
comp=Z,0.8nm,0.7s,baz=168,slow=4.5,SNR=5.3
SONA1 Songino Array 55.69 358 *eP* **P** **06 49 02.7 -0.1**
ULN Ulaanbaatar 55.69 359*c i*P **P** **06 49 03.4 +0.6**
ULN pmax pmax
comp=Z,27nm,0.6s
ULN Ulaanbaatar 55.69 359 *eP* **P** **06 49 02.8 +0.1**
comp=Z,37nm,0.6s
ULN Ulaanbaatar 55.69 359 P **P** **06 49 03.6 +0.8**
SNR=19
ULN Ulaanbaatar 55.69 359 P **P** **06 49 03.6 +0.8**
SNR=19
MDJ Mudanjiang 55.78 18 P **P** **06 49 03.0 -0.3**
MDJ pP pP 06 49 21.0 -3.6
MDJ sP sP 06 49 28.8 -5.3
MDJ S **S** **06 56 42.0 -1.7**
MDJ sS sS 06 57 15.0 -5.1
MDJ ScS **ScS** **06 58 45.5 +1.1**
MDJ SS **SS** **07 00 27.3 -3.4**
MDJ pmax pmax
comp=Z,17nm,0.9s
MDJ pmax pmax
comp=Z,240nm,3.4s
MDJ LR LR
comp=Z,390nm,29.2s
MDJ LR LR
comp=Z,480nm,30.2s
MDJ Mudanjiang 55.78 18 *eP* **P** **06 49 03.5 +0.2**
comp=Z,25nm,0.6s
KSH Kashi 56.10 330 P **P** **06 49 04.3 -1.5**
KSH *ep*P pP 06 49 23.5 -3.7
KSH *eP*cP **PcP** **06 50 03.8 +0.8**
KSH PcS **PcS** **06 54 01.0 -2.6**
KSH S **S** **06 56 41.3 -7.2**
KSH ScS **ScS** **06 58 43.0 -4.2**
KSH pmax pmax
comp=Z,24nm,0.7s
KSH pmax pmax
comp=Z,220nm,4.6s
KSH LR LR
comp=Z,290nm,9.3s
KSH LR LR
comp=Z,120nm,5.9s
KSH LR LR
comp=Z,430nm,10.6s
USRK Ussuriysk Ar. 56.19 20 P **P** **06 49 06.1 0.0**
comp=Z,30nm,0.5s,baz=191,slow=6.3,SNR=97
USRK LR LR 07 13 36.8
comp=Z,297nm,21.5s,baz=202,slow=36
KBL Kabul 56.45 321 *eP* **P** **06 49 08.1 -0.4**
KBL pmax pmax
comp=Z,358nm,1.9s
KBL Kabul 56.45 321 *eP* **P** **06 49 08.1 -0.4**
comp=Z,358nm,1.9s
WBK Wadi Bani Khal 57.26 303 P **P** **06 49 15.4 +1.2**
SNR=6.3
WBK Wadi Bani Khal 57.26 303 P **P** **06 49 15.4 +1.2**
SNR=6.3
PDGK Podgornoye 57.53 335 P **P** **06 49 15.3 -0.4**
PDGK pmax pmax
comp=Z,52nm,1.0s
UZB Uzynbulak 57.58 335 *i* P **P** **06 49 14.3 -2.0**
comp=Z,260nm,0.8s
UZB *i* pP **pP** **06 49 38.1 +0.4**
UZB *e*S **S** **06 57 04.0 -3.8**
SFK Sufi-Kurgan 57.73 329 P **P** **06 49 18.0 +0.6**
SFK pmax pmax
comp=Z,56nm,0.6s
JMDO Jabal Madar 57.88 303 P **P** **06 49 19.3 +0.7**
SNR=7.3
JMDO Jabal Madar 57.88 303 P **P** **06 49 19.3 +0.7**
SNR=7.3
KPKS Kokpek 57.98 335 *i* P **P** **06 49 17.2 -1.8**
comp=Z,402nm,0.9s
KPKS *e*S **S** **06 57 10.6 -2.4**
SMDO Samad 58.22 303 P **P** **06 49 22.0 +1.0**
SNR=11
SMDO Samad 58.22 303 P **P** **06 49 22.0 +1.0**
SNR=11
BIDO Bidbid 58.36 304 P **P** **06 49 23.1 +1.3**
SNR=7.6
BIDO Bidbid 58.36 304 P **P** **06 49 23.1 +1.3**
SNR=7.6
ZAK Zakamensk 58.37 356 *eP* **P** **06 49 21.3 -0.3**
ZAK pmax pmax
comp=Z,13nm,1.7s
BSY Bisya 58.79 303 P **P** **06 49 25.8 +0.9**
SNR=9.8
BSY Bisya 58.79 303 P **P** **06 49 25.8 +0.9**
SNR=9.8
TKM2 Tokmak 2 58.91 332 *i* P **P** **06 49 24.8 -0.8**
TKM2 pmax pmax
comp=Z,36nm,0.5s
TKM2 Tokmak 2 58.91 332 *eP* **P** **06 49 25.0 -0.6**
comp=Z,50nm,0.6s
BMNS Besmoynak 59.03 332 *i* P **P** **06 49 25.0 -1.3**
comp=Z,441nm,0.7s
BMNS *e*S **S** **06 57 25.1 -1.6**
HOQ Hoqain 59.06 304 P **P** **06 49 27.8 +1.0**
SNR=12
HOQ Hoqain 59.06 304 P **P** **06 49 27.8 +1.0**
SNR=12
ERM Erimo 59.06 30⇓ *eP* **P** **06 49 28.0 +1.6**
ERM pmax pmax
comp=Z,107nm,1.7s
ERM Erimo 59.06 30 *eP* **P** **06 49 26.9 +0.5**
comp=Z,50nm,0.8s
AAK Ala-Archa 59.21 331 LR LR 07 16 41.9
comp=Z,575nm,22.0s,baz=144,slow=38
AAK Ala-Archa 59.21 331*c i*P **P** **06 49 26.9 -0.7**
AAK pmax pmax
comp=Z,75nm,1.6s
AAK Ala-Archa 59.21 331 *eP* **P** **06 49 27.7 +0.1**
comp=Z,19nm,0.7s
FRU Bishkek 59.30 332⇓ *i*P **P** **06 49 28.0 -0.1**
FRU *e* 06 49 58.0
FRU *e* 06 51 40.0
FRU *e*S **S** **06 57 27.0 -3.0**
FRU *e* 06 59 04.0
FRU pmax pmax
comp=Z,110nm,2.1s
KUU Kurty 59.34 333 *eP* **P** **06 49 26.8 -1.5**
comp=Z,524nm,0.8s
KUU *e*S **S** **06 57 28.2 -2.2**
MK01 Makanchi Array 59.36 339 *eP* **P** **06 49 27.6 -0.8**
MIR Mirnyy 59.37 187 *i* P **P** **06 49 28.0 -0.1**
MIR pmax pmax
comp=Z,6.0nm,1.5s
MK31 Makanchi Array 59.38 339 *i* P **P** **06 49 28.1 -0.4**
MK31 pmax pmax
comp=Z,23nm,0.6s
MK31 Makanchi Array 59.38 339 *eP* **P** **06 49 28.3 -0.2**
MKAR Makanchi Array 59.38 339 P **P** **06 49 28.4 -0.1**
comp=Z,37nm,0.5s,baz=151,slow=7.2,SNR=155
MKAR LR LR 07 18 12.1
comp=Z,414nm,21.4s,baz=154,slow=39
MKAR PKPPKP **P'P'df** **07 18 50.4 -7.0**
comp=Z,0.3nm,0.8s,baz=299,slow=1.5,SNR=3.5
MKAR P4KPbc 07 26 33.2
comp=Z,0.7nm,0.6s,baz=134,slow=7.0,SNR=8.5
MKAR Makanchi Array 59.38 339 *i* P **P** **06 49 28.2 -0.3**
MKAR pmax pmax
comp=Z,37nm,0.5s
MAKZ Makanchi 59.51 339 *eP* **P** **06 49 28.8 -0.6**
MAKZ pmax pmax
comp=Z,138nm,2.0s
MAKZ Makanchi 59.51 339 *eP* **P** **06 49 28.8 -0.6**
comp=Z,138nm,2.0s
EKS2 Erkin-Say 59.57 331 *eP* **P** **06 49 30.2 +0.1**
EKS2 pmax pmax
comp=Z,24nm,0.8s
EKS2 Erkin-Say 59.57 331 *eP* **P** **06 49 30.2 +0.1**
comp=Z,24nm,0.8s
ARQ Araqi 59.61 303 P **P** **06 49 31.0 +0.5**
SNR=9.0
ARQ Araqi 59.61 303 P **P** **06 49 31.0 +0.5**
SNR=9.0
TLY Talaya 59.64 357 LR LR 07 17 58.6
comp=Z,644nm,18.6s,baz=162,slow=38
TLY Talaya 59.64 357*c i*P **P** **06 49 31.1 +0.9**
TLY *e* 06 50 17.9
TLY *e*S **S** **06 57 36.4 +2.4**
TLY *e* 06 59 10.2
TLY pmax pmax
comp=Z,14nm,1.1s
TLY MLR MLR
comp=Z,599nm,17.0s
MOY Mondy 59.83 355 *eP* **P** **06 49 32.9 +1.3**
MOY pmax pmax
comp=Z,80nm,2.9s
MNAS Manas 60.07 330 P **P** **06 49 33.5 0.0**
MNAS pmax pmax
comp=Z,42nm,0.7s
OPO Ambohidratompo 60.32 253 P **P** **06 49 37.2 +1.5**
comp=Z,18nm,0.9s,baz=62,slow=4.3,SNR=19
ASAJ Asahikawa 60.40 28 P **P** **06 49 35.4 -0.1**
comp=Z,52nm,0.7s,baz=240,slow=12,SNR=28
ASAJ LR LR 07 15 55.2
comp=Z,373nm,21.6s,baz=185,slow=36
ASAJ Asahikawa 60.40 28 *eP* **P** **06 49 35.6 +0.1**
comp=Z,67nm,0.8s
UOSS Minazif 60.56 304 *eP* **P** **06 49 37.7 +0.7**
comp=Z,4.9nm,0.8s
ASHO Ashiyiah 60.57 304 *i* P **P** **06 49 37.8 +0.7**
SNR=17
HATD Hatta, Dubai 60.57 304 *i* P **P** **06 49 38.1 +1.0**
SNR=15
HATD Hatta, Dubai 60.57 304 P **P** **06 49 37.8 +0.8**
SNR=6.6
HATD Hatta, Dubai 60.57 304 P **P** **06 49 37.8 +0.8**
SNR=6.6
KLR Kul'dur 60.58 17 P **P** **06 49 36.4 -0.2**
comp=Z,48nm,0.5s,baz=199,slow=5.3,SNR=169
KLR LR LR 07 15 55.4
comp=Z,302nm,21.5s,baz=214,slow=36
HABR Khabarovsk 60.95 20 *eP* **P** **06 49 37.2 -2.0**
HABR *e**SP **sP** **06 50 06.9 -3.4**
HABR *e* 06 50 19.9
HABR *e*S **S** **06 57 49.4 -1.4**
HABR *e**SS **sS** **06 58 24.7 -3.0**
HABR *e* 06 59 20.2
HABR *e*SS **SS** **07 01 49.9 -1.9**
HABR pmax pmax
comp=Z,904nm,4.0s
HABR pmax pmax
comp=Z,218nm,2.2s
HABR pmax pmax
comp=N,62nm,2.2s
HABR pmax pmax
comp=E,74nm,2.2s
HABR MLR MLR
comp=Z,276nm,17.0s
FAQ Al Faqa, Dubai 60.97 304 *i* P **P** **06 49 40.6 +0.8**
SNR=28
FAQ Al Faqa, Dubai 60.97 304 P **P** **06 49 40.5 +0.8**
SNR=21
FAQ Al Faqa, Dubai 60.97 304 P **P** **06 49 40.5 +0.8**
SNR=21
NAZ Nazwa, Dubai 61.02 304 *i* P **P** **06 49 42.0 +1.8**
SNR=8.9
NAZ Nazwa, Dubai 61.02 304 P **P** **06 49 40.8 +0.7**
SNR=15
NAZ Nazwa, Dubai 61.02 304 P **P** **06 49 40.8 +0.7**
SNR=15
IUG Iuzhnay 61.08 328 *i* P **P** **06 49 39.2 -1.1**
comp=Z,490nm,1.6s
IUG *e*S **S** **06 57 51.1 -1.8**
KK31 Karatay Array 61.52 329 *eP* **P** **06 49 42.9 -0.3**
KK31 pmax pmax
comp=Z,4.0nm,0.5s
KKAR Karatay Array 61.52 329 *eP* **P** **06 49 43.0 -0.2**
KKAR Karatay Array 61.52 329 *eP* **P** **06 49 43.0 -0.2**
YUK Yuzh-Kuril'sk 61.89 30*c i*P P 06 49 36.3 -9.3
YUK *i**PP pP 06 50 04.3 -3.0
YUK *e* 06 50 25.1
YUK *e* 06 52 02.0
YUK *e**SS pS 06 58 31.0 +3.2
YUK *i* 06 59 23.3
YUK pmax pmax
comp=Z,420nm,1.4s
YUK pmax pmax
comp=E,181nm,1.2s
YUK pmax pmax
comp=N,106nm,1.4s
YUK pmax pmax
comp=Z,1μm,2.3s
DCZ Deep Cove 62.53 137 *eP* **P** **06 49 51.7 +1.8**
comp=Z,63nm,1.0s
YSS Yuzh-Sakhalins 62.67 26*ce*P **P** **06 49 51.1 +0.4**
YSS *e* 06 50 13.0
YSS pmax pmax
comp=Z,280nm,1.1s
YSS pmax pmax
comp=N,100nm,0.7s
YSS pmax pmax
comp=E,100nm,1.1s
YSS MLR MLR
comp=Z,200nm,21.0s
YSS Yuzh-Sakhalins 62.67 26 *eP* **P** **06 49 50.5 -0.2**
comp=Z,333nm,1.0s
MLZ Mavora Lakes 63.15 137 *eP* **P** **06 49 55.0 +0.9**
comp=Z,52nm,0.9s
WHZ Wether Hill Ro 63.19 138 *eP* **P** **06 49 55.4 +1.1**
comp=Z,170nm,1.8s
KUR Kuril'sk 63.75 30 *eP* **P** **06 49 54.1 -3.8**
KUR S S 06 58 14.8 -11
KURBB Kurchatov Arra 63.95 339 PKPPKP **P'P'df** **07 18 46.7 -3.3**
comp=Z,0.6nm,0.8s,baz=339,slow=2.4,SNR=4.9
KURK Kurchatov 64.00 339 *eP* **P** **06 49 57.6 -1.8**
KURK pmax pmax
comp=Z,51nm,0.9s
KURK Kurchatov 64.00 339 *eP* **P** **06 49 57.5 -1.8**
comp=Z,51nm,0.9s
LBZ Lake Benmore 64.30 136 *eP* **P** **06 50 02.2 +0.6**
comp=Z,117nm,1.7s
RPZ Rata Peaks 64.74 135 P **P** **06 50 04.3 -0.3**
comp=Z,35nm,0.6s,baz=288,slow=2.2,SNR=13
RPZ Rata Peaks 64.74 135 *eP* **P** **06 50 05.5 +0.9**
comp=Z,59nm,0.9s
ZALV Zalesovo Beam 64.93 345 P **P** **06 50 04.8 -0.6**
comp=Z,21nm,0.4s,baz=160,slow=5.9,SNR=63
ZALV PKPPKP **P'P'df** **07 18 49.1 +1.0**
comp=Z,1.3nm,0.6s,baz=325,slow=1.8,SNR=2.2
ZALV LR LR 07 20 49.2
comp=Z,497nm,18.7s,baz=187,slow=38
ZALV Zalesovo Beam 64.93 345 *i* P **P** **06 50 04.6 -0.8**
ZALV pmax pmax
comp=Z,21nm,0.4s
KRAR Krasnoyarsk 65.14 350⇑ *i*P **P** **06 50 08.7 +2.0**
KRAR pmax pmax
comp=Z,205nm,2.4s
OXZ Oxford 65.35 134 *eP* **P** **06 50 08.8 +0.3**
comp=Z,40nm,0.5s
GEYT Alibeck 65.53 318 P **P** **06 50 10.5 +0.7**
comp=Z,69nm,0.6s,baz=138,slow=5.1,SNR=69
GEYT LR LR 07 22 19.2
comp=Z,346nm,19.8s,baz=145,slow=39
THZ Tophouse 65.65 132 *eP* **P** **06 50 11.7 +1.2**
comp=Z,90nm,0.8s
TYV Tymovskoe 65.70 23 *eP* **P** **06 50 11.5 +1.0**
TYV pmax pmax
comp=Z,197nm,1.4s
BOD Bodaibo 65.80 3⇓ *i*P **P** **06 50 10.6 -0.4**
BOD *i* 06 59 57.2
BOD pmax pmax
comp=Z,69nm,1.5s
CLNS Chul'man 66.06 10 *eP* **P** **06 50 13.4 +0.7**
CLNS pmax pmax
comp=E,24nm,1.2s
CLNS pmax pmax
comp=Z,76nm,0.9s
CLNS pmax pmax
comp=N,44nm,1.0s
NVS Novosibirsk 66.14 344 *eP* **P** **06 50 11.3 -1.9**
NVS *i* 06 50 42.1
NVS *e*S **S** **06 58 46.9 -8.1**
NVS *e* 06 59 53.6
NVS pmax pmax
comp=N,33nm,1.6s
NVS pmax pmax
comp=E,24nm,1.6s
NVS pmax pmax
comp=Z,51nm,1.6s
NVS smax smax
comp=E,76nm,2.0s
MAW Mawson 66.80 197 P **P** **06 50 17.7 +0.5**
comp=E,16nm,0.7s,baz=59,slow=4.9,SNR=41
MAW LR LR 07 13 38.0
comp=E,167nm,21.2s,baz=52,slow=30
MAW PKPPKP **P'P'df** **07 18 45.8 -0.8**
comp=E,4.6nm,0.8s,baz=233,slow=6.7,SNR=4.2
MAW Mawson 66.80 197 *eP* **P** **06 50 17.9 +0.7**
MAW pmax pmax
comp=Z,6.0nm,0.7s
MAW Mawson 66.80 197 *eP* **P** **06 50 17.9 +0.7**
comp=Z,6.1nm,0.7s
NKL Nikolayevsk 66.82 20 *i* P **P** **06 50 18.0 +0.4**
DAMY Dhamar 67.42 289 *eP* **P** **06 50 24.7 +2.2**
comp=Z,65nm,1.1s
BKZ Black Stump Fm 67.92 129 *eP* **P** **06 50 25.7 +0.7**
comp=Z,156nm,1.0s
MSVF Nonsavu 68.18 106 *eP* **P** **06 50 27.7 +0.7**
MSVF pmax pmax
comp=Z,64nm,0.8s
MSVF Nonsavu 68.18 106 *eP* **P** **06 50 27.7 +0.7**
comp=Z,64nm,0.8s
BVA0 Borovoye Array 68.92 336 P **P** **06 50 30.8 0.0**
BVA0 pmax pmax
comp=Z,74nm,0.8s
BVAR Borovoye Array 68.92 336 PKPPKP **P'P'df** **07 18 42.7 +0.9**
comp=Z,0.9nm,0.7s,baz=336,slow=5.4,SNR=6.3
BRVK Borovoye 68.98 336*c i*P **P** **06 50 31.0 -0.2**
BRVK pmax pmax
comp=Z,153nm,1.7s
BRVK Borovoye 68.98 336 *eP* **P** **06 50 31.2 +0.1**
CHKZ Chkalovo 69.32 337 *i* P **P** **06 50 33.4 +0.2**
CHKZ pmax pmax
comp=Z,89nm,0.7s
ZRNK Zerenda 69.42 336 *i* P **P** **06 50 33.6 -0.3**
ZRNK pmax pmax
comp=Z,92nm,0.7s
FUNA Funafuti 69.87 96 *eP* **P** **06 50 39.2 +1.8**
comp=Z,152nm,1.0s
AB31 Akbulak array 71.07 329 *i* P **P** **06 50 44.7 +0.7**
AB31 pmax pmax
comp=Z,124nm,0.6s
ABKAR Akbulak array 71.07 329 *eP* **P** **06 50 44.2 +0.2**
KMBO Kilima Mbogo 71.27 272 P **P** **06 50 47.8 +1.5**
comp=Z,4.3nm,0.8s,baz=119,slow=6.6,SNR=10
KMBO LR LR 07 16 29.1
comp=Z,1μm,21.8s,baz=103,slow=31
KMBO Kilima Mbogo 71.27 272 *eP* **P** **06 50 48.0 +1.7**
KMBO Kilima Mbogo 71.27 272 P P 06 50 34.8 -11
SNR=7.5
YAK Yakutsk 71.79 10 P **P** **06 50 48.2 +0.1**
comp=Z,311nm,0.5s,baz=348,slow=0.2,SNR=46
YAK LR LR 07 26 17.3
comp=Z,241nm,18.4s,baz=212,slow=39
YAK Yakutsk 71.79 10*ce*P **P** **06 50 47.8 -0.3**
YAK *e**PP **pP** **06 51 12.1 +1.8**
YAK *e*S **S** **06 59 57.5 -3.9**
YAK *e**SS **pS** **07 00 27.3 -0.9**
YAK *e* 07 00 41.3
YAK pmax pmax
comp=N,117nm,1.4s
YAK pmax pmax
comp=Z,251nm,0.9s
YAK pmax pmax
comp=E,73nm,1.3s
YAK pmax pmax
comp=Z,5.0nm,0.2s
YAK smax smax
comp=N,310nm,3.3s
YAK smax smax
comp=E,275nm,2.3s
YAK Yakutsk 71.79 10 *eP* **P** **06 50 48.0 -0.1**
RAO Raoul Island 71.81 118 LR LR 07 20 50.5
comp=E,456nm,21.8s,baz=311,slow=34
AKTO Aktyubinsk 72.78 329 P **P** **06 50 54.4 +0.1**
AKTO pmax pmax
comp=Z,230nm,1.7s
PETK Petropavlovsk- 73.80 28 P **P** **06 51 00.5 +0.3**
comp=Z,45nm,0.7s,baz=188,slow=1.3,SNR=61
PETK LR LR 07 24 44.1
comp=Z,125nm,21.2s,baz=223,slow=37
PET Petropavlovsk 74.20 29 *eP* **P** **06 51 03.3 +0.8**
PET *e* 06 53 51.3
PET *e*S **S** **07 00 34.5 +5.4**
PET pmax pmax
comp=Z,215nm,0.9s
PET pmax pmax
comp=Z,200nm,16.2s
PET pmax pmax
comp=Z,100nm,14.9s
PET Petropavlovsk 74.20 29 *eP* **P** **06 51 02.7 +0.2**
VNDA Vanda 74.67 170 P **P** **06 51 05.0 +0.1**
comp=Z,33nm,0.8s,baz=310,slow=5.8,SNR=101
VNDA LR LR 07 20 55.7
comp=Z,273nm,21.0s,baz=317,slow=33
VNDA Vanda 74.67 170 P **P** **06 51 05.0 +0.1**
VNDA pmax pmax
comp=Z,33nm,0.9s
VNDA Vanda 74.67 170 *eP* **P** **06 51 04.9 0.0**
SYO Syowa Base 75.03 200⇑ *eP* **P** **06 51 06.0 -1.0**
SYO Syowa Base 75.03 200⇑ *e*PcP **PcP** **06 51 18.8 -1.6**
MA2 Magadan 75.34 21 P **P** **06 51 09.1 +0.1**
comp=Z,25nm,0.6s,baz=233,slow=5.8,SNR=27
SVE Sverdlovsk 75.58 335*d i*P **P** **06 51 11.4 +1.0**
SVE *e*S **S** **07 00 43.9 -0.4**
SVE pmax pmax
comp=Z,175nm,0.8s
SBA Scott Base 75.73 169 *eP* **P** **06 51 12.4 +1.4**
SBA Scott Base 75.73 169 *eP* **P** **06 51 12.4 +1.4**
GNI Garni 75.74 315 LR LR 07 28 45.2
comp=Z,78nm,21.7s,baz=107,slow=39
GNI Garni 75.74 315 *i* P **P** **06 51 12.4 +0.5**
SNR=7.1
GNI Garni 75.74 315*c i*P **P** **06 51 12.2 +0.3**
GNI pmax pmax
comp=Z,307nm,2.5s
GNI Garni 75.74 315 *eP* **P** **06 51 13.0 +1.1**
GNI Garni 75.74 315 P **P** **06 51 11.6 -0.3**
SNR=6.4
DGRG David-gareji 75.83 316 P **P** **06 51 13.8 +1.5**
DGRG David-gareji 75.83 316 P **P** **06 51 13.8 +1.5**
DGRG David-gareji 75.83 316 P **P** **06 51 13.7 +1.5**
ARU Arti 76.21 334*c i*P **P** **06 51 14.2 +0.2**
ARU *e**PP **pP** **06 51 33.4 -3.0**
ARU S S **07 00 51.6 +0.3**
ARU pmax pmax
comp=Z,292nm,1.7s
ARU Arti 76.21 334 *eP* **P** **06 51 14.3 +0.4**
TBLG Delisi 76.38 316 P **P** **06 51 18.1 +2.8**
TBLG Delisi 76.38 316 P **P** **06 51 18.1 +2.8**
EAK Akyaka 76.75 315 *i* P **P** **06 51 18.4 +0.7**
GUDG Gudauri 76.86 317 P **P** **06 51 20.2 +1.9**
GUDG Gudauri 76.86 317 P **P** **06 51 20.2 +1.9**
EATA Eleskirt 77.22 314 *i* P **P** **06 51 20.9 +0.4**
EKAR Karacoban 77.31 313 *i* P **P** **06 51 22.3 +1.4**
ZEI Tsey 77.37 317 *eP* **P** **06 51 20.9 -0.2**
ZEI *e*S **S** **07 01 03.6 -1.4**
ZEI pmax pmax
comp=Z,74nm,0.6s
BTMN Batman 77.40 312 *i* P **P** **06 51 21.9 +0.7**
ONI Oni 77.60 317 P **P** **06 51 23.5 +1.3**
ONI Oni 77.60 317 P **P** **06 51 23.5 +1.3**
HOMI Horasan 77.71 314 *i* P **P** **06 51 23.6 +0.6**
SFNV Sufian 77.76 310 *eP* **P** **06 51 24.4 +1.1**
BNGL BINGOL 77.86 313 *i* P **P** **06 51 24.7 +0.7**
MATP Matopo 77.89 251 P **P** **06 51 25.1 +0.7**
comp=Z,33nm,0.8s,baz=95,slow=5.3,SNR=52
ERZM Erzurum 78.04 314 *i* P **P** **06 51 26.3 +1.3**
DAGI Agillar 78.08 315 *i* P **P** **06 51 25.8 +0.8**
ARTV Artvin 78.11 315 *i* P **P** **06 51 25.2 -0.1**
AFI Afiamalu 78.19 103 *eP* **P** **06 51 27.8 +1.7**
AFI Afiamalu 78.19 103 *eP* **P** **06 51 27.8 +1.7**
DBAD Bademkaya 78.22 315 *i* P **P** **06 51 25.1 -0.6**

SEY	Seymchan	78.31	19	P	P	06 51 26.0	+0.4		
	comp=Z,33nm,0.6s,baz=220,slow=4.5,SNR=58								
SEY	Seymchan	78.31	19	*c* iP	P	06 51 26.4	+0.8		
NEY	Neytrino	78.35	317	*c* iP	P	06 51 28.0	+1.5		
NEY				pmax	pmax				
	comp=Z,40nm,2.1s								
DBOC	Borcka	78.36	315	*i* P	P	06 51 26.6	+0.2		
KBZ	Khabaz	78.42	318	P	P	06 51 27.4	+0.8		
	comp=Z,16nm,0.8s,baz=108,slow=4.4,SNR=45								
KBZ				LR	LR	07 33 04.6			
	comp=Z,116nm,18.3s,baz=110,slow=41								
KSRV	Kasrt alli	78.42	309	*e*P	P	06 51 28.1	+1.3		
NRIK	Noril'sk	78.58	353	P	P	06 51 27.0	+0.1		
	comp=Z,28nm,0.6s,baz=152,slow=4.7,SNR=80								
NRIK				LR	LR	07 28 41.5			
	comp=Z,391nm,19.5s,baz=164,slow=37								
CHVG	Ch'k'valeri	78.58	316	P	P	06 51 29.3	+1.8		
CHVG	Ch'k'valeri	78.58	316	P	P	06 51 29.3	+1.8		
LSZ	Lusaka	78.61	256	*e*P	P	06 51 29.0	+0.6		
LSZ				pmax	pmax				
	comp=Z,31nm,0.8s								
LSZ	Lusaka	78.61	256	*e*P	P	06 51 29.0	+0.6		
	comp=Z,31nm,0.8s								
LSZ	Lusaka	78.61	256	P	P	06 51 30.0	+1.6		
	SNR=9.3								
KIV	Kislovodsk	78.65	318	*c* iP	P	06 51 28.7	+0.7		
KIV				*i*		06 51 35.3			
KIV				*e*SP	sP	06 51 58.1	-1.7		
KIV				*i* S	S	07 01 15.6	-2.8		
KIV				SS	SS	07 06 27.0	+2.6		
KIV				SSS	SSS	07 09 36.0			
KIV				pmax	pmax				
	comp=Z,32nm,0.6s								
KIV				MLR	MLR				
	comp=Z,245nm,26.0s								
KIV	Kislovodsk	78.65	318	*e*P	P	06 51 29.1	+1.1		
ZALF	Zalf	78.83	306	*e*P	P	06 51 30.7	+1.6		
GOF	Gofitskoye	78.85	319⇑	*e*P	P	06 51 29.7	+0.8		
GOF				pmax	pmax				
	comp=Z,110nm,1.5s								
GOF				pmax	pmax				
	comp=E,166nm,2.0s								
SOKR	Solikamsk	78.91	336	*c* iP	P	06 51 27.3	-1.6		
SOKR				S	S	07 01 15.3	-4.9		
SOKR				pmax	pmax				
	comp=Z,176nm,1.5s								
SOKR				MLR	MLR				
	comp=Z,565nm,31.0s								
ASF	Jabal al Asfar	78.97	305	LR	LR	07 29 18.8			
	comp=Z,271nm,18.7s,slow=38								
ELZG	Elazig	79.30	312	*i* P	P	06 51 32.7	+0.9		
KELT	Kelkit	79.65	313	*i* P	P	06 51 34.7	+1.1		
EIL	Elat	79.88	302	LR	LR	07 25 11.9			
	comp=Z,386nm,21.6s,baz=64,slow=34								
GZT	Gaziantep	79.99	310	*i* P	P	06 51 36.6	+1.1		
BRBR	Barbar	80.08	306	*e*P	P	06 51 34.5	-1.7		
LBTB	Lobatse	80.23	246	P	P	06 51 38.0	+0.9		
	comp=Z,8.5nm,0.7s,baz=121,slow=5.4,SNR=15								
LBTB	Lobatse	80.23	246	P	P	06 51 38.0	+0.9		
LBTB				pmax	pmax				
	comp=Z,9.0nm,0.7s								
LBTB	Lobatse	80.23	246	*e*P	P	06 51 38.1	+1.0		
LBTB				*e*pP	pP	06 51 59.5	-0.1		
BIDA	Albida	80.25	308	*e*P	P	06 51 34.1	-2.8		
BOSA	Boshof	80.27	242	P	P	06 51 38.1	+0.8		
	comp=Z,4.0nm,0.6s,baz=115,slow=4.6,SNR=9.6								
BOSA				LR	LR	07 22 13.8			
	comp=Z,796nm,18.8s,baz=100,slow=32								
BOSA	Boshof	80.27	242	P	P	06 51 38.1	+0.8		
BOSA				pmax	pmax				
	comp=Z,11nm,0.8s								
BOSA	Boshof	80.27	242	*e*P	P	06 51 39.3	+2.0		
MMAI	Mount Meron Ar	80.41	305	LR	LR	07 27 33.0			
	comp=Z,254nm,21.7s,baz=100,slow=36								
SUSE	Susehri	80.43	313	*i* P	P	06 51 37.6	-0.2		
BTCH	Batrach	80.44	309	*e*P	P	06 51 36.8	-1.1		
HCB	Kahramanmara$_{-}$	80.49	310	*i* P	P	06 51 38.1	+0.1		
SOC	Sochi	80.51	317	*e*P	P	06 51 45.2	+7.2		
SOC				*e*		06 54 46.2			
SOC				*e*S	S	07 01 44.3	+6.5		
SOC				*e*SS	SS	07 06 45.3	-6.7		
SOC				pmax	pmax				
	comp=Z,36nm,0.8s								
GRSN	GIRESUNGRSN	80.61	314	*i* P	P	06 51 38.4	-0.2		
CUZAR	Zara_SIVAS	80.64	313	*i* P	P	06 51 37.6	-1.3		
TIXI	Tiksi	80.68	6	P	P	06 51 37.9	-0.3		
	comp=Z,64nm,0.7s,baz=171,slow=3.4,SNR=98								
TIXI	Tiksi	80.68	6	*c* iP	P	06 51 37.8	-0.4		
TIXI				pmax	pmax				
	comp=Z,77nm,0.7s								
TIXI	Tiksi	80.68	6	*e*P	P	06 51 37.1	-1.1		
CUKAN	kangal_SIVAS	80.68	312	*i* P	P	06 51 38.3	-0.9		
YAYL	Yayladag	80.71	308	*i* P	P	06 51 38.2	-1.2		
ARNB	Al Arnab	80.77	308	*e*P	P	06 51 37.3	-2.4		
ANDN	Andirin	80.99	310	*i* P	P	06 51 41.4	+0.6		
YURE	YUREGIR	81.31	309	*i* P	P	06 51 44.1	+1.6		
CUSAR	Sarkisla-SIVAS	81.61	312	*i* P	P	06 51 44.8	+0.6		
QSPA	South Pole Qui	81.94	180	*e*P	P	06 51 45.2	-0.1		
	comp=Z,430nm,1.3s								
DED	Mersin	81.99	309	*i* P	P	06 51 46.0	0.0		
VRH	Novokhopyorsk	82.10	324	*e*P	P	06 51 46.3	+0.1		
VRH				*e*S	S	07 01 51.4	-2.5		
VRH				pmax	pmax				
	comp=Z,130nm,0.8s								
VRH				pmax	pmax				
	comp=Z,180nm,0.8s								
VRH				smax	smax				
	comp=N,730nm,4.2s								
ANN	Anapa	82.47	317	*e*P	P	06 51 46.7	-1.5		
ANN				*e*		06 54 56.5			
ANN				*e*S	S	07 01 56.7	-1.2		
ANN				pmax	pmax				
	comp=Z,67nm,1.6s								
AVNS	Nevsehir-Avano	82.47	311	*i* P	P	06 51 49.0	+0.4		
CSS	Mathiatis	82.59	307	P	P	06 51 50.1	+0.9		
CSS	Mathiatis	82.59	307	*e*P	P	06 51 50.2	+0.9		
COAL	Corum-Alaca	82.78	312	*i* P	P	06 51 49.7	-0.5		
CDAG	Cicekdag	83.06	312	*i* P	P	06 51 51.7	+0.1		
BOYT	Boyabat	83.18	313	*i* P	P	06 51 53.0	+0.8		
AKSY	AKSARAY - Alti	83.25	310	*i* P	P	06 51 53.2	+0.6		
ERMK	Ermenek	83.36	308	*i* P	P	06 51 54.0	+0.6		
VSR	Storozhevoye	83.59	324	*e*P	P	06 51 53.9	0.0		
VSR				*e*S	S	07 02 04.7	-4.4		
VSR				pmax	pmax				
	comp=Z,150nm,0.7s								
VSR				pmax	pmax				
	comp=Z,100nm,0.5s								
VSR				smax	smax				
	comp=N,510nm,3.2s								
BR131	Keskin Array S	83.63	311	*e*P	P	06 51 54.9	+0.4		
BRTR	Keskin Array B	83.63	311	P	P	06 51 55.0	+0.4		
	comp=N,23nm,0.8s,baz=139,slow=6.5,SNR=90								
BRTR				PKKPbc	PKKPbc	07 10 12.2	-1.1		
	comp=N,1.7nm,1.1s,baz=242,slow=2.7,SNR=4.3								
BRTR				LR	LR	07 31 05.5			
	comp=N,248nm,20.8s,baz=104,slow=37								
BRTR	Keskin Array B	83.63	311	P	P	06 51 55.0	+0.4		
GAZI	Gazipasa	83.72	308	*i* P	P	06 51 55.2	+0.2		
ILGA	Ilgaz	83.94	313	*i* P	P	06 51 56.8	+0.5		
BBAL	Bala	83.96	311	*i* P	P	06 51 55.7	-0.6		
ELDT	Eldivan	84.00	312	*i* P	P	06 51 57.2	+0.7		
ANTO	Ankara	84.30	311	*e*P	P	06 51 58.8	+0.9		
ANTO	Ankara	84.30	311	*e*P	P	06 51 58.8	+0.9		
BR231	Keskin MP Arra	84.30	311	*e*P	P	06 51 55.2	-2.8		
KDHN	Kadinhani	84.45	310	*i* P	P	06 51 58.1	-0.6		
SIM	Simferopol'	84.76	317⇑	*e*P	P	06 52 01.1	+1.1		
SIM				pmax	pmax				
	comp=Z,42nm,0.7s								
BCAM	Yenicaga	85.08	312	*i* P	P	06 52 01.6	-0.3		
BTIN	Bart^{-}n	85.16	313	*i* P	P	06 52 01.9	-0.2		
BAGO	Egridir - ISPA	85.33	309	*i* P	P	06 52 03.6	+0.4		
BOLV	Bolvadin	85.39	310	*i* P	P	06 52 04.5	+1.0		
KORT	Korkueli	85.44	308	*i* P	P	06 52 03.4	-0.4		
ESKT	Eskisehir	85.66	311	*i* P	P	06 52 05.9	+1.1		
BTAS	Taskesti	85.80	312	*i* P	P	06 52 05.6	+0.2		
AKAS	Kas	85.85	307	*i* P	P	06 52 02.8	-3.0		
SAHE	Sakarya_HENDEK	85.98	312	*i* P	P	06 52 05.7	-0.5		
BILL	Bilibino	86.01	19	*c* iP	P	06 52 05.8	+0.1		
BILL				*e*PP	pP	06 52 30.6	+2.0		
BILL				*e*		06 55 32.2			
BILL				PPP	PPP	06 57 29.0			
BILL				*i* S	S	07 02 24.0	-8.5		
BILL				*e*		07 04 02.0			
BILL				pmax	pmax				
	comp=Z,82nm,0.7s								
BILL				MLR	MLR				
	comp=Z,214nm,20.0s								
BILL	Bilibino	86.01	19	*e*P	P	06 52 06.0	+0.3		
BORA	Eskisehir	86.04	311	*i* P	P	06 52 07.2	+0.6		
MOS	Moscow	86.06	328	*e*P	P	06 52 04.7	-1.5		
MOS				*e*		06 55 23.5			
MOS				*e*		07 02 22.8			
MOS				*i* S	S	07 02 32.0	-1.3		
MOS				pmax	pmax				
	comp=Z,800nm,2.0s								
MOS				pmax	pmax				
	comp=Z,360nm,1.5s								
FETY	Fethiye	86.35	308	P	P	06 52 08.5	+0.4		
FETY	Fethiye	86.35	308	P	P	06 52 08.5	+0.4		
OBN	Obninsk	86.41	327	*c* iP	P	06 52 08.5	+0.6		
OBN				*e*PP	pP	06 52 33.5	+2.7		
OBN				*i*		07 02 25.2			
OBN				*i* S	S	07 02 35.4	-1.4		
OBN				pmax	pmax				
	comp=Z,417nm,1.7s								
OBN	Obninsk	86.41	327	*e*P	P	06 52 08.8	+0.8		
KHAL	Karahalli	86.42	309	*i* P	P	06 52 09.3	+0.8		
KAND	Kocaeli-Kandir	86.52	312	*i* P	P	06 52 08.6	-0.2		
GDZ	Gediz	86.59	310	*i* P	P	06 52 09.7	+0.3		
TURN	Turunc	86.78	308	*i* P	P	06 52 12.1	+1.9		
IGD	Bursa	87.06	311	*i* P	P	06 52 10.4	-1.1		
YER	Yerkesik	87.08	308	P	P	06 52 12.6	+0.9		
YER	Yerkesik	87.08	308	P	P	06 52 12.6	+0.9		
YER	Yerkesik	87.08	308	P	P	06 52 12.6	+0.9		
KULA	Kula-Manisa	87.09	309	P	P	06 52 12.9	+1.1		
KULA	Kula-Manisa	87.09	309	P	P	06 52 12.9	+1.1		
ULDT	Uludag	87.09	311	*i* P	P	06 52 12.5	+0.6		
ISK	Istanbul-Kandi	87.35	312	P	P	06 52 13.5	+0.7		
ISK	Istanbul-Kandi	87.35	312	P	P	06 52 13.5	+0.7		
ISK	Istanbul-Kandi	87.35	312	P	P	06 52 13.5	+0.7		
DURS	Dursunbey	87.46	310	*i* P	P	06 52 14.1	+0.5		
KARP	Karpathos	87.64	306	P	P	06 52 15.8	+1.4		
KARP	Karpathos	87.64	306	*e*P	P	06 52 15.8	+1.4		
NIS1	Nisyros Isl.	87.84	307	P	P	06 52 16.1	+0.8		
NIS1	Nisyros Isl.	87.84	307	P	P	06 52 16.1	+0.8		
GCAM	G?zelcaml?	88.02	308	*i* P	P	06 52 17.1	+1.1		
TSUM	Tsumeb	88.24	251	*e*P	P	06 52 17.6	-0.1		
	comp=Z,40nm,1.2s								
ZKR	Zakros	88.31	306	P	P	06 52 18.6	+1.0		
ZKR	Zakros	88.31	306	P	P	06 52 18.6	+1.0		
TLCR		88.45	316	⇑*i* P	P	06 52 19.2	+1.3		
TLCR		88.45	316	⇑P	P	06 52 19.2	+1.3		
TIRR	Tirgusor	88.57	315	⇑*i* P	P	06 52 19.3	+0.8		
TIRR	Tirgusor	88.57	315	⇑P	P	06 52 19.3	+0.8		
TIRR	Tirgusor	88.57	315	*e*P	P	06 52 19.0	+0.5		
KIS	Kishinev	88.85	318	*e*P	P	06 52 20.0	+0.2		
KIS				*i* S	S	07 03 00.0	-0.5		
KIS				*i* sS	sS	07 03 38.0	-1.8		
KIS	Kishinev	88.85	318	*e*PS	PS	07 04 16.0	+0.3		
KIS				*e*L	L	07 27 46.0			
KIS	Kishinev	88.85	318	*e*P	P	06 52 20.0	+0.2		
KIS				*i* S	S	07 03 00.0	-0.5		
KIS				*e*PS	PS	07 04 16.0	+0.3		
TMCR	Tamitsa	88.85	336	*e*P	P	06 52 18.4	-1.0		
TMCR				pmax	pmax				
	comp=Z,156nm,1.0s								
CFR	Carcaliu	88.92	316	⇑*i* P	P	06 52 21.0	+0.9		
CFR	Carcaliu	88.92	316	⇑P	P	06 52 21.1	+0.9		
LAST	Lasithi	88.92	306	⇑*i* P	P	06 52 21.9	+1.4		
LAST	Lasithi	88.92	306	P	P	06 52 22.0	+1.4		
LAST	Lasithi	88.92	306	*e*P	P	06 52 22.0	+1.4		
HARR	Harsova	88.95	315	⇑*i* P	P	06 52 21.6	+1.3		
HARR	Harsova	88.95	315	⇑P	P	06 52 21.6	+1.3		
SNAA	Sanae	88.96	197	P	P	06 52 20.9	+0.9		
SNAA	Sanae	88.96	197	*i* P	P	06 52 20.7	+0.7		
SNAA	Sanae	88.96	197	*e*P	P	06 52 20.8	+0.7		
PRD	Provadia	89.02	314	*i* P	P	06 52 21.7	+1.0		
SANT	Santorini	89.15	307	⇑*i* P	P	06 52 21.2	-0.3		
SANT	Santorini	89.15	307	*e*P	P	06 52 21.3	-0.3		
APE	Apeiranthos	89.22	307	⇑*i* P	P	06 52 22.6	+0.7		
APE	Apeiranthos	89.22	307	⇑*i* P	P	06 52 22.2	+0.3		
APE				pmax	pmax				
	comp=Z,33nm,0.7s								
IDI	Anoyia	89.41	306	⇓*i* P	P	06 52 24.4	+1.5		
IDI	Anoyia	89.41	306	*e*P	P	06 52 24.3	+1.5		
SORM	Soroca	89.41	319	⇑*i* P	P	06 52 22.5	+0.1		
SORM	Soroca	89.41	319	⇑P	P	06 52 22.5	+0.1		
SIVA	Sivas	89.43	305	⇓*i* P	P	06 52 24.8	+2.0		
AKASG	Malin Array Be	89.44	321	P	P	06 52 21.7	-0.7		
	comp=Z,5.2nm,0.5s,baz=84,slow=5.0,SNR=23								
AKASG				PP	PP	06 55 46.9	-7.9		
	comp=Z,0.5nm,0.4s,baz=116,slow=7.4,SNR=3.5								
AKASG	Malin Array Be	89.44	321	*i* P	P	06 52 22.1	-0.4		
AKASG				pmax	pmax				
	comp=Z,5.0nm,0.5s								
KIEV	Kiev	89.44	321	⇑*i* P	P	06 52 22.3	-0.2		
KIEV				pmax	pmax				
	comp=Z,14nm,0.7s								
KIEV	Kiev	89.44	321	*e*P	P	06 52 22.1	-0.4		
JMB	Yambol	89.45	313	*i* P	P	06 52 24.1	+1.3		
VRI	Vrincioaia	90.03	316	⇑*i* P	P	06 52 26.6	+1.2		
VRI	Vrincioaia	90.03	316	⇑P	P	06 52 26.6	+1.2		
PLOR	Plostina	90.08	316	⇓*i* P	P	06 52 26.9	+1.2		
PLOR	Plostina	90.08	316	⇓P	P	06 52 26.9	+1.2		
SZH	Strazhica	90.08	314	*i* P	P	06 52 26.4	+0.7		
SULR		90.12	315	⇑*i* P	P	06 52 27.6	+1.8		
TESR	Tescani	90.21	317	⇑*i* P	P	06 52 27.1	+0.9		
MLR	Muntele Rosu	90.49	316	⇑*i* P	P	06 52 28.8	+1.1		
MLR	Muntele Rosu	90.49	316	⇑P	P	06 52 28.8	+1.1		
MLR	Muntele Rosu	90.49	316	*e*P	P	06 52 28.2	+0.5		
VNA2	Neumayer--Watz	90.61	197	P	P	06 52 28.9	+1.3		
	baz=99,slow=5.0								
RZN	Rozhen	90.68	312	*i* P	P	06 52 29.5	+0.8		
VNA1	Neumayer--Stat	90.99	197	P	P	06 52 30.7	+1.3		
VNA3	Neumayer Olymp	91.11	197	P	P	06 52 31.0	+1.0		
PGB	Panagyurishte	91.23	313	*i* P	P	06 52 31.4	+0.3		
ARR	Arges	91.38	319	⇑*i* P	P	06 52 33.3	+0.6		
BURAR	Bucovina Array	91.38	318	⇓*i* P	P	06 52 33.2	+1.5		
BURAR	Bucovina Array	91.38	318	⇓P	P	06 52 33.2	+1.5		
BUR08	Bucovina Ar. S	91.39	318	*e*P	P	06 52 32.6	+0.7		
LVZ	Lovozero	91.41	339	*c* iP	P	06 52 30.9	-0.4		
LVZ				pmax	pmax				
	comp=Z,57nm,0.7s								
LVZ	Lovozero	91.41	339	*e*P	P	06 52 31.0	-0.4		
MPEP	Malo Peshtene	91.67	313	*i* P	P	06 52 33.8	+0.7		
APA	Apatity	91.76	338	⇑*i* P	P	06 52 33.2	+0.3		
NACGM	Naroch	91.79	325	*e*	P	06 52 33.0	-0.3		
KKB	Krupnik	91.91	312	*i* P	P	06 52 34.3	+0.1		
LOT	Lotru	91.99	315	⇓*i* P	P	06 52 35.3	+0.7		
LIT	Litokhoron	92.08	310	P	P	06 52 35.0	-0.1		
LIT	Litokhoron	92.08	310	P	P	06 52 35.0	-0.1		
LIT	Litokhoron	92.08	310	P	P	06 52 35.0	-0.1		
VSU	Vasula	92.51	329	*c* iP	P	06 52 36.8	+0.3		
VSU				pmax	pmax				
	comp=Z,156nm,0.7s								
GAMB	Gambell	92.69	26	*e*P	P	06 52 37.9	+0.6		
	comp=Z,199nm,1.6s								
KWP	Kalwaria Pacla	93.35	319	*e*P	P	06 52 41.5	+0.8		
FINES	FINESS Array B	93.40	332	P	P	06 52 41.0	+0.4		
	comp=Z,9.4nm,0.7s,baz=105,slow=6.5,SNR=37								
FINES				LR	LR	07 40 27.3			
	comp=Z,207nm,18.5s,baz=130,slow=39								
FINES	FINESS Array B	93.40	332	P	P	06 52 41.0	+0.4		
UNV	Unalaska Valle	93.50	36	*e*P	P	06 52 40.9	-0.4		
	comp=Z,248nm,1.3s								
BZS	Buzias	93.51	315	⇓*i* P	P	06 52 42.1	+0.6		
BZS	Buzias	93.51	315	⇓P	P	06 52 42.1	+0.6		
KOLS	Kolonicke sedl	93.53	319	*e*P	P	06 52 42.4	+0.9		
SIRR	Siria	93.57	316	⇑*i* P	P	06 52 42.5	+0.7		
SUW	Suwalki	93.70	324	*e*P	P	06 52 42.5	+0.3		
AKUT	Akutan	93.97	36	*e*P	P	06 52 44.0	+0.6		
CRVS	Cervenica-Dubn	94.06	319	*e*P	P	06 52 45.6	+1.6		
STHS	Stebnicka Huta	94.27	319	*e*P	P	06 52 45.5	+0.6		
KEV	Kevo	94.56	340	*e*P	P	06 52 45.9	+0.2		
KEV	Kevo	94.56	340	*e*P	P	06 52 45.9	+0.2		
KECS	Kecovo	94.65	318	*e*P	P	06 52 47.2	+0.6		
PDG	Podgorica	94.81	312	⇑*i* P	P	06 52 47.7	+0.2		
NIE	Niedzica	94.88	319	*e*P	P	06 52 48.1	+0.4		
ARCES	ARCESS Array B	95.04	339	P	P	06 52 47.9	-0.1		
	comp=Z,11nm,0.7s,baz=84,slow=3.2,SNR=46								
ARCES				LR	LR	07 41 25.6			
	comp=Z,235nm,19.2s,baz=104,slow=39								
KLNR	Kaliningrad	95.51	324	*i* P	P	06 52 49.5	-0.9		
KLNR				pmax	pmax				
	comp=Z,38nm,0.8s								
PKSM	Moragy	95.64	316	⇑*i* P	P	06 52 51.2	0.0		
PKSM	Moragy	95.64	316	⇑P	P	06 52 51.2	0.0		
VYHS	Vyhne	95.74	318	*e*P	P	06 52 51.5	-0.2		
MORC	Moravsky Berou	96.70	319	⇑*i* P	P	06 52 56.6	+0.6		
MORC	Moravsky Berou	96.70	319	⇑P	P	06 52 56.6	+0.6		
KRLC	Kraliky	97.21	320	*e*P	Pdif	06 52 58.8	+0.4		
KRLC				*e*pP	pP	06 53 22.5	+1.1		
KRLC	Kraliky	97.21	320	*e*P	Pdif	06 52 58.8	+0.4		
KRLC				*e*		06 53 22.5			
DPC	Dobruska-Polom	97.52	320	*e*P	Pdif	06 53 00.5	+0.7		
DPC				*e*x	x	06 53 19.7			
DPC				*e*x	x	06 56 46.9			
DPC	Dobruska-Polom	97.52	320	*e*P	Pdif	06 53 00.5	+0.7		
TREC	Trest	98.00	319	*e*P	Pdif	06 53 02.1	+0.2		
TREC	Trest	98.00	319	*e*P	Pdif	06 53 02.1	+0.2		
PPT2	Papeete2	98.83	109	*e*SP	SP	07 06 03.9	+8.3		
	comp=Z,279nm,26.0s								
PPT2	Papeete2	98.83	109	*e*LR	LR	07 25 19.8			
	comp=Z,723nm,25.2s								
BRG	Berggiesshubel	99.06	320	*e*P	PP	06 57 13.0	+3.3		
	comp=Z,28nm,1.8s								
GERES	GERESS Array B	99.16	318	P	Pdif	06 53 07.2	+0.1		
	comp=Z,0.6nm,0.3s,baz=66,slow=3.2,SNR=8.6								
GERES				PP	PP	06 57 05.9	-4.8		
	comp=Z,1.2nm,0.6s,baz=82,slow=7.0,SNR=2.7								
KHC	Kasperske Hory	99.25	318	*e*PP	PP	06 57 11.4	+0.1		
CLL	Collm	99.66	321	*e*SKSac	SKSac	07 03 45.0	+5.0		
CLL				*e*Sdif	S	07 04 36.0	+0.6		
CLL				*e*SS	SS	07 11 28.0	-0.4		
NB2	NORSAR Subarra	100.53	331	P	Pdif	06 53 12.8	-0.1		
	comp=Z,17nm,1.4s,baz=80,slow=4.4								
NB2	NORSAR Subarra	100.53	331	P	Pdif	06 53 12.8	-0.1		
	baz=80,slow=4.4								
NOA	NORSAR Array B	100.53	331	P	Pdif	06 53 12.2	-0.7		
	comp=Z,2.1nm,0.9s,baz=90,slow=4.4,SNR=6.2								
KDAK	Kodiak Island	101.53	33	P	Pdif	06 53 31.8	+14		
	comp=Z,11nm,0.7s,baz=262,slow=5.3,SNR=7.6								
KDAK	Kodiak Island	101.53	33	*i* P	Pdif	06 53 18.8	+1.5		
ILAR	Eielson Array	103.47	25	Pdiff	Pdif	06 53 25.6	-0.3		
	comp=Z,0.7nm,0.8s,baz=271,slow=3.4,SNR=5.5								
ILAR				PKKPbc	PKKPbc	07 09 19.5	-2.3		
	comp=Z,0.8nm,0.7s,baz=119,slow=1.9,SNR=8.3								
INK	Inuvik	107.58	20	Pdiff	Pdif	06 53 44.0	0.0		
	comp=Z,1.2nm,0.6s,baz=298,slow=3.4,SNR=7.4								
INK				PKiKP	PKiKP	06 57 52.2	+0.6		
	comp=Z,1.8nm,0.8s,baz=331,slow=0.7,SNR=4.6								
INK				PKKPbc	PKKPbc	07 09 06.2	-3.0		
	comp=Z,1.3nm,0.7s,baz=114,slow=1.2,SNR=12								
TORD	Torodi Ar. Bea	108.07	281	PKiKP	PKiKP	06 57 53.8	-0.3		
	comp=Z,2.6nm,0.7s,baz=74,slow=1.8,SNR=18								
TORD				PKKPbc	PKKPbc	07 09 04.5	-1.6		
	comp=Z,2.3nm,0.8s,baz=307,slow=3.8,SNR=12								
TAOE	Nuku Hiva Isla	109.58	102	*e*LR	LR	07 30 31.4			
	comp=Z,514nm,30.8s								
RKT	Rikitea	110.67	118	*e*SP	SP	07 08 06.2	+8.3		
	comp=Z,358nm,30.2s								
RKT	Rikitea	110.67	118	*e*LR	LR	07 30 54.6			
	comp=Z,1μm,35.2s								
RES	Resolute Bay	112.07	7	Pdiff	Pdif	06 54 06.0	+2.0		
	comp=Z,0.9nm,0.6s,baz=319,slow=6.4,SNR=4.0								
RES				PKiKP	PKiKP	06 57 59.9	-0.1		
	comp=Z,4.1nm,0.8s,baz

A26A	Wade Farm, Ken	131.88	27	P	PKPdf	06 58 40.3	+1.6	
	baz=318							
BW06	Boulder Array	131.95	38	P	PKPdf	06 58 39.7	+0.4	
	baz=305							
BW06	Boulder Array	131.95	38	ePKPdf	PKPdf	06 58 39.3	0.0	
PDAR	Pinedale Array	131.95	38	PKhKP	PKPpre	06 58 33.9		
	comp=Z,0.9nm,0.8s,baz=29,slow=2.1,SNR=6.9							
PDAR				SKP		07 01 59.3		
	comp=Z,1.6nm,0.8s,baz=187,slow=1.5,SNR=4.2							
A27A	Ledoux Ranch,	132.19	26	P	PKPdf	06 58 40.6	+1.4	
	baz=319							
C26A	Wahner Farm, P	132.64	28	P	PKPdf	06 58 42.0	+1.8	
	baz=317							
B28A	Dugan Ranch, T	132.95	26	P	PKPdf	06 58 42.5	+1.8	
	baz=319							
SCHQ	Schefferville	133.20	356	PKP	PKPdf	06 58 42.0	+1.0	
	comp=Z,9.5nm,0.8s,baz=4.5,slow=3.3,SNR=12							
SCHQ				SKP		07 02 03.4		
	comp=Z,17nm,0.8s,baz=22,slow=2.6,SNR=10							
TRQA	Tornquist	133.27	190	ePKPdf	PKPdf	06 58 42.0	+0.3	
ULM	Lac du Bonnet	133.30	21	PKP	PKPdf	06 58 42.0	+0.7	
	comp=Z,6.1nm,0.7s,baz=268,slow=1.3,SNR=7.9							
ULM				SKP		07 02 03.6		
	comp=Z,12nm,0.8s,baz=335,slow=6.6,SNR=6.3							
ULM	Lac du Bonnet	133.30	21	PKIKP	PKPdf	06 58 42.0	+0.7	
K22A	Casper	133.82	36	P	PKPdf	06 58 43.6	+0.9	
	baz=308							
K22A	Casper	133.82	36	ePKPdf	PKPdf	06 58 41.1	-1.6	
G26A	Maurine	134.21	31	P	PKPdf	06 58 44.7	+1.5	
	baz=315							
O20A	White River Ci	134.26	40	P	PKPdf	06 58 45.2	+1.5	
	baz=304							
O20A	White River Ci	134.26	40	ePKPdf	PKPdf	06 58 45.2	+1.5	
RSSD	Black Hills	134.26	33	P	PKPdf	06 58 45.5	+2.0	
	baz=312							
C30A	Mose, Pekin	134.33	25	P	PKPdf	06 58 44.9	+1.6	
	baz=321							
D29A	Pettibone, Tap	134.34	27	P	PKPdf	06 58 44.5	+1.1	
	baz=319							
I25A	Rochford	134.49	33	P	PKPdf	06 58 45.7	+1.8	
	baz=312							
A33A	Warroad	134.57	22	P	PKPdf	06 58 44.1	+0.4	
	baz=326							
C31A	Landman Farms,	134.57	25	P	PKPdf	06 58 45.1	+1.4	
	baz=322							
B32A	Ashes, Strandq	134.57	23	P	PKPdf	06 58 43.8	+0.1	
	baz=324							
D30A	Buchanan	134.67	26	P	PKPdf	06 58 44.6	+0.6	
	baz=320							
PV04	Paradox Valley	134.78	42	ePKPdf	PKPdf	06 58 44.6	-0.1	
B33A	Robert and Kas	135.04	23	P	PKPdf	06 58 45.4	+0.8	
	baz=325							
D31A	Mcclaflin, Tow	135.16	25	P	PKPdf	06 58 45.3	+0.4	
	baz=322							
G28A	Parade	135.20	30	P	PKPdf	06 58 45.9	+0.8	
	baz=316							
B34A	Aery, Baudette	135.22	22	P	PKPdf	06 58 45.7	+0.8	
	baz=326							
I27A	Quinn	135.34	31	P	PKPdf	06 58 46.6	+1.2	
	baz=314							
I28A	Midland	135.84	31	P	PKPdf	06 58 47.1	+0.8	
	baz=315							
W18A	Petrified Fore	135.85	47	ePKPdf	PKPdf	06 58 46.4	-0.4	
ISCO	Idaho Springs	136.09	39	ePKIKP	PKPdf	06 58 47.3	0.0	
ISCO	Idaho Springs	136.09	39	ePKPdf	PKPdf	06 58 47.3	0.0	
C35A	Jirik Farms, M	136.12	22	P	PKPdf	06 58 47.3	+0.6	
	baz=327							
J28A	Allard Ranch,	136.21	31	P	PKPdf	06 58 47.4	+0.4	
	baz=315							
E33A	Westby DABS, E	136.31	24	P	PKPdf	06 58 49.1	+2.1	
	baz=324							
TUC	Tucson	136.32	51	P	PKPdf	06 58 48.5	+0.9	
	baz=295							
SUSD	Miller	136.61	29	P	PKPdf	06 58 48.0	+0.3	
	baz=318							
D35A	Remer	136.61	22	P	PKPdf	06 58 47.5	-0.1	
	baz=326							
E34A	Wadena	136.65	24	P	PKPdf	06 58 48.6	+0.9	
	baz=325							
C37A	Embarrass	136.74	20	P	PKPdf	06 58 48.3	+0.5	
	baz=329							
F36A	Milaca	137.83	23	P	PKPpre	06 58 39.1		
	baz=326							
K31A	O'Neill	138.05	30	P	PKPpre	06 58 42.1		
	baz=317							
ECSD	EROS Data Cent	138.24	27	P	PKPpre	06 58 41.9		
	baz=321							
H35A	Sunnyside Ranc	138.26	25	P	PKPpre	06 58 40.4		
	baz=324							
ANMO	Albuquerque	138.26	45	P	PKPpre	06 58 43.3		
	baz=302							
ANMO	Albuquerque	138.26	45	c iPKIKP	PKPpre	06 58 52.4		
L31A	Butterfield Fa	138.34	31	P	PKPpre	06 58 44.0		
	baz=317							
K32A	Verdigre	138.41	30	P	PKPpre	06 58 42.7		
	baz=318							
121A	Cookes Peak, D	138.50	49	P	PKPpre	06 58 44.9		
	baz=298							
SPMN	Marine on St.	138.64	23	P	PKPpre	06 58 44.5		
	baz=327							
SPMN	Marine on St.	138.64	23	ePKPdf	PKPpre	06 58 51.7		
M31A	Lambtecht Ranc	138.87	32	P	PKPpre	06 58 45.7		
	baz=316							
L32A	Elgin	138.88	30	P	PKPpre	06 58 44.6		
	baz=318							
L33A	Hoskins	139.13	30	P	PKPpre	06 58 44.8		
	baz=319							
COWI	Conover	139.17	19	ePKPdf	PKPdf	06 58 51.4	-0.9	
BGNE	Belgrade	139.25	31	P	PKPpre	06 58 46.0		
	baz=317							
K34A	Le Mars	139.29	28	P	PKPpre	06 58 44.3		
	baz=321							
I37A	Lemond, Waseca	139.41	24	P	PKPpre	06 58 45.8		
	baz=326							
M33A	Taylor Creek F	139.61	30	P	PKPpre	06 58 46.3		
	baz=319							
L34A	Svendsen Farm,	139.71	29	P	PKPpre	06 58 45.8		
	baz=320							
I38A	Scanlan Farm,	139.82	23	P	PKPpre	06 58 45.8		
	baz=327							
M34A	Aspy Farms, Fr	139.97	30	P	PKPpre	06 58 47.9		
	baz=319							
L35A	Bielow Farm, R	139.99	28	P	PKPpre	06 58 46.6		
	baz=321							
O32A	Brockman Farm,	140.02	32	P	PKPpre	06 58 47.7		
	baz=316							
K36A	Gilmore City	140.08	27	P	PKPpre	06 58 47.1		
	baz=323							
CBKS	Cedar Bluff	140.22	35	P	PKPpre	06 58 47.8		
	baz=313							
P32A	Huiting Farm,	140.30	33	P	PKPpre	06 58 47.6		
	baz=315							
K37A	Belmond	140.33	26	P	PKPpre	06 58 47.6		
	baz=324							
L36A	Harm Buss Farm	140.41	27	P	PKPpre	06 58 48.0		
	baz=322							
M35A	Neola	140.42	29	P	PKPpre	06 58 48.3		
	baz=320							
N34A	Lincoln	140.51	30	P	PKPpre	06 58 48.3		
	baz=319							
O33A	Hebron	140.52	32	P	PKPpre	06 58 49.6		
	baz=317							
MNTX	Cornudas Mount	140.68	49	P	PKPpre	06 58 50.2		
	baz=300							
Q32A	Meitler Ranch,	140.77	34	P	PKPpre	06 58 49.3		
	baz=315							
K38A	Parkersburg	140.79	25	P	PKPpre	06 58 50.1		
	baz=325							
M36A	Felix, Anita	140.85	28	P	PKPpre	06 58 49.9		
	baz=322							
O34A	Beatrice	140.90	31	P	PKPpre	06 58 49.6		
	baz=318							
P33A	Williams Farm,	140.92	33	P	PKPpre	06 58 49.7		
	baz=316							
R32A	Long Quarter,	141.08	35	P	PKPpre	06 58 50.5		
	baz=314							
L38A	Oak Wood Farm,	141.13	26	P	PKPpre	06 58 49.8		
	baz=325							
Q33A	Connelly Farm,	141.16	33	P	PKPpre	06 58 50.4		
	baz=316							
O35A	Humboldt	141.23	30	P	PKPpre	06 58 49.9		
	baz=319							
M37A	Trindle Farm,	141.24	27	P	PKPpre	06 58 50.6		
	baz=323							
N36A	Muff Farm, Cla	141.28	29	P	PKPpre	06 58 50.3		
	baz=321							
P34A	Walnut Farm, R	141.30	32	P	PKPpre	06 58 51.9		
	baz=318							
MSTX	Muleshoe	141.35	44	ePKPdf	PKPdf	06 58 55.5	-1.3	
S32A	Newby Ranch, P	141.44	36	P	PKPpre	06 58 51.9		
	baz=313							
AMTX	Amarillo	141.54	42	ePKPdf	PKPdf	06 58 55.1	-1.9	
R33A	Olander Ranch,	141.56	34	P	PKPpre	06 58 52.1		
	baz=315							
M38A	Pleasantville	141.61	27	P	PKPpre	06 58 52.3		
	baz=324							
N37A	Lee Faris, Mou	141.68	28	P	PKPpre	06 58 52.5		
	baz=322							
Q34A	Chapman	141.70	33	P	PKPpre	06 58 53.2		
	baz=317							
KSU1	Kansas State U	141.74	32	P	PKPpre	06 58 53.0		
	baz=317							
T32A	Huddler Ranch,	141.80	36	P	PKPpre	06 58 53.2		
	baz=313							
R34A	Isabella, Hill	141.98	34	P	PKPpre	06 58 53.5		
	baz=316							
S33A	Kaszmaul Farm,	142.06	35	P	PKPpre	06 58 53.8		
	baz=314							
P36A	Good Intent, A	142.08	30	P	PKPpre	06 58 53.0		
	baz=320							
N38A	Joes South For	142.10	27	P	PKPpre	06 58 53.1		
	baz=323							
O37A	Wolven Farm, M	142.17	29	P	PKPpre	06 58 53.4		
	baz=322							
Q35A	Mercer Eighty,	142.22	32	P	PKPpre	06 58 53.7		
	baz=318							
N39A	Derby Farms, D	142.36	26	P	PKPpre	06 58 54.2		
	baz=325							
Q36A	Arnold C. Orve	142.44	31	P	PKPpre	06 58 54.3		
	baz=319							
S34A	Willow Spring	142.48	34	P	PKPpre	06 58 54.7		
	baz=316							
O38A	Galt	142.52	28	P	PKPpre	06 58 54.8		
	baz=323							
P37A	Lathrop	142.52	30	P	PKPpre	06 58 54.5		
	baz=321							
R35A	Emporia Munici	142.53	33	P	PKPpre	06 58 55.3		
	baz=317							
V32A	Arapaho	142.70	38	P	PKPpre	06 58 56.7		
	baz=311							
U33A	Lingo Farm, Me	142.79	37	P	PKPpre	06 58 56.3		
	baz=313							
O39A	Kirksville	142.84	27	P	PKPpre	06 58 55.9		
	baz=324							
PKME	Peaks-Kenny Pk	142.88	357	ePKPdf	PKPpre	06 58 56.2		
P38A	Dawn	142.89	29	P	PKPpre	06 58 56.0		
	baz=322							
R36A	Gordon, Harris	142.90	32	P	PKPpre	06 58 55.9		
	baz=318							
T34A	McClaskey Farm	142.92	35	P	PKPpre	06 58 56.1		
	baz=315							
S35A	Otter Creek Ra	142.93	34	P	PKPpre	06 58 56.3		
	baz=316							
W32A	Sentinel	142.96	39	P	PKPpre	06 58 57.3		
	baz=310							
Q37A	Longview Farm,	143.02	30	P	PKPpre	06 58 56.0		
	baz=320							
V33A	Lossen Ranch,	143.10	38	P	PKPbc	06 58 57.8	+1.0	
	baz=312							
TXAR	Lajitas Array	143.12	51	PKP	PKPbc	06 58 57.7	+0.6	
	comp=Z,14nm,0.8s,baz=260,slow=2.5,SNR=117							
TXAR				SKKPbc	SKKPbc	07 10 31.0	-12	
	comp=Z,0.2nm,0.7s,baz=116,slow=8.1,SNR=2.7							
U34A	Anderson Ranch	143.12	36	P	PKPbc	06 58 57.4	+0.6	
	baz=314							
LCO	Las Campanas	143.14	181	ePKPdf	PKPbc	06 58 58.0	+0.6	
CPUP	Villa Florida	143.15	202	PKP	PKPbc	06 58 57.1	0.0	
	comp=Z,7.9nm,0.8s,baz=139,slow=2.9,SNR=18							
O40A	La Belle	143.25	26	P	PKPbc	06 58 57.1	+0.1	
	baz=325							
R37A	Teagarden Farm	143.26	31	P	PKPbc	06 58 56.7	-0.4	
	baz=319							
S36A	Lake Cedric, C	143.29	33	P	PKPbc	06 58 57.1	-0.1	
	baz=318							
Q38A	Cooks Store, C	143.37	29	P	PKPbc	06 58 57.3	-0.1	
	baz=321							
T35A	Sooner Cattle	143.38	35	P	PKPbc	06 58 57.7	+0.2	
	baz=316							
X32A	Elmer	143.38	40	P	PKPbc	06 58 58.2	+0.6	
	baz=309							
W33A	Caddo, Fort Co	143.43	39	P	PKPbc	06 58 58.7	+1.0	
	baz=311							
WMOK	Wichita Mounta	143.50	39	ePKIKP	PKPbc	06 58 58.3	+0.4	
WMOK	Wichita Mounta	143.50	39	ePKPdf	PKPbc	06 58 58.3	+0.4	
V34A	Guthrie	143.55	37	P	PKPbc	06 58 58.6	+0.6	
	baz=313							
V34A	Guthrie	143.55	37	ePKPdf	PKPbc	06 58 58.8	+0.8	
Q39A	Willow Grove F	143.61	29	P	PKPbc	06 58 58.4	+0.4	
	baz=322							
T36A	Boggs Farm, Ca	143.62	34	P	PKPbc	06 58 58.8	+0.6	
	baz=317							
U35A	Pawnee	143.63	35	P	PKPbc	06 58 58.7	+0.5	
	baz=315							
P40A	Paris	143.65	27	P	PKPbc	06 58 58.7	+0.5	
	baz=324							
S37A	Fort Scott	143.67	32	P	PKPbc	06 58 58.5	+0.2	
	baz=319							
W34A	Bridge Creek,	143.80	38	P	PKPbc	06 58 59.7	+0.9	
	baz=312							
W34A	Bridge Creek,	143.80	38	ePKPdf	PKPbc	06 58 59.9	+1.1	
X33A	Lawton	143.81	39	P	PKPbc	06 58 59.5	+0.7	
	baz=311							
R38A	Fenwick Farm,	143.82	31	P	PKPab	06 58 58.2	+0.2	
	baz=320							
HDIL	Hopedale	143.96	23	P	PKPbc	06 58 59.4	+0.4	
	baz=329							
V35A	Meyer Ranch, C	144.00	36	P	PKPbc	06 58 60.0	+0.7	
	baz=314							
Y33A	Hilltop Ranch,	144.07	40	P	PKPbc	06 59 00.4	+0.7	
	baz=310							
Q40A	Lazy Farm, Aux	144.07	28	P	PKPbc	06 59 00.1	+0.7	
	baz=324							
T37A	Cheneyville 18	144.10	33	P	PKPbc	06 59 00.0	+0.5	
	baz=318							
R39A	Chumby, Stover	144.16	30	P	PKPbc	06 59 00.1	+0.4	
	baz=322							
X34A	Smith Ranch, M	144.18	39	P	PKPdf	06 59 01.0	-0.7	
	baz=312							
U36A	Oologah	144.19	34	P	PKPbc	06 59 00.7	+0.8	
	baz=316							
AAM	Ann Arbor	144.25	15	ePKIKP	PKPbc	06 59 00.4	+0.5	
AAM	Ann Arbor	144.25	15	ePKPdf	PKPbc	06 59 00.4	+0.5	
S38A	Stockton	144.25	31	P	PKPbc	06 59 00.0	0.0	
	baz=320							
ABTX	Abilene, Hawle	144.26	43	P	PKPdf	06 59 01.6	-0.3	
	baz=307							
ABTX	Abilene, Hawle	144.26	43	ePKPdf	PKPdf	06 59 01.7	-0.1	
W35A	Tecumseh	144.40	37	P	PKPdf	06 59 01.6	-0.4	
	baz=313							
Z33A	Whitaker Ranch	144.43	41	P	PKPdf	06 59 02.1	-0.1	
	baz=309							
T38A	Diamond	144.50	32	P	PKPbc	06 59 01.5	+0.7	
	baz=319							
TUL1	Leonard	144.50	35	P	PKPdf	06 59 01.9	-0.3	
	baz=316							
TUL1	Leonard	144.50	35	ePKPdf	PKPdf	06 59 01.8	-0.3	
S39A	Bolivar	144.50	31	P	PKPbc	06 59 00.9	+0.1	
	baz=321							
V36A	Jenks	144.50	35	P	PKPdf	06 59 02.0	-0.2	
	baz=315							
U37A	Salina	144.52	34	P	PKPdf	06 59 01.7	-0.4	
	baz=317							
R40A	Maddies Statio	144.54	29	P	PKPdf	06 59 01.8	-0.4	
	baz=323							
Y34A	Reagan Ranch,	144.65	39	P	PKPdf	06 59 02.7	+0.2	
	baz=311							
133A	Hamilton Ranch	144.75	42	P	PKPdf	06 59 03.4	+0.7	
	baz=308							
W36A	Wetumka	144.79	36	P	PKPdf	06 59 02.7	+0.1	
	baz=314							
X35A	Drake	144.85	38	P	PKPdf	06 59 02.9	+0.1	
	baz=312							
V37A	Hulbert	144.88	34	P	PKPdf	06 59 02.9	+0.1	
	baz=316							
U38A	Gravette	144.89	33	P	PKPdf	06 59 02.7	-0.1	
	baz=318							
Z34A	Collier Ranch,	144.93	40	P	PKPdf	06 59 03.6	+0.7	
	baz=310							
SFIN	Lafayette	144.94	21	P	PKPdf	06 59 03.2	+0.4	
	baz=332							
SFIN	Lafayette	144.94	21	ePKPbc	PKPdf	06 59 03.1	+0.3	
S40A	Lebanon	144.98	30	P	PKPdf	06 59 02.9	-0.1	
	baz=322							
T39A	Clever	144.98	31	P	PKPdf	06 59 03.1	+0.1	
	baz=320							
X36A	Centrahoma	145.11	37	P	PKPdf	06 59 03.9	+0.7	
	baz=314							
233A	Rising Star	145.12	43	P	PKPdf	06 59 04.7	+1.3	
	baz=307							
W37B	Quinton	145.25	36	P	PKPdf	06 59 04.3	+0.8	
	baz=315							
V38A	Canehill	145.31	34	P	PKPab	06 59 03.8	+0.2	
	baz=318							
T40A	Mansfield	145.32	30	P	PKPab	06 59 03.8	+0.1	
	baz=322							
134A	White-Moore Ra	145.33	42	P	PKPab	06 59 05.3	+1.5	
	baz=309							
Z35A	Perchaven, San	145.38	40	P	PKPab	06 59 05.0	+1.1	
	baz=311							
JCT	Junction City	145.39	46	P	PKPab	06 59 04.8	+0.7	
	baz=304							
JCT	Junction City	145.39	46	ePKIKP	PKPab	06 59 05.3	+1.1	
JCT	Junction City	145.39	46	ePKPdf	PKPab	06 59 05.3	+1.1	
U39A	Green Forest	145.42	32	P	PKPab	06 59 04.2	+0.1	
	baz=319							
333A	Richland Sprin	145.48	44	P	PKPab	06 59 05.1	+0.6	
	baz=306							
Y36A	Durant	145.60	38	P	PKPab	06 59 05.2	+0.4	
	baz=313							
234A	Clairette	145.64	42	P	PKPbc	06 59 04.8	+0.2	
	baz=308							
X37A	Clayton	145.67	36	P	PKPab	06 59 05.3	+0.3	
	baz=315							
HRV	Adam Dziewonsk	145.69	0	ePKP2	PKPab	06 59 04.9	+0.1	
HRV	Adam Dziewonsk	145.69	0	ePKPdf	PKPab	06 59 04.9	+0.1	
433A	Art	145.74	45	P	PKPab	06 59 05.7	+0.2	
	baz=306							
V39A	Pettigrew	145.74	33	P	PKPbc	06 59 05.0	+0.1	
	baz=319							
U40A	Yellville	145.77	31	P	PKPbc	06 59 05.1	+0.2	
	baz=320							
BINY	Binghamton	145.77	6	ePKPdf	PKPab	06 59 05.5	+0.3	
135A	Vickery Place,	145.78	41	P	PKPbc	06 59 05.3	+0.3	
	baz=310							
W38A	Poteau	145.82	35	P	PKPab	06 59 05.5	0.0	
	baz=317							
M54A	Oil Creek Stat	145.91	11	P	PKPab	06 59 05.7	0.0	
	baz=346							
X38A	Whitesboro	145.93	36	P	PKPab	06 59 06.7	+0.7	
	baz=316							
Z36A	Blue Ridge	145.93	39	P	PKPab	06 59 06.6	+0.5	
	baz=312							
Y37A	Hugo	145.95	37	P	PKPab	06 59 06.5	+0.4	
	baz=314							
334A	Lometa	145.99	43	P	PKPab	06 59 06.8	+0.4	
	baz=307							
WHTX	Lake Whitney,	146.10	42	P	PKPab	06 59 07.3	+0.5	
	baz=309							
WHTX	Lake Whitney,	146.10	42	ePKPbc	PKPab	06 59 07.2	+0.5	
W39A	Magazine	146.14	34	P	PKPab	06 59 06.7	0.0	
	baz=318							
533A	Kerrville	146.17	46	P	PKPab	06 59 07.2	+0.1	
	baz=305							
V40A	Witts Springs	146.20	32	P	PKPbc	06 59 06.4	+0.1	
	baz=320							
434A	Burnet	146.27	44	P	PKPab	06 59 07.2	-0.3	
	baz=307							
ACSO	Alum Creek Sta	146.36	16	ePKPdf	PKPbc	06 59 06.8	+0.3	
N54A	Moraine State	146.38	12	P	PKPab	06 59 07.2	-0.3	
	baz=345							
136A	Ennis	146.40	40	P	PKPab	06 59 08.2	+0.4	
	baz=311							
633A	Saathoff Ranch	146.41	47	P	PKPab	06 59 08.1	+0.1	
	baz=304							
832A	Faith Ranch, C	146.45	50	P	PKPab	06 59 08.2	0.0	
	baz=302							
X39A	Fountain Ranch	146.46	35	P	PKPab	06 59 08.1	+0.1	
	baz=317							
Z37A	Pogue Cattle C	146.48	38	P	PKPab	06 59 08.4	+0.2	
	baz=313							
Y38A	Idabel	146.52	36	P	PKPbc	06 59 07.7	+0.5	
	baz=315							
W40A	Ferguson Farm,	146.53	33	P	PKPbc	06 59 07.7	+0.6	
	baz=319							
335A	Moody	146.56	43	P	PKPab	06 59 08.2	-0.3	
	baz=308							
534A	Blanco	146.59	46	P	PKPab	06 59 08.4	-0.4	
	baz=306							
236A	Katherine and	146.70	41	P	PKPab	06 59 09.0	0.0	
	baz=310							
733A	Divot King Ran	146.73	48	P	PKPab	06 59 09.3	0.0	
	baz=303							
MIAR	Mount Ida	146.74	34	P	PKPab	06 59 08.8	-0.3	
	baz=317							
MIAR	Mount Ida	146.74	34	ePKP2	PKPab	06 59 08.7	-0.3	
MIAR	Mount Ida	146.74	34	ePKPbc	PKPab	06 59 08.7	-0.3	
435B	Jarrell	146.76	44	P	PKPab	06 59 09.0	-0.3	
	baz=308							
137A	Heron Place, G	146.81	39	P	PKPab	06 59 09.5	+0.1	
	baz=312							
Z38A	Mt. Pleasant	146.84	38	P	PKPab	06 59 09.3	-0.2	
	baz=314							
833A	Chaparral WMA,	146.87	49	P	PKPab	06 59 09.6	-0.2	
	baz=302							
Y39A	Lockesburg	146.88	36	P	PKPab	06 59 09.1	-0.6	
	baz=316							
336A	Riesel	146.89	42	P	PKPab	06 59 09.5	-0.3	
	baz=309							
W41A	Tony Mavity, V	146.99	32	P	PKPab	06 59 09.4	-0.6	
	baz=320							
W41B	Gary Mavity, V	146.99	32	P	PKPbc	06 59 08.8	+0.4	
	baz=320							
634A	China Grove, S	147.05	46	P	PKPab	06 59 09.8	-0.7	
	baz=305							
N59A	State Game Lan	147.06	6	P	PKPab	06 59 09.4	-0.7	
	baz=352							
SSPA	Standing Stone	147.06	9	ePKPbc	PKPbc	06 59 09.1	+0.6	
WCI	Wyandotte Cave	147.13	22	ePKP2	PKPdf	06 59 07.3	+0.7	
WCI	Wyandotte Cave	147.13	22	ePKPdf	PKPdf	06 59 07.3	+0.7	
WCI				ePKPbc	PKPbc	06 59 09.2	+0.4	
237A	Washetta, Mont	147.17	40	P	PKPab	06 59 10.1	-0.7	
	baz=311							
138A	Matatall Enter	147.18	38	P	PKPab	06 59 11.2	+0.3	
	baz=313							
X40A	Basin Creek Fa	147.19	34	P	PKPbc	06 59 09.7	+0.7	
	baz=318							
734A	La Parita Cree	147.20	47	P	PKPab	06 59 11.1	0.0	
	baz=304							
535A	Dale	147.22	45	P	PKPab	06 59 10.7	-0.5	
	baz=307							
Y40A	Okolona	147.29	35	P	PKPbc	06 59 10.4	+1.0	
	baz=317							
436A	Wall Ranch, Ga	147.31	43	P	PKPab	06 59 11.1	-0.3	
	baz=309							
O56A	Blue Knob Stat	147.31	10	P	PKPbc	06 59 10.2	+0.9	
	baz=347							
Z39A	Irene McRaven,	147.32	37	P	PKPab	06 59 10.9	-0.5	
	baz=315							
933A	Laredo	147.33	50	P	PKPab	06 59 11.8	+0.2	
	baz=301							
635A	Leesville	147.46	46	P	PKPab	06 59 11.7	-0.4	
	baz=306							
536A	Bastrop	147.55	44	P	PKPab	06 59

baz=301
140A Cam and Jess, 148.11 37 P **PKPab 06 59 13.2 -1.4**
baz=315
Z41A Richland Creek 148.11 35 P **PKPbc 06 59 12.8 +1.2**
baz=317
Y42A Garnett, Star 148.25 33 P **PKPbc 06 59 13.2 +1.3**
baz=319
339A Huntington 148.41 40 P **PKPbc 06 59 13.9 +1.5**
baz=312
637A Eagle Lake 148.44 44 P **PKPab 06 59 15.0 -1.0**
baz=308
HKT Hockley 148.47 43 *e*PKP2 **PKPbc 06 59 11.0 -1.5**
HKT Hockley 148.47 43 *e*PKPdf **PKPbc 06 59 11.0 -1.5**
538A Harpers Horsep 148.53 42 P **PKPab 06 59 15.4 -1.0**
baz=310
141A Papa Simpson, 148.53 36 P **PKPbc 06 59 14.2 +1.6**
baz=316
Y43A Makayla and Ka 148.65 32 P **PKPbc 06 59 14.4 +1.4**
baz=321
340A Bronson 148.77 39 P **PKPbc 06 59 14.9 +1.6**
baz=314
241A Mo Tay, Goldon 148.94 37 P **PKPbc 06 59 15.6 +1.8**
baz=316
OXF Oxford 148.95 29 *e*PKP2 **PKPbc 06 59 13.8 +0.1**
OXF Oxford 148.95 29 *e*PKPbc **PKPbc 06 59 13.8 +0.1**
Y44A Strider, Charl 148.98 31 P **PKPbc 06 59 15.0 +1.2**
baz=322
Z43A Armstrong Fami 149.02 33 P **PKPbc 06 59 15.0 +1.1**
baz=320
539A Cross D Ranch, 149.11 42 P **PKPab 06 59 17.2 -1.4**
baz=311
341A Kurthwood 149.27 38 P **PKPbc 06 59 16.4 +1.8**
baz=314
143A Socs Landing, 149.31 34 P **PKPbc 06 59 15.7 +1.0**
baz=319
242A Grayson 149.36 36 P **PKPbc 06 59 16.0 +1.2**
baz=317
Z44A Pea Ridge, Bel 149.40 32 P **PKPbc 06 59 15.9 +1.1**
baz=321
LVC Limon Verde 149.42 185 *e*PKPdf **PKPdf 06 59 12.4 +1.2**
LVC *e*PKPbc **PKiKP 06 59 16.8 0.0**
CBN Corbin Frederi 149.52 9 *e*PKPbc **PKPbc 06 59 15.5 +0.5**
TZTN Tazewell 149.60 19 *e*PKPdf **PKPdf 06 59 11.9 +1.3**
TZTN *e*PKPbc **PKPbc 06 59 15.5 +0.2**
Z45A Winona 149.72 31 P **PKPbc 06 59 16.8 +1.2**
baz=322
342A Flagon Creek P 149.75 37 P **PKPbc 06 59 17.7 +1.9**
baz=316
BLA Blacksburg 149.87 14 *e*PKPdf **PKPdf 06 59 11.5 +0.4**
BLA *e*PKPbc **PKPbc 06 59 16.5 +0.5**
BLA *e*PKPab **PKPab 06 59 19.9 -1.7**
144A Alexander Plac 149.91 33 P **PKPbc 06 59 17.4 +1.3**
baz=320
VBMS Vicksburg 150.17 34 P **PKPbc 06 59 17.9 +1.1**
baz=320
145A Houston Renfro 150.19 32 P **PKPbc 06 59 17.8 +1.0**
baz=321
244A Avery, Jackson 150.21 34 P **PKPbc 06 59 17.7 +0.9**
baz=319
Z46A Louisville 150.24 30 P **PKPbc 06 59 18.2 +1.3**
baz=323
146A Union 150.62 31 P **PKPbc 06 59 19.1 +1.2**
baz=323
344A Westbrook Farm 150.62 35 P **PKPbc 06 59 19.5 +1.6**
baz=318
245A Little AP, Sta 150.65 33 P **PKPbc 06 59 19.0 +1.1**
baz=320
Z47A Carrollton 150.66 29 P **PKPbc 06 59 18.5 +0.6**
baz=325
Z48A Northport 150.76 28 P **PKPbc 06 59 18.4 +0.2**
baz=326
147A Livingston 150.99 30 P **PKPbc 06 59 19.3 +0.6**
baz=324
LRAL Lakeview Retre 151.30 28 *e*PKPdf **PKPdf 06 59 14.6 +1.2**
LRAL *e*PKPbc **PKiKP 06 59 19.7 -0.2**
247A Quitman 151.31 31 P **PKPbc 06 59 20.8 +1.3**
baz=323
KMSC Kings Mountain 151.58 17 P **PKPbc 06 59 20.5 +0.5**
baz=339
KMSC Kings Mountain 151.58 17 *e*PKPbc **PKPbc 06 59 19.9 -0.2**
KMSC *e*PKPab **PKPab 06 59 28.8 +0.2**
248A Dixon Mills 151.72 30 P **PKPbc 06 59 21.3 +0.9**
baz=324
347A Saraland 151.86 32 P **PKPbc 06 59 21.9 +1.2**
baz=322
348A Jackson 152.19 31 P **PKPbc 06 59 22.8 +1.3**
baz=323
GOGA Godfrey 152.45 22 *e*PKIKP **PKPdf 06 59 16.9 +1.8**
GOGA Godfrey 152.45 22 *e*PKPdf **PKPdf 06 59 16.9 +1.8**
GOGA *e*PKPbc **PKiKP 06 59 22.6 +0.4**
SIV San Ignacio 153.97 203 PKP **PKPdf 06 59 18.1 +0.3**
comp=Z,6.2nm,0.7s,baz=132,slow=3.0,SNR=12
SIV PKPbc **PKiKP 06 59 26.3 +0.4**
comp=Z,13nm,0.8s,baz=136,slow=2.1,SNR=16
SIV PKPab **PKPab 06 59 39.3 +0.1**
comp=Z,13nm,0.8s,baz=150,slow=5.1,SNR=8.1
CMIG Matias Romero 155.51 66 PKP **PKPdf 06 59 20.2 +0.4**
comp=Z,7.4nm,0.7s,baz=45,slow=1.9,SNR=9.5
CMIG PKPab **PKPab 06 59 46.0 +0.1**
comp=Z,20nm,0.7s,baz=264,slow=3.9,SNR=12
LPAZ La Paz 155.58 188 PKP **PKPdf 06 59 21.4 +0.6**
comp=Z,3.6nm,0.8s,baz=55,slow=0.8,SNR=12
NNA Nana 159.39 165 PKPab **PKPab 07 00 03.1 +0.5**
comp=Z,7.5nm,0.7s,baz=252,slow=6.4,SNR=3.6
TEIG Tepich 159.76 52 PKPab **PKPab 07 00 04.2 0.0**
comp=Z,12nm,0.8s,baz=270,slow=20,SNR=5.6
SAML Samuel 161.18 206 *e*PKPdf **PKPdf 06 59 26.9 +0.1**
PTGA Pitinga 165.55 233 PKP **PKPdf 06 59 31.0 +0.1**
comp=Z,3.4nm,0.8s,baz=115,slow=2.1,SNR=7.9
OTAV Otavalo 169.60 138 *e*PKPdf **PKPdf 06 59 34.8 +0.4**
OTAV Otavalo 169.60 138 *e*P **PKPdf 06 59 35.2 +0.8**
FLOC Florencia 172.36 147 *e*P **PKPdf 06 59 35.2 -0.1**
POPC Popayan, Colom 172.49 137 *e*P **PKPdf 06 59 35.3 -0.3**
PRAC Prado 174.53 142 *e*P **PKPdf 06 59 34.8 -1.4**
HELC Santa Helena 175.60 115 *e*P **PKPdf 06 59 35.2 -1.6**
ROSC El Rosal 175.76 139 PKP **PKPdf 06 59 37.1 +0.2**
comp=Z,5.7nm,0.8s,baz=59,slow=0.6,SNR=11
ROSC PKPab **PKPab 07 01 14.6 -0.8**
comp=Z,4.8nm,0.6s,baz=166,slow=6.1,SNR=3.6
MOTC Monteria, Cord 175.83 80 *e*P **PKPdf 06 59 35.2 -1.2**
NORC Norcasia 175.85 126 *e*P **PKPdf 06 59 35.2 -1.3**
CHIC Chingaza 175.94 147 *e*P **PKPdf 06 59 35.2 -1.8**
RUSC La Rusia 177.34 144 *e*P **PKPdf 06 59 34.8 -2.6**
BRRC Barranca, Sant 177.62 113 *e*P **PKPdf 06 59 36.8 +0.1**
GRMC Gramalote, San 178.68 105 *e*P **PKPdf 06 59 35.9 -1.1**

JMA 26 06:50:18.6,36.92N×140.69E,h9km±1km,M3.5,3C,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.20**	**26**	⇑P	Pg	06 50 22.8	0.0
ONAJ				S	Sg	06 50 26.0	+0.4
JHO	**Hitachi**	**0.32**	**198**	⇑P	Pg	06 50 24.9	-0.1
JHO				S	Sg	06 50 29.2	-0.1
JFK	**Kawauchi**	**0.47**	**18**	P	Pg	06 50 27.5	-0.3
JFK				S	Sg	06 50 34.3	+0.3
JSB	**Shiboa**	**0.62**	**275**	⇑P	Pb	06 50 31.2	-0.4
JSB				S	Sb	06 50 40.1	-0.3
JFT	**Otama**	**0.66**	**335**	S	Sg	06 50 40.2	+0.2
MAT	**Matsushiro**	**2.03**	**260**	P	Pn	06 50 53.7	+0.7
MAT				S	Sb	06 51 21.5	+0.5

ROM 26 06:51:05.1±0.3,42.90N×12.74E,h10km±1km,Md1.6/3, Ml0.6/2,Error ellipse: s-maj=3.4km s-min=2.5km az=114.0,Central Italy

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CESI	**CESI - Serrava**	**0.16**	**48**	Pg	Pg	06 51 09.3	+0.6
CESI				Sg	Sg	06 51 12.2	+1.0
	7.0nm,0.3s						
NRCA	**Norcia**	**0.28**	**103**	Pg	Pg	06 51 11.2	+0.4
NRCA				Sg	Sb	06 51 16.2	-0.8
	11nm,0.3s						
FDMO	**Fiordimonte**	**0.29**	**61**	Pg	Pb	06 51 11.7	-0.7
FDMO				Sg	Sb	06 51 16.3	-0.9

IDC 26 07:12:07.8±2.4,54.04N×86.44E,h0km,mb1 3.0/2, mb1mx2.9/56,mbtmp3.0/2,ML2.7/2,Error ellipse: s-maj=19.1km s-min=11.4km az=63.0,Southwestern Siberia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
I46RU	**ZALESOVO INFRA**	**0.96**	**265**	*i*		07 18 00.0	
	baz=82,slow=326,SNR=4.0						
ZALV	**Zalesovo Beam**	**0.96**	**265**	Pg	Pg	07 12 25.4	-0.9
	0.9nm,0.3s,baz=84,slow=17,SNR=7.0						
ZALV				Lg	Lg	07 12 39.6	
	2.1nm,0.3s,baz=86,slow=27,SNR=11						
KURBB	**Kurchatov Arra**	**5.94**	**238**	Pn	Pn	07 13 37.9	+0.9
	0.1nm,0.3s,baz=55,slow=14,SNR=9.6						
KURBB				Lg	Lg	07 15 17.5	
	baz=57,slow=31,SNR=2.7						
MKAR	**Makanchi Array**	**7.73**	**202**	Pn	Pn	07 14 02.4	+0.9
	0.2nm,0.3s,baz=22,slow=12,SNR=12						
MKAR				Sn	Sn	07 15 29.7	0.0
	0.1nm,0.3s,baz=24,slow=27,SNR=3.6						
MKAR				Lg	Lg	07 16 13.2	
	0.1nm,0.3s,baz=14,slow=24,SNR=2.9						

*NEIC **26** 07:16:50.1,43.60S×172.79E,h9km,ML3.9(WEL),After WEL.*
NEIC Felt strongly at Christchurch.
WEL 26 07:16:50.5±0.1,43.58S×172.77E,h7km,ML3.9/16**,2C-2D, Error ellipse: s-maj=1.0km s-min=0.5km az=90.0,South Island**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CRLZ	**Canterbury Las**	**0.10**	**274**	⇑PG	Pg	07 16 52.9	+0.1
CRLZ				SG	Sg	07 16 54.4	0.0
CRLZ				AML	AML	07 16 54.8	
CRLZ				AML	AML	07 16 55.3	
CRLZ				AML	AML	07 16 55.4	
CRLZ	**Canterbury Las**	**0.10**	**274**	Pg	Pg	07 16 52.9	+0.1
CRLZ				Sg	Sg	07 16 54.4	0.0
MQZ	**McQueen's Vall**	**0.15**	**213**	PG	Pg	07 16 53.9	+0.2
MQZ				SG	Sg	07 16 56.4	+0.7
MQZ				AML	AML	07 16 56.4	
MQZ	**McQueen's Vall**	**0.15**	**213**	*e*Pg	Pg	07 16 53.9	+0.2
MQZ				Sg	Sg	07 16 56.4	+0.7
OXZ	**Oxford**	**0.59**	**296**	P*	Pg	07 17 01.9	0.0
OXZ	**Oxford**	**0.59**	**296**	P*	Pg	07 17 01.5	-0.4
LTZ	**Lake Taylor**	**0.88**	**336**	P*	Pg	07 17 07.6	+0.2
LTZ				S*	Sb	07 17 19.6	-0.5
LTZ				AML	AML	07 17 20.6	
LTZ	**Lake Taylor**	**0.88**	**336**	P*	Pg	07 17 07.6	+0.2
LTZ				S*	Sb	07 17 19.6	-0.5
RPZ	**Rata Peaks**	**1.25**	**263**	P*	Pn	07 17 13.1	-1.4
RPZ				AML	AML	07 17 36.9	
RPZ				AML	AML	07 17 36.9	
RPZ	**Rata Peaks**	**1.25**	**263**	P*	Pn	07 17 13.1	-1.4
INZ	**Inchbonnie**	**1.29**	**311**	P*	Pn	07 17 13.5	-1.5
KHZ	**Kahutara**	**1.30**	**26**	P*	Pn	07 17 13.2	-1.8
WVZ	**Waitaha Valley**	**1.56**	**288**	⇓PN	Pn	07 17 18.0	-0.7
WVZ				AML	AML	07 17 43.0	
WVZ				AML	AML	07 17 44.8	
WVZ	**Waitaha Valley**	**1.56**	**288**	Pn	Pn	07 17 18.0	-0.7
THZ	**Tophouse**	**1.82**	**3**	PN	Pn	07 17 20.9	-1.5
THZ				AML	AML	07 17 58.8	
THZ				AML	AML	07 18 00.5	
THZ	**Tophouse**	**1.82**	**3**	Pn	Pn	07 17 20.9	-1.5
DSZ	**Denniston Nort**	**1.97**	**339**	⇓PN	Pn	07 17 23.8	-0.6
DSZ				AML	AML	07 17 51.5	
DSZ				AML	AML	07 18 00.4	
DSZ	**Denniston Nort**	**1.97**	**339**	Pn	Pn	07 17 23.8	-0.6
LBZ	**Lake Benmore**	**2.03**	**246**	PN	Pn	07 17 24.2	-1.0
LBZ				AML	AML	07 18 00.1	
LBZ				AML	AML	07 18 03.0	
LBZ				AML	AML	07 18 03.0	
LBZ				AML	AML	07 18 06.4	
LBZ	**Lake Benmore**	**2.03**	**246**	Pn	Pn	07 17 24.2	-1.0
BSWZ	**Blackbirch Sta**	**2.04**	**24**	PN	Pn	07 17 24.1	-1.2
BSWZ				AML	AML	07 17 56.7	
BSWZ	**Blackbirch Sta**	**2.04**	**24**	Pn	Pn	07 17 24.1	-1.2
ODZ	**Otahua Downs**	**2.11**	**225**	⇑PN	Pn	07 17 24.7	-1.5
ODZ				AML	AML	07 18 04.9	
ODZ				AML	AML	07 18 07.0	
ODZ	**Otahua Downs**	**2.11**	**225**	Pn	Pn	07 17 24.8	-1.5
FOZ	**Fox Glacier**	**2.15**	**270**	PN	Pn	07 17 27.1	+0.3
FOZ				AML	AML	07 17 54.0	
FOZ				AML	AML	07 17 54.0	
FOZ				AML	AML	07 17 54.6	
FOZ				AML	AML	07 17 54.6	
FOZ	**Fox Glacier**	**2.15**	**270**	Pn	Pn	07 17 27.1	+0.3
TUWZ	**Tuamarina**	**2.32**	**22**	Pn	Pb	07 17 31.2	-1.6
NNZ	**Nelson**	**2.41**	**11**	PN	Pn	07 17 29.5	-0.8
NNZ				AML	AML	07 18 14.3	
NNZ				AML	AML	07 19 39.8	
NNZ	**Nelson**	**2.41**	**11**	Pn	Pn	07 17 29.5	-0.8
QRZ	**Quartz Range**	**2.76**	**356**	PN	Pn	07 17 34.5	-0.7
QRZ				AML	AML	07 17 55.8	
QRZ				AML	AML	07 18 19.8	
QRZ	**Quartz Range**	**2.76**	**356**	Pn	Pn	07 17 34.5	-0.7
HHSZ	**Highcliff Hill**	**2.77**	**213**	PN	Pn	07 17 32.8	-2.6
HHSZ	**Highcliff Hill**	**2.77**	**213**	Pn	Pn	07 17 32.8	-2.6
JCZ	**Jackson Bay**	**2.92**	**259**	PN	Pn	07 17 37.5	0.0
JCZ				AML	AML	07 18 29.9	
JCZ				AML	AML	07 18 30.7	
JCZ	**Jackson Bay**	**2.92**	**259**	Pn	Pn	07 17 37.5	0.0
WKZ	**Wanaka**	**2.97**	**244**	PN	Pn	07 17 36.9	-1.2
WKZ				AML	AML	07 18 31.8	
WKZ				AML	AML	07 18 33.1	
WKZ	**Wanaka**	**2.97**	**244**	Pn	Pn	07 17 36.9	-1.2
EAZ	**Earnscleugh**	**2.98**	**235**	PN	Pn	07 17 36.9	-1.3
EAZ				AML	AML	07 18 26.9	
EAZ				AML	AML	07 18 28.3	
EAZ	**Earnscleugh**	**2.98**	**235**	Pn	Pn	07 17 36.9	-1.3
TUZ	**Tuapeka**	**3.26**	**222**	Pn	Pn	07 17 40.6	-1.4
MLZ	**Mavora Lakes**	**3.77**	**240**	Pn	Pn	07 17 47.3	-1.9
SYZ	**Scrubby Hill**	**3.92**	**220**	Pn	Pn	07 17 50.0	-1.0
WHZ	**Wether Hill Ro**	**4.14**	**234**	Pn	Pn	07 17 51.9	-2.3
PREZ	**Palmer Road**	**4.36**	**14**	Pn	Pb	07 18 06.8	-0.8
APZ	**The Paps**	**4.68**	**224**	Pn	Pn	07 18 00.5	-1.2
VRZ	**Vera Road**	**4.70**	**19**	Pn	Pn	07 18 01.9	0.0
WNVZ	**Wahianoa**	**4.75**	**28**	Pn	Pn	07 18 01.9	-0.8
HIZ	**Hauiti**	**5.30**	**18**	Pn	Pn	07 18 09.1	-1.1

MEX 26 07:23:03.3±0.5,15.91N×94.42W,h56km±19km,MD3.8, Near coast of Oaxaca

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PCIG		**1.18**	**100**	*e*P	Pn	07 23 22.1	-1.4
PCIG				*i* S	Sn	07 23 36.8	-1.8
TGIG		**1.52**	**55**	*e*P	Pn	07 23 27.0	-1.2
TGIG				*e*S	Sn	07 23 44.6	-2.4
HUIG	**Huatulco**	**1.63**	**265**	*e*P	Pn	07 23 28.6	-1.1
HUIG				*e*S	Sn	07 23 47.2	-2.4

*DJA **26** 07:24:56.8±0.2,9.2S×107.8E±°,h45km±5km,M5.0/22, mb5.0/22,mB5.5/8,MLv5.1/20,Mw(mB)4.9/8*
*ISCJB **26** 07:24:57.7±0.3,8.12S±0.04×108.48E±0.02,h94km±2km, mb4.8/96,Error ellipse: s-maj=7.4km s-min=3.2km az=22.7*
*MOS **26** 07:24:58.8±1.2,8.01S×108.49E,h100km,mb4.9/37,Error ellipse: s-maj=9.5km s-min=6.4km az=107.6*
*NEIC **26** 07:24:59.0±1.0,8.11S×108.45E,h90km±8km,mb4.8/40, Error ellipse: s-maj=8.2km s-min=4.9km az=46.0*
NEIC Felt at Bandung and Jakarta.
*IDC **26** 07:25:03.8±0.8,8.00S×108.65E,h133km±6km,mb4.3/28, mb1 4.3/31,mb1mx4.2/51,mbtmp4.6/31,MS3.3/2, Ms1 3.4/2,ms1mx2.8/33,Error ellipse: s-maj=14.4km s-min=8.3km az=48.0*
ISC 26 07:24:57.6±0.5,8.21S±0.05×108.45E±0.04,h78km±3km, n310,σ1°39/318,mb4.8/95**,25C-9D,Jawa**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CMJI	**Cimerak**	**0.42**	**359**	P	**Pn**	**07 25 11.4**	**+0.9**
CMJI				S	**Sn**	**07 25 21.6**	**+1.6**
CISI	**Cisompet, Garu**	**0.91**	**316**	P	**Pn**	**07 25 16.3**	**+0.8**
CISI				S	**Sn**	**07 25 29.7**	**+0.9**
CNJI	**Cibinong**	**1.59**	**304**	P	**Pn**	**07 25 24.6**	**+0.6**
CNJI				S	**Sn**	**07 25 44.1**	**+0.1**
LEM	**Lembang**	**1.60**	**329**	P	Pn	07 25 32.8	+8.4
	390nm,0.3s,baz=87,slow=20,SNR=86						
LEM				S	Sn	07 25 55.4	+11
	306nm,0.3s,baz=167,slow=18,SNR=6.6						
LEM	**Lembang**	**1.60**	**329**	P	Pn	07 25 33.2	+8.8
UGM	**Wanagama**	**2.07**	**82**	P	**Pn**	**07 25 31.2**	**+0.8**
SKJI	**Sukabumi**	**2.23**	**302**	P	**Pn**	**07 25 34.1**	**+1.6**
SKJI				S	**Sn**	**07 26 02.4**	**+3.2**
SMRI	**Semarang**	**2.28**	**60**	P	**Pn**	**07 25 36.5**	**+3.3**
WOJI	**Wonogiri, Jawa**	**2.47**	**82**	P	**Pn**	**07 25 36.0**	**+0.2**
PCJI	**Pacitan**	**2.70**	**90**	P	**Pn**	**07 25 39.7**	**+0.9**
PCJI				S	**Sn**	**07 26 11.2**	**+0.7**
NGJI	**Ngawi**	**3.10**	**75**	P	**Pn**	**07 25 45.6**	**+1.4**
CGJI	**Cibinong**	**3.16**	**300**	P	**Pn**	**07 25 45.6**	**+0.5**
CGJI				S	**Sn**	**07 26 24.4**	**+2.6**
PWJI	**Pagerwojo**	**3.32**	**87**	P	**Pn**	**07 25 48.2**	**+0.9**
PWJI				S	**Sn**	**07 26 28.4**	**+2.7**
XMIS	**Christmas Isla**	**3.57**	**231**	*e*Pn	**Pn**	**07 25 46.7**	**-3.9**
XMIS				*e*Sn	Sn	07 26 21.3	-10
TBJI	**Tambak Boyo**	**3.64**	**68**	P	**Pn**	**07 25 53.2**	**+1.6**
KASI	**Kota Agung**	**4.75**	**304**	P	**Pn**	**07 26 08.8**	**+2.1**
GMJI	**Gumukmas**	**4.94**	**91**	P	**Pn**	**07 26 10.3**	**+1.0**
LWLI	**Liwa**	**5.40**	**306**	P	**Pn**	**07 26 17.1**	**+1.4**
	184nm,0.6s,1.3nm						
JAGI	**Jajag, Banyuwa**	**5.64**	**93**	P	**Pn**	**07 26 19.5**	**+0.5**
	202nm,0.6s,4μm1.9nm						
ABJI	**Asem Bagus**	**5.74**	**86**	P	**Pn**	**07 26 21.6**	**+1.3**
	214nm,0.7s,3μm1.0nm						
PPBI	**Pangkal Pinang**	**6.44**	**339**	P	**Pn**	**07 26 34.3**	**+4.5**
	80nm,0.7s,5μm1.0nm						
MNAI	**Manna**	**6.67**	**305**	P	**Pn**	**07 26 34.4**	**+1.4**
SRBI	**Singaraja**	**6.69**	**89**	P	**Pn**	**07 26 34.5**	**+1.2**
BBKI	**Banjar Baru**	**7.91**	**54**	P	Pn	07 26 55.6	+5.6
	53nm,1.0s,0.4nm						
TWSI	**Taliwang, Sumb**	**8.35**	**94**	P	**Pn**	**07 26 56.5**	**+0.5**
STKI	**Sintang**	**8.76**	**20**	P	Pn	07 27 07.2	+5.7
	43nm,0.6s						
PLAI	**Plampang**	**9.24**	**94**	P	**Pn**	**07 27 08.5**	**+0.4**
PPSI	**Pulau Pagai**	**9.99**	**302**	P	**Pn**	**07 27 16.7**	**-1.7**
SBUM	**Sibu**	**11.24**	**20**	*e*Pn	**Pn**	**07 27 35.4**	**0.0**
KAPI	**Kappang**	**11.66**	**75**	P	**Pn**	**07 27 43.0**	**+1.9**
	0.6nm,0.3s,baz=287,slow=5.1,SNR=4.5						
KAPI				LR	LR	07 32 13.2	
	comp=Z,125nm,20.8s,baz=294,slow=38						
KAPI	**Kappang**	**11.66**	**75**	*e*Pn	**Pn**	**07 27 43.5**	**+2.3**
COCO	**West Island**	**12.10**	**250**	*e*P	**Pn**	**07 27 47.7**	**+0.6**
COCO	**West Island**	**12.10**	**250**	*e*Pn	**Pn**	**07 27 47.7**	**+0.6**
BSSI	**Bau Bau, Buton**	**12.12**	**81**	P	**P**	**07 27 56.4**	**-0.6**
TTSI	**Tana Toraja**	**12.42**	**66**	P	**P**	**07 28 02.9**	**+2.6**
MNSI	**Mandailing Nat**	**12.58**	**315**	P	**P**	**07 28 06.1**	**+4.0**
MMRI	**Maumere**	**13.64**	**93**	P	**P**	**07 28 14.8**	**+0.9**
BATI	**Baumata**	**15.14**	**99**	P	**Pn**	**07 28 28.5**	**+1.2**
	baz=107,slow=19						
BATI				S	**Sn**	**07 31 05.3**	**-9.0**
KULM	**Kulim**	**15.51**	**330**	*e*P	**P**	**07 28 33.6**	**-1.0**
	8.1nm,1.0s						
SOEI	**Soe**	**15.70**	**97**	P	**Pn**	**07 28 35.1**	**+0.7**
	107nm,1.1s						
MRSI	**Marisa**	**15.97**	**58**	P	**P**	**07 28 41.5**	**+1.7**
	66nm,1.0s						
KKM	**Kota Kinabalu**	**16.14**	**29**	*e*P	**P**	**07 28 43.8**	**+2.1**
	24nm,0.6s						
MYLDM	**Lahad Datu**	**16.65**	**37**	*e*Pn	**P**	**07 28 51.7**	**+4.4**
	25nm,0.8s						
MBWA	**Marble Bar**	**16.86**	**141**	*e*Pn	**Pn**	**07 28 46.2**	**-2.5**
	15nm,1.3s						
MBWA				*e*Sn	Sn	07 31 38.1	-18
FITZ	**Fitzroy Crossi**	**19.39**	**122**	P	**Pn**	**07 29 18.6**	**-0.6**
	0.4nm,0.3s,baz=308,slow=9.4,SNR=11						
FITZ				S	S	07 32 40.6	-12
	0.3nm,0.3s,baz=238,slow=19,SNR=3.6						
FITZ	**Fitzroy Crossi**	**19.39**	**122**	*e*P	**Pn**	**07 29 18.7**	**-0.6**
	7.4nm,0.8s						
FITZ				S	S	07 32 40.6	-12
LBMI	**Labuha**	**20.41**	**69**	P	Pn	07 29 30.4	-1.0
	123nm,0.9s,1μm						
TNTI	**Ternate**	**20.86**	**66**	P	Pn	07 29 36.8	+0.2
	174nm,1.0s						
MTN	**Manton Dam**	**22.76**	**104**	*e*P	**P**	**07 29 53.7**	**0.0**
	71nm,1.4s						
WRA	**Warramunga Arr**	**27.64**	**118**	P	**P**	**07 30 38.2**	**+0.1**
	12nm,1.0s,baz=292,slow=11,SNR=60						
WRA				PcP	**PcP**	**07 33 53.8**	**-0.2**
	2.8nm,0.6s,baz=303,slow=1.9,SNR=9.8						
WRAB	**Tennant Creek**	**27.64**	**118**	*c i*P	**P**	**07 30 38.2**	**0.0**
WRAB				pmax	pmax		
	comp=Z,29nm,1.0s						
WRAB	**Tennant Creek**	**27.64**	**118**	*e*P	**P**	**07 30 38.1**	**-0.1**
	comp=Z,12nm,0.5s						
WB2	**Warramunga Arr**	**27.65**	**118**	*e*P	**P**	**07 30 38.7**	**+0.5**
	comp=Z,8.0nm,0.6s						
CMAR	**Chiang Mai Arr**	**28.11**	**341**	P	**P**	**07 30 41.0**	**-1.3**
	comp=Z,1.2nm,0.3s,baz=175,slow=8.9,SNR=5.3						
CMAR				PcP	**PcP**	**07 33 55.7**	**+0.7**
	comp=Z,1.6nm,0.5s,baz=200,slow=3.5,SNR=6.9						
CMAR				LR	LR	07 43 12.1	
	comp=Z,65nm,19.7s,baz=190,slow=39						
AS31	**Alice Springs**	**28.82**	**125**	*e*P	**P**	**07 30 48.7**	**+0.1**
	comp=Z,1.4nm,0.6s						
ASAR	**Alice Springs**	**28.82**	**125**	P	**P**	**07 30 48.5**	**-0.1**
	comp=Z,3.9nm,0.8s,baz=305,slow=9.0,SNR=43						
ASAR				PcP	**PcP**	**07 33 56.9**	**+0.1**
	comp=Z,3.8nm,0.6s,baz=310,slow=1.9,SNR=18						
AS01	**Alice Springs**	**28.86**	**125**	*e*P	**P**	**07 30 49.0**	**+0.1**
KMI	**Kunming**	**33.60**	**351**	P	**P**	**07 31 31.5**	**+0.7**
KMI				pmax	pmax		
	comp=Z,53nm,6.5s						
SSLB	**Suanglung**	**34.07**	**21**	*e*P	**P**	**07 31 35.9**	**+1.2**
	comp=Z,9.7nm,0.6s						
GYA	**Guiyang**	**34.51**	**357**	P	**P**	**07 31 40.8**	**+2.3**
GYA				pP	pP	07 31 57.3	+0.3
GYA				PP	**PP**	**07 32 59.0**	**+0.8**
GYA				PcP	**PcP**	**07 34 14.0**	**+1.9**
GYA				S	**S**	**07 37 04.3**	**+2.6**
GYA				sS	sS	07 37 33.3	-0.2
GYA				ScP	**ScP**	**07 37 52.5**	**+1.9**
GYA				SS	**SnSn**	**07 39 19.0**	**-1.6**
GYA	**Guiyang**	**34.51**	**357**	ScS	ScS	07 41 53.5	-0.3
GYA				pmax	pmax		
	comp=Z,20nm,0.8s						
GYA				pmax	pmax		
	comp=Z,120nm,4.9s						
GYA				LR	LR		
	comp=N,520nm,15.9s						
GYA				LR	LR		
	comp=E,500nm,16.0s						
GYA				LR	LR		
	comp=Z,550nm,15.8s						
COEN	**Coen**	**34.52**	**103**	*e*P	**P**	**07 31 38.9**	**+0.2**
	comp=Z,25nm,0.9s						
BBOO	**Buckleboo**	**35.39**	**138**	*e*P	**P**	**07 31 45.5**	**-0.5**
	comp=Z,16nm,1.2s						
H08S2	**Diego Garcia H**	**35.61**	**268**	T	T	08 09 48.6	
	baz=93,slow=75,SNR=70						
H08S3	**Diego Garcia H**	**35.62**	**268**	T	T	08 09 38.7	
	baz

PKIN	**Phulchoki**	**42.00**	**329**	*e*P		**P**	**07 32 40.5**	**-1.1**
GUN	**Gumba**	**42.02**	**330**	*e*P		**P**	**07 32 41.7**	**-0.2**
	comp=Z,18nm,0.5s							
DMN	**Daman**	**42.17**	**328**	*e*P		**P**	**07 32 42.3**	**-0.8**
KOLN	**Koldanda**	**43.10**	**327**	*e*P		**P**	**07 32 49.9**	**-0.6**
	comp=Z,37nm,0.5s							
PYUN	**Piuthan**	**43.69**	**327**	*e*P		**P**	**07 32 54.6**	**-0.6**
	comp=Z,17nm,0.4s							
LZH	**Lanzhou**	**44.27**	**355**	*e*P		**P**	**07 32 55.0**	**-4.7**
LZH				pP		pP	07 33 12.0	-6.8
LZH				sP		sP	07 33 17.3	-10
LZH				pmax		pmax		
	comp=Z,26nm,1.0s							
CAN	**Canberra**	**45.83**	**132**	*e*P		**P**	**07 33 13.3**	**+1.3**
CAN				pmax		pmax		
	comp=Z,52nm,1.6s							
CAN	**Canberra**	**45.83**	**132**	*e*P		**P**	**07 33 13.3**	**+1.3**
	comp=Z,52nm,1.6s							
GTA	**Gaotai**	**48.05**	**351**	*e*P		**P**	**07 33 31.3**	**+2.0**
GTA				pP		pP	07 33 34.5	-14
GTA				sP		sP	07 33 37.8	-20
GTA				PcP		**PcP**	**07 34 55.5**	**-0.6**
GTA				pmax		pmax		
	comp=Z,5.0nm,1.0s							
BJT	**Baijiatuau**	**48.51**	**8**	*e*P		**P**	**07 33 32.4**	**-0.2**
BJT				pmax		pmax		
	comp=Z,19nm,0.5s							
BJT	**Baijiatuau**	**48.51**	**8**	*e*P		**P**	**07 33 32.4**	**-0.2**
	comp=Z,19nm,0.5s							
BJI	**Beijing**	**48.54**	**8**	P		**P**	**07 33 32.3**	**-0.5**
BJI				pmax		pmax		
	comp=Z,17nm,0.6s							
BJI				pmax		pmax		
	comp=Z,81nm,3.1s							
HHC	**Hu-ho-hao-te**	**48.90**	**3**	*e*P		**P**	**07 33 39.0**	**+3.3**
HHC				sP		sP	07 34 02.3	-1.6
HHC				S		**S**	**07 40 38.5**	**+4.7**
HHC				pmax		pmax		
	comp=Z,23nm,0.9s							
HHC				pmax		pmax		
	comp=Z,110nm,8.9s							
HHC				LR		LR		
	comp=N,140nm,12.3s							
HHC				LR		LR		
	comp=E,480nm,13.6s							
HHC				LR		LR		
	comp=Z,57nm,14.8s							
KSAR	**Wonju Array Be**	**48.92**	**21**	P		**P**	**07 33 35.1**	**-0.7**
KSAR							07 34 59.5	
KSAR	**Wonju Array Be**	**48.92**	**21**	P		**P**	**07 33 35.1**	**-0.7**
KSAR				PcP		**PcP**	**07 34 59.5**	**+0.4**
KSRS	**Korea Array**	**48.94**	**21**	P		**P**	**07 33 35.1**	**-0.9**
	comp=Z,1.8nm,0.6s,baz=209,slow=10,SNR=7.3							
KSRS				PcP		**PcP**	**07 34 59.5**	**+0.4**
	comp=Z,2.7nm,0.8s,baz=206,slow=3.6,SNR=7.7							
HNR	**Honiara**	**50.86**	**95**	*e*P		**P**	**07 33 51.9**	**+0.9**
HNR	**Honiara**	**50.86**	**95**	*e*P		**P**	**07 33 51.9**	**+0.9**
	comp=Z,147nm,0.8s							
MAJO	**Matsushiro**	**52.56**	**30**	P		**P**	**07 34 03.0**	**-0.2**
MAJO				pmax		pmax		
	comp=Z,23nm,0.7s							
MJAR	**Matsushiro Arr**	**52.56**	**30**	P		**P**	**07 34 01.1**	**-2.1**
	comp=Z,2.6nm,0.7s,baz=205,slow=8.3,SNR=7.7							
MJAR				PcP		**PcP**	**07 35 12.9**	**+0.3**
	comp=Z,3.2nm,0.7s,baz=200,slow=4.8,SNR=5.5							
WMQ	**Urumqi**	**55.10**	**342**	*e*P		**P**	**07 34 22.5**	**+0.8**
WMQ				pP		pP	07 34 39.3	-2.1
WMQ				sP		sP	07 34 46.3	-3.9
WMQ				PP		**PP**	**07 36 28.8**	**+2.9**
WMQ				pmax		pmax		
	comp=Z,4.0nm,1.0s							
WMQ				pmax		pmax		
	comp=Z,26nm,4.2s							
WMQ				LR		LR		
	comp=N,14nm,15.2s							
WMQ				LR		LR		
	comp=E,27nm,19.4s							
WMQ				LR		LR		
	comp=Z,21nm,16.6s							
SONM	**Songino Array**	**55.83**	**358**	P		**P**	**07 34 26.1**	**-0.8**
	comp=Z,3.8nm,0.5s,baz=178,slow=8.2,SNR=34							
SONM				PcP		**PcP**	**07 35 24.8**	**-0.2**
	comp=Z,5.9nm,0.5s,baz=178,slow=4.0,SNR=19							
ULN	**Ulaanbaatar**	**55.84**	**359***c*	*i*P		**P**	**07 34 26.5**	**-0.6**
ULN				pmax		pmax		
	comp=Z,3.0nm,0.6s							
ULN	**Ulaanbaatar**	**55.84**	**359**	*e*P		**P**	**07 34 25.9**	**-1.1**
	comp=Z,4.1nm,0.6s							
MDJ	**Mudanjiang**	**55.94**	**18**	P		**P**	**07 34 28.0**	**+0.4**
MDJ				pmax		pmax		
	comp=Z,6.0nm,0.6s							
MDJ				pmax		pmax		
	comp=Z,40nm,2.9s							
KSH	**Kashi**	**56.22**	**330**	*e*P		**P**	**07 34 28.5**	**-1.4**
KSH				*e*pP		pP	07 34 44.5	-5.2
KSH				*e*sP		sP	07 34 51.5	-6.9
KSH				*e*ScP		**ScP**	**07 39 19.8**	**+0.6**
KSH				S		**S**	**07 42 08.0**	**-5.8**
KSH				pmax		pmax		
	comp=Z,150nm,5.0s							
KSH				LR		LR		
	comp=N,240nm,5.7s							
KSH				LR		LR		
	comp=E,200nm,5.8s							
KSH				LR		LR		
	comp=Z,210nm,5.7s							
USRK	**Ussuriysk Ar.**	**56.34**	**20**	P		**P**	**07 34 29.1**	**-1.4**
	comp=Z,3.3nm,0.6s,baz=198,slow=6.8,SNR=11							
DZM	**Mont Dzumac**	**57.34**	**111**	P		**P**	**07 34 37.9**	**-0.2**
	baz=273,slow=17							
PDGK	**Podgornoye**	**57.66**	**335**	P		**P**	**07 34 39.2**	**-0.6**
PDGK				pmax		pmax		
	comp=Z,5.0nm,0.7s							
SFK	**Sufi-Kurgan**	**57.84**	**329**	P		**P**	**07 34 40.2**	**-1.3**
SFK				pmax		pmax		
	comp=Z,10.0nm,0.6s							
TKM2	**Tokmak 2**	**59.03**	**332**	*i*P		**P**	**07 34 48.6**	**-1.1**
TKM2				pmax		pmax		
	comp=Z,8.0nm,0.5s							
TKM2	**Tokmak 2**	**59.03**	**332**	*e*P		**P**	**07 34 48.5**	**-1.2**
	comp=Z,9.8nm,0.6s							
AAK	**Ala-Archa**	**59.33**	**331⇓**	*e*P		**P**	**07 34 51.4**	**-0.2**
AAK				pmax		pmax		
	comp=Z,10.0nm,1.3s							
MK01	**Makanchi Array**	**59.49**	**339**	*e*P		**P**	**07 34 51.5**	**-1.0**
MK31	**Makanchi Array**	**59.51**	**339**	*e*P		**P**	**07 34 51.4**	**-1.3**
MK31	**Makanchi Array**	**59.51**	**339**	*e*P		**P**	**07 34 51.4**	**-1.3**
MKAR	**Makanchi Array**	**59.51**	**339**	P		**P**	**07 34 51.5**	**-1.2**
	comp=Z,5.0nm,0.4s,baz=153,slow=8.1,SNR=68							
MAKZ	**Makanchi**	**59.63**	**339**	*e*P		**P**	**07 34 53.3**	**-0.2**
MAKZ				pmax		pmax		
	comp=Z,3.0nm,1.0s							
MAKZ	**Makanchi**	**59.63**	**339**	*e*P		**P**	**07 34 53.3**	**-0.2**
	comp=Z,2.8nm,1.0s							
EKS2	**Erkin-Say**	**59.69**	**331**	*e*P		**P**	**07 34 53.9**	**-0.2**
EKS2				pmax		pmax		
	comp=Z,5.0nm,0.8s							
EKS2	**Erkin-Say**	**59.69**	**331**	*e*P		**P**	**07 34 53.9**	**-0.2**
	comp=Z,5.0nm,0.8s							
TLY	**Talaya**	**59.79**	**357**	*e*P		**P**	**07 34 55.3**	**+0.8**
TLY				pmax		pmax		
	comp=Z,2.0nm,1.1s							
MNAS	**Manas**	**60.18**	**330**	P		**P**	**07 34 57.0**	**-0.5**
MNAS				pmax		pmax		
	comp=Z,7.0nm,0.7s							
ASAJ	**Asahikawa**	**60.55**	**28**	P		**P**	**07 34 57.9**	**-1.9**
	comp=Z,2.8nm,0.4s,baz=218,slow=12,SNR=6.6							
UOSS	**Minazif**	**60.62**	**305**	*e*P		**P**	**07 35 00.7**	**+0.1**
	comp=Z,1.9nm,1.3s							
KLR	**Kul'dur**	**60.73**	**17**	P		**P**	**07 34 59.4**	**-1.5**
	comp=Z,4.6nm,0.5s,baz=203,slow=5.6,SNR=36							
HABR	**Khabarovsk**	**61.11**	**20**	*e*P		**P**	**07 35 00.6**	**-2.9**
HABR				*e**SP		**sP**	**07 35 30.3**	**-1.9**
HABR				*e*			07 35 43.1	
HABR				*e*			07 37 15.8	
HABR				*e*S		**S**	**07 43 13.4**	**-3.2**
HABR				*e*			07 43 37.2	
HABR				*e**SS		**sS**	**07 43 48.8**	**-1.9**
HABR				*e*			07 44 44.0	
HABR				*e*SS		**SS**	**07 47 15.8**	**-2.2**
HABR				pmax		pmax		
	comp=Z,49nm,1.9s							
HABR				MLR		MLR		
	comp=Z,186nm,21.0s							
YSS	**Yuzh-Sakhalins**	**62.82**	**26⇑**	*e*P		**P**	**07 35 13.7**	**-1.2**
YSS				pmax		pmax		
	comp=Z,20nm,0.6s							
KUR	**Kuril'sk**	**63.90**	**30**	*e*P		**P**	**07 35 23.4**	**+1.3**
KURK	**Kurchatov**	**64.13**	**339**	*e*P		**P**	**07 35 22.3**	**-1.2**
KURK				pmax		pmax		
	comp=Z,9.0nm,0.8s							
KURK	**Kurchatov**	**64.13**	**339**	*e*P		**P**	**07 35 22.3**	**-1.2**
	comp=Z,8.5nm,0.8s							
RPZ	**Rata Peaks**	**64.66**	**135**	*e*P		**P**	**07 35 27.5**	**+0.2**
	comp=Z,54nm,1.3s							
ZAA0	**Zalesovo Array**	**65.06**	**345**	*e*P		**P**	**07 35 29.1**	**-0.5**
ZALV	**Zalesovo Beam**	**65.06**	**345**	P		**P**	**07 35 27.8**	**-1.8**
	comp=Z,4.1nm,0.3s,baz=151,slow=6.4,SNR=12							
OXZ	**Oxford**	**65.27**	**134**	*e*P		**P**	**07 35 31.1**	**-0.2**
	comp=Z,116nm,1.8s							
GEYT	**Alibeck**	**65.62**	**318**	P		**P**	**07 35 33.2**	**-0.4**
	comp=Z,12nm,0.5s,baz=150,slow=6.2,SNR=23							
BOD	**Bodaibo**	**65.96**	**3**	*e*P		P	07 35 28.4	-6.8
BOD				pmax		pmax		
	comp=Z,4.0nm,1.3s							
MAW	**Mawson**	**66.64**	**197**	P		**P**	**07 35 41.3**	**+1.8**
	comp=Z,4.5nm,1.1s,baz=62,slow=7.3,SNR=3.4							
BKZ	**Black Stump Fm**	**67.85**	**129**	*e*P		**P**	**07 35 48.5**	**+0.7**
	comp=Z,406nm,2.0s							
MSVF	**Nonsavu**	**68.17**	**106**	*e*P		**P**	**07 35 51.2**	**+1.0**
MSVF				pmax		pmax		
	comp=Z,8.0nm,0.6s							
MSVF	**Nonsavu**	**68.17**	**106**	*e*P		**P**	**07 35 51.2**	**+1.0**
	comp=Z,7.8nm,0.6s							
BVA0	**Borovoye Array**	**69.04**	**336**	*i*P		**P**	**07 35 53.4**	**-1.4**
BVA0				pmax		pmax		
	comp=Z,10.0nm,0.8s							
BRVK	**Borovoye**	**69.11**	**336***c*	*i*P		**P**	**07 35 54.5**	**-0.7**
BRVK				pmax		pmax		
	comp=Z,8.0nm,0.8s							
BRVK	**Borovoye**	**69.11**	**336**	*e*P		**P**	**07 35 54.7**	**-0.5**
	comp=Z,6.9nm,0.6s							
ZRNK	**Zerenda**	**69.54**	**336**	*i*P		**P**	**07 35 56.8**	**-1.1**
ZRNK				pmax		pmax		
	comp=Z,9.0nm,0.6s							
ZRNK	**Zerenda**	**69.54**	**336**	*e*P		**P**	**07 35 57.1**	**-0.8**
	comp=Z,11nm,0.6s							
AB31	**Akbulak array**	**71.19**	**329**	*i*P		**P**	**07 36 07.3**	**-0.7**
AB31				pmax		pmax		
	comp=Z,16nm,0.5s							
ABKAR	**Akbulak array**	**71.19**	**329**	*e*P		**P**	**07 36 07.7**	**-0.3**
YAK	**Yakutsk**	**71.95**	**10**	P		**P**	**07 36 11.0**	**-1.2**
	comp=Z,32nm,0.5s,baz=256,slow=1.1,SNR=4.7							
YAK	**Yakutsk**	**71.95**	**10**	*e*P		**P**	**07 36 11.4**	**-0.9**
YAK				pmax		pmax		
	comp=Z,12nm,0.6s							
YAK	**Yakutsk**	**71.95**	**10**	*e*P		**P**	**07 36 11.8**	**-0.5**
	comp=Z,36nm,0.6s							
PEA0	**Petropavlovsk-**	**73.95**	**28**	*e*P		**P**	**07 36 24.2**	**-0.2**
PETK	**Petropavlovsk-**	**73.95**	**28**	P		**P**	**07 36 23.0**	**-1.4**
	comp=Z,5.5nm,0.7s,baz=137,slow=5.0,SNR=4.4							
PETK	**Petropavlovsk-**	**73.95**	**28**	P		**P**	**07 36 23.0**	**-1.4**
VNDA	**Vanda**	**74.52**	**170**	P		**P**	**07 36 28.0**	**+0.7**
	comp=Z,3.1nm,0.9s,baz=305,slow=7.1,SNR=10.0							
VNDA	**Vanda**	**74.52**	**170**	*e*P		**P**	**07 36 28.0**	**+0.7**
VNDA				pmax		pmax		
	comp=Z,6.0nm,1.0s							
VNDA	**Vanda**	**74.52**	**170**	*e*P		**P**	**07 36 28.0**	**+0.7**
	comp=Z,5.6nm,1.0s							
SBA	**Scott Base**	**75.59**	**169**	*e*P		**P**	**07 36 34.9**	**+1.5**
SBA				pmax		pmax		
	comp=Z,47nm,1.8s							
SBA	**Scott Base**	**75.59**	**169**	*e*P		**P**	**07 36 34.9**	**+1.5**
	comp=Z,47nm,1.8s							
SVE	**Sverdlovsk**	**75.70**	**335**	*e*P		**P**	**07 36 34.3**	**-0.1**
SVE				pmax		pmax		
	comp=Z,26nm,0.8s							
ARU	**Arti**	**76.33**	**334***c*	*i*P		**P**	**07 36 37.4**	**-0.5**
ARU							07 39 29.3	
ARU				S		**S**	**07 46 15.2**	**-1.3**
ARU				SS		**SS**	**07 51 08.7**	**-3.7**
ARU				pmax		pmax		
	comp=Z,20nm,1.0s							
ARU	**Arti**	**76.33**	**334**	*e*P		**P**	**07 36 37.5**	**-0.5**
	comp=Z,26nm,1.2s							
ZEI	**Tsey**	**77.46**	**317**	*e*P		**P**	**07 36 43.9**	**-1.0**
ZEI				pmax		pmax		
	comp=Z,8.0nm,0.6s							
NEY	**Neytrino**	**78.44**	**317⇑**	*e*P		**P**	**07 36 50.6**	**+0.3**
SEY	**Seymchan**	**78.46**	**19**	P		**P**	**07 36 48.7**	**-1.0**
	comp=Z,2.8nm,0.5s,baz=235,slow=7.2,SNR=6.8							
SEY	**Seymchan**	**78.46**	**19⇑**	*i*P		**P**	**07 36 49.2**	**-0.5**
KBZ	**Khabaz**	**78.51**	**318**	P		**P**	**07 36 50.2**	**-0.1**
	comp=Z,4.1nm,0.8s,baz=105,slow=4.9,SNR=14							
NRIK	**Noril'sk**	**78.72**	**353**	P		**P**	**07 36 49.8**	**-1.3**
	comp=Z,2.4nm,0.3s,baz=150,slow=5.7,SNR=7.4							
ASF	**Jabal al Asfar**	**79.02**	**305**	P		**P**	**07 36 54.2**	**+0.6**
	comp=Z,8.1nm,0.8s,baz=58,slow=4.4,SNR=14							
EIL	**Elat**	**79.93**	**302**	P		**P**	**07 36 59.0**	**+0.5**
	comp=Z,5.3nm,0.6s,baz=153,slow=6.8,SNR=3.7							
MMAI	**Mount Meron Ar**	**80.47**	**305**	P		**P**	**07 37 02.5**	**+1.0**
	comp=Z,4.5nm,0.5s,baz=108,slow=7.1,SNR=9.9							
TIXI	**Tiksi**	**80.83**	**6***c*	*e*P		**P**	**07 37 00.8**	**-1.6**
TIXI				pmax		pmax		
	comp=Z,14nm,1.0s							
TIXI	**Tiksi**	**80.83**	**6**	*e*P		**P**	**07 37 00.4**	**-2.0**
	comp=Z,10nm,0.8s							
QSPA	**South Pole Qui**	**81.79**	**180**	*e*P		**P**	**07 37 08.6**	**+0.8**
VRH	**Novokhopyorsk**	**82.20**	**324**	*e*P		**P**	**07 37 08.5**	**-1.5**
VRH				pmax		pmax		
	comp=Z,20nm,0.9s							
ANN	**Anapa**	**82.56**	**317**	*e*P		**P**	**07 37 09.7**	**-2.3**
ANN				*e**PP		**pP**	**07 37 31.3**	**-1.7**
ANN				*e*PPP		PPP	07 42 14.0	
ANN				*e*S		**S**	**07 47 20.6**	**-2.2**
ANN				pmax		pmax		
	comp=Z,17nm,1.0s							
CSS	**Mathiatis**	**82.66**	**307**	*e*P		**P**	**07 37 12.8**	**0.0**
	comp=Z,3.7nm,0.9s							
VSR	**Storozhevoye**	**83.69**	**324**	*e*P		**P**	**07 37 16.9**	**-0.8**
VSR				pmax		pmax		
	comp=Z,40nm,1.6s							
BRTR	**Keskin Array B**	**83.70**	**312**	P		**P**	**07 37 17.8**	**-0.4**
	comp=Z,4.4nm,0.8s,baz=137,slow=6.7,SNR=22							
BRTR	**Keskin Array B**	**83.70**	**312***c*	*e*P		**P**	**07 37 18.0**	**-0.3**
BRTR				pmax		pmax		
	comp=Z,4.0nm,0.7s							
BR131	**Keskin Array S**	**83.70**	**312**	*e*P		**P**	**07 37 18.2**	**0.0**
LPSR	**Galich'ya Gora**	**84.33**	**325**	*e*P		**P**	**07 37 20.9**	**0.0**
LPSR				pmax		pmax		
	comp=Z,10.0nm,1.1s							
BR231	**Keskin MP Arra**	**84.38**	**311**	*e*P		**P**	**07 37 18.5**	**-3.1**
BILL	**Bilibino**	**86.17**	**19**	*e*P		**P**	**07 37 28.9**	**-0.9**
BILL				pmax		pmax		
	comp=Z,4.0nm,0.7s							
BILL	**Bilibino**	**86.17**	**19**	*e*P		**P**	**07 37 28.9**	**-0.9**
	comp=Z,4.2nm,0.7s							
MOS	**Moscow**	**86.17**	**328**	*e*P		**P**	**07 37 28.0**	**-2.0**
OBN	**Obninsk**	**86.52**	**327⇑**	*e*P		**P**	**07 37 30.4**	**-1.3**
OBN				*e*			07 37 58.6	
OBN				pmax		pmax		
	comp=Z,20nm,0.6s							
KARP	**Karpathos**	**87.70**	**306**	*e*P		**P**	**07 37 39.1**	**+1.1**
	comp=Z,22nm,0.9s							
TIRR	**Tirgusor**	**88.65**	**315⇑**	*i*P		**P**	**07 37 42.5**	**+0.3**
TIRR	**Tirgusor**	**88.65**	**315⇑**	P		**P**	**07 37 42.5**	**+0.3**
TIRR	**Tirgusor**	**88.65**	**315**	*e*P		**P**	**07 37 41.9**	**-0.3**
	comp=Z,6.5nm,0.9s							
SNAA	**Sanae**	**88.81**	**197⇑**	*e*P		**P**	**07 37 43.1**	**+0.5**
SNAA	**Sanae**	**88.81**	**197**	*e*P		**P**	**07 37 44.0**	**+1.4**
	comp=Z,532nm,1.3s							
LAST	**Lasithi**	**88.98**	**306⇑**	*i*P		**P**	**07 37 44.8**	**+0.6**
LAST	**Lasithi**	**88.98**	**306**	*e*P		**P**	**07 37 44.7**	**+0.6**
	comp=Z,38nm,1.5s							
TMCR	**Tamitsa**	**88.98**	**336**	*e*P		**P**	**07 37 42.9**	**-0.4**
TMCR				pmax		pmax		
	comp=Z,30nm,1.0s							
CFR	**Carcaliu**	**89.00**	**316⇑**	*i*P		**P**	**07 37 44.1**	**+0.3**
CFR	**Carcaliu**	**89.00**	**316⇑**	P		**P**	**07 37 44.1**	**+0.3**
HARR	**Harsova**	**89.03**	**315⇓**	*i*P		**P**	**07 37 44.5**	**+0.5**
HARR	**Harsova**	**89.03**	**315⇓**	P		**P**	**07 37 44.5**	**+0.5**
IDI	**Anoyia**	**89.47**	**306⇑**	*i*P		**P**	**07 37 47.4**	**+1.0**
IDI	**Anoyia**	**89.47**	**306**	*e*P		**P**	**07 37 47.2**	**+0.8**
	comp=Z,38nm,1.4s							
AKASG	**Malin Array Be**	**89.53**	**321**	P		**P**	**07 37 45.1**	**-1.1**
	comp=Z,0.5nm,0.3s,baz=87,slow=4.7,SNR=8.5							
AKASG	**Malin Array Be**	**89.53**	**321***c*	*e*P		**P**	**07 37 45.2**	**-1.0**
AKASG				pmax		pmax		
	comp=Z,1.0nm,0.4s							
KIEV	**Kiev**	**89.54**	**321⇓**	*e*P		**P**	**07 37 45.5**	**-0.8**
KIEV				pmax		pmax		
	comp=Z,8.0nm,2.5s							
VRI	**Vrincioaia**	**90.11**	**316⇓**	*i*P		**P**	**07 37 49.8**	**+0.7**
VRI	**Vrincioaia**	**90.11**	**316⇓**	P		**P**	**07 37 49.8**	**+0.7**
PLOR	**Plostina**	**90.16**	**316⇑**	*i*P		**P**	**07 37 49.8**	**+0.4**
PLOR	**Plostina**	**90.16**	**316⇑**	P		**P**	**07 37 49.8**	**+0.4**
TESR	**Tescani**	**90.29**	**317⇑**	*i*P		**P**	**07 37 49.9**	**0.0**
MLR	**Muntele Rosu**	**90.58**	**316⇓**	*i*P		**P**	**07 37 51.8**	**+0.4**
MLR	**Muntele Rosu**	**90.58**	**316⇓**	P		**P**	**07 37 51.9**	**+0.5**
MLR	**Muntele Rosu**	**90.58**	**316**	*e*P		**P**	**07 37 51.8**	**+0.4**
	comp=Z,3.6nm,0.7s							
BURAR	**Bucovina Array**	**91.47**	**318⇑**	*i*P		**P**	**07 37 55.9**	**+0.4**
BURAR	**Bucovina Array**	**91.47**	**318⇑**	P		**P**	**07 37 55.9**	**+0.4**
BUR08	**Bucovina Ar. S**	**91.48**	**318**	*e*P		**P**	**07 37 55.9**	**+0.3**
LVZ	**Lovozero**	**91.54**	**339⇑**	*e*P		**P**	**07 37 54.8**	**-0.4**
LVZ				pmax		pmax		
	comp=Z,9.0nm,1.4s							
VSU	**Vasula**	**92.62**	**329⇑**	*e*P		**P**	**07 37 59.9**	**-0.5**
VSU				pmax		pmax		
	comp=Z,14nm,0.5s							
FIA1	**FINESS Array S**	**93.51**	**332**	*e*P		**P**	**07 38 04.5**	**+0.1**
FINES	**FINESS Array B**	**93.52**	**332**	P		**P**	**07 38 03.4**	**-1.0**
	comp=Z,1.6nm,0.7s,baz=111,slow=10,SNR=7.0							
FINES	**FINESS Array B**	**93.52**	**332**	*i*P		**P**	**07 38 04.9**	**+0.5**
FINES				pmax		pmax		
	comp=Z,1.0nm,0.6s							
KOLS	**Kolonicke sedl**	**93.62**	**319**	*e*P		**P**	**07 38 06.0**	**+0.7**
UNV	**Unalaska Valle**	**93.65**	**36**	*e*P		**P**	**07 38 05.0**	**-0.2**
	comp=Z,90nm,1.5s							
STHS	**Stebnicka Huta**	**94.36**	**319**	*e*P		**P**	**07 38 08.4**	**-0.2**
ARA0	**ARCESS Array S**	**95.17**	**339**	*e*P		**P**	**07 38 11.1**	**-0.8**
ARCES	**ARCESS Array B**	**95.17**	**339**	P		**P**	**07 38 10.8**	**-1.1**
	comp=Z,2.1nm,0.8s,baz=101,slow=4.6,SNR=8.6							
SPA0	**Spitsbergen Ar**	**98.41**	**348**	*e*P		**P**	**07 38 25.7**	**-0.7**
GERES	**GERESS Array B**	**99.25**	**318**	P		**Pdif**	**07 38 29.3**	**-1.6**
	comp=Z,0.2nm,0.3s,baz=31,slow=3.6,SNR=3.7							
NOA	**NORSAR Array B**	**100.64**	**331**	P		**Pdif**	**07 38 35.4**	**-1.3**
	comp=Z,0.5nm,0.7s,baz=81,slow=7.0,SNR=3.3							
TORD	**Torodi Ar. Bea**	**108.06**	**281**	PKiKP		**PKiKP**	**07 43 16.7**	**-0.8**
	comp=Z,0.5nm,0.5s,baz=58,slow=0.9,SNR=8.9							
TORD				PKKPbc		**PKKPbc**	**07 54 28.1**	**-1.3**
	comp=Z,0.1nm,0.6s,baz=304,slow=3.5,SNR=4.2							
YKA	**Yellowknife Ar**	**117.48**	**21**	PKP		**PKPdf**	**07 43 33.3**	**-0.7**
	comp=Z,0.5nm,0.7s,baz=324,slow=0.5,SNR=21							
YKA				PKKPbc		**PKKPbc**	**07 53 56.0**	**-3.3**
	comp=Z,0.1nm,0.5s,baz=128,slow=4.1,SNR=4.2							
FCC	**Fort Churchill**	**126.69**	**14**	*e*PKIKP		**PKPdf**	**07 43 52.0**	**+0.2**
FCC	**Fort Churchill**	**126.69**	**14**	*e*PKPdf		**PKPdf**	**07 43 52.0**	**+0.2**
DLMT	**Dillon**	**128.82**	**36**	*e*PKPpre		PKPpre	07 43 48.5	
DAC	**Darwin (Calif)**	**129.70**	**49**	*e*PKIKP		**PKPdf**	**07 43 59.9**	**+1.4**
DAC	**Darwin (Calif)**	**129.70**	**49**	*e*PKPdf		**PKPdf**	**07 43 59.9**	**+1.4**
PLCA	**Paso Flores**	**131.29**	**181**	PKP		**PKPdf**	**07 44 02.2**	**+0.9**
	comp=Z,0.6nm,0.6s,baz=143,slow=3.2,SNR=4.3							
PLCA	**Paso Flores**	**131.29**	**181**	*e*PKIKP		**PKPdf**	**07 44 02.8**	**+1.5**
PLCA	**Paso Flores**	**131.29**	**181**	*e*PKPdf		**PKPdf**	**07 44 02.8**	**+1.5**
O20A	**White River Ci**	**134.39**	**40**	*e*PKPdf		**PKPdf**	**07 44 09.1**	**+1.9**
KSU1	**Kansas State U**	**141.89**	**32**	*e*PKPpre		PKPpre	07 44 16.7	
SADO	**Sadowa**	**142.99**	**9**	*e*PKPpre		PKPpre	07 44 19.1	
LCO	**Las Campanas**	**142.99**	**181**	*e*PKPdf		PKPpre	07 44 21.6	
CPUP	**Villa Florida**	**142.99**	**201**	PKP		PKPpre	07 44 20.6	
	comp=Z,1.2nm,0.6s,baz=110,slow=2.3,SNR=4.6							
PKME	**Peaks-Kenny Pk**	**143.03**	**357**	*e*PKPpre		PKPpre	07 44 19.1	
TX31	**Lajitas Ar. Sí**	**143.24**	**51**	*e*PKPpre		PKPpre	07 44 20.7	
TX31				*e*PKPdf		PKPbc	07 44 21.4	+0.6
TXAR	**Lajitas Array**	**143.24**	**51**	PKP		PKPbc	07 44 21.0	+0.2
	comp=Z,1.0nm,0.6s,baz=232,slow=2.4,SNR=22							
TXAR	**Lajitas Array**	**143.24**	**51**	PKIKP		PKPbc	07 44 21.0	+0.2
U34A	**Anderson Ranch**	**143.27**	**36**	*e*PKPdf		PKPbc	07 44 20.9	+0.4
EMMW	**East Machias**	**143.47**	**

JHO				S	Sg	07 56 45.0	0.0		
JFT	**Otama**	**0.54**	**334**	P	Pg	07 56 42.2	+0.4		
JFT				S	Sg	07 56 49.3	+0.4		
JMM	**Marumori**	**0.84**	**9**	P	Pg	07 56 47.4	-0.2		
JMM				S	Sg	07 56 58.6	+0.1		
MAT	**Matsushiro**	**2.00**	**257**	P	Pn	07 57 06.4	+0.9		
MAT				S	Sb	07 57 33.2	+0.1		

IDC 26 07:56:58.1±4.0, 16°63S×128°47E, h0km, mb1 2.8/3, mb1mx2.8/27, mbtmp2.5/3, ML2.1/3, Error ellipse: s-maj=48.7km s-min=15.2km az=0.0, Western Australia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**3.07**	**241**	Pn	Pn	07 57 47.8	-0.2
	0.1nm,0.3s,baz=52,slow=15,SNR=2.7						
FITZ				Pg	Pg	07 57 55.5	-1.6
	0.2nm,0.3s,baz=61,slow=16,SNR=12						
FITZ				Sn	Sn	07 58 26.3	+0.8
	0.3nm,0.3s,baz=333,slow=11,SNR=4.5						
FITZ				Lg	Lg	07 58 33.6	
	2.3nm,0.3s,baz=117,slow=9.0,SNR=23						
I07AU	**WARRAMUNGA INF**	**6.46**	**121**	*i*		08 37 40.0	
	baz=300,slow=315,SNR=1.0						
WRA	**Warramunga Arr**	**6.48**	**121**	Pn	Pn	07 58 36.1	+1.3
	0.1nm,0.3s,baz=300,slow=14,SNR=5.2						
WRA				Sn	Sn	07 59 48.4	-1.1
	0.1nm,0.3s,baz=302,slow=24,SNR=5.1						
WRA				Lg	Lg	08 00 23.7	
	0.1nm,0.3s,baz=291,slow=29,SNR=3.8						
ASAR	**Alice Springs**	**8.66**	**145**	Pn	Pn	07 59 05.3	+0.4
	0.1nm,0.3s,baz=324,slow=12,SNR=7.3						
ASAR				Sn	Sn	08 00 42.3	-1.0
	0.1nm,0.3s,baz=327,slow=25,SNR=3.7						

*GUC **26** 08:01:59.9±0.5, 32°50S×71°64W, h37km±9km, ML3.1*
ISC 26 08:01:53.9±2.1, 32°33S±0°04×71°89W±0°09, h18km±4km, n18, σ1°28/30, Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ROCH	**El Roble**	**0.98**	**131**	*i* P	**Pg**	**08 02 13.9**	**+0.8**
ROCH				*i* S	**Sb**	**08 02 24.6**	**-0.7**
ROCH				IAML		08 02 33.0	
	comp=E,744nm,0.7s						
PEL	**Peldehue**	**1.30**	**129**	*i* P	**Pb**	**08 02 18.3**	**+0.5**
PEL				*i* S	**Sn**	**08 02 32.9**	**-1.3**
PEL				IAML		08 02 35.0	
	comp=E,966nm,0.3s						
CLCH	**Cerro Calan**	**1.56**	**133**	*i* P	**Pb**	**08 02 22.5**	**+0.2**
CLCH				*i* S	**Sn**	**08 02 39.6**	**-1.0**
CLCH				IAML		08 02 46.6	
	comp=E,445nm,0.4s						
ANTU	**Antumapu**	**1.63**	**140**	*i* P	**Pb**	**08 02 23.8**	**+0.3**
ANTU				*i* S	**Sn**	**08 02 41.8**	**-0.4**
ANTU				IAML		08 02 45.8	
	comp=N,548nm,0.6s						
AUSP	**Uspallata**	**2.12**	**88**	*eP*	**Pg**	**08 02 35.3**	**+0.5**
AUSP				*eS*	**Sg**	**08 03 03.5**	**+1.1**
RTLS	**Leoncito**	**2.27**	**77**	*eP*	**Pg**	**08 02 38.5**	**+0.8**
RTLS				*i* S	**Sg**	**08 03 07.3**	**+0.4**
TLL	**Tololo Astrono**	**2.35**	**24**	*i* P	**Pg**	**08 02 39.8**	**+0.8**
TLL				*i* S	**Sg**	**08 03 09.8**	**+0.3**
TLL				IAML		08 03 22.1	
	comp=N,296nm,0.8s						
ARCO	**CERRO ARCO**	**2.55**	**102**	*eP*	**Pg**	**08 02 41.8**	**-1.0**
ARCO				IAML		08 02 50.9	
	comp=Z,436nm,0.5s						
ARCO				*i* S	**Sg**	**08 03 13.7**	**-2.2**
ASAL	**Salagasta**	**2.60**	**97**	*eP*	**Pg**	**08 02 42.6**	**-1.2**
ASAL				*eS*	**Sg**	**08 03 16.9**	**-0.5**
AAGR	**Agrelo**	**2.69**	**107**	*eP*	**Pb**	**08 02 43.3**	**+1.7**
AAGR				*i* S	**Sb**	**08 03 16.7**	**+2.4**
RTCV	**Cerro Valdivia**	**2.88**	**82**	*i* P	**Pb**	**08 02 45.6**	**+0.8**
SJA	**San Juan**	**2.94**	**75**	*eP*	**Pb**	**08 02 47.6**	**+1.8**
SJA				*eS*	**Sg**	**08 03 28.9**	**+0.4**
RTLL	**Cerro Villicun**	**3.07**	**72**	*i* P	**Pb**	**08 02 48.6**	**+0.5**
AMOG	**MOGNA**	**3.21**	**65**	*eP*	**Pb**	**08 02 50.4**	**0.0**
AMOG				*eS*	**Sb**	**08 03 31.8**	**+2.5**
AGUA	**GUANDACOL**	**4.07**	**47**	*eP*	**Pb**	**08 03 03.9**	**-1.2**
AGUA				*i* S	**Sb**	**08 03 53.1**	**-0.9**
AVFE	**Valle Fertil**	**4.14**	**67**	*i* P	**Pb**	**08 03 04.0**	**-2.3**
AVFE				*eS*	**Sb**	**08 03 54.8**	**-1.1**
AVFE				IAML		08 04 04.3	
	comp=Z,119nm,0.3s						
VCA	**Vinchina**	**4.79**	**43**	*i* P	Pb	08 03 13.9	-3.4
VCA				IAML		08 04 26.9	
	comp=Z,248nm,0.7s						
MRA	**San Martin**	**5.22**	**93**	IAML		08 04 56.2	
	comp=Z,22nm,0.8s						

*IDC **26** 08:08:25.6±0.6, 52°88S×27°01E, h0km, mb4.2/10, mb1 4.3/10, mb1mx4.1/32, mbtmp4.2/10, MS3.5/8, Ms1 3.5/8, ms1mx3.3/29, Error ellipse: s-maj=25.1km s-min=17.7km az=59.0*
*ISCJB **26** 08:08:26.4±0.6, 52°76S±0°09×27°1E±0°2, h10km, mb4.4/15, MS3.4/8, Error ellipse: s-maj=16.3km s-min=12.6km az=175.3*
*NEIC **26** 08:08:27.5±0.4, 52°83S×27°03E, h10km, mb4.6/6, Error ellipse: s-maj=17.1km s-min=11.8km az=72.0*
ISC 26 08:08:27.3±0.6, 52°8S±0°1×27°1E±0°1, h10km, n41, σ1°27/31, mb4.3/15, MS3.5/8, 1C, South of Africa

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SYO	**Syowa Base**	**17.29**	**165**	*eP*	**Pn**	**08 12 25.0**	**-3.4**
SUR	**Sutherland**	**20.91**	**345**	P	Pn	08 13 12.1	-0.4
	1.0nm,1.0s,baz=90,slow=13,SNR=3.6						
SUR				LR	LR	08 19 34.7	
	comp=Z,26nm,20.1s,baz=161,slow=32						
SUR	**Sutherland**	**20.91**	**345**	*eP*	Pn	08 13 13.1	+0.6
	7.9nm,0.6s						
MAW	**Mawson**	**22.67**	**144**	P	**P**	**08 13 29.4**	**+1.1**
	9.1nm,0.9s,baz=286,slow=8.8,SNR=7.8						
MAW				LR	LR	08 21 19.2	
	comp=Z,42nm,18.6s,baz=232,slow=34						
SNAA	**Sanae**	**23.04**	**204**	P	**P**	**08 13 34.3**	**+2.0**
SNAA	**Sanae**	**23.04**	**204**	*eP*	**P**	**08 13 33.5**	**+1.2**
	285nm,1.0s						
VNA2	**Neumayer--Watz**	**23.80**	**207**	P	**P**	**08 13 41.5**	**+1.7**
	baz=53,slow=9.3						
VNA1	**Neumayer--Stat**	**23.91**	**208**	P	**P**	**08 13 42.6**	**+1.8**
BOSA	**Boshof**	**24.20**	**356**	LR	LR	08 21 26.3	
	comp=Z,181nm,20.5s,baz=197,slow=32						
LBTB	**Lobatse**	**27.77**	**357**	LR	LR	08 22 58.7	
	comp=Z,215nm,19.9s,baz=194,slow=31						
QSPA	**South Pole Qui**	**37.42**	**180**	*eP*	**P**	**08 15 40.9**	**+0.6**
	37nm,1.1s						
CASY	**Casey**	**40.99**	**142**	*eP*	P	08 16 04.9	-4.9
	5.4nm,0.6s						
PMSA	**Palmer Station**	**44.55**	**218**	P	**P**	**08 16 38.7**	**0.0**
	28nm,1.0s,baz=355,slow=12,SNR=4.3						
PMSA	**Palmer Station**	**44.55**	**218**	*eP*	**P**	**08 16 39.4**	**+0.8**
	16nm,0.7s						
VNDA	**Vanda**	**46.95**	**168**	P	**P**	**08 16 57.2**	**-0.3**
	1.4nm,0.9s,baz=269,slow=4.6,SNR=4.2						
VNDA				LR	LR	08 37 31.8	
	comp=Z,73nm,19.6s,baz=252,slow=37						
KMBO	**Kilima Mbogo**	**52.19**	**13**	LR	LR	08 37 57.3	
	comp=Z,51nm,19.8s,baz=122,slow=34						
H10S2	**ASCENSION HYDR**	**55.22**	**307**	T	T	09 17 58.3	
	baz=150						
H10S3	**ASCENSION HYDR**	**55.24**	**307**	T	T	09 18 00.7	
	baz=150						
H10S1	**ASCENSION HYDR**	**55.24**	**307**	T	T	09 18 04.0	
	baz=150						
PLCA	**Paso Flores**	**62.94**	**238**	P	**P**	**08 18 53.1**	**-0.7**
	2.4nm,1.1s,baz=127,slow=7.7,SNR=3.0						
CPUP	**Villa Florida**	**66.21**	**257**	P	**P**	**08 19 14.6**	**-0.6**
	3.3nm,1.0s,baz=108,slow=6.7,SNR=5.0						
TORD	**Torodi Ar. Bea**	**69.23**	**333**	P	**P**	**08 19 34.6**	**+0.4**
	1.9nm,0.8s,baz=174,slow=7.4,SNR=10.0						
STKA	**Stephens Creek**	**78.26**	**128**	P	**P**	**08 20 28.4**	**+1.2**
	1.3nm,0.8s,baz=156,slow=5.3,SNR=2.8						
ASAR	**Alice Springs**	**81.01**	**117**	P		**08 20 41.5**	**-0.7**
	1.5nm,0.8s,baz=211,slow=4.5,SNR=12						
SAML	**Samuel**	**83.12**	**264**	*eP*	**P**	**08 20 53.9**	**+0.5**
	3.0nm,1.0s						
WRA	**Warramunga Arr**	**84.25**	**115**	P	**P**	**08 20 58.4**	**-0.7**
	0.6nm,0.6s,baz=211,slow=3.7,SNR=6.6						
WRAB	**Tennant Creek**	**84.26**	**115**	*eP*	**P**	**08 21 00.8**	**+1.6**
	6.5nm,1.3s						

KEST	**Kesra**	**89.52**	**346**	LR	LR	09 02 07.5			
	comp=Z,64nm,19.6s,baz=203,slow=36								
BRTR	**Keskin Array B**	**92.33**	**5**	P	**P**	**08 21 38.0**	**+0.6**		
	0.5nm,0.5s,baz=141,slow=5.5,SNR=4.1								
BRTR				LR	LR	09 04 47.3			
	comp=Z,14nm,18.1s,baz=244,slow=37								
TXAR	**Lajitas Array**	**137.18**	**257**	PKP	**PKPdf**	**08 27 51.6**	**+1.1**		
	0.9nm,1.1s,baz=132,slow=3.5,SNR=4.8								
TIXI	**Tiksi**	**142.46**	**31**	PKhKP	PKPpre	08 27 54.6			
	1.6nm,0.4s,baz=0.4,slow=1.9,SNR=6.4								
TIXI				PKP	**PKPdf**	**08 27 59.0**	**+0.4**		
	2.7nm,0.5s,baz=344,slow=0.8,SNR=6.4								
ULM	**Lac du Bonnet**	**145.23**	**289**	PKPbc	**PKPbc**	**08 28 03.7**	**-0.1**		
	1.6nm,0.5s,baz=78,slow=3.1,SNR=3.5								
ISCO	**Idaho Springs**	**145.48**	**267**	*e*PKPdf	**PKPdf**	**08 28 04.6**	**-0.7**		
FCC	**Fort Churchill**	**147.36**	**304**	*e*PKPbc	**PKPbc**	**08 28 09.2**	**-0.7**		
RES	**Resolute Bay**	**148.38**	**335**	PKPbc	**PKPbc**	**08 28 11.9**	**-0.3**		
	2.7nm,1.0s,baz=23,slow=3.1,SNR=8.0								
RES	**Resolute Bay**	**148.38**	**335**	*e*PKPbc	**PKPbc**	**08 28 12.5**	**+0.3**		
PDAR	**Pinedale Array**	**149.63**	**268**	PKPbc	**PKPbc**	**08 28 15.0**	**-1.6**		
	1.1nm,0.9s,baz=94,slow=2.1,SNR=8.0								
SEY	**Seymchan**	**150.11**	**49**	PKPbc	**PKPbc**	**08 28 16.3**	**-0.4**		
	2.5nm,0.8s,baz=270,slow=20,SNR=3.4								
NVAR	**Mina Array Bea**	**152.18**	**253**	PKPbc	**PKPbc**	**08 28 20.0**	**-2.7**		
	0.5nm,0.4s,baz=111,slow=5.0,SNR=3.3								
YKA	**Yellowknife Ar**	**157.67**	**311**	PKPab	**PKPab**	**08 28 54.3**	**-0.6**		
	1.0nm,1.0s,baz=83,slow=4.9,SNR=11								
ILAR	**Eielson Array**	**167.61**	**348**	PKPab	**PKPab**	**08 29 38.3**	**-0.1**		
	0.5nm,1.0s,baz=346,slow=1.9,SNR=3.7								

*IDC **26** 08:11:23.9±7.2, 49°49N×158°82E, h0km, mb3.7/3, mb1 4.0/4, mb1mx3.5/49, mbtmp3.6/4, ML2.4/1, Error ellipse: s-maj=149.0km s-min=48.0km az=56.0*
*KRSC **26** 08:11:28.0±1.8, 49°63N×157°10E, h50km±24km, ML4.1*
*MOS **26** 08:11:27.9±3.1, 49°63N×157°10E, h50km, mb3.9/3, Error ellipse: s-maj=48.7km s-min=11.4km az=83.5*
ISC 26 08:11:23.8±1.5, 49°28N±0°08×156°90E±0°09, h53km, n24, σ1°60/17, mb3.7/3, Kuril Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SKR	**Severo-Kuril's**	**1.49**	**340**	*eP*	**Pn**	**08 11 49.2**	**+1.0**
SKR				*eS*	**Sn**	**08 12 05.1**	**-1.5**
SKR	**Severo-Kuril's**	**1.49**	**340**	*ePN*	**Pn**	**08 11 47.5**	**-0.7**
SKR				*eS*	**Sn**	**08 12 03.5**	**-3.1**
SKR				pmax	pmax		
	comp=N,150nm,0.5s						
SKR				pmax	pmax		
	comp=Z,180nm,0.5s						
SKR				smax	smax		
	comp=N,310nm,0.3s						
SKR				smax	smax		
	comp=E,150nm,0.5s						
ASAK	**Asacha**	**3.17**	**11**	*eP*	Pn	08 12 14.2	+2.9
MTVR	**Mutnovka**	**3.31**	**14**	*eS*	**Sn**	**08 12 50.6**	**-0.7**
RUS	**Russkaya**	**3.32**	**17**	*eS*	**Sn**	**08 12 51.0**	**-0.3**
KRMR	**Karymshinskiy**	**3.64**	**12**	*eP*	Pn	08 12 20.7	+3.1
KRMR				*eS*	**Sn**	**08 12 58.6**	**-0.6**
PETK	**Petropavlovsk-**	**3.87**	**7**	Pn	**Pn**	**08 12 22.5**	**+1.8**
	comp=E,1.5nm,0.3s,baz=171,slow=12,SNR=39						
DALK	**Dalny**	**3.93**	**17**	*eP*	Pn	08 12 24.7	+3.1
DALK				*eS*	**Sn**	**08 13 05.9**	**-0.5**
UGLR	**Uglovaya**	**4.12**	**16**	*eP*	Pn	08 12 27.6	+3.4
AVH	**Avacha**	**4.15**	**15**	*eP*	Pn	08 12 28.5	+3.8
AVH	**Avacha**	**4.15**	**15**	PN	Pn	08 12 28.5	+3.8
SMAR	**Somma**	**4.16**	**16**	*eP*	Pn	08 12 27.9	+2.9
SMAR	**Somma**	**4.16**	**16**	PN	Pn	08 12 27.9	+2.9
NLC	**Nalytchevo**	**4.19**	**21**	*eS*	**Sn**	**08 13 10.9**	**-1.8**
SDLR	**Sedlovina**	**4.19**	**16**	*eP*	Pn	08 12 28.1	+2.8
SDLR	**Sedlovina**	**4.19**	**16**	PN	Pn	08 12 28.1	+2.8
KRX	**Arik**	**4.23**	**14**	*eP*	Pn	08 12 28.9	+3.1
GNL	**Ganaly**	**4.47**	**8**	*eP*	**Pn**	**08 12 30.3**	**+1.2**
GNL	**Ganaly**	**4.47**	**8**	PN	**Pn**	**08 12 30.3**	**+1.2**
BKI	**Bering**	**8.13**	**40**	*eS*	**Sn**	**08 14 46.7**	**-2.7**
ILAR	**Eielson Array**	**32.98**	**41**	P	**P**	**08 17 52.0**	**-1.2**
	comp=E,1.0nm,1.0s,baz=260,slow=7.7,SNR=7.8						
ILAR	**Eielson Array**	**32.98**	**41**	P	**P**	**08 17 52.0**	**-1.2**
ILAR				pmax	pmax		
	comp=Z,1.0nm,1.0s						
YKA	**Yellowknife Ar**	**47.36**	**39**	P	**P**	**08 19 50.7**	**-1.3**
	comp=Z,0.6nm,0.6s,baz=296,slow=7.2,SNR=16						
TXAR	**Lajitas Array**	**74.06**	**64**	P	**P**	**08 22 54.8**	**+0.6**
	comp=Z,0.5nm,0.5s,baz=296,slow=4.8,SNR=14						

*IDC **26** 08:12:08.3±0.9, 11°94S×165°36E, h0km, mb4.3/11, mb1 4.4/13, mb1mx4.1/45, mbtmp4.3/13, ML4.9/2, MS3.4/4, Ms1 3.4/4, ms1mx3.0/33, Error ellipse: s-maj=25.1km s-min=19.1km az=109.0*
*ISCJB **26** 08:12:11.9±0.5, 11°99S±0°07×165°28E±0°07, h33km, mb4.3/20, MS3.4/3, Error ellipse: s-maj=10.8km s-min=8.5km az=139.7*
*NEIC **26** 08:12:12.4±4.0, 11°95S×165°39E, h25km±28km, mb4.6/10, Error ellipse: s-maj=13.1km s-min=9.6km az=67.0*
ISC 26 08:12:13.7±0.7, 11°95S±0°09×165°36E±0°10, h35km, n29, σ0°90/29, mb4.3/20, MS3.5/3, 1C-1D, Santa Cruz Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HNR	**Honiara**	**5.88**	**295**	Pn	**Pn**	**08 13 37.1**	**-1.3**
	39nm,0.3s,baz=154,slow=7.6,SNR=5.9						
HNR				Sn	**Sn**	**08 14 43.9**	**-0.7**
	10nm,0.3s,baz=194,slow=12,SNR=2.2						
HNR				LR	LR	08 15 42.7	
	comp=Z,214nm,20.1s,baz=129,slow=36						
HNR	**Honiara**	**5.88**	**295**	*e*Pn	**Pn**	**08 13 37.9**	**-0.5**
HNR				Sn	**Sn**	**08 14 43.9**	**-0.7**
DZM	**Mont Dzumac**	**10.12**	**174**	Pn	**Pn**	**08 14 35.9**	**-0.7**
	8.4nm,0.3s,baz=12,slow=12,SNR=55						
COEN	**Coen**	**21.71**	**262**	*eP*	**P**	**08 17 04.2**	**+2.3**
	20nm,1.5s						
ARMA	**Armidale**	**22.35**	**213**	*eP*	**P**	**08 17 09.6**	**+0.7**
	8.8nm,0.8s						
STKA	**Stephens Creek**	**29.52**	**224**	P	**P**	**08 18 14.9**	**-0.1**
	2.3nm,0.8s,baz=16,slow=8.7,SNR=7.3						
WRAB	**Tennant Creek**	**30.81**	**251**	*eP*	**P**	**08 18 26.0**	**-0.5**
	1.7nm,0.5s						
WRA	**Warramunga Arr**	**30.82**	**251**	P	**P**	**08 18 26.0**	**-0.6**
	0.8nm,0.4s,baz=81,slow=9.0,SNR=36						
OXZ	**Oxford**	**31.79**	**171**	*eP*	**P**	**08 18 35.7**	**+0.8**
RPZ	**Rata Peaks**	**32.03**	**172**	P	**P**	**08 18 37.0**	**+0.1**
	16nm,0.8s,baz=137,slow=6.4,SNR=4.3						
RPZ	**Rata Peaks**	**32.03**	**172**	*eP*	**P**	**08 18 37.3**	**+0.4**
	27nm,1.0s						
ASAR	**Alice Springs**	**32.05**	**244**	P	**P**	**08 18 36.1**	**-1.3**
	1.8nm,0.9s,baz=68,slow=9.6,SNR=17						
ASAR				LR	LR	08 30 26.2	
	comp=Z,95nm,18.9s,baz=156,slow=34						
GUMO	**Guam**	**32.51**	**321**	LR	LR	08 30 15.1	
	comp=Z,44nm,21.7s,baz=96,slow=33						
FITZ	**Fitzroy Crossi**	**38.78**	**256**	*eP*	**P**	**08 19 36.0**	**+0.7**
	11nm,1.4s						
CMAR	**Chiang Mai Arr**	**72.13**	**294**	P	**P**	**08 23 37.1**	**+1.8**
	1.5nm,0.4s,baz=119,slow=7.3,SNR=4.7						
SEY	**Seymchan**	**75.33**	**354**	P	**P**	**08 23 53.2**	**+0.2**
	1.5nm,0.7s,baz=129,slow=8.8,SNR=5.6						
QSPA	**South Pole Qui**	**78.06**	**180**	*eP*	**P**	**08 24 08.5**	**-0.2**
	36nm,1.4s						
SONM	**Songino Array**	**79.17**	**324**	P	**P**	**08 24 15.9**	**+0.8**
	0.7nm,0.7s,baz=134,slow=6.2,SNR=4.3						
BILL	**Bilibino**	**79.78**	**0**	*eP*	**P**	**08 24 18.2**	**+0.3**
	4.4nm,0.9s						
COLA	**College**	**84.26**	**18**	*eP*	**P**	**08 24 41.4**	**0.0**
	3.4nm,0.7s						
ILAR	**Eielson Array**	**84.49**	**19**	P	**P**	**08 24 42.7**	**+0.1**
	1.9nm,0.6s,baz=243,slow=5.3,SNR=42						
DOT	**Dot Lake**	**84.66**	**20**	*eP*	**P**	**08 24 43.8**	**+0.3**
	10.0nm,1.0s						
EGAK	**Eagle**	**86.36**	**20**	*eP*	**P**	**08 24 52.4**	**+0.5**
	9.0nm,1.2s						
SYO	**Syowa Base**	**90.81**	**197**	*eP*	**P**	**08 25 12.0**	**-1.0**
SYO	**Syowa Base**	**90.81**	**197**	*ePcP*	**PcP**	**08 25 14.4**	**+0.3**
MKAR	**Makanchi Array**	**93.92**	**317**	P	**P**	**08 25 28.0**	**+0.2**
	0.8nm,0.6s,baz=100,slow=5.8,SNR=7.9						
ZALV	**Zalesovo Beam**	**94.06**	**324**	P	**P**	**08 25 27.3**	**-1.0**
	0.5nm,0.6s,baz=100,slow=4.4,SNR=2.5						
YKA	**Yellowknife Ar**	**95.95**	**27**	P	**P**	**08 25 35.5**	**-1.2**
	0.2nm,0.6s,baz=258,slow=4.5,SNR=7.7						
NRIK	**Noril'sk**	**96.83**	**340**	LR	LR	09 06 51.5	
	comp=Z,22nm,21.6s,baz=292,slow=34						

IDC 26 08:18:40.4±1.7, 12°81S×172°70E, h0km, mb4.2/7, mb1 4.4/7, mb1mx3.9/40, mbtmp4.2/7, Error ellipse: s-maj=60.8km s-min=21.7km az=137.0, Santa Cruz Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JAY	**Jayapura**	**33.27**	**285**	P	P	08 25 18.4	-1.5
	8.4nm,0.8s,baz=272,slow=24,SNR=16						
STKA	**Stephens Creek**	**34.27**	**231**	P	P	08 25 27.9	-0.6
	1.7nm,0.3s,baz=35,slow=8.8,SNR=12						
WRA	**Warramunga Arr**	**37.41**	**254**	P	P	08 25 56.6	+1.0
	1.3nm,0.5s,baz=87,slow=8.8,SNR=29						
ASAR	**Alice Springs**	**38.28**	**248**	P	P	08 26 03.0	+0.1
	3.6nm,0.4s,baz=77,slow=9.2,SNR=88						
SEY	**Seymchan**	**77.14**	**351**	P	P	08 30 36.9	+1.4
	0.7nm,0.3s,baz=78,slow=23,SNR=5.1						
ILAR	**Eielson Array**	**83.15**	**16**	P	P	08 31 07.9	-0.1
	0.6nm,0.8s,baz=227,slow=5.3,SNR=9.8						
YKA	**Yellowknife Ar**	**93.47**	**26**	P	P	08 31 56.5	-1.1
	0.3nm,0.7s,baz=252,slow=4.5,SNR=8.2						

*NIED **26** 08:24:00, 36°40N×140°60E, h53km, Mw3.8 Best double couple: M0 5.03000×10^14 NP1: φs102.00000°, δ37.00000°, λ-28.00000°. NP2: φs216.00000°, δ73.00000°, λ-123.00000°.*
*IDC **26** 08:24:45.2±1.3, 36°36N×140°81E, h0km, mb3.6/5, mb1 3.7/7, mb1mx3.5/39, mbtmp3.6/7, ML3.6/2, MS3.3/2, Ms1 3.3/2, ms1mx2.5/45, Error ellipse: s-maj=26.2km s-min=24.8km az=176.0*
*ISCJB **26** 08:24:51.8±0.6, 36°44N±0°04×140°63E±0°07, h59km±4km, mb3.5/5, MS4.2/1, Error ellipse: s-maj=9.3km s-min=5.9km az=24.1*
*JMA **26** 08:24:52.7±0.1, 36°43N×140°59E, h53km±1km, M3.6 Broadband fault plane solution: P waves. NP1: φs27.00000°, δ86.00000°, λ135.00000°. NP2: φs120.00000°, δ45.00000°, λ5.00000°. Principal axes: T Plg33.0000°, Azm333.0000°; N Plg45.0000°, Azm203.0000°; P Plg27.0000°, Azm83.0000°;*
JMA Felt II J1.
ISC 26 08:24:52.9±0.9, 36°46N±0°05×140°64E±0°06, h51km±7km, n24, σ1°35/27, mb3.5/5, 3D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHO	**Hitachi**	**0.16**	**340**	⇓P	**Pn**	**08 25 01.4**	**+0.3**
JHO				S	**Sn**	**08 25 07.0**	**+0.1**
JYT	**Yasato**	**0.43**	**237**	P	**Pn**	**08 25 02.9**	**-0.4**
JYT				S	**Sn**	**08 25 09.8**	**-1.0**
ONAJ	**Iwakimizuishiy**	**0.65**	**11**	P	**Pn**	**08 25 06.2**	**+0.1**
ONAJ				S	**Sn**	**08 25 15.4**	**-0.2**
JSB	**Shiboa**	**0.77**	**311**	⇓P	**Pn**	**08 25 07.7**	**+0.2**
JSB				S	**Sn**	**08 25 18.4**	**+0.2**
JFK	**Kawauchi**	**0.92**	**12**	P	**Pn**	**08 25 09.8**	**+0.2**
JFK				S	**Sn**	**08 25 21.4**	**-0.5**
JAG	**Ashikaga**	**0.95**	**268**	⇓P	**Pn**	**08 25 09.8**	**-0.2**
JAG				S	**Sn**	**08 25 21.5**	**-1.1**
JFT	**Otama**	**1.08**	**347**	P	**Pn**	**08 25 12.1**	**+0.4**
JFT				S	**Sn**	**08 25 26.2**	**+0.5**
MJAR	**Matsushiro Arr**	**1.96**	**273**	Pn	**Pn**	**08 25 23.4**	**-0.2**
	14nm,0.3s,baz=96,slow=9.5,SNR=77						
MJAR				Sn	**Sn**	**08 25 50.7**	**+3.7**
	7.8nm,0.3s,baz=81,slow=16,SNR=5.9						
MJAR				LR	LR	08 26 19.8	
	comp=Z,95nm,20.1s,baz=90,slow=46						
MAT	**Matsushiro**	**1.96**	**273**	P	**Pn**	**08 25 24.1**	**+0.4**
MAT				S	**Sn**	**08 25 45.5**	**-1.6**
JHJ	**Hachijo jima 2**	**3.41**	**192**	Pn	**Pn**	**08 25 42.8**	**-0.7**
	4.3nm,0.3s,baz=66,slow=20,SNR=2.2						
JHJ				Sn	**Sn**	**08 26 24.2**	**+1.5**
	17nm,0.3s,baz=252,slow=20,SNR=3.9						
ASAJ	**Asahikawa**	**7.79**	**10**	Pn	**Pn**	**08 26 41.1**	**-2.5**
	1.2nm,0.3s,baz=208,slow=8.1,SNR=6.6						
USRK	**Usuriysk Ar.**	**10.16**	**322**	Pn	**Pn**	**08 27 19.1**	**+3.1**
	0.2nm,0.3s,baz=122,slow=13,SNR=5.0						
SONM	**Songino Array**	**27.59**	**305**	P	**P**	**08 30 35.1**	**-0.2**
	0.2nm,0.3s,baz=113,slow=11,SNR=2.9						
H11N2	**WAKE ISLAND Hy**	**28.41**	**119**	T	T	09 00 29.4	
	baz=313,slow=75						
H11N1	**WAKE ISLAND Hy**	**28.41**	**119**	T	T	09 00 42.7	
	baz=313,slow=75						
H11N3	**WAKE ISLAND Hy**	**28.42**	**119**	T	T	09 00 37.2	
	baz=313,slow=75						
H11S1	**WAKE ISLAND Hy**	**29.09**	**121**	T	T	09 01 34.3	
	baz=312,slow=76						
H11S3	**WAKE ISLAND Hy**	**29.09**	**121**	T	T

FITZ	**Fitzroy Crossi**	**29.91**	**240**	LR	LR	09 06 31.0			
	comp=Z,888nm,20.6s,baz=157,slow=36								
PETK	**Petropavlovsk-**	**57.00**	**4**	LR	LR	09 20 12.5			
	comp=Z,40nm,19.2s,baz=98,slow=33								
TORD	**Torodi Ar. Bea**	**149.85**	**289**	PKPbc	PKPbc	09 08 25.5	-1.1		
	0.5nm,0.7s,baz=66,slow=2.2,SNR=4.1								

*ISCJB **26** 08:57:41.9±0.5, 37°.20N±0°.03×28°.17E±0°.04, h0km, Error ellipse: s-maj=5.8km s-min=3.4km az=40.3*
*DDA **26** 08:57:41.6, 37°.22N×28°.17E, h7km, Md2.6, Suspected Mining explosion.*
*ISK **26** 08:57:41.3, 37°.22N×28°.17E, h2km, MD2.5*
*CSEM **26** 08:57:42.1±0.3, 37°.21N×28°.18E, h1km, MD2.5, Error ellipse: s-maj=9.9km s-min=5.7km az=40.0, Suspected Mining explosion.*

ISC 26 08:57:40.4±0.8, 37°.10N±0°.05×28°.05E±0°.04, h0km, n13, σ0s60/22, Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
YER	**Yerkesik**	**0.19**	**80**	*e*PG	**Pg**	**08 57 44.4**	**+0.3**
BDRM	**Kayabasi**	**0.48**	**266**	*i* P	**Pn**	**08 57 53.4**	**-1.2**
BDRM				*i* S	**Sb**	**08 58 01.0**	**+1.4**
BDRM	**Kayabasi**	**0.48**	**266**	P	**Pn**	**08 57 53.4**	**-1.2**
TURN	**Turunc**	**0.50**	**117**	*i* P	**Pg**	**08 57 50.0**	**0.0**
TURN				*i* S	**Sg**	**08 57 57.5**	**+1.0**
TURN	**Turunc**	**0.50**	**117**	P	**Pg**	**08 57 50.0**	**0.0**
DALY	**Dalyan (Mu˘la**	**0.56**	**120**	*e*PG	**Pb**	**08 57 53.1**	**0.0**
DALY				*e*SG	**Sb**	**08 58 01.5**	**-0.1**
DALY	**Dalyan (Mu˘la**	**0.56**	**120**	*e*Pg	**Pb**	**08 57 53.1**	**0.0**
DALY				*e*Sg	**Sb**	**08 58 01.5**	**-0.1**
AYDN	**Tasoluk**	**0.58**	**346**	*i* P	**Pg**	**08 57 51.7**	**+0.2**
AYDN				*i* S	**Sg**	**08 57 59.0**	**+0.1**
AYDN	**Tasoluk**	**0.58**	**346**	P	**Pg**	**08 57 51.7**	**+0.2**
AYDN				S	**Sg**	**08 57 59.0**	**+0.1**
BODT	**Bodrum**	**0.59**	**267**	*e*PG	**Pn**	**08 57 55.8**	**-0.3**
BODT				*e*SG	**Sn**	**08 58 06.3**	**-0.2**
BODT	**Bodrum**	**0.59**	**267**	*e*Pg	**Pn**	**08 57 55.8**	**-0.3**
BODT				*e*Sg	**Sn**	**08 58 06.3**	**-0.2**
AYDB	**Zeytinkoy-Aydi**	**0.85**	**352**	*e*PG	**Pg**	**08 57 56.9**	**+0.1**
AYDB				*e*SG	**Sg**	**08 58 08.2**	**+0.3**
FETY	**Fethiye**	**0.95**	**119**	*e*PG	**Pb**	**08 58 00.1**	**+0.3**

IDC 26 09:10:14.1±24.0, 17°.46S×177°.30W, h460km±212km, mb3.3/5, mb1 3.5/5, mb1mx3.0/42, mbtmp4.2/5, Error ellipse: s-maj=167.8km s-min=80.8km az=89.0, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CTA	**Charters Tower**	**34.56**	**260**	P	P	09 16 22.8	-0.4
	4.2nm,0.8s,baz=90,slow=9.1,SNR=3.6						
STKA	**Stephens Creek**	**39.77**	**241**	P	P	09 17 07.1	+1.1
	1.5nm,0.6s,baz=97,slow=8.1,SNR=7.4						
WRA	**Warramunga Arr**	**45.76**	**259**	P	P	09 17 53.6	+0.2
	1.4nm,0.4s,baz=94,slow=7.0,SNR=50						
WRA				PcP	pP	09 19 20.8	-0.4
	0.1nm,0.3s,baz=90,slow=3.5,SNR=4.1						
ASAR	**Alice Springs**	**45.93**	**254**	P	P	09 17 54.9	+0.2
	3.3nm,0.5s,baz=91,slow=8.0,SNR=83						
ASAR				PcP	PcP	09 19 21.3	-1.3
	0.3nm,0.5s,baz=108,slow=4.2,SNR=4.2						
FITZ	**Fitzroy Crossi**	**54.15**	**260**	P	P	09 18 54.2	-1.1
	0.7nm,0.4s,baz=75,slow=5.3,SNR=3.8						
BRTR	**Keskin Array B**	**145.21**	**316**	PKPbc	PKPab	09 29 00.5	-0.1
	0.4nm,0.5s,baz=103,slow=3.0,SNR=3.9						

*IDC **26** 09:20:53.4±6.5, 36°.10N×140°.39E, h60km±49km, mb3.3/3, mb1 3.4/3, mb1mx3.0/56, mbtmp3.6/3, Error ellipse: s-maj=61.3km s-min=27.2km az=59.0*
*ISCJB **26** 09:20:54.1±0.8, 35°.97N±0°.04×140°.15E±0°.08, h73km±6km, mb3.5/3, Error ellipse: s-maj=10.2km s-min=7.0km az=7.0*
*JMA **26** 09:20:56.0±0.1, 36°.03N×140°.08E, h62km±1km, M2.9*

ISC 26 09:20:55.1±1.1, 35°.98N±0°.05×140°.14E±0°.07, h67km±8km, n13, σ0s64/21, mb3.6/3, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JYT	**Yasato**	**0.25**	**11**	P	**Pn**	**09 21 05.9**	**+0.3**
JYT				S	**Sn**	**09 21 13.1**	**-0.2**
JAG	**Ashikaga**	**0.71**	**309**	P	**Pn**	**09 21 10.0**	**+0.1**
JAG				S	**Sn**	**09 21 20.3**	**-0.5**
JRY	**Ryogami san**	**1.00**	**273**	P	**Pn**	**09 21 13.7**	**+0.2**
JRY				*e*S	**Sn**	**09 21 27.4**	**+0.3**
JKT	**Katashina**	**1.06**	**318**	S	**Sn**	**09 21 28.4**	**-0.3**
JOD2	**Odawara 2**	**1.11**	**230**	P	**Pn**	**09 21 15.3**	**+0.4**
JOD2				S	**Sn**	**09 21 29.1**	**-0.5**
JYN	**Shimob**	**1.38**	**250**	P	**Pn**	**09 21 19.3**	**+0.9**
JYN				*e*S	**Sn**	**09 21 36.1**	**+0.1**
JFY	**Yanaizu**	**1.47**	**346**	P	**Pn**	**09 21 20.3**	**+0.7**
JFY				S	**Sn**	**09 21 38.4**	**+0.4**
MJAR	**Matsushiro Arr**	**1.66**	**290**	P	**Pn**	**09 21 21.8**	**-0.3**
	13nm,0.3s,baz=93,slow=10,SNR=124						
MJAR				S	**Sn**	**09 21 43.8**	**+1.4**
	3.3nm,0.3s,baz=66,slow=35,SNR=7.7						
MAT	**Matsushiro**	**1.66**	**290**	P	**Pn**	**09 21 22.8**	**+0.7**
MAT				S	**Sn**	**09 21 41.3**	**-1.2**
JHJ	**Hachijo jima 2**	**2.87**	**186**	S	**Sn**	**09 22 12.0**	**+0.2**
	8.2nm,0.3s,baz=98,slow=22,SNR=3.4						
MKAR	**Makanchi Array**	**43.82**	**303**	P	**P**	**09 28 54.5**	**+0.1**
	0.2nm,0.3s,baz=108,slow=9.3,SNR=3.8						
KURBB	**Kurchatov Arra**	**45.85**	**309**	P	**P**	**09 29 09.7**	**-0.7**
	1.2nm,0.8s,baz=85,slow=8.0,SNR=8.2						
WRA	**Warramunga Arr**	**55.88**	**187**	P	**P**	**09 30 25.8**	**-0.3**
	0.4nm,0.6s,baz=1.2,slow=7.6,SNR=6.4						

*ISCJB **26** 09:25:17.9±0.8, 6°.84N±0°.04×73°.12W±0°.05, h157km±7km, Error ellipse: s-maj=10.2km s-min=5.1km az=36.7*
*FUNV **26** 09:25:18.1, 6°.72N×73°.11W, h168km, MW2.6*
*RSNC **26** 09:25:20.1±1.0, 6°.80N×73°.15W, h144km±7km, ML2.3*

ISC 26 09:25:17.6±1.5, 6°.81N±0°.05×73°.10W±0°.06, h159km±9km, n17, σ1s05/28, 1C, Northern Colombia

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
BARC	**Barichara**	**0.23**	**201**	*e*P	**Pn**	**09 25 39.4**	**-0.1**
BARC				*e*S	**Sn**	**09 25 54.5**	**-1.7**
BARC				*i*		09 25 57.0	
	comp=Z,57nm,0.3s						
PAMC	**Pamplona, Colo**	**0.66**	**37**	*e*P	**Pn**	**09 25 42.4**	**+0.9**
PAMC				*e*S	**Sn**	**09 25 59.1**	**-0.6**
PAMC				*i*		09 26 01.9	
	comp=Z,11nm,0.5s						
BRRC	**Barranca, Sant**	**0.68**	**296**	⇑*i*P	**Pn**	**09 25 41.2**	**+0.1**
BRRC				*e*S	**Sn**	**09 25 57.9**	**-1.0**
BRRC				*i*		09 26 02.0	
	comp=Z,85nm,0.2s						
RUSC	**La Rusia**	**0.91**	**179**	*e*P	**Pn**	**09 25 43.4**	**+0.1**
RUSC				*e*S	**Sn**	**09 26 02.2**	**-0.6**
RUSC				*i*		09 26 04.5	
	comp=Z,35nm,0.3s						
CBRI	**Barrientos, No**	**0.95**	**18**	*e*P	**Pn**	**09 25 45.0**	**+1.9**
CBRI				*i*		09 26 07.8	
	comp=Z,14nm,0.3s						
GRMC	**Gramalote, San**	**0.95**	**18**	*e*P	**Pn**	**09 25 45.2**	**+2.1**
GRMC				*i*		09 26 09.2	
	comp=Z,20nm,0.3s						
CAPV	**Capacho**	**1.30**	**37**	*e*P	**Pn**	**09 25 47.4**	**+1.1**
CAPV				*e*S	**Sn**	**09 26 09.4**	**+1.1**
OCAC	**Ocana**	**1.44**	**351**	*e*P	**Pn**	**09 25 47.5**	**0.0**
OCAC				*e*S	**Sn**	**09 26 10.1**	**-0.4**
OCAC				*i*		09 26 14.0	
	comp=Z,40nm,0.3s						
NORC	**Norcasia**	**2.15**	**235**	*e*P	**Pn**	**09 25 55.3**	**+0.1**
NORC				*e*S	**Sn**	**09 26 23.5**	**-0.6**
CHIC	**Chingaza**	**2.26**	**196**	*e*P	**Pn**	**09 25 57.8**	**+1.0**
CHIC				*e*S	**Sn**	**09 26 27.1**	**+0.1**
CHIC				*i*		09 26 30.2	
	comp=Z,21nm,0.4s						
HELC	**Santa Helena**	**2.49**	**256**	*e*P	**Pn**	**09 26 01.1**	**+1.6**
HELC				*e*S	**Sn**	**09 26 30.9**	**-0.9**
HELC				*i*		09 26 38.9	
	comp=Z,24nm,0.5s						
VIGV	**El Vigia**	**2.65**	**40**	*e*P	**Pn**	**09 26 02.2**	**+1.1**
SOCV	**Socops**	**2.66**	**56**	*e*P	**Pn**	**09 26 01.7**	**+0.4**
SOCV				*e*S	**Sn**	**09 26 33.8**	**-1.2**
PRAC	**Prado**	**3.55**	**210**	*e*P	**Pn**	**09 26 13.3**	**+0.8**
VIRV	**Villa del Rosa**	**3.73**	**11**	*e*P	**Pn**	**09 26 14.6**	**-0.1**
VIRV				*e*S	**Sn**	**09 26 57.9**	**-1.3**
CURV	**Curarigua**	**4.45**	**44**	*e*P	**Pn**	**09 26 24.6**	**+0.5**
BAUV	**El Baul**	**5.44**	**67**	*e*P	**Pn**	**09 26 36.6**	**-0.4**

*SOME **26** 09:26:40.8, 39°.07N×73°.73E, h15km*
*IDC **26** 09:26:44.3±6.6, 38°.20N×73°.94E, h172km±56km, mb3.1/1, mb1 3.0/7, mb1mx2.8/57, mbtmp3.6/7, Error ellipse: s-maj=64.6km s-min=43.9km az=162.0*
*NNC **26** 09:26:46.0±2.8, 38°.41N×73°.63E, h174km±14km, mb2.6, mpv3.6, Error ellipse: s-maj=26.1km s-min=22.9km az=107.0*
*ISCJB **26** 09:26:46.0±1.3, 38°.37N±0°.08×73°.56E±0°.07, h140km, mb3.3/1, Error ellipse: s-maj=10.8km s-min=8.0km az=178.4*

ISC 26 09:26:44.2±1.7, 38°.3N±0°.1×73°.46E±0°.07, h140km, n27, σ2s67/38, 13C-4D, Tajikistan-Xinjiang border region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SFK	**Sufi-Kurgan**	**1.76**	**1**	⇑P	**Pn**	**09 27 18.6**	**+2.5**
	14nm,0.4s						
SFK				⇓S	**Sn**	**09 27 44.2**	**+3.6**
	200nm,0.4s						
AML	**Almayashu**	**3.88**	**3**	⇑*i*P	Pn	09 27 50.9	+8.0
	baz=241						
UCH	**Uchtor**	**4.05**	**11**	⇓*i*P	**Pn**	**09 27 46.4**	**+1.2**
	baz=126						
KZA	**Kyzart**	**4.06**	**19**	⇑*i*P	Pn	09 27 56.6	+11
	baz=111						
MNAS	**Manas**	**4.29**	**350**	⇓P	**Pn**	**09 27 49.9**	**+1.8**
	6.5nm,0.5s						
MNAS				⇑S	**Sn**	**09 28 39.0**	**+1.2**
	52nm,0.7s						
AAK	**Ala-Archa**	**4.45**	**10**	P	**Pn**	**09 27 52.7**	**+2.5**
	3.2nm,0.3s,baz=320,slow=22,SNR=29						
AAK				S	**Sn**	**09 28 42.6**	**+1.2**
	0.9nm,0.3s,baz=328,slow=16,SNR=3.8						
AAK	**Ala-Archa**	**4.45**	**10**	⇑*i*P	**Pn**	**09 27 48.1**	**-2.0**
	baz=35						
AAK	**Ala-Archa**	**4.45**	**10**	⇓P	**Pn**	**09 27 47.9**	**-2.2**
	1.9nm,0.2s						
AAK				⇑S	**Sn**	**09 28 42.8**	**+1.3**
	9.9nm,0.7s						
JBG	**Jabagly**	**4.46**	**20**	*e*P	Pn	09 27 57.3	+7.0
	25nm,0.4s						
JBG				*e*S	**Sn**	**09 28 50.4**	**+8.6**
	117nm,0.4s						
MRKS	**Merke**	**4.49**	**358**	*e*P	**Pn**	**09 27 52.6**	**+1.9**
	24nm,0.5s						
MRKS				*e*S	**Sn**	**09 28 42.5**	**+0.1**
	59nm,0.5s						
IUG	**Iuzhnay**	**4.69**	**327**	*e*P	**Pn**	**09 27 56.7**	**+3.3**
	42nm,0.4s						
IUG				*e*S	**Sn**	**09 28 49.5**	**+2.2**
	174nm,0.6s						
TKM2	**Tokmak 2**	**4.94**	**19**	⇑P	**Pn**	**09 27 56.7**	**0.0**
	8.2nm,0.6s						
TKM2				⇑S	**Sn**	**09 28 52.8**	**-0.4**
	12nm,0.7s						
USP	**Ospenovka**	**5.07**	**9**	⇑*i*P	**Pn**	**09 27 58.7**	**+0.4**
	baz=12						
BMNS	**Besmoynak**	**5.13**	**18**	*e*P	**Pn**	**09 27 59.8**	**+0.6**
	27nm,0.6s						
BMNS				*e*S	**Sn**	**09 28 54.8**	**-3.0**
	47nm,0.9s						
KST	**Kastek**	**5.15**	**21**	*e*P	**Pn**	**09 28 01.6**	**+2.2**
	2.7nm,0.1s						
KST				*e*S	**Sn**	**09 28 57.7**	**-0.4**
	31nm,0.5s						
DGS	**Degeres**	**5.28**	**19**	*e*P	**Pn**	**09 28 02.3**	**+1.1**
KK31	**Karatay Array**	**5.34**	**336**	⇑P	**Pn**	**09 28 03.7**	**+1.8**
	2.7nm,0.4s,baz=155,slow=14,SNR=30						
KK31				⇑S	**Sn**	**09 29 03.3**	**+0.8**
	22nm,0.5s,baz=146,slow=22,SNR=39						
BRLS	**Borolday**	**5.37**	**329**	*e*P	**Pn**	**09 28 04.6**	**+2.4**
	1.0nm,0.5s						
BRLS				*e*S	**Sn**	**09 29 02.9**	**-0.3**
	29nm,0.5s						
TNSS	**Tian-Shan**	**5.47**	**28**	*e*P	**Pn**	**09 28 03.4**	**-0.6**
	2.3nm,0.7s						
MKAR	**Makanchi Array**	**10.73**	**34**	P	**Pn**	**09 29 11.0**	**-3.0**
	0.1nm,0.3s,baz=207,slow=9.1,SNR=1.6						
KURBB	**Kurchatov Arra**	**12.88**	**15**	P	**Pn**	**09 29 39.0**	**-2.9**
	0.0nm,0.3s,baz=200,slow=12,SNR=5.4						
AB31	**Akbulak array**	**14.69**	**323**	P	**Pn**	**09 30 05.7**	**+0.8**
	0.9nm,0.6s,baz=132,slow=12,SNR=12						
AB31				⇑S	**Sn**	**09 32 41.4**	**-6.1**
	1.7nm,0.8s,baz=148,slow=22,SNR=8.2						
BVAR	**Borovoye Array**	**14.93**	**353**	P	**Pn**	**09 30 08.9**	**+1.0**
	0.6nm,0.3s,baz=157,slow=11,SNR=12						
AKTO	**Aktyubinsk**	**16.40**	**323**	P	**P**	**09 30 28.8**	**+2.5**
	baz=121,slow=17						
AKTO				S	**Sn**	**09 33 24.9**	**-3.9**
	0.3nm,0.3s,baz=65,slow=20,SNR=3.1						
AKTO	**Aktyubinsk**	**16.40**	**323**	⇑P	**P**	**09 30 28.2**	**+1.8**
	3.6nm,1.2s						
ZALV	**Zalesovo Beam**	**17.52**	**23**	P	**P**	**09 30 37.1**	**-1.6**
	0.3nm,0.3s,baz=224,slow=12,SNR=4.5						
TORD	**Torodi Ar. Bea**	**67.71**	**269**	P	**P**	**09 37 25.0**	**-1.7**
	0.3nm,0.5s,baz=38,slow=5.5,SNR=2.2						

IDC 26 09:28:35.3±5.4, 85°.36N×13°.58E, h0km, mb3.4/3, mb1 3.5/4, mb1mx3.2/53, mbtmp3.4/4, ML3.1/1, Error ellipse: s-maj=246.3km s-min=27.3km az=62.0, North of Svalbard

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ARCES	**ARCESS Array B**	**16.05**	**165**	Pn	Pn	09 32 19.7	-2.2
	0.1nm,0.3s,baz=350,slow=10,SNR=4.0						
FINES	**FINESS Array B**	**24.18**	**165**	P	P	09 33 52.0	-0.7
	0.7nm,0.7s,baz=355,slow=15,SNR=2.6						
YKA	**Yellowknife Ar**	**30.75**	**314**	P	P	09 34 51.4	-0.1
	0.2nm,0.9s,baz=14,slow=7.7,SNR=3.7						
TORD	**Torodi Ar. Bea**	**72.37**	**192**	P	P	09 40 03.0	+0.4
	0.8nm,0.7s,baz=356,slow=5.8,SNR=6.6						

*IDC **26** 09:33:17.7±8.0, 36°.39N×71°.29E, h94km±56km, mb2.9/2, mb1 3.2/5, mb1mx3.0/46, mbtmp3.6/5, ML3.7/3, Error ellipse: s-maj=92.0km s-min=36.3km az=141.0*
*NNC **26** 09:33:20.9±3.6, 37°.02N×70°.74E, h0km, mb4.0, mpv3.6, Error ellipse: s-maj=41.2km s-min=24.5km az=133.0*

ISC 26 09:33:19.8±1.8, 36°.6N±0°.2×71°.0E±0°.2, h100km, n9, σ1s25/13, 5C-1D, Afghanistan-Tajikistan border region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SFK	**Sufi-Kurgan**	**3.95**	**29**	⇑P	**Pn**	**09 34 19.5**	**+0.9**
	3.5nm,0.3s						
SFK				⇑S	**Sn**	**09 35 05.6**	**+1.6**
	3.7nm,0.2s						
MNAS	**Manas**	**6.01**	**11**	⇑P	**Pn**	**09 34 45.8**	**-0.5**
	1.7nm,0.4s						
MNAS				⇑S	**Sn**	**09 35 52.6**	**-1.3**
	5.2nm,0.3s						
KK31	**Karatay Array**	**6.53**	**357**	P	**Pn**	**09 34 53.4**	**+0.2**
	2.8nm,0.2s,baz=175,slow=12,SNR=89						
AAK	**Ala-Archa**	**6.62**	**23**	P	**Pn**	**09 34 54.5**	**-0.1**
	3.2nm,0.3s,baz=144,slow=4.4,SNR=15						
AAK				S	**Sn**	**09 36 07.7**	**-0.9**
	0.6nm,0.3s,baz=320,slow=23,SNR=8.3						
AAK	**Ala-Archa**	**6.62**	**23**	⇑P	**Pn**	**09 34 54.0**	**-0.7**
	2.8nm,0.3s						
AAK				⇓S	**Sn**	**09 36 07.9**	**-0.8**
	2.1nm,0.4s						
AKTO	**Aktyubinsk**	**16.71**	**330**	P	**P**	**09 37 10.9**	**+2.6**
	0.3nm,0.3s,baz=136,slow=12,SNR=3.0						
ZALV	**Zalesovo Beam**	**19.84**	**25**	P	**P**	**09 37 41.8**	**-0.7**
	0.5nm,0.3s,baz=229,slow=11,SNR=3.8						
TORD	**Torodi Ar. Bea**	**65.72**	**269**	P	**P**	**09 43 53.2**	**-0.9**
	0.2nm,0.4s,baz=32,slow=4.4,SNR=3.2						
YKA	**Yellowknife Ar**	**81.17**	**3**	P	**P**	**09 45 23.8**	**-0.1**
	0.1nm,0.5s,baz=348,slow=5.5,SNR=4.2						

GUC 26 09:37:53.2±0.6, 34°.39S×72°.14W, h34km±5km, ML3.6, 1C-2D, Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
TALC	**Talca**	**1.08**	**158**	⇓*i*P	Pb	09 38 13.7	+0.2
TALC				*i* S	Sb	09 38 28.3	+0.9
ANTU	**Antumapu**	**1.50**	**57**	*e*P	Pn	09 38 18.5	+0.8
ANTU				*i* S	Sn	09 38 37.0	+0.9
ANTU				IAML		09 38 39.8	
	comp=N,1μm,0.6s						
CLCH	**Cerro Calan**	**1.66**	**54**	⇓*i*P	Pn	09 38 21.1	+1.0
CLCH				*i* S	Sn	09 38 41.8	+1.5
CLCH				IAML		09 38 44.3	
	comp=E,2μm,0.8s						
ROCH	**El Roble**	**1.70**	**34**	*e*P	Pn	09 38 20.4	-0.3
ROCH				*e*S	Sn	09 38 42.5	+1.1
ROCH				IAML		09 38 50.5	
	comp=E,866nm,0.5s						
PEL	**Peldehue**	**1.74**	**45**	⇑*i*P	Pn	09 38 22.2	+1.2
PEL				*i* S	Sn	09 38 43.7	+1.7
PEL				IAML		09 38 49.8	
	comp=N,798nm,0.6s						
COCH	**Cobquecura**	**1.81**	**197**	*e*P	Pn	09 38 22.4	+0.4
COCH				*i* S	Sn	09 38 45.3	+1.4
COCH				IAML		09 38 55.6	
	comp=E,825nm,0.8s						
CCHI	**Chillan**	**2.21**	**179**	IAML		09 39 07.2	
	comp=E,997nm,0.4s						

*ISCJB **26** 09:38:10.4±0.6, 10°.80N±0°.04×62°.11W±0°.04, h74km±8km, Error ellipse: s-maj=8.2km s-min=4.7km az=149.5*
*FUNV **26** 09:38:12.6, 10°.67N×62°.01W, h33km, MW3.1*
*TRN **26** 09:38:12.8, 10°.86N×62°.07W, h55km, MD3.7*

ISC 26 09:38:10.1±1.3, 10°.73N±0°.04×62°.07W±0°.04, h84km±10km, n16, σ1s69/29, Near coast of Venezuela

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
TCE	**Chacachacare**	**0.32**	**95**	*e*P	**Pn**	**09 38 23.0**	**+0.1**
TCE				*e*S	**Sn**	**09 38 30.6**	**-2.0**
TRN	**Trinidad (W)**	**0.66**	**97**	*e*P	**Pn**	**09 38 26.6**	**+0.9**
TRN				*e*S	**Sn**	**09 38 36.4**	**-0.9**
TPP	**Pointe-a-Pierr**	**0.73**	**124**	*e*P	**Pn**	**09 38 28.4**	**+1.9**
TPP				*e*S	**Sn**	**09 38 40.0**	**+1.3**
GUNV	**Guanoco**	**1.02**	**237**	*e*P	**Pn**	**09 38 30.7**	**+1.0**
GUNV				*e*S	**Sn**	**09 38 44.4**	**0.0**
CRUV	**Carupano**	**1.15**	**268**	*e*P	**Pn**	**09 38 31.4**	**+0.2**
CRUV				*e*S	**Sn**	**09 38 46.2**	**-0.7**
BOT	**Bacolet**	**1.40**	**72**	*e*P	**Pn**	**09 38 36.1**	**+1.8**
BOT				*e*S	**Sn**	**09 38 53.2**	**+0.6**
GRGR	**Grenville**	**1.46**	**16**	*e*P	**Pn**	**09 38 34.5**	**-0.6**
GRGR				*e*S	**Sn**	**09 38 51.6**	**-2.3**
TOSP	**Speyside**	**1.61**	**69**	*e*P	**Pn**	**09 38 37.7**	**+0.7**
TOSP				*e*S	**Sn**	**09 38 57.1**	**-0.4**
ORIV	**Oritupano**	**2.11**	**219**	*e*P	**Pn**	**09 38 44.9**	**+1.3**
SVB	**Belmont**	**2.66**	**18**	*e*P	**Pn**	**09 38 52.0**	**+1.1**
SVB				*e*S	**Sn**	**09 39 20.5**	**-1.8**
SVV	**Soufriere Volc**	**2.71**	**18**	*e*P	**Pn**	**09 38 53.2**	**+1.5**
GURV	**El Guri**	**3.11**	**199**	*e*P	**Pn**	**09 38 58.0**	**+0.9**
GURV				*e*S	**Sn**	**09 39 31.1**	**-2.1**
CUPV	**Cœpira**	**3.71**	**260**	*e*P	**Pn**	**09 39 07.8**	**+2.5**
CUPV				*e*S	**Sn**	**09 39 47.8**	**-0.2**
BIRV	**Birongo**	**4.13**	**267**	*e*P	**Pn**	**09 39 13.1**	**+2.2**
LUEV	**Luepa**	**4.89**	**173**	*e*P	**Pn**	**09 39 21.8**	**+0.4**
LUEV				*e*S	**Sn**	**09 40 12.8**	**-4.0**
BAUV	**El Baul**	**6.14**	**254**	*e*P	**Pn**	**09 39 39.7**	**+1.4**
BAUV				*e*S	**Sn**	**09 40 44.7**	**-2.5**

*IDC **26** 09:59:53.3±1.1, 4°.38S×122°.84E, h0km, mb3.9/5, mb1 4.0/8, mb1mx3.7/63, mbtmp3.9/8, ML3.4/3, MS2.9/1, Ms1 2.9/1, ms1mx2.4/50, Error ellipse: s-maj=33.2km s-min=19.4km az=58.0*
*ISCJB **26** 09:59:55.8±0.6, 4°.32S±0°.07×122°.87E±0°.05, h33km, mb4.0/5, Error ellipse: s-maj=11.9km s-min=5.5km az=150.1*
*DJA **26** 09:59:58.5±0.4, 4°.S±5°.×12°.3E±°., h56km±18km, M4.1/10, mB5.2/2, mb4.6/2, MLv3.9/10, Mw(mB)4.5/2*

ISC 26 09:59:58.3±0.9, 4°.17S±0°.09×122°.71E±0°.06, h35km, n16, σ2s09/17, mb4.0/5, Sulawesi

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SPSI	**Sidrap Palu**	**2.94**	**274**	P	**Pn**	**10 00 42.3**	**-0.2**
BSSI	**Bau Bau, Buton**	**2.95**	**228**	P	**Pn**	**10 00 41.4**	**-1.3**
BSSI				S	**Sn**	**10 01 16.7**	**-0.3**
KAPI	**Kappang**	**3.06**	**254**	Pn	**Pn**	**10 00 44.8**	**+0.6**
	7.2nm,0.3s,baz=131,slow=7.5,SNR=16						
KAPI				Sn	**Sn**	**10 01 22.4**	**+2.7**
	8.8nm,0.3s,baz=294,slow=21,SNR=6.8						
TTSI	**Tana Toraja**	**3.09**	**291**	P	**Pn**	**10 00 42.6**	**-2.0**
SANI	**Sanana**	**3.90**	**57**	P	**Pn**	**10 00 57.8**	**+2.0**
SANI				S	**Sn**	**10 01 38.0**	**-2.3**
MRSI	**Marisa**	**4.68**	**351**	P	**Pn**	**10 01 04.7**	**-1.8**
LBMI	**Labuha**	**5.94**	**54**	P	**Pn**	**10 01 25.2**	**+1.3**
	25nm,0.8s,1μm0.1nm						
TNTI	**Ternate**	**6.77**	**44**	P	**Pn**	**10 01 34.1**	**-1.1**
DAV	**Davao City (W)**	**11.53**	**14**	LR	LR	10 07 23.5	
	comp=Z,63nm,21.4s,baz=248,slow=38						
FITZ	**Fitzroy Crossi**	**14.14**	**169**	Pn	Pn	10 03 09.8	-6.5
	0.1nm,0.3s,baz=345,slow=12,SNR=5.4						
WRA	**Warramunga Arr**	**19.35**	**145**	P	**P**	**10 04 18.1**	**-2.9**
	0.1nm,0.3s,baz=317,slow=13,SNR=18						
ASAR	**Alice Springs**	**22.19**	**152**	P	**P**	**10 04 49.3**	**-2.4**
	4.0nm,0.8s,baz=329,slow=12,SNR=36						
**

MJAR				LR	LR	10 06 13.4		
	comp=Z,217nm,20.7s,baz=85,slow=40							
MAJO	**Matsushiro**	**4.77 259**	*de*P	**Pn**	**10 04 14.4**	**+0.2**		
MAJO	**Matsushiro**	**4.77 259**	*e*Pn	**Pn**	**10 04 14.7**	**+0.5**		
MAJO			*e*Sn	**Sn**	**10 05 09.0**	**-0.3**		
MAT	**Matsushiro**	**4.77 259**	P	**Pn**	**10 04 14.1**	**-0.1**		
MAT			S	**Sn**	**10 05 08.1**	**-1.2**		
JHJ2	**Mitsune**	**5.67 219**	*e*Pn	**Pn**	**10 04 22.4**	**-4.0**		
JHJ2			*e*Sn	**Sn**	**10 05 29.0**	**-2.3**		
JHJ	**Hachijo jima 2**	**5.68 219**	Pn	**Pn**	**10 04 22.9**	**-3.8**		
	59nm,0.3s,baz=99,slow=23,SNR=16							
JHJ			Sn	Sn	10 05 22.3	-9.2		
	8.5nm,0.3s,baz=66,slow=19,SNR=4.3							
INU	**Inuyama**	**6.08 250**	*e*Pn	**Pn**	**10 04 32.7**	**+0.5**		
YUK	**Yuzh-Kuril'sk**	**6.55 12**	*e*P	**Pn**	**10 04 35.6**	**-3.0**		
YUK			pmax	pmax				
	comp=Z,96nm,0.5s							
ASAJ	**Asahikawa**	**6.57 351**	Pn	**Pn**	**10 04 38.5**	**-0.4**		
	comp=Z,5.2nm,0.3s,baz=195,slow=16,SNR=41							
ASAJ			Sn	**Sn**	**10 05 49.9**	**-3.6**		
	comp=Z,1.2nm,0.3s,baz=269,slow=30,SNR=4.3							
ASAJ			LR	LR	10 07 21.4			
	comp=Z,49nm,19.4s,baz=325,slow=39							
ASAJ	**Asahikawa**	**6.57 351**	*e*Pn	**Pn**	**10 04 38.2**	**-0.7**		
ASAJ			*e*Sn	**Sn**	**10 05 50.8**	**-2.7**		
SHO	**Shikotan**	**6.59 18**	*e*P	Pn	10 04 35.3	-3.8		
SHO			pmax	pmax				
	comp=Z,82nm,0.6s							
SHO			pmax	pmax				
	comp=E,36nm,0.3s							
SHO			pmax	pmax				
	comp=N,43nm,0.4s							
KUR	**Kuril'sk**	**8.13 20**	*e*P	**Pn**	**10 04 57.6**	**-2.6**		
KUR			pmax	pmax				
	comp=Z,13nm,0.9s							
YSS	**Yuzh-Sakhalins**	**9.37 355**⇑	*e*P	Pn	10 05 25.4	+8.2		
YSS			pmax	pmax				
	comp=Z,30nm,1.8s							
YSS	**Yuzh-Sakhalins**	**9.37 355**	*e*Pn	**Pn**	**10 05 16.9**	**-0.2**		
CBIJ	**Chichi jima**	**10.62 189**	*e*Pn	Pn	10 05 28.6	-5.8		
CBIJ			Sn	Sn	10 07 17.0	-16		
JCJ	**Chichijima**	**10.62 189**	Pn	Pn	10 05 26.6	-7.8		
	baz=283,slow=19							
JCJ			Sn	Sn	10 07 17.0	-16		
	comp=Z,6.9nm,0.3s,baz=270,slow=20,SNR=5.0							
USRK	**Ussuriysk Ar.**	**11.22 310**	Pn	**Pn**	**10 05 43.2**	**+0.6**		
	comp=Z,0.4nm,0.3s,baz=106,slow=14,SNR=7.6							
USRK			LR	LR	10 09 37.0			
	comp=Z,122nm,21.9s,baz=130,slow=35							
JNU	**Nakatsue**	**11.63 251**	LR	LR	10 10 26.1			
	comp=Z,59nm,18.5s,baz=116,slow=38							
KSRS	**Korea Array**	**12.78 274**	Pn	**Pn**	**10 06 06.8**	**+2.8**		
	comp=Z,0.2nm,0.3s,baz=88,slow=13,SNR=12							
KSRS			LR	LR	10 10 44.4			
	comp=Z,88nm,18.7s,baz=74,slow=36							
KSAR	**Wonju Array Be**	**12.81 274**	P	**Pn**	**10 06 06.8**	**+2.4**		
KSAR	**Wonju Array Be**	**12.81 274**	Pn	**Pn**	**10 06 06.8**	**+2.4**		
MDJ	**Mudanjiang**	**12.91 307**	P	**Pn**	**10 06 04.0**	**-1.8**		
MDJ			S	**Sn**	**10 08 25.5**	**-3.7**		
MDJ			pmax	pmax				
	comp=Z,4.0nm,0.7s							
MDJ			pmax	pmax				
	comp=Z,19nm,3.1s							
MDJ			LR	LR				
	comp=N,31nm,18.6s							
MDJ			LR	LR				
	comp=E,59nm,18.2s							
MDJ			LR	LR				
	comp=Z,86nm,21.6s							
MDJ	**Mudanjiang**	**12.91 307**	*e*Pn	**Pn**	**10 06 06.5**	**+0.7**		
KLR	**Kul'dur**	**14.60 326**	Pn	**P**	**10 06 34.3**	**-0.9**		
	comp=Z,0.2nm,0.3s,baz=148,slow=12,SNR=11							
KLR			LR	LR	10 11 58.2			
	comp=Z,64nm,18.6s,baz=144,slow=36							
NJ2	**Nanjing**	**21.36 262**	*e*P	**P**	**10 07 50.3**	**+0.7**		
NJ2			pmax	pmax				
	comp=Z,14nm,0.6s							
BJI	**Beijing**	**21.79 285**	P	**P**	**10 07 52.3**	**-1.8**		
BJI			pmax	pmax				
	comp=Z,7.0nm,1.3s							
BJI			pmax	pmax				
	comp=Z,76nm,3.0s							
HHC	**Hu-ho-hao-te**	**25.27 287**	*e*P	**P**	**10 08 28.8**	**+0.3**		
HHC			sP	sP	10 08 37.5	+2.5		
HHC			S	**S**	**10 12 47.8**	**-5.9**		
HHC			pmax	pmax				
	comp=Z,23nm,0.8s							
HHC			pmax	pmax				
	comp=Z,130nm,6.9s							
HHC			LR	LR				
	comp=N,1μm,13.6s							
HHC			LR	LR				
	comp=E,1μm,13.6s							
HHC			LR	LR				
	comp=Z,1μm,13.2s							
SEY	**Seymchan**	**25.85 9**	P	**P**	**10 08 33.9**	**+0.5**		
	comp=Z,4.6nm,0.7s,baz=189,slow=6.4,SNR=15							
SEY	**Seymchan**	**25.85 9**‖	*e*P	**P**	**10 08 34.3**	**+0.9**		
YAK	**Yakutsk**	**26.00 345**	LR	LR	10 18 47.8			
	comp=Z,24nm,18.1s,baz=168,slow=36							
YAK	**Yakutsk**	**26.00 345**	*e*P	**P**	**10 08 36.3**	**+1.5**		
YAK			pmax	pmax				
	comp=Z,7.0nm,0.8s							
H11N2	**WAKE ISLAND Hy**	**26.73 126**	T	T	10 36 22.0			
	baz=317,slow=75,SNR=22							
H11N1	**WAKE ISLAND Hy**	**26.74 126**	T	T	10 36 21.7			
	baz=317,slow=75,SNR=18							
H11N3	**WAKE ISLAND Hy**	**26.75 126**	T	T	10 36 23.9			
	baz=317,slow=75,SNR=24							
H11S1	**WAKE ISLAND Hy**	**27.50 128**	T	T	10 37 01.5			
	baz=318,slow=76,SNR=5.8							
H11S3	**WAKE ISLAND Hy**	**27.51 128**	T	T	10 37 21.6			
	baz=318,slow=76,SNR=4.7							
H11S2	**WAKE ISLAND Hy**	**27.52 128**	T	T	10 37 11.4			
	baz=318,slow=76,SNR=4.4							
BOD	**Bodaibo**	**28.18 325**	*e*P	**P**	**10 08 53.1**	**-1.3**		
BOD			pmax	pmax				
	comp=Z,4.0nm,1.2s							
ULN	**Ulaanbaatar**	**28.76 303**⇑	*i*P	**P**	**10 09 01.2**	**+1.3**		
ULN			pmax	pmax				
	comp=Z,7.0nm,1.7s							
SONM	**Songino Array**	**29.20 303**	P	**P**	**10 09 04.9**	**+1.1**		
	comp=Z,1.5nm,0.9s,baz=93,slow=8.1,SNR=9.4							
TLY	**Talaya**	**31.53 310**	*e*P	**P**	**10 09 27.7**	**+3.4**		
TLY			pmax	pmax				
	comp=Z,3.0nm,1.7s							
TLY			MLR	MLR				
	comp=Z,54nm,12.0s							
ZAK	**Zakamensk**	**31.55 307**	*e*P	**P**	**10 09 23.3**	**-1.2**		
ZAK			pmax	pmax				
	comp=Z,2.0nm,1.5s							
BILL	**Bilibino**	**32.89 15**⇑	*i*P	**P**	**10 09 35.6**	**-0.3**		
BILL			*e*		10 09 48.2			
BILL			*e*S	**S**	**10 14 56.6**	**+3.9**		
BILL			pmax	pmax				
	comp=Z,9.0nm,2.5s							
GYA	**Guiyang**	**33.37 261**	P	**P**	**10 09 42.3**	**+1.6**		
GYA			PP	**PnPn**	**10 10 53.5**	**+2.1**		
GYA			PcP	**PcP**	**10 12 25.0**	**+2.7**		
GYA			S	**S**	**10 15 00.8**	**-0.4**		
GYA			ScP	**ScP**	**10 16 06.8**	**+0.7**		
GYA			SS	**SnSn**	**10 17 03.0**	**+0.7**		
GYA	**Guiyang**	**33.37 261**	ScS	ScS	10 20 05.3	-1.9		
GYA			pmax	pmax				
	comp=Z,20nm,0.8s							
GYA			pmax	pmax				
	comp=Z,120nm,4.9s							
GYA			LR	LR				
	comp=N,540nm,15.6s							
GYA			LR	LR				
	comp=E,520nm,16.2s							
GYA			LR	LR				
	comp=Z,580nm,15.9s							
CD2	**Chengdu**	**33.75 271**	P	**P**	**10 09 42.8**	**-1.1**		
CD2			pmax	pmax				
	comp=Z,1.0nm,0.5s							
GTA	**Gaotai**	**34.38 287**	P	**P**	**10 09 51.8**	**+2.4**		
GTA			pP	sP	10 10 02.5	+6.6		
GTA			sP	pP	10 10 06.3	+12		
GTA			S	**S**	**10 15 17.0**	**+0.4**		
GTA			sS	sS	10 15 33.5	+9.2		
GTA			SS	**SnSn**	**10 17 30.0**	**+3.5**		
GTA			pmax	pmax				
	comp=Z,8.0nm,1.0s							
GTA			pmax	pmax				
	comp=Z,86nm,7.1s							
GTA			LR	LR				
	comp=N,220nm,15.2s							
GTA			LR	LR				
	comp=E,230nm,20.0s							
GTA			LR	LR				
	comp=Z,120nm,17.1s							
TIXI	**Tiksi**	**34.98 352**⇑‖	*e*P	**P**	**10 09 53.4**	**-0.5**		
TIXI			pmax	pmax				
	comp=Z,3.0nm,1.7s							
KMI	**Kunming**	**37.10 262**	P	**P**	**10 10 14.3**	**+1.3**		
KMI			pmax	pmax				
	comp=Z,7.0nm,0.6s							
KMI			pmax	pmax				
	comp=Z,54nm,4.6s							
MANU	**Manus Island**	**39.59 175**	*e*P	**P**	**10 10 35.8**	**+2.1**		
	comp=Z,242nm,0.1s							
WMQ	**Urumqi**	**42.43 297**	*e*P	**P**	**10 10 58.3**	**+1.4**		
WMQ			pP	sP	10 11 04.5	+1.0		
WMQ			sP	pP	10 11 07.5	+5.8		
WMQ			PP	**PP**	**10 12 40.0**	**+4.9**		
WMQ			PcP	**PcP**	**10 12 52.0**	**+2.2**		
WMQ			S	**S**	**10 17 18.8**	**+0.8**		
WMQ			sS	sS	10 17 28.8	+3.0		
WMQ			SS	**SS**	**10 20 22.0**	**-5.0**		
WMQ			ScS	**ScS**	**10 20 57.0**	**-1.2**		
WMQ			pmax	pmax				
	comp=Z,3.0nm,0.6s							
WMQ			pmax	pmax				
	comp=Z,89nm,4.4s							
WMQ			LR	LR				
	comp=N,13nm,16.8s							
WMQ			LR	LR				
	comp=E,32nm,18.8s							
WMQ			LR	LR				
	comp=Z,19nm,21.0s							
ZALV	**Zalesovo Beam**	**43.06 312**	P	**P**	**10 11 02.3**	**+0.5**		
	comp=Z,0.9nm,0.3s,baz=79,slow=7.7,SNR=4.8							
ZALV			PcP	**PcP**	**10 12 51.2**	**-0.4**		
	comp=Z,2.8nm,0.5s,baz=96,slow=3.9,SNR=7.2							
ZALV			LR	LR	10 28 39.0			
	comp=Z,30nm,18.2s,baz=68,slow=36							
NRIK	**Noril'sk**	**43.61 335**	LR	LR	10 30 02.2			
	comp=Z,36nm,20.7s,baz=78,slow=37							
CMAR	**Chiang Mai Arr**	**43.66 257**	P	**P**	**10 11 07.7**	**+0.6**		
	comp=Z,1.4nm,0.4s,baz=44,slow=7.2,SNR=4.5							
CMAR	**Chiang Mai Arr**	**43.66 257**	*i* P	**P**	**10 11 07.6**	**+0.5**		
CMAR			pmax	pmax				
	comp=Z,2.0nm,0.7s							
KDAK	**Kodiak Island**	**45.26 42**	*i* P	**P**	**10 11 19.3**	**-0.1**		
MKAR	**Makanchi Array**	**45.56 302**	P	**P**	**10 11 22.6**	**+0.6**		
	comp=Z,1.9nm,0.7s,baz=83,slow=10,SNR=11							
MKAR			PcP	**PcP**	**10 13 00.4**	**0.0**		
	comp=Z,0.3nm,0.3s,baz=75,slow=6.1,SNR=2.7							
MAKZ	**Makanchi**	**45.77 302**	*e*P	**P**	**10 11 24.3**	**+0.7**		
MAKZ			pmax	pmax				
	comp=Z,5.0nm,1.2s							
MAKZ	**Makanchi**	**45.77 302**	*e*P	**P**	**10 11 24.3**	**+0.7**		
	comp=Z,4.6nm,1.2s							
KURK	**Kurchatov**	**47.20 308**	*e*P	**P**	**10 11 34.4**	**-0.4**		
KURK			pmax	pmax				
	comp=Z,4.0nm,0.6s							
KURK	**Kurchatov**	**47.20 308**	*e*P	**P**	**10 11 34.4**	**-0.4**		
	comp=Z,3.9nm,0.6s							
KURBB	**Kurchatov Arra**	**47.27 308**	P	**P**	**10 11 35.5**	**+0.1**		
	baz=82,slow=8.3							
MDM	**Murphy Dome**	**47.30 32**	*e*P	**P**	**10 11 36.4**	**+0.9**		
	comp=Z,6.6nm,1.0s							
COLA	**College**	**47.46 33**⇑	*e*P	**P**	**10 11 37.1**	**+0.5**		
COLA			pmax	pmax				
	comp=Z,3.0nm,0.8s							
ILAR	**Eielson Array**	**47.88 33**	P	**P**	**10 11 39.7**	**-0.1**		
	comp=Z,2.7nm,0.7s,baz=263,slow=6.9,SNR=29							
TKM2	**Tokmak 2**	**51.17 299**	*e*P	**P**	**10 12 06.5**	**+1.0**		
TKM2			pmax	pmax				
	comp=Z,10.0nm,1.3s							
TKM2	**Tokmak 2**	**51.17 299**	*e*P	**P**	**10 12 06.5**	**+1.0**		
	comp=Z,10nm,1.3s							
BATI	**Baumata**	**51.27 206**	P	**P**	**10 12 04.9**	**-1.3**		
	comp=Z,6.9nm,0.5s,baz=270,slow=20,SNR=2.0							
BVAR	**Borovoye Array**	**51.71 312**	P	**P**	**10 12 09.7**	**+0.5**		
	comp=Z,2.0nm,0.8s,baz=79,slow=7.5,SNR=6.3							
BVAR			PcP	**PcP**	**10 13 22.4**	**-0.1**		
	comp=Z,1.1nm,0.5s,baz=64,slow=3.4,SNR=5.5							
BRVK	**Borovoye**	**51.76 312**⇑	*i* P	**P**	**10 12 09.2**	**-0.3**		
BRVK			pmax	pmax				
	comp=Z,2.0nm,0.6s							
AAK	**Ala-Archa**	**52.03 299**‖	*e*P	**P**	**10 12 12.2**	**+0.3**		
AAK			pmax	pmax				
	comp=Z,9.0nm,1.7s							
KSH	**Kashi**	**52.05 295**	*e*P	**P**	**10 12 16.0**	**+3.9**		
KSH			*e*pP	sP	10 12 22.5	+3.7		
KSH			*e*PP	**PP**	**10 14 15.3**	**+5.2**		
KSH			PcS	**PcS**	**10 17 25.0**	**+2.6**		
KSH			S	**S**	**10 19 36.5**	**+1.1**		
KSH	**Kashi**	**52.05 295**	SS	**SS**	**10 23 13.3**	**+1.1**		
KSH			pmax	pmax				
	comp=Z,190nm,5.2s							
KSH			LR	LR				
	comp=N,250nm,7.4s							
KSH			LR	LR				
	comp=E,140nm,6.4s							
KSH			LR	LR				
	comp=Z,170nm,6.5s							
ZRNK	**Zerenda**	**52.54 313**	*e*P	**P**	**10 12 16.0**	**+0.7**		
ZRNK			pmax	pmax				
	comp=Z,5.0nm,1.0s							
ZRNK	**Zerenda**	**52.54 313**	*e*P	**P**	**10 12 16.0**	**+0.7**		
	comp=Z,4.6nm,1.0s							
INK	**Inuvik**	**52.91 28**	P	**P**	**10 12 18.2**	**+0.4**		
	comp=Z,1.2nm,0.5s,baz=302,slow=7.2,SNR=16							
DLBC	**Dease Lake**	**56.87 39**	*e*P	**P**	**10 12 44.2**	**-2.5**		
	comp=Z,0.9nm,0.5s							
ARU	**Arti**	**57.29 319**	P	**P**	**10 12 48.7**	**-0.8**		
	comp=Z,5.2nm,0.2s,baz=87,slow=3.9,SNR=5.0							
ARU	**Arti**	**57.29 319***d*	*i* P	**P**	**10 12 50.0**	**+0.4**		
ARU			S	**S**	**10 20 45.2**	**+0.3**		
ARU			SS	**SS**	**10 24 30.7**	**-2.9**		
ARU			pmax	pmax				
	comp=Z,16nm,1.7s							
WRAB	**Tennant Creek**	**57.97 191**	*e*P	**P**	**10 12 51.3**	**-3.5**		
WRAB			pmax	pmax				
	comp=Z,5.0nm,1.0s							
WRAB	**Tennant Creek**	**57.97 191**	*e*P	**P**	**10 12 51.3**	**-3.5**		
	comp=Z,5.3nm,1.0s							
WRA	**Warramunga Arr**	**57.98 191**	P	**P**	**10 12 51.9**	**-2.9**		
	comp=Z,4.6nm,0.9s,baz=10,slow=7.3,SNR=16							
ABKAR	**Akbulak array**	**59.14 311**	*e*P	**P**	**10 13 02.8**	**+0.2**		
	comp=Z,0.9nm,0.4s							
AKTO	**Aktyubinsk**	**59.81 312**	P	**P**	**10 13 07.7**	**+0.4**		
	comp=Z,2.0nm,0.6s,baz=68,slow=13,SNR=5.6							
ASAR	**Alice Springs**	**61.71 191**	P	**P**	**10 13 18.6**	**-1.9**		
	comp=Z,1.7nm,0.8s,baz=16,slow=6.1,SNR=14							
YKA	**Yellowknife Ar**	**62.24 31**	P	**P**	**10 13 23.1**	**-0.4**		
	comp=Z,0.4nm,0.7s,baz=301,slow=6.4,SNR=8.5							
ARCES	**ARCESS Array B**	**64.16 340**	P	**P**	**10 13 37.1**	**+0.9**		
	comp=Z,1.2nm,0.8s,baz=64,slow=8.2,SNR=3.7							
STKA	**Stephens Creek**	**69.19 182**	P	**P**	**10 14 06.5**	**-2.1**		
	comp=Z,0.5nm,0.7s,baz=331,slow=11,SNR=3.2							
FINES	**FINESS Array B**	**69.24 333**	P	**P**	**10 14 08.7**	**-0.1**		
	comp=Z,1.9nm,0.6s,baz=66,slow=6.9,SNR=7.9							
ZEI	**Tsey**	**72.01 310**	*e*P	**P**	**10 14 24.4**	**-1.9**		
ZEI			pmax	pmax				
	comp=Z,4.0nm,0.6s							
KIV	**Kislovodsk**	**72.07 312**‖	*e*P	**P**	**10 14 28.3**	**+1.9**		
KIV			pmax	pmax				
	comp=Z,7.0nm,0.7s							
KBZ	**Khabaz**	**72.08 312**	P	**P**	**10 14 27.2**	**+0.9**		
	comp=Z,3.7nm,0.8s,baz=72,slow=5.2,SNR=9.8							
NEY	**Neytrino**	**72.46 311**⇑	*e*P	**P**	**10 14 30.3**	**+1.4**		
NEY			pmax	pmax				
	comp=Z,1.0nm,1.1s							
NVAR	**Mina Array Bea**	**72.96 54**	P	**P**	**10 14 31.6**	**-0.4**		
	comp=Z,0.5nm,0.3s,baz=304,slow=9.7,SNR=2.8							
HFS	**Hagfors**	**74.38 337**	P	**P**	**10 14 40.0**	**+0.3**		
	comp=Z,1.6nm,0.4s,baz=32,slow=8.7,SNR=7.6							
HFS			LR	LR	10 52 03.7			
	comp=Z,70nm,18.6s,baz=340,slow=40							
HFS	**Hagfors**	**74.38 337**	P	**P**	**10 14 40.0**	**+0.3**		
HFS			pmax	pmax				
	comp=Z,2.0nm,0.4s							
HFS			MLR	MLR				
	comp=Z,70nm,18.6s							
NB2	**NORSAR Subarra**	**74.42 338**	P	**P**	**10 14 39.6**	**-0.3**		
	comp=Z,0.9nm,0.6s,baz=38,slow=5.9							
NOA	**NORSAR Array B**	**74.42 338**	P	**P**	**10 14 40.0**	**+0.1**		
	comp=Z,1.9nm,0.7s,baz=38,slow=5.9,SNR=6.4							
NOA			LR	LR	10 51 55.1			
	comp=Z,16nm,18.2s,baz=10.0,slow=39							
NWAO	**Narrogin (SRO)**	**74.50 203**	P	**P**	**10 14 39.6**	**-1.0**		
	comp=Z,5.0nm,0.8s,baz=25,slow=0.0,SNR=2.3							
ANN	**Anapa**	**74.60 315**	*e*P	**P**	**10 14 39.2**	**-2.0**		
ANN			*e**PP	**pP**	**10 14 46.0**	**-0.1**		
ANN			*e*S	**SKiKP**	**10 24 11.8**	**+5.5**		
ANN			*e*SS	**SS**	**10 29 01.2**	**-1.1**		
ANN			*e*SSS	SSS	10 32 20.5			
ANN			pmax	pmax				
	comp=Z,22nm,0.9s							
AKASG	**Malin Array Be**	**75.08 323**	P	**P**	**10 14 43.4**	**-0.5**		
	comp=Z,1.4nm,0.6s,baz=45,slow=6.0,SNR=7.6							
KIEV	**Kiev**	**75.09 323**⇑	*i* P	**P**	**10 14 43.9**	**0.0**		
KIEV			pmax	pmax				
	comp=Z,3.0nm,0.8s							
PDAR	**Pinedale Array**	**75.76 47**	P	**P**	**10 14 46.5**	**-1.8**		
	comp=Z,0.4nm,0.7s,baz=264,slow=1.5,SNR=4.3							
BRTR	**Keskin Array B**	**79.99 313**	P	**P**	**10 15 11.0**	**-0.7**		
	comp=Z,0.4nm,0.5s,baz=134,slow=4.2,SNR=3.2							
BRTR	**Keskin Array B**	**79.99 313**	P	**P**	**10 15 11.0**	**-0.7**		
BRTR	**Keskin Array B**	**79.99 313**	P	**P**	**10 15 11.0**	**-0.7**		
DPC	**Dobruska-Polom**	**81.04 329**	*e*P	**P**	**10 15 18.0**	**+1.0**		
DPC	**Dobruska-Polom**	**81.04 329**	*e*P	**P**	**10 15 18.0**	**+1.0**		
GERES	**GERESS Array B**	**83.28 330**	P	**P**	**10 15 27.9**	**-1.0**		
	comp=Z,0.2nm,0.3s,baz=25,slow=4.4,SNR=3.9							
TXAR	**Lajitas Array**	**88.10 54**	P	**P**	**10 15 51.6**	**-1.6**		
	comp=Z,0.2nm,0.7s,baz=324,slow=6.2,SNR=3.5							
MET	**Memphis--Engin**	**91.99 42**	*e*P	**P**	**10 16 12.6**	**+1.5**		
	comp=Z,242nm,0.5s							

NEIC ***26*** *10:07:46.2, 43.˚59S×172.˚72E, h8km, ML4.2(WEL), After WEL.*
NEIC Felt at Christchurch.

WEL 26 10:07:46.2±0.1, 43.˚58S×172.˚72E, h7km, ML4.1/14, 3D, Error ellipse: s-maj=0.7km s-min=0.3km az=90.0, South Island

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MQZ	**McQueen's Vall**	**0.13**	**202**	*e*Pg	Pg	10 07 49.2	+0.2
MQZ				SG	Sg	10 07 51.5	+0.5
MQZ				AML	AML	10 07 51.6	
MQZ	**McQueen's Vall**	**0.13**	**202**	*e*Pg	Pg	10 07 49.2	+0.2
MQZ				Sg	Sg	10 07 51.5	+0.5
OXZ	**Oxford**	**0.56**	**297**	P*	Pg	10 07 57.0	0.0
OXZ				SG	Sg	10 08 05.0	+0.7
OXZ	**Oxford**	**0.56**	**297**	P*	Pg	10 07 56.8	-0.2
LTZ	**Lake Taylor**	**0.87**	**338**	‖P*	Pg	10 08 03.0	+0.1
LTZ				AML	AML	10 08 15.7	
LTZ				AML	AML	10 08 16.0	
LTZ	**Lake Taylor**	**0.87**	**338**	P*	Pg	10 08 03.0	+0.1
RPZ	**Rata Peaks**	**1.22**	**263**	‖P*	Pg	10 08 08.2	-1.4
RPZ				AML	AML	10 08 27.6	
RPZ				AML	AML	10 08 39.3	
RPZ	**Rata Peaks**	**1.22**	**263**	P*	Pg	10 08 08.2	-1.4
INZ	**Inchbonnie**	**1.27**	**312**	‖P*	Pn	10 08 09.7	-0.7
KHZ	**Kahutara**	**1.31**	**27**	Pn	Pn	10 08 09.0	-1.9
WVZ	**Waitaha Valley**	**1.54**	**289**	Pn	Pn	10 08 13.4	-0.6
THZ	**Tophouse**	**1.82**	**4**	Pn	Pn	10 08 16.4	-1.6
DSZ	**Denniston Nort**	**1.96**	**340**	Pn	Pn	10 08 19.0	-0.9
LBZ	**Lake Benmore**	**2.00**	**245**	PN	Pn	10 08 19.5	-0.9
LBZ				AML	AML	10 08 58.9	
LBZ				AML	AML	10 08 59.2	
LBZ	**Lake Benmore**	**2.00**	**245**	Pn	Pn	10 08 19.5	-0.9
BSWZ	**Blackbirch Sta**	**2.05**	**25**	Pn	Pn	10 08 19.6	-1.5
ODZ	**Otahua Downs**	**2.09**	**225**	PN	Pn	10 08 20.1	-1.5
ODZ				AML	AML	10 09 00.0	
ODZ				AML	AML	10 09 04.6	
ODZ	**Otahua Downs**	**2.09**	**225**	Pn	Pn	10 08 20.1	-1.5
FOZ	**Fox Glacier**	**2.11**	**270**	PN	Pn	10 08 22.1	+0.2
FOZ				AML	AML	10 09 03.3	
FOZ				AML	AML	10 09 32.3	
FOZ	**Fox Glacier**	**2.11**	**270**	Pn	Pn	10 08 22.1	+0.2
TUWZ	**Tuamarina**	**2.33**	**23**	Pn	Pn	10 08 23.2	-1.8
NNZ	**Nelson**	**2.42**	**12**	Pn	Pn	10 08 24.9	-1.2
SNZO	**South Karori**	**2.71**	**34**	*e*Pn	Pn	10 08 31.9	+1.9
QRZ	**Quartz Range**	**2.76**	**357**	PN	Pn	10 08 29.6	-1.2
QRZ				AML	AML	10 09 18.9	
QRZ				AML	AML	10 09 46.3	
QRZ	**Quartz Range**	**2.76**	**357**	Pn	Pn	10 08 29.6	-1.2
JCZ	**Jackson Bay**	**2.89**	**259**	PN	Pn	10 08 32.5	-0.2
JCZ				AML	AML	10 09 32.2	
JCZ				AML	AML	10 09 59.0	
JCZ	**Jackson Bay**	**2.89**	**259**	Pn	Pn	10 08 32.5	-0.2
WKZ	**Wanaka**	**2.94**	**244**	PN	Pn	10 08 32.3	-1.0
WKZ				AML	AML	10 09 24.8	
WKZ				AML	AML	10 09 30.9	
WKZ	**Wanaka**	**2.94**	**244**	Pn	Pn	10 08 32.3	-1.0
EAZ	**Earnscleugh**	**2.95**	**235**	PN	Pn	10 08 32.3	-1.2
EAZ				AML	AML	10 09 26.9	
EAZ				AML	AML	10 09 29.1	
EAZ	**Earnscleugh**	**2.95**	**235**	Pn	Pn	10 08 32.3	-1.2
CAW	**Cannon Point**	**3.02**	**36**	PN	Pn	10 08 32.2	-2.2
CAW				AML	AML	10 09 11.2	
CAW				AML	AML	10 09 42.7	
CAW	**Cannon Point**	**3.02**	**36**	Pn	Pn	10 08

SOEI	Soe	5.43	166	P	Pn	10 18 14.1	+5.2	
SOEI	Soe	5.43	166	*e*Pn	Pn	10 18 12.6	+3.7	
BATI	Baumata	5.75	173	Pn	**Pn**	**10 18 14.8**	**+1.5**	
	baz=90,slow=20							
TNTI	Ternate	6.85	41	*e*Pn	**Pn**	**10 18 27.6**	**-0.7**	
TNTI				*e*Sn	**Sn**	**10 19 45.7**	**+0.5**	
FAKI	Fak Fak	9.45	81	*e*Pn	**Pn**	**10 19 05.0**	**+1.0**	
MYLDM	Lahad Datu	10.54	335	*e*Pn	**Pn**	**10 19 18.6**	**-0.3**	
MTN	Manton Dam	11.64	136	*e*Pn	**Pn**	**10 19 35.3**	**+1.4**	
DAV	Davao City (W)	11.76	13	LR	LR	10 24 18.4		
	comp=Z,95nm,21.3s,baz=176,slow=39							
FITZ	Fitzroy Crossi	13.82	169	Pn	**Pn**	**10 20 01.7**	**-2.1**	
	0.2nm,0.3s,baz=356,slow=9.3,SNR=11							
FITZ	Fitzroy Crossi	13.82	169	*e*Pn	**Pn**	**10 20 03.4**	**-0.3**	
FITZ				*e*Sn	**Sn**	**10 22 34.2**	**-1.9**	
LEM	Lembang	15.39	261	LR	LR	10 26 52.9		
	comp=Z,95nm,21.1s,baz=76,slow=40							
WRAB	Tennant Creek	18.99	145	*e*P	**Pn**	**10 21 10.7**	**+0.7**	
	12nm,1.0s							
WRA	Warramunga Arr	19.00	145	P	**P**	**10 21 08.8**	**-0.3**	
	0.3nm,0.3s,baz=315,slow=13,SNR=31							
ASAR	Alice Springs	21.84	152	P	**P**	**10 21 41.4**	**+1.4**	
	6.7nm,1.0s,baz=311,slow=8.3,SNR=43							
ASAR				PcP	**PcP**	**10 25 39.2**	**+0.1**	
	0.5nm,0.7s,baz=341,slow=1.8,SNR=5.7							
PMG	Port Moresby	24.57	103	P	**P**	**10 22 07.4**	**+0.2**	
	6.4nm,0.7s,baz=294,slow=3.3,SNR=3.7							
PMG				LR	LR	10 32 53.1		
	comp=Z,94nm,19.3s,baz=237,slow=39							
PSI	Prapat	25.02	286	P	**P**	**10 22 11.1**	**-0.4**	
	8.5nm,0.8s,baz=326,slow=11							
PSI	Prapat	25.02	286	*e*P	**P**	**10 22 15.2**	**+3.7**	
	12nm,1.0s							
STKA	Stephens Creek	32.42	149	P	**P**	**10 23 16.2**	**-0.9**	
	1.3nm,0.6s,baz=331,slow=10,SNR=4.6							
CMAR	Chiang Mai Arr	32.81	315	P	**P**	**10 23 19.0**	**-1.7**	
	1.6nm,0.4s,baz=135,slow=7.6,SNR=7.4							
KMI	Kunming	35.34	327	P	**P**	**10 23 45.5**	**+2.7**	
KMI				pmax	pmax			
	comp=Z,8.0nm,0.5s							
KMI				pmax	pmax			
	comp=Z,75nm,4.6s							
NJ2	Nanjing	36.52	354	*e*P	**P**	**10 23 51.5**	**-1.0**	
NJ2				pmax	pmax			
	comp=Z,20nm,0.8s							
CD2	Chengdu	39.65	334	P	**P**	**10 24 19.8**	**+0.8**	
CD2				pmax	pmax			
	comp=Z,1.0nm,0.5s							
KSAR	Wonju Array Be	41.95	6	P	**P**	**10 24 37.7**	**-0.1**	
KSRS	Korea Array	41.96	6	P	**P**	**10 24 37.7**	**-0.2**	
	comp=Z,1.6nm,0.7s,baz=182,slow=10.0,SNR=8.5							
KSRS				LR	LR	10 43 36.1		
	comp=Z,16nm,19.9s,baz=205,slow=38							
LZH	Lanzhou	44.11	338	*e*P	**P**	**10 24 54.8**	**-0.8**	
LZH				pP	pP	10 24 58.5	-6.9	
LZH				sP	sP	10 25 01.0	-8.3	
LZH				pmax	pmax			
	comp=Z,24nm,1.0s							
HHC	Hu-ho-hao-te	46.28	348	*e*P	P	10 25 16.0	+3.4	
HHC				pmax	pmax			
	comp=Z,27nm,0.7s							
HHC				pmax	pmax			
	comp=Z,95nm,8.5s							
GTA	Gaotai	48.58	336	*e*P	**P**	**10 25 30.0**	**-0.6**	
GTA				pP	pP	10 25 34.5	-6.0	
GTA				sP	sP	10 25 37.3	-7.1	
GTA				pmax	pmax			
	comp=Z,4.0nm,1.0s							
USRK	Ussuriysk Ar.	49.13	9	P	**P**	**10 25 33.1**	**-1.4**	
	comp=Z,2.8nm,0.6s,baz=202,slow=8.2,SNR=6.4							
MDJ	Mudanjiang	49.23	6	P	**P**	**10 25 34.0**	**-1.3**	
MDJ				pmax	pmax			
	comp=Z,5.0nm,1.0s							
MDJ				pmax	pmax			
	comp=Z,27nm,3.5s							
SONM	Songino Array	54.06	346	P	**P**	**10 26 11.1**	**-0.4**	
	comp=Z,2.8nm,0.7s,baz=166,slow=8.3,SNR=18							
WMQ	Urumqi	57.57	330	*e*P	**P**	**10 26 39.0**	**+2.3**	
WMQ				pmax	pmax			
	comp=Z,4.0nm,0.6s							
WMQ				pmax	pmax			
	comp=Z,71nm,4.0s							
WMQ				LR	LR			
	comp=Z,15nm,15.4s							
TLY	Talaya	58.30	346	*e*P	**P**	**10 26 41.0**	**-0.6**	
	comp=Z,3.5nm,0.7s							
KSH	Kashi	61.47	320	*e*P	**P**	**10 27 06.5**	**+2.7**	
KSH				*es*P	pP	10 27 13.3	-0.6	
KSH				S	**S**	**10 35 25.3**	**+2.2**	
KSH				ScS	**ScS**	**10 36 54.5**	**+1.4**	
KSH				pmax	pmax			
	comp=Z,140nm,6.3s							
KSH				LR	LR			
	comp=N,240nm,9.0s							
KSH				LR	LR			
	comp=E,170nm,9.6s							
KSH				LR	LR			
	comp=Z,170nm,6.3s							
MKAR	Makanchi Array	62.37	330	P	**P**	**10 27 08.9**	**-0.6**	
	comp=Z,1.3nm,0.6s,baz=132,slow=7.7,SNR=9.9							
MKAR	Makanchi Array	62.37	330	*e*P	**P**	**10 27 09.0**	**-0.6**	
MAKZ	Makanchi	62.53	330	*e*P	**P**	**10 27 12.6**	**+2.0**	
	comp=Z,6.6nm,1.4s							
ZALV	Zalesovo Beam	66.33	337	P	**P**	**10 27 33.9**	**-1.4**	
	comp=Z,1.5nm,0.5s,baz=131,slow=4.1,SNR=8.9							
KURK	Kurchatov	66.79	331	*e*P	**P**	**10 27 37.2**	**-1.0**	
	comp=Z,20nm,1.2s							
BVAR	Borovoye Array	72.25	330	P	**P**	**10 28 11.5**	**-0.5**	
	comp=Z,2.7nm,1.0s,baz=141,slow=5.7,SNR=9.1							
BRVK	Borovoye	72.32	330	*e*P	**P**	**10 28 12.0**	**-0.4**	
	comp=Z,11nm,1.3s							
ZRNK	Zerenda	72.91	329	*e*P	**P**	**10 28 15.4**	**-0.5**	
	comp=Z,17nm,1.6s							
GEYT	Alibeck	73.23	312	P	**P**	**10 28 18.3**	**+0.1**	
	comp=Z,1.5nm,0.4s,baz=245,slow=14,SNR=3.6							
VNDA	Vanda	75.87	172	P	**P**	**10 28 33.5**	**+0.8**	
	comp=Z,0.9nm,0.9s,baz=316,slow=9.3,SNR=3.7							
ABKAR	Akbulak array	76.20	323	*e*P	**P**	**10 28 34.5**	**-0.6**	
	comp=Z,0.3nm,0.3s							
KBZ	Khabaz	85.86	314	P	**P**	**10 29 24.9**	**-1.7**	
	comp=Z,0.8nm,0.4s,baz=22,slow=5.4,SNR=3.4							

IDC ***26*** *10:28:46.0±1.0, 40˚.07S×176˚.84E, h0km, mb4.3/4, mb1 4.5/5, mb1mx4.1/30, mbtmp4.3/5, ML3.7/1, MS3.4/2, Ms1 3.4/2, ms1mx3.0/30, Error ellipse: s-maj=29.6km s-min=21.4km az=119.0*

ISCJB ***26*** *10:28:48.9±0.5, 40˚.16S±0˚.02×176˚.98E±0˚.05, h33km±2km, mb4.3/4, MS3.4/1, Error ellipse: s-maj=6.5km s-min=2.9km az=27.9*

NEIC ***26*** *10:28:49.5, 40˚.14S×176˚.98E, h22km, mb4.8/1, ML4.6(WEL), After WEL.*

NEIC Felt in Hawke's Bay County.

WEL ***26*** *10:28:49.7±0.1, 40˚.14S×176˚.99E, h24km±1km, ML4.6/44, Error ellipse: s-maj=1.5km s-min=0.9km az=90.0*

WEL Felt from Hawke''s Bay to Wellington, maximum reported intensity MM 5.

ISC 26 10:28:49.6±0.8, 40˚.12S±0˚.03×176˚.93E±0˚.04, h26km±5km, n198, σ096/200, mb4.2/4, 10C-14D, North Island

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PXZ	Pawanui	0.10	330	P*	**Pb**	**10 28 54.0**	**-0.3**
PXZ				S*	**Sb**	**10 28 57.6**	**+0.1**
PXZ	Pawanui	0.10	330	P*	**Pb**	**10 28 54.0**	**-0.3**
PXZ				S*	**Sb**	**10 28 57.6**	**+0.1**
PRHZ	Porangahau	0.27	236	⇓P*	**Pb**	**10 28 57.6**	**+1.3**
PRHZ				S*	**Sn**	**10 29 04.1**	**+0.9**
PRHZ	Porangahau	0.27	236	P*	**Pb**	**10 28 57.6**	**+1.3**
PRHZ				S*	**Sn**	**10 29 04.1**	**+0.9**
KAHZ	Kahuranaki	0.32	353	⇑P*	**Pb**	**10 28 57.0**	**-0.1**
KAHZ				S*	**Sb**	**10 29 02.6**	**+0.5**
KAHZ	Kahuranaki	0.32	353	P*	**Pb**	**10 28 57.0**	**-0.1**
KAHZ				S*	**Sb**	**10 29 02.6**	**+0.5**
WPHZ	Waipukurau	0.38	278	⇓P*	**Pb**	**10 28 57.4**	**-0.4**
WPHZ	Waipukurau	0.38	278	P*	**Pb**	**10 28 57.4**	**-0.4**
CKHZ	Cape Kidnapper	0.47	14	P*	**Pb**	**10 29 00.3**	**+0.9**
CKHZ	Cape Kidnapper	0.47	14	P*	**Pn**	**10 29 00.5**	**-0.1**
ANWZ	Angora Road	0.49	225	⇑P*	**Pn**	**10 29 01.6**	**+0.7**
PNHZ	Pukenui	0.59	290	⇓P*	**Pb**	**10 29 00.6**	**-0.8**
PNHZ	Pukenui	0.59	290	P*	**Pb**	**10 29 00.6**	**-0.8**
DVHZ	Dannevirke	0.61	252	⇓P*	**Pb**	**10 29 02.3**	**+0.7**
DVHZ	Dannevirke	0.61	252	P*	**Pb**	**10 29 02.3**	**+0.7**
KRHZ	Kereru	0.64	318	⇓P*	**Pb**	**10 29 01.1**	**-1.0**
MCHZ	McNeill Hill	0.69	345	⇓P*	**Pb**	**10 29 03.3**	**+0.2**
MCHZ	McNeill Hill	0.69	345	P*	**Pb**	**10 29 03.3**	**+0.2**
TSZ	Takapari Road	0.74	274	⇓P*	**Pb**	**10 29 03.5**	**-0.4**
TSZ				AML	AML	10 29 15.1		
TSZ				AML	AML	10 29 15.2		
TSZ	Takapari Road	0.74	274	P*	**Pb**	**10 29 03.5**	**-0.4**
BFZ	Birch Farm	0.77	222	P*	**Pn**	**10 29 05.3**	**+0.6**
BFZ				AML	AML	10 29 22.9		
BFZ				AML	AML	10 29 31.3		
BFZ				AML	AML	10 29 31.3		
BFZ	Birch Farm	0.77	222	P*	**Pb**	**10 29 05.0**	**+0.7**
KWHZ	Kaweka Forest	0.79	331	⇓P*	**Pb**	**10 29 04.1**	**-0.6**
PRWZ	Pori Road	0.85	239	⇑Pn	**Pn**	**10 29 06.6**	**+0.8**
PRWZ	Pori Road	0.85	239	P*	**Pn**	**10 29 06.6**	**+0.8**
ARHZ	Aropaoanui	0.85	4	P*	**Pb**	**10 29 06.0**	**+0.3**
ARHZ	Aropaoanui	0.85	4	P*	**Pb**	**10 29 06.0**	**+0.3**
BHHZ	Black Hill Sta	0.91	313	⇓PN	**Pn**	**10 29 05.8**	**-0.9**
POWZ	Post Office Ro	0.93	252	⇑PN	**Pn**	**10 29 07.1**	**+0.2**
POWZ	Post Office Ro	0.93	252	P*	**Pn**	**10 29 07.2**	**+0.2**
CPWZ	Castlepoint	0.97	215	PN	**Pb**	**10 29 08.4**	**+0.7**
BKZ	Black Stump Fm	1.01	340	⇓PN	**Pn**	**10 29 07.7**	**-0.4**
BKZ				AML	AML	10 29 22.6		
BKZ				AML	AML	10 29 26.4		
BKZ	Black Stump Fm	1.01	340	Pn	**Pn**	**10 29 07.7**	**-0.4**
NMHZ	Naumai	1.02	355	PN	**Pn**	**10 29 08.4**	**+0.1**
NMHZ	Naumai	1.02	355	Pn	**Pn**	**10 29 08.4**	**+0.1**
TIWZ	Tintock	1.03	230	PN	**Pn**	**10 29 08.9**	**+0.5**
TIWZ				AML	AML	10 29 27.7		
TIWZ				AML	AML	10 29 34.6		
TIWZ	Tintock	1.03	230	Pn	**Pn**	**10 29 08.9**	**+0.5**
WHNZ	Waihua	1.06	13	PN	**Pn**	**10 29 09.2**	**+0.5**
MOVZ	Moawhango	1.15	308	⇑PN	**Pn**	**10 29 08.8**	**-0.2**
MOVZ				AML	AML	10 29 27.3		
MOVZ				AML	AML	10 29 27.9		
MOVZ	Moawhango	1.15	308	Pn	**Pn**	**10 29 09.8**	**-0.2**
MRZ	Mangatainoka R	1.16	242	PN	**Pn**	**10 29 10.1**	**-0.1**
MRZ	Mangatainoka R	1.16	242	Pn	**Pn**	**10 29 10.1**	**-0.1**
RAHZ	Arahi	1.21	6	⇑PN	**Pn**	**10 29 10.8**	**+0.1**
MHGZ	Mahia Peninsul	1.22	39	PN	**Pn**	**10 29 11.2**	**+0.3**
MHGZ	Mahia Peninsul	1.22	39	Pn	**Pn**	**10 29 11.2**	**+0.3**
KNZ	Kokohu	1.24	28	PN	**Pn**	**10 29 11.1**	**0.0**
KNZ				AML	AML	10 29 44.1		
KNZ				AML	AML	10 30 18.3		
OHWZ	Ohakea	1.24	265	⇑PN	**Pn**	**10 29 12.2**	**+1.1**
TMWZ	Te Maipa	1.27	218	PN	**Pn**	**10 29 11.7**	**+0.1**
TMWZ	Te Maipa	1.27	218	Pn	**Pn**	**10 29 11.7**	**+0.1**
WNVZ	Wahianoa	1.29	307	⇑PN	**Pn**	**10 29 12.5**	**+0.4**
WNVZ	Wahianoa	1.29	307	Pn	**Pn**	**10 29 12.5**	**+0.4**
TUVZ	Tukino	1.30	310	PN	**Pn**	**10 29 12.6**	**+0.5**
TUVZ				AML	AML	10 29 33.4		
TUVZ				AML	AML	10 29 36.6		
TUVZ	Tukino	1.30	310	Pn	**Pn**	**10 29 12.6**	**+0.5**
WHVZ	Whangaehu Hut	1.33	308	PN	**Pn**	**10 29 12.7**	**+0.1**
WHVZ	Whangaehu Hut	1.33	308	Pn	**Pn**	**10 29 12.7**	**+0.1**
HOWZ	Holdsworth Sta	1.33	234	⇑PN	**Pn**	**10 29 12.4**	**-0.1**
HOWZ	Holdsworth Sta	1.33	234	Pn	**Pn**	**10 29 12.4**	**-0.1**
MTVZ	Mangateitei	1.34	303	PN	**Pn**	**10 29 13.2**	**+0.6**
MTVZ				AML	AML	10 29 32.7		
MTVZ				AML	AML	10 29 46.7		
MTVZ	Mangateitei	1.34	303	Pn	**Pn**	**10 29 12.7**	**+0.1**
MRHZ	Matea Rd	1.34	343	PN	**Pn**	**10 29 12.8**	**+0.2**
TRVZ	Turoa	1.34	307	PN	**Pn**	**10 29 13.0**	**+0.2**
TRVZ				AML	AML	10 29 32.2		
TRVZ				AML	AML	10 29 34.0		
DRZ	Dome Shelter	1.35	308	⇓PN	**Pn**	**10 29 13.4**	**+0.5**
DRZ				AML	AML	10 29 33.9		
DRZ				AML	AML	10 29 41.7		
DRZ	Dome Shelter	1.35	308	Pn	**Pn**	**10 29 13.4**	**+0.5**
OTVZ	Oturere	1.36	314	PN	**Pn**	**10 29 13.3**	**+0.3**
OTVZ				AML	AML	10 29 43.1		
OTVZ				AML	AML	10 29 44.7		
OTVZ	Oturere	1.36	314	Pn	**Pn**	**10 29 13.3**	**+0.3**
FWVZ	Far West T-bar	1.36	309	PN	**Pn**	**10 29 13.3**	**+0.2**
FWVZ				AML	AML	10 29 33.1		
FWVZ				AML	AML	10 29 34.0		
SNGZ	Shannon Statio	1.37	14	PN	**Pn**	**10 29 12.9**	**-0.1**
SNGZ	Shannon Statio	1.37	14	Pn	**Pn**	**10 29 12.9**	**-0.1**
NGZ	Ngauruhoe	1.39	312	PN	**Pn**	**10 29 13.6**	**+0.2**
NGZ				AML	AML	10 29 38.6		
NGZ				AML	AML	10 29 39.1		
NGZ	Ngauruhoe	1.39	312	Pn	**Pn**	**10 29 13.6**	**+0.2**
PRGZ	Paritu Road	1.40	32	PN	**Pn**	**10 29 13.4**	**0.0**
PRGZ	Paritu Road	1.40	32	Pn	**Pn**	**10 29 13.4**	**0.0**
RITZ	Rihia Road	1.41	324	PN	**Pn**	**10 29 14.3**	**+0.8**
RITZ				AML	AML	10 29 39.9		
RITZ				AML	AML	10 29 47.8		
RITZ	Rihia Road	1.41	324	Pn	**Pn**	**10 29 14.3**	**+0.8**
WTVZ	West Tongariro	1.44	314	PN	**Pn**	**10 29 14.9**	**+0.9**
WTVZ	West Tongariro	1.44	314	Pn	**Pn**	**10 29 14.9**	**+0.9**
KATZ	Kakaramea	1.48	320	Pn	**Pn**	**10 29 15.6**	**+0.9**
MTWZ	Mount Morrison	1.50	226	⇓PN	**Pn**	**10 29 14.3**	**-0.5**
MTW				AML	AML	10 29 50.4		
MTW				AML	AML	10 29 51.4		
MTW	Mount Morrison	1.50	226	Pn	**Pn**	**10 29 14.3**	**-0.5**
OGWZ	Otaki Gorge	1.51	242	PN	**Pn**	**10 29 15.0**	**+0.1**
OGWZ	Otaki Gorge	1.51	242	Pn	**Pn**	**10 29 15.0**	**+0.1**
RATZ	Rangitukua	1.54	324	PN	**Pn**	**10 29 16.5**	**+1.2**
RATZ				AML	AML	10 29 54.1		
RATZ				AML	AML	10 30 06.3		
RATZ	Rangitukua	1.54	324	Pn	**Pn**	**10 29 16.5**	**+1.2**
WAZ	Wanganui	1.54	283	PN	**Pn**	**10 29 16.2**	**+1.0**
WAZ				AML	AML	10 29 58.7		
WAZ				AML	AML	10 30 01.1		
WAZ	Wanganui	1.54	283	Pn	**Pn**	**10 29 16.2**	**+1.0**
RIGZ	Rimuhau	1.55	25	PN	**Pn**	**10 29 15.1**	**-0.4**
TWVZ	Taurewa	1.55	312	PN	**Pn**	**10 29 16.5**	**+0.9**
TWVZ				AML	AML	10 29 41.1		
TWVZ				AML	AML	10 29 41.2		
TWVZ	Taurewa	1.55	312	Pn	**Pn**	**10 29 16.5**	**+0.9**
TRWZ	Traveller	1.59	216	⇑PN	**Pn**	**10 29 15.3**	**-0.7**
TRWZ				AML	AML	10 29 57.3		
TRWZ				AML	AML	10 29 58.0		
TRWZ	Traveller	1.59	216	Pn	**Pn**	**10 29 15.3**	**-0.7**
ALRZ	Allen Road	1.62	344	PN	**Pn**	**10 29 16.5**	**+0.1**
ALRZ	Allen Road	1.62	344	Pn	**Pn**	**10 29 16.5**	**+0.1**
RAGZ	Rawiri	1.66	13	PN	**Pn**	**10 29 16.8**	**-0.3**
RAGZ	Rawiri	1.66	13	Pn	**Pn**	**10 29 16.8**	**-0.3**
PRRZ	Plateau Road	1.67	345	PN	**Pn**	**10 29 17.0**	**-0.1**
PRRZ	Plateau Road	1.67	345	Pn	**Pn**	**10 29 17.0**	**-0.1**
WATZ	Wairara	1.68	326	PN	**Pn**	**10 29 17.9**	**+0.6**
WATZ				AML	AML	10 30 04.6		
WATZ				AML	AML	10 30 19.7		
WATZ	Wairara	1.68	326	Pn	**Pn**	**10 29 17.9**	**+0.6**
PAWZ	Paruwai Farm	1.70	222	PN	**Pn**	**10 29 16.9**	**-0.7**
PAWZ				AML	AML	10 30 07.0		
PAWZ				AML	AML	10 30 14.4		
PAWZ	Paruwai Farm	1.70	222	Pn	**Pn**	**10 29 16.9**	**-0.7**
KIW	Kapiti Island	1.71	244	PN	**Pn**	**10 29 17.6**	**-0.1**
KIW				AML	AML	10 29 51.5		
KIW				AML	AML	10 29 52.4		
KIW	Kapiti Island	1.71	244	Pn	**Pn**	**10 29 17.6**	**-0.1**
CAW	Cannon Point	1.73	234	PN	**Pn**	**10 29 17.3**	**-0.6**
CAW				AML	AML	10 29 52.4		
CAW				AML	AML	10 29 54.1		
CAW	Cannon Point	1.73	234	Pn	**Pn**	**10 29 17.4**	**-0.6**
HRRZ	Handcock Road	1.79	344	PN	**Pn**	**10 29 19.1**	**+0.2**
HRRZ	Handcock Road	1.79	344	Pn	**Pn**	**10 29 19.1**	**+0.2**
RRRZ	Republican Roa	1.80	350	⇓PN	**Pn**	**10 29 18.8**	**-0.2**
RRRZ	Republican Roa	1.80	350	Pn	**Pn**	**10 29 18.8**	**-0.2**
MSWZ	Moikau Station	1.82	224	Pn	**Pn**	**10 29 18.2**	**-1.0**
TKGZ	Te Karaka	1.82	23	PN	**Pn**	**10 29 18.6**	**-0.6**
TKGZ	Te Karaka	1.82	23	Pn	**Pn**	**10 29 18.6**	**-0.6**
MWZ	Matawai	1.84	15	PN	**Pn**	**10 29 18.7**	**-0.8**
MWZ				AML	AML	10 30 07.1		
MWZ				AML	AML	10 30 08.6		
MWZ	Matawai	1.84	15	Pn	**Pn**	**10 29 18.7**	**-0.8**
URZ	Urewera	1.86	4	Pn	**Pn**	**10 29 19.1**	**-0.6**
	35nm,0.3s,baz=232,slow=6.8,SNR=94						
URZ				Sn	**Sn**	**10 29 41.7**	**-0.7**
	89nm,0.3s,baz=60,slow=20,SNR=15						
URZ				LR	LR	10 29 50.7	
	comp=Z,286nm,20.1s,baz=266,slow=36						
URZ	Urewera	1.86	4	PN	**Pn**	**10 29 19.1**	**-0.6**
URZ				AML	AML	10 30 00.7	
URZ				AML	AML	10 30 09.9	
TARZ	Mount Tarawera	1.91	350	PN	**Pn**	**10 29 20.4**	**-0.1**
TARZ	Mount Tarawera	1.91	350	Pn	**Pn**	**10 29 20.4**	**-0.1**
CNGZ	Carnagh Statio	1.91	32	PN	**Pn**	**10 29 20.2**	**-0.2**
CNGZ	Carnagh Statio	1.91	32	Pn	**Pn**	**10 29 20.2**	**-0.2**
HLRZ	Highlands Stat	1.91	346	PN	**Pn**	**10 29 21.3**	**+0.8**
PLWZ	Palliser	1.93	221	PN	**Pn**	**10 29 19.7**	**-1.0**
PLWZ	Palliser	1.93	221	Pn	**Pn**	**10 29 19.7**	**-1.0**
VRZ	Vera Road	1.94	300	PN	**Pn**	**10 29 21.0**	**+0.1**
VRZ				AML	AML	10 29 58.3		
VRZ				AML	AML	10 30 00.7		
VRZ	Vera Road	1.94	300	Pn	**Pn**	**10 29 21.0**	**+0.1**
WELZ	Wellington	2.01	234	PN	**Pn**	**10 29 21.1**	**-0.7**
WEL				AML	AML	10 30 04.4		
WELZ	Wellington	2.01	234	Pn	**Pn**	**10 29 21.1**	**-0.7**
BHWZ	Baring Head	2.03	230	PN	**Pn**	**10 29 20.9**	**-1.1**
BHW				AML	AML	10 30 13.0		
BHW				AML	AML	10 30 15.1		
BHWZ	Baring Head	2.03	230	Pn	**Pn**	**10 29 20.9**	**-1.1**
LREZ	Lake Rotokare	2.05	288	PN	**Pn**	**10 29 23.4**	**+1.1**
SNZO	South Karori	2.07	234	*e*Pn	**Pn**	**10 29 21.8**	**-0.8**
TWGZ	Tauwhareparae	2.10	23	PN	**Pn**	**10 29 22.8**	**-0.3**
TWGZ	Tauwhareparae	2.10	23	Pn	**Pn**	**10 29 22.8**	**-0.3**
HIZ	Hauiti	2.27	314	PN	**Pn**	**10 29 25.0**	**-0.4**
HIZ				AML	AML	10 30 00.6		
HIZ				AML	AML	10 30 09.1		
HIZ	Hauiti	2.27	314	Pn	**Pn**	**10 29 25.0**	**-0.4**
OPRZ	Ohinepanea	2.29	353	PN	**Pn**	**10 29 25.4**	**-0.2**
OPRZ	Ohinepanea	2.29	353	Pn	**Pn**	**10 29 25.4**	**-0.2**
PUZ	Puketiti	2.29	27	PN	**Pn**	**10 29 24.7**	**-0.9**
PUZ				AML	AML	10 30 33.2		
PUZ				AML	AML	10 30 34.8		
PUZ	Puketiti	2.29	27	Pn	**Pn**	**10 29 24.7**	**-0.9**
TCW	Tory Channel	2.29	241	PN	**Pn**	**10 29 24.9**	**-0.8**
TCW				AML	AML	10 30 07.6		
TCW				AML	AML	10 30 07.6		
NEZ	North Egmont	2.34	290	PN	**Pn**	**10 29 28.9**	**+2.4**
DUWZ	D'Urville Isla	2.39	252	PN	**Pn**	**10 29 27.0**	**0.0**
DUWZ				AML	AML	10 30 12.2		
DUWZ				AML	AML	10 30 12.4		
HAZ	Te Kaha	2.45	16	PN	**Pn**	**10 29 27.3**	**-0.5**
WMGZ	Waiomatatini S	2.57	27	PN	**Pn**	**10 29 28.9**	**-0.5**
TUWZ	Tuamarina	2.62	239	PN	**Pn**	**10 29 28.8**	**-1.3**
TUWZ				AML	AML	10 30 22.2		
TUWZ				AML	AML	10 30 27.0		
TUWZ	Tuamarina	2.62	239	Pn	**Pn**	**10 29 28.8**	**-1.3**
TOZ	Tahuroa Road	2.63	335	PN	**Pn**	**10 29 29.8**	**-0.4**
TOZ				AML	AML	10 30 12.1		
TOZ				AML	AML	10 30 18.6		
TOZ	Tahuroa Road	2.63	335	Pn	**Pn**	**10 29 29.8**	**-0.4**
BSWZ	Blackbirch Sta	2.81	234	Pn	**Pn**	**10 29 31.3**	**-1.5**
NNZ	Nelson	2.91	247	PN	**Pn**	**10 29 33.6**	**-0.6**
NNZ				AML	AML	10 30 32.4		
NNZ				AML	AML	10 30 33.0		
NNZ	Nelson	2.91	247	Pn	**Pn**	**10 29 33.6**	**-0.6**
QRZ	Quartz Range	3.43	257	PN	**Pn**	**10 29 40.2**	**-1.0**
QRZ				AML	AML	10 30 38.5		
QRZ				AML	AML	10 30 46.8		
QRZ	Quartz Range	3.43	257	Pn	**Pn**	**10 29 40.2**	**-1.0**
KHZ	Kahutara	3.44	227	PN	**Pn**	**10 29 39.0**	**-2.3**
KHZ	Kahutara	3.44	227	Pn	**Pn**	**10 29 39.0**	**-2.3**
THZ	Tophouse	3.46	240	PN	**Pn**	**10 29 40.3**	**-1.5**
THZ				AML	AML	10 30 52.6		
THZ				AML	AML	10 31 11.6		
THZ	Tophouse	3.46	240	Pn	**Pn**	**10 29 40.3**	**-1.5**
AWAZ	Awhitu Peninsu	3.53	329	PN	**Pn**	**10 29 43.1**	**+0.4**
LTZ	Lake Taylor	4.40	231	PN	**Pn**	**10 29 52.2**	**-2.4**
LTZ				AML	AML	10 31 19.6		
LTZ				AML	AML	10 31 21.5		
LTZ	Lake Taylor	4.40	231	Pn	**Pn**	**10 29 52.2**	**-2.4**
MQZ	McQueen's Vall	4.80	220	PN	Pn	10 29 57.2	-2.9
MQZ		

JHO	**Hitachi**	**0.55**	**325**	P	Pn	10 31 13.2	-0.3
JHO				S	Sn	10 31 20.8	-0.6
MAT	**Matsushiro**	**2.25**	**281**	P	Pn	10 31 39.1	+2.2
MAT				S	Sn	10 32 07.9	+4.5

NIED ***26*** *10:31:00.37˝.80N×141˚.70E,h50km,Mw3.6 Best double couple: M₀3.13000×10¹⁴ NP1:φs206.00000°,δ44.00000°, λ84.00000°. NP2:φs35.00000°,δ46.00000°,λ96.00000°.*
ISCJB ***26*** *10:31:57.2±0.8,37˝.81N±0˝.04×141˚.74E±0˝.09,h59km±7km, mb3.7/11,Error ellipse: s-maj=12.2km s-min=5.3km az=18.0*
IDC ***26*** *10:31:57.9±2.2,37˝.72N×141˚.75E,h51km±22km,mb3.3/10, mb1 3.6/15,mb1mx3.4/70,mbtmp3.6/15,ML3.1/5,Error ellipse: s-maj=23.1km s-min=12.3km az=96.0*
JMA ***26*** *10:31:58.4,37˝.82N×141˚.68E,h53km±1km,M4.0*
JMA Felt I J1.
ISC 26 10:31:57.6±1.5,37˚.79N±0˝.04×141˚.80E±0˝.09,h45km±15km, n34,σ1ᵠ28/39,mb3.6/11,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**0.75**	**332**	P	**Pn**	**10 32 12.1**	**+0.2**
JIO				S	**Sn**	**10 32 21.8**	**-0.4**
JMM	**Marumori**	**0.80**	**276**	P	**Pn**	**10 32 12.3**	**-0.3**
JMM				S	**Sn**	**10 32 22.5**	**-0.9**
JFK	**Kawauchi**	**0.85**	**240**	P	**Pn**	**10 32 13.3**	**0.0**
JFK				S	**Sn**	**10 32 24.1**	**-0.5**
ONAJ	**Iwakimizuishiy**	**1.05**	**230**	P	**Pn**	**10 32 16.2**	**+0.2**
ONAJ				S	**Sn**	**10 32 29.3**	**-0.3**
JOU	**Okura**	**1.07**	**303**	P	**Pn**	**10 32 16.0**	**-0.2**
JOU				S	**Sn**	**10 32 29.0**	**-0.9**
JFT	**Otama**	**1.20**	**257**	P	**Pn**	**10 32 18.4**	**+0.5**
JFT				S	**Sn**	**10 32 32.8**	**-0.2**
JMK	**Ichinoseki**	**1.25**	**339**	P	**Pn**	**10 32 19.1**	**+0.5**
JMK				S	**Sn**	**10 32 33.9**	**-0.3**
JYS	**Shirataka**	**1.44**	**288**	P	**Pn**	**10 32 21.2**	**0.0**
JYS				*e*S	**Sn**	**10 32 35.1**	**-3.9**
JYK	**Kaneyama**	**1.60**	**315**	P	**Pn**	**10 32 23.5**	**+0.1**
JFY	**Yanaizu**	**1.71**	**258**	P	**Pn**	**10 32 25.3**	**+0.3**
JFY				S	**Sn**	**10 32 45.3**	**-0.4**
JOM	**Ohasama**	**1.73**	**347**	S	**Sn**	**10 32 46.2**	**+0.2**
MJAR	**Matsushiro Arr**	**3.13**	**248**	P	**Pn**	**10 32 45.4**	**+0.9**
	2.9nm,0.3s,baz=193,slow=23,SNR=9.2						
MJAR				S	Sn	10 33 26.8	+6.2
	2.1nm,0.3s,baz=248,slow=26,SNR=3.5						
MAT	**Matsushiro**	**3.13**	**248**	P	**Pn**	**10 32 45.8**	**+1.3**
MAT				S	**Sn**	**10 33 24.8**	**+4.2**
JHJ	**Hachijo jima 2**	**4.94**	**200**	P	**Pn**	**10 33 09.8**	**+0.4**
	4.3nm,0.3s,baz=240,slow=20,SNR=4.8						
JHJ				S	**Sn**	**10 34 02.2**	**-3.0**
	21nm,0.3s,baz=224,slow=23,SNR=6.3						
ASAJ	**Asahikawa**	**6.35**	**5**	P	**Pn**	**10 33 28.6**	**+0.1**
	0.7nm,0.3s,baz=219,slow=10,SNR=6.1						
USRK	**Ussuriysk Ar.**	**9.79**	**314**	P	**Pn**	**10 34 16.0**	**+0.2**
	0.4nm,0.3s,baz=122,slow=15,SNR=11						
KSRS	**Korea Array**	**11.02**	**272**	P	**Pn**	**10 34 34.2**	**+1.6**
	0.1nm,0.3s,baz=83,slow=14,SNR=3.7						
YAK	**Yakutsk**	**25.40**	**347**	P	**P**	**10 37 21.8**	**+1.3**
	29nm,0.4s,baz=199,slow=3.4,SNR=4.8						
SONM	**Songino Array**	**27.63**	**303**	P	**P**	**10 37 41.4**	**+0.5**
	0.3nm,0.4s,baz=93,slow=14,SNR=2.4						
H11N2	**WAKE ISLAND Hy**	**28.28**	**123**	T	T	11 08 09.0	
	baz=316						
H11N1	**WAKE ISLAND Hy**	**28.29**	**123**	T	T	11 08 09.9	
	baz=316						
H11N3	**WAKE ISLAND Hy**	**28.30**	**123**	T	T	11 08 10.5	
	baz=316						
H11S1	**WAKE ISLAND Hy**	**29.02**	**125**	T	T	11 09 01.8	
	baz=317,slow=76,SNR=62						
H11S3	**WAKE ISLAND Hy**	**29.02**	**125**	T	T	11 09 03.5	
	baz=317,slow=76,SNR=63						
H11S2	**WAKE ISLAND Hy**	**29.04**	**125**	T	T	11 09 03.1	
	baz=317,slow=76,SNR=41						
MKAR	**Makanchi Array**	**43.98**	**302**	P	**P**	**10 39 58.8**	**-1.6**
	0.1nm,0.3s,baz=81,slow=12,SNR=2.4						
KURBB	**Kurchatov Arra**	**45.78**	**307**	P	**P**	**10 40 13.4**	**-1.2**
	1.1nm,0.7s,baz=81,slow=8.0,SNR=7.6						
ILAR	**Eielson Array**	**48.69**	**33**	P	**P**	**10 40 37.4**	**+0.3**
	0.2nm,0.6s,baz=268,slow=6.7,SNR=3.2						
INK	**Inuvik**	**53.57**	**27**	P	**P**	**10 41 13.3**	**-0.2**
	0.8nm,0.8s,baz=304,slow=6.7,SNR=4.3						
WRA	**Warramunga Arr**	**57.85**	**188**	P	**P**	**10 41 44.1**	**-0.7**
	1.1nm,0.6s,baz=7.8,slow=7.7,SNR=16						
ASAR	**Alice Springs**	**61.58**	**188**	P	**P**	**10 42 09.9**	**-0.5**
	0.3nm,0.7s,baz=13,slow=7.3,SNR=4.5						
YKA	**Yellowknife Ar**	**63.00**	**30**	P	**P**	**10 42 19.3**	**-0.1**
	0.2nm,0.6s,baz=304,slow=6.7,SNR=6.0						
PDAR	**Pinedale Array**	**76.92**	**46**	P	**P**	**10 43 45.9**	**+0.4**
	0.4nm,0.6s,baz=277,slow=1.5,SNR=4.9						
TXAR	**Lajitas Array**	**89.41**	**53**	P	**P**	**10 44 50.3**	**+0.4**
	0.3nm,0.6s,baz=297,slow=2.5,SNR=6.1						

NIED ***26*** *10:33:00.39˝.20N×142˚.40E,h38km,Mw3.7 Best double couple: M₀3.38000×10¹⁴ NP1:φs319.00000°,δ31.00000°, λ-127.00000°. NP2:φs180.00000°,δ66.00000°, λ-70.00000°.*
IDC ***26*** *10:33:32.8±2.9,39˚.38N×143˚.07E,h0km,mb3.6/3, mb1 3.8/4,mb1mx3.3/67,mbtmp3.6/4,ML3.4/1,Error ellipse: s-maj=70.9km s-min=32.2km az=71.0*
ISCJB ***26*** *10:33:38.9±1.6,39˚.17N±0˝.04×142˚.5E±0˝.1,h30km±7km, mb3.6/3,Error ellipse: s-maj=13.4km s-min=6.8km az=11.9*
JMA ***26*** *10:33:40.1±0.1,39˚.19N×142˚.38E,h31km±1km,M3.9*
JMA Felt I J1.
ISC 26 10:33:39.2±2.2,39˚.16N±0˝.05×142˚.4E±0˝.1,h24km±13km, n20,σ1ᵠ09/19,mb3.8/3,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**0.56**	**262**	P	**Pn**	**10 33 51.2**	**-0.4**
OFUJ				S	**Sn**	**10 33 59.3**	**-0.9**
MIYJ	**Miyakonagasawa**	**0.60**	**314**	P	**Pb**	**10 33 51.4**	**+0.3**
MIYJ				S	**Sb**	**10 33 59.4**	**+0.2**
JTH	**Tanohata**	**0.88**	**333**	P	**Pn**	**10 33 56.2**	**+0.2**
JOM	**Ohasama**	**0.90**	**291**	P	**Pn**	**10 33 56.4**	**+0.1**
JOM				S	**Sn**	**10 34 08.5**	**-0.1**
JMK	**Ichinoseki**	**0.93**	**257**	P	**Pn**	**10 33 56.9**	**+0.2**
JMK				S	**Sn**	**10 34 09.4**	**+0.2**
JIO	**Ouri**	**1.07**	**229**	P	**Pn**	**10 33 58.5**	**-0.2**
JIO				S	**Sb**	**10 34 11.8**	**-0.8**
JKZ	**Kuzumaki**	**1.16**	**316**	P	**Pb**	**10 34 00.5**	**-0.1**
JKZ				S	**Sn**	**10 34 15.1**	**+0.1**
JANG	**Nango**	**1.38**	**331**	P	**Pn**	**10 34 03.4**	**+0.4**
JANG				S	**Sn**	**10 34 21.0**	**+0.5**
MAT	**Matsushiro**	**4.21**	**233**	P	Pn	10 34 46.0	+4.1
MAT				*e*S	**Sn**	**10 35 34.2**	**+3.9**
MJAR	**Matsushiro Arr**	**4.21**	**233**	Pn	Pn	10 34 45.8	+3.9
	1.7nm,0.3s,baz=45,slow=9.4,SNR=8.8						
KSRS	**Korea Array**	**11.49**	**266**	Pn	Pn	10 36 32.5	+11
	0.2nm,0.3s,baz=67,slow=14,SNR=3.8						
H11N2	**WAKE ISLAND Hy**	**28.57**	**125**	T	T	11 09 56.7	
	baz=318,slow=75,SNR=158						
H11N1	**WAKE ISLAND Hy**	**28.68**	**125**	T	T	11 09 58.0	
	baz=318,slow=75,SNR=74						
H11N3	**WAKE ISLAND Hy**	**28.68**	**125**	T	T	11 09 58.5	
	baz=318,slow=75,SNR=145						
H11S1	**WAKE ISLAND Hy**	**29.45**	**127**	T	T	11 10 55.9	
	baz=319,slow=76,SNR=22						
H11S3	**WAKE ISLAND Hy**	**29.46**	**127**	T	T	11 10 56.0	
	baz=319,slow=76,SNR=20						
H11S2	**WAKE ISLAND Hy**	**29.47**	**127**	T	T	11 10 56.7	
	baz=319,slow=76,SNR=22						
MKAR	**Makanchi Array**	**43.67**	**300**	P	**P**	**10 41 41.7**	**-0.2**
	0.3nm,0.4s,baz=90,slow=8.6,SNR=2.8						
KURBB	**Kurchatov Arra**	**45.33**	**306**	P	**P**	**10 41 54.9**	**-0.1**
	0.6nm,0.5s,baz=82,slow=8.3,SNR=5.0						
WRA	**Warramunga Arr**	**59.27**	**189**	P	**P**	**10 43 38.1**	**-0.7**
	0.5nm,0.6s,baz=6.9,slow=6.8,SNR=5.1						

GUC ***26*** *10:37:04.6±0.5,29˚.98S×71˚.60W,h56km±3km,ML3.0*
ISC 26 10:37:05.2±2.6,29˚.95S±0˝.05×71˚.8W±0˝.2,h43km,n10, σ1ᵠ18/16,Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LSCH	**La Serena**	**0.48**	**85**	*i* P	**Pn**	**10 37 14.7**	**-1.1**
LSCH				*i* S	**Sn**	**10 37 22.8**	**-0.5**
TLL	**Tololo Astrono**	**0.89**	**104**	*i* P	**Pn**	**10 37 20.5**	**-1.0**
TLL				*i* S	**Sn**	**10 37 32.2**	**-1.1**
TLL				IAML		10 37 35.0	
	comp=N,1μm,0.3s						
LCO	**Las Campanas**	**1.34**	**46**	*i* P	**Pn**	**10 37 27.5**	**-0.1**
LCO				*i* S	**Sn**	**10 37 45.2**	**+0.8**
VACH	**Vallenar**	**1.64**	**34**	*i* P	**Pn**	**10 37 32.1**	**+0.5**
VACH				*e*S	**Sn**	**10 37 50.9**	**-0.7**
AUSP	**Uspallata**	**3.07**	**138**	*i* P	**Pn**	**10 37 51.7**	**+0.2**
AUSP				*i* S	**Sn**	**10 38 27.7**	**+0.6**
ROCH	**El Roble**	**3.09**	**168**	*i* P	Pn	10 37 46.3	-5.3
ROCH				*i* S	Sn	10 38 19.9	-7.5
RTLL	**Cerro Villicun**	**3.18**	**116**	*i* P	**Pn**	**10 37 53.5**	**+0.7**
RTLL				*i* S	**Sn**	**10 38 32.7**	**+3.3**
VCA	**Vinchina**	**3.36**	**70**	*i* P	Pn	10 38 00.2	+4.8
VCA				IAML		10 38 10.7	
	comp=Z,454nm,0.2s						
VCA				*i* S	Sn	10 38 43.4	+9.3
ARCO	**CERRO ARCO**	**3.78**	**140**	*i* P	**Pn**	**10 38 01.0**	**-0.2**
ARCO				IAML		10 38 03.5	
	comp=Z,136nm,0.3s						
ARCO				*i* S	**Sn**	**10 38 44.1**	**-0.5**
AAGR	**Agrelo**	**4.03**	**142**	*i* P	**Pn**	**10 38 03.9**	**-0.6**
AAGR				*i* S	**Sn**	**10 38 50.1**	**-0.3**

ISCJB ***26*** *10:43:06.4±0.7,13˚.37S±0˝.09×111˚.3W±0˝.1,h11km, mb4.6/40,MS4.9/15,Error ellipse: s-maj=19.3km s-min=11.0km az=154.1*
IDC ***26*** *10:43:06.7±1.0,13˚.23S×111˚.29W,h0km,mb4.0/9, mb1 4.3/9,mb1mx4.1/27,mbtmp4.0/9,MS4.8/15, Ms1 4.8/15,ms1mx4.7/27,Error ellipse: s-maj=37.8km s-min=19.4km az=52.0*
NEIC ***26*** *10:43:07.5±0.5,13˚.38S×111˚.30W,h10km,mb4.8/30, Error ellipse: s-maj=17.1km s-min=10.3km az=71.0*
GCMT ***26*** *10:43:07.5±0.1,13˚.52S×111˚.21W,h15km,MW5.5/120, Moment Tensor Solution. s99,c172; s120,c226; Duration: 1s3 Moment tensor: Scale 10¹⁷Nm; Mrr-0.13±.02; Mθθ0.82±.02; Mϕϕ-0.68±.03; Mrθ-0.22±.06; Mθϕ1.62±.02; Mϕr0.56±.07; Best double couple: M₀1.88900×10¹⁷ NP1:φs194.00000°,δ80.00000°, λ-164.00000°. NP2:φs101.00000°,δ75.00000°, λ-11.00000°. Principal axes: T 1.8600, Plg3.0000°, Azm327.0000°; N 0.0550, Plg71.0000°, Azm227.0000°; P -1.9170, Plg18.0000°, Azm58.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
ISC 26 10:43:08.3±0.6,13˚.3S±0˝.1×111˚.3W±0˝.1,h11km,n118, σ1ᵠ03/100,mb4.7/40,MS4.9/15,1D,Central East Pacific Rise

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RKT	**Rikitea**	**24.49**	**243**	*e*LQ	LQ	10 53 06.9	
	1μm,36.3s						
RKT				*e*LR	LR	10 54 09.1	
	7μm,27.8s,baz=66						
RKT	**Rikitea**	**24.49**	**243**	*e*T	T	11 13 28.2	
	2.6nm,0.2s						
TAOE	**Nuku Hiva Isla**	**28.66**	**276**	*e*LR	LR	10 55 51.2	
	1μm,23.2s						
PPT2	**Papeete2**	**37.11**	**258**	*e*S	S	10 55 53.4	-12
	991nm,26.2s						
PPT2				*e*LQ	LQ	10 58 28.1	
	5μm,31.0s						
PPT2				*e*LR	LR	10 59 59.9	
	5μm,27.5s,baz=92						
ROSC	**El Rosal**	**40.90**	**66**	LR	LR	11 05 07.0	
	comp=Z,676nm,18.4s,baz=256,slow=32						
LPAZ	**La Paz**	**41.77**	**100**	P	**P**	**10 50 58.0**	**-0.9**
	3.1nm,0.8s,baz=300,slow=5.5,SNR=11						
LPAZ				LR	LR	11 04 46.4	
	comp=Z,1μm,21.4s,baz=260,slow=31						
TXAR	**Lajitas Array**	**43.04**	**10**	P	**P**	**10 51 09.2**	**+0.9**
	0.8nm,0.9s,baz=179,slow=9.9,SNR=7.1						
PLCA	**Paso Flores**	**44.82**	**135**	P	**P**	**10 51 24.0**	**+1.5**
	0.7nm,0.4s,baz=335,slow=7.9,SNR=3.3						
MNTX	**Cornudas Mount**	**45.12**	**7**	P	**P**	**10 51 25.5**	**+0.6**
	baz=188						
MNTX	**Cornudas Mount**	**45.12**	**7**	*e*P	**P**	**10 51 24.8**	**-0.1**
	17nm,1.4s						
433A	**Art**	**45.37**	**15**	P	**P**	**10 51 27.2**	**+0.3**
	baz=197						
TUC	**Tucson**	**45.38**	**1**	*e*P	**P**	**10 51 27.9**	**+1.0**
	3.0nm,1.1s						
121A	**Cookes Peak, D**	**45.72**	**4**	*e*P	**P**	**10 51 31.2**	**+1.4**
	10nm,1.0s						
333A	**Richland Sprin**	**45.94**	**15**	P	**P**	**10 51 32.4**	**+1.1**
	baz=197						
SDV	**Santo Domingo**	**46.00**	**63**	P	**P**	**10 51 33.0**	**+0.6**
	8.3nm,0.7s,baz=256,slow=3.7,SNR=6.9						
SDV	**Santo Domingo**	**46.00**	**63**	*e*P	**P**	**10 51 32.3**	**-0.1**
	38nm,1.2s						
334A	**Lometa**	**46.13**	**16**	P	**P**	**10 51 33.7**	**+0.8**
	baz=198						
233A	**Rising Star**	**46.62**	**15**	P	**P**	**10 51 37.7**	**+1.0**
	baz=197						
WHTX	**Lake Whitney,**	**46.96**	**16**	*e*P	**P**	**10 51 40.9**	**+1.5**
	2.3nm,0.5s						
SAML	**Samuel**	**47.34**	**90**	*e*P	**P**	**10 51 40.4**	**-2.3**
	13nm,1.0s						
MSTX	**Muleshoe**	**47.72**	**10**	P	**P**	**10 51 45.7**	**+0.3**
	baz=191						
MSTX	**Muleshoe**	**47.72**	**10**	*e*P	**P**	**10 51 44.6**	**-0.8**
	14nm,1.1s						
ANMO	**Albuquerque**	**48.22**	**5**	P	**P**	**10 51 49.7**	**+0.4**
	baz=186						
ANMO	**Albuquerque**	**48.22**	**5**	*e*P	**P**	**10 51 49.0**	**-0.3**
	15nm,1.8s						
AMTX	**Amarillo**	**48.80**	**11**	*e*P	**P**	**10 51 52.5**	**-1.2**
	9.2nm,1.2s						
WMOK	**Wichita Mounta**	**49.25**	**14**	*e*P	**P**	**10 51 54.1**	**-2.9**
	1.2nm,0.9s						
W33A	**Caddo, Fort Co**	**49.72**	**14**	P	**P**	**10 52 01.9**	**+1.3**
	baz=196						
V32A	**Arapaho**	**50.13**	**13**	P	**P**	**10 52 05.2**	**+1.4**
	baz=196						
X38A	**Whitesboro**	**50.22**	**18**	P	**P**	**10 52 05.2**	**+0.7**
	baz=201						
MVCO	**Mesa Verde**	**50.33**	**3**	P	**P**	**10 52 06.5**	**+1.0**
	baz=184						
MVCO	**Mesa Verde**	**50.33**	**3**	*e*P	**P**	**10 52 05.3**	**-0.2**
	30nm,1.6s						
T25A	**Trinidad**	**50.61**	**7**	P	**P**	**10 52 09.7**	**+2.1**
	baz=189						
S22A	**4UR Ranch, Cre**	**50.97**	**5**	P	**P**	**10 52 11.1**	**+0.7**
	baz=186						
SDCO	**Great Sand Dun**	**51.09**	**6**	P	**P**	**10 52 12.3**	**+1.0**
	baz=187						
SDCO	**Great Sand Dun**	**51.09**	**6**	*e*P	**P**	**10 52 11.8**	**+0.5**
	7.7nm,1.0s						
PV01	**Paradox Valley**	**51.25**	**3**	*e*P	**P**	**10 52 12.9**	**+0.4**
	431nm,1.0s						
PV04	**Paradox Valley**	**51.49**	**2**	*e*P	**P**	**10 52 14.5**	**+0.3**
W41B	**Gary Mavity, V**	**51.50**	**20**	P	**P**	**10 52 14.9**	**+0.9**
	baz=204						
Y46A	**Houston**	**51.57**	**24**	P	**P**	**10 52 15.5**	**+0.9**
	baz=208						
V40A	**Witts Springs**	**51.89**	**19**	P	**P**	**10 52 17.6**	**+0.6**
	baz=203						
NVAR	**Mina Array Bea**	**51.90**	**353**	P	**P**	**10 52 17.3**	**0.0**
	0.9nm,0.7s,baz=179,slow=11,SNR=5.7						
NVAR				LR	LR	11 09 45.2	
	comp=Z,2μm,18.3s,baz=145,slow=31						
CPUP	**Villa Florida**	**52.04**	**113**	P	**P**	**10 52 17.7**	**-0.8**
	1.4nm,0.7s,baz=259,slow=16,SNR=3.4						
CPUP				LR	LR	11 10 47.8	
	comp=Z,1μm,19.1s,baz=276,slow=32						
PTGA	**Pitinga**	**52.32**	**80**	LR	LR	11 12 12.6	
	comp=Z,1μm,19.8s,baz=270,slow=33						
SMCO	**Snowmass**	**52.38**	**4**	*e*P	**P**	**10 52 21.5**	**+0.4**
	11nm,1.5s						
T38A	**Diamond**	**52.58**	**17**	P	**P**	**10 52 22.4**	**+0.3**
	baz=201						
KSCO	**Kaye Shedlock'**	**52.69**	**8**	P	**P**	**10 52 24.2**	**+1.2**
	baz=191						
KSCO	**Kaye Shedlock'**	**52.69**	**8**	*e*P	**P**	**10 52 24.2**	**+1.2**
	13nm,0.9s						
ISCO	**Idaho Springs**	**53.11**	**5**	P	**P**	**10 52 26.7**	**+0.3**
	baz=187						
ISCO	**Idaho Springs**	**53.11**	**5**	*e*P	**P**	**10 52 26.4**	**+0.1**
	3.5nm,0.9s						
DUG	**Dugway, Tooele**	**53.26**	**359**	P	**P**	**10 52 28.3**	**+1.1**
	baz=178						
S39A	**Bolivar**	**53.47**	**18**	P	**P**	**10 52 28.8**	**+0.2**
	baz=202						
Q33A	**Connelly Farm,**	**53.54**	**13**	P	**P**	**10 52 30.1**	**+0.9**
	baz=196						
SJG	**San Juan**	**54.38**	**56**	LR	LR	11 11 27.5	
	comp=Z,816nm,20.5s,baz=254,slow=31						
HWUT	**Hardware Ranch**	**54.65**	**360**	*e*P	**P**	**10 52 37.2**	**-0.3**
	3.3nm,0.9s						
BW06	**Boulder Array**	**55.83**	**2**	P	**P**	**10 52 45.5**	**-0.6**
	baz=182						
PDAR	**Pinedale Array**	**55.83**	**2**	P	**P**	**10 52 44.4**	**-1.6**
	2.0nm,0.9s,baz=181,slow=5.3,SNR=12						
K22A	**Casper**	**55.87**	**4**	P	**P**	**10 52 46.1**	**0.0**
	baz=186						
K22A	**Casper**	**55.87**	**4**	*e*P	**P**	**10 52 46.3**	**+0.1**
	19nm,1.3s						
L31A	**Butterfield Fa**	**56.40**	**11**	P	**P**	**10 52 50.8**	**+0.9**
	baz=194						
HLID	**Hailey**	**56.68**	**357**	*e*P	**P**	**10 52 53.5**	**+1.5**
	4.2nm,1.0s						
IMW	**Indian Meadow**	**56.94**	**0**	*e*P	**P**	**10 52 53.6**	**-0.4**
	20nm,1.6s						
K32A	**Verdigre**	**57.03**	**12**	P	**P**	**10 52 55.5**	**+1.3**
	baz=195						
FLWY	**Flagg Ranch**	**57.13**	**1**	*e*P	**P**	**10 52 54.7**	**-0.5**
	40nm,1.8s						
J30A	**Dallas**	**57.40**	**10**	P	**P**	**10 52 57.8**	**+1.0**
	baz=194						
D29A	**Pettibone, Tap**	**61.01**	**9**	P	**P**	**10 53 22.1**	**+0.3**
	baz=193						
F36A	**Milaca**	**61.05**	**14**	P	**P**	**10 53 22.5**	**+0.4**
	baz=200						
E33A	**Westby DABS, E**	**61.12**	**12**	P	**P**	**10 53 23.0**	**+0.5**
	baz=197						
NEW	**Newport**	**61.53**	**356**	LR	LR	11 15 38.6	
	comp=Z,1μm,20.2s,baz=174,slow=32						
C30A	**Mose, Pekin**	**61.82**	**10**	P	**P**	**10 53 28.4**	**+1.2**
	baz=194						
B28A	**Dugan Ranch, T**	**62.26**	**8**	P	**P**	**10 53 31.1**	**+0.9**
	baz=192						
A26A	**Wade Farm, Ken**	**62.48**	**7**	P	**P**	**10 53 32.6**	**+0.9**
	baz=190						
C37A	**Embarrass**	**63.12**	**14**	P	**P**	**10 53 36.7**	**+0.7**
	baz=201						
BBB	**Bella Bella**	**66.84**	**349**	LR	LR	11 16 05.5	
	comp=Z,754nm,20.9s,baz=161,slow=30						
DLBC	**Dease Lake**	**73.14**	**350**	LR	LR	11 21 41.2	
	comp=Z,702nm,19.0s,baz=146,slow=32						
FCC	**Fort Churchill**	**73.19**	**9**	*e*P	**P**	**10 54 38.1**	**-0.8**
	5.8nm,0.9s						
YKA	**Yellowknife Ar**	**75.62**	**358**	P	**P**	**10 54 51.8**	**-1.2**
	1.4nm,0.9s,baz=174,slow=5.3,SNR=32						
VNDA	**Vanda**	**76.40**	**193**	LR	LR	11 21 34.6	
	comp=Z,271nm,19.6s,baz=95,slow=30						
QSPA	**South Pole Qui**	**76.78**	**180**	*e*P	**P**	**10 54 59.8**	**-0.1**
	120nm,1.3s						
PMR	**Palmer**	**80.42**	**343**	*e*P	**P**	**10 55 19.8**	**+0.2**
	20nm,1.5s						
DOT	**Dot Lake**	**80.77**	**346**	*e*P	**P**	**10 55 20.5**	**-1.1**
	9.8nm,1.0s						
MCK	**McKinley**	**82.08**	**344**	*e*P	**P**	**10 55 29.2**	**+0.7**
	8.6nm,1.1s						
TRF	**Thorofare Moun**	**82.22**	**343**	*e*P	**P**	**10 55 28.6**	**-0.8**
	18nm,1.1s						
PPLA	**Purkeypile**	**82.33**	**342**	*e*P	**P**	**10 55 29.2**	**-0.8**
	26nm,1.3s						
ILAR	**Eielson Array**	**82.40**	**345**	P	**P**	**10 55 29.3**	**-0.8**
	0.8nm,1.0s,baz=157,slow=4.1,SNR=5.5						
KTH	**Kantishna Hill**	**82.48**	**343**	*e*P	**P**	**10 55 29.9**	**-0.7**
	27nm,0.8s						
BPAW	**Bear Paw Mtn.**	**82.92**	**344**	*e*P	**P**	**10 55 31.9**	**-1.0**
	2.0nm,0.9s						
INK	**Inuvik**	**82.97**	**352**	LR	LR	11 28 08.3	
	comp=Z,1μm,18.2s,baz=150,slow=33						
INK	**Inuvik**	**82.97**	**352**	*e*P	**P**	**10 55 31.4**	**-1.6**
	4.2nm,0.9s						
COLD	**Coldfoot**	**85.19**	**346**	*e*P	**P**	**10 55 44.6**	**+0.2**
	4.8nm,0.9s						
HNR	**Honiara**	**86.68**	**261**	LR	LR	11 27 09.8	
	comp=Z,253nm,21.5s,baz=100,slow=30						
H11S2	**WAKE ISLAND Hy**	**86.78**	**290**	T	T	12 31 50.3	
	baz=100						
H11S1	**WAKE ISLAND Hy**	**86.79**	**290**	T	T	12 31 50.2	
	baz=100,slow=74						
H11S3	**WAKE ISLAND Hy**	**86.80**	**290**	T	T	12 31 49.2	
	baz=100,slow=74						
H11N3	**WAKE ISLAND Hy**	**86.91**	**291**	T	T	12 31 57.2	
	baz=106,slow=75,SNR=35						
H11N2	**WAKE ISLAND Hy**	**86.92**	**291**	T	T	12 32 01.6	
	baz=106,slow=75,SNR=34						
H11N1	**WAKE ISLAND Hy**	**86.93**	**291**	T	T	12 32 02.4	
	baz=106,slow=75,SNR=17						
SYO	**Syowa Base**	**95.33**	**170**	‖*e*P	**P**	**10 56 33.0**	**+0.8**
STKA	**Stephens Creek**	**97.09**	**235**	LR	LR	11 32 13.8	
	comp=Z,676nm,21.9s,baz=91,slow=30						
PMG	**Port Moresby**	**98.93**	**258**	LR	LR	11 32 38.3	
	comp=Z,275nm,19.3s,baz=106,slow=30						
MAW	**Mawson**	**99.18**	**178**	LR	LR	11 35 55.7	
	comp=Z,565nm,22.0s,baz=212,slow=32						
BRTR	**Keskin Array B**	**139.48**	**43**	PKP	**PKPdf**	**11 02 35.6**	**-0.8**
	1.2nm,1.0s,baz=197,slow=4.4,SNR=5.1						
BVAR	**Borovoye Array**	**140.37**	**358**	PKhKP	PKPpre	11 02 30.0	
	0.9nm,0.6s,baz=258,slow=28,SNR=4.3						
KURK	**Kurchatov**	**141.85**	**350**	PKPpre	PKPpre	11 02 34.1	
KURBB	**Kurchatov

0.8nm,0.3s,baz=60,slow=10,SNR=9.3
MJAR Sn **Sb 11 02 30.2 +1.7**
1.2nm,0.3s,baz=116,slow=31,SNR=3.8
MAT Matsushiro 3.47 242 P **Pn 11 01 40.6 +2.8**
MAT S **Sb 11 02 25.0 -3.5**
JHJ Hachijo jima 2 5.43 200 Pn **Pn 11 02 05.9 +1.2**
5.6nm,0.3s,baz=37,slow=20,SNR=3.7
JHJ Sn **Sn 11 03 05.1 -1.0**
2.3nm,0.3s,baz=72,slow=19,SNR=3.3
KURBB Kurchatov Arra 45.63 307 P **P 11 09 02.7 -0.5**
0.5nm,0.7s,baz=84,slow=8.2,SNR=4.9
ARU Arti 55.77 318 LR LR 11 36 39.0
comp=Z,92nm,18.7s,baz=106,slow=39
WRA Warramunga Arr 58.33 188 P **P 11 10 37.3 -0.6**
0.4nm,0.5s,baz=5.3,slow=7.2,SNR=9.6
ASAR Alice Springs 62.06 188 P **P 11 11 03.9 +0.5**
0.3nm,0.7s,baz=14,slow=9.7,SNR=6.0

IDC ***26*** *11:07:24.7±0.6, 16°.84N×99°.48W, h0km, mb4.7/32, mb1 4.8/37, mb1mx4.8/45, mbtmp4.7/37, ML4.2/5, MS4.7/27, Ms1 4.7/27, ms1mx4.6/42, Error ellipse: s-maj=17.2km s-min=10.4km az=48.0*

ISCJB ***26*** *11:07:25.8±0.2, 16°.99N±0°.02×99°.40W±0°.02, h10km, mb5.2/228, MS4.9/168, Error ellipse: s-maj=2.7km s-min=2.2km az=13.9*

NEIC ***26*** *11:07:27.0±0.2, 16°.85N×99°.47W, h11km, mb5.3/231, MS4.9/129, MW5.5, MD5.5(MEX), Error ellipse: s-maj=3.6km s-min=2.2km az=202.0, Moment Tensor Solution. s12 Moment tensor: Scale 10^{17}Nm; M_{rr}=1.53; $M_{\theta\theta}$-2.32; $M_{\phi\phi}$0.79; $M_{r\theta}$-0.02; $M_{\theta\phi}$1.04; $M_{\phi r}$-0.73; Best double couple: M_o2.40000×10^{17} NP1:ϕ_s137.00000°, δ58.00000°, λ135.00000°. NP2:ϕ_s256.00000°, δ53.00000°, λ42.00000°. Principal axes: T 2.0500, Plg53.0000°, Azm104.0000°; N 0.5900, Plg36.0000°, Azm289.0000°; P -2.6400, Plg3.0000°, Azm197.0000°;*

NEIC Felt [V] at Acapulco and [II] at Mexico. Also felt at Acambay, Acamixtla, Cuernavaca, Huixquilucan, Oaxaca, Puebla and San Jeronimo.

GCMT ***26*** *11:07:27.0±0.2, 16°.91N×99°.45W, h23km, MW5.4/106, Moment Tensor Solution. s76,c108; s106,c191; Duration: 1s2 Moment tensor: Scale 10^{17}Nm; M_{rr}1.10±.04; $M_{\theta\theta}$-0.91±.02; $M_{\phi\phi}$-0.19±.02; $M_{r\theta}$0.85±.04; $M_{\theta\phi}$0.29±.01; $M_{\phi r}$-0.63±.04; Best double couple: M_o1.49600×10^{17} NP1:ϕ_s121.00000°, δ68.00000°, λ98.00000°. NP2:ϕ_s281.00000°, δ24.00000°, λ72.00000°. Principal axes: T 1.5580, Plg66.0000°, Azm45.0000°; N -0.1280, Plg7.0000°, Azm298.0000°; P -1.4340, Plg22.0000°, Azm205.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

MOS ***26*** *11:07:28.8±1.0, 16°.92N×99°.37W, h33km, mb5.4/52, MS4.9/6 Error ellipse: s-maj=8.7km s-min=3.9km az=96.8*

MEX ***26*** *11:07:28.0±1.0, 16°.71N×99°.68W, h8km±4km, MD5.5*

BJI ***26*** *11:07:29.5, 17°.10N×99°.40W, h20km, mB5.4/8, Ms5.5/15, Ms7 5.1/14*

ISC 26 11:07:28.2±0.4, 16°.97N±0°.02×99°.59W±0°.02, h19km±1km, n1134, o1831/1073, mb5.2/229, MS4.9/168, 6C-2D, Near coast of Guerrero

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ACX	**Acapulco**	**0.28**	**250**	*e*Pg	**Pb**	**11 07 35.5**	**+1.1**
ACX	**Acapulco**	**0.28**	**250**	*e*P	**Pb**	**11 07 35.5**	**+1.1**
ACP2	**Acapulco**	**0.30**	**252**	*e*P	**Pg**	**11 07 32.9**	**-1.9**
ACP2				*e*S	**Sg**	**11 07 37.0**	**-2.4**
CAIG	**El Cayaco**	**0.65**	**277**	*e*Pg	**Pg**	**11 07 39.3**	**-1.9**
CAIG				*e*Sn	**Sg**	**11 07 48.0**	**-1.9**
CAIG	**El Cayaco**	**0.65**	**277**	*i* P	**Pg**	**11 07 39.3**	**-1.9**
CAIG				*i* S	**Sg**	**11 07 48.0**	**-1.9**
MEIG	**Mezcala**	**0.96**	**358**	*e*Pn	**Pn**	**11 07 47.4**	**+0.7**
MEIG				*e*Sn	**Sn**	**11 08 03.0**	**+3.2**
MEIG	**Mezcala**	**0.96**	**358**	*i* P	**Pn**	**11 07 47.4**	**+0.7**
MEIG				*i* S	**Sn**	**11 08 03.0**	**+3.2**
TLIG	**Tlapa**	**1.14**	**59**	*e*Pn	**Pn**	**11 07 49.7**	**+0.4**
TLIG				*e*Sn	**Sg**	**11 08 07.5**	**+2.0**
TLIG	**Tlapa**	**1.14**	**59**	*e*P	**Pn**	**11 07 49.6**	**+0.4**
TLIG				*i* S	**Sg**	**11 08 08.5**	**+1.0**
ARIG	**Puente Sto Nin**	**1.50**	**331**	*i* P	**Pg**	**11 07 55.2**	**-1.9**
ARIG				*i* S	**Sg**	**11 08 15.2**	**-1.4**
PNIG	**Pinotepa**	**1.51**	**112**	*e*Pn	Pn	11 07 51.7	-2.6
PNIG				*e*Sn	**Sn**	**11 08 12.3**	**-1.1**
PNIG	**Pinotepa**	**1.51**	**112**	*e*P	Pn	11 07 51.7	-2.6
PNIG				*e*S	**Sn**	**11 08 12.3**	**-1.1**
ZIIG	**Zihuatanejo**	**1.90**	**290**	*e*Pn	**Pn**	**11 07 59.0**	**-0.6**
ZIIG				*e*Sn	**Sn**	**11 08 20.4**	**-2.6**
ZIIG	**Zihuatanejo**	**1.90**	**290**	*e*P	**Pn**	**11 07 59.0**	**-0.6**
ZIIG				*e*S	**Sn**	**11 08 20.4**	**-2.6**
MZVM		**2.24**	**9**	*e*P	**Pg**	**11 08 10.8**	**-0.4**
PPM	**Popocatepetl**	**2.28**	**24**	*e*P	**Pn**	**11 08 06.4**	**+1.1**
PPM	**Popocatepetl**	**2.28**	**24**	*e*Pn	**Pn**	**11 08 06.4**	**+1.1**
PPM				*e*Sn	**Sg**	**11 08 42.2**	**+0.4**
PPM	**Popocatepetl**	**2.28**	**24**	*e*P	**Pn**	**11 08 06.4**	**+1.1**
PPM				*i* S	**Sg**	**11 08 42.2**	**+0.4**
TOVM	**TOLUCA**	**2.31**	**358**	*e*P	**Pg**	**11 08 13.1**	**+0.5**
UNM	**Universidad Na**	**2.38**	**9**	*e*P	**Pb**	**11 08 08.6**	**-2.1**
UNM				*e*		11 08 42.4	
UNM	**Universidad Na**	**2.38**	**9**	*e*Pn	**Pb**	**11 08 08.6**	**-2.1**
UNM				*e*Sn	**Sg**	**11 08 42.4**	**-2.6**
UNM	**Universidad Na**	**2.38**	**9**	*e*P	**Pb**	**11 08 08.6**	**-2.1**
UNM				*e*S	**Sg**	**11 08 42.4**	**-2.6**
PBVM	**Pinon**	**2.51**	**11**	*e*Pn	**Pg**	**11 08 14.2**	**-2.2**
PBVM	**Pinon**	**2.51**	**11**	*e*P	**Pg**	**11 08 14.2**	**-2.2**
TPIG	**Tehuac#an**	**2.57**	**55**	*e*Pn	**Pn**	**11 08 09.5**	**+0.6**
TPIG	**Tehuac#an**	**2.57**	**55**	*e*P	**Pn**	**11 08 09.5**	**+0.6**
AZVM	**Cuida Lopez Ma**	**2.62**	**6**	*e*P	**Pb**	**11 08 15.1**	**+0.4**
PTVM	**Pico Tres Padr**	**2.65**	**10**	*e*Pg	**Pg**	**11 08 17.9**	**-1.3**
PTVM	**Pico Tres Padr**	**2.65**	**10**	*e*P	**Pg**	**11 08 17.9**	**-1.3**
VHO	**Vista Hermosa**	**2.73**	**87**	*e*Pn	**Pn**	**11 08 11.0**	**-0.3**
VHO	**Vista Hermosa**	**2.73**	**87**	*e*P	**Pn**	**11 08 11.0**	**-0.3**
ZUVM	**ZUMPANGO**	**2.89**	**10**	*e*P	**Pg**	**11 08 22.9**	**-0.7**
VTVM	**Tizayuca**	**2.90**	**15**	*e*P	**Pg**	**11 08 24.0**	**+0.2**
MOIG	**Morelia**	**3.10**	**331**	*e*Pn	Pb	11 08 18.8	-4.0
MOIG	**Morelia**	**3.10**	**331**	*e*P	Pb	**11 08 18.7**	**-3.1**
DEIG	**Demacu**	**3.36**	**9**	*e*Pn	**Pn**	**11 08 20.7**	**+0.8**
DEIG				*e*Sn	**Sn**	**11 08 58.0**	**-1.4**
DEIG	**Demacu**	**3.36**	**9**	*e*P	**Pn**	**11 08 20.7**	**+0.8**
DEIG				*e*S	**Sn**	**11 08 58.0**	**-1.4**
HUIG	**Huatulco**	**3.55**	**109**	*e*Pn	**Pn**	**11 08 20.8**	**-1.4**
HUIG	**Huatulco**	**3.55**	**109**	*e*P	**Pn**	**11 08 20.8**	**-1.4**
MMIG	**Aquila**	**3.82**	**291**	*e*Pn	**Pn**	**11 08 25.4**	**-0.5**
MMIG	**Aquila**	**3.82**	**291**	*e*P	**Pn**	**11 08 25.4**	**-0.5**
LVIG	**Laguna Verde**	**4.07**	**47**	*e*Pn	**Pn**	**11 08 28.3**	**-1.2**
LVIG				*e*Sn	**Sn**	**11 09 17.4**	**+0.8**
LVIG	**Laguna Verde**	**4.07**	**47**	*e*P	**Pn**	**11 08 28.3**	**-1.2**
LVIG				*e*S	**Sn**	**11 09 17.4**	**+0.8**
IGIG	**Irapuato, Guan**	**4.11**	**337**	*e*P	**Pn**	**11 08 32.1**	**+1.9**
IGIG				*e*S	**Sb**	**11 09 27.9**	**-1.6**
CMIG	**Matias Romero**	**4.50**	**88**	Pn	**Pn**	**11 08 34.3**	**-1.1**
	7.8nm,0.3s,baz=263,slow=11,SNR=58						
CMIG				Sn	**Sn**	**11 09 28.1**	**+0.8**
	112nm,0.3s,baz=258,slow=19,SNR=5.5						
CMIG				Lg	Lg	11 09 51.6	
	134nm,0.3s,baz=327,slow=16,SNR=4.0						
CMIG				LR	LR	11 10 36.2	
	comp=Z,16μm,18.4s,baz=229,slow=43						
TUIG	**Tuzandepetl**	**5.04**	**77**	*e*Pn	**Pn**	**11 08 40.8**	**-2.0**
TUIG				*e*Sg	**Sb**	**11 09 54.6**	**-1.5**
TUIG	**Tuzandepetl**	**5.04**	**77**	*e*P	**Pn**	**11 08 40.8**	**-2.0**
TUIG				*i* S	**Sb**	**11 09 54.6**	**-1.5**
ANIG	**Ahuacatlan**	**6.19**	**312**	*e*Pn	**Pn**	**11 09 00.2**	**+1.5**
ANIG				*e*Sg	**Sb**	**11 10 28.0**	**-1.2**
ANIG	**Ahuacatlan**	**6.19**	**312**	*e*P	**Pn**	**11 09 00.2**	**+1.5**
ANIG				*e*S	**Sb**	**11 10 28.0**	**-1.2**
TGIG		**6.19**	**91**	*e*Pn	**Pn**	**11 08 59.1**	**+0.4**
TGIG				*e*Sg	Sn	11 10 19.0	+10
TGIG		**6.19**	**91**	*e*P	**Pn**	**11 08 59.1**	**+0.4**
TGIG				*i* S	Sn	11 10 19.0	+10
PCIG		**6.24**	**101**	*e*Pn	**Pn**	**11 08 58.7**	**-0.6**
PCIG				*e*Sn	**Sn**	**11 10 13.1**	**+2.9**
PCIG		**6.24**	**101**	*e*P	**Pn**	**11 08 58.7**	**-0.6**
PCIG				*e*S	**Sn**	**11 10 13.1**	**+2.9**
ZAIG	**Zacatecas**	**6.42**	**335**	*e*Pn	Pn	11 09 05.7	+3.7
ZAIG				*e*Sn	Sn	11 10 23.6	+8.8
ZAIG	**Zacatecas**	**6.42**	**335**	*e*P	Pn	11 09 06.5	+4.6
ZAIG				*e*S	Sn	11 10 23.6	+8.8
CCIG	**Comitan**	**7.18**	**94**	*e*Pn	**Pn**	**11 09 10.5**	**-1.8**
THIG		**7.34**	**105**	*e*Pn	Pn	11 09 17.5	+3.2
THIG		**7.34**	**105**	*e*P	Pn	11 09 17.5	+3.2
MAIG	**Mazatlaan**	**8.92**	**315**	*e*Pn	Pn	11 09 31.6	-4.5
MAIG				*e*Sn	Sn	11 11 09.1	-6.9
MAIG	**Mazatlaan**	**8.92**	**315**	*e*P	Pn	11 09 31.6	-4.5
MAIG				*e*S	Sn	11 11 09.1	-6.9
035Z	**Hargill**	**9.56**	**8**	P	Pn	11 09 47.7	+3.0
	baz=188						
035A	**Encino**	**10.02**	**8**	P	Pn	11 09 54.2	+3.1
	baz=187						
034A	**Hebbronville**	**10.09**	**5**	P	Pn	11 09 55.3	+3.2
	baz=184						
933A	**Laredo**	**10.60**	**2**	P	Pn	11 10 03.1	+4.0
	baz=181,SNR=14						
936A	**North Padre Is**	**10.62**	**11**	P	**Pn**	**11 10 02.2**	**+2.9**
	baz=191						
934A	**Benavides**	**10.63**	**5**	P	Pn	11 10 02.7	+3.2
	baz=185						
H06E1	**SOCORRO T-PHAS**	**10.94**	**281**	T	T	11 21 09.2	
	SNR=454						
H06S1	**SOCORRO T**	**10.97**	**281**	T	T	11 21 10.5	
	SNR=60						
H06N1	**SOCORRO T-PHAS**	**11.01**	**282**	T	T	11 21 06.9	
	SNR=8.9						
834A	**Tilden**	**11.15**	**5**	P	Pn	11 10 10.3	+3.8
	baz=184,SNR=6.0						
TEIG	**Tepich**	**11.21**	**71**	Pn	**Pn**	**11 10 05.2**	**-2.2**
	1.1nm,0.3s,baz=269,slow=23,SNR=12						
TEIG				Sn	Sn	11 12 06.9	-5.3
	baz=180,slow=20						
TEIG				LR	LR	11 15 42.0	
	comp=Z,4μm,20.2s,baz=178,slow=45						
TEIG	**Tepich**	**11.21**	**71**	*e*Pn	**Pn**	**11 10 06.2**	**-1.2**
TEIG				*e*Sn	**Sn**	**11 12 10.1**	**-2.1**
832A	**Faith Ranch, C**	**11.27**	**358**	P	Pn	11 10 11.4	+3.1
	baz=178						
833A	**Chaparral WMA,**	**11.31**	**1**	P	Pn	11 10 12.3	+3.5
	baz=180,SNR=8.5						
835A	**Beeville**	**11.38**	**8**	P	Pn	11 10 13.0	+3.2
	baz=188						
HPIG		**11.41**	**331**	*e*Pn	Pn	11 10 15.0	+4.6
733A	**Divot King Ran**	**11.70**	**1**	P	Pn	11 10 17.4	+3.3
	baz=181,SNR=9.7						
SLBS	**Sierra La Lagu**	**11.79**	**306**	*e*Pn	**Pn**	**11 10 17.2**	**+1.7**
734A	**La Parita Cree**	**11.87**	**4**	P	**Pn**	**11 10 19.1**	**+2.7**
	baz=184						
735A	**Kenedy**	**11.95**	**8**	P	**Pn**	**11 10 20.1**	**+2.6**
	baz=188						
737A	**Port Lavaca**	**12.10**	**13**	P	**Pn**	**11 10 22.3**	**+2.8**
	baz=194						
736A	**Circle Diamond**	**12.16**	**11**	P	**Pn**	**11 10 22.9**	**+2.5**
	baz=191						
TGUH	**Tegucigalpa,Un**	**12.22**	**102**	*e*Pn	**Pn**	**11 10 22.4**	**+1.2**
LPIG	**La Paz**	**12.29**	**307**	Pn	**Pn**	**11 10 24.6**	**+2.3**
	4.3nm,0.3s,baz=134,slow=3.4,SNR=2.6						
738A	**Farr-Stevens R**	**12.36**	**16**	P	**Pn**	**11 10 25.7**	**+2.6**
	baz=197						
634A	**China Grove, S**	**12.41**	**5**	P	**Pn**	**11 10 26.1**	**+2.2**
	baz=185						
633A	**Seathoff Ranch**	**12.44**	**2**	P	**Pn**	**11 10 26.6**	**+2.3**
	baz=181,SNR=9.0						
635A	**Leesville**	**12.48**	**7**	P	**Pn**	**11 10 26.1**	**+1.4**
	baz=188						
636A	**Smothers Creek**	**12.67**	**10**	P	**Pn**	**11 10 28.8**	**+1.4**
	baz=190,SNR=8.4						
637A	**Eagle Lake**	**12.77**	**13**	P	**Pn**	**11 10 31.0**	**+2.2**
	baz=194						
LTX	**Lajitas**	**12.87**	**344**	*e*P	Pn	11 10 33.9	+3.7
LTX	**Lajitas**	**12.87**	**344**	*e*Pn	Pn	11 10 33.9	+3.7
TXAR	**Lajitas Array**	**12.87**	**344**	Pn	Pn	11 10 33.9	+3.7
	0.2nm,0.3s,baz=162,slow=14,SNR=59						
TXAR				Lg	Lg	11 14 20.5	
	0.3nm,0.3s,baz=158,slow=24,SNR=3.7						
TXAR				LR	LR	11 15 15.4	
	comp=Z,1μm,18.9s,baz=0.0,slow=36						
638A	**Rosharon**	**12.97**	**16**	P	**Pn**	**11 10 33.4**	**+2.0**
	baz=197						
534A	**Blanco**	**13.04**	**4**	P	**Pn**	**11 10 34.1**	**+1.6**
	baz=184,SNR=12						
533A	**Kerrville**	**13.06**	**2**	P	**Pn**	**11 10 34.1**	**+1.4**
	baz=182						
535A	**Dale**	**13.13**	**8**	P	**Pn**	**11 10 35.3**	**+1.5**
	baz=188						
536A	**Bastrop**	**13.25**	**10**	P	**Pn**	**11 10 36.6**	**+1.2**
	baz=190						
HKT	**Hockley**	**13.38**	**14**	*e*P	**Pn**	**11 10 37.6**	**+0.6**
HKT	**Hockley**	**13.38**	**14**	*e*Pn	**Pn**	**11 10 37.6**	**+0.6**
537A	**Green Hill Far**	**13.39**	**12**	P	**Pn**	**11 10 38.5**	**+1.3**
	baz=193						
JCT	**Junction City**	**13.46**	**359**	P	**Pn**	**11 10 39.9**	**+1.8**
	baz=179						
JCT	**Junction City**	**13.46**	**359**	*e*P	**Pn**	**11 10 39.7**	**+1.5**
JCT				*e*		11 13 06.0	
JCT	**Junction City**	**13.46**	**359**	*e*Pn	**Pn**	**11 10 39.6**	**+1.5**
JCT				*e*Sn	**Sn**	**11 13 06.0**	**-1.2**
538A	**Harpers Horsep**	**13.72**	**15**	P	**Pn**	**11 10 42.7**	**+1.0**
	baz=196						
433A	**Art**	**13.73**	**2**	P	**Pn**	**11 10 43.0**	**+1.1**
	baz=182,SNR=17						
539A	**Cross D Ranch,**	**13.82**	**18**	P	**Pn**	**11 10 43.0**	**0.0**
	baz=199						
434A	**Burnet**	**13.84**	**5**	P	**Pn**	**11 10 43.9**	**+0.5**
	baz=185,SNR=12						
435B	**Jarrell**	**13.88**	**7**	P	**Pn**	**11 10 45.1**	**+1.2**
	baz=188						
436A	**Wall Ranch, Ga**	**13.98**	**10**	P	**Pn**	**11 10 46.0**	**+0.7**
	baz=191						
540A	**Vidor**	**14.15**	**20**	P	**Pn**	**11 10 48.2**	**+0.6**
	baz=202						
437A	**Phantom Ranch,**	**14.16**	**12**	P	**Pn**	**11 10 48.5**	**+0.8**
	baz=193						
438A	**Sam Houston St**	**14.23**	**15**	P	**Pn**	**11 10 49.3**	**+0.7**
	baz=196						
541A	**Lake Charles**	**14.29**	**23**	P	**Pn**	**11 10 50.8**	**+1.2**
	baz=205						
333A	**Richland Sprin**	**14.31**	**2**	P	**Pn**	**11 10 50.6**	**+0.8**
	baz=182,SNR=14						
334A	**Lometa**	**14.36**	**5**	P	**Pn**	**11 10 50.6**	**+0.1**
	baz=185,SNR=10						
335A	**Moody**	**14.39**	**7**	P	**Pn**	**11 10 51.3**	**+0.4**
	baz=188,SNR=13						
439A	**Center Grove,**	**14.45**	**17**	P	**Pn**	**11 10 52.1**	**+0.3**
	baz=198,SNR=16						
336A	**Riesel**	**14.57**	**9**	P	**Pn**	**11 10 53.9**	**+0.5**
	baz=190,SNR=15						
440A	**Kirbyville**	**14.65**	**20**	P	**Pn**	**11 10 54.2**	**-0.2**
	baz=201						
337A	**Centerville**	**14.68**	**13**	P	**Pn**	**11 10 54.6**	**-0.2**
	baz=194,SNR=14						
338A	**Crockett**	**14.85**	**14**	P	**Pn**	**11 10 57.0**	**-0.2**
	baz=196,SNR=8.3						
441A	**DeRidder**	**14.91**	**22**	P	**Pn**	**11 10 57.1**	**-0.9**
	baz=204						
233A	**Rising Star**	**15.00**	**2**	P	**Pn**	**11 10 59.6**	**+0.4**
	baz=182,SNR=36						
339A	**Huntington**	**15.02**	**17**	P	**Pn**	**11 10 59.2**	**-0.2**
	baz=195,SNR=12						
234A	**Clairette**	**15.03**	**5**	P	**Pn**	**11 11 00.0**	**+0.4**
	baz=185,SNR=123						
WHTX	**Lake Whitney,**	**15.09**	**7**	P	**Pn**	**11 11 00.4**	**+0.1**
	baz=187,SNR=51						
WHTX	**Lake Whitney,**	**15.09**	**7**	*e*Pn	**Pn**	**11 11 00.7**	**+0.4**
WHTX				*e*Sn	**Sn**	**11 13 46.2**	**-0.7**
442A	**Mamou**	**15.16**	**24**	P	**Pn**	**11 11 00.8**	**-0.5**
	baz=206						
VCR	**Vista de Mar**	**15.17**	**115**	*e*P	**Pn**	**11 11 05.3**	**+3.7**
544A	**White Castle**	**15.19**	**29**	P	**Pn**	**11 11 00.8**	**-0.8**
	baz=212						
236A	**Katherine and**	**15.22**	**10**	P	**Pn**	**11 11 01.5**	**-0.6**
	baz=191,SNR=17						
340A	**Bronson**	**15.29**	**19**	P	**Pn**	**11 11 02.4**	**-0.7**
	baz=200,SNR=7.5						
237A	**Washetta, Mont**	**15.36**	**12**	P	**Pn**	**11 11 03.8**	**-0.1**
	baz=193,SNR=20						
NATX	**Nacogdoches**	**15.39**	**16**	P	**Pn**	**11 11 03.9**	**-0.5**
	baz=197,SNR=16						
NATX	**Nacogdoches**	**15.39**	**16**	*e*Pn	**Pn**	**11 11 04.3**	**0.0**
	402nm,1.1s						
341A	**Kurthwood**	**15.45**	**21**	P	**Pn**	**11 11 04.0**	**-1.1**
	baz=203						
443A	**Delano Plantat**	**15.47**	**26**	P	**Pn**	**11 11 03.1**	**-2.3**
	baz=208						
238A	**Jacksonville**	**15.51**	**14**	P	**Pn**	**11 11 05.6**	**-0.3**
	baz=196,SNR=10						
MNTX	**Cornudas Mount**	**15.58**	**341**	P	**P**	**11 11 08.9**	**-2.2**
	baz=159,SNR=32						
MNTX	**Cornudas Mount**	**15.58**	**341**	*e*Pn	**P**	**11 11 09.2**	**-1.8**
	217nm,1.9s						
133A	**Hamilton Ranch**	**15.59**	**2**	P	**Pn**	**11 11 07.5**	**+0.6**
	baz=182,SNR=168						
ABTX	**Abilene, Hawle**	**15.59**	**360**	P	**Pn**	**11 11 07.2**	**+0.2**
	baz=179,SNR=25						
ABTX	**Abilene, Hawle**	**15.59**	**360**	*e*Pn	**Pn**	**11 11 07.5**	**+0.5**
	340nm,1.6s						
134A	**White-Moore Ra**	**15.60**	**5**	P	**Pn**	**11 11 07.2**	**+0.2**
	baz=185,SNR=60						
135A	**Vickery Place,**	**15.65**	**7**	P	**Pn**	**11 11 07.6**	**-0.1**
	baz=187,SNR=14						
136A	**Ennis**	**15.69**	**10**	P	**Pn**	**11 11 07.7**	**-0.5**
	baz=190,SNR=7.8						
239A	**Gary**	**15.69**	**16**	P	**Pn**	**11 11 07.8**	**-0.4**
	baz=198						
JTS	**JuntasAbangare**	**15.69**	**113**	Pn	**Pn**	**11 11 09.7**	**+1.4**
	1.1nm,0.3s,baz=288,slow=11,SNR=13						
JTS	**JuntasAbangare**	**15.69**	**113**	*d*P	**P**	**11 11 11.8**	**-0.5**
JTS				pmax	pmax		
	comp=Z,102nm,1.1s						
JTS	**JuntasAbangare**	**15.69**	**113**	*e*Pn	**Pn**	**11 11 07.4**	**-1.0**
	comp=Z,162nm,1.1s						
342A	**Flagon Creek P**	**15.79**	**23**	P	**Pn**	**11 11 08.5**	**-1.1**
	baz=206,SNR=11						
444A	**Pine Grove**	**15.89**	**29**	P	**Pn**	**11 11 09.4**	**-1.4**
	baz=212						
HSIG		**15.90**	**321**	*e*Pn	**P**	**11 11 13.8**	**-0.8**
	comp=Z,152nm,1.2s						
240A	**Hunter Patters**	**15.91**	**18**	P	**Pn**	**11 11 10.1**	**-1.0**
	baz=200						
137A	**Heron Place, G**	**15.95**	**12**	P	**Pn**	**11 11 11.7**	**+0.2**
	baz=193,SNR=11						
343A	**Vidalia**	**15.99**	**26**	P	**Pn**	**11 11 11.3**	**-0.9**
	baz=208						
445A	**Amite**	**16.09**	**30**	P	**Pn**	**11 11 12.5**	**-0.9**
	baz=213						
138A	**Matatall Enter**	**16.15**	**14**	P	**Pn**	**11 11 14.2**	**+0.1**
	baz=195						
241A	**Mo Tay, Goldon**	**16.17**	**21**	P	**Pn**	**11 11 13.8**	**-0.6**
	baz=203						
Z33A	**Whitaker Ranch**	**16.27**	**2**	P	**Pn**	**11 11 15.7**	**0.0**
	baz=182,SNR=67						
139A	**Bunkhouse Ranc**	**16.34**	**16**	P	**Pn**	**11 11 16.0**	**-0.5**
	baz=197						
Z34A	**Collier Ranch,**	**16.41**	**5**	P	**Pn**	**11 11 17.6**	**+0.2**
	baz=185,SNR=19						
Z35A	**Perchaven, San**	**16.43**	**7**	P	**Pn**	**11 11 17.8**	**0.0**
	baz=188,SNR=12						
242A	**Grayson**	**16.47**	**23**	P	**Pn**	**11 11 17.4**	**-0.9**
	baz=205						
Z36A	**Blue Ridge**	**16.48**	**9**	P	**Pn**	**11 11 18.5**	**+0.1**
	baz=190,SNR=21						
344A	**Westbrook Farm**	**16.52**	**28**	P	**Pn**	**11 11 17.6**	**-1.2**
	baz=211						
140A	**Cam and Jess,**	**16.53**	**18**	P	**Pn**	**11 11 18.5**	**-0.5**
	baz=200,SNR=10						
Z37A	**Pogue Cattle C**	**16.55**	**12**	P	**Pn**	**11 11 19.2**	**-0.1**
	baz=193,SNR=7.4						
243A	**Waterproof**	**16.57**	**25**	P	**Pn**	**11 11 18.3**	**-1.2**
	baz=208						
446A	**Poplarville**	**16.62**	**32**	P	**Pn**	**11 11 18.9**	**-1.2**
	baz=216						
141A	**Papa Simpson,**	**16.70**	**20**	P	**Pn**	**11 11 20.3**	**-0.9**
	baz=202,SNR=9.3						
345A	**Thompson Farm,**	**16.72**	**30**	P	**Pn**	**11 11 19.8**	**-1.5**
	baz=213						
Z38A	**Mt. Pleasant**	**16.74**	**14**	P	**Pn**	**11 11 21.4**	**-0.2**
	baz=195,SNR=9.7						
QCR	**Quepos**	**16.77**	**115**	*e*P	**P**	**11 11 24.6**	**+0.3**
319A	**Douglas**	**16.84**	**330**	*e*Pn	**P**	**11 11 25.9**	**+0.8**
	comp=Z,593nm,1.8s						
Z39A	**Irene McRaven,**	**16.92**	**16**	P	**Pn**	**11 11 23.7**	**-0.2**
	baz=198,SNR=11						
URSC	**Urasca**	**16.93**	**113**	*e*P	**Pn**	**11 11 24.6**	**+0.3**
142A	**Monroe**	**16.99**	**23**	P	**Pn**	**11 11 23.6**	**-1.1**
	baz=205						
Y33A	**Hilltop Ranch,**	**16.99**	**3**	P	**Pn**	**11 11 25.1**	**+0.3**
	baz=183,SNR=27						
447A	**Lucedale**	**17.00**	**34**	P	**Pn**	**11 11 23.7**	**-1.2**
	baz=218						
Y34A	**Reagan Ranch,**	**17.00**	**5**	P	**Pn**	**11 11 24.3**	**-0.7**
	baz=186,SNR=24						
Y35A	**Marietta**	**17.02**	**7**	P	**Pn**	**11 11 25.3**	**0.0**
	baz=188,SNR=22						
244A	**Avery, Jackson**	**17.04**	**27**	P	**Pn**	**11 11 24.2**	**-1.3**
	baz=210,SNR=9.6						
346A	**Big Creek Wild**	**17.06**	**31**	P	**Pn**	**11 11 24.4**	**-1.2**
	baz=214						
BUS	**Buena Vista**	**17.07**	**114**	*e*P	**P

comp=Z,202nm,1.2s
W34A Bridge Creek, 18.27 5 P P 11 11 40.9 +0.2
baz=185,SNR=10.0
W34A Bridge Creek, 18.27 5 eP P 11 11 41.8 +1.0
comp=Z,126nm,1.0s
W35A Tecumseh 18.27 7 P P 11 11 41.3 +0.5
baz=188,SNR=27
146A Union 18.28 29 P Pn 11 11 39.5 -1.2
baz=213
MIAR Mount Ida 18.32 16 P Pn 11 11 40.7 -0.4
baz=198,SNR=64
MIAR Mount Ida 18.32 16 eP Pn 11 11 40.8 -0.4
MIAR pmax pmax
comp=Z,120nm,0.9s
MIAR Mount Ida 18.32 16 eP Pn 11 11 40.8 -0.4
comp=Z,115nm,0.9s
TUC Tucson 18.33 328 P P 11 11 43.5 +2.0
baz=144
TUC Tucson 18.33 328 eP P 11 11 44.0 +2.4
TUC pmax pmax
comp=Z,93nm,1.3s
TUC Tucson 18.33 328 eP P 11 11 44.0 +2.4
comp=Z,94nm,1.3s
W36A Wetumka 18.35 9 P P 11 11 41.8 +0.2
baz=190,SNR=20
LPM Los Pinos Moun 18.39 341 eP P 11 11 44.5 +2.2
X40A Basin Creek Fa 18.47 18 P P 11 11 42.4 -0.5
baz=200,SNR=9.4
W37B Quinton 18.48 11 P Pn 11 11 43.8 +0.6
baz=192,SNR=28
248A Dixon Mills 18.50 33 P P 11 11 42.2 -1.1
baz=218
W38A Poteau 18.59 13 P Pn 11 11 45.1 +0.5
baz=195,SNR=18
LAZ Ladron 18.64 340 eP Pn 11 11 46.9 +1.6
V32A Arapaho 18.69 1 P Pn 11 11 45.8 +0.1
baz=181,SNR=13
147A Livingston 18.69 31 P P 11 11 44.7 -0.6
baz=215
V33A Lossen Ranch, 18.82 3 P Pn 11 11 47.5 +0.2
baz=184,SNR=17
V35A Meyer Ranch, C 18.88 7 P Pn 11 11 47.7 -0.4
baz=188,SNR=18
W39A Magazine 18.88 15 P Pn 11 11 48.6 +0.5
baz=197,SNR=31
UALR University of 18.88 19 eP Pn 11 11 47.8 -0.3
comp=Z,344nm,1.1s
V34A Guthrie 18.88 5 P Pn 11 11 48.0 -0.1
baz=186,SNR=19
V34A Guthrie 18.88 5 eP Pn 11 11 47.9 -0.3
comp=Z,137nm,0.8s
Y44A Strider, Charl 18.91 25 P P 11 11 47.4 -0.3
baz=208
ANMO Albuquerque 18.93 342 P Pn 11 11 49.9 +1.0
comp=Z,0.8nm,0.3s,baz=150,slow=12,SNR=114
ANMO Lg Lg 11 17 39.4
comp=Z,0.2nm,0.3s,baz=238,slow=18,SNR=4.8
ANMO LR LR 11 19 27.8
comp=Z,4μm,21.5s,baz=164,slow=38
ANMO Albuquerque 18.93 342 P Pn 11 11 49.7 +0.8
baz=159
ANMO Albuquerque 18.93 342 ceP Pn 11 11 50.5 +1.6
ANMO pmax pmax
comp=Z,49nm,1.6s
ANMO Albuquerque 18.93 342 eP Pn 11 11 50.4 +1.6
comp=Z,136nm,1.6s
V36A Jenks 19.02 9 P P 11 11 49.0 0.0
baz=190,SNR=13
W40A Ferguson Farm, 19.06 17 P Pn 11 11 49.8 -0.4
baz=199
Y45A Yeager Farm, C 19.10 26 P P 11 11 49.4 -0.4
baz=210,SNR=12
214A Organ Pipe Nat 19.14 324 P Pn 11 11 51.6 +0.3
baz=138,SNR=17
214A Organ Pipe Nat 19.14 324 eP Pn 11 11 53.1 +1.8
comp=Z,248nm,1.1s
TUL1 Leonard 19.17 9 P P 11 11 50.8 +0.2
baz=191,SNR=34
TUL1 Leonard 19.17 9 eP P 11 11 50.9 +0.2
comp=Z,400nm,0.9s
V37A Hulbert 19.25 11 P P 11 11 51.6 +0.1
baz=193,SNR=22
W41A Tony Mavity, V 19.28 18 P P 11 11 52.0 +0.2
baz=201,SNR=17
W41B Gary Mavity, V 19.28 18 P P 11 11 52.1 +0.3
baz=201,SNR=17
X301 Greenbrier Sit 19.30 18 eP P 11 11 52.2 +0.3
comp=Z,354nm,1.8s
U32A Winter Ranch, 19.34 1 P Pn 11 11 53.1 -0.6
baz=181,SNR=19
V38A Canehill 19.38 13 P P 11 11 52.4 -0.5
baz=195,SNR=18
WHAR Wooly Hollow 19.38 18 eP Pn 11 11 53.5 -0.5
comp=Z,85nm,0.9s
Y46A Houston 19.41 28 P P 11 11 52.9 -0.4
baz=212,SNR=26
U33A Lingo Farm, Me 19.43 4 P P 11 11 53.3 -0.2
baz=184,SNR=41
U34A Anderson Ranch 19.48 5 P P 11 11 54.0 0.0
baz=186,SNR=29
U34A Anderson Ranch 19.48 5 eP Pn 11 11 54.7 -0.6
comp=Z,468nm,1.6s
U35A Pawnee 19.50 7 P P 11 11 54.1 -0.1
baz=188,SNR=30
V39A Pettigrew 19.53 15 P P 11 11 54.7 +0.1
baz=197,SNR=30
LRAL Lakeview Retre 19.62 33 eP P 11 11 56.2 +0.7
comp=Z,173nm,1.3s
U36A Oologah 19.65 9 P P 11 11 55.7 -0.1
baz=191,SNR=8.7
OXF Oxford 19.71 26 eP P 11 11 56.2 -0.3
OXF pmax pmax
comp=Z,124nm,1.0s
OXF Oxford 19.71 26 eP P 11 11 56.2 -0.3
comp=Z,124nm,1.0s
U37A Salina 19.77 11 P P 11 11 56.6 -0.5
baz=192,SNR=7.9
X18A Snowflake 19.80 334 eP Pn 11 12 00.5 +1.2
comp=Z,181nm,1.3s
HHAR Hobbs 19.88 14 eP P 11 11 58.4 0.0
comp=Z,262nm,1.2s
Y47A UCPARC, Winfie 19.89 30 P P 11 11 57.8 -0.7
baz=214,SNR=18
U38A Gravette 19.94 12 P P 11 11 58.8 -0.2
baz=194,SNR=13
T35A Sooner Cattle 20.06 7 P P 11 11 60.0 -0.3
baz=188,SNR=78
T33A Patterson Ranc 20.07 3 P P 11 12 00.8 +0.3
baz=183,SNR=9.4
U39A Green Forest 20.09 14 P P 11 12 00.6 -0.1
baz=197,SNR=10
T34A McClaskey Farm 20.09 6 P P 11 12 00.5 -0.2
baz=186,SNR=20
T32A Huddler Ranch, 20.14 2 P P 11 12 01.7 +0.4
baz=182,SNR=22
U40A Yellville 20.22 16 P P 11 12 02.0 -0.1
baz=198,SNR=27
W18A Petrified Fore 20.22 335 P Pn 11 12 04.1 -0.2
baz=151
W18A Petrified Fore 20.22 335 eP Pn 11 12 04.9 +0.6
comp=Z,61nm,0.9s
T36A Boggs Farm, Ca 20.28 9 P P 11 12 02.6 -0.1
baz=190,SNR=29
113A Mohawk Valley, 20.29 323 eP Pn 11 12 05.5 +0.7
comp=Z,144nm,1.4s
X16A Lo Mia Camp, P 20.37 331 eP Pn 11 12 06.7 +0.7
comp=Z,114nm,0.8s
TIGA Tifton 20.47 42 P P 11 12 04.6 -0.2
baz=228
TIGA Tifton 20.47 42 eP P 11 12 05.0 +0.2
comp=Z,58nm,0.8s
T37A Cheneyville 18 20.50 11 P P 11 12 04.2 -0.9
baz=192,SNR=41
T38A Diamond 20.53 12 P P 11 12 04.5 -1.0
baz=194,SNR=17
T25A Trinidad 20.54 349 P Pn 11 12 06.8 -1.3
baz=167,SNR=70
T25A Trinidad 20.54 349 eP Pn 11 12 07.5 -0.6
comp=Z,84nm,0.9s
S33A Kaszmaul Farm, 20.60 4 P P 11 12 05.7 -0.5
baz=184,SNR=11
S32A Newby Ranch, P 20.66 1 P P 11 12 06.8 -0.1
baz=181,SNR=16
PLAL Pickwick Lake 20.68 28 eP P 11 12 07.3 +0.3
comp=Z,158nm,1.1s
T39A Clever 20.72 14 P P 11 12 07.2 -0.3
baz=197,SNR=19
BCIP Isla Barro Col 20.73 109 PFAKE 11 12 20.0 +10
BCIP LR LR
comp=Z,913nm,20.0s
Y14A Wickenburg 20.76 327 eP Pn 11 12 10.5 +0.1
comp=Z,364nm,1.1s
S34A Willow Spring 20.77 6 P P 11 12 07.8 -0.3
baz=186,SNR=12
S35A Otter Creek Ra 20.84 7 P P 11 12 08.3 -0.4
baz=188,SNR=30
S36A Lake Cedric, C 20.98 9 P P 11 12 09.9 -0.3
baz=190,SNR=43
T40A Mansfield 21.05 16 P P 11 12 10.5 -0.6
baz=199,SNR=32
MTDJ Mount Denham 21.06 83 eP P 11 12 12.1 +0.7
comp=Z,67nm,0.9s
MTDJ LR LR
comp=Z,1μm,20.0s
GLA Glamis 21.11 322 P P 11 12 14.0 +2.3
baz=136,SNR=38
GLA Glamis 21.11 322 eP P 11 12 14.3 +2.6
GLA pmax pmax
comp=Z,137nm,0.8s
GLA Glamis 21.11 322 eP P 11 12 14.3 +2.6
comp=Z,136nm,0.8s
S37A Fort Scott 21.14 11 P P 11 12 11.4 -0.5
baz=192,SNR=50
S38A Stockton 21.19 13 P P 11 12 11.8 -0.7
baz=195,SNR=25
WUAZ Wupatki 21.25 333 P P 11 12 16.3 +2.9
baz=147,SNR=38
WUAZ Wupatki 21.25 333 eP P 11 12 16.5 +3.1
WUAZ LR LR
comp=Z,8μm,20.0s
R33A Olander Ranch, 21.31 3 P P 11 12 13.6 -0.2
baz=184,SNR=19
PBMO Poplar Bluff 21.34 21 eP P 11 12 13.9 -0.2
comp=Z,114nm,0.8s
SDCO Great Sand Dun 21.35 347 P P 11 12 15.9 +1.3
baz=164,SNR=70
SDCO Great Sand Dun 21.35 347 eP P 11 12 15.8 +1.2
comp=Z,56nm,1.0s
SDCO LR LR
comp=Z,4μm,19.0s
R34A Isabella, Hill 21.36 5 P P 11 12 14.2 -0.1
baz=186,SNR=38
S39A Bolivar 21.37 14 P P 11 12 13.5 -1.0
baz=196,SNR=10
R32A Long Quarter, 21.39 2 P P 11 12 14.2 -0.5
baz=182,SNR=7.3
Y12C Blythe 21.44 324 P P 11 12 17.1 +1.9
baz=138,SNR=32
Y12C Blythe 21.44 324 eP P 11 12 17.6 +2.4
comp=Z,78nm,0.9s
PARMO Parma 21.47 22 eP P 11 12 15.0 -0.5
S40A Lebanon 21.48 16 P P 11 12 15.0 -0.7
baz=198,SNR=29
R35A Emporia Munici 21.48 7 P P 11 12 15.3 -0.4
baz=188,SNR=5.9
UTMT University of 21.52 24 eP P 11 12 17.1 +1.0
comp=Z,621nm,1.0s
R36A Gordon, Harris 21.58 9 P P 11 12 16.5 -0.2
baz=190,SNR=52
SWSC Sam W. Stewart 21.61 320 P P 11 12 19.5 +2.4
baz=134,SNR=11
PDMCI Parker Dam,Lak 21.64 326 P P 11 12 19.1 +1.7
baz=138,SNR=36
MVCO Mesa Verde 21.65 340 P P 11 12 19.0 +1.2
baz=156,SNR=49
MVCO Mesa Verde 21.65 340 eP P 11 12 19.3 +1.6
comp=Z,57nm,0.8s
MVCO LR LR
comp=Z,10μm,20.0s
S22A 4UR Ranch, Cre 21.66 344 P P 11 12 19.7 +1.7
baz=161,SNR=104
S22A 4UR Ranch, Cre 21.66 344 eP P 11 12 19.7 +1.7
comp=Z,73nm,1.0s
R37A Teagarden Farm 21.67 10 P P 11 12 16.8 -1.0
baz=192,SNR=28
R38A Fenwick Farm, 21.72 12 P P 11 12 18.1 -0.2
baz=194,SNR=32
WVT Waverly 21.76 26 eP P 11 12 17.5 -1.1
WVT pmax pmax
comp=Z,100nm,0.9s
WVT Waverly 21.76 26 eP P 11 12 17.7 -1.0
comp=Z,100nm,0.8s
CBKS Cedar Bluff 21.77 360 P P 11 12 19.0 +0.2
baz=179,SNR=7.8
CBKS Cedar Bluff 21.77 360 eP P 11 12 18.0 -0.8
CBKS pmax pmax
comp=Z,120nm,0.9s
CBKS Cedar Bluff 21.77 360 eP P 11 12 17.9 -0.8
comp=Z,124nm,0.8s
CBKS LR LR
comp=Z,2μm,19.0s
GOGA Godfrey 21.88 39 eP P 11 12 19.4 -0.6
GOGA pmax pmax
comp=Z,260nm,1.9s
GOGA Godfrey 21.88 39 eP P 11 12 19.4 -0.6
comp=Z,256nm,1.9s
GOGA LR LR
comp=Z,2μm,20.0s
SWET Sewanee 21.88 31 eP P 11 12 19.0 -1.1
comp=Z,70nm,1.5s
BC3 Big Chuckawall 21.90 322 P P 11 12 22.0 +1.6
baz=136
MONP2 Monument Peak 21.96 319 P P 11 12 22.9 +1.7
baz=132,SNR=12
Q32A Meitler Ranch, 21.96 2 P P 11 12 20.7 -0.2
baz=182,SNR=18
BAR Barrett 21.98 319 eP P 11 12 24.4 +3.3
comp=Z,120nm,1.4s
Q34A Chapman 22.00 6 P P 11 12 20.8 -0.4
baz=186,SNR=28
Q33A Connelly Farm, 22.01 4 P P 11 12 21.0 -0.3
baz=184,SNR=28
R39A Chumby, Stover 22.03 14 P P 11 12 20.9 -0.7
baz=196,SNR=18
IRM Iron Mountain 22.09 324 P P 11 12 24.2 +1.9
baz=137,SNR=6.7
W13A Hualapai Mount 22.11 327 eP P 11 12 25.2 +2.5
comp=Z,61nm,0.9s
KSCO Kaye Shedlock' 22.12 354 P P 11 12 23.2 +0.5
baz=172,SNR=24
KSCO Kaye Shedlock' 22.12 354 eP P 11 12 23.4 +0.7
comp=Z,117nm,1.0s
R40A Maddies Statio 22.20 15 P P 11 12 22.6 -0.8
baz=198,SNR=18
KSU1 Kansas State U 22.21 6 P P 11 12 23.0 -0.5
baz=187,SNR=13
KSU1 Kansas State U 22.21 6 eP P 11 12 23.4 -0.1
comp=Z,114nm,0.8s
KSU1 LR LR
comp=Z,2μm,22.0s
Q36A Arnold C. Orve 22.21 9 P P 11 12 22.8 -0.7
baz=190,SNR=16
NEE2 Needles Airpor 22.25 326 P P 11 12 25.5 +1.6
baz=139
Q37A Longview Farm, 22.29 11 P P 11 12 23.7 -0.6
baz=193
109C Camp Elliot, M 22.39 318 P P 11 12 27.2 +1.7
baz=131
U15A North Rim 22.42 332 eP P 11 12 28.6 +2.5
comp=Z,73nm,1.0s
P33A Williams Farm, 22.45 4 P P 11 12 25.7 -0.4
baz=184
Q24A Divide 22.45 349 P P 11 12 27.2 +0.7
baz=166
Q24A Divide 22.45 349 eP P 11 12 27.1 +0.6
comp=Z,23nm,0.9s
BELC Bell Mtn. Jos 22.47 322 P P 11 12 28.5 +2.0
baz=135,SNR=22
PFO Pinyon Flats O 22.47 321 P P 11 12 27.6 +1.1
comp=Z,16nm,0.9s,baz=114,slow=8.4,SNR=12
PFO LR LR 11 20 50.8
comp=Z,1μm,19.5s,baz=144,slow=36
PFO Pinyon Flats O 22.47 321 P P 11 12 28.7 +2.2
baz=134,SNR=7.4
PFO Pinyon Flats O 22.47 321 eP P 11 12 29.2 +2.7
PFO pmax pmax
comp=Z,110nm,1.3s
PFO Pinyon Flats O 22.47 321 eP P 11 12 27.6 +1.1
comp=Z,110nm,1.3s
PFO LR LR
comp=Z,1μm,19.0s
Q38A Cooks Store, C 22.53 12 P P 11 12 26.1 -0.8
baz=195,SNR=15
P32A Huiting Farm, 22.59 2 P P 11 12 27.4 -0.2
baz=182,SNR=27
SIUC Southern Illin 22.60 22 eP P 11 12 29.2 +1.6
comp=Z,210nm,1.0s
P34A Walnut Farm, R 22.63 6 P P 11 12 27.6 -0.4
baz=186,SNR=28
PV05 Paradox Valley 22.63 340 eP P 11 12 29.6 +1.3
P35A Duane Minner, 22.70 7 P P 11 12 27.9 -0.8
baz=188,SNR=13
Q39A Willow Grove F 22.75 13 P P 11 12 28.0 -1.2
baz=196,SNR=14
LDFC Landfair 22.75 325 eP P 11 12 32.9 +3.5
comp=Z,177nm,0.9s
CPCT Cooper Cave 22.79 33 eP P 11 12 28.7 -0.9
comp=Z,56nm,1.1s
GMRC Granite Mounta 22.83 324 P P 11 12 31.9 +1.5
baz=137,SNR=47
PV04 Paradox Valley 22.86 341 eP P 11 12 31.6 +1.0
PV10 Paradox Valley 22.89 341 eP P 11 12 31.4 +0.4
P36A Good Intent, A 22.89 9 P P 11 12 29.9 -0.8
baz=190,SNR=8.8
Q40A Laux Farm, Aux 22.91 15 P P 11 12 29.7 -1.3
baz=198,SNR=15
MURC Murrieta 22.91 320 P P 11 12 32.1 +1.0
baz=132,SNR=13
P37A Lathrop 23.00 10 P P 11 12 30.9 -1.0
baz=193,SNR=18
PV09 Paradox Valley 23.03 341 eP P 11 12 33.7 +1.2
SMCO Snowmass 23.05 345 eP P 11 12 33.9 +1.1
comp=Z,49nm,1.0s
SLM Saint Louis 23.09 19 eP P 11 12 34.5 +1.7
SLM pmax pmax
comp=Z,170nm,1.5s
SLM Saint Louis 23.09 19 eP P 11 12 34.5 +1.7
comp=Z,170nm,1.5s
O33A Hebron 23.09 4 P P 11 12 32.4 -0.4
baz=185,SNR=11
O31A Woolen Ranch, 23.11 1 P P 11 12 32.1 -0.8
baz=180,SNR=6.1
KNB Kanab 23.14 332 eP P 11 12 35.6 +2.0
KNB pmax pmax
comp=Z,350nm,1.7s
KNB Kanab 23.14 332 eP P 11 12 35.6 +2.0
comp=Z,349nm,1.7s
P38A Dawn 23.19 12 P P 11 12 32.9 -0.8
baz=194,SNR=6.7
BBRC Big Bear Solar 23.20 321 P P 11 12 36.1 +1.9
baz=134
O32A Brockman Farm, 23.24 3 P P 11 12 33.8 -0.6
baz=183
HEC Hector,Ludlow 23.25 323 P P 11 12 36.6 +2.1
baz=136,SNR=12
O34A Beatrice 23.27 6 P P 11 12 34.1 -0.5
baz=187,SNR=13
LCMT Little Creek M 23.33 332 eP P 11 12 37.6 +2.2
comp=Z,154nm,1.8s
TKL Tuckaleechee C 23.34 34 P P 11 12 34.6 -0.8
comp=Z,70nm,1.1s,baz=217,slow=7.7,SNR=30
TKL LR LR 11 25 46.9
comp=Z,698nm,18.2s,baz=240,slow=47
ISCO Idaho Springs 23.35 348 P P 11 12 36.3 +0.6
baz=165,SNR=66
ISCO Idaho Springs 23.35 348 eP P 11 12 36.3 +0.6
ISCO pmax pmax
comp=Z,50nm,1.0s
ISCO Idaho Springs 23.35 348 eP P 11 12 36.3 +0.6
comp=Z,50nm,0.9s
ISCO LR LR
comp=Z,4μm,20.0s
SCI2 San Clemente I 23.38 317 P P 11 12 35.0 -0.7
baz=129
USIN University of 23.40 24 eP P 11 12 36.1 +0.2
comp=Z,379nm,1.6s
GTBY Guantanamo Bay 23.40 79 eP P 11 12 37.9 +1.8
comp=Z,154nm,1.0s
GTBY LR LR
comp=Z,1μm,20.0s
P40A Paris 23.42 15 P P 11 12 35.3 -0.8
baz=198,SNR=14
O36A Bolckow 23.43 9 P P 11 12 35.2 -1.0
baz=191,SNR=9.3
O35A Humboldt 23.44 7 P P 11 12 35.6 -0.7
baz=188,SNR=12
TUQ Turquoise Moun 23.46 325 P P 11 12 38.8 +2.2
baz=138,SNR=6.3
CIS Catalina Islan 23.56 318 P P 11 12 38.9 +1.3
baz=130
O37A Wolven Farm, M 23.60 10 P P 11 12 36.5 -1.3
baz=193,SNR=7.3
BFSC Mount Baldy Ra 23.63 320 P P 11 12 40.3 +1.9
baz=132,SNR=7.2
RRX Edison Barstow 23.67 322 P P 11 12 40.7 +2.2
baz=135,SNR=6.0
O38A Galt 23.68 12 P P 11 12 37.3 -1.3
baz=194,SNR=6.5
FMP Fort Macarthur 23.68 318 P P 11 12 40.3 +1.6
baz=130
MTPU Mount Pierson 23.73 335 eP P 11 12 41.8 +2.2
comp=Z,192nm,1.3s
N32A Stulken Farm, 23.74 2 P P 11 12 39.4 +0.1
baz=183
CSU Charleston Sou 23.76 44 eP P 11 12 40.5 +1.1
NHSC New Hope 23.76 44 eP P 11 12 41.0 +1.5
comp=Z,512nm,1.3s
NHSC LR LR
comp=Z,2μm,22.0s
N33A J Bar K, Exete 23.76 4 P P 11 12 39.4 0.0
baz=185
N31A Bailey Ranch, 23.78 1 P P 11 12 39.7 +0.1
baz=181
GSC Goldstone, Bar 23.86 323 P P 11 12 42.6 +2.1
baz=136,SNR=27
GSC Goldstone, Bar 23.86 323 eP P 11 12 43.4 +2.9
GSC pmax pmax
comp=Z,49nm,1.0s
GSC Goldstone, Bar 23.86 323 eP P 11 12 43.4 +2.9
comp=Z,48nm,0.9s
MWC Mount Wilson 23.86 320 eP P 11 12 43.5 +2.8
MWC pmax pmax
comp=Z,340nm,1.9s
MWC Mount Wilson 23.86 320 eP P 11 12 43.5 +2.8
comp=Z,340nm,1.9s
OLIL Olney 23.91 23 eP P 11 12 41.6 +0.8
comp=Z,98nm,1.0s
PASC Pasadena Art C 23.91 319 eP P 11 12 43.1 +2.2
comp=Z,346nm,2.0s
N34A Lincoln 23.94 6 P P 11 12 40.8 -0.3
baz=187,SNR=14
OGNE Ogallala 23.99 355 P P 11 12 42.5 +0.8
baz=174,SNR=22
OGNE Ogallala 23.99 355 eP P 11 12 43.5 +1.8
comp=Z,313nm,1.4s
OGNE LR LR
comp=Z,2μm,22.0s
SHOC Shoshone, Teco 23.99 325 P P 11 12 43.2 +1.5
baz=138,SNR=6.2
O39A Kirksville 24.00 13 P P 11 12 40.9 -0.7
baz=196,SNR=14
O40A La Belle 24.03 15 P P 11 12 41.0 -0.9
baz=198,SNR=15
SRU San Rafael Swe 24.04 339 eP P 11 12 43.5 +1.2
SRU eS ScS 11 23 49.9 +1.2
SRU pmax pmax
comp=Z,46nm,0.9s
SRU San Rafael Swe 24.04 339 eP P 11 12 43.5 +1.2
comp=Z,46nm,0.9s
DECC Green Verdugo 24.06 319 P P 11 12 44.3 +2.0
baz=131
N35A Tabor 24.06 7 P P 11 12 41.9 -0.3
baz=189,SNR=33
N36A Muff Farm, Cla 24.10 9 P P 11 12 42.1 -0.5
baz=191
TZTN Tazewell 24.13 33 eP P 11 12 42.9 0.0
comp=Z,476nm,1.9s
MSU Marysvale 24.14 335 eP P 11 12 45.0 +1.8
MSU Marysvale 24.14 335 eP P 11 12 45.0 +1.8
N37A Lee Faris, Mou 24.16 10 P P 11 12 42.5 -0.7
baz=192,SNR=7.8
WCI Wyandotte Cave 24.18 26 eP P 11 12 43.1 -0.4
WCI pmax pmax
comp=Z,84nm,0.9s
WCI Wyandotte Cave 24.18 26 eP P 11 12 43.1 -0.4
comp=Z,84nm,0.9s
SNCC San Nicolas Is 24.19 316 P P 11 12 44.8 +1.3
baz=127
EDW2 Edwards Air Fo 24.27 321 P P 11 12 46.6 +2.3
baz=133,SNR=11
O20A White River Ci 24.28 344 P P 11 12 46.3 +1.8
baz=159,SNR=44
O20A White River Ci 24.28 344 eP P 11 12 46.4 +1.9
comp=Z,102nm,1.0s

M31A **Lambtecht Ranc** 24.30 1 P P 11 12 45.6 +1.1
baz=181,SNR=7.2
KMSC **Kings Mountain** 24.35 39 P P 11 12 45.1 +0.1
baz=226,SNR=16
KMSC **Kings Mountain** 24.35 39 eP P 11 12 45.5 +0.5
comp=Z,281nm,1.4s
N38A **Joes South For** 24.37 12 P P 11 12 44.8 -0.3
baz=194,SNR=8.6
BGNE **Belgrade** 24.39 3 P P 11 12 45.9 +0.6
baz=183
BGNE **Belgrade** 24.39 3 eP P 11 12 45.9 +0.6
comp=Z,237nm,1.2s
P18A **Preston Nutter** 24.41 340 eP P 11 12 47.3 +1.4
comp=Z,123nm,1.2s
BLG **Laguna Peak, P** 24.43 318 P P 11 12 47.4 +1.7
baz=130
P17A **Butcher Ranch,** 24.44 339 eP P 11 12 47.2 +1.2
comp=Z,34nm,1.0s
TMUT **Trail Mountain** 24.45 338 eP P 11 12 47.9 +1.7
comp=Z,42nm,0.8s
N23A **Red Feather La** 24.47 348 P P 11 12 47.6 +1.3
baz=165,SNR=41
N23A **Red Feather La** 24.47 348 eP P 11 12 47.2 +0.9
comp=Z,62nm,1.0s
LRMC **Laurel Mtn Rad** 24.49 322 P P 11 12 48.3 +1.9
baz=134
OSI **Osito Audit: C** 24.54 319 P P 11 12 48.6 +1.8
baz=131
M34A **Aspy Farms, Fr** 24.59 5 P P 11 12 47.3 +0.2
baz=187,SNR=14
N39A **Derby Farms, D** 24.60 13 P P 11 12 46.7 -0.5
baz=196,SNR=30
M33A **Taylor Creek F** 24.61 4 P P 11 12 47.4 +0.1
baz=185,SNR=14
M35A **Neola** 24.65 7 P P 11 12 47.8 +0.2
baz=189,SNR=19
MOTC **Monteria, Cord** 24.68 106 eP P 11 12 49.1 +1.0
SCZ2 **Santa Cruz Isl** 24.72 317 P P 11 12 49.8 +1.4
baz=128
FURC **Furnace Creek,** 24.73 325 P P 11 12 50.8 +2.5
baz=137,SNR=24
M36A **Felix, Anita** 24.75 9 P P 11 12 48.3 -0.2
baz=191,SNR=11
TPNV **Topopah Spring** 24.76 327 P P 11 12 51.0 +2.1
baz=139
TPNV **Topopah Spring** 24.76 327 eP P 11 12 51.6 +2.7
TPNV pmax pmax
comp=Z,207nm,1.5s
TPNV **Topopah Spring** 24.76 327 eP P 11 12 51.6 +2.7
comp=Z,207nm,1.5s
PHWY **Pilot Hill** 24.77 349 eP P 11 12 50.0 +1.0
comp=Z,66nm,1.1s
MPMC **Manual Prospec** 24.79 324 P P 11 12 51.2 +2.1
baz=136,SNR=44
M37A **Trindle Farm,** 24.82 10 P P 11 12 49.2 +0.1
baz=192,SNR=36
FLU **Fool Peak** 24.88 336 eP P 11 12 51.9 +1.9
DBBC **Dabeiba** 24.89 111 eP P 11 12 59.9 +10
BLO **Bloomington** 24.89 25 eP P 11 12 50.2 +0.4
BLO pmax pmax
comp=Z,49nm,0.8s
BLO **Bloomington** 24.89 25 eP P 11 12 50.2 +0.4
comp=Z,49nm,0.8s
ARVC **Arvin** 24.94 320 P P 11 12 52.5 +2.2
baz=132,SNR=9.6
M38A **Pleasantville** 24.98 11 P P 11 12 50.7 +0.1
baz=194,SNR=9.4
L32A **Elgin** 24.99 3 P P 11 12 51.0 +0.3
baz=183,SNR=5.9
DAC **Darwin (Calif)** 25.00 324 eP P 11 12 53.2 +2.1
DAC pmax pmax
comp=Z,46nm,1.0s
DAC **Darwin (Calif)** 25.00 324 eP P 11 12 53.2 +2.1
comp=Z,46nm,0.9s
SBC **Santa Barbara** 25.05 318 P P 11 12 52.0 +0.7
baz=129
L34A **Svendsen Farm,** 25.07 6 P P 11 12 51.6 +0.2
baz=187
ISA **Isabella, Lake** 25.08 322 P P 11 12 53.7 +2.0
baz=133,SNR=9.4
ISA **Isabella, Lake** 25.08 322 eP P 11 12 54.5 +2.8
ISA pmax pmax
comp=Z,47nm,1.2s
ISA **Isabella, Lake** 25.08 322 eP P 11 12 54.5 +2.8
comp=Z,46nm,1.2s
L31A **Butterfield Fa** 25.14 1 P P 11 12 53.1 +1.1
baz=181,SNR=11
HDIL **Hopedale** 25.14 19 P P 11 12 51.8 -0.2
baz=203,SNR=7.2
HDIL **Hopedale** 25.14 19 eP P 11 12 52.2 +0.2
HDIL LR LR
comp=Z,3µm,20.0s
L33A **Hoskins** 25.20 4 P P 11 12 52.9 +0.4
baz=185,SNR=8.5
MPU **Maple Canyon** 25.24 338 eP P 11 12 54.8 +1.6
comp=Z,33nm,1.0s
L35A **Bielow Farm, R** 25.30 7 P P 11 12 53.5 0.0
baz=189
NLU **North Lily Min** 25.35 337 eP P 11 12 56.0 +1.8
comp=Z,62nm,1.3s
GRAC **Grapevine Rang** 25.39 325 P P 11 12 57.1 +2.6
baz=137,SNR=22
PKM **Mcpherson Peak** 25.40 318 P P 11 12 56.6 +2.0
baz=130
L36A **Harm Buss Farm** 25.40 9 P P 11 12 54.9 +0.4
baz=191,SNR=15
SCIA **State Center** 25.45 11 eP P 11 12 55.0 +0.2
SCIA LR LR
comp=Z,3µm,19.0s
R11A **Troy Canyon, C** 25.51 330 P P 11 12 57.4 +1.7
baz=142,SNR=36
R11A **Troy Canyon, C** 25.51 330 eP P 11 12 57.6 +2.0
comp=Z,39nm,1.3s
L37A **Phoenix Point,** 25.57 10 P P 11 12 55.2 -0.7
baz=193,SNR=14
K31A **O'Neill** 25.58 1 P P 11 12 56.5 +0.4
baz=182,SNR=6.0
K30A **Basset** 25.62 360 P P 11 12 57.6 +1.1
baz=180,SNR=38
K32A **Verdigre** 25.65 3 P P 11 12 57.2 +0.6
baz=183,SNR=15
K33A **Hardington** 25.65 4 P P 11 12 57.0 +0.3
baz=185,SNR=8.3
FSU **Fish Springs** 25.66 335 eP P 11 12 59.5 +2.6
JLU **Jordanelle** 25.69 339 eP P 11 12 59.2 +1.9
comp=Z,14nm,1.0s
SFIN **Lafayette** 25.72 22 P P 11 12 56.6 -0.7
baz=208
SFIN **Lafayette** 25.72 22 eP P 11 12 57.9 +0.6
comp=Z,43nm,0.9s
L38A **Oak Wood Farm,** 25.73 11 P P 11 12 56.9 -0.5
baz=194,SNR=9.5
SMMC **Simmler** 25.78 319 P P 11 13 00.5 +2.5
baz=130,SNR=13
K34A **Le Mars** 25.81 6 P P 11 12 58.0 -0.1
baz=187,SNR=6.8
DUG **Dugway, Tooele** 25.83 336 P P 11 13 00.5 +2.0
baz=150,SNR=20
DUG **Dugway, Tooele** 25.83 336 eP P 11 13 00.5 +2.0
DUG **Dugway, Tooele** 25.83 336 eP P 11 13 00.5 +2.0
DUG LR LR
comp=Z,1µm,20.0s
CTU **Camp Tracy** 25.88 338 eP P 11 13 00.9 +1.9
comp=Z,25nm,0.9s
TIN **Tinemaha, Big** 25.91 324 P P 11 13 01.2 +1.9
baz=136
K35A **Storm Lake** 25.94 7 P P 11 12 59.4 +0.1
baz=189
K36A **Gilmore City** 25.96 9 P P 11 12 59.9 +0.4
baz=191
RCTC **Rector, Farmer** 25.98 322 P P 11 13 02.0 +2.3
baz=133,SNR=27
TCUT **Toone Canyon** 26.14 339 eP P 11 13 03.4 +1.9
comp=Z,80nm,0.9s
K37A **Belmond** 26.21 10 P P 11 13 01.1 -0.7
baz=193,SNR=12
J31A **Geddes** 26.25 1 P P 11 13 02.1 0.0
baz=182,SNR=5.9
K38A **Parkersburg** 26.25 11 P P 11 13 01.6 -0.5
baz=194
J30A **Dallas** 26.27 0 P P 11 13 03.1 +0.7
baz=180,SNR=18
K22A **Casper** 26.28 348 P P 11 13 03.5 +1.0
baz=165,SNR=15
K22A **Casper** 26.28 348 eP P 11 13 04.1 +1.6
comp=Z,94nm,1.4s

J27A **Elkhorn Farm,** 26.28 356 P P 11 13 04.1 +1.6
baz=175,SNR=27
BLA **Blacksburg** 26.32 36 eP P 11 13 03.2 +0.3
BLA pmax pmax
comp=Z,160nm,0.9s
BLA **Blacksburg** 26.32 36 eP P 11 13 03.2 +0.3
comp=Z,157nm,0.9s
BLA LR LR
comp=Z,1µm,22.0s
J29A **Okreek** 26.36 359 P P 11 13 03.9 +0.7
baz=178,SNR=8.1
J32A **Parkston** 26.36 3 P P 11 13 03.2 +0.1
baz=184,SNR=15
J33A **Davis** 26.36 4 P P 11 13 03.0 -0.1
baz=185
J28A **Allard Ranch,** 26.41 357 P P 11 13 05.1 +1.5
baz=176,SNR=28
J34A **George** 26.41 6 P P 11 13 03.6 0.0
baz=188
J26A **Sides Ranch, S** 26.43 354 P P 11 13 05.3 +1.5
baz=172,SNR=24
BGU **Big Grassy Mou** 26.55 337 eP P 11 13 07.2 +2.2
comp=Z,61nm,1.4s
CNNC **Cliffs of the** 26.56 43 PFAKE 11 13 20.0 +15
CNNC LR LR
comp=Z,820nm,20.0s
J35A **Milford** 26.58 7 P P 11 13 04.3 -0.8
baz=189
J25A **Sunshine Ranch** 26.58 353 P P 11 13 06.5 +1.2
baz=171,SNR=29
VWCC **Virginia Weste** 26.60 37 eP P 11 13 05.6 +0.3
RSUT **Red Spur Mount** 26.61 340 eP P 11 13 07.1 +1.4
HWUT **Hardware Ranch** 26.63 340 eP P 11 13 07.2 +1.4
HWUT LR LR
comp=Z,3µm,22.0s
OTAV **Otavalo** 26.64 126 eP P 11 13 06.8 +0.3
comp=Z,15nm,1.0s
OTAV LR LR
comp=Z,1µm,20.0s
OTAV **Otavalo** 26.64 126 eP P 11 13 07.2 +0.8
J36A **Seneca 1, Swea** 26.66 9 P P 11 13 05.1 -0.7
baz=191,SNR=6.2
MLAC **Mammoth, Mammo** 26.66 324 P P 11 13 09.1 +2.9
baz=135,SNR=6.1
NORC **Norcasia** 26.72 112 eP P 11 13 07.2 +0.5
J37A **Redenius Farm,** 26.76 10 P P 11 13 06.1 -0.6
baz=193
ECSD **EROS Data Cent** 26.80 5 P P 11 13 07.2 +0.1
baz=186,SNR=23
ECSD **EROS Data Cent** 26.80 5 eP P 11 13 07.5 +0.4
ECSD LR LR
comp=Z,2µm,20.0s
I30A **Oacoma** 26.86 0 P P 11 13 08.1 +0.5
baz=180
NV01 **Mina Array Sit** 26.95 326 eP P 11 13 10.9 +2.1
NVAR **Mina Array Bea** 26.95 326 P P 11 13 10.9 +2.1
comp=Z,43nm,0.9s,baz=152,slow=9.5,SNR=169
NVAR LR LR 11 24 16.8
comp=Z,2µm,20.1s,baz=142,slow=37
J38A **Wedel Dairy, R** 26.96 12 P P 11 13 07.1 -1.4
baz=195,SNR=5.8
I29A **Vivian Onida** 26.98 359 P P 11 13 09.2 +0.5
baz=178,SNR=6.5
I28A **Midland** 26.98 357 P P 11 13 09.7 +1.0
baz=176,SNR=19
SDDR **Presa de Saban** 26.98 81 eP P 11 13 10.2 +1.2
comp=Z,75nm,1.1s
SDDR LR LR
comp=Z,2µm,20.0s
I31A **Royce, Wessing** 26.99 2 P P 11 13 09.1 +0.3
baz=182
I32A **Karley and Nic** 27.04 3 P P 11 13 09.1 -0.1
baz=184
JFWS **Jewell Farm** 27.06 15 eP P 11 13 10.7 +1.3
JFWS pmax pmax
comp=Z,40nm,0.9s
JFWS **Jewell Farm** 27.06 15 eP P 11 13 10.7 +1.3
comp=Z,40nm,0.8s
JFWS LR LR
comp=Z,4µm,21.0s
BW06 **Boulder Array** 27.09 344 P P 11 13 10.7 +0.7
baz=159,SNR=62
BW06 **Boulder Array** 27.09 344 eP P 11 13 11.1 +1.1
comp=Z,63nm,1.1s
BW06 LR LR
comp=Z,4µm,19.0s
PD31 **Pinedale Array** 27.09 344 eP P 11 13 10.9 +1.0
PDAR **Pinedale Array** 27.09 344 P P 11 13 10.9 +1.0
comp=Z,30nm,0.9s,baz=142,slow=7.5,SNR=165
PDAR LR LR 11 25 27.8
comp=Z,5µm,21.5s,baz=176,slow=40
I35A **Creekview Farm** 27.09 7 P P 11 13 09.3 -0.4
baz=189
I27A **Quinn** 27.10 356 P P 11 13 11.6 +1.8
baz=175,SNR=26
I33A **Coleman** 27.10 4 P P 11 13 09.7 -0.1
baz=186
I26A **New Underwood** 27.12 355 P P 11 13 11.3 +1.3
baz=173
I34A **Hadley** 27.17 6 P P 11 13 10.4 0.0
baz=188
I25A **Rochford** 27.20 353 P P 11 13 12.0 +1.1
baz=171,SNR=14
HVU **Hansel Valley** 27.20 338 eP P 11 13 12.6 +1.7
HVU pmax pmax
comp=Z,29nm,0.8s
HVU **Hansel Valley** 27.20 338 eP P 11 13 12.6 +1.7
comp=Z,29nm,0.8s
GRTK **Grand Turk** 27.23 76 PFAKE 11 13 20.0 +8.9
GRTK LR LR
comp=Z,2µm,19.0s
ELK **Elko** 27.29 333 LR LR 11 24 42.2
comp=Z,3µm,21.8s,baz=136,slow=38
ELK **Elko** 27.29 333 eP P 11 13 13.9 +2.1
ELK pmax pmax
comp=Z,37nm,1.4s
ELK **Elko** 27.29 333 eP P 11 13 13.9 +2.1
comp=Z,37nm,1.4s
ACSO **Alum Creek Sta** 27.29 29 eP P 11 13 11.5 0.0
comp=Z,89nm,1.0s
ACSO LR LR
comp=Z,2µm,19.0s
RSSD **Black Hills** 27.33 353 P P 11 13 12.7 +0.6
baz=170
RSSD **Black Hills** 27.33 353 eP P 11 13 13.3 +1.2
RSSD pmax pmax
comp=Z,48nm,1.3s
RSSD **Black Hills** 27.33 353 eP P 11 13 13.3 +1.2
comp=Z,48nm,1.3s
I36A **Fitzsimmons Fa** 27.38 9 P P 11 13 11.2 -1.0
baz=191
SUSD **Miller** 27.40 1 P P 11 13 12.3 -0.1
baz=181
H31A **Wolsey** 27.45 2 P P 11 13 12.5 -0.4
baz=182
I37A **Lemond, Waseca** 27.47 10 P P 11 13 12.1 -1.0
baz=193
H32A **Carlson Farm,** 27.51 3 P P 11 13 13.8 +0.3
baz=184
AHID **Auburn Hatcher** 27.53 341 eP P 11 13 14.9 +1.0
comp=Z,29nm,1.1s
AHID LR LR
comp=Z,3µm,20.0s
ROSC **El Rosal** 27.54 113 P P 11 13 16.6 +2.2
comp=Z,4.3nm,0.4s,baz=285,slow=20,SNR=2.8
H29A **Onida** 27.58 359 P P 11 13 14.0 -0.1
baz=178
WAKR **Walker** 27.62 325 eP P 11 13 17.4 +2.7
H28A **Mission Ridge** 27.65 358 P P 11 13 15.5 +0.8
baz=177,SNR=22
H27A **Howes** 27.66 356 P P 11 13 15.9 +1.0
baz=175,SNR=51
I38A **Scanlan Farm,** 27.68 11 P P 11 13 14.1 -0.9
baz=195,SNR=11
H26A **Fairpoint** 27.70 355 P P 11 13 16.3 +1.1
baz=173,SNR=11
H33A **Prehn Over Nor** 27.73 4 P P 11 13 15.2 -0.2
baz=186,SNR=7.3
H25A **Fruitdale** 27.78 354 P P 11 13 17.4 +1.5
baz=172,SNR=33
BARC **Barichara** 27.79 109 eP P 11 13 21.4 +4.8
H34A **Spellman Lake,** 27.80 6 P P 11 13 15.6 -0.5
baz=188
CMB **Columbia Colle** 27.82 323 eP P 11 13 18.2 +1.8
CMB pmax pmax
comp=Z,26nm,1.1s

CMB **Columbia Colle** 27.82 323 eP P 11 13 18.2 +1.8
comp=Z,26nm,1.1s
H35A **Sunnyside Ranc** 27.94 7 P P 11 13 16.7 -0.5
baz=190
H36A **Jessenland, He** 27.94 9 P P 11 13 16.9 -0.3
baz=191,SNR=6.1
PAMC **Pamplona, Colo** 27.94 107 eP P 11 13 16.8 -1.3
REDW **Red Top Meadow** 28.00 342 eP P 11 13 19.3 +1.2
comp=Z,91nm,1.5s
G28A **Parade** 28.05 358 P P 11 13 18.9 +0.6
baz=177,SNR=15
SNOW **Snow King Moun** 28.06 343 eP P 11 13 20.2 +1.5
comp=Z,42nm,0.8s
G30A **Faulkton** 28.08 1 P P 11 13 18.0 -0.5
baz=181,SNR=22
H37A **Dierke Farm, C** 28.10 10 P P 11 13 18.5 -0.2
baz=193
JSRW **J. Sargeant Re** 28.13 38 eP P 11 13 19.4 +0.4
G29A **Hoven** 28.14 359 P P 11 13 19.1 0.0
baz=179,SNR=7.7
LOHW **Long Hollow** 28.16 343 eP P 11 13 20.8 +1.3
comp=Z,30nm,0.9s
RUSC **La Rusia** 28.17 110 eP P 11 13 17.9 -2.3
G31A **Conde** 28.20 2 P P 11 13 19.6 0.0
baz=183
G32A **Webster** 28.26 3 P P 11 13 19.9 -0.2
baz=184
G33A **Watertonville** 28.27 5 P P 11 13 19.6 -0.6
baz=186,SNR=8.3
MOOW **Moose Ponds** 28.32 343 eP P 11 13 21.9 +0.9
comp=Z,23nm,0.9s
G25A **Newell** 28.33 354 P P 11 13 21.9 +1.2
baz=172,SNR=19
G26A **Maurine** 28.36 356 P P 11 13 21.9 +0.9
baz=174,SNR=36
G34A **Benson** 28.39 6 P P 11 13 20.9 -0.3
baz=188
MCWV **Mont Chateau** 28.39 33 eP P 11 13 21.8 +0.4
comp=Z,58nm,0.9s
G27A **Dupree** 28.40 357 P P 11 13 22.2 +0.8
baz=175,SNR=15
G35A **Watkins** 28.49 8 P P 11 13 21.8 -0.4
baz=190
IMW **Indian Meadow** 28.52 343 eP P 11 13 24.1 +1.3
comp=Z,20nm,0.8s
G36A **St. Michael** 28.61 9 P P 11 13 22.7 -0.5
baz=191
FLWY **Flagg Ranch** 28.62 343 eP P 11 13 25.2 +1.6
comp=Z,45nm,1.3s
AAM **Ann Arbor** 28.70 25 eP P 11 13 24.3 +0.3
AAM pmax pmax
comp=Z,75nm,1.0s
AAM **Ann Arbor** 28.70 25 eP P 11 13 24.2 +0.3
comp=Z,75nm,1.0s
AAM LR LR
comp=Z,2µm,19.0s
SPMN **Marine on St.** 28.74 10 P P 11 13 24.2 -0.2
baz=193
CBN **Corbin Frederi** 28.76 38 eP P 11 13 25.6 +0.9
comp=Z,77nm,0.9s
CBN LR LR
comp=Z,980nm,21.0s
AFDM **Forest Hills D** 28.78 324 eP P 11 13 26.5 +1.6
comp=Z,29nm,1.2s
F29A **Eureka** 28.78 360 P P 11 13 24.9 +0.1
baz=179
F30A **Leola** 28.79 1 P P 11 13 25.1 +0.2
baz=181
F28A **McLaughlin** 28.82 358 P P 11 13 25.6 +0.5
baz=177,SNR=14
F31A **Hecla** 28.83 2 P P 11 13 25.1 -0.1
baz=182
H17A **Grant Village** 28.87 344 P P 11 13 27.1 +1.2
baz=158
H17A **Grant Village** 28.87 344 eP P 11 13 28.1 +2.2
comp=Z,50nm,1.6s
F32A **Veblen** 28.89 4 P P 11 13 25.0 -0.8
baz=185
F27A **Lemmon** 28.89 356 P P 11 13 26.5 +0.7
baz=175,SNR=29
F26A **Lodgepole** 28.91 356 P P 11 13 27.2 +1.2
baz=174,SNR=34
F33A **5 Mile Ranch,** 28.92 5 P P 11 13 25.4 -0.6
baz=186
F34A **Alexandria** 28.97 6 P P 11 13 25.8 -0.6
baz=188
LKWY **Lake** 28.98 344 eP P 11 13 29.8 +2.9
LKWY pmax pmax
comp=Z,52nm,1.3s
LKWY MLR MLR
comp=Z,14µm,19.0s
LKWY **Lake** 28.98 344 eP P 11 13 29.8 +2.9
comp=Z,52nm,1.3s
LKWY LR LR
comp=Z,14µm,19.0s
YFT **Old Faithful** 29.00 343 eP P 11 13 30.0 +3.0
comp=Z,16nm,1.0s
F25A **Bowman** 29.05 354 P P 11 13 28.2 +0.9
baz=172,SNR=7.2
F35A **Swanville** 29.11 7 P P 11 13 27.4 -0.3
baz=190
RLMT **Red Lodge** 29.22 346 P P 11 13 29.9 +1.0
baz=161,SNR=38
RLMT **Red Lodge** 29.22 346 eP P 11 13 30.0 +1.1
comp=Z,98nm,1.4s
RLMT LR LR
comp=Z,4µm,21.0s
YMR **Madison River** 29.23 343 eP P 11 13 30.9 +1.8
comp=Z,66nm,1.4s
F36A **Milaca** 29.25 9 P P 11 13 28.3 -0.7
baz=192
N54A **Moraine State** 29.29 31 P P 11 13 29.2 -0.1
baz=221,SNR=5.3
SDV **Santo Domingo** 29.31 102 P P 11 13 29.9 -0.1
comp=Z,3.5nm,0.4s,baz=284,slow=3.4,SNR=6.9
SDV LR LR 11 26 56.8
comp=Z,788nm,19.5s,baz=3.0,slow=40
SDV **Santo Domingo** 29.31 102 eP P 11 13 30.5 +0.5
SDV LR LR
comp=Z,925nm,22.0s
HLID **Hailey** 29.34 338 P P 11 13 31.8 +1.8
baz=150,SNR=28
HLID **Hailey** 29.34 338 eP P 11 13 31.8 +1.8
comp=Z,16nm,0.9s
HLID LR LR
comp=Z,3µm,19.0s
E27A **Carson** 29.43 357 P P 11 13 31.2 +0.7
baz=176,SNR=32
E30A **Jud** 29.46 1 P P 11 13 30.8 0.0
baz=181,SNR=5.6
ORV **Oroville** 29.50 324 eP P 11 13 34.1 +2.9
ORV pmax pmax
comp=Z,93nm,1.5s
ORV **Oroville** 29.50 324 eP P 11 13 34.1 +2.9
comp=Z,93nm,1.5s
O56A **Blue Knob Stat** 29.51 34 P P 11 13 31.8 +0.5
baz=224,SNR=18
QLMT **Earthquake Lak** 29.51 343 eP P 11 13 33.9 +2.4
E26A **Carlson Angus** 29.52 356 P P 11 13 32.0 +0.7
baz=174,SNR=31
E29A **Napoleon** 29.52 360 P P 11 13 31.7 +0.4
baz=180,SNR=13
E28A **Huff** 29.54 358 P P 11 13 32.0 +0.5
baz=178,SNR=15
E31A **Nome** 29.54 2 P P 11 13 31.1 -0.4
baz=183
E33A **Westby DABS, E** 29.60 5 P P 11 13 31.5 -0.6
baz=187
E32A **Braaten, Kindr** 29.62 4 P P 11 13 31.7 -0.4
baz=185
E25A **Miller Ranch,** 29.62 355 P P 11 13 33.2 +0.9
baz=172,SNR=21
E34A **Wadena** 29.69 6 P P 11 13 32.5 -0.4
baz=188
ALLY **Alegheny Colle** 29.73 30 eP P 11 13 33.1 -0.2
comp=Z,88nm,1.3s
MFID **Camas Ranch** 29.75 336 eP P 11 13 35.3 +1.8
comp=Z,52nm,1.2s
E35A **Pequot Lakes** 29.82 7 P P 11 13 34.0 0.0
baz=190
M54A **Oil Creek Stat** 29.86 31 P P 11 13 34.0 -0.4
baz=220,SNR=9.5
SDMD **Soldier's Deli** 29.88 37 eP P 11 13 35.2 +0.7
comp=Z,24nm,1.0s
MCMT **McKenzie Canyo** 29.93 341 eP P 11 13 37.8 +2.5
E36A **McGregor** 29.93 9 P P 11 13 34.8 -0.2
baz=192
D29A **Pettibone, Tap** 30.01 360 P P 11 13 35.8 +0.1

baz=180,SNR=6.8
D31A Mcclaflin, Tow 30.04 3 P P 11 13 35.4 -0.5
baz=183
D30A Buchanan 30.07 1 P P 11 13 36.1 0.0
baz=181,SNR=10.0
D26A Manning 30.07 356 P P 11 13 37.2 +0.9
baz=174,SNR=27
D27A Center 30.10 357 P P 11 13 37.1 +0.7
baz=176,SNR=27
SSPA Standing Stone 30.14 34 eP P 11 13 37.3 +0.4
comp=Z,178nm,1.3s
D28A Regan 30.15 359 P P 11 13 37.6 +0.6
baz=178,SNR=32
WVOR Wild Horse Val 30.16 331 eP P 11 13 38.8 +1.6
WVOR pmax pmax
comp=Z,53nm,1.3s
WVOR Wild Horse Val 30.16 331 eP P 11 13 38.8 +1.6
comp=Z,53nm,1.4s
WVOR LR LR
comp=Z,6µm,19.0s
D32A Dogwood Acres, 30.16 3 P P 11 13 36.8 -0.1
baz=185
O03D Paynes Creek 30.18 325 P P 11 13 39.0 +1.7
baz=134,SNR=7.3
D33A AnnSam, Waubun 30.25 5 P P 11 13 37.3 -0.5
baz=187
D34A Park Rapids 30.25 6 P P 11 13 37.4 -0.4
baz=188
D25A Fairfield 30.26 355 P P 11 13 38.8 +0.9
baz=173,SNR=14
BOZ Bozeman (W) 30.32 343 P P 11 13 39.7 +1.2
baz=157,SNR=61
BOZ Bozeman (W) 30.32 343 eP P 11 13 40.0 +1.5
BOZ pmax pmax
comp=Z,28nm,0.9s
BOZ Bozeman (W) 30.32 343 eP P 11 13 40.0 +1.5
comp=Z,28nm,0.8s
BOZ LR LR
comp=Z,3µm,19.0s
COWI Conover 30.33 14 PFAKE 11 13 50.0 +12
COWI LR LR
comp=Z,2µm,19.0s
DLMT Dillon 30.34 342 eP P 11 13 41.0 +2.3
comp=Z,48nm,0.9s
D35A Remer 30.38 7 P P 11 13 38.1 -0.8
baz=190
MOD Modoc Plateau 30.55 329 eP P 11 13 42.8 +2.1
comp=Z,45nm,1.0s
LCCM Lewis and Clar 30.56 343 eP P 11 13 42.8 +2.1
D36A Goodland 30.59 9 P P 11 13 39.9 -0.9
baz=192
C30A Mose, Pekin 30.67 1 P P 11 13 41.9 +0.5
baz=182,SNR=20
C28A Hausauer Farms 30.67 359 P P 11 13 42.3 +0.8
baz=178,SNR=7.2
D37A Cotton 30.68 10 P P 11 13 41.3 -0.3
baz=193
C27A Sayler Ranch, 30.70 357 P P 11 13 42.5 +0.7
baz=176,SNR=28
LRM Limekiln Ridge 30.71 342 eP P 11 13 43.8 +1.7
C31A Landman Farms, 30.78 2 P P 11 13 42.7 +0.2
baz=183,SNR=7.1
WDC Whiskeytown Da 30.78 325 eP P 11 13 42.7 +0.2
WDC pmax pmax
comp=Z,17nm,1.2s
WDC Whiskeytown Da 30.78 325 eP P 11 13 42.7 +0.2
comp=Z,17nm,1.2s
C25A Freed Ranch, W 30.81 355 P P 11 13 43.6 +0.8
baz=173,SNR=13
C34A RKJ Ranch, Bem 30.84 6 P P 11 13 42.0 -1.0
baz=188,SNR=9.1
C26A Wahner Farm, P 30.84 357 P P 11 13 44.1 +1.0
baz=175,SNR=52
C33A Trail 30.87 5 P P 11 13 42.6 -0.6
baz=187
C32A Crookston 30.88 4 P P 11 13 43.2 0.0
baz=186
C35A Jirik Farms, M 31.00 7 P P 11 13 43.6 -0.8
baz=190
N02D Trinity Center 31.14 325 P P 11 13 46.0 +0.2
baz=134
C36A Pine Crest Far 31.21 9 P P 11 13 45.8 -0.4
baz=192
M04C Macdoel 31.24 327 P P 11 13 48.6 +1.9
baz=136,SNR=14
C37A Embarrass 31.28 10 P P 11 13 46.9 0.0
baz=193
HRY Holter Researc 31.35 344 eP P 11 13 49.1 +1.4
B25A Knox Farm, Ray 31.36 355 P P 11 13 48.0 +0.4
baz=173
B27A Peters Farms, 31.39 358 P P 11 13 48.4 +0.7
baz=177
B33A Robert and Kas 31.39 5 P P 11 13 47.5 -0.3
baz=187,SNR=6.9
AGMN Agassiz Nation 31.40 5 P P 11 13 47.7 -0.2
baz=187,SNR=16
AGMN Agassiz Nation 31.40 5 eP P 11 13 48.5 +0.6
comp=Z,41nm,0.9s
AGMN LR LR
comp=Z,2µm,22.0s
B26A Jensen Ranch, 31.40 357 P P 11 13 48.6 +0.7
baz=175,SNR=9.8
B28A Dugan Ranch, T 31.41 359 P P 11 13 49.0 +1.0
baz=178,SNR=18
B31A Greenbush Farm 31.41 2 P P 11 13 48.2 +0.2
baz=183
B29A Wagenman Farm, 31.42 0 P P 11 13 48.4 +0.4
baz=180,SNR=20
B30A Myrvik Farm, E 31.42 2 P P 11 13 48.4 +0.3
baz=182,SNR=31
C38A Sawbill Land. 31.42 11 P P 11 13 47.5 -0.6
baz=195
B32A Ashes, Strandq 31.45 4 P P 11 13 48.2 -0.1
baz=185,SNR=7.3
K05A Summer Lake 31.45 329 eP P 11 13 50.8 +2.1
comp=Z,66nm,1.3s
N59A State Game Lan 31.49 36 P P 11 13 48.6 -0.2
baz=227,SNR=6.4
LUPA Lehigh Univers 31.51 37 eP P 11 13 50.1 +1.2
comp=Z,69nm,1.0s
M02C Callahan 31.51 325 P P 11 13 50.0 +0.9
baz=134
BMO Blue Mountains 31.54 336 eP P 11 13 50.3 +1.0
comp=Z,20nm,0.9s
BMO LR LR
comp=Z,3µm,20.0s
EYMN Ely 31.60 10 P P 11 13 48.8 -0.9
baz=195
EYMN Ely 31.60 10 PFAKE 11 14 00.0 +10
EYMN LR LR
comp=Z,4µm,20.0s
DGMT Dagmar 31.65 354 P P 11 13 51.0 +1.0
baz=171,SNR=31
DGMT Dagmar 31.65 354 eP P 11 13 51.4 +1.3
comp=Z,132nm,0.9s
DGMT LR LR
comp=Z,1µm,21.0s
KHMM Horse Mountain 31.65 324 eP P 11 13 51.8 +1.4
comp=Z,50nm,1.1s
YBH Yreka Blue Hor 31.67 326 P P 11 13 50.9 +0.4
comp=Z,11nm,0.8s,baz=348,slow=6.7,SNR=5.8
YBH LR LR 11 26 51.1
comp=Z,1µm,19.7s,baz=148,slow=37
YBH Yreka Blue Hor 31.67 326 eP P 11 13 50.9 +0.4
YBH pmax pmax
comp=Z,9.0nm,0.8s
YBH Yreka Blue Hor 31.67 326 eP P 11 13 50.9 +0.4
comp=Z,9.5nm,0.8s
B35A Bob, Littlefor 31.68 7 P P 11 13 49.9 -0.4
baz=190
B34A Aery, Baudette 31.70 6 P P 11 13 50.2 -0.2
baz=189,SNR=9.7
K04D Chiloquin, OR 31.81 328 P P 11 13 52.6 +0.9
baz=137
ATAH Atahualpa 31.82 137 P P 11 13 51.9 -0.5
comp=Z,2.6nm,0.6s,baz=135,slow=17,SNR=3.1
A28A Rude Farm, Bot 31.86 359 P P 11 13 52.5 +0.5
baz=179,SNR=9.5
A29A Manning Farm, 31.88 0 P P 11 13 52.4 +0.4
baz=180,SNR=34
SJG San Juan 31.88 83 P P 11 13 50.8 -1.7
comp=Z,21nm,0.7s,baz=274,slow=4.6,SNR=7.7
SJG LR LR 11 27 54.4
comp=Z,744nm,21.1s,baz=269,slow=39
SJG San Juan 31.88 83 eP P 11 13 50.8 -1.7
SJG MLR MLR
comp=Z,1µm,20.0s
SJG San Juan 31.88 83 eP P 11 13 50.8 -1.7
SJG LR LR
comp=Z,1µm,20.0s
A30A Hoffart Farm, 31.91 2 P P 11 13 53.0 +0.6
baz=182,SNR=42
A26A Wade Farm, Ken 31.91 357 P P 11 13 53.1 +0.7
baz=175,SNR=18
A27A Ledoux Ranch, 31.93 358 P P 11 13 53.1 +0.5
baz=177
CHMT Chamberlain Mo 31.94 342 eP P 11 13 54.1 +1.2
A31A Linda, St. Vin 31.94 3 P P 11 13 52.9 +0.2
baz=184
A32A Rocking H Ranc 31.97 4 P P 11 13 52.8 -0.1
baz=185,SNR=9.8
A25A Svangstu Ranch 32.02 356 P P 11 13 54.5 +1.2
baz=174,SNR=13
BRNJ Basking Ridge 32.03 37 eP P 11 13 54.8 +1.3
comp=Z,86nm,1.0s
J05D Fort Rock, OR 32.04 329 P P 11 13 55.3 +1.6
baz=138
MSO Missoula 32.07 341 P P 11 13 55.4 +1.5
baz=153,SNR=12
MSO Missoula 32.07 341 eP P 11 13 55.2 +1.3
comp=Z,31nm,1.0s
A33A Warroad 32.07 5 P P 11 13 53.7 -0.1
baz=187,SNR=14
EGMT Eagleton 32.08 347 P P 11 13 55.1 +1.1
baz=161
EGMT Eagleton 32.08 347 eP P 11 13 54.2 +0.2
comp=Z,62nm,1.1s
EGMT LR LR
comp=Z,1µm,22.0s
BINY Binghamton 32.25 34 eP P 11 13 55.9 +0.4
comp=Z,100nm,1.1s
BINY LR LR
comp=Z,2µm,19.0s
ODNJ Ogdensburg 32.26 37 eP P 11 13 56.2 +0.6
L02D Cave Junction, 32.44 326 P P 11 13 58.4 +1.2
baz=134
F10A Beach Ranch, E 32.45 337 eP P 11 13 58.5 +1.2
comp=Z,57nm,0.9s
PAL Palisades 32.62 37 eP P 11 13 59.4 +0.8
PAL pmax pmax
comp=Z,79nm,1.0s
PAL Palisades 32.62 37 eP P 11 13 59.4 +0.8
comp=Z,79nm,0.9s
SADO Sadowa 32.62 27 P P 11 13 58.0 -0.6
comp=Z,14nm,0.7s,baz=241,slow=9.7,SNR=15
SADO Sadowa 32.62 27 eP P 11 13 57.8 -0.8
comp=Z,24nm,0.8s
SWMT Swartz Lake 32.69 342 eP P 11 14 00.5 +1.1
I05D Terrebonne, OR 32.88 331 P P 11 14 02.5 +1.5
baz=139
I04A Tendick Farm, 32.99 329 P P 11 14 03.1 +1.2
baz=137
JTMT Jette 32.99 342 eP P 11 14 03.5 +1.4
YBMT Yellow Bay 33.02 342 eP P 11 14 03.8 +1.6
VTHM Trough 33.17 332 P P 11 14 05.3 +1.8
BSMT Bassoo Peak 33.24 341 eP P 11 14 05.4 +1.1
G06A Carlson Farm, 33.25 332 eP P 11 14 06.0 +1.8
comp=Z,127nm,1.9s
E09A Wood Farm, Sta 33.25 336 eP P 11 14 04.8 +0.7
comp=Z,18nm,0.9s
BLMT Blacktail Moun 33.25 342 eP P 11 14 05.9 +1.5
ULM Lac du Bonnet 33.34 4 P P 11 14 04.8 -0.1
comp=Z,20nm,0.9s,baz=190,slow=9.3,SNR=18
ULM LR LR 11 28 19.6
comp=Z,1µm,20.9s,baz=188,slow=38
YLE Yale 33.38 38 eP P 11 14 06.5 +1.2
comp=Z,75nm,1.0s
I03D Drain, OR 33.39 328 P P 11 14 07.0 +1.6
baz=136
H04A Detroit Lake 33.54 330 eP P 11 14 08.1 +1.4
comp=Z,122nm,1.1s
G05D Wamic, OR 33.56 332 P P 11 14 09.2 +2.3
baz=140
HAWA Hanford 33.70 335 PFAKE 11 14 20.0 +12
HAWA LR LR
comp=Z,3µm,20.0s
TRY Troy 33.87 35 eP P 11 14 10.3 +0.7
comp=Z,187nm,1.7s
WALA Waterton Lakes 34.07 343 eP P 11 14 12.8 +1.5
comp=Z,43nm,1.0s
GULW Guler Mountain 34.21 332 P P 11 14 14.9 +2.3
ACCN Adirondack Com 34.31 34 eP P 11 14 13.7 +0.4
comp=Z,56nm,1.1s
QUA2 Belchertown 34.32 37 eP P 11 14 14.2 +0.7
comp=Z,261nm,1.9s
NEW Newport 34.36 339 P P 11 14 15.2 +1.4
comp=Z,20nm,0.9s,baz=150,slow=8.4,SNR=34
NEW Newport 34.36 339 P P 11 14 15.2 +1.4
baz=149
NEW Newport 34.36 339 eP P 11 14 15.9 +2.1
NEW pmax pmax
comp=Z,22nm,0.9s
NEW MLR MLR
comp=Z,3µm,20.0s
NEW Newport 34.36 339 eP P 11 14 15.9 +2.1
comp=Z,22nm,0.9s
NEW LR LR
comp=Z,3µm,20.0s
C09A Chrisman Ranch 34.37 338 eP P 11 14 15.4 +1.5
comp=Z,152nm,1.7s
NCB Newcomb 34.41 33 eP P 11 14 15.4 +1.1
comp=Z,42nm,0.6s
NCB LR LR
comp=Z,2µm,20.0s
G03D McMinnville, O 34.44 330 P P 11 14 16.0 +1.5
baz=137
NAC Naches 34.51 334 P P 11 14 17.7 +2.6
EBG Ellensburg 34.54 334 P P 11 14 17.7 +2.3
F04A Amboy 34.59 332 eP P 11 14 17.6 +1.9
comp=Z,102nm,1.4s
LONY Lake Ozonia 34.67 32 eP P 11 14 16.2 -0.3
comp=Z,98nm,1.6s
LONY LR LR
comp=Z,1µm,20.0s
TBM Table Mountain 34.76 335 eP P 11 14 19.7 +2.3
ERK Elk Rock 34.83 332 P P 11 14 20.3 +2.2
LTY Liberty 34.86 335 eP P 11 14 19.9 +1.7
comp=Z,32nm,1.0s
HRV Adam Dziewonsk 34.92 37 eP P 11 14 19.7 +1.0
HRV pmax pmax
comp=Z,93nm,1.3s
HRV Adam Dziewonsk 34.92 37 eP P 11 14 19.7 +1.0
comp=Z,93nm,1.4s
LON Longmire 34.94 333 eP P 11 14 20.8 +1.9
LON pmax pmax
comp=Z,95nm,1.8s
LON Longmire 34.94 333 eP P 11 14 20.8 +1.9
comp=Z,94nm,1.8s
F04D Rainier, OR 34.97 331 P P 11 14 20.9 +1.8
baz=138
MDV Middlebury 34.98 34 eP P 11 14 19.4 +0.3
WES Weston 34.99 38 eP P 11 14 19.9 +0.7
WES pmax pmax
comp=Z,62nm,1.2s
WES Weston 34.99 38 eP P 11 14 19.9 +0.7
comp=Z,62nm,1.2s
ETW Entiat 35.00 335 eP P 11 14 21.2 +1.7
BBSR BB Station 35.04 57 eP P 11 14 20.4 +0.6
comp=Z,275nm,1.8s
BBSR LR LR
comp=Z,1µm,20.0s
B08A Colville Reser 35.23 337 eP P 11 14 22.6 +1.2
comp=Z,160nm,2.0s
HNH Hanover 35.27 35 eP P 11 14 22.4 +0.7
comp=Z,60nm,0.9s
FRNY Flat Rock 35.33 33 eP P 11 14 22.2 0.0
comp=Z,33nm,1.0s
C06D Leavenworth 35.48 335 P P 11 14 25.6 +2.1
baz=143
E03A Lebam 35.57 331 eP P 11 14 25.3 +1.1
comp=Z,146nm,1.1s
ANWB Willy Bob 36.06 83 PFAKE 11 14 40.0 +11
ANWB LR LR
comp=Z,729nm,21.0s
JCW Jim Creek 36.12 334 eP P 11 14 29.6 +0.6
RPW Rockport 36.15 335 eP P 11 14 30.1 +0.9
B06A Marblemount 36.19 335 eP P 11 14 31.0 +1.5
comp=Z,102nm,1.8s
B05A Bryant 36.24 334 P P 11 14 30.9 +0.9
baz=142
NLWA Neilton Lookou 36.34 332 eP P 11 14 32.8 +1.9
comp=Z,161nm,1.5s
NLWA LR LR
comp=Z,4µm,21.0s
NNA Nana 36.51 141 PFAKE 11 14 40.0 +7.3
NNA LR LR
comp=Z,892nm,22.0s
OSD Olympics--Snow 36.59 332 P P 11 14 35.8 +2.6
A04D Lummi Island 36.85 334 P P 11 14 36.4 +1.3
baz=141
GRGR Grenville 36.99 92 PFAKE 11 14 50.0 +13
GRGR LR LR
comp=Z,719nm,19.0s
FDF Fort de France 37.01 88 PFAKE 11 14 50.0 +13
FDF LR LR
comp=Z,885nm,21.0s
WVL Waterville 37.28 36 eP P 11 14 39.2 +0.4
comp=Z,69nm,1.2s
PKME Peaks-Kenny Pk 37.92 35 eP P 11 14 44.5 +0.2
comp=Z,58nm,1.2s
PKME LR LR
comp=Z,1µm,21.0s
BBGH Gun Hill 38.80 90 PFAKE 11 15 00.0 +8.0
BBGH LR LR
comp=Z,1µm,22.0s
LMQ La Malbaie 38.84 32 eP P 11 14 51.8 -0.2
comp=Z,71nm,1.1s
PQI Presque Isle 39.49 35 eP P 11 14 58.1 +0.7
comp=Z,163nm,1.8s
LMN Caledonia Moun 40.82 38 eP P 11 15 08.5 0.0
BBB Bella Bella 41.73 334 P P 11 15 17.0 +1.1
comp=Z,16nm,1.1s,baz=111,slow=9.8,SNR=5.1
FCC Fort Churchill 41.93 4 eP P 11 15 17.8 +0.4
FCC pmax pmax
comp=Z,46nm,1.0s
FCC Fort Churchill 41.93 4 eP P 11 15 17.8 +0.4
comp=Z,46nm,1.0s
PTGA Pitinga 42.83 110 P P 11 15 23.9 -1.4
comp=Z,1.4nm,0.6s,baz=330,slow=20,SNR=3.5
PTGA Pitinga 42.83 110 eP P 11 15 23.9 -1.4
PTGA LR LR
comp=Z,43µm,22.0s
SAML Samuel 44.26 123 eP P 11 15 34.3 -2.5
comp=Z,6.8nm,0.9s
SAML LR LR
comp=Z,576nm,19.0s
LPAZ La Paz 45.32 135 P P 11 15 45.0 -0.9
comp=Z,1.5nm,0.8s,baz=348,slow=6.3,SNR=4.4
LPAZ LR LR 11 32 58.0
comp=Z,801nm,18.1s,baz=328,slow=34
LPAZ La Paz 45.32 135 eP P 11 15 45.0 -0.9
SCHQ Schefferville 45.40 26 P P 11 15 45.3 0.0
comp=Z,27nm,0.8s,baz=226,slow=6.8,SNR=21
SCHQ LR LR 11 37 03.8
comp=Z,970nm,19.2s,baz=244,slow=39
CRAG Craig 46.16 334 eP P 11 15 52.8 +1.5
comp=Z,182nm,2.0s
WRAK Wrangell Islan 46.50 336 PFAKE 11 16 10.0 +16
WRAK LR LR
comp=Z,1µm,20.0s
YKA Yellowknife Ar 46.68 350 P P 11 15 55.2 -0.1
comp=Z,23nm,0.9s,baz=160,slow=7.3,SNR=241
YKB5 Yellowknife Ar 46.68 350 eP P 11 15 55.2 -0.1
DRLN Deer Lake 46.81 37 eP P 11 15 56.3 -0.3
comp=Z,220nm,1.8s
DLBC Dease Lake 47.10 339 P P 11 16 01.2 +2.3
comp=Z,22nm,1.0s,baz=156,slow=6.3,SNR=32
DLBC Dease Lake 47.10 339 eP P 11 16 01.2 +2.3
comp=Z,128nm,1.3s
TAOE Nuku Hiva Isla 47.61 240 eS S 11 23 01.4 +3.1
comp=Z,569nm,24.2s
TAOE eLR LR 11 29 30.1
comp=Z,2µm,24.2s,baz=54
TAOE Nuku Hiva Isla 47.61 240 eT T 12 06 29.8
comp=Z,99nm,0.2s
LVC Limon Verde 49.48 142 eP P 11 16 17.9 -0.1
comp=Z,13nm,1.1s
FRB Frobisher Bay 51.36 17 P P 11 16 31.6 +0.4
comp=Z,24nm,0.9s,baz=224,slow=7.5,SNR=14
RKT Rikitea 52.76 222 eS S 11 24 09.8 +0.2
comp=Z,695nm,26.8s
RKT eLR LR 11 32 03.7
comp=Z,2µm,26.5s,baz=37
RKT Rikitea 52.76 222 eT T 12 13 01.1
comp=Z,46nm,0.3s
BALM Baldy 53.46 336 eP P 11 16 49.6 +2.6
BALM pmax pmax
comp=Z,29nm,1.1s
BALM Baldy 53.46 336 eP P 11 16 49.6 +2.6
comp=Z,29nm,1.1s
LCO Las Campanas 53.56 148 PFAKE 11 17 00.0 +12
LCO LR LR
comp=Z,2µm,19.0s
CRQM Cirque 53.61 335 eP P 11 16 50.5 +2.3
BMRM Bremner River 54.33 335 eP P 11 16 55.4 +2.2
comp=Z,38nm,1.0s
EYAK Cordova Ski Ar 54.57 334 eP P 11 16 57.3 +2.4
comp=Z,28nm,0.9s
DIV Divide 54.89 335 eP P 11 16 59.1 +1.7
comp=Z,23nm,1.2s
MENT Mentasta 55.10 337 eP P 11 17 00.4 +1.5
comp=Z,17nm,1.0s
KLU Klutina 55.15 335 eP P 11 17 01.2 +2.0
comp=Z,52nm,1.2s
EGAK Eagle 55.33 340 eP P 11 17 01.1 +0.7
comp=Z,29nm,0.9s
EGAK LR LR
comp=Z,985nm,22.0s
INK Inuvik 55.64 345 P P 11 17 03.1 +0.6
comp=Z,35nm,0.8s,baz=133,slow=8.1,SNR=140
INK Inuvik 55.64 345 eP P 11 17 03.1 +0.6
INK pmax pmax
comp=Z,80nm,1.0s
INK Inuvik 55.64 345 eP P 11 17 03.1 +0.6
comp=Z,80nm,0.9s
DOT Dot Lake 55.65 338 eP P 11 17 04.4 +1.6
comp=Z,120nm,1.2s
PAX Paxson 55.78 337 eP P 11 17 04.9 +1.1
PAX pmax pmax
comp=Z,29nm,1.0s
PAX Paxson 55.78 337 eP P 11 17 04.9 +1.1
comp=Z,29nm,1.0s
SCM Sheep Creek Mo 55.90 335 eP P 11 17 05.9 +1.3
SCM pmax pmax
comp=Z,23nm,1.0s
SCM Sheep Creek Mo 55.90 335 eP P 11 17 05.9 +1.3
comp=Z,23nm,1.0s
SEW Seward 55.94 332 eP P 11 17 06.1 +1.3
comp=Z,38nm,1.1s
SML Sawmill 56.30 335 eP P 11 17 09.0 +1.6
SML pmax pmax
comp=Z,32nm,1.0s
SML Sawmill 56.30 335 eP P 11 17 08.9 +1.5
comp=Z,32nm,1.0s
KDAK Kodiak Island 56.40 329 *i* P P 11 17 10.0 +1.9
KDAK Kodiak Island 56.40 329 PFAKE 11 17 20.0 +12
KDAK LR LR
comp=Z,1µm,19.0s
BRLK Bradley Lake 56.43 332 eP P 11 17 09.7 +1.4
comp=Z,59nm,0.9s
PMR Palmer 56.52 334 eP P 11 17 10.0 +1.1
PMR e*PP sP 11 17 18.7 +1.2
PMR Palmer 56.52 334 eP P 11 17 10.0 +1.1
comp=Z,29nm,0.9s
OHAK Old Harbor 56.53 328 eP P 11 17 09.9 +0.9
comp=Z,58nm,1.0s
RC01 Rabbit Creek A 56.53 333 eP P 11 17 10.1 +1.1
comp=Z,28nm,0.9s
DHY Denali Highway 56.57 336 eP P 11 17 10.7 +1.2
comp=Z,9.8nm,0.9s
HOM Homer 56.73 331 eP P 11 17 12.4 +2.0
comp=Z,52nm,0.8s
HDA Harding Lake 57.13 338 eP P 11 17 13.9 +0.7
comp=Z,18nm,0.9s
PMOR Pomariorio Ree 57.28 239 eT T 12 18 34.4
comp=Z,30nm,0.2s
ILAR Eielson Array 57.30 338 P P 11 17 15.2 +0.8
comp=Z,9.1nm,1.1s,baz=144,slow=5.2,SNR=58
ILAR LR LR 11 44 47.1
comp=Z,3µm,18.2s,baz=128,slow=39
ILB Eielson Array 57.30 338 eP P 11 17 15.2 +0.8
RND Reindeer 57.31 336 eP P 11 17 15.9 +1.3
RND pmax pmax
comp=Z,71nm,1.1s
RND Reindeer 57.31 336 eP P 11 17 15.9 +1.3
comp=Z,71nm,1.1s
MCK McKinley 57.51 336 eP P 11 17 17.0 +1.0
MCK pmax pmax
comp=Z,24nm,0.8s
MCK McKinley 57.51 336 eP P 11 17 17.0 +1.0
comp=Z,24nm,0.8s
CCB Clear Creek Bu 57.57 338 eP P 11 17 16.2 -0.1

comp=Z,11nm,0.9s
RSO Redoubt South 57.58 332 *e*P **P 11 17 17.7 +1.0**
SPU Mount Spurr 57.58 333 *e*P **P 11 17 17.4 +0.9**
WRH Wood River Hil 57.58 337 *e*P **P 11 17 16.8 +0.4**
comp=Z,13nm,1.0s
COLA College 57.71 338*c i*P **P 11 17 17.9 +0.7**
COLA pmax pmax
comp=Z,9.0nm,0.8s
COLA College 57.71 338 *e*P **P 11 17 18.3 +1.0**
comp=Z,28nm,1.3s
COLA LR LR
comp=Z,2µm,19.0s
FYU Fort Yukon 57.77 340 *e*P **P 11 17 19.2 +1.5**
comp=Z,60nm,1.3s
RES Resolute Bay 57.79 1 P **P 11 17 17.4 -0.4**
comp=Z,4.6nm,0.7s,baz=186,slow=10,SNR=32
RES Resolute Bay 57.79 1 *e*P **P 11 17 17.3 -0.4**
RES *e**PP **sP 11 17 26.1 -0.2**
RES Resolute Bay 57.79 1 *e*P **P 11 17 17.3 -0.4**
comp=Z,44nm,1.5s
MDM Murphy Dome 57.89 338 *e*P **P 11 17 19.2 +0.6**
comp=Z,12nm,1.2s
TRF Thorofare Moun 57.90 336 *e*P **P 11 17 19.8 +0.9**
comp=Z,60nm,0.9s
BWN Browne 57.94 337 *e*P **P 11 17 19.8 +0.9**
comp=Z,110nm,0.9s
KTH Kantishna Hill 58.19 336 *e*P **P 11 17 21.5 +0.7**
comp=Z,22nm,0.9s
PPLA Purkeypile 58.40 335 *e*P **P 11 17 22.9 +0.6**
comp=Z,65nm,1.3s
BPAW Bear Paw Mtn. 58.48 336 *e*P **P 11 17 23.2 +0.4**
comp=Z,38nm,1.4s
CAST Castle Rocks 58.59 335 *e*P **P 11 17 23.8 +0.3**
comp=Z,40nm,1.0s
MLY Manley 58.84 337 *e*P **P 11 17 26.1 +0.8**
comp=Z,27nm,1.0s
SFJD Kangerlussuaq 59.10 20 P **P 11 17 27.4 +0.5**
comp=Z,4.5nm,0.7s,baz=203,slow=6.7,SNR=5.2
SFJD Kangerlussuaq 59.10 20 *e*P **P 11 17 27.6 +0.7**
SFJD *e**PP **sP 11 17 35.8 +0.3**
SFJD Kangerlussuaq 59.10 20 *e*P **P 11 17 27.4 +0.5**
comp=Z,46nm,1.1s
SFJD LR LR
comp=Z,812nm,19.0s
SVW2 Sparrevohn 59.10 332 *e*P **P 11 17 27.0 -0.1**
comp=Z,28nm,0.9s
CPUP Villa Florida 59.49 136 P **P 11 17 28.2 -2.0**
comp=Z,1.7nm,0.9s,baz=326,slow=6.8,SNR=3.6
CPUP LR LR 11 42 50.9
comp=Z,403nm,19.7s,baz=338,slow=36
COLD Coldfoot 59.77 340 *e*P **P 11 17 33.0 +1.4**
comp=Z,29nm,1.2s
TTA Tatalina 60.00 334 *e*P **P 11 17 33.5 +0.1**
TTA *e**PP **sP 11 17 42.0 +0.1**
TTA Tatalina 60.00 334 *e*P **P 11 17 33.5 +0.1**
comp=Z,22nm,1.0s
PPT Papeete 60.00 238 LR LR 11 36 06.9
comp=Z,642nm,19.8s,baz=50,slow=29
PPT2 Papeete2 60.01 238 *e*S **S 11 25 45.9 -0.3**
comp=Z,1000nm,24.8s
PPT2 *e*SS **SS 11 29 46.9 +3.6**
comp=Z,308nm,27.0s
PPT2 *e*LQ LQ 11 32 44.5
comp=Z,1µm,28.0s
PPT2 *e*LR LR 11 35 15.6
comp=Z,1µm,24.2s,baz=52
KULLO Kullorsuaq 62.06 12⇑ *i*P **P 11 17 47.2 +0.2**
comp=Z,30nm,1.0s
KULLO *i* 11 17 55.9
KULLO Kullorsuaq 62.06 12⇑ *i*P **P 11 17 47.2 +0.2**
KULLO *i* 11 17 55.9
KULLO pmax pmax
comp=Z,30nm,1.0s
PLCA Paso Flores 63.43 156 P **P 11 17 56.0 -0.7**
comp=Z,0.8nm,0.5s,baz=304,slow=11,SNR=3.3
PLCA LR LR 11 40 03.1
comp=Z,628nm,18.3s,baz=357,slow=31
SPB Sao Paulo 64.96 127 PFAKE 11 18 20.0 +13
SPB LR LR
comp=Z,576nm,19.0s
TRQA Tornquist 65.14 148 *e*P P 11 18 12.6 +4.7
comp=Z,16nm,1.1s
TRQA LR LR
comp=Z,2µm,19.0s
SUMG Summit 65.44 17 *i*P **P 11 18 10.6 +0.8**
comp=Z,12nm,0.6s
SUMG Summit 65.44 17 *i*P **P 11 18 10.6 +0.8**
SUMG pmax pmax
comp=Z,12nm,0.6s
SUMG Summit 65.44 17 *e*P **P 11 18 10.4 +0.6**
comp=Z,27nm,0.9s
RCBR Riachuelo 66.87 104 PFAKE 11 18 30.0 +10
RCBR LR LR
comp=Z,662nm,22.0s
SCO Scoresbysund 70.00 20 *i*P **P 11 18 37.7 -0.4**
SCO Scoresbysund 70.00 20 *i*P **P 11 18 37.7 -0.4**
RAR Rarotonga 70.14 239 LR LR 11 40 44.3
comp=Z,623nm,18.6s,baz=49,slow=28
DAG Danmarks Havn 71.52 14 *i*P **P 11 18 46.8 -0.5**
DAG *i* 11 18 55.5
DAG Danmarks Havn 71.52 14 *i*P **P 11 18 46.8 -0.5**
DAG *i* 11 18 55.5
BILL Bilibino 75.95 337 *e*P **P 11 19 14.0 +0.5**
BILL *e**PP **sP 11 19 23.1 +0.9**
BILL Bilibino 75.95 337 *e*P **P 11 19 14.0 +0.5**
comp=Z,32nm,1.1s
BILL LR LR
comp=Z,1µm,21.0s
KBS Kingsbay 77.49 11 *e*P **P 11 19 23.6 +1.6**
KBS pmax pmax
comp=Z,24nm,1.1s
KBS MLR MLR
comp=Z,674nm,20.0s
KBS Kingsbay 77.49 11 *e*P **P 11 19 23.6 +1.6**
comp=Z,24nm,1.1s
KBS LR LR
comp=Z,674nm,20.0s
AFI Afiamalu 77.58 251 LR LR 11 46 55.5
comp=Z,408nm,18.0s,baz=68,slow=30
ESK Eskdalemuir 79.80 35 *i*P **P 11 19 36.5 +1.4**
PCAS Casmilo, Conde 80.10 51 *e*P **P 11 19 37.2 +0.1**
PTOM Tomar 80.27 52 *e*P **P 11 19 38.4 +0.4**
PVIS Viseu 80.39 50 *e*P **P 11 19 38.7 0.0**
PTEO Sao Teotonio 80.53 54 *e*P **P 11 19 38.2 -1.2**
PMTG Montargil 80.54 52 *e*P **P 11 19 39.1 -0.3**
MTE Manteigas 80.73 51 *e*P **P 11 19 40.3 -0.2**
MTE Manteigas 80.73 51 PFAKE 11 19 50.0 +9.5
MTE LR LR
comp=Z,799nm,20.0s
EVO Evora 80.83 53 *e*P **P 11 19 41.2 +0.2**
comp=Z,25nm,1.7s
MESJ Messejana 80.85 53 *e*P **P 11 19 42.3 +1.2**
PCBR Castelo Branco 80.92 51 *e*P **P 11 19 41.8 +0.4**
MVO Moncorvo 80.92 50 *e*P **P 11 19 41.7 +0.2**
PCVE Castro Verde 81.04 53 *e*P **P 11 19 42.3 +0.2**
PBEJ Beja 81.07 53 *e*P **P 11 19 42.6 +0.3**
PMRV Marv??o 81.08 52 *e*P **P 11 19 42.1 -0.3**
comp=Z,33nm,1.6s
PBDV Barranco-do-Ve 81.22 54 *e*P **P 11 19 43.9 +0.8**
CWF Charnwood Fore 81.58 37 *e*P **P 11 19 45.3 +0.7**
comp=Z,62nm,1.7s
PBAR Barrancos 81.67 53 *e*P **P 11 19 45.5 +0.1**
RTC Rabat Centre 82.91 57 PFAKE 11 20 00.0 +8.0
RTC LR LR
comp=Z,3µm,22.0s
SEY Seymchan 82.97 334⇓ *i*P **P 11 19 53.1 +1.4**
PAB San Pablo 83.32 51 *e*P **P 11 19 54.0 -0.2**
PAB pmax pmax
comp=Z,20nm,1.1s
PAB MLR MLR
comp=Z,697nm,19.0s
PAB San Pablo 83.32 51 *e*P **P 11 19 54.0 -0.2**
comp=Z,20nm,1.1s
PAB LR LR
comp=Z,697nm,19.0s
ESDC Sonseca Array 83.57 51 P **P 11 19 55.3 -0.1**
comp=Z,2.3nm,0.7s,baz=302,slow=5.2,SNR=14
PEA1 Petropavlovsk- 84.01 324 *e*P **P 11 19 58.0 +0.8**
PETK Petropavlovsk- 84.01 324 P **P 11 19 58.0 +0.7**
comp=Z,6.2nm,0.8s,baz=82,slow=11,SNR=5.5
FUNA Funafuti 84.15 259 PFAKE 11 20 10.0 +11
FUNA LR LR
comp=Z,5µm,20.0s
KONO Kongsberg 84.83 29 *e*P **P 11 20 03.6 +2.3**
KONO pmax pmax
comp=Z,128nm,1.7s

NB2 NORSAR Subarra 84.96 27 P **P 11 20 03.0 +1.0**
comp=Z,80nm,2.5s,baz=294,slow=4.8
NB2 NORSAR Subarra 84.96 27 P **P 11 20 03.0 +1.0**
baz=294,slow=4.8
NB200 NORSAR Array S 84.96 27 *e*P **P 11 20 03.3 +1.3**
NOA NORSAR Array B 84.96 27 P **P 11 20 03.3 +1.3**
comp=Z,1.9nm,1.0s,baz=303,slow=5.5,SNR=3.6
NOA LR LR 12 00 46.7
comp=Z,230nm,18.0s,baz=290,slow=38
MA2 Magadan 85.07 331 *e*P **P 11 20 02.5 0.0**
MA2 Magadan 85.07 331 PFAKE 11 20 10.0 +7.5
MA2 LR LR
comp=Z,17nm,19.0s
ARA0 ARCESS Array S 85.53 17 *e*P **P 11 20 04.5 -0.1**
ARCES ARCESS Array B 85.53 17 P **P 11 20 04.5 -0.1**
comp=Z,4.3nm,0.8s,baz=316,slow=3.3,SNR=8.4
ARCES LR LR 11 59 25.5
comp=Z,400nm,21.7s,baz=316,slow=36
SNF Seneffe 85.60 38 P **P 11 20 06.2 +0.9**
TIXI Tiksi 85.75 346*c i*P **P 11 20 05.3 -0.4**
TIXI pmax pmax
comp=Z,59nm,2.5s
TIXI Tiksi 85.75 346 *e*P **P 11 20 05.2 -0.4**
comp=Z,33nm,1.1s
TIXI LR LR
comp=Z,568nm,19.0s
KEV Kevo 85.80 16 PFAKE 11 20 20.0 +14
KEV LR LR
comp=Z,674nm,21.0s
DOU Dourbes 85.94 39 P **P 11 20 08.0 +0.9**
BCLA Clavier 86.24 38 P **P 11 20 09.5 +1.0**
MEM Membach 86.58 38 P **P 11 20 11.2 +1.0**
WLF Walferdange 87.03 39 PFAKE 11 20 20.0 +7.5
WLF LR LR
comp=Z,739nm,20.0s
SSB Saint Sauveur 87.68 43 PFAKE 11 20 30.0 +14
SSB LR LR
comp=Z,601nm,19.0s
MSVF Nonsavu 88.08 251 PFAKE 11 20 30.0 +12
MSVF LR LR
comp=Z,668nm,19.0s
BFO Black Forest 88.88 39 *i*P **P 11 20 21.9 +0.6**
BFO Black Forest 88.88 39 PFAKE 11 20 30.0 +8.7
BFO LR LR
comp=Z,776nm,20.0s
LVZ Lovozero 89.10 16 PFAKE 11 20 30.0 +8.0
LVZ LR LR
comp=Z,780nm,20.0s
BNI Bardonecchia 89.17 43 PFAKE 11 20 30.0 +7.1
BNI LR LR
comp=Z,855nm,20.0s
CLL Collm 90.29 35 *e*P **P 11 20 28.0 +0.2**
CLL *e*PP PP 11 24 07.0 +5.7
CLL *e*S S 11 31 48.0 +27
CLL *e*SS **SS 11 37 18.0 -2.0**
CLL LmH 12 02 00.0
comp=N,300nm,20.6s
CLL LmH 12 02 00.0
comp=E,100nm,21.7s
CLL LmV 12 03 00.0
comp=Z,400nm,19.6s
CLL Collm 90.29 35 *e*P **P 11 20 28.0 +0.2**
CLL MLR MLR
comp=Z,400nm,19.6s
TUE Stuetta 90.29 41 PFAKE 11 20 40.0 +12
TUE LR LR
comp=Z,664nm,22.0s
NKC Novy Kostel 90.48 37 *e*P **P 11 20 28.5 -0.3**
NKC *ex* x 11 20 37.9
NKC AMS AMS 12 05 20.0
comp=Z,600nm,21.8s
NKC Novy Kostel 90.48 37 *e*P **P 11 20 28.5 -0.3**
NKC *e* 11 20 37.9
NKC MLR MLR
comp=Z,600nm,21.8s
FIA0 FINESS Array S 90.79 23 *e*P **P 11 20 28.9 -1.0**
FIA0 *e* 11 24 04.2
FIA0 FINESS Array S 90.79 23 *e*P **P 11 20 28.9 -1.0**
FIA0 *e*PP **PP 11 24 04.2 -0.7**
FINES FINESS Array B 90.79 23 P **P 11 20 28.9 -1.0**
comp=Z,1.7nm,0.9s,baz=66,slow=5.2,SNR=4.4
FINES PP **PP 11 24 04.2 -0.7**
comp=Z,2.8nm,0.9s,baz=305,slow=9.8,SNR=3.8
FINES FINESS Array B 90.79 23 *i*P **P 11 20 28.8 -1.1**
FINES pmax pmax
comp=Z,2.0nm,0.9s
FUORN Ofenpass-Fuorn 90.80 40 *e*P **P 11 20 30.7 +0.1**
comp=Z,7.4nm,0.8s
BRG Berggiesshubel 91.02 36 *e*P **P 11 20 30.9 -0.3**
comp=Z,7.5nm,1.1s
PVCC Panska Ves 91.53 36 AMS AMS 12 04 40.0
comp=Z,400nm,16.9s
KHC Kasperske Hory 91.64 37 *e*P **P 11 20 33.9 -0.3**
KHC Kasperske Hory 91.64 37 *e*P **P 11 20 33.9 -0.3**
PRU Pruhonice 91.78 36 *e*P **P 11 20 34.6 -0.2**
PRU *ex* x 11 20 43.6
PRU AMS AMS 12 03 50.0
comp=Z,500nm,12.0s
PRU Pruhonice 91.78 36 *e*P **P 11 20 34.6 -0.2**
PRU *e* 11 20 43.6
PRU MLR MLR
comp=Z,500nm,12.0s
GERES GERESS Array B 91.85 37 P **P 11 20 34.8 -0.5**
comp=Z,1.1nm,0.6s,baz=320,slow=4.0,SNR=12
GERES LR LR 12 06 37.0
comp=Z,216nm,18.4s,baz=305,slow=39
VLC Villacollemand 91.95 43 PFAKE 11 20 50.0 +14
VLC LR LR
comp=Z,293nm,21.0s
YAK Yakutsk 92.22 339 *e*P **P 11 20 36.2 -0.3**
YAK *e**PP **sP 11 20 45.4 +0.1**
YAK *eS* **SKSac 11 31 05.7 -2.9**
YAK pmax pmax
comp=Z,2.0nm,0.6s
YAK smax smax
comp=N,40nm,16.6s
YAK Yakutsk 92.22 339 PFAKE 11 20 50.0 +14
YAK LR LR
comp=Z,641nm,22.0s
UPC Upice 92.34 35 AMS AMS 12 08 40.0
comp=Z,500nm,20.4s
UPC Upice 92.34 35 *e*P P 11 20 46.1 +8.7
UPC MLR MLR
comp=Z,500nm,20.4s
DBIC Dimbokro 92.58 82 P **P 11 20 37.4 -1.8**
comp=Z,8.8nm,1.1s,baz=287,slow=8.6,SNR=3.5
DBIC LR LR 11 57 30.3
comp=Z,174nm,21.7s,baz=269,slow=32
DPC Dobruska-Polom 92.59 35 *e*P **P 11 20 38.7 +0.1**
DPC *ex* x 11 20 47.7
DPC AMS AMS 12 08 50.0
comp=Z,500nm,18.8s
DPC Dobruska-Polom 92.59 35 *e*P **P 11 20 38.7 +0.1**
DPC *e* 11 20 47.7
DPC MLR MLR
comp=Z,500nm,18.8s
TREC Trest 92.66 36 AMS AMS 12 05 50.0
comp=Z,600nm,20.3s
VSL Villasalto 93.27 47 PFAKE 11 20 50.0 +8.1
VSL LR LR
comp=Z,458nm,21.0s
MORC Moravsky Berou 93.56 35 *e*P **P 11 20 43.0 -0.1**
MORC pmax pmax
comp=Z,26nm,1.0s
MORC Moravsky Berou 93.56 35 *e*P **P 11 20 43.0 -0.1**
comp=Z,26nm,1.0s
NRIK Noril'sk 93.78 357 P **P 11 20 43.6 +0.1**
comp=Z,5.6nm,0.6s,baz=69,slow=3.2,SNR=6.3
AQU L'Aquila 94.73 43 PFAKE 11 21 00.0 +11
AQU LR LR
comp=Z,586nm,20.0s
VYHS Vyhne 94.96 36 *e*P **P 11 20 49.5 0.0**
STHS Stebnicka Huta 95.78 34 *e*P **P 11 20 53.3 +0.1**
PSZ Piszkesteto 95.87 36 PFAKE 11 21 10.0 +16
PSZ LR LR
comp=Z,375nm,21.0s
BKZ Black Stump Fm 95.95 231 *e*P **P 11 20 52.4 -1.7**
CRVS Cervenica-Dubn 96.19 35 *e*P **P 11 20 53.9 -1.2**
TOA1 Torodi Ar. Sit 96.71 74 *e*P **P 11 20 56.1 -2.0**
TOA1 *e*PP **PP 11 24 52.1 -0.7**
TORD Torodi Ar. Bea 96.71 74 P **P 11 20 56.1 -2.0**
comp=Z,0.5nm,0.9s,baz=300,slow=4.4,SNR=2.5
TORD PP **PP 11 24 52.1 -0.7**
comp=Z,0.9nm,1.1s,baz=275,slow=9.7,SNR=2.9
TORD PKKP **PKKPbc 11 37 39.8 -0.6**
comp=Z,0.5nm,0.9s,baz=144,slow=2.7,SNR=2.3
TORD LR LR 12 04 15.8
comp=Z,323nm,18.7s,baz=250,slow=35
TAM Tamanrasset 96.81 64 PFAKE 11 21 10.0 +11
TAM LR LR
comp=Z,416nm,19.0s
CLTB Caltabellotta 96.81 48 PFAKE 11 21 10.0 +12
CLTB LR LR
comp=Z,473nm,19.0s
CUC Castrocucco 97.46 44 PFAKE 11 21 10.0 +8.9
CUC LR LR
comp=Z,377nm,19.0s
ERM Erimo 97.66 318 PFAKE 11 21 10.0 +8.2
ERM LR LR
comp=Z,725nm,20.0s
TIP Timpagrande 98.49 45 PFAKE 11 21 20.0 +14
TIP LR LR
comp=Z,549nm,20.0s
KIEV Kiev 99.07 30 PFAKE 11 21 20.0 +12
KIEV LR LR
comp=Z,455nm,20.0s
AKASG Malin Array Be 99.07 30 PP PP 11 25 14.7 +5.1
comp=Z,1.1nm,0.6s,baz=308,slow=6.7,SNR=5.3
AKASG LR LR 12 08 40.4
AKBB Malin Array Si 99.07 30 *e*PP PP 11 25 14.7 +5.1
OBN Obninsk 99.16 24 PFAKE 11 21 20.0 +12
OBN LR LR
comp=Z,1µm,22.0s
TIR Tirane 99.41 42 PFAKE 11 21 20.0 +10
TIR LR LR
comp=Z,482nm,20.0s
MAJO Matsushiro 103.82 315 PFAKE 11 21 40.0 +11
MAJO LR LR
comp=Z,8µm,20.0s
MDJ Mudanjiang 104.11 326 PFAKE 11 21 40.0 +9.5
MDJ LR LR
comp=Z,500nm,20.0s
ARU Arti 104.62 12 PP PP 11 25 49.7 -1.2
comp=Z,1.1nm,0.3s,baz=273,slow=5.9,SNR=3.6
ARU Arti 104.62 12 PFAKE 11 21 40.0 +7.5
ARU LR LR
comp=Z,931nm,20.0s
HIA Hailar 105.41 334 PFAKE 11 26 00.0
HIA LR LR
comp=Z,587nm,21.0s
SANT Santorini 105.80 43 PFAKE 11 26 00.0
SANT LR LR
comp=Z,321nm,21.0s
QSPA South Pole Qui 106.89 180 PFAKE 11 26 00.0
QSPA LR LR
comp=Z,671nm,19.0s
ISP Isparta 108.13 40 PFAKE 11 26 10.0
ISP LR LR
comp=Z,377nm,22.0s
ANTO Ankara 108.14 37 PFAKE 11 26 10.0
ANTO LR LR
comp=Z,13nm,20.0s
TLY Talaya 108.70 345 PFAKE 11 26 10.0
TLY LR LR
comp=Z,419nm,21.0s
BR101 Keskin Array S 108.72 36 *e*PP PP 11 26 24.7 +2.8
BR101 *e*PKKPbc **PKKPbc 11 37 10.3 +4.2**
BRTR Keskin Array B 108.72 36 PP PP 11 26 24.7 +2.8
comp=Z,0.5nm,0.7s,baz=290,slow=8.4,SNR=3.0
BRTR PKKPbc **PKKPbc 11 37 10.3 +4.2**
comp=Z,0.3nm,0.4s,baz=126,slow=3.9,SNR=3.7
ZAA1 Zalesovo Array 109.27 357 *e*PP PP 11 26 23.0 -2.0
ZALV Zalesovo Beam 109.28 357 PP PP 11 26 23.0 -2.0
comp=Z,0.5nm,0.3s,baz=1.4,slow=5.8,SNR=3.7
GUMO Guam 109.48 291 PFAKE 11 26 10.0
GUMO LR LR
comp=Z,491nm,20.0s
BRVK Borovoye 109.72 6 PFAKE 11 26 10.0
BRVK LR LR
comp=Z,974nm,21.0s
BVAR Borovoye Array 109.76 6 PP PP 11 26 29.2 +0.6
comp=Z,1.1nm,0.9s,baz=338,slow=6.4,SNR=3.8
AKTO Aktyubinsk 110.05 15 PP PP 11 26 28.6 -2.2
comp=Z,0.5nm,0.3s,baz=5.3,slow=9.2,SNR=6.6
KIV Kislovodsk 110.25 28 PFAKE 11 26 10.0
KIV LR LR
comp=Z,389nm,21.0s
INCN Inchon 110.55 322 PFAKE 11 26 10.0
INCN LR LR
comp=Z,1µm,21.0s
ULN Ulaanbaatar 111.20 341 PFAKE 11 26 10.0
ULN LR LR
comp=Z,513nm,20.0s
SONM Songino Array 111.43 342 PP PP 11 26 41.9 +0.9
comp=Z,0.2nm,0.4s,baz=96,slow=4.6,SNR=4.4
CSS Mathiatis 111.70 40 PFAKE 11 26 10.0
CSS LR LR
comp=Z,58nm,21.0s
KURK Kurchatov 112.60 1 *e*PKIKP **PKiKP 11 26 01.9 -1.4**
KURK *e* 11 26 46.9
KURK MLR MLR
comp=Z,2µm,20.0s
KURK Kurchatov 112.60 1 *e*PKiKP **PKiKP 11 26 01.9 -1.4**
KURK *e*PP **PP 11 26 46.9 -1.9**
KURK *e*PKKPab **PKKPab 11 37 03.2 +0.2**
KURK LR LR
comp=Z,2µm,20.0s
KURBB Kurchatov Arra 112.69 1 PKiKP **PKiKP 11 26 01.9 -1.6**
comp=Z,0.4nm,0.7s,baz=348,slow=1.7,SNR=4.3
KURBB PP **PP 11 26 46.9 -2.6**
comp=Z,1.3nm,0.8s,baz=356,slow=6.7,SNR=7.5
KURBB PKKP **PKKPab 11 37 03.2 +0.6**
comp=Z,0.9nm,0.9s,baz=189,slow=3.9,SNR=5.0
GNI Garni 114.19 29 PFAKE 11 26 20.0 +13
GNI LR LR
comp=Z,389nm,20.0s
BJI Beijing 114.23 331 PKP PKPdf 11 26 11.5 +4.8
BJI LR LR
comp=Z,500nm,18.8s
BJI LR LR
comp=Z,300nm,17.1s
BJI LR LR
comp=Z,630nm,35.1s
BJT Baijiatuau 114.25 331 PFAKE 11 26 20.0 +13
BJT LR LR
comp=Z,632nm,20.0s
PMG Port Moresby 114.83 267 PFAKE 11 26 20.0 +11
PMG LR LR
comp=Z,486nm,19.0s
HHC Hu-ho-hao-te 115.62 334 *e*PKP **PKPdf 11 26 07.5 -2.1**
HHC PP **PP 11 27 13.3 +2.5**
HHC SKS **SKSdf 11 33 15.8 -5.2**
HHC SS **SS 11 43 06.5 -2.6**
HHC AMB AMB
comp=Z,140nm,9.9s
HHC LR LR
comp=Z,490nm,18.5s
HHC LR LR
comp=Z,690nm,18.5s
HHC LR LR
comp=Z,180nm,17.3s
MK32 Makanchi Array 116.52 359 *e*PKPdf **PKPdf 11 26 09.7 -1.4**
MK32 *e*PP **PP 11 27 14.0 -2.7**
MK32 *e*PKKPbc **PKKPbc 11 36 41.5 +1.3**
MKAR Makanchi Array 116.52 359 PKP **PKPdf 11 26 09.7 -1.4**
comp=Z,0.8nm,0.7s,baz=29,slow=2.8,SNR=6.8
MKAR PP **PP 11 27 14.0 -2.7**
comp=Z,0.3nm,0.5s,baz=18,slow=3.6,SNR=3.6
MKAR PKKPbc **PKKPbc 11 36 41.5 +1.3**
comp=Z,0.2nm,0.6s,baz=160,slow=4.6,SNR=3.5
CAN Canberra 116.91 239 PFAKE 11 26 20.0 +8.0
CAN LR LR
comp=Z,533nm,20.0s
CTAO Charters Tower 117.85 256 PFAKE 11 26 30.0 +16
CTAO LR LR
comp=Z,519nm,19.0s
NJ2 Nanjing 118.90 323 *e*PKP **PKPdf 11 26 19.8 +3.8**
WMQ Urumqi 119.15 354 *e*PKP **PKPdf 11 26 17.5 +1.3**
WMQ PP PP 11 27 42.0 +7.0
WMQ PKS **PKSdf 11 29 55.3 +2.4**
WMQ SKKS 11 34 32.8
WMQ SS **SS 11 43 57.0 +2.8**
WMQ LR LR
comp=Z,110nm,19.4s
WMQ LR LR
comp=Z,100nm,21.8s
WMQ LR LR
comp=Z,140nm,21.8s
TKM2 Tokmak 2 120.25 4 PFAKE 11 26 30.0 +11

TKM2					LR	LR				
	comp=Z,801nm,19.0s									
EKS2	**Erkin-Say**	**120.36**	**6**	PFAKE			11 26 30.0	+11		
EKS2				LR	LR					
	comp=Z,732nm,19.0s									
AAK	**Ala-Archa**	**120.45**	**5**	PFAKE			11 26 30.0	+11		
AAK				LR	LR					
	comp=Z,945nm,20.0s									
GEYT	**Ailbeck**	**121.51**	**21**	PKP	**PKPdf**		**11 26 20.6**	**-0.3**		
	comp=Z,2.8nm,0.6s,baz=264,slow=6.0,SNR=4.5									
TATO	**Taipei**	**122.21**	**315**	PFAKE			11 26 30.0	+7.5		
TATO				LR	LR					
	comp=Z,313nm,19.0s									
YHNB	**Yeheng**	**122.49**	**315**	PFAKE			11 26 40.0	+17		
YHNB				LR	LR					
	comp=Z,290nm,19.0s									
LZH	**Lanzhou**	**122.77**	**337**	*e*PKP	**PKPdf**		**11 26 20.5**	**-3.0**		
LZH				PP	**PP**		**11 28 03.0**	**+2.9**		
LZH				AMB	AMB					
	comp=Z,170nm,14.2s									
LZH				LR	LR					
	comp=Z,650nm,17.6s									
LZH				LR	LR					
	comp=Z,990nm,18.0s									
LZH				LR	LR					
	comp=Z,510nm,17.3s									
STKA	**Stephens Creek**	**123.02**	**243**	PKP	**PKPdf**		**11 26 23.4**	**-0.4**		
	comp=Z,3.5nm,0.8s,baz=75,slow=2.5,SNR=8.1									
KSH	**Kashi**	**123.66**	**4**	*e*PKP	**PKPdf**		**11 26 26.0**	**+0.9**		
KSH				*e*PP	PP		11 28 15.5	+10		
KSH				PKS	**PKSdf**		**11 30 01.3**	**-0.6**		
KSH				SKS	**SKSdf**		**11 33 33.5**	**-2.9**		
KSH				SKKS	**SKKSac**		**11 35 03.0**	**-2.4**		
KSH				SS	**SS**		**11 44 57.8**	**+5.8**		
KSH				AMB	AMB					
	comp=Z,150nm,8.1s									
KSH				LR	LR					
	comp=Z,260nm,8.9s									
KSH				LR	LR					
	comp=Z,240nm,7.2s									
KSH				LR	LR					
	comp=Z,630nm,21.1s									
ENH	**Enshi**	**125.32**	**329**	*e*PKPdf	**PKPdf**		**11 26 28.1**	**-0.4**		
ENH				LR	LR					
	comp=Z,590nm,19.0s									
CD2	**Chengdu**	**127.37**	**335**	PKP	**PKPdf**		**11 26 32.5**	**+0.2**		
CD2				sPKP			11 26 41.5			
CD2				PP	**PP**		**11 28 31.3**	**+0.4**		
CD2				SKS	**SKSdf**		**11 33 43.0**	**-0.5**		
CD2				SKKS	**SKKSac**		**11 35 26.5**	**-2.6**		
CD2				SS	**SS**		**11 45 40.0**	**+0.8**		
CD2				AMB	AMB					
	comp=Z,90nm,15.0s									
CD2				LR	LR					
	comp=Z,610nm,21.0s									
CD2				LR	LR					
	comp=Z,830nm,18.0s									
WRAB	**Tennant Creek**	**128.93**	**258**	PFAKE			11 26 50.0	+15		
WRAB				LR	LR					
	comp=Z,746nm,19.0s									
WR1	**Warramunga Arr**	**128.94**	**258**	*e*PKPdf	**PKPdf**		**11 26 34.9**	**-0.5**		
WRA	**Warramunga Arr**	**128.94**	**258**	PKP	**PKPdf**		**11 26 34.9**	**-0.6**		
	comp=Z,3.6nm,0.8s,baz=86,slow=2.2,SNR=10									
DAV	**Davao City (W)**	**129.36**	**294**	PFAKE			11 26 50.0	+14		
DAV				LR	LR					
	comp=Z,315nm,21.0s									
AS31	**Alice Springs**	**129.63**	**253**	*e*PKPdf	**PKPdf**		**11 26 35.8**	**-1.0**		
ASAR	**Alice Springs**	**129.63**	**253**	PKP	**PKPdf**		**11 26 35.8**	**-1.0**		
	comp=Z,1.6nm,0.8s,baz=94,slow=1.9,SNR=11									
GYA	**Guiyang**	**129.86**	**329**	Pdif	**Pdif**		**11 23 26.0**	**+0.4**		
GYA				PKP	**PKiKP**		**11 26 39.8**	**+1.7**		
GYA				PP	**PP**		**11 28 52.5**	**+5.0**		
GYA				AMB	AMB					
	comp=Z,130nm,7.8s									
LSZ	**Lusaka**	**129.92**	**96**	PFAKE			11 26 50.0	+12		
LSZ				LR	LR					
	comp=Z,376nm,20.0s									
LSA	**Lhasa**	**132.46**	**347**	PFAKE			11 26 50.0	+7.4		
LSA				LR	LR					
	comp=Z,438nm,20.0s									
KMI	**Kunming**	**132.85**	**332**	PKP	**PKPdf**		**11 26 44.0**	**+0.9**		
KMI				sPKP			11 26 54.5			
KMI				PP	**PP**		**11 29 09.5**	**+2.7**		
KMI				SS	SS		11 46 46.5	-0.5		
KMI				AMB	AMB					
	comp=Z,66nm,11.0s									
KMI				LR	LR					
	comp=Z,330nm,17.0s									
KMI				LR	LR					
	comp=Z,330nm,16.4s									
KMI				LR	LR					
	comp=Z,660nm,15.8s									
QIZ	**Qiongzhong**	**133.99**	**320**	PKP	**PKPdf**		**11 26 46.0**	**+0.9**		
QIZ				PP	PP		11 29 22.0	+7.7		
QIZ				SS	SS		11 47 08.8	+7.5		
QIZ				LR	LR					
	comp=Z,110nm,14.8s									
QIZ				LR	LR					
	comp=Z,76nm,16.1s									
KMBO	**Kilima Mbogo**	**134.72**	**74**	PFAKE			11 27 00.0	+13		
KMBO				LR	LR					
	comp=Z,498nm,19.0s									
KKM	**Kota Kinabalu**	**137.87**	**300**	PFAKE			11 27 00.0	+7.4		
KKM				LR	LR					
	comp=Z,187nm,20.0s									
KAPI	**Kappang**	**139.69**	**283**	PFAKE			11 27 10.0	+14		
KAPI				LR	LR					
	comp=Z,167nm,20.0s									
CHTO	**Chiang Mai**	**140.04**	**332**	PFAKE			11 27 10.0	+14		
CHTO				LR	LR					
	comp=Z,409nm,19.0s									
CM31	**Chiang Mai Arr**	**140.36**	**332**	*e*PKPdf	**PKPdf**		**11 26 55.9**	**-1.0**		
CMAR	**Chiang Mai Arr**	**140.36**	**332**	PKP	**PKPdf**		**11 26 55.9**	**-1.0**		
	comp=Z,3.3nm,0.8s,baz=333,slow=2.3,SNR=15									
CMAR	**Chiang Mai Arr**	**140.36**	**332**	*c i*PKIKP	**PKPdf**		**11 26 57.0**	**+0.1**		
CMAR				pmax	pmax					
	comp=Z,3.0nm,0.8s									
MBWA	**Marble Bar**	**142.67**	**257**	PFAKE			11 27 10.0	+9.1		
MBWA				LR	LR					
	comp=Z,546nm,20.0s									
KSM	**Kuching**	**145.28**	**299**	*e*PKPbc	**PKPbc**		**11 27 04.8**	**-0.6**		
KSM				LR	LR					
	comp=Z,212nm,22.0s									
HYB	**Hyderabad**	**145.78**	**3**	*i* PKP	**PKPdf**		**11 27 05.0**	**-1.5**		
HYB				*e*			11 27 15.0			
KULM	**Kulim**	**150.18**	**316**	*e*PKPbc	**PKPbc**		**11 27 18.5**	**-0.3**		
KULM				LR	LR					
	comp=Z,284nm,22.0s									
IPM	**Ipoh**	**150.52**	**314**	*e*PKPbc	**PKPbc**		**11 27 19.4**	**-0.4**		
IPM				*e*PKPab	**PKPab**		**11 27 25.8**	**-0.4**		
LEM	**Lembang**	**151.57**	**287**	PKPbc	**PKPbc**		**11 27 21.9**	**-0.4**		
	comp=Z,6.4nm,0.3s,baz=323,slow=20,SNR=1.9									
PSI	**Prapat**	**153.17**	**315**	PKPbc	**PKPbc**		**11 27 24.6**	**-1.3**		
	comp=Z,7.6nm,0.8s,baz=229,slow=3.1,SNR=10									
PSI	**Prapat**	**153.17**	**315**	*e*PKIKP	**PKPdf**		**11 27 17.9**	**-0.6**		
PSI				*e*			11 27 24.8			
PSI				*e*			11 27 37.0			
PSI	**Prapat**	**153.17**	**315**	*e*PKPdf	**PKPdf**		**11 27 17.9**	**-0.6**		
PSI				*e*PKPbc	**PKPbc**		**11 27 24.8**	**-1.1**		
PSI				*e*PKPab	**PKPab**		**11 27 37.0**	**-0.4**		

IDC ***26*** *11:13:51.6±3.5, 20.°22N×145.°24E, h128km±30km, mb3.3/8, mb1 3.5/9, mb1mx3.2/65, mbtmp3.8/9, MS4.1/2, Ms1 4.1/2, ms1mx3.0/28, Error ellipse: s-maj=39.2km s-min=14.0km az=88.0*

ISCJB ***26*** *11:13:52.6±1.1, 20.°26N±0.°08×145.°1E±0.°3, h150km, mb3.5/8, Error ellipse: s-maj=38.5km s-min=9.8km az=170.3*

ISC 26 11:13:54.1±1.2, 20.°3N±0.°1×145.°1E±0.°3, h150km, n10, σ1s23/10, mb3.6/8, Mariana Islands

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
				Op				
JCJ	**Chichijima**	**7.29**	**339**	P		**Pn**	**11 15 37.8**	**-0.2**
	baz=286,slow=20							
JCJ				S		**Sn**	**11 16 58.0**	**-1.5**
	8.7nm,0.3s,baz=273,slow=23,SNR=6.6							
KSRS	**Korea Array**	**22.72**	**322**	P		**P**	**11 18 44.7**	**+1.5**
	0.9nm,0.7s,baz=143,slow=8.6,SNR=4.2							
PETK	**Petropavlovsk-**	**34.18**	**14**	LR		LR	11 35 47.3	
	comp=Z,496nm,19.6s,baz=88,slow=38							
WRA	**Warramunga Arr**	**41.35**	**195**	P		**P**	**11 21 24.3**	**-1.1**
	1.0nm,0.4s,baz=11,slow=8.6,SNR=20							
WRA				LR		LR	11 40 44.4	
	comp=Z,169nm,19.1s,baz=140,slow=39							
FITZ	**Fitzroy Crossi**	**42.66**	**208**	P		**P**	**11 21 35.4**	**-0.6**
	2.9nm,0.8s,baz=32,slow=14,SNR=7.5							
ASAR	**Alice Springs**	**45.03**	**195**	P		**P**	**11 21 54.6**	**-0.3**
	0.2nm,0.3s,baz=13,slow=6.6,SNR=7.5							
MKAR	**Makanchi Array**	**56.98**	**313**	P		**P**	**11 23 25.1**	**+1.2**
	0.2nm,0.3s,baz=93,slow=4.3,SNR=2.5							
KURBB	**Kurchatov Arra**	**59.78**	**317**	P		**P**	**11 23 44.3**	**+1.1**
	0.3nm,0.4s,baz=95,slow=7.4,SNR=3.2							
YKA	**Yellowknife Ar**	**76.85**	**28**	P		**P**	**11 25 29.7**	**+0.5**
	0.2nm,0.6s,baz=287,slow=5.7,SNR=4.0							
FINES	**FINESS Array B**	**85.22**	**335**	P		**P**	**11 26 12.3**	**-1.1**
	0.4nm,0.3s,baz=77,slow=5.9,SNR=9.1							

IDC ***26*** *11:18:30.3±1.1, 16.°87N×99.°49W, h0km, mb4.3/14, mb1 4.4/19, mb1mx4.1/54, mbtmp4.2/19, ML3.4/4, MS4.1/4, Ms1 4.1/4, ms1mx3.7/35, Error ellipse: s-maj=26.2km s-min=15.8km az=33.0*

ISCJB ***26*** *11:18:32.1±0.6, 16.°79N±0.°03×99.°55W±0.°02, h23km±4km, mb4.5/43, MS4.8/1, Error ellipse: s-maj=5.5km s-min=3.6km az=4.1*

NEIC ***26*** *11:18:32.5±1.1, 16.°78N×99.°50W, h13km±6km, mb4.6/53, MD4.3(MEX), Error ellipse: s-maj=8.3km s-min=5.0km az=199.0*

NEIC Felt at Mexico and Oaxaca.

MEX ***26*** *11:18:33.6±0.9, 16.°70N×99.°69W, h9km±4km, MD4.3*

ISC 26 11:18:30.7±1.3, 16.°79N±0.°03×99.°61W±0.°02, h5km±8km, n369, σ1s45/400, mb4.6/43, Near coast of Guerrero

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
				Op				
ACX	**Acapulco**	**0.26**	**288**	*e*P		**Pn**	**11 18 41.1**	**0.0**
ACX	**Acapulco**	**0.26**	**288**	*e*P		**Pn**	**11 18 41.1**	**0.0**
ACP2	**Acapulco**	**0.28**	**287**	*i* P		**Pb**	**11 18 38.5**	**+0.3**
ACP2				*i* S		**Sb**	**11 18 42.6**	**-0.6**
CAIG	**El Cayaco**	**0.68**	**292**	*e*P		**Pb**	**11 18 44.8**	**-0.3**
CAIG				*i* S		**Sb**	**11 18 53.6**	**-1.2**
CAIG	**El Cayaco**	**0.68**	**292**	*e*P		**Pb**	**11 18 44.8**	**-0.3**
CAIG				*i* S		**Sb**	**11 18 53.6**	**-1.2**
MEIG	**Mezcala**	**1.13**	**359**	*i* P		**Pn**	**11 18 52.7**	**-0.5**
MEIG				*i* S		**Sn**	**11 19 08.1**	**-1.0**
MEIG	**Mezcala**	**1.13**	**359**	*i* P		**Pn**	**11 18 52.7**	**-0.5**
MEIG				*i* S		**Sn**	**11 19 08.1**	**-1.0**
TLIG	**Tlapa**	**1.25**	**52**	*e*Pn		**Pn**	**11 18 55.1**	**+0.2**
TLIG	**Tlapa**	**1.25**	**52**	*e*P		**Pn**	**11 18 55.2**	**+0.2**
TLIG				*i* S		**Sn**	**11 19 12.9**	**+0.7**
PNIG	**Pinotepa**	**1.47**	**105**	*e*P		**Pb**	**11 18 57.5**	**-1.0**
PNIG				*e*S		**Sg**	**11 19 17.1**	**-0.9**
PNIG	**Pinotepa**	**1.47**	**105**	*e*P		**Pb**	**11 18 57.5**	**-1.0**
PNIG				*e*S		**Sg**	**11 19 17.1**	**-0.9**
ARIG	**Puente Sto Nin**	**1.64**	**335**	*e*P		**Pb**	**11 19 00.5**	**-1.0**
ARIG				*e*S		**Sn**	**11 19 21.2**	**-0.5**
ZIIG	**Zihuatanejo**	**1.96**	**295**	*e*P		**Pn**	**11 19 03.7**	**-0.8**
ZIIG				*i* S		**Sn**	**11 19 25.5**	**-3.8**
ZIIG	**Zihuatanejo**	**1.96**	**295**	*e*P		**Pn**	**11 19 03.7**	**-0.8**
ZIIG				*i* S		**Sn**	**11 19 25.5**	**-3.8**
YAIG	**Yautepec**	**2.12**	**14**	*e*P		**Pn**	**11 19 07.0**	**0.0**
YAIG				*e*S		**Sn**	**11 19 29.4**	**-4.4**
YAIG	**Yautepec**	**2.12**	**14**	*e*P		**Pn**	**11 19 07.0**	**0.0**
YAIG				*e*S		**Sn**	**11 19 29.4**	**-4.4**
MAVM	**Malinalco, Edo**	**2.16**	**3**	*e*P		**Pb**	**11 19 09.6**	**-0.7**
MAVM				*e*S		**Sg**	**11 19 38.6**	**-1.5**
MZVM		**2.41**	**8**	*e*P		**Pb**	**11 19 12.1**	**-2.5**
MZVM				*e*S		**Sg**	**11 19 48.4**	**+0.2**
PPM	**Popocatepetl**	**2.45**	**22**	*e*P		**Pn**	**11 19 12.3**	**+0.6**
PPM				*i* S		**Sn**	**11 19 40.2**	**-2.0**
PPM	**Popocatepetl**	**2.45**	**22**	*e*P		**Pn**	**11 19 12.3**	**+0.6**
PPM				*e*P		**Pg**	**11 19 17.2**	**-0.5**
PPM				*i* S		**Sn**	**11 19 40.2**	**-2.0**
TOVM	**TOLUCA**	**2.48**	**358**	*e*P		**Pn**	**11 19 13.1**	**+1.1**
TOVM				*e*S		**Sg**	**11 19 48.2**	**-2.2**
SZVM	**Salazar**	**2.53**	**5**	*e*P		**Pn**	**11 19 12.9**	**+0.2**
SZVM				*e*S		**Sg**	**11 19 50.1**	**-1.9**
SZVM	**Salazar**	**2.53**	**5**	*e*P		**Pn**	**11 19 12.9**	**+0.2**
SZVM				*e*S		**Sg**	**11 19 50.1**	**-1.9**
UNM	**Universidad Na**	**2.56**	**9**	*e*Pn		**Pn**	**11 19 13.8**	**+0.7**
UNM				*i* S		**Sn**	**11 19 44.0**	**-0.6**
UNM	**Universidad Na**	**2.56**	**9**	*e*P		**Pn**	**11 19 13.7**	**+0.7**
UNM				*i* S		**Sn**	**11 19 44.0**	**-0.6**
VCVM	**Valle de Chalc**	**2.57**	**14**	*e*P		**Pg**	**11 19 21.5**	**+1.5**
VCVM				*e*S		**Sg**	**11 19 53.8**	**+0.4**
PBVM	**Pinon**	**2.68**	**11**	*e*P		**Pb**	**11 19 17.3**	**-1.8**
PBVM				*e*S		**Sg**	**11 19 55.7**	**-1.2**
PBVM	**Pinon**	**2.68**	**11**	*e*P		**Pb**	**11 19 17.3**	**-1.8**
PBVM				*e*S		**Sg**	**11 19 55.7**	**-1.2**
TPIG	**Tehuac#an**	**2.68**	**53**	*e*P		**Pn**	**11 19 15.0**	**+0.3**
TPIG				*e*S		**Sn**	**11 19 48.7**	**+1.0**
TPIG	**Tehuac#an**	**2.68**	**53**	*e*P		**Pn**	**11 19 15.0**	**+0.3**
TPIG				*e*S		**Sn**	**11 19 48.7**	**+1.0**
VHO	**Vista Hermosa**	**2.76**	**84**	*e*P		**Pn**	**11 19 16.7**	**+0.9**
VHO				*e*S		**Sn**	**11 19 49.1**	**-0.5**
VHO	**Vista Hermosa**	**2.76**	**84**	*e*P		**Pn**	**11 19 16.7**	**+0.9**
VHO				*e*S		**Sn**	**11 19 49.1**	**-0.5**
AZVM	**Cuida Lopez Ma**	**2.80**	**6**	*e*P		**Pb**	**11 19 19.4**	**-1.9**
AZVM				*e*S		**Sb**	**11 19 55.7**	**-0.3**
PTVM	**Pico Tres Padr**	**2.83**	**9**	*e*P		**Pn**	**11 19 14.5**	**-2.2**
PTVM				*e*S		**Sb**	**11 19 57.2**	**+0.4**
PTVM	**Pico Tres Padr**	**2.83**	**9**	*e*P		**Pn**	**11 19 14.5**	**-2.2**
PTVM				*e*S		**Sb**	**11 19 57.2**	**+0.4**
IIO	**Organos**	**2.91**	**17**	*e*P		**Pn**	**11 19 19.2**	**+1.3**
IIO				*e*S		**Sb**	**11 19 59.8**	**+0.5**
IIO	**Organos**	**2.91**	**17**	*e*P		**Pn**	**11 19 19.2**	**+1.3**
IIO				*e*S		**Sb**	**11 19 59.8**	**+0.5**
ZUVM	**ZUMPANGO**	**3.06**	**9**	*e*P		**Pb**	**11 19 23.2**	**-2.6**
ZUVM				*e*S		**Sg**	**11 20 06.6**	**-2.5**
VTVM	**Tizayuca**	**3.07**	**15**	*e*P		**Pb**	**11 19 25.1**	**-0.8**
VTVM				*e*S		**Sg**	**11 20 11.3**	**+2.0**
MOIG	**Morelia**	**3.24**	**333**	*e*Pn		**Pb**	**11 19 25.6**	**-3.3**
HUIG	**Huatulco**	**3.51**	**106**	*e*P		**Pn**	**11 19 26.6**	**+0.8**
HUIG				*i* S		**Sn**	**11 20 01.8**	**-6.0**
HUIG	**Huatulco**	**3.51**	**106**	*e*P		**Pn**	**11 19 26.6**	**+0.8**
HUIG				*i* S		**Sn**	**11 20 01.8**	**-6.0**
DEIG	**Demacu**	**3.53**	**9**	*e*P		**Pb**	**11 19 33.2**	**-0.6**
DEIG				*e*S		**Sn**	**11 20 04.1**	**-4.6**
DEIG	**Demacu**	**3.53**	**9**	*e*P		**Pb**	**11 19 33.2**	**-0.6**
DEIG				*e*S		**Sn**	**11 20 04.1**	**-4.6**
CMIG	**Matias Romero**	**4.53**	**86**	Pn		**Pn**	**11 19 39.8**	**0.0**
	1.1nm,0.3s,baz=214,slow=22,SNR=16							
CMIG					Sn	**Sn**	**11 20 30.9**	**-2.0**
	11nm,0.3s,baz=286,slow=16,SNR=6.4							
CMIG					Lg	Lg	11 20 54.8	
	47nm,0.3s,baz=160,slow=10,SNR=8.4							
CMIG					LR	LR	11 21 41.6	
	comp=Z,2μm,18.2s,baz=179,slow=43							
ZAIG	**Zacatecas**	**6.57**	**335**	*e*Pn		**Pn**	**11 20 08.9**	**+0.7**
ZAIG				*e*Pg		Pg	11 20 30.5	-6.1
H06E1	**SOCORRO T-PHAS**	**10.96**	**282**	T		T	11 32 10.1	
	SNR=120							
H06S1	**SOCORRO T**	**10.99**	**282**	T		T	11 32 13.4	
	SNR=8.6							
TEIG	**Tepich**	**11.28**	**71**	Pn		**Pn**	**11 21 11.8**	**-0.7**
	0.3nm,0.3s,baz=180,slow=20,SNR=3.9							
TEIG					Sn	**Sn**	**11 23 12.7**	**-6.3**
	0.2nm,0.3s,baz=348,slow=18,SNR=2.0							
TEIG					LR	LR	11 26 36.9	
	comp=Z,681nm,19.4s,baz=314,slow=44							
TEIG	**Tepich**	**11.28**	**71**	*e*Pn		**Pn**	**11 21 13.5**	**+1.0**
TEIG				*e*Sn		**Sn**	**11 23 21.0**	**+2.0**
HPIG		**11.55**	**332**	*e*Pn		**Pn**	**11 21 20.6**	**+4.1**
HPIG				*e*Lg		Lg	11 24 37.9	
LPIG	**La Paz**	**12.39**	**308**	LR		LR	11 25 51.9	
	comp=Z,491nm,18.2s,baz=92,slow=36							
TXAR	**Lajitas Array**	**13.03**	**344**	Pn		**Pn**	**11 21 38.7**	**+2.1**
	baz=163,slow=16,SNR=7.3							
TXAR					Lg	Lg	11 25 22.4	
	0.0nm,0.3s,baz=168,slow=28,SNR=3.5							
534A	**Blanco**	**13.22**	**4**	P		**Pn**	**11 21 40.2**	**+1.2**
	baz=184,SNR=6.1							
JCT	**Junction City**	**13.63**	**359**	*e*Pn		**Pn**	**11 21 44.8**	**+0.1**
JCT				*e*Sn		**Sn**	**11 24 14.7**	**-1.8**
433A	**Art**	**13.91**	**2**	P		**Pn**	**11 21 49.9**	**+1.4**
	baz=182,SNR=5.5							
333A	**Richland Sprin**	**14.48**	**2**	P		**Pn**	**11 21 57.1**	**+0.8**
	baz=182							
334A	**Lometa**	**14.53**	**5**	P		**P**	**11 22 00.3**	**-3.5**
	baz=185,SNR=6.6							
337A	**Centerville**	**14.85**	**13**	P		**P**	**11 22 04.8**	**-2.5**
	baz=194							
233A	**Rising Star**	**15.18**	**2**	P		**P**	**11 22 08.7**	**-2.2**
	baz=182,SNR=12							
234A	**Clairette**	**15.21**	**5**	P		**P**	**11 22 09.3**	**-1.9**
	baz=185,SNR=13							
WHTX	**Lake Whitney,**	**15.26**	**7**	P		**P**	**11 22 10.0**	**-1.8**
	baz=187,SNR=15							
WHTX	**Lake Whitney,**	**15.26**	**7**	*e*Pn		**P**	**11 22 12.5**	**+0.7**
	142nm,1.2s							
236A	**Katherine and**	**15.40**	**10**	P		**P**	**11 22 10.7**	**-2.6**
	baz=191,SNR=5.8							
237A	**Washetta, Mont**	**15.53**	**12**	P		**P**	**11 22 12.8**	**-2.0**
	baz=193							
NATX	**Nacogdoches**	**15.57**	**16**	P		**P**	**11 22 12.9**	**-2.3**
	baz=198							
646A	**Port Sulphur**	**15.58**	**33**	P		**P**	**11 22 12.9**	**-2.4**
	baz=217							
545A	**Edgard**	**15.61**	**31**	P		**P**	**11 22 13.2**	**-2.5**
	baz=214							
JTS	**JuntasAbangare**	**15.64**	**113**	Pn		**Pn**	**11 22 12.9**	**+1.0**
	0.3nm,0.3s,baz=287,slow=16,SNR=2.7							
JTS	**JuntasAbangare**	**15.64**	**113**	*e*Pn		**Pn**	**11 22 10.9**	**-1.0**
	18nm,1.0s							
MNTX	**Cornudas Mount**	**15.74**	**342**	P		**P**	**11 22 16.8**	**-0.5**
	baz=159							
MNTX	**Cornudas Mount**	**15.74**	**342**	*e*Pn		**P**	**11 22 16.0**	**-1.2**
	24nm,1.5s							
133A	**Hamilton Ranch**	**15.76**	**2**	P		**P**	**11 22 16.6**	**-0.8**
	baz=182,SNR=15							
ABTX	**Abilene, Hawle**	**15.77**	**360**	P		**P**	**11 22 16.2**	**-1.2**
	baz=180							
ABTX	**Abilene, Hawle**	**15.77**	**360**	*e*Pn		**P**	**11 22 18.7**	**+1.2**
	49nm,1.5s							
134A	**White-Moore Ra**	**15.78**	**5**	P		**P**	**11 22 16.8**	**-0.8**
	baz=185,SNR=6.2							
135A	**Vickery Place,**	**15.82**	**7**	P		**P**	**11 22 17.7**	**-0.4**
	baz=187							
239A	**Gary**	**15.86**	**16**	P		**P**	**11 22 17.7**	**-0.8**
	baz=198							
342A	**Flagon Creek P**	**15.96**	**23**	P		**P**	**11 22 18.5**	**-1.0**
	baz=206							
HSIG		**16.03**	**321**	*e*Pn		**P**	**11 22 23.3**	**+2.9**
137A	**Heron Place, G**	**16.12**	**12**	P		**P**	**11 22 20.9**	**-0.5**
	baz=193							
Z33A	**Whitaker Ranch**	**16.44**	**2**	P		**P**	**11 22 24.8**	**-0.2**
	baz=182							
Z34A	**Collier Ranch,**	**16.58**	**5**	P		**P**	**11 22 25.9**	**-0.6**
	baz=185							
Z35A	**Perchaven, San**	**16.61**	**7**	P		**P**	**11 22 26.4**	**-0.4**
	baz=188							
Z36A	**Blue Ridge**	**16.66**	**9**	P		**P**	**11 22 26.7**	**-0.6**
	baz=190							
141A	**Papa Simpson,**	**16.87**	**20**	P		**P**	**11 22 28.9**	**-0.8**
	baz=202							
Z38A	**Mt. Pleasant**	**16.91**	**13**	P		**P**	**11 22 29.4**	**-0.7**
	baz=195							
319A	**Douglas**	**16.98**	**331**	*e*Pn		**P**	**11 22 33.5**	**+2.4**
	113nm,1.9s							
Y33A	**Hilltop Ranch,**	**17.17**	**3**	P		**P**	**11 22 33.0**	**0.0**
	baz=183							
Y34A	**Reagan Ranch,**	**17.18**	**5**	P		**P**	**11 22 33.1**	**0.0**
	baz=186							
Y35A	**Marietta**	**17.20**	**7**	P		**P**	**11 22 33.1**	**-0.3**
	baz=188							
Z40A	**Long Farm, Mag**	**17.33**	**18**	P		**P**	**11 22 33.9**	**-0.8**
	baz=200							
121A	**Cookes Peak, D**	**17.34**	**336**	P		**P**	**11 22 35.0**	**0.0**
	baz=153							
121A	**Cookes Peak, D**	**17.34**	**336**	*e*Pn		**P**	**11 22 35.5**	**+0.5**
	9.8nm,0.9s							
MSTX	**Muleshoe**	**17.34**	**351**	P		**P**	**11 22 34.7**	**-0.4**
	baz=170							
MSTX	**Muleshoe**	**17.34**	**351**	*e*Pn		**P**	**11 22 36.6**	**+1.5**
	28nm,1.3s							
X32A	**Elmer**	**17.56**	**1**	P		**P**	**11 22 36.3**	**-1.0**
	baz=181							
X35A	**Drake**	**17.70**	**7**	P		**P**	**11 22 38.1**	**-0.7**
	baz=188							
X33A	**Lawton**	**17.70**	**3**	P		**P**	**11 22 38.4**	**-0.5**
	baz=183							
Y39A	**Lockesburg**	**17.78**	**15**	P		**Pn**	**11 22 38.2**	**-0.7**
	baz=197							
Z42A	**Norrel Spur, H**	**17.81**	**21**	P		**Pn**	**11 22 38.4**	**-0.9**
	baz=204							
X34A	**Smith Ranch, M**	**17.81**	**5**	P		**P**	**11 22 39.4**	**-0.6**
	baz=185				

	baz=186							
U34A	**Anderson Ranch**	19.66	5	*e*P	Pn	11 23 01.5	-0.2	
	107nm,1.8s							
U35A	**Pawnee**	19.67	7	P	P	11 22 59.8	-0.7	
	baz=188							
V39A	**Pettigrew**	19.70	14	P	P	11 22 59.8	-1.1	
	baz=197							
LRAL	**Lakeview Retre**	19.78	33	*e*P	P	11 23 01.3	-0.4	
	4.5nm,0.4s							
U36A	**Oologah**	19.83	9	P	P	11 23 01.0	-1.2	
	baz=191							
X18A	**Snowflake**	19.95	334	*e*P	Pn	11 23 07.5	+2.0	
	18nm,1.1s							
Y47A	**UCPARC, Winfie**	20.05	30	P	P	11 23 03.1	-1.6	
	baz=214							
T35A	**Sooner Cattle**	20.23	7	P	P	11 23 05.7	-1.0	
	baz=188							
T34A	**McClaskey Farm**	20.27	6	P	P	11 23 06.3	-0.7	
	baz=186							
T32A	**Huddler Ranch,**	20.32	2	P	P	11 23 07.1	-0.5	
	baz=182							
U40A	**Yellville**	20.39	16	P	P	11 23 07.7	-0.7	
	baz=198,SNR=5.7							
113A	**Mohawk Valley,**	20.42	324	*e*P	Pn	11 23 11.2	+0.4	
	30nm,1.3s							
T36A	**Boggs Farm, Ca**	20.46	9	P	P	11 23 08.2	-0.9	
	baz=190							
X16A	**Lo Mia Camp, P**	20.51	331	*e*P	Pn	11 23 12.5	+0.4	
	17nm,0.8s							
T37A	**Cheneyville 18**	20.67	11	P	P	11 23 10.1	-1.3	
	baz=192,SNR=7.8							
T38A	**Diamond**	20.71	12	P	P	11 23 10.6	-1.2	
	baz=194							
T25A	**Trinidad**	20.71	349	P	Pn	11 23 12.8	-1.6	
	baz=167							
T25A	**Trinidad**	20.71	349	*e*P	Pn	11 23 14.0	-0.4	
	14nm,0.8s							
S33A	**Kaszmaul Farm,**	20.77	4	P	P	11 23 12.1	-0.4	
	baz=184							
S32A	**Newby Ranch, P**	20.84	1	P	P	11 23 12.7	-0.5	
	baz=182							
PLAL	**Pickwick Lake**	20.84	27	*e*P	P	11 23 13.6	+0.3	
	35nm,1.1s							
Y14A	**Wickenburg**	20.89	327	*e*P	Pn	11 23 16.2	-0.2	
	216nm,1.8s							
S34A	**Willow Spring**	20.95	6	P	P	11 23 13.7	-0.7	
	baz=186							
S35A	**Otter Creek Ra**	21.01	7	P	P	11 23 14.3	-0.8	
	baz=188							
S36A	**Lake Cedric, C**	21.15	9	P	P	11 23 14.9	-1.7	
	baz=190,SNR=8.8							
T40A	**Mansfield**	21.23	16	P	P	11 23 16.6	-0.8	
	baz=199							
GLA	**Glamis**	21.23	322	P	P	11 23 18.5	+0.9	
	baz=136							
GLA	**Glamis**	21.23	322	*e*P	P	11 23 20.3	+2.7	
	25nm,0.9s							
S37A	**Fort Scott**	21.31	10	P	P	11 23 17.8	-0.5	
	baz=192							
S38A	**Stockton**	21.36	12	P	P	11 23 18.4	-0.4	
	baz=195							
WUAZ	**Wupatki**	21.40	333	P	P	11 23 20.3	+0.8	
	baz=148,SNR=6.8							
WUAZ	**Wupatki**	21.40	333	*e*P	P	11 23 22.1	+2.6	
	29nm,0.9s							
R33A	**Olander Ranch,**	21.48	3	P	P	11 23 19.9	-0.3	
	baz=184							
SDCO	**Great Sand Dun**	21.51	347	P	P	11 23 21.2	+0.4	
	baz=164,SNR=5.9							
SDCO	**Great Sand Dun**	21.51	347	*e*P	P	11 23 21.6	+0.8	
	9.0nm,1.3s							
R34A	**Isabella, Hill**	21.53	5	P	P	11 23 20.5	-0.2	
	baz=186							
S39A	**Bolivar**	21.55	14	P	P	11 23 21.2	+0.4	
	baz=196							
Y12C	**Blythe**	21.57	324	P	P	11 23 22.1	+1.0	
	baz=138							
Y12C	**Blythe**	21.57	324	*e*P	P	11 23 24.0	+2.9	
Y12C				*ep*P	sP	11 23 31.9	+8.5	
S40A	**Lebanon**	21.66	15	P	P	11 23 21.4	-0.6	
	baz=198							
SWSC	**Sam W. Stewart**	21.74	321	P	P	11 23 23.4	+0.5	
	baz=134							
R36A	**Gordon, Harris**	21.75	9	P	P	11 23 22.2	-0.8	
	baz=190,SNR=10							
MVCO	**Mesa Verde**	21.81	341	P	P	11 23 24.6	+0.7	
	baz=156							
MVCO	**Mesa Verde**	21.81	341	*e*P	P	11 23 25.1	+1.1	
	87nm,1.9s							
S22A	**4UR Ranch, Cre**	21.82	344	P	P	11 23 23.1	-1.1	
	baz=161,SNR=7.0							
S22A	**4UR Ranch, Cre**	21.82	344	*e*P	P	11 23 25.3	+1.2	
	38nm,1.6s							
R37A	**Teagarden Farm**	21.85	10	P	P	11 23 23.7	-0.4	
	baz=192							
R38A	**Fenwick Farm,**	21.90	12	P	P	11 23 24.4	-0.2	
	baz=194							
WVT	**Waverly**	21.92	26	*e*P	P	11 23 26.7	+1.8	
	32nm,1.4s							
CBKS	**Cedar Bluff**	21.94	360	P	P	11 23 24.9	-0.2	
	baz=175							
SWET	**Sewanee**	22.04	31	*e*P	P	11 23 30.4	+4.2	
	5.8nm,1.0s							
Q32A	**Meitler Ranch,**	22.14	2	P	P	11 23 26.2	-1.0	
	baz=182							
Q34A	**Chapman**	22.17	6	P	P	11 23 27.3	-0.3	
	baz=186							
Q33A	**Connelly Farm,**	22.18	4	P	P	11 23 27.1	-0.5	
	baz=184							
R39A	**Chumby, Stover**	22.20	14	P	P	11 23 26.8	-1.1	
	baz=196							
W13A	**Hualapai Mount**	22.25	328	*e*P	P	11 23 32.8	+4.1	
	8.7nm,0.9s							
KSCO	**Kaye Shedlock'**	22.30	354	P	P	11 23 28.5	-0.5	
	baz=172							
R40A	**Maddies Statio**	22.37	15	P	P	11 23 28.8	-0.9	
	baz=198							
KSU1	**Kansas State U**	22.38	6	P	P	11 23 30.0	+0.2	
	baz=187							
109C	**Camp Elliot, M**	22.51	319	P	P	11 23 33.9	+2.7	
	baz=131							
BELC	**Belle Mtn. Jos**	22.59	322	P	P	11 23 33.8	+1.5	
	baz=135							
P32A	**Huiting Farm,**	22.77	2	P	P	11 23 33.5	-0.4	
	baz=182							
P34A	**Walnut Farm, R**	22.80	6	P	P	11 23 34.8	+0.5	
	baz=187							
P35A	**Duane Minner,**	22.87	7	P	P	11 23 35.4	+0.4	
	baz=189							
Q39A	**Willow Grove F**	22.92	13	P	P	11 23 35.3	-0.2	
	baz=196							
CPCT	**Cooper Cave**	22.94	33	*e*P	P	11 23 37.1	+1.3	
	47nm,1.9s							
GMRC	**Granite Mounta**	22.97	324	P	P	11 23 37.5	+1.3	
	baz=137							
PV04	**Paradox Valley**	23.02	341	*e*P	P	11 23 38.8	+2.0	
MURC	**Murrieta**	23.04	320	P	P	11 23 35.3	-1.6	
	baz=132							
P36A	**Good Intent, A**	23.07	9	P	P	11 23 37.7	+0.7	
	baz=190							
Q40A	**Laux Farm, Aux**	23.08	15	P	P	11 23 35.0	-2.2	
	baz=198							
P37A	**Lathrop**	23.17	10	P	P	11 23 38.0	-0.1	
	baz=193							
SMCO	**Snowmass**	23.22	345	*e*P	P	11 23 39.8	+0.8	
	12nm,1.2s							
O33A	**Hebron**	23.27	4	P	P	11 23 38.8	-0.3	
	baz=185							
P38A	**Dawn**	23.36	12	P	P	11 23 39.4	-0.6	
	baz=194							
HEC	**Hector,Ludlow**	23.38	323	P	P	11 23 41.0	+0.6	
	baz=136							
O34A	**Beatrice**	23.45	6	P	P	11 23 41.0	+0.1	
	baz=187							
TKL	**Tuckaleechee C**	23.49	34	P	P	11 23 41.2	-0.2	
	8.7nm,1.0s,baz=207,slow=9.5,SNR=4.9							
ISCO	**Idaho Springs**	23.52	348	P	P	11 23 41.8	-0.1	
	baz=165,SNR=5.9							
ISCO	**Idaho Springs**	23.52	348	*e*P	P	11 23 42.1	+0.2	
	36nm,1.8s							
P40A	**Paris**	23.60	15	P	P	11 23 41.5	-0.8	
	baz=198							
CIS	**Catalina Islan**	23.68	318	P	P	11 23 44.2	+0.9	
	baz=130							
MTPU	**Mount Pierson**	23.89	335	*e*P	P	11 23 47.2	+1.6	
	62nm,1.7s							
GSC	**Goldstone, Bar**	23.99	323	P	P	11 23 47.1	+0.8	
	baz=136							
N34A	**Lincoln**	24.11	6	P	P	11 23 47.6	+0.2	
	baz=187							
O39A	**Kirksville**	24.17	13	P	P	11 23 48.1	+0.2	
	baz=196							
O40A	**La Belle**	24.20	15	P	P	11 23 47.8	-0.3	
	baz=198							
N35A	**Tabor**	24.23	7	P	P	11 23 48.2	-0.2	
	baz=189							
EDW2	**Edwards Air Fo**	24.39	321	P	P	11 23 51.2	+1.2	
	baz=133							
KMSC	**Kings Mountain**	24.50	38	P	P	11 23 51.1	+0.2	
	baz=226							
P18A	**Preston Nutter**	24.57	340	*e*P	P	11 23 53.3	+1.4	
	80nm,1.9s							
N23A	**Red Feather La**	24.64	348	P	P	11 23 53.9	+1.5	
	baz=165							
N39A	**Derby Farms, D**	24.78	13	P	P	11 23 53.0	-0.4	
	baz=196							
M33A	**Taylor Creek F**	24.79	4	P	P	11 23 54.2	+0.8	
	baz=185							
M35A	**Neola**	24.82	7	P	P	11 23 54.5	+0.7	
	baz=189							
SCZ2	**Santa Cruz Isl**	24.84	317	P	P	11 23 55.8	+1.8	
	baz=129							
FURC	**Furnace Creek,**	24.87	325	P	P	11 23 55.9	+1.7	
	baz=137							
TPNV	**Topopah Spring**	24.90	327	P	P	11 23 55.2	+0.5	
	baz=139							
MPMC	**Manual Prospec**	24.92	324	P	P	11 23 55.7	+0.7	
	baz=136,SNR=5.7							
M36A	**Felix, Anita**	24.93	9	P	P	11 23 55.2	+0.5	
	baz=191							
M37A	**Trindle Farm,**	24.99	10	P	P	11 23 55.7	+0.5	
	baz=192							
ARVC	**Arvin**	25.06	320	P	P	11 23 58.7	+2.7	
	baz=132							
DAC	**Darwin (Calif)**	25.13	324	*e*P	P	11 23 59.0	+2.1	
	6.6nm,0.9s							
L32A	**Elgin**	25.17	3	P	P	11 23 58.7	+1.8	
	baz=183							
ISA	**Isabella, Lake**	25.21	322	P	P	11 23 59.9	+2.5	
	baz=133							
L31A	**Butterfield Fa**	25.31	1	P	P	11 23 59.0	+0.8	
	baz=182							
GRAC	**Grapevine Rang**	25.53	325	P	P	11 24 02.3	+2.0	
	baz=137							
L36A	**Harm Buss Farm**	25.58	9	P	P	11 24 01.8	+1.2	
	baz=191							
R11A	**Troy Canyon, C**	25.65	330	P	P	11 24 03.0	+1.5	
	baz=142							
L37A	**Phoenix Point,**	25.74	10	P	P	11 24 03.3	+1.2	
	baz=193							
K31A	**O'Neill**	25.76	1	P	P	11 24 03.6	+1.3	
	baz=182							
K30A	**Basset**	25.80	360	P	P	11 24 04.6	+1.9	
	baz=180							
K33A	**Hardington**	25.83	4	P	P	11 24 04.5	+1.7	
	baz=186							
SFIN	**Lafayette**	25.89	22	P	P	11 24 04.4	+0.9	
	baz=208							
L38A	**Oak Wood Farm,**	25.90	11	P	P	11 24 04.7	+1.2	
	baz=194							
SMMC	**Simmler**	25.91	319	P	P	11 24 05.3	+1.6	
	baz=130							
K34A	**Le Mars**	25.98	6	P	P	11 24 05.7	+1.4	
	baz=187							
DUG	**Dugway, Tooele**	25.99	336	P	P	11 24 06.0	+1.5	
	baz=150							
RCTC	**Rector, Farmer**	26.11	322	P	P	11 24 07.6	+2.2	
	baz=133							
K36A	**Gilmore City**	26.14	9	P	P	11 24 07.5	+1.8	
	baz=191							
K22A	**Casper**	26.45	348	P	P	11 24 09.8	+1.2	
	baz=165							
J30A	**Dallas**	26.45	0	P	P	11 24 10.9	+2.3	
	baz=180							
J27A	**Elkhorn Farm,**	26.46	356	P	P	11 24 10.5	+1.8	
	baz=175							
BLA	**Blacksburg**	26.47	36	*e*P	P	11 24 08.9	+0.1	
	35nm,1.0s							
J29A	**Okreek**	26.54	359	P	P	11 24 11.7	+2.3	
	baz=178							
J32A	**Parkston**	26.54	3	P	P	11 24 11.6	+2.3	
	baz=184							
J33A	**Davis**	26.54	4	P	P	11 24 11.6	+2.3	
	baz=185							
J28A	**Allard Ranch,**	26.58	357	P	P	11 24 11.2	+1.5	
	baz=176							
J26A	**Sides Ranch, S**	26.60	354	P	P	11 24 11.4	+1.5	
	baz=172							
J25A	**Sunshine Ranch**	26.75	353	P	P	11 24 12.3	+1.0	
	baz=171							
ECSD	**EROS Data Cent**	26.98	5	P	P	11 24 13.4	+0.2	
	baz=186							
NVAR	**Mina Array Bea**	27.09	326	P	P	11 24 16.4	+1.9	
	6.5nm,0.8s,baz=151,slow=9.8,SNR=31							
BW06	**Boulder Array**	27.25	344	P	P	11 24 16.6	+0.6	
	baz=159							
PDAR	**Pinedale Array**	27.25	344	P	P	11 24 16.5	+0.5	
	4.4nm,0.9s,baz=142,slow=8.9,SNR=22							
I27A	**Quinn**	27.27	356	P	P	11 24 17.4	+1.5	
	baz=175							
H27A	**Howes**	27.84	356	P	P	11 24 21.9	+0.9	
	baz=175							
I38A	**Scanlan Farm,**	27.85	11	P	P	11 24 20.5	-0.6	
	baz=195							
G30A	**Faulkton**	28.26	1	P	P	11 24 24.9	+0.2	
	baz=181							
G25A	**Newell**	28.50	354	P	P	11 24 28.5	+1.6	
	baz=172							
G26A	**Maurine**	28.53	356	P	P	11 24 28.4	+1.2	
	baz=174							
F28A	**McLaughlin**	28.99	358	P	P	11 24 31.9	+0.6	
	baz=177							
F27A	**Lemmon**	29.07	357	P	P	11 24 32.7	+0.8	
	baz=175							
F26A	**Lodgepole**	29.09	356	P	P	11 24 33.1	+1.0	
	baz=174							
F25A	**Bowman**	29.23	354	P	P	11 24 34.1	+0.8	
	baz=172							
SDV	**Santo Domingo**	29.29	102	P	P	11 24 34.5	0.0	
	2.3nm,0.2s,baz=335,slow=19,SNR=2.9							
RLMT	**Red Lodge**	29.39	346	P	P	11 24 36.4	+1.4	
	baz=161							
F36A	**Milaca**	29.43	9	P	P	11 24 36.2	+1.1	
	baz=192							
E27A	**Carson**	29.60	357	P	P	11 24 37.5	+0.9	
	baz=176							
O56A	**Blue Knob Stat**	29.66	34	P	P	11 24 37.5	+0.2	
	baz=224							
E26A	**Carlson Angus**	29.69	356	P	P	11 24 38.4	+0.9	
	baz=174							
E28A	**Huff**	29.71	358	P	P	11 24 38.6	+1.0	
	baz=178							
E25A	**Miller Ranch,**	29.79	355	P	P	11 24 39.3	+0.9	
	baz=172							
M54A	**Oil Creek Stat**	30.02	31	P	P	11 24 41.7	+1.3	
	baz=220							
D30A	**Buchanan**	30.24	1	P	P	11 24 43.5	+1.2	
	baz=181							
D26A	**Manning**	30.25	356	P	P	11 24 43.1	+0.8	
	baz=174							
D27A	**Center**	30.27	357	P	P	11 24 43.1	+0.5	
	baz=176							
SSPA	**Standing Stone**	30.29	34	*e*P	P	11 24 43.1	+0.3	
	48nm,1.4s							
WVOR	**Wild Horse Val**	30.30	331	*e*P	P	11 24 44.7	+1.6	
	9.7nm,1.1s							
D28A	**Regan**	30.33	359	P	P	11 24 43.3	+0.2	
	baz=178,SNR=5.3							
D25A	**Fairfield**	30.43	355	P	P	11 24 45.2	+1.1	
	baz=173							
BOZ	**Bozeman (W)**	30.48	343	P	P	11 24 45.7	+1.1	
	baz=157							
BOZ	**Bozeman (W)**	30.48	343	*e*P	P	11 24 45.8	+1.1	
	23nm,1.8s							
DLMT	**Dillon**	30.50	342	*e*P	P	11 24 46.4	+1.6	
	5.2nm,0.8s							
D37A	**Cotton**	30.86	10	P	P	11 24 49.8	+2.1	
	baz=193							
LRM	**Limekiln Ridge**	30.87	342	*e*P	P	11 24 49.7	+1.6	
C27A	**Sayler Ranch,**	30.88	358	P	P	11 24 48.8	+0.9	
	baz=176							
C31A	**Landman Farms,**	30.96	2	P	P	11 24 49.8	+1.2	
	baz=183							
C25A	**Freed Ranch, W**	30.98	355	P	P	11 24 50.3	+1.4	
	baz=173							
C26A	**Wahner Farm, P**	31.02	357	P	P	11 24 50.2	+1.0	
	baz=175							
N02D	**Trinity Center**	31.27	325	P	P	11 24 53.7	+2.1	
	baz=134							
M04C	**Macdoel**	31.38	327	P	P	11 24 54.1	+1.5	
	baz=136							
AGMN	**Agassiz Nation**	31.57	5	P	P	11 24 53.9	-0.1	
	baz=187							
AGMN	**Agassiz Nation**	31.57	5	*e*P	P	11 24 54.0	-0.1	
	16nm,1.7s							
B28A	**Dugan Ranch, T**	31.58	359	P	P	11 24 54.7	+0.6	
	baz=178							
B29A	**Wagenman Farm,**	31.59	0	P	P	11 24 54.5	+0.4	
	baz=180							
B30A	**Myrvik Farm, E**	31.59	2	P	P	11 24 55.2	+1.0	
	baz=182							
YBH	**Yreka Blue Hor**	31.80	326	P	P	11 24 55.6	-0.7	
	2.8nm,0.7s,baz=99,slow=7.3,SNR=5.3							
DGMT	**Dagmar**	31.82	354	P	P	11 24 56.9	+0.7	
	baz=172							
DGMT	**Dagmar**	31.82	354	*e*P	P	11 24 57.1	+0.9	
	25nm,1.4s							
B34A	**Aery, Baudette**	31.87	6	P	P	11 24 56.9	+0.3	
	baz=189							
A29A	**Manning Farm,**	32.05	0	P	P	11 24 58.8	+0.6	
	baz=180							
A30A	**Hoffart Farm,**	32.08	2	P	P	11 24 59.2	+0.7	
	baz=182							
A26A	**Wade Farm, Ken**	32.08	357	P	P	11 24 58.9	+0.4	
	baz=175							
CHMT	**Chamberlain Mo**	32.10	342	*e*P	P	11 24 59.8	+0.9	
J05D	**Fort Rock, OR**	32.18	330	P	P	11 25 01.3	+1.7	
	baz=138							
A25A	**Svangstu Ranch**	32.19	356	P	P	11 25 00.6	+1.1	
	baz=174							
F10A	**Beach Ranch, E**	32.60	337	*e*P	P	11 25 04.2	+1.0	
	9.9nm,0.9s							
SADO	**Sadowa**	32.78	27	P	P	11 25 02.7	-1.9	
	2.2nm,0.4s,baz=259,slow=5.2,SNR=2.7							
SWMT	**Swartz Lake**	32.85	342	*e*P	P	11 25 06.2	+0.8	
I05D	**Terrebonne, OR**	33.02	331	P	P	11 25 08.6	+1.8	
	baz=139							
ULM	**Lac du Bonnet**	33.51	4	P	P	11 25 09.2	-1.7	
	2.3nm,0.7s,baz=188,slow=11,SNR=3.7							
WALA	**Waterton Lakes**	34.23	343	*e*P	P	11 25 18.2	+0.8	
	9.9nm,1.3s							
NEW	**Newport**	34.52	339	P	P	11 25 19.8	0.0	
	3.0nm,0.9s,baz=232,slow=3.5,SNR=4.4							
NEW	**Newport**	34.52	339	P	P	11 25 21.2	+1.4	
	baz=149							
B08A	**Colville Reser**	35.38	337	*e*P	P	11 25 28.4	+1.1	
	35nm,1.9s							
A04D	**Lummi Island**	37.00	334	P	P	11 25 40.7	-0.3	
	baz=141							
EMMW	**East Machias**	38.78	37	*e*P	P	11 25 58.3	+2.2	
	38nm,1.0s							
FCC	**Fort Churchill**	42.10	4	*e*P	P	11 26 23.3	-0.1	
	29nm,1.8s							
SCHQ	**Schefferville**	45.56	26	P	P	11 26 50.3	-1.1	
	4.1nm,0.6s,baz=213,slow=17,SNR=3.7							
YKA	**Yellowknife Ar**	46.85	351	P	P	11 27 01.0	-0.3	
	4.0nm,0.9s,baz=161,slow=7.5,SNR=42							
DLBC	**Dease Lake**	47.26	339	P	P	11 27 05.6	+0.9	
	3.1nm,0.9s,baz=142,slow=5.1,SNR=9.9							
DLBC	**Dease Lake**	47.26	339	*e*P	P	11 27 07.2	+2.5	
	21nm,1.3s							
TAOE	**Nuku Hiva Isla**	47.51	241	*e*LR	LR	11 40 22.6		
	337nm,26.2s							
TAOE	**Nuku Hiva Isla**	47.51	241	*e*T	T	12 17 37.4		
	53nm,0.2s							
RKT	**Rikitea**	52.62	222	*e*LR	LR	11 43 05.9		
	306nm,26.2s							
RKT	**Rikitea**	52.62	222	*e*T	T	12 24 09.8		
	20nm,0.3s							
INK	**Inuvik**	55.80	345	P	P	11 28 08.7	+0.3	
	5.6nm,0.8s,baz=126,slow=8.9,SNR=24							
INK	**Inuvik**	55.80	345	*e*P	P	11 28 09.0	+0.7	
DOT	**Dot Lake**	55.80	338	*e*P	P	11 28 09.6	+1.1	
	28nm,1.3s							
PMOR	**Pomariorio Ree**	57.18	239	*e*T	T	12 29 50.2		
	17nm,0.2s							
ILAR	**Eielson Array**	57.46	338	P	P	11 28 20.9	+0.7	
	1.4nm,1.0s,baz=138,slow=4.9,SNR=10							
RND	**Reindeer**	57.47	336	*e*P	P	11 28 21.0	+0.6	
	15nm,1.2s							
RSO	**Redoubt South**	57.72	332	*e*P	P	11 28 23.3	+0.8	
SPU	**Mount Spurr**	57.72	333	*e*P	P	11 28 23.3	+1.0	
RES	**Resolute Bay**	57.96	1	P	P	11 28 22.9	-0.7	
	0.9nm,0.8s,baz=188,slow=7.1,SNR=3.5							
TRF	**Thorofare Moun**	58.05	336	*e*P	P	11 28 25.4	+0.7	
	33nm,1.5s							
CAST	**Castle Rocks**	58.74	335	*e*P	P	11 28 29.4	0.0	
PPT2	**Papeete2**	59.91	238	*e*LR	LR	11 46 20.4		
	230nm,24.5s							
TIXI	**Tiksi**	85.92	346	*e*P	P	11 31 11.4	+0.1	
HHC	**Hu-ho-hao-te**	115.77	334	*e*PKP	PKPdf	11 37 14.0	-0.7	
HHC				PP	PP	11 38 21.5	+4.9	
HHC	**Hu-ho-hao-te**	115.77	334	SS	SS	11 54 13.5	-3.7	
HHC				AMB	AMB			
	comp=Z,24nm,7.4s							
HHC				LR	LR			
	comp=N,100nm,13.5s							
HHC				LR	LR			
	comp=E,150nm,14.7s							
HHC				LR	LR			
	comp=Z,150nm,14.8s							
CD2	**Chengdu**	127.52	335	PKP	PKPdf	11 37 36.3	-1.2	
WRA	**Warramunga Arr**	128.88	258	PKP	PKPdf	11 37 40.8	+0.6	
	comp=Z,0.4nm,0.6s,baz=81,slow=2.7,SNR=9.0							
ASAR	**Alice Springs**	129.56	253	PKP	PKPdf	11 37 40.9	-0.5	
	comp=Z,0.1nm,0.3s,baz=132,slow=2.6,SNR=3.1							
HYB	**Hyderabad**	145.96	3	*i* PKP	PKPdf	11 38 11.0	-0.7	

IDC ***26*** *11:19:17.6±1.7,6°.03S×130°.73E,h0km,mb3.6/2, mb1 4.2/6,mb1mx3.7/47,mbtmp4.0/6,ML4.3/3,MS4.3/2, Ms1 4.3/2,ms1mx3.1/37,Error ellipse: s-maj=53.7km s-min=24.9km az=85.0*

ISCJB ***26*** *11:19:28.6±0.6,6°.55S±0°.04×130°.58E±0°.06,h150km, mb3.4/2,Error ellipse: s-maj=8.9km s-min=5.7km az=17.3*

DJA ***26*** *11:19:31.2±0.3,6°.S±3°×13°.1E±°,h155km±9km,M4.2/12, mB5.2/2,mb4.1/8,MLv4.3/12,Mw(mB)4.5/2*

ISC 26 11:19:30.5±0.9,6°.41S±0°.05×130°.54E±0°.07,h150km,n16, σ3°.26/20,Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SAUI	**Saumlaki**	1.73	154	P	Pn	11 20 04.1	+1.4
BNDI	**Bandanaira**	1.98	341	P	Pn	11 20 04.2	-1.2
BNDI				S	Sn	11 20 36.6	+4.3
MSAI	**Masohi**	3.44	332	P	Pn	11 20 24.1	+0.5
FAKI	**Fak Fak**	3.86	26	P	Pn	11 20 29.2	+0.1
FAKI				S	Sn	11 21 09.8	-4.7
NLAI	**Namlea**	4.66	312	P	Pn	11 20 42.0	+2.6
SWI	**Sorong**	5.56	7	P	Pn	11 20 50.9	-0.5
	28

0.2nm,0.3s,baz=132,slow=5.4,SNR=2.4

WEL 26 11:19:58.6±0.1, 38.91S×178.02E, h28km±1km, ML3.8/6, 10C-2D, Error ellipse: s-maj=1.7km s-min=1.2km az=90.0, Off east coast of North Island

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PRGZ	**Paritu Road**	**0.11**	**262**	⇓P*		Pb	11 20 02.7	-1.1
MHGZ	**Mahia Peninsul**	**0.26**	**200**	⇑P*		Pb	11 20 05.6	+0.1
RIGZ	**Rimuhau**	**0.28**	**315**	⇑P*		Pb	11 20 05.4	-0.4
RIGZ				S*		Sn	11 20 11.9	-0.5
KNZ	**Kokohu**	**0.29**	**247**	⇓P*		Pb	11 20 05.3	-0.5
KNZ				S*		Sb	11 20 11.2	+0.4
KNZ				AML		AML	11 20 11.5	
CNGZ	**Carnagh Statio**	**0.45**	**19**	P*		Pn	11 20 08.7	-0.5
TKGZ	**Te Karaka**	**0.49**	**344**	⇑P*		Pb	11 20 08.7	-0.1
SNGZ	**Shannon Statio**	**0.55**	**283**	⇑P*		Pb	11 20 09.6	-0.2
SNGZ				S*		Sn	11 20 18.2	-0.6
RAGZ	**Rawiri**	**0.63**	**311**	⇑P*		Pb	11 20 10.7	-0.4
WHHZ	**Waihua**	**0.64**	**254**	P*		Pb	11 20 11.4	+0.1
MWZ	**Matawai**	**0.69**	**326**	⇑P*		Pb	11 20 11.7	-0.5
MWZ				AML		AML	11 20 22.8	
MWZ				AML		AML	11 20 24.3	
MWZ				AML		AML	11 20 24.3	
MWZ				AML		AML	11 20 45.9	
RAHZ	**Arahi**	**0.73**	**269**	⇑P*		Pb	11 20 12.6	-0.2
TWGZ	**Tauwhareparae**	**0.73**	**357**	⇑P*		Pb	11 20 12.7	-0.2
PUZ	**Puketiti**	**0.85**	**13**	⇑PN		Pn	11 20 13.9	-1.0
PUZ				AML		AML	11 20 29.3	
PUZ				AML		AML	11 20 30.8	
ARHZ	**Aropaoanui**	**0.87**	**246**	PN		Pb	11 20 15.5	+0.3
URZ	**Urewera**	**0.96**	**312**	PN		Pn	11 20 15.7	-0.6
URZ				AML		AML	11 20 32.5	
URZ				AML		AML	11 20 32.6	
PKGZ	**Pakihiroa**	**1.02**	**2**	PN		Pn	11 20 16.6	-0.5
MUGZ	**Murupara**	**1.07**	**293**	PN		Pn	11 20 17.3	-0.4
WMGZ	**Waiomatatini S**	**1.13**	**16**	PN		Pn	11 20 17.9	-0.6
MCHZ	**McNeill Hill**	**1.16**	**242**	PN		Pb	11 20 19.6	-0.5
HAZ	**Te Kaha**	**1.16**	**351**	⇑PN		Pn	11 20 18.4	-0.6
BKZ	**Black Stump Fm**	**1.22**	**257**	PN		Pn	11 20 19.4	-0.5
BKZ				AML		AML	11 20 46.1	
RRRZ	**Republican Roa**	**1.31**	**295**	PN		Pn	11 20 20.6	-0.4
TARZ	**Mount Tarawera**	**1.36**	**299**	PN		Pn	11 20 21.7	-0.2
HRRZ	**Handcock Road**	**1.46**	**290**	PN		Pn	11 20 22.8	-0.3
OPRZ	**Ohinepanea**	**1.57**	**312**	PN		Pn	11 20 23.7	-0.9
BHHZ	**Black Hill Sta**	**1.63**	**248**	PN		Pn	11 20 24.7	-0.8
MOVZ	**Moawhango**	**1.83**	**253**	PN		Pn	11 20 28.7	+0.4
WNVZ	**Wahianoa**	**1.93**	**257**	PN		Pn	11 20 31.0	+1.2
QRZ	**Quartz Range**	**4.64**	**244**	PN		Pn	11 21 04.1	-2.8
QRZ				AML		AML	11 21 51.8	
QRZ				AML		AML	11 22 24.7	

GUC 26 11:20:43.2±0.4, 27.01S×69.67W, h102km±6km, ML3.5, Northern Chile

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CPCH	**Copiapo**	**0.70**	**241**	*i* P		Pn	11 21 00.3	-0.6
CPCH				*i* S		Sn	11 21 13.7	-0.4
CDCH	**Caldera**	**1.03**	**267**	*i* P		Pn	11 21 04.0	-0.1
CDCH				*i* S		Sn	11 21 19.4	-0.5
CDCH				IAML			11 21 20.4	
	comp=E,1μm,0.2s							
VACH	**Vallenar**	**1.83**	**212**	*i* P		Pn	11 21 13.8	0.0
VACH				*i* S		Sn	11 21 37.0	0.0
LCO	**Las Campanas**	**2.19**	**204**	*i* P		Pn	11 21 19.0	+0.4
LCO				*i* S		Sn	11 21 46.0	+0.4
LCO				IAML			11 21 48.2	
	comp=N,199nm,0.3s							
TLL	**Tololo Astrono**	**3.30**	**197**	*e*P		Pn	11 21 33.0	-0.2
TLL				*e*S		Sn	11 22 02.0	-10
TLL				IAML			11 22 38.2	
	comp=N,123nm,0.6s							

*ISCJB **26** 11:21:09.6±0.9, 7.0S±0.2×155.3E±0.1, h50km, mb3.9/9, Error ellipse: s-maj=26.6km s-min=9.9km az=146.9*
*IDC **26** 11:21:09.8±6.2, 7.04S×155.57E, h42km±54km, mb3.7/9, mb1 3.9/10, mb1mx3.6/48, mbtmp3.9/10, ML2.2/1, Error ellipse: s-maj=46.0km s-min=28.3km az=116.0*

ISC 26 11:21:10.9±1.1, 7.0S±0.2×155.4E±0.2, h50km, n17, σ0.9s86/12, mb3.9/9, Bougainville-Solomon Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PMG	**Port Moresby**	**8.52**	**253**	P		**Pn**	**11 23 12.2**	**+0.4**
	1.3nm,0.3s,baz=295,slow=18,SNR=4.1							
PMG				S		**Sn**	**11 24 45.5**	**-1.2**
	0.4nm,0.3s,baz=225,slow=20,SNR=2.3							
WRA	**Warramunga Arr**	**24.16**	**236**	P		**P**	**11 26 21.9**	**-0.7**
	1.0nm,0.6s,baz=60,slow=10.0,SNR=2.5							
H11S3	**WAKE ISLAND Hy**	**27.67**	**24**	T		T	11 55 22.7	
	baz=207,slow=74							
H11S2	**WAKE ISLAND Hy**	**27.68**	**24**	T		T	11 55 31.4	
	baz=207,slow=74							
H11S1	**WAKE ISLAND Hy**	**27.69**	**24**	T		T	11 55 39.2	
	baz=207							
STKA	**Stephens Creek**	**27.90**	**206**	P		**P**	**11 26 57.1**	**+0.8**
	2.7nm,0.8s,baz=29,slow=12,SNR=2.0							
H11N1	**WAKE ISLAND Hy**	**28.86**	**23**	T		T	11 57 00.9	
	baz=207							
H11N3	**WAKE ISLAND Hy**	**28.87**	**23**	T		T	11 57 12.5	
	baz=207							
H11N2	**WAKE ISLAND Hy**	**28.87**	**23**	T		T	11 57 04.9	
	baz=207							
PETK	**Petropavlovsk-**	**59.92**	**2**	P		**P**	**11 31 11.4**	**-0.3**
	7.3nm,0.9s,baz=139,slow=9.0,SNR=4.0							
CMAR	**Chiang Mai Arr**	**61.18**	**295**	P		**P**	**11 31 22.7**	**+1.7**
	0.8nm,0.4s,baz=122,slow=5.2,SNR=6.5							
SONM	**Songino Array**	**69.58**	**327**	P		**P**	**11 32 14.8**	**-0.1**
	0.2nm,0.4s,baz=108,slow=4.1,SNR=3.1							
ILAR	**Eielson Array**	**83.23**	**21**	P		**P**	**11 33 31.3**	**-0.4**
	0.7nm,0.9s,baz=238,slow=5.2,SNR=4.9							
MKAR	**Makanchi Array**	**83.70**	**319**	P		**P**	**11 33 34.5**	**0.0**
	0.1nm,0.5s,baz=114,slow=3.5,SNR=2.3							
INK	**Inuvik**	**89.58**	**21**	P		**P**	**11 34 02.2**	**-0.5**
	1.0nm,0.8s,baz=288,slow=6.5,SNR=6.2							
YKA	**Yellowknife Ar**	**96.15**	**28**	P		**P**	**11 34 33.0**	**-0.1**
	0.4nm,0.8s,baz=263,slow=4.9,SNR=9.3							
TORD	**Torodi Ar. Bea**	**153.44**	**285**	PKPbc		**PKPbc**	**11 41 04.2**	**-0.7**
	0.6nm,0.9s,baz=80,slow=1.8,SNR=2.5							

*IDC **26** 11:39:53.8±1.3, 40.34N×143.95E, h0km, mb3.3/4, mb1 3.6/6, mb1mx3.5/43, mbtmp3.4/6, ML2.9/2, Error ellipse: s-maj=35.9km s-min=24.8km az=136.0*
*ISCJB **26** 11:39:54.4±0.9, 40.31N±0.06×143.85E±0.09, h16km, mb3.3/4, Error ellipse: s-maj=10.6km s-min=7.6km az=25.5*
*JMA **26** 11:39:54.6±0.4, 40.36N×143.76E, h15km±5km, M3.6*

ISC 26 11:39:56.0±1.1, 40.32N±0.07×143.77E±0.10, h16km, n22, σ1.9s12/18, mb3.4/4, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JTH	**Tanohata**	**1.51**	**256**	P		**Pn**	**11 40 21.3**	**-1.1**
MIYJ	**Miyakonagasawa**	**1.67**	**244**	P		**Pn**	**11 40 24.2**	**-0.4**
JANG	**Nango**	**1.72**	**273**	P		**Pn**	**11 40 24.4**	**-0.9**
JANG				S		**Sn**	**11 40 45.9**	**-1.1**
OFUJ	**Ofunato**	**2.04**	**233**	P		**Pn**	**11 40 29.3**	**-0.3**
JOM	**Ohasama**	**2.08**	**247**	P		**Pn**	**11 40 30.3**	**0.0**
JNBK	**Urakawa-nobuka**	**2.11**	**339**	P		**Pn**	**11 40 30.0**	**-0.6**
JNBK				*e*S		**Sn**	**11 40 56.6**	**+0.1**
JTM	**Tenmabayashi**	**2.11**	**284**	P		**Pn**	**11 40 30.6**	**-0.1**
JMK	**Ichinoseki**	**2.39**	**236**	P		**Pn**	**11 40 34.7**	**+0.2**
JAH	**Hinai**	**2.40**	**268**	P		**Pn**	**11 40 35.0**	**+0.4**
JRG	**Rokugo**	**2.58**	**250**	P		**Pn**	**11 40 38.1**	**+1.0**
MJAR	**Matsushiro Arr**	**5.76**	**231**	Pn		**Pn**	**11 41 22.1**	**+1.1**
	0.9nm,0.3s,baz=40,slow=11,SNR=12							
USRK	**Ussuriysk Ar.**	**9.55**	**296**	Pn		**Pn**	**11 42 16.1**	**+3.2**
	0.4nm,0.3s,baz=96,slow=14,SNR=7.5							
H11N2	**WAKE ISLAND Hy**	**28.52**	**129**	T		T	12 15 49.8	
	baz=317							
H11N1	**WAKE ISLAND Hy**	**28.53**	**129**	T		T	12 16 00.1	
	baz=317							
H11N3	**WAKE ISLAND Hy**	**28.54**	**129**	T		T	12 16 00.7	
	baz=317							
H11S1	**WAKE ISLAND Hy**	**29.36**	**131**	T		T	12 16 57.2	
	baz=317							
H11S3	**WAKE ISLAND Hy**	**29.36**	**131**	T		T	12 16 52.5	
	baz=317							
H11S2	**WAKE ISLAND Hy**	**29.38**	**131**	T		T	12 16 55.3	
	baz=317							
MKAR	**Makanchi Array**	**44.02**	**300**	P		**P**	**11 48 03.0**	**+0.3**
	0.6nm,0.7s,baz=92,slow=7.2,SNR=6.2							
ILAR	**Eielson Array**	**45.74**	**34**	P		**P**	**11 48 16.4**	**+0.2**
	0.2nm,0.6s,baz=262,slow=5.4,SNR=3.1							
YKA	**Yellowknife Ar**	**60.05**	**32**	P		**P**	**11 50 00.4**	**-1.3**
	0.1nm,0.8s,baz=302,slow=6.6,SNR=3.6							
WRA	**Warramunga Arr**	**60.59**	**190**	P		**P**	**11 50 06.7**	**+0.8**
	0.5nm,0.9s,baz=5.7,slow=7.5,SNR=3.0							

IDC 26 11:40:42.9±1.3, 54.41S×136.47W, h0km, mb3.9/3, mb1 4.1/3, mb1mx3.8/33, mbtmp3.9/3, MS3.9/7, Ms1 4.0/7, ms1mx3.7/30, Error ellipse: s-maj=198.6km s-min=32.9km az=168.0, Pacific-Antarctic Ridge

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
RKT	**Rikitea**	**31.27**	**3**	*e*LR	LR	11 55 08.3	
	526nm,30.5s,baz=172						
RKT	**Rikitea**	**31.27**	**3**	*e*T	T	12 19 35.1	
	4.2nm,0.3s						
RAR	**Rarotonga**	**37.55**	**323**	LR	LR	12 01 42.3	
	comp=Z,133nm,18.8s,baz=156,slow=34						
PPT2	**Papeete2**	**38.12**	**339**	*e*LR	LR	11 58 23.4	
	499nm,26.0s,baz=174						
PPT	**Papeete**	**38.14**	**339**	LR	LR	11 59 19.0	
	comp=Z,230nm,20.6s,baz=145,slow=29						
TAOE	**Nuku Hiva Isla**	**45.53**	**355**	*e*LR	LR	12 01 41.5	
	351nm,26.7s						
AFI	**Afiamalu**	**48.93**	**312**	LR	LR	12 04 22.0	
	comp=Z,109nm,19.6s,baz=228,slow=29						
CPUP	**Villa Florida**	**62.82**	**98**	LR	LR	12 13 43.0	
	comp=Z,140nm,20.1s,baz=223,slow=32						
LPAZ	**La Paz**	**64.32**	**82**	P		11 51 20.8	-0.1
	1.4nm,0.9s,baz=222,slow=5.8,SNR=3.1						
LPAZ				LR	LR	12 12 25.3	
	comp=Z,67nm,20.9s,baz=152,slow=30						
ASAR	**Alice Springs**	**70.89**	**256**	P		P	11 52 02.2	+0.4
	1.3nm,1.1s,baz=134,slow=6.6,SNR=5.9							
WRA	**Warramunga Arr**	**73.57**	**259**	P		P	11 52 18.1	+0.4
	1.0nm,1.0s,baz=146,slow=5.2,SNR=4.9							
PTGA	**Pitinga**	**81.56**	**79**	LR	LR	12 23 17.5	
	comp=Z,71nm,18.5s,baz=182,slow=31						
GUMO	**Guam**	**94.46**	**287**	LR	LR	12 30 26.6	
	comp=Z,85nm,20.7s,baz=29,slow=32						
ILAR	**Eielson Array**	**119.12**	**355**	PKP	PKPdf	11 59 32.8	+0.7
	0.4nm,0.8s,baz=177,slow=3.5,SNR=3.8						
MKAR	**Makanchi Array**	**154.52**	**269**	PKPab	PKPab	12 00 56.6	-2.5
	0.1nm,0.3s,baz=134,slow=4.2,SNR=2.1						

MEX 26 11:54:53.3±0.8, 16.68N×99.70W, h6km±4km, MD3.5, Near coast of Guerrero

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ACX	**Acapulco**	**0.24**	**322**	*e*P	Pg	11 55 01.0	+2.9
ACX				*i* S	Sg	11 55 04.5	+3.1
ACP2	**Acapulco**	**0.27**	**318**	*e*P	Pg	11 54 58.6	+0.1
ACP2				*e*S	Sg	11 55 02.4	+0.3
CAIG	**El Cayaco**	**0.66**	**304**	*e*P	Pg	11 55 05.0	-0.9
CAIG				*e*S	Sg	11 55 13.7	-0.8
MEIG	**Mezcala**	**1.25**	**4**	*i* P	Pg	11 55 13.6	-3.6
MEIG				*e*S	Sg	11 55 29.1	-4.3
TLIG	**Tlapa**	**1.40**	**51**	*e*P	Pn	11 55 15.7	-3.8
TLIG				*e*S	Sb	11 55 33.0	-5.1
ARIG	**Puente Sto Nin**	**1.71**	**339**	*e*P	Pn	11 55 21.1	-2.7
ARIG				*e*S	Sn	11 55 42.3	-3.6

*ISK **26** 12:02:06.9, 38.45N×39.64E, h8km, MD2.6*
*ISCJB **26** 12:02:07.6±0.5, 38.43N±0.03×39.69E±0.04, h9km, Error ellipse: s-maj=5.2km s-min=4.6km az=31.6*
*DDA **26** 12:02:07.4, 38.41N×39.67E, h7km, Md2.7*
*CSEM **26** 12:02:07.3±0.3, 38.42N×39.68E, h2km, MD2.6, Error ellipse: s-maj=8.5km s-min=6.3km az=51.0*

ISC 26 12:02:07.3±0.9, 38.42N±0.03×39.65E±0.03, h9km, n23, σ0.5s51/31, Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SVRC	**Sivrice-ELAZID**	**0.28**	**262**	*e*PG	**Pg**	**12 02 12.5**	**-0.5**
SVRC				*e*SG	**Sg**	**12 02 17.4**	**+0.7**
SVRC	**Sivrice-ELAZID**	**0.28**	**262**	*e*Pg	**Pg**	**12 02 12.5**	**-0.5**
SVRC				*e*Sg	**Sg**	**12 02 17.4**	**+0.7**
PTK	**Pertek**	**0.52**	**337**	*e*PG	**Pg**	**12 02 16.7**	**-0.8**
PTK	**Pertek**	**0.52**	**337**	*e*Pg	**Pg**	**12 02 16.7**	**-0.8**
ELZG	**Elazig**	**0.53**	**279**	*i* P	**Pg**	**12 02 17.3**	**-0.4**
ELZG				*i* S	**Sb**	**12 02 27.2**	**+0.4**
ELZG	**Elazig**	**0.53**	**279**	P	**Pg**	**12 02 17.3**	**-0.4**
ELZG				S	**Sb**	**12 02 27.2**	**+0.4**
DYBB	**Diyarbakir**	**0.60**	**140**	*e*PG	**Pb**	**12 02 19.7**	**-0.4**
DIYA	**Diyarbakir**	**0.61**	**143**	*i* P	**Pb**	**12 02 20.1**	**-0.2**
DIYA	**Diyarbakir**	**0.61**	**143**	P	**Pb**	**12 02 20.1**	**-0.2**
DIY	**Diyarbakir**	**0.69**	**139**	*e*Pg	**Pg**	**12 02 19.7**	**-0.9**
TNCL	**Tunceli-Merkez**	**0.70**	**353**	*i* P	**Pg**	**12 02 20.4**	**-0.6**
TNCL				*i* S	**Sb**	**12 02 32.5**	**+0.8**
TNCL	**Tunceli-Merkez**	**0.70**	**353**	P	**Pg**	**12 02 20.4**	**-0.6**
TNCL				S	**Sb**	**12 02 32.5**	**+0.8**
BNGB	**Bing¶ll**	**0.99**	**54**	*e*PG	**Pg**	**12 02 26.1**	**-0.3**
MAZI	**Mazidag**	**1.14**	**146**	*e*PN	**Pn**	**12 02 29.6**	**0.0**
MAZI	**Mazidag**	**1.14**	**146**	*e*Pn	**Pn**	**12 02 29.6**	**0.0**
URFA	**Urfa**	**1.18**	**214**	*e*PN	**Pn**	**12 02 30.3**	**+0.3**
URFA	**Urfa**	**1.18**	**214**	*e*Pn	**Pn**	**12 02 30.3**	**+0.3**
SVAN	**Silvan-Diyarba**	**1.24**	**102**	*e*PN	**Pg**	**12 02 31.4**	**+0.2**
SVAN	**Silvan-Diyarba**	**1.24**	**102**	*e*Pn	**Pg**	**12 02 31.4**	**+0.2**
SURC	**SANLIURFA_SURC**	**1.74**	**209**	*i* P	**Pg**	**12 02 40.5**	**-0.3**
SURC				*i* S	**Sg**	**12 03 03.1**	**-0.2**
SURC	**SANLIURFA_SURC**	**1.74**	**209**	P	**Pg**	**12 02 40.5**	**-0.3**
SURC				S	**Sg**	**12 03 03.1**	**-0.2**
KELT	**Kelkit**	**1.76**	**350**	*i* P	**Pg**	**12 02 40.5**	**-0.6**
KELT	**Kelkit**	**1.76**	**350**	P	**Pg**	**12 02 40.5**	**-0.6**

*ISK **26** 12:07:33.4, 38.41N×37.65E, h5km, MD2.4*
*ISCJB **26** 12:07:34.5±0.6, 38.40N±0.04×37.62E±0.05, h6km±7km, Error ellipse: s-maj=7.4km s-min=5.3km az=143.3*
*DDA **26** 12:07:34.0, 38.41N×37.67E, h7km, Md2.6*
*CSEM **26** 12:07:34.2±0.2, 38.40N×37.64E, h5km, MD2.4, Error ellipse: s-maj=6.0km s-min=4.9km az=39.0*

ISC 26 12:07:34.6±0.9, 38.42N±0.03×37.63E±0.03, h10km±8km, n18, σ0.9s71/26, Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
DARE	**Darende-Malaty**	**0.19**	**322**	*e*PG	**Pg**	**12 07 38.4**	**-0.3**
DARE				*e*SG	**Sg**	**12 07 42.2**	**+0.7**
DARE	**Darende-Malaty**	**0.19**	**322**	*e*Pg	**Pg**	**12 07 38.4**	**-0.3**
DARE				*e*Sg	**Sg**	**12 07 42.2**	**+0.7**
AKCD	**Akcadag**	**0.26**	**119**	*i* P	**Pg**	**12 07 38.6**	**-1.3**
AKCD				*i* S	**Sg**	**12 07 44.5**	**+1.0**
AKCD	**Akcadag**	**0.26**	**119**	P	**Pg**	**12 07 38.6**	**-1.3**
AKCD				S	**Sg**	**12 07 44.5**	**+1.0**
CUGUR	**Gurin_S¨VAS**	**0.41**	**317**	*i* P	**Pg**	**12 07 41.9**	**-0.9**
CUGUR				*i* S	**Sb**	**12 07 49.8**	**-0.8**
CUGUR	**Gurin_S¨VAS**	**0.41**	**317**	P	**Pg**	**12 07 41.9**	**-0.9**
CUGUR				S	**Sb**	**12 07 49.8**	**-0.8**
GZT	**Gaziantep**	**1.06**	**183**	*i* P	**Pb**	**12 07 55.1**	**-0.1**
KEMA	**Kemaliye**	**1.08**	**38**	*i* P	**Pb**	**12 07 55.4**	**-0.1**
KEMA				*i* S	**Sb**	**12 08 10.1**	**+0.4**
KEMA	**Kemaliye**	**1.08**	**38**	P	**Pb**	**12 07 55.4**	**-0.1**
KEMA				S	**Sb**	**12 08 10.1**	**+0.4**
KMRS	**Kahramanmaras**	**1.08**	**213**	*e*PG	**Pg**	**12 07 55.0**	**-0.3**
KMRS	**Kahramanmaras**	**1.08**	**213**	*e*Pg	**Pg**	**12 07 55.1**	**-0.3**
HCB	**Kahramanmara¨**	**1.22**	**208**	*i* P	**Pg**	**12 07 57.5**	**-0.4**
SVRC	**Sivrice-ELAZID**	**1.31**	**91**	*e*PN	**Pn**	**12 07 59.4**	**+0.2**
SVRC	**Sivrice-ELAZID**	**1.31**	**91**	*e*Pn	**Pn**	**12 07 59.4**	**+0.2**
PTK	**Pertek**	**1.46**	**71**	*e*PN	**Pn**	**12 08 01.6**	**+0.5**
PTK	**Pertek**	**1.46**	**71**	*e*Pn	**Pn**	**12 08 01.7**	**+0.5**
SVSK	**Karacayir**	**1.57**	**342**	*e*PN	**Pb**	**12 08 03.7**	**-0.1**
SVSK	**Karacayir**	**1.57**	**342**	*e*Pn	**Pb**	**12 08 03.7**	**-0.1**

*ISCJB **26** 12:08:23.1±1.3, 6.1S±0.3×152.1E±0.2, h36km, mb3.5/5, Error ellipse: s-maj=48.4km s-min=14.1km az=142.4*
*IDC **26** 12:08:27.1±6.4, 6.01S×151.99E, h57km±52km, mb3.3/5, mb1 3.6/6, mb1mx3.4/51, mbtmp3.7/6, ML1.5/1, Error ellipse: s-maj=55.5km s-min=32.6km az=120.0*

ISC 26 12:08:24.4±1.4, 6.1S±0.3×152.2E±0.3, h36km, n7, σ1.9s37/8, mb3.5/5, New Britain region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PMG	**Port Moresby**	**6.01**	**236**	P		**Pn**	**12 09 52.5**	**+1.7**
	0.9nm,0.3s,baz=60,slow=10,SNR=5.1							
PMG				S		**Sn**	**12 10 57.3**	**-1.2**
	2.0nm,0.3s,baz=283,slow=18,SNR=5.8							
WRA	**Warramunga Arr**	**22.18**	**230**	P		**P**	**12 13 17.7**	**0.0**
	0.5nm,0.5s,baz=55,slow=10,SNR=9.9							
ASAR	**Alice Springs**	**24.84**	**223**	P		**P**	**12 13 45.0**	**+1.4**
	0.2nm,0.3s,baz=51,slow=9.9,SNR=16							
STKA	**Stephens Creek**	**27.54**	**200**	P		**P**	**12 14 06.8**	**-1.0**
	0.6nm,0.5s,baz=324,slow=21,SNR=2.4							
FITZ	**Fitzroy Crossi**	**28.56**	**243**	P		**P**	**12 14 15.8**	**-1.3**
	2.1nm,0.5s,baz=63,slow=5.6,SNR=6.7							
ILAR	**Eielson Array**	**83.54**	**22**	P		**P**	**12 20 48.5**	**+0.2**
	0.3nm,0.6s,baz=252,slow=5.1,SNR=4.4							
TORD	**Torodi Ar. Bea**	**150.12**	**286**	PKPbc		**PKPbc**	**12 28 11.9**	**-0.5**
	0.4nm,0.6s,baz=76,slow=2.5,SNR=6.1							

IDC 26 12:10:17.8±22.0, 20.77S×177.89W, h524km±200km, mb3.1/6, mb1 3.3/6, mb1mx3.0/51, mbtmp4.1/6, Error ellipse: s-maj=153.0km s-min=56.9km az=92.0, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CTA	**Charters Tower**	**33.57**	**265**	P	P	12 16 14.6	+0.2
	7.2nm,1.1s,baz=79,slow=12,SNR=5.7						
STKA	**Stephens Creek**	**37.77**	**244**	P	P	12 16 49.3	+0.2
	1.2nm,0.5s,baz=313,slow=22,SNR=5.5						
JAY	**Jayapura**	**44.23**	**289**	P	P	12 17 41.5	+0.8
	1.8nm,1.0s,baz=85,slow=23,SNR=4.3						
ASAR	**Alice Springs**	**44.56**	**257**	P	P	12 17 42.8	-0.4
	2.2nm,0.5s,baz=93,slow=7.9,SNR=82						
ASAR				PcP	PcP	12 19 16.2	+1.1
	0.5nm,0.6s,baz=101,slow=3.7,SNR=5.7						
WRA	**Warramunga Arr**	**44.67**	**262**	P	P	12 17 43.2	-0.9
	1.0nm,0.3s,baz=97,slow=7.3,SNR=116						
FITZ	**Fitzroy Crossi**	**53.10**	**263**	P	P	12 18 46.4	-0.1
	1.3nm,0.9s,baz=132,slow=3.4,SNR=7.4						
AKASG	**Malin Array Be**	**143.29**	**331**	PKP	PKPdf	12 28 51.8	-0.4
	1.7nm,0.5s,baz=45,slow=4.4,SNR=5.3						
BRTR	**Keskin Array B**	**147.09**	**312**	PKPbc	PKPdf	12 29 00.6	+1.3
	0.5nm,0.6s,baz=254,slow=2.6,SNR=3.1						
MMAI	**Mount Meron Ar**	**148.04**	**299**	PKPbc	PKPbc	12 29 04.5	-0.3
	0.7nm,0.3s,baz=151,slow=17,SNR=3.3						

MDD 26 12:11:17.4±4.7, 41.13N×12.08W, h0km, mb3.7/4, Error ellipse: s-maj=58.8km s-min=40.5km az=42.0, PRXIMO SIN SOLUCIN, North Atlantic Ocean

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PFVI	**Vila Bisbo**	**4.72**	**147**	P	Pn	12 12 29.0	-0.9
	1.2nm,0.1s,SNR=7.9						
PFVI				S	Sn	12 13 19.8	-5.6
	0.6nm,0.3s,SNR=7.9						
EGRO	**El Granado**	**5.06**	**134**	P	Pn	12 12 33.7	-0.8
	0.5nm,0.1s,SNR=7.9						
EGRO				S	Sn	12 13 29.7	-4.0
	0.5nm,0.2s,SNR=7.9						
EMIN	**Mina Concepcio**	**5.36**	**127**	P	Pn	12 12 37.2	-1.5
	0.2nm,0.1s,SNR=7.9						
EMIN				S	Sn	12 13 37.4	-3.8
	0.2nm,0.1s,SNR=7.9						
ECAB	**El Cabril**	**5.98**	**118**	P	Pn	12 12 45.5	-1.7
	0.4nm,0.2s,SNR=7.9						
ECAB				S	Sn	12 13 50.6	-5.9
	0.1nm,0.1s,SNR=7.9						

*MOS **26** 12:11:59.3±0.9, 36.13N×139.80E, h45km, mb5.4/87, MS4.0/15, Error ellipse: s-maj=6.5km s-min=3.7km az=105.2*
*NEIC **26** 12:12:00.5±0.4, 36.09N×139.78E, h40km±4km, mb5.1/162, Error ellipse: s-maj=3.2km s-min=2.1km az=137.0*
NEIC Felt [III] at Tokyo and [II] at Kanagawa. Also felt at Ayase, Itsukaichi, Musashimurayama, Narita, Numazu, Sagamihara, Tachikawa, Yamato, Yokohama and Yokosuka. Recorded [4 JMA] in Ibaraki and Tochigi.
*ISCJB **26** 12:12:00.3±0.3, 36.05N±0.02×139.84E±0.02, h53km±2km, mb5.1/271, MS4.1/36, Error ellipse: s-maj=3.3km s-min=2.7km az=42.7*
*NIED **26** 12:12:00, 36.10N×140.00E, h59km, Mw4.

6.4nm,0.3s,baz=263,slow=25,SNR=4.0
ASAJ LR LR 12 17 22.7
comp=Z,584nm,21.9s,baz=174,slow=39
ASAJ Asahikawa 8.28 13 *e*Pn **Pn** **12 13 58.0 -0.2**
ASAJ *e*Sn **Sn** **12 15 32.7 +2.4**
YUK Yuzh-Kuril'sk 9.14 28 *e*P **Pn** **12 14 08.0 -1.9**
YUK *e*S **Sn** **12 15 45.5 -5.8**
YUK pmax pmax
comp=Z,238nm,0.5s
YUK pmax pmax
comp=E,141nm,0.4s
YUK pmax pmax
comp=N,177nm,0.5s
YUK MLR MLR
comp=Z,625nm,20.0s
CBIJ Chichi jima 9.14 168 *e*Pn **Pn** **12 14 07.2 -2.8**
CBIJ *e*Sn **Sn** **12 15 53.4 +1.8**
JCJ Chichijima 9.14 168 P **Pn** **12 14 07.8 -2.3**
JCJ S **Sn** **12 15 51.4 -0.2**
SHO Shikotan 9.39 32 *e*P **Pn** **12 14 09.7 -3.7**
SHO pmax pmax
comp=Z,153nm,0.9s
SHO pmax pmax
comp=N,98nm,0.4s
SHO pmax pmax
comp=E,96nm,0.9s
MSHR Mys Shultsa 9.44 316⇓ *e*P **Pn** **12 14 13.9 -0.2**
KSRS Korea Array 9.79 282 P **Pn** **12 14 23.4 +4.5**
comp=E,8.5nm,0.3s,baz=92,slow=14,SNR=131
KSRS LR LR 12 18 01.0
comp=E,1μm,20.2s,baz=70,slow=37
KSRS PcP **PcP** **12 20 30.6 +0.7**
comp=E,0.1nm,0.3s,baz=293,slow=0.4,SNR=6.2
KS15 Wonju Array Si 9.82 282 *e*Pn **Pn** **12 14 23.4 +4.1**
KS15 *e*PcP **PcP** **12 20 30.6 +0.7**
USRK Ussuriysk Ar. 10.17 325 P **Pn** **12 14 25.7 +1.6**
comp=E,5.4nm,0.3s,baz=119,slow=15,SNR=47
USRK LR LR 12 18 14.8
comp=E,676nm,18.4s,baz=139,slow=37
KUR Kuril'sk 10.93 31 *e*P **Pn** **12 14 32.6 -1.8**
KUR pmax pmax
comp=N,21nm,0.7s
KUR pmax pmax
comp=E,20nm,0.7s
KUR pmax pmax
comp=Z,59nm,0.7s
YSS Yuzh-Sakhalins 11.07 10⇓ *e*P **Pn** **12 14 35.4 -1.0**
YSS *e*S **Sn** **12 16 35.1 -3.6**
YSS pmax pmax
comp=Z,70nm,0.7s
YSS pmax pmax
comp=N,50nm,0.5s
YSS MLR MLR
comp=Z,900nm,12.0s
YSS MLR MLR
comp=N,700nm,13.0s
YSS Yuzh-Sakhalins 11.07 10 *e*Pn **Pn** **12 14 35.4 -1.0**
YSS *e*Sn **Sn** **12 16 37.3 -1.4**
MDJ Mudanjiang 11.65 320 P **Pn** **12 14 43.5 -0.8**
MDJ S **Sn** **12 16 48.5 -4.4**
MDJ ScP **ScP** **12 23 59.3 -1.1**
MDJ PcS **PcS** **12 24 03.3 -2.1**
MDJ pmax pmax
comp=Z,3.0nm,0.5s
MDJ pmax pmax
comp=Z,470nm,12.2s
MDJ LR LR
comp=N,670nm,28.4s
MDJ LR LR
comp=E,550nm,34.8s
MDJ LR LR
comp=Z,1μm,26.5s
MDJ Mudanjiang 11.65 320 *e*Pn **Pn** **12 14 47.5 +3.2**
HABR Khabarovsk 12.92 345 P **Pn** **12 14 59.0 -2.6**
HABR *e*S **Sn** **12 17 21.3 -2.6**
HABR pmax pmax
comp=Z,52nm,1.3s
HABR pmax pmax
comp=N,35nm,1.4s
HABR pmax pmax
comp=E,36nm,1.4s
HABR MLR MLR
comp=Z,205nm,12.0s
CN2 Changchun 13.56 309 *e*P **Pn** **12 15 12.3 +1.8**
CN2 *e*PP **PnPn** **12 15 24.3 +5.9**
CN2 *e*S **Sn** **12 17 42.5 +2.9**
CN2 *e*SS **S** **12 17 59.5 -1.4**
CN2 pmax pmax
comp=Z,20nm,1.2s
CN2 pmax pmax
comp=Z,200nm,4.0s
CN2 LR LR
comp=N,600nm,14.0s
CN2 LR LR
comp=E,500nm,14.0s
CN2 LR LR
comp=Z,500nm,14.0s
JOW Kunigami 13.59 231 P **P** **12 15 19.5 +0.8**
comp=Z,6.3nm,0.3s,baz=10,slow=6.7,SNR=11
JOW Kunigami 13.59 231 *e*Pn **Pn** **12 15 11.2 +0.3**
KLR Kul'dur 14.47 338 P **Pn** **12 15 22.0 -0.7**
comp=Z,1.6nm,0.3s,baz=139,slow=11,SNR=33
KLR LR LR 12 20 50.0
comp=Z,594nm,18.7s,baz=130,slow=36
DL2 Dalian 14.86 286 P **Pn** **12 15 29.5 +1.7**
DL2 sP sP 12 15 48.5
DL2 S **Sn** **12 18 15.8 +4.7**
DL2 pmax pmax
comp=Z,88nm,0.8s
DL2 pmax pmax
comp=Z,310nm,6.2s
DL2 LR LR
comp=N,300nm,15.9s
DL2 LR LR
comp=E,870nm,20.6s
DL2 LR LR
comp=Z,1μm,22.5s
TYV Tymovskoe 14.91 7 *e*P **Pn** **12 15 26.0 -2.5**
TYV pmax pmax
comp=Z,66nm,0.8s
NKL Nikolayevsk 17.09 1 *e*P **Pn** **12 15 55.0 -1.1**
NKL pmax pmax
comp=Z,17nm,1.0s
NJ2 Nanjing 17.97 263 *e*P **P** **12 16 08.5 +1.3**
NJ2 pP **pP** **12 16 21.0 +2.9**
NJ2 S **S** **12 19 30.5 -0.4**
NJ2 sS **sS** **12 19 50.8 +2.4**
NJ2 pmax pmax
comp=Z,10.0nm,0.5s
NJ2 pmax pmax
comp=Z,170nm,3.8s
NJ2 LR LR
comp=N,640nm,15.5s
NJ2 LR LR
comp=E,830nm,15.6s
NJ2 LR LR
comp=Z,710nm,16.1s
TIA Tai'an 18.47 277 ⇓P **P** **12 16 12.0 -0.8**
TIA S **S** **12 19 46.0 +4.8**
TIA pmax pmax
comp=Z,60nm,1.1s
TIA LR LR
comp=N,410nm,18.0s
TIA LR LR
comp=E,750nm,18.0s
TIA LR LR
comp=Z,830nm,20.0s
YOJ Yonaguni jima 18.65 236 *e*P **P** **12 16 12.8 -2.0**
YOJ pmax pmax
comp=Z,65nm,0.8s
YOJ Yonaguni jima 18.65 236 *e*P **P** **12 16 12.8 -2.0**
comp=Z,66nm,0.8s
BJI Beijing 19.16 289 P **P** **12 16 19.3 -0.9**
BJI pP **pP** **12 16 30.0 -1.2**
BJI sP **sP** **12 16 35.0 -2.1**
BJI S **S** **12 19 54.0 -0.8**
BJI pmax pmax
comp=Z,29nm,1.0s
BJT Baijiatuau 19.16 289 *e*P **P** **12 16 19.2 -1.1**
BJT pmax pmax
comp=Z,77nm,0.7s
BJT Baijiatuau 19.16 289 *e*P **P** **12 16 19.2 -1.1**
comp=Z,77nm,0.7s
YHNB Yeheng 19.64 240 *e*P **P** **12 16 25.6 -0.1**
comp=Z,113nm,1.8s
HIA Hailar 19.82 318 *e*P **P** **12 16 25.6 -1.8**
HIA pmax pmax
comp=Z,22nm,0.9s
HIA Hailar 19.82 318 *e*P **P** **12 16 25.6 -1.8**
comp=Z,22nm,0.9s
SSLB Suanglung 20.50 239 *e*P **P** **12 16 35.2 +0.2**
comp=Z,21nm,0.6s
YULB Yu-li 20.53 237 *e*P **P** **12 16 33.7 -1.6**
comp=Z,27nm,1.0s
TPUB Ta-pu 21.05 238 *e*P **P** **12 16 38.0 -2.9**
comp=Z,48nm,0.7s
TWG Pinlang 21.07 236 *e*P **P** **12 16 40.1 -0.9**
comp=Z,219nm,0.8s
PETK Petropavlovsk- 21.09 31 P **P** **12 16 42.0 +0.9**
comp=Z,7.2nm,0.6s,baz=195,slow=4.0,SNR=18
PETK LR LR 12 24 36.3
comp=Z,224nm,20.6s,baz=221,slow=36
PEA1 Petropavlovsk- 21.10 31 *e*P **P** **12 16 42.0 +0.9**
PET Petropavlovsk 21.43 32⇓ *i*P **P** **12 16 47.5 +2.8**
PET *e*S **S** **12 20 43.3 +3.5**
PET pmax pmax
comp=Z,22nm,0.8s
PET MLR MLR
comp=Z,200nm,16.0s
PET Petropavlovsk 21.43 32 *e*P **P** **12 16 44.9 +0.2**
comp=Z,115nm,1.3s
WHN Wuhan 22.10 263 P **P** **12 16 51.8 -0.3**
HHC Hu-ho-hao-te 22.72 291 *e*P **P** **12 16 58.0 -0.8**
HHC sP sP 12 17 15.3 -0.6
HHC S **S** **12 20 57.5 -6.6**
HHC pmax pmax
comp=Z,27nm,0.8s
HHC pmax pmax
comp=Z,280nm,7.6s
HHC LR LR
comp=N,2μm,12.2s
HHC LR LR
comp=E,2μm,13.6s
HHC LR LR
comp=Z,2μm,14.8s
GUMO Guam 22.81 168 P **P** **12 16 58.7 -1.0**
comp=Z,124nm,0.8s,baz=282,slow=4.3,SNR=3.6
CLNS Chul'man 23.13 339 *e*P **P** **12 17 03.3 +0.6**
CLNS pmax pmax
comp=Z,43nm,0.9s
CLNS pmax pmax
comp=N,26nm,0.9s
CLNS pmax pmax
comp=E,13nm,1.0s
MA2 Magadan 24.54 13 P **P** **12 17 16.1 +0.3**
comp=E,47nm,0.6s,baz=222,slow=9.2,SNR=67
XAN Xi'an 25.47 275 P **P** **12 17 22.5 -2.0**
XAN pP pP 12 17 25.0 -12
XAN pmax pmax
comp=Z,24nm,0.5s
XAN LR LR
comp=N,410nm,19.4s
XAN LR LR
comp=E,560nm,22.6s
XAN LR LR
comp=Z,580nm,19.4s
ENH Enshi 26.12 266 *e*P **P** **12 17 28.4 -2.0**
comp=Z,84nm,0.7s
GZH Guangzhou 26.45 248 P **P** **12 17 27.5 -5.9**
YAK Yakutsk 26.78 349 P **P** **12 17 34.2 -1.8**
comp=Z,26nm,0.3s,baz=2.7,slow=0.7,SNR=12
YAK PcP **PcP** **12 20 57.9 +0.1**
comp=Z,16nm,0.5s,baz=228,slow=2.2,SNR=5.1
YAK LR LR 12 28 20.9
comp=Z,375nm,18.9s,baz=154,slow=37
YAK Yakutsk 26.78 349 *e*P **P** **12 17 34.3 -1.7**
YAK *e**PP **pP** **12 17 43.5 -4.8**
YAK *e*PPP PPP 12 18 22.5
YAK *e*S **S** **12 22 08.8 +0.3**
YAK *e*SS **SnSn** **12 23 20.5 +4.7**
YAK *e*SSS SSS 12 23 42.4
YAK *e* 12 28 18.5
YAK pmax pmax
comp=Z,62nm,1.1s
YAK pmax pmax
comp=E,6.0nm,1.4s
YAK pmax pmax
comp=N,33nm,1.3s
YAK pmax pmax
comp=Z,20nm,0.5s
YAK smax smax
comp=N,117nm,2.2s
YAK smax smax
comp=E,64nm,2.0s
YAK Yakutsk 26.78 349 *e*P **P** **12 17 34.9 -1.1**
comp=E,55nm,0.7s
YAK *e*PcP **PcP** **12 20 57.9 +0.1**
ULN Ulaanbaatar 26.98 306⇑ *e*P **P** **12 17 36.4 -1.8**
ULN pmax pmax
comp=Z,23nm,0.6s
ULN Ulaanbaatar 26.98 306 *e*P **P** **12 17 37.5 -0.7**
comp=Z,27nm,0.8s
ULN *e*PcP **PcP** **12 20 59.2 +0.4**
SONA0 Songino Array 27.40 306 *e*P **P** **12 17 40.1 -1.8**
SONA0 *e*pP **pP** **12 17 54.5 +0.3**
SONA0 *e*PcP **PcP** **12 20 59.9 +0.1**
SONM Songino Array 27.40 306 P **P** **12 17 40.1 -1.8**
comp=Z,33nm,0.7s,baz=105,slow=8.7,SNR=64
SONM pP **pP** **12 17 54.5 +0.3**
comp=Z,10.0nm,0.8s,baz=92,slow=9.4,SNR=3.7
SONM PcP **PcP** **12 20 59.9 +0.1**
comp=Z,3.2nm,0.6s,baz=139,slow=2.3,SNR=7.2
SONM LR LR 12 28 56.5
comp=Z,353nm,20.1s,baz=86,slow=37
BOD Bodaibo 27.76 330 *e*P **P** **12 17 43.5 -1.4**
BOD pmax pmax
comp=Z,60nm,0.9s
SEY Seymchan 27.96 12 P **P** **12 17 47.0 +0.4**
comp=Z,20nm,0.7s,baz=202,slow=7.9,SNR=20
SEY Seymchan 27.96 12⇓ *i*P **P** **12 17 47.3 +0.7**
H11N2 WAKE ISLAND Hy 28.68 117 T T 12 48 08.0
baz=313,slow=75,SNR=218
H11N1 WAKE ISLAND Hy 28.68 117 T T 12 48 06.6
baz=313,slow=75,SNR=167
H11N3 WAKE ISLAND Hy 28.69 117 T T 12 48 09.2
baz=313,slow=75,SNR=190
LZH Lanzhou 29.12 281 *e*P **P** **12 17 58.0 +0.6**
LZH pP pP 12 18 07.0 -2.7
LZH sP sP 12 18 10.3 -5.0
LZH pmax pmax
comp=Z,38nm,1.0s
LZH pmax pmax
comp=Z,140nm,4.9s
H11S1 WAKE ISLAND Hy 29.34 120 T T 12 48 56.6
baz=314,slow=76,SNR=325
H11S3 WAKE ISLAND Hy 29.34 120 T T 12 48 56.7
baz=314,slow=76,SNR=273
H11S2 WAKE ISLAND Hy 29.35 120 T T 12 48 56.7
baz=314,slow=76,SNR=287
GYA Guiyang 29.94 261 P **P** **12 18 04.8 +0.1**
GYA pP pP 12 18 20.0 +3.0
GYA PP **PnPn** **12 19 04.5 +2.1**
GYA PcP **PcP** **12 21 07.8 +1.3**
GYA S **S** **12 22 59.0 -0.1**
GYA sS sS 12 23 22.5 +2.6
GYA SS **SnSn** **12 24 38.0 +4.4**
GYA ScP **ScP** **12 24 44.0 -0.7**
GYA Guiyang 29.94 261 ScS ScS 12 28 38.5 -1.8
GYA pmax pmax
comp=Z,20nm,0.8s
GYA pmax pmax
comp=Z,120nm,4.9s
GYA LR LR
comp=N,570nm,15.6s
GYA LR LR
comp=E,540nm,16.0s
GYA LR LR
comp=Z,580nm,15.8s
ZAK Zakamensk 30.00 310 *e*P **P** **12 18 02.6 -2.3**
ZAK *e* 12 21 04.0
ZAK pmax pmax
comp=Z,14nm,0.9s
ZAK pmax pmax
comp=Z,5.0nm,1.0s
TLY Talaya 30.12 313 PcP **PcP** **12 21 07.0 +0.6**
comp=Z,1.9nm,0.6s,baz=314,slow=0.5,SNR=4.1
TLY LR LR 12 29 27.5
comp=Z,258nm,21.5s,baz=128,slow=35
TLY Talaya 30.12 313 *e*P **P** **12 18 05.3 -0.6**
TLY pmax pmax
comp=Z,16nm,0.8s
TLY Talaya 30.12 313 *e*P **P** **12 18 05.0 -1.0**
comp=Z,16nm,0.6s
TLY *e*PcP **PcP** **12 21 07.0 +0.6**
TLY *e*PcP PcP 12 21 07.2 +0.8
CD2 Chengdu 30.54 271 P **P** **12 18 08.5 -1.4**
CD2 sP sP 12 18 28.0 +0.2
CD2 PP **PP** **12 19 18.0 -1.4**
CD2 S **S** **12 23 07.3 -1.1**
CD2 sS sS 12 23 30.3 +1.2
CD2 SS **SS** **12 25 19.5 -0.3**
CD2 pmax pmax
comp=Z,30nm,0.9s
CD2 pmax pmax
comp=Z,80nm,6.5s
CD2 LR LR
comp=E,610nm,21.6s
CD2 LR LR
comp=Z,830nm,19.2s
MOY Mondy 31.71 312 *e*P **P** **12 18 19.6 -0.4**
GTA Gaotai 31.77 288 *e*P **P** **12 18 19.0 -1.7**
GTA pP pP 12 18 27.0 -6.1
GTA sP sP 12 18 30.0 -8.7
GTA PcP **PcP** **12 21 11.5 +0.4**
GTA S **S** **12 23 26.5 -1.1**
GTA sS sS 12 23 38.8 -10
GTA SS **SnSn** **12 25 17.8 -0.1**
GTA pmax pmax
comp=Z,8.0nm,1.1s
GTA pmax pmax
comp=Z,220nm,5.7s
GTA LR LR
comp=N,280nm,18.1s
GTA LR LR
comp=E,290nm,20.4s
GTA LR LR
comp=Z,540nm,19.0s
KMI Kunming 33.69 262 P **P** **12 18 36.5 -1.3**
KMI pP pP 12 18 51.0 +0.8
KMI sP sP 12 18 57.3 +1.6
KMI pmax pmax
comp=Z,34nm,1.0s
KMI pmax pmax
comp=Z,110nm,4.7s
KMI LR LR
comp=N,340nm,15.3s
KMI LR LR
comp=E,330nm,16.4s
KMI LR LR
comp=Z,660nm,16.4s
BILL Bilibino 35.28 17 *de*P **P** **12 18 50.3 -0.4**
BILL *e* 12 19 09.6
BILL S **S** **12 24 28.0 +7.0**
BILL SS **SnSn** **12 26 44.0 +2.1**
BILL pmax pmax
comp=Z,20nm,0.9s
BILL MLR MLR
comp=Z,148nm,16.0s
BILL Bilibino 35.28 17 *e*P **P** **12 18 50.1 -0.6**
comp=Z,16nm,0.8s
TIXI Tiksi 36.12 354 P **P** **12 18 56.9 -1.0**
comp=Z,24nm,0.6s,baz=146,slow=6.4,SNR=59
TIXI PcP **PcP** **12 21 23.7 +1.0**
comp=Z,2.1nm,0.5s,baz=204,slow=1.3,SNR=3.4
TIXI Tiksi 36.12 354 *c i*P **P** **12 18 56.8 -1.1**
TIXI pmax pmax
comp=Z,20nm,0.7s
MYLDM Lahad Datu 36.55 218 *e*P **P** **12 19 01.7 -0.5**
comp=Z,15nm,0.8s
PANO Nakornpanom 36.55 248 P **P** **12 19 01.4 -0.8**
comp=Z,19nm,0.9s
NONG Nongkai 37.12 251 P **P** **12 19 05.9 -1.1**
comp=Z,65nm,1.2s,comp=Z,9μm
SKNT Sakolnakorn 37.14 249 P **P** **12 19 05.9 -1.3**
comp=Z,35nm,0.9s
KRAR Krasnoyarsk 37.38 317⇓ *i*P **P** **12 19 09.3 +0.5**
KRAR pmax pmax
comp=Z,41nm,0.8s
SWI Sorong 37.63 194 P **P** **12 19 11.7 +0.4**
comp=Z,35nm,0.7s
CRAI Chiangrai 38.05 256 P **P** **12 19 14.0 -0.9**
comp=Z,97nm,1.1s,comp=Z,8μm
JAY Jayapura 38.39 179 P **P** **12 19 19.1 +1.4**
comp=Z,2.0nm,0.9s,baz=275,slow=23,SNR=2.7
KHON Khomkaen 38.40 249 P **P** **12 19 16.9 -0.9**
comp=Z,15nm,0.8s
CMAI Chiengmai2 39.26 257 P **P** **12 19 24.7 -0.5**
comp=Z,46nm,0.7s,comp=Z,6μm
CHAI Chaiyaphum 39.30 249 P **P** **12 19 23.7 -1.7**
comp=Z,18nm,0.8s,comp=Z,147nm
UTTA Uttaradit 39.30 253 P **P** **12 19 27.6 +2.3**
comp=Z,5.3nm,0.7s,comp=Z,86nm
FAKI Fak Fak 39.46 192 P **P** **12 19 26.3 -0.3**
comp=Z,60nm,0.6s
LAMP Lampang 39.57 255 P **P** **12 19 27.4 -0.2**
comp=Z,51nm,0.7s
PBKT Sadao Pong 39.67 251 P **P** **12 19 27.2 -1.2**
comp=Z,24nm,0.8s
CMMT Chiang Mai 39.95 256 P **P** **12 19 29.6 -1.2**
comp=Z,10nm,1.4s,comp=Z,360nm
CHTO Chiang Mai 39.95 256 P **P** **12 19 29.6 -1.2**
comp=Z,59nm,1.3s
CHTO Chiang Mai 39.95 256 *e*P **P** **12 19 29.7 -1.1**
CHTO pmax pmax
comp=Z,6.0nm,0.7s
CHTO Chiang Mai 39.95 256 *e*P **P** **12 19 29.7 -1.1**
comp=Z,5.8nm,0.7s
SANI Sanana 40.11 202 P **P** **12 19 31.9 -0.2**
comp=Z,59nm,0.7s,comp=Z,618nm
CM31 Chiang Mai Arr 40.15 255 *e*P **P** **12 19 31.2 -1.2**
CM31 *e*PcP **PcP** **12 21 37.1 +1.0**
CMAR Chiang Mai Arr 40.15 255 P **P** **12 19 31.2 -1.2**
comp=Z,2.8nm,0.7s,baz=47,slow=8.2,SNR=25
CMAR PcP **PcP** **12 21 37.1 +1.0**
comp=Z,4.5nm,1.1s,baz=44,slow=1.9,SNR=7.7
CMAR ScP **ScP** **12 25 22.3 +1.0**
comp=Z,0.6nm,0.4s,baz=32,slow=4.0,SNR=4.8
WMQ Urumqi 40.27 298 P **P** **12 19 33.5 +0.3**
WMQ pP pP 12 19 46.5 +0.7
WMQ sP sP 12 19 51.8 +0.4
WMQ PP **PnPn** **12 21 11.0 +0.7**
WMQ PcP **PcP** **12 21 36.8 +0.6**
WMQ pmax pmax
comp=Z,36nm,0.6s
WMQ pmax pmax
comp=Z,170nm,4.6s
WMQ LR LR
comp=N,59nm,20.8s
WMQ LR LR
comp=E,91nm,20.8s
WMQ LR LR
comp=Z,120nm,22.6s
SRAK Srakaew 40.44 247 P **P** **12 19 30.3 -4.5**
comp=Z,64nm,0.8s,comp=Z,566nm
CHBT CHBT 41.04 245 P **P** **12 19 39.2 -0.5**
comp=Z,35nm,0.9s,comp=Z,2μm
LSA Lhasa 41.16 276 P **P** **12 19 41.0 -0.3**
LSA pmax pmax
comp=Z,38nm,1.1s
LSA Lhasa 41.16 276 *e*P **P** **12 19 41.8 +0.5**
LSA pmax pmax
comp=Z,50nm,0.8s
LSA Lhasa 41.16 276 *e*P **P** **12 19 41.8 +0.5**
comp=Z,50nm,0.8s
BNDI Bandanaira 41.47 195 P P 12 19 56.6 +13
ZAA1 Zalesovo Array 41.73 313 *e*P **P** **12 19 44.1 -1.0**
ZAA1 *e*PcP **PcP** **12 21 40.1 -0.6**
ZALV Zalesovo Beam 41.73 313 P **P** **12 19 44.1 -1.0**
comp=Z,89nm,0.7s,baz=98,slow=7.3,SNR=348
ZALV PcP **PcP** **12 21 40.1 -0.6**
comp=Z,33nm,0.6s,baz=113,slow=3.1,SNR=18
ZALV ScP **ScP** **12 25 26.4 -0.6**
comp=Z,2.5nm,0.7s,baz=101,slow=4.7,SNR=4.3
ZALV LR LR 12 37 59.2
comp=Z,196nm,18.1s,baz=250,slow=37
SBUM Sibu 42.18 224⇓ *e*P **P** **12 19 47.7 -1.4**
SBUM Sibu 42.18 224 *e*P **P** **12 19 47.9 -1.1**
comp=Z,11nm,1.0s
SHL Shillong 42.26 270 *e*P **P** **12 19 52.0 +2.1**
NVS Novosibirsk 42.69 314 *e*P **P** **12 19 52.5 -0.3**
NVS *e* 12 21 43.5
NVS *e*S **S** **12 26 09.8 -2.9**
NVS pmax pmax
comp=N,13nm,0.8s
NVS pmax pmax
comp=Z,68nm,0.8s
NVS pmax pmax
comp=E,50nm,0.8s

NVS pmax pmax
comp=Z,13nm,0.7s
NVS pmax pmax
comp=N,4.0nm,0.7s
NVS pmax pmax
comp=E,5.0nm,0.6s
NVS smax smax
comp=E,7.0nm,1.4s
MK31 Makanchi Array 43.67 303 *i* P **P** **12 20 00.8 -0.1**
MK31 pmax pmax
comp=Z,78nm,0.8s
MK32 Makanchi Array 43.67 303 *e*P **P** **12 20 00.7 -0.3**
MK32 *e*PcP **PcP** **12 21 46.7 -0.7**
MKAR Makanchi Array 43.67 303 P **P** **12 20 00.7 -0.3**
comp=Z,63nm,0.8s,baz=91,slow=10.0,SNR=408
MKAR PcP **PcP** **12 21 46.7 -0.7**
comp=Z,9.4nm,0.7s,baz=88,slow=6.2,SNR=3.8
MKAR ScP **ScP** **12 25 35.3 +0.2**
comp=Z,1.4nm,0.7s,baz=74,slow=7.9,SNR=4.3
MKAR LR LR 12 38 49.8
comp=Z,364nm,18.5s,baz=130,slow=37
MKAR Makanchi Array 43.67 303 *e*P **P** **12 20 00.8 -0.1**
NRIK Noril'sk 43.67 336 P **P** **12 19 59.7 -0.8**
comp=Z,22nm,0.5s,baz=105,slow=8.2,SNR=23
NRIK PcP **PcP** **12 21 47.1 +0.2**
comp=Z,30nm,0.7s,baz=155,slow=3.1,SNR=6.5
NRIK LR LR 12 39 58.7
comp=Z,350nm,18.1s,baz=115,slow=38
MAKZ Makanchi 43.88 303 *e*P **P** **12 20 02.1 -0.5**
MAKZ pmax pmax
comp=Z,85nm,0.9s
MAKZ Makanchi 43.88 303 *e*P **P** **12 20 02.1 -0.5**
comp=Z,85nm,0.9s
KSM Kuching 44.06 225 *e*P **P** **12 20 03.7 -0.6**
comp=Z,30nm,0.8s
SPSI Sidrap Palu 44.10 210 P **P** **12 20 04.6 +0.1**
comp=Z,11nm,1.2s
SDPT Sand Point 44.29 45 *e*P **P** **12 20 04.9 -0.7**
comp=Z,102nm,0.5s
KURK Kurchatov 45.64 309 *e*P **P** **12 20 15.8 -0.6**
KURK pmax pmax
comp=Z,385nm,1.2s
KURK Kurchatov 45.64 309 *e*P **P** **12 20 15.8 -0.6**
comp=Z,385nm,1.2s
PMG Port Moresby 45.73 170 P **P** **12 20 19.8 +2.3**
comp=Z,8.3nm,0.8s,baz=343,slow=16,SNR=3.2
PMG LR LR 12 40 39.8
comp=Z,119nm,18.2s,baz=350,slow=38
BBKI Banjar Baru 45.83 216 P **P** **12 20 19.1 +0.8**
comp=Z,27nm,1.0s,comp=Z,2µm
GUN Gumba 46.12 276 *e*P **P** **12 20 20.8 -0.2**
comp=Z,102nm,0.5s
SURT Suratani 46.14 245 P **P** **12 20 22.1 +1.3**
comp=Z,6.3nm,1.5s
TRTT Trang 46.25 243 P P 12 20 29.6 +7.9
PKIN Phulchoki 46.65 276 *e*P **P** **12 20 24.3 -0.7**
comp=Z,64nm,0.7s
KKN Kakani 46.65 276 *e*P **P** **12 20 24.6 -0.4**
comp=Z,104nm,0.8s
TTA Tatalina 46.86 34 *e*P **P** **12 20 27.2 +1.2**
TTA pmax pmax
comp=Z,6.0nm,0.8s
TTA Tatalina 46.86 34 *e*P **P** **12 20 27.2 +1.2**
comp=Z,6.1nm,0.8s
DMN Daman 46.87 276 *e*P **P** **12 20 26.3 -0.4**
comp=Z,42nm,0.6s
SVW2 Sparrevohn 46.98 37 *e*P **P** **12 20 28.8 +1.9**
comp=Z,16nm,0.8s
GKN Gorkha 47.08 277 *e*P **P** **12 20 27.9 -0.4**
comp=Z,450nm,0.8s
PKDT Phuket 47.19 244 P **P** **12 20 29.1 +0.1**
comp=Z,32nm,0.9s,comp=Z,11µm
KULM Kulim 47.34 239 ⇑P **P** **12 20 28.7 -1.5**
MMRI Maumere 47.51 204 P **P** **12 20 31.7 +0.3**
comp=Z,28nm,1.5s
IPM Ipoh 47.66 238 *e*P **P** **12 20 31.1 -1.6**
comp=Z,19nm,0.8s
KOLN Koldanda 48.01 277 *e*P **P** **12 20 35.5 -0.1**
comp=Z,129nm,0.7s
OHAK Old Harbor 48.23 42 *e*P **P** **12 20 37.0 +0.4**
comp=Z,24nm,0.8s
RSO Redoubt South 48.36 38 *e*P **P** **12 20 39.2 +1.3**
PYUN Piuthan 48.36 278 *e*P **P** **12 20 38.3 0.0**
comp=Z,884nm,1.1s
BATI Baumata 48.54 202 P **P** **12 20 40.5 +1.1**
comp=Z,13nm,0.5s
BATI Baumata 48.54 202 P **P** **12 20 39.7 +0.3**
comp=Z,15nm,1.0s
KDAK Kodiak Island 48.58 41 P P 12 20 55.1 +16
comp=Z,43nm,0.7s,baz=277,slow=4.5,SNR=60
KDAK pP sP 12 21 07.9 +10
comp=Z,35nm,0.6s,baz=240,slow=5.9,SNR=7.3
KDAK LR LR 12 40 42.2
comp=Z,93nm,21.9s,baz=237,slow=35
KDAK Kodiak Island 48.58 41 *i* P **P** **12 20 39.5 +0.3**
KDAK Kodiak Island 48.58 41 *e*P **P** **12 20 39.8 +0.6**
comp=Z,45nm,0.6s
KDAK *e*pP **pP** **12 20 55.1 +3.0**
PPLA Purkeypile 48.61 34 *e*P **P** **12 20 41.4 +1.7**
comp=Z,15nm,0.8s
CAST Castle Rocks 48.66 34 *e*P **P** **12 20 41.3 +1.5**
comp=Z,14nm,0.6s
SPU Mount Spurr 48.69 37 *e*P **P** **12 20 41.5 +1.4**
HOM Homer 48.95 39 *e*P **P** **12 20 43.4 +1.3**
comp=Z,36nm,0.9s
TKM2 Tokmak 2 49.09 299 *i* P **P** **12 20 44.2 +0.5**
TKM2 pmax pmax
comp=Z,76nm,0.6s
TKM2 Tokmak 2 49.09 299 *e*P **P** **12 20 44.3 +0.6**
comp=Z,456nm,1.7s
BPAW Bear Paw Mtn. 49.15 33 *e*P **P** **12 20 44.9 +1.3**
comp=Z,10nm,0.6s
KTH Kantishna Hill 49.18 34 *e*P **P** **12 20 45.4 +1.5**
comp=Z,23nm,0.8s
MLY Manley 49.27 32 *e*P **P** **12 20 46.2 +1.7**
comp=Z,32nm,1.3s
BRLK Bradley Lake 49.33 39 *e*P **P** **12 20 46.5 +1.5**
comp=Z,18nm,0.9s
MTN Manton Dam 49.36 191 *e*P **P** **12 20 45.2 -0.5**
comp=Z,49nm,0.6s
PPBI Pangkal Pinang 49.43 227 P **P** **12 20 45.5 -0.8**
comp=Z,36nm,0.8s,comp=Z,6µm
TRF Thorofare Moun 49.47 34 *e*P **P** **12 20 47.3 +1.1**
comp=Z,16nm,0.8s
COLD Coldfoot 49.55 29 *e*P **P** **12 20 47.7 +1.2**
comp=Z,6.1nm,0.6s
KSH Kashi 49.76 294 P **P** **12 20 52.5 +3.7**
KSH *e*pP sP 12 21 05.0 -2.1
KSH *e*PP **PP** **12 22 49.0 +5.5**
KSH PcS **PcS** **12 26 08.3 +2.2**
KSH S **S** **12 27 58.0 +3.2**
KSH ScS **ScS** **12 30 37.0 +0.6**
KSH Kashi 49.76 294 SS **SS** **12 31 33.0 +5.6**
KSH pmax pmax
comp=Z,38nm,0.8s
KSH pmax pmax
comp=Z,140nm,5.4s
KSH LR LR
comp=N,240nm,8.5s
KSH LR LR
comp=E,210nm,7.9s
KSH LR LR
comp=Z,220nm,7.2s
FRU Bishkek 49.81 299 ⇑ *i* P **P** **12 20 48.0 -1.0**
FRU *e* 12 21 03.0
FRU pmax pmax
comp=Z,130nm,1.4s
RC01 Rabbit Creek A 49.82 37 *e*P **P** **12 20 49.5 +0.8**
comp=Z,24nm,1.1s
BWN Browne 49.82 33 *e*P **P** **12 20 51.1 +2.4**
comp=Z,74nm,0.8s
COEN Coen 49.84 176 *e*P **P** **12 20 50.1 +0.8**
comp=Z,26nm,1.1s
AAK Ala-Archa 49.95 299 *c i*P **P** **12 20 50.0 -0.1**
AAK pmax pmax
comp=Z,132nm,0.8s
AAK Ala-Archa 49.95 299 *e*P **P** **12 20 50.1 -0.1**
comp=Z,371nm,0.8s
SEW Seward 50.03 38 *e*P **P** **12 20 50.9 +0.6**
comp=Z,21nm,0.9s
PMR Palmer 50.08 36 *e*P **P** **12 20 51.0 +0.4**
PMR pmax pmax
comp=Z,25nm,1.1s
PMR Palmer 50.08 36 *e*P **P** **12 20 51.0 +0.4**
comp=Z,25nm,1.1s
RND Reindeer 50.11 34 *e*P **P** **12 20 51.7 +0.7**
RND pmax pmax
comp=Z,25nm,1.0s
RND Reindeer 50.11 34 *e*P **P** **12 20 51.7 +0.7**
comp=Z,25nm,1.0s
CHKZ Chkalovo 50.14 314 *i* P **P** **12 20 50.2 -1.0**
CHKZ pmax pmax
comp=Z,45nm,0.7s
PSI Prapat 50.32 239 *e*P **P** **12 20 51.9 -1.3**
PSI pmax pmax
comp=Z,9.0nm,0.8s
PSI Prapat 50.32 239 *e*P **P** **12 20 51.9 -1.3**
comp=Z,9.1nm,0.8s
MDM Murphy Dome 50.34 32 *e*P **P** **12 20 54.0 +1.4**
comp=Z,44nm,0.8s
BVA0 Borovoye Array 50.38 313 P **P** **12 20 52.3 -0.8**
BVA0 pmax pmax
comp=Z,29nm,0.9s
BVAR Borovoye Array 50.38 313 P **P** **12 20 52.2 -0.9**
comp=Z,24nm,0.5s,baz=84,slow=7.4,SNR=12
BVAR PcP **PcP** **12 22 10.9 -0.1**
comp=Z,16nm,0.7s,baz=67,slow=3.9,SNR=5.7
WRH Wood River Hil 50.41 32 *e*P **P** **12 20 54.1 +1.0**
comp=Z,17nm,0.7s
BRVK Borovoye 50.44 313 *d i*P **P** **12 20 51.7 -1.8**
BRVK pmax pmax
comp=Z,43nm,1.0s
BRVK Borovoye 50.44 313 *e*P **P** **12 20 51.0 -2.5**
comp=Z,46nm,1.0s
SML Sawmill 50.44 36 *e*P **P** **12 20 54.2 +0.7**
SML pmax pmax
comp=Z,25nm,0.7s
SML Sawmill 50.44 36 *e*P **P** **12 20 54.2 +0.7**
comp=Z,26nm,0.7s
EKS2 Erkin-Say 50.45 299 *e*P **P** **12 20 53.8 -0.1**
EKS2 pmax pmax
comp=Z,44nm,0.8s
EKS2 Erkin-Say 50.45 299 *e*P **P** **12 20 53.8 -0.1**
comp=Z,44nm,0.8s
COLA College 50.50 32 *de*P **P** **12 20 54.4 +0.6**
COLA pmax pmax
comp=Z,10.0nm,0.6s
COLA College 50.50 32 *e*P **P** **12 20 55.3 +1.5**
comp=Z,26nm,0.8s
CCB Clear Creek Bu 50.53 32 *e*P **P** **12 20 54.6 +0.6**
comp=Z,9.4nm,1.0s
DHY Denali Highway 50.80 34 *e*P **P** **12 20 57.0 +0.7**
comp=Z,13nm,0.9s
HDA Harding Lake 50.91 32 *e*P **P** **12 20 57.6 +0.7**
comp=Z,21nm,0.8s
ILAR Eielson Array 50.92 32 P **P** **12 20 57.0 +0.1**
comp=Z,27nm,0.9s,baz=271,slow=6.3,SNR=166
ILB Eielson Array 50.92 32 *e*P **P** **12 20 57.0 +0.1**
SCM Sheep Creek Mo 50.92 36 *e*P **P** **12 20 58.3 +1.2**
SCM pmax pmax
comp=Z,22nm,0.9s
SCM Sheep Creek Mo 50.92 36 *e*P **P** **12 20 58.3 +1.2**
comp=Z,22nm,0.9s
ZRNK Zerenda 51.22 313 *i* P **P** **12 20 58.7 -0.7**
ZRNK pmax pmax
comp=Z,54nm,0.5s
ZRNK Zerenda 51.22 313 *e*P **P** **12 20 59.1 -0.3**
comp=Z,87nm,0.5s
SDSI Sungai Dareh 51.40 233 P **P** **12 21 01.3 +0.1**
comp=Z,38nm,0.9s,comp=Z,41µm
MNAS Manas 51.40 299 P **P** **12 21 01.2 +0.1**
MNAS pmax pmax
comp=Z,100nm,0.9s
KLU Klutina 51.62 36 *e*P **P** **12 21 03.5 +1.1**
comp=Z,13nm,0.9s
PAX Paxson 51.67 34 *e*P **P** **12 21 03.6 +0.9**
PAX pmax pmax
comp=Z,10.0nm,1.0s
PAX Paxson 51.67 34 *e*P **P** **12 21 03.6 +0.9**
comp=Z,10nm,1.0s
DIV Divide 51.73 37 *e*P **P** **12 21 04.8 +1.6**
comp=Z,23nm,0.9s
UGM Wanagama 51.79 218 P **P** **12 21 02.1 -2.0**
comp=Z,86nm,0.8s
EYAK Cordova Ski Ar 51.81 37 *e*P **P** **12 21 05.2 +1.5**
comp=Z,16nm,0.7s
DOT Dot Lake 52.24 33 *e*P **P** **12 21 07.3 +0.4**
comp=Z,56nm,0.7s
BMRM Bremner River 52.31 37 *e*P **P** **12 21 08.6 +1.1**
comp=Z,35nm,1.0s
LHSI Lahat 52.32 229 P **P** **12 21 07.5 -0.5**
comp=Z,92nm,1.0s
RAGM Ragged Mountai 52.36 37 *e*P **P** **12 21 09.3 +1.5**
comp=Z,26nm,0.9s
THN Thein Dam 52.40 286 *e*P **P** **12 21 05.5 -2.9**
MENT Mentasta 52.47 34 *e*P **P** **12 21 10.4 +1.8**
comp=Z,29nm,0.8s
KK31 Karatay Array 52.62 300 P **P** **12 21 09.8 -0.2**
KK31 pmax pmax
comp=Z,93nm,1.0s
KKAR Karatay Array 52.62 300 *e*P **P** **12 21 09.9 -0.1**
KKAR Karatay Array 52.62 300 *e*P **P** **12 21 09.9 -0.1**
NDI New Delhi 52.74 281 *e*P P 12 21 06.0 -5.0
LWLI Liwa 52.95 227 P **P** **12 21 12.9 +0.1**
EGAK Eagle 53.36 32 *e*P **P** **12 21 15.5 +0.4**
comp=Z,16nm,0.8s
BALM Baldy 53.39 36 *e*P **P** **12 21 16.7 +1.2**
BALM pmax pmax
comp=Z,16nm,1.0s
BALM Baldy 53.39 36 *e*P **P** **12 21 16.7 +1.2**
comp=Z,16nm,1.0s
SVE Sverdlovsk 55.12 319 *e*P **P** **12 21 27.8 -0.2**
SVE pmax pmax
comp=Z,75nm,1.2s
FITZ Fitzroy Crossi 55.56 197 P **P** **12 21 31.9 +0.4**
comp=Z,31nm,0.6s,baz=16,slow=7.4,SNR=156
FITZ Fitzroy Crossi 55.56 197 *e*P **P** **12 21 31.9 +0.4**
comp=Z,29nm,0.6s
INK Inuvik 55.76 27 P **P** **12 21 33.4 +1.0**
baz=277,slow=7.6
INK LR LR 12 49 29.5
comp=Z,72nm,18.0s,baz=298,slow=40
INK Inuvik 55.76 27 *e*P **P** **12 21 33.2 +0.8**
INK Inuvik 55.76 27 *e*P **P** **12 21 33.2 +0.8**
WRAB Tennant Creek 55.95 186 *ce*P **P** **12 21 33.8 -0.5**
WRAB pmax pmax
comp=Z,55nm,0.7s
WRAB Tennant Creek 55.95 186 *e*P **P** **12 21 31.1 -3.3**
comp=Z,23nm,0.7s
WR1 Warramunga Arr 55.96 186 *e*P **P** **12 21 33.5 -0.9**
WRA Warramunga Arr 55.96 186 P **P** **12 21 33.5 -0.9**
comp=Z,28nm,0.6s,baz=2.3,slow=7.5,SNR=352
WRA ScP **ScP** **12 26 28.1 +0.5**
comp=Z,3.0nm,1.0s,baz=360,slow=4.3,SNR=7.3
WRA PKP2bc 12 51 47.2
comp=Z,0.8nm,0.8s,baz=204,slow=2.4,SNR=4.7
WRA Warramunga Arr 55.96 186 P **P** **12 21 33.5 -0.9**
WRA pmax pmax
comp=Z,29nm,0.6s
WRA pmax pmax
comp=N,3.0nm,1.0s
CTA Charters Tower 56.16 173 P **P** **12 21 36.0 +0.2**
comp=N,6.5nm,0.8s,baz=351,slow=8.3,SNR=6.1
CTA LR LR 12 46 06.3
comp=N,96nm,20.9s,slow=36
CTA Charters Tower 56.16 173 *e*P **P** **12 21 36.0 +0.2**
ARU Arti 56.33 319 *c i*P **P** **12 21 36.0 -0.7**
ARU *e*PP **pP** **12 21 51.6 +1.8**
ARU 12 22 32.1
ARU S **S** **12 29 24.5 +1.2**
ARU SS **SS** **12 33 07.5 -2.6**
ARU pmax pmax
comp=Z,53nm,0.7s
ARU Arti 56.33 319 *e*P **P** **12 21 36.2 -0.5**
comp=Z,58nm,0.5s
SOKR Solikamsk 56.40 323 ⇑ *i*P **P** **12 21 35.1 -1.9**
SOKR pmax pmax
comp=Z,28nm,1.3s
SOKR MLR MLR
comp=Z,275nm,21.0s
HYB Hyderabad 57.03 268 *i* P **P** **12 21 42.0 -0.3**
comp=Z,70nm,1.0s
SKAG Skagway 57.15 37 *e*P **P** **12 21 45.0 +2.6**
comp=Z,26nm,1.0s
ABKAR Akbulak array 57.69 310 *e*P **P** **12 21 45.8 -0.6**
AS31 Alice Springs 59.69 186 *e*P **P** **12 22 00.1 -0.4**
ASAR Alice Springs 59.69 186 P **P** **12 22 00.1 -0.4**
comp=Z,5.8nm,0.5s,baz=19,slow=13,SNR=93
ASAR PKP2bc 12 51 39.2
comp=Z,3.0nm,0.9s,baz=173,slow=2.2,SNR=14
MBWA Marble Bar 60.06 202 *e*P **P** **12 22 02.9 -0.2**
comp=Z,16nm,0.7s
DLBC Dease Lake 60.09 37 P **P** **12 22 05.0 +2.0**
comp=Z,11nm,0.9s,baz=273,slow=4.2,SNR=30
DLBC Dease Lake 60.09 37 *e*P **P** **12 22 05.0 +2.0**
comp=Z,20nm,1.1s
KBS Kingsbay 61.41 350 *e*P **P** **12 22 12.4 +0.8**
KBS pmax pmax
comp=Z,17nm,0.8s
KBS Kingsbay 61.41 350 *e*P **P** **12 22 12.4 +0.8**
comp=Z,17nm,0.8s
LVZ Lovozero 62.52 336 *e*P **P** **12 22 19.7 +0.5**
LVZ pmax pmax
comp=Z,15nm,0.7s
LVZ Lovozero 62.52 336 *e*P **P** **12 22 19.7 +0.5**
comp=Z,15nm,0.7s
DZM Mont Dzumac 63.01 152 P **P** **12 22 24.8 +1.8**
comp=Z,8.0nm,0.7s,baz=39,slow=13,SNR=5.1
DZM LR LR 12 44 51.6
comp=Z,179nm,21.6s,baz=354,slow=31
TMCR Tamitsa 63.04 331 *e*P **P** **12 22 22.0 -0.7**
TMCR pmax pmax
comp=Z,20nm,0.5s
APA Apatity 63.10 336 ⇑ *i*P **P** **12 22 23.8 +0.8**
APA pmax pmax
comp=Z,100nm,0.7s
APA MLR MLR
comp=Z,900nm,12.0s
GEYT Alibeck 63.30 299 P **P** **12 22 24.8 -0.1**
comp=Z,21nm,0.8s,baz=46,slow=4.3,SNR=34
RES Resolute Bay 63.81 14 *e*P **P** **12 22 27.5 -0.1**
RES Resolute Bay 63.81 14 *e*P **P** **12 22 27.5 -0.1**
KEV Kevo 63.94 339 *e*P **P** **12 22 27.6 -0.9**
KEV pmax pmax
comp=Z,18nm,0.8s
KEV Kevo 63.94 339 *e*P **P** **12 22 27.6 -0.9**
comp=Z,18nm,0.8s
HAMF Hammerfest 64.35 341 *e*P **P** **12 22 30.7 -0.5**
HAMF IAmb IAmb 12 22 31.2
comp=Z,18nm,0.8s
ARA0 ARCESS Array S 64.50 339 *e*P **P** **12 22 32.0 -0.2**
ARCES ARCESS Array B 64.50 339 P **P** **12 22 32.0 -0.2**
comp=Z,17nm,0.8s,baz=53,slow=7.9,SNR=64
ARCES LR LR 12 54 15.7
comp=Z,197nm,18.3s,baz=71,slow=39
ARE0 ARCESS Array S 64.50 339 *e*P **P** **12 22 32.3 +0.1**
YKA Yellowknife Ar 65.21 30 P **P** **12 22 37.0 +0.1**
comp=Z,6.3nm,0.7s,baz=302,slow=6.7,SNR=146
YKA Yellowknife Ar 65.21 30 P **P** **12 22 37.0 +0.1**
YKA pmax pmax
comp=Z,6.0nm,0.7s
YKB5 Yellowknife Ar 65.21 30 *e*P **P** **12 22 37.0 +0.1**
KTK1 Kautokeino 65.46 339 *e*P **P** **12 22 38.3 -0.2**
KTK1 IAmb IAmb 12 22 38.9
comp=Z,21nm,0.9s
TRO Tromso 66.25 341 *e*P **P** **12 22 42.7 -0.8**
DAG Danmarks Havn 66.63 355 ⇑ *i*P **P** **12 22 45.5 -0.3**
comp=Z,25nm,1.0s
DAG Danmarks Havn 66.63 355 ⇑ *i*P **P** **12 22 45.5 -0.3**
DAG pmax pmax
comp=Z,25nm,1.0s
MOS Moscow 67.34 323 *e*P **P** **12 22 47.6 -3.1**
MOS *e* 12 23 07.7
MOS pmax pmax
comp=Z,59nm,0.9s
VRH Novokhopyorsk 67.53 318 *e*P **P** **12 22 50.9 -1.0**
VRH pmax pmax
comp=Z,80nm,0.7s
STKA Stephens Creek 67.61 179 P **P** **12 22 52.9 +0.4**
comp=Z,8.0nm,0.8s,baz=340,slow=6.7,SNR=12
OBN Obninsk 68.18 323 P **P** **12 22 55.3 -0.6**
comp=Z,42nm,0.6s,baz=22,slow=19
OBN Obninsk 68.18 323 *c i*P **P** **12 22 55.3 -0.6**
OBN *e**PP **sP** **12 23 12.5 -2.2**
OBN *e* 12 23 23.8
OBN S **S** **12 31 59.0 +6.6**
OBN pmax pmax
comp=Z,38nm,0.6s
OBN MLR MLR
comp=Z,206nm,16.0s
OBN Obninsk 68.18 323 *e*P **P** **12 22 55.3 -0.6**
comp=Z,46nm,0.8s
LPSR Galich'ya Gora 68.31 320 *e*P **P** **12 22 55.6 -1.2**
LPSR pmax pmax
comp=Z,50nm,0.8s
BBOO Buckleboo 68.62 184 *e*P **P** **12 22 59.0 +0.1**
comp=Z,12nm,0.8s
VSR Storozhevoye 68.90 319 *e*P **P** **12 22 59.6 -0.9**
VSR pmax pmax
comp=Z,60nm,0.8s
FIA0 FINESS Array S 69.13 332 *e*P **P** **12 23 00.8 -1.0**
FIA0 FINESS Array S 69.13 332 *e*P **P** **12 23 00.8 -1.0**
FINES FINESS Array B 69.13 332 P **P** **12 23 00.8 -1.0**
comp=Z,30nm,0.7s,baz=76,slow=8.0,SNR=108
FINES LR LR 12 55 03.3
comp=Z,168nm,18.8s,baz=43,slow=37
FINES FINESS Array B 69.13 332 *i* P **P** **12 23 01.3 -0.5**
FINES pmax pmax
comp=Z,30nm,0.7s
MOR8 Moi Rana 69.87 339 *e*P **P** **12 23 04.3 -1.9**
MOR8 IAmb IAmb 12 23 05.3
comp=Z,59nm,0.8s
GOF Gofitskoye 69.88 311 ⇑ *e*P **P** **12 23 04.7 -2.0**
GOF pmax pmax
comp=Z,75nm,0.9s
LTY Liberty 70.14 46 *e*P **P** **12 23 09.1 +0.7**
comp=Z,12nm,1.1s
DGRG David-gareji 70.28 307 P **P** **12 23 10.4 +1.1**
DGRG David-gareji 70.28 307 P **P** **12 23 10.4 +1.1**
B08A Colville Reser 70.32 44 *e*P **P** **12 23 10.2 +0.8**
comp=Z,7.9nm,0.9s
GUDG Gudauri 70.33 309 P **P** **12 23 10.9 +1.1**
NCK Nalchik 70.35 310 ⇓ *e*P **P** **12 23 09.4 -0.3**
NCK pmax pmax
comp=Z,14nm,0.4s
ZEI Tsey 70.53 309 *e*P **P** **12 23 08.9 -2.1**
ZEI pmax pmax
comp=Z,28nm,0.8s
TBLG Delisi 70.54 308 P **P** **12 23 13.3 +2.4**
TBLG Delisi 70.54 308 P **P** **12 23 13.2 +2.4**
KBZ Khabaz 70.66 310 P **P** **12 23 11.2 -0.2**
comp=Z,29nm,0.8s,baz=48,slow=3.3,SNR=89
KVAR Kislovodsk Arr 70.67 311 P **P** **12 23 11.5 -0.2**
comp=Z,42nm,0.8s,baz=210,slow=6.8
KIV Kislovodsk 70.67 311 *c i*P **P** **12 23 11.6 -0.1**
KIV *e**PP **pP** **12 23 23.4 -1.8**
KIV *e* 12 23 28.9
KIV S **SKiKP** **12 32 40.0 -11**
KIV pmax pmax
comp=Z,87nm,1.0s
KIV MLR MLR
comp=Z,137nm,17.0s
KIV Kislovodsk 70.67 311 *e*P **P** **12 23 11.5 -0.1**
comp=Z,64nm,0.8s
VSU Vasula 70.70 329 ⇓ *i*P **P** **12 23 10.3 -1.2**
VSU pmax pmax
comp=Z,150nm,0.8s
ONI Oni 70.91 309 P **P** **12 23 13.3 +0.2**
ONI Oni 70.91 309 P **P** **12 23 13.3 +0.2**
I04A Tendick Farm, 70.93 49 P **P** **12 23 14.4 +1.2**
baz=302
NEY Neytrino 71.02 310 ⇓ *e*P **P** **12 23 13.8 -0.1**
NEY pmax pmax
comp=Z,3.0nm,0.8s
HATD Hatta, Dubai 71.13 287 *i* P **P** **12 23 14.3 -0.4**
SNR=6.7
C09A Chrisman Ranch 71.22 44 *e*P **P** **12 23 16.0 +1.1**
comp=Z,8.1nm,0.8s
D08A Wollman Farm, 71.26 45 *e*P **P** **12 23 16.2 +1.1**
comp=Z,12nm,1.1s
ASHO Ashiyiah 71.26 287 P **P** **12 23 15.1 -0.4**
GNI Garni 71.36 306 ⇓ *e*P **P** **12 23 16.3 +0.2**
GNI pmax pmax
comp=Z,98nm,1.3s
NAZ Nazwa, Dubai 71.41 288 P **P** **12 23 15.8 -0.5**
FAQ Al Faqa, Dubai 71.59 287 P **P** **12 23 16.7 -0.7**
NEW Newport 71.61 43 P **P** **12 23 18.1 +0.8**
comp=Z,4.4nm,0.9s,baz=312,slow=6.4,SNR=4.6
NEW pP **pP** **12 23 30.8 0.0**
comp=Z,4.9nm,0.7s,baz=353,slow=4.5,SNR=5.4
NEW LR LR 12 58 25.3
comp=Z,22nm,18.1s,baz=296,slow=39
NEW Newport 71.61 43 P **P** **12 23 18.0 +0.8**
baz=304
NEW Newport 71.61 43 *e*P **P** **12 23 18.3 +1.1**
NEW pmax pmax
comp=Z,9.0nm,1.0s
NEW Newport 71.61 43 *e*P **P** **12 23 18.3 +1.1**
comp=Z,9.0nm,1.0s
SUMG Summit 71.64 360 *i* P **P** **12 23 18.1 +0.7**

	comp=Z,39nm,0.8s									
SUMG	**Summit**		**71.64**	**360**	*i* P		**P**		**12 23 18.1**	**+0.7**
SUMG					pmax		pmax			
	comp=Z,39nm,0.8s									
SUMG	**Summit**		**71.64**	**360**	*e*P		**P**		**12 23 16.8**	**-0.7**
	comp=Z,39nm,0.7s									
CHVG	**Ch'k'valeri**		**71.70**	**310**	P		**P**		**12 23 18.0**	**+0.2**
M02C	**Callahan**		**71.92**	**52**	P		**P**		**12 23 20.6**	**+1.3**
	baz=302									
N02D	**Trinity Center**		**72.24**	**52**	P		**P**		**12 23 22.1**	**+0.9**
	baz=303									
M04C	**Macdoel**		**72.36**	**51**	P		**P**		**12 23 22.8**	**+0.9**
	baz=303									
IZAR	**Zarasai**		**72.60**	**327**	*e*P		**P**		**12 23 22.4**	**-0.5**
IZAR					IAmb		IAmb		12 23 24.1	
	comp=Z,20nm,0.8s									
IDID	**Didziasalis**		**72.66**	**327**	*e*P		**P**		**12 23 22.7**	**-0.6**
IDID					IAmb		IAmb		12 23 24.5	
	comp=Z,20nm,0.7s									
SOC	**Sochi**		**72.69**	**312**	*e*P		P		12 23 31.5	+7.8
SOC					*e**PP		pP		12 23 35.3	-1.9
SOC					*e*PPP		PPP		12 27 45.4	
SOC					*e*				12 33 21.5	
SOC					*e*SSS		SSS		12 40 30.5	
SOC					pmax		pmax			
	comp=Z,21nm,0.8s									
DAGI	**Agillar**		**72.69**	**308**	*i* P		**P**		**12 23 24.0**	**+0.1**
ISAL	**Salakas**		**72.77**	**327**	*e*P		**P**		**12 23 23.4**	**-0.5**
ISAL					IAmb		IAmb		12 23 25.2	
	comp=Z,30nm,0.7s									
DBAD	**Bademkaya**		**72.86**	**308**	*i* P		**P**		**12 23 23.7**	**-1.3**
SCO	**Scoresbysund**		**72.95**	**354**	*i* P		**P**		**12 23 25.2**	**+0.4**
	comp=Z,9.4nm,0.7s									
SCO	**Scoresbysund**		**72.95**	**354**	*i* P		**P**		**12 23 25.2**	**+0.4**
SCO					pmax		pmax			
	comp=Z,9.0nm,0.7s									
MOD	**Modoc Plateau**		**73.25**	**50**	*e*P		**P**		**12 23 28.6**	**+1.3**
	comp=Z,6.0nm,0.9s									
ANN	**Anapa**		**73.37**	**314**	*e*P		**P**		**12 23 25.6**	**-2.1**
ANN					*e**PP		**pP**		**12 23 40.1**	**-1.2**
ANN					*e*PPP		PPP		12 27 54.5	
ANN					*e*S		**S**		**12 32 51.1**	**-2.0**
ANN					pmax		pmax			
	comp=Z,81nm,1.5s									
BMO	**Blue Mountains**		**73.42**	**46**	*e*P		**P**		**12 23 29.5**	**+1.4**
	comp=Z,12nm,1.1s									
JTMT	**Jette**		**73.48**	**43**	*e*P		**P**		**12 23 29.8**	**+1.3**
SWMT	**Swartz Lake**		**73.77**	**43**	*e*P		**P**		**12 23 31.3**	**+1.1**
ORV	**Oroville**		**73.79**	**53**	*e*P		**P**		**12 23 31.2**	**+0.9**
ORV					pmax		pmax			
	comp=Z,5.0nm,0.8s									
ORV	**Oroville**		**73.79**	**53**	*e*P		**P**		**12 23 31.2**	**+0.9**
	comp=Z,5.2nm,0.8s									
WVOR	**Wild Horse Val**		**73.99**	**49**	*e*P		**P**		**12 23 33.0**	**+1.4**
WVOR					pmax		pmax			
	comp=Z,10.0nm,1.1s									
WVOR	**Wild Horse Val**		**73.99**	**49**	*e*P		**P**		**12 23 33.0**	**+1.4**
	comp=Z,10nm,1.1s									
MSO	**Missoula**		**74.20**	**43**	P		**P**		**12 23 35.0**	**+2.3**
	baz=306									
AKASG	**Malin Array Be**		**74.36**	**322**	P		**P**		**12 23 32.4**	**-0.9**
	comp=Z,26nm,0.7s,baz=48,slow=6.2,SNR=66									
AKASG					LR		LR		12 59 13.3	
	comp=Z,165nm,18.9s,baz=50,slow=38									
AKBB	**Malin Array Si**		**74.36**	**322**	*e*P		**P**		**12 23 32.4**	**-0.9**
AKBB	**Malin Array Si**		**74.36**	**322**	*e*P		**P**		**12 23 32.4**	**-0.9**
KIEV	**Kiev**		**74.37**	**322**	⇑*i*P		**P**		**12 23 31.4**	**-2.0**
KIEV	**Kiev**		**74.37**	**322**	*e*P		**P**		**12 23 32.5**	**-1.0**
	comp=Z,37nm,0.7s									
HFS	**Hagfors**		**74.49**	**335**	P		**P**		**12 23 33.0**	**-1.0**
	comp=Z,7.4nm,0.4s,baz=72,slow=4.7,SNR=6.0									
NB2	**NORSAR Subarra**		**74.63**	**337**	P		**P**		**12 23 34.2**	**-0.6**
	comp=Z,27nm,0.7s,baz=39,slow=6.2									
NB2	**NORSAR Subarra**		**74.63**	**337**	P		**P**		**12 23 34.2**	**-0.6**
	baz=39,slow=6.2									
NB200	**NORSAR Array S**		**74.63**	**337**	*e*P		**P**		**12 23 34.4**	**-0.5**
NB200					*e*pP		**pP**		**12 23 48.6**	**+0.2**
NB200					*e*PP		**PP**		**12 26 20.1**	**-1.3**
NOA	**NORSAR Array B**		**74.63**	**337**	P		**P**		**12 23 34.4**	**-0.5**
	comp=Z,29nm,0.7s,baz=40,slow=5.8,SNR=97									
NOA					pP		**pP**		**12 23 48.6**	**+0.2**
	comp=Z,1.3nm,0.5s,baz=137,slow=5.9,SNR=2.8									
NOA					PP		**PP**		**12 26 20.1**	**-1.3**
	comp=Z,5.1nm,0.8s,baz=42,slow=8.7,SNR=6.4									
NOA					LR		LR		12 59 30.2	
	comp=Z,152nm,19.9s,baz=45,slow=38									
NOA	**NORSAR Array B**		**74.63**	**337**	P		**P**		**12 23 34.4**	**-0.5**
NOA					*PP		**pP**		**12 23 48.6**	**+0.2**
NOA									12 26 20.2	
NOA					pmax		pmax			
	comp=Z,28nm,0.7s									
NOA					pmax		pmax			
	comp=Z,1.0nm,0.5s									
NOA					pmax		pmax			
	comp=Z,5.0nm,0.9s									
NOA					MLR		MLR			
	comp=Z,152nm,19.9s									
ILULI	**Ilulissat**		**74.71**	**4**	*i* P		**P**		**12 23 34.9**	**-0.1**
	comp=Z,17nm,0.7s									
ILULI	**Ilulissat**		**74.71**	**4**	*i* P		**P**		**12 23 34.9**	**-0.1**
ILULI					pmax		pmax			
	comp=Z,17nm,0.7s									
NC602	**NORSAR Array S**		**74.75**	**336**	*e*P		**P**		**12 23 34.7**	**-0.8**
KELT	**Kelkit**		**74.89**	**309**	*i* P		**P**		**12 23 37.4**	**+0.5**
SUW	**Suwalki**		**75.08**	**327**	*e*P		**P**		**12 23 37.0**	**-0.5**
MFID	**Camas Ranch**		**75.12**	**47**	*e*P		**P**		**12 23 39.3**	**+1.2**
	comp=Z,53nm,1.9s									
SIM	**Simferopol'**		**75.21**	**315**	P		**P**		**12 23 37.8**	**-0.6**
SIM					pmax		pmax			
	comp=Z,26nm,0.7s									
CMB	**Columbia Colle**		**75.36**	**54**	*e*P		**P**		**12 23 40.7**	**+1.2**
CMB					pmax		pmax			
	comp=Z,19nm,1.4s									
CMB	**Columbia Colle**		**75.36**	**54**	*e*P		**P**		**12 23 40.7**	**+1.2**
	comp=Z,19nm,1.4s									
FCC	**Fort Churchill**		**75.37**	**26**	*e*P		**P**		**12 23 39.0**	**0.0**
FCC					pmax		pmax			
	comp=Z,11nm,0.8s									
FCC	**Fort Churchill**		**75.37**	**26**	*e*P		**P**		**12 23 39.0**	**0.0**
	comp=Z,11nm,0.8s									
LRM	**Limekiln Ridge**		**75.63**	**43**	*e*P		**P**		**12 23 42.1**	**+1.0**
WAKR	**Walker**		**75.71**	**53**	*e*P		**P**		**12 23 43.0**	**+1.3**
EGMT	**Eagleton**		**75.75**	**41**	P		**P**		**12 23 42.4**	**+0.9**
	baz=308									
EGMT	**Eagleton**		**75.75**	**41**	*e*P		**P**		**12 23 42.7**	**+1.1**
	comp=Z,25nm,1.1s									
HLID	**Hailey**		**75.86**	**46**	P		**P**		**12 23 43.5**	**+1.1**
	baz=306									
HLID	**Hailey**		**75.86**	**46**	*e*P		**P**		**12 23 43.5**	**+1.1**
	comp=Z,14nm,0.8s									
HYA	**Hoyanger**		**76.07**	**339**	*e*P		**P**		**12 23 43.2**	**+0.2**
BOZ	**Bozeman (W)**		**76.19**	**43**	P		**P**		**12 23 45.5**	**+1.3**
	baz=308									
BOZ	**Bozeman (W)**		**76.19**	**43**	*e*P		**P**		**12 23 45.3**	**+1.1**
BOZ					pmax		pmax			
	comp=Z,9.0nm,1.0s									
BOZ	**Bozeman (W)**		**76.19**	**43**	*e*P		**P**		**12 23 45.3**	**+1.1**
	comp=Z,9.1nm,1.0s									
SORM	**Soroca**		**76.41**	**320**	⇑*i*P		**P**		**12 23 44.3**	**-0.9**
SORM	**Soroca**		**76.41**	**320**	⇑P		**P**		**12 23 44.3**	**-0.9**
NV01	**Mina Array Sit**		**76.48**	**52**	*e*P		**P**		**12 23 47.3**	**+1.3**
NV01					*e*pP		**pP**		**12 23 59.9**	**+0.1**
NVAR	**Mina Array Bea**		**76.48**	**52**	P		**P**		**12 23 47.3**	**+1.2**
	comp=Z,6.7nm,0.7s,baz=284,slow=6.2,SNR=28									
NVAR					pP		**pP**		**12 23 59.9**	**+0.1**
	comp=Z,7.7nm,0.8s,baz=259,slow=7.3,SNR=10									
NVAR					LR		LR		12 54 58.2	
	comp=Z,30nm,19.4s,baz=263,slow=34									
CUKAN	**kangal_SIVAS**		**76.50**	**309**	*i* P		**P**		**12 23 46.6**	**+0.5**
AKCD	**Akcadag**		**76.80**	**308**	*i* P		**P**		**12 23 48.7**	**+0.9**
BOYT	**Boyabat**		**76.84**	**312**	*i* P		**P**		**12 23 48.0**	**+0.1**
ASK	**Askoy**		**76.91**	**339**	*e*P		**P**		**12 23 48.2**	**+0.5**
SFJD	**Kangerlussuaq**		**76.94**	**4**	*i* P		**P**		**12 23 47.7**	**-0.1**
	comp=Z,12nm,0.8s									
SFJD	**Kangerlussuaq**		**76.94**	**4**	*i* P		**P**		**12 23 47.7**	**-0.1**
SFJD					pmax		pmax			
	comp=Z,12nm,0.8s									
ELK	**Elko**		**77.04**	**49**	*e*P		**P**		**12 23 50.7**	**+1.5**
ELK					pmax		pmax			
	comp=Z,5.0nm,0.7s									
ELK	**Elko**		**77.04**	**49**	*e*P		**P**		**12 23 50.7**	**+1.5**
	comp=Z,5.0nm,0.7s									
YMR	**Madison River**		**77.17**	**44**	*e*P		**P**		**12 23 51.6**	**+1.7**
	comp=Z,12nm,0.8s									
CUSAR	**Sarkisla-SIVAS**		**77.20**	**310**	*i* P		**P**		**12 23 50.4**	**+0.4**
YFT	**Old Faithful**		**77.37**	**44**	*e*P		**P**		**12 23 53.8**	**+2.8**
	comp=Z,8.7nm,1.0s									
BLS5	**Blasjo**		**77.38**	**338**	*e*P		**P**		**12 23 50.7**	**+0.2**
LVV	**L'vov**		**77.48**	**323**	*e*P		**P**		**12 23 50.0**	**-1.2**
COAL	**Corum-Alaca**		**77.49**	**311**	*i* P		**P**		**12 23 52.7**	**+1.2**
H17A	**Grant Village**		**77.56**	**44**	P		**P**		**12 23 54.6**	**+2.6**
	baz=309									
H17A	**Grant Village**		**77.56**	**44**	*e*P		**P**		**12 23 54.8**	**+2.7**
	comp=Z,17nm,1.0s									
GZT	**Gaziantep**		**77.58**	**307**	*i* P		**P**		**12 23 52.7**	**+0.5**
BEL	**Belsk**		**77.62**	**326**	*e*P		**P**		**12 23 52.2**	**+0.3**
IMW	**Indian Meadow**		**77.66**	**44**	*e*P		**P**		**12 23 54.6**	**+1.9**
	comp=Z,9.2nm,0.8s									
FLWY	**Flagg Ranch**		**77.68**	**44**	*e*P		**P**		**12 23 54.9**	**+2.2**
	comp=Z,55nm,1.9s									
BSD	**Bornholm Skovb**		**77.75**	**331**	⇑*i*P		**P**		**12 23 51.9**	**-0.6**
	comp=Z,55nm,0.8s									
BSD	**Bornholm Skovb**		**77.75**	**331**	⇑*i*P		**P**		**12 23 51.9**	**-0.6**
BSD					pmax		pmax			
	comp=Z,55nm,0.8s									
ILGA	**Ilgaz**		**77.78**	**312**	*i* P		**P**		**12 23 53.9**	**+0.6**
RLMT	**Red Lodge**		**77.83**	**43**	P		**P**		**12 23 54.4**	**+0.9**
	baz=309									
RLMT	**Red Lodge**		**77.83**	**43**	*e*P		**P**		**12 23 54.9**	**+1.4**
	comp=Z,10nm,0.6s									
MOOW	**Moose Ponds**		**77.86**	**44**	*e*P		**P**		**12 23 55.4**	**+1.7**
	comp=Z,25nm,1.9s									
GRAC	**Grapevine Rang**		**77.92**	**53**	P		**P**		**12 23 55.6**	**+1.7**
	baz=306									
HCB	**Kahramanmara¯**		**78.00**	**307**	*i* P		**P**		**12 23 54.5**	**+0.1**
SNART	**Snartemo**		**78.01**	**337**	*e*P		**P**		**12 23 53.5**	**-0.4**
REDW	**Red Top Meadow**		**78.04**	**45**	*e*P		**P**		**12 23 56.5**	**+1.7**
	comp=Z,7.9nm,0.8s									
DAC	**Darwin (Calif)**		**78.19**	**54**	*e*P		**P**		**12 23 56.8**	**+1.1**
DAC					pmax		pmax			
	comp=Z,6.0nm,1.0s									
DAC	**Darwin (Calif)**		**78.19**	**54**	*e*P		**P**		**12 23 56.8**	**+1.1**
	comp=Z,5.5nm,1.0s									
KWP	**Kalwaria Pacla**		**78.24**	**324**	*e*P		**P**		**12 23 55.8**	**+0.3**
KWP	**Kalwaria Pacla**		**78.24**	**324**	⇑*i*P		**P**		**12 23 55.7**	**+0.3**
KWP	**Kalwaria Pacla**		**78.24**	**324**	⇑P		**P**		**12 23 55.7**	**+0.3**
CDAG	**Cicekdag**		**78.24**	**311**	*i* P		**P**		**12 23 55.5**	**-0.3**
R11A	**Troy Canyon, C**		**78.25**	**51**	P		**P**		**12 23 57.2**	**+1.2**
	baz=307									
R11A	**Troy Canyon, C**		**78.25**	**51**	*e*P		**P**		**12 23 57.2**	**+1.2**
	comp=Z,13nm,1.2s									
AHID	**Auburn Hatcher**		**78.27**	**45**	*e*P		**P**		**12 23 58.6**	**+2.6**
	comp=Z,15nm,0.7s									
ELDT	**Eldivan**		**78.29**	**312**	*i* P		**P**		**12 23 55.9**	**-0.2**
DGMT	**Dagmar**		**78.30**	**38**	P		**P**		**12 23 57.1**	**+1.2**
	baz=312									
DGMT	**Dagmar**		**78.30**	**38**	*e*P		**P**		**12 23 56.4**	**+0.6**
	comp=Z,19nm,0.8s									
TESR	**Tescani**		**78.34**	**320**	⇑*i*P		**P**		**12 23 55.6**	**-0.4**
BURAR	**Bucovina Array**		**78.35**	**321**	⇑*i*P		**P**		**12 23 56.2**	**0.0**
BURAR	**Bucovina Array**		**78.35**	**321**	⇑P		**P**		**12 23 56.2**	**0.0**
MPMC	**Manual Prospec**		**78.39**	**54**	P		**P**		**12 23 57.4**	**+0.6**
	baz=306									
CFR	**Carcaliu**		**78.41**	**318**	⇓*i*P		**P**		**12 23 55.4**	**-1.0**
CFR	**Carcaliu**		**78.41**	**318**	⇓P		**P**		**12 23 55.4**	**-1.0**
ODBI	**Odobesti**		**78.61**	**319**	⇑*i*P		**P**		**12 23 58.9**	**+1.4**
BR101	**Keskin Array S**		**78.63**	**311**	*e*P		**P**		**12 23 57.6**	**-0.3**
BR101					*e*PP		**PP**		**12 26 54.9**	**-0.9**
BRTR	**Keskin Array B**		**78.63**	**311**	P		**P**		**12 23 57.6**	**-0.3**
	comp=Z,6.3nm,0.7s,baz=72,slow=4.0,SNR=36									
BRTR					PP		**PP**		**12 26 54.9**	**-0.9**
	comp=Z,5.4nm,0.9s,baz=76,slow=5.2,SNR=8.5									
BRTR	**Keskin Array B**		**78.63**	**311**	P		**P**		**12 23 57.7**	**-0.3**
BRTR									12 26 54.9	
BRTR					pmax		pmax			
	comp=Z,7.0nm,0.7s									
BRTR					pmax		pmax			
	comp=Z,5.0nm,0.9s									
TPNV	**Topopah Spring**		**78.67**	**53**	P		**P**		**12 23 59.1**	**+0.8**
	baz=307									
TPNV	**Topopah Spring**		**78.67**	**53**	*e*P		**P**		**12 23 59.4**	**+1.2**
TPNV					pmax		pmax			
	comp=Z,11nm,0.9s									
TPNV	**Topopah Spring**		**78.67**	**53**	*e*P		**P**		**12 23 59.4**	**+1.2**
	comp=Z,11nm,0.9s									
TIRR	**Tirgusor**		**78.72**	**317**	⇑*i*P		**P**		**12 23 57.8**	**-0.3**
TIRR	**Tirgusor**		**78.72**	**317**	⇑P		**P**		**12 23 57.8**	**-0.3**
TIRR	**Tirgusor**		**78.72**	**317**	*e*P		**P**		**12 23 57.5**	**-0.6**
	comp=Z,8.2nm,0.9s									
VRI	**Vrincioaia**		**78.72**	**319**	⇓*i*P		**P**		**12 23 58.4**	**+0.3**
VRI	**Vrincioaia**		**78.72**	**319**	⇓P		**P**		**12 23 58.4**	**+0.3**
HWUT	**Hatware Ranch**		**78.72**	**47**	*e*P		**P**		**12 23 59.7**	**+1.2**
	comp=Z,19nm,1.3s									
PLOR	**Plostina**		**78.77**	**319**	⇑*i*P		**P**		**12 23 58.4**	**-0.1**
PLOR	**Plostina**		**78.77**	**319**	⇑P		**P**		**12 23 58.4**	**-0.1**
HARR	**Harsova**		**78.83**	**318**	⇑*i*P		**P**		**12 23 58.4**	**-0.3**
HARR	**Harsova**		**78.83**	**318**	⇑P		**P**		**12 23 58.4**	**-0.3**
DUG	**Dugway, Tooele**		**78.85**	**48**	P		**P**		**12 24 00.3**	**+1.1**
	baz=308									
DUG	**Dugway, Tooele**		**78.85**	**48**	*e*P		**P**		**12 24 00.1**	**+1.0**
DUG					pmax		pmax			
	comp=Z,13nm,1.0s									
DUG	**Dugway, Tooele**		**78.85**	**48**	*e*P		**P**		**12 24 00.1**	**+1.0**
	comp=Z,13nm,1.0s									
BCAM	**Yenicaga**		**78.91**	**313**	*i* P		**P**		**12 24 01.8**	**+2.3**
KOLS	**Kolonicke sedl**		**78.92**	**324**	*e*P		**P**		**12 23 58.9**	**-0.3**
ANTO	**Ankara**		**79.06**	**312**	*e*P		**P**		**12 23 59.7**	**-0.5**
ANTO					pmax		pmax			
	comp=Z,19nm,0.6s									
ANTO	**Ankara**		**79.06**	**312**	*e*P		**P**		**12 23 59.7**	**-0.5**
	comp=Z,19nm,0.6s									
A26A	**Wade Farm, Ken**		**79.06**	**36**	P		**P**		**12 24 00.4**	**+0.4**
	baz=313									
STHS	**Stebicka Huta**		**79.08**	**324**	*e*P		**P**		**12 24 00.3**	**+0.2**
TCUT	**Toone Canyon**		**79.12**	**47**	*e*P		**P**		**12 24 01.9**	**+1.2**
	comp=Z,82nm,1.8s									
UZH	**Uzhgorod**		**79.12**	**323**	*e*P		**P**		**12 23 59.9**	**-0.4**
UZH					*e*				12 24 12.9	
UZH					*e*				12 24 17.5	
BW06	**Boulder Array**		**79.15**	**45**	P		**P**		**12 24 01.3**	**+0.4**
	baz=310									
BW06	**Boulder Array**		**79.15**	**45**	*e*P		**P**		**12 24 01.3**	**+0.4**
	comp=Z,7.3nm,1.1s									
PD31	**Pinedale Array**		**79.15**	**45**	*e*P		**P**		**12 24 01.2**	**+0.3**
PDAR	**Pinedale Array**		**79.15**	**45**	P		**P**		**12 24 01.2**	**+0.3**
	comp=Z,2.2nm,0.6s,baz=254,slow=1.5,SNR=22									
OJC	**Ojcow**		**79.20**	**326**	*e*P		**P**		**12 24 00.5**	**-0.2**
OJC	**Ojcow**		**79.20**	**326**	*e*P		**P**		**12 24 00.7**	**0.0**
OJC					pmax		pmax			
	comp=Z,38nm,0.8s									
OJC	**Ojcow**		**79.20**	**326**	*e*P		**P**		**12 24 00.7**	**0.0**
	comp=Z,38nm,0.8s									
PSUT	**Pine Spring**		**79.22**	**50**	*e*P		**P**		**12 24 02.5**	**+1.1**
	comp=Z,6.1nm,0.8s									
CRVS	**Cervenica-Dubn**		**79.34**	**324**	*e*P		**P**		**12 24 01.4**	**-0.1**
TRPA	**Tarpa**		**79.34**	**323**	⇑*e*P		**P**		**12 24 01.7**	**+0.2**
DOPR	**Dopca**		**79.36**	**320**	⇑*i*P		**P**		**12 24 02.2**	**+0.6**
MLR	**Muntele Rosu**		**79.38**	**319**	P		**P**		**12 24 02.0**	**+0.1**
	comp=Z,1.4nm,0.5s,baz=7.0,slow=2.6,SNR=8.8									
MLR	**Muntele Rosu**		**79.38**	**319**	⇑*i*P		**P**		**12 24 01.5**	**-0.4**
MLR	**Muntele Rosu**		**79.38**	**319**	⇑P		**P**		**12 24 01.5**	**-0.4**
MLR	**Muntele Rosu**		**79.38**	**319**	*e*P		**P**		**12 24 02.0**	**+0.1**
	comp=Z,9.9nm,0.9s									
JLU	**Jordanelle**		**79.41**	**47**	*e*P		**P**		**12 24 03.7**	**+1.3**
	comp=Z,4.9nm,0.7s									
NLU	**North Lily Min**		**79.44**	**48**	*e*P		**P**		**12 24 03.7**	**+1.2**
	comp=Z,7.6nm,0.9s									
NIE	**Niedzica**		**79.53**	**325**	*e*P		**P**		**12 24 02.9**	**+0.4**
MPU	**Maple Canyon**		**79.67**	**48**	*e*P		**P**		**12 24 04.5**	**+0.8**
	comp=Z,10.0nm,0.9s									
KERG	**Konya-Eregli**		**79.73**	**309**	*i* P		**P**		**12 24 02.4**	**-1.7**
VOIR			**79.88**	**320**	⇑*i*P		**P**		**12 24 04.3**	**-0.3**
VOIR			**79.88**	**320**	⇑P		**P**		**12 24 04.3**	**-0.3**
A28A	**Rude Farm, Bot**		**79.90**	**36**	P		**P**		**12 24 05.0**	**+0.5**
	baz=314									
KECS	**Kecovo**		**80.09**	**324**	*e*P		**P**		**12 24 05.8**	**+0.2**
LANS	**Liptovska Anna**		**80.10**	**325**	*e*P		**P**		**12 24 06.3**	**+0.6**
ARR	**Arges**		**80.15**	**320**	⇓*i*P		**P**		**12 24 07.0**	**+1.0**
DRGR			**80.17**	**322**	⇑*i*P		**P**		**12 24 04.9**	**-1.2**
DRGR			**80.17**	**322**	⇑P		**P**		**12 24 04.9**	**-1.2**
OKC	**Ostrava-Krasne**		**80.22**	**326**	*e*P		**P**		**12 24 06.2**	**0.0**
OKC	**Ostrava-Krasne**		**80.22**	**326**	*e*P		**P**		**12 24 06.2**	**0.0**
MSU	**Marysvale**		**80.27**	**49**	*e*P		**P**		**12 24 08.7**	**+1.7**
MSU	**Marysvale**		**80.27**	**49**	*e*P		**P**		**12 24 08.7**	**+1.7**
KDHN	**Kadinhani**		**80.30**	**311**	*i* P		**P**		**12 24 06.3**	**-0.7**
KSP	**Ksiaz**		**80.31**	**328**	*e*P		**P**		**12 24 06.8**	**+0.1**
GMRC	**Granite Mounta**		**80.35**	**54**	P		**P**		**12 24 08.1**	**+0.8**
	baz=307									
TMUT	**Trail Mountain**		**80.37**	**48**	*e*P		**P**		**12 24 09.0**	**+1.4**
	comp=Z,9.5nm,1.0s									
PFO	**Pinyon Flats O**		**80.52**	**55**	P		**P**		**12 24 09.6**	**+1.3**
	comp=Z,12nm,1.0s,baz=312,slow=3.9,SNR=8.9									
PFO	**Pinyon Flats O**		**80.52**	**55**	P		**P**		**12 24 09.1**	**+0.8**
	baz=307									
PFO	**Pinyon Flats O**		**80.52**	**55**	*e*P		**P**		**12 24 09.6**	**+1.3**
PFO					pmax		pmax			
	comp=Z,14nm,1.0s									
PFO	**Pinyon Flats O**		**80.52**	**55**	*e*P		**P**		**12 24 09.6**	**+1.3**
	comp=Z,14nm,1.0s									
MORC	**Moravsky Berou**		**80.54**	**326**	⇓*i*P		**P**		**12 24 07.8**	**-0.2**
MORC	**Moravsky Berou**		**80.54**	**326**	⇓P		**P**		**12 24 07.8**	**-0.2**
MORC	**Moravsky Berou**		**80.54**	**326**	*e*P		**P**		**12 24 08.0**	**0.0**
	comp=Z,87nm,0.9s									
LCMT	**Little Creek M**		**80.54**	**51**	*e*P		**P**		**12 24 10.0**	**+1.6**
	comp=Z,9.6nm,0.9s									
P17A	**Butcher Ranch,**		**80.55**	**48**	*e*P		**P**		**12 24 10.0**	**+1.6**
	comp=Z,14nm,0.8s									
MTPU	**Mount Pierson**		**80.56**	**50**	*e*P		**P**		**12 24 10.4**	**+1.6**
	comp=Z,7.1nm,0.8s									
BELC	**Belle Mtn. Jos**		**80.60**	**55**	P		**P**		**12 24 08.4**	**-0.3**
	baz=307									
DPC	**Dobruska-Polom**		**80.66**	**327**	*e*P		**P**		**12 24 08.9**	**+0.3**
DPC					*e*PCP		**PcP**		**12 24 12.4**	**-2.9**
DPC					*e*PP		**PP**		**12 27 09.2**	**-2.9**
DPC	**Dobruska-Polom**		**80.66**	**327**	*e*P		**P**		**12 24 08.9**	**+0.3**
DPC					*e*				12 27 09.2	
UPC	**Upice**		**80.68**	**328**	*e*P		**P**		**12 24 08.9**	**+0.2**
UPC					*ex*		x		12 24 11.9	
UPC	**Upice**		**80.68**	**328**	*e*P		**P**		**12 24 08.9**	**+0.2**
P18A	**Preston Nutter**		**80.74**	**47**	*e*P		**P**		**12 24 11.1**	**+1.5**
	comp=Z,10nm,0.8s									
PSZ	**Piszkesteto**		**80.77**	**324**	⇓*i*P		**P**		**12 24 09.6**	**+0.3**
PSZ	**Piszkesteto**		**80.77**	**324**	⇓*e*P		**P**		**12 24 09.6**	**+0.3**
PSZ	**Piszkesteto**		**80.77**	**324**	⇓P		**P**		**12 24 09.6**	**+0.3**
PSZ	**Piszkesteto**		**80.77**	**324**	*e*P		**P**		**12 24 09.5**	**+0.3**
	comp=Z,29nm,1.0s									
A30A	**Hoffart Farm,**		**80.79**	**35**	P		**P**		**12 24 09

I28A Midland 82.89 40 P P 12 24 20.7 +0.2
baz=314
GERES GERESS Array B 82.92 328 P P 12 24 19.9 -0.7
comp=Z,4.4nm,0.5s,baz=35,slow=4.9,SNR=46
GERES LR LR 13 02 50.9
comp=Z,105nm,19.8s,baz=39,slow=37
H29A Onida 82.94 39 P P 12 24 20.6 -0.1
baz=315
SMCO Snowmass 82.97 46 *e*P P 12 24 22.3 +0.8
comp=Z,6.0nm,0.8s
F31A Hecla 83.03 37 P P 12 24 20.9 -0.3
baz=316
G30A Faulkton 83.12 38 P P 12 24 21.6 0.0
baz=316
B35A Bob, Littlefor 83.28 33 P P 12 24 22.7 +0.3
baz=319
X16A Lo Mia Camp, P 83.30 52 *e*P P 12 24 24.5 +1.5
comp=Z,13nm,1.1s
GRFO Grafenberg 83.33 329 *e*P P 12 24 22.7 +0.1
GRFO pmax pmax
comp=Z,43nm,0.9s
GRFO Grafenberg 83.33 329 *e*P P 12 24 22.7 +0.1
comp=Z,43nm,0.9s
ISCO Idaho Springs 83.34 45 P P 12 24 23.6 +0.4
baz=312
ISCO Idaho Springs 83.34 45 *e*P P 12 24 24.1 +0.9
ISCO pmax pmax
comp=Z,7.0nm,1.0s
ISCO Idaho Springs 83.34 45 *e*P P 12 24 24.1 +0.9
comp=Z,6.8nm,1.0s
MVCO Mesa Verde 83.35 48 P P 12 24 24.2 +1.0
baz=311
MVCO Mesa Verde 83.35 48 *e*P P 12 24 24.5 +1.3
comp=Z,60nm,1.9s
MOA Molln 83.42 327 *i* P P 12 24 23.4 +0.3
SNR=8.9
E33A Westby DABS, E 83.63 35 P P 12 24 24.0 -0.2
baz=318
EKA Eskdalemuir Ar 83.65 340 P P 12 24 23.9 -0.2
comp=Z,4.8nm,0.5s,baz=37,slow=4.8,SNR=6.6
EKA PP PP 12 27 35.8 -0.6
comp=Z,3.5nm,0.8s,baz=40,slow=8.0,SNR=5.6
C35A Jirik Farms, M 83.66 33 P P 12 24 24.1 -0.3
baz=319
ESK Eskdalemuir 83.68 340 *e*P P 12 24 24.3 +0.1
ESK pmax pmax
comp=Z,14nm,0.8s
ESK Eskdalemuir 83.68 340 *e*P P 12 24 24.3 +0.1
comp=Z,14nm,0.8s
EIL Elat 83.94 302 P P 12 24 26.1 0.0
comp=Z,25nm,0.6s,baz=24,slow=4.9,SNR=10.0
SOKA Soboth 83.95 325 *i* P P 12 24 25.8 -0.1
SNR=20
214A Organ Pipe Nat 83.96 55 P P 12 24 27.2 +1.0
baz=309
F33A 5 Mile Ranch, 83.98 36 P P 12 24 26.5 +0.5
baz=317
S22A 4UR Ranch, Cre 84.00 47 P P 12 24 28.2 +1.6
baz=312
S22A 4UR Ranch, Cre 84.00 47 *e*P P 12 24 28.4 +1.7
comp=Z,7.3nm,0.9s
VAY Valandovo 84.00 318 *i* P P 12 24 26.4 +0.2
SKO Skopje 84.16 319 *i* P P 12 24 27.9 +0.9
PLE Pljevlja 84.27 321 ⇑*i* P P 12 24 27.8 +0.1
RPZ Rata Peaks 84.28 158 P P 12 24 27.6 +0.4
comp=Z,6.7nm,0.7s,baz=201,slow=7.8,SNR=2.7
IVA Berane 84.34 320 ⇑*i* P P 12 24 27.8 -0.2
KBA Koelnbreinsper 84.41 327 *i* PcP P 12 24 29.3 +0.9
SNR=8.1
C37A Embarrass 84.43 32 P P 12 24 28.7 +0.5
baz=320
PVY Plav 84.50 320 ⇑*i* P P 12 24 27.2 -1.7
UPM Unac-Piva 84.61 321 ⇑*i* P P 12 24 28.8 -0.7
BEBN Eben Emael 84.62 333 P P 12 24 28.8 -0.3
MYKA Terra Mystica 84.62 326 *i* P P 12 24 28.4 -0.9
SNR=7.7
MEM Membach 84.65 333 P P 12 24 29.0 -0.3
comp=Z,13nm,1.1s
SDCO Great Sand Dun 84.78 46 P P 12 24 31.6 +1.0
baz=312
SDCO Great Sand Dun 84.78 46 *e*P P 12 24 31.4 +0.8
comp=Z,6.9nm,1.0s
C38A Sawbill Land. 84.83 32 P P 12 24 30.6 +0.3
baz=321
PMOR Pomariorio Ree 84.85 113 *e*T T 13 57 12.7
comp=Z,6.1nm,0.2s
NKME Niksic 84.90 321 ⇑*i* P P 12 24 29.8 -1.0
PDG Podgorica 84.98 320 ⇓*i* P P 12 24 30.7 -0.4
TTG Podgorica 84.98 320 *e*P P 12 24 30.6 -0.5
BRY Bratogost 85.02 321 *e*P P 12 24 30.3 -1.2
ABTA Abfaltersbach 85.04 327 *i* P P 12 24 30.4 -1.1
SNR=7.6
BCLA Clavier 85.07 333 P P 12 24 31.0 -0.4
TUC Tucson 85.07 53 P P 12 24 32.9 +1.0
baz=310
TUC Tucson 85.07 53 *e*P P 12 24 32.8 +1.0
TUC pmax pmax
comp=Z,11nm,1.1s
TUC Tucson 85.07 53 *e*P P 12 24 32.8 +0.9
comp=Z,11nm,1.1s
CEME Cevo 85.08 321 ⇑*i* P P 12 24 30.8 -0.9
OHR Ohrid 85.11 319 *i* P P 12 24 31.5 -0.3
DRME Dracevica, Mon 85.20 320 ⇑*i* P P 12 24 31.7 -0.5
RETA Reutte 85.23 328 *i* P P 12 24 32.0 -0.4
SNR=9.0
PPT Papeete 85.23 116 LR LR 12 52 41.2
comp=Z,112nm,21.7s,baz=334,slow=29
KARP Karpathos 85.25 311 *e*P P 12 24 32.5 -0.2
comp=Z,9.0nm,0.6s
PPT2 Papeete2 85.25 116 *e*LR LR 12 51 09.5
comp=Z,534nm,32.8s
BUM Brajici-Budva 85.27 320 ⇑*i* P P 12 24 32.1 -0.5
LANF Langenberg 85.27 331 ⇑*e*P P 12 24 32.2 -0.3
ULC Ulcinj 85.33 320 ⇑*i* P P 12 24 32.1 -0.8
CWF Charnwood Fore 85.36 338 *e*P P 12 24 32.1 -0.7
comp=Z,26nm,0.9s
HCY Herceg Novi 85.36 321 ⇑*i* P P 12 24 32.1 -1.0
SNF Seneffe 85.37 333 P P 12 24 32.6 -0.2
ECSD EROS Data Cent 85.38 37 P P 12 24 33.1 0.0
baz=317
ECSD EROS Data Cent 85.38 37 *e*P P 12 24 33.3 +0.2
comp=Z,17nm,1.3s
BFO Black Forest 85.58 330 *i* P P 12 24 33.7 -0.3
BFO Black Forest 85.58 330 *e*P P 12 24 33.4 -0.6
comp=Z,23nm,0.9s
DOU Dourbes 85.59 333 P P 12 24 33.3 -0.7
comp=Z,9.9nm,1.7s
FETA Feichten 85.60 328 *i* P P 12 24 33.8 -0.6
SNR=5.7
DAVA Damuels 85.76 329 *i* P P 12 24 34.6 -0.5
SNR=7.7
T25A Trinidad 85.83 46 P P 12 24 36.4 +0.6
baz=313
T25A Trinidad 85.83 46 *e*P P 12 24 36.6 +0.8
comp=Z,9.4nm,0.9s
ANMO Albuquerque 86.08 49 P P 12 24 38.5 +1.5
baz=312
ANMO Albuquerque 86.08 49 *de*P P 12 24 38.0 +1.0
ANMO pmax pmax
comp=Z,5.0nm,1.2s
ANMO Albuquerque 86.08 49 *e*P P 12 24 38.3 +1.3
comp=Z,7.8nm,1.0s
FUORN Ofenpass-Fuorn 86.12 328 *e*P P 12 24 37.0 0.0
comp=Z,43nm,1.2s
ECH Echery 86.14 331 ⇑*e*P P 12 24 36.1 -0.7
DAVOX Davos/Dischmat 86.16 328 P P 12 24 36.3 -0.8
comp=Z,4.2nm,0.4s,baz=349,slow=3.3,SNR=6.6
DAVOX PP PP 12 28 00.1 +2.8
comp=Z,1.0nm,0.3s,baz=237,slow=3.0,SNR=4.0
MOF Molkenrain 86.44 330 ⇑*e*P P 12 24 37.6 -0.8
BNM Barren Site 86.50 50 *e*P P 12 24 39.7 +0.5
LAST Lasithi 86.53 312 *e*P P 12 24 38.6 -0.5
comp=Z,51nm,1.2s
SCHQ Schefferville 86.57 15 P P 12 24 39.1 +0.3
comp=Z,6.4nm,0.7s,baz=305,slow=5.2,SNR=5.5
TUE Stuetta 86.63 328 *e*P P 12 24 39.1 -0.4
comp=Z,30nm,1.7s
319A Douglas 86.65 53 *e*P P 12 24 41.6 +1.9
comp=Z,8.2nm,0.5s
I37A Lemond, Waseca 86.71 35 P P 12 24 40.5 +0.8
baz=320
IDI Anoyia 86.80 312 P P 12 24 39.3 -1.1
comp=Z,11nm,0.6s,baz=57,slow=10,SNR=11
IDI Anoyia 86.80 312 ⇑*i* P P 12 24 38.9 -1.4
IDI Anoyia 86.80 312 *e*P P 12 24 39.7 -0.7
comp=Z,109nm,1.7s

LOMF Lomont 86.97 330 ⇑*e*P P 12 24 41.1 +0.1
TAOE Nuku Hiva Isla 87.05 103 *e*LR LR 12 52 05.0
comp=Z,339nm,32.5s
P32A Huiting Farm, 87.35 41 P P 12 24 42.7 -0.1
baz=316
K37A Belmond 87.55 36 P P 12 24 43.9 +0.2
baz=319
AQU L'Aquila 87.97 323 *e*P P 12 24 46.2 +0.3
AQU pmax pmax
comp=Z,38nm,0.8s
AQU L'Aquila 87.97 323 *e*P P 12 24 46.1 +0.3
comp=Z,38nm,0.8s
PLDF La Plantade 89.37 331 *e*P P 12 24 52.2 -0.2
AGO Saint Agoulin 89.49 332 *e*P P 12 24 53.0 +0.1
LBL Lubilhac 90.13 331 *e*P P 12 24 55.0 -0.9
LPIG La Paz 90.66 59 P P 12 25 00.5 +1.9
comp=Z,40nm,0.3s,baz=170,slow=1.8,SNR=4.5
LTX Lajitas 91.61 52 *e*P P 12 25 03.7 +0.5
LTX *e*'PP **pP** 12 25 17.3 +0.2
LTX Lajitas 91.61 52 *e*P P 12 25 03.7 +0.5
LTX *e*pP **pP** 12 25 17.3 +0.2
TXAR Lajitas Array 91.61 52 P P 12 25 03.7 +0.5
comp=Z,3.2nm,0.5s,baz=297,slow=2.7,SNR=34
TXAR pP **pP** 12 25 17.3 +0.2
comp=Z,2.0nm,0.7s,baz=316,slow=3.5,SNR=3.9
TXAR LR LR 13 04 35.7
comp=Z,30nm,18.8s,baz=0.0,slow=34
KEST Kesra 95.08 322 P P 12 25 20.1 +1.0
comp=Z,2.2nm,0.5s,baz=328,slow=9.5,SNR=2.2
KEST LR LR 13 12 46.7
comp=Z,104nm,18.1s,baz=332,slow=38
ESDC Sonseca Array 97.64 333 P P 12 25 29.7 -0.8
comp=Z,1.6nm,0.8s,baz=20,slow=4.7,SNR=6.6
ESDC pP **pP** 12 25 43.2 -1.3
comp=Z,0.8nm,0.4s,baz=237,slow=15,SNR=5.0
ESDC LR LR 13 13 22.1
comp=Z,65nm,19.2s,baz=320,slow=38
VNDA Vanda 114.11 175 PKP PKPdf 12 30 33.8 +0.2
comp=Z,1.1nm,0.7s,baz=193,slow=2.8,SNR=3.1
TOA1 Torodi Ar. Sit 117.18 313 *e*PKPdf **PKPdf** 12 30 40.2 -1.2
TOA1 *e*PP PP 12 31 43.2 -8.0
TOA1 *e*PKKPbc **PKKPab** 12 41 11.7 +0.4
TORD Torodi Ar. Bea 117.18 313 PKP **PKPdf** 12 30 40.2 -1.2
comp=Z,2.9nm,0.6s,baz=10,slow=1.9,SNR=15
TORD PP PP 12 31 43.2 -8.0
comp=Z,2.2nm,0.8s,baz=38,slow=6.7,SNR=7.1
TORD PKKPab **PKKPab** 12 41 11.7 +0.4
comp=Z,0.8nm,0.7s,baz=228,slow=3.0,SNR=5.3
MAW Mawson 118.18 205 PKP **PKPdf** 12 30 42.1 +0.5
comp=Z,3.2nm,0.6s,baz=58,slow=2.2,SNR=15
BOSA Boshof 125.27 258 PKP **PKPdf** 12 30 56.8 +0.1
comp=Z,8.8nm,0.8s,baz=125,slow=0.9,SNR=6.3
QSPA South Pole Qui 125.81 180 *e*PKPdf **PKPdf** 12 30 56.3 -0.1
DBIC Dimbokro 126.19 315 PKP **PKPdf** 12 30 58.1 -0.6
comp=Z,7.5nm,0.6s,baz=14,slow=2.4,SNR=19
TIC Toumodi 126.30 315 *e*PKIKP **PKPdf** 12 30 58.1 -0.9
KIC Kosan Boka 126.37 315 *e*PKIKP **PKPdf** 12 30 58.2 -0.9
comp=Z,59nm,1.3s
LIC Lamto 126.65 315 *e*PKIKP **PKPdf** 12 30 58.7 -0.9
ROSC El Rosal 128.15 46 PKP **PKPdf** 12 31 04.7 +1.8
comp=Z,4.3nm,0.5s,baz=272,slow=23,SNR=2.5
PTGA Pitinga 140.25 32 PKP **PKPdf** 12 31 26.1 +1.0
comp=Z,1.6nm,0.5s,baz=41,slow=4.5,SNR=4.0
SAML Samuel 145.73 44 *e*PKPdf **PKPdf** 12 31 34.8 +0.1
LPAZ La Paz 148.16 59 PKP **PKPdf** 12 31 40.9 +1.4
comp=Z,5.8nm,0.6s,baz=320,slow=1.9,SNR=14
LPAZ PKPbc **PKPbc** 12 31 43.4 +0.7
comp=Z,5.5nm,0.5s,baz=332,slow=2.2,SNR=24
PB11 IPOC Station P 149.33 66 *e*PKPdf **PKPdf** 12 31 41.4 +0.7
PB11 *e*PKPbc **PKiKP** 12 31 45.7 -0.5
PB11 *e*PKPab **PKPab** 12 31 49.2 -0.6
USHA Ushuaia 152.91 143 PKPbc **PKPbc** 12 31 53.2 +1.1
comp=Z,51nm,0.9s,baz=228,slow=12,SNR=2.9
LCO Las Campanas 153.25 84 *e*PKPbc **PKPbc** 12 31 54.5 +0.4
CPUP Villa Florida 162.31 62 PKP **PKPdf** 12 31 58.0 +0.5
comp=Z,0.6nm,0.4s,baz=170,slow=4.9,SNR=2.8
CPUP PKPab **PKPab** 12 32 45.1 +0.2
comp=Z,1.0nm,0.7s,baz=333,slow=5.2,SNR=3.3

SCB ***26*** *12:14:14.2±0.4, 24°14S×66°93W, h200km, Ml3.9/2, Error ellipse: s-maj=9.6km s-min=5.5km az=37.0*
ISCJB ***26*** *12:14:17.4±0.2, 23°98S±0°03×66°42W±0°05, h195km, mb4.4/53, Error ellipse: s-maj=6.7km s-min=3.4km az=169.9*
NEIC ***26*** *12:14:19.0±0.5, 24°05S×66°39W, h194km±4km, mb4.7/37, MD4.7(SJA), Error ellipse: s-maj=7.0km s-min=5.0km az=64.0*
IDC ***26*** *12:14:19.4±1.9, 23°96S×66°34W, h197km±16km, mb3.9/17, mb1 4.0/21, mb1mx4.0/31, mbtmp4.3/21, Error ellipse: s-maj=16.0km s-min=11.1km az=51.0*
SJA ***26*** *12:14:20.4±0.6, 24°09S×66°42W, h209km±10km, ML4.5, MW3.7*

ISC 26 12:14:18.7±0.4, 24°08S±0°04×66°60W±0°06, h195km, n351, σ1°07/357, mb4.5/52, 8C-2D, Salta Province

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
AZAP	**Zapla**	**1.41**	**96**	*i* P	Dp	Pn	**12 14 54.0**	**+2.6**
FSA	**Cafayete**	**2.10**	**165**	*i* P	Pn	Pn	**12 15 00.7**	**+2.7**
FSA				IAML			12 15 00.7	
	comp=Z,2μm,0.3s							
FSA				*i* S		Sn	**12 15 31.0**	**+2.2**
YJA	**Yavi**	**2.14**	**28**	*e*P		Pn	**12 15 02.0**	**+3.1**
LVC	**Limon Verde**	**2.58**	**304**	*e*Pn		Pn	**12 15 06.3**	**+2.6**
LVC				*e*Sn		Sn	**12 15 41.7**	**+3.1**
AHML	**Horco Molle**	**2.92**	**157**	*i* P		Pn	**12 15 09.3**	**+2.1**
MOCB	**Mochara**	**2.95**	**18**	*e*Pn		Pn	**12 15 10.7**	**+2.7**
MOCB				*e*Sn		Sn	**12 15 52.3**	**+5.8**
PB10	**IPOC Station P**	**3.67**	**278**	*e*Pn		Pn	**12 15 18.0**	**+1.8**
PB04	**IPOC Station P**	**3.70**	**297**	*e*Pn		Pn	**12 15 18.5**	**+1.7**
PB01	**IPOC Station P**	**4.04**	**318**	*e*Pn		Pn	**12 15 22.2**	**+1.3**
CYA	**Choya**	**4.40**	**171**	*i* P		Pn	**12 15 28.2**	**+2.8**
CYA				IAML			12 15 28.5	
	comp=Z,288nm,0.8s							
CYA				*i* S		Sn	**12 16 17.6**	**-0.3**
VCA	**Vinchina**	**4.86**	**197**	*i* P		Pn	**12 15 34.1**	**+2.9**
VCA				IAML			12 15 35.0	
	comp=Z,290nm,0.2s							
VCA				*i* S		Sn	**12 16 29.9**	**+1.4**
LCO	**Las Campanas**	**6.13**	**216**	*e*Pn		Pn	**12 15 47.8**	**-0.1**
LCO				*e*Sn		Sn	**12 16 57.7**	**-0.6**
BBOJ	**La Paz, Jacaqu**	**7.23**	**348**	⇑*i* Pn		Pn	**12 16 04.7**	**+2.3**
BBOJ				⇑*i* Sn		Sn	**12 17 24.6**	**0.0**
BBOE	**La Paz, Chanca**	**7.35**	**350**	⇑*i* Pn		Pn	**12 16 06.3**	**+2.3**
BBOD	**La Paz, Gloria**	**7.64**	**345**	⇑*i* Pn		Pn	**12 16 10.1**	**+2.2**
BBOD				⇑*i* Sn		Sn	**12 17 34.4**	**0.0**
	comp=Z,18nm,0.5s							
LPAZ	**La Paz**	**7.89**	**349**	P		Pn	**12 16 12.1**	**+0.9**
	comp=Z,3.5nm,0.3s,baz=158,slow=6.2,SNR=71							
LPAZ				S		Sn	**12 17 39.0**	**-1.4**
	comp=Z,0.4nm,0.3s,baz=19,slow=13,SNR=2.8							
BBOB	**La Paz, Bander**	**8.03**	**349**	⇑*i* Pn		Pn	**12 16 13.8**	**+0.9**
BBOB				⇑*i* Sn		Sn	**12 17 43.1**	**-0.5**
	comp=Z,12nm,0.3s							
CPUP	**Villa Florida**	**8.69**	**107**	P		Pn	**12 16 20.8**	**-0.1**
	comp=Z,0.9nm,0.3s,baz=287,slow=11,SNR=52							
ARE	**Arequipa**	**8.86**	**328**	*e*P		Pn	**12 16 21.0**	**-2.6**
ARE				*e*S		Sn	12 17 54.0	-9.1
SIV	**San Ignacio**	**9.57**	**34**	P		Pn	**12 16 31.8**	**-0.9**
	comp=Z,0.7nm,0.3s,baz=225,slow=13,SNR=14							
SIV	**San Ignacio**	**9.57**	**34**	⇑*i* P		Pn	**12 16 31.5**	**-1.1**
ROC1	**El Roble**	**9.68**	**203**	*e*Pn		Pn	**12 16 31.2**	**-2.8**
TRQA	**Tornquist**	**14.48**	**165**	*e*Pn		Pn	**12 17 34.0**	**-0.7**
	comp=Z,9.3nm,0.4s							
TRQA				*e*Sn		Sn	**12 20 16.6**	**+0.1**
SAML	**Samuel**	**15.40**	**13**	*e*Pn		Pn	**12 17 45.3**	**-0.8**
	comp=Z,7.7nm,0.8s							
PLCA	**Paso Flores**	**16.93**	**190**	P		Pn	**12 18 04.3**	**-0.1**
	comp=Z,0.2nm,0.3s,baz=40,slow=12,SNR=10							
SPB	**Sao Paulo**	**17.54**	**92**	*e*P		P	**12 18 07.5**	**-2.4**
	comp=Z,8.2nm,0.2s							
ATAH	**Atahualpa**	**20.30**	**324**	P		Pn	12 18 43.1	-1.8
	comp=Z,7.1nm,0.6s,baz=178,slow=0.6,SNR=3.7							
PTGA	**Pitinga**	**24.09**	**16**	P		P	**12 19 14.7**	**-1.8**
	comp=Z,2.7nm,0.4s,baz=214,slow=15,SNR=4.2							
CHIC	**Chingaza**	**29.37**	**345**	*e*P		P	**12 20 02.0**	**-2.2**
RUSC	**La Rusia**	**30.46**	**347**	*e*P		P	**12 20 12.2**	**-1.7**
NORC	**Norcasia**	**30.55**	**344**	*e*P		P	**12 20 11.0**	**-3.1**
RCBR	**Riachuelo**	**34.63**	**63**	P		P	**12 20 48.6**	**-1.1**
	comp=Z,7.1nm,0.6s,baz=218,slow=10,SNR=6.3							
HOPE	**Hope Point**	**37.60**	**151**	*e*P		P	**12 21 13.6**	**-0.7**
	comp=Z,56nm,0.6s							

JTS JuntasAbangare 38.58 330 *e*P P 12 21 23.5 +0.5
comp=Z,16nm,1.1s
CELP Cerrillos 41.90 0 *e*P P 12 21 48.2 -1.9
VNA3 Neumayer Olymp 56.96 161 P P 12 23 44.7 +1.4
VNA2 Neumayer--Watz 57.52 160 P P 12 23 49.5 +2.2
baz=298,slow=8.6
ZAIG Zacatecas 58.22 320 *e*P P 12 23 55.0 +1.9
comp=Z,9.3nm,0.7s
SNAA Sanae 59.15 161 *e*P P 12 24 00.9 +2.3
comp=Z,844nm,1.7s
245A Little AP, Sta 60.08 337 P P 12 24 05.2 -0.1
baz=155
933A Laredo 60.29 327 P P 12 24 07.4 +0.5
baz=145
833A Chaparral WMA, 60.93 327 P P 12 24 11.9 +0.7
baz=145,SNR=6.1
734A La Parita Cree 60.95 328 P P 12 24 12.0 +0.7
baz=146
Y47A UCPARC, Winfie 61.10 340 P P 12 24 11.9 -0.3
baz=158
832A Faith Ranch, C 61.19 326 P P 12 24 13.5 +0.6
baz=145
Y46A Houston 61.41 339 P P 12 24 13.4 -0.8
baz=157
338A Crockett 61.60 332 P P 12 24 16.6 +1.1
baz=150
Y45A Yeager Farm, C 61.62 338 P P 12 24 16.0 +0.3
baz=156
NATX Nacogdoches 61.67 333 P P 12 24 17.0 +1.0
baz=151
141A Papa Simpson, 61.71 335 P P 12 24 17.2 +1.0
baz=152
633A Saathoff Ranch 61.76 328 P P 12 24 17.2 +0.4
baz=146
OXF Oxford 62.17 339 *e*P P 12 24 18.6 -0.6
comp=Z,17nm,0.6s
533A Kerrville 62.20 328 P P 12 24 19.9 +0.3
baz=146
434A Burnet 62.46 329 P P 12 24 21.5 +0.2
baz=147
335A Moody 62.47 330 P P 12 24 22.3 +1.0
baz=148
Z40A Long Farm, Mag 62.48 335 P P 12 24 22.5 +1.1
baz=152
138A Matatall Enter 62.63 333 P P 12 24 23.5 +1.1
baz=150
236A Katherine and 62.68 331 P P 12 24 24.1 +1.4
baz=149
WLAR White Oak Lake 62.75 335 *e*P P 12 24 24.3 +1.2
comp=Z,37nm,0.8s
433A Art 62.79 329 P P 12 24 23.4 -0.2
baz=146,SNR=8.3
137A Heron Place, G 62.86 332 P P 12 24 24.6 +0.7
baz=150
334A Lometa 62.88 330 P P 12 24 24.3 +0.2
baz=147
JCT Junction City 62.91 328 P P 12 24 25.0 +0.7
baz=146
JCT Junction City 62.91 328 *e*P P 12 24 24.9 +0.5
comp=Z,16nm,0.8s
WHTX Lake Whitney, 63.08 331 P P 12 24 25.9 +0.5
baz=148
Y40A Okolona 63.10 335 P P 12 24 25.9 +0.5
baz=152
Z38A Mt. Pleasant 63.10 333 P P 12 24 25.9 +0.4
baz=151
WVT Waverly 63.16 341 *e*P P 12 24 24.7 -1.1
comp=Z,12nm,0.8s
HPIG 63.21 321 *e*P P 12 24 27.7 +1.1
comp=Z,7.2nm,0.5s
333A Richland Sprin 63.22 329 P P 12 24 26.4 +0.1
baz=147
Y39A Locksburg 63.35 335 P P 12 24 27.5 +0.4
baz=152
X40A Basin Creek Fa 63.35 336 P P 12 24 27.0 -0.1
baz=153
234A Clairette 63.40 330 P P 12 24 27.7 +0.2
baz=148
MIAR Mount Ida 63.69 335 P P 12 24 28.9 -0.4
baz=152,SNR=5.2
MIAR Mount Ida 63.69 335 *e*P P 12 24 29.2 -0.1
comp=Z,19nm,1.3s
Z36A Blue Ridge 63.73 332 P P 12 24 30.0 +0.4
baz=149
W41A Tony Mavity, V 63.75 337 P P 12 24 29.4 -0.2
baz=154
W41B Gary Mavity, V 63.75 337 P P 12 24 29.4 -0.2
baz=154
233A Rising Star 63.76 330 P P 12 24 29.8 -0.1
baz=147
134A White-Moore Ra 63.85 331 P P 12 24 30.5 +0.1
baz=148
X39A Fountain Ranch 63.86 335 P P 12 24 30.7 +0.2
baz=152,SNR=10.0
TXAR Lajitas Array 63.96 324 P P 12 24 31.8 +0.4
comp=Z,2.1nm,0.6s,baz=150,slow=8.4,SNR=30
W40A Ferguson Farm, 64.07 336 P P 12 24 32.5 +0.8
baz=153
Z35A Perchaven, San 64.13 332 P P 12 24 32.8 +0.6
baz=149
133A Hamilton Ranch 64.26 330 P P 12 24 33.3 +0.2
baz=147
X38A Whitesboro 64.28 334 P P 12 24 33.7 +0.5
baz=151,SNR=7.5
W39A Magazine 64.34 335 P P 12 24 33.8 +0.3
baz=152,SNR=7.1
X37A Clayton 64.43 334 P P 12 24 34.4 +0.3
baz=151,SNR=5.5
Z34A Collier Ranch, 64.45 331 P P 12 24 34.6 +0.2
baz=148
W38A Poteau 64.51 335 P P 12 24 35.0 +0.4
baz=152,SNR=9.3
Y35A Marietta 64.53 332 P P 12 24 35.3 +0.5
baz=149
ABTX Abilene, Hawle 64.61 329 P P 12 24 35.7 +0.3
baz=146
Z33A Whitaker Ranch 64.76 330 P P 12 24 36.7 +0.4
baz=147
X36A Centrahoma 64.81 333 P P 12 24 36.5 -0.1
baz=150
V39A Pettigrew 64.86 336 P P 12 24 36.6 -0.3
baz=153,SNR=6.3
Y34A Reagan Ranch, 64.88 332 P P 12 24 36.8 -0.2
baz=148,SNR=5.1
X35A Drake 64.92 333 P P 12 24 36.7 -0.6
baz=149,SNR=5.7
W37B Quinton 64.93 334 P P 12 24 37.6 +0.3
baz=151,SNR=5.3
U40A Yellville 65.03 337 P P 12 24 37.5 -0.5
baz=153
V38A Canehill 65.17 335 P P 12 24 38.3 -0.6
baz=152,SNR=10
W36A Wetumka 65.25 334 P P 12 24 39.1 -0.4
baz=150
U39A Green Forest 65.28 336 P P 12 24 39.7 +0.1
baz=153
Y33A Hilltop Ranch, 65.31 331 P P 12 24 40.3 +0.5
baz=148
X34A Smith Ranch, M 65.46 332 P P 12 24 41.1 +0.3
baz=148
V37A Hulbert 65.47 335 P P 12 24 41.1 +0.3
baz=151
W35A Tecumseh 65.53 333 P P 12 24 40.9 -0.4
baz=150
T40A Mansfield 65.62 337 P P 12 24 41.4 -0.4
baz=154
U38A Gravette 65.67 336 P P 12 24 41.6 -0.5
baz=152
V36A Jenks 65.70 334 P P 12 24 41.9 -0.3
baz=150,SNR=6.6
X33A Lawton 65.70 331 P P 12 24 42.1 -0.2
baz=148
TUL1 Leonard 65.75 334 P P 12 24 42.6 0.0
baz=151
T39A Clever 65.81 337 P P 12 24 43.0 0.0
baz=153
U37A Salina 65.91 335 P P 12 24 44.2 +0.5
baz=151
X32A Elmer 65.95 331 P P 12 24 44.2 +0.2
baz=147
W34A Bridge Creek, 65.98 332 P P 12 24 44.2 +0.1
baz=149
S40A Lebanon 66.02 338 P P 12 24 43.9 -0.4
baz=154,SNR=8.1
V35A Meyer Ranch, C 66.04 333 P P 12 24 44.4 -0.1
baz=150
QSPA South Pole Qui 66.12 180 *e*P P 12 24 46.1 +1.2
comp=Z,13nm,0.5s

U36A	Oologah baz=151	66.14 335	P	P	12 24 45.6	+0.5
T38A	Diamond baz=152,SNR=12	66.16 336	P	P	12 24 45.2	0.0
W33A	Caddo, Fort Co baz=148,SNR=7.1	66.20 332	P	P	12 24 46.1	+0.5
V34A	Guthrie baz=149	66.38 333	P	P	12 24 46.9	+0.3
S39A	Bolivar baz=153,SNR=19	66.39 337	P	P	12 24 46.3	-0.4
T37A	Cheneyville 18 baz=152,SNR=21	66.47 336	P	P	12 24 47.1	-0.1
BINY	Binghamton comp=Z,14nm,1.0s	66.52 352	*e*P	P	12 24 47.8	+0.4
W32A	Sentinel baz=147,SNR=6.3	66.52 331	P	P	12 24 47.7	+0.1
U35A	Pawnee baz=150	66.52 334	P	P	12 24 48.2	+0.6
S38A	Stockton baz=153,SNR=11	66.54 337	P	P	12 24 47.1	-0.5
R40A	Maddies Statio baz=154,SNR=6.0	66.56 338	P	P	12 24 48.1	+0.4
V33A	Lossen Ranch, baz=148	66.69 332	P	P	12 24 48.8	+0.1
MNTX	Cornudas Mount baz=141	66.73 324	P	P	12 24 49.1	+0.1
MNTX	Cornudas Mount comp=Z,7.0nm,1.1s	66.73 324	*e*P	P	12 24 48.6	-0.3
T36A	Boggs Farm, Ca baz=151,SNR=6.0	66.78 335	P	P	12 24 48.9	-0.2
R39A	Chumby, Stover baz=154,SNR=6.3	66.84 338	P	P	12 24 48.9	-0.6
T35A	Sooner Cattle baz=150	66.91 334	P	P	12 24 50.2	+0.3
U34A	Anderson Ranch baz=149	66.91 333	P	P	12 24 50.4	+0.4
U34A	Anderson Ranch comp=Z,21nm,0.6s	66.91 333	*e*P	P	12 24 50.0	0.0
SFIN	Lafayette baz=160	66.91 343	P	P	12 24 49.9	0.0
V32A	Arapaho baz=148	66.93 332	P	P	12 24 50.5	+0.4
S37A	Fort Scott baz=152,SNR=11	67.00 336	P	P	12 24 50.3	-0.2
R38A	Fenwick Farm, baz=153,SNR=19	67.04 337	P	P	12 24 50.4	-0.3
Q40A	Laux Farm, Aux baz=155	67.13 339	P	P	12 24 51.2	-0.1
U33A	Lingo Farm, Me baz=149	67.14 333	P	P	12 24 51.4	-0.1
MSTX	Muleshoe baz=144	67.20 328	P	P	12 24 52.3	+0.2
MSTX	Muleshoe comp=Z,19nm,0.9s	67.20 328	*e*P	P	12 24 52.2	+0.2
S36A	Lake Cedric, C baz=151,SNR=9.5	67.25 335	P	P	12 24 51.9	-0.2
T34A	McClaskey Farm baz=150	67.27 334	P	P	12 24 52.4	+0.1
AMTX	Amarillo baz=145	67.43 329	P	P	12 24 52.5	-0.8
AMTX	Amarillo comp=Z,8.6nm,0.8s	67.43 329	*e*P	P	12 24 52.0	-1.4
Q39A	Willow Grove F baz=154	67.48 338	P	P	12 24 53.6	+0.2
DBIC	Dimbokro comp=Z,1.5nm,0.4s,baz=199,slow=7.2,SNR=8.8	67.48 71	P	P	12 24 52.4	-1.7
R37A	Teagarden Farm baz=152,SNR=6.5	67.48 336	P	P	12 24 53.2	-0.3
S35A	Otter Creek Ra baz=150,SNR=7.7	67.50 335	P	P	12 24 53.7	0.0
P40A	Paris baz=155	67.60 339	P	P	12 24 53.8	-0.5
Q38A	Cooks Store, C baz=153,SNR=9.8	67.62 337	P	P	12 24 54.2	-0.2
R36A	Gordon, Harris baz=151,SNR=7.0	67.74 336	P	P	12 24 55.1	-0.1
T33A	Patterson Ranc baz=149	67.75 333	P	P	12 24 55.7	+0.4
S34A	Willow Spring baz=150	67.82 334	P	P	12 24 56.0	+0.3
Q37A	Longview Farm, baz=152	67.84 337	P	P	12 24 55.7	-0.1
R35A	Emporia Munici baz=151	68.01 335	P	P	12 24 57.0	+0.2
O40A	La Belle baz=155	68.08 339	P	P	12 24 56.6	-0.6
S33A	Kaszmaul Farm, baz=149	68.09 334	P	P	12 24 57.5	+0.1
T32A	Huddler Ranch, baz=148	68.12 333	P	P	12 24 57.9	+0.4
P38A	Dawn baz=153,SNR=13	68.19 338	P	P	12 24 57.2	-0.7
Q36A	Arnold C. Orve baz=152	68.29 336	P	P	12 24 58.5	-0.1
R34A	Isabella, Hill baz=150	68.39 334	P	P	12 24 59.0	-0.2
O39A	Kirksville baz=154	68.42 339	P	P	12 24 58.7	-0.6
P37A	Lathrop baz=153	68.44 337	P	P	12 24 59.3	-0.2
O38A	Galt baz=154	68.61 338	P	P	12 25 00.5	0.0
121A	Cookes Peak, D baz=140	68.66 323	P	P	12 25 03.1	+1.9
R33A	Olander Ranch, baz=149	68.69 334	P	P	12 25 01.4	+0.3
P36A	Good Intent, A baz=152,SNR=5.1	68.77 337	P	P	12 25 01.0	-0.6
Q34A	Chapman baz=150	68.81 335	P	P	12 25 01.5	-0.3
KSU1	Kansas State U baz=150	68.84 335	P	P	12 25 01.6	-0.3
O37A	Wolven Farm, M baz=153	68.88 338	P	P	12 25 02.1	-0.1
N39A	Derby Farms, D baz=155	68.97 339	P	P	12 25 02.4	-0.3
P35A	Duane Minner, baz=151	68.99 336	P	P	12 25 02.2	-0.7
R32A	Long Quarter, baz=149	69.09 333	P	P	12 25 04.0	+0.5
N38A	Joes South For baz=154	69.13 339	P	P	12 25 04.1	+0.4
O36A	Bolckow baz=152	69.14 337	P	P	12 25 03.3	-0.5
Q33A	Connelly Farm, baz=149	69.23 334	P	P	12 25 05.0	+0.7
BNM	Barren Site	69.29 325	*e*P	P	12 25 06.8	+1.7
P34A	Walnut Farm, R baz=150,SNR=6.2	69.31 335	P	P	12 25 04.7	-0.2
LPM	Los Pinos Moun	69.42 325	*e*P	P	12 25 07.4	+1.5
N37A	Lee Faris, Mou baz=153	69.43 338	P	P	12 25 05.8	+0.3
Q32A	Meitler Ranch, baz=149	69.51 334	P	P	12 25 06.6	+0.5
P33A	Williams Farm, baz=150	69.55 335	P	P	12 25 06.7	+0.4
M38A	Pleasantville baz=154	69.68 339	P	P	12 25 06.9	-0.2
N36A	Muff Farm, Cla baz=152	69.74 337	P	P	12 25 07.4	-0.1
O34A	Beatrice baz=151	69.82 336	P	P	12 25 07.6	-0.3
ANMO	Albuquerque baz=141	69.82 326	P	P	12 25 09.8	+1.5
CBKS	Cedar Bluff baz=148	69.84 333	P	P	12 25 09.0	+0.9
CBKS	Cedar Bluff comp=Z,27nm,0.8s	69.84 333	*e*P	P	12 25 08.7	+0.5
M37A	Trindle Farm, baz=153	69.95 338	P	P	12 25 08.9	+0.2
O33A	Hebron baz=150	70.06 335	P	P	12 25 09.6	+0.2
M36A	Felix, Anita baz=153	70.25 338	P	P	12 25 10.6	0.0
N34A	Lincoln baz=151	70.32 336	P	P	12 25 10.6	-0.3
O32A	Brockman Farm, baz=149	70.49 335	P	P	12 25 12.3	+0.3
T25A	Trinidad baz=144	70.54 329	P	P	12 25 14.1	+1.4
N33A	J Bar K, Exete baz=150	70.58 336	P	P	12 25 12.9	+0.3
O31A	Woolen Ranch, baz=148	70.81 334	P	P	12 25 14.5	+0.5
K37A	Belmond baz=154	71.04 339	P	P	12 25 14.9	-0.3
L35A	Bielow Farm, R baz=152	71.09 338	P	P	12 25 15.5	-0.1
K36A	Gilmore City baz=153	71.19 339	P	P	12 25 16.1	-0.1
M33A	Taylor Creek F baz=150	71.21 336	P	P	12 25 16.4	0.0
N31A	Bailey Ranch, baz=149	71.23 335	P	P	12 25 17.9	+1.4
KSCO	Kaye Shedlock' baz=145	71.25 331	P	P	12 25 18.0	+1.3
L34A	Svendsen Farm, baz=151	71.26 337	P	P	12 25 16.8	+0.2
BGNE	Belgrade baz=150	71.43 335	P	P	12 25 18.2	+0.5
BGNE	Belgrade comp=Z,98nm,0.8s	71.43 335	*e*P	P	12 25 18.0	+0.3
J37A	Redenius Farm, baz=154	71.50 340	P	P	12 25 18.3	+0.3
SDCO	Great Sand Dun baz=143	71.55 328	P	P	12 25 19.9	+1.1
W18A	Petrified Fore baz=139	71.68 324	P	P	12 25 20.5	+1.0
M31A	Lambtecht Ranc baz=149	71.69 335	P	P	12 25 20.4	+1.1
I37A	Lemond, Waseca baz=154	72.08 340	P	P	12 25 21.6	+0.2
L31A	Butterfield Fa baz=149	72.35 335	P	P	12 25 23.9	+0.8
Q24A	Divide baz=143	72.36 329	P	P	12 25 24.8	+1.1
Q24A	Divide comp=Z,8.4nm,0.8s	72.36 329	*e*P	P	12 25 25.1	+1.5
OGNE	Ogallala baz=146	72.59 333	P	P	12 25 25.5	+0.8
J33A	Davis baz=151	72.65 337	P	P	12 25 25.2	+0.3
K31A	O'Neill baz=149	72.70 336	P	P	12 25 25.7	+0.5
ECSD	EROS Data Cent baz=151	72.89 338	P	P	12 25 26.2	-0.1
J32A	Parkston baz=150	73.01 337	P	P	12 25 26.9	-0.1
ISCO	Idaho Springs baz=143	73.24 330	P	P	12 25 30.2	+1.4
ISCO	Idaho Springs comp=Z,3.1nm,0.9s	73.24 330	*e*P	P	12 25 29.9	+1.1
J31A	Gerdes baz=149	73.27 336	P	P	12 25 29.1	+0.5
SYO	Syowa Base	73.34 159‖	*e*P	P	12 25 28.0	-0.6
SYO	Syowa Base	73.34 159‖	*e*PcP	PcP	12 25 43.0	-0.9
Y12C	Blythe baz=135	73.39 320	P	P	12 25 31.3	+1.9
J30A	Dallas baz=149	73.58 336	P	P	12 25 30.9	+0.5
H33A	Prehn Over Nor baz=151	73.77 338	P	P	12 25 31.5	+0.1
F36A	Milaca baz=154	73.79 341	P	P	12 25 30.9	-0.6
H32A	Carlson Farm, baz=151	73.85 338	P	P	12 25 31.5	-0.3
J29A	Okreek baz=148	73.97 335	P	P	12 25 32.4	-0.2
I30A	Oacoma baz=149	74.06 336	P	P	12 25 33.1	0.0
F35A	Swanville baz=153	74.11 340	P	P	12 25 33.1	-0.2
G33A	Ortonville baz=152	74.12 339	P	P	12 25 33.2	-0.2
N23A	Red Feather La baz=143	74.26 330	P	P	12 25 36.2	+1.6
E36A	McGregor baz=155	74.30 341	P	P	12 25 34.2	-0.2
J28A	Allard Ranch, baz=147	74.34 335	P	P	12 25 34.9	+0.1
SUSD	Miller baz=149	74.34 337	P	P	12 25 34.9	+0.2
PFO	Pinyon Flats O comp=Z,1.4nm,0.5s,baz=108,slow=9.6,SNR=2.0	74.45 319	P	P	12 25 37.2	+1.5
I29A	Vivian Onida baz=148	74.48 335	P	P	12 25 35.2	-0.3
J27A	Elkhorn Farm, baz=147	74.50 334	P	P	12 25 37.3	+1.6
F33A	5 Mile Ranch, baz=152	74.64 339	P	P	12 25 36.5	+0.2
VNDA	Vanda comp=Z,0.8nm,0.7s,baz=177,slow=3.2,SNR=3.3	74.68 190	P	P	12 25 38.2	+2.0
O20A	White River Ci baz=141	74.75 328	P	P	12 25 39.2	+1.8
O20A	White River Ci comp=Z,17nm,0.9s	74.75 328	*e*P	P	12 25 39.0	+1.7
G31A	Conde baz=150	74.75 337	P	P	12 25 37.1	+0.1
GMRC	Granite Mounta baz=134	74.78 320	P	P	12 25 39.4	+1.8
I28A	Midland baz=147	74.80 335	P	P	12 25 38.7	+1.4
H29A	Onida baz=148	74.96 336	P	P	12 25 38.4	+0.2
F31A	Hecla baz=150	75.32 338	P	P	12 25 40.6	+0.3
J25A	Sunshine Ranch baz=145	75.35 333	P	P	12 25 41.9	+1.3
C35A	Hrik Foms, M baz=154	75.58 341	P	P	12 25 41.5	-0.2
G28A	Parade baz=148	75.61 336	P	P	12 25 42.9	+0.9
H27A	Howes baz=147	75.68 335	P	P	12 25 42.9	+0.5
I25A	Rochford baz=145	75.84 333	P	P	12 25 44.8	+1.3
F29A	Eureka baz=149	75.85 337	P	P	12 25 43.6	+0.3
RSSD	Black Hills baz=145	76.05 333	P	P	12 25 46.0	+1.3
RSSD	Black Hills comp=Z,3.3nm,0.6s	76.05 333	*e*P	P	12 25 45.4	+0.7
B35A	Bob, Littlefor baz=154	76.10 342	P	P	12 25 44.6	-0.1
D31A	Mcclaflin, Tow baz=151	76.17 339	P	P	12 25 45.2	+0.2
F28A	McLaughlin baz=148	76.22 336	P	P	12 25 46.0	+0.6
G27A	Dupree baz=147	76.25 335	P	P	12 25 45.7	+0.1
TORD	Torodi Ar. Bea comp=Z,2.7nm,0.5s,baz=268,slow=6.5,SNR=33	76.25 69	P	P	12 25 44.1	-2.1
H25A	Fruitdale baz=145	76.28 334	P	P	12 25 46.8	+1.0
G26A	Maurine baz=146	76.44 335	P	P	12 25 47.0	+0.4
B34A	Aery, Baudette baz=154	76.48 341	P	P	12 25 46.5	-0.3
D30A	Buchanan baz=150	76.58 338	P	P	12 25 47.6	+0.3
TPNV	Topopah Spring baz=134	76.63 321	P	P	12 25 49.9	+1.8
FURC	Furnace Creek, baz=134	76.65 320	P	P	12 25 49.6	+1.7
G25A	Newell baz=146	76.68 334	P	P	12 25 49.1	+1.1
AGMN	Agassiz Nation baz=152	76.68 340	P	P	12 25 47.8	-0.1
AGMN	Agassiz Nation comp=Z,5.6nm,0.8s	76.68 340	*e*P	P	12 25 47.5	-0.4
F27A	Lemmon baz=147	76.70 335	P	P	12 25 49.9	+1.7
MPMC	Manual Prospec baz=133	76.74 320	P	P	12 25 50.2	+1.5
E28A	Huff baz=148	76.80 337	P	P	12 25 49.6	+1.0
D29A	Pettibone, Tap baz=149	76.82 338	P	P	12 25 49.0	+0.3
F26A	Lodgepole baz=146	76.93 335	P	P	12 25 50.4	+1.0
DAC	Darwin (Calif) comp=Z,4.3nm,0.9s	76.95 320	*e*P	P	12 25 51.3	+1.4
B32A	Ashes, Strandq baz=152	76.97 340	P	P	12 25 49.5	-0.1
C30A	Mose, Pekin baz=150	77.00 339	P	P	12 25 50.3	+0.7
SBC	Santa Barbara baz=131	77.00 317	P	P	12 25 52.6	+2.6
ISA	Isabella, Lake baz=132	77.06 319	P	P	12 25 51.9	+1.5
DUG	Dugway, Tooele baz=137	77.08 325	P	P	12 25 52.1	+1.6
A33A	Warroad baz=153	77.11 341	P	P	12 25 50.2	-0.1
R11A	Troy Canyon, C baz=135	77.24 323	P	P	12 25 53.4	+1.9
F25A	Bowman baz=146	77.30 335	P	P	12 25 51.8	+0.3
BW06	Boulder Array baz=140	77.41 329	P	P	12 25 52.7	+0.4
BW06	Boulder Array comp=Z,6.4nm,1.2s	77.41 329	*e*P	P	12 25 52.9	+0.5
PDAR	Pinedale Array comp=Z,2.4nm,0.6s,baz=125,slow=7.0,SNR=15	77.41 329	P	P	12 25 52.9	+0.5
B30A	Myrvik Farm, E baz=150	77.60 339	P	P	12 25 53.3	+0.3
E25A	Miller Ranch, baz=146	77.75 335	P	P	12 25 54.7	+0.7
D26A	Manning baz=147	77.83 336	P	P	12 25 55.6	+1.2
B29A	Wagenman Farm, baz=150	77.95 338	P	P	12 25 56.1	+1.2
AHID	Auburn Hatcher comp=Z,15nm,0.7s	78.14 328	*e*P	P	12 25 57.5	+1.1
D25A	Fairfield baz=146	78.26 335	P	P	12 25 57.7	+1.0
B28A	Dugan Ranch, T baz=149	78.28 338	P	P	12 25 57.5	+0.8
C26A	Wahner Farm, P baz=147	78.37 336	P	P	12 25 58.3	+1.0
ULM	Lac du Bonnet comp=Z,3.2nm,0.6s,baz=137,slow=6.4,SNR=3.3	78.42 341	P	P	12 25 57.2	-0.3
REDW	Red Top Meadow comp=Z,7.9nm,0.8s	78.47 329	*e*P	P	12 25 59.3	+1.1
LOHW	Long Hollow comp=Z,7.4nm,0.7s	78.55 329	*e*P	P	12 25 59.8	+1.1
SCHQ	Schefferville comp=Z,4.1nm,0.6s,baz=263,slow=8.1,SNR=2.4	78.59 360	P	P	12 25 57.7	-0.6
A28A	Rude Farm, Bot baz=149	78.64 338	P	P	12 25 59.1	+0.4
MOOW	Moose Ponds comp=Z,3.3nm,0.7s	78.72 329	*e*P	P	12 26 00.4	+0.8
NVAR	Mina Array Bea comp=Z,1.2nm,0.6s,baz=153,slow=5.9,SNR=4.4	78.83 321	P	P	12 26 01.7	+1.4
IMW	Indian Meadow comp=Z,9.2nm,0.8s	78.92 329	*e*P	P	12 26 01.9	+1.2
FLWY	Flagg Ranch comp=Z,7.9nm,0.6s	78.95 329	*e*P	P	12 26 02.0	+1.2
RLMT	Red Lodge baz=141	79.09 331	P	P	12 26 02.4	+0.9
RLMT	Red Lodge comp=Z,10nm,0.6s	79.09 331	*e*P	P	12 26 02.6	+1.0
H17A	Grant Village baz=140	79.13 330	P	P	12 26 03.4	+1.6
A26A	Wade Farm, Ken baz=147	79.25 337	P	P	12 26 02.7	+0.6
YMR	Madison River comp=Z,12nm,0.8s	79.52 330	*e*P	P	12 26 06.0	+2.1
DGMT	Dagmar baz=145	79.68 336	P	P	12 26 05.8	+1.4
DGMT	Dagmar comp=Z,19nm,0.8s	79.68 336	*e*P	P	12 26 05.5	+1.1
HLID	Hailey baz=136	80.36 327	P	P	12 26 10.2	+1.9
HLID	Hailey comp=Z,9.7nm,0.6s	80.36 327	*e*P	P	12 26 09.9	+1.6
BOSA	Boshof comp=Z,2.3nm,0.7s,baz=226,slow=2.0,SNR=4.5	80.37 117	P	P	12 26 08.8	0.0
BOZ	Bozeman (W) baz=139	80.57 330	P	P	12 26 10.2	+0.8
MAW	Mawson comp=Z,2.0nm,0.6s,baz=194,slow=5.2,SNR=6.5	81.25 163	P	P	12 26 13.1	+0.5
ORV	Oroville comp=Z,5.7nm,0.9s	81.44 320	*e*P	P	12 26 15.9	+2.0
EGMT	Eagleton baz=141	81.56 332	P	P	12 26 15.1	+0.6
WVOR	Wild Horse Val comp=Z,16nm,1.0s	81.75 324	*e*P	P	12 26 17.2	+1.5
O03D	Paynes Creek baz=131	82.09 321	P	P	12 26 18.1	+0.7
MSO	Missoula baz=137	82.52 329	P	P	12 26 20.3	+0.8
N02D	Trinity Center baz=130	83.06 321	P	P	12 26 23.4	+1.0
M04C	Macdoel baz=131	83.09 322	P	P	12 26 23.9	+1.3
BSMT	Bassoo Peak	83.66 330	*e*P	P	12 26 26.4	+1.0
L02D	Cave Junction, baz=130	84.33 321	P	P	12 26 29.8	+1.1
I05D	Terrebonne, OR baz=131	84.49 324	P	P	12 26 31.1	+1.5
NEW	Newport baz=135	85.05 329	P	P	12 26 33.5	+1.3
C09A	Chrisman Ranch	85.27 328	*e*P	P	12 26 33.9	+0.6
ESDC	Sonseca Array comp=Z,0.2nm,0.3s,baz=254,slow=5.0,SNR=3.3	86.20 43	P	P	12 26 38.8	+0.7
B05A	Bryant baz=131	87.48 327	P	P	12 26 43.9	0.0
YKA	Yellowknife Ar comp=Z,2.3nm,0.6s,baz=132,slow=4.3,SNR=36	94.33 340	P	P	12 27 15.3	-0.1
DLBC	Dease Lake comp=Z,1.9nm,0.8s,baz=93,slow=2.5,SNR=6.9	97.47 332	P	Pdif	12 27 30.6	+0.6
ASAR	Alice Springs comp=Z,2.1nm,0.7s,baz=132,slow=1.8,SNR=34	128.53 204	PKP	PKPdf	12 33 02.8	-0.3
ASAR			SKPbc	SKPbc	12 36 04.1	
WRA	comp=Z,0.5nm,1.1s,baz=148,slow=3.6,SNR=4.2 Warramunga Arr	131.72 207	PKP	PKPdf	12 33 09.4	+0.2
NRIK	comp=Z,1.3nm,0.5s,baz=158,slow=1.7,SNR=42 Noril'sk	132.16 12	PKP	PKPdf	12 33 08.5	+0.1
WRAB	Tennant Creek	131.72 207	*e*PKPdf	PKPdf	12 33 09.4	+0.2
PETK	comp=Z,1.2nm,0.3s,baz=143,slow=5.1,SNR=1.9 Petropavlovsk-	135.90 323	PKP	PKPdf	12 33 16.9	+1.0
FITZ	comp=Z,3.5nm,0.8s,baz=104,slow=5.8,SNR=4.9 Fitzroy Crossi	136.41 197	PKP	PKPdf	12 33 19.8	+1.8
KURBB	comp=Z,1.5nm,0.8s Kurchatov Arra	142.22 36	PKhKP	PKPpre	12 33 24.0	
KURK	comp=Z,0.7nm,0.8s,baz=306,slow=3.1,SNR=3.2 Kurchatov	142.22 36	PKPpre	PKPpre	12 33 24.0	
ZALV	Zalesovo Beam	143.29 28	PKP	PKPbc	12 33 26.9	0.0
MKAR	comp=Z,1.6nm,0.5s,baz=289,slow=4.5,SNR=8.9 Makanchi Array	146.35 40	PKPbc	PKPbc	12 33 36.4	-0.1
ASAJ	comp=Z,3.4nm,0.6s,baz=321,slow=2.2,SNR=12 Asahikawa	148.89 317	PKPbc	PKPbc	12 33 43.5	+0.3
KLR	comp=Z,3.7nm,0.6s,baz=68,slow=28,SNR=3.7 Kul'dur	151.06 335	PKPbc	PKPbc	12 33 48.4	+0.1
TLY	comp=Z,1.1nm,0.5s,baz=75,slow=4.4,SNR=8.7 Talaya	151.44 13	PKPbc	PKPbc	12 33 49.8	+0.7
SONM	comp=Z,1.0nm,0.3s,baz=226,slow=4.9,SNR=3.6 Songino Array	155.65 12	PKPbc	PKPdf	12 33 59.0	+10
SONM	comp=Z,0.5nm,0.5s,baz=258,slow=3.7,SNR=3.0		PKPab	PKPab	12 34 15.4	-0.9
	comp=Z,1.0nm,0.6s,baz=326,slow=5.1,SNR=4.3					

IDC ***26*** *12:18:09.9±0.6, 37.49N×144.10E, h0km, mb3.9/20, mb1 4.1/25, mb1mx4.0/60, mbtmp4.0/25, ML4.1/4, Error ellipse: s-maj=16.5km s-min=12.3km az=102.0*

ISCJB ***26*** *12:18:12.6±1.6, 37.54N±0.04×143.91E±0.04, h30km±11km, mb4.0/24, Error ellipse: s-maj=7.1km s-min=5.4km az=153.4*

JMA ***26*** *12:18:13.8±0.2, 37.59N×143.79E, h42km, M4.4*

NEIC ***26*** *12:18:15.0±0.5, 37.53N×144.07E, h35km, mb4.5/3, Error ellipse: s-maj=9.9km s-min=7.8km az=117.0*

ISC 26 12:18:13.9±4.1, 37.56N±0.05×143.93E±0.07, h26km±29km, n51, σ1.957/62, mb4.0/24, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**2.23**	**295**	P	**Pn**	**12 18 48.2**	**-0.9**
JIO				*e*S	**Sn**	**12 19 13.2**	**-2.5**
OFUJ	**Ofunato**	**2.34**	**311**	P	**Pn**	**12 18 49.0**	**-1.7**
JFK	**Kawauchi**	**2.44**	**266**	P	**Pn**	**12 18 50.9**	**-1.1**
JFK				S	**Sn**	**12 19 18.5**	**-2.5**
JMM	**Marumori**	**2.51**	**278**	P	**Pn**	**12 18 51.9**	**-1.0**
JMM				*e*S	**Sn**	**12 19 20.2**	**-2.4**
ONAJ	**Iwakimizuishiy**	**2.54**	**261**	P	**Pn**	**12 18 52.4**	**-1.0**
ONAJ				S	**Sn**	**12 19 20.8**	**-2.7**
JOU	**Okura**	**2.71**	**288**	P	**Pn**	**12 18 55.3**	**-0.4**
JOM	**Ohasama**	**2.82**	**314**	P	**Pn**	**12 18 56.0**	**-1.2**
JOM				S	**Sn**	**12 19 27.4**	**-3.0**
JFT	**Otama**	**2.86**	**270**	P	**Pn**	**12 18 57.8**	**0.0**
JFT				S	**Sn**	**12 19 30.6**	**-0.7**
CHOJ	**Chosi**	**3.09**	**234**	P	**Pn**	**12 19 00.6**	**-0.3**
JYK	**Kaneyama**	**3.12**	**297**	P	**Pn**	**12 19 00.9**	**-0.5**
ERM	**Erimo**	**4.49**	**353**	*e*Pn	**Pn**	**12 19 17.9**	**-2.3**
ERM				*e*Sn	**Sn**	**12 20 13.5**	**+1.9**
MJAR	**Matsushiro Arr** 9.6nm,0.3s,baz=91,slow=16,SNR=15	**4.69**	**259**	Pn	**Pn**	**12 19 24.0**	**+1.1**
MJAR	5.2nm,0.3s,baz=59,slow=24,SNR=6.3			Sn	**Sn**	**12 20 16.8**	**+0.3**
MAJO	**Matsushiro**	**4.69**	**259**	*e*Pn	**Pn**	**12 19 24.4**	**+1.5**
MAJO				*e*Sn	**Sn**	**12 20 18.7**	**+2.2**

MAT	**Matsushiro**	**4.69**	**259**	P		**Pn**		**12 19 24.5**	**+1.5**
MAT				S		**Sn**		**12 20 16.6**	**+0.1**
JHJ2	**Mitsune**	**5.56**	**218**	*e*Pn		**Pn**		**12 19 34.4**	**-0.5**
JHJ	**Hachijo jima 2**	**5.58**	**219**	Pn		**Pn**		**12 19 33.4**	**-1.7**
	14nm,0.3s,baz=71,slow=22,SNR=6.1								
JHJ				Sn		**Sn**		**12 20 33.9**	**-4.4**
	32nm,0.3s,baz=219,slow=22,SNR=8.2								
ASAJ	**Asahikawa**	**6.63**	**352**	Pn		**Pn**		**12 19 47.8**	**-1.8**
	6.9nm,0.3s,baz=197,slow=12,SNR=42								
CBIJ	**Chichi jima**	**10.53**	**189**	Pn		Pn		12 20 38.9	-4.3
JCJ	**Chichijima**	**10.53**	**189**	Pn		Pn		12 20 38.9	-4.3
USRK	**Ussuriysk Ar.**	**11.21**	**310**	Pn		**Pn**		**12 20 53.1**	**+0.8**
	0.4nm,0.3s,baz=116,slow=15,SNR=6.6								
KSRS	**Korea Array**	**12.71**	**274**	Pn		**Pn**		**12 21 15.7**	**+2.8**
	0.1nm,0.3s,baz=85,slow=14,SNR=8.1								
KSAR	**Wonju Array Be**	**12.75**	**274**	Pn		**Pn**		**12 21 15.7**	**+2.3**
MDJ	**Mudanjiang**	**12.90**	**308**	*e*Pn		**Pn**		**12 21 16.3**	**+0.8**
KLR	**Kul'dur**	**14.62**	**327**	Pn		**P**		**12 21 42.6**	**-2.4**
	0.3nm,0.3s,baz=147,slow=10,SNR=5.2								
SEY	**Seymchan**	**25.93**	**9**	P		**P**		**12 23 44.4**	**+0.7**
	2.9nm,0.8s,baz=214,slow=4.8,SNR=4.1								
SONM	**Songino Array**	**29.18**	**303**	P		**P**		**12 24 14.5**	**+1.4**
	0.6nm,0.4s,baz=106,slow=11,SNR=3.6								
ZALV	**Zalesovo Beam**	**43.05**	**312**	P		**P**		**12 26 14.0**	**+2.8**
	1.5nm,0.5s,baz=85,slow=6.1,SNR=2.1								
CMAR	**Chiang Mai Arr**	**43.57**	**257**	P		**P**		**12 26 17.3**	**+1.5**
	0.7nm,0.7s,baz=47,slow=7.3,SNR=4.5								
MKAR	**Makanchi Array**	**45.54**	**302**	P		**P**		**12 26 31.9**	**+0.6**
	0.3nm,0.3s,baz=81,slow=8.9,SNR=2.8								
KURK	**Kurchatov**	**47.19**	**308**	*e*P		**P**		**12 26 44.2**	**+0.1**
ILAR	**Eielson Array**	**47.98**	**33**	P		**P**		**12 26 49.5**	**-0.5**
	1.7nm,0.8s,baz=263,slow=6.5,SNR=11								
TKM2	**Tokmak 2**	**51.14**	**299**	*e*P		**P**		**12 27 15.8**	**+1.0**
BVAR	**Borovoye Array**	**51.70**	**312**	P		**P**		**12 27 20.6**	**+2.1**
	0.6nm,0.5s,baz=64,slow=8.3,SNR=3.0								
INK	**Inuvik**	**53.00**	**27**	P		**P**		**12 27 28.0**	**+0.1**
	0.6nm,0.5s,baz=317,slow=6.8,SNR=4.6								
DLBC	**Dease Lake**	**56.97**	**39**	P		**P**		**12 27 58.2**	**+1.4**
	1.2nm,1.1s,baz=102,slow=6.7,SNR=2.3								
WRAB	**Tennant Creek**	**57.89**	**191**	*e*P		**P**		**12 28 02.6**	**-1.0**
	5.7nm,0.7s								
WRA	**Warramunga Arr**	**57.90**	**191**	P		**P**		**12 28 02.9**	**-0.8**
	9.1nm,0.6s,baz=9.6,slow=7.1,SNR=55								
WRA				PcP		**PcP**		**12 28 56.0**	**+0.2**
	1.1nm,0.6s,baz=4.5,slow=4.2,SNR=6.0								
FITZ	**Fitzroy Crossi**	**57.98**	**201**	P		**P**		**12 28 04.7**	**+0.5**
	0.7nm,0.5s,baz=4.7,slow=6.9,SNR=4.3								
AKTO	**Aktyubinsk**	**59.81**	**312**	P		**P**		**12 28 16.8**	**+0.1**
	0.9nm,0.6s,baz=52,slow=15,SNR=2.8								
ASAR	**Alice Springs**	**61.62**	**190**	P		**P**		**12 28 28.8**	**-0.4**
	2.8nm,0.7s,baz=4.2,slow=7.0,SNR=31								
ASAR				PcP		**PcP**		**12 29 10.9**	**+0.3**
	0.5nm,0.6s,baz=11,slow=4.8,SNR=4.2								
YKA	**Yellowknife Ar**	**62.34**	**31**	P		**P**		**12 28 33.5**	**-0.1**
	0.3nm,0.7s,baz=299,slow=6.5,SNR=4.4								
STKA	**Stephens Creek**	**69.11**	**182**	P		**P**		**12 29 17.1**	**-0.4**
	1.5nm,0.6s,baz=326,slow=11,SNR=3.0								
FINES	**FINESS Array B**	**69.28**	**333**	P		**P**		**12 29 18.6**	**+0.3**
	1.3nm,0.7s,baz=22,slow=12,SNR=4.0								
KBZ	**Khabaz**	**72.07**	**312**	P		**P**		**12 29 37.1**	**+1.5**
	1.9nm,0.9s,baz=209,slow=2.4,SNR=3.9								
FCC	**Fort Churchill**	**72.62**	**28**	*e*P		**P**		**12 29 37.9**	**-0.7**
	0.6nm,0.5s								
HFS	**Hagfors**	**74.42**	**337**	P		**P**		**12 29 49.5**	**+0.2**
	1.7nm,0.8s,baz=85,slow=6.4,SNR=4.3								
NB2	**NORSAR Subarra**	**74.46**	**338**	P		**PcP**		**12 30 02.0**	**-2.0**
	comp=Z,1.0nm,0.7s,baz=37,slow=6.2								
NOA	**NORSAR Array B**	**74.46**	**338**	P		**P**		**12 29 49.9**	**+0.3**
	comp=Z,0.8nm,0.8s,baz=38,slow=6.1,SNR=2.7								
AKASG	**Malin Array Be**	**75.10**	**323**	P		**P**		**12 29 53.4**	**+0.1**
	comp=Z,0.4nm,0.3s,baz=56,slow=8.2,SNR=2.9								
PDAR	**Pinedale Array**	**75.86**	**47**	P		**P**		**12 29 58.2**	**+0.1**
	comp=Z,0.5nm,0.7s,baz=258,slow=2.3,SNR=4.9								
WMOK	**Wichita Mounta**	**87.47**	**47**	*e*P		**P**		**12 30 57.7**	**-1.5**
	comp=Z,3.7nm,1.1s								

NIED ***26*** *12:26:00,38˚.40N×141˚.80E,h59km,Mw4.5 Best double couple: M₀5.74000×10¹⁵ NP1:φ₀=202.00000°,δ27.00000°, λ104.00000°. NP2:φ₀=7.00000°,δ64.00000°,λ83.00000°.*

MOS ***26*** *12:26:53.4± 1.0,38˚.41N×141˚.91E,h59km,mb4.8/24,Error ellipse: s-maj=8.0km s-min=5.4km az=100.2*

ISCJB ***26*** *12:26:53.6± 0.4,38˚.35N± 0˚.02×141˚.87E± 0˚.04,h60km± 2km, mb4.4/73,Error ellipse: s-maj=5.8km s-min=3.3km az=23.5*

JMA ***26*** *12:26:55.5,38˚.40N×141˚.76E,h56km± 1km,M4.3*

JMA Felt II J1.

NEIC ***26*** *12:26:56.6± 0.6,38˚.39N×141˚.77E,h68km± 5km,mb4.6/18, Error ellipse: s-maj=6.9km s-min=4.5km az=118.0*

IDC ***26*** *12:26:58.3± 0.6,38˚.37N×141˚.64E,h81km± 4km,mb4.0/37, mb1 4.2/41,mb1mx4.1/66,mbtmp4.3/41,MS3.4/6, Ms1 3.4/6,ms1mx3.0/47,Error ellipse: s-maj=10.7km s-min=9.3km az=100.0*

ISC 26 12:26:54.9± 0.4,38˚.37N± 0˚.04×141˚.87E± 0˚.04,h54km,ρ2km, h54km:pP-P,n170,σ1§52/206,mb4.4/73,MS3.9/5,6C-7D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**0.42**	**282**	P		**12 27 05.4**	**-0.1**
JIO				S		**12 27 12.4**	**-0.7**
OFUJ	**Ofunato**	**0.73**	**348**	P		**12 27 09.3**	**+0.1**
OFUJ				S		**12 27 19.2**	**-0.4**
JMK	**Ichinoseki**	**0.78**	**319**	P		**12 27 09.7**	**0.0**
JMK				S		**12 27 19.7**	**-0.9**
JOU	**Okura**	**0.95**	**270**	P		**12 27 11.7**	**-0.3**
JOU				S		**12 27 23.8**	**-0.9**
JMM	**Marumori**	**0.98**	**240**	P		**12 27 12.2**	**-0.3**
JMM				S		**12 27 24.5**	**-1.0**
JOM	**Ohasama**	**1.19**	**338**	P		**12 27 15.4**	**+0.1**
JOM				S		**12 27 30.3**	**-0.2**
JFK	**Kawauchi**	**1.27**	**219**	P		**12 27 16.9**	**+0.5**
JFK				S		**12 27 32.2**	**-0.2**
JYK	**Kaneyama**	**1.30**	**295**	P		**12 27 16.5**	**-0.3**
JRG	**Rokugo**	**1.41**	**317**	P		**12 27 18.2**	**0.0**
JYS	**Shirataka**	**1.43**	**265**	P		**12 27 18.4**	**0.0**
JYS				S		**12 27 36.2**	**+0.1**
JFT	**Otama**	**1.48**	**236**	P		**12 27 19.5**	**+0.4**
JFT				S		**12 27 37.5**	**+0.1**
MJAR	**Matsushiro Arr**	**3.44**	**239**	P		**12 27 47.6**	**+1.7**
	28nm,0.3s,baz=37,slow=11,SNR=138						
MAJO	**Matsushiro**	**3.44**	**239**	*e*P		**12 27 47.8**	**+1.9**
MAJO				*e*		12 28 27.0	
MAJO	**Matsushiro**	**3.44**	**239**	*e*Pn		**12 27 47.8**	**+1.9**
MAJO				*e*Sn		**12 28 27.0**	**+1.6**
ERM	**Erimo**	**3.77**	**15**	P		**12 27 50.0**	**-0.5**
ERM				pmax	pmax		
	comp=Z,43nm,1.0s						
ERM	**Erimo**	**3.77**	**15**	*e*Pn		**12 27 50.8**	**+0.3**
ERM				*e*Sn		**12 28 35.7**	**+2.1**
INU	**Inuyama**	**4.92**	**234**	*e*Pn		**12 28 08.0**	**+1.7**
JHJ2	**Mitsune**	**5.50**	**198**	*e*Pn		**12 28 14.7**	**+0.5**
JHJ2				*e*Sn		**12 29 15.2**	**-1.0**
JHJ	**Hachijo jima 2**	**5.50**	**199**	P		**12 28 14.1**	**-0.1**
	comp=Z,25nm,0.3s,baz=311,slow=22,SNR=11						
JHJ				S		**12 29 15.3**	**-0.9**
	comp=Z,61nm,0.3s,baz=110,slow=22,SNR=6.8						
ASAJ	**Asahikawa**	**5.77**	**5**	P		**12 28 17.7**	**-0.1**
	comp=Z,1.7nm,0.3s,baz=201,slow=11,SNR=18						
ASAJ				S		**12 29 26.5**	**+3.8**
	baz=98,slow=33,SNR=3.4						
ASAJ				LR	LR	12 31 04.1	
	comp=Z,133nm,20.5s,baz=201,slow=42						
ASAJ	**Asahikawa**	**5.77**	**5**	*e*Pn		**12 28 17.2**	**-0.7**
ASAJ				*e*Sn		**12 29 27.6**	**+5.0**
YUK	**Yuzh-Kuril'sk**	**6.41**	**27**	*e*P		**12 28 25.7**	**-0.9**
YUK				*e*S		**12 29 34.5**	**-3.9**
YUK				pmax	pmax		
	comp=Z,118nm,0.5s						
SHO	**Shikotan**	**6.65**	**33**	*e*P		**12 28 27.6**	**-2.3**
SHO				*e*S		**12 29 38.3**	**-6.0**
SHO				pmax	pmax		
	comp=Z,23nm,0.5s						
KUR	**Kuril'sk**	**8.19**	**31**	*e*P		**12 28 50.0**	**-1.0**
KUR				*e*S		**12 30 16.3**	**-5.7**
KUR				pmax	pmax		
	comp=N,5.0nm,0.8s						
KUR				pmax	pmax		
	comp=Z,12nm,0.8s						
KUR				smax	smax		
	comp=N,31nm,0.8s						
KUR				smax	smax		
	comp=E,15nm,0.8s						
YSS	**Yuzh-Sakhalins**	**8.61**	**4**	*e*P		**12 29 07.7**	**+11**
MSHR	**Mys Shultsa**	**9.18**	**301**	*i*P		**12 29 04.7**	**+0.1**
USRK	**Ussuriysk Ar.**	**9.45**	**311**	P		**12 29 08.9**	**+0.7**
	comp=E,1.5nm,0.3s,baz=124,slow=13,SNR=34						
USRK				S		**12 30 54.7**	**+1.9**
	comp=E,0.1nm,0.3s,baz=120,slow=17,SNR=2.2						
USRK				LR	LR	12 32 31.8	
	comp=E,280nm,18.4s,baz=99,slow=36						
JNU	**Nakatsue**	**10.35**	**243**	P		**12 29 21.8**	**+1.2**
	comp=E,0.9nm,0.3s,baz=77,slow=1.8,SNR=8.9						
JNU	**Nakatsue**	**10.35**	**243**	*e*Pn		**12 29 22.2**	**+1.6**
KSRS	**Korea Array**	**11.06**	**270**	P		**12 29 33.5**	**+3.3**
	comp=E,1.3nm,0.3s,baz=80,slow=14,SNR=17						
KSRS				LR	LR	12 33 01.1	
	comp=E,268nm,21.6s,baz=40,slow=33						
KSAR	**Wonju Array Be**	**11.09**	**270**	P		**12 29 33.6**	**+2.9**
KSAR	**Wonju Array Be**	**11.09**	**270**	P		**12 29 33.5**	**+2.9**
MDJ	**Mudanjiang**	**11.12**	**308**	P		**12 29 28.3**	**-2.7**
MDJ				pmax	pmax		
	comp=Z,11nm,1.9s						
MDJ				pmax	pmax		
	comp=Z,96nm,3.4s						
MDJ	**Mudanjiang**	**11.12**	**308**	*e*Pn		**12 29 35.5**	**+4.4**
	comp=Z,81nm,1.3s						
JCJ	**Chichijima**	**11.24**	**179**	P		**12 29 31.1**	**-1.8**
	baz=309,slow=21,SNR=1.1						
KLR	**Kul'dur**	**13.07**	**329**	P		**12 29 59.4**	**+1.7**
	comp=Z,0.2nm,0.3s,baz=134,slow=11,SNR=5.4						
KLR				LR	LR	12 34 29.5	
	comp=Z,212nm,19.7s,baz=158,slow=35						
DL2	**Dalian**	**15.83**	**278**	P		**12 30 35.8**	**-1.2**
DL2				pmax	pmax		
	comp=Z,35nm,0.9s						
PETK	**Petropavlovsk-**	**18.36**	**31**	LR	LR	12 38 21.2	
	comp=Z,93nm,18.1s,baz=225,slow=37						
TIA	**Tai'an**	**19.79**	**271**	*e*P		**12 31 18.8**	**-1.9**
TIA				pmax	pmax		
	comp=Z,20nm,1.0s						
NJ2	**Nanjing**	**19.81**	**258**	*e*P		**12 31 19.8**	**-1.0**
NJ2				S		**12 34 58.5**	**-2.5**
NJ2				pmax	pmax		
	comp=Z,9.0nm,0.5s						
NJ2				LR	LR		
	comp=N,1μm,15.7s						
NJ2				LR	LR		
	comp=E,1μm,17.5s						
NJ2				LR	LR		
	comp=Z,1μm,16.1s						
BJI	**Beijing**	**19.96**	**283**	P		**12 31 21.8**	**-0.7**
BJI				pmax	pmax		
	comp=Z,9.0nm,1.1s						
MA2	**Magadan**	**21.98**	**12**	P		**12 31 44.4**	**+0.4**
	comp=Z,12nm,0.8s,baz=208,slow=13,SNR=10						
HHC	**Hu-ho-hao-te**	**23.43**	**286**	*e*P		**12 31 57.3**	**-1.9**
HHC				pP	pP	12 32 11.3	-0.8
HHC				sP	sP	12 32 19.0	+0.3
HHC				S	S	**12 36 02.5**	**-6.0**
HHC				pmax	pmax		
	comp=Z,27nm,0.8s						
HHC				pmax	pmax		
	comp=Z,190nm,6.4s						
HHC				LR	LR		
	comp=N,1μm,13.6s						
HHC				LR	LR		
	comp=E,2μm,13.6s						
HHC				LR	LR		
	comp=Z,2μm,13.6s						
YAK	**Yakutsk**	**24.86**	**346**	*e*P		**12 32 11.6**	**-0.3**
YAK				pmax	pmax		
	comp=Z,12nm,0.9s						
YAK				pmax	pmax		
	comp=E,3.0nm,0.9s						
YAK				pmax	pmax		
	comp=N,13nm,1.5s						
SEY	**Seymchan**	**25.41**	**11**	P		**12 32 18.5**	**+1.5**
	comp=N,4.3nm,1.0s,baz=188,slow=10.0,SNR=8.6						
SEY	**Seymchan**	**25.41**	**11**	*i*eP		**12 32 18.7**	**+1.7**
BOD	**Bodaibo**	**26.61**	**326**	*e*P		**12 32 25.9**	**-2.0**
BOD				pmax	pmax		
	comp=Z,8.0nm,0.8s						
XAN	**Xi'an**	**26.85**	**271**	P		**12 32 29.0**	**-1.4**
XAN				pP	pP	12 32 33.5	-10
XAN				pmax	pmax		
	comp=Z,12nm,0.7s						
ULN	**Ulaanbaatar**	**26.93**	**302**	*i*P		**12 32 31.4**	**+0.3**
ULN				pmax	pmax		
	comp=Z,4.0nm,1.0s						
SONM	**Songino Array**	**27.37**	**302**	P		**12 32 34.9**	**-0.1**
	comp=Z,1.1nm,0.6s,baz=102,slow=8.6,SNR=9.0						
ENH	**Enshi**	**27.83**	**263**	*e*P		**12 32 37.9**	**-1.2**
	comp=Z,31nm,0.7s						
H11N2	**WAKE ISLAND Hy**	**28.55**	**124**	T		13 03 02.4	
	baz=316,slow=75,SNR=1542						
H11N1	**WAKE ISLAND Hy**	**28.56**	**124**	T		13 03 03.7	
	baz=316,slow=75,SNR=2437						
H11N3	**WAKE ISLAND Hy**	**28.57**	**124**	T		13 03 03.7	
	baz=316,slow=75,SNR=1442						
H11S1	**WAKE ISLAND Hy**	**29.31**	**126**	T		13 03 58.6	
	baz=318,slow=76,SNR=952						
H11S3	**WAKE ISLAND Hy**	**29.31**	**126**	T		13 04 02.7	
	baz=318,slow=76,SNR=1186						
H11S2	**WAKE ISLAND Hy**	**29.32**	**126**	T		13 04 02.3	
	baz=318,slow=76,SNR=655						
ZAK	**Zakamensk**	**29.75**	**306**	*e*P		**12 32 54.2**	**-1.9**
ZAK				pmax	pmax		
	comp=Z,4.0nm,1.1s						
TLY	**Talaya**	**29.75**	**309**	P		**12 32 55.8**	**-0.2**
	comp=Z,1.9nm,0.5s,baz=352,slow=2.7,SNR=6.7						
TLY	**Talaya**	**29.75**	**309**	*e*P		**12 32 55.4**	**-0.6**
TLY				pmax	pmax		
	comp=Z,4.0nm,0.8s						
TLY	**Talaya**	**29.75**	**309**	*e*P		**12 32 55.6**	**-0.3**
	comp=Z,3.9nm,0.8s						
LZH	**Lanzhou**	**30.23**	**278**	*e*P		**12 32 59.3**	**-1.2**
LZH				pP	pP	12 33 12.3	-1.9
LZH				sP	sP	12 33 17.3	-3.3
LZH				pmax	pmax		
	comp=Z,23nm,1.0s						
GTA	**Gaotai**	**32.54**	**285**	*e*P		**12 33 20.5**	**-0.3**
GTA				pP	pP	12 33 33.3	-1.3
GTA				sP	sP	12 33 38.5	-2.5
GTA				S	S	**12 38 33.0**	**+0.7**
GTA				sS	sS	12 38 54.8	-0.8
GTA				SS	**SnSn**	**12 40 33.8**	**+3.6**
GTA				pmax	pmax		
	comp=Z,4.0nm,1.0s						
GTA				pmax	pmax		
	comp=Z,140nm,5.2s						
GTA				LR	LR		
	comp=N,140nm,19.5s						
GTA				LR	LR		
	comp=E,170nm,16.6s						
GTA				LR	LR		
	comp=Z,190nm,18.1s						
BILL	**Bilibino**	**32.65**	**17**	*i*eP		**12 33 20.9**	**-0.3**
BILL				*e*PP	**pP**	**12 33 36.7**	**+1.7**
BILL				*e*SP	**sP**	**12 33 44.9**	**+3.5**
BILL				*e*		12 34 35.6	
BILL				*i*		12 36 06.8	
BILL				pmax	pmax		
	comp=Z,4.0nm,1.5s						
TIXI	**Tiksi**	**34.01**	**353**	*i*P		**12 33 32.2**	**-0.8**
TIXI				pmax	pmax		
	comp=Z,1.0nm,0.7s						
DAV	**Davao City (W)**	**34.47**	**209**	LR	LR	12 45 42.7	
	comp=Z,142nm,19.8s,baz=42,slow=33						
KMI	**Kunming**	**35.54**	**260**	P		**12 33 46.5**	**-0.5**
MYLDM	**Lahad Datu**	**39.27**	**219**	*e*P		**12 34 17.6**	**-0.8**
WMQ	**Urumqi**	**40.58**	**296**	P		**12 34 29.0**	**-0.1**
WMQ				pP	pP	12 34 43.5	+0.4
WMQ				sP	sP	12 34 49.3	-0.2
WMQ				pmax	pmax		
	comp=Z,18nm,0.6s						
WMQ				LR	LR		
	comp=N,27nm,13.6s						
WMQ				LR	LR		
	comp=E,43nm,17.6s						
WMQ				LR	LR		
	comp=Z,55nm,19.6s						
ZALV	**Zalesovo Beam**	**41.30**	**311**	P		**12 34 34.3**	**-0.4**
	comp=Z,4.9nm,0.5s,baz=90,slow=8.1,SNR=18						
ZALV				pP	**sP**	**12 34 53.8**	**-1.3**
	comp=Z,8.9nm,0.8s,baz=86,slow=7.7,SNR=8.3						
ZALV				PcP	**PcP**	**12 36 32.1**	**-0.2**
	comp=Z,3.4nm,0.8s,baz=105,slow=3.4,SNR=5.3						
CHTO	**Chiang Mai**	**41.98**	**255**	*e*P		**12 34 40.0**	**-0.8**
CHTO				pmax	pmax		
	comp=Z,5.0nm,0.7s						
CHTO	**Chiang Mai**	**41.98**	**255**	*e*P		**12 34 40.0**	**-0.8**
	comp=Z,5.0nm,0.7s						
NVS	**Novosibirsk**	**42.19**	**313**	*e*P		**12 34 41.2**	**-0.8**
NVS				*e*		12 35 00.5	
NVS				pmax	pmax		
	comp=Z,14nm,1.6s						
NVS				pmax	pmax		
	comp=E,5.0nm,1.2s						
CMAR	**Chiang Mai Arr**	**42.20**	**254**	P		**12 34 42.5**	**0.0**
	comp=E,0.7nm,0.4s,baz=44,slow=7.6,SNR=6.9						
CMAR				PcP	**PcP**	**12 36 36.9**	**+1.0**
	comp=E,0.5nm,0.3s,baz=8.4,slow=1.6,SNR=5.5						
NRIK	**Noril'sk**	**42.22**	**335**	P		**12 34 41.6**	**-0.4**
	comp=E,2.0nm,0.6s,baz=73,slow=6.2,SNR=2.9						
MKAR	**Makanchi Array**	**43.73**	**301**	P		**12 34 54.1**	**-0.6**
	comp=E,6.9nm,0.7s,baz=85,slow=9.3,SNR=31						
MKAR				pP	**sP**	**12 35 13.7**	**-1.4**
	comp=E,10nm,0.9s,baz=87,slow=9.8,SNR=8.1						
MKAR	**Makanchi Array**	**43.73**	**301**	*e*P		**12 34 54.2**	**-0.4**
MAKZ	**Makanchi**	**43.94**	**301**	*e*P		**12 34 55.8**	**-0.5**
MAKZ				pmax	pmax		
	comp=Z,14nm,1.0s						
MAKZ	**Makanchi**	**43.94**	**301**	*e*P		**12 34 55.8**	**-0.5**
	comp=Z,14nm,1.0s						
KURK	**Kurchatov**	**45.41**	**307**	P		**12 35 07.6**	**-0.3**
KURK				*PP	**sP**	**12 35 27.7**	**-0.7**
KURK				pmax	pmax		
	comp=Z,26nm,0.7s						
KURK				pmax	pmax		
	comp=Z,24nm,0.7s						
KURK	**Kurchatov**	**45.41**	**307**	*e*P		**12 35 06.8**	**-1.1**
	comp=Z,36nm,0.8s						
KURBB	**Kurchatov Arra**	**45.48**	**307**	P		**12 35 07.6**	**-0.8**
	comp=Z,26nm,0.7s,baz=81,slow=8.1,SNR=166						
KURBB				pP	**sP**	**12 35 27.7**	**-1.3**
	comp=Z,24nm,0.7s,baz=81,slow=8.2,SNR=10						
GUN	**Gumba**	**47.40**	**275**	*e*P		**12 35 24.0**	**-0.2**
	comp=Z,80nm,1.0s						
COLA	**College**	**47.76**	**33**	*i*eP		**12 35 26.7**	**+0.6**
COLA				pmax	pmax		
	comp=Z,6.0nm,1.7s						
KKN	**Kakani**	**47.92**	**275**	*e*P		**12 35 27.8**	**-0.3**
	comp=Z,60nm,0.8s						
PKIN	**Phulchoki**	**47.93**	**275**	*e*P		**12 35 27.6**	**-0.7**
	comp=Z,10nm,0.6s						
ILAR	**Eielson Array**	**48.18**	**33**	P		**12 35 30.2**	**+0.8**
	comp=Z,1.1nm,0.8s,baz=266,slow=6.2,SNR=11						
GKN	**Gorkha**	**48.33**	**275**	*e*P		**12 35 30.8**	**-0.4**
	comp=Z,69nm,1.0s						
KOLN	**Koldanda**	**49.25**	**276**	*e*P		**12 35 38.0**	**-0.3**
	comp=Z,18nm,0.8s						
TKM2	**Tokmak 2**	**49.33**	**298**	*e*P		**12 35 38.8**	**+0.1**
TKM2				pmax	pmax		
	comp=Z,10.0nm,0.9s						
TKM2	**Tokmak 2**	**49.33**	**298**	*e*P		**12 35 38.8**	**+0.1**
	comp=Z,10nm,0.9s						
PYUN	**Piuthan**	**49.57**	**276**	*e*P		**12 35 40.6**	**-0.2**
	comp=Z,70nm,1.0s						
BVAR	**Borovoye Array**	**49.95**	**312**	P		**12 35 42.5**	**-0.6**
	comp=Z,2.6nm,0.7s,baz=69,slow=8.4,SNR=12						
BVAR				pP	**sP**	**12 36 02.7**	**-1.0**
	comp=Z,4.1nm,0.7s,baz=77,slow=9.3,SNR=7.4						
BVAR				PcP	**PcP**	**12 37 02.6**	**+0.1**
	comp=Z,4.0nm,0.7s,baz=93,slow=3.0,SNR=7.4						
BRVK	**Borovoye**	**50.01**	**312**	*i*P		**12 35 43.0**	**-0.5**
BRVK				pmax	pmax		
	comp=Z,6.0nm,0.8s						
BRVK	**Borovoye**	**50.01**	**312**	*e*P		**12 35 43.0**	**-0.5**
FRU	**Bishkek**	**50.04**	**298**	*e*P		**12 35 44.0**	**+0.1**
FRU				*e*		12 36 02.0	
IPM	**Ipoh**	**50.15**	**238**	*e*P		**12 35 44.7**	**-0.3**
	comp=Z,18nm,0.8s						
AAK	**Ala-Archa**	**50.19**	**298**	P		**12 35 44.6**	**-0.6**
	comp=Z,2.3nm,0.6s,baz=106,slow=2.9,SNR=5.2						
AAK	**Ala-Archa**	**50.19**	**298**	*e*P		**12 35 44.6**	**-0.6**
	comp=Z,2.6nm,0.8s						
KSH	**Kashi**	**50.20**	**293**	*e*P		**12 35 48.3**	**+3.0**
KSH				*e*pP	sP	12 36 04.3	-1.7
KSH				*e*sP	pP	12 36 11.0	+11
KSH				*e*PP	**PP**	**12 37 45.8**	**+5.0**
KSH				S	**S**	**12 42 55.5**	**+2.0**
KSH				pmax	pmax		
	comp=Z,110nm,5.1s						
KSH				LR	LR		
	comp=N,160nm,6.2s						
KSH				LR	LR		
	comp=E,100nm,6.4s						
KSH				LR	LR		
	comp=Z,140nm,6.6s						
ZRNK	**Zerenda**	**50.78**	**312**	*e*P		**12 35 48.8**	**-0.6**
ZRNK				pmax	pmax		
	comp=Z,8.0nm,0.9s						
ZRNK	**Zerenda**	**50.78**	**312**	*e*P		**12 35 48.8**	**-0.6**
	comp=Z,8.2nm,0.9s						
KKAR	**Karatay Array**	**52.78**	**299**	*e*P		**12 36 03.8**	**-0.6**
KKAR				pmax	pmax		
	comp=Z,2.0nm,0.6s						
KKAR	**Karatay Array**	**52.78**	**299**	*e*P		**12 36 03.8**	**-0.6**
	comp=Z,1.8nm,0.6s						
PSI	**Prapat**	**52.79**	**239**	P		**12 36 04.5**	**-0.4**
	comp=Z,1.1nm,0.8s,baz=357,slow=3.5,SNR=9.2						
INK	**Inuvik**	**53.04**	**28**	P		**12

KVAR	Kislovodsk Arr	70.30	311	P		P	12 38 03.8	+1.2
	comp=Z,12nm,1.0s,baz=266,slow=3.9,SNR=9.3							
KIV	Kislovodsk	70.31	311	*de*P		P	12 38 03.5	+0.8
KIV				*PP		pP	12 38 19.0	+1.2
KIV							12 38 22.0	
KIV				*e*			12 38 30.2	
KIV							12 40 38.0	
KIV				pmax	pmax			
	comp=Z,11nm,0.8s							
KIV				MLR	MLR			
	comp=Z,76nm,14.0s							
KBZ	Khabaz	70.31	310	P		P	12 38 02.2	-0.3
	comp=Z,4.8nm,0.9s,baz=42,slow=3.3,SNR=13							
NEY	Neytrino	70.69	310	P		P	12 38 06.0	+0.9
NEY				pmax	pmax			
	comp=Z,1.0nm,0.7s							
NACGM	Naroch	71.81	327	*e*		P	12 38 25.0	+14
FCC	Fort Churchill	72.65	27	*e*P		P	12 38 16.2	-0.1
FCC				pmax	pmax			
	comp=Z,3.0nm,1.1s							
FCC	Fort Churchill	72.65	27	*e*P		P	12 38 16.2	-0.1
	comp=Z,3.4nm,1.1s							
HFS	Hagfors	73.02	336	P		P	12 38 18.5	-0.1
	comp=Z,4.2nm,0.7s,baz=63,slow=4.0,SNR=9.2							
NB2	NORSAR Subarra	73.10	337	P		P	12 38 18.7	-0.3
	comp=Z,2.6nm,0.7s,baz=39,slow=6.2							
NOA	NORSAR Array B	73.10	337	P		P	12 38 18.8	-0.2
	comp=Z,5.1nm,0.8s,baz=38,slow=5.9,SNR=14							
NOA				pP		sP	12 38 40.6	+0.3
	comp=Z,1.2nm,0.6s,baz=40,slow=5.9,SNR=2.9							
AKASG	Malin Array Be	73.47	322	P		P	12 38 20.5	-0.8
	comp=Z,3.5nm,0.7s,baz=46,slow=6.6,SNR=16							
AKASG				pP		sP	12 38 41.7	-0.9
	comp=Z,1.6nm,0.5s,baz=45,slow=7.2,SNR=2.9							
KIEV	Kiev	73.48	322	*e*P		P	12 38 20.4	-1.0
NVAR	Mina Array Bea	73.90	54	P		P	12 38 26.2	+1.8
	comp=Z,0.6nm,0.7s,baz=268,slow=8.9,SNR=4.3							
DUG	Dugway, Tooele	76.21	50	*e*P		P	12 38 37.7	+0.1
DUG				pmax	pmax			
	comp=Z,1.0nm,0.8s							
DUG	Dugway, Tooele	76.21	50	*e*P		P	12 38 37.6	+0.1
	comp=Z,1.4nm,0.8s							
PDAR	Pinedale Array	76.48	46	P		P	12 38 40.3	+1.1
	comp=Z,1.2nm,0.6s,baz=268,slow=1.8,SNR=16							
STHS	Stebnicka Huta	78.08	325	*e*P		P	12 38 48.6	+0.9
BRTR	Keskin Array B	78.24	312	P		P	12 38 47.8	-1.1
	comp=Z,1.4nm,0.8s,baz=96,slow=5.0,SNR=9.1							
BRTR				pP		sP	12 39 09.4	-0.9
	comp=Z,1.2nm,0.8s,baz=47,slow=7.3,SNR=3.4							
CRVS	Cervenica-Dubn	78.35	324	*e*P		P	12 38 49.9	+0.7
MORC	Moravsky Berou	79.44	327	*e*P		P	12 38 55.4	+0.2
MORC	Moravsky Berou	79.44	327	*e*P		P	12 38 55.4	+0.2
DPC	Dobruska-Polom	79.52	328	*e*P		P	12 38 56.0	+0.3
DPC	Dobruska-Polom	79.52	328	*e*P		P	12 38 56.0	+0.3
CLL	Collm	80.12	330	*i* P		P	12 38 58.5	-0.3
	comp=Z,9.0nm,1.1s							
CLL	Collm	80.12	330	*i* P		P	12 38 58.5	-0.3
CLL				pmax	pmax			
	comp=Z,9.0nm,1.1s							
KHC	Kasperske Hory	81.60	329	*e*P		P	12 39 07.1	+0.3
KHC	Kasperske Hory	81.60	329	*e*P		P	12 39 07.1	+0.3
KHC	Kasperske Hory	81.60	329	*e*P		P	12 39 07.1	+0.3
	comp=Z,1.9nm,0.8s							
GERES	GERESS Array B	81.77	328	P		P	12 39 07.7	-0.1
	comp=Z,1.0nm,0.6s,baz=35,slow=4.9,SNR=9.3							
ANMO	Albuquerque	83.45	50	*e*P		P	12 39 19.0	+2.1
ANMO				pmax	pmax			
	comp=Z,1.0nm,0.8s							
EIL	Elat	83.95	303	P		P	12 39 19.9	+0.6
	comp=Z,5.8nm,0.7s,baz=13,slow=12,SNR=3.4							
BFO	Black Forest	84.32	331	*e*P		P	12 39 20.7	-0.2
BFO				pmax	pmax			
	comp=Z,6.0nm,1.1s							
BFO	Black Forest	84.32	331	*e*P		P	12 39 20.7	-0.2
	comp=Z,6.4nm,1.1s							
FUORN	Ofenpass-Fuorn	84.95	329	*e*P		P	12 39 24.6	+0.3
TXAR	Lajitas Array	89.02	53	P		P	12 39 45.8	+1.6
	comp=Z,1.3nm,0.7s,baz=290,slow=2.5,SNR=16							
TRY	Troy	93.06	25	*e*P		P	12 40 02.7	+0.1
SNAA	Sanae	142.13	197	PKP		PKPdf	12 46 16.4	-3.4
VNA2	Neumayer--Watz	143.70	196	PKP		PKPbc	12 46 20.2	0.0
	baz=50,slow=4.1							
VNA3	Neumayer Olymp	143.94	195	PKP		PKPbc	12 46 20.7	-0.2
VNA1	Neumayer--Stat	144.09	196	PKP		PKPab	12 46 20.7	-0.1
LPAZ	La Paz	145.70	58	PKPbc		PKPab	12 46 29.3	+0.2
	comp=Z,3.2nm,0.7s,baz=0.9,slow=5.9,SNR=13							
LCO	Las Campanas	151.46	81	*e*PKPdf		PKPdf	12 46 37.4	+0.4
LCO				*e*PKPbc		PKiKP	12 46 44.0	+0.4
LCO				*e*PKPab		PKPab	12 46 52.0	+0.3

*IDC **26** 12:29:26.6±2.5, 36°.58N×69°.79E, h296km±23km, mb3.0/10, mb1 3.1/16, mb1mx2.9/67, mbtmp3.7/16, Error ellipse: s-maj=20.9km s-min=16.1km az=3.0*

*ISCJB **26** 12:29:27.2±0.6, 36°.81N±0°.08×69°.63E±0°.09, h300km, mb3.2/9, Error ellipse: s-maj=12.8km s-min=7.8km az=42.9*

ISC 26 12:29:27.9±0.8, 36°.7N±0°.1×69°.68E±0°.1, h300km, n21, σ0s96/21, mb3.3/9, Hindu Kush region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
AAK	Ala-Archa	6.99	31	P		Pn		12 31 09.6	+0.4
	3.5nm,0.3s,baz=178,slow=4.4,SNR=23								
GEYT	Alibeck	9.29	281	P		Pn		12 31 37.5	+0.2
	0.2nm,0.3s,baz=46,slow=6.2,SNR=3.6								
MKAR	Makanchi Array	13.78	39	P		Pn		12 32 31.0	-0.7
	0.1nm,0.3s,baz=244,slow=16,SNR=3.0								
PYUN	Piuthan	14.13	124	*e*P		Pn		12 32 37.4	+1.1
	11nm,0.4s								
KURBB	Kurchatov Arra	15.30	22	P		P		12 32 48.0	0.0
	0.1nm,0.3s,baz=213,slow=9.1,SNR=3.2								
GKN	Gorkha	15.31	120	*e*P		Pn		12 32 51.3	+1.1
	9.1nm,0.3s								
KKN	Kakani	15.89	120	*e*P		Pn		12 32 58.6	+1.6
	2.9nm,0.2s								
AKTO	Aktyubinsk	16.09	332	P		P		12 32 57.2	+0.5
	0.5nm,0.3s,baz=118,slow=4.8,SNR=9.2								
PKIN	Phulchoki	16.11	120	*e*P		Pn		12 33 00.4	+0.9
	6.1nm,0.5s								
GUN	Gumba	16.24	118	*e*P		Pn		12 33 02.7	+1.5
	12nm,0.5s								
BVAR	Borovoye Array	16.33	2	P		P		12 32 59.5	+0.2
	0.7nm,0.3s,baz=171,slow=8.8,SNR=9.8								
ZALV	Zalesovo Beam	20.20	27	P		P		12 33 39.0	-1.5
	0.7nm,0.3s,baz=220,slow=7.5,SNR=3.4								
FINES	FINESS Array B	36.73	326	P		P		12 36 07.2	+0.5
	0.8nm,0.7s,baz=115,slow=9.6,SNR=3.2								
ARCES	ARCESS Array B	40.56	338	P		P		12 36 38.5	+0.3
	2.1nm,0.9s,baz=104,slow=10,SNR=4.3								
HFS	Hagfors	42.25	322	P		P		12 36 52.4	+0.4
	0.9nm,0.4s,baz=116,slow=10,SNR=4.2								
NOA	NORSAR Array B	43.58	323	P		P		12 37 02.4	-0.2
	1.3nm,0.9s,baz=98,slow=8.0,SNR=2.8								
TORD	Torodi Ar. Bea	64.66	268	P		P		12 39 33.8	-0.6
	0.3nm,0.4s,baz=62,slow=6.0,SNR=4.1								
INK	Inuvik	73.88	9	P		P		12 40 30.1	+0.4
	0.4nm,0.5s,baz=335,slow=6.0,SNR=5.5								
YKA	Yellowknife Ar	81.09	2	P		P		12 41 09.7	+0.2
	0.1nm,0.5s,baz=351,slow=5.5,SNR=3.7								
WRA	Warramunga Arr	83.00	121	P		P		12 41 18.4	-1.6
	0.3nm,0.5s,baz=322,slow=4.9,SNR=6.3								
ASAR	Alice Springs	85.24	124	P		P		12 41 29.9	-1.3
	0.2nm,0.6s,baz=318,slow=4.9,SNR=6.4								

*NIED **26** 12:35:00, 35°.60N×141°.20E, h23km, Mw4.2 Best double couple: M₀2.31000×10¹⁵ NP1:φs155.00000°, δ46.00000°, λ-113.00000°. NP2:φs6.00000°, δ49.00000°, λ-68.00000°.*

*JMA **26** 12:35:36.9±0.2, 35°.64N×141°.23E, h25km±1km, M3.6*

*ISCJB **26** 12:35:37.4±0.4, 35°.64N±0°.03×141°.33E±0°.05, h33km, mb4.0/27, Error ellipse: s-maj=6.5km s-min=4.3km az=17.2*

*NEIC **26** 12:35:39.5±0.3, 35°.60N×141°.24E, h35km, mb4.3/4, Error ellipse: s-maj=8.9km s-min=6.3km az=96.0*

*IDC **26** 12:35:40.2±2.6, 35°.55N×141°.20E, h39km±23km, mb3.8/23, mb1 3.9/27, mb1mx3.8/62, mbtmp4.0/27, ML3.0/3, MS3.4/3, Ms1 3.4/3, ms1mx2.9/39, Error ellipse: s-maj=16.5km s-min=12.5km az=86.0*

ISC 26 12:35:38.7±0.5, 35°.57N±0°.04×141°.30E±0°.06, h33km, n54, σ1s71/53, mb4.1/27, 1C, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
CHOJ	Chosi	0.38	290	⇑P		Pb		12 35 44.0	-3.5
CHOJ						S	Sb	12 35 49.3	-4.3
BSO1	Boso 1	0.95	196	P		Pn		12 35 55.0	-0.3
BSO4	Boso 4	0.98	234	P		Pn		12 35 55.2	-0.8
BSO3	Boso 3	1.00	220	P		Pn		12 35 55.3	-0.9
BSO3						S	Sb	12 36 10.7	+0.4
JYT	Yasato	1.11	306	P		Pn		12 35 55.1	-2.8
MJAR	Matsushiro Arr	2.68	292	Pn		Pn		12 36 18.9	-0.7
	9.5nm,0.3s,baz=95,slow=12,SNR=35								
MAJO	Matsushiro	2.69	292	*e*Pn		Pn		12 36 18.9	-0.7
MAT	Matsushiro	2.69	292	P		Pn		12 36 18.5	-1.1
MAT				eS		Sn		12 36 50.9	-0.1
JHJ2	Mitsune	2.74	207	*e*Pn		Pn		12 36 22.2	+1.8
JHJ	Hachijo jima 2	2.75	208	Pn		Pn		12 36 22.2	+1.7
	14nm,0.3s,baz=75,slow=23,SNR=4.6								
JHJ						Sn	Sb	12 36 56.0	-4.5
	32nm,0.3s,baz=79,slow=23,SNR=8.5								
ERM	Erimo	6.59	12	*e*Pn		Pn		12 37 12.0	-1.3
ERM				*e*Sn		Sn		12 38 26.3	-1.0
CBIJ	Chichi jima	8.48	175	Pn		Pn		12 37 38.5	-0.8
CBIJ				Sn		Sn		12 39 10.1	-3.8
JCJ	Chichijima	8.48	175	Pn		Pn		12 37 38.5	-0.8
	5.3nm,0.3s,baz=94,slow=22,SNR=5.6								
JCJ				Sn		Sn		12 39 10.1	-3.8
	2.5nm,0.3s,baz=274,slow=22,SNR=2.0								
JCJ				LR		LR		12 40 39.6	
	comp=Z,198nm,19.8s,baz=307,slow=35								
ASAJ	Asahikawa	8.59	6	Pn		Pn		12 37 37.7	-3.0
	1.0nm,0.3s,baz=216,slow=15,SNR=10								
ASAJ				Sn		Sn		12 39 14.2	-2.1
	0.3nm,0.3s,baz=297,slow=32,SNR=2.6								
ASAJ	Asahikawa	8.59	6	*e*Pn		Pn		12 37 38.7	-2.0
ASAJ				*e*Sn		Sn		12 39 13.7	-2.7
KSRS	Korea Array	10.93	284	Pn		Pn		12 38 16.7	+4.0
	0.0nm,0.3s,baz=97,slow=14,SNR=4.4								
KSRS				LR		LR		12 42 21.4	
	comp=Z,209nm,21.3s,baz=325,slow=37								
KSAR	Wonju Array Be	10.96	284	Pn		Pn		12 38 16.7	+3.6
USRK	Ussuriysk Ar.	11.19	323	Pn		Pn		12 38 18.2	+1.9
	0.2nm,0.3s,baz=138,slow=14,SNR=2.9								
USRK				LR		LR		12 42 29.6	
	comp=Z,217nm,18.3s,baz=179,slow=37								
KLR	Kul'dur	15.34	336	Pn		Pn		12 39 08.7	-4.0
	0.2nm,0.3s,baz=162,slow=16,SNR=3.3								
MA2	Magadan	24.80	12	P		P		12 40 57.7	+0.3
	4.0nm,0.7s,baz=205,slow=8.4,SNR=3.9								
H11N2	WAKE ISLAND Hy	27.51	118	T		T		13 10 13.7	
	baz=311,slow=75,SNR=280								
H11N1	WAKE ISLAND Hy	27.52	118	T		T		13 10 15.2	
	baz=311,slow=75,SNR=281								
H11N3	WAKE ISLAND Hy	27.53	118	T		T		13 10 14.0	
	baz=311,slow=75,SNR=356								
H11S1	WAKE ISLAND Hy	28.17	120	T		T		13 11 05.3	
	baz=312,slow=76,SNR=190								
H11S3	WAKE ISLAND Hy	28.17	120	T		T		13 11 05.4	
	baz=312,slow=76,SNR=222								
H11S2	WAKE ISLAND Hy	28.19	120	T		T		13 11 04.5	
	baz=312,slow=76,SNR=243								
SEY	Seymchan	28.24	11	P		P		12 41 30.2	+1.9
	1.9nm,0.3s,baz=177,slow=2.5,SNR=6.3								
SONM	Songino Array	28.55	306	P		P		12 41 32.1	+0.6
	0.9nm,0.6s,baz=111,slow=10,SNR=5.1								
TIXI	Tiksi	36.73	353	P		P		12 42 42.7	+0.3
	1.0nm,0.4s,baz=148,slow=6.4,SNR=5.6								
ZALV	Zalesovo Beam	42.84	314	P		P		12 43 33.6	+0.3
	2.7nm,0.6s,baz=101,slow=7.6,SNR=11								
MKAR	Makanchi Array	44.83	303	P		P		12 43 50.1	+0.5
	3.3nm,0.8s,baz=88,slow=10,SNR=26								
KURK	Kurchatov	46.77	309	*e*P		P		12 44 04.7	-0.1
	7.7nm,0.6s								
KURBB	Kurchatov Arra	46.84	309	P		P		12 44 05.3	+0.1
	2.3nm,0.5s,baz=84,slow=7.7,SNR=24								
TKM2	Tokmak 2	50.25	299	*e*P		P		12 44 32.9	+0.9
	2.8nm,0.7s								
ILAR	Eielson Array	50.78	32	P		P		12 44 36.5	+1.2
	1.0nm,1.0s,baz=273,slow=6.8,SNR=6.7								
BVAR	Borovoye Array	51.49	313	P		P		12 44 41.3	+0.4
	1.5nm,0.6s,baz=225,slow=39,SNR=6.5								
FITZ	Fitzroy Crossi	55.41	198	P		P		12 45 10.8	+1.0
	2.4nm,0.9s,baz=282,slow=22,SNR=3.7								
WRAB	Tennant Creek	55.59	188	*e*P		P		12 45 11.3	+0.2
	2.9nm,0.9s								
WRA	Warramunga Arr	55.60	188	P		P		12 45 11.4	+0.2
	1.6nm,0.7s,baz=4.5,slow=7.6,SNR=16								
INK	Inuvik	55.73	27	P		P		12 45 13.1	+1.4
	0.5nm,0.6s,baz=293,slow=7.5,SNR=2.8								
ARU	Arti	57.40	319	P		P		12 45 23.6	-0.1
	2.5nm,0.4s,baz=97,slow=5.1,SNR=5.8								
ABKAR	Akbulak array	58.81	311	*e*P		P		12 45 33.9	+0.2
	0.8nm,0.4s								
ASAR	Alice Springs	59.33	188	P		P		12 45 37.0	-0.5
	0.3nm,0.7s,baz=19,slow=12,SNR=5.6								
RES	Resolute Bay	64.04	14	P		P		12 46 09.5	+0.9
	1.9nm,0.8s,baz=310,slow=5.3,SNR=8.6								
YKA	Yellowknife Ar	65.12	30	P		P		12 46 16.1	+0.3
	0.4nm,0.8s,baz=299,slow=6.4,SNR=7.8								
FINES	FINESS Array B	70.06	332	P		P		12 46 47.5	+0.5
	2.2nm,0.7s,baz=46,slow=10,SNR=6.4								
KBZ	Khabaz	71.78	311	P		P		12 46 58.0	+0.3
	0.6nm,0.3s,baz=122,slow=3.5,SNR=4.4								
AKASG	Malin Array Be	75.39	322	P		P		12 47 18.6	-0.3
	1.0nm,0.5s,baz=44,slow=6.3,SNR=7.1								
NB2	NORSAR Subarra	75.50	337	P		P		12 47 19.7	+0.4
	comp=Z,0.6nm,0.6s,baz=40,slow=5.9								
NOA	NORSAR Array B	75.50	337	P		P		12 47 20.1	+0.8
	comp=Z,1.8nm,0.9s,baz=39,slow=5.8,SNR=4.3								
NVAR	Mina Array Bea	75.94	53	P		P		12 47 24.2	+1.6
	comp=Z,0.4nm,0.6s,baz=314,slow=4.5,SNR=3.0								
PDAR	Pinedale Array	78.76	45	P		P		12 47 39.2	+0.9
	comp=Z,0.1nm,0.4s,baz=219,slow=1.2,SNR=3.5								
BRTR	Keskin Array B	79.75	312	P		P		12 47 45.0	+1.4
	comp=Z,1.2nm,0.9s,baz=114,slow=3.0,SNR=6.7								
LPAZ	La Paz	147.49	61	PKPbc		PKPbc		12 55 22.4	+1.8
	comp=Z,0.7nm,0.7s,baz=329,slow=6.4,SNR=2.7								

*ISCJB **26** 12:38:26.3±0.7, 34°.70N±0°.08×142°.83E±0°.10, h10km, mb3.7/9, Error ellipse: s-maj=13.8km s-min=9.1km az=139.7*

*IDC **26** 12:38:26.8±0.8, 34°.67N×143°.06E, h0km, mb3.7/9, mb1 3.9/10, mb1mx3.7/56, mbtmp3.7/10, ML3.5/1, Error ellipse: s-maj=26.7km s-min=16.7km az=109.0*

ISC 26 12:38:28.4±0.8, 34°.70N±0°.10×142°.8E±0°.1, h10km, n13, σ1s26/13, mb3.6/9, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
JHJ	Hachijo jima 2	2.98	239	Pn		Pn		12 39 15.2	-0.5
	16nm,0.3s,baz=58,slow=22,SNR=5.3								
JHJ						Sn	Sn	12 39 50.2	-1.3
	21nm,0.3s,baz=66,slow=22,SNR=4.7								
MJAR	Matsushiro Arr	4.18	297	Pn		Pn		12 39 30.6	-1.7
	2.0nm,0.3s,baz=94,slow=9.5,SNR=8.7								
MAT	Matsushiro	4.18	297	P		Pn		12 39 31.5	-0.8
ASAJ	Asahikawa	9.40	359	Pn		Pn		12 40 38.6	-5.3
	1.9nm,0.3s,baz=227,slow=9.6,SNR=12								
ASAJ						Sn	Sn	12 42 18.7	-11
	0.6nm,0.3s,baz=28,slow=32,SNR=3.2								
SEY	Seymchan	28.88	9	P		P		12 44 27.6	+0.6
	0.3nm,0.3s,baz=218,slow=6.6,SNR=3.5								
SONM	Songino Array	30.07	307	P		P		12 44 38.8	+1.0
	0.4nm,0.4s,baz=107,slow=8.0,SNR=2.3								
MKAR	Makanchi Array	46.35	304	P		P		12 46 57.0	+2.4
	0.2nm,0.3s,baz=97,slow=9.3,SNR=3.0								
WRA	Warramunga Arr	54.94	190	P		P		12 47 59.2	-0.3
	2.8nm,0.8s,baz=9.4,slow=7.5,SNR=14								
FITZ	Fitzroy Crossi	55.00	200	P		P		12 48 00.8	+0.8
	1.4nm,0.6s,baz=43,slow=7.8,SNR=4.7								
INK	Inuvik	55.95	26	P		P		12 48 05.6	-0.7
	0.4nm,0.6s,baz=289,slow=0.8,SNR=3.6								
ASAR	Alice Springs	58.66	190	P		P		12 48 26.1	+0.1
	1.1nm,0.8s,baz=14,slow=9.8,SNR=14								
YKA	Yellowknife Ar	65.25	30	P		P		12 49 08.4	-1.4
	0.1nm,0.7s,baz=302,slow=6.4,SNR=3.3								
NVAR	Mina Array Bea	75.46	53	P		P		12 50 12.9	-0.2
	0.4nm,0.6s,baz=291,slow=8.6,SNR=2.1								

*IDC **26** 12:38:55.5±0.8, 34°.83N×142°.78E, h0km, mb3.7/6, mb1 3.9/9, mb1mx3.6/58, mbtmp3.8/9, ML3.8/3, Error ellipse: s-maj=34.1km s-min=16.9km az=115.0*

*ISCJB **26** 12:38:58.3±0.8, 34°.8N±0°.1×142°.6E±0°.1, h33km, mb3.8/6, Error ellipse: s-maj=18.8km s-min=10.0km az=140.9*

ISC 26 12:39:00.1±0.8, 34°.9N±0°.1×142°.6E±0°.1, h35km, n9, σ1s27/10, mb3.9/6, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
JHJ	Hachijo jima 2	2.95	235	Pn		Pn		12 39 44.1	-0.3
	24nm,0.3s,baz=68,slow=19,SNR=4.1								
JHJ						Sn	Sn	12 40 16.9	-1.7
	42nm,0.3s,baz=59,slow=19,SNR=4.8								
MJAR	Matsushiro Arr	3.98	296	Pn		Pn		12 39 59.5	+0.9
	2.6nm,0.3s,baz=95,slow=13,SNR=6.4								
ASAJ	Asahikawa	9.24	360	Pn		Pn		12 41 08.5	-2.2
	1.9nm,0.3s,baz=255,slow=14,SNR=5.3								
WRA	Warramunga Arr	55.08	190	P		P		12 48 28.4	-0.2
	2.7nm,0.8s,baz=8.1,slow=7.6,SNR=9.1								
FITZ	Fitzroy Crossi	55.10	200	P		P		12 48 29.8	+1.1
	1.4nm,0.7s,baz=66,slow=10,SNR=4.7								
INK	Inuvik	55.87	27	P		P		12 48 34.1	+0.4
	0.5nm,0.6s,baz=270,slow=4.0,SNR=3.3								
ASAR	Alice Springs	58.80	189	P		P		12 48 55.3	+0.4
	1.0nm,0.8s,baz=15,slow=10,SNR=8.6								
YKA	Yellowknife Ar	65.18	30	P		P		12 49 38.2	+0.8
	0.2nm,0.8s,baz=308,slow=6.8,SNR=2.7								
NVAR	Mina Array Bea	75.48	53	P		P		12 50 41.7	+0.7
	0.5nm,0.6s,baz=283,slow=8.2,SNR=2.8								

*MAN **26** 12:46:46, 9°.39N×127°.44E, h17km, mb4.4, ML3.2, MS3.0*

*ISCJB **26** 12:46:48.9±1.2, 9°.4N±0°.1×127°.28E±0°.07, h10km, mb3.5/3, Error ellipse: s-maj=14.6km s-min=10.6km az=5.8*

*IDC **26** 12:46:50.3±1.7, 9°.29N×127°.40E, h0km, mb3.5/3, mb1 3.7/4, mb1mx3.4/46, mbtmp3.7/4, ML4.6/1, Error ellipse: s-maj=43.1km s-min=25.6km az=79.0*

ISC 26 12:46:51.9±1.5, 9°.2N±0°.1×127°.3E±0°.1, h10km, n10, σ1s72/10, mb3.5/3, 1C, Philippine Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
BUTP	Butuan	1.65	262	*e*P		Pn		12 47 17.9	-3.1
BUTP				*e*S		Sn		12 47 39.0	-3.3
MATI	Mati	2.46	204	*e*P		Pn		12 47 30.2	-1.9
BUKP	Musuan	2.56	239	*e*P		Pn		12 47 32.7	-0.8
CGP	Cagayan de Oro	2.66	254	⇑*e*P		Pn		12 47 36.0	+1.2
CGP				*e*S		Sn		12 48 07.8	+0.6
DAV	Davao City (W)	2.70	219	Pn		Pn		12 47 36.7	+1.3
	87nm,0.3s,baz=310,slow=3.8,SNR=1.9								
DAV						Sn	Sb	12 48 14.9	+1.3
	87nm,0.3s,baz=285,slow=18,SNR=3.8								
OCLP	Ormoc	3.21	305	*e*P		Pn		12 47 37.4	-5.1
PAGZ	Pagadian	4.08	251	*e*P		Pn		12 47 48.6	-5.9
WRA	Warramunga Arr	29.78	167	P		P		12 52 59.8	+0.8
	0.2nm,0.5s,baz=346,slow=9.4,SNR=4.3								
ASAR	Alice Springs	33.30	169	P		P		12 53 30.1	+0.1
	0.2nm,0.3s,baz=354,slow=6.5,SNR=7.1								
MKAR	Makanchi Array	53.48	323	P		P		12 56 12.5	0.0
	1.1nm,0.8s,baz=123,slow=8.8,SNR=6.7								

*IDC **26** 12:55:01.9±0.7, 34°.73N×142°.89E, h0km, mb3.7/9, mb1 3.9/13, mb1mx3.7/46, mbtmp3.8/13, ML3.6/2, Error ellipse: s-maj=23.2km s-min=15.3km az=101.0*

*JMA **26** 12:55:03.0±0.6, 34°.90N×142°.89E, h51km, M3.7*

*ISCJB **26** 12:55:04.7±0.6, 34°.82N±0°.06×142°.75E±0°.05, h33km, mb3.7/9, Error ellipse: s-maj=8.9km s-min=6.0km az=164.3*

ISC 26 12:55:06.6±0.7, 34°.70N±0°.06×142°.76E±0°.07, h35km, n29, σ1s40/24, mb3.6/9, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
BSO1	Boso 1	1.47	269	P		Pn		12 55 29.2	-0.9
BSO1				S		Sn		12 55 48.1	+0.4
BSO2	Boso 2	1.65	272	S		Sn		12 55 53.5	+0.9
CHOJ	Ch

NIED ***26*** *13:01:00,36˝.90N×141˚.50E,h41km,Mw3.6 Best double couple: M₀2.77000×10¹⁴ NP1:φs166.00000°,δ13.00000°, λ-123.00000°. NP2:φs20.00000°,δ79.00000°, λ-83.00000°.*

IDC ***26*** *13:01:50.4±2.0,37˚.05N×141˚.82E,h0km,mb3.6/4, mb1 3.7/6,mb1mx3.4/35,mbtmp3.6/6,ML3.6/2,MS3.1/2, Ms1 3.1/2,ms1mx2.5/44,Error ellipse: s-maj=41.5km s-min=25.1km az=69.0*

ISCJB ***26*** *13:01:54.6±1.2,36˚.92N±0˚.05×141˚.6E±0˚.1,h37km±12km, mb3.5/4,MS3.2/1,Error ellipse: s-maj=13.6km s-min=7.8km az=179.3*

JMA ***26*** *13:01:55.3±0.2,36˚.93N×141˚.48E,h46km±2km,M3.8*

ISC 26 13:01:55.7±2.3,36˚.98N±0˚.06×141˚.5E±0˚.1,h27km±14km, n19,σ1°20/19,mb3.5/4,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.58**	**283**	P	**Pb**	**13 02 07.0**	**-0.3**
ONAJ				S	**Sb**	**13 02 15.2**	**0.0**
JFK	**Kawauchi**	**0.64**	**308**	P	**Pb**	**13 02 07.8**	**-0.5**
JMM	**Marumori**	**1.05**	**328**	P	**Pn**	**13 02 13.9**	**-0.8**
JMM				S	**Sn**	**13 02 27.1**	**-1.4**
JFT	**Otama**	**1.08**	**301**	P	**Pb**	**13 02 15.3**	**-0.4**
JFT				S	**Sb**	**13 02 29.2**	**-0.2**
MJAR	**Matsushiro Arr**	**2.68**	**262**	Pn	**Pn**	**13 02 38.0**	**+0.9**
	9.3nm,0.3s,baz=90,slow=15,SNR=46						
MJAR				Sn	**Sb**	**13 03 14.9**	**-0.6**
	7.5nm,0.3s,baz=234,slow=10,SNR=8.8						
MAT	**Matsushiro**	**2.68**	**262**	P	**Pn**	**13 02 38.4**	**+1.3**
MAT				S	**Sn**	**13 03 07.8**	**-0.9**
JHJ	**Hachijo jima 2**	**4.10**	**201**	Pn	**Pn**	**13 02 56.3**	**-0.2**
	8.7nm,0.3s,baz=318,slow=21,SNR=8.6						
JHJ				Sn	**Sn**	**13 03 41.6**	**-2.0**
	9.2nm,0.3s,baz=282,slow=23,SNR=4.5						
JHJ				LR	LR	13 04 35.8	
	comp=Z,159nm,21.0s,baz=74,slow=39						
ASAJ	**Asahikawa**	**7.18**	**6**	Pn	**Pn**	**13 03 39.4**	**+0.5**
	0.5nm,0.3s,baz=212,slow=13,SNR=7.3						
USRK	**Ussuriysk Ar.**	**10.21**	**318**	Pn	**Pn**	**13 04 23.5**	**+3.1**
	0.1nm,0.3s,baz=120,slow=10,SNR=2.8						
SONM	**Songino Array**	**27.88**	**304**	P	**P**	**13 07 43.7**	**+0.5**
	0.8nm,0.8s,baz=91,slow=6.9,SNR=4.6						
SONM				LR	LR	13 18 11.2	
	comp=Z,57nm,19.9s,baz=214,slow=35						
H11N2	**WAKE ISLAND Hy**	**28.06**	**121**	T	T	13 37 02.1	
	baz=314,slow=76,SNR=10						
H11N1	**WAKE ISLAND Hy**	**28.06**	**121**	T	T	13 37 03.3	
	baz=314,slow=76,SNR=9.6						
H11N3	**WAKE ISLAND Hy**	**28.07**	**121**	T	T	13 37 11.9	
	baz=314,slow=76,SNR=10.0						
H11S1	**WAKE ISLAND Hy**	**28.77**	**123**	T	T	13 37 57.9	
	baz=315,slow=76,SNR=13						
H11S3	**WAKE ISLAND Hy**	**28.77**	**123**	T	T	13 37 57.1	
	baz=315,slow=76,SNR=4.5						
H11S2	**WAKE ISLAND Hy**	**28.78**	**123**	T	T	13 38 04.6	
	baz=315,slow=76,SNR=6.7						
ZALV	**Zalesovo Beam**	**42.01**	**312**	P	**P**	**13 09 44.6**	**+0.2**
	0.4nm,0.4s,baz=69,slow=8.1,SNR=4.3						
MKAR	**Makanchi Array**	**44.21**	**302**	P	**P**	**13 10 01.6**	**-0.8**
	0.6nm,0.7s,baz=88,slow=11,SNR=3.8						
WRA	**Warramunga Arr**	**57.01**	**188**	P	**P**	**13 11 38.7**	**-0.4**
	0.6nm,1.0s,baz=7.3,slow=7.0,SNR=3.2						

ISCJB ***26*** *13:03:14.9±0.8,8˚.65N±0˚.03×71˚.25W±0˚.03,h5km±5km, Error ellipse: s-maj=5.4km s-min=4.2km az=153.2*

FUNV ***26*** *13:03:14.7,8˚.62N×71˚.29W,h1km,MW2.5*

ISC 26 13:03:14.2±1.2,8˚.62N±0˚.04×71˚.26W±0˚.03,h9km±10km, n12,σ0°42/22,Venezuela

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
VIGV	**El Vigia**	**0.24**	**334**	*e*P	**Pg**	**13 03 19.0**	**-0.1**
VIGV				*e*S	**Sg**	**13 03 22.6**	**+0.2**
SOCV	**Socops**	**0.52**	**130**	*e*P	**Pb**	**13 03 25.2**	**-0.4**
SOCV				*e*S	**Sb**	**13 03 33.0**	**-0.3**
SDV	**Santo Domingo**	**0.67**	**67**	*e*P	Pn	13 03 34.5	+4.4
SDV				*i*		13 03 36.7	
	comp=Z,47nm,0.1s						
CAPV	**Capacho**	**1.29**	**234**	*e*P	**Pn**	**13 03 38.6**	**-0.1**
CAPV				*e*S	**Sn**	**13 03 56.1**	**-0.1**
QARV	**Quebrada Arrib**	**1.73**	**25**	*e*P	**Pb**	**13 03 45.9**	**-0.4**
QARV				*e*S	**Sb**	**13 04 08.4**	**+0.2**
CBRI	**Barrientos, No**	**1.77**	**240**	*e*P	**Pg**	**13 03 48.3**	**+0.1**
CBRI				*e*S	**Sg**	**13 04 11.9**	**+0.7**
CBRI				*i*		13 04 13.5	
	comp=Z,21nm,0.3s						
GRMC	**Gramalote, San**	**1.77**	**240**	*e*P	**Pb**	**13 03 46.4**	**-0.7**
GRMC				*e*S	**Sn**	**13 04 08.6**	**+0.4**
GRMC				*i*		13 04 11.8	
	comp=Z,26nm,0.3s						
CURV	**Curarigua**	**1.88**	**43**	*e*P	**Pb**	**13 03 48.5**	**-0.4**
CURV				*e*S	**Sb**	**13 04 12.3**	**-0.3**
SANV	**Sanarito**	**1.91**	**63**	*e*P	**Pb**	**13 03 49.1**	**-0.3**
SANV				*e*S	**Sb**	**13 04 13.2**	**-0.3**
OCAC	**Ocana**	**2.08**	**260**	*e*P	**Pb**	**13 03 51.7**	**-0.5**
OCAC				*e*S	**Sb**	**13 04 18.4**	**+0.2**
OCAC				*i*		13 04 22.0	
	comp=Z,43nm,0.3s						
VIRV	**Villa del Rosa**	**2.19**	**329**	*e*P	**Pn**	**13 03 50.8**	**-0.1**
VIRV				*e*S	**Sn**	**13 04 18.4**	**+0.4**
BAUV	**El Baul**	**3.19**	**84**	*e*P	**Pn**	**13 04 05.5**	**+0.8**
BAUV				*e*S	**Sn**	**13 04 42.9**	**-0.1**

NIED ***26*** *13:13:00,36˚.50N×141˚.10E,h11km,Mw3.6 Best double couple: M₀2.41000×10¹⁴ NP1:φs314.00000°,δ82.00000°, λ-176.00000°. NP2:φs224.00000°,δ86.00000°, λ-8.00000°.*

ISCJB ***26*** *13:13:06.8±1.1,36˚.54N±0˚.04×141˚.15E±0˚.07,h22km±6km, mb3.5/1,Error ellipse: s-maj=10.0km s-min=5.6km az=21.3*

JMA ***26*** *13:13:07.8±0.1,36˚.52N×141˚.07E,h38km±1km,M3.9*

JMA Felt II J1.

IDC ***26*** *13:13:09.6±2.7,36˚.61N×141˚.26E,h52km±29km,mb3.1/1, mb1 3.5/5,mb1mx3.1/38,mbtmp3.6/5,ML3.3/4,MS2.5/2, Ms1 2.5/2,ms1mx2.2/17,Error ellipse: s-maj=22.0km s-min=14.3km az=69.0*

ISC 26 13:13:09.6±1.5,36˚.58N±0˚.05×140˚.91E±0˚.07,h31km±12km, n21,σ1°61/23,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHO	**Hitachi**	**0.27**	**276**	P	**Pn**	**13 13 16.9**	**-0.6**
JHO				S	**Sn**	**13 13 23.2**	**+0.6**
ONAJ	**Iwakimizuishiy**	**0.52**	**350**	P	**Pb**	**13 13 19.7**	**-0.8**
JYT	**Yasato**	**0.68**	**239**	P	**Pb**	**13 13 21.9**	**-1.0**
JYT				S	**Sn**	**13 13 32.4**	**-0.1**
JFK	**Kawauchi**	**0.78**	**358**	P	**Pb**	**13 13 23.0**	**-1.7**
JFT	**Otama**	**1.04**	**334**	P	**Pb**	**13 13 28.8**	**-0.2**
JFT				S	**Sb**	**13 13 43.3**	**+1.0**
JAG	**Ashikaga**	**1.18**	**263**	P	**Pn**	**13 13 29.9**	**-0.1**
JAG				S	**Sb**	**13 13 46.4**	**+0.1**
JFY	**Yanaizu**	**1.27**	**311**	P	**Pb**	**13 13 32.5**	**-0.3**
JFY				S	**Sb**	**13 13 50.9**	**+2.1**
JMM	**Marumori**	**1.28**	**356**	P	**Pn**	**13 13 30.8**	**-0.6**
JMM				S	**Sn**	**13 13 47.3**	**-0.2**
MJAR	**Matsushiro Arr**	**2.17**	**270**	P	**Pn**	**13 13 45.0**	**+1.3**
	20nm,0.3s,baz=85,slow=9.6,SNR=140						
MJAR				S	**Sb**	**13 14 16.2**	**+1.5**
	13nm,0.3s,baz=58,slow=20,SNR=6.1						
MJAR				LR	LR	13 14 41.5	
	comp=Z,38nm,20.2s,baz=190,slow=38						
MAT	**Matsushiro**	**2.17**	**270**	P	**Pn**	**13 13 45.3**	**+1.6**
MAT				S	**Sn**	**13 14 07.6**	**-2.0**
JHJ	**Hachijo jima 2**	**3.58**	**195**	P	**Pn**	**13 14 02.9**	**0.0**
	7.5nm,0.3s,baz=277,slow=23,SNR=5.5						
JHJ				S	**Sn**	**13 14 47.3**	**+3.1**
	12nm,0.3s,baz=48,slow=21,SNR=3.2						
ASAJ	**Asahikawa**	**7.63**	**9**	P	**Pn**	**13 14 58.0**	**-0.6**
	0.3nm,0.3s,baz=197,slow=18,SNR=4.7						
ASAJ				S	**Sn**	**13 16 27.6**	**+3.6**
	0.5nm,0.3s,baz=270,slow=14,SNR=3.2						
JNU	**Nakatsue**	**8.94**	**250**	LR	LR	13 18 33.7	
	comp=Z,59nm,18.8s,baz=118,slow=35						
KSRS	**Korea Array**	**10.42**	**279**	P	Pn	13 15 42.4	+5.6
	0.2nm,0.3s,baz=92,slow=14,SNR=6.3						
H11N2	**WAKE ISLAND Hy**	**28.27**	**119**	T	T	13 48 31.1	
	baz=312,slow=75,SNR=61						
H11N1	**WAKE ISLAND Hy**	**28.28**	**119**	T	T	13 48 31.9	
	baz=312,slow=75,SNR=59						
H11N3	**WAKE ISLAND Hy**	**28.29**	**119**	T	T	13 48 32.5	
	baz=312,slow=75,SNR=58						
H11S1	**WAKE ISLAND Hy**	**28.96**	**122**	T	T	13 49 09.6	
	baz=314,slow=76,SNR=127						
H11S3	**WAKE ISLAND Hy**	**28.96**	**122**	T	T	13 49 17.3	
	baz=314,slow=76,SNR=80						
H11S2	**WAKE ISLAND Hy**	**28.98**	**122**	T	T	13 49 26.9	
	baz=314,slow=76,SNR=69						
WRA	**Warramunga Arr**	**56.56**	**187**	P	**P**	**13 22 47.1**	**-2.1**
	0.5nm,1.0s,baz=3.7,slow=7.3,SNR=3.9						

ROM ***26*** *13:34:28.8±0.4,42˚.12N×15˚.67E,h6km±3km,Ml2.7/25, Error ellipse: s-maj=4.6km s-min=2.3km az=31.0*

CSEM ***26*** *13:34:29.1±0.4,42˚.11N×15˚.60E,h10km,ML2.7,Error ellipse: s-maj=8.0km s-min=4.0km az=34.0*

ISCJB ***26*** *13:34:30.1±0.8,42˚.14N±0˚.04×15˚.61E±0˚.04,h15km±7km, Error ellipse: s-maj=7.9km s-min=3.9km az=33.5*

ISC 26 13:34:30.5±1.1,42˚.06N±0˚.03×15˚.60E±0˚.02,h19km±3km, n64,σ0°62/79,Adriatic Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SGRT	**San Giovanni R**	**0.33**	**160**	Pg	**Pg**	**13 34 37.2**	**-0.5**
SGRT				Sg	**Sb**	**13 34 43.2**	**+0.4**
	614nm,0.2s						
SGRT	**San Giovanni R**	**0.33**	**160**	Pg	**Pg**	**13 34 37.2**	**-0.5**
SGRT				Sg	**Sb**	**13 34 43.2**	**+0.4**
	614nm,0.2s						
MSAG	**Monte S. Angel**	**0.42**	**146**	Pg	**Pg**	**13 34 39.0**	**-0.3**
MSAG				Sg	**Sb**	**13 34 46.3**	**+0.7**
	857nm,0.2s						
MSAG	**Monte S. Angel**	**0.42**	**146**	Pg	**Pg**	**13 34 39.0**	**-0.3**
MSAG				Sg	**Sb**	**13 34 46.3**	**+0.7**
	857nm,0.2s						
MS1	**Monte Sant'Ang**	**0.44**	**144**	*e*Pg	**Pg**	**13 34 39.5**	**-0.1**
MS1				Sg	**Sn**	**13 34 48.5**	**-1.0**
CIGN	**Sant'Elia a Pi**	**0.66**	**232**	Pg	**Pg**	**13 34 43.3**	**-0.3**
CIGN				Sg	**Sb**	**13 34 53.1**	**+0.9**
	69nm,0.4s						
CIGN	**Sant'Elia a Pi**	**0.66**	**232**	Pg	**Pg**	**13 34 43.3**	**-0.3**
CIGN				Sg	**Sb**	**13 34 53.1**	**+0.9**
	69nm,0.4s						
FRES	**Fresagrandinar**	**0.70**	**263**	Pg	**Pb**	**13 34 43.6**	**-0.5**
FRES				Sg	**Sn**	**13 34 55.2**	**-0.5**
	249nm,0.5s						
FRES	**Fresagrandinar**	**0.70**	**263**	Pg	**Pb**	**13 34 43.6**	**-0.5**
FRES				Sg	**Sn**	**13 34 55.2**	**-0.5**
	249nm,0.5s						
GATE	**Gambatesa**	**0.75**	**223**	Pg	**Pn**	**13 34 46.5**	**+0.3**
	195nm,0.4s						
GATE	**Gambatesa**	**0.75**	**223**	Pg	**Pn**	**13 34 46.5**	**+0.3**
	195nm,0.4s						
MOCO	**Biccari - m.te**	**0.77**	**205**	Pg	**Pb**	**13 34 45.6**	**+0.2**
MOCO				Sg	**Sg**	**13 34 56.7**	**+0.9**
	304nm,0.7s						
TRIV	**Trivento**	**0.84**	**249**	Pg	**Pb**	**13 34 46.7**	**+0.2**
	96nm,0.4s						
TRIV	**Trivento**	**0.84**	**249**	Pg	**Pb**	**13 34 46.7**	**+0.2**
	96nm,0.4s						
CAFR	**Castel Frentan**	**0.94**	**280**	Pg	**Pg**	**13 34 48.8**	**-0.1**
	574nm,0.4s						
CAFR	**Castel Frentan**	**0.94**	**280**	Pg	**Pg**	**13 34 48.8**	**-0.1**
	574nm,0.4s						
SACR	**S. Croce Del S**	**0.94**	**225**	Pg	**Pb**	**13 34 48.2**	**-0.1**
SACR	**S. Croce Del S**	**0.94**	**225**	Pg	**Pb**	**13 34 48.2**	**-0.1**
SGTA	**Sant Agata di**	**0.94**	**191**	Pg	**Pb**	**13 34 48.2**	**-0.2**
	219nm,0.4s						
SGTA	**Sant Agata di**	**0.94**	**191**	Pg	**Pb**	**13 34 48.2**	**-0.2**
	219nm,0.4s						
MRB1	**Monte Rocchett**	**1.05**	**207**	Pg	**Pb**	**13 34 50.3**	**+0.2**
MRB1	**Monte Rocchett**	**1.05**	**207**	Pg	**Pb**	**13 34 50.3**	**+0.2**
CAFE	**Carife**	**1.07**	**195**	Pg	**Pb**	**13 34 50.9**	**+0.4**
	136nm,0.5s						
CAFE	**Carife**	**1.07**	**195**	Pg	**Pb**	**13 34 50.9**	**+0.4**
	136nm,0.5s						
MRVN	**Minervino Murg**	**1.10**	**156**	Pg	**Pb**	**13 34 49.8**	**-1.2**
	68nm,0.3s						
MRVN	**Minervino Murg**	**1.10**	**156**	Pg	**Pb**	**13 34 49.8**	**-1.2**
	68nm,0.3s						
CDT	**Castel del Mon**	**1.10**	**152**	*e*Pg	**Pb**	**13 34 49.9**	**-1.2**
CDT				Sg	**Sg**	**13 35 07.8**	**+1.3**
VULT	**Monte Vulture**	**1.11**	**179**	Pg	**Pb**	**13 34 51.3**	**+0.1**
	241nm,0.3s						
VULT	**Monte Vulture**	**1.11**	**179**	Pg	**Pb**	**13 34 51.3**	**+0.1**
	241nm,0.3s						
SGG	**Gregorio Mates**	**1.14**	**234**	Pg	**Pn**	**13 34 51.2**	**-0.3**
	80nm,0.5s						
SGG	**Gregorio Mates**	**1.14**	**234**	Pg	**Pn**	**13 34 51.2**	**-0.3**
	80nm,0.5s						
PALZ	**Palazzo San Ge**	**1.15**	**166**	Pg	**Pn**	**13 34 50.7**	**-1.0**
	184nm,0.8s						
PALZ	**Palazzo San Ge**	**1.15**	**166**	Pg	**Pn**	**13 34 50.7**	**-1.0**
	184nm,0.8s						
VAGA	**Valle Agricola**	**1.21**	**238**	Pg	**Pn**	**13 34 52.3**	**-0.2**
	65nm,0.4s						
VAGA	**Valle Agricola**	**1.21**	**238**	Pg	**Pn**	**13 34 52.3**	**-0.2**
	65nm,0.4s						
INTR	**Introdacqua**	**1.26**	**268**	Pg	**Pn**	**13 34 53.3**	**0.0**
	313nm,0.6s						
INTR	**Introdacqua**	**1.26**	**268**	Pg	**Pn**	**13 34 53.3**	**0.0**
	313nm,0.6s						
ACER	**Acerenza**	**1.30**	**168**	Pg	**Pn**	**13 34 54.1**	**+0.3**
	191nm,0.4s						
ACER	**Acerenza**	**1.30**	**168**	Pg	**Pn**	**13 34 54.1**	**+0.3**
	191nm,0.4s						
MRLC	**Muro Lucano**	**1.31**	**184**	Pg	**Pn**	**13 34 54.2**	**+0.3**
MRLC	**Muro Lucano**	**1.31**	**184**	Pg	**Pn**	**13 34 54.2**	**+0.3**
MCRV	**Calabrutti - M**	**1.32**	**194**	Pg	**Pn**	**13 34 54.0**	**-0.1**
	113nm,0.3s						
MCRV	**Calabrutti - M**	**1.32**	**194**	Pg	**Pn**	**13 34 54.0**	**-0.1**
	113nm,0.3s						
BAI	**Bari**	**1.36**	**134**	*e*Pg	**Pg**	**13 34 56.6**	**-0.1**
BAI				Sg	**Sg**	**13 35 15.3**	**+0.9**
AMUR	**Altamura**	**1.38**	**146**	Pg	**Pn**	**13 34 54.0**	**-0.9**
	93nm,0.2s						
AMUR	**Altamura**	**1.38**	**146**	Pg	**Pn**	**13 34 54.0**	**-0.9**
	93nm,0.2s						
SG1	**Sgolgore (BA)**	**1.47**	**146**	*e*Pg	**Pb**	**13 34 58.4**	**+1.1**
SG1				Sg	**Sg**	**13 35 17.8**	**-0.2**
VVLD	**Villa Vallelon**	**1.48**	**263**	Pg	**Pn**	**13 34 56.2**	**-0.2**
	54nm,0.5s						
VVLD	**Villa Vallelon**	**1.48**	**263**	Pg	**Pn**	**13 34 56.2**	**-0.2**
	54nm,0.5s						
FAGN	**Fagnano**	**1.51**	**278**	Pg	**Pb**	**13 34 58.2**	**+0.2**
	135nm,0.3s						
FAGN	**Fagnano**	**1.51**	**278**	Pg	**Pb**	**13 34 58.2**	**+0.2**
	135nm,0.3s						
TERO	**Teramo**	**1.58**	**291**	Pg	**Pn**	**13 34 57.6**	**0.0**
	55nm,0.4s						
TERO	**Teramo**	**1.58**	**291**	Pg	**Pn**	**13 34 57.6**	**0.0**
	55nm,0.4s						
PTRP	**Pietrapertosa**	**1.58**	**167**	Pg	**Pb**	**13 35 00.0**	**+0.8**
	117nm,0.6s						
PTRP	**Pietrapertosa**	**1.58**	**167**	Pg	**Pb**	**13 35 00.0**	**+0.8**
	117nm,0.6s						
NOCI	**Noci**	**1.69**	**139**	Pg	**Pn**	**13 34 58.7**	**-0.3**
	144nm,0.5s						
NOCI	**Noci**	**1.69**	**139**	Pg	**Pn**	**13 34 58.7**	**-0.3**
	144nm,0.5s						
LTRZ	**Laterza**	**1.73**	**147**	Pg	**Pn**	**13 34 58.8**	**-0.8**
	92nm,0.4s						
LTRZ	**Laterza**	**1.73**	**147**	Pg	**Pn**	**13 34 58.8**	**-0.8**
	92nm,0.4s						
STON	**Ston**	**1.75**	**62**	*e*Pn	**Pb**	**13 35 03.0**	**+0.9**
STON	**Ston**	**1.75**	**62**	*e*Pn	**Pb**	**13 35 02.9**	**+0.9**
TAR1	**Taranto**	**2.00**	**140**	*e*Pn	**Pn**	**13 35 05.1**	**+1.8**
NVLJ	**Novalja**	**2.55**	**348**	*e*Pn	**Pn**	**13 35 10.3**	**-0.7**
NVLJ				Sn	**Sn**	**13 35 41.0**	**-0.6**
NVLJ	**Novalja**	**2.55**	**348**	*e*Pn	**Pn**	**13 35 10.2**	**-0.7**
NVLJ				Sn	**Sn**	**13 35 40.9**	**-0.6**

ISCJB ***26*** *14:06:45.6±0.5,33˚.79N±0˚.03×35˚.78E±0˚.04,h8km±5km, Error ellipse: s-maj=5.7km s-min=4.4km az=14.6*

CSEM ***26*** *14:06:45.5±0.3,33˚.79N×35˚.75E,h6km±3km,ML3.0,Error ellipse: s-maj=6.3km s-min=3.6km az=95.0*

NSSC ***26*** *14:06:45.7±1.8,33˚.79N×35˚.77E,h8km±7km,ML1.9*

GRAL ***26*** *14:06:45.9±0.3,33˚.80N×35˚.79E,h9km±6km,MD3.0*

ISC 26 14:06:44.9±1.0,33˚.79N±0˚.03×35˚.74E±0˚.03,h16km±8km, n26,σ0°36/46,Jordan-Syria region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BHL	**Bhannes**	**0.13**	**328**	*e*P	**Pb**	**14 06 49.1**	**+0.1**
BHL	**Bhannes**	**0.13**	**328**	*e*P	**Pb**	**14 06 49.1**	**+0.1**
DQRL	**Deir Qamar**	**0.16**	**238**	*e*P	**Pb**	**14 06 49.8**	**+0.2**
DQRL				*e*S	**Sb**	**14 06 52.8**	**+0.1**
DQRL	**Deir Qamar**	**0.16**	**238**	*e*P	**Pb**	**14 06 49.8**	**+0.2**
DQRL				*e*S	**Sb**	**14 06 52.8**	**+0.1**
BEYL	**Beirut**	**0.22**	**291**	*e*P	**Pb**	**14 06 50.8**	**+0.3**
BEYL	**Beirut**	**0.22**	**291**	*e*P	**Pb**	**14 06 50.8**	**+0.3**
RCY	**Rachaya**	**0.31**	**164**	*e*P	**Pg**	**14 06 51.6**	**+0.1**
RCY				*e*S	**Sg**	**14 06 55.8**	**-0.2**
RCY	**Rachaya**	**0.31**	**164**	*e*P	**Pg**	**14 06 51.6**	**+0.1**
RCY				*e*S	**Sg**	**14 06 55.8**	**-0.2**
BRBR	**Barbar**	**0.42**	**155**	*e*P	**Pg**	**14 06 53.7**	**+0.2**
BRBR				*e*S	**Sg**	**14 06 59.8**	**+0.4**
BRBR				AML	AML	14 07 03.2	
	comp=N,206nm,0.5s						
BRBR				AML	AML	14 07 03.6	
	comp=E,282nm,0.7s						
BRBR	**Barbar**	**0.42**	**155**	*e*P	**Pg**	**14 06 53.7**	**+0.2**
BRBR				*e*S	**Sg**	**14 06 59.8**	**+0.4**
HWQ	**Hawqa**	**0.51**	**20**	*e*P	**Pg**	**14 06 55.0**	**-0.2**
HWQ	**Hawqa**	**0.51**	**20**	*e*P	**Pg**	**14 06 55.0**	**-0.2**
MARH	**Ras Al Marh**	**0.66**	**69**	*e*P	**Pb**	**14 06 58.7**	**+0.5**
MARH				*e*S	**Sg**	**14 07 06.5**	**-0.4**
MARH				AML	AML	14 07 14.9	
	comp=E,189nm,0.4s						
MARH				AML	AML	14 07 19.9	
	comp=N,91nm,0.4s						
MARH	**Ras Al Marh**	**0.66**	**69**	*e*P	**Pb**	**14 06 58.7**	**+0.5**
MARH				*e*S	**Sg**	**14 07 06.5**	**-0.4**
TOTH	**TOTAH**	**0.72**	**127**	*e*P	**Pn**	**14 06 59.9**	**-0.5**
TOTH				*e*S	**Sb**	**14 07 08.9**	**+0.2**
TOTH				AML	AML	14 07 16.7	
	comp=N,66nm,0.5s						
TOTH				AML	AML	14 07 22.8	
	comp=E,44nm,0.6s						
TOTH	**TOTAH**	**0.72**	**127**	*e*P	**Pn**	**14 06 59.9**	**-0.5**
TOTH				*e*S	**Sb**	**14 07 08.9**	**+0.2**
TCHB	**Talchebab**	**1.14**	**170**	*e*P	**Pn**	**14 07 06.1**	**-0.1**
TCHB				*e*S	**Sb**	**14 07 20.9**	**+0.2**
TCHB				AML	AML	14 07 29.6	
	comp=N,60nm,0.4s						
TCHB				AML	AML	14 07 34.7	
	comp=E,37nm,0.5s						
TCHB	**Talchebab**	**1.14**	**170**	*e*P	**Pn**	**14 07 06.1**	**-0.1**
TCHB				*e*S	**Sb**	**14 07 20.9**	**+0.2**
ROOS	**tl_alroos**	**1.34**	**73**	*e*P	**Pg**	**14 07 11.6**	**+0.8**
ROOS				*e*S	**Sb**	**14 07 27.1**	**+0.4**
ROOS				AML	AML	14 07 40.1	
	comp=E,46nm,0.6s						
ROOS				AML	AML	14 07 42.4	
	comp=N,28nm,0.5s						
ROOS	**tl_alroos**	**1.34**	**73**	*e*P	**Pg**	**14 07 11.6**	**+0.8**
ROOS				*e*S	**Sb**	**14 07 27.1**	**+0.4**
SALA	**Sala**	**1.36**	**142**	*e*P	**Pg**	**14 07 11.2**	**0.0**
SALA				*e*S	**Sg**	**14 07 28.4**	**-0.6**
SALA				AML	AML	14 07 33.5	
	comp=N,36nm,0.4s						
SALA				AML	AML	14 07 35.8	
	comp=E,3.3nm,0.4s						
SALA	**Sala**	**1.36**	**142**	*e*P	**Pg**	**14 07 11.2**	**0.0**
SALA				*e*S	**Sg**	**14 07 28.4**	**-0.6**
RABH	**Abou Rabah**	**1.38**	**62**	*e*P	**Pb**	**14 07 10.2**	**-0.1**
RABH				*e*S	**Sn**	**14 07 27.4**	**0.0**
RABH				AML	AML	14 07 40.5	
	comp=E,19nm,0.5s						
RABH				AML	AML	14 07 42.0	
	comp=N,25nm,0.4s						
RABH	**Abou Rabah**	**1.38**	**62**	*e*P	**Pb**	**14 07 10.2**	**-0.1**
RABH				*e*S	**Sn**	**14 07 27.4**	**0.0**
ZALF	**Zalf**	**1.59**	**123**	*e*P	**Pg**	**14 07 15.1**	**-0.5**
ZALF				*e*S	**Sb**	**14 07 33.9**	**+0.1**
ZALF				AML	AML	14 07 39.3	
	comp=N,24nm,0.6s						
ZALF				AML	AML	14 07 42.7	
	comp=E,15nm,0.3s						
ZALF	**Zalf**	**1.59**	**123**	*e*P	**Pg**	**14 07 15.1**	**-0.5**
ZALF				*e*S	**Sb**	**14 07 33.9**	**+0.1**

IDC 26 14:10:14.1±1.3,36˚.98N×144˚.42E,h0km,mb3.6/4, mb1 3.8/5,mb1mx3.4/42,mbtmp3.6/5,ML3.5/1,Error ellipse: s-maj=33.0km s-min=23.1km az=85.0,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MJAR	**Matsushiro Arr**	**5.00**	**267**	Pn	Pn	14 11 32.0	+1.6
	1.8nm,0.3s,baz=89,slow=15,SNR=12						
MJAR				Sn	Sn	14 12 29.3	+0.4
	0.3nm,0.3s,baz=272,slow=40,SNR=4.8						
JHJ	**Hachijo jima 2**	**5.41**	**226**	Pn	Pn	14 11 38.6	+2.7
	9.0nm,0.3s,baz=71,slow=23,SNR=5.7						
JHJ				Sn	Sn	14 12 39.5	+0.6
	14nm,0.3s,baz=248,slow=22,SNR=3.8						
ASAJ	**Asahikawa**	**7.26**	**350**	Pn	Pn	14 11 53.6	-7.8

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.09**	**71**	P	**Pg**	**14 20 26.1**	**0.0**
ONAJ				S	**Sg**	**14 20 27.4**	**-0.1**
JFK	**Kawauchi**	**0.33**	**26**	P	**Pg**	**14 20 30.3**	**-0.2**
JHO	**Hitachi**	**0.47**	**192**	P	**Pg**	**14 20 33.4**	**+0.1**
JHO				S	**Sg**	**14 20 40.0**	**+0.5**
JFT	**Otama**	**0.53**	**327**	P	**Pg**	**14 20 34.5**	**+0.1**
JFT				S	**Sg**	**14 20 41.5**	**+0.2**
JSB	**Shiboa**	**0.63**	**261**	P	**Pb**	**14 20 37.2**	**-0.5**
JSB				S	**Sb**	**14 20 46.1**	**-0.7**
JMM	**Marumori**	**0.79**	**6**	P	**Pg**	**14 20 38.8**	**-0.7**
JMM				S	**Sg**	**14 20 49.3**	**-0.5**
JFY	**Yanaizu**	**0.86**	**293**	P	**Pg**	**14 20 40.7**	**0.0**
JFY				S	**Sg**	**14 20 51.8**	**0.0**
JYT	**Yasato**	**0.94**	**206**	P	**Pg**	**14 20 41.9**	**-0.3**
JYT				S	**Sg**	**14 20 54.0**	**-0.3**
MJAR	**Matsushiro Arr**	**2.06**	**256**	Pn	**Pn**	**14 21 00.2**	**+0.6**
MJAR	3.5nm,0.3s,baz=72,slow=15,SNR=17			Sn	**Sb**	**14 21 29.2**	**+1.0**
MAT	**Matsushiro**	**2.07**	**256**	P	**Pn**	**14 21 00.6**	**+1.0**
MAT	3.0nm,0.3s,baz=89,slow=26,SNR=11			S	**Sb**	**14 21 27.5**	**-0.7**
ASAJ	**Asahikawa**	**7.18**	**11**	Pn	**Pn**	**14 22 11.6**	**+1.7**
NRIK	0.2nm,0.3s,baz=240,slow=5.7,SNR=3.2 **Noril'sk**	**42.99**	**335**	LR	LR	14 48 46.0	
WRA	comp=Z,48nm,18.9s,baz=102,slow=40 **Warramunga Arr**	**57.02**	**187**	P	**P**	**14 30 10.2**	**-0.9**
ASAR	0.5nm,0.7s,baz=3.2,slow=7.1,SNR=7.1 **Alice Springs**	**60.75**	**187**	P	**P**	**14 30 36.6**	**-0.3**
	0.3nm,0.9s,baz=2.9,slow=5.6,SNR=3.2						

*ISCJB **26** 14:20:57.7±0.5,2.°19S±0.°04×79.°2W±0.°1, h100km, mb3.6/9, Error ellipse: s-maj=15.9km s-min=6.1km az=175.0*
*IDC **26** 14:20:59.1±2.7,2.°18S×79.°14W, h102km±26km, mb3.4/9, mb1 3.7/13,mb1mx3.5/32,mbtmp3.9/13,MS2.8/1, Ms1 2.8/1,ms1mx2.4/16,Error ellipse: s-maj=24.8km s-min=16.1km az=59.0*

ISC 26 14:20:58.8±0.6,2.°16S±0.°06×79.°1W±0.°1, h100km, n23, σ1°11/26, mb3.6/9, Near coast of Ecuador

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OTAV	**Otavalo**	**2.47**	**15**	*e*P	**Pn**	**14 21 39.6**	**+1.6**
CMBC	**Cumbal**	**3.33**	**22**	*e*P	**Pn**	**14 21 50.9**	**+1.5**
CRUC	**La Cruz**	**4.27**	**30**	*e*P	**Pn**	**14 22 03.4**	**+1.3**
ATAH	**Atahualpa**	**4.98**	**172**	P	**Pn**	**14 22 12.4**	**+0.7**
ATAH	2.7nm,0.3s,baz=2.0,slow=4.7,SNR=9.2			S	**Sn**	**14 23 09.3**	**+0.9**
FLOC	11nm,0.3s,baz=258,slow=17,SNR=7.2 **Florencia**	**5.06**	**43**	*e*P	**Pn**	**14 22 10.7**	**-1.7**
NNA	**Nana**	**10.01**	**167**	P	**Pn**	**14 23 20.1**	**+0.4**
NNA	3.2nm,0.3s,baz=342,slow=11,SNR=3.0			S	**Sn**	**14 25 08.2**	**-2.0**
NNA	6.9nm,0.3s,baz=207,slow=16,SNR=4.6			LR	LR	14 27 24.1	
LPAZ	comp=Z,47nm,18.9s,baz=359,slow=38 **La Paz**	**17.69**	**143**	P	**Pn**	**14 25 00.7**	**+1.1**
PTGA	0.1nm,0.3s,baz=280,slow=13,SNR=3.2 **Pitinga**	**19.16**	**86**	P	**P**	**14 25 13.7**	**-0.8**
PLCA	0.8nm,0.3s,baz=279,slow=13,SNR=9.9 **Paso Flores**	**39.16**	**170**	P	**P**	**14 28 16.9**	**-0.1**
TXAR	1.7nm,0.5s,baz=3.7,slow=13,SNR=5.5 **Lajitas Array**	**39.18**	**325**	P	**P**	**14 28 18.0**	**+0.7**
TXAR	0.2nm,0.7s,baz=154,slow=13,SNR=4.1			PcP	**PcP**	**14 30 24.1**	**-0.8**
PDAR	0.5nm,0.7s,baz=150,slow=6.8,SNR=6.0 **Pinedale Array**	**52.50**	**332**	P	**P**	**14 30 01.7**	**-0.3**
NVAR	0.3nm,0.6s,baz=128,slow=2.4,SNR=3.5 **Mina Array Bea**	**54.22**	**322**	P	**P**	**14 30 15.1**	**+0.5**
YKA	0.4nm,0.5s,baz=119,slow=2.4,SNR=4.4 **Yellowknife Ar**	**69.86**	**343**	P	**P**	**14 31 57.5**	**-0.9**
DBIC	0.4nm,0.6s,baz=140,slow=5.8,SNR=13 **Dimbokro**	**74.60**	**83**	P	**P**	**14 32 29.1**	**+1.4**
INK	1.4nm,0.7s,baz=254,slow=7.4,SNR=5.3 **Inuvik**	**79.56**	**342**	P	**P**	**14 32 54.4**	**0.0**
TORD	1.4nm,0.9s,baz=131,slow=4.2,SNR=3.4 **Torodi Ar. Bea**	**81.51**	**76**	P	**P**	**14 33 07.1**	**+1.2**
ILAR	0.2nm,0.3s,baz=280,slow=6.2,SNR=4.4 **Eielson Array**	**82.66**	**336**	P	**P**	**14 33 11.0**	**0.0**
ZALV	0.5nm,0.6s,baz=100,slow=5.0,SNR=4.9 **Zalesovo Beam**	**126.71**	**12**	PKP	**PKPdf**	**14 39 49.2**	**-1.3**
MKAR	0.5nm,0.4s,baz=188,slow=3.0,SNR=3.5 **Makanchi Array**	**132.68**	**17**	PKP	**PKPdf**	**14 40 01.3**	**-0.9**
KSRS	0.2nm,0.2s,baz=11,slow=1.1,SNR=2.7 **Korea Array**	**137.00**	**328**	PKP	**PKPdf**	**14 40 09.8**	**-0.7**
ASAR	0.7nm,0.7s,baz=13,slow=2.8,SNR=3.2 **Alice Springs**	**138.91**	**229**	PKP	**PKPdf**	**14 40 13.5**	**-1.0**
WRA	0.3nm,0.6s,baz=133,slow=2.0,SNR=4.2 **Warramunga Arr**	**140.53**	**235**	PKhKP	PKPpre	14 40 09.3	
WRA	0.6nm,1.0s,baz=114,slow=2.6,SNR=4.5			PKP	**PKPdf**	**14 40 18.6**	**+1.1**
FITZ	0.9nm,0.7s,baz=110,slow=2.1,SNR=5.1 **Fitzroy Crossi**	**148.41**	**229**	PKPbc	**PKPbc**	**14 40 33.8**	**-0.9**
	2.7nm,0.8s,baz=192,slow=6.5,SNR=8.3						

*JMA **26** 14:22:41.3±0.3,39.°40N×143.°98E, h2km, M4.5*
*ISCJB **26** 14:22:44.9±0.6,39.°39N±0.°05×143.°77E±0.°07, h11km, mb3.6/13, MS3.1/4, Error ellipse: s-maj=8.5km s-min=5.5km az=37.2*
*IDC **26** 14:22:49.7±5.5,39.°38N×143.°65E, h30km±40km, mb3.6/13, mb1 3.8/19,mb1mx3.6/48,mbtmp3.8/19,ML3.5/6,MS3.1/7, Ms1 3.1/7,ms1mx2.7/58,Error ellipse: s-maj=21.1km s-min=16.5km az=117.0*

ISC 26 14:22:46.7±0.7,39.°33N±0.°05×143.°52E±0.°07, h11km, n40, σ1°28/36, mb3.6/13, MS3.1/4, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JTH	**Tanohata**	**1.41**	**296**	P	**Pn**	**14 23 12.3**	**0.0**
OFUJ	**Ofunato**	**1.46**	**261**	P	**Pb**	**14 23 14.2**	**+0.4**
JOM	**Ohasama**	**1.73**	**276**	P	**Pb**	**14 23 18.1**	**-0.3**
JOM				S	**Sg**	**14 23 44.0**	**+1.7**
JMK	**Ichinoseki**	**1.82**	**259**	P	**Pn**	**14 23 18.4**	**+0.4**
JANG	**Nango**	**1.86**	**305**	P	**Pn**	**14 23 18.0**	**-0.5**
JIO	**Ouri**	**1.90**	**243**	P	**Pb**	**14 23 20.3**	**-1.1**
JRG	**Rokugo**	**2.23**	**273**	P	**Pb**	**14 23 25.7**	**-1.4**
JTM	**Tenmabayashi**	**2.38**	**309**	P	**Pn**	**14 23 26.2**	**+0.6**
JOU	**Okura**	**2.42**	**248**	P	**Pb**	**14 23 28.5**	**-1.8**
JYK	**Kaneyama**	**2.49**	**262**	P	**Pb**	**14 23 29.4**	**-2.0**
JMM	**Marumori**	**2.58**	**236**	P	**Pn**	**14 23 29.8**	**+1.4**
JFK	**Kawauchi**	**2.85**	**227**	P	**Pn**	**14 23 33.0**	**+0.8**
ASAJ	**Asahikawa**	**4.83**	**352**	Pn	**Pn**	**14 23 58.5**	**-0.9**
ASAJ	3.1nm,0.3s,baz=207,slow=12,SNR=36			Sn	**Sn**	**14 24 54.0**	**-1.3**
MJAR	3.7nm,0.3s,baz=270,slow=8.2,SNR=3.6 **Matsushiro Arr**	**5.03**	**238**	Pn	Pn	14 24 05.3	+3.2
MJAR	3.5nm,0.3s,baz=45,slow=12,SNR=24			LR	LR	14 26 20.0	
MAT	comp=Z,72nm,19.2s,baz=85,slow=41 **Matsushiro**	**5.03**	**238**	P	Pn	14 24 05.5	+3.4
MAT				S	**Sb**	**14 25 11.8**	**-3.5**
JHJ	**Hachijo jima 2**	**6.89**	**207**	Pn	**Pn**	**14 24 28.8**	**+1.1**
JHJ	7.8nm,0.3s,baz=106,slow=22,SNR=6.6			Sn	**Sn**	**14 25 44.5**	**-1.6**
USRK	24nm,0.3s,baz=229,slow=23,SNR=7.1 **Ussuriysk Ar.**	**9.89**	**303**	Pn	Pn	14 25 11.9	+3.2
JNU	0.4nm,0.3s,baz=94,slow=12,SNR=10 **Nakatsue**	**11.93**	**243**	LR	LR	14 30 45.8	
KSRS	comp=Z,150nm,18.5s,baz=116,slow=40 **Korea Array**	**12.38**	**266**	Pn	Pn	14 25 47.1	+4.3
KSRS	0.1nm,0.3s,baz=90,slow=14,SNR=4.0			LR	LR	14 30 14.5	
KLR	comp=Z,52nm,19.6s,baz=82,slow=36 **Kul'dur**	**12.99**	**323**	Pn	**Pn**	**14 25 51.7**	**+0.7**
MA2	0.1nm,0.3s,baz=112,slow=8.6,SNR=2.9 **Magadan**	**20.78**	**10**	P	**P**	**14 27 27.2**	**-0.3**
SEY	1.4nm,0.5s,baz=220,slow=9.3,SNR=3.2 **Seymchan**	**24.24**	**10**	P	**P**	**14 28 03.6**	**+0.4**
YAK	0.8nm,0.4s,baz=270,slow=22,SNR=6.3 **Yakutsk**	**24.26**	**344**	P	**P**	**14 28 02.7**	**-0.7**
SONM	4.3nm,0.3s,baz=141,slow=2.1,SNR=2.7 **Songino Array**	**27.98**	**300**	P	**P**	**14 28 38.7**	**+1.4**
SONM	0.4nm,0.4s,baz=109,slow=8.0,SNR=5.9			LR	LR	14 38 49.3	
ZALV	comp=Z,35nm,19.9s,baz=100,slow=34 **Zalesovo Beam**	**41.64**	**311**	P	**P**	**14 30 35.0**	**+0.3**
CMAR	1.2nm,0.4s,baz=95,slow=8.5,SNR=7.1 **Chiang Mai Arr**	**43.69**	**255**	P	P	14 31 01.4	+10
CMAR	0.9nm,0.8s,baz=42,slow=4.4,SNR=4.4			LR	LR	14 51 03.3	
	comp=Z,10nm,19.8s,baz=40,slow=39						

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MKAR	**Makanchi Array**	**44.34**	**301**	P	**P**	**14 30 56.9**	**+0.1**
MKAR	1.7nm,0.8s,baz=83,slow=9.9,SNR=12			LR	LR	14 49 02.5	
GUN	comp=Z,34nm,18.5s,baz=138,slow=35 **Gumba**	**48.60**	**275**	*e*P	**P**	**14 31 32.3**	**+1.5**
KKN	22nm,0.7s **Kakani**	**49.12**	**275**	*e*P	**P**	**14 31 35.9**	**+1.3**
DMN	10nm,0.4s **Daman**	**49.34**	**275**	*e*P	P	14 31 40.2	+3.8
KOLN	**Koldanda**	**50.43**	**276**	*e*P	**P**	**14 31 46.1**	**+1.5**
PYUN	2.8nm,0.4s **Piuthan**	**50.74**	**277**	*e*P	**P**	**14 31 48.6**	**+1.7**
INK	**Inuvik**	**51.59**	**28**	P	**P**	**14 31 52.3**	**-0.1**
KBZ	0.5nm,0.4s,baz=288,slow=2.9,SNR=6.0 **Khabaz**	**70.66**	**311**	P	**P**	**14 34 03.7**	**+1.5**
NVAR	1.3nm,0.8s,baz=109,slow=0.7,SNR=4.4 **Mina Array Bea**	**72.30**	**55**	P	**P**	**14 34 13.5**	**+0.9**
AKASG	0.4nm,0.7s,baz=280,slow=8.4,SNR=3.0 **Malin Array Be**	**73.49**	**323**	P	**P**	**14 34 19.0**	**0.0**
PDAR	0.2nm,0.3s,baz=41,slow=6.1,SNR=3.0 **Pinedale Array**	**74.89**	**47**	P	**P**	**14 34 26.8**	**-0.9**
	0.1nm,0.4s,baz=316,slow=3.8,SNR=2.7						

MAN 26 14:31:14,7.°35N×125.°35E, h4km, mb4.3, ML3.2, MS3.0, 3D, Mindanao

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DMPH	**Davao City--Mi**	**0.31**	**150**	⇓*e*P	Pn	14 31 26.2	+0.9
DMPH				*e*S	Sb	14 31 32.1	+4.6
BUKP	**Musuan**	**0.60**	**331**	*e*P	Pb	14 31 27.2	+0.1
BUKP				*e*S	Sn	14 31 38.5	-1.1
MATI	**Mati**	**0.98**	**114**	*e*P	Pg	14 31 32.9	0.0
CTBH	**Cotabato--PC H**	**1.11**	**263**	⇓*e*P	Pb	14 31 36.0	+0.3
CTBH				*i* S	Sn	14 31 52.6	+0.6
CGP	**Cagayan de Oro**	**1.28**	**329**	⇓*e*P	Pn	14 31 40.0	+1.4
CGP				*e*S	Sn	14 31 58.6	+2.4

WEL 26 14:42:48.8±0.1,43.°46S×172.°15E, h8km±1km, ML3.9/22, 4C-7D, Error ellipse: s-maj=1.1km s-min=0.7km az=90.0, South Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OXZ	**Oxford**	**0.15**	**329**	⇓PG	Pg	14 42 51.7	-0.3
OXZ				SG	Sg	14 42 53.9	-0.4
CRLZ	**Canterbury Las**	**0.36**	**109**	⇓PG	Pg	14 42 55.9	-0.1
CRLZ				SG	Sg	14 43 00.9	+0.1
CRLZ				AML	AML	14 43 01.6	
CRLZ				AML	AML	14 43 01.6	
CRLZ				AML	AML	14 43 01.7	
MQZ	**McQueen's Vall**	**0.44**	**124**	⇓P*	Pg	14 42 57.3	-0.2
MQZ				SG	Sg	14 43 03.6	+0.3
MQZ				AML	AML	14 43 03.9	
LTZ	**Lake Taylor**	**0.68**	**8**	⇑P*	Pg	14 43 01.9	0.0
LTZ				AML	AML	14 43 13.4	
LTZ				AML	AML	14 43 13.6	
RPZ	**Rata Peaks**	**0.84**	**252**	P*	Pg	14 43 04.7	-0.2
RPZ				AML	AML	14 43 17.5	
RPZ				AML	AML	14 43 22.6	
INZ	**Inchbonnie**	**0.90**	**325**	P*	Pg	14 43 05.7	-0.3
WVZ	**Waitaha Valley**	**1.10**	**290**	P*	Pg	14 43 09.1	-0.8
WVZ				AML	AML	14 43 26.0	
WVZ				AML	AML	14 43 27.2	
KHZ	**Kahutara**	**1.46**	**45**	⇑PN	Pn	14 43 13.4	-1.9
LBZ	**Lake Benmore**	**1.70**	**236**	⇓PN	Pn	14 43 17.5	-1.2
LBZ				AML	AML	14 43 43.4	
LBZ				AML	AML	14 43 43.5	
LBZ				AML	AML	14 43 45.4	
LBZ				AML	AML	14 43 45.4	
FOZ	**Fox Glacier**	**1.70**	**267**	PN	Pn	14 43 18.7	+0.1
FOZ				AML	AML	14 43 46.6	
FOZ				AML	AML	14 43 49.5	
DSZ	**Denniston Nort**	**1.73**	**351**	⇓PN	Pn	14 43 17.7	-1.5
DSZ				AML	AML	14 43 45.2	
DSZ				AML	AML	14 43 45.2	
DSZ				AML	AML	14 43 45.8	
DSZ				AML	AML	14 43 45.8	
THZ	**Tophouse**	**1.78**	**19**	⇓PN	Pn	14 43 18.1	-1.8
THZ				AML	AML	14 43 55.8	
THZ				AML	AML	14 43 58.9	
ODZ	**Otahua Downs**	**1.92**	**214**	⇑PN	Pn	14 43 19.8	-1.9
ODZ				AML	AML	14 43 51.5	
ODZ				AML	AML	14 43 51.5	
ODZ				AML	AML	14 43 51.6	
ODZ				AML	AML	14 43 51.6	
BSWZ	**Blackbirch Sta**	**2.16**	**37**	PN	Pn	14 43 23.5	-1.5
BSWZ				AML	AML	14 43 52.7	
BSWZ				AML	AML	14 44 15.4	
NNZ	**Nelson**	**2.42**	**23**	PN	Pn	14 43 27.4	-1.2
NNZ				AML	AML	14 43 59.5	
NNZ				AML	AML	14 44 00.0	
TUWZ	**Tuamarina**	**2.42**	**34**	PN	Pn	14 43 26.7	-1.9
TUWZ				AML	AML	14 44 00.8	
TUWZ				AML	AML	14 44 15.3	
WKZ	**Wanaka**	**2.64**	**238**	PN	Pn	14 43 30.4	-1.2
WKZ				AML	AML	14 44 21.5	
WKZ				AML	AML	14 44 25.3	
QRZ	**Quartz Range**	**2.65**	**6**	PN	Pn	14 43 30.0	-1.7
QRZ				AML	AML	14 43 40.0	
QRZ				AML	AML	14 43 40.0	
QRZ				AML	AML	14 44 14.3	
QRZ				AML	AML	14 44 14.3	
EAZ	**Earnscleugh**	**2.70**	**228**	PN	Pn	14 43 30.7	-1.8
EAZ				AML	AML	14 44 22.9	
EAZ				AML	AML	14 44 22.9	
EAZ				AML	AML	14 44 26.4	
EAZ				AML	AML	14 44 26.4	
TCW	**Tory Channel**	**2.74**	**36**	PN	Pn	14 43 32.9	-0.2
TCW				AML	AML	14 44 08.2	
TCW				AML	AML	14 44 08.2	
MSWZ	**Moikau Station**	**3.07**	**49**	PN	Pn	14 43 35.0	-2.6
MSWZ				AML	AML	14 44 19.1	
TUZ	**Tuapeka**	**3.08**	**215**	⇓PN	Pn	14 43 35.7	-1.9
TUZ				AML	AML	14 44 28.8	
TUZ				AML	AML	14 44 32.3	
TUZ				AML	AML	14 44 36.8	
TUZ				AML	AML	14 44 36.8	
CAW	**Cannon Point**	**3.19**	**44**	PN	Pn	14 43 36.7	-2.6
CAW				AML	AML	14 44 13.6	
CAW				AML	AML	14 44 14.2	
MSZ	**Milford Sound**	**3.28**	**247**	PN	Pn	14 43 38.3	-2.1
MSZ				AML	AML	14 44 35.1	
MSZ				AML	AML	14 44 38.3	
KIW	**Kapiti Island**	**3.31**	**39**	PN	Pn	14 43 39.2	-1.6
MLZ	**Mavora Lakes**	**3.46**	**235**	PN	Pn	14 43 41.2	-1.8
SYZ	**Scrubby Hill**	**3.75**	**214**	⇑PN	Pn	14 43 45.5	-1.3
SYZ				AML	AML	14 44 54.3	
SYZ				AML	AML	14 44 55.8	

ISK 26 14:50:47.2,37.°05N×28.°34E, h26km, MD2.5, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
YER	**Yerkesik**	**0.10**	**332**	*e*PG	Pb	14 50 52.2	+0.2
YER				*e*SG	Sb	14 50 55.9	+0.5
BODT	**Bodrum**	**0.82**	**271**	*e*PG	Pn	14 51 03.4	+0.3
BODT				*e*SG	Sn	14 51 15.2	+0.7
AYDB	**Zeytinkoy-Aydi**	**0.96**	**338**	*e*PG	Pb	14 51 05.4	0.0
AYDB				*e*SG	Sn	14 51 18.7	+0.6

*DDA **26** 14:51:07.0,36.°90N×31.°48E, h7km, Md2.8*
*CSEM **26** 14:51:08.3±0.4,36.°89N×31.°59E, h10km, MD2.8, Error ellipse: s-maj=11.0km s-min=5.1km az=53.0*
*ISK **26** 14:51:09.0,36.°97N×31.°68E, h13km, MD2.6*

ISC 26 14:51:08.3±1.2,36.°93N±0.°04×31.°67E±0.°04, h5km±11km, n19, σ0°82/31, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SUTC	**Sutluce-Ispart**	**0.76**	**316**	*e*PG	**Pg**	**14 51 23.6**	**+0.6**
SUTC				*e*SG	**Sb**	**14 51 34.7**	**-0.2**
GAZI	**Gazipasa**	**0.87**	**143**	*i* P	**Pg**	**14 51 24.5**	**-0.4**
GAZI				*i* S	**Sg**	**14 51 36.0**	**-0.2**
GAZI	**Gazipasa**	**0.87**	**143**	P	**Pg**	**14 51 24.5**	**-0.4**
GAZI				S	**Sg**	**14 51 36.0**	**-0.2**
KMER	**Konya-Meram**	**1.00**	**34**	*i* P	Pn	**14 51 29.3**	**+0.1**
KMER				*i* S	Sn	**14 51 43.8**	**0.0**
KMER	**Konya-Meram**	**1.00**	**34**	P	Pn	**14 51 29.3**	**+0.1**
KMER				S	Sn	**14 51 43.8**	**0.0**
ERMK	**Ermenek**	**1.04**	**106**	*i* P	Pn	**14 51 30.0**	**+0.3**
ERMK				*i* S	Sn	**14 51 46.2**	**+1.4**
ERMK	**Ermenek**	**1.04**	**106**	P	Pn	**14 51 30.0**	**+0.3**
ERMK				S	Sn	**14 51 46.2**	**+1.4**
KONT	**Konya--Tatoy**	**1.15**	**28**	*e*PN	Pg	**14 51 30.9**	**+0.5**
KONT	**Konya--Tatoy**	**1.15**	**28**	*e*Pn	Pg	**14 51 30.9**	**+0.5**
BAGO	**Egridir - ISPA**	**1.27**	**327**	*i* P	Pn	**14 51 31.3**	**-1.5**
BAGO				*i* S	Sg	**14 51 50.9**	**+1.8**
LADK	**Ladik-KONYA**	**1.38**	**23**	*e*PN	Pb	**14 51 34.0**	**-0.7**
LADK	**Ladik-KONYA**	**1.38**	**23**	*e*Pn	Pb	**14 51 34.0**	**-0.7**
KDHN	**Kadinhani**	**1.63**	**13**	*i* P	Pn	**14 51 37.4**	**-0.3**
KDHN				*i* S	Sb	**14 51 58.6**	**-1.2**
KDHN	**Kadinhani**	**1.63**	**13**	P	Pn	**14 51 37.4**	**-0.3**
KDHN				S	Sb	**14 51 58.6**	**-1.2**
IKL	**Isikli**	**1.77**	**112**	*e*PN	Pn	**14 51 40.3**	**+0.8**
IKL	**Isikli**	**1.77**	**112**	*e*Pn	Pn	**14 51 40.3**	**+0.8**
KERG	**Konya-Eregli**	**2.02**	**75**	*i* P	Pn	**14 51 43.8**	**+0.6**
KERG				*i* S	Sg	**14 52 12.8**	**-0.5**
KERG	**Konya-Eregli**	**2.02**	**75**	P	Pn	**14 51 43.8**	**+0.6**

*NIED **26** 14:53:00,39.°10N×142.°40E, h47km, Mw3.7 Best double couple: M0=4.43000×10^14 NP1:φ=272.00000°, δ=21.00000°, λ=-163.00000°. NP2:φ=166.00000°, δ=84.00000°, λ=-70.00000°.*
*ISCJB **26** 14:53:41.1±1.5,39.°00N±0.°06×142.°43E±0.°09, h30km±8km, mb3.5/6, Error ellipse: s-maj=13.3km s-min=8.6km az=35.8*
*JMA **26** 14:53:42.4±0.2,39.°09N×142.°38E, h32km±2km, M3.9*
JMA Felt I J1.
*IDC **26** 14:53:50.4±4.1,38.°87N×142.°41E, h104km±37km, mb3.2/6, mb1 3.4/7,mb1mx3.0/63,mbtmp3.5/7,MS2.7/3,Ms1 2.7/3, ms1mx2.4/24,Error ellipse: s-maj=31.6km s-min=19.9km az=80.0*

ISC 26 14:53:41.6±2.4,39.°04N±0.°08×142.°4E±0.°1, h25km±15km, n22, σ1°06/17, mb3.6/6, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**0.57**	**275**	P	**Pb**	**14 53 53.9**	**+0.9**
OFUJ				S	**Sb**	**14 54 01.2**	**+0.4**
MIYJ	**Miyakonagasawa**	**0.70**	**320**	P	**Pb**	**14 53 54.8**	**-0.5**
MIYJ				S	**Sb**	**14 54 03.4**	**-1.2**
JMK	**Ichinoseki**	**0.92**	**265**	P	**Pn**	**14 53 59.2**	**+0.2**
JMK				S	**Sn**	**14 54 11.1**	**-0.4**
JOM	**Ohasama**	**0.96**	**297**	P	**Pn**	**14 53 59.5**	**-0.1**
JOM				S	**Sb**	**14 54 11.7**	**-0.3**
JTH	**Tanohata**	**0.99**	**335**	P	**Pb**	**14 54 00.2**	**0.0**
JIO	**Ouri**	**1.01**	**235**	P	**Pn**	**14 54 00.1**	**-0.1**
JIO				S	**Sn**	**14 54 12.5**	**-1.0**
MJAR	**Matsushiro Arr**	**4.15**	**234**	P	Pb	14 54 50.2	-3.8
MJAR	5.3nm,0.3s,baz=44,slow=11,SNR=18			LR	LR	14 56 34.4	
ASAJ	comp=Z,82nm,18.3s,baz=100,slow=40 **Asahikawa**	**5.08**	**2**	P	Pn	14 54 59.4	+3.2
ASAJ	0.2nm,0.3s,baz=180,slow=33,SNR=2.7			S	Sb	14 56 02.8	-7.5
KSRS	0.3nm,0.3s,baz=229,slow=31,SNR=3.0 **Korea Array**	**11.50**	**267**	LR	LR	15 00 54.8	
PETK	comp=Z,31nm,19.1s,baz=95,slow=37 **Petropavlovsk-**	**17.57**	**32**	LR	LR	15 05 08.7	
H11N2	comp=Z,32nm,18.1s,baz=196,slow=38 **WAKE ISLAND Hy**	**28.58**	**125**	T	T	15 30 00.4	
H11N1	baz=317,slow=75,SNR=187 **WAKE ISLAND Hy**	**28.59**	**125**	T	T	15 30 01.7	
H11N3	baz=317,slow=75,SNR=140 **WAKE ISLAND Hy**	**28.60**	**125**	T	T	15 29 59.2	
H11S1	baz=317,slow=75,SNR=156 **WAKE ISLAND Hy**	**29.37**	**127**	T	T	15 31 04.2	
H11S3	baz=318,slow=76,SNR=26 **WAKE ISLAND Hy**	**29.37**	**127**	T	T	15 31 00.1	
H11S2	baz=318,slow=76,SNR=31 **WAKE ISLAND Hy**	**29.39**	**127**	T	T	15 31 01.2	
ZALV	baz=318,slow=76,SNR=19 **Zalesovo Beam**	**41.17**	**311**	P	**P**	**15 01 26.2**	**+2.4**
MKAR	0.4nm,0.4s,baz=92,slow=10,SNR=2.5 **Makanchi Array**	**43.74**	**301**	P	**P**	**15 01 45.5**	**+0.6**
ILAR	0.2nm,0.4s,baz=88,slow=11,SNR=6.5 **Eielson Array**	**47.39**	**33**	P	**P**	**15 02 14.6**	**+1.2**
BVAR	0.7nm,0.7s,baz=262,slow=6.6,SNR=7.7 **Borovoye Array**	**49.82**	**311**	P	**P**	**15 02 32.5**	**+0.2**
WRA	0.4nm,0.4s,baz=64,slow=6.7,SNR=3.1 **Warramunga Arr**	**59.15**	**189**	P	**P**	**15 03 39.3**	**-1.0**
ASAR	0.4nm,0.5s,baz=7.2,slow=7.0,SNR=5.7 **Alice Springs**	**62.88**	**189**	P	**P**	**15 04 04.0**	**-1.5**
	0.2nm,0.7s,baz=6.2,slow=6.2,SNR=5.1						

*ISCJB **26** 14:53:43.8±1.1,36.°98N±0.°03×140.°86E±0.°09, h9km±5km, mb3.7/2, Error ellipse: s-maj=12.5km s-min=5.0km az=14.2*
*JMA **26** 14:53:44.1,36.°98N×140.°85E, h8km±2km, M2.9*
*IDC **26** 14:54:02.4±16.0,37.°28N×138.°81E, h0km, mb3.6/2, mb1 3.9/2,mb1mx3.2/62,mbtmp3.6/2,Error ellipse: s-maj=441.6km s-min=49.0km az=144.0*

ISC 26 14:53:43.3±1.4,36.°96N±0.°04×140.°84E±0.°07, h18km±4km, n12, σ0°32/17, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.14**	**346**	P	**Pb**	**14 53 46.8**	**-0.1**
ONAJ				*e*S

ASAR	**Alice Springs**	**51.46**	**254**	P	P	15 07 11.4	+0.4
	1.0nm,0.5s,baz=90,slow=8.0,SNR=34						
FITZ	**Fitzroy Crossi**	**59.87**	**259**	P	P	15 08 10.5	-1.0
	2.2nm,0.5s,baz=104,slow=9.1,SNR=14						

KRSC 26 15:00:39.4±0.6, 55°.00N×161°.78E, h72km±11km, ML3.7, Near east coast of Kamchatka Peninsula

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MKZ	**Mys Kozlova**	**0.45**	**183**	*e*P	Pn	15 00 53.1	+1.2
MKZ				*e*S	Sn	15 01 02.1	+1.1
ZLN	**Zelenaya**	**1.16**	**332**	*e*P	Pn	15 01 01.4	+1.3
ZLN				*e*S	Sn	15 01 17.4	+1.9
LGNR	**Loginova**	**1.25**	**331**	*e*P	Pn	15 01 03.2	+1.8
LGNR				*e*S	Sn	15 01 19.7	+1.9
CIRR	**Tsirk**	**1.26**	**333**	*e*P	Pn	15 01 03.0	+1.6
CIRR				*e*S	Sn	15 01 19.3	+1.4
KBG	**Krutoberegovo**	**1.36**	**22**	*e*P	Pn	15 01 04.6	+2.1
KBG				*e*S	Sn	15 01 23.5	+3.6
KRSR	**Krestovskiy**	**1.40**	**331**	*e*P	Pn	15 01 04.1	+0.9
KRSR				*e*S	Sn	15 01 21.5	+0.5
KLY	**Klyuchi**	**1.46**	**335**	*e*P	Pn	15 01 04.7	+0.9
KLY				*e*S	Sn	15 01 23.3	+1.1
SMKR	**Semkarok**	**1.59**	**354**	*e*P	Pn	15 01 07.8	+2.1
SMKR				*e*S	Sn	15 01 28.4	+2.9
BDR	**Baidarnaya**	**1.60**	**349**	*e*P	Pn	15 01 08.1	+2.3
BDR				*e*S	Sn	15 01 28.8	+3.0
SRKR	**Sorokina**	**1.69**	**349**	*e*P	Pn	15 01 09.2	+2.2
SRKR				*e*S	Sn	15 01 30.6	+2.7
ESO	**Esso**	**1.98**	**299**	*e*P	Pn	15 01 11.6	+0.8
ESO				*e*S	Sn	15 01 35.5	+0.8
NLC	**Nalytchevo**	**2.33**	**219**	*e*P	Pn	15 01 17.3	+1.8
NLC				*e*S	Sn	15 01 44.4	+1.4
BKI	**Bering**	**2.42**	**84**	*e*P	Pn	15 01 18.7	+2.0
BKI				*e*S	Sn	15 01 45.4	+0.2
SDLR	**Sedlovina**	**2.43**	**226**	*e*P	Pn	15 01 18.9	+2.0
SDLR				*e*S	Sn	15 01 47.5	+1.9
KRER	**Koryakskii**	**2.46**	**228**	*e*P	Pn	15 01 20.7	+3.2
KRX	**Arik**	**2.47**	**229**	*e*P	Pn	15 01 20.2	+2.7
SMAR	**Somma**	**2.47**	**226**	*e*P	Pn	15 01 20.7	+3.1
SMAR				*e*S	Sn	15 01 48.6	+1.7
AVH	**Avacha**	**2.50**	**227**	*e*P	Pn	15 01 21.1	+3.3
UGLR	**Uglovaya**	**2.50**	**225**	*e*P	Pn	15 01 20.5	+2.6
UGLR				*e*S	Sn	15 01 49.7	+2.3
KOK	**Koryaka**	**2.52**	**228**	*e*P	Pn	15 01 21.2	+3.0
GNL	**Ganaly**	**2.60**	**241**	*e*P	Pn	15 01 22.7	+3.4
DALK	**Dalny**	**2.66**	**223**	*e*P	Pn	15 01 22.0	+2.0
DALK				*e*S	Sn	15 01 52.6	+1.5
PET	**Petropavlovsk**	**2.71**	**224**	*e*P	Pn	15 01 23.0	+2.4
PET				*e*S	Sn	15 01 54.5	+2.3
KRMR	**Karymshinskiy**	**3.06**	**226**	*e*P	Pn	15 01 28.7	+3.2
KRMR				*e*S	Sn	15 02 03.8	+2.9
RUS	**Russkaya**	**3.22**	**218**	*e*P	Pn	15 01 30.5	+2.9
RUS				*e*S	Sn	15 02 06.4	+1.6
MTVR	**Mutnovka**	**3.31**	**222**	*e*P	Pn	15 01 32.0	+3.1
ASAK	**Asacha**	**3.49**	**223**	*e*P	Pn	15 01 35.2	+3.8

*IDC **26** 15:04:42.9±2.4, 4°.39S×129°.02E, h0km, mb3.3/1, mb1 4.1/3, mb1mx3.4/41, mbtmp3.8/3, ML4.1/2, Error ellipse: s-maj=186.7km s-min=28.4km az=68.0*
*ISCJB **26** 15:05:02.8±0.6, 4°.80S±0°.06×129°.46E±0°.06, h200km, mb3.1/1, Error ellipse: s-maj=9.7km s-min=6.8km az=145.9*
*DJA **26** 15:05:07.7±0.6, 4°.S±5°×12°.9E±°, h183km±5km, M3.9/11, mb4.1/2, MLv3.8/11*
ISC 26 15:05:04.6±1.2, 4°.61S±0°.09×129°.46E±0°.06, h200km, n11, σ1°34/15, Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BNDI	**Bandanaira**	**0.45**	**79**	P	**Pn**	**15 05 33.2**	**+1.7**
BNDI				S	**Sn**	**15 05 53.8**	**+1.5**
MSAI	**Masoi**	**1.36**	**337**	P	**Pn**	**15 05 37.3**	**+0.1**
MSAI				S	**Sn**	**15 06 03.4**	**+0.9**
NLAI	**Namlea**	**2.72**	**300**	P	**Pn**	**15 05 52.4**	**+1.4**
NLAI				S	**Sn**	**15 06 28.6**	**+1.4**
FAKI	**Fak Fak**	**3.25**	**59**	P	**Pn**	**15 05 58.3**	**+1.0**
SWI	**Sorong**	**4.13**	**26**	P	**Pn**	**15 06 09.1**	**+1.0**
SWI				S	**Sn**	**15 06 57.9**	**-0.1**
SANI	**Sanana**	**4.30**	**306**	P	**Pn**	**15 06 11.9**	**+1.7**
SANI				S	**Sn**	**15 07 00.7**	**-1.0**
LBMI	**Labuha**	**4.40**	**334**	P	**Pn**	**15 06 12.2**	**+0.7**
TNTI	**Ternate**	**5.74**	**339**	P	**Pn**	**15 06 29.2**	**+0.6**
	30nm,0.8s,0.1nm						
WRA	**Warramunga Arr**	**15.96**	**163**	Pn	P	15 08 34.4	-3.8
	0.5nm,0.3s,baz=344,slow=12,SNR=31						
WRA				Sn	S	15 11 22.6	-13
	0.5nm,0.3s,baz=349,slow=23,SNR=7.6						
ASAR	**Alice Springs**	**19.43**	**168**	P	**P**	**15 09 14.0**	**-2.0**
	1.0nm,0.3s,baz=349,slow=12,SNR=130						
MKAR	**Makanchi Array**	**65.95**	**327**	P	**P**	**15 15 28.2**	**-1.1**
	0.2nm,0.4s,baz=122,slow=8.2,SNR=4.0						

*ISCJB **26** 15:05:06.3±1.4, 36°.43N±0°.08×142°.5E±0°.1, h15km, mb3.6/4, MS3.0/1, Error ellipse: s-maj=17.1km s-min=9.0km az=33.5*
*IDC **26** 15:05:09.6±2.2, 36°.49N×141°.94E, h0km, mb3.7/4, mb1 3.7/7, mb1mx3.4/46, mbtmp3.7/7, ML3.5/3, MS2.8/3, Ms1 2.8/3, ms1mx2.4/65, Error ellipse: s-maj=47.1km s-min=25.8km az=83.0*
ISC 26 15:05:07.8±1.3, 36°.29N±0°.08×142°.4E±0°.1, h15km, n9, σ1°70/10, mb3.6/4, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MJAR	**Matsushiro Arr**	**3.40**	**275**	Pn	**Pn**	**15 05 58.6**	**-1.7**
	4.2nm,0.3s,baz=218,slow=14,SNR=16						
MJAR				LR	LR	15 07 29.9	
	comp=Z,57nm,20.5s,baz=130,slow=47						
MAT	**Matsushiro**	**3.40**	**275**	P	**Pn**	**15 06 00.7**	**+0.4**
MAT				S	**Sn**	**15 06 41.7**	**+1.3**
JHJ	**Hachijo jima 2**	**3.84**	**215**	Pn	**Pn**	**15 06 07.0**	**+0.8**
	18nm,0.3s,baz=328,slow=22,SNR=2.2						
JHJ				Sn	**Sn**	**15 06 48.2**	**-2.9**
	38nm,0.3s,baz=254,slow=23,SNR=2.9						
ASAJ	**Asahikawa**	**7.81**	**1**	Pn	**Pn**	**15 07 00.8**	**0.0**
	0.5nm,0.3s,baz=211,slow=12,SNR=1.9						
ASAJ				Sn	**Sn**	**15 08 26.7**	**-2.3**
	0.1nm,0.3s,baz=234,slow=25,SNR=2.9						
KSRS	**Korea Array**	**11.67**	**280**	LR	LR	15 12 22.0	
	comp=Z,61nm,19.4s,baz=131,slow=38						
SONM	**Songino Array**	**28.87**	**305**	P	**P**	**15 11 06.3**	**+0.5**
	1.0nm,0.6s,baz=103,slow=8.2,SNR=8.3						
SONM				LR	LR	15 23 39.1	
	comp=Z,32nm,18.4s,baz=186,slow=39						
ZALV	**Zalesovo Beam**	**43.01**	**313**	P	**P**	**15 13 07.1**	**+0.7**
	0.3nm,0.4s,baz=112,slow=11,SNR=1.4						
MKAR	**Makanchi Array**	**45.19**	**303**	P	**P**	**15 13 24.6**	**+0.5**
	1.0nm,0.6s,baz=86,slow=10,SNR=4.4						
WRA	**Warramunga Arr**	**56.45**	**189**	P	P	15 14 54.6	+5.7
	0.4nm,0.8s,baz=3.5,slow=7.1,SNR=1.6						

*IDC **26** 15:30:00.7±7.1, 36°.36N×71°.50E, h49km±39km, mb3.4/2, mb1 3.7/8, mb1mx3.2/61, mbtmp3.8/8, ML3.4/6, Error ellipse: s-maj=95.4km s-min=24.6km az=161.0*
*ISCJB **26** 15:30:07.6±0.5, 37°.15N±0°.04×71°.18E±0°.06, h88km, mb3.5/2, Error ellipse: s-maj=7.2km s-min=5.3km az=143.1*
*NNC **26** 15:30:17.2±2.3, 37°.74N×71°.33E, h155km±31km, mb2.8, mpv3.5, Error ellipse: s-maj=23.4km s-min=17.7km az=54.0*
ISC 26 15:30:08.8±0.7, 37°.20N±0°.06×71°.25E±0°.06, h88km, n22, σ1°93/27, 7C-8D, Afghanistan-Tajikistan border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SFK	**Sufi-Kurgan**	**3.32**	**31**	⇓P	Pn	15 31 02.0	+3.3
	3.4nm,0.1s						
SFK				⇓S	**Sn**	**15 31 38.8**	**+1.6**
	8.8nm,0.2s						
MNAS	**Manas**	**5.37**	**10**	⇓P	**Pn**	**15 31 29.1**	**+2.6**
	1.8nm,0.4s						
MNAS				⇑S	**Sn**	**15 32 24.8**	**-2.2**
	26nm,0.6s						
KK31	**Karatay Array**	**5.92**	**355**	⇓P	Pn	15 31 37.0	+3.1
	0.7nm,0.2s,baz=181,slow=14,SNR=18						
KK31				⇑S	**Sn**	**15 32 38.5**	**-1.9**
	0.8nm,0.2s,baz=184,slow=21,SNR=8.5						
AAK	**Ala-Archa**	**5.97**	**24**	P	Pn	15 31 37.6	+2.9
	2.9nm,0.3s,baz=175,slow=5.7,SNR=32						
AAK				S	**Sn**	**15 32 39.8**	**-2.0**
	0.8nm,0.3s,baz=323,slow=22,SNR=11						
AAK	**Ala-Archa**	**5.97**	**24**	⇓P	**Pn**	**15 31 37.3**	**+2.6**
	5.5nm,0.5s						
AAK				⇑S	**Sn**	**15 32 39.8**	**-2.0**
	12nm,0.8s						
THN	**Thein Dam**	**6.01**	**141**	*e*P	Pn	15 31 37.0	+1.9
THN				*e*S	**Sn**	**15 32 41.5**	**-0.9**
TKM2	**Tokmak 2**	**6.62**	**29**	⇓P	**Pn**	**15 31 45.4**	**+1.9**
	7.6nm,0.8s						
TKM2				⇓S	**Sn**	**15 32 54.5**	**-3.0**
	3.0nm,0.7s						
GEYT	**Alibeck**	**10.45**	**278**	P	**Pn**	**15 32 34.6**	**-1.1**
	0.6nm,0.3s,baz=104,slow=13,SNR=5.4						
GEYT				S	**Sn**	**15 34 31.1**	**+0.2**
	0.7nm,0.3s,baz=108,slow=14,SNR=5.0						
MK31	**Makanchi Array**	**12.61**	**37**	⇑P	**Pn**	**15 33 04.7**	**0.0**
	1.6nm,0.6s,baz=224,slow=15,SNR=13						
MKAR	**Makanchi Array**	**12.61**	**37**	P	**Pn**	**15 33 04.7**	**-0.1**
	0.2nm,0.3s,baz=226,slow=15,SNR=22						
PYUN	**Piuthan**	**13.41**	**129**	*e*P	**Pn**	**15 33 14.9**	**-0.8**
	7.5nm,0.4s						
KOLN	**Koldanda**	**14.03**	**129**	*e*P	**Pn**	**15 33 22.1**	**-1.6**
	5.0nm,0.5s						
KURBB	**Kurchatov Arra**	**14.40**	**19**	P	**P**	**15 33 32.0**	**-0.5**
	0.0nm,0.3s,baz=207,slow=10,SNR=10						
AB31	**Akbulak array**	**14.58**	**329**	⇓P	**Pn**	**15 33 31.1**	**+0.7**
	0.3nm,0.3s						
AB31				⇑S	Sn	15 36 00.7	-10
	1.5nm,0.6s						
DMN	**Daman**	**15.10**	**125**	*e*P	**Pn**	**15 33 37.3**	**-0.2**
	8.6nm,0.7s						
PKIN	**Phulchoki**	**15.31**	**125**	*e*P	**P**	**15 33 40.9**	**-2.2**
	5.4nm,0.4s						
GUN	**Gumba**	**15.41**	**123**	*e*P	**P**	**15 33 46.4**	**+2.1**
	19nm,0.9s						
AKTO	**Aktyubinsk**	**16.28**	**329**	P	**P**	**15 33 54.5**	**+1.1**
	0.2nm,0.3s,baz=107,slow=15,SNR=4.2						
AKTO	**Aktyubinsk**	**16.28**	**329**	⇑P	**P**	**15 33 54.4**	**+1.1**
	1.4nm,0.8s						
AKTO				⇑S	**Sn**	**15 36 47.4**	**-4.6**
	4.1nm,1.1s						
ZALV	**Zalesovo Beam**	**19.20**	**25**	P	**Pn**	**15 34 25.9**	**-1.3**
	0.3nm,0.3s,baz=226,slow=11,SNR=12						
TIXI	**Tiksi**	**45.05**	**22**	P	**P**	**15 38 16.5**	**+1.2**
	0.6nm,0.3s,baz=274,slow=5.1,SNR=3.8						
YKA	**Yellowknife Ar**	**80.54**	**3**	P	**P**	**15 42 12.6**	**+1.8**
	0.2nm,0.6s,baz=348,slow=5.5,SNR=6.5						

IDC 26 15:30:10.0±4.3, 16°.74S×69°.42W, h175km±18km, mb3.3/3, mb1 3.4/3, mb1mx3.2/33, mbtmp3.8/3, Error ellipse: s-maj=95.4km s-min=41.6km az=16.0, Peru-Bolivia border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LPAZ	**La Paz**	**1.32**	**70**	P	Pn	15 30 40.1	-0.5
	19nm,0.3s,baz=263,slow=6.6,SNR=231						
LPAZ				S	Sn	15 31 04.2	+0.1
	4.9nm,0.3s,baz=139,slow=24,SNR=25						
DBIC	**Dimbokro**	**67.93**	**75**	P		15 40 50.3	-0.1
	1.7nm,0.6s,baz=220,slow=7.9,SNR=4.1						
TORD	**Torodi Ar. Bea**	**76.27**	**72**	P	P	15 41 40.0	0.0
	0.3nm,0.3s,baz=250,slow=4.2,SNR=6.4						
YKA	**Yellowknife Ar**	**86.56**	**341**	P	P	15 42 33.2	+0.3
	0.2nm,0.6s,baz=132,slow=4.9,SNR=5.1						

*DDA **26** 15:31:32.6, 37°.30N×42°.64E, h7km, Md2.7*
*CSEM **26** 15:31:32.2±0.7, 37°.29N×42°.65E, h0km±5km, MD2.7, Error ellipse: s-maj=17.7km s-min=5.9km az=7.0*
ISC 26 15:31:32.4±1.5, 37°.29N±0°.08×42°.64E±0°.04, h4km±12km, n13, σ0°81/22, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SIRT	**Sirnak**	**0.27**	**323**	*e*PG	**Pg**	**15 31 36.9**	**-0.7**
SIRT				*e*SG	**Sg**	**15 31 41.4**	**+0.3**
SIRT	**Sirnak**	**0.27**	**323**	*e*Pg	**Pg**	**15 31 36.9**	**-0.7**
SIRT				*e*Sg	**Sg**	**15 31 41.4**	**+0.3**
SIRN	**S¨–rnak**	**0.28**	**319**	*i* P	**Pg**	**15 31 37.2**	**-0.6**
SIRN				*i* S	**Sg**	**15 31 42.4**	**+1.0**
SIRN	**S¨–rnak**	**0.28**	**319**	P	**Pg**	**15 31 37.2**	**-0.6**
SIRN				S	**Sg**	**15 31 42.4**	**+1.0**
HAKT	**HAKKARI**	**0.89**	**72**	*i* P	**Pg**	**15 31 49.8**	**+0.3**
HAKT				*i* S	**Sn**	**15 32 04.1**	**-1.4**
HAKT	**HAKKARI**	**0.89**	**72**	P	**Pg**	**15 31 49.8**	**+0.3**
GEVA	**Gevas**	**1.07**	**18**	*i* P	**Pg**	**15 31 52.8**	**-0.2**
GEVA	**Gevas**	**1.07**	**18**	P	**Pg**	**15 31 52.8**	**-0.2**
BTMN	**Batman**	**1.24**	**299**	*i* P	**Pn**	**15 31 56.7**	**0.0**
BTMN				*i* S	**Sn**	**15 32 15.7**	**+1.7**
BTMN	**Batman**	**1.24**	**299**	P	**Pn**	**15 31 56.7**	**0.0**
MARD	**Mardin**	**1.48**	**272**	*i* P	**Pb**	**15 32 00.4**	**-0.3**
MARD				*i* S	**Sg**	**15 32 21.7**	**+1.6**
MAZI	**Mazidag**	**1.76**	**276**	*e*PN	**Pn**	**15 32 03.6**	**-0.1**
MAZI				*e*SN	**Sg**	**15 32 28.4**	**-0.4**
MAZI	**Mazidag**	**1.76**	**276**	*e*Pn	**Pn**	**15 32 03.7**	**-0.1**
MAZI				*e*Sn	**Sg**	**15 32 28.4**	**-0.4**

*ISCJB **26** 15:44:31.0±0.5, 9°.69S±0°.06×118°.20E±0°.04, h35km, mb3.7/1, Error ellipse: s-maj=8.5km s-min=4.8km az=21.6*
*DJA **26** 15:44:34.3±1.0, 10°.S±7°×11°.8E±°, h40km±9km, M4.1/12, mb4.1/5, MLv4.1/12*
*IDC **26** 15:44:40.6±4.0, 9°.33S×119°.32E, h64km±44km, mb3.6/1, mb1 3.5/5, mb1mx3.1/35, mbtmp3.6/5, ML3.5/4, Error ellipse: s-maj=50.5km s-min=12.7km az=66.0*
ISC 26 15:44:32.9±0.9, 9°.56S±0°.07×118°.21E±0°.05, h35km, n16, σ1°40/21, Sumbawa region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PLAI	**Plampang**	**0.84**	**330**	P	**Pn**	**15 44 49.5**	**+1.2**
PLAI				S	**Sn**	**15 45 00.3**	**+0.8**
TWSI	**Taliwang, Sumb**	**1.54**	**302**	P	**Pn**	**15 44 59.1**	**+1.1**
TWSI				S	**Sn**	**15 45 17.1**	**+0.3**
DNP	**Denpasar**	**3.09**	**286**	P	**Pn**	**15 45 20.4**	**+1.2**
DNP				S	**Sn**	**15 45 56.0**	**+1.1**
SRBI	**Singaraja**	**3.30**	**296**	P	**Pn**	**15 45 22.6**	**+0.4**
BSSI	**Bau Bau, Buton**	**4.08**	**34**	P	**Pn**	**15 45 33.8**	**+0.9**
MMRI	**Maumere**	**4.08**	**77**	P	**Pn**	**15 45 35.7**	**+2.8**
MMRI				S	**Sn**	**15 46 20.2**	**+0.7**
JAGI	**Jajag, Banyuwa**	**4.15**	**285**	P	Pn	15 45 30.4	-3.4
KAPI	**Kappang**	**4.77**	**19**	P	**Pn**	**15 45 43.4**	**+1.1**
	2.4nm,0.3s,baz=179,slow=5.4,SNR=9.3						
KAPI				S	**Sn**	**15 46 33.5**	**-3.0**
	25nm,0.3s,baz=106,slow=22,SNR=42						
GMJI	**Gumukmas**	**4.88**	**285**	P	**Pn**	**15 45 43.0**	**-0.8**
SPSI	**Sidrap Palu**	**5.77**	**16**	P	**Pn**	**15 45 57.3**	**+1.2**
	9.7nm,0.8s,0.1nm						
PWJI	**Pagerwojo**	**6.51**	**283**	P	**Pn**	**15 46 04.4**	**-1.9**
	12nm,1.0s,0.1nm						
PCJI	**Pacitan**	**7.08**	**281**	P	**Pn**	**15 46 13.7**	**-0.4**
FITZ	**Fitzroy Crossi**	**11.14**	**140**	P	**Pn**	**15 47 10.5**	**+0.7**
	0.3nm,0.3s,baz=314,slow=9.1,SNR=11						
FITZ				S	Sn	15 49 08.7	-4.5
	0.6nm,0.3s,baz=177,slow=21,SNR=11						
WRA	**Warramunga Arr**	**18.69**	**125**	P	**P**	**15 48 47.5**	**-0.8**
	0.1nm,0.3s,baz=300,slow=12,SNR=6.2						
WRA				S	Sn	15 52 05.9	-11
	0.1nm,0.3s,baz=307,slow=24,SNR=5.2						
ASAR	**Alice Springs**	**20.54**	**135**	P	**P**	**15 49 08.5**	**0.0**
	0.2nm,0.3s,baz=313,slow=8.5,SNR=22						
ASAR				S	**S**	**15 52 54.9**	**-1.6**
	0.1nm,0.3s,baz=303,slow=21,SNR=4.8						
STKA	**Stephens Creek**	**31.03**	**139**	P	**P**	**15 50 46.9**	**-0.6**
	1.1nm,0.8s,baz=309,slow=12,SNR=4.7						

JMA 26 15:45:19.4, 38°.52N×140°.00E, h4km±3km, M0.6, Near west coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JYA	**Atsumi**	**0.24**	**288**	P	Pg	15 45 24.3	+0.3
JYA				S	Sg	15 45 28.0	+0.9

IDC 26 15:45:38.3±11.0, 42°.17S×84°.25E, h0km, mb3.8/4, mb1 4.0/4, mb1mx3.6/37, mbtmp3.8/4, Error ellipse: s-maj=278.9km s-min=46.9km az=46.0, Southeast Indian Ridge

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
H01W2	**Cape Leeuwin H**	**24.39**	**83**	T	T	16 15 25.6	
	baz=244,slow=74,SNR=17						
H01W3	**Cape Leeuwin H**	**24.40**	**83**	T	T	16 15 26.2	
	baz=244,slow=74,SNR=22						
H01W1	**Cape Leeuwin H**	**24.41**	**83**	T	T	16 15 27.1	
	baz=244,slow=74,SNR=16						
H08S2	**Diego Garcia H**	**35.92**	**340**	T	T	16 30 09.0	
	baz=164,slow=76,SNR=75						
H08S1	**Diego Garcia H**	**35.92**	**340**	T	T	16 30 09.1	
	baz=164,slow=76,SNR=100						
H08S3	**Diego Garcia H**	**35.94**	**340**	T	T	16 30 10.2	
	baz=164,slow=76,SNR=84						
ASAR	**Alice Springs**	**44.91**	**82**	P	P	15 53 55.1	+0.3
	1.4nm,0.8s,baz=229,slow=8.1,SNR=10.0						
STKA	**Stephens Creek**	**46.15**	**97**	P	P	15 54 04.2	-0.3
	1.5nm,0.9s,baz=260,slow=6.1,SNR=2.7						
WRA	**Warramunga Arr**	**47.51**	**78**	P	P	15 54 14.8	-0.5
	2.0nm,1.0s,baz=232,slow=7.4,SNR=6.0						
CMAR	**Chiang Mai Arr**	**61.83**	**16**	P	P	15 55 59.1	0.0
	0.2nm,0.4s,baz=204,slow=7.0,SNR=4.7						

*KLM **26** 15:52:16.4, 5°.12N×125°.02E, h345km, mb4.2, MS5.0*
*ISCJB **26** 15:52:18.6±0.3, 5°.16N±0°.04×124°.74E±0°.06, h400km, mb4.0/41, Error ellipse: s-maj=8.3km s-min=5.1km az=151.3*
*IDC **26** 15:52:18.8±0.7, 5°.21N×124°.69E, h380km±7km, mb3.5/17, mb1 3.5/18, mb1mx3.4/47, mbtmp4.2/18, Error ellipse: s-maj=21.4km s-min=8.5km az=76.0*
*NEIC **26** 15:52:20.1±1.6, 5°.40N×124°.68E, h382km±7km, mb4.1/10, Error ellipse: s-maj=36.6km s-min=11.9km az=146.0*
ISC 26 15:52:20.1±0.5, 5°.18N±0°.06×124°.67E±0°.08, h400km, n67, σ1°53/68, mb4.0/41, 2C-2D, Mindanao

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SGSI	**Sangihe**	**1.71**	**150**	P	**Pn**	**15 53 10.2**	**-4.2**
DAV	**Davao City (W)**	**2.09**	**26**	P	**Pn**	**15 53 13.8**	**-2.8**
	64nm,0.3s,baz=124,slow=0.9,SNR=5.5						
DAV				S	**S**	**15 53 57.2**	**-5.1**
	65nm,0.3s,baz=278,slow=22,SNR=6.9						
DAV	**Davao City (W)**	**2.09**	**26**	P	**Pn**	**15 53 14.1**	**-2.6**
TNTI	**Ternate**	**5.14**	**148**	P	**Pn**	**15 53 40.5**	**-3.1**
MRSI	**Marisa**	**5.41**	**210**	P	**Pn**	**15 53 44.8**	**-1.6**
MYLDM	**Lahad Datu**	**6.14**	**270**	*e*Pn	**Pn**	**15 53 53.8**	**-0.5**
LBMI	**Labuha**	**6.43**	**154**	P	**Pn**	**15 53 55.1**	**-2.4**
SANI	**Sanana**	**7.30**	**170**	P	**Pn**	**15 54 04.8**	**-2.4**
	96nm,0.9s,2µm0.9nm						
SDKM	**Sandakan**	**7.46**	**274**	⇓P	**P**	**15 54 08.3**	**-1.2**
KKM	**Kota Kinabalu**	**8.46**	**276**	⇓P	**Pn**	**15 54 19.0**	**-1.5**
KKM	**Kota Kinabalu**	**8.46**	**276**	*e*Pn	**Pn**	**15 54 19.3**	**-1.2**
NLAI	**Namlea**	**8.70**	**164**	P	**P**	**15 54 22.5**	**-0.9**
	44nm,0.8s,1µm0.5nm						
SWI	**Sorong**	**8.91**	**132**	P	**P**	**15 54 25.8**	**+0.2**
MSAI	**Masohi**	**9.47**	**153**	P	**Pn**	**15 54 33.1**	**+1.0**
	21nm,0.7s,188nm0.1nm						
BNDI	**Bandanaira**	**10.96**	**151**	P	Pn	15 54 55.7	+6.4
SBUM	**Sibu**	**12.71**	**258**	⇑P	**Pn**	**15 55 10.2**	**+0.5**
SBUM	**Sibu**	**12.71**	**258**	*e*P	**Pn**	**15 55 09.4**	**-0.3**
JAY	**Jayapura**	**17.75**	**115**	P	**P**	**15 56 04.5**	**+2.4**
	0.1nm,0.3s,baz=2.5,slow=24,SNR=5.4						
TPUB	**Ta-pu**	**18.44**	**348**	*e*P	**P**	**15 56 07.2**	**-2.1**
	35nm,0.8s						
FITZ	**Fitzroy Crossi**	**23.15**	**178**	P	**P**	**15 56 53.4**	**+0.2**
	0.5nm,0.3s,baz=2.3,slow=9.1,SNR=6.4						
SKNT	**Sakolnakorn**	**23.41**	**302**	P	**P**	**15 56 56.5**	**+0.8**
	12nm,1.2s						
CHAI	**Chaiyaphum**	**24.68**	**297**	P	**P**	**15 57 07.4**	**+0.3**
	6.8nm,0.7s,66nm						
PBKT	**Sadao Pong**	**25.84**	**298**	P	**P**	**15 57 18.7**	**+1.3**
	8.7nm,1.3s						
LOEI	**Loei**	**25.97**	**300**	P	**P**	**15 57 16.3**	**-2.3**
	13nm,0.8s,6µm						
WRA	**Warramunga Arr**	**26.71**	**159**	P	**P**	**15 57 24.7**	**-0.4**
	1.1nm,0.4s,baz=333,slow=10,SNR=38						
NANT	**Nan**	**27.02**	**302**	P	**P**	**15 57 29.0**	**+1.1**
	3.2nm,0.4s						
CRAI	**Chiangrai**	**27.96**	**305**	P	**P**	**15 57 37.7**	**+1.5**
	61nm,1.1s						
CMAR	**Chiang Mai Arr**	**28.37**	**300**	P	**P**	**15 57 41.2**	**+1.4**
	3.5nm,0.6s,baz=119,slow=7.4,SNR=35						
CMMT	**Chiang Mai**	**28.52**	**301**	P	**P**	**15 57 41.8**	**+0.7**
	12nm,0.8s						
CHTO	**Chiang Mai**	**28.52**	**301**	*e*P	**P**	**15 57 41.9**	**+0.8**
	7.6nm,0.6s						
ENH	**Enshi**	**28.78**	**332**	*e*P	**P**	**15 57 43.9**	**+0.7**
	11nm,0.8s						
KMI	**Kunming**	**28.91**	**316**	P	**P**	**15 57 46.0**	**+1.3**
KMI				pmax	pmax		
	comp=Z,11nm,0.5s						
KMI				pmax	pmax		
	comp=Z,95nm,4.7s						
CMAI	**Chiengmai2**	**28.93**	**303**	P	**P

MA2	**Magadan**	**57.84**	**15**	P		**P**	**16 01 31.7**	**+0.4**
	comp=Z,4.4nm,0.6s,baz=240,slow=8.0,SNR=7.9							
ZALV	**Zalesovo Beam**	**58.38**	**334**	P		**P**	**16 01 35.0**	**-0.1**
	comp=Z,2.3nm,0.6s,baz=128,slow=6.7,SNR=12							
EKS2	**Erkin-Say**	**58.41**	**318**	*e*P		**P**	**16 01 36.9**	**+1.2**
	comp=Z,3.8nm,0.8s							
KURK	**Kurchatov**	**59.43**	**328**	*e*P		**P**	**16 01 42.1**	**-0.2**
	comp=Z,17nm,0.7s							
KKAR	**Karatay Array**	**60.78**	**317**	*e*P		**P**	**16 01 51.7**	**+0.1**
BRVK	**Borovoye**	**65.07**	**327**	*e*P		**P**	**16 02 19.8**	**+0.6**
	comp=Z,4.3nm,0.9s							
TIXI	**Tiksi**	**66.44**	**1**	*e*P		**P**	**16 02 27.2**	**-0.3**
	comp=Z,1.8nm,0.6s							
NRIK	**Noril'sk**	**68.55**	**347**	P		**P**	**16 02 40.7**	**+0.1**
	comp=Z,3.0nm,0.5s,baz=131,slow=6.2,SNR=10							
BRTR	**Keskin Array B**	**87.52**	**309**	P		**P**	**16 04 23.4**	**-0.9**
	comp=Z,0.7nm,0.8s,baz=105,slow=4.2,SNR=4.1							
ARCES	**ARCESS Array B**	**88.39**	**340**	P		**P**	**16 04 27.4**	**-0.1**
	comp=Z,1.6nm,0.7s,baz=70,slow=5.3,SNR=4.1							
FINES	**FINESS Array B**	**89.59**	**332**	P		**P**	**16 04 32.0**	**-1.2**
	comp=Z,0.5nm,0.4s,baz=74,slow=6.9,SNR=4.2							
TORD	**Torodi Ar. Bea**	**120.52**	**288**	PKP		**PKPdf**	**16 10 25.7**	**-0.2**
	comp=Z,0.4nm,0.5s,baz=35,slow=1.8,SNR=4.9							

CSEM ***26*** *15:56:32.5±0.3, 37.26N×42.53E, h15km, MD2.7, Error ellipse: s-maj=10.7km s-min=4.7km az=11.0*
DDA ***26*** *15:56:34.5, 37.49N×42.63E, h7km, Md2.7*
ISC 26 15:56:33.9±1.6**, 37.30N**±0.09×**42.63E**±0.03**, h3**km±13km**, n12,** σ0.979/20**, Turkey**

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
SIRT	**Sirnak**	**0.25**	**322**	*e*PG		**Pg**	**15 56 38.1**	**-0.6**
SIRT				*e*SG		**Sg**	**15 56 42.7**	**+0.6**
SIRT	**Sirnak**	**0.25**	**322**	*e*Pg		**Pg**	**15 56 38.2**	**-0.6**
SIRT				*e*Sg		**Sg**	**15 56 42.7**	**+0.6**
SIRN	**S¨–rnak**	**0.26**	**318**	*i* P		**Pg**	**15 56 38.2**	**-0.7**
SIRN				*i* S		**Sg**	**15 56 43.5**	**+1.1**
SIRN	**S¨–rnak**	**0.26**	**318**	P		**Pg**	**15 56 38.2**	**-0.7**
SIRN				S		**Sg**	**15 56 43.5**	**+1.1**
CUKT	**Cukurca**	**0.78**	**94**	*e*PG		**Pb**	**15 56 50.1**	**-0.1**
CUKT	**Cukurca**	**0.78**	**94**	*e*Pg		**Pb**	**15 56 50.1**	**-0.1**
HAKT	**HAKKARI**	**0.89**	**73**	*i* P		**Pg**	**15 56 51.0**	**0.0**
HAKT				*i* S		**Sb**	**15 57 04.1**	**-0.5**
HAKT	**HAKKARI**	**0.89**	**73**	P		**Pg**	**15 56 51.0**	**0.0**
HAKT				S		**Sb**	**15 57 04.1**	**-0.5**
BTMN	**Batman**	**1.23**	**299**	*i* P		**Pn**	**15 56 57.7**	**-0.4**
BTMN				*i* S		**Sn**	**15 57 16.8**	**+1.4**
MARD	**Mardin**	**1.48**	**271**	*i* P		**Pb**	**15 57 01.8**	**-0.4**
MARD				*i* S		**Sg**	**15 57 22.6**	**+1.2**
MAZI	**Mazidag**	**1.75**	**276**	*e*PG		**Pn**	**15 57 04.9**	**-0.4**
MAZI	**Mazidag**	**1.75**	**276**	*e*Pg		**Pn**	**15 57 04.9**	**-0.4**

IDC 26 15:56:52.2±3.3**, 36.15N**×**142.25E, h0**km**, mb3.3**/2**, mb1 3.5**/4**, mb1mx3.2**/52**, mbtmp3.4**/4**, ML3.3**/2**, Error ellipse: s-maj=66.1km s-min=34.8km az=65.0, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
MJAR	**Matsushiro Arr**	**3.28**	**278**	Pn		Pn	15 57 44.7	-0.2
	2.0nm,0.3s,baz=93,slow=18,SNR=6.9							
MAT	**Matsushiro**	**3.29**	**278**	P		Pn	15 57 45.6	+0.6
MAT				S		Sn	15 58 23.1	-1.7
JHJ	**Hachijo jima 2**	**3.64**	**215**	Pn		Pn	15 57 49.3	-0.5
	11nm,0.3s,baz=89,slow=23,SNR=2.0							
JHJ				Sn		Sn	15 58 29.8	-3.7
	7.2nm,0.3s,baz=248,slow=21,SNR=1.5							
MKAR	**Makanchi Array**	**45.16**	**303**	P		P	16 05 10.3	-0.2
	0.1nm,0.2s,baz=98,slow=10,SNR=1.3							
WRA	**Warramunga Arr**	**56.28**	**189**	P		P	16 06 34.7	+0.1
	0.1nm,0.3s,baz=7.8,slow=7.7,SNR=1.6							

ISCJB ***26*** *15:58:58.6±1.1, 39.84N×0.03×144.62E±0.04, h15km±7km, mb4.3/55, MS3.6/11, Error ellipse: s-maj=5.8km s-min=4.1km az=140.1*
IDC ***26*** *15:58:58.0±0.6, 39.72N×144.70E, h0km, mb4.2/26, mb1 4.4/32, mb1mx4.3/55, mbtmp4.2/32, ML3.8/6, MS3.3/7, Ms1 3.3/7, ms1mx2.9/47, Error ellipse: s-maj=15.1km s-min=12.0km az=115.0*
NEIC ***26*** *15:58:58.4±2.7, 39.77N×144.73E, h2km±16km, mb4.6/12, Error ellipse: s-maj=9.5km s-min=5.4km az=111.0*
JMA ***26*** *15:59:01.1±0.2, 39.83N×144.58E, h41km, M4.4*
MOS ***26*** *15:59:01.2±1.0, 39.83N×144.71E, h33km, mb4.6/23, Error ellipse: s-maj=8.8km s-min=5.6km az=102.5*
ISC 26 15:59:00.3±0.9**, 39.76N**±0.05×**144.76E**±0.05**, h17**km±5km**, n137,** σ2.919/159**, mb4.4**/55**, MS3.5**/12**, 3C-8D, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
JTH	**Tanohata**	**2.23**	**275**	P		**Pn**	**15 59 34.6**	**-1.9**
JTH				*e*S		**Sn**	**16 00 10.4**	**-3.3**
MIYJ	**Miyakonagasawa**	**2.27**	**266**	P		**Pn**	**15 59 35.7**	**-1.4**
MIYJ				S		**Sn**	**16 00 01.5**	**-3.2**
OFUJ	**Ofunato**	**2.48**	**255**	P		**Pn**	**15 59 38.7**	**-1.3**
ERM	**Erimo**	**2.56**	**332**	*e*P		**Pn**	**15 59 39.4**	**-1.6**
ERM	**Erimo**	**2.56**	**332**	*e*Pn		**Pn**	**15 59 39.4**	**-1.6**
JANG	**Nango**	**2.56**	**285**	P		**Pn**	**15 59 39.2**	**-1.8**
JANG				*e*S		**Sn**	**16 00 07.0**	**-4.8**
JOM	**Ohasama**	**2.69**	**265**	P		**Pn**	**15 59 42.1**	**-0.7**
JOM				*e*S		**Sn**	**16 00 12.1**	**-2.9**
JMK	**Ichinoseki**	**2.86**	**255**	P		**Pn**	**15 59 44.0**	**-1.1**
JNBK	**Urakawa-nobuka**	**2.94**	**330**	P		**Pn**	**15 59 45.2**	**-1.0**
JNBK				*e*S		**Sn**	**16 00 18.5**	**-2.6**
JTM	**Tenmabayashi**	**3.00**	**291**	P		**Pn**	**15 59 45.9**	**-1.2**
JTM				*e*S		**Sn**	**16 00 19.3**	**-3.3**
JCH	**Churui**	**3.04**	**340**	P		**Pn**	**15 59 46.4**	**-1.2**
JCH				*e*S		**Sn**	**16 00 19.7**	**-3.9**
JAH	**Hinai**	**3.19**	**279**	P		**Pn**	**15 59 49.1**	**-0.6**
JAH				S		**Sn**	**16 00 23.5**	**-3.9**
JRG	**Rokugo**	**3.21**	**265**	P		**Pn**	**15 59 49.2**	**-0.7**
JOT	**Ohata**	**3.25**	**301**	P		**Pn**	**15 59 49.4**	**-1.2**
JOT				*e*S		**Sn**	**16 00 25.2**	**-3.7**
JOU	**Okura**	**3.48**	**248**	P		**Pn**	**15 59 52.6**	**-1.0**
JOU				S		**Sn**	**16 00 32.1**	**-2.3**
JYK	**Kaneyama**	**3.51**	**258**	P		**Pn**	**15 59 53.5**	**-0.6**
JKB	**Kayabe**	**3.53**	**308**	P		**Pn**	**15 59 53.7**	**-0.7**
NEM2	**Nemuro 2**	**3.68**	**11**	P		**Pn**	**15 59 54.3**	**-2.1**
JTKR	**Abashiri--Toko**	**4.25**	**352**	P		**Pn**	**16 00 03.1**	**-1.2**
YUK	**Yuzh-Kuril'sk**	**4.35**	**11**	*e*P		**Pn**	**16 00 03.7**	**-1.9**
YUK				*e*S		**Sn**	**16 00 50.0**	**-5.9**
YUK				pmax		pmax		
	comp=N,58nm,0.2s							
YUK				pmax		pmax		
	comp=E,92nm,0.2s							
YUK				pmax		pmax		
	comp=Z,259nm,0.2s							
SHO	**Shikotan**	**4.39**	**20**	*e*P		**Pn**	**16 00 04.1**	**-2.0**
SHO				*e*S		**Sn**	**16 00 50.8**	**-6.0**
SHO				pmax		pmax		
	comp=Z,220nm,0.5s							
SHO				pmax		pmax		
	comp=N,91nm,0.6s							
SHO				pmax		pmax		
	comp=E,144nm,0.5s							
ASAJ	**Asahikawa**	**4.64**	**340**	Pn		**Pn**	**16 00 09.8**	**+0.2**
	comp=E,6.8nm,0.3s,baz=190,slow=11,SNR=33							
ASAJ				Sn		**Sn**	**16 01 02.0**	**-1.0**
	comp=E,4.1nm,0.3s,baz=262,slow=33,SNR=7.5							
ASAJ				LR		LR	16 02 20.2	
	comp=E,153nm,20.4s,baz=146,slow=43							
ASAJ	**Asahikawa**	**4.64**	**340**	*e*Pn		**Pn**	**16 00 08.8**	**-0.8**
ASAJ				Sn		**Sn**	**16 01 02.0**	**-1.0**
KUR	**Kuril'sk**	**5.93**	**22**	*e*P		**Pn**	**16 00 27.1**	**-0.2**
KUR				*e*S		**Sn**	**16 01 28.4**	**-6.5**
KUR				pmax		pmax		
	comp=N,11nm,0.6s							
KUR				pmax		pmax		
	comp=Z,49nm,0.6s							
KUR				pmax		pmax		
	comp=E,34nm,0.3s							
KUR				smax		smax		
	comp=N,124nm,0.6s							
KUR				smax		smax		
	comp=E,56nm,0.6s							
MJAR	**Matsushiro Arr**	**6.08**	**240**	Pn		**Pn**	**16 00 29.5**	**+0.1**
	comp=E,7.3nm,0.3s,baz=58,slow=11,SNR=62							
MAJO	**Matsushiro**	**6.08**	**240**	*d* iP		**Pn**	**16 00 29.7**	**+0.3**
MAJO	**Matsushiro**	**6.08**	**240**	*e*Pn		**Pn**	**16 00 29.5**	**+0.1**
YSS	**Yuzh-Sakhalins**	**7.34**	**349**	*e*P		**Pn**	**16 00 45.9**	**-0.7**
YSS				*e*S		**Sn**	**16 02 17.2**	**+7.8**
YSS				pmax		pmax		
	comp=Z,20nm,1.6s							
YSS	**Yuzh-Sakhalins**	**7.34**	**349**	*e*Pn		**Pn**	**16 00 45.7**	**-0.9**
INU	**Inuyama**	**7.56**	**237**	*e*Pn		**Pn**	**16 00 50.4**	**+0.7**
JHJ2	**Mitsune**	**7.74**	**212**	*e*Pn		**Pn**	**16 00 49.6**	**-2.6**
JHJ	**Hachijo jima 2**	**7.74**	**213**	Pn		**Pn**	**16 00 49.4**	**-2.9**
	comp=Z,13nm,0.3s,baz=85,slow=16,SNR=5.3							
JHJ				Sn		Sn	16 02 10.4	-9.1
	comp=Z,15nm,0.3s,baz=61,slow=21,SNR=2.3							
USRK	**Ussuriysk Ar.**	**10.49**	**299**	Pn		**Pn**	**16 01 30.8**	**+1.0**
	comp=Z,1.1nm,0.3s,baz=102,slow=14,SNR=37							
MSHR	**Mys Shultsa**	**10.63**	**290**	*i* P		**Pn**	**16 01 32.6**	**+0.8**
MDJ	**Mudanjiang**	**12.24**	**298**	P		**Pn**	**16 01 54.0**	**+0.2**
MDJ				S		Sn	16 03 57.8	-12
MDJ				ScP		**ScP**	**16 11 07.0**	**-1.1**
MDJ				PcS		**PcS**	**16 11 08.0**	**-2.0**
MDJ				pmax		pmax		
	comp=Z,15nm,1.0s							
MDJ				pmax		pmax		
	comp=Z,100nm,4.3s							
MDJ				LR		LR		
	comp=N,30nm,19.7s							
MDJ				LR		LR		
	comp=E,59nm,28.6s							
MDJ				LR		LR		
	comp=Z,89nm,24.7s							
MDJ	**Mudanjiang**	**12.24**	**298**	*e*Pn		**Pn**	**16 01 54.1**	**+0.2**
JNU	**Nakatsue**	**12.98**	**244**	Pn		**Pn**	**16 02 03.1**	**-0.9**
	comp=Z,0.4nm,0.3s,baz=66,slow=4.7,SNR=4.8							
KLR	**Kul'dur**	**13.24**	**320**	Pn		**Pn**	**16 02 06.8**	**-0.6**
	comp=Z,0.2nm,0.3s,baz=127,slow=13,SNR=18							
KLR				LR		LR	16 07 25.6	
	comp=Z,66nm,19.2s,baz=116,slow=38							
KSRS	**Korea Array**	**13.37**	**265**	Pn		**Pn**	**16 02 12.0**	**+2.8**
	comp=Z,0.4nm,0.3s,baz=75,slow=13,SNR=12							
KSAR	**Wonju Array Be**	**13.40**	**265**	P		**Pn**	**16 02 12.0**	**+2.4**
KSAR	**Wonju Array Be**	**13.40**	**265**	Pn		**Pn**	**16 02 12.0**	**+2.4**
PETK	**Petropavlovsk-**	**16.02**	**29**	Pn		**P**	**16 02 50.6**	**+2.6**
	comp=Z,0.2nm,0.3s,baz=244,slow=6.4,SNR=4.2							
PETK				LR		LR	16 08 21.6	
	comp=Z,37nm,20.7s,baz=174,slow=35							
MA2	**Magadan**	**20.20**	**9**	P		Pn	16 03 35.3	-0.6
	comp=Z,4.7nm,0.7s,baz=221,slow=6.8,SNR=9.2							
BJI	**Beijing**	**21.89**	**280**	P		**P**	**16 03 52.3**	**-0.1**
BJI				S		**S**	**16 07 53.0**	**-0.6**
BJI				pmax		pmax		
	comp=Z,13nm,0.7s							
BJI				LR		LR		
	comp=N,130nm,8.1s							
BJI				LR		LR		
	comp=E,190nm,15.4s							
BJI				LR		LR		
	comp=Z,68nm,22.6s							
TIA	**Tai'an**	**22.03**	**270**	*e*P		**P**	**16 03 54.0**	**+0.1**
TIA				pmax		pmax		
	comp=Z,10.0nm,1.1s							
NJ2	**Nanjing**	**22.29**	**258**	*e*P		**P**	**16 03 51.0**	**-5.8**
NJ2				pmax		pmax		
	comp=Z,15nm,0.8s							
SEY	**Seymchan**	**23.65**	**9**	P		**P**	**16 04 11.3**	**+0.8**
	comp=Z,4.2nm,0.7s,baz=185,slow=8.3,SNR=19							
YAK	**Yakutsk**	**24.12**	**343**	P		**P**	**16 04 14.8**	**0.0**
	comp=Z,12nm,0.3s,baz=140,slow=0.8,SNR=11							
YAK	**Yakutsk**	**24.12**	**343**	*e*P		**P**	**16 04 14.1**	**-0.8**
YAK				pmax		pmax		
	comp=E,4.0nm,1.2s							
YAK				pmax		pmax		
	comp=Z,19nm,0.8s							
YAK				pmax		pmax		
	comp=N,5.0nm,1.0s							
YAK	**Yakutsk**	**24.12**	**343**	*e*P		**P**	**16 04 13.2**	**-1.6**
	comp=N,59nm,0.4s							
HHC	**Hu-ho-hao-te**	**25.25**	**283**	*e*P		**P**	**16 04 25.5**	**-0.1**
HHC				sP		sP	16 04 33.3	+0.4
HHC				S		**S**	**16 08 49.0**	**-1.6**
HHC				SS		**SnSn**	**16 09 50.8**	**+9.4**
HHC				pmax		pmax		
	comp=Z,26nm,0.8s							
HHC				pmax		pmax		
	comp=Z,57nm,8.5s							
HHC				LR		LR		
	comp=N,470nm,12.3s							
HHC				LR		LR		
	comp=E,490nm,13.2s							
HHC				LR		LR		
	comp=Z,420nm,13.6s							
BOD	**Bodaibo**	**26.79**	**323**	*e*P		**P**	**16 04 38.0**	**-1.2**
BOD				pmax		pmax		
	comp=Z,4.0nm,1.2s							
H11N2	**WAKE ISLAND Hy**	**27.58**	**130**	T		T	16 33 41.0	
	baz=322,slow=75,SNR=13							
H11N1	**WAKE ISLAND Hy**	**27.59**	**130**	T		T	16 33 44.5	
	baz=322,slow=75,SNR=11							
H11N3	**WAKE ISLAND Hy**	**27.60**	**130**	T		T	16 33 41.3	
	baz=322,slow=75,SNR=12							
ULN	**Ulaanbaatar**	**28.16**	**299**	*i* P		**P**	**16 04 52.4**	**+0.6**
ULN				pmax		pmax		
	comp=Z,7.0nm,1.7s							
ULN	**Ulaanbaatar**	**28.16**	**299**	*e*P		**P**	**16 04 52.0**	**+0.3**
	comp=Z,3.7nm,0.7s							
H11S1	**WAKE ISLAND Hy**	**28.42**	**132**	T		T	16 34 46.0	
H11S3	**WAKE ISLAND Hy**	**28.43**	**132**	T		T	16 34 46.0	
H11S2	**WAKE ISLAND Hy**	**28.44**	**132**	T		T	16 34 45.2	
	SNR=12							
SONM	**Songino Array**	**28.60**	**299**	P		**P**	**16 04 56.5**	**+0.8**
	comp=Z,2.4nm,0.7s,baz=80,slow=8.7,SNR=11							
SONM				LR		LR	16 17 13.6	
	comp=Z,74nm,18.0s,baz=104,slow=38							
ENH	**Enshi**	**30.23**	**263**	*e*P		**P**	**16 05 10.5**	**+0.3**
	comp=Z,12nm,0.8s							
TLY	**Talaya**	**30.67**	**307**	LR		LR	16 19 25.0	
	comp=Z,26nm,18.6s,baz=156,slow=40							
BILL	**Bilibino**	**30.68**	**16**	*e*P		**P**	**16 05 14.7**	**+1.0**
BILL				*e*			16 05 24.4	
BILL				*e*			16 05 33.4	
BILL				PPP		PPP	16 06 17.0	
BILL				pmax		pmax		
	comp=Z,6.0nm,2.0s							
BILL				MLR		MLR		
	comp=Z,25nm,15.0s							
ZAK	**Zakamensk**	**30.78**	**304**	*e*P		**P**	**16 05 14.1**	**-0.8**
ZAK				pmax		pmax		
	comp=Z,4.0nm,1.4s							
LZH	**Lanzhou**	**32.28**	**277**	*e*P		**P**	**16 05 32.5**	**+4.2**
LZH				pP		sP	16 05 35.5	-0.2
LZH				sP		pP	16 05 37.5	+3.9
LZH				pmax		pmax		
	comp=Z,20nm,1.0s							
TIXI	**Tiksi**	**32.96**	**351**	P		**P**	**16 05 33.2**	**-0.5**
	comp=Z,0.8nm,0.3s,baz=322,slow=0.7,SNR=5.9							
TIXI	**Tiksi**	**32.96**	**351**	P		**P**	**16 05 34.0**	**+0.4**
TIXI				pmax		pmax		
	comp=Z,5.0nm,1.8s							
TIXI				MLR		MLR		
	comp=Z,41nm,20.0s							
CD2	**Chengdu**	**34.34**	**268**	P		**P**	**16 05 45.3**	**-0.9**
CD2				pmax		pmax		
	comp=Z,1.0nm,0.5s							
GTA	**Gaotai**	**34.36**	**284**	*e*P		**P**	**16 05 47.5**	**+1.1**
GTA				pP		sP	16 05 54.5	+0.8
GTA				sP		pP	16 05 58.0	+6.4
GTA				PcP		**PcP**	**16 08 23.3**	**+1.3**
GTA				S		**S**	**16 11 17.3**	**+4.0**
GTA				sS		sS	16 11 29.0	+7.0
GTA				SS		**SS**	**16 13 32.5**	**-10**
GTA				pmax		pmax		
	comp=Z,6.0nm,1.1s							
GTA				pmax		pmax		
	comp=Z,81nm,6.7s							
GTA				LR		LR		
	comp=N,100nm,17.6s							
GTA				LR		LR		
	comp=E,150nm,17.6s							
GTA				LR		LR		
	comp=Z,150nm,17.6s							
KMI	**Kunming**	**37.99**	**260**	P		**P**	**16 06 18.0**	**+0.3**
KMI				pmax		pmax		
	comp=Z,6.0nm,0.5s							
KMI				pmax		pmax		
	comp=Z,52nm,5.6s							
NRIK	**Noril'sk**	**41.95**	**333**	P		**P**	**16 06 50.9**	**+1.1**
	comp=Z,0.9nm,0.5s,baz=124,slow=8.8,SNR=4.3							
NRIK				LR		LR	16 24 58.5	
	comp=Z,91nm,19.0s,baz=164,slow=37							
WMQ	**Urumqi**	**42.02**	**295**	*e*P		**P**	**16 06 52.0**	**+1.2**
WMQ				pmax		pmax		
	comp=Z,3.0nm,0.8s							
WMQ				pmax		pmax		
	comp=Z,61nm,5.0s							
WMQ				LR		LR		
	comp=N,34nm,16.6s							
WMQ				LR		LR		
	comp=E,16nm,15.2s							
WMQ				LR		LR		
	comp=Z,14nm,15.2s							
ZALV	**Zalesovo Beam**	**42.09**	**310**	P		**P**	**16 06 51.6**	**+0.5**
	comp=Z,2.0nm,0.5s,baz=97,slow=8.7,SNR=11							
ZALV				PcP		**PcP**	**16 08 46.3**	**+0.8**
	comp=Z,3.0nm,0.5s,baz=94,slow=2.9,SNR=7.4							
ZALV	**Zalesovo Beam**	**42.09**	**310**	*i* P		**P**	**16 06 51.5**	**+0.4**
ZALV				pmax		pmax		
	comp=Z,2.0nm,0.4s							
CHTO	**Chiang Mai**	**44.51**	**256**	*e*P		**P**	**16 07 10.4**	**-0.7**
CHTO				pmax		pmax		
	comp=Z,3.0nm,0.9s							
CHTO	**Chiang Mai**	**44.51**	**256**	*e*P		**P**	**16 07 10.3**	**-0.7**
	comp=Z,2.8nm,0.9s							
CMAR	**Chiang Mai Arr**	**44.73**	**255**	P		**P**	**16 07 13.8**	**+0.9**
	comp=Z,0.9nm,0.7s,baz=44,slow=7.4,SNR=9.8							
MKAR	**Makanchi Array**	**44.95**	**300**	P		**P**	**16 07 14.6**	**+0.3**
	comp=Z,3.4nm,0.6s,baz=84,slow=9.6,SNR=33							
MAKZ	**Makanchi**	**45.16**	**301**	*e*P		**P**	**16 07 15.3**	**-0.6**
MAKZ				pmax		pmax		
	comp=Z,6.0nm,1.1s							
MAKZ	**Makanchi**	**45.16**	**301**	*e*P		**P**	**16 07 15.3**	**-0.6**
	comp=Z,6.1nm,1.1s							
ILAR	**Eielson Array**	**45.78**	**34**	P		**P**	**16 07 21.3**	**+0.7**
	comp=Z,1.2nm,0.7s,baz=264,slow=6.2,SNR=15							
KURK	**Kurchatov**	**46.37**	**307**	*e*P		**P**	**16 07 25.4**	**0.0**
KURK				pmax		pmax		
	comp=Z,10.0nm,0.7s							
KURK	**Kurchatov**	**46.37**	**307**	*e*P		**P**	**16 07 25.4**	**0.0**
	comp=Z,10nm,0.7s							
KLU	**Klutina**	**46.41**	**38**	*e*P		**P**	**16 07 22.4**	**-3.3**
	comp=Z,9.5nm,0.7s							
GUN	**Gumba**	**49.52**	**275**	*e*P		**P**	**16 07 51.1**	**+0.6**
	comp=Z,21nm,0.6s							
PKIN	**Phulchoki**	**50.05**	**275**	*e*P		**P**	**16 07 54.6**	**+0.1**
DMN	**Daman**	**50.26**	**275**	*e*P		**P**	**16 07 56.4**	**+0.3**
	comp=Z,16nm,1.1s							
GKN	**Gorkha**	**50.42**	**276**	*e*P		**P**	**16 07 57.6**	**+0.4**
	comp=Z,15nm,0.9s							
TKM2	**Tokmak 2**	**50.67**	**297**	*e*P		**P**	**16 07 59.5**	**+0.6**
TKM2				pmax		pmax		
	comp=Z,7.0nm,0.7s							
TKM2	**Tokmak 2**	**50.67**	**297**	*e*P		**P**	**16 07 59.5**	**+0.6**
	comp=Z,7.5nm,0.7s							
INK	**Inuvik**	**50.76**	**28**	P		**P**	**16 07 59.4**	**+0.5**
	comp=Z,1.6nm,0.5s,baz=124,slow=0.6,SNR=5.9							
INK	**Inuvik**	**50.76**	**28**	*e*P		**P**	**16 07 56.2**	**-2.7**
	comp=Z,3.2nm,0.6s							
BRVK	**Borovoye**	**50.77**	**311**	*i* P		**P**	**16 07 59.8**	**+0.6**
BRVK				pmax		pmax		
	comp=Z,2.0nm,0.6s							
BRVK	**Borovoye**	**50.77**	**311**	*e*P		**P**	**16 07 59.4**	**+0.1**
	comp=Z,6.0nm,0.8s							
KOLN	**Koldanda**	**51.33**	**276**	*e*P		**P**	**16 08 04.7**	**+0.6**
	comp=Z,3.4nm,0.4s							
AAK	**Ala-Archa**	**51.53**	**297**	P		**P**	**16 08 05.0**	**-0.4**
AAK				pmax		pmax		
	comp=Z,10.0nm,1.8s							
PYUN	**Piuthan**	**51.64**	**277**	*e*P		**P**	**16 08 06.9**	**+0.5**
EKS2	**Erkin-Say**	**52.02**	**298**	*e*P		**P**	**16 08 09.1**	**+0.2**
EKS2				pmax		pmax		
	comp=Z,3.0nm,0.7s							
EKS2	**Erkin-Say**	**52.02**	**298**	*e*P		**P**	**16 08 09.1**	**+0.2**
	comp=Z,2.7nm,0.7s							
KKAR	**Karatay Array**	**54.05**	**299**	*e*P		**P**	**16 08 23.6**	**-0.2**
KKAR	**Karatay Array**	**54.05**	**299**	*e*P		**P**	**16 08 23.6**	**-0.2**
ARU	**Arti**	**56.07**	**318**	*d* iP		**P**	**16 08 38.8**	**+0.7**
ARU							16 10 41.6	
ARU				S		**S**	**16 16 27.2**	**+1.4**
ARU				SS		**SS**	**16 20 11.8**	**+0.3**
ARU				pmax		pmax		
	comp=Z,13nm,1.2s							
ARU	**Arti**	**56.07**	**318**	*e*P		**P**	**16 08 37.9**	**-0.2**
	comp=Z,8.1nm,0.9s							
ABKAR	**Akbulak array**	**58.20**	**310**	*e*P		**P**	**16 08 53.4**	**+0.1**
RES	**Resolute Bay**	**59.29**	**15**	P		**P**	**16 09 01.1**	**+0.6**
	comp=Z,0.7nm,0.6s,baz=308,slow=9.0,SNR=3.7							
YKA	**Yellowknife Ar**	**60.12**	**32**	P		**P**	**16 09 06.7**	**+0.3**
	comp=Z,0.7nm,0.6s,baz=300,slow=6.5,SNR=14							
WRAB	**Tennant Creek**	**60.17**	**191**	*i* P		**P**	**16 09 07.5**	**+0.3**
WRAB				pmax		pmax		
	comp=Z,25nm,1.2s							
WRA	**Warramunga Arr**	**60.18**	**191**	P		**P**	**16 09 06.3**	**-0.9**
	comp=Z,2.7nm,0.4s,baz=339,slow=12,SNR=33							
WRA	**Warramunga Arr**	**60.18**	**191**	*i* P		**P**	**16 09 07.5**	**+0.3**
WRA				pmax		pmax		
	comp=Z,3.0nm,0.4s							
ASAR	**Alice Springs**	**63.91**	**191**	P

IDC 26 16:02:01.2±2.6, 3°26N×128°53E, h0km, mb3.2/3, mb1 3.4/3, mb1mx3.2/42, mbtmp3.2/3, Error ellipse: s-maj=186.8km s-min=28.4km az=69.0, North of Halmahera

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**23.75**	**166**	P	P	16 07 15.9	+0.5
	0.5nm,0.6s,baz=346,slow=9.8,SNR=2.9						
ASAR	**Alice Springs**	**27.27**	**169**	P	P	16 07 46.1	-1.4
	0.1nm,0.5s,baz=353,slow=7.5,SNR=1.4						
MKAR	**Makanchi Array**	**58.97**	**325**	P	P	16 12 03.4	+0.7
	0.5nm,0.7s,baz=111,slow=8.2,SNR=1.4						

NIED ***26*** *16:02:00, 34.80N×142.70E, h8km, Mw4.2 Best double couple: M₀1.90000×10¹⁵ NP1:φs4.00000°, δ23.00000°, λ-88.00000°. NP2:φs181.00000°, δ67.00000°, λ-91.00000°.*

IDC ***26*** *16:02:03.0±0.5, 34.78N×142.87E, h0km, mb4.3/26, mb1 4.4/31, mb1mx4.3/53, mbtmp4.2/31, ML3.9/4, MS3.3/3, Ms1 3.3/3, ms1mx2.6/45, Error ellipse: s-maj=14.0km s-min=11.5km az=108.0*

NEIC ***26*** *16:02:04.5±3.2, 34.77N×142.81E, h10km±19km, mb4.6/22, Error ellipse: s-maj=7.2km s-min=6.0km az=112.0*

JMA ***26*** *16:02:06.3±0.4, 34.84N×142.71E, h42km, M4.3*

ISCJB ***26*** *16:02:06.5±0.3, 34.86N±0.04×142.71E±0.03, h33km, mb4.4/62, MS3.6/6, Error ellipse: s-maj=5.1km s-min=3.3km az=179.9*

MOS ***26*** *16:02:06.6±1.6, 34.95N×142.87E, h33km, mb4.7/28, Error ellipse: s-maj=9.3km s-min=5.6km az=102.1*

ISC 26 16:02:08.2±0.5, 34.84N±0.05×142.84E±0.05, h35km, n146, σ1§81/152, mb4.5/62, MS3.8/6, 9C-2D, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BSO1	**Boso 1**	**1.54**	**264**	P	**Pn**	**16 02 30.5**	**-2.2**
BSO1				S	**Sn**	**16 02 48.2**	**-3.0**
CHOJ	**Chosi**	**1.83**	**299**	P	**Pn**	**16 02 35.3**	**-1.8**
CHOJ				*e*S	**Sn**	**16 02 56.2**	**-2.9**
BSO3	**Boso 3**	**1.92**	**269**	P	**Pn**	**16 02 36.5**	**-1.5**
BSO4	**Boso 4**	**2.06**	**275**	P	**Pn**	**16 02 39.0**	**-1.2**
KTR	**Katsuura**	**2.09**	**279**	P	**Pn**	**16 02 38.8**	**-1.9**
KTR				*e*S	**Sn**	**16 03 02.9**	**-2.6**
JCN	**Nagara**	**2.23**	**286**	P	**Pn**	**16 02 41.6**	**-1.1**
JHJ2	**Mitsune**	**3.05**	**236**	P	**Pn**	**16 02 51.4**	**-2.4**
JHJ2				*e*S	**Sn**	**16 03 23.8**	**-5.3**
JHJ2	**Mitsune**	**3.05**	**236**	*e*Pn	**Pn**	**16 02 51.1**	**-2.7**
JHJ	**Hachijo jima 2**	**3.06**	**237**	Pn	**Pn**	**16 02 51.5**	**-2.6**
	84nm,0.3s,baz=5.6,slow=21,SNR=34						
JHJ				Sn	**Sn**	**16 03 24.1**	**-5.5**
	100nm,0.3s,baz=42,slow=22,SNR=8.4						
JOD2	**Odawara 2**	**3.10**	**279**	P	**Pn**	**16 02 52.1**	**-2.6**
JOD2				S	**Sn**	**16 03 27.6**	**-2.9**
JAG	**Ashikaga**	**3.18**	**301**	P	**Pn**	**16 02 53.7**	**-1.9**
JFT	**Otama**	**3.35**	**324**	P	**Pn**	**16 02 55.0**	**-3.0**
JFT				S	**Sn**	**16 03 33.4**	**-3.2**
JRY	**Ryogami san**	**3.42**	**291**	P	**Pn**	**16 02 57.8**	**-1.2**
JYN	**Shimob**	**3.58**	**282**	P	**Pn**	**16 02 58.9**	**-2.3**
JYN				*e*S	**Sn**	**16 03 38.2**	**-4.1**
JNS	**Sasagawa**	**4.11**	**317**	P	**Pn**	**16 03 06.3**	**-2.2**
JNS				*e*S	**Sn**	**16 03 50.8**	**-4.5**
MJAR	**Matsushiro Arr**	**4.13**	**296**	Pn	**Pn**	**16 03 07.3**	**-1.5**
	15nm,0.3s,baz=102,slow=8.8,SNR=35						
MJAR				Sn	**Sn**	**16 03 56.3**	**+0.5**
	4.1nm,0.3s,baz=186,slow=28,SNR=4.3						
MAJO	**Matsushiro**	**4.13**	**296**	*i*P	**Pn**	**16 03 07.3**	**-1.5**
MAJO	**Matsushiro**	**4.13**	**296**	*e*Pn	**Pn**	**16 03 07.4**	**-1.5**
MAT	**Matsushiro**	**4.13**	**296**	P	**Pn**	**16 03 07.2**	**-1.6**
MAT				S	**Sn**	**16 03 57.4**	**+1.5**
MAT	**Matsushiro**	**4.13**	**296**	P	**Pn**	**16 03 07.4**	**-1.4**
MAT				S	**Sn**	**16 03 55.8**	**-0.1**
JMK	**Ichinoseki**	**4.30**	**343**	P	**Pn**	**16 03 08.2**	**-2.9**
JMK				S	**Sn**	**16 03 54.7**	**-5.3**
JYK	**Kaneyama**	**4.53**	**335**	P	**Pn**	**16 03 12.1**	**-2.1**
JYK				S	Sn	16 03 58.2	-7.4
JOM	**Ohasama**	**4.78**	**346**	P	**Pn**	**16 03 15.4**	**-2.3**
JOM				S	**Sn**	**16 04 06.8**	**-5.1**
INU	**Inuyama**	**4.80**	**278**	*e*Pn	**Pn**	**16 03 16.6**	**-1.3**
ERM	**Erimo**	**7.17**	**2**	⇑*e*P	Pn	16 03 46.3	-4.1
ERM	**Erimo**	**7.17**	**2**	*e*Pn	Pn	16 03 46.0	-4.4
ERM				*e*Sn	Sn	16 05 03.6	-6.9
CBIJ	**Chichi jima**	**7.74**	**184**	*e*Pn	Pn	16 03 54.0	-4.4
ASAJ	**Asahikawa**	**9.26**	**359**	Pn	Pn	16 04 15.7	-3.5
	3.8nm,0.3s,baz=229,slow=11,SNR=9.6						
ASAJ				Sn	Sn	16 05 53.7	-8.4
	2.0nm,0.3s,baz=60,slow=31,SNR=3.5						
ASAJ	**Asahikawa**	**9.26**	**359**	*e*Pn	Pn	16 04 15.4	-3.7
ASAJ				*e*Sn	**Sn**	**16 05 57.4**	**-4.7**
YUK	**Yuzh-Kuril'sk**	**9.47**	**13**	P	**Pn**	**16 04 20.6**	**-1.4**
YUK				pmax	pmax		
	comp=Z,46nm,0.8s						
YUK				pmax	pmax		
	comp=E,41nm,0.4s						
YUK				pmax	pmax		
	comp=N,46nm,0.9s						
SHO	**Shikotan**	**9.53**	**18**	*e*P	Pn	16 04 20.0	-2.8
SHO				pmax	pmax		
	comp=Z,53nm,0.9s						
SHO				pmax	pmax		
	comp=N,27nm,0.7s						
SHO				pmax	pmax		
	comp=E,16nm,0.9s						
JNU	**Nakatsue**	**10.08**	**264**	Pn	**Pn**	**16 04 28.9**	**-1.5**
	comp=E,0.8nm,0.3s,baz=45,slow=2.9,SNR=5.7						
JNU				LR	LR	16 08 46.7	
	comp=E,130nm,18.8s,baz=115,slow=40						
JNU	**Nakatsue**	**10.08**	**264**	*e*Pn	**Pn**	**16 04 29.4**	**-1.0**
KUR	**Kuril'sk**	**11.07**	**19**	P	**Pn**	**16 04 42.7**	**-1.1**
KUR				pmax	pmax		
	comp=Z,13nm,1.0s						
KUR				pmax	pmax		
	comp=E,9.0nm,0.7s						
KUR				pmax	pmax		
	comp=N,9.0nm,0.3s						
YSS	**Yuzh-Sakhalins**	**12.10**	**360**	⇑*e*P	Pn	16 05 03.9	+5.9
YSS				pmax	pmax		
	comp=Z,30nm,1.1s						
KSRS	**Korea Array**	**12.34**	**287**	Pn	**Pn**	**16 05 01.9**	**+0.6**
	comp=Z,0.2nm,0.3s,baz=97,slow=14,SNR=7.4						
KSRS				LR	LR	16 09 59.5	
	comp=Z,89nm,20.1s,baz=86,slow=38						
KSAR	**Wonju Array Be**	**12.36**	**286**	P	**Pn**	**16 05 01.9**	**+0.2**
KSAR	**Wonju Array Be**	**12.36**	**286**	Pn	**Pn**	**16 05 01.9**	**+0.2**
USRK	**Ussuriysk Ar.**	**12.54**	**321**	Pn	**Pn**	**16 05 03.2**	**-0.8**
	comp=Z,0.3nm,0.3s,baz=124,slow=12,SNR=5.0						
MDJ	**Mudanjiang**	**14.10**	**318**	P	**Pn**	**16 05 25.5**	**+0.3**
MDJ				pmax	pmax		
	comp=Z,7.0nm,1.6s						
MDJ				pmax	pmax		
	comp=Z,100nm,4.4s						
KLR	**Kul'dur**	**16.54**	**334**	*i*P	**Pn**	**16 05 54.0**	**-3.3**
NKL	**Nikolayevsk**	**18.37**	**356**	*e*P	**P**	**16 06 18.0**	**-1.6**
BJI	**Beijing**	**21.76**	**292**	P	**P**	**16 06 54.0**	**-2.6**
BJI				pmax	pmax		
	comp=Z,9.0nm,1.0s						
MA2	**Magadan**	**25.29**	**9**	P	**P**	**16 07 31.3**	**+0.3**
	comp=Z,4.4nm,0.8s,baz=212,slow=9.9,SNR=4.0						
HHC	**Hu-ho-hao-te**	**25.33**	**293**	*e*P	**P**	**16 07 32.3**	**+0.6**
HHC				sP	sP	16 07 45.5	-0.5
HHC				S	**S**	**16 11 52.8**	**-2.9**
HHC				pmax	pmax		
	comp=Z,21nm,1.0s						
HHC				pmax	pmax		
	comp=Z,110nm,4.9s						
HHC				LR	LR		
	comp=N,150nm,12.3s						
HHC				LR	LR		
	comp=E,400nm,12.3s						
HHC				LR	LR		
	comp=Z,66nm,12.3s						
H11N2	**WAKE ISLAND Hy**	**26.05**	**119**	T	T	16 34 48.2	
	baz=311,slow=76,SNR=7.2						
H11N1	**WAKE ISLAND Hy**	**26.06**	**119**	T	T	16 34 48.3	
	baz=311,slow=76,SNR=5.0						
H11N3	**WAKE ISLAND Hy**	**26.07**	**119**	T	T	16 34 49.5	
	baz=311,slow=76,SNR=6.5						
H11S3	**WAKE ISLAND Hy**	**26.72**	**121**	T	T	16 35 36.6	
	baz=312,slow=75,SNR=13						
H11S1	**WAKE ISLAND Hy**	**26.72**	**121**	T	T	16 35 38.7	
	baz=312,slow=75,SNR=14						
H11S2	**WAKE ISLAND Hy**	**26.73**	**121**	T	T	16 35 38.4	
	baz=312,slow=75,SNR=10						
XAN	**Xi'an**	**27.91**	**278**	P	**P**	**16 07 54.3**	**-0.7**
XAN				pP	pP	16 08 04.5	-0.5
XAN				pmax	pmax		
	comp=Z,12nm,0.6s						
ENH	**Enshi**	**28.40**	**270**	*e*P	**P**	**16 07 58.4**	**-1.0**
	comp=Z,8.9nm,0.8s						
YAK	**Yakutsk**	**28.46**	**347**	*e*P	**P**	**16 08 00.5**	**+1.0**
YAK				pmax	pmax		
	comp=Z,7.0nm,0.5s						
SEY	**Seymchan**	**28.74**	**9**	P	**P**	**16 08 02.8**	**+0.8**
	comp=Z,4.2nm,0.6s,baz=195,slow=10,SNR=11						
ULN	**Ulaanbaatar**	**29.57**	**307**	⇑*e*P	**P**	**16 08 10.2**	**+0.5**
ULN				pmax	pmax		
	comp=Z,5.0nm,1.3s						
SONM	**Songino Array**	**29.99**	**307**	P	**P**	**16 08 14.5**	**+1.1**
	comp=Z,2.4nm,0.9s,baz=102,slow=8.6,SNR=9.3						
BOD	**Bodaibo**	**30.00**	**329**	*e*P	P	16 08 16.3	+3.1
BOD				pmax	pmax		
	comp=Z,6.0nm,1.1s						
ZAK	**Zakamensk**	**32.55**	**311**	*e*P	**P**	**16 08 36.2**	**+0.3**
ZAK				pmax	pmax		
	comp=Z,3.0nm,1.4s						
CD2	**Chengdu**	**32.91**	**274**	P	**P**	**16 08 36.8**	**-2.4**
CD2				pmax	pmax		
	comp=Z,1.0nm,0.5s						
GTA	**Gaotai**	**34.36**	**291**	*e*P	**P**	**16 08 53.8**	**+1.9**
GTA				pP	sP	16 09 03.5	-2.7
GTA				sP	pP	16 09 07.5	+5.5
GTA				PcP	PcP	16 11 32.3	+5.1
GTA				S	**S**	**16 14 20.8**	**+3.5**
GTA				sS	sS	16 14 37.5	+3.5
GTA				SS	SS	16 16 35.5	-11
GTA				pmax	pmax		
	comp=Z,8.0nm,1.1s						
GTA				pmax	pmax		
	comp=Z,100nm,5.7s						
GTA				LR	LR		
	comp=N,100nm,18.1s						
GTA				LR	LR		
	comp=E,150nm,16.6s						
GTA				LR	LR		
	comp=Z,150nm,17.6s						
BILL	**Bilibino**	**35.82**	**15**	⇓*e*P	**P**	**16 09 03.8**	**-0.1**
BILL				*e*		16 10 30.2	
BILL						16 11 31.0	
BILL				MLR	MLR		
	comp=Z,37nm,16.0s						
KMI	**Kunming**	**35.86**	**265**	P	**P**	**16 09 03.5**	**-1.5**
KMI				pmax	pmax		
	comp=Z,9.0nm,0.8s						
KMI				pmax	pmax		
	comp=Z,31nm,5.0s						
CMAR	**Chiang Mai Arr**	**42.13**	**259**	P	**P**	**16 09 56.3**	**-1.0**
	comp=Z,1.4nm,0.8s,baz=46,slow=7.7,SNR=12						
CMAR	**Chiang Mai Arr**	**42.13**	**259**	*i*P	**P**	**16 09 57.2**	**-0.1**
CMAR				pmax	pmax		
	comp=Z,1.0nm,0.7s						
WMQ	**Urumqi**	**42.89**	**299**	*e*P	**P**	**16 10 03.5**	**+0.3**
WMQ				pP	pP	16 10 13.8	+0.3
WMQ				sP	sP	16 10 18.3	+0.6
WMQ				pmax	pmax		
	comp=Z,6.0nm,1.2s						
WMQ				pmax	pmax		
	comp=Z,41nm,3.6s						
WMQ				LR	LR		
	comp=N,22nm,15.6s						
WMQ				LR	LR		
	comp=E,23nm,15.6s						
WMQ				LR	LR		
	comp=Z,21nm,19.4s						
ZALV	**Zalesovo Beam**	**44.25**	**314**	P	**P**	**16 10 14.2**	**+0.3**
	comp=Z,2.4nm,0.5s,baz=98,slow=7.6,SNR=5.7						
ZALV				PcP	**PcP**	**16 11 57.6**	**-0.3**
	comp=Z,1.6nm,0.7s,baz=101,slow=4.6,SNR=3.6						
ZALV	**Zalesovo Beam**	**44.25**	**314**	*i*P	**P**	**16 10 16.7**	**+2.7**
ZALV				pmax	pmax		
	comp=Z,2.0nm,0.5s						
NVS	**Novosibirsk**	**45.20**	**315**	*e*P	**P**	**16 10 22.9**	**+1.4**
NVS				pmax	pmax		
	comp=Z,9.0nm,1.4s						
NRIK	**Noril'sk**	**45.74**	**336**	P	**P**	**16 10 27.1**	**+1.5**
	comp=Z,0.9nm,0.4s,baz=96,slow=7.5,SNR=3.6						
MKAR	**Makanchi Array**	**46.28**	**304**	P	**P**	**16 10 30.6**	**+0.4**
	comp=Z,2.7nm,0.6s,baz=92,slow=8.4,SNR=12						
MKAR	**Makanchi Array**	**46.28**	**304**	*i*P	**P**	**16 10 32.2**	**+2.0**
MKAR				pmax	pmax		
	comp=Z,3.0nm,0.6s						
MKAR	**Makanchi Array**	**46.28**	**304**	*e*P	**P**	**16 10 30.1**	**-0.2**
MAKZ	**Makanchi**	**46.49**	**304**	*e*P	**P**	**16 10 31.5**	**-0.4**
MAKZ				pmax	pmax		
	comp=Z,5.0nm,1.0s						
MAKZ	**Makanchi**	**46.49**	**304**	*e*P	**P**	**16 10 31.5**	**-0.4**
	comp=Z,4.5nm,1.0s						
KDAK	**Kodiak Island**	**47.98**	**41**	*i*P	**P**	**16 10 42.9**	**-0.3**
KURK	**Kurchatov**	**48.21**	**310**	*e*P	**P**	**16 10 44.1**	**-1.0**
KURK				pmax	pmax		
	comp=Z,11nm,0.7s						
KURK	**Kurchatov**	**48.21**	**310**	*e*P	**P**	**16 10 44.1**	**-1.0**
	comp=Z,12nm,0.7s						
MDM	**Murphy Dome**	**50.17**	**31**	*e*P	**P**	**16 11 00.7**	**+0.7**
	comp=Z,3.7nm,0.8s						
ILAR	**Eielson Array**	**50.74**	**31**	P	**P**	**16 11 04.2**	**0.0**
	comp=Z,1.5nm,0.7s,baz=262,slow=6.2,SNR=14						
TKM2	**Tokmak 2**	**51.71**	**300**	*e*P	**P**	**16 11 12.9**	**+0.8**
TKM2				pmax	pmax		
	comp=Z,7.0nm,0.9s						
TKM2	**Tokmak 2**	**51.71**	**300**	*e*P	**P**	**16 11 12.9**	**+0.8**
	comp=Z,7.5nm,0.9s						
AAK	**Ala-Archa**	**52.57**	**300**	P	**P**	**16 11 18.0**	**-0.4**
AAK				pmax	pmax		
	comp=Z,9.0nm,1.0s						
AAK	**Ala-Archa**	**52.57**	**300**	*e*P	**P**	**16 11 18.8**	**+0.4**
	comp=Z,3.3nm,1.0s						
BRVK	**Borovoye**	**52.97**	**314**	⇑*e*P	**P**	**16 11 22.0**	**+1.0**
BRVK				pmax	pmax		
	comp=Z,4.0nm,1.4s						
CTA	**Charters Tower**	**54.72**	**176**	P	**P**	**16 11 33.6**	**-0.5**
	comp=Z,9.9nm,1.1s,baz=32,slow=13,SNR=4.7						
WRAB	**Tennant Creek**	**55.07**	**190**	⇑*i*P	**P**	**16 11 36.4**	**-0.2**
WRAB				pmax	pmax		
	comp=Z,25nm,0.9s						
WRAB	**Tennant Creek**	**55.07**	**190**	*e*P	**P**	**16 11 35.9**	**-0.6**
	comp=Z,9.0nm,0.8s						
WRA	**Warramunga Arr**	**55.08**	**190**	P	**P**	**16 11 36.1**	**-0.6**
	comp=Z,9.1nm,0.8s,baz=9.0,slow=7.6,SNR=37						
FITZ	**Fitzroy Crossi**	**55.13**	**200**	P	**P**	**16 11 37.9**	**+0.9**
	comp=Z,4.2nm,0.7s,baz=44,slow=6.7,SNR=8.6						
KKAR	**Karatay Array**	**55.24**	**302**	*e*P	**P**	**16 11 38.2**	**+0.4**
KKAR				pmax	pmax		
	comp=Z,2.0nm,0.6s						
KKAR	**Karatay Array**	**55.24**	**302**	*e*P	**P**	**16 11 38.2**	**+0.4**
	comp=Z,2.0nm,0.6s						
INK	**Inuvik**	**55.82**	**27**	P	**P**	**16 11 41.8**	**+0.4**
	comp=Z,2.8nm,0.5s,baz=303,slow=8.0,SNR=9.3						
INK	**Inuvik**	**55.82**	**27**	*e*P	**P**	**16 11 42.1**	**+0.7**
INK				pmax	pmax		
	comp=Z,4.0nm,0.8s						
INK	**Inuvik**	**55.82**	**27**	*e*P	**P**	**16 11 42.1**	**+0.7**
	comp=Z,4.4nm,0.8s						
ARU	**Arti**	**58.77**	**320**	*d i*P	**P**	**16 12 05.0**	**+2.5**
ARU						16 12 52.2	
ARU						16 14 13.2	
ARU				S	**S**	**16 20 09.1**	**+4.1**
ARU				SS	**SS**	**16 24 00.5**	**+2.6**
ARU				pmax	pmax		
	comp=Z,13nm,1.7s						
ARU	**Arti**	**58.77**	**320**	*e*P	**P**	**16 12 04.1**	**+1.7**
	comp=Z,21nm,1.1s						
ASAR	**Alice Springs**	**58.80**	**190**	P	**P**	**16 12 02.7**	**-0.3**
	comp=Z,4.2nm,0.8s,baz=12,slow=8.2,SNR=26						
ABKAR	**Akbulak array**	**60.24**	**312**	*e*P	**P**	**16 12 12.1**	**-0.6**
RES	**Resolute Bay**	**64.43**	**14**	P	**P**	**16 12 40.8**	**+0.5**
	comp=Z,4.6nm,0.9s,baz=305,slow=7.9,SNR=9.0						
RES	**Resolute Bay**	**64.43**	**14**	*e*P	**P**	**16 12 40.5**	**+0.2**
RES				pmax	pmax		
	comp=Z,6.0nm,0.9s						
RES	**Resolute Bay**	**64.43**	**14**	*e*P	**P**	**16 12 40.5**	**+0.2**
	comp=Z,5.7nm,0.9s						
YKA	**Yellowknife Ar**	**65.12**	**30**	P	**P**	**16 12 44.8**	**-0.2**
	comp=Z,1.5nm,0.8s,baz=296,slow=6.4,SNR=17						
STKA	**Stephens Creek**	**66.38**	**181**	P	**P**	**16 12 52.9**	**-0.5**
	comp=Z,2.3nm,0.8s,baz=354,slow=6.9,SNR=5.5						
FINES	**FINESS Array B**	**71.29**	**333**	P	**P**	**16 13 24.5**	**+0.8**
	comp=Z,1.8nm,0.7s,baz=90,slow=5.7,SNR=6.7						
FINES	**FINESS Array B**	**71.29**	**333**	*i*P	**P**	**16 13 25.5**	**+1.9**
FINES				pmax	pmax		
	comp=Z,2.0nm,0.7s						
KBZ	**Khabaz**	**73.21**	**312**	P	**P**	**16 13 37.5**	**+2.1**
	comp=Z,2.1nm,0.9s,baz=82,slow=4.3,SNR=4.9						
KIV	**Kislovodsk**	**73.22**	**312**	⇑*e*P	P	16 13 39.3	+3.6
KIV				*e*		16 13 44.6	
KIV				*e*		16 13 59.6	
KIV				pmax	pmax		
	comp=Z,8.0nm,1.1s						
KIV				MLR	MLR		
	comp=Z,64nm,15.0s						
CMB	**Columbia Colle**	**74.20**	**55**	*e*P	**P**	**16 13 41.7**	**+0.2**
CMB				pmax	pmax		
	comp=Z,50nm,1.1s						
CMB	**Columbia Colle**	**74.20**	**55**	*e*P	**P**	**16 13 41.7**	**+0.2**
	comp=Z,50nm,1.1s						
WAKR	**Walker**	**74.58**	**54**	*e*P	**P**	**16 13 44.9**	**+1.0**
NVAR	**Mina Array Bea**	**75.37**	**53**	P	**P**	**16 13 49.7**	**+1.3**
	comp=Z,5.7nm,0.6s,baz=299,slow=5.8,SNR=33						
FCC	**Fort Churchill**	**75.44**	**27**	*e*P	**P**	**16 13 47.6**	**-0.5**
FCC				pmax	pmax		
	comp=Z,5.0nm,1.0s						
FCC	**Fort Churchill**	**75.44**	**27**	*e*P	**P**	**16 13 47.6**	**-0.5**
	comp=Z,4.7nm,1.0s						
ELK	**Elko**	**76.08**	**50**	*e*P	**P**	**16 13 53.3**	**+0.8**
ELK				pmax	pmax		
	comp=Z,2.0nm,0.8s						
ELK	**Elko**	**76.08**	**50**	*e*P	**P**	**16 13 53.3**	**+0.8**
	comp=Z,2.2nm,0.8s						
NB2	**NORSAR Subarra**	**76.65**	**338**	P	**P**	**16 13 55.2**	**+0.1**
	comp=Z,2.0nm,0.6s,baz=40,slow=5.9						
NOA	**NORSAR Array B**	**76.65**	**338**	P	**P**	**16 13 54.9**	**-0.2**
	comp=Z,2.0nm,0.7s,baz=38,slow=5.7,SNR=7.9						
AKASG	**Malin Array Be**	**76.74**	**323**	P	**P**	**16 13 56.3**	**+0.6**
	comp=Z,1.4nm,0.5s,baz=44,slow=6.1,SNR=6.5						
AKASG				LR	LR	16 50 31.3	
	comp=Z,42nm,18.0s,baz=290,slow=38						
AKASG	**Malin Array Be**	**76.74**	**323**	*i*P	**P**	**16 13 57.5**	**+1.8**
AKASG				pmax	pmax		
	comp=Z,1.0nm,0.5s						
KIEV	**Kiev**	**76.75**	**323**	⇑*e*P	**P**	**16 13 58.4**	**+2.6**
KIEV				pmax	pmax		
	comp=Z,9.0nm,1.9s						
H17A	**Grant Village**	**76.81**	**45**	*e*P	**P**	**16 13 59.2**	**+2.6**
	comp=Z,10nm,1.5s						
R11A	**Troy Canyon, C**	**77.20**	**52**	*e*P	**P**	**16 13 59.2**	**+0.5**
	comp=Z,3.5nm,0.8s						
DUG	**Dugway, Tooele**	**77.91**	**49**	*e*P	**P**	**16 14 03.7**	**+1.0**
DUG				pmax	pmax		
	comp=Z,6.0nm,0.6s						
DUG	**Dugway, Tooele**	**77.91**	**49**	*e*P	**P**	**16 14 03.7**	**+1.0**
	comp=Z,6.2nm,0.6s						
PSUT	**Pine Spring**	**78.21**	**51**	*e*P	**P**	**16 14 04.2**	**-0.2**
	comp=Z,5.8nm,1.0s						
PDAR	**Pinedale Array**	**78.37**	**46**	P	**P**	**16 14 05.8**	**+0.4**
	comp=Z,0.6nm,0.7s,baz=269,slow=2.8,SNR=6.4						
NLU	**North Lily Min**	**78.51**	**49**	*e*P	**P**	**16 14 06.9**	**+0.8**
	comp=Z,3.3nm,0.7s						
LCMT	**Little Creek M**	**79.48**	**52**	*e*P	**P**	**16 14 12.4**	**+1.0**
	comp=Z,4.1nm,0.8s						
SRU	**San Rafael Swe**	**79.97**	**49**	*e*P	**P**	**16 14 14.7**	**+0.6**
SRU				pmax	pmax		
	comp=Z,8.0nm,0.7s						
SRU	**San Rafael Swe**	**79.97**	**49**	*e*P	**P**	**16 14 14.7**	**+0.6**
	comp=Z,8.2nm,0.7s						
ULM	**Lac du Bonnet**	**80.69**	**34**	P	**P**	**16 14 16.6**	**-0.8**
	comp=Z,1.6nm,0.4s,baz=305,slow=4.6,SNR=3.1						
BRTR	**Keskin Array B**	**81.17**	**313**	P	**P**	**16 14 21.2**	**+0.8**
	comp=Z,0.6nm,0.8s,baz=79,slow=6.4,SNR=4.5						
BRTR	**Keskin Array B**	**81.17**	**313**	*i*P	**P**	**16 14 22.0**	**+1.6**
BRTR				pmax	pmax		
	comp=Z,1.0nm,0.7s						
PV05	**Paradox Valley**	**81.49**	**49**	*e*P	**P**	**16 14 22.9**	**+0.7**
PV01	**Paradox Valley**	**81.78**	**49**	*e*P	**P**	**16 14 24.6**	**+0.7**
CLL	**Collm**	**83.57**	**331**	*e*P	**P**	**16 14 32.0**	**-0.5**
	comp=Z,6.0nm,1.3s						
CLL	**Collm**	**83.57**	**331**	*e*P	**P**	**16 14 32.0**	**-0.5**
CLL				pmax	pmax		
	comp=Z,6.0nm,1.3s						
SDCO	**Great Sand Dun**	**83.92**	**48**	*e*P	**P**	**16 14 35.8**	**+0.9**
	comp=Z,13nm,1.9s						
KHC	**Kasperske Hory**	**85.01**	**329**	*e*P	**P**	**16 14 38.5**	**-1.5**
KHC				*e*pP	**PcP**	**16 14 42.2**	**-1.0**
KHC	**Kasperske Hory**	**85.01**	**329**	*e*P	**P**	**16 14 38.5**	**-1.5**
ANMO	**Albuquerque**	**85.10**	**50**	⇑*e*P	**P**	**16 14 41.7**	**+0.8**
ANMO				pmax	pmax		
	comp=Z,12nm,3.0s						
GERES	**GERESS Array B**	**85.18**	**329**	P	**P**	**16 14 41.2**	**+0.3**
	comp=Z,0.6nm,0.5s,baz=28,slow=6.0,SNR=5.1						
TXAR	**Lajitas Array**	**90.52**	**53**	P	**P**	**16 15 07.4**	**+0.5**
	comp=Z,0.5nm,0.7s,baz=304,slow=2.7,SNR=5.1						
TORD	**Torodi Ar. Bea**	**119.69**	**315**	PKP	**PKPdf**	**16 20 54.2**	**-0.9**
	comp=Z,0.2nm,0.5s,baz=326,slow=0.7,SNR=2.8						
LPAZ	**La Paz**	**146.71**	**64**	PKPbc	**PKPbc**	**16 21 47.5**	**-0.1**
	comp=Z,2.2nm,0.6s,baz=295,slow=3.3,SNR=10						

IDC ***26*** *16:05:55.8±12.0, 6.15S×128.93E, h250km±136km, mb2.9/1, mb1 3.5/4, mb1mx3.0/37, mbtmp4.0/4, Error ellipse: s-maj=80.2km s-min=47.7km az=43.0*

DJA ***26*** *16:06:01.8±1.2, 6°S±6'×12°9E±°, h347km±24km, M3.9/7, mb3.5/3, MLv4.1/7*

**ISC 26 16:06:02.3±1.0, 6°43S±0.1×128°8E±0.1, h300km, n9, σ2§78/10, Banda Sea

	11nm,0.6s							
SIV	**San Ignacio**	**11.07**	**98**	P	**Pn**	**16 09 43.0**	**-2.3**	
	1.3nm,0.3s,baz=284,slow=14,SNR=17							
SIV	**San Ignacio**	**11.07**	**98**	⇑P	**Pn**	**16 09 43.5**	**-1.8**	
CPUP	**Villa Florida**	**18.24**	**131**	P	**Pn**	**16 11 15.4**	**-0.6**	
	0.6nm,0.3s,baz=306,slow=11,SNR=15							
PTGA	**Pitinga**	**18.64**	**43**	P	**Pn**	**16 11 21.0**	**+0.2**	
	1.9nm,0.3s,baz=224,slow=13,SNR=7.4							
GUYC	**Guyana, Colomb**	**20.07**	**352**	*e*P	Pn	16 11 40.6	+2.6	
NORC	**Norcasia**	**20.34**	**353**	*e*P	Pn	16 11 41.2	+0.6	
DBIC	**Dimbokro**	**70.33**	**77**	P	**P**	**16 18 10.8**	**-1.3**	
	2.5nm,0.9s,baz=222,slow=14,SNR=2.5							
TORD	**Torodi Ar. Bea**	**78.47**	**73**	P	**P**	**16 18 59.5**	**+0.2**	
	0.9nm,0.4s,baz=252,slow=4.8,SNR=14							

NEIC ***26*** *16:16:44.1,35˚.97N×117˚.65W,h4km,ML3.2(PAS),After PAS.*

ISC 26 16:16:44.0±0.9,35˚.98N±0˚.02×117˚.67W±0˚.02,h8km±8km, n55,σ1°23/82,Central California

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MPMC	**Manual Prospec**	**0.16**	**62**	P	**Pg**	**16 16 47.4**	**-0.1**
	baz=235,SNR=1000						
MPMC				S	**Sg**	**16 16 49.3**	**-0.7**
	baz=235						
DAC	**Darwin (Calif)**	**0.30**	**11**	*e*Pg	**Pg**	**16 16 50.1**	**0.0**
WCHM	**Chimney Peak**	**0.34**	**254**	*e*Pg	**Pg**	**16 16 50.8**	**0.0**
WSHM	**Spangler Hills**	**0.41**	**159**	*e*Pg	**Pg**	**16 16 51.5**	**-0.5**
LRMC	**Laurel Mtn Rad**	**0.50**	**181**	P	**Pg**	**16 16 53.2**	**-0.5**
	baz=3.3,SNR=81						
LRMC				S	**Sg**	**16 17 00.2**	**0.0**
	baz=3.3						
WLHM	**Little Horse**	**0.55**	**288**	*e*Pg	**Pg**	**16 16 54.7**	**0.0**
ISA	**Isabella, Lake**	**0.73**	**244**	P	**Pg**	**16 16 58.0**	**0.0**
	baz=65,SNR=58						
ISA				S	**Sg**	**16 17 07.8**	**+0.3**
	baz=65						
ISA	**Isabella, Lake**	**0.73**	**244**	*e*Pg	**Pg**	**16 16 58.0**	**0.0**
ISA				*e*Sg	**Sg**	**16 17 06.7**	**-0.8**
WASM	**Alta Sierra Ca**	**0.76**	**252**	*e*Pg	**Pg**	**16 16 58.7**	**0.0**
FURC	**Furnace Creek,**	**0.81**	**53**	P	**Pg**	**16 16 59.8**	**+0.2**
	baz=232,SNR=42						
FURC				S	**Sg**	**16 17 10.4**	**+0.3**
	baz=232						
WOFM	**Oak Flat**	**0.96**	**243**	*e*Pg	**Pg**	**16 17 02.1**	**-0.3**
GSC	**Goldstone, Bar**	**0.97**	**134**	P	**Pg**	**16 17 01.9**	**-0.9**
	baz=314,SNR=136						
GSC				S	**Sg**	**16 17 14.8**	**-0.6**
	baz=314						
GSC	**Goldstone, Bar**	**0.97**	**134**	*e*Pg	**Pg**	**16 17 01.8**	**-0.9**
GSC				*e*Sg	**Sg**	**16 17 15.2**	**-0.1**
GRAC	**Grapevine Rang**	**1.04**	**13**	P	**Pg**	**16 17 04.0**	**0.0**
	baz=192,SNR=108						
GRAC				S	**Sb**	**16 17 18.5**	**+0.3**
	baz=192						
EDW2	**Edwards Air Fo**	**1.13**	**194**	P	**Pg**	**16 17 04.6**	**-1.0**
	baz=14,SNR=40						
EDW2				S	**Sb**	**16 17 20.9**	**+0.3**
	baz=14						
SHOC	**Shoshone, Teco**	**1.13**	**94**	P	**Pg**	**16 17 05.4**	**-0.3**
	baz=274,SNR=49						
SHOC				S	**Sb**	**16 17 21.1**	**+0.4**
	baz=274						
TIN	**Tinemaha, Big**	**1.16**	**337**	S	**Sb**	**16 17 22.5**	**+0.8**
	baz=156						
RRX	**Edison Barstow**	**1.23**	**153**	P	**Pg**	**16 17 07.2**	**-0.4**
	baz=334,SNR=8.7						
RRX				Sb	**Sn**	**16 17 24.3**	**+0.1**
	baz=334						
ARVC	**Arvin**	**1.27**	**228**	P	**Pg**	**16 17 08.2**	**-0.3**
	baz=48,SNR=18						
RCTC	**Rector, Farmer**	**1.32**	**285**	P	**Pn**	**16 17 08.5**	**-0.1**
	baz=104,SNR=7.1						
TPNV	**Topopah Spring**	**1.50**	**49**	P	**Pn**	**16 17 11.4**	**+0.1**
	baz=229						
TPNV				S	**Sb**	**16 17 31.6**	**+0.3**
	baz=229						
TPNV	**Topopah Spring**	**1.50**	**49**	*e*Pn	**Pn**	**16 17 11.4**	**+0.1**
TUQ	**Turquoise Moun**	**1.52**	**110**	P	**Pn**	**16 17 11.1**	**-0.5**
	baz=291						
TUQ				Sb	**Sg**	**16 17 32.8**	**-0.1**
	baz=291						
HEC	**Hector,Ludlow**	**1.58**	**136**	P	**Pn**	**16 17 11.4**	**-1.0**
	baz=317,SNR=25						
HEC				Sb	**Sg**	**16 17 34.4**	**-0.5**
	baz=317						
OSI	**Osito Audit: C**	**1.61**	**213**	P	**Pn**	**16 17 12.7**	**-0.1**
	baz=33,SNR=6.5						
OSI				Sb	**Sg**	**16 17 35.7**	**-0.1**
	baz=33						
OSI	**Osito Audit: C**	**1.61**	**213**	*e*Pn	**Pg**	**16 17 14.9**	**0.0**
OSI				*e*Sn	**Sn**	**16 17 32.5**	**-1.3**
MARC	**Maricopa**	**1.68**	**235**	*e*Pn	**Pg**	**16 17 16.2**	**0.0**
BFSC	**Mount Baldy Ra**	**1.74**	**180**	Sb	**Sb**	**16 17 38.9**	**+0.7**
	baz=0.3						
MWC	**Mount Wilson**	**1.78**	**190**	*e*Pn	**Pg**	**16 17 18.0**	**-0.2**
BBRC	**Big Bear Solar**	**1.82**	**160**	Sb	**Sg**	**16 17 42.0**	**-0.5**
	baz=341						
PASC	**Pasadena Art C**	**1.85**	**193**	*e*Pn	**Pg**	**16 17 19.4**	**-0.2**
SMMC	**Simmler**	**2.01**	**251**	Sb	**Sb**	**16 17 47.5**	**+1.6**
	baz=70						
GMRC	**Granite Mounta**	**2.03**	**125**	P	**Pn**	**16 17 17.1**	**-1.4**
	baz=307,SNR=8.0						
GMRC				Sb	**Sb**	**16 17 47.2**	**+0.6**
	baz=307						
PKM	**Mcpherson Peak**	**2.06**	**239**	Sb	**Sb**	**16 17 48.6**	**+1.0**
	baz=58						
PFO	**Pinyon Flats O**	**2.56**	**157**	*e*Pn	**Pn**	**16 17 25.4**	**-0.5**
PFO				*e*Pg	**Pb**	**16 17 31.4**	**+1.1**
PFO				*e*Sn	**Sg**	**16 18 05.0**	**-1.3**
WAKR	**Walker**	**2.89**	**331**	*e*Pn	**Pb**	**16 17 37.5**	**+1.6**
R11A	**Troy Canyon, C**	**2.89**	**34**	*e*Pn	**Pn**	**16 17 30.6**	**+0.1**
R11A				*e*Pg	**Pg**	**16 17 38.5**	**-0.9**
CMB	**Columbia Colle**	**2.99**	**314**	*e*Pn	**Pb**	**16 17 37.3**	**-0.2**
W13A	**Hualapai Mount**	**3.21**	**105**	*e*Pn	**Pb**	**16 17 42.9**	**+1.6**
Y12C	**Blythe**	**3.41**	**130**	*e*Pg	**Pg**	**16 17 48.1**	**-1.2**
Y12C				*e*Sg	**Sg**	**16 18 32.8**	**-0.7**
LCMT	**Little Creek M**	**3.71**	**73**	*e*Pn	**Pn**	**16 17 42.8**	**+1.1**
GLA	**Glamis**	**3.75**	**140**	*e*Pn	**Pn**	**16 17 40.8**	**-1.3**
GLA				*e*Sg	**Sg**	**16 18 42.1**	**-2.2**
CCUT	**Cedar City**	**3.79**	**64**	*e*Pg	**Pg**	**16 17 57.3**	**+0.6**
AFDM	**Forest Hills D**	**3.96**	**319**	*e*Pn	**Pn**	**16 17 46.8**	**+1.7**
AFDM				*e*Pg	**Pg**	**16 17 57.8**	**-2.1**
AFDM				*e*Sg	**Sg**	**16 18 48.9**	**-2.2**
PSUT	**Pine Spring**	**3.97**	**49**	*e*Pn	**Pn**	**16 17 46.1**	**+0.8**
PSUT				*e*Pg	**Pg**	**16 17 59.1**	**-0.9**
KNB	**Kanab**	**4.04**	**74**	*e*Pn	**Pn**	**16 17 45.6**	**-0.7**
KNB				*e*Pg	**Pb**	**16 17 58.0**	**+2.5**
Y14A	**Wickenburg**	**4.34**	**117**	*e*Pn	**Pn**	**16 17 50.5**	**+0.3**
Y14A				*e*Pg	**Pb**	**16 18 02.5**	**+2.1**
Y14A				*e*Sg	**Sg**	**16 19 00.7**	**-2.6**
U15A	**North Rim**	**4.37**	**83**	*e*Pn	Pn	16 17 54.6	+3.7
U15A				*e*Pg	**Pb**	**16 18 04.0**	**+2.8**
ORV	**Oroville**	**4.69**	**321**	*e*Sg	**Sg**	**16 19 10.4**	**-4.0**
MTPU	**Mount Pierson**	**4.85**	**63**	*e*Pn	**Pn**	**16 17 59.5**	**+2.0**
MTPU				*e*Pg	**Pg**	**16 18 15.3**	**-1.5**
ELK	**Elko**	**5.12**	**21**	*e*Sg	**Sg**	**16 19 25.0**	**-3.6**
WUAZ	**Wupatki**	**5.14**	**93**	*e*Pg	**Pg**	**16 18 19.6**	**-2.8**
DUG	**Dugway, Tooele**	**5.69**	**41**	*e*Sg	**Sg**	**16 19 46.7**	**+0.1**
MOD	**Modoc Plateau**	**6.26**	**342**	*e*Pg	Pg	16 18 39.5	-4.4
P17A	**Butcher Ranch,**	**6.50**	**56**	*e*Pn	Pn	16 18 23.7	+3.6

IDC ***26*** *16:41:53.8±2.5,37˚.33N×140˚.68E,h0km,mb3.4/2, mb1 3.6/3,mb1mx3.2/48,mbtmp3.4/3,ML3.3/1,MS3.6/1, Ms1 3.8/1,ms1mx2.5/32,Error ellipse: s-maj=42.8km s-min=35.3km az=32.0*

ISCJB ***26*** *16:41:55.1±0.6,37˚.19N±0˚.03×140˚.66E±0˚.07,h15km±7km, mb3.4/2,MS3.6/1,Error ellipse: s-maj=9.6km s-min=5.4km az=3.5*

JMA ***26*** *16:41:55.2,37˚.18N×140˚.60E,h6km±1km,M3.3 Broadband fault plane solution: P waves. NP1: φs4.00000°,δ51.00000°,λ-57.00000°. NP2:φs138.00000°, δ49.00000°,λ-124.00000°. Principal axes: T Plg1.0000°, Azm71.0000°; N Plg25.0000°, Azm161.0000°; P Plg65.0000°, Azm339.0000°;*

JMA Felt I J1.

ISC 26 16:41:55.4±1.0,37˚.18N±0˚.03×140˚.62E±0˚.03,h8km±9km, n12,σ0°43/19,5C-2D,Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.17**	**119**	⇑P	**Pg**	**16 41 58.8**	**-0.1**
ONAJ				S	**Sg**	**16 42 01.7**	**+0.4**
JFK	**Kawauchi**	**0.28**	**48**	⇑P	**Pg**	**16 42 00.9**	**-0.1**
JFK				S	**Sg**	**16 42 04.7**	**0.0**
JFT	**Otama**	**0.40**	**327**	⇓P	**Pg**	**16 42 03.3**	**0.0**
JFT				S	**Sg**	**16 42 08.9**	**+0.3**
JHO	**Hitachi**	**0.57**	**184**	⇑P	**Pg**	**16 42 05.9**	**-0.6**
JHO				S	**Sg**	**16 42 13.7**	**-0.3**
JSB	**Shiboa**	**0.60**	**249**	⇑P	**Pg**	**16 42 07.2**	**+0.3**
JMM	**Marumori**	**0.70**	**12**	⇓P	**Pg**	**16 42 08.3**	**-0.6**
JMM				S	**Sg**	**16 42 17.8**	**-0.2**
JFY	**Yanaizu**	**0.76**	**287**	⇑P	**Pg**	**16 42 09.8**	**-0.3**
JFY				S	**Sg**	**16 42 19.5**	**-0.5**
MJAR	**Matsushiro Arr**	**2.03**	**252**	Pn	**Pn**	**16 42 30.6**	**+0.6**
	9.0nm,0.3s,baz=62,slow=13,SNR=96						
MJAR				Sn	**Sb**	**16 42 58.4**	**+0.3**
	6.6nm,0.3s,baz=93,slow=26,SNR=16						
MAT	**Matsushiro**	**2.03**	**252**	P	**Pn**	**16 42 30.5**	**+0.5**
MAT				S	**Sg**	**16 43 00.4**	**-0.4**
CMAR	**Chiang Mai Arr**	**40.92**	**254**	LR	LR	17 06 44.5	
	comp=Z,73nm,18.1s,baz=213,slow=36						
MKAR	**Makanchi Array**	**43.50**	**302**	P	**P**	**16 49 58.6**	**-0.7**
	0.1nm,0.2s,baz=100,slow=7.9,SNR=1.2						
WRA	**Warramunga Arr**	**57.12**	**187**	P	**P**	**16 51 43.0**	**+0.4**
	0.4nm,0.7s,baz=3.1,slow=7.5,SNR=6.7						

IDC ***26*** *16:45:32.5±0.6,15˚.45S×173˚.17W,h0km,mb4.3/13, mb1 4.5/14,mb1mx4.2/40,mbtmp4.3/14,ML4.9/1,MS3.3/7, Ms1 3.3/7,ms1mx3.1/43,Error ellipse: s-maj=31.8km s-min=14.1km az=133.0*

ISCJB ***26*** *16:45:37.2±0.4,15˚.58S±0˚.10×172˚.7W±0˚.1,h33km, mb4.5/36,MS3.4/5,Error ellipse: s-maj=19.3km s-min=7.9km az=41.0*

NEIC ***26*** *16:45:38.4±0.3,15˚.50S×172˚.95W,h35km,mb4.6/21, Error ellipse: s-maj=19.0km s-min=7.7km az=134.0*

ISC 26 16:45:36.9±0.7,15˚.5S±0˚.2×173˚.1W±0˚.2,h29km,n61, σ0°83/47,mb4.5/36,MS3.5/5,Tonga Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AFI	**Afiamalu**	**1.98**	**39**	Pn	**Pn**	**16 46 08.4**	**-0.2**
	413nm,0.3s,baz=170,slow=1.9,SNR=461						
AFI				LR	LR	16 46 22.3	
	comp=Z,206nm,19.9s,baz=240,slow=24						
AFI				Sn	**Sn**	**16 46 30.2**	**-2.3**
	771nm,0.3s,baz=265,slow=22,SNR=10						
MSVF	**Nonsavu**	**8.81**	**254**	*e*Pn	Pn	16 47 51.0	+8.5
RAR	**Rarotonga**	**13.86**	**116**	LR	LR	16 53 14.3	
	comp=Z,64nm,18.9s,baz=292,slow=33						
DZM	**Mont Dzumac**	**20.48**	**248**	P	Pn	16 50 17.2	+2.2
	8.4nm,0.9s,baz=224,slow=21,SNR=3.8						
DZM				LR	LR	16 56 53.4	
	comp=Z,199nm,18.5s,baz=68,slow=33						
PPT	**Papeete**	**22.62**	**99**	LR	LR	16 57 10.0	
	comp=Z,35nm,19.7s,baz=305,slow=31						
PPT2	**Papeete2**	**22.62**	**99**	*e*LR	LR	16 55 40.0	
	179nm,27.2s						
PMOR	**Pomariorio Ree**	**24.29**	**92**	*e*T	T	17 16 19.7	
	2.4nm,0.3s						
URZ	**Urewera**	**24.32**	**199**	P	**P**	**16 50 52.2**	**+0.1**
	41nm,0.6s,baz=350,slow=3.2,SNR=29						
URZ	**Urewera**	**24.32**	**199**	*e*P	**P**	**16 50 52.0**	**-0.1**
	252nm,17.7s						
HNR	**Honiara**	**27.01**	**280**	LR	LR	17 00 58.0	
	comp=Z,76nm,18.4s,baz=126,slow=34						
RKT	**Rikitea**	**36.67**	**108**	*e*T	T	17 31 24.3	
	4.6nm,0.3s						
H11S2	**WAKE ISLAND Hy**	**39.17**	**329**	T	T	17 35 04.8	
	baz=62,slow=74,SNR=13						
H11S3	**WAKE ISLAND Hy**	**39.19**	**329**	T	T	17 34 48.8	
	baz=147,slow=74,SNR=26						
H11N3	**WAKE ISLAND Hy**	**40.12**	**330**	T	T	17 34 39.0	
	SNR=9.2						
STKA	**Stephens Creek**	**44.29**	**240**	P	**P**	**16 53 43.0**	**-1.4**
	2.5nm,0.6s,baz=93,slow=11,SNR=12						
WRA	**Warramunga Arr**	**50.15**	**257**	P	**P**	**16 54 28.7**	**-1.5**
	0.3nm,0.4s,baz=94,slow=7.4,SNR=8.7						
ASAR	**Alice Springs**	**50.40**	**252**	P	**P**	**16 54 30.4**	**-1.7**
	3.1nm,0.6s,baz=86,slow=7.8,SNR=96						
ASAR				LR	LR	17 14 31.8	
	comp=Z,62nm,19.0s,baz=80,slow=35						
VNDA	**Vanda**	**63.36**	**186**	P	**P**	**16 56 03.6**	**+0.5**
	2.0nm,1.2s,baz=3.3,slow=5.6,SNR=4.0						
H06S1	**SOCORRO T**	**69.94**	**63**	T	T	18 14 33.2	
	SNR=2.6						
PETK	**Petropavlovsk-**	**72.78**	**342**	P	**P**	**16 57 03.8**	**+1.4**
	3.3nm,0.7s,baz=134,slow=6.4,SNR=3.6						
YBH	**Yreka Blue Hor**	**73.45**	**37**	P	**P**	**16 57 07.7**	**+0.9**
	1.8nm,0.5s,baz=284,slow=4.0,SNR=3.8						
NVAR	**Mina Lagy Bea**	**74.15**	**42**	P	**P**	**16 57 12.2**	**+1.0**
	5.3nm,0.8s,baz=228,slow=10.0,SNR=21						
MOD	**Modoc Plateau**	**74.96**	**38**	*e*P	**P**	**16 57 16.4**	**+0.7**
	8.1nm,1.1s						
W13A	**Hualapai Mount**	**75.31**	**47**	*e*P	**P**	**16 57 18.9**	**+1.0**
	7.1nm,0.8s						
LCMT	**Little Creek M**	**76.74**	**45**	*e*P	**P**	**16 57 26.6**	**+0.7**
	4.6nm,0.9s						
PSUT	**Pine Spring**	**77.12**	**44**	*e*P	**P**	**16 57 28.6**	**+0.4**
	12nm,1.0s						
ELK	**Elko**	**77.41**	**41**	*e*P	**P**	**16 57 29.7**	**-0.1**
	4.1nm,1.2s						
MTPU	**Mount Pierson**	**77.99**	**45**	*e*P	**P**	**16 57 34.0**	**+0.8**
	4.9nm,0.9s						
MSU	**Marysvale**	**78.24**	**44**	*e*P	**P**	**16 57 35.6**	**+1.2**
MFID	**Camas Ranch**	**78.53**	**39**	*e*P	**P**	**16 57 36.1**	**+0.3**
	5.4nm,0.9s						
DUG	**Dugway, Tooele**	**78.68**	**43**	*e*P	**P**	**16 57 38.0**	**+1.3**
	33nm,0.8s						
HLID	**Hailey**	**79.46**	**39**	*e*P	**P**	**16 57 41.8**	**+0.9**
	4.9nm,0.8s						
JLU	**Jordanelle**	**79.78**	**43**	*e*P	**P**	**16 57 43.0**	**+0.2**
	34nm,0.9s						
TCUT	**Toone Canyon**	**80.07**	**42**	*e*P	**P**	**16 57 44.9**	**+0.5**
	58nm,0.8s						
PV10	**Paradox Valley**	**80.31**	**46**	*e*P	**P**	**16 57 45.8**	**0.0**
TXAR	**Lajitas Array**	**80.37**	**56**	P	**P**	**16 57 45.9**	**-0.2**
	2.0nm,0.9s,baz=230,slow=5.9,SNR=14						
PV01	**Paradox Valley**	**80.53**	**46**	*e*P	**P**	**16 57 46.9**	**0.0**
ANMO	**Albuquerque**	**80.59**	**50**	P	**P**	**16 57 47.0**	**-0.3**
	1.7nm,0.8s,baz=328,slow=16,SNR=4.5						
ANMO	**Albuquerque**	**80.59**	**50**	*e*P	**P**	**16 57 47.1**	**-0.1**
	7.4nm,1.5s						
MCMT	**McKenzie Canyo**	**81.09**	**39**	*e*P	**P**	**16 57 50.7**	**+0.9**
MCK	**McKinley**	**81.11**	**11**	*e*P	**P**	**16 57 49.5**	**+0.3**
	5.6nm,0.9s						
S22A	**4UR Ranch, Cre**	**81.57**	**47**	*e*P	**P**	**16 57 53.5**	**+0.9**
	5.7nm,0.9s						
BSMT	**Basson Peak**	**81.62**	**35**	*e*P	**P**	**16 57 52.4**	**0.0**
LOHW	**Long Hollow**	**81.85**	**41**	*e*P	**P**	**16 57 54.2**	**+0.4**
	3.0nm,1.2s						
WRH	**Wood River Hil**	**81.94**	**11**	*e*P	**P**	**16 57 53.7**	**+0.2**
	6.1nm,1.0s						
PDAR	**Pinedale Array**	**82.09**	**42**	P	**P**	**16 57 55.2**	**+0.2**
	1.5nm,0.8s,baz=202,slow=3.2,SNR=12						
PDAR				LR	LR	17 29 18.9	
	comp=Z,45nm,18.1s,baz=254,slow=32						
SMCO	**Snowmass**	**82.12**	**46**	*e*P	**P**	**16 57 56.2**	**+0.7**
	11nm,1.4s						
BOZ	**Bozeman (W)**	**82.26**	**38**	*e*P	**P**	**16 57 56.3**	**+0.5**
	6.5nm,1.3s						
ILAR	**Eielson Array**	**82.43**	**11**	P	**P**	**16 57 56.0**	**0.0**
	0.8nm,0.6s,baz=227,slow=6.3,SNR=13						
SDCO	**Great Sand Dun**	**82.51**	**48**	*e*P	**P**	**16 57 57.9**	**+0.4**
	3.8nm,0.8s						
Q24A	**Divide**	**83.29**	**47**	*e*P	**P**	**16 58 01.9**	**+0.4**
	8.8nm,0.9s						
BJI	**Beijing**	**85.74**	**313**	P	P	16 58 17.8	+4.4
BJI				pmax	pmax		
	comp=Z,7.0nm,0.5s						
HHC	**Hu-ho-hao-te**	**89.30**	**313**	*e*P	P	16 58 35.3	+4.6
HHC				pmax	pmax		
	comp=Z,20nm,0.7s						
HHC				pmax	pmax		
	comp=Z,86nm,9.0s						
YKA	**Yellowknife Ar**	**90.02**	**23**	P	**P**	**16 58 33.6**	**+0.2**
	comp=Z,0.7nm,0.8s,baz=237,slow=4.6,SNR=14						
CD2	**Chengdu**	**92.11**	**301**	P	P	16 58 47.3	+3.3
CD2				pmax	pmax		
	comp=Z,1.0nm,0.5s						
LZH	**Lanzhou**	**93.51**	**306**	*e*P	**P**	**16 58 52.3**	**+1.8**
LZH				pP	pP	16 59 01.0	+1.1
LZH				sP	sP	16 59 05.5	+2.3
LZH				pmax	pmax		
	comp=Z,13nm,1.0s						
FINES	**FINESS Array B**	**132.06**	**348**	PKP	**PKPdf**	**17 04 47.0**	**-0.5**
	comp=Z,1.2nm,0.8s,baz=341,slow=4.0,SNR=3.8						
DPC	**Dobruska-Polom**	**144.37**	**350**	*e*PKP	**PKPdf**	**17 05 10.7**	**+0.3**
KHC	**Kasperske Hory**	**145.97**	**352**	*e*PKP	**PKPab**	**17 05 14.5**	**+0.1**
KHC				*ex*	x	17 05 29.7	
GERES	**GERESS Array B**	**146.24**	**352**	PKPbc	**PKPbc**	**17 05 14.7**	**-0.1**
	comp=Z,0.5nm,0.7s,baz=19,slow=4.9,SNR=4.2						
BRTR	**Keskin Array B**	**146.40**	**321**	PKPbc	**PKPab**	**17 05 16.3**	**-0.2**
	comp=Z,1.5nm,0.8s,baz=128,slow=3.1,SNR=9.2						

ISCJB ***26*** *17:00:31.0±0.3,25˚.07N±0˚.04×92˚.93E±0˚.03,h33km, mb4.1/35,MS3.7/3,Error ellipse: s-maj=6.4km s-min=3.7km az=19.9*

IDC ***26*** *17:00:32.8±0.7,25˚.09N×93˚.09E,h33km±4km,mb3.8/21, mb1 4.0/21,mb1mx3.8/49,mbtmp4.0/21,MS3.7/2, Ms1 3.7/2,ms1mx2.9/49,Error ellipse: s-maj=21.7km s-min=14.0km az=48.0*

NEIC ***26*** *17:00:35.5±0.7,25˚.08N×93˚.04E,h60km±7km,mb4.4/15, Error ellipse: s-maj=9.7km s-min=4.5km az=59.0*

ISC 26 17:00:33.0±0.5,25˚.10N±0˚.06×92˚.98E±0˚.05,h35km,n78, σ1°39/99,mb4.1/35,MS3.9/3,India-Bangladesh border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SHL	**Shillong**	**1.09**	**295**	*e*P	**Pn**	**17 00 53.8**	**+1.8**
SHL				*e*S	**Sn**	**17 01 06.0**	**0.0**
SHL				IAML		17 01 14.3	
	comp=E,4μm,0.1s						
SHL				IAML		17 01 14.8	
	comp=N,4μm,0.0s						
LSA	**Lhasa**	**4.86**	**341**	Pn	**Pn**	**17 01 47.0**	**+3.0**
LSA				Sn	Sn	17 02 06.0	-33
LSA				smax	smax		
	comp=N,180nm,0.8s						
LSA				smax	smax		
	comp=E,330nm,0.6s						
LSA	**Lhasa**	**4.86**	**341**	*e*Pn	**Pn**	**17 01 47.1**	**+3.0**
LSA				*e*Sn	Sn	17 02 29.4	-10
BOK	**Bokaro**	**6.59**	**260**	*e*P	**Pn**	**17 02 09.4**	**+1.9**
BOK				*e*S	**Sn**	**17 03 18.8**	**-2.7**
GUN	**Gumba**	**6.95**	**295**	*e*Pn	**Pn**	**17 02 15.1**	**+2.4**
GUN				*e*Sn	**Sn**	**17 03 30.3**	**-0.4**
	comp=E,165nm,0.3s						
PKIN	**Phulchoki**	**7.24**	**292**	*e*Pn	**Pn**	**17 02 18.4**	**+1.9**
PKIN				*e*Sn	**Sn**	**17 03 36.7**	**-0.9**
	comp=E,57nm,0.2s						
KKN	**Kakani**	**7.40**	**293**	*e*Pn	**Pn**	**17 02 20.6**	**+1.8**
KKN				*e*Sn	**Sn**	**17 03 40.3**	**-1.3**
	comp=E,50nm,0.2s						
DMN	**Daman**	**7.49**	**291**	*e*Pn	**Pn**	**17 02 21.7**	**+1.7**
DMN				*e*Sn	**Sn**	**17 03 43.1**	**-0.8**
	comp=E,99nm,0.6s						
GKN	**Gorkha**	**8.01**	**293**	*e*Pn	**Pn**	**17 02 28.5**	**+1.5**
GKN				*e*Sn	**Sn**	**17 03 54.6**	**-1.9**
	comp=E,123nm,0.3s						
BWNR	**Bhubaneshwar**	**8.17**	**236**	*e*P	**Pn**	**17 02 31.5**	**+2.4**
BWNR				*e*S	**Sn**	**17 03 56.3**	**-3.9**
BWNR				IAML		17 03 59.8	
	comp=N,392nm,0.1s						
BWNR				IAML		17 04 00.5	
	comp=E,479nm,0.2s						
CHTO	**Chiang Mai**	**8.35**	**137**	*e*Pn	**Pn**	**17 02 33.5**	**+1.9**
CM31	**Chiang Mai Arr**	**8.62**	**139**	*e*Pn	**Pn**	**17 02 37.2**	**+1.9**
CMAR	**Chiang Mai Arr**	**8.63**	**139**	Pn	**Pn**	**17 02 37.2**	**+1.9**
	comp=E,0.1nm,0.3s,baz=310,slow=13,SNR=8.8						
KOLN	**Koldanda**	**8.82**	**290**	*e*Pn	**Pn**	**17 02 38.9**	**+0.7**
KOLN				*e*Sn	**Sn**	**17 04 13.5**	**-2.9**
	comp=E,96nm,0.4s						
PYUN	**Piuthan**	**9.43**	**291**	*e*Pn	**Pn**	**17 02 46.5**	**0.0**
PYUN				*e*Sn	Sn	17 04 26.9	-4.5
	comp=E,78nm,0.5s						
CD2	**Chengdu**	**11.14**	**56**	P	**Pn**	**17 03 08.0**	**-1.8**
CD2				pmax	pmax		
	comp=Z,1.0nm,0.6s						
LGTI	**Lohaghat**	**12.12**	**294**	*e*P	**Pn**	**17 03 23.1**	**-0.1**
LZH	**Lanzhou**	**14.39**	**38**	*e*P	**Pn**	**17 03 53.3**	**-1.0**
LZH				pP	P	17 04 02.0	+1.2
LZH				sP		17 04 05.0	
LZH				pmax	pmax		
	comp=Z,24nm,1.1s						
LZH				pmax	pmax		
	comp=Z,55nm,4.0s						
LZH				LR	LR		
	comp=N,360nm,10.3s						
LZH				LR	LR		
	comp=E,180nm,11.8s						
LZH				LR	LR		
	comp=Z,160nm,14.8s						
SMLA	**Simla**	**15.18**	**297**	*e*P	**Pn**	**17 04 03.1**	**-1.7**
SML

MAKZ	**Makanchi**	**23.37**	**341**	*e*P		**P**	**17 05 39.5**	**+1.1**
	comp=Z,5.2nm,0.8s							
EKS2	**Erkin-Say**	**23.59**	**323**	*e*P		**P**	**17 05 42.3**	**+1.6**
	comp=Z,5.1nm,0.9s							
SONA0	**Songino Array**	**25.05**	**22**	*e*P		**P**	**17 05 54.8**	**+0.8**
SONA0				*e*PcP		**PcP**	**17 09 28.2**	**+0.1**
SONM	**Songino Array**	**25.05**	**22**	P		**P**	**17 05 54.8**	**+0.8**
	comp=Z,0.7nm,0.7s,baz=208,slow=12,SNR=4.9							
SONM				PcP		**PcP**	**17 09 28.2**	**+0.1**
	comp=Z,0.2nm,0.4s,baz=180,slow=4.3,SNR=4.2							
KKAR	**Karatay Array**	**25.73**	**320**	*e*P		**P**	**17 06 01.2**	**+1.1**
KURBB	**Kurchatov Arra**	**27.81**	**340**	P		**P**	**17 06 19.2**	**+0.5**
	comp=Z,0.6nm,0.6s,baz=157,slow=9.2,SNR=7.8							
KURBB				PcP		**PcP**	**17 09 34.3**	**0.0**
	comp=Z,0.5nm,0.7s,baz=161,slow=2.6,SNR=5.7							
KURK	**Kurchatov**	**27.87**	**340**	*e*P		**P**	**17 06 18.1**	**-1.2**
	comp=Z,2.7nm,0.9s							
KURK				*e*PcP		**PcP**	**17 09 34.3**	**-0.1**
ZALV	**Zalesovo Beam**	**29.45**	**350**	P		**P**	**17 06 34.3**	**+1.1**
	comp=Z,2.1nm,0.5s,baz=170,slow=8.8,SNR=15							
ZAA1	**Zalesovo Array**	**29.45**	**350**	*e*P		**P**	**17 06 34.3**	**+1.0**
VOSK	**Vostochnaya**	**32.20**	**335**	*e*P		**P**	**17 06 58.0**	**+0.4**
	comp=Z,7.1nm,0.7s							
BVAR	**Borovoye Array**	**32.66**	**335**	P		**P**	**17 07 02.3**	**+0.7**
	comp=Z,0.9nm,0.6s,baz=138,slow=12,SNR=8.8							
BRVK	**Borovoye**	**32.73**	**334**	*e*P		**P**	**17 07 01.1**	**-1.1**
	comp=Z,13nm,1.9s							
ABKAR	**Akbulak array**	**35.24**	**322**	*e*P		**P**	**17 07 25.4**	**+1.4**
DAV	**Davao City (W)**	**35.94**	**114**	LR		LR	17 23 13.6	
	comp=Z,65nm,19.0s,baz=230,slow=38							
AKTO	**Aktyubinsk**	**36.92**	**322**	P		**P**	**17 07 39.3**	**+0.9**
	comp=Z,2.0nm,0.6s,baz=121,slow=7.9,SNR=6.1							
KLR	**Kul'dur**	**38.56**	**41**	P		**P**	**17 07 52.2**	**0.0**
	comp=Z,0.3nm,0.4s,baz=264,slow=3.3,SNR=5.3							
ARU	**Arti**	**39.98**	**331**	*e*P		**P**	**17 08 04.4**	**+0.4**
	comp=Z,24nm,1.7s							
TIXI	**Tiksi**	**50.74**	**14**	*e*P		**P**	**17 09 28.1**	**-0.9**
	comp=Z,9.4nm,1.8s							
SEY	**Seymchan**	**54.10**	**29**	P		**P**	**17 09 53.6**	**-0.4**
	comp=Z,0.6nm,0.4s,baz=194,slow=8.7,SNR=5.3							
AKASG	**Malin Array Be**	**54.51**	**316**	P		**P**	**17 09 57.0**	**-0.2**
	comp=Z,1.1nm,0.4s,baz=82,slow=6.5,SNR=18							
AKASG				pP		**pP**	**17 10 06.9**	**-0.8**
	comp=Z,1.1nm,0.5s,baz=73,slow=8.2,SNR=3.2							
AKBB	**Malin Array Si**	**54.51**	**316**	*e*P		**P**	**17 09 57.0**	**-0.2**
KIEV	**Kiev**	**54.52**	**316**	*e*P		**P**	**17 09 56.3**	**-1.0**
	comp=Z,5.7nm,0.9s							
MLR	**Muntele Rosu**	**56.72**	**309**	*e*P		**P**	**17 10 14.5**	**+1.1**
	comp=Z,7.1nm,0.8s							
FIA0	**FINESS Array S**	**57.25**	**328**	*e*P		**P**	**17 10 17.2**	**+0.5**
FINES	**FINESS Array B**	**57.25**	**328**	P		**P**	**17 10 17.2**	**+0.5**
	comp=Z,0.7nm,0.7s,baz=136,slow=8.7,SNR=3.4							
FINES				pP		**pP**	**17 10 26.6**	**-0.7**
	comp=Z,1.4nm,0.6s,baz=110,slow=11,SNR=3.2							
ARA0	**ARCESS Array S**	**58.86**	**338**	*e*P		**P**	**17 10 28.4**	**+0.5**
ARCES	**ARCESS Array B**	**58.86**	**338**	P		**P**	**17 10 28.4**	**+0.5**
	comp=Z,2.1nm,0.8s,baz=98,slow=8.0,SNR=7.2							
WR1	**Warramunga Arr**	**60.10**	**134**	*e*P		**P**	**17 10 37.3**	**-0.4**
WRA	**Warramunga Arr**	**60.19**	**134**	P		**P**	**17 10 37.3**	**-0.4**
	comp=Z,1.1nm,0.7s,baz=323,slow=7.3,SNR=12							
MORC	**Moravsky Berou**	**62.03**	**315**	*e*P		**P**	**17 10 50.6**	**+0.8**
	comp=Z,12nm,0.9s							
KRLC	**Kraliky**	**62.48**	**315**	*e*P		**P**	**17 10 53.2**	**+0.3**
AS31	**Alice Springs**	**62.63**	**137**	*e*P		**P**	**17 10 53.4**	**-0.8**
ASAR	**Alice Springs**	**62.63**	**137**	P		**P**	**17 10 53.4**	**-0.8**
	comp=Z,0.7nm,0.7s,baz=320,slow=6.7,SNR=14							
BRG	**Berggiesshubel**	**64.17**	**316**	*e*P		**P**	**17 11 04.8**	**+0.8**
	comp=Z,2.9nm,0.8s							
NB200	**NORSAR Array S**	**64.42**	**328**	*e*P		**P**	**17 11 05.0**	**-0.5**
NOA	**NORSAR Array B**	**64.42**	**328**	P		**P**	**17 11 05.0**	**-0.5**
	comp=Z,0.6nm,0.6s,baz=94,slow=5.6,SNR=3.3							
NOA				pP		**pP**	**17 11 15.4**	**-0.8**
	comp=Z,0.8nm,0.6s,baz=86,slow=6.6,SNR=2.7							
GERES	**GERESS Array B**	**64.65**	**314**	P		**P**	**17 11 08.1**	**+0.8**
	comp=Z,4.2nm,0.7s,baz=77,slow=6.0,SNR=33							
GERES				pP		**pP**	**17 11 18.7**	**+0.7**
	comp=Z,3.1nm,0.6s,baz=73,slow=6.4,SNR=11							
KHC	**Kasperske Hory**	**64.68**	**314**	*e*P		**P**	**17 11 07.9**	**+0.5**
KEST	**Kesra**	**70.91**	**301**	P		**P**	**17 11 47.8**	**+0.9**
	comp=Z,2.2nm,0.7s,baz=297,slow=12,SNR=3.7							
ILAR	**Eielson Array**	**79.27**	**22**	P		**P**	**17 12 33.9**	**-0.6**
	comp=Z,0.5nm,0.7s,baz=305,slow=5.3,SNR=6.6							
ILB	**Eielson Array**	**79.27**	**22**	*e*P		**P**	**17 12 33.9**	**-0.6**
INK	**Inuvik**	**80.81**	**16**	P		**P**	**17 12 42.8**	**+0.1**
	comp=Z,3.3nm,0.9s,baz=326,slow=4.3,SNR=12							
INK				pP		**pP**	**17 12 53.2**	**-0.5**
	comp=Z,2.6nm,0.6s,baz=3.0,slow=5.8,SNR=7.4							
INK	**Inuvik**	**80.81**	**16**	*e*P		**P**	**17 12 42.8**	**+0.1**
	comp=Z,5.5nm,1.1s							
TORD	**Torodi Ar. Bea**	**85.67**	**282**	P		**P**	**17 13 09.7**	**+0.9**
	comp=Z,1.4nm,0.6s,baz=66,slow=4.5,SNR=9.1							
TORD				pP		**pP**	**17 13 20.8**	**+0.9**
	comp=Z,0.9nm,0.9s,baz=59,slow=4.4,SNR=3.5							
TOA1	**Torodi Ar. Sit**	**85.67**	**282**	*e*P		**P**	**17 13 09.7**	**+0.9**
YKA	**Yellowknife Ar**	**89.97**	**12**	P		**P**	**17 13 28.4**	**0.0**
	comp=Z,0.5nm,0.8s,baz=329,slow=4.6,SNR=8.3							
YKB5	**Yellowknife Ar**	**89.97**	**12**	*e*P		**P**	**17 13 28.4**	**0.0**

IDC ***26*** *17:06:40.3±1.5,35°.95N×141°.62E,h0km,mb3.6/7, mb1 3.7/11,mb1mx3.5/57,mbtmp3.7/11,ML3.2/3,MS3.2/2, Ms1 3.2/2,ms1mx2.4/54,Error ellipse: s-maj=43.4km s-min=16.8km az=73.0*

ISCJB ***26*** *17:06:43.2±0.8,35°.84N±0°.05×141°.37E±0°.08,h26km, mb3.6/7,MS3.9/1,Error ellipse: s-maj=9.9km s-min=7.6km az=173.5*

JMA ***26*** *17:06:45.1±0.2,35°.85N×141°.23E,h29km±2km,M3.2*

ISC 26 17:06:43.6±1.0,35°.88N±0°.06×141°.43E±0°.08,h26km,n25, σ1°45/20,mb3.6/7,2C,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time	Res
CHOJ	**Chosi**	**0.49**	**250**	⇑P			**Pb**	**17 06 52.7**	**-1.0**
CHOJ				S			**Sb**	**17 06 58.5**	**-2.1**
JHO	**Hitachi**	**1.01**	**317**	⇑P			**Pb**	**17 07 01.9**	**-0.6**
JYT	**Yasato**	**1.06**	**290**	P			**Pn**	**17 07 01.6**	**-1.2**
JCN	**Nagara**	**1.10**	**246**	P			**Pb**	**17 07 03.6**	**-0.3**
BSO3	**Boso 3**	**1.31**	**215**	P			**Pn**	**17 07 06.6**	**+0.7**
MJAR	**Matsushiro Arr**	**2.69**	**285**	Pn			**Pn**	**17 07 25.1**	**-0.1**
	4.2nm,0.3s,baz=94,slow=8.6,SNR=35								
MAT	**Matsushiro**	**2.69**	**285**	P			**Pn**	**17 07 25.3**	**+0.1**
MAT				S			**Sn**	**17 07 56.6**	**-0.4**
JHJ	**Hachijo jima 2**	**3.07**	**207**	Pn			**Pn**	**17 07 32.2**	**+1.9**
	11nm,0.3s,baz=341,slow=22,SNR=8.4								
JHJ				Sn			**Sn**	**17 08 04.5**	**-1.7**
	25nm,0.3s,baz=274,slow=23,SNR=9.2								
ASAJ	**Asahikawa**	**8.28**	**6**	Pn			**Pn**	**17 08 39.6**	**-2.4**
	0.3nm,0.3s,baz=236,slow=7.3,SNR=4.4								
JCJ	**Chichijima**	**8.78**	**176**	Pn			**Pn**	**17 08 47.1**	**-1.7**
	4.9nm,0.3s,baz=275,slow=23,SNR=5.4								
JCJ				Sn			Sn	17 10 18.3	-8.6
	4.0nm,0.3s,baz=295,slow=22,SNR=4.2								
KSRS	**Korea Array**	**10.96**	**282**	LR			LR	17 12 45.7	
	comp=Z,27nm,21.2s,baz=85,slow=33								
H11N2	**WAKE ISLAND Hy**	**27.56**	**119**	T			T	17 41 29.5	
	baz=311,slow=75,SNR=95								
H11N1	**WAKE ISLAND Hy**	**27.57**	**119**	T			T	17 41 29.0	
	baz=311,slow=75,SNR=71								
H11N3	**WAKE ISLAND Hy**	**27.58**	**119**	T			T	17 41 29.8	
	baz=311,slow=75,SNR=95								
H11S1	**WAKE ISLAND Hy**	**28.23**	**121**	T			T	17 42 16.8	
	baz=313,slow=76,SNR=23								
H11S3	**WAKE ISLAND Hy**	**28.23**	**121**	T			T	17 42 16.8	
	baz=313,slow=76,SNR=29								
H11S2	**WAKE ISLAND Hy**	**28.25**	**121**	T			T	17 42 17.6	
	baz=313,slow=76,SNR=29								
SONM	**Songino Array**	**28.46**	**306**	P			**P**	**17 12 38.1**	**+1.7**
	0.4nm,0.7s,baz=89,slow=7.4,SNR=2.3								
ZALV	**Zalesovo Beam**	**42.71**	**313**	P			**P**	**17 14 38.5**	**+0.4**
	0.3nm,0.3s,baz=88,slow=7.4,SNR=4.6								
MKAR	**Makanchi Array**	**44.75**	**303**	P			**P**	**17 14 55.9**	**+1.1**
	1.5nm,0.7s,baz=92,slow=9.2,SNR=15								
KURBB	**Kurchatov Arra**	**46.73**	**309**	P			**P**	**17 15 11.7**	**+1.5**
	1.5nm,0.8s,baz=84,slow=8.0,SNR=15								
BVAR	**Borovoye Array**	**51.37**	**313**	P			**P**	**17 15 47.1**	**+1.4**
	0.7nm,0.8s,baz=72,slow=9.5,SNR=4.4								
WRA	**Warramunga Arr**	**55.92**	**188**	P			**P**	**17 16 20.8**	**+1.4**
	0.6nm,0.8s,baz=5.7,slow=7.6,SNR=6.5								
ASAR	**Alice Springs**	**59.64**	**188**	P			**P**	**17 16 47.1**	**+1.6**
	0.3nm,0.8s,baz=6.7,slow=8.8,SNR=4.7								
ANMO	**Albuquerque**	**85.32**	**50**	LR			LR	17 52 17.8	
	comp=Z,49nm,20.6s,baz=285,slow=32								

ISCJB ***26*** *17:12:21.9±0.7,37°.01N±0°.03×140°.75E±0°.06,h9km±4km, mb3.8/2,Error ellipse: s-maj=8.8km s-min=4.6km az=27.2*

IDC ***26*** *17:12:21.1±1.9,36°.84N×140°.82E,h0km,mb3.7/2, mb1 3.7/4,mb1mx3.3/56,mbtmp3.6/4,ML3.1/2,Error ellipse: s-maj=32.5km s-min=29.8km az=86.0*

JMA ***26*** *17:12:22.3,37°.01N×140°.69E,h8km±1km,M3.4 Broadband fault plane solution: P waves. NP1: φs230.00000°,δ45.00000°,λ-87.00000°. NP2:φs46.00000°, δ45.00000°,λ-93.00000°. Principal axes: T Plg0.0000°, Azm318.0000°; N Plg2.0000°, Azm48.0000°; P Plg88.0000°, Azm228.0000°;*

JMA Felt I J1.

ISC 26 17:12:22.4±1.0,37°.01N±0°.03×140°.68E±0°.05,h7km±9km, n11,σ0°77/19,5C-1D,Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time	Res
ONAJ	**Iwakimizuishiy**	**0.13**	**46**	⇓P			**Pg**	**17 12 25.1**	**-0.1**
ONAJ				S			**Sg**	**17 12 27.2**	**+0.1**
JFK	**Kawauchi**	**0.39**	**24**	⇑P			**Pg**	**17 12 29.7**	**-0.2**
JFK				S			**Sg**	**17 12 34.9**	**-0.2**
JHO	**Hitachi**	**0.41**	**193**	⇑P			**Pg**	**17 12 30.2**	**-0.1**
JHO				S			**Sg**	**17 12 36.1**	**+0.5**
JFT	**Otama**	**0.58**	**332**	⇑P			**Pg**	**17 12 33.6**	**+0.1**
JFT				*e*S			**Sb**	**17 12 41.4**	**+0.4**
JSB	**Shiboa**	**0.61**	**266**	⇑P			**Pb**	**17 12 34.9**	**-0.5**
JSB				S			**Sb**	**17 12 43.7**	**-0.5**
JMM	**Marumori**	**0.86**	**6**	⇑P			**Pg**	**17 12 38.1**	**-0.8**
JMM				S			**Sg**	**17 12 49.7**	**-0.3**
MJAR	**Matsushiro Arr**	**2.04**	**257**	Pn			**Pn**	**17 12 57.9**	**+0.7**
	8.9nm,0.3s,baz=81,slow=16,SNR=44								
MJAR				Sn			**Sb**	**17 13 24.4**	**-0.9**
	18nm,0.3s,baz=333,slow=21,SNR=8.5								
MAT	**Matsushiro**	**2.04**	**258**	P			**Pn**	**17 12 57.9**	**+0.7**
MAT				S			**Sb**	**17 13 25.3**	**-0.1**
ASAJ	**Asahikawa**	**7.25**	**11**	Pn			**Pn**	**17 14 10.1**	**+1.4**
	0.2nm,0.3s,baz=308,slow=17,SNR=2.1								
MKAR	**Makanchi Array**	**43.63**	**302**	P			**P**	**17 20 28.6**	**+1.1**
	0.2nm,0.2s,baz=84,slow=8.6,SNR=1.8								
WRA	**Warramunga Arr**	**56.96**	**187**	P			**P**	**17 22 07.1**	**-1.4**
	1.3nm,0.7s,baz=3.0,slow=7.3,SNR=6.3								

IDC ***26*** *17:14:42.4±2.2,37°.64N×142°.01E,h0km,mb3.5/3, mb1 3.5/6,mb1mx3.2/52,mbtmp3.5/6,ML3.1/3,Error ellipse: s-maj=51.1km s-min=26.7km az=90.0*

ISCJB ***26*** *17:14:43.9±1.6,37°.68N±0°.04×141°.9E±0°.1,h23km±11km, mb3.5/3,Error ellipse: s-maj=13.7km s-min=6.7km az=16.5*

JMA ***26*** *17:14:45.0±0.1,37°.72N×141°.89E,h26km±3km,M3.7*

ISC 26 17:14:44.0±2.0,37°.67N±0°.05×141°.89E±0°.08,h14km±11km, n20,σ1°22/22,mb3.6/3,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time	Res
JFK	**Kawauchi**	**0.86**	**250**	P			**Pn**	**17 15 01.3**	**-0.5**
JFK				*e*S			**Sg**	**17 15 12.8**	**+0.8**
JMM	**Marumori**	**0.89**	**283**	P			**Pg**	**17 15 01.3**	**+0.1**
JMM				*e*S			**Sb**	**17 15 12.2**	**-0.8**
JIO	**Ouri**	**0.89**	**332**	P			**Pg**	**17 15 00.6**	**-0.7**
JIO				*e*S			**Sb**	**17 15 11.3**	**-1.8**
ONAJ	**Iwakimizuishiy**	**1.04**	**237**	P			**Pn**	**17 15 03.8**	**-0.4**
JOU	**Okura**	**1.19**	**306**	P			**Pb**	**17 15 06.1**	**-0.3**
JOU				*e*S			**Sb**	**17 15 20.6**	**-1.1**
JFT	**Otama**	**1.24**	**264**	P			**Pg**	**17 15 07.6**	**-0.3**
JFT				S			**Sn**	**17 15 24.2**	**+0.6**
JHO	**Hitachi**	**1.49**	**225**	P			**Pn**	**17 15 10.3**	**-0.1**
JHO				*e*S			**Sn**	**17 15 28.0**	**-1.7**
MJAR	**Matsushiro Arr**	**3.15**	**250**	Pn			**Pn**	**17 15 34.5**	**+1.2**
	1.8nm,0.3s,baz=76,slow=15,SNR=4.4								
MAT	**Matsushiro**	**3.15**	**250**	P			**Pn**	**17 15 35.6**	**+2.4**
MAT				S			**Sb**	**17 16 16.3**	**-1.8**
JHJ	**Hachijo jima 2**	**4.85**	**201**	Pn			**Pn**	**17 15 58.0**	**+1.4**
	5.7nm,0.3s,baz=99,slow=19,SNR=2.1								
JHJ				Sn			**Sn**	**17 16 51.8**	**-0.9**
	6.3nm,0.3s,baz=220,slow=20,SNR=1.9								
ASAJ	**Asahikawa**	**6.46**	**5**	Pn			**Pn**	**17 16 20.0**	**+1.3**
	0.2nm,0.3s,baz=297,slow=33,SNR=1.1								
H11N2	**WAKE ISLAND Hy**	**28.16**	**122**	T			T	17 49 58.9	
	baz=315,slow=75,SNR=58								
H11N1	**WAKE ISLAND Hy**	**28.17**	**122**	T			T	17 50 08.4	
	baz=315,slow=75,SNR=20								
H11N3	**WAKE ISLAND Hy**	**28.18**	**122**	T			T	17 50 08.2	
	baz=315,slow=75,SNR=22								
H11S1	**WAKE ISLAND Hy**	**28.90**	**125**	T			T	17 50 59.9	
	baz=317,slow=76,SNR=25								
H11S3	**WAKE ISLAND Hy**	**28.90**	**125**	T			T	17 51 04.7	
	baz=317,slow=76,SNR=22								
H11S2	**WAKE ISLAND Hy**	**28.91**	**125**	T			T	17 51 05.2	
	baz=317,slow=76,SNR=24								
MKAR	**Makanchi Array**	**44.11**	**302**	P			**P**	**17 22 52.7**	**+0.9**
	0.1nm,0.2s,baz=86,slow=7.8,SNR=1.1								
KURBB	**Kurchatov Arra**	**45.91**	**308**	P			**P**	**17 23 07.1**	**+1.1**
	0.4nm,0.5s,baz=82,slow=8.6,SNR=3.2								
WRA	**Warramunga Arr**	**57.74**	**188**	P			**P**	**17 24 34.5**	**0.0**
	0.4nm,0.5s,baz=5.3,slow=7.3,SNR=2.4								

ISCJB ***26*** *17:15:03.4±0.4,3°.01S±0°.04×128°.05E±0°.04,h38km, mb3.9/8,MS3.3/1,Error ellipse: s-maj=6.9km s-min=5.3km az=35.4*

DJA ***26*** *17:15:03.8±0.6,3°.5S×127°.8E±°,h13km±6km,M4.3/12, mb4.6/4,MLv4.2/12*

IDC ***26*** *17:15:09.3±3.1,3°.24S×127°.96E,h86km±30km,mb3.6/8, mb1 3.7/11,mb1mx3.5/49,mbtmp4.0/11,MS3.5/1, Ms1 3.5/1,ms1mx2.6/28,Error ellipse: s-maj=36.4km s-min=9.8km az=69.0*

ISC 26 17:15:04.4±0.7,3°.13S±0°.06×128°.05E±0°.06,h38km,n22, σ1°33/23,mb4.0/8,Seram

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time	Res
MSAI	**Masohi**	**0.90**	**104**	P			**Pn**	**17 15 22.5**	**+1.9**
NLAI	**Namlea**	**0.96**	**263**	P			**Pn**	**17 15 21.0**	**-0.3**
NLAI				S			**Sn**	**17 15 35.5**	**+1.8**
BNDI	**Bandanaira**	**2.31**	**127**	P			Pn	17 15 44.8	+4.9
SANI	**Sanana**	**2.32**	**297**	P			**Pn**	**17 15 40.3**	**+0.3**
SANI				S			**Sn**	**17 16 04.6**	**-2.7**
LBMI	**Labuha**	**2.53**	**347**	P			**Pn**	**17 15 42.5**	**-0.4**
SWI	**Sorong**	**3.92**	**55**	P			**Pn**	**17 16 02.7**	**+0.7**
TNTI	**Ternate**	**3.93**	**350**	P			**Pn**	**17 16 01.6**	**-0.6**
FAKI	**Fak Fak**	**4.20**	**87**	P			**Pn**	**17 16 06.9**	**+1.0**
MRSI	**Marisa**	**7.08**	**300**	P			**Pn**	**17 16 44.9**	**-0.6**
	29nm,0.5s,0.2nm								
SPSI	**Siap Palu**	**8.31**	**264**	P			**Pn**	**17 17 04.3**	**+2.0**
	17nm,0.9s								
KAPI	**Kappang**	**8.49**	**257**	P			Pn	17 17 09.1	+4.3
	2.5nm,0.3s,baz=104,slow=8.1,SNR=12								
FITZ	**Fitzroy Crossi**	**15.07**	**189**	P			**P**	**17 18 37.4**	**-2.0**
	0.1nm,0.3s,baz=41,slow=13,SNR=5.6								
WRA	**Warramunga Arr**	**17.81**	**160**	P			**P**	**17 19 10.0**	**+0.2**
	0.6nm,0.3s,baz=340,slow=11,SNR=43								
WRA				S			**Sn**	**17 22 27.4**	**+0.4**
	0.0nm,0.3s,baz=347,slow=21,SNR=3.4								
LEM	**Lembang**	**20.68**	**259**	LR			LR	17 28 43.0	
	comp=Z,128nm,19.2s,baz=272,slow=40								
ASAR	**Alice Springs**	**21.19**	**165**	P			**P**	**17 19 47.4**	**+0.6**
	14nm,0.9s,baz=346,slow=11,SNR=98								
ASAR				S			**S**	**17 23 38.3**	**-2.2**
	2.2nm,0.9s,baz=350,slow=20,SNR=9.3								
STKA	**Stephens Creek**	**31.31**	**157**	P			**P**	**17 21 20.9**	**-0.2**
	1.4nm,0.5s,baz=333,slow=8.6,SNR=6.7								
CMAR	**Chiang Mai Arr**	**35.80**	**308**	P			**P**	**17 22 00.8**	**+0.5**
	0.3nm,0.6s,baz=139,slow=7.1,SNR=4.0								
SONM	**Songino Array**	**54.18**	**342**	P			**P**	**17 24 25.8**	**-0.3**
	0.2nm,0.5s,baz=102,slow=14,SNR=3.5								
YAK	**Yakutsk**	**64.99**	**1**	P			**P**	**17 25 40.9**	**+0.9**
	3.9nm,0.6s,baz=86,slow=2.3,SNR=4.1								
ZALV	**Zalesovo Beam**	**67.27**	**334**	P			**P**	**17 25 54.2**	**-0.8**
	0.4nm,0.5s,baz=130,slow=2.3,SNR=3.8								
KURBB	**Kurchatov Arra**	**68.21**	**329**	P			**P**	**17 26 00.1**	**-0.9**
	0.9nm,0.7s,baz=129,slow=5.4,SNR=14								
SEY	**Seymchan**	**68.40**	**12**	P			**P**	**17 26 03.5**	**+1.6**
	0.4nm,0.2s,baz=200,slow=12,SNR=3.4								

NIED ***26*** *17:17:00,36°.30N×140°.00E,h68km,Mw3.7 Best double couple: M0 3.38000×10^14 NP1:φ226.00000°,δ19.00000°, λ92.00000°. NP2:φ43.00000°,δ71.00000°,λ89.00000°.*

IDC ***26*** *17:17:25.8±2.1,36°.44N×140°.48E,h0km,mb3.6/4, mb1 3.7/5,mb1mx3.4/47,mbtmp3.7/5,ML3.9/1,Error ellipse: s-maj=56.1km s-min=21.3km az=61.0*

ISCJB ***26*** *17:17:33.8±0.7,36°.18N±0°.05×140°.01E±0°.08,h65km±5km, mb3.6/4,Error ellipse: s-maj=10.5km s-min=7.6km az=167.6*

JMA ***26*** *17:17:35.5±0.1,36°.20N×139°.96E,h52km±1km,M3.6 Broadband fault plane solution: P waves. NP1: φs36.00000°,δ78.00000°,λ86.00000°. NP2:φs236.00000°, δ13.00000°,λ109.00000°. Principal axes: T Plg57.0000°, Azm301.0000°; N Plg4.0000°, Azm37.0000°; P Plg33.0000°, Azm130.0000°;*

JMA Felt II J1.

ISC 26 17:17:34.9±1.0,36°.21N±0°.05×139°.95E±0°.06,h58km±8km, n13,σ1°11/20,mb3.7/4,2C-4D,Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time	Res
JYT	**Yasato**	**0.20**	**84**	⇑P			**Pn**	**17 17 44.1**	**0.0**
JYT				*e*S			**Sn**	**17 17 50.2**	**-0.6**
JAG	**Ashikaga**	**0.46**	**299**	⇓P			**Pn**	**17 17 46.6**	**+0.3**
JAG				*i* S			**Sn**	**17 17 54.4**	**-0.1**
JKT	**Katashina**	**0.80**	**315**	⇓P			**Pn**	**17 17 50.5**	**+0.2**
JKT				S			**Sn**	**17 18 02.1**	**+0.5**
JRY	**Ryogami san**	**0.87**	**258**	⇓P			**Pn**	**17 17 51.7**	**+0.5**
JRY				S			**Sn**	**17 18 03.6**	**+0.4**
JOD2	**Odawara 2**	**1.18**	**217**	⇑P			**Pn**	**17 17 56.3**	**+1.1**
JOD2				S			**Sn**	**17 18 11.1**	**+0.8**
JFY	**Yanaizu**	**1.21**	**351**	⇓P			**Pn**	**17 17 56.6**	**+0.9**
MJAR	**Matsushiro Arr**	**1.45**	**284**	Pn			**Pn**	**17 17 58.3**	**-0.6**
	21nm,0.3s,baz=94,slow=9.1,SNR=69								
MAT	**Matsushiro**	**1.45**	**284**	P			**Pn**	**17 17 59.8**	**+0.9**
MAT				S			**Sn**	**17 18 13.5**	**-3.4**
JHJ	**Hachijo jima 2**	**3.08**	**183**	Pn			**Pn**	**17 18 21.3**	**+0.2**
	34nm,0.3s,baz=303,slow=23,SNR=13								
JHJ				Sn			**Sn**	**17 18 54.9**	**-1.9**
	8.2nm,0.3s,baz=121,slow=21,SNR=2.9								
MKAR	**Makanchi Array**	**43.57**	**303**	P			**P**	**17 25 33.0**	**-0.1**
	1.2nm,0.8s,baz=90,slow=12,SNR=10								
KURBB	**Kurchatov Arra**	**45.59**	**308**	P			**P**	**17 25 49.1**	**+0.1**
	0.6nm,0.6s,baz=83,slow=7.7,SNR=7.7								
WRA	**Warramunga Arr**	**56.09**	**186**	P			**P**	**17 27 08.2**	**-0.1**
	0.5nm,0.4s,baz=1.7,slow=7.6,SNR=16								
ASAR	**Alice Springs**	**59.82**	**186**	P			**P**	**17 27 34.7**	**+0.4**
	0.2nm,0.5s,baz=6.8,slow=7.2,SNR=4.7								

ISK ***26*** *17:24:57.0,34°.88N×27°.74E,h23km,MD3.3*

ATH ***26*** *17:24:59.6,35°.25N×27°.96E,h18km±3km,ML2.7/2,Error ellipse: s-maj=6.2km s-min=1.9km az=330.0*

CSEM ***26*** *17:25:03.3±0.5,35°.33N×27°.84E,h20km,ML2.7,Error ellipse: s-maj=14.5km s-min=5.7km az=167.0*

DDA ***26*** *17:25:32.1,35°.03N×27°.75E,h52km,Md3.5*

ISC 26 17:25:00.0±1.2,35°.24N±0°.05×27°.25E±0°.03,h17km±11km, n46,σ1°16/55,Dodecanese Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time	Res
KARP	**Karpathos**	**0.71**	**

1.1nm,0.5s,baz=344,slow=10,SNR=24
AS31 Alice Springs 28.51 168 *e*P **P 17 33 44.9 +1.5**
ASAR Alice Springs 28.51 168 P **P 17 33 44.9 +1.5**
0.4nm,0.5s,baz=352,slow=7.6,SNR=19
STKA Stephens Creek 38.42 161 P **P 17 35 10.2 +1.1**
1.7nm,0.4s,baz=347,slow=7.6,SNR=12
MK32 Makanchi Array 57.52 325 *e*P **P 17 37 36.0 -0.1**
MKAR Makanchi Array 57.52 325 P **P 17 37 36.0 -0.1**
0.3nm,0.4s,baz=112,slow=8.0,SNR=12
MKAR Makanchi Array 57.52 325 *e*P **P 17 37 35.7 -0.5**
MAKZ Makanchi 57.71 325 *e*P **P 17 37 37.4 0.0**
7.4nm,1.8s
KURK Kurchatov 61.67 327 *e*P **P 17 38 04.7 +0.3**
1.9nm,0.6s
AFI Afiamalu 62.88 108 *e*P **P 17 38 12.1 -1.2**
65nm,1.3s

ISCJB ***26*** *17:37:37.6±0.5, 35°.44N±0°.03×25°.57E±0°.03, h8km±6km, Error ellipse: s-maj=5.8km s-min=3.7km az=170.6*
ATH ***26*** *17:37:37.9, 35°.43N×25°.56E, h12km±3km, ML2.6/6, Error ellipse: s-maj=4.0km s-min=0.8km az=179.0*
CSEM ***26*** *17:37:37.6±0.2, 35°.44N×25°.56E, h8km, ML2.6, Error ellipse: s-maj=3.5km s-min=3.1km az=138.0*
THE ***26*** *17:37:37.3, 35°.44N×25°.55E, h0km, ML2.9/8, Error ellipse: s-maj=0.6km s-min=0.4km az=84.0*
ISC 26 17:37:37.9±0.8, 35°.43N±0°.02×25°.55E±0°.02, h13km±6km, n55, σ0s72/86, Crete

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
NPS	**Neapolis**	**0.18**	**164**	P	**Pg**	**17 37 42.0**	**-0.1**
NPS				S	**Sg**	**17 37 45.0**	**+0.1**
NPS	**Neapolis**	**0.18**	**164**	P	**Pg**	**17 37 42.0**	**-0.1**
NPS				S	**Sg**	**17 37 45.0**	**+0.1**
NPS	**Neapolis**	**0.18**	**164**	P	**Pg**	**17 37 42.4**	**+0.3**
NPS				S	**Sg**	**17 37 45.3**	**+0.4**
NPS				AML	AML	17 37 45.9	
	comp=N,19529μm,0.1s						
NPS				AML	AML	17 37 46.0	
	comp=E,15538μm,0.1s						
LAST	**Lasithi**	**0.28**	**193**	P	**Pg**	**17 37 43.3**	**-0.5**
LAST				S	**Sg**	**17 37 47.7**	**0.0**
LAST	**Lasithi**	**0.28**	**193**	P	**Pg**	**17 37 43.3**	**-0.5**
LAST				S	**Sg**	**17 37 47.7**	**0.0**
LAST	**Lasithi**	**0.28**	**193**	P	**Pg**	**17 37 43.2**	**-0.5**
IACM	**Heraklion**	**0.41**	**252**	P	**Pg**	**17 37 45.9**	**-0.3**
IACM				S	**Sb**	**17 37 52.8**	**-0.4**
IACM	**Heraklion**	**0.41**	**252**	P	**Pg**	**17 37 45.9**	**-0.3**
IACM				S	**Sb**	**17 37 52.8**	**-0.4**
IACM	**Heraklion**	**0.41**	**252**	P	**Pb**	**17 37 47.5**	**+0.4**
IACM				S	**Sb**	**17 37 53.2**	**0.0**
IACM				AML	AML	17 37 54.1	
	comp=E,7558μm,0.2s						
IACM				AML	AML	17 37 54.2	
	comp=N,7124μm,0.2s						
IDI	**Anoyia**	**0.56**	**255**	P	**Pg**	**17 37 48.8**	**-0.2**
IDI				S	**Sb**	**17 37 57.5**	**0.0**
IDI	**Anoyia**	**0.56**	**255**	P	**Pg**	**17 37 48.7**	**-0.2**
IDI				S	**Sg**	**17 37 55.9**	**-0.5**
IDI	**Anoyia**	**0.56**	**255**	P	**Pg**	**17 37 48.7**	**-0.3**
IDI				S	**Sg**	**17 37 55.9**	**-0.5**
IDI				AML	AML	17 37 57.0	
	comp=N,749μm,0.2s						
IDI				AML	AML	17 37 59.1	
	comp=E,590μm,0.1s						
ZKR	**Zakros**	**0.63**	**120**	P	**Pg**	**17 37 50.0**	**-0.2**
ZKR	**Zakros**	**0.63**	**120**	P	**Pg**	**17 37 50.0**	**-0.2**
ZKR				S	**Sg**	**17 37 57.4**	**-1.2**
ZKR	**Zakros**	**0.63**	**120**	P	**Pg**	**17 37 50.3**	**0.0**
ZKR				S	**Sg**	**17 37 57.4**	**-1.2**
ZKR				AML	AML	17 37 58.3	
	comp=N,913μm,0.3s						
ZKR				AML	AML	17 37 58.4	
	comp=E,1081μm,0.3s						
SIVA	**Sivas**	**0.73**	**236**	P	**Pg**	**17 37 52.0**	**-0.2**
SIVA				S	**Sb**	**17 38 03.0**	**+0.5**
SIVA	**Sivas**	**0.73**	**236**	P	**Pg**	**17 37 52.2**	**0.0**
SIVA				S	**Sg**	**17 38 00.6**	**-1.3**
SIVA	**Sivas**	**0.73**	**236**	P	**Pg**	**17 37 52.2**	**0.0**
SIVA				S	**Sg**	**17 38 00.6**	**-1.3**
SIVA				AML	AML	17 38 03.8	
	comp=E,1159μm,0.3s						
SIVA				AML	AML	17 38 06.3	
	comp=N,1223μm,0.4s						
THR6	**Thira Island,**	**0.93**	**352**	P	**Pg**	**17 37 55.2**	**-0.8**
THR6	**Thira Island,**	**0.93**	**352**	P	**Pg**	**17 37 55.2**	**-0.8**
SANT	**Santorini**	**0.94**	**355**	P	**Pg**	**17 37 55.2**	**-0.9**
SANT				S	**Sn**	**17 38 09.8**	**-0.4**
SANT	**Santorini**	**0.94**	**355**	P	**Pg**	**17 37 55.2**	**-0.9**
SANT				S	**Sn**	**17 38 09.8**	**-0.4**
SANT	**Santorini**	**0.94**	**355**	P	**Pg**	**17 37 54.9**	**-1.2**
THR3	**Thira Island,**	**0.98**	**353**	P	**Pg**	**17 37 55.8**	**-1.1**
THR3	**Thira Island,**	**0.98**	**353**	P	**Pg**	**17 37 55.8**	**-1.1**
THR5	**Thira Island,**	**1.00**	**350**	P	**Pg**	**17 37 56.2**	**-1.0**
THR5	**Thira Island,**	**1.00**	**350**	P	**Pg**	**17 37 56.2**	**-1.0**
VAM	**Vamos**	**1.10**	**269**	P	**Pg**	**17 37 58.4**	**-0.8**
VAM				S	**Sn**	**17 38 14.4**	**+0.2**
VAM	**Vamos**	**1.10**	**269**	P	**Pg**	**17 37 58.9**	**-0.3**
VAM				S	**Sn**	**17 38 14.4**	**+0.2**
IMMV	**Iera Moni Meta**	**1.28**	**272**	P	**Pn**	**17 38 00.7**	**-0.8**
IMMV				S	**Sn**	**17 38 19.3**	**+0.7**
IMMV	**Iera Moni Meta**	**1.28**	**272**	P	**Pg**	**17 38 02.4**	**-0.2**
IMMV				S	**Sn**	**17 38 19.3**	**+0.7**
IMMV	**Iera Moni Meta**	**1.28**	**272**	P	**Pg**	**17 38 02.4**	**-0.2**
IMMV				S	**Sn**	**17 38 19.6**	**+1.0**
KARP	**Karpathos**	**1.32**	**85**	P	**Pn**	**17 38 01.5**	**-0.5**
KARP				S	**Sn**	**17 38 21.2**	**+1.7**
KARP	**Karpathos**	**1.32**	**85**	P	**Pg**	**17 38 02.8**	**-0.5**
KARP				S	**Sn**	**17 38 20.1**	**+0.6**
KARP	**Karpathos**	**1.32**	**85**	P	**Pg**	**17 38 02.8**	**-0.5**
KARP				S	**Sn**	**17 38 20.1**	**+0.6**
KARP				AML	AML	17 38 22.4	
	comp=N,233μm,0.3s						
KARP				AML	AML	17 38 23.7	
	comp=E,259μm,0.2s						
GVD	**Gavdhos**	**1.34**	**244**	P	**Pn**	**17 38 02.3**	**0.0**
GVD	**Gavdhos**	**1.34**	**244**	P	**Pn**	**17 38 02.3**	**0.0**
MHLO	**Agia Marina, M**	**1.56**	**324**	P	**Pn**	**17 38 04.7**	**-0.7**
MHLO				S	**Sb**	**17 38 26.8**	**+0.4**
MHLO	**Agia Marina, M**	**1.56**	**324**	P	**Pn**	**17 38 04.7**	**-0.7**
MHLO				S	**Sb**	**17 38 26.8**	**+0.4**
MHLO	**Agia Marina, M**	**1.56**	**324**	P	**Pg**	**17 38 09.0**	**+1.0**
MHLO				S	**Sg**	**17 38 30.5**	**+2.2**
APE	**Apeiranthos**	**1.63**	**359**	P	**Pn**	**17 38 05.8**	**-0.6**
APE				S	**Sb**	**17 38 28.6**	**+0.1**
APE	**Apeiranthos**	**1.63**	**359**	P	**Pn**	**17 38 05.8**	**-0.6**
APE				S	**Sb**	**17 38 28.6**	**+0.1**
APE	**Apeiranthos**	**1.63**	**359**	P	**Pg**	**17 38 09.2**	**-0.1**
ANKY	**Antikythira Is**	**1.88**	**284**	P	**Pb**	**17 38 12.3**	**+0.1**
ANKY	**Antikythira Is**	**1.88**	**284**	P	**Pb**	**17 38 12.3**	**+0.1**
SERI	**Serifos**	**1.93**	**334**	P	**Pn**	**17 38 11.8**	**+1.3**
SERI	**Serifos**	**1.93**	**334**	P	**Pn**	**17 38 11.8**	**+1.3**
VLI	**Veliai**	**2.48**	**302**	P	**Pn**	**17 38 17.1**	**-0.8**
VLI	**Veliai**	**2.48**	**302**	P	**Pn**	**17 38 17.1**	**-0.8**
KRND	**KRANIDI**	**2.75**	**316**	P	**Pn**	**17 38 21.5**	**-0.2**
KRND	**KRANIDI**	**2.75**	**316**	P	**Pn**	**17 38 21.5**	**-0.2**
DID	**Didima**	**2.79**	**319**	P	**Pn**	**17 38 22.0**	**-0.3**
DID	**Didima**	**2.79**	**319**	P	**Pn**	**17 38 22.0**	**-0.3**
AYDN	**Tasoluk**	**2.91**	**39**	S	**Sn**	**17 38 59.8**	**+1.0**
AYDN	**Tasoluk**	**2.91**	**39** *i*	S	**Sn**	**17 38 59.8**	**+1.0**

ISCJB ***26*** *17:40:47.5±0.9, 12°.5N±0°.1×144°.2E±0°.2, h30km, mb3.5/6, MS3.3/3, Error ellipse: s-maj=26.1km s-min=9.6km az=31.0*
IDC ***26*** *17:40:51.9±1.7, 12°.53N×144°.48E, h63km±20km, mb3.2/6, mb1 3.4/6, mb1mx3.3/47, mbtmp3.5/6, MS3.0/4, Ms1 3.1/4, ms1mx2.8/22, Error ellipse: s-maj=37.1km s-min=17.4km az=93.0*
ISC 26 17:40:48.7±1.1, 12°.5N±0°.1×144°.4E±0°.2, h30km, n9, σ0s92/8, mb3.5/6, MS3.1/3, South of Mariana Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GUMO	**Guam**	**1.20**	**24**	P	**Pn**	**17 41 09.9**	**+0.4**
	121nm,0.3s,baz=237,slow=2.1,SNR=94						
GUMO				S	**Sb**	**17 41 26.6**	**+0.7**
	472nm,0.3s,baz=28,slow=23,SNR=56						
JAY	**Jayapura**	**15.35**	**194**	LR	LR	17 50 39.9	
	comp=Z,9.2nm,18.7s,baz=182,slow=38						

WRA Warramunga Arr 33.71 197 P **P 17 47 28.0 +0.4**
1.4nm,0.7s,baz=19,slow=9.7,SNR=11
ASAR Alice Springs 37.37 196 P **P 17 47 59.7 +0.8**
0.6nm,0.6s,baz=19,slow=12,SNR=16
ASAR LR LR 18 04 09.4
comp=Z,72nm,18.3s,baz=348,slow=37
PETK Petropavlovsk- 41.89 12 LR LR 18 07 29.3
comp=Z,25nm,18.1s,baz=195,slow=38
CMAR Chiang Mai Arr 44.09 284 P **P 17 48 55.0 +0.4**
0.6nm,0.8s,baz=88,slow=6.1,SNR=8.0
CMAR LR LR 18 06 31.5
comp=Z,27nm,20.9s,baz=200,slow=35
SONM Songino Array 47.35 326 P **P 17 49 20.0 0.0**
0.4nm,0.8s,baz=149,slow=8.3,SNR=3.8
MKAR Makanchi Array 61.94 317 P **P 17 51 05.5 -0.4**
0.4nm,0.8s,baz=86,slow=8.2,SNR=3.9
YKA Yellowknife Ar 84.05 27 P **P 17 53 14.7 -1.6**
0.1nm,0.5s,baz=271,slow=5.5,SNR=3.6

IDC ***26*** *17:43:07.2±2.8, 38°.64N×122°.93W, h0km, mb2.6/1, mb1 3.7/5, mb1mx3.4/43, mbtmp3.2/5, ML3.2/4, MS3.2/7, Ms1 3.2/7, ms1mx3.1/9, Error ellipse: s-maj=35.1km s-min=11.2km az=45.0*
ISCJB ***26*** *17:43:08.7±0.4, 38°.80N±0°.03×122°.73W±0°.04, h10km, mb2.7/1, MS3.1/1, Error ellipse: s-maj=5.3km s-min=3.6km az=145.9*
NEIC ***26*** *17:43:08.3, 38°.81N×122°.82W, h4km, MW3.9(BRK), After NCEDC.*
NEIC Felt [IV] at Kelseyville. Also felt at Cloverdale, Geyserville, Healdsburg, Lakeport and Middletown.
ISC 26 17:43:09.0±0.9, 38°.70N±0°.04×122°.93W±0°.06, h10km, n48, σ1s35/48, Northern California

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
NSHM	**Saint Helena R**	**0.31**	**125**	*e*Pg	**Pg**	**17 43 15.2**	**0.0**
HOPS	**Hopland Field**	**0.32**	**339**	*e*Pg	**Pg**	**17 43 14.1**	**-1.4**
HOPS				*e*Sg	**Sg**	**17 43 20.5**	**+0.9**
NMTM	**Middletown**	**0.39**	**74**	*e*Pg	**Pg**	**17 43 14.4**	**-2.4**
MCCM	**Marconi Confer**	**0.55**	**176**	*e*Pg	**Pn**	**17 43 22.0**	**-0.9**
MCCM				*e*Sg	**Sn**	**17 43 31.7**	**-0.5**
GASB	**Alder Springs**	**0.97**	**10**	*e*Pg	**Pg**	**17 43 25.8**	**-1.9**
ORV	**Oroville**	**1.40**	**52**	*e*Pn	Pn	17 43 29.8	-4.9
AFDM	**Forest Hills D**	**1.55**	**80**	*e*Pn	Pn	17 43 33.3	-3.4
KMRM	**Mail Ridge**	**1.64**	**339**	*e*Pn	**Pn**	**17 43 36.8**	**-1.2**
WDC	**Whiskeytown Da**	**1.90**	**9**	*e*Pn	**Pn**	**17 43 39.9**	**-1.7**
CMB	**Columbia Colle**	**2.10**	**108**	*e*Pn	**Pn**	**17 43 42.9**	**-1.4**
SAO	**San Andreas Ge**	**2.26**	**148**	*e*Pn	**Pn**	**17 43 47.1**	**+0.6**
KHMM	**Horse Mountain**	**2.26**	**344**	*e*Pn	**Pn**	**17 43 46.7**	**+0.1**
JCC	**Jacoby Creek,**	**2.28**	**338**	*e*Pn	**Pn**	**17 43 45.3**	**-1.4**
JCC				*e*Pg	**Pg**	**17 43 53.9**	**+1.1**
WAKR	**Walker**	**2.74**	**93**	*e*Pn	**Pn**	**17 43 53.5**	**+0.2**
YBH	**Yreka Blue Hor**	**3.04**	**3**	Pn	**Pn**	**17 43 57.1**	**-0.2**
	0.2nm,0.3s,baz=224,slow=9.0,SNR=8.6						
YBH				Pg	**Pb**	**17 44 03.3**	**+0.1**
	2.7nm,0.3s,baz=154,slow=9.1,SNR=29						
YBH				Lg	Lg	17 44 46.5	
	0.6nm,0.3s,baz=88,slow=12,SNR=3.2						
YBH				LR	LR	17 45 23.1	
	comp=Z,415nm,20.4s,baz=200,slow=44						
YBH	**Yreka Blue Hor**	**3.04**	**3**	*e*Pn	**Pn**	**17 43 57.0**	**-0.2**
YBH				*e*Pg	**Pb**	**17 44 04.7**	**+1.5**
YBH				*e*Lg	Lg	17 44 46.5	
NV01	**Mina Array Sit**	**3.63**	**93**	*e*Pn	**Pn**	**17 44 05.0**	**-0.6**
NV01				*e*Pg	**Pb**	**17 44 13.3**	**-0.1**
NV01				*e*Lg	Lg	17 45 02.0	
NVAR	**Mina Array Bea**	**3.63**	**93**	Pn	**Pn**	**17 44 05.0**	**-0.6**
	0.9nm,0.3s,baz=267,slow=15,SNR=21						
NVAR				Pg	**Pb**	**17 44 13.3**	**-0.1**
	3.8nm,0.3s,baz=268,slow=15,SNR=45						
NVAR				Lg	Lg	17 45 02.0	
	1.5nm,0.3s,baz=258,slow=21,SNR=3.6						
NVAR				LR	LR	17 45 51.3	
	comp=Z,272nm,18.1s,baz=266,slow=44						
MOD	**Modoc Plateau**	**3.78**	**31**	*e*Pn	**Pn**	**17 44 05.2**	**-2.3**
HUMO	**Hull Mountain**	**3.91**	**360**	*e*Pn	**Pn**	**17 44 12.1**	**+3.0**
K05A	**Summer Lake**	**4.31**	**20**	*e*Pn	**Pn**	**17 44 14.2**	**-0.6**
ISA	**Isabella, Lake**	**4.67**	**129**	*e*Pn	**Pn**	**17 44 19.8**	**+0.1**
DAC	**Darwin (Calif)**	**4.88**	**118**	*e*Pn	**Pn**	**17 44 19.8**	**-2.9**
WVOR	**Wild Horse Val**	**4.96**	**40**	*e*Pg	**Pb**	**17 44 38.1**	**+2.1**
WSHM	**Spangler Hills**	**5.33**	**124**	*e*Sg	**Sb**	**17 45 46.6**	**+0.3**
TPNV	**Topopah Spring**	**5.57**	**106**	*e*Pn	**Pn**	**17 44 30.1**	**-2.0**
R11A	**Troy Canyon, C**	**5.77**	**91**	*e*Pn	**Pn**	**17 44 35.1**	**+0.2**
R11A				*e*Pg	**Pb**	**17 44 52.0**	**+2.2**
GSC	**Goldstone, Bar**	**5.96**	**123**	*e*Pn	**Pn**	**17 44 37.0**	**-0.3**
ELK	**Elko**	**6.27**	**69**	*e*Pn	**Pn**	**17 44 42.3**	**+0.6**
PSUT	**Pine Spring**	**7.11**	**88**	*e*Pn	**Pn**	**17 44 52.6**	**-0.6**
PSUT				*e*Pg	Pb	17 45 17.8	+5.2
MFID	**Camas Ranch**	**7.14**	**46**	*e*Pg	Pb	17 45 17.5	+4.4
PFO	**Pinyon Flats O**	**7.29**	**132**	LR	LR	17 48 10.9	
	comp=Z,228nm,18.8s,baz=316,slow=42						
ASR	**Mount Adams--S**	**7.51**	**7**	*e*Pg	**Pg**	**17 45 32.3**	**-0.6**
ASR				*e*Lg	Lg	17 47 09.5	
PAT2	**Paterson 2**	**7.55**	**17**	*e*Lg	Lg	17 47 16.2	
LCMT	**Little Creek M**	**7.84**	**99**	*e*Pn	**Pn**	**17 45 03.4**	**+0.1**
DUG	**Dugway, Tooele**	**7.97**	**76**	*e*Pn	**Pn**	**17 45 03.8**	**-1.2**
KNB	**Kanab**	**8.17**	**99**	*e*Pn	**Pn**	**17 45 08.2**	**+0.4**
KNB				*e*Pg	Pb	17 45 34.5	+3.8
NEW	**Newport**	**10.45**	**22**	LR	LR	17 50 23.7	
	comp=Z,29nm,20.9s,baz=216,slow=42						
PD31	**Pinedale Array**	**10.93**	**64**	*e*Pn	**Pn**	**17 45 47.9**	**+2.3**
PDAR	**Pinedale Array**	**10.93**	**64**	Pn	**Pn**	**17 45 47.9**	**+2.3**
	0.0nm,0.3s,baz=246,slow=11,SNR=8.5						
O20A	**White River Ci**	**11.45**	**78**	*e*Pn	**Pn**	**17 45 54.0**	**+1.2**
MSTX	**Muleshoe**	**16.90**	**100**	*e*Pn	**Pn**	**17 47 03.5**	**-2.3**
LPIG	**La Paz**	**18.07**	**140**	LR	LR	17 54 46.5	
	comp=Z,160nm,18.2s,baz=314,slow=39						
LTX	**Lajitas**	**18.47**	**115**	*e*Pn	**Pn**	**17 47 25.7**	**+0.5**
TXAR	**Lajitas Array**	**18.47**	**115**	P	**Pn**	**17 47 25.7**	**+0.5**
	0.0nm,0.3s,baz=298,slow=8.1,SNR=13						
TXAR				LR	LR	17 55 49.8	
	comp=Z,43nm,19.6s,baz=0.0,slow=41						
DLBC	**Dease Lake**	**20.28**	**349**	LR	LR	17 56 08.6	
	comp=Z,88nm,18.2s,baz=131,slow=38						
YKA	**Yellowknife Ar**	**24.36**	**9**	P	**P**	**17 48 27.1**	**+0.1**
	0.1nm,0.3s,baz=194,slow=10,SNR=3.5						
YKB5	**Yellowknife Ar**	**24.36**	**9**	*e*P	**P**	**17 48 27.1**	**+0.1**

ISCJB ***26*** *17:46:33.5±1.5, 11°.5S±0°.1×163°.2E±0°.2, h33km, mb3.6/4, Error ellipse: s-maj=31.3km s-min=9.0km az=146.6*
IDC ***26*** *17:46:37.4±3.7, 11°.28S×163°.21E, h53km±28km, mb3.4/4, mb1 3.8/6, mb1mx3.4/36, mbtmp3.9/6, ML4.1/2, Error ellipse: s-maj=38.2km s-min=19.4km az=56.0*
ISC 26 17:46:35.6±1.5, 11°.3S±0°.2×163°.3E±0°.2, h35km, n7, σ1s68/9, mb3.7/4, Bougainville-Solomon Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HNR	**Honiara**	**3.75**	**300**	P	**Pn**	**17 47 31.2**	**+0.1**
	26nm,0.3s,baz=149,slow=3.1,SNR=13						
HNR				S	**Sn**	**17 48 15.3**	**+1.3**
	51nm,0.3s,baz=229,slow=23,SNR=7.7						
HNR	**Honiara**	**3.75**	**300**	*e*P	**Pn**	**17 47 30.0**	**-1.1**
HNR				*e*S	Sn	17 48 03.0	-11
DZM	**Mont Dzumac**	**11.12**	**164**	P	**Pn**	**17 49 14.7**	**+2.4**
	0.9nm,0.3s,baz=3.0,slow=9.9,SNR=38						
DZM				S	**Sn**	**17 51 13.2**	**-2.3**
	0.1nm,0.3s,baz=80,slow=15,SNR=1.7						
WRA	**Warramunga Arr**	**29.10**	**249**	P	**P**	**17 52 32.7**	**-0.6**
	0.9nm,0.5s,baz=80,slow=9.0,SNR=9.4						
ASAR	**Alice Springs**	**30.49**	**242**	P	**P**	**17 52 45.4**	**-0.3**
	0.9nm,0.6s,baz=62,slow=10.0,SNR=28						
SONM	**Songino Array**	**77.45**	**325**	P	**P**	**17 58 26.1**	**-1.5**
	0.4nm,0.8s,baz=120,slow=5.7,SNR=3.3						
MKAR	**Makanchi Array**	**92.05**	**317**	P	**P**	**17 59 42.0**	**+0.8**
	0.2nm,0.8s,baz=91,slow=5.9,SNR=2.5						

ISCJB ***26*** *17:54:18.2±1.7, 5°.1S±0°.2×151°.5E±0°.3, h129km, mb3.4/7, Error ellipse: s-maj=57.5km s-min=10.8km az=32.5*
IDC ***26*** *17:54:18.6±4.7, 5°.20S×151°.63E, h126km±37km, mb3.3/7, mb1 3.5/8, mb1mx3.2/40, mbtmp3.8/8, Error ellipse: s-maj=56.4km s-min=24.3km az=116.0*
ISC 26 17:54:18.8±1.9, 5°.2S±0°.3×151°.6E±0°.4, h129km, n9, σ1s02/10, mb3.6/7, New Britain region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**6.10**	**227**	P	**Pn**	**17 55 47.6**	**+0.9**
	2.1nm,0.3s,baz=86,slow=3.9,SNR=9.6						
PMG				S	**Sn**	**17 56 54.2**	**-1.1**
	10.0nm,0.3s,baz=215,slow=21,SNR=16						
WRA	**Warramunga Arr**	**22.32**	**227**	P	**P**	**17 59 06.2**	**+0.1**
	0.7nm,0.6s,baz=49,slow=10,SNR=12						
ASAR	**Alice Springs**	**25.08**	**221**	P	**P**	**17 59 32.3**	**+0.7**
	0.5nm,0.3s,baz=52,slow=9.1,SNR=36						
FITZ	**Fitzroy Crossi**	**28.46**	**241**	P	**P**	**18 00 01.4**	**-0.5**
	0.7nm,0.4s,baz=50,slow=5.9,SNR=9.3						
SONM	**Songino Array**	**66.06**	**328**	P	**P**	**18 04 52.8**	**+0.8**
	0.7nm,0.6s,baz=144,slow=4.8,SNR=7.5						
MKAR	**Makanchi Array**	**79.88**	**319**	P	**P**	**18 06 14.3**	**+1.0**
	0.1nm,0.4s,baz=106,slow=6.4,SNR=4.1						
ZALV	**Zalesovo Beam**	**80.85**	**327**	P	**P**	**18 06 16.7**	**-1.6**
	0.4nm,0.4s,baz=144,slow=11,SNR=3.7						
ILAR	**Eielson Array**	**82.97**	**22**	P	**P**	**18 06 28.9**	**-0.3**
	0.8nm,0.6s,baz=250,slow=4.8,SNR=9.2						
TORD	**Torodi Ar. Bea**	**149.33**	**287**	PKPbc	**PKPbc**	**18 13 53.0**	**-0.6**
	0.6nm,0.4s,baz=98,slow=1.9,SNR=9.9						

NIED ***26*** *18:03:00.36°.60N×143°.20E, h5km, Mw4.4 Best double couple: M0 4.00000×10^15 NP1:φs29.00000°, δ35.00000°, λ-92.00000°. NP2:φs211.00000°, δ55.00000°, λ-89.00000°.*
IDC ***26*** *18:03:22.4±0.5, 36°.42N×143°.35E, h0km, mb4.5/24, mb1 4.7/29, mb1mx4.5/44, mbtmp4.5/29, ML3.3/5, MS3.5/22, Ms1 3.5/22, ms1mx3.3/44, Error ellipse: s-maj=14.5km s-min=12.4km az=121.0*
JMA ***26*** *18:03:26.0±0.4, 36°.56N×143°.22E, h59km, M4.5*
ISCJB ***26*** *18:03:26.6±0.2, 36°.56N±0°.03×143°.21E±0°.02, h34km, mb4.7/106, MS3.7/25, Error ellipse: s-maj=4.7km s-min=2.8km az=173.9*
NEIC ***26*** *18:03:27.9±0.6, 36°.45N×143°.27E, h35km±5km, mb4.8/59, Error ellipse: s-maj=5.6km s-min=3.7km az=149.0*
MOS ***26*** *18:03:28.1±0.8, 36°.89N×143°.20E, h33km, mb4.9/41, Error ellipse: s-maj=8.1km s-min=5.3km az=103.2*
ISC 26 18:03:26.2±0.7, 36°.50N±0°.05×143°.29E±0°.05, h23km±3km, n248, σ1s113/256, mb4.8/106, MS3.8/26, 11C-7D, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**2.09**	**287**	P	**Pn**	**18 03 58.7**	**-1.1**
ONAJ				*e*S	**Sn**	**18 04 22.6**	**-2.5**
JFK	**Kawauchi**	**2.12**	**295**	P	**Pn**	**18 03 58.8**	**-1.4**
JFK				S	**Sn**	**18 04 22.6**	**-3.2**
JFT	**Otama**	**2.57**	**294**	P	**Pn**	**18 04 06.2**	**-0.2**
JFT				S	**Sn**	**18 04 35.4**	**-1.6**
JMK	**Ichinoseki**	**2.94**	**327**	P	**Pn**	**18 04 10.3**	**-1.2**
JMK				S	**Sn**	**18 04 43.1**	**-3.0**
JAG	**Ashikaga**	**3.09**	**270**	P	**Pn**	**18 04 12.6**	**-1.0**
JAG				S	**Sn**	**18 04 46.0**	**-3.8**
JYK	**Kaneyama**	**3.35**	**317**	P	**Pn**	**18 04 16.3**	**-0.8**
JYK				S	**Sn**	**18 04 54.6**	**-1.5**
JOM	**Ohasama**	**3.36**	**333**	P	**Pn**	**18 04 15.8**	**-1.4**
JOM				*e*S	**Sn**	**18 04 53.8**	**-2.6**
JRY	**Ryogami san**	**3.58**	**264**	P	**Pn**	**18 04 19.0**	**-1.3**
JOD2	**Odawara 2**	**3.63**	**251**	P	**Pn**	**18 04 20.8**	**-0.2**
MJAR	**Matsushiro Arr**	**4.09**	**272**	Pn	**Pn**	**18 04 27.6**	**+0.2**
	8.0nm,0.3s,baz=94,slow=8.4,SNR=79						
MJAR				LR	LR	18 06 15.9	
	comp=Z,656nm,20.6s,baz=110,slow=42						
MAJO	**Matsushiro**	**4.09**	**272**	*c i*P	**Pn**	**18 04 27.7**	**+0.3**
MAJO	**Matsushiro**	**4.09**	**272**	*e*Pn	**Pn**	**18 04 27.3**	**-0.1**
MAT	**Matsushiro**	**4.09**	**272**	P	**Pn**	**18 04 27.4**	**0.0**
MAT				S	**Sn**	**18 05 13.5**	**-1.0**
JANG	**Nango**	**4.11**	**341**	S	Sn	18 05 09.7	-5.2
JHJ2	**Mitsune**	**4.43**	**221**	*e*Pn	**Pn**	**18 04 31.5**	**-0.4**
JHJ2				*e*Sn	Sn	18 05 17.1	-5.6
JHJ	**Hachijo jima 2**	**4.44**	**222**	Pn	**Pn**	**18 04 30.9**	**-1.1**
	29nm,0.3s,baz=346,slow=22,SNR=36						
JHJ				Sn	**Sn**	**18 05 18.6**	**-4.5**
	92nm,0.3s,baz=360,slow=23,SNR=8.2						
INU	**Inuyama**	**5.22**	**259**	*e*Pn	**Pn**	**18 04 43.4**	**+0.6**
ERM	**Erimo**	**5.51**	**359**	*d i*P	Pn	18 04 43.8	-2.9
ERM	**Erimo**	**5.51**	**359**	*e*Pn	Pn	18 04 43.9	-2.9
ERM				*e*Sn	Sn	18 05 39.1	-10
ASAJ	**Asahikawa**	**7.62**	**356**	Pn	**Pn**	**18 05 13.6**	**-2.2**
	4.2nm,0.3s,baz=209,slow=10,SNR=42						
ASAJ				Sn	Sn	18 06 35.7	-5.7
	2.7nm,0.3s,baz=7.8,slow=28,SNR=6.9						
ASAJ				LR	LR	18 08 31.3	
	comp=Z,159nm,20.5s,baz=206,slow=40

comp=Z,11nm,0.8s,baz=211,slow=9.1,SNR=13
MA2 LR LR 18 18 50.8
comp=Z,56nm,19.4s,baz=242,slow=39
HHC Hu-ho-hao-te 25.07 290 *e*P **P 18 08 50.5 +1.6**
HHC sP sP 18 09 03.5 +4.8
HHC S **S 18 13 10.0 -2.1**
HHC pmax pmax
comp=Z,29nm,0.8s
HHC pmax pmax
comp=Z,92nm,5.3s
HHC LR LR
comp=N,1µm,14.8s
HHC LR LR
comp=E,1µm,13.6s
HHC LR LR
comp=Z,2µm,13.6s
CIT Chita 26.11 316 *e*P **P 18 08 56.6 -1.5**
CIT *e* 18 09 34.4
H11N2 WAKE ISLAND Hy 26.59 123 T T 18 36 47.2
baz=314,slow=75,SNR=18
H11N1 WAKE ISLAND Hy 26.59 123 T T 18 36 48.5
baz=314,slow=75,SNR=10
H11N3 WAKE ISLAND Hy 26.60 123 T T 18 36 50.8
baz=314,slow=75,SNR=10
YAK Yakutsk 26.93 346 LR LR 18 19 57.3
comp=Z,128nm,18.0s,baz=156,slow=37
YAK Yakutsk 26.93 346 *e*P **P 18 09 05.2 -0.2**
YAK pmax pmax
comp=Z,31nm,0.9s
YAK pmax pmax
comp=N,26nm,1.3s
YAK pmax pmax
comp=E,10.0nm,1.2s
YAK Yakutsk 26.93 346 *e*P **P 18 09 04.3 -1.1**
comp=E,54nm,1.1s
SEY Seymchan 27.05 9 P **P 18 09 07.3 +0.9**
comp=E,6.4nm,0.8s,baz=188,slow=7.5,SNR=20
SEY Seymchan 27.05 9 *i*P **P 18 09 07.7 +1.3**
H11S1 WAKE ISLAND Hy 27.31 125 T T 18 37 39.1
baz=316,slow=76,SNR=7.3
H11S3 WAKE ISLAND Hy 27.31 125 T T 18 37 46.2
baz=316,slow=76,SNR=7.3
H11S2 WAKE ISLAND Hy 27.33 125 T T 18 37 42.0
baz=316,slow=76,SNR=6.6
BOD Bodaibo 28.79 327 *e*P **P 18 09 20.8 -1.2**
BOD pmax pmax
comp=Z,10.0nm,1.1s
ENH Enshi 28.80 267 *e*P **P 18 09 22.1 -0.4**
comp=Z,12nm,0.8s
ULN Ulaanbaatar 28.90 305 *e*P **P 18 09 24.6 +1.3**
ULN pmax pmax
comp=Z,12nm,1.2s
ULN Ulaanbaatar 28.90 305 *e*P **P 18 09 24.2 +0.8**
comp=Z,9.2nm,1.0s
SONA0 Songino Array 29.33 304 *e*P **P 18 09 28.5 +1.4**
SONM Songino Array 29.33 304 P **P 18 09 28.5 +1.4**
comp=Z,8.1nm,1.0s,baz=106,slow=6.1,SNR=35
SONM LR LR 18 21 49.4
comp=Z,95nm,18.6s,baz=148,slow=38
LZH Lanzhou 31.64 281 *e*P P 18 09 51.5 +3.8
LZH pP sP 18 10 01.0 +3.4
LZH sP pP 18 10 06.0 +11
LZH pmax pmax
comp=Z,27nm,1.1s
LZH pmax pmax
comp=Z,120nm,4.0s
LZH LR LR
comp=N,300nm,15.6s
LZH LR LR
comp=E,290nm,15.2s
LZH LR LR
comp=Z,230nm,16.1s
ZAK Zakamensk 31.78 309 *e*P **P 18 09 48.5 -0.2**
ZAK pmax pmax
comp=Z,4.0nm,1.3s
TLY Talaya 31.82 311 *e*P P 18 09 54.2 +5.3
TLY pmax pmax
comp=Z,9.0nm,1.0s
TLY MLR MLR
comp=Z,125nm,16.0s
TLY Talaya 31.82 311 *e*P P 18 09 52.3 +3.4
comp=Z,8.1nm,0.9s
GYA Guiyang 32.63 263 P **P 18 09 57.8 +1.4**
GYA pmax pmax
comp=Z,10.0nm,0.8s
CD2 Chengdu 33.19 272 P **P 18 10 00.3 -0.9**
CD2 pmax pmax
comp=Z,2.0nm,0.6s
MOY Mondy 33.43 310 *e*P P 18 10 06.5 +3.3
BILL Bilibino 34.13 15 *d i*P **P 18 10 08.4 -0.5**
BILL *e* 18 10 25.0
BILL *e* 18 12 46.5
BILL pmax pmax
comp=Z,11nm,1.0s
BILL Bilibino 34.13 15 *e*P **P 18 10 08.7 -0.2**
comp=Z,8.9nm,0.9s
GTA Gaotai 34.16 288 P **P 18 10 11.0 +1.3**
GTA pP sP 18 10 20.0 +0.5
GTA sP pP 18 10 24.0 +7.3
GTA PcP **PcP 18 12 47.3 +0.9**
GTA S **S 18 15 34.5 -0.2**
GTA sS sS 18 15 50.0 +3.7
GTA SS **SnSn 18 17 45.5 +2.2**
GTA pmax pmax
comp=Z,9.0nm,0.8s
GTA pmax pmax
comp=Z,62nm,6.2s
GTA LR LR
comp=N,98nm,17.1s
GTA LR LR
comp=E,120nm,16.2s
GTA LR LR
comp=Z,140nm,16.2s
TIXI Tiksi 36.01 352 P **P 18 10 24.6 -0.3**
comp=Z,1.9nm,0.7s,baz=143,slow=6.0,SNR=11
TIXI Tiksi 36.01 352 *i*P **P 18 10 24.7 -0.3**
TIXI pmax pmax
comp=Z,3.0nm,1.0s
TIXI Tiksi 36.01 352 *e*P **P 18 10 24.2 -0.7**
comp=Z,2.9nm,1.0s
KMI Kunming 36.38 263 P **P 18 10 29.0 0.0**
KMI pmax pmax
comp=Z,8.0nm,0.5s
KMI pmax pmax
comp=Z,100nm,4.5s
KMI LR LR
comp=N,120nm,11.5s
KMI LR LR
comp=E,180nm,15.0s
KMI LR LR
comp=Z,160nm,16.7s
WMQ Urumqi 42.42 298 *e*P **P 18 11 19.8 +0.8**
WMQ pP sP 18 11 30.5 +1.5
WMQ sP pP 18 11 35.3 +9.2
WMQ S **S 18 17 39.5 +0.2**
WMQ pmax pmax
comp=Z,8.0nm,0.6s
WMQ pmax pmax
comp=Z,46nm,4.0s
WMQ LR LR
comp=N,16nm,17.4s
WMQ LR LR
comp=E,22nm,17.4s
WMQ LR LR
comp=Z,35nm,20.4s
CMAR Chiang Mai Arr 42.84 257 LR LR 18 32 21.4
comp=Z,49nm,19.4s,baz=70,slow=41
ZAA1 Zalesovo Array 43.38 313 *e*P **P 18 11 27.1 +0.5**
ZAA1 *e*PP **PcP 18 13 14.5 -0.3**
ZALV Zalesovo Beam 43.38 313 P **P 18 11 27.1 +0.5**
comp=Z,7.4nm,0.8s,baz=100,slow=7.7,SNR=36
ZALV PcP **PcP 18 13 14.5 -0.2**
comp=Z,3.2nm,0.7s,baz=94,slow=2.7,SNR=5.8
ZALV LR LR 18 30 17.5
comp=Z,102nm,18.7s,baz=70,slow=37
NVS Novosibirsk 44.29 314 *e*P **P 18 11 33.5 -0.4**
NVS *e* 18 11 40.3
NVS pmax pmax
comp=Z,7.0nm,0.9s
NVS pmax pmax
comp=E,6.0nm,1.0s
NRIK Noril'sk 44.38 335 LR LR 18 31 12.5
comp=E,120nm,18.5s,baz=349,slow=38
SBUM Sibu 44.38 227 *e*P **P 18 11 35.2 +0.1**
comp=E,11nm,1.4s
TTA Tatalina 45.00 34 *e*P **P 18 11 40.4 +0.8**
TTA pmax pmax
comp=Z,5.0nm,1.0s
TTA Tatalina 45.00 34 *e*P **P 18 11 40.4 +0.8**
comp=Z,4.6nm,1.0s
SVW2 Sparrevohn 45.03 37 *e*P **P 18 11 41.3 +1.6**
comp=Z,14nm,1.0s
MK32 Makanchi Array 45.67 303 *e*P **P 18 11 45.3 +0.3**
MKAR Makanchi Array 45.67 303 P **P 18 11 45.3 +0.3**
comp=Z,2.2nm,0.7s,baz=86,slow=9.9,SNR=34
MKAR LR LR 18 30 58.8
comp=Z,52nm,21.5s,baz=82,slow=36
MKAR Makanchi Array 45.67 303 *e*P **P 18 11 45.0 -0.1**
MAKZ Makanchi 45.88 303 *e*P **P 18 11 47.0 +0.3**
MAKZ pmax pmax
comp=Z,5.0nm,0.9s
MAKZ Makanchi 45.88 303 *e*P **P 18 11 47.0 +0.3**
comp=Z,4.6nm,0.9s
RSO Redoubt South 46.39 38 *e*P **P 18 11 49.1 -1.5**
KDAK Kodiak Island 46.49 42 *i*P **P 18 11 51.2 -0.1**
KDAK Kodiak Island 46.49 42 *e*P **P 18 11 51.1 -0.1**
comp=Z,29nm,0.7s
PPLA Purkeypile 46.75 35 *e*P **P 18 11 54.8 +1.4**
comp=Z,7.0nm,1.0s
SPU Mount Spurr 46.75 37 *e*P **P 18 11 54.5 +1.3**
CAST Castle Rocks 46.82 34 *e*P **P 18 11 55.1 +1.3**
comp=Z,4.6nm,0.7s
KTH Kantishna Hill 47.35 34 *e*P **P 18 11 58.5 +0.5**
comp=Z,8.8nm,1.0s
KURK Kurchatov 47.44 309 P **P 18 11 59.5 +0.7**
KURK pmax pmax
comp=Z,16nm,0.7s
KURK Kurchatov 47.44 309 *e*P **P 18 11 59.0 +0.2**
comp=Z,23nm,0.8s
MLY Manley 47.51 32 *e*P **P 18 11 59.9 +0.7**
comp=Z,11nm,0.9s
MLY *e*PcP **PcP 18 13 29.2 +0.2**
KURBB Kurchatov Arra 47.51 309 P **P 18 11 59.5 +0.2**
comp=Z,16nm,0.7s,baz=83,slow=7.8,SNR=171
TRF Thorofare Moun 47.63 34 *e*P **P 18 12 00.8 +0.6**
comp=Z,24nm,1.9s
RC01 Rabbit Creek A 47.87 37 *e*P **P 18 12 02.2 +0.3**
comp=Z,24nm,1.2s
COLD Coldfoot 47.89 29 *e*P **P 18 12 02.8 +0.8**
comp=Z,2.4nm,0.7s
BWN Browne 48.02 33 *e*P **P 18 12 03.9 +0.8**
comp=Z,26nm,1.0s
SEW Seward 48.04 38 *e*P **P 18 12 03.4 +0.2**
comp=Z,31nm,1.2s
PMR Palmer 48.16 36 *e*P **P 18 12 04.0 -0.1**
PMR pmax pmax
comp=Z,9.0nm,0.8s
PMR Palmer 48.16 36 *e*P **P 18 12 04.0 -0.1**
comp=Z,8.8nm,0.8s
MCK McKinley 48.24 34 *e*P **P 18 12 05.3 +0.5**
MCK pmax pmax
comp=Z,11nm,1.2s
MCK McKinley 48.24 34 *e*P **P 18 12 05.3 +0.5**
comp=Z,11nm,1.2s
RND Reindeer 48.27 34 *e*P **P 18 12 05.0 -0.1**
RND pmax pmax
comp=Z,10.0nm,0.9s
RND Reindeer 48.27 34 *e*P **P 18 12 05.0 -0.1**
comp=Z,9.7nm,0.9s
SML Sawmill 48.53 36 *e*P **P 18 12 07.6 +0.5**
SML pmax pmax
comp=Z,16nm,0.7s
SML Sawmill 48.53 36 *e*P **P 18 12 07.6 +0.5**
comp=Z,16nm,0.7s
MDM Murphy Dome 48.57 32 *e*P **P 18 12 07.8 +0.5**
comp=Z,14nm,0.8s
MDM *e*PcP **PcP 18 13 33.9 +1.2**
WRH Wood River Hil 48.62 33 *e*P **P 18 12 08.0 +0.3**
WRH *e*PcP **PcP 18 13 32.7 -0.2**
GUN Gumba 48.71 277 *e*P **P 18 12 10.1 +0.8**
comp=Z,9.3nm,0.5s
COLA College 48.73 32 *e*P **P 18 12 09.8 +1.3**
COLA pmax pmax
comp=Z,7.0nm,0.7s
CCB Clear Creek Bu 48.74 32 *e*P **P 18 12 08.9 +0.3**
comp=Z,2.0nm,0.6s
SCM Sheep Creek Mo 49.01 36 *e*P **P 18 12 11.4 +0.6**
SCM pmax pmax
comp=Z,11nm,0.7s
SCM Sheep Creek Mo 49.01 36 *e*P **P 18 12 11.4 +0.6**
comp=Z,11nm,0.7s
HDA Harding Lake 49.12 33 *e*P **P 18 12 11.5 0.0**
comp=Z,11nm,0.4s
ILAR Eielson Array 49.14 32 P **P 18 12 11.9 +0.3**
comp=Z,6.6nm,0.7s,baz=263,slow=6.5,SNR=72
ILAR Eielson Array 49.14 32 P **P 18 12 12.0 +0.3**
ILB Eielson Array 49.14 32 *e*P **P 18 12 11.9 +0.3**
PKIN Phulchoki 49.24 277 *e*P **P 18 12 13.0 -0.3**
comp=Z,5.3nm,0.6s
DMN Daman 49.46 277 *e*P **P 18 12 15.3 +0.3**
GKN Gorkha 49.66 278 *e*P **P 18 12 16.6 +0.2**
comp=Z,18nm,0.7s
KLU Klutina 49.70 36 *e*P **P 18 12 16.5 +0.4**
comp=Z,17nm,1.1s
DIV Divide 49.79 37 *e*P **P 18 12 17.9 +1.1**
comp=Z,19nm,0.9s
PAX Paxson 49.82 34 *e*P **P 18 12 17.0 0.0**
PAX *e* 18 13 38.4
PAX Paxson 49.82 34 *e*P **P 18 12 17.0 0.0**
PAX *e*PcP **PcP 18 13 38.4 +1.0**
FYU Fort Yukon 49.82 30 *e*P **P 18 12 18.4 +1.6**
comp=Z,70nm,1.8s
BMRM Bremner River 50.37 37 *e*P **P 18 12 21.9 +0.7**
comp=Z,8.9nm,0.8s
DOT Dot Lake 50.41 34 *e*P **P 18 12 21.1 -0.3**
comp=Z,10nm,0.7s
DOT *e*PcP **PcP 18 13 40.2 +0.7**
KOLN Koldanda 50.59 278 *e*P **P 18 12 23.7 +0.2**
comp=Z,3.6nm,0.6s
PYUN Piuthan 50.94 279 *e*P **P 18 12 26.3 +0.2**
comp=Z,44nm,1.0s
CRQM Cirque 51.11 37 *e*P **P 18 12 28.4 +1.6**
comp=Z,17nm,0.8s
TKM2 Tokmak 2 51.21 299 *e*P **P 18 12 27.7 -0.2**
TKM2 pmax pmax
comp=Z,4.0nm,0.8s
TKM2 Tokmak 2 51.21 299 *e*P **P 18 12 27.7 -0.2**
comp=Z,4.2nm,0.8s
BALM Baldy 51.46 37 *e*P **P 18 12 30.1 +0.7**
BALM pmax pmax
comp=Z,7.0nm,0.9s
BALM Baldy 51.46 37 *e*P **P 18 12 30.1 +0.7**
comp=Z,7.2nm,0.9s
EGAK Eagle 51.59 32 *e*P **P 18 12 30.5 +0.3**
comp=Z,19nm,1.9s
KSH Kashi 52.00 295 P P 18 12 38.5 +4.7
KSH *e*pP sP 18 12 48.8 +5.0
KSH PcS **PcS 18 17 46.8 +2.6**
KSH S **S 18 19 59.5 +3.6**
KSH ScS **ScS 18 22 21.5 -1.1**
KSH pmax pmax
comp=Z,7.0nm,1.0s
KSH pmax pmax
comp=Z,88nm,7.9s
KSH LR LR
comp=N,180nm,10.9s
KSH LR LR
comp=E,100nm,6.7s
KSH LR LR
comp=Z,230nm,6.3s
AAK Ala-Archa 52.07 299 *i*P **P 18 12 34.9 +0.6**
AAK pmax pmax
comp=Z,7.0nm,1.1s
BRVK Borovoye 52.10 313 *i*P **P 18 12 34.5 +0.4**
BRVK pmax pmax
comp=Z,18nm,2.5s
BRVK Borovoye 52.10 313 *e*P **P 18 12 34.6 +0.5**
comp=Z,7.1nm,0.9s
INK Inuvik 54.17 27 P **P 18 12 49.2 +0.1**
comp=Z,8.1nm,0.6s,baz=297,slow=6.7,SNR=36
INK Inuvik 54.17 27 *e*P **P 18 12 49.4 +0.2**
INK pmax pmax
comp=Z,8.0nm,0.7s
INK Inuvik 54.17 27 *e*P **P 18 12 49.4 +0.2**
comp=Z,8.4nm,0.7s
KKAR Karatay Array 54.69 301 *e*P **P 18 12 53.7 +0.3**
KKAR Karatay Array 54.69 301 *e*P **P 18 12 53.7 +0.3**
SVE Sverdlovsk 56.54 319 *e*P **P 18 13 07.1 +0.7**
SVE pmax pmax
comp=Z,27nm,0.9s
WRAB Tennant Creek 56.76 190 *c i*P **P 18 13 07.3 -1.0**
WRAB pmax pmax
comp=Z,33nm,0.8s
WRAB Tennant Creek 56.76 190 *e*P **P 18 13 07.0 -1.3**
comp=Z,15nm,0.8s
WR1 Warramunga Arr 56.77 190 *e*P **P 18 13 07.0 -1.4**
WRA Warramunga Arr 56.77 190 P **P 18 13 07.0 -1.4**
comp=Z,12nm,0.7s,baz=11,slow=7.2,SNR=79
ARU Arti 57.75 319 *d i*P **P 18 13 15.2 +0.2**
ARU 18 14 05.4
ARU 18 15 21.3
ARU S **S 18 21 15.0 +2.6**
ARU SS **SS 18 25 02.3 -0.1**
ARU pmax pmax
comp=Z,32nm,1.2s
ARU Arti 57.75 319 *e*P **P 18 13 14.9 -0.1**
comp=Z,22nm,0.9s
ABKAR Akbulak array 59.43 311 *e*P **P 18 13 26.6 -0.2**
AS31 Alice Springs 60.49 190 *e*P **P 18 13 33.4 -0.9**
ASAR Alice Springs 60.50 190 P **P 18 13 33.4 -0.9**
comp=Z,3.1nm,0.7s,baz=14,slow=16,SNR=56
RES Resolute Bay 62.73 15 P **P 18 13 49.0 +0.3**
comp=Z,12nm,0.9s,baz=308,slow=6.9,SNR=39
YKA Yellowknife Ar 63.51 30 P **P 18 13 54.0 -0.1**
comp=Z,2.1nm,0.8s,baz=299,slow=6.6,SNR=41
YKB5 Yellowknife Ar 63.51 30 *e*P **P 18 13 54.0 0.0**
ARA0 ARCESS Array S 65.02 340 *e*P **P 18 14 03.9 -0.1**
ARCES ARCESS Array B 65.02 340 P **P 18 14 03.9 -0.1**
comp=Z,3.2nm,0.8s,baz=57,slow=8.8,SNR=4.5
ARCES LR LR 18 45 31.5
comp=Z,27nm,18.1s,baz=25,slow=39
GEYT Alibeck 65.41 300 P **P 18 14 07.5 +0.4**
comp=Z,3.4nm,0.8s,baz=57,slow=5.5,SNR=9.1
STKA Stephens Creek 68.04 182 P **P 18 14 23.3 -0.3**
comp=Z,3.2nm,0.9s,baz=359,slow=10,SNR=6.8
VRH Novokhopyorsk 68.98 319 *e*P **P 18 14 28.5 -0.9**
VRH pmax pmax
comp=Z,10.0nm,0.8s
OBN Obninsk 69.42 324 *e*P **P 18 14 31.9 -0.1**
OBN *PP **sP 18 14 42.0 -0.2**
OBN *SP pP 18 14 46.0 +6.6
OBN *e* 18 14 55.3
OBN *e* 18 23 53.4
OBN pmax pmax
comp=Z,22nm,0.9s
OBN MLR MLR
comp=Z,88nm,17.0s
LPSR Galich'ya Gora 69.67 321 *e*P **P 18 14 33.7 +0.1**
LPSR pmax pmax
comp=Z,10.0nm,0.7s
FIA0 FINESS Array S 69.98 333 *e*P **P 18 14 35.8 +0.4**
FIA0 FINESS Array S 69.98 333 *e*P **P 18 14 35.8 +0.4**
FINES FINESS Array B 69.98 333 P **P 18 14 35.8 +0.4**
comp=Z,9.9nm,0.8s,baz=58,slow=7.2,SNR=28
FINES LR LR 18 46 55.8
comp=Z,59nm,18.4s,baz=16,slow=37
VSR Storozhevoye 70.32 320 *e*P **P 18 14 37.2 -0.4**
VSR pmax pmax
comp=Z,10.0nm,1.0s
GOF Gofitskoye 71.56 313 *e*P **P 18 14 46.1 +0.8**
VSU Vasula 71.67 330 *e*P **P 18 14 46.5 +0.8**
VSU pmax pmax
comp=Z,42nm,1.0s
NCK Nalchik 72.09 311 P **P 18 14 51.0 +2.4**
NCK pmax pmax
comp=Z,4.0nm,0.9s
ZEI Tsey 72.30 310 *e*P **P 18 14 49.0 -1.0**
ZEI pmax pmax
comp=Z,4.0nm,0.6s
KBZ Khabaz 72.39 312 P **P 18 14 51.1 +0.9**
comp=Z,4.4nm,1.0s,baz=65,slow=1.2,SNR=13
KBZ LR LR 18 49 07.7
comp=Z,49nm,18.8s,baz=18,slow=38
KIV Kislovodsk 72.39 312 *c i*P **P 18 14 51.7 +1.3**
KIV *e*PP **sP 18 15 01.0 +0.3**
KIV *e*SP **PcP 18 15 06.3 -2.0**
KIV *e* 18 15 08.6
KIV *e* 18 24 39.2
KIV pmax pmax
comp=Z,17nm,1.2s
KIV MLR MLR
comp=Z,50nm,16.0s
KIV Kislovodsk 72.39 312 *e*P **P 18 14 51.2 +0.8**
comp=Z,22nm,1.3s
NEY Neytrino 72.76 311 P **P 18 14 54.0 +1.2**
NEY pmax pmax
comp=Z,1.0nm,1.4s
LRM Limekiln Ridge 73.47 45 *e*P **P 18 14 57.3 +0.3**
FCC Fort Churchill 73.79 27 *e*P **P 18 14 58.0 -0.3**
FCC pmax pmax
comp=Z,18nm,1.5s
FCC Fort Churchill 73.79 27 *e*P **P 18 14 58.0 -0.3**
comp=Z,18nm,1.5s
BOZ Bozeman (W) 74.03 45 *e*P **P 18 15 00.5 +0.3**
BOZ pmax pmax
comp=Z,4.0nm,0.8s
BOZ Bozeman (W) 74.03 45 *e*P **P 18 15 00.5 +0.3**
comp=Z,3.9nm,0.8s
NV01 Mina Array Sit 74.09 54 *e*P **P 18 15 01.6 +0.8**
NVAR Mina Array Bea 74.09 54 P **P 18 15 01.6 +0.8**
comp=Z,3.8nm,0.8s,baz=284,slow=6.9,SNR=16
ANN Anapa 74.98 315 *e*P P 18 15 03.0 -2.4
ANN *e*PP sP 18 15 14.5 -1.2
ANN *e* 18 17 52.5
ANN *e*S **S 18 24 38.3 -3.4**
ANN *e*SS **SS 18 29 30.6 +1.1**
ANN pmax pmax
comp=Z,14nm,1.1s
NB2 NORSAR Subarra 75.25 338 P **P 18 15 07.2 +0.4**
comp=Z,15nm,0.8s,baz=38,slow=5.9
NB2 NORSAR Subarra 75.25 338 P **P 18 15 07.2 +0.4**
baz=38,slow=5.9
NB200 NORSAR Array S 75.25 338 *e*P **P 18 15 07.2 +0.4**
NOA NORSAR Array B 75.25 338 P **P 18 15 07.2 +0.4**
comp=Z,14nm,0.8s,baz=38,slow=5.7,SNR=46
NOA LR LR 18 52 03.3
comp=Z,42nm,18.3s,baz=290,slow=39
H17A Grant Village 75.38 45 *e*P **P 18 15 10.4 +2.3**
comp=Z,6.4nm,0.9s
AKASG Malin Array Be 75.63 323 P **P 18 15 09.2 0.0**
comp=Z,6.7nm,0.7s,baz=45,slow=6.1,SNR=45
AKASG LR LR 18 52 14.3
comp=Z,59nm,18.4s,baz=340,slow=39
AKASG Malin Array Be 75.63 323 *i*P **P 18 15 09.1 0.0**
AKASG pmax pmax
comp=Z,6.0nm,0.6s
AKBB Malin Array Si 75.63 323 *e*P **P 18 15 09.2 +0.1**
AKBB Malin Array Si 75.63 323 *e*P **P 18 15 09.2 +0.1**
KIEV Kiev 75.64 323 *i*P **P 18 15 09.1 -0.1**
KIEV pmax pmax
comp=Z,10.0nm,0.8s
KIEV Kiev 75.64 323 *e*P **P 18 15 08.7 -0.4**
comp=Z,11nm,0.9s
MOOW Moose Ponds 75.67 46 *e*P **P 18 15 10.2 +0.5**
comp=Z,9.3nm,1.8s
R11A Troy Canyon, C 75.89 53 *e*P **P 18 15 11.3 +0.2**
comp=Z,4.1nm,1.0s
WSHM Spangler Hills 76.23 56 *e*P **P 18 15 13.2 +0.3**
HWUT Hardware Ranch 76.47 48 *e*P **P 18 15 15.1 +0.8**
comp=Z,5.7nm,1.1s
DUG Dugway, Tooele 76.56 50 *e*P **P 18 15 15.2 +0.4**
DUG pmax pmax
comp=Z,5.0nm,0.9s
DUG Dugway, Tooele 76.56 50 *e*P **P 18 15 15.2 +0.4**
comp=Z,5.3nm,0.9s
PSUT Pine Spring 76.89 52 *e*P **P 18 15 16.9 +0.2**
comp=Z,5.6nm,1.1s
PD31 Pinedale Array 76.95 46 *e*P **P 18 15 17.1 -0.1**
PDAR Pinedale Array 76.95 46 P **P 18 15 17.1 -0.1**
comp=Z,0.9nm,0.5s,baz=275,slow=2.1,SNR=11
TMUT Trail Mountain 78.08 50 *e*P **P 18 15 24.1 +0.6**
comp=Z,24nm,1.0s
LCMT Little Creek M 78.18 53 *e*P **P 18 15 25.0 +1.0**
comp=Z,12nm,1.0s
MTPU Mount Pierson 78.24 51 *e*P **P 18 15 25.1 +0.6**
comp=Z,4.4nm,1.0s
KWP Kalwaria Pacla 79.43 325 *e*P **P 18 15 31.8 +1.4**
PV10 Paradox Valley 79.98 50 *e*P **P 18 15 34.7 +0.8**
KOLS Kolonicke sedl 80.13 325 *e*P **P 18 15 34.6 +0.4**
PV05 Paradox Valley 80.13 50 *e*P **P 18 15 35.4 +0.7**
Y14A Wickenburg 80.19 55 *e*P **P 18 15 35.2 +0.3**
comp=Z,72nm,0.6s
N23A Red Feather La 80.23 46 *e*P **P 18 15 35.9 +0.6**
comp=Z,10nm,0.8s
STHS Stebnicka Huta 80.25 326 *e*P **P 18 15 36.0 +1.1**
OJC Ojcow 80.31 327 *e*P **P 18 15 36.1 +1.0**
OJC Ojcow 80.31 327 *e*P **P 18 15 33.7 -1.5**

OJC					pmax	pmax		
	comp=Z,9.0nm,0.9s							
OJC	**Ojcow**	**80.31**	**327**	*eP*	**P**		**18 15 33.6**	**-1.5**
	comp=Z,8.7nm,0.9s							
BR101	**Keskin Array S**	**80.33**	**313**	*eP*	**P**		**18 15 36.5**	**+0.8**
BR101				*e*PP	**PP**		**18 18 39.1**	**+1.2**
BRTR	**Keskin Array B**	**80.33**	**313**	P	**P**		**18 15 36.5**	**+0.8**
	comp=Z,1.7nm,0.8s,baz=112,slow=3.3,SNR=12							
BRTR				PP	**PP**		**18 18 39.1**	**+1.1**
	comp=Z,0.3nm,0.5s,baz=146,slow=6.9,SNR=4.0							
BRTR				LR	LR		18 56 25.0	
	comp=Z,27nm,18.2s,baz=62,slow=40							
PV01	**Paradox Valley**	**80.42**	**49**	*eP*	**P**		**18 15 36.5**	**+0.2**
NIE	**Niedzica**	**80.68**	**326**	*eP*	**P**		**18 15 38.4**	**+1.2**
DPC	**Dobruska-Polom**	**81.70**	**329**	*eP*	**P**		**18 15 43.8**	**+1.2**
DPC	**Dobruska-Polom**	**81.70**	**329**	*eP*	**P**		**18 15 43.8**	**+1.2**
VYHS	**Vyhne**	**82.01**	**326**	*eP*	**P**		**18 15 45.3**	**+1.1**
CLL	**Collm**	**82.30**	**331**	*i* P	**P**		**18 15 45.4**	**-0.2**
	comp=Z,10.0nm,1.4s							
CLL				*e*			18 15 57.0	
CLL				*e*			18 16 07.0	
CLL				*e*PP	**PP**		**18 18 52.0**	**-1.6**
CLL	**Collm**	**82.30**	**331**	*i* P	**P**		**18 15 45.4**	**-0.2**
CLL				*e*			18 15 57.0	
CLL				pmax	pmax			
	comp=Z,10.0nm,1.4s							
CLL	**Collm**	**82.30**	**331**	*eP*	**P**		**18 15 45.1**	**-0.5**
	comp=Z,10nm,1.2s							
ANMO	**Albuquerque**	**83.77**	**51**	*eP*	**P**		**18 15 54.5**	**+0.7**
ANMO				pmax	pmax			
	comp=Z,4.0nm,1.0s							
ANMO	**Albuquerque**	**83.77**	**51**	*eP*	**P**		**18 15 54.5**	**+0.7**
	comp=Z,4.1nm,1.0s							
KHC	**Kasperske Hory**	**83.78**	**329**	*eP*	**P**		**18 15 54.1**	**+0.7**
KHC	**Kasperske Hory**	**83.78**	**329**	*eP*	**P**		**18 15 54.1**	**+0.7**
LTX	**Lajitas**	**89.24**	**53**	*eP*	**P**		**18 16 20.8**	**+0.2**
LTX	**Lajitas**	**89.24**	**53**	*eP*	**P**		**18 16 20.8**	**+0.2**
TXAR	**Lajitas Array**	**89.24**	**53**	P	**P**		**18 16 20.8**	**+0.1**
	comp=Z,1.3nm,0.6s,baz=306,slow=3.1,SNR=15							
ESDC	**Sonseca Array**	**98.42**	**335**	LR	LR		19 05 59.9	
	comp=Z,32nm,18.7s,baz=350,slow=38							
TOA1	**Torodi Ar. Sit**	**118.76**	**316**	*e*PP	PP		18 23 28.5	-1.9
TORD	**Torodi Ar. Bea**	**118.77**	**316**	PP	PP		18 23 28.5	-2.0
	comp=Z,0.6nm,1.1s,baz=16,slow=7.5,SNR=4.1							
LPAZ	**La Paz**	**145.63**	**62**	PKPbc	**PKPdf**		**18 23 03.8**	**0.0**
	comp=Z,5.2nm,0.7s,baz=328,slow=2.8,SNR=22							

NIED ***26*** *18:06:00,36.˚50N×143.˚20E,h5km,Mw4.0 Best double couple: M₀1.02000×10¹⁵ NP1:φ₀40.00000°, δ31.00000°, λ-79.00000°. NP2:φ₀208.00000°, δ59.00000°, λ-97.00000°.*

IDC ***26*** *18:06:23.9±0.6,36.˚40N×143.˚35E,h0km,mb4.1/17, mb1 4.3/20,mb1mx4.1/47,mbtmp4.1/20,ML3.5/3,Error ellipse: s-maj=17.8km s-min=15.2km az=128.0*

ISCJB ***26*** *18:06:26.2±0.3,36.˚38N±0.˚04×143.˚19E±0.˚03,h29km, mb4.7/55,Error ellipse: s-maj=5.1km s-min=3.1km az=169.7*

JMA ***26*** *18:06:27.7±0.3,36.˚54N×143.˚18E,h45km,M4.1*

NEIC ***26*** *18:06:29.0±0.8,36.˚35N×143.˚25E,h36km±8km,mb4.8/36, Error ellipse: s-maj=6.3km s-min=5.0km az=144.0*

ISC 26 18:06:28.1±0.5,36˚42N±0.˚05×143˚19E±0.˚06,h29km,n111,
σ0s98/111,mb4.7/55,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**2.04**	**290**	P	**Pn**	**18 07 00.2**	**-0.3**
ONAJ				S	**Sn**	**18 07 23.7**	**-1.3**
JFK	**Kawauchi**	**2.08**	**298**	P	**Pn**	**18 07 00.2**	**-0.9**
JFK				S	**Sn**	**18 07 24.7**	**-1.4**
JHO	**Hitachi**	**2.12**	**276**	P	**Pn**	**18 07 01.1**	**-0.5**
JHO				S	**Sn**	**18 07 25.3**	**-1.7**
JFT	**Otama**	**2.54**	**297**	P	**Pn**	**18 07 07.9**	**+0.6**
JFT				S	**Sn**	**18 07 37.1**	**-0.1**
JMK	**Ichinoseki**	**2.98**	**329**	P	**Pn**	**18 07 11.8**	**-1.5**
JAG	**Ashikaga**	**3.01**	**271**	P	**Pn**	**18 07 14.1**	**+0.2**
JYK	**Kaneyama**	**3.36**	**319**	S	**Sn**	**18 07 56.7**	**-0.8**
JOM	**Ohasama**	**3.40**	**334**	P	**Pn**	**18 07 18.7**	**-0.5**
JRY	**Ryogami san**	**3.49**	**265**	P	**Pn**	**18 07 20.6**	**+0.2**
JOD2	**Odawara 2**	**3.52**	**252**	S	**Sn**	**18 08 01.0**	**-0.7**
JYN	**Shimob**	**3.88**	**258**	P	**Pn**	**18 07 26.8**	**+1.0**
MJAR	**Matsushiro Arr**	**4.02**	**273**	Pn	**Pn**	**18 07 28.8**	**+1.1**
	4.3nm,0.3s,baz=42,slow=25,SNR=6.9						
MAJO	**Matsushiro**	**4.02**	**273**	*e*Pn	**Pn**	**18 07 29.1**	**+1.5**
MAJO				*e*Sn	**Sn**	**18 08 11.9**	**-1.9**
MAT	**Matsushiro**	**4.02**	**273**	P	**Pn**	**18 07 28.5**	**+0.8**
MAT				S	**Sn**	**18 08 14.2**	**+0.4**
MAT	**Matsushiro**	**4.02**	**273**	P	**Pn**	**18 07 29.3**	**+1.6**
JANG	**Nango**	**4.17**	**342**	P	**Pn**	**18 07 28.6**	**-1.1**
JANG				S	Sn	18 08 11.4	-6.0
JSD	**Sado**	**4.25**	**294**	P	**Pn**	**18 07 31.1**	**+0.2**
JHJ2	**Mitsune**	**4.31**	**221**	*e*Pn	**Pn**	**18 07 31.9**	**+0.3**
JHJ2				*e*Sn	Sn	18 08 14.8	-6.1
JHJ	**Hachijo jima 2**	**4.32**	**221**	Pn	**Pn**	**18 07 32.0**	**+0.1**
	20nm,0.3s,baz=344,slow=17,SNR=6.0						
JHJ				Sn	**Sn**	**18 08 19.4**	**-1.8**
	59nm,0.3s,baz=58,slow=23,SNR=5.8						
INU	**Inuyama**	**5.12**	**260**	*e*Pn	**Pn**	**18 07 41.8**	**-1.1**
ERM	**Erimo**	**5.59**	**360**	*e*Pn	Pn	18 07 45.5	-3.8
ERM				*e*Sn	Sn	18 08 43.3	-9.2
ASAJ	**Asahikawa**	**7.71**	**357**	Pn	**Pn**	**18 08 15.4**	**-2.9**
	3.1nm,0.3s,baz=203,slow=16,SNR=10						
ASAJ	**Asahikawa**	**7.71**	**357**	*e*Pn	**Pn**	**18 08 15.1**	**-3.2**
CBIJ	**Chichi jima**	**9.33**	**186**	*e*Pn	Pn	18 08 36.7	-4.0
CBIJ				*e*Sn	Sn	18 10 08.7	-16
YSS	**Yuzh-Sakhalins**	**10.54**	**358**	*e*Pn	Pn	18 08 53.2	-3.8
JNU	**Nakatsue**	**10.65**	**256**	*e*Pn	**Pn**	**18 08 56.4**	**-2.3**
JNU				*e*Sn	Sn	18 10 38.5	-18
KSRS	**Korea Array**	**12.26**	**279**	Pn	Pn	18 09 23.8	+3.1
	0.1nm,0.3s,baz=76,slow=13,SNR=3.9						
KS15	**Wonju Array Si**	**12.29**	**279**	*e*Pn	Pn	18 09 23.8	+2.7
KSAR	**Wonju Array Be**	**12.29**	**279**	Pn	Pn	18 09 23.8	+2.7
KLR	**Kul'dur**	**15.29**	**330**	*e*Sn	Sn	18 12 37.4	-13
YOJ	**Yonaguni jima**	**21.04**	**241**	*e*P	**P**	**18 11 09.3**	**-0.4**
	93nm,1.1s						
BJT	**Baijiatuan**	**21.50**	**288**	*e*P	**P**	**18 11 14.2**	**-0.3**
YAK	**Yakutsk**	**27.00**	**346**	P	**P**	**18 12 06.6**	**-0.5**
	13nm,0.4s,baz=221,slow=0.6,SNR=4.6						
YAK	**Yakutsk**	**27.00**	**346**	*e*P	**P**	**18 12 06.6**	**-0.5**
	19nm,0.4s						
SEY	**Seymchan**	**27.15**	**9**	P	**P**	**18 12 08.8**	**+0.3**
	0.5nm,0.3s,baz=191,slow=17,SNR=4.1						
ULN	**Ulaanbaatar**	**28.88**	**305**	*e*P	**P**	**18 12 23.1**	**-1.2**
	5.4nm,1.2s						
SONA0	**Songino Array**	**29.31**	**304**	*e*P	**P**	**18 12 29.6**	**+1.5**
SONM	**Songino Array**	**29.31**	**304**	P	**P**	**18 12 29.6**	**+1.5**
	2.2nm,1.0s,baz=106,slow=11,SNR=4.3						
MIDW	**Midway**	**34.13**	**92**	*e*P	**P**	**18 13 10.9**	**+0.4**
	215nm,1.3s						
BILL	**Bilibino**	**34.23**	**15**	*e*P	**P**	**18 13 10.3**	**-0.6**
	3.2nm,0.9s						
ZAA1	**Zalesovo Array**	**43.38**	**313**	*e*P	**P**	**18 14 28.8**	**+1.1**
ZAA1				*e*PP	**PcP**	**18 16 16.1**	**+0.3**
ZALV	**Zalesovo Beam**	**43.38**	**313**	P	**P**	**18 14 28.8**	**+1.1**
	1.9nm,0.7s,baz=97,slow=6.8,SNR=4.2						
ZALV				PcP	**PcP**	**18 16 16.1**	**+0.3**
	0.9nm,0.6s,baz=103,slow=4.6,SNR=3.5						
MK32	**Makanchi Array**	**45.65**	**303**	*e*P	**P**	**18 14 47.1**	**+1.1**
MKAR	**Makanchi Array**	**45.65**	**303**	P	**P**	**18 14 47.1**	**+1.1**
	0.5nm,0.7s,baz=90,slow=8.7,SNR=3.4						
MKAR	**Makanchi Array**	**45.65**	**303**	*e*P	**P**	**18 14 46.7**	**+0.7**
PMG	**Port Moresby**	**45.73**	**175**	*e*P	**P**	**18 14 44.6**	**-2.2**
	36nm,1.3s						
MAKZ	**Makanchi**	**45.86**	**303**	*e*P	**P**	**18 14 48.6**	**+1.0**
	6.4nm,1.6s						
OHAK	**Old Harbor**	**46.24**	**42**	*e*P	**P**	**18 14 50.0**	**-0.4**
	50nm,1.6s						
KDAK	**Kodiak Island**	**46.61**	**42**	*e*P	**P**	**18 14 53.0**	**-0.2**
	82nm,1.8s						
SPU	**Mount Spurr**	**46.87**	**37**	*e*P	**P**	**18 14 56.0**	**+0.7**
CAST	**Castle Rocks**	**46.94**	**34**	*e*P	**P**	**18 14 56.9**	**+1.1**
	5.0nm,0.7s						
KURK	**Kurchatov**	**47.43**	**309**	*e*P	**P**	**18 15 00.0**	**+0.2**
	6.5nm,0.9s						
KTH	**Kantishna Hill**	**47.47**	**34**	*e*P	**P**	**18 14 58.0**	**-2.0**
	112nm,0.4s						
KURBB	**Kurchatov Arra**	**47.50**	**309**	P	**P**	**18 15 00.5**	**+0.2**
	3.6nm,0.6s,baz=83,slow=7.8,SNR=9.8						
MLY	**Manley**	**47.62**	**32**	*e*P	**P**	**18 15 02.0**	**+0.8**
	6.8nm,0.4s						
TRF	**Thorofare Moun**	**47.75**	**34**	*e*P	**P**	**18 15 01.6**	**-0.7**
	10nm,0.7s						
RC01	**Rabbit Creek A**	**47.99**	**37**	*e*P	**P**	**18 15 03.3**	**-0.7**
	13nm,1.3s						
COLD	**Coldfoot**	**48.00**	**29**	*e*P	**P**	**18 15 04.7**	**+0.7**
	11nm,1.9s						
BWN	**Browne**	**48.13**	**33**	*e*P	**P**	**18 15 05.2**	**+0.1**
	13nm,0.4s						
MCK	**McKinley**	**48.36**	**33**	*e*P	**P**	**18 15 06.9**	**0.0**
	15nm,1.7s						
RND	**Reindeer**	**48.39**	**34**	*e*P	**P**	**18 15 07.5**	**+0.4**
	6.9nm,0.6s						
SML	**Sawmill**	**48.65**	**36**	*e*P	**P**	**18 15 09.8**	**+0.6**
	21nm,1.6s						
MDM	**Murphy Dome**	**48.68**	**32**	*e*P	**P**	**18 15 10.3**	**+1.0**
	5.2nm,0.7s						
WRH	**Wood River Hil**	**48.74**	**32**	*e*P	**P**	**18 15 09.8**	**+0.1**
	8.4nm,1.5s						
SCM	**Sheep Creek Mo**	**49.12**	**36**	*e*P	**P**	**18 15 13.0**	**+0.2**
	58nm,2.0s						
HDA	**Harding Lake**	**49.23**	**33**	*e*P	**P**	**18 15 13.2**	**-0.3**
	8.7nm,0.4s						
ILAR	**Eielson Array**	**49.26**	**32**	P	**P**	**18 15 13.3**	**-0.4**
	1.8nm,0.7s,baz=258,slow=6.3,SNR=12						
ILB	**Eielson Array**	**49.26**	**32**	*e*P	**P**	**18 15 13.3**	**-0.4**
KLU	**Klutina**	**49.81**	**36**	*e*P	**P**	**18 15 18.8**	**+0.7**
	20nm,1.9s						
DIV	**Divide**	**49.91**	**37**	*e*P	**P**	**18 15 19.8**	**+1.0**
	13nm,1.4s						
FYU	**Fort Yukon**	**49.93**	**30**	*e*P	**P**	**18 15 20.1**	**+1.3**
	30nm,2.0s						
PAX	**Paxson**	**49.93**	**34**	*e*P	**P**	**18 15 19.3**	**+0.3**
	7.9nm,1.6s						
EYAK	**Cordova Ski Ar**	**49.97**	**38**	*e*P	**P**	**18 15 20.1**	**+1.0**
	19nm,1.3s						
BMRM	**Bremner River**	**50.49**	**37**	*e*P	**P**	**18 15 24.0**	**+0.9**
	9.7nm,1.3s						
RAGM	**Ragged Mountai**	**50.51**	**38**	*e*P	**P**	**18 15 24.3**	**+1.0**
	28nm,1.4s						
DOT	**Dot Lake**	**50.53**	**34**	*e*P	**P**	**18 15 23.0**	**-0.4**
	35nm,1.9s						
MENT	**Mentasta**	**50.73**	**34**	*e*P	**P**	**18 15 24.3**	**-0.7**
	62nm,0.2s						
TKM2	**Tokmak 2**	**51.18**	**299**	*e*P	**P**	**18 15 29.1**	**+0.3**
	1.8nm,0.6s						
BALM	**Baldy**	**51.58**	**37**	*e*P	**P**	**18 15 31.8**	**+0.4**
	19nm,1.7s						
INK	**Inuvik**	**54.29**	**27**	P	**P**	**18 15 51.3**	**+0.2**
	2.9nm,0.5s,baz=290,slow=7.2,SNR=8.9						
INK	**Inuvik**	**54.29**	**27**	*e*P	**P**	**18 15 50.8**	**-0.3**
	3.2nm,0.7s						
KKAR	**Karatay Array**	**54.67**	**301**	*e*P	**P**	**18 15 54.8**	**+0.4**
WRAB	**Tennant Creek**	**56.66**	**190**	*e*P	**P**	**18 16 08.1**	**-0.6**
	5.8nm,0.7s						
WR1	**Warramunga Arr**	**56.67**	**190**	*e*P	**P**	**18 16 08.8**	**0.0**
WRA	**Warramunga Arr**	**56.67**	**190**	P	**P**	**18 16 08.8**	**0.0**
	5.2nm,0.9s,baz=7.7,slow=7.4,SNR=13						
ARU	**Arti**	**57.77**	**319**	*e*P	**P**	**18 16 16.6**	**+0.5**
	6.7nm,1.0s						
ABKAR	**Akbulak array**	**59.43**	**311**	*e*P	**P**	**18 16 28.4**	**+0.5**
AS31	**Alice Springs**	**60.40**	**190**	*e*P	**P**	**18 16 34.9**	**+0.1**
ASAR	**Alice Springs**	**60.40**	**190**	P	**P**	**18 16 34.9**	**+0.1**
	2.5nm,0.8s,baz=2.7,slow=6.8,SNR=10						
RES	**Resolute Bay**	**62.84**	**15**	P	**P**	**18 16 50.5**	**-0.1**
	3.4nm,0.9s,baz=331,slow=7.3,SNR=7.3						
RES	**Resolute Bay**	**62.84**	**15**	*e*P	**P**	**18 16 50.3**	**-0.3**
	3.7nm,0.9s						
YKA	**Yellowknife Ar**	**63.62**	**30**	P	**P**	**18 16 55.7**	**-0.2**
	0.5nm,0.7s,baz=301,slow=6.7,SNR=6.1						
YKB5	**Yellowknife Ar**	**63.62**	**30**	*e*P	**P**	**18 16 55.7**	**-0.3**
NEWO	**Newport DOGAMI**	**67.29**	**51**	*e*P	P	18 17 16.2	-3.8
FIA0	**FINESS Array S**	**70.02**	**333**	*e*P	**P**	**18 17 37.4**	**+0.7**
FINES	**FINESS Array B**	**70.02**	**333**	P	**P**	**18 17 37.4**	**+0.7**
	2.7nm,0.8s,baz=28,slow=4.5,SNR=5.7						
NV01	**Mina Array Sit**	**74.21**	**54**	*e*P	**P**	**18 18 02.9**	**+0.4**
NVAR	**Mina Array Bea**	**74.21**	**54**	P	**P**	**18 18 02.9**	**+0.4**
	1.3nm,0.8s,baz=292,slow=5.6,SNR=4.7						
NB2	**NORSAR Subarra**	**75.30**	**338**	P	**P**	**18 18 08.8**	**+0.6**
	comp=Z,2.2nm,0.6s,baz=38,slow=5.9						
NB200	**NORSAR Array S**	**75.30**	**338**	*e*P	**P**	**18 18 09.1**	**+0.9**
NOA	**NORSAR Array B**	**75.30**	**338**	P	**P**	**18 18 09.1**	**+0.9**
	comp=Z,4.1nm,0.8s,baz=38,slow=5.7,SNR=11						
AKASG	**Malin Array Be**	**75.65**	**323**	P	**P**	**18 18 11.0**	**+0.7**
	comp=Z,1.5nm,0.6s,baz=46,slow=6.1,SNR=8.9						
AKBB	**Malin Array Si**	**75.65**	**323**	*e*P	**P**	**18 18 11.0**	**+0.7**
PD31	**Pinedale Array**	**77.07**	**46**	*e*P	**P**	**18 18 19.0**	**+0.2**
PDAR	**Pinedale Array**	**77.07**	**46**	P	**P**	**18 18 19.0**	**+0.2**
	comp=Z,0.3nm,0.5s,baz=243,slow=1.0,SNR=3.2						
N16A	**Rees Ranch, Co**	**77.10**	**49**	*e*P	**P**	**18 18 17.2**	**-1.8**
PV05	**Paradox Valley**	**80.25**	**50**	*e*P	P	18 18 31.9	-4.5
LTX	**Lajitas**	**89.36**	**53**	*e*P	**P**	**18 19 21.8**	**-0.4**
TXAR	**Lajitas Array**	**89.36**	**53**	P	**P**	**18 19 21.8**	**-0.4**
	comp=Z,0.4nm,0.6s,baz=307,slow=3.0,SNR=4.6						
HDIL	**Hopedale**	**89.51**	**37**	*e*P	**P**	**18 19 25.1**	**+2.6**
	comp=Z,132nm,0.9s						
LPAZ	**La Paz**	**145.74**	**62**	PKPbc	**PKPbc**	**18 26 05.0**	**-0.4**
	comp=Z,1.4nm,0.6s,baz=294,slow=2.8,SNR=5.9						

MAN 26 18:09:26,13.˚53N×120.˚10E,h32km,mb4.3,ML3.2,MS3.0, 1C,Mindoro

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PGP	**Puerto Galera**	**0.83**	**92**	⇑*e*P	Pn	18 09 41.6	0.0
PGP				*e*S	Sn	18 09 50.1	-2.6
SJMP	**San Jose**	**1.46**	**137**	*e*P	Pn	18 09 50.8	+0.7
SJMP				*e*S	Sn	18 10 08.6	+0.5
BUSP	**Coron**	**1.52**	**176**	*e*P	Pn	18 09 51.7	+0.7
BUSP				*e*S	Sn	18 10 10.3	+0.6
ENPP	**El Nido**	**2.40**	**196**	*e*P	Pn	18 10 04.1	+1.0
ENPP				*e*S	Sn	18 10 32.0	+0.6
CUYO	**Cuyo Island**	**2.81**	**161**	*e*P	Pn	18 10 09.4	+0.6

NIED ***26*** *18:10:00,36.˚50N×143.˚20E,h5km,Mw3.9 Best double couple: M₀8.03000×10¹⁴ NP1:φ₀50.00000°, δ35.00000°, λ-75.00000°. NP2:φ₀212.00000°, δ57.00000°, λ-100.00000°.*

IDC ***26*** *18:10:14.3±0.8,36.˚37N×143.˚43E,h0km,mb3.9/13, mb1 4.1/15,mb1mx3.9/45,mbtmp3.9/15,ML3.4/2,Error ellipse: s-maj=22.2km s-min=18.0km az=117.0*

NEIC ***26*** *18:10:15.7±0.3,36.˚38N×143.˚41E,h10km,mb4.6/17,Error ellipse: s-maj=8.7km s-min=6.3km az=129.0*

ISCJB ***26*** *18:10:17.6±0.3,36.˚43N±0.˚04×143.˚24E±0.˚04,h33km, mb4.3/30,Error ellipse: s-maj=6.1km s-min=4.6km az=172.8*

JMA ***26*** *18:10:18.4±0.2,36.˚51N×143.˚17E,h57km,M3.8*

ISC 26 18:10:19.6±0.6,36˚44N±0.˚06×143˚27E±0.˚07,h35km,n65,
σ1s18/66,mb4.4/30,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JFK	**Kawauchi**	**2.13**	**296**	P	**Pn**	**18 10 51.0**	**-1.7**
JFK				S	**Sn**	**18 11 14.8**	**-3.2**
JHO	**Hitachi**	**2.18**	**275**	P	**Pn**	**18 10 51.9**	**-1.5**
JFT	**Otama**	**2.58**	**295**	P	**Pn**	**18 10 57.9**	**-1.0**
JFT				S	**Sn**	**18 11 27.9**	**-1.2**
JMK	**Ichinoseki**	**2.98**	**328**	P	**Pn**	**18 11 02.6**	**-1.8**
JAG	**Ashikaga**	**3.08**	**271**	P	**Pn**	**18 11 04.9**	**-0.8**
JYK	**Kaneyama**	**3.38**	**318**	P	**Pn**	**18 11 09.1**	**-0.8**
JYK				*e*S	**Sn**	**18 11 46.9**	**-1.9**
JOM	**Ohasama**	**3.40**	**333**	P	**Pn**	**18 11 09.5**	**-0.7**
JRY	**Ryogami san**	**3.56**	**264**	P	**Pn**	**18 11 11.3**	**-1.4**
JYN	**Shimob**	**3.95**	**258**	P	**Pn**	**18 11 17.9**	**+0.2**
MJAR	**Matsushiro Arr**	**4.08**	**273**	Pn	**Pn**	**18 11 19.9**	**+0.4**
	1.6nm,0.3s,baz=84,slow=9.0,SNR=12						
MAJO	**Matsushiro**	**4.08**	**273**	*e*Pn	**Pn**	**18 11 20.1**	**+0.5**
MAT	**Matsushiro**	**4.08**	**273**	P	**Pn**	**18 11 19.9**	**+0.4**
MAT				S	**Sn**	**18 12 05.7**	**-0.4**
JHJ2	**Mitsune**	**4.37**	**222**	*e*Pn	**Pn**	**18 11 23.7**	**+0.2**
JHJ	**Hachijo jima 2**	**4.38**	**222**	Pn	**Pn**	**18 11 23.0**	**-0.7**
	6.8nm,0.3s,baz=84,slow=22,SNR=7.4						
JHJ				Sn	**Sn**	**18 12 10.2**	**-3.4**
	26nm,0.3s,baz=224,slow=23,SNR=6.4						
INU	**Inuyama**	**5.19**	**260**	*e*Pn	**Pn**	**18 11 34.9**	**+0.1**
ERM	**Erimo**	**5.56**	**359**	*e*Pn	Pn	18 11 36.5	-3.4
ASAJ	**Asahikawa**	**7.68**	**356**	Pn	Pn	18 12 05.8	-3.2
	1.3nm,0.3s,baz=194,slow=18,SNR=12						
CBIJ	**Chichi jima**	**9.37**	**186**	*e*Pn	Pn	18 12 27.6	-4.5
YSS	**Yuzh-Sakhalins**	**10.51**	**358**	*e*Pn	**Pn**	**18 12 47.0**	**-0.6**
YAK	**Yakutsk**	**26.99**	**346**	*e*P	**P**	**18 15 57.4**	**-0.4**
	6.0nm,1.0s						
ULN	**Ulaanbaatar**	**28.92**	**305**	*e*P	**P**	**18 16 18.5**	**+3.1**
	6.3nm,1.5s						
SONA0	**Songino Array**	**29.35**	**304**	*e*P	**P**	**18 16 20.7**	**+1.5**
SONM	**Songino Array**	**29.35**	**304**	P	**P**	**18 16 20.7**	**+1.5**
	0.4nm,0.7s,baz=112,slow=9.1,SNR=4.9						
UNV	**Unalaska Valle**	**38.55**	**47**	*e*P	**P**	**18 17 37.7**	**-0.9**
	31nm,1.3s						
ZAA1	**Zalesovo Array**	**43.41**	**313**	*e*P	**P**	**18 18 19.4**	**+0.7**
ZALV	**Zalesovo Beam**	**43.41**	**313**	P	**P**	**18 18 19.4**	**+0.7**
	0.4nm,0.3s,baz=99,slow=9.2,SNR=4.8						
MK32	**Makanchi Array**	**45.69**	**303**	*e*P	**P**	**18 18 37.8**	**+0.8**
MKAR	**Makanchi Array**	**45.69**	**303**	P	**P**	**18 18 37.8**	**+0.8**
	0.5nm,0.8s,baz=87,slow=8.2,SNR=4.3						
MLY	**Manley**	**47.56**	**32**	*e*P	**P**	**18 18 52.7**	**+1.3**
	10nm,1.8s						
BWN	**Browne**	**48.07**	**33**	*e*P	**P**	**18 18 57.5**	**+2.2**
	48nm,2.0s						
SML	**Sawmill**	**48.59**	**36**	*e*P	**P**	**18 19 00.2**	**+0.8**
	23nm,1.8s						
MDM	**Murphy Dome**	**48.62**	**32**	*e*P	**P**	**18 19 00.5**	**+1.0**
	3.6nm,0.8s						
WRH	**Wood River Hil**	**48.68**	**33**	*e*P	**P**	**18 19 00.4**	**+0.4**
	11nm,1.6s						
ILAR	**Eielson Array**	**49.20**	**32**	P	**P**	**18 19 04.3**	**+0.4**
	1.3nm,0.7s,baz=263,slow=6.5,SNR=15						
ILB	**Eielson Array**	**49.20**	**32**	*e*P	**P**	**18 19 04.3**	**+0.4**
KLU	**Klutina**	**49.75**	**36**	*e*P	**P**	**18 19 09.4**	**+1.1**
	10.0nm,1.5s						
DIV	**Divide**	**49.85**	**37**	*e*P	**P**	**18 19 10.1**	**+1.0**
	12nm,1.4s						
BALM	**Baldy**	**51.52**	**37**	*e*P	P	18 19 18.7	-2.9
	22nm,1.8s						
AAK	**Ala-Archa**	**52.08**	**299**	*e*P	**P**	**18 19 25.9**	**-0.3**
	9.9nm,1.9s						
INK	**Inuvik**	**54.23**	**27**	P	**P**	**18 19 42.6**	**+1.2**
	0.7nm,0.6s,baz=326,slow=9.9,SNR=5.4						
INK	**Inuvik**	**54.23**	**27**	*e*P	**P**	**18 19 42.3**	**+0.9**
	8.6nm,1.7s						
KKAR	**Karatay Array**	**54.71**	**301**	*e*P	**P**	**18 19 46.0**	**+0.7**
WR1	**Warramunga Arr**	**56.71**	**190**	*e*P	**P**	**18 19 58.8**	**-1.0**
WRA	**Warramunga Arr**	**56.71**	**190**	P	**P**	**18 19 58.8**	**-1.0**
	2.0nm,0.5s,baz=10,slow=7.4,SNR=4.9						
ARU	**Arti**	**57.78**	**319**	*e*P	**P**	**18 20 07.6**	**+0.6**
	6.4nm,1.2s						
XMIS	**Christmas Isla**	**58.58**	**225**	*e*P	**P**	**18 20 12.9**	**-0.2**
	36nm,0.9s						
ABKAR	**Akbulak array**	**59.45**	**311**	*e*P	**P**	**18 20 19.1**	**+0.3**
AS31	**Alice Springs**	**60.44**	**190**	*e*P	**P**	**18 20 25.9**	**+0.2**
ASAR	**Alice Springs**	**60.44**	**190**	P	**P**	**18 20 25.9**	**+0.2**
	1.4nm,0.9s,baz=16,slow=5.6,SNR=9.2						
RES	**Resolute Bay**	**62.80**	**15**	*e*P	**P**	**18 20 41.5**	**+0.5**
	4.4nm,1.1s						
YKA	**Yellowknife Ar**	**63.56**	**30**	P	**P**	**18 20 45.8**	**-0.4**
	0.3nm,0.7s,baz=299,slow=6.5,SNR=7.1						
YKB5	**Yellowknife Ar**	**63.56**	**30**	*e*P	**P**	**18 20 45.9**	**-0.4**
COCO	**West Island**	**65.21**	**231**	*e*P	**P**	**18 20 57.3**	**-0.3**
	202nm,0.6s						
FIA0	**FINESS Array S**	**70.02**	**333**	*e*P	**P**	**18 21 28.0**	**+0.6

TUC	**Tucson**	**3.58**	**84**	*e*Pn	**Pn**	**18 17 46.0**	**+0.5**
TUC				*e*Sg	**Sg**	**18 18 42.5**	**-2.8**
X16A	**Lo Mia Camp, P**	**3.83**	**50**	*e*Pn	**Pn**	**18 17 49.3**	**+0.3**
WSHM	**Spangler Hills**	**4.15**	**331**	*e*Pn	**Pn**	**18 17 56.3**	**+3.0**
WSHM				*e*Pg	**Pg**	**18 18 07.1**	**-2.7**
WSHM				*e*Sn	**Sn**	**18 18 40.3**	**-1.3**
GCAZ	**Grand Canyon**	**4.69**	**30**	*e*Pn	**Pb**	**18 18 14.7**	**+2.4**

NIED ***26*** *18:17:00, 37.˚50N× 141.˚30E, h29km, Mw3.8 Best double couple: M₀5.58000×10¹⁴ NP1:φs292.00000°, δ67.00000°, λ-165.00000°. NP2:φs196.00000°, δ76.00000°, λ-24.00000°.*

IDC ***26*** *18:17:55.2±0.9, 37.˚41N× 141.˚41E, h0km, mb3.5/7, mb1 3.7/10, mb1mx3.5/41, mbtmp3.6/10, ML3.7/3, MS2.9/1, Ms1 2.9/1, ms1mx2.3/40, Error ellipse: s-maj=29.4km s-min=17.7km az=107.0*

ISCJB ***26*** *18:17:57.1±0.9, 37.˚43N±0.˚03× 141.˚45E±0.˚07, h27km±5km, mb3.5/7, Error ellipse: s-maj=9.2km s-min=5.6km az=11.7*

JMA ***26*** *18:17:58.9±0.1, 37.˚48N× 141.˚33E, h29km±1km, M4.0*

JMA Felt II J1.

ISC 26 18:17:56.7±3.7**, 37.˚44N**±0.˚04×**141.˚38E**±0.˚07**, h10**km±24**km, n27,** σ0**99/26, mb3.5/7, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JFK	**Kawauchi**	**0.41**	**260**	P	**Pn**	**18 18 07.3**	**-1.3**
JFK				S	**Sb**	**18 18 12.8**	**+0.5**
ONAJ	**Iwakimizuishiy**	**0.57**	**234**	P	**Pn**	**18 18 09.9**	**-1.0**
ONAJ				S	**Sb**	**18 18 17.6**	**+0.6**
JMM	**Marumori**	**0.63**	**313**	P	**Pb**	**18 18 10.1**	**+0.3**
JFT	**Otama**	**0.83**	**276**	P	**Pn**	**18 18 14.0**	**-0.5**
JIO	**Ouri**	**1.01**	**359**	P	**Pb**	**18 18 16.1**	**-0.2**
JIO				S	**Sb**	**18 18 28.4**	**-1.3**
JHO	**Hitachi**	**1.05**	**218**	P	**Pb**	**18 18 16.7**	**-0.2**
JOU	**Okura**	**1.09**	**329**	P	**Pn**	**18 18 17.7**	**-0.2**
JOU				S	**Sb**	**18 18 31.4**	**-0.4**
JYS	**Shirataka**	**1.30**	**307**	P	**Pb**	**18 18 21.1**	**-0.1**
JYS				S	**Sb**	**18 18 37.5**	**-0.5**
JFY	**Yanaizu**	**1.33**	**269**	P	**Pb**	**18 18 21.7**	**-0.1**
JFY				*e*S	**Sb**	**18 18 38.3**	**-0.6**
MJAR	**Matsushiro Arr**	**2.69**	**252**	Pn	**Pn**	**18 18 41.6**	**+1.6**
	27nm,0.3s,baz=81,slow=17,SNR=102						
JHJ	**Hachijo jima 2**	**4.50**	**197**	Pn	**Pn**	**18 19 06.0**	**+1.1**
	16nm,0.3s,baz=124,slow=24,SNR=16						
JHJ				Sn	**Sn**	**18 19 55.6**	**-1.7**
	44nm,0.3s,baz=62,slow=23,SNR=9.4						
ASAJ	**Asahikawa**	**6.73**	**7**	Pn	**Pn**	**18 19 36.0**	**+0.5**
	1.0nm,0.3s,baz=214,slow=11,SNR=14						
USRK	**Ussuriysk Ar.**	**9.81**	**316**	Pn	Pn	18 20 23.9	+6.3
	0.1nm,0.3s,baz=124,slow=40,SNR=2.7						
KSRS	**Korea Array**	**10.70**	**274**	LR	LR	18 24 12.9	
	comp=Z,54nm,18.1s,baz=345,slow=35						
H11N2	**WAKE ISLAND Hy**	**28.38**	**121**	T	T	18 54 00.3	
	baz=314,slow=75,SNR=92						
H11N1	**WAKE ISLAND Hy**	**28.39**	**121**	T	T	18 53 55.8	
	baz=314,slow=75,SNR=96						
H11N3	**WAKE ISLAND Hy**	**28.40**	**121**	T	T	18 53 60.0	
	baz=314,slow=75,SNR=116						
H11S1	**WAKE ISLAND Hy**	**29.10**	**123**	T	T	18 54 51.4	
	baz=316,slow=76,SNR=94						
H11S3	**WAKE ISLAND Hy**	**29.10**	**123**	T	T	18 54 49.7	
	baz=316,slow=76,SNR=83						
H11S2	**WAKE ISLAND Hy**	**29.12**	**123**	T	T	18 54 52.6	
	baz=316,slow=76,SNR=77						
MKAR	**Makanchi Array**	**43.88**	**302**	P	**P**	**18 26 02.6**	**-0.6**
	0.5nm,0.6s,baz=89,slow=10,SNR=6.0						
ILAR	**Eielson Array**	**49.17**	**33**	P	**P**	**18 26 43.9**	**-0.4**
	0.2nm,0.5s,baz=264,slow=6.8,SNR=2.8						
WRA	**Warramunga Arr**	**57.46**	**188**	P	**P**	**18 27 44.7**	**-1.1**
	0.6nm,0.8s,baz=5.2,slow=6.8,SNR=6.1						
ASAR	**Alice Springs**	**61.19**	**188**	P	**P**	**18 28 11.5**	**0.0**
	0.2nm,0.5s,baz=3.0,slow=5.7,SNR=5.0						
YKA	**Yellowknife Ar**	**63.47**	**30**	P	**P**	**18 28 27.9**	**+1.6**
	0.1nm,0.6s,baz=302,slow=7.1,SNR=3.1						
FINES	**FINESS Array B**	**68.44**	**332**	P	**P**	**18 29 00.4**	**+2.0**
	2.2nm,1.0s,baz=139,slow=28,SNR=3.7						
AKASG	**Malin Array Be**	**73.96**	**322**	P	**P**	**18 29 31.2**	**-0.7**
	0.2nm,0.3s,baz=46,slow=6.3,SNR=3.0						

ISCJB ***26*** *18:30:36.8±0.5, 2.˚02S±0.˚05× 79.˚3W±0.˚1, h100km, mb3.8/12, Error ellipse: s-maj=14.7km s-min=6.3km az=172.7*

IDC ***26*** *18:30:40.0±2.6, 2.˚09S× 79.˚20W, h127km±30km, mb3.5/11, mb1 3.7/15, mb1mx3.6/31, mbtmp3.9/15, Error ellipse: s-maj=27.9km s-min=14.7km az=50.0*

ISC 26 18:30:38.3±0.8**, 2.˚06S**±0.˚06×**79.˚2W**±0.˚1**, h100**km**, n21,** σ1**9/49/16, mb3.7/12, Near coast of Ecuador**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
OTAV	**Otavalo**	**2.39**	**17**	*e*P	**Pn**	**18 31 16.5**	**0.0**
CMBC	**Cumbal**	**3.27**	**24**	*e*P	**Pn**	**18 31 28.4**	**+0.3**
CRUC	**La Cruz**	**4.23**	**32**	*e*P	Pn	18 31 45.7	+4.7
ATAH	**Atahualpa**	**5.10**	**171**	P	**Pn**	**18 31 53.5**	**+0.8**
	2.6nm,0.3s,baz=19,slow=8.5,SNR=22						
ATAH				S	**Sn**	**18 32 51.8**	**+1.2**
	3.9nm,0.3s,baz=288,slow=5.3,SNR=4.1						
RUSC	**La Rusia**	**9.97**	**38**	*e*P	**Pn**	**18 32 58.8**	**-0.3**
NNA	**Nana**	**10.13**	**167**	P	**Pn**	**18 33 02.9**	**+2.1**
	2.6nm,0.3s,baz=246,slow=3.3,SNR=2.8						
NNA				S	**Sn**	**18 34 48.6**	**-4.0**
	1.9nm,0.3s,baz=150,slow=18,SNR=2.6						
LPAZ	**La Paz**	**17.83**	**143**	P	**P**	**18 34 41.0**	**+0.9**
	0.2nm,0.3s,baz=342,slow=11,SNR=3.7						
PTGA	**Pitinga**	**19.24**	**86**	P	**P**	**18 34 54.2**	**-0.7**
	0.6nm,0.3s,baz=227,slow=12,SNR=4.1						
SIV	**San Ignacio**	**22.58**	**129**	P	**P**	**18 35 31.7**	**+1.2**
	1.1nm,0.4s,baz=320,slow=15,SNR=2.9						
SJG	**San Juan**	**23.80**	**32**	P	**P**	**18 35 42.3**	**+0.3**
	8.6nm,0.2s,baz=250,slow=8.8,SNR=3.1						
TEIG	**Tepich**	**23.88**	**338**	P	**P**	**18 35 43.4**	**+0.6**
	3.2nm,0.7s,baz=264,slow=23,SNR=3.1						
CMIG	**Matias Romero**	**24.55**	**321**	P	**P**	**18 35 49.8**	**+1.0**
	4.1nm,0.8s,baz=48,slow=12,SNR=3.4						
TXAR	**Lajitas Array**	**39.05**	**325**	P	**P**	**18 37 54.9**	**-0.7**
	0.4nm,0.7s,baz=170,slow=11,SNR=3.6						
PLCA	**Paso Flores**	**39.28**	**170**	P	**P**	**18 37 56.5**	**-0.9**
	1.8nm,0.8s,baz=9.6,slow=12,SNR=3.1						
PDAR	**Pinedale Array**	**52.36**	**332**	P	**P**	**18 39 39.6**	**-0.8**
	0.5nm,0.7s,baz=124,slow=8.1,SNR=3.1						
ULM	**Lac du Bonnet**	**54.05**	**347**	P	P	18 39 49.9	-2.4
	3.0nm,0.7s,baz=150,slow=5.6,SNR=3.4						
SCHQ	**Schefferville**	**57.61**	**8**	P	P	18 40 14.0	-3.7
	4.4nm,0.6s,baz=208,slow=18,SNR=2.5						
YKA	**Yellowknife Ar**	**69.73**	**343**	P	P	18 41 35.0	-2.2
	0.5nm,0.6s,baz=138,slow=5.8,SNR=14						
TORD	**Torodi Ar. Bea**	**81.58**	**76**	P	P	18 42 44.5	-1.2
	0.4nm,0.7s,baz=285,slow=6.0,SNR=5.8						
ILAR	**Eielson Array**	**82.52**	**336**	P	P	18 42 47.8	-1.9
	0.5nm,0.8s,baz=113,slow=4.7,SNR=6.6						
WRA	**Warramunga Arr**	**140.52**	**235**	PKhKP	PKPpre	18 49 48.9	
	0.6nm,0.8s,baz=110,slow=2.9,SNR=4.8						

ISCJB ***26*** *18:39:24.8±0.8, 2.˚29N±0.˚04× 128.˚83E±0.˚04, h41km±8km, mb4.5/68, MS3.6/4, Error ellipse: s-maj=7.1km s-min=5.5km az=142.0*

DJA ***26*** *18:39:26.0±0.4, 2.˚N±4.˚× 12.˚9E±.˚, h10km, M4.5/13, mb4.8/13, mB5.0/4, MLv4.5/12, Mw(mB)4.3/4*

IDC ***26*** *18:39:27.5±2.4, 2.˚35N× 128.˚79E, h44km±23km, mb4.0/20, mb1 4.2/21, mb1mx4.1/40, mbtmp4.3/21, ML4.5/1, MS3.3/1, Ms1 3.3/1, ms1mx2.5/43, Error ellipse: s-maj=24.4km s-min=12.0km az=81.0*

NEIC ***26*** *18:39:28.0±0.9, 2.˚33N× 128.˚77E, h54km±9km, mb4.6/38, Error ellipse: s-maj=7.4km s-min=5.4km az=70.0*

ISC 26 18:39:26.6±1.0**, 2.˚27N**±0.˚05×**128.˚79E**±0.˚05**, h41**km±9**km, n134,** σ1**9/40/138, mb4.5/67, MS3.6/4, Halmahera**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
TNTI	**Ternate**	**2.05**	**224**	P	**Pn**	**18 39 58.8**	**+0.1**
TNTI				S	**Sn**	**18 40 21.9**	**-1.2**
TNTI	**Ternate**	**2.05**	**224**	*e*Pn	**Pn**	**18 39 58.9**	**+0.1**
LBMI	**Labuha**	**3.16**	**204**	P	**Pn**	**18 40 14.6**	**+0.7**
LBMI				S	**Sn**	**18 40 48.7**	**-1.7**
SGSI	**Sangihe**	**3.55**	**294**	P	**Pn**	**18 40 19.7**	**+0.5**
SWI	**Sorong**	**3.97**	**141**	P	**Pn**	**18 40 25.0**	**-0.1**
SWI				S	**Sn**	**18 41 07.8**	**-2.6**
SANI	**Sanana**	**5.12**	**213**	P	**Pn**	**18 40 43.4**	**+2.5**
MSAI	**Masohi**	**5.58**	**179**	P	Pn	18 40 39.3	-7.8
NLAI	**Namlea**	**5.72**	**197**	P	**Pn**	**18 40 47.6**	**-1.5**
	42nm,0.8s,0.1nm						
FAKI	**Fak Fak**	**6.21**	**146**	P	**Pn**	**18 40 55.8**	**0.0**
	35nm,0.9s,0.1nm						
FAKI	**Fak Fak**	**6.21**	**146**	*e*Pn	**Pn**	**18 40 56.0**	**+0.2**
FAKI				*e*Sn	**Sn**	**18 42 03.7**	**-1.8**
MRSI	**Marisa**	**7.07**	**256**	P	**Pn**	**18 41 09.9**	**+2.2**
	75nm,0.9s,0.2nm						
TTSI	**Tana Toraja**	**10.40**	**240**	P	Pn	18 41 49.8	-3.6
	86nm,0.8s,811nm						
MYLDM	**Lahad Datu**	**10.66**	**286**	*e*Pn	**Pn**	**18 41 59.5**	**+2.6**
SPSI	**Sidrap Palu**	**10.93**	**236**	P	**Pn**	**18 42 02.0**	**+1.4**
	51nm,0.6s,468nm						
KAPI	**Kappang**	**11.57**	**231**	P	**Pn**	**18 42 12.1**	**+2.8**
	2.8nm,0.3s,baz=87,slow=1.4,SNR=19						
KAPI				S	**Sn**	**18 44 12.6**	**-4.6**
	0.1nm,0.3s,baz=277,slow=22,SNR=1.8						
KKM	**Kota Kinabalu**	**13.09**	**287**	*e*Pn	**Pn**	**18 42 30.6**	**+0.5**
MTN	**Manton Dam**	**15.19**	**171**	*e*Pn	**Pn**	**18 42 56.7**	**-1.8**
	44nm,1.5s						
PLAI	**Plampang**	**15.55**	**225**	P	**P**	**18 43 09.3**	**+2.3**
TWSI	**Taliwang, Sumb**	**16.14**	**227**	P	**P**	**18 43 16.5**	**+3.1**
SBUM	**Sibu**	**16.55**	**271**	*e*Pn	**P**	**18 43 19.2**	**+1.2**
	16nm,0.9s						
STKI	**Sintang**	**17.44**	**263**	P	**Pn**	**18 43 22.9**	**-4.2**
JAGI	**Jajag, Banyuwa**	**18.07**	**234**	*e*P	**P**	**18 43 36.8**	**+1.9**
	28nm,0.9s						
KSM	**Kuching**	**18.48**	**268**	*e*P	**P**	**18 43 38.9**	**-0.5**
	16nm,0.9s						
GMJI	**Gunmukmas**	**18.54**	**235**	P	Pn	18 43 46.2	+5.7
NGJI	**Ngawi**	**19.76**	**241**	P	**Pn**	**18 43 59.5**	**+4.4**
PWJI	**Pagerwojo**	**19.78**	**239**	P	**Pn**	**18 43 54.5**	**-0.9**
PCJI	**Pacitan**	**20.41**	**239**	P	Pn	18 44 05.9	+3.2
WOJI	**Wonogiri, Jawa**	**20.45**	**240**	P	Pn	18 44 09.6	+6.3
FITZ	**Fitzroy Crossi**	**20.48**	**189**	P	**P**	**18 44 02.2**	**+1.1**
	7.6nm,1.0s,baz=27,slow=7.1,SNR=11						
FITZ	**Fitzroy Crossi**	**20.48**	**189**	*e*P	**P**	**18 44 02.0**	**+0.9**
	5.2nm,0.8s						
UGM	**Wanagama**	**20.84**	**241**	*e*P	Pn	18 44 06.8	-1.0
	154nm,1.4s						
COEN	**Coen**	**21.52**	**139**	*e*P	**P**	**18 44 15.4**	**+3.0**
	32nm,1.4s						
YULB	**Yu-li**	**22.22**	**342**	*e*P	**P**	**18 44 17.8**	**-2.1**
	44nm,1.7s						
TPUB	**Ta-pu**	**22.36**	**340**	*e*P	**P**	**18 44 19.7**	**-1.6**
	11nm,0.8s						
SSLB	**Suanglung**	**22.70**	**341**	*e*P	**P**	**18 44 25.1**	**+0.1**
	8.2nm,0.8s						
WRAB	**Tennant Creek**	**22.73**	**166**	*e*P	**P**	**18 44 26.8**	**+1.4**
	14nm,0.8s						
WR1	**Warramunga Arr**	**22.73**	**166**	*e*P	**P**	**18 44 25.8**	**+0.4**
WRA	**Warramunga Arr**	**22.73**	**166**	P	**P**	**18 44 25.8**	**+0.4**
	5.4nm,0.6s,baz=343,slow=10,SNR=40						
NACB	**Ninganchiao**	**22.86**	**343**	*e*P	**P**	**18 44 26.2**	**-0.5**
	21nm,0.9s						
LEM	**Lembang**	**22.98**	**247**	P	P	18 44 34.5	+6.4
	19nm,0.6s,baz=347,slow=9.7,SNR=8.2						
CISI	**Cisompet, Garu**	**23.09**	**245**	*e*P	**P**	**18 44 27.9**	**-1.3**
	36nm,1.1s						
MBWA	**Marble Bar**	**24.91**	**200**	*e*P	**P**	**18 44 45.8**	**-0.2**
	51nm,1.9s						
MYKOM	**Kota Tinggi**	**24.93**	**269**	*e*P	**P**	**18 44 47.0**	**+0.8**
	17nm,1.0s						
AS31	**Alice Springs**	**26.25**	**169**	*e*P	**P**	**18 44 59.5**	**+1.3**
AS31				*e*ScP	**ScP**	**18 52 01.9**	**+0.9**
ASAR	**Alice Springs**	**26.25**	**169**	P	**P**	**18 44 59.5**	**+1.3**
	3.3nm,0.7s,baz=355,slow=8.3,SNR=64						
ASAR				ScP	**ScP**	**18 52 01.9**	**+0.9**
	0.3nm,0.5s,baz=345,slow=3.2,SNR=4.1						
XMIS	**Christmas Isla**	**26.28**	**241**	*e*P	**P**	**18 44 57.0**	**-1.6**
	36nm,0.9s						
CHBT	**CHBT**	**28.19**	**293**	P	P	18 45 19.8	+4.2
	14nm,1.2s						
SKNT	**Sakolnakorn**	**28.43**	**303**	P	**P**	**18 45 18.3**	**+0.5**
	14nm,0.9s						
SRAK	**Srakaew**	**28.89**	**295**	P	**P**	**18 45 23.6**	**+1.7**
	18nm,0.8s						
CHAI	**Chaiyaphum**	**29.67**	**299**	P	**P**	**18 45 30.1**	**+1.3**
	2.2nm,1.0s						
PSI	**Prapat**	**29.84**	**272**	*e*P	**P**	**18 45 30.5**	**0.0**
	6.3nm,1.1s						
PBKT	**Sadao Pong**	**30.83**	**299**	P	**P**	**18 45 40.3**	**+1.2**
	6.0nm,1.1s						
LOEI	**Loei**	**30.98**	**301**	P	**P**	**18 45 38.0**	**-2.4**
	62nm,1.2s						
GSI	**Gunungsitoli**	**31.21**	**269**	*e*P	**P**	**18 45 40.9**	**-1.6**
	11nm,0.7s						
NANT	**Nan**	**32.04**	**303**	P	P	18 45 55.8	+6.1
	1.6nm,0.7s						
ENH	**Enshi**	**33.33**	**329**	*e*P	**P**	**18 46 00.7**	**-0.2**
	7.8nm,0.9s						
CM31	**Chiang Mai Arr**	**33.38**	**301**	*e*P	**P**	**18 46 02.3**	**+0.8**
CM31				*e*PcP	**PcP**	**18 48 44.0**	**+1.3**
CMAR	**Chiang Mai Arr**	**33.38**	**301**	P	**P**	**18 46 02.3**	**+0.8**
	1.5nm,1.0s,baz=122,slow=7.7,SNR=13						
CMAR				PcP	**PcP**	**18 48 44.0**	**+1.3**
	0.8nm,0.8s,baz=154,slow=1.5,SNR=6.5						
CMMT	**Chiang Mai**	**33.53**	**301**	P	**P**	**18 46 03.5**	**+0.7**
	4.6nm,1.4s						
CHTO	**Chiang Mai**	**33.53**	**301**	P	**P**	**18 46 03.6**	**+0.8**
	20nm,1.4s						
CHTO	**Chiang Mai**	**33.53**	**301**	*e*P	**P**	**18 46 02.7**	**-0.1**
	3.7nm,0.9s						
INU	**Inuyama**	**33.79**	**12**	*e*P	**P**	**18 46 04.2**	**-0.6**
	24nm,1.2s						
KMI	**Kunming**	**33.86**	**314**	P	**P**	**18 46 08.0**	**+2.1**
KMI				pmax	pmax		
	comp=Z,5.0nm,0.6s						
KMI				pmax	pmax		
	comp=Z,71nm,7.7s						
CMAI	**Chiengmai2**	**33.95**	**303**	P	P	18 46 17.0	+10
KS15	**Wonju Array Si**	**35.02**	**359**	*e*P	**P**	**18 46 15.2**	**-0.2**
KSAR	**Wonju Array Be**	**35.02**	**359**	P	**P**	**18 46 15.2**	**-0.2**
KSRS	**Korea Array**	**35.03**	**359**	P	**P**	**18 46 15.2**	**-0.3**
	comp=Z,3.8nm,0.8s,baz=174,slow=10,SNR=15						
MJAR	**Matsushiro Arr**	**35.20**	**13**	P	**P**	**18 46 15.8**	**-1.3**
	comp=Z,4.3nm,0.8s,baz=186,slow=9.2,SNR=12						
MJAR				LR	LR	18 58 36.8	
	comp=Z,57nm,21.6s,baz=195,slow=33						
MAJO	**Matsushiro**	**35.20**	**13**	*e*P	**P**	**18 46 15.2**	**-1.9**
	comp=Z,12nm,1.1s						
STKA	**Stephens Creek**	**36.07**	**161**	P	**P**	**18 46 25.9**	**+1.4**
	comp=Z,4.1nm,0.5s,baz=336,slow=8.3,SNR=19						
XAN	**Xi'an**	**36.65**	**332**	P	P	18 46 35.3	+5.8
XAN				pP	pP	18 46 43.8	+3.0
XAN				pmax	pmax		
	comp=Z,12nm,0.9s						
CD2	**Chengdu**	**37.04**	**323**	P	**P**	**18 46 32.3**	**-0.5**
CD2				pmax	pmax		
	comp=Z,1.0nm,0.5s						
BJT	**Baijiatuao**	**39.29**	**345**	*e*P	**P**	**18 46 50.7**	**-0.9**
	comp=Z,14nm,0.4s						
BJI	**Beijing**	**39.31**	**345**	P	**P**	**18 46 51.5**	**-0.2**
BJI				pmax	pmax		
	comp=Z,13nm,1.5s						
BJI				pmax	pmax		
	comp=Z,97nm,4.0s						
H11S3	**WAKE ISLAND Hy**	**40.48**	**64**	T	T	19 30 12.2	
	baz=251,slow=75,SNR=105						
H11S2	**WAKE ISLAND Hy**	**40.49**	**64**	T	T	19 30 14.3	
	baz=251,slow=75,SNR=52						
H11S1	**WAKE ISLAND Hy**	**40.50**	**64**	T	T	19 30 13.4	
	baz=251,slow=75,SNR=56						
LZH	**Lanzhou**	**40.81**	**328**	*e*P	**P**	**18 47 05.8**	**+1.3**
LZH				pP	pP	18 47 14.0	-1.9
LZH				sP	sP	18 47 18.8	-1.9
LZH				pmax	pmax		
	comp=Z,19nm,1.0s						
LZH				pmax	pmax		
	comp=Z,90nm,4.7s						
H11N1	**WAKE ISLAND Hy**	**41.07**	**62**	T	T	19 30 59.9	
	baz=250,slow=75,SNR=46						
H11N2	**WAKE ISLAND Hy**	**41.08**	**62**	T	T	19 30 59.4	
	baz=250,slow=75,SNR=35						
H11N3	**WAKE ISLAND Hy**	**41.09**	**62**	T	T	19 30 59.8	
	baz=250,slow=75,SNR=29						
HHC	**Hu-ho-hao-te**	**41.44**	**340**	*e*P	**P**	**18 47 11.8**	**+2.2**
HHC				pP	pP	18 47 24.0	+3.0
HHC				sP	sP	18 47 29.3	+3.5
HHC				S	S	18 53 43.8	+22
HHC				pmax	pmax		
	comp=Z,26nm,1.0s						
HHC				pmax	pmax		
	comp=Z,79nm,8.5s						
HHC				LR	LR		
	comp=N,130nm,13.6s						
HHC				LR	LR		
	comp=E,240nm,13.6s						
HHC				LR	LR		
	comp=Z,100nm,14.8s						
USRK	**Ussuriysk Ar.**	**41.85**	**3**	P	**P**	**18 47 13.0**	**+0.3**
	comp=Z,3.9nm,0.8s,baz=186,slow=7.6,SNR=11						
LSA	**Lhasa**	**44.94**	**311**	*e*P	**P**	**18 47 38.7**	**+0.2**
	comp=Z,3.4nm,0.8s						
GTA	**Gaotai**	**45.41**	**328**	*e*P	**P**	**18 47 41.3**	**-0.3**
GTA				pP	pP	18 47 52.5	-0.6
GTA				sP	sP	18 47 56.8	-1.1
GTA				PcP	**PcP**	**18 49 21.5**	**+1.1**
GTA				S	**S**	**18 54 19.0**	**-1.2**
GTA				sS	sS	18 54 39.5	+0.1
GTA				SS	**ScS**	**18 57 34.0**	**-1.1**
GTA				pmax	pmax		
	comp=Z,4.0nm,1.3s						
GTA				pmax	pmax		
	comp=Z,120nm,7.1s						
GTA				LR	LR		
	comp=N,130nm,15.7s						
GTA				LR	LR		
	comp=E,120nm,15.7s						
GTA				LR	LR		
	comp=Z,120nm,16.2s						
GUN	**Gumba**	**48.24**	**306**	*e*P	**P**	**18 48 04.3**	**+0.1**
	comp=Z,18nm,0.6s						
PKIN	**Phulchoki**	**48.50**	**305**	*e*P	**P**	**18 48 06.2**	**+0.1**
	comp=Z,6.0nm,0.8s						
KKN	**Kakani**	**48.68**	**306**	*e*P	**P**	**18 48 07.4**	**0.0**
	comp=Z,7.4nm,0.6s						
DMN	**Daman**	**48.75**	**305**	*e*P	**P**	**18 48 07.9**	**-0.1**
	comp=Z,14nm,0.8s						
ULN	**Ulaanbaatar**	**49.15**	**341**	*e*P	**P**	**18 48 10.1**	**-0.5**
	comp=Z,10nm,0.9s						
GKN	**Gorkha**	**49.28**	**306**	*e*P	**P**	**18 48 11.6**	**-0.4**
	comp=Z,8.0nm,0.8s						
SONA0	**Songino Array**	**49.35**	**340**	*e*P	**P**	**18 48 12.2**	**+0.1**
SONA0				*e*PcP	**PcP**	**18 49 35.3**	**+1.0**
SONM	**Songino Array**	**49.35**	**340**	P	**P**	**18 48 12.2**	**+0.1**
	comp=Z,3.7nm,0.8s,baz=151,slow=8.6,SNR=28						
SONM				PcP	**PcP**	**18 49 35.3**	**+1.0**
	comp=Z,0.9nm,0.7s,baz=151,slow=3.3,SNR=3.0						
KOLN	**Koldanda**	**50.04**	**305**	*e*P	**P**	**18 48 18.0**	**+0.2**
	comp=Z,22nm,0.8s						
PYUN	**Piuthan**	**50.66**	**305**	*e*P	**P**	**18 48 22.8**	**+0.3**
	comp=Z,35nm,0.8s						
HYB	**Hyderabad**	**51.54**	**290**	*i* P	**P**	**18 48 29.0**	**-0.1**
TLY	**Talaya**	**53.56**	**341**	*e*P	**P**	**18 48 43.0**	**-0.5**
	comp=Z,5.2nm,1.4s						
WMQ	**Urumqi**	**55.10**	**325**	*e*P	**P**	**18 48 56.0**	**+1.2**
WMQ				pmax	pmax		
	comp=Z,3.0nm,0.6s						
WMQ				LR	LR		
	comp=N,21nm,15.0s						
WMQ				LR	LR		
	comp=E,12nm,16.2s						
WMQ				LR	LR		
	comp=Z,9.0nm,16.2s						
PETK	**Petropavlovsk-**	**56.04**	**21**	P	**P**	**18 49 02.5**	**+1.3**
	comp=Z,6.6nm,0.8s,baz=197,slow=1.5,SNR=5.4						
PEA1	**Petropavlovsk-**	**56.04**	**21**	*e*P	**P**	**18 49 02.5**	**+1.2**
YAK	**Yakutsk**	**59.62**	**0**	*e*P	**P**	**18 49 24.9**	**-1.3**
	comp=Z,14nm,0.8s						
MK32	**Makanchi Array**	**59.92**	**325**	*e*P	**P**	**18 49 28.8**	**+0.1**
MK32				*e*PcP	**PcP**	**18 50 14.5**	**-0.2**
MKAR	**Makanchi Array**	**59.92**	**325**	P	**P**	**18 49 28.8**	**+0.1**
	comp=Z,1.5nm,0.5s,baz=120,slow=8.8,SNR=5.5						
MKAR				PcP	**PcP**	**18 50 14.5**	**-0.2**
	comp=Z,3.0nm,0.7s,baz=135,slow=3.8,SNR=4.6						
MAKZ	**Makanchi**	**60.11**	**325**	*e*P	**P**	**18 49 28.6**	**-1.4**
	comp=Z,4.4nm,0.8s						
KSH	**Kashi**	**60.52**	**315**	*e*P	P	18 49 36.5	+3.4
KSH				*e*sP	sP	18 49 54.8	+5.1
KSH				*e*PcP	**PcP**	**18 50 19.8**	**+2.4**
KSH				*e*ScP	**ScP**	**18 54 16.3**	**+0.6**
KSH				PcS	**PcS**	**18 54 21.5**	**+1.5**
KSH				S	**S**	**18 57 48.8**	**+2.6**
KSH				pmax	pmax		
	comp=Z,78nm,4.8s						
KSH				LR	LR		
	comp=N,170nm,7.0s						
KSH				LR	LR		
	comp=E,110nm,5.7s						
KSH				LR	LR		
	comp=Z,210nm,5.7s						
ZALV	**Zalesovo Beam**	**62.82**	**333**	P	**P**	**18 49 47.0**	**-1.0**
	com

2.3nm,0.1s
ZHN eS Sg 18 47 37.6 -2.8
20nm,0.3s
KAPS Kapalarasan 4.51 312 *e*P Pb 18 46 46.4 +3.7
KAPS eS **Sg 18 47 46.2 -1.9**
KURS Kuram 4.51 286 *e*P **Pb 18 46 45.1 +2.3**
2.1nm,0.6s
KURS eS **Sg 18 47 44.6 -3.8**
5.5nm,0.9s
MK31 Makanchi Array 4.60 344 ⇑Pg **Pb 18 46 47.4 +3.2**
2.2nm,0.7s,baz=155,slow=16,SNR=18
MK31 ⇓Lg Lg 18 47 50.7
6.3nm,0.5s,baz=156,slow=28,SNR=15
ZSN Zaisan 5.06 2 *e*P **Pg 18 46 57.6 -2.8**
2.9nm,0.4s
ZSN eS **Sg 18 48 05.7 -0.3**
12nm,0.5s

*ISCJB **26** 18:50:52.1±0.8, 11°.1S±0°.1×33°.1E±0°.2, h10km, mb3.4/2, Error ellipse: s-maj=26.5km s-min=6.8km az=36.7*
*IDC **26** 18:50:52.1±1.5, 10°.92S×32°.89E, h0km, mb3.5/2, mb1 3.9/7, mb1mx3.5/45, mbtmp3.9/7, ML2.7/3, Error ellipse: s-maj=94.4km s-min=19.4km az=121.0*
ISC 26 18:50:53.9±1.0, 11°.1S±0°.2×32°.9E±0°.2, h10km, n8, σ1§61/10, Zambia

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
DODT	**Dodoma, Tanzan**	**5.58**	**30**	*i* P		Pb	18 52 25.0	-6.6
DODT				*i* S		**Sn**	**18 53 22.2**	**+0.5**
LSZ	**Lusaka**	**6.23**	**227**	Pn		**Pn**	**18 52 28.2**	**+2.1**
	2.6nm,0.3s,baz=38,slow=12,SNR=14							
LSZ				Sn		**Sn**	**18 53 35.2**	**-2.3**
	9.8nm,0.3s,baz=141,slow=17,SNR=3.6							
LSZ				Lg		Lg	18 54 07.7	
	7.6nm,0.3s,baz=317,slow=18,SNR=4.0							
KMBO	**Kilima Mbogo**	**10.76**	**24**	Pn		**Pn**	**18 53 28.4**	**-0.1**
	0.4nm,0.3s,baz=221,slow=19,SNR=1.3							
KMBO				Lg		Lg	18 56 27.1	
	0.4nm,0.3s,baz=264,slow=20,SNR=9.9							
LBTB	**Lobatse**	**15.53**	**206**	Pn		**Pn**	**18 54 33.1**	**0.0**
	0.3nm,0.3s,baz=38,slow=11,SNR=3.5							
TSUM	**Tsumeb**	**16.86**	**239**	Pn		**Pn**	**18 54 48.4**	**-1.9**
	0.2nm,0.3s,baz=255,slow=15,SNR=2.3							
TSUM				Sn		**Sn**	**18 57 59.6**	**+1.7**
	0.2nm,0.3s,baz=312,slow=11,SNR=2.8							
TSUM				Lg		Lg	18 59 51.1	
	0.1nm,0.3s,baz=323,slow=3.6,SNR=1.6							
BOSA	**Boshof**	**18.89**	**201**	Pn		**P**	**18 55 14.5**	**-0.2**
	1.0nm,0.3s,baz=18,slow=10,SNR=3.3							
SUR	**Sutherland**	**23.98**	**206**	P		**P**	**18 56 09.9**	**+1.0**
	1.9nm,1.2s,baz=69,slow=14,SNR=1.8							
MKAR	**Makanchi Array**	**72.50**	**33**	P		**P**	**19 02 20.1**	**-0.8**
	0.3nm,0.8s,baz=221,slow=4.8,SNR=3.2							

*IDC **26** 19:00:32.9±1.1, 4°.22S×123°.03E, h0km, mb3.7/5, mb1 3.8/8, mb1mx3.6/50, mbtmp3.7/8, ML3.2/2, MS3.7/2, Ms1 3.7/2, ms1mx2.8/39, Error ellipse: s-maj=40.2km s-min=18.1km az=63.0*
*ISCJB **26** 19:00:35.6±0.8, 4°.30S±0°.09×122°.87E±0°.08, h33km, mb3.8/5, MS4.6/1, Error ellipse: s-maj=13.3km s-min=10.8km az=14.8*
ISC 26 19:00:37.5±1.1, 4°.4S±0°.1×122°.9E±0°.1, h33km, n10, σ1§21/8, mb3.8/5, Sulawesi

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
KAPI	**Kappang**	**3.17**	**259**	Pn		**Pn**	**19 01 25.0**	**-0.1**
	3.5nm,0.3s,baz=57,slow=7.0,SNR=16							
KAPI				Sn		**Sn**	**19 02 01.3**	**-0.5**
	2.0nm,0.3s,baz=123,slow=23,SNR=3.6							
BATI	**Baumata**	**5.83**	**172**	Pn		Pn	19 02 04.5	+2.8
	baz=270,slow=20							
DAV	**Davao City (W)**	**11.70**	**13**	LR		LR	19 08 13.8	
	comp=Z,46nm,19.4s,baz=236,slow=40							
WRA	**Warramunga Arr**	**19.07**	**145**	P		**P**	**19 04 56.6**	**-0.8**
	0.1nm,0.3s,baz=312,slow=14,SNR=8.4							
ASAR	**Alice Springs**	**21.92**	**152**	P		**P**	**19 05 29.4**	**+1.1**
	2.1nm,1.0s,baz=327,slow=12,SNR=16							
CMAR	**Chiang Mai Arr**	**32.74**	**315**	P		**P**	**19 07 09.3**	**+1.8**
	0.9nm,0.9s,baz=139,slow=6.9,SNR=9.6							
DZM	**Mont Dzumac**	**45.69**	**117**	LR		LR	19 30 04.8	
	comp=Z,701nm,19.1s,baz=222,slow=39							
SONM	**Songino Array**	**53.99**	**346**	P		**P**	**19 09 57.6**	**-0.8**
	1.3nm,1.1s,baz=167,slow=7.9,SNR=6.8							
MKAR	**Makanchi Array**	**62.29**	**330**	P		**P**	**19 10 55.3**	**-1.1**
	0.7nm,0.8s,baz=132,slow=7.2,SNR=5.9							
ZALV	**Zalesovo Beam**	**66.25**	**337**	P		**P**	**19 11 21.9**	**-0.2**
	0.6nm,0.4s,baz=116,slow=6.8,SNR=5.0							

*ISCJB **26** 19:01:40.6±0.2, 24°.93S±0°.03×179°.68E±0°.05, h501km, mb4.4/73, Error ellipse: s-maj=6.6km s-min=3.7km az=20.5*
*NEIC **26** 19:01:41.7±0.6, 24°.98S×179°.68E, h508km±7km, mb4.7/59, Error ellipse: s-maj=8.6km s-min=5.5km az=115.0*
*IDC **26** 19:01:42.1±0.9, 24°.98S×179°.72E, h509km±9km, mb3.7/21, mb1 3.8/25, mb1mx3.7/52, mbtmp4.6/25, Error ellipse: s-maj=11.7km s-min=9.1km az=159.0*
ISC 26 19:01:41.0±0.3, 24°.92S±0°.05×179°.83E±0°.06, h501km, n174, σ1§30/192, mb4.5/73, 23C-11D, South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
RAO	**Raoul Island**	**4.75**	**156**	P		**P**	**19 03 08.5**	**+2.8**
	265nm,0.3s,baz=62,slow=23,SNR=8.1							
RAO				S		**S**	**19 04 16.4**	**+1.4**
	30nm,0.3s,baz=34,slow=23,SNR=1.8							
RAO	**Raoul Island**	**4.75**	**156**	*e*P		**P**	**19 03 08.3**	**+2.6**
MSVF	**Nonsavu**	**7.34**	**347**	*e*P		**P**	**19 03 31.7**	**+0.8**
OUZ	**Omahuta**	**11.59**	**206**	*e*P		**P**	**19 04 18.3**	**+3.3**
DZM	**Mont Dzumac**	**12.61**	**280**	P		**P**	**19 04 27.7**	**+1.6**
	3.0nm,0.3s,baz=72,slow=17,SNR=25							
URZ	**Urewera**	**13.49**	**189**	P		**P**	**19 04 34.2**	**-1.0**
	4.4nm,0.3s,baz=36,slow=2.9,SNR=23							
URZ				S		**S**	**19 06 57.4**	**-1.4**
	2.7nm,0.3s,baz=52,slow=19,SNR=13							
URZ	**Urewera**	**13.49**	**189**	*e*P		**P**	**19 04 35.7**	**+0.6**
URZ				*e*			19 06 58.0	
AFI	**Afiamalu**	**13.51**	**37**	P		**P**	**19 04 36.9**	**+1.1**
	14nm,0.3s,baz=127,slow=17,SNR=8.0							
AFI				S		**S**	**19 06 56.1**	**-3.7**
	4.1nm,0.3s,baz=188,slow=20,SNR=4.1							
AFI	**Afiamalu**	**13.51**	**37**	*e*P		**P**	**19 04 32.4**	**-3.3**
BKZ	**Black Stump Fm**	**14.48**	**190**	*e*P		**P**	**19 04 43.7**	**-1.9**
BKZ				*e*S		**S**	**19 07 15.5**	**-2.3**
BFZ	**Birch Farm**	**16.00**	**190**	*e*P		**P**	**19 04 59.7**	**-1.6**
	285nm,1.4s							
SNZO	**South Karori**	**16.89**	**193**	*e*P		**P**	**19 05 10.0**	**-0.6**
	261nm,1.3s							
THZ	**Tophouse**	**17.75**	**197**	*e*P		**P**	**19 05 17.8**	**-1.1**
	272nm,2.0s							
THZ				*e*S		**S**	**19 08 11.1**	**-5.7**
KHZ	**Kahutara**	**18.20**	**195**	*e*P		**P**	**19 05 22.3**	**-0.6**
	94nm,1.3s							
LTZ	**Lake Taylor**	**18.87**	**197**	*e*P		**P**	**19 05 28.3**	**-0.8**
	94nm,1.6s							
OXZ	**Oxford**	**19.44**	**197**	*e*P		**P**	**19 05 33.1**	**-1.2**
	34nm,0.5s							
OXZ				*e*S		**S**	**19 08 43.9**	**-0.2**
MQZ	**McQueen's Vall**	**19.64**	**196**	*e*P		**P**	**19 05 35.5**	**-0.5**
	221nm,2.0s							
RPZ	**Rata Peaks**	**20.07**	**199**	P		**P**	**19 05 39.8**	**-0.3**
	4.1nm,0.3s,baz=343,slow=2.6,SNR=12							
RPZ	**Rata Peaks**	**20.07**	**199**	*e*P		**P**	**19 05 40.0**	**0.0**
	158nm,1.8s							
FOZ	**Fox Glacier**	**20.30**	**201**	*e*P		**P**	**19 05 40.2**	**-1.8**
	198nm,1.8s							
LBZ	**Lake Benmore**	**20.94**	**200**	*e*P		**P**	**19 05 46.1**	**-1.8**
	145nm,1.8s							
ODZ	**Otahua Downs**	**21.41**	**198**	*e*P		**P**	**19 05 50.9**	**-1.2**
	60nm,1.7s							
WKZ	**Wanaka**	**21.71**	**201**	*e*P		**P**	**19 05 54.5**	**-0.4**
	146nm,1.7s							
MLZ	**Mavora Lakes**	**22.48**	**202**	*e*P		**P**	**19 06 02.1**	**+0.2**
	125nm,2.1s							
WHZ	**Wether Hill Ro**	**23.00**	**202**	*e*P		**P**	**19 06 06.3**	**-0.1**
	108nm,1.9s							
HNR	**Honiara**	**24.40**	**306**	P		**P**	**19 06 18.6**	**-0.8**
	40nm,0.4s,baz=110,slow=2.6,SNR=7.5							
HNR	**Honiara**	**24.40**	**306**	*e*P		**P**	**19 06 18.5**	**-0.8**
	71nm,0.9s							
CTA	**Charters Tower**	**31.34**	**272**	P		**P**	**19 07 20.7**	**+0.7**
	14nm,0.4s,baz=87,slow=9.1,SNR=42							
CTAO	**Charters Tower**	**31.34**	**272**	*e*P		**P**	**19 07 20.7**	**+0.7**
	20nm,0.8s							
TAU	**Tasmania Unive**	**32.13**	**228**	*e*P		**P**	**19 07 27.2**	**+0.8**
	21nm,1.4s							
STKA	**Stephens Creek**	**34.21**	**249**	P		**P**	**19 07 43.9**	**-0.4**
	0.8nm,0.3s,baz=105,slow=11,SNR=9.0							
PMG	**Port Moresby**	**34.69**	**291**	*e*P		**P**	**19 07 48.1**	**-0.3**
	22nm,1.1s							
XMAS	**Kiritimati**	**34.71**	**43**	*e*P		**P**	**19 07 49.7**	**+1.1**
	76nm,0.8s							
COEN	**Coen**	**36.14**	**281**	*e*P		**P**	**19 08 01.0**	**+0.5**
	81nm,1.9s							
ASAR	**Alice Springs**	**41.73**	**262**	P		**P**	**19 08 45.8**	**-0.1**
	2.0nm,0.3s,baz=94,slow=7.2,SNR=125							
ASAR				pP		**pP**	**19 10 18.2**	**+1.1**
	1.9nm,0.8s,baz=101,slow=8.4,SNR=5.1							
ASAR				ScP		**ScP**	**19 13 33.9**	**+0.8**
	1.0nm,0.8s,baz=120,slow=4.2,SNR=5.2							
ASAR				S		**S**	**19 14 23.4**	**-2.9**
	0.8nm,0.7s,baz=101,slow=13,SNR=6.0							
WRAB	**Tennant Creek**	**42.19**	**267**	*e*P		**P**	**19 08 48.9**	**-0.5**
	9.8nm,0.8s							
WRA	**Warramunga Arr**	**42.19**	**267**	P		**P**	**19 08 49.0**	**-0.5**
	7.1nm,0.5s,baz=99,slow=6.9,SNR=226							
WRA				ScP		**ScP**	**19 13 35.2**	**+0.1**
	3.2nm,0.8s,baz=102,slow=3.7,SNR=12							
WRA				S		**S**	**19 14 30.2**	**-3.0**
	3.2nm,0.9s,baz=102,slow=14,SNR=7.2							
JAY	**Jayapura**	**43.78**	**294**	P		**P**	**19 09 01.9**	**-0.2**
	1.2nm,0.5s,baz=44,slow=24,SNR=6.9							
FITZ	**Fitzroy Crossi**	**50.60**	**266**	P		**P**	**19 09 53.6**	**+0.2**
	4.6nm,0.6s,baz=128,slow=8.3,SNR=22							
FITZ	**Fitzroy Crossi**	**50.60**	**266**	*e*P		**P**	**19 09 53.2**	**-0.2**
	4.6nm,0.7s							
HPAH	**Hawaii Prepara**	**50.63**	**30**	*e*P		**P**	**19 09 53.7**	**+0.1**
	103nm,0.7s							
VNDA	**Vanda**	**53.35**	**185**	P		**P**	**19 10 13.3**	**+1.0**
	0.6nm,0.4s,baz=359,slow=9.1,SNR=5.6							
QSPA	**South Pole Qui**	**65.16**	**180**	*e*P		**P**	**19 11 33.0**	**+1.2**
MAW	**Mawson**	**76.74**	**201**	P		**P**	**19 12 40.1**	**+0.3**
	3.2nm,0.6s,baz=122,slow=5.7,SNR=6.4							
KSRS	**Korea Array**	**78.93**	**320**	P		**P**	**19 12 53.4**	**+1.3**
	0.9nm,0.7s,baz=134,slow=6.4,SNR=5.1							
PETK	**Petropavlovsk-**	**80.06**	**347**	P		**P**	**19 12 58.0**	**+0.3**
	4.8nm,0.6s,baz=114,slow=6.6,SNR=14							
NJ2	**Nanjing**	**81.21**	**311**	*e*P		**P**	**19 13 03.5**	**-0.7**
NJ2				pmax		pmax		
	comp=Z,11nm,0.8s							
USRK	**Ussuriysk Ar.**	**81.54**	**327**	P		**P**	**19 13 06.5**	**+0.9**
	comp=Z,1.4nm,0.6s,baz=177,slow=6.6,SNR=4.2							
SYO	**Syowa Base**	**81.98**	**193**	⇑*e*P		**P**	**19 13 05.4**	**-2.2**
SLBS	**Sierra La Lagu**	**83.44**	**60**	*e*P		**P**	**19 13 17.5**	**+1.7**
	comp=Z,13nm,0.8s							
CMB	**Columbia Colle**	**84.05**	**43**	*e*P		**P**	**19 13 18.9**	**+0.4**
	comp=Z,11nm,1.0s							
AFDM	**Forest Hills D**	**84.25**	**42**	*e*P		**P**	**19 13 20.9**	**+1.4**
	comp=Z,8.2nm,0.9s							
ORV	**Oroville**	**84.31**	**42**	*e*P		**P**	**19 13 20.7**	**+1.1**
	comp=Z,11nm,1.1s							
WDC	**Whiskeytown Da**	**84.34**	**40**	*e*P		**P**	**19 13 21.2**	**+1.5**
	comp=Z,13nm,1.1s							
CN2	**Changchun**	**84.62**	**324**	*e*P		**P**	**19 13 23.0**	**+1.9**
GSC	**Goldstone, Bar**	**84.73**	**47**	*e*P		**P**	**19 13 23.3**	**+1.3**
	comp=Z,11nm,1.0s							
GLA	**Glamis**	**84.80**	**50**	*e*P		**P**	**19 13 23.8**	**+1.5**
	comp=Z,20nm,0.9s							
WAKR	**Walker**	**84.93**	**43**	*e*P		**P**	**19 13 22.6**	**-0.4**
YBH	**Yreka Blue Hor**	**84.97**	**39**	P		**P**	**19 13 24.3**	**+1.3**
	comp=Z,3.4nm,0.8s,baz=236,slow=0.4,SNR=6.9							
KLR	**Kul'dur**	**85.34**	**331**	P		**P**	**19 13 25.3**	**+0.9**
	comp=Z,1.3nm,0.7s,baz=224,slow=1.0,SNR=7.1							
NVAR	**Mina Array Bea**	**85.59**	**44**	P		**P**	**19 13 27.3**	**+1.0**
	comp=Z,4.2nm,0.8s,baz=222,slow=8.5,SNR=19							
TPNV	**Topopah Spring**	**86.05**	**46**	*e*P		**P**	**19 13 29.3**	**+1.0**
	comp=Z,9.0nm,0.9s							
MOD	**Modoc Plateau**	**86.48**	**40**	*e*P		**P**	**19 13 31.3**	**+1.0**
	comp=Z,5.8nm,0.8s							
K05A	**Summer Lake**	**86.65**	**39**	*e*P		**P**	**19 13 32.6**	**+1.5**
	comp=Z,75nm,1.8s							
GYA	**Guiyang**	**87.13**	**301**	*e*P		**P**	**19 13 34.0**	**+0.3**
GYA				pP		pP	19 15 28.3	+3.6
GYA				sP		sP	19 16 20.5	+4.8
GYA				PP		**PP**	**19 17 09.5**	**+2.8**
GYA				SKS		**SKSac**	**19 23 10.8**	**-2.5**
GYA				S		**S**	**19 23 29.0**	**-2.1**
GYA				pmax		pmax		
	comp=Z,10.0nm,1.0s							
TUC	**Tucson**	**87.26**	**53**	*e*P		**P**	**19 13 36.4**	**+2.3**
	comp=Z,11nm,0.9s							
MA2	**Magadan**	**87.53**	**346**	P		**P**	**19 13 34.2**	**-0.4**
	comp=Z,3.1nm,0.6s,baz=177,slow=5.0,SNR=5.7							
319A	**Douglas**	**87.87**	**54**	*e*P		**P**	**19 13 39.0**	**+2.0**
	comp=Z,27nm,1.3s							
RSO	**Redoubt South**	**87.97**	**13**	*e*P		**P**	**19 13 35.9**	**-1.1**
LCMT	**Little Creek M**	**88.07**	**47**	*e*P		**P**	**19 13 39.1**	**+1.2**
	comp=Z,7.7nm,1.1s							
KNB	**Kanab**	**88.36**	**48**	*e*P		**P**	**19 13 40.4**	**+1.1**
	comp=Z,8.8nm,1.0s							
U15A	**North Rim**	**88.40**	**48**	*e*P		**P**	**19 13 41.2**	**+1.6**
	comp=Z,9.0nm,0.8s							
SPU	**Mount Spurr**	**88.77**	**13**	*e*P		**P**	**19 13 39.9**	**-0.6**
ELK	**Elko**	**88.86**	**44**	*e*P		**P**	**19 13 42.3**	**+0.7**
	comp=Z,7.7nm,1.3s							
MTPU	**Mount Pierson**	**89.34**	**47**	*e*P		**P**	**19 13 46.0**	**+2.0**
	comp=Z,11nm,0.9s							
KMI	**Kunming**	**89.60**	**298**	P		**P**	**19 13 47.8**	**+2.4**
KMI				pmax		pmax		
	comp=Z,4.0nm,0.6s							
KMI				pmax		pmax		
	comp=Z,55nm,5.0s							
TTA	**Tatalina**	**89.64**	**11**	*e*P		**P**	**19 13 44.6**	**+0.2**
	comp=Z,5.8nm,1.1s							
CMAR	**Chiang Mai Arr**	**89.73**	**290**	P		**P**	**19 13 47.5**	**+1.6**
	comp=Z,0.9nm,0.9s,baz=143,slow=3.7,SNR=8.8							
CMAR				PKKPbc		**PKKPbc**	**19 31 14.7**	**-0.9**
	comp=Z,0.5nm,0.7s,baz=282,slow=4.6,SNR=4.7							
MFID	**Camas Ranch**	**90.03**	**41**	*e*P		**P**	**19 13 47.9**	**+1.1**
	comp=Z,11nm,1.1s							
DUG	**Dugway, Tooele**	**90.10**	**45**	*e*P		**P**	**19 13 48.0**	**+0.8**
	comp=Z,8.5nm,1.3s							
SEY	**Seymchan**	**90.23**	**348**	P		**P**	**19 13 47.6**	**+0.6**
	comp=Z,5.0nm,0.7s,baz=139,slow=6.1,SNR=21							
TMUT	**Trail Mountain**	**90.66**	**46**	*e*P		**P**	**19 13 51.9**	**+1.9**
	comp=Z,16nm,0.7s							
F10A	**Beach Ranch, E**	**90.71**	**38**	*e*P		**P**	**19 13 50.2**	**+0.3**
	comp=Z,15nm,1.4s							
CAST	**Castle Rocks**	**90.80**	**12**	*e*P		**P**	**19 13 48.5**	**-1.2**
	comp=Z,4.4nm,1.0s							
HLID	**Hailey**	**90.96**	**42**	*e*P		**P**	**19 13 52.2**	**+1.0**
	comp=Z,3.7nm,0.9s							
HHC	**Hu-ho-hao-te**	**91.03**	**315**	*e*P		**P**	**19 13 54.0**	**+2.5**
HHC				pmax		pmax		
	comp=Z,26nm,0.8s							
HHC				pmax		pmax		
	comp=Z,100nm,7.8s							
TXAR	**Lajitas Array**	**91.10**	**58**	P		**P**	**19 13 53.7**	**+1.7**
	comp=Z,4.3nm,0.8s,baz=216,slow=5.9,SNR=21							
TRF	**Thorofare Moun**	**91.18**	**13**	*e*P		**P**	**19 13 51.1**	**-0.6**
	comp=Z,7.7nm,0.9s							
RND	**Reindeer**	**91.44**	**14**	*e*P		**P**	**19 13 52.0**	**-0.7**
	comp=Z,5.7nm,0.7s							
TCUT	**Toone Canyon**	**91.49**	**45**	*e*P		**P**	**19 13 55.1**	**+1.3**
	comp=Z,18nm,1.1s							
CD2	**Chengdu**	**91.51**	**303**	P		**P**	**19 13 53.8**	**-0.1**
CD2				pmax		pmax		
	comp=Z,3.0nm,0.5s							
ANMO	**Albuquerque**	**91.71**	**52**	P		**P**	**19 13 55.5**	**+0.6**
	comp=Z,3.0nm,0.8s,baz=202,slow=5.8,SNR=4.9							
WRH	**Wood River Hil**	**92.54**	**13**	*e*P		**P**	**19 13 56.8**	**-0.9**
	comp=Z,2.9nm,0.7s							
DOT	**Dot Lake**	**92.73**	**15**	*e*P		**P**	**19 13 58.4**	**-0.2**
	comp=Z,8.8nm,0.9s							
CCB	**Clear Creek Bu**	**92.75**	**13**	*e*P		**P**	**19 13 57.7**	**-1.0**
	comp=Z,5.5nm,1.2s							
S22A	**4UR Ranch, Cre**	**92.82**	**49**	*e*P		**P**	**19 13 59.4**	**-0.7**
	comp=Z,9.3nm,1.3s							
ILAR	**Eielson Array**	**93.06**	**14**	P		**P**	**19 13 59.5**	**-0.6**
	comp=Z,0.9nm,0.7s,baz=231,slow=4.7,SNR=9.8							
PDAR	**Pinedale Array**	**93.53**	**44**	P		**P**	**19 14 03.2**	**+0.2**
	comp=Z,0.5nm,0.7s,baz=217,slow=3.7,SNR=5.5							
YMR	**Madison River**	**93.65**	**42**	*e*P		**P**	**19 14 04.8**	**+1.2**
	comp=Z,3.6nm,0.6s							
SDCO	**Great Sand Dun**	**93.74**	**50**	*e*P		**P**	**19 14 04.3**	**0.0**
	comp=Z,2.3nm,0.9s							
BOZ	**Bozeman (W)**	**93.77**	**41**	*e*P		**P**	**19 14 04.1**	**+0.1**
	comp=Z,2.9nm,1.2s							
EGAK	**Eagle**	**94.38**	**16**	*e*P		**P**	**19 14 06.2**	**+0.1**
	comp=Z,3.6nm,0.6s							
JCT	**Junction City**	**94.61**	**59**	*e*P		**P**	**19 14 04.3**	**-3.8**
	comp=Z,22nm,0.6s							
MKAR	**Makanchi Array**	**112.73**	**312**	PKKPbc		PKKPbc	19 30 10.1	-0.4
	comp=Z,0.5nm,0.6s,baz=299,slow=1.4,SNR=8.1							
BVAR	**Borovoye Array**	**121.10**	**318**	PKP		**PKPdf**	**19 19 35.6**	**-0.5**
	comp=Z,2.3nm,0.4s,baz=124,slow=1.9,SNR=19							
FRB	**Frobisher Bay**	**121.61**	**29**	PKP		**PKPdf**	**19 19 35.8**	**-0.9**
	comp=Z,4.7nm,0.6s,baz=332,slow=4.4,SNR=5.7							
DAG	**Danmarks Havn**	**127.31**	**5**	*i* P		**PKPdf**	**19 19 46.4**	**-0.9**
ARU	**Arti**	**127.61**	**323**	*e*PKPdf		**PKPdf**	**19 19 48.3**	**-0.1**
GEYT	**Alibeck**	**129.34**	**300**	SKPbc		SKPbc	19 22 27.6	+0.6
	comp=Z,4.0nm,1.0s,baz=225,slow=1.9,SNR=5.1							
ARCES	**ARCESS Array B**	**132.85**	**348**	PKP		**PKPdf**	**19 19 57.0**	**-0.9**
	comp=Z,3.7nm,0.7s,baz=70,slow=1.4,SNR=16							
ARCES				SKPbc		**SKPbc**	**19 22 38.6**	**+0.2**
	comp=Z,4.9nm,0.9s,baz=355,slow=4.0,SNR=5.5							
FINES	**FINESS Array B**	**139.36**	**341**	PKhKP		PKPpre	19 20 00.6	
	comp=Z,0.6nm,0.3s,baz=47,slow=5.5,SNR=14							
FINES				SKPbc		**SKPbc**	**19 22 55.7**	**-2.5**
	comp=Z,2.8nm,0.7s,baz=20,slow=6.1,SNR=7.7							
NB2	**NORSAR Subarra**	**143.06**	**351**	PKP		PKPab	19 20 14.0	-0.4
	comp=Z,9.5nm,0.7s,baz=16,slow=3.2							
NOA	**NORSAR Array B**	**143.06**	**351**	PKP		PKPab	19 20 14.2	-0.1
	comp=Z,2.1nm,0.6s,baz=15,slow=4.9,SNR=26							
NACGM	**Naroch**	**144.05**	**334**	*e*		PKPbc	19 20 18.0	0.0
KONO	**Kongsberg**	**144.63**	**351**	*e*PKPdf		**PKPdf**	**19 20 19.2**	**-0.4**
AKASG	**Malin Array Be**	**145.74**	**326**	PKPbc		**PKPdf**	**19 20 22.6**	**+0.8**
	comp=Z,6.8nm,0.6s,baz=44,slow=4.3,SNR=34							
KIEV	**Kiev**	**145.75**	**326**	*e*PKPdf		**PKPbc**	**19 20 21.5**	**-0.3**
SUW	**Suwalki**	**146.13**	**335**	*e*PKP		**PKPbc**	**19 20 24.0**	**-0.3**
SORM	**Soroca**	**147.73**	**323**	⇓*i*P		**PKPbc**	**19 20 28.5**	**-0.3**
BSD	**Bornholm Skovb**	**147.85**	**344**	*i* P		**PKPbc**	**19 20 28.3**	**-0.5**
BRTR	**Keskin Array B**	**148.06**	**306**	PKPbc		**PKPbc**	**19 20 29.6**	**-0.5**
	comp=Z,2.6nm,0.6s,baz=136,slow=3.4,SNR=21							
ANTO	**Ankara**	**148.63**	**306**	*e*PKPbc		**PKPbc**	**19 20 31.5**	**+0.1**
TLCR		**149.09**	**318**	⇑*i*P		**PKPbc**	**19 20 32.3**	**+0.1**
PRAR	**RASCA**	**149.34**	**324**	⇓*i*P		**PKPbc**	**19 20 32.7**	**-0.1**
CSS	**Mathiatis**	**149.42**	**297**	*e*PKPbc		**PKPbc**	**19 20 33.1**	**-0.3**
CFR	**Carcaliu**	**149.50**	**319**	⇑*i*P		**PKPbc**	**19 20 33.5**	**+0.3**
KWP	**Kalwaria Pacla**	**149.58**	**330**	*e*PKP		**PKPbc**	**19 20 33.6**	**+0.2**
KWP	**Kalwaria Pacla**	**149.58**	**330**	⇑*i*P		**PKPbc**	**19 20 33.5**	**+0.2**
TESR	**Tescani**	**149.62**	**322**	⇑*i*P		**PKPbc**	**19 20 33.6**	**+0.1**
TIRR	**Tirgusor**	**149.71**	**317**	⇑*i*P		**PKPbc**	**19 20 33.3**	**-0.5**
TIRR	**Tirgusor**	**149.71**	**317**	*e*PKPbc		**PKPbc**	**19 20 33.2**	**-0.5**
BURAR	**Bucovina Array**	**149.72**	**325**	⇑*i*P		**PKPbc**	**19 20 33.5**	**-0.4**
HARR	**Harsova**	**149.88**	**318**	⇓*i*P		**PKPbc**	**19 20 34.7**	**+0.5**
VRI	**Vrincioaia**	**149.95**	**321**	⇓*i*P		**PKPbc**	**19 20 33.9**	**-0.4**
PLOR	**Plostina**	**150.00**	**321**	⇑*i*P		**PKPbc**	**19 20 34.0**	**-0.5**
KOLS	**Kolonicke sedl**	**150.28**	**329**	*e*PKP		**PKPbc**	**19 20 35.6**	**+0.6**
OJC	**Ojcow**	**150.38**	**334**	*e*PKP		**PKPbc**	**19 20 35.2**	**0.0**
OJC	**Ojcow**	**150.38**	**334**	*e*PKPbc		**PKPbc**	**19 20 35.0**	**-0.2**
STHS	**Stebnicka Huta**	**150.39**	**331**	*e*PKP		**PKPbc**	**19 20 35.9**

SHO					AMB	AMB	19 07 16.8	
	comp=N,20nm,0.2s							
SHO				*i* S		**Sn**	**19 08 26.2**	**-5.5**
SHO					A	A	19 08 35.6	
	comp=N,20nm,0.3s							
SHO	**Shikotan**	**6.69 246**	*d*	*i* PN		**Pn**	**19 07 14.5**	**-1.5**
SHO				pmax	pmax			
	comp=Z,43nm,0.9s							
SHO				pmax	pmax			
	comp=N,18nm,0.5s							
SHO				pmax	pmax			
	comp=E,28nm,0.6s							
YUK	**Yuzh-Kuril'sk**	**7.23 250**		*i* P		**Pn**	**19 07 24.2**	**+0.8**
YUK				AMB	AMB		19 07 24.7	
	comp=E,20nm,0.3s							
YUK				*e*S		**Sn**	**19 08 42.2**	**-2.7**
YUK	**Yuzh-Kuril'sk**	**7.23 250**	*d*	*i* PN		**Pn**	**19 07 24.1**	**+0.7**
YUK				pmax	pmax			
	comp=N,56nm,0.2s							
YUK				pmax	pmax			
	comp=E,20nm,0.2s							
YUK				pmax	pmax			
	comp=Z,190nm,0.2s							
UGL	**Uglegorsk**	**9.14 289**		*e*P		**Pn**	**19 07 50.0**	**+0.5**
TYV	**Tymovskoe**	**9.22 300**		*e*P		**Pn**	**19 07 50.9**	**+0.2**
JKA	**Kamikawa-asahi**	**9.34 257**		*e*P		**Pn**	**19 07 54.1**	**+1.7**
ASAJ	**Asahikawa**	**9.35 257**		Pn		**Pn**	**19 07 54.0**	**+1.7**
	comp=Z,0.4nm,0.3s,baz=72,slow=9.6,SNR=5.2							
USRK	**Ussuriysk Ar.**	**16.54 269**		Pn		**Pn**	**19 09 30.4**	**+0.9**
	comp=Z,0.1nm,0.3s,baz=75,slow=12,SNR=2.7							
KROS	**Kirovskiy**	**19.37 303**		*e*P		**Pn**	**19 10 07.0**	**+2.6**
KROS				AMB	AMB		19 10 11.9	
	comp=Z,9.0nm,0.5s							
KSRS	**Korea Array**	**22.28 255**		P		**P**	**19 10 34.5**	**-0.2**
	comp=Z,1.2nm,0.8s,baz=66,slow=11,SNR=4.2							
KSRS	**Korea Array**	**22.28 255**		*e*P		**P**	**19 10 37.7**	**+3.0**
KSRS	**Korea Array**	**22.28 255**		*e*P		**P**	**19 10 37.7**	**+3.0**
H11S1	**WAKE ISLAND Hy**	**29.83 158**		T		T	19 42 42.3	
	baz=345,slow=76,SNR=5.1							
H11S3	**WAKE ISLAND Hy**	**29.84 158**		T		T	19 42 39.6	
	baz=345,slow=76,SNR=6.6							
H11S2	**WAKE ISLAND Hy**	**29.85 158**		T		T	19 42 41.5	
	baz=345,slow=76,SNR=4.8							
MKAR	**Makanchi Array**	**48.20 298**		P		**P**	**19 14 18.9**	**+1.1**
	comp=Z,0.2nm,0.5s,baz=73,slow=8.9,SNR=4.3							
MKAR	**Makanchi Array**	**48.20 298**		*e*P		**P**	**19 14 13.3**	**-4.6**
MKAR	**Makanchi Array**	**48.20 298**		*e*P		**P**	**19 14 13.3**	**-4.6**
CMAR	**Chiang Mai Arr**	**53.87 258**		P		**P**	**19 14 59.4**	**-1.3**
	comp=Z,0.5nm,0.7s,baz=39,slow=5.9,SNR=3.0							
CMAR	**Chiang Mai Arr**	**53.87 258**		*e*P		**P**	**19 15 04.8**	**+4.0**
FINES	**FINESS Array B**	**64.53 336**		P		**P**	**19 16 15.9**	**+2.0**
	comp=Z,0.8nm,0.6s,baz=46,slow=8.2,SNR=5.8							
FINES	**FINESS Array B**	**64.53 336**		*e*P		**P**	**19 16 16.0**	**+2.0**
FINES	**FINESS Array B**	**64.53 336**		P		**P**	**19 16 16.0**	**+2.0**
FINES				pmax	pmax			
	comp=Z,1.0nm,0.6s							
WRA	**Warramunga Arr**	**69.17 201**		P		**P**	**19 16 41.5**	**-2.4**
	comp=Z,0.4nm,0.7s,baz=24,slow=6.8,SNR=3.2							
ASAR	**Alice Springs**	**72.85 200**		P		**P**	**19 17 05.7**	**-0.5**
	comp=Z,0.5nm,0.8s,baz=21,slow=6.1,SNR=4.4							
TXAR	**Lajitas Array**	**76.10 62**		P		**P**	**19 17 25.3**	**-0.1**
	comp=Z,0.5nm,0.6s,baz=297,slow=4.0,SNR=2.9							

NIED ***26*** *19:23:00,36.°80N×141.°30E,h8km,Mw3.6 Best double couple: M☉3.06000×10^14 NP1:φs219.00000°,δ19.00000°, λ-89.00000°. NP2:φs38.00000°,δ71.00000°,λ-90.00000°.*

IDC ***26*** *19:23:31.8±1.2,36.°85N×141.°41E,h0km,mb3.4/5, mb1 3.6/8,mb1mx3.4/57,mbtmp3.6/8,ML3.2/2,Error ellipse: s-maj=26.4km s-min=20.9km az=77.0*

ISCJB ***26*** *19:23:33.6±1.2,36.°82N±0.°04×141.°46E±0.°08,h27km±7km, mb3.3/5,Error ellipse: s-maj=10.5km s-min=7.3km az=7.7*

JMA ***26*** *19:23:35.2±0.2,36.°83N×141.°34E,h42km±1km,M3.6*

ISC 26 19:23:33.7±1.8,36.°83N±0.°05×141.°45E±0.°08,h15km±10km, n20,σ1§06/20,mb3.4/5,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time	Res
								h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.59**	**297**	P		**Pg**		**19 23 45.9**	**+0.7**
ONAJ				S		**Sg**		**19 23 53.4**	**+0.3**
JFK	**Kawauchi**	**0.70**	**319**	P		**Pg**		**19 23 47.6**	**+0.2**
JHO	**Hitachi**	**0.74**	**253**	P		**Pg**		**19 23 47.8**	**-0.3**
JHO				S		**Sg**		**19 23 57.1**	**-0.8**
JFT	**Otama**	**1.12**	**308**	P		**Pn**		**19 23 54.7**	**-0.2**
JMM	**Marumori**	**1.16**	**333**	P		**Pn**		**19 23 54.4**	**-0.9**
JMM				S		**Sb**		**19 24 08.5**	**-1.7**
MJAR	**Matsushiro Arr**	**2.62**	**265**	Pn		**Pn**		**19 24 16.1**	**+0.6**
	3.3nm,0.3s,baz=90,slow=14,SNR=23								
MJAR				Sn		**Sn**		**19 24 46.3**	**-0.8**
	6.1nm,0.3s,baz=98,slow=26,SNR=6.8								
MAT	**Matsushiro**	**2.62**	**265**	P		**Pn**		**19 24 16.4**	**+0.9**
MAT				S		**Sn**		**19 24 47.8**	**+0.7**
JHJ	**Hachijo jima 2**	**3.95**	**201**	Pn		**Pn**		**19 24 35.5**	**+1.8**
	6.7nm,0.3s,baz=53,slow=20,SNR=7.4								
JHJ				Sn		**Sn**		**19 25 19.0**	**-0.9**
	7.1nm,0.3s,baz=72,slow=20,SNR=3.2								
JCJ	**Chichijima**	**9.73**	**176**	Pn		**Pn**		**19 25 51.5**	**-1.6**
	baz=357,slow=19								
SONM	**Songino Array**	**27.92**	**304**	P		**P**		**19 29 24.1**	**+0.8**
	0.2nm,0.6s,baz=107,slow=9.2,SNR=2.5								
H11N2	**WAKE ISLAND Hy**	**28.02**	**121**	T		T		19 58 38.1	
	baz=313,slow=75,SNR=42								
H11N1	**WAKE ISLAND Hy**	**28.03**	**121**	T		T		19 58 38.7	
	baz=313,slow=75,SNR=46								
H11N3	**WAKE ISLAND Hy**	**28.04**	**121**	T		T		19 58 33.9	
	baz=313,slow=75,SNR=37								
H11S1	**WAKE ISLAND Hy**	**28.73**	**123**	T		T		19 59 31.5	
	baz=315,slow=76,SNR=16								
H11S3	**WAKE ISLAND Hy**	**28.73**	**123**	T		T		19 59 31.2	
	baz=315,slow=76,SNR=9.6								
H11S2	**WAKE ISLAND Hy**	**28.74**	**123**	T		T		19 59 33.7	
	baz=315,slow=76,SNR=12								
ZALV	**Zalesovo Beam**	**42.07**	**313**	P		**P**		**19 31 23.1**	**-1.5**
	0.4nm,0.5s,baz=91,slow=11,SNR=2.5								
MKAR	**Makanchi Array**	**44.25**	**302**	P		**P**		**19 31 42.6**	**+0.2**
	0.2nm,0.5s,baz=86,slow=11,SNR=3.6								
ILAR	**Eielson Array**	**49.65**	**32**	P		**P**		**19 32 25.5**	**+1.2**
	0.4nm,0.8s,baz=267,slow=7.1,SNR=4.4								
WRA	**Warramunga Arr**	**56.87**	**188**	P		**P**		**19 33 18.0**	**+0.2**
	0.6nm,0.9s,baz=5.1,slow=7.2,SNR=3.7								

ISCJB ***26*** *19:30:34.3±0.7,13.°5N±0.°1×143.°83E±0.°08,h50km, mb3.4/7,MS2.6/1,Error ellipse: s-maj=20.2km s-min=10.2km az=170.0*

IDC ***26*** *19:30:37.7±1.3,13.°45N×144.°13E,h70km±12km,mb3.1/7, mb1 3.5/7,mb1mx3.2/47,mbtmp3.4/7,MS2.8/1,Ms1 2.8/1, ms1mx2.4/14,Error ellipse: s-maj=28.0km s-min=20.4km az=126.0*

ISC 26 19:30:36.2±0.8,13.°5N±0.°2×143.°88E±0.°09,h50km,n10, σ1§47/10,mb3.4/7,South of Mariana Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time	Res
								h m s	ISC
GUMO	**Guam**	**0.96**	**85**	P		**Pn**		**19 30 55.1**	**+1.6**
	248nm,0.3s,baz=303,slow=10,SNR=222								
GUMO				S		**Sn**		**19 31 05.7**	**-0.5**
	806nm,0.3s,baz=162,slow=20,SNR=120								
GUMO				LR		LR		19 31 20.9	
	comp=Z,243nm,18.1s,baz=204,slow=59								
MJAR	**Matsushiro Arr**	**23.49**	**348**	LR		LR		19 42 50.7	
	comp=Z,24nm,21.6s,baz=120,slow=31								
WRA	**Warramunga Arr**	**34.55**	**196**	P		**P**		**19 37 19.2**	**-0.9**
	0.3nm,0.6s,baz=21,slow=9.2,SNR=4.0								
ASAR	**Alice Springs**	**38.22**	**195**	P		**P**		**19 37 50.6**	**-0.8**
	0.3nm,0.6s,baz=17,slow=13,SNR=4.3								
CMAR	**Chiang Mai Arr**	**43.40**	**283**	P		**P**		**19 38 35.5**	**+1.2**
	0.5nm,0.8s,baz=85,slow=6.0,SNR=6.9								
MKAR	**Makanchi Array**	**60.88**	**316**	P		**P**		**19 40 44.1**	**+0.4**
	0.5nm,0.9s,baz=91,slow=5.8,SNR=4.2								
ILAR	**Eielson Array**	**69.05**	**25**	P		**P**		**19 41 35.1**	**-1.4**
	0.1nm,0.5s,baz=266,slow=6.1,SNR=2.9								
YKA	**Yellowknife Ar**	**83.37**	**27**	P		**P**		**19 42 57.0**	**-0.8**
	0.1nm,0.3s,baz=282,slow=6.3,SNR=3.7								
NVAR	**Mina Array Bea**	**87.72**	**51**	P		**P**		**19 43 19.1**	**-1.1**
	0.4nm,0.4s,baz=278,slow=2.6,SNR=3.4								
LPAZ	**La Paz**	**148.96**	**99**	PKPbc		**PKPdf**		**19 50 18.6**	**+2.3**
	2.6nm,0.7s,baz=281,slow=2.9,SNR=9.4								

ATH ***26*** *19:32:13.0,40.°99N×20.°52E,h16km±2km,ML2.4/2,Error ellipse: s-maj=4.4km s-min=1.7km az=149.0*

CSEM ***26*** *19:32:13.9±0.1,40.°91N×20.°53E,h5km,ML2.2,Error ellipse: s-maj=2.9km s-min=1.9km az=51.0*

TIR ***26*** *19:32:13.6,40.°97N×20.°56E,h8km,ML2.6*

SKO ***26*** *19:32:13.3,40.°87N×20.°44E,h4km,M1.7,ML2.3*

THE ***26*** *19:32:14.9,40.°90N×20.°62E,h6km,ML2.3/9,Error ellipse: s-maj=0.9km s-min=0.4km az=118.0*

BEO ***26*** *19:32:14.3±0.8,40.°89N×20.°53E,h6km±4km,M2.2/5*

PDG ***26*** *19:32:14.0±0.2,40.°98N×20.°54E,h11km,ML2.6/10,Error ellipse: s-maj=0.4km s-min=0.5km az=0.0*

ISC 26 19:32:13.9±1.0,40.°92N±0.°02×20.°54E±0.°02,h6km±9km, n102,σ0§82/177,6C-16D,Greece-Albania border region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time	Res
								h m s	ISC
OHR	**Ohrid**	**0.27**	**46**	⇓	*i* Pg	**Pg**		**19 32 19.6**	**+0.3**
OHR					*i* Sg	**Sb**		**19 32 25.2**	**-1.0**
OHR					*e*Lg	Lg		19 32 25.8	
	comp=E,355nm,0.5s								
OHR					*e*Lg	Lg		19 32 26.1	
	comp=N,204nm,0.3s								
OHR	**Ohrid**	**0.27**	**46**	⇓	*i* Pg	**Pg**		**19 32 19.6**	**+0.3**
OHR					*i* Sg	**Sb**		**19 32 25.1**	**-1.0**
OHR					*e*Lg	Lg		19 32 25.8	
	comp=N,355nm,0.5s								
BIA	**Bitola**	**0.60**	**80**		P	**Pg**		**19 32 25.0**	**-0.5**
BIA					S	**Sg**		**19 32 33.7**	**+0.4**
BIA	**Bitola**	**0.60**	**80**		*i* Pg	**Pg**		**19 32 25.9**	**+0.4**
BIA					*i* Sg	**Sb**		**19 32 35.5**	**-0.1**
BIA					*e*Lg	Lg		19 32 36.0	
	comp=N,88nm,0.2s								
BIA					*e*Lg	Lg		19 32 36.2	
	comp=E,110nm,0.3s								
BIA	**Bitola**	**0.60**	**80**		P	**Pg**		**19 32 25.0**	**-0.5**
BIA	**Bitola**	**0.60**	**80**		*i* Pg	**Pg**		**19 32 25.8**	**+0.4**
BIA					S	**Sg**		**19 32 33.7**	**+0.4**
BIA					*i* Sg	**Sb**		**19 32 35.5**	**-0.1**
BIA					*e*Lg	Lg		19 32 35.9	
	comp=E,88nm,0.2s								
NEST	**Nestorio**	**0.64**	**142**		P	**Pg**		**19 32 25.9**	**-0.2**
NEST					S	**Sg**		**19 32 34.6**	**+0.2**
NEST	**Nestorio**	**0.64**	**142**		P	**Pg**		**19 32 25.9**	**-0.2**
NEST					S	**Sg**		**19 32 34.6**	**+0.2**
NEST	**Nestorio**	**0.64**	**142**		P	**Pg**		**19 32 25.3**	**-0.8**
NEST					S	**Sg**		**19 32 35.2**	**+0.8**
NEST					AML	AML		19 32 39.8	
	comp=N,415μm,0.3s								
NEST					AML	AML		19 32 40.4	
	comp=E,452μm,0.3s								
FNA	**Florina**	**0.65**	**102**		P	**Pg**		**19 32 26.3**	**-0.1**
FNA					S	**Sg**		**19 32 34.9**	**+0.1**
FNA	**Florina**	**0.65**	**102**		P	**Pg**		**19 32 26.3**	**-0.1**
FNA					S	**Sg**		**19 32 34.9**	**+0.1**
FNA	**Florina**	**0.65**	**102**		P	**Pg**		**19 32 26.6**	**+0.2**
FNA					S	**Sb**		**19 32 37.0**	**0.0**
FNA					AML	AML		19 32 37.8	
	comp=N,1917μm,0.3s								
FNA					AML	AML		19 32 38.2	
	comp=E,1975μm,0.2s								
TIR	**Tirane**	**0.67**	**310**	*i*	PG	**Pg**		**19 32 25.7**	**-1.0**
TIR				*i*	SG	**Sg**		**19 32 36.4**	**+1.1**
TIR	**Tirane**	**0.67**	**310**	*e*	Pg	**Pg**		**19 32 25.6**	**-1.1**
TIR				*e*	Sg	**Sb**		**19 32 37.6**	**+0.2**
TIR	**Tirane**	**0.67**	**310**	*i*	Pg	**Pg**		**19 32 25.7**	**-1.0**
TIR				*i*	Sg	**Sg**		**19 32 36.4**	**+1.1**
KZN	**Kozani**	**1.12**	**123**	P		**Pg**		**19 32 34.4**	**-0.9**
KZN				S		**Sb**		**19 32 50.7**	**+0.2**
KZN	**Kozani**	**1.12**	**123**	P		**Pg**		**19 32 34.4**	**-0.9**
KZN				S		**Sb**		**19 32 50.7**	**+0.2**
KPRO	**Kipourio**	**1.15**	**147**	P		**Pg**		**19 32 35.4**	**-0.5**
KPRO				S		**Sb**		**19 32 51.3**	**-0.1**
KPRO	**Kipourio**	**1.15**	**147**	P		**Pg**		**19 32 35.4**	**-0.5**
KPRO				S		**Sb**		**19 32 51.3**	**-0.1**
KPRO	**Kipourio**	**1.15**	**147**	P		**Pg**		**19 32 35.3**	**-0.7**
SKO	**Skopje**	**1.25**	**32**	P		**Pn**		**19 32 38.2**	**+0.3**
SKO				S		**Sn**		**19 32 56.7**	**+1.7**
SKO	**Skopje**	**1.25**	**32**	*i*	Pg	**Pn**		**19 32 38.0**	**+0.1**
SKO				*i*	Sg	**Sn**		**19 32 55.8**	**+0.7**
SKO				*e*	Lg	Lg		19 32 56.5	
	comp=E,10nm,0.6s								
SKO				*e*	Lg	Lg		19 32 57.2	
	comp=N,10.0nm,0.4s								
SKO	**Skopje**	**1.25**	**32**	*i*	Pg	**Pn**		**19 32 38.0**	**+0.1**
SKO				*i*	Sg	**Sn**		**19 32 55.7**	**+0.7**
SKO				*e*	Lg	Lg		19 32 56.4	
	comp=N,10nm,0.6s								
SKO					S	**Sn**		**19 32 56.7**	**+1.7**
JAN	**Janina**	**1.28**	**169**		P	**Pg**		**19 32 37.2**	**-1.3**
SGD	**Sagiada**	**1.33**	**190**		P	**Pg**		**19 32 39.4**	**+0.1**
SGD					S	**Sn**		**19 32 57.8**	**+1.0**
SGD	**Sagiada**	**1.33**	**190**		P	**Pg**		**19 32 39.4**	**+0.1**
SGD					S	**Sn**		**19 32 57.8**	**+1.0**
SGD	**Sagiada**	**1.33**	**190**		P	**Pg**		**19 32 39.4**	**+0.1**
KEK	**Kerkira**	**1.33**	**205**		P	**Pn**		**19 32 39.0**	**0.0**
KEK					S	**Sn**		**19 32 58.8**	**+1.8**
KEK	**Kerkira**	**1.33**	**205**		P	**Pn**		**19 32 39.0**	**0.0**
KEK					S	**Sn**		**19 32 58.8**	**+1.8**
IGT	**Igoumenitsa**	**1.40**	**187**		P	**Pn**		**19 32 39.9**	**+0.1**
IGT					S	**Sn**		**19 32 59.3**	**+0.7**
IGT	**Igoumenitsa**	**1.40**	**187**		P	**Pn**		**19 32 39.9**	**+0.1**
IGT					S	**Sn**		**19 32 59.3**	**+0.7**
IGT	**Igoumenitsa**	**1.40**	**187**		P	**Pg**		**19 32 41.8**	**+1.2**
GRG	**Griva**	**1.41**	**88**		P	**Pn**		**19 32 40.0**	**-0.1**
GRG					S	**Sb**		**19 32 58.7**	**-0.1**
GRG	**Griva**	**1.41**	**88**		P	**Pn**		**19 32 40.0**	**-0.1**
GRG					S	**Sb**		**19 32 58.7**	**-0.1**
GRG	**Griva**	**1.41**	**88**		P	**Pb**		**19 32 40.5**	**-0.1**
ULC	**Ulcinj**	**1.43**	**317**	⇓	*i* Pg	**Pn**		**19 32 39.7**	**-0.6**
ULC					*e*Sg	**Sg**		**19 33 01.0**	**+1.2**
ULC	**Ulcinj**	**1.43**	**317**	⇓	*i* Pg	**Pn**		**19 32 39.7**	**-0.6**
ULC					*e*Sg	**Sg**		**19 33 01.0**	**+1.2**
VAY	**Valandovo**	**1.58**	**75**		P	**Pn**		**19 32 42.2**	**-0.3**
VAY	**Valandovo**	**1.58**	**75**	*i*	Pn	**Pb**		**19 32 43.2**	**-0.4**
VAY				*i*	Sn	**Sg**		**19 33 05.9**	**+1.0**
VAY				*e*	Lg	Lg		19 33 09.9	
	comp=N,39nm,0.9s								
VAY				*e*	Lg	Lg		19 33 13.0	
	comp=E,26nm,0.7s								
VAY	**Valandovo**	**1.58**	**75**	*e*	Pg	**Pb**		**19 32 43.3**	**-0.3**
VAY				*e*	Sg	**Sg**		**19 33 05.4**	**+0.6**
VAY	**Valandovo**	**1.58**	**75**		P	**Pn**		**19 32 42.2**	**-0.3**
VAY	**Valandovo**	**1.58**	**75**	*i*	Pn	**Pb**		**19 32 43.1**	**-0.4**
VAY	**Valandovo**	**1.58**	**75**	*e*	Pg	**Pb**		**19 32 43.3**	**-0.3**
VAY				*e*	Sg	**Sg**		**19 33 05.4**	**+0.6**
VAY				*e*	Lg	Lg		19 33 09.9	
	comp=E,39nm,0.9s								
DRME	**Dracevica, Mon**	**1.62**	**322**	⇓	*i* Pn	**Pn**		**19 32 42.7**	**-0.3**
DRME					*e*Sn	**Sg**		**19 33 05.7**	**-0.4**
DRME	**Dracevica, Mon**	**1.62**	**322**	⇓	*i* Pn	**Pn**		**19 32 42.7**	**-0.3**
DRME					*e*Sn	**Sg**		**19 33 05.7**	**-0.4**
LIT	**Litokhoron**	**1.70**	**118**		P	**Pn**		**19 32 43.5**	**-0.5**
LIT	**Litokhoron**	**1.70**	**118**		P	**Pn**		**19 32 43.5**	**-0.5**
LIT	**Litokhoron**	**1.70**	**118**		P	**Pn**		**19 32 43.2**	**-0.8**
PVY	**Plav**	**1.73**	**346**	⇓	*i* Pn	**Pn**		**19 32 44.9**	**+0.3**
PVY					*e*Sn	**Sb**		**19 33 08.2**	**+0.1**
PVY	**Plav**	**1.73**	**346**	⇓	*i* Pn	**Pn**		**19 32 44.9**	**+0.3**
PVY					*e*Sn	**Sb**		**19 33 08.2**	**+0.1**
THL	**Klokotos Trika**	**1.76**	**140**		P	**Pn**		**19 32 44.8**	**-0.1**
THL					S	**Sn**		**19 33 07.4**	**-0.2**
THL	**Klokotos Trika**	**1.76**	**140**		P	**Pn**		**19 32 44.8**	**-0.1**
THL					S	**Sn**		**19 33 07.4**	**-0.2**
PDG	**Podgorica**	**1.79**	**328**	*e*	Pg	**Pn**		**19 32 45.7**	**+0.4**
PDG				*e*	Sg	**Sg**		**19 33 11.8**	**+0.4**
PDG				*e*	Sg	**Sb**		**19 33 13.2**	**+3.5**
PDG	**Podgorica**	**1.79**	**328**	⇓	*i* Pn	**Pn**		**19 32 45.5**	**+0.2**
PDG					*e*Sn	**Sb**		**19 33 09.6**	**-0.1**
PDG					*e*Sg	**Sg**		**19 33 11.8**	**+0.4**
TTG	**Podgorica**	**1.79**	**328**	⇓	*i* Pn	**Pn**		**19 32 45.5**	**+0.2**
TTG					*e*Sn	**Sb**		**19 33 09.5**	**-0.1**
KNT	**Kendrikon**	**1.80**	**82**		P	**Pn**		**19 32 45.1**	**-0.3**
KNT					S	**Sn**		**19 33 08.4**	**-0.2**
KNT	**Kendrikon**	**1.80**	**82**		P	**Pn**		**19 32 45.1**	**-0.3**
KNT					S	**Sn**		**19 33 08.4**	**-0.2**
KNT	**Kendrikon**	**1.80**	**82**		P	**Pn**		**19 32 44.7**	**-0.8**
DSL	**Palaion Diasel**	**1.83**	**166**		P	**Pg**		**19 32 50.1**	**+1.1**
DSL	**Palaion Diasel**	**1.83**	**166**		P	**Pg**		**19 32 50.1**	**+1.1**
BUM	**Brajici-Budva**	**1.85**	**319**	⇑	*i* Pn	**Pn**		**19 32 46.4**	**+0.2**
BUM					*e*Sn	**Sb**		**19 33 11.4**	**-0.2**
BUM	**Brajici-Budva**	**1.85**	**319**	⇑	*i* Pn	**Pn**		**19 32 46.4**	**+0.2**
BUM					*e*Sn	**Sb**		**19 33 11.4**	**-0.2**
BEY	**Berane**	**2.01**	**346**	⇓	*i* Pn	**Pn**		**19 32 48.2**	**-0.2**
BEY					*e*Sn	**Sn**		**19 33 14.9**	**+1.0**
IVA	**Berane**	**2.01**	**346**	⇓	*i* Pn	**Pn**		**19 32 48.2**	**-0.2**
IVA					*e*Sn	**Sn**		**19 33 14.9**	**+1.0**
CEME	**Cevo**	**2.03**	**324**	⇑	*i* Pn	**Pn**		**19 32 48.6**	**0.0**
CEME					*e*Sn	**Sn**		**19 33 15.4**	**+1.1**
CEME	**Cevo**	**2.03**	**324**	⇑	*i* Pn	**Pn**		**19 32 48.6**	**0.0**
CEME					*e*Sn	**Sn**		**19 33 15.4**	**+1.1**
BARS	**Barje**	**2.12**	**26**		*e*Pn	**Pn**		**19 32 51.4**	**+1.5**
BARS					*e*Sg	**Sg**		**19 33 22.3**	**+0.3**
BARS	**Barje**	**2.12**	**26**		*e*Pn	**Pn**		**19 32 51.4**	**+1.5**
BARS					*e*Sg	**Sg**		**19 33 22.3**	**+0.3**
LKD2	**Lefkada island**	**2.13**	**178**		P	**Pn**		**19 32 51.0**	**+1.0**
LKD2	**Lefkada island**	**2.13**	**178**		P	**Pn**		**19 32 51.0**	**+1.0**
HCY	**Herceg Novi**	**2.16**	**316**		*e*Pn	**Pn**		**19 32 50.4**	**0.0**
HCY					*e*Sn	**Sn**		**19 33 18.9**	**+1.4**
HCY	**Herceg Novi**	**2.16**	**316**		*e*Pn	**Pn**		**19 32 50.4**	**0.0**
HCY					*e*Sn	**Sn**		**19 33 18.9**	**+1.4**
NKME	**Niksic**	**2.19**	**328**	⇓	*i* Pn	**Pn**		**19 32 51.2**	**+0.3**
NKME					*e*Sn	**Sn**		**19 33 19.7**	**+1.3**
NKME	**Niksic**	**2.19**	**328**	⇓	*i* Pn	**Pn**		**19 32 51.2**	**+0.3**
NKME					*e*Sn	**Sn**		**19 33 19.7**	**+1.3**
NKY	**Niksic**	**2.22**	**329**		*e*Pn	**Pn**		**19 32 51.4**	**+0.1**
NKY					*e*Sn	**Sn**		**19 33 19.8**	**+0.8**
NKY	**Niksic**	**2.22**	**329**		*e*Pn	**Pn**		**19 32 51.4**	**+0.1**
NKY					*e*Sn	**Sn**		**19 33 19.8**	**+0.8**
AGG	**Agios Georgios**	**2.34**	**143**		P	**Pn**		**19 32 52.5**	**-0.4**
AGG					S	**Sn**		**19 33 22.1**	**+0.1**
AGG	**Agios Georgios**	**2.34**	**143**		P	**Pn**		**19 32 52.8**	**-0.1**
AGG					S	**Sn**		**19 33 22.1**	**+0.1**
AGG	**Agios Georgios**	**2.34**	**143**		P	**Pn**		**19 32 52.8**	**-0.1**
PDO	**Prodromos**	**2.37**	**168**		P	**Pn**		**19 32 53.5**	**+0.3**
PDO	**Prodromos**	**2.37**	**168**		P	**Pn**		**19 32 53.5**	**+0.3**
SJES	**Sjenica**	**2.38**	**350**		*e*Pn	**Pb**		**19 32 55.9**	**-1.2**
SJES					*e*Sg	**Sg**		**19 33 29.8**	**-0.5**
BRY	**Bratogost**	**2.48**	**324**	⇓	*i* Pn	**Pn**		**19 32 54.9**	**0.0**
BRY					*e*Sn	**Sn**		**19 33 26.7**	**+1.1**
BRY	**Bratogost**	**2.48**	**324**	⇓	*i* Pn	**Pn**		**19 32 54.9**	**0.0**
BRY					*e*Sn	**Sn**		**19 33 26.7**	**+1.1**
ANX	**Ano Chora**	**2.56**	**155**		P	**Pb**		**19 32 58.8**	**-1.4**
PLE	**Pljevlja**	**2.56**	**341**		*e*Pn	**Pn**		**19 32 55.7**	**-0.2**
PLE					*e*Sn	**Sn**		**19 33 27.9**	**+0.5**
PLE	**Pljevlja**	**2.56**	**341**		*e*Pn	**Pn**		**19 32 55.7**	**-0.2**
PLE					*e*Sn	**Sn**		**19 33 27.9**	**+0.5**
UPM	**Unac-Piva**	**2.59**	**332**	⇑	*i* Pn	**Pn**		**19 32 56.5**	**+0.1**
UPM					*e*Sn	**Sn**		**19 33 28.8**	**+0.6**
UPM	**Unac-Piva**	**2.59**	**332**	⇑	*i* Pn	**Pn**		**19 32 56.5**	**+0.1**
UPM					*e*Sn	**Sn**		**19 33 28.8**	**+0.6**
IVAS	**Ivanjica**	**2.67**	**354**		*e*Pn	**Pn**		**19 32 59.0**	**+1.5**
IVAS	**Ivanjica**	**2.67**	**354**		*e*P

comp=N,26nm,0.2s
MORF Marmelete 1.12 52 *e*P **Pb 19 51 05.2 +0.6**
MORF *e*S **Sn 19 51 19.3 +0.7**
MORF A A 19 51 20.0
comp=N,20nm,0.1s
MORF Marmelete 1.12 52 P **Pb 19 51 05.2 +0.6**
MORF S **Sn 19 51 19.3 +0.7**
comp=N,20nm,0.1s
MORF Marmelete 1.12 52 *e*P **Pb 19 51 05.2 +0.6**
MORF S **Sn 19 51 19.3 +0.7**
comp=N,20nm,0.1s
PTEO Sao Teotonio 1.24 41 *e*P **Pb 19 51 06.9 +0.3**
PTEO *e*S **Sb 19 51 22.1 -0.1**
PTEO A A 19 51 25.1
comp=N,10nm,0.7s
PTEO Sao Teotonio 1.24 41 P **Pb 19 51 06.9 +0.3**
PTEO S **Sb 19 51 22.1 -0.1**
comp=N,5.1nm,0.7s
PTEO Sao Teotonio 1.24 41 *e*P **Pb 19 51 06.9 +0.3**
PTEO S **Sb 19 51 22.1 -0.1**
comp=N,5.1nm,0.7s
PBDV Barranco-do-Ve 1.59 66⇑ *e*P **Pb 19 51 11.8 -0.8**
PBDV *e*S **Sn 19 51 30.2 0.0**
PBDV A A 19 51 33.9
comp=N,4.2nm,0.2s
PBDV Barranco-do-Ve 1.59 66 P **Pb 19 51 11.8 -0.8**
PBDV S **Sn 19 51 30.2 0.0**
comp=N,4.2nm,0.2s
PBDV Barranco-do-Ve 1.59 66⇑ *e*P **Pb 19 51 11.8 -0.8**
PBDV S **Sn 19 51 30.2 0.0**
comp=N,4.2nm,0.2s
PCVE Castro Verde 1.71 53 *e*Pn **Pb 19 51 13.6 -0.9**
PCVE *e*Sn **Sn 19 51 33.8 +0.8**
PCVE A A 19 51 35.9
comp=N,8.0nm,0.4s
PCVE Castro Verde 1.71 53 P **Pb 19 51 13.6 -0.9**
PCVE S **Sn 19 51 33.8 +0.8**
comp=N,8.0nm,0.4s
PCVE Castro Verde 1.71 53 P **Pb 19 51 13.6 -0.9**
PCVE S **Sn 19 51 33.8 +0.8**
comp=N,8.0nm,0.4s
MESJ Messejana 1.73 45 *e*P **Pn 19 51 13.6 +1.3**
MESJ *i* P **Pn 19 51 13.7 +1.3**
MESJ *e*S **Sn 19 51 33.8 +0.2**
MESJ AML AML 19 51 34.8
comp=N,5.8nm,0.3s
MESJ Messejana 1.73 45 *e*Pn **Pn 19 51 13.6 +1.3**
MESJ *e*Sn **Sn 19 51 33.9 +0.3**
MESJ A A 19 51 36.5
comp=N,5.2nm,1.2s
MESJ Messejana 1.73 45 P **Pn 19 51 13.6 +1.3**
MESJ S **Sn 19 51 33.9 +0.3**
comp=N,5.2nm,1.2s
MESJ Messejana 1.73 45 P **Pn 19 51 13.6 +1.3**
MESJ S **Sn 19 51 33.9 +0.3**
comp=N,5.2nm,1.2s
PNCL Nicolau / Gran 1.79 33 *e*Pn **Pn 19 51 14.1 +1.1**
PNCL *e*Sn **Sn 19 51 35.4 +0.5**
PNCL A A 19 51 38.9
comp=N,5.4nm,0.2s
PNCL Nicolau / Gran 1.79 33 *e*Pn **Pn 19 51 14.1 +1.1**
PNCL *e*Sn **Sn 19 51 35.4 +0.5**
comp=N,5.4nm,0.2s
PVAQ Vaqueiros 1.81 64⇑ *e*Pn **Pn 19 51 14.8 +1.4**
PVAQ *e*Sn **Sn 19 51 35.9 +0.3**
PVAQ A A 19 51 38.6
comp=N,8.0nm,0.1s
PVAQ Vaqueiros 1.81 64 P **Pn 19 51 14.8 +1.4**
PVAQ S **Sn 19 51 35.9 +0.3**
comp=N,8.0nm,0.1s
PVAQ Vaqueiros 1.81 64 P **Pn 19 51 14.8 +1.4**
PVAQ S **Sn 19 51 35.9 +0.3**
comp=N,8.0nm,0.1s
EGRO El Granado 2.04 63 P **Pn 19 51 17.8 +1.3**
comp=N,0.3nm,0.0s,SNR=7.9
EGRO S **Sn 19 51 41.4 +0.3**
comp=N,2.2nm,0.2s,SNR=7.9
EGRO El Granado 2.04 63 P **Pn 19 51 17.8 +1.3**
comp=N,0.3nm,0.0s,SNR=7.9
EGRO S **Sn 19 51 41.4 +0.3**
comp=N,2.2nm,0.2s,SNR=7.9
PBEJ Beja 2.06 46 *e*Pn **Pn 19 51 17.9 +1.1**
PBEJ *e*Sn **Sn 19 51 41.5 -0.3**
PBEJ A A 19 51 46.7
comp=N,3.1nm,0.5s
PBEJ Beja 2.06 46 P **Pn 19 51 17.9 +1.1**
PBEJ S **Sn 19 51 41.5 -0.3**
comp=N,1.6nm,0.5s
PBEJ Beja 2.06 46 P **Pn 19 51 17.9 +1.1**
PBEJ S **Sn 19 51 41.5 -0.3**
comp=N,1.6nm,0.5s
EVO Evora 2.36 35 *e*Pn **Pn 19 51 22.0 +1.1**
EVO *e*Sn **Sn 19 51 49.2 +0.1**
EVO A A 19 51 49.8
comp=N,7.3nm,0.1s
EVO Evora 2.36 35 P **Pn 19 51 22.0 +1.1**
EVO S **Sn 19 51 49.2 +0.1**
comp=N,7.3nm,0.1s
EVO Evora 2.36 35 P **Pn 19 51 22.0 +1.1**
EVO S **Sn 19 51 49.2 +0.1**
comp=N,7.3nm,0.1s
PMAFR Mafra 2.37 9 *e*Pn **Pn 19 51 21.9 +0.9**
PMAFR *e*Sn **Sn 19 51 49.4 +0.2**
PMAFR A A 19 51 51.2
comp=N,19nm,0.2s
PMAFR Mafra 2.37 9 P **Pn 19 51 21.9 +0.9**
comp=N,4.5nm,0.2s,SNR=7.9
PMAFR S **Sn 19 51 49.1 -0.1**
comp=N,7.5nm,0.3s,SNR=7.9
PMAFR Mafra 2.37 9 P **Pn 19 51 21.9 +0.9**
comp=N,4.5nm,0.2s,SNR=7.9
PMAFR S **Sn 19 51 49.1 -0.1**
comp=N,7.5nm,0.3s,SNR=7.9
PMAFR *e*Sn **Sn 19 51 49.4 +0.2**
comp=N,19nm,0.2s
PBAR Barrancos 2.67 54 *e*Pn **Pn 19 51 26.5 +1.4**
PBAR *e*Sn **Sn 19 51 56.7 +0.1**
PBAR A A 19 52 03.2
comp=N,4.0nm,0.4s
PBAR Barrancos 2.67 54 P **Pn 19 51 26.5 +1.4**
PBAR S **Sn 19 51 56.7 +0.1**
comp=N,4.0nm,0.4s
PBAR Barrancos 2.67 54 P **Pn 19 51 26.5 +1.4**
PBAR S **Sn 19 51 56.7 +0.1**
comp=N,4.0nm,0.4s
EMIN Mina Concepcio 2.72 64 P **Pn 19 51 26.6 +0.8**
comp=N,0.3nm,0.1s,SNR=7.9
EMIN S **Sn 19 51 56.4 -1.6**
comp=N,1.4nm,0.1s,SNR=7.9
EMIN Mina Concepcio 2.72 64 P **Pn 19 51 26.6 +0.8**
comp=N,0.3nm,0.1s,SNR=7.9
EMIN S **Sn 19 51 56.4 -1.6**
comp=N,1.4nm,0.1s,SNR=7.9
PMTG Montargil 2.73 26 *e*Pn **Pn 19 51 27.4 +1.4**
PMTG *e*Sn **Sn 19 51 57.9 -0.4**
PMTG A A 19 51 59.6
comp=N,3.7nm,0.1s
PMTG Montargil 2.73 26 *e*Pn **Pn 19 51 27.4 +1.4**
PMTG *e*Sn **Sn 19 51 57.9 -0.4**
comp=N,3.7nm,0.1s
PESTR Estremoz 2.83 37 *e*Sn **Sn 19 52 00.2 -0.5**
PESTR Estremoz 2.83 37 S **Sn 19 52 00.2 -0.5**
PESTR Estremoz 2.83 37 S **Sn 19 52 00.2 -0.5**
EBAD Badajoz 3.05 45 P **Pn 19 51 30.9 +0.5**
comp=N,0.4nm,0.1s,SNR=7.9
EBAD S **Sn 19 52 05.8 -0.3**
comp=N,3.0nm,0.2s,SNR=7.9
EBAD Badajoz 3.05 45 P **Pn 19 51 30.9 +0.5**
comp=N,0.4nm,0.1s,SNR=7.9
EBAD S **Sn 19 52 05.8 -0.3**
comp=N,3.0nm,0.2s,SNR=7.9
ESPR Espera 3.15 84 P **Pn 19 51 33.1 +1.4**
comp=N,1.1nm,0.1s,SNR=7.9
ESPR S **Sn 19 52 08.0 -0.4**
comp=N,16nm,0.3s,SNR=7.9
ESPR Espera 3.15 84 P **Pn 19 51 33.1 +1.4**
comp=N,1.1nm,0.1s,SNR=7.9
ESPR S **Sn 19 52 08.0 -0.4**
comp=N,16nm,0.3s,SNR=7.9
PTOM Tomar 3.18 19 *e*Sn **Sn 19 52 08.2 -1.1**
PTOM A A 19 52 10.5
comp=N,4.7nm,0.6s
PTOM Tomar 3.18 19 S **Sn 19 52 08.2 -1.1**
comp=N,2.3nm,0.6s
PTOM Tomar 3.18 19 S **Sn 19 52 08.2 -1.1**
comp=N,2.3nm,0.6s
PMRV Marv??o 3.37 33 *e*Pn **Pn 19 51 35.9 +1.0**
PMRV *e*Sn **Sn 19 52 12.7 -1.4**
PMRV A A 19 52 14.6
comp=N,2.5nm,0.4s
PMRV Marv??o 3.37 33 P **Pn 19 51 35.9 +1.0**
PMRV S **Sn 19 52 12.7 -1.4**
comp=N,2.5nm,0.4s
PMRV Marv??o 3.37 33 P **Pn 19 51 35.9 +1.0**
PMRV S **Sn 19 52 12.7 -1.4**
comp=N,2.5nm,0.4s
PCAS Casmilo, Conde 3.57 16 *e*Pn **Pn 19 51 39.0 +1.4**
PCAS *e*Sn **Sn 19 52 18.7 -0.3**
PCAS A A 19 52 21.6
comp=N,2.1nm,0.1s
PCAS Casmilo, Conde 3.57 16 *e*Pn **Pn 19 51 39.0 +1.4**
PCAS *e*Sn **Sn 19 52 18.7 -0.3**
comp=N,2.1nm,0.1s
ECAB El Cabril 3.75 66 P **Pn 19 51 40.9 +0.8**
comp=N,0.2nm,0.1s,SNR=7.9
ECAB S **Sn 19 52 22.6 -0.9**
comp=N,1.1nm,0.2s,SNR=7.9
ECAB El Cabril 3.75 66 P **Pn 19 51 40.9 +0.8**
comp=N,0.2nm,0.1s,SNR=7.9
ECAB S **Sn 19 52 22.6 -0.9**
comp=N,1.1nm,0.2s,SNR=7.9
PVIS Viseu 4.35 19 *e*Pn **Pn 19 51 48.7 +0.5**
PVIS *e*Sn **Sn 19 52 37.2 -0.9**
PVIS Viseu 4.35 19 P **Pn 19 51 48.7 +0.5**
PVIS S **Sn 19 52 37.2 -0.9**
PVIS Viseu 4.35 19 P **Pn 19 51 48.7 +0.5**
PVIS S **Sn 19 52 37.2 -0.9**
EADA Adamuz 4.41 68 P **Pn 19 51 49.5 +0.4**
comp=N,0.2nm,0.1s,SNR=7.9
EADA S **Sn 19 52 37.5 -2.1**
comp=N,1.0nm,0.2s,SNR=7.9
EADA Adamuz 4.41 68 P **Pn 19 51 49.5 +0.4**
comp=N,0.2nm,0.1s,SNR=7.9
EADA S **Sn 19 52 37.5 -2.1**
comp=N,1.0nm,0.2s,SNR=7.9
EPLA Plasencia 4.50 39 S **Sn 19 52 40.4 -1.4**
comp=N,3.7nm,0.2s,SNR=7.9
EPLA Plasencia 4.50 39 S **Sn 19 52 40.4 -1.4**
comp=N,3.7nm,0.2s,SNR=7.9
EGOR Sierra Gorda, 4.56 82 S **Sn 19 52 42.4 -1.1**
comp=N,0.3nm,0.1s,SNR=7.9
EGOR Sierra Gorda, 4.56 82 S **Sn 19 52 42.4 -1.1**
comp=N,0.3nm,0.1s,SNR=7.9
POLO Lamas de Olo 4.99 17 *e*Pn **Pn 19 51 58.1 +0.9**
POLO *e*Sn **Sn 19 52 53.0 -1.1**
POLO Lamas de Olo 4.99 17 *e*Pn **Pn 19 51 58.1 +0.9**
POLO *e*Sn **Sn 19 52 53.0 -1.1**
MVO Moncorvo 5.02 24 P **Pn 19 51 58.2 +0.7**
comp=N,1.2nm,0.2s,SNR=7.9
MVO S **Sn 19 52 52.9 -1.7**
comp=N,1.0nm,0.1s,SNR=7.9
MVO Moncorvo 5.02 24 P **Pn 19 51 58.2 +0.7**
comp=N,1.2nm,0.2s,SNR=7.9
MVO S **Sn 19 52 52.9 -1.7**
comp=N,1.0nm,0.1s,SNR=7.9
ELOB Lobios 5.41 14 S **Sn 19 53 02.0 -2.3**
comp=N,0.9nm,0.1s,SNR=7.9
ELOB Lobios 5.41 14 S **Sn 19 53 02.0 -2.3**
comp=N,0.9nm,0.1s,SNR=7.9
EQES Quesada 5.47 75 S **Sn 19 53 03.7 -2.2**
comp=N,0.5nm,0.1s,SNR=7.9
EQES Quesada 5.47 75 S **Sn 19 53 03.7 -2.2**
comp=N,0.5nm,0.1s,SNR=7.9

CSEM ***26*** *19:53:42.3, 44.55N×10.28E, h31km, MD1.8/3*
ROM 26 19:53:42.3±0.6, 44.55N×10.28E, h31km±6km, Md1.8/3, Ml1.6/3, Error ellipse: s-maj=6.3km s-min=2.6km az=105.0, Northern Italy

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ERBM	**Eremo**	**0.16**	**145**	Pg	Pb	19 53 48.1	-0.3
ERBM				Sg	Sn	19 53 52.6	0.0
ERBM	**Eremo**	**0.16**	**145**	Pg	Pb	19 53 48.1	-0.3
ERBM				Sg	Sn	19 53 52.6	0.0
PRMA	**PARMA**	**0.21**	**6**	Pg	Pb	19 53 48.9	+0.1
PRMA				Sg	Sn	19 53 54.3	+0.5
	60nm,0.2s						
PRMA	**PARMA**	**0.21**	**6**	Pg	Pb	19 53 48.9	+0.1
PRMA				Sg	Sn	19 53 54.3	+0.5
	60nm,0.2s						
NOVE	**Novellara**	**0.40**	**51**	Pg	Pb	19 53 51.1	-0.1
NOVE				Sg	Sn	19 53 58.4	+0.2
	419nm,1.7s						
NOVE	**Novellara**	**0.40**	**51**	Pg	Pb	19 53 51.1	-0.1
NOVE				Sg	Sn	19 53 58.4	+0.2
	419nm,1.7s						
VLC	**Villacollemand**	**0.40**	**169**	Pg	Pb	19 53 51.5	+0.2
VLC				Sg	Sn	19 53 58.8	+0.4
VLC	**Villacollemand**	**0.40**	**169**	Pg	Pb	19 53 51.5	+0.2
VLC				Sg	Sn	19 53 58.8	+0.4
BDI	**Bagni Di Lucca**	**0.54**	**155**	Pg	Pn	19 53 54.3	+0.4
BDI				Sg	Sn	19 54 01.9	0.0
	15nm,0.6s						
BDI	**Bagni Di Lucca**	**0.54**	**155**	Pg	Pn	19 53 54.3	+0.4
BDI				Sg	Sn	19 54 01.9	0.0
	15nm,0.6s						

GEN ***26*** *19:54:23.6, 44.64N×10.44E, h0km, ML1.9*
ISCJB ***26*** *19:54:25.0±0.3, 44.56N±0.02×10.35E±0.03, h26km±3km, Error ellipse: s-maj=4.1km s-min=3.0km az=37.1*
ROM ***26*** *19:54:24.7±0.1, 44.56N×10.37E, h25km±2km, Ml1.7/7, Error ellipse: s-maj=2.9km s-min=1.5km az=94.0*
CSEM ***26*** *19:54:24.7±0.1, 44.58N×10.37E, h20km, ML2.2/10, Error ellipse: s-maj=3.5km s-min=2.9km az=99.0*
LDG ***26*** *19:54:25.0±0.1, 44.60N×10.43E, h10km, Ml2.4/9, Error ellipse: s-maj=2.8km s-min=2.3km az=105.0*
ISC 26 19:54:24.6±0.9, 44.58N±0.02×10.38E±0.02, h25km±5km, n69, σ1.07/112, Northern Italy

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ERBM	**Eremo**	**0.16**	**171**	Pg	Pb	19 54 29.5	-0.4
ERBM				Sg	Sb	19 54 33.9	+0.5
ERBM	**Eremo**	**0.16**	**171**	Pg	Pb	19 54 29.5	-0.4
ERBM				Sg	Sb	19 54 33.9	+0.5
PRMA	**PARMA**	**0.19**	**346**	Pg	Pb	19 54 29.9	-0.3
PRMA				Sg	Sb	19 54 35.3	+1.3
	30nm,0.3s						
PRMA	**PARMA**	**0.19**	**346**	Pg	Pb	19 54 29.9	-0.3
PRMA				Sg	Sb	19 54 35.3	+1.3
	30nm,0.3s						
GRAM	**Graiana**	**0.24**	**250**	P	Pb	19 54 30.0	-0.8
GRAM				S	Sb	19 54 34.7	-0.3
NOVE	**Novellara**	**0.33**	**47**	Pg	Pb	19 54 32.1	+0.1
NOVE				Sg	Sn	19 54 39.2	-0.6
	324nm,0.5s						
NOVE	**Novellara**	**0.33**	**47**	Pg	Pb	19 54 32.1	+0.1
SARO	**Sassorosso**	**0.39**	**177**	P	Pb	19 54 32.7	-0.4
SARO				S	Sb	19 54 38.7	-0.1
VLC	**Villacollemand**	**0.41**	**179**	Pg	Pb	19 54 33.6	+0.2
VLC	**Villacollemand**	**0.41**	**179**	Pg	Pb	19 54 33.6	+0.2
CODM	**Codolo**	**0.42**	**244**	P	Pb	19 54 33.2	-0.3
CODM				S	Sb	19 54 40.2	+0.6
ZCCA	**Zocca**	**0.48**	**117**	Pg	Pn	19 54 35.5	-0.5
	45nm,0.5s						
ZCCA	**Zocca**	**0.48**	**117**	Pg	Pn	19 54 35.5	-0.5
	45nm,0.5s						
BDI	**Bagni Di Lucca**	**0.54**	**163**	Pg	Pb	19 54 35.3	-0.2
BDI				Sg	Sb	19 54 43.0	+0.2
BDI	**Bagni Di Lucca**	**0.54**	**163**	Pg	Pb	19 54 35.3	-0.2
BDI				Sg	Sb	19 54 43.0	+0.2
POPM	**Popiglio**	**0.60**	**153**	P	Pb	19 54 36.2	-0.2
POPM				S	Sb	19 54 45.0	+0.5
PLMA	**Palmaria, Port**	**0.65**	**216**	Pg	Pb	19 54 36.5	-0.8
PLMA				Sg	Sb	19 54 46.5	+0.6
	15nm,0.4s						
PLMA	**Palmaria, Port**	**0.65**	**216**	Pg	Pb	19 54 36.5	-0.8
PLMA				Sg	Sb	19 54 46.5	+0.6
	15nm,0.4s						
MAIM	**Mastiano**	**0.67**	**173**	Pg	Pn	19 54 38.3	-0.1
MAIM				Sg	Sb	19 54 46.7	+0.3
	23nm,0.5s						
MAIM	**Mastiano**	**0.67**	**173**	Pg	Pn	19 54 38.3	-0.1
MAIM				S	Sb	19 54 46.6	+0.2
MSSA	**Maissana**	**0.67**	**248**	Pg	Pb	19 54 37.2	-0.5
	37nm,0.8s						
MSSA	**Maissana**	**0.67**	**248**	Pg	Pb	19 54 37.2	-0.5
	37nm,0.8s						
FNVD	**Fontana Vidola**	**0.67**	**127**	Pg	Pb	19 54 38.1	+0.3
	27nm,0.6s						
FNVD	**Fontana Vidola**	**0.67**	**127**	Pg	Pb	19 54 38.1	+0.3
	27nm,0.6s						
BOB	**Bobbio (Coli)**	**0.69**	**286**	Pg	Pb	19 54 38.5	+0.4
BOB	**Bobbio (Coli)**	**0.69**	**286**	Pg	Pb	19 54 38.5	+0.4
BALD	**Monte Baldo**	**1.15**	**16**	*e*Pg	Pn	19 54 45.6	+0.3
BALD				*e*Sg	Sb	19 55 02.0	+1.4
BALD	**Monte Baldo**	**1.15**	**16**	*e*Pg	Pn	19 54 45.6	+0.3
BALD				*e*Sg	Sb	19 55 02.0	+1.4
ROVR	**Rover¯¤ Verone**	**1.18**	**24**	Pg	Pn	19 54 45.9	+0.2
ROVR				Sg	Sb	19 55 02.7	+1.4
ROVR	**Rover¯¤ Verone**	**1.18**	**24**	Pg	Pn	19 54 45.9	+0.2
ROVR				Sg	Sb	19 55 02.7	+1.4
TEOL	**Teolo**	**1.21**	**49**	Pg	Pn	19 54 46.4	+0.5
TEOL				Sg	Sb	19 55 03.1	+1.1
TEOL	**Teolo**	**1.21**	**49**	Pg	Pn	19 54 46.4	+0.5
TEOL				Sg	Sb	19 55 03.1	+1.1
MAGA	**Magasa**	**1.21**	**8**	Pg	Pb	19 54 46.8	-0.2
MAGA				Sg	Sb	19 55 03.7	+1.4
MAGA	**Magasa**	**1.21**	**8**	Pg	Pb	19 54 46.8	-0.2
MAGA				Sg	Sb	19 55 03.7	+1.4
MARN	**Marana (Italy)**	**1.22**	**29**	*e*Pg	Pn	19 54 46.5	+0.4
MARN	**Marana (Italy)**	**1.22**	**29**	*e*Pg	Pn	19 54 46.5	+0.4
MDI	**Monti di Nese**	**1.29**	**339**	Pg	Pb	19 54 48.8	+0.5
MDI				Sg	Sb	19 55 05.7	+1.2
MDI	**Monti di Nese**	**1.29**	**339**	Pg	Pb	19 54 48.8	+0.5
MDI				Sg	Sb	19 55 05.7	+1.2
PCP	**Piancastagn**	**1.31**	**269**	P	Pb	19 54 49.3	+0.7
RNI	**Roncone**	**1.42**	**7**	*e*Pg	Pn	19 54 49.5	+0.6
DDS	**Dosso del Somm**	**1.43**	**23**	*e*Pg	Pn	19 54 49.3	+0.2
DDS	**Dosso del Somm**	**1.43**	**23**	*e*Pg	Pn	19 54 49.3	+0.2
CGRP	**Cima Grappa**	**1.65**	**37**	*e*Pg	Pn	19 54 52.2	+0.1
CGRP	**Cima Grappa**	**1.65**	**37**	*e*Pg	Pn	19 54 52.2	+0.1
SBF	**Sospel**	**2.23**	**252**	*e*Pn	Pn	19 55 00.8	+0.7
SBF				*e*Sn	Sn	19 55 29.2	+2.3
	6.6nm,0.3s						
SBF	**Sospel**	**2.23**	**252**	*e*Pn	Pn	19 55 00.8	+0.7
SBF				*e*Sn	Sn	19 55 29.2	+2.3
	3.3nm,0.3s						
PGF	**Pioggiola**	**2.26**	**207**	*e*Pn	Sn	19 55 01.4	+0.9
PGF				*e*Sn	Sn	19 55 28.5	+0.9
	0.8nm,0.2s						
PGF	**Pioggiola**	**2.26**	**207**	*e*Pn	Pn	19 55 01.4	+0.9
PGF				*e*Sn	Sn	19 55 28.5	+0.9
	0.4nm,0.2s						
MBDF	**Montbardon**	**2.58**	**275**	*e*P	Pb	19 55 08.6	-1.6
MBDF				*e*Sn	Sn	19 55 36.4	+0.9
	1.8nm,0.3s						
MBDF	**Montbardon**	**2.58**	**275**	*e*P	Pb	19 55 08.6	-1.6
MBDF				*e*Sn	Sn	19 55 36.4	+0.9
	0.9nm,0.3s						
LPG	**La Plagne**	**2.73**	**291**	*e*P	Pn	19 55 09.9	+2.8
LPG	**La Plagne**	**2.73**	**291**	*e*P	Pn	19 55 09.9	+2.8
LPL	**La Plagne**	**2.75**	**291**	*e*P	Pb	19 55 10.6	-2.6
LPL	**La Plagne**	**2.75**	**291**	*e*P	Pb	19 55 10.6	-2.6
FRF	**La Foret Royal**	**2.87**	**251**	*e*Pn	Pn	19 55 09.7	+0.9
FRF				*e*Sn	Sn	19 55 43.0	+0.4
	3.4nm,0.3s						
FRF	**La Foret Royal**	**2.87**	**251**	*e*Pn	Pn	19 55 09.7	+0.9
FRF				*e*Sn	Sn	19 55 43.0	+0.4
	1.7nm,0.3s						
LMR	**La Mourre**	**3.06**	**247**	*e*Pn	Pn	19 55 11.8	+0.5
LMR				*e*Sn	Sn	19 55 45.8	-1.3
	3.5nm,0.2s						
LMR	**La Mourre**	**3.06**	**247**	*e*Pn	Pn	19 55 11.8	+0.5
LMR				*e*Sn	Sn	19 55 45.8	-1.3
	1.8nm,0.2s						
ORIF	**Oris-en-Rattie**	**3.22**	**278**	*e*Pn	Pn	19 55 14.5	+0.8
ORIF				*e*Sn	Sn	19 55 52.0	+0.7
	1.1nm,0.3s						
ORIF	**Oris-en-Rattie**	**3.22**	**278**	*e*Pn	Pn	19 55 14.5	+0.8
ORIF				*e*Sn	Sn	19 55 52.0	+0.7
	0.6nm,0.3s						
SMRF	**Simiane la Rot**	**3.50**	**262**	*e*Pn	Pn	19 55 17.3	-0.2
SMRF	**Simiane la Rot**	**3.50**	**262**	*e*Pn	Pn	19 55 17.3	-0.2
HINF	**Hinteralfeld**	**4.06**	**324**	*e*Pn	Pn	19 55 24.4	-0.8
HINF				*e*Sn	Sn	19 56 09.9	-2.1
	1.5nm,0.2s						
HINF	**Hinteralfeld**	**4.06**	**324**	*e*Pn	Pn	19 55 24.4	-0.8
HINF				*e*Sn	Sn	19 56 09.9	-2.1
	0.8nm,0.2s						
CDF	**Champ du Feu**	**4.39**	**332**	*e*Pn	Pn	19 55 29.6	-0.2
CDF				*e*Sn	Sn	19 56 17.7	-2.5
	1.3nm,0.3s						
CDF	**Champ du Feu**	**4.39**	**332**	*e*Pn	Pn	19 55 29.6	-0.2
CDF				*e*Sn	Sn	19 56 17.7	-2.5
	0.6nm,0.3s						
HAU	**Haudompre**	**4.42**	**322**	*e*Pn	Pn	19 55 29.2	-0.9
HAU				*e*Sn	Sn	19 56 18.8	-2.0
	2.6nm,0.2s						
HAU	**Haudompre**	**4.42**	**322**	*e*Pn	Pn	19 55 29.2	-0.9
HAU				*e*Sn	Sn	19 56 18.8	-2.0
	1.3nm,0.2s						
KHC	**Kasperske Hory**	**5.06**	**25**	*e*SN	Sn	19 56 34.9	-1.6

MEX 26 20:06:12.3±0.9, 18.42N×103.02W, h52km±21km, MD3.5, Near coast of Michoacan

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MMIG	**Aquila**	**0.34**	**247**	*e*P	Pn	20 06 20.2	-1.8
MMIG				*i* S	Sn	20 06 27.4	-1.6
R15V		**1.18**	**309**	*e*P	Pn	20 06 30.9	-1.6
R15V				*e*S	Sn	20 06 45.6	-2.0
EZ5V		**1.19**	**332**	*e*P	Pn	20 06 32.1	-0.8
EZ5V				*e*S	Sn	20 06 45.3	-2.9
ZIIG	**Zihuatanejo**	**1.68**	**119**	*e*P	Pn	20 06 37.8	-1.5
ZIIG				*e*S	Sn	20 06 58.5	-1.3

IDC ***26*** *20:07:08.8±2.4, 36.20N×141.27E, h0km, mb3.4/5, mb1 3.5/6, mb1mx3.3/50, mbtmp3.4/6, ML3.3/1, MS2.4/2, Ms1 2.4/2, ms1mx2.2/23, Error ellipse: s-maj=63.9km s-min=28.7km az=65.0*
ISCJB ***26*** *20:07:13.5±1.0, 36.17N±0.05×141.04E±0.09, h40km±8km, mb3.3/5, MS4.0/1, Error ellipse: s-maj=12.5km s-min=8.4km az=156.8*
JMA ***26*** *20:07:14.3±0.1, 36.16N×140.95E, h43km±1km, M3.4 JMA Felt I J1.*
ISC 26 20:07:12.8±2.2, 36.17N±0.06×141.08E±0.09, h24km±14km, n20, σ0.73/17, mb3.3/5, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CHOJ	**Chosi**	**0.49**	**201**	P	Pn	20 07 24.6	+0.2
CHOJ				S	Sn	20 07 31.5	-0.7
JHO	**Hitachi**	**0.61**	**317**	P	Pn	20 07 25.5	-0.5
JHO				S	Sb	20 07 33.3	+0.3
JYT	**Yasato**	**0.72**	**275**	P	Pb	20 07 26.8	+0.1
JYT				S	Sb	20 07 35.4	-0.7
JFK	**Kawauchi**	**1.21**	**352**	P	Pn	20 07 34.2	-0.1
JAG	**Ashikaga**	**1.34**	**282**	P	Pn	20 07 35.7	-0.3
MJAR	**Matsushiro Arr**	**2.35**	**280**	Pn	Pn	20 07 50.3	+0.4
	6.4nm,0.3s,baz=92,slow=16,SNR=36						
MJAR				Sn	Sn	20 08 17.2	-0.8
	6.4nm,0.3s,baz=70,slow=7.0,SNR=9.3						
MJAR				LR	LR	20 08 54.2	
	comp=Z,59nm,21.6s,baz=125,slow=43						
MAT	**Matsushiro**	**2.35**	**280**	P	Pn	20 07 50.9	+1.0
MAT				S	Sn	20 08 18.6	+0.5
KSRS	**Korea Array**	**10.63**	**281**	LR	LR	20 13 41.6	
	comp=Z,24nm,21.3s,baz=145,slow=36						
H11N2	**WAKE ISLAND Hy 27.95**	**119**		T	T	20 42 14.1	
	baz=312,slow=75,SNR=22						
H11N1	**WAKE ISLAND Hy 27.96**	**119**		T	T	20 42 13.5	
	baz=312,slow=75,SNR=26						
H11N3	**WAKE ISLAND Hy 27.97**	**119**		T	T	20 42 14.6	
	baz=312,slow=75,SNR=23						
SONM	**Songino Array**	**28.06**	**305**	P	**P**	**20 13 01.3**	**-1.1**
	0.2nm,0.4s,baz=107,slow=10,SNR=2.8						
H11S1	**WAKE ISLAND Hy 28.63**	**121**		T	T	20 43 04.5	
	baz=314,slow=76,SNR=60						
H11S3	**WAKE ISLAND Hy 28.63**	**121**		T	T	20 43 03.9	
	baz=314,slow=76,SNR=37						
H11S2	**WAKE ISLAND Hy 28.64**	**121**		T	T	20 43 03.4	
	baz=314,slow=76,SNR=34						
ZALV	**Zalesovo Beam**	**42.31**	**313**	P	**P**	**20 15 05.4**	**+1.0**
	0.2nm,0.3s,

MKAR Makanchi Array 44.36 303 P **P** 20 15 22.2 +1.0
0.1nm,0.2s,baz=90,slow=8.6,SNR=3.4
BVAR Borovoye Array 50.96 313 P **P** 20 16 12.6 +0.3
0.5nm,0.6s,baz=90,slow=5.8,SNR=4.8
WRA Warramunga Arr 56.16 188 P **P** 20 16 50.5 -0.2
0.8nm,1.0s,baz=3.8,slow=7.2,SNR=4.5
FINES FINESS Array B 69.46 332 LR LR 20 49 18.6
comp=Z,74nm,19.0s,baz=353,slow=36

IDC 26 20:09:15.1±7.2,**5°49S**×**149°96E, h72**km±53km, **mb3.1**/4, **mb1 3.3**/5, **mb1mx3.1**/24, **mbtmpg3.4**/5, **ML1.3**/1, **Error ellipse: s-maj=99.7km s-min=37.6km az=108.0, New Britain region**

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**4.78**	**215**	P		Pn	20 10 23.3	-1.4
	0.8nm,0.3s,baz=24,slow=20,SNR=2.2							
PMG				S		Sn	20 11 20.3	+1.6
	6.1nm,0.3s,baz=346,slow=19,SNR=12							
WRA	**Warramunga Arr**	**20.91**	**225**	P		P	20 13 51.9	0.0
	0.4nm,0.4s,baz=50,slow=10,SNR=9.9							
ASAR	**Alice Springs**	**23.78**	**219**	P		P	20 14 21.1	-0.3
	0.9nm,1.0s,baz=55,slow=8.6,SNR=11							
FITZ	**Fitzroy Crossi**	**26.85**	**240**	P		P	20 14 48.7	-0.5
	1.9nm,0.8s,baz=58,slow=14,SNR=8.2							
SONM	**Songino Array**	**65.43**	**329**	P		P	20 19 51.2	+0.7
	0.2nm,0.5s,baz=137,slow=5.6,SNR=2.8							

*CSEM **26** 20:14:07.9±0.5, 35°93N×28°23E, h2km, MD2.7, Error ellipse: s-maj=12.5km s-min=6.9km az=148.0*
*ISK **26** 20:14:07.1, 35°88N×28°26E, h9km, MD2.7*
*DDA **26** 20:14:35.7, 35°98N×28°24E, h12km, Md2.8*
ISC 26 20:14:06.9±1.8, **35°91N**±0°06×**28°26E**±0°05, **h0**km±13km, **n18**, σ1°**25**/29, **Eastern Mediterranean Sea**

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
KARP	**Karpathos**	**0.96**	**248**	*e*Pg		**Pb**	**20 14 25.7**	**-0.7**
KARP				*e*SG		**Sb**	**20 14 39.4**	**-0.4**
KARP	**Karpathos**	**0.96**	**248**	*e*Pg		**Pb**	**20 14 25.7**	**0.7**
KARP				*e*Sg		**Sb**	**20 14 39.4**	**-0.4**
DALY	**Dalyan (Mu˘la**	**0.96**	**19**	*e*PG		**Pb**	**20 14 26.5**	**0.0**
DALY				*e*SG		**Sn**	**20 14 40.7**	**-1.3**
DALY	**Dalyan (Mu˘la**	**0.96**	**19**	*e*Pg		**Pb**	**20 14 26.5**	**0.0**
DALY				*e*Sg		**Sn**	**20 14 40.7**	**-1.3**
FETY	**Fethiye**	**0.99**	**42**	*e*PG		**Pb**	**20 14 26.8**	**-0.1**
FETY				*e*SG		**Sn**	**20 14 41.4**	**-1.3**
FETY	**Fethiye**	**0.99**	**42**	*e*Pg		**Pb**	**20 14 26.8**	**-0.1**
FETY				*e*Sg		**Sn**	**20 14 41.4**	**-1.3**
TURN	**Turunc**	**1.00**	**16**	*i* P		**Pg**	**20 14 25.0**	**-1.2**
TURN				*i* S		**Sg**	**20 14 37.7**	**-1.5**
TURN	**Turunc**	**1.00**	**16**	P		**Pg**	**20 14 25.0**	**-1.2**
TURN				S		**Sg**	**20 14 37.7**	**-1.5**
AKAS	**Kas**	**1.14**	**73**	*i* P		**Pn**	**20 14 30.9**	**+0.7**
AKAS				*i* S		**Sn**	**20 14 50.4**	**+3.8**
AKAS	**Kas**	**1.14**	**73**	P		**Pn**	**20 14 30.9**	**+0.7**
YER	**Yerkesik**	**1.23**	**1**	*e*PN		**Pg**	**20 14 31.3**	**+0.9**
YER	**Yerkesik**	**1.23**	**1**	*e*Pn		**Pg**	**20 14 31.3**	**+0.9**
BDRM	**Kayabasi**	**1.33**	**331**	*i* P		**Pb**	**20 14 32.8**	**+0.1**
BDRM				*i* S		**Sg**	**20 14 51.5**	**+1.8**
BDRM	**Kayabasi**	**1.33**	**331**	P		**Pb**	**20 14 32.8**	**+0.1**
BDRM				S		**Sg**	**20 14 51.5**	**+1.8**
BODT	**Bodrum**	**1.38**	**327**	*e*PN		**Pb**	**20 14 33.5**	**-0.1**
BODT	**Bodrum**	**1.38**	**327**	*e*Pn		**Pb**	**20 14 33.5**	**-0.1**
AYDN	**Tasoluk**	**1.78**	**350**	*i* P		**Pb**	**20 14 40.6**	**+0.2**
AYDN	**Tasoluk**	**1.78**	**350**	P		**Pb**	**20 14 40.6**	**+0.2**

*ISK **26** 20:20:02.9, 40°00N×41°87E, h5km, MD3.7*
*DDA **26** 20:20:03.9, 40°02N×41°83E, h10km, Ml3.4*
*TIF **26** 20:20:03.4, 40°00N×41°77E, h16km±2km*
*ISCJB **26** 20:20:04.3±0.5, 40°01N±0°02×41°81E±0°03, h3km±4km, Error ellipse: s-maj=3.9km s-min=2.8km az=29.1*
*CSEM **26** 20:20:04.3±0.2, 40°00N×41°82E, h2km, ML3.4, Error ellipse: s-maj=4.6km s-min=3.7km az=119.0*
ISC 26 20:20:03.6±1.0, **40°01N**±0°02×**41°77E**±0°02, **h5**km±9km, **n75**, σ0°**99**/103, **Turkey**

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
HOMI	**Horasan**	**0.11**	**70**	*i* P		**Pg**	**20 20 06.2**	**+0.2**
HOMI				*i* S		**Sg**	**20 20 08.1**	**+0.4**
ERZM	**Erzurum**	**0.33**	**252**	*i* P		**Pb**	**20 20 11.9**	**-0.1**
ERZM	**Erzurum**	**0.33**	**252**	P		**Pb**	**20 20 11.9**	**-0.1**
EZM	**Erzurum**	**0.33**	**252**	*e*PG		**Pb**	**20 20 11.9**	**-0.1**
EATA	**Eleskirt**	**0.57**	**104**	*i* P		**Pg**	**20 20 15.2**	**+0.6**
EATA				*i* S		**Sb**	**20 20 23.8**	**-1.1**
EATA	**Eleskirt**	**0.57**	**104**	P		**Pg**	**20 20 15.2**	**+0.6**
EATA				S		**Sb**	**20 20 23.8**	**-1.1**
ECAT	**Cat-ERZURUM**	**0.73**	**237**	*i* P		**Pb**	**20 20 18.7**	**-0.2**
ECAT				*i* S		**Sn**	**20 20 32.7**	**+0.3**
ECAT	**Cat-ERZURUM**	**0.73**	**237**	P		**Pb**	**20 20 18.7**	**-0.2**
EKAR	**Karacoban**	**0.78**	**163**	*i* P		**Pb**	**20 20 19.7**	**-0.1**
EKAR				*i* S		**Sn**	**20 20 35.5**	**+1.8**
EKAR	**Karacoban**	**0.78**	**163**	P		**Pb**	**20 20 19.7**	**-0.1**
VRTB	**Varto-Mus**	**0.88**	**196**	*e*PG		**Pb**	**20 20 20.9**	**-0.5**
VRTB				*e*SG		**Sn**	**20 20 34.9**	**-1.1**
VRTB	**Varto-Mus**	**0.88**	**196**	*e*Pg		**Pb**	**20 20 20.9**	**-0.5**
VRTB				*e*Sg		**Sn**	**20 20 34.9**	**-1.1**
DDEM	**Demirkent**	**0.89**	**359**	*i* P		**Pg**	**20 20 20.5**	**-0.1**
DDEM				*i* S		**Sb**	**20 20 33.6**	**-0.1**
DDEM	**Demirkent**	**0.89**	**359**	P		**Pg**	**20 20 20.5**	**-0.1**
DDEM				S		**Sb**	**20 20 33.6**	**-0.1**
DBAD	**Bademkaya**	**1.01**	**357**	*i* P		**Pg**	**20 20 22.9**	**-0.1**
DBAD				*i* S		**Sb**	**20 20 37.6**	**+0.3**
DBAD	**Bademkaya**	**1.01**	**357**	P		**Pg**	**20 20 22.9**	**-0.1**
DBAD				S		**Sb**	**20 20 37.6**	**+0.3**
DAGI	**Agillar**	**1.08**	**6**	*i* P		**Pg**	**20 20 23.8**	**-0.4**
DAGI				*i* S		**Sg**	**20 20 38.6**	**+0.4**
BNGL	**BINGOL**	**1.16**	**205**	*i* P		**Pb**	**20 20 26.1**	**-0.1**
BNGL				*i* S		**Sn**	**20 20 43.8**	**+0.9**
KARS	**Kars**	**1.18**	**58**	*e*PN		**Pg**	**20 20 25.4**	**-0.8**
KARS	**Kars**	**1.18**	**58**	*e*Pn		**Pg**	**20 20 25.4**	**-0.8**
ARTV	**Artvin**	**1.18**	**6**	*i* P		**Pg**	**20 20 26.2**	**-0.1**
ARTV				*i* S		**Sb**	**20 20 42.3**	**0.0**
ARTV	**Artvin**	**1.18**	**6**	P		**Pg**	**20 20 26.2**	**-0.1**
ARTV				S		**Sb**	**20 20 42.3**	**0.0**
BAYT	**Ayd¨–ntepe-Bay**	**1.31**	**288**	*e*PN		**Pn**	**20 20 29.4**	**+0.8**
BAYT	**Ayd¨–ntepe-Bay**	**1.31**	**288**	*e*Pn		**Pn**	**20 20 29.4**	**+0.8**
BNGB	**Bing¨¶l**	**1.32**	**220**	*e*PN		**Pb**	**20 20 30.1**	**+1.2**
DBOC	**Borcka**	**1.34**	**357**	*i* P		**Pn**	**20 20 28.8**	**-0.2**
DBOC				*i* S		**Sg**	**20 20 46.3**	**-0.3**
DBOC	**Borcka**	**1.34**	**357**	P		**Pn**	**20 20 28.8**	**-0.2**
DBOC				S		**Sg**	**20 20 46.3**	**-0.3**
BINT	**Bingol**	**1.50**	**222**	*e*Pn		**Pn**	**20 20 30.1**	**-1.2**
TATV	**Tatvan**	**1.55**	**165**	*i* P		**Pn**	**20 20 31.3**	**-0.6**
TATV				*i* S		**Sn**	**20 20 52.2**	**-0.3**
TATV	**Tatvan**	**1.55**	**165**	P		**Pn**	**20 20 31.3**	**-0.6**
TATV				S		**Sn**	**20 20 52.2**	**-0.3**
EAK	**Akyaka**	**1.56**	**64**	*i* P		**Pn**	**20 20 32.1**	**+0.1**
EAK				*i* S		**Sb**	**20 20 53.5**	**+0.4**
EAK	**Akyaka**	**1.56**	**64**	P		**Pn**	**20 20 32.2**	**+0.1**
EAK				S		**Sb**	**20 20 53.5**	**+0.4**
EUZM	**Uzumlu**	**1.62**	**260**	*i* P		**Pg**	**20 20 35.5**	**+0.8**
EUZM	**Uzumlu**	**1.62**	**260**	P		**Pg**	**20 20 35.5**	**+0.8**
ERZN	**Erzincan**	**1.63**	**256**	*e*PN		**Pg**	**20 20 34.9**	**+0.1**
EPOS	**Posof**	**1.66**	**26**	*i* P		**Pb**	**20 20 35.1**	**+0.3**
EPOS				*i* S		**Sg**	**20 20 58.2**	**+1.2**
EPOS	**Posof**	**1.66**	**26**	P		**Pb**	**20 20 35.1**	**+0.3**
EPOS				S		**Sg**	**20 20 58.2**	**+1.2**
GUMT	**Gumushane**	**1.81**	**285**	*e*PN		**Pg**	**20 20 37.6**	**-0.6**
GUMT	**Gumushane**	**1.81**	**285**	*e*Pn		**Pg**	**20 20 37.6**	**-0.6**
KTUT	**Trabzon**	**1.81**	**303**	*e*PN		**Pb**	**20 20 37.4**	**+0.2**
KTUT	**Trabzon**	**1.81**	**303**	*e*Pn		**Pb**	**20 20 37.4**	**+0.2**
CLDR	**Caldiran**	**1.87**	**117**	*e*PN		**Pn**	**20 20 36.3**	**-0.1**
CLDR	**Caldiran**	**1.87**	**117**	*e*Pn		**Pn**	**20 20 36.3**	**-0.1**
EZC	**Erzincan**	**1.88**	**263**	*e*Pn		**Pn**	**20 20 34.9**	**-1.5**
VANB	**Van**	**1.89**	**138**	*e*PN		**Pn**	**20 20 37.0**	**+0.4**
VANB	**Van**	**1.89**	**138**	*e*Pn		**Pn**	**20 20 37.0**	**+0.4**
AKH	**Akhalkalaki**	**1.92**	**43**	P		**Pn**	**20 20 38.0**	**+0.9**
AKH				S		**Sb**	**20 21 03.7**	**+0.2**
AKH	**Akhalkalaki**	**1.92**	**43**	P		**Pn**	**20 20 38.0**	**+0.9**
AKH				S		**Sb**	**20 21 03.7**	**+0.2**
KELT	**Kelkit**	**1.93**	**275**	*i* P		**Pg**	**20 20 40.1**	**-0.5**
KELT	**Kelkit**	**1.93**	**275**	P		**Pg**	**20 20 40.1**	**-0.5**
TNCL	**Tunceli-Merkez**	**1.94**	**243**	*i* P		**Pb**	**20 20 39.2**	**-0.2**
TNCL	**Tunceli-Merkez**	**1.94**	**243**	P		**Pb**	**20 20 39.2**	**-0.2**
BTMN	**Batman**	**2.15**	**191**	*i* P		**Pb**	**20 20 42.4**	**-0.7**
BTMN	**Batman**	**2.15**	**191**	P		**Pb**	**20 20 42.3**	**-0.7**
PTK	**Pertek**	**2.15**	**240**	*e*PN		**Pb**	**20 20 42.5**	**-0.6**
PTK	**Pertek**	**2.15**	**240**	*e*Pn		**Pb**	**20 20 42.5**	**-0.6**
ESPY	**Espiye-Giresun**	**2.49**	**292**	*e*PN		**Pb**	**20 20 47.5**	**-1.3**
ESPY	**Espiye-Giresun**	**2.49**	**292**	*e*Pn		**Pb**	**20 20 47.5**	**-1.3**
SVRC	**Sivrice-ELAZID**	**2.51**	**230**	*e*PN		**Pb**	**20 20 47.5**	**-1.7**
SVRC	**Sivrice-ELAZID**	**2.51**	**230**	*e*Pn		**Pb**	**20 20 47.5**	**-1.7**
ILIC	**ilic-Erzincan**	**2.53**	**258**	*e*PN		**Pb**	**20 20 48.0**	**-1.5**
ILIC	**ilic-Erzincan**	**2.53**	**258**	*e*Pn		**Pb**	**20 20 48.0**	**-1.5**
SIRT	**Sirnak**	**2.56**	**168**	*e*PN		**Pn**	**20 20 47.0**	**+1.3**
SIRT	**Sirnak**	**2.56**	**168**	*e*Pn		**Pn**	**20 20 47.0**	**+1.3**
CHVG	**Ch'k'valeri**	**2.72**	**5**	*e*PN		**Pb**	**20 20 52.3**	**-0.4**
CHVG	**Ch'k'valeri**	**2.72**	**5**	P		**Pg**	**20 20 54.2**	**-1.5**
CHVG	**Ch'k'valeri**	**2.72**	**5**	*e*Pn		**Pg**	**20 20 52.3**	**-0.4**
CHVG	**Ch'k'valeri**	**2.72**	**5**	P		**Pg**	**20 20 54.2**	**-1.5**
TBLG	**Delisi**	**2.83**	**52**	P		**Pb**	**20 20 52.4**	**-2.2**
TBLG				S		**Sg**	**20 21 35.3**	**+0.7**
TBLG	**Delisi**	**2.83**	**52**	P		**Pb**	**20 20 52.4**	**-2.2**
ONI	**Oni**	**2.88**	**26**	P		**Pn**	**20 20 51.8**	**+1.7**
ONI				S		**Sg**	**20 21 33.7**	**-2.2**
DGRG	**David-gareji**	**3.10**	**61**	P		**Pn**	**20 20 55.1**	**+2.0**
DGRG				S		**Sb**	**20 21 39.0**	**+1.8**
DGRG	**David-gareji**	**3.10**	**61**	P		**Pn**	**20 20 55.1**	**+2.0**
RSDY	**Resadiye-TOKAT**	**3.42**	**278**	*e*PN		**Pn**	**20 21 00.5**	**+2.9**
RSDY	**Resadiye-TOKAT**	**3.42**	**278**	*e*Pn		**Pn**	**20 21 00.5**	**+2.9**

*ISK **26** 20:26:35.9, 34°26N×28°30E, h21km, MD3.8*
*ATH **26** 20:26:48.0, 35°21N×27°89E, h15km±3km, ML2.4/2, Error ellipse: s-maj=7.5km s-min=1.7km az=330.0*
*CSEM **26** 20:26:48.0, 35°21N×27°89E, h15km, ML2.4/2*
*DDA **26** 20:27:13.7, 35°41N×28°16E, h26km, Md3.1*
ISC 26 20:26:46.3±1.5, **35°13N**±0°06×**27°98E**±0°03, **h2**km±12km, **n26**, σ1°**28**/37, **Dodecanese Islands**

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
KARP	**Karpathos**	**0.79**	**302**	P		**Pg**	**20 27 00.4**	**-1.0**
KARP				S		**Sg**	**20 27 11.0**	**-0.6**
KARP	**Karpathos**	**0.79**	**302**	P		**Pg**	**20 27 00.4**	**-1.0**
KARP				S		**Sg**	**20 27 11.0**	**-0.6**
KARP				AML	AML		20 27 16.7	
	comp=N,701μm,0.4s							
KARP				AML	AML		20 27 20.5	
	comp=E,538μm,0.5s							
ZKR				AML	AML		20 27 47.5	
	comp=N,255μm,0.8s							
KSL	**Kastellorizon**	**1.66**	**52**	P		**Pb**	**20 27 17.5**	**-0.1**
AKAS	**Kas**	**1.72**	**50**	*i* P		**Pg**	**20 27 19.5**	**+0.1**
AKAS				*i* S		**Sg**	**20 27 42.6**	**+0.9**
AKAS	**Kas**	**1.72**	**50**	P		**Pg**	**20 27 19.5**	**+0.1**
AKAS				S		**Sg**	**20 27 42.6**	**+0.9**
FETY	**Fethiye**	**1.75**	**31**	*e*PN		**Pn**	**20 27 16.0**	**-1.7**
DALY	**Dalyan (Mu˘la**	**1.77**	**18**	*e*PN		**Pn**	**20 27 17.8**	**-0.2**
DALY				*e*SN		**Sg**	**20 27 47.9**	**+4.6**
TURN	**Turunc**	**1.81**	**16**	*i* P		**Pn**	**20 27 19.0**	**+0.5**
TURN				*i* S		**Sn**	**20 27 41.9**	**-0.1**
TURN	**Turunc**	**1.81**	**16**	P		**Pn**	**20 27 19.0**	**+0.5**
TURN				S		**Sn**	**20 27 41.9**	**-0.1**
BDRM	**Kayabasi**	**1.98**	**348**	*i* P		**Pg**	**20 27 24.1**	**-0.2**
BDRM				*i* S		**Sg**	**20 27 49.2**	**-0.8**
BDRM	**Kayabasi**	**1.98**	**348**	P		**Pg**	**20 27 24.1**	**-0.2**
BDRM				S		**Sg**	**20 27 49.2**	**-0.8**
BODT	**Bodrum**	**2.00**	**345**	*e*PN		**Pb**	**20 27 22.6**	**-0.9**
YER	**Yerkesik**	**2.02**	**7**	*e*PN		**Pn**	**20 27 21.7**	**+0.3**
LAST	**Lasithi**	**2.05**	**272**	P		**Pb**	**20 27 23.8**	**-0.4**
LAST	**Lasithi**	**2.05**	**272**	P		**Pb**	**20 27 23.8**	**-0.4**
ELL	**Elmali**	**2.25**	**44**	*e*PN		**Pn**	**20 27 20.9**	**-3.8**
AYDN	**Tasoluk**	**2.53**	**358**	*i* P		**Pn**	**20 27 29.4**	**+1.0**
AYDN	**Tasoluk**	**2.53**	**358**	P		**Pn**	**20 27 29.4**	**+1.0**
IDI	**Anoyia**	**2.53**	**274**	P		**Pn**	**20 27 30.0**	**+1.5**
IDI	**Anoyia**	**2.53**	**274**	P		**Pn**	**20 27 30.0**	**+1.5**
SMG	**Samos**	**2.73**	**341**	P		**Pn**	**20 27 31.7**	**+0.5**
SMG	**Samos**	**2.73**	**341**	P		**Pn**	**20 27 31.7**	**+0.5**
AYDB	**Zeytinkoy-Aydi**	**2.81**	**359**	*e*Pn		**Pn**	**20 27 33.0**	**+0.6**

*IDC **26** 20:28:45.8±2.3, 23°45N×124°95E, h0km, mb3.6/5, mb1 3.6/5, mb1mx3.3/31, mbtmpg3.6/5, Error ellipse: s-maj=162.7km s-min=28.6km az=67.0*
*ISCJB **26** 20:28:54.9±0.9, 24°34N±0°09×125°18E±0°06, h46km±6km, mb3.4/5, Error ellipse: s-maj=17.1km s-min=5.0km az=151.1*
*JMA **26** 20:28:54.9±0.2, 24°31N×125°17E, h39km, M3.1*
ISC 26 20:28:55.1±1.6, **24°32N**±0°09×**125°15E**±0°06, **h31**km±9km, **n21**, σ0°**68**/28, **mb3.5**/5, **Southwestern Ryukyu Islands**

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
JOGS	**Gusukube**	**0.50**	**28**	P		**Pb**	**20 29 05.5**	**-0.1**
JOGS				S		**Sn**	**20 29 13.3**	**+0.3**
JIRB	**Irabujima**	**0.51**	**2**	P		**Pb**	**20 29 05.4**	**-0.4**
JIRB				*e*S		**Sb**	**20 29 13.1**	**0.0**
JMJ	**Miyako jima 2**	**0.51**	**15**	P		**Pb**	**20 29 05.6**	**-0.2**
JMJ				*e*S		**Sb**	**20 29 13.3**	**+0.2**
JTJ	**Tarama**	**0.52**	**308**	P		**Pb**	**20 29 05.9**	**0.0**
JTJ				*e*S		**Sn**	**20 29 13.9**	**-0.2**
JIKM	**Ikemajima**	**0.61**	**8**	P		**Pb**	**20 29 07.1**	**-0.3**
JIKM				S		**Sn**	**20 29 16.6**	**+0.2**
JISG	**Ishigakijimahi**	**0.81**	**289**	P		**Pn**	**20 29 09.9**	**-0.5**
JIJ	**Ishigaki jima**	**0.92**	**273**	P		**Pn**	**20 29 11.7**	**-0.2**
JIJ				*e*S		**Sb**	**20 29 25.1**	**+0.6**
JKRS	**Kuro-shima**	**1.04**	**266**	P		**Pb**	**20 29 14.4**	**-0.2**
HATJ	**Hateruma jima**	**1.26**	**258**	P		**Pn**	**20 29 16.4**	**-0.1**
HATJ				*e*S		**Sb**	**20 29 33.6**	**-0.4**
IRIF	**Iriomote-Funau**	**1.30**	**271**	P		**Pn**	**20 29 17.8**	**+0.8**
YOJ	**Yonaguni jima**	**1.96**	**275**	P		**Pn**	**20 29 26.9**	**+0.8**
JYNG	**Yonagunijimaku**	**2.02**	**274**	P		**Pn**	**20 29 27.5**	**+0.6**
JKE	**Kume jima 2**	**2.49**	**36**	P		**Pn**	**20 29 33.5**	**+0.1**
JKE				S		**Sn**	**20 30 02.5**	**-0.2**
JJT2	**Tamagusuku 2**	**2.97**	**52**	P		**Pn**	**20 29 40.0**	**-0.1**
JIH	**Iheya**	**3.71**	**43**	P		**Pn**	**20 29 49.9**	**-0.4**
JOW	**Kunigami**	**3.77**	**48**	P		**Pn**	**20 29 52.3**	**+1.2**
SONM	**Songino Array**	**27.79**	**332**	P		**P**	**20 34 43.6**	**+2.2**
	0.3nm,0.7s,baz=148,slow=10,SNR=4.3							
MKAR	**Makanchi Array**	**40.80**	**314**	P		**P**	**20 36 33.0**	**-0.5**
	0.5nm,0.4s,baz=98,slow=9.8,SNR=13							
ZALV	**Zalesovo Beam**	**42.15**	**325**	P		**P**	**20 36 43.4**	**-1.1**
	0.4nm,0.4s,baz=110,slow=8.3,SNR=3.1							
ASAR	**Alice Springs**	**48.45**	**169**	P		P	20 37 23.8	-11
	0.2nm,0.8s,baz=353,slow=7.4,SNR=3.1							
FINES	**FINESS Array B**	**73.14**	**330**	P		**P**	**20 40 21.7**	**-0.6**
	0.7nm,0.7s,baz=59,slow=5.7,SNR=5.3							

IDC 26 20:56:43.4±2.1, **9°03S**×**123°31E, h0**km, **mb3.2**/1, **mb1 3.6**/3, **mb1mx3.3**/22, **mbtmpg3.4**/3, **ML3.7**/2, **Error ellipse: s-maj=263.6km s-min=30.8km az=55.0, Timor region**

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**15.21**	**137**	Pn		Pn	21 00 18.3	-1.4
	0.3nm,0.3s,baz=312,slow=14,SNR=21							
WRA				Sn		Sn	21 02 54.0	-15
	0.5nm,0.3s,baz=265,slow=18,SNR=8.4							
ASAR	**Alice Springs**	**17.74**	**146**	P		P	21 00 52.9	0.0
	0.3nm,0.3s,baz=319,slow=11,SNR=16							
ASAR				S		Sn	21 03 54.7	-16
	0.1nm,0.3s,baz=312,slow=22,SNR=2.9							
MKAR	**Makanchi Array**	**66.50**	**331**	P		P	21 07 35.0	0.0
	0.1nm,0.3s,baz=129,slow=7.6,SNR=2.2							

*ECX **26** 21:10:21.0±1.8, 27°54N×111°32W, h8km±32km, MD5.5*
*ISCJB **26** 21:10:24.4±0.2, 27°63N±0°02×111°27W±0°01, h10km, mb4.9/116, MS5.1/57, Error ellipse: s-maj=2.8km s-min=1.6km az=25.1*
*IDC **26** 21:10:24.4±0.5, 27°65N×111°41W, h0km, mb4.5/22, mb1 4.7/29, mb1mx4.6/35, mbtmpg4.5/29, ML4.2/7, MS4.9/42, Ms1 4.9/42, ms1mx4.8/57, Error ellipse: s-maj=15.0km s-min=9.5km az=46.0*

*MEX **26** 21:10:24.4±0.6, 27°57N×111°46W, h13km, MD5.4*
*BJI **26** 21:10:25.1, 27°40N×111°60W, h15km, mb5.5/6, mB5.6/12, Ms5.6/12, Ms7 5.3/12*
*GCMT **26** 21:10:25.6±0.1, 27°67N×111°54W, h18km, MW5.4/120, Moment Tensor Solution. s88,c135; s120,c224; Duration: 1s3 Moment tensor: Scale 10¹⁷Nm; Mrr-0.07±.02; Mθθ-1.57±.03; Mϕϕ1.64±.03; Mrθ-0.31±.06; Mθϕ-0.53±.02; Mϕr-0.06±.05; Best double couple: M₀1.72000×10¹⁷ NP1:ϕs35.00000°, δ82.00000°, λ-8.00000°. NP2:ϕs126.00000°, δ82.00000°, λ-172.00000°. Principal axes: T 1.7250, Plg0.0000°, Azm81.0000°; N -0.0110, Plg79.0000°, Azm172.0000°; P -1.7160, Plg11.0000°, Azm351.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
*NEIC **26** 21:10:25.6±1.2, 27°46N×111°53W, h11km±7km, mb5.1/134, MW5.3, MD5.4(MEX) Error ellipse: s-maj=5.2km s-min=3.6km az=216.0*
NEIC Felt [III] at Guaymas and [II] at Hermosillo, Sonora. Also felt at Agua Prieta, Bahia de Kino, Empalme and Kino. Felt at Santa Rosalia, Baja California Sur.
*NEIC **26** 21:10:26.0±0.0, 27°44N×111°60W, h15km, Moment Tensor Solution. s9 Moment tensor: Scale 10¹⁷Nm; Mrr-0.10; Mθθ-1.30; Mϕϕ1.40; Mrθ0.40; Mϕθ0.00; Mϕr-0.20; Best double couple: M₀1.00000×10¹⁷ NP1:ϕs316.00000°, δ84.00000°, λ-163.00000°. NP2:ϕs224.00000°, δ73.00000°, λ-5.00000°. Principal axes: T 1.4000, Plg7.0000°, Azm89.0000°; N 0.0000, Plg72.0000°, Azm334.0000°; P -1.4000, Plg15.0000°, Azm181.0000°;*
*MOS **26** 21:10:26.0±1.2, 27°61N×111°36W, h20km, mb5.2/31, MS5.4/8 Error ellipse: s-maj=7.7km s-min=4.3km az=97.5*
ISC 26 21:10:25.9±0.3, **27°60N**±0°04×**111°40W**±0°03, **h10**km, **n945**, σ2°**11**/932, **mb5.0**/115, **MS5.1**/58, **6C-4D, Gulf of California**

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
GUYB	**Guaymas**	**0.55**	**58**	*e*P		**Pg**	**21 10 34.8**	**-1.9**
GUYB				*e*S		**Sb**	**21 10 42.6**	**-3.1**
SRIG	**Santa Rosalia**	**0.80**	**249¶**	*e*P		Pg	21 10 36.7	-4.7
SRIG				*e*S		**Sg**	**21 10 46.8**	**-5.0**
SRIG	**Santa Rosalia**	**0.80**	**249**	*e*Pg		Pg	21 10 36.7	-4.6
SRIG				*e*Sg		**Sg**	**21 10 46.1**	**-5.7**
SRIG	**Santa Rosalia**	**0.80**	**249**	*e*P		Pg	21 10 36.7	-4.6
SRIG				*i* S		**Sg**	**21 10 46.1**	**-5.7**
HSIG		**1.47**	**16↓**	*e*P		**Pn**	**21 10 48.3**	**-4.2**
HSIG				*e*S		**Sn**	**21 11 09.4**	**-2.3**
HSIG		**1.47**	**16**	*e*Pn		**Pn**	**21 10 50.8**	**-1.7**
HSIG				*e*Sn		**Sn**	**21 11 08.2**	**-3.6**
HSIG		**1.47**	**16**	*e*P		**Pn**	**21 10 48.3**	**-4.2**
HSIG				*e*S		**Sn**	**21 11 05.7**	**-6.0**
LPIG	**La Paz**	**3.62**	**164**	Pn		**Pn**	**21 11 23.2**	**+1.1**
	7.7nm,0.3s,baz=22,slow=3.9,SNR=6.5							
LPIG				LR		LR	21 12 40.6	
	comp=Z,22μm,20.0s,baz=274,slow=37							
CGIG		**4.07**	**47**	*e*Pn		**Pn**	**21 11 25.2**	**-3.2**
CGIG				*e*Sn		**Sn**	**21 12 11.3**	**-4.9**
CGIG		**4.07**	**47**	*e*P		**Pn**	**21 11 25.2**	**-3.2**
CGIG				*i* S		**Sn**	**21 12 11.3**	**-4.9**
SLBS	**Sierra La Lagu**	**4.12**	**161**	*e*Pn		**Pn**	**21 11 28.0**	**-1.0**
SLBS				*e*Sn		Sn	21 12 05.5	-12
SLBS	**Sierra La Lagu**	**4.12**	**161**	*e*P		**Pn**	**21 11 27.5**	**-1.5**
319A	**Douglas**	**4.19**	**26**	*e*Pn		**Pn**	**21 11 31.6**	**+1.6**
319A				*e*Sn		**Sn**	**21 12 16.6**	**-2.5**
214A	**Organ Pipe Nat**	**4.51**	**345**	P		**Pn**	**21 11 30.8**	**-3.5**
	baz=165							
TUC	**Tucson**

baz=181
WUAZ **Wupatki** 7.89 0 *e*Pn Pn 21 12 22.3 +1.4
GMRC **Granite Mounta** 8.03 334 P Pn 21 12 20.9 -1.9
baz=153
LDFC **Landfair** 8.10 338 *e*Pn Pn 21 12 21.3 -2.4
BBRC **Big Bear Solar** 8.15 326 P Pn 21 12 21.9 -2.7
baz=144
SCI2 **San Clemente I** 8.18 313 P Pn 21 12 23.3 -1.4
baz=130
HEC **Hector,Ludlow** 8.35 331 P Pn 21 12 24.5 -2.6
baz=149
CIS **Catalina Islan** 8.37 315 P Pn 21 12 27.0 -0.3
baz=133
ANMO **Albuquerque** 8.45 29 Pn Pn 21 12 32.2 +3.6
0.5nm,0.3s,baz=210,slow=10,SNR=10
ANMO Lg Lg 21 14 50.4
8.9nm,0.3s,baz=151,slow=19,SNR=8.9
ANMO **Albuquerque** 8.45 29 P Pn 21 12 28.5 -0.2
baz=211
ANMO **Albuquerque** 8.45 29 *c i*P Pn 21 12 31.6 +3.0
ANMO pmax pmax
comp=Z,20nm,1.7s
FMP **Fort Macarthur** 8.50 317 P Pn 21 12 27.1 -2.0
baz=135
BFSC **Mount Baldy Ra** 8.52 322 P Pn 21 12 26.9 -2.6
baz=140
RRX **Edison Barstow** 8.69 328 P Pn 21 12 29.0 -2.7
baz=146
TUQ **Turquoise Moun** 8.71 335 P Pn 21 12 30.3 -1.8
baz=153
MWC **Mount Wilson** 8.73 321 *e*P Pn 21 12 35.6 +3.2
MWC **Mount Wilson** 8.73 321 *e*Pn Pn 21 12 35.6 +3.2
PASC **Pasadena Art C** 8.76 320 *e*Pn Pn 21 12 36.5 +3.7
U15A **North Rim** 8.83 355 *e*Pn Pn 21 12 34.7 +0.8
DECC **Green Verdugo** 8.91 320 P Pn 21 12 32.3 -2.4
baz=137
GSC **Goldstone, Bar** 8.95 330 P Pn 21 12 33.4 -2.0
baz=148
GSC **Goldstone, Bar** 8.95 330 *e*P Pn 21 12 33.8 -1.6
GSC **Goldstone, Bar** 8.95 330 *e*Pn Pn 21 12 33.8 -1.6
SNCC **San Nicolas Is** 8.99 311 P Pn 21 12 33.1 -2.7
baz=128
SNCC **San Nicolas Is** 8.99 311 *e*Pn Pn 21 12 41.0 +5.2
EDW2 **Edwards Air Fo** 9.19 324 P Pn 21 12 38.7 +0.1
baz=141
BLG **Laguna Peak, P** 9.24 316 P Pn 21 12 36.8 -2.5
baz=134
SHOC **Shoshone, Teco** 9.25 335 P Pn 21 12 38.6 -0.8
baz=153
OSI **Osito Audit: C** 9.39 320 P Pn 21 12 40.2 -1.2
baz=137
OSI **Osito Audit: C** 9.39 320 *e*Pn Pn 21 12 47.7 +6.3
KNB **Kanab** 9.46 353 *e*P Pn 21 12 43.3 +0.8
KNB **Kanab** 9.46 353 *e*Pn Pn 21 12 43.3 +0.8
LRMC **Laurel Mtn Rad** 9.50 327 P Pn 21 12 42.4 -0.6
baz=145
LCMT **Little Creek M** 9.51 351 *e*Pn Pn 21 12 41.0 -2.0
SCZ2 **Santa Cruz Isl** 9.52 314 P Pn 21 12 41.6 -1.5
baz=131
MSTX **Muleshoe** 9.76 47 P Pn 21 12 50.3 +3.8
baz=231
MSTX **Muleshoe** 9.76 47 *e*Pn Pn 21 12 39.3 -7.2
ARVC **Arvin** 9.82 322 P Pn 21 12 46.3 -1.0
baz=139
SBC **Santa Barbara** 9.86 316 P Pn 21 12 47.5 -0.2
baz=132
MVCO **Mesa Verde** 9.89 14 P Pn 21 12 48.4 +0.1
baz=195
MVCO **Mesa Verde** 9.89 14 *e*Pn Pn 21 12 50.0 +1.7
MPMC **Manual Prospec** 9.89 330 P Pn 21 12 47.5 -0.9
baz=148
FURC **Furnace Creek,** 9.98 334 P Pn 21 12 50.1 +0.8
baz=152
ISA **Isabella, Lake** 10.04 325 P Pn 21 12 49.2 -1.1
baz=142
ISA S Sn 21 14 49.6 +6.5
baz=142
ISA **Isabella, Lake** 10.04 325 *e*P Pn 21 12 51.0 +0.7
ISA **Isabella, Lake** 10.04 325 *e*Pn Pn 21 12 51.0 +0.7
DAC **Darwin (Calif)** 10.12 330 *e*P Pn 21 12 51.8 +0.3
DAC **Darwin (Calif)** 10.12 330 *e*Pn Pn 21 12 49.8 -1.6
WASM **Alta Sierra Ca** 10.14 325 *e*Sn Sn 21 14 52.5 +6.8
TPNV **Topopah Spring** 10.18 337 P Pn 21 12 53.0 +0.7
baz=156
TPNV **Topopah Spring** 10.18 337 *e*P Pn 21 12 53.2 +0.9
TPNV **Topopah Spring** 10.18 337 *e*Pn Pn 21 12 53.1 +0.9
PKM **Mcpherson Peak** 10.22 317 P Pn 21 12 52.0 -0.9
baz=134
MTPU **Mount Pierson** 10.43 357 *e*Pn Pn 21 12 59.3 +3.4
JCT **Junction City** 10.55 71 P Pn 21 12 56.7 -0.6
baz=256
JCT **Junction City** 10.55 71 *e*P Pn 21 13 00.5 +3.3
JCT **Junction City** 10.55 71 *e*Pn Pn 21 13 00.5 +3.3
PV05 **Paradox Valley** 10.62 10 *e*Pn Pn 21 13 02.1 +3.7
SMMC **Simmler** 10.62 318 P Pn 21 12 55.8 -2.4
baz=135
GRAC **Grapevine Rang** 10.63 333 P Pn 21 12 59.1 +0.7
baz=151
833A **Chaparral WMA,** 10.64 83 P Pn 21 12 57.6 -0.9
baz=268
733A **Divot King Ran** 10.74 81 P Pn 21 12 58.4 -1.4
baz=266
933A **Laredo** 10.76 87 P Pn 21 12 58.7 -1.4
baz=272
PV01 **Paradox Valley** 10.77 12 *e*Pn Pn 21 13 01.5 +1.1
S22A **4UR Ranch, Cre** 10.82 20 P Pn 21 13 02.2 +1.0
baz=202
S22A **4UR Ranch, Cre** 10.82 20 *e*Pn Pn 21 13 03.3 +2.1
MSU **Marysvale** 10.90 357 *e*P Pn 21 13 05.5 +3.3
MSU **Marysvale** 10.90 357 *e*Pn Pn 21 13 05.5 +3.3
633A **Saathoff Ranch** 10.91 77 P Pn 21 13 03.0 +0.9
baz=263
PV10 **Paradox Valley** 10.92 10 *e*Pn Pn 21 13 08.2 +5.7
RCTC **Rector, Farmer** 10.93 324 P Pn 21 13 02.8 +0.3
baz=141
PV09 **Paradox Valley** 11.03 9 *e*Pn Pn 21 13 05.7 +1.7
AMTX **Amarillo** 11.03 46 P Pn 21 13 04.9 +1.0
baz=231
TIN **Tinemaha, Big** 11.05 330 P Pn 21 13 03.3 -0.8
baz=147
PSUT **Pine Spring** 11.09 350 *e*Pn Pn 21 13 07.3 +2.5
533A **Kerrville** 11.12 74 P Pn 21 13 06.9 +1.8
baz=260
T25A **Trinidad** 11.19 30 P Pn 21 13 07.1 +0.9
baz=214
T25A **Trinidad** 11.19 30 *e*Pn Pn 21 13 08.5 +2.4
433A **Art** 11.21 71 P Pn 21 13 06.2 0.0
baz=256
SDCO **Great Sand Dun** 11.26 25 P Pn 21 13 08.6 +1.4
baz=208
SDCO **Great Sand Dun** 11.26 25 *e*Pn Pn 21 13 11.5 +4.2
R11A **Troy Canyon, C** 11.28 343 P Pn 21 13 08.6 +1.3
baz=161
R11A **Troy Canyon, C** 11.28 343 *e*Pn Pn 21 13 07.3 0.0
034A **Hebbronville** 11.32 90 P Pn 21 13 07.3 -0.5
baz=275
ABTX **Abilene, Hawle** 11.34 61 P Pn 21 13 07.5 -0.6
baz=246
ABTX **Abilene, Hawle** 11.34 61 *e*Pn Pn 21 13 09.2 +1.1
834A **Tilden** 11.38 84 P Pn 21 13 09.3 +0.6
baz=270
734A **La Parita Cree** 11.39 81 P Pn 21 13 08.5 -0.3
baz=266
934A **Benavides** 11.43 87 P Pn 21 13 09.3 +0.1
baz=272
333A **Richland Sprin** 11.44 68 P Pn 21 13 08.3 -1.1
baz=254
SRU **San Rafael Swe** 11.50 3 *e*P Pn 21 13 13.4 +3.0
SRU **San Rafael Swe** 11.50 3 *e*Pn Pn 21 13 13.4 +3.0
534A **Blanco** 11.59 75 P Pn 21 13 10.5 -1.0
baz=261
634A **China Grove, S** 11.62 78 P Pn 21 13 11.3 -0.5
baz=264
TMUT **Trail Mountain** 11.66 1 *e*Pn Pn 21 13 15.4 +2.7
233A **Rising Star** 11.71 65 P Pn 21 13 12.7 -0.4
baz=251
MLAC **Mammoth, Mammo** 11.79 330 P Pn 21 13 15.7 +1.3
baz=147
035A **Encino** 11.85 90 P Pn 21 13 15.5 +0.5
baz=276
P17A **Butcher Ranch,** 11.85 2 *e*Pn Pn 21 13 11.9 -3.3
133A **Hamilton Ranch** 11.90 62 P Pn 21 13 14.8 -0.9
baz=248
434A **Burnet** 11.91 71 P Pn 21 13 15.0 -0.9
baz=257
035Z **Hargill** 11.94 92 P Pn 21 13 16.1 -0.2
baz=278
835A **Beeville** 12.02 84 P Pn 21 13 17.1 -0.3
baz=269
P18A **Preston Nutter** 12.03 4 *e*Pn Pn 21 13 19.7 +1.9
735A **Kenedy** 12.05 81 P Pn 21 13 16.6 -1.2
baz=267
334A **Lometa** 12.05 69 P Pn 21 13 15.9 -1.9
baz=255
635A **Leesville** 12.12 78 P Pn 21 13 15.8 -2.9
baz=264
SMCO **Snowmass** 12.12 17 *e*Pn Pn 21 13 21.4 +2.3
MOIG **Morelia** 12.23 128 *e*Pn Pn 21 13 21.4 +0.8
NV01 **Mina Array Sit** 12.25 334 *e*Pn Pn 21 13 22.8 +2.1
NVAR **Mina Array Bea** 12.25 334 Pn Pn 21 13 22.8 +2.1
comp=Z,0.8nm,0.3s,baz=155,slow=14,SNR=43
NVAR Lg Lg 21 16 54.6
comp=Z,0.2nm,0.3s,baz=141,slow=30,SNR=2.4
NVAR LR LR 21 18 02.8
comp=Z,5µm,18.8s,baz=150,slow=38
Z33A **Whitaker Ranch** 12.28 59 P Pn 21 13 20.1 -0.8
baz=245
234A **Clairette** 12.32 66 P Pn 21 13 21.0 -0.5
baz=252
NLU **North Lily Min** 12.33 358 *e*Pn Pn 21 13 24.9 +3.2
535A **Dale** 12.37 75 P Pn 21 13 20.5 -1.5
baz=262
MPU **Maple Canyon** 12.38 359 *e*Pn Pn 21 13 25.9 +3.4
X32A **Elmer** 12.41 54 P Pn 21 13 21.7 -1.0
baz=240
Q24A **Divide** 12.47 23 P Pn 21 13 23.8 0.0
baz=207
Q24A **Divide** 12.47 23 *e*Pn Pn 21 13 28.8 +4.9
SAO **San Andreas Ge** 12.47 320 *e*P Pn 21 13 19.5 -4.1
SAO **San Andreas Ge** 12.47 320 *e*Pn Pn 21 13 19.5 -4.1
435B **Jarrell** 12.48 72 P Pn 21 13 22.7 -0.9
baz=258
134A **White-Moore Ra** 12.55 64 P Pn 21 13 23.1 -1.5
baz=250
DUG **Dugway, Tooele** 12.61 355 P Pn 21 13 25.4 -0.2
baz=175
DUG **Dugway, Tooele** 12.61 355 *e*P Pn 21 13 28.3 +2.7
DUG **Dugway, Tooele** 12.61 355 *e*Pn Pn 21 13 28.3 +2.7
Y33A **Hilltop Ranch,** 12.70 57 P Pn 21 13 25.5 -1.1
baz=243
736A **Circle Diamond** 12.71 81 P Pn 21 13 25.6 -1.1
baz=267
335A **Moody** 12.72 70 P Pn 21 13 25.5 -1.4
baz=256
636A **Smothers Creek** 12.75 78 P Pn 21 13 27.2 -0.1
baz=264
O20A **White River Ci** 12.77 11 P Pn 21 13 27.3 -0.5
baz=193
O20A **White River Ci** 12.77 11 *e*Pn Pn 21 13 29.4 +1.7
WAKR **Walker** 12.78 330 *e*Pn Pn 21 13 30.1 +2.2
W32A **Sentinel** 12.80 51 P Pn 21 13 27.1 -1.0
baz=237
536A **Bastrop** 12.81 76 P Pn 21 13 28.1 0.0
baz=262
CMB **Columbia Colle** 12.85 326 *e*P Pn 21 13 30.4 +1.7
CMB **Columbia Colle** 12.85 326 *e*Pn Pn 21 13 30.4 +1.7
WHTX **Lake Whitney,** 12.87 67 *e*Pn Pn 21 13 35.5 +6.5
WMOK **Wichita Mounta** 12.93 54 *e*P Pn 21 13 29.3 -0.5
WMOK **Wichita Mounta** 12.93 54 *e*Pn Pn 21 13 29.3 -0.5
JLU **Jordanelle** 12.97 360 *e*Pn Pn 21 13 34.0 +3.5
Z34A **Collier Ranch,** 12.97 60 P Pn 21 13 28.6 -1.7
baz=247
X33A **Lawton** 13.03 55 P Pn 21 13 30.5 -0.7
baz=241
CTU **Camp Tracy** 13.06 359 *e*Pn Pn 21 13 34.5 +2.8
ISCO **Idaho Springs** 13.08 20 P Pn 21 13 32.8 +0.7
baz=203
ISCO **Idaho Springs** 13.08 20 *e*P P 21 13 38.8 -3.7
ISCO **Idaho Springs** 13.08 20 *e*Pn P 21 13 38.8 -3.7
135A **Vickery Place,** 13.08 64 P Pn 21 13 30.8 -1.0
baz=251
436A **Wall Ranch, Ga** 13.14 73 P Pn 21 13 30.4 -2.3
baz=259
336A **Riesel** 13.23 70 P Pn 21 13 32.7 -1.1
baz=257
737A **Port Lavaca** 13.25 81 P Pn 21 13 33.4 -0.7
baz=268
V32A **Arapaho** 13.27 49 P Pn 21 13 32.7 -1.7
baz=236
Y34A **Reagan Ranch,** 13.32 58 P Pn 21 13 32.7 -2.5
baz=245
BGU **Big Grassy Mou** 13.36 355 *e*Pn Pn 21 13 38.1 +2.4
W33A **Caddo, Fort Co** 13.36 53 P Pn 21 13 35.2 -0.4
baz=239
637A **Eagle Lake** 13.38 79 P Pn 21 13 33.9 -2.0
baz=265
537A **Green Hill Far** 13.45 76 P Pn 21 13 34.5 -2.4
baz=263
Z35A **Perchaven, San** 13.47 61 P Pn 21 13 33.8 -3.3
baz=248
TCUT **Toone Canyon** 13.48 360 *e*Pn Pn 21 13 41.1 +3.6
ELK **Elko** 13.48 347 Pn Pn 21 13 39.4 +1.9
comp=Z,1.9nm,0.3s,baz=70,slow=12,SNR=3.0
ELK Lg Lg 21 17 32.4
comp=Z,1.9nm,0.3s,baz=217,slow=0.0,SNR=4.6
ELK LR LR 21 18 47.9
comp=Z,12µm,18.6s,baz=136,slow=38
ELK **Elko** 13.48 347 *e*P Pn 21 13 39.2 +1.7
KSCO **Kaye Shedlock'** 13.53 31 P Pn 21 13 38.7 +0.7
baz=215
KSCO **Kaye Shedlock'** 13.53 31 *e*Pn Pn 21 13 40.9 +2.9
X34A **Smith Ranch, M** 13.55 56 P Pn 21 13 37.3 -0.9
baz=242
236A **Katherine and** 13.63 68 P Pn 21 13 36.4 -3.0
baz=255
U32A **Winter Ranch,** 13.67 47 P Pn 21 13 37.7 -2.2
baz=233
SPUT **South Promonto** 13.70 357 *e*Pn Pn 21 13 44.4 +4.0
437A **Phantom Ranch,** 13.71 73 P Pn 21 13 38.2 -2.3
baz=260
136A **Ennis** 13.76 66 P Pn 21 13 38.1 -3.0
baz=253
V33A **Lossen Ranch,** 13.84 50 P Pn 21 13 40.6 -1.5
baz=237
AFDM **Forest Hills D** 13.85 327 *e*Pn Pn 21 13 46.4 +4.0
Y35A **Marietta** 13.85 60 P Pn 21 13 40.6 -1.7
baz=246
HKT **Hockley** 13.85 77 *e*P P 21 13 51.9 +1.2
HKT **Hockley** 13.85 77 *e*P P 21 13 51.9 +1.2
W34A **Bridge Creek,** 13.89 53 P Pn 21 13 41.6 -1.3
baz=240
W34A **Bridge Creek,** 13.89 53 *e*P P 21 13 51.5 +0.2
738A **Farr-Stevens R** 13.95 81 P Pn 21 13 41.5 -2.1
baz=268
HWUT **Hardware Ranch** 13.97 359 *e*Pn Pn 21 13 46.5 +2.3
N23A **Red Feather La** 14.00 17 P Pn 21 13 44.3 -0.3
baz=200
N23A **Red Feather La** 14.00 17 *e*Pn P 21 13 48.9 -3.8
337A **Centerville** 14.01 71 P Pn 21 13 43.3 -1.3
baz=256
Z36A **Blue Ridge** 14.09 63 P Pn 21 13 45.0 -0.6
baz=250
X35A **Drake** 14.10 58 P Pn 21 13 44.8 -1.0
baz=245
638A **Rosharon** 14.14 79 P Pn 21 13 46.2 -0.2
baz=266
538A **Harpers Horsep** 14.18 76 P Pn 21 13 47.7 +0.9
baz=263
HVU **Hansel Valley** 14.19 356 *e*P Pn 21 13 49.7 +2.6
HVU **Hansel Valley** 14.19 356 *e*Pn Pn 21 13 49.7 +2.6
T32A **Huddler Ranch,** 14.21 45 P Pn 21 13 48.3 +1.1
baz=231
237A **Washetta, Mont** 14.23 68 P Pn 21 13 47.2 -0.3
baz=256
MCCM **Marconi Confer** 14.25 320 *e*P P 21 13 52.9 -2.2
438A **Sam Houston St** 14.26 74 P Pn 21 13 49.8 +1.8
baz=261
U33A **Lingo Farm, Me** 14.29 49 P Pn 21 13 48.5 +0.1
baz=235
PTU **Portage** 14.31 357 *e*Pn Pn 21 13 47.7 -1.2
V34A **Guthrie** 14.37 52 P Pn 21 13 47.5 -2.0
baz=239
V34A **Guthrie** 14.37 52 *e*Pn Pn 21 13 50.8 +1.2
137A **Heron Place, G** 14.42 66 P Pn 21 13 48.6 -1.6
baz=254
W35A **Tecumseh** 14.50 55 P Pn 21 13 48.9 -2.4
baz=242
338A **Crockett** 14.50 71 P Pn 21 13 49.0 -2.3
baz=259
PHWY **Pilot Hill** 14.51 18 *e*Pn P 21 13 56.8 -1.5
S32A **Newby Ranch, P** 14.53 43 P Pn 21 13 49.1 -2.6
baz=230
ORV **Oroville** 14.58 327 *e*P Pn 21 13 55.5 +3.2
ORV **Oroville** 14.58 327 *e*Pn Pn 21 13 55.5 +3.2
T33A **Patterson Ranc** 14.58 46 P Pn 21 13 50.6 -1.7
baz=233
X36A **Centrahoma** 14.64 58 P Pn 21 13 51.4 -1.7
baz=245
U34A **Anderson Ranch** 14.68 50 P Pn 21 13 53.3 -0.4
baz=237
U34A **Anderson Ranch** 14.68 50 *e*Pn P 21 14 01.3 +1.3
Z37A **Pogue Cattle C** 14.71 64 P Pn 21 13 52.9 -1.2
baz=252
238A **Jacksonville** 14.80 69 P Pn 21 13 52.5 -2.7
baz=256
V35A **Meyer Ranch, C** 14.82 53 P Pn 21 13 53.9 -1.6
baz=240
539A **Cross D Ranch,** 14.83 76 P Pn 21 13 53.8 -1.9
baz=264
CBKS **Cedar Bluff** 14.83 38 P Pn 21 13 55.6 -0.1
baz=224
CBKS **Cedar Bluff** 14.83 38 *e*P Pn 21 13 57.3 +1.6
CBKS pmax pmax
comp=Z,100nm,1.0s
CBKS **Cedar Bluff** 14.83 38 *e*Pn Pn 21 13 57.2 +1.6
comp=Z,103nm,1.0s
HOPS **Hopland Field** 14.96 322 *e*Pn Pn 21 13 57.6 +0.2
W36A **Wetumka** 14.97 56 P Pn 21 13 55.9 -1.8
baz=244
138A **Matatall Enter** 14.98 66 P Pn 21 13 55.8 -2.0
baz=254
S33A **Kaszmaul Farm,** 15.04 45 P Pn 21 13 57.3 -1.2
baz=232
NATX **Nacogdoches** 15.13 70 P Pn 21 13 58.8 -1.0
baz=258
AHID **Auburn Hatcher** 15.13 1 *e*Pn Pn 21 14 00.3 +0.4
comp=Z,440nm,1.9s
339A **Huntington** 15.13 72 P Pn 21 13 58.0 -1.8
baz=260
R32A **Long Quarter,** 15.14 41 P Pn 21 13 59.0 -0.9
baz=229
U35A **Pawnee** 15.20 51 P Pn 21 13 57.8 -2.8
baz=239
BW06 **Boulder Array** 15.20 5 P Pn 21 13 59.1 -1.8
baz=186
BW06 **Boulder Array** 15.20 5 *e*Pn P 21 14 09.1 +3.1
comp=Z,61nm,1.0s
BW06 *e*Sn Sn 21 16 57.0 +7.5
PD31 **Pinedale Array** 15.20 5 *e*Pn Pn 21 14 01.7 +0.8
PDAR **Pinedale Array** 15.20 5 Pn Pn 21 14 01.7 +0.8
baz=184,slow=10,SNR=5.1
PDAR Lg Lg 21 18 20.8
comp=Z,0.2nm,0.3s,baz=185,slow=31,SNR=4.0
PDAR LR LR 21 18 55.4
comp=Z,2µm,21.5s,baz=194,slow=34
Z38A **Mt. Pleasant** 15.23 64 P Pn 21 13 58.4 -2.7
baz=252
T34A **McClaskey Farm** 15.23 48 P Pn 21 13 59.1 -2.0
baz=236
O03D **Paynes Creek** 15.30 328 P Pn 21 13 59.6 -2.5
baz=143,SNR=32
239A **Gary** 15.34 69 P Pn 21 13 60.0 -2.5
baz=257
OGNE **Ogallala** 15.38 28 P Pn 21 14 01.5 -1.6
baz=213
OGNE **Ogallala** 15.38 28 *e*Pn P 21 14 09.3 +1.5
comp=Z,658nm,1.8s
X37A **Clayton** 15.39 59 P Pn 21 14 00.9 -2.3
baz=247
V36A **Jenks** 15.47 54 P Pn 21 14 01.7 -2.5
baz=242
TLIG **Tlapa** 15.49 127 *e*Pn Pn 21 14 03.8 -0.9
comp=Z,38nm,1.0s
TLIG *e*Sn Sn 21 16 56.8 +0.3
R33A **Olander Ranch,** 15.50 43 P Pn 21 14 04.7 +0.1
baz=230
K22A **Casper** 15.53 14 P Pn 21 14 02.8 -2.3
baz=196
K22A **Casper** 15.53 14 *e*Pn P 21 14 08.9 -0.7
comp=Z,234nm,1.1s
440A **Kirbyville** 15.55 74 P Pn 21 14 04.2 -1.1
baz=262
139A **Bunkhouse Ranc** 15.55 67 P Pn 21 14 02.9 -2.5
baz=255
W37B **Quinton** 15.56 57 P Pn 21 14 03.2 -2.2
baz=245
Q32A **Meitler Ranch,** 15.61 40 P Pn 21 14 03.3 -2.7
baz=227
T35A **Sooner Cattle** 15.63 50 P Pn 21 14 03.9 -2.5
baz=238
TUL1 **Leonard** 15.63 54 P Pn 21 14 04.2 -2.2
baz=242
TUL1 **Leonard** 15.63 54 *e*Pn P 21 14 08.8 -1.8
comp=Z,222nm,1.8s
TUL1 *e*Sn Sn 21 17 02.5 +2.8
Y38A **Idabel** 15.65 62 P Pn 21 14 02.7 -3.8
baz=250
S34A **Willow Spring** 15.67 46 P Pn 21 14 06.6 -0.3
baz=234
340A **Bronson** 15.71 72 P Pn 21 14 05.5 -1.9
baz=260
REDW **Red Top Meadow** 15.73 1 *e*Pn P 21 14 10.6 -1.3
comp=Z,192nm,1.3s
REDW *e*S S 21 17 16.1 -1.2
X38A **Whitesboro** 15.83 60 P Pn 21 14 08.2 -0.8
baz=248
SNOW **Snow King Moun** 15.83 2 *e*Pn P 21 14 14.8 +1.8
comp=Z,158nm,1.4s
Z39A **Irene McRaven,** 15.87 65 P Pn 21 14 07.0 -2.5
baz=253
WDC **Whiskeytown Da** 15.88 327 *e*P Pn 21 14 10.6 +1.1
WDC pmax pmax
comp=Z,200nm,1.2s
WDC **Whiskeytown Da** 15.88 327 *e*Pn Pn 21 14 10.6 +1.1
comp=Z,204nm,1.2s
U36A **Oologah** 15.90 53 P Pn 21 14 07.7 -2.2
baz=241
WVOR **Wild Horse Val** 15.93 340 *e*P Pn 21 14 11.4 +1.1
WVOR pmax pmax
comp=Z,485nm,1.5s
WVOR **Wild Horse Val** 15.93 340 *e*Pn Pn 21 14 11.4 +1.1
comp=Z,485nm,1.5s
240A **Hunter Patters** 15.93 70 P Pn 21 14 07.8 -2.4
baz=258
R34A **Isabella, Hill** 15.95 44 P Pn 21 14 08.7 -1.7
baz=232
LOHW **Long Hollow** 15.99 2 *e*Pn Pn 21 14 11.8 +0.7
comp=Z,86nm,1.0s
FXWY **Fox Creek** 16.00 1 *e*Pn P 21 14 13.0 -1.9
comp=Z,76nm,1.0s
FXWY *e*Sn Sn 21 17 11.1 +2.2
MOD **Modoc Plateau** 16.02 335 *e*Pn P 21 14 13.2 -1.7
comp=Z,362nm,1.3s
O31A **Woolen Ranch,** 16.02 36 P Pn 21 14 11.8 +0.5
baz=222
P32A **Huiting Farm,** 16.02 38 P Pn 21 14 12.2 +0.9
baz=225
Q33A **Connelly Farm,** 16.03 41 P Pn 21 14 12.0 +0.4
baz=229
HLID **Hailey** 16.11 352 P Pn 21 14 13.9 +1.2
baz=171
HLID **Hailey** 16.11 352 *e*Pn P 21 14 14.9 -1.1
comp=Z,125nm,1.4s
MOOW **Moose Ponds** 16.12 2 *e*Pn Pn 21 14 13.9 +1.1
comp=Z,148nm,1.2s
T36A **Boggs Farm, Ca** 16.14 50 P Pn 21 14 11.8 -1.1
baz=238
Y39A **Lockesburg** 16.15 63 P Pn 21 14 09.9 -3.1
baz=251
S35A **Otter Creek Ra** 16.18 48 P Pn 21 14 12.0 -1.4
baz=236
MFID **Camas Ranch** 16.18 348 *e*Pn P 21 14 15.3 -1.4
comp=Z,138nm,1.3s
KMRM **Mail Ridge** 16.19 324 *e*Pn Pn 21 14 12.9 -0.7
comp=Z,464nm,1.1s
441A **DeRidder** 16.21 75 P Pn 21 14 12.2 -1.7
baz=263
140A **Cam and Jess,** 16.22 68 P Pn 21 14 11.0 -2.9
baz=256
W38A **Poteau** 16.22 59 P Pn 21 14 12.3 -1.6
baz=247
N02D **Trinity Center** 16.26 328 P Pn 21 14 15.1 +0.6
baz=142,SNR=22
IMW **Indian Meadow** 16.26 1 *e*Pn P 21 14 16.1 -1.7
comp=Z,319nm,1.3s
IMW *e*Sn Sn 21 17 15.3 +0.1
341A **Kurthwood** 16.31 72 P Pn 21 14 12.7 -2.3
baz=261
X39A **Fountain Ranch** 16.32 61 P Pn 21 14 13.6 -1.7
baz=249

U37A	Salina	16.35	53	P	Pn	21 14 13.3	-2.2
	baz=242						
P33A	Williams Farm,	16.40	41	P	Pn	21 14 13.5	-2.8
	baz=228						
FLWY	Flagg Ranch	16.45	2	ePn	P	21 14 18.7	-1.1
	comp=Z,432nm,1.5s						
FLWY				ePcP	PcP	21 19 13.6	+4.7
Z40A	Long Farm, Mag	16.51	66	P	Pn	21 14 15.8	-1.8
	baz=254						
Q34A	Chapman	16.52	43	P	Pn	21 14 16.3	-1.4
	baz=231						
M04C	Macdoel	16.53	332	P	Pn	21 14 17.3	-0.6
	baz=146,SNR=58						
R35A	Emporia Munici	16.62	46	P	Pn	21 14 18.3	-0.7
	baz=234						
V38A	Canehill	16.62	56	P	Pn	21 14 16.4	-2.7
	baz=245						
241A	Mo Tay, Goldon	16.63	70	P	Pn	21 14 16.5	-2.7
	baz=259						
O32A	Brockman Farm,	16.65	37	P	Pn	21 14 17.7	-1.7
	baz=224						
M02C	Callahan	16.66	329	P	Pn	21 14 18.8	-0.8
	baz=143,SNR=29						
S36A	Lake Cedric, C	16.68	49	P	Pn	21 14 18.7	-1.1
	baz=237						
KHMM	Horse Mountain	16.68	326	ePn	P	21 14 21.5	-0.9
	comp=Z,321nm,1.2s						
542A	Morse	16.70	77	P	Pn	21 14 19.7	-0.4
	baz=266						
N31A	Bailey Ranch,	16.70	35	P	Pn	21 14 19.8	-0.3
	baz=222						
MIAR	Mount Ida	16.75	61	P	Pn	21 14 20.1	-0.7
	baz=250						
MIAR	Mount Ida	16.75	61	eP	P	21 14 24.4	+1.4
MIAR	Mount Ida	16.75	61	ePn	P	21 14 24.4	+1.4
MIAR				eSP	sP	21 14 37.8	+11
141A	Papa Simpson,	16.76	68	P	Pn	21 14 18.9	-1.9
	baz=257						
H17A	Grant Village	16.77	2	P	Pn	21 14 19.8	-1.4
	baz=183						
H17A	Grant Village	16.77	2	ePn	P	21 14 22.6	-0.7
	comp=Z,115nm,1.5s						
JCC	Jacoby Creek,	16.79	325	ePn	P	21 14 25.5	+2.2
	comp=Z,423nm,1.2s						
Y40A	Okolona	16.82	63	P	Pn	21 14 19.7	-1.8
	baz=252						
YFT	Old Faithful	16.82	1	ePn	P	21 14 23.0	-0.9
	comp=Z,116nm,1.2s						
W39A	Magazine	16.82	59	P	Pn	21 14 19.2	-2.4
	baz=248						
KSU1	Kansas State U	16.83	43	P	Pn	21 14 19.6	-2.1
	baz=231						
KSU1	Kansas State U	16.83	43	ePn	P	21 14 24.4	+0.6
	comp=Z,110nm,1.1s						
T37A	Cheneyville 18	16.83	52	P	Pn	21 14 20.9	-0.8
	baz=240						
442A	Mamou	16.86	75	P	Pn	21 14 17.0	-5.0
	baz=264						
WLAR	White Oak Lake	16.86	64	ePn	P	21 14 29.8	+5.7
	comp=Z,98nm,1.1s						
YBH	Yreka Blue Hor	16.86	330	Pn	Pn	21 14 22.8	+0.6
	comp=Z,0.2nm,0.3s,baz=118,slow=4.9,SNR=7.4						
YBH				LR	LR	21 20 37.2	
	comp=Z,6µm,19.5s,baz=176,slow=36						
YBH	Yreka Blue Hor	16.86	330	eP	Pn	21 14 22.8	+0.6
YBH				pmax	pmax		
	comp=Z,117nm,1.3s						
YBH	Yreka Blue Hor	16.86	330	ePn	Pn	21 14 22.8	+0.6
	comp=Z,117nm,1.3s						
U38A	Gravette	16.89	54	P	Pn	21 14 20.4	-2.0
	baz=243						
O33A	Hebron	16.90	39	P	Pn	21 14 21.2	-1.4
	baz=227						
J25A	Sunshine Ranch	16.91	19	P	Pn	21 14 20.9	-1.9
	baz=204						
LKWY	Lake	16.95	2	eP	P	21 14 30.8	+5.5
LKWY				pmax	pmax		
	comp=Z,220nm,1.5s						
LKWY	Lake	16.95	2	ePn	P	21 14 30.8	+5.5
	comp=Z,219nm,1.5s						
K05A	Summer Lake	16.95	335	ePn	P	21 14 26.1	+0.8
	comp=Z,1µm,1.3s						
P34A	Walnut Farm, R	16.98	42	P	Pn	21 14 22.6	-1.1
	baz=230						
Z41A	Richland Creek	16.99	66	P	Pn	21 14 17.9	-5.8
	baz=255						
N32A	Stulken Farm,	17.00	36	P	P	21 14 24.6	-1.1
	baz=223						
342A	Flagon Creek P	17.03	73	P	Pn	21 14 19.2	-4.9
	baz=262						
YMR	Madison River	17.03	1	ePn	P	21 14 26.3	+0.1
	comp=Z,479nm,1.8s						
VSP	Spence Mountai	17.04	332	P	P	21 14 26.5	+0.3
J26A	Sides Ranch, S	17.06	21	P	Pn	21 14 24.0	-0.7
	baz=206						
R36A	Gordon, Harris	17.07	47	P	Pn	21 14 23.2	-1.5
	baz=236						
M31A	Lambtecht Ranc	17.09	33	P	Pn	21 14 23.5	-1.4
	baz=220						
BUOR	Burton Butte	17.11	332	P	P	21 14 28.9	+1.9
V39A	Pettigrew	17.18	57	P	Pn	21 14 22.9	-3.2
	baz=246						
K04D	Chiloquin, OR	17.19	333	P	P	21 14 28.5	+0.6
	baz=148,SNR=25						
QLMT	Earthquake Lak	17.19	360	ePn	P	21 14 28.5	+0.5
S37A	Fort Scott	17.21	50	P	Pn	21 14 24.2	-2.3
	baz=238						
T38A	Diamond	17.23	53	P	Pn	21 14 25.1	-1.6
	baz=242						
MCMT	McKenzie Canyo	17.23	357	ePn	P	21 14 29.4	+1.0
242A	Grayson	17.28	70	P	Pn	21 14 25.7	-1.7
	baz=260						
543A	St. Martinvill	17.30	77	P	Pn	21 14 26.2	-1.4
	baz=266						
X40A	Basin Creek Fa	17.31	62	P	Pn	21 14 25.2	-2.5
	baz=251						
W40A	Ferguson Farm,	17.37	60	P	Pn	21 14 27.7	-0.7
	baz=249						
J27A	Elkhorn Farm,	17.37	24	P	Pn	21 14 27.0	-1.5
	baz=209						
443A	Delano Plantat	17.42	75	P	Pn	21 14 28.0	-1.1
	baz=264						
N33A	J Bar K, Exete	17.43	38	P	Pn	21 14 28.6	-0.6
	baz=225						
P35A	Duane Minner,	17.46	43	P	P	21 14 29.5	-1.3
	baz=232						
Q36A	Arnold C. Orve	17.46	46	P	P	21 14 29.5	-1.3
	baz=234						
O34A	Beatrice	17.48	40	P	P	21 14 30.5	-0.5
	baz=228						
I25A	Rochford	17.51	19	P	Pn	21 14 26.8	-3.5
	baz=203						
R37A	Teagarden Farm	17.51	48	P	Pn	21 14 28.6	-1.5
	baz=237						
RSSD	Black Hills	17.52	18	P	Pn	21 14 26.6	-3.9
	baz=202						
RSSD	Black Hills	17.52	18	eP	Pn	21 14 30.3	-0.2
RSSD				pmax	pmax		
	comp=Z,120nm,1.5s						
RSSD	Black Hills	17.52	18	ePn	Pn	21 14 30.3	-0.2
	comp=Z,123nm,1.5s						
U39A	Green Forest	17.52	56	P	Pn	21 14 27.2	-3.1
	baz=245						
142A	Monroe	17.54	69	P	Pn	21 14 29.6	-0.9
	baz=258						
BGNE	Belgrade	17.55	35	P	Pn	21 14 27.0	-3.6
	baz=222						
BGNE	Belgrade	17.55	35	ePn	P	21 14 31.8	+0.1
	comp=Z,158nm,1.1s						
J05D	Fort Rock, OR	17.56	336	P	Pn	21 14 29.3	-1.5
	baz=150,SNR=32						
RLMT	Red Lodge	17.57	5	P	Pn	21 14 30.1	-0.9
	baz=186						
RLMT	Red Lodge	17.57	5	ePn	P	21 14 32.1	-0.1
	comp=Z,130nm,1.2s						
L02D	Cave Junction,	17.61	329	P	Pn	21 14 29.9	-1.5
	baz=142						
343A	Vidalia	17.62	73	P	Pn	21 14 28.7	-2.8
	baz=263						
HUMO	Hull Mountain	17.68	331	ePn	P	21 14 36.0	+2.9
	comp=Z,209nm,1.8s						
Z42A	Norrel Spur, H	17.69	67	P	Pn	21 14 30.5	-2.0
	baz=256						
DLMT	Dillon	17.75	357	ePn	P	21 14 36.2	+2.1
	comp=Z,155nm,1.4s						
DLMT				eSn	Sn	21 17 47.0	-4.1
I26A	New Underwood	17.78	21	P	Pn	21 14 32.4	-1.2
	baz=206						
S38A	Stockton	17.78	51	P	Pn	21 14 31.6	-2.0
	baz=241						
L31A	Butterfield Fa	17.79	32	P	P	21 14 34.7	+0.3
	baz=219						
J28A	Allard Ranch,	17.80	25	P	Pn	21 14 31.9	-1.8
	baz=211						
243A	Waterproof	17.81	71	P	Pn	21 14 33.3	-0.7
	baz=261						
K30A	Basset	17.83	29	P	P	21 14 35.2	+0.3
	baz=216						
BMO	Blue Mountains	17.85	346	ePn	P	21 14 35.6	+0.5
	comp=Z,90nm,1.4s						
T39A	Clever	17.87	54	P	Pn	21 14 33.0	-1.7
	baz=243						
X301	Greenbrier Sit	17.90	60	ePn	Pn	21 14 33.8	-1.2
	comp=Z,119nm,1.3s						
544A	White Castle	17.90	77	P	Pn	21 14 33.7	-1.4
	baz=267						
Y42A	Garnett, Star	17.96	65	P	Pn	21 14 34.2	-1.6
	baz=255						
U40A	Yellville	17.97	56	P	Pn	21 14 34.5	-1.4
	baz=246						
O35A	Humboldt	17.99	41	P	P	21 14 36.4	-0.2
	baz=230						
W41B	Gary Mavity, V	17.99	60	P	Pn	21 14 35.1	-1.1
	baz=250						
W41A	Tony Mavity, V	17.99	60	P	Pn	21 14 34.7	-1.5
	baz=250						
WHAR	Wooly Hollow	18.00	60	ePn	Pn	21 14 34.9	-1.4
	comp=Z,166nm,1.4s						
BOZ	Bozeman (W)	18.01	359	P	Pn	21 14 36.1	-0.3
	baz=180						
BOZ	Bozeman (W)	18.01	359	eP	Pn	21 14 29.0	-7.4
BOZ				pmax	pmax		
	comp=Z,130nm,1.3s						
BOZ	Bozeman (W)	18.01	359	ePn	Pn	21 14 29.0	-7.4
	comp=Z,130nm,1.4s						
P36A	Good Intent, A	18.01	44	P	Pn	21 14 34.8	-1.5
	baz=233						
143A	Socs Landing,	18.02	69	P	Pn	21 14 35.2	-1.3
	baz=258						
N34A	Lincoln	18.02	39	P	P	21 14 36.1	-0.9
	baz=227						
L32A	Elgin	18.06	34	P	Pn	21 14 35.9	-1.1
	baz=221						
R38A	Fenwick Farm,	18.06	50	P	Pn	21 14 33.6	-3.4
	baz=239						
Q37A	Longview Farm,	18.06	47	P	Pn	21 14 35.8	-1.2
	baz=236						
I27A	Quinn	18.07	22	P	Pn	21 14 36.0	-1.2
	baz=208						
H25A	Fruitdale	18.10	18	P	Pn	21 14 37.0	-0.5
	baz=203						
J29A	Okreek	18.14	27	P	P	21 14 37.8	-0.4
	baz=213						
M33A	Taylor Creek F	18.16	36	P	Pn	21 14 37.4	-0.8
	baz=224						
K31A	O'Neill	18.18	31	P	P	21 14 37.9	-0.7
	baz=218						
LRM	Limekiln Ridge	18.20	358	ePn	P	21 14 41.5	+2.3
GCMT	Greycliff	18.20	4	eP	P	21 14 40.5	+1.4
S39A	Bolivar	18.22	52	P	Pn	21 14 37.9	-1.1
	baz=242						
Z43A	Armstrong Fami	18.25	67	P	Pn	21 14 38.1	-1.3
	baz=257						
444A	Pine Grove	18.30	75	P	Pn	21 14 38.7	-1.3
	baz=265						
I28A	Midland	18.32	24	P	P	21 14 40.6	+0.3
	baz=210						
H26A	Fairpoint	18.33	20	P	Pn	21 14 39.2	-1.1
	baz=205						
645A	Chauvin	18.37	79	P	P	21 14 40.8	-0.1
	baz=269						
344A	Westbrook Farm	18.39	73	P	Pn	21 14 39.3	-1.7
	baz=263						
J30A	Dallas	18.41	28	P	P	21 14 41.2	0.0
	baz=215						
M34A	Aspy Farms, Fr	18.43	37	P	P	21 14 42.9	+1.4
	baz=226						
I04A	Tendick Farm,	18.44	334	P	P	21 14 38.8	-2.8
	baz=148,SNR=8.6						
HBO	Huckleberry Mo	18.44	334	P	Pn	21 14 43.5	+1.6
O36A	Bolckow	18.47	43	P	Pn	21 14 40.0	-2.0
	baz=232						
CMIG	Matias Romero	18.50	121	P	Pn	21 14 43.0	+0.5
	comp=Z,0.2nm,0.3s,baz=316,slow=11,SNR=6.5						
CMIG				LR	LR	21 21 02.1	
	comp=Z,6µm,18.5s,baz=272,slow=34						
244A	Avery, Jackson	18.50	71	P	P	21 14 40.3	-2.1
	baz=261						
I05D	Terrebonne, OR	18.51	337	P	P	21 14 40.8	-1.6
	baz=152,SNR=22						
N35A	Tabor	18.52	40	P	Pn	21 14 45.2	+2.5
	baz=229						
P37A	Lathrop	18.53	45	P	P	21 14 41.7	-0.8
	baz=235						
T40A	Mansfield	18.55	54	P	P	21 14 41.4	-1.4
	baz=244						
L33A	Hoskins	18.55	35	P	Pn	21 14 42.7	-0.2
	baz=223						
H27A	Howes	18.57	21	P	P	21 14 42.2	-0.8
	baz=207						
K32A	Verdigre	18.57	33	P	Pn	21 14 43.4	+0.2
	baz=220						
445A	Amite	18.65	75	P	Pn	21 14 44.0	-0.3
	baz=265						
Q38A	Cooks Store, C	18.65	48	P	P	21 14 43.1	-0.9
	baz=238						
I29A	Vivian Onida	18.66	26	P	Pn	21 14 43.6	-0.7
	baz=212						
Y43A	Makaha and Ka	18.67	65	P	P	21 14 42.6	-1.6
	baz=256						
VBMS	Vicksburg	18.67	71	P	P	21 14 42.8	-1.3
	baz=261						
G25A	Newell	18.68	18	P	P	21 14 43.3	-0.9
	baz=203						
J31A	Geddes	18.71	30	P	P	21 14 43.6	-1.0
	baz=217						
R39A	Chumby, Stover	18.71	51	P	P	21 14 42.6	-2.0
	baz=240						
I03D	Drain, OR	18.73	332	P	Pn	21 14 45.1	0.0
	baz=146						
S40A	Lebanon	18.75	53	P	Pn	21 14 44.4	-1.0
	baz=243						
144A	Alexander Plac	18.82	69	P	Pn	21 14 45.9	-0.4
	baz=260						
L34A	Svendsen Farm,	18.87	37	P	Pn	21 14 45.9	-0.9
	baz=225						
N36A	Muff Farm, Cla	18.89	42	P	Pn	21 14 46.5	-0.7
	baz=231						
M35A	Neola	18.90	39	P	Pn	21 14 46.9	-0.3
	baz=228						
I30A	Oacoma	18.92	28	P	P	21 14 45.4	-1.5
	baz=214						
Z44A	Pea Ridge, Bel	18.93	68	P	Pn	21 14 46.8	-0.8
	baz=258						
H28A	Mission Ridge	18.96	23	P	P	21 14 45.4	-1.9
	baz=210						
CROR	Criterion Ridg	18.96	339	P	Pn	21 14 49.2	+1.2
345A	Thompson Farm,	18.97	74	P	P	21 14 46.7	-0.7
	baz=264						
O37A	Wolven Farm, M	18.99	44	P	P	21 14 46.8	-0.8
	baz=234						
G26A	Maurine	19.00	19	P	Pn	21 14 47.6	-0.8
	baz=205						
K33A	Hardington	19.00	34	P	Pn	21 14 48.8	+0.3
	baz=222						
VTHM	Trough	19.01	340	P	Pn	21 14 50.1	+1.6
646A	Port Sulphur	19.05	79	P	P	21 14 43.7	-4.6
	baz=269						
P38A	Dawn	19.07	46	P	P	21 14 46.9	-1.6
	baz=236						
HRY	Holter Researc	19.08	359	eP	Pn	21 14 55.6	+6.1
G06A	Carlson Farm,	19.08	340	eP	Pn	21 14 51.4	+2.0
	comp=Z,643nm,1.8s						
H04A	Detroit Lake	19.11	336	eP	Pn	21 14 51.0	+1.2
	comp=Z,104nm,1.0s						
Q39A	Willow Grove F	19.12	49	P	P	21 14 47.9	-1.2
	baz=239						
245A	Little AP, Sta	19.17	71	P	P	21 14 48.9	-0.7
	baz=262						
J32A	Parkston	19.18	31	P	Pn	21 14 51.1	+0.5
	baz=219						
H29A	Onida	19.21	25	P	Pn	21 14 50.0	-1.0
	baz=212						
145A	Houston Renfro	19.23	70	P	Pn	21 14 50.3	-0.8
	baz=260						
R40A	Maddies Statio	19.23	52	P	P	21 14 49.7	-0.6
	baz=242						
Y44A	Strider, Charl	19.26	66	P	Pn	21 14 50.5	-1.1
	baz=256						
G27A	Dupree	19.28	21	P	Pn	21 14 51.1	-0.7
	baz=206						
MSO	Missoula	19.30	355	P	Pn	21 14 51.3	-0.7
	baz=173						
MSO	Missoula	19.30	355	eP	Pn	21 14 51.9	-0.2
	comp=Z,334nm,1.5s						
G05D	Wamic, OR	19.30	338	P	P	21 14 50.6	-0.4
	baz=153						
N37A	Lee Faris, Mou	19.30	43	P	Pn	21 14 52.0	-0.1
	baz=232						
CHMT	Chamberlain Mo	19.33	356	eP	Pn	21 14 52.4	-0.2
F25A	Bowman	19.34	17	P	Pn	21 14 52.4	-0.2
	baz=202						
G28A	Parade	19.34	23	P	P	21 14 50.7	-0.8
	baz=209						
O38A	Galt	19.39	45	P	P	21 14 50.7	-1.2
	baz=235						
I31A	Royce, Wessing	19.39	29	P	Pn	21 14 54.1	+1.0
	baz=216						
M36A	Felix, Anita	19.39	40	P	Pn	21 14 52.3	-0.8
	baz=230						
L35A	Bielow Farm, R	19.41	38	P	Pn	21 14 52.2	-1.2
	baz=227						
COR	Corvallis	19.45	334	eP	Pn	21 14 56.3	+2.5
COR				pmax	pmax		
	comp=Z,180nm,1.2s						
COR	Corvallis	19.45	334	eP	Pn	21 14 56.3	+2.5
	comp=Z,178nm,1.2s						
346A	Big Creek Wild	19.46	74	P	P	21 14 52.4	-0.4
	baz=264						
F26A	Lodgepole	19.49	19	P	Pn	21 14 53.7	-0.6
	baz=204						
446A	Poplarville	19.49	75	P	Pn	21 14 53.1	-1.3
	baz=266						
K34A	Le Mars	19.52	36	P	Pn	21 14 53.8	-0.9
	baz=224						
SUSD	Miller	19.55	27	P	Pn	21 14 55.5	+0.5
	baz=215						
J33A	Davis	19.55	33	P	Pn	21 14 54.4	-0.6
	baz=221						
E09A	Wood Farm, Sta	19.61	346	eP	P	21 14 54.2	-0.2
	comp=Z,199nm,1.4s						
F27A	Lemmon	19.70	20	P	Pn	21 14 56.3	-0.5
	baz=205						
Q40A	Laux Farm, Aux	19.70	50	P	Pn	21 14 56.0	-0.9
	baz=240						
H31A	Wolsey	19.78	28	P	P	21 14 56.2	0.0
	baz=216						
Y45A	Yeager Farm, C	19.78	66	P	P	21 14 55.8	-0.6
	baz=257						
M37A	Trindle Farm,	19.79	41	P	Pn	21 14 57.0	-0.9
	baz=231						
G29A	Hoven	19.80	25	P	Pn	21 14 57.3	-0.7
	baz=211						
246A	Jackson Lee, B	19.81	72	P	P	21 14 56.0	-0.7
	baz=263						
HAWA	Hanford	19.83	343	eP	P	21 14 56.9	+0.2
	comp=Z,165nm,1.4s						
I32A	Karley and Nic	19.86	31	P	Pn	21 14 57.8	-0.9
	baz=219						
L36A	Harm Buss Farm	19.89	39	P	Pn	21 14 58.5	-0.6
	baz=228						
E25A	Miller Ranch,	19.89	16	P	Pn	21 14 58.1	-1.1
	baz=201						
N38A	Joes South For	19.92	44	P	Pn	21 14 58.4	-1.1
	baz=234						
PBMO	Poplar Bluff	19.93	57	eP	Pn	21 14 59.7	+0.1
	comp=Z,24nm,0.9s						
146A	Union	19.96	70	P	P	21 14 57.9	-0.3
	baz=261						
G03D	McMinnville, O	19.96	335	P	P	21 14 58.0	-0.2
	baz=148						
SWMT	Swartz Lake	19.98	355	eP	P	21 14 58.9	+0.4
P40A	Paris	19.99	49	P	Pn	21 14 59.4	-0.8
	baz=239						
K35A	Storm Lake	20.00	37	P	Pn	21 15 00.4	0.0
	baz=226						
J34A	George	20.02	35	P	Pn	21 15 00.7	0.0
	baz=224						
ECSD	EROS Data Cent	20.03	33	P	Pn	21 15 00.4	-0.4
	baz=221						
ECSD	EROS Data Cent	20.03	33	eP	Pn	21 15 00.2	-0.5
	comp=Z,130nm,1.4s						
OXF	Oxford	20.04	64	eP	Pn	21 15 00.6	-0.3
OXF				pmax	pmax		
	comp=Z,76nm,1.0s						
OXF	Oxford	20.04	64	eP	Pn	21 15 00.6	-0.3
	comp=Z,76nm,1.0s						
G30A	Faulkton	20.04	26	P	P	21 14 58.7	-0.4
	baz=213						
O39A	Kirksville	20.05	46	P	Pn	21 14 59.4	-1.6
	baz=237						
F28A	McLaughlin	20.06	22	P	Pn	21 14 59.6	-1.5
	baz=208						
447A	Lucedale	20.10	75	P	P	21 14 59.8	-0.1
	baz=266						
E26A	Carlson Angus	20.11	18	P	P	21 15 00.1	+0.2
	baz=204						
I33A	Coleman	20.18	32	P	P	21 14 57.8	-2.9
	baz=220						
JTMT	Jette	20.23	354	eP	P	21 15 01.7	+0.4
347A	Saraland	20.25	74	P	P	21 14 59.2	-2.2
	baz=265						
H32A	Carlson Farm,	20.25	30	P	Pn	21 15 04.1	+0.9
	baz=218						
EBZ	Ebenezer Churc	20.25	63	eP	Pn	21 15 01.6	-1.7
247A	Quitman	20.25	72	P	P	21 15 01.5	0.0
	baz=263						
F04A	Amboy	20.27	337	eP	Pn	21 15 04.3	+0.7
	comp=Z,122nm,1.1s						
D08A	Wollman Farm,	20.30	345	eP	P	21 15 00.9	-1.0
	comp=Z,173nm,1.5s						
M38A	Pleasantville	20.31	43	P	Pn	21 15 02.7	-1.4
	baz=233						
YBMT	Yellow Bay	20.33	355	eP	P	21 15 02.8	+0.5
E27A	Carson	20.34	20	P	P	21 15 02.2	-0.1
	baz=206						
Y46A	Houston	20.34	67	P	P	21 15 02.6	+0.1
	baz=259						
K36A	Gilmore City	20.37	38	P	P	21 15 02.6	-0.1
	baz=228						
F29A	Eureka	20.38	24	P	P	21 15 02.7	-0.1
	baz=211						
BSMT	Bassoo Peak	20.39	353	eP	P	21 15 02.6	-0.4
O40A	La Belle	20.41	47	P	P	21 15 02.9	-0.2
	baz=238						
L37A	Phoenix Point,	20.42	40	P	Pn	21 15 04.2	-1.1
	baz=230						
N39A	Derby Farms, D	20.42	45	P	P	21 15 03.1	-0.2
	baz=235						
EGMT	Eagleton	20.43	3	P	P	21 15 02.8	-0.5
	baz=184						
EGMT	Eagleton	20.43	3	eP	Pn	21 15 07.2	+1.8
	comp=Z,387nm,1.4s						
J35A	Milford	20.46	36	P	Pn	21 15 04.3	-1.5
	baz=225						
G31A	Conde	20.49	27	P	P	21 15 04.3	+0.3
	baz=215						
BLMT	Blacktail Moun	20.50	354	eP	P	21 15 04.5	+0.2
D25A	Fairfield	20.52	16	P	Pn	21 15 05.2	-1.3
	baz=201						
SCIA	State Center	20.60	41	eP	Pn	21 15 08.1	+0.6
	comp=Z,113nm,1.0s						
F04D	Rainier, OR	20.61	337	P	P	21 15 04.8	-0.5
	baz=150						
147A	Livingston	20.62	70	P	Pn	21 15 05.8	-1.9
	baz=262						
I34A	Hadley	20.62	33	P	Pn	21 15 07.2	-0.6
	baz=222						
D26A	Manning	20.63	18	P	P	21 15 04.7	-0.9
	baz=203						
F30A	Leola	20.68	25	P	P	21 15 06.3	+0.3
	baz=212						
H33A	Prehn Over Nor	20.69	31	P	P	21 15 05.8	-0.4
	baz=219						
E28A	Huff	20.74	21	P	Pn	21 15 08.0	-1.0
	baz=208						
348A	Jackson	20.79	74	P	P	21 15 07.2	-0.1
	baz=265						
448A	Bay Minette	20.79	75	P	P	21 15 05.1	-2.2
	baz=266						
LON	Longmire	20.80	340	eP	P	21 15 08.0	+0.7
LON				pmax	pmax		
	comp=Z,510nm,1.8s						
LON	Longmire	20.80	340	eP	P	21 15 08.0	+0.7

	comp=Z,508nm,1.8s									
G32A	**Webster**	20.81	29	P		P	21 15 06.4	-1.0		
	baz=217									
SLM	**Saint Louis**	20.81	53	*e*P		Pn	21 15 10.2	+0.3		
SLM				pmax		pmax				
	comp=Z,110nm,1.2s									
SLM	**Saint Louis**	20.81	53	*e*P		Pn	21 15 10.2	+0.3		
	comp=Z,105nm,1.2s									
C09A	**Chrisman Ranch**	20.87	347	*e*P		P	21 15 07.3	-0.7		
	comp=Z,77nm,1.0s									
L38A	**Oak Wood Farm,**	20.89	41	P		P	21 15 05.9	-2.5		
	baz=232									
J36A	**Seneca 1, Swea**	20.89	37	P		P	21 15 06.8	-1.5		
	baz=227									
K37A	**Belmond**	20.90	39	P		P	21 15 08.0	-0.5		
	baz=229									
LTY	**Liberty**	20.93	342	*e*P		P	21 15 09.5	+0.7		
	comp=Z,120nm,1.3s									
I35A	**Creekview Farm**	20.93	35	P		P	21 15 08.6	-0.1		
	baz=224									
D27A	**Center**	20.96	19	P		P	21 15 07.8	-1.2		
	baz=205									
248A	**Dixon Mills**	20.99	72	P		P	21 15 09.4	0.0		
	baz=264									
F31A	**Hecla**	21.00	26	P		P	21 15 08.9	-0.6		
	baz=214									
C25A	**Freed Ranch, W**	21.06	15	P		P	21 15 10.3	+0.2		
	baz=200									
E29A	**Napoleon**	21.08	23	P		P	21 15 09.9	-0.5		
	baz=210									
NEW	**Newport**	21.10	349	P		P	21 15 09.9	-0.7		
	comp=Z,51nm,0.7s,baz=168,slow=11,SNR=39									
NEW				Lg		Lg	21 21 34.6			
	comp=Z,0.9nm,0.4s,baz=80,slow=19,SNR=3.5									
NEW	**Newport**	21.10	349	P		P	21 15 07.3	-3.3		
	baz=166									
NEW	**Newport**	21.10	349	*e*P		P	21 15 10.1	-0.5		
NEW				pmax		pmax				
	comp=Z,150nm,1.2s									
NEW	**Newport**	21.10	349	*e*P		P	21 15 10.1	-0.5		
	comp=Z,147nm,1.2s									
H34A	**Spellman Lake,**	21.13	32	P		P	21 15 09.4	-1.5		
	baz=221									
Y47A	**UCPARC, Winfie**	21.17	67	P		P	21 15 10.4	-1.0		
	baz=259									
SIUC	**Southern Illin**	21.18	56	*e*P		P	21 15 11.6	+0.1		
	comp=Z,409nm,1.8s									
E03A	**Lebam**	21.20	336	*e*P		P	21 15 12.9	+1.3		
	comp=Z,305nm,1.0s									
PLAL	**Pickwick Lake**	21.22	64	*e*P		P	21 15 14.6	+2.7		
	comp=Z,67nm,1.2s									
G33A	**Ortonville**	21.23	30	P		P	21 15 10.9	-1.0		
	baz=219									
E30A	**Jud**	21.29	24	P		P	21 15 11.0	-1.5		
	baz=212									
J37A	**Redenius Farm,**	21.31	38	P		P	21 15 11.7	-1.1		
	baz=228									
K38A	**Parkersburg**	21.32	40	P		P	21 15 10.9	-2.0		
	baz=231									
D28A	**Regan**	21.32	21	P		P	21 15 11.8	-1.2		
	baz=207									
C26A	**Wahner Farm, P**	21.46	17	P		P	21 15 12.3	-2.0		
	baz=203									
F32A	**Veblen**	21.46	28	P		P	21 15 13.4	-1.0		
	baz=217									
WALA	**Waterton Lakes**	21.51	355	*e*P		P	21 15 15.0	0.0		
	comp=Z,244nm,1.4s									
C27A	**Sayler Ranch,**	21.52	18	P		P	21 15 13.9	-1.1		
	baz=205									
D29A	**Pettibone, Tap**	21.52	22	P		P	21 15 14.3	-0.8		
	baz=210									
I36A	**Fitzsimmons Fa**	21.54	36	P		P	21 15 14.8	-0.5		
	baz=226									
DGMT	**Dagmar**	21.57	13	P		P	21 15 15.0	-0.6		
	baz=198									
DGMT	**Dagmar**	21.57	13	*e*P		P	21 15 22.0	+6.4		
	comp=Z,128nm,1.1s									
NLW	**Nelson Butte**	21.59	344	P		P	21 15 16.0	0.0		
C06D	**Leavenworth**	21.60	342	P		P	21 15 14.1	-1.8		
	baz=157									
B25A	**Knox Farm, Ray**	21.61	15	P		P	21 15 15.8	-0.2		
	baz=200									
H35A	**Sunnyside Ranc**	21.61	34	P		P	21 15 16.3	+0.3		
	baz=223									
B08A	**Colville Reser**	21.62	346	*e*P		P	21 15 15.5	-0.6		
G34A	**Benson**	21.63	31	P		P	21 15 17.2	+1.0		
	baz=221									
WVT	**Waverly**	21.71	61	*e*P		P	21 15 17.1	-0.1		
WVT				pmax		pmax				
	comp=Z,69nm,1.0s									
WVT	**Waverly**	21.71	61	*e*P		P	21 15 17.1	-0.1		
	comp=Z,69nm,0.9s									
E31A	**Nome**	21.72	26	P		P	21 15 18.9	+1.7		
	baz=214									
LRAL	**Lakeview Retre**	21.73	70	*e*P		P	21 15 16.4	-1.0		
	comp=Z,31nm,1.0s									
F33A	**5 Mile Ranch,**	21.79	29	P		P	21 15 18.3	+0.3		
	baz=218									
C28A	**Hausauer Farms**	21.85	20	P		P	21 15 18.1	-0.5		
	baz=207									
D30A	**Buchanan**	21.86	24	P		P	21 15 20.0	+1.3		
	baz=211									
I37A	**Lemond, Waseca**	21.86	37	P		P	21 15 20.8	+2.0		
	baz=227									
J38A	**Wedel Dairy, R**	21.91	39	P		P	21 15 20.2	+0.9		
	baz=230									
B26A	**Jensen Ranch,**	21.93	17	P		P	21 15 21.8	+2.3		
	baz=202									
H36A	**Jessenland, He**	21.97	35	P		P	21 15 20.3	+0.3		
	baz=225									
NLWA	**Neilton Lookou**	22.04	337	*e*P		P	21 15 20.8	+0.2		
	comp=Z,315nm,1.4s									
E32A	**Braaten, Kindr**	22.07	27	P		P	21 15 21.2	+0.3		
	baz=216									
G35A	**Watkins**	22.16	33	P		P	21 15 23.2	+1.3		
	baz=223									
D31A	**Mcclaflin, Tow**	22.19	25	P		P	21 15 22.1	-0.1		
	baz=214									
B27A	**Peters Farms,**	22.21	18	P		P	21 15 21.2	-1.3		
	baz=204									
F34A	**Alexandria**	22.22	31	P		P	21 15 23.9	+1.3		
	baz=221									
B05A	**Bryant**	22.24	341	P		P	21 15 22.5	-0.3		
	baz=155									
A25A	**Svangstu Ranch**	22.25	15	P		P	21 15 21.2	-1.7		
	baz=200									
B06A	**Marblemount**	22.30	342	*e*P		P	21 15 28.5	+5.2		
HDIL	**Hopedale**	22.34	49	P		P	21 15 23.2	-0.7		
	baz=241									
HDIL	**Hopedale**	22.34	49	*e*P		P	21 15 25.0	+1.1		
	comp=Z,113nm,1.0s									
TEIG	**Tepich**	22.36	104	LR		LR	21 25 51.8			
	comp=Z,3µm,21.2s,baz=66,slow=42									
OLIL	**Olney**	22.38	54	*e*P		P	21 15 24.8	+0.5		
	comp=Z,110nm,1.1s									
USIN	**University of**	22.41	57	*e*P		P	21 15 28.9	+4.2		
	comp=Z,159nm,1.4s									
E33A	**Westby DABS, E**	22.44	29	P		P	21 15 25.1	+0.2		
	baz=218									
I38A	**Scanlan Farm,**	22.45	38	P		P	21 15 26.0	+0.9		
	baz=229									
A26A	**Wade Farm, Ken**	22.46	16	P		P	21 15 24.2	-1.0		
	baz=202									
C30A	**Mose, Pekin**	22.46	23	P		P	21 15 25.0	-0.2		
	baz=211									
H37A	**Dierke Farm, C**	22.50	36	P		P	21 15 25.7	+0.2		
	baz=227									
B28A	**Dugan Ranch, T**	22.51	19	P		P	21 15 25.1	-0.6		
	baz=206									
G36A	**St. Michael**	22.53	34	P		P	21 15 26.8	+0.9		
	baz=224									
D32A	**Dogwood Acres,**	22.53	26	P		P	21 15 25.4	-0.5		
	baz=215									
F35A	**Swanville**	22.59	32	P		P	21 15 25.2	-1.2		
	baz=222									
C31A	**Landman Farms,**	22.81	24	P		P	21 15 29.7	+0.9		
	baz=213									
E34A	**Wadena**	22.81	30	P		P	21 15 28.7	-0.2		
	baz=220									
A04D	**Lummi Island**	22.83	340	P		P	21 15 28.3	-0.6		
	baz=154									
B29A	**Wagenman Farm,**	22.83	21	P		P	21 15 27.4	-1.6		
	baz=208									
A28A	**Rude Farm, Bot**	22.95	19	P		P	21 15 28.7	-1.7		
	baz=206									
JFWS	**Jewell Farm**	22.97	43	*e*P		P	21 15 32.2	+1.7		
JFWS				pmax		pmax				
	comp=Z,95nm,1.1s									
JFWS	**Jewell Farm**	22.97	43	*e*P		P	21 15 32.2	+1.7		
	comp=Z,95nm,1.1s									
SWET	**Sewanee**	22.98	64	*e*P		P	21 15 36.9	+6.1		
	comp=Z,21nm,1.3s									
PGC	**Sidney**	23.00	339	*e*P		P	21 15 36.0	+5.3		
	comp=Z,107nm,1.1s									
SPMN	**Marine on St.**	23.00	35	P		P	21 15 31.0	+0.2		
	baz=226									
SPMN	**Marine on St.**	23.00	35	*e*P		P	21 15 33.3	+2.5		
	comp=Z,78nm,1.2s									
D33A	**AnnSam, Waubun**	23.01	28	P		P	21 15 29.7	-1.2		
	baz=217									
F36A	**Milaca**	23.09	33	P		P	21 15 31.2	-0.5		
	baz=224									
B30A	**Myrvik Farm, E**	23.16	23	P		P	21 15 30.9	-1.6		
	baz=211									
E35A	**Pequot Lakes**	23.19	31	P		P	21 15 32.6	-0.1		
	baz=221									
D34A	**Park Rapids**	23.24	29	P		P	21 15 32.7	-0.6		
	baz=219									
A29A	**Manning Farm,**	23.27	21	P		P	21 15 32.1	-1.5		
	baz=208									
C32A	**Crookston**	23.29	26	P		P	21 15 31.5	-2.2		
	baz=215									
B31A	**Greenbush Farm**	23.37	24	P		P	21 15 33.0	-1.6		
	baz=212									
WCI	**Wyandotte Cave**	23.52	57	*e*P		P	21 15 39.9	+3.7		
WCI				pmax		pmax				
	comp=Z,50nm,1.0s									
WCI	**Wyandotte Cave**	23.52	57	*e*P		P	21 15 39.9	+3.7		
	comp=Z,50nm,1.0s									
C33A	**Trail**	23.53	27	P		P	21 15 34.8	-1.4		
	baz=217									
A30A	**Hoffart Farm,**	23.59	22	P		P	21 15 35.3	-1.4		
	baz=210									
BLO	**Bloomington**	23.68	54	*e*P		P	21 15 41.8	+4.1		
BLO				pmax		pmax				
	comp=Z,110nm,1.2s									
BLO	**Bloomington**	23.68	54	*e*P		P	21 15 41.8	+4.1		
	comp=Z,111nm,1.2s									
E36A	**McGregor**	23.69	32	P		P	21 15 37.3	-0.4		
	baz=223									
D35A	**Remer**	23.74	30	P		P	21 15 37.4	-0.8		
	baz=221									
B32A	**Ashes, Strandq**	23.75	25	P		P	21 15 36.8	-1.5		
	baz=214									
SFIN	**Lafayette**	23.75	51	P		P	21 15 37.1	-1.4		
	baz=245									
C34A	**RKJ Ranch, Bem**	23.80	28	P		P	21 15 37.7	-1.2		
	baz=219									
AGMN	**Agassiz Nation**	23.93	26	P		P	21 15 39.6	-0.5		
	baz=216									
AGMN	**Agassiz Nation**	23.93	26	*e*P		P	21 15 39.5	-0.5		
	comp=Z,50nm,0.9s									
B33A	**Robert and Kas**	24.02	27	P		P	21 15 40.7	-0.2		
	baz=216									
E37A	**Wrenshall**	24.14	33	P		P	21 15 38.6	-3.4		
	baz=225									
CPCT	**Cooper Cave**	24.16	64	*e*P		P	21 15 41.9	-0.5		
	comp=Z,19nm,1.1s									
A32A	**Rocking H Ranc**	24.20	24	P		P	21 15 42.4	-0.2		
	baz=214									
D36A	**Goodland**	24.21	31	P		P	21 15 42.5	-0.2		
	baz=222									
C35A	**Jirik Farms, M**	24.24	30	P		P	21 15 42.8	-0.2		
	baz=220									
D37A	**Cotton**	24.55	32	P		P	21 15 44.8	-1.0		
	baz=224									
B34A	**Aery, Baudette**	24.57	27	P		P	21 15 44.6	-1.3		
	baz=218									
A33A	**Warroad**	24.63	26	P		P	21 15 46.3	-0.2		
	baz=216									
GOGA	**Godfrey**	24.71	70	*e*P		P	21 15 52.4	+5.0		
GOGA				pmax		pmax				
	comp=Z,24nm,1.1s									
GOGA	**Godfrey**	24.71	70	*e*P		P	21 15 52.4	+5.0		
	comp=Z,24nm,1.1s									
C36A	**Pine Crest Far**	24.79	31	P		P	21 15 48.6	+0.6		
	baz=222									
TKL	**Tuckaleechee C**	24.80	64	P		P	21 15 47.9	-0.3		
	comp=Z,5.2nm,0.6s,baz=201,slow=9.3,SNR=8.8									
TKL				Lg		Lg	21 23 23.4			
	comp=Z,4.8nm,1.1s,baz=179,slow=13,SNR=1.7									
TKL				LR		LR	21 25 53.4			
	comp=Z,4µm,20.6s,baz=254,slow=38									
C37A	**Embarrass**	25.07	32	P		P	21 15 51.7	+1.2		
	baz=224									
COWI	**Conover**	25.51	38	*e*P		P	21 16 00.4	+5.9		
	comp=Z,178nm,1.9s									
ULM	**Lac du Bonnet**	25.54	23	P		P	21 15 55.6	+0.9		
	comp=Z,18nm,0.9s,baz=216,slow=10,SNR=12									
ULM				Lg		Lg	21 23 45.6			
	comp=Z,1.1nm,0.5s,baz=266,slow=6.7,SNR=5.4									
ULM				LR		LR	21 24 46.5			
	comp=Z,2µm,20.9s,baz=212,slow=34									
EYMN	**Ely**	25.55	32	*e*P		P	21 16 00.2	+5.3		
	comp=Z,46nm,0.9s									
ACSO	**Alum Creek Sta**	26.61	54	*e*P		P	21 16 07.3	+2.8		
	comp=Z,50nm,1.1s									
KMSC	**Kings Mountain**	26.68	66	*e*P		P	21 16 06.7	+1.5		
	comp=Z,30nm,1.0s									
BBB	**Bella Bella**	27.56	338	LR		LR	21 27 01.1			
	comp=Z,3µm,19.6s,baz=160,slow=36									
M54A	**Oil Creek Stat**	29.40	54	P		P	21 16 28.9	-0.6		
	baz=252									
JTS	**JuntasAbangare**	30.26	120	LR		LR	21 28 37.8			
	comp=Z,3µm,21.0s,baz=312,slow=36									
SSPA	**Standing Stone**	30.45	56	*e*P		P	21 16 39.2	+0.5		
	comp=Z,26nm,1.0s									
SADO	**Sadowa**	30.90	48	Lg		Lg	21 26 39.3			
	comp=Z,4.3nm,0.9s,baz=265,slow=12,SNR=2.4									
SADO				LR		LR	21 30 09.8			
	comp=Z,2µm,18.7s,baz=258,slow=38									
BINY	**Binghamton**	32.23	54	*e*P		P	21 16 54.6	+0.1		
	comp=Z,33nm,1.3s									
ODNJ	**Ogdensburg**	32.97	56	*e*P		P	21 17 03.2	+2.3		
	comp=Z,35nm,1.4s									
FCC	**Fort Churchill**	33.39	16	*e*P		P	21 17 02.6	-1.7		
FCC				pmax		pmax				
	comp=Z,42nm,0.9s									
FCC	**Fort Churchill**	33.39	16	*e*P		P	21 17 02.6	-1.7		
	comp=Z,42nm,0.9s									
DLBC	**Dease Lake**	33.45	342	*e*P		P	21 17 05.5	+0.6		
	comp=Z,26nm,0.9s									
LONY	**Lake Ozonia**	33.90	50	*e*P		P	21 17 11.4	+2.4		
	comp=Z,25nm,1.1s									
ACCN	**Adirondack Com**	34.19	53	*e*P		P	21 17 18.1	+6.6		
	comp=Z,17nm,1.0s									
FRNY	**Flat Rock**	34.64	50	*e*P		P	21 17 17.1	+1.8		
	comp=Z,57nm,1.7s									
QUA2	**Belchertown**	34.87	55	*e*P		P	21 17 19.4	+2.0		
	comp=Z,24nm,0.8s									
YKA	**Yellowknife Ar**	34.95	357	P		P	21 17 16.3	-1.5		
	comp=Z,2.3nm,0.8s,baz=178,slow=8.6,SNR=35									
YKA				PcP		PcP	21 19 49.9	-0.2		
	comp=Z,1.9nm,0.7s,baz=161,slow=3.3,SNR=7.3									
YKB5	**Yellowknife Ar**	34.95	357	*e*P		P	21 17 16.3	-1.5		
YKB5				*e*PcP		PcP	21 19 49.9	-0.2		
WVL	**Waterville**	37.28	52	*e*P		P	21 17 41.0	+3.0		
	comp=Z,53nm,1.2s									
LMQ	**La Malbaie**	37.60	47	*e*P		P	21 17 45.5	+4.8		
	comp=Z,23nm,0.9s									
PQI	**Presque Isle**	38.89	49	*e*P		P	21 17 54.8	+3.2		
	comp=Z,90nm,1.4s									
BALM	**Baldy**	39.37	337	*e*P		P	21 17 59.4	+3.9		
BALM				pmax		pmax				
	comp=Z,26nm,1.2s									
BALM	**Baldy**	39.37	337	*e*P		P	21 17 59.4	+3.9		
	comp=Z,26nm,1.2s									
GUYC	**Guyana, Colomb**	40.83	116	*e*P		P	21 18 12.8	+4.2		
LMN	**Caledonia Moun**	40.90	51	*e*P		P	21 18 10.4	+2.1		
	comp=Z,31nm,1.1s									
KLU	**Klutina**	40.96	335	*e*P		P	21 18 12.2	+3.6		
	comp=Z,41nm,1.6s									
NORC	**Norcasia**	41.05	116	*e*P		P	21 18 12.8	+2.9		
MENT	**Mentasta**	41.16	338	*e*P		P	21 18 15.0	+4.8		
	comp=Z,28nm,1.1s									
GRMC	**Gramalote, San**	41.51	111	*e*P		P	21 18 13.8	0.0		
CBRI	**Barrientos, No**	41.51	111	*e*P		P	21 18 13.8	0.0		
KDAK	**Kodiak Island**	41.67	328	*e*P		P	21 18 19.4	+5.0		
KDAK				pmax		pmax				
	comp=Z,120nm,1.8s									
CMBC	**Cumbal**	41.69	124	*e*P		P	21 18 14.3	-1.2		
SCM	**Sheep Creek Mo**	41.69	335	*e*P		P	21 18 14.9	+0.2		
SCM				pmax		pmax				
	comp=Z,42nm,1.1s									
SCM	**Sheep Creek Mo**	41.69	335	*e*P		P	21 18 14.9	+0.2		
	comp=Z,42nm,1.1s									
OTAV	**Otavalo**	41.70	125	*e*P		P	21 18 19.4	+3.7		
	comp=Z,13nm,0.9s									
OTAV	**Otavalo**	41.70	125	*e*P		P	21 18 15.4	-0.4		
EGAK	**Eagle**	41.71	341	*e*P		P	21 18 14.7	0.0		
	comp=Z,70nm,1.8s									
OHAK	**Old Harbor**	41.74	327	*e*P		P	21 18 19.1	+4.1		
	comp=Z,26nm,1.0s									
DOT	**Dot Lake**	41.77	339	*e*P		P	21 18 15.2	+0.1		
	comp=Z,26nm,0.9s									
PAX	**Paxson**	41.77	337	*e*P		P	21 18 15.2	-0.1		
PAX				pmax		pmax				
	comp=Z,8.0nm,1.0s									
PAX	**Paxson**	41.77	337	*e*P		P	21 18 15.2	-0.1		
	comp=Z,8.2nm,1.0s									
BRLK	**Bradley Lake**	41.91	331	*e*P		P	21 18 16.7	+0.3		
	comp=Z,87nm,1.5s									
ROSC	**El Rosal**	41.91	116	LR		LR	21 35 58.6			
	comp=Z,801nm,19.2s,baz=350,slow=37									
SML	**Sawmill**	42.05	335	*e*P		P	21 18 18.1	+0.5		
SML				pmax		pmax				
	comp=Z,32nm,1.0s									
SML	**Sawmill**	42.05	335	*e*P		P	21 18 18.1	+0.5		
	comp=Z,32nm,1.1s									
SCHQ	**Schefferville**	42.12	37	P		P	21 18 18.2	+0.1		
	comp=Z,26nm,1.0s,baz=265,slow=5.9,SNR=8.8									
SCHQ				LR		LR	21 36 31.3			
	comp=Z,4µm,20.3s,baz=252,slow=37									
PMR	**Palmer**	42.23	334	*e*P		P	21 18 19.2	+0.3		
PMR				pmax		pmax				
	comp=Z,130nm,1.8s									
PMR	**Palmer**	42.23	334	*e*P		P	21 18 19.2	+0.3		
	comp=Z,135nm,1.8s									
RUSC	**La Rusia**	42.30	114	*e*P		P	21 18 20.6	-0.1		
DHY	**Denali Highway**	42.49	337	*e*P		P	21 18 21.8	+0.6		
	comp=Z,20nm,1.1s									
SJG	**San Juan**	42.56	93	LR		LR	21 37 40.9			
	comp=Z,1µm,22.0s,baz=282,slow=38									
SDV	**Santo Domingo**	42.70	108	LR		LR	21 37 04.0			
	comp=Z,1µm,20.9s,baz=310,slow=37									
SDV	**Santo Domingo**	42.70	108	*e*P		P	21 18 23.5	-0.1		
	comp=Z,22nm,0.9s									
INK	**Inuvik**	42.82	348	*e*P		P	21 18 22.8	-0.8		
INK	**Inuvik**	42.82	348	*e*P		P	21 18 22.8	-0.8		
RSO	**Redoubt South**	43.08	331	*e*P		P	21 18 26.2	+0.1		
SPU	**Mount Spurr**	43.16	333	*e*P		P	21 18 26.3	-0.3		
RND	**Reindeer**	43.23	336	*e*P		P	21 18 27.1	0.0		
RND				pmax		pmax				
	comp=Z,18nm,1.0s									
RND	**Reindeer**	43.23	336	*e*P		P	21 18 27.1	0.0		
	comp=Z,18nm,1.0s									
ILAR	**Eielson Array**	43.44	339	P		P	21 18 28.1	-0.6		
	comp=Z,5.7nm,0.8s,baz=151,slow=6.9,SNR=29									
ILB	**Eielson Array**	43.44	339	*e*P		P	21 18 28.1	-0.6		
MCK	**McKinley**	43.46	337	*e*P		P	21 18 29.0	+0.1		
MCK				pmax		pmax				
	comp=Z,44nm,1.3s									
MCK	**McKinley**	43.46	337	*e*P		P	21 18 29.0	+0.1		
	comp=Z,44nm,1.3s									
WRH	**Wood River Hil**	43.63	338	*e*P		P	21 18 32.2	+2.0		
	comp=Z,14nm,0.9s									
CCB	**Clear Creek Bu**	43.65	338	*e*P		P	21 18 30.3	-0.1		
	comp=Z,8.3nm,0.9s									
TRF	**Thorofare Moun**	43.77	336	*e*P		P	21 18 31.1	-0.5		
	comp=Z,228nm,1.9s									
BWN	**Browne**	43.91	337	*e*P		P	21 18 32.4	-0.2		
	comp=Z,87nm,1.2s									
MDM	**Murphy Dome**	43.99	338	*e*P		P	21 18 34.3	+1.1		
	comp=Z,13nm,1.0s									
KTH	**Kantishna Hill**	44.06	336	*e*P		P	21 18 33.4	-0.4		
	comp=Z,38nm,1.0s									
PPLA	**Purkeypile**	44.15	335	*e*P		P	21 18 34.5	-0.2		
	comp=Z,73nm,1.0s									
FYU	**Fort Yukon**	44.17	341	*e*P		P	21 18 35.1	+0.6		
	comp=Z,122nm,1.5s									
BPAW	**Bear Paw Mtn.**	44.40	336	*e*P		P	21 18 35.8	-0.7		
	comp=Z,30nm,0.9s									
CAST	**Castle Rocks**	44.41	335	*e*P		P	21 18 35.7	-0.9		
	comp=Z,138nm,2.0s									
SVW2	**Sparrevohn**	44.60	331	*e*P		P	21 18 37.1	-1.0		
	comp=Z,33nm,1.0s									
MLY	**Manley**	44.87	338	*e*P		P	21 18 39.9	-0.3		
	comp=Z,21nm,0.8s									
TTA	**Tatalina**	45.66	333	*e*P		P	21 18 45.4	-1.2		
TTA				pmax		pmax				
	comp=Z,25nm,1.2s									
TTA	**Tatalina**	45.66	333	*e*P		P	21 18 45.4	-1.2		
	comp=Z,25nm,1.2s									
TAOE	**Nuku Hiva Isla**	45.70	222	*e*LQ		LQ	21 29 36.9			
	comp=Z,5µm,27.9s									
TAOE				*e*LR		LR	21 31 32.4			
	comp=Z,3µm,25.0s,baz=46									
COLD	**Coldfoot**	46.07	340	*e*P		P	21 18 50.1	+0.5		
	comp=Z,15nm,1.0s									
ATAH	**Atahualpa**	47.03	132	LR		LR	21 35 53.4			
	comp=Z,652nm,21.1s,baz=316,slow=32						

CPUP	**Villa Florida**	**74.69**	**131**	P	**P**	**21 22 06.3**	**+0.4**
	comp=Z,4.3nm,0.8s,baz=316,slow=8.4,SNR=6.9						
CPUP				LR	LR	21 54 18.0	
	comp=Z,306nm,20.1s,baz=338,slow=35						
PLCA	**Paso Flores**	**77.85**	**149**	P	**P**	**21 22 23.8**	**+0.2**
	comp=Z,3.7nm,0.9s,baz=13,slow=12,SNR=3.0						
PLCA				LR	LR	21 49 25.0	
	comp=Z,982nm,21.3s,baz=360,slow=30						
YAK	**Yakutsk**	**78.22**	**335**	LR	LR	21 57 56.0	
	comp=Z,785nm,18.3s,baz=65,slow=36						
YAK	**Yakutsk**	**78.22**	**335**	*e*P	**P**	**21 22 23.9**	**-1.5**
YAK				pmax	pmax		
	comp=Z,22nm,1.3s						
YAK				pmax	pmax		
	comp=E,11nm,1.4s						
YAK				pmax	pmax		
	comp=N,4.0nm,1.3s						
ARA0	**ARCESS Array S**	**78.26**	**14**	*e*P	**P**	**21 22 25.5**	**-0.1**
ARCES	**ARCESS Array B**	**78.26**	**14**	P	**P**	**21 22 25.5**	**-0.1**
	comp=N,2.4nm,0.8s,baz=332,slow=5.5,SNR=3.3						
ARCES				LR	LR	21 58 30.2	
	comp=N,1μm,18.5s,baz=334,slow=37						
NKL	**Nikolayevsk**	**78.26**	**324**	*e*P	**P**	**21 22 30.0**	**+4.2**
NKL				pmax	pmax		
	comp=Z,17nm,1.0s						
NKL				MLR	MLR		
	comp=Z,550nm,16.0s						
PMOZ	**Porto Moniz, M**	**78.82**	**59**	*e*LR	LR	21 49 28.5	
	comp=Z,654nm,22.0s						
NB2	**NORSAR Subarra**	**80.22**	**25**	P	**P**	**21 22 39.4**	**+2.9**
	comp=Z,8.7nm,1.1s,baz=308,slow=5.6						
NB200	**NORSAR Array S**	**80.22**	**25**	*e*P	**P**	**21 22 37.6**	**+1.1**
NOA	**NORSAR Array B**	**80.22**	**25**	P	**P**	**21 22 37.6**	**+1.1**
	comp=Z,2.4nm,0.8s,baz=310,slow=5.3,SNR=9.3						
NOA				LR	LR	21 57 18.6	
	comp=Z,510nm,21.7s,baz=315,slow=35						
YSS	**Yuzh-Sakhalins**	**80.22**	**318**⇩	*e*P	**P**	**21 22 33.4**	**-3.3**
YSS				pmax	pmax		
	comp=Z,30nm,1.8s						
YSS				MLR	MLR		
	comp=Z,4μm,16.0s						
PGAV	**Gavieira, Arco**	**80.98**	**47**	*e*LR	LR	21 50 59.6	
	comp=Z,1μm,20.0s						
APA	**Apatity**	**81.53**	**13**	*e*P	P	21 22 38.0	-5.3
APA				MLR	MLR		
	comp=Z,2μm,19.0s						
PVRL	**Vila Real**	**81.68**	**48**	*e*P	**P**	**21 22 45.2**	**+0.5**
ASAJ	**Asahikawa**	**81.75**	**316**	*e*P	**P**	**21 22 47.9**	**+3.0**
	comp=Z,64nm,1.5s						
PVIS	**Viseu**	**81.84**	**48**	*e*P	**P**	**21 22 45.5**	**-0.1**
PTOM	**Tomar**	**82.03**	**49**	*e*P	**P**	**21 22 49.5**	**+3.0**
	comp=Z,53nm,1.5s						
MVO	**Moncorvo**	**82.19**	**48**	*e*P	**P**	**21 22 48.8**	**+1.4**
MVO	**Moncorvo**	**82.19**	**48**	*e*LR	LR	21 50 41.5	
	comp=Z,1μm,16.0s						
MTE	**Manteigas**	**82.23**	**48**	*e*P	**P**	**21 22 48.3**	**+0.7**
	comp=Z,32nm,1.3s						
MTE	**Manteigas**	**82.23**	**48**	*e*LR	LR	21 49 47.0	
	comp=Z,960nm,16.0s						
MTE	**Manteigas**	**82.23**	**48**	*e*P	**P**	**21 22 49.6**	**+2.0**
	comp=Z,23nm,1.0s						
NRIK	**Noril'sk**	**82.36**	**353**	P	**P**	**21 22 48.8**	**+1.2**
	comp=Z,4.5nm,0.6s,baz=352,slow=5.0,SNR=5.6						
NRIK				LR	LR	22 00 48.5	
	comp=Z,2μm,20.0s,baz=22,slow=37						
PMTG	**Montargil**	**82.42**	**50**	*e*P	**P**	**21 22 50.2**	**+1.6**
PCBR	**Castelo Branco**	**82.55**	**49**	*e*P	**P**	**21 22 49.9**	**+0.7**
PMRV	**Marv??o**	**82.81**	**49**	*e*P	**P**	**21 22 51.1**	**+0.5**
	comp=Z,37nm,1.9s						
PMRV	**Marv??o**	**82.81**	**49**	*e*LR	LR	21 50 50.1	
	comp=Z,1μm,18.0s						
PTEO	**Sao Teotonio**	**82.83**	**51**	*e*PcP	**PcP**	**21 22 55.5**	**0.0**
PVAQ	**Vaqueiros**	**83.59**	**51**	*e*LR	LR	21 50 52.8	
	comp=Z,2μm,20.0s						
FIA0	**FINESS Array S**	**84.84**	**19**	*e*P	**P**	**21 22 59.9**	**-0.6**
FIA0	**FINESS Array S**	**84.84**	**19**	*e*P	**P**	**21 22 59.9**	**-0.6**
FINES	**FINESS Array B**	**84.84**	**19**	P	**P**	**21 22 59.9**	**-0.6**
	comp=Z,5.6nm,0.8s,baz=29,slow=4.4,SNR=16						
FINES				LR	LR	21 59 58.1	
	comp=Z,2μm,20.6s,baz=328,slow=35						
FINES	**FINESS Array B**	**84.84**	**19**	*i* P	**P**	**21 23 01.2**	**+0.7**
FINES				pmax	pmax		
	comp=Z,6.0nm,0.8s						
ESDC	**Sonseca Array**	**84.96**	**48**	P	**P**	**21 23 01.9**	**+0.2**
	comp=Z,1.5nm,0.8s,baz=296,slow=5.3,SNR=11						
ESDC				LR	LR	21 58 40.4	
	comp=Z,580nm,19.6s,baz=275,slow=34						
WLF	**Walferdange**	**85.20**	**35**	P	**P**	**21 23 03.0**	**+0.4**
WLF	**Walferdange**	**85.20**	**35**	*e*P	**P**	**21 23 06.3**	**+3.7**
WLF				pmax	pmax		
	comp=Z,12nm,0.8s						
WLF	**Walferdange**	**85.20**	**35**	*e*P	**P**	**21 23 06.3**	**+3.7**
	comp=Z,12nm,0.8s						
TMCR	**Tamitsa**	**85.44**	**13**	*e*P	**P**	**21 23 06.6**	**+3.2**
TMCR				pmax	pmax		
	comp=Z,17nm,1.0s						
BSD	**Bornholm Skovb**	**85.68**	**28**	*i* P	**P**	**21 23 00.9**	**-3.9**
BSD	**Bornholm Skovb**	**85.68**	**28**	*e*P	**P**	**21 23 00.9**	**-3.9**
BOD	**Bodaibo**	**86.80**	**338**	*e*P	**P**	**21 23 06.7**	**-3.6**
BOD				pmax	pmax		
	comp=Z,9.0nm,1.5s						
CLL	**Collm**	**87.47**	**31**	*i* P	**P**	**21 23 13.7**	**0.0**
CLL				*i*		21 23 17.5	
CLL				*e*S	**S**	**21 33 49.0**	**-5.7**
CLL				*e*SS	**SS**	**21 39 42.0**	**+3.4**
CLL				*e*SSS	SSS	21 43 12.0	
CLL				*e*SSSS		21 46 12.0	
CLL				Lm	MLR	22 05 00.0	
	comp=N,700nm,18.6s						
CLL				Lm	MLR	22 05 00.0	
	comp=E,1μm,18.0s						
CLL	**Collm**	**87.47**	**31**	*i* P	**P**	**21 23 13.7**	**0.0**
CLL				*i*		21 23 17.5	
CLL				*e*S	**S**	**21 33 49.0**	**-5.7**
NKC	**Novy Kostel**	**87.94**	**32**	AMS	AMS	22 04 20.0	
	comp=E,2μm,18.3s						
USRK	**Ussuriysk Ar.**	**88.03**	**320**	P	**P**	**21 23 16.1**	**-0.4**
	comp=E,2.1nm,0.8s,baz=73,slow=5.2,SNR=5.1						
BRG	**Berggiesshubel**	**88.20**	**31**	*e*P	**P**	**21 23 17.8**	**+0.6**
	comp=E,2.8nm,0.9s						
BRG				*e*		21 23 30.7	
	comp=E,3.3nm,0.8s						
	comp=N,1μm,18.2s						
	comp=E,938nm,19.3s						
	comp=Z,2μm,18.4s						
MAJO	**Matsushiro**	**88.61**	**311**⇑	*e*P	**P**	**21 23 20.8**	**+1.3**
MAJO				pmax	pmax		
	comp=Z,81nm,1.1s						
MJAR	**Matsushiro Arr**	**88.61**	**311**	P	**P**	**21 23 21.2**	**+1.8**
	comp=Z,1.5nm,0.5s,baz=39,slow=3.3,SNR=9.0						
PVCC	**Panska Ves**	**88.73**	**31**	AMS	AMS	22 04 40.0	
	comp=Z,2μm,17.7s						
PRA	**Prague**	**88.99**	**32**	AMS	AMS	22 03 50.0	
	comp=Z,2μm,19.8s						
PRU	**Pruhonice**	**89.09**	**32**	AMS	AMS	22 04 10.0	
	comp=Z,2μm,19.1s						
KHC	**Kasperske Hory**	**89.23**	**33**	AMS	AMS	22 05 00.0	
	comp=Z,2μm,15.2s						
GOPC	**GO Pecny, Ondr**	**89.26**	**31**	AMS	AMS	22 04 10.0	
	comp=Z,2μm,17.6s						
UPC	**Upice**	**89.40**	**30**	AMS	AMS	22 06 20.0	
	comp=Z,1μm,15.3s						
GERES	**GERESS Array B**	**89.49**	**33**	P	**P**	**21 23 24.6**	**+1.2**
	comp=Z,0.5nm,0.6s,baz=338,slow=3.2,SNR=4.4						
GERES				LR	LR	22 03 28.7	
	comp=Z,2μm,19.5s,baz=292,slow=36						
DPC	**Dobruska-Polom**	**89.65**	**30**	*e*P	**P**	**21 23 24.3**	**+0.2**
DPC				*e*pP	**pP**	**21 23 26.3**	**-1.2**
DPC				AMS	AMS	22 06 30.0	
	comp=Z,1μm,14.3s						
DPC	**Dobruska-Polom**	**89.65**	**30**	*e*P	**P**	**21 23 24.3**	**+0.2**
DPC				*e*		21 23 26.3	
DPC				MLR	MLR		
	comp=Z,1μm,14.3s						
TREC	**Trest**	**90.02**	**32**	AMS	AMS	22 04 50.0	
	comp=Z,2μm,15.1s						
OKC	**Ostrava-Krasne**	**90.84**	**30**	AMS	AMS	22 06 40.0	
	comp=Z,1μm,18.0s						
JCJ	**Chichijima**	**90.84**	**301**	LR	LR	21 56 15.3	
	comp=Z,284nm,20.9s,slow=30						
PERS	**Pernice**	**91.71**	**34**	*i* P	**P**	**21 23 35.5**	**+1.7**
CN2	**Changchun**	**91.92**	**323**	*e*P	**P**	**21 23 30.3**	**-4.4**
CN2				pmax	pmax		
	comp=Z,10.0nm,1.4s						
VYHS	**Vyhne**	**92.13**	**31**	*e*P	**P**	**21 23 37.7**	**+2.1**
VISS	**Visnje**	**92.16**	**34**	*e*P	**P**	**21 23 37.6**	**+1.8**
STHS	**Stebnicka Huta**	**92.50**	**29**	*e*P	**P**	**21 23 38.6**	**+1.3**
OBN	**Obninsk**	**93.15**	**18**	LR	LR	22 06 18.0	
	comp=Z,2μm,18.2s,baz=336,slow=36						
IRK	**Irkutsk**	**94.58**	**339**	*e*P	**P**	**21 23 49.0**	**+2.2**
IRK				pmax	pmax		
	comp=Z,28nm,2.0s						
AKASG	**Malin Array Be**	**94.62**	**24**	P	**P**	**21 23 46.0**	**-0.9**
	comp=Z,0.5nm,0.3s,baz=316,slow=3.6,SNR=7.8						
AKASG				LR	LR	22 07 23.5	
	comp=Z,880nm,18.2s,baz=15,slow=36						
AKASG	**Malin Array Be**	**94.62**	**24**	*i* P	**P**	**21 23 45.7**	**-1.3**
AKASG				pmax	pmax		
	comp=Z,1.0nm,0.3s						
AKBB	**Malin Array Si**	**94.62**	**24**	*e*P	**P**	**21 23 46.1**	**-0.9**
AKBB	**Malin Array Si**	**94.62**	**24**	*e*P	**P**	**21 23 46.0**	**-0.9**
KIEV	**Kiev**	**94.62**	**24**	P	**P**	**21 23 45.0**	**-2.0**
KIEV				pmax	pmax		
	comp=Z,13nm,2.0s						
KSRS	**Korea Array**	**94.66**	**317**	P	**P**	**21 23 46.6**	**-0.8**
	comp=Z,2.2nm,0.8s,baz=62,slow=5.6,SNR=4.2						
KS15	**Wonju Array Si**	**94.69**	**317**	*e*P	**P**	**21 23 46.6**	**-1.0**
KSAR	**Wonju Array Be**	**94.69**	**317**	P	**P**	**21 23 46.6**	**-1.0**
KSAR	**Wonju Array Be**	**94.69**	**317**	P	**P**	**21 23 46.6**	**-1.0**
TLY	**Talaya**	**95.26**	**339**	*e*P	**P**	**21 23 54.4**	**+4.4**
TLY				pmax	pmax		
	comp=Z,9.0nm,1.5s						
GUMO	**Guam**	**95.58**	**288**	LR	LR	21 57 50.3	
	comp=Z,545nm,22.0s,baz=61,slow=30						
KEST	**Kesra**	**95.81**	**45**	LR	LR	22 05 26.2	
	comp=Z,898nm,20.1s,baz=258,slow=34						
ARU	**Arti**	**95.87**	**6***d*	*i* P	**P**	**21 23 53.4**	**+0.8**
ARU				S	**SKSac**	**21 34 28.6**	**-0.3**
ARU				pmax	pmax		
	comp=Z,8.0nm,1.7s						
ARU				MLR	MLR		
	comp=Z,1μm,18.0s						
MOY	**Mondy**	**96.09**	**340**	*e*P	**P**	**21 23 58.3**	**+4.4**
ZAK	**Zakamensk**	**96.50**	**338**	*e*P	**P**	**21 23 58.9**	**+3.2**
ZAK				pmax	pmax		
	comp=Z,4.0nm,1.4s						
NVS	**Novosibirsk**	**96.93**	**352**	*e*P	**P**	**21 24 00.1**	**+2.7**
ULN	**Ulaanbaatar**	**97.31**	**335**	P	**P**	**21 23 57.0**	**-2.5**
MLR	**Muntele Rosu**	**97.56**	**29**	LR	LR	22 09 04.0	
	comp=Z,212nm,19.4s,baz=312,slow=36						
ZAA1	**Zalesovo Array**	**97.58**	**350**	*e*P	**P**	**21 23 59.7**	**-0.6**
SONA0	**Songino Array**	**97.58**	**335**	*e*P	**P**	**21 24 00.3**	**-0.4**
SONA0				*e*PP	**PP**	**21 28 01.0**	**+3.8**
SONM	**Songino Array**	**97.58**	**335**	P	**P**	**21 24 00.3**	**-0.4**
	comp=Z,0.8nm,0.6s,baz=37,slow=5.1,SNR=3.4						
SONM				PP	**PP**	**21 28 01.0**	**+3.8**
	comp=Z,0.8nm,0.9s,baz=46,slow=6.4,SNR=5.5						
SONM				LR	LR	22 13 07.0	
	comp=Z,455nm,18.0s,baz=42,slow=39						
ZALV	**Zalesovo Beam**	**97.58**	**350**	P	**P**	**21 23 59.7**	**-0.7**
	comp=Z,1.4nm,0.7s,baz=351,slow=3.3,SNR=5.7						
ZALV				LR	LR	22 11 00.4	
	comp=Z,631nm,21.2s,baz=50,slow=37						
BRVK	**Borovoye**	**99.67**	**359**	P	**Pdif**	**21 24 09.0**	**-0.8**
BRVK	**Borovoye**	**99.67**	**359**	*e*Pdif	**Pdif**	**21 24 13.3**	**+3.5**
	comp=Z,3.4nm,0.8s						
HHC	**Hu-ho-hao-te**	**101.09**	**328**	*e*P	**Pdif**	**21 24 16.0**	**-0.5**
HHC				PP	**PP**	**21 28 26.8**	**+2.7**
HHC				S	**Sdif**	**21 35 45.3**	**-10**
HHC				SS	**SS**	**21 42 51.5**	**-1.6**
HHC				pmax	pmax		
	comp=Z,26nm,0.9s						
HHC				pmax	pmax		
	comp=Z,110nm,9.7s						
HHC				LR	LR		
	comp=Z,960nm,13.6s						
HHC				LR	LR		
	comp=Z,920nm,13.6s						
HHC				LR	LR		
	comp=Z,940nm,14.8s						
TOA1	**Torodi Ar. Sit**	**103.58**	**67**	*e*PKKPbc	PKKPbc	21 40 21.5	+1.9
TORD	**Torodi Ar. Bea**	**103.59**	**67**	PKKPbc	PKKPbc	21 40 21.5	+1.9
	comp=Z,0.3nm,0.7s,baz=86,slow=4.8,SNR=3.5						
MK32	**Makanchi Array**	**104.92**	**350**	*e*Pdif	**Pdif**	**21 24 32.8**	**-0.5**
MK32				*e*PP	**PP**	**21 28 52.1**	**-0.2**
MKAR	**Makanchi Array**	**104.92**	**350**	Pdiff	**Pdif**	**21 24 32.8**	**-0.5**
	comp=Z,0.1nm,0.3s,baz=20,slow=4.7,SNR=4.0						
MKAR				PP	**PP**	**21 28 52.1**	**-0.2**
	comp=Z,0.1nm,0.3s,baz=358,slow=4.3,SNR=3.1						
WMQ	**Urumqi**	**106.80**	**346**	*e*Pdif	**Pdif**	**21 24 42.5**	**+0.7**
WMQ				PP	**PP**	**21 29 06.0**	**-0.2**
WMQ				SS	SS	21 44 15.5	+4.8
WMQ				LR	LR		
	comp=Z,220nm,22.4s						
WMQ				LR	LR		
	comp=Z,350nm,19.2s						
WMQ				LR	LR		
	comp=Z,200nm,22.4s						
CD2	**Chengdu**	**112.83**	**328**	PKP	**PKiKP**	**21 29 04.3**	**+0.8**
CD2				sPKP		21 29 11.3	
CD2				SKS	**SKSdf**	**21 36 13.0**	**-3.1**
CD2				SKKS	**SKKSac**	**21 36 48.3**	**-5.8**
CD2				SS	**SS**	**21 45 30.5**	**-2.0**
CD2				AMB	AMB		
	comp=Z,150nm,7.2s						
CD2				LR	LR		
	comp=Z,840nm,15.6s						
CD2				LR	LR		
	comp=Z,740nm,18.0s						
KSH	**Kashi**	**112.87**	**354**	*e*PKP	**PKiKP**	**21 29 04.5**	**+1.0**
KSH				*e*PP	**PP**	**21 29 57.0**	**+6.8**
KSH				PKS	**PKSdf**	**21 32 39.5**	**-0.8**
KSH				SKS	**SKSdf**	**21 36 16.3**	**+0.3**
KSH				SKKS	**SKKSac**	**21 36 46.0**	**-8.2**
KSH				AMB	AMB		
	comp=Z,71nm,5.9s						
KSH				LR	LR		
	comp=Z,990nm,18.8s						
KSH				LR	LR		
	comp=Z,1μm,17.9s						
KSH				LR	LR		
	comp=Z,1μm,16.2s						
GYA	**Guiyang**	**114.97**	**322**	Pdif	**Pdif**	**21 25 16.8**	**-1.7**
GYA				PKP	**PKiKP**	**21 29 05.5**	**-2.3**
GYA				PP	**PP**	**21 30 08.3**	**+2.5**
GYA				PKS	**PKSdf**	**21 32 41.3**	**-3.5**
GYA				SKKS		21 36 59.0	
GYA				SS	**SS**	**21 45 58.5**	**-2.7**
GYA				AMB	AMB		
	comp=Z,190nm,7.8s						
GYA				LR	LR		
	comp=Z,410nm,20.8s						
GYA				LR	LR		
	comp=Z,340nm,21.2s						
GYA				LR	LR		
	comp=Z,280nm,21.4s						
STKA	**Stephens Creek**	**117.58**	**247**	PKP	**PKPdf**	**21 29 12.7**	**+0.2**
	comp=Z,1.6nm,0.8s,baz=318,slow=4.3,SNR=4.1						
KMI	**Kunming**	**118.11**	**325**	PKP	**PKPdf**	**21 29 11.3**	**-2.8**
WR1	**Warramunga Arr**	**119.95**	**262**	*e*PKPdf	**PKPdf**	**21 29 16.3**	**-1.0**
WRA	**Warramunga Arr**	**119.95**	**262**	PKP	**PKPdf**	**21 29 16.3**	**-1.0**
	comp=Z,3.3nm,0.8s,baz=60,slow=2.0,SNR=19						
AS31	**Alice Springs**	**121.59**	**258**	*e*PKPdf	**PKPdf**	**21 29 19.1**	**-1.4**
ASAR	**Alice Springs**	**121.60**	**258**	PKP	**PKPdf**	**21 29 19.1**	**-1.4**
	comp=Z,2.6nm,0.8s,baz=69,slow=2.1,SNR=7.0						
CHTO	**Chiang Mai**	**125.29**	**324**	*e*PKiKP	**PKPdf**	**21 29 28.1**	**+0.4**
CHTO	**Chiang Mai**	**125.29**	**324**	*e*PKPdf	**PKPdf**	**21 29 28.1**	**+0.4**
CM31	**Chiang Mai Arr**	**125.59**	**324**	*e*PKPdf	**PKPdf**	**21 29 27.6**	**-0.6**
CMAR	**Chiang Mai Arr**	**125.59**	**324**	PKP	**PKPdf**	**21 29 27.6**	**-0.6**
	comp=Z,2.3nm,0.9s,baz=336,slow=2.4,SNR=13						
BOSA	**Boshof**	**141.91**	**102**	PKP	**PKPdf**	**21 29 56.6**	**-2.0**
	comp=Z,2.9nm,0.8s,baz=236,slow=3.6,SNR=4.2						

NIED **26** *21:13:00,38˙40N×144˙60E,h5km,Mw3.6 Best double couple: M₀2.76000×10¹⁴ NP1:φs35.00000°,δ20.00000°, λ-141.00000°. NP2:φs267.00000°,δ78.00000°, λ-74.00000°.*

IDC **26** *21:13:08.3±2.3,38˙20N×144˙83E,h0km,mb3.6/3, mb1 3.7/5,mb1mx3.4/36,mbtmp3.6/5,ML2.7/2,Error ellipse: s-maj=51.7km s-min=28.4km az=50.0*

ISCJB **26** *21:13:10.9±1.1,38˙36N±0˙07×144˙63E±0˙08,h29km, mb3.8/3,Error ellipse: s-maj=10.8km s-min=8.9km az=165.4*

JMA **26** *21:13:12.4±0.2,38˙43N×144˙55E,h40km,M3.9*

ISC 26 21:13:12.5±1.6,38˙42N±0˙10×144˙7E±0˙1,h29km,n22,σ1ᵍ33/19,mb3.7/3,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC

OFUJ	**Ofunato**	**2.42**	**287**	P		**Pn**	**21 13 49.9**	**-0.2**
JIO	**Ouri**	**2.59**	**272**	P		**Pn**	**21 13 52.0**	**-0.5**
JIO				S		**Sn**	**21 14 21.4**	**-1.6**
JTH	**Tanohata**	**2.64**	**306**	P		**Pn**	**21 13 52.9**	**-0.3**
JOM	**Ohasama**	**2.82**	**293**	P		**Pn**	**21 13 55.8**	**+0.2**
JMM	**Marumori**	**3.09**	**261**	P		**Pn**	**21 13 59.0**	**-0.4**
JMM				*e*S		**Sn**	**21 14 33.7**	**-1.6**
JANG	**Nango**	**3.11**	**310**	P		**Pn**	**21 13 58.9**	**-0.8**
JOU	**Okura**	**3.13**	**270**	*e*S		**Sn**	**21 14 35.8**	**-0.6**
JRG	**Rokugo**	**3.28**	**288**	P		**Pn**	**21 14 02.6**	**+0.6**
JYK	**Kaneyama**	**3.39**	**280**	P		**Pn**	**21 14 04.2**	**+0.7**
JFT	**Otama**	**3.52**	**256**	*e*S		**Sn**	**21 14 45.1**	**-1.0**
JTM	**Tenmabayashi**	**3.64**	**312**	*e*S		**Sn**	**21 14 47.3**	**-1.5**
MJAR	**Matsushiro Arr**	**5.46**	**252**	Pn		**Pn**	**21 14 32.2**	**+0.3**
	1.0nm,0.3s,baz=91,slow=12,SNR=4.1							
MJAR				Sn		**Sn**	**21 15 35.6**	**+1.9**
	0.4nm,0.3s,baz=94,slow=14,SNR=3.5							
USRK	**Ussuriysk Ar.**	**11.13**	**305**	Pn		**Pn**	**21 15 52.6**	**+3.0**
	0.1nm,0.3s,baz=104,slow=14,SNR=4.9							
H11N2	**WAKE ISLAND Hy**	**26.81**	**128**	T		T	21 47 43.8	
	baz=312,slow=75,SNR=5.3							
H11N1	**WAKE ISLAND Hy**	**26.82**	**128**	T		T	21 47 42.7	
	baz=312,slow=75,SNR=7.4							
H11N3	**WAKE ISLAND Hy**	**26.82**	**128**	T		T	21 47 44.9	
	baz=312,slow=75,SNR=5.8							
H11S1	**WAKE ISLAND Hy**	**27.61**	**130**	T		T	21 48 32.9	
	baz=314,slow=76,SNR=19							
H11S3	**WAKE ISLAND Hy**	**27.61**	**130**	T		T	21 48 31.4	
	baz=314,slow=76,SNR=16							
H11S2	**WAKE ISLAND Hy**	**27.63**	**130**	T		T	21 48 29.1	
	baz=314,slow=76,SNR=15							
MKAR	**Makanchi Array**	**45.57**	**302**	P		**P**	**21 21 31.3**	**+1.5**
	0.2nm,0.2s,baz=76,slow=7.5,SNR=3.8							
WRA	**Warramunga Arr**	**58.86**	**191**	P		**P**	**21 23 07.0**	**-1.6**
	0.7nm,0.5s,baz=11,slow=7.3,SNR=11							
ASAR	**Alice Springs**	**62.58**	**191**	P		**P**	**21 23 33.4**	**-0.5**
	0.5nm,0.8s,baz=18,slow=6.2,SNR=4.1							

ISCJB **26** *21:25:50.7±0.2,16˙00N±0˙03×92˙57W±0˙03,h197km±2km, mb4.4/31,Error ellipse: s-maj=5.4km s-min=3.4km az=41.9*

IDC **26** *21:25:52.3±0.8,16˙13N×92˙28W,h194km±6km,mb4.1/11, mb1 4.3/13,mb1mx3.9/34,mbtmp4.6/13,MS4.5/1, Ms1 4.5/1,ms1mx3.6/38,Error ellipse: s-maj=22.5km s-min=8.4km az=50.0*

MEX **26** *21:25:53.3±0.3,15˙87N×92˙73W,h194km±5km,MD5.2*

NEIC **26** *21:25:53.3,15˙87N×92˙73W,h194km,mb4.7/42, MD5.2(MEX),After MEX.*

ISC 26 21:25:51.3±0.5,15˙90N±0˙05×92˙68W±0˙04,h193km±3km, h193km:pP-P,n311,σ1ᵍ36/344,mb4.4/31,
Mexico-Guatemala border region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC

PCIG		**0.56**	**250**	*e*Pn		**Pn**	**21 26 18.5**	**+0.6**
PCIG				*e*Sn		**Sn**	**21 26 37.8**	**-0.5**
PCIG		**0.56**	**250**	*i* P		**Pn**	**21 26 18.5**	**+0.6**
PCIG				*e*S		**Sn**	**21 26 37.8**	**-0.5**
CCIG	**Comitan**	**0.65**	**54**	*e*Pn		**Pn**	**21 26 19.5**	**+1.0**
CCIG				*e*Sn		Sn	21 26 33.5	-6.0
CCIG				*e*Sn		Sn	21 26 39.8	+0.2
CCIG	**Comitan**	**0.65**	**54**	*e*P		**Pn**	**21 26 19.5**	**+1.0**
CCIG				*e*S		**Sn**	**21 26 39.8**	**+0.2**
TGBT	**Tuxtla Gutierr**	**0.96**	**336**	*i* P		**Pn**	**21 26 20.9**	**+0.7**
TGIG		**0.97**	**334**	*e*Pn		**Pn**	**21 26 21.1**	**+0.7**
TGIG				*e*Sn		**Sn**	**21 26 42.3**	**-0.6**
TGIG		**0.97**	**334**	*i* P		**Pn**	**21 26 21.1**	**+0.7**
TGIG				*e*S		**Sn**	**21 26 42.3**	**-0.6**
THIG		**1.06**	**158**	*e*Pn		**Pn**	**21 26 21.7**	**+0.8**
THIG				*e*Sn		**Sn**	**21 26 43.0**	**-0.8**
THIG		**1.06**	**158**	*e*P		**Pn**	**21 26 21.7**	**+0.8**
THIG				*e*S		**Sn**	**21 26 43.0**	**-0.8**
CMIG	**Matias Romero**	**2.43**	**300**	P		**Pn**	**21 26 34.0**	**0.0**
	300nm,0.3s,baz=97,slow=8.7,SNR=2015							
CMIG				S		**Sn**	**21 27 04.8**	**-2.5**
	207nm,0.3s,baz=340,slow=19,SNR=25							
TUIG	**Tuzandepetl**	**2.70**	**322**	*e*Pn		**Pn**	**21 26 37.2**	**+0.1**
TUIG				*e*Sn		**Sn**	**21 27 12.2**	**-0.8**
TUIG	**Tuzandepetl**	**2.70**	**322**	*i* P		**Pn**	**21 26 37.2**	**+0.1**
TUIG				*i* S		**Sn**	**21 27 12.2**	**-0.8**
HUIG	**Huatulco**	**3.30**	**268**	*e*Pn		**Pn**	**21 26 43.5**	**-0.8**
HUIG				*e*Sn		**Sn**	**21 27 23.3**	**-2.4**
HUIG	**Huatulco**	**3.30**	**268**	*i* P		**Pn**	**21 26 43.5**	**-0.8**
HUIG				*i* S		**Sn**	**21 27 23.3**	**-2.4**
PANG	**Puerto Angel**	**3.66**	**267**	*i* P		**Pn**	**21 26 48.2**	**-0.5**
PANG				*e*S		**Sn**	**21 27 30.1**	**-3.4**
PNIG	**Pinotepa**	**5.26**	**276**	*e*Pn		**Pn**	**21 27 09.6**	**

baz=172
245A **Little AP, Sta** 16.26 8 P P 21 29 28.5 0.0
baz=190
VBMS **Vicksburg** 16.37 7 P P 21 29 29.7 +0.1
baz=188
VBMS **Vicksburg** 16.37 7 eP Pn 21 29 31.3 +1.0
45nm,0.8s
333A **Richland Sprin** 16.40 341 P Pn 21 29 31.5 +0.7
baz=158
142A **Monroe** 16.59 2 P P 21 29 32.8 +0.7
baz=183
140A **Cam and Jess,** 16.69 357 P P 21 29 33.3 +0.1
baz=177
LTX **Lajitas** 16.77 325 eP Pn 21 29 37.5 +2.1
TXAR **Lajitas Array** 16.77 325 P Pn 21 29 37.5 +2.1
2.0nm,0.3s,baz=152,slow=12,SNR=92
TXAR ScP ScP 21 37 28.8 +0.7
0.1nm,0.3s,baz=168,slow=4.6,SNR=4.9
234A **Clairette** 16.79 344 P Pn 21 29 35.4 0.0
baz=162,SNR=7.1
233A **Rising Star** 17.02 342 P Pn 21 29 37.8 -0.4
baz=159,SNR=17
135A **Vickery Place,** 17.13 346 P Pn 21 29 39.1 -0.4
baz=165
GTBY **Guantanamo Bay** 17.19 74 eP P 21 29 39.7 +0.8
58nm,0.7s
Z41A **Richland Creek** 17.29 360 P P 21 29 40.0 +0.2
baz=180
134A **White-Moore Ra** 17.31 345 P P 21 29 40.3 +0.2
baz=162,SNR=6.5
Z42A **Norrel Spur, H** 17.31 2 P P 21 29 39.3 -0.7
baz=182
Z38A **Mt. Pleasant** 17.40 354 P P 21 29 40.3 -0.8
baz=173
Z37A **Pogue Cattle C** 17.43 352 P P 21 29 41.0 -0.4
baz=171
133A **Hamilton Ranch** 17.57 342 P Pn 21 29 44.1 -0.6
baz=160,SNR=11
WLAR **White Oak Lake** 17.72 359 eP Pn 21 29 46.4 +0.1
47nm,0.7s
ABTX **Abilene, Hawle** 17.81 340 P P 21 29 46.6 +1.0
baz=158,SNR=12
ABTX **Abilene, Hawle** 17.81 340 eP Pn 21 29 47.0 -0.5
32nm,0.8s
Z35A **Perchaven, San** 17.84 347 P P 21 29 46.4 +0.5
baz=166
SLBS **Sierra La Lagu** 17.99 298 eP Pn 21 29 52.3 +2.6
27nm,1.1s
Y39A **Lockesburg** 18.01 356 P P 21 29 47.5 -0.2
baz=176
Z34A **Collier Ranch,** 18.03 346 P P 21 29 48.3 +0.4
baz=164
Y40A **Okolona** 18.05 358 P P 21 29 47.5 -0.6
baz=178
Y38A **Idabel** 18.05 354 P P 21 29 48.1 +0.1
baz=174
MOTC **Monteria, Cord** 18.05 111 eP P 21 29 46.2 -2.1
Y45A **Yeager Farm, C** 18.11 8 P P 21 29 47.6 -1.2
baz=190
Y44A **Strider, Charl** 18.12 7 P P 21 29 48.4 -0.5
baz=188
Z33A **Whitaker Ranch** 18.17 343 P P 21 29 50.2 +0.8
baz=161,SNR=11
Y46A **Houston** 18.24 10 P P 21 29 50.6 +0.5
baz=192,SNR=18
Y35A **Marietta** 18.36 348 P P 21 29 51.9 +0.5
baz=167,SNR=17
Y47A **UCPARC, Winfie** 18.45 13 P P 21 29 53.2 +0.7
baz=195,SNR=10
X40A **Basin Creek Fa** 18.51 360 P P 21 29 53.0 -0.2
baz=180
Y34A **Reagan Ranch,** 18.56 347 P P 21 29 54.0 +0.4
baz=165,SNR=11
X39A **Fountain Ranch** 18.58 356 P P 21 29 53.5 -0.3
baz=176
MIAR **Mount Ida** 18.59 358 P P 21 29 53.3 -0.6
baz=177,SNR=9.8
MIAR **Mount Ida** 18.59 358 eP P 21 29 54.4 +0.4
23nm,1.0s
X37A **Clayton** 18.77 353 P P 21 29 56.1 +0.2
baz=172,SNR=6.5
X38A **Whitesboro** 18.79 354 P P 21 29 56.6 +0.4
baz=174,SNR=14
UALR **University of** 18.80 1 eP P 21 29 56.9 +0.7
20nm,0.6s
Y33A **Hilltop Ranch,** 18.81 345 P P 21 29 56.7 +0.3
baz=162
X35A **Drake** 18.83 349 P P 21 29 57.1 +0.6
baz=167,SNR=9.2
X36A **Centrahoma** 18.89 351 P P 21 29 57.4 +0.2
baz=169,SNR=6.5
W38A **Poteau** 19.16 355 P P 21 29 59.7 -0.5
baz=175
X34A **Smith Ranch, M** 19.19 347 P P 21 30 00.3 -0.2
baz=165,SNR=5.9
W41A **Tony Mavity, V** 19.20 1 P P 21 29 59.5 -1.0
baz=181
W41B **Gary Mavity, V** 19.20 1 P P 21 29 59.7 -0.9
baz=181
W40A **Ferguson Farm,** 19.22 359 P P 21 30 00.0 -0.7
baz=179
W39A **Magazine** 19.25 357 P P 21 29 59.5 -1.5
baz=177
X33A **Lawton** 19.29 345 P P 21 30 01.8 +0.3
baz=163,SNR=15
W37B **Quinton** 19.32 353 P P 21 30 01.6 -0.2
baz=172,SNR=5.9
GOGA **Godfrey** 19.32 24 eP P 21 30 02.3 +0.4
59nm,1.8s
X32A **Elmer** 19.38 343 P P 21 30 03.1 +0.5
baz=161,SNR=14
W36A **Wetumka** 19.43 351 P P 21 30 03.1 +0.2
baz=170,SNR=8.5
PLAL **Pickwick Lake** 19.45 11 eP Pn 21 30 07.9 +1.2
17nm,0.6s
MNTX **Cornudas Mount** 19.53 326 P P 21 30 05.9 +1.7
baz=141,SNR=8.2
MNTX **Cornudas Mount** 19.53 326 eP P 21 30 05.9 +1.7
33nm,0.8s
W35A **Tecumseh** 19.54 350 P P 21 30 03.9 -0.4
baz=168,SNR=14
WMOK **Wichita Mounta** 19.55 345 eP P 21 30 04.2 -0.2
11nm,0.6s
W34A **Bridge Creek,** 19.79 348 P P 21 30 07.1 +0.1
baz=166,SNR=9.5
W34A **Bridge Creek,** 19.79 348 eP P 21 30 07.3 +0.4
73nm,0.6s
W33A **Caddo, Fort Co** 19.86 346 P P 21 30 08.1 +0.4
baz=164,SNR=7.8
V39A **Pettigrew** 19.88 358 P P 21 30 07.4 -0.5
baz=177
V38A **Canehill** 19.94 356 P P 21 30 07.9 -0.7
baz=175
GUYC **Guyana, Colomb** 20.01 120 eP P 21 30 10.7 +0.7
V36A **Jenks** 20.02 352 P P 21 30 09.0 -0.4
baz=171
V37A **Hulbert** 20.03 354 P P 21 30 08.9 -0.5
baz=173
W32A **Sentinel** 20.03 344 P P 21 30 09.7 +0.2
baz=162,SNR=8.5
TUL1 **Leonard** 20.12 353 P P 21 30 09.9 -0.6
baz=171
TUL1 **Leonard** 20.12 353 eP P 21 30 10.5 0.0
16nm,0.8s
V35A **Meyer Ranch, C** 20.13 350 P P 21 30 09.6 -0.9
baz=168
MSTX **Muleshoe** 20.17 335 P P 21 30 11.0 -0.1
baz=151,SNR=7.2
MSTX **Muleshoe** 20.17 335 eP P 21 30 11.6 +0.5
20nm,0.5s
NORC **Norcasia** 20.27 119 eP P 21 30 11.8 -0.5
V34A **Guthrie** 20.32 349 P P 21 30 12.0 -0.6
baz=167
V34A **Guthrie** 20.32 349 eP P 21 30 12.2 -0.4
48nm,1.1s
TOLC **Tolima** 20.42 122 eP P 21 30 14.6 +0.3
V33A **Lossen Ranch,** 20.46 347 P P 21 30 13.9 -0.2
baz=165,SNR=12
CSU **Charleston Sou** 20.49 32 eP P 21 30 13.8 -0.6
U38A **Gravette** 20.52 356 P P 21 30 14.5 -0.1
baz=176
V32A **Arapaho** 20.55 345 P P 21 30 14.6 -0.4
baz=162,SNR=7.6
AMTX **Amarillo** 20.56 339 P P 21 30 15.1 -0.1
baz=155
AMTX **Amarillo** 20.56 339 eP P 21 30 15.9 +0.7
58nm,0.8s
U36A **Oologah** 20.59 353 P P 21 30 14.5 -0.9
baz=172
WVT **Waverly** 20.61 11 eP P 21 30 13.1 -2.5
12nm,0.6s
SDDR **Presa de Saban** 20.63 78 eP P 21 30 17.0 +0.8
19nm,0.8s
U35A **Pawnee** 20.71 351 P P 21 30 15.4 -1.3
baz=169
CMBC **Cumbal** 20.87 134 eP P 21 30 21.2 +2.2
U34A **Anderson Ranch** 20.91 349 P P 21 30 17.8 -1.0
baz=167
U34A **Anderson Ranch** 20.91 349 eP P 21 30 17.8 -1.0
29nm,1.0s
OTAV **Otavalo** 20.96 137 eP P 21 30 22.8 +2.8
37nm,1.4s
OTAV **Otavalo** 20.96 137 eP P 21 30 21.7 +1.6
U33A **Lingo Farm, Me** 21.02 348 P P 21 30 19.0 -1.0
baz=166,SNR=11
T39A **Clever** 21.05 358 P P 21 30 19.1 -1.2
baz=178
GRMC **Gramalote, San** 21.07 110 eP P 21 30 18.4 -2.4
CBRI **Barrientos, No** 21.07 110 eP P 21 30 19.6 -1.4
T38A **Diamond** 21.10 356 P P 21 30 20.2 -0.6
baz=176,SNR=5.7
ROSC **El Rosal** 21.11 119 P P 21 30 21.1 -0.5
6.5nm,0.5s,baz=213,slow=23,SNR=3.5
U32A **Winter Ranch,** 21.16 346 P P 21 30 20.6 -0.9
baz=163
T40A **Mansfield** 21.17 0 P P 21 30 20.8 -0.8
baz=181,SNR=5.3
T35A **Sooner Cattle** 21.21 351 P P 21 30 20.8 -1.2
baz=170,SNR=11
T37A **Cheneyville 18** 21.23 355 P P 21 30 21.6 -0.6
baz=174,SNR=15
T36A **Boggs Farm, Ca** 21.27 353 P P 21 30 21.0 -1.6
baz=172,SNR=7.0
PRAC **Prado** 21.28 123 eP P 21 30 23.5 +0.5
72nm,0.4s
T34A **McClaskey Farm** 21.42 350 P P 21 30 22.3 -1.8
baz=168,SNR=13
BANI **BANI** 21.47 80 eP P 21 30 18.8 -6.3
121A **Cookes Peak, D** 21.50 323 P P 21 30 26.4 +1.1
baz=137
319A **Douglas** 21.61 318 eP P 21 30 29.2 +2.9
32nm,1.3s
S40A **Lebanon** 21.62 0 P P 21 30 24.9 -1.3
baz=181,SNR=7.2
RUSC **La Rusia** 21.64 115 eP P 21 30 26.2 -0.9
T33A **Patterson Ranc** 21.67 348 P P 21 30 26.0 -0.7
baz=166
S38A **Stockton** 21.68 357 P P 21 30 25.5 -1.3
baz=177,SNR=14
KMSC **Kings Mountain** 21.69 26 P P 21 30 24.9 -2.1
baz=211
S39A **Bolivar** 21.72 359 P P 21 30 25.9 -1.3
baz=178,SNR=14
S37A **Fort Scott** 21.86 355 P P 21 30 27.3 -1.3
baz=175,SNR=18
S36A **Lake Cedric, C** 21.89 354 P P 21 30 28.1 -0.8
baz=173,SNR=7.0
T32A **Huddler Ranch,** 21.91 347 P P 21 30 28.6 -0.5
baz=164,SNR=8.6
S35A **Otter Creek Ra** 21.94 352 P P 21 30 28.5 -0.9
baz=171,SNR=9.8
S34A **Willow Spring** 22.07 351 P P 21 30 29.6 -1.1
baz=169,SNR=7.0
BNM **Barren Site** 22.09 328 eP P 21 30 33.7 +2.5
S33A **Kaszmaul Farm,** 22.12 349 P P 21 30 29.5 -1.7
baz=166
Y22D **IRIS PASSCAL I** 22.19 327 P P 21 30 31.3 -0.7
baz=141
LPM **Los Pinos Moun** 22.22 328 eP P 21 30 34.6 +2.2
R38A **Fenwick Farm,** 22.23 357 P P 21 30 31.2 -0.9
baz=177,SNR=15
R40A **Maddies Statio** 22.31 1 P P 21 30 31.6 -1.3
baz=181
R39A **Chumby, Stover** 22.33 359 P P 21 30 31.7 -1.4
baz=179,SNR=5.9
R37A **Teagarden Farm** 22.41 356 P P 21 30 32.7 -1.2
baz=175,SNR=7.0
S32A **Newby Ranch, P** 22.41 347 P P 21 30 33.2 -0.7
baz=164
R36A **Gordon, Harris** 22.48 354 P P 21 30 33.6 -0.9
baz=173,SNR=5.6
LAZ **Ladron** 22.55 327 eP P 21 30 38.1 +2.7
R35A **Emporia Munici** 22.55 353 P P 21 30 34.2 -1.0
baz=171
SDV **Santo Domingo** 22.62 105 P P 21 30 34.8 -1.4
9.4nm,0.5s,baz=342,slow=5.6,SNR=7.7
SDV **Santo Domingo** 22.62 105 eP P 21 30 35.0 -1.2
18nm,0.7s
SDV epP pP 21 31 14.0 +3.4
SDV **Santo Domingo** 22.62 105 eP P 21 30 34.6 -1.6
ANMO **Albuquerque** 22.64 329 P P 21 30 37.8 +1.6
8.3nm,0.7s,baz=152,slow=12,SNR=21
ANMO **Albuquerque** 22.64 329 P P 21 30 37.2 +1.0
baz=144
R34A **Isabella, Hill** 22.68 351 P P 21 30 35.6 -0.7
baz=169,SNR=15
R33A **Olander Ranch,** 22.81 349 P P 21 30 37.2 -0.3
baz=167,SNR=5.6
Q37A **Longview Farm,** 22.95 356 P P 21 30 37.5 -1.2
baz=176
Q38A **Cooks Store, C** 22.99 358 P P 21 30 38.6 -0.5
baz=178,SNR=12
Q40A **Laux Farm, Aux** 23.02 1 P P 21 30 38.3 -1.0
baz=182
Q39A **Willow Grove F** 23.06 359 P P 21 30 38.6 -1.2
baz=179
TUC **Tucson** 23.18 318 P P 21 30 42.2 +1.2
baz=131
TUC **Tucson** 23.18 318 eP P 21 30 43.7 +2.7
7.7nm,0.8s
Q34A **Chapman** 23.24 352 P P 21 30 40.4 -1.0
baz=170,SNR=8.8
KSU1 **Kansas State U** 23.37 352 P P 21 30 41.9 -0.6
baz=171,SNR=9.5
KSU1 **Kansas State U** 23.37 352 eP P 21 30 42.1 -0.4
56nm,0.6s
Q33A **Connelly Farm,** 23.45 350 P P 21 30 42.6 -0.7
baz=168
P40A **Paris** 23.55 1 P P 21 30 42.6 -1.6
baz=182
T25A **Trinidad** 23.58 336 P P 21 30 45.9 +1.2
baz=151,SNR=10
T25A **Trinidad** 23.58 336 eP P 21 30 46.2 +1.5
23nm,0.8s
Q32A **Meitler Ranch,** 23.58 348 P P 21 30 44.0 -0.4
baz=166,SNR=27
P37A **Lathrop** 23.65 357 P P 21 30 44.4 -0.7
baz=176,SNR=7.1
P38A **Dawn** 23.65 358 P P 21 30 43.8 -1.3
baz=178
CBKS **Cedar Bluff** 23.66 346 P P 21 30 45.1 -0.1
baz=163,SNR=7.7
CBKS **Cedar Bluff** 23.66 346 eP P 21 30 45.5 +0.3
P35A **Duane Minner,** 23.73 354 P P 21 30 45.0 -0.8
baz=172,SNR=11
P36A **Good Intent, A** 23.74 355 P P 21 30 44.8 -1.1
baz=174
P34A **Walnut Farm, R** 23.84 352 P P 21 30 47.2 +0.4
baz=170,SNR=20
P33A **Williams Farm,** 23.86 350 P P 21 30 46.5 -0.5
baz=168
O38A **Galt** 24.15 359 P P 21 30 48.1 -1.4
baz=178
O40A **La Belle** 24.15 2 P P 21 30 48.1 -1.5
baz=182
P32A **Huiting Farm,** 24.20 349 P P 21 30 49.5 -0.6
baz=166
O37A **Wolven Farm, M** 24.21 357 P P 21 30 48.8 -1.4
baz=177
O36A **Bolckow** 24.23 356 P P 21 30 48.8 -1.5
baz=175
O39A **Kirksville** 24.27 0 P P 21 30 49.7 -1.0
baz=180
214A **Organ Pipe Nat** 24.31 315 P P 21 30 53.3 +2.1
baz=127,SNR=5.1
O34A **Beatrice** 24.45 353 P P 21 30 52.2 -0.1
baz=171
O33A **Hebron** 24.47 351 P P 21 30 52.9 +0.4
baz=169,SNR=5.3
W18A **Petrified Fore** 24.49 325 P P 21 30 54.8 +1.7
baz=137
SDCO **Great Sand Dun** 24.54 335 P P 21 30 54.4 +0.9
baz=149
SDCO **Great Sand Dun** 24.54 335 eP P 21 30 55.2 +1.7
14nm,1.4s
KSCO **Kaye Shedlock'** 24.63 341 P P 21 30 55.5 +1.4
baz=157,SNR=5.7
KSCO **Kaye Shedlock'** 24.63 341 eP P 21 30 58.2 +4.1
38nm,0.4s
HDIL **Hopedale** 24.75 6 P P 21 30 53.6 -1.4
baz=188
O32A **Brockman Farm,** 24.76 350 P P 21 30 55.8 +0.6
baz=167,SNR=5.3
N37A **Lee Faris, Mou** 24.81 357 P P 21 30 54.3 -1.2
baz=177
N38A **Joes South For** 24.81 359 P P 21 30 54.8 -0.9
baz=179,SNR=6.2
O31A **Woolen Ranch,** 24.85 348 P P 21 30 55.6 -0.4
baz=165
S22A **4UR Ranch, Cre** 25.10 333 P P 21 30 58.4 -0.2
baz=147
SJG **San Juan** 25.46 81 P P 21 30 59.6 -2.0
7.9nm,0.2s,baz=305,slow=16,SNR=3.1
GLA **Glamis** 26.33 314 P P 21 31 10.3 +0.9
baz=125
BC3 **Big Chuckawall** 27.11 315 P P 21 31 18.4 +2.0
baz=125,SNR=6.7
IRM **Iron Mountain** 27.19 316 P P 21 31 18.0 +0.9
baz=127
J36A **Seneca 1, Swea** 27.38 357 P P 21 31 17.6 -1.0
baz=177
KNB **Kanab** 27.59 323 eP P 21 31 23.9 +3.1
4.4nm,0.8s
BELC **Belle Mtn. Jos** 27.67 315 P P 21 31 22.9 +1.4
baz=125
PFO **Pinyon Flats O** 27.77 314 P P 21 31 24.1 +1.8
2.8nm,0.8s,baz=123,slow=9.2,SNR=2.7
PFO **Pinyon Flats O** 27.77 314 eP P 21 31 24.1 +1.8
12nm,1.3s
LCMT **Little Creek M** 27.84 323 epP pP 21 31 58.3 -4.0
LCMT epP PP 21 32 35.9 +6.1
GMRC **Granite Mounta** 27.90 317 P P 21 31 24.7 +1.1
baz=127
MTPU **Mount Pierson** 27.97 326 eP P 21 31 27.2 +2.9
5.5nm,0.8s
J29A **Okreek** 28.18 348 P P 21 31 25.4 -0.4
baz=164
PSUT **Pine Spring** 29.24 325 eP P 21 31 38.5 +3.0
13nm,1.5s
G30A **Faulkton** 29.65 351 P P 21 31 36.0 -2.7
baz=168
LRMC **Laurel Mtn Rad** 29.66 316 P P 21 31 38.4 -0.7
baz=125
RSSD **Black Hills** 29.74 343 P P 21 31 38.4 -1.4
baz=158
MPMC **Manual Prospec** 29.86 317 P P 21 31 42.7 +1.8
baz=126,SNR=5.9
R11A **Troy Canyon, C** 30.11 322 P P 21 31 44.4 +1.3
baz=132
R11A **Troy Canyon, C** 30.11 322 eP P 21 31 45.6 +2.6
2.2nm,0.9s
R11A eS S 21 36 35.8 +8.3
GRAC **Grapevine Rang** 30.34 319 P P 21 31 46.3 +1.3
baz=128
PD31 **Pinedale Array** 30.43 335 eP P 21 31 46.7 +0.8
PD31 eScP ScP 21 38 05.9 +1.1
PDAR **Pinedale Array** 30.43 335 P P 21 31 46.7 +0.8
0.3nm,0.4s,baz=131,slow=11,SNR=3.7
PDAR ScP ScP 21 38 05.9 +1.1
0.3nm,0.6s,baz=142,slow=5.1,SNR=4.6
REDW **Red Top Meadow** 31.46 334 eP P 21 31 56.5 +1.5
16nm,1.0s
D30A **Buchanan** 31.53 352 P P 21 31 53.2 -2.0
baz=169
E25A **Miller Ranch,** 31.80 346 P P 21 31 56.4 -1.3
baz=160
NV01 **Mina Array Sit** 31.80 320 eP P 21 32 01.0 +3.1
NV01 epP pP 21 32 38.8 +1.1
NVAR **Mina Array Bea** 31.80 320 P P 21 32 01.0 +3.1
10nm,0.6s,baz=134,slow=8.7,SNR=6.3
NVAR pP pP 21 32 38.8 +1.1
2.4nm,0.8s,baz=130,slow=8.4,SNR=2.7
D28A **Regan** 31.89 350 P P 21 31 56.9 -1.5
baz=166
D27A **Center** 31.98 349 P P 21 31 58.1 -1.0
baz=164
C30A **Mose, Pekin** 32.08 353 P P 21 31 59.1 -0.9
baz=170
C31A **Landman Farms,** 32.08 354 P P 21 31 58.7 -1.3
baz=171
D26A **Manning** 32.09 347 P P 21 31 59.3 -0.8
baz=162
RLMT **Red Lodge** 32.31 338 P P 21 32 02.1 -0.3
baz=149
D25A **Fairfield** 32.39 346 P P 21 32 02.5 -0.3
baz=161
B31A **Greenbush Farm** 32.69 354 P P 21 32 03.8 -1.5
baz=171
C26A **Wahner Farm, P** 32.78 348 P P 21 32 04.8 -1.2
baz=163
B30A **Myrvik Farm, E** 32.79 353 P P 21 32 04.8 -1.4
baz=170
C25A **Freed Ranch, W** 32.91 347 P P 21 32 06.1 -1.2
baz=161
B29A **Wagenman Farm,** 32.94 352 P P 21 32 05.9 -1.5
baz=168
A33A **Warroad** 33.02 357 P P 21 32 06.8 -1.4
baz=175
B28A **Dugan Ranch, T** 33.07 351 P P 21 32 07.4 -1.2
baz=166,SNR=5.6
A30A **Hoffart Farm,** 33.27 353 P P 21 32 08.9 -1.5
baz=170
A29A **Manning Farm,** 33.37 352 P P 21 32 09.8 -1.4
baz=169,SNR=6.1
MCMT **McKenzie Canyo** 33.49 334 eP P 21 32 15.0 +2.4
A28A **Rude Farm, Bot** 33.51 351 P P 21 32 10.6 -1.8
baz=167
A26A **Wade Farm, Ken** 33.79 349 P P 21 32 13.7 -1.2
baz=164
A25A **Svangstu Ranch** 34.04 348 P P 21 32 16.3 -0.7
baz=162
WVOR **Wild Horse Val** 34.57 325 eP P 21 32 23.9 +2.2
6.6nm,0.9s
O03D **Paynes Creek** 35.09 320 P P 21 32 26.6 +0.5
baz=126
MSO **Missoula** 35.55 335 P P 21 32 29.7 -0.4
baz=143
M04C **Macdoel** 35.99 322 P P 21 32 33.8 0.0
baz=127
J05D **Fort Rock, OR** 36.57 324 P P 21 32 38.4 -0.4
baz=130
SAML **Samuel** 38.24 128 eP P 21 32 50.7 -2.3
6.0nm,0.6s
ASR **Mount Adams--S** 38.63 327 epP pP 21 33 38.4 +1.5
FFC **Flin Flon** 39.41 352 eP P 21 33 01.6 -0.6
9.3nm,0.3s
LPAZ **La Paz** 40.12 142 P P 21 33 10.2 +1.0
23nm,0.6s,baz=331,slow=6.5,SNR=105
PB11 **IPOC Station P** 42.05 147 eP P 21 33 26.0 +1.7
20nm,0.8s
LVC **Limon Verde** 44.79 148 eP P 21 33 49.1 +2.6
34nm,1.8s
YKA **Yellowknife Ar** 49.04 347 P P 21 34 18.0 -0.4
7.8nm,0.6s,baz=149,slow=7.5,SNR=162
YKA pP pP 21 35 00.9 -0.2
1.7nm,0.8s,baz=147,slow=7.7,SNR=4.1
YKA ScP ScP 21 39 16.2 +0.4
0.4nm,0.7s,baz=147,slow=3.5,SNR=4.0
YKB5 **Yellowknife Ar** 49.04 347 eP P 21 34 18.0 -0.4
YKB5 epP pP 21 35 00.9 -0.2
YKB5 eScP ScP 21 39 16.2 +0.3
DLBC **Dease Lake** 50.66 336 LR LR 21 57 39.1
comp=Z,440nm,19.0s,baz=70,slow=38
CPUP **Villa Florida** 54.25 140 P P 21 34 57.0 -0.5
6.8nm,0.8s,baz=330,slow=7.4,SNR=19
PLCA **Paso Flores** 59.97 161 P P 21 35 39.1 +1.7
13nm,1.0s,baz=0.6,slow=7.2,SNR=14
ILAR **Eielson Array** 60.85 337 P P 21 35 42.8 -0.2
1.6nm,0.7s,baz=121,slow=5.0,SNR=15
ILAR pP pP 21 36 27.6 +0.1
0.8nm,1.0s,baz=102,slow=4.8,SNR=2.8
ILB **Eielson Array** 60.85 337 eP P 21 35 42.8 -0.2
ILB epP pP 21 36 27.6 +0.1
RND **Reindeer** 61.04 335 eP P 21 35 45.7 +1.3
40nm,1.0s
RSO **Redoubt South** 61.69 331 eP P 21 35 50.0 +1.0
ESDC **Sonseca Array** 79.06 52 P P 21 37 31.9 -2.5
0.1nm,0.4s,baz=270,slow=4.7,SNR=3.6
ESDC pP pP 21 38 19.4 -1.8
1.2nm,0.8s,baz=289,slow=5.3,SNR=3.8
WR1 **Warramunga Arr** 135.19 258 ePKPdf PKPdf 21 44 49.4 +0.8
WRA **Warramunga Arr** 135.19 258 PKP PKPdf 21 44 49.4 +0.8
1.7nm,1.2s,baz=88,slow=2.8,SNR=8.6
AS31 **Alice Springs** 135.65 252 ePKPdf PKPdf 21 44 48.4 -1.0

ASAR	**Alice Springs**	**135.65**	**252**	PKP	**PKPdf**	**21 44 48.4**	**-1.0**
	0.3nm,0.7s,baz=82,slow=2.2,SNR=2.7							
FITZ	**Fitzroy Crossi**	**143.33**	**261**	PKP	PKPbc	21 45 02.0	+0.9
	1.2nm,0.4s,baz=129,slow=2.6,SNR=8.0							
CMAR	**Chiang Mai Arr**	**144.00**	**341**	SKPbc	**SKiKP**	**21 48 26.2**	**+0.1**
	0.9nm,0.8s,baz=332,slow=3.0,SNR=9.0							

IDC 26 21:32:48.4±2.6, 0.50S×132.06E, h0km, mb3.4/2, mb1 3.6/4, mb1mx3.4/30, mbtmp3.4/4, ML3.6/2, Error ellipse: s-maj=125.4km s-min=24.4km az=77.0, Irian Jaya region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**18.60**	**199**	P	Pn	21 37 07.8	+0.2
	0.1nm,0.3s,baz=27,slow=12,SNR=4.9						
WRA	**Warramunga Arr**	**19.46**	**174**	P	P	21 37 16.9	+0.1
	0.2nm,0.3s,baz=352,slow=11,SNR=12						
ASAR	**Alice Springs**	**23.10**	**176**	P	P	21 37 55.9	-0.3
	1.5nm,0.8s,baz=352,slow=11,SNR=12						
MKAR	**Makanchi Array**	**64.06**	**324**	P	P	21 43 24.2	0.0
	0.2nm,0.5s,baz=109,slow=7.8,SNR=2.2						

*CSEM **26** 21:38:32.7, 43.30N×12.57E, h8km, MD1.5/7*
ROM 26 21:38:32.7±0.1, 43.30N×12.57E, h8km±1km, Md1.5/7, Ml0.8/4, Error ellipse: s-maj=0.6km s-min=0.6km az=66.0, Central Italy

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MURB	**Monte Urbino**	**0.05**	**221**	Pg	Pg	21 38 34.8	+0.3
MURB				Sg	Sg	21 38 36.1	+0.3
	135nm,0.2s						
MURB	**Monte Urbino**	**0.05**	**221**	Pg	Pg	21 38 34.8	+0.3
MURB				Sg	Sg	21 38 36.1	+0.3
	135nm,0.2s						
ATVO	**AVT- Monte Val**	**0.14**	**306**	Pg	Pg	21 38 36.2	+0.3
ATVO				Sg	Sg	21 38 38.9	+0.9
	43nm,0.2s						
ATVO	**AVT- Monte Val**	**0.14**	**306**	Pg	Pg	21 38 36.2	+0.3
ATVO				Sg	Sg	21 38 38.9	+0.9
	43nm,0.2s						
ATTE	**AVT- Monte Tez**	**0.18**	**237**	Pg	Pg	21 38 37.4	+0.8
ATTE				Sg	Sg	21 38 40.2	+1.0
ATTE	**AVT- Monte Tez**	**0.18**	**237**	Pg	Pg	21 38 37.4	+0.8
ATTE				Sg	Sg	21 38 40.2	+1.0
ATPC	**Poggio Castell**	**0.20**	**337**	Pg	Pg	21 38 37.3	+0.5
ATPC				Sg	Sg	21 38 41.2	+1.6
	12nm,0.2s						
ATPC	**Poggio Castell**	**0.20**	**337**	Pg	Pg	21 38 37.3	+0.5
ATPC				Sg	Sg	21 38 41.2	+1.6
	12nm,0.2s						
SSFR	**Montelago di S**	**0.21**	**49**	Pg	Pg	21 38 37.6	+0.6
SSFR				Sg	Sg	21 38 41.3	+1.4
	23nm,0.2s						
SSFR	**Montelago di S**	**0.21**	**49**	Pg	Pg	21 38 37.6	+0.6
SSFR				Sg	Sg	21 38 41.3	+1.4
	23nm,0.2s						
PIEI	**Pieia**	**0.24**	**355**	Pg	Pg	21 38 38.2	+0.7
PIEI				Sg	Sg	21 38 42.4	+1.6
	7.0nm,0.2s						
PIEI	**Pieia**	**0.24**	**355**	Pg	Pg	21 38 38.2	+0.7
PIEI				Sg	Sg	21 38 42.4	+1.6
	7.0nm,0.2s						
SNTG	**Esanatoglia**	**0.28**	**99**	Pg	Pg	21 38 39.0	+0.8
SNTG				Sg	Sb	21 38 43.8	-0.9
SNTG	**Esanatoglia**	**0.28**	**99**	Pg	Pg	21 38 39.0	+0.8
SNTG				Sg	Sb	21 38 43.8	-0.9

*CSEM **26** 21:38:49.8±0.1, 41.38N×15.88E, h19km, MD2.3, Error ellipse: s-maj=2.8km s-min=2.0km az=55.0*
*ROM **26** 21:38:49.3±0.1, 41.38N×15.89E, h4km, Md2.3/20, Ml2.1/7, Error ellipse: s-maj=1.5km s-min=1.0km az=65.0*
*ISCJB **26** 21:38:50.2±0.3, 41.40N±0.02×15.89E±0.03, h25km±4km, Error ellipse: s-maj=4.2km s-min=3.1km az=153.1*
ISC 26 21:38:49.7±1.1, 41.39N±0.02×15.90E±0.02, h16km±6km, n58, σ0.958/83, Southern Italy

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MS1	**Monte Sant'Ang**	**0.32**	**6**	Sg	**Sb**	**21 39 02.7**	**+0.5**
MSAG	**Monte S. Angel**	**0.33**	**2**	Pg	**Pg**	**21 38 56.9**	**+0.4**
MSAG				Sg	**Sb**	**21 39 02.3**	**0.0**
MSAG	**Monte S. Angel**	**0.33**	**2**	Pg	**Pg**	**21 38 56.9**	**+0.4**
MSAG				Sg	**Sb**	**21 39 02.3**	**0.0**
SGRT	**San Giovanni R**	**0.39**	**343**	Pg	**Pg**	**21 38 57.8**	**+0.2**
SGRT				Sg	**Sb**	**21 39 03.9**	**-0.1**
SGRT	**San Giovanni R**	**0.39**	**343**	Pg	**Pg**	**21 38 57.8**	**+0.2**
SGRT				Sg	**Sb**	**21 39 03.9**	**-0.1**
MRVN	**Minervino Murg**	**0.40**	**145**	Pg	**Pg**	**21 38 57.3**	**-0.4**
MRVN				Sg	**Sb**	**21 39 04.1**	**-0.1**
MRVN	**Minervino Murg**	**0.40**	**145**	Pg	**Pg**	**21 38 57.3**	**-0.4**
MRVN				Sg	**Sb**	**21 39 04.1**	**-0.1**
CDT	**Castel del Mon**	**0.41**	**137**	*e*Pg	**Pg**	**21 38 57.9**	**-0.1**
CDT				Sg	**Sb**	**21 39 05.1**	**+0.3**
PALZ	**Palazzo San Ge**	**0.44**	**174**	Pg	**Pg**	**21 38 58.2**	**-0.3**
PALZ	**Palazzo San Ge**	**0.44**	**174**	Pg	**Pg**	**21 38 58.2**	**-0.3**
SGTA	**Sant Agata di**	**0.47**	**238**	Pg	**Pg**	**21 38 58.9**	**-0.2**
SGTA				Sg	**Sb**	**21 39 06.9**	**+0.5**
SGTA	**Sant Agata di**	**0.47**	**238**	Pg	**Pg**	**21 38 58.9**	**-0.2**
SGTA				Sg	**Sb**	**21 39 06.9**	**+0.5**
VULT	**Monte Vulture**	**0.48**	**206**	Pg	**Pg**	**21 38 59.1**	**-0.1**
VULT	**Monte Vulture**	**0.48**	**206**	Pg	**Pg**	**21 38 59.1**	**-0.1**
MOCO	**Biccari - m.te**	**0.56**	**269**	Pg	**Pb**	**21 39 01.2**	**+0.1**
MOCO				Sg	**Sb**	**21 39 09.4**	**+0.5**
ACER	**Acerenza**	**0.60**	**177**	Pg	**Pb**	**21 39 01.9**	**+0.1**
ACER				Sg	**Sb**	**21 39 10.8**	**+0.8**
ACER	**Acerenza**	**0.60**	**177**	Pg	**Pb**	**21 39 01.9**	**+0.1**
ACER				Sg	**Sb**	**21 39 10.8**	**+0.8**
CAFE	**Carife**	**0.61**	**235**	Pg	**Pg**	**21 39 01.7**	**0.0**
	37nm,0.3s						
CAFE	**Carife**	**0.61**	**235**	Pg	**Pg**	**21 39 01.7**	**0.0**
	37nm,0.3s						
MRLC	**Muro Lucano**	**0.70**	**206**	Pg	**Pb**	**21 39 03.4**	**-0.1**
MRLC				Sg	**Sb**	**21 39 14.2**	**+1.3**
	53nm,0.4s						
MRLC	**Muro Lucano**	**0.70**	**206**	Pg	**Pb**	**21 39 03.4**	**-0.1**
MRLC				Sg	**Sb**	**21 39 14.2**	**+1.3**
	53nm,0.4s						
AMUR	**Altamura**	**0.72**	**132**	Pg	**Pb**	**21 39 03.8**	**0.0**
AMUR				Sg	**Sb**	**21 39 14.7**	**+1.3**
AMUR	**Altamura**	**0.72**	**132**	Pg	**Pb**	**21 39 03.8**	**0.0**
AMUR				Sg	**Sb**	**21 39 14.7**	**+1.3**
GATE	**Gambatesa**	**0.75**	**280**	Pg	**Pn**	**21 39 05.5**	**-0.2**
GATE	**Gambatesa**	**0.75**	**280**	Pg	**Pn**	**21 39 05.5**	**-0.2**
BAI	**Bari**	**0.79**	**110**	Sg	**Sn**	**21 39 17.7**	**0.0**
CIGN	**Sant'Elia a Pi**	**0.79**	**290**	Pg	**Pb**	**21 39 05.3**	**+0.2**
	513nm,3.6s						
CIGN	**Sant'Elia a Pi**	**0.79**	**290**	Pg	**Pb**	**21 39 05.3**	**+0.2**
	513nm,3.6s						
SG1	**Sgolgore (BA)**	**0.80**	**132**	Sg	**Sb**	**21 39 17.4**	**+1.5**
MCRV	**Calabrutti - M**	**0.81**	**223**	Pg	**Pg**	**21 39 05.0**	**-0.5**
MCRV				Sg	**Sn**	**21 39 18.0**	**-0.5**
MCRV	**Calabrutti - M**	**0.81**	**223**	Pg	**Pg**	**21 39 05.0**	**-0.5**
MCRV				Sg	**Sn**	**21 39 18.0**	**-0.5**
PTRP	**Pietrapertosa**	**0.87**	**172**	Pg	**Pn**	**21 39 07.3**	**-0.1**
PTRP	**Pietrapertosa**	**0.87**	**172**	Pg	**Pn**	**21 39 07.3**	**-0.1**
MIGL	**Miglionico**	**0.88**	**152**	Pg	**Pg**	**21 39 06.5**	**-0.3**
	356nm,1.1s						
MIGL	**Miglionico**	**0.88**	**152**	Pg	**Pg**	**21 39 06.5**	**-0.3**
	356nm,1.1s						
MATE	**Matera**	**0.96**	**140**	Pg	**Pn**	**21 39 08.4**	**0.0**
MATE				Sg	**Sn**	**21 39 21.8**	**+0.1**
MATE	**Matera**	**0.96**	**140**	Pg	**Pn**	**21 39 08.4**	**0.0**
MATE				Sg	**Sn**	**21 39 21.8**	**+0.1**
SLCN	**Sala Consilina**	**1.01**	**191**	Pg	**Pn**	**21 39 09.3**	**0.0**
	33nm,0.4s						
SLCN	**Sala Consilina**	**1.01**	**191**	Pg	**Pn**	**21 39 09.3**	**0.0**
	33nm,0.4s						
PTRJ	**Pietraroja**	**1.03**	**269**	Pg	**Pn**	**21 39 09.7**	**+0.1**
PTRJ	**Pietraroja**	**1.03**	**269**	Pg	**Pn**	**21 39 09.7**	**+0.1**
LTRZ	**Laterza**	**1.05**	**138**	Pg	**Pn**	**21 39 09.9**	**+0.2**
	100nm,0.3s						
LTRZ	**Laterza**	**1.05**	**138**	Pg	**Pn**	**21 39 09.9**	**+0.2**
	100nm,0.3s						
NOCI	**Noci**	**1.06**	**124**	Pg	**Pn**	**21 39 10.3**	**+0.3**
	72nm,0.2s						
NOCI	**Noci**	**1.06**	**124**	Pg	**Pn**	**21 39 10.3**	**+0.3**
	72nm,0.2s						
CRAC	**Craco**	**1.10**	**158**	Pg	**Pg**	**21 39 10.6**	**-0.2**

CRAC	**Craco**	**1.10**	**158**	Pg	**Pg**	**21 39 10.6**	**-0.2**
SCHR	**S. Chirico Rap**	**1.19**	**173**	Pg	**Pb**	**21 39 11.6**	**-0.4**
SIRI	**Monte Sirino -**	**1.20**	**181**	Pg	**Pn**	**21 39 11.5**	**-0.4**
SIRI	**Monte Sirino -**	**1.20**	**181**	Pg	**Pn**	**21 39 11.5**	**-0.4**
MIDA	**Miranda**	**1.26**	**282**	Pg	**Pb**	**21 39 13.4**	**+0.3**
MIDA	**Miranda**	**1.26**	**282**	Pg	**Pb**	**21 39 13.4**	**+0.3**
STON	**Ston**	**2.00**	**41**	*e*Pn	**Pg**	**21 39 27.3**	**-0.7**
STON				Sn	**Sg**	**21 39 53.3**	**-0.7**
STON	**Ston**	**2.00**	**41**	*e*Pn	**Pg**	**21 39 27.3**	**-0.8**
UDBI	**Udbina**	**3.14**	**358**	*e*Pn	**Pn**	**21 39 38.5**	**-0.2**
UDBI				Sn	**Sn**	**21 40 17.6**	**+1.8**
UDBI	**Udbina**	**3.14**	**358**	*e*Pn	**Pn**	**21 39 38.4**	**-0.2**
UDBI				Sn	**Sn**	**21 40 17.6**	**+1.8**
NVLJ	**Novalja**	**3.27**	**347**	*e*Pn	**Pn**	**21 39 40.1**	**-0.1**
NVLJ				Sn	**Sn**	**21 40 17.3**	**-1.5**
NVLJ	**Novalja**	**3.27**	**347**	*e*Pn	**Pn**	**21 39 40.0**	**-0.1**
NVLJ				Sn	**Sn**	**21 40 17.2**	**-1.5**

MEX 26 21:39:33.8±0.6, 27.45N×111.42W, h13km, MD3.8, Gulf of California

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GUYB	**Guaymas**	**0.66**	**47**	*e*P	Pg	21 39 44.7	-1.9
GUYB				*e*S	Sg	21 39 52.9	-2.4
SRIG	**Santa Rosalia**	**0.75**	**260**	*e*P	Pg	21 39 45.9	-2.4
SRIG				*e*S	Sg	21 39 55.5	-2.6
HSIG		**1.62**	**15**	*e*P	Pn	21 39 59.2	-2.8
HSIG				*e*S	Sn	21 40 17.3	-5.5

*IDC **26** 21:43:45.1±0.3, 8.94S×125.57E, h0km, mb5.3/38, mb1 5.2/39, mb1mx5.2/44, mbtmp5.3/39, ML4.0/1, MS4.7/25, Ms1 4.7/25, ms1mx4.4/52, Error ellipse: s-maj=13.5km s-min=9.7km az=74.0*
*ISCJB **26** 21:43:46.4±0.9, 8.95S±0.02×125.63E±0.02, h21km±6km, mb5.3/202, MS4.9/179, Error ellipse: s-maj=4.0km s-min=3.3km az=27.4*
*GCMT **26** 21:43:47.5±0.1, 9.24S×125.81E, h22km, MW5.3/92, Moment Tensor Solution. s90,c146; s92,c177; Duration: 1s1 Moment tensor: Scale 10^17Nm; Mrr0.91±.03; Mθθ-0.92±.02; Mφφ0.01±.02; Mrθ0.23±.03; Mθφ-0.33±.01; Mφr-0.19±.04; Best double couple: M0 1.01300×10^17 NP1:φ88.00000°, δ52.00000°, λ110.00000°. NP2:φ237.00000°, δ43.00000°, λ66.00000°. Principal axes: T 0.9910, Plg73.0000°, Azm57.0000°; N 0.0440, Plg16.0000°, Azm255.0000°; P -1.0350, Plg5.0000°, Azm164.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
*NEIC **26** 21:43:47.5±2.0, 8.81S×125.66E, h10km±11km, mb5.5/118, MS5.0/131 Error ellipse: s-maj=5.1km s-min=4.4km az=47.0*
NEIC Felt [II] at Dili.
*BJI **26** 21:43:48.3, 8.90S×125.70E, h25km, mb5.2/82, mB5.2/51, Ms5.1/73, Ms7 4.9/70*
*MOS **26** 21:43:49.4±1.6, 8.78S×125.55E, h33km, mb5.6/54, MS4.9/27, Error ellipse: s-maj=8.3km s-min=5.2km az=105.5*
*DJA **26** 21:43:52.1±0.3, 9.S±2.×12.6E±., h50km±5km, MS.4/34, mb5.5/34, mB5.7/32, MLv5.8/16, Mw(mB)5.3/32, Mwp5.3/2*
*KLM **26** 21:43:56.1, 9.03S×125.66E, h85km, mb5.4, MS6.0*
ISC 26 21:43:48.2±0.5, 9.02S±0.03×125.68E±0.03, h20km±2km, n1077, σ1.972/1083, mb5.4/220, MS4.9/180, 30C-15D, Timor region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SOEI	**Soe**	**1.58**	**242**	P	**Pg**	**21 44 18.2**	**-0.4**
SOEI	**Soe**	**1.58**	**242**	*e*Pn	**Pg**	**21 44 17.9**	**-0.7**
SOEI				*e*Sn	**Sb**	**21 44 36.2**	**-0.1**
BATI	**Baumata**	**2.31**	**239**	Pn	**Pb**	**21 44 28.0**	**-1.3**
	baz=52,slow=18						
BATI				Sn	**Sb**	**21 44 57.0**	**-0.5**
	baz=151,slow=3.6						
MMRI	**Maumere**	**3.42**	**276**	P	**Pb**	**21 44 43.5**	**-4.7**
MMRI	**Maumere**	**3.42**	**276**	*e*Pn	**Pb**	**21 44 43.5**	**-4.7**
MMRI				*e*Sn	**Sn**	**21 45 23.3**	**+2.8**
BASI	**Baing, Sumba**	**5.17**	**256**	P	**Pn**	**21 45 06.8**	**+2.3**
SAUI	**Saumlaki**	**5.65**	**80**	P	**Pn**	**21 45 12.5**	**+1.4**
SAUI	**Saumlaki**	**5.65**	**80**	*e*Pn	**Pn**	**21 45 12.6**	**+1.5**
SAUI				*e*Sn	**Sn**	**21 46 11.0**	**-4.5**
BSSI	**Bau Bau, Buton**	**5.88**	**299**	P	Pn	21 45 20.1	+5.8
	801nm,0.8s,11μm3.3nm						
NLAI	**Namlea**	**5.91**	**14**	P	Pn	21 45 20.7	+6.0
	623nm,1.2s,8μm1.9nm						
BNDI	**Bandanaira**	**6.12**	**43**	P	**Pn**	**21 45 21.3**	**+3.7**
	913nm,1.2s,13μm5.0nm						
MSAI	**Masohi**	**6.49**	**30**	P	Pn	21 45 27.5	+4.8
	168nm,0.8s,2μm5μm0.5nm						
MTN	**Manton Dam**	**6.57**	**126**	P	**Pn**	**21 45 22.5**	**-1.2**
	baz=6.5,SNR=987						
MTN	**Manton Dam**	**6.57**	**126**	*e*Pn	**Pn**	**21 45 23.8**	**+0.1**
MTN				*e*Sn	Sn	21 46 29.7	-8.4
SANI	**Sanana**	**6.93**	**3**	P	Pn	21 45 35.8	+7.2
	823nm,1.5s,10μm12μm2.4nm						
KAPI	**Kappang**	**7.10**	**304**	Pn	Pn	21 45 37.4	+6.3
	4.6nm,0.3s,baz=134,slow=13,SNR=35						
KAPI				LR	LR	21 48 30.3	
	comp=Z,21μm,18.9s,baz=129,slow=41						
KDU	**Kakadu**	**7.60**	**119**	P	**Pn**	**21 45 36.1**	**-1.8**
	baz=7.6,SNR=117						
SPSI	**Sidrap Palu**	**7.72**	**310**	P	Pn	21 45 45.6	+6.0
	750nm,1.1s,7μm2.2nm						
PLAI	**Plampang**	**7.81**	**271**	P	**Pn**	**21 45 42.8**	**+2.0**
	582nm,0.8s,9μm3.0nm						
TTSI	**Tana Toraja**	**8.31**	**315**	P	Pn	21 45 54.9	+7.2
	648nm,1.2s,6μm2.0nm						
LBMI	**Labuha**	**8.52**	**12**	P	Pn	21 45 58.7	+8.2
	758nm,1.1s,8μm3.0nm						
TWSI	**Taliwang, Sumb**	**8.70**	**271**	P	**Pn**	**21 45 54.5**	**+1.5**
	241nm,0.8s,3μm1.9nm						
FAKI	**Fak Fak**	**8.91**	**48**	P	**Pn**	**21 45 57.4**	**+1.6**
	422nm,1.0s,5μm						
FAKI	**Fak Fak**	**8.91**	**48**	*e*Pn	**Pn**	**21 45 56.3**	**+0.5**
FAKI				*e*Sn	**Sn**	**21 47 36.4**	**+0.6**
FITZ	**Fitzroy Crossi**	**9.03**	**180**	Pn	**Pn**	**21 45 54.8**	**-2.8**
	27nm,0.3s,baz=7.2,slow=9.7,SNR=140						
FITZ				Sn	Sn	21 47 27.1	-12
	117nm,0.3s,baz=28,slow=13,SNR=9.3						
FITZ				LR	LR	21 50 07.3	
	comp=Z,2μm,19.3s,baz=22,slow=42						
FITZ	**Fitzroy Crossi**	**9.03**	**180**	P	**Pn**	**21 45 54.7**	**-2.8**
	baz=8.9,SNR=259						
FITZ	**Fitzroy Crossi**	**9.03**	**180**	*e*Pn	**Pn**	**21 45 54.8**	**-2.8**
FITZ				*e*Sn	Sn	21 47 21.1	-18
SWI	**Sorong**	**9.82**	**35**	P	Pn	21 46 13.5	+5.1
	293nm,1.0s,3μm						
TNTI	**Ternate**	**9.87**	**10**	P	Pn	21 46 17.6	+8.6
	635nm,1.2s,7μm						
TNTI	**Ternate**	**9.87**	**10**	*e*Pn	Pn	21 46 16.6	+7.5
MRSI	**Marisa**	**10.14**	**338**	P	Pn	21 46 19.8	+7.1
	334nm,1.1s,4μm						
SRBI	**Singaraja**	**10.39**	**274**	P	**Pn**	**21 46 18.6**	**+2.4**
	170nm,1.1s,2μm						
RKPI	**Ransiki, Papua**	**11.27**	**49**	P	**Pn**	**21 46 29.5**	**+1.2**
	735nm,1.1s,7μm						
ABJI	**Asem Bagus**	**11.39**	**275**	P	**Pn**	**21 46 31.8**	**+1.9**
JAGI	**Jajag, Banyuwa**	**11.41**	**272**	P	**Pn**	**21 46 27.5**	**-2.7**
JAGI	**Jajag, Banyuwa**	**11.41**	**272**	*e*Pn	**Pn**	**21 46 27.8**	**-2.4**
GMJI	**Gumukmas**	**12.12**	**273**	P	**Pn**	**21 46 36.6**	**-3.3**
MBWA	**Marble Bar**	**13.37**	**205**	*e*Pn	**Pn**	**21 46 53.1**	**-3.8**
MBWA	**Marble Bar**	**13.37**	**205**	P	**Pn**	**21 46 54.5**	**-2.4**
	SNR=13						
I07AU	**WARRAMUNGA INE**	**13.70**	**143**	*i*		23 11 10.0	
	baz=323,slow=324,SNR=0.3						
WRAB	**Tennant Creek**	**13.71**	**143**	*i*P	Pn	21 46 56.2	-5.5
WRAB	**Tennant Creek**	**13.71**	**143**	*e*Pn	Pn	21 46 55.3	-6.3
WR1	**Warramunga Arr**	**13.71**	**143**	*e*Pn	Pn	21 46 56.0	-5.7
WR1				*e*Sn	Sn	21 49 15.2	-18
WRA	**Warramunga Arr**	**13.71**	**143**	Pn	Pn	21 46 56.0	-5.7
	19nm,0.3s,baz=318,slow=12,SNR=280						
WRA				Sn	Sn	21 49 15.2	-18
	51nm,0.3s,baz=319,slow=23,SNR=14						
WRA				LR	LR	21 53 18.0	
	comp=Z,4μm,18.1s,baz=320,slow=41						
WRA	**Warramunga Arr**	**13.71**	**143**	*i* P	Pn	21 46 54.4	-7.3
WRA				pmax	pmax		
	comp=Z,96nm,0.5s						
PWJI	**Pagerwojo**	**13.76**	**273**	P	**Pn**	**21 47 00.8**	**-1.5**

NGJI	**Ngawi**	**14.17**	**276**	P	**P**	**21 47 12.0**	**-3.3**
PCJI	**Pacitan**	**14.36**	**272**	P	**Pn**	**21 47 08.9**	**-1.7**
UGM	**Wanagama**	**15.03**	**273**	P	**Pn**	**21 47 20.6**	**+0.9**
UGM	**Wanagama**	**15.03**	**273**	*e*Pn	**Pn**	**21 47 18.2**	**-1.5**
TSM	**Tawau**	**15.34**	**329**	⇓P	**P**	**21 47 27.7**	**-0.6**
GENI	**Genyem**	**15.76**	**67**	P	**P**	**21 47 31.6**	**-1.3**
MYLDM	**Lahad Datu**	**15.81**	**333**	⇓P	**P**	**21 47 34.6**	**+1.1**
MYLDM	**Lahad Datu**	**15.81**	**333**	*e*Pn	**P**	**21 47 33.0**	**-0.6**
	comp=Z,141nm,0.9s							
DAV	**Davao City (W)**	**15.98**	**360**	Pn	**P**	**21 47 35.3**	**-0.2**
	comp=Z,38nm,0.3s,baz=117,slow=9.0,SNR=2.8							
DAV				LR	LR	21 54 11.8		
	comp=Z,4μm,19.9s,baz=214,slow=39							
DAV	**Davao City (W)**	**15.98**	**360**	*e*P	**P**	**21 47 35.3**	**-0.2**
	comp=Z,341nm,0.8s							
DAV	**Davao City (W)**	**15.98**	**360**	P	**P**	**21 47 35.7**	**+0.3**
	SNR=11							
DAV	**Davao City (W)**	**15.98**	**360**	Pn	**P**	**21 47 35.7**	**+0.3**
	SNR=11							
WRKA	**Warakurna**	**16.13**	**171**	P	**Pn**	**21 47 29.0**	**-4.9**
	baz=16,SNR=416							
JAY	**Jayapura**	**16.28**	**68**	Pn	**Pn**	**21 47 35.8**	**-0.1**
	comp=Z,0.6nm,0.3s,baz=259,slow=22,SNR=15							
JAY	**Jayapura**	**16.28**	**68**	P	**Pn**	**21 47 34.7**	**-1.2**
AS31	**Alice Springs**	**16.56**	**153**	*e*Pn	**Pn**	**21 47 35.2**	**-4.2**
AS31				*e*Sn	Sn	21 50 27.1	-16
ASAR	**Alice Springs**	**16.56**	**153**	Pn	**Pn**	**21 47 35.2**	**-4.2**
	comp=Z,11nm,0.3s,baz=320,slow=11,SNR=246							
ASAR				Sn	Sn	21 50 27.1	-16	
	comp=Z,23nm,0.3s,baz=324,slow=21,SNR=12							
ASAR				LR	LR	21 55 07.9		
	comp=Z,4μm,18.4s,baz=324,slow=41							
STKI	**Sintang**	**16.78**	**302**	P	**P**	**21 47 45.5**	**+1.2**
SDKM	**Sandakan**	**16.84**	**330**	⇓P	**P**	**21 47 47.3**	**+2.3**
CMJI	**Cimerak**	**17.09**	**273**	P	**Pn**	**21 47 42.7**	**-3.4**
GIRL	**Giralia**	**17.44**	**218**	P	**P**	**21 47 53.5**	**+2.0**
	baz=17,SNR=10							
BTM	**Bintulu**	**17.46**	**313**	⇑P	**P**	**21 47 55.4**	**+3.5**
SBUM	**Sibu**	**17.60**	**310**	⇑P	**P**	**21 47 56.4**	**+3.1**
SBUM	**Sibu**	**17.60**	**310**	*e*P	**P**	**21 47 53.5**	**+0.1**
	comp=Z,150nm,1.1s							
KKM	**Kota Kinabalu**	**17.69**	**327**	⇑P	**P**	**21 47 57.6**	**+3.2**
KKM	**Kota Kinabalu**	**17.69**	**327**	*e*Pn	**P**	**21 47 57.0**	**+2.6**
	comp=Z,314nm,1.1s							
CISI	**Cisompet, Garu**	**17.74**	**273**	P	**P**	**21 47 54.1**	**-0.9**
CISI	**Cisompet, Garu**	**17.74**	**273**	*e*Pn	**Pn**	**21 47 50.8**	**-3.4**
	comp=Z,212nm,0.7s							
CISI				*e*Sn	**Sn**	**21 51 11.0**	**-0.6**
COEN	**Coen**	**17.83**	**108**	P	**Pn**	**21 47 51.5**	**-3.9**
	baz=18,SNR=30							
COEN	**Coen**	**17.83**	**108**	*e*Pn	**Pn**	**21 47 51.5**	**-3.9**
	comp=Z,124nm,0.8s							
LEM	**Lembang**	**18.02**	**276**	Pn	**P**	**21 48 02.2**	**+4.0**
	comp=Z,4.2nm,0.3s,baz=31,slow=11,SNR=12							
LEM				S	**S**	**21 51 33.1**	**+8.7**
	comp=Z,1.5nm,0.3s,baz=37,slow=7.1,SNR=2.7							
LEM	**Lembang**	**18.02**	**276**	P	**P**	**21 48 00.8**	**+2.6**
KDM	**Kudat**	**18.12**	**331**	⇑P	**P**	**21 48 02.3**	**+3.3**
CNJI	**Cibinong**	**18.44**	**274**	P	**P**	**21 48 00.8**	**-1.9**
PALU	**Palau**	**18.46**	**29**	P	**Pn**	**21 48 03.2**	**+0.1**
	baz=19,SNR=24							
KSM	**Kuching**	**18.53**	**303**	⇑P	**Pn**	**21 48 07.0**	**+3.2**
KSM	**Kuching**	**18.53**	**303**	*e*P	**Pn**	**21 48 06.2**	**+2.4**
	comp=Z,101nm,0.9s							
CBJI	**Citeko**	**18.84**	**277**	P	**P**	**21 48 05.4**	**-1.6**
SKJI	**Sukabumi**	**19.04**	**275**	P	**P**	**21 48 09.0**	**-0.3**
XMIS	**Christmas Isla**	**19.79**	**264**	*e*P	**Pn**	**21 48 18.2**	**-0.9**
	comp=Z,152nm,0.8s							
CGJI	**Cibinong**	**19.94**	**275**	P	**P**	**21 48 16.6**	**-2.6**
JAP	**San Jose, Anti**	**19.98**	**349**	⇑*e*P	**Pn**	**21 48 23.6**	**+2.3**
PLP	**Palo**	**20.06**	**358**	⇑*e*P	Pn	21 48 22.2	0.0
MTSU	**Mount Surprise**	**20.24**	**119**	P	**P**	**21 48 22.9**	**+0.5**
	baz=20,SNR=67							
CUYO	**Cuyo Island**	**20.27**	**347**	*e*P	Pn	21 48 25.6	+0.8
PPBI	**Pangkal Pinang**	**20.60**	**288**	P	**P**	**21 48 25.4**	**-0.9**
ENPP	**El Nido**	**21.03**	**343**	*e

IPM	**Ipoh**	**28.00**	**298**	⇑P		**P**	**21**	**49**	**38.3 +0.2**
IPM	**Ipoh**	**28.00**	**298**	*e*P		**P**	**21**	**49**	**37.2 -0.9**
	comp=Z,33nm,1.2s								
IPM				*e*PcP		**PcP**	**21**	**52**	**54.6 +1.5**
IPM				LR	LR				
	comp=Z,3μm,18.0s								
COCO	**West Island**	**28.52**	**261**	PFAKE			21	50	00.0 +17
COCO				LR	LR				
	comp=Z,2μm,19.0s								
KULM	**Kulim**	**28.71**	**299**	*e*P		**P**	**21**	**49**	**43.2 -1.2**
	comp=Z,22nm,0.9s								
KULM				*e*PcP		**PcP**	**21**	**52**	**55.4 +0.6**
KULM				LR	LR				
	comp=Z,2μm,20.0s								
CMSA	**Cobar Meteorol**	**29.12**	**143**	P		**P**	**21**	**49**	**48.1 +0.2**
	baz=29,SNR=103								
PSI	**Prapat**	**29.14**	**293**	P		**P**	**21**	**49**	**46.5 -1.8**
	comp=Z,29nm,0.9s,baz=115,slow=5.6,SNR=22								
PSI	**Prapat**	**29.14**	**293**	*e*P		**P**	**21**	**49**	**46.5 -1.8**
PSI				pmax	pmax				
	comp=Z,34nm,0.9s								
PSI				MLR	MLR				
	comp=Z,8μm,18.0s								
PSI	**Prapat**	**29.14**	**293**	*e*P		**P**	**21**	**49**	**46.5 -1.8**
	comp=Z,34nm,0.9s								
PSI				LR	LR				
	comp=Z,8μm,18.0s								
GUMO	**Guam**	**29.45**	**41**	PFAKE			21	50	00.0 +9.1
GUMO				LR	LR				
	comp=Z,1μm,19.0s								
SKLT	**Songkhla**	**29.70**	**302**	P		**P**	**21**	**49**	**53.8 +0.6**
	comp=Z,64nm,1.3s								
GSI	**Gunungsitoli**	**29.82**	**289**	*e*P		**P**	**21**	**49**	**50.8 -3.5**
	comp=Z,23nm,0.8s								
GSI				*e*PcP		**PcP**	**21**	**52**	**59.8 +2.1**
GSI				*e*ScP		**ScP**	**21**	**56**	**39.6 +0.7**
GSI				LR	LR				
	comp=Z,8μm,18.0s								
TRTT	**Trang**	**30.84**	**302**	P		**P**	**21**	**50**	**03.4 +0.2**
	comp=Z,41nm,1.3s,comp=Z,673nm								
ARPS	**Mount Arapiles**	**31.28**	**155**	P		**P**	**21**	**50**	**08.0 +1.2**
	baz=31,SNR=37								
CHBT	**CHBT**	**31.71**	**313**	P		**P**	**21**	**50**	**12.9 +2.0**
	comp=Z,27nm,1.2s								
QIZ	**Qiongzhong**	**31.95**	**331**	P		**P**	**21**	**50**	**15.0 +2.1**
QIZ				S		**S**	**21**	**55**	**24.3 +0.9**
QIZ				pmax	pmax				
	comp=Z,3.0nm,0.8s								
QIZ				LR	LR				
	comp=Z,300nm,12.9s								
QIZ				LR	LR				
	comp=Z,180nm,13.9s								
LHMI	**Lhok Sumawe**	**31.95**	**295**	PFAKE			21	50	30.0 +17
LHMI				LR	LR				
	comp=Z,4μm,19.0s								
TWG	**Pinlang**	**31.96**	**352**	PFAKE			21	50	20.0 +7.0
TWG				LR	LR				
	comp=Z,4μm,22.0s								
PKDT	**Phuket**	**32.01**	**301**	P		**P**	**21**	**50**	**13.2 -0.3**
	comp=Z,28nm,1.1s,comp=Z,849nm								
SURT	**Suratani**	**32.18**	**303**	P		**P**	**21**	**50**	**15.0 -0.1**
	comp=Z,8.2nm,1.3s								
ARMA	**Armidale**	**32.25**	**135**	P		**P**	**21**	**50**	**17.2 +1.5**
	baz=32,SNR=8.0								
ARMA	**Armidale**	**32.25**	**135**	*e*P		**P**	**21**	**50**	**17.1 +1.5**
	comp=Z,50nm,1.1s								
ARMA				LR	LR				
	comp=Z,3μm,19.0s								
YULB	**Yu-li**	**32.49**	**352**	*e*P		**P**	**21**	**50**	**15.7 -2.0**
	comp=Z,22nm,1.0s								
YULB				LR	LR				
	comp=Z,900nm,21.0s								
TPUB	**Ta-pu**	**32.49**	**351**	*e*P		**P**	**21**	**50**	**16.4 -1.2**
	comp=Z,70nm,0.8s								
TPUB				LR	LR				
	comp=Z,900nm,19.0s								
YNG	**Young**	**32.68**	**144**	P		**P**	**21**	**50**	**20.2 +0.9**
	baz=33,SNR=20								
SRAK	**Srakaew**	**32.77**	**314**	P		**P**	**21**	**50**	**18.1 -2.0**
	comp=Z,39nm,1.1s,comp=Z,402nm								
PATY	**Pattaya**	**32.90**	**311**	P		P	21	50	28.2 +6.9
	comp=Z,4.9nm,1.0s,comp=Z,735nm								
SSLB	**Suanglung**	**32.93**	**352**	*e*P		**P**	**21**	**50**	**21.1 -0.4**
	comp=Z,32nm,1.1s								
SSLB				LR	LR				
	comp=Z,600nm,20.0s								
NACB	**Ninganchiao**	**33.23**	**353**	*e*P		**P**	**21**	**50**	**23.4 -0.6**
	comp=Z,47nm,1.1s								
NACB				LR	LR				
	comp=Z,600nm,20.0s								
YOJ	**Yonaguni jima**	**33.38**	**356**	*e*P		**P**	**21**	**50**	**25.4 +0.1**
YOJ				pmax	pmax				
	comp=Z,130nm,1.1s								
YOJ	**Yonaguni jima**	**33.38**	**356**	*e*P		**P**	**21**	**50**	**25.4 +0.1**
	comp=Z,127nm,1.1s								
YOJ				LR	LR				
	comp=Z,1μm,20.0s								
SKNT	**Sakolnakorn**	**33.58**	**320**	P		**P**	**21**	**50**	**26.9 -0.3**
	comp=Z,45nm,1.2s								
TOO	**Toolangi**	**33.60**	**151**	P		**P**	**21**	**50**	**29.2 +1.9**
	baz=34,SNR=38								
MGCD	**Mangrove Creek**	**33.62**	**139**	P		**P**	**21**	**50**	**28.9 +1.4**
	baz=34,SNR=7.7								
YHNB	**Yeheng**	**33.74**	**353**	*e*P		**P**	**21**	**50**	**27.1 -1.6**
	comp=Z,31nm,0.8s								
YHNB				LR	LR				
	comp=Z,1μm,22.0s								
CAN	**Canberra**	**33.76**	**144**	*e*P		**P**	**21**	**50**	**29.8 +1.1**
CAN				pmax	pmax				
	comp=Z,110nm,1.5s								
CAN	**Canberra**	**33.76**	**144**	*e*P		**P**	**21**	**50**	**29.8 +1.1**
	comp=Z,115nm,1.5s								
CAN				LR	LR				
	comp=Z,3μm,20.0s								
HNR	**Honiara**	**33.82**	**93**	P		**P**	**21**	**50**	**28.6 -0.8**
	comp=Z,138nm,0.7s,baz=209,slow=4.8,SNR=13								
HNR				LR	LR		22	04	36.2
	comp=Z,2μm,19.8s,baz=293,slow=37								
HNR	**Honiara**	**33.82**	**93**	*e*P		**P**	**21**	**50**	**29.5 +0.1**
HNR	**Honiara**	**33.82**	**93**	*e*P		**P**	**21**	**50**	**29.5 +0.1**
	comp=Z,219nm,1.0s								
HNR				LR	LR				
	comp=Z,2μm,19.0s								
KHON	**Khomkaen**	**33.86**	**318**	P		P	21	50	35.2 +5.5
	comp=Z,15nm,1.0s								
CNB	**Canberra Magne**	**33.96**	**144**	P		**P**	**21**	**50**	**32.0 +1.5**
	baz=34,SNR=13								
TATO	**Taipei**	**34.03**	**353**	PFAKE			21	50	40.0 +9.0
TATO				LR	LR				
	comp=Z,1μm,19.0s								
CHAI	**Chaiyaphum**	**34.11**	**316**	P		**P**	**21**	**50**	**32.7 +0.8**
	comp=Z,13nm,0.8s,comp=Z,101nm								
GZH	**Guangzhou**	**34.11**	**339**	P		**P**	**21**	**50**	**35.8 +4.0**
GZH				pmax	pmax				
	comp=Z,200nm,3.2s								
QZH	**Quanzhou**	**34.45**	**349**	*e*P		**P**	**21**	**50**	**31.8 -2.9**
QZH				PP		**PnPn**	**21**	**51**	**47.8 -2.1**
QZH				S		**S**	**21**	**56**	**06.0 +3.9**
QZH				LR	LR				
	comp=Z,990nm,14.0s								
QZH				LR	LR				
	comp=Z,1μm,16.4s								
QZH				LR	LR				
	comp=Z,2μm,19.3s								
NONG	**Nongkai**	**34.92**	**320**	P		**P**	**21**	**50**	**39.0 +0.2**
	comp=Z,23nm,1.8s								
MILA	**Mila**	**35.09**	**146**	P		**P**	**21**	**50**	**41.6 +1.4**
	baz=35,SNR=4.8								
SRDT	**SRDT**	**35.11**	**311**	P		**P**	**21**	**50**	**41.9 +1.3**
	comp=Z,53nm,1.7s,comp=Z,2μm								
PBKT	**Sadao Pong**	**35.27**	**316**	P		**P**	**21**	**50**	**42.4 +0.5**
	comp=Z,17nm,1.1s								
CMBY	**CAMPBELL BAY**	**35.42**	**296**	*e*P		**P**	**21**	**50**	**40.0 -3.3**
JOW	**Kunigami**	**35.72**	**4**	P		**P**	**21**	**50**	**45.8 +0.1**
	comp=Z,89nm,0.9s,baz=213,slow=4.8,SNR=13								
JOW	**Kunigami**	**35.72**	**4**	*e*P		**P**	**21**	**50**	**45.8 +0.1**
	comp=Z,129nm,1.0s								
JOW				LR	LR				
	comp=Z,2μm,22.0s								
KHLT	**Khaolaem Dam**	**35.79**	**311**	P		**P**	**21**	**50**	**47.5 +1.1**
	comp=Z,14nm,1.2s,comp=Z,191nm								
UTTA	**Uttaradit**	**36.37**	**317**	P		**P**	**21**	**50**	**51.7 +0.4**
	comp=Z,8.6nm,0.9s,comp=Z,76nm								
LAMP	**Lampang**	**37.54**	**317**	P		**P**	**21**	**51**	**02.9 +1.6**
	comp=Z,14nm,1.1s,comp=Z,117nm								
CM31	**Chiang Mai Arr**	**37.97**	**316**	*e*P		**P**	**21**	**51**	**04.4 -0.5**
CM31				*e*PcP		**PcP**	**21**	**53**	**21.1 +0.5**
CM31				*e*ScP		**ScP**	**21**	**57**	**06.4 -1.0**
CMAR	**Chiang Mai Arr**	**37.97**	**316**	P		**P**	**21**	**51**	**04.4 -0.5**
	comp=Z,8.9nm,0.8s,baz=142,slow=6.6,SNR=82								
CMAR				PcP		**PcP**	**21**	**53**	**21.1 +0.5**
	comp=Z,8.2nm,0.9s,baz=175,slow=2.8,SNR=6.6								
CMAR				ScP		**ScP**	**21**	**57**	**06.4 -1.0**
	comp=Z,2.2nm,0.8s,baz=162,slow=3.4,SNR=6.7								
CMAR				PKiKP		**PKiKP**	**22**	**00**	**36.9 +0.5**
	comp=Z,2.0nm,0.8s,baz=248,slow=1.2,SNR=14								
CMAR				LR	LR		22	09	22.6
	comp=Z,2μm,18.8s,baz=149,slow=41								
CMMT	**Chiang Mai**	**38.21**	**316**	P		**P**	**21**	**51**	**06.6 -0.3**
	comp=Z,46nm,1.2s,comp=Z,646nm								
CHTO	**Chiang Mai**	**38.21**	**316**	P		**P**	**21**	**51**	**06.7 -0.3**
	comp=Z,134nm,1.7s,comp=Z,2μm								
CHTO	**Chiang Mai**	**38.21**	**316**	*e*P		**P**	**21**	**51**	**06.6 -0.4**
CHTO				pmax	pmax				
	comp=Z,40nm,1.0s								
CHTO	**Chiang Mai**	**38.21**	**316**	*e*P		**P**	**21**	**51**	**06.6 -0.4**
	comp=Z,40nm,1.0s								
CHTO				LR	LR				
	comp=Z,2μm,20.0s								
CHTO	**Chiang Mai**	**38.21**	**316**	P		**P**	**21**	**51**	**06.8 -0.1**
	SNR=20								
CHTO	**Chiang Mai**	**38.21**	**316**	P		**P**	**21**	**51**	**06.8 -0.1**
	SNR=20								
MOO	**Moorlands**	**38.28**	**154**	P		**P**	**21**	**51**	**09.5 +2.2**
	baz=38,SNR=5.7								
MHMT	**Maesarieng**	**38.48**	**315**	P		**P**	**21**	**51**	**10.2 +1.0**
	comp=Z,9.6nm,0.8s,comp=Z,164nm								
TAU	**Tasmania Unive**	**38.72**	**154**	*e*P		**P**	**21**	**51**	**13.0 +2.1**
TAU				pmax	pmax				
	comp=Z,50nm,1.1s								
TAU	**Tasmania Unive**	**38.72**	**154**	*e*P		**P**	**21**	**51**	**13.0 +2.1**
	comp=Z,50nm,1.1s								
TAU				LR	LR				
	comp=Z,4μm,19.0s								
CMAI	**Chiengmai2**	**38.92**	**318**	P		**P**	**21**	**51**	**12.7 -0.4**
	comp=Z,136nm,0.8s,comp=Z,7μm								
DGPR	**DIGLIPUR**	**39.29**	**304**	*e*P		**P**	**21**	**51**	**13.7 -2.4**
DGPR				IAmb	IAmb		21	51	17.8
	comp=Z,24nm,0.8s								
CBIJ	**Chichi jima**	**39.30**	**24**	*e*P		**P**	**21**	**51**	**13.6 -2.4**
	comp=Z,100nm,0.9s								
GYA	**Guiyang**	**39.81**	**333**	⇑*i*P		**P**	**21**	**51**	**19.8 -0.6**
GYA				pP	sP		21	51	30.5 +1.6
GYA				PP		**PnPn**	**21**	**52**	**59.8 +4.5**
GYA				PcP		**PcP**	**21**	**53**	**29.0 +2.6**
GYA				ScP		**ScP**	**21**	**57**	**15.5 +1.0**
GYA				S		**S**	**21**	**57**	**26.3 +2.4**
GYA				sS	sS		21	57	38.0 +4.0
GYA				SS		**SS**	**22**	**00**	**16.8 -3.7**
GYA				ScS		**ScS**	**22**	**01**	**27.8 +0.3**
GYA				pmax	pmax				
	comp=Z,20nm,1.0s								
GYA				pmax	pmax				
	comp=Z,180nm,5.2s								
GYA				LR	LR				
	comp=Z,2μm,17.8s								
GYA				LR	LR				
	comp=Z,1μm,18.0s								
GYA				LR	LR				
	comp=Z,2μm,17.6s								
SSE	**Sheshan**	**40.11**	**354**	P		**P**	**21**	**51**	**23.5 +0.9**
SSE				S		**S**	**21**	**57**	**33.3 +5.2**
SSE				pmax	pmax				
	comp=Z,56nm,1.0s								
SSE				pmax	pmax				
	comp=Z,170nm,8.3s								
SSE				LR	LR				
	comp=Z,380nm,21.3s								
SSE				LR	LR				
	comp=Z,260nm,21.3s								
SSE				LR	LR				
	comp=Z,400nm,24.5s								
KMI	**Kunming**	**40.63**	**327**	P		**P**	**21**	**51**	**28.0 +0.6**
KMI				pP	sP		21	51	34.0 -1.9
KMI				sP	pP		21	51	36.5 +3.0
KMI				PP		**PnPn**	**21**	**53**	**07.3 +2.1**
KMI				S		**S**	**21**	**57**	**30.3 -6.2**
KMI				SS		**SS**	**22**	**00**	**29.8 -7.4**
KMI				pmax	pmax				
	comp=Z,38nm,1.1s								
KMI				pmax	pmax				
	comp=Z,160nm,3.6s								
KMI				LR	LR				
	comp=Z,230nm,17.1s								
KMI				LR	LR				
	comp=Z,570nm,17.7s								
KMI				LR	LR				
	comp=Z,600nm,25.3s								
WHN	**Wuhan**	**40.81**	**345**	P		**P**	**21**	**51**	**28.8 +0.4**
WHN				S		**S**	**21**	**57**	**33.5 -5.0**
WHN				pmax	pmax				
	comp=Z,82nm,0.8s								
WHN				LR	LR				
	comp=Z,2μm,19.9s								
WHN				LR	LR				
	comp=Z,800nm,13.0s								
WHN				LR	LR				
	comp=Z,3μm,19.4s								
DZM	**Mont Dzumac**	**41.22**	**113**	LR		LR	22	09	51.1
	comp=Z,976nm,18.2s,baz=291,slow=38								
NJ2	**Nanjing**	**41.35**	**351**	*e*P		**P**	**21**	**51**	**33.0 +0.1**
NJ2				PcP		**PcP**	**21**	**53**	**29.8 -1.3**
NJ2				S		**S**	**21**	**57**	**46.5 0.0**
NJ2				pmax	pmax				
	comp=Z,48nm,0.7s								
NJ2				LR	LR				
	comp=Z,680nm,24.9s								
NJ2				LR	LR				
	comp=Z,680nm,24.9s								
NJ2				LR	LR				
	comp=Z,740nm,24.9s								
ENH	**Enshi**	**42.05**	**339**	*e*P		**P**	**21**	**51**	**38.0 -0.7**
	comp=Z,34nm,0.8s								
ENH				LR	LR				
	comp=Z,800nm,21.0s								
JNU	**Nakatsue**	**42.19**	**6**	P		**P**	**21**	**51**	**39.3 -0.5**
	comp=Z,75nm,0.8s,baz=171,slow=3.7,SNR=28								
JNU				PcP		**PcP**	**21**	**53**	**33.4 -0.6**
	comp=Z,16nm,0.9s,baz=209,slow=15,SNR=2.6								
JNU	**Nakatsue**	**42.19**	**6**	*e*P		**P**	**21**	**51**	**39.3 -0.5**
	comp=Z,109nm,0.9s								
JNU				*e*PcP		**PcP**	**21**	**53**	**33.3 -0.6**
JNU				LR	LR				
	comp=Z,1μm,22.0s								
JHJ	**Hachijo jima 2**	**44.00**	**17**	LR		LR	22	09	52.5
	comp=Z,822nm,19.4s,baz=114,slow=36								
CD2	**Chengdu**	**44.92**	**333**	P		**P**	**21**	**52**	**01.3 -0.6**
CD2				sP	sP		21	52	12.0 +1.5
CD2				PP		**PP**	**21**	**53**	**46.8 -0.3**
CD2				S		**S**	**21**	**58**	**39.3 +0.2**
CD2				sS	sS		21	58	52.0 +2.7
CD2				pmax	pmax				
	comp=Z,50nm,0.8s								
CD2				pmax	pmax				
	comp=Z,190nm,9.3s								
CD2				LR	LR				
	comp=Z,840nm,15.6s								
CD2				LR	LR				
	comp=Z,750nm,21.6s								
INU	**Inuyama**	**45.41**	**13**	*e*P		**P**	**21**	**52**	**05.7 +0.1**
INU	comp=Z,55nm,0.9s			LR	LR				
	comp=Z,1μm,20.0s								
XAN	**Xi'an**	**45.68**	**340**	P		**P**	**21**	**52**	**05.3 -2.5**
XAN				pmax	pmax				
	comp=Z,28nm,0.9s								
XAN				pmax	pmax				
	comp=Z,160nm,13.5s								
XAN				LR	LR				
	comp=Z,790nm,19.3s								
XAN				LR	LR				
	comp=Z,610nm,19.4s								
XAN				LR	LR				
	comp=Z,940nm,18.7s								
TIA	**Tai'an**	**45.70**	**350**	⇑P		**P**	**21**	**52**	**06.3 -1.6**
TIA				pmax	pmax				
	comp=Z,40nm,0.9s								
TIA				pmax	pmax				
	comp=Z,340nm,5.0s								
TIA				LR	LR				
	comp=Z,390nm,21.0s								
TIA				LR	LR				
	comp=Z,660nm,21.0s								
TIA				LR	LR				
	comp=Z,890nm,23.0s								
KS15	**Wonju Array Si**	**46.26**	**2**	*e*P		**P**	**21**	**52**	**12.8 +0.5**
KS15				*e*PcP		**PcP**	**21**	**53**	**47.5 -0.1**
KSAR	**Wonju Array Be**	**46.26**	**2**	P		**P**	**21**	**52**	**12.8 +0.5**
KSAR	**Wonju Array Be**	**46.26**	**2**	P		**P**	**21**	**52**	**12.8 +0.5**
INCN	**Inchon**	**46.26**	**1**	*e*P		**P**	**21**	**52**	**12.6 +0.3**
	comp=Z,91nm,0.8s								
INCN				LR	LR				
	comp=Z,1μm,21.0s								
KSRS	**Korea Array**	**46.27**	**2**	P		**P**	**21**	**52**	**12.8 +0.4**
	comp=Z,108nm,0.9s,baz=178,slow=9.5,SNR=195								
KSRS				PcP		**PcP**	**21**	**53**	**47.5 -0.1**
	comp=Z,9.8nm,0.8s,baz=189,slow=4.0,SNR=5.3								
KSRS				LR	LR		22	15	22.3
	comp=Z,432nm,18.0s,baz=142,slow=41								
MAJO	**Matsushiro**	**46.82**	**14**	*c i*P		**P**	**21**	**52**	**15.4 -1.3**
MAJO				pmax	pmax				
	comp=Z,383nm,0.9s								
MAJO	**Matsushiro**	**46.82**	**14**	*e*P		**P**	**21**	**52**	**15.6 -1.1**
	comp=Z,71nm,0.8s								
MAJO				LR	LR				
	comp=Z,1μm,22.0s								
MAT	**Matsushiro**	**46.82**	**14**	P		**P**	**21**	**52**	**15.4 -1.3**
MJAR	**Matsushiro Arr**	**46.82**	**14**	P		**P**	**21**	**52**	**15.4 -1.3**
	comp=Z,45nm,0.8s,baz=190,slow=9.1,SNR=65								
MJAR				PcP		**PcP**	**21**	**53**	**49.4 -0.3**
	comp=Z,5.0nm,0.9s,baz=166,slow=2.9,SNR=4.0								
MJAR				LR	LR		22	11	10.4
	comp=Z,670nm,19.8s,baz=205,slow=35								
SHL	**Shillong**	**47.58**	**317**	*e*P		**P**	**21**	**52**	**21.7 -1.3**
DL2	**Dalian**	**47.82**	**356**	P		**P**	**21**	**52**	**23.8 -0.6**
DL2				*e*S		**S**	**21**	**59**	**19.5 -0.8**
DL2				pmax	pmax				
	comp=Z,85nm,1.1s								
DL2				pmax	pmax				
	comp=Z,290nm,8.1s								
DL2				LR	LR				
	comp=Z,630nm,16.5s								
DL2				LR	LR				
	comp=Z,320nm,16.7s								
DL2				LR	LR				
	comp=Z,760nm,14.7s								
TIY	**Taiyuan**	**48.11**	**346**	*e*P		**P**	**21**	**52**	**26.3 -0.5**
TIY				S		**S**	**21**	**59**	**28.3 +3.7**
TIY				pmax	pmax				
	comp=Z,29nm,0.8s								
TIY				LR	LR				
	comp=Z,780nm,13.8s								
TIY				LR	LR				
	comp=Z,460nm,13.5s								
TIY				LR	LR				
	comp=Z,950nm,15.3s								
CHLP	**Challavanipeta**	**49.34**	**304**	*e*P		**P**	**21**	**52**	**35.7 -0.8**
CHLP				IAmb	IAmb		21	52	37.0
	comp=Z,114nm,1.8s								
CHLP				*e*S		**S**	**21**	**59**	**41.7 -0.7**
CHLP				IVMs_BB	IVMs_BB		22	15	21.3
	comp=Z,483nm,18.4s								
LZH	**Lanzhou**	**49.35**	**337**	⇓P		**P**	**21**	**52**	**36.8 +0.3**
LZH				pP	sP		21	52	45.5 +0.4
LZH				sP	pP		21	52	50.0 +7.3
LZH				PP		**PP**	**21**	**54**	**26.0 -4.7**
LZH				*e*S		**S**	**21**	**59**	**42.0 -0.4**
LZH				sS	sS		21	59	54.3 +1.7
LZH				SS		**SS**	**22**	**03**	**09.0 -5.4**
LZH				pmax	pmax				
	comp=Z,64nm,1.0s								
LZH				pmax	pmax				
	comp=Z,190nm,4.0s								
LZH				LR	LR				
	comp=Z,900nm,14.8s								
LZH				LR	LR				
	comp=Z,900nm,16.4s								
LZH				LR	LR				
	comp=Z,1μm,16.6s								
VIS	**Vishakhapatnam**	**49.56**	**302**	*e*P		**P**	**21**	**52**	**36.7 -1.5**
VIS				IAmb	IAmb		21	52	37.8
	comp=Z,38nm,0.9s								
BJT	**Baijiatuau**	**49.58**	**350**	*e*P		**P**	**21**	**52**	**36.7 -1.2**
BJT				pmax	pmax				
	comp=Z,58nm,1.2s								
BJT				MLR	MLR				
	comp=Z,1μm,19.0s								
BJT	**Baijiatuau**	**49.58**	**350**	*e*P		**P**	**21**	**52**	**36.7 -1.2**
	comp=Z,58nm,1.2s								
BJT				LR	LR				
	comp=Z,1μm,19.0s								
BJI	**Beijing**	**49.59**	**350**	P		**P**	**21**	**52**	**36.5 -1.5**
BJI				PP		**PP**	**21**	**54**	**32.5 -0.2**
BJI				S		**S**	**21**	**59**	**51.0 +5.7**
BJI				pmax	pmax				
	comp=Z,33nm,1.3s								
BJI				pmax	pmax				
	comp=Z,220nm,4.1s								
BJI				LR	LR				
	comp=Z,820nm,16.9s								
BJI				LR	LR				
	comp=Z,560nm,16.3s								
BJI				LR	LR				
	comp=Z,700nm,22.7s								
MDRS	**Chennai**	**50.17**	**295**	*e*P		**P**	**21**	**52**	**40.0 -2.9**
SNY	**Shenyang**	**50.63**	**358**	⇑P		**P**	**21**	**52**	**45.0 -0.9**
SNY				pP		**sP**	**21**	**52**	**59.8 +5.3**
SNY				S		**S**	**22**	**00**	**04.5 +4.9**
SNY				pmax	pmax				
	comp=Z,71nm,1.2s								
SNY				pmax	pmax				
	comp=Z,180nm,3.5s								
SNY				LR	LR				
	comp=Z,880nm,18.3s								
SNY				LR	LR				
	comp=Z,860nm,15.3s								
SNY				LR	LR				
	comp=Z,900nm,22.7s								
BOK	**Bokaro**	**50.75**	**311**	*e*P		**P**	**21**	**52**	**46.3 -0.8**
BOK				IAmb	IAmb		21	52	48.7
	comp=Z,32nm,1.8s								
PVM	**Polavaram**	**50.77**	**301**	*e*P		**P**	**21**	**52**	**45.5 -1.8**
PVM				IAmb	IAmb		21	52	47.2
	comp=Z,35nm,0.9s								
PVM				*e*S		**S**	**22**	**00**	**06.3 +4.0**
PVM				IVMs_BB	IVMs_BB		22	18	40.2
	comp=Z,287nm,16.3s								
OUZ	**Omahuta**	**50.84**	**128**	*e*P		**P**	**21**	**52**	**50.5 +2.8**
	comp=Z,55nm,0.9s								
LSA	**Lhasa**	**50.85**	**321**	P		**P**	**21**	**52**	**48.5 +0.1**
LSA				pmax	pmax				
	comp=Z,41nm,1.5s								
LSA	**Lhasa**	**50.85**	**321**	*e*P		**P**	**21**	**52**	**48.4 +0.1**
LSA				pmax	pmax				
	comp=Z,64nm,1.3s								
LSA				MLR	MLR				
	comp=Z,515nm,20.0s								
LSA	**Lhasa**	**50.85**	**321**	*e*P		**P**	**21**	**52**	**48.4 0.0**
	comp=Z,64nm,1.3s								
LSA				LR	LR				
	comp=Z,515nm,20.0s								
SKHT	**Srikalahasti**	**50.92**	**296**	*e*P	

comp=Z,47nm,0.8s
ADKI Addanki 51.56 298 *e*P P **21 52 51.9 -1.4**
ADKI IAmb IAmb 21 52 53.2
comp=Z,145nm,1.8s
ADKI *e*S **S** **22 00 15.0 +1.6**
ADKI IVMs_BB IVMs_BB 22 17 47.8
comp=Z,612nm,21.7s
MSHR Mys Shultsa 51.59 5⇓ *i*P P **21 52 52.7 -0.3**
LBZ Lake Benmore 52.15 140 *e*P P **21 52 57.9 +0.6**
comp=Z,51nm,0.9s
RCLA Racherla 52.29 297 *e*P P **21 52 56.6 -2.1**
RCLA IAmb IAmb 21 52 57.7
comp=Z,183nm,2.4s
RCLA IVMs_BB IVMs_BB 22 17 52.9
comp=Z,741nm,22.4s
RPZ Rata Peaks 52.38 139 LR LR 22 16 05.4
comp=Z,882nm,18.6s,baz=4.0,slow=37
RPZ Rata Peaks 52.38 139 *e*P P **21 53 00.4 +1.3**
comp=Z,134nm,0.9s
NJS Nagarjunasagar 52.44 299 *e*P P **21 52 57.8 -2.1**
NJS IAmb IAmb 21 52 59.1
comp=Z,32nm,1.2s
NJS IVMsBB 22 18 37.1
comp=Z,576nm,22.5s
MCQ Macquarie Isla 52.54 156 P P **21 53 02.0 +2.0**
baz=52,SNR=5.4
CN2 Changchun 52.57 360 *e*P P **21 52 58.5 -1.8**
CN2 *e*PP **PP** **21 54 59.3 -0.3**
CN2 *e*S **S** **22 00 26.3 0.0**
CN2 *e*SS **SS** **22 04 03.8 -1.2**
CN2 pmax pmax
comp=Z,30nm,1.1s
CN2 pmax pmax
comp=Z,200nm,5.0s
CN2 LR LR
comp=Z,600nm,14.0s
CN2 LR LR
comp=Z,300nm,14.0s
CN2 LR LR
comp=Z,800nm,16.0s
SRLM Srisailam 52.61 298 *e*P P **21 52 59.2 -2.0**
SRLM IAmb IAmb 21 53 01.4
comp=Z,165nm,2.1s
SRLM *e*S **S** **22 00 31.4 +3.5**
SRLM IVMs_BB IVMs_BB 22 18 18.4
comp=Z,688nm,19.6s
DGAR Diego Garcia 52.67 268 PFAKE 21 53 10.0 +8.3
DGAR LR LR
comp=Z,964nm,20.0s
THZ Tophouse 52.76 136 *e*P P **21 53 03.8 +1.8**
comp=Z,110nm,0.9s
OXZ Oxford 52.85 139 *e*P P **21 53 03.0 +0.5**
comp=Z,72nm,1.0s
FUNA Funafuti 52.85 94 *e*P P **21 53 03.4 +0.4**
comp=Z,155nm,1.0s
FUNA LR LR
comp=Z,5μm,20.0s
GUN Gumba 53.19 315 *e*P P **21 53 04.9 -0.8**
comp=Z,187nm,0.8s
ERM Erimo 53.25 16 *e*P P **21 53 06.6 +1.2**
ERM Erimo 53.25 16 *e*P P **21 53 06.6 +1.2**
comp=Z,49nm,1.0s
ERM *e*PP **sP** **21 53 11.6 -2.5**
ERM LR LR
comp=Z,716nm,19.0s
USRK Ussuriysk Ar. 53.27 6 P P **21 53 05.5 0.0**
comp=Z,80nm,0.9s,baz=191,slow=7.0,SNR=117
USRK LR LR 22 23 16.9
comp=Z,117nm,18.2s,baz=151,slow=45
PKIN Phulchoki 53.33 314 *e*P P **21 53 05.3 -1.3**
comp=Z,44nm,0.8s
CRLZ Canterbury Las 53.34 139 *e*P P **21 53 07.9 +1.8**
comp=Z,110nm,1.1s
KHZ Kahutara 53.46 137 *e*P P **21 53 08.3 +1.3**
comp=Z,121nm,0.9s
HYB Hyderabad 53.46 299 *i*P P **21 53 06.0 -1.5**
comp=Z,71nm,1.2s
HYB Hyderabad 53.46 299 *e*P P **21 53 05.4 -2.1**
HYB IAmb IAmb 21 53 05.9
comp=Z,46nm,1.2s
HYBB Hyderabad (bro 53.47 299 *e*P P **21 53 05.3 -2.2**
HYBB IAmb IAmb 21 53 06.5
comp=Z,41nm,1.2s
HYBB *e*S **S** **22 00 44.9 +5.4**
HYBB IVMs_BB IVMs_BB 22 18 00.9
comp=Z,426nm,15.7s
RPR Rampur 53.47 301 *e*P P **21 53 05.7 -1.8**
RPR IAmb IAmb 21 53 06.9
comp=Z,40nm,0.9s
RPR *e*S **S** **22 00 43.7 +4.2**
RPR IVMsBB 22 21 53.5
comp=Z,381nm,16.5s
MDJ Mudanjiang 53.50 3 P P **21 53 07.3 +0.1**
MDJ pP sP 21 53 13.0 -2.9
MDJ sP pP 21 53 16.0 +2.5
MDJ S **S** **22 00 38.0 -1.0**
MDJ sS sS 22 00 49.0 -0.3
MDJ pmax pmax
comp=Z,190nm,1.2s
MDJ pmax pmax
comp=Z,160nm,3.1s
MDJ LR LR
comp=Z,470nm,19.9s
MDJ LR LR
comp=Z,380nm,16.9s
MDJ LR LR
comp=Z,760nm,16.1s
MDJ Mudanjiang 53.50 3 *e*P P **21 53 07.5 +0.3**
comp=Z,188nm,0.9s
KKN Kakani 53.54 314 *e*P P **21 53 06.9 -1.2**
comp=Z,132nm,1.4s
DMN Daman 53.55 314 *e*P P **21 53 07.3 -1.0**
comp=Z,178nm,1.2s
URV Uravakonda 53.58 296 *e*P P **21 53 07.2 -1.1**
URV IAmb IAmb 21 53 07.5
comp=Z,41nm,1.7s
URV *e*S **S** **22 00 42.2 +1.2**
URV IVMs_BB IVMs_BB 22 16 26.4
comp=Z,672nm,23.6s
GKN Gorkha 54.12 314 *e*P P **21 53 11.3 -1.0**
comp=Z,167nm,1.1s
SRSP Sriramsagar 54.30 301 *e*P P **21 53 10.5 -3.1**
SRSP IAmb IAmb 21 53 12.6
comp=Z,33nm,1.0s
SRSP IVMs_BB IVMs_BB 22 19 38.4
comp=Z,332nm,18.7s
BKZ Black Stump Fm 54.33 132 *e*P P **21 53 14.9 +1.3**
comp=Z,93nm,1.0s
URZ Urewera 54.49 131 LR LR 22 17 01.4
comp=Z,941nm,20.6s,baz=298,slow=36
KOLN Koldamda 54.73 313 *e*P P **21 53 15.8 -1.0**
comp=Z,80nm,0.9s
ASAJ Asahikawa 55.06 15 P P **21 53 18.6 +0.1**
comp=Z,19nm,0.7s,baz=218,slow=8.7,SNR=16
ASAJ LR LR 22 15 55.3
comp=Z,640nm,20.6s,baz=206,slow=35
ASAJ Asahikawa 55.06 15 *e*P P **21 53 18.6 +0.1**
comp=Z,42nm,0.9s
PYUN Piuthan 55.35 313 *e*P P **21 53 20.5 -0.8**
comp=Z,221nm,1.1s
KLRI Killari 55.43 299 *e*P P **21 53 19.2 -2.5**
KLRI IAmb IAmb 21 53 20.5
comp=Z,253nm,2.3s
KLRI IVMs_BB IVMs_BB 22 19 53.5
comp=Z,801nm,19.3s
YUK Yuzh-Kuril'sk 55.88 17 P P **21 53 20.1 -4.4**
YUK *e* 21 54 20.5
YUK *e* 21 55 30.2
YUK *e*PPP PPP 21 56 40.3
YUK S **S** **22 01 08.1 -2.9**
YUK MLR MLR
comp=Z,537nm,19.0s
RAO Raoul Island 56.40 119 LR LR 22 16 26.4
comp=Z,552nm,18.0s,baz=335,slow=35
GOA Goa 56.84 295 *e*P P **21 53 29.0 -2.9**
GOA IAmb IAmb 21 53 32.4
comp=Z,101nm,2.0s
BHPL Bhopal 57.05 305 *e*P P **21 53 32.0 -1.3**
BHPL IAmb IAmb 21 53 33.0
comp=Z,12nm,0.4s
KUR Kuril'sk 57.58 18 *i*P P **21 53 38.8 +2.3**
YSS Yuzh-Sakhalins 57.76 14‖ *e*P P **21 53 37.3 -0.5**
YSS pmax pmax
comp=Z,30nm,1.2s
YSS MLR MLR
comp=Z,700nm,15.0s

HABR Khabarovsk 57.83 7 *e*P P **21 53 35.6 -2.6**
HABR *e* 21 54 28.2
HABR *e* 21 55 43.7
HABR *e*S **S** **22 01 34.9 -1.7**
HABR *e* 22 03 25.0
HABR *e*SS **SS** **22 05 26.6 -1.2**
HABR pmax pmax
comp=Z,36nm,1.2s
HABR MLR MLR
comp=Z,297nm,20.0s
POO Poona 57.99 298 *e*P P **21 53 39.0 -1.0**
LGTI Lohaghat 58.10 313 *e*P P **21 53 39.2 -1.3**
CASY Casey 58.12 187 PFAKE 21 53 50.0 +10
CASY LR LR
comp=Z,251nm,19.0s
KLR Kul'dur 58.24 5 P P **21 53 40.7 -0.4**
comp=Z,16nm,0.8s,baz=197,slow=4.5,SNR=40
KLR PcP **PcP** **21 54 31.2 -1.1**
comp=Z,10nm,0.8s,baz=183,slow=5.3,SNR=4.0
KLR LR LR 22 18 40.2
comp=Z,639nm,21.4s,baz=158,slow=36
KLR PKP2bc 22 23 24.6
comp=Z,0.9nm,0.8s,baz=102,slow=2.9,SNR=4.4
HIA Hailar 58.27 355 *e*P P **21 53 41.4 +0.1**
HIA pmax pmax
comp=Z,72nm,1.1s
HIA MLR MLR
comp=Z,715nm,21.0s
HIA Hailar 58.27 355 *e*P P **21 53 41.4 +0.1**
comp=Z,72nm,1.1s
HIA LR LR
comp=Z,715nm,21.0s
ULN Ulaanbaatar 58.99 345*c i*P P **21 53 46.0 -0.6**
ULN pmax pmax
comp=Z,42nm,1.0s
ULN Ulaanbaatar 58.99 345 *e*P P **21 53 45.9 -0.7**
comp=Z,36nm,0.9s
ULN Ulaanbaatar 58.99 345 P P **21 53 46.2 -0.4**
SNR=19
ULN Ulaanbaatar 58.99 345 P P **21 53 46.2 -0.4**
SNR=19
SONA0 Songino Array 59.13 345 *e*P P **21 53 46.9 -0.5**
SONA0 ⇑*e* 22 23 25.3
SONM Songino Array 59.13 345 P P **21 53 46.9 -0.5**
comp=Z,19nm,0.9s,baz=158,slow=7.9,SNR=53
SONM PKP2bc 22 23 25.3
comp=Z,1.4nm,0.9s,baz=310,slow=2.2,SNR=7.3
SONM P4KPbc 22 30 51.6
comp=Z,0.5nm,0.8s,baz=150,slow=3.3,SNR=4.7
NDI New Delhi 59.92 311 *ex* P 21 53 46.5 -6.7
DDI Dehra Dun 60.17 313 *e*P P **21 53 54.6 -0.3**
SMLA Simla 61.24 313 *i*P P **21 54 01.5 -0.7**
SMLA IAmb IAmb 21 54 02.7
comp=Z,143nm,0.9s
AFI Afiamalu 61.35 101 *e*P P **21 54 04.8 +1.5**
AFI Afiamalu 61.35 101 *e*P P **21 54 04.8 +1.5**
comp=Z,82nm,1.0s
MIR Mirnyy 61.61 194 *i*P P **21 54 04.5 +0.5**
MIR pmax pmax
comp=Z,6.0nm,1.0s
ZAK Zakamensk 62.28 344 *e*P P **21 54 07.8 -1.1**
ZAK pmax pmax
comp=Z,13nm,1.3s
DHRM DHARAMSHALA 62.47 314 *e*P P **21 54 08.8 -1.9**
DHRM IAmb IAmb 21 54 10.1
comp=Z,145nm,0.3s
WMQ Urumqi 62.86 330 P P **21 54 13.0 +0.1**
WMQ pP sP 21 54 21.0 -0.7
WMQ sP pP 21 54 25.5 +6.2
WMQ PcP **PcP** **21 54 52.3 +1.2**
WMQ PP **PP** **21 56 35.3 +3.9**
WMQ ScP **ScP** **21 58 52.5 +0.1**
WMQ S **S** **22 02 43.8 +2.3**
WMQ sS sS 22 02 56.8 +4.8
WMQ pmax pmax
comp=Z,12nm,2.0s
WMQ pmax pmax
comp=Z,150nm,3.8s
WMQ LR LR
comp=Z,310nm,17.0s
WMQ LR LR
comp=Z,280nm,17.0s
WMQ LR LR
comp=Z,340nm,23.6s
NKL Nikolayevsk 63.23 10 *i*P P **21 54 15.0 0.0**
NKL *e* 21 54 23.2
NKL pmax pmax
comp=N,26nm,1.0s
NKL pmax pmax
comp=E,26nm,1.0s
NKL pmax pmax
comp=Z,150nm,1.0s
NKL MLR MLR
comp=Z,2μm,15.0s
TLY Talaya 63.37 345 P P **21 54 15.7 -0.3**
comp=Z,8.4nm,0.8s,baz=217,slow=4.5,SNR=5.7
TLY Talaya 63.37 345 *e*P P **21 54 16.6 +0.6**
TLY pmax pmax
comp=Z,16nm,1.1s
TLY MLR MLR
comp=Z,338nm,20.0s
TLY Talaya 63.37 345 *e*P P **21 54 16.2 +0.2**
comp=Z,16nm,1.1s
IRK Irkutsk 63.72 346 *e*P P **21 54 16.8 -1.5**
IRK *e* 21 56 35.2
IRK pmax pmax
comp=Z,44nm,1.7s
MOY Mondy 64.08 343 *e*P P **21 54 20.5 -0.3**
MOY pmax pmax
comp=Z,43nm,2.2s
SKR Severo-Kuril's 65.06 21 *e*P P **21 54 27.2 +0.2**
CLNS Chul'man 65.62 360 *e*P P **21 54 30.7 0.0**
CLNS pmax pmax
comp=Z,22nm,1.1s
CLNS pmax pmax
comp=N,15nm,1.1s
CLNS pmax pmax
comp=E,7.0nm,1.2s
KSH Kashi 66.70 320 P P **21 54 37.5 -0.6**
KSH *e*PcP **PcP** **21 55 07.8 +0.7**
KSH *e*PP **PP** **21 57 05.5 +0.2**
KSH PcS 21 59 11.0
KSH S **S** **22 03 26.0 -3.2**
KSH SKS **SKSac** **22 04 31.3 -2.9**
KSH SS **SS** **22 07 42.0 -5.3**
KSH pmax pmax
comp=E,46nm,0.8s
KSH pmax pmax
comp=E,160nm,5.0s
KSH LR LR
comp=E,990nm,18.8s
KSH LR LR
comp=E,1μm,17.9s
KSH LR LR
comp=E,1μm,16.2s
PDGK Podgornoye 66.89 325 *i*P P **21 54 37.7 -1.3**
PDGK pmax pmax
comp=Z,30nm,1.1s
BOD Bodaibo 67.28 353⇓ *i*P P **21 54 40.4 -0.8**
BOD pmax pmax
comp=Z,48nm,0.9s
PETK Petropavlovsk- 67.62 20 P P **21 54 43.9 +0.5**
comp=Z,102nm,0.7s,baz=184,slow=4.4,SNR=91
PETK LR LR 22 21 00.1
comp=Z,176nm,21.4s,baz=210,slow=33
PEA1 Petropavlovsk- 67.62 20 *e*P P **21 54 43.9 +0.4**
MK31 Makanchi Array 67.66 329 *i*P P **21 54 42.8 -1.1**
MK31 pmax pmax
comp=Z,28nm,0.8s
MK32 Makanchi Array 67.66 329 *e*P P **21 54 43.1 -0.8**
MK32 ⇑*e* 22 23 06.6
MKAR Makanchi Array 67.66 329 P P **21 54 43.1 -0.8**
comp=Z,15nm,0.7s,baz=133,slow=7.5,SNR=169
MKAR PKP2bc 22 23 06.6
comp=Z,0.2nm,0.2s,baz=318,slow=3.3,SNR=4.1
MAKZ Makanchi 67.83 329 *e*P P **21 54 43.8 -1.1**
MAKZ pmax pmax
comp=Z,16nm,0.8s
MAKZ Makanchi 67.83 329 *e*P P **21 54 43.8 -1.1**
comp=Z,16nm,0.8s
PET Petropavlovsk 67.88 21 *e*P P **21 54 45.8 +0.7**
PET pmax pmax
comp=Z,158nm,1.1s
PET MLR MLR
comp=Z,400nm,18.0s

PET Petropavlovsk 67.88 21 *e*P P **21 54 45.8 +0.7**
comp=Z,199nm,1.2s
RER Riviere de l'E 68.15 251 *e*P P **21 54 50.0 +2.4**
comp=Z,248nm,0.9s
SFK Sufi-Kurgan 68.56 319 *i*P P **21 54 48.9 -1.1**
SFK pmax pmax
comp=Z,20nm,0.7s
TKM2 Tokmak 2 68.90 323 *i*P P **21 54 50.9 -1.1**
TKM2 pmax pmax
comp=Z,29nm,1.1s
TKM2 Tokmak 2 68.90 323 *e*P P **21 54 50.8 -1.1**
comp=Z,20nm,0.9s
TKM2 LR LR
comp=Z,1μm,19.0s
AAK Ala-Archa 69.40 322 P P **21 54 54.7 -0.3**
comp=Z,26nm,0.8s,baz=124,slow=4.9,SNR=108
AAK Ala-Archa 69.40 322 *e*P P **21 54 54.7 -0.3**
AAK MLR MLR
comp=Z,883nm,20.0s
AAK Ala-Archa 69.40 322 *e*P P **21 54 54.7 -0.3**
AAK LR LR
comp=Z,883nm,20.0s
FRU Bishkek 69.44 322 *i*P P **21 54 53.0 -2.1**
FRU *e* 21 57 36.0
FRU pmax pmax
comp=Z,50nm,1.8s
EKS2 Erkin-Say 69.85 322 *e*P P **21 54 57.5 -0.3**
EKS2 pmax pmax
comp=Z,31nm,0.9s
EKS2 MLR MLR
comp=Z,1μm,20.0s
EKS2 Erkin-Say 69.85 322 *e*P P **21 54 57.5 -0.3**
comp=Z,31nm,0.9s
EKS2 LR LR
comp=Z,1μm,20.0s
KRAR Krasnoyarsk 70.28 341⇑ *i*P P **21 54 59.5 -0.4**
KRAR pmax pmax
comp=Z,22nm,0.9s
MNAS Manas 70.54 321 *i*P P **21 55 01.2 -0.8**
MNAS pmax pmax
comp=Z,34nm,0.8s
YAK Yakutsk 70.90 2 P P **21 55 03.0 -0.6**
comp=Z,51nm,0.6s,baz=38,slow=0.1,SNR=29
YAK LR LR 22 28 32.8
comp=Z,356nm,18.7s,baz=214,slow=38
YAK Yakutsk 70.90 2*c i*P P **21 55 02.8 -0.7**
YAK pmax pmax
comp=Z,119nm,1.0s
YAK pmax pmax
comp=N,57nm,1.1s
YAK pmax pmax
comp=E,24nm,1.1s
YAK Yakutsk 70.90 2 *e*P P **21 55 03.0 -0.6**
comp=E,128nm,1.0s
VNDA Vanda 71.01 172 P P **21 55 04.3 +0.2**
comp=E,12nm,1.0s,baz=319,slow=6.1,SNR=54
VNDA LR LR 22 26 24.0
comp=E,1μm,18.2s,baz=358,slow=36
MA2 Magadan 71.26 13 P P **21 55 06.2 +0.4**
comp=E,32nm,0.8s,baz=222,slow=6.1,SNR=37
MAW Mawson 71.53 201 P P **21 55 07.8 +0.4**
comp=E,14nm,0.7s,baz=85,slow=6.6,SNR=22
MAW LR LR 22 24 01.7
comp=E,547nm,20.3s,baz=70,slow=34
MAW Mawson 71.53 201 P P **21 55 08.1 +0.7**
baz=71,SNR=11
ZALV Zalesovo Beam 71.58 336 P P **21 55 06.2 -1.7**
comp=E,20nm,0.8s,baz=136,slow=5.8,SNR=41
ZALV PKP2bc 22 23 01.4
comp=E,0.7nm,0.6s,baz=186,slow=1.5,SNR=4.8
ZAA1 Zalesovo Array 71.58 336 *e*P P **21 55 06.2 -1.7**
ZAA1 *e*P'P'df **P'P'df** **22 23 01.4 +3.9**
SBA Scott Base 71.95 172 *e*P P **21 55 11.4 +1.6**
SBA pmax pmax
comp=Z,28nm,1.2s
SBA Scott Base 71.95 172 *e*P P **21 55 11.4 +1.6**
comp=Z,28nm,1.2s
KURBB Kurchatov Arra 72.07 331 P P **21 55 09.5 -1.4**
comp=Z,8.2nm,0.9s,baz=130,slow=5.0,SNR=77
KURBB PP **PP** **21 57 53.8 +2.5**
comp=Z,0.8nm,0.3s,baz=137,slow=4.6,SNR=4.1
KURBB PKP2bc 22 22 56.9
comp=Z,0.5nm,0.7s,baz=297,slow=2.7,SNR=5.3
KURK Kurchatov 72.08 331 *e*P P **21 55 10.1 -0.9**
KURK *e* 21 57 53.8
KURK pmax pmax
comp=Z,30nm,1.0s
KURK MLR MLR
comp=Z,1μm,21.0s
KURK Kurchatov 72.08 331 *e*P P **21 55 10.1 -0.9**
comp=Z,30nm,1.0s
KURK *e*PP **PP** **21 57 53.8 +2.3**
KURK LR LR
comp=Z,1μm,21.0s
KKAR Karatay Array 72.11 321 *e*P P **21 55 10.3 -1.0**
KKAR Karatay Array 72.11 321 *e*P P **21 55 10.3 -1.0**
NVS Novosibirsk 72.86 336 *e*P P **21 55 14.5 -1.0**
NVS *e* 21 55 23.7
NVS *e*S **S** **22 04 34.7 -5.9**
NVS pmax pmax
comp=N,47nm,1.9s
NVS pmax pmax
comp=Z,100nm,1.9s
NVS pmax pmax
comp=E,32nm,1.6s
NVS smax smax
comp=N,9.0nm,1.6s
NVS smax smax
comp=E,14nm,1.6s
SMY Shemya 74.03 28 *e*P P **21 55 23.6 +1.2**
SMY pmax pmax
comp=Z,301nm,0.9s
SMY Shemya 74.03 28 *e*P P **21 55 23.6 +1.2**
comp=Z,301nm,0.9s
SEY Seymchan 74.62 12 P P **21 55 25.4 -0.2**
comp=Z,38nm,0.7s,baz=211,slow=4.7,SNR=143
UOSS Minazif 75.58 299 PFAKE 21 55 40.0 +8.0
UOSS LR LR
comp=Z,700nm,22.0s
HATD Hatta, Dubai 75.60 298 *i*P P **21 55 31.4 -0.8**
SNR=5.3
HATD Hatta, Dubai 75.60 298 *i*P P **21 55 31.4 -0.8**
SNR=5.3
HATD Hatta, Dubai 75.60 298 P P **21 55 31.5 -0.8**
ASHO Ashiyiah 75.63 298 *i*P P **21 55 31.5 -0.9**
SNR=5.4
ASHO Ashiyiah 75.63 298 *i*P P **21 55 31.5 -0.9**
SNR=5.4
FAQ Al Faqa, Dubai 76.05 298 *i*P P **21 55 33.8 -0.9**
SNR=24
FAQ Al Faqa, Dubai 76.05 298 *i*P P **21 55 33.8 -0.9**
SNR=24
FAQ Al Faqa, Dubai 76.05 298 P P **21 55 33.9 -0.9**
SNR=6.3
FAQ Al Faqa, Dubai 76.05 298 P P **21 55 33.9 -0.9**
SNR=6.3
BVAR Borovoye Array 77.55 329 P P **21 55 41.5 -1.1**
comp=Z,23nm,1.0s,baz=134,slow=8.5,SNR=65
BRVK Borovoye 77.62 329*c i*P P **21 55 41.8 -1.1**
BRVK pmax pmax
comp=Z,102nm,1.7s
BRVK Borovoye 77.62 329 *e*P P **21 55 42.0 -0.9**
comp=Z,88nm,1.3s
BRVK LR LR
comp=Z,582nm,22.0s
CHKZ Chkalovo 77.80 330 *i*P P **21 55 42.5 -1.4**
CHKZ pmax pmax
comp=Z,79nm,1.1s
ZRNK Zerenda 78.20 329 *i*P P **21 55 44.9 -1.3**
ZRNK pmax pmax
comp=Z,105nm,1.4s
GEYT Alibeck 78.30 312 P P **21 55 46.3 -0.8**
comp=Z,15nm,0.9s,baz=149,slow=3.5,SNR=38
SYO Syowa Base 80.24 201⇓ *e*X P **21 55 56.4 -0.7**
SYO Syowa Base 80.24 201⇑ *e*pP pP 21 56 00.3 -3.3
TIXI Tiksi 80.52 1 P P **21 55 57.1 -1.4**
comp=Z,39nm,0.6s,baz=144,slow=6.0,SNR=129
TIXI ScS **ScS** **22 06 26.8 +3.6**
comp=Z,1.4nm,0.4s,baz=116,slow=1.1,SNR=7.1
TIXI Tiksi 80.52 1*c i*P P **21 55 56.8 -1.6**
TIXI pmax pmax
comp=Z,47nm,0.7s
TIXI MLR MLR
comp=Z,583nm,19.0s
TIXI Tiksi 80.52 1 *e*P P **21 55 56.5 -2.0**
comp=Z,43nm,0.7s
TIXI LR LR

comp=Z,600nm,20.0s
QSPA South Pole Qui 80.97 180 *e*P **P** **21 56 01.9 +0.5**
ABKAR Akbulak array 81.47 323 *e*P **P** **21 56 03.2 -0.8**
BILL Bilibino 82.07 14‖ *e*P **P** **21 56 05.8 -1.0**
BILL *e* 21 56 11.5
BILL *e* 21 59 10.4
BILL *e*S **S** **22 06 24.1 +4.1**
BILL *e*SS **SS** **22 11 43.2 +3.5**
BILL *e*SSS SSS 22 15 04.8
BILL pmax pmax
comp=Z,11nm,1.7s
BILL MLR MLR
comp=Z,329nm,18.0s
BILL Bilibino 82.07 14 *e*P **P** **21 56 06.3 -0.5**
comp=Z,7.7nm,0.9s
BILL LR LR
comp=Z,509nm,21.0s
PPT2 Papeete2 82.35 107 *e*LR LR 22 22 01.4
comp=Z,528nm,28.0s
NRIK Noril'sk 82.52 347 P **P** **21 56 08.8 -0.3**
comp=Z,23nm,1.0s,baz=134,slow=5.1,SNR=39
NRIK LR LR 22 37 52.8
comp=Z,328nm,18.2s,baz=148,slow=39
MLOA Mauna Loa Obse 82.52 69 *e*P **P** **21 56 13.1 +2.4**
POHA Pohakuloa 82.61 69 *e*P **P** **21 56 12.9 +2.0**
comp=Z,134nm,0.9s
NIKH Nikolski High 82.87 34 *e*P **P** **21 56 11.6 +0.3**
comp=Z,64nm,1.0s
AKTO Aktyubinsk 83.09 323 P **P** **21 56 11.8 -0.6**
comp=Z,15nm,0.8s,baz=112,slow=5.3,SNR=47
DAMY Dhamar 83.92 286 *e*P **P** **21 56 19.8 +1.9**
comp=Z,55nm,1.0s
DAMY LR LR
comp=Z,500nm,21.0s
SVE Sverdlovsk 84.31 330*c i*P **P** **21 56 18.3 -0.3**
SVE pmax pmax
comp=Z,99nm,1.6s
UNV Unalaska Valle 84.52 33 *e*P **P** **21 56 19.5 -0.2**
comp=Z,46nm,1.2s
AKUT Akutan 85.03 33 *e*P **P** **21 56 22.1 0.0**
comp=Z,69nm,1.0s
ARU Arti 85.19 329 P **P** **21 56 22.0 -1.0**
comp=Z,14nm,0.9s,baz=105,slow=2.1,SNR=36
ARU Arti 85.19 329*c i*P **P** **21 56 21.3 -1.7**
ARU 21 59 36.5
ARU S **S** **22 06 45.1 -6.8**
ARU SS **SS** **22 12 20.3 -5.9**
ARU pmax pmax
comp=Z,108nm,1.7s
ARU Arti 85.19 329 *e*P **P** **21 56 22.0 -1.0**
comp=Z,155nm,1.6s
ARU LR LR
comp=Z,585nm,19.0s
GAMB Gambell 86.42 23 *e*P **P** **21 56 28.7 -0.2**
comp=Z,25nm,1.0s
SOKR Solikamsk 87.31 332*c i*P **P** **21 56 30.9 -2.4**
SOKR pmax pmax
comp=Z,54nm,1.0s
KMBO Kilima Mbogo 88.27 269 P **P** **21 56 40.5 +1.1**
comp=Z,28nm,0.8s,baz=70,slow=6.4,SNR=85
KMBO Kilima Mbogo 88.27 269 *i* P **P** **21 56 40.7 +1.3**
KMBO pmax pmax
comp=Z,28nm,0.9s
KMBO Kilima Mbogo 88.27 269 *e*P **P** **21 56 40.5 +1.1**
comp=Z,42nm,1.0s
KMBO LR LR
comp=Z,900nm,19.0s
KMBO Kilima Mbogo 88.27 269 P **P** **21 56 40.6 +1.3**
SNR=16
SDPT Sand Point 88.33 33 *e*P **P** **21 56 37.5 -0.8**
comp=Z,94nm,0.7s
FURI Furi 88.44 279 *e*P **P** **21 56 43.2 +2.9**
comp=Z,26nm,0.8s
FURI LR LR
comp=Z,500nm,20.0s
GNI Garni 88.90 311 PFAKE 21 56 50.0 +8.4
GNI LR LR
comp=Z,464nm,22.0s
NVL N'lazarevskaya 89.17 198 *e*P **P** **21 56 43.7 +1.6**
TBLG Delisi 89.25 312 P **P** **21 56 45.0 +2.0**
ZEI Tsey 90.08 313 *e*P **P** **21 56 44.7 -2.5**
ZEI pmax pmax
comp=Z,25nm,0.8s
ONI Oni 90.36 313 P P 21 56 53.9 +5.6
ONI Oni 90.36 313 P P 21 56 53.9 +5.6
NCK Nalchik 90.45 314‖ *e*P **P** **21 56 48.1 -0.5**
NCK pmax pmax
comp=Z,11nm,1.0s
KBZ Khabaz 90.99 314 P **P** **21 56 50.2 -0.9**
comp=Z,7.1nm,0.8s,baz=113,slow=3.7,SNR=27
KBZ PKKPbc **PKKPbc** **22 14 15.7 -1.1**
comp=Z,2.5nm,0.8s,baz=197,slow=0.1,SNR=10
NEY Neytrino 91.02 314‖ *e*P **P** **21 56 52.4 +0.9**
NEY pmax pmax
comp=Z,2.0nm,0.8s
KVAR Kislovodsk Arr 91.18 314 P **P** **21 56 52.5 +0.4**
comp=Z,4.2nm,0.8s,baz=96,slow=14,SNR=5.9
KIV Kislovodsk 91.18 314‖ *i*P **P** **21 56 53.8 +1.7**
KIV *e* 21 57 02.9
KIV pmax pmax
comp=Z,3.0nm,1.0s
KIV Kislovodsk 91.18 314 *e*P **P** **21 56 52.5 +0.4**
comp=Z,6.3nm,0.9s
KIV LR LR
comp=Z,260nm,20.0s
CHVG Ch'k'valeri 91.38 313 P **P** **21 56 53.7 +0.7**
SVW2 Sparrevohn 92.43 28 *e*P **P** **21 56 56.0 -1.3**
comp=Z,7.7nm,0.9s
TTA Tatalina 92.69 27 *e*P **P** **21 56 57.9 -0.7**
TTA pmax pmax
comp=Z,8.0nm,1.0s
TTA Tatalina 92.69 27 *e*P **P** **21 56 57.9 -0.7**
comp=Z,7.7nm,1.0s
OHAK Old Harbor 92.69 33 *e*P **P** **21 56 58.1 -0.5**
comp=Z,38nm,1.4s
SNAA Sanae 92.69 194‖ *e*P **P** **21 56 58.5 -0.1**
SNAA Sanae 92.69 194 *e*P **P** **21 56 59.3 +0.7**
comp=Z,40nm,1.0s
TAOE Nuku Hiva Isla 92.70 99 *e*LR LR 22 26 56.9
comp=Z,363nm,27.7s
KDAK Kodiak Island 93.18 32 *i* P **P** **21 57 03.9 +3.1**
KDAK Kodiak Island 93.18 32 *e*P **P** **21 57 00.4 -0.4**
comp=Z,35nm,1.4s
KDAK LR LR
comp=Z,705nm,21.0s
VRH Novokhopyorsk 93.19 321 *e*P **P** **21 56 59.2 -1.9**
VRH pmax pmax
comp=Z,20nm,0.8s
RSO Redoubt South 93.64 29 *e*P **P** **21 57 01.4 -1.8**
HOM Homer 94.03 30 *e*P **P** **21 57 04.1 -0.7**
comp=Z,79nm,0.8s
SPU Mount Spurr 94.12 29 *e*P **P** **21 57 03.4 -1.8**
BRLK Bradley Lake 94.42 30 *e*P **P** **21 57 05.2 -1.4**
comp=Z,20nm,0.9s
CAST Castle Rocks 94.53 27 *e*P **P** **21 57 05.8 -1.2**
comp=Z,5.2nm,1.0s
BOSA Boshof 94.76 240 P **P** **21 57 09.5 +0.4**
comp=Z,13nm,1.0s,baz=95,slow=3.6,SNR=9.5
VSR Storozhevoye 94.78 321 *e*P **P** **21 57 06.2 -2.2**
VSR pmax pmax
comp=Z,10.0nm,0.8s
LSZ Lusaka 94.79 254 *e*P **P** **21 57 05.4 -4.0**
LSZ pmax pmax
comp=Z,19nm,1.0s
LSZ MLR MLR
comp=Z,980nm,20.0s
LSZ Lusaka 94.79 254 *e*P **P** **21 57 05.4 -4.0**
comp=Z,19nm,1.0s
LSZ LR LR
comp=Z,980nm,20.0s
KTH Kantishna Hill 95.07 27 *e*P **P** **21 57 08.0 -1.5**
comp=Z,8.2nm,1.0s
LPSR Galich'ya Gora 95.12 322 *e*P **P** **21 57 08.1 -1.8**
LPSR pmax pmax
comp=Z,10.0nm,0.9s
BPAW Bear Paw Mtn. 95.14 26 *e*P **P** **21 57 08.3 -1.5**
comp=Z,6.0nm,0.8s
SEW Seward 95.19 30 *e*P **P** **21 57 09.0 -1.0**
comp=Z,23nm,0.9s
RC01 Rabbit Creek A 95.21 29 *e*P **P** **21 57 09.2 -0.9**
comp=Z,26nm,0.9s
TRF Thorofare Moun 95.33 27 *e*P **P** **21 57 09.6 -1.3**
comp=Z,9.9nm,1.2s
MLY Manley 95.40 25 *e*P **P** **21 57 09.9 -1.1**
comp=Z,11nm,0.8s
PMR Palmer 95.57 29 *e*P **P** **21 57 10.4 -1.4**
PMR pmax pmax
comp=Z,14nm,0.9s
PMR Palmer 95.57 29 *e*P **P** **21 57 10.4 -1.4**
comp=Z,14nm,0.9s
BWN Browne 95.81 26 *e*P **P** **21 57 12.2 -0.6**
comp=Z,29nm,0.9s
RND Reindeer 95.96 27 *e*P **P** **21 57 11.5 -2.2**
RND pmax pmax
comp=Z,23nm,0.9s
RND Reindeer 95.96 27 *e*P **P** **21 57 11.5 -2.2**
comp=Z,23nm,0.9s
COLD Coldfoot 95.97 23 *e*P **P** **21 57 13.2 -0.3**
comp=Z,8.8nm,0.8s
COLD *e*PKKPbc **PKKPbc** **22 14 04.0 -0.6**
MCK McKinley 95.97 26 *e*P **P** **21 57 12.0 -1.6**
MCK pmax pmax
comp=Z,14nm,0.9s
MCK McKinley 95.97 26 *e*P **P** **21 57 12.0 -1.6**
comp=Z,14nm,0.9s
SML Sawmill 95.98 28 *e*P **P** **21 57 12.8 -0.9**
SML pmax pmax
comp=Z,23nm,0.8s
SML Sawmill 95.98 28 *e*P **P** **21 57 12.8 -0.9**
comp=Z,23nm,0.8s
WRH Wood River Hil 96.44 26 *e*P **P** **21 57 13.9 -1.8**
comp=Z,14nm,1.0s
MDM Murphy Dome 96.44 25 *e*P **P** **21 57 14.1 -1.6**
comp=Z,8.2nm,1.0s
SCM Sheep Creek Mo 96.46 28 *e*P **P** **21 57 15.6 -0.3**
SCM pmax pmax
comp=Z,20nm,1.0s
SCM Sheep Creek Mo 96.46 28 *e*P **P** **21 57 15.6 -0.3**
comp=Z,20nm,1.0s
CCB Clear Creek Bu 96.58 26 *e*P **P** **21 57 14.2 -2.1**
comp=Z,15nm,1.0s
DHY Denali Highway 96.58 27 *e*P **P** **21 57 15.6 -1.0**
comp=Z,6.8nm,0.8s
COLA College 96.59 25‖ *e*P **P** **21 57 14.5 -1.8**
COLA pmax pmax
comp=Z,7.0nm,0.9s
COLA College 96.59 25 PFAKE 21 57 30.0 +14
COLA LR LR
comp=Z,244nm,20.0s
OBN Obninsk 96.81 325 P **P** **21 57 16.8 -0.8**
comp=Z,11nm,0.6s,baz=29,slow=6.3,SNR=8.4
OBN Obninsk 96.81 325‖ *e*P **P** **21 57 16.7 -0.8**
OBN *e**SP **sP** **21 57 25.1 -1.4**
OBN pmax pmax
comp=Z,28nm,0.9s
OBN Obninsk 96.81 325 *e*P **P** **21 57 16.8 -0.8**
comp=Z,24nm,0.5s
OBN LR LR
comp=Z,361nm,20.0s
HDA Harding Lake 96.92 26 *e*P **P** **21 57 15.7 -2.2**
comp=Z,12nm,0.8s
ILAR Eielson Array 96.99 26 P **P** **21 57 15.3 -2.9**
comp=Z,4.1nm,0.9s,baz=269,slow=4.2,SNR=31
ILAR PKIKP **PKiKP** **22 01 53.0 -1.1**
comp=Z,1.0nm,0.9s,baz=308,slow=4.4,SNR=2.7
ILAR PKKPbc **PKKPbc** **22 13 58.6 -3.1**
comp=Z,1.7nm,0.8s,baz=86,slow=1.8,SNR=8.6
ILAR LR LR 22 35 07.4
comp=Z,147nm,20.6s,baz=278,slow=32
ILB Eielson Array 96.99 26 *e*P **P** **21 57 15.3 -2.9**
ILB *e*PKiKP **PKiKP** **22 01 53.0 -1.1**
ILB *e*PKKPbc **PKKPbc** **22 13 58.6 -3.1**
CSS Mathiatis 97.01 304 PFAKE 21 57 30.0 +11
CSS LR LR
comp=Z,127nm,20.0s
TMCR Tamitsa 97.02 334 *e*P **P** **21 57 15.9 -2.3**
TMCR pmax pmax
comp=Z,28nm,0.8s
KLU Klutina 97.09 29 *e*P **P** **21 57 18.5 -0.3**
comp=Z,8.7nm,1.0s
KLU *e*PKKPbc **PKKPbc** **22 13 58.2 -3.3**
DIV Divide 97.12 29 *e*P **P** **21 57 18.5 -0.4**
comp=Z,25nm,1.0s
BR101 Keskin Array S 97.25 309 *e*P **P** **21 57 18.1 -2.1**
BRTR Keskin Array B 97.25 309 P P **21 57 18.1 -2.1**
comp=Z,2.4nm,0.9s,baz=125,slow=5.6,SNR=13
BRTR LR LR 22 47 38.0
comp=Z,115nm,20.4s,baz=92,slow=40
PAX Paxson 97.44 27 *e*P **P** **21 57 19.4 -0.9**
PAX pmax pmax
comp=Z,8.0nm,1.1s
PAX Paxson 97.44 27 *e*P **P** **21 57 19.4 -0.9**
comp=Z,8.2nm,1.1s
BMRM Bremner River 97.67 29 *e*P **P** **21 57 21.2 -0.2**
comp=Z,16nm,0.9s
FYU Fort Yukon 97.84 24 *e*P **P** **21 57 21.8 -0.1**
comp=Z,20nm,1.1s
ANTO Ankara 97.91 309 PFAKE 21 57 30.0 +6.9
ANTO LR LR
comp=Z,18nm,22.0s
DOT Dot Lake 98.12 27 *e*P **P** **21 57 22.4 -0.9**
comp=Z,17nm,0.8s
DOT LR LR
comp=Z,2μm,22.0s
CRQM Cirque 98.37 30 *e*P Pdif 21 57 25.7 +1.0
APA Apatity 99.14 337 *e*P **Pdif** **21 57 30.0 +2.3**
APA MLR MLR
comp=Z,800nm,19.0s
EGAK Eagle 99.44 26 *e*P **Pdif** **21 57 28.7 -0.4**
comp=Z,6.1nm,1.0s
EGAK *e*PKKPbc **PKKPbc** **22 13 53.8 -1.1**
EGAK LR LR
comp=Z,345nm,22.0s
ISP Isparta 99.52 307 PFAKE 21 57 40.0 +10
ISP LR LR
comp=Z,303nm,21.0s
AKASG Malin Array Be 101.00 320 P **Pdif** **21 57 34.0 -2.4**
comp=Z,1.4nm,0.6s,baz=74,slow=4.7,SNR=5.9
AKBB Malin Array Si 101.00 320 *e*P **Pdif** **21 57 34.1 -2.3**
AKBB Malin Array Si 101.00 320 *e*Pdif **Pdif** **21 57 34.0 -2.3**
KIEV Kiev 101.01 320 PFAKE 21 57 50.0 +14
KIEV LR LR
comp=Z,458nm,21.0s
ARA0 ARCESS Array S 101.95 339 *e*Pdif **Pdif** **21 57 38.6 -1.6**
ARCES ARCESS Array B 101.95 339 P **Pdif** **21 57 38.6 -1.6**
comp=Z,2.8nm,0.7s,baz=41,slow=8.0,SNR=6.3
INK Inuvik 102.32 22 P **Pdif** **21 57 40.6 -1.3**
comp=Z,1.4nm,0.3s,baz=264,slow=8.9,SNR=3.9
INK PKKPbc **PKKPbc** **22 13 43.5 -3.0**
comp=Z,2.9nm,0.9s,baz=100,slow=7.3,SNR=7.8
INK Inuvik 102.32 22 *e*Pdif **Pdif** **21 57 40.6 -1.3**
INK *e*PKiKP **PKiKP** **22 02 05.2 +1.7**
INK *e*PKKPbc **PKKPbc** **22 13 43.5 -3.0**
NACGM Naroch 102.44 324 *e*LR LR 22 01 38.0
FIA0 FINESS Array S 102.46 331 *e*PKiKP **PKiKP** **22 02 03.8 -0.2**
FINES FINESS Array B 102.46 331 PKiKP **PKiKP** **22 02 03.8 -0.2**
comp=Z,2.2nm,0.7s,baz=108,slow=6.2,SNR=8.2
SPITS Spitsbergen Ar 102.69 348 P **Pdif** **21 57 41.8 -1.6**
comp=Z,7.8nm,0.8s,baz=108,slow=8.0,SNR=9.2
MLR Muntele Rosu 103.19 315 PKKPbc PKKPbc 22 13 41.3 -2.2
comp=Z,0.5nm,0.9s,baz=142,slow=2.3,SNR=4.5
MLR Muntele Rosu 103.19 315 *e*PP PP 22 02 09.2 +7.5
MLR *e*PKKPbc **PKKPbc** **22 13 41.3 -2.2**
KBS Kingsbay 103.28 350 PFAKE 21 58 00.0 +14
KBS LR LR
comp=Z,585nm,21.0s
SANT Santorini 103.50 305 PFAKE 21 58 00.0 +12
SANT LR LR
comp=Z,403nm,20.0s
IDI Anoyia 103.94 304 PFAKE 21 58 00.0 +10
IDI LR LR
comp=Z,300nm,19.0s
PSZ Piszkesteto 107.22 317 PFAKE 22 02 30.0
PSZ LR LR
comp=Z,196nm,21.0s
DPC Dobruska-Polom 109.23 320 *e*PKP **PKiKP** **22 02 18.1 +1.2**
NB2 NORSAR Subarra 109.58 332 PKPdf **PKiKP** **22 02 16.6 -0.7**
comp=Z,1.8nm,0.8s,baz=68,slow=1.9
NB200 NORSAR Array S 109.58 332 *e*Pdif **Pdif** **21 58 12.8 -1.7**
NB200 *e*PKiKP **PKiKP** **22 02 17.0 -0.3**
NOA NORSAR Array B 109.58 332 Pdiff **Pdif** **21 58 12.8 -1.7**
comp=Z,1.8nm,0.9s,baz=71,slow=4.5,SNR=5.6
NOA PKiKP **PKiKP** **22 02 17.0 -0.3**
comp=Z,2.6nm,0.8s,baz=263,slow=3.3,SNR=8.7
TREC Trest 109.93 319 AMS AMS 23 04 10.0
comp=Z,500nm,22.0s
RES Resolute Bay 110.45 11 Pdiff **Pdif** **21 58 16.5 -1.5**
comp=Z,0.8nm,0.5s,baz=301,slow=5.9,SNR=13
BRG Berggiesshubel 110.62 321 *e*P **PKKPdf** **22 13 36.9 -0.9**
comp=Z,5.3nm,1.4s
CUC Castrocucco 110.95 309 PFAKE 22 02 30.0
CUC LR LR
comp=Z,154nm,20.0s
CLL Collm 111.11 322 *i* PKiKP **PKiKP** **22 02 20.6 +0.2**
comp=Z,3.0nm,0.7s
CLL *i* 22 02 28.4
CLL Collm 111.11 322 *i* PKIKP **PKiKP** **22 02 20.6 +0.2**
CLL *i* 22 02 28.4
CLL pmax pmax
comp=Z,3.0nm,0.7s
GERES GERESS Array B 111.17 319 PKiKP **PKiKP** **22 02 20.6 -0.1**
comp=Z,1.4nm,0.6s,baz=65,slow=1.8,SNR=18
GERES PKKPbc **PKKPbc** **22 13 16.8 -1.8**
comp=Z,0.6nm,0.8s,baz=251,slow=4.1,SNR=4.3
KHC Kasperske Hory 111.19 319 *e*PKP **PKiKP** **22 02 21.2 +0.5**
KHC Kasperske Hory 111.19 319 *e*PKIKP **PKiKP** **22 02 21.2 +0.5**
CMW Cultus Mountai 111.39 41 P **PKiKP** **22 02 22.6 +1.4**
YKA Yellowknife Ar 111.42 26 Pdiff **Pdif** **21 58 22.1 -0.3**
comp=Z,0.7nm,0.8s,baz=294,slow=4.8,SNR=10
YKA PKIKP **PKiKP** **22 02 20.8 +0.2**
comp=Z,2.8nm,0.7s,baz=294,slow=1.8,SNR=33
YKA PKKPbc **PKKPbc** **22 13 12.9 -5.1**
comp=Z,1.7nm,0.8s,baz=106,slow=3.3,SNR=22
YKB5 Yellowknife Ar 111.42 26 *e*Pdif **Pdif** **21 58 22.1 -0.3**
YKB5 *e*PKiKP **PKiKP** **22 02 20.8 +0.2**
YKB5 *e*PKKPbc **PKKPbc** **22 13 12.9 -5.1**
B05A Bryant 111.44 42 P **PKiKP** **22 02 22.6 +1.5**
baz=281
JCW Jim Creek 111.56 42 *e*PKiKP **PKiKP** **22 02 22.6 +1.2**
HUMO Hull Mountain 111.76 48 *e*PKiKP **PKiKP** **22 02 23.9 +2.0**
RPW Rockport 111.78 41 *e*PKiKP **PKiKP** **22 02 23.0 +1.2**
I04A Tendick Farm, 111.98 46 P **PKiKP** **22 02 23.6 +1.2**
baz=279
M02C Callahan 112.00 49 P **PKiKP** **22 02 24.3 +1.8**
baz=278
N02D Trinity Center 112.16 49 P **PKiKP** **22 02 24.7 +1.9**
baz=278
ABTA Abfaltersbach 112.35 317 *i* PKiKP **PKiKP** **22 02 21.0 -2.1**
AQU L'Aquila 112.46 312 PFAKE 22 02 40.0
AQU LR LR
comp=Z,431nm,21.0s
NAC Naches 112.57 43 P **PKiKP** **22 02 24.8 +1.5**
M04C Macdoel 112.69 49 P **PKiKP** **22 02 25.3 +1.4**
baz=279
J05D Fort Rock, OR 112.90 47 P **PKiKP** **22 02 25.8 +1.6**
baz=280
O03D Paynes Creek 112.93 50 P **PKiKP** **22 02 25.1 +0.8**
baz=278
B08A Colville Reser 113.22 41 *e*PKiKP **PKiKP** **22 02 25.4 +0.9**
CLTB Caltabellotta 113.23 307 PFAKE 22 02 40.0
CLTB LR LR
comp=Z,106nm,19.0s
K05A Summer Lake 113.24 47 *e*PKiKP **PKiKP** **22 02 26.8 +1.8**
ORV Oroville 113.26 51 *e*PKiKP **PKiKP** **22 02 26.0 +1.2**
ORV Oroville 113.26 51 *e*PKiKP **PKiKP** **22 02 26.0 +1.2**
HAWA Hanford 113.52 43 *e*PKiKP **PKiKP** **22 02 26.5 +1.3**
HAWA LR LR
comp=Z,377nm,21.0s
AFDM Forest Hills D 113.75 51 *e*PKiKP **PKiKP** **22 02 27.2 +1.4**
D08A Wollman Farm, 113.78 42 *e*PKiKP **PKiKP** **22 02 27.1 +1.5**
MOD Modoc Plateau 113.81 48 *e*PKiKP **PKiKP** **22 02 27.6 +1.6**
FUORN Ofenpass-Fuorn 113.89 317 *e*PKiKP **PKiKP** **22 02 26.4 +0.3**
DAVA Damuels 114.00 318 *i* PKPdf **PKiKP** **22 02 26.0 -0.2**
CMB Columbia Colle 114.33 52 *e*PKiKP PKPdf 22 02 28.3 +1.3
CMB Columbia Colle 114.33 52 *e*PKiKP **PKiKP** **22 02 28.3 +1.3**
TUE Stuetta 114.54 317 *e*PKiKP **PKiKP** **22 02 27.6 +0.2**
NEW Newport 114.68 41 P PKPdf 22 02 28.1 +0.7
baz=285
NEW Newport 114.68 41 *e*PKiKP PKPdf 22 02 28.3 +0.9
NEW Newport 114.68 41 *e*PKiKP PKPdf 22 02 28.2 +0.9
BFO Black Forest 114.76 319 PFAKE 22 02 40.0 +13
BFO LR LR
comp=Z,230nm,19.0s
WVOR Wild Horse Val 114.94 47 *e*PKiKP PKPdf 22 02 25.5 -2.6
WVOR Wild Horse Val 114.94 47 *e*PKiKP **PKiKP** **22 02 25.5 -2.6**
WAKR Walker 115.00 52 *e*PKiKP **PKPdf** **22 02 30.5 +2.0**
PKM Mcpherson Peak 115.18 56 P **PKPdf** **22 02 30.9 +2.0**
baz=277
BMO Blue Mountains 115.38 45 PFAKE 22 02 40.0 +11
BMO LR LR
comp=Z,301nm,20.0s
NV01 Mina Array Sit 115.89 52 *e*PKPdf **PKPdf** **22 02 31.8 +1.5**
NV01 *e*PKKPbc **PKKPab** **22 13 05.6 -0.6**
NVAR Mina Array Bea 115.89 52 PKP **PKPdf** **22 02 31.8 +1.5**
comp=Z,12nm,0.8s,baz=264,slow=2.3,SNR=37
NVAR PKKPbc **PKKPab** **22 13 05.6 -0.6**
comp=Z,0.5nm,0.6s,baz=109,slow=5.7,SNR=5.1
SENIN Lac Senin/Sane 115.94 317 *e*PKPdf **PKPdf** **22 02 30.3 +0.2**
BSMT Bassoo Peak 116.30 41 *e*PKPdf **PKPdf** **22 02 31.3 +0.6**
CWC Cottonwood Cre 116.38 54 P **PKPdf** **22 02 32.4 +1.2**
baz=279
WALA Waterton Lakes 116.50 39 *e*PKPdf **PKPdf** **22 02 31.8 +0.9**
WALA LR LR
comp=Z,400nm,21.0s
KEST Kesra 116.55 305 PKP **PKPdf** **22 02 31.8 +0.4**
comp=Z,2.4nm,0.6s,baz=30,slow=2.8,SNR=4.1
EDW2 Edwards Air Fo 116.67 56 P **PKPdf** **22 02 33.3 +1.7**
baz=278
BNI Bardonecchia 116.70 316 PFAKE 22 02 40.0 +8.5
BNI LR LR
comp=Z,391nm,19.0s
MWC Mount Wilson 116.70 56 *e*PKiKP **PKPdf** **22 02 33.7 +1.8**
MWC Mount Wilson 116.70 56 *e*PKPdf **PKPdf** **22 02 33.7 +1.8**
MFID Camas Ranch 116.74 46 *e*PKPdf **PKPdf** **22 02 33.3 +1.7**
DAC Darwin (Calif) 116.79 54 *e*PKiKP **PKPdf** **22 02 34.0 +2.0**
DAC Darwin (Calif) 116.79 54 *e*PKPdf **PKPdf** **22 02 34.0 +2.0**
LRMC Laurel Mtn Rad 116.83 55 P **PKPdf** **22 02 33.7 +1.7**
baz=278
MPMC Manual Prospec 116.90 54 P **PKPdf** **22 02 33.8 +1.6**
baz=279
SWMT Swartz Lake 116.91 41 *e*PKPdf **PKPdf** **22 02 32.3 +0.5**
BFSC Mount Baldy Ra 117.03 56 P **PKPdf** **22 02 33.7 +1.2**
baz=278
MSO Missoula 117.14 42 P **PKPdf** **22 02 32.6 +0.3**
baz=287
MSO Missoula 117.14 42 *e*PKPdf **PKPdf** **22 02 32.5 +0.3**
FURC Furnace Creek, 117.34 54 P **PKPdf** **22 02 34.9 +2.2**
baz=280
CHMT Chamberlain Mo 117.57 41 P **PKPdf** **22 02 33.9 +0.7**
GSC Goldstone, Bar 117.57 55 P **PKPdf** **22 02 35.2 +1.8**
baz=279
GSC Goldstone, Bar 117.57 55 *e*PKIKP **PKPdf** **22 02 35.5 +2.1**
GSC *e* 22 03 53.0
GSC Goldstone, Bar 117.57 55 *e*PKPdf **PKPdf** **22 02 35.5 +2.1**
GSC *e*PP **PP** **22 03 53.0 +7.2**
HLID Hailey 117.70 45 P **PKPdf** **22 02 35.2 +1.7**
baz=285
HLID Hailey 117.70 45 *e*PKPdf **PKPdf** **22 02 35.4 +1.9**
HLID LR LR
comp=Z,288nm,19.0s
TPNV Topopah Spring 117.75 53 P **PKPdf** **22 02 35.2 +1.4**
baz=280
TPNV Topopah Spring 117.75 53 *e*PKIKP **PKPdf** **22 02 35.7 +1.9**
TPNV Topopah Spring 117.75 53 *e*PKPdf **PKPdf** **22 02 35.7 +1.9**
ELK Elko 117.78 49 *e*PKIKP **PKPdf** **22 02 35.5 +1.7**
ELK Elko 117.78 49 *e*PKPdf **PKPdf** **22 02 35.5 +1.7**
SHOC Shoshone, Teco 117.90 54 P **PKPdf** **22 02 35.7 +1.8**
baz=280
R11A Troy Canyon, C 118.01 51 P **PKPdf** **22 02 35.8 +1.5**
baz=281
R11A Troy Canyon, C 118.01 51 *e*PKPdf **PKPdf** **22 02 36.1 +1.8**
HEC Hector,Ludlow 118.02 55 P **PKPdf** **22 02 35.9 +1.6**
baz=279
PFO Pinyon Flats O 118.10 57 P **PKPdf** **22 02 36.1 +1.6**
baz=278
PFO Pinyon Flats O 118.10 57 *e*PKIKP **PKPdf** **22 02 36.5 +2.0**
PFO MLR MLR
comp=Z,455nm,20.0s
PFO Pinyon Flats O 118.10 57 *e*PKPdf **PKPdf** **22 02 36.5 +2.0**
PFO LR LR
comp=Z,455nm,20.0s
MONP2 Monument Peak 118.23 58 P **PKPdf** **22 02 36.8 +1.9**
baz=278
BELC Belle Mtn. Jos 118.42 56 P **PKPdf** **22 02 36.9 +1.8**
baz=279
LRM Limekiln Ridge 118.42 42 *e*PKPdf **PKPdf** **22 02 36.1 +1.1**
MCMT McKenzie Canyo 118.45 44 *e*PKPdf **PKPdf** **22 02 36.6 +1.6**
DLMT Dillon 118.46 43 PFAKE 22 02 50.0 +15
DLMT LR LR
comp=Z,800nm,21.0s
GMRC Granite Mounta 118.58 55 P **PKPdf** **22 02 37.3 +1.9**
baz=280
LCCM Lewis and Clar 118.80 42 *e*PKPdf **PKPdf** **22 02 36.6 +1.1**
BC3 Big Chuckawall 118.92 57 P **PKPdf** **22 02 37.8 +1.7**
baz=279
BOZ Bozeman (W) 119.03 42 P **PKPdf** **22 02 37.1 +1.1**
baz=288

BOZ Bozeman (W) 119.03 42 ePKIKP PKPdf 22 02 37.5 +1.5
BOZ MLR MLR
comp=Z,228nm,20.0s
BOZ Bozeman (W) 119.03 42 ePKPdf PKPdf 22 02 37.5 +1.5
BOZ LR LR
comp=Z,228nm,20.0s
IRM Iron Mountain 119.10 56 P PKPdf 22 02 38.1 +1.8
baz=280
HVU Hansel Valley 119.33 47 ePKIKP PKPdf 22 02 38.3 +1.6
HVU Hansel Valley 119.33 47 ePKPdf PKPdf 22 02 38.3 +1.6
BGU Big Grassy Mou 119.36 48 ePKPdf PKPdf 22 02 38.3 +1.6
QLMT Earthquake Lak 119.41 43 ePKPdf PKPdf 22 02 38.9 +2.0
EGMT Eagleton 119.45 39 PFAKE 22 02 50.0 +13
EGMT LR LR
comp=Z,388nm,21.0s
GLA Glamis 119.53 57 P PKPdf 22 02 38.8 +1.6
baz=279
GLA Glamis 119.53 57 ePKIKP PKPdf 22 02 39.3 +2.1
GLA Glamis 119.53 57 ePKPdf PKPdf 22 02 39.3 +2.1
Y12C Blythe 119.67 56 P PKPdf 22 02 38.9 +1.6
baz=280
Y12C Blythe 119.67 56 ePKPdf PKPdf 22 02 39.1 +1.8
DUG Dugway, Tooele 119.70 49 P PKPdf 22 02 38.8 +1.3
baz=284
DUG Dugway, Tooele 119.70 49 ePKIKP PKPdf 22 02 39.3 +1.9
DUG MLR MLR
comp=Z,260nm,19.0s
DUG Dugway, Tooele 119.70 49 ePKPdf PKPdf 22 02 39.3 +1.9
DUG LR LR
comp=Z,260nm,19.0s
PDMCI Parker Dam,Lak 119.89 56 P PKPdf 22 02 39.7 +1.9
baz=280
YFT Old Faithful 119.93 44 ePKPdf PKPdf 22 02 41.0 +3.2
W13A Hualapai Mount 119.96 55 ePKPdf PKPdf 22 02 40.3 +2.1
IMW Indian Meadow 120.03 44 ePKPdf PKPdf 22 02 39.5 +1.4
FXWY Fox Creek 120.05 45 ePKPdf PKPdf 22 02 38.8 +0.7
LCMT Little Creek M 120.10 52 ePKPdf PKPdf 22 02 40.5 +2.3
H17A Grant Village 120.12 44 P PKPdf 22 02 40.8 +2.6
baz=288
H17A Grant Village 120.12 44 ePKPdf PKPdf 22 02 41.0 +2.7
FLWY Flagg Ranch 120.14 44 ePKPdf PKPdf 22 02 40.2 +2.0
LKWY Lake 120.19 43 PFAKE 22 02 50.0 +12
LKWY LR LR
comp=Z,371nm,19.0s
MOOW Moose Ponds 120.21 44 ePKPdf PKPdf 22 02 39.8 +1.4
HWUT Hardware Ranch 120.25 47 ePKPdf PKPdf 22 02 39.5 +1.0
HWUT LR LR
comp=Z,377nm,20.0s
REDW Red Top Meadow 120.25 45 ePKPdf PKPdf 22 02 39.8 +1.3
AHID Auburn Hatcher 120.25 45 ePKPdf PKPdf 22 02 40.1 +1.6
AHID LR LR
comp=Z,416nm,19.0s
GCMT Greycliff 120.28 42 ePKPdf PKPdf 22 02 39.8 +1.5
SNOW Snow King Moun 120.29 45 ePKPdf PKPdf 22 02 40.6 +2.0
NLU North Lily Min 120.31 49 ePKPdf PKPdf 22 02 40.4 +1.7
LOHW Long Hollow 120.35 44 ePKPdf PKPdf 22 02 40.0 +1.4
CTU Camp Tracy 120.36 48 ePKPdf PKPdf 22 02 40.1 +1.4
CTU LR LR
comp=Z,200nm,20.0s
KNB Kanab 120.42 52 ePKIKP PKPdf 22 02 41.3 +2.4
KNB Kanab 120.42 52 ePKPdf PKPdf 22 02 41.3 +2.4
113A Mohawk Valley, 120.46 57 PFAKE 22 02 50.0 +11
113A LR LR
comp=Z,400nm,21.0s
TCUT Toone Canyon 120.50 47 ePKPdf PKPdf 22 02 40.7 +1.6
JLU Jordanelle 120.61 48 ePKPdf PKPdf 22 02 40.8 +1.5
MPU Maple Canyon 120.62 49 ePKPdf PKPdf 22 02 41.0 +1.7
MTPU Mount Pierson 120.69 51 ePKPdf PKPdf 22 02 42.3 +2.6
RLMT Red Lodge 120.77 42 P PKPdf 22 02 40.9 +1.5
baz=290
RLMT Red Lodge 120.77 42 ePKPdf PKPdf 22 02 41.0 +1.6
RLMT LR LR
comp=Z,298nm,20.0s
Y14A Wickenburg 120.89 56 ePKPdf PKPdf 22 02 41.5 +1.7
U15A North Rim 120.97 53 ePKPdf PKPdf 22 02 42.6 +2.5
TMUT Trail Mountain 121.12 49 ePKPdf PKPdf 22 02 42.3 +1.9
TAM Tamanrasset 121.19 291 ePKIKP PKPdf 22 02 42.2 +1.4
TAM Tamanrasset 121.19 291 ePKPdf PKPdf 22 02 42.2 +1.4
BW06 Boulder Array 121.34 45 P PKPdf 22 02 41.5 +0.9
baz=288
BW06 Boulder Array 121.34 45 ePKPdf PKPdf 22 02 41.7 +1.1
BW06 LR LR
comp=Z,265nm,19.0s
PD31 Pinedale Array 121.34 45 ePKPdf PKPdf 22 02 41.2 +0.6
PD31 ePKKPbc PKKPab 22 12 42.2 0.0
PDAR Pinedale Array 121.34 45 PKP PKPdf 22 02 41.2 +0.6
comp=Z,11nm,0.7s,baz=239,slow=1.3,SNR=84
PDAR PKKPbc PKKPab 22 12 42.2 0.0
comp=Z,1.3nm,0.8s,baz=102,slow=6.2,SNR=8.6
214A Organ Pipe Nat 121.39 58 P PKPdf 22 02 42.3 +1.6
baz=280
P17A Butcher Ranch, 121.43 49 ePKPdf PKPdf 22 02 42.5 +1.7
SRU San Rafael Swe 121.69 49 ePKIKP PKPdf 22 02 42.5 +1.2
SRU San Rafael Swe 121.69 49 ePKPdf PKPdf 22 02 42.5 +1.2
WUAZ Wupatki 121.89 54 P PKPdf 22 02 43.4 +1.6
baz=283
WUAZ Wupatki 121.89 54 ePKPdf PKPdf 22 02 43.9 +2.1
FCC Fort Churchill 121.91 23 ePKIKP PKPdf 22 02 40.7 -0.1
FCC Fort Churchill 121.91 23 ePKPdf PKPdf 22 02 40.7 -0.1
X16A Lo Mia Camp, P 122.07 55 ePKPdf PKPdf 22 02 44.4 +2.1
DGMT Dagmar 122.67 37 P PKPdf 22 02 44.4 +1.7
baz=296
DGMT Dagmar 122.67 37 ePKPdf PKPdf 22 02 44.2 +1.4
DGMT LR LR
comp=Z,299nm,20.0s
PV09 Paradox Valley 122.90 50 ePKPdf PKPdf 22 02 45.9 +2.0
PV10 Paradox Valley 123.00 50 ePKPdf PKPdf 22 02 45.8 +1.8
TUC Tucson 123.02 57 P PKPdf 22 02 45.5 +1.6
baz=281
TUC Tucson 123.02 57 ePKIKP PKPdf 22 02 46.0 +2.0
TUC Tucson 123.02 57 ePKPdf PKPdf 22 02 46.0 +2.0
PV05 Paradox Valley 123.04 50 ePKPdf PKPdf 22 02 45.8 +1.8
O20A White River Ci 123.09 48 P PKPdf 22 02 45.5 +1.5
baz=288
O20A White River Ci 123.09 48 ePKPdf PKPdf 22 02 45.5 +1.5
A25A Svangstu Ranch 123.10 36 P PKPdf 22 02 44.5 +1.0
baz=298
X18A Snowflake 123.25 55 ePKPdf PKPdf 22 02 46.5 +2.1
W18A Petrified Fore 123.28 54 P PKPdf 22 02 46.0 +1.5
baz=284
W18A Petrified Fore 123.28 54 ePKPdf PKPdf 22 02 46.6 +2.1
B25A Knox Farm, Ray 123.38 37 P PKPdf 22 02 45.2 +1.1
baz=297
PV01 Paradox Valley 123.42 50 ePKPdf PKPdf 22 02 46.6 +1.8
HSIG 123.44 61 ePKPdf PKPdf 22 02 46.2 +1.4
K22A Casper 123.48 44 P PKPdf 22 02 45.2 +0.5
baz=291
K22A Casper 123.48 44 ePKPdf PKPdf 22 02 45.5 +0.8
K22A eSdif Sdif 22 12 24.0 +1.7
K22A LR LR
comp=Z,298nm,20.0s
C25A Freed Ranch, W 123.58 38 P PKPdf 22 02 46.1 +1.6
baz=297
MVCO Mesa Verde 123.73 51 P PKPdf 22 02 47.1 +1.7
baz=286
MVCO Mesa Verde 123.73 51 ePKPdf PKPdf 22 02 47.5 +2.1
A26A Wade Farm, Ken 123.75 36 P PKPdf 22 02 45.6 +0.8
baz=299
D25A Fairfield 123.79 38 P PKPdf 22 02 46.5 +1.6
baz=296
B26A Jensen Ranch, 123.88 37 P PKPdf 22 02 45.9 +0.8
baz=298
E25A Miller Ranch, 124.02 39 P PKPdf 22 02 46.4 +1.0
baz=296
A27A Ledoux Ranch, 124.18 36 P PKPdf 22 02 46.5 +0.9
baz=300
C26A Wahner Farm, P 124.22 37 P PKPdf 22 02 46.5 +0.8
baz=298
F25A Bowman 124.23 40 P PKPdf 22 02 46.6 +0.8
baz=296
SMCO Snowmass 124.31 48 ePKPdf PKPdf 22 02 48.3 +1.6
D26A Manning 124.38 38 P PKPdf 22 02 47.0 +1.0
baz=297
319A Douglas 124.45 58 ePKPdf PKPdf 22 02 48.9 +2.1
N23A Red Feather La 124.50 46 P PKPdf 22 02 47.8 +1.0
baz=290
N23A Red Feather La 124.50 46 ePKPdf PKPdf 22 02 48.3 +1.5
G25A Newell 124.57 40 P PKPdf 22 02 46.8 +0.2
baz=295
RSSD Black Hills 124.61 42 P PKPdf 22 02 47.0 +0.2
baz=294
RSSD Black Hills 124.61 42 ePKIKP PKPdf 22 02 46.9 +0.1
RSSD Black Hills 124.61 42 ePKPdf PKPdf 22 02 46.9 +0.1
E26A Carlson Angus 124.62 39 P PKPdf 22 02 47.3 +0.7
baz=297
C27A Sayler Ranch, 124.62 37 P PKPdf 22 02 47.5 +1.0
baz=298
H25A Fruitdale 124.69 41 P PKPdf 22 02 46.9 +0.2
baz=295
PHWY Pilot Hill 124.70 46 ePKPdf PKPdf 22 02 48.0 +0.8
PHWY LR LR
comp=Z,101nm,22.0s
A28A Rude Farm, Bot 124.76 35 P PKPdf 22 02 47.2 +0.5
baz=300
F26A Lodgepole 124.76 39 P PKPdf 22 02 47.4 +0.6
baz=296
I25A Rochford 124.85 42 P PKPdf 22 02 47.4 +0.1
baz=294
S22A 4UR Ranch, Cre 124.85 50 ePKPdf PKPdf 22 02 49.6 +2.0
D27A Center 124.90 38 P PKPdf 22 02 47.9 +0.8
baz=298
B28A Dugan Ranch, T 124.94 36 P PKPdf 22 02 47.7 +0.7
baz=300
TORD Torodi Ar. Bea 124.97 280 PKP PKPdf 22 02 48.5 +0.5
comp=Z,44nm,0.7s,baz=72,slow=2.0,SNR=235
TORD PKKPbc PKKPab 22 12 27.8 +0.4
comp=Z,1.1nm,0.9s,baz=272,slow=3.9,SNR=4.8
TOA1 Torodi Ar. Sit 124.97 280 ePKPdf PKPdf 22 02 48.5 +0.5
TOA1 eSdif Sdif 22 12 27.8 -7.6
SLBS Sierra La Lagu 124.99 67 ePKPdf PKPdf 22 02 50.2 +2.2
G26A Maurine 125.05 40 P PKPdf 22 02 47.6 +0.1
baz=296
J25A Sunshine Ranch 125.06 43 P PKPdf 22 02 47.9 +0.3
baz=294
ISCO Idaho Springs 125.11 47 P PKPdf 22 02 49.1 +1.1
baz=290
ISCO Idaho Springs 125.11 47 ePKIKP PKPdf 22 02 49.1 +1.1
ISCO MLR MLR
comp=Z,299nm,20.0s
ISCO Idaho Springs 125.11 47 ePKPdf PKPdf 22 02 49.1 +1.1
ISCO LR LR
comp=Z,299nm,20.0s
F27A Lemmon 125.16 39 P PKPdf 22 02 48.0 +0.4
baz=297
E27A Carson 125.19 38 P PKPdf 22 02 48.5 +0.8
baz=298
H26A Fairpoint 125.23 41 P PKPdf 22 02 48.2 +0.4
baz=295
A29A Manning Farm, 125.34 35 P PKPdf 22 02 47.8 +0.1
baz=302
D28A Regan 125.43 37 P PKPdf 22 02 48.7 +0.7
baz=299
G27A Dupree 125.44 40 P PKPdf 22 02 48.5 +0.4
baz=297
121A Cookes Peak, D 125.45 56 P PKPdf 22 02 50.4 +1.7
baz=283
B29A Wagenman Farm, 125.51 35 P PKPdf 22 02 48.5 +0.4
baz=301
H27A Howes 125.67 41 P PKPdf 22 02 48.7 +0.1
baz=296
Q24A Divide 125.73 48 P PKPdf 22 02 50.2 +0.9
baz=290
Q24A Divide 125.73 48 ePKPdf PKPdf 22 02 50.7 +1.4
Y22D IRIS PASSCAL I 125.79 54 PFAKE 22 03 00.0 +11
Y22D LR LR
comp=Z,900nm,22.0s
ESDC Sonseca Array 125.83 313 PKP PKPdf 22 02 49.6 +0.6
comp=Z,2.9nm,0.7s,baz=17,slow=3.2,SNR=22
A30A Hoffart Farm, 125.85 34 P PKPdf 22 02 48.9 +0.1
baz=302
SDCO Great Sand Dun 125.86 50 P PKPdf 22 02 50.9 +1.4
baz=289
SDCO Great Sand Dun 125.86 50 ePKPdf PKPdf 22 02 50.2 +0.7
F28A McLaughlin 125.93 39 P PKPdf 22 02 49.2 +0.2
baz=298
I27A Quinn 125.93 41 P PKPdf 22 02 49.4 +0.3
baz=296
ANMO Albuquerque 125.93 53 P PKPdf 22 02 51.2 +1.6
baz=286
ANMO Albuquerque 125.93 53 ePKIKP PKPdf 22 02 51.5 +1.9
ANMO MLR MLR
comp=Z,370nm,22.0s
ANMO Albuquerque 125.93 53 ePKPdf PKPdf 22 02 51.5 +1.9
ANMO LR LR
comp=Z,370nm,22.0s
D29A Pettibone, Tap 126.08 37 P PKPdf 22 02 49.3 0.0
baz=300
B30A Myrvik Farm, E 126.10 35 P PKPdf 22 02 49.3 0.0
baz=302
PAB San Pablo 126.16 313 ePKIKP PKPdf 22 02 50.9 +1.1
PAB San Pablo 126.16 313 ePKPdf PKPdf 22 02 50.9 +1.1
G28A Parade 126.21 40 P PKPdf 22 02 50.1 +0.5
baz=297
J27A Elkhorn Farm, 126.31 42 P PKPdf 22 02 51.4 +1.4
baz=295
C30A Mose, Pekin 126.40 36 P PKPdf 22 02 50.1 +0.3
baz=302
ULM Lac du Bonnet 126.44 32 PKP PKPdf 22 02 49.8 0.0
comp=Z,19nm,0.8s,baz=314,slow=4.0,SNR=19
B31A Greenbush Farm 126.49 35 P PKPdf 22 02 50.0 0.0
baz=303
F29A Eureka 126.53 38 P PKPdf 22 02 50.5 +0.3
baz=299
I28A Midland 126.53 41 P PKPdf 22 02 50.5 +0.2
baz=296
D30A Buchanan 126.55 37 P PKPdf 22 02 50.4 +0.2
baz=301
J28A Allard Ranch, 126.74 42 P PKPdf 22 02 51.0 +0.3
baz=296
E30A Jud 126.76 37 P PKPdf 22 02 50.6 0.0
baz=300
C31A Landman Farms, 126.78 35 P PKPdf 22 02 50.7 +0.1
baz=302
A32A Rocking H Ranc 126.86 34 P PKPdf 22 02 50.5 -0.2
baz=304
H29A Onida 126.86 40 P PKPdf 22 02 51.0 +0.2
baz=298
T25A Trinidad 126.87 50 P PKPdf 22 02 52.7 +1.3
baz=289
T25A Trinidad 126.87 50 ePKPdf PKPdf 22 02 53.1 +1.8
PBRG Braganca 126.98 316 ePKP PKPdf 22 02 51.8 +0.6
F30A Leola 127.02 38 P PKPdf 22 02 51.3 +0.2
baz=300
I29A Vivian Onida 127.08 41 P PKPdf 22 02 52.1 +0.8
baz=297
B32A Ashes, Strandq 127.13 34 P PKPdf 22 02 51.0 -0.2
baz=304
D31A Mcclaflin, Tow 127.18 36 P PKPdf 22 02 51.3 -0.1
baz=302
OGNE Ogallala 127.24 45 P PKPdf 22 02 52.0 +0.2
baz=294
OGNE Ogallala 127.24 45 ePKPdf PKPdf 22 02 52.7 +0.9
OGNE LR LR
comp=Z,300nm,20.0s
G30A Faulkton 127.30 39 P PKPdf 22 02 52.1 +0.4
baz=299
E31A Nome 127.34 37 P PKPdf 22 02 52.0 +0.3
baz=301
J29A Okreek 127.35 41 P PKPdf 22 02 51.9 0.0
baz=297
MVO Moncorvo 127.44 316 ePKP PKPdf 22 02 53.1 +1.0
C32A Crookston 127.45 35 P PKPdf 22 02 51.3 -0.5
baz=304
A33A Warroad 127.45 33 P PKPdf 22 02 51.6 -0.2
baz=305
F31A Hecla 127.48 38 P PKPdf 22 02 52.2 +0.3
baz=300
KSCO Kaye Shedlock' 127.55 47 P PKPdf 22 02 53.2 +0.7
baz=292
KSCO Kaye Shedlock' 127.55 47 ePKPdf PKPdf 22 02 53.9 +1.4
AGMN Agassiz Nation 127.56 34 P PKPdf 22 02 51.9 -0.1
baz=304
AGMN Agassiz Nation 127.56 34 ePKPdf PKPdf 22 02 51.9 -0.1
AGMN LR LR
comp=Z,293nm,20.0s
MNTX Cornudas Mount 127.63 57 ePKPdf PKPdf 22 02 54.2 +1.5
MNTX LR LR
comp=Z,334nm,20.0s
SUSD Miller 127.74 40 P PKPdf 22 02 53.6 +1.1
baz=299
PVRL Vila Real 127.87 316 ePKP PKPdf 22 02 54.5 +1.6
C33A Trail 127.91 34 P PKPdf 22 02 53.0 +0.3
baz=304
J30A Dallas 127.92 41 P PKPdf 22 02 54.0 +1.1
baz=298
PGAV Gavieira, Arco 127.95 317 ePKP PKPdf 22 02 54.5 +1.4
MTE Manteigas 128.11 315 ePKP PKPdf 22 02 54.9 +1.5
B34A Aery, Baudette 128.11 33 P PKPdf 22 02 53.0 -0.1
baz=306
K30A Basset 128.14 42 P PKPdf 22 02 53.9 +0.5
baz=297
F32A Veblen 128.15 37 P PKPdf 22 02 53.4 +0.2
baz=302
D33A AnnSam, Waubun 128.22 35 P PKPdf 22 02 53.4 +0.1
baz=304
PLCA Paso Flores 128.28 164 PKP PKPdf 22 02 54.0 +0.2
comp=Z,12nm,0.9s,baz=256,slow=4.2,SNR=14
PCBR Castelo Branco 128.28 314 ePKP PKPdf 22 02 55.3 +1.6
PMRV Marv??o 128.39 314 ePKP PKPdf 22 02 54.3 +0.4
MDT Midelt 128.46 305 PKP PKPdf 22 02 55.4 +1.0
comp=Z,4.9nm,0.9s,baz=106,slow=2.8,SNR=4.2
E33A Westby DABS, E 128.47 36 P PKPdf 22 02 53.7 -0.1
baz=303
PBAR Barrancos 128.61 312 ePKP PKPdf 22 02 56.0 +1.7
F33A 5 Mile Ranch, 128.66 37 P PKPdf 22 02 54.7 +0.5
baz=302
B35A Bob, Littlefor 128.68 33 P PKPdf 22 02 54.3 +0.1
baz=307
K31A O'Neill 128.73 41 P PKPdf 22 02 54.9 +0.4
baz=298
PESTR Estremoz 128.75 313 ePKP PKPdf 22 02 55.8 +1.2
L31A Butterfield Fa 128.88 42 P PKPdf 22 02 55.2 +0.4
baz=297
I32A Karley and Nic 128.88 39 P PKPdf 22 02 55.8 +1.1
baz=300
PCAS Casmilo, Conde 128.92 315 ePKP PKPdf 22 02 56.3 +1.4
E34A Wadena 128.95 36 P PKPdf 22 02 55.1 +0.3
baz=304
J32A Parkston 128.96 40 P PKPdf 22 02 55.2 +0.3
baz=299
PMTG Montargil 129.12 314 ePKP PKPdf 22 02 56.5 +1.2
MSTX Muleshoe 129.13 53 P PKPdf 22 02 57.1 +1.5
baz=288
MSTX Muleshoe 129.13 53 ePKPdf PKPdf 22 02 57.7 +2.0
M31A Lambtecht Ranc 129.16 43 P PKPdf 22 02 55.5 +0.1
baz=297
K32A Verdigre 129.22 41 P PKPdf 22 02 55.2 -0.2
baz=299
D35A Remer 129.26 34 P PKPdf 22 02 55.1 -0.2
baz=306
PBEJ Beja 129.27 312 ePKP PKPdf 22 02 57.6 +2.0
E35A Pequot Lakes 129.36 35 P PKPdf 22 02 55.5 0.0
baz=305
PCVE Castro Verde 129.54 312 ePKP PKPdf 22 02 58.0 +1.9
J33A Davis 129.55 40 P PKPdf 22 02 56.8 +0.8
baz=300
ECSD EROS Data Cent 129.56 39 P PKPdf 22 02 56.7 +0.7
baz=301
ECSD EROS Data Cent 129.56 39 ePKPdf PKPdf 22 02 55.8 -0.3
ECSD LR LR
comp=Z,335nm,22.0s
H34A Spellman Lake, 129.59 38 P PKPdf 22 02 57.0 +0.9
baz=302
MESJ Messejana 129.60 312 ePKP PKPdf 22 02 58.1 +1.9
PBDV Barranco-do-Ve 129.61 311 ePKP PKPdf 22 02 57.0 +0.7
LTX Lajitas 129.63 59 ePKIKP PKPdf 22 02 57.3 +0.6
LTX Lajitas 129.63 59 ePKPdf PKPdf 22 02 57.3 +0.6
TXAR Lajitas Array 129.63 59 PKP PKPdf 22 02 57.3 +0.6
comp=Z,2.9nm,0.7s,baz=305,slow=4.4,SNR=3.5
TXAR SKPbc SKPab 22 06 17.3 +0.1
comp=Z,2.7nm,1.0s,baz=293,slow=1.0,SNR=6.4
BGNE Belgrade 129.69 43 P PKPdf 22 02 57.2 +0.9
baz=298
BGNE Belgrade 129.69 43 ePKPdf PKPdf 22 02 57.7 +1.3
CBKS Cedar Bluff 129.71 46 P PKPdf 22 02 57.1 +0.6
baz=294
CBKS Cedar Bluff 129.71 46 ePKIKP PKPdf 22 02 57.5 +1.0
CBKS MLR MLR
comp=Z,300nm,19.0s
CBKS Cedar Bluff 129.71 46 ePKPdf PKPdf 22 02 57.5 +1.0
CBKS LR LR
comp=Z,300nm,19.0s
I34A Hadley 129.87 39 P PKPdf 22 02 57.7 +1.1
baz=302
RTC Rabat Centre 129.91 307 PFAKE 22 03 10.0 +13
RTC LR LR
comp=Z,884nm,21.0s
E36A McGregor 130.03 35 P PKPdf 22 02 57.8 +1.0
baz=306
MORF Marmelete 130.12 312 ePKP PKPdf 22 02 57.9 +0.6
O32A Brockman Farm, 130.12 44 P PKPdf 22 02 58.1 +0.9
baz=297
EYMN Ely 130.12 32 PFAKE 22 03 10.0 +13
EYMN LR LR
comp=Z,367nm,21.0s
P32A Huiting Farm, 130.17 45 P PKPdf 22 02 57.6 +0.3
baz=296
J34A George 130.20 39 P PKPdf 22 02 58.3 +1.0
baz=301
M33A Taylor Creek F 130.25 42 P PKPdf 22 02 57.7 +0.3
baz=299
F36A Milaca 130.26 35 P PKPdf 22 02 57.9 +0.6
baz=305
PFVI Vila Bisbo 130.31 312 ePKP PKPdf 22 02 58.9 +1.3
K34A Le Mars 130.42 40 P PKPdf 22 02 58.2 +0.5
baz=300
N33A J Bar K, Exete 130.47 43 P PKPdf 22 02 58.3 +0.5
baz=298
Q32A Meitler Ranch, 130.47 46 P PKPdf 22 02 59.4 +1.4
baz=295
I35A Creekview Farm 130.51 38 P PKPdf 22 02 58.5 +0.7
baz=302
R32A Long Quarter, 130.60 46 P PKPdf 22 02 59.1 +0.9
baz=295
O33A Hebron 130.68 44 P PKPdf 22 02 58.4 +0.2
baz=297
H36A Jessenland, He 130.75 37 P PKPdf 22 02 59.7 +1.5
baz=304
KIC Kosan Boka 130.82 271 ePKIKP PKPdf 22 02 59.9 +0.6
comp=Z,78nm,0.9s
P33A Willms Farm, 130.88 45 P PKPdf 22 02 59.4 +0.7
baz=296
K35A Storm Lake 130.94 40 P PKPdf 22 02 59.5 +0.8
baz=301
T32A Huddler Ranch, 130.95 48 P PKPdf 22 02 59.5 +1.6
baz=294
DBIC Dimbokro 130.97 271 PKP PKPdf 22 03 00.7 +1.2
comp=Z,33nm,0.8s,baz=95,slow=2.7,SNR=34
DBIC SKPbc SKPbc 22 06 22.7 -0.3
comp=Z,28nm,1.2s,baz=112,slow=19,SNR=18
Q33A Connelly Farm, 130.98 45 P PKPdf 22 03 00.2 +1.3
baz=296
I36A Fitzsimmons Fa 131.01 38 P PKPdf 22 02 59.9 +1.1
baz=304
SPMN Marine on St. 131.04 36 ePKPdf PKPdf 22 02 59.8 +1.0
N34A Lincoln 131.06 43 P PKPdf 22 02 59.2 +0.3
baz=299
L35A Bielow Farm, R 131.06 41 P PKPdf 22 02 59.7 +0.8
baz=301
LIC Lamto 131.09 270 ePKIKP PKPdf 22 03 00.4 +0.7
comp=Z,44nm,0.8s
TIC Toumodi 131.13 271 ePKIKP PKPdf 22 03 00.4 +0.6
R33A Olander Ranch, 131.17 46 P PKPdf 22 03 00.6 +1.3
baz=295
J36A Seneca 1, Swea 131.18 39 P PKPdf 22 02 59.5 +0.4
baz=303
U32A Winter Ranch, 131.20 49 P PKPdf 22 03 00.7 +1.3
baz=293
O34A Beatrice 131.23 43 P PKPdf 22 02 59.6 +0.3
baz=298
H37A Dierke Farm, C 131.34 36 P PKPdf 22 02 59.5 +0.1
baz=305
I37A Lemond, Waseca 131.38 37 P PKPdf 22 03 00.3 +0.9
baz=304
V32A Arapaho 131.42 50 P PKPdf 22 03 01.1 +1.3
baz=292
P34A Walnut Farm, R 131.44 44 P PKPdf 22 03 00.1 +0.3
baz=297
S33A Kaszmaul Farm, 131.45 47 P PKPdf 22 03 00.9 +1.0
baz=295
K36A Gilmore City 131.48 39 P PKPdf 22 03 00.7 +1.0
baz=302
W32A Sentinel 131.49 51 P PKPdf 22 03 01.5 +1.6
baz=292
L36A Harm Buss Farm 131.62 40 P PKPdf 22 03 00.9 +0.9
baz=302
Q34A Chapman 131.64 45 P PKPdf 22 03 01.4 +1.3
baz=297
J37A Redenius Farm, 131.68 38 P PKPdf 22 03 00.9 +0.8
baz=304
R34A Isabella, Hill 131.69 46 P PKPdf 22 03 00.8 +0.5
baz=296
O35A Humboldt 131.72 43 P PKPdf 22 03 00.7 +0.5
baz=299
KSU1 Kansas State U 131.79 45 P PKPdf 22 03 00.9 +0.5
baz=297
KSU1 Kansas State U 131.79 45 ePKPdf PKPdf 22 03 01.6 +1.3
KSU1 LR LR

comp=Z,348nm,19.0s
ZAIG Zacatecas 131.84 68 *e*PKPdf **PKPdf 22 03 04.8 +3.5**
V33A Lossen Ranch, 131.95 49 P **PKPdf 22 03 02.2 +1.4**
baz=293
WMOK Wichita Mounta 131.98 51 *e*PKPpre PKPpre 22 02 54.5
WMOK *e*SKPbc **SKPab 22 06 28.1 +1.1**
P35A Duane Minner, 132.00 44 P **PKPdf 22 03 01.7 +1.0**
baz=298
I38A Scanlan Farm, 132.00 37 P **PKPdf 22 03 01.1 +0.5**
baz=305
ABTX Abilene, Hawle 132.04 54 *e*PKPdf PKPpre 22 02 55.7
ABTX *e*SKPbc **SKPbc 22 06 26.0 -0.4**
S34A Willow Spring 132.05 47 P **PKPdf 22 03 01.8 +0.9**
baz=296
N36A Muff Farm, Cla 132.09 42 P **PKPdf 22 03 01.9 +1.0**
baz=300
U34A Anderson Ranch 132.27 48 P **PKPdf 22 03 02.4 +1.0**
baz=294
U34A Anderson Ranch 132.27 48 *e*PKPdf **PKPdf 22 03 02.7 +1.3**
X33A Lawton 132.27 51 P **PKPdf 22 03 02.2 +0.7**
baz=292
Q35A Mercer Eighty, 132.29 45 P **PKPdf 22 03 01.6 +0.3**
baz=298
Y33A Hilltop Ranch, 132.37 52 P **PKPdf 22 03 03.1 +1.4**
baz=291
M37A Trindle Farm, 132.38 41 P **PKPdf 22 03 02.4 +0.9**
baz=302
O36A Bolckow 132.42 43 P **PKPdf 22 03 02.2 +0.7**
baz=300
P36A Good Intent, A 132.51 43 P **PKPdf 22 03 01.9 +0.2**
baz=299
V34A Guthrie 132.52 49 *e*PKPdf **PKPdf 22 03 04.3 +2.5**
COWI Conover 132.54 33 PFAKE 22 03 10.0 +8.4
COWI LR LR
comp=Z,260nm,19.0s
W34A Bridge Creek, 132.56 50 *e*PKPdf **PKPdf 22 03 03.7 +1.7**
JCT Junction City 132.57 57 P **PKPdf 22 03 03.0 +0.9**
baz=287
JCT Junction City 132.57 57 *e*PKIKP **PKPdf 22 03 03.8 +1.6**
JCT MLR MLR
comp=Z,400nm,18.0s
JCT Junction City 132.57 57 *e*PKPdf **PKPdf 22 03 03.8 +1.6**
JCT *e*SKPbc **SKPab 22 06 30.2 +0.6**
JCT LR LR
comp=Z,400nm,18.0s
133A Hamilton Ranch 132.62 54 P **PKPdf 22 03 03.9 +1.8**
baz=290
S35A Otter Creek Ra 132.62 46 P **PKPdf 22 03 02.7 +0.7**
baz=296
TRQA Tornquist 132.63 172 *e*PKPdf **PKPdf 22 03 03.1 +1.0**
Q36A Arnold C. Orve 132.65 44 P **PKPdf 22 03 02.6 +0.6**
baz=298
X34A Smith Ranch, M 132.76 51 P **PKPdf 22 03 04.1 +1.7**
baz=292
T35A Sooner Cattle 132.82 47 P **PKPdf 22 03 02.9 +0.5**
baz=296
U35A Pawnee 132.88 48 P **PKPdf 22 03 03.3 +0.8**
baz=295
R36A Gordon, Harris 132.91 45 P **PKPdf 22 03 03.2 +0.7**
baz=298
O37A Wolven Farm, M 132.95 42 P **PKPdf 22 03 03.5 +1.0**
baz=300
333A Richland Sprin 132.98 55 P **PKPdf 22 03 04.3 +1.4**
baz=289
832A Faith Ranch, C 133.03 60 P **PKPdf 22 03 04.4 +1.4**
baz=285
V35A Meyer Ranch, C 133.06 49 P **PKPdf 22 03 03.8 +0.9**
baz=294
Y34A Reagan Ranch, 133.06 51 P **PKPdf 22 03 03.7 +0.8**
baz=292
433A Art 133.07 56 P **PKPdf 22 03 04.0 +0.9**
baz=288
P37A Lathrop 133.10 43 P **PKPdf 22 03 03.4 +0.5**
baz=300
S36A Lake Cedric, C 133.12 46 P **PKPdf 22 03 03.7 +0.8**
baz=297
T36A Boggs Farm, Ca 133.21 47 P **PKPdf 22 03 04.0 +0.9**
baz=296
SCHQ Schefferville 133.23 10 PKhKP PKPpre 22 02 57.5
comp=Z,5.6nm,0.9s,baz=190,slow=1.6,SNR=3.6
W35A Tecumseh 133.27 50 P **PKPdf 22 03 04.5 +1.2**
baz=294
134A White-Moore Ra 133.30 53 P **PKPdf 22 03 05.1 +1.7**
baz=290
533A Kerrville 133.32 57 P **PKPdf 22 03 04.2 +0.6**
baz=288
633A Saathoff Ranch 133.38 58 P **PKPdf 22 03 04.9 +1.2**
baz=287
R37A Teagarden Farm 133.39 45 P **PKPdf 22 03 04.1 +0.7**
baz=298
X35A Drake 133.49 51 P **PKPdf 22 03 04.9 +1.2**
baz=293
334A Lometa 133.59 55 P **PKPdf 22 03 04.7 +0.6**
baz=289
P38A Dawn 133.63 42 P **PKPdf 22 03 04.1 +0.3**
baz=301
Y35A Marietta 133.63 51 P **PKPdf 22 03 04.3 +0.3**
baz=292
S37A Fort Scott 133.65 45 P **PKPdf 22 03 04.2 +0.3**
baz=298
Z35A Perchaven, San 133.68 52 P **PKPdf 22 03 05.1 +1.0**
baz=292
V36A Jenks 133.71 48 P **PKPdf 22 03 04.7 +0.6**
baz=295
434A Burnet 133.72 56 P **PKPdf 22 03 05.1 +0.8**
baz=289
W36A Wetumka 133.77 49 P **PKPdf 22 03 05.0 +0.8**
baz=294
TUL1 Leonard 133.77 48 P **PKPdf 22 03 05.0 +0.8**
baz=295
TUL1 Leonard 133.77 48 *e*PKPdf **PKPdf 22 03 05.3 +1.1**
T37A Cheneyville 18 133.87 46 P **PKPdf 22 03 04.7 +0.4**
baz=297
JFWS Jewell Farm 133.89 37 *e*PKIKP **PKPdf 22 03 04.2 0.0**
JFWS MLR MLR
comp=Z,435nm,20.0s
JFWS Jewell Farm 133.89 37 *e*PKPdf **PKPdf 22 03 04.2 0.0**
JFWS LR LR
comp=Z,435nm,20.0s
X36A Centrahoma 133.90 50 P **PKPdf 22 03 05.2 +0.7**
baz=294
Q38A Cooks Store, C 133.91 43 P **PKPdf 22 03 04.7 +0.3**
baz=300
O39A Kirksville 133.96 41 P **PKPdf 22 03 05.4 +0.9**
baz=302
R38A Fenwick Farm, 134.09 44 P **PKPdf 22 03 05.3 +0.6**
baz=299
Y36A Durant 134.21 51 P **PKPdf 22 03 05.7 +0.6**
baz=293
335A Moody 134.26 55 P **PKPdf 22 03 06.3 +1.1**
baz=290
V37A Hulbert 134.26 48 P **PKPdf 22 03 05.4 +0.2**
baz=296
435B Jarrell 134.29 55 P **PKPdf 22 03 06.8 +1.4**
baz=289
Q39A Willow Grove F 134.29 43 P **PKPdf 22 03 06.3 +1.2**
baz=301
Z36A Blue Ridge 134.34 52 P **PKPdf 22 03 07.0 +1.7**
baz=292
S38A Stockton 134.35 45 P **PKPdf 22 03 05.2 0.0**
baz=299
T38A Diamond 134.36 46 P **PKPdf 22 03 05.4 +0.1**
baz=298
W37B Quinton 134.36 49 P **PKPdf 22 03 06.0 +0.6**
baz=295
U38A Gravette 134.56 47 P **PKPdf 22 03 06.5 +0.8**
baz=297
X37A Clayton 134.63 50 P **PKPdf 22 03 07.6 +1.7**
baz=295
P40A Paris 134.66 42 P **PKPdf 22 03 06.7 +0.9**
baz=302
Y37A Hugo 134.69 50 P **PKPdf 22 03 07.8 +1.8**
baz=294
236A Katherine and 134.73 53 P **PKPdf 22 03 08.3 +2.2**
baz=291
S39A Bolivar 134.73 45 P **PKPdf 22 03 06.0 +0.1**
baz=299
V38A Canehill 134.80 47 P **PKPdf 22 03 06.3 +0.2**
baz=297
Q40A Laux Farm, Aux 134.92 42 P **PKPdf 22 03 07.5 +1.2**
baz=302
536A Bastrop 134.94 56 P **PKPdf 22 03 09.0 +2.4**
baz=289
X38A Whitesboro 135.01 49 P **PKPdf 22 03 07.7 +1.1**
baz=295
T39A Clever 135.01 46 P **PKPdf 22 03 06.6 +0.1**
baz=299
W38A Poteau 135.07 49 P **PKPdf 22 03 07.5 +0.9**
baz=296
R40A Maddies Statio 135.16 43 P **PKPdf 22 03 07.6 +0.9**
baz=301
U39A Green Forest 135.24 46 P **PKPdf 22 03 06.7 -0.2**
baz=298
ROC1 El Roble 135.31 160 *e*PKPdf **PKPdf 22 03 07.3 -0.3**
S40A Lebanon 135.34 44 P **PKPdf 22 03 07.3 +0.2**
baz=300
V39A Pettigrew 135.37 47 P **PKPdf 22 03 07.3 0.0**
baz=297
Y38A Idabel 135.39 50 P **PKPdf 22 03 07.9 +0.7**
baz=295
T40A Mansfield 135.55 45 P **PKPdf 22 03 07.6 +0.1**
baz=300
W39A Magazine 135.55 48 P **PKPdf 22 03 08.1 +0.5**
baz=297
X39A Fountain Ranch 135.61 49 P **PKPdf 22 03 08.5 +0.8**
baz=296
U40A Yellville 135.70 46 P **PKPdf 22 03 07.1 -0.7**
baz=299
HDIL Hopedale 135.85 39 *e*PKPdf **PKPdf 22 03 10.1 +2.2**
HDIL LR LR
comp=Z,568nm,21.0s
V40A Witts Springs 135.98 47 P **PKPdf 22 03 08.6 +0.2**
baz=298
MIAR Mount Ida 135.99 49 P **PKPdf 22 03 09.2 +0.7**
baz=296
MIAR Mount Ida 135.99 49 *e*PKIKP **PKPdf 22 03 09.1 +0.7**
MIAR Mount Ida 135.99 49 *e*PKPdf **PKPdf 22 03 09.1 +0.7**
HKT Hockley 136.00 56 *e*PKIKP **PKPdf 22 03 12.2 +3.8**
HKT Hockley 136.00 56 *e*PKPdf **PKPdf 22 03 12.2 +3.8**
SLM Saint Louis 136.33 42 PFAKE 22 03 20.0 +11
SLM LR LR
comp=Z,400nm,19.0s
X301 Greenbrier Sit 136.54 47 *e*PKPdf **PKPdf 22 03 11.2 +1.8**
WHAR Wooly Hollow 136.60 47 *e*PKPdf **PKPdf 22 03 11.4 +1.9**
WLAR White Oak Lake 136.71 50 *e*PKPdf PKPpre 22 03 05.1
ASCN Ascension 136.77 248 PFAKE 22 03 20.0 +10
ASCN LR LR
comp=Z,2µm,19.0s
UALR University of 136.80 48 *e*PKPdf **PKPdf 22 03 10.9 +1.0**
340A Bronson 137.03 53 P **PKPdf 22 03 13.3 +2.9**
baz=293
PBMO Poplar Bluff 137.18 44 *e*PKPdf **PKPdf 22 03 10.4 -0.2**
PBMO LR LR
comp=Z,500nm,21.0s
141A Papa Simpson, 137.32 51 P **PKPdf 22 03 13.0 +2.1**
baz=295
SIUC Southern Illin 137.50 42 PFAKE 22 03 20.0 +8.9
SIUC LR LR
comp=Z,300nm,21.0s
OLIL Olney 137.66 40 *e*PKPdf **PKPdf 22 03 12.5 +1.2**
PARMO Parma 137.71 44 *e*PKPdf **PKPdf 22 03 14.4 +2.9**
AAM Ann Arbor 138.01 33 PFAKE 22 03 20.0 +8.1
AAM LR LR
comp=Z,404nm,19.0s
USIN University of 138.38 41 *e*PKPdf **PKPdf 22 03 15.7 +3.0**
BLO Bloomington 138.39 39 *e*PKIKP **PKPdf 22 03 14.1 +1.4**
BLO Bloomington 138.39 39 *e*PKPdf **PKPdf 22 03 14.1 +1.4**
LCO Las Campanas 139.02 158 *e*PKPpre PKPpre 22 03 05.9
OXF Oxford 139.05 46 *e*PKHKP PKPpre 22 03 07.9
OXF *e* 22 03 13.6
OXF Oxford 139.05 46 *e*PKPpre PKPpre 22 03 07.9
OXF *e*PKPdf **PKPdf 22 03 13.6 -0.4**
WCI Wyandotte Cave 139.10 40 *e*PKIKP PKPpre 22 03 10.9
WCI Wyandotte Cave 139.10 40 *e*PKPdf PKPpre 22 03 10.9
WVT Waverly 139.30 43 *e*PKIKP PKPpre 22 03 10.3
WVT Waverly 139.30 43 *e*PKPdf PKPpre 22 03 10.3
PLAL Pickwick Lake 139.75 45 *e*PKPdf **PKPdf 22 03 15.3 0.0**
ACSO Alum Creek Sta 139.79 35 *e*PKPdf PKPpre 22 03 11.1
ACSO LR LR
comp=Z,283nm,20.0s
LONY Lake Ozonia 140.42 23 *e*PKPpre PKPpre 22 03 10.2
LONY LR LR
comp=Z,369nm,20.0s
PQI Presque Isle 140.69 15 PFAKE 22 03 30.0 +13
PQI LR LR
comp=Z,500nm,18.0s
SWET Sewanee 141.09 43 *e*PKPdf **PKPdf 22 03 14.8 -2.9**
NCB Newcomb 141.11 23 PFAKE 22 03 30.0 +12
NCB LR LR
comp=Z,2µm,21.0s
LRAL Lakeview Retre 141.53 47 *e*PKPpre PKPpre 22 03 13.3
PKME Peaks-Kenny Pk 141.64 17 *e*PKPdf **PKPdf 22 03 21.0 +2.6**
BINY Binghamton 141.84 26 *e*PKPdf **PKPdf 22 03 18.3 -0.6**
BINY LR LR
comp=Z,300nm,20.0s
CPCT Cooper Cave 141.90 42 *e*PKPpre PKPpre 22 03 15.0
MCWV Mont Chateau 141.91 33 *e*PKPdf **PKPdf 22 03 19.8 +0.8**
HNH Hanover 142.06 21 PFAKE 22 03 30.0 +11
HNH LR LR
comp=Z,300nm,21.0s
WVL Waterville 142.17 18 *e*PKPpre PKPpre 22 03 14.1
SSPA Standing Stone 142.19 30 *e*PKPpre PKPpre 22 03 13.9
LMN Caledonia Moun 142.21 12 PFAKE 22 03 30.0 +11
LMN LR LR
comp=Z,400nm,19.0s
BRAL Brewton 142.42 49 PFAKE 22 03 30.0 +10
BRAL LR LR
comp=Z,420nm,20.0s
BBTS Babate 142.63 282 PKhKP PKPpre 22 03 17.7
comp=Z,34nm,0.8s,baz=146,slow=1.4,SNR=6.1
EMMW East Machias 142.66 15 PFAKE 22 03 30.0 +10
EMMW LR LR
comp=Z,4µm,22.0s
BLA Blacksburg 143.32 36 *e*PKIKP **PKPdf 22 03 22.3 +0.6**
BLA MLR MLR
comp=Z,258nm,20.0s
BLA Blacksburg 143.32 36 *e*PKPdf **PKPdf 22 03 22.3 +0.6**
BLA LR LR
comp=Z,258nm,20.0s
VWCC Virginia Weste 143.55 36 *e*PKPdf **PKPdf 22 03 23.1 +1.0**
PAL Palisades 143.72 25 *e*PKIKP **PKPdf 22 03 22.0 -0.2**
PAL Palisades 143.72 25 *e*PKPdf **PKPdf 22 03 22.0 -0.2**
GOGA Godfrey 143.80 44 *e*PKIKP PKPbc 22 03 20.4 +0.2
GOGA MLR MLR
comp=Z,319nm,22.0s
GOGA Godfrey 143.80 44 *e*PKPdf PKPbc 22 03 20.4 +0.3
GOGA LR LR
comp=Z,319nm,22.0s
BRYW Bryant College 143.88 22 *e*PKPdf **PKPdf 22 03 25.7 +3.2**
BRYW LR LR
comp=Z,500nm,21.0s
PB10 IPOC Station P 143.98 154 *e*pPKPdf pPKPdf 22 03 30.6 +0.6
KMSC Kings Mountain 144.14 39 P PKPbc 22 03 21.8 +0.7
baz=310
KMSC Kings Mountain 144.14 39 *e*PKPdf PKPbc 22 03 21.4 +0.3
CBN Corbin Frederi 144.29 32 PFAKE 22 03 40.0 +17
CBN LR LR
comp=Z,535nm,21.0s
CPUP Villa Florida 144.74 175 PKP **PKPdf 22 03 24.1 -0.3**
comp=Z,32nm,0.8s,baz=191,slow=2.1,SNR=74
TIGA Tifton 144.82 46 P PKPbc 22 03 23.9 +0.5
baz=304
PB04 IPOC Station P 145.19 154 *e*PKPbc **PKPdf 22 03 25.8 +0.2**
TEIG Tepich 145.38 67 *e*PKPbc **PKPab 22 03 26.8 +1.1**
LVC Limon Verde 145.47 156 *e*PKPbc **PKPab 22 03 27.8 +1.4**
CNNC Cliffs of the 146.16 36 *e*PKPdf **PKPab 22 03 28.0 -0.1**
CNNC LR LR
comp=Z,423nm,19.0s
NHSC New Hope 146.17 41 *e*PKPdf **PKPab 22 03 29.5 +1.2**
RGRS Roger Stewart 146.29 41 *e*PKPdf **PKPab 22 03 28.9 +0.2**
CSU Charleston Sou 146.32 41 *e*PKPdf **PKPab 22 03 29.4 +0.6**
PB01 IPOC Station P 146.62 154 *e*PKPdf **PKPbc 22 03 29.6 +0.2**
SPB Sao Paulo 146.90 192 *e*PKPdf **PKPab 22 03 31.6 +0.3**
TGUH Tegucigalpa,Un 147.35 78 *e*PKPbc **PKPab 22 03 33.1 -0.3**
PB11 IPOC Station P 147.66 152 *e*PKPdf **PKPdf 22 03 30.9 +1.1**
DWPF Disney Wildern 148.18 50 *e*PKPdf **PKPdf 22 03 31.7 +1.6**
NNA Nana 149.40 133 *e*PKPbc **PKPbc 22 03 36.5 -0.5**
NNA LR LR
comp=Z,197nm,20.0s
JTS JuntasAbangare 149.78 85 *e*PKPdf **PKPdf 22 03 34.3 +1.1**
JTS LR LR
comp=Z,399nm,19.0s
LPAZ La Paz 151.38 151 PKP **PKPdf 22 03 37.8 +1.5**
comp=Z,6.5nm,0.9s,baz=197,slow=0.8,SNR=20
LPAZ PKPbc **PKiKP 22 03 43.7 +0.8**
comp=Z,65nm,0.9s,baz=158,slow=2.0,SNR=90
LPAZ PKPab **PKPab 22 03 51.7 +1.3**
comp=Z,79nm,0.9s,baz=144,slow=3.6,SNR=19
OTAV Otavalo 154.44 109 *e*PKPdf **PKPdf 22 03 42.7 +2.0**
BCIP Isla Barro Col 154.80 88 PFAKE 22 03 50.0 +0.8
BCIP LR LR
comp=Z,203nm,19.0s
BBSR BB Station 154.85 21 PFAKE 22 03 50.0 +1.2
BBSR LR LR
comp=Z,195nm,19.0s
RCBR Riachuelo 156.45 232 *e*PKPab **PKPab 22 04 13.4 +2.1**
GTBY Guantanamo Bay 157.16 59 PFAKE 22 04 00.0 -14
GTBY LR LR
comp=Z,264nm,19.0s
PRAC Prado 158.90 103 PFAKE 22 04 00.0 +14
PRAC LR LR
comp=Z,200nm,21.0s
MOTC Monteria, Cord 158.91 89 *e*P **PKPdf 22 03 45.7 -0.2**
ROSC El Rosal 159.72 100 PKP **PKPdf 22 03 47.9 +0.6**
comp=Z,9.9nm,0.5s,baz=241,slow=15,SNR=7.0
ROSC PKPab **PKPab 22 04 27.6 +1.6**
comp=Z,12nm,0.7s,baz=267,slow=2.8,SNR=6.7
ROSC El Rosal 159.72 100 *e*P **PKPdf 22 03 49.6 +2.3**
SAML Samuel 160.09 153 *e*PKPdf **PKPdf 22 03 48.4 +1.2**
SDDR Presa de Saban 160.80 57 *e*PKPab **PKPab 22 04 30.9 +0.8**
RUSC La Rusia 161.14 98 *e*P **PKPdf 22 03 51.3 +2.3**
SDV Santo Domingo 163.88 89 *e*PKPdf **PKPdf 22 03 51.5 +0.2**
SDV Santo Domingo 163.88 89 *e*P **PKPdf 22 03 51.3 0.0**
CELP Cerrillos 165.07 52 *e*PKPdf **PKPdf 22 03 51.9 -0.2**
CELP *e*PKPab **PKPab 22 04 49.6 +0.8**
HUMP Col San Antoni 165.59 50 *e*PKPdf **PKPdf 22 03 52.8 +0.3**
PTGA Pitinga 168.80 150 *e*PKPdf **PKPdf 22 03 55.8 +0.8**
PCM Pelee Case Pet 171.13 49 *e*P **PKPdf 22 03 57.2 +0.9**
ZAM Aeronautique 171.42 49 *e*P **PKPdf 22 03 56.2 -0.2**
TRMF Trois Ilets 171.43 50 *e*P **PKPdf 22 03 58.2 +1.9**
GRGR Grenville 172.15 66 PFAKE 22 04 10.0 +13
GRGR LR LR
comp=Z,396nm,21.0s

MEX 26 21:54:44.5±0.6, 27°38N×111°39W, h16km±10km, MD3.6, Gulf of California

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GUYB	**Guaymas**	**0.69**	**41**	*e*P	Pg	21 54 55.5	-2.5
GUYB				*i* S	Sg	21 55 04.0	-3.2
SRIG	**Santa Rosalia**	**0.76**	**266**	*e*P	Pg	21 54 56.5	-2.8
SRIG				*e*S	Sg	21 55 06.0	-3.5
HSIG		**1.68**	**13**	*e*P	Pn	21 55 10.4	-2.8
HSIG				*i* S	Sn	21 55 29.3	-5.1

*NNC **26** 21:57:05.9±2.3, 45°52N×82°56E, h0km, mb2.4, mpv2.6, Error ellipse: s-maj=13.8km s-min=12.2km az=125.0*
*SOME **26** 21:57:07.7, 45°58N×82°30E, h5km*
ISC 26 21:57:08.0±1.6, 45°60N±0°06×82°36E±0°08, h0km±18km, n9, σ1s11/16, 2C-3D, Kazakhstan-Xinjiang border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MK31	**Makanchi Array**	**1.19**	**358**	⇓P	**Pg**	**21 57 30.6**	**-0.3**
	2.2nm,0.3s,baz=171,slow=15,SNR=57						
MK31				⇓S	**Sb**	**21 57 47.7**	**+0.2**
	7.7nm,0.3s,baz=170,slow=29,SNR=14						
MAKZ	**Makanchi**	**1.23**	**348**	⇓P	**Pg**	**21 57 31.3**	**-0.4**
	2.3nm,0.3s						
MAKZ				⇑S	**Sn**	**21 57 49.6**	**-0.3**
	2.8nm,0.3s						
KAPS	**Kapalarasan**	**2.14**	**263**	*e*P	**Pb**	**21 57 46.6**	**-1.0**
	1.1nm,0.1s						
KAPS				*e*S	**Sb**	**21 58 14.9**	**+0.3**
	8.9nm,0.3s						
DJR	**Jarkent**	**2.22**	**236**	*e*P	**Pb**	**21 57 48.1**	**-0.9**
	1.8nm,0.1s						
DJR				*e*S	**Sb**	**21 58 17.5**	**+0.3**
	8.7nm,0.3s						
ZSN	**Zaisan**	**2.32**	**37**	*e*P	**Pg**	**21 57 52.0**	**-0.5**
	1.5nm,0.1s						
ZSN				*e*S	**Sg**	**21 58 24.3**	**+1.7**
	9.7nm,0.4s						
SHLS	**Shalkode**	**3.02**	**217**	*e*P	**Pb**	**21 58 01.5**	**-1.3**
	2.3nm,0.3s						
SHLS				*e*S	**Sb**	**21 58 39.9**	**-0.4**
	4.2nm,0.2s						
PDGK	**Podgornoye**	**3.07**	**223**	⇑Lg	Lg	21 58 41.0	
	2.1nm,0.4s						
KPKS	**Kokpek**	**3.39**	**232**	*e*P	**Pb**	**21 58 08.8**	**-0.1**
	2.0nm,0.1s						
KPKS				*e*S	**Sb**	**21 58 52.5**	**+1.8**
	14nm,0.3s						
KURS	**Kuram**	**3.67**	**236**	*e*P	**Pb**	**21 58 13.5**	**-0.1**
	2.9nm,1.1s						
KURS				*e*S	**Sb**	**21 59 00.7**	**+2.0**
	2.2nm,0.5s						

*IDC **26** 22:03:54.9±1.2, 36°04N×142°65E, h0km, mb3.6/7, mb1 3.8/9, mb1mx3.6/51, mbtmp3.6/9, ML3.4/2, MS4.2/6, Ms1 4.3/6, ms1mx3.5/51, Error ellipse: s-maj=28.4km s-min=20.7km az=140.0*
*ISCJB **26** 22:03:55.8±0.7, 36°05N±0°07×142°64E±0°07, h18km, mb3.6/7, MS4.3/5, Error ellipse: s-maj=9.6km s-min=7.7km az=157.8*
ISC 26 22:03:57.4±0.8, 36°09N±0°08×142°66E±0°08, h18km, n23, σ0s97/15, mb3.7/7, MS4.3/5, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MJAR	**Matsushiro Arr**	**3.62**	**278**	Pn	**Pn**	**22 04 52.6**	**-0.1**
	2.5nm,0.3s,baz=109,slow=9.4,SNR=1						
MJAR				Sn	**Sn**	**22 05 34.0**	**-0.9**
	2.7nm,0.3s,baz=94,slow=30,SNR=6.2						
MAT	**Matsushiro**	**3.62**	**278**	P	**Pn**	**22 04 53.0**	**+0.4**
MAT				S	**Sn**	**22 05 34.8**	**-0.1**
JHJ	**Hachijo jima 2**	**3.79**	**219**	Pn	**Pn**	**22 04 54.1**	**-0.9**
	11nm,0.3s,baz=79,slow=16,SNR=4.9						
JHJ				Sn	**Sn**	**22 05 39.5**	**+0.4**
	16nm,0.3s,baz=75,slow=19,SNR=4.2						
ASAJ	**Asahikawa**	**8.02**	**360**	Pn	**Pn**	**22 05 50.6**	**-2.4**
	0.7nm,0.3s,baz=212,slow=17,SNR=5.5						
ASAJ				Sn	Sn	22 07 16.5	-6.7
	0.2nm,0.3s,baz=177,slow=18,SNR=2.7						
JCJ	**Chichijima**	**8.98**	**183**	Pn	**Pn**	**22 06 05.1**	**-1.1**
	baz=37,slow=20						
JOW	**Kunigami**	**15.34**	**237**	LR	LR	22 13 20.0	
	comp=Z,773nm,18.3s,baz=164,slow=37						
H11N2	**WAKE ISLAND Hy 26.81**		**121**	T	T	22 37 42.5	
	baz=313,slow=75,SNR=11						
H11N1	**WAKE ISLAND Hy 26.81**		**121**	T	T	22 37 44.2	
	baz=313,slow=75,SNR=7.8						
H11N3	**WAKE ISLAND Hy 26.82**		**121**	T	T	22 37 44.8	
	baz=313,slow=75,SNR=7.8						
H11S1	**WAKE ISLAND Hy 27.51**		**123**	T	T	22 38 38.6	
	baz=315,slow=75,SNR=6.1						
H11S3	**WAKE ISLAND Hy 27.51**		**123**	T	T	22 38 42.3	
	baz=315,slow=75,SNR=3.7						
H11S2	**WAKE ISLAND Hy 27.52**		**123**	T	T	22 38 42.5	
	baz=315,slow=75,SNR=4.7						
SONM	**Songino Array**	**29.14**	**305**	P	**P**	**22 09 57.3**	**-0.1**
	0.3nm,0.5s,baz=95,slow=10,SNR=3.0						
ZALV	**Zalesovo Beam**	**43.29**	**313**	P	**P**	**22 11 58.3**	**+0.5**
	0.6nm,0.7s,baz=106,slow=9.1,SNR=2.8						
MKAR	**Makanchi Array**	**45.47**	**303**	P	**P**	**22 12 15.8**	**+0.4**
	0.3nm,0.3s,baz=90,slow=8.9,SNR=4.3						
ILAR	**Eielson Array**	**49.76**	**32**	P	**P**	**22 12 49.7**	**+1.2**
	0.4nm,0.3s,baz=277,slow=7.2,SNR=8.6						
YKA	**Yellowknife Ar**	**64.12**	**30**	P	**P**	**22 14 30.4**	**+0.2**
	0.3nm,0.8s,baz=306,slow=6.5,SNR=2.8						
FINES	**FINESS Array B**	**70.11**	**333**	P	**P**	**22 15 09.0**	**+0.7**
	1.4nm,0.9s,baz=11,slow=17,SNR=2.8						
NVAR	**Mina Array Bea**	**74.75**	**54**	P	**P**	**22 15 37.0**	**+0.4**
	0.8nm,0.6s,baz=294,slow=6.8,SNR=2.7						
NVAR				LR	LR	22 44 04.2	
	comp=Z,144nm,21.3s,baz=268,slow=32						
NOA	**NORSAR Array B**	**75.44**	**338**	LR	LR	22 54 47.0	
	comp=Z,179nm,18.3s,baz=80,slow=40						
PDAR	**Pinedale Array**	**77.61**	**46**	LR	LR	22 49 18.0	
	comp=Z,106nm,19.4s,baz=302,slow=35						
ULM	**Lac du Bonnet**	**79.73**	**34**	LR	LR	22 56 16.7	
	comp=Z,148nm,19.3s,baz=314,slow=39						
GERES	**GERESS Array B**	**84.04**	**329**	LR	LR	22 58 03.3	
	comp=Z,234nm,19.1s,baz=74,slow=39						

*IDC **26** 22:05:01.8±0.9, 9°78S×150°06E, h0km, mb3.9/9, mb1 4.1/11, mb1mx3.9/44, mbtmp4.0/11, ML3.8/1, Error ellipse: s-maj=20.5km s-min=19.6km az=146.0*
*ISCJB **26** 22:05:04.4±0.9, 9°85S±0°1×150°0E±0°1, h28km, mb3.9/8, Error ellipse: s-maj=20.2km s-min=15.4km az=22.0*
ISC 26 22:05:06.3±1.0, 9°85S±0°1×150°0E±0°2, h28km, n12,

σ1§00/12, **mb4.0/8, Eastern New Guinea region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**2.81**	**278**	Pn	**Pn**	**22 05 49.3**	**-0.1**
	23nm,0.3s,baz=78,slow=7.3,SNR=34						
PMG				Lg	Lg	22 06 33.5	
	43nm,0.3s,baz=80,slow=9.3,SNR=3.0						
WRA	**Warramunga Arr**	**18.15**	**235**	P	**Pn**	**22 09 15.8**	**-0.7**
	0.3nm,0.3s,baz=57,slow=14,SNR=13						
ASAR	**Alice Springs**	**20.63**	**226**	P	**P**	**22 09 44.5**	**+0.8**
	3.9nm,0.9s,baz=62,slow=10,SNR=25						
STKA	**Stephens Creek**	**23.30**	**198**	P	**P**	**22 10 11.2**	**-0.7**
	6.1nm,0.9s,baz=19,slow=9.2,SNR=8.8						
FITZ	**Fitzroy Crossi**	**25.00**	**248**	P	**P**	**22 10 27.1**	**-0.9**
	2.7nm,0.8s,baz=112,slow=11,SNR=8.5						
CMAR	**Chiang Mai Arr**	**57.66**	**299**	P	**P**	**22 14 55.9**	**+1.3**
	1.2nm,0.7s,baz=125,slow=5.3,SNR=15						
VNDA	**Vanda**	**67.98**	**177**	P	**P**	**22 16 03.2**	**+0.9**
	0.8nm,0.8s,baz=330,slow=8.1,SNR=4.8						
SONM	**Songino Array**	**69.15**	**330**	P	**P**	**22 16 11.0**	**+0.8**
	2.2nm,1.1s,baz=140,slow=6.2,SNR=8.6						
MKAR	**Makanchi Array**	**82.30**	**320**	P	**P**	**22 17 25.2**	**-0.1**
	0.4nm,0.7s,baz=102,slow=6.6,SNR=4.5						
ZALV	**Zalesovo Beam**	**83.79**	**327**	P	**P**	**22 17 31.0**	**-1.8**
	0.9nm,0.7s,baz=123,slow=5.3,SNR=3.5						
ILAR	**Eielson Array**	**87.82**	**22**	P	**P**	**22 17 51.9**	**-0.7**
	0.9nm,0.9s,baz=216,slow=6.9,SNR=6.1						
TORD	**Torodi Ar. Bea**	**148.76**	**279**	PKPbc	**PKPbc**	**22 24 52.3**	**+0.2**
	2.1nm,0.8s,baz=62,slow=2.6,SNR=11						

CSEM ***26*** *22:07:52.4±0.3, 41.60N×20.08E, h10km, ML2.3, Error ellipse: s-maj=7.9km s-min=4.3km az=35.0*
SKO ***26*** *22:07:52.7, 41.62N×20.06E, h11km*
PDG ***26*** *22:07:52.1±0.3, 41.67N×20.13E, h12km, ML2.5/11, Error ellipse: s-maj=0.5km s-min=0.6km az=0.0*
BEO ***26*** *22:07:53.5±0.3, 41.59N×20.17E, h8km±3km, M2.3/1*

ISC 26 22:07:52.3±1.1, 41.62N±0.02×20.09E±0.02, h6km±9km, n60, σ0§94/101**, 10C-9D, Albania**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TIR	**Tirane**	**0.32**	**212**	*i* Pg	**Pg**	**22 07 58.3**	**-0.3**
TIR				eSg	**Sb**	**22 08 06.6**	**+0.7**
TIR	**Tirane**	**0.32**	**212**	*i* Pg	**Pg**	**22 07 58.3**	**-0.3**
ULC	**Ulcinj**	**0.72**	**299**	⇓*i* Pg	**Pg**	**22 08 05.5**	**-0.7**
ULC				eSg	**Sb**	**22 08 16.9**	**-0.6**
ULC	**Ulcinj**	**0.72**	**299**	⇓*i* Pg	**Pg**	**22 08 05.5**	**-0.7**
ULC				eSg	**Sb**	**22 08 16.9**	**-0.6**
OHR	**Ohrid**	**0.73**	**134**	*i* Pg	**Pb**	**22 08 07.2**	**-0.4**
OHR				*i* Sg	**Sb**	**22 08 16.8**	**-1.1**
OHR	**Ohrid**	**0.73**	**134**	*i* Pg	**Pb**	**22 08 07.1**	**-0.4**
OHR				*i* Sg	**Sb**	**22 08 16.8**	**-1.1**
DRME	**Dracevica, Mon**	**0.89**	**310**	⇓*i* Pg	**Pg**	**22 08 08.0**	**-1.3**
DRME				eSg	**Sb**	**22 08 22.2**	**0.0**
DRME	**Dracevica, Mon**	**0.89**	**310**	⇓*i* Pg	**Pg**	**22 08 08.0**	**-1.3**
DRME				eSg	**Sb**	**22 08 22.2**	**0.0**
PVY	**Plav**	**0.98**	**354**	e*P*g	**Pg**	**22 08 09.8**	**-1.3**
PVY				eSg	**Sg**	**22 08 24.5**	**+0.6**
PVY	**Plav**	**0.98**	**354**	e*P*g	**Pg**	**22 08 09.8**	**-1.3**
PVY				eSg	**Sg**	**22 08 24.5**	**+0.6**
PDG	**Podgorica**	**1.02**	**323**	e*P*g	**Pb**	**22 08 12.6**	**+0.2**
PDG				eSg	**Sn**	**22 08 28.0**	**+0.1**
PDG	**Podgorica**	**1.02**	**323**	e*P*g	**Pb**	**22 08 12.6**	**+0.2**
PDG				eSg	**Sb**	**22 08 28.0**	**+0.4**
TTG	**Podgorica**	**1.02**	**323**	⇓*i* Pg	**Pg**	**22 08 10.5**	**-1.5**
TTG				eSg	**Sb**	**22 08 26.5**	**+0.4**
SKO	**Skopje**	**1.07**	**70**	*i* Pg	**Pg**	**22 08 12.8**	**0.0**
SKO				*i* Sg	**Sg**	**22 08 26.6**	**0.0**
SKO	**Skopje**	**1.07**	**70**	*i* Pg	**Pg**	**22 08 12.8**	**0.0**
SKO				*i* Sg	**Sg**	**22 08 26.6**	**0.0**
BIA	**Bitola**	**1.10**	**123**	*i* Pg	**Pn**	**22 08 14.5**	**+0.1**
BIA				*i* Sg	**Sb**	**22 08 28.5**	**0.0**
BIA	**Bitola**	**1.10**	**123**	*i* Pg	**Pn**	**22 08 14.5**	**+0.1**
BIA				*i* Sg	**Sb**	**22 08 28.5**	**0.0**
BUM	**Brajici-Budva**	**1.12**	**308**	⇑*i* Pg	**Pb**	**22 08 12.9**	**-1.3**
BUM				eSg	**Sn**	**22 08 30.5**	**0.0**
BUM	**Brajici-Budva**	**1.12**	**308**	⇑*i* Pg	**Pb**	**22 08 12.9**	**-1.3**
BUM				eSg	**Sn**	**22 08 30.5**	**0.0**
BEY	**Berane**	**1.26**	**353**	e*P*g	**Pn**	**22 08 14.8**	**-1.8**
BEY				eSg	**Sn**	**22 08 33.9**	**0.0**
IVA	**Berane**	**1.26**	**353**	e*P*g	**Pn**	**22 08 14.8**	**-1.8**
IVA				eSg	**Sn**	**22 08 33.9**	**0.0**
CEME	**Cevo**	**1.27**	**317**	⇑*i* Pg	**Pn**	**22 08 15.2**	**-1.5**
CEME				eSg	**Sn**	**22 08 35.5**	**+1.3**
CEME	**Cevo**	**1.27**	**317**	⇑*i* Pg	**Pn**	**22 08 15.2**	**-1.5**
CEME				eSg	**Sn**	**22 08 35.5**	**+1.3**
NKME	**Niksic**	**1.43**	**324**	⇑*i* Pg	**Pn**	**22 08 18.1**	**-0.7**
NKME				eSg	**Sg**	**22 08 39.8**	**+1.6**
NKME	**Niksic**	**1.43**	**324**	⇑*i* Pg	**Pn**	**22 08 18.1**	**-0.7**
NKME				eSg	**Sg**	**22 08 39.8**	**+1.6**
NKY	**Niksic**	**1.45**	**326**	⇓*i* Pg	**Pn**	**22 08 18.3**	**-0.8**
NKY				eSg	**Sg**	**22 08 40.4**	**+1.6**
NKY	**Niksic**	**1.45**	**326**	⇓*i* Pg	**Pn**	**22 08 18.3**	**-0.8**
NKY				eSg	**Sg**	**22 08 40.4**	**+1.6**
HCY	**Herceg Novi**	**1.45**	**305**	⇑*i* Pg	**Pn**	**22 08 18.7**	**-0.4**
HCY				eSg	**Sg**	**22 08 40.7**	**+1.7**
HCY	**Herceg Novi**	**1.45**	**305**	⇑*i* Pg	**Pn**	**22 08 18.7**	**-0.4**
HCY				eSg	**Sg**	**22 08 40.7**	**+1.7**
SJES	**Sjenica**	**1.64**	**357**	e*P*g	**Pb**	**22 08 22.7**	**-0.4**
SJES				eSg	**Sg**	**22 08 47.2**	**+2.0**
BRY	**Bratogost**	**1.73**	**318**	⇑*i* Pn	**Pn**	**22 08 22.8**	**-0.2**
BRY				eSn	**Sb**	**22 08 47.0**	**+0.5**
BRY	**Bratogost**	**1.73**	**318**	⇑*i* Pn	**Pn**	**22 08 22.8**	**-0.2**
BRY				eSn	**Sb**	**22 08 47.0**	**+0.5**
BARS	**Barje**	**1.75**	**46**	e*P*n	**Pn**	**22 08 23.7**	**+0.5**
PLE	**Pljevlja**	**1.79**	**343**	⇓*i* Pn	**Pn**	**22 08 23.4**	**-0.4**
PLE				eSn	**Sb**	**22 08 48.2**	**-0.1**
PLE	**Pljevlja**	**1.79**	**343**	⇓*i* Pn	**Pn**	**22 08 23.4**	**-0.4**
PLE				eSn	**Sb**	**22 08 48.2**	**-0.1**
UPM	**Unac-Piva**	**1.81**	**331**	e*P*n	**Pn**	**22 08 24.0**	**-0.2**
UPM				eSn	**Sb**	**22 08 49.0**	**0.0**
UPM	**Unac-Piva**	**1.81**	**331**	e*P*n	**Pn**	**22 08 24.0**	**-0.2**
UPM				eSn	**Sb**	**22 08 49.0**	**0.0**
VAY	**Valandovo**	**1.88**	**98**	*i* Pn	**Pn**	**22 08 24.8**	**-0.2**
VAY	**Valandovo**	**1.88**	**98**	e*P*g	**Pb**	**22 08 25.9**	**-1.2**
VAY	**Valandovo**	**1.88**	**98**	*i* Pn	**Pn**	**22 08 24.8**	**-0.2**
VAY	**Valandovo**	**1.88**	**98**	e*P*g	**Pb**	**22 08 25.9**	**-1.2**
IVAS	**Ivanjica**	**1.96**	**1**	e*P*n	**Pb**	**22 08 28.1**	**-0.3**
IVAS	**Ivanjica**	**1.96**	**1**	e*P*n	**Pb**	**22 08 28.1**	**-0.3**
STON	**Ston**	**2.17**	**306**	*i* Pn	**Pn**	**22 08 29.9**	**+0.9**
STON				Sn	**Sn**	**22 08 56.9**	**+0.7**
STON	**Ston**	**2.17**	**306**	*i* Pn	**Pn**	**22 08 29.9**	**+0.9**
STON				eSn	**Sb**	**22 08 58.0**	**-1.2**
BBLS	**Lazići**	**2.30**	**347**	e*P*n	**Pb**	**22 08 33.3**	**-1.0**
BBLS	**Lazići**	**2.30**	**347**	e*P*n	**Pb**	**22 08 33.3**	**-1.0**
GRUS	**Gruza**	**2.31**	**11**	e*P*n	**Pn**	**22 08 31.2**	**+0.2**
GRUS	**Gruza**	**2.31**	**11**	e*P*n	**Pn**	**22 08 31.2**	**+0.2**
DIVS	**Divibare**	**2.48**	**358**	e*P*n	**Pn**	**22 08 34.8**	**+1.5**
DIVS	**Divibare**	**2.48**	**358**	e*P*n	**Pn**	**22 08 34.8**	**+1.5**
ZAPS	**Zavoj**	**2.50**	**48**	e*P*n	**Pn**	**22 08 34.9**	**+1.3**
ZAPS	**Zavoj**	**2.50**	**48**	e*P*n	**Pn**	**22 08 35.0**	**+1.3**
ZAPS	**Zavoj**	**2.50**	**48**	e*P*n	**Pn**	**22 08 34.9**	**+1.3**
BZS	**Buzias**	**4.15**	**15**	e*P*n	**Pn**	**22 08 56.9**	**+0.8**
BZS	**Buzias**	**4.15**	**15**	e*P*n	**Pn**	**22 08 56.9**	**+0.8**
UDBI	**Udbina**	**4.30**	**314**	*i* Pn	**Pn**	**22 08 58.5**	**+0.1**
UDBI				Sn	**Sn**	**22 09 50.4**	**+1.5**
UDBI	**Udbina**	**4.30**	**314**	*i* Pn	**Pn**	**22 08 58.4**	**+0.1**
UDBI				Sn	**Sn**	**22 09 50.3**	**+1.5**
NVLJ	**Novalja**	**4.83**	**309**	e*P*n	**Pn**	**22 09 06.3**	**+0.8**
NVLJ				Sn	**Sn**	**22 10 00.4**	**-1.2**
NVLJ	**Novalja**	**4.83**	**309**	e*P*n	**Pn**	**22 09 06.2**	**+0.8**
NVLJ				Sn	**Sn**	**22 10 00.4**	**-1.2**

IDC ***26*** *22:20:23.4±0.7, 10.00S×160.48E, h0km, mb4.2/15, mb1 4.5/17, mb1mx4.3/44, mbtmp4.3/17, ML2.2/1, MS4.2/11, Ms1 4.2/11, ms1mx3.9/34, Error ellipse: s-maj=17.0km s-min=15.1km az=96.0*
ISCJB ***26*** *22:20:27.6±0.3, 10.06S±0.05×160.39E±0.05, h37km, mb4.7/43, MS4.2/8, Error ellipse: s-maj=7.5km s-min=6.6km az=33.2*
NEIC ***26*** *22:20:28.8±3.5, 10.00S×160.36E, h32km±24km, mb4.9/30, Error ellipse: s-maj=9.4km s-min=7.6km az=120.0*

ISC 26 22:20:29.3±0.5, 9.97S±0.07×160.42E±0.07, h37km, n88, σ1§14/67**, mb4.9/43, MS4.2/8, 1D, Bougainville-Solomon Islands region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HNR	**Honiara**	**0.71**	**319**	Pn	**Pn**	**22 20 41.3**	**-1.6**
	406nm,0.3s,baz=157,slow=5.7,SNR=5.0						
HNR				Sn	**Sn**	**22 20 53.6**	**+0.9**
	3μm,0.3s,baz=156,slow=20,SNR=36						
HNR	**Honiara**	**0.71**	**319**	*i* P	**Pn**	**22 20 40.5**	**-2.4**
PMG	**Port Moresby**	**13.09**	**271**	Pn	**Pn**	**22 23 33.6**	**+0.8**
	0.5nm,0.3s,baz=73,slow=14,SNR=2.0						
PMG				LR	LR	22 28 18.1	
	comp=Z,2μm,19.8s,baz=113,slow=36						
PMG	**Port Moresby**	**13.09**	**271**	e*P*n	P	22 23 38.7	-3.7
DZM	**Mont Dzumac**	**13.34**	**155**	LR	LR	22 28 13.5	
	comp=Z,506nm,19.0s,baz=292,slow=35						
CTA	**Charters Tower**	**16.97**	**232**	Pn	**Pn**	**22 24 23.7**	**-0.3**
	1.4nm,0.3s,baz=54,slow=13,SNR=15						
CTA				LR	LR	22 30 17.3	
	comp=Z,1μm,19.2s,baz=50,slow=35						
CTAO	**Charters Tower**	**16.97**	**232**	e*P*n	**P**	**22 24 27.2**	**+1.6**
	82nm,1.3s						
COEN	**Coen**	**17.33**	**255**	e*P*n	**P**	**22 24 28.9**	**-0.7**
	137nm,1.6s						
MSVF	**Nonsavu**	**18.76**	**116**	e*P*	**P**	**22 24 45.2**	**-0.2**
MSVF				e*s*P	**sP**	**22 24 58.9**	**-0.7**
JAY	**Jayapura**	**20.94**	**289**	P	**P**	**22 25 08.9**	**-0.3**
	1.2nm,0.7s,baz=89,slow=22,SNR=4.5						
ARMA	**Armidale**	**21.93**	**201**	e*P*	**P**	**22 25 20.1**	**+0.3**
	61nm,1.4s						
WRAB	**Tennant Creek**	**27.03**	**246**	e*P*	**P**	**22 26 06.8**	**-1.5**
	50nm,1.3s						
WR1	**Warramunga Arr**	**27.04**	**245**	e*P*	**P**	**22 26 07.8**	**-0.5**
WR1				e*P*cP	**PcP**	**22 29 30.4**	**+1.1**
WRA	**Warramunga Arr**	**27.04**	**245**	P	**P**	**22 26 07.8**	**-0.6**
	20nm,1.0s,baz=72,slow=8.6,SNR=42						
WRA				PcP	**PcP**	**22 29 30.4**	**+1.1**
	1.4nm,0.8s,baz=84,slow=3.4,SNR=2.6						
AFI	**Afiamalu**	**27.47**	**101**	LR	LR	22 34 45.8	
	comp=Z,602nm,20.7s,baz=264,slow=32						
STKA	**Stephens Creek**	**27.91**	**216**	P	**P**	**22 26 15.5**	**-0.5**
	6.5nm,0.9s,baz=30,slow=9.3,SNR=8.0						
STKA				LR	LR	22 36 27.5	
	comp=Z,418nm,20.8s,baz=29,slow=34						
GUMO	**Guam**	**28.04**	**326**	LR	LR	22 36 48.2	
	comp=Z,195nm,20.2s,baz=142,slow=35						
AS31	**Alice Springs**	**28.73**	**238**	e*P*	**P**	**22 26 22.4**	**-1.0**
ASAR	**Alice Springs**	**28.73**	**238**	P	**P**	**22 26 22.4**	**-1.1**
	4.8nm,0.9s,baz=70,slow=9.4,SNR=25						
H11S2	**WAKE ISLAND Hy**	**28.95**	**12**	T	T	22 55 10.9	
	baz=194,slow=76,SNR=45						
H11S3	**WAKE ISLAND Hy**	**28.96**	**12**	T	T	22 55 09.2	
	baz=194,slow=76,SNR=29						
H11S1	**WAKE ISLAND Hy**	**28.97**	**12**	T	T	22 55 12.4	
	baz=194,slow=76,SNR=28						
H11N1	**WAKE ISLAND Hy**	**30.18**	**12**	T	T	22 56 56.7	
	baz=193,slow=76,SNR=69						
H11N3	**WAKE ISLAND Hy**	**30.19**	**12**	T	T	22 56 54.4	
	baz=193,slow=76,SNR=62						
H11N2	**WAKE ISLAND Hy**	**30.20**	**12**	T	T	22 56 56.1	
	baz=193,slow=76,SNR=85						
BBOO	**Buckleboo**	**31.95**	**221**	e*P*	**P**	**22 26 51.4**	**-0.4**
	24nm,0.8s						
FITZ	**Fitzroy Crossi**	**34.65**	**253**	P	**P**	**22 27 14.8**	**-0.7**
	12nm,0.9s,baz=84,slow=6.8,SNR=23						
FITZ	**Fitzroy Crossi**	**34.65**	**253**	e*P*	**P**	**22 27 14.8**	**-0.7**
	14nm,0.8s						
SANI	**Sanana**	**35.11**	**281**	P	**P**	**22 27 22.3**	**+2.8**
PYZ	**Puysegur Point**	**36.46**	**173**	e*P*	**P**	**22 27 31.8**	**+1.2**
	256nm,1.8s						
MBWA	**Marble Bar**	**40.63**	**249**	e*P*	**P**	**22 28 05.6**	**-0.5**
	29nm,1.0s						
JAGI	**Jajag, Banyuwa**	**45.67**	**268**	e*P*	**P**	**22 28 45.1**	**-1.8**
	40nm,1.1s						
KSRS	**Korea Array**	**56.15**	**329**	P	**P**	**22 30 06.3**	**+1.0**
	2.3nm,0.9s,baz=155,slow=6.9,SNR=6.2						
KS15	**Wonju Array Si**	**56.16**	**329**	e*P*	**P**	**22 30 06.3**	**+0.9**
KSAR	**Wonju Array Be**	**56.16**	**329**	P	**P**	**22 30 06.3**	**+0.9**
MNSI	**Mandailing Nat**	**61.48**	**276**	P	P	22 30 47.1	+4.3
	19nm,1.1s						
PETK	**Petropavlovsk-**	**62.88**	**358**	LR	LR	22 55 11.8	
	comp=Z,101nm,21.3s,baz=237,slow=33						
GSI	**Gunungsitoli**	**63.54**	**276**	P	P	22 31 05.6	+8.9
	18nm,1.1s						
CM31	**Chiang Mai Arr**	**66.90**	**295**	e*P*	**P**	**22 31 19.1**	**+0.7**
CMAR	**Chiang Mai Arr**	**66.90**	**295**	P	**P**	**22 31 19.1**	**+0.7**
	1.1nm,0.7s,baz=118,slow=4.5,SNR=7.4						
VNDA	**Vanda**	**67.53**	**180**	P	**P**	**22 31 20.7**	**-0.6**
	3.0nm,0.9s,baz=350,slow=7.0,SNR=9.3						
SEY	**Seymchan**	**72.95**	**356**	P	**P**	**22 31 54.6**	**+0.1**
	0.9nm,0.3s,baz=268,slow=21,SNR=3.8						
SONA0	**Songino Array**	**74.77**	**326**	e*P*	**P**	**22 32 06.0**	**+0.3**
SONM	**Songino Array**	**74.77**	**326**	P	**P**	**22 32 06.0**	**+0.3**
	1.0nm,0.7s,baz=149,slow=5.9,SNR=6.8						
BILL	**Bilibino**	**77.93**	**2**	e*P*	**P**	**22 32 23.7**	**+0.7**
	12nm,0.9s						
SVW2	**Sparrevohn**	**78.82**	**20**	e*P*	**P**	**22 32 29.4**	**+1.3**
	15nm,1.0s						
RSO	**Redoubt South**	**79.37**	**22**	e*P*	**P**	**22 32 33.9**	**+2.6**
TTA	**Tatalina**	**80.01**	**19**	e*P*	P	22 32 39.2	+4.6
	16nm,1.4s						
QSPA	**South Pole Qui**	**80.02**	**180**	e*P*	**P**	**22 32 35.4**	**+0.6**
CAST	**Castle Rocks**	**81.62**	**20**	e*P*	**P**	**22 32 42.8**	**-0.4**
	12nm,1.2s						
TRF	**Thorofare Moun**	**82.24**	**20**	e*P*	P	22 32 49.4	+2.8
	6.6nm,0.9s						
BPAW	**Bear Paw Mtn.**	**82.44**	**19**	e*P*	**P**	**22 32 48.8**	**+1.3**
	21nm,1.9s						
RND	**Reindeer**	**82.70**	**21**	e*P*	**P**	**22 32 49.1**	**+0.2**
	13nm,1.2s						
MCK	**McKinley**	**82.89**	**20**	e*P*	**P**	**22 32 49.5**	**-0.3**
	29nm,1.1s						
DHY	**Denali Highway**	**83.02**	**21**	e*P*	P	22 32 54.8	+4.1
	6.8nm,1.2s						
MLY	**Manley**	**83.14**	**19**	e*P*	**P**	**22 32 51.5**	**+0.4**
	8.7nm,1.0s						
CRQM	**Cirque**	**83.25**	**24**	e*P*	**P**	**22 32 53.0**	**+1.0**
WRH	**Wood River Hil**	**83.64**	**20**	e*P*	**P**	**22 32 53.2**	**-0.4**
	8.1nm,1.0s						
BALM	**Baldy**	**83.73**	**24**	e*P*	P	22 32 51.0	-3.3
	11nm,0.9s						
CCB	**Clear Creek Bu**	**83.85**	**20**	e*P*	**P**	**22 32 54.2**	**-0.5**
	5.1nm,1.0s						
MDM	**Murphy Dome**	**83.91**	**20**	e*P*	**P**	**22 32 54.5**	**-0.5**
	8.2nm,0.9s						
ILAR	**Eielson Array**	**84.24**	**20**	P	**P**	**22 32 55.5**	**-1.2**
	1.2nm,0.5s,baz=253,slow=5.1,SNR=16						
ILB	**Eielson Array**	**84.24**	**20**	e*P*	**P**	**22 32 55.5**	**-1.2**
DOT	**Dot Lake**	**84.55**	**22**	e*P*	**P**	**22 32 59.2**	**+0.9**
	12nm,1.0s						
EGAK	**Eagle**	**86.24**	**21**	e*P*	**P**	**22 33 08.2**	**+1.5**
	15nm,1.1s						
MK32	**Makanchi Array**	**89.19**	**318**	e*P*	**P**	**22 33 20.9**	**-0.4**
MKAR	**Makanchi Array**	**89.19**	**318**	P	**P**	**22 33 20.9**	**-0.4**
	0.2nm,0.3s,baz=104,slow=5.1,SNR=4.8						
NV01	**Mina Array Sit**	**89.38**	**51**	e*P*	**P**	**22 33 22.3**	**-0.3**
NVAR	**Mina Array Bea**	**89.38**	**51**	P	**P**	**22 33 22.3**	**-0.3**
	0.6nm,0.4s,baz=260,slow=5.4,SNR=4.5						
NVAR				LR	LR	23 09 03.7	
	comp=Z,201nm,18.3s,baz=269,slow=33						
WSHM	**Spangler Hills**	**89.38**	**54**	e*P*	**P**	**22 33 19.7**	**-2.8**
DAC	**Darwin (Calif)**	**89.45**	**53**	e*P*	P	22 33 28.1	+5.2
	6.9nm,1.1s						
WVOR	**Wild Horse Val**	**90.05**	**47**	e*P*	P	22 33 29.4	+3.9
	10nm,1.2s						
SYO	**Syowa Base**	**91.23**	**198**	⇓e*X*		22 33 24.2	
R11A	**Troy Canyon, C**	**91.45**	**51**	e*P*	P	22 33 35.5	+3.3
	6.3nm,1.3s						
NEW	**Newport**	**92.38**	**42**	LR	LR	23 09 03.6	
	comp=Z,139nm,21.4s,baz=54,slow=32						
LCMT	**Little Creek M**	**93.02**	**53**	e*P*	**P**	**22 33 39.6**	**+0.2**
	20nm,1.0s						
HLID	**Hailey**	**93.31**	**47**	e*P*	P	22 33 45.2	+4.5
	7.4nm,1.3s						
NRIK	**Noril'sk**	**93.32**	**340**	LR	LR	23 15 14.5	
	comp=Z,122nm,20.7s,baz=120,slow=35						
X18A	**Snowflake**	**95.27**	**56**	e*P*P	PP	22 37 36.2	-4.3
YKA	**Yellowknife Ar**	**96.45**	**28**	P	**P**	**22 33 53.4**	**-0.9**
	1.0nm,0.7s,baz=257,slow=4.7,SNR=24						
YKB5	**Yellowknife Ar**	**96.45**	**28**	e*P*	**P**	**22 33 53.4**	**-0.9**
PD31	**Pinedale Array**	**96.70**	**48**	e*P*	**P**	**22 33 56.1**	**-0.2**
PDAR	**Pinedale Array**	**96.70**	**48**	P	**P**	**22 33 56.1**	**-0.2**
	0.4nm,0.6s,baz=222,slow=2.0,SNR=3.7						
TXAR	**Lajitas Array**	**99.93**	**62**	LR	LR	23 11 55.4	
	comp=Z,178nm,20.2s,baz=0.0,slow=31						
ESDC	**Sonseca Array**	**147.31**	**337**	PKPbc	**PKPbc**	**22 40 10.3**	**+0.9**
	0.1nm,0.3s,baz=6.2,slow=3.7,SNR=3.5						
TORD	**Torodi Ar. Bea**	**158.92**	**281**	PKPab	**PKPab**	**22 41 00.7**	**+0.1**
	0.7nm,1.0s,baz=52,slow=2.4,SNR=2.5						
TOA1	**Torodi Ar. Sit**	**158.93**	**281**	e*P*KPab	**PKPab**	**22 41 00.7**	**0.0**
DBIC	**Dimbokro**	**165.07**	**258**	PKPab	**PKPab**	**22 41 25.2**	**-2.4**

5.3nm,1.1s,baz=267,slow=3.1,SNR=3.1

NIED ***26*** *22:35:00, 35.40N×141.10E, h23km, Mw4.2 Best double couple: M₀2.29000×10¹⁵ NP1:φ₀=150.00000°, δ51.00000°, λ-135.00000°. NP2:φ₀=27.00000°, δ56.00000°, λ-49.00000°*
IDC ***26*** *22:35:28.2±0.7, 35.40N×141.15E, h0km, mb3.7/13, mb1 3.9/18, mb1mx3.8/51, mbtmp3.8/18, ML3.5/4, MS3.5/6, Ms1 3.5/6, ms1mx3.2/65, Error ellipse: s-maj=17.9km s-min=15.0km az=92.0*
ISCJB ***26*** *22:35:31.1±0.5, 35.36N±0.04×141.10E±0.07, h33km, mb3.7/13, MS4.2/2, Error ellipse: s-maj=7.8km s-min=5.1km az=167.8*
JMA ***26*** *22:35:31.8±0.1, 35.42N×140.99E, h27km±2km, M4.2*
JMA Felt II J1.

ISC 26 22:35:32.2±0.7, 35.44N±0.04×140.98E±0.06, h33km, n39, σ1§50/**26, mb3.7/13, 3C-1D, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.29**	**339**	⇑P	**Pn**	**22 35 38.9**	**-1.1**
CHOJ				S	**Sb**	**22 35 44.1**	**-0.8**
KTR	**Katsuura**	**0.62**	**243**	⇓P	**Pb**	**22 35 44.1**	**-0.5**
JCN	**Nagara**	**0.64**	**269**	P	**Pb**	**22 35 45.1**	**+0.1**
BSO4	**Boso 4**	**0.69**	**230**	⇑P	**Pb**	**22 35 45.5**	**-0.3**
BSO3	**Boso 3**	**0.74**	**212**	⇑P	**Pb**	**22 35 45.7**	**-0.8**
BSO1	**Boso 1**	**0.78**	**180**	P	**Pb**	**22 35 45.5**	**-1.5**
JYT	**Yasato**	**1.02**	**321**	P	**Pb**	**22 35 50.4**	**-0.9**
JYT				S	**Sb**	**22 36 04.4**	**0.0**
JHO	**Hitachi**	**1.22**	**344**	P	**Pb**	**22 35 53.1**	**-1.6**
MJAR	**Matsushiro Arr**	**2.51**	**297**	Pn	**Pb**	**22 36 13.9**	**-2.6**
	5.9nm,0.3s,baz=93,slow=13,SNR=43						
MJAR				LR	LR	22 36 50.7	
	comp=Z,99nm,19.3s,baz=275,slow=32						
MAT	**Matsushiro**	**2.51**	**297**	P	**Pb**	**22 36 14.2**	**-2.4**
MAT				S	**Sb**	**22 36 44.3**	**-2.7**
JHJ	**Hachijo jima 2**	**2.52**	**204**	Pn	**Pn**	**22 36 10.3**	**-0.5**
	31nm,0.3s,baz=332,slow=22,SNR=19						
JHJ				Sn	**Sn**	**22 36 37.8**	**-2.4**
	39nm,0.3s,baz=91,slow=23,SNR=6.9						
JHJ				LR	LR	22 37 10.3	
	comp=Z,316nm,19.1s,baz=3.0,slow=40						
JCJ	**Chichijima**	**8.38**	**173**	Pn	**Pn**	**22 37 30.1**	**-1.2**
	11nm,0.3s,baz=281,slow=4.1,SNR=7.9						
JCJ				Sn	Sn	22 38 57.0	-7.8
	baz=61,slow=19						
JNU	**Nakatsue**	**8.68**	**257**	LR	LR	22 41 10.1	
	comp=Z,225nm,18.2s,baz=299,slow=39						
ASAJ	**Asahikawa**	**8.76**	**8**	Pn	**Pn**	**22 37 35.0**	**-1.5**
	0.8nm,0.3s,baz=256,slow=20,SNR=4.3						
KSRS	**Korea Array**	**10.71**	**285**	Pn	**Pn**	**22 38 04.3**	**+1.1**
	0.2nm,0.3s,baz=99,slow=13,SNR=2.6						
KS

*MEX **26** 22:45:29.3±0.4, 31.91N×115.43W, h8km±21km, MD3.3*
ISC 26 22:45:24.2±1.3, 31°98N±0°03×115°06W±0°04, h19km±3km, n16,σ1°66/25, 7C, Baja California

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MBIG	**Mexicali**	**0.45**	**345**	*eP*	Pn	22 45 39.5	+3.9
MBIG				*i* S	**Sn**	**22 45 46.6**	**+3.5**
CPBX	**Cerro Prieto**	**0.49**	**335**	⇑*eP*	**Pg**	**22 45 33.6**	**-0.5**
CPBX				⇑*eP*	**Pb**	**22 45 33.8**	**-0.4**
CPBX				*eS*	**Sg**	**22 45 39.5**	**-1.3**
CPBX				⇑*e*		22 45 41.2	
CPBX				AML	AML	22 45 41.2	
	comp=E,5μm,0.5s						
CPBX				⇑*e*		22 45 43.6	
CPBX				AML	AML	22 45 43.6	
	comp=N,3μm,0.2s						
ECBX	**El Chinero**	**0.50**	**179**	⇑*eP*	**Pn**	**22 45 36.1**	**-0.2**
ECBX				*eS*	**Sn**	**22 45 44.5**	**0.0**
SPIG	**San Pedro Mart**	**0.99**	**201**	⇑*eP*	**Pg**	**22 45 44.1**	**+0.5**
SPIG	**San Pedro Mart**	**0.99**	**201**	*ePg*	**Pg**	**22 45 44.0**	**+0.5**
SPIG				*eSg*	**Sb**	**22 45 56.3**	**+0.6**
SPIG	**San Pedro Mart**	**0.99**	**201**	*eP*	**Pg**	**22 45 44.0**	**+0.5**
SPIG				*eS*	**Sb**	**22 45 56.3**	**+0.6**
SPX	**San Pedro Mart**	**0.99**	**200**	*eP*	**Pg**	**22 45 44.1**	**+0.5**
GLA	**Glamis**	**1.09**	**10**	*ePg*	**Pb**	**22 45 42.6**	**-1.9**
113A	**Mohawk Valley,**	**1.35**	**54**	*ePg*	**Pn**	**22 45 47.5**	**-0.5**
CBX	**Cerro Bola**	**1.40**	**284**	*eP*	**Pn**	**22 45 48.0**	**-0.9**
CBX				AML	AML	22 46 08.5	
	comp=N,234nm,0.3s						
CBX				⇑*e*		22 46 08.5	
TJIG	**Tijuana**	**1.44**	**289**	*eP*	**Pn**	**22 45 48.0**	**-1.3**
TJIG				*eS*	**Sn**	**22 46 03.3**	**-4.3**
BAR	**Barrett**	**1.54**	**298**	*ePn*	**Pg**	**22 45 55.6**	**+1.8**
Y12C	**Blythe**	**1.83**	**14**	*ePn*	**Pb**	**22 45 57.2**	**+0.2**
214A	**Organ Pipe Nat**	**1.91**	**90**	*ePn*	**Pn**	**22 45 55.6**	**-0.2**
214A				*eSn*	**Sn**	**22 46 19.8**	**+0.5**
Y14A	**Wickenburg**	**2.61**	**41**	*ePn*	**Pb**	**22 46 09.7**	**-0.8**
WSHM	**Spangler Hills**	**4.14**	**331**	*ePn*	**Pn**	**22 46 29.3**	**+2.8**
WSHM				*ePg*	**Pb**	**22 46 38.4**	**+1.9**
WSHM				*eSn*	Sn	22 47 05.2	-9.3
WSHM				*eSg*	**Sb**	**22 47 25.2**	**-1.1**

IDC 26 22:46:30.0±9.2, 4.75S×145.61E, h0km, mb3.8/3, mb1 4.0/5, mb1mx3.6/31, mbtmp3.9/5, ML3.1/2, MS3.4/2, Ms1 3.4/2, ms1mx2.9/40, Error ellipse: s-maj=136.3km s-min=47.6km az=26.0, Near north coast of New Guinea

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PMG	**Port Moresby**	**4.88**	**162**	Pn	Pn	22 47 46.1	+1.5
	8.0nm,0.3s,baz=294,slow=6.8,SNR=12						
PMG				Sn	Sn	22 48 32.6	-9.3
	2.7nm,0.3s,baz=348,slow=19,SNR=3.8						
WRA	**Warramunga Arr**	**18.67**	**215**	P	P	22 50 49.9	+0.1
	0.3nm,0.3s,baz=39,slow=12,SNR=19						
ASAR	**Alice Springs**	**21.94**	**210**	P	P	22 51 24.5	-0.9
	1.5nm,0.8s,baz=36,slow=10.0,SNR=9.7						
DAV	**Davao City (W)**	**23.19**	**300**	LR	LR	22 59 26.8	
	comp=Z,113nm,20.2s,baz=303,slow=34						
FITZ	**Fitzroy Crossi**	**23.61**	**234**	P	P	22 51 43.8	+0.9
	2.2nm,0.6s,baz=50,slow=11,SNR=8.0						
STKA	**Stephens Creek**	**27.25**	**187**	P	P	22 52 14.9	-1.0
	1.9nm,0.7s,baz=4.5,slow=14,SNR=3.1						
JCJ	**Chichijima**	**31.83**	**354**	LR	LR	23 04 25.6	
	comp=Z,50nm,20.7s,baz=108,slow=34						

*IDC **26** 23:04:15.5±1.3, 14.12N×121.17E, h0km, mb3.6/4, mb1 3.8/4, mb1mx3.4/59, mbtmp3.6/4, Error ellipse: s-maj=93.8km s-min=25.1km az=68.0*
*ISCJB **26** 23:04:26.3±0.8, 13.91N±0.07×120.38E±0.10, h100km, mb3.4/4, Error ellipse: s-maj=13.8km s-min=9.3km az=5.9*
*MAN **26** 23:04:28, 13.79N×120.47E, h76km, mb4.2, ML3.0, MS2.7*
ISC 26 23:04:27.4±0.9, 13°83N±0°07×120°5E±0°1, h100km, n9, σ1°41/12, mb3.5/4, 1C-2D, Mindoro

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
TGY	**Tagaytay City**	**0.54**	**60**	⇓*iP*	**Pn**	**23 04 46.3**	**+2.8**
TGY				*i* S	**Sn**	**23 04 56.1**	**+0.4**
PGP	**Puerto Galera**	**0.58**	**124**	⇑*eP*	**Pn**	**23 04 43.8**	**-0.1**
PGP				*i* S	**Sn**	**23 04 56.0**	**-0.3**
LQP	**Lukban**	**1.09**	**75**	⇓*eP*	**Pn**	**23 04 48.9**	**-0.2**
SJMP	**San Jose**	**1.51**	**155**	*eP*	**Pn**	**23 04 55.5**	**+1.7**
BUSP	**Coron**	**1.84**	**188**	*eP*	**Pn**	**23 04 57.6**	**-0.3**
BUSP				*eS*	**Sn**	**23 05 22.7**	**+1.6**
SONM	**Songino Array**	**35.86**	**344**	P	**P**	**23 11 17.1**	**-0.6**
	1.0nm,0.6s,baz=164,slow=10.0,SNR=12						
WRA	**Warramunga Arr**	**36.24**	**158**	P	**P**	**23 11 20.6**	**-0.4**
	0.5nm,1.0s,baz=339,slow=9.0,SNR=3.1						
MKAR	**Makanchi Array**	**45.78**	**324**	P	**P**	**23 12 39.9**	**+0.9**
	0.1nm,0.5s,baz=120,slow=9.4,SNR=4.6						
YKA	**Yellowknife Ar**	**92.74**	**22**	P	**P**	**23 17 26.5**	**-1.7**
	0.2nm,0.8s,baz=311,slow=4.4,SNR=5.7						

JMA 26 23:06:12.9±0.3, 36°67N×143°34E, h49km, M3.8, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**2.08**	**283**	P	Pn	23 06 46.9	+1.5
ONAJ				S	Sn	23 07 11.3	+1.1
JFK	**Kawauchi**	**2.09**	**290**	P	Pn	23 06 46.6	+1.1
JFK				S	Sn	23 07 10.9	+0.5
JHO	**Hitachi**	**2.23**	**269**	P	Pn	23 06 48.4	+1.0
JHO				*eS*	Sn	23 07 14.1	+0.4
JMM	**Marumori**	**2.36**	**301**	P	Pn	23 06 50.7	+1.6
JMM				S	Sn	23 07 17.6	+0.8
JFT	**Otama**	**2.55**	**290**	P	Pn	23 06 53.8	+2.1
JFT				S	Sn	23 07 23.7	+2.2
BSO1	**Boso 1**	**2.78**	**224**	P	Pn	23 06 55.5	+1.0
BSO1				*eS*	Sn	23 07 28.6	+2.1
JMK	**Ichinoseki**	**2.83**	**324**	P	Pn	23 06 56.9	+1.3
JMK				S	Sn	23 07 28.8	+0.4
JAG	**Ashikaga**	**3.14**	**267**	P	Pn	23 07 01.6	+1.8
JAG				S	Sn	23 07 37.2	+1.1
JOM	**Ohasama**	**3.23**	**331**	P	Pn	23 07 02.7	+1.6
JOM				*eS*	Sn	23 07 37.8	-0.5
JYK	**Kaneyama**	**3.26**	**314**	P	Pn	23 07 03.1	+1.6
JYK				*eS*	Sn	23 07 40.3	+1.3
JRY	**Ryogami san**	**3.64**	**261**	P	Pn	23 07 08.2	+1.4
JRY				*eS*	Sn	23 07 49.2	+0.7
JOD2	**Odawara 2**	**3.72**	**249**	P	Pn	23 07 09.2	+1.3
JOD2				S	Sn	23 07 51.1	+0.6
JANG	**Nango**	**3.96**	**339**	P	Pn	23 07 13.5	+2.3
JYN	**Shimob**	**4.06**	**255**	P	Pn	23 07 14.4	+1.9
JYN				*eS*	Sn	23 07 59.7	+0.9

PGC 26 23:07:14.2±1.4, 50.43N×130.23W, h10km, ML3.0/21, Mw3.6, 201km west of Pt. Hardy, Bc Vancouver Island Region, Vancouver Island region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
HOLB	**Holberg**	**1.35**	**80**	P	Pn	23 07 37.0	-2.2
HOLB				S	Sb	23 07 53.1	-4.0
BPBC	**Brooks Peninsu**	**1.60**	**99**	Pn	Pn	23 07 39.8	-2.8
PHC	**Port Hardy**	**1.81**	**80**	Pn	Pn	23 07 43.6	-1.7
PHC				Sn	Sn	23 08 03.8	-4.5
MAYB	**Maynard**	**1.96**	**89**	Pn	Pn	23 07 45.5	-2.1
FHRB	**Fair Harbour**	**2.03**	**99**	Pn	Pn	23 07 46.4	-2.0
EDB	**Eliza Dome**	**2.08**	**104**	Pn	Pn	23 07 46.1	-3.0
TLCB	**Telegraph Cove**	**2.17**	**85**	Pn	Pn	23 07 49.1	-1.2
TLCB				Sn	Sn	23 08 14.3	-3.0
BBB	**Bella Bella**	**2.21**	**36**	Pn	Pn	23 07 49.5	-1.6
BBB				Sn	Sn	23 08 12.9	-5.3
BNB	**Barry Inlet**	**2.35**	**337**	Pn	Pn	23 07 51.1	-1.8
BNB				Sn	Sn	23 08 18.4	-3.5
WOSB	**Woss**	**2.36**	**95**	Pn	Pn	23 07 51.5	-1.6
NCRB	**Newcastle Ridg**	**2.67**	**89**	Pn	Pn	23 07 55.5	-1.9
GDR	**Gold River**	**2.78**	**102**	Pn	Pn	23 07 56.7	-2.1
BCBC	**Bella Coola**	**2.92**	**47**	Sn	Sn	23 08 33.3	-2.5
MOBC	**Moresby Island**	**2.93**	**339**	Pn	Pn	23 07 59.0	-1.9
MOBC				Sn	Sn	23 08 33.3	-2.9
DIB	**Dawson Inlet,**	**3.11**	**334**	Pn	Pn	23 08 01.4	-1.9
DIB				Sn	Sn	23 08 36.9	-3.6
CBB	**Campbell River**	**3.15**	**95**	Pn	Pn	23 08 02.9	-1.0
VIB	**Van Inlet**	**3.17**	**334**	Pn	Pn	23 08 02.7	-1.6
VIB				Sn	Sn	23 08 39.0	-3.2
BTB	**Buttle Lake**	**3.19**	**106**	Pn	Pn	23 08 02.9	-1.6
BTB				Sn	Sn	23 08 37.3	-5.4
MWAB	**Mount Washingt**	**3.25**	**100**	Pn	Pn	23 08 04.2	-1.1
OZB	**Mount Ozzard**	**3.41**	**114**	Pn	Pn	23 08 07.5	+0.1
TXB	**Texada**	**3.80**	**99**	Pn	Pn	23 08 11.7	-1.2
MGB	**Mount Grey**	**3.87**	**110**	Pn	Pn	23 08 13.6	-0.3
NDB	**Naden**	**3.91**	**336**	Pn	Pn	23 08 13.0	-1.3
NDB				Sn	Sn	23 08 59.8	-0.5
YOUB	**Youbou, Lake C**	**4.17**	**109**	Pn	Pn	23 08 18.7	+0.8
SHB	**Sechelt**	**4.18**	**99**	Pn	Pn	23 08 17.3	-0.8
LZB	**Mount Lazard**	**4.55**	**111**	Pn	Pn	23 08 24.2	+1.0
UBRB	**Upper Baezaeko**	**4.55**	**55**	Pn	Pn	23 08 23.9	+0.6
UBRB				Sn	Sn	23 09 14.5	-1.8
GOBB	**Galiano Island**	**4.61**	**106**	Pn	Pn	23 08 24.3	+0.5
MCW	**Mount Constitu**	**5.12**	**107**	Pn	Pn	23 08 31.4	+0.4
LLLB	**Lillooet**	**5.33**	**85**	Pn	Pn	23 08 33.4	-0.5
CMW	**Cultus Mountai**	**5.66**	**108**	Pn	Pn	23 08 39.7	+1.2
MBW	**Mount Baker**	**5.66**	**104**	Pn	Pn	23 08 39.6	+1.1
JCW	**Jim Creek**	**5.87**	**109**	Pn	Pn	23 08 42.5	+1.3
B06A	**Marblemount**	**6.01**	**105**	Pn	Pn	23 08 44.0	+0.9
RPW	**Rockport**	**6.02**	**106**	Pn	Pn	23 08 44.2	+0.8
GPW	**Glacier Peak**	**6.38**	**108**	Pn	Pn	23 08 49.3	+0.8
LTY	**Liberty**	**7.06**	**113**	Pn	Pn	23 08 59.7	+2.0
B08A	**Colville Reser**	**7.41**	**102**	Pn	Pn	23 09 03.0	+0.7

*CSEM **26** 23:11:49.0±0.2, 43.98N×7.72E, h5km, ML2.8/21, Error ellipse: s-maj=4.3km s-min=3.4km az=155.0*
*LDG **26** 23:11:49.7±0.1, 43.95N×7.74E, h3km, Md2.8/3, Ml2.8/30, Error ellipse: s-maj=1.9km s-min=1.4km az=151.0*
*GEN **26** 23:11:49.7, 43.91N×7.72E, h6km, ML2.3*
*ISCJB **26** 23:11:49.2±0.3, 43.95N±0.02×7.72E±0.03, h27km±2km, Error ellipse: s-maj=4.0km s-min=3.2km az=162.0*
*ROM **26** 23:11:49.3±0.2, 43.95N×7.73E, h7km±3km, Ml2.4/8, Error ellipse: s-maj=3.2km s-min=2.7km az=41.0*
*STR **26** 23:11:49.7±0.3, 43.95N×7.75E, h5km, Ml2.6, Error ellipse: s-maj=0.0km s-min=0.0km az=0.0*
ISC 26 23:11:48.7±0.9, 43°94N±0°02×7°76E±0°02, h18km±3km, n92,σ1°10/166, 1C, Near south coast of France

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
IMI	**Imperia**	**0.10**	**109**	⇑*iPg*	**Pg**	**23 11 52.6**	**+0.2**
IMI				Sg	**Sg**	**23 11 54.6**	**-0.3**
	2μm,0.3s						
IMI	**Imperia**	**0.10**	**109**	P	**Pg**	**23 11 52.6**	**+0.2**
IMI				Sg	**Sg**	**23 11 54.6**	**-0.3**
	2μm,0.3s						
SBF	**Sospel**	**0.25**	**251**	*ePg*	**Pg**	**23 11 54.2**	**-0.2**
SBF				*eSg*	**Sg**	**23 11 57.6**	**-0.8**
	953nm,0.3s						
SBF	**Sospel**	**0.25**	**251**	*ePg*	**Pg**	**23 11 54.2**	**-0.2**
SBF				*eSg*	**Sg**	**23 11 57.6**	**-0.8**
	477nm,0.3s						
RORO	**Rocca Rossa**	**0.28**	**52**	Pg	**Pb**	**23 11 56.0**	**+0.9**
RORO				Sg	**Sb**	**23 12 00.6**	**+1.2**
	180nm,0.1s						
RORO	**Rocca Rossa**	**0.28**	**52**	P	**Pb**	**23 11 56.0**	**+0.9**
RORO				Sg	**Sb**	**23 12 00.6**	**+1.2**
	180nm,0.1s						
LUCF	**Luceram**	**0.30**	**261**	Pg	**Pg**	**23 11 55.5**	**+0.1**
LUCF				Sg	**Sg**	**23 11 59.9**	**0.0**
LUCF	**Luceram**	**0.30**	**261**	Pg	**Pg**	**23 11 55.5**	**+0.1**
LUCF				Sg	**Sg**	**23 11 59.9**	**0.0**
REVF	**Revere**	**0.35**	**235**	Pg	**Pg**	**23 11 56.6**	**+0.5**
REVF				Sg	**Sg**	**23 12 01.4**	**+0.3**
REVF	**Revere**	**0.35**	**235**	Pg	**Pg**	**23 11 56.6**	**+0.5**
REVF				Sg	**Sg**	**23 12 01.4**	**+0.3**
ENR	**Entracque**	**0.38**	**319**	P	**Pg**	**23 11 57.2**	**+0.6**
STV	**Sant Anna di V**	**0.44**	**314**	Pg	**Pg**	**23 11 58.2**	**+0.6**
STV				Sg	**Sg**	**23 12 04.2**	**+0.5**
	291nm,0.2s						
STV	**Sant Anna di V**	**0.44**	**314**	P	**Pg**	**23 11 58.2**	**+0.6**
STV				Sg	**Sg**	**23 12 04.2**	**+0.5**
	291nm,0.2s						
MVIF	**Mont Vial**	**0.44**	**264**	Pg	**Pg**	**23 11 58.1**	**+0.3**
MVIF				Sg	**Sg**	**23 12 04.2**	**+0.3**
MVIF	**Mont Vial**	**0.44**	**264**	Pg	**Pg**	**23 11 58.1**	**+0.3**
MVIF				Sg	**Sg**	**23 12 04.2**	**+0.3**
FINB	**Finale Ligure**	**0.47**	**60**	Pg	**Pb**	**23 11 59.5**	**+1.1**
	349nm,0.2s						
FINB	**Finale Ligure**	**0.47**	**60**	Pg	**Pb**	**23 11 59.5**	**+1.1**
	349nm,0.2s						
QLNO	**Quiliano**	**0.57**	**48**	Pg	**Pb**	**23 12 01.4**	**+1.3**
	137nm,0.2s						
QLNO	**Quiliano**	**0.57**	**48**	Pg	**Pb**	**23 12 01.4**	**+1.3**
	137nm,0.2s						
CALN	**Calern**	**0.66**	**253**	Pg	**Pg**	**23 12 02.0**	**+0.2**
CALN				Sg	**Sb**	**23 12 11.5**	**+0.9**
CALN	**Calern**	**0.66**	**253**	Pg	**Pg**	**23 12 02.0**	**+0.2**
CALN				Sg	**Sb**	**23 12 11.5**	**+0.9**
DOI	**San Damiano**	**0.67**	**327**	Pg	**Pg**	**23 12 02.7**	**+0.7**
DOI				Sg	**Sb**	**23 12 12.3**	**+1.3**
	159nm,0.2s						
DOI	**San Damiano**	**0.67**	**327**	Pg	**Pg**	**23 12 02.7**	**+0.7**
DOI				Sg	**Sb**	**23 12 12.3**	**+1.3**
	159nm,0.2s						
PZZ	**Stroppo**	**0.73**	**321**	P	**Pb**	**23 12 03.8**	**+0.8**
PZZ				S	**Sb**	**23 12 13.7**	**+1.0**
PCP	**Piancastagn**	**0.82**	**43**	Pg	**Pn**	**23 12 06.1**	**+0.7**
	108nm,0.3s						
PCP	**Piancastagn**	**0.82**	**43**	Pg	**Pn**	**23 12 06.1**	**+0.7**
	108nm,0.3s						
FRF	**La Foret Royal**	**0.90**	**245**	*ePg*	**Pb**	**23 12 06.0**	**+0.3**
FRF	**La Foret Royal**	**0.90**	**245**	*ePn*	**Pn**	**23 12 07.4**	**+1.0**
FRF				*eSg*	**Sb**	**23 12 17.8**	**+0.5**
	111nm,0.2s						
FRF	**La Foret Royal**	**0.90**	**245**	*ePg*	**Pb**	**23 12 06.0**	**+0.3**
FRF	**La Foret Royal**	**0.90**	**245**	*ePn*	**Pn**	**23 12 07.4**	**+1.0**
FRF				*eSg*	**Sb**	**23 12 17.8**	**+0.5**
	56nm,0.2s						
MBDF	**Montbardon**	**1.06**	**318**	*ePg*	**Pb**	**23 12 09.4**	**+0.8**
MBDF				*eSg*	**Sg**	**23 12 23.6**	**+0.4**
	59nm,0.3s						
MBDF	**Montbardon**	**1.06**	**318**	*ePg*	**Pb**	**23 12 09.4**	**+0.8**
MBDF				*eSg*	**Sg**	**23 12 23.6**	**+0.4**
	30nm,0.3s						
LMR	**La Mourre**	**1.09**	**237**	*ePg*	**Pb**	**23 12 09.7**	**+0.6**
LMR				*eSg*	**Sb**	**23 12 23.9**	**+0.9**
	136nm,0.2s						
LMR	**La Mourre**	**1.09**	**237**	*ePg*	**Pb**	**23 12 09.7**	**+0.6**
LMR				*eSg*	**Sb**	**23 12 23.9**	**+0.9**
	68nm,0.2s						
RRL	**Rocca Remolon**	**1.20**	**325**	Pg	**Pn**	**23 12 11.8**	**+1.0**
RRL	**Rocca Remolon**	**1.20**	**325**	Pg	**Pn**	**23 12 11.8**	**+1.0**
RSP	**Reno Superiore**	**1.26**	**344**	P	**Pn**	**23 12 12.0**	**+0.5**
SC2M	**Scurtabo**	**1.35**	**70**	Pg	**Pb**	**23 12 14.3**	**+0.7**
	31nm,0.7s						
SC2M	**Scurtabo**	**1.35**	**70**	P	**Pb**	**23 12 14.3**	**+0.7**
CODM	**Codolo**	**1.57**	**73**	P	**Pn**	**23 12 17.1**	**+1.4**
CODM				S	**Sb**	**23 12 37.2**	**+0.5**
TRAV	**Traversella**	**1.57**	**360**	P	**Pb**	**23 12 17.6**	**+0.4**
SMRF	**Simiane la Rot**	**1.58**	**272**	*eP*	**Pb**	**23 12 18.3**	**+0.9**
SMRF				*eSg*	**Sb**	**23 12 39.0**	**+2.0**
	230nm,0.4s						
SMRF	**Simiane la Rot**	**1.58**	**272**	*eP*	**Pb**	**23 12 18.3**	**+0.9**
SMRF				*eSg*	**Sb**	**23 12 39.0**	**+2.0**
	115nm,0.4s						
LSD	**Lago del Serru**	**1.58**	**344**	Pg	**Pn**	**23 12 17.5**	**+1.4**
LSD	**Lago del Serru**	**1.58**	**344**	Pg	**Pn**	**23 12 17.5**	**+1.4**
PGF	**Pioggiola**	**1.66**	**147**	*ePn*	**Pn**	**23 12 16.7**	**-0.3**
PGF				*eSn*	**Sn**	**23 12 37.2**	**-0.7**
	12nm,0.2s						
PGF	**Pioggiola**	**1.66**	**147**	*ePn*	**Pn**	**23 12 16.7**	**-0.3**
PGF				*eSn*	**Sn**	**23 12 37.2**	**-0.7**
	5.8nm,0.2s						
ORIF	**Oris-en-Rattie**	**1.66**	**307**	*ePg*	**Pg**	**23 12 20.6**	**-0.1**
ORIF				*eSg*	**Sb**	**23 12 41.9**	**+2.4**
	76nm,0.6s						
ORIF	**Oris-en-Rattie**	**1.66**	**307**	*ePg*	**Pg**	**23 12 20.6**	**-0.1**
ORIF				*eSg*	**Sb**	**23 12 41.9**	**+2.4**
	38nm,0.6s						
LPG	**La Plagne**	**1.71**	**335**	*eP*	**Pb**	**23 12 20.4**	**+0.6**
LPG	**La Plagne**	**1.71**	**335**	*ePg*	**Pg**	**23 12 21.8**	**+0.1**
LPG				*eSg*	**Sg**	**23 12 43.6**	**-0.4**
	11nm,0.3s						
LPG	**La Plagne**	**1.71**	**335**	*eP*	**Pb**	**23 12 20.4**	**+0.6**
LPG	**La Plagne**	**1.71**	**335**	*ePg*	**Pg**	**23 12 21.8**	**+0.1**
LPG				*eSg*	**Sg**	**23 12 43.6**	**-0.4**
	5.5nm,0.3s						
LPL	**La Plagne**	**1.74**	**335**	*eP*	**Pb**	**23 12 21.0**	**+0.8**
LPL	**La Plagne**	**1.74**	**335**	*ePg*	**Pg**	**23 12 22.2**	**+0.1**
LPL				*eSg*	**Sg**	**23 12 44.5**	**-0.2**
	21nm,0.5s						
LPL	**La Plagne**	**1.74**	**335**	*eP*	**Pb**	**23 12 21.0**	**+0.8**
LPL	**La Plagne**	**1.74**	**335**	*ePg*	**Pg**	**23 12 22.2**	**+0.1**
LPL				*eSg*	**Sg**	**23 12 44.5**	**-0.2**
	10nm,0.5s						
GRAM	**Graiana**	**1.74**	**71**	P	**Pb**	**23 12 21.1**	**+0.9**
VIVF	**Saint-Julien-l**	**2.40**	**293**	*ePn*	**Pn**	**23 12 28.4**	**+1.4**
VIVF				*eSn*	**Sn**	**23 12 55.7**	**-0.3**
VIVF				*eSg*	**Sg**	**23 13 04.5**	**-1.2**
	28nm,0.4s						
VIVF	**Saint-Julien-l**	**2.40**	**293**	*ePn*	**Pn**	**23 12 28.4**	**+1.4**
VIVF				*eSn*	**Sn**	**23 12 55.7**	**-0.3**
VIVF				*eSg*	**Sg**	**23 13 04.5**	**-1.2**
	14nm,0.4s						
LASF	**Ste Croix**	**2.82**	**274**	*ePn*	**Pn**	**23 12 34.0**	**+1.1**
LASF				*eSn*	**Sn**	**23 13 06.2**	**-0.2**
	5.5nm,0.2s						
LASF	**Ste Croix**	**2.82**	**274**	*ePn*	**Pn**	**23 12 34.0**	**+1.1**
LASF				*eSn*	**Sn**	**23 13 06.2**	**-0.2**
	2.8nm,0.2s						
CABF	**La Chapelle**	**2.92**	**337**	*ePn*	**Pn**	**23 12 34.4**	**+0.1**
CABF				*eSn*	**Sn**	**23 13 08.4**	**-0.5**
	4.5nm,0.7s						
CABF	**La Chapelle**	**2.92**	**337**	*ePn*	**Pn**	**23 12 34.4**	**+0.1**
CABF				*eSn*	**Sn**	**23 13 08.4**	**-0.5**
	2.2nm,0.7s						
SMF	**Signal de Mont**	**3.87**	**316**	*ePn*	**Pn**	**23 12 47.5**	**+0.2**
SMF				*eSn*	**Sn**	**23 13 31.2**	**-1.0**
	2.1nm,0.2s						
SMF	**Signal de Mont**	**3.87**	**316**	*ePn*	**Pn**	**23 12 47.5**	**+0.2**
SMF				*eSn*	**Sn**	**23 13 31.2**	**-1.0**
	1.0nm,0.2s						
HINF	**Hinteralfeld**	**3.93**	**351**	*ePn*	**Pn**	**23 12 47.8**	**-0.3**
HINF				*eSn*	**Sn**	**23 13 31.8**	**-1.9**
	2.3nm,0.3s						
HINF	**Hinteralfeld**	**3.93**	**351**	*ePn*	**Pn**	**23 12 47.8**	**-0.3**
HINF				*eSn*	**Sn**	**23 13 31.8**	**-1.9**
	1.1nm,0.3s						
MTLF	**Montolieu**	**4.07**	**263**	*ePn*	**Pn**	**23 12 51.2**	**+1.2**
MTLF				*eSn*	**Sn**	**23 13 36.1**	**-1.1**
	2.6nm,0.4s						
MTLF	**Montolieu**	**4.07**	**263**	*ePn*	**Pn**	**23 12 51.2**	**+1.2**
MTLF				*eSn*	**Sn**	**23 13 36.1**	**-1.1**
	1.3nm,0.4s						
HAU	**Haudompre**	**4.18**	**347**	*ePn*	**Pn**	**23 12 51.7**	**+0.1**
HAU				*eSn*	**Sn**	**23 13 38.0**	**-2.0**
	4.6nm,0.3s						
HAU	**Haudompre**	**4.18**	**347**	*ePn*	**Pn**	**23 12 51.7**	**+0.1**
HAU				*eSn*	**Sn**	**23 13 38.0**	**-2.0**
	2.3nm,0.3s						
CAF	**Calviac**	**4.20**	**286**	*ePn*	**Pn**	**23 12 53.8**	**+2.0**
CAF				*eSn*	**Sn**	**23 13 39.0**	**-1.4**
CAF				*eSg*	**Sg**	**23 14 00.6**	**-2.8**
	3.2nm,0.4s						
CAF	**Calviac**	**4.20**	**286**	*ePn*	**Pn**	**23 12 53.8**	**+2.0**
CAF				*eSn*	**Sn**	**23 13 39.0**	**-1.4**
CAF				*eSg*	**Sg**	**23 14 00.6**	**-2.8**
	1.6nm,0.4s						
AVF	**Avril sur Loir**	**4.21**	**314**	*ePn*	**Pn**	**23 12 52.0**	**0.0**
AVF				*eSn*	**Sn**	**23 13 39.5**	**-1.2**
	0.9nm,0.2s						
AVF	**Avril sur Loir**	**4.21**	**314**	*ePn*	**Pn**	**23 12 52.0**	**0.0**
AVF				*eSn*	**Sn**	**23 13 39.5**	**-1.2**
	0.4nm,0.2s						
LOR	**Lormes**	**4.31**	**322**	*ePn*	**Pn**	**23 12 53.2**	**-0.1**
	baz=138						
LOR				*eSn*	**Sn**	**23 13 41.6**	**-1.5**
	1.5nm,0.3s						
LOR	**Lormes**	**4.31**	**322**	*ePn*	**Pn**	**23 12 53.2**	**-0.1**
LOR				*eSn*	**Sn**	**23 13 41.6**	**-1.5**
	0.8nm,0.3s						
SSF	**Saint Saulge**	**4.32**	**318**	*ePn*	**Pn**	**23 12 53.5**	**0.0**
SSF				*eSn*	**Sn**	**23 13 42.1**	**-1.3**
	2.2nm,0.4s						
SSF	**Saint Saulge**	**4.32**	**318**	*ePn*	**Pn**	**23 12 53.5**	**0.0**
SSF				*eSn*	**Sn**	**23 13 42.1**	**-1.3**
	1.1nm,0.4s						
BGF	**Bois d'Agland**	**4.35**

JIO				S		**Sn**	**23 13 48.0**	**-0.3**
JANG	**Nang**	**1.30**	**329**	P		**Pn**	**23 13 36.0**	**+0.1**
MJAR	**Matsushiro Arr**	**4.29**	**232**	P		Pn	23 14 21.1	+4.2
	1.2nm,0.3s,baz=35,slow=13,SNR=15							
USRK	**Ussuriysk Ar.**	**9.21**	**306**	P		Pn	23 15 29.5	+5.1
	0.2nm,0.3s,baz=104,slow=13,SNR=6.9							
H11N2	**WAKE ISLAND Hy**	**28.71**	**126**	T		T	23 49 31.0	
	baz=318,slow=75,SNR=40							
H11N1	**WAKE ISLAND Hy**	**28.72**	**126**	T		T	23 49 32.2	
	baz=318,slow=75,SNR=36							
H11N3	**WAKE ISLAND Hy**	**28.73**	**126**	T		T	23 49 33.9	
	baz=318,slow=75,SNR=36							
H11S1	**WAKE ISLAND Hy**	**29.51**	**128**	T		T	23 50 32.0	
	baz=319,slow=76,SNR=12							
H11S3	**WAKE ISLAND Hy**	**29.51**	**128**	T		T	23 50 33.2	
	baz=319,slow=76,SNR=16							
H11S2	**WAKE ISLAND Hy**	**29.52**	**128**	T		T	23 50 34.9	
	baz=319,slow=76,SNR=13							
ZALV	**Zalesovo Beam**	**41.03**	**311**	P		**P**	**23 20 54.4**	**+1.1**
	1.2nm,0.3s,baz=83,slow=12,SNR=6.4							
MKAR	**Makanchi Array**	**43.63**	**300**	P		**P**	**23 21 14.1**	**-0.7**
	0.1nm,0.3s,baz=77,slow=8.6,SNR=4.8							
WRA	**Warramunga Arr**	**59.38**	**189**	P		**P**	**23 23 12.4**	**-0.2**
	0.8nm,0.7s,baz=7.8,slow=7.7,SNR=5.5							

IDC 26 23:19:43.5±2.0, 20.29S×168.31E, h0km, mb3.9/3, mb1 4.2/4, mb1mx3.7/32, mbtmp3.8/4, ML3.3/1, Error ellipse: s-maj=81.3km s-min=30.7km az=148.0, Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
DZM	**Mont Dzumac**	**2.48**	**224**	Pn	Pn	23 20 24.9	-0.5
	6.5nm,0.3s,baz=90,slow=7.8,SNR=130						
DZM				Sn	Sn	23 20 52.8	-3.6
	9.3nm,0.3s,baz=331,slow=22,SNR=6.8						
WRA	**Warramunga Arr**	**31.87**	**265**	P	P	23 26 10.2	-0.5
	0.2nm,0.3s,baz=94,slow=8.1,SNR=7.1						
ASAR	**Alice Springs**	**32.04**	**258**	P	P	23 26 12.8	+0.7
	1.4nm,0.7s,baz=84,slow=9.2,SNR=5.7						
NVAR	**Mina Array Bea**	**90.15**	**49**	P	P	23 32 46.1	-0.1
	0.9nm,0.6s,baz=219,slow=5.6,SNR=4.5						

IDC 26 23:30:16.7±1.7, 10.01S×160.01E, h0km, mb3.8/4, mb1 4.0/4, mb1mx3.6/38, mbtmp3.8/4, MS3.7/5, Ms1 3.7/5, ms1mx3.2/23, Error ellipse: s-maj=33.0km s-min=15.5km az=109.0, Bougainville-Solomon Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
HNR	**Honiara**	**0.58**	**353**	Pn	Pn	23 30 31.2	-1.0
	278nm,0.3s,baz=171,slow=0.9,SNR=34						
HNR				Sn	Sn	23 30 44.0	+1.6
	692nm,0.3s,baz=233,slow=20,SNR=29						
HNR	**Honiara**	**0.58**	**353**	*i* P	Pb	23 30 30.5	+0.8
HNR				*i* S	Sn	23 30 43.0	+0.6
PMG	**Port Moresby**	**12.69**	**272**	LR	LR	23 38 16.5	
	comp=Z,322nm,18.3s,baz=144,slow=38						
WRA	**Warramunga Arr**	**26.66**	**245**	P	P	23 35 57.1	-0.5
	3.5nm,1.0s,baz=72,slow=9.6,SNR=8.0						
AFI	**Afiamalu**	**27.86**	**101**	LR	LR	23 46 06.5	
	comp=Z,102nm,20.0s,baz=316,slow=34						
ASAR	**Alice Springs**	**28.37**	**238**	P	P	23 36 11.9	-1.0
	0.7nm,0.8s,baz=70,slow=9.8,SNR=5.5						
ASAR				LR	LR	23 46 52.3	
	comp=Z,147nm,19.2s,baz=16,slow=35						
PPT	**Papeete**	**49.41**	**105**	LR	LR	23 58 20.7	
	comp=Z,72nm,18.3s,baz=193,slow=34						
SONM	**Songino Array**	**74.57**	**326**	P	P	23 41 59.0	+1.3
	0.4nm,0.3s,baz=124,slow=5.8,SNR=5.9						
MAW	**Mawson**	**83.54**	**202**	LR	LR	00 16 22.5	
	comp=Z,56nm,18.3s,baz=56,slow=33						
MKAR	**Makanchi Array**	**88.94**	**318**	P	P	23 43 15.0	+1.6
	0.1nm,0.3s,baz=92,slow=4.3,SNR=1.9						

JMA 26 23:37:27.4±0.2, 37.55N×142.03E, h29km±4km, M3.6, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JFK	**Kawauchi**	**0.94**	**259**	P	Pn	23 37 44.5	-0.2
JFK				S	Sn	23 37 56.6	-0.5
JMM	**Marumori**	**1.03**	**288**	P	Pn	23 37 45.7	-0.2
JMM				S	Sn	23 37 59.2	-0.1
JIO	**Ouri**	**1.05**	**329**	P	Pn	23 37 45.8	-0.4
ONAJ	**Iwakimizuishiy**	**1.08**	**246**	P	Pn	23 37 46.6	0.0
ONAJ				S	Sn	23 38 00.1	-0.5
JFT	**Otama**	**1.35**	**269**	P	Pb	23 37 51.4	-0.6
JFT				S	Sb	23 38 08.3	-0.5
JOU	**Okura**	**1.35**	**307**	P	Pn	23 37 51.2	+0.9
JHO	**Hitachi**	**1.50**	**232**	P	Pn	23 37 52.4	+0.1
JHO				S	Sn	23 38 10.1	-0.8
MAT	**Matsushiro**	**3.22**	**253**	P	Pn	23 38 19.8	+3.8
MAT				S	Sb	23 39 01.0	-1.7

MEX 26 23:44:07.3±0.8, 27.41N×111.43W, h13km, MD3.6, Gulf of California

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
GUYB	**Guaymas**	**0.69**	**45**	*e*P	Pg	23 44 18.7	-2.1
GUYB				*e*S	Sg	23 44 27.6	-2.3
SRIG	**Santa Rosalia**	**0.73**	**263**	*i* P	Pg	23 44 19.4	-2.1
SRIG				*e*S	Sg	23 44 28.7	-2.4
HSIG		**1.66**	**15**	*i* P	Pn	23 44 33.6	-2.5
HSIG				*e*S	Sn	23 44 51.9	-5.4

*ISCJB **26** 23:46:45.0±0.6, 37.68N±0.03×37.25E±0.04, h1km±7km, Error ellipse: s-maj=5.5km s-min=4.6km az=35.2*
*ISK **26** 23:46:44.7, 37.66N×37.27E, h7km, MD2.4*
*DDA **26** 23:46:45.0, 37.66N×37.26E, h7km, MD2.7*
*CSEM **26** 23:46:45.2±0.2, 37.66N×37.25E, h8km, MD2.4, Error ellipse: s-maj=6.1km s-min=5.0km az=124.0*

ISC 26 23:46:44.9±1.2, 37.66N±0.03×37.20E±0.03, h10km±11km, n23, σ0s30/36, Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
KMRS	**Kahramanmaras**	**0.28**	**238**	*e*PG	**Pb**	**23 46 51.7**	**-0.4**
KMRS				*e*SG	**Sb**	**23 46 56.9**	**-0.1**
KMRS	**Kahramanmaras**	**0.28**	**238**	*e*Pg	**Pb**	**23 46 51.7**	**-0.4**
KMRS				*e*Sg	**Sb**	**23 46 56.9**	**-0.1**
HCB	**Kahramanmara¯**	**0.39**	**217**	*i* P	**Pb**	**23 46 53.8**	**-0.1**
HCB				*i* S	**Sb**	**23 46 59.5**	**-0.5**
GZT	**Gaziantep**	**0.42**	**136**	*i* P	**Pg**	**23 46 53.3**	**+0.2**
GZT				*i* S	**Sg**	**23 46 58.6**	**0.0**
GAZ	**Gaziantep**	**0.48**	**179**	*e*PG	**Pg**	**23 46 54.6**	**+0.3**
GAZ	**Gaziantep**	**0.48**	**179**	*e*Pg	**Pg**	**23 46 54.7**	**+0.3**
KAMA	**Osmaniye**	**0.63**	**222**	*i* P	**Pb**	**23 46 58.1**	**-0.1**
KAMA				*i* S	**Sb**	**23 47 06.5**	**-0.6**
ANDN	**Andirin**	**0.69**	**264**	*i* P	**Pb**	**23 46 59.1**	**+0.1**
ANDN				*i* S	**Sb**	**23 47 08.7**	**+0.1**
ANDN	**Andirin**	**0.69**	**264**	P	**Pb**	**23 46 59.1**	**+0.1**
ANDN				S	**Sb**	**23 47 08.7**	**+0.1**
KUZU	**Kuzuini**	**0.89**	**187**	*i* P	**Pn**	**23 47 03.3**	**-0.2**
KUZU				*i* S	**Sn**	**23 47 16.8**	**+0.3**
KUZU	**Kuzuini**	**0.89**	**187**	P	**Pn**	**23 47 03.3**	**-0.2**
KUZU				S	**Sn**	**23 47 16.8**	**+0.3**
DARE	**Darende-Malaty**	**0.94**	**14**	*e*PG	**Pg**	**23 47 02.8**	**-0.2**
DARE				*e*SG	**Sb**	**23 47 16.1**	**+0.1**
DARE	**Darende-Malaty**	**0.94**	**14**	*e*Pg	**Pg**	**23 47 02.8**	**-0.2**
DARE				*e*Sg	**Sb**	**23 47 16.1**	**+0.1**
URFA	**Urfa**	**1.30**	**99**	*e*PN	**Pn**	**23 47 08.9**	**-0.4**
URFA	**Urfa**	**1.30**	**99**	*e*Pn	**Pn**	**23 47 08.9**	**-0.4**
SURC	**SANLIURFA_SURC**	**1.37**	**124**	*i* P	**Pg**	**23 47 10.4**	**-0.2**
SURC				*i* S	**Sg**	**23 47 28.7**	**-0.1**
SURC	**SANLIURFA_SURC**	**1.37**	**124**	P	**Pb**	**23 47 10.4**	**-0.2**
SURC				S	**Sg**	**23 47 28.7**	**-0.1**
TAHT	**Tahtakopru-Hat**	**1.52**	**213**	*e*PN	**Pb**	**23 47 13.4**	**+0.3**
TAHT	**Tahtakopru-Hat**	**1.52**	**213**	*e*Pn	**Pb**	**23 47 13.4**	**+0.3**
BNN	**Bunyan**	**1.60**	**319**	*e*PN	**Pb**	**23 47 14.6**	**-0.1**
BNN	**Bunyan**	**1.60**	**319**	*e*Pn	**Pb**	**23 47 14.6**	**-0.1**
SVRC	**Sivrice-ELAZID**	**1.81**	**66**	*e*PN	**Pn**	**23 47 16.8**	**+0.5**
SVRC	**Sivrice-ELAZID**	**1.81**	**66**	*e*Pn	**Pn**	**23 47 16.8**	**+0.5**

GUC 26 23:47:11.4±0.6, 36.38S×72.66W, h33km±6km, ML3.5, Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
COCH	**Cobquecura**	**0.27**	**337**	*i* P	Pn	23 47 18.0	-0.8
COCH				*i* S	Sb	23 47 23.4	-0.4
COCH				IAML		23 47 24.1	
	comp=N,14μm,0.2s						
CCHI	**Chillan**	**0.52**	**115**	*i* P	Pb	23 47 21.8	-0.5
CCHI				*i* S	Sb	23 47 28.8	-1.0
CCSP	**San Pedro de C**	**0.59**	**218**	*i* P	Pn	23 47 21.7	-1.7
CCSP				*i* S	Sb	23 47 30.1	-1.6
CCSP				IAML		23 47 31.9	
	comp=N,4μm,0.2s						

MEX 26 23:59:19.0±0.6, 27.39N×111.40W, h13km, MD3.5, Gulf of California

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
GUYB	**Guaymas**	**0.69**	**43**	*e*P	Pg	23 59 30.3	-2.1
GUYB				*e*S	Sg	23 59 39.1	-2.4
SRIG	**Santa Rosalia**	**0.75**	**265**	*e*P	Pg	23 59 31.3	-2.3
SRIG				*e*S	Sg	23 59 40.7	-2.7
HSIG		**1.67**	**14**	*e*P	Pn	23 59 45.4	-2.6
HSIG				*e*S	Sn	00 00 04.2	-5.1

*DDA **27** 00:04:34.4, 36.22N×35.54E, h7km, Md2.9*
*CSEM **27** 00:04:35.0±0.3, 36.03N×35.55E, h15km, ML1.4, Error ellipse: s-maj=5.9km s-min=4.1km az=32.0*
*ISK **27** 00:04:35.2, 36.07N×35.58E, h18km, MD2.6*

ISC 27 00:04:34.3±1.3, 36.04N±0.05×35.54E±0.03, h13km±11km, n22, σ0s44/37, Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
YAYL	**Yayladag**	**0.46**	**90**	*i* P	**Pg**	**00 04 43.5**	**+0.2**
YAYL				*i* S	**Sb**	**00 04 51.3**	**+0.3**
YAYL	**Yayladag**	**0.46**	**90**	P	**Pg**	**00 04 43.5**	**+0.2**
YAYL				S	**Sb**	**00 04 51.3**	**+0.3**
TAHT	**Tahtakopru-Hat**	**0.62**	**57**	*e*PG	**Pb**	**00 04 47.1**	**+0.1**
TAHT				*e*SG	**Sb**	**00 04 55.7**	**+0.1**
TAHT	**Tahtakopru-Hat**	**0.62**	**57**	*e*Pg	**Pb**	**00 04 47.1**	**+0.1**
TAHT				*e*Sg	**Sb**	**00 04 55.7**	**+0.1**
YURE	**YUREGIR**	**0.79**	**5**	*i* P	**Pb**	**00 04 50.3**	**+0.4**
YURE				*i* S	**Sn**	**00 05 03.3**	**+0.4**
YURE	**YUREGIR**	**0.79**	**5**	P	**Pb**	**00 04 50.3**	**+0.4**
YURE				S	**Sn**	**00 05 03.3**	**+0.4**
WRDH	**Warideh**	**0.88**	**127**	*e*P	**Pn**	**00 04 52.5**	**0.0**
WRDH				*e*S	**Sg**	**00 05 02.5**	**-0.4**
CEYT	**Ceyhan**	**0.98**	**10**	*e*PG	**Pn**	**00 04 54.3**	**+0.5**
CEYT				*e*SG	**Sn**	**00 05 07.7**	**0.0**
CEYT	**Ceyhan**	**0.98**	**10**	*e*Pg	**Pn**	**00 04 54.7**	**+0.5**
CEYT				*e*Sg	**Sn**	**00 05 07.7**	**0.0**
DRWC	**Darouich**	**1.08**	**57**	*e*P	**Pg**	**00 04 55.1**	**0.0**
KARA	**Karaisali**	**1.28**	**342**	*e*PN	**Pn**	**00 04 57.8**	**-0.2**
KARA	**Karaisali**	**1.28**	**342**	*e*Pn	**Pn**	**00 04 57.8**	**-0.2**
KUZU	**Kuzuini**	**1.44**	**59**	*i* P	**Pb**	**00 05 01.3**	**+0.3**
KUZU				*i* S	**Sg**	**00 05 20.1**	**-0.5**
KUZU	**Kuzuini**	**1.44**	**59**	P	**Pb**	**00 05 01.3**	**+0.3**
KUZU				S	**Sg**	**00 05 20.1**	**-0.5**
KAMA	**Osmaniye**	**1.46**	**38**	*i* P	**Pn**	**00 05 00.6**	**+0.2**
KAMA				*i* S	**Sn**	**00 05 18.0**	**-1.5**
IKL	**Isikli**	**1.52**	**278**	*e*PN	**Pb**	**00 05 02.6**	**+0.3**
IKL	**Isikli**	**1.52**	**278**	*e*Pn	**Pb**	**00 05 02.6**	**+0.3**
HCB	**Kahramanmara¯**	**1.70**	**40**	*i* P	**Pn**	**00 05 03.1**	**-0.7**
HCB				*i* S	**Sn**	**00 05 24.9**	**-0.5**
KERG	**Konya-Eregli**	**1.79**	**321**	*i* P	**Pn**	**00 05 04.9**	**-0.1**
KERG				*i* S	**Sb**	**00 05 28.9**	**-0.3**
KERG	**Konya-Eregli**	**1.79**	**321**	P	**Pn**	**00 05 04.9**	**-0.1**
KERG				S	**Sb**	**00 05 28.9**	**-0.3**
KMRS	**Kahramanmaras**	**1.82**	**36**	*e*PN	**Pn**	**00 05 06.0**	**+0.6**
KMRS	**Kahramanmaras**	**1.82**	**36**	*e*Pn	**Pn**	**00 05 06.0**	**+0.6**

*ATH **27** 00:07:31.9, 36.13N×27.71E, h27km±2km, ML2.1/2, Error ellipse: s-maj=2.9km s-min=1.3km az=50.0*
*ISCJB **27** 00:07:33.0±0.6, 36.14N±0.03×27.69E±0.04, h13km±5km, Error ellipse: s-maj=5.7km s-min=3.7km az=33.3*
*CSEM **27** 00:07:33.1±0.2, 36.15N×27.66E, h10km, ML2.1, Error ellipse: s-maj=6.8km s-min=4.4km az=126.0*
*ISK **27** 00:07:33.8, 36.14N×27.63E, h49km, MD2.7*
*DDA **27** 00:07:35.1, 36.30N×27.64E, h7km, Md3.0*

ISC 27 00:07:32.2±1.1, 36.14N±0.03×27.61E±0.03, h11km±10km, n30, σ0s44/47, Dodecanese Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ARG	**Arkhangelos**	**0.42**	**80**	P	**Pg**	**00 07 39.9**	**-0.7**
ARG				S	**Sg**	**00 07 45.4**	**-0.8**
NIS1	**Nisyros Isl.**	**0.58**	**323**	P	**Pb**	**00 07 44.0**	**-0.4**
NIS1	**Nisyros Isl.**	**0.58**	**323**	P	**Pb**	**00 07 44.0**	**-0.4**
NIS1				S	**Sn**	**00 07 55.7**	**-0.2**
NIS1				AML	AML	00 08 00.2	
	comp=N,552μm,0.3s						
NIS1				AML	AML	00 08 01.6	
	comp=E,802μm,0.4s						
KARP	**Karpathos**	**0.70**	**212**	*e*PG	**Pn**	**00 07 48.1**	**+0.1**
KARP				*e*SG	**Sn**	**00 07 58.7**	**-0.1**
KARP	**Karpathos**	**0.70**	**212**	P	**Pg**	**00 07 45.9**	**+0.2**
KARP	**Karpathos**	**0.70**	**212**	*e*Pg	**Pn**	**00 07 48.1**	**+0.1**
KARP				S	**Sn**	**00 07 57.5**	**-1.3**
KARP				*e*Sg	**Sn**	**00 07 58.7**	**-0.1**
KARP	**Karpathos**	**0.70**	**212**	P	**Pg**	**00 07 45.9**	**+0.2**
KARP				S	**Sn**	**00 07 57.5**	**-1.3**
KARP				AML	AML	00 07 59.4	
	comp=N,130μm,0.2s						
KARP				AML	AML	00 07 59.4	
	comp=E,229μm,0.2s						
BDRM	**Kayabasi**	**0.93**	**352**	*i* P	**Pn**	**00 07 51.0**	**-0.3**
BDRM				*i* S	**Sn**	**00 08 04.3**	**-0.4**
BDRM	**Kayabasi**	**0.93**	**352**	P	**Pn**	**00 07 51.0**	**-0.3**
BDRM				S	**Sn**	**00 08 04.3**	**-0.4**
BODT	**Bodrum**	**0.95**	**345**	*e*PG	**Pn**	**00 07 51.6**	**+0.1**
BODT				*e*SG	**Sn**	**00 08 04.6**	**-0.5**
BODT	**Bodrum**	**0.95**	**345**	*e*Pg	**Pn**	**00 07 51.7**	**+0.1**
BODT				*e*Sg	**Sn**	**00 08 04.6**	**-0.5**
DALY	**Dalyan (Mu¨la**	**1.08**	**51**	*e*PG	**Pn**	**00 07 53.1**	**-0.1**
DALY				*e*SG	**Sg**	**00 08 07.1**	**+0.1**
DALY	**Dalyan (Mu¨la**	**1.08**	**51**	*e*Pg	**Pn**	**00 07 53.1**	**-0.1**
DALY				*e*Sg	**Sg**	**00 08 07.1**	**+0.1**
TURN	**Turunc**	**1.08**	**47**	*i* P	Pb	00 07 47.6	-5.4
TURN				*i* S	Sb	00 07 59.5	-7.6
YER	**Yerkesik**	**1.13**	**28**	*e*PN	**Pg**	**00 07 53.9**	**-0.1**
YER	**Yerkesik**	**1.13**	**28**	*e*Pn	**Pg**	**00 07 53.9**	**-0.1**
FETY	**Fethiye**	**1.29**	**67**	*e*PN	**Pn**	**00 07 56.1**	**-0.1**
FETY	**Fethiye**	**1.29**	**67**	*e*Pn	**Pn**	**00 07 56.1**	**-0.1**
ZKR	**Zakros**	**1.53**	**228**	P	**Pg**	**00 08 01.5**	**-0.1**
ZKR				S	**Sg**	**00 08 21.6**	**+0.2**
ZKR	**Zakros**	**1.53**	**228**	P	**Pg**	**00 08 01.5**	**-0.1**
ZKR				S	**Sg**	**00 08 21.6**	**+0.2**
AYDN	**Tasoluk**	**1.53**	**8**	*i* P	**Pg**	**00 08 01.7**	**+0.1**
AYDN				*i* S	**Sn**	**00 08 19.7**	**+0.2**
AYDN	**Tasoluk**	**1.53**	**8**	P	**Pg**	**00 08 01.7**	**+0.1**
AYDN				S	**Sn**	**00 08 19.7**	**+0.2**
AYDB	**Zeytinkoy-Aydi**	**1.82**	**7**	*e*PN	**Pn**	**00 08 03.7**	**+0.2**
AYDB	**Zeytinkoy-Aydi**	**1.82**	**7**	*e*Pn	**Pn**	**00 08 03.7**	**+0.2**
NPS	**Neapolis**	**1.85**	**242**	P	**Pn**	**00 08 04.2**	**+0.4**
NPS	**Neapolis**	**1.85**	**242**	P	**Pn**	**00 08 04.2**	**+0.4**
NPS				S	**Sn**	**00 08 27.9**	**+0.2**
GOLH	**Golhisar**	**1.91**	**54**	*i* P	**Pb**	**00 08 07.9**	**+0.7**
GOLH				*i* S	**Sg**	**00 08 34.6**	**+0.9**
GOLH	**Golhisar**	**1.91**	**54**	P	**Pb**	**00 08 07.9**	**+0.7**
ELL	**Elmali**	**1.95**	**71**	*e*PN	**Pn**	**00 08 05.5**	**+0.1**
ELL	**Elmali**	**1.95**	**71**	*e*Pn	**Pn**	**00 08 05.5**	**+0.1**

*IDC **27** 00:25:01.4±2.7, 36.47N×71.31E, h155km±22km, mb3.4/9, mb1 3.5/16, mb1mx3.3/40, mbtmp3.9/16, Error ellipse: s-maj=20.6km s-min=14.6km az=170.0*
*ISCJB **27** 00:25:04.5±0.4, 36.74N±0.04×71.37E±0.05, h200km, mb3.4/10, Error ellipse: s-maj=6.4km s-min=4.4km az=148.6*
*NNC **27** 00:25:09.2±1.8, 37.12N×71.22E, h191km±22km, mb3.0, mpv4.0, Error ellipse: s-maj=19.7km s-min=14.0km az=68.0*

ISC 27 00:25:05.0±0.6, 36.71N±0.06×71.34E±0.06, h200km, n34, σ2s24/42, mb3.4/10, 5C-6D, Afghanistan-Tajikistan border region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SFK	**Sufi-Kurgan**	**3.71**	**27**	⇑P	**Pn**	**00 26 03.4**	**0.0**
	14nm,0.2s						
SFK				⇓S	**Sn**	**00 26 46.0**	**-3.2**
	134nm,0.5s						
THN	**Thein Dam**	**5.59**	**138**	*e*P	**Pn**	**00 26 26.0**	**-1.0**
THN				*e*S	**Sn**	**00 27 26.1**	**-5.6**
MNAS	**Manas**	**5.84**	**9**	⇓P	**Pn**	**00 26 29.2**	**-1.1**
	13nm,0.3s						
MNAS				⇓S	**Sn**	**00 27 33.0**	**-4.6**
	58nm,0.7s						
AAK	**Ala-Archa**	**6.39**	**21**	P	**Pn**	**00 26 38.0**	**+0.6**
	2.7nm,0.3s,baz=169,slow=5.4,SNR=21						
AAK				S	**Sn**	**00 27 50.0**	**-0.7**
	3.0nm,0.3s,baz=312,slow=23,SNR=25						
AAK	**Ala-Archa**	**6.39**	**21**	⇑P	**Pn**	**00 26 37.3**	**-0.2**
	3.6nm,0.4s						
AAK				⇑S	**Sn**	**00 27 47.0**	**-3.7**
	27nm,0.6s						
KK31	**Karatay Array**	**6.42**	**355**	⇓P	**Pn**	**00 26 37.4**	**-0.2**
	3.1nm,0.3s,baz=177,slow=12,SNR=161						
KK31				S	**Sn**	**00 27 46.1**	**-4.9**
	20nm,0.5s,baz=188,slow=24,SNR=18						
SDNR	**Sundarnagar**	**6.99**	**136**	*e*P	**Pn**	**00 26 44.6**	**-0.5**
TKM2	**Tokmak 2**	**7.01**	**27**	⇓P	**Pn**	**00 26 44.8**	**-0.7**
	4.9nm,0.6s						
TKM2				⇑S	**Sn**	**00 28 02.8**	**-2.6**
	14nm,0.8s						
GEYT	**Alibeck**	**10.60**	**281**	P	**Pn**	**00 27 30.0**	**-2.0**
	3.2nm,0.3s,baz=81,slow=9.2,SNR=67						
GEYT				S	**Sn**	**00 29 26.4**	**-3.9**
	1.8nm,0.3s,baz=281,slow=24,SNR=7.2						
MKAR	**Makanchi Array**	**12.96**	**36**	P	**Pn**	**00 28 02.9**	**+1.1**
	0.2nm,0.3s,baz=215,slow=11,SNR=6.8						
PYUN	**Piuthan**	**13.05**	**128**	*e*P	**Pn**	**00 28 02.0**	**-1.4**
	39nm,0.4s						
PYUN				*e*S	S	00 30 17.9	-11
KOLN	**Koldanda**	**13.67**	**127**	*e*P	**Pn**	**00 28 10.3**	**-0.8**
	22nm,0.3s						
GKN	**Gorkha**	**14.19**	**124**	*e*P	**Pn**	**00 28 17.6**	**+0.1**
	43nm,0.4s						
GKN				*e*S	S	00 30 43.5	-12
KKN	**Kakani**	**14.76**	**123**	*e*P	**Pn**	**00 28 24.5**	**0.0**
	35nm,0.5s						
DMN	**Daman**	**14.76**	**124**	*e*P	**P**	**00 28 24.8**	**-0.8**
	54nm,0.5s						
KURBB	**Kurchatov Arra**	**14.84**	**18**	P	**P**	**00 28 26.3**	**+0.4**
	0.1nm,0.3s,baz=208,slow=11,SNR=6.2						
PKIN	**Phulchoki**	**14.98**	**123**	*e*P	**P**	**00 28 27.9**	**0.0**
	46nm,0.4s						
AB31	**Akbulak array**	**15.03**	**330**	P	**Pn**	**00 28 26.8**	**-0.6**
	0.7nm,0.3s,baz=142,slow=9.9,SNR=85						
AB31				S	S	00 31 06.9	-7.3
	2.4nm,0.5s,baz=149,slow=24,SNR=14						
GUN	**Gumba**	**15.09**	**121**	*e*P	**P**	**00 28 28.9**	**-0.4**
	32nm,0.4s						
BVAR	**Borovoye Array**	**16.33**	**358**	P	**Pn**	**00 28 43.7**	**+0.7**
	0.4nm,0.3s,baz=160,slow=12,SNR=6.3						
AKTO	**Aktyubinsk**	**16.74**	**329**	P	**Pn**	**00 28 49.2**	**+1.3**
	1.4nm,0.3s,baz=136,slow=11,SNR=26						
AKTO	**Aktyubinsk**	**16.74**	**329**	⇑P	**Pn**	**00 28 48.0**	**+0.1**
	8.7nm,0.8s						
AKTO				⇓S	**S**	**00 31 48.0**	**-3.2**
	1.4nm,0.6s						
ZALV	**Zalesovo Beam**	**19.61**	**24**	P	**Pn**	**00 29 20.1**	**-1.7**
	0.8nm,0.3s,baz=218,slow=10,SNR=11						
BRTR	**Keskin Array B**	**29.63**	**287**	P	P	00 30 55.1	+3.4
	0.4nm,0.7s,baz=110,slow=11,SNR=3.6						
AKASG	**Malin Array Be**	**33.03**	**309**	P	**P**	**00 31 23.2**	**+2.1**
	0.2nm,0.3s,baz=79,slow=7.9,SNR=4.8						
FINES	**FINESS Array B**	**37.46**	**326**	P	**P**	**00 32 01.4**	**+2.6**
	0.6nm,0.3s,baz=124,slow=9.1,SNR=11						
ARCES	**ARCESS Array B**	**41.05**	**337**	P	**P**	**00 32 31.2**	**+2.7**
	4.8nm,1.1s,baz=118,slow=9.9,SNR=7.6						
NB2	**NORSAR Subarra**	**44.38**	**323**	P	**P**	**00 32 57.3**	**+2.0**
	comp=Z,0.6nm,0.5s,baz=97,slow=7.9						
NOA	**NORSAR Array B**	**44.38**	**323**	P	**P**	**00 32 57.3**	**+2.0**
	comp=Z,0.7nm,0.5s,baz=96,slow=7.8,SNR=5.2						
TORD	**Torodi Ar. Bea**	**66.00**	**269**	P	**P**	**00 35 30.8**	**+0.5**
	comp=Z,1.3nm,0.6s,baz=50,slow=5.7,SNR=34						
INK	**Inuvik**	**73.65**	**9**	P	**P**	**00 36 18.9**	**+2.9**
	comp=Z,0.5nm,0.5s,baz=327,slow=7.2,SNR=3.6						
YKA	**Yellowknife Ar**	**81.02**	**3**	P	**P**	**00 36 59.5**	**+2.5**
	comp=Z,0.3nm,0.4s,baz=351,slow=5.4,SNR=28						
WRA	**Warramunga Arr**	**81.87**	**122**	P	**P**	**00 37 03.2**	**+1.1**
	0.2nm,0.6nm,0.8s,baz=327,slow=4.9,SNR=4.5						
**

TTSI	**Tana Toraja**	**2.35**	**197**	P	**Pn**	**00 44 47.6**	**-1.1**
TTSI				S	**Sn**	**00 45 16.0**	**-0.3**
SPSI	**Sidrap Palu**	**3.25**	**193**	P	**Pn**	**00 44 58.0**	**-3.0**
SPSI				S	**Sn**	**00 45 36.1**	**-2.3**
KAPI	**Kappang**	**4.27**	**190**	Pn	**Pn**	**00 45 14.5**	**-0.6**
	4.7nm,0.3s,baz=48,slow=3.1,SNR=14						
KAPI				Sn	**Sn**	**00 46 03.0**	**-0.7**
	1.5nm,0.3s,baz=35,slow=22,SNR=3.5						
SANI	**Sanana**	**5.63**	**103**	P	**Pn**	**00 45 33.7**	**-0.1**
WRA	**Warramunga Arr**	**23.37**	**145**	P	**P**	**00 49 17.2**	**+0.2**
	1.8nm,0.8s,baz=334,slow=9.2,SNR=6.7						
ASAR	**Alice Springs**	**26.21**	**151**	P	**P**	**00 49 43.0**	**+0.1**
	0.6nm,0.7s,baz=327,slow=9.0,SNR=5.4						
STKA	**Stephens Creek**	**36.80**	**149**	P	**P**	**00 51 18.2**	**+2.4**
	0.8nm,0.4s,baz=288,slow=8.9,SNR=3.6						
SONM	**Songino Array**	**49.95**	**348**	P	**P**	**00 53 02.2**	**+0.5**
	0.1nm,0.3s,baz=183,slow=5.8,SNR=2.3						
MKAR	**Makanchi Array**	**57.99**	**330**	P	**P**	**00 54 01.1**	**+0.8**
	0.1nm,0.5s,baz=130,slow=7.2,SNR=2.6						

NIED ***27*** *00:55:00,37˚.00N×140˚.70E,h5km,Mw3.7 Best double couple: M₀4.07000×10¹⁴ NP1:φ₀52.00000°,δ44.00000°, λ-86.00000°. NP2:φ₀226.00000°,δ46.00000°, λ-94.00000°.*

IDC ***27*** *00:55:50.6±0.6,37˚.07N×140˚.68E,h0km,mb3.8/16, mb1 4.0/19,mb1mx3.9/35,mbtmp3.8/19,ML3.7/3,MS3.1/3, Ms1 3.1/3,ms1mx2.5/36,Error ellipse: s-maj=17.3km s-min=13.9km az=113.0*

ISCJB ***27*** *00:55:51.7±0.5,37˚.05N±0˚.03×140˚.78E±0˚.04,h18km±3km, mb4.0/21,MS4.0/1,Error ellipse: s-maj=6.0km s-min=4.2km az=26.0*

JMA ***27*** *00:55:52.2,37˚.04N×140˚.68E,h9km±1km,M4.1 Broadband fault plane solution: P waves. NP1: φ₀240.00000°,δ54.00000°,λ-91.00000°. NP2:φ₀62.00000°, δ36.00000°,λ-88.00000°. Principal axes: T Plg9.0000°, Azm331.0000°; N Plg1.0000°, Azm241.0000°; P Plg81.0000°, Azm145.0000°;*

JMA Felt II J1.

NEIC ***27*** *00:55:56.8±0.7,37˚.05N×140˚.60E,h44km±5km,mb4.2/4 Error ellipse: s-maj=6.3km s-min=5.0km az=126.0*

NEIC Recorded [2 JMA] in Fukushima and Ibaraki.

ISC 27 00:55:52.2±0.9, 37˚.05N±0˚.03×140˚.66E±0˚.04, h9km±6km, n61,σ0ˢ79/62, mb3.8/21, 6C, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.12**	**64**	P	**Pg**	**00 55 55.0**	**-0.1**
ONAJ				S	**Sg**	**00 55 56.8**	**-0.3**
JFK	**Kawauchi**	**0.36**	**28**	↑P	**Pg**	**00 55 59.4**	**+0.1**
JHO	**Hitachi**	**0.45**	**190**	↑P	**Pg**	**00 56 00.6**	**-0.3**
JHO				S	**Sg**	**00 56 06.5**	**-0.2**
JFT	**Otama**	**0.54**	**331**	↑P	**Pg**	**00 56 03.1**	**+0.5**
JFT				S	**Sb**	**00 56 10.7**	**-0.9**
JSB	**Shiboa**	**0.60**	**262**	↑P	**Pb**	**00 56 04.8**	**-0.1**
JSB				S	**Sb**	**00 56 13.0**	**-0.5**
JMM	**Marumori**	**0.82**	**7**	↑P	**Pg**	**00 56 07.7**	**-0.3**
JMM				S	**Sg**	**00 56 18.9**	**+0.2**
JFY	**Yanaizu**	**0.84**	**295**	↑P	**Pg**	**00 56 08.7**	**+0.2**
JFY				S	**Sg**	**00 56 19.9**	**+0.4**
MJAR	**Matsushiro Arr**	**2.03**	**256**	Pn	**Pn**	**00 56 27.6**	**+1.0**
	35nm,0.3s,baz=79,slow=15,SNR=85						
MJAR				Sn	**Sb**	**00 56 54.9**	**+0.1**
	54nm,0.3s,baz=75,slow=34,SNR=16						
MAJO	**Matsushiro**	**2.04**	**256**	*e*Pn	**Pb**	**00 56 28.1**	**-1.3**
MAT	**Matsushiro**	**2.04**	**256**	P	**Pb**	**00 56 27.9**	**-1.5**
MAT				S	**Sb**	**00 56 55.4**	**+0.6**
INU	**Inuyama**	**3.40**	**241**	*e*Pn	**Pn**	**00 56 47.5**	**+2.1**
JHJ	**Hachijo jima 2**	**3.99**	**191**	Pn	**Pn**	**00 56 55.3**	**+1.8**
	12nm,0.3s,baz=120,slow=23,SNR=4.2						
JHJ				Sn	**Sn**	**00 57 42.5**	**+2.2**
	23nm,0.3s,baz=71,slow=23,SNR=4.0						
ASAJ	**Asahikawa**	**7.21**	**11**	Pn	**Pn**	**00 57 38.8**	**+1.0**
	1.4nm,0.3s,baz=128,slow=8.0,SNR=3.9						
ASAJ				Sn	**Sn**	**00 59 01.0**	**+1.3**
	1.0nm,0.3s,baz=126,slow=28,SNR=2.3						
USRK	**Ussuriysk Ar.**	**9.71**	**320**	Pn	Pn	00 58 18.7	+6.6
	0.2nm,0.3s,baz=138,slow=12,SNR=8.7						
KSRS	**Korea Array**	**10.17**	**276**	Pn	Pn	00 58 25.2	+7.0
	0.3nm,0.3s,baz=90,slow=14,SNR=8.6						
KSRS				LR	LR	01 01 47.0	
	comp=Z,31nm,19.3s,baz=190,slow=35						
KS15	**Wonju Array Si**	**10.20**	**276**	*e*Pn	Pn	00 58 25.2	+6.5
KSAR	**Wonju Array Be**	**10.20**	**276**	Pn	Pn	00 58 25.2	+6.5
KLR	**Kul'dur**	**13.79**	**335**	LR	LR	01 04 18.5	
	comp=Z,30nm,18.6s,baz=166,slow=37						
SEY	**Seymchan**	**26.89**	**12**	P	**P**	**01 01 35.0**	**+1.9**
	0.7nm,0.3s,baz=177,slow=10.0,SNR=4.7						
SONA0	**Songino Array**	**27.28**	**304**	*e*P	**P**	**01 01 37.1**	**+0.1**
SONM	**Songino Array**	**27.28**	**304**	P	**P**	**01 01 37.1**	**+0.1**
	1.3nm,0.7s,baz=103,slow=9.2,SNR=8.4						
H11N2	**WAKE ISLAND Hy**	**28.67**	**120**	T	T	01 31 33.9	
	baz=313,slow=75,SNR=159						
H11N1	**WAKE ISLAND Hy**	**28.68**	**120**	T	T	01 31 34.5	
	baz=313,slow=75,SNR=100						
H11N3	**WAKE ISLAND Hy**	**28.69**	**120**	T	T	01 31 35.2	
	baz=313,slow=75,SNR=144						
H11S1	**WAKE ISLAND Hy**	**29.38**	**122**	T	T	01 32 32.8	
	baz=314,slow=76,SNR=362						
H11S3	**WAKE ISLAND Hy**	**29.38**	**122**	T	T	01 32 27.7	
	baz=314,slow=76,SNR=259						
H11S2	**WAKE ISLAND Hy**	**29.39**	**122**	T	T	01 32 26.9	
	baz=314,slow=76,SNR=251						
ZAA1	**Zalesovo Array**	**41.46**	**312**	*e*P	**P**	**01 03 38.2**	**-0.8**
ZAA1				*e*PcP	**PcP**	**01 05 36.1**	**-0.6**
ZALV	**Zalesovo Beam**	**41.46**	**312**	P	**P**	**01 03 38.2**	**-0.8**
	0.5nm,0.4s,baz=97,slow=8.5,SNR=3.6						
ZALV				PcP	**PcP**	**01 05 36.1**	**-0.6**
	0.5nm,0.4s,baz=17,slow=1.5,SNR=3.5						
MK32	**Makanchi Array**	**43.60**	**302**	*e*P	**P**	**01 03 56.9**	**+0.2**
MKAR	**Makanchi Array**	**43.60**	**302**	P	**P**	**01 03 56.9**	**+0.2**
	0.7nm,0.5s,baz=87,slow=9.4,SNR=7.9						
KURK	**Kurchatov**	**45.45**	**308**	*e*P	**P**	**01 04 10.4**	**-0.9**
	3.3nm,0.7s						
ILAR	**Eielson Array**	**49.80**	**32**	P	**P**	**01 04 45.1**	**+0.2**
	0.6nm,0.8s,baz=276,slow=6.4,SNR=7.2						
ILB	**Eielson Array**	**49.80**	**32**	*e*P	**P**	**01 04 45.1**	**+0.2**
VOSK	**Vostochnaya**	**49.82**	**312**	*e*P	**P**	**01 04 44.7**	**-0.6**
	2.0nm,0.9s						
BVAR	**Borovoye Array**	**50.12**	**312**	P	**P**	**01 04 46.9**	**-0.6**
	0.7nm,0.6s,baz=75,slow=7.8,SNR=5.0						
ZRNK	**Zerenda**	**50.95**	**312**	*e*P	**P**	**01 04 53.5**	**-0.3**
	1.6nm,0.7s						
INK	**Inuvik**	**54.65**	**27**	P	**P**	**01 05 20.3**	**-0.5**
	0.3nm,0.4s,baz=331,slow=5.2,SNR=4.8						
INK	**Inuvik**	**54.65**	**27**	*e*P	**P**	**01 05 20.3**	**-0.5**
	13nm,1.9s						
WR1	**Warramunga Arr**	**57.00**	**187**	*e*P	**P**	**01 05 37.5**	**-0.8**
WRA	**Warramunga Arr**	**57.00**	**187**	P	**P**	**01 05 37.5**	**-0.8**
	4.4nm,0.5s,baz=3.3,slow=7.3,SNR=52						
ABKAR	**Akbulak array**	**57.47**	**310**	*e*P	**P**	**01 05 41.0**	**-0.3**
AS31	**Alice Springs**	**60.72**	**187**	*e*P	**P**	**01 06 03.7**	**-0.4**
ASAR	**Alice Springs**	**60.73**	**187**	P	**P**	**01 06 03.7**	**-0.4**
	1.3nm,0.7s,baz=16,slow=7.1,SNR=12						
GEYT	**Ailbeck**	**63.30**	**299**	P	**P**	**01 06 21.5**	**0.0**
	0.9nm,0.4s,baz=31,slow=6.7,SNR=3.5						
YKA	**Yellowknife Ar**	**64.09**	**30**	P	**P**	**01 06 26.2**	**0.0**
	0.3nm,0.8s,baz=303,slow=6.6,SNR=6.4						
YKB5	**Yellowknife Ar**	**64.09**	**30**	*e*P	**P**	**01 06 26.2**	**0.0**
FIA0	**FINESS Array S**	**68.52**	**332**	*e*P	**P**	**01 06 53.9**	**-0.7**
FINES	**FINESS Array B**	**68.52**	**332**	P	**P**	**01 06 53.9**	**-0.6**
	1.4nm,0.9s,baz=106,slow=6.2,SNR=5.4						
FINES				LR	LR	01 39 49.3	
	comp=Z,87nm,18.2s,baz=252,slow=38						
AKASG	**Malin Array Be**	**73.92**	**322**	P	**P**	**01 07 26.4**	**-1.0**
	0.2nm,0.3s,baz=47,slow=6.0,SNR=5.7						
AKBB	**Malin Array Si**	**73.92**	**322**	*e*P	**P**	**01 07 26.4**	**-1.0**
NB200	**NORSAR Array S**	**73.94**	**337**	*e*P	**P**	**01 07 27.0**	**-0.4**
NOA	**NORSAR Array B**	**73.94**	**337**	P	**P**	**01 07 27.0**	**-0.4**
	0.9nm,0.8s,baz=41,slow=5.9,SNR=3.7						
NV01	**Mina Array Sit**	**75.46**	**53**	*e*P	**P**	**01 07 37.2**	**+0.3**
NVAR	**Mina Array Bea**	**75.46**	**53**	P	**P**	**01 07 37.2**	**+0.3**
	0.4nm,0.5s,baz=275,slow=6.0,SNR=3.5						
PD31	**Pinedale Array**	**78.08**	**45**	*e*P	**P**	**01 07 51.8**	**+0.1**
PDAR	**Pinedale Array**	**78.08**	**45**	P	**P**	**01 07 51.8**	**+0.1**
	0.5nm,0.7s,baz=264,slow=3.0,SNR=5.0						
GERES	**GERESS Array B**	**82.38**	**328**	P	**P**	**01 08 14.1**	**-0.4**
	0.2nm,0.4s,baz=43,slow=5.9,SNR=3.8						
OXF	**Oxford**	**94.91**	**39**	*e*P	**P**	**01 09 14.5**	**-0.5**
	139nm,0.9s						
TORD	**Torodi Ar. Bea**	**116.89**	**314**	PKP	**PKPdf**	**01 14 36.9**	**-0.9**
	0.5nm,1.1s,baz=354,slow=2.3,SNR=3.4						
LPAZ	**La Paz**	**147.20**	**59**	PKPbc	**PKPbc**	**01 15 37.0**	**-0.1**
	1.3nm,0.7s,baz=20,slow=8.7,SNR=5.6						

ISCJB ***27*** *01:06:15.6±0.5,38˚.64N±0˚.02×39˚.70E±0˚.03,h3km±5km, Error ellipse: s-maj=5.0km s-min=3.3km az=143.4*

DDA ***27*** *01:06:15.9,38˚.65N×39˚.66E,h5km,Md2.6*

ISK ***27*** *01:06:15.0,38˚.66N×39˚.71E,h7km,MD2.5*

CSEM ***27*** *01:06:16.0±0.2,38˚.63N×39˚.65E,h10km,MD2.5,Error ellipse: s-maj=5.8km s-min=4.5km az=49.0*

ISC 27 01:06:15.2±1.1, 38˚.66N±0˚.02×39˚.67E±0˚.02, h10km±11km, n26,σ0ˢ56/44, Turkey

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
PTK	**Pertek**	**0.32**	**317**	*e*PG	**Pg**	**01 06 22.3**	**+0.6**
PTK				*e*SG	**Sb**	**01 06 27.4**	**-1.1**
PTK	**Pertek**	**0.32**	**317**	*e*Pg	**Pg**	**01 06 22.3**	**+0.6**
PTK				*e*Sg	**Sb**	**01 06 27.4**	**-1.1**
SVRC	**Sivrice-ELAZID**	**0.40**	**226**	*e*PG	**Pg**	**01 06 23.4**	**+0.3**
SVRC				*e*SG	**Sb**	**01 06 30.4**	**-0.2**
SVRC	**Sivrice-ELAZID**	**0.40**	**226**	*e*Pg	**Pg**	**01 06 23.4**	**+0.3**
SVRC				*e*Sg	**Sb**	**01 06 30.4**	**-0.2**
TNCL	**Tunceli-Merkez**	**0.47**	**348**	*i* P	**Pb**	**01 06 25.6**	**0.0**
TNCL				*i* S	**Sb**	**01 06 32.0**	**-0.6**
TNCL	**Tunceli-Merkez**	**0.47**	**348**	P	**Pb**	**01 06 25.6**	**0.0**
TNCL				S	**Sb**	**01 06 32.0**	**-0.6**
ELZG	**Elazig**	**0.56**	**254**	*i* P	**Pg**	**01 06 25.8**	**-0.4**
ELZG				*i* S	**Sb**	**01 06 35.1**	**-0.2**
ELZG	**Elazig**	**0.56**	**254**	P	**Pg**	**01 06 25.8**	**-0.4**
ELZG				S	**Sb**	**01 06 35.1**	**-0.2**
BINT	**Bingol**	**0.68**	**71**	*e*Pg	**Pn**	**01 06 31.3**	**+0.4**
DYBB	**Diyarbakir**	**0.79**	**152**	*e*PG	**Pg**	**01 06 30.7**	**+0.2**
DYBB				*e*SG	**Sb**	**01 06 42.1**	**-0.2**
DIYA	**Diyarbakir**	**0.81**	**154**	*i* P	**Pb**	**01 06 32.1**	**+0.7**
DIYA				*i* S	**Sb**	**01 06 43.0**	**+0.5**
DIYA	**Diyarbakir**	**0.81**	**154**	P	**Pb**	**01 06 32.1**	**+0.7**
DIYA				S	**Sb**	**01 06 43.0**	**+0.5**
BNGB	**Bing¶ll**	**0.85**	**67**	*e*PG	**Pg**	**01 06 31.3**	**-0.4**
DIY	**Diyarbakir**	**0.88**	**150**	*e*Pg	**Pg**	**01 06 30.7**	**-1.4**
DIY				*e*Sg	**Sg**	**01 06 42.1**	**-1.4**
ILIC	**ilic-Erzincan**	**1.17**	**313**	*e*PN	**Pn**	**01 06 37.5**	**-0.2**
ILIC	**ilic-Erzincan**	**1.17**	**313**	*e*Pn	**Pn**	**01 06 37.6**	**-0.2**
MAZI	**Mazidag**	**1.34**	**153**	*e*PN	**Pb**	**01 06 40.7**	**+0.2**
MAZI	**Mazidag**	**1.34**	**153**	*e*Pn	**Pb**	**01 06 40.7**	**+0.2**
URFA	**Urfa**	**1.39**	**209**	*e*PN	**Pg**	**01 06 41.8**	**0.0**
URFA	**Urfa**	**1.39**	**209**	*e*Pn	**Pg**	**01 06 41.8**	**0.0**
AKCD	**Akcadag**	**1.42**	**256**	*i* P	**Pg**	**01 06 42.8**	**+0.4**
AKCD				*i* S	**Sg**	**01 07 01.1**	**+0.2**
AKCD	**Akcadag**	**1.42**	**256**	P	**Pg**	**01 06 42.8**	**+0.4**
AKCD				S	**Sg**	**01 07 01.1**	**+0.2**
BTMN	**Batman**	**1.47**	**121**	*i* P	**Pb**	**01 06 42.9**	**+0.2**
BTMN				*i* S	**Sb**	**01 07 02.1**	**+0.6**
BTMN	**Batman**	**1.47**	**121**	P	**Pb**	**01 06 42.9**	**+0.2**
BTMN				S	**Sb**	**01 07 02.1**	**+0.6**
KELT	**Kelkit**	**1.52**	**348**	*i* P	**Pg**	**01 06 45.5**	**+1.1**
KELT				*i* S	**Sg**	**01 07 04.2**	**-0.1**
MARD	**Mardin**	**1.60**	**147**	*i* P	**Pb**	**01 06 44.5**	**-0.4**
MARD				*i* S	**Sb**	**01 07 05.2**	**0.0**

WEL 27 01:11:51.4±0.5, 35˚.82S×178˚.94E, h306km±18km, ML3.7/1, Error ellipse: s-maj=24.5km s-min=13.7km az=0.0, Off east coast of North Island

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
WMGZ	**Waiomatatini S**	**2.04**	**192**	PN	Pn	01 12 39.0	+0.1
WMGZ				*e*SN	S	01 13 15.6	-1.1
PKGZ	**Pakihiroa**	**2.18**	**198**	PN	Pn	01 12 39.9	-0.1
PKGZ				SN	S	01 13 17.3	-1.6
PUZ	**Puketiti**	**2.31**	**194**	PN	Pn	01 12 41.0	-0.1
PUZ				SN	S	01 13 20.1	-0.8

ISCJB ***27*** *01:13:53.9±1.4,38˚.02N±0˚.06×142˚.0E±0˚.1,h46km±16km, mb3.4/3,Error ellipse: s-maj=19.1km s-min=7.5km az=19.3*

JMA ***27*** *01:13:54.8±0.1,38˚.05N×141˚.94E,h49km±1km,M3.8*

IDC ***27*** *01:13:56.1±1.3,38˚.83N×142˚.80E,h0km,mb3.3/3, mb1 3.6/5,mb1mx3.3/30,mbtmp3.3/5,ML2.7/2,Error ellipse: s-maj=43.3km s-min=25.6km az=124.0*

ISC 27 01:13:54.3±1.9, 38˚.01N±0˚.08×142˚.0E±0˚.2, h36km±5km, n18,σ0ˢ50/16, mb3.3/3, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**0.69**	**310**	P	**Pn**	**01 14 07.6**	**+0.1**
JIO				S	**Sn**	**01 14 16.5**	**-0.4**
JMM	**Marumori**	**0.98**	**262**	P	**Pn**	**01 14 11.5**	**+0.1**
JMM				S	**Sn**	**01 14 23.9**	**-0.1**
OFUJ	**Ofunato**	**1.10**	**346**	P	**Pn**	**01 14 13.2**	**0.0**
OFUJ				*e*S	**Sn**	**01 14 26.4**	**-0.8**
JFK	**Kawauchi**	**1.11**	**235**	P	**Pn**	**01 14 13.5**	**+0.2**
JFK				S	**Sn**	**01 14 27.0**	**-0.4**
JOU	**Okura**	**1.12**	**289**	P	**Pn**	**01 14 13.7**	**+0.2**
JOU				S	**Sn**	**01 14 27.6**	**-0.1**
JMK	**Ichinoseki**	**1.13**	**327**	P	**Pn**	**01 14 13.7**	**+0.2**
JMK				S	**Sn**	**01 14 27.6**	**-0.2**
JOM	**Ohasama**	**1.57**	**339**	P	**Pn**	**01 14 20.0**	**+0.4**
JOM				S	**Sn**	**01 14 38.9**	**+0.3**
MJAR	**Matsushiro Arr**	**3.37**	**245**	Pn	Pn	01 15 03.5	+19
	2.0nm,0.3s,baz=39,slow=16,SNR=6.3						
USRK	**Ussuriysk Ar.**	**9.77**	**312**	Pn	Pn	01 16 16.6	+4.5
	0.2nm,0.3s,baz=143,slow=14,SNR=4.2						
H11N2	**WAKE ISLAND Hy**	**28.26**	**123**	T	T	01 50 03.0	
	baz=316,slow=75,SNR=43						
H11N1	**WAKE ISLAND Hy**	**28.27**	**123**	T	T	01 50 04.6	
	baz=316,slow=75,SNR=87						
H11N3	**WAKE ISLAND Hy**	**28.28**	**123**	T	T	01 50 05.1	
	baz=316,slow=75,SNR=36						
H11S1	**WAKE ISLAND Hy**	**29.01**	**125**	T	T	01 51 01.8	
	baz=318,slow=76,SNR=35						
H11S3	**WAKE ISLAND Hy**	**29.01**	**125**	T	T	01 51 02.0	
	baz=318,slow=76,SNR=42						
H11S2	**WAKE ISLAND Hy**	**29.02**	**125**	T	T	01 51 05.5	
	baz=318,slow=76,SNR=26						
ILAR	**Eielson Array**	**48.42**	**33**	P	**P**	**01 22 33.4**	**+0.8**
	0.2nm,0.9s,baz=266,slow=6.6,SNR=4.3						
WRA	**Warramunga Arr**	**58.09**	**189**	P	P	01 23 57.4	+13
	0.6nm,0.8s,baz=6.7,slow=7.1,SNR=4.9						
YKA	**Yellowknife Ar**	**62.73**	**31**	P	**P**	**01 24 14.3**	**-1.0**
	0.2nm,0.8s,baz=296,slow=6.7,SNR=4.4						

ISCJB ***27*** *01:21:26.7±1.0,0˚.80N±0˚.08×97˚.14E±0˚.08,h27km, mb3.5/6,Error ellipse: s-maj=13.6km s-min=7.4km az=135.7*

DJA ***27*** *01:21:27.7±1.5,1˚N±10˚×97˚7E±1˚1,h46km±25km,M3.6/7, MLv3.6/7*

IDC ***27*** *01:21:39.0±5.9,1˚.29N×97˚.86E,h95km±45km, mb3.2/6, mb1 3.2/6,mb1mx3.0/40,mbtmp3.5/6,Error ellipse: s-maj=61.8km s-min=22.0km az=58.0*

ISC 27 01:21:28.5±1.4, 0˚.8N±0˚.1×97˚.2E±0˚.1, h27km, n18, σ0ˢ93/15, mb3.4/6, Northern Sumatera

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
GSI	**Gunungsitoli**	**0.65**	**40**	P	**Pn**	**01 21 42.2**	**+0.3**
MNSI	**Mandailing Nat**	**2.42**	**90**	P	**Pn**	**01 22 05.6**	**-0.7**
MNSI				S	**Sn**	**01 22 33.5**	**-1.6**
TPTI		**2.44**	**1**	P	**Pn**	**01 22 05.7**	**-0.9**
TPTI				S	**Sn**	**01 22 35.3**	**-0.2**
PSI	**Prapat**	**2.65**	**42**	P	**Pn**	**01 22 09.4**	**-0.2**
	1.8nm,0.3s,baz=304,slow=8.6,SNR=2.6						
PSI				S	Sn	01 22 30.8	-10
	2.2nm,0.3s,baz=190,slow=4.6,SNR=4.0						
KCSI	**Kotacane, Aceh**	**2.77**	**13**	P	**Pn**	**01 22 11.2**	**+0.1**
MLSI	**Meulaboh, Aceh**	**3.52**	**348**	P	**Pn**	**01 22 19.5**	**-2.0**
MLSI				S	**Sn**	**01 23 01.6**	**-0.7**
H08S2	**Diego Garcia H**	**25.99**	**251**	T	T	01 53 51.7	
	baz=72,slow=76,SNR=341						
H08S3	**Diego Garcia H**	**26.00**	**251**	T	T	01 53 52.5	
	baz=72,slow=76,SNR=333						
H08S1	**Diego Garcia H**	**26.01**	**251**	T	T	01 53 53.1	
	baz=72,slow=76,SNR=348						
H01W3	**Cape Leeuwin H**	**38.90**	**158**	T	T	02 09 57.7	
	baz=333,slow=76,SNR=26						
H01W2	**Cape Leeuwin H**	**38.91**	**158**	T	T	02 09 52.7	
	baz=333,slow=76,SNR=27						
H01W1	**Cape Leeuwin H**	**38.91**	**158**	T	T	02 09 58.8	
	baz=333,slow=76,SNR=23						
WRA	**Warramunga Arr**	**41.86**	**122**	P	**P**	**01 29 16.9**	**+0.2**
	0.2nm,0.6s,baz=305,slow=8.6,SNR=2.9						
SONM	**Songino Array**	**47.52**	**8**	P	**P**	**01 30 01.9**	**+0.3**
	0.2nm,0.3s,baz=191,slow=6.8,SNR=2.9						
MKAR	**Makanchi Array**	**47.61**	**346**	P	**P**	**01 30 03.1**	**+1.0**
	0.7nm,0.6s,baz=163,slow=8.2,SNR=6.8						
KURBB	**Kurchatov Arra**	**52.10**	**345**	P	**P**	**01 30 36.7**	**+0.5**
	0.2nm,0.7s,baz=165,slow=7.1,SNR=4.1						
ZALV	**Zalesovo Beam**	**53.94**	**351**	P	**P**	**01 30 50.1**	**+0.4**
	0.6nm,0.4s,baz=181,slow=7.3,SNR=4.4						
BVAR	**Borovoye Array**	**56.61**	**341**	P	**P**	**01 31 09.5**	**+0.5**
	0.1nm,0.4s,baz=112,slow=11,SNR=2.2						

ISCJB ***27*** *01:25:01.9±0.8,24˚.75N±0˚.05×122˚.86E±0˚.03, h112km±7km,Error ellipse: s-maj=9.0km s-min=3.8km az=3.0*

TAP ***27*** *01:25:01.2,24˚.74N×122˚.90E,h116km±1km,ML3.4,C*

JMA ***27*** *01:25:01.3±0.2,24˚.67N×122˚.85E,h123km±2km,M2.2*

ISC 27 01:25:02.2±1.9, 24˚.73N±0˚.07×122˚.86E±0˚.03, h114km±12km, n27,σ0ˢ65/49, 1D, Taiwan region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JYNG	**Yonagunijimaku**	**0.29**	**164**	P	**Pn**	**01 25 18.5**	**+0.2**
JYNG				S	**Sn**	**01 25 31.4**	**+1.0**
YOJ	**Yonaguni jima**	**0.30**	**152**	P	**Pn**	**01 25 18.6**	**+0.2**
YOJ				S	**Sn**	**01 25 31.6**	**+1.1**
EGS		**0.85**	**278**	*e*P	**Pn**	**01 25 21.7**	**-0.5**
	baz=271						
EGS				*e*S	**Sn**	**01 25 36.9**	**-0.3**
	baz=271						
IRIF	**Iriomote-Funau**	**0.89**	**116**	P	**Pn**	**01 25 22.4**	**-0.1**
IRIF				S	**Sn**	**01 25 38.1**	**+0.2**
TWC	**Suao**	**0.92**	**263**	*e*P	**Pn**	**01 25 22.1**	**-0.8**
	baz=259						
TWC				*e*S	**Sn**	**01 25 37.7**	**-0.8**
	baz=259						
NWF	**Wu-fen Shan**	**1.03**	**289**	*e*P	**Pn**	**01 25 24.1**	**0.0**
	baz=288						
ENA	**Nanau**	**1.06**	**254**	*e*P	**Pn**	**01 25 24.2**	**0.0**
	baz=249						
ENA				*e*S	**Sn**	**01 25 41.0**	**0.0**
	baz=249						
TWE	**Neicheng**	**1.08**	**270**	*e*P	**Pn**	**01 25 24.2**	**-0.3**
	baz=266						
HATJ	**Hateruma jima**	**1.09**	**128**	P	**Pn**	**01 25 25.0**	**+0.4**
HATJ				S	**Sn**	**01 25 41.9**	**+0.3**
PCYT	**Pengchaiyu**	**1.15**	**322**	*e*P	**Pn**	**01 25 25.6**	**+0.4**
	baz=319						
PCYT				*e*S	**Sn**	**01 25 42.2**	**-0.4**
	baz=319						
JKRS	**Kuro-shima**	**1.16**	**115**	P	**Pn**	**01 25 25.6**	**+0.3**
JKRS				S	**Sn**	**01 25 43.0**	**+0.2**
ENTT	**Nioudou**	**1.18**	**266**	*e*P	**Pn**	**01 25 26.0**	**+0.4**
	baz=262						
ENTT				*e*S	**Sn**	**01 25 43.7**	**+0.4**
	baz=262						
JIJ	**Ishigaki jima**	**1.23**	**107**	P	**Pn**	**01 25 25.8**	**-0.3**
JIJ				S	**Sn**	**01 25 43.3**	**-0.9**
TWD	**Chiawan**	**1.32**	**241**	*e*P	**Pn**	**01 25 26.1**	**-0.9**
	baz=235						
TWD				*e*S	**Sn**	**01 25 45.1**	**-0.9**
	baz=235						
JISG	**Ishigakijimahi**	**1.33**	**96**	P	**Pn**	**01 25 27.0**	**-0.2**
JISG				S	**Sn**	**01 25 45.4**	**-0.8**
NSK	**Sanguang**	**1.36**	**268**	P	**Pn**	**01 25 28.1**	**+0.4**
	baz=272						
NSK				S	**Sn**	**01 25 47.0**	**0.0**
	baz=272						
NNS	**Nan Shan**	**1.38**	**258**	*e*P	**Pn**	**01 25 28.0**	**+0.1**
	baz=252						
NNS				*e*S	**Sn**	**01 25 46.0**	**-1.5**
	baz=252						
WHF	**Hehuan Shan**	**1.56**	**249**	P	**Pn**	**01 25 30.3**	**-0.1

JIO	**Ouri**	**1.17 340**	P	Pn	01 50 19.9	+0.3
JFT	**Otama**	**1.22 278**	P	Pn	01 50 22.0	+1.6
JFT			S	Sn	01 50 37.2	+1.5
JHO	**Hitachi**	**1.28 235**	P	Pn	01 50 21.3	+0.1
JOU	**Okura**	**1.38 317**	P	Pn	01 50 24.1	+1.5
JOU			S	Sn	01 50 40.8	+1.2
JMK	**Ichinoseki**	**1.67 343**	P	Pn	01 50 27.8	+1.3

IDC 27 01:50:38.6±3.1, 18°15S×174°38W, h0km, mb4.1/3, mb1 4.3/4, mb1mx3.8/27, mbtmp4.1/4, ML3.4/1, Error ellipse: s-maj=139.7km s-min=23.0km az=137.0, Tonga Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AFI	**Afiamalu**	**4.90**	**31**	Pn	Pn	01 51 52.4	-1.2
	1.4nm,0.3s,baz=290,slow=12,SNR=3.1						
AFI				Sn	Sn	01 52 50.3	-0.8
	24nm,0.3s,baz=240,slow=23,SNR=10.0						
WRA	**Warramunga Arr**	**48.36**	**259**	P	P	01 59 22.2	-0.3
	3.0nm,0.5s,baz=97,slow=8.4,SNR=15						
ASAR	**Alice Springs**	**48.42**	**254**	P	P	01 59 22.9	-0.1
	4.1nm,0.6s,baz=88,slow=8.6,SNR=49						
ASAR				PcP	PcP	02 00 48.5	-1.1
	0.2nm,0.5s,baz=87,slow=4.9,SNR=2.8						
ILAR	**Eielson Array**	**85.31**	**11**	P	P	02 03 18.0	+1.0
	0.1nm,0.5s,baz=215,slow=6.1,SNR=2.7						
BRTR	**Keskin Array B**	**147.61**	**317**	PKPbc	PKPbc	02 10 25.4	0.0
	0.7nm,0.8s,baz=56,slow=3.1,SNR=3.9						
GERES	**GERESS Array B**	**148.69**	**350**	PKPbc	PKPbc	02 10 26.9	-1.0
	0.2nm,0.5s,baz=351,slow=3.2,SNR=2.5						

*IDC **27** 02:04:47.0±1.1, 36°.33N×28°.53E, h0km, mb3.7/4, mb1 3.5/8, mb1mx3.3/50, mbtmp3.5/8, ML3.2/4, MS3.3/2, Ms1 3.3/2, ms1mx2.5/46, Error ellipse: s-maj=22.5km s-min=13.9km az=156.0*

*ISCJB **27** 02:04:50.0±0.5, 36°.33N±0°.02×28°.75E±0°.02, h9km, 3km, mb3.5/4, MS3.4/2, Error ellipse: s-maj=3.2km s-min=2.5km az=3.6*

*ISK **27** 02:04:49.0, 36°.34N×28°.69E, h2km, MD4.0*

*THE **27** 02:04:50.6, 36°.36N×28°.74E, h0km±1km, ML3.4/8, Error ellipse: s-maj=1.7km s-min=1.1km az=161.0*

*DDA **27** 02:04:50.9, 36°.35N×28°.63E, h32km, Md3.5*

*ATH **27** 02:04:50.2, 36°.36N×28°.71E, h24km±1km, ML3.2/2, Error ellipse: s-maj=3.0km s-min=1.4km az=173.0*

*CSEM **27** 02:04:50.6±0.1, 36°.34N×28°.71E, h5km, ML3.4, Error ellipse: s-maj=3.1km s-min=2.2km az=176.0*

ISC 27 02:04:50.5±0.9, 36°34N±0°.02×28°.71E±0°.01, h13km±7km, n165, σ1§23/222, mb3.4/4, Dodecanese Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FETY	**Fethiye**	**0.42**	**45**	*e*PG	**Pg**	**02 04 58.4**	**-0.6**
FETY				*e*SG	**Sg**	**02 05 05.3**	**+0.6**
FETY	**Fethiye**	**0.42**	**45**	P	**Pg**	**02 04 58.2**	**-0.8**
FETY				S	**Sg**	**02 05 05.2**	**+0.5**
FETY	**Fethiye**	**0.42**	**45**	*e*Pg	**Pg**	**02 04 58.4**	**-0.6**
FETY				S	**Sg**	**02 05 05.2**	**+0.5**
DALY	**Dalyan (Mu¨la**	**0.48**	**354**	*e*PG	**Pg**	**02 04 59.1**	**-1.0**
DALY				*e*SG	**Sg**	**02 05 06.5**	**-0.1**
DALY	**Dalyan (Mu¨la**	**0.48**	**354**	*e*Pg	**Pg**	**02 04 59.1**	**-1.0**
DALY				*e*Sg	**Sg**	**02 05 06.5**	**-0.1**
ARG	**Arkhangelos**	**0.49**	**256**	P	**Pg**	**02 04 59.6**	**-0.6**
ARG				S	**Sb**	**02 05 08.6**	**+0.6**
ARG	**Arkhangelos**	**0.49**	**256**	P	**Pg**	**02 04 59.6**	**-0.6**
ARG				S	**Sb**	**02 05 08.6**	**+0.6**
TURN	**Turunc**	**0.54**	**351**	*i* P	**Pg**	**02 05 01.2**	**0.0**
TURN				*i* S	**Sb**	**02 05 10.0**	**+0.4**
TURN	**Turunc**	**0.54**	**351**	P	**Pg**	**02 05 01.2**	**0.0**
TURN				S	**Sb**	**02 05 10.0**	**+0.4**
KSL	**Kastellorizon**	**0.73**	**104**	P	**Pg**	**02 05 04.4**	**-0.3**
KSL				S	**Sb**	**02 05 16.4**	**+1.5**
KSL	**Kastellorizon**	**0.73**	**104**	P	**Pg**	**02 05 04.4**	**-0.3**
KSL				S	**Sb**	**02 05 16.4**	**+1.5**
KSL	**Kastellorizon**	**0.73**	**104**	P	**Pg**	**02 05 04.0**	**-0.6**
KSL				S	**Sn**	**02 05 17.5**	**+0.1**
KSL				AML	AML	02 05 20.1	
	comp=E,3535μm,0.7s						
KSL				AML	AML	02 05 20.8	
	comp=N,2510μm,0.8s						
YER	**Yerkesik**	**0.87**	**337**	*e*PG	**Pg**	**02 05 06.4**	**-1.0**
YER				*e*SG	**Sb**	**02 05 19.2**	**+0.1**
YER	**Yerkesik**	**0.87**	**337**	P	**Pg**	**02 05 06.6**	**-0.8**
YER				S	**Sb**	**02 05 19.7**	**+0.6**
YER	**Yerkesik**	**0.87**	**337**	P	**Pg**	**02 05 06.6**	**-0.8**
YER				*e*Sg	**Sb**	**02 05 19.2**	**+0.1**
ELL	**Elmali**	**1.05**	**66**	*e*PG	**Pg**	**02 05 10.1**	**-0.7**
ELL	**Elmali**	**1.05**	**66**	*e*Pg	**Pg**	**02 05 10.1**	**-0.7**
BDRM	**Kayabasi**	**1.25**	**306**	*i* P	**Pn**	**02 05 13.7**	**-0.1**
BDRM				*i* S	**Sg**	**02 05 30.9**	**0.0**
BDRM	**Kayabasi**	**1.25**	**306**	P	**Pn**	**02 05 13.7**	**-0.1**
BDRM				S	**Sg**	**02 05 31.0**	**0.0**
NIS1	**Nisyros Isl.**	**1.27**	**283**	*e*PN	**Pn**	**02 05 13.6**	**-0.3**
NIS1	**Nisyros Isl.**	**1.27**	**283**	P	**Pn**	**02 05 13.9**	**0.0**
NIS1				S	**Sg**	**02 05 34.0**	**+2.6**
NIS1	**Nisyros Isl.**	**1.27**	**283**	*e*Pn	**Pn**	**02 05 13.6**	**-0.3**
NIS1	**Nisyros Isl.**	**1.27**	**283**	P	**Pn**	**02 05 13.9**	**0.0**
NISR	**Nisiros**	**1.31**	**283**	P	**Pg**	**02 05 15.5**	**-0.2**
NISR				S	**Sg**	**02 05 34.4**	**+1.7**
NISR	**Nisiros**	**1.31**	**283**	P	**Pg**	**02 05 15.5**	**-0.2**
NISR				S	**Sg**	**02 05 34.4**	**+1.7**
NISR	**Nisiros**	**1.31**	**283**	P	**Pg**	**02 05 16.5**	**+0.8**
BODT	**Bodrum**	**1.34**	**303**	*e*PN	**Pb**	**02 05 15.4**	**-0.1**
BODT	**Bodrum**	**1.34**	**303**	P	**Pn**	**02 05 15.0**	**+0.1**
BODT				S	**Sg**	**02 05 33.6**	**-0.2**
BODT	**Bodrum**	**1.34**	**303**	P	**Pn**	**02 05 15.0**	**+0.1**
BODT	**Bodrum**	**1.34**	**303**	*e*Pn	**Pb**	**02 05 15.4**	**-0.1**
BODT				S	**Sg**	**02 05 33.6**	**-0.2**
DENT	**Denizli**	**1.44**	**10**	*e*PN	**Pb**	**02 05 17.3**	**+0.1**
DENT	**Denizli**	**1.44**	**10**	*e*Pn	**Pb**	**02 05 17.3**	**+0.1**
KORT	**Korkueli**	**1.47**	**63**	*i* P	**Pg**	**02 05 18.7**	**-0.2**
KORT				*i* S	**Sg**	**02 05 41.0**	**+2.9**
KORT	**Korkueli**	**1.47**	**63**	P	**Pg**	**02 05 18.7**	**-0.2**
KORT				S	**Sg**	**02 05 41.0**	**+2.9**
AYDN	**Tasoluk**	**1.48**	**333**	*i* P	**Pb**	**02 05 17.9**	**0.0**
AYDN				*i* S	**Sb**	**02 05 36.9**	**+0.2**
AYDN	**Tasoluk**	**1.48**	**333**	P	**Pb**	**02 05 18.0**	**0.0**
AYDN				S	**Sb**	**02 05 36.9**	**+0.2**
KARP	**Karpathos**	**1.48**	**238**	*e*PN	**Pn**	**02 05 17.4**	**+0.4**
KARP	**Karpathos**	**1.48**	**238**	P	**Pb**	**02 05 17.7**	**-0.3**
KARP				S	**Sg**	**02 05 38.9**	**+0.5**
KARP	**Karpathos**	**1.48**	**238**	*e*Pn	**Pn**	**02 05 17.4**	**+0.4**
KARP	**Karpathos**	**1.48**	**238**	P	**Pb**	**02 05 17.7**	**-0.3**
KARP				S	**Sb**	**02 05 36.9**	**+0.2**
KARP	**Karpathos**	**1.48**	**238**	P	**Pb**	**02 05 18.1**	**+0.1**
KARP				S	**Sb**	**02 05 36.9**	**+0.2**
KARP				AML	AML	02 05 45.8	
	comp=N,1424μm,0.5s						
KARP				AML	AML	02 05 46.1	
	comp=E,1309μm,0.4s						
AYDB	**Zeytinkoy-Aydi**	**1.74**	**338**	*e*PN	**Pn**	**02 05 21.1**	**+0.6**
AYDB	**Zeytinkoy-Aydi**	**1.74**	**338**	*e*Pn	**Pn**	**02 05 21.1**	**+0.6**
GCAM	**G?zelcaml?**	**1.81**	**319**	*i* P	**Pn**	**02 05 21.9**	**+0.7**
GCAM				*i* S	**Sn**	**02 05 44.9**	**+0.9**
GCAM	**G?zelcaml?**	**1.81**	**319**	P	**Pn**	**02 05 22.0**	**+0.7**
GCAM				S	**Sn**	**02 05 44.9**	**+0.9**
SMG	**Samos**	**2.03**	**313**	P	**Pn**	**02 05 24.8**	**+0.3**
SMG				S	**Sb**	**02 05 52.1**	**-0.4**
SMG	**Samos**	**2.03**	**313**	P	**Pn**	**02 05 24.8**	**+0.3**
SMG				S	**Sb**	**02 05 52.1**	**-0.4**
SMG	**Samos**	**2.03**	**313**	P	**Pn**	**02 05 24.7**	**+0.3**
ISP	**Isparta**	**2.07**	**44**	*e*PN	**Pn**	**02 05 26.1**	**+1.0**
ISP	**Isparta**	**2.07**	**44**	P	**Pn**	**02 05 25.8**	**+0.7**
ISP				S	**Sb**	**02 05 53.7**	**-0.1**
ISP	**Isparta**	**2.07**	**44**	P	**Pn**	**02 05 25.8**	**+0.7**
ISP	**Isparta**	**2.07**	**44**	*e*Pn	**Pn**	**02 05 26.1**	**+1.0**
ISP				S	**Sb**	**02 05 53.7**	**-0.1**
KHL	**Karahalli**	**2.09**	**18**	*e*PN	**Pn**	**02 05 26.1**	**+0.8**
KHL	**Karahalli**	**2.09**	**18**	*e*Pn	**Pn**	**02 05 26.1**	**+0.8**
KHAL	**Karahalli**	**2.12**	**17**	*i* P	**Pn**	**02 05 26.2**	**+0.4**
KHAL				*i* S	**Sn**	**02 05 51.4**	**-0.7**
KHAL	**Karahalli**	**2.12**	**17**	P	**Pn**	**02 05 26.2**	**+0.4**
KHAL				S	**Sn**	**02 05 51.4**	**-0.7**
SUTC	**Sutluce-Ispart**	**2.16**	**57**	*e*PN	**Pn**	**02 05 27.3**	**+1.0**
SUTC	**Sutluce-Ispart**	**2.16**	**57**	*e*Pn	**Pn**	**02 05 27.3**	**+1.0**
KULA	**Kula-Manisa**	**2.18**	**359**	*e*PN	**Pn**	**02 05 27.4**	**+0.9**
KULA	**Kula-Manisa**	**2.18**	**359**	P	**Pn**	**02 05 27.2**	**+0.7**
KULA				S	**Sn**	**02 05 54.7**	**+1.4**
KULA	**Kula-Manisa**	**2.18**	**359**	*e*Pn	**Pn**	**02 05 27.4**	**+0.9**
KULA				S	**Sn**	**02 05 54.7**	**+1.4**
BAGO	**Egridir - ISPA**	**2.34**	**44**	*i* P	**Pb**	**02 05 32.3**	**-0.3**
BAGO				*i* S	**Sg**	**02 06 04.7**	**-1.1**
IZM	**Izmir**	**2.36**	**331**	*e*PN	**Pn**	**02 05 29.9**	**+0.9**
IZM	**Izmir**	**2.36**	**331**	*e*Pn	**Pn**	**02 05 29.9**	**+0.9**
ZKR	**Zakros**	**2.37**	**240**	P	**Pn**	**02 05 30.8**	**+1.7**
ZKR				S	**Sb**	**02 06 01.7**	**-0.5**
ZKR	**Zakros**	**2.37**	**240**	P	**Pn**	**02 05 30.8**	**+1.7**
ZKR	**Zakros**	**2.37**	**240**	P	**Pb**	**02 05 31.3**	**-1.7**
BLCB	**Balcova**	**2.44**	**327**	*e*PN	**Pn**	**02 05 31.1**	**+1.1**
BLCB	**Balcova**	**2.44**	**327**	*e*Pn	**Pn**	**02 05 31.1**	**+1.1**
ZEY	**¨zmir**	**2.59**	**318**	*i* P	**Pn**	**02 05 32.7**	**+0.6**
ZEY				*i* S	**Sn**	**02 06 05.3**	**+1.8**
AKHS	**Akhisar**	**2.64**	**345**	*i* P	**Pn**	**02 05 33.0**	**+0.2**
AKHS				*i* S	**Sn**	**02 06 06.1**	**+1.5**
AKHS	**Akhisar**	**2.64**	**345**	P	**Pn**	**02 05 33.0**	**+0.2**
AKHS				S	**Sn**	**02 06 06.1**	**+1.5**
AKS	**Akhisar**	**2.64**	**345**	*e*PN	**Pn**	**02 05 33.4**	**+0.6**
AKS	**Akhisar**	**2.64**	**345**	*e*Pn	**Pn**	**02 05 33.4**	**+0.6**
APE	**Apeiranthos**	**2.66**	**287**	*e*PN	**Pn**	**02 05 33.6**	**+0.6**
APE	**Apeiranthos**	**2.66**	**287**	P	**Pn**	**02 05 33.7**	**+0.6**
APE				S	**Sn**	**02 06 06.1**	**+0.9**
APE	**Apeiranthos**	**2.66**	**287**	P	**Pn**	**02 05 33.7**	**+0.6**
APE				S	**Sn**	**02 06 06.1**	**+0.9**
THR3	**Thira Island,**	**2.67**	**273**	P	**Pn**	**02 05 34.3**	**+1.1**
THR3	**Thira Island,**	**2.67**	**273**	P	**Pn**	**02 05 34.3**	**+1.1**
THR6	**Thira Island,**	**2.68**	**271**	P	**Pn**	**02 05 34.3**	**+1.0**
THR6	**Thira Island,**	**2.68**	**271**	P	**Pn**	**02 05 34.3**	**+1.0**
DEMI	**Demirci**	**2.70**	**0**	*i* P	**Pn**	**02 05 34.0**	**+0.3**
DEMI				*i* S	**Sn**	**02 06 06.8**	**+0.4**
DEMI	**Demirci**	**2.70**	**0**	P	**Pn**	**02 05 34.0**	**+0.3**
DEMI				S	**Sn**	**02 06 06.8**	**+0.4**
NPS	**Neapolis**	**2.74**	**248**	P	**Pn**	**02 05 34.8**	**+0.6**
NPS				S	**Sn**	**02 06 09.7**	**+2.6**
NPS	**Neapolis**	**2.74**	**248**	P	**Pn**	**02 05 34.8**	**+0.6**
NPS				S	**Sn**	**02 06 09.7**	**+2.6**
NPS	**Neapolis**	**2.74**	**248**	P	**Pn**	**02 05 34.2**	**0.0**
GDZ	**Gediz**	**2.81**	**12**	*i* P	**Pn**	**02 05 35.5**	**+0.2**
GDZ	**Gediz**	**2.81**	**12**	P	**Pn**	**02 05 35.5**	**+0.2**
LAST	**Lasithi**	**2.88**	**247**	P	**Pn**	**02 05 37.4**	**+1.2**
LAST	**Lasithi**	**2.88**	**247**	P	**Pn**	**02 05 37.4**	**+1.2**
GAZI	**Gazipasa**	**2.91**	**91**	*i* P	**Pn**	**02 05 35.5**	**-1.0**
GAZI				*i* S	**Sn**	**02 06 09.3**	**-2.1**
GAZI	**Gazipasa**	**2.91**	**91**	P	**Pn**	**02 05 35.5**	**-1.0**
GAZI				S	**Sn**	**02 06 09.3**	**-2.1**
CHOS	**Chios island**	**2.95**	**315**	P	**Pn**	**02 05 37.7**	**+0.6**
CHOS	**Chios island**	**2.95**	**315**	P	**Pn**	**02 05 37.7**	**+0.6**
DKL	**Dikili**	**3.08**	**333**	*e*PN	**Pn**	**02 05 40.3**	**+1.4**
DKL	**Dikili**	**3.08**	**333**	*e*Pn	**Pn**	**02 05 40.3**	**+1.4**
TVSB	**Tavsanli**	**3.17**	**11**	*e*PN	**Pn**	**02 05 40.9**	**+0.8**
TVSB	**Tavsanli**	**3.17**	**11**	*e*Pn	**Pn**	**02 05 40.9**	**+0.8**
AKMC	**Akamas**	**3.22**	**113**	P	**Pn**	**02 05 39.3**	**-1.5**
DURS	**Dursunbey**	**3.27**	**357**	*i* P	**Pn**	**02 05 42.0**	**+0.5**
DURS				*i* S	**Pn**	**02 05 42.4**	**+0.9**
DURS	**Dursunbey**	**3.27**	**357**	P	**Pn**	**02 05 42.0**	**+0.5**
IDI	**Anoyia**	**3.28**	**253**	Pg	**Pn**	**02 05 42.7**	**+1.1**
	comp=E,3.9nm,0.3s,baz=14,slow=7.1,SNR=30						
IDI				Lg	Lg	02 06 26.7	
	comp=E,8.9nm,0.3s,baz=2.6,slow=21,SNR=7.0						
IDI	**Anoyia**	**3.28**	**253**	P	**Pn**	**02 05 42.4**	**+0.8**
IDI	**Anoyia**	**3.28**	**253**	P	**Pn**	**02 05 42.4**	**+0.8**
KONT	**Konya--Tatoy**	**3.33**	**60**	*e*PN	**Pn**	**02 05 44.0**	**+1.7**
KONT	**Konya--Tatoy**	**3.33**	**60**	*e*Pn	**Pn**	**02 05 44.0**	**+1.7**
ALFC	**Alefka**	**3.37**	**109**	P	**Pn**	**02 05 42.4**	**-0.5**
ERMK	**Ermenek**	**3.40**	**84**	*i* P	**Pn**	**02 05 45.6**	**+2.2**
ERMK				*i* S	**Sn**	**02 06 26.2**	**+2.6**
ERMK	**Ermenek**	**3.40**	**84**	P	**Pn**	**02 05 45.6**	**+2.2**
ERMK				S	**Sn**	**02 06 26.2**	**+2.6**
KDHN	**Kadinhani**	**3.48**	**50**	*i* P	**Pn**	**02 05 45.5**	**+1.1**
KDHN	**Kadinhani**	**3.48**	**50**	P	**Pn**	**02 05 45.5**	**+1.1**
PRK	**Paraskevi**	**3.49**	**327**	P	**Pn**	**02 05 45.8**	**+1.3**
PRK				S	**Sn**	**02 06 26.7**	**+1.1**
PRK	**Paraskevi**	**3.49**	**327**	P	**Pn**	**02 05 45.8**	**+1.3**
PRK				S	**Sn**	**02 06 26.7**	**+1.1**
BALY	**Balya**	**3.51**	**346**	*i* P	**Pn**	**02 05 45.8**	**+1.0**
BALY	**Balya**	**3.51**	**346**	P	**Pn**	**02 05 45.8**	**+1.0**
KIZT	**Kizilcal**	**3.57**	**44**	*e*PN	**Pn**	**02 05 47.5**	**+1.8**
KIZT	**Kizilcal**	**3.57**	**44**	*e*Pn	**Pn**	**02 05 47.5**	**+1.8**
SIGR	**SIGRI**	**3.66**	**323**	*e*PN	**Pn**	**02 05 48.2**	**+1.5**
SIGR	**SIGRI**	**3.66**	**323**	P	**Pn**	**02 05 48.0**	**+1.3**
SIGR	**SIGRI**	**3.66**	**323**	P	**Pn**	**02 05 48.0**	**+1.3**
SZAC	**Souni**	**3.75**	**114**	P	**Pn**	**02 05 47.0**	**-1.0**
BORA	**Eskisehir**	**3.80**	**21**	*i* P	**Pn**	**02 05 47.7**	**-1.1**
BORA	**Eskisehir**	**3.80**	**21**	P	**Pn**	**02 05 47.7**	**-1.1**
KCTX	**Karacabey (Bur**	**3.93**	**356**	*e*PN	**Pn**	**02 05 52.3**	**+1.7**
KCTX	**Karacabey (Bur**	**3.93**	**356**	*e*Pn	**Pn**	**02 05 52.3**	**+1.7**
IMMV	**Iera Moni Meta**	**3.94**	**259**	P	**Pn**	**02 05 52.0**	**+1.3**
IMMV	**Iera Moni Meta**	**3.94**	**259**	P	**Pn**	**02 05 52.0**	**+1.3**
EZN	**Ezine**	**3.96**	**332**	*e*PN	**Pn**	**02 05 52.7**	**+1.8**
EZN	**Ezine**	**3.96**	**332**	*e*Pn	**Pn**	**02 05 52.7**	**+1.8**
CSS	**Mathiatis**	**4.00**	**109**	P	**Pn**	**02 05 51.0**	**-0.5**
CSS				S	**Sn**	**02 06 39.1**	**+0.8**
CSS	**Mathiatis**	**4.00**	**109**	P	**Pn**	**02 05 51.0**	**-0.5**
CSS				S	**Sn**	**02 06 39.1**	**+0.8**
IKL	**Isikli**	**4.02**	**90**	*e*PN	**Pn**	**02 05 53.8**	**+2.1**
IKL	**Isikli**	**4.02**	**90**	*e*Pn	**Pn**	**02 05 53.8**	**+2.1**
LFK	**Lefkose**	**4.06**	**104**	*e*PN	**Pn**	**02 05 54.5**	**+2.2**
LFK	**Lefkose**	**4.06**	**104**	*e*Pn	**Pn**	**02 05 54.5**	**+2.2**
YESY	**Yesilyurt**	**4.27**	**69**	*e*PN	**Pn**	**02 05 57.6**	**+2.2**
YESY	**Yesilyurt**	**4.27**	**69**	*e*Pn	**Pn**	**02 05 57.6**	**+2.2**
GELI	**Tayfur-Gelibol**	**4.42**	**337**	*e*PN	**Pn**	**02 05 59.2**	**+2.0**
GELI	**Tayfur-Gelibol**	**4.42**	**337**	*e*Pn	**Pn**	**02 05 59.2**	**+2.0**
LIA	**Limnos Island**	**4.52**	**323**	P	**Pn**	**02 06 00.2**	**+1.6**
AFSR	**Af¨ar-Bala (A**	**4.64**	**47**	*e*PN	**Pn**	**02 06 02.6**	**+2.2**
AFSR	**Af¨ar-Bala (A**	**4.64**	**47**	*e*Pn	**Pn**	**02 06 02.6**	**+2.2**
ERIK	**Erikli-Kesan**	**4.66**	**339**	*e*PN	**Pn**	**02 06 02.6**	**+2.1**
ERIK	**Erikli-Kesan**	**4.66**	**339**	*e*Pn	**Pn**	**02 06 02.6**	**+2.1**
MERS	**Mersin**	**4.70**	**82**	*e*PN	**Pn**	**02 06 03.7**	**+2.5**
MERS	**Mersin**	**4.70**	**82**	*e*Pn	**Pn**	**02 06 03.7**	**+2.5**
SMTH	**Samothraki Isl**	**4.83**	**330**	P	**Pn**	**02 06 03.8**	**+0.9**
SMTH	**Samothraki Isl**	**4.83**	**330**	P	**Pn**	**02 06 03.8**	**+0.9**
ENEZ	**Enez**	**4.83**	**336**	*e*PN	**Pn**	**02 06 04.9**	**+2.0**
ENEZ	**Enez**	**4.83**	**336**	*e*Pn	**Pn**	**02 06 04.9**	**+2.0**
BRTR	**Keskin Array B**	**5.15**	**47**	Pn	**Pn**	**02 06 09.6**	**+2.1**
	comp=E,0.1nm,0.3s,baz=219,slow=15,SNR=3.9						
BRTR				Sn	**Sn**	**02 07 10.0**	**+3.1**
	comp=E,0.1nm,0.3s,baz=225,slow=18,SNR=2.6						
BCAM	**Yenicaga**	**5.19**	**29**	*i* P	**Pn**	**02 06 07.7**	**-0.2**
BCAM	**Yenicaga**	**5.19**	**29**	P	**Pn**	**02 06 07.7**	**-0.2**
MMAI	**Mount Meron Ar**	**6.43**	**119**	Pn	**Pn**	**02 06 23.6**	**-1.3**
	comp=E,2.3nm,0.3s,baz=305,slow=12,SNR=12						
GRG	**Griva**	**6.76**	**315**	*e*PN	**Pn**	**02 06 32.2**	**+2.8**
GRG	**Griva**	**6.76**	**315**	*e*Pn	**Pn**	**02 06 32.2**	**+2.8**
ASF	**Jabal al Asfar**	**7.95**	**119**	Pn	**Pn**	**02 06 44.7**	**-1.0**
	comp=E,0.2nm,0.3s,baz=266,slow=4.5,SNR=3.3						
EIL	**Elat**	**8.46**	**140**	Pn	**Pn**	**02 06 52.0**	**-0.7**
	comp=E,0.6nm,0.3s,baz=334,slow=8.6,SNR=5.5						
MLR	**Muntele Rosu**	**9.38**	**348**	Pn	Pn	02 07 00.3	-5.2
	comp=E,0.0nm,0.3s,baz=169,slow=12,SNR=3.3						
FINES	**FINESS Array B**	**25.18**	**357**	P	**P**	**02 10 13.2**	**-2.2**
	comp=E,0.8nm,0.8s,baz=157,slow=10,SNR=3.3						
TORD	**Torodi Ar. Bea**	**33.48**	**233**	P	**P**	**02 11 28.3**	**-1.3**
	comp=E,0.3nm,0.7s,baz=31,slow=7.8,SNR=4.1						
MKAR	**Makanchi Array**	**40.71**	**58**	P	**P**	**02 12 30.9**	**+0.1**
	comp=E,0.2nm,0.6s,baz=284,slow=5.8,SNR=3.1						
SPITS	**Spitsbergen Ar**	**42.28**	**356**	P	**P**	**02 12 41.4**	**-1.8**
	comp=E,8.0nm,0.9s,baz=163,slow=15,SNR=3.3						
TLY	**Talaya**	**53.68**	**48**	LR	LR	02 42 22.5	
	comp=E,25nm,19.0s,baz=147,slow=42						
SCHQ	**Schefferville**	**64.15**	**320**	LR	LR	02 41 29.7	
	comp=E,30nm,21.2s,baz=344,slow=34						

DDA 27 02:27:28.0, 37°.61N×35°.90E, h7km, Md2.7, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ANDN	**Andirin**	**0.36**	**95**	*i* P	Pg	02 27 35.7	+0.6
ANDN				*i* S	Sb	02 27 42.8	+0.1
AKO	**Adana**	**0.39**	**248**	*i* P	Pg	02 27 36.1	+0.5
AKO				*i* S	Sg	02 27 41.9	+1.2
HCB	**Kahramanmara¯**	**0.85**	**108**	*i* P	Pg	02 27 44.4	+0.1
HCB				*i* S	Sb	02 27 56.5	-0.1
KERG	**Konya-Eregli**	**1.42**	**263**	*i* P	Pn	02 27 54.6	+0.3
KERG				*i* S	Sg	02 28 13.9	+0.2

*CRAAG **27** 02:37:20.6, 36°.11N×3°.97E, Ml3.2*

*CSEM **27** 02:37:22.9±0.3, 36°.10N×3°.93E, h2km, mb3.9, Error ellipse: s-maj=8.0km s-min=5.3km az=10.0*

*MDD **27** 02:37:23.4±0.5, 36°.02N×3°.93E, h0km, mb3.9/14, Error ellipse: s-maj=9.3km s-min=3.8km az=20.0, PRXIMO*

ISC 27 02:37:22.8±1.0, 36°.08N±0°.04×3°.95E±0°.02, h8km±7km, n64, σ1§69/81, Northern Algeria

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AKET	**Djebel Ketaf**	**0.07**	**237**	P	**Pg**	**02 37 24.2**	**-0.7**
AKET	**Djebel Ketaf**	**0.07**	**237**	P	**Pg**	**02 37 24.2**	**-0.7**
AKET	**Djebel Ketaf**	**0.07**	**237**	P	**Pg**	**02 37 24.2**	**-0.7**
ATAF	**Djebel Tarf**	**0.34**	**128**	P	**Pg**	**02 37 28.2**	**-1.3**
ATAF	**Djebel Tarf**	**0.34**	**128**	P	**Pg**	**02 37 28.2**	**-1.3**
ATAF	**Djebel Tarf**	**0.34**	**128**	P	**Pg**	**02 37 28.2**	**-1.3**
ADJB	**Djebel Djouab**	**0.42**	**280**	P	**Pg**	**02 37 30.9**	**-0.2**
ADJB	**Djebel Djouab**	**0.42**	**280**	P	**Pg**	**02 37 30.9**	**-0.2**
ADJB	**Djebel Djouab**	**0.42**	**280**	P	**Pg**	**02 37 30.9**	**-0.2**
EMHD	**Djebel Mahouad**	**0.81**	**279**	P	**Pg**	**02 37 38.5**	**0.0**
EMHD	**Djebel Mahouad**	**0.81**	**279**	P	**Pg**	**02 37 38.5**	**0.0**
EMHD	**Djebel Mahouad**	**0.81**	**279**	P	**Pg**	**02 37 38.5**	**0.0**
ABA	**Alger-Bouzarea**	**1.03**	**314**	P	**Pg**	**02 37 42.2**	**-0.4**
ABA	**Alger-Bouzarea**	**1.03**	**314**	P	**Pg**	**02 37 42.2**	**-0.4**
ABA	**Alger-Bouzarea**	**1.03**	**314**	P	**Pg**	**02 37 42.2**	**-0.4**
SET	**Setif**	**1.18**	**84**	P	**Pn**	**02 37 48.0**	**+2.3**
SET	**Setif**	**1.18**	**84**	P	**Pn**	**02 37 48.0**	**+2.3**
SET	**Setif**	**1.18**	**84**	P	**Pn**	**02 37 48.0**	**+2.3**
CKHR	**Kef el Ahmar**	**1.27**	**93**	P	**Pg**	**02 37 46.7**	**-0.4**
CKHR	**Kef el Ahmar**	**1.27**	**93**	P	**Pg**	**02 37 46.7**	**-0.4**
CKHR	**Kef el Ahmar**	**1.27**	**93**	P	**Pg**	**02 37 46.7**	**-0.4**
DFRA	**Djebel Bou Aff**	**1.62**	**73**	P	Pg	02 37 57.1	+3.2
DFRA	**Djebel Bou Aff**	**1.62**	**73**	P	Pg	02 37 57.1	+3.2
EBNR	**Beni Rached**	**1.97**	**277**	P	**Pn**	**02 37 58.0**	**+1.5**
EBNR	**Beni Rached**	**1.97**	**277**	P	**Pn**	**02 37 58.0**	**+1.5**
ECHA	**Ech Chlef**	**2.09**	**273

H11S3	**WAKE ISLAND Hy**	**27.12**	**124**	T	T	03 13 00.8
H11S2	**WAKE ISLAND Hy**	**27.14**	**124**	T	T	03 13 00.8
SONM	**Songino Array**	**29.53**	**305**	P	P	02 44 25.7 -0.9
	0.4nm,0.6s,baz=101,slow=9.1,SNR=3.1					
MKAR	**Makanchi Array**	**45.86**	**303**	P	P	02 46 45.5 +1.3
	0.8nm,0.8s,baz=90,slow=10,SNR=5.9					
ILAR	**Eielson Array**	**49.72**	**32**	P	P	02 47 13.4 -0.5
	0.2nm,0.8s,baz=250,slow=5.9,SNR=2.8					
YKA	**Yellowknife Ar**	**64.09**	**30**	P	P	02 48 56.0 +0.1
	0.2nm,0.8s,baz=287,slow=6.4,SNR=3.0					

JMA 27 02:38:37.6±0.1,36.19N×140.86E,h35km±1km,M1.9, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHO	**Hitachi**	**0.48**	**331**	P	Pn	02 38 47.5	-0.5
JHO				S	Sn	02 38 54.2	-1.0
JYT	**Yasato**	**0.54**	**274**	P	Pn	02 38 48.8	0.0
JYT				S	Sn	02 38 56.2	-0.4
JAG	**Ashikaga**	**1.16**	**282**	P	Pn	02 38 57.6	+0.3

ISCJB 27 02:39:44.0±0.6,39.79N±0.03×26.10E±0.06,h8km±4km, Error ellipse: s-maj=7.4km s-min=4.5km az=4.7
ISK 27 02:39:43.5,39.75N×26.19E,h10km,MD2.5
CSEM 27 02:39:44.2±0.3,39.78N×26.14E,h13km±2km,MD2.5, Error ellipse: s-maj=9.8km s-min=4.7km az=101.0
DDA 27 02:39:44.0,39.85N×26.15E,h6km,Md2.8
ISC 27 02:39:43.4±0.9,39.78N±0.03×26.14E±0.04,h10km±6km, n21,σ0936/36,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BOZC	**Bozcaada**	**0.10**	**314**	*i* P	**Pg**	**02 39 45.8**	**-0.1**
BOZC				*i* S	**Sg**	**02 39 47.5**	**-0.3**
EZN	**Ezine**	**0.15**	**70**	*e*PG	**Pg**	**02 39 46.7**	**0.0**
EZN				*e*SG	**Sg**	**02 39 49.5**	**+0.5**
EZN	**Ezine**	**0.15**	**70**	*e*Pg	**Pg**	**02 39 46.7**	**0.0**
EZN				*e*Sg	**Sg**	**02 39 49.6**	**+0.5**
SIGR	**SIGRI**	**0.60**	**202**	*e*PG	**Pg**	**02 39 55.5**	**+0.4**
SIGR				*e*SG	**Sb**	**02 40 04.3**	**-0.3**
SIGR	**SIGRI**	**0.60**	**202**	*e*Pg	**Pg**	**02 39 55.5**	**+0.4**
SIGR				*e*Sg	**Sb**	**02 40 04.3**	**-0.3**
AYVA	**Ayvalik**	**0.63**	**138**	*i* P	**Pn**	**02 39 58.1**	**-0.3**
AYVA				*i* S	**Sn**	**02 40 08.4**	**0.0**
AYVA	**Ayvalik**	**0.63**	**138**	P	**Pn**	**02 39 58.1**	**-0.3**
AYVA				S	**Sn**	**02 40 08.4**	**0.0**
GELI	**Tayfur-Gelibol**	**0.67**	**22**	*e*PG	**Pb**	**02 39 57.1**	**-0.1**
GELI				*e*SG	**Sb**	**02 40 07.0**	**+0.4**
GELI	**Tayfur-Gelibol**	**0.67**	**22**	*e*Pg	**Pb**	**02 39 57.1**	**-0.1**
GELI				*e*Sg	**Sb**	**02 40 07.0**	**+0.4**
ERIK	**Erikli-Kesan**	**0.94**	**17**	*e*PG	**Pn**	**02 40 02.2**	**-0.5**
ERIK	**Erikli-Kesan**	**0.94**	**17**	*e*Pg	**Pn**	**02 40 02.2**	**-0.5**
ENEZ	**Enez**	**0.96**	**0**	*e*PG	**Pn**	**02 40 02.8**	**-0.2**
ENEZ				*e*SG	**Sn**	**02 40 16.9**	**+0.2**
ENEZ	**Enez**	**0.96**	**0**	*e*Pg	**Pn**	**02 40 02.8**	**-0.2**
ENEZ				*e*Sg	**Sn**	**02 40 16.9**	**+0.2**
ALN	**Alexandroupoli**	**1.12**	**356**	*e*PN	**Pn**	**02 40 05.9**	**+0.7**
ALN	**Alexandroupoli**	**1.12**	**356**	*e*Pn	**Pn**	**02 40 05.9**	**+0.7**
KESN	**Edirne-Kesan**	**1.13**	**21**	*i* P	**Pg**	**02 40 04.9**	**-0.2**
KESN				*i* S	**Sb**	**02 40 19.7**	**-0.4**
KESN	**Edirne-Kesan**	**1.13**	**21**	P	**Pg**	**02 40 04.9**	**-0.2**
KESN				S	**Sb**	**02 40 19.7**	**-0.4**
RKY	**Sarkoy-Tekirda**	**1.21**	**41**	*e*PN	**Pg**	**02 40 07.0**	**+0.4**
RKY	**Sarkoy-Tekirda**	**1.21**	**41**	*e*Pn	**Pg**	**02 40 07.0**	**+0.4**
SART	**Tekirdag**	**1.21**	**41**	*i* P	**Pg**	**02 40 06.5**	**-0.2**
SART				*i* S	**Sb**	**02 40 22.0**	**-0.2**
SART	**Tekirdag**	**1.21**	**41**	P	**Pg**	**02 40 06.5**	**-0.2**
SART				S	**Sb**	**02 40 22.0**	**-0.2**

ISCJB 27 02:39:48.4±0.4,50.11N±0.03×18.33E±0.02,h0km, Error ellipse: s-maj=4.1km s-min=2.2km az=7.7
IPEC 27 02:39:49.5±0.2,50.06N×18.47E,h0km±2km,ML1.8/3, Error ellipse: s-maj=2.1km s-min=1.1km az=160.0
CSEM 27 02:39:49.3±0.3,50.11N×18.37E,h1km,ML2.8/9, Error ellipse: s-maj=6.1km s-min=3.1km az=9.0
PRU 27 02:39:51.0,50.05N×18.33E,h0km
ISC 27 02:39:49.7±0.8,50.07N±0.03×18.39E±0.02,h0km,n33, σ0984/60,2D,Poland

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAC	**Raciborz**	**0.13**	**275**	*e*Pg	**Pg**	**02 39 53.7**	**+1.6**
RAC				*e*Sg	**Sg**	**02 39 56.8**	**+3.1**
OKC	**Ostrava-Krasne**	**0.28**	**214**	*e*PG	**Pg**	**02 39 56.0**	**+0.9**
OKC				*e*SG	**Sg**	**02 39 59.6**	**+0.9**
	comp=Z,52nm,0.6s						
OKC	**Ostrava-Krasne**	**0.28**	**214**	Pg	**Pg**	**02 39 56.0**	**+0.9**
OKC				Sg	**Sg**	**02 39 59.6**	**+0.9**
	52nm,0.6s						
CHZP	**Chorzow**	**0.45**	**60⇓**	*e*Pg	**Pg**	**02 39 58.6**	**+0.4**
CHZP			**⇓**	*e*Sg	**Sg**	**02 40 05.0**	**+1.0**
MORC	**Moravsky Berou**	**0.62**	**242**	*e*Pg	**Pg**	**02 40 02.1**	**+0.5**
MORC				*e*Sg	**Sg**	**02 40 10.2**	**+0.5**
	19nm,0.2s,baz=64						
OJC	**Ojcow**	**0.92**	**80**	*e*Pg	**Pg**	**02 40 06.7**	**-0.6**
OJC				*e*Sg	**Sg**	**02 40 19.7**	**+0.5**
OJC	**Ojcow**	**0.92**	**80**	*e*Pg	**Pg**	**02 40 06.7**	**-0.6**
OJC				*e*Sg	**Sg**	**02 40 19.7**	**+0.5**
KRLC	**Kraliky**	**1.03**	**271**	*e*PG	**Pg**	**02 40 09.0**	**-0.5**
KRLC				*e*SG	**Sg**	**02 40 22.7**	**-0.2**
KRLC	**Kraliky**	**1.03**	**271**	Pg	**Pg**	**02 40 09.0**	**-0.5**
KRLC				Sg	**Sg**	**02 40 22.7**	**-0.2**
LANS	**Liptovska Anna**	**1.16**	**142**	*e*PG	**Pg**	**02 40 11.8**	**-0.1**
LANS				*e*SG	**Sb**	**02 40 28.6**	**+0.4**
DPC	**Dobruska-Polom**	**1.36**	**283**	*i* PG	**Pg**	**02 40 15.6**	**-0.1**
DPC				*e*SG	**Sb**	**02 40 33.9**	**0.0**
	comp=Z,21nm,0.5s						
DPC	**Dobruska-Polom**	**1.36**	**283**	Pg	**Pg**	**02 40 15.6**	**-0.1**
DPC				Sg	**Sb**	**02 40 33.9**	**0.0**
	21nm,0.5s						
VRAC	**Vranov**	**1.39**	**237**	*e*Pg	**Pn**	**02 40 15.8**	**-0.6**
VRAC				*e*Sg	**Sg**	**02 40 34.2**	**-0.3**
	12nm,0.3s,baz=58						
NIE	**Niedzica**	**1.40**	**117**	*e*Pg	**Pn**	**02 40 16.5**	**-0.1**
NIE				*e*Sg	**Sn**	**02 40 36.5**	**+0.7**
UPC	**Upice**	**1.58**	**287**	*e*PG	**Pb**	**02 40 19.6**	**-0.3**
UPC				*e*SG	**Sg**	**02 40 41.0**	**+0.4**
	comp=Z,11nm,0.3s						
UPC	**Upice**	**1.58**	**287**	Pg	**Pb**	**02 40 19.6**	**-0.3**
UPC				Sg	**Sg**	**02 40 41.0**	**+0.4**
	11nm,0.3s						
VYHS	**Vyhne**	**1.61**	**169**	*e*Sn	**Sn**	**02 40 40.6**	**-0.2**
VYHS	**Vyhne**	**1.61**	**169**	*e*SN	**Sn**	**02 40 40.6**	**-0.2**
VYHS				*e*LG	Lg	02 40 41.6	
KRUC	**Moravsky**	**1.65**	**233**	*e*Pn	**Pn**	**02 40 20.0**	**+0.1**
	baz=53						
KRUC				*e*Sg	**Sn**	**02 40 41.9**	**+0.2**
	7.7nm,0.2s,baz=53						
STHS	**Stebnicka Huta**	**1.96**	**108**	*e*Pn	**Pg**	**02 40 27.4**	**+0.1**
STHS	**Stebnicka Huta**	**1.96**	**108**	*e*PN	**Pg**	**02 40 27.4**	**+0.1**
STHS				*e*SN	**Sg**	**02 40 53.8**	**+1.0**
STHS				*e*LG	Lg	02 40 58.5	
KECS	**Kecovo**	**2.10**	**138**	*e*Sn	**Sn**	**02 40 51.6**	**-1.4**
KECS	**Kecovo**	**2.10**	**138**	*e*SN	**Sn**	**02 40 51.6**	**-1.4**
KECS				*e*LG	Lg	02 40 54.1	
GOPC	**GO Pecny, Ondr**	**2.33**	**267**	*e*PG	**Pb**	**02 40 32.6**	**0.0**
GOPC				*e*SG	**Sb**	**02 41 02.6**	**+0.7**
	comp=Z,3.9nm,0.3s						
GOPC	**GO Pecny, Ondr**	**2.33**	**267**	Pg	**Pb**	**02 40 32.6**	**0.0**
GOPC				Sg	**Sb**	**02 41 02.6**	**+0.7**
	3.9nm,0.3s						
PRU	**Pruhonice**	**2.48**	**270**	*e*PG	**Pb**	**02 40 35.3**	**+0.1**
PRU				*e*SG	**Sb**	**02 41 07.2**	**+1.0**
	comp=Z,3.6nm,0.3s						
PRU	**Pruhonice**	**2.48**	**270**	Pg	**Pb**	**02 40 35.3**	**+0.1**
PRU				Sg	**Sb**	**02 41 07.2**	**+1.0**
	3.6nm,0.3s						
PVCC	**Panska Ves**	**2.49**	**282**	*e*PG	**Pg**	**02 40 37.0**	**-0.4**
PVCC				*e*SG	**Sg**	**02 41 09.6**	**-0.1**
	comp=Z,9.9nm,0.3s						
PVCC	**Panska Ves**	**2.49**	**282**	Pg	**Pg**	**02 40 37.0**	**-0.4**
PVCC				Sg	**Sg**	**02 41 09.6**	**-0.1**
	9.9nm,0.3s						
BRG	**Berggiesshubel**	**2.95**	**287**	SG	**Sg**	**02 41 24.4**	**0.0**
	3.1nm,0.5s						
KHC	**Kasperske Hory**	**3.27**	**255**	*e*PG	**Pg**	**02 40 50.6**	**-1.7**
KHC				*e*SN	**Sn**	**02 41 22.4**	**+0.6**
KHC				*ex*	x	02 41 30.5	
KHC				*e*SG	**Sg**	**02 41 33.0**	**-1.6**
	comp=Z,4.2nm,0.4s						
KHC	**Kasperske Hory**	**3.27**	**255**	Pg	**Pg**	**02 40 50.6**	**-1.7**
KHC				Sg	**Sg**	**02 41 33.0**	**-1.6**
	4.2nm,0.4s						
CLL	**Collm**	**3.64**	**292**	*e*Sg	**Sg**	**02 41 47.0**	**+0.4**

CSEM 27 02:49:27.2±0.3,36.31N×28.70E,h5km,MD2.8,Error ellipse: s-maj=5.6km s-min=3.4km az=21.0
ISK 27 02:49:27.2,36.36N×28.69E,h8km,MD2.5
DDA 27 02:49:28.1,36.55N×28.84E,h7km,Md2.8
ISC 27 02:49:27.3±1.6,36.38N±0.07×28.76E±0.04,h9km±11km, n17,σ0939/30,Dodecanese Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FETY	**Fethiye**	**0.37**	**46**	*e*PG	**Pb**	**02 49 35.8**	**-0.3**
FETY				*e*SG	**Sb**	**02 49 42.1**	**+0.1**
FETY	**Fethiye**	**0.37**	**46**	*e*Pg	**Pb**	**02 49 35.8**	**-0.3**
FETY				*e*Sg	**Sb**	**02 49 42.1**	**+0.1**
DALY	**Dalyan (Mu¨la**	**0.45**	**350**	*e*PG	**Pg**	**02 49 36.2**	**+0.2**
DALY				*e*SG	**Sb**	**02 49 43.3**	**-0.8**
DALY	**Dalyan (Mu¨la**	**0.45**	**350**	*e*Pg	**Pg**	**02 49 36.2**	**+0.2**
DALY				*e*Sg	**Sb**	**02 49 43.3**	**-0.8**
TURN	**Turunc**	**0.51**	**346**	*i* P	**Pb**	**02 49 38.4**	**0.0**
TURN				*i* S	**Sb**	**02 49 46.9**	**+1.0**
TURN	**Turunc**	**0.51**	**346**	P	**Pb**	**02 49 38.4**	**0.0**
TURN				S	**Sb**	**02 49 46.9**	**+1.0**
AKAS	**Kas**	**0.70**	**102**	*i* P	**Pb**	**02 49 41.7**	**-0.1**
AKAS				*i* S	**Sn**	**02 49 54.7**	**+0.1**
AKAS	**Kas**	**0.70**	**102**	P	**Pb**	**02 49 41.7**	**-0.1**
YER	**Yerkesik**	**0.84**	**333**	*e*PG	**Pg**	**02 49 43.8**	**+0.2**
YER				*e*SG	**Sb**	**02 49 55.8**	**+0.1**
YER	**Yerkesik**	**0.84**	**333**	*e*Pg	**Pg**	**02 49 43.8**	**+0.2**
YER				*e*Sg	**Sb**	**02 49 55.8**	**+0.1**
ELL	**Elmali**	**1.00**	**68**	*e*PG	**Pn**	**02 49 47.8**	**+0.1**
BDRM	**Kayabasi**	**1.26**	**303**	*i* P	**Pg**	**02 49 51.4**	**0.0**
BDRM				*i* S	**Sn**	**02 50 08.1**	**-0.1**
BDRM	**Kayabasi**	**1.26**	**303**	P	**Pg**	**02 49 51.4**	**0.0**
BDRM				S	**Sn**	**02 50 08.1**	**-0.1**
BODT	**Bodrum**	**1.35**	**301**	*e*PN	**Pn**	**02 49 52.5**	**+0.2**
BODT	**Bodrum**	**1.35**	**301**	*e*Pn	**Pn**	**02 49 52.5**	**+0.2**
AYDN	**Tasoluk**	**1.46**	**332**	*i* P	**Pg**	**02 49 55.1**	**-0.2**
AYDN				*i* S	**Sg**	**02 50 14.0**	**-0.2**
AYDN	**Tasoluk**	**1.46**	**332**	P	**Pg**	**02 49 55.1**	**-0.2**
AYDN				S	**Sg**	**02 50 14.0**	**-0.2**

ISCJB 27 02:57:55.2±0.5,6.84N±0.04×73.07W±0.04,h164km±4km, mb3.4/1,Error ellipse: s-maj=8.3km s-min=4.2km az=35.8
FUNV 27 02:57:56.9,6.79N×73.07W,h167km,MW3.0
RSNC 27 02:57:58.3±0.9,6.80N×73.14W,h144km±6km,ML2.8
IDC 27 02:58:00.8±3.8,6.86N×74.36W,h167km±43km,mb3.0/1, mb1 3.2/2,mb1mx2.8/23,mbtmp3.4/2,Error ellipse: s-maj=477.7km s-min=30.5km az=90.0
ISC 27 02:57:56.1±0.9,6.82N±0.04×73.07W±0.05,h159km±6km, n33,σ1910/48,2D,Northern Colombia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BARC	**Barichara**	**0.26**	**206**	*i* P	**Pn**	**02 58 17.5**	**-0.4**
BARC				*i*		02 58 17.9	
	comp=Z,265nm,0.1s						
BARC				*e*S	**Sn**	**02 58 31.8**	**-2.8**
PAMC	**Pamplona, Colo**	**0.63**	**36**	*e*P	**Pn**	**02 58 20.4**	**+0.7**
PAMC				*e*S	**Sn**	**02 58 37.4**	**-0.4**
PAMC				*i*		02 58 38.0	
	comp=Z,52nm,0.4s						
BRRC	**Barranca, Sant**	**0.70**	**294**	*e*P	**Pn**	**02 58 19.5**	**-0.1**
BRRC				*i*		02 58 19.8	
	comp=Z,287nm,0.1s						
BRRC				*e*S	**Sn**	**02 58 36.4**	**-1.1**
RUSC	**La Rusia**	**0.93**	**181**	*e*P	**Pn**	**02 58 21.4**	**-0.4**
RUSC				*i*		02 58 22.2	
	comp=Z,74nm,0.2s						
RUSC				*e*S	**Sn**	**02 58 40.0**	**-1.3**
CBRI	**Barrientos, No**	**0.93**	**17**	*e*P	**Pn**	**02 58 22.2**	**+0.8**
CBRI				*e*S	**Sn**	**02 58 40.8**	**0.0**
CBRI				*i*		02 58 42.5	
	comp=Z,163nm,0.3s						
GRMC	**Gramalote, San**	**0.93**	**17**	*e*P	**Pn**	**02 58 23.4**	**+2.1**
GRMC				*e*S	**Sn**	**02 58 42.8**	**+2.0**
GRMC				*i*		02 58 44.2	
	comp=Z,144nm,0.3s						
CAPV	**Capacho**	**1.28**	**36⇓**	*i*P	**Pn**	**02 58 25.6**	**+1.1**
CAPV				*e*S	**Sn**	**02 58 46.3**	**0.0**
OCAC	**Ocana**	**1.43**	**350**	*e*P	**Pn**	**02 58 26.0**	**+0.2**
OCAC				*e*S	**Sn**	**02 58 48.0**	**-0.8**
OCAC				*i*		02 58 51.9	
	comp=Z,108nm,0.2s						
YOPC	**Yopal, Colombi**	**1.60**	**156**	*e*P	**Pn**	**02 58 28.1**	**+0.6**
YOPC				*i*		02 58 29.3	
	comp=Z,59nm,0.1s						
YOPC				*e*S	**Sn**	**02 58 52.2**	**+0.5**
NORC	**Norcasia**	**2.18**	**235**	*e*P	**Pn**	**02 58 33.5**	**-0.4**
NORC				*e*S	**Sn**	**02 59 01.4**	**-1.8**
NORC				*i*		02 59 04.7	
	comp=Z,16nm,0.3s						
ROSC	**El Rosal**	**2.33**	**212**	P	**Pn**	**02 58 37.9**	**+1.8**
	comp=Z,7.6nm,0.3s,baz=294,slow=19,SNR=52						
ROSC				S	**Sn**	**02 59 06.1**	**-0.8**
	comp=Z,9.0nm,0.3s,baz=44,slow=20,SNR=8.6						
ROSC	**El Rosal**	**2.33**	**212**	*e*P	**Pn**	**02 58 37.1**	**+1.1**
ROSC				*i*		02 59 15.2	
	comp=Z,108nm,0.4s						
HELC	**Santa Helena**	**2.52**	**256**	*e*P	**Pn**	**02 58 38.4**	**+0.1**
HELC				*i*		02 59 18.1	
	comp=Z,49nm,0.3s						
VIGV	**El Vigia**	**2.62**	**40⇓**	*e*P	**Pn**	**02 58 40.0**	**+0.9**
VIGV				*e*S	**Sn**	**02 59 11.2**	**-1.4**
SOCV	**Socops**	**2.63**	**56**	*e*P	**Pn**	**02 58 39.8**	**+0.5**
SOCV				*e*S	**Sn**	**02 59 11.7**	**-1.0**
DBBC	**Dabeiba**	**3.12**	**274**	*e*P	**Pn**	**02 58 46.4**	**+1.0**
DBBC				*i*		02 59 26.4	
	comp=Z,8.6nm,0.4s						
ELOV	**Elorza**	**3.57**	**87**	*e*P	**Pn**	**02 58 51.5**	**+0.5**
PRAC	**Prado**	**3.58**	**210**	*e*P	**Pn**	**02 58 51.4**	**+0.1**
PRAC				*e*S	**Sn**	**02 59 33.8**	**-0.3**
VIRV	**Villa del Rosa**	**3.71**	**10**	*e*P	**Pn**	**02 58 52.5**	**-0.4**
VIRV				*e*S	**Sn**	**02 59 35.0**	**-2.2**
QARV	**Quebrada Arrib**	**4.20**	**37**	*e*P	**Pn**	**02 58 60.0**	**+0.7**
SANV	**Sanarito**	**4.40**	**53**	*e*P	**Pn**	**02 59 01.6**	**-0.2**
CURV	**Curarigua**	**4.42**	**44**	*e*P	**Pn**	**02 59 02.2**	**+0.1**
DABV	**Dabajuro**	**4.73**	**30**	*e*P	**Pn**	**02 59 06.6**	**+0.5**
TEPV	**Terepaima**	**4.95**	**51**	*e*P	**Pn**	**02 59 08.7**	**-0.3**
SIQV	**Siquisique**	**4.99**	**40**	*e*P	**Pn**	**02 59 08.2**	**-1.3**
BAUV	**El Baul**	**5.41**	**67**	*e*P	**Pn**	**02 59 08.7**	**-1.3**
MAPV	**Macapo**	**5.46**	**56**	*e*P	**Pn**	**02 59 15.2**	**+0.5**
MONV	**Montecano**	**5.95**	**31**	*e*P	**Pn**	**02 59 21.6**	**-0.6**
TURV	**Turiamo**	**6.30**	**55**	*e*P	**Pn**	**02 59 26.0**	**-0.9**
CUPV	**Cepira**	**7.89**	**65**	*e*P	**Pn**	**02 59 46.1**	**-2.0**
YKA	**Yellowknife Ar**	**63.28**	**340**	P	**P**	**03 08 08.3**	**+0.8**
	comp=Z,0.3nm,0.5s,baz=133,slow=6.6,SNR=15						
ASAR	**Alice Springs**	**149.15**	**234**	PKPbc	**PKPbc**	**03 17 27.7**	**+1.1**
	comp=Z,0.1nm,0.3s,baz=107,slow=3.1,SNR=3.1						
WRA	**Warramunga Arr**	**150.38**	**241**	PKPbc	**PKPbc**	**03 17 29.9**	**+0.3**
	comp=Z,0.5nm,0.8s,baz=112,slow=1.9,SNR=2.8						

NIED 27 03:11:00,39.90N×143.30E,h23km,Mw4.1 Best double couple: Mo1.57000×10^15 NP1:φs198.00000°,δ23.00000°, λ79.00000°. NP2:φs30.00000°,δ68.00000°,λ95.00000°.
JMA 27 03:11:54.4±0.3,39.87N×143.32E,h21km±5km,M3.9
IDC 27 03:11:58.2±2.9,39.82N×143.19E,h40km±25km,mb3.6/16, mb1 3.8/20,mb1mx3.7/37,mbtmp3.8/20,ML3.3/4,MS3.4/15, Ms1 3.4/15,ms1mx3.2/44,Error ellipse: s-maj=19.7km s-min=14.6km az=120.0
ISC 27 03:11:52.6±2.0,39.83N±0.05×143.34E±0.06,h2km±11km, n51,σ1918/51,mb3.9/15,MS3.5/10,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JTH	**Tanohata**	**1.14**	**276**	P	**Pg**	**03 12 14.7**	**+0.2**
JTH				*e*S	**Sg**	**03 12 29.4**	**+0.1**
MIYJ	**Miyakonagasawa**	**1.20**	**258**	P	**Pb**	**03 12 16.0**	**-0.1**
MIYJ				*e*S	**Sg**	**03 12 31.1**	**-0.1**
OFUJ	**Ofunato**	**1.50**	**241**	P	**Pn**	**03 12 20.2**	**-0.3**
JANG	**Nango**	**1.50**	**292**	P	**Pn**	**03 12 19.8**	**-0.8**
JKZ	**Kuzumaki**	**1.56**	**276**	P	**Pn**	**03 12 21.3**	**-0.1**
JKZ				*e*S	**Sn**	**03 12 41.5**	**-0.7**
JOM	**Ohasama**	**1.62**	**258**	P	**Pn**	**03 12 22.7**	**+0.5**
JOM				*e*S	**Sn**	**03 12 43.1**	**-0.6**
JMK	**Ichinoseki**	**1.86**	**243**	P	**Pn**	**03 12 25.5**	**-0.1**
JMK				S	**Sb**	**03 12 50.5**	**-0.6**
JTM	**Tenmabayashi**	**1.98**	**300**	P	**Pn**	**03 12 27.4**	**+0.2**
JTM				*e*S	**Sn**	**03 12 52.6**	**-0.1**
JIO	**Ouri**	**2.07**	**229**	P	**Pn**	**03 12 27.7**	**-0.7**
JAH	**Hinai**	**2.11**	**281**	P	**Pn**	**03 12 29.6**	**+0.7**
JAH				S	**Sn**	**03 12 54.3**	**-1.5**
JRG	**Rokugo**	**2.14**	**259**	P	**Pn**	**03 12 30.2**	**+0.9**
JOT	**Ohata**	**2.34**	**312**	P	**Pn**	**03 12 32.5**	**+0.5**
JOT				*e*S	**Sb**	**03 13 04.5**	**-0.2**
JYK	**Kaneyama**	**2.48**	**249**	P	**Pn**	**03 12 34.8**	**+0.7**
JYK				*e*S	**Sg**	**03 13 11.0**	**-1.4**
JNBK	**Urakawa-nobuka**	**2.49**	**350**	P	**Pn**	**03 12 34.8**	**+0.6**
JNBK				*e*S	**Sn**	**03 13 06.1**	**+1.0**
JKB	**Kayabe**	**2.70**	**320**	P	**Pb**	**03 12 39.7**	**-2.0**
JKB				*e*S	**Sn**	**03 13 12.3**	**+2.0**
JCH	**Churui**	**2.78**	**0**	P	**Pn**	**03 12 38.0**	**-0.2**
JCH				*e*S	**Sn**	**03 13 09.5**	**-2.9**
ASAJ	**Asahikawa**	**4.32**	**353**	Pn	**Pn**	**03 12 59.4**	**+0.1**
	1.1nm,0.3s,baz=201,slow=14,SNR=8.1						
ASAJ				Sn	**Sn**	**03 13 49.2**	**-1.1**
	1.8nm,0.3s,baz=268,slow=25,SNR=3.7						
MAT	**Matsushiro**	**5.21**	**233**	P	**Pn**	**03 13 12.1**	**+0.5**
MJAR	**Matsushiro Arr**	**5.21**	**233**	Pn	**Pn**	**03 13 12.2**	**+0.7**
	0.9nm,0.3s,baz=35,slow=12,SNR=13						
MJAR				LR	LR	03 15 26.5	
	comp=Z,179nm,19.8s,baz=40,slow=41						
USRK	**Ussuriysk Ar.**	**9.51**	**301**	Pn	**Pn**	**03 14 14.4**	**+3.9**
	0.3nm,0.3s,baz=98,slow=14,SNR=6.9						
USRK				LR	LR	03 17 44.1	
	comp=Z,194nm,20.3s,baz=114,slow=37						
JNU	**Nakatsue**	**12.05**	**240**	LR	LR	03 19 44.1	
	comp=Z,169nm,19.3s,baz=119,slow=39						
KSRS	**Korea Array**	**12.29**	**264**	Pn	**Pn**	**03 14 51.1**	**+2.5**
	0.2nm,0.3s,baz=90,slow=16,SNR=4.3						
KSRS				LR	LR	03 19 16.4	
	comp=Z,150nm,19.2s,baz=96,slow=36						
KLR	**Kul'dur**	**12.51**	**323**	Pn	**Pn**	**03 14 53.0**	**+1.4**
	0.5nm,0.3s,baz=216,slow=1.3,SNR=3.4						
KLR				LR	LR	03 19 54.2	
	comp=Z,159nm,20.7s,baz=134,slow=38						
MA2	**Magadan**	**20.32**	**11**	P	Pn	03 16 31.1	-0.6
	4.0nm,0.4s,baz=199,slow=7.8,SNR=5.5						
MA2				LR	LR	03 23 39.7	
	comp=Z,43nm,21.0s,baz=254,slow=34						
YAK	**Yakutsk**	**23.74**	**344**	LR	LR	03 28 18.0	
	comp=Z,40nm,18.5s,baz=219,slow=41						
SEY	**Seymchan**	**23.77**	**10**	P	**P**	**03 17 06.9**	**+0.7**
	4.4nm,1.0s,baz=212,slow=6.8,SNR=8.8						
SONM	**Songino Array**	**27.62**	**299**	P	**P**	**03 17 41.5**	**0.0**
	1.5nm,0.8s,baz=99,slow=8.8,SNR=8.6						
SONM				LR	LR	03 29 18.8	
	comp=Z,173nm,18.7s,baz=116,slow=38						
H11N2	**WAKE ISLAND Hy**	**28.47**	**128**	T	T	03 47 40.2	
	baz=320,slow=75,SNR=18						
H11N1	**WAKE ISLAND Hy**	**28.48**	**128**	T	T	03 48 07.3	
	baz=320,slow=75,SNR=19						
H11N3	**WAKE ISLAND Hy**	**28.49**	**128**	T	T	03 48 00.3	
	baz=320,slow=75,SNR=19						
H11S1	**WAKE ISLAND Hy**	**29.29**	**130**	T	T	03 48 40.5	
H11S3	**WAKE ISLAND Hy**	**29.30**	**130**	T	T	03 48 40.5	
H11S2	**WAKE ISLAND Hy**	**29.31**	**130**	T	T	03 48 40.5	
TLY	**Talaya**	**29.76**	**307**	LR	LR	03 30 19.3	
	comp=Z,67nm,20.5s,baz=157,slow=37						
ZALV	**Zalesovo Beam**	**41.21**	**310**	P	**P**	**03 19 38.4**	**-0.2**
	1.5nm,0.5s,baz=81,slow=9.2,SNR=5.5						
NRIK	**Noril'sk**	**41.40**	**334**	LR	LR	03 38 11.6	
	comp=Z,69nm,18.4s,baz=90,slow=38						
CMAR	**Chiang Mai Arr**	**43.70**	**254**	LR	LR	03 40 13.8	
	comp=Z,27nm,20.4s,baz=200,slow=39						
MKAR	**Makanchi Array**	**43.98**	**300**	P	**P**	**03 20 01.0**	**-0.2**
	2.1nm,0.9s,baz=82,slow=8.7,SNR=11			

CMPO	Campotto Po	0.41	34	Pg		Pb	03 17 25.4	+1.0	
	203nm,0.7s								
SFI	Santa Sofia	0.42	143	Pg		Pg	03 17 24.5	0.0	
SFI				Sg		Sb	03 17 32.2	+1.3	
	309nm,0.5s								
SFI	Santa Sofia	0.42	143	Pg		Pg	03 17 24.5	0.0	
SFI				Sg		Sb	03 17 32.2	+1.3	
	309nm,0.5s								
ASQU	Asqua	0.50	154	Pg		Pg	03 17 25.8	0.0	
ASQU				Sg		Sb	03 17 34.2	+1.3	
	179nm,0.4s								
ASQU	Asqua	0.50	154	Pg		Pg	03 17 25.8	0.0	
ASQU				Sg		Sb	03 17 34.2	+1.3	
	179nm,0.4s								
FIR	Firenze	0.50	200	Pg		Pg	03 17 25.9	+0.1	
FIR				Sg		Sb	03 17 33.9	+1.0	
	318nm,0.4s								
FIR	Firenze	0.50	200	Pg		Pg	03 17 25.9	+0.1	
FIR				Sg		Sb	03 17 33.9	+1.0	
	318nm,0.4s								
BDI	Bagni Di Lucca	0.67	255	Pg		Pg	03 17 28.7	-0.3	
	152nm,0.7s								
BDI	Bagni Di Lucca	0.67	255	Pg		Pg	03 17 28.7	-0.3	
	152nm,0.7s								
CRE	Caprese Michel	0.71	152	Pg		Pb	03 17 29.7	+0.1	
	126nm,0.4s								
CRE	Caprese Michel	0.71	152	Pg		Pb	03 17 29.7	+0.1	
	126nm,0.4s								
NOVE	Novellara	0.78	315	Pg		Pn	03 17 32.7	+0.9	
MAIM	Mastiano	0.79	246	Pg		Pb	03 17 30.8	-0.2	
MAIM				Sg		Sg	03 17 42.2	+0.4	
	78nm,0.6s								
MAIM	Mastiano	0.79	246	Pg		Pb	03 17 30.8	-0.2	
MAIM				Sg		Sg	03 17 42.2	+0.4	
	78nm,0.6s								
ERBM	Eremo	0.79	283	Pg		Pg	03 17 31.6	+0.3	
	93nm,0.8s								
ERBM	Eremo	0.79	283	Pg		Pg	03 17 31.6	+0.3	
	93nm,0.8s								
VLC	Villacollemand	0.80	264	Pg		Pb	03 17 31.1	0.0	
	62nm,0.6s								
VLC	Villacollemand	0.80	264	Pg		Pb	03 17 31.1	0.0	
	62nm,0.6s								
PARC	Parchiule	0.80	138	Pg		Pb	03 17 31.0	-0.2	
	71nm,0.7s								
PARC	Parchiule	0.80	138	Pg		Pb	03 17 31.0	-0.2	
	71nm,0.7s								
BADI	Badiali	0.91	143	Pg		Pb	03 17 33.1	+0.1	
	138nm,0.7s								
BADI	Badiali	0.91	143	Pg		Pb	03 17 33.1	+0.1	
	138nm,0.7s								
CAFI	Castiglion Fio	0.98	159	Pg		Pn	03 17 34.9	+0.3	
	51nm,0.5s								
CAFI	Castiglion Fio	0.98	159	Pg		Pn	03 17 34.9	+0.3	
	51nm,0.5s								
ATPC	Poggio Castell	1.03	137	Pg		Pb	03 17 35.0	-0.1	
	131nm,1.1s								
ATPC	Poggio Castell	1.03	137	Pg		Pb	03 17 35.0	-0.1	
	131nm,1.1s								
PIEI	Pieia	1.03	133	Pg		Pb	03 17 35.2	+0.1	
	33nm,0.5s								
PIEI	Pieia	1.03	133	Pg		Pb	03 17 35.2	+0.1	
	33nm,0.5s								
ATVO	AVT- Monte Val	1.09	142	Pg		Pb	03 17 36.1	+0.1	
	72nm,0.6s								
ATVO	AVT- Monte Val	1.09	142	Pg		Pb	03 17 36.1	+0.1	
	72nm,0.6s								
TEOL	Teolo	1.12	6	Pg		Pn	03 17 35.6	-0.9	
	338nm,0.4s								
TEOL	Teolo	1.12	6	Pg		Pn	03 17 35.6	-0.9	
	338nm,0.4s								
FRON	Frontone	1.15	129	Pg		Pn	03 17 37.4	+0.5	
	57nm,0.8s								
FRON	Frontone	1.15	129	Pg		Pn	03 17 37.4	+0.5	
	57nm,0.8s								
PLMA	Palmaria, Port	1.20	261	Pg		Pb	03 17 38.1	+0.3	
	52nm,0.8s								
PLMA	Palmaria, Port	1.20	261	Pg		Pb	03 17 38.1	+0.3	
	52nm,0.8s								
TRIF	Trifonti	1.21	201	Pg		Pn	03 17 37.6	-0.1	
	30nm,0.9s								
TRIF	Trifonti	1.21	201	Pg		Pn	03 17 37.6	-0.1	
	30nm,0.9s								
ATTE	AVT- Monte Tez	1.22	149	Pg		Pb	03 17 38.9	+0.6	
	56nm,0.6s								
ATTE	AVT- Monte Tez	1.22	149	Pg		Pb	03 17 38.9	+0.6	
	56nm,0.6s								
SSFR	Montelago di S	1.23	130	Pg		Pn	03 17 38.5	+0.4	
	62nm,0.4s								
SSFR	Montelago di S	1.23	130	Pg		Pn	03 17 38.5	+0.4	
	62nm,0.4s								
ARVD	Arcevia	1.29	125	Pg		Pb	03 17 39.8	+0.4	
	33nm,0.8s								
ARVD	Arcevia	1.29	125	Pg		Pb	03 17 39.8	+0.4	
	33nm,0.8s								
MARN	Marana (Italy)	1.41	352	*e*Pg		Pn	03 17 40.2	-0.3	
MARN	Marana (Italy)	1.41	352	*e*Pg		Pn	03 17 40.2	-0.3	
SC2M	Scurtabo	1.41	277	Pg		Pb	03 17 42.4	+0.8	
	99nm,0.4s								
SC2M	Scurtabo	1.41	277	Pg		Pb	03 17 42.4	+0.8	
	99nm,0.4s								
MSSA	Maissana	1.42	274	Pg		Pb	03 17 42.3	+0.6	
	55nm,0.6s								
MSSA	Maissana	1.42	274	Pg		Pb	03 17 42.3	+0.6	
	55nm,0.6s								
BALD	Monte Baldo	1.52	342	*e*Pg		Pn	03 17 42.2	+0.1	
BALD				*e*Sg		Sb	03 18 03.3	+0.9	
BALD	Monte Baldo	1.52	342	*e*Pg		Pn	03 17 42.2	+0.1	
BALD				*e*Sg		Sb	03 18 03.3	+0.9	
BOB	Bobbio (Coli)	1.55	290	Pg		Pb	03 17 44.6	+0.6	
	83nm,0.7s								
BOB	Bobbio (Coli)	1.55	290	Pg		Pb	03 17 44.6	+0.6	
	83nm,0.7s								
MAGA	Magasa	1.65	339	Pg		Pn	03 17 43.8	-0.1	
	230nm,0.4s								
MAGA	Magasa	1.65	339	Pg		Pn	03 17 43.8	-0.1	
	230nm,0.4s								
CGRP	Cima Grappa	1.65	8	*e*Pg		Pn	03 17 43.0	-0.9	
CGRP	Cima Grappa	1.65	8	*e*Pg		Pn	03 17 43.0	-0.9	
DDS	Dosso del Somm	1.65	353	*e*Pg		Pn	03 17 43.5	-0.5	
DDS	Dosso del Somm	1.65	353	*e*Pg		Pn	03 17 43.5	-0.5	
VARN	Col Varnada, M	1.80	14	*e*Pn		Pn	03 17 44.6	-1.3	
VARN	Col Varnada, M	1.80	14	*e*Pn		Pn	03 17 44.6	-1.3	
PANI	Panarotta	1.81	357	*e*Pn		Pn	03 17 45.8	-0.4	
PANI	Panarotta	1.81	357	*e*Pn		Pn	03 17 45.8	-0.4	
POLC	Polcenigo	1.92	21	*e*Pn		Pn	03 17 46.6	-0.9	
POLC	Polcenigo	1.92	21	*e*Pn		Pn	03 17 46.6	-0.9	
CIMO	Cimolais	2.17	18	*e*Pn		Pn	03 17 49.9	-1.1	
CIMO	Cimolais	2.17	18	*e*Pn		Pn	03 17 49.9	-1.1	
OZOL	Ozolo	2.18	352	*e*Pn		Pn	03 17 50.9	-0.3	
OZOL	Ozolo	2.18	352	*e*Pn		Pn	03 17 50.9	-0.3	
SKDS	Skadanscina	2.22	53	*i* Pn		Pn	03 17 50.0	-1.6	
SKDS				*i* Sn		Sn	03 18 17.2	-1.3	
SKDS	Skadanscina	2.22	53	*i* Pn		Pn	03 17 50.0	-1.6	
SKDS				*i* Sn		Sn	03 18 17.2	-1.3	
CARE	Lago del Cares	2.25	346	*e*Pn		Pn	03 17 52.0	-0.3	
CARE	Lago del Cares	2.25	346	*e*Pn		Pn	03 17 52.0	-0.3	
SABO	M.te Sabotino	2.29	40	*e*Pn		Pn	03 17 51.6	-1.0	
SABO	M.te Sabotino	2.29	40	*e*Pn		Pn	03 17 51.6	-1.0	
VINO	Villanova	2.38	32	*e*Pn		Pn	03 17 52.2	-1.6	
VINO	Villanova	2.38	32	*e*Pn		Pn	03 17 52.2	-1.6	
CLUD	Cludinico	2.42	23	*e*Pn		Pn	03 17 53.6	-0.8	
CLUD	Cludinico	2.42	23	*e*Pn		Pn	03 17 53.6	-0.8	
NVLJ	Novalja	2.44	81	*i* Pn		Pn	03 17 54.0	-0.6	
NVLJ				*i* Sn		Sn	03 18 23.2	-0.8	
NVLJ	Novalja	2.44	81	*i* Pn		Pn	03 17 54.0	-0.6	
NVLJ				*i* Sn		Sn	03 18 23.2	-0.8	
JAVS	Javornik	2.46	47	*i* Pn		Pn	03 17 53.4	-1.6	
JAVS				*i* Sn		Sn	03 18 23.2	-1.4	
JAVS	Javornik	2.46	47	*i* Pn		Pn	03 17 53.4	-1.6	
JAVS				*i* Sn		Sn	03 18 23.2	-1.4	
PGF	Pioggiola	2.48	228	*e*Pn		Pn	03 17 54.0	-1.4	
PGF				*e*Sn		Sn	03 18 23.7	-1.5	
	4.2nm,0.4s								
PGF	Pioggiola	2.48	228	*e*Pn		Pn	03 17 54.0	-1.4	
PGF				*e*Sn		Sn	03 18 23.7	-1.5	
	2.1nm,0.4s								
ABTA	Abfaltersbach	2.60	16	*i* P		Pb	03 18 04.5	+2.6	
	6.4nm,0.6s								
FETA	Feichten	2.83	349	*i* P		Pn	03 18 03.6	+3.5	
	2.9nm,0.5s								
FETA	Feichten	2.83	349	P		Pn	03 18 03.6	+3.5	
	2.9nm,0.5s								
VISS	Visnje	2.84	56	*i* Pn		Pn	03 17 59.4	-0.7	
VISS				*i* Sn		Sn	03 18 33.1	-0.7	
SBF	Sospel	2.95	264	*e*Pn		Pn	03 18 01.6	-0.1	
SBF				*e*Sn		Sn	03 18 36.9	+0.3	
	13nm,0.5s								
SBF	Sospel	2.95	264	*e*Pn		Pn	03 18 01.6	-0.1	
SBF				*e*Sn		Sn	03 18 36.9	+0.3	
	6.4nm,0.5s								
UDBI	Udbina	3.08	83	*e*Pn		Pn	03 18 03.1	-0.3	
UDBI				Sn		Sn	03 18 39.7	-0.1	
UDBI	Udbina	3.08	83	*e*Pn		Pn	03 18 03.1	-0.3	
UDBI				Sn		Sn	03 18 39.7	-0.1	
KBA	Koelnbreinsper	3.12	24	P		Pn	03 18 07.6	+3.5	
	2.6nm,0.4s								
KBA	Koelnbreinsper	3.12	24	P		Pn	03 18 07.6	+3.5	
	2.6nm,0.4s								
OBKA	Obir	3.13	43	*e*P		Pg	03 18 15.0	-0.7	
	7.7nm,0.9s								
RETA	Reutte	3.28	351	*i* Pn		Pn	03 18 07.3	+1.0	
	1.9nm,0.6s								
RETA	Reutte	3.28	351	P		Pn	03 18 07.3	+1.0	
	1.9nm,0.6s								
MBDF	Montbardon	3.41	280	*e*Pn		Pn	03 18 08.1	0.0	
MBDF				*e*Sn		Sn	03 18 49.4	+1.2	
	12nm,0.8s								
MBDF	Montbardon	3.41	280	*e*Pn		Pn	03 18 08.1	0.0	
MBDF				*e*Sn		Sn	03 18 49.4	+1.2	
	6.1nm,0.8s								
FRF	La Foret Royal	3.57	261	*e*Pn		Pn	03 18 09.7	-0.4	
FRF				*e*Sn		Sn	03 18 51.2	-0.6	
	2.9nm,0.4s								
FRF	La Foret Royal	3.57	261	*e*Pn		Pn	03 18 09.7	-0.4	
FRF				*e*Sn		Sn	03 18 51.2	-0.6	
	1.5nm,0.4s								
LPG	La Plagne	3.59	292	*e*Pn		Pn	03 18 10.7	-0.1	
LPG				*e*Sn		Sn	03 18 54.0	+1.1	
	6.1nm,0.6s								
LPG	La Plagne	3.59	292	*e*Pn		Pn	03 18 10.7	-0.1	
LPG				*e*Sn		Sn	03 18 54.0	+1.1	
	3.0nm,0.6s								
LPL	La Plagne	3.61	292	*e*Pn		Pn	03 18 10.9	-0.1	
LPL				*e*Sn		Sn	03 18 54.2	+0.9	
	2.4nm,0.4s								
LPL	La Plagne	3.61	292	*e*Pn		Pn	03 18 10.9	-0.1	
LPL				*e*Sn		Sn	03 18 54.2	+0.9	
	1.2nm,0.4s								
LMR	La Mourre	3.72	258	*e*Pn		Pn	03 18 11.5	-0.7	
LMR				*e*Sn		Sn	03 18 53.8	-1.8	
	5.3nm,0.6s								
LMR	La Mourre	3.72	258	*e*Pn		Pn	03 18 11.5	-0.7	
LMR				*e*Sn		Sn	03 18 53.8	-1.8	
	2.7nm,0.6s								
ORIF	Oris-en-Rattie	4.07	281	*e*Pn		Pn	03 18 17.0	-0.1	
ORIF				*e*Sn		Sn	03 19 05.2	+1.0	
	5.6nm,0.6s								
ORIF	Oris-en-Rattie	4.07	281	*e*Pn		Pn	03 18 17.0	-0.1	
ORIF				*e*Sn		Sn	03 19 05.2	+1.0	
	2.8nm,0.6s								
SMRF	Simiane la Rot	4.27	268	*e*Pn		Pn	03 18 19.8	0.0	
SMRF	Simiane la Rot	4.27	268	*e*Pn		Pn	03 18 19.8	0.0	
CABF	La Chapelle	4.48	304	*e*Pn		Pn	03 18 22.5	-0.3	
CABF				*e*Sn		Sn	03 19 14.5	+0.1	
	1.0nm,0.3s								
CABF	La Chapelle	4.48	304	*e*Pn		Pn	03 18 22.5	-0.3	
CABF				*e*Sn		Sn	03 19 14.5	+0.1	
	0.5nm,0.3s								
STON	Ston	4.72	105	*i* Pn		Pn	03 18 26.8	+0.8	
STON				Sn		Sn	03 19 19.9	-0.2	
STON	Ston	4.72	105	*i* Pn		Pn	03 18 26.7	+0.8	
STON				Sn		Sn	03 19 19.9	-0.2	
HINF	Hinteralfeld	4.82	320	*e*Pn		Pn	03 18 25.1	-2.2	
HINF				*e*Sn		Sn	03 19 19.1	-3.5	
	3.4nm,0.4s								
HINF	Hinteralfeld	4.82	320	*e*Pn		Pn	03 18 25.1	-2.2	
HINF				*e*Sn		Sn	03 19 19.1	-3.5	
	1.7nm,0.4s								
VIVF	Saint-Julien-l	4.91	280	*e*Pn		Pn	03 18 28.2	-0.4	
VIVF	Saint-Julien-l	4.91	280	*e*Pn		Pn	03 18 28.2	-0.4	
CDF	Champ du Feu	5.09	326	*e*Pn		Pn	03 18 29.8	-1.3	
CDF				*e*Sn		Sn	03 19 25.7	-3.7	
	1.4nm,0.2s								
CDF	Champ du Feu	5.09	326	*e*Pn		Pn	03 18 29.8	-1.3	
CDF				*e*Sn		Sn	03 19 25.7	-3.7	
	0.7nm,0.2s								
KHC	Kasperske Hory	5.09	16	*e*SN		Sn	03 19 26.4	-3.1	
KHC				*e*SG		Sg	03 19 58.8	-0.4	
KHC	Kasperske Hory	5.09	16	Sn		Sn	03 19 26.4	-3.1	
KHC				Sg		Sg	03 19 58.8	-0.4	
HAU	Haudompre	5.19	318	*e*Pn		Pn	03 18 31.3	-1.1	
HAU				*e*Sn		Sn	03 19 26.8	-5.0	
	2.8nm,0.3s								
HAU	Haudompre	5.19	318	*e*Pn		Pn	03 18 31.3	-1.1	
HAU				*e*Sn		Sn	03 19 26.8	-5.0	
	1.4nm,0.3s								
SMF	Signal de Mont	5.89	297	*e*Pn		Pn	03 18 41.2	-0.9	
SMF	Signal de Mont	5.89	297	*e*Pn		Pn	03 18 41.2	-0.9	
LOR	Lormes	6.14	302	*e*Pn		Pn	03 18 44.5	-0.9	
LOR				*e*Sn		Sn	03 19 51.5	-3.6	
	2.8nm,0.4s								
LOR	Lormes	6.14	302	*e*Pn		Pn	03 18 44.5	-0.9	
SSF	Saint Saulge	6.26	300	*e*Pn		Pn	03 18 46.6	-0.6	
SSF	Saint Saulge	6.26	300	*e*Pn		Pn	03 18 46.6	-0.6	

NIED ***27*** *03:33:00.3, 38°.30N×142°.20E, h32km, Mw3.6 Best double couple: M0 2.54000×10^14 NP1:φ=253.00000°, δ=49.00000°, λ=-23.00000°. NP2:φ=358.00000°, δ=73.00000°, λ=-137.00000°.*

JMA 27 03:33:35.8±0.1, 38°.32N×142°.20E, h36km±2km, M3.8, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID			Time	Res
				Op		ISC	h m s	ISC
JIO	Ouri	0.68	282	P		Pn	03 33 49.1	+0.1
JIO				S		Sn	03 33 58.2	-0.1
OFUJ	Ofunato	0.86	331	P		Pn	03 33 51.6	+0.1
JMK	Ichinoseki	0.99	310	P		Pn	03 33 53.7	+0.5
JMK				S		Sn	03 34 05.3	-0.6
JMM	Marumori	1.20	248	P		Pn	03 33 55.9	-0.1
JMM				*e*S		Sn	03 34 10.5	-0.5
JOU	Okura	1.21	273	P		Pn	03 33 57.0	+0.8
MIYJ	Miyakonagasawa	1.29	347	P		Pn	03 33 57.4	+0.1
MIYJ				*e*S		Sn	03 34 14.0	+0.7
JOM	Ohasama	1.35	329	P		Pn	03 33 59.1	+1.0
JOM				*e*S		Sn	03 34 15.9	+1.1
JYK	Kaneyama	1.56	293	P		Pn	03 34 02.1	+1.1
JRG	Rokugo	1.63	312	P		Pn	03 34 04.1	+2.2
JRG				*e*S		Sn	03 34 24.5	+2.9
JYS	Shirataka	1.68	267	P		Pn	03 34 03.8	+1.1
JYS				*e*S		Sn	03 34 26.4	+3.4
JKZ	Kuzumaki	1.79	338	P		Pn	03 34 05.6	+1.3
JKZ				S		Sn	03 34 28.6	+2.8
JANG	Nango	2.12	346	P		Pn	03 34 10.1	+1.4
JANG				*e*S		Sn	03 34 36.4	+2.7

SJA ***27*** *03:34:56.6±0.3, 24°.12S×66°.93W, h212km±11km, ML1.9, MW2.6*

ISCJB ***27*** *03:34:58.7±0.6, 24°.14S±0°.07×67°.07W±0°.06, h181km, mb3.2/2, Error ellipse: s-maj=11.0km s-min=6.1km az=28.0*

IDC ***27*** *03:35:08.8±9.8, 23°.25S×66°.46W, h244km±67km, mb2.9/2, mb1 3.1/3, mb1mx2.9/18, mbtmp3.4/3, Error ellipse: s-maj=110.5km s-min=44.0km az=27.0*

ISC 27 03:34:58.5±1.0, 24°.06S±0°.07×67°.03W±0°.06, h181km, n13, σ1=50/17, 2C-1D, Chile-Argentina border region

Code	Station Name	Δ°	AZ°	Phase ID			Time	Res
				Op		ISC	h m s	ISC
SLA	San Lorenzo	1.54	116	*e*P		Pn	03 35 31.6	+0.5
SLA				*e*S		Sn	03 35 57.4	+1.1
SLA				IAML			03 35 58.3	
	comp=Z,6.4nm,0.6s							
HJA	Humahuaca	1.71	61	*e*P		Pn	03 35 34.2	+1.2
AZAP	Zapla	1.80	96	*e*P		Pn	03 35 34.2	+0.5
FSA	Cafayete	2.26	155	*e*P		Pn	03 35 38.6	0.0
YJA	Yavi	2.33	37	*e*P		Pn	03 35 41.0	+1.2
YJA				*e*S		Sn	03 36 14.1	+2.2
PB06	IPOC Station P	2.70	299	*i*P		Pn	03 35 45.3	+1.6
PB06				*i* S		Sn	03 36 19.4	+0.5
PB06				AML		AML	03 36 21.7	
	comp=E,474nm,0.4s							
PB09	IPOC Station P	3.04	317	*i*P		Pn	03 35 49.9	+2.1
PB09				*i* S		Sn	03 36 27.6	+1.3
PB09				AML		AML	03 36 29.0	
	comp=N,465nm,0.5s							
PB10	IPOC Station P	3.28	279	*i*P		Pn	03 35 51.6	+1.0
PATCX	Punta Patache	4.33	317	*i* P		Pn	03 36 04.2	+0.2
LPAZ	La Paz	7.80	352	P		Pn	03 36 51.3	+1.5
	comp=N,0.4nm,0.3s,baz=153,slow=7.2,SNR=13							
LPAZ				S		Sn	03 38 14.4	-3.3
	comp=N,0.1nm,0.3s,baz=90,slow=12,SNR=1.9							
TORD	Torodi Ar. Bea	76.61	69	P		P	03 46 28.6	-1.0
	comp=N,0.3nm,0.4s,baz=255,slow=5.8,SNR=14							
YKA	Yellowknife Ar	94.17	340	P		P	03 47 56.0	-0.1
	comp=N,0.1nm,0.5s,baz=136,slow=5.4,SNR=2.8							
MKAR	Makanchi Array	146.58	40	PKPbc		PKPab	03 54 18.6	-1.4
	comp=N,0.3nm,0.6s,baz=286,slow=3.8,SNR=2.8							

NEIC ***27*** *03:42:47.7, 19°.18N×67°.89W, h70km, MD3.4(RSPR), After RSPR.*

RSPR 27 03:42:47.7, 19°.18N×67°.89W, h70km±10km, 6C-6D, Mona Passage

Code	Station Name	Δ°	AZ°	Phase ID			Time	Res
				Op		ISC	h m s	ISC
IDE	Isla Desecheo	0.88	153	*e*S		Sn	03 43 17.0	-0.4
IDE	Isla Desecheo	0.88	153	*e*P		Pn	03 43 03.7	-1.1
IDE	Isla Desecheo	0.88	153	*e*P		Pn	03 43 03.7	-1.1
IDE				*e*S		Sn	03 43 17.0	-0.4
LSP	Las Mesas	1.26	143	*e*S		Sn	03 43 25.3	-0.6
LSP	Las Mesas	1.26	143	*e*P		Pn	03 43 08.7	-0.9
LSP	Las Mesas	1.26	143	*e*P		Pn	03 43 08.7	-0.9
LSP				*e*S		Sn	03 43 25.3	-0.6
AOPR	Arecibo Observ	1.36	127	*e*P		Pn	03 43 10.1	-0.8
AOPR	Arecibo Observ	1.36	127	*e*S		Sn	03 43 27.6	-0.6
AOPR	Arecibo Observ	1.36	127	*e*P		Pn	03 43 10.1	-0.8
AOPR				*e*S		Sn	03 43 27.6	-0.6
DR12	Loma Pena Alta	1.46	255	*e*P		Pn	03 43 11.6	-0.6
DR12	Loma Pena Alta	1.46	255	*e*P		Pn	03 43 11.6	-0.6
SJG	San Juan	1.96	123	*e*Pn		Pn	03 43 17.6	-1.2
SJG				*e*S		Sn	03 43 40.0	-2.5
HUMP	Col San Antoni	2.19	118	*e*P		Pn	03 43 21.0	-0.9
HUMP	Col San Antoni	2.19	118	*e*P		Pn	03 43 21.0	-0.9
MTP	Monte Pirata	2.47	116	*e*P		Pn	03 43 25.6	0.0
MTP	Monte Pirata	2.47	116	*e*P		Pn	03 43 25.6	0.0
SDDR	Presa de Saban	3.22	267	*e*Pn		Pn	03 43 37.3	+1.4

ISCJB ***27*** *03:53:52.7±0.5, 6°.67S±0°.07×154°.89E±0°.07, h150km, mb4.2/25, Error ellipse: s-maj=10.9km s-min=8.4km az=149.6*

IDC ***27*** *03:53:53.2±2.2, 6°.62S×154°.80E, h144km±22km, mb3.7/15, mb1 3.8/18, mb1mx3.7/46, mbtmp4.1/18, MS3.4/6, Ms1 3.4/6, ms1mx3.1/40, Error ellipse: s-maj=18.4km s-min=14.3km az=127.0*

ISC 27 03:53:54.1±0.6, 6°.64S±0°.10×154°.82E±0°.08, h150km, n48, σ1=20/35, mb4.0/25, Bougainville-Solomon Islands region

Code	Station Name	Δ°	AZ°	Phase ID			Time	Res
				Op		ISC	h m s	ISC
HNR	Honiara	5.78	119	P		Pn	03 55 17.5	-0.4
	12nm,0.3s,baz=299,slow=7.7,SNR=5.3							
HNR				S		Sn	03 56 12.4	-11
	14nm,0.3s,baz=207,slow=18,SNR=4.3							
HNR	Honiara	5.78	119	*e*P		Pn	03 55 19.0	+1.1
HNR				*e*S		Sn	03 56 08.0	-16
PMG	Port Moresby	8.07	250	P		Pn	03 55 46.8	-1.7
	4.2nm,0.3s,baz=48,slow=15,SNR=7.3							
PMG				S		Sn	03 57 18.8	+0.4
	4.4nm,0.3s,baz=58,slow=21,SNR=11							
PMG				LR		LR	03 58 54.1	
	comp=Z,291nm,20.1s,baz=27,slow=37							
DZM	Mont Dzumac	19.01	145	P		P	03 58 04.7	+0.2
	0.3nm,0.3s,baz=77,slow=6.9,SNR=3.1							
DZM				LR		LR	04 03 44.9	
	comp=Z,175nm,20.0s,baz=14,slow=31							
GUMO	Guam	22.40	334	LR		LR	04 07 18.0	
	comp=Z,37nm,20.4s,baz=96,slow=36							
WRA	Warramunga Arr	23.88	234	P		P	03 58 53.8	-0.2
	4.5nm,0.5s,baz=57,slow=9.4,SNR=18							
ASAR	Alice Springs	26.28	228	P		P	03 59 14.4	-1.4
	1.1nm,0.5s,baz=57,slow=9.4,SNR=13							
ASAR				LR		LR	04 09 10.6	
	comp=Z,80nm,19.9s,baz=332,slow=35							
H11S3	WAKE ISLAND Hy	27.59	25	T		T	04 27 45.3	
	baz=203,slow=75,SNR=40							
H11S2	WAKE ISLAND Hy	27.59	25	T		T	04 27 44.6	
	baz=203,slow=75,SNR=51							
H11S1	WAKE ISLAND Hy	27.60	25	T		T	04 27 46.7	
	baz=203,slow=75,SNR=26							
STKA	Stephens Creek	27.98	205	P		P	03 59 31.4	+0.6

NIED ***27*** *03:55:00,37.10N×140.70E,h8km,Mw3.9 Best double couple: M₀7.19000×10¹⁴ NP1:φ₈12.00000°,δ16.00000°, λ-73.00000°. NP2:φ₈175.00000°,δ75.00000°, λ-95.00000°.*

ISCJB ***27*** *03:55:08.9±0.5,37.04N±0.03×140.80E±0.05,h15km±3km, mb3.9/14,Error ellipse: s-maj=6.8km s-min=3.8km az=28.8*

IDC ***27*** *03:55:08.2±0.8,36.96N×140.69E,h0km,mb3.9/13, mb1 4.0/14,mb1mx3.8/52,mbtmp3.9/14,ML3.7/1,MS2.7/5, Ms1 2.7/5,ms1mx2.5/40,Error ellipse: s-maj=18.3km s-min=12.6km az=148.0*

JMA ***27*** *03:55:09.5,37.06N×140.67E,h10km±1km,M4.1 Broadband fault plane solution: P waves. NP1: φ₈174.00000°,δ67.00000°,λ-96.00000°. NP2:φ₈10.00000°, δ23.00000°,λ-75.00000°. Principal axes: T Plg22.0000°, Azm269.0000°; N Plg6.0000°, Azm177.0000°; P Plg67.0000°, Azm73.0000°;*

JMA Felt III J1.

NEIC ***27*** *03:55:09.8±0.7,36.97N×140.60E,h10km,mb4.2/1 Error ellipse: s-maj=16.3km s-min=9.1km az=140.0*

NEIC Recorded [3 JMA] in Fukushima.

ISC 27 03:55:09.6±0.9,37.05N±0.03×140.67E±0.04,h7km±6km, n39,σ0°79/40,mb3.9/14,5C-3D,Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.11**	**63**	⇓P	**Pg**	**03 55 12.2**	**+0.1**
ONAJ				S	**Sg**	**03 55 14.0**	**+0.1**
JFK	**Kawauchi**	**0.35**	**27**	⇓P	**Pg**	**03 55 16.3**	**-0.2**
JFK				*e*S	**Sg**	**03 55 20.9**	**-0.3**
JHO	**Hitachi**	**0.45**	**191**	⇑P	**Pg**	**03 55 18.3**	**+0.1**
JHO				S	**Sg**	**03 55 24.5**	**+0.4**
JFT	**Otama**	**0.54**	**330**	⇑P	**Pg**	**03 55 20.0**	**0.0**
JFT				S	**Sg**	**03 55 27.3**	**+0.3**
JSB	**Shiboa**	**0.61**	**262**	⇑P	**Pb**	**03 55 22.0**	**-0.6**
JSB				S	**Sb**	**03 55 30.7**	**-0.6**
JMM	**Marumori**	**0.82**	**7**	⇓P	**Pg**	**03 55 24.6**	**-0.7**
JMM				S	**Sg**	**03 55 35.5**	**-0.5**
JFY	**Yanaizu**	**0.85**	**295**	⇑P	**Pg**	**03 55 25.8**	**-0.1**
JFY				S	**Sg**	**03 55 36.7**	**-0.3**
JYT	**Yasato**	**0.91**	**205**	⇑P	**Pg**	**03 55 26.4**	**-0.6**
JYT				S	**Sg**	**03 55 38.4**	**-0.4**
MJAR	**Matsushiro Arr** 49nm,0.3s,baz=81,slow=16,SNR=275	**2.04**	**256**	Pg	**Pn**	**03 55 44.9**	**+0.5**
MJAR	comp=Z,49nm,21.8s,baz=80,slow=30			LR	LR	03 56 08.3	
MJAR	61nm,0.3s,baz=343,slow=3.9,SNR=8.3			Lg	Lg	03 56 12.6	
MAJO	**Matsushiro**	**2.04**	**256**	*e*Pn	**Pn**	**03 55 45.1**	**+0.7**
MAJO				*e*S	**Sb**	**03 56 13.1**	**+0.5**
MAT	**Matsushiro**	**2.04**	**256**	P	**Pn**	**03 55 45.1**	**+0.7**
MAT				S	**Sb**	**03 56 12.4**	**-0.2**
ERM	**Erimo**	**5.32**	**20**	*e*Pn	**Pn**	**03 56 28.7**	**-0.6**
ERM				*e*S	**Sn**	**03 57 28.8**	**-2.0**
ASAJ	**Asahikawa** 1.4nm,0.3s,baz=217,slow=14,SNR=9.5	**7.21**	**11**	Pn	**Pn**	**03 56 56.8**	**+1.4**
ASAJ	0.5nm,0.3s,baz=290,slow=28,SNR=3.7			Sn	**Sn**	**03 58 18.7**	**+1.3**
ASAJ	comp=Z,40nm,19.0s,baz=170,slow=38			LR	LR	03 59 46.7	
JNU	**Nakatsue** comp=Z,86nm,19.6s,baz=119,slow=40	**8.93**	**247**	LR	LR	04 01 04.0	
USRK	**Ussuriysk Ar.** 0.1nm,0.3s,baz=142,slow=13,SNR=5.5	**9.72**	**320**	Pn	Pn	03 57 34.7	+4.9
KSRS	**Korea Array** 0.1nm,0.3s,baz=92,slow=14,SNR=9.2	**10.17**	**276**	Pn	Pn	03 57 41.4	+5.4
KSRS	comp=Z,52nm,19.5s,baz=230,slow=37			LR	LR	04 01 27.6	
KSAR	**Wonju Array Be**	**10.21**	**276**	Pn	Pn	03 57 41.4	+5.0
PETK	**Petropavlovsk-** comp=Z,52nm,18.8s,baz=216,slow=34	**19.97**	**31**	LR	LR	04 06 33.2	
SEY	**Seymchan** 0.7nm,0.4s,baz=56,slow=23,SNR=3.4	**26.89**	**12**	P	**P**	**04 00 52.6**	**+1.9**
SONM	**Songino Array** 1.8nm,0.7s	**27.29**	**304**	P	**P**	**04 00 56.1**	**+1.4**
H11N2	**WAKE ISLAND Hy** baz=313,slow=75,SNR=30	**28.67**	**120**	T	T	04 30 56.4	
H11N1	**WAKE ISLAND Hy** baz=313,slow=75,SNR=21	**28.68**	**120**	T	T	04 30 54.5	
H11N3	**WAKE ISLAND Hy** baz=313,slow=75,SNR=25	**28.69**	**120**	T	T	04 30 57.7	
H11S1	**WAKE ISLAND Hy** baz=314,slow=76,SNR=42	**29.37**	**122**	T	T	04 31 47.6	
H11S3	**WAKE ISLAND Hy** baz=314,slow=76,SNR=24	**29.37**	**122**	T	T	04 31 48.3	
H11S2	**WAKE ISLAND Hy** baz=314,slow=76,SNR=16	**29.38**	**122**	T	T	04 31 49.0	
ZALV	**Zalesovo Beam** 1.1nm,0.5s,baz=86,slow=7.6,SNR=3.6	**41.47**	**312**	P	**P**	**04 02 57.5**	**+0.7**
MKAR	**Makanchi Array** 0.8nm,0.6s,baz=85,slow=8.2,SNR=4.0	**43.61**	**302**	P	**P**	**04 03 14.1**	**-0.3**
KURK	**Kurchatov**	**45.45**	**308**	P	**P**	**04 03 28.5**	**-0.5**
KURBB	**Kurchatov Arra** 1.6nm,0.6s,baz=85,slow=7.9,SNR=16	**45.52**	**308**	P	**P**	**04 03 28.5**	**-1.0**
ILAR	**Eielson Array** 0.7nm,0.7s,baz=270,slow=6.6,SNR=10.0	**49.80**	**32**	P	**P**	**04 04 02.9**	**+0.3**
BVAR	**Borovoye Array** 0.7nm,0.5s,baz=68,slow=10,SNR=4.0	**50.12**	**312**	P	**P**	**04 04 04.9**	**-0.3**
INK	**Inuvik** 0.4nm,0.5s,baz=262,slow=6.7,SNR=3.8	**54.64**	**27**	P	**P**	**04 04 38.9**	**+0.5**
WRA	**Warramunga Arr** 2.4nm,0.5s,baz=4.2,slow=7.4,SNR=11	**57.00**	**187**	P	**P**	**04 04 54.9**	**-1.0**
ABKAR	**Akbulak array** 1.4nm,0.6s	**57.48**	**310**	*e*P	**P**	**04 04 58.2**	**-0.9**
ASAR	**Alice Springs** 1.0nm,0.7s,baz=16,slow=6.7,SNR=8.4	**60.73**	**187**	P	**P**	**04 05 21.2**	**-0.6**
YKA	**Yellowknife Ar** 0.3nm,0.8s,baz=299,slow=6.7,SNR=4.0	**64.09**	**30**	P	**P**	**04 05 43.4**	**-0.5**
FINES	**FINESS Array B** 1.6nm,0.7s,baz=73,slow=4.4,SNR=6.9	**68.52**	**332**	P	**P**	**04 06 12.4**	**+0.1**
AKASG	**Malin Array Be** 0.7nm,0.5s,baz=49,slow=5.9,SNR=3.5	**73.92**	**322**	P	**P**	**04 06 45.7**	**+0.5**

ISCJB ***27*** *04:00:60.0±1.2,36.29N±0.09×71.1E±0.1,h188km, mb3.2/3,Error ellipse: s-maj=14.7km s-min=10.0km az=137.9*

IDC ***27*** *04:01:01.9±5.1,36.41N×71.10E,h193km±40km,mb2.9/3, mb1 3.0/5,mb1mx2.8/53,mbtmp3.5/5,Error ellipse: s-maj=69.7km s-min=33.0km az=137.0*

NNC ***27*** *04:01:07.5±4.2,37.11N×70.55E,h0km,mb4.1,mpv3.7, Error ellipse: s-maj=33.0km s-min=24.9km az=165.0*

ISC 27 04:01:02.0±1.5,36.5N±0.1×71.0E±0.1,h188km,n12, σ1°99/17,mb3.2/3,2D,Afghanistan-Tajikistan border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SFK	**Sufi-Kurgan** 7.3nm,0.3s	**4.03**	**28**	Pn	Pn	04 02 07.1	+3.2
SFK				Sn	**Sn**	**04 02 52.5**	**-0.1**
KSH	**Kashi** 58nm,0.4s	**4.96**	**51**	Pn	**Pn**	**04 02 13.8**	**-1.8**
KSH				Sn	Sn	04 03 02.0	-12
KSH	comp=N,65nm,0.5s			smax	smax		
KSH	comp=E,54nm,0.3s			smax	smax		
MNAS	**Manas** comp=E,8.2nm,0.5s	**6.11**	**10**	Pn	**Pn**	**04 02 32.8**	**+2.3**
MNAS	comp=E,15nm,0.5s			Sn	**Sn**	**04 03 37.2**	**-3.2**
KK31	**Karatay Array** comp=E,0.8nm,0.2s,baz=178,slow=13,SNR=48	**6.62**	**357**	Pn	**Pn**	**04 02 39.1**	**+2.0**
KK31	comp=E,12nm,0.5s,baz=185,slow=24,SNR=19			Sn	**Sn**	**04 03 49.8**	**-2.6**
AAK	**Ala-Archa** comp=E,2.0nm,0.3s,baz=254,slow=18,SNR=15	**6.71**	**23**	P	**Pn**	**04 02 40.5**	**+2.1**
AAK	comp=E,1.0nm,0.3s,baz=327,slow=24,SNR=14			S	**Sn**	**04 03 53.7**	**-0.9**
AAK	**Ala-Archa** comp=E,4.9nm,0.8s	**6.71**	**23**	Pn	**Pn**	**04 02 40.3**	**+2.0**
AAK	comp=E,6.6nm,0.6s			Sn	**Sn**	**04 03 54.3**	**-0.3**
TKM2	**Tokmak 2** comp=E,6.0nm,0.7s	**7.34**	**27**	Pn	**Pn**	**04 02 48.4**	**+1.8**
TKM2	comp=E,3.7nm,0.8s			Sn	**Sn**	**04 04 11.9**	**+2.3**
MKAR	**Makanchi Array** comp=E,0.2nm,0.3s,baz=215,slow=13,SNR=4.9	**13.30**	**36**	P	**Pn**	**04 04 03.7**	**+0.2**
AB31	**Akbulak array** comp=E,1.2nm,0.7s,baz=100,slow=7.5,SNR=12	**15.10**	**331**	⇓P	P	04 04 32.9	+6.4
AB31	comp=E,0.3nm,0.4s			⇓S	**S**	**04 07 11.7**	**-2.7**
FINES	**FINESS Array B** comp=E,0.4nm,0.4s,baz=121,slow=7.4,SNR=3.3	**37.50**	**326**	P	**P**	**04 07 58.3**	**+1.1**
TORD	**Torodi Ar. Bea** comp=E,0.2nm,0.4s,baz=53,slow=6.0,SNR=16	**65.72**	**269**	P	**P**	**04 11 26.2**	**-0.5**
YKA	**Yellowknife Ar** comp=E,0.1nm,0.4s,baz=351,slow=5.6,SNR=5.2	**81.26**	**3**	P	**P**	**04 12 56.4**	**-0.2**

NIED ***27*** *04:03:00,37.00N×141.30E,h11km,Mw3.9 Best double couple: M₀7.90000×10¹⁴ NP1:φ₈86.00000°,δ50.00000°, λ-49.00000°. NP2:φ₈212.00000°,δ55.00000°, λ-128.00000°.*

ISCJB ***27*** *04:03:42.4±0.9,37.02N±0.03×141.32E±0.06,h24km±5km, mb3.8/14,MS3.4/1,Error ellipse: s-maj=7.9km s-min=5.4km az=21.5*

JMA ***27*** *04:03:43.8±0.1,37.04N×141.21E,h28km±1km,M4.0*

JMA Felt II J1.

IDC ***27*** *04:03:48.5±2.4,37.00N×141.09E,h58km±23km,mb3.5/14, mb1 3.7/18,mb1mx3.5/54,mbtmp3.8/18,ML3.4/3,MS3.2/2, Ms1 3.2/2,ms1mx2.5/38,Error ellipse: s-maj=17.8km s-min=16.6km az=81.0*

ISC 27 04:03:43.8±1.2,37.05N±0.04×141.26E±0.05,h20km±5km, n38,σ1°17/41,mb3.9/14,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.37**	**278**	P	**Pg**	**04 03 51.3**	**-0.5**
ONAJ				*e*S	**Sg**	**04 03 56.6**	**-0.6**
JFK	**Kawauchi**	**0.44**	**316**	P	**Pg**	**04 03 52.6**	**-0.4**
JFK				S	**Sg**	**04 03 58.6**	**-0.6**
JHO	**Hitachi**	**0.70**	**232**	P	**Pb**	**04 03 56.7**	**-0.8**
JHO				S	**Sb**	**04 04 04.9**	**-1.8**
JFT	**Otama**	**0.87**	**303**	P	**Pb**	**04 03 59.9**	**-0.4**
JFT				S	**Sb**	**04 04 11.2**	**-0.4**
JMM	**Marumori**	**0.90**	**336**	P	**Pb**	**04 03 59.9**	**-0.8**
JSB	**Shiboa**	**1.07**	**266**	P	**Pb**	**04 04 03.4**	**-0.4**
JSB				S	**Sb**	**04 04 17.3**	**-0.1**
JFY	**Yanaizu**	**1.29**	**287**	P	**Pn**	**04 04 06.5**	**-0.3**
JFY				S	**Sn**	**04 04 23.1**	**-0.5**
JOU	**Okura**	**1.40**	**340**	P	**Pn**	**04 04 08.2**	**-0.1**
JOU				S	**Sn**	**04 04 26.3**	**+0.1**
JIO	**Ouri**	**1.41**	**3**	P	**Pn**	**04 04 07.7**	**-0.7**
JIO				S	**Sn**	**04 04 24.5**	**-1.8**
MJAR	**Matsushiro Arr** 5.9nm,0.3s,baz=82,slow=15,SNR=24	**2.50**	**259**	P	**Pn**	**04 04 24.2**	**+0.8**
MJAR	7.7nm,0.3s,baz=87,slow=12,SNR=5.6			S	**Sn**	**04 04 53.1**	**-0.3**
MAT	**Matsushiro**	**2.50**	**259**	P	**Pn**	**04 04 24.2**	**+0.7**
MAT				S	**Sn**	**04 04 56.2**	**+2.8**
JHJ	**Hachijo jima 2** 7.6nm,0.3s,baz=339,slow=14,SNR=2.5	**4.10**	**198**	P	**Pn**	**04 04 46.5**	**+1.1**
JHJ	19nm,0.3s,baz=61,slow=19,SNR=3.7			S	**Sn**	**04 05 29.8**	**-3.1**
USRK	**Ussuriysk Ar.** baz=123,slow=12,SNR=3.6	**10.03**	**318**	P	**Pn**	**04 06 08.9**	**+2.1**
KSRS	**Korea Array** 0.3nm,0.3s,baz=76,slow=15,SNR=2.8	**10.64**	**276**	P	**Pn**	**04 06 17.9**	**+2.8**
KLR	**Kul'dur** comp=Z,57nm,18.1s,baz=228,slow=36	**14.00**	**333**	LR	LR	04 12 17.5	
SONM	**Songino Array** 0.4nm,0.5s,baz=107,slow=9.9,SNR=2.5	**27.67**	**304**	P	**P**	**04 09 29.8**	**-0.7**
H11N2	**WAKE ISLAND Hy** baz=313,slow=76,SNR=218	**28.26**	**121**	T	T	04 39 02.7	
H11N1	**WAKE ISLAND Hy** baz=313,slow=76,SNR=150	**28.27**	**121**	T	T	04 39 04.1	
H11N3	**WAKE ISLAND Hy** baz=313,slow=76,SNR=145	**28.28**	**121**	T	T	04 39 05.2	
H11S1	**WAKE ISLAND Hy** baz=314	**28.97**	**123**	T	T	04 39 54.4	
H11S3	**WAKE ISLAND Hy** baz=314,slow=74	**28.97**	**123**	T	T	04 39 53.3	
H11S2	**WAKE ISLAND Hy** baz=314,slow=74	**28.99**	**123**	T	T	04 39 55.2	
ZALV	**Zalesovo Beam** 1.5nm,0.7s,baz=76,slow=6.3,SNR=5.5	**41.81**	**312**	P	**P**	**04 11 31.2**	**-0.7**
MKAR	**Makanchi Array** 0.7nm,0.7s,baz=92,slow=8.7,SNR=7.7	**44.01**	**302**	P	**P**	**04 11 49.2**	**-0.7**
KURBB	**Kurchatov Arra** 1.2nm,0.6s,baz=84,slow=8.2,SNR=11	**45.90**	**308**	P	**P**	**04 12 04.5**	**-0.3**
ILAR	**Eielson Array** 1.1nm,0.7s,baz=264,slow=6.5,SNR=14	**49.55**	**32**	P	**P**	**04 12 33.5**	**+0.6**
INK	**Inuvik** 0.6nm,0.5s,baz=314,slow=5.9,SNR=6.4	**54.43**	**27**	P	**P**	**04 13 10.3**	**+1.1**
WRA	**Warramunga Arr** 2.2nm,0.9s,baz=6.5,slow=7.3,SNR=4.9	**57.06**	**188**	P	**P**	**04 13 28.1**	**-0.6**
ASAR	**Alice Springs** 0.8nm,0.6s,baz=3.9,slow=6.3,SNR=5.0	**60.79**	**188**	P	**P**	**04 13 53.7**	**-0.8**
BBB	**Bella Bella** comp=Z,39nm,20.6s,baz=218,slow=32	**62.14**	**44**	LR	LR	04 36 57.8	
RES	**Resolute Bay** 1.1nm,0.9s,baz=324,slow=10,SNR=3.4	**62.62**	**14**	P	**P**	**04 14 06.1**	**-0.1**
YKA	**Yellowknife Ar** 0.4nm,0.6s,baz=300,slow=5.5,SNR=5.3	**63.86**	**30**	P	**P**	**04 14 15.2**	**+0.6**
FINES	**FINESS Array B** 1.4nm,0.7s,baz=76,slow=8.0,SNR=5.1	**68.74**	**332**	P	**P**	**04 14 45.4**	**-0.5**
NB2	**NORSAR Subarra** comp=Z,0.5nm,0.6s,baz=42,slow=6.2	**74.12**	**337**	P	**P**	**04 15 18.1**	**-0.4**
NOA	**NORSAR Array B** comp=Z,0.5nm,0.6s,baz=40,slow=5.8,SNR=3.6	**74.12**	**337**	P	**P**	**04 15 18.4**	**0.0**
AKASG	**Malin Array Be** comp=Z,0.4nm,0.4s,baz=46,slow=6.3,SNR=4.2	**74.21**	**322**	P	**P**	**04 15 18.5**	**-0.6**
NVAR	**Mina Array Bea** comp=Z,0.6nm,0.7s,baz=279,slow=2.9,SNR=3.8	**75.08**	**53**	P	**P**	**04 15 26.2**	**+1.5**
LPAZ	**La Paz** comp=Z,1.2nm,0.5s,baz=284,slow=2.9,SNR=7.8	**146.79**	**59**	PKPbc	**PKPbc**	**04 23 25.9**	**+0.2**

NIED ***27*** *04:06:00,39.10N×142.30E,h32km,Mw3.5 Best double couple: M₀2.14000×10¹⁴ NP1:φ₈202.00000°,δ13.00000°, λ112.00000°. NP2:φ₈359.00000°,δ78.00000°,λ85.00000°.*

IDC ***27*** *04:06:01.7±3.1,39.18N×142.88E,h0km,mb3.8/2, mb1 4.0/3,mb1mx3.4/46,mbtmp3.8/3,ML3.5/1,MS4.3/1, Ms1 4.3/1,ms1mx2.5/40,Error ellipse: s-maj=71.6km s-min=39.1km az=67.0*

ISCJB ***27*** *04:06:06.7±1.6,39.03N±0.05×142.5E±0.1,h25km±7km, mb3.8/2,MS4.2/1,Error ellipse: s-maj=13.2km s-min=7.7km az=4.9*

JMA ***27*** *04:06:08.7±0.1,39.06N×142.35E,h33km±1km,M4.0*

JMA Felt I J1.

ISC 27 04:06:05.0±2.2,39.07N±0.05×142.46E±0.09,h8km±11km, n12,σ1°04/19,Near coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**0.61**	**271**	P	**Pn**	**04 06 19.6**	**-0.4**
OFUJ				*e*S	**Sb**	**04 06 27.2**	**+0.4**
MIYJ	**Miyakonagasawa**	**0.70**	**316**	P	**Pn**	**04 06 21.1**	**-0.2**
MIYJ				*e*S	**Sb**	**04 06 29.9**	**+0.5**
JMK	**Ichinoseki**	**0.97**	**263**	P	**Pn**	**04 06 24.8**	**-0.1**
JMK				*e*S	**Sg**	**04 06 36.4**	**+0.1**
JOM	**Ohasama**	**0.99**	**294**	P	**Pn**	**04 06 25.4**	**+0.2**
JOM				*e*S	**Sb**	**04 06 37.4**	**-0.2**
JIO	**Ouri**	**1.06**	**235**	P	**Pg**	**04 06 25.4**	**-0.1**
JIO				S	**Sg**	**04 06 37.7**	**-1.6**
JKZ	**Kuzumaki**	**1.26**	**317**	P	**Pg**	**04 06 30.3**	**+1.1**
JKZ				S	**Sg**	**04 06 45.2**	**-0.4**
JRG	**Rokugo**	**1.45**	**283**	P	**Pg**	**04 06 32.8**	**-0.1**
JRG				S	**Sn**	**04 06 51.0**	**+0.2**
MJAR	**Matsushiro Arr** 2.2nm,0.3s,baz=42,slow=12,SNR=6.9	**4.21**	**234**	Pn	**Pn**	**04 07 11.6**	**+2.1**
MAT	**Matsushiro**	**4.21**	**234**	P	**Pn**	**04 07 11.8**	**+2.3**
MAT				S	**Sn**	**04 07 59.3**	**+0.5**
TLY	**Talaya** comp=Z,594nm,20.1s,baz=114,slow=39	**29.67**	**308**	LR	LR	04 25 14.1	
MKAR	**Makanchi Array** 1.0nm,0.7s,baz=91,slow=8.6,SNR=6.1	**43.77**	**300**	P	**P**	**04 14 10.6**	**-0.3**
WRA	**Warramunga Arr** 0.5nm,0.3s,baz=6.0,slow=7.0,SNR=4.9	**59.20**	**189**	P	**P**	**04 16 05.5**	**-1.1**

ISCJB ***27*** *04:12:30.3±0.5,32.50N±0.05×115.68W±0.04,h9km±8km, Error ellipse: s-maj=9.8km s-min=3.9km az=25.4*

ECX ***27*** *04:12:31.7±0.5,32.54N×115.70W,h4km,MD2.5,ML2.7*

MEX ***27*** *04:12:32.0±1.0,32.59N×115.59W,h16km±17km,MD3.4*

ISC 27 04:12:29.5±1.0,32.54N±0.03×115.65W±0.03,h17km±9km, n17,σ0°63/27,6C-6D,California-Baja California border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SGL	**Mount Signal**	**0.12**	**330**	⇓*i*P	**Pb**	**04 12 33.5**	**+0.1**
ERPC	**Ernies Place**	**0.20**	**357**	⇓*i*P	**Pb**	**04 12 35.5**	**+0.8**
WESC	**Westside Schoo**	**0.23**	**343**	⇓*e*P	**Pb**	**04 12 35.8**	**+0.6**
WESC				*e*S	**Sb**	**04 12 39.6**	**+0.7**
YUH	**Yuha Desert**	**0.25**	**295**	⇓*i*P	**Pb**	**04 12 35.7**	**+0.1**
DREC	**Desert Rsrch C**	**0.31**	**34**	⇓*e*P	**Pn**	**04 12 38.1**	**-1.2**
CPBX	**Cerro Prieto**	**0.32**	**113**	*e*P	**Pb**	**04 12 38.3**	**+1.5**
CPBX				*e*P	**Pn**	**04 12 38.5**	**-0.9**
CPBX	comp=E,2μm,0.1s			AML	AML	04 12 45.4	
CPBX				⇓*e*		04 12 45.4	
CPBX	comp=N,3μm,0.2s			AML	AML	04 12 46.1	
CPBX				⇑*e*		04 12 46.1	
CPBX	comp=N,1μm,0.2s			AML	AML	04 12 47.4	
CPBX				*e*		04 12 47.4	
CPBX	comp=E,2μm,0.1s			AML	AML	04 12 49.5	
CPBX				⇑*e*		04 12 49.5	
RMX	**La Rumorosa**	**0.36**	**279**	⇑*e*P	**Pb**	**04 12 37.5**	**-0.1**
RMX				*e*S	**Sg**	**04 12 42.2**	**-0.2**
IKP	**In-Ko-Pah, Jac**	**0.40**	**286**	⇓*i*P	**Pb**	**04 12 38.5**	**+0.3**
MBIG	**Mexicali**	**0.41**	**109**	*e*P	**Pb**	**04 12 38.5**	**+0.2**
MBIG				*i* S	**Sg**	**04 12 42.4**	**-1.1**
COA	**Coachella**	**0.55**	**54**	⇑*i*P	**Pn**	**04 12 42.1**	**-0.4**
BAR	**Barrett**	**0.87**	**279**	*e*P	**Pg**	**04 12 46.8**	**+0.3**
BAR				*e*S	**Sb**	**04 12 57.8**	**+0.3**
TJIG	**Tijuana**	**0.87**	**263**	*e*P	**Pb**	**04 12 46.2**	**+0.1**
TJIG	**Tijuana**	**0.87**	**263**	*e*P	**Pg**	**04 12 46.9**	**+0.4**
TJIG				*i* S	**Sb**	**04 12 56.8**	**-0.7**
CBX	**Cerro Bola**	**0.89**	**255**	*e*P	**Pb**	**04 12 46.7**	**+0.2**
CBX				*e*S	**Sb**	**04 12 58.5**	**+0.5**
CBX	**Cerro Bola**	**0.89**	**255**	*e*P	**Pn**	**04 12 47.5**	**+0.2**
CBX				*e*S	**Sg**	**04 12 58.7**	**+0.2**
ECBX	**El Chinero**	**1.18**	**154**	*e*P	**Pg**	**04 12 52.4**	**0.0**
ECBX				*e*S	**Sg**	**04 13 08.6**	**+0.6**
ECBX	comp=E,163nm,0.3s			AML	AML	04 13 10.9	
ECBX				⇑*e*		04 13 10.9	
SPIG	**San Pedro Mart**	**1.50**	**174**	*e*P	**Pb**	**04 12 57.2**	**+0.1**
SPIG				*e*S	**Sn**	**04 13 15.1**	**-0.2**

NIED ***27*** *04:23:00,37.10N×141.40E,h53km,Mw3.9 Best double couple: M₀7.89000×10¹⁴ NP1:φ₈351.00000°,δ27.00000°, λ71.00000°. NP2:φ₈193.00000°,δ64.00000°,λ100.00000°.*

ISCJB ***27*** *04:23:56.6±0.8,37.08N±0.04×141.53E±0.08,h54km±6km, mb3.8/13,Error ellipse: s-maj=10.8km s-min=6.5km az=25.6*

JMA ***27*** *04:23:57.8±0.1,37.10N×141.43E,h54km±1km,M3.9*

JMA Felt II J1.

IDC ***27*** *04:24:00.6±2.6,37.08N×141.22E,h75km±25km,mb3.5/13, mb1 3.7/15,mb1mx3.6/42,mbtmp3.8/15,MS2.7/3, Ms1 2.7/3,ms1mx2.4/38,Error ellipse: s-maj=20.3km s-min=16.7km az=94.0*

ISC 27 04:23:56.9±1.4,37.09N±0.05×141.55E±0.07,h42km±13km, n34,σ1°15/36,mb3.8/13,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.60**	**271**	P	**Pn**	**04 24 09.4**	**+0.3**
ONAJ				S	**Sn**	**04 24 17.7**	**-0.1**
JFK	**Kawauchi**	**0.61**	**297**	P	**Pn**	**04 24 09.3**	**+0.2**
JFK				*e*S	**Sn**	**04 24 17.5**	**-0.4**
JHO	**Hitachi**	**0.92**	**239**	P	**Pn**	**04 24 13.3**	**-0.1**
JHO				S	**Sn**	**04 24 24.5**	**-1.0**
JMM	**Marumori**	**0.98**	**322**	P	**Pn**	**04 24 14.5**	**+0.3**
JMM				S	**Sn**	**04 24 26.6**	**-0.2**
JFT	**Otama**	**1.06**	**294**	P	**Pn**	**04 24 16.0**	**+0.7**
JFT				S	**Sn**	**04 24 29.1**	**+0.3**
JIO	**Ouri**	**1.37**	**353**	P	**Pn**	**04 24 20.4**	**+0.9**
JIO				S	**Sn**	**04 24 36.5**	**+0.1**
JFY	**Yanaizu**	**1.51**	**283**	P	**Pn**	**04 24 21.8**	**+0.4**
JFY				S	**Sn**	**04 24 40.2**	**+0.3**
MJAR	**Matsushiro Arr** 22nm,0.3s,baz=84,slow=15,SNR=78	**2.74**	**259**	P	**Pn**	**04 24 39.5**	**+1.2**
MJAR	14nm,0.3s,baz=90,slow=27,SNR=10			S	**Sn**	**04 25 11.8**	**+1.6**
MJAR	comp=Z,144nm,20.6s,baz=90,slow=50			LR	LR	04 26 02.7	
MAT	**Matsushiro**	**2.74**	**259**	P	**Pn**	**04 24 39.8**	**+1.4**
MAT				S	**Sn**	**04 25 12.6**	**+2.3**
JHJ	**Hachijo jima 2** 41nm,0.3s,baz=90,slow=23,SNR=7.1	**4.22**	**201**	P	**Pn**	**04 24 59.9**	**+1.2**
JHJ	35nm,0.3s,baz=18,slow=20,SNR=4.6			S	**Sn**	**04 25 45.0**	**-1.7**
ASAJ	**Asahikawa** 1.1nm,0.3s,baz=164,slow=15,SNR=2.3	**7.06**	**6**	P	Pn	04 25 35.0	-2.6
ASAJ	1.2nm,0.3s,baz=72,slow=20,SNR=2.7			S	**Sn**	**04 26 54.5**	**-2.1**
JNU	**Nakatsue** comp=Z,48nm,18.3s,baz=115,slow=39	**9.60**	**249**	LR	LR	04 30 01.2	
KSRS	**Korea Array** 0.4nm,0.3s,baz=91,slow=14,SNR=6.4	**10.87**	**276**	P	Pn	04 26 33.1	+3.4
KSRS	comp=Z,29nm,20.1s,baz=156,slow=37			LR	LR	04 30 30.3	
SONM	**Songino Array** 1.6nm,0.5s,baz=107,slow=8.8,SNR=11	**27.84**	**304**	P	**P**	**04 29 41.3**	**-1.2**
H11N2	**WAKE ISLAND Hy** baz=314,slow=75,SNR=111	**28.08**	**121**	T	T	04 59 09.3	
H11N1	**WAKE ISLAND Hy** baz=314,slow=75,SNR=109	**28.09**	**121**	T	T	04 59 09.7	
H11N3	**WAKE ISLAND Hy** baz=314,slow=75,SNR=132	**28.10**	**121**	T	T	04 59 10.5	
H11S1	**WAKE ISLAND Hy** baz=320	**28.80**	**123**	T	T	05 00 02.5	
H11S3	**WAKE ISLAND Hy** baz=320,slow=74	**28.80**	**123**	T	T	05 00 01.1	
H11S2	**WAKE ISLAND Hy** baz=320,slow=74	**28.82**	**123**	T	T	05 00 03.7	
SHL	**Shillong**	**43.52**	**269**	*e*P	**P**	**04 31 55.0**	**-1.7**
MKAR	**Makanchi Array** 1.2nm,0.6s,baz=86,slow=10.0,SNR=11	**44.18**	**302**	P	**P**	**04 31 59.9**	**-1.6**
ILAR	**Eielson Array** 1.2nm,0.7s,baz=271,slow=6.1,SNR=15	**49.38**	**32**	P	**P**	**04 32 43.1**	**+1.2**
INK	**Inuvik** 1.2nm,0.8s,baz=293,slow=4.9,SNR=6.

	comp=E,824nm,0.1s							
PB09	**IPOC Station P**	**1.81**	**7**	⇑*i*	P	Pn	04 24 36.9	+1.1
PB09				*i* S	Sn	Sn	04 24 59.5	+1.7
PB09				AML	AML	AML	04 25 06.7	
	comp=N,3μm,0.5s							
PB07	**IPOC Station P**	**1.91**	**348**	⇑*i*	P	Pn	04 24 36.8	-0.3
PB07				*i* S	Sn	Sn	04 25 00.8	+0.6
PB07				AML	AML	AML	04 25 05.9	
	comp=E,673nm,0.3s							
PB01	**IPOC Station P**	**2.55**	**360**	⇑*i*	P	Pn	04 24 45.5	-0.3

IDC ***27*** *04:27:51.5±2.5, 31°.37N×141°.66E, h0km, mb3.6/3, mb1 3.7/7, mb1mx3.4/42, mbtmp3.7/7, ML3.7/4, Error ellipse: s-maj=86.1km s-min=18.5km az=69.0*
ISCJB ***27*** *04:27:52.6±1.2, 31°.41N±0°.09×141°.9E±0°.2, h40km, mb3.6/3, Error ellipse: s-maj=31.9km s-min=6.5km az=159.2*
ISC 27 04:27:55.7±1.4,**31°.4N**±0°.1×**141°.7E**±0°.3,**h40**km,**n8, σ2°36/12, mb3.6/3, Southeast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
JHJ	**Hachijo jima 2**	**2.39**	**317**	Pn		**Pn**	**04 28 29.6**	**-2.8**
	22nm,0.3s,baz=93,slow=18,SNR=4.8							
JHJ				Sn		**Sn**	**04 29 01.4**	**+0.9**
	26nm,0.3s,baz=73,slow=19,SNR=2.8							
JCJ	**Chichijima**	**4.29**	**175**	Pn		**Pn**	**04 28 57.5**	**-1.0**
	9.7nm,0.3s,baz=357,slow=21,SNR=6.7							
JCJ				Sn		**Sn**	**04 29 44.9**	**-2.6**
	6.4nm,0.3s,baz=287,slow=19,SNR=2.4							
MJAR	**Matsushiro Arr**	**5.92**	**331**	Pn		**Pn**	**04 29 18.5**	**-2.3**
	2.9nm,0.3s,baz=157,slow=12,SNR=6.9							
MJAR				Sn		**Sn**	**04 30 23.0**	**-4.4**
	baz=150,slow=32,SNR=2.1							
MAT	**Matsushiro**	**5.92**	**331**	P		**Pn**	**04 29 20.7**	**-0.2**
MAT				S		**Sn**	**04 30 27.3**	**-0.2**
KLR	**Kul'dur**	**19.35**	**340**	P		**P**	**04 32 17.9**	**+0.1**
	0.1nm,0.3s,baz=157,slow=8.9,SNR=4.7							
SONM	**Songino Array**	**31.46**	**312**	P		**P**	**04 34 15.6**	**+2.1**
	0.5nm,0.6s,baz=118,slow=8.3,SNR=3.5							
MKAR	**Makanchi Array**	**47.53**	**307**	P		**P**	**04 36 28.9**	**+1.9**
	0.4nm,0.6s,baz=98,slow=6.8,SNR=3.8							
WRA	**Warramunga Arr**	**51.53**	**189**	P		**P**	**04 36 58.6**	**+0.9**
	0.7nm,0.6s,baz=3.6,slow=7.9,SNR=3.6							

KRNET ***27*** *04:30:24.9±0.1, 41°.90N×79°.51E, h12km, mb3.0*
SOME ***27*** *04:30:25.9, 41°.82N×79°.38E, h10km*
ISC 27 04:30:22.8±2.6,**41°.80N**±0°.09×**79°.57E**±0°.08,**h10**km±14km,**n13, σ1°13/26, 10C-8D, Kyrgyzstan-Xinjiang border region**

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
PRZ	**Przheval'sk**	**1.11**	**309**	⇑*i* P		**Pg**	**04 30 44.4**	**+0.2**
	baz=305							
PRZ				⇑*i* S		**Sn**	**04 30 59.4**	**-0.6**
	baz=305							
PDGK	**Podgornoye**	**1.53**	**358**	⇓*i* P		**Pg**	**04 30 52.5**	**+0.3**
	baz=359							
PDGK				⇓*i* S		**Sg**	**04 31 12.8**	**+0.7**
	baz=359							
ZHN	**Zhinishke**	**1.61**	**329**	*e*P		**Pg**	**04 30 54.8**	**+1.0**
	34nm,0.2s							
ZHN				*e*S		**Sg**	**04 31 15.3**	**+0.7**
	158nm,0.2s							
ANVS	**Anan'yevo**	**1.73**	**306**	⇓*e*P		**Pg**	**04 30 56.0**	**+0.1**
	baz=303							
ANVS				⇓*i* S		**Sg**	**04 31 18.3**	**0.0**
	baz=303							
KURS	**Kuram**	**1.98**	**329**	⇑*i* P		**Pg**	**04 31 01.3**	**+0.4**
	21nm,0.6s							
KURS				⇑*i* S		**Sg**	**04 31 26.9**	**+0.3**
	26nm,0.5s							
MDOK	**Medeo**	**2.31**	**307**	⇓*i* P		**Pg**	**04 31 06.8**	**-0.4**
	57nm,0.5s							
MDOK				⇓*i* S		**Sg**	**04 31 36.7**	**-0.5**
	93nm,0.5s							
ULHL	**Ulahol**	**2.52**	**281**	⇑*i* P		**Pb**	**04 31 09.8**	**+1.5**
	baz=279							
ULHL				⇑*i* S		**Sg**	**04 31 43.4**	**-0.5**
	baz=279							
DJR	**Jarkent**	**2.54**	**3**	*e*P		**Pg**	**04 30 10.5**	**-1.0**
	7.6nm,0.2s							
DJR				*e*S		**Sg**	**04 31 42.7**	**-1.7**
	70nm,0.4s							
MTBS	**Maitube**	**2.68**	**301**	*e*P		**Pb**	**04 31 12.7**	**+1.7**
	20nm,0.2s							
MTBS				*e*S		**Sg**	**04 31 46.2**	**-2.7**
	38nm,0.5s							
NRN	**Naryn**	**2.70**	**263**	⇑*e*P		**Pb**	**04 31 11.7**	**+0.2**
	baz=261							
NRN				⇑*i* S		**Sb**	**04 31 45.8**	**+1.0**
	baz=261							
BOOM	**Boomskoye usch**	**2.79**	**286**	⇓*e*P		**Pb**	**04 31 11.5**	**-1.3**
	baz=284							
BOOM				⇓*i* S		**Sb**	**04 31 46.2**	**-0.9**
	baz=284							
KZA	**Kyzart**	**3.24**	**276**	⇑*i* P		**Pb**	**04 31 22.2**	**+1.6**
	baz=275							
KZA				⇑*i* S		**Sg**	**04 32 05.8**	**-1.1**
	baz=275							
KAPS	**Kapalarasan**	**3.49**	**357**	*e*P		**Pg**	**04 31 29.3**	**-0.4**
	1.4nm,0.4s							
KAPS				*e*S		**Sg**	**04 32 14.3**	**-0.6**
	9.6nm,0.3s							

CSEM ***27*** *04:35:29.6±0.3, 40°.00N×41°.76E, h10km, MD2.6, Error ellipse: s-maj=8.5km s-min=7.0km az=11.0*
DDA 27 04:35:29.9, 40°.04N×41°.82E, h9km, Md2.6, Turkey

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
HOMI	**Horasan**	**0.07**	**86**	*i* P		Pg	04 35 31.9	-0.3
HOMI				*i* S		Sg	04 35 33.9	+0.1
ERZM	**Erzurum**	**0.37**	**249**	*i* P		Pg	04 35 37.8	+0.4
ERZM	**Erzurum**	**0.37**	**249**	P		Pg	04 35 37.8	+0.4
EZM	**Erzurum**	**0.38**	**249**	*e*PG		Pg	04 35 37.4	0.0
EZM				*e*SG		Sg	04 35 42.5	+0.1
EATA	**Eleskirt**	**0.55**	**109**	*i* P		Pg	04 35 40.7	+0.1
EATA				*i* S		Sb	04 35 49.1	-1.0
EATA	**Eleskirt**	**0.55**	**109**	P		Pg	04 35 40.7	+0.1
EATA				S		Sb	04 35 49.1	-0.9
EKAR	**Karacoban**	**0.81**	**166**	*i* P		Pg	04 35 45.3	-0.2
EKAR				*i* S		Sn	04 36 00.9	+0.9
EKAR	**Karacoban**	**0.81**	**166**	P		Pg	04 35 45.3	-0.2
DBAD	**Bademkaya**	**0.98**	**355**	*i* P		Pg	04 35 49.0	+0.1
DBAD				*i* S		Sb	04 36 03.2	+0.9
DBAD	**Bademkaya**	**0.98**	**355**	P		Pg	04 35 49.0	+0.2
DBAD				S		Sb	04 36 03.2	+0.8
DAGI	**Agillar**	**1.04**	**4**	*i* P		Pg	04 35 49.6	-0.4
DAGI				*i* S		Sb	04 36 04.3	+0.3

JMA 27 04:36:27.9±0.2,**39°.04N**×**142°.41E, h31**km±2km,**M3.5, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**0.58**	**274**	P		Pb	04 36 39.5	-0.1
OFUJ				S		Sb	04 36 47.2	-0.5
MIYJ	**Miyakonagasawa**	**0.70**	**320**	P		Pn	04 36 41.0	-0.7
MIYJ				S		Sb	04 36 50.2	-1.0
JMK	**Ichinoseki**	**0.93**	**265**	P		Pn	04 36 44.9	+0.1
JMK				S		Sn	04 36 56.9	-0.2
JOM	**Ohasama**	**0.97**	**297**	P		Pn	04 36 45.6	+0.2
JOM				S		Sn	04 36 58.3	+0.2
JIO	**Ouri**	**1.01**	**235**	P		Pn	04 36 45.6	-0.4
JIO				S		Sn	04 36 57.9	-1.3
JKZ	**Kuzumaki**	**1.26**	**319**	P		Pn	04 36 50.2	+0.8
JKZ				S		Sn	04 37 06.1	+0.8
JRG	**Rokugo**	**1.43**	**285**	P		Pb	04 36 53.1	-0.7
JRG				S		Sb	04 37 11.5	-0.1
JANG	**Nango**	**1.50**	**333**	P		Pb	04 36 54.0	-1.1
JANG				S		Sb	04 37 12.8	-1.0
JOU	**Okura**	**1.52**	**244**	P		Pn	04 36 54.2	+1.2
JYK	**Kaneyama**	**1.60**	**266**	P		Pn	04 36 55.4	+1.3
JMM	**Marumori**	**1.73**	**228**	P		Pn	04 36 56.2	+0.4

ISCJB ***27*** *04:39:38.9±0.7, 39°.00N±0°.05×141°.80E±0°.09, h72km±5km, mb3.7/5, Error ellipse: s-maj=11.5km s-min=7.1km az=17.9*
JMA ***27*** *04:39:40.2, 39°.03N×141°.72E, h67km±1km, M3.5*
JMA Felt I J1.
IDC ***27*** *04:39:42.9±3.3, 38°.95N×141°.63E, h95km±32km, mb3.4/5, mb1 3.5/7, mb1mx3.2/35, mbtmp3.7/7, Error ellipse: s-maj=30.9km s-min=21.5km az=97.0*
ISC 27 04:39:39.8±1.0,**39°.00N**±0°.05×**141°.81E**±0°.08,**h65**km±7km,**n23, σ0°80/24, mb3.7/5, 2C-4D, Eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**0.14**	**305**	⇑P		**Pn**	**04 39 49.9**	**+0.4**
OFUJ				S		**Sn**	**04 39 56.9**	**+0.2**
JOM	**Ohasama**	**0.62**	**319**	⇓P		**Pn**	**04 39 53.4**	**0.0**
JOM				S		**Sn**	**04 40 03.4**	**0.0**
JIO	**Ouri**	**0.66**	**214**	⇑P		**Pn**	**04 39 54.0**	**+0.2**
JIO				S		**Sn**	**04 40 03.9**	**-0.2**
JRG	**Rokugo**	**1.00**	**294**	⇓P		**Pn**	**04 39 57.5**	**-0.5**
JRG				S		**Sn**	**04 40 10.9**	**-0.6**
JOU	**Okura**	**1.10**	**235**	P		**Pn**	**04 39 59.4**	**+0.1**
JOU				S		**Sn**	**04 40 13.6**	**-0.3**
JYK	**Kaneyama**	**1.14**	**266**	⇓P		**Pn**	**04 39 59.6**	**-0.2**
JYK				S		**Sn**	**04 40 14.6**	**-0.1**
JANG	**Nango**	**1.39**	**351**	P		**Pn**	**04 40 02.8**	**-0.3**
JMM	**Marumori**	**1.39**	**215**	S		**Sn**	**04 40 19.3**	**-1.3**
JAH	**Hinai**	**1.49**	**323**	⇓P		**Pn**	**04 40 04.7**	**+0.2**
JYS	**Shirataka**	**1.57**	**241**	P		**Pn**	**04 40 05.9**	**+0.3**
JYS				S		**Sn**	**04 40 26.4**	**+1.3**
MJAR	**Matsushiro Arr**	**3.77**	**230**	P		**Pn**	**04 40 37.5**	**+2.1**
	1.1nm,0.3s,baz=41,slow=11,SNR=6.2							
USRK	**Ussuriysk Ar.**	**9.00**	**308**	P		**Pn**	**04 41 47.7**	**+0.8**
	0.3nm,0.3s,baz=115,slow=14,SNR=6.0							
H11N2	**WAKE ISLAND Hy**	**28.94**	**124**	T		T	05 16 01.8	
	baz=317,slow=75,SNR=32							
H11N1	**WAKE ISLAND Hy**	**28.95**	**124**	T		T	05 16 04.2	
	baz=317,slow=75,SNR=57							
H11N3	**WAKE ISLAND Hy**	**28.96**	**124**	T		T	05 16 01.6	
	baz=317,slow=75,SNR=42							
H11S1	**WAKE ISLAND Hy**	**29.72**	**126**	T		T	05 17 00.1	
	baz=318,slow=76,SNR=25							
H11S3	**WAKE ISLAND Hy**	**29.72**	**126**	T		T	05 16 58.4	
	baz=318,slow=76,SNR=31							
H11S2	**WAKE ISLAND Hy**	**29.73**	**126**	T		T	05 16 59.5	
	baz=318,slow=76,SNR=34							
ZALV	**Zalesovo Beam**	**40.84**	**311**	P		**P**	**04 47 14.3**	**-0.5**
	1.0nm,0.5s,baz=92,slow=9.4,SNR=4.1							
MKAR	**Makanchi Array**	**43.37**	**300**	P		**P**	**04 47 34.9**	**-0.6**
	0.9nm,0.7s,baz=66,slow=9.2,SNR=6.9							
ILAR	**Eielson Array**	**47.67**	**33**	P		**P**	**04 48 09.9**	**+0.7**
	0.5nm,0.7s,baz=265,slow=5.6,SNR=5.5							
INK	**Inuvik**	**52.50**	**28**	P		**P**	**04 48 46.6**	**+1.0**
	0.5nm,0.6s,baz=293,slow=7.4,SNR=5.3							
WRA	**Warramunga Arr**	**59.05**	**188**	P		**P**	**04 49 32.2**	**-0.9**
	0.4nm,0.5s,baz=6.6,slow=7.3,SNR=3.2							

NIED ***27*** *04:50:00, 38°.60N×142°.40E, h44km, Mw3.9 Best double couple: M07.61000×10^14 NP1:φ8=134.00000°, δ28.00000°, λ73.00000°. NP2:φ8=333.00000°, δ63.00000°, λ99.00000°.*
JMA 27 04:50:01.0±0.2,**38°.56N**×**142°.40E, h16**km±3km,**M3.6, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**0.77**	**313**	P		Pb	04 50 15.7	-0.4
OFUJ				S		Sg	04 50 26.0	-0.3
JIO	**Ouri**	**0.83**	**263**	P		Pb	04 50 16.5	-0.6
JIO				S		Sb	04 50 27.3	-0.7
JMK	**Ichinoseki**	**1.00**	**293**	P		Pb	04 50 19.6	-0.4
JMK				*e*S		Sb	04 50 32.6	-0.3
JOM	**Ohasama**	**1.25**	**317**	P		Pn	04 50 24.0	+0.1
JOM				S		Sb	04 50 39.2	-1.0
JOU	**Okura**	**1.38**	**262**	S		Sn	04 50 42.8	-0.7

KLM ***27*** *04:55:28.0, 2°.18N×96°.45E, h28km, mb4.8, ML4.4, MS5.6*
ISCJB ***27*** *04:55:27.4±0.3, 2°.13N±0°.03×96°.64E±0°.03, h28km, mb4.7/68, MS4.1/18, Error ellipse: s-maj=5.4km s-min=3.6km az=44.6*
MOS ***27*** *04:55:28.0±1.1, 2°.14N×96°.68E, h33km, mb5.1/30, Error ellipse: s-maj=10.2km s-min=6.1km az=100.5*
DJA ***27*** *04:55:28.2±1.7, 2°.N±3°×9°.7E±°, h13km±14km, M4.9/16, mb4.9/3, mB5.0/3, MLv4.9/16, Mw(mB)4.3/3*
NEIC ***27*** *04:55:31.1±0.7, 2°.15N×96°.71E, h43km±6km, mb4.8/20, Error ellipse: s-maj=7.1km s-min=4.3km az=54.0*
IDC ***27*** *04:55:31.1±2.5, 2°.17N×96°.74E, h43km±22km, mb4.3/32, mb1 4.4/34, mb1mx4.3/49, mbtmp4.6/34, ML4.6/1, MS4.0/15, Ms1 4.0/15, ms1mx3.8/36, Error ellipse: s-maj=15.5km s-min=10.9km az=46.0*
ISC 27 04:55:29.3±0.4,**2°.14N**±0°.05×**96°.62E**±0°.05,**h28**km,**n180, σ1°09/175, mb4.8/68, MS4.1/18, 16C-9D, Northern Sumatera**

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
TPTI		**1.25**	**27**	P		**Pn**	**04 55 50.4**	**-0.5**
GSI	**Gunungsitoli**	**1.26**	**131**	P		**Pn**	**04 55 50.3**	**-0.8**
GSI	**Gunungsitoli**	**1.26**	**131**	*e*Pn		**Pn**	**04 55 50.6**	**-0.5**
GSI				*e*S		Sn	04 56 00.5	-6.7
KCSI	**Kotacane, Aceh**	**1.79**	**40**	P		**Pn**	**04 55 58.8**	**+0.4**
MLSI	**Meulaboh, Aceh**	**2.13**	**354**	P		**Pn**	**04 56 03.0**	**0.0**
TSI	**Tuntungan**	**2.37**	**55**	P		**Pn**	**04 56 07.5**	**+1.2**
PSI	**Prapat**	**2.39**	**74**	P		**Pn**	**04 56 06.4**	**-0.4**
PSI				LR		LR	04 56 56.2	
	comp=Z,2μm,20.2s,baz=278,slow=38							
PSI	**Prapat**	**2.39**	**74**	*e*P		**Pn**	**04 56 06.7**	**-0.1**
PSI	**Prapat**	**2.39**	**74**	*e*Pn		**Pn**	**04 56 06.7**	**-0.1**
LHMI	**Lhok Sumawe**	**3.09**	**6**	P		**Pn**	**04 56 17.4**	**+1.2**
LHMI	**Lhok Sumawe**	**3.09**	**6**	*e*Pn		**Pn**	**04 56 16.9**	**+0.7**
LHMI				*e*S		**Sn**	**04 56 50.1**	**-2.1**
MNSI	**Mandailing Nat**	**3.24**	**114**	P		**Pn**	**04 56 18.5**	**+0.1**
BKNI	**Bangkinang**	**4.77**	**112**	P		**Pn**	**04 56 40.0**	**+0.6**
BKNI	**Bangkinang**	**4.77**	**112**	*e*Pn		**Pn**	**04 56 39.9**	**+0.5**
PDSI	**Padang**	**4.89**	**128**	P		**Pn**	**04 56 41.6**	**+0.5**
IPM	**Ipoh**	**4.97**	**62**	*e*Pn		**Pn**	**04 56 42.6**	**+0.4**
IPM				*e*S		**Sn**	**04 57 43.5**	**+4.7**
KULM	**Kulim**	**5.10**	**52**	⇓P		**Pn**	**04 56 44.2**	**+0.3**
KULM	**Kulim**	**5.10**	**52**	*e*Pn		**Pn**	**04 56 44.1**	**+0.3**
KULM				*e*S		Sb	04 57 51.7	-6.9
FRIM	**Kepong**	**5.12**	**78**	⇑P		**Pn**	**04 56 45.3**	**+1.2**
SDSI	**Sungai Dareh**	**5.69**	**122**	P		**Pn**	**04 56 53.5**	**+1.4**
SKLT	**Songkhla**	**6.39**	**38**	P		**Pn**	**04 57 01.8**	**+0.1**
	97nm,0.7s,1μm							
KRAB	**Krabi**	**6.56**	**23**	P		**Pn**	**04 57 04.5**	**+0.5**
	1μm,0.7s,356μm110nm							
MYKOM	**Kota Tinggi**	**7.23**	**93**	⇓P		**Pn**	**04 57 13.9**	**+0.7**
MYKOM	**Kota Tinggi**	**7.23**	**93**	*e*Pn		**Pn**	**04 57 13.6**	**+0.4**
LHSI	**Lahat**	**9.09**	**131**	P		**Pn**	**04 57 39.0**	**+0.2**
MDSI	**Maura Dua**	**10.02**	**131**	P		**Pn**	**04 57 50.3**	**-1.1**
PPBI	**Pangkal Pinang**	**10.43**	**114**	P		**Pn**	**04 57 58.9**	**+1.8**
CHBT	**CHBT**	**11.97**	**28**	P		**Pn**	**04 58 19.8**	**+1.7**
	34nm,1.4s							
KHLT	**Khaolaem Dam**	**12.73**	**9**	P		**Pn**	**04 58 28.7**	**+0.1**
	6.5nm,1.1s							
SRAK	**Srakaew**	**12.96**	**24**	P		P	04 58 37.1	-4.9
	87nm,0.7s,1μm							
KSM	**Kuching**	**13.70**	**93**	⇑P		**Pn**	**04 58 42.6**	**+0.8**
KSM	**Kuching**	**13.70**	**93**	*e*Pn		**Pn**	**04 58 42.2**	**+0.4**
CHAI	**Chaiyaphum**	**14.66**	**21**	P		**P**	**04 59 01.6**	**+0.7**
STKI	**Sintang**	**14.99**	**98**	P		**Pn**	**04 58 56.3**	**-3.2**
SBUM	**Sibu**	**15.59**	**89**	⇓P		**Pn**	**04 59 08.3**	**+1.0**
SBUM	**Sibu**	**15.59**	**89**	*e*Pn		**Pn**	**04 59 07.6**	**+0.3**
	23nm,1.2s							
LOEI	**Loei**	**15.94**	**16**	P		**Pn**	**04 59 12.5**	**+0.7**
	31nm,0.9s,417nm							
UTTA	**Uttaradit**	**15.98**	**14**	P		**Pn**	**04 59 12.0**	**-0.3**
	13nm,0.9s,102nm							
MHMT	**Maesarieng**	**15.99**	**5**	P		**Pn**	**04 59 12.0**	**-0.4**
	10nm,1.1s							
CMAR	**Chiang Mai Arr**	**16.38**	**8**	P		**Pn**	**04 59 16.8**	**-0.6**
	0.9nm,0.3s,baz=197,slow=12,SNR=71							
CMAR				LR		LR	05 06 01.0	
	comp=Z,558nm,20.1s,baz=196,slow=39							
SKNT	**Sakolnakorn**	**16.42**	**26**	P		**P**	**04 59 19.6**	**-0.9**
	15nm,1.9s							
BTM	**Bintulu**	**16.48**	**86**	⇑P		**Pn**	**04 59 18.7**	**0.0**
LAMP	**Lampang**	**16.55**	**10**	P		**Pn**	**04 59 19.5**	**0.0**
	8.5nm,1.0s							
CHTO	**Chiang Mai**	**16.73**	**8**	P		**Pn**	**04 59 21.2**	**-0.6**
	82nm,1.2s							
CHTO	**Chiang Mai**	**16.73**	**8**	*e*P		**Pn**	**04 59 21.0**	**-0.8**
CHTO				pmax		pmax		
	comp=Z,22nm,1.1s							
CHTO	**Chiang Mai**	**16.73**	**8**	*e*Pn		**Pn**	**04 59 21.0**	**-0.8**
	comp=Z,22nm,1.1s							
CMMT	**Chiang Mai**	**16.73**	**8**	P		**Pn**	**04 59 21.2**	**-0.6**
	comp=Z,18nm,1.1s							
NONG	**Nongkai**	**17.07**	**22**	P		**Pn**	**04 59 25.6**	**-0.5**
	comp=Z,31nm,0.8s							
CMAI	**Chiengmai2**	**17.84**	**7**	P		**Pn**	**04 59 34.9**	**-1.0**
	comp=Z,15nm,0.8s,comp=Z,736nm							
CRAI	**Chiangrai**	**18.35**	**11**	P		**P**	**04 59 41.3**	**-0.5**
	comp=Z,218nm,1.1s,comp=Z,3μm							
KKM	**Kota Kinabalu**	**19.92**	**78**	*e*P		**P**	**04 59 58.7**	**-0.5**
	comp=Z,68nm,1.5s							
KDM	**Kudat**	**20.70**	**76**	⇑P		**P**	**05 00 07.6**	**+0.1**
SDKM	**Sandakan**	**20.82**	**80**	⇑P		**P**	**05 00 08.7**	**-0.1**
TSM	**Tawau**	**21.32**	**84**	⇓P		**P**	**05 00 14.8**	**+0.5**
MYLDM	**Lahad Datu**	**22.04**	**82**	*e*P		**P**	**05 00 22.4**	**+0.4**
	comp=Z,135nm,1.3s							
HYB	**Hyderabad**	**23.36**	**312**	*i* P		**P**	**05 00 39.5**	**+3.7**
KMI	**Kunming**	**23.60**	**14**	P		**P**	**05 00 38.8**	**+0.5**
KMI				pP		pP	05 00 46.5	+0.2
KMI				sP		sP	05 00 51.5	+1.8
KMI				S		Sn	05 05 13.0	+0.3
KMI				sS		sS	05 05 27.5	+23
KMI				pmax		pmax		
	comp=Z,29nm,1.4s							
KMI				pmax		pmax		
	comp=Z,130nm,3.4s							
KMI				LR		LR		
	comp=N,380nm,17.6s							
KMI				LR		LR		
	comp=E,420nm,16.7s							
KMI				LR		LR		
	comp=Z,590nm,16.7s							
KAPI	**Kappang**	**24.18**	**107**	P		**P**	**05 00 43.1**	**-0.5**
	comp=Z,5.2nm,0.3s,baz=310,slow=7.7,SNR=5.9							
H08S2	**Diego Garcia H**	**25.96**	**248**	T		T	05 27 48.4	
	baz=69,slow=76,SNR=4899							
H08S3	**Diego Garcia H**	**25.96**	**248**	T		T	05 27 48.7	
	baz=69,slow=76,SNR=2473							
H08S1	**Diego Carcia H**	**25.98**	**248**	T		T	05 27 49.8	
	baz=69,slow=76,SNR=4977							
GYA	**Guiyang**	**26.04**	**21**	⇓*i* P		**P**	**05 00 59.5**	**-0.9**
GYA				pmax		pmax		
	comp=Z,20nm,0.9s							
PKIN	**Phulchoki**	**27.48**	**338**	*e*P		**P**	**05 01 14.1**	**+0.5**
	comp=Z,37nm,1.1s							
GUN	**Gumba**	**27.61**	**339**	*e*P		**P**	**05 01 15.6**	**+0.7**
	comp=Z,129nm,1.1s							
DMN	**Daman**	**27.62**	**338**	*e*P		**P**	**05 01 15.3**	**+0.4**
KKN	**Kakani**	**27.72**	**338**	*e*P		**P**	**05 01 16.4**	**+0.7**
	comp=Z,58nm,1.0s							
LSA	**Lhasa**	**27.90**	**350**	P		**P**	**05 01 18.0**	**+0.4**
LSA				pmax		pmax		
	comp=Z,20nm,1.0s							
LSA	**Lhasa**	**27.90**	**350**	*e*P		**P**	**05 01 18.0**	**+0.4**
LSA				pmax		pmax		
	comp=Z,24nm,1.0s							
LSA	**Lhasa**	**27.90**	**350**	*e*P		**P**	**05 01 18.0**	**+0.4**
	comp=Z,24nm,1.0s							
GKN	**Gorkha**	**28.16**	**337**	*e*P		**P**	**05 01 20.0**	**+0.5**
KOLN	**Koldanda**	**28.37**	**335**	*e*P		**P**	**05 01 22.3**	**+0.8**
	comp=Z,37nm,0.7s							
PYUN	**Piuthan**	**28.92**	**334**	*e*P		**P**	**05 01 27.1**	**+0.7**
YULB	**Yu-li**	**31.91**	**47**	*e*P		**P**	**05 01 53.1**	**+0.4**
	comp=Z,25nm,1.1s							
XAN	**Xi'an**	**33.76**	**19**	P		**P**	**05 02 07.0**	**-1.7**
XAN				pP		pP	05 02 13.8	-3.2
XAN				S		**sS**	**05 07 47.5**	**+3.2**
XAN				pmax		pmax		
	comp=Z,12nm,1.0s							
XAN				pmax		pmax		
	comp=Z,84nm,6.2s							
XAN				LR		LR		
	comp=N,400nm,12.9s							
XAN				LR		LR		
	comp=E,560nm,15.9s							
XAN				LR		LR		
	comp=Z,410nm,15.9s							
LZH	**Lanzhou**	**34.44**	**10**	*e*P		**P**	**05 02 15.0**	**+0.3**
LZH				pP		pP	05 02 20.3	-2.7
LZH				sP		sP	05 02 24.0	-2.4
LZH				pmax		pmax		
	comp=Z,39nm,1.0s							
LZH				pmax		pmax		
	comp=Z,120nm,4.9s							
LZH				LR		LR		
	comp=N,380nm,16.6s							
LZH				LR		LR		
	comp=E,690nm,18.1s							
LZH				LR		LR		
	comp=Z,540nm,18.2s							
FITZ	**Fitzroy Crossi**	**34.95**	**126**	P		**P**	**05 02 18.1**	**-1.0**
	comp=Z,7.2nm,0.9s,baz=266,slow=3.6,SNR=8.7							
FITZ	**Fitzroy Crossi**	**34.95**	**126**	*e*P		**P**	**05 02 17.6**	**-1.6**
	comp=Z,5.1nm,0.8s							
GTA	**Gaotai**	**37.21**	**4**	⇑P		**P**	**05 02 38.0**	**-0.4**
GTA				pP		pP	05 02 42.8	-4.0
GTA				sP		sP	05 02 45.

KSRS LR LR 05 24 43.1
comp=Z,260nm,18.3s,baz=216,slow=39
MKAR Makanchi Array 46.20 346 P **P** **05 03 52.0 +0.2**
comp=Z,23nm,0.8s,baz=159,slow=7.7,SNR=144
MKAR LR LR 05 26 58.4
comp=Z,178nm,20.8s,baz=162,slow=41
MKAR Makanchi Array 46.20 346 P **P** **05 03 52.0 +0.2**
MKAR pmax pmax
comp=Z,23nm,0.8s
MKAR MLR MLR
comp=Z,178nm,20.8s
MKAR Makanchi Array 46.20 346 *eP* **P** **05 03 52.1 +0.3**
MAKZ Makanchi 46.29 346 *eP* **P** **05 03 52.5 +0.1**
MAKZ pmax pmax
comp=Z,25nm,0.9s
MAKZ Makanchi 46.29 346 *eP* **P** **05 03 52.5 +0.1**
comp=Z,25nm,0.9s
SONM Songino Array 46.30 9 P **P** **05 03 53.2 +0.5**
comp=Z,12nm,0.8s,baz=188,slow=8.6,SNR=60
ULN Ulaanbaatar 46.44 10*c iP* **P** **05 03 53.8 0.0**
ULN pmax pmax
comp=Z,12nm,1.0s
ULN Ulaanbaatar 46.44 10 *eP* **P** **05 03 53.7 -0.1**
comp=Z,12nm,1.0s
KKAR Karatay Array 46.97 334 *eP* **P** **05 03 59.0 +1.1**
KKAR pmax pmax
comp=Z,3.0nm,0.6s
KKAR Karatay Array 46.97 334 *eP* **P** **05 03 59.0 +1.1**
comp=Z,2.6nm,0.6s
ZAK Zakamensk 48.40 6 *eP* **P** **05 04 08.8 -0.1**
ZAK pmax pmax
comp=Z,7.0nm,1.7s
GUMO Guam 49.03 74 LR LR 05 24 18.3
comp=Z,96nm,20.6s,baz=194,slow=35
TLY Talaya 49.72 6 *eP* **P** **05 04 19.8 +0.9**
TLY pmax pmax
comp=Z,9.0nm,0.9s
GEYT Alibeck 50.13 320 P **P** **05 04 23.4 +1.1**
comp=Z,2.4nm,0.5s,baz=157,slow=9.2,SNR=5.2
GEYT LR LR 05 28 43.7
comp=Z,142nm,18.5s,baz=180,slow=40
JCJ Chichijima 50.17 56 LR LR 05 25 59.3
comp=Z,91nm,20.5s,baz=338,slow=36
KURBB Kurchatov Arra 50.68 345 P **P** **05 04 26.6 +0.4**
comp=Z,10.0nm,0.7s,baz=166,slow=6.9,SNR=54
KURK Kurchatov 50.74 345 P **P** **05 04 26.6 0.0**
KURK Kurchatov 50.74 345 P **P** **05 04 26.6 0.0**
MJAR Matsushiro Arr 51.40 43 P **P** **05 04 31.5 -0.4**
comp=Z,3.7nm,0.8s,baz=224,slow=6.8,SNR=8.9
MJAR LR LR 05 27 22.5
comp=Z,104nm,19.9s,baz=230,slow=37
PMG Port Moresby 51.63 104*c iP* **P** **05 04 33.0 -0.9**
PMG pmax pmax
comp=Z,51nm,0.8s
PMG Port Moresby 51.63 104 *eP* **P** **05 04 33.0 -0.9**
comp=Z,26nm,1.0s
USRK Ussuriysk Ar. 52.28 32 P **P** **05 04 38.3 +0.1**
comp=Z,5.0nm,0.7s,baz=204,slow=4.2,SNR=12
USRK LR LR 05 29 14.8
comp=Z,363nm,18.7s,baz=206,slow=39
ZALV Zalesovo Beam 52.55 351 P **P** **05 04 40.3 +0.2**
comp=Z,57nm,1.0s,baz=173,slow=6.8,SNR=92
OPO Ambohidratompo 52.79 245 P **P** **05 04 44.2 +1.5**
comp=Z,3.3nm,0.7s,baz=216,slow=2.4,SNR=4.5
NVS Novosibirsk 53.66 350 *eP* **P** **05 04 48.2 0.0**
NVS pmax pmax
comp=Z,28nm,1.2s
NVS pmax pmax
comp=N,21nm,1.3s
NVS pmax pmax
comp=E,11nm,1.2s
STKA Stephens Creek 54.41 132 P **P** **05 04 53.6 -0.6**
comp=E,4.6nm,1.0s,baz=311,slow=6.6,SNR=6.7
STKA LR LR 05 30 34.5
comp=E,184nm,20.4s,baz=314,slow=39
BVAR Borovoye Array 55.18 341 P **P** **05 04 59.1 -0.3**
comp=E,9.2nm,0.9s,baz=139,slow=9.2,SNR=24
BRVK Borovoye 55.24 341*c iP* **P** **05 04 59.4 -0.4**
BRVK pmax pmax
comp=Z,14nm,1.0s
BRVK Borovoye 55.24 341 *eP* **P** **05 04 59.1 -0.7**
comp=Z,14nm,1.0s
KLR Kul'dur 55.68 27 P **P** **05 05 01.6 -1.4**
comp=Z,10nm,1.0s,baz=248,slow=6.5,SNR=14
KLR LR LR 05 32 57.6
comp=Z,302nm,18.1s,baz=224,slow=40
ABKAR Akbulak array 56.42 332 *eP* **P** **05 05 08.3 0.0**
comp=Z,5.8nm,0.8s
BOD Bodaibo 57.20 11 *eP* **P** **05 05 11.3 -2.4**
BOD pmax pmax
comp=Z,8.0nm,1.7s
ASAJ Asahikawa 58.27 38 LR LR 05 29 32.6
comp=Z,101nm,21.6s,baz=256,slow=35
KMBO Kilima Mbogo 59.45 267 P **P** **05 05 30.9 +0.4**
comp=Z,0.7nm,0.3s,baz=60,slow=10,SNR=4.6
KMBO Kilima Mbogo 59.45 267*ceP* **P** **05 05 33.2 +2.7**
KMBO pmax pmax
comp=Z,1.0nm,0.3s
YSS Yuzh-Sakhalins 59.91 35 *i P* **P** **05 05 33.2 +0.4**
YSS pmax pmax
comp=Z,38nm,2.5s
SVE Sverdlovsk 61.61 338 *eP* **P** **05 05 44.6 +0.4**
SVE pmax pmax
comp=Z,23nm,1.0s
ZEI Tsey 61.92 318 *eP* **P** **05 05 46.7 -0.1**
ZEI pmax pmax
comp=Z,15nm,1.1s
ARU Arti 62.10 337*c iP* **P** **05 05 45.9 -1.6**
ARU 05 06 22.7
ARU 05 07 59.7
ARU S **S** **05 14 10.1 -0.6**
ARU SS **SS** **05 18 10.4 -3.4**
ARU pmax pmax
comp=Z,23nm,2.5s
ARU Arti 62.10 337 *eP* **P** **05 05 47.0 -0.5**
comp=Z,9.9nm,1.0s
NKL Nikolayevsk 62.48 28 *eP* **P** **05 05 48.0 -2.0**
NKL pmax pmax
comp=Z,15nm,1.0s
NKL MLR MLR
comp=E,400nm,14.0s
NKL MLR MLR
comp=Z,500nm,14.0s
KBZ Khabaz 62.99 319 P **P** **05 05 53.8 +0.2**
comp=Z,2.8nm,0.9s,baz=184,slow=6.3,SNR=7.7
KIV Kislovodsk 63.22 319*ceP* **P** **05 05 56.7 +1.3**
KIV pmax pmax
comp=Z,9.0nm,1.0s
YAK Yakutsk 64.69 17 P **P** **05 06 03.1 -1.3**
comp=Z,20nm,0.4s,baz=147,slow=0.3,SNR=7.2
YAK Yakutsk 64.69 17 *eP* **P** **05 06 02.8 -1.7**
YAK pmax pmax
comp=Z,59nm,1.2s
YAK pmax pmax
comp=N,19nm,1.6s
YAK pmax pmax
comp=E,18nm,1.8s
YAK Yakutsk 64.69 17 *eP* **P** **05 06 03.4 -1.0**
SOKR Solikamsk 65.02 339↑ *iP* P 05 06 02.2 -4.5
SOKR pmax pmax
comp=Z,6.0nm,0.8s
VRH Novokhopyorsk 67.03 326 *eP* **P** **05 06 17.9 -1.9**
VRH pmax pmax
comp=Z,20nm,1.2s
NRIK Noril'sk 67.36 357 P **P** **05 06 21.4 -0.2**
comp=Z,4.7nm,0.6s,baz=169,slow=4.3,SNR=7.9
NRIK LR LR 05 38 46.0
comp=Z,114nm,21.5s,baz=135,slow=38
BRTR Keskin Array B 68.06 312 P **P** **05 06 26.7 -0.1**
comp=Z,1.5nm,0.9s,baz=129,slow=7.0,SNR=8.0
BRTR LR LR 05 38 08.9
comp=Z,33nm,19.8s,baz=98,slow=38
BRTR Keskin Array B 68.06 312*ceP* **P** **05 06 26.0 -0.7**
BRTR pmax pmax
comp=Z,2.0nm,0.9s
LPSR Galich'ya Gora 69.20 327 *eP* **P** **05 06 32.3 -1.1**
LPSR pmax pmax
comp=Z,8.0nm,0.6s
MA2 Magadan 70.74 26 P **P** **05 06 42.0 -0.8**
comp=Z,3.0nm,0.3s,baz=264,slow=4.0,SNR=6.0
MA2 Magadan 70.74 26 P **P** **05 06 42.0 -0.8**
PETK Petropavlovsk- 71.28 34 LR LR 05 42 25.7
comp=Z,111nm,18.0s,baz=216,slow=40
OBN Obninsk 71.52 328 *eP* **P** **05 06 46.5 -1.0**
OBN *e* 05 06 52.8
OBN *e* 05 07 04.6
OBN pmax pmax
comp=Z,7.0nm,0.9s
PET Petropavlovsk 71.78 34 *eP* **P** **05 06 49.3 +0.2**
PET pmax pmax
comp=Z,27nm,1.0s
TIXI Tiksi 72.37 10 P **P** **05 06 50.9 -1.4**
comp=Z,3.6nm,0.6s,baz=198,slow=3.4,SNR=11
TIXI Tiksi 72.37 10↓ *iP* **P** **05 06 51.1 -1.2**
TIXI pmax pmax
comp=Z,12nm,1.2s
TIXI Tiksi 72.37 10 *eP* **P** **05 06 51.4 -0.9**
SEY Seymchan 73.13 23 P **P** **05 06 56.4 -0.6**
comp=Z,8.1nm,0.9s,baz=231,slow=5.4,SNR=20
SEY Seymchan 73.13 23↓ *iP* **P** **05 06 57.2 +0.2**
AKASG Malin Array Be 74.17 322 P **P** **05 07 02.5 -0.8**
comp=Z,1.4nm,0.8s,baz=86,slow=5.1,SNR=12
KIEV Kiev 74.17 322*d iP* **P** **05 07 03.0 -0.4**
MLR Muntele Rosu 74.99 317 *eP* **P** **05 07 09.7 +1.3**
MLR pmax pmax
comp=Z,8.0nm,1.1s
MLR Muntele Rosu 74.99 317 *eP* **P** **05 07 09.7 +1.3**
comp=Z,8.1nm,1.1s
VSU Vasula 77.75 330 *i P* **P** **05 07 22.5 -1.1**
KOLS Kolonicke sedl 78.13 320 *eP* **P** **05 07 26.8 +0.8**
KOLS *e* 05 07 34.7
CRVS Cervenica-Dubn 78.65 319 *eP* **P** **05 07 30.8 +1.9**
CRVS *e* 05 07 37.4
STHS Stebnicka Huta 78.88 320 *eP* **P** **05 07 31.4 +1.3**
STHS *e* 05 07 38.2
FINES FINESS Array B 78.91 333 P **P** **05 07 30.0 +0.1**
comp=Z,2.2nm,0.7s,baz=100,slow=5.7,SNR=9.5
FINES FINESS Array B 78.91 333 *i P* **P** **05 07 30.1 +0.2**
FINES pmax pmax
comp=Z,2.0nm,0.6s
BILL Bilibino 80.50 21 *eP* **P** **05 07 38.8 +0.3**
BILL *e* 05 07 44.1
BILL pmax pmax
comp=Z,2.0nm,1.0s
SYO Syowa Base 80.71 198↑ *eP* **P** **05 07 40.4 +0.9**
SYO Syowa Base 80.71 198 ⇓WpP 05 07 55.4
ARCES ARCESS Array B 81.46 340 P **P** **05 07 44.2 +0.6**
comp=Z,5.0nm,0.9s,baz=93,slow=4.1,SNR=9.1
GERES GERESS Array B 83.73 319 P **P** **05 07 56.7 +0.8**
comp=Z,1.9nm,0.8s,baz=102,slow=5.9,SNR=14
NOA NORSAR Array B 85.91 331 P **P** **05 08 05.6 -1.0**
comp=Z,1.8nm,0.9s,baz=93,slow=5.1,SNR=4.1
TORD Torodi Ar. Bea 94.31 283 P **P** **05 08 45.9 -1.1**
comp=Z,0.3nm,0.8s,baz=104,slow=6.1,SNR=3.0
CPUP Villa Florida 145.29 224 PKPbc **PKPdf** **05 15 05.6 +0.3**
comp=Z,2.2nm,0.8s,baz=125,slow=5.8,SNR=3.3

GUC ***27*** *04:57:32.9±0.6,33.95S×72.50W,h24km±9km,ML5.0*
GCMT ***27*** *04:57:32.0±0.2,34.01S×72.66W,h20km±1km,MW5.2/79, Moment Tensor Solution. s45,c54; s79,c115; Duration: 0 Moment tensor: Scale 10¹⁶Nm; Mrr4.23±.20; Mθθ-0.10±.11; Mθφ-4.13±.15; Mrθ-0.11±.21; Mφφ-0.76±.08; Mφr-4.97±.33; Best double couple: Mo6.53900×10¹⁶ NP1:φs183.00000°,δ70.00000°,λ85.00000°. NP2: φs17.00000°,δ21.00000°,λ103.00000°. Principal axes: T 6.5510, Plg65.0000°, Azm86.0000°; N -0.0190, Plg4.0000°, Azm185.0000°; P -6.5270, Plg25.0000°, Azm277.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
NEIC ***27*** *04:57:32.0,33.95S×72.50W,h24km,mb5.3/134,MW5.1, ML5.0(GUC),Moment Tensor Solution. s19 Moment tensor: Scale 10¹⁶Nm; Mrr3.14; Mθθ0.09; Mφφ-3.24; Mrθ-1.15; Mθφ1.78; Mφr-3.01; Best double couple: Mo4.90000×10¹⁶ NP1:φs184.00000°,δ67.00000°, λ117.00000°. NP2:φs311.00000°,δ35.00000°,λ43.00000°. Principal axes: T 4.9700, Plg59.0000°, Azm131.0000°; N -0.2000, Plg25.0000°, Azm353.0000°; P -4.7700, Plg18.0000°, Azm254.0000°; After GUC.*
NEIC Felt [IV] at Constitucion and Valparaiso; [II] at Curico, Navidad, Rancagua and Talca. Also felt at Colina, Santiago and Vina del Mar.
ISCJB ***27*** *04:57:33.9±1.0,33.87S±0.03×72.20W±0.06,h24km±7km, mb5.2/152,MS4.6/18 Error ellipse: s-maj=7.8km s-min=4.9km az=169.3*
MOS ***27*** *04:57:36.1±1.2,33.71S×72.13W,h33km,mb5.3/57, MS4.6/5,Error ellipse: s-maj=15.3km s-min=7.0km az=101.1*
BJI ***27*** *04:57:36.2,34.24S×72.68W,h39km,mB5.2/18,Ms5.4/15, Ms7 5.2/15*
IDC ***27*** *04:57:37.8±3.0,33.88S×72.19W,h39km±25km,mb4.7/17, mb1 4.9/19,mb1mx4.8/26,mbtmp5.0/19,ML4.9/2,MS4.6/16, Ms1 4.6/16,ms1mx4.5/23,Error ellipse: s-maj=19.6km s-min=12.3km az=85.0*
ISC 27 04:57:35.4±1.3,33.95S±0.03×72.21W±0.06,h24km±8km, n772,σ1ϑ07/792,mb5.2/152,MS4.6/20,26C-7D,Off coast of central Chile

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
CHPI	**Pichilemu**	**0.47**	**159**	⇓*iP*		**Pb**		**04 57 44.1**	**-1.0**
CHPI				*i*	S	**Sn**		**04 57 53.0**	**-1.1**
ANTU	**Antumapu**	**1.36**	**74**	*eP*		**Pb**		**04 58 00.6**	**+0.3**
ANTU					IAML			04 58 25.6	
comp=N,26μm,1.0s									
ROC1	**El Roble**	**1.39**	**46**	*e*Pn		**Pn**		**04 58 00.1**	**+0.6**
ROCH	**El Roble**	**1.40**	**46**↑	*i*P		**Pn**		**04 58 00.1**	**+0.5**
ROCH				*i*	S	**Sb**		**04 58 21.9**	**+3.5**
ROCH					IAML			04 58 32.2	
comp=N,25μm,0.6s									
CLCH	**Cerro Calan**	**1.50**	**69**↑	*i*P		**Pb**		**04 58 02.5**	**-0.1**
CLCH				*i*	S	**Sb**		**04 58 24.8**	**+3.7**
CLCH					IAML			04 58 38.3	
comp=E,38μm,0.6s									
PEL	**Peldehue**	**1.50**	**58**	*e*P		**Pb**		**04 58 02.4**	**-0.3**
PEL				*e*	S	**Sb**		**04 58 24.0**	**+2.7**
PEL					IAML			04 58 34.4	
comp=E,37μm,0.8s									
TALC	**Talca**	**1.52**	**162**↑	*i*P		**Pn**		**04 58 01.1**	**0.0**
TALC				*i*	S	**Sb**		**04 58 21.9**	**+0.2**
COCH	**Cobquecura**	**2.23**	**192**↓	*i*P		**Pn**		**04 58 08.9**	**-1.9**
COCH					IAML			04 58 52.4	
comp=E,14μm,2.6s									
PLCA	**Paso Flores**	**6.90**	**169**	Pn		**Pn**		**04 59 15.3**	**+0.2**
comp=E,5.7nm,0.3s,baz=2.3,slow=11,SNR=149									
PLCA					Sn		Sb	05 00 47.1	-9.4
comp=E,2.1nm,0.3s,baz=7.4,slow=12,SNR=1.7									
PLCA					LR		LR	05 01 52.6	
comp=E,3μm,18.4s,baz=12,slow=37									
TRQA	**Tornquist**	**9.24**	**119**	*e*Pn		**Pn**		**04 59 48.9**	**+1.8**
TRQA				*e*	S	**Sn**		**05 01 25.2**	**-5.1**
LVC	**Limon Verde**	**11.66**	**15**	Pn		Pn		05 00 15.0	-5.6
comp=E,37nm,0.3s,baz=196,slow=8.1,SNR=9.2									
LVC					Sn		**Sn**	**05 02 22.2**	**-8.1**
comp=E,24nm,0.3s,baz=180,slow=20,SNR=2.2									
LVC					LR		LR	05 05 03.2	
comp=E,9μm,19.1s,baz=206,slow=38									
PB04	**IPOC Station P**	**11.71**	**9**	*e*Pn		Pn		05 00 16.1	-5.1
LPA	**La Plata**	**11.83**	**99**	*ce*P		**Pn**		**05 00 24.0**	**+1.5**
LPA				PCP		**PcP**		**05 06 11.0**	**+1.3**
PB01	**IPOC Station P**	**13.08**	**11**	*e*Pn		Pn		05 00 33.2	-6.6
CHRN	**Cochrane**	**13.29**	**181**	*e*Pn		**Pn**		**05 00 41.5**	**-0.9**
PB11	**IPOC Station P**	**14.31**	**10**	*e*Pn		**Pn**		**05 00 57.1**	**+0.4**
CPUP	**Villa Florida**	**14.93**	**63**	Pn		**Pn**		**05 01 01.8**	**-3.1**
comp=E,0.1nm,0.3s,baz=222,slow=12,SNR=7.3									
CPUP					LR		LR	05 07 42.9	
comp=E,3μm,18.9s,baz=242,slow=41									
LPAZ	**La Paz**	**17.96**	**13**	P		**Pn**		**05 01 44.3**	**+0.1**
comp=E,1.7nm,0.3s,baz=191,slow=7.1,SNR=107									
EFI	**East Falkland**	**20.46**	**154**	⇓*iP*		**P**		**05 02 10.7**	**-0.4**
EFI					pmax		pmax		
comp=Z,29nm,0.6s									
EFI	**East Falkland**	**20.46**	**154**	*eP*		**P**		**05 02 11.2**	**+0.1**
comp=Z,55nm,0.8s									
SIV	**San Ignacio**	**20.50**	**32**	P		**P**		**05 02 11.2**	**-0.6**
comp=Z,63nm,0.8s,baz=225,slow=12,SNR=100									
SIV					LR		LR	05 11 33.0	
comp=Z,3μm,18.4s,baz=228,slow=41									
USHA	**Ushuaia**	**21.05**	**174**	P		**P**		**05 02 19.6**	**+2.2**
comp=Z,397nm,1.1s,baz=338,slow=7.3,SNR=7.9									
NNA	**Nana**	**22.27**	**348**	P		**P**		**05 02 31.3**	**+0.5**
comp=Z,44nm,0.8s,baz=193,slow=11,SNR=14									
NNA					LR		LR	05 09 46.3	
comp=Z,773nm,18.2s,baz=177,slow=33									
NNA	**Nana**	**22.27**	**348**	*ce*P		**P**		**05 02 31.7**	**+0.9**
NNA	**Nana**	**22.27**	**348**	*eP*		**P**		**05 02 30.4**	**-0.5**
comp=Z,336nm,1.1s									
SPB	**Sao Paulo**	**23.99**	**71**	*e*P		**P**		**05 02 48.3**	**+0.2**
comp=Z,187nm,1.0s									
SAML	**Samuel**	**26.23**	**21**	*e*P		**P**		**05 03 08.4**	**-0.1**
comp=Z,45nm,0.8s									
SAML				*e*PcP		**PcP**		**05 06 33.3**	**-1.7**
ATAH	**Atahualpa**	**27.29**	**347**		LR	LR		05 12 59.0	
comp=Z,672nm,18.1s,baz=184,slow=34									
PMSA	**Palmer Station**	**31.25**	**173**		LR	LR		05 16 27.2	
comp=Z,1μm,18.9s,baz=338,slow=36									
OTAV	**Otavalo**	**34.51**	**349**	*e*P		**P**		**05 04 23.7**	**+1.4**
comp=Z,36nm,1.4s									
OTAV	**Otavalo**	**34.51**	**349**	*e*P		**P**		**05 04 23.1**	**+0.9**
PTGA	**Pitinga**	**34.98**	**22**	P		**P**		**05 04 25.6**	**-0.3**
comp=Z,50nm,1.1s,baz=201,slow=9.1,SNR=43									
PTGA	**Pitinga**	**34.98**	**22**	*e*P		**P**		**05 04 25.6**	**-0.3**
comp=Z,76nm,1.1s									
ROSC	**El Rosal**	**38.63**	**357**	P		**P**		**05 04 57.7**	**+0.4**
comp=Z,3.9nm,0.6s,baz=135,slow=20,SNR=3.7									
GUYC	**Guyana, Colomb**	**39.08**	**355**	*e*P		**P**		**05 05 02.4**	**+1.2**
YOPC	**Yopal, Colombi**	**39.09**	**360**	*e*P		**P**		**05 05 00.5**	**-0.4**
NORC	**Norcasia**	**39.38**	**356**	*e*P		**P**		**05 05 03.8**	**+0.6**
RUSC	**La Rusia**	**39.63**	**359**	*e*P		**P**		**05 05 06.1**	**+0.3**
HELC	**Santa Helena**	**40.05**	**355**	*e*P		**P**		**05 05 08.6**	**-0.5**
SDV	**Santo Domingo**	**42.62**	**2**	*e*P		**P**		**05 05 29.5**	**-0.6**
comp=Z,28nm,1.0s									
RCBR	**Riachuelo**	**43.73**	**58**	P		**P**		**05 05 38.9**	**-0.1**
comp=Z,18nm,1.0s,baz=194,slow=11,SNR=6.4									
RCBR	**Riachuelo**	**43.73**	**58**	*e*P		**P**		**05 05 39.2**	**+0.2**
comp=Z,73nm,1.3s									
JTS	**JuntasAbangare**	**45.63**	**342**	*i* P		**P**		**05 05 54.3**	**+0.3**
JTS					pmax		pmax		
comp=Z,6.0nm,0.7s									
SVB	**Belmont**	**48.10**	**14**	*e*P		**P**		**05 06 13.3**	**0.0**
comp=Z,104nm,0.7s									
VNA3	**Neumayer Olymp**	**49.46**	**158**	P		**P**		**05 06 24.6**	**+1.5**
VNA1	**Neumayer--Stat**	**49.77**	**157**	P		**P**		**05 06 27.6**	**+2.1**
TGUH	**Tegucigalpa,Un**	**49.85**	**341**	*e*P		**P**		**05 06 26.9**	**+0.3**
comp=Z,46nm,1.0s									
VNA2	**Neumayer--Watz**	**50.11**	**157**	P		**P**		**05 06 29.9**	**+1.8**
baz=288,slow=9.4									
SNAA	**Sanae**	**51.68**	**158**	*d iP*		**P**		**05 06 41.3**	**+1.3**
SNAA	**Sanae**	**51.68**	**158**	*eP*		**P**		**05 06 40.2**	**+0.2**
comp=Z,4μm,1.0s									
SABA	**Saba**	**51.99**	**11**	*e*P		**P**		**05 06 42.7**	**0.0**
comp=Z,242nm,0.8s									
CELP	**Cerrillos**	**52.01**	**7**	*e*P		**P**		**05 06 42.1**	**-0.8**
SJG	**San Juan**	**52.09**	**7**	*e*P		**P**		**05 06 41.7**	**-1.8**
SJG					pmax		pmax		
comp=Z,42nm,0.8s									
SJG	**San Juan**	**52.09**	**7**	*e*P		**P**		**05 06 41.7**	**-1.8**
comp=Z,42nm,0.8s									
CBYP	**Canovanas**	**52.28**	**8**	*e*P		**P**		**05 06 43.5**	**-1.5**
comp=Z,64nm,0.9s									
SDDR	**Presa de Saban**	**52.64**	**1**	*e*P		**P**		**05 06 46.9**	**-0.8**
comp=Z,21nm,0.9s									
CCIG	**Comitan**	**53.44**	**336**	*e*P		**P**		**05 06 54.0**	**+0.3**
comp=Z,16nm,1.0s									
GTBY	**Guantanamo Bay**	**53.65**	**357**	*e*P		**P**		**05 06 53.7**	**-1.2**
comp=Z,45nm,0.8s									
RKT	**Rikitea**	**55.44**	**264**	*e*S		**S**		**05 14 53.7**	**+1.9**
comp=Z,344nm,28.2s									
RKT				*e*LR		LR		05 23 22.8	
comp=Z,409nm,27.0s,baz=112									
TEIG	**Tepich**	**56.01**	**342**	*e*P		**P**		**05 07 11.3**	**-0.7**
comp=Z,25nm,0.8s									
QSPA	**South Pole Qui**	**56.29**	**180**	*e*P		**P**		**05 07 14.0**	**+0.2**
comp=Z,198nm,1.0s									
NVL	**N'lazarevskaya**	**56.42**	**157**	*e*P		**P**		**05 07 16.2**	**+1.7**
TLIG	**Tlapa**	**57.06**	**330**	*e*P		**P**		**05 07 20.8**	**+1.0**
comp=Z,24nm,1.2s									
SBA	**Scott Base**	**63.10**	**192**	*e*P		**P**		**05 08 02.3**	**+2.0**
SBA					pmax		pmax		
comp=Z,29nm,1.4s									
SBA	**Scott Base**	**63.10**	**192**	*e*P		**P**		**05 08 02.3**	**+2.0**
comp=Z,29nm,1.4s									
ZAIG	**Zacatecas**	**63.38**	**329**	*e*P		**P**		**05 08 04.7**	**+1.6**
comp=Z,11nm,1.1s									
VNDA	**Vanda**	**64.12**	**191**	P		**P**		**05 08 08.4**	**+1.4**
comp=Z,5.2nm,1.0s,baz=151,slow=4.9,SNR=18									
VNDA					LR		LR	05 32 12.8	
comp=Z,242nm,20.1s,baz=120,slow=32									
035A	**Encino**	**65.35**	**335**	P		**P**		**05 08 15.1**	**-0.5**
baz=157									
646A	**Port Sulphur**	**65.35**	**343**	P		**P**		**05 08 16.2**	**+0.7**
baz=164									
TIGA	**Tifton**	**65.92**	**349**	P		**P**		**05 08 18.7**	**-0.5**
baz=170									
SYO	**Syowa Base**	**65.96**	**159**↑	*e*P		**P**		**05 08 16.6**	**-2.5**
SYO	**Syowa Base**	**65.96**	**159**↓	*i*SP		**P**		**05 08 18.8**	**-0.3**
934A	**Benavides**	**66.10**	**335**	P		**P**		**05 08 20.6**	**+0.1**
baz=157									
933A	**Laredo**	**66.39**	**334**	P		**P**		**05 08 23.2**	**+0.9**
baz=156,SNR=11									
737A	**Port Lavaca**	**66.46**	**337**	P		**P**		**05 08 23.9**	**+1.2**
baz=158									
835A	**Beeville**	**66.49**	**335**	P		**P**		**05 08 24.4**	**+1.5**
baz=157									
834A	**Tilden**	**66.59**	**335**	P		**P**		**05 08 24.9**	**+1.3**
baz=157									
347A	**Saraland**	**66.80**	**345**	P		**P**		**05 08 24.4**	**-0.4**
baz=166									
TAOE	**Nuku Hiva Isla**	**66.83**	**275**	*e*LR		LR		05 28 37.5	
comp=Z,384nm,22.1s									
736A	**Circle Diamond**	**66.84**	**336**	P		**P**		**05 08 27.0**	**+1.8**
baz=158,SNR=7.0									
346A	**Big Creek Wild**	**67.00**	**344**	P		**P**		**05 08 26.6**	**+0.5**
baz=165									
735A	**Kenedy**	**67.00**	**336**	P		**P**		**05 08 27.4**	**+1.2**
baz=157,SNR=7.3									
833A	**Chaparral WMA,**	**67.08**	**334**	P		**P**		**05 08 27.3**	**+0.6**
baz=156,SNR=28									
NHSC	**New Hope**	**67.12**	**353**	*e*P		**P**		**05 08 27.2**	**+0.4**
comp=Z,82nm,1.0s									
734A	**La Parita Cree**	**67.25**	**335**	P		**P**		**05 08 28.3**	**+0.6**
baz=157,SNR=9.5									
832A	**Faith Ranch, C**	**67.25**	**334**	P		**P**		**05 08 28.1**	**+0.2**
baz=156,SNR=13									
636A	**Smothers Creek**	**67.33**	**337**	P		**P**		**05 08 29.4**	**+1.2**
baz=158,SNR=11									
HKT	**Hockley**	**67.36**	**338**	*e*P		**P**		**05 08 29.8**	**+1.4**
HKT					pmax		pmax		
comp=Z,30nm,1.2s									
HKT	**Hockley**	**67.36**	**338**	*e*P		**P**		**05 08 29.8**	**+1.4**
comp=Z,30nm,1.2s									
733A	**Divot King Ran**	**67.40**	**334**	P		**P**		**05 08 28.8**	**+0.1**
baz=156,SNR=9.0									
247A	**Quitman**	**67.45**	**345**	P		**P**		**05 08 29.2**	**+0.3**
baz=166,SNR=5.8									
635A	**Leesville**	**67.48**	**336**	P		**P**		**05 08 28.8**	**-0.4**
baz=158									
246A	**Jackson Lee, B**	**67.52**	**344**	P		**P**		**05 08 29.7**	**+0.3**
baz=165									
537A	**Green Hill Far**	**67.64**	**337**	P		**P**		**05 08 30.3**	**+0.1**
baz=159									
634A	**China Grove, S**	**67.67**	**335**	P		**P**		**05 08 30.2**	**-0.2**
baz=157									
342A	**Flagon Creek P**	**67.69**	**341**	P		**P**		**05 08 31.3**	**+0.8**
baz=162,SNR=6.5									
245A	**Little AP, Sta**	**67.71**	**344**	P		**P**		**05 08 30.9**	**+0.3**
baz=164									
439A	**Center Grove,**	**67.83**	**339**	P		**P**		**05 08 32.1**	**+0.7**
baz=160									
GOGA	**Godfrey**	**67.84**	**350**	*eP*		**P**		**05 08 30.3**	**-1.0**
GOGA					pmax		pmax		
comp=Z,22nm,0.8s									
GOGA	**Godfrey**	**67.84**	**350**	*eP*		**P**		**05 08 30.3**	**-1.0**
comp=Z,22nm,0.8s									
536A	**Bastrop**	**67.88**	**337**	P		**P**		**05 08 32.3**	**+0.6**
baz=158,SNR=5.9									
341A	**Kurthwood**	**67.88**	**341**	P		**P**		**05 08 31.9**	**+0.3**
baz=162									
244A	**Avery, Jackson**	**67.91**	**343**	P		**P**		**05 08 32.5**	**+0.

baz=165,SNR=7.7
145A Houston Renfro 68.27 344 P P 05 08 34.7 +0.6
baz=164
242A Grayson 68.30 342 P P 05 08 35.0 +0.7
baz=163,SNR=8.5
534A Blanco 68.31 336 P P 05 08 34.3 -0.2
baz=157,SNR=5.3
Z47A Carrollton 68.44 346 P P 05 08 35.0 -0.1
baz=166,SNR=10
241A Mo Tay, Goldon 68.46 341 P P 05 08 36.3 +1.0
baz=162
533A Kerrville 68.54 335 P P 05 08 36.0 +0.1
baz=157,SNR=16
337A Centerville 68.65 338 P P 05 08 37.6 +1.1
baz=159,SNR=8.1
435B Jarrell 68.70 337 P P 05 08 37.3 +0.4
baz=158
239A Gary 68.89 340 P P 05 08 38.5 +0.5
baz=161
434A Burnet 68.95 336 P P 05 08 38.5 0.0
baz=157,SNR=27
141A Papa Simpson, 69.01 341 P P 05 08 39.3 +0.6
baz=162,SNR=6.3
336A Riesel 69.02 338 P P 05 08 39.2 +0.4
baz=159,SNR=16
238A Jacksonville 69.06 339 P P 05 08 39.7 +0.6
baz=160,SNR=5.4
Y47A UCPARC, Winfie 69.08 346 P P 05 08 39.1 0.0
baz=166,SNR=36
335A Moody 69.11 337 P P 05 08 39.7 +0.3
baz=158,SNR=9.5
JCT Junction City 69.18 335 P P 05 08 39.8 -0.1
baz=156
JCT Junction City 69.18 335 eP P 05 08 38.3 -1.6
JCT pmax pmax
comp=Z,68nm,0.9s
JCT Junction City 69.18 335 eP P 05 08 38.3 -1.6
comp=Z,68nm,0.9s
433A Art 69.18 335 P P 05 08 40.1 +0.2
baz=157,SNR=46
KMSC Kings Mountain 69.26 352 P P 05 08 39.6 -0.6
baz=172
KMSC Kings Mountain 69.26 352 eP P 05 08 39.1 -1.2
comp=Z,60nm,1.4s
Y46A Houston 69.26 345 P P 05 08 39.8 -0.4
baz=166,SNR=16
237A Washetta, Mont 69.27 339 P P 05 08 40.8 +0.5
baz=160,SNR=8.8
Y45A Yeager Farm, C 69.39 345 P P 05 08 41.3 +0.2
baz=165
Z42A Norrel Spur, H 69.40 342 P P 05 08 40.7 -0.4
baz=163,SNR=5.9
334A Lometa 69.42 336 P P 05 08 41.3 0.0
baz=157,SNR=21
236A Katherine and 69.49 338 P P 05 08 42.0 +0.3
baz=159,SNR=8.4
139A Bunkhouse Ranc 69.49 340 P P 05 08 42.1 +0.4
baz=161
Z41A Richland Creek 69.60 342 P P 05 08 42.9 +0.5
baz=162,SNR=7.0
TXAR Lajitas Array 69.62 331 P P 05 08 43.3 +0.5
comp=Z,9.5nm,0.7s,baz=151,slow=8.4,SNR=67
TXAR LR LR 05 35 01.7
comp=Z,504nm,18.0s,baz=0.0,slow=32
333A Richland Sprin 69.67 336 P P 05 08 43.1 +0.3
baz=157
Z40A Long Farm, Mag 69.76 341 P P 05 08 43.8 +0.5
baz=162,SNR=6.9
WHTX Lake Whitney, 69.77 337 P P 05 08 43.4 0.0
baz=158,SNR=14
WHTX Lake Whitney, 69.77 337 eP P 05 08 42.9 -0.6
comp=Z,69nm,0.9s
137A Heron Place, G 69.81 339 P P 05 08 44.3 +0.6
baz=160,SNR=6.5
136A Ennis 69.93 338 P P 05 08 44.2 -0.2
baz=159,SNR=5.7
OXF Oxford 69.99 345 eP P 05 08 43.9 -0.8
OXF pmax pmax
comp=Z,109nm,0.9s
OXF Oxford 69.99 345 eP P 05 08 43.9 -0.8
comp=Z,109nm,0.9s
CPCT Cooper Cave 70.00 349 eP P 05 08 44.4 -0.3
comp=Z,24nm,0.9s
SWET Sewanee 70.00 348 eP P 05 08 45.0 +0.1
comp=Z,18nm,0.8s
234A Clairette 70.00 337 P P 05 08 44.8 -0.1
baz=158,SNR=25
PPT2 Papeete2 70.11 262 eS S 05 17 57.8 +1.8
comp=Z,296nm,22.2s
PPT2 Papeete2 70.11 262 eLR LR 05 30 05.2
comp=Z,660nm,27.5s,baz=138
PPT Papeete 70.11 262 LR LR 05 32 39.3
comp=Z,434nm,18.0s,baz=130,slow=30
PLAL Pickwick Lake 70.17 346 eP P 05 08 45.6 -0.2
comp=Z,42nm,0.8s
Z38A Mt. Pleasant 70.19 340 P P 05 08 46.2 +0.2
baz=160
233A Rising Star 70.27 336 P P 05 08 46.5 0.0
baz=157,SNR=26
135A Vickery Place, 70.28 338 P P 05 08 46.2 -0.4
baz=158
Z37A Pogue Cattle C 70.33 339 P P 05 08 46.8 -0.1
baz=160
Y40A Okolona 70.44 342 P P 05 08 47.4 -0.1
baz=162,SNR=7.6
134A White-Moore Ra 70.51 337 P P 05 08 47.8 -0.2
baz=158,SNR=7.5
Y39A Lockesburg 70.59 341 P P 05 08 48.3 -0.1
baz=161
Z36A Blue Ridge 70.64 339 P P 05 08 48.9 +0.1
baz=159,SNR=16
MET Memphis--Engin 70.69 345 eP P 05 08 47.9 -1.1
comp=Z,191nm,0.6s
Y38A Idabel 70.75 340 P P 05 08 49.3 -0.1
baz=161,SNR=5.9
X40A Basin Creek Fa 70.77 342 P P 05 08 49.4 -0.1
baz=162
133A Hamilton Ranch 70.82 336 P P 05 08 49.8 -0.1
baz=157,SNR=23
UALR University of 70.92 343 eP P 05 08 50.4 0.0
comp=Z,28nm,1.0s
TZTN Tazewell 70.93 350 eP P 05 08 49.3 -1.1
comp=Z,24nm,1.0s
Z35A Perchaven, San 70.94 338 P P 05 08 50.7 +0.1
baz=158,SNR=16
MIAR Mount Ida 71.02 341 P P 05 08 51.1 +0.1
baz=162
MIAR Mount Ida 71.02 341 eP P 05 08 49.5 -1.5
MIAR pmax pmax
comp=Z,26nm,1.0s
MIAR Mount Ida 71.02 341 eP P 05 08 49.5 -1.5
comp=Z,26nm,1.0s
Y37A Hugo 71.06 340 P P 05 08 51.7 +0.4
baz=160
ABTX Abilene, Hawle 71.08 336 P P 05 08 51.6 +0.2
baz=156
ABTX Abilene, Hawle 71.08 336 eP P 05 08 51.1 -0.4
comp=Z,45nm,0.8s
X39A Fountain Ranch 71.13 341 P P 05 08 51.9 +0.1
baz=161,SNR=12
Y36A Durant 71.18 339 P P 05 08 52.6 +0.6
baz=159
Z34A Collier Ranch, 71.19 337 P P 05 08 52.4 +0.2
baz=158
VWCC Virginia Weste 71.20 353 eP P 05 08 52.3 +0.2
WVT Waverly 71.23 347 eP P 05 08 51.9 -0.4
WVT pmax pmax
comp=Z,118nm,0.8s
WVT Waverly 71.23 347 eP P 05 08 51.9 -0.4
comp=Z,118nm,0.8s
W41A Tony Mavity, V 71.28 343 P P 05 08 52.4 -0.2
baz=163
W41B Gary Mavity, V 71.28 343 P P 05 08 52.2 -0.3
baz=163
X301 Greenbrier Sit 71.38 343 eP P 05 08 53.5 +0.3
comp=Z,64nm,0.9s
Z33A Whitaker Ranch 71.39 337 P P 05 08 53.2 -0.1
baz=157,SNR=23
WHAR Wooly Hollow 71.40 343 eP P 05 08 53.4 +0.1
comp=Z,45nm,1.0s
Y35A Marietta 71.41 338 P P 05 08 53.5 0.0
baz=159,SNR=10
X38A Whitesboro 71.48 340 P P 05 08 53.8 0.0
baz=161,SNR=11
W40A Ferguson Farm, 71.50 342 P P 05 08 54.3 +0.4
baz=162
X37A Clayton 71.56 340 P P 05 08 54.1 -0.2
baz=160
Y34A Reagan Ranch, 71.68 338 P P 05 08 54.5 -0.5
baz=158,SNR=10
W39A Magazine 71.69 342 P P 05 08 55.1 0.0
baz=162
W38A Poteau 71.77 341 P P 05 08 55.7 +0.1
baz=161
SRIG Santa Rosalia 71.79 323 eP P 05 08 56.8 +0.9
comp=Z,29nm,1.1s
X36A Centrahoma 71.82 339 P P 05 08 55.1 -0.8
baz=159,SNR=19
X35A Drake 71.85 339 P P 05 08 55.9 -0.2
baz=159
Y33A Hilltop Ranch, 72.00 337 P P 05 08 56.7 -0.3
baz=157,SNR=14
V40A Witts Springs 72.02 342 P P 05 08 56.8 -0.3
baz=162
W37B Quinton 72.09 340 P P 05 08 57.0 -0.5
baz=160,SNR=9.1
V39A Pettigrew 72.26 342 P P 05 08 58.2 -0.4
baz=162,SNR=9.2
X34A Smith Ranch, M 72.30 338 P P 05 08 58.7 -0.1
baz=158,SNR=17
W36A Wetumka 72.32 340 P P 05 08 57.8 -1.0
baz=160,SNR=8.9
MNTX Cornudas Mount 72.40 331 P P 05 08 58.4 -1.1
baz=152
MNTX Cornudas Mount 72.40 331 eP P 05 08 58.6 -0.8
comp=Z,22nm,0.8s
X33A Lawton 72.45 337 P P 05 08 59.0 -0.7
baz=158,SNR=6.5
V38A Canehill 72.49 341 P P 05 08 59.2 -0.6
baz=161
W35A Tecumseh 72.52 339 P P 05 08 59.1 -0.9
baz=159,SNR=9.1
U40A Yellville 72.55 343 P P 05 08 60.0 -0.2
baz=162
HSIG 72.57 325 eP P 05 09 01.4 +0.9
comp=Z,22nm,1.0s
X32A Elmer 72.60 337 P P 05 09 00.3 -0.2
baz=157
V37A Hulbert 72.70 341 P P 05 09 00.7 -0.5
baz=160
WMOK Wichita Mounta 72.73 337 eP P 05 09 00.5 -0.8
WMOK pmax pmax
comp=Z,18nm,1.1s
WMOK Wichita Mounta 72.73 337 eP P 05 09 00.5 -0.8
comp=Z,18nm,1.1s
U39A Green Forest 72.73 342 P P 05 09 01.0 -0.4
baz=162
V36A Jenks 72.84 340 P P 05 09 01.7 -0.2
baz=160
W34A Bridge Creek, 72.87 338 P P 05 09 01.9 -0.3
baz=158,SNR=7.2
TUL1 Leonard 72.91 340 P P 05 09 01.7 -0.6
baz=160,SNR=10
TUL1 Leonard 72.91 340 eP P 05 09 01.8 -0.6
comp=Z,65nm,1.2s
USIN University of 72.98 347 eP P 05 09 01.6 -1.1
comp=Z,58nm,0.9s
WCI Wyandotte Cave 73.00 348 eP P 05 09 01.3 -1.5
WCI pmax pmax
comp=Z,24nm,0.9s
WCI Wyandotte Cave 73.00 348 eP P 05 09 01.3 -1.5
comp=Z,24nm,0.9s
W33A Caddo, Fort Co 73.01 338 P P 05 09 03.2 +0.2
baz=158,SNR=14
U38A Gravette 73.02 341 P P 05 09 02.3 -0.7
baz=161
SIUC Southern Illin 73.04 346 eP P 05 09 02.8 -0.3
comp=Z,40nm,0.8s
V35A Meyer Ranch, C 73.08 339 P P 05 09 02.7 -0.6
baz=159,SNR=6.7
SDMD Soldier's Deli 73.12 356 eP P 05 09 04.7 +1.2
comp=Z,15nm,1.1s
U37A Salina 73.19 341 P P 05 09 03.8 -0.2
baz=161
T40A Mansfield 73.22 343 P P 05 09 03.7 -0.5
baz=163,SNR=11
W32A Sentinel 73.23 337 P P 05 09 04.2 -0.1
baz=157,SNR=43
MAW Mawson 73.27 164 P P 05 09 05.1 +0.9
comp=Z,32nm,0.9s,baz=212,slow=6.8,SNR=30
MAW LR LR 05 43 34.1
comp=Z,524nm,18.7s,baz=232,slow=38
T39A Clever 73.32 342 P P 05 09 04.3 -0.5
baz=162
V34A Guthrie 73.34 339 P P 05 09 04.3 -0.6
baz=159,SNR=7.9
V34A Guthrie 73.34 339 eP P 05 09 03.3 -1.6
comp=Z,40nm,1.0s
U36A Oologah 73.35 340 P P 05 09 05.0 +0.1
baz=160
MSTX Muleshoe 73.40 334 P P 05 09 05.2 -0.3
baz=154
MSTX Muleshoe 73.40 334 eP P 05 09 04.3 -1.1
comp=Z,57nm,1.0s
T38A Diamond 73.56 342 P P 05 09 05.7 -0.5
baz=161,SNR=8.8
V33A Lossen Ranch, 73.57 338 P P 05 09 05.9 -0.3
baz=158,SNR=12
MCWV Mc Chatee 73.58 354 eP P 05 09 06.4 +0.2
comp=Z,27nm,1.5s
U35A Pawnee 73.61 340 P P 05 09 06.1 -0.4
baz=159,SNR=24
S40A Lebanon 73.65 343 P P 05 09 06.2 -0.4
baz=163,SNR=18
OLIL Olney 73.81 347 eP P 05 09 06.9 -0.6
comp=Z,46nm,1.3s
T37A Cheneyville 18 73.81 341 P P 05 09 06.8 -0.8
baz=161,SNR=10
AMTX Amarillo 73.83 335 P P 05 09 07.8 -0.1
baz=155
AMTX Amarillo 73.83 335 eP P 05 09 07.4 -0.6
comp=Z,76nm,1.4s
U34A Anderson Ranch 73.91 339 P P 05 09 07.7 -0.6
baz=159,SNR=8.2
U34A Anderson Ranch 73.91 339 eP P 05 09 07.0 -1.2
comp=Z,44nm,0.9s
S39A Bolivar 73.94 343 P P 05 09 07.9 -0.4
baz=162
BLO Bloomington 73.95 348 eP P 05 09 08.0 -0.4
BLO pmax pmax
comp=Z,23nm,0.8s
BLO Bloomington 73.95 348 eP P 05 09 08.0 -0.4
comp=Z,23nm,0.8s
T36A Boggs Farm, Ca 74.01 340 P P 05 09 08.2 -0.6
baz=160,SNR=9.6
S38A Stockton 74.02 342 P P 05 09 08.3 -0.6
baz=162,SNR=19
T35A Sooner Cattle 74.06 340 P P 05 09 08.8 -0.3
baz=160,SNR=13
U33A Lingo Farm, Me 74.08 339 P P 05 09 08.6 -0.6
baz=158,SNR=5.1
O56A Blue Knob Stat 74.08 355 P P 05 09 09.1 -0.1
baz=175
121A Cookes Peak, D 74.12 329 P P 05 09 10.4 +0.6
baz=150
121A Cookes Peak, D 74.12 329 eP P 05 09 08.1 -1.7
comp=Z,34nm,0.9s
SLM Saint Louis 74.13 345 eP P 05 09 09.3 -0.1
SLM pmax pmax
comp=Z,41nm,0.7s
SLM Saint Louis 74.13 345 eP P 05 09 09.3 -0.1
comp=Z,41nm,0.7s
R40A Maddies Statio 74.25 344 P P 05 09 09.5 -0.7
baz=163,SNR=19
U32A Winter Ranch, 74.31 338 P P 05 09 10.5 -0.1
baz=157,SNR=5.7
T34A McClaskey Farm 74.35 339 P P 05 09 10.6 -0.2
baz=159,SNR=17
S37A Fort Scott 74.38 342 P P 05 09 10.2 -0.7
baz=161,SNR=8.1
SSPA Standing Stone 74.40 356 eP P 05 09 08.9 -2.1
comp=Z,52nm,1.5s
R39A Chumby, Stover 74.46 343 P P 05 09 10.7 -0.7
baz=162,SNR=11
ACSO Alum Creek Sta 74.48 351 eP P 05 09 10.0 -1.4
comp=Z,51nm,0.7s
R38A Fenwick Farm, 74.55 342 P P 05 09 11.0 -0.9
baz=162,SNR=8.1
S36A Lake Cedric, C 74.56 341 P P 05 09 11.5 -0.4
baz=160
N59A State Game Lan 74.57 357 P P 05 09 12.1 +0.1
baz=177,SNR=6.9
ODNJ Ogdensburg 74.70 358 eP P 05 09 13.5 +0.8
comp=Z,89nm,2.0s
S35A Otter Creek Ra 74.72 340 P P 05 09 12.5 -0.4
baz=160,SNR=11
T33A Patterson Ranc 74.72 339 P P 05 09 12.7 -0.3
baz=158,SNR=6.5
Q40A Laux Farm, Aux 74.88 344 P P 05 09 13.2 -0.6
baz=163,SNR=17
N54A Moraine State 74.89 354 P P 05 09 13.4 -0.4
baz=174,SNR=6.0
LIC Lamto 74.89 72 eP P 05 09 14.9 +0.4
comp=Z,70nm,1.3s
R37A Teagarden Farm 74.91 342 P P 05 09 13.2 -0.8
baz=161,SNR=8.3
S34A Willow Spring 74.96 340 P P 05 09 14.4 +0.1
baz=159
T32A Huddler Ranch, 75.02 338 P P 05 09 14.9 +0.2
baz=158
BNM Barren Site 75.05 331 eP P 05 09 16.4 +1.1
R36A Gordon, Harris 75.09 341 P P 05 09 14.5 -0.6
baz=160
S33A Kaszmaul Farm, 75.12 339 P P 05 09 15.1 -0.2
baz=158
Q39A Willow Grove F 75.14 343 P P 05 09 14.6 -0.7
baz=163,SNR=12
TIC Toumodi 75.15 71 eP P 05 09 16.2 +0.2
LPM Los Pinos Moun 75.19 331 eP P 05 09 16.9 +1.0
KIC Kosan Boka 75.20 72 eP P 05 09 16.6 +0.3
comp=Z,248nm,1.3s
KSPA Keystone Colle 75.21 357 eP P 05 09 17.4 +1.7
comp=Z,16nm,1.1s
Q38A Cooks Store, C 75.21 343 P P 05 09 15.1 -0.6
baz=162,SNR=7.9
SFIN Lafayette 75.23 348 P P 05 09 14.2 -1.5
baz=168,SNR=5.1
SFIN Lafayette 75.23 348 eP P 05 09 13.4 -2.4
comp=Z,19nm,1.0s
TUC Tucson 75.25 327 P P 05 09 16.9 +0.6
baz=148
TUC Tucson 75.25 327 eP P 05 09 15.5 -0.7
TUC pmax pmax
comp=Z,18nm,1.1s
TUC Tucson 75.25 327 eP P 05 09 15.5 -0.7
comp=Z,18nm,1.1s
R35A Emporia Munici 75.28 341 P P 05 09 15.1 -1.0
baz=160
DBIC Dimbokro 75.29 71 P P 05 09 17.4 +0.6
comp=Z,31nm,0.7s,baz=213,slow=5.9,SNR=54
DBIC LR LR 05 41 24.7
comp=Z,277nm,18.0s,baz=206,slow=35
Q37A Longview Farm, 75.34 342 P P 05 09 15.7 -0.8
baz=161
P40A Paris 75.39 344 P P 05 09 16.2 -0.5
baz=163,SNR=23
M54A Oil Creek Stat 75.40 354 P P 05 09 16.2 -0.6
baz=174
S32A Newby Ranch, P 75.50 338 P P 05 09 17.3 -0.2
baz=158,SNR=7.7
R34A Isabella, Hill 75.56 340 P P 05 09 17.2 -0.5
baz=159,SNR=9.7
ANMO Albuquerque 75.67 331 P P 05 09 19.2 +0.5
baz=152
ANMO Albuquerque 75.67 331 eP P 05 09 19.6 +0.9
ANMO pmax pmax
comp=Z,22nm,1.2s
ANMO Albuquerque 75.67 331 eP P 05 09 19.1 +0.4
comp=Z,22nm,1.0s
Q36A Arnold C. Orve 75.68 341 P P 05 09 17.3 -1.1
baz=160
Q35A Mercer Eighty, 75.74 341 P P 05 09 17.8 -1.0
baz=160
R33A Olander Ranch, 75.78 339 P P 05 09 18.9 -0.1
baz=158
HDIL Hopedale 75.80 347 P P 05 09 18.4 -0.6
baz=166,SNR=6.5
HDIL Hopedale 75.80 347 eP P 05 09 16.8 -2.3
comp=Z,33nm,0.9s
P38A Dawn 75.82 343 P P 05 09 18.5 -0.7
baz=162,SNR=12
QUA2 Belchertown 75.86 360 eP P 05 09 20.7 +1.4
comp=Z,28nm,1.0s
214A Organ Pipe Nat 75.90 325 P P 05 09 20.5 +0.7
baz=146
214A Organ Pipe Nat 75.90 325 eP P 05 09 19.3 -0.6
comp=Z,71nm,1.0s
O40A La Belle 75.91 345 P P 05 09 18.8 -0.9
baz=164,SNR=8.0
P37A Lathrop 75.99 343 P P 05 09 18.9 -1.2
baz=162
ERPA Erie 76.03 354 eP P 05 09 20.3 -0.1
comp=Z,30nm,1.0s
Q34A Chapman 76.05 340 P P 05 09 20.1 -0.5
baz=159,SNR=5.4
R32A Long Quarter, 76.10 339 P P 05 09 20.7 -0.2
baz=158,SNR=11
KSU1 Kansas State U 76.12 341 P P 05 09 20.4 -0.6
baz=160
KSU1 Kansas State U 76.12 341 eP P 05 09 19.9 -1.0
comp=Z,17nm,0.9s
O39A Kirksville 76.19 344 P P 05 09 20.8 -0.5
baz=163,SNR=11
P36A Good Intent, A 76.23 342 P P 05 09 20.6 -1.0
baz=161
O38A Galt 76.28 343 P P 05 09 21.1 -0.7
baz=162
TRY Troy 76.32 359 eP P 05 09 23.1 +1.1
comp=Z,68nm,1.0s
P35A Duane Minner, 76.36 341 P P 05 09 21.5 -0.9
baz=160,SNR=5.8
Q33A Connelly Farm, 76.37 340 P P 05 09 21.9 -0.5
baz=159
O37A Wolven Farm, M 76.48 343 P P 05 09 22.1 -0.8
baz=162,SNR=9.7
Q32A Meitler Ranch, 76.58 339 P P 05 09 23.4 -0.2
baz=158,SNR=9.1
P34A Walnut Farm, R 76.60 341 P P 05 09 23.2 -0.4
baz=160,SNR=7.8
AAM Ann Arbor 76.61 351 eP P 05 09 22.1 -1.5
AAM pmax pmax
comp=Z,23nm,0.8s
AAM Ann Arbor 76.61 351 eP P 05 09 22.1 -1.5
comp=Z,23nm,0.8s
O36A Bolckow 76.65 342 P P 05 09 23.2 -0.7
baz=161
P33A Williams Farm, 76.74 340 P P 05 09 24.0 -0.5
baz=159
CBKS Cedar Bluff 76.77 338 P P 05 09 24.1 -0.5
baz=157
CBKS Cedar Bluff 76.77 338 eP P 05 09 22.5 -2.2
CBKS pmax pmax
comp=Z,36nm,0.9s
CBKS Cedar Bluff 76.77 338 eP P 05 09 22.5 -2.2
comp=Z,36nm,0.9s
N39A Derby Farms, D 76.77 344 P P 05 09 23.9 -0.7
baz=163,SNR=11
T25A Trinidad 76.83 334 P P 05 09 25.7 +0.4
baz=153
N38A Joes South For 76.86 344 P P 05 09 24.3 -0.8
baz=162,SNR=12
ACCN Adirondack Com 76.97 359 eP P 05 09 26.3 +0.7
comp=Z,64nm,1.6s
113A Mohawk Valley, 77.02 325 eP P 05 09 27.2 +1.1
comp=Z,19nm,1.4s
O35A Humboldt 77.03 342 P P 05 09 25.7 -0.3
baz=160
N37A Lee Faris, Mou 77.06 343 P P 05 09 25.5 -0.7
baz=162,SNR=5.3
O34A Beatrice 77.16 341 P P 05 09 26.2 -0.6
baz=160,SNR=5.8
W18A Petrified Fore 77.17 329 P P 05 09 27.2 0.0
baz=149
P32A Huiting Farm, 77.17 339 P P 05 09 26.5 -0.4
baz=158
HNH Hanover 77.28 360 eP P 05 09 29.3 +1.9
comp=Z,29nm,1.0s
O33A Hebron 77.30 340 P P 05 09 27.1 -0.5
baz=159,SNR=8.8
M38A Pleasantville 77.45 344 P P 05 09 27.7 -0.7
baz=162,SNR=10
N35A Tabor 77.51 342 P P 05 09 28.0 -0.8
baz=160,SNR=10
MDV Middlebury 77.58 359 eP P 05 09 29.7 +0.7
Y14A Wickenburg 77.63 326 eP P 05 09 30.7 +1.1
M37A Trindle Farm, 77.63 343 P P 05 09 29.3 -0.1
baz=162
O32A Brockman Farm, 77.67 340 P P 05 09 29.4 -0.2
baz=158
N34A Lincoln 77.72 341 P P 05 09 29.2 -0.7
baz=160,SNR=7.0
GLA Glamis 77.76 324 P P 05 09 30.5 +0.1
baz=145
SDCO Great Sand Dun 77.76 334 P P 05 09 30.8 +0.2

baz=152
SDCO Great Sand Dun 77.76 334 eP P 05 09 30.1 -0.5
comp=Z,9.4nm,0.9s
M36A Felix, Anita 77.86 343 P P 05 09 30.0 -0.7
baz=161,SNR=7.1
O31A Woolen Ranch, 77.88 339 P P 05 09 31.2 +0.3
baz=158
KSCO Kaye Shedlock' 77.88 336 P P 05 09 31.1 +0.1
baz=155
KSCO Kaye Shedlock' 77.88 336 eP P 05 09 31.4 +0.4
comp=Z,28nm,0.9s
N33A J Bar K, Exete 77.88 341 P P 05 09 30.1 -0.7
baz=159
SCIA State Center 77.92 344 eP P 05 09 29.4 -1.6
comp=Z,26nm,0.7s
L38A Oak Wood Farm, 78.08 344 P P 05 09 32.1 +0.2
baz=163
M35A Neola 78.10 342 P P 05 09 32.3 +0.3
baz=160
WVL Waterville 78.18 2 eP P 05 09 33.5 +1.2
comp=Z,94nm,1.4s
Y12C Blythe 78.19 325 P P 05 09 33.5 +0.9
baz=146
WUAZ Wupatki 78.21 328 P P 05 09 33.7 +0.7
baz=148
WUAZ Wupatki 78.21 328 eP P 05 09 32.9 -0.1
comp=Z,31nm,1.1s
LONY Lake Ozonia 78.23 358 eP P 05 09 31.3 -1.4
comp=Z,25nm,1.1s
JFWS Jewell Farm 78.26 347 eP P 05 09 32.3 -0.5
JFWS pmax pmax
comp=Z,25nm,0.8s
JFWS Jewell Farm 78.26 347 eP P 05 09 32.3 -0.5
comp=Z,25nm,0.8s
S22A 4UR Ranch, Cre 78.26 333 P P 05 09 33.8 +0.4
baz=152
M34A Aspy Farms, Fr 78.36 342 P P 05 09 32.9 -0.5
baz=160
EMMW East Machias 78.41 3 eP P 05 09 35.1 +1.5
comp=Z,41nm,1.0s
MONP2 Monument Peak 78.42 323 P P 05 09 34.3 0.0
baz=144
FRNY Flat Rock 78.42 359 eP P 05 09 34.2 +0.5
comp=Z,20nm,0.9s
L36A Harm Buss Farm 78.44 343 P P 05 09 33.3 -0.6
baz=161
MVCO Mesa Verde 78.45 331 P P 05 09 35.1 +0.7
baz=150
MVCO Mesa Verde 78.45 331 eP P 05 09 33.9 -0.5
comp=Z,33nm,1.1s
BC3 Big Chuckawall 78.56 324 P P 05 09 35.7 +0.8
baz=145
M33A Taylor Creek F 78.59 341 P P 05 09 34.3 -0.4
baz=159
SADO Sadowa 78.60 355 eP P 05 09 34.6 -0.1
L35A Bielow Farm, R 78.67 343 P P 05 09 35.0 -0.2
baz=161
BGNE Belgrade 78.70 340 eP P 05 09 33.6 -1.8
comp=Z,4.7nm,0.4s
Q24A Divide 78.71 334 P P 05 09 36.4 +0.6
baz=153
IRM Iron Mountain 78.82 325 P P 05 09 37.4 +1.3
baz=145
PKME Peaks-Kenny Pk 78.89 2 eP P 05 09 35.8 -0.4
comp=Z,86nm,1.6s
K36A Gilmore City 78.90 343 P P 05 09 35.8 -0.5
baz=162,SNR=6.2
W13A Hualapai Mount 79.00 326 eP P 05 09 38.7 +1.3
PFO Pinyon Flats O 79.01 324 LR LR 05 37 29.8
comp=Z,226nm,20.5s,baz=156,slow=30
PFO Pinyon Flats O 79.01 324 P P 05 09 38.3 +0.9
baz=144
PFO Pinyon Flats O 79.01 324 eP P 05 09 37.8 +0.4
PFO pmax pmax
comp=Z,23nm,1.0s
PFO Pinyon Flats O 79.01 324 eP P 05 09 37.8 +0.4
comp=Z,23nm,1.0s
BELC Belle Mtn. Jos 79.10 324 P P 05 09 38.1 +0.2
baz=144
L32A Elgin 79.21 341 P P 05 09 38.2 0.0
baz=159
K34A Le Mars 79.34 342 P P 05 09 39.1 +0.3
baz=160
TSUM Tsumeb 79.36 106 eP P 05 09 39.8 +0.1
comp=Z,20nm,1.0s
OGNE Ogallala 79.43 337 P P 05 09 40.2 +0.7
baz=155
OGNE Ogallala 79.43 337 eP P 05 09 37.6 -1.9
comp=Z,14nm,0.8s
J36A Seneca 1, Swea 79.53 344 P P 05 09 39.2 -0.6
baz=162,SNR=5.6
SMCO Snowmass 79.57 333 eP P 05 09 41.4 +0.7
comp=Z,29nm,0.9s
GMRC Granite Mounta 79.57 325 P P 05 09 41.1 +0.7
baz=145
L31A Butterfield Fa 79.60 340 P P 05 09 41.0 +0.7
baz=158
ISCO Idaho Springs 79.62 334 P P 05 09 41.4 +0.6
baz=153
ISCO Idaho Springs 79.62 334 eP P 05 09 40.0 -0.8
ISCO pmax pmax
comp=Z,33nm,1.5s
ISCO Idaho Springs 79.62 334 eP P 05 09 40.0 -0.8
comp=Z,33nm,1.5s
LMN Caledonia Moun 79.71 5 eP P 05 09 41.7 +1.0
I38A Scanlan Farm, 79.76 345 P P 05 09 40.2 -0.8
baz=163,SNR=10
K32A Verdigre 79.81 341 P P 05 09 40.8 -0.6
baz=159
TRQ Mont Tremblant 79.83 358 eP P 05 09 41.5 +0.1
J34A George 79.87 343 P P 05 09 41.3 -0.4
baz=160
HEC Hector,Ludlow 79.93 324 P P 05 09 42.4 0.0
baz=144
I37A Lemond, Waseca 79.96 345 P P 05 09 41.9 -0.2
baz=162
K31A O'Neill 79.99 340 P P 05 09 42.7 +0.4
baz=158
I36A Fitzsimmons Fa 80.11 344 P P 05 09 42.8 -0.1
baz=162
KNB Kanab 80.11 328 eP P 05 09 44.8 +1.5
KNB pmax pmax
comp=Z,35nm,1.0s
KNB Kanab 80.11 328 eP P 05 09 44.8 +1.5
comp=Z,35nm,1.0s
BFSC Mount Baldy Ra 80.11 323 P P 05 09 43.7 +0.4
baz=143
J33A Davis 80.16 342 P P 05 09 43.2 -0.1
baz=160
I35A Creekview Farm 80.17 343 P P 05 09 43.3 0.0
baz=161
BOSA Boshof 80.22 118 P P 05 09 44.7 +0.4
comp=Z,21nm,0.9s,baz=228,slow=4.9,SNR=17
BOSA LR LR 05 42 10.6
comp=Z,198nm,18.3s,baz=224,slow=33
TUQ Turquoise Moun 80.23 325 P P 05 09 44.8 +0.8
baz=145
K30A Basset 80.28 340 P P 05 09 44.3 +0.3
baz=158
J32A Parkston 80.44 341 P P 05 09 44.3 -0.4
baz=159
ECSD EROS Data Cent 80.46 342 P P 05 09 44.3 -0.5
baz=160,SNR=22
ECSD EROS Data Cent 80.46 342 eP P 05 09 44.0 -0.8
comp=Z,26nm,0.8s
GSC Goldstone, Bar 80.54 324 P P 05 09 46.3 +0.7
baz=144,SNR=5.7
GSC Goldstone, Bar 80.54 324 eP P 05 09 46.9 +1.3
GSC pmax pmax
comp=Z,29nm,1.4s
GSC Goldstone, Bar 80.54 324 eP P 05 09 46.9 +1.3
comp=Z,29nm,1.4s
I34A Hadley 80.56 343 P P 05 09 45.1 -0.3
baz=160
H36A Jessenland, He 80.62 344 P P 05 09 45.8 +0.1
baz=162
MTPU Mount Pierson 80.69 329 eP P 05 09 47.6 +0.9
comp=Z,14nm,1.0s
N23A Red Feather La 80.70 335 P P 05 09 46.7 +0.2
baz=152
EDW2 Edwards Air Fo 80.79 323 P P 05 09 47.1 +0.2
baz=143
J30A Dallas 80.85 340 P P 05 09 47.0 0.0
baz=158
O20A White River Ci 80.88 333 P P 05 09 47.8 +0.3
baz=151
O20A White River Ci 80.88 333 eP P 05 09 47.4 0.0
comp=Z,9.0nm,0.8s

PHWY Pilot Hill 80.89 335 eP P 05 09 46.0 -1.6
comp=Z,10.0nm,0.8s
SRU San Rafael Swe 80.90 331 eP P 05 09 48.1 +0.5
SRU pmax pmax
comp=Z,16nm,0.9s
SRU San Rafael Swe 80.90 331 eP P 05 09 48.1 +0.5
comp=Z,16nm,0.9s
H35A Sunnyside Ranc 80.94 344 P P 05 09 46.6 -0.7
baz=161
SPMN Marine on St. 80.99 345 P P 05 09 46.8 -0.8
baz=163
SPMN Marine on St. 80.99 345 eP P 05 09 46.1 -1.5
comp=Z,21nm,0.8s
MSU Marysvale 81.08 329 eP P 05 09 49.8 +1.2
MSU Marysvale 81.08 329 eP P 05 09 49.8 +1.2
LRMC Laurel Mtn Rad 81.11 324 P P 05 09 49.3 +0.6
baz=144,SNR=5.8
H34A Spellman Lake, 81.13 343 P P 05 09 47.9 -0.5
baz=161
J29A Okreek 81.16 340 P P 05 09 48.5 -0.1
baz=157
G36A St. Michael 81.20 345 P P 05 09 48.4 -0.3
baz=162
P18A Preston Nutter 81.23 331 eP P 05 09 50.4 +1.0
comp=Z,19nm,0.9s
P17A Butcher Ranch, 81.30 331 eP P 05 09 50.5 +0.8
comp=Z,36nm,1.4s
TMUT Trail Mountain 81.34 330 eP P 05 09 51.0 +0.9
comp=Z,30nm,1.4s
G35A Watkins 81.35 344 P P 05 09 49.4 -0.1
baz=162
I30A Oacoma 81.37 340 P P 05 09 49.6 -0.1
baz=158
H33A Prehn Over Nor 81.38 343 P P 05 09 49.7 -0.1
baz=160
H32A Carlson Farm, 81.39 342 P P 05 09 49.7 -0.1
baz=159
J28A Allard Ranch, 81.44 339 P P 05 09 50.8 +0.6
baz=156
MPMC Manual Prospec 81.48 324 P P 05 09 51.2 +0.5
baz=144
FURC Furnace Creek, 81.51 325 P P 05 09 50.3 -0.3
baz=144
J27A Elkhorn Farm, 81.52 338 P P 05 09 51.9 +1.3
baz=156
TPNV Topopah Spring 81.61 326 P P 05 09 52.1 +0.8
baz=145
TPNV Topopah Spring 81.61 326 eP P 05 09 52.9 +1.6
TPNV pmax pmax
comp=Z,12nm,0.9s
TPNV Topopah Spring 81.61 326 eP P 05 09 52.9 +1.6
comp=Z,12nm,0.9s
G34A Benson 81.64 344 P P 05 09 50.2 -0.8
baz=161
ISA Isabella, Lake 81.65 324 P P 05 09 52.3 +0.8
baz=143
ISA Isabella, Lake 81.65 324 eP P 05 09 53.0 +1.5
ISA pmax pmax
comp=Z,17nm,0.9s
ISA Isabella, Lake 81.65 324 eP P 05 09 53.0 +1.5
comp=Z,17nm,0.9s
DAC Darwin (Calif) 81.70 324 eP P 05 09 50.6 -1.3
DAC pmax pmax
comp=Z,23nm,1.0s
DAC Darwin (Calif) 81.70 324 eP P 05 09 50.6 -1.3
comp=Z,23nm,1.0s
I29A Vivian Onida 81.72 340 P P 05 09 51.6 0.0
baz=157
SUSD Miller 81.73 341 P P 05 09 51.6 0.0
baz=158
F36A Milaca 81.75 345 P P 05 09 50.6 -1.0
baz=162,SNR=9.2
G33A Ortonville 81.78 343 P P 05 09 51.7 -0.1
baz=160
PSUT Pine Spring 81.82 328 eP P 05 09 53.7 +1.2
comp=Z,22nm,1.3s
I28A Midland 81.95 339 P P 05 09 52.6 -0.1
baz=156
F35A Swanville 81.97 344 P P 05 09 52.1 -0.8
baz=162,SNR=5.6
F34A Alexandria 82.07 344 P P 05 09 52.6 -0.7
baz=161
G32A Webster 82.11 342 P P 05 09 53.5 -0.1
baz=159
GRAC Grapevine Rang 82.17 325 P P 05 09 54.2 +0.1
baz=144
E37A Wrenshall 82.19 346 P P 05 09 53.5 -0.5
baz=163
J25A Sunshine Ranch 82.20 337 P P 05 09 54.9 +0.7
baz=154
H29A Onida 82.25 340 P P 05 09 54.2 -0.1
baz=157
NLU North Lily Min 82.25 330 eP P 05 09 55.7 +1.0
comp=Z,40nm,1.6s
I27A Quinn 82.27 339 P P 05 09 54.8 +0.3
baz=156
E36A McGregor 82.32 346 P P 05 09 53.9 -0.7
baz=163,SNR=5.3
F33A 5 Mile Ranch, 82.36 343 P P 05 09 54.6 -0.3
baz=160
G30A Faulkton 82.42 341 P P 05 09 55.5 +0.3
baz=158
R11A Troy Canyon, C 82.44 327 P P 05 09 56.7 +1.0
baz=145
R11A Troy Canyon, C 82.44 327 eP P 05 09 56.2 +0.5
comp=Z,20nm,1.1s
K22A Casper 82.46 335 P P 05 09 55.2 -0.5
comp=Z,41nm,1.4s
I26A New Underwood 82.48 338 P P 05 09 55.8 +0.1
baz=155
H28A Mission Ridge 82.52 340 P P 05 09 56.2 +0.4
baz=156
JLU Jordanelle 82.54 331 eP P 05 09 57.0 +0.7
comp=Z,52nm,1.8s
E35A Pequot Lakes 82.60 345 P P 05 09 55.4 -0.7
baz=162
G29A Hoven 82.69 341 P P 05 09 56.5 -0.1
baz=157
E34A Wadena 82.73 344 P P 05 09 56.5 -0.3
baz=161
CTU Camp Tracy 82.74 331 eP P 05 09 57.9 +0.7
comp=Z,5.5nm,0.9s
I25A Rochford 82.75 338 P P 05 09 57.4 +0.2
baz=154
DUG Dugway, Tooele 82.76 330 P P 05 09 57.6 +0.4
baz=147,SNR=17
DUG Dugway, Tooele 82.76 330 eP P 05 09 56.1 -1.2
DUG pmax pmax
comp=Z,23nm,1.1s
DUG Dugway, Tooele 82.76 330 eP P 05 09 56.1 -1.2
comp=Z,23nm,1.1s
D37A Cotton 82.76 346 P P 05 09 57.0 +0.1
baz=163
H27A Howes 82.79 339 P P 05 09 57.4 +0.2
baz=156
G28A Parade 82.86 340 P P 05 09 57.5 0.0
baz=157,SNR=11
F31A Hecla 82.86 342 P P 05 09 56.9 -0.5
baz=159,SNR=5.6
E33A Westby DABS, E 82.91 344 P P 05 09 57.3 -0.4
baz=160
RSSD Black Hills 82.94 337 P P 05 09 58.0 -0.2
baz=154
RSSD Black Hills 82.94 337 eP P 05 09 56.5 -1.7
RSSD pmax pmax
comp=Z,9.0nm,0.9s
RSSD Black Hills 82.94 337 eP P 05 09 56.5 -1.7
comp=Z,9.3nm,0.9s
TCUT Toone Canyon 82.96 331 eP P 05 09 59.1 +0.7
comp=Z,22nm,0.9s
D35A Remer 83.02 345 P P 05 09 57.7 -0.6
baz=162,SNR=6.8
C38A Sawbill Land. 83.08 347 P P 05 09 58.2 -0.4
baz=164
H25A Fruitdale 83.25 338 P P 05 09 59.7 +0.1
baz=154
F29A Eureka 83.25 341 P P 05 09 59.5 0.0
baz=158
D34A Park Rapids 83.28 344 P P 05 09 59.2 -0.4
baz=161
MLAC Mammoth, Mammo 83.38 324 P P 05 10 00.7 0.0
baz=143
C36A Pine Crest Far 83.42 346 P P 05 10 00.2 -0.1
baz=163
E31A Nome 83.42 342 P P 05 09 59.8 -0.5
baz=159
G27A Dupree 83.43 339 P P 05 09 60.0 -0.5
baz=156,SNR=8.4

HWUT Hardware Ranch 83.44 331 eP P 05 09 59.7 -1.1
comp=Z,17nm,0.9s
BGU Big Grassy Mou 83.46 330 eP P 05 10 01.9 +1.0
comp=Z,27nm,1.4s
D33A AnnSam, Waubun 83.47 344 P P 05 10 00.0 -0.6
baz=161,SNR=5.8
CMLA Cha da Macela 83.51 35 iP P 05 10 00.2 -0.8
F28A McLaughlin 83.53 340 P P 05 10 00.9 -0.1
baz=157,SNR=13
G26A Maurine 83.55 339 P P 05 10 00.7 -0.4
baz=155,SNR=12
C35A Jirik Farms, M 83.59 345 P P 05 10 00.6 -0.6
baz=162,SNR=5.8
E30A Jud 83.63 342 P P 05 10 00.8 -0.6
baz=158,SNR=5.3
BW06 Boulder Array 83.66 333 P P 05 10 01.9 -0.1
baz=150
BW06 Boulder Array 83.66 333 eP P 05 09 59.9 -2.1
comp=Z,9.2nm,1.1s
PDAR Pinedale Array 83.66 333 P P 05 10 01.3 -0.6
comp=Z,2.4nm,0.8s,baz=156,slow=4.0,SNR=20
G25A Newell 83.71 338 P P 05 10 01.7 -0.2
baz=155,SNR=8.0
D32A Dogwood Acres, 83.74 343 P P 05 10 01.6 -0.4
baz=160
C34A RKJ Ranch, Bem 83.75 345 P P 05 10 01.4 -0.6
baz=162
NVAR Mina Array Bea 83.76 325 P P 05 10 03.5 +1.0
comp=Z,4.2nm,0.8s,baz=157,slow=6.2,SNR=26
NVAR LR LR 05 40 29.0
comp=Z,99nm,19.2s,baz=140,slow=31
D31A Mcclaflin, Tow 83.83 343 P P 05 10 02.4 -0.1
baz=159
DRLN Deer Lake 83.86 10 eP P 05 10 02.9 +0.4
E29A Napoleon 83.88 341 P P 05 10 02.4 -0.4
baz=158
F27A Lemmon 83.90 340 P P 05 10 02.7 -0.2
baz=156,SNR=17
C33A Trail 84.04 344 P P 05 10 03.1 -0.4
baz=161
HVU Hansel Valley 84.07 331 eP P 05 10 04.2 +0.2
HVU pmax pmax
comp=Z,16nm,0.9s
HVU Hansel Valley 84.07 331 eP P 05 10 04.2 +0.2
comp=Z,16nm,0.9s
F26A Lodgepole 84.08 339 P P 05 10 03.6 -0.2
baz=155,SNR=7.2
D30A Buchanan 84.15 342 P P 05 10 03.8 -0.2
baz=158,SNR=11
E28A Huff 84.17 341 P P 05 10 04.1 -0.1
baz=157,SNR=7.6
B35A Bob, Littlefor 84.17 346 P P 05 10 03.3 -0.8
baz=162
ELK Elko 84.25 329 eP P 05 10 03.9 -1.1
ELK pmax pmax
comp=Z,14nm,1.0s
ELK Elko 84.25 329 eP P 05 10 03.9 -1.1
comp=Z,14nm,1.0s
C32A Crookston 84.28 344 P P 05 10 04.0 -0.6
baz=160
E27A Carson 84.28 340 P P 05 10 04.6 -0.2
baz=156
D29A Pettibone, Tap 84.32 342 P P 05 10 04.9 -0.1
baz=158
TORD Torodi Air. Bea 84.32 70 P P 05 10 06.0 +0.3
comp=Z,32nm,0.8s,baz=255,slow=4.1,SNR=147
WAKR Walker 84.36 325 eP P 05 10 07.0 +1.4
F25A Bowman 84.38 339 P P 05 10 05.1 -0.2
baz=155
CMB Columbia Colle 84.46 324 eP P 05 10 04.0 -1.9
CMB pmax pmax
comp=Z,8.0nm,1.0s
CMB Columbia Colle 84.46 324 eP P 05 10 04.0 -1.9
comp=Z,7.8nm,1.0s
B34A Aery, Baudette 84.48 345 P P 05 10 05.0 -0.7
baz=162
C31A Landman Farms, 84.53 343 P P 05 10 05.5 -0.5
baz=159,SNR=8.9
AGMN Agassiz Nation 84.57 344 P P 05 10 05.6 -0.5
baz=161
AGMN Agassiz Nation 84.57 344 eP P 05 10 04.9 -1.2
comp=Z,68nm,1.9s
E26A Carlson Angus 84.58 340 P P 05 10 05.6 -0.7
baz=155
C30A Mose, Pekin 84.63 343 P P 05 10 06.2 -0.3
baz=159,SNR=14
REDW Red Top Meadow 84.65 333 eP P 05 10 06.2 -0.9
SNOW Snow King Moun 84.70 333 eP P 05 10 05.5 -1.7
D28A Regan 84.70 341 P P 05 10 06.7 -0.2
baz=157,SNR=6.3
LOHW Long Hollow 84.77 333 eP P 05 10 05.5 -2.1
B32A Ashes, Strandq 84.81 344 P P 05 10 06.6 -0.8
baz=160,SNR=12
E25A Miller Ranch, 84.88 339 P P 05 10 08.3 +0.5
baz=155
D27A Center 84.89 340 P P 05 10 07.6 -0.3
baz=156
MOOW Moose Ponds 84.94 333 eP P 05 10 07.8 -0.6
comp=Z,17nm,1.5s
FXWY Fox Creek 84.95 333 eP P 05 10 08.6 +0.1
A33A Warroad 85.07 345 P P 05 10 08.0 -0.6
baz=161,SNR=6.9
D26A Manning 85.08 340 P P 05 10 08.6 -0.2
baz=156,SNR=6.2
B31A Greenbush Farm 85.10 343 P P 05 10 08.4 -0.4
baz=159
C28A Hausauer Farms 85.14 341 P P 05 10 08.5 -0.6
baz=157
IMW Indian Meadow 85.14 333 eP P 05 10 07.7 -1.8
FLWY Flagg Ranch 85.21 333 eP P 05 10 07.5 -2.2
B30A Myrvik Farm, E 85.29 343 P P 05 10 09.5 -0.3
baz=159,SNR=17
H17A Grant Village 85.43 333 eP P 05 10 10.6 -0.4
comp=Z,4.0nm,0.8s
C27A Sayler Ranch, 85.44 341 P P 05 10 10.9 +0.3
baz=156,SNR=5.7
D25A Fairfield 85.44 339 P P 05 10 10.8 +0.1
baz=155
AFDM Forest Hills D 85.46 324 eP P 05 10 12.1 +1.2
A31A Linda, St. Vin 85.47 344 P P 05 10 10.0 -0.6
baz=160
LKWY Lake 85.51 334 eP P 05 10 11.5 +0.2
LKWY pmax pmax
comp=Z,7.0nm,1.0s
LKWY Lake 85.51 334 eP P 05 10 11.5 +0.2
comp=Z,7.3nm,1.0s
B29A Wagenman Farm, 85.56 342 P P 05 10 10.6 -0.6
baz=158
YFT Old Faithful 85.58 333 eP P 05 10 13.3 +1.7
RLMT Red Lodge 85.58 335 P P 05 10 11.2 -0.4
baz=150,SNR=12
RLMT Red Lodge 85.58 335 eP P 05 10 09.1 -2.5
comp=Z,44nm,1.7s
A30A Hoffart Farm, 85.74 343 P P 05 10 11.4 -0.6
baz=159,SNR=5.7
B28A Dugan Ranch, T 85.80 342 P P 05 10 12.5 +0.1
baz=157
YMR Madison River 85.81 333 eP P 05 10 13.8 +1.0
YHH Holmes Hill 85.87 334 eP P 05 10 13.6 +0.5
C25A Freed Ranch, W 85.93 340 P P 05 10 12.8 -0.2
baz=155
A29A Manning Farm, 85.95 343 P P 05 10 12.5 -0.6
baz=158,SNR=8.9
QLMT Earthquake Lak 86.12 333 eP P 05 10 15.4 +1.1
ORV Oroville 86.18 324 eP P 05 10 15.7 +1.3
ORV pmax pmax
comp=Z,39nm,1.2s
ORV Oroville 86.18 324 eP P 05 10 15.7 +1.3
comp=Z,39nm,1.2s
A28A Rude Farm, Bot 86.20 342 P P 05 10 14.3 0.0
baz=157
HLID Hailey 86.22 331 P P 05 10 14.8 0.0
baz=146
HLID Hailey 86.22 331 eP P 05 10 14.5 -0.3
comp=Z,38nm,1.5s
B26A Jensen Ranch, 86.24 340 P P 05 10 14.4 -0.2
baz=156
B25A Knox Farm, Ray 86.41 340 P P 05 10 15.5 +0.2
baz=155
ULM Lac du Bonnet 86.41 345 P P 05 10 14.5 -0.7
comp=Z,20nm,1.2s,baz=166,slow=2.8,SNR=7.8
A27A Ledoux Ranch, 86.50 341 P P 05 10 15.8 0.0
baz=156
MCMT McKenzie Canyo 86.66 332 eP P 05 10 17.7 +0.7
A26A Wade Farm, Ken 86.66 341 P P 05 10 16.3 -0.3
baz=156
MFID Camas Ranch 86.69 330 eP P 05 10 15.3 -1.7

DGMT	Dagmar	86.89	339	P	P	05 10 18.0	+0.3
	baz=154						
DGMT	Dagmar	86.89	339	eP	P	05 10 16.5	-1.2
BOZ	Bozeman (W)	86.89	334	P	P	05 10 17.5	-0.5
	baz=148						
BOZ	Bozeman (W)	86.89	334	eP	P	05 10 16.4	-1.5
BOZ	Bozeman (W)	86.89	334	eP	P	05 10 16.4	-1.5
O03D	Paynes Creek	86.90	324	P	P	05 10 17.9	-0.1
	baz=141						
A25A	Svangstu Ranch	87.00	340	P	P	05 10 19.0	+0.8
	baz=155						
DLMT	Dillon	87.01	333	eP	P	05 10 18.2	-0.3
WVOR	Wild Horse Val	87.11	328	eP	P	05 10 18.4	-0.7
WVOR	Wild Horse Val	87.11	328	eP	P	05 10 18.4	-0.7
LRM	Limekiln Ridge	87.34	333	eP	P	05 10 20.8	+0.5
MOD	Modoc Plateau	87.44	326	eP	P	05 10 19.3	-1.4
	comp=Z,11nm,0.8s						
WDC	Whiskeytown Da	87.48	324	eP	P	05 10 20.1	-0.7
WDC				pmax	pmax		
	comp=Z,6.0nm,0.7s						
WDC	Whiskeytown Da	87.48	324	eP	P	05 10 20.1	-0.7
	comp=Z,6.0nm,0.7s						
KMRM	Mail Ridge	87.79	323	eP	P	05 10 24.6	+2.3
N02D	Trinity Center	87.86	324	P	P	05 10 23.2	+0.5
	baz=140						
M04C	Macdoel	88.07	325	P	P	05 10 24.2	+0.5
	baz=141						
EGMT	Eagleton	88.26	336	P	P	05 10 24.2	-0.1
	baz=150						
EGMT	Eagleton	88.26	336	eP	P	05 10 22.4	-2.0
M02C	Callahan	88.26	324	P	P	05 10 25.0	+0.4
	baz=140						
KHMM	Horse Mountain	88.29	324	eP	P	05 10 27.1	+2.4
K05A	Summer Lake	88.36	326	eP	P	05 10 26.4	+1.3
YBH	Yreka Blue Hor	88.45	325	eP	P	05 10 24.3	-1.1
YBH	Yreka Blue Hor	88.45	325	eP	P	05 10 24.3	-1.1
BMO	Blue Mountains	88.47	330	eP	P	05 10 25.3	-0.2
	comp=Z,1.3nm,0.7s						
SCHQ	Schefferville	88.54	3	P	P	05 10 24.6	-0.8
	comp=Z,8.4nm,1.0s,baz=180,slow=7.0,SNR=8.6						
MSO	Missoula	88.75	333	eP	P	05 10 28.8	+2.0
J05D	Fort Rock, OR	88.95	327	P	P	05 10 28.4	+0.5
	baz=141						
L02D	Cave Junction,	89.20	324	P	P	05 10 29.9	+1.0
	baz=140						
F10A	Beach Ranch, E	89.35	330	eP	P	05 10 31.1	+1.5
JTMT	Jette	89.64	333	eP	P	05 10 31.8	+0.8
BSMT	Bassoo Peak	89.92	333	eP	P	05 10 33.0	+0.6
LSZ	Lusaka	89.95	108	eP	P	05 10 32.6	-0.7
LSZ				pmax	pmax		
	comp=Z,1.0nm,0.8s						
LSZ	Lusaka	89.95	108	eP	P	05 10 32.6	-0.7
	comp=Z,1.3nm,0.8s						
WALA	Waterton Lakes	90.60	334	eP	P	05 10 33.9	-1.5
NEW	Newport	91.16	332	P	P	05 10 37.2	-0.7
	comp=Z,1.6nm,0.7s,baz=147,slow=3.5,SNR=3.0						
NEW	Newport	91.16	332	eP	P	05 10 37.8	-0.1
NEW	Newport	91.16	332	eP	P	05 10 37.8	-0.1
C09A	Chrisman Ranch	91.25	331	eP	P	05 10 38.7	+0.5
TAM	Tamanrasset	92.93	65	eP	P	05 10 44.7	-2.1
TAM	Tamanrasset	92.93	65	eP	P	05 10 44.7	-2.1
	comp=Z,0.5nm,0.3s						
FCC	Fort Churchill	94.15	349	eP	P	05 10 49.2	-2.1
FCC				pmax	pmax		
	comp=Z,5.0nm,1.4s						
FCC	Fort Churchill	94.15	349	eP	P	05 10 49.2	-2.1
	comp=Z,5.0nm,1.4s						
PAB	San Pablo	96.33	46	eP	P	05 11 02.4	+0.5
PAB	San Pablo	96.33	46	eP	P	05 11 02.4	+0.5
ESDC	Sonseca Array	96.64	46	P	P	05 11 03.3	-0.1
	comp=Z,0.6nm,0.5s,baz=245,slow=4.3,SNR=7.3						
ESDC				LR	LR	05 54 19.7	
	comp=Z,329nm,19.0s,baz=255,slow=35						
YKA	Yellowknife Ar	101.97	341	P	Pdif	05 11 25.5	-0.9
	comp=Z,0.5nm,0.8s,baz=144,slow=4.4,SNR=13						
YKA				PP	PP	05 15 35.5	-2.9
	comp=Z,0.6nm,0.9s,baz=146,slow=8.5,SNR=5.1						
GERES	GERESS Array B	112.22	45	PKiKP	PKiKP	05 16 08.8	+0.1
	comp=Z,0.7nm,0.5s,baz=246,slow=2.6,SNR=8.4						
CLL	Collm	112.90	43	eSP	SP	05 26 46.0	+16
CLL				eSS	SS	05 32 42.0	+1.3
CLL				L	L	05 59 00.0	
	comp=Z,200nm,20.8s						
PVCC	Panska Ves	113.46	44	AMS	AMS	06 02 40.0	
	comp=Z,400nm,18.8s						
ILAR	Eielson Array	114.09	333	PKP	PKPdf	05 16 10.0	-1.6
	comp=Z,8.4nm,0.4s,baz=228,slow=3.2,SNR=4.6						
PKSM	Moragy	114.11	50	⇓iP	PKiKP	05 16 09.2	-3.0
PKSM	Moragy	114.11	50	⇓PKIKP	PKiKP	05 16 09.2	-3.0
VYHS	Vyhne	115.16	47	e	PKPdf	05 16 14.9	+0.7
BZS	Buzias	115.78	51	⇑iP	PKPpre	05 16 05.4	
BZS	Buzias	115.78	51	⇑PKIKP	PKPpre	05 16 05.4	
NOA	NORSAR Array B	116.06	33	PKP	PKPdf	05 16 14.2	-1.4
	comp=Z,1.0nm,0.9s,baz=240,slow=2.4,SNR=2.5						
ASAR	Alice Springs	117.55	207	PKP	PKPdf	05 16 18.9	-0.9
	comp=Z,0.8nm,0.9s,baz=130,slow=1.4,SNR=5.1						
KWP	Kalwaria Pacla	117.94	47	⇑iP	PKPdf	05 16 18.0	-1.5
KWP	Kalwaria Pacla	117.94	47	⇑PKIKP	PKPdf	05 16 18.0	-1.5
MLR	Muntele Rosu	118.55	52	⇑iP	PKPdf	05 16 20.6	-0.4
MLR	Muntele Rosu	118.55	52	⇑PKIKP	PKPdf	05 16 20.7	-0.3
BURAR	Bucovina Array	118.81	50	⇑iP	PKPdf	05 16 21.1	-0.2
BURAR	Bucovina Array	118.81	50	⇑PKIKP	PKPdf	05 16 21.1	-0.2
VRI	Vrincioaia	119.20	52	⇑iP	PKPdf	05 16 21.9	-0.1
VRI	Vrincioaia	119.20	52	⇑PKIKP	PKPdf	05 16 21.9	-0.1
TIRR	Tirgusor	119.85	54	⇑iP	PKPdf	05 16 19.9	-3.4
TIRR	Tirgusor	119.85	54	⇑PKIKP	PKPdf	05 16 19.9	-3.4
CFR	Carcaliu	119.90	53	⇑iP	PKPdf	05 16 22.5	-0.8
CFR	Carcaliu	119.90	53	⇑PKIKP	PKPdf	05 16 22.6	-0.8
WRA	Warramunga Arr	120.74	209	PKP	PKPdf	05 16 25.1	-0.8
	comp=Z,1.6nm,0.6s,baz=177,slow=1.7,SNR=8.5						
WRA	Warramunga Arr	120.74	209	PKIKP	PKPdf	05 16 25.1	-0.8
WRA				pmax	pmax		
	comp=Z,3.0nm,1.0s						
WRAB	Tennant Creek	120.74	209c	iPKIKP	PKPdf	05 16 26.3	+0.4
WRAB				pmax	pmax		
	comp=Z,29nm,2.5s						
BRTR	Keskin Array B	121.93	61	PKP	PKPdf	05 16 27.9	+0.2
	comp=Z,5.0nm,0.8s,baz=187,slow=3.4,SNR=26						
KIEV	Kiev	122.25	47	ePKIKP	PKPdf	05 16 27.0	-0.7
KIEV	Kiev	122.25	47	ePKPdf	PKPdf	05 16 27.0	-0.7
AKASG	Malin Array Be	122.26	47	PKP	PKPdf	05 16 27.0	-0.7
	comp=Z,6.5nm,0.8s,baz=264,slow=2.6,SNR=39						
VSU	Vasula	122.74	38c	iPKIKP	PKPdf	05 16 28.7	+0.3
VSU				pmax	pmax		
	comp=Z,44nm,1.2s						
FINES	FINESS Array B	123.03	35	PKP	PKPdf	05 16 28.6	-0.2
	comp=Z,4.3nm,1.0s,baz=186,slow=5.2,SNR=6.2						
ARCES	ARCESS Array B	124.03	25	PKP	PKPdf	05 16 30.8	+0.2
	comp=Z,2.9nm,0.8s,baz=251,slow=2.8,SNR=4.4						
ARCES	ARCESS Array B	124.03	25	PKIKP	PKPdf	05 16 30.8	+0.2
ARCES				pmax	pmax		
	comp=Z,5.0nm,0.9s						
OBN	Obninsk	127.49	43	i PKIKP	PKPdf	05 16 35.7	-1.9
OBN				e		05 18 37.3	
OBN				pmax	pmax		
	comp=Z,17nm,1.2s						
OBN				MLR	MLR		
	comp=Z,153nm,17.0s						
LPSR	Galich'ya Gora	128.56	47	ePKIKP	PKPdf	05 16 39.5	-0.2
LPSR				pmax	pmax		
	comp=Z,20nm,0.9s						
TMCR	Tamitsa	128.73	32	ePKIKP	PKPdf	05 16 40.1	+0.4
TMCR				pmax	pmax		
	comp=Z,21nm,0.4s						
NEY	Neytrino	129.46	59	i PKIKP	PKPdf	05 16 41.4	-0.6
KIV	Kislovodsk	129.58	58	i PKIKP	PKPdf	05 16 42.1	0.0
KIV				e		05 18 50.2	
KIV				ePPP	PPP	05 21 36.1	
KIV				pmax	pmax		
	comp=Z,18nm,1.1s						
KIV				MLR	MLR		
	comp=Z,130nm,20.0s						
KBZ	Khabaz	129.68	59	PKP	PKPdf	05 16 42.9	+0.8
	comp=Z,5.4nm,0.9s,baz=237,slow=3.4,SNR=11						
GOF	Gofitskoye	130.05	57	⇑ePKIKP	PKPdf	05 16 43.4	+0.6
VRH	Novokhopyorsk	130.10	49	ePKIKP	PKPdf	05 16 42.4	-0.3
VRH				pmax	pmax		
	comp=Z,7.0nm,0.4s						
ZEI	Tsey	130.20	60	i PKIKP	PKPdf	05 16 43.1	-0.4
ZEI				pmax	pmax		
	comp=Z,22nm,1.1s						
BILL	Bilibino	132.73	334	i PKIKP	PKPdf	05 16 47.0	-0.2
BILL				e		05 19 10.2	
BILL				pmax	pmax		
	comp=Z,4.0nm,1.0s						
BILL				MLR	MLR		
	comp=Z,115nm,18.0s						
SOKR	Solikamsk	138.13	36	⇑iPKIKP	PKPdf	05 16 55.9	-1.5
SOKR				pmax	pmax		
	comp=Z,9.0nm,0.9s						
ARU	Arti	139.80	41	i PKIKP	PKPdf	05 16 59.0	-1.6
SEY	Seymchan	139.92	330	PKhKP	PKPpre	05 16 52.4	
	comp=Z,0.9nm,0.2s,baz=17,slow=20,SNR=3.4						
SEY				PKP	PKPdf	05 16 59.0	-1.6
	comp=Z,1.9nm,0.5s,baz=99,slow=4.4,SNR=3.5						
SEY	Seymchan	139.92	330	ePKIKP	PKPdf	05 17 02.0	+1.4
GEYT	Alibeck	139.96	70	PKhKP	PKPpre	05 16 54.4	
	comp=Z,1.0nm,0.3s,baz=198,slow=9.1,SNR=2.9						
GEYT				PKP	PKPdf	05 17 01.2	-0.4
	comp=Z,2.3nm,0.3s,baz=255,slow=4.5,SNR=6.3						
PETK	Petropavlovsk-	140.02	314	PKP	PKPdf	05 17 00.4	-0.7
	comp=Z,12nm,1.1s,baz=127,slow=12,SNR=5.3						
PETK	Petropavlovsk-	140.02	314	PKIKP	PKPdf	05 17 00.4	-0.7
PETK				pmax	pmax		
	comp=Z,10.0nm,1.0s						
AKTO	Aktyubinsk	140.41	50	PKhKP	PKPpre	05 16 55.6	
	comp=Z,1.2nm,0.3s,baz=302,slow=3.2,SNR=3.5						
TIXI	Tiksi	140.62	350	ePKIKP	PKPdf	05 17 01.0	-0.7
TIXI				pmax	pmax		
	comp=Z,5.0nm,1.0s						
TIXI				MLR	MLR		
	comp=Z,92nm,20.0s						
AB31	Akbulak array	141.76	52	ePKHKP	PKPpre	05 16 58.7	
AB31				pmax	pmax		
	comp=Z,4.0nm,0.6s						
ABKAR	Akbulak array	141.76	52	ePKPdf	PKPpre	05 16 59.0	
POO	Poona	146.09	108	⇑iP	PKPdf	05 17 13.0	0.0
	comp=Z,60nm,1.0s						
CHKZ	Chkalovo	147.23	42	PKIKP	PKPdf	05 17 14.0	+0.3
CHKZ				pmax	pmax		
	comp=Z,89nm,1.3s						
BRVK	Borovoye	147.27	43	ePKP2	PKPbc	05 17 15.2	-1.0
BRVK	Borovoye	147.27	43	ePKPbc	PKPbc	05 17 15.2	-1.0
BRVK				ePKPab	PKPab	05 17 17.2	-0.8
BVA0	Borovoye Array	147.34	43	PKIKP	PKPdf	05 17 13.5	-0.5
BVA0				pmax	pmax		
	comp=Z,28nm,0.8s						
BVAR	Borovoye Array	147.34	43	PKPbc	PKPdf	05 17 15.0	+1.0
	comp=Z,19nm,0.7s,baz=280,slow=4.1,SNR=58						
BVAR	Borovoye Array	147.34	43	PKP2	PKPdf	05 17 15.0	+1.0
BVAR				pmax	pmax		
	comp=Z,19nm,0.7s						
KUR	Kuril'sk	147.44	302	ePKIKP	PKPdf	05 17 15.5	+1.2
KSM	Kuching	147.61	185	ePKPbc	PKPbc	05 17 18.1	-0.2
YAK	Yakutsk	148.64	340	PKPbc	PKPbc	05 17 18.7	-0.8
	comp=Z,16nm,0.4s,baz=332,slow=0.6,SNR=9.1						
YAK	Yakutsk	148.64	340	ePKP2	PKPbc	05 17 18.8	-0.7
YAK				e		05 24 25.6	
YAK				pmax	pmax		
	comp=Z,43nm,1.1s						
YAK				pmax	pmax		
	comp=N,22nm,1.5s						
YAK				pmax	pmax		
	comp=E,21nm,1.5s						
YAK				pmax	pmax		
	comp=Z,186nm,4.8s						
YAK				pmax	pmax		
	comp=N,47nm,4.0s						
YAK				pmax	pmax		
	comp=E,103nm,3.6s						
YAK	Yakutsk	148.64	340	ePKPbc	PKPbc	05 17 19.5	0.0
HYB	Hyderabad	149.08	115	i PKP	PKPdf	05 17 19.0	+1.1
HYB				e		05 17 22.5	
HYB				e		05 17 27.5	
TYV	Tymovskoe	149.57	314	ePKP2	PKPbc	05 17 22.0	-0.2
TYV				pmax	pmax		
	comp=Z,15nm,0.8s						
KK31	Karatay Array	149.64	61	i PKP2	PKPbc	05 17 21.7	-1.0
KK31				pmax	pmax		
	comp=Z,8.0nm,0.7s						
KKAR	Karatay Array	149.64	61	ePKPdf	PKPdf	05 17 18.3	+0.2
KKAR				ePKPbc	PKPbc	05 17 22.5	-0.2
IPM	Ipoh	150.01	166	ePKPdf	PKPdf	05 17 20.0	+0.5
IPM				ePKPbc	PKPbc	05 17 24.1	-0.4
YSS	Yuzh-Sakhalins	150.65	307	ePKIKP	PKPbc	05 17 28.0	+3.0
KULM	Kulim	150.72	165	ePKPdf	PKPdf	05 17 19.8	-0.8
KULM				ePKPbc	PKPbc	05 17 25.6	-0.6
MNAS	Manas	151.16	62	PKIKP	PKPdf	05 17 20.9	+0.3
MNAS				pmax	pmax		
	comp=Z,40nm,1.2s						
ASAJ	Asahikawa	151.31	301	PKPbc	PKPbc	05 17 25.8	-0.8
	comp=Z,4.6nm,0.4s,baz=110,slow=28,SNR=5.2						
ASAJ	Asahikawa	151.31	301	ePKPbc	PKPbc	05 17 26.4	-0.3
EKS2	Erkin-Say	152.07	62	ePKIKP	PKPdf	05 17 22.9	+0.9
EKS2				e		05 17 29.6	
EKS2	Erkin-Say	152.07	62	ePKPdf	PKPdf	05 17 22.9	+0.9
EKS2				ePKPbc	PKiKP	05 17 29.6	+0.7
SKLT	Songkhla	152.54	164	PKP	PKPab	05 17 42.2	+1.7
AAK	Ala-Archa	152.60	62	ePKIKP	PKPdf	05 17 23.7	+0.9
AAK				e		05 17 30.2	
AAK	Ala-Archa	152.60	62	ePKPdf	PKPdf	05 17 23.7	+0.9
AAK				ePKPbc	PKiKP	05 17 30.2	+0.1
FRU	Bishkek	152.67	61	i PKIKP	PKPbc	05 17 30.0	+0.2
FRU				e		05 21 12.0	
FRU				pmax	pmax		
	comp=Z,50nm,1.7s						
NVS	Novosibirsk	152.97	32	ePKIKP	PKPdf	05 17 23.2	+0.5
NVS				e		05 21 13.6	
NVS				pmax	pmax		
	comp=Z,45nm,1.1s						
NVS				pmax	pmax		
	comp=E,10.0nm,1.2s						
TKM2	Tokmak 2	153.37	61	ePKIKP	PKPdf	05 17 24.0	0.0
TKM2				e		05 17 32.0	
TKM2	Tokmak 2	153.37	61	ePKPdf	PKPdf	05 17 24.0	0.0
TKM2				ePKPbc	PKiKP	05 17 32.0	+0.3
KSH	Kashi	153.98	68	PKPbc	PKPdf	05 17 25.5	+0.6
KSH				PKS	PKSdf	05 20 59.0	-0.2
KSH				ePP	PP	05 21 20.0	-1.5
KSH				SKKS		05 28 07.5	
KSH				LR	LR		
	comp=E,150nm,6.4s						
KSH				LR	LR		
	comp=E,160nm,10.9s						
KSH				LR	LR		
	comp=E,180nm,6.3s						
ZALV	Zalesovo Beam	154.26	32	PKP	PKPdf	05 17 24.1	-0.5
	comp=E,4.0nm,0.8s,baz=267,slow=2.8,SNR=14						
ZALV				PKPbc	PKiKP	05 17 33.2	+0.3
	comp=E,17nm,0.6s,baz=297,slow=3.6,SNR=28						
BOD	Bodaibo	155.76	352	ePKIKP	PKPdf	05 17 24.2	-2.3
BOD				e		05 17 51.5	
BOD				pmax	pmax		
	comp=Z,22nm,1.0s						
PDGK	Podgornoye	156.08	59	PKP2	PKPab	05 17 53.6	-1.4
PDGK				pmax	pmax		
	comp=Z,15nm,0.9s						
KLR	Kul'dur	156.60	318	PKP	PKPdf	05 17 26.8	-1.1
	comp=Z,3.0nm,1.0s,baz=321,slow=4.3,SNR=6.1						
MK31	Makanchi Array	156.83	49	i PKIKP	PKPdf	05 17 27.8	-0.6
MK31				pmax	pmax		
	comp=Z,7.0nm,0.7s						
MKAR	Makanchi Array	156.83	49	PKP	PKPdf	05 17 28.5	+0.2
	comp=Z,2.2nm,0.8s,baz=300,slow=2.4,SNR=16						
MKAR				PKPab	PKPab	05 17 58.8	+0.6
	comp=Z,10nm,0.8s,baz=306,slow=1.6,SNR=4.5						
MKAR				PP	PP	05 21 37.7	+0.9
	comp=Z,8.2nm,1.4s,baz=289,slow=4.4,SNR=3.8						
WMQ	Urumqi	161.55	52	PKP	PKPdf	05 17 34.3	+0.3
WMQ				PKS	PKSdf	05 21 09.5	+2.3
WMQ				PP	PP	05 22 05.0	+2.4
WMQ				SS	SS	05 42 20.0	+1.6
WMQ				LR	LR		
	comp=Z,110nm,21.4s						
WMQ				LR	LR		
	comp=Z,61nm,20.0s						
WMQ				LR	LR		
	comp=Z,59nm,20.0s						
MOY	Mondy	161.62	14	ePKP2	PKPab	05 18 19.6	+0.8
LOEI	Loei	162.61	159	PKP	PKPdf	05 17 42.0	+6.2
CMAR	Chiang Mai Arr	162.66	151	PKP	PKPdf	05 17 35.7	-0.1
	comp=Z,0.7nm,0.3s,baz=246,slow=2.5,SNR=4.9						
CMAR	Chiang Mai Arr	162.66	151	PKIKP	PKPdf	05 17 35.7	-0.1
CMAR				pmax	pmax		
	comp=Z,3.0nm,0.7s						
SKNT	Sakolnakorn	162.75	168	PKP	PKPdf	05 17 36.5	+0.6
CHTO	Chiang Mai	162.98	150	ePKIKP	PKPdf	05 17 36.4	+0.3
CHTO	Chiang Mai	162.98	150	ePKPdf	PKPdf	05 17 36.4	+0.3
CN2	Changchun	163.13	311	ePKP	PKPdf	05 17 32.0	-3.5
CN2				epPKP	pPKPdf	05 17 42.0	-1.6
CN2				ePP	PP	05 22 09.5	-1.3
CN2				eSS	SS	05 42 29.8	-4.7
CN2				AMB	AMB		
	comp=Z,200nm,7.0s						
CN2				LR	LR		
	comp=Z,500nm,17.0s						
CN2				LR	LR		
	comp=Z,300nm,17.0s						
CN2				LR	LR		
	comp=Z,300nm,19.0s						
ZAK	Zakamensk	163.25	10	ePKP2	PKPab	05 18 24.6	-1.4
ZAK				pmax	pmax		
	comp=Z,6.0nm,1.4s						
KSRS	Korea Array	163.28	288	PKP	PKPdf	05 17 35.2	-0.6
	comp=Z,2.0nm,0.9s,baz=149,slow=1.0,SNR=5.5						
KSRS				PKPab	PKPab	05 18 27.7	+1.1
	comp=Z,2.0nm,0.7s,baz=108,slow=4.0,SNR=3.4						
KSRS	Korea Array	163.28	288	PKIKP	PKPdf	05 17 35.2	-0.6
KSRS						05 18 27.7	
KSRS				pmax	pmax		
	comp=Z,2.0nm,0.8s						
KSRS				pmax	pmax		
	comp=Z,2.0nm,0.7s						
KSAR	Wonju Array Be	163.31	288	PKIKP	PKPdf	05 17 35.2	-0.6
KSAR						05 18 27.7	
KSAR	Wonju Array Be	163.31	288	PKP	PKPdf	05 17 35.2	-0.6
KSAR				PKPab	PKPab	05 18 27.7	+1.0
SHL	Shillong	163.87	117	eP	PKPpre	05 17 26.0	
CRAI	Chiangrai	164.83	152	PKP	PKPdf	05 17 38.3	+0.5
SONM	Songino Array	166.09	4	PKP	PKPdf	05 17 37.9	-0.2
	comp=Z,0.6nm,0.5s,baz=276,slow=1.3,SNR=4.7						
SONM				PKPab	PKPab	05 18 39.2	+0.7
	comp=Z,5.4nm,0.9s,baz=331,slow=4.9,SNR=15						
BJI	Beijing	170.95	315	PKP	PKPdf	05 17 43.5	+2.1
BJI				PP	PP	05 22 55.5	+4.7
BJI				LR	LR		
	comp=Z,160nm,22.4s						
BJI				LR	LR		
	comp=Z,150nm,19.7s						
BJI				LR	LR		
	comp=Z,160nm,22.4s						
GTA	Gaotai	171.59	47	ePKP	PKPdf	05 17 42.3	+0.4
GTA				PKPab	PKPab	05 19 04.3	+1.0
GTA				PP	PP	05 22 57.0	+2.7
GTA				SKKS		05 29 43.0	
GTA				SS	SS	05 44 00.8	+0.8
GTA				AMB	AMB		
	comp=Z,140nm,6.9s						
GTA				LR	LR		
	comp=Z,260nm,20.0s						
GTA				LR	LR		
	comp=Z,440nm,20.0s						
GTA				LR	LR		
	comp=Z,170nm,19.5s						
GYA	Guiyang	172.47	172	PKP	PKPdf	05 17 43.0	+0.3
GYA				PKPab	PKPab	05 19 10.8	+3.5
GYA				PKS	PKSdf	05 21 14.3	-0.9
GYA				PP	PP	05 23 02.5	+4.9
GYA				AMB	AMB		
	comp=Z,130nm,8.3s						
HHC	Hu-ho-hao-te	172.49	338	ePKP	PKPdf	05 17 43.5	+1.2
HHC				PP	PP	05 23 01.8	+3.9
HHC				AMB	AMB		
	comp=Z,88nm,11.2s						
HHC				LR	LR		
	comp=Z,240nm,20.4s						
HHC				LR	LR		
	comp=Z,180nm,19.6s						
HHC				LR	LR		
	comp=Z,200nm,20.0s						
CD2	Chengdu	175.44	130	PKP	PKPdf	05 17 43.3	-0.2
CD2				PP	PP	05 23 13.3	+0.3
CD2				SKKS		05 29 59.8	
CD2				AMB	AMB		
	comp=Z,170nm,6.0s						
LZH	Lanzhou	176.12	56	ePKP	PKPdf	05 17 40.0	-3.7
XAN	Xi'an	179.06	276	PKP	PKPdf	05 17 43.8	-0.2
XAN				pPKP	pPKPdf	05 17 50.0	-2.2

MEX 27 05:09:42.1±0.5, 17°.05N×94°.13W, h144km±12km, MD3.6, Chiapas

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TGIG		1.01	105	eP	Pn	05 10 05.0	-1.4
TGIG				eS	Sn	05 10 23.0	-1.9
PCIG		1.60	147	eP	Pn	05 10 11.0	-1.3
PCIG				eS	Sn	05 10 33.8	-1.6
CCIG	Comitan	2.06	111	eP	Pn	05 10 15.9	-1.9
CCIG				eS	Sn	05 10 42.9	-2.2
HUIG	Huatulco	2.28	236	eP	Pn	05 10 16.7	-3.6
HUIG				eS	Sn	05 10 47.6	-2.0
VHO	Vista Hermosa	2.49	271	eP	Pn	05 10 22.1	-0.9
VHO				i S	Sn	05 10 52.6	-1.8
PNIG	Pinotepa	3.88	261	eP	Pn	05 10 37.7	-3.0
PNIG				eS	Sn	05 11 23.2	-2.9

IDC 27 05:20:27.4±2.7, 35°.95N×142°.77E, h0km, mb3.6/3, mb1 3.7/5, mb1mx3.4/45, mbtmp3.6/5, ML3.3/2, Error ellipse: s-maj=61.3km s-min=28.6km az=66.0
JMA 27 05:20:29.9±0.3, 36°.30N×142°.60E, h33km, M3.4
ISC 27 05:20:27.1±2.5, 36°.19N±0°.05×142°.7E±0°.1, h8km±14km, n22, σ1s.63/25, mb3.7/3, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	Chosi	1.55	252	P	Pg	05 20 56.3	-0.4
JHO	Hitachi	1.74	284	P	Pn	05 20 57.8	+0.2
JHO				eS	Sn	05 21 17.9	-2.1
ONAJ	Iwakimizuishiy	1.75	302	P	Pn	05 20 58.0	+0.2
ONAJ				eS	Sn	05 21 18.7	-1.6
JFK	Kawauchi	1.85	310	P	Pn	05 20 59.1	-0.1
JFK				eS	Sn	05 21 20.8	-2.0
BSO1	Boso 1	2.06	222	P	Pb	05 21 04.1	-0.3
BSO1				eS	Sb	05 21 29.0	-1.0
JMM	Marumori	2.24	319	P	Pn	05 21 03.8	-0.7
JMM				eS	Sn	05 21 29.6	-2.7
JFT	Otama	2.29	306	P	Pn	05 21 06.1	+1.0
JFT				S	Sn	05 21 33.0	-0.5
JAG	Ashikaga	2.60	276	P	Pn	05 21 10.6	+1.2
JAG				eS	Sn	05 21 39.0	-2.3
JRY	Ryogami san	3.05	268	P	Pn	05 21 16.7	+1.1
MJAR	Matsushiro Arr	3.61	277	Pn	Pn	05 21 25.1	+1.8
	2.6nm,0.3s,baz=102,slow=8.4,SNR=12						
MJAR				Sn	Sn	05 22 08.6	+2.5
	2.2nm,0.3s,baz=83,slow=12,SNR=4.4						
MAT	Matsushiro	3.62	277	P	Pn	05 21 25.3	+1.9
MAT				S	Sn	05 22 05.1	-1.1
MAT	Matsushiro	3.62	277	P	Pn	05 21 24.8	+1.4
JHJ	Hachijo jima 2	3.88	219	Pn	Pn	05 21 27.3	+0.3
	4.5nm,0.3s,baz=72,slow=20,SNR=2.3						
JHJ				Sn	Sn	05 22 10.5	-2.2
	21nm,0.3s,baz=233,slow=20,SNR=5.2						
H11N2	WAKE ISLAND Hy	26.85	121	T	T	05 54 16.7	
	baz=313,slow=75,SNR=7.0						
H11N1	WAKE ISLAND Hy	26.86	121	T	T	05 54 19.4	
	baz=313,slow=75,SNR=6.6						
H11N3	WAKE ISLAND Hy	26.87	121	T	T	05 54 20.1	
	baz=313,slow=75,SNR=5.0						
H11S1	WAKE ISLAND Hy	27.56	123	T	T	05 55 15.5	
	baz=315,slow=76,SNR=3.5						
H11S3	WAKE ISLAND Hy	27.56	123	T	T	05 55 10.9	
	baz=315,slow=76,SNR=5.7						
H11S2	WAKE ISLAND Hy	27.57	123	T	T	05 55 15.6	
	baz=315,slow=76,SNR=4.0						
SONM	Songino Array	29.09	305	P	P	05 26 30.6	+2.4
	0.3nm,0.4s,baz=109,slow=8.0,SNR=3.7						
MKAR	Makanchi Array	45.42	303	P	P	05 28 50.6	+4.4
	0.6nm,0.7s,baz=88,slow=8.7,SNR=4.7						
WRA	Warramunga Arr	56.38	189	P	P	05 30 08.5	-0.3
	0.7nm,0.9s,baz=5.6,slow=7.0,SNR=4.2						

KRSC 27 05:41:56.7±2.7, 49°.23N×156°.93E, h7km±34km, ML3.7, Kuril Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SKR	Severo-Kuril's	1.55	341	eP	Pn	05 42 23.3	-1.4
SKR				eS	Sn	05 42 44.9	-0.1
ASAK	Asacha	3.22	11	eP	Pb	05 42 52.2	-2.0

RUS	**Russkaya**	**3.36**	**17**	*e*P	Pn	05 42 52.7	+3.1
UGLR	**Uglovaya**	**4.16**	**16**	*e*P	Pn	05 43 05.1	+4.4
AVH	**Avacha**	**4.20**	**15**	*e*P	Pn	05 43 05.1	+3.9
SMAR	**Somma**	**4.21**	**16**	*e*P	Pn	05 43 05.6	+4.1
SDLR	**Sedlovina**	**4.24**	**16**	*e*P	Pn	05 43 05.7	+3.9
KRER	**Koryakskii**	**4.24**	**15**	*e*P	Pn	05 43 05.7	+3.8
KRX	**Arik**	**4.28**	**14**	*e*P	Pn	05 43 06.4	+4.1
GNL	**Ganaly**	**4.52**	**8**	*e*P	Pn	05 43 09.8	+4.2
MKZ	**Mys Kozlova**	**6.11**	**27**	*e*P	Pn	05 43 31.5	+4.2

SOME ***27*** *05:52:25.2, 44.72N×82.05E, h5km*
NNC ***27*** *05:52:29.6±2.1, 44.86N×81.80E, h0km, mb3.0, mpv2.5, Error ellipse: s-maj=33.8km s-min=8.8km az=117.0*
ISC 27 05:52:23.6±1.8**, 44.68N**±0.05**×82.23E**±0.09**, h1**km±18**km, n10, σ0.87/20, 5C-1D, Northern Xinjiang**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
DJR	**Jarkent**	**1.78**	**260**	*e*P	**Pg**	**05 52 57.7**	**+0.1**
DJR	6.2nm,0.1s			*e*S	**Sg**	**05 53 20.7**	**+0.1**
KTMS	5.4nm,0.2s **Ketmen**	**1.83**	**228**	*e*P	**Pg**	**05 52 59.2**	**+0.6**
KTMS	2.7nm,0.4s			*e*S	**Sg**	**05 53 23.7**	**+1.3**
MK31	18nm,0.4s **Makanchi Array**	**2.11**	**1**	⇑Pn	**Pg**	**05 53 03.7**	**-0.4**
MK31	1.8nm,0.2s,baz=191,slow=16			⇑Sn	**Sg**	**05 53 31.4**	**0.0**
KAPS	2.7nm,0.3s,baz=192,slow=26 **Kapalarasan**	**2.12**	**288**	*e*P	**Pb**	**05 53 02.9**	**0.0**
KAPS	1.3nm,0.3s			*e*S	**Sb**	**05 53 30.1**	**+0.3**
MAKZ	4.5nm,0.5s **Makanchi**	**2.13**	**355**	⇑Pn	**Pb**	**05 53 03.3**	**+0.2**
MAKZ	0.6nm,0.2s			⇑Sn	**Sb**	**05 53 30.3**	**+0.2**
SHLS	3.9nm,0.5s **Shalkode**	**2.28**	**229**	*e*P	**Pb**	**05 53 05.8**	**+0.2**
SHLS	6.0nm,0.3s			*e*S	**Sb**	**05 53 35.1**	**+0.8**
PDGK	10nm,0.3s **Podgornoye**	**2.40**	**237**	⇑Pn	**Pb**	**05 53 06.4**	**-1.0**
PDGK	1.8nm,0.5s			⇓Sn	**Sg**	**05 53 39.1**	**-1.4**
MNBS	5.3nm,0.5s **Baschi**	**2.81**	**259**	*e*P	**Pb**	**05 53 13.9**	**-0.6**
MNBS	1.4nm,0.2s			*e*S	**Sb**	**05 53 49.2**	**-0.3**
KPKS	7.5nm,0.5s **Kokpek**	**2.83**	**246**	*e*P	**Pb**	**05 53 13.6**	**-1.2**
KPKS	4.4nm,0.2s			*e*S	**Sb**	**05 53 48.8**	**-1.3**
ARXS	12nm,0.2s **Arharly**	**3.18**	**263**	*e*P	**Pb**	**05 53 21.2**	**+0.2**
ARXS	1.8nm,0.3s			*e*S	**Sb**	**05 54 01.8**	**+1.5**
	6.2nm,0.4s						

IDC 27 06:15:05.7±3.5**, 30.16S×138.69E, h0**km**, mb1 2.9**/3**, mb1mx2.9**/33**, mbtmp2.7**/3**, ML2.6**/3**, Error ellipse: s-maj=102.6km s-min=16.6km az=44.0, South Australia**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
STKA	**Stephens Creek**	**3.03**	**125**	Pn	Pn	06 15 55.6	+0.7
STKA	0.3nm,0.3s,baz=306,slow=12,SNR=5.0			Sn	Sn	06 16 33.2	+1.3
STKA	1.5nm,0.3s,baz=336,slow=19,SNR=5.4			Lg	Lg	06 16 41.0	
ASAR	1.4nm,0.3s,baz=347,slow=18,SNR=5.2 **Alice Springs**	**7.75**	**325**	Pn	Pn	06 16 59.9	0.0
ASAR	0.1nm,0.3s,baz=147,slow=13,SNR=4.8			Sn	Sn	06 18 27.7	-0.6
WRA	0.1nm,0.3s,baz=149,slow=22,SNR=3.1 **Warramunga Arr**	**10.90**	**338**	Pn	Pn	06 17 43.4	+0.3
	0.1nm,0.3s,baz=162,slow=12,SNR=2.6						

NIED ***27*** *06:15:00, 36.70N×140.70E, h5km, Mw3.7 Best double couple: M0 3.67000×10^14 NP1:φs=298.00000°, δ47.00000°, λ-114.00000°. NP2:φs=150.00000°, δ48.00000°, λ-67.00000°.*
IDC ***27*** *06:15:37.5±1.6, 36.77N×140.77E, h0km, mb3.8/7, mb1 3.9/8, mb1mx3.6/47, mbtmp3.8/8, ML3.5/1, Error ellipse: s-maj=35.6km s-min=22.0km az=71.0*
ISCJB ***27*** *06:15:38.4±0.9, 36.66N±0.04×140.75E±0.07, h18km±5km, mb3.7/7, Error ellipse: s-maj=10.7km s-min=4.7km az=22.9*
JMA ***27*** *06:15:39.7, 36.72N×140.65E, h6km±1km, M3.9 Broadband fault plane solution: P waves. NP1: φs=293.00000°, δ62.00000°, λ-120.00000°. NP2: φs=163.00000°, δ40.00000°, λ-47.00000°. Principal axes: T Plg12.0000°, Azm44.0000°; N Plg26.0000°, Azm308.0000°; P Plg61.0000°, Azm156.0000°;*
JMA Felt II J1.
ISC 27 06:15:39.0±1.1**, 36.74N**±0.05**×140.66E**±0.05**, h9**km±7**km, n17, σ1.04/25, mb3.8/7, 6C, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JHO	**Hitachi**	**0.15**	**210**	⇑P	**Pg**	**06 15 42.3**	**-0.1**
JHO				S	**Sg**	**06 15 44.1**	**-0.5**
ONAJ	**Iwakimizuishiy**	**0.38**	**17**	⇑P	**Pb**	**06 15 47.6**	**-0.3**
ONAJ				S	**Sb**	**06 15 53.7**	**-0.1**
JSB	**Shiboa**	**0.64**	**291**	P	**Pb**	**06 15 52.6**	**+0.3**
JSB				S	**Sb**	**06 16 01.4**	**+0.1**
JYT	**Yasato**	**0.64**	**216**	⇑P	**Pg**	**06 15 51.3**	**-0.1**
JYT				S	**Sg**	**06 15 59.8**	**+0.1**
JFK	**Kawauchi**	**0.65**	**15**	⇑P	**Pb**	**06 15 52.3**	**-0.2**
JFK				S	**Sb**	**06 16 01.7**	**+0.1**
JFT	**Otama**	**0.82**	**342**	⇑P	**Pb**	**06 15 55.7**	**+0.3**
JFT				S	**Sb**	**06 16 07.0**	**+0.5**
JFY	**Yanaizu**	**1.01**	**311**	P	**Pn**	**06 15 59.7**	**+0.3**
JAG	**Ashikaga**	**1.02**	**252**	⇑P	**Pg**	**06 15 57.9**	**-0.8**
JAG				S	**Sg**	**06 16 11.5**	**-0.5**
MJAR	**Matsushiro Arr**	**1.98**	**265**	P*g*	**Pn**	**06 16 13.8**	**+1.1**
MJAR	33nm,0.3s,baz=84,slow=12,SNR=77			Lg	Lg	06 16 39.1	
JHJ	49nm,0.3s,baz=84,slow=30,SNR=17 **Hachijo jima 2**	**3.69**	**192**	Pn	**Pn**	**06 16 38.4**	**+2.2**
JHJ	9.8nm,0.3s,baz=252,slow=20,SNR=2.9			Sn	**Sn**	**06 17 16.5**	**-3.2**
SONM	9.3nm,0.3s,baz=234,slow=19,SNR=2.3 **Songino Array**	**27.45**	**305**	P	**P**	**06 21 26.1**	**+0.8**
ZALV	1.0nm,0.7s,baz=110,slow=8.1,SNR=7.4 **Zalesovo Beam**	**41.67**	**313**	P	**P**	**06 23 28.5**	**+0.9**
MKAR	1.2nm,0.4s,baz=99,slow=6.5,SNR=4.8 **Makanchi Array**	**43.76**	**302**	P	**P**	**06 23 46.0**	**+1.3**
KURBB	0.3nm,0.6s,baz=92,slow=10,SNR=3.9 **Kurchatov Arra**	**45.71**	**308**	P	**P**	**06 24 00.4**	**+0.3**
BVAR	1.8nm,0.6s,baz=84,slow=7.8,SNR=11 **Borovoye Array**	**50.32**	**312**	P	**P**	**06 24 36.1**	**+0.2**
WRA	0.6nm,0.5s,baz=75,slow=6.1,SNR=3.4 **Warramunga Arr**	**56.69**	**187**	P	**P**	**06 25 22.5**	**-0.4**
AKASG	0.4nm,0.3s,baz=4.6,slow=7.5,SNR=4.7 **Malin Array Be**	**74.16**	**322**	P	**P**	**06 27 14.7**	**-0.9**
	0.2nm,0.3s,baz=50,slow=4.7,SNR=4.2						

IDC ***27*** *06:47:47.6±1.2, 25.56N×128.59E, h0km, mb3.6/4, mb1 3.9/4, mb1mx3.4/64, mbtmp3.6/4, Error ellipse: s-maj=56.0km s-min=25.1km az=77.0*
ISCJB ***27*** *06:47:51.9±0.4, 25.75N±0.08×125.81E±0.07, h88km±6km, mb3.5/3, Error ellipse: s-maj=16.3km s-min=3.0km az=141.2*
JMA ***27*** *06:47:52.6±0.1, 25.74N×125.81E, h88km±4km, M3.5*
ISC 27 06:47:53.0±1.0**, 25.76N**±0.09**×125.81E**±0.08**, h82**km±10**km, n27, σ0.79/42, mb3.7/4, Southwestern Ryukyu Islands**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JIKM	**Ikemajima**	**0.97**	**211**	P	**Pn**	**06 48 12.0**	**+0.1**
JIKM				S	**Sn**	**06 48 25.9**	**-0.1**
JMJ	**Miyako jima 2**	**1.05**	**206**	P	**Pn**	**06 48 12.9**	**+0.1**
JMJ				S	**Sn**	**06 48 27.0**	**-0.5**
JKE	**Kume jima 2**	**1.05**	**57**	P	**Pn**	**06 48 13.0**	**+0.2**
JKE				S	**Sn**	**06 48 28.3**	**+0.7**
JOGS	**Gusukube**	**1.06**	**200**	P	**Pn**	**06 48 13.1**	**+0.2**
JOGS				S	**Sn**	**06 48 27.8**	**0.0**
JIRB	**Irabujima**	**1.09**	**212**	P	**Pn**	**06 48 13.1**	**-0.2**
JIRB				S	**Sn**	**06 48 27.7**	**-0.7**
JTJ	**Tarama**	**1.50**	**222**	P	**Pn**	**06 48 18.5**	**+0.1**
JTJ				S	**Sn**	**06 48 36.9**	**-0.6**
JAGN	**Aguni-jima**	**1.53**	**57**	P	**Pn**	**06 48 19.4**	**+0.5**
JAGN				S	**Sn**	**06 48 38.4**	**0.0**
JISG	**Ishigakijimahi**	**1.79**	**230**	P	**Pn**	**06 48 22.2**	**0.0**
JISG				S	**Sn**	**06 48 43.5**	**-0.8**
JJT2	**Tamagusuku 2**	**1.79**	**77**	S	**Sn**	**06 48 44.7**	**+0.3**
JIJ	**Ishigaki jima**	**2.05**	**228**	P	**Pn**	**06 48 25.2**	**-0.4**
JIJ				S	**Sn**	**06 48 48.0**	**-2.5**
JNTH	**Nagotoyohara**	**2.13**	**69**	P	**Pn**	**06 48 26.7**	**0.0**
JKRS	**Kuro-shima**	**2.22**	**228**	P	**Pn**	**06 48 27.7**	**-0.3**
JKRS				*e*S	**Sn**	**06 48 54.5**	**-0.2**
JIH	**Iheya**	**2.32**	**56**	P	**Pn**	**06 48 29.3**	**+0.1**
JIH				S	**Sn**	**06 48 55.6**	**-1.4**
IRIF	**Iriomote-Funau**	**2.35**	**233**	P	**Pn**	**06 48 29.5**	**-0.2**
IRIF				S	**Sn**	**06 48 57.6**	**-0.2**
JOW	**Kunigami**	**2.46**	**64**	P	**Pn**	**06 48 30.8**	**-0.4**
JOW				*e*S	**Sn**	**06 48 58.9**	**-1.5**
HATJ	**Hateruma jima**	**2.48**	**227**	P	**Pn**	**06 48 31.6**	**+0.2**
HATJ				*e*S	**Sn**	**06 49 01.5**	**+0.6**
YOJ	**Yonaguni jima**	**2.84**	**244**	P	**Pn**	**06 48 36.9**	**+0.6**
JYNG	**Yonagunijimaku**	**2.90**	**244**	P	**Pn**	**06 48 36.8**	**-0.3**
JOKE	**Okinoerabujima**	**2.95**	**57**	P	**Pn**	**06 48 36.8**	**-0.9**
JOKE				S	**Sn**	**06 49 12.4**	**+0.3**
JTK	**Tokunoshima**	**3.46**	**54**	P	**Pn**	**06 48 45.6**	**+0.9**
JTK				S	**Sn**	**06 49 22.3**	**-2.3**
JAMN	**Amaminishikomi**	**3.90**	**50**	P	**Pn**	**06 48 49.9**	**-0.6**
JAM	**Amami Oshima**	**4.30**	**51**	P	**Pn**	**06 48 55.4**	**-0.6**
JTAJ	**Takarajima**	**4.53**	**41**	P	**Pn**	**06 48 59.7**	**+0.5**
MKAR	**Makanchi Array**	**40.24**	**313**	P	P	06 55 42.3	+21
WRA	0.6nm,0.6s,baz=102,slow=9.8,SNR=6.3 **Warramunga Arr**	**46.18**	**169**	P	**P**	**06 56 09.3**	**-0.3**
ASAR	1.0nm,0.7s,baz=351,slow=8.6,SNR=5.5 **Alice Springs**	**49.75**	**170**	P	**P**	**06 56 37.7**	**+0.5**
YKA	0.4nm,0.4s,baz=359,slow=14,SNR=11 **Yellowknife Ar**	**79.86**	**24**	P	**P**	**06 59 53.1**	**+0.8**
	0.3nm,0.7s,baz=300,slow=5.7,SNR=7.1						

IDC ***27*** *06:48:55.5±0.9, 74.86N×9.08E, h0km, mb3.5/4, mb1 3.7/7, mb1mx3.4/68, mbtmp3.6/7, ML3.1/3, MS3.1/7, Ms1 3.1/7, ms1mx2.7/59, Error ellipse: s-maj=22.4km s-min=11.1km az=87.0*
BER ***27*** *06:48:59.8±3.4, 74.93N×9.78E, h24km±125km, MD1.3, ML2.9(NAO)*
CSEM ***27*** *06:49:01.7±0.4, 75.01N×12.20E, h15km, ML2.9, Error ellipse: s-maj=19.4km s-min=5.4km az=85.0*
NAO ***27*** *06:49:01.0±1.7, 75.06N×12.25E, ML2.9*
ISC 27 06:48:57.8±1.0**, 74.86N**±0.05**×10.7E**±0.1**, h10**km**, n31, σ1.11/25, mb3.3/6, MS3.3/3, Norwegian Sea**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
HSPB	**Hornsund (broa**	**2.45**	**26**	Pn	**Pn**	**06 49 37.8**	**+0.1**
HSPB	**Hornsund (broa**	**2.45**	**26**	Pn	**Pn**	**06 49 37.8**	**+0.1**
HSPB	**Hornsund (broa**	**2.45**	**26**	*e*Pg	**Pb**	**06 49 43.8**	**+1.9**
HSP	**Hornsund**	**2.46**	**26**	Pn	**Pn**	**06 49 37.8**	**0.0**
BRBA	**Barentsburg A**	**3.32**	**13**	Pn	**Pn**	**06 49 48.5**	**-1.1**
SPA0	**Spitsbergen Ar**	**3.59**	**19**	Pn	**Pn**	**06 49 53.2**	**-0.1**
SPA0	baz=207,slow=14 **Spitsbergen Ar**	**3.59**	**19**	Pn	**Pn**	**06 49 53.2**	**-0.1**
SPA0	baz=207,slow=14 **Spitsbergen Ar**	**3.59**	**19**	Pn	**Pn**	**06 49 53.2**	**-0.1**
SPITS	baz=207,slow=14,SNR=620 **Spitsbergen Ar**	**3.59**	**19**	Pn	**Pn**	**06 49 53.6**	**+0.3**
SPITS	baz=200,slow=16,SNR=69			Sn	**Sn**	**06 50 34.5**	**-1.2**
SPITS	baz=205,slow=20,SNR=1.3			LR	LR	06 51 21.6	
HOPEN	comp=Z,93nm,18.8s,baz=290,slow=39 **Hopen**	**3.91**	**58**	*e*P	Pn	06 50 01.6	+3.9
KBS	**Kingsbay**	**4.10**	**3**	Pn	Pn	06 49 57.0	-3.3
KBS	**Kingsbay**	**4.10**	**3**	Pn	Pn	06 49 57.0	-3.3
JMIC	**Jan Mayen**	**6.84**	**245**	LR	LR	06 52 05.3	
ARA0	comp=Z,95nm,18.1s,baz=37,slow=29 **ARCESS Array S**	**6.99**	**132**	Pn	**Pn**	**06 50 40.7**	**+0.7**
ARA0	baz=324,slow=12			Sn	**Sn**	**06 51 58.1**	**-1.2**
ARA0	baz=322,slow=22 **ARCESS Array S**	**6.99**	**132**	Pn	**Pn**	**06 50 40.7**	**+0.7**
ARA0	baz=324,slow=12			Sn	**Sn**	**06 51 58.1**	**-1.2**
ARA0	baz=322,slow=22 **ARCESS Array S**	**6.99**	**132**	Pn	**Pn**	**06 50 40.7**	**+0.7**
ARA0	baz=324,slow=12,SNR=2.3			Sn	**Sn**	**06 51 58.2**	**-1.2**
ARCES	baz=322,slow=22 **ARCESS Array B**	**6.99**	**132**	Pn	**Pn**	**06 50 42.5**	**+2.5**
ARCES	0.3nm,0.3s,baz=324,slow=10,SNR=8.0			Sn	**Sn**	**06 51 57.0**	**-2.5**
ARCES	0.2nm,0.3s,baz=339,slow=25,SNR=3.5			LR	LR	06 53 35.0	
FINES	comp=Z,117nm,19.5s,baz=30,slow=38 **FINESS Array B**	**14.55**	**150**	LR	LR	06 57 30.2	
HFS	comp=Z,44nm,18.3s,baz=6.5,slow=35 **Hagfors**	**14.84**	**174**	Pn	**P**	**06 52 33.2**	**+0.1**
HFS	baz=358,slow=14 **Hagfors**	**14.84**	**174**	Pn	**P**	**06 52 33.2**	**+0.1**
HFS	baz=358,slow=14 **Hagfors**	**14.84**	**174**	Pn	**Pn**	**06 52 27.3**	**+0.1**
HFS	0.1nm,0.3s,baz=4.8,slow=8.7,SNR=2.0 **Hagfors**	**14.84**	**174**	Pn	**P**	**06 52 33.2**	**+0.1**
OBN	baz=358,slow=13,SNR=8.6 **Obninsk**	**22.24**	**139**	LR	LR	07 02 49.7	
AKASG	comp=Z,54nm,20.8s,baz=88,slow=37 **Malin Array Be**	**25.43**	**152**	P	**P**	**06 54 25.6**	**+0.4**
GERES	0.2nm,0.3s,baz=351,slow=11,SNR=2.7 **GERESS Array B**	**26.14**	**176**	P	**P**	**06 54 32.2**	**+0.5**
FRB	0.4nm,0.2s,baz=12,slow=5.2,SNR=2.9 **Frobisher Bay**	**27.63**	**290**	LR	LR	07 04 24.7	
YKA	comp=Z,79nm,19.7s,baz=240,slow=34 **Yellowknife Ar**	**38.37**	**322**	P	P	06 56 15.2	-3.1
ILAR	0.5nm,0.9s,baz=13,slow=8.7,SNR=7.4 **Eielson Array**	**39.86**	**345**	P	**P**	**06 56 29.4**	**-1.3**
MKAR	0.8nm,0.9s,baz=359,slow=8.4,SNR=5.0 **Makanchi Array**	**40.70**	**92**	P	P	06 56 44.1	+6.1
GEYT	0.2nm,0.5s,baz=351,slow=7.3,SNR=5.2 **Ailbeck**	**43.01**	**121**	LR	LR	07 16 08.5	
TORD	comp=Z,66nm,19.0s,baz=5.0,slow=38 **Torodi Ar. Bea**	**61.91**	**190**	P	P	06 59 14.5	-2.7
	0.8nm,1.0s,baz=356,slow=7.4,SNR=3.8						

SJA ***27*** *06:56:09.2±0.5, 40.71S×72.53W, h39km±39km, ML3.8, MW4.4*
IDC ***27*** *06:56:10.8±0.8, 40.25S×72.04W, h0km, mb4.2/8, mb1 4.5/9, mb1mx4.3/23, mbtmp4.3/9, ML5.5/1, MS4.2/6, Ms1 4.2/6, ms1mx3.8/18, Error ellipse: s-maj=23.6km s-min=12.2km az=35.0*
ISCJB ***27*** *06:56:14.6±0.4, 40.45S±0.04×71.83W±0.10, h33km, mb4.8/22, MS4.2/5, Error ellipse: s-maj=10.6km s-min=5.2km az=7.6*
NEIC ***27*** *06:56:17.4±1.1, 40.36S×71.73W, h41km±11km, mb4.8/16, Error ellipse: s-maj=15.6km s-min=8.3km az=88.0*
ISC 27 06:56:16.3±0.5**, 40.45S**±0.05**×72.11W**±0.08**, h35**km**, n72, σ1.73/75, mb4.8/22, MS4.3/5, 1C-2D, Central Chile**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PLCA	**Paso Flores**	**1.22**	**104**	*i* P	**Pn**	**06 56 35.1**	**-1.8**
PLCA	comp=Z,885nm,0.3s			IAML		06 56 36.6	
PLCA	comp=Z,2μm,0.3s			IAML		06 56 36.7	
PLCA				*i* S	**Sn**	**06 56 54.9**	**+2.7**
PLCA	**Paso Flores**	**1.22**	**104**	Pg	**Pn**	**06 56 34.7**	**-2.2**
PLCA	comp=Z,288nm,0.3s,baz=314,slow=12,SNR=1638			Lg	Lg	06 56 50.8	
CANA	comp=Z,96nm,0.3s,baz=256,slow=21,SNR=7.2 **Caviahue**	**2.69**	**18**	*e*P	**Pn**	**06 56 57.7**	**+0.5**
CANA				*e*S	**Sn**	**06 57 32.8**	**+4.2**
CANA	comp=Z,157nm,0.7s			IAML		06 57 44.9	
CHRN	**Cochrane**	**6.80**	**183**	*e*Pn	**Pn**	**06 57 55.3**	**+1.7**
ROC1	**El Roble**	**7.51**	**7**	*e*P	**Pn**	**06 58 02.8**	**-0.7**
ROC1	**El Roble**	**7.51**	**7**	*e*P	**Pn**	**06 57 60.0**	**-3.6**
ROC1	**El Roble**	**7.51**	**7**	*e*Pn	**Pn**	**06 58 02.0**	**-1.6**
AAGR	**Agrelo**	**7.81**	**21**	*e*P	**Pn**	**06 58 08.4**	**+0.9**
AAGR	**Agrelo**	**7.81**	**21**	⇓*e*P	**Pn**	**06 58 10.1**	**+2.6**
ARCO	**CERRO ARCO**	**8.01**	**20**	*e*P	**Pn**	**06 58 10.9**	**+0.6**
ARCO	comp=Z,11nm,0.7s			IAML		06 58 52.7	
ARCO				*e*S	**Sn**	**06 59 40.2**	**+0.4**
ARCO	**CERRO ARCO**	**8.01**	**20**	*e*P	**Pn**	**06 58 11.8**	**+1.4**
ARCO	comp=Z,11nm,0.7s			IAML		06 58 52.7	
TRQA	**Tornquist**	**8.22**	**76**	*e*Pn	**Pn**	**06 58 11.6**	**-1.4**
ASAL	**Salagasta**	**8.28**	**20**	*e*P	**Pn**	**06 58 14.5**	**+0.7**
ASAL	**Salagasta**	**8.28**	**20**	*e*P	**Pn**	**06 58 15.3**	**+1.4**
ASAL				*e*P		**06 58 15.3**	**+1.4**
AUSP	**Uspallata**	**8.50**	**16**	*e*P	**Pn**	**06 58 17.8**	**+0.7**
AUSP	**Uspallata**	**8.50**	**16**	*e*P	**Pn**	**06 58 15.9**	**-1.3**
RTLS	**Leoncito**	**8.93**	**16**	*e*P	**Pn**	**06 58 24.1**	**+1.1**
RTLS	**Leoncito**	**8.93**	**16**	*e*P	**Pn**	**06 58 22.0**	**-1.1**
ACAN	**Cantantal**	**9.07**	**27**	*e*P	**Pn**	**06 58 25.6**	**+0.9**
MRA	**San Martin**	**9.53**	**35**	*e*P	**Pn**	**06 58 32.1**	**+1.0**
RTLL	**Cerro Villicun**	**9.57**	**19**	*e*P	**Pn**	**06 58 30.5**	**-1.0**
RTLL	**Cerro Villicun**	**9.57**	**19**	*e*P	**Pn**	**06 58 30.6**	**-1.0**
AGUA	**GUANDACOL**	**11.33**	**16**	*e*P	**Pn**	**06 58 54.2**	**-1.6**
LVC	**Limon Verde**	**17.99**	**10**	P	**Pn**	**07 00 20.5**	**-3.4**
LVC	comp=Z,15nm,0.3s,baz=201,slow=7.9,SNR=9.3 **Limon Verde**	**17.99**	**10**	*e*Pn	**Pn**	**07 00 22.1**	**-1.9**
CPUP	comp=Z,25nm,0.9s **Villa Florida**	**18.69**	**46**	P	**Pn**	**07 00 33.7**	**+1.7**
CPUP	comp=Z,0.4nm,0.3s,baz=234,slow=7.9,SNR=14			LR	LR	07 08 47.3	
PB01	comp=Z,916nm,21.0s,baz=218,slow=41 **IPOC Station P**	**19.48**	**7**	*e*P	**P**	**07 00 39.9**	**-0.4**
LPAZ	comp=Z,23nm,1.0s **La Paz**	**24.32**	**9**	P	**P**	**07 01 28.3**	**-3.1**
SIV	comp=Z,13nm,1.0s,baz=152,slow=9.8,SNR=19 **San Ignacio**	**26.19**	**25**	P	**P**	**07 01 46.1**	**-1.6**
SAML	comp=Z,9.3nm,1.0s,baz=221,slow=8.5,SNR=11 **Samuel**	**32.36**	**17**	*e*P	**P**	**07 02 42.2**	**-0.3**
VNA3	comp=Z,12nm,1.5s **Neumayer Olymp**	**43.47**	**155**	P	**P**	**07 04 13.4**	**-2.1**
VNA1	**Neumayer--Stat**	**43.83**	**154**	P	**P**	**07 04 16.9**	**-1.4**
VNA2	**Neumayer--Watz**	**44.15**	**155**	P	**P**	**07 04 19.5**	**-1.5**
SNAA	baz=259,slow=3.2 **Sanae**	**45.69**	**156**	P	**P**	**07 04 31.7**	**-1.6**
SNAA	**Sanae**	**45.69**	**156**	*e*P	**P**	**07 04 31.9**	**-1.3**
QSPA	comp=Z,972nm,0.5s **South Pole Qui**	**49.80**	**180**	*e*P	**P**	**07 05 05.9**	**+0.6**
RKT	comp=Z,74nm,1.2s **Rikitea**	**55.06**	**268**	*e*LR	LR	07 22 01.3	
VNDA	comp=Z,219nm,27.5s **Vanda**	**57.78**	**192**	P	**P**	**07 06 05.1**	**+1.8**
SYO	comp=Z,2.3nm,1.0s,baz=146,slow=4.0,SNR=7.8 **Syowa Base**	**59.92**	**157**	⇓*e*P	**P**	**07 06 16.0**	**-2.2**
SYO	**Syowa Base**	**59.92**	**157**	⇓*e*pP	pP	07 06 27.4	-1.5
MAW	**Mawson**	**67.03**	**163**	LR	LR	07 38 17.5	
TAOE	comp=Z,193nm,18.5s,baz=236,slow=38 **Nuku Hiva Isla**	**67.61**	**278**	*e*LR	LR	07 27 48.0	
PPT2	comp=Z,419nm,25.3s **Papeete2**	**69.39**	**264**	*e*LR	LR	07 28 35.2	
PPT	comp=Z,142nm,24.0s **Papeete**	**69.40**	**264**	LR	LR	07 29 07.3	
LRAL	comp=Z,157nm,19.1s,baz=304,slow=28 **Lakeview Retre**	**74.41**	**347**	*e*P	**P**	**07 07 50.1**	**-0.2**
TXAR	comp=Z,33nm,1.6s **Lajitas Array**	**75.36**	**332**	P	**P**	**07 07 55.0**	**-1.0**
TXAR	comp=Z,0.7nm,0.7s,baz=157,slow=8.2,SNR=9.0			LR	LR	07 36 06.1	
DBIC	comp=Z,97nm,20.4s,baz=0.0,slow=32 **Dimbokro**	**77.38**	**70**	P	**P**	**07 08 06.5**	**-1.4**
DBIC	comp=Z,4.1nm,0.7s,baz=189,slow=4.7,SNR=7.1			LR	LR	07 37 23.8	
LAZ	comp=Z,180nm,21.9s,baz=194,slow=32 **Ladron**	**81.19**	**331**	*e*P	**P**	**07 08 29.3**	**+0.9**
ANMO	**Albuquerque**	**81.43**	**332**	P	**P**	**07 08 29.0**	**-0.6**
ANMO	comp=Z,2.9nm,0.8s,baz=160,slow=4.4,SNR=9.8 **Albuquerque**	**81.43**	**332**	*e*P	**P**	**07 08 30.9**	**+1.3**
T25A	comp=Z,4.7nm,1.0s **Trinidad**	**82.71**	**335**	*e*P	**P**	**07 08 37.4**	**+1.1**
SDCO	comp=Z,1.1nm,1.1s **Great Sand Dun**	**83.62**	**334**	*e*P	**P**	**07 08 42.1**	**+1.0**
SMCO	comp=Z,3.8nm,1.2s **Snowmass**	**85.41**	**334**	*e*P	**P**	**07 08 51.7**	**+1.5**
KNB	comp=Z,17nm,1.9s **Kanab**	**85.67**	**328**	*e*P	**P**	**07 08 53.1**	**+1.8**
TORD	comp=Z,9.5nm,1.1s **Torodi Ar. Bea**	**86.49**	**70**	P	**P**	**07 08 54.6**	**-1.1**
ECSD	comp=Z,2.4nm,1.1s,baz=222,slow=6.0,SNR=5.2 **EROS Data Cent**	**86.67**	**342**	*e*P	**P**	**07 08 55.8**	**-0.1**
P18A	comp=Z,21nm,1.4s **Preston Nutter**	**86.96**	**331**	*e*P	**P**	**07 08 59.8**	**+2.0**
R11A	comp=Z,8.6nm,0.3s **Troy Canyon, C**	**87.93**	**327**	*e*P	**P**	**07 09 05.3**	**+3.0**
DUG	comp=Z,7.8nm,1.5s **Dugway, Tooele**	**88.42**	**330**	*e*P	**P**	**07 09 06.3**	**+1.8**
HWUT	comp=Z,9.0nm,1.5s **Hardware Ranch**	**89.18**	**332**	*e*P	**P**	**07 09 09.6**	**+1.4**
PDAR	comp=Z,25nm,1.7s **Pinedale Array**	**89.49**	**333**	P	**P**	**07 09 09.2**	**-0.4**
IMW	comp=Z,1.0nm,0.9s,baz=140,slow=5.8,SNR=6.9 **Indian Meadow**	**90.96**	**333**	*e*P	**P**	**07 09 17.8**	**+1.2**
ILAR	comp=Z,5.7nm,1.3s **Eielson Array**	**119.87**	**332**	PKP	**PKPdf**	**07 15 00.7**	**-1.0**
SEY	comp=Z,0.4nm,0.9s,baz=125,slow=1.4,SNR=3.5 **Seymchan**	**145.46**	**326**	PKPbc	**PKPdf**	**07 15 46.6**	**-2.9**
HYB	comp=Z,3.3nm,0.9s,baz=70,slow=3.6,SNR=8.2 **Hyderabad**	**145.83**	**124**	*i* PKP	**PKPab**	**07 15 53.0**	**+0.4**
NRIK	**Noril'sk**	**149.11**	**14**	PKPbc	**PKPbc**	**07 15 59.2**	**-0.4**
YAK	comp=Z,1.5nm,0.4s,baz=340,slow=5.7,SNR=5.0 **Yakutsk**	**154.69**	**336**	PK

JAH S Sn 07 04 00.9 +0.7
ERM Erimo 2.18 15 *ce*P Pn 07 03 55.9 +1.3
ERM pmax pmax
comp=Z,67nm,1.0s
ERM Erimo 2.18 15 *e*Pn Pn 07 03 56.1 +1.5
ASAJ Asahikawa 4.21 2 P Pn 07 04 23.4 +1.0
comp=Z,6.0nm,0.3s,baz=224,slow=13,SNR=9.9
ASAJ S Sn 07 05 09.9 -0.3
comp=Z,3.7nm,0.3s,baz=89,slow=15,SNR=3.5
ASAJ Asahikawa 4.21 2 *e*Pn Pn 07 04 22.8 +0.4
ASAJ P Pn 07 04 23.4 +1.0
ASAJ S Sn 07 05 09.9 -0.3
MAJO Matsushiro 4.70 226 *c i*P Pn 07 04 32.0 +2.8
MAJO Matsushiro 4.70 226 *e*Pn Pn 07 04 31.8 +2.5
MAT Matsushiro 4.70 226 P Pn 07 04 32.0 +2.8
MAT S Sn 07 05 25.9 +3.4
MJAR Matsushiro Arr 4.70 226 P Pn 07 04 32.4 +3.2
comp=Z,7.2nm,0.3s,baz=32,slow=13,SNR=71
MJAR LR LR 07 06 37.5
comp=Z,376nm,21.5s,baz=50,slow=42
YUK Yuzh-Kuril'sk 4.87 31 *e*P Pn 07 04 31.9 +0.4
YUK *e*S Sn 07 05 24.7 -1.9
YUK pmax pmax
comp=Z,102nm,0.2s
YUK pmax pmax
comp=N,42nm,0.1s
YUK pmax pmax
comp=E,65nm,0.1s
SHO Shikotan 5.17 39 *e*P Pn 07 04 34.4 -1.1
SHO *e*S Sn 07 05 26.0 -7.8
SHO pmax pmax
comp=Z,18nm,0.3s
SHO pmax pmax
comp=E,10.0nm,0.2s
SHO pmax pmax
comp=N,7.0nm,0.3s
YSS Yuzh-Sakhalins 7.04 2 *e*P Pn 07 05 02.5 +1.2
YSS pmax pmax
comp=Z,30nm,1.1s
YSS Yuzh-Sakhalins 7.04 2 *e*Pn Pn 07 05 02.8 +1.5
JHJ Hachijo jima 2 7.09 198 P Pn 07 05 05.5 +3.4
comp=Z,14nm,0.3s,baz=250,slow=24,SNR=3.3
JHJ S Sn 07 06 17.4 -4.0
comp=Z,11nm,0.3s,baz=60,slow=17,SNR=2.8
USRK Ussuriysk Ar. 8.83 302 P Pn 07 05 28.9 +3.0
comp=Z,1.0nm,0.3s,baz=112,slow=14,SNR=20
USRK LR LR 07 08 44.7
comp=Z,289nm,18.8s,baz=118,slow=37
MDJ Mudanjiang 10.57 301 *e*Pn Pn 07 05 51.5 +1.8
comp=Z,46nm,1.1s
KSRS Korea Array 11.56 262 P Pn 07 06 06.3 +3.2
comp=Z,0.4nm,0.3s,baz=80,slow=14,SNR=5.4
KSRS LR LR 07 10 16.7
comp=Z,158nm,18.6s,baz=68,slow=36
KSAR Wonju Array Be 11.59 262 P Pn 07 06 06.4 +2.7
KSAR Wonju Array Be 11.59 262 P Pn 07 06 06.3 +2.7
KLR Kul'dur 12.00 324 LR LR 07 10 48.6
comp=Z,242nm,18.7s,baz=148,slow=37
KLR Kul'dur 12.00 324 *e*P Pn 07 06 09.6 +0.5
NKL Nikolayevsk 13.29 356 *e*P Pn 07 06 27.0 +0.3
PETK Petropavlovsk- 16.84 33 LR LR 07 13 33.6
comp=Z,50nm,21.2s,baz=232,slow=36
MA2 Magadan 20.39 12 P P 07 07 53.9 +0.1
comp=Z,3.1nm,0.5s,baz=186,slow=16,SNR=3.1
YAK Yakutsk 23.46 345 LR LR 07 17 27.9
comp=Z,33nm,20.6s,baz=182,slow=36
YAK Yakutsk 23.46 345 *e*P P 07 08 23.6 -2.6
YAK pmax pmax
comp=Z,19nm,0.7s
SEY Seymchan 23.82 11 P P 07 08 29.2 -0.4
comp=Z,6.5nm,0.9s,baz=179,slow=7.8,SNR=15
SEY Seymchan 23.82 11 *ce*P P 07 08 30.2 +0.5
BOD Bodaibo 25.57 324 *e*P P 07 08 44.2 -1.4
BOD pmax pmax
comp=Z,6.0nm,1.3s
ULN Ulaanbaatar 26.49 299 *ce*P P 07 08 54.7 +0.5
ULN pmax pmax
comp=Z,3.0nm,0.8s
SONM Songino Array 26.93 299 P P 07 08 57.4 -0.8
comp=Z,1.9nm,0.6s,baz=90,slow=9.5,SNR=11
SONM LR LR 07 20 09.1
comp=Z,196nm,18.1s,baz=136,slow=38
ENH Enshi 28.44 261 *e*P P 07 09 10.4 -1.3
H11N2 WAKE ISLAND Hy 29.14 127 T T 07 40 02.8
baz=319,slow=76,SNR=1476
TLY Talaya 29.11 307 LR LR 07 21 21.3
comp=Z,88nm,18.6s,baz=136,slow=37
TLY Talaya 29.11 307 *e*P P 07 09 14.0 -3.5
TLY pmax pmax
comp=Z,4.0nm,0.8s
TLY MLR MLR
comp=Z,89nm,18.0s
H11N1 WAKE ISLAND Hy 29.12 127 T T 07 40 00.8
baz=319,slow=76,SNR=1786
H11N3 WAKE ISLAND Hy 29.13 127 T T 07 40 05.0
baz=319,slow=76,SNR=2596
ZAK Zakamensk 29.18 304 *e*P P 07 09 15.5 -2.7
ZAK pmax pmax
comp=Z,2.0nm,1.8s
H11S1 WAKE ISLAND Hy 29.92 128 T T 07 41 02.4
baz=321,slow=76,SNR=139
H11S3 WAKE ISLAND Hy 29.92 128 T T 07 41 02.7
baz=321,slow=76,SNR=92
H11S2 WAKE ISLAND Hy 29.94 128 T T 07 41 04.2
baz=321,slow=76,SNR=89
BILL Bilibino 31.06 17 *e*P P 07 09 34.5 +0.1
BILL *e* 07 10 36.4
BILL *e*PPP PPP 07 10 45.9
BILL pmax pmax
comp=Z,2.0nm,0.7s
BILL MLR MLR
comp=Z,56nm,16.0s
TIXI Tiksi 32.54 352 P P 07 09 46.7 -0.7
comp=Z,2.4nm,0.5s,baz=141,slow=4.5,SNR=6.8
ZALV Zalesovo Beam 40.59 310 P P 07 10 55.8 -0.3
comp=Z,4.4nm,0.5s,baz=88,slow=7.1,SNR=16
ZALV LR LR 07 28 32.4
comp=Z,113nm,18.6s,baz=92,slow=37
NRIK Noril'sk 41.00 334 P P 07 10 58.8 -0.5
comp=Z,1.8nm,0.5s,baz=130,slow=8.7,SNR=5.2
NRIK LR LR 07 28 49.7
comp=Z,147nm,18.3s,baz=118,slow=37
CHTO Chiang Mai 42.78 253 *e*P P 07 11 14.3 -0.2
CHTO pmax pmax
comp=Z,4.0nm,0.5s
CHTO Chiang Mai 42.78 253 *e*P P 07 11 14.2 -0.2
comp=Z,3.9nm,0.5s
CMAR Chiang Mai Arr 43.01 253 P P 07 11 16.3 0.0
comp=Z,2.6nm,0.3s,baz=49,slow=6.4,SNR=6.2
MKAR Makanchi Array 43.29 300 P P 07 11 17.9 -0.5
comp=Z,3.0nm,0.7s,baz=84,slow=10.0,SNR=30
MKAR LR LR 07 30 07.9
comp=Z,96nm,19.0s,baz=92,slow=37
KDAK Kodiak Island 44.48 44 *ce*P P 07 11 29.1 +1.5
KURK Kurchatov 44.80 306 P P 07 11 30.4 0.0
KURK pmax pmax
comp=Z,8.0nm,0.6s
KURK Kurchatov 44.80 306 P P 07 11 30.4 0.0
KURBB Kurchatov Arra 44.88 306 P P 07 11 30.4 -0.6
comp=Z,8.0nm,0.6s,baz=80,slow=8.5,SNR=31
ILAR Eielson Array 46.67 34 P P 07 11 46.0 +1.1
comp=Z,6.5nm,0.3s,baz=261,slow=6.1,SNR=20
GUN Gumba 47.68 274 *e*P P 07 11 53.5 -0.2
comp=Z,72nm,0.9s
KKN Kakani 48.20 274 *e*P P 07 11 57.3 -0.2
comp=Z,37nm,0.6s
PKIN Phulchoki 48.21 273 *e*P P 07 11 57.1 -0.6
DMN Daman 48.42 274 *e*P P 07 11 59.2 -0.1
GKN Gorkha 48.59 274 *e*P P 07 12 00.1 -0.3
comp=Z,15nm,0.6s
TKM2 Tokmak 2 48.98 297 *e*P P 07 12 02.9 -0.4
TKM2 pmax pmax
comp=Z,9.0nm,0.8s
TKM2 Tokmak 2 48.98 297 *e*P P 07 12 02.9 -0.4
comp=Z,8.9nm,0.8s
BRVK Borovoye 49.29 311 *ce*P P 07 12 05.7 +0.4
BRVK pmax pmax
comp=Z,3.0nm,0.6s
KOLN Koldanda 49.50 275 *e*P P 07 12 07.3 -0.2
PYUN Piuthan 49.80 275 *e*P P 07 12 09.6 -0.2
comp=Z,28nm,0.8s
AAK Ala-Archa 49.84 297 P P 07 12 09.0 -0.8
comp=Z,1.3nm,0.3s,baz=59,slow=7.6,SNR=5.5
AAK LR LR 07 34 11.9
comp=Z,81nm,20.1s,baz=72,slow=37
AAK Ala-Archa 49.84 297 *e*P P 07 12 09.5 -0.3
AAK pmax pmax
comp=Z,6.0nm,0.9s
EKS2 Erkin-Say 50.32 297 *e*P P 07 12 12.4 -1.0
EKS2 pmax pmax
comp=Z,3.0nm,0.8s
EKS2 Erkin-Say 50.32 297 *e*P P 07 12 12.4 -1.0
comp=Z,3.3nm,0.8s
INK Inuvik 51.49 28 P P 07 12 23.0 +1.3
comp=Z,1.7nm,0.6s,baz=301,slow=7.1,SNR=15
INK Inuvik 51.49 28 P P 07 12 23.0 +1.3
INK pmax pmax
comp=Z,2.0nm,0.6s
KKAR Karatay Array 52.38 299 *e*P P 07 12 27.6 -1.1
KKAR pmax pmax
comp=Z,5.0nm,0.7s
KKAR Karatay Array 52.38 299 *e*P P 07 12 27.6 -1.1
comp=Z,5.3nm,0.7s
SVE Sverdlovsk 53.52 317 *e*P P 07 12 37.3 +0.4
SVE pmax pmax
comp=Z,23nm,0.8s
ARU Arti 54.73 317 *d i*P P 07 12 45.0 -0.7
ARU 07 14 44.7
ARU S S 07 20 23.3 +0.4
ARU SS SS 07 24 10.2 +4.5
ARU pmax pmax
comp=Z,19nm,1.0s
ABKAR Akbulak array 56.69 309 *e*P P 07 12 59.1 -0.7
comp=Z,7.9nm,0.6s
WRA Warramunga Arr 60.01 189 P P 07 13 22.6 -0.7
comp=Z,5.0nm,0.7s,baz=6.5,slow=7.1,SNR=30
YKA Yellowknife Ar 60.95 31 P P 07 13 29.7 +0.5
comp=Z,0.8nm,0.7s,baz=302,slow=6.4,SNR=20
GEYT Alibeck 63.13 298 P P 07 13 44.1 -0.2
comp=Z,5.2nm,0.7s,baz=46,slow=4.3,SNR=9.1
GEYT LR LR 07 42 08.4
comp=Z,55nm,18.1s,baz=330,slow=37
ASAR Alice Springs 63.74 189 P P 07 13 48.4 +0.1
comp=Z,2.5nm,0.9s,baz=9.3,slow=6.3,SNR=22
ASAR Alice Springs 63.74 189 P P 07 13 48.4 +0.1
ASAR pmax pmax
comp=Z,2.0nm,0.7s
VRH Novokhopyorsk 65.97 317 *e*P P 07 13 59.8 -2.7
VRH pmax pmax
comp=Z,10.0nm,0.9s
OBN Obninsk 66.25 323 *e*P P 07 14 04.2 -0.1
OBN *e* 07 14 12.1
OBN *e* 07 14 39.0
OBN *e*PPP PPP 07 18 04.3
OBN pmax pmax
comp=Z,7.0nm,0.5s
LPSR Galich'ya Gora 66.59 320 *e*P P 07 14 05.0 -1.5
LPSR pmax pmax
comp=Z,10.0nm,0.9s
FINES FINESS Array B 66.63 332 P P 07 14 06.1 -0.4
comp=Z,5.5nm,0.7s,baz=44,slow=8.5,SNR=17
FINES LR LR 07 44 09.1
comp=Z,99nm,18.3s,baz=6.5,slow=37
FINES FINESS Array B 66.63 332 *i* P P 07 14 06.0 -0.6
FINES pmax pmax
comp=Z,6.0nm,0.7s
ZEI Tsey 69.57 309 *e*P P 07 14 24.0 -1.6
ZEI pmax pmax
comp=Z,13nm,0.7s
KIV Kislovodsk 69.60 311 *e*P P 07 14 26.6 +0.9
KIV *e* 07 14 43.4
KIV pmax pmax
comp=Z,33nm,1.0s
KIV MLR MLR
comp=Z,49nm,15.0s
KIV Kislovodsk 69.60 311 *e*P P 07 14 26.0 +0.3
comp=Z,16nm,0.8s
KBZ Khabaz 69.61 310 P P 07 14 25.9 +0.3
comp=Z,10nm,0.8s,baz=64,slow=3.9,SNR=23
KBZ Khabaz 69.61 310 P P 07 14 25.9 +0.3
KBZ pmax pmax
comp=Z,11nm,0.9s
NEY Neytrino 70.00 310 *e*P P 07 14 28.8 +0.6
NEY pmax pmax
comp=Z,1.0nm,0.9s
GNI Garni 70.60 306 LR LR 07 48 27.1
comp=Z,43nm,19.4s,baz=22,slow=38
NB2 NORSAR Subarra 71.83 337 P P 07 14 38.5 -0.3
comp=Z,2.1nm,0.6s,baz=38,slow=6.2
NOA NORSAR Array B 71.83 337 P P 07 14 38.5 -0.3
comp=Z,3.4nm,0.7s,baz=38,slow=6.0,SNR=15
NOA LR LR 07 48 52.6
comp=Z,28nm,21.6s,baz=5.0,slow=38
AKASG Malin Array Be 72.49 322 P P 07 14 42.5 -0.5
comp=Z,4.1nm,0.5s,baz=46,slow=5.9,SNR=20
KIEV Kiev 72.50 322 *e*P P 07 14 42.6 -0.4
KIEV pmax pmax
comp=Z,8.0nm,1.0s
KIEV Kiev 72.50 322 *e*P P 07 14 42.2 -0.7
comp=Z,10.0nm,1.0s
NVAR Mina Array Bea 72.68 54 P P 07 14 46.2 +1.6
comp=Z,0.4nm,0.6s,baz=297,slow=6.5,SNR=3.9
PDAR Pinedale Array 75.12 46 P P 07 14 59.7 +0.9
comp=Z,0.4nm,0.7s,baz=256,slow=2.4,SNR=4.7
KOLS Kolonicke sedl 76.94 324 *e*P P 07 15 09.7 +1.0
STHS Stebnicka Huta 77.04 325 *e*P P 07 15 10.6 +1.3
CRVS Cervenica-Dubn 77.32 325 *e*P P 07 15 12.0 +1.1
BRTR Keskin Array B 77.51 312 P P 07 15 12.1 -0.2
comp=Z,2.9nm,0.6s,baz=128,slow=3.4,SNR=6.5
BRTR Keskin Array B 77.51 312 *e*P P 07 15 12.8 +0.5
BRTR pmax pmax
comp=Z,1.0nm,0.7s
LANS Liptovska Anna 78.02 326 *e*P P 07 15 16.4 +1.6
DPC Dobruska-Polom 78.42 328 *e*P P 07 15 17.6 +0.6
DPC Dobruska-Polom 78.42 328 *e*P P 07 15 17.6 +0.6
VYHS Vyhne 78.78 326 *e*P P 07 15 19.7 +0.7
CLL Collm 78.98 330 *i* P P 07 15 19.8 -0.2
comp=Z,7.0nm,1.2s
CLL *i* 07 15 22.4
KHC Kasperske Hory 80.48 329 *e*P P 07 15 29.0 +0.7
KHC *e*PCP PcP 07 15 33.6 -1.5
KHC Kasperske Hory 80.48 329 *e*P P 07 15 29.0 +0.7
GERES GERESS Array B 80.66 328 P P 07 15 28.6 -0.7
comp=Z,1.5nm,0.7s,baz=26,slow=3.4,SNR=8.8
ANMO Albuquerque 82.17 51 *e*P P 07 15 39.4 +1.7
ANMO pmax pmax
comp=Z,8.0nm,3.6s
PPT Papeete 85.26 117 LR LR 07 47 06.7
comp=Z,45nm,21.6s,baz=316,slow=31
TXAR Lajitas Array 87.78 53 P P 07 16 06.5 +0.7
comp=Z,0.4nm,0.7s,baz=265,slow=3.2,SNR=4.5
KEST Kesra 93.18 323 LR LR 08 01 59.2
comp=Z,254nm,18.5s,baz=242,slow=38

*ISCJB **27** 07:13:49.3±0.7, 46°.0N±0°.1×149°.5E±0°.2, h149km, mb3.6/12, Error ellipse: s-maj=21.2km s-min=6.8km az=42.3*
*SKHL **27** 07:13:52.4±0.4, 45°.01N×150°.32E, h48km±2km, mb4.3/3*
*IDC **27** 07:13:56.7±5.7, 45°.94N×149°.28E, h21km±53km, mb3.2/11, mb1 3.4/12, mb1mx3.2/34, mbtmp3.8/12, Error ellipse: s-maj=21.7km s-min=15.1km az=157.0*
ISC 27 07:13:50.0±0.8, 45°.8N±0°.1×149°.5E±0°.1, h149km, n20,
σ1°53/21, mb3.6/12, Kuril Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
KUR	**Kuril'sk**	**1.30**	**243**	*e*P	**Pn**	**07 14 19.7**	**+2.4**
KUR				AMB	AMB	07 14 20.0	
	50nm,0.3s						
KUR				*e*S	**Sn**	**07 14 40.3**	**+2.0**
KUR				A	A	07 14 43.9	
	230nm,0.3s						
KUR				A	A	07 14 43.9	
	280nm,0.3s						
SHO	**Shikotan**	**2.74**	**225**	*e*P	**Pn**	**07 14 34.0**	**+0.1**
SHO				AMB	AMB	07 14 37.1	
	30nm,0.5s						
SHO				*e*S	**Sn**	**07 15 04.9**	**-3.0**
SHO				A	A	07 15 05.6	
	110nm,0.2s						
SHO				A	A	07 15 05.6	
	240nm,0.2s						
YUK	**Yuzh-Kuril'sk**	**3.15**	**236**	*e*P	Pn	07 14 42.4	+3.2
YUK				AMB	AMB	07 14 44.5	
	60nm,0.3s						
YUK				AMB	AMB	07 14 44.5	
	40nm,0.3s						
YUK				AMB	AMB	07 14 44.5	
	110nm,0.3s						
YUK				*e*S	**Sn**	**07 15 20.1**	**+2.9**
YUK				A	A	07 15 21.0	
	180nm,0.5s						
YUK				A	A	07 15 21.0	
	130nm,0.5s						
YSS	**Yuzh-Sakhalins**	**4.80**	**286**	*e*P	Pn	07 15 14.7	+14
MYR	**Moyori**	**5.71**	**234**	*e*P	**Pn**	**07 15 12.9**	**+0.1**
TYV	**Tymovskoe**	**6.78**	**320**	*e*P	Pn	07 15 44.9	+18
SEY	**Seymchan**	**17.20**	**4**	P	**Pn**	**07 17 41.1**	**+0.2**
	0.2nm,0.3s,baz=172,slow=9.3,SNR=5.7						
SONM	**Songino Array**	**29.28**	**290**	P	**P**	**07 19 38.8**	**+0.8**
	0.3nm,0.3s,baz=92,slow=9.1,SNR=4.1						
ILAR	**Eielson Array**	**38.81**	**38**	P	**P**	**07 21 00.5**	**+0.7**
	5.7nm,0.3s,baz=278,slow=7.9,SNR=7.3						
INK	**Inuvik**	**43.75**	**32**	P	**P**	**07 21 40.9**	**+1.0**
	0.7nm,0.3s,baz=293,slow=6.7,SNR=11						
MKAR	**Makanchi Array**	**45.12**	**297**	P	**P**	**07 21 50.9**	**-0.3**
	0.5nm,0.5s,baz=65,slow=7.7,SNR=7.3						
MKAR				PcP	**PcP**	**07 23 29.2**	**+0.1**
	0.4nm,0.7s,baz=50,slow=3.8,SNR=4.5						
YKA	**Yellowknife Ar**	**53.13**	**35**	P	**P**	**07 22 52.6**	**+0.9**
	0.4nm,0.6s,baz=299,slow=6.8,SNR=9.4						
FINES	**FINESS Array B**	**63.76**	**333**	P	**P**	**07 24 03.7**	**-1.6**
	1.3nm,0.5s,baz=39,slow=9.0,SNR=8.9						
WRA	**Warramunga Arr**	**66.90**	**196**	P	**P**	**07 24 25.8**	**-0.2**
	0.1nm,0.4s,baz=13,slow=6.8,SNR=2.6						
NB2	**NORSAR Subarra**	**68.24**	**340**	P	**P**	**07 24 32.6**	**-1.4**
	comp=Z,2.2nm,0.8s,baz=30,slow=6.5						
NOA	**NORSAR Array B**	**68.24**	**340**	P	**P**	**07 24 32.5**	**-1.6**
	comp=Z,0.8nm,0.6s,baz=30,slow=6.5,SNR=6.1						
AKASG	**Malin Array Be**	**70.87**	**324**	P	**P**	**07 24 48.6**	**-1.6**
	comp=Z,0.8nm,0.4s,baz=35,slow=7.1,SNR=3.0						
BRTR	**Keskin Array B**	**77.29**	**315**	P	**P**	**07 25 27.3**	**-0.6**
	comp=Z,0.8nm,0.7s,baz=98,slow=2.5,SNR=4.7						
GERES	**GERESS Array B**	**78.12**	**332**	P	**P**	**07 25 31.3**	**-1.0**
	comp=Z,0.6nm,0.4s,baz=44,slow=4.1,SNR=4.9						
TXAR	**Lajitas Array**	**80.11**	**58**	P	**P**	**07 25 44.5**	**+1.0**
	comp=Z,0.1nm,0.4s,baz=293,slow=4.7,SNR=4.1						

*IDC **27** 07:21:40.4±2.7, 27°.92N×55°.83E, h0km, mb3.5/5, mb1 3.6/5, mb1mx3.4/52, mbtmp3.6/5, Error ellipse: s-maj=80.5km s-min=26.3km az=156.0*
*CSEM **27** 07:21:43.8, 28°.30N×55°.68E, h6km, ML3.5*
*TEH **27** 07:21:43.8, 28°.30N×55°.68E, h6km, ML3.5*
*ISCJB **27** 07:21:44.4±0.6, 28°.38N±0°.05×55°.83E±0°.08, h10km, mb3.5/5, Error ellipse: s-maj=12.1km s-min=5.6km az=148.8*
ISC 27 07:21:44.5±0.8, 28°.39N±0°.03×55°.82E±0°.05, h10km, n24,
σ1°43/25, mb3.4/5, Southern Iran

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
GENO	**Geno**	**1.03**	**162**	*e*Pg	**Pg**	**07 22 04.4**	**0.0**
GENO	**Geno**	**1.03**	**162**	*e*Pg	**Pg**	**07 22 04.4**	**0.0**
IBND	**Bandar-abas**	**1.13**	**146**	*e*Sg	**Sn**	**07 22 23.7**	**+1.7**
IBND				*e*Pg	**Pb**	**07 22 06.2**	**0.0**
IBND				*e*AMB	AMB	07 22 39.9	
	comp=Z,16μm,0.2s						
NIAN	**Nian**	**1.22**	**132**	*e*Pg	**Pn**	**07 22 07.9**	**+0.3**
NIAN	**Nian**	**1.22**	**132**	*e*Pg	**Pn**	**07 22 07.9**	**+0.3**
NGRK	**Negar Kerman**	**1.48**	**32**	*e*Pn	**Pn**	**07 22 12.5**	**+0.9**
NGRK	**Negar Kerman**	**1.48**	**32**	*e*Pn	**Pn**	**07 22 12.5**	**+0.9**
TVBK	**TV Kerman**	**1.79**	**27**	*e*Pn	**Pg**	**07 22 20.0**	**+1.1**
TVBK	**TV Kerman**	**1.79**	**27**	*e*Pn	**Pg**	**07 22 20.0**	**+1.1**
KHGB	**Koh Gabri**	**2.06**	**16**	*e*Pn	**Pn**	**07 22 19.6**	**+0.2**
KHGB	**Koh Gabri**	**2.06**	**16**	*e*Pn	**Pn**	**07 22 19.6**	**+0.2**
CHMN	**Cheshme madani**	**2.10**	**45**	*e*Pn	**Pg**	**07 22 25.8**	**+1.0**
CHMN	**Cheshme madani**	**2.10**	**45**	*e*Pn	**Pg**	**07 22 25.8**	**+1.0**
IPAR	**Pars**	**2.82**	**301**	*e*Pn	**Pn**	**07 22 32.3**	**+2.3**
IPAR				*e*AMB	AMB	07 23 25.6	
	comp=Z,1μm,0.5s						
IPAR	**Pars**	**2.82**	**301**	*e*Pn	**Pn**	**07 22 32.3**	**+2.3**
IBAF	**Bafgh**	**3.20**	**356**	*e*Pn	**Pb**	**07 22 39.1**	**-2.4**
IBAF				*e*AMB	AMB	07 22 49.5	
	comp=Z,439nm,0.2s						
IBAF	**Bafgh**	**3.20**	**356**	*e*Pn	**Pb**	**07 22 39.1**	**-2.4**
IKAZ	**Kazeroun**	**3.75**	**293**	*e*Pn	**Pn**	**07 22 44.1**	**+1.4**
IKAZ				*e*AMB	AMB	07 23 34.6	
	comp=Z,910nm,0.2s						
IKAZ	**Kazeroun**	**3.75**	**293**	*e*Pn	**Pn**	**07 22 44.1**	**+1.4**
BRTR	**Keskin Array B**	**21.52**	**307**	P	**P**	**07 26 34.2**	**+0.4**
	comp=Z,1.0nm,0.6s,baz=130,slow=12,SNR=3.7						
MKAR	**Makanchi Array**	**27.68**	**41**	P	**P**	**07 27 33.2**	**+0.6**
	comp=Z,0.1nm,0.4s,baz=232,slow=7.0,SNR=2.8						
ZALV	**Zalesovo Beam**	**33.17**	**32**	P	**P**	**07 28 21.7**	**+0.7**
	comp=Z,0.8nm,0.5s,baz=230,slow=6.8,SNR=2.5						
TORD	**Torodi Ar. Bea**	**52.42**	**265**	P	**P**	**07 30 54.6**	**-2.9**
	comp=Z,1.0nm,0.6s,baz=62,slow=7.7,SNR=8.1						
YKA	**Yellowknife Ar**	**89.11**	**356**	P	**P**	**07 34 39.9**	**+0.1**
	comp=Z,0.1nm,0.7s,baz=4.7,slow=4.8,SNR=3.8						

MEX 27 07:23:21.7±0.4, 16°.69N×99°.69W, h7km±2km, MD3.7, Near coast of Guerrero

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ACX	**Acapulco**	**0.24**	**318**	*i* P	Pg	07 23 27.5	+1.0
ACX				*e*S	Sg	07 23 31.0	+1.3
ACP2	**Acapulco**	**0.26**	**315**	*e*P	Pg	07 23 26.7	-0.2
ACP2				*e*S	Sg	07 23 30.7	+0.3
CAIG	**El Cayaco**	**0.66**	**303**	*e*P	Pg	07 23 33.3	-1.0
CAIG				*i* S	Sg	07 23 42.4	-0.5
MEIG	**Mezcala**	**1.23**	**3**	*e*P	Pg	07 23 41.6	-3.7
MEIG				*e*S	Sg	07 23 57.4	-4.0
TLIG	**Tlapa**	**1.38**	**51**	*e*P	Pn	07 23 43.9	-3.7
TLIG				*e*S	Sb	07 24 01.1	-4.8
PNIG	**Pinotepa**	**1.53**	**101**	*i* P	Pn	07 23 44.5	-5.0
PNIG				*e*S	Sn	07 24 07.4	-2.3
ARIG	**Puente Sto Nin**	**1.70**	**339**	*e*P	Pn	07 23 49.4	-2.5
ARIG				*e*S	Sn	07 24 08.8	-5.1

IDC 27 07:31:32.6±2.8, 4°.25S×131°.60E, h0km, mb3.5/1, mb1 3.8/4, mb1mx3.5/49, mbtmp3.6/4, ML3.7/3, Error ellipse: s-maj=132.7km s-min=29.6km az=77.0, Banda Sea

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
FITZ	**Fitzroy Crossi**	**14.96**	**203**	Pn	Pn	07 35 04.5	-0.9
	0.2nm,0.3s,baz=33,slow=18,SNR=3.3						
WRA	**Warramunga Arr**	**15.83**	**171**	Pn	Pn	07 35 15.5	-1.5
	0.2nm,0.3s,baz=354,slow=13,SNR=9.1						
WRA				Sn	Sn	07 38 04.8	-8.5
	0.1nm,0.3s,baz=355,slow=23,SNR=2.7						
ASAR	**Alice Springs**	**19.43**	**174**	P	Pn	07 36 01.8	-0.2
	0.3nm,0.3s,baz=350,slow=10,SNR=21						
MKAR	**Makanchi Array**	**66.84**	**325**	P	P	07 42 26.5	0.0
	0.2nm,0.5s,baz=108,slow=8.4,SNR=3.7						

*IDC **27** 07:36:22.5±0.6, 37°.49N×142°.87E, h0km, mb4.0/18, mb1 4.2/22, mb1mx4.0/53, mbtmp4.1/22, ML3.8/4, MS3.0/5, Ms1 3.0/5, ms1mx2.8/44, Error ellipse: s-maj=18.1km s-min=14.1km az=118.0*
*ISCJB **27** 07:36:24.1±0.4, 37°.46N±0°.04×142°.90E±0°.04, h24km, mb4.0/22, Error ellipse: s-maj=6.2km s-min=5.0km az=170.7*
*JMA **27** 07:36:25.4±0.3, 37°.52N×142°.67E, h10km, M4.4*
*NEIC **27** 07:36:25.4±2.8, 37°.47N×142°.95E, h19km±17km, mb4.4/2, Error ellipse: s-maj=8.2km s-min=6.3km az=108.0*
ISC 27 07:36:25.8±0.5, 37°.50N±0°.05×142°.93E±0°.06, h24km, n52,
σ1°61/51, mb4.0/22, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**1.57**	**308**	P	**Pn**	**07 36 50.7**	**-1.5**
JIO				S	**Sn**	**07 37 08.7**	**-3.1**
JFK	**Kawauchi**	**1.64**	**266**	P	**Pn**	**07 36 51.6**	**-1.6**
JMM	**Marumori**	**1.73**	**283**	P	**Pn**	**07 36 52.6**	**-1.9**
JMM				*e*S	**Sn**	**07 37 12.6**	**-3.2**
ONAJ	**Iwakimizuishiy**	**1.74**	**258**	P	**Pn**	**07 36 53.1**	**-1.6**
JOU	**Okura**	**1.99**	**296**	P	**Pn**	**07 36 57.2**	**-0.8**
JOU				*e*S	**Sn**	**07 37 19.9**	**-2.3**
JFT	**Otama**	**2.06**	**271**	P	**Pn**	**07 36 58.6**	**-0.4**
JFT				*e*S	**Sn**	**07 37 22.3**	**-1.6**
JHO	**Hitachi**	**2.08**	**246**	P	**Pn**	**07 36 58.2**	**-1.1**
MJAR	**Matsushiro Arr**	**3.90**	**257**	Pn	**Pn**	**07 37 24.6**	**+0.4**
	6.2nm,0.3s,baz=79,slow=14,SNR=22						
MJAR				LR	LR	07 39 17.4	
	comp=Z,368nm,18.2s,baz=85,slow=46						
MAJO	**Matsushiro**	**3.90**	**257**	*e*Pn	**Pn**	**07 37 25.0**	**+0.7**

MAT	**Matsushiro**	**3.90**	**257**	P	**Pn**	07 37 25.0	**+0.8**
MAT				S	**Sn**	07 38 09.9	**+0.7**
JHJ2	**Mitsune**	**5.06**	**211**	*e*Pn	**Pn**	07 37 40.0	**-0.2**
JHJ	**Hachijo jima 2**	**5.07**	**211**	Pn	**Pn**	07 37 39.4	**-1.0**
	9.4nm,0.3s,baz=115,slow=23,SNR=6.3						
JHJ				Sn	**Sn**	07 38 32.5	**-5.7**
	13nm,0.3s,baz=109,slow=22,SNR=3.7						
ASAJ	**Asahikawa**	**6.62**	**358**	Pn	**Pn**	07 38 01.2	**-0.3**
	1.7nm,0.3s,baz=223,slow=13,SNR=8.8						
ASAJ				Sn	**Sn**	07 39 12.6	**-3.6**
	0.8nm,0.3s,baz=229,slow=25,SNR=2.8						
ASAJ				LR	LR	07 39 53.4	
	comp=Z,21nm,20.4s,baz=146,slow=32						
ASAJ	**Asahikawa**	**6.62**	**358**	*e*Pn	**Pn**	07 38 01.1	**-0.4**
ASAJ				Pn	**Pn**	07 38 01.2	**-0.3**
ASAJ				Sn	**Sn**	07 39 12.6	**-3.6**
CBIJ	**Chichi jima**	**10.39**	**184**	Pn	**Pn**	07 38 52.0	**-1.4**
CBIJ				Sn	Sn	07 40 40.9	-8.2
JCJ	**Chichijima**	**10.39**	**184**	Pn	**Pn**	07 38 52.0	**-1.4**
	1.9nm,0.3s,baz=284,slow=22,SNR=3.3						
JCJ				Sn	Sn	07 40 40.9	-8.2
	5.7nm,0.3s,baz=283,slow=19,SNR=3.4						
USRK	**Ussuriysk Ar.**	**10.65**	**312**	Pn	Pn	07 39 00.2	+3.5
	0.1nm,0.3s,baz=129,slow=14,SNR=2.6						
JNU	**Nakatsue**	**10.77**	**250**	LR	LR	07 43 35.9	
	comp=Z,121nm,18.4s,baz=124,slow=40						
KSRS	**Korea Array**	**11.93**	**274**	Pn	**Pn**	07 39 16.7	**+2.4**
	0.2nm,0.3s,baz=216,slow=17,SNR=3.1						
KSRS				LR	LR	07 43 30.7	
	comp=Z,88nm,18.4s,baz=190,slow=36						
KSAR	**Wonju Array Be**	**11.96**	**274**	Pn	**Pn**	07 39 16.7	**+1.9**
KLR	**Kul'dur**	**14.25**	**329**	Pn	Pn	07 39 42.3	-3.7
	0.1nm,0.3s,baz=117,slow=12,SNR=5.5						
PETK	**Petropavlovsk-**	**18.69**	**29**	LR	LR	07 48 21.3	
	comp=Z,44nm,20.2s,baz=220,slow=38						
MA2	**Magadan**	**22.66**	**10**	P	**P**	07 41 24.7	**-0.4**
	4.6nm,0.8s,baz=218,slow=10,SNR=4.1						
SEY	**Seymchan**	**26.11**	**10**	P	**P**	07 41 58.5	**+0.9**
	4.9nm,0.7s,baz=195,slow=8.8,SNR=17						
H11N2	**WAKE ISLAND Hy**	**27.37**	**124**	T	T	08 11 04.7	
	baz=316,slow=75,SNR=48						
H11N1	**WAKE ISLAND Hy**	**27.38**	**124**	T	T	08 11 13.4	
	baz=316,slow=75,SNR=18						
H11N3	**WAKE ISLAND Hy**	**27.39**	**124**	T	T	08 11 06.4	
	baz=316,slow=75,SNR=25						
H11S1	**WAKE ISLAND Hy**	**28.12**	**126**	T	T	08 12 08.5	
	baz=318,slow=76,SNR=18						
H11S3	**WAKE ISLAND Hy**	**28.12**	**126**	T	T	08 12 09.3	
	baz=318,slow=76,SNR=16						
H11S2	**WAKE ISLAND Hy**	**28.14**	**126**	T	T	08 12 10.4	
	baz=318,slow=76,SNR=9.7						
SONM	**Songino Array**	**28.54**	**303**	P	**P**	07 42 20.4	**+0.8**
	1.2nm,0.7s,baz=104,slow=8.2,SNR=6.1						
ENH	**Enshi**	**28.58**	**265**	*e*P	**P**	07 42 19.8	**-0.3**
	22nm,0.8s						
ZALV	**Zalesovo Beam**	**42.50**	**312**	P	**P**	07 44 19.4	**+0.4**
	1.5nm,0.5s,baz=91,slow=8.9,SNR=6.1						
MKAR	**Makanchi Array**	**44.90**	**302**	P	**P**	07 44 38.2	**-0.2**
	0.8nm,0.7s,baz=90,slow=11,SNR=9.2						
ILAR	**Eielson Array**	**48.45**	**33**	P	**P**	07 45 06.5	**+0.5**
	1.8nm,0.7s,baz=266,slow=6.5,SNR=22						
TKM2	**Tokmak 2**	**50.47**	**299**	*e*P	**P**	07 45 22.2	**+0.3**
	6.0nm,0.8s						
INK	**Inuvik**	**53.42**	**27**	P	**P**	07 45 44.0	**+0.8**
	0.9nm,0.6s,baz=300,slow=6.0,SNR=14						
WRA	**Warramunga Arr**	**57.70**	**190**	P	**P**	07 46 14.4	**-0.1**
	1.0nm,0.9s,baz=7.1,slow=7.3,SNR=6.7						
ABKAR	**Akbulak array**	**58.56**	**310**	*e*P	**P**	07 46 19.9	**-0.5**
	1.2nm,0.5s						
ASAR	**Alice Springs**	**61.43**	**189**	P	**P**	07 46 40.5	**+0.3**
	0.4nm,0.7s,baz=14,slow=7.1,SNR=5.1						
RES	**Resolute Bay**	**61.85**	**15**	P	**P**	07 46 42.6	**+0.2**
	1.9nm,0.8s,baz=294,slow=6.6,SNR=7.9						
YKA	**Yellowknife Ar**	**62.80**	**31**	P	**P**	07 46 49.3	**+0.4**
	0.7nm,0.6s,baz=302,slow=6.4,SNR=24						
FINES	**FINESS Array B**	**68.96**	**333**	P	**P**	07 47 28.8	**+0.2**
	4.1nm,0.7s,baz=46,slow=8.2,SNR=11						
KBZ	**Khabaz**	**71.51**	**311**	P	**P**	07 47 45.5	**+1.0**
	0.8nm,0.5s,baz=94,slow=4.3,SNR=3.5						
NVAR	**Mina Array Bea**	**73.74**	**54**	P	**P**	07 47 59.9	**+1.7**
	0.9nm,0.8s,baz=287,slow=6.7,SNR=7.1						
NB2	**NORSAR Subarra**	**74.22**	**338**	P	**P**	07 48 00.6	**+0.3**
	comp=Z,0.8nm,0.6s,baz=40,slow=5.9						
NOA	**NORSAR Array B**	**74.22**	**338**	P	**P**	07 48 00.7	**+0.3**
	comp=Z,2.7nm,0.7s,baz=38,slow=5.8,SNR=11						
AKASG	**Malin Array Be**	**74.66**	**323**	P	**P**	07 48 02.9	**-0.1**
	comp=Z,1.8nm,0.5s,baz=46,slow=6.0,SNR=16						
PDAR	**Pinedale Array**	**76.48**	**46**	P	**P**	07 48 14.8	**+0.8**
	comp=Z,0.5nm,0.5s,baz=231,slow=1.5,SNR=7.7						
BRTR	**Keskin Array B**	**79.44**	**312**	P	**P**	07 48 29.9	**-0.4**
	comp=Z,0.4nm,0.4s,baz=29,slow=5.6,SNR=4.0						
TXAR	**Lajitas Array**	**88.88**	**53**	P	**P**	07 49 19.6	**+1.1**
	comp=Z,0.4nm,0.5s,baz=328,slow=2.4,SNR=5.1						
LPAZ	**La Paz**	**145.41**	**61**	PKPbc	**PKPab**	07 56 03.4	**+0.3**
	comp=Z,0.9nm,0.5s,baz=333,slow=2.2,SNR=7.3						

*ISCJB **27** 07:45:31.2±0.2, 60.84N±0.02×149.26W±0.04, h51km±5km, mb3.5/2, Error ellipse: s-maj=3.8km s-min=3.0km az=156.3*
*NEIC **27** 07:45:32.5, 60.85N×149.28W, h24km, ML3.4(AEIC), After AEIC.*
NEIC Felt [II] at Anchorage and Girdwood.
*IDC **27** 07:45:33.1±8.9, 60.78N×149.19W, h66km±49km, mb3.2/2, mb1 3.3/6, mb1mx3.1/55, mbtmp3.3/6, ML3.0/4, Error ellipse: s-maj=102.5km s-min=38.5km az=46.0*

ISC 27 07:45:31.9±1.3, 60.84N±0.03×149.28W±0.03, h36km±2km, n88, σ0893/95, Kenai Peninsula

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PTE	**Portage**	**0.13**	**80**	P	Pn	07 45 37.9	-3.4
RC01	**Rabbit Creek A**	**0.33**	**318**	P	**Pn**	07 45 39.5	**-0.7**
RC01				S	**Sn**	07 45 45.2	**-1.4**
FIB	**Fire Island**	**0.54**	**307**	P	**Pn**	07 45 42.8	**-0.4**
FIB				S	**Sn**	07 45 51.7	**+0.6**
SLKM	**Skilak Lake**	**0.57**	**235**	P	**Pn**	07 45 43.3	**-0.3**
SEW	**Seward**	**0.75**	**187**	P	**Pn**	07 45 45.7	**-0.2**
SEW				S	**Sn**	07 45 56.1	**+0.2**
PMR	**Palmer**	**0.76**	**5**	P	**Pn**	07 45 45.3	**-0.7**
PMR				S	**Sn**	07 45 55.9	**-0.3**
SML	**Sawmill**	**1.07**	**25**	P	**Pn**	07 45 50.4	**0.0**
SML				S	**Sn**	07 46 04.9	**+0.8**
BRLK	**Bradley Lake**	**1.34**	**217**	P	**Pn**	07 45 54.8	**+0.7**
BRLK				S	**Sn**	07 46 12.8	**+2.0**
SCM	**Sheep Creek Mo**	**1.37**	**43**	P	**Pn**	07 45 55.1	**+0.5**
SCM				S	**Sn**	07 46 13.2	**+1.7**
STLK	**Strandline Lak**	**1.40**	**299**	P	**Pn**	07 45 55.0	**0.0**
VMT	**TAPS TI Valdez**	**1.44**	**79**	P	**Pn**	07 45 56.2	**+0.8**
VLZ	**Valdez**	**1.47**	**77**	P	**Pn**	07 45 56.4	**+0.6**
SPCR	**Spurr Chakacha**	**1.47**	**285**	P	**Pn**	07 45 56.1	**+0.2**
SPCR				S	**Sn**	07 46 15.6	**+1.6**
CKL	**Chakachamna La**	**1.53**	**285**	P	**Pn**	07 45 57.0	**+0.2**
SPWE	**Spurr West**	**1.65**	**287**	P	**Pn**	07 45 59.1	**+0.6**
DIV	**Divide**	**1.73**	**79**	P	**Pn**	07 45 60.0	**+0.4**
DIV				S	**Sn**	07 46 22.5	**+2.0**
RDJH	**Redoubt Jeurge**	**1.75**	**263**	P	**Pn**	07 46 00.2	**+0.4**
RSO	**Redoubt South**	**1.75**	**259**	P	**Pn**	07 46 00.6	**+0.7**
KLU	**Klutina**	**1.75**	**67**	P	**Pn**	07 46 00.5	**+0.7**
EYAK	**Cordova Ski Ar**	**1.76**	**98**	P	**Pn**	07 46 00.1	**+0.3**
NCT	**North Crescent**	**1.82**	**263**	P	**Pn**	07 46 01.1	**+0.4**
IVE	**Iliamna Volcan**	**2.03**	**248**	P	**Pn**	07 46 04.1	**+0.4**
INE	**Iliamna NE**	**2.03**	**249**	P	**Pn**	07 46 04.3	**+0.6**
ILW	**Iliamna West**	**2.07**	**249**	P	**Pn**	07 46 05.2	**+1.0**
HUR	**Hurricane**	**2.15**	**356**	P	**Pn**	07 46 06.5	**+1.3**
PS11	**TAPS Pump St11**	**2.21**	**54**	P	**Pn**	07 46 07.4	**+1.4**
BMRM	**Bremner River**	**2.29**	**85**	P	**Pn**	07 46 07.4	**+0.3**
RAGM	**Ragged Mountai**	**2.32**	**99**	P	**Pn**	07 46 07.4	**-0.1**
DHY	**Denali Highway**	**2.42**	**21**	P	**Pn**	07 46 09.8	**+0.8**
PPLA	**Purkeypile**	**2.48**	**328**	P	**Pn**	07 46 10.5	**+0.6**
AUE	**Augustine Isla**	**2.53**	**236**	P	**Pn**	07 46 11.4	**+1.0**
AUL	**Augustine Lava**	**2.54**	**237**	P	**Pn**	07 46 11.8	**+1.2**
AUSE	**Augustine SEas**	**2.55**	**236**	P	**Pn**	07 46 11.0	**+0.3**
RND	**Reindeer**	**2.58**	**4**	P	**Pn**	07 46 11.8	**+0.6**
TRF	**Thorofare Moun**	**2.66**	**350**	P	**Pn**	07 46 12.9	**+0.5**
NICHA	**Nichawak Mount**	**2.69**	**101**	P	**Pn**	07 46 12.3	**-0.4**
PAX	**Paxson**	**2.79**	**39**	P	**Pn**	07 46 15.2	**+1.1**
KTH	**Kantishna Hill**	**2.83**	**345**	P	**Pn**	07 46 15.5	**+0.9**
VRDI	**Verde Repeater**	**2.86**	**80**	P	**Pn**	07 46 15.6	**+0.4**
CAST	**Castle Rocks**	**2.90**	**334**	P	**Pn**	07 46 16.5	**+1.0**
MCK	**McKinley**	**2.91**	**3**	P	**Pn**	07 46 16.6	**+1.1**
CDD	**Cape Douglas**	**2.92**	**231**	P	**Pn**	07 46 16.4	**+0.7**
FOPK	**Fourpeaked Vol**	**2.98**	**227**	P	**Pn**	07 46 17.6	**+1.0**
GRIN	**Grindle Hills**	**3.00**	**98**	P	**Pn**	07 46 16.5	**-0.4**
SVW2	**Sparrevohn**	**3.08**	**278**	P	**Pn**	07 46 17.7	**-0.3**
MCARA	**McCarthy VSAT**	**3.09**	**77**	P	**Pn**	07 46 19.5	**+1.5**
KULT	**Kultieth River**	**3.29**	**98**	P	**Pn**	07 46 20.4	**-0.5**
PTPK	**Patty Peak**	**3.34**	**81**	P	**Pn**	07 46 22.5	**+0.9**
BWN	**Browne**	**3.34**	**359**	P	**Pn**	07 46 23.2	**+1.7**
BPAW	**Bear Paw Mtn.**	**3.37**	**347**	P	**Pn**	07 46 22.0	**+0.1**
KIAG	**Kiagna River**	**3.38**	**86**	P	**Pn**	07 46 22.5	**+0.2**
BALM	**Baldy**	**3.39**	**84**	P	**Pn**	07 46 22.5	**+0.2**
ISLE	**Juniper Island**	**3.42**	**91**	P	**Pn**	07 46 22.8	**+0.1**
KDAK	**Kodiak Island**	**3.50**	**210**	P	Pn	07 46 38.9	+15
	0.9nm,0.3s,baz=59,slow=9.7,SNR=17						
KDAK				S	Sn	07 47 15.7	+12
	1.8nm,0.3s,baz=311,slow=23,SNR=4.1						
KDAK	**Kodiak Island**	**3.50**	**210**	P	**Pn**	07 46 23.7	**0.0**
KDAK				*e*Pn	Pn	07 46 24.3	+0.5
KDAK				P	Pb	07 46 38.9	
KDAK				S	Sn	07 47 15.7	+12
BAGL	**Bagley Icefiel**	**3.56**	**93**	P	**Pn**	07 46 24.9	**+0.4**
WRH	**Wood River Hil**	**3.68**	**8**	P	**Pn**	07 46 26.9	**+0.7**
MESA	**MESA**	**3.69**	**97**	P	**Pn**	07 46 26.6	**+0.1**
BARN	**Barnard Glacie**	**3.72**	**83**	P	**Pn**	07 46 27.6	**+0.6**
DOT	**Dot Lake**	**3.73**	**39**	P	**Pn**	07 46 28.1	**+1.2**
HDA	**Harding Lake**	**3.74**	**16**	P	**Pn**	07 46 28.4	**+1.4**
TT01	**Tatalina**	**3.81**	**306**	P	**Pn**	07 46 27.9	**0.0**
TTA	**Tatalina**	**3.81**	**306**	P	**Pn**	07 46 28.3	**+0.2**
CCB	**Clear Creek Bu**	**3.88**	**9**	P	**Pn**	07 46 30.1	**+1.2**
CTGM	**Chitina Glacie**	**3.88**	**85**	P	**Pn**	07 46 30.2	**+1.1**
PS08	**TAPS Pump Stn8**	**3.88**	**16**	P	**Pn**	07 46 30.1	**+1.1**
KABR	**Katmai Barrier**	**3.98**	**229**	P	**Pn**	07 46 30.8	**+0.5**
LOGN	**Logan Glacier**	**4.05**	**87**	P	**Pn**	07 46 31.9	**+0.4**
ILAR	**Eielson Array**	**4.09**	**15**	P	**Pn**	07 46 33.0	**+1.1**
	0.9nm,0.3s,baz=195,slow=13,SNR=59						
ILAR				S	Sn	07 47 25.1	+6.7
	4.8nm,0.3s,baz=194,slow=22,SNR=11						
IL1	**Eielson Array**	**4.09**	**15**	P	**Pn**	07 46 33.2	**+1.4**
COLA	**College**	**4.10**	**9**	P	**Pn**	07 46 32.9	**+1.0**
MDM	**Murphy Dome**	**4.16**	**6**	P	**Pn**	07 46 33.8	**+0.9**
OHAK	**Old Harbor**	**4.18**	**211**	P	**Pn**	07 46 32.2	**-0.8**
BCA3	**Beaver Creek A**	**4.18**	**55**	P	**Pn**	07 46 34.4	**+1.3**
MLY	**Manley**	**4.26**	**352**	P	**Pn**	07 46 34.4	**+0.3**
EGAK	**Eagle**	**5.43**	**40**	P	**Pn**	07 46 50.5	**+0.4**
IM3	**Indian Mountai**	**5.54**	**341**	P	**Pn**	07 46 52.5	**+0.8**
DAWY	**Dawson**	**5.61**	**51**	*e*Pn	**Pn**	07 46 54.1	**+1.3**
	4.4nm,0.6s						
COLD	**Coldfoot**	**6.42**	**357**	*e*Pn	**Pn**	07 47 05.5	**+1.7**
	5.2nm,0.6s						
BM3	**Burnt Mountain**	**6.91**	**15**	P	**Pn**	07 47 10.9	**+0.4**
WHY	**Whitehorse**	**7.06**	**85**	P	**Pn**	07 47 11.7	**-1.0**
SKAG	**Skagway**	**7.10**	**95**	*e*Pn	**Pn**	07 47 13.6	**+0.5**
	4.6nm,0.6s						
TNA	**Tin City**	**9.64**	**307**	*e*Pn	**Pn**	07 47 49.3	**+1.5**
	3.7nm,0.7s						
DLBC	**Dease Lake**	**10.03**	**95**	P	**Pn**	07 47 54.3	**+0.9**
	0.1nm,0.3s,baz=275,slow=7.7,SNR=5.1						
INK	**Inuvik**	**10.06**	**35**	P	**Pn**	07 47 55.6	**+1.9**
	0.1nm,0.3s,baz=238,slow=15,SNR=4.9						
YKA	**Yellowknife Ar**	**16.42**	**69**	P	**Pn**	07 49 18.1	**-1.1**
	0.0nm,0.3s,baz=279,slow=9.9,SNR=5.8						
RES	**Resolute Bay**	**23.61**	**33**	P	**P**	07 50 37.5	**-1.4**
	0.7nm,0.9s,baz=243,slow=9.0,SNR=3.1						
FINES	**FINESS Array B**	**57.99**	**3**	P	**P**	07 55 18.6	**-1.6**
	0.5nm,0.4s,baz=357,slow=7.6,SNR=5.1						

MEX 27 07:46:18.7±0.4, 14.15N×92.61W, h16km±999km, MD3.6, Near coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PCIG		**1.65**	**339**	*e*P	Pn	07 46 43.7	-3.3
PCIG				*e*S	Sn	07 47 02.7	-5.2
CCIG	**Comitan**	**2.17**	**12**	*e*P	Pn	07 46 51.5	-2.8
CCIG				*e*S	Sn	07 47 17.3	-3.6

*ISCJB **27** 07:52:02.4±0.8, 12.19N±0.1×145.17E±0.1, h43km, mb4.0/7, MS2.9/1, Error ellipse: s-maj=20.1km s-min=10.9km az=136.7*
*IDC **27** 07:52:03.9±3.6, 12.98N×145.66E, h41km±32km, mb3.5/6, mb1 3.8/6, mb1mx3.5/43, mbtmp3.8/6, MS3.1/1, Ms1 3.1/1, ms1mx2.6/48, Error ellipse: s-maj=34.4km s-min=17.5km az=91.0*

ISC 27 07:52:04.0±0.9, 13.0N±0.1×145.6E±0.1, h43km, n13, σ082/12, mb3.8/7, South of Mariana Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
GUMO	**Guam**	**0.95**	**309**	P	**Pn**	07 52 20.1	**-0.7**
	424nm,0.3s,baz=132,slow=6.8,SNR=150						
GUMO				S	**Sn**	07 52 34.6	**+1.4**
	228nm,0.3s,baz=45,slow=20,SNR=9.9						
GUMO				LR	LR	07 52 52.5	
	comp=Z,719nm,21.8s,baz=70,slow=50						
JHJ	**Hachijo jima 2**	**20.74**	**346**	LR	LR	08 04 09.5	
	comp=Z,55nm,20.5s,baz=62,slow=35						
WRA	**Warramunga Arr**	**34.55**	**199**	P	**P**	07 58 48.6	**0.0**
	1.1nm,0.6s,baz=22,slow=9.7,SNR=15						
ASAR	**Alice Springs**	**36.19**	**198**	P	**P**	07 59 20.1	**+0.4**
	0.6nm,0.8s,baz=26,slow=8.0,SNR=14						
MKAR	**Makanchi Array**	**62.43**	**316**	P	**P**	08 02 22.5	**-0.3**
	0.3nm,0.4s,baz=91,slow=7.8,SNR=4.9						
ILAR	**Eielson Array**	**68.80**	**25**	P	**P**	08 03 02.9	**-0.6**
	8.2nm,0.4s,baz=259,slow=6.2,SNR=4.9						
YKA	**Yellowknife Ar**	**83.06**	**27**	P	**P**	08 04 25.4	**+0.6**
	0.5nm,0.7s,baz=285,slow=5.1,SNR=13						
NVAR	**Mina Array Bea**	**86.72**	**51**	P	**P**	08 04 45.1	**+1.0**
	0.3nm,0.5s,baz=291,slow=8.3,SNR=2.6						
FINES	**FINESS Array B**	**92.01**	**335**	P	**P**	08 05 07.2	**-1.0**
	0.7nm,0.8s,baz=39,slow=5.3,SNR=3.3						
DBIC	**Dimbokro**	**144.76**	**302**	PKP	**PKPdf**	08 11 36.8	**-0.5**
	3.0nm,0.7s,baz=69,slow=3.0,SNR=7.4						
KIC	**Kosan Boka**	**144.84**	**301**	*e*PKP2	PKPbc	08 11 36.9	+0.4
	79nm,1.7s						
TIC	**Toumodi**	**144.91**	**302**	*e*PKP2	**PKPdf**	08 11 37.4	**-0.1**
LIC	**Lamto**	**145.15**	**301**	*e*PKP2	**PKPdf**	08 11 38.3	**+0.4**

*IDC **27** 08:00:05.4±0.9, 4.35S×122.96E, h0km, mb4.2/9, mb1 4.3/11, mb1mx4.0/48, mbtmp4.2/11, ML3.9/2, MS3.4/4, Ms1 3.5/4, ms1mx3.0/48, Error ellipse: s-maj=28.5km s-min=19.0km az=60.0*
*NEIC **27** 08:00:06.7±0.4, 4.39S×122.94E, h10km, mb4.1/1, Error ellipse: s-maj=11.1km s-min=7.9km az=72.0*
NEIC Felt [III] at Kendari.
*ISCJB **27** 08:00:08.1±0.4, 4.39S±0.05×122.97E±0.04, h33km, mb4.2/9, MS3.5/3, Error ellipse: s-maj=7.1km s-min=5.0km az=151.0*
*DJA **27** 08:00:08.6±0.2, 4.7S×12.3E, h16km, M4.0/5, mB5.3/1, mb4.5/5, MLv3.7/2, Mw(mB)4.7/1*

ISC 27 08:00:10.5±0.7, 4.38S±0.08×122.94E±0.06, h33km, n33, σ102/30, mb4.1/9, MS3.4/3, Sulawesi

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
BSSI	**Bau Bau, Buton**	**3.01**	**234**	P	**Pn**	08 00 55.3	**-0.6**
SPSI	**Sidrap Palu**	**3.19**	**277**	P	**Pn**	08 00 57.4	**-1.0**
KAPI	**Kappang**	**3.24**	**259**	Pn	**Pn**	08 00 57.8	**-1.3**
	13nm,0.3s,baz=93,slow=5.8,SNR=18						
KAPI				Sn	**Sn**	08 01 36.7	**+0.1**
	9.3nm,0.3s,baz=304,slow=22,SNR=5.7						
TTSI	**Tana Toraja**	**3.38**	**293**	P	**Pn**	08 01 01.8	**+0.8**
SANI	**Sanana**	**3.82**	**53**	P	**Pn**	08 01 07.7	**+0.7**
SANI				S	**Sn**	08 01 50.4	**-0.4**
MMRI	**Maumere**	**4.29**	**189**	P	**Pn**	08 01 12.8	**-0.7**
MMRI	**Maumere**	**4.29**	**189**	*e*Pn	**Pn**	08 01 12.3	**-1.3**
NLAI	**Namlea**	**4.30**	**75**	P	**Pn**	08 01 15.5	**+1.9**
MRSI	**Marisa**	**4.92**	**348**	P	**Pn**	08 01 20.5	**-1.7**
GTOI	**Gorontalo**	**4.98**	**1**	P	**Pn**	08 01 21.9	**-1.1**
SOEI	**Soe**	**5.50**	**166**	P	Pn	08 01 34.1	+3.8
TNTI	**Ternate**	**6.76**	**41**	P	**Pn**	08 01 47.5	**+0.1**
TNTI	**Ternate**	**6.76**	**41**	*e*Pn	**Pn**	08 01 47.0	**-0.4**
SWI	**Sorong**	**9.01**	**67**	P	**Pn**	08 02 18.6	**+0.2**
FAKI	**Fak Fak**	**9.40**	**81**	P	**Pn**	08 02 23.6	**-0.1**
DAV	**Davao City (W)**	**11.67**	**13**	LR	LR	08 07 36.6	
	comp=Z,178nm,20.1s,baz=158,slow=39						
CBJI	**Citeko**	**16.15**	**262**	P	Pn	08 03 49.7	-5.5
PPBI	**Pangkal Pinang**	**16.92**	**277**	P	**P**	08 04 08.3	**+1.6**
WRAB	**Tennant Creek**	**19.05**	**145**	*e*P	**P**	08 04 28.5	**-1.5**
	13nm,0.9s						
WRA	**Warramunga Arr**	**19.05**	**145**	P	**P**	08 04 28.5	**-1.5**
	0.4nm,0.3s,baz=316,slow=13,SNR=27						
ASAR	**Alice Springs**	**21.90**	**152**	P	**P**	08 05 01.4	**+0.3**
	13nm,1.1s,baz=334,slow=12,SNR=49						
CMAR	**Chiang Mai Arr**	**32.78**	**315**	P	**P**	08 06 41.5	**+0.7**
	0.7nm,0.3s,baz=138,slow=7.0,SNR=9.4						
CMAR				LR	LR	08 23 04.7	
	comp=Z,78nm,18.7s,baz=185,slow=42						
USRK	**Ussuriysk Ar.**	**49.03**	**9**	P	**P**	08 08 54.3	**+0.1**
	1.3nm,0.6s,baz=194,slow=10,SNR=3.9						
SONM	**Songino Array**	**53.98**	**346**	P	**P**	08 09 31.2	**-0.2**
	1.5nm,0.7s,baz=164,slow=8.8,SNR=6.7						
MKAR	**Makanchi Array**	**62.31**	**330**	P	**P**	08 10 29.4	**-0.2**
	0.9nm,0.8s,baz=132,slow=7.2,SNR=7.5						
ZALV	**Zalesovo Beam**	**66.26**	**337**	P	**P**	08 10 54.2	**-1.0**
	3.1nm,0.9s,baz=131,slow=6.8,SNR=7.6						
KURBB	**Kurchatov Arra**	**66.72**	**331**	P	**P**	08 10 57.0	**-1.2**
	1.1nm,0.2s,baz=134,slow=5.5,SNR=7.6						
KURK	**Kurchatov**	**66.73**	**331**	P	**P**	08 10 57.0	**-1.3**
BVAR	**Borovoye Array**	**72.19**	**330**	P	**P**	08 11 31.8	**-0.2**
	1.3nm,0.8s,baz=148,slow=12,SNR=8.1						
GEYT	**Alibeck**	**73.20**	**312**	P	**P**	08 11 39.8	**+1.3**
	2.1nm,0.3s,baz=159,slow=4.5,SNR=3.0						
VNDA	**Vanda**	**75.95**	**172**	LR	LR	08 45 37.7	
	comp=Z,38nm,19.0s,baz=308,slow=36						
BRTR	**Keskin Array B**	**92.23**	**309**	LR	LR	09 00 50.4	
	comp=Z,12nm,19.6s,baz=103,slow=40						
TORD	**Torodi Ar. Bea**	**121.40**	**283**	PKP	**PKPdf**	08 19 01.2	**-0.3**
	0.3nm,0.8s,baz=106,slow=3.0,SNR=2.3						

*ISCJB **27** 08:00:37.0±0.6, 20.59S±0.03×68.11W±0.07, h174km±8km, mb3.4/1, Error ellipse: s-maj=11.0km s-min=5.7km az=3.7*
*IDC **27** 08:00:37.2±0.8, 20.57S×67.87W, h158km±12km, mb3.0/2, mb1 3.3/6, mb1mx3.1/24, mbtmp3.6/6, Error ellipse: s-maj=25.7km s-min=9.7km az=100.0*
*GUC **27** 08:00:37.6±0.6, 20.59S×68.46W, h193km±6km, ML3.6*

ISC 27 08:00:37.5±0.8, 20.57S±0.04×68.10W±0.08, h169km±10km, n17, σ0880/29, 6C-2D, Chile-Bolivia border region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PB01	**IPOC Station P**	**1.38**	**250**	⇓*i*P	**Pn**	08 01 07.9	**+0.4**
PB01				*i* S	**Sn**	08 01 31.2	**+0.5**
PB01				IAML		08 01 31.3	
	comp=N,557nm,0.3s						
PB09	**IPOC Station P**	**1.62**	**221**	*e*P	**Pn**	08 01 11.0	**+1.0**
PB09				*e*S	**Sn**	08 01 36.0	**+0.9**
PB09				IAML		08 01 37.0	
	comp=N,557nm,1.2s						
HMBC	**Humberstone**	**1.70**	**280**	⇑*i*P	**Pn**	08 01 10.6	**-0.2**
HMBC				*i* S	**Sn**	08 01 35.7	**-0.7**
HMBC				IAML		08 01 38.2	
	comp=N,572nm,0

4.6nm,0.8s,baz=3.2,slow=17,SNR=3.9
SEY Seymchan 25.24 10 P **P 08 12 17.3 +1.0**
1.0nm,0.4s,baz=181,slow=9.7,SNR=5.9
H11N2 WAKE ISLAND Hy 27.64 125 T T 08 41 32.9
baz=318,slow=76,SNR=60
H11N1 WAKE ISLAND Hy 27.65 126 T T 08 41 39.5
baz=318,slow=76,SNR=54
H11N3 WAKE ISLAND Hy 27.66 125 T T 08 41 34.9
baz=318,slow=76,SNR=76
H11S1 WAKE ISLAND Hy 28.42 127 T T 08 42 30.4
baz=319,slow=76,SNR=15
H11S3 WAKE ISLAND Hy 28.42 128 T T 08 42 36.4
baz=319,slow=76,SNR=17
H11S2 WAKE ISLAND Hy 28.44 128 T T 08 42 45.6
baz=319,slow=76,SNR=13
MKAR Makanchi Array 44.67 301 P **P 08 15 03.6 +0.4**
0.3nm,0.4s,baz=91,slow=13,SNR=3.2
KURBB Kurchatov Arra 46.36 307 P **P 08 15 16.5 0.0**
1.8nm,0.6s,baz=82,slow=8.2,SNR=10
ILAR Eielson Array 47.61 33 P **P 08 15 26.1 -0.1**
6.2nm,0.3s,baz=269,slow=7.0,SNR=7.9
HNR Honiara 50.02 158 LR LR 08 36 54.7
comp=Z,413nm,18.9s,baz=274,slow=36
INK Inuvik 52.56 28 P **P 08 16 04.0 +0.5**
0.9nm,1.0s,baz=327,slow=6.0,SNR=3.8
WRA Warramunga Arr 58.58 190 P **P 08 16 46.6 -0.8**
4.0nm,0.6s,baz=9.8,slow=7.2,SNR=10
YKA Yellowknife Ar 61.94 31 P **P 08 17 09.6 -0.3**
0.2nm,0.6s,baz=300,slow=6.3,SNR=5.7
ASAR Alice Springs 62.30 190 P **P 08 17 13.1 +0.3**
0.6nm,0.5s,baz=13,slow=13,SNR=6.1
NOA NORSAR Array B 73.53 338 P **P 08 18 22.8 -0.3**
0.5nm,0.5s,baz=44,slow=5.4,SNR=2.7
AKASG Malin Array Be 74.14 323 P **P 08 18 26.9 +0.1**
0.3nm,0.4s,baz=42,slow=6.2,SNR=4.0
PDAR Pinedale Array 75.71 47 P **P 08 18 36.3 0.0**
0.3nm,0.7s,baz=250,slow=3.0,SNR=3.9

IDC 27 08:09:25.0±2.2, 6°62S×132°57E, h0km, mb3.7/2, mb1 3.6/5, mb1mx3.5/42, mbtmp3.5/5, ML3.3/3, Error ellipse: s-maj=104.7km s-min=26.4km az=85.0, Tanimbar Islands region

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
FITZ	**Fitzroy Crossi**	**13.27**	**210**	Pn		Pn	08 12 33.8	-1.0
	0.1nm,0.3s,baz=34,slow=15,SNR=2.7							
FITZ				Sn		Sn	08 14 56.0	-7.1
	0.2nm,0.3s,baz=207,slow=14,SNR=3.5							
WRA	**Warramunga Arr**	**13.36**	**173**	Pn		Pn	08 12 36.6	+0.6
	0.2nm,0.3s,baz=358,slow=13,SNR=9.2							
WRA				Sn		Sn	08 15 02.6	-2.7
	0.3nm,0.3s,baz=353,slow=24,SNR=5.3							
ASAR	**Alice Springs**	**17.00**	**176**	Pn		Pn	08 13 24.6	+0.2
	0.1nm,0.3s,baz=356,slow=12,SNR=6.3							
ASAR				Sn		Sn	08 16 25.7	-8.4
	0.1nm,0.3s,baz=355,slow=26,SNR=3.0							
SONM	**Songino Array**	**58.93**	**340**	P		P	08 19 26.1	-0.1
	0.3nm,0.6s,baz=150,slow=6.0,SNR=2.7							
MKAR	**Makanchi Array**	**69.33**	**326**	P		P	08 20 34.6	+0.1
	0.5nm,0.4s,baz=115,slow=7.9,SNR=5.5							

WEL 27 08:15:45.1±0.1, 38°90S×178°02E, h28km±1km, ML3.7/7, 8C-3D, Error ellipse: s-maj=1.6km s-min=1.1km az=90.0, Off east coast of North Island

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
PRGZ	**Paritu Road**	**0.10**	**258**	⇓P*		Pb	08 15 48.9	-1.2
PRGZ				S*		Sb	08 15 53.1	-0.6
MHGZ	**Mahia Peninsul**	**0.27**	**198**	⇑P*		Pb	08 15 51.7	-0.1
RIGZ	**Rimuhau**	**0.28**	**315**	⇑P*		Pb	08 15 51.7	-0.4
RIGZ				S*		Sn	08 15 58.1	-0.5
KNZ	**Kokohu**	**0.29**	**246**	⇓P*		Pb	08 15 51.4	-0.8
KNZ				S*		Sb	08 15 57.3	+0.2
KNZ				AML		AML	08 15 57.6	
CNGZ	**Carnagh Statio**	**0.44**	**20**	⇑P*		Pn	08 15 55.0	-0.5
TKGZ	**Te Karaka**	**0.48**	**344**	⇑P*		Pb	08 15 55.0	-0.1
SNGZ	**Shannon Statio**	**0.54**	**283**	⇑P*		Pb	08 15 55.7	-0.4
RAGZ	**Rawiri**	**0.62**	**311**	P*		Pb	08 15 57.0	-0.5
WHHZ	**Waihua**	**0.63**	**254**	P*		Pb	08 15 57.5	-0.1
WHHZ				S*		Sn	08 16 07.5	+0.2
MWZ	**Matawai**	**0.68**	**326**	P*		Pb	08 15 57.9	-0.5
MWZ				AML		AML	08 16 09.4	
MWZ				AML		AML	08 16 10.9	
MWZ				AML		AML	08 16 10.9	
TWGZ	**Tauwhareparae**	**0.72**	**358**	P*		Pb	08 15 59.0	-0.1
RAHZ	**Arahi**	**0.72**	**269**	⇑P*		Pb	08 15 58.8	-0.4
RAHZ				S*		Sn	08 16 10.5	+0.8
PUZ	**Puketiti**	**0.85**	**13**	PN		Pn	08 16 00.1	-1.1
PUZ				AML		AML	08 16 15.7	
PUZ				AML		AML	08 16 21.7	
ARHZ	**Aropaoanui**	**0.87**	**245**	PN		Pn	08 16 01.1	-0.4
URZ	**Urewera**	**0.95**	**312**	PN		Pn	08 16 01.9	-0.7
URZ				AML		AML	08 16 18.7	
URZ				AML		AML	08 16 18.7	
NMHZ	**Naumai**	**0.96**	**258**	PN		Pn	08 16 02.4	-0.4
PKGZ	**Pakihiroa**	**1.01**	**3**	⇑PN		Pn	08 16 02.9	-0.5
MUGZ	**Murupara**	**1.06**	**293**	PN		Pn	08 16 03.6	-0.5
WMGZ	**Waiomatatini S**	**1.12**	**16**	PN		Pn	08 16 04.3	-0.6
HAZ	**Te Kaha**	**1.16**	**351**	⇑PN		Pn	08 16 04.7	-0.7
MCHZ	**McNeill Hill**	**1.16**	**242**	PN		Pn	08 16 05.1	-0.3
BKZ	**Black Stump Fm**	**1.22**	**257**	PN		Pn	08 16 05.2	-1.1
BKZ				AML		AML	08 16 25.9	
BKZ				AML		AML	08 16 27.5	
KAHZ	**Kahuranaki**	**1.25**	**224**	PN		Pn	08 16 06.1	-0.7
RRRZ	**Republican Roa**	**1.30**	**295**	⇓PN		Pn	08 16 06.9	-0.5
PRRZ	**Plateau Road**	**1.30**	**287**	PN		Pn	08 16 07.5	-0.3
KWHZ	**Kaweka Forest**	**1.34**	**247**	PN		Pn	08 16 08.0	0.0
ALRZ	**Allen Road**	**1.35**	**284**	PN		Pn	08 16 08.7	+0.7
MXZ	**Matakaoa Point**	**1.36**	**10**	PN		Pn	08 16 07.7	-0.5
MXZ				AML		AML	08 16 25.7	
MXZ				AML		AML	08 16 31.6	
MXZ				AML		AML	08 16 32.2	
TARZ	**Mount Tarawera**	**1.36**	**299**	PN		Pn	08 16 07.9	-0.3
HRRZ	**Handcock Road**	**1.45**	**290**	PN		Pn	08 16 09.4	0.0
HLRZ	**Highlands Stat**	**1.46**	**296**	PN		Pb	08 16 10.9	-0.6
OPRZ	**Ohinepanea**	**1.56**	**312**	PN		Pn	08 16 09.9	-1.0
BHHZ	**Black Hill Sta**	**1.63**	**248**	PN		Pn	08 16 11.0	-0.9
WPHZ	**Waipukurau**	**1.68**	**226**	ePN		Pn	08 16 11.3	-1.3
PNHZ	**Pukenui**	**1.73**	**234**	PN		Pn	08 16 12.3	-1.0
MOVZ	**Moawhango**	**1.83**	**253**	PN		Pn	08 16 14.9	+0.1
WNVZ	**Wahianoa**	**1.93**	**256**	PN		Pn	08 16 16.1	-0.1
TSZ	**Takapari Road**	**1.96**	**233**	PN		Pn	08 16 14.8	-1.8
TSZ				AML		AML	08 16 39.0	
DVHZ	**Dannevirke**	**2.00**	**225**	PN		Pn	08 16 15.4	-1.6
MRZ	**Mangatainoka R**	**2.57**	**226**	PN		Pn	08 16 23.1	-1.8
HOWZ	**Holdsworth Sta**	**2.77**	**223**	PN		Pn	08 16 25.0	-2.6

ECX 27 08:18:37.1±1.2, 27°74N×111°73W, h10km, MD3.3
MEX 27 08:18:34.0±1.0, 27°38N×111°37W, h10km, MD3.5, 2C, Gulf of California

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
GUYB	**Guaymas**	**0.68**	**40**	eP		Pg	08 18 45.6	-1.5
GUYB				eS		Sg	08 18 53.9	-2.1
SRIG	**Santa Rosalia**	**0.78**	**266**	⇑eP		Pg	08 18 47.2	-1.9
SRIG				eS		Sg	08 18 57.4	-1.9
SRIG	**Santa Rosalia**	**0.78**	**266**	eP		Pg	08 18 47.0	-2.0
SRIG				eS		Sg	08 18 56.6	-2.7
HSIG		**1.67**	**13**	⇑eP		Pn	08 19 01.3	-2.1
HSIG				eS		Sn	08 19 19.4	-5.5
HSIG		**1.67**	**13**	eP		Pn	08 19 00.9	-2.5
HSIG				eS		Sn	08 19 20.0	-4.9

MEX 27 08:20:36.5±0.4, 16°69N×99°69W, h6km±3km, MD3.7, Near coast of Guerrero

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
ACP2	**Acapulco**	**0.26**	**315**	eP		Pg	08 20 41.6	-0.1
ACP2				eS		Sg	08 20 45.1	-0.1
CAIG	**El Cayaco**	**0.66**	**303**	eP		Pg	08 20 48.2	-1.0
CAIG				i S		Sg	08 20 57.3	-0.4
MEIG	**Mezcala**	**1.23**	**3**	eP		Pg	08 20 56.6	-3.6
MEIG				eS		Sg	08 21 12.0	-4.3
TLIG	**Tlapa**	**1.39**	**51**	eP		Pn	08 20 58.9	-3.6
TLIG				eS		Sb	08 21 16.0	-4.9
ARIG	**Puente Sto Nin**	**1.70**	**339**	eP		Pn	08 21 04.3	-2.5
ARIG				eS		Sn	08 21 25.8	-3.1

NIED 27 08:35:00, 35°70N×140°80E, h53km, Mw4.2 Best double couple: M₀2.15000×10¹⁵ NP1:φ₀173.00000°, δ20.00000°, λ88.00000°. NP2:φ₀355.00000°, δ70.00000°, λ91.00000°.
IDC 27 08:35:30.6±0.8, 35°68N×140°85E, h0km, mb3.9/11, mb1 4.0/16, mb1mx3.9/48, mbtmp4.0/16, ML3.8/3, MS3.1/5, Ms1 3.1/5, ms1mx2.7/58, Error ellipse: s-maj=24.6km s-min=15.5km az=83.0
ISCJB 27 08:35:34.8±0.5, 35°66N±0°03×140°95E±0°07, h51km±4km, mb4.0/14, MS3.0/1, Error ellipse: s-maj=9.5km s-min=5.7km az=171.9
NEIC 27 08:35:34.2±1.9, 35°61N×140°87E, h26km±14km, mb4.4/1, Error ellipse: s-maj=10.4km s-min=6.3km az=88.0
JMA 27 08:35:36.5±0.1, 35°69N×140°74E, h47km±1km, M3.6 Broadband fault plane solution: P waves. NP1: φ₀23.00000°, δ82.00000°, λ96.00000°. NP2:φ₀162.00000°, δ10.00000°, λ50.00000°. Principal axes: T Plg52.0000°, Azm300.0000°; N Plg6.0000°, Azm202.0000°; P Plg37.0000°, Azm107.0000°;
JMA Felt I J1.
ISC 27 08:35:36.3±0.8, 35°68N±0°05×140°87E±0°07, h44km±7km, n42, σ1s08/39, mb4.0/14, 3D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
CHOJ	**Chosi**	**0.03**	**336**	P		Pn	08 35 43.8	+0.6
CHOJ				S		Sn	08 35 49.3	+1.3
JCN	**Nagara**	**0.60**	**245**	⇓P		Pn	08 35 48.5	-0.1
JCN				S		Sn	08 35 57.8	+0.5
JYT	**Yasato**	**0.78**	**315**	⇓P		Pn	08 35 50.1	-0.8
JYT				eS		Sn	08 36 00.3	-1.2
BSO4	**Boso 4**	**0.81**	**213**	P		Pn	08 35 51.4	+0.1
BSO3	**Boso 3**	**0.92**	**199**	P		Pn	08 35 53.0	+0.4
JHO	**Hitachi**	**0.96**	**345**	⇓P		Pn	08 35 53.7	+0.2
BSO1	**Boso 1**	**1.02**	**175**	P		Pn	08 35 54.7	+0.9
JAG	**Ashikaga**	**1.37**	**303**	P		Pn	08 35 57.8	-1.2
MJAR	**Matsushiro Arr**	**2.32**	**293**	Pn		Pn	08 36 11.6	-0.5
MJAR	27nm,0.3s,baz=97,slow=14,SNR=86					LR	08 37 13.3	
	comp=Z,298nm,20.4s,baz=100,slow=45							
MAJO	**Matsushiro**	**2.33**	**293**	ePn		Pn	08 36 12.4	+0.3
MAT	**Matsushiro**	**2.33**	**293**	P		Pn	08 36 12.4	+0.3
MAT				S		Sn	08 36 42.4	+2.9
JHJ2	**Mitsune**	**2.70**	**199**	ePn		Pn	08 36 14.1	-3.3
JHJ	**Hachijo jima 2**	**2.71**	**200**	Pn		Pn	08 36 16.6	-0.7
JHJ	32nm,0.3s,baz=344,slow=17,SNR=18					Sn	08 36 48.6	-0.2
	68nm,0.3s,baz=237,slow=21,SNR=8.3							
ERM	**Erimo**	**6.57**	**15**	ePn		Pn	08 37 10.2	-0.2
ASAJ	**Asahikawa**	**8.53**	**8**	Pn		Pn	08 37 36.0	-1.2
ASAJ	1.5nm,0.3s,baz=213,slow=14,SNR=8.8					Sn	08 39 09.4	-2.7
	0.8nm,0.3s,baz=95,slow=33,SNR=2.6							
CBIJ	**Chichi jima**	**8.63**	**172**	Pn		Pn	08 37 36.6	-2.0
CBIJ				Sn		Sn	08 39 08.1	-6.5
JCJ	**Chichijima**	**8.63**	**172**	Pn		Pn	08 37 36.6	-2.0
JCJ	12nm,0.3s,baz=288,slow=17,SNR=6.2					Sn	08 39 08.1	-6.5
	3.9nm,0.3s,baz=274,slow=18,SNR=2.6							
JNU	**Nakatsue**	**8.64**	**256**	LR		LR	08 41 27.3	
	comp=Z,286nm,18.3s,baz=118,slow=41							
KSRS	**Korea Array**	**10.57**	**283**	LR		LR	08 42 11.2	
	comp=Z,109nm,20.2s,baz=104,slow=38							
USRK	**Ussuriysk Ar.**	**10.90**	**324**	Pn		Pn	08 38 08.8	-0.9
	0.2nm,0.3s,baz=159,slow=16,SNR=4.7							
USRK						LR	08 42 14.1	
	comp=Z,69nm,19.3s,baz=68,slow=37							
H11N2	**WAKE ISLAND Hy**	**27.87**	**118**	T		T	09 10 38.1	
	baz=310,slow=75,SNR=32							
H11N1	**WAKE ISLAND Hy**	**27.87**	**118**	T		T	09 10 39.0	
	baz=310,slow=75,SNR=25							
H11N3	**WAKE ISLAND Hy**	**27.88**	**118**	T		T	09 10 28.8	
	baz=310,slow=75,SNR=19							
SONM	**Songino Array**	**28.21**	**306**	P		P	08 41 24.3	-0.7
	0.9nm,0.7s,baz=100,slow=9.1,SNR=6.5							
SONM						LR	08 53 11.2	
	comp=Z,38nm,18.2s,baz=166,slow=38							
H11S1	**WAKE ISLAND Hy**	**28.52**	**120**	T		T	09 11 19.3	
	baz=312,slow=75,SNR=38							
H11S3	**WAKE ISLAND Hy**	**28.52**	**120**	T		T	09 11 19.2	
	baz=312,slow=75,SNR=31							
H11S2	**WAKE ISLAND Hy**	**28.54**	**120**	T		T	09 11 20.4	
	baz=312,slow=75,SNR=26							
TIXI	**Tiksi**	**36.58**	**354**	eP		P	08 42 38.0	+0.3
ZALV	**Zalesovo Beam**	**42.52**	**313**	P		P	08 43 27.1	-0.1
	1.6nm,0.4s,baz=91,slow=6.2,SNR=8.8							
MKAR	**Makanchi Array**	**44.48**	**303**	P		P	08 43 43.0	-0.2
	1.4nm,0.5s,baz=88,slow=9.9,SNR=13							
ILAR	**Eielson Array**	**50.87**	**32**	P		P	08 44 34.0	+1.5
	8.1nm,0.5s,baz=266,slow=6.1,SNR=5.7							
WRAB	**Tennant Creek**	**55.65**	**187**	P		P	08 45 07.3	-0.7
	12nm,1.6s							
WRA	**Warramunga Arr**	**55.66**	**187**	P		P	08 45 07.8	-0.3
	0.6nm,0.4s,baz=1.6,slow=7.4,SNR=6.3							
ABKAR	**Akbulak array**	**58.48**	**311**	eP		P	08 45 27.1	-0.7
	1.6nm,0.4s							
ASAR	**Alice Springs**	**59.39**	**187**	P		P	08 45 35.3	+1.0
	0.4nm,0.5s,baz=20,slow=12,SNR=4.6							
ARCES	**ARCESS Array B**	**65.11**	**339**	P		P	08 46 13.0	+0.9
	3.2nm,0.9s,baz=63,slow=6.6,SNR=2.2							
YKA	**Yellowknife Ar**	**65.20**	**30**	P		P	08 46 13.2	+0.5
	0.2nm,0.8s,baz=306,slow=6.2,SNR=4.5							
FINES	**FINESS Array B**	**69.81**	**332**	P		P	08 46 41.9	0.0
	0.8nm,0.5s,baz=46,slow=8.2,SNR=5.9							
AKASG	**Malin Array Be**	**75.10**	**322**	P		P	08 47 13.5	-0.1
	0.5nm,0.4s,baz=49,slow=6.3,SNR=4.2							
NB2	**NORSAR Subarra**	**75.27**	**337**	P		P	08 47 14.5	+0.1
	comp=Z,0.9nm,0.5s,baz=40,slow=6.2							
NOA	**NORSAR Array B**	**75.27**	**337**	P		P	08 47 14.8	+0.4
	comp=Z,1.5nm,0.8s,baz=40,slow=5.7,SNR=4.7							
BRTR	**Keskin Array B**	**79.42**	**311**	P		P	08 47 38.9	+0.7
	comp=Z,0.8nm,0.8s,baz=90,slow=5.8,SNR=3.5							

IDC 27 08:37:49.8±1.1, 2°22S×139°22E, h0km, mb3.6/3, mb1 3.8/4, mb1mx3.5/35, mbtmp3.6/4, ML3.7/1, Error ellipse: s-maj=25.9km s-min=14.4km az=16.0, Near north coast of Irian Jaya

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
JAY	**Jayapura**	**1.52**	**101**	Pg		Pn	08 38 18.1	-0.2
	4.1nm,0.3s,baz=261,slow=23,SNR=61							
JAY				Lg		Lg	08 38 37.8	
	5.8nm,0.3s,baz=90,slow=20,SNR=14							
WRA	**Warramunga Arr**	**18.25**	**195**	P		Pn	08 42 04.0	-0.8
	0.3nm,0.3s,baz=18,slow=12,SNR=6.1							
ASAR	**Alice Springs**	**21.94**	**193**	P		P	08 42 44.6	-0.6
	0.6nm,0.5s,baz=27,slow=11,SNR=15							
MKAR	**Makanchi Array**	**69.71**	**322**	P		P	08 49 02.1	+0.4
	0.4nm,0.6s,baz=118,slow=6.9,SNR=3.9							
BVAR	**Borovoye Array**	**79.20**	**325**	P		P	08 49 56.6	-0.1
	0.6nm,0.5s,baz=120,slow=6.0,SNR=5.0							
ILAR	**Eielson Array**	**85.17**	**24**	P		P	08 50 27.8	0.0
	0.4nm,0.8s,baz=261,slow=5.4,SNR=4.2							

IDC 27 08:49:40.4±2.4, 54°15N×86°48E, h0km, mb1 3.5/2, mb1mx3.1/55, mbtmp3.5/2, ML3.2/2, Error ellipse: s-maj=19.1km s-min=12.0km az=59.0, Southwestern Siberia

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
I46RU	**ZALESOVO INFRA**	**1.00**	**259**	i			08 57 00.0	
	baz=78,slow=331,SNR=8.7							
ZALV	**Zalesovo Beam**	**1.00**	**259**	Pg		Pg	08 49 58.0	-1.6
	3.2nm,0.3s,baz=77,slow=17,SNR=26							
ZALV				Lg		Lg	08 50 13.9	
	5.1nm,0.3s,baz=77,slow=28,SNR=30							
KURBB	**Kurchatov Arra**	**6.01**	**237**	Pn		Pn	08 51 11.6	+1.1
	0.4nm,0.3s,baz=54,slow=13,SNR=18							
KURBB						Sn	08 52 19.2	-0.8
	baz=55,slow=23,SNR=2.0							
KURBB						Lg	08 52 51.6	
	0.1nm,0.3s,baz=56,slow=34,SNR=9.9							
MKAR	**Makanchi Array**	**7.83**	**202**	Pn		Pn	08 51 36.5	+1.0
	0.5nm,0.3s,baz=26,slow=12,SNR=14							
MKAR						Sn	08 53 04.5	-0.3
	0.1nm,0.3s,baz=27,slow=26,SNR=6.6							
MKAR						Lg	08 53 48.0	
	0.0nm,0.3s,baz=26,slow=26,SNR=9.9							

SCB 27 09:39:25.3±0.6, 23°35S×66°76W, h198km, Ml3.9/2, Error ellipse: s-maj=14.2km s-min=7.6km az=25.0
SJA 27 09:39:32.3±0.6, 23°04S×66°50W, h231km±8km, ML3.4, MW3.8
NEIC 27 09:39:32.2±0.6, 23°07S×66°49W, h210km±6km, mb4.4/3, Error ellipse: s-maj=9.9km s-min=7.4km az=85.0
IDC 27 09:39:32.4±0.9, 23°01S×66°42W, h208km±9km, mb3.8/10, mb1 3.9/15, mb1mx3.8/31, mbtmp4.4/15, MS3.3/1, Ms1 3.3/1, ms1mx2.6/28, Error ellipse: s-maj=13.8km s-min=12.4km az=89.0
ISCJB 27 09:39:32.2±0.3, 23°10S±0°03×66°65W±0°03, h228km±3km, mb3.9/11, Error ellipse: s-maj=5.5km s-min=3.8km az=43.4
GUC 27 09:39:34.1±0.6, 22°98S×67°18W, h264km±14km, ML4.9
ISC 27 09:39:33.0±0.6, 23°06S±0°04×66°63W±0°04, h219km±6km, n53, σ1s26/75, mb4.1/11, 13C-4D, Jujuy Province

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
HJA	**Humahuaca**	**1.14**	**98**	eP		Pn	09 40 06.6	+0.5
HJA				eS		S	09 40 31.8	+0.1
YJA	**Yavi**	**1.35**	**50**	eP		Pn	09 40 08.3	+0.5
AZAP	**Zapla**	**1.85**	**129**	eP		Pn	09 40 11.4	-0.3
AZAP				eS		S	09 40 41.3	-0.6
SLA	**San Lorenzo**	**1.95**	**148**	eP		Pn	09 40 13.3	+0.6
SLA				eS		S	09 40 43.1	-0.4
SLA				IAML			09 40 49.6	
	comp=Z,142nm,0.8s							
MOCB	**Mochara**	**2.02**	**27**	ePn		Pn	09 40 14.1	+0.4
MOCB				eSn		S	09 40 46.2	+1.0
	comp=Z,352nm,0.7s							
LVC	**Limon Verde**	**2.15**	**281**	P		Pn	09 40 16.0	+1.2
	comp=Z,2μm,0.3s,baz=103,slow=7.0,SNR=538							
LVC				S		S	09 40 48.7	+1.5
	comp=Z,2μm,0.3s,baz=274,slow=21,SNR=33							
LVC				LR		LR	09 41 05.0	
	comp=Z,644nm,18.5s,baz=40,slow=40							
ASTB	**Santa Barbara**	**2.19**	**114**	eP		Pn	09 40 14.8	-0.2
PB09	**IPOC Station P**	**2.72**	**297**	⇑iP		Pn	09 40 22.4	+1.6
PB09				eS		S	09 40 59.0	+1.2
PB09				IAML			09 41 03.6	
	comp=E,3μm,0.6s							
PB06	**IPOC Station P**	**2.73**	**277**	⇑iP		Pn	09 40 21.7	+0.9
PB06				eS		S	09 40 57.9	-0.1
FSA	**Cafayete**	**3.10**	**169**	eP		Pn	09 40 25.5	+0.5
PB07	**IPOC Station P**	**3.29**	**293**	⇑iP		Pn	09 40 28.0	+0.8
PB07				i S		S	09 41 08.5	-1.0
PB07				IAML			09 41 11.3	
	comp=N,2μm,0.3s							
PB01	**IPOC Station P**	**3.32**	**307**	⇑iP		Pn	09 40 28.3	+0.8
PB01				i S		S	09 41 10.2	+0.2
PB01				IAML			09 41 12.0	
	comp=E,1μm,0.2s							
PB04	**IPOC Station P**	**3.33**	**282**	⇑iP		Pn	09 40 28.2	+0.6
PB04				i S		S	09 41 09.6	-0.6
PB04				IAML			09 41 13.8	
	comp=N,1μm,0.3s							
PB10	**IPOC Station P**	**3.63**	**262**	⇑iP		Pn	09 40 31.8	+0.7
PB10				i S		S	09 41 15.3	-1.2
PB14	**IPOC Station P**	**3.79**	**245**	⇑iP		Pn	09 40 33.5	+0.3
PB14				i S		S	09 41 19.2	-1.2
AHML	**Horco Molle**	**3.90**	**163**	eP		Pn	09 40 34.0	-0.2
PATCX	**Punta Patache**	**3.95**	**304**	⇓iP		Pn	09 40 35.4	+0.3
PATCX				i S		S	09 41 22.1	-1.6
HMBC	**Humberstone**	**4.10**	**312**	⇑iP		Pn	09 40 36.5	-0.4
HMBC				i S		S	09 41 24.7	-2.2
PSGC	**Pisagua**	**4.74**	**316**	⇑iP		Pn	09 40 43.8	-0.9
PSGC				i S		S	09 41 38.2	-3.0
MNMC	**Minye Minye**	**4.79**	**324**	⇓iP		Pn	09 40 45.8	+0.3
MNMC				i S		S	09 41 41.0	-1.6
CYA	**Choya**	**5.42**	**172**	eP		Pn	09 40 53.9	+0.8
BBOJ	**La Paz, Jacaqu**	**6.22**	**346**	⇓iPn		Pn	09 41 05.6	+1.6
BBOJ				⇑i Sn		S	09 42 19.0	+2.9
BBOE	**La Paz, Chanca**	**6.34**	**348**	⇑iPn		Pn	09 41 07.3	+1.8
BBOD	**La Paz, Gloria**	**6.65**	**343**	⇓iPn		Pn	09 41 10.8	+1.4
BBOD				⇑i Sn		S	09 42 27.6	+1.6
	comp=N,37nm,0.8s							
LPAZ	**La Paz**	**6.88**	**348**	P		Pn	09 41 13.1	+0.7
	comp=N,2.2nm,0.3s,baz=157,slow=8.4,SNR=67							
LPAZ				S		S	09 42 31.4	-0.2
	baz=331,slow=19,SNR=1.7							
LCO	**Las Campanas**	**6.97**	**211**	ePn		Pn	09 41 11.1	-2.0
	comp=N,6nm,0.3s							
LCO				eSn		S	09 42 18.2	-15
BBOB	**La Paz, Bander**	**7.02**	**348**	⇑iPn		Pn	09 41 14.6	+0.4
ARE	**Arequipa**	**8.00**	**324**	eP		Pn	09 41 25.0	-1.5
ARE				eS		S	09 42 54.0	-3.3
SIV	**San Ignacio**	**8.77**	**38**	P		Pn	09 41 33.9	-2.3
	comp=N,5.1nm,0.3s,baz=137,slow=1.9,SNR=102							
SIV	**San Ignacio**	**8.77**	**38**	eP		Pn	09 41 33.5	-2.7
CPUP	**Villa Florida**	**9.06**	**113**	P		Pn	09 41 39.3	-0.6
	comp=N,0.1nm,0.3s,baz=298,slow=11,SNR=6.5							
SAML	**Samuel**	**14.

7.1nm,0.3s,baz=267,slow=23,SNR=5.4
JHJ Sn **Sn** **09 42 54.4 -0.4**
34nm,0.3s,baz=234,slow=22,SNR=8.5
ASAJ Asahikawa 7.83 352 Pn Pn 09 42 37.5 -3.6
0.5nm,0.3s,baz=218,slow=12,SNR=4.0
ASAJ Sn Sn 09 44 00.0 -8.6
0.6nm,0.3s,baz=235,slow=33,SNR=2.2
KLR Kul'dur 15.72 329 Pn **Pn** **09 44 28.4 -0.1**
0.1nm,0.3s,baz=132,slow=13,SNR=3.7
H11N2 WAKE ISLAND Hy 25.94 124 T T 10 13 24.5
baz=316,slow=76,SNR=20
H11N1 WAKE ISLAND Hy 25.95 124 T T 10 13 25.4
baz=316,slow=76,SNR=9.8
H11N3 WAKE ISLAND Hy 25.95 124 T T 10 13 26.7
baz=316,slow=76,SNR=12
H11S1 WAKE ISLAND Hy 26.67 126 T T 10 14 22.9
baz=317,slow=76,SNR=7.1
H11S3 WAKE ISLAND Hy 26.67 126 T T 10 14 19.3
baz=317,slow=76,SNR=6.9
H11S2 WAKE ISLAND Hy 26.69 126 T T 10 14 24.0
baz=317,slow=76,SNR=6.0
TGY Tagaytay City 30.38 229 LR LR 09 57 19.0
comp=Z,82nm,21.0s,baz=200,slow=33
MKAR Makanchi Array 46.33 303 P **P** **09 49 13.1 +0.9**
0.8nm,0.8s,baz=88,slow=8.6,SNR=5.5
KURBB Kurchatov Arra 48.13 309 P **P** **09 49 26.3 +0.2**
0.4nm,0.3s,baz=82,slow=7.5,SNR=3.7
ILAR Eielson Array 48.89 32 P **P** **09 49 31.5 -0.3**
4.6nm,0.3s,baz=264,slow=6.3,SNR=3.2
BVAR Borovoye Array 52.63 313 P **P** **09 50 00.4 +0.3**
0.6nm,0.5s,baz=73,slow=9.7,SNR=3.4
WRA Warramunga Arr 56.76 191 P **P** **09 50 30.9 +0.6**
0.3nm,0.5s,baz=10,slow=7.2,SNR=5.2
YKA Yellowknife Ar 63.27 31 P **P** **09 51 13.1 -1.4**
0.1nm,0.7s,baz=300,slow=6.5,SNR=4.9
DAVOX Davos/Dischmat 87.61 330 LR LR 10 36 11.0
comp=Z,27nm,18.7s,baz=81,slow=38
TXAR Lajitas Array 88.77 54 P **P** **09 53 41.0 +0.8**
0.3nm,0.6s,baz=277,slow=2.8,SNR=5.3

NIED ***27*** *09:41:00,37.40N×141.60E,h5km,Mw4.0 Best double couple: M₀9.71000×10¹⁴ NP1:φs36.00000°,δ34.00000°, λ-93.00000°. NP2:φs220.00000°,δ56.00000°, λ-88.00000°.*

ISCJB ***27*** *09:41:42.6±1.3,37.39N±0.04×141.70E±0.06,h3km±6km, mb4.0/5,MS2.4/1,Error ellipse: s-maj=8.5km s-min=6.2km az=22.0.*

IDC ***27*** *09:41:44.2±1.2,37.35N×141.50E,h0km,mb3.7/4, mb1 3.7/5,mb1mx3.4/62,mbtmp3.6/5,ML3.1/1,MS2.8/3, Ms1 2.8/3,ms1mx2.6/49,Error ellipse: s-maj=30.7km s-min=24.6km az=91.0*

JMA ***27*** *09:41:45.2,37.41N×141.59E,h13km±1km,M3.8*

ISC 27 09:41:45.2±2.6,37.41N±0.05×141.47E±0.08,h6km±16km, n23,σ0°76/21,mb3.8/5,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JFK	**Kawauchi**	**0.47**	**265**	P	**Pb**	**09 41 56.3**	**+0.3**
JFK				S	**Sb**	**09 42 04.2**	**+1.0**
ONAJ	**Iwakimizuishiy**	**0.62**	**240**	P	**Pb**	**09 41 58.6**	**+0.2**
ONAJ				S	**Sb**	**09 42 08.3**	**+1.0**
JMM	**Marumori**	**0.70**	**311**	P	**Pb**	**09 42 00.0**	**+0.2**
JMM				S	**Sb**	**09 42 10.2**	**+0.4**
JFT	**Otama**	**0.91**	**277**	P	**Pn**	**09 42 04.2**	**-0.3**
JFT				S	**Sn**	**09 42 17.4**	**-0.5**
JIO	**Ouri**	**1.05**	**355**	*e*S	**Sg**	**09 42 18.2**	**-0.7**
JHO	**Hitachi**	**1.07**	**222**	*e*S	**Sn**	**09 42 21.3**	**-0.7**
JOU	**Okura**	**1.15**	**327**	P	**Pb**	**09 42 07.5**	**+0.1**
JOU				S	**Sn**	**09 42 23.9**	**+0.1**
MJAR	**Matsushiro Arr**	**2.75**	**253**	Pn	**Pn**	**09 42 31.0**	**+1.2**
	3.3nm,0.3s,baz=81,slow=15,SNR=12						
MJAR				Sn	**Sb**	**09 43 07.3**	**-1.4**
	4.9nm,0.3s,baz=75,slow=15,SNR=5.8						
MAT	**Matsushiro**	**2.75**	**253**	P	**Pn**	**09 42 30.8**	**+1.0**
MAT				S	**Sb**	**09 43 07.8**	**-1.0**
JNU	**Nakatsue**	**9.66**	**247**	LR	LR	09 47 59.4	
	comp=Z,58nm,18.1s,baz=121,slow=39						
USRK	**Ussuriysk Ar.**	**9.88**	**316**	LR	LR	09 47 41.9	
	comp=Z,112nm,20.4s,baz=140,slow=36						
GUMO	**Guam**	**23.92**	**172**	LR	LR	09 56 50.3	
	comp=Z,114nm,21.2s,baz=86,slow=38						
H11N2	**WAKE ISLAND Hy 28.30**	**121**		T	T	10 17 09.2	
	baz=314,slow=75,SNR=47						
H11N1	**WAKE ISLAND Hy 28.31**	**121**		T	T	10 17 09.9	
	baz=314,slow=75,SNR=58						
H11N3	**WAKE ISLAND Hy 28.32**	**121**		T	T	10 17 10.7	
	baz=314,slow=75,SNR=48						
H11S1	**WAKE ISLAND Hy 29.03**	**124**		T	T	10 18 03.5	
	baz=316,slow=76,SNR=53						
H11S3	**WAKE ISLAND Hy 29.03**	**124**		T	T	10 18 04.9	
	baz=316,slow=76,SNR=33						
H11S2	**WAKE ISLAND Hy 29.04**	**124**		T	T	10 18 06.3	
	baz=316,slow=76,SNR=36						
MKAR	**Makanchi Array**	**43.96**	**302**	P	**P**	**09 49 52.9**	**0.0**
	0.8nm,0.7s,baz=96,slow=7.4,SNR=5.8						
KURBB	**Kurchatov Arra**	**45.81**	**308**	P	**P**	**09 50 07.4**	**-0.1**
	0.5nm,0.4s,baz=83,slow=8.2,SNR=6.5						
ILAR	**Eielson Array**	**49.15**	**33**	P	**P**	**09 50 34.0**	**+0.6**
	7.5nm,0.4s,baz=264,slow=6.3,SNR=3.0						
WRA	**Warramunga Arr**	**57.44**	**188**	P	**P**	**09 51 34.1**	**-0.6**
	0.7nm,0.7s,baz=4.9,slow=7.2,SNR=9.1						
ASAR	**Alice Springs**	**61.17**	**188**	P	**P**	**09 51 59.9**	**-0.6**
	0.3nm,0.7s,baz=1.5,slow=5.6,SNR=4.2						

IDC 27 09:46:56.8±9.9,21.76N×143.57E,h222km±97km,mb3.2/9, mb1 3.3/9,mb1mx3.0/58,mbtmp3.8/9,Error ellipse: s-maj=27.0km s-min=14.8km az=88.0,Mariana Islands region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
KLR	**Kul'dur**	**28.98**	**344**	P	P	09 52 35.6	+0.1
	2.1nm,0.4s,baz=170,slow=7.9,SNR=9.3						
WRA	**Warramunga Arr**	**42.42**	**193**	P	P	09 54 29.9	0.0
	0.1nm,0.3s,baz=16,slow=9.2,SNR=9.8						
ASAR	**Alice Springs**	**46.12**	**192**	P	P	09 54 58.8	-0.3
	0.2nm,0.7s,baz=13,slow=12,SNR=3.5						
MKAR	**Makanchi Array**	**54.92**	**313**	P	P	09 56 04.5	-0.1
	0.3nm,0.3s,baz=90,slow=9.9,SNR=3.0						
KURBB	**Kurchatov Arra**	**57.72**	**317**	P	P	09 56 24.2	0.0
	0.9nm,0.4s,baz=93,slow=7.4,SNR=5.5						
ILAR	**Eielson Array**	**61.82**	**27**	P	P	09 56 51.1	-0.8
	0.4nm,0.7s,baz=259,slow=6.2,SNR=5.1						
BVAR	**Borovoye Array**	**62.85**	**319**	P	P	09 56 59.3	+0.3
	0.9nm,0.4s,baz=88,slow=6.8,SNR=5.5						
INK	**Inuvik**	**67.37**	**24**	P	P	09 57 28.0	+0.4
	0.4nm,0.5s,baz=286,slow=11,SNR=5.6						
YKA	**Yellowknife Ar**	**76.23**	**28**	P	P	09 58 20.8	+0.4
	0.8nm,0.5s,baz=292,slow=5.8,SNR=29						
FINES	**FINESS Array B**	**83.28**	**335**	P	P	09 58 57.6	-0.6
	0.2nm,0.3s,baz=177,slow=36,SNR=3.2						

IDC 27 09:59:13.3±2.0,6.21S×129.79E,h0km,mb4.1/1, mb1 3.8/4,mb1mx3.5/32,mbtmp3.7/4,ML3.6/3,Error ellipse: s-maj=84.1km s-min=27.4km az=76.0,Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
FITZ	**Fitzroy Crossi**	**12.50**	**199**	Pn	Pn	10 02 14.5	+2.0
	0.3nm,0.3s,baz=108,slow=20,SNR=5.1						
FITZ				Sn	Sn	10 04 18.3	-14
	0.2nm,0.3s,baz=6.9,slow=19,SNR=1.8						
WRA	**Warramunga Arr**	**14.35**	**162**	Pn	Pn	10 02 37.3	-0.6
	0.3nm,0.3s,baz=340,slow=12,SNR=5.3						
WRA				Sn	Sn	10 05 03.1	-15
	0.4nm,0.3s,baz=347,slow=22,SNR=7.2						
ASAR	**Alice Springs**	**17.80**	**168**	P	Pn	10 03 21.5	-1.2
	0.2nm,0.3s,baz=345,slow=11,SNR=22						
MKAR	**Makanchi Array**	**67.45**	**327**	P	P	10 10 11.0	0.0
	0.9nm,0.4s,baz=127,slow=6.9,SNR=9.4						

JMA 27 10:06:01.7±0.2,37.22N×142.44E,h2km±3km,M3.9,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JFK	**Kawauchi**	**1.26**	**277**	P	Pg	10 06 25.6	-0.2
JFK				S	Sb	10 06 43.0	+0.2
ONAJ	**Iwakimizuishiy**	**1.32**	**265**	P	Pg	10 06 26.4	-0.5
ONAJ				S	Sb	10 06 44.4	-0.1
JMM	**Marumori**	**1.46**	**297**	P	Pn	10 06 28.8	-0.3
JMM				S	Sb	10 06 48.3	-0.3
JIO	**Ouri**	**1.50**	**325**	P	Pn	10 06 29.4	-0.3
JFT	**Otama**	**1.70**	**281**	P	Pb	10 06 33.1	-0.6
JFT				S	Sb	10 06 55.4	-0.2
MAT	**Matsushiro**	**3.46**	**260**	P	Pn	10 06 58.7	+2.1
MAT				*e*S	Sn	10 07 40.0	+1.8

JMA 27 10:18:28.4±0.4,35.78N×143.23E,h82km,M3.5,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
CHOJ	**Chosi**	**1.93**	**268**	P	Pn	10 19 00.5	+1.1
BSO1	**Boso 1**	**2.16**	**239**	P	Pn	10 19 02.1	+0.2
JHO	**Hitachi**	**2.31**	**292**	P	Pn	10 19 04.8	+0.4
ONAJ	**Iwakimizuishiy**	**2.36**	**305**	P	Pn	10 19 05.6	+0.4
ONAJ				*e*S	Sn	10 19 34.0	+0.6
BSO3	**Boso 3**	**2.43**	**247**	P	Pn	10 19 07.3	+1.5
JFK	**Kawauchi**	**2.47**	**311**	P	Pn	10 19 06.9	+0.3
JYT	**Yasato**	**2.50**	**281**	P	Pn	10 19 07.6	+0.6
JYT				*e*S	Sn	10 19 37.0	+0.4
JFT	**Otama**	**2.90**	**308**	P	Pn	10 19 13.8	+1.4
JFT				S	Sn	10 19 47.9	+1.5
JAG	**Ashikaga**	**3.12**	**283**	P	Pn	10 19 16.6	+1.2
JHU	**Hanno**	**3.21**	**272**	P	Pn	10 19 19.2	+2.6
JOD2	**Odawara 2**	**3.42**	**263**	P	Pn	10 19 20.6	+1.2
JRY	**Ryogami san**	**3.52**	**275**	P	Pn	10 19 22.3	+1.4
JMK	**Ichinoseki**	**3.55**	**334**	P	Pn	10 19 21.2	0.0
MAT	**Matsushiro**	**4.13**	**282**	P	Pn	10 19 32.4	+3.2
MAT				S	Sn	10 20 18.1	+1.8

IDC 27 10:19:35.5±4.6,34.61N×142.57E,h0km,mb3.5/3, mb1 3.6/4,mb1mx3.2/62,mbtmp3.4/4,ML3.1/1,Error ellipse: s-maj=153.1km s-min=27.2km az=62.0,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JHJ	**Hachijo jima 2**	**2.75**	**238**	Sn	Sn	10 20 56.0	+1.1
	16nm,0.3s,baz=233,slow=20,SNR=3.0						
MJAR	**Matsushiro Arr**	**4.04**	**300**	Pn	Pn	10 20 38.7	+0.1
	1.3nm,0.3s,baz=102,slow=8.9,SNR=5.9						
KURBB	**Kurchatov Arra**	**48.25**	**310**	P	P	10 28 17.7	-0.3
	0.3nm,0.4s,baz=85,slow=7.5,SNR=1.9						
WRA	**Warramunga Arr**	**54.81**	**189**	P	P	10 29 07.2	-0.2
	0.7nm,0.7s,baz=10,slow=7.6,SNR=6.0						
ASAR	**Alice Springs**	**58.54**	**189**	P	P	10 29 33.9	0.0
	0.3nm,0.7s,baz=13,slow=7.8,SNR=5.7						

JMA 27 10:27:00.2±0.2,38.12N×142.10E,h16km±1km,M3.5, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**0.68**	**300**	P	Pg	10 27 13.2	-0.3
JIO				S	Sg	10 27 22.4	-0.1
OFUJ	**Ofunato**	**1.02**	**341**	P	Pb	10 27 18.8	-0.6
OFUJ				S	Sg	10 27 33.0	-0.2
JMM	**Marumori**	**1.06**	**257**	S	Sb	10 27 33.0	-0.9
JMK	**Ichinoseki**	**1.08**	**321**	P	Pn	10 27 20.6	-0.1
JMK				S	Sb	10 27 34.6	+0.2
JOU	**Okura**	**1.16**	**283**	P	Pn	10 27 21.7	-0.1
MIYJ	**Miyakonagasawa**	**1.47**	**352**	P	Pn	10 27 25.2	-0.9
MIYJ				S	Sn	10 27 44.1	-0.9
JOM	**Ohasama**	**1.49**	**335**	P	Pn	10 27 26.6	+0.3
JOM				S	Sb	10 27 46.4	+0.2

NIED ***27*** *10:27:00,36.80N×138.60E,h8km,Mw4.4 Best double couple: M₀5.13000×10¹⁵ NP1:φs102.00000°,δ78.00000°, λ-170.00000°. NP2:φs10.00000°,δ80.00000°, λ-12.00000°.*

IDC ***27*** *10:27:23.8±0.5,36.88N×138.49E,h0km,mb3.9/19, mb1 4.2/23,mb1mx4.1/63,mbtmp4.0/23,ML3.2/3,MS3.6/22, Ms1 3.6/22,ms1mx3.5/47,Error ellipse: s-maj=15.7km s-min=5.9km az=113.0*

ISCJB ***27*** *10:27:24.0±0.5,36.82N±0.03×138.58E±0.03,h16km±4km, mb4.0/30,MS3.6/16,Error ellipse: s-maj=5.5km s-min=3.8km az=144.4*

JMA ***27*** *10:27:24.2±0.2,36.82N×138.62E,h0km±3km,M4.6 Broadband fault plane solution: P waves. NP1: φs184.00000°,λ85.00000°,λ8.00000°. NP2:φs94.00000°, δ82.00000°,λ175.00000°. Principal axes: T Plg9.0000°, Azm49.0000°; N Plg81.0000°, Azm217.0000°; P Plg2.0000°, Azm319.0000°;*

JMA Felt IV J1.

NEIC ***27*** *10:27:26.0±0.8,36.75N×138.49E,h18km±5km,mb4.3/11 Error ellipse: s-maj=7.5km s-min=5.7km az=119.0*

NEIC Recorded [4 JMA] in Gumma.

ISC 27 10:27:24.7±1.0,36.80N±0.03×138.62E±0.03,h10km±6km, n69,σ1§18/69,mb4.2/30,MS3.6/16,3C-4D,Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JGK	**Kuni**	**0.23**	**175**	⇓P	**Pg**	**10 27 29.9**	**+0.4**
JGK				S	**Sg**	**10 27 33.9**	**+1.1**
MJAR	**Matsushiro Arr**	**0.41**	**232**	Pg	**Pg**	**10 27 32.4**	**-0.4**
	4μm,0.3s,baz=43,slow=19						
MJAR				Lg	Lg	10 27 37.4	
	4μm,0.3s,baz=250,slow=29,SNR=68						
MJAR				LR	LR	10 27 53.5	
	comp=Z,42μm,21.8s,baz=50,slow=73						
MAJO	**Matsushiro**	**0.41**	**233**	*e*Pg	**Pg**	**10 27 32.6**	**-0.2**
MAJO				*e*Sg	**Sg**	**10 27 37.2**	**-1.2**
MAT	**Matsushiro**	**0.41**	**233**	P	**Pg**	**10 27 32.6**	**-0.3**
MAT				S	**Sg**	**10 27 38.3**	**-0.1**
MAT	**Matsushiro**	**0.41**	**233**	P	**Pg**	**10 27 32.6**	**-0.3**
MAT				S	**Sg**	**10 27 38.3**	**-0.1**
JKT	**Katashina**	**0.51**	**93**	⇓P	**Pg**	**10 27 34.1**	**-0.6**
JKT				S	**Sg**	**10 27 41.0**	**-0.4**
JHK	**Hiroka**	**0.55**	**35**	⇑P	**Pg**	**10 27 34.3**	**-1.2**
JHK				S	**Sg**	**10 27 41.4**	**-1.4**
JNG	**Nsakai**	**0.57**	**227**	⇑P	**Pg**	**10 27 35.5**	**-0.3**
JNG				S	**Sg**	**10 27 43.3**	**0.0**
JIZZ	**Izumozaki**	**0.74**	**6**	⇑P	**Pg**	**10 27 39.0**	**0.0**
JAG	**Ashikaga**	**0.77**	**119**	⇓P	**Pg**	**10 27 39.3**	**-0.2**
JAG				S	**Sg**	**10 27 49.5**	**-0.1**
JRY	**Ryogami san**	**0.81**	**163**	⇓P	**Pg**	**10 27 39.9**	**-0.5**
JHJ	**Hachijo jima 2**	**3.79**	**165**	Pn	**Pn**	**10 28 25.6**	**+2.4**
	98nm,0.3s,baz=212,slow=3.9,SNR=23						
JHJ				Sn	**Sb**	**10 29 13.9**	**-3.8**
	14nm,0.3s,baz=46,slow=12,SNR=2.0						
JHJ				LR	LR	10 29 56.2	
	comp=Z,1μm,18.6s,baz=108,slow=39						
JHJ2	**Mitsune**	**3.81**	**165**	*e*Pn	**Pn**	**10 28 22.7**	**-0.7**
ERM	**Erimo**	**6.29**	**33**	*e*Pn	**Pn**	**10 28 58.5**	**+1.1**
	41nm,0.7s						
JNU	**Nakatsue**	**7.33**	**242**	Pn	**Pn**	**10 29 12.6**	**+0.6**
	1.0nm,0.3s,baz=76,slow=4.7,SNR=10						
JNU				LR	LR	10 32 25.6	
	comp=Z,520nm,20.8s,baz=90,slow=41						
ASAJ	**Asahikawa**	**7.92**	**21**	Pn	Pn	10 29 23.3	+3.5
	1.1nm,0.3s,baz=200,slow=10.0,SNR=5.4						
ASAJ				LR	LR	10 32 44.3	
	comp=Z,346nm,18.3s,baz=178,slow=41						
ASAJ	**Asahikawa**	**7.92**	**21**	Pn	**Pn**	**10 29 23.0**	**+3.1**
KSRS	**Korea Array**	**8.57**	**278**	Pn	**Pn**	**10 29 31.2**	**+2.4**
	3.3nm,0.3s,baz=94,slow=14,SNR=42						
KSRS				LR	LR	10 32 29.3	
	comp=Z,249nm,21.4s,baz=99,slow=36						
KSAR	**Wonju Array Be**	**8.60**	**278**	Pn	**Pn**	**10 29 31.2**	**+2.0**
USRK	**Ussuriysk Ar.**	**8.95**	**328**	Pn	**Pn**	**10 29 33.6**	**-0.4**
	0.6nm,0.3s,baz=146,slow=14,SNR=7.9						
USRK				LR	LR	10 32 47.2	
	comp=Z,230nm,19.4s,baz=139,slow=37						
MDJ	**Mudanjiang**	**10.38**	**322**	*e*Pn	**Pn**	**10 29 54.0**	**+0.3**
YSS	**Yuzh-Sakhalins**	**10.61**	**16**	*e*Pn	**Pn**	**10 29 58.4**	**+1.7**
KLR	**Kul'dur**	**13.40**	**340**	Pn	**Pn**	**10 30 34.5**	**-0.3**
	0.1nm,0.3s,baz=146,slow=13,SNR=3.7						
KLR				LR	LR	10 35 06.5	
	comp=Z,236nm,22.0s,baz=152,slow=35						
BJT	**Baijiatuau**	**17.88**	**287**	*e*Pn	**Pn**	**10 31 32.7**	**-0.8**
	24nm,1.5s						
PETK	**Petropavlovsk-**	**21.07**	**33**	P	**P**	**10 32 08.8**	**-0.1**
	1.9nm,0.7s,baz=188,slow=9.7,SNR=3.3						
PETK				LR	LR	10 40 26.1	
	comp=Z,71nm,18.2s,baz=231,slow=37						
PET	**Petropavlovsk**	**21.44**	**34**	*e*P	**P**	**10 32 15.1**	**+2.2**
	2.2nm,0.3s						
GUMO	**Guam**	**23.78**	**165**	LR	LR	10 40 26.9	
	comp=Z,256nm,21.8s,baz=24,slow=33						
MA2	**Magadan**	**24.11**	**15**	P	**P**	**10 32 40.4**	**0.0**
	5.2nm,0.7s,baz=211,slow=13,SNR=5.7						
MA2				LR	LR	10 41 56.8	
	comp=Z,123nm,20.4s,baz=214,slow=36						
ENH	**Enshi**	**25.08**	**263**	*e*P	**P**	**10 32 48.2**	**-1.3**
	9.2nm,1.1s						
ULN	**Ulaanbaatar**	**25.65**	**305**	P	**P**	**10 32 54.4**	**-0.3**
	8.3nm,1.6s						
YAK	**Yakutsk**	**25.87**	**350**	LR	LR	10 43 01.3	
	comp=Z,147nm,20.6s,baz=164,slow=36						
YAK	**Yakutsk**	**25.87**	**350**	*e*P	**P**	**10 32 55.1**	**-1.1**
	15nm,0.7s						
SONM	**Songino Array**	**26.07**	**305**	P	**P**	**10 32 56.9**	**-1.6**
	0.5nm,0.7s,baz=107,slow=9.6,SNR=2.8						
SONM				LR	LR	10 43 12.1	
	comp=Z,153nm,18.6s,baz=110,slow=37						
SEY	**Seymchan**	**27.50**	**14**	P	**P**	**10 33 11.9**	**+0.9**
	3.0nm,0.8s,baz=212,slow=9.7,SNR=9.9						
TLY	**Talaya**	**28.81**	**312**	LR	LR	10 43 55.9	
	comp=Z,122nm,18.1s,baz=113,slow=35						
CMAR	**Chiang Mai Arr**	**39.27**	**253**	LR	LR	10 54 06.1	
	comp=Z,90nm,18.4s,baz=174,slow=41						
ZALV	**Zalesovo Beam**	**40.42**	**313**	PcP	**PcP**	**10 37 05.2**	**-0.5**
	1.6nm,0.5s,baz=118,slow=2.5,SNR=7.0						
ZALV				LR	LR	10 50 18.9	
	comp=Z,43nm,18.9s,baz=68,slow=34						
TNA	**Tin City**	**42.17**	**30**	*e*P	**P**	**10 35 17.6**	**+0.5**
	5.0nm,1.0s						
MKAR	**Makanchi Array**	**42.34**	**302**	P	**P**	**10 35 18.5**	**-0.3**
	0.4nm,0.7s,baz=96,slow=8.4,SNR=3.1						
MKAR				PcP	**PcP**	**10 37 11.6**	**-0.6**
	0.6nm,0.8s,baz=81,slow=3.1,SNR=3.6						
MKAR				LR	LR	10 52 17.3	
	comp=Z,66nm,21.9s,baz=98,slow=35						
NRIK	**Noril'sk**	**42.56**	**336**	LR	LR	10 54 11.1	
	comp=Z,93nm,18.1s,baz=106,slow=38						
KURK	**Kurchatov**	**44.31**	**308**	P	**P**	**10 35 36.0**	**+1.4**
KURBB	**Kurchatov Arra**	**44.38**	**308**	P	**P**	**10 35 36.0**	**+0.9**
	0.9nm,0.6s,baz=82,slow=7.9,SNR=4.2						
TKM2	**Tokmak 2**	**47.77**	**298**	*e*P	**P**	**10 36 02.1**	**-0.1**
	3.2nm,1.3s						
BVAR	**Borovoye Array**	**49.07**	**312**	P	**P**	**10 36 12.5**	**+0.6**
	0.6nm,0.5s,baz=79,slow=7.7,SNR=3.7						
BVAR				PcP	**PcP**	**10 37 35.2**	**-0.3**
	0.3nm,0.3s,baz=83,slow=4.8,SNR=4.3						
ILAR	**Eielson Array**	**50.89**	**32**	P	**P**	**10 36 26.8**	**+1.2**
	1.9nm,0.8s,baz=285,slow=6.8,SNR=15						
INK	**Inuvik**	**55.62**	**27**	P	**P**	**10 37 01.6**	**+1.4**
	1.8nm,0.7s,baz=286,slow=7.4,SNR=7.7						
INK	**Inuvik**	**55.62**	**27**	*e*P	**P**	**10 37 01.4**	**+1.2**
	3.4nm,1.0s						
WRAB	**Tennant Creek**	**56.56**	**185**	*e*P	**P**	**10 37 06.6**	**-0.9**
	5.0nm,0.7s						
WRA	**Warramunga Arr**	**56.58**	**185**	P	**P**	**10 37 06.9**	**-0.7**
	7.6nm,0.8s,baz=0.3,slow=7.5,SNR=70						
ASAR	**Alice Springs**	**60.30**	**185**	P	**P**	**10 37 33.0**	**-0.6**
	1.8nm,0.7s,baz=6.6,slow=5.2,SNR=26						
RES	**Resolute Bay**	**63.38**	**14**	*e*P	**P**	**10 37 52.8**	**-0.9**
	3.1nm,1.0s						
ARCES	**ARCESS Array B**	**63.42**	**339**	LR	LR	11 08 57.3	
	comp=Z,60nm,19.5s,baz=42,slow=39						
YKA	**Yellowknife Ar**	**65.13**	**29**	P	**P**	**10 38 05.2**	**-0.2**
	0.4nm,0.8s,baz=304,slow=6.7,SNR=8.7						
FINES	**FINESS Array B**	**67.97**	**331**	P	**P**	**10 38 22.1**	**-1.4**
	1.9nm,0.7s,baz=46,slow=8.2,SNR=4.8						
FINES				LR	LR	11 10 31.5	
	comp=Z,56nm,18.1s,baz=30,slow=38						
AKASG	**Malin Array Be**	**73.10**	**321**	P	**P**	**10 38 53.5**	**-1.5**
	0.9nm,0.5s,baz=49,slow=6.3,SNR=7.9						
AKASG				LR	LR	11 13 34.2	
	comp=Z,93nm,18.9s,baz=35,slow=38						
NB2	**NORSAR Subarra**	**73.52**	**336**	P	**P**	**10 38 56.5**	**-0.9**
	comp=Z,8.1nm,1.4s,baz=40,slow=6.2						
NOA	**NORSAR Array B**	**73.52**	**336**	P	**P**	**10 38 56.9**	**-0.6**
	comp=Z,2.1nm,0.9s,baz=41,slow=5.9,SNR=4.7						
NOA				LR	LR	11 13 29.0	
	comp=Z,28nm,19.6s,baz=20,slow=38						
EGMT	**Eagleton**	**75.91**	**40**	*e*P	**P**	**10 39 12.2**	**+0.7**
	comp=Z,12nm,1.1s						
NVAR	**Mina Array Bea**	**76.91**	**52**	P	**P**	**10 39 19.0**	**+1.4**
	comp=Z,1.9nm,0.8s,baz=290,slow=5.1,SNR=11						
BRTR	**Keskin Array B**	**77.31**	**310**	P	**P**	**10 39 19.4**	**-0.4**
	comp=Z,0.7nm,0.6s,baz=77,slow=7.6,SNR=2.5						
BRTR				LR	LR	11 18 44.2	
	comp=Z,20nm,18.6s,baz=91,slow=40						
KOLS	**Kolonicke sedl**	**77.68**	**323**	*e*P	P	10 39 27.0	+5.6
STHS	**Stebnicka Huta**	**77.84**	**324**	*e*P	P	10 39 27.0	+4.7
PDAR	**Pinedale Array**	**79.41**	**44**	P	**P**	**10 39 33.2**	**+1.8**
	comp=Z,1.0nm,0.8s,baz=191,slow=1.5,SNR=8.3						
VYHS	**Vyhne**	**79.62**	**324**	*e*P	P	10 39 38.0	+5.8
CLL	**Collm**	**80.16**	**329**	*e*P	P	10 39 40.0	+5.0
	comp=Z,7.0nm,1.1s						
GERES	**GERESS Array B**	**81.71**	**327**	P	**P**	**10 39 42.9**	**-0.6**
	comp=Z,0.3nm,0.3s,baz=22,slow=4.3,SNR=5.2						
GERES				LR	LR	11 17 48.9	
	comp=Z,41nm,18.1s,baz=55,slow=37						
TXAR	**Lajitas Array**	**92.02**	**51**	P	**P**	**10 40 35.6**	**+1.4**
	comp=Z,0.3nm,0.6s,baz=314,slow

baz=294
SZAC S Sn 10 39 43.3 +2.7
SZAC Souni 1.41 107 P Pn 10 39 23.5 +0.4
SZAC S Sn 10 39 43.3 +2.7
AKDN Akdeniz- K¯–br 1.41 85 *e*PN Pn 10 39 23.2 +0.1
AKDN Akdeniz- K¯–br 1.41 85 *e*Pn Pn 10 39 23.2 +0.1
MAMC Mammari 1.61 90 P Pn 10 39 26.6 +0.8
baz=277
MAMC Mammari 1.61 90 P Pn 10 39 26.6 +0.8
CSS Mathiatis 1.72 97 P Pn 10 39 27.5 +0.2
baz=283
CSS Mathiatis 1.72 97 Pn Pn 10 39 27.8 +0.5
CSS Sn Sn 10 39 49.9 +1.7
CSS Mathiatis 1.72 97 P Pn 10 39 27.5 +0.2
CSS Mathiatis 1.72 97 Pn Pn 10 39 27.8 +0.5
CSS Sn Sn 10 39 49.9 +1.7
LFK Lefkose 1.87 86 *e*PN Pn 10 39 30.2 +0.8
LFK Lefkose 1.87 86 *e*Pn Pn 10 39 30.2 +0.8
KORT Korkueli 1.96 338 *i*P Pn 10 39 32.2 +1.6
KORT *i*S Sn 10 40 05.7 +12
KORT Korkueli 1.96 338 P Pn 10 39 32.2 +1.6
ERMK Ermenek 1.99 42 *i*P Pn 10 39 31.6 +0.5
ERMK *i*S Sn 10 39 58.9 +4.0
ERMK Ermenek 1.99 42 P Pn 10 39 31.6 +0.5
IKL Isikli 2.25 61 *e*PN Pn 10 39 34.1 -0.3
IKL Isikli 2.25 61 *e*Pn Pn 10 39 34.1 -0.3
SUTC Sutluce-Ispart 2.30 355 *e*PN Pn 10 39 37.9 +2.6
SUTC Sutluce-Ispart 2.30 355 *e*Pn Pn 10 39 37.9 +2.6
KIZK Mersin 2.69 60 *i*P Pn 10 39 41.3 +0.8
KIZK *i*S Sn 10 40 11.2 -0.6
KIZK Mersin 2.69 60 P Pn 10 39 41.3 +0.8
KIZK S Sn 10 40 11.2 -0.6
ISP Isparta 2.70 348 Pn Pn 10 39 42.4 +1.6
ISP Isparta 2.70 348 Pn Pn 10 39 42.4 +1.6
TURN Turunc 2.73 309 *i*P Pn 10 39 42.8 +1.8
TURN *i*S Sn 10 40 14.3 +1.5
TURN Turunc 2.73 309 P Pn 10 39 42.8 +1.8
TURN S Sn 10 40 14.3 +1.5
KMER Konya-Meram 2.73 19 *i*P Pn 10 39 42.1 +0.8
KMER *i*S Sn 10 40 13.6 +0.4
KMER Konya-Meram 2.73 19 P Pn 10 39 42.1 +0.8
KMER S Sn 10 40 13.6 +0.4
BAGO Egridir - ISPA 2.83 353 *i*P Pn 10 39 41.0 -1.5
BAGO *i*S Sn 10 40 14.1 -1.3
KONT Konya--Tatoy 2.90 18 *e*PN Pn 10 39 44.5 +1.1
KONT Konya--Tatoy 2.90 18 *e*Pn Pn 10 39 44.5 +1.1
LADK Ladik-KONYA 3.14 16 *e*PN Pn 10 39 48.1 +1.3
LADK Ladik-KONYA 3.14 16 *e*Pn Pn 10 39 48.1 +1.3
MERS Mersin 3.14 57 *e*PN Pn 10 39 46.8 0.0
MERS Mersin 3.14 57 *e*Pn Pn 10 39 46.8 0.0
KERG Konya-Eregli 3.22 45 *i*P Pn 10 39 48.6 +0.7
KERG *i*S Sn 10 40 26.0 +0.9
KERG Konya-Eregli 3.22 45 P Pn 10 39 48.6 +0.7
KERG S Sn 10 40 26.0 +0.9
YESY Yesilyurt 3.28 37 *e*PN Pn 10 39 49.0 +0.3
YESY Yesilyurt 3.28 37 *e*Pn Pn 10 39 49.0 +0.3
DED Mersin 3.38 57 *i*P Pn 10 39 49.8 -0.2
DED *i*S Sn 10 40 28.6 -0.3
KDHN Kadinhani 3.41 12 *i*P Pn 10 39 50.3 -0.1
KDHN *i*S Sn 10 40 31.9 +2.3
KDHN Kadinhani 3.41 12 P Pn 10 39 50.3 -0.1
KDHN S Sn 10 40 31.9 +2.3
KHAL Karahalli 3.48 337 *i*P Pn 10 39 50.3 -1.2
KHAL *i*S Sn 10 40 29.8 -1.6
KHAL Karahalli 3.48 337 P Pn 10 39 50.3 -1.2
KHAL S Sn 10 40 29.8 -1.6
BOLV Bolvadin 3.54 356 *i*P Pn 10 39 51.6 -0.7
BOLV *i*S Sn 10 40 31.1 -1.8
BOLV Bolvadin 3.54 356 P Pn 10 39 51.6 -0.7
GULE Gulek 3.54 53 *i*P Pn 10 39 53.9 +1.6
GULE *i*S Sn 10 40 34.8 +1.8
GULE Gulek 3.54 53 P Pn 10 39 53.9 +1.6
GULE S Sn 10 40 34.8 +1.8
KRTS Karatas 3.63 66 *e*PN Pn 10 39 53.7 +0.4
KRTS Karatas 3.63 66 *e*Pn Pn 10 39 53.7 +0.4
CHBY Cihanbeyli 3.64 21 *e*PN Pn 10 39 54.7 +1.1
CHBY Cihanbeyli 3.64 21 *e*Pn Pn 10 39 54.7 +1.1
AYDN Tasoluk 3.67 313 *i*P Pn 10 39 53.0 -1.1
AYDN *i*S Sn 10 40 30.4 -5.7
AYDN Tasoluk 3.67 313 P Pn 10 39 53.0 -1.1
HNTI Hanita 3.87 122 Pn Pn 10 39 57.8 +1.1
HNTI Sn Sn 10 40 41.3 +0.4
HNTI Hanita 3.87 122 Pn Pn 10 39 57.8 +1.1
HNTI Sn Sn 10 40 41.3 +0.4
YURE YUREGIR 3.92 64 *i*P Pn 10 39 57.6 +0.3
YURE *i*S Sn 10 40 39.9 -2.1
YURE YUREGIR 3.92 64 P Pn 10 39 57.6 +0.3
GULA Gulagac 3.96 36 *e*PN Pn 10 39 58.7 +0.6
GULA Gulagac 3.96 36 *e*Pn Pn 10 39 58.7 +0.6
NIG Nigde 3.98 42 *e*PN Pn 10 39 58.8 +0.4
NIG Nigde 3.98 42 *e*Pn Pn 10 39 58.8 +0.4
OFRI 'Ofer 4.02 128 Pn Pn 10 39 59.1 +0.3
OFRI Sn Sn 10 40 45.0 +0.3
OFRI 'Ofer 4.02 128 Pn Pn 10 39 59.1 +0.3
OFRI Sn Sn 10 40 45.0 +0.3
YAYL Yayladag 4.05 76 *i*P Pn 10 39 58.7 -0.6
YAYL *i*S Sn 10 40 39.6 -5.9
YAYL Yayladag 4.05 76 P Pn 10 39 58.7 -0.6
MMA0B Mount Meron ar 4.07 121 Pn Pn 10 39 59.4 -0.1
MMA0B Sn Sn 10 40 46.1 +0.2
MMA0B Mount Meron ar 4.07 121 Pn Pn 10 39 59.4 -0.1
MMA0B Sn Sn 10 40 46.1 +0.2
MMAI Mount Meron Ar 4.07 121 Pn Pn 10 39 59.7 +0.2
9.2nm,0.3s,baz=307,slow=12,SNR=20
MMAI Sn Sn 10 40 46.9 +1.0
30nm,0.3s,baz=135,slow=19,SNR=12
CEYT Ceyhan 4.08 62 *e*PN Pn 10 40 00.2 +0.8
CEYT Ceyhan 4.08 62 *e*Pn Pn 10 40 00.2 +0.8
AKO Adana 4.08 55 *i*P Pn 10 40 00.7 +1.1
AKO *i*S Sn 10 40 46.7 +0.6
BLGI Bet Lehem HaGe 4.09 126 Pn Pn 10 39 59.0 -0.7
BLGI Bet Lehem HaGe 4.09 126 Pn Pn 10 39 59.0 -0.7
GDZ Gediz 4.15 341 *i*P Pn 10 39 59.4 -1.2
GDZ *i*S Sn 10 40 43.0 -4.9
GDZ Gediz 4.15 341 P Pn 10 39 59.4 -1.2
KSDI Kefar Szold 4.16 117 Pn Pn 10 40 00.5 -0.1
KSDI Sn Sn 10 40 47.8 -0.2
KSDI Kefar Szold 4.16 117 Pn Pn 10 40 00.5 -0.1
KSDI Sn Sn 10 40 47.8 -0.2
BIDA Albida 4.16 91 *e*P Pn 10 40 00.2 -0.6
BIDA *e*S Sn 10 40 45.1 -3.1
BIDA AML AML 10 41 01.1
comp=E,211nm,0.5s
BIDA AML AML 10 41 01.4
comp=N,167nm,0.5s
BIDA Albida 4.16 91 *e*P Pn 10 40 00.2 -0.6
BIDA *e*S Sn 10 40 45.1 -3.1
comp=N,167nm,0.5s
TAHT Tahtakopru-Hat 4.19 72 *e*PN Pn 10 40 02.0 +1.1
TAHT Tahtakopru-Hat 4.19 72 *e*Pn Pn 10 40 02.1 +1.1
WRDH Warideh 4.23 84 *e*P Pn 10 40 02.3 +0.6
WRDH *e*S Sn 10 40 46.7 -3.2
WRDH AML AML 10 40 57.3
comp=E,26nm,0.4s
WRDH AML AML 10 41 01.3
comp=N,51nm,0.2s
WRDH Warideh 4.23 84 *e*P Pn 10 40 02.3 +0.6
WRDH *e*S Sn 10 40 46.7 -3.2
comp=N,51nm,0.2s
BRBR Barbar 4.28 113 *e*P Pn 10 40 02.8 +0.4
BRBR *e*S Sn 10 40 48.1 -3.0
BRBR AML AML 10 40 52.7
comp=N,75nm,0.3s
BRBR AML AML 10 40 57.3
comp=E,63nm,0.3s
BRBR Barbar 4.28 113 *e*P Pn 10 40 02.8 +0.4
BRBR *e*S Sn 10 40 48.1 -3.0
comp=E,63nm,0.3s
SLTI Sal'it 4.31 132 Sn Sn 10 40 51.3 -0.5
SLTI Sal'it 4.31 132 Sn Sn 10 40 51.3 -0.5
ESKT Eskisehir 4.34 356 *i*P Pn 10 40 02.2 -1.1
ESKT *i*S Sn 10 40 51.2 -1.4
SEYT Eskypehyr 4.34 356 P Pn 10 40 02.2 -1.0
SEYT S Sn 10 40 51.2 -1.4
KSHT Keshet 4.38 119 Pn Pn 10 40 05.2 +1.5
KSHT Keshet 4.38 119 Pn Pn 10 40 05.2 +1.5
MMLI Mount Malkishu 4.42 127 Pn Pn 10 40 04.1 -0.2
MMLI Sn Sn 10 40 54.8 +0.3
MMLI Mount Malkishu 4.42 127 Pn Pn 10 40 04.1 -0.2
MMLI Sn Sn 10 40 54.8 +0.3
MARH Ras Al Marh 4.47 103 *e*P Pn 10 40 05.6 +0.4
MARH *e*S Sn 10 40 53.4 -2.6
MARH AML AML 10 40 58.9
comp=N,46nm,0.3s
MARH AML AML 10 41 07.1
comp=E,59nm,0.3s
MARH Ras Al Marh 4.47 103 *e*P Pn 10 40 05.6 +0.4
MARH *e*S Sn 10 40 53.4 -2.6
comp=E,59nm,0.3s
HMDT Nahal Hemdat 4.61 128 Pn Pn 10 40 07.8 +1.0
HMDT Sn Sn 10 40 59.5 +0.5
HMDT Nahal Hemdat 4.61 128 Pn Pn 10 40 07.8 +1.0
HMDT Sn Sn 10 40 59.5 +0.5
TCHB Talchebab 4.66 121 *e*P Pn 10 40 08.6 +1.1
TCHB *e*S Sn 10 40 58.6 -1.6
TCHB AML AML 10 41 04.1
comp=N,108nm,0.4s
TCHB AML AML 10 41 26.1
comp=E,39nm,0.5s
TCHB Talchebab 4.66 121 *e*P Pn 10 40 08.6 +1.1
TCHB *e*S Sn 10 40 58.6 -1.6
comp=E,39nm,0.5s
TOTH TOTAH 4.66 111 *e*P Pn 10 40 08.7 +1.2
TOTH *e*S Sn 10 40 57.8 -2.5
comp=E,30nm,0.5s
AMAZ Amatzia 4.76 139 Pn Pn 10 40 09.3 +0.4
AMAZ Sn Sn 10 41 02.3 -0.5
AMAZ Amatzia 4.76 139 Pn Pn 10 40 09.3 +0.4
AMAZ Sn Sn 10 41 02.3 -0.5
KAMA Osmaniye 4.82 64 *i*P Pn 10 40 08.9 -0.8
KAMA *i*S Sn 10 41 00.6 -3.7
BRTR Keskin Array B 4.92 22 Pn Pn 10 40 11.0 -0.2
comp=E,0.7nm,0.3s,baz=187,slow=16,SNR=11
BRTR Sn Sn 10 41 11.1 +4.3
comp=E,0.9nm,0.3s,baz=210,slow=24,SNR=6.5
DSI Dead Sea 4.99 135 Pn Pn 10 40 13.0 +0.9
DSI Dead Sea 4.99 135 Pn Pn 10 40 13.0 +0.9
MZDA Masada 5.18 137 Sn Sn 10 41 12.3 -0.6
MZDA Masada 5.18 137 Sn Sn 10 41 12.3 -0.6
IDI Anoyia 5.21 273 Pn Pn 10 40 13.7 -1.4
comp=E,2.4nm,0.3s,baz=125,slow=12,SNR=13
IDI Sn Sn 10 41 12.3 -1.5
comp=E,5.5nm,0.3s,baz=3.1,slow=14,SNR=8.3
KOT Kottamia 5.26 174 P Pn 10 40 16.2 +0.4
baz=172
KOT AMP 10 41 00.0
comp=N,50μm,0.2s,logA/T=5.4,baz=172
KOT Kottamia 5.26 174 P Pn 10 40 16.2 +0.4
HHAG Hagoal 5.26 172 P Pn 10 40 15.6 -0.2
baz=170
HHAG AMP 10 41 00.0
comp=N,90μm,0.2s,logA/T=5.6,baz=170
HHAG S Sn 10 41 12.0 -3.2
baz=170
HHAG Hagoal 5.26 172 P Pn 10 40 15.6 -0.2
HHAG S Sn 10 41 12.0 -3.2
HMAT Matruh 5.36 222 P Pn 10 40 16.6 -0.5
baz=223
HMAT Matruh 5.36 222 P Pn 10 40 16.6 -0.5
HMYD Mayadein 5.38 184 P Pn 10 40 16.6 -0.9
baz=183
HMYD Mayadein 5.38 184 P Pn 10 40 16.6 -0.9
SUZ Suez 5.49 165 P Pn 10 40 19.1 +0.2
baz=163
SUZ Suez 5.49 165 P Pn 10 40 19.1 +0.2
ZALF Zalf 5.53 112 *e*P Pn 10 40 20.8 +1.3
ZALF *e*S Sn 10 41 19.4 -2.4
ZALF AML AML 10 41 35.2
comp=N,12nm,0.6s
ZALF AML AML 10 41 37.2
comp=E,11nm,0.5s
ZALF Zalf 5.53 112 *e*P Pn 10 40 20.8 +1.3
HSAF As Saff 5.55 177 P Pn 10 40 19.8 0.0
baz=175
HSAF As Saff 5.55 177 P Pn 10 40 19.8 0.0
ASF Jabal al Asfar 5.58 121 Pn Pn 10 40 21.3 +1.0
comp=E,0.6nm,0.3s,baz=303,slow=4.1,SNR=4.2
ASF Sn Sn 10 41 27.8 +4.7
comp=E,1.3nm,0.3s,baz=48,slow=15,SNR=3.1
GLL Jalalah 5.60 176 P Pn 10 40 20.5 0.0
baz=174
GLL Jalalah 5.60 176 P Pn 10 40 20.5 0.0
HNKL Nakhl 5.72 155 P Pn 10 40 22.5 +0.4
baz=153
HNKL AMP 10 41 00.0
comp=N,10μm,0.3s,logA/T=4.5,baz=153
HNKL S Sn 10 41 24.1 -2.4
baz=153
HNKL Nakhl 5.72 155 P Pn 10 40 22.5 +0.4
HNKL S Sn 10 41 24.1 -2.4
PRNI Paran 5.76 146 Pn Pn 10 40 23.3 +0.6
PRNI Sn Sn 10 41 27.6 +0.2
PRNI Paran 5.76 146 Pn Pn 10 40 23.3 +0.6
PRNI Sn Sn 10 41 27.6 +0.2
ZNM Zenema 5.95 166 P Pn 10 40 25.1 -0.1
baz=164
ZNM Zenema 5.95 166 P Pn 10 40 25.1 -0.1
ZAF Zafarana 5.99 169 P Pn 10 40 26.3 +0.6
baz=167
ZAF Zafarana 5.99 169 P Pn 10 40 26.3 +0.6
HRFI Mount Harif 6.04 147 Pn Pn 10 40 26.8 +0.3
HRFI Sn Sn 10 41 33.5 -0.9
HRFI Mount Harif 6.04 147 Pn Pn 10 40 26.8 +0.3
HRFI Sn Sn 10 41 33.5 -0.9
MBRI Mt Berech 6.20 149 Pn Pn 10 40 28.5 -0.2
MBRI Sn Sn 10 41 37.6 -0.7
MBRI Mt Berech 6.20 149 Pn Pn 10 40 28.5 -0.2
MBRI Sn Sn 10 41 37.6 -0.7
SLUM Salum 6.25 236 P Pn 10 40 28.6 -0.7
baz=237
SLUM Salum 6.25 236 P Pn 10 40 28.6 -0.7
EIL Elat 6.32 149 Pn Pn 10 40 31.4 +1.1
comp=N,1.9nm,0.3s,baz=337,slow=3.1,SNR=20
EIL Sn Sn 10 41 39.2 -2.0
comp=N,2.0nm,0.3s,baz=81,slow=4.6,SNR=5.9
EIL Elat 6.32 149 Pn Pn 10 40 30.9 +0.6
EIL Elat 6.32 149 Pn Pn 10 40 30.9 +0.6
NBNS Bani Suef 6.54 180 P Pn 10 40 33.3 0.0
baz=178
NBNS AMP 10 41 00.0
comp=N,10μm,0.3s,logA/T=4.5,baz=178
NBNS S Sn 10 41 43.1 -3.4
baz=178
NBNS Bani Suef 6.54 180 P Pn 10 40 33.3 0.0
GRB Gharib 7.01 169 P Pn 10 40 39.7 -0.1
baz=167
GRB Gharib 7.01 169 P Pn 10 40 39.7 -0.1
TR2 Tor 2 7.09 162 P Pn 10 40 41.1 +0.2
baz=160
TR2 Tor 2 7.09 162 P Pn 10 40 41.1 +0.2
DAVOX Davos/Dischmat 19.79 312 LR LR 10 53 20.2
comp=N,39nm,18.8s,baz=346,slow=44
FINES FINESS Array B 26.49 354 P P 10 44 30.2 -1.1
comp=N,0.7nm,0.4s,baz=160,slow=11,SNR=8.4
ARCES ARCESS Array B 34.55 356 P P 10 45 41.6 -0.9
comp=N,4.3nm,0.9s,baz=173,slow=11,SNR=3.9
MKAR Makanchi Array 39.59 57 P P 10 46 26.4 +0.9
comp=N,0.4nm,0.5s,baz=270,slow=5.6,SNR=3.7
RCBR Riachuelo 75.01 252 LR LR 11 25 52.3
comp=N,31nm,18.2s,baz=156,slow=38
YKA Yellowknife Ar 78.86 345 P P 10 50 57.6 +1.2
comp=N,0.1nm,0.5s,baz=19,slow=4.0,SNR=2.7

WEL 27 11:00:51.0±0.5, 36°01'S×178°23'E, h199km±3km, ML4.2/12, 6C, Error ellipse: s-maj=5.5km s-min=4.7km az=0.0, Off east coast of North Island

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
MXZ	**Matakaoa Point**	**1.55**	**178**	⇑PN	Pn	11 01 25.0	-0.1
MXZ				SN	Sn	11 01 51.8	+0.1
MXZ				AML	AML	11 01 55.0	
HAZ	**Te Kaha**	**1.78**	**191**	PN	Pn	11 01 26.9	-0.3
HAZ				SN	Sn	11 01 55.4	-0.1
WMGZ	**Waiomatatini S**	**1.81**	**175**	⇑PN	Pn	11 01 28.0	+0.5
PKGZ	**Pakihiroa**	**1.88**	**184**	PN	Pn	11 01 28.3	+0.1
PUZ	**Puketiti**	**2.06**	**179**	PN	Pn	11 01 30.0	-0.1
PUZ				SN	Sn	11 02 00.6	-0.1
PUZ				AML	AML	11 02 03.9	

TWGZ Tauwhareparae 2.17 185 PN Pn 11 01 31.9 +0.6
OPRZ Ohinepanea 2.27 216 PN Pn 11 01 32.8 +0.5
MWZ Matawai 2.39 193 PN Pn 11 01 34.0 +0.3
MWZ AML AML 11 02 10.8
MWZ AML AML 11 02 16.0
URZ Urewera 2.42 201 PN Pn 11 01 33.7 -0.1
URZ AML AML 11 02 10.7
URZ AML AML 11 02 12.8
TKGZ Te Karaka 2.44 187 PN Pn 11 01 34.4 +0.2
CNGZ Carnagh Statio 2.47 180 PN Pn 11 01 34.9 +0.4
RRRZ Republican Roa 2.70 210 PN Pn 11 01 37.7 +0.6
RIGZ Rimuhau 2.72 188 PN Pn 11 01 37.3 -0.1
SNGZ Shannon Statio 2.86 194 PN Pn 11 01 39.0 +0.1
PRRZ Plateau Road 2.88 210 PN Pn 11 01 39.8 +0.6
PRGZ Paritu Road 2.92 185 PN Pn 11 01 39.5 -0.2
ALRZ Allen Road 2.96 210 ⇑PN Pn 11 01 40.7 +0.6
KNZ Kokohu 3.04 188 PN Pn 11 01 40.6 -0.4
KNZ AML AML 11 02 22.1
KNZ AML AML 11 02 24.8
RAHZ Arahi 3.04 197 PN Pn 11 01 41.1 +0.1
MHGZ Mahia Peninsul 3.15 185 PN Pn 11 01 42.2 -0.1
WHHZ Waihua 3.16 194 PN Pn 11 01 42.6 +0.1
NMHZ Naumai 3.28 200 PN Pn 11 01 44.1 +0.1
ARHZ Aropaoanui 3.39 196 PN Pn 11 01 45.1 -0.2
BKZ Black Stump Fm 3.44 203 ⇑PN Pn 11 01 45.4 -0.5
BKZ AML AML 11 02 32.2
BKZ AML AML 11 02 54.5
MCHZ McNeill Hill 3.64 199 PN Pn 11 01 48.0 -0.2
HIZ Hauiti 3.67 226 PN Pn 11 01 50.8 +2.2
KWHZ Kaweka Forest 3.70 202 PN Pn 11 01 48.7 -0.4
BHHZ Black Hill Sta 3.88 206 PN Pn 11 01 50.3 -1.0
WHVZ Whangaehu Hut 3.88 212 PN Pn 11 01 51.0 -0.5
KRHZ Kereru 3.92 202 PN Pn 11 01 50.5 -1.2
WNVZ Wahianoa 3.92 211 PN Pn 11 01 51.3 -0.5
MOVZ Moawhango 3.92 209 ⇑PN Pn 11 01 50.7 -1.1
KAHZ Kahuranaki 3.93 195 PN Pn 11 01 51.2 -0.7
PXZ Pawanui 4.16 195 PN Pn 11 01 53.4 -1.2
PXZ AML AML 11 01 55.5
PXZ AML AML 11 02 07.7
PNHZ Pukenui 4.21 202 PN Pn 11 01 53.7 -1.8
WPHZ Waipukurau 4.29 199 PN Pn 11 01 55.0 -1.4
TSZ Takapari Road 4.42 203 PN Pn 11 01 56.1 -2.0
PRHZ Porangahau 4.43 196 PN Pn 11 01 56.7 -1.4
WAZ Wanganui 4.54 213 PN Pn 11 01 58.9 -0.6
DVHZ Dannevirke 4.58 200 PN Pn 11 01 58.2 -1.8
ANWZ Angora Road 4.65 197 PN Pn 11 01 59.5 -1.4
POWZ Post Office Ro 4.79 203 PN Pn 11 02 00.8 -1.8
PRWZ Pori Road 4.87 201 PN Pn 11 02 02.3 -1.5
BFZ Birch Farm 4.92 198 PN Pn 11 02 02.2 -2.1
BFZ AML AML 11 03 04.4
MRZ Mangatainoka R 5.09 203 PN Pn 11 02 04.1 -2.4
TIWZ Tintock 5.10 200 PN Pn 11 02 04.8 -1.8
TIWZ AML AML 11 02 06.1
TIWZ AML AML 11 02 06.5
HOWZ Holdsworth Sta 5.33 203 PN Pn 11 02 06.7 -2.9
KIW Kapiti Island 5.50 207 PN Pn 11 02 09.0 -2.8
MTW Mount Morrison 5.57 202 PN Pn 11 02 09.6 -3.0
CAW Cannon Point 5.66 205 PN Pn 11 02 10.8 -3.1
CAW AML AML 11 03 19.5
CAW AML AML 11 03 19.6
TRWZ Traveller 5.74 199 PN Pn 11 02 12.1 -2.7
PAWZ Paruwai Farm 5.79 201 PN Pn 11 02 12.4 -3.2
MSWZ Moikau Station 5.88 202 PN Pn 11 02 13.3 -3.3
BHW Baring Head 6.00 205 PN Pn 11 02 14.9 -3.2
TCW Tory Channel 6.04 210 PN Pn 11 02 15.6 -3.2
TCW AML AML 11 02 17.5
TCW AML AML 11 02 52.7
TUWZ Tuamarina 6.37 210 PN Pn 11 02 19.4 -3.5
TUWZ AML AML 11 02 21.8
NNZ Nelson 6.44 215 PN Pn 11 02 20.5 -3.4
QRZ Quartz Range 6.57 221 PN Pn 11 02 22.0 -3.6
BSWZ Blackbirch Sta 6.63 209 PN Pn 11 02 23.0 -3.4
THZ Tophouse 7.09 214 PN Pn 11 02 28.9 -3.4
KHZ Kahutara 7.36 208 ⇑PN Pn 11 02 32.2 -3.6
LTZ Lake Taylor 8.18 212 PN Pn 11 02 42.1 -4.6
INZ Inchbonnie 8.52 216 PN Pn 11 02 47.2 -3.7
CRLZ Canterbury Las 8.70 208 PN Pn 11 02 48.6 -4.6
OXZ Oxford 8.73 211 PN Pn 11 02 48.5 -5.2
MQZ McQueen's Vall 8.80 207 PN Pn 11 02 49.4 -5.2
RPZ Rata Peaks 9.46 213 PN Pn 11 02 59.1 -4.2
FOZ Fox Glacier 9.91 218 PN Pn 11 03 04.2 -4.9
LBZ Lake Benmore 10.38 214 PN Pn 11 03 10.3 -4.8
ODZ Otahua Downs 10.71 210 PN Pn 11 03 15.4 -3.9
JCZ Jackson Bay 10.82 219 PN Pn 11 03 16.7 -4.2
TUZ Tuapeka 11.86 210 PN Pn 11 03 31.4 -2.6

*ISK **27** 11:04:53.6, 37°.67N×34°.96E, h27km, MD2.6*
*ISCJB **27** 11:04:55.8±0.6, 37°.65N±0°.03×34°.75E±0°.05, h13km±7km, Error ellipse: s-maj=6.6km s-min=4.6km az=161.0*
*DDA **27** 11:04:55.1, 37°.69N×34°.73E, h7km, Md2.7*
*CSEM **27** 11:04:55.1±0.5, 37°.65N×34°.77E, h15km, MD2.6, Error ellipse: s-maj=12.7km s-min=5.0km az=88.0*

ISC 27 11:04:55.1±1.3, 37°.64N±0°.03×34°.73E±0°.04, h15km±11km, n12, σ0°.62/23, Turkey

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
GULE	**Gulek**	**0.36**	**175**	*i*P	**Pb**	**11 05 03.1**	**-0.3**
GULE				*i*S	**Sb**	**11 05 09.4**	**+0.6**
NIG	**Nigde**	**0.48**	**348**	*e*PG	**Pg**	**11 05 04.8**	**+0.1**
NIG				*e*SG	**Sb**	**11 05 13.0**	**+0.7**
NIG	**Nigde**	**0.48**	**348**	*e*Pg	**Pg**	**11 05 04.8**	**+0.1**
NIG				*e*Sg	**Sb**	**11 05 13.0**	**+0.7**
KERG	**Konya-Eregli**	**0.54**	**245**	*i*P	**Pb**	**11 05 05.7**	**-0.1**
KERG				*i*S	**Sb**	**11 05 14.4**	**+0.6**
KERG	**Konya-Eregli**	**0.54**	**245**	P	**Pg**	**11 05 05.7**	**-0.1**
KERG				S	**Sb**	**11 05 14.4**	**+0.6**
AKO	**Adana**	**0.59**	**108**	*i*P	**Pb**	**11 05 07.2**	**-0.1**
AKO				*i*S	**Sb**	**11 05 16.4**	**+1.0**
MERS	**Mersin**	**0.79**	**192**	*e*PG	**Pg**	**11 05 10.5**	**-0.1**
MERS				*e*SG	**Sn**	**11 05 22.8**	**-0.6**
MERS	**Mersin**	**0.79**	**192**	*e*Pg	**Pg**	**11 05 10.5**	**-0.1**
MERS				*e*Sg	**Sn**	**11 05 22.8**	**-0.6**
YESY	**Yesilyurt**	**0.80**	**280**	*e*PG	**Pn**	**11 05 11.8**	**-0.1**
YESY				*e*SG	**Sn**	**11 05 25.0**	**+1.4**
YESY	**Yesilyurt**	**0.80**	**280**	*e*Pg	**Pn**	**11 05 11.8**	**-0.1**
GULA	**Gulagac**	**0.80**	**331**	*e*PG	**Pg**	**11 05 10.5**	**-0.3**
GULA				*e*SG	**Sn**	**11 05 22.9**	**-0.9**
GULA	**Gulagac**	**0.80**	**331**	*e*Pg	**Pg**	**11 05 10.5**	**-0.3**
GULA				*e*Sg	**Sn**	**11 05 22.9**	**-0.9**

IDC 27 11:05:13.1±50.0, 18°.55S×176°.25W, h0km, mb3.8/3, mb1 4.0/3, mb1mx3.6/40, mbtmp3.8/3, Error ellipse: s-maj=936.7km s-min=163.4km az=81.0, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
STKA	**Stephens Creek**	**40.13**	**242**	P	P	11 12 51.0	+0.1
	0.8nm,0.5s,baz=70,slow=8.0,SNR=4.3						
WRA	**Warramunga Arr**	**46.53**	**260**	P	P	11 13 42.6	-0.2
	0.4nm,0.3s,baz=98,slow=7.3,SNR=23						
ASAR	**Alice Springs**	**46.59**	**255**	P	P	11 13 43.1	-0.2
	0.7nm,0.5s,baz=87,slow=8.6,SNR=19						

*ISCJB **27** 11:12:44.9±0.7, 38°.41N±0°.04×141°.84E±0°.08, h65km±6km, mb3.5/6, Error ellipse: s-maj=10.9km s-min=5.2km az=18.1*
*JMA **27** 11:12:46.3, 38°.40N×141°.78E, h58km±1km, M3.8*
JMA Felt I J1.
*IDC **27** 11:12:46.4±2.5, 38°.45N×141°.86E, h64km±23km, mb3.3/6, mb1 3.5/10, mb1mx3.3/45, mbtmp3.6/10, MS2.4/2, Ms1 2.4/2, ms1mx2.2/27, Error ellipse: s-maj=29.9km s-min=16.6km az=97.0*

ISC 27 11:12:45.5±1.2, 38°.40N±0°.05×141°.85E±0°.09, h54km±10km, n29, σ1°.34/36, mb3.6/6, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**0.39**	**278**	P	**Pn**	**11 12 56.5**	**+0.6**
JIO				S	**Sn**	**11 13 03.6**	**+0.3**
OFUJ	**Ofunato**	**0.69**	**348**	P	**Pn**	**11 13 00.1**	**+0.8**
OFUJ				S	**Sn**	**11 13 10.0**	**+0.6**
JMK	**Ichinoseki**	**0.73**	**318**	P	**Pn**	**11 13 00.7**	**+0.8**
JMK				S	**Sn**	**11 13 10.8**	**+0.5**

JOU	**Okura**	**0.93**	**268**	P		**Pn**	**11 13 02.4**	**-0.1**
JOU				S		**Sn**	**11 13 14.8**	**-0.1**
JMM	**Marumori**	**0.99**	**237**	P		**Pn**	**11 13 03.2**	**0.0**
JMM				S		**Sn**	**11 13 15.5**	**-0.7**
JOM	**Ohasama**	**1.15**	**338**	P		**Pn**	**11 13 06.2**	**+0.8**
JOM				S		**Sn**	**11 13 21.0**	**+0.8**
JYK	**Kaneyama**	**1.27**	**294**	P		**Pn**	**11 13 07.5**	**+0.5**
JYK				S		**Sn**	**11 13 23.3**	**+0.2**
JFK	**Kawauchi**	**1.29**	**217**	P		**Pn**	**11 13 07.7**	**+0.4**
JFK				S		**Sn**	**11 13 23.4**	**-0.1**
JRG	**Rokugo**	**1.37**	**317**	P		**Pn**	**11 13 09.2**	**+0.9**
JRG				*e*S		**Sn**	**11 13 26.0**	**+0.6**
JYS	**Shirataka**	**1.41**	**263**	P		**Pn**	**11 13 09.4**	**+0.5**
JYS				*e*S		**Sn**	**11 13 26.4**	**-0.1**
JFT	**Otama**	**1.48**	**234**	P		**Pn**	**11 13 10.6**	**+0.7**
JFT				S		**Sn**	**11 13 28.1**	**-0.1**
MAT	**Matsushiro**	**3.44**	**238**	P		**Pn**	**11 13 39.3**	**+2.7**
MAT				*e*S		**Sn**	**11 14 19.4**	**+3.2**
MJAR	**Matsushiro Arr**	**3.44**	**238**	P		**Pn**	**11 13 38.9**	**+2.3**
	3.6nm,0.3s,baz=35,slow=13,SNR=37							
JHJ	**Hachijo jima 2**	**5.53**	**198**	P		**Pn**	**11 14 06.6**	**+1.3**
	5.8nm,0.3s,baz=57,slow=1.7,SNR=3.1							
JHJ				S		**Sn**	**11 15 04.0**	**-3.6**
	8.0nm,0.3s,baz=290,slow=11,SNR=2.3							
ASAJ	**Asahikawa**	**5.74**	**5**	P		**Pn**	**11 14 08.0**	**-0.1**
	0.7nm,0.3s,baz=224,slow=9.6,SNR=7.4							
ASAJ				S		**Sn**	**11 15 09.3**	**-3.2**
	0.5nm,0.3s,baz=96,slow=31,SNR=2.3							
ASAJ				LR		LR	11 16 36.0	
	comp=Z,46nm,19.6s,baz=218,slow=40							
USRK	**Ussuriysk Ar.**	**9.41**	**311**	P		**Pn**	**11 14 57.6**	**-0.7**
	0.4nm,0.3s,baz=122,slow=14,SNR=4.1							
KSRS	**Korea Array**	**11.04**	**269**	LR		LR	11 19 20.8	
	comp=Z,17nm,18.7s,baz=20,slow=36							
H11N2	**WAKE ISLAND Hy**	**28.58**	**124**	T		T	11 48 53.3	
	baz=316,slow=75,SNR=264							
H11N1	**WAKE ISLAND Hy**	**28.59**	**124**	T		T	11 48 55.7	
	baz=316,slow=75,SNR=90							
H11N3	**WAKE ISLAND Hy**	**28.60**	**124**	T		T	11 48 54.9	
	baz=316,slow=75,SNR=180							
H11S1	**WAKE ISLAND Hy**	**29.34**	**126**	T		T	11 49 51.4	
	baz=318,slow=76,SNR=43							
H11S3	**WAKE ISLAND Hy**	**29.34**	**126**	T		T	11 49 51.7	
	baz=318,slow=76,SNR=71							
H11S2	**WAKE ISLAND Hy**	**29.36**	**126**	T		T	11 49 54.2	
	baz=318,slow=76,SNR=56							
ZALV	**Zalesovo Beam**	**41.26**	**311**	P		**P**	**11 20 23.7**	**-1.5**
	0.5nm,0.4s,baz=91,slow=9.0,SNR=3.5							
MKAR	**Makanchi Array**	**43.70**	**301**	P		**P**	**11 20 45.6**	**+0.5**
	0.4nm,0.4s,baz=83,slow=10.0,SNR=4.2							
WRA	**Warramunga Arr**	**58.46**	**188**	P		**P**	**11 22 35.6**	**-0.4**
	1.0nm,0.5s,baz=6.5,slow=7.3,SNR=15							
ASAR	**Alice Springs**	**62.19**	**188**	P		**P**	**11 23 01.4**	**0.0**
	0.4nm,0.6s,baz=7.0,slow=5.0,SNR=6.9							
YKA	**Yellowknife Ar**	**62.45**	**31**	P		**P**	**11 23 02.2**	**-0.5**
	0.1nm,0.5s,baz=298,slow=5.7,SNR=5.2							
PDAR	**Pinedale Array**	**76.47**	**46**	P		**P**	**11 24 29.8**	**-0.1**
	0.2nm,0.5s,baz=162,slow=0.5,SNR=4.0							

*ISCJB **27** 11:13:49.5±0.3,43˚.02N±0˚.01×18˚.34E±0˚.02,h6km±2km, Error ellipse: s-maj=2.7km s-min=2.3km az=142.1*
*CSEM **27** 11:13:50.2±0.1,43˚.00N×18˚.38E,h5km,ML3.3, Error ellipse: s-maj=3.2km s-min=2.5km az=46.0*
*PDG **27** 11:13:50.3±0.4,42˚.99N×18˚.40E,h16km,MD3.3/11, ML3.3/12, Error ellipse: s-maj=0.5km s-min=0.6km az=0.0*
*BEO **27** 11:13:50.5±0.2,42˚.97N×18˚.33E,h12km±2km,M3.1/1*

ISC 27 11:13:50.4±0.9, 42˚.99N±0˚.02×18˚.37E±0˚.01, h12km±6km, n111, σ1§19/183, 28C-10D, Northwestern Balkan Peninsula

Code	Station Name	Δ°	AZ°	Phase	ID		ISC	Time h m s	Res ISC
					Op				
BRY	**Bratogost**	**0.16**	**126**	*i*	P		**Pb**	**11 13 54.5**	**-0.9**
BRY					*e*	S	**Sg**	**11 13 57.7**	**+0.9**
BRY	**Bratogost**	**0.16**	**126**	⇑*i*	P		**Pb**	**11 13 54.4**	**-0.9**
BRY					*e*	S	**Sg**	**11 13 57.7**	**+0.9**
TREB	**Trebinje**	**0.28**	**182**	*e*	P		**Pg**	**11 13 56.1**	**0.0**
TREB					*e*	S	**Sg**	**11 14 00.0**	**+0.1**
TREB	**Trebinje**	**0.28**	**182**	*e*	P		**Pg**	**11 13 56.1**	**0.0**
TREB					*e*	S	**Sg**	**11 14 00.0**	**+0.1**
UPM	**Unac-Piva**	**0.45**	**62**	⇓*i*	P		**Pg**	**11 13 58.8**	**-0.5**
UPM					*e*	S	**Sb**	**11 14 06.3**	**-0.8**
UPM	**Unac-Piva**	**0.45**	**62**	*i*	P		**Pg**	**11 13 58.8**	**-0.5**
UPM					*e*	S	**Sb**	**11 14 06.1**	**-1.0**
NKME	**Niksic**	**0.49**	**117**	⇑*i*	P		**Pg**	**11 13 59.5**	**-0.4**
NKME					*e*	S	**Sb**	**11 14 07.6**	**-0.4**
NKME	**Niksic**	**0.49**	**117**	⇑*i*	P		**Pg**	**11 13 59.5**	**-0.4**
NKME					*e*	S	**Sb**	**11 14 07.6**	**-0.4**
NKY	**Niksic**	**0.49**	**111**	⇓*i*	P		**Pg**	**11 13 59.8**	**-0.3**
NKY					*e*	S	**Sb**	**11 14 08.0**	**-0.3**
NKY	**Niksic**	**0.49**	**111**	⇓*i*	P		**Pg**	**11 13 59.8**	**-0.3**
NKY					*e*	S	**Sb**	**11 14 08.0**	**-0.3**
STON	**Ston**	**0.50**	**256**	*e*	P		**Pg**	**11 13 59.6**	**-0.6**
STON						S	**Sb**	**11 14 07.8**	**-0.6**
STON	**Ston**	**0.50**	**256**	*i*	P		**Pg**	**11 13 59.6**	**-0.6**
STON					*i*	S	**Sb**	**11 14 07.7**	**-0.7**
STON	**Ston**	**0.50**	**256**	*i*	P		**Pg**	**11 13 59.6**	**-0.6**
STON					*e*	S	**Sg**	**11 14 07.3**	**+0.4**
HCY	**Herceg Novi**	**0.55**	**170**	⇑*i*	P		**Pg**	**11 14 00.5**	**-0.7**
HCY					*e*	S	**Sb**	**11 14 09.5**	**-0.4**
HCY	**Herceg Novi**	**0.55**	**170**	⇑*i*	P		**Pg**	**11 14 00.5**	**-0.7**
HCY					*e*	S	**Sb**	**11 14 09.4**	**-0.4**
CEME	**Cevo**	**0.60**	**137**	⇓*i*	P		**Pg**	**11 14 01.1**	**-1.0**
CEME					*e*	S	**Sb**	**11 14 11.4**	**0.0**
CEME	**Cevo**	**0.60**	**137**	⇓*i*	P		**Pg**	**11 14 01.1**	**-1.0**
CEME					*e*	S	**Sb**	**11 14 11.4**	**0.0**
BUM	**Brajici-Budva**	**0.79**	**150**	⇑*i*	P		**Pg**	**11 14 04.9**	**-0.8**
BUM					*e*	S	**Sb**	**11 14 17.6**	**+0.7**
BUM	**Brajici-Budva**	**0.79**	**150**	⇑*i*	P		**Pg**	**11 14 04.9**	**-0.8**
BUM					*e*	S	**Sb**	**11 14 17.6**	**+0.7**
PLE	**Pljevlja**	**0.82**	**65**	⇑*i*	P		**Pg**	**11 14 05.8**	**-0.5**
PLE					*e*	S	**Sn**	**11 14 18.8**	**-1.3**
PLE	**Pljevlja**	**0.82**	**65**	⇑*i*	P		**Pg**	**11 14 05.8**	**-0.5**
PLE					*e*	S	**Sn**	**11 14 18.8**	**-1.3**
PDG	**Podgorica**	**0.86**	**130**	⇑*i*	P		**Pg**	**11 14 05.6**	**-1.4**
PDG						S	**Sb**	**11 14 19.5**	**+0.7**
PDG	**Podgorica**	**0.86**	**130**	*e*	Pg		**Pg**	**11 14 06.3**	**-0.7**
PDG					*e*	S	**Sn**	**11 14 20.2**	**-0.7**
PDG	**Podgorica**	**0.86**	**130**	⇑*i*	P		**Pg**	**11 14 05.6**	**-1.4**
PDG	**Podgorica**	**0.86**	**130**	*e*	Pg		**Pg**	**11 14 06.3**	**-0.7**
PDG					*e*	S	**Sb**	**11 14 19.1**	**+0.3**
TTG	**Podgorica**	**0.86**	**130**	⇓*i*	Pg		**Pg**	**11 14 05.9**	**-1.1**
TTG					*e*	S	**Sn**	**11 14 20.2**	**-0.7**
DRME	**Dracevica, Mon**	**1.01**	**143**	⇑*i*	P		**Pg**	**11 14 08.8**	**-1.0**
DRME					*e*	S	**Sn**	**11 14 24.8**	**+0.4**
DRME	**Dracevica, Mon**	**1.01**	**143**	⇑*i*	P		**Pg**	**11 14 08.8**	**-1.0**
DRME					*e*	S	**Sb**	**11 14 23.4**	**+0.4**
BEY	**Berane**	**1.13**	**96**	⇑*i*	P		**Pb**	**11 14 11.1**	**-0.8**
BEY	**Berane**	**1.13**	**96**	P			**Pb**	**11 14 11.4**	**-0.5**
BEY					*e*	S	**Sn**	**11 14 29.1**	**+1.5**
IVA	**Berane**	**1.13**	**96**	⇑*i*	P		**Pb**	**11 14 11.1**	**-0.8**
IVA					*e*	S	**Sn**	**11 14 29.1**	**+1.5**
BBLS	**Lazići**	**1.16**	**41**	*i*	Pg		**Pb**	**11 14 12.0**	**-0.4**
BBLS					*e*	S	**Sn**	**11 14 28.7**	**+0.5**
BBLS	**Lazići**	**1.16**	**41**	*i*	Pg		**Pb**	**11 14 12.0**	**-0.4**
BBLS					*e*	S	**Sn**	**11 14 28.4**	**+0.2**
HAPS	**Han Pijesak,BI**	**1.17**	**21**	*e*	Pg		**Pb**	**11 14 11.3**	**-1.4**
HAPS					*e*	S	**Sg**	**11 14 28.2**	**0.0**
SJES	**Sjenica**	**1.21**	**77**	*e*	Pg		**Pn**	**11 14 13.0**	**-0.2**
ULC	**Ulcinj**	**1.22**	**147**	⇑*i*	P		**Pn**	**11 14 12.2**	**-1.0**
ULC					*e*	S	**Sn**	**11 14 31.6**	**+1.9**
ULC	**Ulcinj**	**1.22**	**147**	P			**Pn**	**11 14 12.3**	**-1.0**
ULC					*e*	S	**Sn**	**11 14 31.6**	**+1.9**
PVY	**Plav**	**1.24**	**108**	⇑*i*	Pg		**Pn**	**11 14 13.1**	**-0.5**
PVY					*e*	S	**Sn**	**11 14 32.5**	**+2.2**
PVY	**Plav**	**1.24**	**108**	⇑*i*	Pg		**Pn**	**11 14 13.1**	**-0.5**
PVY					*e*	S	**Sn**	**11 14 32.5**	**+2.2**
IVAS	**Ivanjica**	**1.43**	**65**	*i*	Pg		**Pb**	**11 14 16.6**	**-0.4**
IVAS					*e*	S	**Sb**	**11 14 35.5**	**+0.3**
IVAS	**Ivanjica**	**1.43**	**65**	*i*	Pg		**Pb**	**11 14 16.6**	**-0.4**
IVAS					*e*	S	**Sb**	**11 14 35.5**	**+0.3**
PEJK	**Peje**	**1.45**	**103**	P			**Pg**	**11 14 17.9**	**-0.3**
PEJK						S	**Sg**	**11 14 38.2**	**+1.1**
DIVS	**Divibare**	**1.62**	**46**	*e*	Pn		**Pn**	**11 14 18.6**	**-0.2**
DIVS					*e*	S	**Sg**	**11 14 42.8**	**+0.3**
DIVS	**Divibare**	**1.62**	**46**	*e*	Pn		**Pn**	**11 14 18.6**	**-0.2**
DIVS					*e*	S	**Sg**	**11 14 42.8**	**+0.3**
ZATK	**Zatriq**	**1.75**	**107**	P			**Pb**	**11 14 22.4**	**-0.1**
ZATK						S	**Sg**	**11 14 47.4**	**+0.7**
TEKS	**Tekeris**	**1.77**	**28**	*e*	Pn		**Pn**	**11 14 20.5**	**-0.4**
TEKS					*e*	Sg	**Sg**	**11 14 49.0**	**+1.7**
TEKS	**Tekeris**	**1.77**	**28**	*e*	Pn		**Pn**	**11 14 21.7**	**+0.8**
TEKS					*e*	Sn	**Sb**	**11 14 44.5**	**-0.5**
TEKS					*e*	Sg	**Sg**	**11 14 49.0**	**+1.7**
TRUS	**Trudelj**	**1.93**	**50**	*e*	Pn		**Pn**	**11 14 22.6**	**-0.4**
TRUS	**Trudelj**	**1.93**	**50**	*e*	Pn		**Pn**	**11 14 22.6**	**-0.4**
GRUS	**Gruza**	**1.93**	**62**	*e*	Pn		**Pn**	**11 14 23.1**	**0.0**
GRUS					*e*	Sn	**Sn**	**11 14 48.0**	**+0.7**
GRUS	**Gruza**	**1.93**	**62**	*e*	Pn		**Pn**	**11 14 23.1**	**0.0**
GRUS					*e*	Sn	**Sn**	**11 14 48.0**	**+0.7**
BLY	**Banja Luka**	**1.95**	**334**	⇑*i*	P		**Pn**	**11 14 24.1**	**+0.7**
BLY	**Banja Luka**	**1.95**	**334**	*i*	S		**Sb**	**11 14 50.8**	**+0.6**
BLY	**Banja Luka**	**1.95**	**334**	*e*	Pn		**Pn**	**11 14 24.4**	**+1.0**
BLY					*e*	Sg	**Sg**	**11 14 54.3**	**+1.1**
BLY	**Banja Luka**	**1.95**	**334**	*e*	Pn		**Pn**	**11 14 24.0**	**+0.7**
BLY					*e*	Sn	**Sb**	**11 14 49.3**	**-0.9**
BLY					*e*	Sg	**Sg**	**11 14 54.3**	**+1.1**
TIR	**Tirane**	**1.99**	**145**	⇑*i*	P		**Pn**	**11 14 23.4**	**-0.4**
TIR	**Tirane**	**1.99**	**145**	⇑*i*	P		**Pn**	**11 14 23.4**	**-0.4**
BAI	**Bari**	**2.19**	**211**	*e*	Pn		**Pb**	**11 14 29.3**	**-0.5**
MS1	**Monte Sant'Ang**	**2.21**	**235**	*e*	Pn		**Pb**	**11 14 30.4**	**+0.1**
GJIK	**Gjilan**	**2.32**	**102**	P			**Pn**	**11 14 29.7**	**+1.2**
GJIK						S	**Sb**	**11 15 00.5**	**-0.4**
FGSL	**Fruska Gora**	**2.40**	**25**	*e*	Pn		**Pn**	**11 14 30.2**	**+0.7**
FRGS	**Fruska Gora**	**2.40**	**25**	*e*	Pn		**Pn**	**11 14 30.2**	**+0.6**
UDBI	**Udbina**	**2.43**	**310**	*e*	Pn		**Pb**	**11 14 33.0**	**-1.1**
UDBI						Sn	**Sb**	**11 15 02.4**	**-1.6**
UDBI	**Udbina**	**2.43**	**310**	*e*	Pn		**Pb**	**11 14 32.9**	**-1.1**
UDBI						Sn	**Sb**	**11 15 02.4**	**-1.6**
CDT	**Castel del Mon**	**2.46**	**220**	*e*	Pn		**Pn**	**11 14 29.9**	**-0.5**
SGI	**Sgolgore (BA)**	**2.49**	**211**	*e*	Pn		**Pn**	**11 14 32.6**	**+1.8**
SKO	**Skopje**	**2.49**	**113**	*i*	Pn		**Pn**	**11 14 27.0**	**-3.8**
SKO	**Skopje**	**2.49**	**113**	*i*	Pn		**Pn**	**11 14 26.9**	**-3.9**
BARS	**Barje**	**2.54**	**93**	*e*	Pn		**Pn**	**11 14 32.1**	**+0.7**
BARS					*e*	Sn	**Sn**	**11 15 03.4**	**+1.1**
BARS	**Barje**	**2.54**	**93**	*e*	Pn		**Pn**	**11 14 32.1**	**+0.7**
BARS					*e*	Sn	**Sn**	**11 15 03.4**	**+1.1**
OHR	**Ohrid**	**2.61**	**135**	*i*	Pn		**Pg**	**11 14 39.6**	**-0.8**
MATE	**Matera**	**2.65**	**208**	⇓*i*	P		**Pn**	**11 14 31.4**	**-1.5**
MATE	**Matera**	**2.65**	**208**	*i*	S		**Sn**	**11 15 02.8**	**-2.1**
MATE	**Matera**	**2.65**	**208**	⇓*i*	P		**Pn**	**11 14 31.4**	**-1.5**
BIA	**Bitola**	**2.96**	**131**	*i*	Pn		**Pn**	**11 14 36.5**	**-0.8**
BIA	**Bitola**	**2.96**	**131**	*i*	Pn		**Pn**	**11 14 36.4**	**-0.8**
NVLJ	**Novalja**	**2.98**	**303**	*e*	Pn		**Pn**	**11 14 38.7**	**+1.3**
NVLJ						Sn	**Sn**	**11 15 16.3**	**+3.3**
NVLJ	**Novalja**	**2.98**	**303**	*e*	Pn		**Pn**	**11 14 38.7**	**+1.3**
NVLJ						Sn	**Sn**	**11 15 16.3**	**+3.3**
MDVR	**Moldovita**	**3.01**	**52**	⇑*i*	P		**Pn**	**11 14 35.0**	**-2.9**
MDVR	**Moldovita**	**3.01**	**52**	⇑*i*	P		**Pn**	**11 14 35.0**	**-2.9**
ZAPS	**Zavoj**	**3.14**	**83**	*i*	Pn		**Pn**	**11 14 40.7**	**+1.0**
ZAPS					*e*	Sn	**Sn**	**11 15 18.0**	**+0.9**
ZAPS	**Zavoj**	**3.14**	**83**	*i*	Pn		**Pn**	**11 14 40.7**	**+1.0**
ZAPS					*e*	Sn	**Sn**	**11 15 18.0**	**+0.9**
PKSM	**Moragy**	**3.23**	**3**	⇑*i*	P		**Pn**	**11 14 41.3**	**+0.5**
PKSM	**Moragy**	**3.23**	**3**	*e*	Pn		**Pn**	**11 14 40.7**	**-0.1**
PKSM	**Moragy**	**3.23**	**3**	*e*	Pn		**Pn**	**11 14 40.7**	**-0.1**
PKSM	**Moragy**	**3.23**	**3**	⇑*i*	P		**Pn**	**11 14 41.3**	**+0.5**
BOJS	**Bojanci**	**3.36**	**319**	*i*	Pn		**Pn**	**11 14 44.6**	**+1.9**
BOJS					*i*	Sn	**Sn**	**11 15 25.9**	**+3.3**
BOJS	**Bojanci**	**3.36**	**319**	*i*	Pn		**Pn**	**11 14 44.6**	**+1.9**
BOJS					*i*	Sn	**Sn**	**11 15 25.9**	**+3.3**
BZS	**Buzias**	**3.51**	**41**	⇓*i*	P		**Pb**	**11 14 50.1**	**-2.3**
BZS	**Buzias**	**3.51**	**41**	*e*	Pn		**Pn**	**11 14 45.1**	**+0.3**
BZS	**Buzias**	**3.51**	**41**	*e*	Pn		**Pn**	**11 14 45.1**	**+0.3**
BZS	**Buzias**	**3.51**	**41**	⇓*i*	P		**Pb**	**11 14 50.1**	**-2.3**
CRES	**Cresnjev**	**3.52**	**325**	*i*	Pn		**Pn**	**11 14 46.1**	**+1.2**
CRES					*i*	Sn	**Sn**	**11 15 28.1**	**+1.7**
CRES	**Cresnjev**	**3.52**	**325**	*e*	Pn		**Pn**	**11 14 45.6**	**+0.7**
CRES					*e*	Sn	**Sn**	**11 15 27.8**	**+1.4**
VAY	**Valandovo**	**3.54**	**117**	*i*	Pn		**Pb**	**11 14 55.2**	**+2.2**
CEY	**Cerknica**	**3.94**	**316**	*e*	Pn		**Pn**	**11 14 51.7**	**+1.0**
CEY					*e*	Sn	**Sn**	**11 15 36.8**	**0.0**
JAVS	**Javornik**	**4.23**	**315**	*i*	Pn		**Pn**	**11 14 56.0**	**+1.3**
JAVS					*i*	Sn	**Sn**	**11 15 46.0**	**+1.9**
JAVS	**Javornik**	**4.23**	**315**	*i*	Pn		**Pn**	**11 14 56.0**	**+1.3**
JAVS					*i*	Sn	**Sn**	**11 15 46.0**	**+1.9**
SOKA	**Soboth**	**4.38**	**328**	*i*	Pn		**Pn**	**11 14 55.2**	**-1.6**
	6.8nm,0.6s								
SOKA					*i*	Sn	**Sn**	**11 15 47.5**	**-0.3**
	0.4nm,0.3s								
SOKA	**Soboth**	**4.38**	**328**		Pn		**Pn**	**11 14 55.2**	**-1.6**
	6.8nm,0.6s								
SOKA						Sn	**Sn**	**11 15 47.5**	**-0.3**
	0.4nm,0.3s								
OBKA	**Obir**	**4.44**	**324**	*i*	Pn		**Pn**	**11 14 56.2**	**-1.5**
	3.4nm,0.7s								
OBKA					*i*	Sn	**Sn**	**11 15 49.8**	**+0.4**
	7.9nm,0.6s								
OBKA	**Obir**	**4.44**	**324**		Pn		**Pn**	**11 14 56.2**	**-1.5**
	3.4nm,0.7s								
OBKA						Sn	**Sn**	**11 15 49.8**	**+0.4**
	7.9nm,0.6s								
PSZ	**Piszkesteto**	**5.04**	**12**	⇑*i*	P		**Pn**	**11 15 08.4**	**+2.5**
PSZ	**Piszkesteto**	**5.04**	**12**	⇑*i*	P		**Pn**	**11 15 08.4**	**+2.5**
CONA	**Conrad Observa**	**5.24**	**341**		Pn		**Pn**	**11 15 08.2**	**-0.4**
	0.2nm,0.1s								
CONA	**Conrad Observa**	**5.24**	**341**		Pn		**Pn**	**11 15 08.2**	**-0.4**
	0.2nm,0.1s								
KBA	**Koelnbreinsper**	**5.42**	**321**	*i*	Pn		**Pn**	**11 15 12.7**	**+1.6**
	2.3nm,0.6s								
KBA					*i*	Sn	**Sn**	**11 16 11.8**	**-1.7**
KBA	**Koelnbreinsper**	**5.42**	**321**		Pn		**Pn**	**11 15 12.7**	**+1.6**
	2.3nm,0.6s								
KBA						Sn	**Sn**	**11 16 11.8**	**-1.7**
MOA	**Molln**	**5.65**	**331**	*i*	Pn		**Pn**	**11 15 14.8**	**+0.7**
	2.8nm,0.9s								
MOA					*i*	Sn	**Sn**	**11 16 18.8**	**-0.1**
	4.9nm,1.2s								
MOA	**Molln**	**5.65**	**331**		Pn		**Pn**	**11 15 14.8**	**+0.7**
	2.8nm,0.9s								
MOA						Sn	**Sn**	**11 16 18.8**	**-0.1**
	4.9nm,1.2s								
KHC	**Kasperske Hory**	**6.98**	**333**	*e*	SN		**Sn**	**11 16 49.4**	**-2.4**

*SCB **27** 11:21:01.2±0.2,20˚.35S×66˚.48W,h225km,Ml3.8/2, Error ellipse: s-maj=11.7km s-min=5.1km az=51.0*
*ISCJB **27** 11:21:11.5±0.2,19˚.62S±0˚.03×66˚.16W±0˚.06,h33km, mb4.7/59,MS3.9/11, Error ellipse: s-maj=7.9km s-min=4.1km az=171.9*
*IDC **27** 11:21:14.9±1.7,19˚.84S×66˚.26W,h49km±16km,mb3.9/8, mb1 4.3/14,mb1mx4.1/33,mbtmp4.3/14,ML4.0/6,MS4.0/16, Ms1 4.0/16,ms1mx3.8/27, Error ellipse: s-maj=20.1km s-min=18.1km az=52.0*
*NEIC **27** 11:21:15.0±0.5,19˚.75S×66˚.22W,h49km±5km,mb4.8/42, Error ellipse: s-maj=6.8km s-min=5.3km az=79.0*
*SJA **27** 11:21:47.3±0.6,22˚.21S×65˚.26W,h33km±15km,ML3.0, MW3.9*

ISC 27 11:21:14.1±0.4, 19˚.83S±0˚.05×66˚.30W±0˚.06, h35km, n298, σ1§61/299, mb4.7/59, MS3.9/11, 1C-2D, Southern Bolivia

Code	Station Name	Δ°	AZ°	Phase	ID		ISC	Time h m s	Res ISC
					Op				
MOCB	**Mochara**	**1.54**	**156**	*e*	P		**Pn**	**11 21 38.8**	**-0.7**
MOCB					*e*	Sn	**Sn**	**11 22 05.1**	**+6.5**
	1μm,0.8s								
YJA	**Yavi**	**2.45**	**163**	*e*	P		**Pn**	**11 21 55.9**	**+3.9**
YJA					*e*	S	Sn	11 22 01.7	-19
PB01	**IPOC Station P**	**3.23**	**247**	*e*	Pn		**Pn**	**11 22 04.2**	**+1.9**
BBOJ	**La Paz, Jacagu**	**3.36**	**327**	*e*	Pn		**Pn**	**11 22 06.5**	**+1.9**
BBOE	**La Paz, Chanca**	**3.40**	**332**	*e*	Pn		**Pn**	**11 22 06.7**	**+1.5**
HJA	**Humahuaca**	**3.46**	**166**	*e*	P		**Pn**	**11 22 08.0**	**+2.1**
HJA					IAML			11 22 20.7	
	comp=Z,261nm,0.5s								
LVC	**Limon Verde**	**3.69**	**221**		P		**Pn**	**11 22 10.6**	**+1.7**
	comp=Z,46nm,0.3s,baz=22,slow=7.1,SNR=10.0								
LVC					LR	LR		11 24 08.2	
	comp=Z,5μm,19.0s,baz=32,slow=47								
LVC	**Limon Verde**	**3.69**	**221**	*e*	Pn		**Pn**	**11 22 11.2**	**+2.3**
BBOD	**La Paz, Gloria**	**3.85**	**325**	*e*	Pn		**Pn**	**11 22 12.8**	**+1.4**
LPAZ	**La Paz**	**3.93**	**333**		P		**Pn**	**11 22 14.4**	**+1.9**
	comp=Z,2.3nm,0.3s,baz=152,slow=11,SNR=151								
LPAZ					S		**Sn**	**11 23 05.8**	**+8.1**
	baz=2.5,slow=24,SNR=1.4								
LPAZ					LR	LR		11 24 04.1	
	comp=Z,1μm,18.1s,baz=145,slow=43								
LPAZ	**La Paz**	**3.93**	**333**	*e*	Pn		**Pn**	**11 22 14.1**	**+1.6**
LPAZ					*e*	Sn	**Sn**	**11 23 06.1**	**+8.4**
	comp=Z,45nm,0.9s								
BBOB	**La Paz, Bander**	**4.06**	**334**	⇓*i*	Pn		**Pn**	**11 22 15.3**	**+1.1**
PB04	**IPOC Station P**	**4.38**	**235**	*e*	Pn		**Pn**	**11 22 20.1**	**+1.9**
ASTB	**Santa Barbara**	**4.44**	**158**	*e*	P		**Pn**	**11 22 19.7**	**+0.5**
AZAP	**Zapla**	**4.52**	**166**	*e*	P		**Pn**	**11 22 21.6**	**+1.3**
SLA	**San Lorenzo**	**4.92**	**172**	*e*	P		**Pn**	**11 22 28.5**	**+2.7**
SLA					IAML			11 22 58.4	
	comp=Z,84nm,0.7s								
PB10	**IPOC Station P**	**5.39**	**226**	*e*	Pn		Pn	11 22 29.1	-3.0
ARE	**Arequipa**	**5.97**	**303**	*e*	P		**Pn**	**11 22 42.0**	**+1.8**
FSA	**Cafayete**	**6.26**	**177**	⇓*e*	P		Pn	11 22 49.4	+5.3
SIV	**San Ignacio**	**6.27**	**53**	P			**Pn**	**11 22 44.9**	**+0.7**
	comp=Z,12nm,0.3s,baz=254,slow=13,SNR=110								
SIV					S		**Sn**	**11 24 01.3**	**+6.6**
	baz=173,slow=23,SNR=2.0								
SIV	**San Ignacio**	**6.27**	**53**	⇑*i*	Pn		**Pn**	**11 22 44.7**	**+0.5**
LCO	**Las Campanas**	**9.98**	**203**	*e*	Pn		**Pn**	**11 23 37.8**	**+2.5**
CPUP	**Villa Florida**	**10.49**	**130**	P			**Pn**	**11 23 41.1**	**-0.9**
	comp=Z,0.5nm,0.3s,baz=304,slow=13,SNR=12								
CPUP					LR	LR		11 28 33.7	
	comp=Z,882nm,19.4s,baz=308,slow=42								
CPUP	**Villa Florida**	**10.49**	**130**	*e*	Pn		**Pn**	**11 23 42.1**	**+0.2**
SAML	**Samuel**	**11.23**	**16**	*e*	Pn		**Pn**	**11 23 50.7**	**-1.5**
NNA	**Nana**	**12.79**	**306**	*e*	Pn		**Pn**	**11 24 13.3**	**-0.3**
ATAH	**Atahualpa**	**17.23**	**315**	P			**Pn**	**11 25 13.3**	**+0.8**
	comp=Z,0.3nm,0.3s,baz=140,slow=3.4,SNR=4.2								
ATAH					LR	LR		11 32 56.9	
	comp=Z,507nm,19.8s,baz=163,slow=41								
TRQA	**

baz=152
X34A **Smith Ranch, M** 61.88 331 P P 11 31 29.1 -0.9
baz=146
W35A **Tecumseh** 61.91 332 P P 11 31 28.2 -2.0
baz=147
U38A **Gravette** 61.94 335 P P 11 31 29.0 -1.5
baz=150
V36A **Jenks** 62.03 333 P P 11 31 29.5 -1.5
baz=148
T39A **Clever** 62.05 336 P P 11 31 30.1 -1.1
baz=151
S40A **Lebanon** 62.22 337 P P 11 31 31.2 -1.0
baz=152
M54A **Oil Creek Stat** 62.27 349 P P 11 31 31.4 -1.1
baz=166
V35A **Meyer Ranch, C** 62.40 332 P P 11 31 31.8 -1.7
baz=147
X32A **Elmer** 62.42 329 P P 11 31 31.8 -1.8
baz=145
T38A **Diamond** 62.42 335 P P 11 31 31.4 -2.2
baz=150
WMOK **Wichita Mounta** 62.44 330 *e*P P 11 31 31.8 -2.0
comp=Z,5.5nm,1.1s
S39A **Bolivar** 62.61 336 P P 11 31 32.9 -1.9
baz=151
W33A **Caddo, Fort Co** 62.63 331 P P 11 31 34.0 -1.0
baz=146,SNR=6.0
R40A **Maddies Statio** 62.75 337 P P 11 31 33.7 -2.0
baz=152
T37A **Cheneyville 18** 62.75 334 P P 11 31 34.3 -1.4
baz=150
V34A **Guthrie** 62.76 332 P P 11 31 34.7 -1.3
baz=147
V34A **Guthrie** 62.76 332 *e*P P 11 31 34.6 -1.3
comp=Z,24nm,0.9s
S38A **Stockton** 62.79 336 P P 11 31 34.8 -1.2
baz=151
U35A **Pawnee** 62.87 333 P P 11 31 35.7 -0.8
baz=148,SNR=5.9
ERPA **Erie** 62.92 349 *e*P P 11 31 35.5 -1.2
comp=Z,31nm,0.9s
SFIN **Lafayette** 62.95 342 P P 11 31 34.5 -2.5
baz=158
SFIN **Lafayette** 62.95 342 *e*P P 11 31 33.7 -3.4
comp=Z,8nm,1.0s
W32A **Sentinel** 62.97 330 P P 11 31 36.0 -1.3
baz=145,SNR=8.0
R39A **Chumby, Stover** 63.05 337 P P 11 31 35.9 -1.9
baz=152,SNR=7.0
T36A **Boggs Farm, Ca** 63.09 334 P P 11 31 36.6 -1.4
baz=149
V33A **Lossen Ranch,** 63.10 331 P P 11 31 36.5 -1.6
baz=146
T35A **Sooner Cattle** 63.23 333 P P 11 31 38.1 -1.0
baz=148
S37A **Fort Scott** 63.26 335 P P 11 31 37.7 -1.4
baz=150
R38A **Fenwick Farm,** 63.27 336 P P 11 31 37.6 -1.6
baz=151
U34A **Anderson Ranch** 63.27 332 P P 11 31 37.8 -1.5
baz=147
U34A **Anderson Ranch** 63.27 332 *e*P P 11 31 37.5 -1.8
comp=Z,26nm,0.9s
U34A *e*pP pP 11 31 50.2 +0.2
Q40A **Laux Farm, Aux** 63.30 338 P P 11 31 37.2 -2.2
baz=153
V32A **Arapaho** 63.36 331 P P 11 31 38.3 -1.7
baz=145
MNTX **Cornudas Mount** 63.48 323 *e*P P 11 31 38.7 -2.0
comp=Z,15nm,1.9s
U33A **Lingo Farm, Me** 63.53 332 P P 11 31 39.1 -1.9
baz=146
S36A **Lake Cedric, C** 63.54 334 P P 11 31 38.6 -2.4
baz=149,SNR=5.4
T34A **McClaskey Farm** 63.61 333 P P 11 31 39.4 -2.1
baz=147
Q39A **Willow Grove F** 63.67 337 P P 11 31 39.4 -2.5
baz=152,SNR=5.7
R37A **Teagarden Farm** 63.74 335 P P 11 31 40.5 -1.8
baz=150
P40A **Paris** 63.77 338 P P 11 31 39.7 -2.7
baz=153,SNR=6.2
HDIL **Hopedale** 63.77 341 P P 11 31 38.5 -3.9
baz=156
MSTX **Muleshoe** 63.79 327 P P 11 31 41.4 -1.5
baz=141
MSTX **Muleshoe** 63.79 327 *e*P P 11 31 41.7 -1.3
comp=Z,14nm,1.0s
S35A **Otter Creek Ra** 63.80 334 P P 11 31 41.1 -1.7
baz=148,SNR=6.5
Q38A **Cooks Store, C** 63.84 337 P P 11 31 41.6 -1.4
baz=151
U32A **Winter Ranch,** 63.89 331 P P 11 31 42.3 -1.0
baz=146
AMTX **Amarillo** 63.96 328 P P 11 31 43.0 -0.9
baz=143
R36A **Gordon, Harris** 64.02 335 P P 11 31 42.5 -1.7
baz=149
T33A **Patterson Ranc** 64.13 332 P P 11 31 43.8 -1.1
baz=146
S34A **Willow Spring** 64.15 333 P P 11 31 44.2 -0.8
baz=148
O40A **La Belle** 64.23 338 P P 11 31 43.9 -1.6
baz=153
R35A **Emporia Munici** 64.30 334 P P 11 31 44.9 -1.0
baz=149
P38A **Dawn** 64.39 337 P P 11 31 44.9 -1.6
baz=151
T32A **Huddler Ranch,** 64.51 332 P P 11 31 46.3 -1.1
baz=146
Q36A **Arnold C. Orve** 64.55 335 P P 11 31 46.1 -1.5
baz=150
LONY **Lake Ozonia** 64.58 353 *e*P P 11 31 46.8 -0.9
comp=Z,27nm,1.4s
P37A **Lathrop** 64.66 336 P P 11 31 46.7 -1.6
baz=151
Q35A **Mercer Eighty,** 64.69 335 P P 11 31 46.9 -1.7
baz=149
R34A **Isabella, Hill** 64.72 333 P P 11 31 47.3 -1.4
baz=148
S32A **Newby Ranch, P** 64.94 332 P P 11 31 48.8 -1.5
baz=146
P36A **Good Intent, A** 65.02 336 P P 11 31 49.3 -1.4
baz=150
R33A **Olander Ranch,** 65.03 333 P P 11 31 49.4 -1.5
baz=147
O37A **Wolven Farm, M** 65.09 337 P P 11 31 49.5 -1.6
baz=151
KSU1 **Kansas State U** 65.13 334 *e*P P 11 31 49.8 -1.6
comp=Z,19nm,1.1s
R32A **Long Quarter,** 65.44 332 P P 11 31 52.3 -1.2
baz=146
319A **Douglas** 65.52 320 *e*P P 11 31 54.0 -0.3
comp=Z,157nm,0.8s
Q33A **Connelly Farm,** 65.55 333 P P 11 31 53.1 -1.1
baz=147
P34A **Walnut Farm, R** 65.60 334 P P 11 31 53.4 -1.0
baz=148
N37A **Lee Faris, Mou** 65.63 337 P P 11 31 53.7 -0.9
baz=151
Q32A **Meitler Ranch,** 65.85 333 P P 11 31 54.9 -1.2
baz=147
DBIC **Dimbokro** 65.91 73 P P 11 31 56.5 -0.5
comp=Z,6.3nm,0.9s,baz=227,slow=5.8,SNR=5.8
DBIC LR LR 11 58 53.3
comp=Z,102nm,20.5s,baz=215,slow=34
CBKS **Cedar Bluff** 66.22 332 P P 11 31 57.6 -0.9
baz=146
CBKS **Cedar Bluff** 66.22 332 *e*P P 11 31 57.4 -1.1
N35A **Tabor** 66.25 336 P P 11 31 57.3 -1.4
baz=150
O33A **Hebron** 66.35 334 P P 11 31 58.0 -1.3
baz=148
P32A **Huiting Farm,** 66.40 333 P P 11 31 58.0 -1.6
baz=147
L38A **Oak Wood Farm,** 66.40 339 P P 11 31 57.7 -1.8
baz=152
ANMO **Albuquerque** 66.50 325 *e*P P 11 31 59.5 -1.0
comp=Z,10nm,1.8s
N34A **Lincoln** 66.57 335 P P 11 31 58.9 -1.7
baz=149
O32A **Brockman Farm,** 66.80 334 P P 11 32 00.9 -1.2
baz=147
L36A **Harn Buss Farm** 66.97 337 P P 11 32 02.1 -1.1
baz=151
TUC **Tucson** 67.09 320 *e*P P 11 32 04.0 -0.2
comp=Z,28nm,0.8s
T25A **Trinidad** 67.09 328 P P 11 32 02.2 -2.1
baz=141
M34A **Aspy Farms, Fr** 67.17 336 P P 11 32 03.1 -1.4
baz=149
L35A **Bielow Farm, R** 67.30 337 P P 11 32 03.7 -1.6
baz=150
K36A **Gilmore City** 67.36 338 P P 11 32 04.3 -1.3
baz=151
M33A **Taylor Creek F** 67.47 335 P P 11 32 04.8 -1.5
baz=148
L34A **Svendsen Farm,** 67.49 336 P P 11 32 04.8 -1.6
baz=149
BGNE **Belgrade** 67.71 335 P P 11 32 06.5 -1.4
baz=148
BGNE **Belgrade** 67.71 335 *e*P P 11 32 07.3 -0.6
comp=Z,52nm,0.9s
I38A **Scanlan Farm,** 67.89 340 P P 11 32 07.2 -1.7
baz=154
214A **Organ Pipe Nat** 68.09 318 *e*P P 11 32 09.1 -1.5
comp=Z,150nm,1.0s
SDCO **Great Sand Dun** 68.11 327 P P 11 32 10.1 -0.8
baz=140
SDCO **Great Sand Dun** 68.11 327 *e*P P 11 32 10.4 -0.5
comp=Z,5.5nm,1.0s
L31A **Butterfield Fa** 68.63 335 P P 11 32 12.8 -0.9
baz=147
S22A **4UR Ranch, Cre** 68.80 326 P P 11 32 13.5 -1.7
baz=139
Q24A **Divide** 68.88 328 P P 11 32 15.5 -0.1
baz=141
ECSD **EROS Data Cent** 69.10 337 P P 11 32 15.0 -1.5
baz=149
ECSD **EROS Data Cent** 69.10 337 *e*P P 11 32 14.7 -1.8
comp=Z,12nm,1.4s
SPMN **Marine on St.** 69.10 340 P P 11 32 14.7 -1.8
baz=153
MVCO **Mesa Verde** 69.28 325 P P 11 32 17.1 -1.0
baz=138
MVCO **Mesa Verde** 69.28 325 *e*P P 11 32 17.2 -1.0
comp=Z,16nm,1.7s
H35A **Sunnyside Ranc** 69.30 339 P P 11 32 16.5 -1.2
baz=151
WUAZ **Wupatki** 69.68 322 *e*P P 11 32 20.6 +0.1
comp=Z,6.1nm,1.0s
ISCO **Idaho Springs** 69.75 329 P P 11 32 19.9 -1.1
baz=140
J30A **Dallas** 69.86 335 P P 11 32 20.0 -1.3
baz=147
SMCO **Snowmass** 69.95 327 *e*P P 11 32 22.1 -0.3
comp=Z,3.9nm,0.9s
H33A **Prehn Over Nor** 69.96 337 P P 11 32 20.6 -1.2
baz=150
QSPA **South Pole Qui** 70.36 180 *e*P P 11 32 24.9 +0.7
E36A **McGregor** 70.39 341 P P 11 32 23.2 -1.1
baz=153
F33A **5 Mile Ranch,** 70.80 338 P P 11 32 25.1 -1.8
baz=150
J27A **Elkhorn Farm,** 70.83 333 P P 11 32 27.2 -0.1
baz=144
H29A **Onida** 71.23 335 P P 11 32 29.0 -0.5
baz=146
O20A **White River Ci** 71.32 327 P P 11 32 29.4 -1.0
baz=138
J26A **Sides Ranch, S** 71.34 333 P P 11 32 29.6 -0.7
baz=144
C36A **Pine Crest Far** 71.37 341 P P 11 32 29.3 -1.0
baz=154
KNB **Kanab** 71.56 322 *e*P P 11 32 32.2 +0.3
comp=Z,14nm,1.2s
GMRC **Granite Mounta** 71.75 319 P P 11 32 32.9 -0.1
baz=131
SRU **San Rafael Swe** 71.76 325 *e*P P 11 32 32.8 -0.3
comp=Z,4.0nm,0.9s
LCMT **Little Creek M** 71.80 322 *e*P P 11 32 33.4 +0.1
comp=Z,3.0nm,1.1s
MTPU **Mount Pierson** 71.91 323 *e*P P 11 32 34.2 -0.1
comp=Z,14nm,1.9s
TAOE **Nuku Hiva Isla** 71.92 267 *e*LR LR 11 54 41.4
comp=Z,88nm,26.3s
P18A **Preston Nutter** 71.98 326 *e*P P 11 32 34.2 -0.4
comp=Z,5.2nm,1.0s
B35A **Bob, Littlefor** 72.18 341 P P 11 32 31.7 -3.4
baz=153
I25A **Rochford** 72.19 333 P P 11 32 35.1 -0.5
baz=143
MSU **Marysvale** 72.24 324 *e*P P 11 32 36.5 +0.4
RSSD **Black Hills** 72.41 332 P P 11 32 36.7 -0.2
baz=143
RSSD **Black Hills** 72.41 332 *e*P P 11 32 36.6 -0.2
comp=Z,11nm,1.4s
F28A **McLaughlin** 72.47 335 P P 11 32 36.6 -0.4
baz=146
G27A **Dupree** 72.54 335 P P 11 32 36.8 -0.7
baz=145
G26A **Maurine** 72.74 334 P P 11 32 37.7 -0.9
baz=144
D30A **Buchanan** 72.76 337 P P 11 32 37.5 -1.2
baz=148
AGMN **Agassiz Nation** 72.80 340 P P 11 32 37.7 -1.1
baz=151
F27A **Lemmon** 72.98 335 P P 11 32 39.5 -0.5
baz=145
C31A **Landman Farms,** 72.99 338 P P 11 32 39.1 -0.9
baz=149
G25A **Newell** 73.00 333 P P 11 32 39.4 -0.8
baz=144
E28A **Huff** 73.04 336 P P 11 32 39.5 -0.9
baz=146
B32A **Ashes, Strandq** 73.10 339 P P 11 32 39.0 -1.6
baz=150
C30A **Mc, Pekin** 73.17 338 P P 11 32 40.3 -0.8
baz=148
PSUT **Pine Spring** 73.20 323 *e*P P 11 32 41.7 0.0
comp=Z,4.4nm,1.0s
A33A **Warroad** 73.20 340 P P 11 32 39.7 -1.5
baz=151
F26A **Lodgepole** 73.22 334 P P 11 32 40.2 -1.3
baz=144
TPNV **Topopah Spring** 73.53 320 P P 11 32 41.9 -1.8
baz=131
FURC **Furnace Creek,** 73.59 320 P P 11 32 43.2 -0.5
baz=131
B30A **Myrvik Farm, E** 73.75 338 P P 11 32 43.6 -0.9
baz=149
DUG **Dugway, Tooele** 73.77 325 P P 11 32 44.0 -1.0
baz=135
DUG **Dugway, Tooele** 73.77 325 *e*P P 11 32 44.3 -0.7
comp=Z,19nm,1.9s
BW06 **Bender Array** 73.94 328 P P 11 32 44.8 -1.2
baz=136
PDAR **Pinedale Array** 73.94 328 P P 11 32 45.2 -0.7
comp=Z,0.6nm,0.7s,baz=110,slow=8.1,SNR=6.3
PDAR LR LR 12 09 39.1
comp=Z,36nm,18.3s,baz=175,slow=39
R11A **Troy Canyon, C** 74.07 322 P P 11 32 46.1 -0.7
baz=132
R11A **Troy Canyon, C** 74.07 322 *e*P P 11 32 46.6 -0.2
comp=Z,12nm,1.8s
A30A **Hoffart Farm,** 74.17 339 P P 11 32 46.2 -0.7
baz=149
BGU **Big Grassy Mou** 74.40 325 *e*P P 11 32 48.5 -0.2
comp=Z,4.6nm,1.0s
A29A **Manning Farm,** 74.47 338 P P 11 32 48.0 -0.7
baz=148
B28A **Dugan Ranch, T** 74.48 337 P P 11 32 48.6 -0.1
baz=147
TORD **Toroni Ar. Bea** 74.49 70 P P 11 32 47.9 -1.6
comp=Z,2.5nm,0.9s,baz=250,slow=5.1,SNR=11
ULM **Lac du Bonnet** 74.51 341 P P 11 32 46.6 -2.3
comp=Z,7.3nm,0.9s,baz=157,slow=5.2,SNR=6.1
ULM LR LR 12 08 18.5
comp=Z,109nm,18.5s,baz=156,slow=38
D25A **Fairfield** 74.54 335 P P 11 32 49.1 -0.1
baz=144
C26A **Wahner Farm, P** 74.61 336 P P 11 32 49.6 +0.1
baz=145
MOOW **Moose Ponds** 75.24 328 *e*P P 11 32 52.9 -0.6
comp=Z,3.1nm,1.1s
IMW **Indian Meadow** 75.45 328 *e*P P 11 32 54.1 -0.7
comp=Z,4.8nm,1.0s
FLWY **Flagg Ranch** 75.47 329 *e*P P 11 32 55.0 +0.2
comp=Z,6.0nm,0.9s
RLMT **Red Lodge** 75.55 330 P P 11 32 55.1 -0.2
baz=138
RLMT **Red Lodge** 75.55 330 *e*P P 11 32 55.0 -0.2
comp=Z,11nm,1.3s
H17A **Grant Village** 75.64 329 P P 11 32 55.1 -0.8
baz=137
LKWY **Lake** 75.67 329 *e*P P 11 32 56.7 +0.7
comp=Z,7.3nm,1.1s
NVAR **Mina Array Bea** 75.73 320 P P 11 32 56.5 +0.1
comp=Z,0.8nm,0.8s,baz=168,slow=5.3,SNR=5.8
DGMT **Dagmar** 75.95 335 P P 11 32 57.5 +0.2
baz=143
DGMT **Dagmar** 75.95 335 *e*P P 11 32 57.3 +0.1
comp=Z,9.5nm,1.0s
YMR **Madison River** 76.03 329 *e*P P 11 32 58.3 +0.3
comp=Z,7.4nm,1.1s
HLID **Hailey** 76.98 326 P P 11 33 04.1 +0.7
baz=134
HLID **Hailey** 76.98 326 *e*P P 11 33 02.8 -0.6
comp=Z,5.3nm,1.0s
BOZ **Bozeman (W)** 77.06 329 P P 11 33 03.7 0.0
baz=137
MCMT **McKenzie Canyo** 77.07 328 *e*P P 11 33 04.1 +0.2
MFID **Camas Ranch** 77.62 325 *e*P P 11 33 06.8 -0.1
comp=Z,6.7nm,1.2s
EGMT **Eagleton** 77.95 332 P P 11 33 08.5 0.0
baz=138
PPT2 **Papeete2** 78.09 255 *e*LR LR 11 57 31.5
comp=Z,81nm,24.0s
MDT **Midelt** 78.81 49 LR LR 12 07 08.4
comp=Z,38nm,19.5s,slow=35
VNDA **Vanda** 78.90 190 LR LR 12 07 32.9
comp=Z,53nm,20.6s,baz=286,slow=35
BMO **Blue Mountains** 79.38 326 *e*P P 11 33 16.5 0.0
comp=Z,6.1nm,1.0s
YBMT **Yellow Bay** 79.79 330 *e*P P 11 33 18.7 0.0
M04C **Macdoel** 79.95 321 P P 11 33 19.4 -0.3
baz=128
BSMT **Bassoo Peak** 80.15 329 *e*P P 11 33 20.4 -0.3
J05D **Fort Rock, OR** 80.53 323 P P 11 33 23.4 +0.5
baz=129
WALA **Waterton Lakes** 80.59 330 *e*P P 11 33 23.1 0.0
comp=Z,13nm,1.5s
I05D **Terrebonne, OR** 81.25 323 P P 11 33 27.1 +0.5
baz=129
FCC **Fort Churchill** 81.59 346 *e*P P 11 33 27.1 -0.8
comp=Z,6.6nm,0.9s
C09A **Chrisman Ranch** 81.84 328 *e*P P 11 33 29.8 +0.2
comp=Z,8.4nm,1.0s
G03D **McMinnville, O** 82.86 323 P P 11 33 37.0 +2.1
baz=127
MAW **Mawson** 85.20 163 LR LR 12 11 38.4
comp=Z,93nm,19.0s,baz=66,slow=36
YKA **Yellowknife Ar** 90.45 340 P P 11 34 10.9 -0.7
comp=Z,3.5nm,0.9s,baz=129,slow=4.5,SNR=42
BORG **Borgarnes** 91.08 18 LR LR 12 11 12.4
comp=Z,59nm,19.6s,baz=190,slow=33
RAO **Raoul Island** 98.00 235 *e*P P 11 34 47.0 -0.2
GERES **GERESS Array B** 98.35 41 LR LR 12 16 57.7
comp=Z,35nm,19.7s,baz=306,slow=34
ZALV **Zalesovo Beam** 139.40 26 PKP PKPdf 11 40 36.0 -1.4
comp=Z,2.7nm,0.7s,baz=307,slow=2.8,SNR=11
MKAR **Makanchi Array** 142.85 36 PKP PKPdf 11 40 42.5 -1.4
comp=Z,1.0nm,0.9s,baz=321,slow=1.6,SNR=7.3
TLY **Talaya** 147.25 12 PKPbc PKPdf 11 40 53.0 +1.6
comp=Z,0.8nm,0.4s,baz=348,slow=4.0,SNR=5.1
KLR **Kul'dur** 147.29 338 PKPbc PKPdf 11 40 52.9 +1.4
comp=Z,2.3nm,0.9s,baz=13,slow=6.5,SNR=5.9
USRK **Ussuriysk Ar.** 151.31 332 PKPbc PKPbc 11 41 03.9 -0.1
comp=Z,2.8nm,0.8s,baz=272,slow=2.6,SNR=4.5
SONM **Songino Array** 151.44 10 PKPbc PKPbc 11 41 04.2 -0.2
comp=Z,4.5nm,0.9s,baz=348,slow=1.2,SNR=19
HHC **Hu-ho-hao-te** 158.97 5 *e*PKP PKPdf 11 41 08.0 -0.7
HHC sPKP 11 41 22.3
HHC PP PP 11 45 25.5 +0.8
CD2 **Chengdu** 165.78 37 PKP PKPdf 11 41 14.0 -1.7
GYA **Guiyang** 170.76 43 *e*PKPbc PKPdf 11 41 18.0 -1.3
GYA PKPab PKPab 11 42 38.5 +1.2
GYA PKS PKSdf 11 44 49.5 -2.4
GYA PP PP 11 46 29.3 +2.0
GYA AMB AMB
comp=Z,120nm,8.0s

MEX 27 11:25:35.5±0.9, **27°29N**×**111°31W, h16**km±24km, **MD3.6, Gulf of California**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
GUYB	**Guaymas**	**0.72**	**32**	*e*P	Pg	11 25 47.1	-2.6
GUYB				*e*S	Sg	11 25 55.5	-3.7
SRIG	**Santa Rosalia**	**0.83**	**273**	*e*P	Pb	11 25 48.4	-3.1
SRIG				*e*S	Sb	11 25 58.8	-3.6
HSIG		**1.76**	**10**	*e*P	Pn	11 26 02.6	-2.7
HSIG				*e*S	Sn	11 26 22.2	-5.1

*ECX **27** 11:31:07.2±0.5, 27°.79N×111°.75W, h10km, MD3.8*
MEX 27 11:31:06.0±0.8, 27°.54N×111°.46W, h11km, MD3.6, 1C-1D, Gulf of California

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
GUYB	**Guaymas**	**0.63**	**55**	*e*P	Pg	11 31 17.1	-1.2
GUYB				*i* S	Sg	11 31 24.8	-1.8
SRIG	**Santa Rosalia**	**0.73**	**253**↑	*e*P	Pg	11 31 18.2	-1.9
SRIG				*e*S	Sg	11 31 27.6	-2.0
SRIG	**Santa Rosalia**	**0.73**	**253**	*i* P	Pg	11 31 18.2	-1.9
SRIG				*i* S	Sg	11 31 27.8	-1.8
HSIG		**1.54**	**17**↓	*e*P	Pn	11 31 31.8	-1.7
HSIG				*e*S	Sn	11 31 50.5	-3.0
HSIG		**1.54**	**17**	*e*P	Pn	11 31 31.4	-2.1
HSIG				*i* S	Sn	11 31 49.0	-4.5

*JMA **27** 11:40:21.6±0.2, 38°.26N×144°.42E, h24km, M3.8*
*ISCJB **27** 11:40:22.4±1.0, 38°.35N±0°.05×144°.30E±0°.07, h10km, mb3.5/2, Error ellipse: s-maj=8.1km s-min=7.6km az=36.2*
*IDC **27** 11:40:23.6±1.9, 38°.49N×144°.06E, h0km, mb3.3/2, mb1 3.5/4, mb1mx3.2/50, mbtmp3.3/4, ML3.5/2, Error ellipse: s-maj=59.3km s-min=26.7km az=86.0*
ISC 27 11:40:24.8±1.5, 38°.44N±0°.06×144°.05E±0°.08, h10km, n16, σ1s59/23, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
OFUJ	**Ofunato**	**1.97**	**290**	P	**Pb**	**11 40 59.4**	**-1.3**
JIO	**Ouri**	**2.12**	**271**	P	**Pb**	**11 41 01.1**	**-2.2**
JIO				S	**Sb**	**11 41 29.9**	**+0.2**
JTH	**Tanohata**	**2.26**	**312**	P	**Pn**	**11 41 03.2**	**+0.9**
JTH				S	**Sb**	**11 41 33.9**	**+0.1**
JMK	**Ichinoseki**	**2.27**	**284**	P	**Pb**	**11 41 03.7**	**-2.2**
JOM	**Ohasama**	**2.38**	**296**	P	**Pb**	**11 41 05.6**	**-2.2**
JOM				S	**Sb**	**11 41 38.3**	**+1.0**
JMM	**Marumori**	**2.63**	**258**	P	**Pn**	**11 41 07.0**	**-0.3**
JMM				S	**Sn**	**11 41 40.7**	**+1.4**
JOU	**Okura**	**2.66**	**269**	P	**Pn**	**11 41 08.9**	**+1.1**
JOU				*e*S	**Sb**	**11 41 43.9**	**-1.4**
JANG	**Nango**	**2.75**	**315**	P	**Pn**	**11 41 10.4**	**+1.4**
JRG	**Rokugo**	**2.83**	**291**	P	**Pb**	**11 41 12.3**	**-3.1**
JRG				*e*S	**Sb**	**11 41 50.2**	**+0.1**
JYK	**Kaneyama**	**2.93**	**281**	P	**Pn**	**11 41 13.4**	**+2.0**
JYK				*e*S	**Sb**	**11 41 52.1**	**-0.8**
JFT	**Otama**	**3.08**	**254**	S	**Sn**	**11 41 52.1**	**+1.8**
JTM	**Tenmabayashi**	**3.29**	**316**	P	Pn	11 41 19.0	+2.7
MJAR	**Matsushiro Arr**	**5.02**	**250**	Pn	**Pn**	**11 41 40.4**	**+0.2**
	0.8nm,0.3s,baz=129,slow=10,SNR=6.0						
ASAJ	**Asahikawa**	**5.78**	**350**	Pn	**Pn**	**11 41 49.4**	**-1.2**
	2.0nm,0.3s,baz=200,slow=10,SNR=20						
ASAJ				Sn	**Sn**	**11 42 59.0**	**+2.2**
	1.1nm,0.3s,baz=134,slow=31,SNR=3.9						
WRA	**Warramunga Arr**	**58.78**	**191**	P	**P**	**11 50 24.1**	**+0.9**
	0.4nm,0.6s,baz=11,slow=7.1,SNR=4.7						
ASAR	**Alice Springs**	**62.51**	**190**	P	**P**	**11 50 49.2**	**+0.6**
	0.2nm,0.6s,baz=7.2,slow=7.3,SNR=3.0						

*JMA **27** 11:40:42.7±0.2, 24°.29N×121°.17E, h3km, M3.0*
*TAP **27** 11:40:43.7, 24°.28N×121°.21E, h10km, ML3.6, B*
*IASPEI **27** 11:40:44.2±0.8, 24°.25N±0°.02×121°.25E±0°.02, h11km±6km, Error ellipse: s-maj=2.9km s-min=2.1km az=115.1, GT5 selection from ISC bulletin GT5 identified by Bond˜¡r and McLaughlin (2009) selection criteria Bond˜¡r and McLaughlin, A new ground truth data set for seismic studies, Seism. Res. Let., 80, 465-472, 2009*
*ISCJB **27** 11:40:44.4±0.2, 24°.27N±0°.01×121°.24E±0°.01, h6km±2km, Error ellipse: s-maj=2.4km s-min=1.7km az=41.2*
ISC 27 11:40:44.4±0.8, 24°.25N±0°.02×121°.24E±0°.02, h12km±5km,

n72,σ0ᵍ68/114, 4C-17D, Taiwan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TWT	**Tachien** baz=239	**0.06**	**275**	⇓*i*P	**Pg**	**11 40 46.3**	**-0.6**
WHF	**Hehuan Shan** baz=157	**0.11**	**166**	⇑*i*P	**Pg**	**11 40 48.2**	**+0.6**
WHF	baz=157			*i* S	**Sg**	**11 40 50.8**	**+0.8**
NNS	**Nan Shan** baz=44	**0.23**	**33**	⇓*i*P	**Pg**	**11 40 48.8**	**-0.5**
NNS	baz=44			*e*S	**Sg**	**11 40 52.3**	**-0.3**
TWD	**Chiawan** baz=111	**0.37**	**117**	⇑*i*P	**Pb**	**11 40 52.6**	**-0.3**
TWD	baz=111			*i* S	**Sb**	**11 40 58.2**	**-0.4**
HWA	**Hwalien** baz=129	**0.43**	**129**	*i* P	**Pb**	**11 40 54.0**	**+0.1**
HWA	baz=129			*e*S	**Sb**	**11 41 00.4**	**0.0**
TWQ1	**Liyutan** baz=281	**0.44**	**283**	*e*P	**Pg**	**11 40 53.0**	**0.0**
TWQ1	baz=281			S	**Sg**	**11 40 58.6**	**-0.1**
NSTT	**Nanjuang** baz=332	**0.44**	**331**	⇑*i*P	**Pg**	**11 40 52.6**	**-0.4**
NSTT	baz=332			*i* S	**Sg**	**11 40 58.0**	**-0.9**
NSK	**Sanguang** baz=19	**0.44**	**14**	⇓*i*P	**Pg**	**11 40 52.4**	**-0.6**
NSK	baz=19			*i* S	**Sg**	**11 40 57.5**	**-1.5**
ESF	**Shoufeng Towns** baz=155	**0.45**	**147**	*e*P	**Pb**	**11 40 54.6**	**+0.3**
ESF	baz=155			*e*S	**Sb**	**11 41 00.7**	**-0.2**
NSY	**Sanyi** baz=289	**0.47**	**291**	P	**Pb**	**11 40 53.9**	**-0.7**
NSY	baz=289			S	**Sg**	**11 41 00.3**	**+0.6**
ESL	**Shilin** baz=156	**0.47**	**158**	⇑*i*P	**Pb**	**11 40 54.2**	**-0.3**
ESL	baz=156			S	**Sb**	**11 41 00.4**	**-1.1**
SMLT	**Sun Moon Lake** baz=207	**0.48**	**220**	⇓*i*P	**Pg**	**11 40 53.5**	**-0.3**
SMLT	baz=207			*e*S	**Sg**	**11 40 59.4**	**-0.7**
TYC	**Yuchr** baz=221	**0.49**	**225**	⇓*i*P	**Pg**	**11 40 53.6**	**-0.4**
TYC	baz=221			*i* S	**Sg**	**11 40 59.7**	**-0.8**
ENTT	**Nioudou** baz=42	**0.49**	**37**	⇓*i*P	**Pg**	**11 40 53.3**	**-0.7**
ENA	**Nanau** baz=73	**0.49**	**69**	⇓*i*P	**Pg**	**11 40 54.1**	**+0.1**
ENA	baz=73			S	**Sg**	**11 41 00.4**	**-0.2**
WDT	**Danda** baz=187	**0.50**	**191**	⇓*i*P	**Pg**	**11 40 53.8**	**-0.4**
WDT	baz=187			*e*S	**Sg**	**11 40 59.8**	**-1.1**
TCU	**Taichung** baz=256	**0.52**	**259**	⇓*i*P	**Pb**	**11 40 55.4**	**-0.1**
TCU	baz=256			*e*S	**Sb**	**11 41 02.7**	**-0.3**
HSN	**Hsinchu** baz=342	**0.60**	**336**	*e*P	**Pb**	**11 40 56.9**	**0.0**
HSN	baz=342			S	**Sb**	**11 41 05.7**	**+0.4**
TWE	**Neicheng** baz=39	**0.61**	**40**	⇓*i*P	**Pg**	**11 40 55.9**	**-0.4**
WNT	**Mingjian** baz=223	**0.63**	**234**	*i* P	**Pb**	**11 40 57.3**	**+0.1**
WNT	baz=223			*e*S	**Sb**	**11 41 06.7**	**+0.7**
TWC	**Suao** baz=60	**0.66**	**57**	⇓*i*P	**Pg**	**11 40 56.8**	**-0.5**
TWC	baz=60			*e*S	**Sg**	**11 41 05.6**	**-0.4**
ILA	**Ilan** baz=45	**0.69**	**42**	*e*P	**Pg**	**11 40 57.1**	**-0.7**
ILA	baz=45			*e*S	**Sb**	**11 41 09.1**	**+1.1**
NCU	**National Centr** baz=358	**0.72**	**356**	*e*P	**Pb**	**11 40 59.3**	**+0.4**
NCU	baz=358			*e*S	**Sb**	**11 41 09.2**	**+0.5**
EHY	**Hungye** baz=184	**0.74**	**174**	⇓*i*P	**Pb**	**11 40 58.9**	**-0.4**
TWA	**Mucha** baz=32	**0.79**	**23**	⇓P	**Pg**	**11 40 59.1**	**-0.6**
TWA	baz=32			*e*S	**Sg**	**11 41 08.5**	**-1.6**
YUS	**Yu-Shan** baz=205	**0.80**	**199**	*e*P	**Pg**	**11 40 59.1**	**-0.8**
TAP	**Taipei** baz=29	**0.82**	**17**	*e*P	**Pg**	**11 41 00.0**	**-0.3**
CHN5	**Tsauling** baz=216	**0.83**	**218**	⇓*i*P	**Pb**	**11 40 00.9**	**+0.1**
CHN5	baz=216			*e*S	**Sb**	**11 41 12.4**	**+0.6**
TAP1	**Taipei** baz=29	**0.83**	**18**	*e*P	**Pg**	**11 40 59.2**	**-1.2**
WGK	**Gukeng** baz=225	**0.83**	**228**	P	**Pn**	**11 41 01.4**	**-0.5**
ALS	**Alishan** baz=201	**0.83**	**208**	P	**Pg**	**11 41 00.2**	**-0.3**
TWS1	**Kuangyinshan** baz=13	**0.86**	**11**	*e*P	**Pb**	**11 41 01.8**	**+0.5**
TWS1	baz=13			S	**Sb**	**11 41 13.7**	**+0.9**
EGS	baz=39	**0.87**	**47**	⇓P	**Pg**	**11 41 00.5**	**-0.7**
TWF1	**Yuli** baz=181	**0.89**	**177**	P	**Pg**	**11 41 01.4**	**-0.2**
TWF1	baz=181			*e*S	**Sb**	**11 41 13.4**	**-0.3**
WTCT	**Ta-ch'eng** baz=245	**0.95**	**247**	*e*P	**Pb**	**11 41 03.2**	**+0.3**
WTCT	baz=245			*e*S	**Sn**	**11 41 16.9**	**-0.3**
NWF	**Wu-fen Shan** baz=43	**0.96**	**31**	*e*P	**Pg**	**11 41 02.1**	**-0.7**
CHN2	**Minshiung** baz=223	**1.00**	**225**	P	**Pn**	**11 41 04.2**	**-0.1**
CHN2	baz=223			*e*S	**Sn**	**11 41 18.4**	**+0.1**
TWB1	**Santiao Chiao** baz=44	**1.02**	**42**	*e*P	**Pg**	**11 41 02.9**	**-1.1**
CHY	**Chiayi** baz=223	**1.05**	**225**	*e*P	**Pn**	**11 41 05.0**	**0.0**
CHY	baz=223			*e*S	**Sn**	**11 41 19.9**	**+0.2**
CHN4	**Tsaushan** baz=212	**1.07**	**214**	⇓*i*P	**Pn**	**11 41 05.2**	**-0.1**
CHN4	baz=212			S	**Sn**	**11 41 20.2**	**+0.1**
ELDTW	**Lidau** baz=190	**1.07**	**191**	*e*P	**Pg**	**11 41 03.6**	**-1.5**
TWY	**Chenhua** baz=32	**1.07**	**18**	*e*P	**Pn**	**11 41 05.3**	**0.0**
TWY	baz=32			*e*S	**Sg**	**11 41 18.6**	**-0.4**
WSF	**Szhu** baz=235	**1.11**	**237**	P	**Pg**	**11 41 05.4**	**-0.4**
WSF	baz=235			*e*S	**Sn**	**11 41 21.1**	**+0.1**
CHKT	**Chengkung** baz=157	**1.15**	**174**	*e*P	**Pn**	**11 41 06.4**	**+0.1**
CHKT	baz=157			*e*S	**Sn**	**11 41 22.3**	**+0.3**
WTP	**Ta-pu** baz=208	**1.15**	**210**	⇓*i*P	**Pb**	**11 41 06.2**	**-0.1**
WTP	baz=208			*e*S	**Sn**	**11 41 22.0**	**-0.1**
STYT	**Tauyuan** baz=201	**1.17**	**202**	*e*P	**Pb**	**11 41 06.2**	**-0.3**
TWK	**Hsinying** baz=214	**1.20**	**215**	*e*P	**Pn**	**11 41 07.2**	**+0.2**
CHN1	**Nanshi** baz=210	**1.24**	**212**	*e*P	**Pg**	**11 41 07.8**	**-0.4**
CHN1	baz=210			*e*S	**Sn**	**11 41 25.6**	**+1.2**
CHN8	**Yiju** baz=225	**1.30**	**227**	*e*P	**Pb**	**11 41 08.6**	**-0.1**
CHN8	baz=225			*e*S	**Sn**	**11 41 26.4**	**+0.7**
SGST	**Jiashian** baz=206	**1.31**	**207**	*e*P	**Pb**	**11 41 08.8**	**-0.1**
SGST	baz=206			*e*S	**Sn**	**11 41 28.3**	**+2.4**
CHN3	**Shinhua** baz=214	**1.42**	**215**	*e*P	**Pb**	**11 41 10.8**	**+0.1**
TWG	**Pinlang** baz=186	**1.43**	**186**	*e*P	**Pn**	**11 41 10.2**	**0.0**
SCLT	**Jiali** baz=220	**1.43**	**222**	*e*P	**Pb**	**11 41 11.0**	**0.0**
TAI1	**Yung-k'ang** baz=216	**1.52**	**218**	*e*P	**Pb**	**11 41 12.1**	**-0.3**
PCYT	**Pengchaiyu** baz=29	**1.57**	**29**	*e*P	**Pn**	**11 41 12.1**	**0.0**
JYNG	**Yonagunijimaku**	**1.57**	**82**	P	**Pb**	**11 41 13.2**	**-0.2**
JYNG				S	**Sg**	**11 41 34.5**	**-0.4**
SSD	**Sandimen** baz=215	**1.60**	**201**	*e*P	**Pg**	**11 41 14.4**	**-0.6**
TWM1	**Shoushan** baz=208	**1.60**	**208**	*e*P	**Pg**	**11 41 14.4**	**-0.8**
YOJ	**Yonaguni jima**	**1.63**	**82**	P	**Pb**	**11 41 13.9**	**-0.5**
YOJ				S	**Sg**	**11 41 37.2**	**+0.3**
YOJ	**Yonaguni jima** baz=83	**1.63**	**82**	*e*P	**Pg**	**11 41 15.3**	**-0.4**
ECL	**Taimali** baz=176	**1.67**	**189**	*e*P	**Pb**	**11 41 15.4**	**+0.4**
PNG	**Penghu** baz=246	**1.68**	**247**	*e*P	**Pn**	**11 41 14.2**	**+0.5**
PNG	baz=246			*e*S	**Sb**	**11 41 36.6**	**+0.2**
WDGT	**Dungji** baz=235	**1.75**	**236**	*e*P	**Pn**	**11 41 15.2**	**+0.7**
WDGT	baz=235			*e*S	**Sb**	**11 41 38.4**	**0.0**
EAST	**Anshuo** baz=180	**1.89**	**191**	*e*P	**Pb**	**11 41 18.6**	**-0.3**
TAW	**Tawu** baz=179	**1.91**	**190**	*e*P	**Pb**	**11 41 19.8**	**+0.6**
SCZT	**Fangliau** baz=215	**1.95**	**197**	*e*P	**Pn**	**11 41 18.1**	**+0.8**
LAY	**Lan-yu** baz=174	**2.22**	**172**	*e*P	**Pn**	**11 41 21.2**	**+0.1**
IRIF	**Iriomote-Funau**	**2.28**	**87**	P	**Pb**	**11 41 24.2**	**-1.2**
IRIF				S	**Sn**	**11 41 51.2**	**+1.4**
QZH	**Quanzhou**	**2.51**	**287**	Pn	Pn	11 41 20.3	-4.7
QZH				Sn	Sn	11 41 47.8	-7.7
QZH	comp=N,310nm,0.5s			smax	smax		
QZH	comp=E,200nm,0.9s			smax	smax		
JKRS	**Kuro-shima**	**2.53**	**90**	P	**Pn**	**11 41 26.8**	**+1.5**
JKRS				S	**Sb**	**11 41 59.5**	**-1.3**
JIJ	**Ishigaki jima**	**2.65**	**87**	P	**Pn**	**11 41 28.3**	**+1.3**
JIJ				S	**Sn**	**11 41 59.9**	**+0.8**
JISG	**Ishigakijimahi**	**2.82**	**83**	P	**Pn**	**11 41 30.4**	**+1.1**
JISG				S	**Sn**	**11 42 03.9**	**+0.6**

*ISCJB **27** 11:47:17.9±0.6, 46°.21N±0°.09×150°.1E±0°.1, h152ᵏᵐ, mb3.7/13, Error ellipse: s-maj=16.7km s-min=4.4km az=137.4*
*IDC **27** 11:47:22.8±2.0, 46°.74N×149°.85E, h170ᵏᵐ±18ᵏᵐ, mb3.4/12, mb1 3.6/17, mb1mx3.4/58, mbtmp3.9/17, Error ellipse: s-maj=25.0km s-min=11.1km az=157.0*
*JMA **27** 11:47:22.7±0.6, 45°.56N×150°.24E, h171ᵏᵐ, M3.7*
ISC 27 11:47:18.6±0.8, 46°.3N±0°.1×149°.99E±0°.10, h152ᵏᵐ, n46, σ1ᵍ54/45, mb3.7/12, Kuril Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JRA	**Rausu**	**4.17**	**238**	P	Pn	11 48 24.0	+3.0
NEM2	**Nemuro 2**	**4.20**	**228**	P	**Pn**	**11 48 22.3**	**+0.9**
NEM2				*e*S	**Sn**	**11 49 09.1**	**-1.2**
JNK	**Nakash**	**4.61**	**236**	P	Pn	11 48 29.7	+2.8
JTKR	**Abashiri--Toko**	**4.88**	**244**	P	Pn	11 48 34.0	+3.5
JAK	**Akkeshi**	**5.00**	**231**	P	**Pn**	**11 48 33.2**	**+1.2**
JAK				*e*S	**Sn**	**11 49 28.9**	**-0.4**
JMP	**Maruseppu**	**5.21**	**247**	P	Pn	11 48 39.1	+4.2
JAR	**Ashorobuto**	**5.34**	**238**	P	Pn	11 48 39.3	+2.8
JOB	**Onbets**	**5.54**	**235**	P	**Pn**	**11 48 41.2**	**+2.0**
JOB				*e*S	**Sn**	**11 49 42.1**	**0.0**
ASAJ	**Asahikawa** 2.5nm,0.3s,baz=73,slow=14,SNR=20	**5.66**	**250**	P	Pn	11 48 45.5	+4.9
ASAJ	**Asahikawa**	**5.66**	**250**	P	Pn	11 48 45.6	+4.9
JKK2	**Kamakawa 2**	**5.67**	**248**	P	Pn	11 48 45.0	+4.1
JCH	**Churui**	**5.99**	**235**	P	**Pn**	**11 48 46.3**	**+1.1**
JCH				*e*S	**Sn**	**11 49 51.2**	**-1.7**
JBT2	**Biratori 2**	**6.48**	**240**	P	Pn	11 48 54.6	+3.0
JBT2				*e*S	**Sn**	**11 50 05.2**	**+0.7**
JEM	**Erimo**	**6.50**	**232**	*e*S	**Sn**	**11 50 03.1**	**-2.0**
JNBK	**Urakawa-nobuka**	**6.55**	**235**	P	**Pn**	**11 48 52.8**	**+0.1**
JNBK				*e*S	**Sn**	**11 50 03.7**	**-2.6**
JEW	**Eniwo**	**7.00**	**244**	P	Pn	11 49 02.0	+3.4
JNB	**Noboribetsu**	**7.46**	**243**	P	**Pn**	**11 49 06.4**	**+1.7**
JNB				*e*S	**Sn**	**11 50 27.9**	**-0.1**
JKB	**Kayabe**	**7.80**	**239**	P	**Pn**	**11 49 09.5**	**+0.2**
JKB				*e*S	**Sn**	**11 50 31.7**	**-4.5**
JYM2	**Yakumo 2**	**8.06**	**242**	P	**Pn**	**11 49 14.3**	**+1.5**
JSR	**Shiriuchi**	**8.38**	**239**	P	**Pn**	**11 49 17.7**	**+0.7**
PETK	**Petropavlovsk-** 0.6nm,0.3s,baz=190,slow=9.0,SNR=14	**8.47**	**33**	P	**Pn**	**11 49 17.4**	**-0.7**
JTM	**Tenmabayashi**	**8.49**	**233**	P	**Pn**	**11 49 18.7**	**+0.2**
JTM				*e*S	Sn	11 50 46.1	-6.7
JANG	**Nango**	**8.54**	**229**	P	**Pn**	**11 49 18.0**	**-1.2**
JANG				*e*S	Sn	11 50 46.1	-8.0
KLR	**Kul'dur** 0.2nm,0.3s,baz=86,slow=14,SNR=14	**12.63**	**290**	P	**Pn**	**11 50 15.1**	**+2.3**
USRK	**Ussuriysk Ar.** 0.7nm,0.3s,baz=74,slow=11,SNR=8.9	**12.86**	**267**	P	**P**	**11 50 18.8**	**-2.0**
KSRS	**Korea Array** 0.3nm,0.3s,baz=54,slow=11,SNR=7.4	**18.60**	**250**	P	**Pn**	**11 51 28.1**	**+1.9**
TIXI	**Tiksi** 1.4nm,0.4s,baz=158,slow=6.8,SNR=4.2	**27.36**	**346**	P	**P**	**11 52 46.9**	**-2.1**
ILAR	**Eielson Array** 0.3nm,0.4s,baz=272,slow=5.8,SNR=10	**38.26**	**38**	P	**P**	**11 54 23.1**	**-0.5**
ZALV	**Zalesovo Beam** 0.3nm,0.3s,baz=67,slow=8.5,SNR=3.0	**41.14**	**305**	P	**P**	**11 54 47.8**	**+0.3**
ZALV	1.5nm,0.7s,baz=85,slow=3.0,SNR=7.1			PcP	**PcP**	**11 56 44.6**	**+0.9**
INK	**Inuvik** 0.9nm,0.3s,baz=281,slow=6.4,SNR=19	**43.20**	**32**	P	**P**	**11 55 04.5**	**+0.6**
MKAR	**Makanchi Array** 0.6nm,0.5s,baz=71,slow=5.9,SNR=6.0	**45.24**	**296**	P	**P**	**11 55 19.8**	**-0.7**
MKAR	0.7nm,0.6s,baz=67,slow=4.7,SNR=5.7			PcP	**PcP**	**11 56 58.5**	**+0.8**
CMAR	**Chiang Mai Arr** 1.4nm,0.8s,baz=38,slow=7.5,SNR=10	**50.17**	**254**	P	P	11 56 01.4	+2.7
YKA	**Yellowknife Ar** 0.8nm,0.4s,baz=300,slow=6.8,SNR=30	**52.58**	**36**	P	**P**	**11 56 16.3**	**+0.2**
YKA	0.2nm,0.3s,baz=305,slow=3.7,SNR=7.1			PcP	**PcP**	**11 57 24.5**	**+0.4**
GUN	**Gumba**	**52.89**	**273**	*e*P	**P**	**11 56 20.1**	**+0.8**
KKN	**Kakani**	**53.38**	**274**	*e*P	**P**	**11 56 24.6**	**+1.9**
PKIN	**Phulchoki**	**53.43**	**273**	*e*P	**P**	**11 56 24.6**	**+1.5**
DMN	**Daman** 11nm,0.8s	**53.61**	**273**	*e*P	**P**	**11 56 26.2**	**+1.8**
GKN	**Gorkha**	**53.69**	**274**	*e*P	**P**	**11 56 26.4**	**+1.5**
ARU	**Arti** 2.2nm,0.5s,baz=323,slow=4.8,SNR=4.0	**53.89**	**317**	P	**P**	**11 56 23.8**	**-1.9**
KOLN	**Koldanda** 11nm,0.8s	**54.55**	**275**	*e*P	**P**	**11 56 33.1**	**+1.9**
PYUN	**Piuthan**	**54.77**	**275**	*e*P	**P**	**11 56 34.8**	**+2.0**
FINES	**FINESS Array B** 1.1nm,0.5s,baz=55,slow=7.2,SNR=8.8	**63.53**	**334**	P	**P**	**11 57 30.9**	**-1.3**
PDAR	**Pinedale Array** 0.6nm,0.5s,baz=296,slow=2.1,SNR=14	**66.75**	**52**	P	**P**	**11 57 54.4**	**+0.7**
NOA	**NORSAR Array B** 0.8nm,0.7s,baz=29,slow=6.2,SNR=2.4	**67.96**	**340**	P	**P**	**11 57 59.0**	**-1.7**
TXAR	**Lajitas Array** 0.3nm,0.5s,baz=296,slow=4.3,SNR=9.3	**79.59**	**58**	P	**P**	**11 59 09.8**	**+0.8**
MDT	**Midelt** 1.6nm,0.6s,baz=232,slow=3.3,SNR=5.1	**98.00**	**339**	P	Pdif	12 00 38.4	+0.7

*ISCJB **27** 11:55:52.8±0.6, 1°.7N±0°.1×66°.96E±0°.09, h13ᵏᵐ, mb4.2/17, MS3.7/17, Error ellipse: s-maj=16.1km s-min=12.0km az=143.4*
*IDC **27** 11:55:52.6±0.7, 1°.66N×66°.90E, h0ᵏᵐ, mb4.1/14, mb1 4.2/14, mb1mx3.9/54, mbtmp4.1/14, MS3.8/17, Ms1 3.7/17, ms1mx3.5/51, Error ellipse: s-maj=19.1km s-min=17.6km az=134.0*
*NEIC **27** 11:55:54.1±0.5, 1°.64N×66°.96E, h10ᵏᵐ, mb4.6/3, Error ellipse: s-maj=14.3km s-min=10.6km az=149.0*
ISC 27 11:55:54.7±0.8, 1°.7N±0°.1×66°.9E±0°.1, h13ᵏᵐ, n39, σ0ᵍ95/22, mb4.3/17, MS3.8/17, 1C, Carlsberg Ridge

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
H08N2	**Diego Garcia H** baz=332,slow=75,SNR=1194	**8.90**	**153**	T	T	12 07 09.6	
H08N3	**Diego Garcia H** baz=332,slow=75,SNR=883	**8.91**	**153**	T	T	12 07 03.4	
H08N1	**Diego Garcia H** baz=332,slow=75,SNR=864	**8.92**	**153**	T	T	12 07 06.6	
TRD	**Trivandrum**	**12.08**	**55**	⇑*e*P	P	11 59 11.6	+12
WSAR	**Wadi Sarin** comp=Z,111nm,18.7s,baz=164,slow=33	**22.93**	**340**	LR	LR	12 08 24.6	
DAMY	**Dhamar** 17nm,1.4s	**25.71**	**301**	*e*P	**P**	**12 01 27.4**	**+2.1**
ATD	**Arta Tunnel** comp=Z,112nm,20.1s,baz=70,slow=32	**25.84**	**293**	LR	LR	12 09 50.4	
OPO	**Ambohidratompo** comp=Z,436nm,18.8s,baz=24,slow=31	**27.95**	**223**	LR	LR	12 10 21.2	
KMBO	**Kilima Mbogo** comp=Z,309nm,18.3s,baz=88,slow=36	**29.81**	**265**	LR	LR	12 13 41.7	
CMAR	**Chiang Mai Arr** 0.6nm,0.4s,baz=247,slow=9.5,SNR=12	**35.55**	**60**	P	**P**	**12 02 52.4**	**+0.5**
CMAR	0.7nm,0.7s,baz=248,slow=4.2,SNR=5.5			PcP	**PcP**	**12 05 21.8**	**+0.6**
CHTO	**Chiang Mai** 10nm,1.1s	**35.70**	**59**	*e*P	**P**	**12 02 52.8**	**-0.4**
LSA	**Lhasa** 7.3nm,0.6s	**36.17**	**37**	*e*P	**P**	**12 02 58.0**	**+0.4**
GEYT	**Alibeck** comp=Z,88nm,18.3s,baz=190,slow=37	**37.00**	**348**	LR	LR	12 18 30.5	
LSZ	**Lusaka** 2.6nm,0.9s,baz=57,slow=10,SNR=4.2	**41.85**	**245**	P	**P**	**12 03 45.1**	**+0.1**
GNI	**Garni** comp=Z,54nm,21.9s,baz=96,slow=36	**43.30**	**335**	LR	LR	12 21 46.6	
MATP	**Matopo** 3.3nm,0.9s,baz=36,slow=11,SNR=3.7	**43.58**	**238**	P	**P**	**12 03 59.9**	**+0.8**
MKAR	**Makanchi Array** 1.0nm,0.9s,baz=202,slow=9.2,SNR=5.3	**46.92**	**14**	P	**P**	**12 04 24.4**	**-0.6**
MKAR	comp=Z,65nm,18.5s,baz=193,slow=36			LR	LR	12 24 27.1	
KBZ	**Khabaz** 4.4nm,1.0s,baz=136,slow=3.9,SNR=7.5	**47.04**	**336**	P	**P**	**12 04 26.4**	**+0.5**
KBZ	comp=Z,39nm,18.8s,baz=136,slow=37			LR	LR	12 25 12.9	
KVAR	**Kislovodsk Arr** comp=Z,51nm,19.8s,baz=50,slow=37	**47.31**	**336**	LR	LR	12 25 09.8	
BRTR	**Keskin Array B** 0.2nm,0.3s,baz=359,slow=23,SNR=4.8	**48.51**	**326**	P	**P**	**12 04 37.8**	**+0.1**
BRTR	comp=Z,65nm,19.0s,baz=141,slow=37			LR	LR	12 25 30.5	
AKTO	**Aktyubinsk** 1.6nm,0.5s,baz=190,slow=7.9,SNR=9.4	**49.20**	**352**	P	**P**	**12 04 41.9**	**-0.6**
KURBB	**Kurchatov Arra** 0.7nm,0.6s,baz=208,slow=8.0,SNR=5.6	**49.78**	**10**	P	**P**	**12 04 46.0**	**-0.9**
KURK	**Kurchatov**	**49.88**	**10**	P	**P**	**12 04 46.0**	**-1.7**
BOSA	**Boshof** 6.0nm,0.9s,baz=86,slow=9.3,SNR=4.1	**50.01**	**230**	P	**P**	**12 04 48.0**	**-1.3**
BOSA	comp=Z,311nm,19.2s,baz=54,slow=33			LR	LR	12 23 29.3	
ZALV	**Zalesovo Beam** 4.5nm,0.9s,baz=206,slow=6.4,SNR=15	**54.17**	**13**	P	**P**	**12 05 19.4**	**-0.3**
ZALV	comp=Z,72nm,19.0s,baz=250,slow=38			LR	LR	12 29 45.6	
H01W3	**Cape Leeuwin H** baz=300,slow=75,SNR=18	**57.17**	**134**	T	T	13 07 21.2	
H01W2	**Cape Leeuwin H** baz=300,slow=75,SNR=18	**57.18**	**134**	T	T	13 07 24.1	
H01W1	**Cape Leeuwin H** baz=300,slow=75,SNR=20	**57.19**	**134**	T	T	13 07 21.1	
SONM	**Songino Array** 2.2nm,0.9s	**57.24**	**31**	P	**P**	**12 05 43.2**	**+1.2**
KSRS	**Korea Array** comp=Z,84nm,19.0s,baz=242,slow=39	**66.22**	**50**	LR	LR	12 39 04.6	
NRIK	**Noril'sk** comp=Z,99nm,21.9s,baz=116,slow=36	**68.97**	**8**	LR	LR	12 37 38.4	
WRA	**Warramunga Arr** 2.8nm,0.8s,baz=288,slow=5.8,SNR=12	**69.41**	**112**	P	**P**	**12 07 02.9**	**-0.1**
ASAR	**Alice Springs** 1.7nm,0.8s,baz=285,slow=5.8,SNR=11	**69.68**	**116**	P	**P**	**12 07 04.8**	**+0.1**
ASAR	comp=Z,64nm,19.5s,baz=296,slow=35			LR	LR	12 36 50.9	
MJAR	**Matsushiro Arr** comp=Z,51nm,19.7s,baz=90,slow=38	**74.01**	**53**	LR	LR	12 42 47.9	
ESDC	**Sonseca Array** 1.0nm,0.7s,baz=90,slow=6.0,SNR=5.0	**74.30**	**311**	P	**P**	**12 07 30.6**	**-1.6**
PMG	**Port Moresby** comp=Z,63nm,18.9s,baz=273,slow=36	**80.62**	**100**	LR	LR	12 44 03.7	
YKA	**Yellowknife Ar** 0.1nm,0.6s,baz=353,slow=2.0,SNR=4.7	**116.02**	**1**	PKP	**PKPdf**	**12 14 36.7**	**-0.5**
MNTX	**Cornudas Mount**	**146.04**	**348**	*e*PKPbc	**PKPab**	**12 15 35.5**	**0.0**
TXAR	**Lajitas Array** 3.5nm,0.8s,baz=53,slow=2.8,SNR=25	**147.91**	**344**	PKPbc	**PKPbc**	**12 15 40.4**	**-0.2**

IDC 27 12:01:10.8±3.3, 7°.02S×148°.72E, h0ᵏᵐ, mb3.5/1, mb1 3.8/2, mb1mx3.4/30, mbtmp3.5/2, ML3.4/1, Error ellipse: s-maj=118.2km s-min=44.2km az=118.0, Eastern New Guinea region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr** 0.1nm,0.3s,baz=51,slow=11,SNR=5.6	**18.96**	**226**	P	P	12 05 33.1	-0.7
ASAR	**Alice Springs** 0.9nm,0.4s,baz=54,slow=9.0,SNR=27	**21.82**	**219**	P	P	12 06 05.0	+0.1
TORD	**Torodi Ar. Bea** 0.2nm,0.5s,baz=54,slow=4.7,SNR=3.5	**146.99**	**283**	PKPbc	PKPbc	12 20 56.0	-0.5

*ISCJB **27** 12:01:26.6±0.7, 27°.97N±0°.05×52°.53E±0°.07, h15ᵏᵐ, mb3.8/6, Error ellipse: s-maj=9.7km s-min=6.4km az=162.8*
*IDC **27** 12:01:26.6±1.5, 28°.15N×52°.56E, h0ᵏᵐ, mb3.8/6, mb1 3.9/8, mb1mx3.5/46, mbtmp3.7/8, ML3.3/2, Error ellipse: s-maj=32.8km s-min=25.6km az=1.0*
*CSEM **27** 12:01:31.9, 28°.13N×52°.44E, h29ᵏᵐ, ML3.3*
*TEH **27** 12:01:31.9, 28°.13N×52°.44E, h29ᵏᵐ, ML3.3*
ISC 27 12:01:28.2±1.0, 27°.98N±0°.07×52°.47E±0°.07, h15ᵏᵐ, n26, σ0ᵍ61/31, mb3.8/6, Southern Iran

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ISRV	**Sarvestan**	**1.51**	**22**	*e*Pn	**Pn**	**12 01 54.8**	**-0.2**
ISRV				*e*Sg	**Sb**	**12 02 15.9**	**+0.8**
ISRV	comp=Z,8μm,0.1s			*e*AMB	AMB	12 02 17.5	
ISRV	**Sarvestan**	**1.51**	**22**	*e*Pn	**Pn**	**12 01 54.8**	**-0.2**
ISRV				*e*Sg	**Sb**	**12 02 15.9**	**+0.8**
IKAZ	**Kazeroun**	**1.88**	**343**	*e*Pn	**Pn**	**12 02 00.3**	**+0.2**
IKAZ				*e*Sg	**Sb**	**12 02 26.3**	**+0.5**
IKAZ	comp=Z,7μm,0.1s			*e*AMB	AMB	12 02 29.8	
IKAZ	**Kazeroun**	**1.88**	**343**	*e*Pn	**Pn**	**12 02 00.3**	**+0.2**
IKAZ				*e*Sg	**Sb**	**12 02 26.3**	**+0.5**
IPAR	**Pars**	**1.92**	**15**	*e*Pn	**Pn**	**12 02 01.0**	**+0.3**
IPAR	comp=Z,2μm,0.4s			*e*AMB	AMB	12 02 32.1	
IPAR	**Pars**	**1.92**	**15**	*e*Pn	**Pn**	**12 02 01.0**	**+0.3**
IRAM	**Ramesheh**	**3.82**	**359**	*e*Pn	**Pn**	**12 02 26.1**	**-0.5**
IRAM	comp=Z,282nm,0.3s			*e*AMB	AMB	12 02 40.6	
IRAM	**Ramesheh**	**3.82**	**359**	*e*Pn	**Pn**	**12 02 26.1**	**-0.5**
IMEH	**Mehriz**	**3.88**	**28**	*e*Pn	**Pn**	**12 02 27.7**	**+0.2**
IMEH	comp=N,468nm,0.2s			*e*AMB	AMB	12 03 16.5	
IMEH	**Mehriz**	**3.88**	**28**	*e*Pn	**Pn**	**12 02 27.7**	**+0.2**
ISAD	**Sadrabad**	**4.06**	**15**	*e*Pn	**Pn**	**12 02 30.2**	**+0.2**
ISAD	comp=Z,247nm,0.1s			*e*AMB	AMB	12 02 49.8	
ISAD	**Sadrabad**	**4.06**	**15**	*e*Pn	**Pn**	**12 02 30.2**	**+0.2**
IBAF	**Bafgh**	**4.49**	**36**	*e*Pn	**Pn**	**12

comp=Z,0.4nm,0.3s,baz=326,slow=7.6,SNR=4.0
WSAR Sn **Sn** **12 04 35.9 -0.9**
comp=Z,1.1nm,0.3s,baz=9.5,slow=15,SNR=5.6
BRTR Keskin Array B 19.50 312 P **Pn** **12 05 56.4 +0.2**
comp=Z,0.1nm,0.3s,baz=129,slow=11,SNR=3.0
MKAR Makanchi Array 29.97 43 P **P** **12 07 35.7 -0.2**
comp=Z,0.3nm,0.5s,baz=232,slow=8.9,SNR=3.4
ZALV Zalesovo Beam 35.11 33 P **P** **12 08 19.6 -1.2**
comp=Z,0.4nm,0.3s,baz=230,slow=11,SNR=2.7
FINES FINESS Array B 37.82 340 P **P** **12 08 43.0 -0.8**
comp=Z,1.7nm,1.0s,baz=145,slow=4.7,SNR=4.3
ARCES ARCESS Array B 44.43 347 P **P** **12 09 37.2 -0.8**
comp=Z,3.2nm,0.9s,baz=144,slow=7.8,SNR=3.7
TORD Torodi Ar. Bea 49.44 263 P **P** **12 10 19.2 +1.3**
comp=Z,0.8nm,0.6s,baz=65,slow=8.0,SNR=5.3
YKA Yellowknife Ar 89.25 354 P **P** **12 14 23.4 +0.1**
comp=Z,0.3nm,0.7s,baz=7.6,slow=5.2,SNR=12

ISCJB ***27*** *12:23:19.4±0.9, 15.60N±0.09×93.94W±0.04, h69km, mb3.5/2, Error ellipse: s-maj=13.1km s-min=5.6km az=1.7*
MEX ***27*** *12:23:21.2±0.6, 15.63N×93.97W, h68km±9km, MD3.8*
IDC ***27*** *12:23:21.1±5.1, 15.75N×93.76W, h67km±30km, mb3.3/2, mb1 3.9/4, mb1mx3.3/43, mbtmp3.7/4, ML4.0/2, MS3.5/1, Ms1 3.6/1, ms1mx2.5/19, Error ellipse: s-maj=49.9km s-min=16.1km az=-5.0*
ISC 27 12:23:20.2±1.2, 15.62N±0.10×93.90W±0.04, h69km, n11, σ1§56/17, Near coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
PCIG		**0.66**	**83**	*eP*		**Pn**	**12 23 35.1**	**+0.5**
PCIG				*eS*		**Sn**	**12 23 45.9**	**+0.7**
TGIG		**1.37**	**33**	*i P*		**Pn**	**12 23 43.8**	**+0.2**
TGIG				*i S*		**Sn**	**12 24 00.5**	**-0.5**
CMIG	**Matias Romero**	**1.74**	**327**	P		**Pn**	**12 23 48.7**	**+0.3**
	60nm,0.3s,baz=154,slow=12,SNR=332							
CMIG				S		**Sn**	**12 24 10.0**	**+0.2**
	62nm,0.3s,baz=109,slow=18,SNR=12							
CMIG				LR		LR	12 24 28.0	
	comp=Z,59nm,21.3s,baz=184,slow=39							
CCIG	**Comitan**	**1.82**	**68**	*eP*		**Pn**	**12 23 50.2**	**+0.6**
HUIG	**Huatulco**	**2.14**	**274**	*eP*		**Pn**	**12 23 52.8**	**-0.9**
HUIG				*eS*		**Sn**	**12 24 16.1**	**-3.1**
VHO	**Vista Hermosa**	**3.08**	**298**	*eP*		**Pn**	**12 24 08.3**	**+1.6**
VHO				*eS*		**Sn**	**12 24 42.0**	**-0.7**
TEIG	**Tepich**	**7.04**	**49**	P		**Pn**	**12 24 59.6**	**-1.1**
	3.9nm,0.3s,baz=269,slow=24,SNR=59							
TEIG				S		**Sn**	**12 26 15.7**	**-3.6**
	7.3nm,0.3s,baz=353,slow=23,SNR=7.0							
TXAR	**Lajitas Array**	**16.35**	**328**	P		**P**	**12 27 07.0**	**-0.3**
	0.1nm,0.3s,baz=149,slow=12,SNR=14							
NVAR	**Mina Array Bea**	**31.27**	**321**	P		**P**	**12 29 35.9**	**+2.1**
	0.7nm,0.8s,baz=144,slow=11,SNR=3.4							
YKA	**Yellowknife Ar**	**49.05**	**347**	P		**P**	**12 31 59.3**	**-0.7**
	0.4nm,0.5s,baz=152,slow=7.3,SNR=15							
YKA				pP		**pP**	**12 32 18.1**	**+0.6**
	0.9nm,0.8s,baz=153,slow=7.3,SNR=9.5							
ILAR	**Eielson Array**	**60.64**	**337**	LR		LR	13 01 21.4	
	comp=Z,36nm,18.8s,baz=316,slow=38							

IDC 27 12:25:08.7±2.0, 54.27N×86.00E, h0km, mb1 3.4/3, mb1mx3.1/67, mbtmp3.4/3, ML3.1/3, Error ellipse: s-maj=16.7km s-min=9.2km az=58.0, Southwestern Siberia

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
I46RU	**ZALESOVO INFRA**	**0.77**	**245**	*i*			12 31 20.0	
	baz=64,slow=330,SNR=3.6							
ZALV	**Zalesovo Beam**	**0.77**	**245**	Pg		Pg	12 25 22.2	-1.2
	1.4nm,0.3s,baz=65,slow=16,SNR=22							
ZALV				Lg		Lg	12 25 35.0	
	8.5nm,0.3s,baz=66,slow=28,SNR=44							
KURBB	**Kurchatov Arra**	**5.85**	**234**	Pn		Pn	12 26 37.4	+0.8
	0.2nm,0.3s,baz=51,slow=14,SNR=23							
KURBB				Lg		Lg	12 28 14.4	
	0.1nm,0.3s,baz=53,slow=31,SNR=4.3							
MKAR	**Makanchi Array**	**7.85**	**199**	Pn		Pn	12 27 04.8	+0.6
	0.6nm,0.3s,baz=21,slow=14,SNR=21							
MKAR				Sn		Sn	12 28 34.1	+0.4
	0.2nm,0.3s,baz=24,slow=25,SNR=3.5							
MKAR				Lg		Lg	12 29 16.6	
	0.2nm,0.3s,baz=21,slow=29,SNR=8.0							
BVAR	**Borovoye Array**	**9.36**	**269**	Pn		Pn	12 27 24.7	0.0
	0.2nm,0.3s,baz=68,slow=16,SNR=3.2							
BVAR				Sn		Sn	12 29 04.9	-5.6
	0.3nm,0.3s,baz=69,slow=25,SNR=4.3							

NIED ***27*** *12:27:00, 37.00N×140.70E, h11km, Mw3.7 Best double couple: M0 4.20000×10^14 NP1:φs228.00000°, δ44.00000°, λ90.00000°. NP2:φs47.00000°, δ46.00000°, λ90.00000°.*
ISCJB ***27*** *12:27:46.8±0.4, 37.08N±0.03×140.72E±0.04, h23km±3km, mb3.9/15, Error ellipse: s-maj=6.0km s-min=4.3km az=25.1*
JMA ***27*** *12:27:47.4, 37.06N×140.66E, h13km±1km, M3.9 Broadband fault plane solution: P waves. NP1: φs255.00000°, δ54.00000°, λ96.00000°. NP2:φs65.00000°, δ36.00000°, λ82.00000°. Principal axes: T Plg80.0000°, Azm191.0000°; N Plg5.0000°, Azm72.0000°; P Plg9.0000°, Azm341.0000°;*
JMA Felt III J1.
IDC ***27*** *12:27:51.0±2.0, 37.10N×140.51E, h41km±18km, mb3.6/14, mb1 3.8/18, mb1mx3.6/58, mbtmp3.8/18, ML3.2/4 Error ellipse: s-maj=17.5km s-min=12.1km az=104.0*
ISC 27 12:27:46.8±1.0, 37.09N±0.03×140.53E±0.04, h9km±7km, n35, σ0§78/40, mb3.8/15, 1C-6D, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.22**	**87**	⇑P		**Pg**	**12 27 50.7**	**-0.5**
ONAJ					S	**Sg**	**12 27 52.9**	**-1.3**
JFK	**Kawauchi**	**0.39**	**45**	⇓P		**Pg**	**12 27 54.4**	**0.0**
JFK					*e*S	**Sg**	**12 27 59.2**	**-0.4**
JFT	**Otama**	**0.45**	**340**	⇓P		**Pb**	**12 27 57.8**	**+0.9**
JFT					S	**Sb**	**12 28 04.9**	**+1.1**
JHO	**Hitachi**	**0.48**	**176**	⇓P		**Pg**	**12 27 56.2**	**+0.1**
JHO					S	**Sg**	**12 28 02.3**	**-0.1**
JSB	**Shiboa**	**0.50**	**256**	⇓P		**Pn**	**12 27 59.6**	**-0.5**
JSB					S	**Sn**	**12 28 07.7**	**-1.2**
JFY	**Yanaizu**	**0.73**	**296**	⇓P		**Pn**	**12 28 03.3**	**0.0**
JFY					S	**Sn**	**12 28 14.1**	**-0.4**
JMM	**Marumori**	**0.80**	**15**	⇓P		**Pg**	**12 28 02.3**	**+0.1**
JMM					S	**Sg**	**12 28 13.0**	**+0.3**
MJAR	**Matsushiro Arr**	**1.94**	**254**	P		**Pb**	**12 28 22.2**	**-0.1**
	20nm,0.3s,baz=101,slow=16,SNR=100							
MJAR					S	**Sg**	**12 28 48.9**	**-0.2**
	32nm,0.3s,baz=89,slow=27,SNR=20							
MAT	**Matsushiro**	**1.94**	**254**	P		**Pb**	**12 28 22.4**	**+0.1**
MAT					S	**Sg**	**12 28 49.4**	**+0.3**
JHJ	**Hachijo jima 2**	**4.01**	**189**	P		**Pn**	**12 28 49.5**	**+1.1**
	15nm,0.3s,baz=80,slow=22,SNR=9.8							
JHJ					S	**Sn**	**12 29 36.3**	**+0.8**
	30nm,0.3s,baz=250,slow=23,SNR=6.0							
ASAJ	**Asahikawa**	**7.19**	**12**	P		**Pn**	**12 29 33.3**	**+1.2**
	1.0nm,0.3s,baz=223,slow=9.8,SNR=8.1							
ASAJ					S	**Sn**	**12 30 53.2**	**-0.7**
	baz=145,slow=33,SNR=2.3							
USRK	**Ussuriysk Ar.**	**9.61**	**320**	P		**Pn**	**12 30 06.0**	**+0.7**
	0.2nm,0.3s,baz=100,slow=15,SNR=2.4							
KSRS	**Korea Array**	**10.05**	**276**	P		**Pn**	**12 30 13.2**	**+1.9**
	0.1nm,0.3s,baz=70,slow=32,SNR=2.7							
SEY	**Seymchan**	**26.88**	**12**	P		**P**	**12 33 27.4**	**-0.1**
	0.5nm,0.4s,baz=81,slow=19,SNR=3.4							
SONM	**Songino Array**	**27.16**	**304**	P		**P**	**12 33 29.3**	**-1.3**
	0.9nm,0.6s,baz=106,slow=9.7,SNR=6.2							
H11N2	**WAKE ISLAND Hy**	**28.79**	**120**	T		T	13 03 34.7	
	baz=313,slow=75,SNR=520							
H11N1	**WAKE ISLAND Hy**	**28.80**	**120**	T		T	13 03 36.6	
	baz=313,slow=75,SNR=458							
H11N3	**WAKE ISLAND Hy**	**28.81**	**120**	T		T	13 03 35.1	
	baz=313,slow=75,SNR=446							
H11S1	**WAKE ISLAND Hy**	**29.49**	**122**	T		T	13 04 26.2	
	baz=314,slow=75,SNR=706							
H11S3	**WAKE ISLAND Hy**	**29.49**	**122**	T		T	13 04 27.5	
	baz=314,slow=75,SNR=669							
H11S2	**WAKE ISLAND Hy**	**29.50**	**122**	T		T	13 04 27.2	
	baz=314,slow=75,SNR=416							
TIXI	**Tiksi**	**35.15**	**354**	P		**P**	**12 34 39.1**	**-1.3**
	0.5nm,0.2s,baz=72,slow=7.6,SNR=2.0							
ZALV	**Zalesovo Beam**	**41.35**	**312**	P		**P**	**12 35 32.8**	**+0.1**
	0.5nm,0.4s,baz=112,slow=7.0,SNR=3.1							
MKAR	**Makanchi Array**	**43.49**	**302**	P		**P**	**12 35 51.0**	**+0.7**
	0.9nm,0.6s,baz=88,slow=9.4,SNR=8.3							
KURBB	**Kurchatov Arra**	**45.41**	**308**	P		**P**	**12 36 05.0**	**-0.6**
	1.5nm,0.7s,baz=85,slow=8.0,SNR=6.8							
ILAR	**Eielson Array**	**49.83**	**32**	P		**P**	**12 36 39.8**	**+0.1**
	6.2nm,0.3s,baz=274,slow=6.5,SNR=9.2							
BVAR	**Borovoye Array**	**50.01**	**312**	P		**P**	**12 36 40.2**	**-1.1**
	0.6nm,0.5s,baz=65,slow=6.8,SNR=3.7							
WRA	**Warramunga Arr**	**57.03**	**187**	P		**P**	**12 37 31.9**	**-1.2**
	3.0nm,0.6s,baz=2.8,slow=7.3,SNR=62							
ASAR	**Alice Springs**	**60.75**	**187**	P		**P**	**12 37 58.5**	**-0.3**
	1.1nm,0.7s,baz=19,slow=7.4,SNR=17							
YKA	**Yellowknife Ar**	**64.11**	**30**	P		**P**	**12 38 20.7**	**-0.2**
	0.2nm,0.7s,baz=300,slow=6.2,SNR=4.3							
FINES	**FINESS Array B**	**68.43**	**332**	P		**P**	**12 38 48.1**	**-0.5**
	2.3nm,0.8s,baz=73,slow=14,SNR=3.6							
NVAR	**Mina Array Bea**	**75.52**	**53**	P		**P**	**12 39 32.4**	**+0.5**
	0.6nm,0.6s,baz=280,slow=8.3,SNR=5.3							
PDAR	**Pinedale Array**	**78.13**	**45**	P		**P**	**12 39 46.7**	**+0.1**
	0.4nm,0.6s,baz=263,slow=4.1,SNR=4.1							
TXAR	**Lajitas Array**	**90.64**	**52**	P		**P**	**12 40 49.8**	**-0.2**
	0.4nm,0.7s,baz=224,slow=3.5,SNR=3.6							
LPAZ	**La Paz**	**147.27**	**58**	PKPbc		**PKPdf**	**12 47 30.1**	**+0.6**
	1.9nm,0.9s,baz=59,slow=5.0,SNR=5.2							

JMA ***27*** *12:38:52.4±0.1, 36.03N×141.06E, h37km±1km, M3.3*
IDC ***27*** *12:38:54.3±2.2, 36.00N×141.19E, h44km±20km, mb3.4/7, mb1 3.6/10, mb1mx3.3/49, mbtmp3.7/10, ML3.3/3, MS3.6/2, Ms1 3.6/2, ms1mx2.7/40, Error ellipse: s-maj=29.8km s-min=15.0km az=94.0*
ISC 27 12:38:48.7±1.7, 35.98N±0.04×141.03E±0.07, h2km±11km, n25, σ1§59/24, mb3.7/7, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.31**	**207**	P		**Pn**	**12 39 01.1**	**+0.9**
CHOJ				S		**Sb**	**12 39 07.2**	**+4.8**
JYT	**Yasato**	**0.72**	**291**	P		**Pn**	**12 39 06.3**	**+0.4**
JYT				S		**Sn**	**12 39 16.2**	**-1.3**
JHO	**Hitachi**	**0.73**	**330**	P		**Pb**	**12 39 05.6**	**+1.4**
JHO				S		**Sb**	**12 39 15.0**	**+0.3**
ONAJ	**Iwakimizuishiy**	**1.14**	**351**	P		**Pg**	**12 39 11.3**	**+0.8**
ONAJ				S		**Sg**	**12 39 24.2**	**-1.1**
JFK	**Kawauchi**	**1.39**	**355**	P		**Pn**	**12 39 14.2**	**-1.0**
MJAR	**Matsushiro Arr**	**2.35**	**285**	P		**Pb**	**12 39 30.6**	**-1.2**
	7.2nm,0.3s,baz=105,slow=7.9,SNR=39							
MAT	**Matsushiro**	**2.35**	**285**	P		**Pb**	**12 39 30.5**	**-1.3**
MAT				S		**Sn**	**12 39 58.3**	**+0.5**
JHJ	**Hachijo jima 2**	**3.03**	**200**	P		**Pb**	**12 39 42.0**	**-1.4**
	4.6nm,0.3s,baz=348,slow=20,SNR=4.4							
JHJ				S		**Sb**	**12 40 18.6**	**-2.2**
	10nm,0.3s,baz=270,slow=20,SNR=5.1							
ASAJ	**Asahikawa**	**8.22**	**8**	P		**Pn**	**12 40 48.8**	**-0.1**
	0.5nm,0.3s,baz=226,slow=12,SNR=6.5							
ASAJ				S		**Sn**	**12 42 23.5**	**+1.2**
	0.3nm,0.3s,baz=117,slow=28,SNR=2.1							
H11N2	**WAKE ISLAND Hy**	**27.89**	**119**	T		T	13 13 46.8	
	baz=311,slow=75,SNR=8.2							
H11N1	**WAKE ISLAND Hy**	**27.90**	**119**	T		T	13 13 46.5	
	baz=311,slow=75,SNR=8.6							
H11N3	**WAKE ISLAND Hy**	**27.91**	**119**	T		T	13 13 48.2	
	baz=311,slow=75,SNR=10							
H11S1	**WAKE ISLAND Hy**	**28.57**	**121**	T		T	13 14 45.8	
	baz=314,slow=76,SNR=13							
H11S3	**WAKE ISLAND Hy**	**28.57**	**121**	T		T	13 14 48.9	
	baz=314,slow=76,SNR=7.9							
H11S2	**WAKE ISLAND Hy**	**28.58**	**121**	T		T	13 14 51.1	
	baz=314,slow=76,SNR=10.0							
SIJI	**Sorong**	**37.77**	**196**	LR		LR	12 59 16.5	
	comp=Z,137nm,20.8s,baz=322,slow=32							
ZALV	**Zalesovo Beam**	**42.40**	**313**	P		**P**	**12 46 46.4**	**+2.0**
	0.3nm,0.3s,baz=94,slow=9.0,SNR=2.5							
MKAR	**Makanchi Array**	**44.42**	**303**	P		**P**	**12 47 01.5**	**+0.6**
	0.7nm,0.7s,baz=88,slow=9.8,SNR=8.5							
WRA	**Warramunga Arr**	**55.97**	**188**	P		**P**	**12 48 28.1**	**-0.5**
	1.0nm,0.7s,baz=2.4,slow=7.1,SNR=3.8							
ASAR	**Alice Springs**	**59.70**	**188**	P		**P**	**12 48 54.5**	**-0.2**
	0.5nm,0.8s,baz=19,slow=8.8,SNR=3.0							
YKA	**Yellowknife Ar**	**64.88**	**30**	P		**P**	**12 49 28.6**	**-0.3**
	0.2nm,0.8s,baz=302,slow=6.5,SNR=4.1							
FINES	**FINESS Array B**	**69.60**	**332**	P		**P**	**12 49 57.4**	**-1.6**
	0.6nm,0.6s,baz=32,slow=7.5,SNR=3.4							
NB2	**NORSAR Subarra**	**75.04**	**337**	P		**P**	**12 50 31.7**	**+0.1**
	comp=Z,0.5nm,0.5s,baz=41,slow=5.9							
NOA	**NORSAR Array B**	**75.04**	**337**	P		**P**	**12 50 30.4**	**-1.2**
	comp=Z,1.0nm,0.7s,baz=40,slow=5.7,SNR=4.9							
TXAR	**Lajitas Array**	**91.01**	**52**	LR		LR	13 26 44.5	
	comp=Z,22nm,21.7s,baz=0.0,slow=32							

IDC 27 12:39:31.2±2.3, 3.64S×135.15E, h0km, mb3.8/4, mb1 4.0/5, mb1mx3.8/23, mbtmp3.9/5, ML4.0/1, MS3.3/2, Ms1 3.3/2, ms1mx2.7/36, Error ellipse: s-maj=94.0km s-min=30.0km az=80.0, Irian Jaya region

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**16.23**	**183**	Pn		Pn	12 43 15.8	-5.0
	0.1nm,0.3s,baz=6.8,slow=13,SNR=7.1							
ASAR	**Alice Springs**	**19.95**	**183**	P		P	12 44 05.0	-0.1
	0.4nm,0.3s,baz=7.3,slow=11,SNR=75							
STKA	**Stephens Creek**	**28.74**	**169**	LR		LR	12 58 47.5	
	comp=Z,88nm,21.4s,baz=266,slow=40							
KSRS	**Korea Array**	**41.43**	**351**	LR		LR	13 03 23.2	
	comp=Z,28nm,21.0s,baz=220,slow=35							
CMAR	**Chiang Mai Arr**	**41.88**	**303**	P		P	12 47 23.1	-0.4
	0.7nm,0.5s,baz=122,slow=7.2,SNR=7.1							
SONM	**Songino Array**	**57.11**	**337**	P		P	12 49 19.3	-0.4
	0.5nm,0.7s,baz=139,slow=6.8,SNR=3.3							
MKAR	**Makanchi Array**	**68.39**	**324**	P		P	12 50 35.3	+0.5
	1.7nm,0.7s,baz=110,slow=8.6,SNR=14							
ZALV	**Zalesovo Beam**	**70.98**	**331**	P		P	12 50 50.5	0.0
	0.4nm,0.5s,baz=136,slow=5.3,SNR=3.4							

ISCJB ***27*** *12:53:24.1±0.4, 39.00N±0.02×29.86E±0.03, h0km, Error ellipse: s-maj=3.7km s-min=3.1km az=143.7*
CSEM ***27*** *12:53:24.6±0.1, 38.99N×29.83E, h2km, MD2.7, Error ellipse: s-maj=2.5km s-min=2.2km az=149.0, Suspected Mining explosion.*
DDA ***27*** *12:53:24.2, 38.99N×29.84E, h8km, Md2.7, Suspected Mining explosion.*
ISK ***27*** *12:53:24.8, 38.99N×29.75E, h8km, MD2.6*
ISC 27 12:53:24.5±0.9, 39.00N±0.02×29.85E±0.02, h0km, n40, σ0§67/58, Turkey

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
GDZ	**Gediz**	**0.30**	**286**	*i* P		**Pg**	**12 53 30.4**	**+0.2**
GDZ				*i* S		**Sg**	**12 53 34.7**	**+0.5**
GDZ	**Gediz**	**0.30**	**286**	P		**Pg**	**12 53 30.5**	**+0.2**
GDZ				S		**Sg**	**12 53 34.7**	**+0.5**
TVSB	**Tavsanli**	**0.54**	**326**	*e*PG		**Pg**	**12 53 35.2**	**+0.3**
TVSB				*e*SG		**Sg**	**12 53 42.4**	**+0.6**
TVSB	**Tavsanli**	**0.54**	**326**	*e*Pg		**Pg**	**12 53 35.2**	**+0.3**
TVSB				*e*Sg		**Sg**	**12 53 42.4**	**+0.6**
AUKIR	**K¨–rka- Seyitg**	**0.59**	**62**	*i* P		**Pg**	**12 53 36.6**	**+0.7**
AUKIR				*i* S		**Sg**	**12 53 44.9**	**+1.3**
AUKIR	**K¨–rka- Seyitg**	**0.59**	**62**	P		**Pg**	**12 53 36.6**	**+0.7**
AUKIR				S		**Sg**	**12 53 44.9**	**+1.3**
KHAL	**Karahalli**	**0.69**	**204**	*i* P		**Pg**	**12 53 37.4**	**-0.4**
KHAL				*i* S		**Sg**	**12 53 46.5**	**-0.3**
KHAL	**Karahalli**	**0.69**	**204**	P		**Pg**	**12 53 37.4**	**-0.4**
KHAL				S		**Sg**	**12 53 46.5**	**-0.3**
KHL	**Karahalli**	**0.73**	**201**	*e*PG		**Pg**	**12 53 38.5**	**+0.1**
KHL				*e*SG		**Sg**	**12 53 48.6**	**+0.7**
KHL	**Karahalli**	**0.73**	**201**	*e*Pg		**Pg**	**12 53 38.5**	**+0.1**
ESKT	**Eskisehir**	**0.93**	**56**	*i* P		**Pg**	**12 53 39.9**	**-2.4**
ESKT				*i* S		**Sg**	**12 53 54.5**	**+0.1**
SEYT	**Eskypehyr**	**0.93**	**56**	S		**Sg**	**12 53 54.5**	**+0.1**
AUKUT	**KUTAHYA**	**0.96**	**8**	*i* P		Pg	12 53 33.1	-10
AUKUT				*i* S		Sg	12 53 39.5	-16
BORA	**Eskisehir**	**0.99**	**28**	*i* P		**Pg**	**12 53 43.6**	**+0.1**
BORA				*i* S		**Sg**	**12 53 56.6**	**+0.2**
BORA	**Eskisehir**	**0.99**	**28**	P		**Pg**	**12 53 43.6**	**+0.1**
BORA				S		**Sg**	**12 53 56.6**	**+0.2**
CAVI	**Cavuskoy**	**1.20**	**360**	*e*PN		**Pb**	**12 53 48.4**	**+0.3**
CAVI	**Cavuskoy**	**1.20**	**360**	*e*Pn		**Pb**	**12 53 48.4**	**+0.3**
DURS	**Dursunbey**	**1.23**	**300**	*i* P		**Pg**	**12 53 47.9**	**-0.1**
DURS				*i* S		**Sg**	**12 54 03.7**	**-0.2**
DURS	**Dursunbey**	**1.23**	**300**	P		**Pg**	**12 53 47.9**	**-0.1**
DURS				S		**Sg**	**12 54 03.7**	**-0.2**
ULDT	**Uludag**	**1.27**	**334**	*i* P		**Pg**	**12 53 48.6**	**-0.2**
ULDT				*i* S		**Sn**	**12 54 06.9**	**-0.6**
ULDT	**Uludag**	**1.27**	**334**	P		**Pg**	**12 53 48.6**	**-0.2**
ULDT				S		**Sn**	**12 54 06.9**	**-0.6**
ORLT	**Orhaneli**	**1.28**	**325**	*e*PN		**Pg**	**12 53 49.0**	**0.0**
ORLT	**Orhaneli**	**1.28**	**325**	*e*Pn		**Pg**	**12 53 49.0**	**0.0**
IGD	**Bursa**	**1.35**	**338**	*i* P		**Pg**	**12 53 49.2**	**-1.3**
IGD				*i* S		**Sg**	**12 54 07.5**	**-0.6**
IZI	**Iznik**	**1.36**	**348**	*e*PN		**Pg**	**12 53 50.7**	**0.0**
IZI	**Iznik**	**1.36**	**348**	*e*Pn		**Pg**	**12 53 50.7**	**0.0**
SVRH	**Sivrihisar-ESK**	**1.37**	**71**	*e*PN		**Pb**	**12 53 51.9**	**+0.8**
SVRH	**Sivrihisar-ESK**	**1.37**	**71**	*e*Pn		**Pb**	**12 53 51.9**	**+0.8**
AUSIV	**SIVRIHISAR**	**1.38**	**71**	*i* P		**Pn**	**12 53 51.3**	**+0.1**
AUSIV				*i* S		**Sg**	**12 54 07.1**	**-1.8**
AUSIV	**SIVRIHISAR**	**1.38**	**71**	P		**Pn**	**12 53 51.3**	**+0.1**
AUSIV				S		**Sg**	**12 54 07.1**	**-1.8**
ADVT	**Abdulvahap**	**1.43**	**356**	*e*PN		**Pn**	**12 53 51.8**	**+0.1**
ADVT	**Abdulvahap**	**1.43**	**356**	*e*Pn		**Pn**	**12 53 51.8**	**+0.1**
GULT	**Gulveren**	**1.52**	**19**	*e*PN		**Pb**	**12 53 53.4**	**-0.1**
GULT	**Gulveren**	**1.52**	**19**	*e*Pn		**Pb**	**12 53 53.4**	**-0.1**
KCTX	**Karacabey (Bur**	**1.71**	**318**	*e*PN		**Pn**	**12 53 55.2**	**-0.4**
KCTX	**Karacabey (Bur**	**1.71**	**318**	*e*Pn		**Pn**	**12 53 55.2**	**-0.4**
ARMT	**Armutlu**	**1.74**	**334**	*e*PN		**Pn**	**12 53 55.8**	**-0.2**
ARMT	**Armutlu**	**1.74**	**334**	*e*Pn		**Pn**	**12 53 55.8**	**-0.2**
MDUB	**Mudurnu**	**1.79**	**35**	*e*PN		**Pn**	**12 53 57.6**	**+0.8**
MDUB	**Mudurnu**	**1.79**	**35**	*e*Pn		**Pn**	**12 53 57.6**	**+0.8**

NIED ***27*** *12:57:00, 37.10N×140.70E, h5km, Mw3.7 Best double couple: M0 3.47000×10^14 NP1:φs353.00000°, δ13.00000°, λ-105.00000°. NP2:φs189.00000°, δ77.00000°, λ-86.00000°.*
IDC ***27*** *12:57:09.4±1.3, 37.08N×140.92E, h0km, mb3.8/6, mb1 3.9/8, mb1mx3.6/45, mbtmp3.8/8, ML3.6/2, Error ellipse: s-maj=32.5km s-min=18.3km az=75.0*
ISCJB ***27*** *12:57:11.1±0.5, 37.05N±0.03×140.81E±0.05, h16km±4km, mb3.7/7, Error ellipse: s-maj=6.4km s-min=3.8km az=20.3*
JMA ***27*** *12:57:11.8, 37.07N×140.67E, h9km±1km, M3.7 Broadband fault plane solution: P waves. NP1: φs197.00000°, δ61.00000°, λ-95.00000°. NP2:φs28.00000°, δ29.00000°, λ-81.00000°. Principal axes: T Plg16.0000°, Azm291.0000°; N Plg4.0000°, Azm200.0000°; P Plg73.0000°, Azm95.0000°;*
JMA Felt II J1.
NEIC ***27*** *12:57:15.3±0.8, 36.99N×140.72E, h35km±8km, mb4.0/1 Error ellipse: s-maj=12.3km s-min=7.5km az=107.0*
ISC 27 12:57:12.0±0.9, 37.06N±0.03×140.70E±0.04, h10km±6km, n27, σ0§74/35, mb3.8/7, 7C, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.09**	**63**	⇑P		**Pg**	**12 57 14.4**	**-0.1**
ONAJ				*e*S		**Sg**	**12 57 16.4**	**0.0**
JFK	**Kawauchi**	**0.34**	**25**	⇑P		**Pg**	**12 57 18.6**	**-0.2**
JFK				S		**Sg**	**12 57 23.4**	**+0.1**
JHO	**Hitachi**	**0.46**	**193**	⇑P		**Pg**	**12 57 20.7**	**-0.3**
JHO				S		**Sg**	**12 57 27.2**	**+0.2**
JFT	**Otama**	**0.54**	**328**	⇑P		**Pg**	**12 57 22.3**	**-0.2**
JFT				S		**Sg**	**12 57 29.4**	**-0.2**
JSB	**Shiboa**	**0.63**	**262**	⇑P		**Pg**	**12 57 24.3**	**+0.1**
JSB				S		**Sg**	**12 57 32.8**	**+0.4**
JMM	**Marumori**	**0.81**	**5**	⇑P		**Pg**	**12 57 26.8**	**-0.8**
JMM				S		**Sg**	**12 57 37.7**	**-0.5**
JFY	**Yanaizu**	**0.86**	**294**	⇑P		**Pg**	**12 57 28.1**	**-0.5**
JFY				S		**Sg**	**12 57 38.9**	**-1.0**
MJAR	**Matsushiro Arr**	**2.06**	**256**	Pn		**Pn**	**12 57 47.4**	**+0.7**
	23nm,0.3s,baz=82,slow=16,SNR=110							
MJAR				Sn		**Sb**	**12

baz=43
EKS2 Erkin-Say 2.63 27⇑*iP* Pb 13 03 58.9 -0.7
baz=27
EKS2 ⇑*iS* **Sb 13 04 32.9 +0.4**
baz=27
AAK Ala-Archa 2.90 36⇑*iP* Pb 13 04 02.5 -1.6
baz=37
AAK ⇑*iS* **Sb 13 04 39.2 -0.9**
baz=37
AAK Ala-Archa 2.90 36 ⇑Pn Pn 13 04 01.5 +2.6
6.1nm,0.4s
AAK ⇑Sn **Sb 13 04 42.7 +2.6**
15nm,0.4s
KZA Kyzart 2.91 52⇑*iP* Pb 13 04 02.8 -1.7
baz=52
KZA ⇑*iS* **Sb 13 04 40.6 -0.1**
baz=52
KK31 Karatay Array 3.05 336 ⇑Pn Pn 13 04 00.9 -0.1
1.3nm,0.2s,baz=144,slow=14,SNR=21
KK31 ⇓Sn **Sb 13 04 44.8 +0.3**
8.7nm,0.3s,baz=155,slow=30,SNR=9.4
BRLS Boroldaу 3.10 324 *eP* **Pb 13 04 08.5 +1.0**
5.8nm,0.3s
BRLS *eS* **Sb 13 04 46.8 +1.1**
37nm,0.4s
NRN Naryn 3.10 68⇓*eP* Pn 13 04 03.5 +1.5
baz=68
NRN ⇓*eS* **Sn 13 04 40.0 +0.1**
baz=68
CHMS Chumysh 3.30 35⇑*iP* Pn 13 04 07.7 +3.3
baz=35
CHMS ⇑*iS* **Sb 13 04 50.9 -0.7**
baz=35
USP Ospenovka 3.42 30⇑*iP* Pn 13 04 09.6 +3.5
baz=30
USP ⇑*iS* **Sb 13 04 54.5 -0.6**
baz=30
TKM2 Tokmak 2 3.65 43 ⇑Pn Pn 13 04 10.9 +1.5
TKM2 ⇑Sn **Sb 13 05 00.9 -1.0**
11nm,0.6s
KST Kastek 3.93 45⇓*iP* Pb 13 04 25.6 +3.9
4.2nm,0.6s
KST ⇓*iS* **Sg 13 05 16.8 -1.0**
68nm,0.4s
DGS Degeres 3.97 41 *eP* **Pb** 13 04 25.6 +3.2
6.8nm,0.6s
DGS *eS* **Sb 13 05 16.2 +5.2**
16nm,0.5s
IZV Izvestkoviy 4.29 49 *eP* **Pb** 13 04 31.5 +3.6
6.1nm,0.4s
IZV *eS* Sb 13 05 25.6 +5.4
10nm,0.6s
TNSS Tian-Shan 4.49 51 *eP* **Pb** 13 04 36.1 +4.7
4.9nm,0.6s
TNSS *eS* **Sg 13 05 33.7 -2.0**
16nm,0.7s
MDOK Medeo 4.62 50 *eP* **Pb** 13 04 38.0 +4.4
3.4nm,0.6s
MDOK *eS* **Sg 13 05 37.0 -3.0**
12nm,0.7s
KUU Kurty 4.73 40⇑*iP* Pb 13 04 39.6 +4.4
2.6nm,0.4s
KUU ⇑*iS* Sg 13 05 39.9 -3.4
15nm,0.6s
AB31 Akbulak array 12.45 320 ⇓P Pn 13 06 13.6 +3.7
0.1nm,0.3s,baz=130,slow=14,SNR=9.0

*MOS **27** 13:08:59.1±1.3,53.˚41N×109.˚02E,h10km,mb4.2/1,Error ellipse: s-maj=40.7km s-min=24.5km az=46.7*
*BYKL **27** 13:09:00.0±0.2,53.˚51N×108.˚99E,h10km±10km*
ISC 27 13:08:59.5±1.2,53.˚62N±0.˚03×109.˚05E±0.˚02,h10km±10km, n32,σ1ᵗ89/61,3C-3D,Lake Baykal region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time	Res
SYVR	**Suvo**	**0.56**	**86**	⇓*iPG*		**Pb**		**13 09 11.6**	**+0.1**
SYVR				*eSg*		**Sb**		**13 09 20.4**	**+0.8**
SYVR				Pmax					
	64nm,0.2s								
SYVR				Smax					
	544nm,0.4s								
SYVR	**Suvo**	**0.56**	**86**	⇑*iPG*		**Pb**		**13 09 11.7**	**+0.2**
SYVR				*e*				13 09 20.1	
SYVR				pmax	pmax				
	comp=Z,55nm,0.2s								
SYVR				smax	smax				
	comp=Z,527nm,0.3s								
OGRR	**Ongureny**	**0.87**	**272**	⇑*iPg*		**Pg**		**13 09 15.7**	**-0.5**
OGRR				*ePb*		**Pn**		**13 09 17.4**	**-0.4**
OGRR				*eSg*		**Sg**		**13 09 27.1**	**-0.4**
OGRR				Pmax					
	comp=Z,62nm,0.5s								
OGRR				Smax					
	comp=Z,2µm,0.3s								
OGRR	**Ongureny**	**0.87**	**272**	⇑*iPG*		**Pb**		**13 09 16.7**	**0.0**
OGRR				*e*				13 09 26.7	
OGRR				pmax	pmax				
	comp=Z,62nm,0.5s								
OGRR				smax	smax				
	comp=N,2µm,0.3s								
ZRHB	**Zarechye**	**1.57**	**228**	*ePg*		**Pn**		**13 09 27.3**	**-0.1**
ZRHB				*eSg*		**Sn**		**13 09 46.5**	**-1.2**
ZRHB				Pmax					
	comp=N,54nm,0.6s								
ZRHB				Smax					
	comp=N,414nm,0.5s								
YLYR	**Ulyunkhan**	**1.76**	**44**	⇓*iPn*		**Pb**		**13 09 32.1**	**+0.2**
YLYR				*ePg*		**Pg**		**13 09 33.2**	**-0.1**
YLYR				*eSg*		**Sg**		**13 09 58.5**	**+2.3**
YLYR				Pmax					
	comp=N,21nm,0.7s								
YLYR				Smax					
	comp=N,169nm,0.5s								
YLYR	**Ulyunkhan**	**1.76**	**44**	*ePN*		**Pb**		**13 09 32.1**	**+0.2**
YLYR				*e*				13 09 33.3	
YLYR				*eS*		**Sg**		**13 09 56.5**	**+0.3**
YLYR				*e*				13 09 57.9	
YLYR				pmax	pmax				
	comp=Z,27nm,0.3s								
YLYR				smax	smax				
	comp=N,168nm,0.5s								
TRG	**Tyrgan**	**1.84**	**243**	*ePg*		**Pn**		**13 09 31.0**	**-0.2**
TRG				*eSg*		**Sb**		**13 09 55.9**	**-0.5**
TRG				Pmax					
	comp=N,27nm,0.3s								
TRG				Smax					
	comp=N,245nm,0.2s								
UUDB	**Ulan-Yde**	**1.95**	**206**	*ePg*		**Pn**		**13 09 33.3**	**+0.6**
UUDB				*i Sg*		**Sn**		**13 09 58.2**	**+1.0**
UUDB				Pmax					
	comp=N,27nm,0.4s								
UUDB				Smax					
	comp=N,209nm,0.7s								
KAB	**Kabansk**	**2.14**	**224**	*eSg*		**Sn**		**13 10 02.9**	**+1.0**
KAB				*e*				13 10 07.8	
KAB				max					
	comp=N,525nm,0.8s								
NIZ	**Nizh Angarsk**	**2.18**	**7**	*e*		**Pn**		**13 09 36.1**	**+0.4**
NIZ				*ePg*		**Pg**		**13 09 41.0**	**-0.2**
NIZ				*e*				13 10 07.2	
NIZ				*eSg*		**Sg**		**13 10 11.0**	**+1.6**
NIZ				Pmax					
	comp=N,25nm,0.3s								
NIZ				Smax					
	comp=N,115nm,0.4s								
HRMR	**Khuramsha**	**2.37**	**213**	*ePn*		**Pn**		**13 09 38.1**	**-0.3**
HRMR				*ePg*		**Pb**		**13 09 40.6**	**-1.7**
HRMR				*eSg*		**Sb**		**13 10 11.1**	**-0.5**
HRMR				Pmax					
	comp=N,57nm,0.5s								
HRMR				Smax					
	comp=N,725nm,0.6s								
KMO	**Kumora**	**2.59**	**28**	*ePn*		**Pb**		**13 09 44.4**	**-1.6**
KMO				*ePg*		**Pg**		**13 09 48.7**	**-0.4**
KMO				*i Sg*		**Sg**		**13 10 23.9**	**+1.3**
KMO				Pmax					
	comp=N,30nm,0.4s								
KMO				Smax					
	comp=N,219nm,1.1s								
KMO	**Kumora**	**2.59**	**28**	*ePN*		**Pb**		**13 09 44.6**	**-1.4**
KMO				*e*				13 09 48.6	
KMO				*eS*		**Sb**		**13 10 15.8**	**-2.0**
YOA	**Uoyan**	**2.95**	**30**	*ePg*		**Pg**		**13 09 56.1**	**+0.1**
YOA				*eSg*		**Sg**		**13 10 36.5**	**+2.3**
YOA				*e*				13 10 40.6	
YOA				Pmax					
	comp=N,59nm,0.4s								
YOA				max					
	comp=N,381nm,1.8s								
LSTR	**Listvyanka**	**3.11**	**237**	*ePg*		**Pb**		**13 09 52.9**	**-1.9**
LSTR				*eSn*		**Sn**		**13 10 22.5**	**-3.2**
LSTR				*eSg*		**Sb**		**13 10 32.7**	**-0.1**
LSTR				*e*				13 10 34.8	
LSTR				Pmax					
	comp=N,3.0nm,0.2s								
LSTR				max					
	comp=N,55nm,0.9s								
CIT	**Chita**	**3.17**	**119**	*eSg*		**Sb**		**13 10 36.1**	**+1.6**
CIT				Smax					
	comp=N,162nm,0.3s								
IRK	**Irkutsk**	**3.21**	**246**	*eSg*		**Sb**		**13 10 35.2**	**-0.4**
IRK				*e*				13 10 41.7	
IRK				max					
	comp=N,278nm,0.4s								
UKT	**Uakit**	**3.25**	**53**	⇓*iPn*		**Pn**		**13 09 52.7**	**+2.1**
UKT				*ePg*		**Pb**		**13 09 58.9**	**+1.5**
UKT				*eSg*		**Sg**		**13 10 43.7**	**-0.3**
UKT				Pmax					
	comp=N,13nm,0.9s								
UKT				Smax					
	comp=N,35nm,0.5s								
SVKR	**Severomuysk**	**3.61**	**44**	*eSg*		**Sg**		**13 10 56.8**	**+1.5**
SVKR				Smax					
	comp=N,180nm,0.7s								
TLY	**Talaya**	**3.83**	**242**	*ePg*		**Pb**		**13 10 06.7**	**-0.3**
TLY				*eSg*		**Sb**		**13 10 54.6**	**+1.2**
TLY				Pmax					
	comp=N,3.0nm,0.6s								
TLY				Smax					
	comp=N,39nm,0.6s								
ARS	**Arshan**	**4.37**	**250**	*ePg*		**Pb**		**13 10 16.7**	**+0.3**
ARS				*eSg*		**Sb**		**13 11 12.4**	**+3.3**
ARS				*e*				13 11 15.2	
ARS				Pmax					
	comp=N,12nm,0.9s								
ARS				max					
	comp=N,158nm,0.9s								
KPC	**Khapcheranga**	**4.44**	**151**	*e*		**Pn**		**13 10 05.0**	**-1.9**
KPC				*ePg*		**Pb**		**13 10 18.0**	**+0.5**
KPC				*e*				13 10 55.4	
KPC				*eSg*		**Sb**		**13 11 15.8**	**+4.8**
KPC				Pmax					
	comp=N,3.0nm,0.5s								
KPC				Smax					
	comp=N,42nm,1.0s								
ZAK	**Zakamensk**	**4.82**	**230**	*ePg*		**Pb**		**13 10 25.0**	**+0.9**
ZAK				*eSg*		**Sb**		**13 11 27.2**	**+5.1**
ZAK				Smax					
	comp=N,16nm,0.7s								
BOD	**Bodaibo**	**5.05**	**32**	*e*		Sn		13 11 06.9	-6.6
BOD				*eSg*		**Sg**		**13 11 38.4**	**-3.1**
BOD				Smax					
	comp=N,32nm,0.8s								
MOY	**Mondy**	**5.28**	**251**	*e*		Pb		13 10 27.2	-4.7
MOY				*ePg*		Pg		13 10 32.8	-7.8
MOY				*eSg*		**Sb**		**13 11 39.9**	**+4.5**
MOY				Pmax					
	comp=N,6.0nm,0.9s								
MOY				Smax					
	comp=N,39nm,0.8s								
ORL	**Orlik**	**5.68**	**263**	*ePg*		**Pb**		**13 10 40.3**	**+1.7**
ORL				*eSn*		**Sn**		**13 11 29.1**	**0.0**
ORL				*eSg*		Sg		13 11 54.3	-7.3
ORL				Pmax					
	comp=N,3.0nm,0.4s								
ORL				Smax					
	comp=N,26nm,1.1s								
ORL	**Orlik**	**5.68**	**263**	*ePN*		**Pb**		**13 10 37.9**	**-0.7**
ORL				*eS*		**Sn**		**13 11 27.5**	**-1.6**
ORL				*e*				13 11 54.0	
ORL				pmax	pmax				
	comp=Z,1.0nm,0.2s								
ORL				smax	smax				
	comp=N,27nm,1.4s								
ULN	**Ulaanbaatar**	**5.90**	**193**	*eSg*		Sb		13 12 00.2	+6.9
CRS	**Chara**	**6.21**	**54**	*eSg*		**Sg**		**13 12 14.9**	**-3.7**
CRS				Smax					
	comp=N,45nm,2.2s								
TUP	**Tupik**	**6.48**	**78**	*e*		**Pn**		**13 10 35.3**	**+0.4**
TUP				*ePg*		Pb		13 10 56.6	+4.4
TUP				*eSg*		**Sg**		**13 12 21.7**	**-5.5**
TUP				Pmax					
	comp=N,1.0nm,0.4s								
TUP				Smax					
	comp=N,68nm,0.8s								
TUP	**Tupik**	**6.48**	**78**	*ePN*		**Pn**		**13 10 35.2**	**+0.4**
TUP				*e*				13 10 55.7	
TUP				*eS*		**Sn**		**13 11 48.5**	**-0.2**
TUP				*e*				13 12 20.6	
TUP				pmax	pmax				
	comp=Z,6.0nm,0.5s								
TUP				smax	smax				
	comp=N,68nm,0.7s								

MEX 27 13:11:52.8±0.6,16.˚93N×94.˚92W,h106km±13km,MD3.7, Oaxaca

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time	Res
TUIG	**Tuzandepetl**	**1.20**	**23**	*eP*		Pn		13 12 14.4	-1.4
TUIG				*i S*		Sn		13 12 31.7	-1.5
HUIG	**Huatulco**	**1.62**	**225**	*eP*		Pn		13 12 18.1	-2.9
HUIG				*eS*		Sn		13 12 40.4	-1.9
TGIG		**1.72**	**95**	*eP*		Pn		13 12 20.8	-1.4
TGIG				*i S*		Sn		13 12 43.3	-1.3
VHO	**Vista Hermosa**	**1.75**	**275**	*eP*		Pn		13 12 21.9	-0.7
VHO				*eS*		Sn		13 12 44.1	-1.2
PCIG		**2.03**	**126**	*eP*		Pn		13 12 25.6	-0.4
PCIG				*eS*		Sn		13 12 49.8	-1.6
TPIG	**Tehuac#an**	**2.77**	**303**	*eP*		Pn		13 12 35.0	-0.7
TPIG				*i S*		Sn		13 13 07.4	-1.4

*ISCJB **27** 13:23:35.9±0.4,38.˚49N±0.˚03×118.˚69W±0.˚04,h10km, Error ellipse: s-maj=4.9km s-min=4.2km az=34.4*
*NEIC **27** 13:23:35.5,38.˚41N×118.˚73W,h1km,ML3.5(REN),After REN.*
ISC 27 13:23:35.2±0.8,38.˚38N±0.˚02×118.˚67W±0.˚03,h10km,n38, σ1ᵗ67/45,California-Nevada border region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time	Res
WAKR	**Walker**	**0.61**	**282**	*ePg*		**Pg**		**13 23 46.7**	**-0.5**
MLAC	**Mammoth, Mammo**	**0.76**	**190**	P		**Pb**		**13 23 50.5**	**-0.2**
	baz=6.3								
MLAC				S		**Sb**		**13 24 01.7**	**+0.5**
	baz=6.3								
MTUM	**Tungsten Hills**	**1.03**	**175**	*ePg*		**Pn**		**13 23 55.5**	**-0.4**
CMB	**Columbia Colle**	**1.39**	**256**	*ePg*		**Pn**		**13 24 00.7**	**-0.1**
CMB				*eSn*		**Sb**		**13 24 18.6**	**-0.6**
GRAC	**Grapevine Rang**	**1.73**	**143**	Pb		**Pg**		**13 24 08.8**	**+0.5**
	baz=323								
GRAC				Sb		**Sg**		**13 24 33.2**	**+2.4**
	baz=323								
AFDM	**Forest Hills D**	**1.89**	**288**	*ePn*		**Pb**		**13 24 08.3**	**-1.4**
AFDM				*eSn*		**Sn**		**13 24 31.6**	**+0.2**
DAC	**Darwin (Calif)**	**2.27**	**157**	*ePn*		**Pg**		**13 24 18.4**	**-0.4**
DAC				*eSn*		**Sg**		**13 24 48.6**	**+0.4**
TPNV	**Topopah Spring**	**2.40**	**126**	Pb		**Pg**		**13 24 20.9**	**-0.3**
	baz=307								
TPNV	**Topopah Spring**	**2.40**	**126**	*ePn*		**Pn**		**13 24 16.5**	**+1.9**
R11A	**Troy Canyon, C**	**2.43**	**90**	Pb		**Pb**		**13 24 20.1**	**+1.0**
	baz=272								
R11A				Sb		**Sg**		**13 24 53.2**	**-0.1**
	baz=272								
R11A	**Troy Canyon, C**	**2.43**	**90**	*ePn*		**Pb**		**13 24 19.6**	**+0.6**
R11A				*eSn*		**Sg**		**13 24 51.5**	**-1.7**
ORV	**Oroville**	**2.50**	**299**	*ePn*		**Pn**		**13 24 17.1**	**+1.2**
ISA	**Isabella, Lake**	**2.72**	**177**	Pb		**Pb**		**13 24 25.5**	**+1.5**
	baz=356								
ISA				Sb		**Sg**		**13 25 01.5**	**-1.0**
	baz=356								
ISA	**Isabella, Lake**	**2.72**	**177**	*ePn*		**Pb**		**13 24 25.4**	**+1.5**
SAO	**San Andreas Ge**	**2.73**	**235**	*ePn*		**Pb**		**13 24 22.7**	**-1.4**
WSHM	**Spangler Hills**	**2.93**	**161**	*ePn*		**Pb**		**13 24 29.1**	**+1.5**
GSC	**Goldstone, Bar**	**3.42**	**153**	*ePn*		**Pb**		**13 24 34.3**	**-1.6**
ELK	**Elko**	**3.55**	**47**	*ePn*		**Pn**		**13 24 30.8**	**+0.2**
WDC	**Whiskeytown Da**	**3.71**	**307**	*ePn*		**Pn**		**13 24 34.8**	**+2.2**
MOD	**Modoc Plateau**	**3.73**	**341**	*ePg*		**Pb**		**13 24 42.4**	**+1.1**
PSUT	**Pine Spring**	**3.79**	**86**	*ePn*		Pn		13 24 37.2	+3.4
WVOR	**Wild Horse Val**	**4.05**	**0**	*ePn*		**Pn**		**13 24 40.2**	**+2.8**
WVOR				*ePg*		**Pb**		**13 24 49.0**	**+2.3**
KMRM	**Mail Ridge**	**4.32**	**297**	*ePn*		**Pn**		**13 24 43.2**	**+2.3**
K05A	**Summer Lake**	**4.66**	**339**	*ePn*		Pn		13 24 49.7	+4.0
KNB	**Kanab**	**4.84**	**105**	*ePg*		**Pg**		**13 25 06.8**	**-1.1**
DUG	**Dugway, Tooele**	**4.89**	**66**	*ePg*		**Pg**		**13 25 08.9**	**0.0**
BGU	**Big Grassy Mou**	**5.04**	**58**	*ePn*		**Pn**		**13 24 52.3**	**+1.2**
W13A	**Hualapai Mount**	**5.05**	**129**	*ePg*		**Pg**		**13 25 09.2**	**-2.8**
W13A				*eSg*		**Sg**		**13 26 18.2**	**+0.8**
MSU	**Marysvale**	**5.10**	**87**	*ePn*		Pn		13 24 55.4	+3.4
PKCU	**Pink Cliffs**	**5.12**	**99**	*eSg*		**Sg**		**13 26 20.6**	**+1.1**
MTPU	**Mount Pierson**	**5.12**	**92**	*eSg*		**Pg**		**13 25 11.2**	**-2.1**
NLU	**North Lily Min**	**5.36**	**71**	*eSg*		**Sg**		**13 26 24.8**	**-2.6**
U15A	**North Rim**	**5.44**	**109**	*eSg*		**Pg**		**13 25 16.6**	**-2.9**
MFID	**Camas Ranch**	**5.47**	**22**	Pn		Pn		**13 24 58.1**	**+1.2**
	4.6nm,0.7s								
MFID				*eSg*		**Sg**		**13 26 29.2**	**-1.7**
HVU	**Hansel Valley**	**5.66**	**51**	*ePg*		Pg		13 25 19.9	-3.6
MPU	**Maple Canyon**	**5.71**	**71**	*eSg*		**Sg**		**13 26 39.0**	**+0.6**
HLID	**Hailey**	**6.10**	**31**	*eSg*		**Sg**		**13 26 47.6**	**-3.3**
SRU	**San Rafael Swe**	**6.41**	**81**	*eSg*		**Sg**		**13 26 57.3**	**-3.8**

JMA 27 13:32:49.1±0.1,36.˚07N×141.˚19E,h31km±2km,M3.5, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time	Res
CHOJ	**Chosi**	**0.46**	**216**	P		P	Pb	13 32 58.5	-0.4
CHOJ				S		S	Sb	13 33 06.0	+0.5
JHO	**Hitachi**	**0.74**	**317**	P		P	Pn	13 33 03.3	-0.1
JHO				S		S	Sn	13 33 13.7	+0.1
MAT	**Matsushiro**	**2.46**	**282**	P		P	Pn	13 33 28.1	+1.1
MAT				S		S	Sb	13 34 02.9	+0.5

CASC 27 13:35:53.2±1.6,12.˚09N×88.˚01W,h36km±21km,MD3.8, ML2.7,Off coast of central America

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time	Res
CSGN	**Cosiguina Volc**	**0.99**	**27**	*eP*		P	Pn	13 36 11.8	+1.2
CSGN				*eS*		S	Sn	13 36 24.9	+1.5
CNGN	**Cerro Negro**	**1.35**	**72**	*eP*		P	Pn	13 36 16.1	+0.5
CNGN						AML	AML	13 36 43.8	
	comp=N,103nm,0.4s								
VSM	**San Miguel**	**1.36**	**349**	*eP*		P	Pn	13 36 16.4	+0.6
COPN	**Copaltepe**	**1.39**	**86**	*eP*		P	Pn	13 36 15.0	-1.1
PACA	**Pacayal**	**1.41**	**348**	*eP*		P	Pn	13 36 17.0	+0.6
TECA	**Tecapa**	**1.48**	**341**	*eP*		P	Pn	13 36 17.7	+0.2
LFRS	**El Faro**	**1.84**	**326**	*eP*		P	Pn	13 36 23.1	+0.7
LFRS				*eS*		S	Sn	13 36 44.4	0.0

IDC 27 13:43:40.0±8.1,7.˚04S×150.˚16E,h51km±60km,mb3.3/4, mb1 3.5/5,mb1mx3.2/28,mbtmp3.6/5,ML1.3/1,MS3.0/1, Ms1 3.0/1,ms1mx2.6/18,Error ellipse: s-maj=52.4km s-min=50.1km az=115.0,New Britain region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time	Res
PMG	**Port Moresby**	**3.79**	**231**	P		P	Pn	13 44 36.8	+0.9
	1.7nm,0.3s,baz=9.2,slow=10,SNR=6.3								
PMG				S		S	Sn	13 45 20.2	+0.9
	7.1nm,0.3s,baz=190,slow=23,SNR=10								
HNR	**Honiara**	**9.97**	**104**	LR		LR		13 49 50.2	
	comp=Z,76nm,19.1s,baz=184,slow=37								
WRA	**Warramunga Arr**	**20.01**	**229**	P		P		13 48 07.8	-0.8
	1.9nm,0.6s,baz=53,slow=11,SNR=24								
ASAR	**Alice Springs**	**22.74**	**222**	P				13 48 37.6	-0.4
	0.6nm,0.6s,baz=54,slow=9.2,SNR=15								
STKA	**Stephens Creek**	**25.98**	**197**	P		P		13 49 07.5	-0.4
	1.0nm,0.8s,baz=17,slow=14,SNR=2.1								
FITZ	**Fitzroy Crossi**	**26.30**	**243**	P		P		13 49 10.8	-0.2
	0.7nm,0.6s,baz=72,slow=13,SNR=5.8								
TORD	**Torodi Ar. Bea**	**148.39**	**284**	PKPbc		PKPbc		14 03 22.2	+0.3
	0.6nm,0.8s,baz=93,slow=2.5,SNR=5.7								

*IDC **27** 13:49:15.4±2.9,34.˚61N×23.˚08E,h0km,mb3.6/4, mb1 3.6/5,mb1mx3.3/43,mbtmp3.5/5,ML4.1/1,Error ellipse: s-maj=62.4km s-min=26.0km az=3.0*
*CSEM **27** 13:49:23.4±0.6,34.˚85N×23.˚32E,h30km,ML3.2,Error ellipse: s-maj=15.2km s-min=6.4km az=29.0*
*ATH **27** 13:49:24.8,35.˚04N×23.˚41E,h44km±2km,ML3.2/4,Error ellipse: s-maj=3.5km s-min=1.2km az=213.0*
*ISCJB **27** 13:49:24.6±1.0,34.˚98N±0.˚08×23.˚38E±0.˚08,h64km±6km, mb3.6/5,Error ellipse: s-maj=15.7km s-min=5.5km az=37.7*
*NEIC **27** 13:49:24.8±4.3,34.˚99N×23.˚33E,h50km±23km,mb4.3/1, Error ellipse: s-maj=52.1km s-min=21.3km az=218.0*
*THE **27** 13:49:25.2,34.˚91N×23.˚33E,h29km±9km,ML3.3/5,Error ellipse: s-maj=10.9km s-min=1.3km az=221.0*
ISC 27 13:49:25.2±1.2,34.˚97N±0.˚07×23.˚38E±0.˚06,h51km±9km, n83,σ0ᵗ77/77,mb3.7/5,Crete

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time	Res
GVD	**Gavdhos**	**0.59**	**102**	P		**Pn**		**13 49 36.8**	**-0.8**
GVD				S		**Sn**		**13 49 46.2**	**-0.4**
GVD	**Gavdhos**	**0.59**	**102**	P		**Pn**		**13 49 36.8**	**-0.8**
GVD				S		**Sn**		**13 49 47.9**	**+1.3**
GVD	**Gavdhos**	**0.59**	**102**	P		**Pn**		**13 49 36.3**	**-1.3**
GVD				S		**Sn**		**13 49 47.9**	**+1.3**
GVD				AML		AML		13 49 50.9	
	comp=E,5782µm,0.4s								
GVD				AML		AML		13 49 51.3	
	comp=N,5576µm,0.3s								
IMMV	**Iera Moni Meta**	**0.69**	**45**	P		**Pn**		**13 49 38.3**	**-0.6**
IMMV				S		**Sn**		**13 49 50.5**	**+1.7**
IMMV	**Iera Moni Meta**	**0.69**	**45**	P		**Pn**		**13 49 38.5**	**-0.4**
IMMV				S		**Sn**		**13 49 48.5**	**-0.3**
IMMV	**Iera Moni Meta**	**0.69**	**45**	P		**Pn**		**13 49 38.5**	**-0.4**
IMMV				S		**Sn**		**13 49 48.5**	**-0.3**
IMMV				AML		AML		13 49 51.5	
	comp=E,2820µm,0.5s								
IMMV				AML		AML		13 49 52.2	
	comp=N,3561µm,0.5s								
VAM	**Vamos**	**0.80**	**57**	P		**Pn**		**13 49 39.9**	**-0.3**
VAM				S		**Sn**		**13 49 52.6**	**+1.3**
VAM	**Vamos**	**0.80**	**57**	P		**Pn**		**13 49 40.0**	**-0.3**
VAM				S		**Sn**		**13 49 52.6**	**+1.3**
ANKY	**Antikythira Is**	**0.90**	**356**	P		**Pn**		**13 49 42.2**	**+0.6**
ANKY				S		**Sn**		**13 49 54.0**	**+0.4**
ANKY	**Antikythira Is**	**0.90**	**356**	P		**Pn**		**13 49 42.2**	**+0.6**
ANKY				S		**Sn**		**13 49 54.0**	**+0.4**
ANKY	**Antikythira Is**	**0.90**	**356**	P		Pn		13 49 43.3	+1.7
ANKY				S		**Sn**		**13 49 54.0**	**+0.4**
ANKY				AML		AML		13 49 59.5	
	comp=E,1772µm,0.7s								
ANKY				AML		AML		13 50 00.1	
	comp=N,1575µm,0.6s								
SIVA	**Sivas**	**1.17**	**87**	P		**Pn**		**13 49 45.9**	**+0.7**
SIVA				S		**Sn**		**13 50 01.7**	**+1.6**
SIVA	**Sivas**	**1.17**	**87**	P		**Pn**		**13 49 45.3**	**0.0**
SIVA				S		**Sn**		**13 50 01.7**	**+1.6**
SIVA	**Sivas**	**1.17**	**87**	P		**Pn**		**13 49 45.3**	**0.0**
SIVA				S		**Sn**		**13 50 02.8**	**+2.6**
SIVA				AML		AML		13 50 10.0	
	comp=N,2769µm,0.6s								
SIVA				AML		AML		13 50 10.9	
	comp=E,1674µm,0.7s								
IDI	**Anoyia**	**1.27**	**75**	Pn		**Pn**		**13 49 47.3**	**+0.6**
	comp=E,7.3nm,0.3s,baz=270,slow=18,SNR=26

NPS	**Neapolis**	**1.85**	**80**	P		**Pn**	**13 49 55.0**	**+0.5**
NPS	**Neapolis**	**1.85**	**80**	P		**Pn**	**13 49 55.0**	**+0.5**
MHLO	**Agia Marina, M**	**1.91**	**25**	P		Pn	13 49 55.8	+0.5
MHLO	**Agia Marina, M**	**1.91**	**25**	P		Pn	13 49 55.8	+0.5
SANT	**Santorini**	**2.19**	**50**	P		**Pn**	**13 49 58.4**	**-0.8**
SANT	**Santorini**	**2.19**	**50**	*e*Pn		**Pn**	**13 49 59.0**	**-0.2**
SANT	**Santorini**	**2.19**	**50**	P		**Pn**	**13 49 58.4**	**-0.8**
SANT	**Santorini**	**2.19**	**50**	*e*Pn		**Pn**	**13 49 59.0**	**-0.2**
ZKR	**Zakros**	**2.33**	**86**	P		Pn	13 50 02.5	+1.4
ZKR	**Zakros**	**2.33**	**86**	P		Pn	13 50 02.5	+1.4
SERI	**Serifos**	**2.36**	**22**	P		**Pn**	**13 50 00.3**	**-1.2**
SERI	**Serifos**	**2.36**	**22**	P		**Pn**	**13 50 00.3**	**-1.2**
KRND	**KRANIDI**	**2.42**	**356**	P		Pn	13 50 03.8	+1.6
KRND	**KRANIDI**	**2.42**	**356**	P		Pn	13 50 03.8	+1.6
DID	**Didima**	**2.54**	**357**	P		Pn	13 50 04.8	+0.9
DID	**Didima**	**2.54**	**357**	P		Pn	13 50 04.8	+0.9
TRIP	**Tripoli**	**2.71**	**341**	P		Pn	13 50 07.4	+1.1
TRIP	**Tripoli**	**2.71**	**341**	P		Pn	13 50 07.4	+1.1
APE	**Apeiranthos**	**2.72**	**39**	P		**Pn**	**13 50 06.1**	**-0.4**
APE	**Apeiranthos**	**2.72**	**39**	P		**Pn**	**13 50 06.1**	**-0.4**
VLY	**Voula,Athens**	**2.90**	**6**	P		**Pn**	**13 50 08.8**	**-0.1**
VLY	**Voula,Athens**	**2.90**	**6**	P		**Pn**	**13 50 08.8**	**-0.1**
ATHU	**Athens Univers**	**3.01**	**6**	P		**Pn**	**13 50 10.6**	**+0.2**
ATHU	**Athens Univers**	**3.01**	**6**	P		**Pn**	**13 50 10.6**	**+0.2**
LTK	**Loutraki**	**3.07**	**354**	P		**Pn**	**13 50 11.7**	**+0.5**
LTK	**Loutraki**	**3.07**	**354**	P		**Pn**	**13 50 11.7**	**+0.5**
PTL	**Penteli**	**3.10**	**7**	P		**Pn**	**13 50 10.8**	**-0.8**
PTL	**Penteli**	**3.10**	**7**	P		**Pn**	**13 50 10.8**	**-0.8**
VILL	**Villia**	**3.19**	**359**	P		Pn	13 50 13.7	+0.8
KLV	**Kalavryta, Ach**	**3.23**	**342**	P		Pn	13 50 15.1	+1.7
KLV	**Kalavryta, Ach**	**3.23**	**342**	P		Pn	13 50 15.1	+1.7
VIL2	**Platees**	**3.24**	**358**	P		**Pn**	**13 50 13.7**	**+0.2**
LAKA	**Lakka**	**3.46**	**341**	P		Pn	13 50 17.9	+1.4
LAKA	**Lakka**	**3.46**	**341**	P		Pn	13 50 17.9	+1.4
DSF	**Desfina**	**3.50**	**349**	P		**Pn**	**13 50 17.4**	**+0.2**
DSF	**Desfina**	**3.50**	**349**	P		**Pn**	**13 50 17.4**	**+0.2**
LKR	**Lokris**	**3.69**	**355**	P		**Pn**	**13 50 19.6**	**0.0**
LKR	**Lokris**	**3.69**	**355**	P		**Pn**	**13 50 19.6**	**0.0**
CHOS	**Chios island**	**4.03**	**31**	P		**Pn**	**13 50 24.2**	**-0.3**
CHOS	**Chios island**	**4.03**	**31**	P		**Pn**	**13 50 24.2**	**-0.3**
PDO	**Prodromos**	**4.03**	**335**	P		**Pn**	**13 50 25.0**	**+0.6**
PDO	**Prodromos**	**4.03**	**335**	P		**Pn**	**13 50 25.0**	**+0.6**
AGG	**Agios Georgios**	**4.13**	**349**	P		**Pn**	**13 50 25.8**	**0.0**
AGG	**Agios Georgios**	**4.13**	**349**	P		**Pn**	**13 50 25.8**	**0.0**
EVR	**Evrytania**	**4.14**	**343**	P		Pn	13 50 27.5	+1.6
EVR	**Evrytania**	**4.14**	**343**	P		Pn	13 50 27.5	+1.6
LKD2	**Lefkada island**	**4.39**	**331**	P		**Pn**	**13 50 29.0**	**-0.4**
LKD2	**Lefkada island**	**4.39**	**331**	P		**Pn**	**13 50 29.1**	**-0.4**
DSL	**Palaion Diasel**	**4.54**	**337**	P		**Pn**	**13 50 30.8**	**-0.6**
DSL	**Palaion Diasel**	**4.54**	**337**	P		**Pn**	**13 50 30.8**	**-0.6**
AKASG	**Malin Array Be**	**16.29**	**13**	Pn		**Pn**	**13 53 10.2**	**-0.1**
	comp=E,0.7nm,0.3s,baz=210,slow=10,SNR=3.6							
HFS	**Hagfors**	**25.96**	**349**	P		**P**	**13 54 51.3**	**-1.3**
	comp=E,0.9nm,0.3s,baz=166,slow=13,SNR=6.3							
KURK	**Kurchatov**	**42.43**	**51**	*e*P		**P**	**13 57 15.5**	**+0.8**
	comp=E,4.3nm,0.8s							
KURK	**Kurchatov**	**42.43**	**51**	*e*P		**P**	**13 57 15.5**	**+0.8**
	comp=E,4.3nm,0.8s							
MKAR	**Makanchi Array**	**45.09**	**56**	P		**P**	**13 57 35.7**	**-0.5**
	comp=E,0.4nm,0.4s,baz=278,slow=7.8,SNR=11							
SONM	**Songino Array**	**60.73**	**50**	P		**P**	**13 59 30.9**	**-0.7**
	comp=E,0.3nm,0.5s,baz=297,slow=6.6,SNR=3.0							
YKA	**Yellowknife Ar**	**77.17**	**341**	P		**P**	**14 01 13.4**	**+0.2**
	comp=E,0.1nm,0.5s,baz=36,slow=5.4,SNR=2.8							

NIED ***27*** *13:55:00.3, 37.50N× 141.60E, h47km, Mw3.6 Best double couple: M0 2.63000× 10^14 NP1: φ=273.00000°, δ=16.00000°, λ=157.00000°. NP2: φ=25.00000°, δ=84.00000°, λ=76.00000°.*

JMA 27 13:55:24.8±0.1**, 37.44N**×**141.52E, h43**km±2**km, M3.5, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**0.52**	**262**	P	Pn	13 55 35.9	-0.1
JFK				S	Sn	13 55 43.5	-0.4
ONAJ	**Iwakimizuishiy**	**0.67**	**240**	P	Pn	13 55 37.9	0.0
ONAJ				S	Sn	13 55 46.8	-0.5
JMM	**Marumori**	**0.72**	**307**	P	Pn	13 55 38.6	+0.1
JMM				S	Sn	13 55 48.3	-0.1
JFT	**Otama**	**0.94**	**275**	P	Pn	13 55 42.4	+0.8
JFT				S	Sn	13 55 54.2	+0.2
JIO	**Ouri**	**1.02**	**352**	P	Pn	13 55 42.7	0.0
JIO				S	Sn	13 55 54.9	-0.9
JHO	**Hitachi**	**1.12**	**223**	P	Pn	13 55 43.7	-0.4
JOU	**Okura**	**1.15**	**324**	P	Pn	13 55 44.6	+0.2
JOU				S	Sn	13 55 59.5	+0.6
JYS	**Shirataka**	**1.39**	**305**	P	Pn	13 55 48.6	+0.9
JFY	**Yanaizu**	**1.45**	**269**	P	Pn	13 55 48.9	+0.4
JFY				S	Sn	13 56 06.3	0.0
JMK	**Ichinoseki**	**1.53**	**351**	P	Pn	13 55 50.2	+0.6
MAT	**Matsushiro**	**2.80**	**252**	P	Pn	13 56 10.3	+3.2
MAT				S	Sn	13 56 45.4	+5.8

FUNV ***27*** *14:13:11.1, 9.95N× 73.23W, h144km, MW3.1*
ISCJB ***27*** *14:13:12.7±1.0, 9.92N±0.05× 72.95W±0.06, h139km±10km, Error ellipse: s-maj=11.8km s-min=5.0km az=41.6*
RSNC ***27*** *14:13:15.0±0.6, 9.90N× 73.04W, h127km±14km, ML2.7*

ISC 27 14:13:13.5±2.1**, 9°91N**±0°07×**72°96W**±0°08**, h133**km±16km**, n15,** σ1°**05/27, Venezuela**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
VIRV	**Villa del Rosa**	**0.80**	**43**	*e*P	**Pn**	**14 13 34.1**	**-0.9**
VIRV				*e*S	**Sn**	**14 13 52.0**	**+0.7**
OCAC	**Ocana**	**1.70**	**192**	*e*P	**Pn**	**14 13 44.7**	**+0.4**
OCAC				*e*S	**Sn**	**14 14 07.4**	**-0.3**
OCAC				*i*		14 14 08.4	
	comp=Z,96nm,0.1s						
GRMC	**Gramalote, San**	**2.18**	**176**	*i* P	**Pn**	**14 13 48.8**	**-1.3**
GRMC				*e*S	**Sn**	**14 14 14.8**	**-3.3**
GRMC				*i*		14 14 17.6	
	comp=Z,51nm,0.5s						
CBRI	**Barrientos, No**	**2.19**	**176**	*e*P	**Pn**	**14 13 51.1**	**+1.0**
CBRI				*e*S	**Sn**	**14 14 18.8**	**+0.6**
CBRI				*i*		14 14 20.4	
	comp=Z,73nm,0.3s						
QARV	**Quebrada Arrib**	**2.41**	**83**	*e*P	**Pn**	**14 13 53.5**	**+0.7**
QARV				*e*S	**Sn**	**14 14 23.9**	**+0.9**
DABV	**Dabajuro**	**2.49**	**66**	*e*P	**Pn**	**14 13 53.5**	**-0.2**
DABV				*e*S	**Sn**	**14 14 24.9**	**+0.2**
PAMC	**Pamplona, Colo**	**2.57**	**174**	*e*P	**Pn**	**14 13 56.1**	**+0.9**
PAMC				*e*S	**Sn**	**14 14 27.9**	**+0.8**
PAMC				*i*		14 14 30.6	
	comp=Z,5.1nm,0.2s						
SOCV	**Socops**	**2.63**	**128**	*e*P	**Pn**	**14 13 55.5**	**0.0**
SOCV				*e*S	**Sn**	**14 14 28.4**	**+0.5**
BRRC	**Barranca, Sant**	**2.88**	**195**	*e*P	**Pn**	**14 13 59.0**	**+0.2**
BRRC				*i*		14 13 59.5	
	comp=Z,26nm,0.3s						
BRRC				*e*S	**Sn**	**14 14 34.3**	**+0.6**
CURV	**Curarigua**	**2.95**	**88**	*e*P	**Pn**	**14 14 00.5**	**+0.8**
SIQV	**Siquisique**	**3.18**	**76**	*e*P	**Pn**	**14 14 02.5**	**-0.2**
SIQV				*e*S	**Sn**	**14 14 41.4**	**+0.7**
BARC	**Barichara**	**3.30**	**184**	*e*P	**Pn**	**14 14 05.1**	**+0.6**
BARC				*e*S	**Sn**	**14 14 43.9**	**+0.1**
BARC				*i*		14 14 45.1	
	comp=Z,18nm,0.4s						
HELC	**Santa Helena**	**4.49**	**215**	*e*P	**Pn**	**14 14 20.4**	**+0.2**
HELC				*i*		14 14 22.8	
	comp=Z,12nm,0.2s						
NORC	**Norcasia**	**4.72**	**204**	*e*P	**Pn**	**14 14 22.6**	**-0.4**
BAUV	**El Baul**	**4.94**	**101**	*e*P	**Pn**	**14 14 25.4**	**-0.5**
BAUV				*e*S	**Sn**	**14 15 20.2**	**-2.0**

ISCJB ***27*** *14:20:37.5±0.4, 50.17N±0.03× 18.95E±0.03, h0km, Error ellipse: s-maj=4.9km s-min=2.4km az=18.6*
CSEM ***27*** *14:20:37.8±0.3, 50.22N× 19.04E, h2km, ML2.6/5, Error ellipse: s-maj=8.5km s-min=3.7km az=15.0*
PRU ***27*** *14:20:38.8, 50.22N× 19.02E, h0km*

ISC 27 14:20:38.2±0.8**, 50°14N**±0°03×**19°02E**±0°02**, h0**km**, n33,** σ0°**83/59, 2D, Poland**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHZP	**Chorzow**	**0.16**	**354**	ǁ *i* Pg	**Pg**	**14 20 41.7**	**+0.4**
CHZP				ǁ *e*Sg	**Sg**	**14 20 45.1**	**+1.8**
OJC	**Ojcow**	**0.51**	**80**	*i* Pg	**Pg**	**14 20 47.0**	**-1.0**
OJC				*e*Sg	**Sg**	**14 20 53.4**	**-1.2**
OJC	**Ojcow**	**0.51**	**80**	*i* Pg	**Pg**	**14 20 47.0**	**-1.0**
OJC				*e*Sg	**Sg**	**14 20 53.4**	**-1.2**
OKC	**Ostrava-Krasne**	**0.64**	**242**	*e*Pg	**Pb**	**14 20 52.4**	**+0.2**
OKC				*e*SG	**Sb**	**14 21 02.6**	**+0.9**
	comp=Z,16nm,0.4s						
OKC	**Ostrava-Krasne**	**0.64**	**242**	Pg	**Pb**	**14 20 52.4**	**+0.2**
OKC				Sg	**Sb**	**14 21 02.6**	**+0.9**
	16nm,0.4s						
MORC	**Moravsky Berou**	**1.02**	**250**	*e*Pg	**Pb**	**14 20 58.6**	**-0.2**
MORC				*e*Sg	**Sn**	**14 21 14.1**	**-0.8**
LANS	**Liptovska Anna**	**1.03**	**163**	*e*Pg	**Pb**	**14 20 59.1**	**+0.2**
LANS				*e*Sg	**Sb**	**14 21 13.9**	**+0.9**
LANS	**Liptovska Anna**	**1.03**	**163**	*e*PG	**Pb**	**14 20 59.1**	**+0.2**
LANS				*e*SG	**Sb**	**14 21 13.9**	**+0.9**
NIE	**Niedzica**	**1.10**	**130**	*e*Pg	**Pb**	**14 20 59.8**	**-0.3**
NIE				*e*Sg	**Sb**	**14 21 14.9**	**-0.1**
KRLC	**Kraliky**	**1.44**	**268**	*e*PG	**Pn**	**14 21 04.9**	**-0.8**
KRLC				*e*SG	**Sn**	**14 21 25.1**	**-0.2**
KRLC	**Kraliky**	**1.44**	**268**	Pg	**Pn**	**14 21 04.9**	**-0.8**
KRLC				Sg	**Sn**	**14 21 25.1**	**-0.2**
STHS	**Stebnicka Huta**	**1.61**	**116**	*e*Pn	**Pg**	**14 21 08.7**	**-0.4**
STHS				*e*Sn	**Sg**	**14 21 32.3**	**+2.3**
STHS	**Stebnicka Huta**	**1.61**	**116**	*e*PN	**Pg**	**14 21 08.7**	**-0.4**
STHS				*e*SN	**Sg**	**14 21 32.3**	**+2.3**
STHS				*e*LG	Lg	14 21 39.9	
VYHS	**Vyhne**	**1.65**	**184**	*e*Pn	**Pn**	**14 21 08.4**	**0.0**
VYHS				*e*Sn	**Sn**	**14 21 30.7**	**+0.4**
VYHS	**Vyhne**	**1.65**	**184**	*e*PN	**Pn**	**14 21 08.4**	**0.0**
VYHS				*e*SN	**Sn**	**14 21 30.7**	**+0.4**
VYHS				*e*LG	Lg	14 21 33.3	
DPC	**Dobruska-Polom**	**1.75**	**278**	*e*PG	**Pn**	**14 21 09.7**	**-0.1**
DPC				*e*SG	**Sg**	**14 21 33.8**	**-0.5**
	comp=Z,16nm,0.5s						
DPC	**Dobruska-Polom**	**1.75**	**278**	Pg	**Pn**	**14 21 09.7**	**-0.1**
DPC				Sg	**Sg**	**14 21 33.8**	**-0.5**
	16nm,0.5s						
VRAC	**Vranov**	**1.78**	**243**	*e*Pn	**Pb**	**14 21 11.6**	**-0.1**
VRAC				*e*Sg	**Sg**	**14 21 36.1**	**+0.8**
KSP	**Ksiaz**	**1.88**	**293**	*e*Pg	**Pg**	**14 21 15.6**	**+1.4**
KSP				*e*Sg	**Sg**	**14 21 39.1**	**+0.5**
KSP	**Ksiaz**	**1.88**	**293**	*e*Pg	**Pg**	**14 21 15.6**	**+1.4**
KSP				*e*Sg	**Sg**	**14 21 39.1**	**+0.5**
KECS	**Kecovo**	**1.91**	**149**	*e*Pn	**Pn**	**14 21 11.8**	**-0.3**
KECS				*e*Sn	**Sn**	**14 21 36.9**	**+0.1**
KECS	**Kecovo**	**1.91**	**149**	*e*PN	**Pn**	**14 21 11.8**	**-0.3**
KECS				*e*SN	**Sn**	**14 21 36.9**	**+0.1**
KECS				*e*LG	Lg	14 21 45.8	
UPC	**Upice**	**1.96**	**282**	*e*PG	**Pb**	**14 21 14.0**	**-0.9**
UPC				*e*SG	**Sg**	**14 21 41.9**	**+0.6**
	comp=Z,5.4nm,0.5s						
UPC	**Upice**	**1.96**	**282**	Pg	**Pb**	**14 21 14.0**	**-0.9**
UPC				Sg	**Sg**	**14 21 41.9**	**+0.6**
	5.4nm,0.5s						
CRVS	**Cervenica-Dubn**	**2.01**	**127**	*e*Pn	**Pg**	**14 21 16.7**	**-0.1**
CRVS	**Cervenica-Dubn**	**2.01**	**127**	*e*PN	**Pg**	**14 21 16.7**	**-0.1**
GOPC	**GO Pecny, Ondr**	**2.74**	**267**	*e*PG	**Pg**	**14 21 29.8**	**-0.9**
GOPC				*e*SG	**Sg**	**14 22 05.5**	**-0.7**
GOPC	**GO Pecny, Ondr**	**2.74**	**267**	Pg	**Pg**	**14 21 29.8**	**-0.9**
GOPC				Sg	**Sg**	**14 22 05.5**	**-0.7**
PRU	**Pruhonice**	**2.89**	**269**	*e*SG	**Sg**	**14 22 10.9**	**-0.1**
	comp=Z,3.4nm,0.3s						
PRU	**Pruhonice**	**2.89**	**269**	Sg	**Sg**	**14 22 10.9**	**-0.1**
	3.4nm,0.3s						
BRG	**Berggiesshubel**	**3.32**	**285**	SG	**Sg**	**14 22 25.2**	**+0.2**
	2.5nm,0.6s						
KHC	**Kasperske Hory**	**3.68**	**256**	*e*SG	**Sg**	**14 22 35.0**	**-1.3**
	comp=Z,3.3nm,0.4s						
KHC	**Kasperske Hory**	**3.68**	**256**	Sg	**Sg**	**14 22 35.0**	**-1.3**
	3.3nm,0.4s						

IDC ***27*** *14:33:59.1±0.7, 15.71S× 174.76W, h0km, mb4.3/12, mb1 4.5/12, mb1mx4.3/38, mbtmp4.3/12, MS4.0/14, Ms1 4.0/14, ms1mx3.9/25, Error ellipse: s-maj=31.9km s-min=16.6km az=127.0*
ISCJB ***27*** *14:34:00.1±0.3, 15.70S±0.09× 174.81W±0.09, h10km, mb4.5/43, MS4.0/12, Error ellipse: s-maj=15.9km s-min=7.9km az=136.6*
NEIC ***27*** *14:34:03.5±1.2, 15.56S× 174.86W, h19km±7km, mb4.7/28, Error ellipse: s-maj=24.0km s-min=9.6km az=143.0*

ISC 27 14:34:01.6±0.5**, 15.7S**±0.1×**174.7W**±0.1**, h10**km**, n103,** σ1°**60/76, mb4.6/43, MS4.1/12, 2C-8D, Tonga Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AFI	**Afiamalu**	**3.34**	**58**	Pn	Pn	14 34 46.6	-7.4
	25nm,0.3s,baz=338,slow=4.6,SNR=19						
AFI				LR	LR	14 35 56.6	
	comp=Z,2µm,21.5s,baz=232,slow=35						
AFI	**Afiamalu**	**3.34**	**58**	*e*Pn	Pn	14 34 46.4	-7.6
MSVF	**Nonsavu**	**7.23**	**253**	*e*Pn	**Pn**	**14 35 50.8**	**+3.2**
RAO	**Raoul Island**	**13.81**	**192**	LR	LR	14 41 50.0	
	comp=Z,2µm,18.5s,baz=346,slow=34						
RAR	**Rarotonga**	**15.19**	**113**	LR	LR	14 41 53.6	
	comp=Z,1µm,20.9s,baz=288,slow=31						
DZM	**Mont Dzumac**	**18.93**	**248**	P	**Pn**	**14 38 25.2**	**+1.7**
	0.2nm,0.3s,baz=79,slow=17,SNR=7.1						
URZ	**Urewera**	**23.61**	**196**	P	**P**	**14 39 13.1**	**+0.4**
	21nm,1.1s,baz=356,slow=16,SNR=2.6						
PAE	**Paea**	**24.14**	**98**	*e*T	T	15 04 07.4	
	8.9nm,0.3s						
PPT	**Papeete**	**24.14**	**98**	LR	LR	14 46 28.6	
	comp=Z,404nm,19.6s,baz=280,slow=31						
PPT2	**Papeete2**	**24.14**	**98**	*e*LR	LR	14 45 00.9	
	2µm,26.5s						
PPT2	**Papeete2**	**24.14**	**98**	*e*T	T	15 03 54.0	
	8.9nm,0.3s						
TIAR	**Tiarei**	**24.36**	**98**	*e*T	T	15 04 10.9	
	6.4nm,0.2s						
MEH	**Mehetia**	**25.59**	**99**	*e*T	T	15 05 56.5	
	12nm,0.2s						
PMOR	**Pomariorio Ree**	**25.86**	**92**	*e*T	T	15 06 15.2	
	4.7nm,0.2s						
TAOE	**Nuku Hiva Isla**	**34.41**	**83**	*e*LR	LR	14 49 43.1	
	1µm,27.4s						
TAOE	**Nuku Hiva Isla**	**34.41**	**83**	*e*T	T	15 16 49.1	
	64nm,0.2s						
RKT	**Rikitea**	**38.10**	**108**	*e*LR	LR	14 51 34.2	
	875nm,27.2s						
RKT	**Rikitea**	**38.10**	**108**	*e*T	T	15 21 35.5	
	6.4nm,0.3s						
H11S2	**WAKE ISLAND Hy**	**38.59**	**331**	T	T	15 22 13.2	
	baz=149,slow=76,SNR=196						
H11S3	**WAKE ISLAND Hy**	**38.60**	**331**	T	T	15 22 14.2	
	baz=149,slow=76,SNR=111						
H11S1	**WAKE ISLAND Hy**	**38.61**	**331**	T	T	15 22 14.5	
	baz=149,slow=76,SNR=146						
H11N3	**WAKE ISLAND Hy**	**39.56**	**332**	T	T	15 23 25.8	
	baz=151,slow=76,SNR=269						
H11N1	**WAKE ISLAND Hy**	**39.57**	**332**	T	T	15 23 25.3	
	baz=151,slow=76,SNR=1027						
H11N2	**WAKE ISLAND Hy**	**39.58**	**332**	T	T	15 23 27.2	
	baz=151,slow=76,SNR=301						
STKA	**Stephens Creek**	**42.80**	**240**	P	**P**	**14 41 59.5**	**-0.3**
	12nm,0.9s,baz=71,slow=8.6,SNR=14						
WRA	**Warramunga Arr**	**48.55**	**257**	P	**P**	**14 42 43.2**	**-2.3**
	2.9nm,0.8s,baz=92,slow=7.0,SNR=13						
WRA				LR	LR	15 01 38.3	
	comp=Z,251nm,20.1s,baz=70,slow=34						
AS01	**Alice Springs**	**48.78**	**252**	*e*P	**P**	**14 42 45.2**	**-2.0**
AS31	**Alice Springs**	**48.82**	**252**	*e*P	**P**	**14 42 45.8**	**-1.9**
	4.4nm,0.7s						
ASAR	**Alice Springs**	**48.83**	**252**	P	**P**	**14 42 44.6**	**-3.0**
	6.9nm,0.8s,baz=86,slow=8.2,SNR=47						
ASAR				LR	LR	15 01 41.2	
	comp=Z,547nm,20.3s,baz=96,slow=34						
GUMO	**Guam**	**49.45**	**304**	LR	LR	14 59 48.8	
	comp=Z,37nm,22.0s,baz=120,slow=31						
SBA	**Scott Base**	**62.86**	**184**	*e*P	**P**	**14 44 27.5**	**+0.1**
	5.6nm,1.0s						
VNDA	**Vanda**	**62.96**	**186**	P	**P**	**14 44 25.9**	**-2.1**
	4.5nm,1.0s,baz=12,slow=5.4,SNR=13						
VNDA	**Vanda**	**62.96**	**186**	*e*P	**P**	**14 44 29.9**	**+1.9**
	7.2nm,1.1s						
MJAR	**Matsushiro Arr**	**68.36**	**321**	LR	LR	15 09 42.0	
	comp=Z,50nm,21.9s,baz=155,slow=31						
PETK	**Petropavlovsk-**	**72.53**	**343**	P	**P**	**14 45 26.9**	**-1.7**
	4.7nm,0.9s,baz=126,slow=7.3,SNR=3.8						
CMB	**Columbia Colle**	**73.82**	**42**	*e*P	**P**	**14 45 36.5**	**-0.1**
	5.7nm,0.9s						
AFDM	**Forest Hills D**	**73.98**	**41**	*e*P	**P**	**14 45 37.8**	**+0.2**
	8.9nm,1.3s						
YBH	**Yreka Blue Hor**	**74.59**	**38**	*e*P	**P**	**14 45 41.6**	**+0.4**
	11nm,1.3s						

NV01	**Mina Array Sit**	**75.39**	**43**	*e*P		**P**	**14 45 44.9**	**-1.0**
NVAR	**Mina Array Bea**	**75.39**	**43**	P		**P**	**14 45 45.0**	**-0.9**
	4.2nm,0.9s,baz=228,slow=11,SNR=11							
HSO	**Harness Mounta**	**75.49**	**36**	*e*pP		pP	14 45 52.4	+2.8
KSRS	**Korea Array**	**75.49**	**316**	LR		LR	15 14 27.8	
	comp=Z,33nm,20.2s,baz=40,slow=32							
USRK	**Ussuriysk Ar.**	**76.87**	**324**	LR		LR	15 12 48.4	
	comp=Z,101nm,21.5s,baz=150,slow=30							
R11A	**Troy Canyon, C**	**77.14**	**44**	*e*P		**P**	**14 45 55.9**	**+0.1**
	3.9nm,1.3s							
WVOR	**Wild Horse Val**	**77.45**	**39**	*e*P		**P**	**14 45 55.9**	**-1.5**
	6.4nm,1.1s							
PSUT	**Pine Spring**	**78.39**	**44**	*e*P		**P**	**14 46 06.3**	**+3.4**
	5.6nm,1.2s							
U15A	**North Rim**	**78.42**	**47**	*e*P		**P**	**14 46 03.8**	**+0.6**
	21nm,1.5s							
WUAZ	**Wupatki**	**78.62**	**48**	*e*P		**P**	**14 46 04.6**	**+0.4**
	13nm,1.4s							
MTPU	**Mount Pierson**	**79.28**	**45**	*e*P		**P**	**14 46 08.5**	**+0.5**
	12nm,1.5s							
MSU	**Marysvale**	**79.52**	**45**	*e*P		**P**	**14 46 09.7**	**+0.6**
PMR	**Palmer**	**79.67**	**12**	*e*P		**P**	**14 46 10.5**	**+1.5**
	14nm,1.4s							
TTA	**Tatalina**	**79.72**	**9**	*e*P		**P**	**14 46 09.6**	**+0.2**
	27nm,1.9s							
F10A	**Beach Ranch, E**	**80.30**	**37**	*e*P		**P**	**14 46 15.5**	**+2.5**
	7.7nm,1.2s							
CN2	**Changchun**	**80.51**	**321**	*e*P		**P**	**14 46 16.0**	**+2.0**
CN2				pmax	pmax			
	comp=Z,10.0nm,0.7s							
TMUT	**Trail Mountain**	**80.56**	**45**	*e*P		**P**	**14 46 18.3**	**+3.4**
	comp=Z,6.9nm,1.0s							
HLID	**Hailey**	**80.65**	**40**	*e*P		**P**	**14 46 14.9**	**-0.1**
	comp=Z,4.8nm,1.0s							
MNTX	**Cornudas Mount**	**81.41**	**54**	*e*P		**P**	**14 46 22.4**	**+3.2**
	comp=Z,5.4nm,1.3s							
MCK	**McKinley**	**81.65**	**11**	*e*P		**P**	**14 46 19.7**	**0.0**
	comp=Z,38nm,2.0s							
TX31	**Lajitas Ar. Si**	**81.82**	**57**	*e*P		**P**	**14 46 24.3**	**+2.8**
TXAR	**Lajitas Array**	**81.82**	**57**	P		**P**	**14 46 24.5**	**+3.0**
	comp=Z,1.6nm,1.0s,baz=241,slow=4.1,SNR=8.4							
TXAR				LR		LR	15 16 46.4	
	comp=Z,54nm,18.7s,baz=0.0,slow=31							
MCMT	**McKenzie Canyo**	**82.27**	**39**	*e*P		**P**	**14 46 22.6**	**-1.0**
DOT	**Dot Lake**	**82.57**	**13**	*e*P		**P**	**14 46 24.5**	**-0.1**
	comp=Z,15nm,1.2s							
REDW	**Red Top Meadow**	**82.78**	**41**	*e*P		**P**	**14 46 26.6**	**+0.2**
	comp=Z,14nm,1.4s							
S22A	**4UR Ranch, Cre**	**82.89**	**48**	*e*P		**P**	**14 46 27.8**	**+0.6**
	comp=Z,8.0nm,1.1s							
MDM	**Murphy Dome**	**82.89**	**11**	*e*P		**P**	**14 46 25.1**	**-1.1**
	comp=Z,37nm,2.0s							
ILAR	**Eielson Array**	**82.98**	**12**	P		**P**	**14 46 27.4**	**+0.8**
	comp=Z,0.8nm,0.8s,baz=228,slow=5.4,SNR=6.7							
ILAR				LR		LR	15 16 24.4	
	comp=Z,111nm,21.0s,baz=220,slow=31							
IMW	**Indian Meadow**	**82.99**	**41**	*e*P		**P**	**14 46 27.7**	**+0.2**
	comp=Z,9.4nm,1.4s							
LOHW	**Long Hollow**	**83.06**	**41**	*e*P		**P**	**14 46 27.7**	**-0.1**
	comp=Z,8.8nm,1.4s							
FLWY	**Flagg Ranch**	**83.23**	**41**	*e*P		**P**	**14 46 28.7**	**+0.1**
	comp=Z,9.7nm,1.2s							
BW06	**Boulder Array**	**83.32**	**42**	*e*P		**P**	**14 46 28.2**	**-1.0**

comp=E,80nm,0.3s
SHO Shikotan 4.10 264 *e*P **Pn** **14 38 17.4 +0.2**
SHO AMB AMB 14 38 29.2
comp=E,30nm,0.4s
SHO *i* S **Sn** **14 39 02.0 -2.4**
SHO A A 14 39 05.4
comp=E,30nm,0.2s
SHO A A 14 39 05.4
comp=E,50nm,0.2s
SHO Shikotan 4.10 264 *d*PN **Pn** **14 38 17.0 -0.2**
SHO pmax pmax
comp=Z,29nm,0.4s
SHO pmax pmax
comp=N,10.0nm,0.2s
SHO pmax pmax
comp=E,8.0nm,0.3s
YUK Yuzh-Kuril'sk 4.77 268 *i* P **Pn** **14 38 27.2 +0.8**
YUK AMB AMB 14 38 40.9
comp=E,30nm,0.4s
YUK AMB AMB 14 38 40.9
comp=E,20nm,0.4s
YUK AMB AMB 14 38 40.9
comp=E,60nm,0.4s
YUK *i* S **Sn** **14 39 19.0 -1.8**
YUK A A 14 39 21.7
comp=E,40nm,0.2s
YUK A A 14 39 21.7
comp=E,30nm,0.2s
YUK Yuzh-Kuril'sk 4.77 268 *d*PN **Pn** **14 38 27.2 +0.8**
YUK pmax pmax
comp=N,32nm,0.2s
YUK pmax pmax
comp=E,22nm,0.2s
YUK pmax pmax
comp=Z,85nm,0.2s
NEM2 Nemuro 2 4.98 260 P **Pn** **14 38 28.3 -1.0**
NEM2 *e*S **Sn** **14 39 21.6 -4.4**
JRA Rausu 5.31 267 P **Pn** **14 38 35.1 +1.3**
JRA *e*S **Sn** **14 39 34.0 -0.2**
JNK Nakash 5.66 264 P **Pn** **14 38 38.8 +0.2**
JNK *e*S **Sn** **14 39 40.1 -2.7**
JAK Akkeshi 5.82 258 *e*S **Sn** **14 38 42.0 -4.6**
JTKR Abashiri--Toko 6.18 269 P **Pn** **14 38 47.1 +1.4**
JAR Ashorobuto 6.39 263 P **Pn** **14 38 49.1 +0.4**
JAR *e*S **Sn** **14 39 59.0 -1.9**
JOB Onbets 6.45 259 *e*S **Sn** **14 39 58.2 -4.0**
JMP Maruseppu 6.56 270 P **Pn** **14 38 52.8 +1.7**
SKR Severo-Kuril's 6.73 20 *i* P **Pn** **14 38 54.0 +0.8**
SKR AMB AMB 14 39 00.7
comp=Z,40nm,0.9s
SKR *i* S **Sn** **14 40 05.3 -3.6**
SKR A A 14 40 06.3
comp=Z,30nm,0.2s
SKR Severo-Kuril's 6.73 20 *e*PN **Pn** **14 38 51.7 -1.5**
JCH Churui 6.87 258 P **Pn** **14 38 55.5 +0.3**
JCH *e*S **Sn** **14 40 08.1 -4.4**
MYR Moyori 7.03 256 *e*S Sn 14 40 10.8 -5.7
JKA Kamikawa-asahi 7.10 271 *e*P **Pn** **14 39 00.9 +2.5**
ASAJ Asahikawa 7.10 271 Pn **Pn** **14 39 00.9 +2.5**
comp=Z,1.0nm,0.3s,baz=38,slow=13,SNR=7.7
ASAJ Sn Sn 14 40 29.2 +11
comp=Z,0.8nm,0.3s,baz=204,slow=19,SNR=2.6
ASAJ LR LR 14 43 39.2
comp=Z,44nm,18.2s,baz=159,slow=53
ERM Erimo 7.22 254 PN **Pn** **14 39 01.2 +1.1**
ERM Erimo 7.22 254 Pn **Pn** **14 39 01.2 +1.1**
YSS Yuzh-Sakhalins 7.26 294 *e*P **Pn** **14 39 01.8 +1.2**
YSS Yuzh-Sakhalins 7.26 294 *e*PN **Pn** **14 39 03.6 +3.0**
YSS Yuzh-Sakhalins 7.26 294 *e*Pn **Pn** **14 39 03.6 +3.0**
JNBK Urakawa-nobuka 7.41 257 *e*S Sn 14 40 18.5 -7.2
JNB Noboribetsu 8.55 261 *e*S **Sn** **14 40 50.7 -3.2**
JKB Kayabe 8.74 257 *e*S Sn 14 40 52.5 -6.1
JANG Nango 9.06 247 *e*S Sn 14 40 57.7 -8.8
JTM Tenmabayashi 9.16 251 *e*S Sn 14 41 01.9 -7.1
TYV Tymovskoe 9.24 318 *i* P **Pn** **14 39 28.7 +1.1**
TYV *i* S **Sn** **14 41 06.2 -4.5**
PETK Petropavlovsk- 9.35 20 Pn **Pn** **14 39 29.3 +0.2**
comp=Z,0.3nm,0.3s,baz=174,slow=12,SNR=8.0
PET Petropavlovsk 9.52 23 *e*P **Pn** **14 39 30.0 -1.5**
PET Petropavlovsk 9.52 23 PN **Pn** **14 39 30.0 -1.5**
PET Petropavlovsk 9.52 23 Pn **Pn** **14 39 30.0 -1.5**
USRK Ussuriysk Ar. 14.67 276 Pn **Pn** **14 40 41.8 -0.1**
comp=Z,0.1nm,0.3s,baz=80,slow=12,SNR=2.6
EKMR Ekimchan 15.47 311 *e*P **Pn** **14 40 51.5 -1.1**
SEY Seymchan 18.54 360 P **Pn** **14 41 31.6 +0.7**
comp=Z,0.1nm,0.3s,baz=172,slow=14,SNR=2.7
YAK Yakutsk 22.09 331 LR LR 14 51 32.8
comp=Z,50nm,19.7s,baz=258,slow=39
BILL Bilibino 24.76 12 *e*P **P** **14 42 35.0 -0.4**
BILL Bilibino 24.76 12 *e*P **P** **14 42 35.0 -0.4**
BILL pmax pmax
comp=Z,3.0nm,1.0s
H11N2 WAKE ISLAND Hy 27.40 149 T T 15 11 34.9
baz=334
H11N1 WAKE ISLAND Hy 27.42 149 T T 15 11 28.1
baz=334
H11N3 WAKE ISLAND Hy 27.42 149 T T 15 11 33.9
baz=334
TIXI Tiksi 29.59 345 P **P** **14 43 18.2 -0.5**
comp=Z,0.9nm,0.4s,baz=142,slow=6.6,SNR=5.0
SONM Songino Array 31.75 293 P **P** **14 43 39.9 +1.7**
comp=Z,0.3nm,0.5s,baz=87,slow=7.8,SNR=3.0
ZAK Zakamensk 33.32 298 *e*P **P** **14 43 51.3 -0.5**
ZAK pmax pmax
comp=Z,2.0nm,1.0s
ILAR Eielson Array 38.66 37 P **P** **14 44 36.8 -0.5**
comp=Z,0.2nm,0.6s,baz=253,slow=9.0,SNR=4.6
INK Inuvik 43.86 31 P **P** **14 45 20.3 +0.5**
comp=Z,0.5nm,0.5s,baz=300,slow=6.6,SNR=7.0
MKAR Makanchi Array 47.64 299 P **P** **14 45 51.5 +1.4**
comp=Z,0.8nm,0.6s,baz=67,slow=8.1,SNR=12
KURK Kurchatov 48.31 305 *e*P **P** **14 45 57.1 +2.0**
KURK Kurchatov 48.31 305 P **P** **14 45 57.1 +2.0**
KURK pmax pmax
comp=Z,1.0nm,0.6s
KURK Kurchatov 48.31 305 P **P** **14 45 57.1 +2.0**
KURBB Kurchatov Arra 48.40 305 P **P** **14 45 57.1 +1.3**
comp=Z,1.8nm,0.7s,baz=70,slow=8.7,SNR=5.5
YKA Yellowknife Ar 53.06 35 P **P** **14 46 30.4 -0.4**
comp=Z,0.3nm,0.6s,baz=297,slow=7.2,SNR=6.4
ABKAR Akbulak array 59.59 311 *e*P **P** **14 47 18.8 +1.3**
comp=Z,0.8nm,0.5s
AKTO Aktyubinsk 59.95 313 LR LR 15 14 41.2
comp=Z,34nm,18.2s,baz=126,slow=37
FINES FINESS Array B 65.95 335 P **P** **14 47 59.9 +0.3**
comp=Z,1.4nm,0.8s,baz=69,slow=7.6,SNR=3.3
NB2 NORSAR Subarra 70.28 341 P **P** **14 48 27.0 +0.1**
comp=Z,0.7nm,0.5s,baz=28,slow=6.2
NOA NORSAR Array B 70.28 341 P **P** **14 48 27.3 +0.4**
comp=Z,1.0nm,0.5s,baz=28,slow=6.3,SNR=5.7
HFS Hagfors 70.48 340 P **P** **14 48 27.9 -0.2**
comp=Z,0.9nm,0.5s,baz=45,slow=9.0,SNR=4.0
KBZ Khabaz 72.15 314 P **P** **14 48 39.7 +1.3**
comp=Z,1.0nm,0.6s,baz=23,slow=2.2,SNR=4.8
AKASG Malin Array Be 73.23 326 P **P** **14 48 44.6 -0.1**
comp=Z,0.8nm,0.5s,baz=35,slow=6.3,SNR=3.0
TXAR Lajitas Array 79.04 60 P **P** **14 49 17.3 -1.0**
comp=Z,0.2nm,0.6s,baz=333,slow=1.4,SNR=2.6
BRTR Keskin Array B 79.77 317 P **P** **14 49 22.9 +0.8**
comp=Z,0.7nm,0.8s,baz=70,slow=4.7,SNR=4.0
BRTR Keskin Array B 79.77 317 P **P** **14 49 23.0 +0.8**
BRTR pmax pmax
comp=Z,1.0nm,0.8s

GUC 27 14:38:30.9±0.7, 21°.69S × 68°.86W, h107 km ±5km, ML3.7, 4C-1D, Chile-Bolivia border region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PB09	**IPOC Station P**	**0.37**	**253**	⇑*i*P	Pn	14 38 47.3	+0.4
PB09				*i* S	Sn	14 38 59.9	+1.0
PB09				IAML		14 39 02.3	
	comp=N,5μm,0.2s						
PB01	**IPOC Station P**	**0.86**	**318**	⇑*i*P	Pn	14 38 51.1	+0.4
PB01				*i* S	Sn	14 39 05.9	+0.4
PB01				IAML		14 39 09.0	
	comp=E,1μm,0.2s						
PB06	**IPOC Station P**	**1.21**	**213**	⇑*i*P	Pn	14 38 54.9	+0.6
PB06				*i* S	Sn	14 39 12.8	+0.8
PB06				IAML		14 39 14.0	
	comp=E,2μm,0.2s						
PATCX	**Punta Patache**	**1.48**	**305**	⇑*i*P	Pn	14 38 58.4	+1.0
PATCX				*i* S	Sn	14 39 18.8	+1.3
PATCX				IAML		14 39 23.4	
	comp=E,1μm,0.2s						
HMBC	**Humberstone**	**1.70**	**325**	⇓*i*P	Pn	14 39 00.5	+0.4
HMBC				*i* S	Sn	14 39 23.4	+1.1
HMBC				IAML		14 39 24.8	
	comp=E,1μm,0.2s						

NIED ***27*** *14:42:00, 36°.70N × 141°.90E, h23 km, Mw3.6 Best double couple: M₀2.60000×10¹⁴ NP1:φ₈271.00000°, δ26.00000°, λ152.00000°. NP2:φ₈26.00000°, δ78.00000°, λ67.00000°.*

JMA 27 14:42:05.4±0.3, 36°.74N × 141°.86E, h41 km, M3.5, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizushiy**	**0.92**	**293**	P	Pn	14 42 21.9	-0.1
JFK	**Kawauchi**	**1.01**	**309**	P	Pn	14 42 23.1	0.0
JHO	**Hitachi**	**1.05**	**263**	P	Pn	14 42 23.6	0.0
JMM	**Marumori**	**1.41**	**323**	P	Pn	14 42 29.3	+0.7
JFT	**Otama**	**1.44**	**303**	P	Pn	14 42 30.5	+1.4
JFT				*e*S	Sn	14 42 48.3	+1.5
JIO	**Ouri**	**1.76**	**347**	P	Pn	14 42 34.5	+1.1
JIO				*e*S	Sn	14 42 54.7	+0.2
JFY	**Yanaizu**	**1.85**	**292**	P	Pn	14 42 36.8	+2.2
JOU	**Okura**	**1.88**	**330**	P	Pn	14 42 37.4	+2.3
JOU				*e*S	Sn	14 43 00.0	+2.4
JAG	**Ashikaga**	**1.96**	**261**	P	Pn	14 42 37.1	+0.9
MAT	**Matsushiro**	**2.94**	**267**	P	Pn	14 42 52.4	+2.7
MAT				S	Sn	14 43 29.5	+5.7

ISCJB ***27*** *14:42:39.6±0.6, 18°.62N±0°.07 × 121°.5E±0°.1, h35 km, mb3.7/11, MS2.6/1, Error ellipse: s-maj=17.3km s-min=9.5km az=5.2*

MAN ***27*** *14:42:41, 18°.72N × 120°.89E, h17 km, mb4.7, ML3.6, MS3.6*

IDC ***27*** *14:42:42.4±5.4, 18°.54N × 121°.33E, h45 km±52km, mb3.5/11, mb1 3.7/12, mb1mx3.4/57, mbtmp3.8/12, ML3.5/1, MS3.0/2, Ms1 3.1/2, ms1mx2.6/51, Error ellipse: s-maj=31.4km s-min=14.1km az=72.0*

ISC 27 14:42:41.4±0.7, 18°.60N±0°.09 × 121°.5E±0°.2, h35 km, n20, σ0§69/18, mb3.7/11, Luzon

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
BOLP	**Bolinao**	**2.65**	**214**	*e*P	**Pn**	**14 43 22.3**	**+0.7**
SCZP	**Santa Cruz**	**3.17**	**208**	*e*P	**Pn**	**14 43 29.2**	**+0.5**
KSRS	**Korea Array**	**19.63**	**15**	P	**Pn**	**14 47 08.9**	**+0.5**
	0.2nm,0.3s,baz=196,slow=11,SNR=4.2						
KSRS				LR	LR	14 56 04.5	
	comp=Z,54nm,18.8s,baz=213,slow=41						
CMAR	**Chiang Mai Arr**	**21.34**	**273**	P	**P**	**14 47 25.3**	**-0.4**
	0.6nm,0.6s,baz=77,slow=8.5,SNR=8.6						
CMAR				LR	LR	14 56 14.7	
	comp=Z,28nm,21.3s,baz=315,slow=38						
SONM	**Songino Array**	**31.65**	**341**	P	**P**	**14 49 02.3**	**+1.0**
	0.3nm,0.3s,baz=157,slow=7.8,SNR=3.5						
WRA	**Warrunga Arr**	**40.33**	**161**	P	**P**	**14 50 14.5**	**-1.2**
	0.6nm,0.4s,baz=343,slow=9.0,SNR=11						
WRA				PcP	**PcP**	**14 52 18.7**	**-0.2**
	0.9nm,0.6s,baz=345,slow=3.2,SNR=11						
MKAR	**Makanchi Array**	**42.65**	**320**	P	**P**	**14 50 34.0**	**-0.5**
	0.5nm,0.5s,baz=112,slow=9.6,SNR=6.6						
MKAR				PcP	**PcP**	**14 52 25.3**	**-0.8**
	0.5nm,0.7s,baz=102,slow=4.9,SNR=3.7						
H11S3	**WAKE ISLAND Hy 42.80**	**83**		T	T	15 36 03.8	
	baz=276,slow=74,SNR=19						
H11S1	**WAKE ISLAND Hy 42.81**	**83**		T	T	15 36 03.5	
	baz=276,slow=74,SNR=8.6						
H11S2	**WAKE ISLAND Hy 42.81**	**83**		T	T	15 36 03.9	
	baz=276,slow=74,SNR=11						
H11N1	**WAKE ISLAND Hy 42.84**	**81**		T	T	15 36 12.1	
	baz=274,slow=74,SNR=4.4						
H11N3	**WAKE ISLAND Hy 42.86**	**81**		T	T	15 36 14.1	
	baz=239,slow=74,SNR=3.9						
ASAR	**Alice Springs**	**43.73**	**163**	P	**P**	**14 50 43.1**	**-0.3**
	0.8nm,0.5s,baz=343,slow=6.9,SNR=26						
ASAR				PcP	**PcP**	**14 52 29.9**	**-0.1**
	0.3nm,0.5s,baz=341,slow=2.6,SNR=8.2						
ZALV	**Zalesovo Beam**	**45.13**	**330**	P	**P**	**14 50 53.2**	**-1.1**
	0.5nm,0.3s,baz=134,slow=6.2,SNR=3.0						
KURBB	**Kurchatov Arra**	**46.63**	**323**	P	**P**	**14 51 05.4**	**-0.8**
	1.4nm,0.6s,baz=123,slow=7.4,SNR=9.6						
STKA	**Stephens Creek**	**53.77**	**159**	P	**P**	**14 52 00.9**	**+0.5**
	1.0nm,0.7s,baz=318,slow=7.3,SNR=3.7						
NRIK	**Noril'sk**	**54.85**	**346**	P	**P**	**14 52 07.8**	**0.0**
	1.7nm,0.4s,baz=95,slow=6.4,SNR=4.3						
ILAR	**Eielson Array**	**74.06**	**26**	P	**P**	**14 54 13.2**	**-0.3**
	0.3nm,0.6s,baz=272,slow=5.4,SNR=5.4						
YKA	**Yellowknife Ar**	**88.00**	**23**	P	**P**	**14 55 28.1**	**+0.4**
	0.7nm,0.6s,baz=311,slow=4.5,SNR=21						
TXAR	**Lajitas Array**	**115.46**	**43**	PKP	**PKPdf**	**15 01 20.9**	**+0.6**
	0.2nm,0.6s,baz=335,slow=1.3,SNR=3.7						

IDC ***27*** *14:44:49.7±3.1, 37°.50N × 72°.21E, h104 km±25km, mb3.6/8, mb1 3.6/15, mb1mx3.3/62, mbtmp3.9/15, Error ellipse: s-maj=26.1km s-min=20.1km az=173.0*

NNC ***27*** *14:44:56.3±1.2, 38°.03N × 72°.05E, h135 km±15km, mb3.4, mpv4.2, Error ellipse: s-maj=12.2km s-min=9.9km az=74.0*

ISC 27 14:44:51.7±1.0, 37°.74N±0°.09 × 71°.99E±0°.08, h113 km, n31, σ1§47/29, mb3.8/8, 4C-5D, Afghanistan-Tajikistan border region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SFK	**Sufi-Kurgan**	**2.56**	**27**	⇑P	**Pn**	**14 45 34.2**	**+2.0**
	39nm,0.4s						
SFK				⇓S	**Sn**	**14 46 03.9**	**+0.7**
	145nm,0.4s						
MNAS	**Manas**	**4.76**	**5**	⇑P	**Pn**	**14 46 02.4**	**+1.1**
	8.3nm,0.3s						
MNAS				⇓S	**Sn**	**14 46 54.1**	**-1.4**
	50nm,0.7s						
AAK	**Ala-Archa**	**5.25**	**21**	P	**Pn**	**14 46 09.8**	**+1.8**
	15nm,0.3s,baz=168,slow=5.7,SNR=112						
AAK				S	**Sn**	**14 47 06.6**	**-0.9**
	3.6nm,0.3s,baz=301,slow=19,SNR=3.7						
AAK	**Ala-Archa**	**5.25**	**21**	⇓P	**Pn**	**14 46 09.4**	**+1.4**
	11nm,0.3s						
AAK				⇑S	**Sn**	**14 47 06.3**	**-1.1**
	57nm,0.7s						
KK31	**Karatay Array**	**5.47**	**349**	P	**Pn**	**14 46 13.0**	**+2.1**
	95nm,0.5s,baz=168,slow=12,SNR=758						
KK31				S	**Sn**	**14 47 12.1**	**-0.6**
	10nm,0.3s,baz=173,slow=24,SNR=8.9						
TKM2	**Tokmak 2**	**5.86**	**27**	⇓P	**Pn**	**14 46 17.5**	**+1.2**
	6.9nm,0.4s						
TKM2				⇓S	**Sn**	**14 47 21.4**	**-0.9**
	10nm,0.6s						
THN	**Thein Dam**	**6.11**	**149**	*e*P	Pn	14 46 16.2	-3.4
THN				*e*S	Sn	14 47 19.0	-9.2
GEYT	**Alibeck**	**10.97**	**275**	P	**Pn**	**14 47 25.2**	**-0.2**
	0.9nm,0.3s,baz=98,slow=10,SNR=8.6						
GEYT				S	Sn	14 49 22.1	-4.1
	0.9nm,0.3s,baz=115,slow=21,SNR=5.1						
MKAR	**Makanchi Array**	**11.82**	**37**	P	**Pn**	**14 47 36.3**	**-0.4**
	0.1nm,0.3s,baz=223,slow=14,SNR=5.1						
PYUN	**Piuthan**	**13.32**	**133**	*e*P	Pn	14 47 50.7	-5.9
	31nm,0.4s						
KURBB	**Kurchatov Arra**	**13.70**	**18**	P	**Pn**	**14 48 00.1**	**-0.9**
	0.0nm,0.3s,baz=210,slow=12,SNR=3.0						
KOLN	**Koldanda**	**13.93**	**132**	*e*P	Pn	14 47 58.3	-6.1
	20nm,0.4s						
GKN	**Gorkha**	**14.38**	**129**	*e*P	Pn	14 48 03.0	-7.2
	36nm,0.4s						
AB31	**Akbulak array**	**14.43**	**327**	⇑P	**Pn**	**14 48 09.0**	**-1.4**
	2.0nm,0.5s,baz=64,slow=7.7,SNR=17						
KKN	**Kakani**	**14.93**	**128**	*e*P	Pn	14 48 10.6	-6.6
	15nm,0.5s						
DMN	**Daman**	**14.95**	**129**	*e*P	Pn	14 48 11.0	-6.5
	16nm,0.4s						
PKIN	**Phulchoki**	**15.16**	**128**	*e*P	Pn	14 48 13.6	-6.5
	20nm,0.5s						
GUN	**Gumba**	**15.23**	**126**	*e*P	Pn	14 48 14.4	-6.7
	18nm,0.4s						
BVAR	**Borovoye Array**	**15.32**	**356**	P	**Pn**	**14 48 22.1**	**+0.3**
	0.7nm,0.3s,baz=171,slow=13,SNR=10						
AKTO	**Aktyubinsk**	**16.14**	**326**	P	**P**	**14 48 34.1**	**+1.1**
	0.7nm,0.3s,baz=131,slow=13,SNR=10.0						
AKTO				S	**Sn**	**14 51 27.2**	**-3.6**
	0.2nm,0.3s,baz=270,slow=20,SNR=7.4						
ZALV	**Zalesovo Beam**	**18.46**	**24**	P	**P**	**14 48 58.8**	**+0.3**
	0.4nm,0.3s,baz=222,slow=11,SNR=9.5						
FINES	**FINESS Array B**	**36.91**	**325**	P	**P**	**14 51 50.7**	**+1.6**
	0.6nm,0.5s,baz=114,slow=13,SNR=3.6						
VYHS	**Vyhne**	**39.52**	**303**	*e*PKP		14 53 40.3	
VYHS				*e*		14 53 44.3	
ARCES	**ARCESS Array B**	**40.31**	**337**	P	**P**	**14 52 18.8**	**+1.3**
	3.1nm,0.9s,baz=122,slow=9.7,SNR=3.5						
HFS	**Hagfors**	**42.59**	**321**	P	**P**	**14 52 38.0**	**+1.8**
	1.8nm,0.5s,baz=103,slow=9.7,SNR=7.7						
NB2	**NORSAR Subarra**	**43.88**	**322**	P	**P**	**14 52 47.8**	**+1.2**
	comp=Z,0.4nm,0.5s,baz=91,slow=8.6						
NOA	**NORSAR Array B**	**43.88**	**322**	P	**P**	**14 52 48.0**	**+1.5**
	comp=Z,0.7nm,0.5s,baz=92,slow=8.0,SNR=4.2						
TORD	**Torodi Ar. Bea**	**66.54**	**269**	P	**P**	**14 55 29.9**	**+0.1**
	comp=Z,1.1nm,0.6s,baz=52,slow=6.0,SNR=11						
ILAR	**Eielson Array**	**73.37**	**16**	P	**P**	**14 56 09.9**	**-0.9**
	comp=Z,0.6nm,0.9s,baz=335,slow=4.0,SNR=4.6						
YKA	**Yellowknife Ar**	**79.97**	**3**	P	**P**	**14 56 48.4**	**+0.5**
	comp=Z,1.3nm,0.6s,baz=349,slow=5.5,SNR=30						
WRA	**Warramunga Arr**	**81.98**	**123**	P	**P**	**14 56 57.1**	**-2.2**
	comp=Z,0.4nm,0.8s,baz=328,slow=4.9,SNR=4.2						

IDC ***27*** *14:48:22.4±2.4, 37°.03N × 140°.85E, h0 km, mb3.5/3, mb1 3.7/4, mb1mx3.3/54, mbtmp3.4/4, ML3.3/1, MS2.9/1, Ms1 2.9/1, ms1mx2.3/48, Error ellipse: s-maj=49.7km s-min=29.2km az=31.0*

ISCJB ***27*** *14:48:23.9±0.6, 37°.03N±0°.03 × 140°.75E±0°.05, h15 km±5km, mb3.6/3, Error ellipse: s-maj=7.7km s-min=5.4km az=23.7*

JMA ***27*** *14:48:24.4, 37°.05N × 140°.65E, h7 km±2km, M3.3 Broadband fault plane solution: P waves. NP1: φ₈206.00000°, δ51.00000°, λ-77.00000°. NP2:φ₈6.00000°, δ41.00000°, λ-105.00000°. Principal axes: T Plg5.0000°, Azm287.0000°; N Plg10.0000°, Azm18.0000°; P Plg79.0000°, Azm172.0000°;*

JMA Felt I J1.

ISC 27 14:48:24.2±0.9, 37°.05N±0°.03 × 140°.66E±0°.04, h10 km±8km, n13, σ0§55/21, mb3.5/3, 6C-1D, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizushiy**	**0.13**	**64**	⇑P	**Pg**	**14 48 27.2**	**-0.1**
ONAJ				S	**Sg**	**14 48 29.7**	**+0.2**
JFK	**Kawauchi**	**0.36**	**29**	⇑P	**Pg**	**14 48 31.5**	**0.0**
JFK				S	**Sg**	**14 48 36.6**	**+0.3**
JHO	**Hitachi**	**0.44**	**189**	⇓P	**Pg**	**14 48 32.9**	**+0.1**
JHO				S	**Sg**	**14 48 39.0**	**+0.4**
JFT	**Otama**	**0.54**	**332**	⇑P	**Pg**	**14 48 34.8**	**+0.2**
JFT				S	**Sg**	**14 48 42.1**	**+0.4**
JSB	**Shiboa**	**0.59**	**263**	⇑P	**Pb**	**14 48 36.5**	**-0.2**
JSB				S	**Sb**	**14 48 44.8**	**-0.3**
JMM	**Marumori**	**0.82**	**8**	⇑P	**Pg**	**14 48 39.7**	**-0.4**
JMM				S	**Sg**	**14 48 51.3**	**+0.4**
JFY	**Yanaizu**	**0.84**	**296**	⇑P	**Pg**	**14 48 40.4**	**0.0**
JFY				S	**Sg**	**14 48 51.3**	**-0.1**
MJAR	**Matsushiro Arr**	**2.03**	**256**	Pn	**Pb**	**14 49 00.1**	**-1.0**
	8.7nm,0.3s,baz=158,slow=11,SNR=41						
MJAR				Sn	**Sb**	**14 49 26.9**	**+0.5**
	16nm,0.3s,baz=250,slow=25,SNR=18						
MJAR				LR	LR	14 49 51.8	
	comp=Z,25nm,21.4s,baz=130,slow=42						
MAT	**Matsushiro**	**2.03**	**256**	P	**Pb**	**14 49 00.1**	**-1.0**
MAT				S	**Sb**	**14 49 27.5**	**+1.1**
KLR	**Kul'dur**	**13.79**	**335**	LR	LR	14 57 01.9	
	comp=Z,43nm,18.5s,baz=204,slow=37						
MKAR	**Makanchi Array**	**43.60**	**302**	P	**P**	**14 56 29.0**	**+0.6**
	0.3nm,0.6s,baz=88,slow=8.1,SNR=3.0						
WRA	**Warramunga Arr**	**56.99**	**187**	P	**P**	**14 58 09.4**	**-0.6**
	1.0nm,0.6s,baz=4.4,slow=7.4,SNR=15						
ASAR	**Alice Springs**	**60.72**	**187**	P	**P**	**14 58 36.1**	**+0.3**
	0.2nm,0.5s,baz=5.5,slow=7.1,SNR=4.5						

IDC ***27*** *15:18:15.5±1.8, 51°.56S × 152°.04E, h0 km, mb4.1/4, mb1 4.3/5, mb1mx4.1/17, mbtmp4.1/5, ML4.2/1, MS3.8/4, Ms1 3.8/4, ms1mx3.3/26, Error ellipse: s-maj=63.5km s-min=39.7km az=45.0*

NEIC ***27*** *15:18:17.9±0.6, 51°.43S × 151°.94E, h10 km, mb4.6/2, Error ellipse: s-maj=14.3km s-min=9.2km az=214.0*

ISCJB ***27*** *15:18:19.4±0.8, 51°.38S±0°.10 × 152°.1E±0°.1, h33 km, mb4.2/5, MS3.7/4, Error ellipse: s-maj=15.5km s-min=9.8km az=31.7*

ISC 27 15:18:21.6±0.8, 51°.4S±0°.1 × 152°.1E±0°.1, h35 km, n19, σ1§12/15, mb4.2/5, MS3.7/4, North of Macquarie Island

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MCQ	**Macquarie Isla**	**5.24**	**130**	*e*Pn	**Pn**	**15 19 35.6**	**-1.6**
	3μm,0.4s						
TAU	**Tasmania Unive**	**9.03**	**337**	*e*Pn	**Pn**	**15 20 27.3**	**-2.1**
	12nm,0.6s						
TAU				*e*Sn	Sn	15 21 58.7	-11
WHZ	**Wether Hill Ro**	**11.84**	**69**	*e*Pn	**Pn**	**15 21 09.3**	**+1.4**
ODZ	**Otahua Downs**	**13.90**	**70**	Pn	**Pn**	**15 21 35.5**	**-0.3**
RPZ	**Rata Peaks**	**14.91**	**67**	Pn	**Pn**	**15 21 49.6**	**0.0**
	1.0nm,0.3s,baz=211,slow=3.6,SNR=5.3						
CAN	**Canberra**	**16.17**	**351**	*e*Pn	**Pn**	**15 22 07.1**	**+1.0**
STKA	**Stephens Creek**	**20.93**	**334**	P	Pn	15 23 03.0	-0.7
	9.6nm,0.8s,baz=155,slow=11,SNR=21						
STKA				LR	LR	15 30 16.1	
	comp=Z,303nm,19.5s,baz=197,slow=34						
BBOO	**Buckleboo**	**21.91**	**322**	*e*P	**P**	**15 23 11.2**	**-0.4**
	20nm,1.2s						
VNDA	**Vanda**	**26.53**	**175**	LR	LR	15 32 33.8	
	comp=Z,111nm,18.1s,baz=301,slow=33						
ASAR	**Alice Springs**	**30.98**	**326**	P	**P**	**15 24 35.8**	**+0.3**
	3.2nm,0.8s,baz=162,slow=8.9,SNR=41						
RAO	**Raoul Island**	**31.45**	**57**	LR	LR	15 36 26.1	
	comp=Z,147nm,21.2s,baz=304,slow=34						
WRA	**Warramunga Arr**	**34.30**	**329**	P	**P**	**15 25 04.0**	**-0.5**
	0.7nm,0.4s,baz=160,slow=7.4,SNR=15						
WRAB	**Tennant Creek**	**34.30**	**330**	*e*P	**P**	**15 25 04.3**	**-0.2**
QSPA	**South Pole Qui**	**38.77**	**180**	*e*P	**P**	**15 25 42.8**	**+0.5**
	14nm,0.8s						
CMAR	**Chiang Mai Arr**	**83.55**	**310**	P	**P**	**15 30 46.5**	**+0.7**
	0.2nm,0.4s,baz=165,slow=3.7,SNR=4.7						
OPO	**Ambohidratompo**	**84.61**	**247**	LR	LR	15 59 06.8	
	comp=Z,60nm,19.7s,baz=179,slow=29						
SPITS	**Spitsbergen Ar**	**148.72**	**344**	PKPbc	**PKPdf**	**15 38 01.3**	**+1.8**
	4.7nm,0.8s,baz=20,slow=4.7,SNR=14						
FINES	**FINESS Array B**	**149.33**	**310**	PKPbc	**PKPbc**	**15 38 05.6**	**+0.3**
	1.9nm,0.8s,baz=90,slow=2.8,SNR=4.2						
ARCES	**

GOPC	**GO Pecny, Ondr**	**1.78 209**	Pg	**Pb**	**15 42 46.5**	**+0.2**
GOPC			Sg	**Sb**	**15 43 09.4**	**+0.2**
MORC	**Moravsky Berou**	**1.93 151**	*e*Pn	**Pn**	**15 42 46.4**	**-0.7**
MORC			*e*Sg	**Sb**	**15 43 13.6**	**-0.1**
CLL	**Collm**	**1.95 266**	*e*Sg	**Sb**	**15 43 15.0**	**+0.8**
TREC	**Trest** comp=Z,3.3nm,0.2s	**2.22 191**	*e*SG	**Sg**	**15 43 24.3**	**+0.1**
TREC	**Trest** 3.3nm,0.2s	**2.22 191**	Sg	**Sg**	**15 43 24.3**	**+0.1**
KHC	**Kasperske Hory**	**2.85 216**	*e*PG	**Pb**	**15 43 05.4**	**+0.7**
KHC			*e*SN	**Sn**	**15 43 34.3**	**-0.5**
KHC			*e*SG	**Sg**	**15 43 43.4**	**-1.2**
KHC	**Kasperske Hory**	**2.85 216**	Pg	**Pb**	**15 43 05.4**	**+0.7**
KHC			Sn	**Sn**	**15 43 34.3**	**-0.5**
KHC			Sg	**Sg**	**15 43 43.4**	**-1.2**

IDC 27 15:46:07.4±3.4, 22°88N×11°78W, h0km, mb3.6/1, mb1 3.6/2, mb1mx3.2/41, mbtmp3.6/2, ML3.3/1, Error ellipse: s-maj=124.3km s-min=64.5km az=67.0, Mauritania

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TORD	**Torodi Ar. Bea** 0.1nm,0.3s,baz=316,slow=13,SNR=8.6	**16.05**	**125**	Pn	Pn	15 49 54.6	0.0
MKAR	**Makanchi Array** 0.3nm,0.5s,baz=277,slow=3.9,SNR=4.0	**76.36**	**45**	P	P	15 57 58.7	+0.1
WRA	**Warramunga Arr** 0.4nm,0.7s,baz=291,slow=2.3,SNR=3.7	**148.36**	**91**	PKPbc	PKPbc	16 05 55.7	-0.9
ASAR	**Alice Springs** 0.4nm,0.7s,baz=294,slow=2.6,SNR=5.5	**148.51**	**98**	PKPbc	PKPbc	16 05 56.5	-0.4

ISCJB 27 15:51:46.8±0.8, 26°6N±0°.1×143°.58E±0°.10, h10km, mb3.5/9, Error ellipse: s-maj=15.9km s-min=11.3km az=30.7

IDC 27 15:51:47.0±1.0, 26°.57N×143°.58E, h0km, mb3.6/9, mb1 3.8/10, mb1mx3.6/43, mbtmp3.6/10, ML4.5/1, Error ellipse: s-maj=26.0km s-min=19.3km az=82.0

ISC 27 15:51:48.8±1.0, 26°6N±0°.1×143°50E±0°.10, h10km, n11, σ0s79/12, mb3.5/9, Bonin Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JCJ	**Chichijima** 29nm,0.3s,baz=272,slow=22,SNR=9.5	**1.27**	**293**	Pn	**Pg**	**15 52 13.7**	**+0.4**
JCJ	baz=0.0,slow=20			Sn	**Sb**	**15 52 28.7**	**-0.6**
MJAR	**Matsushiro Arr** 0.3nm,0.3s,baz=164,slow=11,SNR=3.7	**10.88**	**337**	Pn	**Pn**	**15 54 24.0**	**-0.6**
KLR	**Kul'dur** 1.3nm,0.6s,baz=142,slow=10,SNR=5.5	**24.36**	**341**	P	**P**	**15 57 06.0**	**-0.8**
SONM	**Songino Array** 0.4nm,0.6s,baz=118,slow=7.5,SNR=4.3	**35.88**	**316**	P	**P**	**15 58 49.7**	**+0.6**
CMAR	**Chiang Mai Arr** 0.3nm,0.6s,baz=66,slow=7.2,SNR=3.8	**41.78**	**268**	P	**P**	**15 59 39.8**	**+1.0**
WRA	**Warramunga Arr** 1.8nm,0.7s,baz=12,slow=8.6,SNR=14	**47.12**	**192**	P	**P**	**16 00 20.5**	**-0.7**
ASAR	**Alice Springs** 0.2nm,0.7s,baz=14,slow=8.0,SNR=4.3	**50.83**	**191**	P	**P**	**16 00 49.1**	**-0.7**
MKAR	**Makanchi Array** 0.8nm,0.6s,baz=91,slow=8.3,SNR=10	**51.69**	**310**	P	**P**	**16 00 56.2**	**+0.2**
ILAR	**Eielson Array** 0.4nm,0.8s,baz=253,slow=6.3,SNR=4.3	**57.58**	**28**	P	**P**	**16 01 38.6**	**+0.2**
YKA	**Yellowknife Ar** 0.1nm,0.4s,baz=295,slow=5.9,SNR=3.7	**72.01**	**29**	P	**P**	**16 03 13.4**	**+0.9**
FINES	**FINESS Array B** 0.4nm,0.5s,baz=84,slow=4.3,SNR=4.0	**78.90**	**334**	P	**P**	**16 03 51.3**	**-0.8**

NIED 27 15:57:00, 29°.40N×130°.50E, h20km, Mw4.2 Best double couple: M0 2.29000×10^15 NP1:φs295.00000°, δ9.00000°, λ-177.00000°. NP2:φs202.00000°, δ90.00000°, λ-81.00000°.

IDC 27 15:57:16.8±0.8, 29°.31N×130°.45E, h0km, mb3.5/10, mb1 3.7/12, mb1mx3.6/38, mbtmp3.6/12, ML3.2/2, MS3.3/2, Ms1 3.3/2, ms1mx2.8/27, Error ellipse: s-maj=31.5km s-min=18.2km az=83.0

ISCJB 27 15:57:22.3±0.6, 29°.37N±0°.04×130°.53E±0°.08, h55km±6km, mb3.5/10, MS3.2/1, Error ellipse: s-maj=12.4km s-min=3.7km az=23.4

JMA 27 15:57:22.7, 29°.39N×130°.50E, h54km±3km, M3.5

ISC 27 15:57:23.3±1.3, 29°38N±0°.04×130°50E±0°.08, h45km±12km, n28, σ0s61/38, mb3.6/10, Ryukyu Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JNN	**Nakanoshima**	**0.71**	**310**	P	**Pn**	**15 57 36.6**	**-0.4**
JNN				*e*S	**Sn**	**15 57 47.1**	**+0.1**
JYAK	**Yakushimahirau**	**0.85**	**0**	P	**Pn**	**15 57 38.5**	**-0.4**
JYAK				*e*S	**Sn**	**15 57 50.7**	**+0.4**
JKC	**Kuchinoerabu**	**1.11**	**346**	P	**Pn**	**15 57 42.4**	**0.0**
JKC				*e*S	**Sn**	**15 57 56.4**	**-0.1**
JTAJ	**Takarajima**	**1.16**	**259**	P	**Pn**	**15 57 43.3**	**+0.3**
JTAJ				*e*S	**Sn**	**15 57 58.1**	**+0.4**
JZK	**Kikaishima**	**1.16**	**204**	P	**Pn**	**15 57 43.2**	**+0.1**
JAM	**Amami Oshima**	**1.25**	**219**	P	**Pn**	**15 57 44.0**	**-0.3**
JAM				*e*S	**Sn**	**15 58 00.3**	**+0.4**
JTN	**Tanegashima 3**	**1.33**	**18**	P	**Pn**	**15 57 45.3**	**-0.2**
JTN				*e*S	**Sn**	**15 58 02.3**	**+0.3**
JAMN	**Amaminishikomi**	**1.63**	**226**	P	**Pn**	**15 57 49.5**	**0.0**
JAMN				*e*S	**Sn**	**15 58 10.4**	**+1.2**
JTSR	**Tashiro 2**	**1.81**	**11**	P	**Pn**	**15 57 52.4**	**+0.3**
JTSR				*e*S	**Sn**	**15 58 14.2**	**+0.3**
JTK	**Tokunoshima**	**2.10**	**221**	P	**Pn**	**15 57 56.2**	**+0.3**
JTK				*e*S	**Sn**	**15 58 22.1**	**+1.3**
JSU	**Suzuyama**	**2.12**	**359**	P	**Pn**	**15 57 56.3**	**+0.1**
JOKE	**Okinoerabujima**	**2.64**	**221**	P	**Pn**	**15 58 03.2**	**-0.1**
JOW	**Kunigami**	**3.21**	**218**	P	**Pn**	**15 58 11.0**	**-0.3**
JOW				*e*S	**Sn**	**15 58 48.4**	**+0.1**
JIH	**Iheya**	**3.24**	**224**	P	**Pn**	**15 58 11.1**	**-0.5**
JNTH	**Nagotoyohara**	**3.60**	**218**	P	**Pn**	**15 58 16.2**	**-0.3**
JNTH				*e*S	**Sn**	**15 58 57.2**	**-0.6**
JNU	**Nakatsue** 1.8nm,0.3s,baz=349,slow=6.5,SNR=19	**3.74**	**5**	Pn	**Pn**	**15 58 19.0**	**+0.5**
KSRS	**Korea Array** comp=Z,137nm,18.6s,baz=178,slow=40	**8.33**	**346**	LR	LR	16 02 54.4	
KLR	**Kul'dur** 0.1nm,0.3s,baz=188,slow=5.8,SNR=6.4	**19.84**	**2**	P	**P**	**16 01 49.5**	**-0.8**
SONM	**Songino Array** 1.2nm,0.6s,baz=139,slow=8.9,SNR=3.5	**26.18**	**321**	P	**P**	**16 02 52.9**	**-0.7**
SONM	comp=Z,81nm,20.5s,baz=130,slow=39			LR	LR	16 14 08.8	
MKAR	**Makanchi Array** 0.4nm,0.4s,baz=93,slow=10,SNR=7.3	**41.04**	**309**	P	**P**	**16 05 02.8**	**+0.6**
WRA	**Warramunga Arr** 0.4nm,0.7s,baz=358,slow=8.3,SNR=3.1	**49.18**	**175**	P	**P**	**16 06 05.0**	**-2.0**
ASAR	**Alice Springs** 0.1nm,0.5s,baz=8.3,slow=14,SNR=3.3	**52.84**	**176**	P	**P**	**16 06 35.0**	**+0.5**
ILAR	**Eielson Array** 0.3nm,0.8s,baz=265,slow=4.3,SNR=3.6	**60.72**	**29**	P	**P**	**16 07 29.9**	**0.0**
FINES	**FINESS Array B** 0.4nm,0.5s,baz=38,slow=5.4,SNR=3.2	**71.12**	**331**	P	**P**	**16 08 36.4**	**-0.3**
RES	**Resolute Bay** 1.1nm,0.7s,baz=302,slow=7.5,SNR=6.4	**72.08**	**11**	P	**P**	**16 08 43.1**	**+0.9**
AKASG	**Malin Array Be** 0.5nm,0.5s,baz=59,slow=7.1,SNR=2.8	**74.44**	**320**	P	**P**	**16 08 56.2**	**-0.5**
YKA	**Yellowknife Ar** 0.2nm,0.7s,baz=304,slow=5.5,SNR=4.5	**74.83**	**26**	P	**P**	**16 08 59.4**	**+0.8**
BRTR	**Keskin Array B** 0.6nm,0.6s,baz=104,slow=5.2,SNR=3.8	**76.69**	**308**	P	**P**	**16 09 10.0**	**+0.1**

NIED 27 16:03:00, 26°.90N×143°.70E, h8km, Mw4.4 Best double couple: M0 4.65000×10^15 NP1:φs123.00000°, δ44.00000°, λ-148.00000°. NP2:φs8.00000°, δ68.00000°, λ-51.00000°.

IDC 27 16:03:28.3±0.5, 26°.63N×143°.70E, h0km, mb4.5/29, mb1 4.6/33, mb1mx4.6/41, mbtmp4.5/33, ML4.1/4, MS3.6/10, Ms1 3.6/10, ms1mx3.3/31, Error ellipse: s-maj=13.8km s-min=12.3km az=69.0

NEIC 27 16:03:29.7±0.2, 26°.68N×143°.68E, h10km, mb4.9/62, Error ellipse: s-maj=4.9km s-min=4.0km az=152.0

ISCJB 27 16:03:31.6±0.2, 26°.74N±0°.03×143°.69E±0°.03, h33km, mb4.7/134, MS3.8/20, Error ellipse: s-maj=4.6km s-min=3.5km az=160.4

MOS 27 16:03:31.1±0.9, 26°.64N×143°.75E, h34km, mb4.9/64, Error ellipse: s-maj=9.7km s-min=5.3km az=112.3

JMA 27 16:03:32.2±0.3, 26°.87N×143°.70E, h40km, M4.5

ISC 27 16:03:32.4±0.8, 26°79N±0°.05×143°68E±0°.05, h25km±5km, n263, σ1s42/289, mb4.8/134, MS3.8/20, 5C-2D, Bonin Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHHJ	**Haha-jima-NKT**	**1.35**	**264**	P	**Pn**	**16 03 55.8**	**0.0**
CBIJ	**Chichi jima**	**1.37**	**283**	P	**Pn**	**16 03 55.7**	**-0.3**
CBIJ				*e*S	**Sn**	**16 04 13.3**	**-0.1**
CBIJ	**Chichi jima**	**1.37**	**283**	*e*Pn	**Pn**	**16 03 55.4**	**-0.6**
CBIJ				Sn	**Sn**	**16 04 13.9**	**+0.6**
JCJ	**Chichijima** 336nm,0.3s,baz=283,slow=21,SNR=50	**1.37**	**283**	Pn	**Pn**	**16 03 55.8**	**-0.2**
JCJ	baz=90,slow=20			Sn	**Sn**	**16 04 13.9**	**+0.6**
JHJ2	**Mitsune**	**7.14**	**333**	S	**Sn**	**16 06 32.2**	**-3.4**
JHJ2	**Mitsune**	**7.14**	**333**	*e*Pn	**Pn**	**16 05 14.5**	**-0.7**
JHJ	**Hachijo jima 2** 15nm,0.3s,baz=183,slow=18,SNR=4.5	**7.16**	**333**	Pn	**Pn**	**16 05 15.5**	**-0.1**
JHJ	48nm,0.3s,baz=67,slow=22,SNR=6.6			Sn	**Sn**	**16 06 30.9**	**-5.2**
BSO1	**Boso 1**	**8.18**	**344**	*e*S	**Sn**	**16 06 56.5**	**-3.9**
JOD2	**Odawara 2**	**9.32**	**336**	P	**Pn**	**16 05 44.1**	**-1.1**
JRY	**Ryogami san**	**10.06**	**337**	P	**Pn**	**16 05 54.9**	**-0.5**
INU	**Inuyama**	**10.27**	**328**	*e*Pn	**Pn**	**16 05 57.8**	**-0.4**
MJAR	**Matsushiro Arr** 4.9nm,0.3s,baz=157,slow=11,SNR=40	**10.78**	**336**	Pn	**Pn**	**16 06 04.5**	**-0.8**
MJAR	2.0nm,0.3s,baz=139,slow=19,SNR=6.2			Sn	**Sn**	**16 08 02.2**	**-2.9**
MAJO	**Matsushiro**	**10.78**	**336**	*e*P	**Pn**	**16 06 04.7**	**-0.5**
MAJO	**Matsushiro**	**10.78**	**336**	*e*Pn	**Pn**	**16 06 04.7**	**-0.5**
MJB9	**Matsu-Tunnel**	**10.79**	**336**	*e*Pn	**Pn**	**16 06 04.7**	**-0.6**
JNU	**Nakatsue** comp=Z,154nm,18.2s,baz=124,slow=37	**12.76**	**303**	LR	LR	16 11 25.5	
ERM	**Erimo**	**15.20**	**359**	*ce*P	**Pn**	**16 07 03.7**	**-1.6**
ERM	comp=Z,67nm,1.7s			pmax	pmax		
KSRS	**Korea Array** comp=Z,0.7nm,0.3s,baz=121,slow=12,SNR=41	**17.04**	**312**	P	**Pn**	**16 07 29.9**	**+0.9**
KSRS	comp=Z,110nm,18.7s,baz=126,slow=36			LR	LR	16 13 48.2	
KS15	**Wonju Array Si**	**17.06**	**312**	*e*Pn	**Pn**	**16 07 30.3**	**+1.1**
KSAR	**Wonju Array Be**	**17.06**	**312**	P	**Pn**	**16 07 29.9**	**+0.6**
KSAR	**Wonju Array Be**	**17.06**	**312**	P	**Pn**	**16 07 29.9**	**+0.6**
KS01	**Wonju Array Si**	**17.07**	**313**	*e*Pn	**Pn**	**16 07 29.1**	**-0.3**
SHO	**Shikotan**	**17.23**	**8**	*i* P	**Pn**	**16 07 27.1**	**-4.3**
ASAJ	**Asahikawa** comp=Z,0.5nm,0.3s,baz=203,slow=22,SNR=6.0	**17.31**	**357**	P	**Pn**	**16 07 30.1**	**-2.3**
ASAJ	comp=Z,117nm,19.8s,baz=170,slow=35			LR	LR	16 13 40.7	
INCN	**Inchon** comp=Z,80nm,0.9s	**17.92**	**311**	*e*Pn	**Pn**	**16 07 39.8**	**-0.1**
KUR	**Kuril'sk**	**18.71**	**9**	P	**P**	**16 07 49.5**	**+0.5**
KUR	comp=Z,11nm,0.9s			pmax	pmax		
USRK	**Ussuriysk Ar.** comp=Z,0.8nm,0.3s,baz=139,slow=9.5,SNR=18	**19.77**	**334**	P	**P**	**16 08 01.2**	**+0.5**
TATO	**Taipei** comp=Z,1μm,2.1s	**20.05**	**270**	P	**P**	**16 08 04.4**	**+0.5**
NACB	**Ninganchiao** comp=Z,52nm,1.0s	**20.11**	**267**	*e*P	**P**	**16 08 03.6**	**-0.9**
YSS	**Yuzh-Sakhalins**	**20.14**	**358**	*e*P	Pn	16 08 08.4	+1.8
YHNB	**Yeheng** comp=Z,57nm,0.7s	**20.20**	**269**	*e*P	**P**	**16 08 05.5**	**-0.1**
YULB	**Yu-li** comp=Z,44nm,1.0s	**20.55**	**265**	*e*P	**P**	**16 08 09.1**	**-0.2**
SSLB	**Suanglung** comp=Z,78nm,0.7s	**20.76**	**267**	*e*P	**P**	**16 08 10.7**	**-0.9**
TWG	**Pinlang** comp=Z,111nm,0.8s	**20.89**	**264**	*e*P	**P**	**16 08 11.9**	**-1.1**
MDJ	**Mudanjiang**	**21.10**	**331**	P	**P**	**16 08 15.5**	**+0.5**
MDJ				pP	pP	16 08 18.3	-3.5
MDJ				sP	sP	16 08 19.5	-5.5
MDJ				S	Sn	16 12 13.8	-1.7
MDJ				sS	sS	16 12 18.8	-0.6
MDJ	comp=Z,16nm,1.0s			pmax	pmax		
MDJ	comp=Z,130nm,5.8s			pmax	pmax		
MDJ	comp=N,84nm,22.6s			LR	LR		
MDJ	comp=E,100nm,22.1s			LR	LR		
MDJ	comp=Z,60nm,16.8s			LR	LR		
CN2	**Changchun**	**22.49**	**324**	*e*P	**P**	**16 08 30.3**	**+0.3**
CN2				*es*P	pP	16 08 36.5	-0.3
CN2				*e*S	**S**	**16 12 32.3**	**-3.1**
CN2	comp=Z,10.0nm,0.6s			pmax	pmax		
CN2	comp=Z,200nm,5.0s			pmax	pmax		
CN2	comp=N,400nm,16.0s			LR	LR		
CN2	comp=E,400nm,16.0s			LR	LR		
CN2	comp=Z,200nm,15.0s			LR	LR		
QZH	**Quanzhou**	**22.64**	**271**	*i* P	**P**	**16 08 28.5**	**-3.3**
QZH				S	**S**	**16 12 31.8**	**-6.6**
QZH	comp=Z,220nm,0.8s			pmax	pmax		
QZH	comp=Z,820nm,8.1s			LR	LR		
HABR	**Khabarovsk**	**22.67**	**345**	*e*P	**P**	**16 08 30.5**	**-1.3**
HABR				*e**PP	**pP**	**16 08 39.3**	**+0.6**
HABR				*e**SP	**sP**	**16 08 43.8**	**+1.9**
HABR				*e*PPP	PPP	16 09 03.2	
HABR				*e*		16 12 21.7	
HABR				*e*S	**S**	**16 12 37.5**	**-1.0**
HABR				*e**SS	Sn	16 12 53.3	+0.1
HABR				*e*SSS	SSS	16 13 24.6	
HABR				*e*		16 19 42.4	
HABR	comp=N,48nm,2.3s			pmax	pmax		
HABR	comp=E,69nm,2.3s			pmax	pmax		
HABR	comp=Z,32nm,2.3s			pmax	pmax		
HABR	comp=Z,39nm,17.0s			MLR	MLR		
KLR	**Kul'dur** comp=Z,13nm,0.7s,baz=148,slow=8.1,SNR=58	**24.24**	**341**	P	**P**	**16 08 48.4**	**+1.1**
TIA	**Tai'an**	**24.45**	**299**	*e*P	**P**	**16 08 47.5**	**-1.9**
TIA	comp=Z,30nm,0.8s			pmax	pmax		
WHN	**Wuhan**	**25.97**	**285**	P	**P**	**16 09 03.0**	**-0.2**
WHN	comp=Z,80nm,0.6s			pmax	pmax		
DAV	**Davao City (W)** comp=Z,166nm,19.6s,baz=34,slow=33	**26.09**	**225**	LR	LR	16 17 40.8	
BJI	**Beijing**	**26.37**	**307**	P	**P**	**16 09 06.8**	**+0.1**
BJI				S	**S**	**16 13 41.8**	**+3.4**
BJI	comp=Z,12nm,0.8s			pmax	pmax		
BJI	comp=Z,77nm,3.7s			pmax	pmax		
BJI	comp=N,120nm,16.1s			LR	LR		
BJI	comp=E,210nm,17.8s			LR	LR		
BJI	comp=Z,97nm,22.6s			LR	LR		
NKL	**Nikolayevsk**	**26.43**	**356**	*e*P	**P**	**16 09 08.8**	**+1.8**
NKL	comp=Z,15nm,0.9s			pmax	pmax		
NKL	comp=E,300nm,13.0s			MLR	MLR		
NKL	comp=Z,300nm,13.0s			MLR	MLR		
PETK	**Petropavlovsk-** comp=Z,71nm,21.7s,baz=190,slow=31	**28.30**	**18**	LR	LR	16 18 20.5	
HHC	**Hu-ho-hao-te**	**29.95**	**306**	*e*P	**P**	**16 09 39.3**	**+0.5**
HHC				pP	pP	16 09 43.8	-2.4
HHC				sP	sP	16 09 46.3	-3.0
HHC				S	**S**	**16 14 35.5**	**+0.3**
HHC				sS	sS	16 14 43.0	-4.3
HHC	comp=Z,27nm,0.8s			pmax	pmax		
HHC	comp=Z,87nm,10.8s			pmax	pmax		
HHC	comp=N,730nm,12.2s			LR	LR		
HHC	comp=E,800nm,13.9s			LR	LR		
HHC	comp=Z,720nm,13.3s			LR	LR		
TNTI	**Ternate** comp=Z,21nm,1.2s	**30.25**	**214**	P	**P**	**16 09 42.8**	**+1.3**
XAN	**Xi'an**	**30.73**	**292**	P	**P**	**16 09 44.5**	**-1.2**
XAN				pP	pP	16 09 49.8	-3.3
XAN				S	**S**	**16 14 40.5**	**-6.8**
XAN	comp=Z,35nm,0.9s			pmax	pmax		
XAN	comp=E,130nm,14.9s			LR	LR		
XAN	comp=Z,160nm,14.9s			LR	LR		
LBMI	**Labuha** comp=Z,44nm,1.0s,comp=Z,567nm	**31.41**	**212**	P	**P**	**16 09 51.5**	**-0.2**
MYLDM	**Lahad Datu** comp=Z,18nm,1.1s	**32.23**	**233**	*e*P	**P**	**16 09 58.5**	**-0.5**
GYA	**Guiyang**	**33.02**	**278**	*i* P	**P**	**16 10 05.5**	**-0.5**
GYA				PP	**PnPn**	**16 11 16.5**	**+0.9**
GYA				PcP	**PcP**	**16 12 50.8**	**+1.3**
GYA				S	**S**	**16 15 23.5**	**+0.1**
GYA				ScP	**ScP**	**16 16 34.0**	**+1.8**
GYA				SS	**SnSn**	**16 17 22.3**	**+0.1**
GYA	**Guiyang** comp=Z,20nm,1.0s	**33.02**	**278**	ScS	ScS	16 20 33.0	+0.3
GYA	comp=Z,120nm,5.0s			pmax	pmax		
GYA	comp=N,490nm,17.8s			LR	LR		
GYA	comp=E,470nm,18.0s			LR	LR		
GYA	comp=Z,500nm,17.6s			LR	LR		
MA2	**Magadan** comp=Z,2.5nm,0.7s,baz=200,slow=12,SNR=3.0	**33.14**	**7**	P	**P**	**16 10 07.6**	**+1.1**
SANI	**Sanana** comp=Z,21nm,1.0s	**33.37**	**214**	P	**P**	**16 10 08.8**	**-0.1**
MRSI	**Marisa** comp=Z,65nm,1.1s,comp=Z,2μm	**33.49**	**222**	P	**P**	**16 10 10.0**	**0.0**
LZH	**Lanzhou**	**35.03**	**295**	*e*P	**P**	**16 10 23.0**	**-0.4**
LZH				pP	pP	16 10 25.5	-5.3
LZH				sP	sP	16 10 26.8	-7.0
LZH	comp=Z,29nm,1.0s			pmax	pmax		
LZH	comp=Z,140nm,4.3s			pmax	pmax		
LZH	comp=N,190nm,13.2s			LR	LR		
LZH	comp=E,200nm,13.7s			LR	LR		
LZH	comp=Z,220nm,14.7s			LR	LR		
CD2	**Chengdu**	**35.08**	**286**	P	**P**	**16 10 22.0**	**-1.7**
CD2	comp=Z,2.0nm,0.6s			pmax	pmax		
ULN	**Ulaanbaatar**	**35.47**	**316**	*e*P	**P**	**16 10 28.2**	**+1.2**
ULN	comp=Z,10.0nm,0.7s			pmax	pmax		
ULN	**Ulaanbaatar** comp=Z,11nm,0.9s	**35.47**	**316**	*e*P	**P**	**16 10 27.9**	**+0.9**
SONA1	**Songino Array**	**35.86**	**316**	*e*P	**P**	**16 10 30.9**	**+0.6**
SONM	**Songino Array** comp=Z,7.2nm,0.8s,baz=115,slow=7.3,SNR=46	**35.86**	**316**	P	**P**	**16 10 31.4**	**+1.0**
YAK	**Yakutsk** comp=Z,13nm,0.7s,baz=209,slow=1.2,SNR=12	**36.46**	**349**	P	**P**	**16 10 35.5**	**+0.5**
YAK	**Yakutsk**	**36.46**	**349**	*e*P	**P**	**16 10 35.2**	**+0.1**
YAK	comp=Z,14nm,0.8s			pmax	pmax		
YAK	comp=N,5.0nm,1.1s			pmax	pmax		
YAK	comp=E,2.0nm,1.1s			pmax	pmax		
SEY	**Seymchan** comp=E,6.6nm,0.9s,baz=176,slow=9.6,SNR=12	**36.60**	**7**	P	**P**	**16 10 37.7**	**+1.4**
SEY	**Seymchan**	**36.60**	**7**	*e*P	**P**	**16 10 36.6**	**+0.4**
KMI	**Kunming**	**36.74**	**277**	P	**P**	**16 10 38.5**	**+0.3**
KMI				pP	pP	16 10 41.3	-4.4
KMI				sP	sP	16 10 42.3	-6.4
KMI	comp=Z,19nm,1.2s			pmax	pmax		
KMI	comp=Z,69nm,3.2s			pmax	pmax		
KMI	comp=N,130nm,9.7s			LR	LR		
KMI	comp=E,140nm,9.7s			LR	LR		
KMI	comp=Z,150nm,12.8s			LR	LR		
BOD	**Bodaibo**	**37.41**	**334**	*e*P	**P**	**16 10 43.2**	**0.0**
BOD	comp=Z,5.0nm,1.1s			pmax	pmax		
SKNT	**Sakolnakorn** comp=Z,19nm,0.9s	**37.98**	**263**	P	**P**	**16 10 49.1**	**+0.6**
SPSI	**Sidrap Palu** comp=Z,54nm,0.9s	**38.33**	**221**	P	**P**	**16 10 50.7**	**-0.7**
GTA	**Gaotai**	**38.49**	**300**	*e*P	**P**	**16 10 52.0**	**-0.8**
GTA				pP	pP	16 10 56.3	-3.9
GTA				sP	sP	16 10 59.0	-4.3
GTA				PcP	**PcP**	**16 13 06.3**	**+0.8**
GTA				S	**S**	**16 16 47.5**	**+0.5**
GTA				sS	ScP	16 16 55.0	+3.0
GTA				SS	**SnSn**	**16 19 29.0**	**-5.3**
GTA	comp=Z,21nm,1.2s			pmax	pmax		
GTA	comp=Z,94nm,6.2s			pmax	pmax		
GTA	comp=N,150nm,16.6s			LR	LR		
GTA	comp=E,110nm,14.7s			LR	LR		
GTA	comp=Z,160nm,15.2s			LR	LR		
ZAK	**Zakamensk**	**38.72**	**318**	*e*P	**P**	**16 10 55.6**	**+1.1**
ZAK	comp=Z,27nm,1.1s			pmax	pmax		
TLY	**Talaya** comp=Z,18nm,0.7s,baz=141,slow=5.1,SNR=28	**39.02**	**320**	P	**P**	**16 10 59.2**	**+2.2**
TLY	**Talaya**	**39.02**	**320**	*e*P	**P**	**16 10 58.9**	**+2.0**
TLY	comp=Z,23nm,0.8s			pmax	pmax		
TLY	comp=Z,110nm,17.0s			MLR	MLR		
TLY	**Talaya** comp=Z,23nm,0.7s	**39.02**	**320**	*e*P	**P**	**16 10 57.9**	**+0.9**
KAPI	**Kappang** comp=Z,40nm,1.0s	**39.19**	**220**	*e*P	**P**	**16 10 58.0**	**-0.7**
CRAI	**Chiangrai** comp=Z,306nm,1.0s	**40.10**	**270**	P	**P**	**16 11 06.4**	**+0.1**
CHAI	**Chaiyaphum** comp=Z,7.4nm,1.0s	**40.15**	**263**	P	**P**	**16 11 07.1**	**+0.3**
MOY	**Mondy**	**40.54**	**319**	*e*P	**P**	**16 11 10.6**	**+0.9**
UTTA	**Uttaradit** comp=Z,3.3nm,0.8s	**40.75**	**266**	P	**P**	**16 11 12.1**	**+0.4**
PBKT	**Sadao Pong** comp=Z,23nm,1.0s	**40.80**	**265**	P	**P**	**16 11 12.3**	**+0.2**
STKI	**Sintang** comp=Z,16nm,1.5s,comp=Z,7μm	**40.81**	**235**	P	**P**	**16 11 12.6**	**+0.4**
SRAK	**Srakaew** comp=Z,77nm,0.9s,comp=Z,632nm	**40.86**	**260**	P	**P**	**16 11 09.1**	**-3.5**
CHBT	**CHBT** comp=Z,25nm,0.7s	**41.15**	**258**	P	**P**	**16 11 15.6**	**+0.6**
CMMT	**Chiang Mai** comp=Z,12nm,1.2s	**41.82**	**269**	P	**P**	**16 11 19.8**	**-0.7**
CHTO	**Chiang Mai** comp=Z,42nm,1.0s	**41.83**	**269**	P	**P**	**16 11 19.9**	**-0.6**
CHTO	**Chiang Mai** comp=Z,11nm,1.1s	**41.83**	**269**	*e*P	**P**	**16 11 19.7**	**-0.9**
CHTO				pmax	pmax		
CHTO	**Chiang Mai** comp=Z,11nm,1.1s	**41.83**	**269**	*e*P	**P**	**16 11 19.6**	**-0.9**
CM01	**Chiang Mai Arr**	**41.95**	**268**	*e*P	**P**	**16 11 20.2**	**-1.3**
CM31	**Chiang Mai Arr**	**41.95**	**268**	*e*P	**P**	**16 11 20.6**	**-0.9**
CMAR	**Chiang Mai Arr** comp=Z,5.2nm,0.9s,baz=58,slow=8.5,SNR=42	**41.95**	**268**	P	**P**	**16 11 21.1**	**-0.4**
CMAR	comp=Z,1.0nm,0.9s,baz=51,slow=2.5,SNR=4.7			PcP	**PcP**	**16 13 18.1**	**+1.3**
CMAR	comp=Z,47nm,18.9s,baz=195,slow=37			LR	LR	16 29 04.5	
SRDT	**SRDT** comp=Z,33nm,1.4s,comp=Z,6μm	**43.31**	**263**	P	**P**	**16 11 32.7**	**+0.1**
BILL	**Bilibino**	**43.46**	**12**	*e*P	**P**	**16 11 34.6**	**+1.4**
BILL				*e*		16 13 12.4	
BILL				*e*		16 13 23.1	
BILL	comp=Z,9.0nm,1.2s			pmax	pmax		
BILL	**Bilibino** comp=Z,3.9nm,0.7s	**43.46**	**12**	*e*P	**P**	**16 11 34.0**	**+0.8**

KHLT	**Khaolaem Dam**	**43.60**	**263**	P		**P**	**16**	**11**	**35.6**	**+0.7**
	comp=Z,4,8nm,1.7s									
MYKOM	**Kota Tinggi**	**45.57**	**244**	*e*P		**P**	**16**	**11**	**51.1**	**+0.4**
	comp=Z,21nm,1.1s									
TIXI	**Tiksi**	**45.66**	**353**	P		**P**	**16**	**11**	**51.0**	**+0.4**
	comp=Z,2.8nm,0.7s,baz=154,slow=4.3,SNR=11									
TIXI	**Tiksi**	**45.66**	**353**	*e*P		**P**	**16**	**11**	**49.6**	**-1.0**
TIXI				pmax	pmax					
	comp=Z,6.0nm,1.7s									
SURT	**Suratani**	**45.97**	**256**	P		**P**	**16**	**11**	**56.0**	**+2.2**
	comp=Z,3.2nm,1.4s									
IPM	**Ipoh**	**46.35**	**249**	*e*P		**P**	**16**	**11**	**56.4**	**-0.5**
	comp=Z,15nm,0.9s									
WRAB	**Tennant Creek**	**47.32**	**192**	*ce*P		**P**	**16**	**12**	**03.1**	**-1.1**
WRAB				pmax	pmax					
	comp=Z,44nm,1.2s									
WRAB	**Tennant Creek**	**47.32**	**192**	*e*P		**P**	**16**	**12**	**02.6**	**-1.6**
	comp=Z,18nm,0.9s									
WB2	**Warramunga Arr**	**47.33**	**192**	*e*P		**P**	**16**	**12**	**02.4**	**-1.8**
	comp=Z,19nm,0.9s									
WRA	**Warramunga Arr**	**47.33**	**192**	P		**P**	**16**	**12**	**02.8**	**-1.5**
	comp=Z,11nm,0.7s,baz=12,slow=8.5,SNR=58									
WMQ	**Urumqi**	**47.84**	**306**	P		**P**	**16**	**12**	**09.0**	**+0.8**
WMQ				pP	pP		16	12	11.8	-4.0
WMQ				sP	sP		16	12	13.8	-5.0
WMQ				PP	**PP**		**16**	**14**	**03.0**	**+3.0**
WMQ				S	**S**		**16**	**19**	**06.5**	**+2.8**
WMQ				pmax	pmax					
	comp=Z,5.0nm,0.8s									
WMQ				pmax	pmax					
	comp=Z,26nm,3.6s									
WMQ				LR	LR					
	comp=N,36nm,17.2s									
WMQ				LR	LR					
	comp=E,44nm,17.2s									
WMQ				LR	LR					
	comp=Z,30nm,17.2s									
FITZ	**Fitzroy Crossi**	**47.94**	**203**	*e*P		**P**	**16**	**12**	**08.3**	**-0.7**
	comp=Z,20nm,0.9s									
PSI	**Prapat**	**49.02**	**249**	*e*P		**P**	**16**	**12**	**17.3**	**-0.4**
PSI				pmax	pmax					
	comp=Z,21nm,0.8s									
PSI	**Prapat**	**49.02**	**249**	*e*P		**P**	**16**	**12**	**17.3**	**-0.4**
	comp=Z,21nm,0.8s									
ZAA0	**Zalesovo Array**	**50.59**	**319**	*e*P		**P**	**16**	**12**	**29.0**	**0.0**
ZALV	**Zalesovo Beam**	**50.59**	**319**	P		**P**	**16**	**12**	**29.1**	**+0.1**
	comp=Z,4.4nm,0.8s,baz=100,slow=6.2,SNR=14									
GUN	**Gumba**	**50.93**	**285**	*e*P		**P**	**16**	**12**	**32.7**	**+0.3**
	comp=Z,85nm,0.7s									
GSI	**Gunungsitoli**	**50.97**	**248**	*e*P		**P**	**16**	**12**	**30.6**	**-1.8**
	comp=Z,54nm,1.5s									
AS31	**Alice Springs**	**51.04**	**192**	*e*P		**P**	**16**	**12**	**30.4**	**-2.3**
	comp=Z,1.1nm,0.8s									
ASAR	**Alice Springs**	**51.04**	**192**	P		**P**	**16**	**12**	**30.8**	**-1.9**
	comp=Z,0.7nm,0.5s,baz=7.3,slow=7.3,SNR=24									
PKIN	**Phulchoki**	**51.42**	**285**	*e*P		**P**	**16**	**12**	**35.5**	**-0.5**
	comp=Z,9.3nm,0.6s									
KKN	**Kakani**	**51.48**	**285**	*e*P		**P**	**16**	**12**	**36.0**	**-0.3**
	comp=Z,26nm,0.7s									
NVS	**Novosibirsk**	**51.63**	**320**	*i* P		**P**	**16**	**12**	**37.3**	**+0.5**
DMN	**Daman**	**51.67**	**285**	*e*P		**P**	**16**	**12**	**37.5**	**-0.3**
	comp=Z,25nm,0.7s									
MK01	**Makanchi Array**	**51.69**	**310**	*e*P		**P**	**16**	**12**	**37.7**	**+0.3**
MK31	**Makanchi Array**	**51.70**	**310**	*e*P		**P**	**16**	**12**	**37.8**	**+0.3**
MK31				pmax	pmax					
	comp=Z,12nm,0.9s									
MK31	**Makanchi Array**	**51.70**	**310**	*e*P		**P**	**16**	**12**	**38.1**	**+0.6**
MKAR	**Makanchi Array**	**51.70**	**310**	P		**P**	**16**	**12**	**37.9**	**+0.5**
	comp=Z,8.2nm,0.6s,baz=91,slow=8.7,SNR=88									
MKAR				PcP		**PcP**	**16**	**13**	**50.5**	**-0.2**
	comp=Z,2.9nm,0.8s,baz=87,slow=5.5,SNR=3.9									
MKAR				LR	LR		16	35	19.2	
	comp=Z,70nm,18.4s,baz=119,slow=37									
MKAR	**Makanchi Array**	**51.70**	**310**	*i* P		**P**	**16**	**12**	**38.0**	**+0.5**
MKAR				pmax	pmax					
	comp=Z,8.0nm,0.6s									
MAKZ	**Makanchi**	**51.91**	**310**	P		**P**	**16**	**12**	**39.3**	**+0.2**
MAKZ				pmax	pmax					
	comp=Z,8.0nm,0.7s									
MAKZ	**Makanchi**	**51.91**	**310**	*e*P		**P**	**16**	**12**	**39.6**	**+0.5**
	comp=Z,10nm,0.8s									
GKN	**Gorkha**	**51.98**	**286**	*e*P		**P**	**16**	**12**	**39.7**	**-0.3**
	comp=Z,32nm,1.0s									
SVW2	**Sparrevohn**	**52.84**	**32**	*e*P		**P**	**16**	**12**	**47.0**	**+1.4**
	comp=Z,10nm,1.3s									
KOLN	**Koldanda**	**52.93**	**286**	*e*P		**P**	**16**	**12**	**46.8**	**-0.3**
	comp=Z,34nm,0.8s									
PYUN	**Piuthan**	**53.37**	**286**	*e*P		**P**	**16**	**12**	**50.4**	**0.0**
	comp=Z,36nm,0.6s									
NRIK	**Noril'sk**	**53.42**	**338**	P		**P**	**16**	**12**	**50.5**	**+0.7**
	comp=Z,8.5nm,0.8s,baz=108,slow=8.5,SNR=20									
NRIK				LR	LR		16	35	06.3	
	comp=Z,46nm,21.9s,baz=130,slow=35									
KDAK	**Kodiak Island**	**53.81**	**37**	P		P	16	13	08.0	+15
	comp=Z,9.5nm,0.7s,baz=272,slow=5.0,SNR=16									
KDAK	**Kodiak Island**	**53.81**	**37**	*i* P		**P**	**16**	**12**	**53.2**	**+0.4**
KDAK	**Kodiak Island**	**53.81**	**37**	*e*P		**P**	**16**	**12**	**55.0**	**+2.2**
	comp=Z,15nm,0.8s									
PDGK	**Podgornoye**	**53.81**	**306**	P		**P**	**16**	**12**	**52.4**	**-0.7**
PDGK				pmax	pmax					
	comp=Z,9.0nm,1.2s									
KURK	**Kurchatov**	**54.15**	**315**	*e*P		**P**	**16**	**12**	**55.8**	**+0.4**
KURK				pmax	pmax					
	comp=Z,41nm,0.9s									
KURK	**Kurchatov**	**54.15**	**315**	*e*P		**P**	**16**	**12**	**55.8**	**+0.4**
	comp=Z,41nm,0.9s									
CAST	**Castle Rocks**	**54.89**	**30**	*e*P		**P**	**16**	**13**	**01.5**	**+0.8**
	comp=Z,8.1nm,0.9s									
BRLK	**Bradley Lake**	**54.92**	**34**	*e*P		**P**	**16**	**13**	**03.1**	**+2.1**
	comp=Z,29nm,1.7s									
KTH	**Kantishna Hill**	**55.42**	**30**	*e*P		**P**	**16**	**13**	**07.1**	**+2.5**
BPAW	**Bear Paw Mtn.**	**55.49**	**29**	*e*P		**P**	**16**	**13**	**06.0**	**+1.1**
	comp=Z,17nm,1.7s									
TRF	**Thorofare Moun**	**55.69**	**30**	*e*P		**P**	**16**	**13**	**06.9**	**+0.3**
	comp=Z,4.7nm,0.8s									
MLY	**Manley**	**55.75**	**28**	*e*P		**P**	**16**	**13**	**07.9**	**+1.0**
	comp=Z,4.5nm,0.9s									
PMR	**Palmer**	**55.98**	**32**	*e*P		**P**	**16**	**13**	**08.5**	**0.0**
PMR				pmax	pmax					
	comp=Z,7.0nm,0.6s									
PMR	**Palmer**	**55.98**	**32**	*e*P		**P**	**16**	**13**	**08.5**	**0.0**
	comp=Z,7.1nm,0.6s									
RND	**Reindeer**	**56.32**	**30**	*e*P		**P**	**16**	**13**	**10.7**	**-0.3**
RND				pmax	pmax					
	comp=Z,6.0nm,0.8s									
RND	**Reindeer**	**56.32**	**30**	*e*P		**P**	**16**	**13**	**10.7**	**-0.3**
	comp=Z,6.4nm,0.8s									
MCK	**McKinley**	**56.33**	**30**	*e*P		**P**	**16**	**13**	**11.2**	**+0.2**
MCK				pmax	pmax					
	comp=Z,7.0nm,1.0s									
MCK	**McKinley**	**56.33**	**30**	*e*P		**P**	**16**	**13**	**11.2**	**+0.2**
	comp=Z,6.6nm,1.0s									
COLD	**Coldfoot**	**56.37**	**25**	*e*P		**P**	**16**	**13**	**11.4**	**+0.2**
	comp=Z,6.3nm,0.9s									
SML	**Sawmill**	**56.38**	**32**	*e*P		**P**	**16**	**13**	**11.4**	**0.0**
SML				pmax	pmax					
	comp=Z,9.0nm,0.8s									
SML	**Sawmill**	**56.38**	**32**	*e*P		**P**	**16**	**13**	**11.4**	**0.0**
	comp=Z,8.8nm,0.8s									
TKM2	**Tokmak 2**	**56.68**	**305**	*e*P		**P**	**16**	**13**	**13.7**	**-0.4**
TKM2				pmax	pmax					
	comp=Z,9.0nm,0.9s									
TKM2	**Tokmak 2**	**56.68**	**305**	*e*P		**P**	**16**	**13**	**13.7**	**-0.4**
	comp=Z,9.2nm,0.9s									
SCM	**Sheep Creek Mo**	**56.86**	**32**	*e*P		**P**	**16**	**13**	**15.2**	**+0.3**
SCM				pmax	pmax					
	comp=Z,14nm,0.8s									
SCM	**Sheep Creek Mo**	**56.86**	**32**	*e*P		**P**	**16**	**13**	**15.2**	**+0.3**
	comp=Z,14nm,0.8s									
KSH	**Kashi**	**56.88**	**301**	P		**P**	**16**	**13**	**19.3**	**+3.8**
KSH				*e*pP		pP	16	13	24.0	+0.8
KSH				*e*sP		sP	16	13	26.3	+0.1
KSH				PcS		**PcS**	**16**	**18**	**13.0**	**+1.2**
KSH				S		**S**	**16**	**21**	**12.5**	**+4.7**
KSH				ScS		**ScS**	**16**	**23**	**04.5**	**+1.0**
KSH	**Kashi**	**56.88**	**301**	SS		**SS**	**16**	**25**	**02.3**	**+6.3**
KSH				pmax	pmax					
	comp=Z,11nm,0.7s									
KSH				pmax	pmax					
	comp=Z,110nm,3.7s									
KSH				LR	LR					
	comp=N,60nm,5.0s									
KSH				LR	LR					
	comp=E,120nm,5.1s									
KSH				LR	LR					
	comp=Z,130nm,5.3s									
IL1	**Eielson Array**	**57.34**	**28**	*e*P		**P**	**16**	**13**	**16.9**	**-1.2**
ILAR	**Eielson Array**	**57.34**	**28**	P		**P**	**16**	**13**	**17.6**	**-0.5**
	comp=Z,3.2nm,0.8s,baz=258,slow=6.2,SNR=14									
ILB	**Eielson Array**	**57.34**	**28**	*e*P		**P**	**16**	**13**	**17.0**	**-1.1**
FRU	**Bishkek**	**57.41**	**305**	*i* P		**P**	**16**	**13**	**19.0**	**0.0**
FRU				pmax	pmax					
	comp=Z,27nm,1.6s									
KLU	**Klutina**	**57.51**	**32**	*e*P		**P**	**16**	**13**	**19.5**	**+0.1**
	comp=Z,8.4nm,0.7s									
AAK	**Ala-Archa**	**57.53**	**305**	*i* P		**P**	**16**	**13**	**19.3**	**-0.7**
AAK				pmax	pmax					
	comp=Z,16nm,0.9s									
AAK	**Ala-Archa**	**57.53**	**305**	*e*P		**P**	**16**	**13**	**20.0**	**-0.1**
	comp=Z,8.2nm,1.0s									
PAX	**Paxson**	**57.81**	**31**	*e*P		**P**	**16**	**13**	**21.8**	**+0.2**
PAX				pmax	pmax					
	comp=Z,22nm,1.6s									
PAX	**Paxson**	**57.81**	**31**	*e*P		**P**	**16**	**13**	**21.8**	**+0.2**
	comp=Z,22nm,1.6s									
EKS2	**Erkin-Say**	**58.05**	**305**	*e*P		**P**	**16**	**13**	**23.9**	**+0.3**
EKS2				pmax	pmax					
	comp=Z,8.0nm,0.9s									
EKS2	**Erkin-Say**	**58.05**	**305**	*e*P		**P**	**16**	**13**	**23.9**	**+0.3**
	comp=Z,7.7nm,0.9s									
RAGM	**Ragged Mountai**	**58.07**	**34**	*e*P		**P**	**16**	**13**	**24.1**	**+0.7**
	comp=Z,25nm,1.3s									
BMRM	**Bremner River**	**58.12**	**33**	*e*P		**P**	**16**	**13**	**24.5**	**+0.7**
	comp=Z,68nm,2.0s									
STKA	**Stephens Creek**	**58.37**	**182**	P		**P**	**16**	**13**	**23.7**	**-1.9**
	comp=Z,24nm,0.8s,baz=17,slow=6.8,SNR=5.2									
DOT	**Dot Lake**	**58.48**	**30**	*e*P		**P**	**16**	**13**	**26.1**	**-0.1**
	comp=Z,15nm,1.0s									
VOSK	**Vostochnaya**	**58.84**	**317**	*e*P		**P**	**16**	**13**	**29.3**	**+0.5**
VOSK				pmax	pmax					
	comp=Z,36nm,1.8s									
VOSK	**Vostochnaya**	**58.84**	**317**	*e*P		**P**	**16**	**13**	**29.3**	**+0.5**
	comp=Z,36nm,1.8s									
MNAS	**Manas**	**59.00**	**305**	P		**P**	**16**	**13**	**30.9**	**+0.6**
MNAS				pmax	pmax					
	comp=Z,7.0nm,1.1s									
BVA0	**Borovoye Array**	**59.17**	**318**	*i* P		**P**	**16**	**13**	**31.4**	**+0.3**
BVA0				pmax	pmax					
	comp=Z,14nm,1.3s									
BRVK	**Borovoye**	**59.23**	**318**	*de*P		**P**	**16**	**13**	**31.8**	**+0.3**
BRVK				pmax	pmax					
	comp=Z,11nm,1.0s									
BRVK	**Borovoye**	**59.23**	**318**	*e*P		**P**	**16**	**13**	**30.1**	**-1.4**
	comp=Z,28nm,1.6s									
ZRNK	**Zerenda**	**60.01**	**318**	*e*P		**P**	**16**	**13**	**37.0**	**+0.1**
ZRNK				pmax	pmax					
	comp=Z,27nm,1.8s									
ZRNK	**Zerenda**	**60.01**	**318**	*e*P		**P**	**16**	**13**	**37.0**	**+0.1**
	comp=Z,27nm,1.8s									
KK31	**Karatay Array**	**60.34**	**306**	*i* P		**P**	**16**	**13**	**39.7**	**+0.3**
KK31				pmax	pmax					
	comp=Z,24nm,0.7s									
KKAR	**Karatay Array**	**60.34**	**306**	*e*P		**P**	**16**	**13**	**40.1**	**+0.7**
KKAR	**Karatay Array**	**60.34**	**306**	*e*P		**P**	**16**	**13**	**40.1**	**+0.7**
INK	**Inuvik**	**62.75**	**25**	P		**P**	**16**	**13**	**56.0**	**+0.8**
	comp=Z,2.8nm,0.8s,baz=267,slow=5.3,SNR=11									
INK	**Inuvik**	**62.75**	**25**	*e*P		**P**	**16**	**13**	**54.9**	**-0.2**
INK				pmax	pmax					
	comp=Z,3.0nm,0.9s									
INK	**Inuvik**	**62.75**	**25**	*e*P		**P**	**16**	**13**	**54.9**	**-0.2**
	comp=Z,3.5nm,0.9s									
KBL	**Kabul**	**63.35**	**297**	*e*P		**P**	**16**	**14**	**00.1**	**+0.1**
KBL				pmax	pmax					
	comp=Z,11nm,0.8s									
KBL	**Kabul**	**63.35**	**297**	*e*P		**P**	**16**	**14**	**00.1**	**+0.1**
	comp=Z,11nm,0.8s									
SVE	**Sverdlovsk**	**64.28**	**323**	*e*P		**P**	**16**	**14**	**06.8**	**+1.4**
SVE				pmax	pmax					
	comp=Z,16nm,1.0s									
ARU	**Arti**	**65.48**	**323**	*d* P		**P**	**16**	**14**	**13.5**	**+0.2**
ARU							16	14	42.1	
ARU				S		**S**	**16**	**22**	**58.7**	**+2.3**
ARU							16	23	58.9	
ARU				SS		**SS**	**16**	**27**	**10.4**	**+0.8**
ARU				pmax	pmax					
	comp=Z,24nm,1.2s									
ARU	**Arti**	**65.48**	**323**	*e*P		**P**	**16**	**14**	**13.4**	**+0.1**
	comp=Z,21nm,1.1s									
DLBC	**Dease Lake**	**65.69**	**35**	*e*P		**P**	**16**	**14**	**16.0**	**+1.3**
	comp=Z,10nm,1.3s									
AB31	**Akbulak array**	**66.26**	**315**	P		**P**	**16**	**14**	**18.2**	**-0.2**
AB31				pmax	pmax					
	comp=Z,10.0nm,0.8s									
ABKAR	**Akbulak array**	**66.26**	**315**	*e*P		**P**	**16**	**14**	**18.1**	**-0.4**
AKTO	**Aktyubinsk**	**67.18**	**316**	P		**P**	**16**	**14**	**24.0**	**-0.3**
AKTO				pmax	pmax					
	comp=Z,5.0nm,0.7s									
GEYT	**Alibeck**	**70.79**	**303**	P		**P**	**16**	**14**	**47.9**	**+0.9**
	comp=Z,7.9nm,0.9s,baz=46,slow=4.3,SNR=19									
YKA	**Yellowknife Ar**	**71.77**	**29**	P		**P**	**16**	**14**	**52.5**	**+0.1**
	comp=Z,1.9nm,0.7s,baz=293,slow=5.8,SNR=27									
YKB5	**Yellowknife Ar**	**71.77**	**29**	*e*P		**P**	**16**	**14**	**51.3**	**-1.1**
RES	**Resolute Bay**	**72.04**	**14**	P		**P**	**16**	**14**	**55.8**	**+1.9**
	comp=Z,1.9nm,0.8s,baz=321,slow=5.3,SNR=9.2									
RES	**Resolute Bay**	**72.04**	**14**	*e*P		**P**	**16**	**14**	**54.0**	**+0.2**
RES				pmax	pmax					
	comp=Z,3.0nm,0.9s									
RES	**Resolute Bay**	**72.04**	**14**	*e*P		**P**	**16**	**14**	**54.0**	**+0.2**
	comp=Z,3.0nm,0.9s									
KLMR	**Klimovskoe**	**73.51**	**330**	*e*P		**P**	**16**	**15**	**01.2**	**-1.6**
KLMR				pmax	pmax					
	comp=Z,14nm,1.1s									
ARCES	**ARCESS Array B**	**74.26**	**341**	P		**P**	**16**	**15**	**09.8**	**+2.7**
	comp=Z,11nm,1.1s,baz=60,slow=7.2,SNR=4.4									
HSO	**Harness Mounta**	**74.28**	**49**	*e*P		**P**	**16**	**15**	**05.9**	**-1.8**
HSO	**Harness Mounta**	**74.28**	**49**	*e*P		**P**	**16**	**15**	**05.9**	**-1.8**
NEW	**Newport**	**76.23**	**43**	*e*P		**P**	**16**	**15**	**19.1**	**+0.3**
NEW				pmax	pmax					
	comp=Z,6.0nm,0.9s									
NEW	**Newport**	**76.23**	**43**	*e*P		**P**	**16**	**15**	**19.1**	**+0.3**
	comp=Z,6.3nm,0.9s									
VRH	**Novokhopyorsk**	**76.59**	**321**	*e*P		**P**	**16**	**15**	**19.4**	**-1.3**
VRH				pmax	pmax					
	comp=Z,7.0nm,0.9s									
UOSS	**Minazif**	**77.07**	**291**	*e*P		**P**	**16**	**15**	**23.8**	**-0.1**
	comp=Z,1.2nm,1.0s									
LPSR	**Galich'ya Gora**	**77.50**	**323**	*e*P		**P**	**16**	**15**	**24.9**	**-0.9**
LPSR				pmax	pmax					
	comp=Z,10.0nm,1.1s									
OBN	**Obninsk**	**77.54**	**326**	*e*P		**P**	**16**	**15**	**25.6**	**-0.3**
OBN				*e*			16	15	39.2	
OBN				pmax	pmax					
	comp=Z,42nm,2.5s									
WALA	**Waterton Lakes**	**77.80**	**41**	*e*P		**P**	**16**	**15**	**26.9**	**-0.9**
	comp=Z,28nm,1.8s									
JTMT	**Jette**	**78.17**	**42**	*e*P		**P**	**16**	**15**	**30.1**	**+0.3**
SWMT	**Swartz Lake**	**78.45**	**43**	*e*P		**P**	**16**	**15**	**33.1**	**+1.8**
FINES	**FINESS Array B**	**78.81**	**334**	P		**P**	**16**	**15**	**33.2**	**+0.3**
	comp=Z,1.7nm,0.5s,baz=63,slow=4.9,SNR=16									
ZEI	**Tsey**	**78.95**	**312**	*e*P		**P**	**16**	**15**	**32.6**	**-1.7**
ZEI				pmax	pmax					
	comp=Z,13nm,0.8s									
MFID	**Camas Ranch**	**79.14**	**47**	*e*P		**P**	**16**	**15**	**33.4**	**-1.9**
	comp=Z,7.5nm,1.1s									
KBZ	**Khabaz**	**79.19**	**314**	P		**P**	**16**	**15**	**36.5**	**+1.1**
	comp=Z,11nm,1.0s,baz=86,slow=3.7,SNR=26									
KIV	**Kislovodsk**	**79.22**	**314**	*e*P		**P**	**16**	**15**	**37.0**	**+1.3**
KIV				*e*			16	15	41.8	
KIV				pmax	pmax					
	comp=Z,6.0nm,1.0s									
NEY	**Neytrino**	**79.52**	**313**	*e*P		**P**	**16**	**15**	**38.1**	**+0.7**
GNI	**Garni**	**79.55**	**310**	*ce*P		**P**	**16**	**15**	**39.7**	**+2.1**
GNI				pmax	pmax					
	comp=Z,22nm,1.3s									
NV01	**Mina Array Sit**	**79.65**	**52**	*e*P		**P**	**16**	**15**	**37.6**	**-0.7**
NVAR	**Mina Array Bea**	**79.65**	**52**	P		**P**	**16**	**15**	**38.7**	**+0.4**
	comp=Z,1.5nm,0.7s,baz=280,slow=5.1,SNR=9.8									
NVAR				LR	LR		16	44	59.8	
	comp=Z,60nm,19.3s,baz=261,slow=31									
LRM	**Limekiln Ridge**	**80.17**	**44**	*e*P		**P**	**16**	**15**	**42.0**	**+1.0**
VSU	**Vasula**	**80.30**	**332**	*e*P		**P**	**16**	**15**	**42.6**	**+1.6**
VSU				pmax	pmax					
	comp=Z,34nm,1.2s									
FFC	**Flin Flon**	**81.29**	**32**	*e*P		**P**	**16**	**15**	**46.5**	**+0.1**
FFC				pmax	pmax					
	comp=Z,8.0nm,0.8s									
FFC	**Flin Flon**	**81.29**	**32**	*e*P		**P**	**16**	**15**	**46.5**	**+0.1**
	comp=Z,7.6nm,0.8s									
R11A	**Troy Canyon, C**	**81.60**	**51**	*e*P		**P**	**16**	**15**	**48.8**	**+0.2**
	comp=Z,5.2nm,1.5s									
IMW	**Indian Meadow**	**82.05**	**45**	*e*P		**P**	**16**	**15**	**50.0**	**-1.0**
	comp=Z,3.7nm,0.8s									
FLWY	**Flagg Ranch**	**82.11**	**44**	*e*P		**P**	**16**	**15**	**51.4**	**+0.2**
	comp=Z,5.7nm,1.0s									
ANN	**Anapa**	**82.14**	**316**	*e*P		**P**	**16**	**15**	**51.6**	**+0.5**
ANN				pmax	pmax					
	comp=Z,24nm,1.3s									
RLMT	**Red Lodge**	**82.47**	**43**	*e*P		**P**	**16**	**15**	**53.0**	**-0.2**
	comp=Z,3.8nm,0.8s									
PDAR	**Pinedale Array**	**83.48**	**45**	P		**P**	**16**	**15**	**58.7**	**+0.2**
	comp=Z,0.7nm,0.7s,baz=300,slow=1.6,SNR=7.7									
PDAR				LR	LR		16	46	39.2	
	comp=Z,76nm,21.7s,baz=312,slow=31									
AKASG	**Malin Array Be**	**83.65**	**324**	P		**P**	**16**	**15**	**58.3**	**-0.5**
	comp=Z,5.3nm,0.8s,baz=48,slow=5.5,SNR=31									
KIEV	**Kiev**	**83.66**	**324**	*e*P		**P**	**16**	**15**	**58.2**	**-0.7**
KIEV				pmax	pmax					
	comp=Z,7.0nm,0.9s									
KIEV	**Kiev**	**83.66**	**324**	*e*P		**P**	**16**	**15**	**56.8**	**-2.1**
	comp=Z,7.4nm,0.8s									
AK11	**Malin Array Si**	**83.69**	**324**	*e*P		**P**	**16**	**15**	**58.1**	**-0.9**
NB2	**NORSAR Subarra**	**84.38**	**339**	P		**P**	**16**	**16**	**02.0**	**-0.4**
	comp=Z,1.3nm,0.7s,baz=41,slow=5.1									
NOA	**NORSAR Array B**	**84.38**	**339**	P		**P**	**16**	**16**	**02.0**	**-0.4**
	comp=Z,3.6nm,0.9s,baz=41,slow=5.0,SNR=7.4									
SUW	**Suwalki**	**84.60**	**329**	*e*P		**P**	**16**	**16**	**03.5**	**-0.1**
BRTR	**Keskin Array B**	**87.19**	**313**	P		**P**	**16**	**16**	**16.4**	**-0.6**
	comp=Z,1.9nm,0.8s,baz=86,slow=2.7,SNR=11									
BRTR				PP		**PP**	**16**	**19**	**41.1**	**+0.8**
	comp=Z,0.6nm,0.7s,baz=57,slow=7.8,SNR=3.7									
BRTR	**Keskin Array B**	**87.19**	**313**	*i* P		**P**	**16**	**16**	**16.3**	**-0.6**
BRTR				pmax	pmax					
	comp=Z,3.0nm,0.9s									
KWP	**Kalwaria Pacla**	**87.62**	**326**	*e*P		**P**	**16**	**16**	**18.9**	**+0.3**
BR231	**Keskin MP Arra**	**87.68**	**314**	*e*P		**P**	**16**	**16**	**16.8**	**-2.4**
KOLS	**Kolonicke sedl**	**88.29**	**326**	*e*P		**P**	**16**	**23**	**1.1**	**+1.3**
STHS	**Stebnicka Huta**	**88.49**	**327**	*e*P		**P**	**16**	**23**	**5.5**	**+0.7**
CRVS	**Cervenica-Dubn**	**88.72**	**326**	*e*P		**P**	**16**	**24**	**2.2**	**+0.3**
DPC	**Dobruska-Polom**	**90.19**	**329**	*e*P		**P**	**16**	**30**	**7.0**	**-0.1**
DPC	**Dobruska-Polom**	**90.19**	**329**	*e*P		**P**	**16**	**30**	**7.0**	**-0.1**
VYHS	**Vyhne**	**90.29**	**327**	*e*P		**P**	**16**	**31**	**4.0**	**+0.2**
GERES	**GERESS Array B**	**92.46**	**330**	P		**P**	**16**	**39**	**9.9**	**-1.5**
	comp=Z,0.8nm,0.7s,baz=71,slow=5.8,SNR=6.7									
GEA0	**GERESS Array S**	**92.46**	**330**	*e*P		**P**	**16**	**39**	**3.3**	**-2.1**
TX31	**Lajitas Ar. Si**	**94.71**	**54**	*e*P		**P**	**16**	**52**	**2.2**	**+0.1**
TXAR	**Lajitas Array**	**94.71**	**54**	P		**P**	**16**	**53**	**2.2**	**+1.1**
	comp=Z,1.3nm,0.9s,baz=292,slow=2.8,SNR=7.6									
TORD	**Torodi Ar. Bea**	**125.78**	**312**	PKP		**PKPdf**	**16**	**22**	**32.2**	**-0.5**
	comp=Z,0.5nm,0.6s,baz=47,slow=1.8,SNR=3.7									
TORD				PP		**PP**	**16**	**24**	**24.5**	**0.0**
	comp=Z,0.5nm,0.8s,baz=46,slow=4.8,SNR=3.8									
SNAA	**Sanae**	**131.39**	**193**	PKP		**PKPdf**	**16**	**22**	**42.0**	**+0.2**
VNA2	**Neumayer--Watz**	**132.89**	**193**	PKP		**PKPdf**	**16**	**22**	**43.8**	**-0.9**
	baz=255,slow=0.7									
VNA3	**Neumayer Olymp**	**133.05**	**191**	PKP		**PKPdf**	**16**	**22**	**44.1**	**-0.8**
VNA1	**Neumayer--Stat**	**133.28**	**192**	PKP		**P

PLCA	**Paso Flores**	**20.34**	**184**	*e*P		**P**	**16 18 28.7**	**+0.8**
	comp=Z,16nm,1.1s							
PTGA	**Pitinga**	**21.36**	**25**	P		**P**	**16 18 38.3**	**-0.8**
	comp=Z,2.5nm,0.3s,baz=19,slow=23,SNR=5.0							
OTAV	**Otavalo**	**22.55**	**334**	*e*P		**P**	**16 18 54.2**	**+2.2**
	comp=Z,6.5nm,0.8s							
CMBC	**Cumbal**	**22.95**	**336**	*e*P		P	16 19 08.4	+13
RUSC	**La Rusia**	**26.44**	**350**	*e*P		**P**	**16 19 28.8**	**+1.3**
BARC	**Barichara**	**27.14**	**350**	*e*P		**P**	**16 19 34.2**	**+0.7**
CBRI	**Barrientos, No**	**28.19**	**352**	*e*P		P	16 19 47.7	+4.9
GRMC	**Gramalote, San**	**28.20**	**352**	*e*P		P	16 19 50.4	+7.5
TXAR	**Lajitas Array**	**59.76**	**325**	P		P	**16 23 53.7**	**-0.1**
	comp=Z,0.3nm,0.6s,baz=143,slow=9.0,SNR=3.6							
TXAR				pP		**pP**	**16 24 25.3**	**+3.0**
	comp=Z,0.4nm,0.7s,baz=126,slow=6.4,SNR=3.2							
SDCO	**Great Sand Dun**	**67.33**	**329**	*e*P		**P**	**16 24 44.5**	**+0.8**
	comp=Z,9.0nm,1.4s							
DBIC	**Dimbokro**	**68.34**	**74**	P		**P**	**16 24 49.1**	**-1.0**
	comp=Z,6.1nm,1.2s,baz=213,slow=6.6,SNR=4.5							
SMCO	**Snowmass**	**69.17**	**329**	*e*P		**P**	**16 24 56.6**	**+1.3**
	comp=Z,2.6nm,0.7s							
QSPA	**South Pole Qui**	**69.81**	**180**	*e*P		**P**	**16 25 00.1**	**+1.6**
KNB	**Kanab**	**70.57**	**324**	*e*P		**P**	**16 25 05.8**	**+2.2**
	comp=Z,11nm,1.1s							
MTPU	**Mount Pierson**	**70.97**	**325**	*e*P		**P**	**16 25 07.8**	**+1.6**
	comp=Z,16nm,1.9s							
MSU	**Marysvale**	**71.31**	**325**	*e*P		**P**	**16 25 09.6**	**+1.6**
PSUT	**Pine Spring**	**72.23**	**324**	*e*P		**P**	**16 25 15.5**	**+1.9**
	comp=Z,3.0nm,0.8s							
TPNV	**Topopah Spring**	**72.47**	**322**	*e*P		**P**	**16 25 16.9**	**+2.0**
	comp=Z,3.9nm,1.0s							
DUG	**Dugway, Tooele**	**72.88**	**326**	*e*P		**P**	**16 25 18.6**	**+1.4**
	comp=Z,4.4nm,1.1s							
R11A	**Troy Canyon, C**	**73.06**	**323**	*e*P		**P**	**16 25 20.4**	**+2.0**
	comp=Z,1.9nm,0.9s							
PDAR	**Pinedale Array**	**73.19**	**330**	P		**P**	**16 25 19.5**	**+0.4**
	comp=Z,0.4nm,0.6s,baz=125,slow=6.0,SNR=4.4							
BGU	**Big Grassy Mou**	**73.52**	**327**	*e*P		**P**	**16 25 22.3**	**+1.3**
	comp=Z,4.3nm,1.1s							
ULM	**Lac du Bonnet**	**74.28**	**342**	P		**P**	**16 25 24.6**	**-0.4**
	comp=Z,3.0nm,0.5s,baz=178,slow=9.4,SNR=3.9							
NVAR	**Mina Array Bea**	**74.67**	**322**	P		**P**	**16 25 29.1**	**+1.2**
	comp=Z,0.9nm,0.7s,baz=145,slow=6.5,SNR=5.5							
IMW	**Indian Meadow**	**74.70**	**330**	*e*P		**P**	**16 25 29.3**	**+1.3**
	comp=Z,6.3nm,1.0s							
FLWY	**Flagg Ranch**	**74.73**	**330**	*e*P		**P**	**16 25 29.9**	**+1.9**
	comp=Z,8.9nm,0.7s							
RLMT	**Red Lodge**	**74.87**	**332**	*e*P		**P**	**16 25 30.0**	**+1.1**
	comp=Z,4.6nm,0.8s							
H17A	**Grant Village**	**74.91**	**330**	*e*P		**P**	**16 25 31.4**	**+2.2**
	comp=Z,2.0nm,0.6s							
HLID	**Hailey**	**76.14**	**328**	*e*P		**P**	**16 25 38.0**	**+1.9**
	comp=Z,4.7nm,0.8s							
MCMT	**McKenzie Canyo**	**76.30**	**329**	*e*P		**P**	**16 25 39.0**	**+1.9**
TOA0	**Torodi Ar. Sit**	**76.91**	**71**	*e*P		**P**	**16 25 39.4**	**-1.5**
TOA0				*e*pP		**pP**	**16 26 09.2**	**-1.4**
TORD	**Torodi Ar. Bea**	**76.91**	**71**	P		**P**	**16 25 39.3**	**-1.5**
	comp=Z,1.1nm,0.3s,baz=251,slow=5.6,SNR=18							
TORD				pP		**pP**	**16 26 09.7**	**-0.9**
	comp=Z,2.3nm,0.6s,baz=249,slow=5.6,SNR=7.3							
BMO	**Blue Mountains**	**78.52**	**327**	*e*P		**P**	**16 25 50.4**	**+1.1**
	comp=Z,5.7nm,0.9s							
BMO				*e*pP		**pP**	**16 26 15.5**	**-3.7**
WALA	**Waterton Lakes**	**79.93**	**332**	*e*P		**P**	**16 25 57.8**	**+0.9**
	comp=Z,4.3nm,0.8s							
FCC	**Fort Churchill**	**81.56**	**347**	*e*P		**P**	**16 26 05.5**	**+0.4**
	comp=Z,5.6nm,0.6s							
YKA	**Yellowknife Ar**	**90.16**	**341**	P		**P**	**16 26 47.9**	**+0.5**
	comp=Z,4.2nm,0.6s,baz=132,slow=4.6,SNR=118							
YKA				pP		**pP**	**16 27 19.0**	**+1.0**
	comp=Z,1.0nm,0.6s,baz=134,slow=4.8,SNR=4.0							
YKA				sP		**sP**	**16 27 32.2**	**+1.8**
	comp=Z,3.1nm,0.8s,baz=134,slow=4.7,SNR=6.2							
YKB5	**Yellowknife Ar**	**90.16**	**341**	*e*P		**P**	**16 26 47.5**	**0.0**
YKW3	**Yellowknife Ar**	**90.22**	**341**	*e*P		**P**	**16 26 47.9**	**+0.2**
	comp=Z,10nm,1.0s							
ASAR	**Alice Springs**	**130.94**	**208**	PKP		**PKPdf**	**16 32 59.8**	**+0.4**
	comp=Z,0.5nm,0.5s,baz=146,slow=1.4,SNR=21							
PETK	**Petropavlovsk-**	**131.71**	**324**	PKP		**PKPdf**	**16 33 01.2**	**+1.4**
	comp=Z,2.1nm,0.9s,baz=143,slow=22,SNR=3.9							
WRA	**Warramunga Arr**	**133.95**	**211**	PKP		**PKPdf**	**16 33 05.7**	**+0.5**
	comp=Z,0.9nm,0.7s,baz=158,slow=1.7,SNR=11							
ZALV	**Zalesovo Beam**	**140.91**	**25**	PKhKP		PKPpre	16 33 13.3	
	comp=Z,1.2nm,0.6s,baz=339,slow=3.6,SNR=4.2							
ZALV				PKP		**PKiKP**	**16 33 17.6**	**-1.8**
	comp=Z,1.3nm,0.6s,baz=295,slow=2.7,SNR=4.0							
ZALV				pPKP		pPKPdf	16 33 50.5	+1.7
	comp=Z,0.4nm,0.4s,baz=285,slow=5.5,SNR=1.8							
MKAR	**Makanchi Array**	**144.68**	**35**	PKP		**PKPdf**	**16 33 23.1**	**-0.7**
	comp=Z,1.1nm,0.6s,baz=324,slow=3.5,SNR=17							
WMQ	**Urumqi**	**149.51**	**35**	*e*P		**PKPdf**	**16 33 31.8**	**-0.2**
WMQ				LR		LR		
	comp=N,20nm,15.8s							
WMQ				LR		LR		
	comp=E,16nm,15.8s							
WMQ				LR		LR		
	comp=Z,17nm,17.8s							
USRK	**Ussuriysk Ar.**	**150.61**	**329**	PKPbc		**PKPbc**	**16 33 40.0**	**+0.9**
	comp=Z,3.3nm,0.7s,baz=63,slow=1.5,SNR=7.0							
SONM	**Songino Array**	**152.34**	**7**	PKP		**PKPdf**	**16 33 37.2**	**+0.9**
	comp=Z,0.4nm,0.5s,baz=121,slow=0.8,SNR=3.8							
SONM				PKPbc		**PKiKP**	**16 33 43.8**	**+0.4**
	comp=Z,1.5nm,0.4s,baz=343,slow=1.2,SNR=9.6							
SONM				pPKPbc		**pPKPbc**	**16 34 15.2**	**+0.2**
	comp=Z,0.5nm,0.5s,baz=65,slow=2.2,SNR=2.5							
CD2	**Chengdu**	**167.57**	**31**	PKP		**PKPdf**	**16 33 52.8**	**-0.9**
CMAR	**Chiang Mai Arr**	**168.30**	**97**	PKP		**PKPdf**	**16 33 55.5**	**+1.0**
	comp=Z,0.2nm,0.5s,baz=247,slow=1.9,SNR=4.4							

MEX 27 16:27:37.5±0.3, 14°.84N×93°.47W, h30km±25km, MD3.5, Near coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PCIG		**0.89**	**16**	*i* P	Pn	16 27 51.6	-2.3
PCIG				*e*S	Sn	16 28 02.6	-3.2
CCIG	**Comitan**	**1.92**	**42**	*i* P	Pn	16 28 06.4	-2.0
CCIG				*e*S	Sn	16 28 29.5	-2.1

*FUNV **27** 16:43:31.7, 8°.67N×73°.25W, h132km, MW2.4*
*RSNC **27** 16:43:32.4±0.6, 8°.55N×73°.21W, h133km±5km, ML2.5*
ISC 27 16:43:30.0±2.3, 8°.60N±0°.09×73°.17W±0°.10, h143km±15km, n11, σ1°20/21, Northern Colombia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OCAC	**Ocana**	**0.39**	**202**	*e*P	**Pn**	**16 43 50.7**	**+0.5**
OCAC				*e*S	**Sn**	**16 44 04.8**	**-0.8**
OCAC				*i*		16 44 08.2	
	comp=Z,84nm,0.5s						
GRMC	**Gramalote, San**	**0.95**	**158**	*e*P	**Pn**	**16 43 53.4**	**-0.5**
GRMC				*e*S	**Sn**	**16 44 09.8**	**-2.2**
GRMC				*i*		16 44 10.9	
	comp=Z,97nm,0.3s						
CBRI	**Barrientos, No**	**0.95**	**157**	*e*P	**Pn**	**16 43 54.9**	**+1.0**
CBRI				*e*S	**Sn**	**16 44 12.3**	**+0.2**
CBRI				*i*		16 44 15.5	
	comp=Z,40nm,0.2s						
PAMC	**Pamplona, Colo**	**1.34**	**160**	*e*P	**Pn**	**16 43 58.7**	**+0.9**
PAMC				*e*S	**Sn**	**16 44 18.6**	**-0.4**
BRRC	**Barranca, Sant**	**1.58**	**200**	*e*P	**Pn**	**16 44 00.3**	**+0.5**
BRRC				*e*S	**Sn**	**16 44 22.4**	**-0.4**
BRRC				*i*		16 44 23.2	
	comp=Z,37nm,0.1s						
VIGV	**El Vigia**	**1.80**	**82**	*e*P	**Pn**	**16 44 04.5**	**+2.1**
VIGV				*e*S	**Sn**	**16 44 27.2**	**0.0**
BARC	**Barichara**	**2.00**	**180**	*e*P	**Pn**	**16 44 05.4**	**+0.5**
BARC				*e*S	**Sn**	**16 44 31.6**	**0.0**
BARC				*i*		16 44 33.4	
	comp=Z,24nm,0.1s						
SOCV	**Socops**	**2.31**	**98**	*e*P	**Pn**	**16 44 09.6**	**+1.2**
SOCV				*e*S	**Sn**	**16 44 37.7**	**-0.3**
QARV	**Quebrada Arrib**	**3.06**	**58**	*e*P	**Pn**	**16 44 18.6**	**+0.8**
QARV				*e*S	**Sn**	**16 44 52.9**	**-2.0**
CURV	**Curarigua**	**3.46**	**66**	*e*P	**Pn**	**16 44 24.2**	**+1.1**
BAUV	**El Baul**	**5.08**	**86**	*e*P	**Pn**	**16 44 44.4**	**0.0**
BAUV				*e*S	**Sn**	**16 45 40.2**	**-2.1**

*ISCJB **27** 16:53:17.9±1.0, 26°.6N±0°.1×143°.7E±0°.1, h10km, mb3.6/7, Error ellipse: s-maj=20.7km s-min=12.7km az=21.6*
*IDC **27** 16:53:17.8±1.3, 26°.65N×143°.78E, h0km, mb3.6/7, mb1 3.8/9, mb1mx3.6/50, mbtmp3.7/9, ML3.6/2, MS2.7/2, Ms1 2.7/2, ms1mx2.4/45, Error ellipse: s-maj=28.3km s-min=23.6km az=75.0*

ISC 27 16:53:19.8±1.2, 26°.7N±0°.1×143°.6E±0°.1, h10km, n12, σ0s84°/11, mb3.8/7, Bonin Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JCJ	**Chichijima**	**1.36**	**287**	Pn	**Pb**	**16 53 45.2**	**-0.2**
	64nm,0.3s,baz=276,slow=23,SNR=13						
JCJ				Sn	**Sn**	**16 54 02.2**	**-0.8**
	160nm,0.3s,baz=269,slow=23,SNR=14						
MJAR	**Matsushiro Arr**	**10.85**	**336**	Pn	**Pn**	**16 55 53.9**	**-1.3**
	0.9nm,0.3s,baz=158,slow=11,SNR=8.0						
JNU	**Nakatsue**	**12.79**	**303**	LR	LR	17 00 06.7	
	comp=Z,48nm,21.1s,baz=121,slow=32						
KSRS	**Korea Array**	**17.08**	**313**	P	**P**	**16 57 21.1**	**+0.7**
	0.1nm,0.3s,baz=128,slow=16,SNR=4.2						
ASAJ	**Asahikawa**	**17.41**	**357**	LR	LR	17 06 15.7	
	comp=Z,18nm,19.2s,baz=32,slow=44						
KLR	**Kul'dur**	**24.32**	**341**	P	**P**	**16 58 37.9**	**+0.4**
	1.6nm,0.6s,baz=130,slow=9.7,SNR=6.9						
SONM	**Songino Array**	**35.91**	**316**	P	**P**	**17 00 20.8**	**+0.5**
	0.9nm,0.8s,baz=121,slow=8.8,SNR=5.6						
CMAR	**Chiang Mai Arr**	**41.91**	**268**	P	**P**	**17 01 11.0**	**+0.2**
	0.3nm,0.7s,baz=66,slow=7.2,SNR=4.0						
WRA	**Warramunga Arr**	**47.23**	**192**	P	**P**	**17 01 52.4**	**-0.8**
	1.2nm,0.8s,baz=12,slow=8.6,SNR=8.8						
MKAR	**Makanchi Array**	**51.73**	**310**	P	**P**	**17 02 28.2**	**+0.9**
	0.5nm,0.3s,baz=89,slow=9.4,SNR=6.1						
BVAR	**Borovoye Array**	**59.22**	**318**	P	**P**	**17 03 21.9**	**+0.8**
	0.4nm,0.4s,baz=76,slow=6.9,SNR=6.8						
YKA	**Yellowknife Ar**	**71.87**	**29**	P	**P**	**17 04 42.1**	**-0.6**
	0.2nm,0.7s,baz=296,slow=6.6,SNR=3.0						

*ISCJB **27** 16:56:37.8±0.4, 84°.66N±0°.04×5°.2E±0°.7, h10km, mb3.8/21, MS3.4/28, Error ellipse: s-maj=9.3km s-min=5.7km az=156.3*
*IDC **27** 16:56:39.0±0.6, 84°.83N×4°.37E, h0km, mb3.7/20, mb1 4.0/22, mb1mx3.8/50, mbtmp3.8/22, ML4.2/2, MS3.5/31, Ms1 3.5/31, ms1mx3.4/51, Error ellipse: s-maj=18.5km s-min=11.1km az=61.0*
*CSEM **27** 16:56:39.5±0.4, 84°.69N×5°.40E, h10km, ML4.5, Error ellipse: s-maj=21.8km s-min=12.0km az=68.0*
*NEIC **27** 16:56:40.2±0.5, 84°.75N×4°.90E, h10km, mb4.2/3, Error ellipse: s-maj=13.4km s-min=8.8km az=66.0*

ISC 27 16:56:39.5±0.5, 84°.65N±0°.06×5°.14E±0°.08, h10km, n90, σ1s92°/75, mb3.7/21, MS3.5/28, North of Svalbard

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KBS	**Kingsbay**	**5.84**	**167**	Pn	**Pn**	**16 58 06.2**	**+0.3**
KBS				Sn	**Sn**	**16 59 09.6**	**-3.1**
KBS	**Kingsbay**	**5.84**	**167**	P	**Pn**	**16 58 06.2**	**+0.3**
KBS				S	**Sn**	**16 59 09.6**	**-3.1**
KBS				IAML		16 59 13.8	
	comp=Z,19nm,0.6s						
KBS	**Kingsbay**	**5.84**	**167**	Pn	**Pn**	**16 58 06.2**	**+0.3**
KBS	**Kingsbay**	**5.84**	**167**	*e*Pn	**Pn**	**16 58 06.1**	**+0.2**
	comp=Z,42nm,0.4s						
SPA0	**Spitsbergen Ar**	**6.70**	**160**	Pn	**Pn**	**16 58 18.1**	**+0.4**
	baz=354,slow=9.3						
SPA0	**Spitsbergen Ar**	**6.70**	**160**	P	**Pn**	**16 58 18.1**	**+0.4**
	baz=354,slow=9.3						
SPA0				*e*S	**Sn**	**16 59 29.7**	**-4.3**
SPA0	**Spitsbergen Ar**	**6.70**	**160**	Pn	**Pn**	**16 58 18.1**	**+0.4**
	SNR=286						
SPA0				*e*S	**Sn**	**16 59 29.7**	**-4.3**
	SNR=48						
SPITS	**Spitsbergen Ar**	**6.70**	**160**	Pn	**Pn**	**16 58 18.3**	**+0.5**
	baz=5.1,slow=10,SNR=187						
SPITS				Sn	**Sn**	**16 59 33.5**	**-0.5**
	baz=31,slow=20,SNR=1.7						
SPITS				LR	LR	17 00 44.2	
	comp=Z,477nm,21.2s,baz=10.0,slow=36						
BRBA	**Barentsburg A**	**6.76**	**164**	Pn	**Pn**	**16 58 18.9**	**+0.4**
HSP	**Hornsund**	**7.84**	**163**	Pn	**Pn**	**16 58 34.6**	**+1.3**
HSPB	**Hornsund (broa**	**7.85**	**163**	P	**Pn**	**16 58 34.6**	**+1.2**
HSPB	**Hornsund (broa**	**7.85**	**163**	Pn	**Pn**	**16 58 34.6**	**+1.2**
DAG	**Danmarks Havn**	**8.66**	**218**	*i* P	**Pn**	**16 58 46.6**	**+2.0**
	comp=Z,3.7nm,0.7s						
HOPEN	**Hopen**	**8.71**	**148**	Pn	**Pn**	**16 58 45.2**	**0.0**
HOPEN				Sn	**Sn**	**17 00 18.5**	**-4.7**
HOPEN	**Hopen**	**8.71**	**148**	P	**Pn**	**16 58 45.2**	**0.0**
HOPEN	**Hopen**	**8.71**	**148**	Pn	**Pn**	**16 58 45.2**	**0.0**
BJO	**Bjornoya**	**10.45**	**159**	*e*P	**Pn**	**16 59 10.6**	**+1.5**
BJO	**Bjornoya**	**10.45**	**159**	*e*P	**Pn**	**16 59 10.6**	**+1.5**
	SNR=46						
SUMG	**Summit**	**14.12**	**238**	Pn	**Pn**	**17 00 00.9**	**+1.4**
SUMG	**Summit**	**14.12**	**238**	Pn	**Pn**	**17 00 00.9**	**+1.4**
KEV	**Kevo**	**15.50**	**151**	*e*P	**Pn**	**17 00 17.7**	**0.0**
KEV	**Kevo**	**15.50**	**151**	*e*Pn	**Pn**	**17 00 16.9**	**-0.8**
KEV	**Kevo**	**15.50**	**151**	*e*P	**Pn**	**17 00 17.7**	**0.0**
	SNR=45						
KEV	**Kevo**	**15.50**	**151**	*e*Pn	**Pn**	**17 00 16.9**	**-0.8**
ARA0	**ARCESS Array S**	**15.65**	**153**	P	**Pn**	**17 00 18.6**	**-1.1**
	slow=11						
ARA0	**ARCESS Array S**	**15.65**	**153**	P	**Pn**	**17 00 18.6**	**-1.1**
	slow=11						
ARCES	**ARCESS Array B**	**15.65**	**153**	Pn	**Pn**	**17 00 18.9**	**-0.9**
	comp=Z,1.0nm,0.3s,baz=352,slow=9.5,SNR=19						
ARCES				LR	LR	17 06 05.6	
	comp=Z,121nm,18.8s,baz=41,slow=36						
ARE0	**ARCESS Array S**	**15.65**	**153**	*e*P	**Pn**	**17 00 19.4**	**-0.3**
ARE0	**ARCESS Array S**	**15.65**	**153**	*e*P	**Pn**	**17 00 19.4**	**-0.3**
	SNR=45						
KIF	**Kilpisjarvi**	**16.01**	**159**	*e*P	**Pn**	**17 00 25.1**	**+0.9**
KIF	**Kilpisjarvi**	**16.01**	**159**	*e*P	**Pn**	**17 00 25.1**	**+0.9**
	SNR=43						
RES	**Resolute Bay**	**17.17**	**298**	Pn	**Pn**	**17 00 35.1**	**-3.8**
	comp=Z,0.9nm,0.3s,baz=30,slow=13,SNR=50						
RES				Sn	Sn	17 03 33.1	-16
	comp=Z,0.3nm,0.3s,baz=300,slow=21,SNR=5.5						
RES				LR	LR	17 07 05.0	
	comp=Z,221nm,21.8s,baz=7.0,slow=37						
RES	**Resolute Bay**	**17.17**	**298**	*e*Pn	**Pn**	**17 00 34.5**	**-4.4**
	comp=Z,10.0nm,0.8s						
RES				Sn	Sn	17 03 33.1	-16
LVZ	**Lovozero**	**17.74**	**142**	*e*Pn	**Pn**	**17 00 43.8**	**-2.3**
APA0	**Apatity Array**	**17.94**	**144**	P	**Pn**	**17 00 46.9**	**-1.6**
	baz=14,slow=9.3						
APA0	**Apatity Array**	**17.94**	**144**	P	**Pn**	**17 00 46.9**	**-1.6**
	baz=14,slow=9.3						
SFJD	**Kangerlussuaq**	**20.57**	**248**	LR	LR	17 09 10.7	
	comp=Z,54nm,18.1s,baz=28,slow=36						
BORG	**Borgarnes**	**20.71**	**213**	LR	LR	17 07 56.1	
	comp=Z,68nm,20.0s,baz=1.1,slow=32						
NRIK	**Noril'sk**	**20.74**	**83**	P	Pn	17 01 20.9	-1.2
	comp=Z,3.4nm,0.8s,baz=0.1,slow=10,SNR=3.4						
NRIK				LR	LR	17 10 57.0	
	comp=Z,44nm,18.3s,baz=14,slow=41						
TIXI	**Tiksi**	**21.90**	**45**	P	**P**	**17 01 32.9**	**+0.8**
	comp=Z,0.8nm,0.3s,baz=70,slow=1.0,SNR=5.3						
TIXI				LR	LR	17 08 28.1	
	comp=Z,75nm,21.6s,baz=297,slow=32						
FIA0	**FINESS Array S**	**23.76**	**155**	P	**P**	**17 01 53.9**	**+2.4**
	baz=9.5,slow=8.6						
FIA0	**FINESS Array S**	**23.76**	**155**	P	**P**	**17 01 53.9**	**+2.4**
	baz=9.5,slow=8.6						
FIA0	**FINESS Array S**	**23.76**	**155**	P	**P**	**17 01 53.9**	**+2.4**
	SNR=4.7						
FINES	**FINESS Array B**	**23.76**	**155**	P	**P**	**17 01 53.7**	**+2.2**
	comp=Z,4.4nm,0.8s,baz=12,slow=9.8,SNR=11						
FINES				LR	LR	17 11 16.4	
	comp=Z,126nm,19.7s,baz=2.5,slow=37						
NB2	**NORSAR Subarra**	**23.78**	**173**	P	**P**	**17 01 54.9**	**+3.2**
	baz=351,slow=10						
NB2	**NORSAR Subarra**	**23.78**	**173**	P	**P**	**17 01 54.4**	**+2.7**
	comp=Z,6.1nm,0.8s,baz=359,slow=11						
NB2	**NORSAR Subarra**	**23.78**	**173**	P	**P**	**17 01 54.9**	**+3.2**
	baz=351,slow=10						
NB2	**NORSAR Subarra**	**23.78**	**173**	P	**P**	**17 01 54.9**	**+3.2**
	SNR=6.4						
NOA	**NORSAR Array B**	**23.78**	**173**	P	**P**	**17 01 54.7**	**+3.0**
	comp=Z,5.2nm,0.8s,baz=360,slow=9.9,SNR=17						
NOA				LR	LR	17 11 56.0	
	comp=Z,63nm,19.1s,baz=355,slow=38						
HFS	**Hagfors**	**24.72**	**170**	P	**P**	**17 02 02.9**	**+2.5**
	baz=18,slow=6.2						
HFS	**Hagfors**	**24.72**	**170**	P	**P**	**17 02 02.9**	**+2.5**
	baz=18,slow=6.2						
HFS	**Hagfors**	**24.72**	**170**	P	**P**	**17 02 02.7**	**+2.3**
	comp=Z,2.5nm,0.7s,baz=340,slow=6.4,SNR=5.4						
HFS				LR	LR	17 10 20.8	
	comp=Z,52nm,20.1s,baz=1.0,slow=33						
HFS	**Hagfors**	**24.72**	**170**	P	**P**	**17 02 02.9**	**+2.5**
	SNR=28						
FRB	**Frobisher Bay**	**25.39**	**265**	LR	LR	17 11 16.4	
	comp=Z,46nm,19.5s,baz=163,slow=35						
INK	**Inuvik**	**26.10**	**326**	P	**P**	**17 02 11.9**	**-0.8**
	comp=Z,5.2nm,0.8s,baz=4.1,slow=8.3,SNR=24						
INK				LR	LR	17 12 35.3	
	comp=Z,82nm,21.9s,baz=48,slow=37						
INK	**Inuvik**	**26.10**	**326**	*e*P	**P**	**17 02 12.1**	**-0.6**
INK	**Inuvik**	**26.10**	**326**	*e*P	**P**	**17 02 12.1**	**-0.6**
EGAK	**Eagle**	**29.99**	**332**	*e*P	**P**	**17 02 46.8**	**-0.7**
	comp=Z,2.7nm,1.0s						
EGAK	**Eagle**	**29.99**	**332**	*e*P	**P**	**17 02 46.8**	**-0.7**
	comp=Z,2.7nm,1.0s						
ILAR	**Eielson Array**	**30.23**	**336**	P	**P**	**17 02 50.4**	**+0.7**
	comp=Z,1.3nm,0.9s,baz=0.2,slow=8.5,SNR=15						
ILAR				LR	LR	17 14 24.7	
	comp=Z,104nm,19.7s,baz=352,slow=36						
OBN	**Obninsk**	**30.59**	**144**	LR	LR	17 14 59.4	
	comp=Z,83nm,19.2s,baz=341,slow=36						
YKA	**Yellowknife Ar**	**30.66**	**308**	P	**P**	**17 02 53.0**	**-0.4**
	comp=Z,0.6nm,0.6s,baz=5.1,slow=8.3,SNR=17						
YAK	**Yakutsk**	**31.47**	**48**	*e*P	**P**	**17 02 59.4**	**-1.1**
	comp=Z,8.5nm,0.5s						
YAK	**Yakutsk**	**31.47**	**48**	*e*P	**P**	**17 02 59.4**	**-1.1**
	comp=Z,8.5nm,0.5s						
AKASG	**Malin Array Be**	**34.63**	**153**	P	**P**	**17 03 29.8**	**+1.5**
	comp=Z,1.5nm,0.6s,baz=356,slow=9.1,SNR=6.1						
AKASG				LR	LR	17 17 57.0	
	comp=Z,119nm,18.2s,baz=20,slow=37						
BVAR	**Borovoye Array**	**35.20**	**108**	P	**P**	**17 03 34.2**	**+1.1**
	comp=Z,0.8nm,0.7s,baz=339,slow=9.9,SNR=4.1						
ZALV	**Zalesovo Beam**	**35.61**	**93**	LR	LR	17 20 26.7	
	comp=Z,38nm,19.5s,baz=50,slow=40						
GERES	**GERESS Array B**	**36.03**	**170**	P	P	17 03 44.2	+3.8
	comp=Z,0.3nm,0.4s,baz=14,slow=9.1,SNR=4.9						
GERES				LR	LR	17 17 35.3	
	comp=Z,74nm,20.4s,baz=306,slow=35						
AKTO	**Aktyubinsk**	**36.72**	**121**	LR	LR	17 21 21.5	
	comp=Z,163nm,18.5s,baz=357,slow=40						
ABKAR	**Akbulak array**	**38.04**	**120**	P	**P**	**17 03 58.5**	**+1.1**
ABKAR	**Akbulak array**	**38.04**	**120**	P	**P**	**17 03 58.5**	**+1.1**
TLY	**Talaya**	**39.60**	**75**	LR	LR	17 20 29.2	
	comp=Z,79nm,20.9s,baz=286,slow=36						
MLR	**Muntele Rosu**	**39.71**	**157**	P	P	17 04 15.8	+4.2
	comp=Z,0.5nm,0.6s,baz=182,slow=10,SNR=4.8						
ULM	**Lac du Bonnet**	**41.25**	**287**	LR	LR	17 21 38.3	
	comp=Z,144nm,18.4s,baz=346,slow=36						
PETK	**Petropavlovsk-**	**41.91**	**25**	LR	LR	17 21 25.2	
	comp=Z,24nm,20.3s,baz=328,slow=36						
KBZ	**Khabaz**	**42.31**	**139**	P	P	17 04 36.2	+3.5
	comp=Z,3.0nm,1.0s,baz=334,slow=4.8,SNR=6.7						
KBZ				LR	LR	17 22 46.9	
	comp=Z,64nm,20.2s,baz=22,slow=37						
SONM	**Songino Array**	**43.67**	**73**	P	**P**	**17 04 46.0**	**+2.1**
	comp=Z,0.2nm,0.6s,baz=357,slow=7.9,SNR=2.9						
ESDC	**Sonseca Array**	**45.21**	**190**	P	P	17 04 58.7	+2.5
	comp=Z,0.2nm,0.3s,baz=8.9,slow=9.9,SNR=3.4						
BRTR	**Keskin Array B**	**45.79**	**149**	P	P	17 05 04.0	+3.1
	comp=Z,0.8nm,0.9s,baz=353,slow=8.7,SNR=3.7						
AAK	**Ala-Archa**	**45.87**	**106**	LR	LR	17 24 49.2	
	comp=Z,61nm,20.6s,baz=320,slow=37						
GNI	**Garni**	**45.99**	**137**	LR	LR	17 25 48.0	

ARCES				Lg		Lg	17 08 39.0		
	comp=Z,1.5nm,0.3s,baz=209,slow=27,SNR=9.8								
ARE0	**ARCESS Array S**	**2.98**	**32**	*e*P		**Pn**	**17 08 00.3**	**+0.8**	
	baz=213								
ARE0				*e*SB		**Sb**	**17 08 40.6**	**-1.2**	
ARE0	**ARCESS Array S**	**2.98**	**32**	Pn		**Pn**	**17 08 00.3**	**+0.8**	
ARE0				Sb		**Sb**	**17 08 40.6**	**-1.2**	
OUFX	**Oulainen**	**3.13**	**149**	*e*PB		**Pb**	**17 08 05.0**	**-2.6**	
OUFX	**Oulainen**	**3.13**	**149**	Pb		**Pb**	**17 08 05.0**	**-2.6**	
UMAU	**Umeaa**	**3.22**	**182**	*e*P		**Pn**	**17 08 04.9**	**+2.1**	
	baz=360								
UMAU	**Umeaa**	**3.22**	**182**	Pn		**Pn**	**17 08 04.9**	**+2.1**	
VRF	**Varrio**	**3.39**	**75**	*e*PB		**Pb**	**17 08 09.6**	**-2.4**	
VRF	**Varrio**	**3.39**	**75**	Pb		**Pb**	**17 08 09.6**	**-2.4**	
MSF	**Maaselka**	**3.44**	**106**	*e*PB		Pb	17 08 09.4	-3.3	
MSF				*e*SG		**Sg**	**17 09 00.5**	**-0.9**	
MSF	**Maaselka**	**3.44**	**106**	Pb		Pb	17 08 09.4	-3.3	
KEV	**Kevo**	**3.48**	**37**	*e*P		**Pn**	**17 08 07.9**	**+1.4**	
	baz=227								
KEV	**Kevo**	**3.48**	**37**	Pn		**Pn**	**17 08 07.8**	**+1.4**	
KU6	**Riekki**	**3.71**	**103**	*e*P		**Pn**	**17 08 12.1**	**+2.4**	
	baz=294								
KU6	**Riekki**	**3.71**	**103**	Pn		**Pn**	**17 08 12.0**	**+2.4**	
VAF	**Ylistaro**	**4.12**	**169**	Pn		Pn	17 08 18.9	+3.7	
HEMU	**Hemsoen**	**4.60**	**197**	*e*P		**Pn**	**17 08 24.2**	**+2.4**	
HEMU	**Hemsoen**	**4.60**	**197**	Pn		**Pn**	**17 08 24.2**	**+2.4**	
FINES	**FINESS Array B**	**6.08**	**156**	Pn		**Pn**	**17 08 43.0**	**+0.9**	
	comp=Z,0.1nm,0.3s,baz=348,slow=13,SNR=6.8								
FINES				Sn		**Sn**	**17 09 52.9**	**+0.6**	
	comp=Z,0.3nm,0.3s,baz=341,slow=24,SNR=6.3								
FINES				Lg		Lg	17 10 21.4		
	comp=Z,0.3nm,0.3s,baz=339,slow=27,SNR=3.8								
NOA	**NORSAR Array B**	**7.42**	**220**	Pn		**Pn**	**17 09 02.5**	**+1.9**	
	comp=Z,0.1nm,0.3s,baz=28,slow=11,SNR=2.4								
NOA				Sn		**Sn**	**17 10 24.9**	**-0.4**	
	comp=Z,0.1nm,0.3s,baz=44,slow=21,SNR=2.3								
NOA				Lg		Lg	17 11 05.0		
	comp=Z,0.2nm,0.3s,baz=39,slow=23,SNR=2.9								
HFS	**Hagfors**	**7.69**	**208**	Pn		**Pn**	**17 09 06.4**	**+2.2**	
	comp=Z,0.1nm,0.3s,baz=28,slow=13,SNR=2.9								
HFS				Sn		**Sn**	**17 10 31.8**	**-0.2**	
	comp=Z,0.2nm,0.3s,baz=28,slow=28,SNR=3.5								
HFS				Lg		Lg	17 11 10.9		
	comp=Z,0.1nm,0.3s,baz=30,slow=23,SNR=2.2								

JMA 27 17:18:51.2±0.1, 36°26N×141°12E, h45km±2km, M3.0, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JHO	**Hitachi**	**0.57**	**308**	P	Pn	17 19 02.8	-0.2
JHO				*e*S	Sn	17 19 10.8	-0.7
CHOJ	**Chosi**	**0.59**	**201**	P	Pn	17 19 03.3	-0.1
ONAJ	**Iwakimizuishiy**	**0.88**	**343**	P	Pn	17 19 07.0	-0.2
ONAJ				S	Sn	17 19 17.8	-1.1
JFK	**Kawauchi**	**1.12**	**350**	P	Pn	17 19 10.2	-0.3
MAT	**Matsushiro**	**2.37**	**278**	P	Pn	17 19 29.9	+2.3
MAT				S	Sn	17 20 00.0	+4.6

MEX 27 17:28:50.9±0.3, 15°87N×94°65W, h19km±169km, MD3.8, Near coast of Oaxaca

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
PCIG		**1.39**	**97**	*e*P	Pn	17 29 12.0	-3.2
PCIG				*e*S	Sn	17 29 28.6	-4.4
HUIG	**Huatulco**	**1.41**	**266**	*e*P	Pn	17 29 12.1	-3.4
HUIG				*e*S	Sn	17 29 29.1	-4.4
TGIG		**1.72**	**58**	*e*P	Pn	17 29 17.1	-2.8
TGIG				*e*S	Sn	17 29 37.0	-4.4
VHO	**Vista Hermosa**	**2.33**	**301**	*i* P	Pn	17 29 26.4	-2.0
VHO				*e*S	Sn	17 29 53.0	-3.6
CCIG	**Comitan**	**2.45**	**80**	*e*P	Pn	17 29 27.9	-2.1
CCIG				*i* S	Sn	17 29 56.0	-3.6

*ISCJB **27** 17:34:56.5±1.0, 27°6N±0°1×111°54W±0°08, h10km, Error ellipse: s-maj=17.3km s-min=5.7km az=145.8*
*ECX **27** 17:34:59.0±0.5, 27°68N×111°64W, h10km, MD3.4*
*MEX **27** 17:34:59.4±0.8, 27°46N×111°37W, h30km±31km, MD3.7*
ISC 27 17:34:55.8±1.4, 27°6N±0°1×111°54W±0°08, h10km, n4, σ0s17/8, 1C-1D, Gulf of California

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
GUYB	**Guaymas**	**0.65**	**65**	*e*P	**Pb**	**17 35 09.3**	**+0.1**
GUYB				*e*S	**Sb**	**17 35 18.3**	**0.0**
SRIG	**Santa Rosalia**	**0.69**	**244**⇑	*e*P	**Pb**	**17 35 10.1**	**+0.1**
SRIG				*e*S	**Sb**	**17 35 19.4**	**-0.1**
HSIG		**1.48**	**21**⇓	*e*P	**Pg**	**17 35 24.0**	**-0.2**
HSIG				*e*S	**Sb**	**17 35 42.5**	**+0.2**
HSIG		**1.48**	**21**	*e*P	**Pg**	**17 35 24.1**	**-0.1**
HSIG				*i* S	**Sb**	**17 35 42.3**	**0.0**

IDC 27 17:35:52.5±1.1, 4°12S×123°33E, h0km, mb3.5/5, mb1 3.6/6, mb1mx3.5/32, mbtmp3.5/6, ML2.9/1, Error ellipse: s-maj=103.6km s-min=20.6km az=60.0, Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
WRA	**Warramunga Arr**	**19.04**	**147**	P	P	17 40 15.6	-0.7
	0.0nm,0.3s,baz=320,slow=12,SNR=5.7						
ASAR	**Alice Springs**	**21.95**	**153**	P	P	17 40 48.4	+0.4
	1.3nm,0.9s,baz=336,slow=14,SNR=12						
CMAR	**Chiang Mai Arr**	**32.88**	**314**	P	P	17 42 28.2	-0.3
	0.2nm,0.5s,baz=142,slow=7.8,SNR=4.1						
SONM	**Songino Array**	**53.84**	**346**	P	P	17 45 17.2	-0.1
	0.4nm,0.7s,baz=155,slow=7.6,SNR=3.0						
MKAR	**Makanchi Array**	**62.29**	**329**	P	P	17 46 16.9	+0.4
	0.2nm,0.6s,baz=133,slow=6.3,SNR=3.6						
ZALV	**Zalesovo Beam**	**66.19**	**336**	P	P	17 46 41.8	-0.1
	0.3nm,0.3s,baz=138,slow=6.7,SNR=2.6						

IDC 27 17:37:30.7±1.3, 5°47N×126°29E, h0km, mb3.5/5, mb1 3.6/5, mb1mx3.4/39, mbtmp3.5/5, Error ellipse: s-maj=107.8km s-min=19.0km az=72.0, Mindanao

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
FITZ	**Fitzroy Crossi**	**23.43**	**182**	P	P	17 42 42.7	+0.9
	1.5nm,0.7s,baz=0.0,slow=8.1,SNR=2.7						
WRA	**Warramunga Arr**	**26.47**	**163**	P	P	17 43 09.9	+0.1
	0.2nm,0.5s,baz=340,slow=10,SNR=8.9						
ASAR	**Alice Springs**	**29.90**	**166**	P	P	17 43 40.0	-0.4
	0.1nm,0.6s,baz=346,slow=7.2,SNR=2.6						
ASAR				PcP	PcP	17 46 42.4	-1.2
	0.8nm,1.1s,baz=345,slow=3.3,SNR=4.1						
SONM	**Songino Array**	**45.52**	**341**	P	P	17 45 52.5	+0.3
	0.2nm,0.4s,baz=142,slow=7.3,SNR=2.9						
MKAR	**Makanchi Array**	**55.89**	**325**	P	P	17 47 10.1	-0.3
	0.8nm,0.5s,baz=119,slow=7.8,SNR=8.9						

KRSC 27 17:37:32.3±0.7, 55°98N×162°64E, h20km±8km, ML3.7, Near east coast of Kamchatka Peninsula

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
KBG	**Krutoberegovo**	**0.28**	**8**	*i* P	Pb	17 37 38.5	-0.1
KBG				*i* S	Sb	17 37 42.4	-0.4
SMKR	**Semkarok**	**0.89**	**313**	*e*P	Pb	17 37 48.5	-0.5
SMKR				*e*S	Sb	17 37 59.9	-0.6
BDR	**Baidarnaya**	**0.99**	**307**	*e*P	Pb	17 37 50.5	-0.3
BDR				*e*S	Sn	17 38 04.6	0.0
ZLN	**Zelenaya**	**1.03**	**273**	*i* P	Pg	17 37 52.3	-0.1
ZLN				*e*S	Sg	17 38 06.7	+0.7
SRKR	**Sorokina**	**1.06**	**310**	*i* P	Pb	17 37 51.5	-0.5
SRKR				*e*S	Sn	17 38 06.1	-0.2
CIRR	**Tsirk**	**1.07**	**278**	*i* P	Pn	17 37 52.5	+0.2
CIRR				*e*S	Sg	17 38 07.1	-0.1
LGNR	**Loginova**	**1.10**	**276**	*i* P	Pg	17 37 53.3	-0.4
LGNR				*i* S	Sg	17 38 08.2	0.0
KLY	**Klyuchi**	**1.16**	**287**	*i* P	Pn	17 37 51.7	-1.7
KLY				*i* S	Sb	17 38 05.8	-2.4
KRSR	**Krestovskiy**	**1.19**	**282**	*i* P	Pn	17 37 53.9	+0.1
KRSR				*e*S	Sb	17 38 08.8	-0.3
BKI	**Bering**	**2.05**	**111**	*e*P	Pb	17 38 09.2	+0.5
BKI				*e*S	Sb	17 38 35.0	+1.3
ESO	**Esso**	**2.21**	**270**	*e*P	Pb	17 38 10.1	-1.5
ESO				*e*S	Sb	17 38 37.7	-0.9

NLC	**Nalytchevo**	**3.41**	**216**	*e*P		Pn	17 38 27.4	+3.2	
NLC				*e*S		Sn	17 39 07.7	+3.7	
SDLR	**Sedlovina**	**3.48**	**220**	*e*P		Pn	17 38 28.3	+2.9	
KRX	**Arik**	**3.50**	**223**	*e*P		Pb	17 38 30.4	-3.3	
KRER	**Koryakskii**	**3.51**	**222**	*e*P		Pn	17 38 29.4	+3.5	
SMAR	**Somma**	**3.52**	**221**	*e*P		Pn	17 38 28.7	+2.7	
AVH	**Avacha**	**3.54**	**221**	*e*P		Pn	17 38 29.7	+3.5	
AVH				*e*P		Pb	17 38 29.8	-4.5	
GNL	**Ganaly**	**3.55**	**232**	*e*P		Pn	17 38 30.1	+3.7	
UGLR	**Uglovaya**	**3.56**	**220**	*e*P		Pn	17 38 30.2	+3.8	
DALK	**Dalny**	**3.73**	**219**	*e*P		Pn	17 38 31.4	+2.8	
DALK				*e*S		Sn	17 39 15.3	+3.5	
PET	**Petropavlovsk**	**3.77**	**220**	*e*P		Pn	17 38 33.0	+3.8	
PET				*e*S		Sn	17 39 17.4	+4.5	
KRMR	**Karymshinskiy**	**4.11**	**222**	*i* P		Pn	17 38 38.1	+4.2	
KRMR				*i* S		Sn	17 39 26.5	+5.1	
RUS	**Russkaya**	**4.30**	**216**	*e*P		Pn	17 38 39.2	+2.7	

*FUNV **27** 17:42:41.1, 9°78N×73°85W, h35km, MW3.1*
*RSNC **27** 17:42:41.7±0.8, 9°55N×73°34W, h0km±16km, ML2.5*
ISC 27 17:42:38.9±1.3, 9°55N±0°04×73°47W±0°04, h15km±13km, n9, σ0s82/15, Northern Colombia

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
OCAC	**Ocana**	**1.31**	**174**	*e*S	**Sg**	**17 43 22.5**	**+1.4**
OCAC				*i*		17 43 29.1	
	comp=Z,61nm,0.5s						
VIRV	**Villa del Rosa**	**1.41**	**48**	*e*P	**Pg**	**17 43 05.7**	**-0.4**
VIRV				*e*S	**Sg**	**17 43 25.2**	**+0.7**
GRMC	**Gramalote, San**	**1.93**	**160**	*e*P	**Pn**	**17 43 11.3**	**0.0**
GRMC				*e*S	**Sn**	**17 43 35.6**	**+0.2**
GRMC				*i*		17 43 44.4	
	comp=Z,89nm,0.3s						
CBRI	**Barrientos, No**	**1.93**	**160**	*e*P	**Pb**	**17 43 14.4**	**+0.5**
CBRI				*e*S	**Sg**	**17 43 40.6**	**-0.6**
CBRI				*i*		17 43 52.4	
	comp=Z,83nm,0.8s						
CAPV	**Capacho**	**2.02**	**146**	*e*P	**Pg**	**17 43 17.6**	**-0.1**
CAPV				*e*S	**Sg**	**17 43 45.1**	**+1.1**
VIGV	**El Vigia**	**2.19**	**108**	*e*P	**Pg**	**17 43 20.5**	**-0.4**
VIGV				*e*S	**Sg**	**17 43 48.7**	**-0.7**
MOTC	**Monteria, Cord**	**2.30**	**251**	*e*P	**Pb**	**17 43 20.6**	**+0.5**
MOTC				*e*S	**Sg**	**17 43 52.7**	**-0.3**
MOTC				*i*		17 44 06.2	
	comp=Z,14nm,0.8s						
BRRC	**Barranca, Sant**	**2.44**	**186**	*e*P	**Pb**	**17 43 21.1**	**-1.3**
BRRC				*i*		17 43 36.9	
	comp=Z,16nm,0.5s						
SOCV	**Socops**	**2.87**	**116**	*e*P	**Pb**	**17 43 29.9**	**+0.1**

ISC 27 17:46:10.6±0.8, 50°13N±0°04×19°05E±0°02, h0km, n19, σ1s01/32, 2D, Poland

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
CHZP	**Chorzow**	**0.17**	**346**⇓	*e*Pg	**Pg**	**17 46 13.5**	**-0.2**
CHZP				⇓*e*Sg	**Sg**	**17 46 17.1**	**+1.2**
OJC	**Ojcow**	**0.49**	**79**	*i* Pg	**Pg**	**17 46 19.8**	**-1.0**
OJC				*e*Sg	**Sg**	**17 46 25.6**	**-0.6**
OKC	**Ostrava-Krasne**	**0.65**	**244**	*e*PG	**Pb**	**17 46 24.2**	**-0.6**
OKC				*e*SG	**Sb**	**17 46 34.0**	**-0.5**
	comp=Z,14nm,0.4s						
LANS	**Liptovska Anna**	**1.02**	**164**	*e*PG	**Pg**	**17 46 31.0**	**+1.0**
LANS				*e*SG	**Sb**	**17 46 45.8**	**+0.8**
NIE	**Niedzica**	**1.08**	**131**	*e*Pg	**Pg**	**17 46 31.1**	**-0.1**
NIE				*e*Sg	**Sb**	**17 46 46.9**	**+0.2**
KRLC	**Kraliky**	**1.46**	**269**	*e*PG	**Pn**	**17 46 37.0**	**-1.3**
KRLC				*e*SG	**Sg**	**17 46 57.0**	**-0.5**
STHS	**Stebnicka Huta**	**1.59**	**116**	*e*PN	**Pb**	**17 46 40.7**	**-0.1**
STHS				*e*LG	Lg	17 47 07.6	
VYHS	**Vyhne**	**1.64**	**185**	*e*PN	**Pn**	**17 46 40.4**	**-0.3**
VYHS				*e*SN	**Sn**	**17 47 02.8**	**+0.3**
VYHS				*e*LG	Lg	17 47 05.1	
DPC	**Dobruska-Polom**	**1.77**	**278**	*e*PG	**Pn**	**17 46 41.6**	**-0.8**
DPC				*e*SG	**Sn**	**17 47 05.5**	**-0.1**
	comp=Z,18nm,0.5s						
KECS	**Kecovo**	**1.90**	**150**	*e*PN	**Pn**	**17 46 43.8**	**-0.4**
KECS				*e*SN	**Sn**	**17 47 09.2**	**+0.4**
KECS				*e*LG	Lg	17 47 17.7	
KSP	**Ksiaz**	**1.90**	**293**	*e*Pg	**Pg**	**17 46 46.4**	**-0.6**
KSP				*e*Sg	**Sg**	**17 47 11.0**	**-0.6**
UPC	**Upice**	**1.98**	**282**	*e*SG	**Sg**	**17 47 14.0**	**-0.3**
	comp=Z,5.5nm,0.3s						
CRVS	**Cervenica-Dubn**	**1.99**	**127**	*e*PN	**Pb**	**17 46 48.2**	**+0.5**
TREC	**Trest**	**2.46**	**251**	*e*SG	**Sg**	**17 47 28.4**	**-1.2**
	comp=Z,3.8nm,0.3s						
GOPC	**GO Pecny, Ondr**	**2.76**	**267**	*e*PG	**Pb**	**17 47 01.8**	**+1.0**
GOPC				*e*SG	**Sb**	**17 47 36.9**	**+1.8**
PVCC	**Panska Ves**	**2.90**	**280**	*e*SG	**Sg**	**17 47 43.0**	**-0.7**
	comp=Z,6.8nm,0.3s						
PRU	**Pruhonice**	**2.91**	**269**	*e*PG	**Pb**	**17 47 04.4**	**+1.1**
PRU				*e*SG	**Sb**	**17 47 41.5**	**+2.1**
	comp=Z,4.2nm,0.4s						
KHC	**Kasperske Hory**	**3.70**	**256**	*e*PN	**Pn**	**17 47 09.4**	**+0.4**
KHC				*ex*	x	17 47 15.3	
KHC				*e*SG	**Sg**	**17 48 06.4**	**-2.9**
	comp=Z,3.5nm,0.6s						
CLL	**Collm**	**4.02**	**289**	*e*Sg	**Sg**	**17 48 20.0**	**+0.3**

MAN 27 17:56:28, 15°74N×119°78E, h21km, mb4.5, ML3.3, MS3.2, 2C, Luzon

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
SCZP	**Santa Cruz**	**0.13**	**74**	*e*P	Pb	17 56 33.8	-0.5
BOLP	**Bolinao**	**0.65**	**11**	*e*P	Pb	17 56 41.0	+0.3
BOLP				*e*S	Sn	17 56 52.0	+0.4
BCPH	**Baguio City Da**	**1.00**	**50**⇑	*i*P	Pn	17 56 47.2	+0.3
BCPH				*i* S	Sn	17 57 02.0	+1.5
PCPH	**Palayan**	**1.28**	**98**⇑	*e*P	Pn	17 56 49.6	-1.0
PCPH				*e*S	Sb	17 57 07.5	+0.1
BALP	**Baler**	**1.73**	**90**	*e*P	Pn	17 56 57.0	+0.2
CAUP	**Cauayan**	**2.30**	**58**	*e*P	Pb	17 57 06.8	-1.9

*IDC **27** 18:00:11.0±2.5, 24°22S×70°90W, h0km, mb3.7/2, mb1 3.7/3, mb1mx3.6/17, mbtmp3.6/3, ML3.2/1, Error ellipse: s-maj=76.6km s-min=64.8km az=82.0*
*GUC **27** 18:00:19.1±0.6, 23°01S×70°62W, h41km±2km, ML4.1*
ISC 27 18:00:17.5±1.7, 23°06S±0°05×70°7W±0°1, h17km±10km, n16, σ0s51/15, 3C-2D, Near coast of northern Chile

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
PB10	**IPOC Station P**	**0.47**	**167**⇑	*i*P	**Pn**	**18 00 30.0**	**+0.5**
PB10				*i* S	**Sn**	**18 00 37.5**	**+0.2**
PB10				IAML		18 00 38.3	
	comp=E,19μm,0.3s						
PB04	**IPOC Station P**	**0.86**	**34**⇑	*i*P	**Pg**	**18 00 34.5**	**+0.1**
PB04				*i* S	**Sg**	**18 00 45.7**	**-0.1**
PB06	**IPOC Station P**	**1.07**	**71**⇓	*i*P	**Pn**	**18 00 37.9**	**+0.1**
PB06				*i* S	**Sb**	**18 00 51.5**	**+0.1**
PB06				IAML		18 00 52.3	
	comp=N,10μm,0.5s						
PB07	**IPOC Station P**	**1.51**	**29**⇑	*i*P	**Pn**	**18 00 44.2**	**+0.4**
PB07				*i* S	**Sn**	**18 01 03.5**	**+0.3**
PB14	**IPOC Station P**	**1.58**	**171**⇓	*i*P	**Pb**	**18 00 46.2**	**-0.3**
PB14				*i* S	**Sn**	**18 01 05.8**	**+0.5**
PB09	**IPOC Station P**	**1.82**	**47**	*i* P	**Pn**	**18 00 48.6**	**+0.5**
PB09				*i* S	**Sn**	**18 01 11.4**	**+0.5**
PB09				IAML		18 01 20.3	
	comp=N,3μm,0.7s						
LPAZ	**La Paz**	**7.14**	**20**	Pn	Pb	18 02 13.9	-7.6
	comp=N,0.1nm,0.3s,baz=197,slow=8.2,SNR=4.8						
TORD	**Torodi Ar. Bea**	**79.40**	**71**	P	**P**	**18 12 22.0**	**-1.2**
	comp=N,0.6nm,0.6s,baz=250,slow=4.9,SNR=3.5						
YKA	**Yellowknife Ar**	**92.12**	**341**	P	**P**	**18 13 25.5**	**+0.2**
	comp=N,0.0nm,0.3s,baz=132,slow=4.1,SNR=5.1						
H11S2	**WAKE ISLAND Hyd**	**26.45**	**277**	T	T	20 38 37.6	
	baz=106,slow=75,SNR=14						
H11S1	**WAKE ISLAND Hyd**	**26.46**	**277**	T	T	20 38 37.0	
	baz=106,slow=75,SNR=21						
H11S3	**WAKE ISLAND Hyd**	**26.46**	**277**	T	T	20 38 37.6	
	baz=106,slow=75,SNR=16						
H11N3	**WAKE ISLAND Hyd**	**26.57**	**278**	T	T	20 38 47.3	
	baz=105,slow=75,SNR=11						
H11N2	**WAKE ISLAND Hyd**	**26.59**	**278**	T	T	20 38 43.8	
	baz=105,slow=75,SNR=11						
H11N1	**WAKE ISLAND Hyd**	**26.59**	**278**	T	T	20 38 44.4	
	baz=105,slow=75,SNR=11						
MKAR	**Makanchi Array**	**147.84**	**36**	PKPbc	**PKPbc**	**18 20 01.8**	**+0.3**
	comp=N,0.3nm,0.6s,baz=329,slow=1.7,SNR=3.5						

MAN 27 18:07:38, 6°61N×125°06E, h22km, mb4.5, ML3.4, MS3.3, 1C-1D, Mindanao

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
KCP	**Kidapawan**	**0.40**	**5**⇑	*i*P	Pb	18 07 47.3	+0.9
KCP				*i* S	Sn	18 07 53.9	-1.4
CTBH	**Cotabato--PC H**	**1.01**	**307**	*e*P	Pb	18 07 56.5	-0.3
CTBH				*i* S	Sn	18 08 10.2	-0.1
MATI	**Mati**	**1.24**	**74**	*e*P	Pb	18 08 00.3	-0.3
MATI				*e*S	Sb	18 08 16.7	+0.5
BUKP	**Musuan**	**1.26**	**0**	*e*P	Pb	18 08 01.0	-0.1
BUKP				*e*S	Sn	18 08 16.7	+0.1
CGP	**Cagayan de Oro**	**1.87**	**349**⇓	*i*P	Pb	18 08 10.6	-0.9
CGP				*i* S	Sb	18 08 34.0	-0.3
PAGZ	**Pagadian**	**2.07**	**307**	*e*P	Pb	18 08 13.5	-1.3
PAGZ				*e*S	Sb	18 08 38.7	-1.5
IPIL	**Ipil**	**2.73**	**295**	*e*P	Pn	18 08 21.3	+0.8

*IDC **27** 18:08:30.4±1.2, 6°59S×132°74E, h0km, mb3.7/4, mb1 3.8/7, mb1mx3.7/24, mbtmp3.7/7, ML3.8/4, MS3.6/5, Ms1 3.5/5, ms1mx3.1/27, Error ellipse: s-maj=58.0km s-min=21.6km az=76.0*
*DJA **27** 18:09:38.8±0.4, 4°S±5°×12°9E±°, h23km±4km, M2.8/9, MLv2.8/9*
ISC 27 18:08:35.3±0.9, 6°77S±0°06×132°5E±0°1, h35km, n20, σ2s22/19, mb3.8/4, MS3.6/4, Tanimbar Islands region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
BNDI	**Bandanaira**	**3.42**	**311**	P	**Sn**	**18 10 05.5**	**0.0**
MSAI	**Masohi**	**4.93**	**313**	P	**Pn**	**18 09 48.5**	**+1.6**
SIJI	**Sorong**	**5.99**	**348**	Pn	**Pn**	**18 09 57.8**	**-3.8**
	25nm,0.3s,baz=180,slow=20,SNR=2.9						
SIJI				Sn	Sn	18 11 00.5	-8.5
	19nm,0.3s,baz=186,slow=17,SNR=2.4						
NLAI	**Namlea**	**6.43**	**303**	P	**Pn**	**18 10 04.8**	**-2.7**
LBMI	**Labuha**	**7.88**	**320**	P	**Pn**	**18 10 25.9**	**-1.5**
SANI	**Sanana**	**8.01**	**306**	P	**Pn**	**18 10 25.4**	**-3.9**
TNTI	**Ternate**	**9.08**	**325**	P	**Pn**	**18 10 45.2**	**+1.3**
FITZ	**Fitzroy Crossi**	**13.10**	**210**	Pn	**Pn**	**18 11 41.8**	**+2.8**
	0.4nm,0.3s,baz=22,slow=11,SNR=18						
FITZ				Sn	**Sn**	**18 14 01.2**	**-2.4**
	0.5nm,0.3s,baz=86,slow=16,SNR=6.1						
WRA	**Warramunga Arr**	**13.21**	**172**	Pn	**Pn**	**18 11 42.0**	**+1.5**
	0.3nm,0.3s,baz=352,slow=13,SNR=18						
WRA				Sn	**Sn**	**18 14 03.0**	**-3.4**
	0.2nm,0.3s,baz=354,slow=24,SNR=3.7						
WRA				Lg	Lg	18 15 36.1	
	baz=352,slow=30,SNR=3.1						
PMG	**Port Moresby**	**14.74**	**101**	LR	LR	18 18 21.4	
	comp=Z,122nm,19.1s,baz=30,slow=41						
ASAR	**Alice Springs**	**16.85**	**176**	P	**Pn**	**18 12 29.2**	**+0.6**
	0.2nm,0.3s,baz=354,slow=13,SNR=17						
ASAR				S	**Sn**	**18 15 34.5**	**-0.4**
	0.1nm,0.3s,baz=353,slow=28,SNR=3.5						
ASAR				Lg	Lg	18 17 30.7	
	baz=355,slow=30,SNR=3.3						
STKA	**Stephens Creek**	**26.38**	**162**	LR	LR	18 25 16.5	
	comp=Z,159nm,21.2s,baz=358,slow=38						
HNR	**Honiara**	**27.29**	**97**	LR	LR	18 25 35.2	
	comp=Z,75nm,18.2s,baz=207,slow=38						
CMAR	**Chiang Mai Arr**	**41.53**	**308**	P	**P**	**18 16 19.5**	**-0.1**
	0.5nm,0.7s,baz=134,slow=7.7,SNR=6.7						
SONM	**Songino Array**	**59.05**	**340**	P	**P**	**18 18 32.2**	**+0.2**
	0.4nm,0.5s,baz=152,slow=6.5,SNR=3.6						
SONM				LR	LR	18 46 12.0	
	comp=Z,54nm,20.1s,baz=194,slow=38						
MKAR	**Makanchi Array**	**69.42**	**326**	P	**P**	**18 19 41.0**	**+1.1**
	1.0nm,0.7s,baz=119,slow=8.3,SNR=11						
ZALV	**Zalesovo Beam**	**72.50**	**333**	P	**P**	**18 19 58.3**	**-0.1**
	0.5nm,0.4s,baz=126,slow=7.3,SNR=3.5						
NRIK	**Noril'sk**	**81.95**	**345**	LR	LR	18 59 49.4	
	comp=Z,51nm,20.1s,baz=127,slow=38						
TORD	**Torodi Ar. Bea**	**131.21**	**281**	PKP	**PKPdf**	**18 27 47.2**	**+2.5**
	0.4nm,0.7s,baz=48,slow=2.1,SNR=2.4						
LPAZ	**La Paz**	**149.31**	**138**	PKPbc	**PKPbc**	**18 28 21.7**	**-0.5**
	0.9nm,0.9s,baz=233,slow=5.1,SNR=2.2						

**MEX 27 18:20:11.1±0.9, 17°29

KHL				*e*SG	**Sg**	18 55 56.3	+0.7
KHL	**Karahalli**	**0.71**	**201**	*e*Pg	**Pg**	18 55 46.1	-0.3
KHL				*e*Sg	**Sg**	18 55 56.3	+0.7
DEMI	**Demirci**	**0.88**	**274**	*i* P	**Pg**	18 55 49.5	-0.1
DEMI				*i* S	**Sg**	18 56 01.1	+0.1
DEMI	**Demirci**	**0.88**	**274**	P	**Pg**	18 55 49.5	-0.1
DEMI				S	**Sg**	18 56 01.1	+0.1
BOLV	**Bolvadin**	**0.91**	**107**	*i* P	**Pg**	18 55 49.9	-0.3
BOLV				*i* S	**Sg**	18 56 02.5	+0.5
BOLV	**Bolvadin**	**0.91**	**107**	P	**Pg**	18 55 49.9	-0.3
BOLV				S	**Sg**	18 56 02.5	+0.5
ESKT	**Eskisehir**	**0.95**	**56**	*i* P	**Pg**	18 55 49.7	-1.3
ESKT				*i* S	**Sb**	18 56 04.3	-0.3
SEYT	**Eskypehyr**	**0.95**	**56**	P	**Pg**	18 55 49.7	-1.3
SEYT				S	**Sb**	18 56 04.3	-0.3
BORA	**Eskisehir**	**1.01**	**28**	*i* P	**Pg**	18 55 51.8	-0.4
BORA				*i* S	**Sb**	18 56 06.0	-0.3
BORA	**Eskisehir**	**1.01**	**28**	P	**Pg**	18 55 51.8	-0.4
BORA				S	**Sb**	18 56 06.0	-0.3
KULA	**Kula-Manisa**	**1.04**	**243**	*e*PG	**Pg**	18 55 51.9	-0.7
KULA	**Kula-Manisa**	**1.04**	**243**	*e*Pg	**Pg**	18 55 51.9	-0.7
CAVI	**Cavuskoy**	**1.21**	**0**	*e*PN	**Pg**	18 55 56.0	0.0
CAVI	**Cavuskoy**	**1.21**	**0**	*e*Pn	**Pg**	18 55 56.0	0.0
DURS	**Dursunbey**	**1.22**	**300**	*i* P	**Pn**	18 55 56.9	+0.4
DURS				*i* S	**Sn**	18 56 14.2	+0.7
DURS	**Dursunbey**	**1.22**	**300**	P	**Pn**	18 55 56.9	+0.4
DURS				S	**Sn**	18 56 14.2	+0.7
SVRH	**Sivrihisar-ESK**	**1.39**	**70**	*e*PN	**Pg**	18 55 59.4	0.0
SVRH	**Sivrihisar-ESK**	**1.39**	**70**	*e*Pn	**Pg**	18 55 59.4	0.0
GULT	**Gulveren**	**1.53**	**20**	*e*PN	**Pb**	18 56 01.2	-0.5
GULT	**Gulveren**	**1.53**	**20**	*e*Pn	**Pb**	18 56 01.2	-0.5
ARMT	**Armutlu**	**1.75**	**335**	*e*PN	**Pn**	18 56 03.8	+0.1
ARMT	**Armutlu**	**1.75**	**335**	*e*Pn	**Pn**	18 56 03.8	+0.1
AYDB	**Zeytinkoy-Aydi**	**1.85**	**236**	*e*PN	**Pn**	18 56 05.0	-0.2
AYDB	**Zeytinkoy-Aydi**	**1.85**	**236**	*e*Pn	**Pn**	18 56 05.0	-0.2

*ISCJB **27** 18:56:39.3±0.6, 48°.87S±0°.09×124°.1E±0°.1, h10km, mb4.7/18, MS4.0/8, Error ellipse: s-maj=14.0km s-min=12.3km az=31.7*
*IDC **27** 18:56:39.8±0.9, 48°.83S×124°.10E, h0km, mb4.3/7, mb1 4.5/8, mb1mx4.1/30, mbtmp4.3/8, ML2.8/1, MS4.0/8, Ms1 4.0/8, ms1mx3.7/20, Error ellipse: s-maj=40.5km s-min=22.7km az=91.0*
*NEIC **27** 18:56:41.1±0.6, 48°.83S×124°.05E, h10km, mb4.8/8, Error ellipse: s-maj=14.3km s-min=12.7km az=73.0*
ISC 27 18:56:40.8±0.7, 48°.9S±0°.1×124°.0E±0°.1, h10km, n48, σ0§88/32, mb4.8/17, MS4.0/8, 1D, Western Indian-Antarctic Ridge

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
H01W1	**Cape Leeuwin H**	**15.73**	**329**	T	T	19 16 29.4	
	baz=155,slow=75,SNR=89						
H01W2	**Cape Leeuwin H**	**15.74**	**329**	T	T	19 16 29.0	
	baz=155,slow=75,SNR=88						
H01W3	**Cape Leeuwin H**	**15.75**	**329**	T	T	19 16 30.1	
	baz=155,slow=75,SNR=72						
NWAO	**Narrogin (SRO)**	**16.70**	**340**	Pn	**P**	**19 00 36.4**	**-0.7**
	1.8nm,0.3s,baz=127,slow=0.2,SNR=6.2						
TAU	**Tasmania Unive**	**17.28**	**79**	*e*P	**Pn**	19 00 41.4	-0.6
	32nm,1.1s						
BBOO	**Buckleboo**	**18.42**	**34**	*e*P	**Pn**	19 00 56.3	+0.1
	79nm,1.4s						
STKA	**Stephens Creek**	**21.55**	**45**	P	**P**	**19 01 31.1**	**+0.9**
	6.7nm,0.8s,baz=188,slow=12,SNR=14						
STKA				LR	LR	19 08 11.0	
	comp=Z,510nm,21.7s,baz=209,slow=32						
ASAR	**Alice Springs**	**26.34**	**21**	P	**P**	**19 02 16.2**	**-0.7**
	4.3nm,0.8s,baz=172,slow=11,SNR=61						
ASAR				PcP	**PcP**	**19 05 42.5**	**-0.3**
	0.3nm,0.6s,baz=195,slow=1.7,SNR=5.5						
ASAR				LR	LR	19 11 49.2	
	comp=Z,815nm,19.8s,baz=182,slow=35						
WRA	**Warramunga Arr**	**30.03**	**20**	P	**P**	**19 02 48.6**	**-1.2**
	0.9nm,0.6s,baz=196,slow=7.8,SNR=15						
WRA				PcP	**PcP**	**19 05 51.1**	**-0.7**
	1.3nm,0.8s,baz=210,slow=2.3,SNR=5.1						
WRA				LR	LR	19 13 54.6	
	comp=Z,746nm,20.1s,baz=190,slow=34						
WRAB	**Tennant Creek**	**30.04**	**20**	*e*P	**P**	**19 02 48.3**	**-1.7**
	16nm,1.3s						
FITZ	**Fitzroy Crossi**	**30.71**	**3**	*e*P	**P**	**19 02 56.5**	**+0.7**
	12nm,1.1s						
VNDA	**Vanda**	**32.19**	**165**	P	**P**	**19 03 08.9**	**+0.6**
	6.7nm,1.2s,baz=312,slow=9.8,SNR=12						
VNDA				LR	LR	19 15 02.5	
	comp=Z,359nm,20.0s,baz=320,slow=34						
MAW	**Mawson**	**35.33**	**215**	LR	LR	19 16 05.0	
	comp=Z,91nm,18.2s,baz=64,slow=33						
SYO	**Syowa Base**	**43.63**	**211**	*e*P	**P**	**19 04 43.9**	**-0.9**
LEM	**Lembang**	**44.12**	**336**	P	P	19 04 58.3	+8.8
	206nm,1.1s						
SPSI	**Sidrap Palu**	**44.88**	**354**	P	P	19 05 04.8	+9.5
	31nm,1.0s						
PPBI	**Pangkal Pinang**	**48.98**	**336**	P	P	19 05 36.7	+9.3
	16nm,1.2s,939nm						
STKI	**Sintang**	**49.91**	**344**	P	P	19 05 44.6	+10
	17nm,1.2s,1μm						
GSI	**Gunungsitoli**	**54.94**	**327**	*e*P	**P**	**19 06 11.9**	**+0.1**
	42nm,1.1s						
KCSI	**Kotacane, Aceh**	**56.93**	**328**	P	P	19 06 34.5	+8.3
	20nm,1.2s						
KULM	**Kulim**	**57.65**	**332**	*e*P	**P**	**19 06 30.1**	**-1.1**
	30nm,1.3s						
H08S2	**Diego Garcia H**	**59.54**	**296**	T	T	20 11 05.8	
	baz=143,slow=76,SNR=3.7						
H08S1	**Diego Carcia H**	**59.55**	**296**	T	T	20 11 09.3	
	baz=143,slow=76,SNR=4.4						
H08S3	**Diego Garcia H**	**59.56**	**296**	T	T	20 11 08.4	
	baz=143,slow=76,SNR=4.0						
CMAR	**Chiang Mai Arr**	**70.63**	**335**	P	**P**	**19 07 57.2**	**+0.9**
	1.5nm,0.7s,baz=185,slow=5.6,SNR=16						
CMAR				LR	LR	19 37 33.8	
	comp=Z,67nm,20.5s,baz=183,slow=35						
TPUB	**Ta-pu**	**71.89**	**357**	P	**P**	**19 08 01.3**	**-2.6**
	20nm,1.1s						
YULB	**Yu-li**	**71.96**	**357**	P	**P**	**19 08 05.2**	**+0.9**
BOSA	**Boshof**	**74.35**	**244**	LR	LR	19 35 17.2	
	comp=Z,76nm,19.4s,baz=138,slow=31						
LSA	**Lhasa**	**83.53**	**332**	*e*P	**P**	**19 09 09.8**	**+0.6**
	5.2nm,0.8s						
PKIN	**Phulchoki**	**83.54**	**326**	*e*P	**P**	**19 09 09.1**	**0.0**
	26nm,1.5s						
GUN	**Gumba**	**83.67**	**327**	*e*P	**P**	**19 09 10.4**	**+0.6**
DMN	**Daman**	**83.68**	**326**	*e*P	**P**	**19 09 10.2**	**+0.5**
KKN	**Kakani**	**83.78**	**326**	*e*P	**P**	**19 09 10.7**	**+0.5**
	55nm,1.5s						
GKN	**Gorkha**	**84.21**	**326**	*e*P	**P**	**19 09 12.6**	**+0.3**
	17nm,0.9s						
KOLN	**Koldanda**	**84.39**	**325**	*e*P	**P**	**19 09 13.5**	**+0.2**
	14nm,0.9s						
PYUN	**Piuthan**	**84.92**	**324**	*e*P	**P**	**19 09 15.8**	**-0.2**
MJAR	**Matsushiro Arr**	**85.97**	**11**	P	**P**	**19 09 21.9**	**+1.2**
	2.5nm,0.8s,baz=193,slow=6.3,SNR=3.9						
PLCA	**Paso Flores**	**89.87**	**169**	LR	LR	19 46 02.3	
	comp=Z,68nm,21.2s,baz=182,slow=33						
SONM	**Songino Array**	**97.51**	**348**	P	Pdif	19 10 15.2	+0.7
	0.8nm,0.9s,baz=174,slow=5.2,SNR=5.5						
H10S2	**ASCENSION HYDR**	**11.92**	**225**	T	T	21 17 43.0	
	baz=151,slow=75,SNR=14						
H10S3	**ASCENSION HYDR**	**11.94**	**225**	T	T	21 17 42.8	
	baz=151,slow=75,SNR=12						
H10S1	**ASCENSION HYDR**	**11.94**	**225**	T	T	21 17 51.1	
	baz=151,slow=75,SNR=14						
TIXI	**Tiksi**	**120.25**	**2**	PKP	**PKPdf**	**19 15 29.8**	**-0.7**
	0.7nm,0.5s,baz=124,slow=3.0,SNR=7.0						
ILAR	**Eielson Array**	**132.39**	**35**	PKP	**PKPdf**	**19 15 54.6**	**+0.7**
	0.3nm,0.6s,baz=247,slow=1.9,SNR=5.3						
FINES	**FINESS Array B**	**134.60**	**318**	PKP	**PKPdf**	**19 15 58.9**	**+0.8**
	0.9nm,0.7s,baz=112,slow=2.2,SNR=3.4						
TXAR	**Lajitas Array**	**138.99**	**101**	PKP	**PKPdf**	**19 16 07.3**	**-0.1**
	0.5nm,0.8s,baz=222,slow=3.4,SNR=3.7						
YKA	**Yellowknife Ar**	**145.58**	**45**	PKPbc	**PKPab**	**19 16 18.6**	**+0.1**
	4.2nm,0.7s,baz=271,slow=2.9,SNR=58						
RES	**Resolute Bay**	**149.38**	**19**	PKPbc	**PKPbc**	**19 16 28.5**	**+0.2**
	3.3nm,0.7s,baz=252,slow=2.6,SNR=17						

*NIED **27** 19:05:00, 37°.30N×142°.40E, h23km, Mw3.8 Best double couple: M₀5.85000×10¹⁴ NP1:φs359.00000°, δ34.00000°, λ-149.00000°. NP2:φs243.00000°, δ74.00000°, λ-60.00000°.*

*ISCJB **27** 19:05:04.9±0.7, 37°.18N±0°.06×142°.48E±0°.06, h21km, mb3.6/7, Error ellipse: s-maj=9.0km s-min=6.0km az=141.8*
*IDC **27** 19:05:04.1±1.0, 37°.20N×142°.42E, h0km, mb3.7/7, mb1 3.8/10, mb1mx3.5/48, mbtmp3.7/10, ML3.5/3, MS2.9/1, Ms1 2.9/1, ms1mx2.3/35, Error ellipse: s-maj=27.2km s-min=17.3km az=98.0*
*JMA **27** 19:05:06.0±0.6, 37°.35N×142°.40E, h33km, M4.1*
ISC 27 19:05:07.4±1.0, 37°.26N±0°.07×142°.29E±0°.08, h21km, n23, σ1§47/20, mb3.6/7, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**1.13**	**276**	P	**Pn**	**19 05 26.8**	**-1.2**
ONAJ	**Iwakimizuishiy**	**1.20**	**263**	P	**Pn**	19 05 28.0	-1.0
ONAJ				S	**Sn**	19 05 45.3	+0.6
JIO	**Ouri**	**1.41**	**328**	P	**Pn**	19 05 30.3	-1.4
JHO	**Hitachi**	**1.52**	**245**	P	**Pn**	19 05 33.2	-0.2
JHO				*e*S	**Sb**	19 05 53.5	-0.2
MJAR	**Matsushiro Arr**	**3.35**	**259**	Pn	**Pn**	**19 05 59.5**	**+1.0**
	2.7nm,0.3s,baz=87,slow=15,SNR=17						
MJAR				Sn	**Sb**	19 06 42.3	-4.0
	4.1nm,0.3s,baz=67,slow=21,SNR=5.5						
MAT	**Matsushiro**	**3.35**	**259**	P	**Pn**	**19 06 00.5**	**+2.0**
MAT				*e*S	**Sn**	19 06 40.2	+2.6
JHJ	**Hachijo jima 2**	**4.61**	**207**	Pn	**Pn**	19 06 16.0	+0.2
	23nm,0.3s,baz=66,slow=20,SNR=7.1						
JHJ				Sn	**Sn**	19 07 07.5	-1.3
	8.5nm,0.3s,baz=72,slow=20,SNR=1.8						
ASAJ	**Asahikawa**	**6.85**	**2**	Pn	**Pn**	**19 06 47.0**	**+0.3**
	0.6nm,0.3s,baz=217,slow=20,SNR=3.9						
USRK	**Ussuriysk Ar.**	**10.44**	**315**	Pn	Pn	19 07 41.9	+6.1
	0.5nm,0.3s,baz=130,slow=14,SNR=6.2						
KLR	**Kul'dur**	**14.20**	**331**	LR	LR	19 13 30.7	
	comp=Z,47nm,19.3s,baz=192,slow=35						
SEY	**Seymchan**	**26.44**	**10**	P	**P**	**19 10 43.3**	**+0.9**
	0.5nm,0.5s,baz=149,slow=19,SNR=3.7						
H11N2	**WAKE ISLAND Hy**	**27.67**	**122**	T	T	19 39 52.4	
	baz=315,slow=75,SNR=64						
H11N1	**WAKE ISLAND Hy**	**27.68**	**122**	T	T	19 39 52.7	
	baz=315,slow=75,SNR=45						
H11N3	**WAKE ISLAND Hy**	**27.69**	**122**	T	T	19 39 53.8	
	baz=315,slow=75,SNR=44						
SONM	**Songino Array**	**28.24**	**303**	P	**P**	**19 10 59.6**	**+0.6**
	0.8nm,0.6s,baz=94,slow=8.6,SNR=5.6						
H11S1	**WAKE ISLAND Hy**	**28.40**	**124**	T	T	19 40 47.8	
	baz=317,slow=76,SNR=46						
H11S3	**WAKE ISLAND Hy**	**28.40**	**125**	T	T	19 40 47.9	
	baz=317,slow=76,SNR=42						
H11S2	**WAKE ISLAND Hy**	**28.42**	**124**	T	T	19 40 49.0	
	baz=317,slow=76,SNR=35						
ZALV	**Zalesovo Beam**	**42.28**	**312**	P	**P**	**19 12 59.6**	**+0.5**
	0.9nm,0.5s,baz=96,slow=6.5,SNR=3.4						
MKAR	**Makanchi Array**	**44.59**	**302**	P	**P**	**19 13 18.6**	**+0.7**
	0.5nm,0.6s,baz=80,slow=9.9,SNR=6.1						
ILAR	**Eielson Array**	**49.33**	**31**	P	**P**	**19 13 51.4**	**-0.2**
	0.3nm,0.8s,baz=270,slow=6.3,SNR=3.8						
WRA	**Warramunga Arr**	**57.39**	**189**	P	**P**	**19 14 53.8**	**-0.5**
	1.1nm,0.6s,baz=6.2,slow=7.2,SNR=13						
ASAR	**Alice Springs**	**61.11**	**189**	P	**P**	**19 15 19.7**	**-0.3**
	0.7nm,0.7s,baz=12,slow=6.6,SNR=6.6						

*IDC **27** 19:06:00.9±4.5, 17°.80S×178°.75W, h615km±59km, mb3.3/11, mb1 3.6/12, mb1mx3.2/40, mbtmp4.2/12, Error ellipse: s-maj=60.4km s-min=21.9km az=152.0*
ISC 27 19:05:55.3±1.3, 17°.7S±0°.4×178°.5W±0°.3, h547km, n19, σ1§16/19, mb3.7/11, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**14.79**	**250**	P	**P**	**19 09 04.8**	**+2.1**
	0.4nm,0.3s,baz=107,slow=19,SNR=3.8						
STKA	**Stephens Creek**	**38.63**	**241**	P	**P**	19 12 31.6	-0.5
	2.3nm,0.5s,baz=96,slow=10,SNR=14						
WRA	**Warramunga Arr**	**44.55**	**259**	P	**P**	19 13 18.1	-1.0
	2.7nm,0.7s,baz=96,slow=7.2,SNR=52						
ASAR	**Alice Springs**	**44.73**	**254**	P	**P**	19 13 20.0	-0.4
	11nm,0.6s,baz=88,slow=8.7,SNR=215						
YBH	**Yreka Blue Hor**	**78.43**	**39**	P	**P**	19 17 01.2	+1.4
	1.8nm,0.6s,baz=243,slow=3.3,SNR=5.5						
NVAR	**Mina Array Bea**	**79.35**	**44**	P	**P**	19 17 06.0	+1.1
	1.4nm,0.6s,baz=220,slow=8.3,SNR=4.9						
SEY	**Seymchan**	**83.53**	**347**	P	**P**	19 17 26.2	+0.7
	1.0nm,0.5s,baz=162,slow=19,SNR=5.6						
ILAR	**Eielson Array**	**85.69**	**13**	P	**P**	19 17 35.7	-0.3
	0.6nm,0.4s,baz=223,slow=4.7,SNR=15						
TXAR	**Lajitas Array**	**85.98**	**58**	P	**P**	19 17 39.1	+0.8
	2.1nm,0.7s,baz=232,slow=4.1,SNR=8.4						
PDAR	**Pinedale Array**	**87.27**	**43**	P	**P**	19 17 44.6	+0.3
	0.8nm,0.6s,baz=236,slow=4.5,SNR=3.7						
INK	**Inuvik**	**91.70**	**15**	P	**P**	19 18 03.4	-0.5
	1.1nm,0.9s,baz=221,slow=3.7,SNR=3.2						
YKA	**Yellowknife Ar**	**94.18**	**25**	P	**P**	19 18 15.2	-0.2
	0.2nm,0.5s,baz=238,slow=4.6,SNR=4.1						
MKAR	**Makanchi Array**	**108.89**	**314**	PKiKP	**PKiKP**	**19 23 20.7**	**-2.0**
	0.1nm,0.4s,baz=54,slow=2.8,SNR=3.3						
ARCES	**ARCESS Array B**	**126.07**	**350**	PKP	**PKPdf**	19 23 53.4	-1.5
	2.5nm,0.8s,baz=17,slow=0.9,SNR=4.4						
FINES	**FINESS Array B**	**132.94**	**344**	PKP	**PKPdf**	19 24 06.0	-2.0
	2.0nm,1.0s,baz=48,slow=2.1,SNR=3.4						
CLL	**Collm**	**145.22**	**347**	*i* P	**PKPbc**	19 24 31.4	-0.2
	comp=Z,5.0nm,0.7s						
DPC	**Dobruska-Polom**	**145.30**	**343**	*e*P	**PKPbc**	**19 24 32.3**	**+0.3**
KHC	**Kasperske Hory**	**147.13**	**345**	*e*P	**PKPbc**	**19 24 37.1**	**0.0**
GERES	**GERESS Array B**	**147.36**	**345**	PKPbc	**PKPbc**	**19 24 37.1**	**-0.7**
	comp=Z,1.1nm,0.7s,baz=25,slow=3.5,SNR=9.7						

*IDC **27** 19:09:22.8±2.2, 43°.61N×105°.40W, h0km, mb1 3.4/3, mb1mx3.1/48, mbtmp3.2/3, ML3.2/2, Error ellipse: s-maj=45.3km s-min=10.2km az=150.0*
*NEIC **27** 19:09:23.0±0.8, 43°.63N×105°.35W, h0km, ML3.0, Error ellipse: s-maj=12.7km s-min=8.8km az=180.0, Suspected Mining explosion.*
NEIC 75 km [46 miles] S of Gillette.
ISC 27 19:09:22.4±0.8, 43°.35N±0°.04×105°.16W±0°.03, h0km, n39, σ1§29/41, Wyoming

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
J25A	**Sunshine Ranch**	**0.99**	**87**	P	**Pn**	**19 09 44.1**	**+0.4**
	baz=282						
RSSD	**Black Hills**	**1.12**	**46**	P	**Pg**	19 09 43.4	-0.5
	baz=243						
RSSD	**Black Hills**	**1.12**	**46**	*e*Pg	**Pg**	19 09 43.1	-0.8
K22A	**Casper**	**1.22**	**235**	P	**Pn**	19 09 48.4	+1.5
	baz=41						
I25A	**Rochford**	**1.23**	**57**	P	**Pg**	19 09 46.1	+0.1
	baz=252						
H25A	**Fruitdale**	**1.70**	**41**	Pg	**Pn**	19 09 53.6	+0.2
	baz=232						
I26A	**New Underwood**	**1.80**	**67**	Pb	**Pg**	19 09 57.4	+0.5
	baz=258						
PHWY	**Pilot Hill**	**2.06**	**186**	*e*Pn	**Pb**	19 10 00.9	0.0
G25A	**Newell**	**2.23**	**34**	Pb	**Pn**	19 10 01.5	+0.9
	baz=222						
G25A				Sb	**Sn**	19 10 30.3	+1.4
	baz=222						
J27A	**Elkhorn Farm,**	**2.31**	**91**	Pb	**Pg**	19 10 07.3	+0.7
	baz=280						
I27A	**Quinn**	**2.37**	**71**	Pb	**Pg**	19 10 07.7	0.0
	baz=261						
I27A				Sb	**Sg**	19 10 40.1	+1.7
	baz=261						
N23A	**Red Feather La**	**2.52**	**194**	P	**Pg**	19 10 10.8	0.0
	baz=8.9						
H27A	**Howes**	**2.57**	**59**	P	**Pb**	19 10 09.4	0.0
	baz=248						
G26A	**Maurine**	**2.67**	**43**	P	**Pn**	19 10 08.5	+1.7
	baz=231						
G26A				Sb	**Sb**	19 10 43.9	-0.6
	baz=231						
F25A	**Bowman**	**2.85**	**25**	P	**Pn**	19 10 09.5	+0.4
	baz=211						
F26A	**Lodgepole**	**3.07**	**35**	P	**Pn**	19 10 13.0	+0.8
	baz=222						
G27A	**Dupree**	**3.08**	**48**	Pb	**Pb**	19 10 18.2	+0.2
	baz=236						
G27A				Sb	**Sb**	19 10 57.1	+1.0
	baz=236						
BW06	**Boulder Array**	**3.27**	**261**	*e*Pn	**Pn**	19 10 17.2	+2.0
PDAR	**Pinedale Array**	**3.27**	**261**	Pn	**Pn**	19 10 17.1	+1.9
	3.2nm,0.3s,baz=78,slow=15,SNR=42						
PDAR				Lg	Lg	19 11 01.6	
	7.4nm,0.3s,baz=74,slow=34,SNR=7.1						
OGNE	**Ogallala**	**3.35**	**135**	*e*Pn	**Pb**	**19 10 21.7**	**-1.0**
E25A	**Miller Ranch,**	**3.39**	**21**	P	**Pn**	19 10 16.8	+0.3
	baz=206						
RLMT	**Red Lodge**	**3.44**	**302**	P	**Pn**	**19 10 17.1**	**-0.4**
	baz=117						
RLMT	**Red Lodge**	**3.44**	**302**	*e*Pn	**Pn**	**19 10 17.0**	**-0.4**
ISCO	**Idaho Springs**	**3.57**	**186**	*e*Pn	**Pb**	**19 10 24.8**	**-1.7**
O20A	**White River Ci**	**3.96**	**217**	*e*Pn	**Pb**	**19 10 25.0**	**+0.5**
LOHW	**Long Hollow**	**3.97**	**276**	*e*Pn	**Pn**	**19 10 23.3**	**-1.4**
LKWY	**Lake**	**3.97**	**290**	*e*Pg	**Pb**	**19 10 34.6**	**+1.2**
D25A	**Fairfield**	**4.01**	**18**	P	**Pn**	**19 10 22.9**	**-2.3**
	baz=203						
H17A	**Grant Village**	**4.05**	**287**	*e*Pn	Pn	19 10 21.9	-3.9
SNOW	**Snow King Moun**	**4.08**	**273**	*e*Pg	**Pb**	**19 10 35.1**	**0.0**
MOOW	**Moose Ponds**	**4.08**	**277**	*e*Pn	**Pn**	**19 10 24.3**	**-1.9**
FLWY	**Flagg Ranch**	**4.08**	**282**	*e*Pg	**Pb**	**19 10 36.5**	**+1.3**
REDW	**Red Top Meadow**	**4.15**	**272**	*e*Pg	**Pb**	**19 10 39.0**	**+2.6**
D26A	**Manning**	**4.15**	**27**	P	**Pn**	**19 10 27.0**	**-0.1**
	baz=212						
IMW	**Indian Meadow**	**4.23**	**279**	*e*Pn	**Pn**	**19 10 28.3**	**0.0**
AHID	**Auburn Hatcher**	**4.39**	**264**	*e*Pg	**Pg**	**19 10 45.0**	**-1.5**
ULM	**Lac du Bonnet**	**9.38**	**39**	Pn	**Pn**	**19 11 35.7**	**-3.1**
	0.4nm,0.3s,baz=226,slow=14,SNR=3.0						
ULM				Lg	Lg	19 14 10.2	
	0.6nm,0.3s,baz=323,slow=20,SNR=2.6						
I56US	**NEWPORT INFRAS**	**9.69**	**305**	*i*		20 07 40.0	
	baz=115,slow=324,SNR=1.8						
YKA	**Yellowknife Ar**	**19.96**	**347**	P	**P**	**19 13 53.9**	**-1.9**
	baz=159,slow=12,SNR=3.3						

*NEIC **27** 19:19:20.6, 38°.41N×118°.72W, h3km, ML4.3(REN), MW3.9(SLM), After REN.*
NEIC Felt [II] at Hawthorne. Also felt at Carson City and Yerington.
*IDC **27** 19:19:21.2±0.9, 38°.39N×118°.71W, h0km, mb3.6/3, mb1 3.9/8, mb1mx3.6/45, mbtmp3.6/8, ML4.0/5, MS3.4/3, Ms1 3.4/3, ms1mx2.9/36, Error ellipse: s-maj=12.6km s-min=6.5km az=9.0*
ISC 27 19:19:22.2±1.3, 38°.35N±0°.03×118°.61W±0°.04, h1km±10km, n77, σ1§42/88, California-Nevada border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
NVAR	**Mina Array Bea**	**0.26**	**71**	Pg	**Pg**	**19 10 28.6**	**-0.3**
	796nm,0.3s,baz=260,slow=20,SNR=3207						
NVAR				Lg	Lg	19 19 31.1	
	2μm,0.3s,baz=282,slow=34,SNR=94						
MLAC	**Mammoth, Mammo**	**0.74**	**194**	P	**Pg**	**19 19 35.8**	**-0.4**
	baz=6.7						
MLAC				S	**Sg**	19 19 45.1	-0.7
	baz=6.7						
TIN	**Tinemaha, Big**	**1.32**	**167**	P	**Pg**	**19 19 47.2**	**-0.3**
	baz=344						
CMB	**Columbia Colle**	**1.43**	**258**	*e*Pg	Pn	19 19 45.6	-3.7
GRAC	**Grapevine Rang**	**1.67**	**143**	P	**Pn**	**19 19 52.3**	**-0.4**
	baz=323						
GRAC				S	**Sn**	19 20 14.4	-0.3
	baz=323						
CWC	**Cottonwood Cre**	**1.95**	**167**	P	**Pn**	**19 19 55.7**	**-0.8**
	baz=346						
RCTC	**Rector, Farmer**	**2.10**	**194**	Pb	**Pb**	**19 20 00.2**	**-0.7**
	baz=11						
RCTC				Sb	**Sg**	19 20 28.9	-0.7
	baz=11						
DAC	**Darwin (Calif)**	**2.22**	**158**	*e*Pn	**Pn**	19 19 59.9	-0.3
FURC	**Furnace Creek,**	**2.34**	**143**	Pb	**Pb**	19 20 05.2	+0.2
	baz=324						
TPNV	**Topopah Spring**	**2.34**	**126**	P	**Pn**	**19 20 01.4**	**-0.5**
	baz=308						
R11A	**Troy Canyon, C**	**2.38**	**89**	P	**Pn**	**19 20 01.0**	**-1.5**
	baz=272						
R11A				Sb	**Sg**	19 20 37.5	-1.1
	baz=272						
R11A	**Troy Canyon, C**	**2.38**	**89**	*e*Pn	**Pn**	**19 20 00.8**	**-1.6**
MPMC	**Manual Prospec**	**2.45**	**158**	P	**Pn**	**19 20 02.9**	**-0.6**
	baz=338						
MPMC				S	**Sn**	19 20 34.7	+0.5
	baz=338						
ISA	**Isabella, Lake**	**2.68**	**178**	Pb	**Pb**	**19 20 10.5**	**-0.5**
	baz=356						
ISA				Sb	**Sb**	19 20 46.0	+1.6
	baz=356						
SAO	**San Andreas Ge**	**2.75**	**236**	*e*Pn	**Pn**	19 20 06.5	-0.9
LRMC	**Laurel Mtn Rad**	**2.96**	**165**	Pg	**

69nm,0.7s
MFID Camas Ranch 5.49 22 *e*Pn **Pn 19 20 45.2 +0.1**
31nm,0.6s
Y12C Blythe 5.66 143 Pg **Pg 19 21 09.8 -0.8**
baz=325
MONP2 Monument Peak 5.73 161 P **Pn 19 20 48.2 -0.3**
baz=342
HLID Hailey 6.10 30 *e*Pn **Pn 19 20 53.5 -0.2**
29nm,0.6s
I04A Tendick Farm, 6.15 333 P **Pn 19 20 55.1 +0.9**
baz=151,SNR=11
I05D Terrebonne, OR 6.33 342 P **Pn 19 20 57.0 +0.4**
baz=161,SNR=12
I03D Drain, OR 6.43 328 P **Pn 19 20 59.4 +1.4**
baz=145
WUAZ Wupatki 6.45 114 Pn **Pn 19 20 59.1 +0.7**
34nm,0.8s
BROR Big Rock Looko 6.58 335 P **Pn 19 21 01.6 +1.5**
BPO Bald Peter 6.71 341 P **Pn 19 21 04.0 +2.0**
VTHM Trough 6.98 349 P **Pn 19 21 08.3 +2.7**
LOHW Long Hollow 8.02 46 *e*Pn **Pn 19 21 19.1 -1.0**
9.4nm,0.7s
MOOW Moose Ponds 8.03 45 *e*Pn **Pn 19 21 19.2 -0.9**
5.1nm,0.6s
BW06 Boulder Array 8.18 54 *e*Pn **Pn 19 21 23.5 +1.3**
9.7nm,1.0s
PDAR Pinedale Array 8.19 54 Pn **Pn 19 21 23.8 +1.5**
0.3nm,0.3s,baz=236,slow=13,SNR=17
PDAR Lg Lg 19 23 36.2
baz=229,slow=27,SNR=2.5
O20A White River Ci 8.24 74 Pn **Pn 19 21 22.1 -1.0**
14nm,0.9s
FLWY Flagg Ranch 8.27 44 *e*Pn **Pn 19 21 23.5 +0.1**
12nm,0.8s
MDW Midway 8.31 355 P **Pn 19 21 26.8 +3.1**
MSO Missoula 9.15 21 P **Pn 19 21 36.2 +0.8**
baz=204
NEW Newport 9.97 6 Pn **Pn 19 21 47.4 +0.8**
0.2nm,0.3s,baz=188,slow=20,SNR=4.1
NEW Lg Lg 19 24 30.5
0.3nm,0.3s,baz=313,slow=19,SNR=2.8
NEW LR LR 19 25 30.2
comp=Z,115nm,18.0s,baz=203,slow=37
TXAR Lajitas Array 15.31 121 Pn **P 19 23 04.8 +0.3**
0.4nm,0.3s,baz=306,slow=9.9,SNR=4.5
ULM Lac du Bonnet 20.07 46 P **P 19 23 55.7 -1.1**
3.7nm,0.8s,baz=231,slow=10,SNR=3.2
YKA Yellowknife Ar 24.30 5 P **P 19 24 39.3 -1.5**
1.1nm,0.7s,baz=186,slow=9.7,SNR=25
INK Inuvik 31.12 349 LR LR 19 38 48.7
comp=Z,64nm,19.6s,baz=280,slow=38
ILAR Eielson Array 31.24 337 P **P 19 25 42.4 -0.5**
0.8nm,0.9s,baz=153,slow=8.4,SNR=11

*IDC **27** 19:27:06.5±9.0, 36°.53N×141°.85E, h0km, mb3.5/3, mb1 3.4/4, mb1mx3.2/39, mbtmp3.4/4, ML2.9/1, MS2.8/1, Ms1 2.8/1, ms1mx2.4/36, Error ellipse: s-maj=152.2km s-min=65.4km az=136.0*
ISC 27 19:27:08.8±1.7, 36°.3N±0°.1×141°.7E±0°.1, h19km, n8, σ1§01/9, mb3.4/3, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
MJAR	**Matsushiro Arr**	**2.85**	**277**	Pn	**Pn**	**19 27 54.3**	**+1.0**
	1.8nm,0.3s,baz=90,slow=16,SNR=9.5						
MJAR				LR	LR	19 28 38.7	
	comp=Z,156nm,21.3s,baz=120,slow=32						
MAJO	**Matsushiro**	**2.85**	**277**	*e*Pn	**Pn**	**19 27 54.5**	**+1.2**
MAT	**Matsushiro**	**2.85**	**277**	P	**Pn**	**19 27 54.7**	**+1.4**
MAT	**Matsushiro**	**2.85**	**277**	P	**Pg**	**19 28 03.2**	**-0.3**
MAT				S	**Sg**	**19 28 39.9**	**-0.6**
JHJ2	**Mitsune**	**3.50**	**207**	*e*Pn	**Pn**	**19 28 02.7**	**+0.6**
SONM	**Songino Array**	**28.44**	**305**	P	**P**	**19 33 01.4**	**-1.0**
	0.3nm,0.6s,baz=108,slow=8.7,SNR=3.3						
ZALV	**Zalesovo Beam**	**42.63**	**313**	P	**P**	**19 35 03.6**	**0.0**
	0.4nm,0.3s,baz=101,slow=8.7,SNR=2.7						
MKAR	**Makanchi Array**	**44.75**	**303**	P	**P**	**19 35 21.2**	**+0.3**
	0.3nm,0.6s,baz=84,slow=7.7,SNR=4.3						

*NIED **27** 19:27:00, 36°.30N×142°.30E, h23km, Mw4.2 Best double couple: M0 2.27000×10^15 NP1:φ1=191.00000°, δ30.00000°, λ81.00000°. NP2:φ2=22.00000°, δ61.00000°, λ95.00000°.*
*JMA **27** 19:27:11.1±0.4, 36°.29N×142°.28E, h17km, M3.8*
*ISCJB **27** 19:27:11.7±0.6, 36°.26N±0°.04×142°.23E±0°.08, h19km, mb4.0/28, MS3.7/1, Error ellipse: s-maj=9.7km s-min=5.2km az=25.1*
*IDC **27** 19:27:11.3±0.8, 36°.19N×141°.94E, h0km, mb3.9/12, mb1 3.9/16, mb1mx3.7/43, mbtmp3.8/16, ML3.6/3, Error ellipse: s-maj=22.0km s-min=16.0km az=99.0*
*MOS **27** 19:27:13.9±1.3, 36°.23N×142°.15E, h33km, mb4.5/15, Error ellipse: s-maj=14.4km s-min=9.0km az=115.6*
*NEIC **27** 19:27:15.5±3.4, 36°.18N×141°.95E, h28km±23km, mb4.3/5, Error ellipse: s-maj=13.3km s-min=9.1km az=126.0*
ISC 27 19:27:14.1±0.8, 36°.29N±0°.05×142°.00E±0°.09, h19km, n60, σ1§45/59, mb4.2/28, 4C-1D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
CHOJ	**Chosi**	**1.09**	**238**	P	**Pb**	**19 27 34.6**	**+0.2**
CHOJ				*e*S	**Sg**	**19 27 51.0**	**+1.3**
JHO	**Hitachi**	**1.19**	**286**	P	**Pn**	**19 27 36.0**	**+0.2**
JFK	**Kawauchi**	**1.40**	**320**	P	**Pn**	**19 27 38.0**	**-0.7**
JFT	**Otama**	**1.81**	**313**	P	**Pb**	**19 27 45.8**	**-0.8**
BSO1	**Boso 1**	**1.83**	**207**	P	**Pn**	**19 27 43.9**	**-0.2**
BSO1				*e*S	**Sb**	**19 28 07.7**	**-1.4**
JMM	**Marumori**	**1.84**	**329**	P	**Pn**	**19 27 44.6**	**-0.1**
BSO3	**Boso 3**	**1.92**	**220**	P	**Pn**	**19 27 46.0**	**+0.5**
JAG	**Ashikaga**	**2.06**	**274**	P	**Pn**	**19 27 48.7**	**+1.0**
MJAR	**Matsushiro Arr**	**3.06**	**276**	Pn	**Pn**	**19 28 02.0**	**+0.5**
	4.4nm,0.3s,baz=89,slow=16,SNR=30						
MJAR	**Matsushiro Arr**	**3.06**	**276**	Pn	**Pn**	**19 28 02.0**	**+0.5**
MAJO	**Matsushiro**	**3.06**	**276**	*e*P	**Pn**	**19 28 03.0**	**+1.4**
JHJ	**Hachijo jima 2**	**3.65**	**211**	Pn	**Pn**	**19 28 09.0**	**-0.6**
	47nm,0.3s,baz=34,slow=22,SNR=10						
JHJ					Sn	**Sn**	**19 28 48.3**	**-3.8**
	45nm,0.3s,baz=90,slow=20,SNR=11						
ERM	**Erimo**	**5.79**	**9**	*i* P	**Pn**	**19 28 38.4**	**-0.5**
ASAJ	**Asahikawa**	**7.83**	**3**	Pn	**Pn**	**19 29 08.8**	**+1.8**
	0.8nm,0.3s,baz=167,slow=30,SNR=4.8						
ASAJ					Sn	**Sn**	**19 30 30.3**	**-4.7**
	0.6nm,0.3s,baz=95,slow=18,SNR=2.4						
USRK	**Ussuriysk Ar.**	**10.99**	**319**	Pn	**Pn**	**19 29 49.5**	**-0.7**
	0.2nm,0.3s,baz=110,slow=13,SNR=3.2						
YAK	**Yakutsk**	**26.89**	**347**	P	**P**	**19 32 53.7**	**+0.1**
	3.0nm,0.3s,baz=170,slow=1.1,SNR=4.1						
YAK	**Yakutsk**	**26.89**	**347**	*e*P	**P**	**19 32 53.7**	**+0.1**
YAK				pmax	pmax		
	comp=Z,20nm,1.1s						
YAK				pmax	pmax		
	comp=N,15nm,1.5s						
YAK				pmax	pmax		
	comp=E,4.0nm,1.5s						
H11N2	**WAKE ISLAND Hy**	**27.37**	**120**	T	T	20 01 27.3	
	baz=313,slow=75,SNR=12						
H11N1	**WAKE ISLAND Hy**	**27.38**	**120**	T	T	20 01 31.5	
	baz=313,slow=75,SNR=12						
H11N3	**WAKE ISLAND Hy**	**27.39**	**120**	T	T	20 01 35.3	
	baz=313,slow=75,SNR=12						
ENH	**Enshi**	**27.75**	**267**	*e*P	**P**	**19 33 01.3**	**-0.3**
	comp=E,7.4nm,0.7s						
H11S1	**WAKE ISLAND Hy**	**28.07**	**123**	T	T	20 02 18.1	
	baz=314,slow=75,SNR=9.2						
H11S3	**WAKE ISLAND Hy**	**28.07**	**123**	T	T	20 02 18.7	
	baz=314,slow=75,SNR=11						
H11S2	**WAKE ISLAND Hy**	**28.08**	**123**	T	T	20 02 30.2	
	baz=314,slow=75,SNR=6.8						
ULN	**Ulaanbaatar**	**28.16**	**305**	*c*e P	**P**	**19 33 06.8**	**+1.5**
ULN				pmax	pmax		
	comp=Z,5.0nm,1.0s						
BOD	**Bodaibo**	**28.41**	**328**	*e*P	**P**	**19 33 06.5**	**-0.6**
BOD				pmax	pmax		
	comp=Z,7.0nm,1.6s						
SONM	**Songino Array**	**28.59**	**305**	P	**P**	**19 33 09.7**	**+0.7**
	comp=Z,4.3nm,0.9s,baz=110,slow=8.9,SNR=28						
ZAK	**Zakamensk**	**31.10**	**309**	*e*P	**P**	**19 33 32.5**	**+1.3**
ZAK				pmax	pmax		
	comp=Z,4.0nm,1.2s						
TLY	**Talaya**	**31.17**	**312**	*e*P	**P**	**19 33 33.7**	**+2.0**
TLY				pmax	pmax		
	comp=Z,6.0nm,1.1s						
TLY				MLR	MLR		

	comp=Z,105nm,12.0s						
BILL	**Bilibino**	**34.61**	**16**	*i* P	P	19 34 07.3	+5.8
BILL				pmax	pmax		
	comp=Z,1.0nm,0.9s						
CHTO	**Chiang Mai**	**41.57**	**257**	*e*P	**P**	**19 35 00.1**	**-0.7**
CHTO				pmax	pmax		
	comp=Z,4.0nm,1.2s						
CHTO	**Chiang Mai**	**41.57**	**257**	*e*P	**P**	**19 35 00.1**	**-0.7**
	comp=Z,3.7nm,1.2s						
CMAR	**Chiang Mai Arr**	**41.77**	**257**	P	**P**	**19 35 02.1**	**-0.3**
	comp=Z,0.8nm,0.8s,baz=51,slow=6.5,SNR=11						
CMAR	**Chiang Mai Arr**	**41.77**	**257**	*i* P	**P**	**19 35 03.2**	**+0.8**
CMAR				pmax	pmax		
	comp=Z,1.0nm,0.7s						
LSA	**Lhasa**	**42.75**	**276**	*e*P	**P**	**19 35 11.9**	**+1.0**
LSA				pmax	pmax		
	comp=Z,2.0nm,0.7s						
LSA	**Lhasa**	**42.75**	**276**	*e*P	**P**	**19 35 11.9**	**+1.0**
	comp=Z,2.5nm,0.7s						
ZALV	**Zalesovo Beam**	**42.76**	**313**	P	**P**	**19 35 10.4**	**+0.4**
	comp=Z,2.0nm,0.7s,baz=93,slow=5.9,SNR=7.5						
ZALV	**Zalesovo Beam**	**42.76**	**313**	*i* P	**P**	**19 35 12.5**	**+2.4**
ZALV				pmax	pmax		
	comp=Z,2.0nm,0.7s						
MKAR	**Makanchi Array**	**44.91**	**303**	P	**P**	**19 35 27.9**	**+0.4**
	comp=Z,3.0nm,0.7s,baz=94,slow=9.8,SNR=22						
MKAR	**Makanchi Array**	**44.91**	**303**	*c*e P	**P**	**19 35 28.2**	**+0.7**
MKAR				pmax	pmax		
	comp=Z,3.0nm,0.7s						
KURK	**Kurchatov**	**46.76**	**309**	*e*P	**P**	**19 35 42.3**	**+0.3**
KURK				pmax	pmax		
	comp=Z,18nm,1.1s						
KURK	**Kurchatov**	**46.76**	**309**	*e*P	**P**	**19 35 42.3**	**+0.3**
	comp=Z,18nm,1.1s						
ILAR	**Eielson Array**	**49.87**	**32**	P	**P**	**19 36 07.7**	**+1.9**
	comp=Z,0.2nm,0.7s,baz=269,slow=7.2,SNR=3.0						
TKM2	**Tokmak 2**	**50.40**	**299**	*e*P	**P**	**19 36 11.7**	**+1.3**
TKM2				pmax	pmax		
	comp=Z,12nm,1.3s						
TKM2	**Tokmak 2**	**50.40**	**299**	*e*P	**P**	**19 36 11.7**	**+1.3**
	comp=Z,12nm,1.3s						
AAK	**Ala-Archa**	**51.26**	**299**	*e*P	**P**	**19 36 20.2**	**+3.4**
AAK				pmax	pmax		
	comp=Z,4.0nm,1.0s						
BRVK	**Borovoye**	**51.47**	**313**	*e*P	**P**	**19 36 17.4**	**-0.7**
BRVK				pmax	pmax		
	comp=Z,2.0nm,0.8s						
WRA	**Warramunga Arr**	**56.40**	**189**	P	**P**	**19 36 53.0**	**-1.3**
	comp=Z,0.4nm,0.6s,baz=3.7,slow=7.7,SNR=3.3						
WRA	**Warramunga Arr**	**56.40**	**189**	P	**P**	**19 36 53.0**	**-1.3**
WRA				pmax	pmax		
	comp=Z,1.0nm,0.8s						
ARU	**Arti**	**57.23**	**319**	*c* iP	**P**	**19 37 00.1**	**+0.3**
ARU						19 37 49.9	
ARU						19 39 07.5	
ARU				S	**S**	**19 44 53.7**	**-0.7**
ARU				SS	**SS**	**19 48 38.7**	**-4.3**
ARU				pmax	pmax		
	comp=Z,12nm,1.7s						
ABKAR	**Akbulak array**	**58.77**	**311**	*e*P	**P**	**19 37 10.7**	**-0.1**
	comp=Z,2.0nm,1.0s						
ASAR	**Alice Springs**	**60.12**	**189**	P	**P**	**19 37 19.6**	**-0.8**
	comp=Z,0.4nm,0.8s,baz=15,slow=7.7,SNR=3.8						
YKA	**Yellowknife Ar**	**64.21**	**30**	P	**P**	**19 37 48.9**	**+1.6**
	comp=Z,0.2nm,0.8s,baz=300,slow=6.9,SNR=3.6						
OBN	**Obninsk**	**68.97**	**324**	*e*P	**P**	**19 38 17.1**	**-0.7**
OBN				pmax	pmax		
	comp=Z,5.0nm,1.1s						
KBZ	**Khabaz**	**71.74**	**311**	P	**P**	**19 38 35.3**	**+0.4**
	comp=Z,2.0nm,0.9s,baz=94,slow=4.2,SNR=6.2						
KIV	**Kislovodsk**	**71.75**	**311**	*d*e P	**P**	**19 38 36.5**	**+1.4**
KIV				pmax	pmax		
	comp=Z,6.0nm,0.9s						
NB2	**NORSAR Subarra**	**75.05**	**338**	P	**P**	**19 38 54.4**	**+0.1**
	comp=Z,2.4nm,1.0s,baz=38,slow=6.2						
NOA	**NORSAR Array B**	**75.05**	**338**	P	**P**	**19 38 54.3**	**+0.1**
	comp=Z,1.2nm,0.8s,baz=37,slow=5.7,SNR=3.9						
AKASG	**Malin Array Be**	**75.17**	**323**	P	**P**	**19 38 54.6**	**-0.4**
	comp=Z,0.2nm,0.4s,baz=50,slow=7.6,SNR=4.9						
AKASG	**Malin Array Be**	**75.17**	**323**	*c*e P	**P**	**19 38 55.5**	**+0.5**

IDC 27 19:30:26.9±3.2, 11°.14S×118°.04E, h0km, mb3.5/2, mb1 3.5/4, mb1mx3.3/29, mbtmp3.3/4, ML3.3/2, Error ellipse: s-maj=173.3km s-min=26.2km az=49.0, South of Sumbawa

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
WRA	**Warramunga Arr**	**17.97**	**121**	P	Pn	19 34 38.1	-0.2
	0.1nm,0.3s,baz=299,slow=13,SNR=8.7						
ASAR	**Alice Springs**	**19.58**	**132**	P	P	19 34 57.0	+0.3
	0.1nm,0.3s,baz=306,slow=11,SNR=9.4						
SONM	**Songino Array**	**59.62**	**351**	P	P	19 40 33.1	+0.4
	0.4nm,0.6s,baz=168,slow=7.4,SNR=3.5						
MKAR	**Makanchi Array**	**65.93**	**334**	P	P	19 41 14.5	-0.3
	0.3nm,0.6s,baz=145,slow=5.3,SNR=3.1						

*ISK **27** 19:35:05.8, 34°.39N×28°.06E, h26km, MD4.2*
*ISCJB **27** 19:35:07.5±0.3, 34°.45N±0°.02×28°.20E±0°.03, h48km, Error ellipse: s-maj=4.0km s-min=3.0km az=164.0*
*CSEM **27** 19:35:09.1±0.2, 34°.48N×28°.09E, h40km, MD4.2, Error ellipse: s-maj=5.2km s-min=3.5km az=79.0*
*DDA **27** 19:35:09.5, 35°.05N×28°.47E, h5km, Md3.2*
*GII **27** 19:35:18.6±0.2, 34°.23N×30°.31E, h200km, MD2.9/3*
ISC 27 19:35:08.1±1.1, 34°.45N±0°.04×28°.14E±0°.04, h48km, n86, σ1§81/106, Eastern Mediterranean Sea

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
KARP	**Karpathos**	**1.36**	**324**	*e*PN	**Pn**	**19 35 29.8**	**-0.9**
KARP				*e*SN	**Sn**	**19 35 47.3**	**-0.2**
KARP	**Karpathos**	**1.36**	**324**	*e*Pn	**Pn**	**19 35 29.8**	**-0.9**
KARP				*e*Sn	**Sn**	**19 35 47.3**	**-0.2**
AKAS	**Kas**	**2.15**	**34**	*i* P	**Pn**	**19 35 42.8**	**+1.2**
AKAS				*i* S	**Sn**	**19 36 06.7**	**-0.4**
AKAS	**Kas**	**2.15**	**34**	P	**Pn**	**19 35 42.8**	**+1.2**
AKAS				S	**Sn**	**19 36 06.7**	**-0.4**
FETY	**Fethiye**	**2.31**	**19**	*e*PN	**Pn**	**19 35 44.4**	**+0.6**
FETY	**Fethiye**	**2.31**	**19**	*e*Pn	**Pn**	**19 35 44.4**	**+0.6**
DALY	**Dalyan (Mu˘la**	**2.40**	**10**	*e*PN	**Pn**	**19 35 45.3**	**+0.4**
DALY	**Dalyan (Mu˘la**	**2.40**	**10**	*e*Pn	**Pn**	**19 35 45.3**	**+0.4**
YER	**Yerkesik**	**2.68**	**3**	*e*PN	**Pn**	**19 35 49.5**	**+0.7**
YER	**Yerkesik**	**2.68**	**3**	*e*Pn	**Pn**	**19 35 49.5**	**+0.7**
BODT	**Bodrum**	**2.69**	**346**	*e*PN	**Pn**	**19 35 49.4**	**+0.5**
BODT	**Bodrum**	**2.69**	**346**	*e*Pn	**Pn**	**19 35 49.4**	**+0.5**
ELL	**Elmali**	**2.71**	**32**	*e*PN	**Pn**	**19 35 50.2**	**+0.9**
ELL	**Elmali**	**2.71**	**32**	*e*Pn	**Pn**	**19 35 50.2**	**+0.9**
THR5	**Thira Island,**	**3.01**	**312**	*e*PN	**Pn**	**19 35 53.1**	**-0.1**
THR5	**Thira Island,**	**3.01**	**312**	*e*Pn	**Pn**	**19 35 53.1**	**-0.1**
AYDN	**Tasoluk**	**3.21**	**356**	*i* P	**Pn**	**19 35 56.9**	**+0.8**
AYDN				*i* S	**Sn**	**19 36 31.8**	**-1.3**
AYDN	**Tasoluk**	**3.21**	**356**	P	**Pn**	**19 35 56.9**	**+0.8**
AYDN				S	**Sn**	**19 36 31.8**	**-1.3**
APE	**Apeiranthos**	**3.37**	**322**	*e*PN	**Pn**	**19 35 58.3**	**+0.1**
APE	**Apeiranthos**	**3.37**	**322**	*e*Pn	**Pn**	**19 35 58.3**	**+0.1**
HMAT	**Matruh**	**3.46**	**195**	P	**Pn**	**19 36 01.7**	**+2.3**
HMAT				S	**Sn**	**19 36 39.9**	**+0.8**
AYDB	**Zeytinkoy-Aydi**	**3.50**	**357**	*e*PN	**Pn**	**19 36 00.9**	**+0.9**
AYDB	**Zeytinkoy-Aydi**	**3.50**	**357**	*e*Pn	**Pn**	**19 36 01.0**	**+0.9**
SUTC	**Sutluce-Ispart**	**3.81**	**37**	*e*PN	**Pn**	**19 36 05.9**	**+1.5**
SUTC	**Sutluce-Ispart**	**3.81**	**37**	*e*Pn	**Pn**	**19 36 05.9**	**+1.5**
SLUM	**Salum**	**3.84**	**221**	P	**Pn**	**19 36 07.0**	**+2.4**
GAZI	**Gazipasa**	**3.85**	**61**	*i* P	**Pn**	**19 36 05.6**	**+0.8**
GAZI				*i* S	**Sn**	**19 36 48.6**	**-0.3**
GAZI	**Gazipasa**	**3.85**	**61**	P	**Pn**	**19 36 05.6**	**+0.8**
GAZI				S	**Sn**	**19 36 48.6**	**-0.3**
LEF	**Lefka**	**3.97**	**79**	*e*PN	**Pn**	**19 36 07.4**	**+1.0**
LEF	**Lefka**	**3.97**	**79**	*e*Pn	**Pn**	**19 36 07.4**	**+1.0**
KHAL	**Karahalli**	**4.06**	**15**	*i* P	**Pn**	**19 36 05.9**	**-1.9**
KHAL				*i* S	**Sn**	**19 36 51.2**	**-2.9**
KHAL	**Karahalli**	**4.06**	**15**	P	**Pn**	**19 36 05.9**	**-1.9**
KHAL				S	**Sn**	**19 36 51.2**	**-2.9**
KULA	**Kula-Manisa**	**4.08**	**6**	*e*PN	**Pn**	**19 36 09.2**	**+1.2**
KULA	**Kula-Manisa**	**4.08**	**6**	*e*Pn	**Pn**	**19 36 09.2**	**+1.2**
ERMK	**Ermenek**	**4.47**	**59**	*i* P	**Pn**	**19 36 15.4**	**+2.0**
ERMK				*i* S	**Sn**	**19 37 07.9**	**+3.7**
ERMK	**Ermenek**	**4.47**	**59**	P	**Pn**	**19 36 15.4**	**+2.0**
ERMK				S	**Sn**	**19 37 07.9**	**+3.7**
LFK	**Lefkose**	**4.51**	**78**	*e*PN	**Pn**	**19 36 15.9**	**+1.9**
LFK	**Lefkose**	**4.51**	**78**	*e*Pn	**Pn**	**19 36 15.9**	**+1.9**
DEMI	**Demirci**	**4.61**	**6**	*i* P	**Pn**	**19 36 14.8**	**-0.5**
DEMI				*i* S	**Sn**	**19 37 02.5**	**-5.1**
DEMI	**Demirci**	**4.61**	**6**	P	**Pn**	**19 36 14.8**	**-0.5**
IKL	**Isikli**	**4.87**	**67**	*e*PN	**Pn**	**19 36 20.4**	**+1.6**
IKL	**Isikli**	**4.87**	**67**	*e*Pn	**Pn**	**19 36 20.4**	**+1.6**
KONT	**Konya--Tatoy**	**4.88**	**43**	*e*PN	**Pn**	**19 36 21.1**	**+2.1**
KONT	**Konya--Tatoy**	**4.88**	**43**	*e*Pn	**Pn**	**19 36 21.1**	**+2.1**
KDHN	**Kadınhani**	**5.18**	**37**	*i* P	**Pn**	**19 36 25.1**	**+1.9**
KDHN				*i* S	**Sn**	**19 37 20.9**	**-0.7**
KDHN	**Kadinhani**	**5.18**	**37**	P	**Pn**	**19 36 25.0**	**+1.9**
KDHN				S	**Sn**	**19 37 20.9**	**-0.7**
HNAT	**Natroun**	**5.24**	**156**	P	**Pn**	**19 36 24.9**	**+1.0**
KOT	**Kottamia**	**5.49**	**144**	P	**Pn**	**19 36 29.1**	**+1.8**
HHAG	**Hagoal**	**5.60**	**142**	P	**Pn**	**19 36 30.2**	**+1.3**
SWA2		**5.67**	**204**	P	**Pn**	**19 36 32.1**	**+2.3**
KERG	**Konya-Eregli**	**5.69**	**57**	*i* P	Pn	19 36 33.6	+3.4
KERG				*i* S	**Sn**	**19 37 33.8**	**-0.4**
KERG	**Konya-Eregli**	**5.69**	**57**	P	Pn	19 36 33.6	+3.5
GLL	**Jalalah**	**5.73**	**147**	P	**Pn**	**19 36 31.9**	**+1.3**
MERS	**Mersin**	**5.73**	**63**	*e*PN	**Pn**	**19 36 33.2**	**+2.6**
MERS	**Mersin**	**5.73**	**63**	*e*Pn	**Pn**	**19 36 33.3**	**+2.6**
OFRI	**'Ofer**	**6.00**	**106**	Sn	**Sn**	**19 37 40.9**	**-0.9**
HNTI	**Hanita**	**6.02**	**101**	Sn	**Sn**	**19 37 41.1**	**-1.0**
SUZ	**Suez**	**6.08**	**138**	P	**Pn**	**19 36 37.4**	**+2.0**
SLTI	**Sal'it**	**6.18**	**109**	Pn	**Pn**	**19 36 38.2**	**+1.4**
SLTI				Sn	**Sn**	**19 37 44.9**	**-1.3**
SLTI	**Sal'it**	**6.18**	**109**	Pn	**Pn**	**19 36 38.2**	**+1.4**
MMA0B	**Mount Meron ar**	**6.22**	**101**	Pn	**Pn**	**19 36 39.3**	**+1.9**
MMA0B				Sn	**Sn**	**19 37 43.8**	**-3.4**
MMA0B	**Mount Meron ar**	**6.22**	**101**	Pn	**Pn**	**19 36 39.3**	**+1.9**
KARA	**Karaisali**	**6.28**	**61**	*e*PN	**Pn**	**19 36 41.0**	**+2.9**
KARA	**Karaisali**	**6.28**	**61**	*e*Pn	**Pn**	**19 36 41.0**	**+2.9**
ZAF	**Zafarana**	**6.37**	**143**	P	**Pn**	**19 36 40.7**	**+1.3**
MMLI	**Mount Malkishu**	**6.41**	**106**	Sn	**Sn**	**19 37 48.2**	**-3.7**
ZNM	**Zenema**	**6.46**	**140**	P	**Pn**	**19 36 42.5**	**+1.8**
REVI	**Revivim**	**6.50**	**120**	Sn	**Sn**	**19 37 52.4**	**-1.7**
AGG	**Agios Georgios**	**6.52**	**316**	*e*PN	**Pn**	**19 36 42.1**	**+0.6**
HMDT	**Nahal Hemdat**	**6.56**	**107**	Pn	**Pn**	**19 36 43.2**	**+1.2**
HMDT	**Nahal Hemdat**	**6.56**	**107**	Pn	**Pn**	**19 36 43.2**	**+1.2**
HNKL	**Nakhl**	**6.70**	**131**	P	**Pn**	**19 36 45.7**	**+1.8**
DSI	**Dead Sea**	**6.73**	**113**	Pn	**Pn**	**19 36 44.9**	**+0.6**
DSI	**Dead Sea**	**6.73**	**113**	Pn	**Pn**	**19 36 44.9**	**+0.6**
RMNI	**Mount Ramon**	**6.79**	**123**	Sn	**Sn**	**19 37 59.8**	**-1.4**
MZDA	**Masada**	**6.84**	**115**	Sn	**Sn**	**19 37 59.0**	**-3.2**
KRMI	**Paran Flat**	**7.05**	**126**	Sn	**Sn**	**19 38 04.5**	**-3.2**
PRNI	**Paran**	**7.10**	**123**	Pn	**Pn**	**19 36 50.3**	**+0.9**
PRNI				Sn	**Sn**	**19 38 05.7**	**-3.1**
PRNI	**Paran**	**7.10**	**123**	Pn	**Pn**	**19 36 50.3**	**+0.9**
ZFRI	**Zfri**	**7.10**	**121**	Pn	**Pn**	**19 36 50.1**	**+0.7**
ZFRI				Sn	**Sn**	**19 38 04.9**	**-3.9**
ZFRI	**Zfri**	**7.10**	**121**	Pn	**Pn**	**19 36 50.1**	**+0.7**
HFRF	**Wahat Farafira**	**7.28**	**179**	P	**Pn**	**19 36 54.2**	**+2.3**
MBRI	**Mt Berech**	**7.39**	**127**	Sn	**Sn**	**19 38 13.2**	**-2.7**
EIL	**Elat**	**7.49**	**128**	Pn	**Pn**	**19 36 54.7**	**-0.1**
EIL				Sn	**Sn**	**19 38 14.1**	**-4.3**
EIL	**Elat**	**7.49**	**128**	Pn	**Pn**	**19 36 54.7**	**-0.1**
HBST	**Basata**	**7.66**	**131**	P	**Pn**	**19 36 58.8**	**+1.7**

*IDC **27** 19:49:28.6±0.9, 36°.10N×141°.19E, h0km, mb3.4/6, mb1 3.6/9, mb1mx3.4/44, mbtmp3.5/9, ML3.3/3, MS2.5/2, Ms1 2.5/2, ms1mx2.3/30, Error ellipse: s-maj=26.2km s-min=18.4km az=97.0*
*ISCJB **27** 19:49:32.4±0.8, 36°.22N±0°.04×141°.07E±0°.08, h41km±8km, mb3.4/6, Error ellipse: s-maj=10.5km s-min=6.0km az=176.7*
*JMA **27** 19:49:33.8±0.1, 36°.23N×140°.91E, h46km±1km, M3.3*
ISC 27 19:49:33.3±1.2, 36°.24N±0°.04×141°.05E±0°.07, h30km±9km, n20, σ0§97/19, mb3.5/6, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JHO	**Hitachi**	**0.54**	**314**	P	**Pb**	**19 49 44.2**	**-0.1**
JHO				S	**Sb**	**19 49 51.3**	**-0.5**
CHOJ	**Chosi**	**0.55**	**196**	P	**Pb**	**19 49 44.9**	**+0.4**
CHOJ				S	**Sb**	**19 49 52.5**	**+0.3**
ONAJ	**Iwakimizuishiy**	**0.89**	**347**	P	**Pn**	**19 49 49.3**	**-0.5**
ONAJ				S	**Sn**	**19 50 00.4**	**-1.3**
MJAR	**Matsushiro Arr**	**2.31**	**278**	Pn	**Pn**	**19 50 09.2**	**-0.2**
	4.5n

SCZT	**Fangliau**	**0.71**	**275**	P	**Pn**	**19 51 56.3**	**-0.9**
	baz=277							
SCZT				S	**Sn**	**19 52 06.5**	**-1.5**
	baz=277							
CHKT	**Chengkung**	**0.78**	**359**	*e*P	**Pg**	**19 51 56.2**	**-0.6**
	baz=2.0							
CHKT				S	**Sn**	**19 52 10.3**	**+0.6**
	baz=2.0							
SSD	**Sandimen**	**0.81**	**302**	P	**Pn**	**19 51 58.1**	**-0.6**
	baz=305							
SSD				S	**Sb**	**19 52 09.2**	**+0.8**
	baz=305							
ELDTW	**Lidau**	**0.93**	**339**	*e*P	**Pg**	**19 51 59.8**	**+0.1**
	baz=342							
ELDTW				*e*S	**Sn**	**19 52 14.7**	**+1.0**
	baz=342							
TWP	**Hsiaoliuchiu**	**0.94**	**272**	*e*P	**Pg**	**19 51 59.6**	**-0.2**
	baz=273							
TWP				*e*S	**Sn**	**19 52 14.1**	**+0.3**
	baz=273							
TWM1	**Shoushan**	**1.02**	**300**	*e*S	**Sn**	**19 52 15.6**	**-0.1**
	baz=302							
STYT	**Tauyuan**	**1.02**	**326**	P	**Pb**	**19 52 01.2**	**0.0**
	baz=328							
STYT				*e*S	**Sn**	**19 52 15.9**	**+0.1**
	baz=328							
TWF1	**Yuli**	**1.04**	**356**	*e*P	**Pb**	**19 52 01.4**	**0.0**
	baz=358							
TWF1				S	**Sg**	**19 52 15.6**	**+0.4**
	baz=358							
SGST	**Jiashian**	**1.06**	**316**	*e*P	**Pg**	**19 52 02.6**	**+0.5**
	baz=318							
SGST				*e*S	**Sg**	**19 52 16.0**	**0.0**
	baz=318							
WTP	**Ta-pu**	**1.17**	**323**	P	**Pn**	**19 52 03.0**	**-0.6**
	baz=325							
WTP				*e*S	**Sn**	**19 52 19.4**	**+0.1**
	baz=325							
CHN1	**Nanshi**	**1.17**	**318**	P	**Pn**	**19 52 03.0**	**-0.7**
	baz=320							
CHN1				S	**Sb**	**19 52 18.8**	**+0.1**
	baz=320							
EHY	**Hungye**	**1.19**	**357**	*e*P	**Pn**	**19 52 03.6**	**-0.3**
	baz=359							
EHY				*e*S	**Sn**	**19 52 20.1**	**+0.2**
	baz=359							
YUS	**Yu-Shan**	**1.23**	**341**	P	**Pg**	**19 52 05.6**	**+0.1**
	baz=343							
YUS				*e*S	**Sn**	**19 52 21.5**	**-0.1**
	baz=343							
CHN4	**Tsaushan**	**1.26**	**325**	*e*P	**Pn**	**19 52 04.6**	**-0.2**
	baz=327							
CHN4				*e*S	**Sn**	**19 52 22.1**	**+0.4**
	baz=327							
ALS	**Alishan**	**1.30**	**336**	P	**Pn**	**19 52 05.7**	**0.0**
	baz=338							
ALS				*e*S	**Sg**	**19 52 23.6**	**-0.1**
	baz=338							
CHN5	**Tsauling**	**1.43**	**333**	*e*P	**Pn**	**19 52 06.8**	**-0.5**
	baz=334							
CHN5				*e*S	**Sn**	**19 52 26.1**	**+0.1**
	baz=334							
ESL	**Shilin**	**1.50**	**2**	*e*P	**Pn**	**19 52 08.0**	**-0.1**
	baz=3.0							
ESL				*e*S	**Sn**	**19 52 26.4**	**-1.0**
	baz=3.0							
WGK	**Gukeng**	**1.56**	**331**	*e*S	**Sn**	**19 52 28.5**	**-0.5**
	baz=332							
SMLT	**Sun Moon Lake**	**1.62**	**344**	*e*P	**Pn**	**19 52 10.0**	**+0.1**
	baz=345							
SMLT				*e*S	**Sg**	**19 52 33.9**	**-0.1**
	baz=345							
TYC	**Yuchr**	**1.66**	**343**	*e*P	**Pn**	**19 52 10.0**	**-0.3**
	baz=344							
TYC				*e*S	**Sb**	**19 52 32.4**	**-0.3**
	baz=344							
WNT	**Mingjian**	**1.68**	**338**	*e*S	**Sb**	**19 52 33.7**	**+0.2**
	baz=339							
WHF	**Hehuan Shan**	**1.83**	**357**	*e*S	**Sn**	**19 52 36.4**	**+0.2**
	baz=358							
TWQ1	**Liyutan**	**2.10**	**345**	*e*S	**Sb**	**19 52 45.8**	**+0.3**
	baz=345							
NNS	**Nan Shan**	**2.12**	**360**	*e*S	**Sn**	**19 52 43.8**	**+0.8**
ENA	**Nanau**	**2.13**	**9**	*e*P	**Pn**	**19 52 16.9**	**+0.1**
	baz=9.0							
ENA				*e*S	**Sn**	**19 52 42.9**	**-0.2**
	baz=9.0							
ENTT	**Nioudou**	**2.32**	**4**	*e*P	**Pn**	**19 52 20.6**	**+1.1**
	baz=5.0							
ENTT				*e*S	**Sn**	**19 52 47.0**	**-0.9**
	baz=5.0							
NSK	**Sanguang**	**2.35**	**360**	*e*P	**Pn**	**19 52 21.0**	**+1.1**
NSK				*e*S	**Sn**	**19 52 49.0**	**+0.4**
TWE	**Neicheng**	**2.41**	**6**	*e*S	**Sn**	**19 52 51.8**	**+1.8**
	baz=7.0							
JYNG	**Yonagunijimaku**	**2.57**	**34**	P	**Pn**	**19 52 23.3**	**+0.5**
JYNG				*e*S	**Sn**	**19 52 53.8**	**-0.1**
HATJ	**Hateruma jima**	**2.83**	**52**	*e*S	**Sn**	**19 52 59.4**	**-0.9**
IRIF	**Iriomote-Funau**	**2.95**	**47**	P	**Pn**	**19 52 28.0**	**-0.1**
IRIF				S	**Sn**	**19 53 03.7**	**+0.3**
JKRS	**Kuro-shima**	**3.08**	**51**	P	**Pn**	**19 52 29.8**	**-0.1**
JKRS				S	**Sn**	**19 53 05.3**	**-1.3**
JIJ	**Ishigaki jima**	**3.26**	**51**	P	**Pn**	**19 52 32.2**	**-0.1**
JIJ				*e*S	**Sn**	**19 53 08.8**	**-2.1**
JISG	**Ishigakijimahi**	**3.52**	**49**	P	**Pn**	**19 52 35.0**	**-0.9**
JISG				S	**Sn**	**19 53 15.1**	**-2.2**
JTJ	**Tarama**	**3.83**	**52**	P	**Pn**	**19 52 39.9**	**-0.3**
JTJ				*e*S	**Sn**	**19 53 24.1**	**-0.9**

*ISCJB **27** 19:56:53.0±0.6,35°.97N×0°.03×10°.19W±0°.04,h10km, Error ellipse: s-maj=5.1km s-min=3.9km az=3.5*
*CSEM **27** 19:56:53.7±0.3,35°.92N×10°.29W,h10km, ML3.8/4, Error ellipse: s-maj=7.6km s-min=4.7km az=92.0*
*MDD **27** 19:56:54.0±0.9,35°.95N×10°.33W,h0km,mbLg3.0/16, Error ellipse: s-maj=10.2km s-min=6.9km az=94.0, PRXIMO*
*CNRM **27** 19:56:56.9,35°.78N×10°.30W,h30km, MD3.6*
*INMG **27** 19:56:57.3±1.0,36°.04N×10°.33W,h10km, MD2.7, ML2.6, Error ellipse: s-maj=3.8km s-min=2.8km az=70.0*
*IGIL **27** 19:56:57.4,35°.90N×10°.40W,h31km, ML2.6*
ISC 27 19:56:51.8±1.8,35°.93N±0°.06×10°.39W±0°.08,h10km,n124,
σ2s01/221,2C-4D,Azores-Cape St. Vincent Ridge

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PFVI	**Vila Bisbo**	**1.74**	**46**	⇓*e*Pn	**Pb**	**19 57 24.4**	**+0.5**
PFVI				*e*Sn	**Sn**	**19 57 44.4**	**0.0**
PFVI				A	A	19 57 45.8	
	39nm,0.1s						
PFVI	**Vila Bisbo**	**1.74**	**46**	⇓P	**Pb**	**19 57 24.4**	**+0.5**
	7.1nm,0.1s,SNR=18						
PFVI				S	**Sn**	**19 57 44.4**	**0.0**
	53nm,0.2s,SNR=16						
PFVI	**Vila Bisbo**	**1.74**	**46**	P	**Pb**	**19 57 24.4**	**+0.5**
	7.1nm,0.1s,SNR=18						
PFVI				S	**Sn**	**19 57 44.4**	**0.0**
	53nm,0.2s,SNR=16						
MORF	**Marmelete**	**1.96**	**45**	*e*P	**Pn**	**19 57 27.5**	**+2.3**
MORF				*e*S	**Sn**	**19 57 49.8**	**-0.1**
MORF				AML	AML	19 57 50.5	
	comp=E,58nm,0.3s						
MORF	**Marmelete**	**1.96**	**45**	⇓*e*Pn	**Pn**	**19 57 27.5**	**+2.3**
MORF				*e*Sn	**Sn**	**19 57 49.5**	**-0.4**
MORF				A	A	19 57 50.9	
	comp=E,49nm,0.1s						
MORF	**Marmelete**	**1.96**	**45**	P	**Pn**	**19 57 27.5**	**+2.3**
MORF				S	**Sn**	**19 57 49.8**	**-0.1**
	comp=E,58nm,0.3s						
MORF	**Marmelete**	**1.96**	**45**	P	**Pn**	**19 57 27.5**	**+2.3**
MORF				*e*Sn	**Sn**	**19 57 49.5**	**-0.4**
	comp=E,49nm,0.1s						
MORF				S	**Sn**	**19 57 49.8**	**-0.1**
	comp=E,58nm,0.3s						
PBDV	**Barranco-do-Ve**	**2.38**	**56**	*e*Pn	**Pn**	**19 57 33.3**	**+2.4**
PBDV				*e*Sn	**Sn**	**19 57 59.8**	**-0.3**
PBDV				A	A	19 58 03.0	
	comp=E,24nm,0.2s						
PBDV	**Barranco-do-Ve**	**2.38**	**56**	P	**Pn**	**19 57 33.3**	**+2.4**
PBDV				S	**Sn**	**19 57 59.8**	**-0.3**
	comp=E,24nm,0.2s						
PBDV	**Barranco-do-Ve**	**2.38**	**56**	P	**Pn**	**19 57 33.3**	**+2.4**
PBDV				S	**Sn**	**19 57 59.8**	**-0.3**
	comp=E,24nm,0.2s						
PCVE	**Castro Verde**	**2.54**	**47**	*e*Pn	**Pn**	**19 57 35.6**	**+2.5**
PCVE				*e*Sn	**Sn**	**19 58 03.8**	**-0.3**
PCVE				A	A	19 58 06.6	
	comp=E,18nm,0.2s						
PCVE	**Castro Verde**	**2.54**	**47**	P	**Pn**	**19 57 35.6**	**+2.5**
PCVE				S	**Sn**	**19 58 03.8**	**-0.3**
	comp=E,18nm,0.2s						
PCVE	**Castro Verde**	**2.54**	**47**	P	**Pn**	**19 57 35.6**	**+2.5**
PCVE				S	**Sn**	**19 58 03.8**	**-0.3**
	comp=E,18nm,0.2s						
MESJ	**Messejana**	**2.58**	**42**	*e*P	**Pn**	**19 57 36.0**	**+2.3**
MESJ				*e*S	**Sn**	**19 58 04.5**	**-0.6**
MESJ				AML	AML	19 58 05.8	
	comp=E,22nm,0.2s						
MESJ	**Messejana**	**2.58**	**42**	*e*Pn	**Pn**	**19 57 36.0**	**+2.3**
MESJ				*e*Sn	**Sn**	**19 58 04.8**	**-0.3**
MESJ				A	A	19 58 07.7	
	comp=E,21nm,0.4s						
MESJ	**Messejana**	**2.58**	**42**	P	**Pn**	**19 57 36.0**	**+2.3**
MESJ				S	**Sn**	**19 58 04.5**	**-0.6**
	comp=E,22nm,0.2s						
MESJ	**Messejana**	**2.58**	**42**	P	**Pn**	**19 57 36.0**	**+2.3**
MESJ				S	**Sn**	**19 58 04.5**	**-0.6**
	comp=E,22nm,0.2s						
MESJ				*e*Sn	**Sn**	**19 58 04.8**	**-0.3**
	comp=E,21nm,0.4s						
PVAQ	**Vaqueiros**	**2.60**	**55**	*e*Pn	**Pn**	**19 57 36.4**	**+2.4**
PVAQ				*e*Sn	**Sn**	**19 58 05.2**	**-0.5**
PVAQ				A	A	19 58 05.8	
	comp=E,58nm,0.1s						
PVAQ	**Vaqueiros**	**2.60**	**55**	P	**Pn**	**19 57 36.4**	**+2.4**
PVAQ				S	**Sn**	**19 58 05.2**	**-0.5**
	comp=E,58nm,0.1s						
PVAQ	**Vaqueiros**	**2.60**	**55**	P	**Pn**	**19 57 36.4**	**+2.4**
PVAQ				S	**Sn**	**19 58 05.2**	**-0.5**
	comp=E,58nm,0.1s						
PNCL	**Nicolau / Gran**	**2.64**	**34**	*e*Pn	**Pn**	**19 57 36.5**	**+2.1**
PNCL				*e*Sn	**Sn**	**19 58 06.0**	**-0.5**
PNCL				A	A	19 58 07.3	
	comp=E,17nm,0.1s						
PNCL	**Nicolau / Gran**	**2.64**	**34**	*e*Pn	**Pn**	**19 57 36.5**	**+2.1**
PNCL				*e*Sn	**Sn**	**19 58 06.0**	**-0.5**
	comp=E,17nm,0.1s						
EGRO	**El Granado**	**2.83**	**55**	⇓P	**Pn**	**19 57 39.5**	**+2.4**
	comp=E,1.9nm,0.1s,SNR=18						
EGRO				S	**Sn**	**19 58 10.9**	**-0.4**
	comp=E,33nm,0.1s						
EGRO	**El Granado**	**2.83**	**55**	P	**Pn**	**19 57 39.5**	**+2.4**
	comp=E,1.9nm,0.1s,SNR=18						
EGRO				S	**Sn**	**19 58 10.9**	**-0.4**
	comp=E,33nm,0.1s						
PBEJ	**Beja**	**2.91**	**43**	*e*Pn	**Pn**	**19 57 40.2**	**+2.0**
PBEJ				*e*Sn	**Sn**	**19 58 12.6**	**-0.6**
PBEJ				A	A	19 58 14.4	
	comp=E,15nm,0.2s						
PBEJ	**Beja**	**2.91**	**43**	P	**Pn**	**19 57 40.2**	**+2.0**
PBEJ				S	**Sn**	**19 58 12.6**	**-0.6**
	comp=E,7.6nm,0.2s						
PBEJ	**Beja**	**2.91**	**43**	P	**Pn**	**19 57 40.2**	**+2.0**
PBEJ				S	**Sn**	**19 58 12.6**	**-0.6**
	comp=E,7.6nm,0.2s						
MOE	**Montemor**	**3.06**	**32**	*e*Pn	**Pn**	**19 57 40.6**	**+0.4**
MOE				*e*Sn	**Sn**	**19 58 14.1**	**-2.8**
MOE	**Montemor**	**3.06**	**32**	P	**Pn**	**19 57 40.6**	**+0.4**
MOE				S	**Sn**	**19 58 14.1**	**-2.8**
MOE	**Montemor**	**3.06**	**32**	P	**Pn**	**19 57 40.6**	**+0.4**
MOE				S	**Sn**	**19 58 14.1**	**-2.8**
PMAFR	**Mafra**	**3.15**	**16**	*e*Pn	**Pn**	**19 57 42.8**	**+1.4**
PMAFR				*e*Sn	**Sn**	**19 58 18.2**	**-0.8**
PMAFR				A	A	19 58 21.1	
	comp=E,26nm,0.2s						
PMAFR	**Mafra**	**3.15**	**16**	⇑P	**Pn**	**19 57 42.9**	**+1.4**
	comp=E,6.7nm,0.1s,SNR=18						
PMAFR				S	**Sn**	**19 58 18.3**	**-0.8**
	comp=E,14nm,0.2s						
PMAFR	**Mafra**	**3.15**	**16**	P	**Pn**	**19 57 42.8**	**+1.4**
	comp=E,6.7nm,0.1s,SNR=18						
PMAFR				S	**Sn**	**19 58 18.3**	**-0.8**
	comp=E,14nm,0.2s						
EVO	**Evora**	**3.22**	**35**	*e*Pn	**Pn**	**19 57 44.1**	**+1.7**
EVO				*e*Sn	**Sn**	**19 58 19.5**	**-1.3**
EVO				A	A	19 58 20.7	
	comp=E,32nm,0.1s						
EVO	**Evora**	**3.22**	**35**	P	**Pn**	**19 57 44.1**	**+1.7**
EVO				S	**Sn**	**19 58 19.5**	**-1.3**
	comp=E,32nm,0.1s						
EVO	**Evora**	**3.22**	**35**	P	**Pn**	**19 57 44.1**	**+1.7**
EVO				S	**Sn**	**19 58 19.5**	**-1.3**
	comp=E,32nm,0.1s						
PBAR	**Barrancos**	**3.50**	**49**	*e*Pn	**Pn**	**19 57 48.3**	**+2.1**
PBAR				*e*Sn	**Sn**	**19 58 27.0**	**-0.6**
PBAR				A	A	19 58 28.6	
	comp=E,20nm,0.1s						
PBAR	**Barrancos**	**3.50**	**49**	P	**Pn**	**19 57 48.3**	**+2.1**
PBAR				S	**Sn**	**19 58 27.0**	**-0.6**
	comp=E,20nm,0.1s						
PBAR	**Barrancos**	**3.50**	**49**	P	**Pn**	**19 57 48.3**	**+2.1**
PBAR				S	**Sn**	**19 58 27.0**	**-0.6**
	comp=E,20nm,0.1s						
EMIN	**Mina Concepcio**	**3.50**	**57**	P	**Pn**	**19 57 48.4**	**+2.1**
	comp=E,0.9nm,0.1s,SNR=16						
EMIN				S	**Sn**	**19 58 26.7**	**-1.1**
	comp=E,3.3nm,0.1s,SNR=11						
EMIN	**Mina Concepcio**	**3.50**	**57**	P	**Pn**	**19 57 48.4**	**+2.1**
	comp=E,0.9nm,0.1s,SNR=16						
EMIN				S	**Sn**	**19 58 26.7**	**-1.1**
	comp=E,3.3nm,0.1s,SNR=11						
PMTG	**Montargil**	**3.58**	**28**	*e*Pn	**Pn**	**19 57 49.0**	**+1.7**
PMTG				*e*Sn	**Sn**	**19 58 27.9**	**-1.7**
PMTG				A	A	19 58 30.7	
	comp=E,14nm,0.1s						
PMTG	**Montargil**	**3.58**	**28**	*e*Pn	**Pn**	**19 57 49.0**	**+1.7**
PMTG				*e*Sn	**Sn**	**19 58 27.9**	**-1.7**
	comp=E,14nm,0.1s						
PESTR	**Estremoz**	**3.68**	**36**	*e*Pn	**Pn**	**19 57 50.6**	**+1.8**
PESTR				*e*Sn	**Sn**	**19 58 30.8**	**-1.5**
PESTR				A	A	19 58 34.0	
	comp=E,6.4nm,0.3s						
PESTR	**Estremoz**	**3.68**	**36**	P	**Pn**	**19 57 50.6**	**+1.8**
PESTR				S	**Sn**	**19 58 30.8**	**-1.5**
	comp=E,6.4nm,0.3s						
PESTR	**Estremoz**	**3.68**	**36**	P	**Pn**	**19 57 50.6**	**+1.8**
PESTR				S	**Sn**	**19 58 30.8**	**-1.5**
	comp=E,6.4nm,0.3s						
ESPR	**Espera**	**3.78**	**74**	P	**Pn**	**19 57 52.6**	**+2.5**
	comp=E,10nm,0.1s,SNR=57						
ESPR				S	**Sn**	**19 58 33.3**	**-1.3**
	comp=E,20nm,0.2s,SNR=7.2						
ESPR	**Espera**	**3.78**	**74**	P	**Pn**	**19 57 52.6**	**+2.5**
	comp=E,10nm,0.1s,SNR=57						
ESPR				S	**Sn**	**19 58 33.3**	**-1.3**
	comp=E,20nm,0.2s,SNR=7.2						
EBAD	**Badajoz**	**3.90**	**43**	⇑P	**Pn**	**19 57 53.4**	**+1.6**
	comp=E,1.1nm,0.1s,SNR=18						
EBAD				S	**Sn**	**19 58 36.3**	**-1.3**
	comp=E,7.4nm,0.1s,SNR=12						
EBAD	**Badajoz**	**3.90**	**43**	P	**Pn**	**19 57 53.4**	**+1.6**
	comp=E,1.1nm,0.1s,SNR=18						
EBAD				S	**Sn**	**19 58 36.3**	**-1.3**
	comp=E,7.4nm,0.1s,SNR=12						
PTOM	**Tomar**	**4.00**	**23**	*e*Sn	**Sn**	**19 58 38.3**	**-1.8**
PTOM				A	A	19 58 39.5	
	comp=E,10nm,0.2s						
PTOM	**Tomar**	**4.00**	**23**	S	**Sn**	**19 58 38.3**	**-1.8**
	comp=E,5.1nm,0.2s						
PTOM	**Tomar**	**4.00**	**23**	S	**Sn**	**19 58 38.3**	**-1.8**
	comp=E,5.1nm,0.2s						
EJIF	**Jimena Fronter**	**4.02**	**81**	P	**Pn**	**19 57 56.5**	**+3.1**
	comp=E,1.9nm,0.2s,SNR=7.9						
EJIF				S	**Sn**	**19 58 39.2**	**-1.3**
	comp=E,2.8nm,0.2s,SNR=7.9						
EJIF	**Jimena Fronter**	**4.02**	**81**	P	**Pn**	**19 57 56.5**	**+3.1**
	comp=E,1.9nm,0.2s,SNR=7.9						
EJIF				S	**Sn**	**19 58 39.2**	**-1.3**
	comp=E,2.8nm,0.2s,SNR=7.9						
PMRV	**Marv??o**	**4.23**	**33**	*e*Pn	**Pn**	**19 57 58.1**	**+1.8**
PMRV				*e*Sn	**Sn**	**19 58 43.5**	**-2.2**
PMRV				A	A	19 58 45.8	
	comp=E,9.6nm,0.3s						
PMRV	**Marv??o**	**4.23**	**33**	P	**Pn**	**19 57 58.1**	**+1.8**
PMRV				S	**Sn**	**19 58 43.5**	**-2.2**
	comp=E,9.6nm,0.3s						
PMRV	**Marv??o**	**4.23**	**33**	P	**Pn**	**19 57 58.1**	**+1.8**
PMRV				S	**Sn**	**19 58 43.5**	**-2.2**
	comp=E,9.6nm,0.3s						
PCAS	**Casmilo, Conde**	**4.38**	**19**	*e*Pn	**Pn**	**19 58 00.3**	**+1.9**
PCAS				*e*Sn	**Sn**	**19 58 47.6**	**-1.9**
PCAS				A	A	19 58 50.5	
	comp=E,3.6nm,0.2s						
PCAS	**Casmilo, Conde**	**4.38**	**19**	*e*Pn	**Pn**	**19 58 00.3**	**+1.9**
PCAS				*e*Sn	**Sn**	**19 58 47.6**	**-1.9**
	comp=E,3.6nm,0.2s						
ECAB	**El Cabril**	**4.52**	**60**	P	**Pn**	**19 58 02.3**	**+1.9**
	comp=E,1.3nm,0.1s,SNR=17						
ECAB				S	**Sn**	**19 58 50.6**	**-2.4**
	comp=E,2.6nm,0.1s,SNR=11						
ECAB	**El Cabril**	**4.52**	**60**	P	**Pn**	**19 58 02.3**	**+1.9**
	comp=E,1.3nm,0.1s,SNR=17						
ECAB				S	**Sn**	**19 58 50.6**	**-2.4**
	comp=E,2.6nm,0.1s,SNR=11						
PCBR	**Castelo Branco**	**4.53**	**30**	*e*Sn	**Sn**	**19 58 50.4**	**-2.8**
PCBR				A	A	19 59 00.4	
	comp=E,5.5nm,0.2s						
PCBR	**Castelo Branco**	**4.53**	**30**	S	**Sn**	**19 58 50.4**	**-2.8**
	comp=E,2.8nm,0.2s						
PCBR	**Castelo Branco**	**4.53**	**30**	S	**Sn**	**19 58 50.4**	**-2.8**
	comp=E,2.8nm,0.2s						
CIA	**Chichaoua**	**4.56**	**162**	P	**Pn**	**19 58 01.0**	**+0.1**
CIA				S	Sn	19 58 48.0	-6.0
CIA	**Chichaoua**	**4.56**	**162**	*i* P	**Pn**	**19 58 01.0**	**+0.1**
EMIJ	**Mijas**	**4.59**	**80**	P	**Pn**	**19 58 03.2**	**+2.0**
	comp=E,0.5nm,0.1s,SNR=6.8						
EMIJ				S	**Sn**	**19 58 51.9**	**-2.7**
	comp=E,0.6nm,0.3s,SNR=7.9						
EMIJ	**Mijas**	**4.59**	**80**	P	**Pn**	**19 58 03.2**	**+2.0**
	comp=E,0.5nm,0.1s,SNR=6.8						
EMIJ				S	**Sn**	**19 58 51.9**	**-2.7**
	comp=E,0.6nm,0.3s,SNR=7.9						
KIB	**El Ksiba**	**4.92**	**132**	P	**Pn**	**19 58 06.0**	**+0.1**
KIB				S	Sn	19 58 57.0	-5.9
KIB	**El Ksiba**	**4.92**	**132**	*i* P	**Pn**	**19 58 06.0**	**+0.1**
KIB				*i* S	Sn	19 58 57.0	-5.9
TZC	**Tazercounte**	**4.97**	**138**	P	**Pn**	**19 58 07.0**	**+0.3**
TZC				S	**Sn**	**19 58 59.0**	**-5.4**
TZC	**Tazercounte**	**4.97**	**138**	*i* P	**Pn**	**19 58 07.0**	**+0.3**
TZC				*i* S	**Sn**	**19 58 59.0**	**-5.4**
MTE	**Manteigas**	**4.99**	**26**	*e*Pn	**Pn**	**19 58 08.6**	**+1.7**
MTE				*e*Sn	**Sn**	**19 59 02.6**	**-2.1**
MTE				A	A	19 59 10.1	
	comp=E,3.3nm,0.2s						
MTE	**Manteigas**	**4.99**	**26**	P	**Pn**	**19 58 08.6**	**+1.7**
MTE				S	**Sn**	**19 59 02.6**	**-2.1**
	comp=E,1.7nm,0.2s						
MTE	**Manteigas**	**4.99**	**26**	P	**Pn**	**19 58 08.6**	**+1.7**
MTE				S	**Sn**	**19 59 02.6**	**-2.1**
	comp=E,1.7nm,0.2s						
OUK	**Oukaimeden**	**5.16**	**155**	P	**Pn**	**19 58 10.0**	**+0.6**
OUK				S	Sn	19 59 03.0	-6.2
OUK	**Oukaimeden**	**5.16**	**155**	*i* P	**Pn**	**19 58 10.0**	**+0.6**
OUK				*i* S	Sn	19 59 03.0	-6.2
EADA	**Adamuz**	**5.16**	**63**	P	**Pn**	**19 58 11.2**	**+2.0**
	comp=E,1.3nm,0.1s,SNR=13						
EADA				S	**Sn**	**19 59 05.1**	**-3.7**
	comp=E,2.9nm,0.1s,SNR=7.9						
EADA	**Adamuz**	**5.16**	**63**	P	**Pn**	**19 58 11.2**	**+2.0**
	comp=E,1.3nm,0.1s,SNR=13						
EADA				S	**Sn**	**19 59 05.1**	**-3.7**
	comp=E,2.9nm,0.1s,SNR=7.9						
PVIS	**Viseu**	**5.17**	**22**	*e*Pn	**Pn**	**19 58 11.1**	**+1.9**
PVIS				*e*Sn	**Sn**	**19 59 06.8**	**-2.1**
PVIS				A	A	19 59 09.2	
	comp=E,3.7nm,0.1s						
PVIS	**Viseu**	**5.17**	**22**	P	**Pn**	**19 58 11.1**	**+1.9**
PVIS				S	**Sn**	**19 59 06.8**	**-2.1**
	comp=E,1.9nm,0.1s						
PVIS	**Viseu**	**5.17**	**22**	P	**Pn**	**19 58 11.1**	**+1.9**
PVIS				S	**Sn**	**19 59 06.8**	**-2.1**
	comp=E,1.9nm,0.1s						
EGOR	**Sierra Gorda,**	**5.20**	**75**	P	**Pn**	**19 58 12.2**	**+2.5**
	comp=E,0.6nm,0.2s,SNR=7.9						
EGOR				S	**Sn**	**19 59 08.1**	**-1.7**
	comp=E,0.4nm,0.1s,SNR=7.9						
EGOR	**Sierra Gorda,**	**5.20**	**75**	P	**Pn**	**19 58 12.2**	**+2.5**
	comp=E,0.6nm,0.2s,SNR=7.9						
EGOR				S	**Sn**	**19 59 08.1**	**-1.7**
	comp=E,0.4nm,0.1s,SNR=7.9						
CZD	**Col de Zad**	**5.28**	**122**	P	**Pn**	**19 58 11.0**	**0.0**
CZD				S	Sn	19 59 06.0	-6.1
CZD	**Col de Zad**	**5.28**	**122**	*i* P	**Pn**	**19 58 11.0**	**0.0**
CZD				*i* S	Sn	19 59 06.0	-6.1
EPLA	**Plasencia**	**5.35**	**38**	P	**Pn**	**19 58 14.1**	**+2.4**
	comp=E,0.4nm,0.1s,SNR=7.9						
EPLA				S	**Sn**	**19 59 11.5**	**-2.0**
	comp=E,5.8nm,0.1s,SNR=7.9						
EPLA	**Plasencia**	**5.35**	**38**	P	**Pn**	**19 58 14.1**	**+2.4**
	comp=E,0.4nm,0.1s,SNR=7.9						
EPLA				S	**Sn**	**19 59 11.5**	**-2.0**
	comp=E,5.8nm,0.1s,SNR=7.9						
SELV	**Sierra Elvira**	**5.52**	**74**	P	**Pn**	**19 58 17.1**	**+3.0**
	comp=E,0.3nm,0.2s,SNR=7.9						
ECOG	**Cogollos-Vega**	**5.65**	**74**	P	**Pn**	**19 58 18.4**	**+2.4**
	comp=E,0.9nm,0.2s,SNR=7.9						
ECOG				S	**Sn**	**19 59 18.7**	**-2.3**
	comp=E,0.9nm,0.2s,SNR=7.9						
ECOG	**Cogollos-Vega**	**5.65**	**74**	P	**Pn**	**19 58 18.4**	**+2.4**
	comp=E,0.9nm,0.2s,SNR=7.9						
ECOG				S	**Sn**	**19 59 18.7**	**-2.3**
	comp=E,0.9nm,0.2s,SNR=7.9						
POLO	**Lamas de Olo**	**5.80**	**20**	*e*Pn	**Pn**	**19 58 19.2**	**+1.2**
POLO				*e*Sn	**Sn**	**19 59 21.3**	**-3.4**
POLO				A	A	19 59 24.8	
	comp=E,1.2nm,0.5

comp=E,3.2nm,0.1s,SNR=7.9
GUD Guadarrama 6.80 44 P **Pn** 19 58 33.5 **+1.8**
comp=E,0.4nm,0.2s,SNR=7.9
GUD S **Sn** 19 59 46.1 **-3.1**
comp=E,0.4nm,0.2s,SNR=7.9
GUD Guadarrama 6.80 44 P **Pn** 19 58 33.5 **+1.8**
comp=E,0.4nm,0.2s,SNR=7.9
GUD S **Sn** 19 59 46.1 **-3.1**
comp=E,0.4nm,0.1s,SNR=7.9
EAGO Agolada(Pontev 7.09 14 P **Pn** 19 58 36.4 **+0.8**
comp=E,0.9nm,0.1s,SNR=7.9
EAGO Agolada(Pontev 7.09 14 P **Pn** 19 58 36.4 **+0.8**
comp=E,0.9nm,0.1s,SNR=7.9
EMAZ Mazaricos 7.09 8 P **Pn** 19 58 35.8 **+0.1**
comp=E,1.2nm,0.2s,SNR=7.9
EMAZ S Sn 19 59 49.7 -6.7
comp=E,2.2nm,0.1s,SNR=7.9
EMAZ Mazaricos 7.09 8 P **Pn** 19 58 35.8 **+0.1**
comp=E,1.2nm,0.2s,SNR=7.9
ETOB Tobarra 7.55 66 P **Pn** 19 58 43.4 **+1.4**
comp=E,0.3nm,0.1s,SNR=9.1
ETOB S **Sn** 20 00 03.2 **-4.6**
comp=E,1.4nm,0.2s,SNR=7.9
ETOB Tobarra 7.55 66 P **Pn** 19 58 43.4 **+1.4**
comp=E,0.3nm,0.1s,SNR=9.1
ETOB S **Sn** 20 00 03.2 **-4.6**
comp=E,1.4nm,0.2s,SNR=7.9

*ISCJB **27** 19:57:04.6±1.0,21°.6N±0°.1×143°.2E±0°.3,h350km,mb3.3/9, Error ellipse: s-maj=42.3km s-min=16.4km az=174.4*
*IDC **27** 19:57:04.7±8.5,21°.58N×143°.27E,h337km±89km,mb3.1/9, mb1 3.2/9,mb1mx2.9/41,mbtmp3.8/9,Error ellipse: s-maj=42.4km s-min=13.7km az=81.0*
ISC 27 19:57:06.0±1.2,21°.6N±0°.1×143°.2E±0°.3,h350km,n9, σ0§40/9,mb3.3/9,Mariana Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KLR	**Kul'dur**	**29.07**	**344**	P	**P**	**20 02 34.6**	**-0.5**
	1.4nm,0.5s,baz=150,slow=8.9,SNR=5.6						
SONM	**Songino Array**	**39.45**	**321**	P	**P**	**20 04 03.9**	**+0.3**
	0.4nm,0.6s,baz=127,slow=6.4,SNR=3.2						
WRA	**Warramunga Arr**	**42.15**	**192**	P	**P**	**20 04 25.5**	**0.0**
	0.6nm,0.3s,baz=17,slow=9.5,SNR=20						
ASAR	**Alice Springs**	**45.86**	**192**	P	**P**	**20 04 54.5**	**-0.2**
	0.1nm,0.3s,baz=20,slow=11,SNR=3.8						
ZALV	**Zalesovo Beam**	**54.33**	**322**	P	**P**	**20 05 57.3**	**+0.1**
	0.4nm,0.3s,baz=110,slow=7.1,SNR=3.0						
MKAR	**Makanchi Array**	**54.80**	**313**	P	**P**	**20 06 01.1**	**+0.3**
	0.4nm,0.5s,baz=89,slow=7.7,SNR=8.3						
YKA	**Yellowknife Ar**	**76.56**	**28**	P	**P**	**20 08 18.4**	**+0.2**
	0.2nm,0.4s,baz=293,slow=5.6,SNR=4.8						
ARCES	**ARCESS Array B**	**79.06**	**342**	P	**P**	**20 08 32.1**	**+0.4**
	5.5nm,1.0s,baz=68,slow=7.1,SNR=4.8						
FINES	**FINESS Array B**	**83.31**	**334**	P	**P**	**20 08 53.5**	**-0.5**
	1.3nm,0.8s,baz=56,slow=4.9,SNR=4.7						

*ISCJB **27** 20:21:00.7±0.4,34°.08N±0°.04×141°.66E±0°.05,h24km, mb4.0/26,MS3.4/4,Error ellipse: s-maj=5.5km s-min=5.3km az=141.1*
*NIED **27** 20:21:00,34°.10N×141°.50E,h35km,Mw4.2 Best double couple: M○2.29000×10^15 NP1:φ§264.00000°,δ47.00000°, λ-143.00000°. NP2:φ§147.00000°,δ64.00000°, λ-49.00000°.*
*MOS **27** 20:21:01.8±1.5,34°.16N×141°.80E,h33km,mb4.3/19,Error ellipse: s-maj=15.5km s-min=7.1km az=100.6*
*JMA **27** 20:21:03.2±0.4,34°.08N×141°.51E,h37km±3km,M4.0*
*IDC **27** 20:21:06.6±0.8,34°.05N×141°.45E,h57km±6km,mb3.7/16, mb1 3.9/18,mb1mx3.8/34,mbtmp4.0/18,MS3.2/8, Ms1 3.3/8,ms1mx2.9/49,Error ellipse: s-maj=16.9km s-min=14.2km az=112.0*
ISC 27 20:21:02.8±0.5,34°.08N±0°.05×141°.53E±0°.07,h24km,n59, σ1§46/59,mb4.0/26,MS3.6/4,6C-2D,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BSO1	**Boso 1**	**0.73**	**322**	||P	**Pb**	**20 21 16.8**	**+0.2**
BSO3	**Boso 3**	**1.11**	**311**	↑↑P	**Pn**	**20 21 22.9**	**+0.3**
BSO4	**Boso 4**	**1.34**	**313**	↑↑P	**Pn**	**20 21 26.6**	**+0.7**
KTR	**Katsuura**	**1.46**	**317**	P	**Pn**	**20 21 28.5**	**+0.8**
KTR				*e*S	**Sn**	**20 21 46.1**	**0.0**
JHJ2	**Mitsune**	**1.72**	**236**	P	**Pn**	**20 21 31.9**	**+0.7**
JHJ2				*e*S	**Sn**	**20 21 53.1**	**+0.6**
JHJ	**Hachijo jima 2**	**1.74**	**237**	P	**Pn**	**20 21 32.2**	**+0.7**
	568nm,0.3s,baz=74,slow=20,SNR=419						
JHJ				S	**Sn**	**20 21 52.5**	**-0.4**
	761nm,0.3s,baz=38,slow=19,SNR=15						
JIM2	**Oshima 3**	**1.85**	**291**	P	**Pn**	**20 21 32.4**	**-0.6**
KTJJ	**Kamata 2**	**2.20**	**293**	P	**Pn**	**20 21 37.5**	**-0.4**
KTJJ				S	**Sn**	**20 22 02.4**	**-2.0**
JIZS	**Izushimoda**	**2.28**	**287**	P	**Pn**	**20 21 39.3**	**+0.3**
MJAR	**Matsushiro Arr**	**3.66**	**313**	P	**Pn**	**20 21 59.1**	**+1.2**
	8.9nm,0.3s,baz=151,slow=12,SNR=63						
MJAR				S	**Sn**	**20 22 40.8**	**+0.4**
	12nm,0.3s,baz=140,slow=23,SNR=11						
MAJO	**Matsushiro**	**3.66**	**313**	*i* P	**Pn**	**20 22 00.0**	**+2.0**
MAT	**Matsushiro**	**3.66**	**313**	P	**Pn**	**20 21 59.9**	**+1.9**
MAT				*e*S	**Sn**	**20 22 41.6**	**+1.1**
JCJ	**Chichijima**	**6.98**	**175**	P	**Pn**	**20 22 43.2**	**-0.4**
	baz=281,slow=18						
JCJ				S	Sn	20 23 54.8	-7.4
	62nm,0.3s,baz=280,slow=22,SNR=7.6						
ERM	**Erimo**	**8.03**	**9**	*ce*P	Pn	20 22 54.3	-3.6
ERM				pmax	pmax		
	comp=Z,73nm,1.2s						
JNU	**Nakatsue**	**8.93**	**267**	P	Pn	20 23 15.4	+5.0
	comp=Z,0.4nm,0.3s,baz=18,slow=20,SNR=3.1						
JNU				LR	LR	20 26 41.1	
	comp=Z,140nm,21.2s,baz=120,slow=38						
ASAJ	**Asahikawa**	**10.06**	**4**	P	**Pn**	**20 23 23.1**	**-2.6**
	comp=Z,3.3nm,0.3s,baz=221,slow=11,SNR=22						
ASAJ				LR	LR	20 28 28.2	
	comp=Z,99nm,19.1s,baz=333,slow=44						
KSRS	**Korea Array**	**11.55**	**291**	LR	LR	20 28 56.5	
	comp=Z,49nm,18.5s,baz=158,slow=41						
KUR	**Kuril'sk**	**12.16**	**22**	P	**Pn**	**20 23 54.0**	**-0.5**
KUR				*e*S	Sn	20 25 57.6	-12
YSS	**Yuzh-Sakhalins**	**12.90**	**4**	*e*P	**Pn**	**20 24 02.0**	**-2.5**
YSS				pmax	pmax		
	comp=Z,30nm,0.8s						
KLR	**Kul'dur**	**16.79**	**337**	P	**P**	**20 24 58.7**	**+0.4**
	comp=Z,0.2nm,0.3s,baz=175,slow=10,SNR=4.2						
KLR				LR	LR	20 32 08.4	
	comp=Z,101nm,18.6s,baz=166,slow=39						
NKL	**Nikolayevsk**	**19.08**	**358**	*e*P	**P**	**20 25 22.8**	**-0.6**
PETK	**Petropavlovsk-**	**22.25**	**26**	LR	LR	20 35 48.8	
	comp=Z,34nm,20.8s,baz=233,slow=40						
H11N2	**WAKE ISLAND Hy**	**26.66**	**116**	T	T	20 55 51.1	
	baz=306,slow=75,SNR=5.5						
H11N1	**WAKE ISLAND Hy**	**26.67**	**116**	T	T	20 55 51.1	
	baz=306,slow=75,SNR=7.1						
H11N3	**WAKE ISLAND Hy**	**26.68**	**116**	T	T	20 55 51.1	
	baz=306,slow=75,SNR=4.9						
ULN	**Ulaanbaatar**	**29.18**	**309**	*ce*P	**P**	**20 27 02.2**	**-0.2**
ULN				pmax	pmax		
	comp=Z,4.0nm,1.7s						
SONM	**Songino Array**	**29.60**	**308**	P	**P**	**20 27 07.1**	**+1.0**
	comp=Z,0.9nm,0.6s,baz=108,slow=9.3,SNR=7.6						
BOD	**Bodaibo**	**30.11**	**330**	*e*P	P	20 27 01.4	-8.9
BOD				pmax	pmax		
	comp=Z,3.0nm,1.8s						
TLY	**Talaya**	**32.40**	**314**	*e*P	P	20 27 34.6	+4.0
TLY				pmax	pmax		
	comp=Z,2.0nm,0.9s						
BILL	**Bilibino**	**36.84**	**15**	*e*P	**P**	**20 28 07.3**	**-1.4**
BILL				*e*		20 28 18.3	
BILL				pmax	pmax		
	comp=Z,2.0nm,1.0s						
TIXI	**Tiksi**	**38.23**	**354**	*e*P	**P**	**20 28 20.0**	**-0.4**
TIXI				pmax	pmax		
	comp=Z,3.0nm,1.4s						
ZALV	**Zalesovo Beam**	**44.01**	**315**	P	**P**	**20 29 07.3**	**-0.8**
	comp=Z,1.3nm,0.7s,baz=54,slow=7.5,SNR=5.6						
ZALV				PcP	**PcP**	**20 30 52.7**	**-0.8**
	comp=Z,0.6nm,0.4s,baz=87,slow=2.6,SNR=3.6						
MKAR	**Makanchi Array**	**45.82**	**305**	P	**P**	**20 29 22.5**	**-0.2**
	comp=Z,1.1nm,0.7s,baz=89,slow=10,SNR=7.9						
KDAK	**Kodiak Island**	**49.26**	**40**	*i* P	**P**	**20 29 49.2**	**0.0**
ILAR	**Eielson Array**	**51.96**	**31**	P	**P**	**20 30 09.4**	**-0.1**
	comp=Z,1.5nm,0.7s,baz=266,slow=6.3,SNR=18						
ILAR				pP	**sP**	**20 30 25.0**	**+5.1**

comp=Z,1.2nm,0.9s,baz=270,slow=6.2,SNR=4.2
BRVK Borovoye 52.72 314 *e*P P 20 30 12.1 -3.2
BRVK pmax pmax
comp=Z,3.0nm,0.7s
WRAB Tennant Creek 54.14 188 *ce*P P 20 30 31.9 +5.9
WRAB pmax pmax
comp=Z,29nm,1.7s
WRA Warramunga Arr 54.15 188 P **P** **20 30 25.5 -0.7**
comp=Z,1.3nm,0.5s,baz=7.3,slow=7.4,SNR=35
INK Inuvik 56.98 26 P **P** **20 30 46.2 +0.3**
comp=Z,1.2nm,0.7s,baz=9.5,slow=2.6,SNR=6.8
ASAR Alice Springs 57.88 188 P **P** **20 30 52.8 0.0**
comp=Z,0.9nm,0.6s,baz=4.2,slow=6.4,SNR=19
ARU Arti 58.65 320 *di* P **P** **20 30 57.4 -0.5**
ARU S **S** **20 38 58.0 -2.7**
ARU pmax pmax
comp=Z,3.0nm,0.6s
YKA Yellowknife Ar 66.32 29 P **P** **20 31 48.8 -0.1**
comp=Z,0.4nm,0.7s,baz=296,slow=6.2,SNR=8.6
FINES FINESS Array B 71.47 333 P **P** **20 32 20.3 -0.7**
comp=Z,2.5nm,0.9s,baz=51,slow=6.1,SNR=7.0
FINES FINESS Array B 71.47 333 *i* P **P** **20 32 20.7 -0.3**
FINES pmax pmax
comp=Z,3.0nm,0.9s
KBZ Khabaz 72.91 311 P **P** **20 32 30.2 +0.3**
comp=Z,2.1nm,0.9s,baz=122,slow=2.1,SNR=4.8
KIV Kislovodsk 72.92 312 *e*P **P** **20 32 30.2 0.0**
KIV pmax pmax
comp=Z,2.0nm,0.9s
ANN Anapa 75.66 315 *e*P P **20 32 44.6 -1.3**
ANN pmax pmax
comp=Z,6.0nm,0.5s
AKASG Malin Array Be 76.70 323 P **P** **20 32 51.0 -0.7**
comp=Z,2.0nm,0.6s,baz=46,slow=6.3,SNR=13
AKASG pP **PcP** **20 33 07.5 +4.5**
comp=Z,0.9nm,0.5s,baz=47,slow=6.5,SNR=3.2
AKASG LR LR 21 09 20.0
comp=Z,23nm,20.6s,baz=225,slow=38
NVAR Mina Array Bea 76.70 53 P **P** **20 32 51.7 -0.6**
comp=Z,0.7nm,0.7s,baz=279,slow=5.3,SNR=4.3
NB2 NORSAR Subarra 76.95 338 P **P** **20 32 52.6 -0.4**
comp=Z,0.8nm,0.6s,baz=39,slow=5.9
NOA NORSAR Array B 76.95 338 P **P** **20 32 52.7 -0.4**
comp=Z,1.6nm,0.8s,baz=39,slow=5.7,SNR=7.4
NOA pP **PcP** **20 33 08.6 +4.6**
comp=Z,1.3nm,0.8s,baz=39,slow=5.7,SNR=4.1
NOA LR LR 21 11 09.9
comp=Z,31nm,18.4s,baz=40,slow=39
PDAR Pinedale Array 79.68 45 P **P** **20 33 09.2 +0.5**
comp=Z,0.9nm,0.6s,baz=246,slow=2.1,SNR=6.9
BRTR Keskin Array B 80.89 312 P **P** **20 33 15.0 -0.2**
comp=Z,1.2nm,1.0s,baz=48,slow=1.8,SNR=4.4
BRTR Keskin Array B 80.89 312 *ce*P **P** **20 33 16.8 +1.6**
BRTR pmax pmax
comp=Z,1.0nm,1.0s
KHC Kasperske Hory 85.11 329 *e*P **P** **20 33 36.9 +0.2**
KHC Kasperske Hory 85.11 329 *e*P **P** **20 33 36.9 +0.2**
GERES GERESS Array B 85.27 328 P **P** **20 33 36.9 -0.7**
comp=Z,0.6nm,0.5s,baz=46,slow=5.8,SNR=6.3
GERES LR LR 21 13 37.1
comp=Z,30nm,19.0s,baz=13,slow=37
TORD Torodi Ar. Bea 119.46 314 PKP **PKPdf** **20 39 50.1 -0.8**
comp=Z,0.3nm,0.5s,baz=47,slow=1.4,SNR=5.8
LPAZ La Paz 148.01 64 PKPbc **PKPbc** **20 40 47.3 -0.2**
comp=Z,2.1nm,0.6s,baz=347,slow=4.4,SNR=8.5

*ISCJB **27** 20:32:47.2±0.6,41°.08N±0°.03×38°.70E±0°.03,h3km±4km, Error ellipse: s-maj=5.1km s-min=3.2km az=0.5*
*DDA **27** 20:32:47.8,41°.00N×38°.67E,h23km,Md2.9*
*CSEM **27** 20:32:47.8±0.1,41°.04N×38°.70E,h5km,MD3.0,Error ellipse: s-maj=3.9km s-min=2.4km az=3.0*
*ISK **27** 20:32:47.0,41°.06N×38°.71E,h6km,MD3.0*
ISC 27 20:32:47.6±1.1,41°.07N±0°.03×38°.73E±0°.02,h6km±8km, n57,σ0§62/86,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ESPY	**Espiye-Giresun**	**0.15**	**180**	*e*PG	**Pg**	**20 32 50.8**	**+0.1**
ESPY				*e*SG	**Sg**	**20 32 53.0**	**+0.3**
ESPY	**Espiye-Giresun**	**0.15**	**180**	*e*Pg	**Pg**	**20 32 50.8**	**+0.1**
ESPY				*e*Sg	**Sg**	**20 32 53.0**	**+0.3**
GRSN	**GIRESUNGRSN**	**0.38**	**248**	*i* P	**Pg**	**20 32 55.2**	**+0.3**
GRSN	**GIRESUNGRSN**	**0.38**	**248**	P	**Pg**	**20 32 55.2**	**+0.3**
ORDU	**Ordu-Boztepe**	**0.66**	**264**	*i* P	**Pg**	**20 33 00.2**	**-0.2**
ORDU				*i* S	**Sg**	**20 33 08.8**	**-0.2**
ORDU	**Ordu-Boztepe**	**0.66**	**264**	P	**Pg**	**20 33 00.2**	**-0.2**
ORDU				S	**Sg**	**20 33 08.8**	**-0.2**
KTUT	**Trabzon**	**0.79**	**96**	*e*PG	**Pg**	**20 33 03.0**	**+0.2**
KTUT				*e*SG	**Sb**	**20 33 14.7**	**0.0**
KTUT	**Trabzon**	**0.79**	**96**	*e*Pg	**Pg**	**20 33 03.0**	**+0.2**
KTUT				*e*Sg	**Sb**	**20 33 14.7**	**0.0**
GUMT	**Gumushane**	**0.83**	**136**	*e*PG	**Pg**	**20 33 03.4**	**-0.3**
GUMT	**Gumushane**	**0.83**	**136**	*e*Pg	**Pg**	**20 33 03.4**	**-0.3**
SUSE	**Susehri**	**0.95**	**205**	*i* P	**Pg**	**20 33 05.4**	**-0.4**
SUSE				*i* S	**Sg**	**20 33 17.4**	**-0.7**
SUSE	**Susehri**	**0.95**	**205**	P	**Pg**	**20 33 05.4**	**-0.4**
SUSE				S	**Sg**	**20 33 17.4**	**-0.7**
KELT	**Kelkit**	**1.00**	**156**	*i* P	**Pg**	**20 33 06.2**	**-0.7**
KELT				*i* S	**Sg**	**20 33 18.8**	**-1.0**
KELT	**Kelkit**	**1.00**	**156**	P	**Pg**	**20 33 06.2**	**-0.7**
KELT				S	**Sg**	**20 33 18.8**	**-1.0**
RSDY	**Resadiye-TOKAT**	**1.26**	**238**	*e*PN	**Pg**	**20 33 11.3**	**-0.4**
RSDY	**Resadiye-TOKAT**	**1.26**	**238**	*e*Pn	**Pg**	**20 33 11.3**	**-0.4**
BAYT	**Ayd¨–ntepe-Bay**	**1.27**	**122**	*e*PN	**Pg**	**20 33 11.0**	**-0.9**
BAYT	**Ayd¨–ntepe-Bay**	**1.27**	**122**	*e*Pn	**Pg**	**20 33 11.0**	**-0.9**
CUZAR	**Zara_SIVAS**	**1.39**	**212**	*i* P	**Pn**	**20 33 12.8**	**-0.9**
CUZAR				*i* S	**Sb**	**20 33 30.9**	**-1.1**
CUZAR	**Zara_SIVAS**	**1.39**	**212**	P	**Pn**	**20 33 12.8**	**-0.9**
CUZAR				S	**Sb**	**20 33 31.0**	**-1.1**
EUZM	**Uzumlu**	**1.55**	**151**	*i* P	**Pn**	**20 33 16.2**	**+0.4**
EUZM				*i* S	**Sn**	**20 33 36.1**	**-0.2**
EUZM	**Uzumlu**	**1.55**	**151**	P	**Pn**	**20 33 16.2**	**+0.4**
EUZM				S	**Sn**	**20 33 36.1**	**-0.2**
ILIC	**ilic-Erzincan**	**1.62**	**184**	*e*PN	**Pn**	**20 33 16.9**	**+0.1**
ILIC	**ilic-Erzincan**	**1.62**	**184**	*e*Pn	**Pn**	**20 33 16.9**	**+0.1**
ERZN	**Erzincan**	**1.66**	**152**	*e*PN	**Pn**	**20 33 17.4**	**-0.1**
KOPT	**Kop Dagi**	**1.71**	**127**	*i* P	**Pb**	**20 33 19.7**	**+0.1**
KOPT				*i* S	**Sg**	**20 33 42.8**	**+0.3**
KOPT	**Kop Dagi**	**1.71**	**127**	P	**Pb**	**20 33 19.7**	**+0.1**
KOPT				S	**Sg**	**20 33 42.8**	**+0.3**
SVSK	**Karacayir**	**1.75**	**230**	*e*PN	**Pn**	**20 33 18.1**	**-0.4**
SVSK	**Karacayir**	**1.75**	**230**	*e*Pn	**Pn**	**20 33 18.1**	**-0.4**
KEMA	**Kemaliye**	**1.81**	**186**	*i* P	**Sg**	**20 33 24.1**	**+1.9**
KEMA				*i* S	**Sg**	**20 33 45.7**	**+0.1**
KEMA	**Kemaliye**	**1.81**	**186**	P	**Pg**	**20 33 24.1**	**+1.9**
KEMA				S	**Sg**	**20 33 45.7**	**+0.1**
TOKT	**Tokat**	**1.82**	**247**	*e*PN	**Pn**	**20 33 19.4**	**-0.2**
TOKT	**Tokat**	**1.82**	**247**	*e*Pn	**Pn**	**20 33 19.4**	**-0.2**
SAMS	**Samsun-Alacam**	**1.94**	**280**	*i* P	**Pn**	**20 33 21.1**	**0.0**
SAMS				*i* S	**Sn**	**20 33 45.9**	**+0.1**
SAMS	**Samsun-Alacam**	**1.94**	**280**	P	**Pn**	**20 33 21.1**	**0.0**
SAMS				S	**Sn**	**20 33 45.9**	**+0.1**
KVT	**Kavak**	**2.03**	**271**	*e*PN	**Pn**	**20 33 22.3**	**-0.1**
KVT	**Kavak**	**2.03**	**271**	*e*Pn	**Pn**	**20 33 22.3**	**-0.1**
TNCL	**Tunceli-Merkez**	**2.05**	**162**	*i* P	**Pg**	**20 33 27.9**	**+1.0**
TNCL				*i* S	**Sb**	**20 33 51.8**	**+0.8**
PTK	**Pertek**	**2.23**	**167**	*e*PN	**Pn**	**20 33 25.8**	**+0.5**
PTK	**Pertek**	**2.23**	**167**	*e*Pn	**Pn**	**20 33 25.8**	**+0.5**
DBAD	**Bademkaya**	**2.24**	**90**	*i* P	**Pn**	**20 33 25.9**	**+0.5**
DBAD				*i* S	**Sn**	**20 33 53.5**	**0.0**
DBAD	**Bademkaya**	**2.24**	**90**	P	**Pn**	**20 33 25.9**	**+0.5**
DBAD				S	**Sn**	**20 33 53.5**	**0.0**
HAVZ	**Havza**	**2.28**	**271**	*i* P	**Pb**	**20 33 29.4**	**+0.3**
HAVZ				*i* S	**Sn**	**20 33 55.1**	**+0.9**
HAVZ	**Havza**	**2.28**	**271**	P	**Pb**	**20 33 29.4**	**+0.3**
HAVZ				S	**Sn**	**20 33 55.1**	**+0.9**
DDEM	**Demirkent**	**2.29**	**93**	*i* P	**Pn**	**20 33 27.3**	**+1.2**
DDEM				*i* S	**Sb**	**20 33 58.6**	**+0.4**
DDEM	**Demirkent**	**2.29**	**93**	P	**Pn**	**20 33 27.3**	**+1.2**
DDEM				S	**Sb**	**20 33 58.6**	**+0.4**
EZM	**Erzurum**	**2.32**	**119**	*e*PN	**Pn**	**20 33 27.1**	**+0.5**
ERZM	**Erzurum**	**2.32**	**119**	*i* P	**Pg**	**20 33 31.8**	**-0.3**
DAGI	**Agillar**	**2.41**	**89**	*i* P	**Pb**	**20 33 30.1**	**-1.3**
DAGI				*i* S	**Sn**	**20 33 58.5**	**+0.9**
ARTV	**Artvin**	**2.42**	**86**	*i* P	**Pg**	**20 33 33.2**	**-0.9**
ARTV				*i* S	**Sn**	**20 33 57.1**	**-0.9**
CUSAR	**Sarkisla-SIVAS**	**2.52**	**230**	*i* P	Pg	20 33 41.1	+5.3
CUSAR				*i* S	**Sg**	**20 34 08.2**	**-0.2**
DARE	**Darende-Malaty**	**2.67**	**201**	*e*PN	**Pn**	**20 33 31.8**	**+0.5**
DARE	**Darende-Malaty**	**2.67**	**201**	*e*Pn	**Pn**	**20 33 31.8**	**+0.5**
DIKM	**Dikmen**	**2.68**	**284**	*e*Pn	**Pn**	**20 33 31.6**	**+0.3**
DIKM	**Dikmen**	**2.68**	**284**	*e*Pn	**Pn**	**20 33 31.6**	**+0.3**
CHVG	**Ch'k'valeri**	**3.00**	**56**	P	**Pn**	**20 33 36.3**	**+0.6**
CHVG	**Ch'k'valeri**	**3.00**	**56**	P	**Pn**	**20 33 36.3**	**+0.6**

*IDC **27** 20:43:20.1±1.3,33°.06S×179°.79W,h138km±8km,mb3.7/3, mb1 3.8/4,mb1mx3.4/34,mbtmp4.1/4,Error ellipse: s-maj=29.5km s-min=17.2km az=109.0*
ISC 27 20:43:20.0±1.4,32°.91S±0°.09×180°.0E±0°.2,h100km,n29, σ2§29/32,mb4.1/3,South of Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WMGZ	**Waiomatatini S**	**5.06**	**194**	SN	**Sn**	**20 45 33.0**	**+2.3**
HAZ	**Te Kaha**	**5.16**	**200**	PN	**Pn**	**20 44 36.6**	**+1.8**
PKGZ	**Pakihiroa**	**5.20**	**197**	PN	**Pn**	**20 44 37.2**	**+1.7**
PUZ	**Puketiti**	**5.34**	**195**	PN	**Pn**	**20 44 36.9**	**-0.4**
PUZ				SN	**Sn**	**20 45 37.3**	**-0.1**
TWGZ	**Tauwhareparae**	**5.50**	**197**	PN	**Pn**	**20 44 40.1**	**+0.6**
TWGZ				SN	**Sn**	**20 45 43.6**	**+2.1**
CNGZ	**Carnagh Statio**	**5.74**	**194**	PN	**Pn**	**20 44 43.5**	**+0.7**
CNGZ				SN	**Sn**	**20 45 49.1**	**+1.9**
MWZ	**Matawai**	**5.77**	**200**	PN	**Pn**	**20 44 43.5**	**+0.3**
MWZ				SN	**Sn**	**20 45 48.6**	**+0.7**
URZ	**Urewera**	**5.83**	**203**	P	**Pn**	**20 44 44.0**	**+0.2**
	4.4nm,0.3s,baz=342,slow=9.6,SNR=25						
URZ				S	**Sn**	**20 45 48.7**	**-0.6**
	13nm,0.3s,baz=338,slow=19,SNR=9.2						
URZ	**Urewera**	**5.83**	**203**	PN	**Pn**	**20 44 45.5**	**+0.6**
RIGZ	**Rimuhau**	**6.06**	**197**	PN	**Pn**	**20 44 46.3**	**-0.7**
RIGZ				SN	**Sn**	**20 45 56.5**	**+1.5**
SNGZ	**Shannon Statio**	**6.24**	**199**	PN	**Pn**	**20 44 51.8**	**+2.3**
KNZ	**Kokohu**	**6.38**	**196**	PN	**Pn**	**20 44 53.4**	**+2.1**
BKZ	**Black Stump Fm**	**6.85**	**203**	PN	**Pn**	**20 44 58.8**	**+0.9**
MCHZ	**McNeill Hill**	**7.04**	**201**	SN	**Sn**	**20 46 20.1**	**+1.3**
BHHZ	**Black Hill Sta**	**7.29**	**205**	PN	**Pn**	**20 45 03.9**	**+0.1**
KRHZ	**Kereru**	**7.32**	**202**	PN	**Pn**	**20 45 02.6**	**-1.7**
PNHZ	**Pukenui**	**7.62**	**203**	PN	**Pn**	**20 45 06.3**	**-2.1**
BFZ	**Birch Farm**	**8.31**	**200**	*e*SN	**Sn**	**20 46 45.5**	**-4.3**
MRZ	**Mangatainoka R**	**8.50**	**203**	PN	**Pn**	**20 45 17.1**	**-3.2**
MRZ				*e*SN	Sn	20 46 46.7	-7.7
HOWZ	**Holdsworth Sta**	**8.73**	**203**	PN	Pn	20 45 19.9	-3.5
CTZ	**Chatham Island**	**11.13**	**167**	*e*SN	Sn	20 47 47.3	-11
RPZ	**Rata Peaks**	**12.85**	**210**	P	Pn	20 46 14.0	-4.8
	0.3nm,0.3s,baz=11,slow=18,SNR=4.1						
RPZ				S	Sn	20 48 28.0	-12
	1.3nm,0.3s,baz=37,slow=20,SNR=6.7						
ASAR	**Alice Springs**	**41.34**	**271**	P	**P**	**20 50 54.9**	**-1.3**
	0.7nm,0.5s,baz=107,slow=7.5,SNR=15						
ASAR				pP	**pP**	**20 51 23.6**	**+4.2**
	0.2nm,0.4s,baz=108,slow=6.7,SNR=2.4						
WRA	**Warramunga Arr**	**42.56**	**276**	P	P	20 51 03.4	-2.7
	1.2nm,0.4s,baz=114,slow=8.1,SNR=37						
WRA				pP	pP	20 51 35.1	+5.7
	1.2nm,0.7s,baz=114,slow=7.5,SNR=3.0						
PETK	**Petropavlovsk-**	**87.83**	**347**	P	P	20 55 54.4	-3.2
	2.2nm,0.7s,baz=131,slow=5.9,SNR=2.9						
FINES	**FINESS Array B**	**146.85**	**337**	PKPbc	**PKPdf**	**21 02 44.7**	**-3.1**
	2.4nm,0.7s,baz=56,slow=3.7,SNR=10						
FINES				pPKPbc	**pPKPbc**	**21 03 21.9**	**+4.9**
	2.5nm,0.7s,baz=45,slow=4.1,SNR=3.5						
NB2	**NORSAR Subarra**	**150.92**	**349**	PKP	**PKPdf**	**21 02 55.3**	**+0.8**
	comp=Z,12nm,1.7s,baz=17,slow=2.6						
NOA	**NORSAR Array B**	**150.92**	**349**	PKPbc	**PKPdf**	**21 02 55.1**	**+0.6**
	comp=Z,0.5nm,0.6s,baz=14,slow=4.1,SNR=4.2						
TORD	**Torodi Ar. Bea**	**160.26**	**185**	PKPab	**PKPab**	**21 03 44.1**	**-4.9**
	comp=Z,0.6nm,1.0s,baz=160,slow=4.6,SNR=3.7						

*ISCJB **27** 20:50:52.7±0.7,54°.86N±0°.06×160°.26W±0°.07,h38km, mb3.4/4,MS3.1/1,Error ellipse: s-maj=9.9km s-min=4.3km az=153.1*
*NEIC **27** 20:50:53.5,54°.90N×160°.39W,h24km,ML3.3(AEIC),After AEIC.*
*IDC **27** 20:50:54.8±7.7,55°.11N×160°.35W,h55km±57km,mb3.3/4, mb1 3.5/6,mb1mx3.1/48,mbtmp3.5/6,ML3.5/2,MS3.1/1, Ms1 3.1/1,ms1mx2.3/37,Error ellipse: s-maj=86.8km s-min=28.8km az=162.0*
ISC 27 20:50:53.4±1.1,55°.0N±0°.1×160°.33W±0°.07,h38km,n30, σ1§48/32,mb3.7/4,Alaska Peninsula

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SDPT	**Sand Point**	**0.41**	**348**	P

0.1nm,0.3s,baz=315,slow=13,SNR=2.5
FITZ Sn Sn 21 09 11.2 -8.6
0.3nm,0.3s,baz=18,slow=20,SNR=5.9
WRA Warramunga Arr 19.14 131 P **P 21 08 35.1 -0.6**
0.1nm,0.3s,baz=309,slow=12,SNR=6.5
ASAR Alice Springs 21.29 140 P **P 21 08 59.4 +0.2**
1.6nm,0.6s,baz=316,slow=8.4,SNR=30
STKA Stephens Creek 31.89 142 P **P 21 10 37.4 -0.1**
1.8nm,1.0s,baz=299,slow=13,SNR=3.4
DZM Mont Dzumac 47.74 113 LR LR 21 36 28.1
comp=Z,75nm,18.3s,baz=278,slow=40
MKAR Makanchi Array 63.37 333 P **P 21 14 41.0 -0.2**
0.4nm,0.4s,baz=133,slow=8.5,SNR=6.1
ZALV Zalesovo Beam 67.89 339 P **P 21 15 09.6 -0.6**
0.3nm,0.3s,baz=147,slow=5.6,SNR=2.7
VNDA Vanda 73.21 171 P **P 21 15 42.9 +0.6**
0.4nm,0.9s,baz=319,slow=5.9,SNR=3.5

*IDC **27** 21:08:09.7±0.7, 15.06S×173.64W, h0km, mb4.1/10, mb1 4.3/11,mb1mx4.0/46,mbtmp4.1/11,ML5.2/1,MS3.8/9, Ms1 3.8/9,ms1mx3.5/35,Error ellipse: s-maj=31.5km s-min=15.6km az=132.0*
*NEIC **27** 21:08:11.1±0.3, 15.06S×173.64W,h10km,mb4.5/5,Error ellipse: s-maj=13.5km s-min=6.3km az=135.0*
*ISCJB **27** 21:08:12.3±0.5, 15.1S±0.1×173.7W±0.1, h30km,mb4.2/13, MS3.8/8,Error ellipse: s-maj=19.8km s-min=9.2km az=137.5*
ISC 27 21:08:14.5±0.6, 15.1S±0.1×173.6W±0.2, h30km, n51, σ1§56/36, mb4.3/13, MS3.8/8, 7C-1D, Tonga Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AFI	**Afiamalu**	**2.11**	**55**	Pn	**Pn**	**21 08 45.6**	**-2.3**
	676nm,0.3s,baz=142,slow=1.1,SNR=249						
AFI				Sn	Sn	21 09 06.1	-7.0
	238nm,0.3s,baz=323,slow=23,SNR=3.8						
AFI				LR	LR	21 09 28.6	
	comp=Z,1μm,21.5s,baz=218,slow=37						
FUNA	**Funafuti**	**9.68**	**312**	*e*ScP	**ScP**	**21 20 22.9**	**+6.4**
DZM	**Mont Dzumac**	**20.16**	**247**	P	**P**	**21 12 46.2**	**-0.5**
	6.7nm,0.9s,baz=83,slow=18,SNR=2.3						
PPT	**Papeete**	**23.12**	**99**	LR	LR	21 21 42.2	
	comp=Z,56nm,18.4s,baz=298,slow=35						
PAE	**Paea**	**23.12**	**100**	*e*T	T	21 36 38.2	
	3.7nm,0.2s						
PPT2	**Papeete2**	**23.12**	**99**	*e*LR	LR	21 18 30.7	
	301nm,29.0s						
TIAR	**Tiarei**	**23.34**	**99**	*e*T	T	21 36 54.3	
	2.2nm,0.3s						
URZ	**Urewera**	**24.46**	**198**	P	**P**	**21 13 30.5**	**-0.3**
	7.0nm,0.5s,baz=19,slow=3.6,SNR=5.4						
URZ				LR	LR	21 21 40.7	
	comp=Z,301nm,18.8s,baz=184,slow=33						
PMOR	**Pomariorio Ree**	**24.77**	**93**	*e*T	T	21 38 38.7	
	2.6nm,0.3s						
OXZ	**Oxford**	**30.68**	**201**	*e*P	**P**	**21 14 26.0**	**-0.5**
	113nm,1.8s						
RPZ	**Rata Peaks**	**31.36**	**202**	P	**P**	**21 14 33.0**	**+0.4**
	6.4nm,0.7s,baz=8.8,slow=3.4,SNR=4.6						
RPZ	**Rata Peaks**	**31.36**	**202**	*e*P	**P**	**21 14 33.0**	**+0.4**
TAOE	**Nuku Hiva Isla**	**33.23**	**83**	*e*LR	LR	21 23 13.4	
	310nm,29.0s						
RKT	**Rikitea**	**37.21**	**108**	*e*T	T	21 54 17.7	
	3.2nm,0.3s						
H11S2	**WAKE ISLAND Hy**	**38.67**	**329**	T	T	21 56 44.9	
	baz=149,slow=76,SNR=7.1						
H11S3	**WAKE ISLAND Hy**	**38.68**	**329**	T	T	21 56 24.5	
	baz=149,slow=76,SNR=6.4						
H11S1	**WAKE ISLAND Hy**	**38.69**	**329**	T	T	21 56 48.1	
	baz=149,slow=76,SNR=8.2						
H11N3	**WAKE ISLAND Hy**	**39.62**	**330**	T	T	21 57 54.6	
	baz=150,slow=76,SNR=10						
H11N1	**WAKE ISLAND Hy**	**39.62**	**330**	T	T	21 57 48.3	
	baz=150,slow=76,SNR=11						
H11N2	**WAKE ISLAND Hy**	**39.64**	**330**	T	T	21 57 56.8	
	baz=150,slow=76,SNR=7.7						
STKA	**Stephens Creek**	**44.04**	**240**	P	**P**	**21 16 19.0**	**-0.8**
	2.4nm,0.7s,baz=82,slow=9.7,SNR=6.8						
STKA				LR	LR	21 32 32.8	
	comp=Z,86nm,20.6s,baz=27,slow=33						
STKA	**Stephens Creek**	**44.04**	**240**	*e*P	**P**	**21 16 19.0**	**-0.8**
	2.5nm,1.3s						
WR1	**Warramunga Arr**	**49.76**	**257**	*e*P	**P**	**21 17 03.2**	**-1.5**
WRA	**Warramunga Arr**	**49.76**	**257**	P	**P**	**21 17 03.2**	**-1.5**
	0.8nm,0.4s,baz=96,slow=6.4,SNR=23						
WRA				LR	LR	21 36 13.2	
	comp=Z,102nm,20.0s,baz=245,slow=34						
AS01	**Alice Springs**	**50.01**	**252**	*e*P	**P**	**21 17 05.3**	**-1.3**
AS31	**Alice Springs**	**50.05**	**252**	*e*P	**P**	**21 17 05.2**	**-1.7**
	2.1nm,0.6s						
ASAR	**Alice Springs**	**50.05**	**252**	P	**P**	**21 17 05.2**	**-1.7**
	7.0nm,0.6s,baz=85,slow=8.2,SNR=97						
ASAR				LR	LR	21 36 37.2	
	comp=Z,181nm,21.1s,baz=109,slow=34						
VNDA	**Vanda**	**63.62**	**186**	P	**P**	**21 18 42.6**	**+0.5**
	1.7nm,0.9s,baz=25,slow=8.8,SNR=12						
NV01	**Mina Array Sit**	**74.23**	**42**	*e*P	**P**	**21 19 48.9**	**-0.2**
NVAR	**Mina Array Bea**	**74.23**	**42**	P	**P**	**21 19 48.9**	**-0.2**
	0.9nm,0.7s,baz=230,slow=9.9,SNR=5.2						
NVAR				LR	LR	21 44 11.7	
	comp=Z,94nm,21.5s,baz=262,slow=29						
QSPA	**South Pole Qui**	**74.90**	**180**	*e*P	**P**	**21 19 52.9**	**+0.4**
D08A	**Wollman Farm,**	**78.88**	**35**	*e*P	**P**	**21 20 14.8**	**-0.1**
	8.8nm,1.1s						
TXAR	**Lajitas Array**	**80.59**	**56**	LR	LR	21 48 01.8	
	comp=Z,41nm,21.9s,baz=0.0,slow=30						
WRH	**Wood River Hil**	**81.73**	**11**	*e*P	**P**	**21 20 33.4**	**+3.6**
	6.3nm,1.0s						
PDAR	**Pinedale Array**	**82.17**	**42**	LR	LR	21 51 17.9	
	comp=Z,59nm,18.8s,baz=290,slow=32						
ILAR	**Eielson Array**	**82.22**	**11**	P	**P**	**21 20 31.6**	**-0.8**
	0.2nm,0.7s,baz=221,slow=6.5,SNR=4.0						
ILB	**Eielson Array**	**82.22**	**11**	*e*P	**P**	**21 20 31.6**	**-0.8**
YKA	**Yellowknife Ar**	**89.92**	**23**	P	**P**	**21 21 10.3**	**0.0**
	0.1nm,0.5s,baz=242,slow=4.4,SNR=3.0						
YKB5	**Yellowknife Ar**	**89.92**	**23**	*e*P	**P**	**21 21 10.3**	**0.0**
BURAR	**Bucovina Array**	**144.08**	**338**	⇑*i*P	**PKPdf**	**21 27 47.7**	**+0.2**
DOPR	**Dopca**	**145.40**	**337**	⇑*i*P	**PKPdf**	**21 27 50.9**	**+1.2**
MLR	**Muntele Rosu**	**145.58**	**335**	⇑*i*P	**PKPab**	**21 27 51.3**	**+0.7**
KHC	**Kasperske Hory**	**145.60**	**352**	*e*PKP	**PKPab**	**21 27 51.8**	**+1.3**
KHC				*ex*	x	21 28 05.5	
DRGR		**145.65**	**340**	⇑*i*P	**PKPab**	**21 27 50.8**	**0.0**
GERES	**GERESS Array B**	**145.87**	**351**	PKPbc	**PKPbc**	**21 27 51.3**	**+0.2**
	0.2nm,0.3s,baz=69,slow=3.6,SNR=4.9						
BR101	**Keskin Array S**	**145.87**	**321**	*e*PKPdf	**PKPab**	**21 27 51.7**	**-0.2**
BRTR	**Keskin Array B**	**145.87**	**321**	PKPbc	**PKPab**	**21 27 51.7**	**-0.2**
	2.0nm,0.8s,baz=39,slow=2.2,SNR=10						
VOIR		**145.97**	**336**	⇑*i*P	**PKPab**	**21 27 52.7**	**+0.7**
ARR	**Arges**	**146.19**	**337**	⇑*i*P	**PKPab**	**21 27 53.9**	**+1.1**
BZS	**Buzias**	**147.04**	**340**	⇑*i*P	**PKPdf**	**21 27 52.7**	**+0.2**
PKSM	**Moragy**	**147.38**	**344**	⇑*i*P	**PKPbc**	**21 27 55.8**	**+0.4**

*NIED **27** 21:11:00,37.00N×140.70E,h5km,Mw3.6 Best double couple: M0 2.85000×10^14 NP1:φs355.00000°, δ21.00000°, λ-122.00000°. NP2:φs209.00000°, δ72.00000°, λ-78.00000°.*
*IDC **27** 21:11:14.8±2.0, 36.95N×140.79E, h0km, mb3.6/3, mb1 3.7/4, mb1mx3.3/47, mbtmp3.5/4, ML3.3/1, MS2.4/1, Ms1 2.4/1, ms1mx2.1/50, Error ellipse: s-maj=39.1km s-min=23.7km az=64.0*
*ISCJB **27** 21:11:17.6±0.7, 36.99N±0.03×140.75E±0.06, h25km±4km, mb3.5/3, Error ellipse: s-maj=8.1km s-min=5.3km az=14.4*
*JMA **27** 21:11:18.5, 37.00N×140.65E, h17km±1km, M3.5*
JMA Felt II J1.
ISC 27 21:11:18.1±1.1, 36.99N±0.04×140.70E±0.04, h20km±3km, n19, σ0§79/21, mb3.5/3, 2C-3D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.14**	**35**	⇑P	**Pg**	**21 11 22.6**	**+0.1**
ONAJ				S	**Sg**	**21 11 25.6**	**+0.2**
JHO	**Hitachi**	**0.39**	**195**	⇓P	**Pb**	**21 11 26.2**	**-0.2**
JHO				S	**Sb**	**21 11 31.8**	**-0.3**
JFK	**Kawauchi**	**0.40**	**20**	⇓P	**Pb**	**21 11 26.5**	**-0.2**
JFK				S	**Sb**	**21 11 32.1**	**-0.3**
JFT	**Otama**	**0.60**	**331**	⇓P	**Pb**	**21 11 29.8**	**-0.1**
JFT				S	**Sg**	**21 11 37.5**	**-0.7**
JSB	**Shiboa**	**0.62**	**268**	⇑P	**Pb**	**21 11 30.4**	**+0.1**
JSB				S	**Sb**	**21 11 38.6**	**0.0**
JYT	**Yasato**	**0.86**	**208**	P	**Pn**	**21 11 34.4**	**-0.7**
JYT				S	**Sb**	**21 11 45.4**	**-0.1**
JFY	**Yanaizu**	**0.90**	**298**	P	**Pb**	**21 11 34.6**	**-0.4**
JFY				S	**Sg**	**21 11 45.7**	**-1.8**
MJAR	**Matsushiro Arr**	**2.05**	**258**	Pn	**Pn**	**21 11 52.5**	**+1.0**
	9.3nm,0.3s,baz=82,slow=16,SNR=59						
MJAR				Sn	**Sn**	**21 12 18.1**	**+1.6**
	12nm,0.3s,baz=81,slow=29,SNR=13						
MAT	**Matsushiro**	**2.05**	**258**	P	**Pn**	**21 11 52.8**	**+1.3**
MAT				S	**Sb**	**21 12 19.0**	**-0.8**
KSRS	**Korea Array**	**10.20**	**276**	LR	LR	21 17 24.9	
	comp=Z,18nm,18.5s,baz=65,slow=36						
SONM	**Songino Array**	**27.34**	**304**	P	**P**	**21 17 01.7**	**0.0**
	0.3nm,0.5s,baz=106,slow=10,SNR=2.8						
H11N2	**WAKE ISLAND Hy**	**28.62**	**120**	T	T	21 47 03.3	
	baz=313,slow=75,SNR=39						
H11N1	**WAKE ISLAND Hy**	**28.63**	**120**	T	T	21 47 05.1	
	baz=313,slow=75,SNR=37						
H11N3	**WAKE ISLAND Hy**	**28.64**	**120**	T	T	21 47 05.9	
	baz=313,slow=75,SNR=38						
H11S1	**WAKE ISLAND Hy**	**29.32**	**122**	T	T	21 47 55.9	
	baz=314,slow=76,SNR=42						
H11S3	**WAKE ISLAND Hy**	**29.32**	**122**	T	T	21 47 56.0	
	baz=314,slow=76,SNR=36						
H11S2	**WAKE ISLAND Hy**	**29.34**	**122**	T	T	21 47 57.1	
	baz=314,slow=76,SNR=31						
MKAR	**Makanchi Array**	**43.66**	**302**	P	**P**	**21 19 21.2**	**-0.2**
	0.2nm,0.2s,baz=73,slow=8.9,SNR=2.8						
WRA	**Warramunga Arr**	**56.94**	**187**	P	**P**	**21 21 02.0**	**-0.1**
	0.7nm,0.5s,baz=2.7,slow=7.3,SNR=11						

*CSEM **27** 21:20:49.0,38.61N×29.21W,h1km,ML3.2*
PDA 27 21:20:49.0±1.2, 38.61N×29.21W, h1km±6km, MD3.8, ML3.2, Error ellipse: s-maj=8.4km s-min=6.8km az=77.0, Azores Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PCED	**Cedros**	**0.40**	**88**	*e*P	Pg	21 20 56.3	-0.3
PCED				*e*S	Sg	21 21 01.8	0.0
PCED	**Cedros**	**0.40**	**88**	*e*P	Pg	21 20 56.3	-0.3
PCED				*e*S	Sg	21 21 01.8	0.0
PCED				A	A	21 21 04.7	
	1μm,0.2s						
CALA	**Caldeira**	**0.40**	**95**	*e*P	Pg	21 20 56.8	+0.2
CALA				*e*S	Sg	21 21 01.7	-0.1
CALA	**Caldeira**	**0.40**	**95**	*e*P	Pg	21 20 56.8	+0.2
CALA				*e*S	Sg	21 21 01.7	-0.1
HOR	**Horta**	**0.46**	**101**	*e*P	Pg	21 20 57.3	-0.6
HOR				*e*S	Sg	21 21 03.5	-0.3
HOR	**Horta**	**0.46**	**101**	*e*P	Pg	21 20 57.3	-0.6
HOR				*e*S	Sg	21 21 03.5	-0.3
HOR				A	A	21 21 05.1	
	2μm,0.3s						
PCAN	**Candelaria**	**0.59**	**105**	*e*P	Pg	21 20 58.8	-1.4
PCAN				*e*S	Sg	21 21 06.7	-1.2
PCAN	**Candelaria**	**0.59**	**105**	*e*P	Pg	21 20 58.8	-1.4
PCAN				*e*S	Sg	21 21 06.7	-1.2
PCAN				A	A	21 21 09.7	
	912nm,0.2s						
PICO	**Pico**	**0.62**	**100**	*e*P	Pg	21 20 59.8	-1.2
PICO				*e*S	Sg	21 21 08.1	-1.0
PICO	**Pico**	**0.62**	**100**	*e*P	Pg	21 20 59.8	-1.2
PICO				*e*S	Sg	21 21 08.1	-1.0
PICO				A	A	21 21 09.6	
	2μm,0.3s						
PPNO	**Prainha do Nor**	**0.76**	**101**	*e*P	Pg	21 21 01.6	-1.9
PPNO				*e*S	Sg	21 21 11.7	-1.5
PPNO	**Prainha do Nor**	**0.76**	**101**	*e*P	Pg	21 21 01.6	-1.9
PPNO				*e*S	Sg	21 21 11.7	-1.5
PPNO				A	A	21 21 15.3	
	478nm,0.2s						
ROSA	**Rosais**	**0.77**	**82**	*e*P	Pg	21 21 01.6	-2.1
ROSA				*e*S	Sg	21 21 11.6	-2.0
ROSA	**Rosais**	**0.77**	**82**	*e*P	Pg	21 21 01.6	-2.1
ROSA				*e*S	Sg	21 21 11.6	-2.0
ROSA				A	A	21 21 17.8	
	731nm,0.5s						
PMAN	**Manadas**	**0.88**	**88**	*e*P	Pg	21 21 03.0	-2.8
PMAN				*e*S	Sg	21 21 13.8	-3.4
PMAN	**Manadas**	**0.88**	**88**	*e*P	Pg	21 21 03.0	-2.8
PMAN				*e*S	Sg	21 21 13.8	-3.4
PMAN				A	A	21 21 15.9	
	256nm,0.3s						
PGRA	**Graciosa**	**1.04**	**66**	*e*P	Pg	21 21 05.5	-3.5
PGRA				*e*S	Sg	21 21 18.6	-4.0
PGRA	**Graciosa**	**1.04**	**66**	*e*P	Pg	21 21 05.5	-3.5
PGRA				*e*S	Sg	21 21 18.6	-4.0
PGRA				A	A	21 21 18.8	
	144nm,0.3s						
ADH	**Angra Heroismo**	**1.55**	**88**	*e*S	Sn	21 21 30.6	-7.7
ADH	**Angra Heroismo**	**1.55**	**88**	*e*S	Sn	21 21 30.6	-7.7
ADH				A	A	21 21 32.7	
	91nm,0.3s						
PSET	**Sete Cidades**	**2.86**	**105**	*e*P	Pn	21 21 31.4	-4.3
PSET				*e*S	Sn	21 22 02.6	-8.2
PSET	**Sete Cidades**	**2.86**	**105**	*e*P	Pn	21 21 31.4	-4.3
PSET				*e*S	Sn	21 22 02.6	-8.2
PSET				A	A	21 22 05.5	
	32nm,0.4s						
CMLA	**Cha da Macela**	**3.02**	**105**	*e*P	Pn	21 21 33.9	-4.1
CMLA				*e*S	Sn	21 22 06.6	-8.2
CMLA	**Cha da Macela**	**3.02**	**105**	*e*P	Pn	21 21 33.9	-4.1
CMLA				*e*S	Sn	21 22 06.6	-8.2

SCB 27 21:22:48.5±0.1, 17.58S×65.90W, h22km, MI3.8/3, 6C, Error ellipse: s-maj=5.8km s-min=2.6km az=26.0, Central Bolivia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BBOE	**La Paz, Chanca**	**2.13**	**291**	⇑*e*Pg	Pb	21 23 27.9	+1.1
BBOJ	**La Paz, Jacaqu**	**2.27**	**285**	⇑*e*Pg	Pb	21 23 30.2	+1.1
LPAZ	**La Paz**	**2.49**	**301**	⇑*e*Pg	Pb	21 23 33.6	+0.6
LPAZ				*e*Sg	Sb	21 24 06.7	+3.2
	210nm,0.3s						
BBOB	**La Paz, Bander**	**2.57**	**304**	⇑*e*Pg	Pb	21 23 34.6	+0.3
BBOB				⇑*e*Sg	Sb	21 24 08.9	+3.2
	102nm,0.3s						
BBOD	**La Paz, Gloria**	**2.75**	**290**	⇑*e*Pg	Pb	21 23 38.4	+1.2
BBOD				*e*Sg	Sb	21 24 14.7	+4.0
	38nm,0.4s						
MOCB	**Mochara**	**3.66**	**176**	*e*Pn	Pb	21 23 50.7	-2.0
SIV	**San Ignacio**	**4.89**	**72**	*e*Pn	Pb	21 24 07.5	-6.0

IDC 27 21:23:04.5±3.6, 23.78S×176.92W, h0km, mb3.7/2, mb1 4.2/3, mb1mx3.7/23, mbtmp4.0/3, ML4.5/1, Error ellipse: s-maj=143.2km s-min=33.3km az=143.0, South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AFI	**Afiamalu**	**10.96**	**27**	Pn	Pn	21 25 42.5	-0.2
	3.6nm,0.3s,baz=141,slow=19,SNR=3.6						
AFI				Sn	Sn	21 27 38.1	-8.1
	0.5nm,0.3s,baz=282,slow=20,SNR=3.0						
ASAR	**Alice Springs**	**44.84**	**260**	P	P	21 31 20.5	-0.2
	0.4nm,0.4s,baz=96,slow=7.4,SNR=6.2						
WRA	**Warramunga Arr**	**45.23**	**265**	P	P	21 31 23.7	-0.2
	0.4nm,0.3s,baz=104,slow=8.4,SNR=8.7						
BVAR	**Borovoye Array**	**122.22**	**319**	PKP	PKPdf	21 42 00.9	-0.1
	0.1nm,0.4s,baz=95,slow=2.2,SNR=2.5						
AKASG	**Malin Array Be**	**146.35**	**330**	PKPbc	PKPdf	21 42 46.1	+0.3
	0.3nm,0.3s,baz=43,slow=4.0,SNR=4.2						

*DDA **27** 21:28:39.9, 38.40N×26.84E, h7km, Md2.6*
*ISCJB **27** 21:28:40.5±0.5, 38.40N±0.03×26.82E±0.03, h6km±6km, Error ellipse: s-maj=5.7km s-min=4.0km az=170.2*
*CSEM **27** 21:28:40.2±0.2, 38.38N×26.79E, h8km, MD2.5, Error ellipse: s-maj=3.3km s-min=2.5km az=32.0*
*ISK **27** 21:28:40.3, 38.39N×26.84E, h5km, MD2.5*
ISC 27 21:28:40.1±0.8, 38.39N±0.04×26.84E±0.03, h13km±6km, n21, σ0§40/38, Aegean Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BLCB	**Balcova**	**0.16**	**92**	*e*PG	**Pg**	**21 28 44.0**	**+0.2**
BLCB				*e*SG	**Sg**	**21 28 46.8**	**+0.4**
BLCB	**Balcova**	**0.16**	**92**	*e*Pg	**Pg**	**21 28 44.0**	**+0.2**
BLCB				*e*Sg	**Sg**	**21 28 46.8**	**+0.4**
URLA	**Izmir**	**0.20**	**261**	*i* P	**Pg**	**21 28 44.0**	**-0.4**
URLA				*i* S	**Sg**	**21 28 47.4**	**-0.1**
URLA	**Izmir**	**0.20**	**261**	P	**Pg**	**21 28 44.0**	**-0.4**
URLA				S	**Sg**	**21 28 47.3**	**-0.1**
ZEY	**˙zmir**	**0.31**	**241**	*i* P	**Pg**	**21 28 46.1**	**-0.2**
ZEY				*i* S	**Sg**	**21 28 50.9**	**+0.4**
IZM	**Izmir**	**0.33**	**89**	*e*PG	**Pb**	**21 28 47.5**	**-0.4**
IZM				*e*SG	**Sb**	**21 28 52.8**	**-0.4**
IZM	**Izmir**	**0.33**	**89**	*e*Pg	**Pb**	**21 28 47.5**	**-0.4**
IZM				*e*Sg	**Sb**	**21 28 52.8**	**-0.4**
DKL	**Dikili**	**0.68**	**4**	*e*PG	**Pb**	**21 28 53.8**	**0.0**
DKL				*e*SG	**Sb**	**21 29 03.8**	**+0.6**
DKL	**Dikili**	**0.68**	**4**	*e*Pg	**Pb**	**21 28 53.8**	**0.0**
DKL				*e*Sg	**Sb**	**21 29 03.8**	**+0.6**
AKS	**Akhisar**	**0.90**	**57**	*e*PG	**Pn**	**21 28 58.2**	**-0.3**
AKS				*e*SG	**Sn**	**21 29 11.0**	**-0.5**
AKS	**Akhisar**	**0.90**	**57**	*e*Pg	**Pn**	**21 28 58.2**	**-0.3**
AKS				*e*Sg	**Sn**	**21 29 11.0**	**-0.5**
AKHS	**Akhisar**	**0.91**	**57**	*i* P	**Pg**	**21 28 57.5**	**0.0**
AKHS				*i* S	**Sn**	**21 29 11.2**	**-0.3**
AKHS	**Akhisar**	**0.91**	**57**	P	**Pg**	**21 28 57.5**	**0.0**
AKHS				S	**Sn**	**21 29 11.2**	**-0.3**
AYDB	**Zeytinkoy-Aydi**	**0.94**	**118**	*e*PG	**Pn**	**21 28 58.8**	**-0.3**
AYDB				*e*SG	**Sn**	**21 29 12.4**	**-0.1**
AYDB	**Zeytinkoy-Aydi**	**0.94**	**118**	*e*Pg	**Pn**	**21 28 58.8**	**-0.3**
AYDB				*e*Sg	**Sn**	**21 29 12.4**	**-0.1**
AYDN	**Tasoluk**	**1.10**	**131**	*i* P	**Pn**	**21 29 01.7**	**+0.5**
AYDN				*i* S	**Sn**	**21 29 17.1**	**+0.8**
AYDN	**Tasoluk**	**1.10**	**131**	P	**Pn**	**21 29 01.7**	**+0.5**
AYDN				S	**Sn**	**21 29 17.1**	**+0.8**
SIGR	**SIGRI**	**1.12**	**317**	*e*PN	**Pg**	**21 29 02.1**	**+0.4**
SIGR	**SIGRI**	**1.12**	**317**	*e*Pn	**Pg**	**21 29 02.1**	**+0.4**
KULA	**Kula-Manisa**	**1.43**	**84**	*e*PN	**Pg**	**21 29 07.6**	**0.0**
KULA	**Kula-Manisa**	**1.43**	**84**	*e*Pn	**Pg**	**21 29 07.6**	**0.0**

JMA 27 21:30:20.2±0.2, 37.95N×144.27E, h42km, M3.7, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**2.33**	**300**	P	Pn	21 30 57.2	+1.2
JIO	**Ouri**	**2.36**	**283**	P	Pn	21 30 57.7	+1.4
JIO				S	Sn	21 31 25.7	+1.7
JMK	**Ichinoseki**	**2.59**	**294**	P	Pn	21 31 01.3	+1.7
JFK	**Kawauchi**	**2.76**	**259**	P	Pn	21 31 03.1	+1.2
JFK				S	Sn	21 31 35.7	+1.7
JOM	**Ohasama**	**2.78**	**304**	P	Pn	21 31 04.0	+1.8
JOM				S	Sn	21 31 36.1	+1.6
JFT	**Otama**	**3.15**	**263**	P	Pn	21 31 09.7	+2.4
JFT				S	Sn	21 31 46.1	+2.5
JYT	**Yasato**	**3.68**	**243**	P	Pn	21 31 16.5	+1.9
JYT				S	Sn	21 31 56.0	-0.8
JAG	**Ashikaga**	**4.14**	**250**	P	Pn	21 31 22.6	+1.8
JAG				S	Sn	21 32 09.7	+1.8
MAT	**Matsushiro**	**5.04**	**256**	P	Pn	21 31 36.4	+3.2
MAT				*e*S	Sn	21 32 35.4	+5.2

*NIED **27** 21:42:00,36.80N×142.60E,h11km,Mw4.9 Best double couple: M0 2.79000×10^16 NP1:φs249.00000°, δ27.00000°, λ113.00000°. NP2:φs43.00000°, δ65.00000°, λ79.00000°.*
*IDC **27** 21:42:44.7±0.5, 36.73N×142.65E, h0km, mb4.6/43, mb1 4.7/50, mb1mx4.7/57, mbtmp4.7/50, ML4.4/5, MS4.3/18, Ms1 4.3/18, ms1mx4.1/31, Error ellipse: s-maj=12.4km s-min=10.0km az=109.0*
*BJI **27** 21:42:46.6, 36.83N×142.78E, h33km, mb4.9/77, mB4.8/61, Ms5.0/86, Ms7 4.8/78*
*GCMT **27** 21:42:47.1±0.4, 36.85N×142.77E, h15km, MW5.0/65, Moment Tensor Solution. s39,c48; s65,c104; Duration: 0 Moment tensor: Scale 10^16Nm; Mrr2.22±.09; Mθθ-1.26±.07; Mφφ-0.96±.07; Mrθ2.78±.27; Mrφ-1.45±.06; Mθφ2.93±.29; Best double couple: M0 4.69600×10^16 NP1:φ44.00000°, δ75.00000°, λ88.00000°. NP2: φs233.00000°, δ15.00000°, λ99.00000°. Principal axes: T 4.5290, Plg60.000°, Azm310.0000°; N 0.3350, Plg2.0000°, Azm45.0000°; P -4.8630, Plg30.0000°, Azm136.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
*JMA **27** 21:42:47.8±0.3, 36.79N×142.59E, h68km, M4.8*
*NEIC **27** 21:42:47.1±1.9, 36.80N×142.55E, h10km±11km, mb5.1/100, Error ellipse: s-maj=5.4km s-min=3.3km az=144.0*
*MOS **27** 21:42:49.9±0.9, 37.10N×142.49E, h33km, mb5.2/80, MS4.6/20, Error ellipse: s-maj=7.7km s-min=5.4km az=102.4*
*ISCJB **27** 21:42:49.2±0.2, 36.83N±0.03×142.53E±0.02, h33km, mb4.9/195, MS4.7/50, Error ellipse: s-maj=4.1km s-min=2.2km az=156.4*
ISC 27 21:42:49.2±0.4, 36.74N±0.04×142.62E±0.03, h28km±2km, h28km:pP-P, n564, σ1§60/623, mb5.0/201, MS4.8/51, 51C-24D, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**1.50**	**285**	P	**Pn**	**21 43 12.5**	**-1.9**
JFK	**Kawauchi**	**1.53**	**295**	P	Pn	21 43 12.7	-2.0
JFK				*e*S	**Sn**	21 43 31.5	-2.2
JHO	**Hitachi**	**1.65**	**266**	P	Pn	21 43 14.6	-1.7
JHO				*e*S	**Sn**	21 43 33.7	-2.9
CHOJ	**Chosi**	**1.76**	**235**	P	Pn	21 43 17.0	-0.8
JMM	**Marumori**	**1.84**	**308**	P	Pn	21 43 17.1	-1.8
JFT	**Otama**	**1.98**	**294**	P	Pn	21 43 20.1	-0.8
JIO	**Ouri**	**1.

KSRS LR LR 21 50 05.0
comp=E,3µm,18.1s,baz=86,slow=37
KS01 Wonju Array Si 11.78 278 *e*Pn **Pn 21 45 34.1 -1.2**
KS01 *e*Sn **Sn 21 47 40.4 -5.5**
KS15 Wonju Array Si 11.79 278 *e*Pn **Pn 21 45 37.1 +1.7**
KS15 *e*Sn **Sn 21 47 42.4 -3.7**
KSAR Wonju Array Be 11.79 278 P **Pn 21 45 37.2 +1.7**
KSAR Wonju Array Be 11.79 278 Pn **Pn 21 45 37.1 +1.7**
MDJ Mudanjiang 12.63 313 P **Pn 21 45 48.3 +1.4**
MDJ S **Sn 21 48 02.5 -4.0**
MDJ pmax pmax
comp=E,8.0nm,1.4s
MDJ pmax pmax
comp=E,500nm,10.0s
MDJ LR LR
comp=E,880nm,14.1s
MDJ LR LR
comp=E,1µm,16.4s
MDJ LR LR
comp=E,2µm,17.9s
TYV Tymovskoe 14.12 0 *e*P **Pn 21 46 03.0 -4.2**
TYV pmax pmax
comp=Z,500nm,10.0s
TYV pmax pmax
comp=E,66nm,1.0s
TYV pmax pmax
comp=Z,37nm,0.8s
TYV MLR MLR
comp=N,2µm,18.0s
TYV MLR MLR
comp=Z,2µm,18.0s
KLR Kul'dur 14.78 331 Pn **Pn 21 46 12.7 -3.6**
comp=Z,0.6nm,0.3s,baz=144,slow=9.7,SNR=12
KLR LR LR 21 52 02.0
comp=Z,2µm,18.0s,baz=147,slow=38
KLR Kul'dur 14.78 331 P **Pn 21 46 12.7 -3.6**
KLR pmax pmax
comp=Z,1.0nm,0.3s
KLR MLR MLR
comp=Z,2µm,18.0s
CN2 Changchun 14.87 304 ⇓P **P 21 46 20.0 -2.9**
CN2 *es*P sP 21 46 31.0
CN2 *e*S **Sn 21 49 04.5 +3.2**
CN2 pmax pmax
comp=Z,10.0nm,0.6s
CN2 pmax pmax
comp=Z,200nm,8.0s
CN2 LR LR
comp=Z,2µm,14.0s
CN2 LR LR
comp=Z,1µm,14.0s
CN2 LR LR
comp=Z,2µm,17.0s
SNY Shenyang 15.59 295 ⇓P **P 21 46 30.0 -0.9**
SNY S **Sn 21 49 24.5 +5.8**
SNY pmax pmax
comp=Z,29nm,1.1s
SNY pmax pmax
comp=Z,430nm,12.0s
SNY LR LR
comp=Z,2µm,12.4s
SNY LR LR
comp=Z,3µm,16.8s
SNY LR LR
comp=Z,7µm,15.1s
NKL Nikolayevsk 16.47 356 *e*P **Pn 21 46 33.3 -4.8**
NKL pmax pmax
comp=N,20nm,1.0s
NKL pmax pmax
comp=Z,30nm,1.0s
NKL MLR MLR
comp=N,2µm,17.0s
NKL MLR MLR
comp=Z,2µm,17.0s
DL2 Dalian 16.73 284 P **Pn 21 46 41.8 +0.4**
DL2 S **Sn 21 49 47.5 +1.2**
DL2 pmax pmax
comp=Z,35nm,0.9s
DL2 pmax pmax
comp=Z,360nm,9.4s
DL2 LR LR
comp=Z,3µm,14.1s
DL2 LR LR
comp=Z,2µm,15.5s
DL2 LR LR
comp=Z,3µm,13.5s
SSE Sheshan 18.64 259 P **P 21 47 04.5 -0.2**
SSE pP **pP 21 47 13.0 +0.8**
SSE S **Sn 21 50 32.0 -0.8**
SSE sS **sS 21 50 48.0 +0.3**
SSE pmax pmax
comp=Z,21nm,0.7s
SSE LR LR
comp=Z,2µm,16.1s
SSE LR LR
comp=Z,1µm,16.1s
SSE LR LR
comp=Z,2µm,13.3s
PEA0 Petropavlovsk- 19.48 28 *e*P **P 21 47 13.1 -0.6**
PEA0B Petropavlovsk- 19.48 28 *e*P **Pn 21 47 15.1 0.0**
comp=Z,41nm,1.1s
PETK Petropavlovsk- 19.48 28 P **P 21 47 12.8 -0.9**
comp=Z,0.1nm,0.3s,baz=195,slow=9.9,SNR=14
PEA1 Petropavlovsk- 19.48 28 *e*P **P 21 47 12.8 -0.9**
PET Petropavlovsk 19.78 30 *e*P **P 21 47 16.8 -0.2**
PET *e*S **S 21 50 54.9 -3.4**
PET pmax pmax
comp=Z,400nm,9.2s
PET MLR MLR
comp=Z,1µm,19.0s
NJ2 Nanjing 20.14 264 *e*P Pn 21 47 24.3 +1.2
NJ2 S Sn 21 51 10.8 +1.8
NJ2 pmax pmax
comp=Z,9.0nm,0.7s
NJ2 LR LR
comp=Z,1µm,13.0s
NJ2 LR LR
comp=Z,3µm,13.0s
NJ2 LR LR
comp=Z,2µm,13.6s
TIA Tai'an 20.50 276 *e*P **P 21 47 23.0 -2.0**
TIA S **S 21 51 14.0 +1.1**
TIA pmax pmax
comp=Z,30nm,1.0s
TIA LR LR
comp=Z,2µm,14.0s
TIA LR LR
comp=Z,2µm,16.6s
TIA LR LR
comp=Z,3µm,17.0s
HIA Hailar 20.80 314 *e*P **P 21 47 25.8 -2.4**
HIA pmax pmax
comp=Z,33nm,0.8s
HIA Hailar 20.80 314 *e*P **P 21 47 25.8 -2.4**
comp=Z,33nm,0.8s
BJI Beijing 20.96 287 P **P 21 47 29.3 -0.6**
BJI pP **pP 21 47 38.5 +1.0**
BJI sP **sP 21 47 42.0 +0.9**
BJI S **S 21 51 24.5 +2.5**
BJI sS **sS 21 51 36.3 +2.2**
BJI pmax pmax
comp=Z,24nm,0.8s
BJI pmax pmax
comp=Z,270nm,6.5s
BJI LR LR
comp=Z,2µm,12.0s
BJI LR LR
comp=Z,330nm,11.6s
BJI LR LR
comp=Z,920nm,16.8s
BJT Baijiatuan 20.97 287 *e*P **P 21 47 29.4 -0.6**
BJT Baijiatuan 20.97 287 *e*P **P 21 47 29.4 -0.6**
BJT *e*Pn **pP 21 47 35.3 -2.3**
SSLB Suanglung 22.67 241 *e*P **P 21 47 46.3 -2.1**
comp=Z,19nm,1.0s
YULB Yu-li 22.68 240 *e*P **P 21 47 46.4 -2.1**
comp=Z,73nm,1.8s
GUMO Guam 23.14 174 LR LR 21 56 13.4
comp=Z,354nm,21.0s,baz=15,slow=35
TPUB Ta-pu 23.21 241 *e*P **P 21 47 54.7 +0.8**
comp=Z,44nm,0.9s
CLNS Chul'man 23.35 335 *e*P **P 21 47 54.0 -1.2**
CLNS *e**PP **pP 21 48 01.6 -1.4**
CLNS *e* 21 48 17.6
CLNS *e* 21 51 40.2
CLNS *e*S **S 21 52 03.6 -2.5**

CLNS *e*SS **SnSn 21 52 52.0 +10**
CLNS *e* 21 58 55.9
CLNS pmax pmax
comp=Z,51nm,1.0s
CLNS pmax pmax
comp=N,35nm,1.1s
CLNS pmax pmax
comp=E,22nm,1.4s
CLNS pmax pmax
comp=E,7.0nm,0.8s
CLNS pmax pmax
comp=Z,25nm,0.9s
CLNS pmax pmax
comp=N,24nm,1.4s
CLNS smax smax
comp=E,277nm,12.3s
CLNS smax smax
comp=N,768nm,11.4s
CLNS MLR MLR
comp=Z,2µm,16.0s
CLNS MLR MLR
comp=N,2µm,15.0s
CLNS MLR MLR
comp=E,689nm,14.0s
MA2 Magadan 23.46 10 P **P 21 47 55.1 -1.0**
comp=E,33nm,0.9s,baz=209,slow=8.8,SNR=17
MA2 LR LR 21 58 01.7
comp=E,538nm,18.4s,baz=222,slow=39
QZH Quanzhou 23.67 247 P **P 21 47 57.0 -1.5**
QZH S **S 21 52 08.8 -2.8**
QZH LR LR
comp=E,3µm,17.4s
QZH LR LR
comp=E,2µm,15.8s
QZH LR LR
comp=E,2µm,14.6s
TIY Taiyuan 24.01 281 *e*P **P 21 48 03.0 +1.3**
TIY pP **sP 21 48 11.5 -1.7**
TIY S **S 21 52 18.0 +1.0**
TIY pmax pmax
comp=E,160nm,6.9s
TIY LR LR
comp=E,940nm,12.1s
TIY LR LR
comp=E,2µm,13.2s
TIY LR LR
comp=E,3µm,13.6s
WHN Wuhan 24.28 264 P **P 21 48 03.3 -0.8**
WHN S **S 21 52 20.5 -0.8**
WHN pmax pmax
comp=E,400nm,9.7s
WHN LR LR
comp=E,3µm,13.8s
WHN LR LR
comp=E,2µm,9.8s
WHN LR LR
comp=E,3µm,11.8s
HHC Hu-ho-hao-te 24.48 289 *e*P **P 21 48 06.5 +0.5**
HHC pP sP 21 48 16.0 -1.6
HHC sP pP 21 48 20.0 +5.8
HHC S **S 21 52 26.5 +1.9**
HHC pmax pmax
comp=E,33nm,0.8s
HHC pmax pmax
comp=E,190nm,8.7s
HHC LR LR
comp=E,1µm,12.5s
HHC LR LR
comp=E,1µm,14.0s
HHC LR LR
comp=E,890nm,15.7s
CIT Chita 25.56 316 *e*P **P 21 48 15.8 +0.2**
CIT pmax pmax
comp=Z,310nm,1.4s
YAK Yakutsk 26.58 346 P **P 21 48 23.7 -0.9**
comp=Z,76nm,0.7s,baz=153,slow=1.9,SNR=19
YAK LR LR 22 00 47.9
comp=Z,719nm,18.9s,baz=161,slow=41
YAK Yakutsk 26.58 346 *c*P **P 21 48 23.7 -0.9**
YAK *e**PP **pP 21 48 33.7 +0.9**
YAK *e* 21 49 01.0
YAK *e*PPP PPP 21 49 11.3
YAK *e*S **S 21 52 54.6 -2.6**
YAK *e* 21 59 09.2
YAK pmax pmax
comp=Z,114nm,1.0s
YAK pmax pmax
comp=N,61nm,1.3s
YAK pmax pmax
comp=E,19nm,1.6s
YAK pmax pmax
comp=Z,32nm,0.7s
YAK pmax pmax
comp=E,10.0nm,0.8s
YAK pmax pmax
comp=N,15nm,0.8s
YAK smax smax
comp=N,137nm,3.8s
YAK smax smax
comp=E,39nm,1.8s
YAK MLR MLR
comp=Z,2µm,15.0s
YAK MLR MLR
comp=N,2µm,15.0s
YAK MLR MLR
comp=E,735nm,15.0s
YAK Yakutsk 26.58 346 *e*P **P 21 48 23.8 -0.9**
comp=E,111nm,0.9s
SEY Seymchan 26.91 10 P **P 21 48 27.9 +0.3**
comp=E,27nm,0.9s,baz=198,slow=6.8,SNR=32
SEY Seymchan 26.91 10 *ce*P **P 21 48 28.1 +0.5**
H11N2 WAKE ISLAND Hy 27.17 122 T T 22 17 03.4
baz=314,slow=75,SNR=14
H11N1 WAKE ISLAND Hy 27.18 122 T T 22 17 06.6
baz=314,slow=75,SNR=13
H11N3 WAKE ISLAND Hy 27.19 122 T T 22 17 05.0
baz=314,slow=75,SNR=18
XAN Xi'an 27.52 274 P **P 21 48 32.5 -1.0**
XAN pP pP 21 48 41.5 -0.2
XAN sP sP 21 48 45.8 +0.7
XAN S **S 21 53 08.3 -4.6**
XAN pmax pmax
comp=E,26nm,1.3s
XAN pmax pmax
comp=E,140nm,7.5s
XAN LR LR
comp=E,1µm,15.9s
XAN LR LR
comp=E,1µm,13.9s
ENH Enshi 28.27 267 *e*P **P 21 48 39.6 -0.6**
comp=E,90nm,0.8s
BOD Bodaibo 28.30 327 ⇓*i*P **P 21 48 39.2 -0.9**
BOD pmax pmax
comp=Z,32nm,0.9s
ULN Ulaanbaatar 28.32 304 *ce*P **P 21 48 40.6 0.0**
ULN pmax pmax
comp=Z,39nm,1.0s
ULN Ulaanbaatar 28.32 304 *e*P **P 21 48 41.2 +0.6**
comp=Z,50nm,1.2s
SONA1 Songino Array 28.75 304 *e*P **P 21 48 44.5 +0.1**
SONA0 Songino Array 28.75 304 *e*P **P 21 48 44.8 +0.4**
comp=Z,43nm,0.9s
SONM Songino Array 28.75 304 P **P 21 48 44.8 +0.4**
comp=Z,28nm,0.8s,baz=103,slow=9.1,SNR=163
SONM LR LR 22 00 48.4
comp=Z,1µm,18.1s,baz=92,slow=38
TGY Tagaytay City 29.72 226 P **P 21 48 54.6 +1.5**
comp=Z,167nm,0.3s,baz=347,slow=15,SNR=3.5
IRK Irkutsk 31.01 312 *e*P **P 21 49 03.5 -0.7**
IRK pmax pmax
comp=Z,39nm,2.1s
LZH Lanzhou 31.07 281 ⇓P **P 21 49 05.5 +0.4**
LZH pP sP 21 49 15.5 -1.2
LZH sP pP 21 49 19.5 +6.2
LZH PP **PnPn 21 50 08.0 +1.3**
LZH *e*S **S 21 54 08.3 -0.5**
LZH sS sS 21 54 24.0 +1.7
LZH SS **SnSn 21 55 53.0 +2.2**
LZH pmax pmax
comp=Z,87nm,1.3s
LZH pmax pmax
comp=Z,150nm,4.0s
LZH LR LR
comp=Z,2µm,15.1s
LZH LR LR
comp=Z,2µm,15.1s

LZH LR LR
comp=Z,3µm,16.8s
ZAK Zakamensk 31.21 308 *e*P **P 21 49 06.3 +0.2**
ZAK pmax pmax
comp=Z,22nm,1.4s
TLY Talaya 31.25 311 P **P 21 49 06.6 +0.2**
comp=Z,16nm,0.9s,baz=116,slow=5.8,SNR=15
TLY LR LR 22 02 30.7
comp=Z,1µm,19.1s,baz=113,slow=38
TLY Talaya 31.25 311 *c i*P **P 21 49 06.4 0.0**
TLY *e* 21 50 10.3
TLY *e*PPP PPP 21 50 19.5
TLY *e*SS SS 21 55 46.2 -39
TLY pmax pmax
comp=Z,28nm,0.9s
TLY MLR MLR
comp=Z,1µm,19.0s
TLY Talaya 31.25 311 *e*P **P 21 49 06.8 +0.4**
GYA Guiyang 32.13 262 ‖*i*P **P 21 49 13.3 -1.1**
GYA pP sP 21 49 25.0 -1.1
GYA PP **PnPn 21 50 23.3 +2.8**
GYA PcP **PcP 21 52 05.5 +2.3**
GYA S **S 21 54 25.5 +0.1**
GYA sS sS 21 54 41.0 +2.1
GYA ScP **ScP 21 55 45.8 +1.0**
GYA SS **SnSn 21 56 19.0 +2.4**
GYA ScS **ScS 21 59 42.5 -1.3**
GYA pmax pmax
comp=Z,40nm,0.9s
GYA pmax pmax
comp=Z,160nm,5.5s
GYA LR LR
comp=Z,540nm,17.6s
GYA LR LR
comp=Z,490nm,18.0s
GYA LR LR
comp=Z,520nm,17.8s
CD2 Chengdu 32.64 271 P **P 21 49 18.8 0.0**
MOY Mondy 32.87 310 *e*P **P 21 49 20.5 -0.1**
MOY pmax pmax
comp=Z,30nm,3.2s
GTA Gaotai 33.57 288 *e*P **P 21 49 27.0 0.0**
GTA pP pP 21 49 36.3 +1.1
GTA sP sP 21 49 40.5 +1.9
GTA PP **PnPn 21 50 40.0 +1.2**
GTA S **S 21 54 45.5 -2.1**
GTA sS sS 21 55 00.0 -1.2
GTA SS **SnSn 21 56 49.8 -1.6**
GTA pmax pmax
comp=Z,16nm,1.4s
GTA pmax pmax
comp=Z,220nm,7.1s
GTA LR LR
comp=Z,1µm,15.2s
GTA LR LR
comp=Z,860nm,17.6s
GTA LR LR
comp=Z,960nm,19.0s
QIZ Qiongzhong 33.70 247 P **P 21 49 30.3 +2.3**
QIZ S **S 21 54 47.5 -2.1**
QIZ pmax pmax
comp=Z,5.0nm,1.2s
QIZ LR LR
comp=Z,440nm,18.4s
QIZ LR LR
comp=Z,430nm,19.0s
BILL Bilibino 34.05 16 ⇓*e*P **P 21 49 30.1 -0.5**
BILL *e* 21 49 38.7
BILL *e*PPP PPP 21 50 53.8
BILL pmax pmax
comp=Z,22nm,1.7s
BILL Bilibino 34.05 16 *e*P **P 21 49 29.8 -0.7**
comp=Z,28nm,1.3s
TIXI Tiksi 35.70 353 P **P 21 49 43.7 -1.1**
comp=Z,7.4nm,0.9s,baz=146,slow=6.4,SNR=19
TIXI LR LR 22 04 55.2
comp=Z,404nm,20.0s,baz=174,slow=37
TIXI Tiksi 35.70 353 *e*P **P 21 49 43.9 -0.9**
TIXI Tiksi 35.70 353 *e*P **P 21 49 43.9 -0.9**
KMI Kunming 35.88 263 P **P 21 49 47.0 -0.1**
KMI pP sP 21 49 57.8 -1.0
KMI sP pP 21 50 02.0 +6.6
KMI PP **PP 21 51 11.8 +3.0**
KMI S **S 21 55 18.5 -5.0**
KMI SS **SnSn 21 57 41.3 -6.4**
KMI pmax pmax
comp=Z,14nm,0.8s
KMI pmax pmax
comp=Z,120nm,3.5s
KMI LR LR
comp=Z,1µm,22.0s
KMI LR LR
comp=Z,510nm,19.9s
KMI LR LR
comp=Z,920nm,18.5s
KRAR Krasnoyarsk 38.35 316 *e*P **P 21 50 05.7 -1.7**
KRAR pmax pmax
comp=Z,10.0nm,1.1s
MYLDM Lahad Datu 38.40 221 *e*P **P 21 50 10.6 +2.3**
comp=Z,32nm,0.9s
PANO Nakornpanom 38.77 250 P **P 21 50 14.5 +3.1**
comp=Z,155nm,1.3s,comp=Z,8µm
JAY Jayapura 39.09 183 P **P 21 50 14.4 +0.3**
comp=Z,1.9nm,1.0s,baz=276,slow=21,SNR=4.2
NONG Nongkai 39.33 253 P **P 21 50 17.1 +1.0**
comp=Z,29nm,0.9s
SKNT Sakolnakorn 39.35 250 P **P 21 50 17.6 +1.3**
comp=Z,32nm,1.0s
LBMI Labuha 39.74 204 P **P 21 50 22.3 +2.8**
comp=Z,28nm,1.4s,comp=Z,3µm
CRAI Chiangrai 40.26 258 P **P 21 50 25.7 +1.9**
comp=Z,114nm,0.9s,comp=Z,81µm
KHON Khomkaen 40.61 251 P **P 21 50 31.4 +4.6**
comp=Z,11nm,0.7s
MRSI Marisa 40.84 213 P **P 21 50 29.2 +0.6**
comp=Z,42nm,1.3s,comp=Z,2µm
CMAI Chiengmai2 41.46 258 P **P 21 50 34.9 +1.0**
comp=Z,397nm,1.4s,comp=Z,19µm
CHAI Chaiyaphum 41.52 251 P **P 21 50 35.4 +1.2**
comp=Z,9.9nm,1.0s,comp=Z,81nm
UTTA Uttaradit 41.52 254 P **P 21 50 37.3 +3.1**
comp=Z,4.0nm,1.0s
SANI Sanana 41.58 206 P **P 21 50 35.8 +1.2**
comp=Z,38nm,0.9s
WMQ Urumqi 41.84 297 P **P 21 50 38.0 +1.4**
WMQ pP sP 21 50 47.5 -0.9
WMQ sP pP 21 50 50.8 +5.8
WMQ PP **PnPn 21 52 18.8 +0.2**
WMQ PcP **PcP 21 52 33.5 +1.3**
WMQ S **S 21 56 53.3 +0.6**
WMQ sS sS 21 57 05.5 -0.9
WMQ ScS **ScS 22 00 32.5 -5.1**
WMQ pmax pmax
comp=Z,15nm,0.8s
WMQ pmax pmax
comp=Z,97nm,3.8s
WMQ LR LR
comp=Z,470nm,17.6s
WMQ LR LR
comp=Z,170nm,20.0s
WMQ LR LR
comp=Z,250nm,21.0s
PBKT Sadao Pong 41.89 253 P **P 21 50 36.3 -0.9**
comp=Z,15nm,0.7s
CMMT Chiang Mai 42.16 257 P **P 21 50 40.9 +1.4**
comp=Z,8.8nm,1.1s
CHTO Chiang Mai 42.16 257 P **P 21 50 41.0 +1.5**
comp=Z,24nm,1.4s
CHTO Chiang Mai 42.16 257 *e*P **P 21 50 39.4 -0.1**
CHTO pmax pmax
comp=Z,9.0nm,1.0s
CHTO Chiang Mai 42.16 257 *e*P **P 21 50 39.4 -0.1**
comp=Z,9.3nm,1.0s
CM31 Chiang Mai Arr 42.36 257 *e*P **P 21 50 41.5 +0.4**
CMAR Chiang Mai Arr 42.36 257 P **P 21 50 41.5 +0.4**
comp=Z,1.3nm,0.7s,baz=47,slow=7.8,SNR=13
CM01 Chiang Mai Arr 42.37 257 *e*P **P 21 50 43.7 +2.6**
SRAK Srakaew 42.65 249 P **P 21 50 42.9 -0.5**
comp=Z,38nm,0.9s
ZAA0 Zalesovo Array 42.83 313 *e*P **P 21 50 44.7 +0.2**
ZAA1 Zalesovo Array 42.83 313 *e*P **P 21 50 44.2 -0.3**
ZALV Zalesovo Beam 42.83 313 P **P 21 50 44.2 -0.3**
comp=Z,18nm,0.8s,baz=91,slow=6.9,SNR=55
ZALV LR LR 22 09 17.0
comp=Z,592nm,19.9s,baz=80,slow=37

ZALV **Zalesovo Beam** 42.83 313 *i* P **P** 21 50 44.5 0.0
ZALV pmax pmax
comp=Z,19nm,0.9s
NAYO **Nakonayok** 43.00 250 P **P** 21 50 50.0 +3.7
comp=Z,52nm,1.1s,comp=Z,3µm
LSA **Lhasa** 43.20 276 P **P** 21 50 48.5 +0.1
LSA pmax pmax
comp=Z,5.0nm,1.4s
LSA **Lhasa** 43.20 276 *e*P **P** 21 50 49.6 +1.2
LSA pmax pmax
comp=Z,10.0nm,0.9s
LSA **Lhasa** 43.20 276 *e*P **P** 21 50 49.6 +1.2
comp=Z,9.6nm,0.9s
CHBT **CHBT** 43.24 247 P **P** 21 50 50.6 +2.4
comp=Z,29nm,1.0s
MHMT **Maesarieng** 43.31 257 P **P** 21 50 50.8 +2.0
comp=Z,7.8nm,1.0s,comp=Z,194nm
NVS **Novosibirsk** 43.74 314 ⇑*i*P **P** 21 50 51.5 -0.3
NVS *i* 21 52 34.4
NVS *i* 21 53 09.7
NVS pmax pmax
comp=Z,32nm,0.8s
NVS pmax pmax
comp=N,2.0nm,0.3s
NVS pmax pmax
comp=E,13nm,0.5s
NRIK **Noril'sk** 43.94 335 P **P** 21 50 52.9 -0.3
comp=E,3.8nm,0.5s,baz=119,slow=5.6,SNR=13
SHL **Shillong** 44.37 270 *e*P **P** 21 50 57.0 -0.5
SRDT **SRDT** 44.65 252 P **P** 21 51 01.6 +2.1
comp=E,40nm,1.0s
KHLT **Khaolaem Dam** 44.78 253 P **P** 21 51 03.0 +2.4
comp=E,4.4nm,1.0s
MK01 **Makanchi Array** 45.09 303 *e*P **P** 21 51 02.6 -0.2
MK31 **Makanchi Array** 45.09 303 *e*P **P** 21 51 02.7 -0.1
MK31 **Makanchi Array** 45.09 303 *e*P **P** 21 51 02.7 -0.1
MK32 **Makanchi Array** 45.09 303 *e*P **P** 21 51 02.7 -0.1
MKAR **Makanchi Array** 45.09 303 P **P** 21 51 02.7 -0.1
comp=E,13nm,0.9s,baz=88,slow=9.5,SNR=46
MKAR LR LR 22 10 53.8
comp=E,289nm,18.8s,baz=94,slow=37
TT01 **Tatalina** 45.11 35 *e*P **P** 21 51 03.2 +0.6
PHET **Kaeng Krachan** 45.16 250 P **P** 21 51 06.4 +2.8
comp=E,11nm,0.9s,comp=E,100nm
MAKZ **Makanchi** 45.30 303 *e*P **P** 21 51 04.6 +0.1
MAKZ pmax pmax
comp=Z,18nm,0.9s
MAKZ **Makanchi** 45.30 303 *e*P **P** 21 51 04.6 +0.1
comp=Z,18nm,0.9s
RSO **Redoubt South** 46.54 38 *e*P **P** 21 51 15.1 +0.9
KDAK **Kodiak Island** 46.68 42 P P 21 51 29.8 +15
comp=Z,10nm,0.6s,baz=259,slow=4.9,SNR=21
KDAK **Kodiak Island** 46.68 42 *i* P **P** 21 51 14.8 -0.2
KDAK **Kodiak Island** 46.68 42 *e*P **P** 21 51 14.9 -0.2
comp=Z,20nm,0.9s
KDAK *e*pP **sP** 21 51 29.8 +2.9
KAPI **Kappang** 46.71 212 *e*P **P** 21 51 16.8 +1.0
comp=Z,86nm,1.6s
PPLA **Purkeypile** 46.86 35 *e*P **P** 21 51 18.3 +1.7
comp=Z,43nm,1.5s
KURK **Kurchatov** 46.88 308 *e*P **P** 21 51 16.3 -0.4
KURK pmax pmax
comp=Z,50nm,0.9s
KURK **Kurchatov** 46.88 308 *e*P **P** 21 51 16.3 -0.4
comp=Z,50nm,0.9s
SPU **Mount Spurr** 46.89 37 *e*P **P** 21 51 17.5 +0.8
CAST **Castle Rocks** 46.93 34 *e*P **P** 21 51 18.1 +1.1
comp=Z,10nm,0.9s
KURBB **Kurchatov Arra** 46.95 308 P **P** 21 51 17.0 -0.3
comp=Z,15nm,0.5s,baz=82,slow=7.8,SNR=172
BPAW **Bear Paw Mtn.** 47.45 33 *e*P **P** 21 51 21.8 +0.8
comp=Z,5.7nm,0.8s
KTH **Kantishna Hill** 47.46 34 *e*P **P** 21 51 22.3 +1.1
comp=Z,27nm,1.0s
MLY **Manley** 47.59 32 *e*P **P** 21 51 23.1 +0.9
comp=Z,18nm,0.9s
TRF **Thorofare Moun** 47.74 34 *e*P **P** 21 51 24.7 +1.2
comp=Z,9.9nm,0.9s
RC01 **Rabbit Creek A** 48.01 37 *e*P **P** 21 51 25.7 +0.3
comp=Z,15nm,1.0s
BWN **Browne** 48.11 33 *e*P **P** 21 51 28.1 +1.9
comp=Z,42nm,1.0s
GUN **Gumba** 48.15 277 *e*P **P** 21 51 27.6 +0.2
comp=Z,56nm,0.7s
MCK **McKinley** 48.34 34 *e*P **P** 21 51 28.5 +0.5
MCK pmax pmax
comp=Z,9.0nm,0.8s
MCK **McKinley** 48.34 34 *e*P **P** 21 51 28.5 +0.5
comp=Z,9.3nm,0.8s
RND **Reindeer** 48.38 34 *e*P **P** 21 51 28.2 -0.2
RND pmax pmax
comp=Z,14nm,1.0s
RND **Reindeer** 48.38 34 *e*P **P** 21 51 28.2 -0.2
comp=Z,14nm,1.0s
MDM **Murphy Dome** 48.66 32 *e*P **P** 21 51 31.1 +0.7
comp=Z,26nm,0.8s
SML **Sawmill** 48.66 36 *e*P **P** 21 51 31.1 +0.6
SML pmax pmax
comp=Z,18nm,1.0s
SML **Sawmill** 48.66 36 *e*P **P** 21 51 31.1 +0.6
comp=Z,18nm,1.0s
PKIN **Phulchoki** 48.68 276 *e*P **P** 21 51 31.2 -0.2
comp=Z,6.9nm,0.5s
KKN **Kakani** 48.68 277 *e*P **P** 21 51 31.3 0.0
comp=Z,49nm,0.8s
WRH **Wood River Hil** 48.72 33 *e*P **P** 21 51 31.3 +0.5
comp=Z,11nm,0.9s
COLA **College** 48.82 32 *i* P **P** 21 51 32.3 +0.8
COLA pmax pmax
comp=Z,6.0nm,0.9s
CCB **Clear Creek Bu** 48.84 32 *e*P **P** 21 51 31.9 +0.2
comp=Z,5.7nm,1.0s
DMN **Daman** 48.90 277 *e*P **P** 21 51 33.0 0.0
DHY **Denali Highway** 49.06 34 *e*P **P** 21 51 34.0 +0.3
comp=Z,11nm,1.3s
GKN **Gorkha** 49.10 277 *e*P **P** 21 51 34.5 0.0
comp=Z,139nm,0.9s
SCM **Sheep Creek Mo** 49.14 36 *e*P **P** 21 51 35.0 +0.8
SCM pmax pmax
comp=Z,18nm,1.0s
SCM **Sheep Creek Mo** 49.14 36 *e*P **P** 21 51 35.0 +0.8
comp=Z,18nm,1.0s
IL1 **Eielson Array** 49.23 32 *e*P **P** 21 51 33.8 -1.0
ILAR **Eielson Array** 49.23 32 P **P** 21 51 34.4 -0.4
comp=Z,8.6nm,0.8s,baz=266,slow=6.4,SNR=95
ILAR LR LR 22 11 52.8
comp=Z,150nm,21.7s,baz=282,slow=36
ILB **Eielson Array** 49.23 32 *e*P **P** 21 51 34.4 -0.4
PKDT **Phuket** 49.39 246 P **P** 21 51 38.9 +2.4
comp=Z,40nm,0.9s
AAA **Alma-Ata** 49.57 299 *e*P P 21 51 48.0 +10
AAA pmax pmax
comp=Z,400nm,5.6s
AAA MLR MLR
comp=Z,2µm,17.0s
IPM **Ipoh** 49.82 240 *e*P **P** 21 51 41.1 +1.2
comp=Z,10nm,0.8s
KLU **Klutina** 49.83 37 *e*P **P** 21 51 40.5 +1.0
comp=Z,59nm,2.0s
DIV **Divide** 49.93 37 *e*P **P** 21 51 41.3 +1.1
comp=Z,23nm,1.1s
PAX **Paxson** 49.93 35 *e*P **P** 21 51 41.5 +1.3
PAX pmax pmax
comp=Z,9.0nm,1.0s
PAX **Paxson** 49.93 35 *e*P **P** 21 51 41.5 +1.3
comp=Z,8.7nm,1.0s
EYAK **Cordova Ski Ar** 50.00 38 *e*P **P** 21 51 41.9 +1.2
EYAK *e*pP **pP** 21 51 49.5 +0.4
KOLN **Koldanda** 50.02 278 *e*P **P** 21 51 41.7 +0.1
comp=Z,19nm,0.6s
PYUN **Piuthan** 50.37 278 *e*P **P** 21 51 44.4 +0.2
comp=Z,113nm,0.9s
BMRM **Bremner River** 50.51 37 *e*P **P** 21 51 45.8 +1.1
comp=Z,14nm,0.9s
DOT **Dot Lake** 50.52 34 *e*P **P** 21 51 44.5 -0.1
comp=Z,17nm,0.7s
RAGM **Ragged Mountai** 50.54 38 *e*P **P** 21 51 46.2 +1.4
comp=Z,27nm,1.2s
TKM2 **Tokmak 2** 50.62 299 *e*P **P** 21 51 46.5 +0.6
TKM2 pmax pmax
comp=Z,60nm,1.4s
TKM2 **Tokmak 2** 50.62 299 *e*P **P** 21 51 46.5 +0.6
comp=Z,60nm,1.4s
VOSK **Vostochnaya** 51.20 312 *e*P **P** 21 51 49.5 -0.3
VOSK pmax pmax
comp=Z,24nm,1.0s
VOSK **Vostochnaya** 51.20 312 *e*P **P** 21 51 49.5 -0.3
comp=Z,24nm,1.0s
CRQM **Cirque** 51.25 37 *e*P **P** 21 51 51.6 +1.3
comp=Z,24nm,1.0s
FRU **Bishkek** 51.33 299 *e*P **P** 21 51 51.0 -0.1
FRU pmax pmax
comp=Z,28nm,1.9s
FRU MLR MLR
comp=E,800nm,18.0s
KSH **Kashi** 51.41 295 P **P** 21 51 56.0 +4.2
KSH *e*pP sP 21 52 06.5 +2.9
KSH *es*P pP 21 52 10.5 +10
KSH PcS **PcS** 21 57 07.0 +3.0
KSH S **S** 21 59 14.8 +5.0
KSH ScS **ScS** 22 01 40.5 +0.2
KSH SS **SS** 22 02 46.5 +1.1
KSH pmax pmax
comp=E,8.0nm,0.8s
KSH pmax pmax
comp=E,140nm,3.5s
KSH LR LR
comp=E,1µm,15.8s
KSH LR LR
comp=E,1µm,15.4s
KSH LR LR
comp=E,2µm,15.1s
AAK **Ala-Archa** 51.48 299*c* *i*P **P** 21 51 52.2 -0.1
AAK pmax pmax
comp=Z,9.0nm,0.8s
AAK **Ala-Archa** 51.48 299 *e*P **P** 21 51 52.7 +0.4
comp=Z,9.2nm,0.8s
BVAR **Borovoye Array** 51.49 313 P **P** 21 51 51.8 -0.2
comp=Z,4.0nm,0.7s,baz=72,slow=7.5,SNR=35
BRVK **Borovoye** 51.54 313 *e*P **P** 21 51 52.2 -0.2
BRVK pmax pmax
comp=Z,41nm,1.4s
BRVK **Borovoye** 51.54 313 *e*P **P** 21 51 52.2 -0.2
comp=Z,41nm,1.4s
BALM **Baldy** 51.60 37 *e*P **P** 21 51 53.4 +0.6
BALM pmax pmax
comp=Z,8.0nm,0.8s
BALM **Baldy** 51.60 37 *e*P **P** 21 51 53.4 +0.6
comp=Z,8.0nm,0.8s
EGAK **Eagle** 51.68 32 *e*P **P** 21 51 53.5 +0.2
comp=Z,4.9nm,0.8s
EKS2 **Erkin-Say** 51.98 299 *e*P **P** 21 51 56.1 +0.1
EKS2 pmax pmax
comp=Z,10.0nm,0.8s
EKS2 **Erkin-Say** 51.98 299 *e*P **P** 21 51 56.1 +0.1
comp=Z,9.9nm,0.8s
ZRNK **Zerenda** 52.32 313 *e*P **P** 21 51 57.9 -0.3
ZRNK pmax pmax
comp=Z,16nm,0.8s
ZRNK **Zerenda** 52.32 313 *e*P **P** 21 51 57.9 -0.3
comp=Z,16nm,0.8s
PSI **Prapat** 52.48 240 *e*P **P** 21 52 03.2 +3.2
PSI pmax pmax
comp=Z,8.0nm,0.9s
PSI **Prapat** 52.48 240 *e*P **P** 21 52 03.2 +3.2
comp=Z,8.2nm,0.9s
DAWY **Dawson** 52.53 33 *e*P **P** 21 52 00.5 +0.8
KKAR **Karatay Array** 54.11 301 *e*P **P** 21 52 11.6 0.0
KKAR **Karatay Array** 54.11 301 *e*P **P** 21 52 11.6 0.0
INK **Inuvik** 54.21 27 P **P** 21 52 12.1 +0.3
comp=Z,6.1nm,0.8s,baz=297,slow=7.8,SNR=27
INK **Inuvik** 54.21 27 *e*P **P** 21 52 12.1 +0.3
comp=Z,10nm,1.0s
GSI **Gunungsitoli** 54.48 240 *e*P **P** 21 52 18.0 +3.5
comp=Z,31nm,0.7s
SVE **Sverdlovsk** 56.01 319 *e*P **P** 21 52 25.5 +0.5
SVE pmax pmax
comp=Z,68nm,1.1s
SVE MLR MLR
comp=Z,1µm,14.0s
WRAB **Tennant Creek** 56.90 189*ce*P **P** 21 52 31.5 -0.2
WRAB pmax pmax
comp=Z,37nm,1.2s
WB2 **Warramunga Arr** 56.91 189 *e*P **P** 21 52 31.0 -0.7
WR1 **Warramunga Arr** 56.91 189 *e*P **P** 21 52 30.6 -1.2
WRA **Warramunga Arr** 56.91 189 P **P** 21 52 30.6 -1.2
comp=Z,10nm,0.9s,baz=9.3,slow=7.2,SNR=45
WRA **Warramunga Arr** 56.91 189 *i* P **P** 21 52 30.7 -1.1
WRA pmax pmax
comp=Z,11nm,0.9s
ARU **Arti** 57.22 319*c* *i*P **P** 21 52 33.4 -0.2
ARU *PP **pP** 21 52 43.5 +1.3
ARU 21 54 38.7
ARU S **S** 22 00 29.0 +1.6
ARU SS **SS** 22 04 12.5 -3.6
ARU pmax pmax
comp=Z,19nm,0.8s
ARU MLR MLR
comp=Z,993nm,17.0s
ARU **Arti** 57.22 319 *e*P **P** 21 52 32.5 -1.1
comp=Z,51nm,1.1s
DLBC **Dease Lake** 58.27 38 P **P** 21 52 42.5 +1.4
comp=Z,4.6nm,0.9s,baz=298,slow=7.7,SNR=11
DLBC **Dease Lake** 58.27 38 *e*P **P** 21 52 42.5 +1.4
comp=Z,23nm,1.1s
KBL **Kabul** 58.42 292 *e*P **P** 21 52 42.6 -0.1
KBL pmax pmax
comp=Z,23nm,0.9s
KBL **Kabul** 58.42 292 *e*P **P** 21 52 42.6 -0.1
comp=Z,23nm,0.9s
ABKAR **Akbulak array** 58.87 311 *e*P **P** 21 52 45.0 -0.3
HYB **Hyderabad** 59.16 269 *i* P **P** 21 52 48.0 +0.2
HYB *e* 21 52 58.5
AKTO **Aktyubinsk** 59.59 312 P **P** 21 52 49.5 -0.8
comp=Z,5.9nm,0.7s,baz=78,slow=13,SNR=15
AKTO LR LR 22 19 24.0
comp=Z,240nm,19.1s,baz=76,slow=37
AS01 **Alice Springs** 60.63 189 *e*P **P** 21 52 56.7 -0.8
AS31 **Alice Springs** 60.63 189 *e*P **P** 21 52 57.1 -0.5
comp=Z,2.5nm,0.7s
ASAR **Alice Springs** 60.64 189 P **P** 21 52 57.1 -0.5
comp=Z,6.7nm,0.8s,baz=9.5,slow=7.0,SNR=62
ASAR LR LR 22 19 14.4
comp=Z,81nm,21.9s,baz=358,slow=36
BBB **Bella Bella** 61.60 44 LR LR 22 16 49.3
comp=Z,112nm,19.4s,baz=298,slow=33
POO **Poona** 62.35 273 *e*P **P** 21 53 09.0 -0.5
APA **Apatity** 63.35 336 ⇑*i*P P 21 53 25.6 +10
APA pmax pmax
comp=Z,26nm,1.0s
APA MLR MLR
comp=Z,900nm,16.0s
TMCR **Tamitsa** 63.47 332 *e*P **P** 21 53 16.5 +0.4
TMCR pmax pmax
comp=Z,20nm,0.6s
YKW3 **Yellowknife Ar** 63.54 30 *e*P **P** 21 53 16.6 -0.1
comp=Z,9.9nm,0.8s
YKA **Yellowknife Ar** 63.58 30 P **P** 21 53 16.7 -0.2
comp=Z,3.9nm,0.7s,baz=302,slow=6.7,SNR=66
YKB5 **Yellowknife Ar** 63.58 30 *e*P **P** 21 53 16.7 -0.2
KLMR **Klimovskoe** 64.52 328 *e*P **P** 21 53 21.8 -1.3
KLMR *e* 21 55 43.9
KLMR pmax pmax
comp=Z,28nm,1.3s
ARA0 **ARCESS Array S** 64.61 340 *e*P **P** 21 53 23.4 -0.2
ARCES **ARCESS Array B** 64.61 340 P **P** 21 53 23.4 -0.2
comp=Z,3.0nm,0.8s,baz=49,slow=11,SNR=4.9
GEYT **Alibeck** 64.82 300 P **P** 21 53 25.8 +0.2
comp=Z,8.4nm,0.9s,baz=31,slow=3.5,SNR=21
DAG **Danmarks Havn** 66.15 355 *i* P **P** 21 53 32.8 -0.7
comp=Z,6.5nm,0.9s
DAG **Danmarks Havn** 66.15 355 *i* P **P** 21 53 32.8 -0.7
DAG pmax pmax
comp=Z,6.0nm,0.9s
MOS **Moscow** 68.06 324 *e*P **P** 21 53 45.1 -0.8
MOS *e* 21 53 55.9
MOS *e* 21 54 03.3
MOS pmax pmax
comp=Z,46nm,1.2s
MOS MLR MLR
comp=Z,600nm,16.0s
STKA **Stephens Creek** 68.26 181 P **P** 21 53 46.5 -0.8
comp=Z,3.2nm,0.7s,baz=353,slow=8.1,SNR=7.2
STKA LR LR 22 31 28.3
comp=Z,69nm,18.0s,baz=14,slow=43
STKA **Stephens Creek** 68.26 181 *e*P **P** 21 53 46.5 -0.8
comp=Z,1.4nm,1.0s
VRH **Novokhopyorsk** 68.45 318 *e*P **P** 21 53 47.5 -0.9
VRH *e*PP **pP** 21 53 58.5 +1.3
VRH pmax pmax
comp=Z,10.0nm,0.7s
VRH MLR MLR
comp=Z,920nm,14.0s
OBN **Obninsk** 68.91 324 P **P** 21 53 50.9 -0.3
comp=Z,14nm,0.7s,baz=346,slow=15,SNR=3.1
OBN **Obninsk** 68.91 324*de*P **P** 21 53 50.9 -0.3
OBN *i* 21 54 01.7
OBN *e* 21 54 15.6
OBN pmax pmax
comp=Z,28nm,1.2s
OBN **Obninsk** 68.91 324 *e*P **P** 21 53 50.9 -0.3
comp=Z,56nm,1.4s
LPSR **Galich'ya Gora** 69.15 321 *e*P **P** 21 53 52.3 -0.4
LPSR *e*PP **sP** 21 54 03.0 -1.8
LPSR pmax pmax
comp=Z,20nm,0.8s
LPSR MLR MLR
comp=Z,940nm,15.0s
FIA1 **FINESS Array S** 69.52 333 *e*P **P** 21 53 55.1 +0.3
FIA0 **FINESS Array S** 69.53 333 *e*P **P** 21 53 54.7 -0.2
FIA0 **FINESS Array S** 69.53 333 *e*P **P** 21 53 54.7 -0.2
FINES **FINESS Array B** 69.53 333 P **P** 21 53 54.7 -0.2
comp=Z,9.7nm,0.8s,baz=54,slow=7.5,SNR=27
FINES **FINESS Array B** 69.53 333 *i* P **P** 21 53 55.0 +0.1
FINES pmax pmax
comp=Z,10.0nm,0.8s
M04C **Macdoel** 70.29 52 P **P** 21 54 00.7 +0.5
baz=302
K05A **Summer Lake** 70.39 51 *e*P **P** 21 54 04.3 +3.5
comp=Z,55nm,0.9s
SUMG **Summit** 70.98 0 *i* P **P** 21 54 05.0 +0.8
comp=Z,9.6nm,0.9s
SUMG **Summit** 70.98 0 *i* P **P** 21 54 05.0 +0.8
SUMG pmax pmax
comp=Z,10.0nm,0.9s
SUMG **Summit** 70.98 0 *e*P **P** 21 54 04.6 +0.5
comp=Z,26nm,0.8s
GOF **Gofitskoye** 71.01 312⇑*e*P **P** 21 54 04.0 -0.3
GOF pmax pmax
comp=Z,26nm,0.8s
VSU **Vasula** 71.20 330*ce*P **P** 21 54 05.6 +0.4
VSU pmax pmax
comp=Z,18nm,0.6s
DGRG **David-gareji** 71.54 308 P **P** 21 54 08.2 +0.5
DGRG **David-gareji** 71.54 308 P **P** 21 54 08.2 +0.5
GUDG **Gudauri** 71.55 309 P **P** 21 54 09.5 +1.6
ZEI **Tsey** 71.73 310 *e*P **P** 21 54 06.8 -2.2
ZEI pmax pmax
comp=Z,21nm,0.9s
TBLG **Delisi** 71.79 309 P **P** 21 54 11.1 +1.9
TBLG **Delisi** 71.79 309 P **P** 21 54 11.0 +1.9
KBZ **Khabaz** 71.83 311 P **P** 21 54 09.7 +0.5
comp=Z,19nm,0.9s,baz=45,slow=3.3,SNR=58
KIV **Kislovodsk** 71.83 312 *i* P **P** 21 54 10.0 +0.6
SNR=35
KIV **Kislovodsk** 71.83 312*ce*P **P** 21 54 09.8 +0.4
KIV *i* 21 54 20.3
KIV *e* 21 54 27.8
KIV pmax pmax
comp=Z,59nm,1.0s
KIV **Kislovodsk** 71.83 312 *e*P **P** 21 54 10.0 +0.6
comp=Z,55nm,0.8s
SWMT **Swartz Lake** 71.84 44 *e*P **P** 21 54 10.3 +0.9
ONI **Oni** 72.12 310 P **P** 21 54 12.3 +1.2
ONI **Oni** 72.12 310 P **P** 21 54 12.3 +1.2
NEY **Neytrino** 72.20 311*c* *i*P **P** 21 54 12.7 +0.9
NEY pmax pmax
comp=Z,2.0nm,1.0s
MSO **Missoula** 72.26 45 P **P** 21 54 12.2 +0.3
baz=305
MSO **Missoula** 72.26 45 *e*P **P** 21 54 12.2 +0.3
comp=Z,13nm,1.1s
GNI **Garni** 72.66 307 *e*P **P** 21 54 15.3 +0.8
GNI pmax pmax
comp=Z,74nm,1.2s
GNI **Garni** 72.66 307 *e*P **P** 21 54 17.9 +3.4
comp=Z,25nm,1.0s
AKH **Akhalkalaki** 72.75 309⇓*i*P **P** 21 54 15.9 +0.8
CHVG **Ch'k'valeri** 72.88 311 P **P** 21 54 16.4 +0.8
CHVG **Ch'k'valeri** 72.88 311⇑*i*P **P** 21 54 16.7 +1.1
HATD **Hatta, Dubai** 72.94 288 *i* P P 21 54 27.2 +11
SNR=6.3
ASHO **Ashiyiah** 73.07 288 P P 21 54 27.0 +10
MFID **Camas Ranch** 73.11 48 *e*P **P** 21 54 17.8 +0.7
MFID *e*pP **sP** 21 54 28.9 -0.3
IZAR **Zarasai** 73.17 328 *e*P **P** 21 54 16.7 -0.3
IZAR lAmb lAmb 21 54 29.3
comp=Z,7.9nm,0.9s
IDID **Didziasalis** 73.25 328 *e*P **P** 21 54 17.3 -0.2
IDID lAmb lAmb 21 54 29.8
comp=Z,11nm,0.8s
CMB **Columbia Colle** 73.25 55 *e*P **P** 21 54 20.2 +2.2
CMB pmax pmax
comp=Z,15nm,0.8s
CMB **Columbia Colle** 73.25 55 *e*P **P** 21 54 20.2 +2.2
comp=Z,15nm,0.8s
MICGM **Minsk** 73.28 326 *e* **P** 21 54 20.0 +2.3
MNK **Minsk** 73.28 326 *e*P **P** 21 54 20.0 +2.3
ISAL **Salakas** 73.34 328 *e*P **P** 21 54 17.7 -0.3
ISAL lAmb lAmb 21 54 30.5
comp=Z,18nm,0.9s
FAQ **Al Faqa, Dubai** 73.39 289 P P 21 54 29.4 +10
NACGM **Naroch** 73.50 327 *e* **P** 21 54 19.0 0.0
NACGM eLR LR 22 28 26.0
LRM **Limekiln Ridge** 73.68 45 *e*P **P** 21 54 21.6 +1.0
SOC **Sochi** 73.81 312 *e*P P 21 54 31.5 +10
SOC MLR MLR
comp=Z,445nm,15.0s
FCC **Fort Churchill** 73.83 27 *e*P **P** 21 54 20.6 -0.2
FCC pmax pmax
comp=Z,40nm,1.4s
FCC **Fort Churchill** 73.83 27 *e*P **P** 21 54 20.6 -0.2
comp=Z,40nm,1.4s
EGMT **Eagleton** 73.85 42 P **P** 21 54 22.1 +0.8
baz=307
HLID **Hailey** 73.86 48 P **P** 21 54 22.5 +0.8
baz=306
HLID **Hailey** 73.86 48 *e*P **P** 21 54 22.8 +1.2
comp=Z,12nm,0.9s
DLMT **Dillon** 73.87 45 *e*P **P** 21 54 22.6 +1.1
comp=Z,24nm,0.9s
BOZ **Bozeman (W)** 74.25 45 P **P** 21 54 24.6 +0.8
baz=307
BOZ **Bozeman (W)** 74.25 45 *e*P **P** 21 54 24.9 +1.1
BOZ pmax pmax
comp=Z,19nm,0.8s
BOZ **Bozeman (W)** 74.25 45 *e*P **P** 21 54 24.9 +1.1
comp=Z,19nm,0.8s
NV01 **Mina Array Sit** 74.39 54 *e*P **P** 21 54 25.7 +0.9
NVAR **Mina Array Bea** 74.39 54 P **P** 21 54 25.7 +0.9
comp=Z,1.8nm,0.8s,baz=290,slow=5.5,SNR=11
ANN **Anapa** 74.43 314 *e*P **P** 21 54 27.4 +2.8
ANN *e*S **S** 22 04 03.9 +6.5
ANN pmax pmax
comp=Z,41nm,1.0s
NC405 **NORSAR Array S** 74.62 338 *e*P **P** 21 54 26.0 +0.5
HFS **Hagfors** 74.75 336 P P 21 54 25.8 -0.5
comp=Z,7.3nm,0.9s,baz=72,slow=4.8,SNR=12
NC204 **NORSAR Array S** 74.78 338 *e*P **P** 21 54 27.1 +0.7
NB2 **NORSAR Subarra** 74.83 338 P **P** 21 54 26.4 -0.3
comp=Z,8.5nm,0.8s,baz=38,slow=5.9
NB200 **NORSAR Array S** 74.83 338 *e*P **P** 21 54 26.7 0.0
NOA **NORSAR Array B** 74.83 338 P **P** 21 54 26.7 0.0
comp=Z,5.6nm,0.8s,baz=39,slow=5.8,SNR=22
NBO02 **NORSAR Array S** 74.93 338 *e*P **P** 21 54 27.2 -0.1
AKASG **Malin Array Be** 75.12 323 P P 21 54 28.3 -0.2
comp=Z,12nm,0.7s,baz=45,slow=6.1,SNR=60
AKASG **Malin Array Be** 75.12 323*ce*P **P** 21 54 28.2 -0.3
AKASG pmax pmax
comp=Z,16nm,0.8s
AKBB **Malin Array Si** 75.12 323 *e*P **P** 21 54 28.3 -0.2
AKBB pmax pmax
comp=Z,27nm,0.9s
AKBB **Malin Array Si** 75.12 323 *e*P **P** 21 54 28.3 -0.2
comp=Z,26nm,0.9s
KIEV **Kiev** 75.13 323*c* *i*P **P** 21 54 28.1 -0.5
KIEV pmax pmax
comp=Z,18nm,1.0s
KIEV **Kiev** 75.13 323 *e*P **P** 21 54 28.4 -0.2
comp=Z,28nm,1.0s
AK11 **Malin Array Si** 75.16 323 *e*P **P** 21 54 28.5 -0.3
H17A **Grant Village** 75.60 45 P **P** 21 54 34.3 +2.6
baz=308
H17A **Grant Village** 75.60 45 *e*P **P** 21 54 33.8 +2.1
comp=Z,36nm,0.8s
IMW **Indian Meadow** 75.69 46 *e*P **P** 21 54 34.2 +1.8
IMW *e*pP **sP** 21 54 44.8 +0.3
FXWY **Fox Creek** 75.80 46 *e*P **P** 21 54 34.6 +1.8

comp=Z,19nm,0.9s
RLMT Red Lodge 75.89 44 P P 21 54 34.3 +0.9
baz=308
MOOW Moose Ponds 75.90 46 eP P 21 54 35.0 +1.6
comp=Z,17nm,0.9s
SFJD Kangerlussuaq 76.10 5 P P 21 54 33.9 +0.2
comp=Z,5.0nm,0.7s,baz=353,slow=8.1,SNR=2.6
R11A Troy Canyon, C 76.18 52 P P 21 54 36.1 +1.0
baz=306
R11A Troy Canyon, C 76.18 52 eP P 21 54 36.1 +1.0
comp=Z,26nm,1.2s
SIM Simferopol' 76.21 316 eP P 21 54 35.5 +0.6
SIM e 21 54 46.0
SIM S **S 22 04 20.0 +2.7**
SIM pmax pmax
comp=Z,18nm,0.8s
SIM MLR MLR
comp=Z,180nm,14.7s
DUG Dugway, Tooele 76.82 50 P P 21 54 39.8 +1.2
baz=307
DUG Dugway, Tooele 76.82 50 eP P 21 54 40.0 +1.4
DUG pmax pmax
comp=Z,25nm,1.0s
DUG Dugway, Tooele 76.82 50 eP P 21 54 40.0 +1.4
comp=Z,25nm,1.0s
FRB Frobisher Bay 76.84 14 P P 21 54 37.8 -0.3
comp=Z,7.3nm,0.7s,baz=304,slow=8.0,SNR=8.6
PSUT Pine Spring 77.17 51 eP P 21 54 43.0 +2.3
comp=Z,13nm,0.9s
BW06 Boulder Array 77.18 46 eP P 21 54 40.7 0.0
PD31 Pinedale Array 77.18 46 eP P 21 54 41.0 +0.3
PDAR Pinedale Array 77.18 46 P P 21 54 41.0 +0.3
comp=Z,1.1nm,0.7s,baz=230,slow=2.3,SNR=7.3
SORM Soroca 77.23 321 ⇓iP P 21 54 40.2 -0.3
SORM Soroca 77.23 321 ⇓P P 21 54 40.2 -0.3
A26A Wade Farm, Ken 77.26 38 P P 21 54 41.1 +0.3
baz=312
NLU North Lily Min 77.41 49 eP P 21 54 43.2 +1.2
comp=Z,16nm,0.9s
KIS Kishinev 77.74 320 eP P 21 54 55.0 +12
KIS LRM MLR 22 32 14.0
comp=Z,2μm,16.0s
KIS Kishinev 77.74 320 eP P 21 54 55.0 +12
KIS e 21 55 05.0
KIS e 22 04 54.0
KIS MLR MLR
comp=N,500nm,15.0s
KIS MLR MLR
comp=E,1μm,15.0s
KIS MLR MLR
comp=Z,2μm,15.0s
KIS MLR MLR
comp=Z,2μm,16.0s
MZRK Al-Mazaregh 77.78 306 eP P 21 54 45.5 +1.6
SFNV Sufian 77.78 306 eP P 21 54 44.4 +0.4
MILM Milestii Mici 77.80 320 ⇓iP P 21 54 43.5 -0.2
A28A Rude Farm, Bot 78.11 37 P P 21 54 46.1 +0.5
baz=313
LVV L'vov 78.19 324 eP P 21 54 46.0 +0.1
LVV e 21 54 56.6
MSU Marysvale 78.23 51 eP P 21 54 51.0 +4.4
MSU Marysvale 78.23 51 eP P 21 54 51.0 +4.4
C27A Sayler Ranch, 78.32 38 P P 21 54 46.9 +0.2
baz=313
MTPU Mount Pierson 78.51 51 eP P 21 54 50.0 +1.7
comp=Z,20nm,0.8s
A29A Manning Farm, 78.60 36 P P 21 54 48.5 +0.3
baz=314
P18A Preston Nutter 78.72 49 eP P 21 54 54.6 +5.1
comp=Z,39nm,1.5s
KNB Kanab 78.73 52 eP P 21 54 51.6 +2.2
KNB pmax pmax
comp=Z,32nm,1.3s
KNB Kanab 78.73 52 eP P 21 54 51.6 +2.2
comp=Z,32nm,1.3s
KSRV Kasrt alli 78.83 306 eP P 21 54 50.0 +0.3
SRU San Rafael Swe 78.88 49 eP P 21 54 51.7 +1.6
SRU pmax pmax
comp=Z,30nm,0.7s
SRU San Rafael Swe 78.88 49 eP P 21 54 51.7 +1.6
comp=Z,30nm,0.7s
KWP Kalwaria Pacla 78.93 325 eP P 21 54 50.6 +0.6
KWP e 21 55 01.3
KWP Kalwaria Pacla 78.93 325 ⇑iP P 21 54 51.0 +1.0
KWP Kalwaria Pacla 78.93 325 ⇑P P 21 54 51.0 +1.0
IRM Iron Mountain 78.95 56 P P 21 54 51.4 +0.9
baz=307
GIRR Girov 78.95 321 ⇑iP P 21 54 50.0 -0.2
A30A Hoffart Farm, 79.03 36 P P 21 54 50.8 +0.2
baz=314
BUR08 Bucovina Ar. S 79.13 322 eP P 21 54 51.8 +0.5
BURAR Bucovina Array 79.14 322 ⇓iP P 21 54 52.1 +0.8
BURAR Bucovina Array 79.14 322 ⇓P P 21 54 52.1 +0.8
TESR Tescani 79.18 321 ⇓iP P 21 54 51.5 +0.1
F27A Lemmon 79.30 40 P P 21 54 52.5 +0.3
baz=313
CFR Carcaliu 79.31 319 ⇑iP P 21 54 52.3 +0.2
CFR Carcaliu 79.31 319 ⇑P P 21 54 52.3 +0.2
B30A Myrvik Farm, E 79.36 36 P P 21 54 52.8 +0.5
baz=315
G26A Maurine 79.39 41 P P 21 54 53.0 +0.3
baz=312
PETR Petresti 79.41 320 ⇑iP P 21 54 54.5 +1.8
ODBI Odobesti 79.48 320 ⇑iP P 21 54 55.7 +2.7
VRI Vrincioaia 79.58 320 ⇑iP P 21 54 55.0 +1.4
VRI Vrincioaia 79.58 320 ⇑P P 21 54 55.0 +1.4
PLOR Plostina 79.63 320 ⇑iP P 21 54 53.1 -0.8
PLOR Plostina 79.63 320 ⇑P P 21 54 53.1 -0.8
KOLS Kolonicke sedl 79.63 325 eP P 21 54 54.3 +0.5
KOLS e 21 55 04.4
TIRR Tirgusor 79.64 318 ⇑iP P 21 54 54.3 +0.4
TIRR Tirgusor 79.64 318 ⇑P P 21 54 54.3 +0.4
STHS Stebnicka Huta 79.75 325 eP P 21 54 55.9 +1.4
STHS e 21 55 05.5
BR101 Keskin Array S 79.77 312 eP P 21 54 55.1 +0.2
BR131 Keskin Array S 79.77 312 eP P 21 54 55.5 +0.5
BRTR Keskin Array B 79.77 312 P P 21 54 55.1 +0.2
comp=Z,5.6nm,1.1s,baz=101,slow=3.9,SNR=18
BRTR Keskin Array B 79.77 312 P P 21 54 55.2 +0.2
BRTR pmax pmax
comp=Z,9.0nm,1.2s
OJC Ojcow 79.82 327 eP P 21 54 55.1 +0.3
OJC e 21 55 05.8
OJC Ojcow 79.82 327 eP P 21 54 55.7 +0.9
OJC pmax pmax
comp=Z,43nm,1.1s
OJC Ojcow 79.82 327 eP P 21 54 55.7 +0.9
comp=Z,43nm,1.1s
UZH Uzhgorod 79.83 324 eP P 21 54 54.7 -0.2
UZH i 21 55 02.5
UZH e 21 55 08.3
ARCR ARCALIA 79.93 322 ⇓iP P 21 54 56.6 +1.1
CRVS Cervenica-Dubn 80.02 325 eP P 21 54 56.5 +0.5
CRVS e 21 55 06.6
TRPA Tarpa 80.07 324 ⇑eP P 21 54 57.3 +1.1
H27A Howes 80.11 41 P P 21 54 56.9 +0.4
baz=313
NIE Niedzica 80.18 326 eP P 21 54 57.7 +0.9
NIE e 21 55 08.1
DOPR Dopca 80.19 321 ⇑iP P 21 54 58.3 +1.4
BR231 Keskin MP Arra 80.21 313 eP P 21 54 55.6 -1.6
MLR Muntele Rosu 80.23 320 P P 21 54 57.3 0.0
comp=Z,0.9nm,1.0s,baz=90,slow=7.1
MLR Muntele Rosu 80.23 320 eP P 21 54 57.3 0.0
comp=Z,13nm,1.2s
N23A Red Feather La 80.46 46 eP P 21 55 00.7 +1.9
comp=Z,26nm,1.0s
CJR Cluj-Napoca 80.56 322 ⇓iP P 21 55 00.5 +1.5
CJR Cluj-Napoca 80.56 322 ⇓P P 21 55 00.5 +1.5
WUAZ Wupatki 80.58 53 P P 21 55 00.2 +0.8
baz=309
WUAZ Wupatki 80.58 53 eP P 21 55 00.7 +1.3
comp=Z,24nm,0.9s
H28A Mission Ridge 80.63 40 P P 21 55 00.1 +0.8
baz=313
VOIR 80.73 321 ⇑iP P 21 55 01.1 +1.2
VOIR 80.73 321 ⇑P P 21 55 01.2 +1.3
LANS Liptovska Anna 80.75 326 eP P 21 55 00.9 +1.0
LANS e 21 55 11.7
ARNB Al Arnab 80.77 308 eP P 21 54 59.7 -0.6
KECS Kecovo 80.78 325 eP P 21 55 01.3 +1.3
KECS e 21 55 10.1
OKC Ostrava-Krasne 80.83 327 eP P 21 55 00.7 +0.5
OKC ex x 21 55 11.2

OKC AMS AMS 22 35 00.0
comp=Z,900nm,17.2s
OKC Ostrava-Krasne 80.83 327 eP P 21 55 00.7 +0.5
OKC e 21 55 11.2
OKC MLR MLR
comp=Z,900nm,17.2s
KSP Ksiaz 80.86 329 eP P 21 55 01.1 +0.7
KSP e 21 55 11.3
DRGR 80.94 323 ⇑iP P 21 55 01.1 +0.1
DRGR 80.94 323 ⇑P P 21 55 01.1 +0.1
I28A Midland 81.02 41 P P 21 55 01.9 +0.5
baz=313
MORC Moravsky Berou 81.13 328 ⇑iP P 21 55 02.4 +0.5
MORC Moravsky Berou 81.13 328 ⇑P P 21 55 02.4 +0.5
MORC Moravsky Berou 81.13 328 eP P 21 55 02.5 +0.6
comp=Z,76nm,1.0s
X16A Lo Mia Camp, P 81.22 54 eP P 21 55 04.8 +1.9
comp=Z,19nm,0.9s
DPC Dobruska-Polom 81.22 329 eP P 21 55 03.1 +0.7
DPC ex x 21 55 13.7
DPC AMS AMS 22 35 30.0
comp=Z,800nm,14.3s
DPC Dobruska-Polom 81.22 329 eP P 21 55 03.1 +0.7
DPC e 21 55 13.7
DPC MLR MLR
comp=Z,800nm,14.3s
UPC Upice 81.23 329 AMS AMS 22 34 20.0
comp=Z,600nm,16.8s
KRLC Kraliky 81.23 328 eP P 21 55 02.9 +0.4
KRLC Kraliky 81.23 328 eP P 21 55 02.9 +0.4
PSZ Piszkesteto 81.46 325 ⇑iP P 21 55 05.4 +1.7
PSZ Piszkesteto 81.46 325 ⇑eP P 21 55 04.5 +0.8
PSZ Piszkesteto 81.46 325 ⇑P P 21 55 05.4 +1.7
PSZ Piszkesteto 81.46 325 eP P 21 55 04.6 +0.9
comp=Z,27nm,1.0s
VYHS Vyhne 81.52 326 eP P 21 55 04.4 +0.4
VYHS e 21 55 14.9
MARH Ras Al Marh 81.59 306 eP P 21 55 03.3 -1.7
ZALF Zalf 81.72 305 eP P 21 55 04.7 -0.7
BRG Berggiesshubel 81.80 330 eP P 21 55 05.3 0.0
comp=Z,8.3nm,0.9s
BRG e 21 55 16.1
comp=Z,14nm,1.1s
PVCC Panska Ves 81.81 329 eP P 21 55 06.1 +0.7
PVCC ex x 21 55 16.5
PVCC AMS AMS 22 35 20.0
comp=Z,800nm,14.0s
PVCC Panska Ves 81.81 329 eP P 21 55 06.1 +0.7
PVCC e 21 55 16.5
PVCC MLR MLR
comp=Z,800nm,14.0s
SIRR Siria 81.82 323 ⇑iP P 21 55 08.0 +2.4
CLL Collm 81.83 331 ⇑iP P 21 55 05.3 -0.2
comp=Z,13nm,0.9s
CLL i 21 55 15.7
comp=Z,23nm,1.1s
CLL eS **S 22 05 24.0 +7.2**
CLL eSS SS 22 11 00.0 +26
CLL Collm 81.83 331 eP P 21 55 04.9 -0.6
CLL pmax pmax
comp=Z,17nm,0.9s
CLL Collm 81.83 331 eP P 21 55 04.9 -0.6
comp=Z,17nm,0.9s
VRAC Vranov 81.89 328 P P 21 55 06.4 +0.5
comp=Z,7.7nm,0.8s,baz=46,slow=6.6,SNR=11
VRAC Vranov 81.89 328 ⇓iP P 21 55 07.0 +1.1
VRAC Vranov 81.89 328 ⇓P P 21 55 07.0 +1.1
S22A 4UR Ranch, Cre 81.98 49 P P 21 55 07.9 +0.9
baz=311
S22A 4UR Ranch, Cre 81.98 49 eP P 21 55 08.5 +1.5
comp=Z,11nm,1.0s
SMOL Smolenice 82.13 327 eP P 21 55 08.5 +1.3
SMOL e 21 55 18.7
GOPC GO Pecny, Ondr 82.19 329 eP P 21 55 08.1 +0.6
GOPC ex x 21 55 18.6
GOPC AMS AMS 22 36 00.0
comp=Z,500nm,14.9s
GOPC GO Pecny, Ondr 82.19 329 eP P 21 55 08.1 +0.6
GOPC e 21 55 18.6
GOPC MLR MLR
comp=Z,500nm,14.9s
PRA Prague 82.22 329 AMS AMS 22 37 20.0
comp=Z,800nm,17.8s
PRU Pruhonice 82.24 329 eP P 21 55 08.2 +0.5
PRU ex x 21 55 18.4
PRU AMS AMS 22 35 30.0
comp=Z,700nm,15.8s
PRU Pruhonice 82.24 329 eP P 21 55 08.2 +0.5
PRU e 21 55 18.4
PRU MLR MLR
comp=Z,700nm,15.8s
SALA Sala 82.25 305 eP P 21 55 07.9 -0.4
BZS Buzias 82.31 323 ⇑iP P 21 55 09.0 +0.8
BZS Buzias 82.31 323 ⇑P P 21 55 09.0 +0.8
BRBR Barbar 82.32 306 eP P 21 55 18.6 +10
TREC Trest 82.37 328 eP P 21 55 08.8 +0.3
TREC ex x 21 55 19.4
TREC AMS AMS 22 37 30.0
comp=Z,700nm,16.6s
TREC Trest 82.37 328 eP P 21 55 08.8 +0.3
TREC e 21 55 19.4
TREC MLR MLR
comp=Z,700nm,16.6s
ASF Jabal al Asfar 82.47 305 P P 21 55 10.0 +0.7
comp=Z,2.0nm,0.7s,baz=359,slow=2.0,SNR=5.1
SDCO Great Sand Dun 82.78 48 P P 21 55 12.1 +0.9
baz=312
SDCO Great Sand Dun 82.78 48 eP P 21 55 14.2 +3.0
comp=Z,9.8nm,1.1s
MPEP Malo Peshtene 82.85 320 eP P 21 55 11.6 +0.6
MDVR Moldovita 82.86 322 ⇓iP P 21 55 11.5 +0.4
NKC Novy Kostel 82.89 330 eP P 21 55 11.5 +0.4
NKC AMS AMS 22 36 00.0
comp=Z,900nm,14.4s
NKC Novy Kostel 82.89 330 eP P 21 55 11.5 +0.4
NKC MLR MLR
comp=Z,900nm,14.4s
MMAI Mount Meron Ar 82.92 306 P P 21 55 12.6 +0.9
comp=Z,7.0nm,0.9s,baz=42,slow=6.7,SNR=11
CSS Mathiatis 83.00 309 eP P 21 55 12.4 +0.4
comp=Z,3.7nm,0.8s
SOP Sopron 83.14 327 ⇑eP P 21 55 13.2 +0.8
PGB Panagyurishte 83.20 319 eP P 21 55 24.0 +11
CONA Conrad Observa 83.26 327 iP P 21 55 14.0 +0.9
comp=Z,9.9nm,0.8s,SNR=6.3
PKSM Moragy 83.29 325 ⇑iP P 21 55 13.0 -0.2
PKSM Moragy 83.29 325 ⇑P P 21 55 13.0 -0.2
KHC Kasperske Hory 83.30 329 eP P 21 55 13.6 +0.3
KHC ex x 21 55 23.9
KHC AMS AMS 22 36 50.0
comp=Z,600nm,12.9s
KHC Kasperske Hory 83.30 329 eP P 21 55 13.6 +0.3
KHC e 21 55 23.9
KHC MLR MLR
comp=Z,600nm,12.9s
KHC Kasperske Hory 83.30 329 eP P 21 55 13.7 +0.3
comp=Z,7.8nm,0.9s
GEC2 GERESS Array S 83.47 329 eP P 21 55 14.6 +0.3
GEC2 pmax pmax
comp=Z,10.0nm,0.9s
GEC2 GERESS Array S 83.47 329 eP P 21 55 14.6 +0.3
comp=Z,9.9nm,0.9s
GERES GERESS Array B 83.47 329 P P 21 55 14.2 0.0
comp=Z,4.7nm,0.7s,baz=33,slow=5.4,SNR=38
GEA0 GERESS Array S 83.48 329 eP P 21 55 14.0 -0.3
RZN Rozhen 83.51 318 eP P 21 55 15.1 +0.4
ECSD EROS Data Cent 83.55 39 P P 21 55 14.7 +0.1
baz=316
PPT Papeete 83.64 117 LR LR 22 29 17.1
comp=Z,179nm,19.1s,baz=358,slow=33
H35A Sunnyside Ranc 83.73 37 P P 21 55 15.9 +0.4
baz=317
EKA Eskdalemuir Ar 83.73 341 P P 21 55 15.7 +0.4
comp=Z,2.1nm,0.6s,baz=27,slow=5.5,SNR=13
GRFO Grafenberg 83.81 331 eP P 21 55 16.5 +0.6
GRFO pmax pmax
comp=Z,24nm,1.0s
GRFO Grafenberg 83.81 331 eP P 21 55 16.4 +0.6
comp=Z,24nm,1.0s
T25A Trinidad 83.83 48 P P 21 55 17.8 +1.3
baz=312
T25A Trinidad 83.83 48 eP P 21 55 19.9 +3.4
comp=Z,16nm,0.8s
ANMO Albuquerque 84.04 50 P P 21 55 18.9 +1.3
baz=311

ANMO Albuquerque 84.04 50 d iP P 21 55 17.3 -0.2
ANMO pmax pmax
comp=Z,5.0nm,1.2s
ANMO Albuquerque 84.04 50 eP P 21 55 19.1 +1.5
comp=Z,16nm,1.0s
MMB Musomiste 84.11 319 eP P 21 55 18.1 +0.5
KKB Krupnik 84.25 319 eP P 21 55 18.9 +0.6
GROS Grobnik 84.54 326 eP P 21 55 18.9 -0.8
GROS Grobnik 84.54 326 i pP 21 55 29.9 +1.3
SOKA Soboth 84.58 327 iP P 21 55 20.1 +0.2
comp=Z,17nm,1.6s,SNR=8.1
GOLS Golise 84.83 326 iP P 21 55 20.9 -0.2
VAY Valandovo 84.91 319 iP P 21 55 22.2 +0.7
I37A Lemond, Waseca 84.93 37 P P 21 55 21.9 +0.3
baz=318
BEBN Eben Emael 84.97 334 P P 21 55 21.8 +0.1
MEM Membach 85.01 334 P P 21 55 22.1 +0.2
comp=Z,11nm,1.2s
MEM AP **sP 21 55 32.4 -1.7**
SKO Skopje 85.03 320 iP P 21 55 23.5 +1.4
BCLA Clavier 85.41 334 P P 21 55 24.0 +0.1
BCLA AP **sP 21 55 34.5 -1.7**
SNF Seneffe 85.69 335 P P 21 55 25.7 +0.4
SNF AP **sP 21 55 36.3 -1.2**
LANF Langenberg 85.70 332 ⇑eP P 21 55 25.5 +0.1
WLF Walferdange 85.74 333 P P 21 55 27.0 +1.5
comp=Z,20nm,2.2s
WLF AP **sP 21 55 36.8 -1.0**
RETA Reutte 85.75 330 iP P 21 55 25.8 0.0
comp=Z,11nm,0.9s,SNR=6.0
BIA Bitola 85.78 320 iP P 21 55 26.3 +0.3
PDG Podgorica 85.80 322 ⇓iP P 21 55 25.2 -0.8
DOU Dourbes 85.93 334 P P 21 55 26.1 -0.3
DOU AP **pP 21 55 36.3 +0.8**
OHR Ohrid 85.98 320 iP P 21 55 27.2 +0.1
BFO Black Forest 86.03 331 ceP P 21 55 27.3 +0.2
BFO Black Forest 86.03 331 eP P 21 55 26.9 -0.1
comp=Z,24nm,0.9s
BFO epP **pP 21 55 37.0 +0.9**
FETA Feichten 86.14 329 i PcP P 21 55 27.8 0.0
comp=Z,5.8nm,1.0s
DAVA Damuels 86.27 330 i PcP P 21 55 28.5 0.0
comp=Z,11nm,1.0s,SNR=5.1
ECH Echery 86.57 332 eP P 21 55 29.5 -0.2
S32A Newby Ranch, P 86.61 44 P P 21 55 30.6 +0.4
baz=315
FUORN Ofenpass-Fuorn 86.65 329 eP P 21 55 30.9 +0.5
comp=Z,26nm,0.8s
DAVOX Davos/Dischmat 86.68 330 P P 21 55 30.3 -0.2
comp=Z,2.7nm,0.6s,baz=48,slow=4.6,SNR=4.6
MOF Molkenrain 86.88 332 eP P 21 55 31.2 -0.1
M38A Pleasantville 86.96 39 P P 21 55 32.1 +0.3
baz=318
T32A Huddler Ranch, 86.98 45 P P 21 55 32.5 +0.5
baz=315
P36A Good Intent, A 87.26 41 P P 21 55 33.2 0.0
baz=317
Q35A Mercer Eighty, 87.37 42 P P 21 55 33.8 0.0
baz=317
U34A Anderson Ranch 88.29 44 eP P 21 55 43.2 +4.9
MATE Matera 88.40 322 ⇓iP P 21 55 37.9 -0.7
P40A Paris 88.96 39 P P 21 55 41.5 +0.3
baz=319
TX31 Lajitas Ar. Si 89.53 53 eP P 21 55 44.6 +0.3
LTX Lajitas 89.53 53 eP P 21 55 43.8 -0.5
LTX Lajitas 89.53 53 eP P 21 55 43.8 -0.5
TXAR Lajitas Array 89.53 53 P P 21 55 43.8 -0.6
comp=Z,0.9nm,0.7s,baz=305,slow=4.4,SNR=6.2
T38A Diamond 89.64 42 P P 21 55 44.6 0.0
baz=318
PLDF La Plantade 89.77 333 eP P 21 55 45.8 +0.7
LBL Lubilhac 90.54 333 eP P 21 55 49.8 +1.1
U40A Yellville 90.92 42 P P 21 55 50.6 0.0
baz=319
X38A Whitesboro 91.09 44 P P 21 55 51.7 +0.4
baz=318
X39A Fountain Ranch 91.61 44 P P 21 55 54.5 +0.7
baz=318
CBN Corbin Frederi 96.78 31 eP P 21 56 13.4 -4.0
comp=Z,205nm,0.3s
ESDC Sonseca Array 97.98 335 P P 21 56 21.2 -1.6
comp=Z,0.1nm,0.3s,baz=23,slow=4.9,SNR=4.6
ESDC PP **PP 22 00 20.6 -0.1**
comp=Z,0.4nm,0.7s,baz=37,slow=7.6,SNR=4.4
TOA1 Torodi Ar. Sit 118.22 316 e PKPdf PKPdf 22 01 33.5 -0.7
TOA1 e PP **PP 22 02 47.2 -1.9**
TORD Torodi Ar. Bea 118.22 316 PKP PKPdf 22 01 33.5 -0.7
comp=Z,0.3nm,0.6s,baz=37,slow=2.2,SNR=3.1
TORD PP **PP 22 02 47.2 -1.9**
comp=Z,1.8nm,0.9s,baz=43,slow=6.4,SNR=6.3
LPAZ La Paz 146.00 61 PKPbc PKPdf 22 02 27.2 +0.5
comp=Z,1.3nm,0.5s,baz=6.1,slow=6.3,SNR=6.2
PB11 IPOC Station P 147.13 68 e PKPbc PKPab 22 02 32.3 +0.5
LCO Las Campanas 151.08 84 e PKPbc PKPbc 22 02 40.1 0.0

MOS ***27*** *21:44:58.9±1.2,38.°17N×141.°87E,h33km,mb5.3/99,Error ellipse: s-maj=7.7km s-min=5.4km az=84.4*
BJI ***27*** *21:45:00.2,38.°11N×141.°90E,h58km,mb4.9/66,mB4.8/44, Ms4.8/48,Ms7 4.6/48*
NIED ***27*** *21:45:00,38.°10N×141.°80E,h53km,Mw4.7 Best double couple: M0 1.31000×10^16 NP1:ϕs52.00000°,δ45.00000°, λ117.00000°. NP2:ϕs196.00000°,δ51.00000°,λ65.00000°.*
IDC ***27*** *21:45:02.9±0.5,38.°13N×141.°74E,h58km±4km,mb4.6/46, mb1 4.7/52,mb1mx4.7/61,mbtmp4.9/52,MS4.0/2, Ms1 4.0/2,ms1mx3.4/29,Error ellipse: s-maj=10.7km s-min=9.1km az=117.0*
ISCJB ***27*** *21:45:02.5±0.3,38.°14N±0.°02×141.°71E±0.°02,h64km±2km, mb5.0/264,Error ellipse: s-maj=4.0km s-min=2.6km az=157.3*
JMA ***27*** *21:45:02.6±0.1,38.°13N×141.°78E,h53km±1km,M4.8 JMA Felt III J1.*
GCMT ***27*** *21:45:04.2±0.5,38.°42N×141.°84E,h56km±1km,MW5.0/53, Moment Tensor Solution. s38,c46; s53,c69; Duration: 0 Moment tensor: Scale 10^16Nm; Mrr3.38±.22; Mθθ-0.82±.15; Mϕϕ-2.56±.15; Mrθ1.36±.15; Mrϕ-1.16±.10; Mθϕ-0.79±.14; Best double couple: Mo3.55500×10^16 NP1:ϕs187.00000°,δ49.00000°,λ63.00000°. NP2: ϕs46.00000°,δ48.00000°,λ118.00000°. Principal axes: T 3.9680, Plg70.0000°, Azm29.0000°; N -0.8290, Plg20.0000°, Azm206.0000°; P -3.1420, Plg1.0000°, Azm296.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
NEIC ***27*** *21:45:04.2±0.4,38.°15N×141.°65E,h66km±3km,mb5.1/205 Error ellipse: s-maj=3.8km s-min=2.4km az=148.0*
NEIC Recorded [3 JMA] in Iwate and Miyagi.
ISC 27 21:45:02.5±0.4,38.°14N±0.°03×141.°83E±0.°03,h55km±3km, h54km:pP-P,n910,σ1§28/969,mb5.1/269,MS4.5/13, 37C-6D,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
JIO	**Ouri**	**0.49**	**309**	P	P		Pn	**21 45 13.8**	**-0.1**
JIO				S	S		Sn	**21 45 21.7**	**-0.5**
JMM	**Marumori**	**0.87**	**252**	P	P		Pn	**21 45 17.9**	**-0.6**
JMM				S	S		Sn	**21 45 29.2**	**-1.1**
JMK	**Ichinoseki**	**0.94**	**329**	P	P		Pn	**21 45 19.8**	**+0.3**
JMK				S	S		Sn	**21 45 31.9**	**-0.2**
JOU	**Okura**	**0.94**	**284**	P	P		Pn	**21 45 19.5**	**-0.1**
JOU				S	S		Sn	**21 45 31.7**	**-0.6**
OFUJ	**Ofunato**	**0.94**	**352**	P	P		Pn	**21 45 19.8**	**+0.2**
OFUJ				S	S		Sn	**21 45 32.1**	**-0.1**
JFK	**Kawauchi**	**1.08**	**225**	P	P		Pn	**21 45 21.0**	**-0.5**
JFK				S	S		Sn	**21 45 34.9**	**-0.7**
JFT	**Otama**	**1.34**	**243**	P	P		Pn	**21 45 25.1**	**+0.2**
JFT				S	S		Sn	**21 45 41.6**	**0.0**
JYK	**Kaneyama**	**1.39**	**304**	P	P		Pn	**21 45 25.7**	**+0.1**
JYK				S	S		Sn	**21 45 43.6**	**+0.7**
JOM	**Ohasama**	**1.39**	**343**	P	P		Pn	**21 45 26.2**	**+0.6**
JOM				S	S		Sn	**21 45 43.5**	**+0.5**
JYS	**Shirataka**	**1.39**	**274**	P	P		Pn	**21 45 25.7**	**+0.1**
JYS				S	S		Sn	**21 45 42.9**	**-0.1**
JRG	**Rokugo**	**1.56**	**324**	P	P		Pn	**21 45 28.6**	**+0.7**
MJAR	**Matsushiro Arr**	**3.30**	**242**	P	P		Pn	**21 45 52.8**	**+1.1**
	19nm,0.3s,baz=62,slow=12,SNR=6.8								
MAJO	**Matsushiro**	**3.30**	**242**	*d* iP	P		Pn	**21 45 54.1**	**+2.4**
MAJO	**Matsushiro**	**3.30**	**242**	eP	n		Pn	**21 45 52.6**	**+0.9**
MAT	**Matsushiro**	**3.30**	**242**	P	P		Pn	**21 45 54.9**	**+3.2**
MAT				eS	S		Sn	**21 46 35.8**	**+6.1**
MJB9	**Matsu-Tunnel**	**3.30**	**242**	eP	n		Pn	**21 45 53.2**	**+1.5**

MJB9 eSn Sn 21 46 21.6 -8.2
ERM Erimo 4.00 14 eP Pn 21 46 01.0 -0.2
ERM Erimo 4.00 14 ePn Pn 21 46 00.5 -0.7
ERM eSn Sn 21 46 41.9 -4.9
INU Inuyama 4.77 236 ePn Pn 21 46 14.8 +3.1
JHJ2 Mitsune 5.28 199 ePn Pn 21 46 17.3 -1.5
JHJ2 eSn Sn 21 47 14.2 -4.1
JHJ Hachijo jima 2 5.28 199 P Pn 21 46 18.0 -0.8
51nm,0.3s,baz=330,slow=20,SNR=15
JHJ S Sn 21 47 14.1 -4.3
92nm,0.3s,baz=72,slow=19,SNR=4.4
ASAJ Asahikawa 6.00 5 P Pn 21 46 27.9 -0.6
13nm,0.3s,baz=211,slow=17,SNR=16
ASAJ S Sn 21 47 32.0 -3.8
6.4nm,0.3s,baz=249,slow=17,SNR=2.4
ASAJ Asahikawa 6.00 5 ePn Pn 21 46 26.4 -2.1
ASAJ eSn Sn 21 47 32.0 -3.8
YUK Yuzh-Kuril'sk 6.63 26 *i* P Pn 21 46 35.1 -2.1
YUK *i* S Sn 21 47 44.9 -6.4
YUK pmax pmax
comp=Z,513nm,0.4s
YUK pmax pmax
comp=N,143nm,0.3s
YUK MLR MLR
comp=N,3μm,13.0s
YUK MLR MLR
comp=E,2μm,13.0s
YUK MLR MLR
comp=Z,4μm,13.0s
KUR Kuril'sk 8.40 31 *i* P Pn 21 47 00.6 -0.8
KUR *i* S Sn 21 48 28.2 -6.5
KUR pmax pmax
comp=Z,142nm,0.5s
KUR pmax pmax
comp=N,45nm,0.2s
KUR MLR MLR
comp=Z,2μm,11.0s
KUR MLR MLR
comp=E,2μm,14.0s
KUR MLR MLR
comp=N,2μm,10.0s
YSS Yuzh-Sakhalins 8.83 4 eP Pn 21 47 06.7 -0.6
YSS Yuzh-Sakhalins 8.83 4 ePn Pn 21 47 06.7 -0.6
MSHR Mys Shultsa 9.27 302 *c* P Pn 21 47 13.6 +0.2
USRK Ussuriysk Ar. 9.57 312 P Pn 21 47 18.4 +0.9
comp=N,5.0nm,0.3s,baz=123,slow=14,SNR=42
JNU Nakatsue 10.22 244 P Pn 21 47 28.7 +2.2
comp=N,0.9nm,0.3s,baz=75,slow=9.0,SNR=4.1
JNU Nakatsue 10.22 244 ePn Pn 21 47 27.4 +0.9
CBIJ Chichi jima 11.02 178 ePn Pn 21 47 33.8 -3.6
CBIJ eSn Sn 21 49 29.4 -10
JCJ Chichijima 11.02 178 P Pn 21 47 33.8 -3.6
comp=N,11nm,0.3s,baz=30,slow=20,SNR=4.1
JCJ S Sn 21 49 29.4 -10
comp=N,10nm,0.3s,baz=287,slow=19,SNR=2.7
KSRS Korea Array 11.03 271 P Pn 21 47 40.3 +2.9
comp=N,2.2nm,0.3s,baz=84,slow=14,SNR=12
KS01 Wonju Array Si 11.05 271 ePn Pn 21 47 39.6 +1.9
KS15 Wonju Array Si 11.06 271 ePn Pn 21 47 40.8 +2.9
KSAR Wonju Array Be 11.06 271 P Pn 21 47 40.3 +2.4
KSAR Wonju Array Be 11.06 271 P Pn 21 47 40.3 +2.4
MDJ Mudanjiang 11.23 309 P Pn 21 48 00.0 +20
MDJ pmax pmax
comp=Z,220nm,1.1s
MDJ pmax pmax
comp=Z,280nm,3.1s
MDJ Mudanjiang 11.23 309 P Pn 21 47 41.5 +1.3
MDJ pmax pmax
comp=Z,61nm,1.1s
MDJ pmax pmax
comp=Z,230nm,4.8s
MDJ LR LR
comp=Z,1μm,12.8s
MDJ LR LR
comp=Z,1μm,15.3s
MDJ LR LR
comp=Z,2μm,16.5s
MDJ Mudanjiang 11.23 309 ePn Pn 21 47 45.5 +5.2
HABR Khabarovsk 11.44 337 *c* P Pn 21 47 40.5 -2.5
HABR eS Sn 21 49 48.2 -0.9
HABR pmax pmax
comp=Z,10.0nm,1.5s
HABR MLR MLR
comp=Z,1μm,15.0s
KLR Kul'dur 13.25 330 P Pn 21 48 07.7 0.0
comp=Z,0.4nm,0.3s,baz=149,slow=18,SNR=2.7
CN2 Changchun 13.60 300 eP Pn 21 48 14.0 +1.5
CN2 esP sP 21 48 31.0
CN2 eS Sn 21 50 43.0 +1.1
CN2 pmax pmax
comp=Z,10.0nm,0.8s
CN2 pmax pmax
comp=Z,200nm,6.0s
CN2 LR LR
comp=Z,700nm,13.0s
CN2 LR LR
comp=Z,800nm,13.0s
CN2 LR LR
comp=Z,400nm,14.0s
SNY Shenyang 14.47 290 ⇑P P 21 48 29.3 -0.1
SNY sP sP 21 48 42.0
SNY S Sn 21 51 04.5 +1.5
SNY pmax pmax
comp=Z,18nm,1.1s
SNY pmax pmax
comp=Z,180nm,4.9s
SNY LR LR
comp=Z,2μm,12.0s
SNY LR LR
comp=Z,5μm,14.2s
SNY LR LR
comp=Z,7μm,14.7s
DL2 Dalian 15.83 279 P Pn 21 48 41.5 -0.2
DL2 S Sn 21 51 31.3 -4.9
DL2 pmax pmax
comp=Z,84nm,1.0s
DL2 LR LR
comp=Z,3μm,13.2s
DL2 LR LR
comp=Z,3μm,13.5s
JOW Kunigami 16.04 229 ePn Pn 21 48 43.8 -0.7
comp=Z,115nm,1.6s
SKR Severo-Kuril's 16.13 34 eP Pn 21 48 43.0 -2.4
PEA0 Petropavlovsk- 18.57 31 eP P 21 49 13.6 -1.0
PEA0B Petropavlovsk- 18.57 31 eP Pn 21 49 15.8 +0.4
comp=Z,44nm,0.9s
PETK Petropavlovsk- 18.57 31 P P 21 49 13.5 -1.2
comp=Z,0.8nm,0.3s,baz=236,slow=6.0,SNR=10.0
PEA1 Petropavlovsk- 18.57 31 eP P 21 49 13.5 -1.2
PET Petropavlovsk 18.90 33 eP Pn 21 49 19.6 +0.2
PET pmax pmax
comp=Z,43nm,0.8s
PET Petropavlovsk 18.90 33 eP Pn 21 49 21.3 +1.8
comp=Z,33nm,0.9s
HIA Hailar 19.38 312 eP P 21 49 21.5 -2.2
HIA pmax pmax
comp=Z,12nm,0.6s
HIA Hailar 19.38 312 eP P 21 49 21.5 -2.2
comp=Z,12nm,0.6s
NJ2 Nanjing 19.74 259 eP P 21 49 27.8 +0.2
NJ2 pmax pmax
comp=Z,36nm,1.0s
NJ2 LR LR
comp=Z,2μm,12.5s
NJ2 LR LR
comp=Z,1μm,14.6s
NJ2 LR LR
comp=Z,940nm,15.7s
TIA Tai'an 19.77 272 ⇑P P 21 49 27.5 -0.5
TIA pmax pmax
comp=Z,90nm,1.3s
BJI Beijing 19.99 283 P P 21 49 29.5 -0.8
BJI S Sn 21 53 15.8 -0.6
BJI pmax pmax
comp=Z,41nm,1.2s
BJI pmax pmax
comp=Z,240nm,3.5s
BJI LR LR
comp=Z,1μm,12.9s
BJI LR LR
comp=Z,1μm,17.2s
BJI LR LR
comp=Z,920nm,17.2s
BJT Baijiatuau 19.99 283 eP P 21 49 29.3 -1.1
BJT Baijiatuau 19.99 283 eP P 21 49 29.3 -1.1
BJT ePn Pn 21 49 30.5 -2.0

YHNB Yeheng 21.96 238 eP P 21 49 48.7 -3.1
comp=Z,107nm,1.6s
NACB Ninganchiao 22.16 237 eP P 21 49 51.1 -2.6
comp=Z,19nm,0.7s
MA2 Magadan 22.20 12 P P 21 49 53.4 -0.5
comp=Z,51nm,0.7s,baz=224,slow=8.8,SNR=12
SSLB Suanglung 22.85 237 eP P 21 49 58.5 -2.6
comp=Z,16nm,0.8s
YULB Yu-li 22.89 236 eP P 21 50 00.1 -1.5
comp=Z,14nm,0.8s
TPUB Ta-pu 23.40 237 eP P 21 50 03.7 -2.8
comp=Z,30nm,1.0s
TWG Pinlang 23.44 235 eP P 21 50 07.3 +0.4
comp=Z,93nm,0.6s
HHC Hu-ho-hao-te 23.46 286 eP P 21 50 05.3 -1.8
HHC pP pP 21 50 19.5 -0.6
HHC sP sP 21 50 27.0 +0.2
HHC S S 21 54 12.5 -4.0
HHC pmax pmax
comp=Z,37nm,1.1s
HHC pmax pmax
comp=Z,100nm,8.2s
HHC LR LR
comp=Z,2μm,13.5s
HHC LR LR
comp=Z,1μm,13.1s
HHC LR LR
comp=Z,880nm,14.5s
WHN Wuhan 23.86 260 P P 21 50 11.5 +0.7
SEY Seymchan 25.64 11 P P 21 50 27.5 +0.9
comp=Z,50nm,0.9s,baz=197,slow=6.5,SNR=11
XAN Xi'an 26.83 271 P P 21 50 38.5 +0.8
XAN pP pP 21 50 48.0 -3.4
XAN sP sP 21 50 52.8 -5.1
XAN pmax pmax
comp=Z,42nm,0.7s
XAN pmax pmax
comp=Z,62nm,7.9s
XAN LR LR
comp=Z,830nm,15.9s
XAN LR LR
comp=Z,830nm,13.9s
XAN LR LR
comp=Z,1μm,13.9s
ULN Ulaanbaatar 27.02 302 eP P 21 50 40.6 +1.1
ULN pmax pmax
comp=Z,11nm,1.2s
ULN Ulaanbaatar 27.02 302 eP P 21 50 40.9 +1.4
comp=Z,12nm,0.8s
SONA1 Songino Array 27.46 302 eP P 21 50 43.4 +0.1
SONA0 Songino Array 27.46 302 eP P 21 50 43.3 0.0
comp=Z,14nm,0.8s
SONA0 ePcP PcP 21 54 00.4 -0.1
SONM Songino Array 27.46 302 P P 21 50 43.3 0.0
comp=Z,11nm,0.7s,baz=110,slow=8.3,SNR=12
SONM PcP PcP 21 54 00.4 -0.1
comp=Z,1.9nm,0.6s,baz=101,slow=3.3,SNR=4.9
ENH Enshi 27.77 263 eP P 21 50 45.4 -0.8
comp=Z,73nm,1.0s
H11N2 WAKE ISLAND Hy 28.45 123 T T 22 21 16.0
baz=316,slow=75,SNR=372
H11N1 WAKE ISLAND Hy 28.46 123 T T 22 21 13.3
baz=316,slow=75,SNR=513
H11N3 WAKE ISLAND Hy 28.47 123 T T 22 21 15.8
baz=316,slow=75,SNR=458
H11S1 WAKE ISLAND Hy 29.20 125 T T 22 21 22.4
baz=317,slow=76,SNR=161
H11S3 WAKE ISLAND Hy 29.20 125 T T 22 21 22.7
baz=317,slow=76,SNR=158
H11S2 WAKE ISLAND Hy 29.22 125 T T 22 21 23.9
baz=317,slow=76,SNR=115
TLY Talaya 29.87 309 P P 21 51 05.6 +1.0
comp=Z,4.7nm,0.6s,baz=105,slow=2.0,SNR=3.3
TLY PcP PcP 21 54 06.4 +0.1
comp=Z,1.4nm,0.4s,baz=36,slow=1.7,SNR=3.5
LZH Lanzhou 30.23 278 eP P 21 51 07.8 -0.3
LZH pP pP 21 51 21.0 -0.9
LZH sP sP 21 51 30.3 +1.9
LZH pmax pmax
comp=Z,40nm,1.0s
LZH pmax pmax
comp=Z,140nm,4.0s
GYA Guiyang 31.75 259 ⇑*i* P P 21 51 23.0 +1.5
GYA pP pP 21 51 37.5 +2.1
GYA PP **PnPn** 21 52 29.0 +1.7
GYA PcP **PcP** 21 54 14.5 +2.6
GYA sS S 21 56 51.3 +24
GYA SS **SnSn** 21 58 20.0 +1.1
GYA ScS **ScS** 22 01 48.8 -0.2
GYA pmax pmax
comp=Z,40nm,0.9s
GYA pmax pmax
comp=Z,140nm,5.6s
GYA LR LR
comp=Z,580nm,17.6s
GYA LR LR
comp=Z,520nm,18.0s
GYA LR LR
comp=Z,560nm,17.8s
CD2 Chengdu 32.02 269 P P 21 51 23.3 -0.5
GTA Gaotai 32.57 286 eP P 21 51 30.0 +1.4
GTA pP pP 21 51 41.3 -1.2
GTA sP sP 21 51 46.3 -2.7
GTA PcP **PcP** 21 54 14.3 +0.3
GTA S S 21 56 41.8 +1.5
GTA sS sS 21 57 01.5 -2.3
GTA SS **SnSn** 21 58 41.0 +2.4
GTA pmax pmax
comp=Z,9.0nm,0.8s
GTA pmax pmax
comp=Z,100nm,5.7s
GTA LR LR
comp=Z,1μm,15.2s
GTA LR LR
comp=Z,860nm,17.1s
GTA LR LR
comp=Z,950nm,18.5s
BILL Bilibino 32.87 17 eP P 21 51 30.2 -0.5
BILL *e* 21 52 36.3
BILL ePPP PPP 21 52 51.7
BILL pmax pmax
comp=Z,26nm,1.2s
BILL MLR MLR
comp=Z,426nm,16.0s
BILL Bilibino 32.87 17 eP P 21 51 30.6 -0.2
comp=Z,27nm,1.2s
TIXI Tiksi 34.23 353 P P 21 51 42.0 -0.5
comp=Z,1.9nm,0.4s,baz=125,slow=7.6,SNR=4.1
TIXI Tiksi 34.23 353 eP P 21 51 43.7 +1.2
TIXI pmax pmax
comp=Z,3.0nm,0.6s
TIXI Tiksi 34.23 353 eP P 21 51 41.8 -0.6
comp=Z,6.0nm,0.9s
KMI Kunming 35.47 260 P P 21 51 55.0 +1.0
KMI pP pP 21 52 07.0 -1.0
KMI sP sP 21 52 12.3 -2.1
KMI S S 21 57 22.0 -3.5
KMI sS sS 21 57 46.8 -2.4
KMI SS **SnSn** 21 59 48.0 -1.2
KMI pmax pmax
comp=Z,19nm,0.8s
KMI pmax pmax
comp=Z,89nm,6.0s
KMI LR LR
comp=Z,540nm,13.9s
KMI LR LR
comp=Z,370nm,13.9s
KMI LR LR
comp=Z,860nm,14.9s
KRAR Krasnoyarsk 36.90 315 eP P 21 52 06.3 +0.7
KRAR pmax pmax
comp=Z,21nm,0.9s
GAMB Gambell 37.60 32 eP P 21 52 13.3 +1.9
comp=Z,60nm,1.9s
UNV Unalaska Valle 38.26 49 eP P 21 52 18.5 +1.5
comp=Z,199nm,1.6s
MYLDM Lahad Datu 39.08 219 epP pP 21 52 42.1 +3.6
TNA Tin City 39.73 30 eP P 21 52 30.1 +0.9
comp=Z,30nm,1.0s
WMQ Urumqi 40.65 296 P P 21 52 37.8 +0.6
WMQ pP pP 21 52 52.8 +1.4
WMQ sP sP 21 52 58.5 +0.7
WMQ PP **PnPn** 21 54 17.0 +1.1
WMQ S S 21 58 43.3 +0.2
WMQ sS sS 21 59 04.8 -2.3
WMQ pmax pmax
comp=Z,13nm,0.8s
WMQ pmax pmax
comp=Z,60nm,3.8s
WMQ LR LR
comp=Z,210nm,15.0s
WMQ LR LR
comp=Z,120nm,17.4s
WMQ LR LR
comp=Z,200nm,18.6s
ZAA0 Zalesovo Array 41.42 311 eP P 21 52 42.5 -0.8
ZAA0 ePcP PcP 21 54 40.1 -0.2
ZAA1 Zalesovo Array 41.42 311 eP P 21 52 42.8 -0.5
ZAA1 ePcP PcP 21 54 39.5 -0.8
ZALV Zalesovo Beam 41.42 311 P P 21 52 42.8 -0.5
comp=Z,18nm,0.7s,baz=86,slow=7.1,SNR=14
ZALV PcP PcP 21 54 39.5 -0.8
comp=Z,5.1nm,0.5s,baz=103,slow=3.0,SNR=5.1
ZALV Zalesovo Beam 41.42 311 *i* P P 21 52 43.0 -0.3
ZALV pmax pmax
comp=Z,18nm,0.7s
FAKI Fak Fak 41.81 194 eP P 21 52 46.4 -0.4
comp=Z,194nm,1.9s
CHTO Chiang Mai 41.89 255 eP P 21 52 45.5 -2.1
CHTO pmax pmax
comp=Z,9.0nm,0.8s
CHTO Chiang Mai 41.89 255 eP P 21 52 45.5 -2.1
comp=Z,8.9nm,0.8s
CM31 Chiang Mai Arr 42.11 254 eP P 21 52 49.4 +0.1
CM31 ePcP PcP 21 54 43.4 +0.2
CMAR Chiang Mai Arr 42.11 254 P P 21 52 49.4 +0.1
comp=Z,1.2nm,0.6s,baz=42,slow=9.2,SNR=4.8
CMAR PcP PcP 21 54 43.4 +0.2
comp=Z,1.7nm,0.6s,baz=345,slow=1.9,SNR=5.4
CMAR Chiang Mai Arr 42.11 254 *i* P P 21 52 53.5 +4.2
CMAR pmax pmax
comp=Z,3.0nm,0.5s
LSA Lhasa 42.45 274 eP P 21 52 56.2 +3.6
LSA pmax pmax
comp=Z,14nm,0.6s
LSA Lhasa 42.45 274 eP P 21 52 56.2 +3.6
comp=Z,14nm,0.6s
SHL Shillong 43.76 268 eS P 21 53 06.0 +3.1
MK01 Makanchi Array 43.82 301 eP P 21 53 02.9 -0.1
MK31 Makanchi Array 43.82 301 eP P 21 53 03.2 +0.3
MK31 Makanchi Array 43.82 301 eP P 21 53 03.2 +0.3
MK32 Makanchi Array 43.82 301 eP P 21 53 02.7 -0.2
MKAR Makanchi Array 43.82 301 P P 21 53 02.7 -0.2
comp=Z,11nm,0.6s,baz=83,slow=11,SNR=11
MKAR Makanchi Array 43.82 301 *i* P P 21 53 03.2 +0.2
MKAR pmax pmax
comp=Z,11nm,0.6s
MKAR Makanchi Array 43.82 301 eP P 21 53 03.1 +0.2
MAKZ Makanchi 44.03 301 eP P 21 53 04.1 -0.5
MAKZ pmax pmax
comp=Z,25nm,1.0s
MAKZ Makanchi 44.03 301 eP P 21 53 04.1 -0.5
comp=Z,25nm,1.0s
TT01 Tatalina 44.32 35 eP P 21 53 07.7 +1.1
TTA Tatalina 44.32 35 eP P 21 53 07.9 +1.1
TTA pmax pmax
comp=Z,6.0nm,0.9s
TTA Tatalina 44.32 35 eP P 21 53 07.9 +1.1
comp=Z,6.0nm,0.9s
SVW2 Sparrevohn 44.44 38 eP P 21 53 09.5 +1.8
comp=Z,24nm,0.8s
KURK Kurchatov 45.52 307 P P 21 53 16.4 +0.1
KURK S S 21 59 49.1 -5.0
KURK pmax pmax
comp=Z,40nm,0.7s
KURK smax smax
comp=N,2.0nm,1.0s
KURK Kurchatov 45.52 307 eP P 21 53 15.7 -0.7
comp=N,109nm,1.0s
KURK eS S 21 59 49.1 -5.0
KURBB Kurchatov Arra 45.59 307 P P 21 53 16.4 -0.5
comp=N,14nm,0.6s,baz=75,slow=7.2,SNR=30
KURBB S S 21 59 49.1 -6.1
comp=N,1.7nm,1.0s,baz=83,slow=13,SNR=5.0
OHAK Old Harbor 45.72 43 eP P 21 53 18.1 +0.3
comp=N,21nm,0.8s
RSO Redoubt South 45.83 39 eP P 21 53 20.2 +1.3
KDAK Kodiak Island 46.06 43 P P 21 53 35.9 +15
comp=N,37nm,0.7s,baz=296,slow=2.9,SNR=36
KDAK LR LR 22 12 06.6
comp=N,209nm,20.0s,baz=246,slow=35
KDAK Kodiak Island 46.06 43 *i* P P 21 53 20.6 +0.2
KDAK Kodiak Island 46.06 43 eP P 21 53 20.9 +0.4
comp=N,38nm,0.7s
KDAK epP pP 21 53 35.9 +1.0
PPLA Purkeypile 46.07 36 eP P 21 53 23.0 +2.2
comp=N,16nm,0.8s
CAST Castle Rocks 46.12 35 eP P 21 53 22.7 +1.7
comp=N,19nm,0.8s
SPU Mount Spurr 46.15 38 eP P 21 53 22.6 +1.4
BPAW Bear Paw Mtn. 46.62 34 eP P 21 53 26.6 +1.7
comp=N,9.9nm,0.6s
KTH Kantishna Hill 46.65 35 eP P 21 53 27.0 +1.9
comp=N,34nm,0.9s
BRLK Bradley Lake 46.80 40 eP P 21 53 27.1 +0.8
comp=N,11nm,0.6s
TRF Thorofare Moun 46.93 35 eP P 21 53 28.7 +1.2
comp=N,21nm,0.8s
COLD Coldfoot 47.02 30 eP P 21 53 29.5 +1.6
comp=N,6.1nm,0.9s
RC01 Rabbit Creek A 47.28 38 eP P 21 53 30.6 +0.5
comp=N,28nm,1.0s
BWN Browne 47.28 34 eP P 21 53 32.5 +2.5
comp=N,57nm,0.8s
GUN Gumba 47.38 275 eP P 21 53 31.6 -0.1
comp=N,106nm,0.6s
SEW Seward 47.49 39 eP P 21 53 32.2 +0.5
comp=N,52nm,1.6s
MCK McKinley 47.53 34 eP P 21 53 33.0 +1.1
MCK pmax pmax
comp=Z,21nm,0.8s
MCK McKinley 47.53 34 eP P 21 53 33.0 +1.1
comp=Z,21nm,0.8s
PMR Palmer 47.54 37 eP P 21 53 32.5 +0.5
PMR pmax pmax
comp=Z,20nm,0.6s
PMR Palmer 47.54 37 eP P 21 53 32.5 +0.5
comp=Z,20nm,0.6s
RND Reindeer 47.58 35 eP P 21 53 33.2 +0.8
RND pmax pmax
comp=Z,26nm,0.8s
RND Reindeer 47.58 35 eP P 21 53 33.2 +0.8
comp=Z,26nm,0.8s
MDM Murphy Dome 47.80 33 eP P 21 53 35.5 +1.5
comp=Z,28nm,0.9s
WRH Wood River Hil 47.88 33 eP P 21 53 36.1 +1.5
comp=Z,16nm,0.9s
SML Sawmill 47.91 37 eP P 21 53 35.7 +0.8
SML pmax pmax
comp=Z,30nm,0.7s
SML Sawmill 47.91 37 eP P 21 53 35.7 +0.8
comp=Z,30nm,0.7s
KKN Kakani 47.91 275 eP P 21 53 35.5 -0.1
comp=Z,56nm,0.6s
PKIN Phulchoki 47.92 275 eP P 21 53 35.1 -0.6
comp=Z,16nm,0.6s
COLA College 47.97 33 *c*eP P 21 53 37.1 +1.9
COLA pmax pmax
comp=Z,23nm,1.2s
CCB Clear Creek Bu 47.99 33 eP P 21 53 36.3 +0.9
comp=Z,7.7nm,0.6s
DMN Daman 48.13 275 eP P 21 53 36.7 -0.7
comp=Z,18nm,0.6s
DHY Denali Highway 48.26 35 eP P 21 53 38.7 +0.9
comp=Z,8.4nm,0.8s
GKN Gorkha 48.32 276 eP P 21 53 38.4 -0.3
comp=Z,43nm,0.5s
HDA Harding Lake 48.37 33 eP P 21 53 39.0 +0.5
comp=Z,100nm,1.6s
SCM Sheep Creek Mo 48.38 37 eP P 21 53 39.9 +1.3
SCM pmax pmax
comp=Z,33nm,0.8s
SCM Sheep Creek Mo 48.38 37 eP P 21 53 39.9 +1.3
comp=Z,33nm,0.8s
IL1 Eielson Array 48.38 33 eP P 21 53 38.6 +0.2
ILAR Eielson Array 48.38 33 P P 21 53 38.8 +0.3
comp=Z,18nm,0.7s,baz=268,slow=6.4,SNR=34
ILB Eielson Array 48.38 33 eP P 21 53 38.8 +0.3
KLU Klutina 49.08 37 eP P 21 53 45.2 +1.2
comp=Z,24nm,0.5s
PAX Paxson 49.14 35 eP P 21 53 44.6 +0.2
PAX pmax pmax

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comp=Z,11nm,0.8s
PAX Paxson 49.14 35 *e*P **P 21 53 44.6 +0.2**
comp=Z,11nm,0.8s
DIV Divide 49.20 38 *e*P **P 21 53 46.1 +1.2**
comp=Z,28nm,0.7s
KOLN Koldanda 49.24 276 *e*P **P 21 53 45.7 -0.1**
comp=Z,22nm,0.5s
EYAK Cordova Ski Ar 49.28 38 *e*P **P 21 53 46.9 +1.5**
comp=Z,23nm,0.7s
TKM2 Tokmak 2 49.40 298 *e*P **P 21 53 47.2 +0.3**
TKM2 pmax pmax
comp=Z,48nm,0.8s
TKM2 Tokmak 2 49.40 298 *e*P **P 21 53 47.2 +0.3**
comp=Z,48nm,0.8s
PYUN Piuthan 49.56 277 *e*P **P 21 53 48.3 0.0**
comp=Z,43nm,0.5s
KULM Kulim 49.66 239 *e*P **P 21 53 47.0 -1.9**
comp=Z,10nm,1.1s
DOT Dot Lake 49.70 34 *e*P **P 21 53 49.3 +0.7**
comp=Z,27nm,0.7s
BMRM Bremner River 49.78 38 *e*P **P 21 53 50.6 +1.4**
comp=Z,28nm,1.0s
VOSK Vostochnaya 49.80 311 *e*P **P 21 53 48.6 -0.9**
VOSK pmax pmax
comp=Z,29nm,0.8s
VOSK Vostochnaya 49.80 311 *e*P **P 21 53 48.6 -0.9**
comp=Z,28nm,0.8s
RAGM Ragged Mountai 49.83 39 *e*P **P 21 53 51.3 +1.7**
comp=Z,19nm,0.6s
MENT Mentasta 49.94 35 *e*P **P 21 53 52.0 +1.6**
comp=Z,15nm,0.7s
IPM Ipoh 50.00 238 *e*P **P 21 53 51.2 -0.2**
comp=Z,12nm,1.0s
BVAR Borovoye Array 50.08 312 P **P 21 53 51.4 -0.2**
comp=Z,4.6nm,0.5s,baz=68,slow=8.0,SNR=8.1
BVAR PcP **PcP 21 55 10.6 0.0**
comp=Z,9.4nm,0.6s,baz=90,slow=3.8,SNR=7.4
BVAR S **S 22 00 53.6 -5.1**
comp=Z,0.4nm,0.7s,baz=66,slow=18,SNR=2.2
BRVK Borovoye 50.13 312 *e*P **P 21 53 51.3 -0.7**
BRVK pmax pmax
comp=Z,25nm,0.9s
BRVK Borovoye 50.13 312 *e*P **P 21 53 51.3 -0.7**
comp=Z,24nm,0.9s
AAK Ala-Archa 50.26 298 *e*P **P 21 53 55.4 +2.0**
AAK pmax pmax
comp=Z,17nm,0.7s
AAK Ala-Archa 50.26 298 *e*P **P 21 53 55.4 +2.0**
comp=Z,17nm,0.7s
KSH Kashi 50.26 293 *e*P P 21 53 59.0 +5.6
KSH *e*pP sP 21 54 14.8 +0.5
KSH *es*P pP 21 54 21.8 +14
KSH *e*PcP **PcP 21 55 15.8 +4.2**
KSH S **S 22 01 08.8 +6.9**
KSH ScS **ScS 22 03 42.0 +2.3**
KSH SS **SS 22 04 41.8 +6.2**
KSH pmax pmax
comp=Z,130nm,6.0s
KSH LR LR
comp=Z,860nm,13.6s
KSH LR LR
comp=Z,1μm,15.4s
KSH LR LR
comp=Z,2μm,15.1s
CRQM Cirque 50.52 38 *e*P **P 21 53 56.6 +1.5**
comp=Z,25nm,0.8s
EKS2 Erkin-Say 50.75 298 *e*P **P 21 53 58.9 +1.9**
EKS2 pmax pmax
comp=Z,16nm,0.7s
EKS2 Erkin-Say 50.75 298 *e*P **P 21 53 58.9 +1.9**
comp=Z,16nm,0.7s
BALM Baldy 50.86 37 *e*P **P 21 53 58.7 +1.2**
BALM pmax pmax
comp=Z,15nm,0.7s
BALM Baldy 50.86 37 *e*P **P 21 53 58.7 +1.2**
comp=Z,15nm,0.7s
ZRNK Zerenda 50.91 312 *e*P **P 21 53 56.9 -1.0**
ZRNK pmax pmax
comp=Z,31nm,0.9s
ZRNK Zerenda 50.91 312 *e*P **P 21 53 56.9 -1.0**
comp=Z,31nm,0.9s
MTN Manton Dam 51.70 193 *e*P **P 21 54 04.2 +0.1**
comp=Z,20nm,0.9s
PSI Prapat 52.65 239 *e*P **P 21 54 11.3 -0.1**
PSI pmax pmax
comp=Z,10.0nm,0.7s
PSI Prapat 52.65 239 *e*P **P 21 54 11.2 -0.1**
comp=Z,10.0nm,0.7s
KKAR Karatay Array 52.86 300 *e*P **P 21 54 14.8 +2.2**
KKAR Karatay Array 52.86 300 *e*P **P 21 54 14.8 +2.2**
INK Inuvik 53.25 28 P **P 21 54 16.1 +1.1**
comp=Z,23nm,0.8s,baz=301,slow=6.9,SNR=21
INK Inuvik 53.25 28 *e*P **P 21 54 16.0 +1.1**
comp=Z,24nm,0.9s
SVE Sverdlovsk 54.54 318 *e*P **P 21 54 25.2 +0.6**
SVE pmax pmax
comp=Z,40nm,0.9s
GSI Gunungsitoli 54.66 239 *e*P **P 21 54 26.2 +0.3**
comp=Z,30nm,0.7s
ARU Arti 55.75 318 P **P 21 54 32.9 -0.4**
comp=Z,9.7nm,0.6s,baz=83,slow=4.6
ARU Arti 55.75 318*c i*P **P 21 54 33.0 -0.4**
ARU 21 55 30.6
ARU 21 56 37.4
ARU S **S 22 02 18.3 +2.5**
ARU SS **SS 22 05 57.0 -4.2**
ARU pmax pmax
comp=Z,28nm,1.2s
ARU Arti 55.75 318 *e*P **P 21 54 32.9 -0.4**
comp=Z,23nm,0.8s
WRAK Wrangell Islan 57.09 41 *e*P **P 21 54 45.2 +2.4**
comp=Z,15nm,1.1s
KBL Kabul 57.33 290 *e*P **P 21 54 44.8 -0.4**
KBL pmax pmax
comp=Z,18nm,0.8s
KBL Kabul 57.33 290 *e*P **P 21 54 44.8 -0.4**
comp=Z,18nm,0.8s
ABKAR Akbulak array 57.48 310 *e*P **P 21 54 45.1 -0.6**
DLBC Dease Lake 57.55 39 P **P 21 54 48.2 +2.0**
comp=Z,12nm,0.9s,baz=287,slow=7.7,SNR=12
DLBC Dease Lake 57.55 39 *e*P **P 21 54 48.2 +2.0**
comp=Z,23nm,1.1s
FITZ Fitzroy Crossi 57.98 198 *e*P **P 21 54 50.1 +0.7**
comp=Z,12nm,0.9s
AKTO Aktyubinsk 58.19 312 P **P 21 54 51.1 +0.5**
comp=Z,8.2nm,0.8s,baz=82,slow=11,SNR=5.2
WRAB Tennant Creek 58.19 188*ce*P **P 21 54 51.0 +0.1**
WRAB pmax pmax
comp=Z,8.0nm,0.6s
WRAB Tennant Creek 58.19 188 *e*P **P 21 54 50.5 -0.4**
comp=Z,20nm,0.8s
WR1 Warramunga Arr 58.20 188 *e*P **P 21 54 50.2 -0.8**
WR1 *ep*P **pP 21 55 06.2 +0.3**
WRA Warramunga Ar 58.20 188 P **P 21 54 50.2 -0.8**
comp=Z,12nm,0.6s,baz=5.4,slow=7.2,SNR=16
WRA pP **pP 21 55 06.2 +0.3**
comp=Z,18nm,0.8s,baz=6.2,slow=7.4,SNR=9.6
WRA LR LR 22 19 26.9
comp=Z,86nm,19.7s,baz=190,slow=36
HYB Hyderabad 58.57 268 *i* P **P 21 54 53.0 -0.8**
HYB *e* 21 55 02.0
SPA0 Spitsbergen Ar 59.50 349 *e*P **P 21 54 59.0 -0.4**
SPITS Spitsbergen Ar 59.50 349 P **P 21 54 59.2 -0.2**
comp=Z,4.9nm,0.5s,baz=89,slow=8.7,SNR=14
KBS Kingsbay 59.62 350 *e*P **P 21 55 01.1 +0.9**
KBS pmax pmax
comp=Z,25nm,0.8s
KBS Kingsbay 59.62 350 *e*P **P 21 55 01.1 +0.9**
comp=Z,25nm,0.8s
RES Resolute Bay 61.45 15 P **P 21 55 12.6 0.0**
comp=Z,24nm,0.6s,baz=315,slow=6.4,SNR=48
RES Resolute Bay 61.45 15 *e*P **P 21 55 12.6 0.0**
comp=Z,26nm,0.7s
APA Apatity 61.81 336⇑*i*P **P 21 55 15.4 +0.2**
APA pmax pmax
comp=Z,20nm,0.6s
APA MLR MLR
comp=Z,800nm,13.0s
AS01 Alice Springs 61.92 188 *e*P **P 21 55 16.1 -0.3**
AS31 Alice Springs 61.93 188 *e*P **P 21 55 16.2 -0.2**
comp=Z,2.7nm,0.7s
ASAR Alice Springs 61.93 188 P **P 21 55 16.2 -0.2**
comp=Z,8.4nm,0.7s,baz=9.4,slow=5.2,SNR=16
ASAR pP **pP 21 55 31.8 +0.2**
comp=Z,8.0nm,0.8s,baz=13,slow=6.9,SNR=10
ASAR PKP2bc 22 24 33.0
comp=Z,0.7nm,1.0s,baz=157,slow=2.6,SNR=5.7

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MBWA Marble Bar 62.54 203 *e*P **P 21 55 20.4 -0.2**
comp=Z,16nm,0.8s
YKW3 Yellowknife Ar 62.65 30 *e*P **P 21 55 20.3 -0.5**
comp=Z,9.9nm,0.8s
YKA Yellowknife Ar 62.69 31 P **P 21 55 21.3 +0.2**
comp=Z,8.2nm,0.8s,baz=300,slow=5.6,SNR=22
YKA pP **pP 21 55 37.2 +1.1**
comp=Z,1.8nm,0.6s,baz=302,slow=6.2,SNR=3.6
YKA PcP **PcP 21 55 60.0 +0.6**
comp=Z,2.0nm,0.5s,baz=299,slow=3.7,SNR=7.2
YKB5 Yellowknife Ar 62.69 31 *e*P **P 21 55 21.3 +0.2**
YKB5 *e*PcP **PcP 21 55 60.0 +0.6**
KLMR Klimovskoe 63.00 328 *e*P **P 21 55 21.4 -1.8**
KLMR *e* 21 55 59.3
KLMR pmax pmax
comp=Z,10.0nm,0.7s
ARA0 ARCESS Array S 63.08 339 *e*P **P 21 55 23.6 0.0**
ARCES ARCESS Array B 63.08 339 P **P 21 55 23.6 0.0**
comp=Z,7.9nm,0.5s,baz=56,slow=7.7,SNR=32
GEYT Ailbeck 63.59 299 P **P 21 55 27.4 -0.2**
comp=Z,4.3nm,0.6s,baz=48,slow=2.2,SNR=5.1
DAG Danmarks Havn 64.70 355 *i* P **P 21 55 33.9 -0.2**
comp=Z,24nm,0.8s
DAG Danmarks Havn 64.70 355 *i* P **P 21 55 33.9 -0.2**
DAG pmax pmax
comp=Z,18nm,0.8s
MBW Mount Baker 66.15 46 P **P 21 55 45.4 +1.2**
CMW Cultus Mountai 66.21 46 P **P 21 55 46.1 +1.6**
B05A Bryant 66.31 47 P **P 21 55 45.4 +0.4**
baz=301
B06A Marblemount 66.52 46 *e*P **P 21 55 47.9 +1.5**
comp=Z,49nm,1.3s
VRH Novokhopyorsk 66.98 318 *e*P **P 21 55 47.5 -1.7**
VRH pmax pmax
comp=Z,20nm,0.6s
C06D Leavenworth 67.17 46 P **P 21 55 51.2 +0.7**
baz=302
NLW Nelson Butte 67.41 46 P **P 21 55 53.4 +1.2**
OBN Obninsk 67.41 323 P **P 21 55 51.1 -0.7**
comp=Z,8.9nm,0.5s,baz=20,slow=17,SNR=4.2
OBN Obninsk 67.41 323 *e*P **P 21 55 52.1 +0.3**
OBN *e* 21 56 21.2
OBN *e* 21 58 20.0
OBN pmax pmax
comp=Z,20nm,1.2s
OBN MLR MLR
comp=Z,742nm,17.0s
OBN Obninsk 67.41 323 *e*P **P 21 55 51.1 -0.7**
comp=Z,18nm,1.0s
LTY Liberty 67.65 47 *e*P **P 21 55 55.0 +1.3**
comp=Z,10nm,0.8s
LPSR Galich'ya Gora 67.67 320 *e*P **P 21 55 53.0 -0.5**
LPSR pmax pmax
comp=Z,20nm,0.8s
B08A Colville Reser 67.82 45 *e*P **P 21 55 56.0 +1.4**
comp=Z,26nm,1.3s
I03D Drain, OR 67.95 51 P **P 21 55 57.1 +1.6**
baz=302
FIA1 FINESS Array S 67.99 332 *e*P **P 21 55 55.0 -0.3**
FIA0 FINESS Array S 67.99 332 *e*P **P 21 55 55.1 -0.3**
FIA0 FINESS Array S 67.99 332 *e*P **P 21 55 55.1 -0.3**
FINES FINESS Array B 67.99 332 P **P 21 55 55.1 -0.3**
comp=Z,21nm,0.7s,baz=44,slow=6.9,SNR=27
H04A Detroit Lake 68.14 50 *e*P **P 21 55 58.0 +1.3**
comp=Z,22nm,0.8s
SAW Saint Andrews 68.14 46 P **P 21 55 57.7 +1.1**
G05D Wamic, OR 68.36 49 P **P 21 55 59.3 +1.2**
baz=303
I04A Tendick Farm, 68.48 51 P **P 21 55 59.5 +0.6**
baz=303,SNR=6.7
L02D Cave Junction, 68.62 53 P **P 21 56 01.1 +1.4**
baz=303
C09A Chrisman Ranch 68.72 45 *e*P **P 21 56 01.4 +1.2**
comp=Z,18nm,0.8s
D08A Wollman Farm, 68.77 46 *e*P **P 21 56 01.6 +1.0**
comp=Z,13nm,0.9s
I05D Terrebonne, OR 68.83 50 P **P 21 56 02.4 +1.3**
baz=303
NEW Newport 69.11 45 P **P 21 56 03.3 +0.7**
baz=304,SNR=10
NEW Newport 69.11 45 *e*P **P 21 56 04.1 +1.4**
NEW pmax pmax
comp=Z,17nm,0.8s
NEW Newport 69.11 45 *e*P **P 21 56 04.1 +1.4**
comp=Z,17nm,0.8s
KHMM Horse Mountain 69.23 54 *e*P **P 21 56 06.1 +2.4**
comp=Z,17nm,0.9s
YBH Yreka Blue Hor 69.41 53 *e*P **P 21 56 06.6 +1.9**
YBH pmax pmax
comp=Z,14nm,0.8s
YBH Yreka Blue Hor 69.41 53 *e*P **P 21 56 06.6 +1.9**
comp=Z,14nm,0.8s
J05D Fort Rock, OR 69.47 51 P **P 21 56 07.0 +1.8**
baz=304,SNR=5.4
M02C Callahan 69.50 53 P **P 21 56 07.3 +2.0**
baz=303,SNR=7.4
E09A Wood Farm, Sta 69.51 47 *e*P **P 21 56 06.8 +1.7**
comp=Z,22nm,1.1s
SUMG Summit 69.58 0 *i* P **P 21 56 06.4 +0.8**
comp=Z,28nm,0.9s
SUMG Summit 69.58 0 *i* P **P 21 56 06.4 +0.8**
SUMG pmax pmax
comp=Z,28nm,0.9s
GOF Gofitskoye 69.60 312⇑*e*P **P 21 56 05.4 -0.3**
GOF pmax pmax
comp=Z,31nm,0.6s
STKA Stephens Creek 69.66 180 P **P 21 56 06.0 0.0**
comp=Z,3.2nm,0.6s,baz=338,slow=7.0,SNR=7.1
STKA Stephens Creek 69.66 180 P **P 21 56 06.0 0.0**
STKA pmax pmax
comp=Z,3.0nm,0.6s
STKA Stephens Creek 69.66 180 *e*P **P 21 56 06.0 0.0**
comp=Z,5.2nm,1.6s
N02D Trinity Center 69.82 53 P **P 21 56 08.9 +1.7**
baz=304,SNR=6.2
M04C Macdoel 69.92 52 P **P 21 56 09.2 +1.3**
baz=304,SNR=12
K05A Summer Lake 69.99 51 *e*P **P 21 56 10.4 +2.0**
comp=Z,55nm,0.9s
WDC Whiskeytown Da 70.14 54 *e*P **P 21 56 10.8 +1.7**
WDC pmax pmax
comp=Z,15nm,1.0s
WDC Whiskeytown Da 70.14 54 *e*P **P 21 56 10.8 +1.7**
comp=Z,15nm,1.0s
F10A Beach Ranch, E 70.34 47 *e*P **P 21 56 11.8 +1.4**
comp=Z,23nm,1.8s
ZEI Tsey 70.35 309 *e*P **P 21 56 09.0 -1.7**
ZEI pmax pmax
comp=Z,17nm,0.7s
WALA Waterton Lakes 70.39 43 *e*P **P 21 56 11.7 +1.0**
comp=Z,23nm,0.8s
KIV Kislovodsk 70.43 311 *e*P **P 21 56 12.6 +1.6**
KIV *e* 21 56 33.7
KIV *e* 21 58 50.9
KIV pmax pmax
comp=Z,15nm,0.6s
KBZ Khabaz 70.43 311 P **P 21 56 10.7 -0.2**
comp=Z,10nm,0.9s,baz=110,slow=1.3,SNR=7.6
BSMT Bassoo Peak 70.63 44 *e*P **P 21 56 13.6 +1.3**
BLMT Blacktail Moun 70.77 44 *e*P **P 21 56 14.8 +1.7**
O03D Paynes Creek 70.77 54 P **P 21 56 13.8 +0.7**
baz=304
NEY Neytrino 70.81 310*ce*P **P 21 56 15.8 +2.4**
MOD Modoc Plateau 70.81 52 *e*P **P 21 56 15.0 +1.6**
comp=Z,15nm,0.8s
BMO Blue Mountains 70.94 48 *e*P **P 21 56 15.3 +1.3**
comp=Z,15nm,0.9s
JTMT Jette 70.96 44 *e*P **P 21 56 15.5 +1.3**
YBMT Yellow Bay 71.04 44 *e*P **P 21 56 16.0 +1.3**
SCO Scoresbysund 71.04 354 *i* P **P 21 56 14.9 +0.8**
comp=Z,20nm,1.2s
SCO Scoresbysund 71.04 354 *i* P **P 21 56 14.9 +0.8**
SCO pmax pmax
comp=Z,20nm,1.2s
SWMT Swartz Lake 71.26 44 *e*P **P 21 56 17.1 +1.1**
ORV Oroville 71.38 54 *e*P **P 21 56 17.8 +1.1**
ORV pmax pmax
comp=Z,9.0nm,0.8s
ORV Oroville 71.38 54 *e*P **P 21 56 17.8 +1.1**
comp=Z,9.1nm,0.8s
AKH Akhalkalaki 71.38 308⇑*i*P **P 21 56 17.6 +0.7**
CHVG Ch'k'valeri 71.50 310⇓*i*P **P 21 56 18.0 +0.7**
WVOR Wild Horse Val 71.53 50 *e*P **P 21 56 19.1 +1.4**
WVOR pmax pmax
comp=Z,24nm,1.3s
WVOR Wild Horse Val 71.53 50 *e*P **P 21 56 19.1 +1.4**
comp=Z,24nm,1.3s
IZAR Zarasai 71.65 328 *e*P **P 21 56 18.2 +0.2**
IZAR IAmb IAmb 21 56 19.1
comp=Z,12nm,0.6s
MSO Missoula 71.69 45 P **P 21 56 19.2 +0.6**
baz=307
MSO Missoula 71.69 45 *e*P **P 21 56 19.4 +0.8**
comp=Z,8.4nm,0.9s
IDID Didziasalis 71.73 327 *e*P **P 21 56 18.7 +0.2**
IDID IAmb IAmb 21 56 19.7
comp=Z,12nm,0.6s
UOSS Minazif 71.79 288 *e*P **P 21 56 18.9 -0.5**
comp=Z,1.4nm,0.9s
UOSS *ep*P **pP 21 56 33.8 -0.9**
ISAL Salakas 71.82 327 *e*P **P 21 56 19.2 +0.2**
ISAL IAmb IAmb 21 56 20.4
comp=Z,18nm,0.6s
CHMT Chamberlain Mo 72.02 44 *e*P **P 21 56 21.1 +0.4**
AFDM Forest Hills D 72.06 54 *e*P **P 21 56 22.1 +1.3**
comp=Z,12nm,1.3s
MFID Camas Ranch 72.64 48 *e*P **P 21 56 25.6 +1.3**
comp=Z,16nm,0.8s
FCC Fort Churchill 72.86 27 *e*P **P 21 56 25.3 +0.1**
FCC Fort Churchill 72.86 27 *e*P **P 21 56 25.2 +0.1**
HRY Holter Researc 72.92 44 *e*P **P 21 56 27.4 +1.5**
CMB Columbia Colle 72.96 55 *e*P **P 21 56 27.4 +1.2**
CMB pmax pmax
comp=Z,15nm,0.8s
CMB Columbia Colle 72.96 55 *e*P **P 21 56 27.4 +1.2**
comp=Z,15nm,0.8s
NC405 NORSAR Array S 73.08 337 *e*P **P 21 56 26.6 +0.1**
NC303 NORSAR Array S 73.10 337 *e*P **P 21 56 26.8 +0.3**
LRM Limekiln Ridge 73.12 45 *e*P **P 21 56 28.4 +1.1**
HFS Hagfors 73.22 336 P **P 21 56 26.8 -0.4**
comp=Z,16nm,0.7s,baz=36,slow=5.5,SNR=29
HFS pP **PcP 21 56 43.6 0.0**
comp=Z,3.6nm,0.5s,baz=47,slow=6.5,SNR=3.3
EGMT Eagleton 73.22 42 P **P 21 56 28.2 +0.6**
baz=309,SNR=9.6
EGMT Eagleton 73.22 42 *e*P **P 21 56 28.5 +0.9**
comp=Z,43nm,0.8s
NC204 NORSAR Array S 73.24 338 *e*P **P 21 56 27.8 +0.3**
NB201 NORSAR Array S 73.26 337 *e*P **P 21 56 27.6 +0.1**
NB2 NORSAR Subarra 73.29 337 P **P 21 56 27.5 -0.2**
comp=Z,21nm,0.9s,baz=39,slow=6.2
NB2 NORSAR Subarra 73.29 337 P **P 21 56 27.5 -0.2**
baz=39,slow=6.2
NB200 NORSAR Array S 73.29 337 *e*P **P 21 56 27.6 -0.2**
NOA NORSAR Array B 73.29 337 P **P 21 56 27.6 -0.2**
comp=Z,13nm,0.8s,baz=38,slow=5.9,SNR=16
WAKR Walker 73.30 54 *e*P **P 21 56 29.8 +1.4**
DLMT Dillon 73.32 45 *e*P **P 21 56 30.0 +1.6**
comp=Z,24nm,0.9s
HLID Hailey 73.38 47 P **P 21 56 30.0 +1.4**
baz=307,SNR=14
HLID Hailey 73.38 47 *e*P **P 21 56 30.1 +1.4**
comp=Z,12nm,0.9s
NBO02 NORSAR Array S 73.39 337 *e*P **P 21 56 28.1 -0.2**
NBO00 NORSAR Array S 73.43 337 *e*P **P 21 56 28.7 +0.2**
MCMT McKenzie Canyo 73.51 46 *e*P **P 21 56 30.6 +1.0**
NAO01 NORSAR Array S 73.55 337 *e*P **P 21 56 29.5 +0.3**
AKASG Malin Array Be 73.62 322 P **P 21 56 29.2 -0.6**
comp=Z,8.9nm,0.4s,baz=45,slow=6.5,SNR=29
AKBB Malin Array Si 73.62 322 *e*P **P 21 56 29.2 -0.6**
AKBB pmax pmax
comp=Z,17nm,0.8s
AKBB Malin Array Si 73.62 322 *e*P **P 21 56 29.2 -0.6**
comp=Z,17nm,0.8s
KIEV Kiev 73.64 322 *e*P **P 21 56 29.8 -0.1**
KIEV pmax pmax
comp=Z,8.0nm,0.6s
KIEV Kiev 73.64 322 *e*P **P 21 56 29.2 -0.6**
comp=Z,17nm,0.8s
KIEV *e*PcP **pP 21 56 48.0 +2.7**
AK11 Malin Array Si 73.67 322 *e*P **P 21 56 29.6 -0.4**
BOZ Bozeman (W) 73.69 44 P **P 21 56 31.7 +1.2**
baz=308,SNR=17
BOZ Bozeman (W) 73.69 44 *e*P **P 21 56 31.9 +1.4**
BOZ Bozeman (W) 73.69 44 *e*P **P 21 56 31.9 +1.4**
NV01 Mina Array Sit 74.06 54 *e*P **P 21 56 34.3 +1.4**
NVAR Mina Array Bea 74.06 54 P **P 21 56 34.3 +1.4**
comp=Z,14nm,0.8s,baz=284,slow=6.2,SNR=30
NV11 Mina Array Sit 74.15 54 *e*P **P 21 56 34.7 +1.4**
comp=Z,8nm,0.8s
MLAC Mammoth, Mammo 74.19 55 P **P 21 56 34.7 +1.0**
baz=306
QLMT Earthquake Lak 74.30 45 *e*P **P 21 56 35.8 +1.6**
ELK Elko 74.58 50 *e*P **P 21 56 37.5 +1.6**
ELK pmax pmax
comp=Z,9.0nm,1.0s
ELK Elko 74.58 50 *e*P **P 21 56 37.5 +1.6**
comp=Z,9.4nm,1.0s
SFJD Kangerlussuaq 74.75 5 P **P 21 56 35.8 -0.2**
comp=Z,7.8nm,0.7s,baz=357,slow=8.6,SNR=3.8
SIM Simferopol' 74.77 315 *e*P **P 21 56 36.7 +0.1**
SIM pmax pmax
comp=Z,19nm,0.6s
SIM MLR MLR
comp=Z,160nm,14.4s
YFT Old Faithful 74.87 45 *e*P **P 21 56 40.7 +3.2**
comp=Z,20nm,0.8s
TIN Tinemaha, Big 74.92 55 P **P 21 56 39.3 +1.5**
baz=307
LKWY Lake 75.04 45 *e*P **P 21 56 40.1 +1.6**
LKWY pmax pmax
comp=Z,23nm,1.0s
LKWY Lake 75.04 45 *e*P **P 21 56 40.1 +1.6**
comp=Z,23nm,1.0s
H17A Grant Village 75.05 45 P **P 21 56 41.4 +2.8**
baz=309,SNR=25
H17A Grant Village 75.05 45 *e*P **P 21 56 41.6 +3.0**
comp=Z,36nm,0.8s
IMW Indian Meadow 75.16 46 *e*P **P 21 56 41.3 +2.1**
comp=Z,28nm,0.8s
PKM Mcpherson Peak 75.17 57 P **P 21 56 40.8 +1.5**
baz=306
FLWY Flagg Ranch 75.18 45 *e*P **P 21 56 41.8 +2.5**
comp=Z,36nm,1.4s
FXWY Fox Creek 75.27 46 *e*P **P 21 56 41.6 +1.8**
comp=Z,19nm,0.9s
RLMT Red Lodge 75.31 44 P **P 21 56 41.2 +1.1**
baz=310,SNR=8.4
RLMT Red Lodge 75.31 44 *e*P **P 21 56 41.3 +1.3**
comp=Z,39nm,1.5s
MOOW Moose Ponds 75.36 46 *e*P **P 21 56 42.0 +1.7**
comp=Z,17nm,0.9s
CWC Cottonwood Cre 75.38 55 P **P 21 56 41.3 +0.8**
baz=307
HVU Hansel Valley 75.42 48 *e*P **P 21 56 42.5 +1.9**
HVU pmax pmax
comp=Z,20nm,0.9s
HVU Hansel Valley 75.42 48 *e*P **P 21 56 42.5 +1.9**
comp=Z,20nm,0.9s
GRAC Grapevine Rang 75.51 54 P **P 21 56 42.3 +1.2**
baz=307,SNR=9.7
LOHW Long Hollow 75.53 46 *e*P **P 21 56 42.8 +1.5**
comp=Z,8.2nm,0.8s
SNOW Snow King Moun 75.54 46 *e*P **P 21 56 43.3 +1.9**
comp=Z,21nm,0.8s
REDW Red Top Meadow 75.54 46 *e*P **P 21 56 43.0 +1.6**
comp=Z,18nm,0.9s
FRB Frobisher Bay 75.62 13 P **P 21 56 41.1 0.0**
comp=Z,25nm,0.6s,baz=331,slow=6.0,SNR=29
ARVC Arvin 75.67 57 P **P 21 56 43.2 +1.2**
baz=307
SORM Soroca 75.75 321⇑*i*P **P 21 56 41.5 -0.6**
DGMT Dagmar 75.77 39 P **P 21 56 42.8 +0.5**
baz=312,SNR=5.7
DGMT Dagmar 75.77 39 *e*P **P 21 56 43.4 +1.0**
comp=Z,31nm,0.8s
AHID Auburn Hatcher 75.78 47 *e*P **P 21 56 44.0 +1.3**
comp=Z,18nm,0.8s
DAC Darwin (Calif) 75.79 55 *e*P **P 21 56 43.2 +0.3**
DAC pmax pmax
comp=Z,12nm,0.8s
DAC Darwin (Calif) 75.79 55 *e*P **P 21 56 43.2 +0.3**
comp=Z,12nm,0.8s
BGU Big Grassy Mou 75.80 49 *e*P **P 21 56 44.5 +1.7**
comp=Z,8.7nm,1.0s
R11A Troy Canyon, C 75.82 52 P **P 21 56 44.3 +1.2**
baz=308,SNR=21
R11A Troy Canyon, C 75.82 52 *e*P **P 21 56 44.2 +1.2**
comp=Z,26nm,1.2s
SPUT South Promonto 75.91 48 *e*P **P 21 56 45.2 +1.8**
comp=Z,12nm,1.0s
A25A Svangstu Ranch 75.98 38 P **P 21 56 44.3 +0.8**
baz=313

27d 21h

MPMC	Manual Prospec	75.99	55	P		P	21 56 44.9	+0.9
	baz=307,SNR=17							
FURC	Furnace Creek,	76.15	55	P		P	21 56 45.9	+1.3
	baz=307							
LRMC	Laurel Mtn Rad	76.22	56	P		P	21 56 45.8	+0.5
	baz=307,SNR=7.5							
HWUT	Hardware Ranch	76.24	48	*e*P		P	21 56 46.7	+1.4
	comp=Z,31nm,1.1s							
TPNV	Topopah Spring	76.25	54	P		P	21 56 46.3	+0.9
	baz=308,SNR=21							
TPNV	Topopah Spring	76.25	54	*e*P		P	21 56 46.7	+1.3
TPNV					pmax	pmax		
	comp=Z,24nm,0.8s							
TPNV	Topopah Spring	76.25	54	*e*P		P	21 56 46.7	+1.3
	comp=Z,24nm,0.8s							
MILM	Milestii Mici	76.32	320	⇑*i*P		P	21 56 45.1	-0.3
EDW2	Edwards Air Fo	76.37	56	P		P	21 56 47.2	+1.2
	baz=307,SNR=13							
DUG	Dugway, Tooele	76.38	49	P		P	21 56 47.2	+1.1
	baz=309,SNR=17							
DUG	Dugway, Tooele	76.38	49	*e*P		P	21 56 47.6	+1.5
DUG					pmax	pmax		
	comp=Z,25nm,1.0s							
DUG	Dugway, Tooele	76.38	49	*e*P		P	21 56 47.6	+1.5
	comp=Z,25nm,1.0s							
A26A	Wade Farm, Ken	76.53	38	P		P	21 56 47.3	+0.6
	baz=314,SNR=9.5							
BW06	Boulder Array	76.66	46	P		P	21 56 48.3	+0.6
	baz=310,SNR=18							
BW06	Boulder Array	76.66	46	*e*P		P	21 56 48.4	+0.7
PD31	Pinedale Array	76.66	46	*e*P		P	21 56 48.4	+0.7
PD31				*ep*P		pP	21 57 04.4	+1.2
PDAR	Pinedale Array	76.66	46	P		P	21 56 48.4	+0.7
	comp=Z,19nm,0.7s,baz=282,slow=1.3,SNR=48							
PDAR				pP		pP	21 57 04.4	+1.2
	comp=Z,2.4nm,0.5s,baz=299,slow=3.3,SNR=3.7							
CTU	Camp Tracy	76.70	49	*e*P		P	21 56 49.6	+1.7
	comp=Z,15nm,0.9s							
C25A	Freed Ranch, W	76.74	39	P		P	21 56 48.8	+0.9
	baz=313							
PSUT	Pine Spring	76.78	51	*e*P		P	21 56 50.1	+1.6
	comp=Z,13nm,0.9s							
B26A	Jensen Ranch,	76.79	38	P		P	21 56 49.4	+1.2
	baz=314							
SHOC	Shoshone, Teco	76.87	55	P		P	21 56 50.1	+1.3
	baz=308							
GSC	Goldstone, Bar	76.89	55	P		P	21 56 49.8	+0.8
	baz=308,SNR=9.0							
GSC	Goldstone, Bar	76.89	55	*e*P		P	21 56 50.3	+1.3
GSC					pmax	pmax		
	comp=Z,14nm,0.9s							
GSC	Goldstone, Bar	76.89	55	*e*P		P	21 56 50.3	+1.3
	comp=Z,14nm,0.9s							
JLU	Jordanelle	76.94	48	*e*P		P	21 56 51.0	+1.7
	comp=Z,15nm,1.0s							
NLU	North Lily Min	76.97	49	*e*P		P	21 56 51.2	+1.7
	comp=Z,16nm,0.9s							
BFSC	Mount Baldy Ra	76.98	57	P		P	21 56 50.8	+1.2
	baz=308							
D25A	Fairfield	77.09	39	P		P	21 56 50.4	+0.6
	baz=313							
MPU	Maple Canyon	77.20	49	*e*P		P	21 56 52.3	+1.5
	comp=Z,24nm,0.9s							
C26A	Wahner Farm, P	77.24	38	P		P	21 56 51.3	+0.7
	baz=314							
A28A	Rude Farm, Bot	77.36	37	P		P	21 56 51.7	+0.4
	baz=315,SNR=7.7							
TUQ	Turquoise Moun	77.38	55	P		P	21 56 52.9	+1.1
	baz=308,SNR=16							
KWP	Kalwaria Pacla	77.42	324	*e*P		P	21 56 52.3	+0.7
GIRR	Girov	77.47	321	⇑*i*P		P	21 56 52.0	+0.1
HEC	Hector,Ludlow	77.49	56	P		P	21 56 53.3	+0.9
	baz=308,SNR=10							
E25A	Miller Ranch,	77.49	40	P		P	21 56 53.0	+0.8
	baz=313							
C27A	Sayler Ranch,	77.60	38	P		P	21 56 53.3	+0.7
	baz=314,SNR=7.8							
D26A	Manning	77.62	39	P		P	21 56 53.3	+0.5
	baz=314,SNR=6.2							
BUR08	Bucovina Ar. S	77.64	322	*e*P		P	21 56 53.4	+0.4
B28A	Dugan Ranch, T	77.64	37	P		P	21 56 53.6	+0.8
	baz=315,SNR=8.5							
BURAR	Bucovina Array	77.65	322	⇑*i*P		P	21 56 53.0	0.0
MURC	Murrieta	77.67	57	P		P	21 56 54.8	+1.4
	baz=308							
TESR	Tescani	77.70	320	⇑*i*P		P	21 56 53.1	-0.1
MSU	Marysvale	77.82	50	*e*P		P	21 56 56.1	+1.8
MSU	Marysvale	77.82	50	*e*P		P	21 56 56.1	+1.8
CFR	Carcaliu	77.84	319	⇑*i*P		P	21 56 53.9	0.0
A29A	Manning Farm,	77.84	36	P		P	21 56 54.1	+0.2
	baz=315,SNR=13							
F25A	Bowman	77.86	40	P		P	21 56 55.2	+1.0
	baz=313							
TMUT	Trail Mountain	77.91	49	*e*P		P	21 56 56.5	+1.6
	comp=Z,34nm,1.6s							
PETR	Petresti	77.94	319	⇑*i*P		P	21 56 55.2	+0.7
GMRC	Granite Mounta	77.95	55	P		P	21 56 56.1	+1.1
	baz=308,SNR=12							
E26A	Carlson Angus	77.99	40	P		P	21 56 55.3	+0.4
	baz=314							
ODBI	Odobesti	78.00	319	⇑*i*P		P	21 56 56.8	+1.9
D27A	Center	78.01	39	P		P	21 56 55.7	+0.7
	baz=314							
P17A	Butcher Ranch,	78.08	49	*e*P		P	21 56 57.5	+1.8
	comp=Z,31nm,0.8s							
VRI	Vrincioaia	78.10	320	⇑*i*P		P	21 56 56.5	+1.1
LCMT	Little Creek M	78.11	52	*e*P		P	21 56 57.5	+1.6
B29A	Wagenman Farm,	78.11	37	P		P	21 56 56.1	+0.6
	baz=315,SNR=6.4							
MTPU	Mount Pierson	78.11	51	*e*P		P	21 56 58.0	+1.9
	comp=Z,20nm,0.8s							
KOLS	Kolonicke sedl	78.12	324	*e*P		P	21 56 55.6	+0.1
C28A	Hausauer Farms	78.14	38	P		P	21 56 56.8	+1.1
	baz=315							
PLOR	Plostina	78.15	320	⇑*i*P		P	21 56 56.6	+0.9
PFO	Pinyon Flats O	78.15	57	P		P	21 56 57.3	+1.3
	baz=308							
PFO	Pinyon Flats O	78.15	57	*e*P		P	21 56 57.2	+1.1
PFO					pmax	pmax		
	comp=Z,13nm,1.0s							
PFO	Pinyon Flats O	78.15	57	*e*P		P	21 56 57.2	+1.1
	comp=Z,13nm,1.0s							
109C	Camp Elliot, M	78.17	58	P		P	21 56 57.3	+1.3
	baz=308							
TIRR	Tirgusor	78.18	318	⇑*i*P		P	21 56 55.6	-0.2
BELC	Belle Mtn. Jos	78.21	56	P		P	21 56 56.9	+0.4
	baz=308,SNR=5.6							
STHS	Stebnicka Huta	78.24	325	*e*P		P	21 56 56.7	+0.5
A30A	Hoffart Farm,	78.26	36	P		P	21 56 56.4	+0.1
	baz=316,SNR=6.8							
P18A	Preston Nutter	78.27	49	*e*P		P	21 56 58.6	+1.7
	comp=Z,39nm,1.5s							
OJC	Ojcow	78.30	326	*e*P		P	21 56 56.6	+0.1
OJC	Ojcow	78.30	326	*e*P		P	21 56 56.9	+0.4
OJC					pmax	pmax		
	comp=Z,25nm,1.0s							
OJC	Ojcow	78.30	326	*e*P		P	21 56 56.9	+0.4
	comp=Z,25nm,1.0s							
F26A	Lodgepole	78.31	40	P		P	21 56 57.2	+0.5
	baz=314							
BR101	Keskin Array S	78.36	312	*e*P		P	21 56 57.0	-0.2
BR101				*e*PP		PP	21 59 54.7	+0.3
BR131	Keskin Array S	78.36	312	*e*P		P	21 56 57.3	+0.1
BRTR	Keskin Array B	78.36	312	P		P	21 56 57.0	-0.3
	comp=Z,2.3nm,0.4s,baz=106,slow=3.2,SNR=21							
BRTR				PP		PP	21 59 54.7	+0.3
	comp=Z,0.8nm,0.7s,baz=58,slow=4.9,SNR=3.9							
KNB	Kanab	78.36	52	*e*P		P	21 56 59.1	+1.8
KNB					pmax	pmax		
	comp=Z,32nm,1.3s							
KNB	Kanab	78.36	52	*e*P		P	21 56 59.1	+1.8
	comp=Z,32nm,1.3s							
G25A	Newell	78.38	41	P		P	21 56 57.4	+0.3
	baz=313							
ULM	Lac du Bonnet	78.40	34	P		P	21 56 57.0	0.0
	baz=270,slow=20							
ULM	Lac du Bonnet	78.40	34	P		P	21 56 57.0	0.0
ULM	Lac du Bonnet	78.40	34	*e*P		P	21 56 57.3	+0.3
D28A	Regan	78.42	38	P		P	21 56 58.0	+0.8
	baz=315,SNR=5.2							
K22A	Casper	78.43	44	P		P	21 56 57.8	+0.3
	baz=312							
K22A	Casper	78.43	44	*e*P		P	21 56 58.6	+1.0
	comp=Z,29nm,0.3s							
SRU	San Rafael Swe	78.44	49	*e*P		P	21 56 58.9	+1.2
SRU					pmax	pmax		
	comp=Z,30nm,0.7s							
SRU	San Rafael Swe	78.44	49	*e*P		P	21 56 58.9	+1.2
	comp=Z,30nm,0.7s							
ARCR	ARCALIA	78.44	322	⇑*i*P		P	21 56 58.3	+1.0
CRVS	Cervenica-Dubn	78.52	324	*e*P		P	21 56 58.0	+0.3
MMU	Miners Mountai	78.56	50	*e*P		P	21 57 00.1	+1.7
B30A	Myrvik Farm, E	78.60	36	P		P	21 56 58.5	+0.4
	baz=316,SNR=10							
MONP2	Monument Peak	78.62	57	P		P	21 56 59.8	+1.1
	baz=308							
PGOR	Pogoanele	78.62	319	⇑*i*P		P	21 56 59.6	+1.3
F27A	Lemmon	78.62	40	P		P	21 56 59.3	+0.9
	baz=314							
NIE	Niedzica	78.67	325	*e*P		P	21 56 59.1	+0.6
H25A	Fruitdale	78.67	41	P		P	21 56 58.8	+0.1
	baz=313,SNR=5.6							
IRM	Iron Mountain	78.67	55	P		P	21 56 59.7	+0.8
	baz=309,SNR=9.4							
DOPR	Dopca	78.70	320	⇑*i*P		P	21 56 59.7	+0.9
G26A	Maurine	78.73	40	P		P	21 56 59.3	+0.3
	baz=314,SNR=11							
MLR	Muntele Rosu	78.75	320	P		P	21 56 59.0	-0.2
	comp=Z,0.6nm,0.5s,baz=18,slow=6.4							
MLR	Muntele Rosu	78.75	320	⇑*i*P		P	21 56 59.2	0.0
MLR	Muntele Rosu	78.75	320	*e*P		P	21 56 59.0	-0.2
	comp=Z,30nm,1.7s							
ANTO	Ankara	78.77	312	*e*P		P	21 56 59.6	+0.3
ANTO					pmax	pmax		
	comp=Z,17nm,0.7s							
ANTO	Ankara	78.77	312	*e*P		P	21 56 59.6	+0.3
	comp=Z,17nm,0.7s							
BC3	Big Chuckawall	78.78	56	P		P	21 57 00.2	+0.6
	baz=309,SNR=8.0							
RSSD	Black Hills	78.78	42	*e*P		P	21 56 59.2	-0.3
RSSD					pmax	pmax		
	comp=Z,16nm,0.6s							
RSSD	Black Hills	78.78	42	*e*P		P	21 56 59.2	-0.3
	comp=Z,16nm,0.6s							
E28A	Huff	78.79	39	P		P	21 56 59.8	+0.5
	baz=315							
BR231	Keskin MP Arra	78.80	312	*e*P		P	21 57 00.4	+0.9
W13A	Hualapai Mount	78.90	54	*e*P		P	21 57 01.4	+1.1
	comp=Z,9.1nm,1.0s							
D29A	Pettibone, Tap	78.99	38	P		P	21 57 00.3	0.0
	baz=315							
SWSC	Sam W. Stewart	79.00	57	P		P	21 57 00.8	+0.2
	baz=308							
G27A	Dupree	79.01	40	P		P	21 57 00.9	+0.3
	baz=314,SNR=6.9							
I25A	Rochford	79.01	42	P		P	21 57 00.7	0.0
	baz=313,SNR=5.4							
C30A	Mose, Pekin	79.06	37	P		P	21 57 00.7	0.0
	baz=316,SNR=5.7							
U15A	North Rim	79.07	52	*e*P		P	21 57 03.0	+1.8
	comp=Z,15nm,0.7s							
CJR	Cluj-Napoca	79.07	322	⇑*i*P		P	21 57 01.6	+0.8
A32A	Rocking H Ranc	79.10	35	P		P	21 57 00.4	-0.5
	baz=317							
O20A	White River Ci	79.11	47	P		P	21 57 02.0	+0.6
	baz=313,SNR=8.2							
O20A	White River Ci	79.11	47	*e*P		P	21 57 02.5	+1.1
	comp=Z,19nm,0.9s							
PDMCI	Parker Dam,Lak	79.23	55	P		P	21 57 02.7	+0.8
	baz=309							
LANS	Liptovska Anna	79.23	326	*e*P		P	21 57 02.5	+0.8
VOIR		79.25	320	⇓*i*P		P	21 57 01.8	0.0
F28A	McLaughlin	79.25	39	P		P	21 57 02.9	+1.1
	baz=315							
E29A	Napoleon	79.31	38	P		P	21 57 01.7	-0.4
	baz=315							
Y12C	Blythe	79.33	55	P		P	21 57 03.3	+0.9
	baz=309,SNR=6.4							
Y12C	Blythe	79.33	55	*e*P		P	21 57 03.6	+1.2
	comp=Z,19nm,0.8s							
KSP	Ksiaz	79.33	328	*e*P		P	21 57 02.4	+0.3
C31A	Landman Farms,	79.35	36	P		P	21 57 02.3	+0.1
	baz=316							
D30A	Buchanan	79.36	37	P		P	21 57 02.3	0.0
	baz=316							
J25A	Sunshine Ranch	79.40	42	P		P	21 57 02.9	+0.1
	baz=313							
DRGR		79.44	322	⇑*i*P		P	21 57 03.1	+0.2
H27A	Howes	79.45	41	P		P	21 57 03.4	+0.5
	baz=314,SNR=11							
B32A	Ashes, Strandq	79.46	35	P		P	21 57 02.2	-0.6
	baz=317,SNR=7.9							
I26A	New Underwood	79.46	42	P		P	21 57 03.8	+0.7
	baz=314							
ARR	Arges	79.50	320	⇑*i*P		P	21 57 04.3	+1.1
GLA	Glamis	79.57	56	P		P	21 57 05.0	+1.2
	baz=309,SNR=6.2							
GLA	Glamis	79.57	56	*e*P		P	21 57 05.0	+1.2
GLA					pmax	pmax		
	comp=Z,20nm,0.8s							
GLA	Glamis	79.57	56	*e*P		P	21 57 05.0	+1.2
	comp=Z,20nm,0.8s							
A33A	Warroad	79.58	34	P		P	21 57 02.8	-0.6
	baz=318,SNR=5.1							
MORC	Moravsky Berou	79.61	327	⇑*i*P		P	21 57 03.9	+0.2
MORC	Moravsky Berou	79.61	327	*e*P		P	21 57 04.1	+0.4
MORC					pmax	pmax		
	comp=Z,50nm,0.9s							
MORC	Moravsky Berou	79.61	327	*e*P		P	21 57 04.1	+0.4
	comp=Z,50nm,0.9s							
DPC	Dobruska-Polom	79.70	328	*e*P		P	21 57 04.8	+0.7
DPC	Dobruska-Polom	79.70	328	*e*P		P	21 57 04.0	-0.1
UPC	Upice	79.70	328	*e*P		P	21 57 04.6	+0.5
UPC	Upice	79.70	328	*e*P		P	21 57 04.6	+0.5
KRLC	Kraliky	79.71	328	*e*P		P	21 57 04.5	+0.3
KRLC	Kraliky	79.71	328	*e*P		P	21 57 04.5	+0.3
E30A	Jud	79.72	38	P		P	21 57 04.7	+0.4
	baz=316							
G28A	Pade	79.74	40	P		P	21 57 04.9	+0.5
	baz=315							
F29A	Eureka	79.74	39	P		P	21 57 04.7	+0.2
	baz=315							
AGMN	Agassiz Nation	79.84	35	P		P	21 57 04.6	-0.3
	baz=318							
AGMN	Agassiz Nation	79.84	35	*e*P		P	21 57 04.8	0.0
	comp=Z,11nm,0.9s							
J26A	Sides Ranch, S	79.84	42	P		P	21 57 05.7	+0.6
	baz=314							
I27A	Quinn	79.86	41	P		P	21 57 05.7	+0.5
	baz=314,SNR=5.1							
LOT	Lotru	79.88	321	⇑*i*P		P	21 57 05.4	+0.1
D31A	Mcclaflin, Tow	79.89	37	P		P	21 57 05.3	+0.1
	baz=316							
N23A	Red Feather La	79.92	45	P		P	21 57 07.1	+1.3
	baz=312,SNR=11							
N23A	Red Feather La	79.92	45	*e*P		P	21 57 07.1	+1.3
	comp=Z,26nm,1.0s							
PSZ	Piszkesteto	79.95	325	⇑*i*P		P	21 57 06.2	+0.7
PSZ	Piszkesteto	79.95	325	*e*P		P	21 57 06.3	+0.7
PSZ					pmax	pmax		
	comp=Z,73nm,2.0s							
PSZ	Piszkesteto	79.95	325	*e*P		P	21 57 06.3	+0.7
	comp=Z,72nm,2.0s							
H28A	Mission Ridge	79.96	40	P		P	21 57 06.0	+0.3
	baz=315,SNR=8.7							
B33A	Robert and Kas	79.98	35	P		P	21 57 05.3	-0.3
	baz=318							
VYHS	Vyhne	80.00	325	*e*P		P	21 57 06.2	+0.4
E31A	Nome	80.17	37	P		P	21 57 06.7	0.0
	baz=316							
WUAZ	Wupatki	80.22	52	P		P	21 57 08.7	+1.3
	baz=310,SNR=16							
WUAZ	Wupatki	80.22	52	*e*P		P	21 57 08.9	+1.4
	comp=Z,24nm,0.9s							
B34A	Aery, Baudette	80.24	34	P		P	21 57 06.7	-0.4
	baz=318							
BRG	Berggiesshubel	80.27	330	*e*P		P	21 57 07.1	0.0
	comp=Z,11nm,1.0s							
	comp=N,564nm,11.9s							
	comp=E,399nm,14.0s							
	comp=Z,1μm,15.1s							
PVCC	Panska Ves	80.28	329	*e*P		P	21 57 07.8	+0.6
PVCC				*ex*		x	21 57 10.5	
PVCC	Panska Ves	80.28	329	*e*P		P	21 57 07.8	+0.6
PVCC				*e*			21 57 10.5	
CLL	Collm	80.30	330	*i*P		P	21 57 07.0	-0.3
	comp=Z,20nm,1.0s							
CLL				*i*			21 57 09.7	
	comp=Z,12nm,0.8s							
CLL				*e*			21 57 29.0	
CLL	Collm	80.30	330	*e*P		P	21 57 07.0	-0.3
CLL					pmax	pmax		
	comp=Z,17nm,0.9s							
CLL	Collm	80.30	330	*e*P		P	21 57 07.0	-0.3
	comp=Z,17nm,0.9s							
I28A	Midland	80.36	41	P		P	21 57 08.4	+0.5
	baz=315,SNR=7.1							
VRAC	Vranov	80.37	327	P		P	21 57 08.2	+0.4
	comp=Z,8.4nm,0.8s,baz=43,slow=4.8,SNR=7.2							
VRAC	Vranov	80.37	327	⇓*i*P		P	21 57 08.6	+0.8
J27A	Elkhorn Farm,	80.45	42	P		P	21 57 09.3	+0.9
	baz=314							
SMCO	Snowmass	80.48	47	*e*P		P	21 57 10.2	+1.2
	comp=Z,8.1nm,0.9s							
F31A	Hecla	80.50	38	P		P	21 57 08.6	+0.1
	baz=316							
G30A	Faulkton	80.58	39	P		P	21 57 09.2	+0.3
	baz=316,SNR=8.8							
SMOL	Smolenice	80.61	326	*e*P		P	21 57 09.7	+0.6
PRA	Prague	80.69	329	*e*P		P	21 57 09.8	+0.4
PRA	Prague	80.69	329	*e*P		P	21 57 09.8	+0.4
PRU	Pruhonice	80.71	329	*e*P		P	21 57 09.8	+0.3
PRU				*ex*		x	21 57 12.9	
PRU				*ep*P		pP	21 57 24.5	-0.6
PRU	Pruhonice	80.71	329	*e*P		P	21 57 09.8	+0.3
PRU				*e*			21 57 24.5	
J28A	Allard Ranch,	80.73	41	P		P	21 57 10.4	+0.5
	baz=315							
B35A	Bob, Littlefor	80.74	34	P		P	21 57 09.6	-0.1
	baz=319							
I29A	Vivian Onida	80.79	40	P		P	21 57 10.3	+0.1
	baz=315							
BZS	Buzias	80.81	322	⇑*i*P		P	21 57 09.9	-0.3
ISCO	Idaho Springs	80.84	46	P		P	21 57 11.9	+1.0
	baz=313,SNR=6.8							
ISCO	Idaho Springs	80.84	46	*e*P		P	21 57 12.4	+1.5
ISCO					pmax	pmax		
	comp=Z,42nm,0.8s							
ISCO	Idaho Springs	80.84	46	*e*P		P	21 57 12.4	+1.5
	comp=Z,42nm,0.8s							
TREC	Trest	80.85	328	*e*P		P	21 57 10.6	+0.2
TREC	Trest	80.85	328	*e*P		P	21 57 10.6	+0.2
MVCO	Mesa Verde	80.88	50	P		P	21 57 12.0	+0.9
	baz=312							
MVCO	Mesa Verde	80.88	50	*e*P		P	21 57 12.4	+1.4
	comp=Z,43nm,1.5s							
X16A	Lo Mia Camp, P	80.88	53	*e*P		P	21 57 12.7	+1.6
	comp=Z,19nm,0.9s							
G31A	Conde	80.97	38	P		P	21 57 11.7	+0.7
	baz=316							
D34A	Park Rapids	81.04	35	P		P	21 57 11.2	-0.2
	baz=318							
E33A	Westby DABS, E	81.09	36	P		P	21 57 11.4	-0.2
	baz=316							
C35A	Jirik Farms, M	81.13	34	P		P	21 57 11.7	-0.2
	baz=319							
ASF	Jabal al Asfar	81.16	304	P		P	21 57 12.7	+0.2
	comp=Z,4.5nm,0.7s,baz=19,slow=4.6,SNR=5.9							
SUSD	Miller	81.17	39	P		P	21 57 12.3	+0.1
	baz=316							
J29A	Okreek	81.21	41	P		P	21 57 12.6	+0.2
	baz=315							
I30A	Oacoma	81.31	40	P		P	21 57 12.9	0.0
	baz=316,SNR=5.6							
MDVR	Moldovita	81.37	321	⇑*i*P		P	21 57 13.0	-0.2
H31A	Wolsey	81.38	39	P		P	21 57 13.4	+0.2
	baz=316							
F33A	5 Mile Ranch,	81.45	37	P		P	21 57 13.3	-0.3
	baz=318							
W18A	Petrified Fore	81.50	52	P		P	21 57 15.7	+1.4
	baz=311							
S22A	4UR Ranch, Cre	81.52	48	P		P	21 57 15.9	+1.4
	baz=312,SNR=9.6							
S22A	4UR Ranch, Cre	81.52	48	*e*P		P	21 57 16.0	+1.5
	comp=Z,11nm,1.0s							
D35A	Remer	81.56	35	P		P	21 57 13.7	-0.4
	baz=319							
214A	Organ Pipe Nat	81.58	56	P		P	21 57 15.5	+1.0
	baz=310,SNR=7.0							
C36A	Pine Crest Far	81.59	34	P		P	21 57 14.1	-0.2
	baz=320							
MMAI	Mount Meron Ar	81.59	305	P		P	21 57 15.0	+0.4
	comp=Z,7.5nm,0.7s,baz=46,slow=6.0,SNR=12							
CSS	Mathiatis	81.64	308	*e*P		P	21 57 14.4	-0.4
	comp=Z,2.5nm,0.7s							
Q24A	Divide	81.67	46	P		P	21 57 15.8	+0.6
	baz=313,SNR=5.3							
Q24A	Divide	81.67	46	*e*P		P	21 57 16.5	+1.2
	comp=Z,18nm,1.1s							
J30A	Dallas	81.70	40	P		P	21 57 15.3	+0.3
	baz=316,SNR=5.8							
CONA	Conrad Observa	81.74	327	*i* P		P	21 57 15.9	+0.8
	comp=Z,9.3nm,0.8s							
X18A	Snowflake	81.75	52	*e*P		P	21 57 16.9	+1.4
	comp=Z,11nm,0.6s							
KHC	Kasperske Hory	81.77	329	*e*P		P	21 57 15.5	+0.2
KHC				*e*PCP		PcP	21 57 18.6	-2.3
KHC				*ep*P		pP	21 57 31.2	+0.4
KHC	Kasperske Hory	81.77	329	*e*P		P	21 57 15.5	+0.2
KHC				*e*			21 57 31.2	
KHC	Kasperske Hory	81.77	329	*e*P		P	21 57 15.4	+0.2
	comp=Z,6.5nm,1.0s							
PKSM	Moragy	81.79	324	⇓*i*P		P	21 57 15.1	-0.2
E35A	Pequot Lakes	81.79	35	P		P	21 57 15.2	-0.2
	baz=319							
G33A	Ortonville	81.85	37	P		P	21 57 15.8	+0.1
	baz=318,SNR=6.2							
D36A	Goodland	81.89	34	P		P	21 57 15.6	-0.2
	baz=320							
C37A	Embarrass	81.90	33	P		P	21 57 15.8	-0.1
	baz=320							
GEC2	GERESS Array S	81.94	328	*e*P		P	21 57 16.4	+0.1
GEC2					pmax	pmax		
	comp=Z,10.0nm,1.1s							
GEC2	GERESS Array S	81.94	328	*e*P		P	21 57 16.4	+0.1
	comp=Z,9.6nm,1.1s							
GERES	GERESS Array B	81.94	328	P		P	21 57 16.0

comp=Z,17nm,0.8s
L31A **Butterfield Fa** 82.86 41 P P 21 57 21.2 +0.1
baz=316
I34A **Hadley** 82.98 38 P P 21 57 21.8 +0.2
baz=318
H35A **Sunnyside Ranc** 82.99 37 P P 21 57 21.9 +0.3
baz=319,SNR=15
GROS **Grobnik** 83.02 326 *i* PP P 21 57 21.4 -0.4
SOKA **Soboth** 83.06 326 *i* P P 21 57 22.1 0.0
comp=Z,15nm,1.0s,SNR=7.2
KSCO **Kaye Shedlock'** 83.07 45 P P 21 57 22.7 +0.4
baz=314
KSCO **Kaye Shedlock'** 83.07 45 *e*P P 21 57 23.2 +0.9
comp=Z,26nm,1.3s
G36A **St. Michael** 83.09 36 P P 21 57 21.8 -0.4
baz=319
GOLS **Golise** 83.31 326 *i* PP P 21 57 23.0 -0.3
T25A **Trinidad** 83.34 47 P P 21 57 24.9 +1.0
baz=314,SNR=10
T25A **Trinidad** 83.34 47 *e*P P 21 57 24.9 +1.0
comp=Z,16nm,0.8s
L32A **Elgin** 83.41 40 P P 21 57 24.2 +0.3
baz=317
MEM **Membach** 83.47 333 P P 21 57 24.0 +0.1
comp=Z,7.2nm,0.9s
H36A **Jessenland, He** 83.50 36 P P 21 57 25.1 +0.9
baz=319,SNR=8.2
SPMN **Marine on St.** 83.53 35 P P 21 57 24.4 0.0
baz=320
SPMN **Marine on St.** 83.53 35 *e*P P 21 57 24.7 +0.3
comp=Z,12nm,0.9s
I35A **Creekview Farm** 83.54 38 P P 21 57 24.8 +0.3
baz=319
LAZ **Ladron** 83.57 51 *e*P P 21 57 26.9 +1.8
ANMO **Albuquerque** 83.62 50 P P 21 57 26.7 +1.4
baz=313
ANMO **Albuquerque** 83.62 50 *c e*P P 21 57 27.0 +1.7
ANMO pmax pmax
comp=Z,22nm,1.2s
ANMO **Albuquerque** 83.62 50 *e*P P 21 57 26.2 +0.9
comp=Z,16nm,1.0s
BGNE **Belgrade** 83.77 41 P P 21 57 26.0 +0.2
baz=317
N31A **Bailey Ranch,** 83.77 42 P P 21 57 25.7 -0.1
baz=316
K34A **Le Mars** 83.87 39 P P 21 57 26.5 +0.3
baz=318
BCLA **Clavier** 83.88 334 P P 21 57 25.6 -0.4
LPM **Los Pinos Moun** 83.94 51 *e*P P 21 57 28.1 +1.2
H37A **Dierke Farm, C** 83.97 36 P P 21 57 26.7 0.0
baz=320,SNR=5.4
BNM **Barren Site** 84.05 51 *e*P P 21 57 28.8 +1.2
M33A **Taylor Creek F** 84.14 40 P P 21 57 27.4 -0.2
baz=317
N32A **Stulken Farm,** 84.16 41 P P 21 57 27.5 -0.3
baz=317
I37A **Lemond, Waseca** 84.18 37 P P 21 57 28.2 +0.5
baz=320,SNR=16
SCHQ **Schefferville** 84.18 16 P P 21 57 27.5 -0.1
comp=Z,11nm,0.7s,baz=350,slow=6.0,SNR=7.9
SCHQ **Schefferville** 84.18 16 *e*P P 21 57 27.5 -0.1
comp=Z,15nm,0.8s
MOTA **Moosalm** 84.20 329 *i* PcP P 21 57 29.0 +1.0
comp=Z,8.5nm,0.8s,SNR=6.3
WLF **Walferdange** 84.20 333 P P 21 57 28.9 +1.2
RETA **Reutte** 84.22 329 *i* P P 21 57 28.1 +0.1
comp=Z,15nm,0.9s,SNR=7.6
319A **Douglas** 84.24 54 *e*P P 21 57 30.0 +1.5
comp=Z,36nm,1.0s
J36A **Seneca 1, Swea** 84.25 38 P P 21 57 28.0 -0.1
baz=319
L34A **Svendsen Farm,** 84.26 40 P P 21 57 28.3 0.0
baz=318
PDG **Podgorica** 84.31 321 ⇑ *i* P P 21 57 28.2 -0.2
DOU **Dourbes** 84.39 334 P P 21 57 29.0 +0.3
121A **Cookes Peak, D** 84.42 53 P P 21 57 30.8 +1.4
baz=312,SNR=11
BFO **Black Forest** 84.50 331 *i* P P 21 57 29.5 +0.2
BFO **Black Forest** 84.50 331 *e*P P 21 57 29.0 -0.3
comp=Z,18nm,0.9s
M34A **Aspy Farms, Fr** 84.50 40 P P 21 57 29.0 -0.5
baz=318
FETA **Feichten** 84.61 329 *i* P P 21 57 30.0 -0.1
comp=Z,12nm,1.0s,SNR=5.8
J37A **Redenius Farm,** 84.64 37 P P 21 57 30.0 -0.1
baz=320
I38A **Scanlan Farm,** 84.66 36 P P 21 57 29.9 -0.3
baz=320,SNR=6.9
K36A **Gilmore City** 84.71 38 P P 21 57 30.4 -0.1
baz=319
DAVA **Damuels** 84.74 329 *i* PcP P 21 57 31.0 +0.2
comp=Z,22nm,0.9s,SNR=6.7
CBKS **Cedar Bluff** 84.80 44 P P 21 57 30.8 -0.2
baz=316
P32A **Huiting Farm,** 84.83 42 P P 21 57 30.7 -0.4
baz=317
M35A **Neola** 84.98 40 P P 21 57 32.2 +0.4
baz=318
K37A **Belmond** 85.01 38 P P 21 57 31.9 0.0
baz=320,SNR=8.2
L36A **Harm Buss Farm** 85.01 39 P P 21 57 31.9 -0.1
baz=319
N34A **Lincoln** 85.03 40 P P 21 57 32.3 +0.2
baz=318
FUORN **Ofenpass-Fuorn** 85.12 329 *e*P P 21 57 33.2 +0.4
comp=Z,26nm,0.8s
J38A **Wedel Dairy, R** 85.14 37 P P 21 57 32.4 -0.2
baz=320
DAVOX **Davos/Dischmat** 85.15 329 P P 21 57 32.5 -0.3
comp=Z,7.9nm,0.8s,baz=77,slow=4.9,SNR=9.2
Q32A **Meitler Ranch,** 85.31 43 P P 21 57 33.1 -0.4
baz=317
O34A **Beatrice** 85.42 41 P P 21 57 33.1 -0.9
baz=318
M36A **Felix, Anita** 85.43 39 P P 21 57 34.0 -0.1
baz=319
L37A **Phoenix Point,** 85.44 38 P P 21 57 34.0 -0.1
baz=320
N35A **Tabor** 85.45 40 P P 21 57 34.5 +0.3
baz=318,SNR=6.0
TUE **Stuetta** 85.61 329 *e*P P 21 57 35.1 -0.1
comp=Z,10.0nm,1.0s
Q33A **Connelly Farm,** 85.69 42 P P 21 57 35.3 -0.1
baz=317,SNR=5.4
O35A **Humboldt** 85.76 40 P P 21 57 35.7 -0.1
baz=318
L38A **Oak Wood Farm,** 85.81 38 P P 21 57 36.1 +0.1
baz=320
P34A **Walnut Farm, R** 85.82 41 P P 21 57 35.7 -0.3
baz=318,SNR=7.5
N36A **Muff Farm, Cla** 85.83 40 P P 21 57 36.2 +0.1
baz=319
S32A **Newby Ranch, P** 86.04 44 P P 21 57 37.4 +0.2
baz=317
R33A **Olander Ranch,** 86.11 43 P P 21 57 37.3 -0.3
baz=317
Q34A **Chapman** 86.22 42 P P 21 57 38.3 +0.2
baz=318
LAST **Lasithi** 86.22 313 ⇑ *i* P P 21 57 38.5 +0.3
M38A **Pleasantville** 86.25 38 P P 21 57 38.3 +0.1
baz=320,SNR=6.6
N37A **Lee Faris, Mou** 86.25 39 P P 21 57 38.7 +0.5
baz=319,SNR=6.4
KSU1 **Kansas State U** 86.26 42 P P 21 57 38.1 -0.2
baz=318
KSU1 **Kansas State U** 86.26 42 *e*P P 21 57 38.5 +0.3
comp=Z,31nm,0.8s
O36A **Bolckow** 86.34 40 P P 21 57 38.8 +0.2
baz=319,SNR=6.5
IDI **Anoyia** 86.48 313 P P 21 57 37.8 -1.6
comp=Z,6.7nm,0.5s,baz=28,slow=9.4
IDI **Anoyia** 86.48 313 *e*P P 21 57 37.8 -1.6
comp=Z,166nm,2.0s
MNTX **Cornudas Mount** 86.48 52 P P 21 57 39.9 +0.4
baz=314,SNR=7.9
MNTX **Cornudas Mount** 86.48 52 *e*P P 21 57 40.5 +1.0
comp=Z,7.5nm,0.8s
JFWS **Jewell Farm** 86.49 35 *e*P P 21 57 39.5 +0.2
JFWS pmax pmax
comp=Z,15nm,0.9s
JFWS **Jewell Farm** 86.49 35 *e*P P 21 57 39.5 +0.2
comp=Z,15nm,0.9s
AMTX **Amarillo** 86.50 47 P P 21 57 40.7 +1.1
baz=315
AMTX **Amarillo** 86.50 47 *e*P P 21 57 40.6 +1.0
comp=Z,32nm,1.0s
MSTX **Muleshoe** 86.50 49 P P 21 57 40.3 +0.7
baz=315
MSTX **Muleshoe** 86.50 49 *e*P P 21 57 40.4 +0.7
comp=Z,11nm,1.0s
R34A **Isabella, Hill** 86.51 43 P P 21 57 40.2 +0.7
baz=318
SENIN **Lac Senin/Sane** 86.52 330 *e*P P 21 57 39.4 -0.3
comp=Z,5.7nm,0.8s
P36A **Good Intent, A** 86.60 40 P P 21 57 39.8 -0.1
baz=319,SNR=8.6
S33A **Kaszmaul Farm,** 86.62 43 P P 21 57 40.1 0.0
baz=317
N38A **Joes South For** 86.70 39 P P 21 57 40.5 +0.1
baz=320
O37A **Wolven Farm, M** 86.73 40 P P 21 57 40.8 +0.3
baz=319,SNR=7.7
Q36A **Arnold C. Orve** 86.96 41 P P 21 57 41.7 0.0
baz=319
N39A **Derby Farms, D** 87.00 38 P P 21 57 42.0 +0.1
baz=320,SNR=6.6
S34A **Willow Spring** 87.03 43 P P 21 57 42.1 +0.1
baz=318
R35A **Emporia Munici** 87.05 42 P P 21 57 42.7 +0.6
baz=318,SNR=7.1
P37A **Lathrop** 87.06 40 P P 21 57 42.3 +0.2
baz=319,SNR=8.0
O38A **Galt** 87.10 39 P P 21 57 42.6 +0.3
baz=320
U33A **Lingo Farm, Me** 87.41 44 P P 21 57 44.2 +0.3
baz=317
V32A **Arapaho** 87.41 45 P P 21 57 44.5 +0.5
baz=317
R36A **Gordon, Harris** 87.42 42 P P 21 57 44.1 +0.2
baz=319,SNR=7.8
P38A **Dawn** 87.44 40 P P 21 57 44.2 +0.2
baz=320,SNR=12
O39A **Kirksville** 87.46 39 P P 21 57 43.9 -0.1
baz=320
S35A **Otter Creek Ra** 87.46 42 P P 21 57 44.7 +0.5
baz=318,SNR=7.5
T34A **McClaskey Farm** 87.48 43 P P 21 57 44.8 +0.6
baz=318
Q37A **Longview Farm,** 87.55 41 P P 21 57 44.3 -0.2
baz=319
U34A **Anderson Ranch** 87.72 44 P P 21 57 46.0 +0.6
baz=318
U34A **Anderson Ranch** 87.72 44 *e*P P 21 57 46.5 +1.1
comp=Z,65nm,1.5s
W32A **Sentinel** 87.72 46 P P 21 57 46.1 +0.7
baz=317,SNR=5.3
V33A **Lossen Ranch,** 87.76 45 P P 21 57 45.6 +0.1
baz=317
R37A **Teagarden Farm** 87.77 41 P P 21 57 45.1 -0.5
baz=319
S36A **Lake Cedric, C** 87.82 42 P P 21 57 45.8 0.0
baz=319,SNR=5.3
O40A **La Belle** 87.89 38 P P 21 57 46.5 +0.4
baz=321,SNR=11
Q38A **Cooks Store, C** 87.91 40 P P 21 57 46.2 0.0
baz=320,SNR=7.0
T35A **Sooner Cattle** 87.93 43 P P 21 57 47.1 +0.7
baz=318
W33A **Caddo, Fort Co** 88.14 45 P P 21 57 47.7 +0.3
baz=317
T36A **Boggs Farm, Ca** 88.16 43 P P 21 57 47.8 +0.4
baz=318,SNR=5.1
Q39A **Willow Grove F** 88.17 40 P P 21 57 47.8 +0.4
baz=320,SNR=5.4
V34A **Guthrie** 88.17 44 P P 21 57 47.7 +0.1
baz=318
V34A **Guthrie** 88.17 44 *e*P P 21 57 48.3 +0.8
comp=Z,19nm,0.9s
S37A **Fort Scott** 88.19 41 P P 21 57 47.5 -0.1
baz=319,SNR=9.6
U35A **Pawnee** 88.21 44 P P 21 57 47.9 +0.2
baz=318
X32A **Elmer** 88.21 46 P P 21 57 47.8 +0.1
baz=317
P40A **Paris** 88.26 39 P P 21 57 48.2 +0.4
baz=321,SNR=11
WMOK **Wichita Mounta** 88.27 46 *e*P P 21 57 49.0 +1.0
WMOK pmax pmax
comp=Z,11nm,0.9s
WMOK **Wichita Mounta** 88.27 46 *e*P P 21 57 49.0 +1.0
comp=Z,11nm,0.9s
R38A **Fenwick Farm,** 88.35 41 P P 21 57 47.5 -0.8
baz=320
W34A **Bridge Creek,** 88.47 45 P P 21 57 49.4 +0.4
baz=317
X33A **Lawton** 88.57 46 P P 21 57 49.1 -0.3
baz=317
T37A **Cheneyville 18** 88.62 42 P P 21 57 49.8 +0.2
baz=319,SNR=5.4
Q40A **Laux Farm, Aux** 88.66 39 P P 21 57 49.9 +0.2
baz=321,SNR=6.7
R39A **Chumby, Stover** 88.69 40 P P 21 57 49.9 -0.1
baz=320,SNR=6.8
U36A **Oologah** 88.73 43 P P 21 57 50.3 +0.2
baz=318
S38A **Stockton** 88.77 41 P P 21 57 49.9 -0.4
baz=320
HDIL **Hopedale** 88.78 36 P P 21 57 50.6 +0.3
baz=322,SNR=5.2
HDIL **Hopedale** 88.78 36 *e*P P 21 57 50.9 +0.6
comp=Z,37nm,0.8s
Y33A **Hilltop Ranch,** 88.89 46 P P 21 57 50.9 -0.1
baz=317
X34A **Smith Ranch, M** 88.90 45 P P 21 57 51.8 +0.8
baz=317
T38A **Diamond** 89.02 42 P P 21 57 51.6 +0.1
baz=319,SNR=11
S39A **Bolivar** 89.02 41 P P 21 57 50.9 -0.6
baz=320,SNR=6.6
W35A **Tecumseh** 89.03 44 P P 21 57 51.6 +0.1
baz=318
U37A **Salina** 89.05 43 P P 21 57 52.4 +0.7
baz=319
TUL1 **Leonard** 89.06 43 P P 21 57 52.1 +0.4
baz=318
V36A **Jenks** 89.07 43 P P 21 57 51.9 +0.2
baz=318
R40A **Maddies Statio** 89.10 40 P P 21 57 52.0 +0.2
baz=320,SNR=7.0
TX31 **Lajitas Ar. Si** 89.18 53 *e*P P 21 57 53.4 +0.8
LTX **Lajitas** 89.18 53 *e*P P 21 57 53.2 +0.7
LTX **Lajitas** 89.18 53 *e*P P 21 57 53.2 +0.7
TXAR **Lajitas Array** 89.18 53 P P 21 57 53.2 +0.7
comp=Z,12nm,0.6s,baz=300,slow=3.3,SNR=52
ABTX **Abilene, Hawle** 89.30 48 P P 21 57 53.2 +0.3
baz=316
ABTX **Abilene, Hawle** 89.30 48 *e*P P 21 57 54.0 +1.0
comp=Z,24nm,1.1s
Z33A **Whitaker Ranch** 89.33 47 P P 21 57 52.9 -0.2
baz=317
W36A **Wetumka** 89.40 44 P P 21 57 53.4 +0.1
baz=318
Y34A **Reagan Ranch,** 89.42 46 P P 21 57 53.4 -0.1
baz=317
U38A **Gravette** 89.42 42 P P 21 57 53.4 0.0
baz=319
V37A **Hulbert** 89.43 43 P P 21 57 53.9 +0.4
baz=319
T39A **Clever** 89.50 41 P P 21 57 53.6 -0.1
baz=320
S40A **Lebanon** 89.51 40 P P 21 57 53.6 -0.3
baz=320
X35A **Drake** 89.53 45 P P 21 57 53.9 -0.1
baz=318
HPIG 89.56 56 *e*P P 21 57 55.5 +1.0
comp=Z,9.2nm,0.7s
133A **Hamilton Ranch** 89.73 47 P P 21 57 55.0 +0.1
baz=317
X36A **Centrahoma** 89.75 45 P P 21 57 55.2 +0.3
baz=318,SNR=7.3
Z34A **Collier Ranch,** 89.75 46 P P 21 57 55.1 +0.1
baz=317
HHAR **Hobbs** 89.77 42 *e*P P 21 57 55.4 +0.4
comp=Z,13nm,1.0s
W37B **Quinton** 89.83 44 P P 21 57 55.9 +0.6
baz=319
V38A **Canehill** 89.84 42 P P 21 57 55.4 +0.1
baz=319,SNR=6.9
T40A **Mansfield** 89.85 40 P P 21 57 55.1 -0.3
baz=320,SNR=7.5
Y35A **Marietta** 89.86 45 P P 21 57 55.5 +0.1
baz=318
SFIN **Lafayette** 89.93 35 P P 21 57 55.7 0.0
baz=324,SNR=6.5
SFIN **Lafayette** 89.93 35 *e*P P 21 57 56.5 +0.8
comp=Z,18nm,0.7s
U39A **Green Forest** 89.94 42 P P 21 57 55.4 -0.4
baz=320
Z35A **Perchaven, San** 90.16 46 P P 21 57 57.1 +0.2
baz=318,SNR=8.0
233A **Rising Star** 90.17 48 P P 21 57 57.4 +0.4
baz=317,SNR=5.5
134A **White-Moore Ra** 90.24 47 P P 21 57 57.8 +0.5
baz=317
V39A **Pettigrew** 90.26 42 P P 21 57 57.3 -0.1
baz=320
X37A **Clayton** 90.28 44 P P 21 57 57.8 +0.4
baz=319
U40A **Yellville** 90.28 41 P P 21 57 57.5 0.0
baz=320,SNR=8.7
W38A **Poteau** 90.38 43 P P 21 57 58.2 +0.3
baz=319
X38A **Whitesboro** 90.51 44 P P 21 57 58.5 0.0
baz=319
333A **Richland Sprin** 90.62 48 P P 21 57 59.6 +0.5
baz=317
234A **Clairette** 90.62 47 P P 21 57 59.4 +0.3
baz=317,SNR=6.3
135A **Vickery Place,** 90.64 47 P P 21 57 59.3 +0.2
baz=318
Z36A **Blue Ridge** 90.67 45 P P 21 57 59.4 +0.2
baz=318
W39A **Magazine** 90.67 43 P P 21 57 59.0 -0.2
baz=320
V40A **Witts Springs** 90.72 42 P P 21 57 59.3 -0.2
baz=320
JCT **Junction City** 90.74 49 P P 21 57 59.8 +0.1
baz=316
JCT **Junction City** 90.74 49 *e*P P 21 58 00.5 +0.8
JCT pmax pmax
comp=Z,14nm,0.6s
JCT **Junction City** 90.74 49 *e*P P 21 58 00.5 +0.8
comp=Z,14nm,0.6s
OLIL **Olney** 90.78 37 *e*P P 21 58 00.7 +1.0
comp=Z,29nm,0.9s
433A **Art** 90.97 49 P P 21 58 01.1 +0.3
baz=317
X39A **Fountain Ranch** 91.02 43 P P 21 58 01.3 +0.4
baz=319,SNR=5.8
WHTX **Lake Whitney,** 91.03 47 P P 21 58 01.6 +0.6
baz=318
334A **Lometa** 91.05 48 P P 21 58 01.6 +0.5
baz=317,SNR=16
SIUC **Southern Illin** 91.06 38 *e*P P 21 58 01.9 +1.0
comp=Z,26nm,0.8s
W40A **Ferguson Farm,** 91.06 42 P P 21 58 01.1 0.0
baz=320
Y38A **Idabel** 91.12 44 P P 21 58 01.1 -0.2
baz=319
PBMO **Poplar Bluff** 91.19 39 *e*P P 21 58 01.9 +0.3
comp=Z,16nm,0.9s
MIAR **Mount Ida** 91.28 43 P P 21 58 02.5 +0.4
baz=320,SNR=7.2
X301 **Greenbrier Sit** 91.37 42 *e*P P 21 58 03.5 +1.0
comp=Z,11nm,1.0s
WHAR **Wooly Hollow** 91.39 42 *e*P P 21 58 03.0 +0.4
comp=Z,21nm,0.8s
434A **Burnet** 91.41 48 P P 21 58 02.9 +0.1
baz=317,SNR=7.0
PQI **Presque Isle** 91.43 20 *e*P P 21 58 04.4 +1.9
comp=Z,611nm,1.2s
Y39A **Lockesburg** 91.46 44 P P 21 58 03.0 0.0
baz=319
533A **Kerrville** 91.50 49 P P 21 58 03.1 -0.1
baz=317
W41A **Tony Mavity, V** 91.50 42 P P 21 58 03.1 0.0
baz=320
W41B **Gary Mavity, V** 91.50 42 P P 21 58 03.1 0.0
baz=320
X40A **Basin Creek Fa** 91.72 42 P P 21 58 04.3 +0.1
baz=320
435B **Jarrell** 91.84 48 P P 21 58 05.3 +0.5
baz=318
633A **Saathoff Ranch** 91.85 50 P P 21 58 05.4 +0.5
baz=317
534A **Blanco** 91.86 49 P P 21 58 05.3 +0.4
baz=317,SNR=9.2
M54A **Oil Creek Stat** 92.15 30 P P 21 58 06.2 +0.2
baz=329
733A **Divot King Ran** 92.32 50 P P 21 58 07.7 +0.7
baz=316
Z40A **Long Farm, Mag** 92.35 44 P P 21 58 07.7 +0.7
baz=320
N54A **Moraine State** 92.48 30 P P 21 58 07.7 +0.1
baz=328
536A **Bastrop** 92.66 48 P P 21 58 08.9 +0.4
baz=318
636A **Smothers Creek** 93.10 48 P P 21 58 11.4 +0.9
baz=318
933A **Laredo** 93.12 51 P P 21 58 11.7 +1.0
baz=316
Y43A **Makayla and Ka** 93.17 42 P P 21 58 10.8 0.0
baz=321
O56A **Blue Knob Stat** 93.64 30 P P 21 58 13.2 +0.3
baz=329
034A **Hebbronville** 93.88 51 P P 21 58 15.7 +1.5
baz=317
N59A **State Game Lan** 94.14 28 P P 21 58 15.6 +0.4
baz=331
Y46A **Houston** 94.26 40 P P 21 58 16.0 +0.1
baz=322
035Z **Hargill** 94.70 51 P P 21 58 19.4 +1.5
baz=317
TKL **Tuckaleechee C** 95.29 36 P P 21 58 20.6 +0.1
comp=Z,11nm,0.7s,baz=292,slow=2.4,SNR=8.8
TKL **Tuckaleechee C** 95.29 36 *e*P P 21 58 20.6 +0.1
comp=Z,12nm,0.8s
ES19 **SONSECA Array** 96.39 334 *e*P P 21 58 25.2 -0.3
ESDC **Sonseca Array** 96.44 334 P P 21 58 24.8 -1.0
comp=Z,0.6nm,0.7s,baz=20,slow=4.4,SNR=4.9
TOA1 **Torodi Ar. Sit** 116.78 316 *e*PKPdf PKPdf 22 03 39.9 -1.3
TORD **Torodi Ar. Bea** 116.78 316 PKP PKPdf 22 03 39.9 -1.3
comp=Z,0.9nm,0.5s,baz=31,slow=2.5,SNR=16
SDV **Santo Domingo** 124.26 40 *e*PKPdf PKPdf 22 03 55.7 -0.1
DBIC **Dimbokro** 125.70 318 PKP PKPdf 22 03 57.3 -1.1
comp=Z,3.1nm,0.6s,baz=93,slow=0.9,SNR=8.5
BOSA **Boshof** 127.10 260 PKP PKPdf 22 03 59.8 -0.9
comp=Z,1.7nm,0.5s,baz=151,slow=2.2,SNR=5.6
BOSA **Boshof** 127.10 260 PKIKP PKPdf 22 03 59.8 -0.9
BOSA pmax pmax
comp=Z,4.0nm,0.7s
QSPA **South Pole Qui** 127.88 180 *e*PKPdf PKPdf 22 04 00.9 -0.1
PTGA **Pitinga** 137.72 33 PKP PKPdf 22 04 19.9 -1.2
comp=Z,2.6nm,0.6s,baz=339,slow=4.8,SNR=4.3
SNAA **Sanae** 141.90 197 P PKPdf 22 04 24.5 -2.5
SAML **Samuel** 143.22 44 *e*PKPpre PKPpre 22 04 28.1
VNA2 **Neumayer--Watz** 143.47 196 P PKPbc 22 04 27.1 0.0
baz=95,slow=2.1
VNA3 **Neumayer Olymp** 143.72 195 P PKPbc 22 04 27.6 -0.3
VNA1 **Neumayer--Stat** 143.87 196 P PKPbc 22 04 28.3 +0.1
LPAZ **La Paz** 145.84 59 PKPbc PKPbc 22 04 36.8 0.0
comp=Z,27nm,0.5s,baz=350,slow=2.9,SNR=60
PB11 **IPOC Station P** 147.14 65 *e*PKPdf PKPdf 22 04 38.2 +0.5
PB01 **IPOC Station P** 148.08 67 *e*PKPdf PKPdf 22 04 40.1 +0.9
LVC **Limon Verde** 149.47 68 *e*PKPbc PKPbc 22 04 47.0 +0.8
LCO **Las Campanas** 151.53 81 *e*PKPbc PKPbc 22 04 51.3 +0.4
CPUP **Villa Florida** 160.01 59 PKPab PKPab 22 05 35.5 0.0
comp=Z,2.1nm,0.6s,baz=320,slow=4.9,SNR=5.4

NIED ***27*** *22:00:00, 32˚.70N× 132˚.20E, h32km, Mw4.0 Best double couple: M0 1.03000× 10^15 NP1:ϕs345.00000°, δ34.00000°, λ-102.00000°. NP2:ϕs180.00000°, δ57.00000°, λ-82.00000°.*

ISCJB ***27*** *22:00:18.5±0.4, 32˚.73N±0˚.05× 132˚.10E±0˚.04, h50km±4km, mb3.7/10, MS3.5/1, Error ellipse: s-maj=8.4km s-min=4.9km az=155.3*

JMA ***27*** *22:00:19.1, 32˚.69N× 132˚.14E, h37km±1km, M3.9 Broadband fault plane solution: P waves. NP1: ϕs170.00000°, δ50.00000°, λ-80.00000°. NP2: ϕs335.00000°, δ41.00000°, λ-102.00000°. Principal axes: T Plg5.0000°, Azm253.0000°; N Plg8.0000°, Azm344.0000°; P Plg81.0000°, Azm132.0000°;*

JMA Felt II J1.

IDC ***27*** *22:00:19.5±0.8, 32˚.65N× 131˚.96E, h41km±7km, mb3.5/10, mb1 3.7/12, mb1mx3.5/49, mbtmp3.7/12, ML3.5/2, MS3.6/1, Ms1 3.6/1, ms1mx2.8/27 Error ellipse: s-maj=20.5km s-min=13.1km az=62.0*

ISC 27 22:00:18.9±0.8, 32.71N±0˚.05× 132˚.13E±0˚.03, h37km±1km, n22, σ1§21/35, mb3.8/10, 7C-1D, Shikoku

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JUS	**Usuki**	**0.48**	**318**	⇓P	**Pn**	**22 00 29.5**	**+0.3**
JUS				S	**Sn**	**22 00 37.2**	**+0.8**
JKIT	**Kitakata**	**0.58**	**262**	⇑P	**Pn**	**22 00 30.8**	**0.0**
JKIT				S	**Sn**	**22 00 38.8**	**-0.2**
JTO	**Tosashimizu**	**0.58**	**75**	⇑P	**Pn**	**22 00 30.7**	**-0.2**
JTO				S	**Sn**	**22 00 39.1**	**-0.1**
UWA2	**Uwa jima 2**	**0.65**	**39**	⇑P	**Pn**	**22 00 31.7**	**-0.1**
UWA2				S	**Sn**	**22 00 41.1**	**+0.3**
JTSN	**Tsuno**	**0.70**	**229**	⇑P	**Pn**	**22 00 32.3**	**-0.1**
JTSN				S	**Sn**	**22 00 42.6**	**+0.6**
JNA	**Nagahama**	**0.89**	**19**	⇑P	**Pn**	**22 00 35.4**	**+0.4**
JNA				S	**Sn**	**22 00 47.3**	**+0.6**
JKU	**Kubokawa**	**0.98**	**52**	⇑P	**Pn**	**22 00 36.3**	**+0.1**
JKU				S	**Sn**	**22 00 49.0**	**+0.1**
JIU2	**Izumi 2**	**1.12**	**262**	⇑P	**Pn**	**22 00 39.4**	**+1.3**
JNU	**Nakatsue**	**1.13**	**292**	P	**Pn**	**22 00 39.2**	**+1.0**
	326nm,0.3s,baz=74,slow=6.9,SNR=2432						
JNU				S	**Sn**	**22 00 50.5**	**-2.0**
	181nm,0.3s,baz=273,slow=19,SNR=14						
KSRS	**Korea Array**	**5.86**	**325**	P	**Pn**	**22 01 45.0**	**+1.9**
	0.6nm,0.3s,baz=148,slow=14,SNR=5.6						
KSRS				S	**Sn**	**22 02 47.7**	**-1.3**
	0.2nm,0.3s,baz=150,slow=28,SNR=2.8						
JHJ	**Hachijo jima 2**	**6.45**	**84**	P	**Pn**	**22 01 54.3**	**+3.0**
	7.1nm,0.3s,baz=270,slow=20,SNR=2.3						
JHJ				S	**Sn**	**22 03 00.9**	**-2.7**
	6.4nm,0.3s,baz=127,slow=20,SNR=2.7						
KLR	**Kul'dur**	**16.51**	**359**	P	**P**	**22 04 11.2**	**+1.5**
	0.3nm,0.3s,baz=167,slow=9.1,SNR=14						
SONM	**Songino Array**	**24.62**	**315**	P	**P**	**22 05 34.7**	**-1.1**
	0.2nm,0.4s,baz=124,slow=7.9,SNR=3.8						
SONM				LR	LR	22 16 23.4	
	comp=Z,137nm,18.4s,baz=191,slow=39						
MKAR	**Makanchi Array**	**40.15**	**305**	P	**P**	**22 07 49.5**	**-1.8**
	0.2nm,0.2s,baz=95,slow=10,SNR=2.2						
MKAR				pP	**pP**	**22 08 01.4**	**-0.5**
	0.2nm,0.3s,baz=90,slow=10,SNR=2.2						
BVAR	**Borovoye Array**	**47.95**	**314**	P	**P**	**22 08 52.0**	**-1.7**
	0.4nm,0.6s,baz=103,slow=11,SNR=5.2						
WRA	**Warramunga Arr**	**52.40**	**177**	P	**P**	**22 09 27.2**	**-0.4**
	1.3nm,0.8s,baz=352,slow=7.8,SNR=6.9						
WRA				pP	**pP**	**22 09 38.3**	**-0.3**
	1.5nm,0.8s,baz=354,slow=8.1,SNR=6.5						
ASAR	**Alice Springs**	**56.09**	**178**	P	**P**	**22 09 54.5**	**+0.1**
	0.7nm,0.7s,baz=11,slow=9.3,SNR=6.8						
ASAR				pP	**pP**	**22 10 06.0**	**+0.5**
	1.1nm,0.8s,baz=6.4,slow=8.0,SNR=7.7						
ILAR	**Eielson Array**	**57.14**	**30**	P	**P**	**22 10 02.5**	**+1.1**
	0.5nm,0.8s,baz=290,slow=8.7,SNR=6.6						
STKA	**Stephens Creek**	**64.86**	**171**	P	**P**	**22 10 54.2**	**+0.1**
	1.4nm,0.7s,baz=336,slow=12,SNR=2.6						
RES	**Resolute Bay**	**68.54**	**12**	P	**P**	**22 11 17.7**	**+0.6**
	1.8nm,0.8s,baz=320,slow=5.5,SNR=7.9						
YKA	**Yellowknife Ar**	**71.23**	**27**	P	**P**	**22 11 34.8**	**+1.0**
	0.7nm,0.8s,baz=304,slow=5.9,SNR=15						
NVAR	**Mina Array Bea**	**83.62**	**48**	P	**P**	**22 12 45.3**	**+1.5**
	0.6nm,0.7s,baz=284,slow=4.2,SNR=4.8						

IDC ***27*** *22:00:38.5±1.5,37.45N×144.00E,h0km,mb3.4/2, mb1 3.7/3,mb1mx3.2/49,mbtmp3.4/3,ML3.3/1,Error ellipse: s-maj=54.1km s-min=29.2km az=126.0*

JMA ***27*** *22:00:45.2±0.1,38.31N×142.16E,h39km±2km,M3.1*

ISC 27 22:00:40.2±1.3,38.19N±0.06×142.4E±0.1,h21km±5km, n13,σ1$03/18,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**0.85**	**288**	P	**Pn**	**22 00 58.0**	**+1.1**
JIO				S	**Sb**	**22 01 06.9**	**-0.4**
OFUJ	**Ofunato**	**1.05**	**328**	P	**Pb**	**22 01 00.9**	**+1.3**
OFUJ				S	**Sb**	**22 01 11.8**	**-1.1**
JMK	**Ichinoseki**	**1.19**	**310**	P	**Pb**	**22 01 02.8**	**+0.9**
JMM	**Marumori**	**1.30**	**256**	P	**Pb**	**22 01 04.7**	**+0.9**
JMM				*e*S	**Sb**	**22 01 19.2**	**-0.8**
JOU	**Okura**	**1.36**	**278**	P	**Pb**	**22 01 06.0**	**+1.0**
JOU				S	**Sn**	**22 01 21.1**	**-0.3**
MIYJ	**Miyakonagasawa**	**1.45**	**343**	P	**Pb**	**22 01 06.9**	**+0.4**
MIYJ				S	**Sn**	**22 01 22.7**	**-0.8**
JFK	**Kawauchi**	**1.45**	**236**	P	**Pb**	**22 01 07.5**	**+1.0**
JOM	**Ohasama**	**1.54**	**327**	P	**Pb**	**22 01 08.5**	**+0.6**
JOM				S	**Sn**	**22 01 25.3**	**-0.3**
JYK	**Kaneyama**	**1.74**	**295**	P	**Pb**	**22 01 11.2**	**-0.3**
JFT	**Otama**	**1.75**	**248**	S	**Sb**	**22 01 32.6**	**-0.6**
MJAR	**Matsushiro Arr**	**3.71**	**245**	Pn	Pb	22 01 50.5	+5.5
	1.3nm,0.3s,baz=80,slow=15,SNR=10						
ILAR	**Eielson Array**	**48.10**	**33**	P	**P**	**22 09 19.0**	**+1.0**
	0.4nm,0.9s,baz=269,slow=7.2,SNR=3.5						
WRA	**Warramunga Arr**	**58.32**	**189**	P	**P**	**22 10 31.6**	**-1.9**
	0.7nm,0.9s,baz=9.1,slow=7.0,SNR=3.8						

JMA 27 22:01:31.0±0.1,39.29N×143.12E,h17km±2km,M3.2,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MIYJ	**Miyakonagasawa**	**1.05**	**286**	P	Pb	22 01 50.3	-0.4
MIYJ				S	Sb	22 02 04.1	0.0
JTH	**Tanohata**	**1.17**	**304**	P	Pn	22 01 52.5	0.0
JTH				S	Sb	22 02 07.8	+0.3
JOM	**Ohasama**	**1.43**	**278**	S	Sb	22 02 14.9	-0.2
JKZ	**Kuzumaki**	**1.55**	**297**	P	Pn	22 01 58.3	+0.5
JKZ				*e*S	Sn	22 02 18.0	+0.5

NIED ***27*** *22:03:00,38.00N×141.70E,h35km,Mw4.0 Best double couple: M0 1.10000×10^15 NP1:φs=149.00000°,δ13.00000°, λ48.00000°. NP2:φs=11.00000°,δ81.00000°,λ98.00000°.*

ISCJB ***27*** *22:03:31.3±0.8,37.96N±0.04×141.8E±0.1,h63km±6km, mb3.6/12,Error ellipse: s-maj=13.6km s-min=6.9km az=11.3*

IDC ***27*** *22:03:32.7±0.8,37.95N×141.71E,h60km±7km,mb3.4/12, mb1 3.6/16,mb1mx3.4/47,mbtmp3.7/16,MS2.9/1, Ms1 2.9/1,ms1mx2.4/20,Error ellipse: s-maj=18.7km s-min=14.0km az=86.0*

JMA ***27*** *22:03:32.3±0.1,37.96N×141.74E,h52km±2km,M3.9*

ISC 27 22:03:32.1±0.9,37.94N±0.05×141.80E±0.09,h55km±7km, n31,σ0$96/35,mb3.6/12,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**0.62**	**326**	P	**Pn**	**22 03 44.6**	**-0.5**
JIO				S	**Sn**	**22 03 53.5**	**-1.0**
JMM	**Marumori**	**0.80**	**265**	P	**Pn**	**22 03 46.9**	**-0.4**
JMM				S	**Sn**	**22 03 57.8**	**-0.6**
JFK	**Kawauchi**	**0.93**	**232**	P	**Pn**	**22 03 49.0**	**-0.1**
JFK				S	**Sn**	**22 04 01.3**	**-0.2**
JOU	**Okura**	**0.99**	**296**	P	**Pn**	**22 03 49.5**	**-0.3**
JOU				S	**Sn**	**22 04 02.3**	**-0.6**
ONAJ	**Iwakimizuishiy**	**1.16**	**224**	P	**Pn**	**22 03 52.1**	**0.0**
ONAJ				S	**Sn**	**22 04 06.4**	**-0.5**
JFT	**Otama**	**1.23**	**251**	P	**Pn**	**22 03 53.4**	**+0.3**
JFT				S	**Sn**	**22 04 09.5**	**+0.8**
JHO	**Hitachi**	**1.65**	**217**	P	**Pn**	**22 03 58.7**	**0.0**
MJAR	**Matsushiro Arr**	**3.19**	**245**	P	**Pn**	**22 04 21.2**	**+1.4**
	1.6nm,0.3s,baz=62,slow=10,SNR=12						
MAT	**Matsushiro**	**3.19**	**245**	P	**Pn**	**22 04 21.3**	**+1.6**
MAT				*e*S	Sn	22 05 03.6	+7.1
JHJ	**Hachijo jima 2**	**5.08**	**199**	P	**Pn**	**22 04 45.9**	**+0.2**
	5.1nm,0.3s,baz=57,slow=18,SNR=4.1						
JHJ				S	**Sn**	**22 05 40.2**	**-2.9**
	13nm,0.3s,baz=73,slow=19,SNR=6.2						
ASAJ	**Asahikawa**	**6.20**	**5**	P	**Pn**	**22 05 02.5**	**+1.6**
	1.4nm,0.3s,baz=189,slow=19,SNR=4.9						
USRK	**Ussuriysk Ar.**	**9.69**	**313**	P	**Pn**	**22 05 50.1**	**+1.4**
	0.3nm,0.3s,baz=117,slow=14,SNR=5.6						
JNU	**Nakatsue**	**10.11**	**245**	LR	LR	22 09 19.3	
	comp=Z,77nm,20.7s,baz=296,slow=34						
SONM	**Songino Array**	**27.55**	**302**	P	**P**	**22 09 14.0**	**+0.2**
	0.5nm,0.6s,baz=98,slow=8.0,SNR=3.7						
H11N2	**WAKE ISLAND Hy**	**28.36**	**123**	T	T	22 39 39.5	
	baz=316,slow=75,SNR=27						
H11N1	**WAKE ISLAND Hy**	**28.37**	**123**	T	T	22 39 41.3	
	baz=316,slow=75,SNR=28						
H11N3	**WAKE ISLAND Hy**	**28.38**	**123**	T	T	22 39 42.1	
	baz=316,slow=75,SNR=25						
H11S1	**WAKE ISLAND Hy**	**29.11**	**125**	T	T	22 40 40.2	
	baz=318,slow=76,SNR=28						
H11S3	**WAKE ISLAND Hy**	**29.11**	**125**	T	T	22 40 40.3	
	baz=318,slow=76,SNR=29						
H11S2	**WAKE ISLAND Hy**	**29.12**	**125**	T	T	22 40 41.4	
	baz=318,slow=76,SNR=23						
ZALV	**Zalesovo Beam**	**41.54**	**312**	P	**P**	**22 11 13.4**	**-0.5**
	1.0nm,0.4s,baz=88,slow=5.3,SNR=5.0						
MKAR	**Makanchi Array**	**43.90**	**301**	P	**P**	**22 11 32.8**	**-0.4**
	0.3nm,0.4s,baz=88,slow=9.7,SNR=4.4						
ILAR	**Eielson Array**	**48.57**	**33**	P	**P**	**22 12 09.4**	**-0.1**
	0.3nm,0.6s,baz=262,slow=6.3,SNR=3.8						
BVAR	**Borovoye Array**	**50.19**	**312**	P	**P**	**22 12 21.0**	**-1.2**
	0.3nm,0.5s,baz=86,slow=9.1,SNR=3.6						
BVAR				pP	**pP**	**22 12 35.9**	**-0.7**
	0.4nm,0.6s,baz=59,slow=7.2,SNR=3.3						
BVAR				PcP	**PcP**	**22 13 40.4**	**-0.2**
	0.6nm,0.7s,baz=93,slow=3.4,SNR=4.0						
WRA	**Warramunga Arr**	**58.00**	**188**	P	**P**	**22 13 18.8**	**-0.4**
	1.3nm,0.7s,baz=6.9,slow=7.3,SNR=12						
WRA				pP	**pP**	**22 13 34.9**	**+0.8**
	1.0nm,0.6s,baz=7.1,slow=7.1,SNR=4.2						
ASAR	**Alice Springs**	**61.73**	**188**	P	**P**	**22 13 44.9**	**+0.1**
	0.3nm,0.6s,baz=3.4,slow=4.6,SNR=3.8						
ASAR				pP	**pP**	**22 14 01.1**	**+1.4**
	0.6nm,0.8s,baz=12,slow=7.4,SNR=4.3						
YKA	**Yellowknife Ar**	**62.87**	**30**	P	**P**	**22 13 52.3**	**+0.4**
	0.3nm,0.7s,baz=304,slow=6.9,SNR=5.6						
FINES	**FINESS Array B**	**68.16**	**332**	P	**P**	**22 14 25.6**	**-0.5**
	1.1nm,0.6s,baz=42,slow=8.1,SNR=6.4						
AKASG	**Malin Array Be**	**73.77**	**322**	P	**P**	**22 14 59.3**	**-1.0**
	0.4nm,0.4s,baz=47,slow=5.8,SNR=5.3						
PDAR	**Pinedale Array**	**76.81**	**46**	P	**P**	**22 15 19.0**	**+0.8**
	0.3nm,0.6s,baz=306,slow=1.5,SNR=3.6						
TXAR	**Lajitas Array**	**89.33**	**53**	P	**P**	**22 16 23.7**	**+0.9**
	0.3nm,0.7s,baz=287,slow=3.4,SNR=3.3						

JMA 27 22:04:24.7±0.1,36.30N×140.89E,h41km±1km,M3.2, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHO	**Hitachi**	**0.40**	**320**	P	Pn	22 04 34.1	-0.2
JHO				*e*S	Sn	22 04 40.5	-0.5
CHOJ	**Chosi**	**0.60**	**182**	P	Pn	22 04 36.3	-0.5
CHOJ				S	Sn	22 04 44.3	-1.0
ONAJ	**Iwakimizuishiy**	**0.80**	**355**	P	Pn	22 04 39.2	-0.4
ONAJ				S	Sn	22 04 49.1	-1.4
MAT	**Matsushiro**	**2.18**	**277**	P	Pn	22 05 00.5	+2.1
MAT				*e*S	Sn	22 05 27.8	+3.6

CSEM ***27*** *22:13:09.0,38.58N×29.26W,h3km,ML3.4*

PDA 27 22:13:09.0±0.9,38.58N±29.26W,h3km±7km,MD3.6, ML3.4,2C,Error ellipse: s-maj=9.1km s-min=5.9km az=62.0,Azores Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CALA	**Caldeira**	**0.44**	**90**	*e*P	Pg	22 13 17.2	-0.2
CALA	**Caldeira**	**0.44**	**90**	*e*P	Pg	22 13 17.2	-0.2
PCED	**Cedros**	**0.44**	**84**	*e*P	Pg	22 13 17.0	-0.4
PCED	**Cedros**	**0.44**	**84**	*e*P	Pg	22 13 17.0	-0.4
PCED				A	A	22 13 25.3	
	1μm,0.2s						
HOR	**Horta**	**0.50**	**96**	*e*P	Pg	22 13 17.7	-0.8
HOR				*e*S	Sg	22 13 24.0	-0.9
HOR	**Horta**	**0.50**	**96**	*e*P	Pg	22 13 17.7	-0.8
HOR				*e*S	Sg	22 13 24.0	-0.9
HOR				A	A	22 13 25.9	
	3μm,0.2s						
PCAN	**Candelaria**	**0.62**	**101**	*e*P	Pg	22 13 19.3	-1.6
PCAN				*e*S	Sg	22 13 27.4	-1.5
PCAN	**Candelaria**	**0.62**	**101**	*e*P	Pg	22 13 19.3	-1.6
PCAN				*e*S	Sg	22 13 27.4	-1.5
PCAN				A	A	22 13 30.3	
	1μm,0.3s						
PICO	**Pico**	**0.66**	**97**	*e*P	Pg	22 13 20.3	-1.3
PICO				*e*S	Sg	22 13 29.0	-1.2
PICO	**Pico**	**0.66**	**97**	*e*P	Pg	22 13 20.3	-1.3
PICO				*e*S	Sg	22 13 29.0	-1.2
PICO				A	A	22 13 30.2	
	2μm,0.3s						
PPNO	**Prainha do Nor**	**0.79**	**98**	*e*P	Pg	22 13 22.3	-1.8
PPNO				*e*S	Sg	22 13 32.2	-2.1
PPNO	**Prainha do Nor**	**0.79**	**98**	*e*P	Pg	22 13 22.3	-1.8
PPNO				*e*S	Sg	22 13 32.2	-2.1
PPNO				A	A	22 13 34.8	
	828nm,0.2s						
ROSA	**Rosais**	**0.81**	**80**	*e*P	Pg	22 13 22.4	-2.1
ROSA				*e*S	Sg	22 13 32.2	-2.8
ROSA	**Rosais**	**0.81**	**80**	*e*P	Pg	22 13 22.4	-2.1
ROSA				*e*S	Sg	22 13 32.2	-2.8
ROSA				A	A	22 13 33.9	
	829nm,0.2s						
PMAN	**Manadas**	**0.92**	**87**	*e*P	Pg	22 13 23.8	-2.8
PMAN				*e*S	Sg	22 13 35.2	-3.3
PMAN	**Manadas**	**0.92**	**87**	*e*P	Pg	22 13 23.8	-2.8
PMAN				*e*S	Sg	22 13 35.2	-3.3
PMAN				A	A	22 13 37.0	
	316nm,0.4s						
PGRA	**Graciosa**	**1.09**	**66**	⇑*i*P	Pg	22 13 26.0	-3.9
PGRA				*e*S	Sg	22 13 39.3	-4.8
PGRA	**Graciosa**	**1.09**	**66**	⇑*i*P	Pg	22 13 26.0	-3.9
PGRA				*e*S	Sg	22 13 39.3	-4.8
PGRA				A	A	22 13 39.4	
	258nm,0.3s						
ADH	**Angra Heroismo**	**1.59**	**87**	*e*P	Pn	22 13 33.2	-4.8
ADH				*e*S	Sn	22 13 51.1	-7.9
ADH	**Angra Heroismo**	**1.59**	**87**	*e*P	Pn	22 13 33.2	-4.8
ADH				*e*S	Sn	22 13 51.1	-7.9
ADH				A	A	22 13 52.8	
	87nm,0.3s						

SCB ***27*** *22:19:48.1±0.6,18.21S×72.25W,h38km,Ml4.1/1,Error ellipse: s-maj=16.4km s-min=7.5km az=106.0*

IDC ***27*** *22:19:52.4±0.8,18.08S×71.70W,h0km,mb4.1/9, mb1 4.3/12,mb1mx4.1/26,mbtmp4.1/12,ML4.4/3,MS3.8/7, Ms1 3.8/7,ms1mx3.5/23,Error ellipse: s-maj=25.6km s-min=19.4km az=58.0*

ISCJB ***27*** *22:19:56.6±0.8,18.36S±0.04×71.83W±0.06,h39km±8km, mb4.6/18,MS3.9/3,Error ellipse: s-maj=9.3km s-min=5.7km az=159.6*

NEIC ***27*** *22:19:56.0,18.30S×71.69W,h34km,mb4.8/12, ML4.4(GUC),After GUC.*

GUC ***27*** *22:19:56.6±0.7,18.30S×71.69W,h34km±4km,ML4.4*

ISC 27 22:19:53.3±2.0,18.18S±0.05×71.66W±0.06,h4km±12km, n74,σ2$05/77,mb4.7/17,MS4.3/3,10C-1D,Off coast of northern Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PB12	**IPOC Station P**	**1.33**	**109**	*i* P	**Pg**	**22 20 19.5**	**+0.6**
PB12				*i* S	**Sn**	**22 20 37.5**	**+0.5**
ARE	**Arequipa**	**1.71**	**5**	⇑*i*P	**Pn**	**22 20 24.4**	**+0.2**
PSGC	**Pisagua**	**2.03**	**134**	*i* P	**Pn**	**22 20 28.9**	**+0.6**
PSGC				*i* S	**Sn**	**22 20 52.9**	**-1.3**
PB13	**IPOC Station P**	**2.05**	**95**	⇑*i*P	**Pb**	**22 20 31.4**	**-0.1**
PB13				*i* S	**Sg**	**22 20 58.5**	**-0.8**
PB11	**IPOC Station P**	**2.46**	**130**	⇑*i*P	**Pn**	**22 20 35.5**	**+1.1**
PB11				*i* S	**Sn**	**22 21 04.7**	**-0.4**
PB11	**IPOC Station P**	**2.46**	**130**	*e*Pn	**Pn**	**22 20 36.0**	**+1.6**
HMBC	**Humberstone**	**2.68**	**142**	⇑*i*P	**Pn**	**22 20 38.2**	**+0.9**
HMBC				*i* S	**Sn**	**22 21 09.4**	**-0.9**
HMBC				IAML		22 21 15.0	
	comp=N,2μm,0.8s						
PATCX	**Punta Patache**	**2.99**	**152**	⇓*i*P	**Pn**	**22 20 41.8**	**+0.2**
PATCX				IAML		22 21 41.8	
	comp=E,890nm,0.9s						
BBOD	**La Paz, Gloria**	**3.30**	**63**	⇑*i*Pn	**Pb**	**22 20 51.1**	**-1.6**
BBOD				*e*Sn	**Sg**	**22 21 36.3**	**-3.0**
PB01	**IPOC Station P**	**3.51**	**145**	*e*Pn	**Pn**	**22 20 49.3**	**+0.6**
BBOJ	**La Paz, Jacaqu**	**3.52**	**71**	⇑*i*Pn	**Pb**	**22 20 54.8**	**-1.6**
BBOE	**La Paz, Chanca**	**3.76**	**69**	⇑*i*Pn	**Pb**	**22 20 58.4**	**-2.2**
LPAZ	**La Paz**	**3.86**	**61**	Pn	**Pn**	**22 20 57.3**	**+3.3**
	comp=E,2.4nm,0.3s,baz=239,slow=9.6,SNR=58						
LPAZ	**La Paz**	**3.86**	**61**	⇑*i*Pn	**Pb**	**22 20 58.7**	**-3.6**
LPAZ				*e*Sn	**Sb**	**22 21 50.8**	**+1.2**
	comp=E,248nm,1.1s						
PB07	**IPOC Station P**	**3.91**	**155**	*i* P	**Pn**	**22 20 54.3**	**0.0**
BBOB	**La Paz, Bander**	**3.93**	**60**	⇑*i*Pn	**Pb**	**22 20 59.9**	**-3.6**
PB09	**IPOC Station P**	**4.26**	**148**	*i* P	**Pn**	**22 20 59.6**	**+0.5**
PB09				*i* S	**Sn**	**22 21 46.9**	**-2.5**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PB04	**IPOC Station P**	**4.37**	**161**	*e*Pn	**Pn**	**22 21 00.3**	**-0.4**
LVC	**Limon Verde**	**5.11**	**150**	Pn	**Pn**	**22 21 11.7**	**+0.8**
	comp=E,113nm,0.3s,baz=322,slow=13,SNR=28						
LVC				Sn	**Sn**	**22 22 09.2**	**-1.4**
	comp=E,368nm,0.3s,baz=30,slow=20,SNR=14						
LVC	**Limon Verde**	**5.11**	**150**	*e*Pn	**Pn**	**22 21 12.4**	**+1.5**
LVC				*e*Sn	**Sn**	**22 22 09.2**	**-1.4**
MOCB	**Mochara**	**6.44**	**119**	*e*Pn	**Pn**	**22 21 34.1**	**+4.7**
NNA	**Nana**	**7.93**	**320**	Pn	**Pn**	**22 21 51.2**	**+1.7**
	comp=E,1.2nm,0.3s,baz=153,slow=14,SNR=2.6						
NNA				Sn	**Sn**	**22 23 14.7**	**-5.1**
	comp=E,2.1nm,0.3s,baz=119,slow=19,SNR=2.1						
NNA				LR	LR	22 25 22.8	
	comp=E,175nm,18.2s,baz=164,slow=42						
SIV	**San Ignacio**	**10.35**	**79**	Pn	**Pn**	**22 22 24.3**	**+1.6**
	comp=E,2.1nm,0.3s,baz=265,slow=14,SNR=34						
SIV				LR	LR	22 26 57.2	
	comp=E,943nm,18.1s,baz=258,slow=41						
SIV	**San Ignacio**	**10.35**	**79**	⇑*i*P	**Pn**	**22 22 24.1**	**+1.4**
SAML	**Samuel**	**12.32**	**43**	*e*Pn	**Pn**	**22 22 50.4**	**+0.8**
ATAH	**Atahualpa**	**12.79**	**328**	LR	LR	22 28 30.2	
	comp=E,289nm,19.5s,baz=155,slow=41						
CPUP	**Villa Florida**	**15.54**	**124**	Pn	**P**	**22 23 36.1**	**-1.6**
	comp=E,0.1nm,0.3s,baz=317,slow=14,SNR=3.6						
CPUP				LR	LR	22 30 16.1	
	comp=E,179nm,21.7s,baz=300,slow=40						
OTAV	**Otavalo**	**19.48**	**339**	*e*sP	sP	22 24 38.0	+15
OTAV	**Otavalo**	**19.48**	**339**	*e*P	**Pn**	**22 24 27.3**	**+4.3**
PTGA	**Pitinga**	**20.80**	**35**	P	**P**	**22 24 34.3**	**-1.5**
	comp=E,17nm,0.7s,baz=217,slow=13,SNR=18						
PTGA				LR	LR	22 31 53.1	
	comp=E,78nm,21.9s,baz=216,slow=35						
PTGA	**Pitinga**	**20.80**	**35**	*e*P	**P**	**22 24 34.3**	**-1.5**
	comp=E,32nm,0.6s						
TRQA	**Tornquist**	**21.54**	**159**	*e*P	**P**	**22 24 45.6**	**+2.0**
	comp=E,19nm,1.1s						
PLCA	**Paso Flores**	**22.50**	**178**	P	**P**	**22 24 54.6**	**+0.7**
	comp=E,3.1nm,0.7s,baz=16,slow=9.5,SNR=6.7						
PLCA	**Paso Flores**	**22.50**	**178**	*e*P	**P**	**22 24 54.6**	**+0.7**
	comp=E,32nm,1.5s						
GUYC	**Guyana, Colomb**	**23.54**	**351**	*e*P	**P**	**22 25 08.8**	**+3.4**
NORC	**Norcasia**	**23.80**	**352**	*e*P	**P**	**22 25 09.3**	**+1.9**
HELC	**Santa Helena**	**24.51**	**351**	*e*P	**P**	**22 25 19.6**	**+5.2**
	comp=E,34nm,0.8s						
HELC	**Santa Helena**	**24.51**	**351**	*e*P	**P**	**22 25 18.4**	**+4.0**
SDV	**Santo Domingo**	**26.91**	**2**	P	**P**	**22 25 39.1**	**+3.2**
	comp=E,4.4nm,0.2s,baz=180,slow=8.1,SNR=7.0						
SDV	**Santo Domingo**	**26.91**	**2**	*e*P	**P**	**22 25 42.0**	**+6.1**
	comp=E,30nm,1.5s						
LTX	**Lajitas**	**56.44**	**326**	*e*P	**P**	**22 29 35.0**	**-1.4**
TXAR	**Lajitas Array**	**56.44**	**326**	P	**P**	**22 29 35.0**	**-1.4**
	comp=E,0.5nm,0.8s,baz=121,slow=6.6,SNR=3.5						
KSCO	**Kaye Shedlock'**	**63.85**	**333**	*e*P	**P**	**22 30 24.1**	**-3.1**
	comp=E,12nm,0.5s						
DUG	**Dugway, Tooele**	**69.58**	**327**	*e*P	**P**	**22 31 04.6**	**+0.9**
	comp=E,22nm,0.3s						
R11A	**Troy Canyon, C**	**69.71**	**324**	*e*P	**P**	**22 31 06.4**	**+1.8**
	comp=E,15nm,1.9s						
DBIC	**Dimbokro**	**70.35**	**76**	P	**P**	**22 31 08.8**	**0.0**
	comp=E,2.0nm,0.8s,baz=198,slow=6.6,SNR=2.8						
DBIC				LR	LR	23 01 44.2	
	comp=E,190nm,20.0s,baz=1.0,slow=36						
DBIC	**Dimbokro**	**70.35**	**76**	*e*P	**P**	**22 31 08.8**	**0.0**
	comp=E,40nm,1.8s						
NV01	**Mina Array Sit**	**71.30**	**323**	*e*P	**P**	**22 31 13.6**	**-0.8**
NVAR	**Mina Array Bea**	**71.30**	**323**	P	**P**	**22 31 13.6**	**-0.8**
	comp=E,0.4nm,0.6s,baz=163,slow=5.4,SNR=5.1						
LCCM	**Lewis and Clar**	**73.39**	**332**	*e*P	**P**	**22 31 29.7**	**+3.1**
TOA1	**Torodi Ar. Sit**	**78.74**	**72**	*e*P	**P**	**22 31 56.1**	**-1.5**
	comp=E,7.6nm,1.0s						
TOA0	**Torodi Ar. Sit**	**78.74**	**72**	*e*P	**P**	**22 31 57.0**	**-0.5**
TORD	**Torodi Ar. Bea**	**78.74**	**72**	P	**P**	**22 31 56.1**	**-1.5**
	comp=E,1.7nm,0.9s,baz=246,slow=5.1,SNR=6.8						
TORD				LR	LR	23 06 06.9	
	comp=E,170nm,18.2s,baz=45,slow=35						
ESDC	**Sonseca Array**	**85.33**	**46**	P	**P**	**22 32 32.2**	**+0.4**
	comp=E,0.5nm,

1.4nm,0.3s,baz=217,slow=22,SNR=6.2
USRK Ussuriysk Ar. 9.80 320 Pn Pn 22 31 53.4 +3.6
0.2nm,0.3s,baz=128,slow=12,SNR=3.2
SONM Songino Array 27.34 304 P **P 22 35 13.6 -0.4**
0.6nm,0.6s,baz=94,slow=7.8,SNR=3.9
H11N2 WAKE ISLAND Hy 28.62 120 T T 23 05 11.9
baz=313,slow=75,SNR=187
H11N1 WAKE ISLAND Hy 28.63 120 T T 23 05 12.4
baz=313,slow=75,SNR=219
H11N3 WAKE ISLAND Hy 28.64 120 T T 23 05 13.2
baz=313,slow=75,SNR=168
H11S1 WAKE ISLAND Hy 29.32 122 T T 23 06 02.5
baz=314,slow=76,SNR=384
H11S3 WAKE ISLAND Hy 29.32 122 T T 23 06 02.6
baz=314,slow=76,SNR=223
H11S2 WAKE ISLAND Hy 29.33 122 T T 23 06 03.4
baz=314,slow=76,SNR=193
ZALV Zalesovo Beam 41.53 312 P **P 22 37 16.9 +0.6**
0.5nm,0.4s,baz=88,slow=4.4,SNR=3.6
MKAR Makanchi Array 43.66 302 P **P 22 37 34.2 +0.6**
0.2nm,0.2s,baz=92,slow=7.4,SNR=3.8
ILAR Eielson Array 49.89 32 P **P 22 38 23.6 +1.4**
0.5nm,0.9s,baz=254,slow=5.4,SNR=4.5
INK Inuvik 54.74 27 P **P 22 38 59.6 +1.6**
0.8nm,0.8s,baz=256,slow=4.0,SNR=4.0
WRA Warramunga Arr 56.89 187 P **P 22 39 12.8 -1.3**
1.7nm,0.5s,baz=2.3,slow=7.2,SNR=24
ASAR Alice Springs 60.62 187 P **P 22 39 39.3 -0.6**
1.0nm,0.7s,baz=13,slow=5.7,SNR=7.7
YKA Yellowknife Ar 64.19 30 P **P 22 40 03.2 -0.2**
0.1nm,0.6s,baz=306,slow=6.6,SNR=3.5
FINES FINESS Array B 68.62 332 P **P 22 40 31.5 -0.3**
0.7nm,0.7s,baz=22,slow=7.7,SNR=3.1
LPAZ La Paz 147.25 59 PKPbc **PKPbc 22 49 14.1 +0.2**
0.5nm,0.4s,baz=225,slow=4.3,SNR=3.4

MEX 27 22:32:05.5±1.1, 16.70N×94.50W, h106km±34km, MD3.8, Oaxaca

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TGIG		**1.32**	**87**	*i* P	Pn	22 32 28.6	-1.4
TGIG				*i* S	Sn	22 32 46.6	-1.9
PCIG		**1.58**	**129**	*e*P	Pn	22 32 32.4	-0.6
PCIG				*e*S	Sn	22 32 52.7	-1.2
HUIG	**Huatulco**	**1.81**	**239**	*e*P	Pn	22 32 33.3	-2.6
HUIG				*e*S	Sn	22 32 57.8	-1.2
VHO	**Vista Hermosa**	**2.17**	**280**	*i* P	Pn	22 32 40.2	-0.5
VHO				*e*S	Sn	22 33 06.6	-1.1

*IDC **27** 23:02:32.5±2.2, 39.38N×143.63E, h0km, mb3.5/4, mb1 3.6/6, mb1mx3.3/39, mbtmp3.5/6, ML3.2/2, Error ellipse: s-maj=55.2km s-min=25.1km az=78.0*
*JMA **27** 23:02:36.2±0.2, 39.27N×143.21E, h12km±2km, M4.0*
ISC 27 23:02:34.1±3.8, 39.23N±0.06×143.26E±0.08, h4km±24km, n26,σ1ꞌ8ꞌ8/25, mb3.5/4, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MIYJ	**Miyakonagasawa**	**1.17**	**288**	P	**Pb**	**23 02 57.1**	**+0.2**
MIYJ				S	**Sb**	**23 03 11.8**	**-0.6**
OFUJ	**Ofunato**	**1.25**	**264**	P	**Pn**	**23 02 58.2**	**-0.1**
OFUJ				*e*S	**Sb**	**23 03 14.3**	**-0.3**
JTH	**Tanohata**	**1.29**	**304**	P	**Pn**	**23 02 58.8**	**-0.1**
JTH				*e*S	**Sb**	**23 03 15.2**	**-0.8**
JOM	**Ohasama**	**1.55**	**280**	P	**Pn**	**23 03 03.2**	**+0.8**
JOM				*e*S	**Sn**	**23 03 22.5**	**-0.4**
JMK	**Ichinoseki**	**1.61**	**261**	P	**Pn**	**23 03 04.6**	**+1.3**
JMK				*e*S	**Sn**	**23 03 24.6**	**+0.1**
JKZ	**Kuzumaki**	**1.68**	**298**	P	**Pn**	**23 03 05.1**	**+0.9**
JKZ				*e*S	**Sn**	**23 03 25.7**	**-0.4**
JIO	**Ouri**	**1.68**	**243**	P	**Pn**	**23 03 05.3**	**+1.1**
JANG	**Nango**	**1.77**	**311**	P	**Pn**	**23 03 05.8**	**+0.3**
JRG	**Rokugo**	**2.05**	**266**	P	**Pn**	**23 03 11.2**	**-0.6**
JAH	**Hinai**	**2.24**	**296**	P	**Pn**	**23 03 13.6**	**+1.6**
JTM	**Tenmabayashi**	**2.30**	**313**	P	**Pn**	**23 03 14.1**	**+1.4**
JOT	**Ohata**	**2.74**	**323**	P	**Pn**	**23 03 20.5**	**+1.7**
JKB	**Kayabe**	**3.16**	**328**	P	**Pn**	**23 03 26.5**	**+2.0**
MJAR	**Matsushiro Arr**	**4.81**	**238**	Pn	Pn	23 03 51.6	+4.3
	1.7nm,0.3s,baz=44,slow=11,SNR=11						
MAT	**Matsushiro**	**4.81**	**238**	P	Pn	23 03 52.4	+5.1
MAT				*e*S	**Sb**	**23 04 55.3**	**-1.9**
ASAJ	**Asahikawa**	**4.91**	**354**	Pn	**Pn**	**23 03 47.5**	**-1.1**
	0.5nm,0.3s,baz=191,slow=18,SNR=2.4						
SONM	**Songino Array**	**27.86**	**300**	P	**P**	**23 08 25.0**	**+0.2**
	0.3nm,0.4s,baz=93,slow=7.2,SNR=2.5						
H11N2	**WAKE ISLAND Hy 28.15**	**127**		T	T	23 37 56.6	
	baz=320,slow=74,SNR=29						
H11N1	**WAKE ISLAND Hy 28.16**	**127**		T	T	23 38 02.0	
	baz=320,slow=74,SNR=22						
H11N3	**WAKE ISLAND Hy 28.17**	**127**		T	T	23 38 05.9	
	baz=320,slow=74,SNR=33						
H11S1	**WAKE ISLAND Hy 28.96**	**129**		T	T	23 39 02.3	
	baz=321,slow=76,SNR=11						
H11S3	**WAKE ISLAND Hy 28.96**	**129**		T	T	23 39 01.7	
	baz=321,slow=76,SNR=0.2						
H11S2	**WAKE ISLAND Hy 28.97**	**129**		T	T	23 39 03.8	
	baz=321,slow=76,SNR=5.9						
ZALV	**Zalesovo Beam**	**41.56**	**311**	P	**P**	**23 10 21.6**	**-0.9**
	0.5nm,0.5s,baz=86,slow=8.8,SNR=2.6						
MKAR	**Makanchi Array**	**44.23**	**301**	P	**P**	**23 10 45.1**	**+0.8**
	0.3nm,0.6s,baz=78,slow=7.9,SNR=3.5						
WRA	**Warramunga Arr**	**59.45**	**190**	P	**P**	**23 12 38.3**	**+0.3**
	0.3nm,0.7s,baz=5.2,slow=6.9,SNR=3.3						

*IDC **27** 23:12:25.5±1.3, 23.03S×175.51W, h0km, mb4.0/9, mb1 4.2/10, mb1mx4.0/24, mbtmp4.0/10, ML4.4/1, MS3.5/2, Ms1 3.5/2, ms1mx3.0/27, Error ellipse: s-maj=62.6km s-min=18.1km az=151.0*
*ISCJB **27** 23:12:28.1±1.1, 23.4S±0.4×175.4W±0.2, h30km, mb4.1/12, MS3.4/1, Error ellipse: s-maj=60.0km s-min=13.1km az=156.6*
*NEIC **27** 23:12:29.7±1.2, 23.72S×175.22W, h35km, mb4.1/3, Error ellipse: s-maj=72.8km s-min=13.1km az=157.0*
ISC 27 23:12:29.8±1.4, 23.4S±0.4×175.4W±0.2, h30km, n25,σ1ꞌ9ꞌ20/21, mb4.0/12, Tonga Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MSVF	**Nonsavu**	**8.33**	**311**	*e*Pn	Pn	23 14 33.7	+5.1
AFI	**Afiamalu**	**10.00**	**21**	Pn	Pn	23 14 44.9	-6.7
	3.3nm,0.3s,baz=236,slow=3.6,SNR=2.4						
AFI				Sn	Sn	23 16 25.8	-17
	2.6nm,0.3s,baz=162,slow=20,SNR=3.2						
RAR	**Rarotonga**	**14.60**	**85**	LR	LR	23 20 42.6	
	comp=Z,165nm,20.0s,baz=284,slow=34						
PPT	**Papeete**	**24.83**	**81**	LR	LR	23 25 22.5	
	comp=Z,120nm,19.3s,baz=4.5,slow=31						
CTA	**Charters Tower**	**35.73**	**268**	P	**P**	**23 19 26.3**	**+0.2**
	3.9nm,0.7s,baz=96,slow=12,SNR=3.9						
STKA	**Stephens Creek**	**38.86**	**248**	P	**P**	**23 19 52.3**	**-0.1**
	0.6nm,0.3s,baz=135,slow=13,SNR=2.5						
STKA	**Stephens Creek**	**38.86**	**248**	*e*P	**P**	**23 19 52.3**	**-0.1**
	5.4nm,1.8s						
AS31	**Alice Springs**	**46.31**	**259**	*e*P	**P**	**23 20 52.7**	**-0.5**
	1.4nm,1.0s						
ASAR	**Alice Springs**	**46.31**	**259**	P	**P**	**23 20 52.7**	**-0.5**
	1.8nm,0.9s,baz=87,slow=8.7,SNR=12						
WR1	**Warramunga Arr**	**46.68**	**264**	*e*P	**P**	**23 20 54.4**	**-1.7**
WRA	**Warramunga Arr**	**46.68**	**264**	P	**P**	**23 20 54.4**	**-1.7**
	1.6nm,0.6s,baz=100,slow=7.9,SNR=7.7						
NV01	**Mina Array Sit**	**81.47**	**42**	*e*P	**P**	**23 24 44.5**	**0.0**
NVAR	**Mina Array Bea**	**81.47**	**42**	P	**P**	**23 24 44.5**	**0.0**
	0.8nm,0.7s,baz=216,slow=8.9,SNR=3.4						
USRK	**Ussuriysk Ar.**	**82.70**	**329**	P	**P**	**23 24 49.5**	**-0.9**
	3.2nm,0.8s,baz=143,slow=3.1,SNR=6.1						
LTX	**Lajitas**	**86.58**	**56**	*e*P	**P**	**23 25 10.3**	**-0.2**
TXAR	**Lajitas Array**	**86.58**	**56**	P	**P**	**23 25 10.3**	**-0.2**
	0.5nm,0.8s,baz=209,slow=5.2,SNR=3.1						
PD31	**Pinedale Array**	**89.40**	**42**	*e*P	**P**	**23 25 23.8**	**-0.1**
PDAR	**Pinedale Array**	**89.40**	**42**	P	**P**	**23 25 23.8**	**-0.1**
	0.5nm,0.9s,baz=206,slow=5.9,SNR=3.2						
ILAR	**Eielson Array**	**90.58**	**12**	P	**P**	**23 25 28.4**	**-0.1**
	0.3nm,0.7s,baz=214,slow=7.5,SNR=3.5						
ILB	**Eielson Array**	**90.58**	**12**	*e*P	**P**	**23 25 28.4**	**-0.1**
CM31	**Chiang Mai Arr**	**93.35**	**289**	*e*P	**P**	**23 25 45.0**	**+2.5**
CMAR	**Chiang Mai Arr**	**93.35**	**289**	P	**P**	**23 25 45.0**	**+2.5**
	2.7nm,0.8s,baz=134,slow=3.2,SNR=20						
CHTO	**Chiang Mai**	**93.49**	**289**	*e*P	**P**	**23 25 45.5**	**+2.4**
	3.0nm,0.8s						
AKASG	**Malin Array Be**	**146.69**	**331**	PKPbc	**PKPdf**	**23 32 06.9**	**+0.1**
	1.1nm,0.6s,baz=38,slow=4.2,SNR=6.4						
BRTR	**Keskin Array B**	**150.55**	**310**	PKPbc	**PKPbc**	**23 32 18.4**	**-0.6**
	0.6nm,0.8s,baz=128,slow=2.0,SNR=4.0						

*CSEM **27** 23:26:00.6±0.7, 38.41N×45.18E, h10km, ML3.0, Error ellipse: s-maj=13.6km s-min=7.0km az=60.0*
*NSSP **27** 23:26:00.3, 38.38N×45.32E, h10km, Ms3.0*
*TEH **27** 23:26:01.5, 38.38N×45.18E, h11km, ML3.0*
ISC 27 23:26:04.0±1.2, 38.43N±0.04×45.44E±0.04, h23km±9km, n25,σ1ꞌ8ꞌ88/25, 3C-7D, Iran-Armenia-Azerbaijan border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ISHB	**Shabestar**	**0.20**	**136**	*e*AMB	AMB	23 26 08.5	
	comp=Z,21μm,0.0s						
ISHB				*e*Pg	**Pb**	**23 26 08.2**	**-1.5**
IMRD	**Marand**	**0.35**	**36**	*e*Pg	**Pb**	**23 26 11.3**	**-0.5**
IMRD				*e*Sg	**Sb**	**23 26 18.0**	**+0.9**
IMRD				*e*AMB	AMB	23 26 19.3	
	comp=Z,53μm,0.1s						
IMRD	**Marand**	**0.35**	**36**	*e*Pg	**Pb**	**23 26 11.3**	**-0.5**
IMRD				*e*Sg	**Sb**	**23 26 18.0**	**+0.9**
ITBZ	**Tabriz**	**0.59**	**109**	*e*Pg	**Pb**	**23 26 15.7**	**0.0**
ITBZ				*e*Sg	**Sb**	**23 26 26.5**	**+2.8**
ITBZ				*e*AMB	AMB	23 26 27.1	
	comp=Z,4μm,0.1s						
ITBZ	**Tabriz**	**0.59**	**109**	*e*Pg	**Pb**	**23 26 15.7**	**0.0**
ITBZ				*e*Sg	**Sb**	**23 26 26.5**	**+2.8**
GRS	**Goris**	**1.28**	**33**	⇓*i*P	Pn	23 26 23.0	-3.5
GRS				⇓*i*S	**Sn**	**23 26 41.0**	**-2.0**
GRS	**Goris**	**1.28**	**33**	⇓P	Pn	23 26 23.0	-3.5
GRS				S	**Sn**	**23 26 41.0**	**-2.0**
IBST	**Bostanabad**	**1.36**	**122**	*e*Pn	**Pb**	**23 26 28.7**	**-0.1**
IBST				*e*Sg	**Sb**	**23 26 48.4**	**+2.6**
IBST				*e*AMB	AMB	23 26 48.8	
	comp=Z,3μm,0.2s						
IBST	**Bostanabad**	**1.36**	**122**	*e*Pn	**Pb**	**23 26 28.7**	**-0.1**
IBST				*e*Sg	**Sb**	**23 26 48.4**	**+2.6**
VMUR	**Van-Muradiye**	**1.57**	**292**	*i* P	**Pb**	**23 26 29.9**	**-0.5**
TVAN	**Van**	**1.60**	**274**	*i* P	Pb	23 26 33.4	+0.4
STKZ		**1.72**	**36**	⇑*i*P	Pb	23 26 46.5	+12
STKZ				⇑*i*S	Sb	23 27 10.8	+15
STKZ		**1.72**	**36**	⇓P	Pb	23 26 46.5	+12
STKZ				S	Sb	23 27 10.8	+15
VADZ	**Vardenis**	**1.76**	**8**	*e*P	**Pn**	**23 26 32.0**	**-1.2**
VADZ				⇑S	**Sn**	**23 26 54.0**	**-1.0**
VADZ	**Vardenis**	**1.76**	**8**	P	**Pn**	**23 26 32.0**	**-1.2**
VADZ				S	**Sn**	**23 26 54.0**	**-1.0**
GNI	**Garni**	**1.80**	**343**	⇓*i*P	**Pb**	**23 26 36.9**	**+0.4**
GNI				⇑*i*S	**Sb**	**23 27 02.3**	**+3.7**
GNI	**Garni**	**1.80**	**343**	⇓P	**Pb**	**23 26 36.8**	**+0.4**
GNI				S	**Sb**	**23 27 02.3**	**+3.7**
GEVA	**Gevas**	**1.88**	**267**	*i* P	**Pb**	**23 26 37.0**	**-0.7**
SIRN	**S¨–rnak**	**2.57**	**250**	*i* P	Pb	23 26 54.7	+5.3
EAK	**Akyaka**	**2.66**	**328**	*i* P	Pb	23 26 55.0	+3.9
EATA	**Eleskirt**	**2.70**	**303**	*i* P	Pb	23 26 52.3	+0.5
EKAR	**Karacoban**	**2.76**	**288**	*i* P	Pb	23 27 00.7	+7.9
HOMI	**Horasan**	**3.19**	**302**	*i* P	Pb	23 27 06.3	+6.4
BTMN	**Batman**	**3.33**	**262**	*i* P	Pb	23 27 02.7	+0.3
ERZM	**Erzurum**	**3.49**	**296**	*i* P	Pb	23 27 11.0	+5.7

*NIED **27** 23:31:00, 37.30N×142.50E, h5km, Mw3.7 Best double couple: M₀3.70000×10¹⁴ NP1:φs200.00000°, δ12.00000°, λ-96.00000°. NP2:φs25.00000°, δ78.00000°, λ-89.00000°.*
JMA 27 23:31:03.0±0.3, 37.28N×142.48E, h5km±4km, M3.9, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**1.28**	**274**	P	Pg	23 31 37.2	-0.4
ONAJ	**Iwakimizuishiy**	**1.35**	**263**	P	Pn	23 31 28.3	-0.3
JMM	**Marumori**	**1.46**	**294**	P	Pn	23 31 29.9	-0.1
JMM				S	Sn	23 31 49.1	-0.5
JIO	**Ouri**	**1.48**	**323**	*e*S	Sb	23 31 50.1	+0.2
JFT	**Otama**	**1.72**	**279**	P	Pb	23 31 34.8	-0.4
JFT				S	Sb	23 31 56.7	-0.4
JYS	**Shirataka**	**2.13**	**297**	*e*S	Sb	23 32 09.0	+0.1
JFY	**Yanaizu**	**2.21**	**274**	*e*S	Sb	23 32 09.9	-1.4
JYK	**Kaneyama**	**2.34**	**315**	P	Pn	23 31 43.2	+1.1
MAT	**Matsushiro**	**3.50**	**259**	P	Pn	23 32 00.1	+2.0
MAT				*e*S	Sn	23 32 42.1	+2.1

*NIED **27** 23:33:00, 37.50N×142.00E, h23km, Mw3.5 Best double couple: M₀2.17000×10¹⁴ NP1:φs342.00000°, δ36.00000°, λ-116.00000°. NP2:φs193.00000°, δ58.00000°, λ-72.00000°.*
JMA 27 23:33:29.7±0.1, 37.54N×142.01E, h18km±3km, M3.7, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**0.92**	**259**	P	Pb	23 33 46.9	-0.2
JFK				S	Sb	23 33 59.1	+0.1
JMM	**Marumori**	**1.02**	**289**	P	Pb	23 33 48.5	-0.3
JMM				*e*S	Sb	23 34 01.3	-0.5
JIO	**Ouri**	**1.05**	**330**	P	Pb	23 33 48.8	-0.6
JIO				*e*S	Sb	23 34 02.4	-0.4
ONAJ	**Iwakimizuishiy**	**1.06**	**246**	P	Pb	23 33 48.8	-0.7
JFT	**Otama**	**1.33**	**270**	S	Sb	23 34 11.1	+0.3
JOU	**Okura**	**1.35**	**308**	P	Pb	23 33 54.4	0.0
JOU				*e*S	Sb	23 34 11.6	+0.3
JHO	**Hitachi**	**1.48**	**232**	P	Pn	23 33 56.0	+0.6
MAT	**Matsushiro**	**3.20**	**253**	P	Pb	23 34 22.9	-3.1
MAT				*e*S	Sb	23 35 03.5	-1.2

*MOS **27** 23:35:04.9±1.2, 17.86S×178.53W, h570km, mb4.6/23, Error ellipse: s-maj=11.0km s-min=9.2km az=152.7*
*ISCJB **27** 23:35:05.2±0.1, 18.02S±0.04×178.53W±0.03, h579km, mb4.6/149, Error ellipse: s-maj=6.0km s-min=2.9km az=151.1*
*IDC **27** 23:35:05.8±1.4, 18.02S×178.40W, h580km±15km, mb3.9/19, mb1 4.1/21, mb1mx4.0/25, mbtmp4.8/21, Error ellipse: s-maj=14.2km s-min=10.7km az=132.0*
*NEIC **27** 23:35:08.6±0.6, 18.05S×178.54W, h612km±7km, mb4.6/102, Error ellipse: s-maj=7.2km s-min=4.6km az=149.0*
*BJI **27** 23:35:08.1, 17.66S×178.54W, h599km, mb4.7/29, mB4.8/19*
ISC 27 23:35:05.7±0.3, 18.00S±0.06×178.44W±0.05, h579km, n555,σ1ꞌ9ꞌ15/577, mb4.6/149, 16C-35D, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MSVF	**Nonsavu**	**3.35**	**274**	*e*P	P	23 36 30.3	+4.9
MSVF				*e*S	**S**	**23 37 34.2**	**+4.0**
MSVF	**Nonsavu**	**3.35**	**274**	*e*P	P	23 36 30.3	+4.9
MSVF				*e*S	**S**	**23 37 34.2**	**+4.0**
AFI	**Afiamalu**	**7.59**	**59**	P	**P**	**23 37 00.6**	**+0.1**
	12nm,0.3s,baz=143,slow=5.6,SNR=8.2						
AFI				S	**S**	**23 38 33.7**	**-0.9**
	4.7nm,0.3s,baz=162,slow=19,SNR=2.7						
AFI	**Afiamalu**	**7.59**	**59**	*e*P	**P**	**23 36 59.3**	**-1.3**
AFI				*e*S	**S**	**23 38 35.5**	**+0.9**
AFI	**Afiamalu**	**7.59**	**59**	*e*P	**P**	**23 36 59.3**	**-1.3**
AFI				*e*S	**S**	**23 38 35.5**	**+0.9**
NIUE	**Niue**	**8.15**	**99**	P	**P**	**23 37 07.7**	**+1.9**
	baz=8.0,SNR=5.6						
DZM	**Mont Dzumac**	**14.77**	**252**	P	**P**	**23 38 13.7**	**+1.3**
	1.6nm,0.3s,baz=84,slow=19,SNR=13						
RAR	**Rarotonga**	**17.88**	**103**	*e*P	**P**	**23 38 41.7**	**+0.5**
RAR				pmax	pmax		
	comp=Z,202nm,2.0s						
RAR	**Rarotonga**	**17.88**	**103**	*e*P	**P**	**23 38 41.7**	**+0.5**
	comp=Z,202nm,2.0s						
OUZ	**Omahuta**	**18.56**	**201**	*e*P	P	23 38 50.7	+3.6
	comp=Z,277nm,2.0s						
URZ	**Urewera**	**20.56**	**190**	P	**P**	**23 39 03.6**	**-1.7**
	comp=Z,7.1nm,0.3s,baz=344,slow=6.5,SNR=5.7						
URZ				S	S	23 42 10.1	-8.8
	comp=Z,11nm,0.9s,baz=12,slow=14,SNR=3.0						
URZ	**Urewera**	**20.56**	**190**	*e*P	**P**	**23 39 03.8**	**-1.5**
	comp=Z,194nm,1.9s						
URZ				*e*S	S	23 42 10.1	-8.8
HNR	**Honiara**	**22.63**	**289**	P	**P**	**23 39 24.0**	**-0.2**
	comp=Z,42nm,0.3s,baz=181,slow=4.6,SNR=3.9						
HNR	**Honiara**	**22.63**	**289**	*e*P	**P**	**23 39 25.4**	**+1.2**
HNR	**Honiara**	**22.63**	**289**	*e*P	**P**	**23 39 25.4**	**+1.2**
THZ	**Tophouse**	**24.82**	**196**	*e*P	**P**	**23 39 44.6**	**+1.3**
	comp=Z,136nm,1.7s						
KHZ	**Kahutara**	**25.28**	**194**	*e*P	**P**	**23 39 46.7**	**-0.5**
	comp=Z,182nm,1.8s						
LTZ	**Lake Taylor**	**25.94**	**196**	*e*P	**P**	**23 39 51.9**	**-1.2**
	comp=Z,73nm,1.6s						
FOZ	**Fox Glacier**	**27.32**	**199**	*e*P	**P**	**23 40 05.7**	**+0.6**
	comp=Z,72nm,1.5s						
LBZ	**Lake Benmore**	**27.99**	**198**	*e*P	**P**	**23 40 09.5**	**-1.6**
	comp=Z,28nm,1.4s						
WKZ	**Wanaka**	**28.74**	**199**	*e*P	**P**	**23 40 16.5**	**-1.0**
	comp=Z,111nm,1.6s						
EIDS	**Eidsvold**	**29.21**	**250**	P	**P**	**23 40 22.4**	**+0.6**
	baz=29,SNR=9.1						
EIDS	**Eidsvold**	**29.21**	**250**	*e*P	**P**	**23 40 22.6**	**+0.8**
	comp=Z,34nm,0.7s						
MLZ	**Mavora Lakes**	**29.50**	**199**	*e*P	**P**	**23 40 25.1**	**+0.9**
	comp=Z,86nm,1.9s						
ARMA	**Armidale**	**29.87**	**240**	P	**P**	**23 40 29.3**	**+1.7**
	baz=30,SNR=10						
ARMA	**Armidale**	**29.87**	**240**	*e*P	**P**	**23 40 29.5**	**+1.9**
	comp=Z,22nm,0.8s						
DCZ	**Deep Cove**	**29.91**	**201**	*e*P	**P**	**23 40 27.6**	**+0.1**
	comp=Z,95nm,1.8s						
MGCD	**Mangrove Creek**	**31.22**	**235**	P	**P**	**23 40 40.3**	**+1.3**
	baz=31,SNR=4.3						
RMQ	**Roma**	**31.44**	**249**	P	**P**	**23 40 42.6**	**+1.6**
	baz=32,SNR=11						
CNB	**Canberra Magne**	**33.35**	**232**	P	**P**	**23 40 58.7**	**+1.7**
	baz=34,SNR=22						
CTA	**Charters Tower**	**33.40**	**261**	P	**P**	**23 40 57.7**	**+0.1**
	comp=Z,37nm,0.6s,baz=83,slow=10,SNR=20						
CTAO	**Charters Tower**	**33.40**	**261**	*e*P	**P**	**23 40 57.7**	**+0.1**
CTAO				pmax	pmax		
	comp=Z,46nm,0.7s						
CTAO	**Charters Tower**	**33.40**	**261**	*e*P	**P**	**23 40 57.7**	**+0.1**
	comp=Z,46nm,0.7s						
CAN	**Canberra**	**33.62**	**233**	*e*P	**P**	**23 41 00.7**	**+1.4**
CAN				pmax	pmax		
	comp=Z,22nm,0.8s						
CAN	**Canberra**	**33.62**	**233**	*e*P	**P**	**23 41 00.7**	**+1.4**
	comp=Z,22nm,0.8s						
PMG	**Port Moresby**	**34.44**	**280**	*d i*P	**P**	**23 41 07.9**	**+1.5**
PMG	**Port Moresby**	**34.44**	**280**	*e*P	**P**	**23 41 08.2**	**+1.8**
	comp=Z,166nm,0.8s						
CMSA	**Cobar Meteorol**	**35.08**	**241**	P	**P**	**23 41 12.5**	**+1.1**
	baz=35,SNR=39						
MTSU	**Mount Surprise**	**35.37**	**264**	P	**P**	**23 41 14.7**	**+0.7**
	baz=36,SNR=14						
QLP	**Quilpie**	**35.47**	**249**	P	**P**	**23 41 15.4**	**+0.6**
	baz=36,SNR=48						
COEN	**Coen**	**37.07**	**271**	P	**P**	**23 41 29.5**	**+1.4**
	baz=37,SNR=57						
COEN	**Coen**	**37.07**	**271**	*e*P	**P**	**23 41 29.4**	**+1.3**
	comp=Z,119nm,0.8s						
TOO	**Toolangi**	**37.09**	**231**	P	**P**	**23 41 29.4**	**+1.4**
	baz=37,SNR=16						
MANU	**Manus Island**	**37.10**	**291**	*e*P	**P**	**23 41 30.2**	**+1.9**
	comp=Z,85nm,1.3s						
STKA	**Stephens Creek**	**38.56**	**241**	P	**P**	**23 41 41.0**	**+1.0**
	comp=Z,50nm,0.8s,baz=88,slow=9.5,SNR=70						
STKA	**Stephens Creek**	**38.56**	**241**	P	**P**	**23 41 41.4**	**+1.5**
	baz=39,SNR=21						
ARPS	**Mount Arapiles**	**39.57**	**234**	P	**P**	**23 41 48.8**	**+0.8**
	baz=40,SNR=7.3						
HTT	**Hallett**	**41.07**	**240**	P	**P**	**23 42 01.2**	**+1.1**
	baz=41,SNR=20						
BBOO	**Buckleboo**	**43.33**	**241**	P	**P**	**23 42 18.5**	**+0.7**
	baz=44,SNR=51						
BBOO	**Buckleboo**	**43.33**	**241**	*e*P	**P**	**23 42 18.4**	**+0.6**
	comp=Z,57nm,0.8s						
MLOA	**Mauna Loa Obse**	**43.53**	**32**	*e*P	**P**	**23 42 20.1**	**+0.2**
KEKH	**Kekaha**	**43.76**	**26**	*e*P	**P**	**23 42 21.4**	**+0.3**
	comp=Z,376nm,1.5s						
WB2	**Warramunga Arr**	**44.57**	**260**	*e*P	**P**	**23 42 27.2**	**-0.3**
	comp=Z,56nm,0.6s						
WRAB	**Tennant Creek**	**44.57**	**260**	*d i*P	**P**	**23 42 27.1**	**-0.4**
WRAB	**Tennant Creek**	**44.57**	**260**	*e*P	**P**	**23 42 27.0**	**-0.4**
	comp=Z,47nm,0.6s						
WR1	**Warramunga Arr**	**44.58**	**260**	*e*P	**P**	**23 42 27.2**	**-0.3**
	comp=Z,65nm,0.6s						
WR1				*e*PcP	**PcP**	**23 43 57.2**	**-0.7**
WR1				*e*S	**S**	**23 48 17.0**	**-5.3**
WRA	**Warramunga Arr**	**44.58**	**260**	P	**P**	**23 42 27.2**	**-0.3**
	comp=Z,43nm,0.7s,baz=96,slow=7.3,SNR=440						
WRA				PcP	**PcP**	**23 43 57.2**	**-0.7**
	comp=Z,6.5nm,0.7s,baz=90,slow=3.8,SNR=5.5						
WRA				S	**S**	**23 48 17.0**	**-5.3**
	comp=Z,2.4nm,0.8s,baz=97,slow=13,SNR=3.9						
AS01	**Alice Springs**	**44.69**	**254**	*e*P	**P**	**23 42 28.6**	**+0.2**
AS31	**Alice Springs**	**44.73**	**254**	*e*P	**P**	**23 42 29.1**	**+0.4**
	comp=Z,54nm,0.6s						
AS31				*e*PcP	**PcP**	**23 43 58.1**	**-0.3**
AS31				*e*ScP	**ScP**	**23 46 56.6**	**+0.6**
AS31				*e*S	S	**23 48 21.7**	**-2.7**
ASAR	**Alice Springs**	**44.73**	**254

QSPA **South Pole Qui** 72.06 180 *e*P P 23 45 32.7 +0.9
TPUB **Ta-pu** 72.28 302 *e*P P 23 45 32.9 -0.7
comp=Z,38nm,0.7s
YHNB **Yeheng** 72.36 304 *e*P P 23 45 28.5 -5.6
comp=Z,88nm,1.5s
KSM **Kuching** 72.66 277 *e*P P 23 45 35.9 -0.2
comp=Z,67nm,0.8s
PETK **Petropavlovsk-** 73.75 345 P P 23 45 41.4 0.0
comp=Z,5.0nm,0.5s,baz=127,slow=9.8,SNR=4.0
PEA1 **Petropavlovsk-** 73.76 345 *e*P P 23 45 41.4 -0.1
CGJI **Cibinong** 74.57 268 P P 23 45 45.7 -1.2
comp=Z,136nm,0.6s
KSRS **Korea Array** 74.74 318 P P 23 45 48.4 +1.1
comp=Z,2.2nm,0.6s,baz=138,slow=6.4,SNR=6.1
KS15 **Wonju Array Si** 74.76 318 *e*P P 23 45 48.4 +1.0
KSAR **Wonju Array Be** 74.76 318 P P 23 45 48.4 +1.0
KSAR **Wonju Array Be** 74.76 318 P P 23 45 48.4 +1.0
KASI **Kota Agung** 76.02 269 P P 23 45 53.9 -1.1
comp=Z,66nm,0.8s
MDSI **Maura Dua** 76.63 270 P P 23 45 56.8 -1.5
comp=Z,26nm,0.9s
USRK **Ussuriysk Ar.** 76.67 326 P P 23 45 59.2 +1.4
comp=Z,2.6nm,0.8s,baz=128,slow=4.1,SNR=6.4
ARVC **Arvin** 77.37 46 P P 23 46 03.0 +1.2
baz=237
MWC **Mount Wilson** 77.42 48 *e*P P 23 46 03.0 +0.6
MWC pmax pmax
comp=Z,14nm,0.7s
MWC **Mount Wilson** 77.42 48 *e*P P 23 46 03.0 +0.6
comp=Z,14nm,0.7s
MURC **Murrieta** 77.71 48 P P 23 46 04.5 +0.7
baz=238
BFSC **Mount Baldy Ra** 77.71 48 P P 23 46 04.5 +0.6
baz=238
EDW2 **Edwards Air Fo** 77.82 47 P P 23 46 04.3 0.0
baz=238,SNR=8.4
MONP2 **Monument Peak** 77.90 49 P P 23 46 06.0 +1.0
baz=239,SNR=6.8
ISA **Isabella, Lake** 77.90 46 P P 23 46 05.4 +0.6
baz=237,SNR=5.8
CMB **Columbia Colle** 77.93 43 *e*P P 23 46 05.8 +1.0
CMB pmax pmax
comp=Z,15nm,1.0s
CMB **Columbia Colle** 77.93 43 *e*P P 23 46 05.8 +1.0
comp=Z,15nm,1.0s
AFDM **Forest Hills D** 78.07 42 *e*P P 23 46 06.5 +0.9
comp=Z,10nm,1.0s
MDJ **Mudanjiang** 78.24 325 P P 23 46 08.0 +1.8
MDJ pP pP 23 48 12.3 +4.5
MDJ sP PP 23 49 15.0 +0.8
MDJ S **S** 23 55 14.8 +0.3
MDJ pmax pmax
comp=Z,19nm,0.8s
MDJ pmax pmax
comp=Z,57nm,4.6s
PFO **Pinyon Flats O** 78.24 49 P P 23 46 07.8 +1.1
baz=239
PFO **Pinyon Flats O** 78.24 49 *i* P P 23 46 08.8 +2.1
O03D **Paynes Creek** 78.32 41 P P 23 46 07.7 +0.7
baz=234
L02D **Cave Junction,** 78.34 38 P P 23 46 08.1 +1.2
baz=232
LRMC **Laurel Mtn Rad** 78.35 47 P P 23 46 08.1 +0.9
baz=238
SWSC **Sam W. Stewart** 78.38 50 P P 23 46 07.8 +0.5
baz=240
SLBS **Sierra La Lagu** 78.63 60 *e*P P 23 46 10.6 +1.6
comp=Z,7.0nm,0.7s
BELC **Belle Mtn. Jos** 78.77 49 P P 23 46 10.5 +0.9
baz=239,SNR=5.8
MPMC **Manual Prospec** 78.79 46 P P 23 46 10.2 +0.6
baz=238,SNR=8.8
WAKR **Walker** 78.81 43 *e*P P 23 46 10.7 +1.0
GSC **Goldstone, Bar** 78.86 47 P P 23 46 10.6 +0.7
baz=238
MYKOM **Kota Tinggi** 78.87 276 *e*P P 23 46 10.9 +0.5
comp=Z,17nm,1.0s
HEC **Hector,Ludlow** 78.95 48 P P 23 46 11.1 +0.7
baz=239
BC3 **Big Chuckawall** 78.98 49 P P 23 46 11.6 +1.0
baz=240
GLA **Glamis** 79.14 50 P P 23 46 12.5 +1.2
baz=240
M04C **Macdoel** 79.17 39 P P 23 46 12.4 +0.9
baz=234
GRAC **Grapevine Rang** 79.37 45 P P 23 46 13.4 +0.9
baz=238
GMRC **Granite Mounta** 79.41 48 P P 23 46 13.7 +0.8
baz=239
I03D **Drain, OR** 79.42 37 P P 23 46 13.6 +1.0
baz=232
FURC **Furnace Creek,** 79.43 46 P P 23 46 13.8 +1.1
baz=238
IRM **Iron Mountain** 79.46 49 P P 23 46 14.1 +1.1
baz=240,SNR=6.3
NV01 **Mina Array Sit** 79.51 44 *e*P P 23 46 14.1 +0.7
NV01 *e*pP **pP** 23 48 17.9 +2.4
NVAR **Mina Array Bea** 79.51 44 P P 23 46 14.1 +0.7
comp=Z,7.8nm,0.8s,baz=224,slow=8.8,SNR=54
NVAR pP **pP** 23 48 17.9 +2.4
comp=Z,1.1nm,0.9s,baz=222,slow=9.3,SNR=2.4
SHOC **Shoshone, Teco** 79.54 47 P P 23 46 14.4 +1.0
baz=239
TUQ **Turquoise Moun** 79.55 47 P P 23 46 14.5 +0.8
baz=239,SNR=7.1
NV11 **Mina Array Sit** 79.61 44 *e*P P 23 46 14.2 +0.3
comp=Z,10nm,0.9s
Y12C **Blythe** 79.70 50 P P 23 46 15.1 +0.8
baz=240
Y12C **Blythe** 79.70 50 *e*P P 23 46 15.8 +1.6
comp=Z,12nm,1.0s
K04D **Chiloquin, OR** 79.72 39 P P 23 46 15.1 +0.8
baz=234
LDFC **Landfair** 79.94 48 *e*P P 23 46 17.3 +1.6
comp=Z,28nm,1.0s
I04A **Tendick Farm,** 80.02 38 P P 23 46 16.4 +0.7
baz=233
214A **Organ Pipe Nat** 80.09 52 P P 23 46 18.1 +1.7
baz=242
TPNV **Topopah Spring** 80.11 46 P P 23 46 17.1 +0.6
baz=239,SNR=7.7
TPNV **Topopah Spring** 80.11 46 *e*P P 23 46 17.5 +1.0
TPNV pmax pmax
comp=Z,9.0nm,1.0s
TPNV **Topopah Spring** 80.11 46 *e*P P 23 46 17.4 +1.0
comp=Z,9.0nm,1.0s
KLR **Kul'dur** 80.17 329 *e*P P 23 46 16.2 -0.1
MOD **Modoc Plateau** 80.17 40 *e*P P 23 46 17.6 +0.8
comp=Z,14nm,0.8s
PDMCI **Parker Dam,Lak** 80.25 49 P P 23 46 18.4 +1.3
baz=240
K05A **Summer Lake** 80.29 39 *e*P P 23 46 18.4 +1.1
comp=Z,29nm,1.0s
J05D **Fort Rock, OR** 80.41 39 P P 23 46 18.8 +0.9
baz=234,SNR=7.6
H04A **Detroit Lake** 80.68 37 *e*P P 23 46 19.8 +0.6
comp=Z,65nm,1.6s
RSO **Redoubt South** 80.90 13 *e*P P 23 46 19.9 -0.2
Y14A **Wickenburg** 80.90 50 *e*P P 23 46 21.6 +1.1
comp=Z,31nm,1.1s
I05D **Terrebonne, OR** 80.97 38 P P 23 46 21.9 +1.3
baz=234
R11A **Troy Canyon, C** 81.28 45 P P 23 46 22.7 +0.2
baz=239,SNR=8.5
R11A **Troy Canyon, C** 81.28 45 *e*P P 23 46 23.3 +0.7
comp=Z,4.1nm,0.9s
WVOR **Wild Horse Val** 81.50 40 *e*P P 23 46 24.3 +0.8
WVOR pmax pmax
comp=Z,17nm,1.0s
WVOR **Wild Horse Val** 81.50 40 *e*P P 23 46 24.3 +0.8
comp=Z,17nm,1.0s
G05D **Wamic, OR** 81.51 37 P P 23 46 24.4 +1.0
baz=234
SEPW **September Lobe** 81.59 36 *e*P P 23 46 26.9 +2.8
SPU **Mount Spurr** 81.69 13 *e*P P 23 46 23.6 -0.4
TUC **Tucson** 81.78 52 P P 23 46 26.7 +1.6
baz=243
TUC **Tucson** 81.78 52 *e*P P 23 46 27.1 +1.9
TUC pmax pmax
comp=Z,14nm,1.1s
TUC **Tucson** 81.78 52 *e*P P 23 46 27.1 +1.9
comp=Z,14nm,1.1s
LCMT **Little Creek M** 82.21 47 *e*P P 23 46 28.3 +1.0
comp=Z,9.7nm,0.9s
X16A **Lo Mia Camp, P** 82.26 50 *e*P P 23 46 29.0 +1.3
comp=Z,13nm,1.0s
IPM **Ipoh** 82.40 277 *e*P P 23 46 28.6 -0.1
comp=Z,28nm,0.8s
319A **Douglas** 82.50 54 *e*P P 23 46 30.9 +2.0
comp=Z,19nm,0.9s
KNB **Kanab** 82.51 47 *e*P P 23 46 30.4 +1.5
KNB pmax pmax
comp=Z,9.0nm,0.8s
KNB **Kanab** 82.51 47 *e*P P 23 46 30.4 +1.5
comp=Z,8.8nm,0.8s
TT01 **Tatalina** 82.54 10 *e*P P 23 46 28.3 +0.2
PSUT **Pine Spring** 82.54 46 *e*P P 23 46 30.1 +1.0
comp=Z,7.4nm,0.8s
U15A **North Rim** 82.60 48 *e*P P 23 46 30.8 +1.4
comp=Z,18nm,0.8s
ELK **Elko** 82.74 43 *e*P P 23 46 30.7 +0.7
ELK pmax pmax
comp=Z,9.0nm,1.1s
ELK **Elko** 82.74 43 *e*P P 23 46 30.7 +0.7
comp=Z,9.0nm,1.1s
WUAZ **Wupatki** 82.83 49 P P 23 46 31.9 +1.4
baz=242
WUAZ **Wupatki** 82.83 49 *e*P P 23 46 31.8 +1.4
comp=Z,14nm,1.1s
A04D **Lummi Island** 82.83 33 P P 23 46 31.1 +1.2
baz=232
B05A **Bryant** 82.88 34 P P 23 46 31.2 +1.0
baz=233
HAWA **Hanford** 83.19 37 *e*P P 23 46 33.0 +1.2
comp=Z,14nm,1.0s
SCM **Sheep Creek Mo** 83.32 14 *e*P P 23 46 31.9 -0.3
SCM pmax pmax
comp=Z,12nm,0.8s
SCM **Sheep Creek Mo** 83.32 14 *e*P P 23 46 31.9 -0.3
comp=Z,12nm,0.8s
PANO **Nakornpanom** 83.36 290 P P 23 46 33.8 +0.5
comp=Z,19nm,1.1s
X18A **Snowflake** 83.41 51 *e*P P 23 46 34.8 +1.4
comp=Z,5.2nm,0.9s
MTPU **Mount Pierson** 83.45 47 *e*P P 23 46 35.4 +1.6
comp=Z,8.9nm,0.9s
CRQM **Cirque** 83.46 17 *e*P P 23 46 33.6 +0.6
SKLT **Songkhla** 83.64 280 P P 23 46 36.4 +1.6
comp=Z,40nm,0.9s
MSU **Marysvale** 83.68 46 *e*P P 23 46 36.3 +1.6
MSU **Marysvale** 83.68 46 *e*P P 23 46 36.3 +1.6
CAST **Castle Rocks** 83.72 12 *e*P P 23 46 32.7 -1.3
comp=Z,9.6nm,0.9s
MFID **Camas Ranch** 83.76 41 *e*P P 23 46 35.8 +0.9
comp=Z,11nm,1.1s
MAW **Mawson** 83.77 200 P P 23 46 34.4 +0.1
comp=Z,5.5nm,0.5s,baz=148,slow=4.9,SNR=15
MAW **Mawson** 83.77 200 P P 23 46 34.1 -0.2
baz=84,SNR=9.4
MAW **Mawson** 83.77 200 *e*P P 23 46 34.4 +0.1
MAW pmax pmax
comp=Z,2.0nm,0.9s
MAW **Mawson** 83.77 200 *e*P P 23 46 34.4 +0.1
comp=Z,2.0nm,0.9s
BJI **Beijing** 83.82 315 P P 23 46 35.8 +0.8
BJI pmax pmax
comp=Z,12nm,0.9s
BJI pmax pmax
comp=Z,71nm,3.8s
SEY **Seymchan** 83.85 347 *e*P P 23 46 34.6 0.0
PSI **Prapat** 83.86 275 *e*P P 23 46 35.7 -0.3
PSI pmax pmax
comp=Z,26nm,0.8s
PSI **Prapat** 83.86 275 *e*P P 23 46 35.7 -0.3
comp=Z,26nm,0.8s
SKNT **Sakolnakorn** 83.86 290 P P 23 46 36.1 +0.3
comp=Z,25nm,1.1s
CHBT **CHBT** 83.90 285 P P 23 46 37.3 +1.3
comp=Z,18nm,1.4s
BALM **Baldy** 83.91 17 *e*P P 23 46 35.1 -0.1
BALM pmax pmax
comp=Z,7.0nm,1.0s
BALM **Baldy** 83.91 17 *e*P P 23 46 35.1 -0.1
comp=Z,7.3nm,1.0s
D08A **Wollman Farm,** 83.92 36 *e*P P 23 46 36.3 +0.9
comp=Z,8.2nm,0.8s
DUG **Dugway, Tooele** 84.07 45 P P 23 46 38.0 +1.5
baz=241
KTH **Kantishna Hill** 84.07 12 *e*P P 23 46 34.7 -1.1
comp=Z,6.7nm,1.0s
TRF **Thorofare Moun** 84.10 12 *e*P P 23 46 35.1 -1.0
comp=Z,13nm,0.9s
121A **Cookes Peak, D** 84.15 53 P P 23 46 38.4 +1.2
baz=244
F10A **Beach Ranch, E** 84.29 38 *e*P P 23 46 37.8 +0.5
comp=Z,18nm,1.0s
RND **Reindeer** 84.36 13 *e*P P 23 46 35.6 -1.7
RND pmax pmax
comp=Z,13nm,0.9s
RND **Reindeer** 84.36 13 *e*P P 23 46 35.6 -1.7
comp=Z,13nm,0.9s
B08A **Colville Reser** 84.43 35 *e*P P 23 46 38.1 +0.2
comp=Z,8.7nm,0.8s
SRAK **Srakaev** 84.59 287 P P 23 46 38.4 -1.0
comp=Z,25nm,1.2s
MCK **McKinley** 84.63 13 *e*P P 23 46 38.4 -0.1
MCK pmax pmax
comp=Z,13nm,1.2s
MCK **McKinley** 84.63 13 *e*P P 23 46 38.4 -0.1
comp=Z,12nm,1.2s
HLID **Hailey** 84.72 41 P P 23 46 40.8 +1.1
baz=239
HLID **Hailey** 84.72 41 *e*P P 23 46 40.6 +1.0
comp=Z,6.7nm,0.8s
TMUT **Trail Mountain** 84.72 46 *e*P P 23 46 41.3 +1.4
comp=Z,5.8nm,0.9s
TRTT **Trang** 84.73 280 P P 23 46 41.5 +1.4
comp=Z,38nm,1.0s
NONG **Nongkai** 85.00 291 P P 23 46 42.0 +0.7
comp=Z,24nm,0.8s
GYA **Guiyang** 85.05 300 P P 23 46 42.3 +0.8
GYA pP pP 23 48 52.5 +6.7
GYA sP sP 23 49 52.0 +7.8
GYA PP **PP** 23 50 13.5 +3.7
GYA SKS **SKSac** 23 56 07.8 -3.9
GYA S **SKKSac** 23 56 21.0 +0.9
GYA sS sS 00 00 10.0 +4.9
GYA pmax pmax
comp=Z,20nm,1.0s
GYA pmax pmax
comp=Z,120nm,5.8s
SRU **San Rafael Swe** 85.10 46 *e*P P 23 46 42.5 +0.9
SRU pmax pmax
comp=Z,6.0nm,0.8s
SRU **San Rafael Swe** 85.10 46 *e*P P 23 46 42.5 +0.9
comp=Z,6.0nm,0.8s
WRH **Wood River Hil** 85.46 13 *e*P P 23 46 41.9 -0.6
comp=Z,11nm,1.3s
HWUT **Hardware Ranch** 85.58 44 *e*P P 23 46 44.2 +0.4
HWUT *e*PP **PP** 23 50 13.1 -0.7
NEW **Newport** 85.60 36 P P 23 46 43.5 -0.1
baz=237
MNTX **Cornudas Mount** 85.65 55 P P 23 46 44.9 +0.7
baz=246
MNTX **Cornudas Mount** 85.65 55 *e*P P 23 46 45.2 +1.1
comp=Z,4.5nm,0.8s
CCB **Clear Creek Bu** 85.68 13 *e*P P 23 46 42.5 -1.0
comp=Z,4.4nm,1.0s
MDM **Murphy Dome** 85.86 12 *e*P P 23 46 43.5 -0.9
comp=Z,5.6nm,1.0s
COLA **College** 85.87 13 *i* P P 23 46 43.8 -0.5
COLA pmax pmax
comp=Z,4.0nm,0.8s
IL1 **Eielson Array** 85.98 13 *e*P P 23 46 43.7 -1.2
ILAR **Eielson Array** 85.98 13 P P 23 46 43.6 -1.3
comp=Z,1.8nm,0.8s,baz=232,slow=5.6,SNR=14
ILAR pP **pP** 23 48 51.6 +2.0
comp=Z,0.8nm,1.0s,baz=234,slow=5.5,SNR=3.3
ILB **Eielson Array** 85.98 13 *e*P P 23 46 43.6 -1.3
ILB *e*pP **pP** 23 48 51.6 +2.0
LTX **Lajitas** 86.07 58 *e*P P 23 46 47.9 +1.6
LTX **Lajitas** 86.07 58 *e*P P 23 46 47.9 +1.6
TX31 **Lajitas Ar. Si** 86.07 58 *e*P P 23 46 47.7 +1.4
TXAR **Lajitas Array** 86.07 58 P P 23 46 47.9 +1.6
comp=Z,10nm,0.8s,baz=219,slow=5.8,SNR=50
ANMO **Albuquerque** 86.18 52 P P 23 46 47.6 +0.8
baz=245
ANMO **Albuquerque** 86.18 52 ⇑ *i* P P 23 46 46.3 -0.5
ANMO pmax pmax
comp=Z,5.0nm,1.0s
ANMO **Albuquerque** 86.18 52 *e*P P 23 46 47.4 +0.5
comp=Z,5.3nm,0.9s
XAN **Xi'an** 86.29 307 P P 23 46 47.8 +0.6
XAN pmax pmax
comp=Z,23nm,1.1s
MCMT **McKenzie Canyo** 86.33 40 *e*P P 23 46 48.5 +1.1
PHET **Kaeng Krachan** 86.44 285 P P 23 46 50.1 +1.9
comp=Z,12nm,0.8s
LOEI **Loei** 86.48 290 P P 23 46 48.6 +0.2
BILL **Bilibino** 86.52 354 *e*P P 23 46 47.5 +0.1
BILL *e*PP **pP** 23 48 50.2 -2.1
BILL *e* 23 50 27.1
BILL pmax pmax
comp=Z,2.0nm,0.8s
MSO **Missoula** 86.67 38 P P 23 46 49.2 +0.5
baz=239
MLSI **Meulaboh, Aceh** 86.70 276 P P 23 46 49.8 +0.3
comp=Z,74nm,0.8s
BSMT **Bassoo Peak** 86.71 37 *e*P P 23 46 49.2 +0.2
REDW **Red Top Meadow** 86.88 42 *e*P P 23 46 50.1 +0.2
comp=Z,17nm,1.1s
FXWY **Fox Creek** 86.89 42 *e*P P 23 46 51.1 +1.0
comp=Z,4.9nm,0.9s
SNOW **Snow King Moun** 86.99 42 *e*P P 23 46 51.8 +1.3
comp=Z,15nm,1.1s
LRM **Limekiln Ridge** 87.06 40 *e*P P 23 46 51.9 +1.1
IMW **Indian Meadow** 87.07 42 *e*P P 23 46 51.8 +0.8
comp=Z,11nm,0.9s
IMW *e*PP **PP** 23 50 24.0 -1.7
S22A **4UR Ranch, Cre** 87.09 49 P P 23 46 51.8 +0.6
baz=245
S22A **4UR Ranch, Cre** 87.09 49 *e*P P 23 46 52.4 +1.2
comp=Z,5.0nm,1.0s
CHMT **Chamberlain Mo** 87.12 39 *e*P P 23 46 51.2 +0.2
MOOW **Moose Ponds** 87.13 42 *e*P P 23 46 52.0 +0.8
comp=Z,3.9nm,1.0s
O20A **White River Ci** 87.14 46 P P 23 46 51.8 +0.5
baz=244
O20A **White River Ci** 87.14 46 *e*P P 23 46 52.0 +0.8
comp=Z,6.0nm,1.0s
LOHW **Long Hollow** 87.15 42 *e*P P 23 46 51.9 +0.6
comp=Z,21nm,1.7s
FLWY **Flagg Ranch** 87.31 42 *e*P P 23 46 53.5 +1.5
comp=Z,11nm,1.0s
BW06 **Boulder Array** 87.44 43 P P 23 46 52.9 +0.3
baz=243
BW06 **Boulder Array** 87.44 43 *e*P P 23 46 52.8 +0.1
PD31 **Pinedale Array** 87.44 43 *e*P P 23 46 52.7 +0.1
PD31 *e*pP pP 23 49 02.9 +5.1
PDAR **Pinedale Array** 87.44 43 P P 23 46 52.7 +0.1
comp=Z,3.6nm,0.6s,baz=214,slow=3.4,SNR=37
PDAR pP pP 23 49 02.9 +5.1
comp=Z,0.4nm,0.8s,baz=248,slow=2.4,SNR=3.7
BOZ **Bozeman (W)** 87.48 40 P P 23 46 53.2 +0.6
baz=241
COLD **Coldfoot** 87.50 11 *e*P P 23 46 52.6 +0.5
comp=Z,3.0nm,0.8s
H17A **Grant Village** 87.54 42 P P 23 46 55.0 +1.9
baz=242
H17A **Grant Village** 87.54 42 *e*P P 23 46 55.5 +2.4
comp=Z,8.2nm,0.9s
KMI **Kunming** 87.84 297 P P 23 46 56.5 +1.6
KMI pmax pmax
comp=Z,8.0nm,0.9s
KMI pmax pmax
comp=Z,31nm,3.1s
SDCO **Great Sand Dun** 88.05 49 P P 23 46 55.7 +0.1
baz=246
MSTX **Muleshoe** 88.57 54 P P 23 46 58.4 +0.5
baz=247
MSTX **Muleshoe** 88.57 54 *e*P P 23 46 58.6 +0.6
comp=Z,12nm,1.1s
T25A **Trinidad** 88.59 50 P P 23 46 59.5 +1.4
baz=246
832A **Faith Ranch, C** 88.68 60 P P 23 46 59.8 +1.3
baz=249
RLMT **Red Lodge** 88.70 41 P P 23 46 59.7 +1.2
baz=243
RLMT **Red Lodge** 88.70 41 *e*P P 23 46 59.8 +1.3
comp=Z,6.9nm,0.9s
Q24A **Divide** 88.80 48 P P 23 47 00.2 +1.1
baz=246
ISCO **Idaho Springs** 88.82 47 P P 23 46 59.4 +0.2
baz=245
CM01 **Chiang Mai Arr** 88.86 290 *e*P P 23 47 00.3 +0.8
CM31 **Chiang Mai Arr** 88.88 290 *e*P P 23 47 01.0 +1.4
CMAR **Chiang Mai Arr** 88.88 290 P P 23 47 01.0 +1.4
comp=Z,6.3nm,0.8s,baz=111,slow=3.0,SNR=40
CMAR **Chiang Mai Arr** 88.88 290 *i* P P 23 47 01.2 +1.6
CMAR pmax pmax
comp=Z,6.0nm,0.8s
CHTO **Chiang Mai** 89.00 290 *e*P P 23 47 01.0 +0.9
CHTO pmax pmax
comp=Z,9.0nm,0.8s
CHTO **Chiang Mai** 89.00 290 *e*P P 23 47 01.0 +0.9
comp=Z,8.8nm,0.8s
N23A **Red Feather La** 89.04 46 P P 23 47 01.2 +1.0
baz=245
SYO **Syowa Base** 89.06 193 ‖ *e*P P 23 46 57.4 -2.0
CD2 **Chengdu** 89.09 303 P P 23 47 00.3 0.0
CD2 pP pP 23 49 11.3 +5.2
CD2 sP sP 23 50 12.0 +8.0
CD2 PP **PP** 23 50 41.5 0.0
CD2 SKS **SKSac** 23 56 31.8 -3.7
CD2 S **S** 23 56 58.3 -2.7
CD2 SS **SS** 00 03 12.0 -1.0
CD2 pmax pmax
comp=Z,10.0nm,0.3s
CD2 pmax pmax
comp=Z,120nm,5.1s
833A **Chaparral WMA,** 89.17 60 P P 23 47 01.8 +1.1
baz=249
JCT **Junction City** 89.61 58 P P 23 47 03.5 +0.7
baz=249
YAK **Yakutsk** 89.64 338 *e*P P 23 47 02.1 0.0
YAK pmax pmax
comp=Z,12nm,0.5s
AMTX **Amarillo** 89.75 53 P P 23 47 03.9 +0.5
baz=248
633A **Saathoff Ranch** 89.75 59 P P 23 47 04.6 +1.2
baz=249
533A **Kerrville** 90.08 58 P P 23 47 05.8 +0.8
baz=249
433A **Art** 90.28 58 P P 23 47 06.3 +0.5
baz=249
ABTX **Abilene, Hawle** 90.50 56 P P 23 47 07.4 +0.6
baz=249
ABTX **Abilene, Hawle** 90.50 56 *e*P P 23 47 07.7 +0.8
comp=Z,16nm,1.1s
SNAA **Sanae** 90.51 179 P P 23 47 05.7 -0.5
534A **Blanco** 90.52 59 P P 23 47 07.5 +0.5
baz=250
333A **Richland Sprin** 90.57 57 P P 23 47 07.7 +0.6
baz=249
VNA3 **Neumayer Olymp** 90.65 176 P P 23 47 05.2 -1.6
233A **Rising Star** 90.88 57 P P 23 47 09.3 +0.7
baz=249
LZH **Lanzhou** 90.92 308 *e*P P 23 47 11.0 +2.2
LZH pP pP 23 49 22.3 +7.4
LZH PP **PP** 23 50 59.0 +3.1
LZH SKS **SKSac** 23 56 46.0 0.0
LZH *e*S **S** 23 57 15.0 -2.4
LZH sS sS 00 01 08.3 +5.4
LZH SS **SS** 00 03 42.0 +2.9
LZH pmax pmax
comp=Z,33nm,1.1s
LZH pmax pmax
comp=Z,95nm,4.4s
434A **Burnet** 90.96 58 P P 23 47 09.4 +0.4
baz=250
133A **Hamilton Ranch** 91.07 56 P P 23 47 09.8 +0.4
baz=249
VNA2 **Neumayer--Watz** 91.09 177 P P 23 47 10.0 +1.2
baz=197,slow=4.6
334A **Lometa** 91.17 58 P P 23 47 10.4 +0.4
baz=250
VNA1 **Neumayer--Stat** 91.32 177 P P 23 47 10.2 +0.4
X32A **Elmer** 91.42 54 P P 23 47 11.3 +0.3
baz=249
Z33A **Whitaker Ranch** 91.43 56 P P 23 47 11.3 +0.2
baz=249
RSSD **Black Hills** 91.65 44 P P 23 47 12.3 +0.3
baz=246
RSSD **Black Hills** 91.65 44 *e*P P 23 47 12.4 +0.3
RSSD pmax pmax
comp=Z,5.0nm,1.0s
RSSD **Black Hills** 91.65 44 *e*P P 23 47 12.4 +0.3
comp=Z,4.9nm,1.0s
W32A **Sentinel** 91.70 54 P P 23 47 12.9 +0.6
baz=249

I25A	Rochford	91.81	44	P		P	23 47 13.2	+0.4
	baz=247							
J26A	Sides Ranch, S	91.97	45	P		P	23 47 13.8	+0.4
	baz=247							
INK	Inuvik	91.98	15	P		P	23 47 11.9	-0.8
	comp=Z,2.2nm,0.7s,baz=215,slow=3.3,SNR=8.4							
INK	Inuvik	91.98	15	*eP*		P	23 47 11.9	-0.8
INK				pmax		pmax		
	comp=Z,4.0nm,0.9s							
INK	Inuvik	91.98	15	*eP*		P	23 47 11.9	-0.8
	comp=Z,3.6nm,0.9s							
X33A	Lawton	92.07	54	P		P	23 47 14.6	+0.6
	baz=250							
W33A	Caddo, Fort Co	92.31	54	P		P	23 47 16.3	+1.2
	baz=250							
U32A	Winter Ranch,	92.33	53	P		P	23 47 16.0	+0.9
	baz=249							
T32A	Huddler Ranch,	92.67	52	P		P	23 47 17.2	+0.5
	baz=249							
J27A	Elkhorn Farm,	92.67	45	P		P	23 47 17.7	+1.1
	baz=248							
F25A	Bowman	92.74	42	P		P	23 47 17.6	+0.8
	baz=247							
ULN	Ulaanbaatar	93.20	319	*eP*		P	23 47 19.0	0.0
ULN				pmax		pmax		
	comp=Z,3.0nm,1.0s							
R32A	Long Quarter,	93.26	51	P		P	23 47 20.1	+0.8
	baz=250							
Z36A	Blue Ridge	93.26	56	P		P	23 47 19.4	-0.1
	baz=251							
DGMT	Dagmar	93.28	40	P		P	23 47 20.1	+0.9
	baz=246							
G27A	Dupree	93.52	43	P		P	23 47 21.2	+0.8
	baz=248							
Q32A	Meitler Ranch,	93.56	50	P		P	23 47 21.6	+0.9
	baz=250							
SONA0	Songino Array	93.59	319	*eP*		P	23 47 21.2	+0.4
	comp=Z,6.5nm,1.6s							
SONM	Songino Array	93.59	319	P		P	23 47 21.2	+0.4
	comp=Z,0.7nm,0.7s,baz=122,slow=3.7,SNR=5.3							
F27A	Lemmon	93.65	43	P		P	23 47 21.9	+0.9
	baz=248							
R33A	Olander Ranch,	93.75	51	P		P	23 47 22.4	+0.7
	baz=250							
Q33A	Connelly Farm,	94.10	50	P		P	23 47 23.9	+0.8
	baz=250							
S34A	Willow Spring	94.20	52	P		P	23 47 24.5	+0.8
	baz=251							
C26A	Wahner Farm, P	94.33	41	P		P	23 47 25.1	+1.0
	baz=248							
YKA	Yellowknife Ar	94.42	25	P		P	23 47 23.3	-0.7
	comp=Z,1.2nm,0.9s,baz=241,slow=4.7,SNR=17							
YKB5	Yellowknife Ar	94.42	25	*eP*		P	23 47 23.3	-0.7
W37B	Quinton	94.65	55	P		P	23 47 26.8	+1.0
	baz=251							
Q34A	Chapman	94.73	51	P		P	23 47 26.5	+0.5
	baz=251							
T36A	Boggs Farm, Ca	94.92	53	P		P	23 47 27.6	+0.7
	baz=251							
KSU1	Kansas State U	95.03	51	P		P	23 47 27.8	+0.5
	baz=251							
TIXI	Tiksi	96.23	345	*eP*		P	23 47 32.0	0.0
TIXI				pmax		pmax		
	comp=Z,1.0nm,0.9s							
TLY	Talaya	96.67	322	*eP*		P	23 47 33.8	-0.7
TLY				pmax		pmax		
	comp=Z,1.0nm,0.9s							
H33A	Prehn Over Nor	96.73	45	Pdiff		P	23 47 35.5	+0.6
	baz=251							
P37A	Lathrop	96.85	51	Pdiff		P	23 47 36.2	+0.6
	baz=252							
R39A	Chumby, Stover	97.45	52	Pdiff		P	23 47 39.2	+0.9
	baz=253							
C38A	Sawbill Land.	101.23	43	Pdiff		Pdif	23 47 55.9	+1.0
	baz=256							
ZAA1	Zalesovo Array	108.28	322	*e*PKiKP		PKiKP	23 52 26.2	-2.3
ZALV	Zalesovo Beam	108.28	322	PKiKP		PKiKP	23 52 26.2	-2.3
	comp=Z,0.8nm,0.5s,baz=87,slow=1.0,SNR=5.1							
MK32	Makanchi Array	109.17	314	*e*PKiKP		PKiKP	23 52 28.9	-1.6
MKAR	Makanchi Array	109.17	314	PKiKP		PKiKP	23 52 28.9	-1.6
	comp=Z,1.2nm,0.5s,baz=112,slow=2.2,SNR=12							
KSH	Kashi	113.10	306	*e*PKP		PKiKP	23 52 40.5	+2.2
KSH				*es*PKP			23 55 56.0	
KSH				SKS		SKSdf	23 58 56.3	+0.2
KSH				AMB		AMB		
	comp=Z,140nm,5.0s							
VOSK	Vostochnaya	116.56	320	*e*PKiKP		PKPdf	23 52 43.2	-1.2
VOSK	Vostochnaya	116.56	320	*e*PKPdf		PKPdf	23 52 43.2	-1.2
BVAR	Borovoye Array	116.89	321	PKP		PKPdf	23 52 44.0	-1.0
	comp=Z,2.7nm,0.5s,baz=95,slow=1.7,SNR=26							
BVAR	Borovoye Array	116.89	321	PKiKP		PKPdf	23 52 44.0	-1.0
KKAR	Karatay Array	117.35	310	*e*PKiKP		PKPdf	23 52 45.2	-1.0
KKAR	Karatay Array	117.35	310	*e*PKPdf		PKPdf	23 52 45.2	-1.0
ZRNK	Zerenda	117.73	321	*e*PKiKP		PKPdf	23 52 45.6	-1.0
ZRNK	Zerenda	117.73	321	*e*PKPdf		PKPdf	23 52 45.6	-1.0
ARU	Arti	122.90	326	PKP		PKPdf	23 52 55.6	-0.8
	comp=Z,3.5nm,0.5s,baz=340,slow=0.4,SNR=12							
ARU	Arti	122.90	326	*i* PKiKP		PKPdf	23 52 55.4	-1.0
ARU							23 59 09.7	
AKTO	Aktyubinsk	124.91	319	PKP		PKPdf	23 52 59.7	-0.8
	comp=Z,2.2nm,0.7s,baz=116,slow=3.6,SNR=9.1							
ARA0	ARCESS Array S	126.39	350	*e*PKPdf		PKPdf	23 53 01.9	-0.9
ARCES	ARCESS Array B	126.39	350	PKP		PKPdf	23 53 01.9	-0.9
	comp=Z,3.5nm,0.7s,baz=326,slow=0.4,SNR=7.7							
GEYT	Alibeck	127.06	304	PKP		PKPdf	23 53 04.3	-0.7
	comp=Z,3.2nm,0.8s,baz=126,slow=3.5,SNR=10							
KLMR	Klimovskoe	129.43	337	*e*PKiKP		PKPdf	23 53 06.5	-2.2
KLMR				pmax		pmax		
	comp=Z,7.0nm,1.4s							
FIA0	FINESS Array S	133.26	344	*e*PKiKP		PKPdf	23 53 14.0	-2.0
FIA0				*e*			23 55 49.3	
FIA0	FINESS Array S	133.26	344	*e*PKPdf		PKPdf	23 53 14.0	-2.0
FIA0				*e*PP		PP	23 55 49.2	-2.2
FINES	FINESS Array B	133.26	344	PKP		PKPdf	23 53 14.0	-2.0
	comp=Z,1.9nm,0.6s,baz=107,slow=4.2,SNR=12							
FINES				PP		PP	23 55 49.2	-2.2
	comp=Z,3.0nm,1.0s,baz=5.7,slow=7.7,SNR=4.1							
OBN	Obninsk	134.36	333	*e*PKiKP		PKPdf	23 53 17.9	-0.3
OBN				*e*			23 55 59.4	
OBN				pmax		pmax		
	comp=Z,3.0nm,0.9s							
NB2	NORSAR Subarra	136.46	353	PKP		PKPpre	23 53 14.3	
	comp=Z,0.7nm,0.7s,baz=17,slow=3.5							
NB200	NORSAR Array S	136.46	353	*e*PKPpre		PKPpre	23 53 14.0	
NB200				*e*PKPdf		PKiKP	23 53 22.8	-1.1
NOA	NORSAR Array B	136.46	353	PKhKP		PKPpre	23 53 14.0	
	comp=Z,0.8nm,0.7s,baz=14,slow=2.3,SNR=5.5							
NOA				PKP		PKiKP	23 53 22.7	-1.1
	comp=Z,1.7nm,1.0s,baz=14,slow=4.1,SNR=3.7							
ZEI	Tsey	136.52	314	*i* PKiKP		PKPdf	23 53 22.7	-0.2
ZEI				pmax		pmax		
	comp=Z,4.0nm,0.8s							
KBZ	Khabaz	136.84	316	PKP		PKPdf	23 53 24.2	+1.0
	comp=Z,1.0nm,0.8s,baz=90,slow=2.7,SNR=4.8							
KIV	Kislovodsk	136.89	316	*e*PKiKP		PKPdf	23 53 21.6	-1.8
KIV				*e*			23 56 14.5	
KIV				pmax		pmax		
	comp=Z,2.0nm,1.0s							
KMBO	Kilima Mbogo	140.06	245	*i* PKHKP		PKPpre	23 53 25.5	
KMBO				pmax		pmax		
	comp=Z,1.0nm,0.4s							
AKASG	Malin Array Be	140.62	332	PKhKP		PKPpre	23 53 22.8	
	comp=Z,1.2nm,0.4s,baz=43,slow=4.1,SNR=15							
AKASG				PKP		PKiKP	23 53 30.9	-1.8
	comp=Z,1.4nm,0.5s,baz=45,slow=3.2,SNR=7.9							
AKBB	Malin Array Si	140.62	332	*e*PKHKP		PKPpre	23 53 22.8	
AKBB				*e*			23 53 30.9	
AKBB	Malin Array Si	140.62	332	*e*PKPpre		PKPpre	23 53 22.8	
AKBB				*e*PKPdf		PKiKP	23 53 30.9	-1.8
AK11	Malin Array Si	140.66	332	*e*PKPpre		PKPpre	23 53 23.4	
KELT	Kelkit	140.75	312	*i* P		PKPdf	23 53 26.3	-4.4
ERBA	Erbaa	142.26	314	*i* P		PKPdf	23 53 30.8	-2.4
CUKAN	kangal_SIVAS	142.35	312	*i* P		PKPdf	23 53 31.6	-2.0
SURC	SANLIURFA_SURC	142.42	308	*i* P		PKPdf	23 53 30.6	-2.9
AKCD	Akcadag	142.42	310	*i* P		PKPdf	23 53 31.5	-2.1
EKA	Eskdalemuir Ar	142.56	4	PKhKP		PKPpre	23 53 29.0	
	comp=Z,0.8nm,0.6s,baz=337,slow=2.5,SNR=4.4							
HAVZ	Havza	142.78	315	*i* P		PKPdf	23 53 32.4	-1.7
SORM	Soroca	142.85	330	‖*i* P		PKPdf	23 53 30.6	-3.3
CUALT	Altinyayla-SIV	142.87	312	*i* P		PKPdf	23 53 33.3	-1.1
GZT	Gaziantep	143.03	309	*i* P		PKPdf	23 53 33.3	-1.5
CUSAR	Sarkisla-SIVAS	143.16	313	*i* P		PKPdf	23 53 34.0	-0.9
MILM	Milestii Mici	143.47	328	‖*i* P		PKPab	23 53 32.5	-1.1
LVV	L'vov	143.47	335	*e*PKiKP		PKPab	23 53 33.0	-0.6
HCB	Kahramanmara¯	143.52	309	*i* P		PKPdf	23 53 34.4	-1.1
KUZU	Kuzuini	143.61	308	*i* P		PKPdf	23 53 34.8	-0.9
COAL	Corum-Alaca	143.66	315	*i* P		PKPdf	23 53 35.4	-0.4
KAMA	Osmaniye	143.76	309	*i* P		PKPdf	23 53 35.4	-0.6
ANDN	Andirin	143.85	310	*i* P		PKPdf	23 53 35.9	-0.3
LEOM	Leova	144.06	328	‖*i* P		PKPab	23 53 35.9	0.0
LEOM	Leova	144.06	328	‖PKiKP		PKPab	23 53 35.9	0.0
KWP	Kalwaria Pacla	144.14	336	*e*PKP		PKPab	23 53 35.8	-0.3
PRAR	RASCA	144.40	331	‖*i* P		PKPdf	23 53 35.5	-1.2
AVNS	Nevsehir-Avano	144.41	313	*i* P		PKPab	23 53 37.1	-0.5
ELDT	Eldivan	144.59	316	*i* P		PKPab	23 53 38.0	-0.4
YAYL	Yayladag	144.60	307	*i* P		PKPbc	23 53 37.2	-0.6
TLCR		144.63	326	‖*i* P		PKPbc	23 53 37.2	-0.2
TLCR		144.63	326	‖PKiKP		PKPbc	23 53 37.2	-0.2
BUR08	Bucovina Ar. S	144.66	332	*e*PKPdf		PKPbc	23 53 37.5	-0.1
YURE	YUREGIR	144.66	309	*i* P		PKPab	23 53 38.4	-0.2
BURAR	Bucovina Array	144.68	332	⇑*i* P		PKPab	23 53 38.3	-0.1
BURAR	Bucovina Array	144.68	332	⇑PKiKP		PKPab	23 53 38.3	-0.1
OJC	Ojcow	144.68	340	*e*PKP		PKPbc	23 53 37.3	-0.1
OJC	Ojcow	144.68	340	*e*PKiKP		PKPdf	23 53 35.7	-1.3
OJC	Ojcow	144.68	340	*e*PKPdf		PKPdf	23 53 35.7	-1.3
TESR	Tescani	144.82	329	‖*i* P		PKPdf	23 53 36.8	-0.6
BR101	Keskin Array S	144.82	315	*e*PKPdf		PKPbc	23 53 38.0	-0.5
BR131	Keskin Array S	144.82	315	*e*PKPdf		PKPdf	23 53 37.3	-0.5
BRTR	Keskin Array B	144.82	315	PKP		PKPbc	23 53 38.0	-0.5
	comp=Z,4.9nm,0.5s,baz=119,slow=3.7,SNR=41							
BRTR	Keskin Array B	144.82	315	PKiKP		PKPbc	23 53 38.0	-0.4
STHS	Stebnicka Huta	144.86	338	*e*PKP		PKPab	23 53 38.5	-0.4
KOLS	Kolonicke sedl	144.87	336	*e*PKP		PKPab	23 53 38.5	-0.5
CFR	Carcaliu	144.99	327	‖*i* P		PKPbc	23 53 38.3	-0.2
CFR	Carcaliu	144.99	327	‖PKiKP		PKPbc	23 53 38.3	-0.2
UZH	Uzhgorod	145.31	336	‖PKiKP		PKPab	23 53 39.0	-0.8
KSP	Ksiaz	145.18	344	*e*PKP		PKPab	23 53 39.3	-0.8
NIE	Niedzica	145.19	338	*e*PKP		PKPab	23 53 39.4	-0.8
CRVS	Cervenica-Dubn	145.20	337	*e*PKP		PKPab	23 53 39.5	-0.8
VRI	Vrincioaia	145.24	329	‖*i* P		PKPbc	23 53 39.1	-0.2
VRI	Vrincioaia	145.24	329	‖PKiKP		PKPbc	23 53 39.1	-0.2
BBAL	Bala	145.26	315	*i* P		PKPbc	23 53 39.6	-0.1
PLOR	Plostina	145.28	329	‖*i* P		PKPbc	23 53 38.5	-0.9
PLOR	Plostina	145.28	329	‖PKiKP		PKPbc	23 53 38.5	-0.9
ANTO	Ankara	145.32	315	*e*PKiKP		PKPbc	23 53 39.8	0.0
ANTO	Ankara	145.32	315	*e*PKPdf		PKPbc	23 53 39.8	0.0
BR231	Keskin MP Arra	145.34	315	*e*PKPdf		PKPdf	23 53 37.9	-0.8
BR231				*e*PKPdf		PKPbc	23 53 40.0	+0.1
BMR	Baia Mare	145.38	334	⇑*i* P		PKPab	23 53 40.1	-0.9
BMR	Baia Mare	145.38	334	⇑PKP2		PKPab	23 53 40.1	-0.9
HARR	Harsova	145.42	326	‖*i* P		PKPab	23 53 40.1	-1.1
HARR	Harsova	145.42	326	‖PKP2		PKPab	23 53 40.1	-1.1
ARCR	ARCALIA	145.46	332	‖*i* P		PKPbc	23 53 39.8	-0.1
KERG	Konya-Eregli	145.53	311	*i* P		PKPbc	23 53 39.8	-0.8
CLL	Collm	145.54	347	*e*PKPdf		PKPdf	23 53 38.0	-0.4
CLL				*i* PKPbc		PKPbc	23 53 39.8	-0.1
	comp=Z,16nm,0.8s							
CLL				*i*			23 53 47.1	
CLL	Collm	145.54	347	*e*PKiKP		PKPbc	23 53 39.2	-0.7
CLL	Collm	145.54	347	*e*PKPdf		PKPbc	23 53 39.2	-0.7
OKC	Ostrava-Krasne	145.54	341	*e*PKP		PKPbc	23 53 40.0	0.0
OKC	Ostrava-Krasne	145.54	341	*e*PKiKP		PKPbc	23 53 40.0	0.0
UPC	Upice	145.56	344	*e*PKP		PKPbc	23 53 40.3	+0.3
UPC	Upice	145.56	344	*e*PKP2		PKPbc	23 53 40.3	+0.3
KKUL	Konya-Kulu	145.58	314	*i* P		PKPbc	23 53 40.8	+0.2
DPC	Dobruska-Polom	145.62	343	*e*PKP		PKPab	23 53 40.7	-1.2
DPC				*ex*		x	23 53 42.6	
DPC	Dobruska-Polom	145.62	343	*e*PKP2		PKPab	23 53 40.7	-1.2
LANS	Liptovska Anna	145.71	339	*e*PKP		PKPab	23 53 41.6	-0.7
KRLC	Kraliky	145.74	343	*e*PKP		PKPbc	23 53 40.8	+0.2
KRLC	Kraliky	145.74	343	*e*PKP2		PKPbc	23 53 40.8	+0.2
BRG	Berggiesshubel	145.74	346	*e*PKP		PKPbc	23 53 40.4	-0.1
	comp=Z,7.2nm,0.7s							
MORC	Moravsky Berou	145.78	341	⇑*i* P		PKPbc	23 53 40.6	-0.1
MORC	Moravsky Berou	145.78	341	⇑PKiKP		PKPbc	23 53 40.6	-0.1
MORC	Moravsky Berou	145.78	341	*e*PKPdf		PKPbc	23 53 41.1	+0.3
DOPR	Dopca	145.81	330	‖*i* P		PKPab	23 53 41.5	-1.3
ISR	Istrita	145.85	328	‖*i* P		PKPab	23 53 41.6	-1.4
ISR	Istrita	145.85	328	‖PKP2		PKPab	23 53 41.6	-1.4
MLR	Muntele Rosu	145.89	329	PKPbc		PKPbc	23 53 40.6	-0.7
	comp=Z,1.5nm,0.6s,baz=30,slow=4.9,SNR=29							
MLR	Muntele Rosu	145.89	329	⇑*i* P		PKPbc	23 53 41.0	-0.3
MLR	Muntele Rosu	145.89	329	⇑PKiKP		PKPbc	23 53 41.0	-0.3
KECS	Kecovo	145.91	337	*e*PKP		PKPbc	23 53 41.6	+0.5
PVCC	Panska Ves	145.91	345	*e*PKP		PKPbc	23 53 41.3	+0.3
PVCC				*ex*		x	23 53 43.4	
PVCC	Panska Ves	145.91	345	*e*PKP2		PKPbc	23 53 41.3	+0.3
SECR		146.15	328	‖*i* P		PKPbc	23 53 41.5	-0.4
AUMIH	MIHALICIK	146.19	316	*i* P		PKPbc	23 53 41.8	-0.5
VOIR		146.36	330	⇑*i* P		PKPbc	23 53 40.8	-1.7
VOIR		146.36	330	⇑PKiKP		PKPbc	23 53 40.8	-1.7
PRA	Prague	146.37	345	*e*PKP		PKPbc	23 53 42.6	+0.3
PRA	Prague	146.37	345	*e*PKP2		PKPbc	23 53 42.6	+0.3
DRGR		146.40	333	‖*i* P		PKPbc	23 53 42.4	-0.2
DRGR		146.40	333	‖PKiKP		PKPbc	23 53 42.4	-0.2
PRU	Pruhonice	146.42	345	*e*PKP		PKPbc	23 53 42.5	+0.1
PRU				*ex*		x	23 53 45.0	
PRU	Pruhonice	146.42	345	*e*PKP2		PKPbc	23 53 42.5	+0.1
GOPC	GO Pecny, Ondr	146.43	344	*e*PKP		PKPbc	23 53 42.6	+0.1
GOPC	GO Pecny, Ondr	146.43	344	*e*PKP2		PKPbc	23 53 42.6	+0.1
KDHN	Kadinhani	146.44	314	*i* P		PKPbc	23 53 42.5	-0.5
VRAC	Vranov	146.48	342	PKPbc		PKPbc	23 53 42.9	+0.2
	comp=Z,3.0nm,0.6s,baz=1.0,slow=4.6,SNR=3.9							
VRAC	Vranov	146.48	342	‖*i* P		PKPdf	23 53 38.2	-1.9
VYHS	Vyhne	146.49	339	*e*PKP		PKPbc	23 53 42.9	+0.2
PSZ	Piszkesteto	146.60	337	‖*i* P		PKPdf	23 53 41.0	+0.6
PSZ	Piszkesteto	146.60	337	‖PKiKP		PKPdf	23 53 41.1	+0.6
PSZ	Piszkesteto	146.60	337	*e*PKPdf		PKPbc	23 53 42.7	-0.4
ARR	Arges	146.62	330	⇑*i* P		PKPbc	23 53 43.2	0.0
NKC	Novy Kostel	146.67	347	*e*PKP		PKPbc	23 53 43.3	+0.2
NKC				*ex*		x	23 53 46.1	
NKC	Novy Kostel	146.67	347	*e*PKP2		PKPbc	23 53 43.3	+0.2
PRD	Provadia	146.70	325	*e*P		PKPbc	23 53 43.6	+0.2
ERMK	Ermenek	146.73	310	*i* P		PKPbc	23 53 43.9	-0.1
TREC	Trest	146.81	343	*e*PKP		PKPbc	23 53 43.5	0.0
TREC	Trest	146.81	343	*e*PKP2		PKPbc	23 53 43.5	0.0
SMOL	Smolenice	146.93	341	*e*PKP		PKPbc	23 53 44.6	+0.7
CSS	Mathiatis	147.10	307	*e*PKPdf		PKPbc	23 53 42.9	-1.9
SIRR	Siria	147.26	334	‖*i* P		PKPbc	23 53 44.7	-0.1
SZH	Strazhica	147.45	326	*e*P		PKPbc	23 53 44.8	-0.6
KHC	Kasperske Hory	147.45	345	*e*PKP		PKPbc	23 53 45.4	+0.1
KHC				*ex*		x	23 53 50.1	
KHC	Kasperske Hory	147.45	345	*e*PKP2		PKPbc	23 53 45.4	+0.1
KHC	Kasperske Hory	147.45	345	*e*PKPbc		PKPbc	23 53 44.8	-0.5
GEC2	GERESS Array S	147.69	345	*e*PKP2		PKPbc	23 53 45.9	-0.1
GEC2	GERESS Array S	147.69	345	*e*PKPbc		PKPbc	23 53 45.9	-0.1
GERES	GERESS Array B	147.69	345	PKPbc		PKPbc	23 53 45.8	-0.2
	comp=Z,4.8nm,0.6s,baz=24,slow=3.1,SNR=55							
GEA0	GERESS Array S	147.69	345	*e*PKPbc		PKPbc	23 53 45.7	-0.2
BZS	Buzias	147.80	333	⇑*i* P		PKPbc	23 53 45.4	-0.8
BZS	Buzias	147.80	333	⇑PKiKP		PKPbc	23 53 45.4	-0.8
CONA	Conrad Observa	147.94	342	*i* PKiKP		PKiKP	23 53 47.1	-0.8
	comp=Z,14nm,1.4s,SNR=6.2							
BANR	Banloc	148.19	333	‖*i* P		PKPbc	23 53 47.8	+0.7
WLF	Walferdange	148.19	354	PKPbc		PKPbc	23 53 47.7	+0.7
KHAL	Karahalli	148.29	316	*i* P		PKPbc	23 53 47.2	-0.6
MDVR	Moldovita	148.41	332	‖*i* P		PKPbc	23 53 46.9	-0.9
PKSM	Moragy	148.50	337	⇑*i* P		PKPbc	23 53 47.7	-0.2
MPEP	Malo Peshtene	148.52	328	*e*P		PKPbc	23 53 48.1	0.0
KDZ	Kurdzhali	148.82	324	*e*P		PKPbc	23 53 48.3	-0.6
RZN	Rozhen	149.18	325	*e*P		PKPbc	23 53 49.1	-0.9
BFO	Black Forest	149.24	351	*e*PKPbc		PKPbc	23 53 49.5	-0.2
SOKA	Soboth	149.31	342	*i* PKPbc		PKPbc	23 53 49.6	-0.4
	comp=Z,8.1nm,0.9s,SNR=5.6							
KBA	Koelnbreinsper	149.41	344	*i* PKiKP		PKPbc	23 53 50.1	-0.2
	comp=Z,6.1nm,0.7s							
WTTA	Wattenberg	149.66	346	*i* PKiKP		PKPbc	23 53 50.7	-0.2
	comp=Z,10.0nm,0.6s							
MOTA	Moosalm	149.70	347	*i* PKiKP		PKiKP	23 53 51.7	0.0
	comp=Z,7.4nm,0.8s,SNR=7.2							
AYDN	Tasoluk	149.75	316	*i* P		PKPbc	23 53 51.5	+0.2
MMB	Musomiste	149.79	326	*e*P		PKPbc	23 53 50.2	-1.0
KKB	Krupnik	149.93	327	*e*P		PKPbc	23 53 51.0	-0.5
ABTA	Abfaltersbach	149.93	345	*i* PKPbc		PKPbc	23 53 50.6	-0.9
	comp=Z,13nm,0.7s,SNR=7.0							
CRES	Cresnjev	149.94	340	*i* PKPbc		PKPbc	23 53 50.9	-0.5
LJU	Ljubljana	150.03	342	*i* PKPbc		PKPbc	23 53 51.2	-0.4
FETA	Feichten	150.08	347	*i* PKiKP		PKiKP	23 53 51.8	-0.7
	comp=Z,10nm,1.0s							
BLY	Banja Luka	150.29	337	⇑*i* P		PKPbc	23 53 52.2	0.0
BOJS	Bojanci	150.29	340	*i* PKPbc		PKPbc	23 53 52.1	-0.1
DAVOX	Davos/Dischmat	150.48	348	PKPbc		PKPbc	23 53 52.8	-0.1
	comp=Z,13nm,0.7s,baz=319,slow=2.3,SNR=19							
FUORN	Ofenpass-Fuorn	150.56	348	*e*PKPbc		PKPbc	23 53 53.4	+0.3
VAY	Valandovo	150.59	327	*i* PKP		PKPbc	23 53 52.4	-0.6
SKO	Skopje	150.69	329	*i* PKP		PKPbc	23 53 53.0	-0.2
PDG	Podgorica	151.36	332	‖*i* P		PKPbc	23 53 53.9	-0.8
BIA	Bitola	151.45	328	*i* PKP		PKPbc	23 53 54.5	-0.6
OHR	Ohrid	151.65	328	*i* PKP		PKPbc	23 53 55.6	+0.1
KEST	Kesra	161.03	340	PKPab		PKPab	23 54 47.0	-0.6
	comp=Z,1.4nm,0.6s,baz=342,slow=19,SNR=4.2							
TOA0	Torodi Ar. Sit	175.18	182	*e*PKPdf		PKPdf	23 54 09.4	-1.2
TORD	Torodi Ar. Bea	175.18	182	PKP		PKPdf	23 54 08.7	-1.9
	comp=Z,1.3nm,1.1s,baz=135,slow=0.8,SNR=5.4							
TORD				PKPab		PKPab	23 55 49.7	-0.8
	comp=Z,0.3nm,0.5s,baz=172,slow=4.4,SNR=9.9							
TOA1	Torodi Ar. Sit	175.18	182	*e*PKPdf		PKPdf	23 54 08.7	-1.9
TOA1				*e*PKPab		PKPab	23 55 49.7	-0.8

MEX 27 23:37:14.0±0.3, 16°.55N×98°.47W, h5km, MD3.8, Near coast of Guerrero

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PNIG	Pinotepa	0.36	116	*eP*		Pg 23 37 20.7	-0.4
PNIG				*eS*		Sg 23 37 25.9	+0.1
TLIG	Tlapa	1.01	355	*eP*		Pg 23 37 30.8	-2.7
TLIG				*i* S		Sg 23 37 44.0	-2.6
ACX	Acapulco	1.37	284	*eP*		Pn 23 37 36.4	-3.4
ACX				*eS*		Sb 23 37 54.4	-3.6
ACP2	Acapulco	1.40	283	*eP*		Pn 23 37 37.5	-2.7
ACP2				*i* S		Sb 23 37 53.9	-4.9
VHO	Vista Hermosa	1.74	72	*eP*		Pn 23 37 41.5	-3.5
VHO				*eS*		Sn 23 38 03.8	-4.0

YOJ				*e*S		**Sn**	**23 51 00.2**	**+0.6**
YOJ	**Yonaguni jima**	**1.25**	**75**	*e*P		**Pn**	**23 50 43.5**	**-0.3**
	baz=75							
CHN4	**Tsaushan**	**1.28**	**232**	*e*P		**Pn**	**23 50 45.0**	**+0.6**
	baz=224							
CHN4				S		**Sn**	**23 51 02.6**	**+2.2**
	baz=224							
STYT	**Tauyuan**	**1.30**	**221**	*e*P		**Pn**	**23 50 44.4**	**-0.3**
	baz=214							
CHY	**Chiayi**	**1.33**	**241**	*e*P		**Pn**	**23 50 45.7**	**+0.7**
	baz=239							
WTP	**Ta-pu**	**1.33**	**228**	*e*P		**Pn**	**23 50 45.6**	**+0.5**
	baz=227							
CHN1	**Nanshi**	**1.43**	**228**	*e*P		**Pn**	**23 50 46.4**	**0.0**
	baz=227							
CHN1				*e*S		**Sn**	**23 51 06.9**	**+2.7**
	baz=227							
TWG	**Pinlang**	**1.43**	**203**	*e*P		Pn	23 50 44.1	-2.4
	baz=193							
SSD	**Sandimen**	**1.70**	**215**	*e*P		**Pn**	**23 50 50.9**	**+0.8**
	baz=215							
IRIF	**Iriomote-Funau**	**1.87**	**84**	P		**Pn**	**23 50 52.0**	**-0.5**
IRIF				S		**Sn**	**23 51 15.0**	**0.0**
HATJ	**Hateruma jima**	**1.94**	**92**	*e*S		**Sn**	**23 51 17.6**	**+1.0**
SCZT	**Fangliau**	**2.02**	**209**	*e*P		**Pn**	**23 50 54.3**	**-0.2**
	baz=200							
WDGT	**Dungji**	**2.06**	**245**	*e*P		**Pn**	**23 50 53.8**	**-1.3**
	baz=244							
JKRS	**Kuro-shima**	**2.12**	**87**	P		**Pn**	**23 50 56.1**	**+0.2**
JKRS				*e*S		**Sn**	**23 51 22.4**	**+1.2**
JIJ	**Ishigaki jima**	**2.25**	**84**	P		**Pn**	**23 50 57.7**	**0.0**
JIJ				*e*S		**Sn**	**23 51 23.2**	**-1.2**
JISG	**Ishigakijimahi**	**2.43**	**79**	P		**Pn**	**23 51 00.3**	**+0.1**
JISG				S		**Sn**	**23 51 28.3**	**-0.5**
JIRB	**Irabujima**	**3.25**	**77**	P		**Pn**	**23 51 10.7**	**-0.7**

IDC 27 23:55:13.6±1.5, 4.85S×101.22E, h0km, mb3.5/7, mb1 3.6/7, mb1mx3.5/41, mbtmp3.5/7, Error ellipse: s-maj=62.6km s-min=19.6km az=52.0, Southern Sumatera

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CMAR	**Chiang Mai Arr**	**23.27**	**355**	P	P	00 00 24.4	+1.5
	0.5nm,0.3s,baz=181,slow=9.7,SNR=2.8						
H08S2	**Diego Garcia H**	**28.68**	**263**	T	T	00 31 30.1	
	baz=85						
H08S3	**Diego Garcia H**	**28.69**	**263**	T	T	00 31 42.3	
	baz=85						
H08S1	**Diego Carcia H**	**28.70**	**263**	T	T	00 31 47.0	
	baz=85						
WRA	**Warramunga Arr**	**35.55**	**118**	P	P	00 02 12.7	-0.2
	0.2nm,0.3s,baz=294,slow=10.0,SNR=3.0						
ASAR	**Alice Springs**	**36.64**	**124**	P	P	00 02 22.2	0.0
	0.2nm,0.7s,baz=299,slow=7.8,SNR=3.2						
SONM	**Songino Array**	**52.66**	**4**	P	P	00 04 28.8	-1.0
	0.4nm,0.6s,baz=180,slow=6.8,SNR=3.1						
MKAR	**Makanchi Array**	**54.08**	**344**	P	P	00 04 40.0	-0.2
	0.5nm,0.5s,baz=157,slow=8.9,SNR=7.9						
ZALV	**Zalesovo Beam**	**60.17**	**349**	P	P	00 05 22.4	-0.7
	0.7nm,0.4s,baz=154,slow=5.9,SNR=4.7						
BRTR	**Keskin Array B**	**76.13**	**313**	P	P	00 07 04.0	+0.1
	0.3nm,0.5s,baz=99,slow=7.4,SNR=3.2						
TXAR	**Lajitas Array**	**146.12**	**41**	PKPbc	PKPbc	00 14 56.3	-0.3
	1.4nm,0.5s,baz=287,slow=0.6,SNR=23						

*NIED **28** 00:02:00, 36.80N×142.60E, h11km, Mw4.9 Best double couple: M0 2.85000×10^16 NP1:φs=234.0000°, δ=23.00000°, λ=139.00000°. NP2:φs=2.00000°, δ=75.00000°, λ=73.00000°.*

*ISCJB **28** 00:02:20.0±0.8, 36.77N±0.02×142.59E±0.02, h6km±4km, mb4.9/218, MS4.8/61, Error ellipse: s-maj=3.6km s-min=2.1km az=166.5*

*NEIC **28** 00:02:22.8±1.5, 36.72N×142.57E, h16km±9km, mb4.9/132, Error ellipse: s-maj=3.8km s-min=2.8km az=139.0*

NEIC Recorded [1 JMA] in Fukushima and Miyagi.

*GCMT **28** 00:02:22.8±0.3, 36.72N×142.67E, h28km±1km, MW5.0/71, Moment Tensor Solution. s33,c41; s71,c115; Duration: 0 Moment tensor: Scale 10^16Nm; Mrr3.25±.21; Mθθ-0.70±.12; Mφφ-2.55±.13; Mrθ1.10±.19; Mθφ-1.47±.07; Mφr2.77±.19; Best double couple: M0 4.45100×10^16 NP1:φs=24.00000°, δ=66.00000°, λ=86.00000°. NP2: φs=214.00000°, δ=24.00000°, λ=99.00000°. Principal axes: T 4.4080, Plg69.0000°, Azm286.0000°; N 0.0890, Plg4.0000°, Azm26.0000°; P -4.4950, Plg21.0000°, Azm117.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

*JMA **28** 00:02:22.5±0.1, 36.79N×142.64E, h54km, M5.0*

JMA Felt I J1.

*IDC **28** 00:02:23.6±5.5, 36.74N×142.63E, h21km±35km, mb4.6/32, mb1 4.7/42, mb1mx4.7/49, mbtmp4.7/42, ML4.2/7, MS4.4/29, Ms1 4.4/29, ms1mx4.2/45, Error ellipse: s-maj=12.0km s-min=9.2km az=100.0*

*MOS **28** 00:02:24.5±1.0, 36.93N×142.56E, h33km, mb5.1/80, MS4.6/25, Error ellipse: s-maj=6.8km s-min=4.3km az=105.6*

ISC 28 00:02:23.4±0.3, 36.80N±0.03×142.65E±0.03, h19km±3km, h19km:pP-P, n829, σ1s25/881, mb4.9/226, MS4.8/63, 50C-26D, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**1.52**	**282**	⇑P	**Pn**	**00 02 47.6**	**-1.9**
JFK	**Kawauchi**	**1.53**	**292**	⇑P	**Pn**	**00 02 47.9**	**-1.8**
JFK				S	**Sn**	**00 03 06.5**	**-2.6**
JHO	**Hitachi**	**1.68**	**264**	⇑P	**Pn**	**00 02 49.8**	**-2.0**
JHO				S	**Sn**	**00 03 10.3**	**-2.5**
JMM	**Marumori**	**1.83**	**306**	⇑P	**Pn**	**00 02 52.3**	**-1.4**
JMM				S	**Sn**	**00 03 14.6**	**-1.7**
JIO	**Ouri**	**1.95**	**328**	⇑P	**Pn**	**00 02 53.9**	**-1.5**
JIO				S	**Sn**	**00 03 17.4**	**-2.0**
JFT	**Otama**	**1.99**	**292**	⇑P	**Pn**	**00 02 55.3**	**-0.6**
JFT				S	**Sn**	**00 03 18.6**	**-1.7**
JMK	**Ichinoseki**	**2.43**	**333**	P	**Pn**	**00 03 01.1**	**-0.9**
JMK				S	**Sn**	**00 03 29.4**	**-1.9**
BSO1	**Boso 1**	**2.53**	**213**	P	**Pn**	**00 03 01.9**	**-1.0**
BSO1				S	**Sn**	**00 03 32.4**	**-0.6**
JAG	**Ashikaga**	**2.60**	**263**	P	**Pn**	**00 03 03.1**	**-1.3**
JAG				S	**Sn**	**00 03 32.7**	**-2.7**
JYK	**Kaneyama**	**2.79**	**320**	P	**Pn**	**00 03 06.2**	**-0.8**
JOM	**Ohasama**	**2.88**	**339**	P	**Pn**	**00 03 07.2**	**-1.0**
JRY	**Ryogami san**	**3.12**	**257**	P	**Pn**	**00 03 10.2**	**-1.4**
JRY				S	**Sn**	**00 03 45.9**	**-2.5**
JOD2	**Odawara 2**	**3.27**	**243**	P	**Pn**	**00 03 12.3**	**-1.3**
MJAR	**Matsushiro Arr**	**3.58**	**267**	Pn	**Pn**	**00 03 17.4**	**-0.5**
	39nm,0.3s,baz=85,slow=14,SNR=362						
MJAR				Sn	**Sn**	**00 03 58.8**	**-0.8**
	24nm,0.3s,baz=76,slow=21,SNR=4.8						
MJAR				LR	LR	00 04 55.1	
	comp=Z,6μm,19.3s,baz=105,slow=43						
MAJO	**Matsushiro**	**3.58**	**267**	*c i*P	**Pn**	**00 03 17.9**	**0.0**
MAJO	**Matsushiro**	**3.58**	**267**	*e*Pn	**Pn**	**00 03 18.2**	**+0.3**
MAJO				*e*Sn	Sn	00 03 45.6	-14
MAT	**Matsushiro**	**3.58**	**267**	P	**Pn**	**00 03 18.2**	**+0.3**
MAT				S	**Sn**	**00 04 01.9**	**+2.2**
MJB9	**Matsu-Tunnel**	**3.58**	**267**	*e*Pn	**Pn**	**00 03 18.2**	**+0.2**
JHJ2	**Mitsune**	**4.35**	**213**	*e*Pn	**Pn**	**00 03 25.9**	**-2.5**
JHJ2				*e*Sn	**Sn**	**00 04 16.2**	**-2.3**
JHJ	**Hachijo jima 2**	**4.36**	**214**	Pn	**Pn**	**00 03 26.0**	**-2.5**
	54nm,0.3s,baz=47,slow=19,SNR=11						
JHJ				Sn	**Sn**	**00 04 15.1**	**-3.7**
	180nm,0.3s,baz=108,slow=22,SNR=6.2						
INU	**Inuyama**	**4.79**	**254**	*e*Pn	**Pn**	**00 03 34.5**	**0.0**
INU				*e*Sn	**Sn**	**00 04 27.8**	**-1.5**
ERM	**Erimo**	**5.23**	**4**	*de*P	**Pn**	**00 03 38.6**	**-1.9**
ERM				pmax	pmax		
	comp=Z,164nm,0.7s						
ERM	**Erimo**	**5.23**	**4**	*e*Pn	**Pn**	**00 03 38.5**	**-1.9**
ERM				*e*Sn	**Sn**	**00 04 36.4**	**-3.7**
ASAJ	**Asahikawa**	**7.31**	**360**	Pn	**Pn**	**00 04 07.9**	**-1.2**
	comp=Z,18nm,0.3s,baz=203,slow=11,SNR=36						
ASAJ				Sn	**Sn**	**00 05 28.8**	**-2.7**
	comp=Z,4.6nm,0.3s,baz=73,slow=20,SNR=3.7						
ASAJ				LR	LR	00 06 44.9	
	comp=Z,696nm,21.4s,baz=171,slow=35						
YUK	**Yuzh-Kuril'sk**	**7.63**	**18**	*i* P	Pn	00 04 09.8	-3.7
YUK				*i* S	**Sn**	**00 05 34.4**	**-5.0**
YUK				pmax	pmax		
	comp=Z,300nm,0.4s						
YUK				pmax	pmax		
	comp=N,82nm,0.3s						
YUK				pmax	pmax		
	comp=E,135nm,0.3s						
YUK				MLR	MLR		
	comp=Z,3μm,16.0s						
YUK				MLR	MLR		
	comp=E,5μm,13.0s						
SHO	**Shikotan**	**7.75**	**23**	*i* P	Pn	00 04 11.0	-4.1
SHO				*i* S	Sn	00 05 33.0	-9.3
SHO				pmax	pmax		
	comp=Z,121nm,0.5s						
SHO				pmax	pmax		
	comp=E,62nm,0.4s						
SHO				pmax	pmax		
	comp=N,83nm,0.5s						
KUR	**Kuril'sk**	**9.30**	**23**	P	**Pn**	**00 04 35.8**	**-0.5**
KUR				pmax	pmax		
	comp=Z,47nm,0.8s						
CBIJ	**Chichi jima**	**9.68**	**182**	*e*Pn	Pn	00 04 37.8	-3.8
CBIJ				*e*Sn	Sn	00 06 16.5	-13
JCJ	**Chichijima**	**9.68**	**182**	Pn	**Pn**	**00 04 40.3**	**-1.3**
	comp=Z,18nm,0.3s,baz=288,slow=22,SNR=4.5						
JCJ				Sn	Sn	00 06 18.3	-11
	comp=Z,20nm,0.3s,baz=354,slow=21,SNR=4.1						
JCJ				LR	LR	00 11 37.8	
	comp=Z,82nm,18.3s,baz=84,slow=58						
YSS	**Yuzh-Sakhalins**	**10.15**	**0**	*iα*P	**Pn**	**00 04 47.2**	**-0.7**
YSS				*e*S	**Sn**	**00 06 39.8**	**-1.4**
YSS				pmax	pmax		
	comp=Z,90nm,0.9s						
YSS				MLR	MLR		
	comp=N,2μm,17.0s						
YSS				MLR	MLR		
	comp=E,4μm,17.0s						
YSS				MLR	MLR		
	comp=Z,3μm,17.0s						
YSS	**Yuzh-Sakhalins**	**10.15**	**0**	*e*Pn	**Pn**	**00 04 47.3**	**-0.7**
JNU	**Nakatsue**	**10.33**	**253**	Pn	**Pn**	**00 04 51.0**	**+0.5**
	comp=Z,0.9nm,0.3s,baz=39,slow=7.5,SNR=11						
JNU				LR	LR	00 09 08.3	
	comp=Z,1μm,18.1s,baz=79,slow=39						
USRK	**Ussuriysk Ar.**	**10.98**	**316**	Pn	**Pn**	**00 05 01.2**	**+2.0**
	comp=Z,0.7nm,0.3s,baz=118,slow=12,SNR=14						
USRK				LR	LR	00 08 44.8	
	comp=Z,2μm,19.8s,baz=116,slow=35						
KSRS	**Korea Array**	**11.78**	**278**	Pn	**Pn**	**00 05 12.3**	**+2.0**
	comp=Z,0.6nm,0.3s,baz=86,slow=14,SNR=45						
KSRS				LR	LR	00 09 41.0	
	comp=Z,4μm,18.6s,baz=88,slow=37						
KS01	**Wonju Array Si**	**11.80**	**278**	*e*Pn	**Pn**	**00 05 11.8**	**+1.2**
KS15	**Wonju Array Si**	**11.81**	**278**	*e*Pn	**Pn**	**00 05 12.3**	**+1.6**
KSAR	**Wonju Array Be**	**11.81**	**278**	P	**Pn**	**00 05 12.3**	**+1.6**
KSAR	**Wonju Array Be**	**11.81**	**278**	Pn	**Pn**	**00 05 12.3**	**+1.6**
UGL	**Uglegorsk**	**12.28**	**358**	P	Pn	00 05 22.0	+4.9
UGL				*e*		00 07 35.0	
UGL				pmax	pmax		
	comp=Z,66nm,0.9s						
UGL				MLR	MLR		
	comp=Z,4μm,16.0s						
UGL				MLR	MLR		
	comp=N,2μm,17.0s						
UGL				MLR	MLR		
	comp=E,2μm,17.0s						
MDJ	**Mudanjiang**	**12.61**	**312**	P	Pn	00 05 25.3	+3.7
MDJ				S	**Sn**	**00 07 41.0**	**-0.4**
MDJ				PcP	**PcP**	**00 10 59.8**	**+0.7**
MDJ				ScP	**ScP**	**00 14 30.5**	**-0.6**
MDJ				PcS	**PcS**	**00 14 33.5**	**+0.2**
MDJ	**Mudanjiang**	**12.61**	**312**	ScS	ScS	00 18 07.0	-0.2
MDJ				pmax	pmax		
	comp=Z,8.0nm,1.1s						
MDJ				pmax	pmax		
	comp=Z,470nm,7.0s						
MDJ				LR	LR		
	comp=N,2μm,12.9s						
MDJ				LR	LR		
	comp=E,2μm,12.9s						
MDJ				LR	LR		
	comp=Z,3μm,14.1s						
MDJ	**Mudanjiang**	**12.61**	**312**	*e*Pn	**P**	**00 05 33.8**	**+0.8**
HABR	**Khabarovsk**	**12.93**	**337**	*e*P	**Pn**	**00 05 23.7**	**-2.3**
HABR				*e*S	**Sn**	**00 07 46.4**	**-2.9**
HABR				pmax	pmax		
	comp=Z,37nm,1.7s						
HABR				pmax	pmax		
	comp=Z,44nm,1.5s						
HABR				pmax	pmax		
	comp=N,37nm,1.4s						
HABR				MLR	MLR		
	comp=E,2μm,15.0s						
TYV	**Tymovskoe**	**14.06**	**0**	*e*P	**Pn**	**00 05 39.2**	**-2.2**
TYV				*e*S	**Sn**	**00 08 16.0**	**-0.8**
TYV				pmax	pmax		
	comp=Z,33nm,0.8s						
TYV				smax	smax		
	comp=E,900nm,12.0s						
TYV				MLR	MLR		
	comp=E,5μm,18.0s						
TYV				MLR	MLR		
	comp=Z,2μm,18.0s						
KLR	**Kul'dur**	**14.74**	**331**	Pn	**Pn**	**00 05 51.6**	**+0.9**
	comp=Z,0.4nm,0.3s,baz=113,slow=11,SNR=5.6						
KLR				LR	LR	00 11 36.7	
	comp=Z,2μm,18.2s,baz=144,slow=37						
CN2	**Changchun**	**14.86**	**303**	*e*P	**Pn**	**00 05 49.5**	**-2.9**
CN2				*e*S	**Sn**	**00 08 40.0**	**+3.6**
CN2				pmax	pmax		
	comp=Z,10.0nm,0.8s						
CN2				pmax	pmax		
	comp=Z,200nm,7.0s						
CN2				LR	LR		
	comp=N,2μm,15.0s						
CN2				LR	LR		
	comp=E,2μm,15.0s						
CN2				LR	LR		
	comp=Z,2μm,17.0s						
SNY	**Shenyang**	**15.59**	**295**	⇓P	**P**	**00 06 05.5**	**-0.6**
SNY				S	S	00 09 21.8	+13
SNY				pmax	pmax		
	comp=Z,41nm,0.9s						
SNY				pmax	pmax		
	comp=Z,620nm,10.7s						
SNY				LR	LR		
	comp=N,2μm,11.6s						
SNY				LR	LR		
	comp=E,7μm,14.1s						
SNY				LR	LR		
	comp=Z,10μm,13.6s						
JOW	**Kunigami**	**15.73**	**235**	Pn	**Pn**	**00 06 04.9**	**+1.0**
	comp=Z,0.7nm,0.3s,baz=58,slow=14,SNR=3.7						
JOW				LR	LR	00 12 14.1	
	comp=Z,1μm,20.1s,baz=88,slow=38						
JOW	**Kunigami**	**15.73**	**235**	*e*Pn	**Pn**	**00 06 04.9**	**+1.0**
	comp=Z,78nm,1.1s						
NKL	**Nikolayevsk**	**16.41**	**356**	*i* P	**Pn**	**00 06 09.0**	**-3.4**
NKL				pmax	pmax		
	comp=N,10.0nm,1.0s						
NKL				pmax	pmax		
	comp=Z,20nm,1.0s						
NKL				MLR	MLR		
	comp=N,1μm,16.0s						
NKL				MLR	MLR		
	comp=E,2μm,16.0s						
NKL				MLR	MLR		
	comp=Z,2μm,16.0s						
DL2	**Dalian**	**16.74**	**284**	P	**Pn**	**00 06 12.5**	**-4.2**
DL2				S	Sn	00 09 12.3	-10
DL2				pmax	pmax		
	comp=Z,15nm,0.7s						
DL2				pmax	pmax		
	comp=Z,500nm,8.7s						
DL2				LR	LR		
	comp=N,2μm,14.7s						
DL2				LR	LR		
	comp=E,3μm,18.1s						
DL2				LR	LR		
	comp=Z,4μm,17.9s						
SSE	**Sheshan**	**18.68**	**259**	P	**P**	**00 06 38.8**	**-1.5**
SSE				sP	**sP**	**00 06 50.8**	**+2.5**
SSE				S	**Sn**	**00 10 08.0**	**-1.1**
SSE				pmax	pmax		
	comp=Z,18nm,0.6s						
SSE				pmax	pmax		
	comp=Z,160nm,3.7s						
SSE				LR	LR		
	comp=N,2μm,15.5s						
SSE				LR	LR		
	comp=E,2μm,15.5s						
SSE				LR	LR		
	comp=Z,3μm,14.3s						
PEA0	**Petropavlovsk-**	**19.41**	**28**	*e*P	**P**	**00 06 48.5**	**+0.3**
PEA0B	**Petropavlovsk-**	**19.41**	**28**	*e*P	**P**	**00 06 48.5**	**+0.3**
	comp=Z,35nm,1.0s						
PETK	**Petropavlovsk-**	**19.41**	**28**	P	**P**	**00 06 48.6**	**+0.4**
	comp=Z,0.2nm,0.3s,baz=198,slow=8.4,SNR=10.0						
PETK				LR	LR	00 15 49.6	
	comp=Z,480nm,18.1s,baz=214,slow=41						
PEA1	**Petropavlovsk-**	**19.42**	**28**	*e*P	**P**	**00 06 48.6**	**+0.4**
PET	**Petropavlovsk**	**19.72**	**30**	*e*P	**P**	**00 06 52.2**	**+0.7**
PET				*e*S	**S**	**00 10 26.3**	**-6.5**
PET				pmax	pmax		
	comp=Z,169nm,9.3s						
PET				MLR	MLR		
	comp=Z,964nm,17.0s						
PET				MLR	MLR		
	comp=Z,845nm,15.0s						
NJ2	**Nanjing**	**20.18**	**263**	*e*P	**P**	**00 06 56.0**	**-0.7**
NJ2				S	**S**	**00 10 40.5**	**-1.9**
NJ2				pmax	pmax		
	comp=Z,25nm,0.7s						
NJ2				LR	LR		
	comp=N,3μm,22.8s						
NJ2				LR	LR		
	comp=E,3μm,19.5s						
NJ2				LR	LR		
	comp=Z,3μm,19.5s						
TIA	**Tai'an**	**20.52**	**276**	⇓P	**P**	**00 06 58.0**	**-2.4**
TIA				S	**S**	**00 10 48.0**	**-1.1**
TIA				pmax	pmax		
	comp=Z,50nm,1.1s						
TIA				pmax	pmax		
	comp=Z,390nm,10.0s						
TIA				LR	LR		
	comp=N,2μm,16.0s						
TIA				LR	LR		
	comp=E,4μm,16.0s						
TIA				LR	LR		
	comp=Z,4μm,14.0s						
HIA	**Hailar**	**20.78**	**314**	*e*P	Pn	00 07 06.9	+1.3
HIA				pmax	pmax		
	comp=Z,27nm,0.8s						
HIA	**Hailar**	**20.78**	**314**	*e*P	Pn	00 07 06.9	+1.3
	comp=Z,27nm,0.8s						
BJI	**Beijing**	**20.97**	**287**	P	**P**	**00 07 02.0**	**-3.2**
BJI				pP	**sP**	**00 07 12.8**	**-0.4**
BJI				S	**S**	**00 10 57.5**	**-0.5**
BJI				sS	**sS**	**00 11 06.8**	**0.0**
BJI				pmax	pmax		
	comp=Z,18nm,2.0s						
BJI				pmax	pmax		
	comp=Z,100nm,3.3s						
BJI				LR	LR		
	comp=N,2μm,13.4s						
BJI				LR	LR		
	comp=E,790nm,17.4s						
BJI				LR	LR		
	comp=Z,880nm,21.8s						
BJT	**Baijiatuan**	**20.98**	**287**	*e*P	**P**	**00 07 04.6**	**-0.7**
BJT				pmax	pmax		
	comp=Z,113nm,1.6s						
BJT	**Baijiatuan**	**20.98**	**287**	*e*P	**P**	**00 07 04.6**	**-0.7**
	comp=Z,113nm,1.6s						
SSLB	**Suanglung**	**22.72**	**241**	*e*P	**P**	**00 07 22.2**	**-2.0**
	comp=Z,18nm,0.8s						
YULB	**Yu-li**	**22.73**	**240**	*e*P	**P**	**00 07 21.1**	**-3.2**
	comp=Z,16nm,0.8s						
GUMO	**Guam**	**23.19**	**175**	P	**P**	**00 07 28.7**	**-0.4**
	comp=Z,30nm,0.3s,baz=199,slow=22,SNR=2.4						
GUMO				LR	LR	00 16 08.7	
	comp=Z,414nm,19.1s,baz=20,slow=36						
TPUB	**Ta-pu**	**23.26**	**241**	*e*P	**P**	**00 07 27.2**	**-2.5**
	comp=Z,34nm,1.0s						
MA2	**Magadan**	**23.39**	**10**	P	**P**	**00 07 30.7**	**0.0**
	comp=Z,23nm,0.7s,baz=221,slow=6.7,SNR=17						
MA2				LR	LR	00 17 26.1	
	comp=Z,947nm,19.4s,baz=218,slow=38						
QZH	**Quanzhou**	**23.72**	**247**	P	P	00 07 25.0	-9.2
QZH				S	**S**	**00 11 48.0**	**-0.4**
QZH				LR	LR		
	comp=N,4μm,19.0s						
QZH				LR	LR		
	comp=E,3μm,12.8s						
QZH				LR	LR		
	comp=Z,5μm,15.0s						
WHN	**Wuhan**	**24.31**	**263**	P	**P**	**00 07 38.5**	**-1.2**
WHN				S	**S**	**00 11 52.0**	**-5.8**
WHN				pmax	pmax		
	comp=Z,120nm,1.1s						
WHN				pmax	pmax		
	comp=Z,660nm,6.8s						
WHN				pmax	pmax		
	comp=Z,560nm,11.6s						
WHN				LR	LR		
	comp=N,4μm,11.4s						
WHN				LR	LR		
	comp=E,3μm,13.0s						
WHN				LR	LR		
	comp=Z,4μm,13.0s						
HHC	**Hu-ho-hao-te**	**24.49**	**289**	*e*P	**P**	**00 07 40.5**	**-0.9**
HHC				S	**S**	**00 12 05.0**	**+4.2**
HHC				pmax	pmax		
	comp=Z,45nm,0.9s						
HHC				pmax	pmax		
	comp=Z,360nm,7.2s						
HHC				LR	LR		
	comp=N,1μm,15.3s						
HHC				LR	LR		
	comp=E,1μm,12.6s						
HHC				LR	LR		
	comp=Z,1μm,13.5s						
CIT	**Chita**	**25.54**	**316**	*e*P	**P**	**00 07 51.2**	**+0.5**
CIT				*e*		00 08 32.3	
CIT				pmax	pmax		
	comp=Z,331nm,1.6s						
YAK	**Yakutsk**	**26.53**	**346**	P	**P**	**00 07 59.3**	**-0.2**
	comp=Z,68nm,0.6s,baz=10,slow=1.4,SNR=17						
YAK	**Yakutsk**	**26.53**	**346**	*e*P	**P**	**00 07 58.6**	**-0.8**
YAK				*e*		00 08 43.5	
YAK				*e*S	**S**	**00 12 37.3**	**+4.8**
YAK				*e*SS	SnSn	00 13 45.8	+11
YAK				*e*		00 18 47.6	
YAK				pmax	pmax		
	comp=Z,82nm,0.9s						
YAK				pmax	pmax		
	comp=N,18nm,1.0s						
YAK				pmax	pmax		
	comp=E,16nm,1.3s						
YAK				pmax	pmax		
	comp=Z,34nm,0.9s						
YAK				pmax	pmax		
	comp=N,32nm,0.9s						
YAK				pmax	pmax		
	comp=E,27nm,1.1s						
YAK				smax	smax		
	comp=N,265nm,2.7s						
YAK				smax	smax		
	comp=E,114nm,2.5s						
YAK				MLR	MLR		
	comp=Z,2μm,14.0s						
YAK				MLR	MLR		
	comp=N,2μm,15.0s						
YAK				MLR	MLR		
	comp=E,787nm,15.0s						
YAK	**Yakutsk**	**26.53**	**346**	*e*P	**P**	**00 07 59.3**	**-0.2**
	comp=E,86nm,0.7s						
SEY	**Seymchan**	**26.84**	**10**	P	**P**	**00 08 03.1**	**+0.8**
	comp=E,19nm,0.7s,baz=184,slow=6.7,SNR=36						
H11N2	**WAKE ISLAND Hy**	**27.18**	**122**	T	T	00 36 39.0	
	baz=314,slow=75,SNR=111						
H11N1	**WAKE ISLAND Hy**	**27.18**	**122**	T	T	00 36 45.1	
	baz=314,slow=75,SNR=106						
H11N3	**WAKE ISLAND Hy**	**27.19**	**122**	T	T	00 36 40.6	
	baz=314,slow=75,SNR=26						
XAN	**Xi'an**	**27.55**	**274**	P	**P**	**00 08 07.8**	**-1.2**
XAN				pP	sP	00 08 16.5	-0.8
XAN				sP	pP	00 08 20.8	+5.9
XAN				PP	**PnPn**	**00 09 00.8**	**+6.7**
XAN				S	**S**	**00 12 49.5**	**+0.2**
XAN				SS	SnSn	00 14 13.5	+13
XAN				PcS	PcS	00 15 02.0	-6.5
XAN				pmax	pmax		
	comp=Z,40nm,1.1s						

XAN pmax pmax
comp=Z,290nm,8.0s
XAN LR LR
comp=N,1µm,15.2s
XAN LR LR
comp=E,880nm,15.2s
XAN LR LR
comp=Z,2µm,13.2s
H11S1 WAKE ISLAND Hy 27.90 124 T T 00 37 40.4
baz=316,slow=76,SNR=29
H11S3 WAKE ISLAND Hy 27.90 124 T T 00 37 36.2
baz=316,slow=76,SNR=27
H11S2 WAKE ISLAND Hy 27.92 124 T T 00 37 35.9
baz=316,slow=76,SNR=25
BOD Bodaibo 28.26 327 *e*P **P 00 08 14.6 -0.5**
BOD pmax pmax
comp=Z,26nm,0.8s
ENH Enshi 28.30 266 *e*P **P 00 08 14.9 -0.9**
comp=Z,111nm,0.8s
ULN Ulaanbaatar 28.31 304*ce*P **P 00 08 15.9 +0.1**
ULN pmax pmax
comp=Z,30nm,0.8s
ULN Ulaanbaatar 28.31 304 *e*P **P 00 08 15.7 -0.1**
comp=Z,30nm,0.9s
SONA1 Songino Array 28.74 304 *e*P **P 00 08 19.0 -0.6**
SONA0 Songino Array 28.74 304 *e*P **P 00 08 20.0 +0.3**
comp=Z,42nm,0.8s
SONM Songino Array 28.74 304 P **P 00 08 20.0 +0.4**
comp=Z,34nm,0.8s,baz=103,slow=9.0,SNR=160
SONM LR LR 00 20 06.2
comp=Z,905nm,18.3s,baz=96,slow=37
SONM Songino Array 28.74 304 P **P 00 08 20.0 +0.4**
SONM pmax pmax
comp=Z,34nm,0.8s
SONM MLR MLR
comp=Z,905nm,18.3s
LZH Lanzhou 31.09 281 ⇓P **P 00 08 40.8 +0.3**
LZH pP sP 00 08 51.3 +2.4
LZH sP pP 00 08 55.0 +8.5
LZH PP **PnPn 00 09 42.0 +0.1**
LZH *e*S **S 00 13 43.5 -1.6**
LZH sS sS 00 13 58.0 +3.2
LZH SS **SnSn 00 15 27.0 +0.5**
LZH pmax pmax
comp=Z,76nm,1.0s
LZH pmax pmax
comp=Z,250nm,4.0s
LZH LR LR
comp=N,1µm,13.0s
LZH LR LR
comp=E,3µm,15.4s
LZH LR LR
comp=Z,3µm,16.2s
ZAK Zakamensk 31.20 308 *e*P **P 00 08 41.8 +0.5**
ZAK pmax pmax
comp=Z,31nm,1.2s
TLY Talaya 31.24 311 P **P 00 08 42.0 +0.4**
comp=Z,14nm,0.7s,baz=52,slow=6.2,SNR=12
TLY Talaya 31.24 311*c i*P **P 00 08 41.7 +0.2**
TLY *e* 00 09 52.1
TLY *e*PPP PPP 00 09 56.7
TLY *e*S **S 00 13 48.0 +1.2**
TLY pmax pmax
comp=Z,18nm,0.7s
TLY MLR MLR
comp=Z,2µm,18.0s
TLY Talaya 31.24 311 *e*P **P 00 08 42.0 +0.4**
TLY *e*pP **sP 00 08 52.1 +2.3**
GYA Guiyang 32.16 262 ⇑*i*P **P 00 08 48.5 -1.6**
GYA pP sP 00 09 00.3 +1.9
GYA PP **PnPn 00 09 57.5 +1.5**
GYA PcP **PcP 00 11 40.8 +2.0**
GYA S **S 00 13 59.0 -3.0**
GYA sS sS 00 14 16.0 +4.2
GYA ScP **ScP 00 15 20.3 -1.0**
GYA SS **SnSn 00 15 51.8 -1.1**
GYA Guiyang 32.16 262 ScS ScS 00 19 16.8 -3.6
GYA pmax pmax
comp=Z,40nm,0.8s
GYA pmax pmax
comp=Z,140nm,9.7s
GYA LR LR
comp=N,2µm,17.1s
GYA LR LR
comp=E,1µm,15.2s
GYA LR LR
comp=Z,1µm,13.9s
CD2 Chengdu 32.67 271 P **P 00 08 53.8 -0.6**
CD2 sP sP 00 09 07.8 +5.1
CD2 PP **PP 00 10 07.5 -0.7**
CD2 S **S 00 14 07.0 -2.6**
CD2 sS sS 00 14 23.8 +4.4
CD2 SS **SS 00 16 26.8 -3.4**
CD2 pmax pmax
comp=Z,50nm,0.9s
CD2 pmax pmax
comp=Z,290nm,11.4s
CD2 LR LR
comp=N,3µm,14.4s
CD2 LR LR
comp=Z,3µm,15.6s
GTA Gaotai 33.58 288 *e*P **P 00 09 02.0 -0.3**
GTA pP sP 00 09 12.3 +1.6
GTA sP pP 00 09 16.3 +8.0
GTA PcP **PcP 00 11 43.0 +0.5**
GTA S **S 00 14 20.8 -3.0**
GTA sS sS 00 14 34.5 +0.9
GTA SS **SnSn 00 16 23.5 -3.5**
GTA pmax pmax
comp=Z,18nm,1.3s
GTA pmax pmax
comp=Z,220nm,5.9s
GTA LR LR
comp=N,1µm,15.2s
GTA LR LR
comp=E,910nm,16.6s
GTA LR LR
comp=Z,810nm,19.0s
QIZ Qiongzhong 33.74 247 P **P 00 09 04.8 +1.0**
QIZ pP **sP 00 09 13.0 +0.9**
QIZ S **S 00 14 25.8 -0.6**
QIZ SS **SS 00 17 01.0 +8.6**
QIZ pmax pmax
comp=Z,9.0nm,1.0s
QIZ LR LR
comp=N,370nm,15.7s
QIZ LR LR
comp=E,290nm,17.7s
BILL Bilibino 33.98 16*c i*P **P 00 09 05.1 -0.2**
BILL *e* 00 10 22.6
BILL pmax pmax
comp=Z,20nm,1.8s
BILL MLR MLR
comp=Z,477nm,18.0s
BILL Bilibino 33.98 16 *e*P **P 00 09 05.2 -0.1**
comp=Z,16nm,1.2s
TIXI Tiksi 35.65 353 P **P 00 09 19.6 0.0**
comp=Z,3.6nm,0.7s,baz=169,slow=6.0,SNR=7.4
TIXI Tiksi 35.65 353 *e*P **P 00 09 19.3 -0.3**
TIXI pmax pmax
comp=Z,6.0nm,1.0s
TIXI Tiksi 35.65 353 *e*P **P 00 09 19.1 -0.5**
comp=Z,5.3nm,0.7s
KMI Kunming 35.91 263 P **P 00 09 23.3 +0.6**
KMI pP sP 00 09 33.0 +1.9
KMI sP pP 00 09 37.0 +8.3
KMI PP **PnPn 00 10 43.8 +0.6**
KMI S **S 00 14 56.0 -4.1**
KMI sS sS 00 15 17.3 +7.3
KMI SS **SnSn 00 17 19.3 -4.7**
KMI pmax pmax
comp=Z,33nm,0.9s
KMI pmax pmax
comp=Z,240nm,6.3s
KMI LR LR
comp=N,1µm,16.0s
KMI LR LR
comp=E,900nm,14.6s
KMI LR LR
comp=Z,1µm,15.3s
SGSI Sangihe 36.52 210 P **P 00 09 27.5 -0.2**
comp=Z,621nm,0.8s,comp=Z,14µm
KRAR Krasnoyarsk 38.32 316 *e*P **P 00 09 42.1 -0.4**
KRAR pmax pmax
comp=Z,15nm,1.0s

MYLDM Lahad Datu 38.47 221 *e*P **P 00 09 46.9 +2.7**
JAY Jayapura 39.15 183 P **P 00 09 50.0 +0.1**
comp=Z,0.9nm,0.9s,baz=272,slow=23,SNR=3.2
JAY Jayapura 39.15 183 P P 00 09 54.7 +4.8
comp=Z,33nm,1.1s
NONG Nongkai 39.38 253 P **P 00 09 51.9 +0.1**
comp=Z,33nm,1.0s,comp=Z,8µm
SKNT Sakolnakorn 39.40 250 P **P 00 09 52.1 +0.1**
comp=Z,39nm,1.1s
CRAI Chiangrai 40.30 258 P **P 00 09 59.5 0.0**
comp=Z,100nm,1.1s,comp=Z,40µm
KHON Khomkaen 40.66 251 P **P 00 10 05.0 +2.5**
comp=Z,14nm,0.8s,comp=Z,1µm
MRSI Marisa 40.91 213 P P 00 10 09.2 +4.7
comp=Z,34nm,1.3s
LOEI Loei 41.15 253 P P 00 10 03.2 -3.3
comp=Z,14nm,0.9s
UTTA Uttaradit 41.56 254 P **P 00 10 11.0 +1.1**
comp=Z,3.8nm,0.8s
CHAI Chaiyaphum 41.56 251 P **P 00 10 09.6 -0.3**
comp=Z,11nm,1.0s,comp=Z,101nm
SANI Sanana 41.64 206 P P 00 10 13.7 +3.2
comp=Z,30nm,0.9s
LAMP Lampang 41.83 256 P **P 00 10 14.0 +1.9**
comp=Z,5.5nm,1.1s
WMQ Urumqi 41.83 297 P **P 00 10 12.0 0.0**
WMQ pP sP 00 10 22.3 +1.9
WMQ sP pP 00 10 26.5 +8.5
WMQ PP **PP 00 11 47.3 -1.4**
WMQ S **S 00 16 27.5 -1.2**
WMQ sS sS 00 16 43.0 +4.4
WMQ ScS **ScS 00 20 06.8 -7.1**
WMQ pmax pmax
comp=Z,13nm,0.8s
WMQ pmax pmax
comp=Z,87nm,4.4s
WMQ LR LR
comp=N,610nm,17.4s
WMQ LR LR
comp=E,500nm,12.8s
WMQ LR LR
comp=Z,240nm,18.6s
PBKT Sadao Pong 41.93 253 P **P 00 10 12.6 -0.3**
comp=Z,19nm,0.8s
CMMT Chiang Mai 42.20 257 P **P 00 10 15.0 -0.1**
comp=Z,13nm,1.2s,comp=Z,356nm
CHTO Chiang Mai 42.20 257 *e*P **P 00 10 14.5 -0.7**
CHTO pmax pmax
comp=Z,20nm,1.3s
CHTO Chiang Mai 42.20 257 *e*P **P 00 10 14.5 -0.7**
comp=Z,20nm,1.3s
CM31 Chiang Mai Arr 42.40 257 *e*P **P 00 10 16.5 -0.3**
CM31 *e*PcP **PcP 00 12 10.5 +0.7**
CMAR Chiang Mai Arr 42.40 257 P **P 00 10 16.5 -0.3**
comp=Z,4.3nm,0.8s,baz=45,slow=6.6,SNR=16
CMAR PcP **PcP 00 12 10.5 +0.7**
comp=Z,1.3nm,0.4s,baz=20,slow=5.0,SNR=4.1
CMAR LR LR 00 29 39.6
comp=Z,548nm,18.1s,baz=46,slow=39
CMAR Chiang Mai Arr 42.40 257*ce*P **P 00 10 16.8 0.0**
CMAR pmax pmax
comp=Z,4.0nm,0.8s
SRAK Srakaew 42.70 249 P **P 00 10 16.9 -2.3**
comp=Z,41nm,1.3s,comp=Z,2µm
ZAA1 Zalesovo Array 42.81 313 *e*P **P 00 10 19.6 0.0**
ZAA1 *e*PcP **PcP 00 12 10.4 -0.2**
ZAA0 Zalesovo Array 42.81 313 *e*P **P 00 10 19.6 -0.1**
ZALV Zalesovo Beam 42.81 313 P **P 00 10 19.6 0.0**
comp=Z,19nm,0.8s,baz=89,slow=6.8,SNR=64
ZALV PcP **PcP 00 12 10.4 -0.2**
comp=Z,2.9nm,0.7s,baz=80,slow=4.0,SNR=2.4
ZALV LR LR 00 28 34.7
comp=Z,545nm,18.7s,baz=68,slow=37
NAYO Nakonayok 43.05 250 P **P 00 10 22.8 +0.8**
comp=Z,58nm,1.3s
LSA Lhasa 43.22 276 P **P 00 10 24.5 +0.6**
LSA pmax pmax
comp=Z,7.0nm,0.9s
LSA Lhasa 43.22 276 *e*P P 00 10 27.1 +3.2
LSA pmax pmax
comp=Z,13nm,0.9s
LSA Lhasa 43.22 276 *e*P P 00 10 27.1 +3.2
comp=Z,13nm,0.9s
CHBT CHBT 43.29 247 P **P 00 10 24.4 +0.4**
comp=Z,46nm,1.0s,comp=Z,6µm
MHMT Maesarieng 43.35 257 P **P 00 10 25.1 +0.6**
comp=Z,10nm,0.9s
NVS Novosibirsk 43.72 314⇑*i*P **P 00 10 27.0 0.0**
NVS pmax pmax
comp=Z,33nm,0.9s
NVS pmax pmax
comp=N,3.0nm,0.4s
NVS pmax pmax
comp=E,19nm,0.7s
NRIK Noril'sk 43.90 335 P **P 00 10 28.2 0.0**
comp=E,1.9nm,0.3s,baz=103,slow=8.9,SNR=9.0
NRIK LR LR 00 29 52.8
comp=E,883nm,18.6s,baz=108,slow=38
SHL Shillong 44.40 270 *e*P **P 00 10 32.0 -1.0**
SHL *e*S **S 00 17 10.0 +3.1**
SRDT SRDT 44.69 252 P **P 00 10 35.5 +0.3**
comp=E,50nm,1.1s
KHLT Khaolaem Dam 44.82 253 P **P 00 10 36.8 +0.5**
comp=E,6.7nm,0.8s
MK01 Makanchi Array 45.08 302 *e*P **P 00 10 37.6 -0.5**
MK31 Makanchi Array 45.09 303 *e*P **P 00 10 38.1 0.0**
MK31 Makanchi Array 45.09 303 *e*P **P 00 10 38.0 0.0**
MK32 Makanchi Array 45.09 303 *e*P **P 00 10 38.0 -0.1**
MKAR Makanchi Array 45.09 303 P **P 00 10 38.0 -0.1**
comp=E,8.7nm,0.7s,baz=89,slow=9.4,SNR=52
MKAR LR LR 00 29 45.1
comp=E,328nm,18.9s,baz=84,slow=36
MKAR Makanchi Array 45.09 303 *e*P **P 00 10 38.1 -0.1**
MKAR Makanchi Array 45.09 303 *e*P **P 00 10 38.0 -0.1**
PHET Kaeng Krachan 45.20 250 P **P 00 10 39.9 +0.6**
comp=E,10nm,0.8s,comp=E,115nm
MAKZ Makanchi 45.30 303 *e*P **P 00 10 39.7 -0.1**
MAKZ pmax pmax
comp=Z,17nm,1.0s
MAKZ Makanchi 45.30 303 *e*P **P 00 10 39.7 -0.1**
comp=Z,17nm,1.0s
SPSI Sitap Palu 45.83 213 P **P 00 10 47.2 +3.0**
comp=Z,19nm,1.0s
STKI Sintang 46.57 225 P **P 00 10 52.2 +2.1**
comp=Z,44nm,0.6s
KAPI Kappang 46.77 212 *e*P **P 00 10 49.6 -2.0**
comp=Z,40nm,1.3s
PPLA Purkeypile 46.80 35 *e*P **P 00 10 52.1 +0.6**
comp=Z,36nm,1.4s
KURK Kurchatov 46.86 308 *e*P **P 00 10 51.2 -0.7**
KURK pmax pmax
comp=Z,55nm,0.8s
KURK Kurchatov 46.86 308 *e*P **P 00 10 51.2 -0.7**
comp=Z,55nm,0.8s
BPAW Bear Paw Mtn. 47.38 33 *e*P **P 00 10 57.0 +1.1**
comp=Z,51nm,2.0s
KTH Kantishna Hill 47.39 34 *e*P **P 00 10 53.4 -2.7**
comp=Z,20nm,1.1s
MLY Manley 47.53 32 *e*P **P 00 10 58.4 +1.4**
comp=Z,18nm,0.9s
BBKI Banjar Baru 47.71 219 P P 00 11 02.0 +3.1
comp=Z,56nm,1.1s,comp=Z,4µm
BWN Browne 48.05 33 *e*P **P 00 11 03.2 +2.2**
comp=Z,52nm,1.1s
GUN Gumba 48.17 277 *e*P **P 00 11 02.8 -0.1**
comp=Z,208nm,1.2s
PMR Palmer 48.22 37 *e*P **P 00 10 59.3 -3.1**
PMR pmax pmax
comp=Z,14nm,0.8s
PMR Palmer 48.22 37 *e*P **P 00 10 59.3 -3.1**
comp=Z,14nm,0.8s
TRTT Trang 48.49 244 P P 00 11 15.8 +11
MDM Murphy Dome 48.59 32 *e*P **P 00 11 06.4 +1.1**
comp=Z,25nm,0.8s
WRH Wood River Hil 48.65 33 *e*P **P 00 11 06.4 +0.7**
comp=Z,7.6nm,0.8s
KKN Kakani 48.70 277 *e*P **P 00 11 06.5 -0.3**
comp=Z,60nm,0.8s
COLA College 48.75 32*d i*P **P 00 11 07.0 +0.6**
COLA pmax pmax
comp=Z,8.0nm,0.8s
DHY Denali Highway 48.99 35 *e*P P 00 11 04.5 -4.0
SCM Sheep Creek Mo 49.07 36 *e*P **P 00 11 10.2 +1.2**
SCM pmax pmax
comp=Z,19nm,0.8s
SCM Sheep Creek Mo 49.07 36 *e*P **P 00 11 10.2 +1.2**
comp=Z,19nm,0.8s

GKN Gorkha 49.12 277 *e*P **P 00 11 09.8 -0.2**
comp=Z,173nm,1.0s
IL1 Eielson Array 49.16 32 *e*P **P 00 11 09.9 +0.3**
ILAR Eielson Array 49.16 32 P **P 00 11 09.6 0.0**
comp=Z,12nm,0.7s,baz=263,slow=5.8,SNR=49
ILAR LR LR 00 32 14.2
comp=Z,95nm,21.4s,baz=288,slow=36
ILAR Eielson Array 49.16 32 P **P 00 11 09.6 0.0**
ILAR pmax pmax
comp=Z,3.0nm,0.8s
ILAR MLR MLR
comp=Z,95nm,21.4s
ILB Eielson Array 49.16 32 *e*P **P 00 11 09.6 0.0**
SOEI Soe 49.42 204 P P 00 11 16.7 +4.5
comp=Z,63nm,1.1s
SOEI Soe 49.42 204 *e*P **P 00 11 10.4 -1.8**
comp=Z,117nm,1.4s
SOEI *e*pP **sP 00 11 21.7 +1.0**
PKDT Phuket 49.44 246 P **P 00 11 13.0 +0.7**
comp=Z,44nm,1.0s
KLU Klutina 49.77 37 *e*P **P 00 11 14.2 -0.2**
comp=Z,12nm,0.9s
KOLN Koldanda 50.05 278 *e*P **P 00 11 16.9 -0.2**
comp=Z,30nm,0.8s
PYUN Piuthan 50.39 278 *e*P **P 00 11 19.6 -0.1**
comp=Z,161nm,1.0s
BMRM Bremner River 50.45 37 *e*P **P 00 11 20.9 +1.4**
comp=Z,20nm,1.0s
DOT Dot Lake 50.45 34 *e*P **P 00 11 19.9 +0.4**
comp=Z,20nm,0.7s
MTN Manton Dam 50.55 195 *e*P **P 00 11 19.1 -1.5**
MTN *e*pP **sP 00 11 31.0 +1.9**
MENT Mentasta 50.67 35 *e*P **P 00 11 22.4 +1.3**
comp=Z,10nm,0.8s
VOSK Vostochnaya 51.18 312 *e*P **P 00 11 24.8 -0.3**
VOSK pmax pmax
comp=Z,18nm,0.9s
VOSK Vostochnaya 51.18 312 *e*P **P 00 11 24.8 -0.3**
comp=Z,18nm,0.9s
CRQM Cirque 51.19 37 *e*P **P 00 11 26.8 +1.6**
FRU Bishkek 51.33 299 *e*P **P 00 11 28.0 +1.6**
FRU *e* 00 11 36.0
FRU MLR MLR
comp=E,1µm,18.0s
KSH Kashi 51.41 295 P P 00 11 31.0 +3.9
KSH *e*pP sP 00 11 41.8 +6.2
KSH *e*sP pP 00 11 45.5 +12
KSH PcS **PcS 00 16 41.5 +2.0**
KSH S **S 00 18 48.8 +2.9**
KSH Kashi 51.41 295 SS **SS 00 22 27.5 +6.0**
KSH pmax pmax
comp=Z,9.0nm,0.9s
KSH pmax pmax
comp=Z,150nm,3.2s
KSH LR LR
comp=N,2µm,16.4s
KSH LR LR
comp=E,1µm,15.0s
KSH LR LR
comp=Z,2µm,15.4s
AAK Ala-Archa 51.48 299*c i*P **P 00 11 27.5 -0.1**
AAK pmax pmax
comp=Z,11nm,0.9s
AAK Ala-Archa 51.48 299 *e*P **P 00 11 27.6 0.0**
comp=Z,18nm,1.3s
BRVK Borovoye 51.52 313*ce*P **P 00 11 27.8 +0.2**
BRVK pmax pmax
comp=Z,7.0nm,0.7s
BRVK Borovoye 51.52 313 *e*P **P 00 11 27.6 0.0**
comp=Z,15nm,1.0s
BALM Baldy 51.53 37 *e*P **P 00 11 28.9 +1.2**
BALM pmax pmax
comp=Z,9.0nm,0.7s
BALM Baldy 51.53 37 *e*P **P 00 11 28.9 +1.2**
comp=Z,9.3nm,0.7s
EGAK Eagle 51.61 32 *e*P **P 00 11 28.3 +0.1**
comp=Z,5.0nm,0.7s
ZRNK Zerenda 52.30 313 *e*P **P 00 11 33.5 +0.1**
ZRNK pmax pmax
comp=Z,17nm,1.0s
ZRNK Zerenda 52.30 313 *e*P **P 00 11 33.5 +0.1**
comp=Z,17nm,1.0s
DAWY Dawson 52.46 33 *e*P **P 00 11 35.2 +0.7**
comp=Z,3.5nm,0.9s
PSI Prapat 52.53 240 *e*P **P 00 11 35.1 -0.6**
PSI Prapat 52.53 240 *e*P **P 00 11 35.1 -0.6**
KKAR Karatay Array 54.10 301 *e*P **P 00 11 46.7 -0.2**
KKAR Karatay Array 54.10 301 *e*P **P 00 11 46.7 -0.2**
INK Inuvik 54.15 27 P **P 00 11 47.4 +0.7**
comp=Z,7.5nm,0.8s,baz=300,slow=6.3,SNR=42
INK Inuvik 54.15 27 *e*P **P 00 11 47.4 +0.7**
comp=Z,14nm,1.1s
SKAG Skagway 55.27 38 *e*P **P 00 11 57.1 +2.1**
comp=Z,15nm,1.2s
SVE Sverdlovsk 55.98 319⇓*i*P **P 00 12 00.7 +0.5**
SVE pmax pmax
comp=Z,36nm,1.1s
SVE MLR MLR
comp=Z,2µm,15.0s
FITZ Fitzroy Crossi 56.91 199 P **P 00 12 06.8 -0.3**
comp=Z,2.3nm,0.8s,baz=5.7,slow=10,SNR=5.9
FITZ Fitzroy Crossi 56.91 199 *e*P **P 00 12 06.8 -0.3**
FITZ *e*pP **sP 00 12 16.2 +0.6**
WRAB Tennant Creek 56.96 189 *e*P **P 00 12 06.7 -0.8**
WRAB pmax pmax
comp=Z,26nm,0.9s
WRAB Tennant Creek 56.96 189 *e*P **P 00 12 05.4 -2.1**
comp=Z,31nm,1.0s
WB2 Warramunga Arr 56.97 189 *e*P **P 00 12 06.7 -0.9**
WR1 Warramunga Arr 56.97 189 *e*P **P 00 12 06.2 -1.4**
WRA Warramunga Arr 56.97 189 P **P 00 12 06.2 -1.4**
comp=Z,8.5nm,0.8s,baz=8.6,slow=7.2,SNR=31
WRA Warramunga Arr 56.97 189 P **P 00 12 06.2 -1.4**
WRA pmax pmax
comp=Z,8.0nm,0.8s
SOKR Solikamsk 57.12 323⇑*i*P P 00 12 18.3 +10
SOKR S S 00 20 08.0 +6.0
SOKR pmax pmax
comp=Z,24nm,1.0s
SOKR MLR MLR
comp=Z,817nm,17.0s
ARU Arti 57.19 319*c i*P **P 00 12 08.7 -0.1**
ARU 00 13 03.1
ARU 00 14 15.6
ARU S **S 00 20 04.6 +1.4**
ARU 00 21 48.7
ARU SS **SS 00 23 49.3 -2.4**
ARU pmax pmax
comp=Z,15nm,0.7s
ARU MLR MLR
comp=Z,1µm,16.0s
ARU Arti 57.19 319 *e*P **P 00 12 08.0 -0.8**
comp=Z,36nm,1.2s
DLBC Dease Lake 58.20 38 P **P 00 12 17.8 +1.8**
comp=Z,7.3nm,0.8s,baz=290,slow=9.1,SNR=20
DLBC Dease Lake 58.20 38 *e*P **P 00 12 17.8 +1.8**
comp=Z,11nm,0.9s
KBL Kabul 58.43 292 *e*P **P 00 12 17.6 -0.5**
KBL pmax pmax
comp=Z,24nm,1.1s
KBL Kabul 58.43 292 *e*P **P 00 12 17.6 -0.5**
comp=Z,24nm,1.1s
ABKAR Akbulak array 58.85 311 *e*P **P 00 12 19.8 -0.8**
HYB Hyderabad 59.19 269 *i* P **P 00 12 23.0 -0.4**
HYB *e* 00 12 31.0
AS01 Alice Springs 60.69 189 *e*P **P 00 12 32.0 -1.4**
AS31 Alice Springs 60.70 189 *e*P **P 00 12 32.5 -1.0**
comp=Z,3.6nm,0.9s
ASAR Alice Springs 60.70 189 P **P 00 12 32.5 -1.0**
comp=Z,4.1nm,0.9s,baz=8.8,slow=5.6,SNR=26
ASAR LR LR 00 36 41.3
comp=Z,86nm,21.8s,baz=3.5,slow=34
POO Poona 62.37 273 *e*P **P 00 12 42.0 -3.0**
RES Resolute Bay 62.58 15 *e*P **P 00 12 45.6 +0.1**
RES pmax pmax
comp=Z,13nm,0.9s
RES Resolute Bay 62.58 15 *e*P **P 00 12 45.6 +0.1**
comp=Z,13nm,0.9s
TMCR Tamitsa 63.43 332 *e*P **P 00 12 51.3 0.0**
TMCR pmax pmax
comp=Z,16nm,0.4s
YKW3 Yellowknife Ar 63.48 30 *e*P **P 00 12 51.7 +0.1**
comp=Z,5.8nm,0.8s
YKA Yellowknife Ar 63.51 30 P **P 00 12 51.9 0.0**
comp=Z,5.6nm,0.7s,baz=303,slow=6.8,SNR=128
YKB5 Yellowknife Ar 63.51 30 *e*P **P 00 12 51.9 0.0**

KLMR **Klimovskoe** 64.48 328 *e*P **P** 00 12 56.9 -1.4
KLMR *e**PP **sP** 00 13 07.6 +0.7
KLMR *e**SP pP 00 13 10.3 +5.7
KLMR *e* 00 15 18.7
KLMR pmax pmax
comp=Z,10.0nm,0.8s
ARA0 ARCESS Array S 64.57 340 *e*P **P** 00 12 58.6 -0.1
ARCES ARCESS Array B 64.57 340 P **P** 00 12 58.6 -0.1
comp=Z,3.2nm,0.8s,baz=52,slow=7.9,SNR=7.1
ARCES LR LR 00 47 20.6
comp=Z,354nm,18.6s,baz=40,slow=42
GEYT Alibeck 64.82 300 P **P** 00 13 01.0 +0.1
comp=Z,8.9nm,0.8s,baz=29,slow=3.4,SNR=29
GEYT LR LR 00 42 17.0
comp=Z,255nm,18.9s,baz=65,slow=37
DAG Danmarks Havn 66.09 355 *i*P **P** 00 13 07.9 -0.6
comp=Z,5.2nm,0.8s
DAG Danmarks Havn 66.09 355 *i*P **P** 00 13 07.9 -0.6
DAG pmax pmax
comp=Z,4.0nm,0.8s
B05A Bryant 66.76 46 P **P** 00 13 13.9 +0.7
baz=300
MOS Moscow 68.03 324 *e*P **P** 00 13 23.2 +2.1
MOS *e* 00 13 49.6
MOS pmax pmax
comp=Z,40nm,1.2s
MOS MLR MLR
comp=Z,800nm,19.0s
I03D Drain, OR 68.29 51 P **P** 00 13 23.8 +0.8
baz=300
B08A Colville Reser 68.30 45 *e*P **P** 00 13 24.0 +0.9
comp=Z,9.2nm,1.0s
STKA Stephens Creek 68.32 181 P **P** 00 13 22.8 -0.3
comp=Z,1.4nm,0.6s,baz=16,slow=8.0,SNR=3.9
STKA Stephens Creek 68.32 181 *e*P **P** 00 13 22.8 -0.3
comp=Z,1.8nm,1.0s
VRH Novokhopyorsk 68.42 318 *e*P **P** 00 13 22.5 -1.1
VRH *e**SP **sP** 00 13 32.4 +0.1
VRH pmax pmax
comp=Z,10.0nm,0.7s
VRH MLR MLR
comp=Z,1µm,14.0s
G05D Wamic, OR 68.75 49 P **P** 00 13 27.4 +1.5
baz=301
I04A Tendick Farm, 68.82 51 P **P** 00 13 27.2 +0.9
baz=301
OBN Obninsk 68.88 324⇑ *i*P **P** 00 13 25.4 -1.0
OBN *e* 00 13 37.0
OBN *e* 00 13 51.6
OBN *e* 00 15 56.8
OBN pmax pmax
comp=Z,10.0nm,0.9s
OBN MLR MLR
comp=Z,610nm,15.0s
L02D Cave Junction, 68.91 53 P **P** 00 13 28.4 +1.4
baz=301
LPSR Galich'ya Gora 69.12 321 *e*P **P** 00 13 27.5 -0.5
LPSR *e**SP **sP** 00 13 38.0 +1.4
LPSR pmax pmax
comp=Z,10.0nm,0.8s
LPSR MLR MLR
comp=Z,1µm,16.0s
C09A Chrisman Ranch 69.20 45 *e*P **P** 00 13 29.6 +1.0
comp=Z,16nm,1.0s
D08A Wollman Farm, 69.22 46 *e*P **P** 00 13 29.1 +0.4
comp=Z,12nm,1.0s
FIA1 FINESS Array S 69.48 333 *e*P **P** 00 13 30.2 +0.2
FIA0 FINESS Array S 69.48 333 *e*P **P** 00 13 30.1 0.0
FIA0 FINESS Array S 69.48 333 *e*P **P** 00 13 30.1 0.0
FINES FINESS Array B 69.48 333 P **P** 00 13 30.1 0.0
comp=Z,10.0nm,0.8s,baz=53,slow=7.6,SNR=30
FINES LR LR 00 48 28.1
comp=Z,665nm,18.9s,baz=36,slow=40
NEW Newport 69.61 45 P **P** 00 13 31.7 +0.5
baz=303
NEW Newport 69.61 45 *e*P **P** 00 13 31.7 +0.5
NEW pmax pmax
comp=Z,8.0nm,0.9s
NEW Newport 69.61 45 *e*P **P** 00 13 31.7 +0.5
comp=Z,7.7nm,0.9s
VSR Storozhevoye 69.76 319 *e*P **P** 00 13 31.4 -0.6
VSR *e**SP **sP** 00 13 41.7 +1.1
VSR pmax pmax
comp=Z,10.0nm,0.7s
VSR MLR MLR
comp=Z,2µm,15.0s
M02C Callahan 69.79 53 P **P** 00 13 33.9 +1.5
baz=302
J05D Fort Rock, OR 69.82 51 P **P** 00 13 34.2 +1.5
baz=302
E09A Wood Farm, Sta 69.96 47 *e*P **P** 00 13 34.6 +1.3
comp=Z,14nm,0.9s
N02D Trinity Center 70.10 53 P **P** 00 13 35.6 +1.2
baz=302
M04C Macdoel 70.23 52 P **P** 00 13 36.1 +0.9
baz=302
K05A Summer Lake 70.33 51 *e*P **P** 00 13 37.7 +1.8
comp=Z,18nm,0.9s
SUMG Summit 70.92 0 *i*P **P** 00 13 39.8 +0.6
comp=Z,9.5nm,0.9s
SUMG Summit 70.92 0 *i*P **P** 00 13 39.8 +0.6
SUMG pmax pmax
comp=Z,10.0nm,0.9s
SUMG Summit 70.92 0 *e*P **P** 00 13 40.1 +0.9
comp=Z,9.9nm,0.8s
WALA Waterton Lakes 70.94 43 *e*P **P** 00 13 40.4 +0.9
comp=Z,7.2nm,0.8s
GOF Gofitskoye 70.99 312⇑ *e*P **P** 00 13 40.1 +0.5
GOF pmax pmax
comp=Z,41nm,0.7s
O03D Paynes Creek 71.04 54 P **P** 00 13 40.7 +0.6
baz=302
BMO Blue Mountains 71.36 48 *e*P **P** 00 13 43.1 +1.1
comp=Z,10.0nm,1.1s
BMO *e*pP **sP** 00 13 50.9 +0.3
JTMT Jette 71.48 44 *e*P **P** 00 13 43.9 +1.2
DGRG David-gareji 71.53 308 P **P** 00 13 43.4 +0.4
DGRG David-gareji 71.53 308 P **P** 00 13 43.4 +0.4
GUDG Gudauri 71.54 309 P **P** 00 13 44.5 +1.2
ZEI Tsey 71.72 310 *e*P **P** 00 13 42.8 -1.5
ZEI pmax pmax
comp=Z,22nm,0.8s
SWMT Swartz Lake 71.77 44 *e*P **P** 00 13 45.2 +0.7
TBLG Delisi 71.78 309 P **P** 00 13 45.8 +1.3
TBLG Delisi 71.78 309 P **P** 00 13 45.7 +1.3
KBZ Khabaz 71.81 311 P **P** 00 13 45.2 +0.7
comp=Z,21nm,0.8s,baz=72,slow=3.9,SNR=75
KBZ LR LR 00 50 19.9
comp=Z,506nm,18.5s,baz=47,slow=40
KIV Kislovodsk 71.81 312 *de*P **P** 00 13 44.7 0.0
KIV *i* 00 13 54.7
KIV *e* 00 14 08.0
KIV pmax pmax
comp=Z,59nm,1.0s
KIV Kislovodsk 71.81 312 *e*P **P** 00 13 45.3 +0.6
comp=Z,43nm,0.8s
WVOR Wild Horse Val 71.89 50 *e*P **P** 00 13 46.1 +0.9
WVOR pmax pmax
comp=Z,19nm,1.6s
WVOR Wild Horse Val 71.89 50 *e*P **P** 00 13 46.1 +0.9
comp=Z,19nm,1.6s
ONI Oni 72.10 310 P **P** 00 13 46.6 +0.2
ONI Oni 72.10 310 P **P** 00 13 46.6 +0.2
NEY Neytrino 72.18 311 *e*P **P** 00 13 47.0 -0.1
NEY pmax pmax
comp=Z,2.0nm,0.9s
MSO Missoula 72.19 45 *e*P **P** 00 13 47.6 +0.6
comp=Z,6.8nm,0.9s
SCO Scoresbysund 72.45 355 *i*P **P** 00 13 48.0 +0.1
comp=Z,2.3nm,0.7s
SCO Scoresbysund 72.45 355 *i*P **P** 00 13 48.0 +0.1
SCO pmax pmax
comp=Z,2.0nm,0.7s
GNI Garni 72.64 307 *ce*P **P** 00 13 51.1 +1.2
GNI pmax pmax
comp=Z,87nm,1.2s
GNI Garni 72.64 307 *e*P **P** 00 13 50.9 +1.0
comp=Z,13nm,0.9s
AKH Akhalkalaki 72.73 309⇓ *i*P **P** 00 13 51.2 +0.8
UOSS Minazif 72.83 288 *e*P **P** 00 13 50.8 -0.2
comp=Z,1.8nm,0.8s
CHVG Ch'k'valeri 72.87 311 P **P** 00 13 51.5 +0.5
CHVG Ch'k'valeri 72.87 311⇑ *i*P **P** 00 13 51.5 +0.5
MFID Camas Ranch 73.05 48 *e*P **P** 00 13 53.4 +1.2
comp=Z,6.2nm,0.9s
IZAR Zarasai 73.14 328 *e*P **P** 00 13 52.1 -0.2
IZAR IAmb IAmb 00 13 53.2
comp=Z,5.2nm,0.7s
EPOS Posof 73.15 309 *i*P **P** 00 13 53.9 +1.1
CMB Columbia Colle 73.20 55 *e*P **P** 00 13 53.7 +0.7
CMB pmax pmax
comp=Z,9.0nm,1.0s
CMB Columbia Colle 73.20 55 *e*P **P** 00 13 53.7 +0.7
comp=Z,9.0nm,1.0s
IDID Didziasalis 73.21 328 *e*P **P** 00 13 52.5 -0.2
IDID IAmb IAmb 00 13 54.6
comp=Z,9.3nm,0.8s
MICGM Minsk 73.25 326 *e* P 00 14 04.0 +11
MNK Minsk 73.25 326 *e*P P 00 14 04.0 +11
ISAL Salakas 73.31 328 *e*P **P** 00 13 53.1 -0.2
ISAL IAmb IAmb 00 13 55.2
comp=Z,9.6nm,0.8s
HRY Holter Researc 73.44 44 *e*P **P** 00 13 55.5 +1.1
NACGM Naroch 73.47 327 *e* **P** 00 13 54.0 -0.2
NACGM *e*LQ LQ 00 42 23.0
NACGM *e*LR LR 00 47 48.0
WAKR Walker 73.56 54 *e*P **P** 00 13 56.4 +1.0
LRM Limekiln Ridge 73.62 45 *e*P **P** 00 13 56.3 +0.7
FCC Fort Churchill 73.77 27 *e*P **P** 00 13 55.8 -0.1
FCC pmax pmax
comp=Z,11nm,1.0s
FCC Fort Churchill 73.77 27 *e*P **P** 00 13 55.8 -0.1
comp=Z,11nm,1.0s
EGMT Eagleton 73.79 42 P **P** 00 13 56.7 +0.3
baz=307
SOC Sochi 73.79 312 *e*P P 00 14 08.1 +12
SOC *e* 00 23 31.2
SOC MLR MLR
comp=Z,747nm,19.0s
HLID Hailey 73.80 48 P **P** 00 13 57.4 +0.7
baz=306
HLID Hailey 73.80 48 *e*P **P** 00 13 57.9 +1.2
comp=Z,7.3nm,1.2s
DLMT Dillon 73.81 45 *e*P **P** 00 13 57.9 +1.2
comp=Z,15nm,0.8s
ARTV Artvin 73.83 309 *i*P **P** 00 13 57.9 +0.9
DAGI Agillar 73.90 309 *i*P **P** 00 13 58.0 +0.8
MCMT McKenzie Canyo 73.98 46 *e*P **P** 00 13 58.4 +0.6
DBAD Bademkaya 74.07 309 *i*P **P** 00 13 58.8 +0.7
BOZ Bozeman (W) 74.19 45 *e*P **P** 00 13 59.7 +0.8
BOZ pmax pmax
comp=Z,16nm,0.8s
BOZ Bozeman (W) 74.19 45 *e*P **P** 00 13 59.7 +0.8
comp=Z,16nm,0.8s
EATA Eleskirt 74.23 308 *i*P **P** 00 14 00.7 +1.3
NV01 Mina Array Sit 74.33 54 *e*P **P** 00 14 00.8 +0.9
NVAR Mina Array Bea 74.33 54 P **P** 00 14 00.8 +0.9
comp=Z,7.8nm,0.8s,baz=281,slow=6.2,SNR=59
ANN Anapa 74.41 315 *e*P **P** 00 13 57.3 -2.6
ANN *e*S **S** 00 23 30.8 -2.6
ANN pmax pmax
comp=Z,19nm,0.9s
ANN MLR MLR
comp=N,416nm,17.0s
ANN MLR MLR
comp=Z,412nm,17.0s
ANN MLR MLR
comp=E,288nm,17.0s
HOMI Horasan 74.50 308 *i*P **P** 00 14 01.9 +1.0
NC405 NORSAR Array S 74.58 338 *e*P **P** 00 14 01.1 +0.4
NC204 NORSAR Array S 74.74 338 *e*P **P** 00 14 02.2 +0.6
NB2 NORSAR Subarra 74.79 338 P **P** 00 14 01.7 -0.2
comp=Z,4.7nm,0.7s,baz=38,slow=5.9
NB200 NORSAR Array S 74.79 338 *e*P **P** 00 14 01.8 -0.1
NOA NORSAR Array B 74.79 338 P **P** 00 14 01.8 -0.1
comp=Z,5.3nm,0.8s,baz=38,slow=5.8,SNR=30
NOA LR LR 00 49 53.7
comp=Z,456nm,19.4s,baz=35,slow=38
EKAR Karacoban 74.85 308 *i*P **P** 00 14 04.6 +1.6
NBO02 NORSAR Array S 74.89 338 *e*P **P** 00 14 02.8 +0.3
ERZM Erzurum 74.92 309 *i*P **P** 00 14 04.8 +1.5
AKASG Malin Array Be 75.09 323 P **P** 00 14 03.4 -0.4
comp=Z,12nm,0.7s,baz=46,slow=6.0,SNR=50
AKASG LR LR 00 51 15.7
comp=Z,518nm,18.1s,baz=55,slow=39
AKASG Malin Array Be 75.09 323 *ce*P **P** 00 14 03.5 -0.3
AKASG pmax pmax
comp=Z,13nm,0.7s
AKBB Malin Array Si 75.09 323 *e*P **P** 00 14 03.4 -0.4
AKBB pmax pmax
comp=Z,21nm,1.0s
AKBB Malin Array Si 75.09 323 *e*P **P** 00 14 03.4 -0.4
comp=Z,21nm,1.0s
KIEV Kiev 75.10 323 *c*i P **P** 00 14 03.5 -0.3
KIEV pmax pmax
comp=Z,17nm,0.8s
KIEV Kiev 75.10 323 *e*P **P** 00 14 02.7 -1.1
comp=Z,17nm,0.9s
AK11 Malin Array Si 75.13 323 *e*P **P** 00 14 03.8 -0.2
YMR Madison River 75.15 45 *e*P **P** 00 14 06.1 +1.6
comp=Z,11nm,0.8s
YFT Old Faithful 75.36 45 *e*P **P** 00 14 08.7 +2.9
comp=Z,10nm,0.8s
LKWY Lake 75.53 45 *e*P **P** 00 14 09.3 +2.5
LKWY pmax pmax
comp=Z,12nm,0.8s
LKWY Lake 75.53 45 *e*P **P** 00 14 09.3 +2.5
comp=Z,12nm,0.8s
H17A Grant Village 75.54 45 P **P** 00 14 09.7 +2.9
baz=308
H17A Grant Village 75.54 45 *e*P **P** 00 14 09.5 +2.7
comp=Z,23nm,0.9s
IMW Indian Meadow 75.63 46 *e*P **P** 00 14 09.0 +1.6
comp=Z,14nm,0.8s
SIRN S˜¬rnak 75.64 306 *i*P **P** 00 14 07.1 -0.2
FLWY Flagg Ranch 75.66 45 *e*P **P** 00 14 09.6 +2.1
comp=Z,22nm,1.4s
FXWY Fox Creek 75.74 46 *e*P **P** 00 14 09.2 +1.3
comp=Z,10nm,1.0s
GRAC Grapevine Rang 75.76 54 P **P** 00 14 09.0 +1.1
baz=305
RLMT Red Lodge 75.83 44 *e*P **P** 00 14 09.7 +1.3
comp=Z,33nm,1.6s
MOOW Moose Ponds 75.83 46 *e*P **P** 00 14 09.7 +1.2
comp=Z,9.8nm,1.1s
LOHW Long Hollow 76.00 46 *e*P **P** 00 14 10.6 +1.1
comp=Z,3.9nm,0.9s
REDW Red Top Meadow 76.01 46 *e*P **P** 00 14 11.0 +1.5
comp=Z,9.5nm,1.0s
DAC Darwin (Calif) 76.03 55 *e*P **P** 00 14 10.0 +0.3
DAC pmax pmax
comp=Z,6.0nm,0.9s
DAC Darwin (Calif) 76.03 55 *e*P **P** 00 14 10.0 +0.3
comp=Z,5.5nm,0.9s
KELT Kelkit 76.09 310 *i*P **P** 00 14 10.6 +0.7
R11A Troy Canyon, C 76.12 52 P **P** 00 14 10.8 +0.6
baz=306,SNR=17
R11A Troy Canyon, C 76.12 52 *e*P **P** 00 14 10.8 +0.6
comp=Z,7.7nm,1.0s
BGU Big Grassy Mou 76.19 49 *e*P **P** 00 14 11.8 +1.3
comp=Z,4.1nm,0.8s
SIM Simferopol' 76.19 316 *c*i P **P** 00 14 10.3 +0.1
SIM *i* 00 14 20.0
SIM pmax pmax
comp=Z,22nm,0.8s
SIM MLR MLR
comp=E,300nm,15.1s
MPMC Manual Prospec 76.22 55 P **P** 00 14 11.1 +0.3
baz=306,SNR=7.7
FURC Furnace Creek, 76.40 55 P **P** 00 14 12.3 +0.8
baz=306
DGMT Dagmar 76.40 39 P **P** 00 14 12.0 +0.6
baz=311
LRMC Laurel Mtn Rad 76.43 56 P **P** 00 14 12.5 +0.6
baz=306
TPNV Topopah Spring 76.52 54 P **P** 00 14 12.8 +0.4
baz=306,SNR=9.5
TPNV Topopah Spring 76.52 54 *e*P **P** 00 14 13.0 +0.6
TPNV pmax pmax
comp=Z,11nm,1.0s
TPNV Topopah Spring 76.52 54 *e*P **P** 00 14 13.0 +0.6
comp=Z,11nm,1.0s
TNCL Tunceli-Merkez 76.52 309 *i*P **P** 00 14 14.1 +1.8
EDW2 Edwards Air Fo 76.57 57 P **P** 00 14 13.6 +1.0
baz=306
HWUT Hardware Ranch 76.66 48 *e*P **P** 00 14 14.2 +1.0
comp=Z,19nm,1.4s
DUG Dugway, Tooele 76.76 50 P **P** 00 14 14.6 +0.9
baz=307
DUG Dugway, Tooele 76.76 50 *e*P **P** 00 14 14.7 +1.0
DUG pmax pmax
comp=Z,11nm,0.9s
DUG Dugway, Tooele 76.76 50 *e*P **P** 00 14 14.7 +1.0
comp=Z,11nm,0.9s
MARD Mardin 76.80 307 *i*P **P** 00 14 15.0 +1.0
B25A Knox Farm, Ray 77.05 39 P **P** 00 14 15.6 +0.5
baz=311
KEMA Kemaliye 77.08 309 *i*P **P** 00 14 16.9 +1.4
PSUT Pine Spring 77.11 51 *e*P **P** 00 14 16.9 +1.1
comp=Z,9.2nm,1.0s
GSC Goldstone, Bar 77.12 56 P **P** 00 14 16.4 +0.7
baz=306
GSC Goldstone, Bar 77.12 56 *e*P **P** 00 14 16.4 +0.7
GSC pmax pmax
comp=Z,5.0nm,0.9s
GSC Goldstone, Bar 77.12 56 *e*P **P** 00 14 16.4 +0.7
comp=Z,4.7nm,0.9s
BW06 Boulder Array 77.12 46 *e*P **P** 00 14 16.0 +0.2
PD31 Pinedale Array 77.12 46 *e*P **P** 00 14 15.6 -0.2
PDAR Pinedale Array 77.12 46 P **P** 00 14 15.6 -0.2
comp=Z,3.9nm,0.7s,baz=260,slow=2.0,SNR=46
BFSC Mount Baldy Ra 77.17 57 P **P** 00 14 16.5 +0.4
baz=306
A26A Wade Farm, Ken 77.20 38 P **P** 00 14 16.3 +0.5
baz=312
SORM Soroca 77.20 321⇑ *i*P **P** 00 14 14.9 -0.9
SORM Soroca 77.20 321 ⇑P **P** 00 14 14.9 -0.9
ELZG Elazig 77.24 309 *i*P **P** 00 14 17.2 +0.7
JLU Jordanelle 77.34 49 *e*P **P** 00 14 18.4 +1.3
comp=Z,6.3nm,0.9s
NLU North Lily Min 77.35 49 *e*P **P** 00 14 18.4 +1.3
comp=Z,6.5nm,0.9s
MPU Maple Canyon 77.58 49 *e*P **P** 00 14 19.7 +1.3
comp=Z,10nm,0.9s
TUQ Turquoise Moun 77.62 55 P **P** 00 14 18.9 +0.3
baz=306,SNR=5.6
CUKAN kangal_SIVAS 77.69 310 *i*P **P** 00 14 19.7 +0.8
D25A Fairfield 77.71 40 P **P** 00 14 19.4 +0.6
baz=312
KIS Kishinev 77.72 320 *e*P P 00 14 30.0 +11
KIS LRM MLR 00 51 56.0
comp=Z,1µm,15.0s
KIS Kishinev 77.72 320 *e*P P 00 14 30.0 +11
KIS *e* 00 14 39.0
KIS *e* 00 24 48.0
KIS MLR MLR
comp=N,1µm,15.0s
KIS MLR MLR
comp=E,900nm,15.0s
KIS MLR MLR
comp=Z,2µm,15.0s
KIS MLR MLR
comp=Z,2µm,16.0s
SFNV Sufian 77.77 306 *e*P **P** 00 14 18.8 -0.5
MILM Milestii Mici 77.77 320⇓ *i*P **P** 00 14 18.5 -0.5
C26A Wahner Farm, P 77.88 39 P **P** 00 14 20.1 +0.4
baz=312
BOYT Boyabat 77.94 313 *i*P **P** 00 14 21.3 +1.2
AKCD Akcadag 78.03 309 *i*P **P** 00 14 21.9 +1.0
A28A Rude Farm, Bot 78.05 37 P **P** 00 14 21.1 +0.5
baz=313
E25A Miller Ranch, 78.10 40 P **P** 00 14 21.6 +0.6
baz=312
LVV L'vov 78.15 324 *e*P **P** 00 14 21.4 +0.3
LVV *e* 00 14 29.6
MSU Marysvale 78.17 51 *e*P **P** 00 14 23.1 +1.4
MSU Marysvale 78.17 51 *e*P **P** 00 14 23.1 +1.4
GMRC Granite Mounta 78.18 55 P **P** 00 14 21.9 +0.2
baz=307
D26A Manning 78.25 39 P **P** 00 14 21.9 +0.1
baz=312
C27A Sayler Ranch, 78.26 38 P **P** 00 14 21.8 0.0
baz=312
TMUT Trail Mountain 78.28 50 *e*P **P** 00 14 23.8 +1.3
comp=Z,5.3nm,1.0s
B28A Dugan Ranch, T 78.32 37 P **P** 00 14 22.3 +0.2
baz=313
109C Camp Elliot, M 78.33 58 P **P** 00 14 23.0 +0.6
baz=306
PFO Pinyon Flats O 78.34 57 P **P** 00 14 22.6 0.0
baz=306
CUSAR Sarkisla-SIVAS 78.37 311 *i*P **P** 00 14 23.6 +0.9
BELC Belle Mtn. Jos 78.42 56 P **P** 00 14 22.9 -0.2
baz=307
SURC SANLIURFA_SURC 78.45 307 *i*P **P** 00 14 24.0 +0.9
MTPU Mount Pierson 78.45 51 *e*P **P** 00 14 25.2 +1.7
comp=Z,6.3nm,0.9s
F25A Bowman 78.45 41 P **P** 00 14 23.3 +0.3
baz=312
P17A Butcher Ranch, 78.46 49 *e*P **P** 00 14 24.6 +1.4
comp=Z,21nm,1.0s
A29A Manning Farm, 78.54 36 P **P** 00 14 22.9 -0.4
baz=314,SNR=8.0
E26A Carlson Angus 78.61 40 P **P** 00 14 23.9 +0.1
baz=312
COAL Corum-Alaca 78.61 312 *i*P **P** 00 14 25.2 +1.2
P18A Preston Nutter 78.67 49 *e*P **P** 00 14 25.8 +1.2
comp=Z,19nm,1.4s
KNB Kanab 78.68 52 *e*P **P** 00 14 26.1 +1.6
KNB pmax pmax
comp=Z,15nm,1.1s
KNB Kanab 78.68 52 *e*P **P** 00 14 26.1 +1.6
comp=Z,15nm,1.1s
PRAR RASCA 78.78 322⇓ *i*P **P** 00 14 25.2 +0.5
MONP2 Monument Peak 78.79 57 P **P** 00 14 25.1 -0.1
baz=307
B29A Wagenman Farm, 78.80 37 P **P** 00 14 24.7 0.0
baz=314
KSRV Kasrt alli 78.81 306 *e*P **P** 00 14 25.2 +0.2
SRU San Rafael Swe 78.82 49 *e*P **P** 00 14 26.0 +0.8
SRU pmax pmax
comp=Z,17nm,0.9s
SRU San Rafael Swe 78.82 49 *e*P **P** 00 14 26.0 +0.8
comp=Z,17nm,0.9s
GZT Gaziantep 78.82 308 *i*P **P** 00 14 26.4 +1.1
IRM Iron Mountain 78.89 56 P **P** 00 14 25.5 0.0
baz=307
KWP Kalwaria Pacla 78.90 325 *e*P **P** 00 14 25.1 -0.2
KWP Kalwaria Pacla 78.90 325⇑ *i*P **P** 00 14 26.2 +0.9
KWP Kalwaria Pacla 78.90 325 ⇑P **P** 00 14 26.2 +0.9
MMU Miners Mountai 78.91 50 *e*P **P** 00 14 27.0 +1.1
F26A Lodgepole 78.91 40 P **P** 00 14 25.6 +0.1
baz=312
GIRR Girov 78.92 321⇓ *i*P **P** 00 14 25.7 +0.3
A30A Hoffart Farm, 78.97 36 P **P** 00 14 25.4 -0.3
baz=314,SNR=8.3
BC3 Big Chuckawall 78.99 56 P **P** 00 14 26.4 +0.2
baz=307
D28A Regan 79.08 38 P **P** 00 14 26.3 0.0
baz=313
E27A Carson 79.09 39 P **P** 00 14 26.9 +0.5
baz=313
BUR08 Bucovina Ar. S 79.10 322 *e*P **P** 00 14 27.1 +0.6
BURAR Bucovina Array 79.11 322⇓ *i*P **P** 00 14 27.0 +0.4
BURAR Bucovina Array 79.11 322 ⇓P **P** 00 14 27.0 +0.4
TESR Tescani 79.15 321⇓ *i*P **P** 00 14 26.6 -0.1
ULM Lac du Bonnet 79.15 34 P **P** 00 14 26.7 +0.1
comp=Z,1.7nm,0.5s,baz=310,slow=5.2,SNR=3.1
SWSC Sam W. Stewart 79.18 57 P **P** 00 14 27.4 +0.3
baz=307
F27A Lemmon 79.24 40 P **P** 00 14 27.2 0.0
baz=312
HCB Kahramanmara˜ 79.24 309 *i*P **P** 00 14 28.3 +0.9
H25A Fruitdale 79.25 42 P **P** 00 14 27.4 +0.1
baz=312
CFR Carcaliu 79.28 319⇑ *i*P **P** 00 14 27.1 -0.3
CFR Carcaliu 79.28 319 ⇑P **P** 00 14 27.1 -0.3
B30A Myrvik Farm, E 79.30 36 P **P** 00 14 27.0 -0.4
baz=314,SNR=5.1
G26A Maurine 79.32 41 P **P** 00 14 27.3 -0.4
baz=312,SNR=6.8
RSSD Black Hills 79.34 42 *e*P **P** 00 14 28.1 0.0
RSSD pmax pmax
comp=Z,6.0nm,0.9s
RSSD Black Hills 79.34 42 *e*P **P** 00 14 28.1 0.0
comp=Z,6.3nm,0.9s
ANDN Andirin 79.45 309 *i*P **P** 00 14 29.7 +1.0
O20A White River Ci 79.54 47 P **P** 00 14 29.6 +0.4
baz=310,SNR=5.8
O20A White River Ci 79.54 47 *e*P **P** 00 14 29.9 +0.7
comp=Z,9.0nm,0.8s
VRI Vrincioaia 79.55 320⇑ *i*P **P** 00 14 29.6 +0.7
VRI Vrincioaia 79.55 320 ⇑P **P** 00 14 29.7 +0.8
Y12C Blythe 79.55 56 P **P** 00 14 29.8 +0.8
baz=307
I25A Rochford 79.57 42 P **P** 00 14 29.0 -0.3
baz=312,SNR=6.1
KOLS Kolonicke sedl 79.59 325 *e*P **P** 00 14 29.5 +0.4

KOLS e 00 14 39.3
PLOR Plostina 79.60 320 ⇓ *i*P **P 00 14 30.1 +0.9**
PLOR Plostina 79.60 320 ⇓ P **P 00 14 30.1 +0.9**
G27A Dupree 79.61 40 P **P 00 14 29.1 -0.2**
baz=313,SNR=6.1
H26A Fairpoint 79.69 41 P **P 00 14 30.2 +0.4**
baz=312
STHS Stebnicka Huta 79.72 325 *e*P **P 00 14 30.7 +0.9**
STHS *e* 00 14 41.5
C30A Mose, Pekin 79.75 37 P **P 00 14 30.3 +0.3**
baz=314
BR101 Keskin Array S 79.75 312 *e*P **P 00 14 30.1 -0.1**
BR131 Keskin Array S 79.75 312 *e*P **P 00 14 30.8 +0.5**
BRTR Keskin Array B 79.75 312 P **P 00 14 30.1 -0.1**
comp=Z,3.0nm,0.8s,baz=110,slow=4.3,SNR=18
BRTR LR LR 00 54 33.0
comp=Z,248nm,18.2s,baz=44,slow=39
BRTR Keskin Array B 79.75 312 *c*e*P* **P 00 14 31.0 +0.7**
BRTR pmax pmax
comp=Z,3.0nm,0.8s
GLA Glamis 79.77 56 P **P 00 14 30.6 +0.2**
baz=307
OJC Ojcow 79.79 327 *e*P **P 00 14 30.7 +0.6**
OJC Ojcow 79.79 327 *e*P **P 00 14 30.2 +0.1**
OJC pmax pmax
comp=Z,25nm,1.1s
OJC Ojcow 79.79 327 *e*P **P 00 14 30.1 +0.1**
comp=Z,25nm,1.1s
UZH Uzhgorod 79.80 324 *e*P **P 00 14 31.2 +1.1**
UZH *i* 00 14 37.5
UZH *e* 00 14 44.2
UZH *e* 00 17 31.5
UZH *e*S **S 00 24 28.6 -3.4**
UZH *e*SS **SS 00 29 33.5 -6.4**
UZH MLR MLR
comp=N,1μm,15.0s
UZH MLR MLR
comp=E,2μm,15.0s
UZH MLR MLR
comp=Z,1μm,15.0s
DRWC Darouich 79.84 308 *e*P **P 00 14 30.2 -0.5**
ARCR ARCALIA 79.90 322 ⇑ *i*P **P 00 14 32.3 +1.5**
BCAM Yenicaga 79.97 314 *i*P **P 00 14 33.0 +1.6**
CRVS Cervenica-Dubn 79.99 325 *e*P **P 00 14 32.0 +0.8**
D30A Buchanan 80.03 38 P **P 00 14 31.5 +0.1**
baz=314
I26A New Underwood 80.03 42 P **P 00 14 32.3 +0.7**
baz=312
C31A Landman Farms, 80.04 37 P **P 00 14 31.0 -0.5**
baz=315
H27A Howes 80.04 41 P **P 00 14 31.6 0.0**
baz=313,SNR=6.9
NIE Niedzica 80.15 326 *e*P **P 00 14 33.0 +0.9**
ANTO Ankara 80.16 313 *e*P **P 00 14 33.1 +0.7**
ANTO pmax pmax
comp=Z,14nm,0.9s
ANTO Ankara 80.16 313 *e*P **P 00 14 33.1 +0.7**
comp=Z,14nm,0.9s
DOPR Dopca 80.16 321 ⇑ *i*P **P 00 14 33.4 +1.2**
BBAL Bala 80.17 312 *i*P **P 00 14 33.0 +0.4**
B32A Ashes, Strandq 80.18 36 P **P 00 14 31.7 -0.5**
baz=316
BR231 Keskin MP Arra 80.19 313 *e*P **P 00 14 30.9 -1.7**
MLR Muntele Rosu 80.20 320 ⇑ *i*P **P 00 14 34.2 +1.6**
MLR Muntele Rosu 80.20 320 ⇑ P **P 00 14 34.2 +1.6**
A33A Warroad 80.32 35 P **P 00 14 33.0 +0.1**
baz=316
G28A Parade 80.35 40 P **P 00 14 33.5 +0.2**
baz=313
E30A Jud 80.38 38 P **P 00 14 33.4 +0.1**
baz=314
F29A Eureka 80.38 39 P **P 00 14 33.5 +0.1**
baz=314
N23A Red Feather La 80.39 46 P **P 00 14 34.6 +0.7**
baz=311,SNR=6.5
N23A Red Feather La 80.39 46 *e*P **P 00 14 35.3 +1.4**
comp=Z,11nm,0.8s
J26A Sides Ranch, S 80.40 42 P **P 00 14 34.0 +0.4**
baz=312
I27A Quinn 80.44 41 P **P 00 14 34.4 +0.6**
baz=313
WUAZ Wupatki 80.52 53 P **P 00 14 35.1 +0.6**
baz=309,SNR=6.3
WUAZ Wupatki 80.52 53 *e*P **P 00 14 35.8 +1.3**
comp=Z,9.1nm,0.9s
CJR Cluj-Napoca 80.53 322 ⇑ *i*P **P 00 14 34.3 +0.1**
CJR Cluj-Napoca 80.53 322 ⇑ P **P 00 14 34.3 +0.1**
KKUL Konya-Kulu 80.53 312 *i*P **P 00 14 35.3 +0.8**
YAYL Yayladag 80.56 308 *i*P **P 00 14 34.6 -0.1**
AGMN Agassiz Nation 80.56 35 P **P 00 14 34.0 -0.3**
baz=316
H28A Mission Ridge 80.57 40 P **P 00 14 35.0 +0.6**
baz=313
WRDH Warideh 80.69 307 *e*P **P 00 14 33.8 -1.5**
VOIR 80.70 321 ⇓ *i*P **P 00 14 36.0 +0.8**
VOIR 80.70 321 ⇓ P **P 00 14 36.0 +0.8**
LANS Liptovska Anna 80.72 326 *e*P **P 00 14 36.4 +1.2**
KECS Kecovo 80.74 325 *e*P **P 00 14 35.9 +0.7**
BTAS Taskesti 80.75 314 *i*P **P 00 14 36.1 +0.5**
G29A Hoven 80.78 39 P **P 00 14 35.4 -0.2**
baz=314
OKC Ostrava-Krasne 80.79 327 *e*P **P 00 14 36.1 +0.6**
OKC AMS AMS 00 54 50.0
comp=Z,900nm,16.1s
E31A Nome 80.84 37 P **P 00 14 36.5 +0.7**
baz=315
RABH Abou Rabah 80.85 306 *e*P P 00 14 32.6 -3.6
DRGR 80.91 323 ⇓ *i*P **P 00 14 35.0 -1.3**
DRGR 80.91 323 ⇓ P **P 00 14 35.0 -1.3**
SMCO Snowmass 80.91 48 *e*P **P 00 14 37.7 +0.8**
comp=Z,39nm,1.9s
KERG Konya-Eregli 80.92 310 *i*P **P 00 14 36.6 -0.1**
AUMIH MIHALICIK 80.93 313 *i*P **P 00 14 36.9 +0.3**
I28A Midland 80.95 41 P **P 00 14 36.5 0.0**
baz=313,SNR=5.6
ARR Arges 80.96 321 ⇓ *i*P **P 00 14 38.3 +1.7**
ROOS tl_alroos 80.96 306 *e*P **P 00 14 35.7 -1.1**
J27A Elkhorn Farm, 81.02 42 P **P 00 14 37.5 +0.5**
baz=313
H29A Onida 81.02 40 P **P 00 14 37.2 +0.3**
baz=314
MORC Moravsky Berou 81.10 328 ⇓ *i*P **P 00 14 37.7 +0.5**
MORC Moravsky Berou 81.10 328 ⇓ P **P 00 14 37.7 +0.5**
MORC Moravsky Berou 81.10 328 *e*P **P 00 14 37.9 +0.7**
comp=Z,49nm,1.1s
F31A Hecla 81.15 38 P **P 00 14 38.0 +0.5**
baz=315
DPC Dobruska-Polom 81.18 329 *e*P **P 00 14 38.5 +0.9**
DPC *ep*P **sP 00 14 46.4 +0.1**
DPC *ex* x 00 14 48.7
DPC *e*PP PP 00 17 34.6 -7.7
DPC *e*S **S 00 24 47.7 +1.1**
DPC AMS AMS 00 55 00.0
comp=Z,700nm,15.0s
UPC Upice 81.19 329 *e*P **P 00 14 38.4 +0.8**
UPC *e*S **S 00 24 44.6 -2.0**
UPC AMS AMS 00 53 40.0
comp=Z,700nm,15.8s
KRLC Kraliky 81.20 328 *e*P **P 00 14 38.3 +0.6**
G30A Faulkton 81.22 39 P **P 00 14 38.1 +0.2**
baz=314
MVCO Mesa Verde 81.25 50 P **P 00 14 38.9 +0.4**
baz=310
MVCO Mesa Verde 81.25 50 *e*P **P 00 14 39.6 +1.1**
comp=Z,14nm,1.2s
ISCO Idaho Springs 81.30 46 P **P 00 14 39.3 +0.5**
baz=311,SNR=6.5
ISCO Idaho Springs 81.30 46 *e*P **P 00 14 39.7 +0.9**
ISCO pmax pmax
comp=Z,20nm,1.8s
ISCO Idaho Springs 81.30 46 *e*P **P 00 14 39.7 +0.9**
comp=Z,20nm,1.8s
J28A Allard Ranch, 81.31 41 P **P 00 14 38.9 +0.4**
baz=313
HAWK Haweek 81.31 307 *e*P **P 00 14 38.1 -0.6**
I29A Vivian Onida 81.39 41 P **P 00 14 38.4 -0.4**
baz=314
PSZ Piszkesteto 81.42 325 ⇑ *i*P **P 00 14 39.6 +0.6**
PSZ Piszkesteto 81.42 325 ⇑ P **P 00 14 39.6 +0.6**
PSZ Piszkesteto 81.42 325 *e*P **P 00 14 39.7 +0.6**
comp=Z,23nm,1.0s
KDHN Kadinhani 81.43 312 *i*P **P 00 14 39.2 -0.1**
VYHS Vyhne 81.48 326 *e*P **P 00 14 39.9 +0.7**
VYHS *e* 00 14 47.8
KIZK Mersin 81.51 309 *i*P **P 00 14 39.6 +0.1**
BORA Eskisehir 81.52 314 *i*P **P 00 14 40.3 +0.6**
ESKT Eskisehir 81.53 313 *i*P **P 00 14 40.3 +0.5**
MARH Ras Al Marh 81.58 306 *e*P **P 00 14 39.2 -1.1**
G31A Conde 81.62 39 P **P 00 14 40.2 +0.2**
baz=315
BUY Buyukada 81.64 315 *i*P **P 00 14 39.7 -0.4**
ZALF Zalf 81.71 305 *e*P **P 00 14 39.0 -1.7**
BRG Berggiesshubel 81.76 330 *e*P **P 00 14 40.8 +0.2**
comp=Z,7.8nm,0.9s
BRG *e* 00 14 51.7
comp=Z,6.0nm,0.9s
BRG Berggiesshubel 81.76 330 S **S 00 24 55.0 +2.6**
comp=N,593nm,18.8s
comp=E,446nm,16.2s
comp=Z,974nm,14.0s
KMER Konya-Meram 81.77 311 *i*P **P 00 14 39.5 -1.6**
PVCC Panska Ves 81.77 329 *e*P **P 00 14 41.5 +0.8**
PVCC AMS AMS 00 55 30.0
comp=Z,700nm,16.2s
214A Organ Pipe Nat 81.79 56 P **P 00 14 41.2 0.0**
baz=308
SIRR Siria 81.79 323 ⇑ *i*P **P 00 14 41.3 +0.4**
CLL Collm 81.79 331 *i*P **P 00 14 40.8 0.0**
comp=Z,12nm,0.9s
CLL *i* 00 14 51.2
comp=Z,13nm,1.1s
CLL *e*PP PP 00 17 58.0 +11
CLL *e*S S 00 24 59.0 +6.3
CLL *es*S **ScS 00 25 14.0 +4.5**
CLL *e*SS **SS 00 30 12.0 +2.5**
CLL Collm 81.79 331 *e*P **P 00 14 40.3 -0.5**
CLL pmax pmax
comp=Z,11nm,0.7s
CLL Collm 81.79 331 *e*P **P 00 14 40.3 -0.5**
comp=Z,11nm,0.7s
SUSD Miller 81.79 40 P **P 00 14 41.0 +0.1**
baz=315
J29A Okreek 81.80 41 P **P 00 14 41.1 +0.1**
baz=314
VRAC Vranov 81.86 328 ⇑ *i*P **P 00 14 42.0 +0.8**
VRAC Vranov 81.86 328 ⇑ P **P 00 14 42.0 +0.8**
C35A Jirik Farms, M 81.86 35 P **P 00 14 40.9 -0.3**
baz=318
I30A Oacoma 81.92 40 P **P 00 14 42.2 +0.6**
baz=314
S22A 4UR Ranch, Cre 81.92 49 P **P 00 14 42.9 +0.8**
baz=311,SNR=7.2
S22A 4UR Ranch, Cre 81.92 49 *e*P **P 00 14 43.4 +1.3**
comp=Z,10nm,1.1s
BOLV Bolvadin 81.99 313 *i*P **P 00 14 42.5 +0.2**
SMOL Smolenice 82.09 327 *e*P **P 00 14 43.4 +1.0**
SMOL *e* 00 14 53.7
ULDT Uludag 82.10 315 *i*P **P 00 14 43.5 +0.6**
Q24A Divide 82.12 47 P **P 00 14 43.7 +0.5**
baz=312
Q24A Divide 82.12 47 *e*P **P 00 14 44.1 +0.9**
comp=Z,5.8nm,0.8s
F33A 5 Mile Ranch, 82.13 37 P **P 00 14 42.8 +0.2**
baz=316
GOPC GO Pecny, Ondr 82.16 329 *e*P **P 00 14 43.4 +0.7**
GOPC AMS AMS 00 55 40.0
comp=Z,800nm,14.7s
ERMK Ermenek 82.16 310 *i*P **P 00 14 42.9 -0.4**
PRA Prague 82.18 329 *e*P **P 00 14 43.6 +0.8**
PRA AMS AMS 00 55 40.0
comp=Z,800nm,16.8s
PRU Pruhonice 82.20 329 *e*P **P 00 14 43.6 +0.7**
PRU *ep*P **sP 00 14 52.2 +0.5**
PRU *e*S **S 00 24 57.3 +0.3**
PRU AMS AMS 00 55 40.0
comp=Z,800nm,14.9s
SALA Sala 82.23 305 *e*P **P 00 14 40.9 -2.8**
BZS Buzias 82.28 323 ⇓ *i*P **P 00 14 43.2 -0.2**
BZS Buzias 82.28 323 ⇓ P **P 00 14 43.2 -0.2**
J30A Dallas 82.30 41 P **P 00 14 43.8 +0.2**
baz=314
BRBR Barbar 82.31 306 *e*P P 00 14 38.8 -5.3
TREC Trest 82.34 328 *e*P **P 00 14 44.2 +0.5**
TREC *ep*P **sP 00 14 52.2 -0.2**
TREC AMS AMS 00 57 40.0
comp=Z,600nm,16.8s
G33A Ortonville 82.52 38 P **P 00 14 44.9 +0.2**
baz=316
GDZ Gediz 82.61 314 *i*P **P 00 14 45.6 +0.1**
C37A Embarrass 82.65 34 P **P 00 14 45.3 -0.1**
baz=319
F34A Alexandria 82.66 37 P **P 00 14 45.8 +0.4**
baz=317
K30A Basset 82.69 41 P **P 00 14 45.9 +0.2**
baz=314
SDCO Great Sand Dun 82.72 48 *e*P **P 00 14 47.4 +1.1**
comp=Z,5.7nm,1.0s
H33A Prehn Over Nor 82.74 38 P **P 00 14 46.3 +0.4**
baz=316
TCHB Talchebab 82.76 305 *e*P P 00 14 39.7 -6.5
MDVR Moldovita 82.83 322 ⇓ *i*P **P 00 14 46.1 -0.3**
DURS Dursunbey 82.84 315 *i*P **P 00 14 46.7 +0.1**
NKC Novy Kostel 82.86 330 *e*P **P 00 14 46.6 +0.2**
NKC AMS AMS 00 55 20.0
comp=Z,800nm,15.3s
G34A Benson 82.88 37 P **P 00 14 46.8 +0.2**
baz=317
F35A Swanville 82.94 36 P **P 00 14 46.4 -0.5**
baz=317
CSS Mathiatis 82.99 309 *e*P **P 00 14 47.3 0.0**
comp=Z,3.2nm,0.8s
DEMI Demirci 83.08 314 *i*P **P 00 14 45.8 -2.0**
KHAL Karahalli 83.08 313 *i*P **P 00 14 47.9 0.0**
K31A O'Neill 83.17 41 P **P 00 14 48.8 +0.5**
baz=315
PMOR Pomariorio Ree 83.17 114 *e*T T 01 46 30.9
comp=Z,2.5nm,0.2s
CONA Conrad Observa 83.22 327 *i*P **P 00 14 49.1 +0.7**
comp=Z,8.4nm,0.8s
H34A Spellman Lake, 83.23 38 P **P 00 14 48.8 +0.4**
baz=317
KHC Kasperske Hory 83.26 329 *e*P **P 00 14 49.0 +0.5**
KHC *ep*P **sP 00 14 57.3 0.0**
KHC *ex* x 00 14 59.1
KHC AMS AMS 00 56 20.0
comp=Z,600nm,15.3s
KHC Kasperske Hory 83.26 329 *e*P **P 00 14 47.8 -0.7**
KHC pmax pmax
comp=Z,4.0nm,0.7s
KHC Kasperske Hory 83.26 329 *e*P **P 00 14 47.8 -0.7**
comp=Z,4.3nm,0.7s
PKSM Moragy 83.26 325 ⇑ *i*P **P 00 14 47.4 -1.1**
PKSM Moragy 83.26 325 ⇑ P **P 00 14 47.4 -1.1**
GEC2 GERESS Array S 83.43 329 *e*P **P 00 14 49.6 +0.1**
GEC2 pmax pmax
comp=Z,6.0nm,0.7s
GEC2 GERESS Array S 83.43 329 *e*P **P 00 14 49.6 +0.1**
comp=Z,5.8nm,0.7s
GERES GERESS Array B 83.43 329 P **P 00 14 49.5 +0.1**
comp=Z,5.0nm,0.7s,baz=31,slow=4.9,SNR=51
GERES LR LR 00 54 59.2
comp=Z,358nm,18.7s,baz=32,slow=38
GEA0 GERESS Array S 83.44 329 *e*P **P 00 14 49.2 -0.3**
L31A Butterfield Fa 83.45 41 P **P 00 14 50.2 +0.5**
baz=315
KORT Korkueli 83.48 312 *i*P **P 00 14 49.9 -0.1**
ECSD EROS Data Cent 83.48 39 P **P 00 14 49.8 0.0**
baz=316
ECSD EROS Data Cent 83.48 39 *e*P **P 00 14 49.6 -0.2**
comp=Z,8.8nm,0.8s
PPT Papeete 83.64 117 LR LR 00 48 11.6
comp=Z,256nm,19.4s,baz=344,slow=33
PPT2 Papeete2 83.66 117 *e*LR LR 00 41 02.5
comp=Z,296nm,20.8s
H35A Sunnyside Ranc 83.67 37 P **P 00 14 50.9 +0.3**
baz=317
GRFO Grafenberg 83.77 331 *e*P **P 00 14 51.8 +0.7**
GRFO pmax pmax
comp=Z,32nm,1.4s
GRFO Grafenberg 83.77 331 *e*P **P 00 14 51.8 +0.7**
comp=Z,32nm,1.4s
T25A Trinidad 83.77 48 P **P 00 14 52.5 +0.9**
baz=312
T25A Trinidad 83.77 48 *e*P **P 00 14 52.7 +1.1**
comp=Z,14nm,0.9s
ARSA Arzberg 83.89 327 *i*P **P 00 14 52.2 +0.5**
comp=Z,3.8nm,0.8s
LAZ Ladron 83.91 51 *e*P **P 00 14 53.2 +0.9**
MOA Molln 83.97 328 *i*PcP **P 00 14 53.0 +0.8**
comp=Z,3.4nm,0.9s
ANMO Albuquerque 83.98 51 *e*P **P 00 14 50.8 -1.9**
ANMO pmax pmax
comp=Z,6.0nm,1.0s
ANMO Albuquerque 83.98 51 *e*P **P 00 14 53.9 +1.2**
comp=Z,10nm,1.1s
H36A Jessenland, He 84.19 37 P **P 00 14 53.5 +0.1**
baz=318
SPMN Marine on St. 84.25 36 P **P 00 14 53.7 +0.1**
baz=318
N31A Bailey Ranch, 84.34 42 P **P 00 14 54.5 +0.3**
baz=315
AYDN Tasoluk 84.50 314 *i*P **P 00 14 56.1 +1.0**
PERS Pernice 84.54 327 *i*P **P 00 14 55.0 -0.1**
SOKA Soboth 84.54 327 *i*P **P 00 14 55.1 -0.1**
comp=Z,6.8nm,0.7s
121A Cookes Peak, D 84.71 53 P **P 00 14 57.2 +0.8**
baz=311
M33A Taylor Creek F 84.74 41 P **P 00 14 56.5 +0.3**
baz=316
URLA Izmir 84.76 315 *i*P **P 00 14 56.1 -0.2**
GCAM G?zelcaml? 84.84 314 *i*P **P 00 14 57.6 +0.9**
I37A Lemond, Waseca 84.86 37 P **P 00 14 56.9 +0.1**
baz=318
VAY Valandovo 84.88 319 *i*P **P 00 14 57.0 +0.2**
J36A Seneca 1, Swea 84.91 38 P **P 00 14 57.4 +0.4**
baz=318
KBA Koelnbreinsper 84.96 328 *i*PcP **P 00 14 58.2 +0.8**
comp=Z,5.0nm,0.8s
BLY Banja Luka 85.04 324 ⇑ *i*P **P 00 14 57.9 +0.3**
TAOE Nuku Hiva Isla 85.15 105 *e*LR LR 00 41 48.6
comp=Z,396nm,22.0s
SCHQ Schefferville 85.29 17 LR LR 00 55 48.6
comp=Z,92nm,19.6s,baz=330,slow=38
STU Stuttgart 85.30 331 *e*P **P 00 14 58.9 +0.1**
STU pmax pmax
comp=Z,22nm,0.7s
STU Stuttgart 85.30 331 *e*P **P 00 14 58.9 +0.1**
comp=Z,22nm,0.7s
VISS Visnje 85.30 326 *i*P **P 00 14 58.3 -0.6**
J37A Redenius Farm, 85.31 37 P **P 00 14 58.8 -0.2**
baz=318
BOJS Bojanci 85.35 326 *i*P **P 00 14 58.6 -0.5**
I38A Scanlan Farm, 85.36 36 P **P 00 14 59.1 -0.1**
baz=319
K36A Gilmore City 85.37 38 P **P 00 14 58.8 -0.5**
baz=318
JAVS Javornik 85.57 327 *i*P **P 00 14 59.3 -1.1**
ABTA Abfaltersbach 85.58 328 *i*P **P 00 14 59.8 -0.5**
comp=Z,4.0nm,0.8s
M35A Neola 85.59 40 P **P 00 15 00.1 -0.3**
baz=317
O33A Hebron 85.60 42 P **P 00 14 60.0 -0.6**
baz=316
N34A Lincoln 85.63 41 P **P 00 15 00.3 -0.3**
baz=316
L36A Harm Buss Farm 85.65 39 P **P 00 15 00.6 -0.1**
baz=318
K37A Belmond 85.67 38 P **P 00 15 00.6 -0.2**
baz=318
MOTA Moosalm 85.69 329 *i*PcP **P 00 15 02.3 +1.3**
comp=Z,3.5nm,0.8s
RETA Reutte 85.71 330 *i*PcP **P 00 15 01.1 +0.1**
comp=Z,9.6nm,0.8s
J38A Wedel Dairy, R 85.83 37 P **P 00 15 01.3 -0.3**
baz=319
Q32A Meitler Ranch, 85.84 43 P **P 00 15 01.3 -0.5**
baz=315
OHR Ohrid 85.95 320 *i*P **P 00 15 02.4 +0.1**
BFO Black Forest 85.99 331 *c*e*P* **P 00 15 02.7 +0.4**
BFO Black Forest 85.99 331 *e*P **P 00 15 02.0 -0.4**
comp=Z,12nm,0.8s
P33A Williams Farm, 86.00 42 P **P 00 15 02.4 -0.1**
baz=316
O34A Beatrice 86.00 41 P **P 00 15 02.2 -0.3**
baz=316
M36A Felix, Anita 86.06 39 P **P 00 15 02.8 0.0**
baz=317
N35A Tabor 86.06 40 P **P 00 15 03.1 +0.3**
baz=317
FETA Feichten 86.10 329 *i*PcP **P 00 15 03.5 +0.4**
comp=Z,4.6nm,0.8s
R32A Long Quarter, 86.16 44 P **P 00 15 02.9 -0.5**
baz=315
DAVA Damuels 86.23 330 *i*P **P 00 15 03.1 -0.6**
comp=Z,12nm,0.9s
Q33A Connelly Farm, 86.24 43 P **P 00 15 03.4 -0.3**
baz=316
DSB Dublin 86.39 342 *e*P **P 00 15 04.3 +0.2**
comp=Z,9.5nm,0.8s
P34A Walnut Farm, R 86.39 42 P **P 00 15 04.2 -0.2**
baz=316
L38A Oak Wood Farm, 86.47 38 P **P 00 15 04.8 0.0**
baz=318
M37A Trindle Farm, 86.48 39 P **P 00 15 04.8 0.0**
baz=318
S32A Newby Ranch, P 86.55 44 P **P 00 15 05.4 +0.2**
baz=315
R33A Vander Ranch, 86.65 43 P **P 00 15 05.5 -0.2**
baz=316
Q34A Chapman 86.78 42 P **P 00 15 06.4 0.0**
baz=316
MNTX Cornudas Mount 86.80 52 *e*P **P 00 15 06.5 -0.1**
comp=Z,14nm,1.9s
KSU1 Kansas State U 86.83 42 P **P 00 15 06.6 0.0**
baz=316
KSU1 Kansas State U 86.83 42 *e*P **P 00 15 06.6 0.0**
comp=Z,14nm,0.7s
N37A Lee Faris, Mou 86.88 40 P **P 00 15 07.0 +0.2**
baz=318
MSTX Muleshoe 86.89 49 P **P 00 15 06.9 -0.3**
baz=313
M38A Pleasantville 86.90 39 P **P 00 15 07.2 +0.4**
baz=318
T32A Huddler Ranch, 86.92 45 P **P 00 15 07.5 +0.4**
baz=315
AMTX Amarillo 86.92 48 *e*P **P 00 15 08.2 +0.9**
comp=Z,13nm,0.9s
O36A Bolckow 86.95 40 P **P 00 15 07.3 +0.1**
baz=317
R34A Isabella, Hill 87.06 43 P **P 00 15 08.8 +1.0**
baz=316
S33A Kaszmaul Farm, 87.14 44 P **P 00 15 08.1 -0.1**
baz=316
P36A Good Intent, A 87.19 41 P **P 00 15 08.0 -0.4**
baz=317
O37A Wolven Farm, M 87.34 40 P **P 00 15 09.3 +0.3**
baz=318
U32A Winter Ranch, 87.44 45 P **P 00 15 09.8 +0.2**
baz=315
Q36A Arnold C. Orve 87.54 41 P **P 00 15 10.1 0.0**
baz=317
S34A Willow Spring 87.56 43 P **P 00 15 09.7 -0.5**
baz=316
R35A Emporia Munici 87.61 42 P **P 00 15 10.4 0.0**
baz=317
N39A Derby Farms, D 87.65 39 P **P 00 15 10.6 +0.1**
baz=319
P37A Lathrop 87.67 40 P **P 00 15 10.8 +0.1**
baz=318
V32A Arapaho 87.88 46 P **P 00 15 12.3 +0.5**
baz=315
U33A Lingo Farm, Me 87.91 45 P **P 00 15 11.8 -0.1**
baz=316
R36A Gordon, Harris 87.98 42 P **P 00 15 12.3 +0.1**
baz=317
T34A McClaskey Farm 88.01 44 P **P 00 15 12.5 +0.2**
baz=316
S35A Otter Creek Ra 88.01 43 P **P 00 15 12.5 +0.1**
baz=317
P38A Dawn 88.06 40 P **P 00 15 12.8 +0.2**
baz=318
O39A Kirksville 88.10 39 P **P 00 15 13.0 +0.4**
baz=319
W32A Sentinel 88.19 46 P **P 00 15 13.3 0.0**
baz=315
U34A Anderson Ranch 88.23 44 P **P 00 15 13.6 +0.2**
baz=316
U34A Anderson Ranch 88.23 44 *e*P **P 00 15 14.3 +0.9**
comp=Z,17nm,0.9s
V33A Lossen Ranch, 88.25 45 P **P 00 15 13.9 +0.4**
baz=316
R37A Teagarden Farm 88.35 42 P **P 00 15 13.4 -0.5**
baz=318
S36A Lake Cedric, C 88.37 42 P **P 00 15 14.2 +0.1**
baz=317
T35A Sooner Cattle 88.46 44 P **P 00 15 14.5 0.0**
baz=316
Q38A Cooks Store, C 88.51 40 P **P 00 15 14.3 -0.4**
baz=318

O40A	**La Belle**	**88.53**	**39**	P		**P**	**00 15 14.7**	**0.0**
	baz=319							
AQU	**L'Aquila**	**88.63**	**325**	*e*P		**P**	**00 15 15.5**	**+0.3**
AQU					pmax	pmax		
	comp=Z,14nm,0.7s							
AQU	**L'Aquila**	**88.63**	**325**	*e*P		**P**	**00 15 15.5**	**+0.3**
	comp=Z,14nm,0.7s							
X32A	**Elmer**	**88.66**	**47**	P		**P**	**00 15 16.0**	**+0.6**
	baz=315							
V34A	**Guthrie**	**88.67**	**45**	P		**P**	**00 15 15.4**	**-0.1**
	baz=316							
T36A	**Boggs Farm, Ca**	**88.70**	**43**	P		**P**	**00 15 15.5**	**-0.1**
	baz=317							
U35A	**Pawnee**	**88.73**	**44**	P		**P**	**00 15 15.6**	**-0.1**
	baz=316							
WMOK	**Wichita Mounta**	**88.73**	**46**	*e*P		**P**	**00 15 16.2**	**+0.4**
WMOK					pmax	pmax		
	comp=Z,18nm,1.8s							
WMOK	**Wichita Mounta**	**88.73**	**46**	*e*P		**P**	**00 15 16.2**	**+0.4**
	comp=Z,18nm,1.8s							
S37A	**Fort Scott**	**88.76**	**42**	P		**P**	**00 15 15.6**	**-0.2**
	baz=318							
Q39A	**Willow Grove F**	**88.78**	**40**	P		**P**	**00 15 15.9**	**0.0**
	baz=319							
P40A	**Paris**	**88.89**	**39**	P		**P**	**00 15 16.3**	**-0.1**
	baz=319							
R38A	**Fenwick Farm,**	**88.94**	**41**	P		**P**	**00 15 16.2**	**-0.5**
	baz=318							
X33A	**Lawton**	**89.03**	**46**	P		**P**	**00 15 17.7**	**+0.5**
	baz=315							
T37A	**Cheneyville 18**	**89.18**	**42**	P		**P**	**00 15 17.7**	**-0.1**
	baz=318							
U36A	**Oologah**	**89.27**	**43**	P		**P**	**00 15 18.2**	**-0.1**
	baz=317							
Q40A	**Laux Farm, Aux**	**89.28**	**40**	P		**P**	**00 15 18.4**	**+0.1**
	baz=319							
R39A	**Chumby, Stover**	**89.30**	**41**	P		**P**	**00 15 17.7**	**-0.6**
	baz=319							
S38A	**Stockton**	**89.35**	**41**	P		**P**	**00 15 17.9**	**-0.8**
	baz=318							
TX31	**Lajitas Ar. Si**	**89.47**	**53**	*e*P		**P**	**00 15 20.0**	**+0.5**
LTX	**Lajitas**	**89.47**	**53**	*e*P		**P**	**00 15 19.7**	**+0.2**
LTX	**Lajitas**	**89.47**	**53**	*e*P		**P**	**00 15 19.7**	**+0.2**
TXAR	**Lajitas Array**	**89.47**	**53**	P		**P**	**00 15 19.7**	**+0.2**
	comp=Z,3.5nm,0.7s,baz=298,slow=3.5,SNR=27							
W35A	**Tecumseh**	**89.53**	**45**	P		**P**	**00 15 19.5**	**0.0**
	baz=316							
T38A	**Diamond**	**89.58**	**42**	P		**P**	**00 15 19.6**	**-0.1**
	baz=318							
TUL1	**Leonard**	**89.59**	**44**	P		**P**	**00 15 19.2**	**-0.6**
	baz=317							
V36A	**Jenks**	**89.59**	**44**	P		**P**	**00 15 20.1**	**+0.3**
	baz=317							
S39A	**Bolivar**	**89.61**	**41**	P		**P**	**00 15 19.2**	**-0.6**
	baz=318							
ABTX	**Abilene, Hawle**	**89.71**	**48**	P		**P**	**00 15 20.7**	**+0.3**
	baz=315							
R40A	**Maddies Statio**	**89.71**	**40**	P		**P**	**00 15 19.7**	**-0.6**
	baz=319							
Z33A	**Whitaker Ranch**	**89.77**	**47**	P		**P**	**00 15 20.7**	**+0.1**
	baz=315							
Y34A	**Reagan Ranch,**	**89.88**	**46**	P		**P**	**00 15 21.3**	**+0.2**
	baz=316							
W36A	**Wetumka**	**89.90**	**45**	P		**P**	**00 15 21.5**	**+0.3**
	baz=317							
V37A	**Hulbert**	**89.97**	**43**	P		**P**	**00 15 21.4**	**-0.1**
	baz=317							
U38A	**Gravette**	**89.97**	**43**	P		**P**	**00 15 21.5**	**0.0**
	baz=318							
X35A	**Drake**	**90.01**	**46**	P		**P**	**00 15 21.7**	**-0.1**
	baz=316							
T39A	**Clever**	**90.08**	**42**	P		**P**	**00 15 21.4**	**-0.7**
	baz=318							
S40A	**Lebanon**	**90.11**	**41**	P		**P**	**00 15 21.8**	**-0.4**
	baz=319							
133A	**Hamilton Ranch**	**90.16**	**48**	P		**P**	**00 15 22.7**	**+0.2**
	baz=315							
Z34A	**Collier Ranch,**	**90.20**	**47**	P		**P**	**00 15 22.6**	**-0.1**
	baz=316							
X36A	**Centrahoma**	**90.24**	**45**	P		**P**	**00 15 23.1**	**+0.3**
	baz=317							
HHAR	**Hobbs**	**90.33**	**42**	*e*P		**P**	**00 15 23.6**	**+0.4**
	comp=Z,4.7nm,0.8s							
Y35A	**Marietta**	**90.33**	**46**	P		**P**	**00 15 23.1**	**-0.2**
	baz=316							
W37B	**Quinton**	**90.35**	**44**	P		**P**	**00 15 23.5**	**+0.1**
	baz=317							
V38A	**Canehill**	**90.38**	**43**	P		**P**	**00 15 23.2**	**-0.3**
	baz=318							
T40A	**Mansfield**	**90.44**	**41**	P		**P**	**00 15 23.2**	**-0.6**
	baz=319							
U39A	**Green Forest**	**90.50**	**42**	P		**P**	**00 15 23.9**	**-0.2**
	baz=318							
233A	**Rising Star**	**90.58**	**48**	P		**P**	**00 15 24.6**	**0.0**
	baz=315							
Z35A	**Perchaven, San**	**90.62**	**46**	P		**P**	**00 15 24.7**	**0.0**
	baz=316							
134A	**White-Moore Ra**	**90.68**	**47**	P		**P**	**00 15 25.0**	**+0.1**
	baz=316							
X37A	**Clayton**	**90.78**	**44**	P		**P**	**00 15 25.0**	**-0.4**
	baz=317							
V39A	**Pettigrew**	**90.82**	**43**	P		**P**	**00 15 25.6**	**0.0**
	baz=318							
U40A	**Yellville**	**90.86**	**42**	P		**P**	**00 15 25.4**	**-0.3**
	baz=319							
W38A	**Poteau**	**90.91**	**44**	P		**P**	**00 15 26.1**	**+0.1**
	baz=318							
333A	**Richland Sprin**	**91.02**	**49**	P		**P**	**00 15 26.7**	**+0.2**
	baz=315							
X38A	**Whitesboro**	**91.03**	**44**	P		**P**	**00 15 26.8**	**+0.3**
	baz=318							
234A	**Clairette**	**91.05**	**48**	P		**P**	**00 15 27.2**	**+0.5**
	baz=316							
Z36A	**Blue Ridge**	**91.14**	**46**	P		**P**	**00 15 26.8**	**-0.2**
	baz=317							
W39A	**Magazine**	**91.22**	**43**	P		**P**	**00 15 27.4**	**0.0**
	baz=318							
V40A	**Witts Springs**	**91.29**	**42**	P		**P**	**00 15 27.5**	**-0.2**
	baz=319							
334A	**Lometa**	**91.47**	**48**	P		**P**	**00 15 28.6**	**0.0**
	baz=316							
X39A	**Fountain Ranch**	**91.54**	**44**	P		**P**	**00 15 29.3**	**+0.3**
	baz=318							
W40A	**Ferguson Farm,**	**91.61**	**43**	P		**P**	**00 15 29.2**	**0.0**
	baz=319							
Z37A	**Pogue Cattle C**	**91.66**	**46**	P		**P**	**00 15 30.0**	**+0.5**
	baz=317							
434A	**Burnet**	**91.81**	**49**	P		**P**	**00 15 30.2**	**-0.1**
	baz=316							
MIAR	**Mount Ida**	**91.82**	**43**	P		**P**	**00 15 30.4**	**+0.2**
	baz=318							
WHAR	**Wooly Hollow**	**91.96**	**42**	*e*P		**P**	**00 15 31.4**	**+0.6**
	comp=Z,12nm,0.8s							
Y39A	**Lockesburg**	**91.98**	**44**	P		**P**	**00 15 31.0**	**+0.1**
	baz=318							
W41A	**Tony Mavity, V**	**92.07**	**42**	P		**P**	**00 15 31.1**	**-0.1**
	baz=319							
W41B	**Gary Mavity, V**	**92.07**	**42**	P		**P**	**00 15 31.1**	**-0.1**
	baz=319							
534A	**Blanco**	**92.25**	**49**	P		**P**	**00 15 32.4**	**+0.2**
	baz=315							
Z40A	**Long Farm, Mag**	**92.87**	**44**	P		**P**	**00 15 35.5**	**+0.5**
	baz=318							
N54A	**Moraine State**	**93.31**	**31**	P		**P**	**00 15 36.4**	**-0.5**
	baz=327							
KEST	**Kesra**	**95.81**	**323**	LR		LR	01 04 15.2	
	comp=Z,310nm,18.4s,baz=350,slow=39							
RKT	**Rikitea**	**97.75**	**113**	*e*LR		LR	00 47 50.7	
	comp=Z,368nm,29.2s							
ES19	**SONSECA Array**	**97.89**	**335**	*e*P		**P**	**00 15 57.5**	**-0.4**
ESDC	**Sonseca Array**	**97.94**	**335**	P		**P**	**00 15 57.9**	**-0.2**
	comp=Z,0.8nm,0.8s,baz=16,slow=4.7,SNR=6.9							
ESDC				LR		LR	01 05 18.2	
	comp=Z,223nm,18.9s,baz=15,slow=38							
TOA1	**Torodi Ar. Sit**	**118.19**	**316**	*e*PKPdf		**PKPdf**	**00 21 08.5**	**-1.2**
TOA1				*e*PP		**PP**	**00 22 23.1**	**-1.1**
TORD	**Torodi Ar. Bea**	**118.20**	**316**	PKP		**PKPdf**	**00 21 08.5**	**-1.2**
	comp=Z,0.4nm,0.8s,baz=40,slow=1.1,SNR=4.5							
TORD				PP		**PP**	**00 22 23.1**	**-1.1**
	comp=Z,1.4nm,1.0s,baz=35,slow=7.2,SNR=4.5							
LPAZ	**La Paz**	**145.95**	**61**	PKPbc		**PKPbc**	**00 22 02.5**	**-0.3**
	comp=Z,2.9nm,0.5s,baz=344,slow=2.5,SNR=19							
LVC	**Limon Verde**	**149.31**	**71**	*e*PKPbc		**PKPbc**	**00 22 12.5**	**+0.9**
LCO	**Las Campanas**	**151.05**	**84**	*e*PKPbc		**PKPbc**	**00 22 15.2**	**-0.3**
PLCA	**Paso Flores**	**153.90**	**109**	PKPab		**PKPab**	**00 22 33.5**	**-1.1**
	comp=Z,3.1nm,0.9s,baz=285,slow=5.7,SNR=4.2							
CPUP	**Villa Florida**	**160.07**	**64**	PKPab		**PKPab**	**00 23 01.0**	**-0.3**
	comp=Z,1.2nm,0.7s,baz=225,slow=4.3,SNR=3.6							

SJA 28 00:25:02.6±1.0, 30.28S×68.76W, h19km±4km, ML3.2, MW3.5, San Juan Province

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
AMOG	**MOGNA**	**0.70**	**161**	*e*P	Pg	00 25 17.0	+0.5
AMOG				*e*S	Sn	00 25 26.9	-1.0
AGUA	**GUANDACOL**	**0.82**	**17**	*e*P	Pn	00 25 19.2	0.0
RTLL	**Cerro Villicun**	**1.08**	**167**	*e*P	Pn	00 25 22.9	+0.1
SJA	**San Juan**	**1.26**	**172**	*e*P	Pb	00 25 26.2	+0.4
SJA				IAML		00 25 44.9	
	comp=Z,551nm,0.2s						
RTLS	**Leoncito**	**1.59**	**197**	*e*P	Pb	00 25 31.9	+0.3
RTCV	**Cerro Valdivia**	**1.59**	**173**	*e*P	Pb	00 25 31.9	+0.4
AUSP	**Uspallata**	**2.01**	**195**	*e*P	Pb	00 25 38.9	0.0
ASAL	**Salagasta**	**2.31**	**182**	*e*P	Pb	00 25 42.6	-1.1
ASAL				*e*S	Sb	00 26 12.0	+0.1
ACAN	**Cantantal**	**2.40**	**146**	*e*P	Pb	00 25 43.9	-1.4
ARCO	**CERRO ARCO**	**2.56**	**183**	*e*P	Pb	00 25 47.0	-1.0
ARCO				IAML		00 26 29.0	
	comp=Z,106nm,0.8s						
AAGR	**Agrelo**	**2.80**	**181**	*e*P	Pb	00 25 49.5	-2.7
CYA	**Choya**	**3.16**	**55**	*e*P	Pn	00 25 53.8	+2.4
ROC1	**El Roble**	**3.31**	**215**	*e*P	Pn	00 25 56.1	+2.5
FSA	**Cafayete**	**4.82**	**31**	*e*P	Pn	00 26 18.2	+3.8

*IDC **28** 00:27:10.8±1.4, 36.48S×179.34W, h0km, mb4.2/2, mb1 4.3/4, mb1mx3.9/36, mbtmp4.0/4, ML3.4/2, Error ellipse: s-maj=43.3km s-min=33.0km az=150.0*
*ISCJB **28** 00:27:12.5±1.1, 36.8S±0.1×179.2W±0.1, h28km, mb4.0/2, Error ellipse: s-maj=21.6km s-min=9.4km az=146.5*
*WEL **28** 00:27:13.7±0.5, 36.63S×179.16W, h33km, ML4.2/6, Error ellipse: s-maj=5.4km s-min=3.9km az=0.0*

ISC 28 00:27:14.7±1.2, 36.8S±0.1×179.3W±0.1, h28km, n27, σ18/17/35, East of North Island

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MXZ	**Matakaoa Point**	**2.07**	**248**	PN	**Pn**	**00 27 47.4**	**-0.2**
MXZ				SN	**Sn**	**00 28 12.8**	**+0.3**
MXZ				AML	AML	00 28 14.7	
MXZ				AML	AML	00 28 14.7	
MXZ				AML	AML	00 28 17.6	
WMGZ	**Waiomatatini S**	**2.10**	**240**	PN	**Pn**	**00 27 48.5**	**+0.5**
WMGZ				SN	**Sb**	**00 28 15.2**	**-2.5**
PUZ	**Puketiti**	**2.34**	**236**	PN	**Pn**	**00 27 52.1**	**+0.9**
PUZ				SN	**Sn**	**00 28 20.7**	**+1.7**
PUZ				AML	AML	00 28 22.6	
PKGZ	**Pakihiroa**	**2.37**	**242**	PN	**Pn**	**00 27 51.8**	**0.0**
HAZ	**Te Kaha**	**2.53**	**247**	PN	**Pn**	**00 27 54.5**	**+0.6**
TWGZ	**Tauwhareparae**	**2.58**	**237**	PN	**Pn**	**00 27 55.8**	**+1.2**
CNGZ	**Carnagh Statio**	**2.61**	**229**	PN	**Pn**	**00 27 55.9**	**+1.0**
MWZ	**Matawai**	**2.96**	**238**	PN	**Pn**	**00 27 60.0**	**+0.1**
MWZ				SN	**Sn**	**00 28 35.5**	**+1.0**
MWZ				AML	AML	00 28 37.6	
MWZ				AML	AML	00 28 41.5	
MWZ				AML	AML	00 28 56.7	
RIGZ	**Rimuhau**	**3.02**	**230**	PN	**Pn**	**00 28 01.1**	**+0.4**
URZ	**Urewera**	**3.22**	**242**	Pn	**Pn**	**00 28 03.5**	**+0.2**
	3.2nm,0.3s,baz=100,slow=17,SNR=12						
URZ				Sn	**Sn**	**00 28 41.9**	**+1.1**
	22nm,0.3s,baz=122,slow=22,SNR=20						
URZ	**Urewera**	**3.22**	**242**	PN	**Pn**	**00 28 03.6**	**+0.2**
URZ				SN	**Sn**	**00 28 42.1**	**+1.3**
URZ				AML	AML	00 28 44.9	
MHGZ	**Mahia Peninsul**	**3.23**	**223**	PN	**Pn**	**00 28 03.9**	**+0.3**
KNZ	**Kokohu**	**3.27**	**226**	PN	**Pn**	**00 28 04.1**	**-0.1**
KNZ				AML	AML	00 29 41.6	
KNZ				AML	AML	00 30 16.9	
NMHZ	**Naumai**	**3.85**	**232**	SN	**Sn**	**00 28 58.2**	**+1.7**
BKZ	**Black Stump Fm**	**4.09**	**233**	PN	**Pn**	**00 28 16.0**	**+0.6**
BKZ				SN	**Sn**	**00 29 02.5**	**+0.1**
BKZ				AML	AML	00 29 05.2	
MCHZ	**McNeill Hill**	**4.13**	**229**	PN	**Pn**	**00 28 16.7**	**+0.9**
BHHZ	**Black Hill Sta**	**4.55**	**232**	PN	**Pn**	**00 28 21.8**	**+0.1**
WNVZ	**Wahianoa**	**4.76**	**236**	PN	**Pn**	**00 28 24.6**	**-0.2**
BFZ	**Birch Farm**	**5.22**	**221**	PN	**Pn**	**00 28 28.1**	**-2.7**
HOWZ	**Holdsworth Sta**	**5.76**	**223**	PN	**Pn**	**00 28 36.5**	**-1.9**
RPZ	**Rata Peaks**	**10.11**	**224**	Pn	**Pn**	**00 29 39.6**	**+1.7**
	0.4nm,0.3s,baz=58,slow=14,SNR=3.1						
RPZ				Sn	Sn	00 31 21.3	-9.0
	1.1nm,0.3s,baz=53,slow=20,SNR=4.3						
ASAR	**Alice Springs**	**42.12**	**275**	P	**P**	**00 35 04.7**	**0.0**
	2.7nm,0.7s,baz=119,slow=8.0,SNR=24						
WRA	**Warramunga Arr**	**43.69**	**280**	P	**P**	**00 35 16.9**	**-0.5**
	1.4nm,0.4s,baz=120,slow=7.7,SNR=11						
KURBB	**Kurchatov Arra**	**124.59**	**311**	PKP	**PKPdf**	**00 46 10.7**	**-0.1**
	0.4nm,0.6s,baz=123,slow=2.1,SNR=5.4						
FINES	**FINESS Array B**	**150.64**	**335**	PKPbc	**PKPbc**	**00 47 03.4**	**+0.3**
	1.7nm,0.7s,baz=64,slow=3.2,SNR=6.8						
BRTR	**Keskin Array B**	**154.07**	**287**	PKPbc	**PKPbc**	**00 47 12.3**	**+0.5**
	0.3nm,0.7s,baz=98,slow=2.0,SNR=2.4						
BRTR				PKPab	**PKPab**	**00 47 23.1**	**-2.3**
	0.4nm,0.7s,baz=93,slow=2.5,SNR=3.5						
TORD	**Torodi Ar. Bea**	**156.43**	**182**	PKPab	**PKPab**	**00 47 37.3**	**+1.6**
	0.4nm,0.6s,baz=173,slow=2.5,SNR=2.7						

IDC 28 00:27:33.2±3.5, 48.57S×123.45E, h0km, mb4.0/3, mb1 4.2/3, mb1mx3.9/31, mbtmp4.0/3, Error ellipse: s-maj=111.6km s-min=63.0km az=112.0, Western Indian-Antarctic Ridge

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
H01W1	**Cape Leeuwin H**	**15.30**	**330**	T	T	00 47 21.8	
	baz=160,slow=79,SNR=14						
H01W2	**Cape Leeuwin H**	**15.31**	**330**	T	T	00 47 26.7	
	baz=160,slow=79,SNR=12						
H01W3	**Cape Leeuwin H**	**15.32**	**330**	T	T	00 47 25.1	
	baz=160,slow=79,SNR=9.3						
STKA	**Stephens Creek**	**21.59**	**46**	P	P	00 32 24.2	-0.1
	1.5nm,0.2s,baz=195,slow=12,SNR=4.3						
ASAR	**Alice Springs**	**26.19**	**22**	P	P	00 33 09.7	+0.2
	2.5nm,0.8s,baz=192,slow=8.7,SNR=19						
WRA	**Warramunga Arr**	**29.88**	**21**	P	P	00 33 42.0	-0.4
	1.2nm,1.0s,baz=197,slow=9.9,SNR=3.5						
YKA	**Yellowknife Ar**	**145.61**	**44**	PKPbc	PKPdf	00 47 11.7	-0.4
	1.6nm,0.9s,baz=273,slow=2.8,SNR=26						

*YARS **28** 00:33:09.9±0.1, 56.60N±0.01×121.51E±0.01, h10km*
*BYKL **28** 00:33:09.8±0.4, 56.63N×121.55E*
*MOS **28** 00:33:09.2±1.2, 56.43N×121.44E, h12km, mb4.0/2, Error ellipse: s-maj=10.9km s-min=9.6km az=73.6*
*IDC **28** 00:33:10.3±1.1, 56.57N×121.51E, h0km, mb3.4/8, mb1 3.7/14, mb1mx3.5/43, mbtmp3.6/14, ML3.7/5, MS3.4/1, Ms1 3.4/1, ms1mx2.7/36, Error ellipse: s-maj=20.6km s-min=12.1km az=145.0*

ISC 28 00:33:09.8±0.5, 56.61N±0.03×121.54E±0.02, h10km, n84, σ26/03/96, mb3.4/7, 4D, Southeastern Siberia

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
KHNR	**Khani**	**0.92**	**290**	⇓*i*Pg	**Pg**	**00 33 26.4**	**-1.0**
KHNR				*e*Sg	**Sg**	**00 33 38.8**	**-0.5**
KHN	**Khani**	**1.01**	**289**	*i* P	**Pg**	**00 33 26.4**	**-2.9**
KHN				*e*S	**Sg**	**00 33 38.8**	**-3.7**
CRS	**Chara**	**1.83**	**280**	⇓*i*Pg	**Pb**	**00 33 42.6**	**-0.7**
CRS				Pmax		00 33 44.8	
	1μm,0.9s						
CRS				*e*Sg	**Sg**	**00 34 06.9**	**-1.5**
CRS				Smax		00 34 09.5	
	2μm,0.7s						
CRS	**Chara**	**1.83**	**280**	*e*P	**Pb**	**00 33 43.3**	**0.0**
CRS				*e*		00 34 07.5	
CRS				pmax	pmax		
	comp=Z,1μm,0.5s						
CRS				smax	smax		
	comp=E,2μm,0.5s						
CRS	**Chara**	**1.83**	**280**	*i* P	**Pb**	**00 33 42.6**	**-0.7**
CRS				*e*S	**Sg**	**00 34 06.9**	**-1.5**
CLNS	**Chul'man**	**1.86**	**82**	*e*Pg	**Pb**	**00 33 43.3**	**-0.6**
CLNS				*e*Sg	**Sg**	**00 34 07.9**	**-1.6**
CLNS	**Chul'man**	**1.86**	**82**	*e*P	**Pg**	**00 33 44.2**	**-1.2**
CLNS				*e*		00 34 08.5	
CLNS				pmax	pmax		
	comp=E,33nm,0.2s						
CLNS				pmax	pmax		
	comp=N,26nm,0.2s						
CLNS				pmax	pmax		
	comp=Z,66nm,0.2s						
CLNS				smax	smax		
	comp=E,427nm,0.3s						
CLNS				smax	smax		
	comp=Z,213nm,0.3s						
CLNS				smax	smax		
	comp=N,519nm,0.3s						
CLNS	**Chul'man**	**1.86**	**82**	*e*P	**Pb**	**00 33 43.3**	**-0.6**
CLNS				*e*S	**Sg**	**00 34 07.9**	**-1.6**
IENR	**lengra**	**1.88**	**101**	*e*Pn	**Pb**	**00 33 43.2**	**-1.1**
IENR				*e*Pg	**Pg**	**00 33 44.5**	**-1.4**
IENR				*e*		00 34 06.5	
IENR				*e*Sg	**Sg**	**00 34 09.5**	**-0.7**
IENR	**lengra**	**1.88**	**101**	*e*P	**Pb**	**00 33 43.2**	**-1.1**
IENR				*e*Pn	**Pg**	**00 33 44.5**	**-1.4**
IENR				*e*S	**Sg**	**00 34 09.5**	**-0.7**
TNDR	**Tynda**	**2.32**	**128**	*e*Pn	**Pn**	**00 33 48.7**	**+0.7**
TNDR				*e*Pg	**Pb**	**00 33 50.6**	**-1.0**
TNDR				*e*Sg	**Sb**	**00 34 21.3**	**+1.0**
TNDR				*e*		00 34 24.3	
TNDR	**Tynda**	**2.32**	**128**	*e*P	**Pn**	**00 33 48.7**	**+0.7**
TNDR				*e*P	**Pb**	**00 33 51.5**	**-0.1**
TNDR				*e*S	**Sb**	**00 34 21.3**	**+1.0**
TUP	**Tupik**	**2.37**	**203**	*e*Pn	**Pn**	**00 33 48.8**	**+0.1**
TUP				⇓*i*Pg	**Pb**	**00 33 51.8**	**-0.8**
TUP				Pmax		00 33 53.1	
	comp=N,308nm,0.6s						
TUP				*e*Sg	**Sg**	**00 34 23.3**	**-2.6**
TUP				Smax		00 34 24.5	
	comp=N,3μm,0.7s						
TUP	**Tupik**	**2.37**	**203**	*e*P	**Pn**	**00 33 48.6**	**-0.1**
TUP				*e*S	**Sn**	**00 34 18.1**	**+0.2**
TUP				pmax	pmax		
	comp=Z,237nm,0.4s						
TUP				smax	smax		
	comp=E,3μm,0.7s						
TUP	**Tupik**	**2.37**	**203**	*e*P	**Pn**	**00 33 48.8**	**+0.1**
TUP				*i* P	**Pb**	**00 33 51.8**	**-0.8**
TUP				*e*S	**Sg**	**00 34 23.3**	**-2.6**
ALDR	**Aldan**	**2.89**	**44**	*e*S	**Sb**	**00 34 38.9**	**+2.1**
NLYR	**Nelyaty**	**3.23**	**270**	*e*P	**Pn**	**00 34 01.1**	**+0.5**
NLYR				*e*		00 34 48.4	
NLYR				pmax	pmax		
	comp=Z,110nm,0.2s						
NLYR				smax	smax		
	comp=E,1μm,0.2s						
KROS	**Kirovskiy**	**3.78**	**123**	*e*S	**Sb**	**00 35 05.0**	**+2.6**
OLMR	**Olekminsk**	**3.82**	**352**	*e*P	**Pn**	**00 34 08.8**	**+0.3**
OLMR				*e*P	**Pb**	**00 34 18.2**	**+1.0**
OLMR				*e*S	**Sn**	**00 34 53.5**	**+0.1**
OLMR				*e*S	**Sg**	**00 35 08.4**	**-3.9**
BOD	**Bodaibo**	**4.27**	**290**	*e*Pn	**Pn**	**00 34 15.5**	**+0.7**
BOD				*e*Pg	**Pb**	**00 34 25.4**	**+0.5**
BOD				Pmax		00 34 31.9	
	comp=E,33nm,1.0s						
BOD				*e*		00 34 57.0	
BOD				*e*Sg	**Sb**	**00 35 20.1**	**+3.6**
BOD				Smax		00 35 38.9	
	comp=E,372nm,1.2s						
BOD	**Bodaibo**	**4.27**	**290**	*e*P	**Pn**	**00 34 15.2**	**+0.4**
BOD				pmax	pmax		
	comp=Z,22nm,0.7s						
BOD	**Bodaibo**	**4.27**	**290**	*e*P	**Pn**	**00 34 15.5**	**+0.7**
BOD				*e*P	**Pb**	**00 34 25.4**	**+0.5**
BOD				*e*S	**Sb**	**00 35 20.1**	**+3.6**
SVKR	**Severomuysk**	**4.47**	**267**	*e*Sg	**Sg**	**00 35 27.3**	**-5.8**
SVKR				Smax		00 35 41.9	
	comp=Z,657nm,0.6s						
BMKR	**Bomnak**	**4.55**	**112**	*e*P	**Pn**	**00 34 20.4**	**+1.7**
BMKR				*e*P	**Pb**	**00 34 31.5**	**+1.8**
BMKR				*e*S	**Sn**	**00 35 09.6**	**-2.0**
BMKR				*e*S	**Sg**	**00 35 31.5**	**-4.3**
UKT	**Uakit**	**4.58**	**259**	⇓*i*Pn	**Pn**	**00 34 19.9**	**+0.8**
UKT				*e*Pg	**Pb**	**00 34 31.0**	**+0.8**
UKT				*e*		00 34 33.1	
UKT				max		00 34 38.4	
	comp=Z,50nm,1.3s						
UKT				*e*Sg	**Sb**	**00 35 29.9**	**+4.5**
UKT				Smax		00 35 38.7	
	comp=Z,301nm,1.0s						
UKT	**Uakit**	**4.58**	**259**	*e*P	**Pb**	**00 34 30.1**	**-0.1**
CGD	**Chagda**	**5.32**	**62**	*e*P	**Pn**	**00 34 30.3**	**+1.1**
CGD				*e*P	Pb	00 34 45.9	+3.2
CGD				*e*S	**Sn**	**00 35 28.3**	**-2.1**
CGD				*e*S	**Sg**	**00 35 54.7**	**-5.7**
YOA	**Uoyan**	**5.48**	**269**	*e*Sg	**Sg**	**00 36 00.6**	**-4.9**
YOA				Smax		00 36 18.2	
	comp=Z,1μm,1.2s						
VTMR	**Vitim**	**5.56**	**304**	*e*S	Sg	00 36 01.7	-6.3
KMO	**Kumora**	**5.81**	**267**	*e*Pn	**Pn**	**00 34 37.5**	**+1.5**
KMO				*e*Pg	Pb	00 34 53.7	+2.5
KMO				Pmax		00 34 58.4	
	comp=Z,31nm,1.3s						
KMO				*e*Sg	**Sg**	**00 36 10.9**	**-5.3**
KMO				Smax		00 36 16.6	
	comp=Z,406nm,1.2s						
KMO	**Kumora**	**5.81**	**267**	*e*P	**Pn**	**00 34 34.2**	**-1.8**
KMO				*e*S	**Sn**	**00 35 39.0**	**-3.6**
KMO				pmax	pmax		
	comp=Z,32nm,0.8s						
KMO				smax	smax		
	comp=N,403nm,1.1s						
YLYR	**Ulyunkhan**	**6.12**	**258**	*e*Pn	**Pn**	**00 34 41.0**	**+0.9**
YLYR				*e*		00 34 50.3	
YL

OGRR				Smax			00 37 42.3	
	comp=Z,84nm,1.6s							
OGRR	**Ongureny**	**8.53**	**255**	*e*P		**Pn**	**00 35 13.8**	**+0.6**
KPC	**Khapcheranga**	**8.84**	**222**	*e*Pn		**Pn**	**00 35 16.8**	**-0.7**
KPC				*i* Sg		Sg	00 37 44.7	-8.4
KPC				Smax			00 37 51.4	
	comp=Z,338nm,1.4s							
KPC				*e*			00 37 58.0	
ZRHB	**Zarechye**	**9.29**	**250**	*e*Sg		Sn	00 37 58.0	+50
ZRHB				Smax			00 38 13.1	
	comp=Z,708nm,1.7s							
UUDB	**Ulan-Yde**	**9.41**	**245**	*e*Sg		Sn	00 38 01.7	+51
UUDB				*e*			00 38 11.0	
UUDB				max			00 38 11.6	
	comp=Z,336nm,1.3s							
TRG	**Tyrgan**	**9.60**	**253**	*e*Pn		**Pn**	**00 35 28.3**	**+0.3**
TRG				*e*Sg		Sn	00 38 09.1	+53
TRG				Smax			00 38 22.5	
	comp=Z,81nm,1.3s							
KLR	**Kul'dur**	**9.62**	**136**	Pn		**Pn**	**00 35 29.7**	**+1.6**
	comp=Z,0.8nm,0.3s,baz=331,slow=16,SNR=8.7							
KLR				Sn		Sn	00 37 08.7	-7.4
	comp=Z,1.0nm,0.3s,baz=16,slow=19,SNR=5.0							
KLR				Lg		Lg	00 38 13.0	
	comp=Z,2.2nm,0.3s,baz=59,slow=23,SNR=13							
KAB	**Kabansk**	**9.82**	**249**	*e*Sg		Sn	00 38 13.2	+52
KAB				Smax			00 38 37.2	
	comp=Z,766nm,1.2s							
HRMR	**Khuramsha**	**9.90**	**246**	*e*Sg		Sn	00 38 17.4	+54
HRMR				*e*			00 38 27.2	
HRMR				max			00 38 27.9	
	comp=Z,588nm,1.2s							
LSTR	**Listvyanka**	**10.86**	**251**	*e*Sg			00 38 47.2	
LSTR				Smax			00 39 05.8	
	comp=Z,51nm,1.3s							
IRK	**Irkutsk**	**10.96**	**254**	*e*Sg			00 38 48.5	
IRK				Smax			00 39 05.8	
	comp=Z,207nm,0.3s							
TLY	**Talaya**	**11.59**	**252**	*e*Sg			00 39 08.8	
TLY				Smax			00 39 35.5	
	comp=Z,34nm,1.7s							
TLY	**Talaya**	**11.59**	**252**	*e*P		**Pn**	**00 35 53.9**	**-1.2**
ARS	**Arshan**	**12.11**	**255**	*e*			00 38 37.4	
ARS				*e*Sg			00 39 25.6	
ARS				Smax			00 39 37.5	
	comp=Z,90nm,1.4s							
ULN	**Ulaanbaatar**	**12.45**	**231**	*e*		Pn	00 36 37.7	+31
ULN				*e*			00 39 18.7	
ULN				*e*Sg			00 39 34.7	
ZAK	**Zakamensk**	**12.51**	**248**	*e*Sg			00 39 36.4	
ZAK				*e*			00 40 06.4	
ZAK				max			00 40 07.1	
	comp=Z,98nm,1.9s							
BTGS	**Batagay**	**12.62**	**23**	*e*S			00 39 40.4	
SONM	**Songino Array**	**12.76**	**233**	Pn		**Pn**	**00 36 12.1**	**+0.9**
	comp=Z,0.2nm,0.3s,baz=37,slow=15,SNR=2.4							
SONM				Lg		Lg	00 39 46.8	
	comp=Z,0.9nm,0.3s,baz=38,slow=26,SNR=7.3							
ORL	**Orlik**	**13.23**	**261**	*e*Sg		S	00 39 57.3	+48
ORL				Smax			00 40 14.6	
	comp=Z,35nm,2.0s							
UNR	**Ust'-Nera**	**13.24**	**44**	*e*S		S	00 39 59.2	+50
MOMR	**Moma**	**14.20**	**37**	*e*S		S	00 40 29.5	+61
DEPR	**Deputatskiy**	**15.19**	**25**	*e*S		S	00 41 00.6	+71
TIXI	**Tiksi**	**15.41**	**9**	Pn		**Pn**	**00 36 42.8**	**-4.2**
	comp=Z,1.5nm,0.3s,baz=191,slow=9.9,SNR=6.7							
TIXI				Sn		Sn	00 39 24.7	-13
	comp=Z,0.8nm,0.3s,baz=290,slow=13,SNR=5.3							
TIXI	**Tiksi**	**15.41**	**9**	*e*P		**P**	**00 36 51.3**	**-0.2**
TIXI				pmax		pmax		
	comp=Z,3.0nm,0.6s							
KRAR	**Krasnoyarsk**	**15.87**	**280**	*e*P		**Pn**	**00 36 52.9**	**-0.1**
KRAR				pmax		pmax		
	comp=Z,7.0nm,0.9s							
SEY	**Seymchan**	**16.64**	**55**	Pn		**Pn**	**00 37 02.3**	**-0.5**
	comp=Z,0.2nm,0.3s,baz=283,slow=14,SNR=2.9							
SEY				Lg		Lg	00 41 53.1	
	comp=Z,0.2nm,0.3s,baz=345,slow=19,SNR=7.5							
SEY	**Seymchan**	**16.64**	**55**	*e*P		**P**	**00 37 04.5**	**-0.7**
KSRS	**Korea Array**	**19.64**	**165**	LR		LR	00 45 44.1	
	comp=Z,106nm,18.4s,baz=67,slow=38							
NRIK	**Noril'sk**	**19.66**	**324**	P		Pn	**00 37 40.9**	**+1.1**
	comp=Z,0.3nm,0.3s,baz=122,slow=11,SNR=3.2							
ZALV	**Zalesovo Beam**	**20.92**	**278**	*e*P		Pn	00 37 58.3	+3.5
BILL	**Bilibino**	**23.10**	**42**	*e*P		**P**	**00 38 18.8**	**+3.5**
BILL				*e*			00 38 45.9	
KURK	**Kurchatov**	**25.76**	**275**	P		**P**	**00 38 42.7**	**+2.4**
KURBB	**Kurchatov Arra**	**25.86**	**275**	P		**P**	**00 38 42.7**	**+1.5**
	comp=Z,0.7nm,0.8s,baz=60,slow=9.6,SNR=5.6							
MKAR	**Makanchi Array**	**25.89**	**265**	P		**P**	**00 38 43.6**	**+2.0**
	comp=Z,0.6nm,0.8s,baz=46,slow=8.7,SNR=3.7							
MKAR	**Makanchi Array**	**25.89**	**265**	*e*P		P	00 38 47.4	+5.8
BVAR	**Borovoye Array**	**29.13**	**285**	P		**P**	**00 39 11.2**	**+0.7**
	comp=Z,0.5nm,0.5s,baz=74,slow=11,SNR=2.9							
ILAR	**Eielson Array**	**41.73**	**40**	P		P	00 41 01.1	+2.7
	comp=Z,0.7nm,0.5s,baz=298,slow=4.7,SNR=10							
ILAR	**Eielson Array**	**41.73**	**40**	*e*P		P	00 41 01.4	+3.1
ILAR				pmax		pmax		
	comp=Z,1.0nm,0.5s							
FINES	**FINESS Array B**	**45.13**	**318**	P		**P**	**00 41 27.6**	**+1.8**
	comp=Z,0.7nm,0.6s,baz=30,slow=3.7,SNR=4.9							
NOA	**NORSAR Array B**	**50.62**	**324**	P		P	00 42 12.2	+3.8
	comp=Z,0.1nm,0.5s,baz=44,slow=12,SNR=2.8							
YKA	**Yellowknife Ar**	**53.49**	**29**	P		**P**	**00 42 32.1**	**+2.5**
	comp=Z,0.2nm,0.6s,baz=329,slow=6.6,SNR=6.8							
COCO	**West Island**	**71.56**	**206**	*i* P		**P**	**00 44 30.8**	**0.0**

*NIED **28** 00:38:00, 38˚.00N× 141˚.80E, h56km, Mw3.9 Best double couple: M0 8.65000×10^14 NP1:φ=232.00000°, δ=44.00000°, λ=118.00000°. NP2:φ=15.00000°, δ=53.00000°, λ=66.00000°.*
*ISCJB **28** 00:38:54.6±0.8, 37˚.98N±0˚.04× 141˚.93E±0˚.08, h57km±7km, mb3.8/13, Error ellipse: s-maj=11.6km s-min=5.8km az=22.3*
*JMA **28** 00:38:55.8±0.1, 37˚.97N× 141˚.84E, h52km±1km, M3.9*
JMA Felt I J1.
*IDC **28** 00:38:55.5±1.7, 37˚.93N× 141˚.89E, h49km±16km, mb3.5/13, mb1 3.8/17, mb1mx3.6/41, mbtmp3.8/17, ML3.4/4, MS2.6/1, Ms1 2.6/1, ms1mx2.3/37, Error ellipse: s-maj=20.3km s-min=10.7km az=98.0*

ISC 28 00:38:55.0±1.6, 37˚.95N±0˚.05× 141˚.96E±0˚.09, h43km±15km, n37, σ0≥90/41, mb3.6/13, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**0.70**	**316**	P	**Pn**	**00 39 08.4**	**-0.1**
JIO				S	**Sn**	**00 39 17.8**	**-0.4**
JMM	**Marumori**	**0.93**	**265**	P	**Pn**	**00 39 11.4**	**-0.2**
JMM				S	**Sn**	**00 39 22.9**	**-0.9**
JFK	**Kawauchi**	**1.04**	**236**	P	**Pn**	**00 39 13.1**	**-0.1**
JFK				S	**Sn**	**00 39 25.7**	**-0.9**
JOU	**Okura**	**1.10**	**292**	P	**Pn**	**00 39 14.0**	**0.0**
JOU				S	**Sn**	**00 39 27.4**	**-0.7**
JMK	**Ichinoseki**	**1.16**	**330**	P	**Pn**	**00 39 15.2**	**+0.5**
JFT	**Otama**	**1.36**	**252**	P	**Pn**	**00 39 17.9**	**+0.4**
JFT				S	**Sn**	**00 39 34.7**	**+0.3**
JYS	**Shirataka**	**1.52**	**281**	P	**Pn**	**00 39 19.8**	**+0.1**
JYK	**Kaneyama**	**1.59**	**308**	P	**Pn**	**00 39 20.9**	**+0.3**
JYK				S	**Sn**	**00 39 39.9**	**0.0**
JOM	**Ohasama**	**1.61**	**341**	P	**Pn**	**00 39 21.7**	**+0.8**
JRG	**Rokugo**	**1.78**	**325**	P	**Pn**	**00 39 24.2**	**+1.0**
JFY	**Yanaizu**	**1.87**	**254**	P	**Pn**	**00 39 25.1**	**+0.5**
JFY				S	**Sn**	**00 39 46.9**	**-0.1**
JYA	**Atsumi**	**1.88**	**291**	P	**Pn**	**00 39 24.8**	**+0.1**
MJAR	**Matsushiro Arr**	**3.31**	**246**	P	**Pn**	**00 39 45.7**	**+1.4**
	5.3nm,0.3s,baz=61,slow=11,SNR=27							
MJAR				LR	LR	00 41 12.3		
	comp=Z,98nm,20.3s,baz=340,slow=42							
MAT	**Matsushiro**	**3.31**	**246**	P	**Pn**	**00 39 45.4**	**+1.1**
MAT				S	**Sn**	**00 40 24.9**	**+2.5**
JHJ	**Hachijo jima 2**	**5.14**	**201**	P	**Pn**	**00 40 11.2**	**+1.7**
	22nm,0.3s,baz=26,slow=18,SNR=4.3							
JHJ				S	**Sn**	**00 41 05.8**	**-1.6**
	18nm,0.3s,baz=22,slow=19,SNR=6.1							
ASAJ	**Asahikawa**	**6.18**	**4**	P	**Pn**	**00 40 24.5**	**+0.9**
	0.9nm,0.3s,baz=140,slow=16,SNR=6.1							
ASAJ				S	**Sn**	**00 41 32.9**	**0.0**
	0.8nm,0.3s,baz=166,slow=19,SNR=2.7							
USRK	**Ussuriysk Ar.**	**9.78**	**313**	P	**Pn**	**00 41 14.3**	**+1.4**
	0.3nm,0.3s,baz=124,slow=14,SNR=7.3							

SONM	**Songino Array**	**27.65**	**302**	P		**P**	**00 44 39.0**	**+0.4**
	1.2nm,0.8s,baz=91,slow=8.6,SNR=3.3							
H11N2	**WAKE ISLAND Hy**	**28.26**	**123**	T		T	01 15 04.6	
	baz=316,slow=75,SNR=230							
H11N1	**WAKE ISLAND Hy**	**28.27**	**123**	T		T	01 15 02.2	
	baz=316,slow=75,SNR=194							
H11N3	**WAKE ISLAND Hy**	**28.28**	**123**	T		T	01 15 02.3	
	baz=316,slow=75,SNR=176							
H11S1	**WAKE ISLAND Hy**	**29.01**	**125**	T		T	01 15 58.6	
	baz=317,slow=76,SNR=112							
H11S3	**WAKE ISLAND Hy**	**29.01**	**125**	T		T	01 15 57.9	
	baz=317,slow=76,SNR=140							
H11S2	**WAKE ISLAND Hy**	**29.03**	**125**	T		T	01 16 04.7	
	baz=317,slow=76,SNR=45							
ZALV	**Zalesovo Beam**	**41.62**	**312**	P		**P**	**00 46 36.8**	**-1.8**
	0.5nm,0.4s,baz=92,slow=9.0,SNR=3.2							
MKAR	**Makanchi Array**	**44.01**	**301**	P		**P**	**00 46 58.5**	**+0.4**
	0.8nm,0.8s,baz=74,slow=11,SNR=3.2							
KURBB	**Kurchatov Arra**	**45.79**	**307**	P		**P**	**00 47 11.8**	**-0.4**
	1.9nm,0.5s,baz=81,slow=8.2,SNR=13							
ILAR	**Eielson Array**	**48.49**	**33**	P		**P**	**00 47 32.6**	**-0.4**
	0.2nm,0.6s,baz=274,slow=8.4,SNR=5.2							
BVAR	**Borovoye Array**	**50.28**	**312**	P		**P**	**00 47 46.1**	**-0.8**
	0.3nm,0.5s,baz=61,slow=8.9,SNR=3.3							
WRA	**Warramunga Arr**	**58.03**	**188**	P		**P**	**00 48 43.1**	**-0.5**
	3.7nm,0.7s,baz=6.5,slow=7.4,SNR=21							
ASAR	**Alice Springs**	**61.76**	**188**	P		**P**	**00 49 08.4**	**-0.7**
	1.0nm,0.8s,baz=8.3,slow=7.1,SNR=9.2							
YKA	**Yellowknife Ar**	**62.80**	**31**	P		**P**	**00 49 16.0**	**+0.4**
	0.3nm,0.6s,baz=302,slow=6.8,SNR=6.2							
FINES	**FINESS Array B**	**68.21**	**332**	P		**P**	**00 49 49.6**	**-0.9**
	0.9nm,0.7s,baz=50,slow=9.2,SNR=4.1							
NOA	**NORSAR Array B**	**73.51**	**337**	P		**P**	**00 50 22.5**	**-0.3**
	0.5nm,0.8s,baz=39,slow=6.0,SNR=3.3							
PDAR	**Pinedale Array**	**76.71**	**46**	P		**P**	**00 50 42.8**	**+0.9**
	0.4nm,0.6s,baz=299,slow=1.5,SNR=4.2							
TXAR	**Lajitas Array**	**89.22**	**53**	P		**P**	**00 51 47.2**	**+0.7**
	0.5nm,0.8s,baz=270,slow=2.5,SNR=5.4							
LPAZ	**La Paz**	**145.85**	**59**	PKPbc		**PKPbc**	**00 58 30.7**	**0.0**
	1.2nm,0.8s,baz=48,slow=6.1,SNR=5.3							

*NEIC **28** 00:49:56.6, 38˚.42N× 118˚.72W, h2km, ML3.7(REN), After REN.*
NEIC Felt at Gardnerville.

ISC 28 00:49:56.4±0.8, 38˚.44N±0˚.02× 118˚.69W±0˚.02, h9km, n44, σ1≥51/49, California-Nevada border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WAKR	**Walker**	**0.59**	**276**	*e*Pg	**Pg**	**00 50 07.5**	**-0.3**
MLAC	**Mammoth, Mammo**	**0.82**	**188**	P	**Pg**	**00 50 11.6**	**-0.6**
	baz=6.8						
MLAC				S	**Sb**	**00 50 23.2**	**-0.9**
	baz=6.8						
CMB	**Columbia Colle**	**1.40**	**254**	*e*Pg	**Pn**	**00 50 21.7**	**-0.3**
GRAC	**Grapevine Rang**	**1.79**	**144**	Pb	**Pb**	**00 50 29.5**	**+0.3**
	baz=324						
GRAC				Sb	**Sg**	**00 50 54.2**	**+0.5**
	baz=324						
AFDM	**Forest Hills D**	**1.86**	**287**	*e*Pn	**Pb**	**00 50 29.6**	**-0.9**
RCTC	**Rector, Farmer**	**2.18**	**192**	Sb	**Sg**	**00 51 04.6**	**-1.7**
	baz=11						
DAC	**Darwin (Calif)**	**2.33**	**158**	*e*Pn	**Pb**	**00 50 37.7**	**-1.0**
OHCM	**Honcut**	**2.36**	**293**	*e*Pn	**Pb**	**00 50 39.0**	**0.0**
R11A	**Troy Canyon, C**	**2.44**	**91**	Pb	**Pb**	**00 50 40.8**	**+0.3**
	baz=273						
R11A				Sb	**Sg**	**00 51 14.0**	**-0.8**
	baz=273						
R11A	**Troy Canyon, C**	**2.44**	**91**	*e*Pn	**Pn**	**00 50 38.1**	**+1.6**
TPNV	**Topopah Spring**	**2.44**	**127**	*e*Pn	**Pn**	**00 50 38.0**	**+1.4**
ORV	**Oroville**	**2.46**	**298**	*e*Pn	**Pn**	**00 50 38.1**	**+1.5**
MPMC	**Manual Prospec**	**2.56**	**158**	Sb	**Sg**	**00 51 17.3**	**-1.4**
	baz=338						
WASM	**Alta Sierra Ca**	**2.70**	**178**	*e*Sn	**Sg**	**00 51 20.5**	**-2.6**
SAO	**San Andreas Ge**	**2.76**	**233**	*e*Pn	**Pb**	**00 50 46.0**	**+0.2**
ISA	**Isabella, Lake**	**2.78**	**176**	Pb	**Pb**	**00 50 46.3**	**+0.1**
	baz=356						
ISA				Sb	**Sb**	**00 51 22.3**	**+1.9**
	baz=356						
ISA	**Isabella, Lake**	**2.78**	**176**	*e*Pn	**Pb**	**00 50 46.0**	**-0.2**
O03D	**Paynes Creek**	**3.04**	**308**	Sb	**Sb**	**00 51 28.6**	**+0.7**
	baz=127						
NSHM	**Saint Helena R**	**3.08**	**273**	*e*Pn	**Pn**	**00 50 43.1**	**-2.0**
ELK	**Elko**	**3.52**	**48**	*e*Pn	**Pn**	**00 50 52.2**	**+0.8**
ELK				*e*Sg	**Sg**	**00 51 48.7**	**-0.8**
WDC	**Whiskeytown Da**	**3.67**	**307**	*e*Pn	**Pn**	**00 50 56.3**	**+3.1**
MOD	**Modoc Plateau**	**3.67**	**341**	*e*Pg	**Pb**	**00 51 03.8**	**+2.4**
PSUT	**Pine Spring**	**3.80**	**87**	*e*Pn	**Pb**	**00 51 04.5**	**+0.9**
WVOR	**Wild Horse Val**	**3.99**	**1**	*e*Pn	**Pb**	**00 51 06.3**	**-0.6**
MWC	**Mount Wilson**	**4.24**	**173**	*e*Pg	**Pb**	**00 51 13.9**	**+2.7**
MWC				*e*Sg	**Sg**	**00 52 13.1**	**+0.5**
PASC	**Pasadena Art C**	**4.28**	**174**	*e*Sg	**Sg**	**00 52 14.8**	**+1.0**
CCUT	**Cedar City**	**4.30**	**100**	*e*Pg	**Pg**	**00 51 20.7**	**+1.9**
LDFC	**Landfair**	**4.42**	**138**	*e*Pg	**Pg**	**00 51 19.4**	**-1.6**
YBH	**Yreka Blue Hor**	**4.51**	**318**	*e*Pn	Pb	00 51 11.2	-4.4
LCMT	**Little Creek M**	**4.55**	**107**	*e*Pn	Pn	00 51 08.9	+3.5
K05A	**Summer Lake**	**4.60**	**339**	*e*Pn	Pn	00 51 11.1	+4.9
DUG	**Dugway, Tooele**	**4.88**	**67**	*e*Pn	**Pb**	**00 51 20.7**	**-1.4**
DUG				*e*Sg	**Sg**	**00 52 31.7**	**-1.4**
BGU	**Big Grassy Mou**	**5.02**	**59**	*e*Pn	**Pb**	**00 51 22.8**	**-1.7**
MSU	**Marysvale**	**5.11**	**87**	*e*Pn	**Pb**	**00 51 24.0**	**-2.0**
PKCU	**Pink Cliffs**	**5.14**	**99**	*e*Pg	**Pg**	**00 51 33.3**	**-1.5**
PKCU				*e*Sg	**Sg**	**00 52 40.2**	**-1.2**
NLU	**North Lily Min**	**5.36**	**72**	*e*Pg	Pg	00 51 42.6	+3.6
MFID	**Camas Ranch**	**5.42**	**23**	*e*Pn	**Pn**	**00 51 18.1**	**+0.6**
	7.9nm,0.6s						
MFID				*e*Sg	**Sg**	**00 52 51.1**	**+0.8**
HVU	**Hansel Valley**	**5.63**	**52**	*e*Pg	Pg	00 51 41.6	-2.5
TMUT	**Trail Mountain**	**5.90**	**79**	*e*Pg	**Pg**	**00 51 49.7**	**+0.3**
TMUT				*e*Sg	**Sg**	**00 53 03.8**	**-2.0**
HLID	**Hailey**	**6.05**	**31**	*e*Pn	Pb	00 51 37.4	-4.7
SRU	**San Rafael Swe**	**6.42**	**81**	*e*Pn	Pn	00 51 38.6	+7.4
SRU				*e*Sg	**Sg**	**00 53 18.2**	**-4.1**
P18A	**Preston Nutter**	**6.68**	**77**	*e*Pg	**Pg**	**00 52 04.1**	**-0.2**
P18A				*e*Sg	**Sg**	**00 53 29.2**	**-1.6**
FXWY	**Fox Creek**	**7.78**	**46**	*e*Pg	**Pg**	**00 52 24.6**	**-0.6**
MVCO	**Mesa Verde**	**8.16**	**96**	*e*Pg	**Pg**	**00 52 34.3**	**+1.7**

*IDC **28** 01:03:40.7±0.6, 30˚.74N× 105˚.77W, h0km, mb4.1/11, mb1 4.3/19, mb1mx4.0/53, mbtmp4.0/19, ML3.7/7, MS3.2/4, Ms1 3.2/4, ms1mx2.8/46, Error ellipse: s-maj=20.0km s-min=5.7km az=43.0*
*NEIC **28** 01:03:42.0±1.6, 30˚.74N× 105˚.71W, h6km±11km, mb4.4/12, MD4.4(MEX), Error ellipse: s-maj=6.4km s-min=4.2km az=195.0*
NEIC Felt at El Paso and Van Horn, Texas.
*MEX **28** 01:03:42.7±0.5, 30˚.66N× 105˚.57W, h10km, MD4.4*

ISC 28 01:03:40.5±1.2, 30˚.71N±0˚.03× 105˚.59W±0˚.03, h2km±8km, n167, σ1≥96/180, mb4.2/15, 1D, Texas-Mexico border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MNTX	**Cornudas Mount**	**1.00**	**10**	P	**Pg**	**01 03 59.4**	**-0.3**
	baz=196						
MNTX				S	**Sg**	**01 04 13.1**	**+0.4**
	baz=196						
MNTX	**Cornudas Mount**	**1.00**	**10**	*e*Pg	**Pg**	**01 03 59.5**	**-0.2**
MNTX				*e*Sg	**Sg**	**01 04 13.0**	**+0.4**
GDL2	**Guadalupe Moun**	**1.82**	**35**	*e*Pn	**Pb**	**01 04 14.8**	**+0.3**
CGIG		**2.09**	**261**	*e*P	**Pn**	**01 04 15.5**	**-1.1**
CGIG				*e*S	**Sn**	**01 04 39.6**	**-3.6**
CGIG		**2.09**	**261**	*e*P	**Pn**	**01 04 15.5**	**-1.1**
CGIG				*e*S	**Sn**	**01 04 39.6**	**-3.6**
CLNB	**Carlsbad**	**2.13**	**43**	*e*Pn	**Pb**	**01 04 20.1**	**+0.2**
TX31	**Lajitas Ar. Si**	**2.16**	**129**	*e*Pn	**Pb**	**01 04 20.1**	**-0.3**
TXAR	**Lajitas Array**	**2.16**	**129**	Pn	**Pb**	**01 04 20.1**	**-0.3**
	163nm,0.3s,baz=299,slow=12,SNR=606						
TXAR				Pg	**Pg**	**01 04 23.6**	**+1.7**
	189nm,0.3s,baz=313,slow=17,SNR=794						
TXAR				Sn	**Sg**	**01 04 49.1**	**-0.9**
	146nm,0.3s,baz=327,slow=21,SNR=8.4						
TXAR				Lg	Lg	01 04 53.4	
	849nm,0.3s,baz=306,slow=31,SNR=52						
TXAR				LR	LR	01 05 33.8	
	comp=Z,1μm,21.7s,baz=0.0,slow=49						
121A	**Cookes Peak, D**	**2.61**	**315**	P	**Pn**	**01 04 22.5**	**-1.3**
	baz=135						
121A				Sb	**Sb**	**01 05 00.3**	**-0.3**
	baz=135						
121A	**Cookes Peak, D**	**2.61**	**315**	*e*Pn	**Pn**	**01 04 22.5**	**-1.3**

121A				*e*S		**Sb**	**01 05 01.2**	**+0.7**
121A	**Cookes Peak, D**	**2.61**	**315**	*e*P		**Pn**	**01 04 22.5**	**-1.3**
121A				*e*S		**Sn**	**01 04 54.3**	**-1.8**
Y22D	**IRIS PASSCAL I**	**3.54**	**342**	Sb		**Sg**	**01 05 30.6**	**-3.5**
	baz=163							
Y22D	**IRIS PASSCAL I**	**3.54**	**342**	*e*Pn		**Pn**	**01 04 36.8**	**+0.2**
BNM	**Barren Site**	**3.54**	**346**	*e*Pn		**Pn**	**01 04 36.6**	**-0.1**
LPM	**Los Pinos Moun**	**3.70**	**347**	*e*Pn		**Pn**	**01 04 38.5**	**-0.3**
HPIG		**3.76**	**181**	*e*Pn		**Pn**	**01 04 41.2**	**+1.5**
HPIG				*e*S		**Sn**	**01 05 20.7**	**-4.0**
HPIG		**3.76**	**181**	*e*P		**Pn**	**01 04 38.5**	**-1.2**
HPIG				⇓*e*S		**Sn**	**01 05 20.7**	**-4.0**
LAZ	**Ladron**	**3.91**	**341**	*e*Pn		**Pn**	**01 04 41.5**	**-0.1**
MSTX	**Muleshoe**	**4.03**	**36**	Pb		**Pb**	**01 04 54.1**	**+1.8**
	baz=218							
MSTX	**Muleshoe**	**4.03**	**36**	*e*Pn		**Pn**	**01 04 45.3**	**+2.0**
MSTX				*e*S		**Sg**	**01 05 49.5**	**-0.5**
ANMO	**Albuquerque**	**4.29**	**350**	Pn		**Pn**	**01 04 47.4**	**+0.5**
	0.8nm,0.3s,baz=174,slow=15,SNR=16							
ANMO				Lg		Lg	01 05 52.3	
	20nm,0.3s,baz=352,slow=8.9,SNR=7.9							
ANMO				LR		LR	01 06 33.8	
	comp=Z,257nm,18.6s,baz=136,slow=41							
ANMO	**Albuquerque**	**4.29**	**350**	*e*Pn		**Pn**	**01 04 47.2**	**+0.3**
ANMO				*e*S		**Sb**	**01 05 52.2**	**+3.3**
ANMO				Lg		Lg	01 05 52.3	
ANMO	**Albuquerque**	**4.29**	**350**	*e*P		**Pn**	**01 04 47.4**	**+0.5**
ANMO				*e*S		**Sn**	**01 05 35.5**	**-2.0**
TUC	**Tucson**	**4.71**	**291**	*e*Pn		**Pn**	**01 04 51.4**	**-1.2**
TUC				*e*S		**Sb**	**01 06 05.2**	**+4.2**
HSIG		**4.95**	**251**	*e*P		**Pb**	**01 05 11.1**	**+3.3**
HSIG				*e*S		**Sb**	**01 06 07.0**	**-0.7**
HSIG		**4.95**	**251**	*e*P		**Pb**	**01 05 11.1**	**+3.3**
HSIG				*e*S		**Sb**	**01 06 07.0**	**-0.7**
JCT	**Junction City**	**5.00**	**91**	P		**Pn**	**01 04 59.5**	**+3.0**
	baz=274							
JCT	**Junction City**	**5.00**	**91**	*e*Pn		**Pn**	**01 04 60.0**	**+3.4**
JCT				*e*S		**Sb**	**01 06 02.0**	**-7.2**
AMTX	**Amarillo**	**5.31**	**37**	*e*Pn		**Pn**	**01 05 03.2**	**+2.4**
AMTX				*e*S		**Sb**	**01 06 20.8**	**+2.6**
GUYB	**Guaymas**	**5.39**	**240**	*e*P		**Pb**	**01 05 19.2**	**+3.8**
GUYB				*e*S		**Sn**	**01 06 02.2**	**-2.4**
ABTX	**Abilene, Hawle**	**5.42**	**68**	P		**Pn**	**01 05 03.8**	**+1.5**
	baz=252							
ABTX	**Abilene, Hawle**	**5.42**	**68**	*e*Pn		**Pn**	**01 05 03.7**	**+1.4**
ABTX				*e*S		**Sg**	**01 06 32.0**	**-2.6**
832A	**Faith Ranch, C**	**5.46**	**115**	P		**Pn**	**01 05 05.2**	**+2.3**
	baz=298							
433A	**Art**	**5.60**	**88**	P		**Pn**	**01 05 06.8**	**+2.0**
	baz=272							
W18A	**Petrified Fore**	**5.61**	**323**	P		**Pn**	**01 05 05.2**	**+0.2**
	baz=141							
W18A	**Petrified Fore**	**5.61**	**323**	*e*Pn		**Pn**	**01 05 00.9**	**-4.1**
W18A				*e*S		**Sb**	**01 06 32.2**	**+5.3**
633A	**Saathoff Ranch**	**5.70**	**101**	P		**Pn**	**01 05 09.2**	**+3.1**
	baz=284							
733A	**Divot King Ran**	**5.83**	**108**	P		**Pn**	**01 05 10.7**	**+2.8**
	baz=292							
233A	**Rising Star**	**5.87**	**75**	P		**Pn**	**01 05 10.4**	**+1.9**
	baz=259							
133A	**Hamilton Ranch**	**6.00**	**70**	P		**Pn**	**01 05 11.8**	**+1.5**
	baz=254							
214A	**Organ Pipe Nat**	**6.30**	**283**	P		**Pn**	**01 05 13.5**	**-0.9**
	baz=100							
214A	**Organ Pipe Nat**	**6.30**	**283**	*e*Pn		**Pn**	**01 05 13.3**

HEC	**Hector,Ludlow**	**9.93**	**297**	P		**Pn**	**01 06 03.7**	**-0.6**
	baz=112							
T36A	**Boggs Farm, Ca**	**10.26**	**49**	P		**Pn**	**01 06 08.8**	**+0.1**
	baz=235							
S35A	**Otter Creek Ra**	**10.36**	**45**	P		**Pn**	**01 06 09.9**	**-0.1**
	baz=231							
X39A	**Fountain Ranch**	**10.39**	**66**	P		**Pn**	**01 06 11.2**	**+0.7**
	baz=252							
GSC	**Goldstone, Bar**	**10.47**	**299**	*e*Pn		**Pn**	**01 06 12.1**	**+0.5**
Z40A	**Long Farm, Mag**	**10.66**	**73**	P		**Pn**	**01 06 14.5**	**+0.3**
	baz=260							
V38A	**Canehill**	**10.68**	**58**	P		**Pn**	**01 06 14.2**	**-0.2**
	baz=245							
TPNV	**Topopah Spring**	**10.82**	**308**	*e*Pn		Pn	01 06 21.1	+4.6
MIAR	**Mount Ida**	**10.83**	**66**	*e*Pn		**Pn**	**01 06 21.0**	**+4.5**
S36A	**Lake Cedric, C**	**10.83**	**47**	P		**Pn**	**01 06 16.6**	**+0.1**
	baz=233							
T37A	**Cheneyville 18**	**10.93**	**51**	P		**Pn**	**01 06 17.9**	**0.0**
	baz=238							
U38A	**Gravette**	**10.95**	**56**	P		**Pn**	**01 06 18.1**	**0.0**
	baz=242							
Z41A	**Richland Creek**	**11.15**	**74**	P		**Pn**	**01 06 21.6**	**+0.7**
	baz=260							
HHAR	**Hobbs**	**11.20**	**57**	*e*Pn		**Pn**	**01 06 22.1**	**+0.5**
R11A	**Troy Canyon, C**	**11.22**	**315**	*e*Pn		Pn	01 06 27.2	+5.3
V39A	**Pettigrew**	**11.23**	**60**	P		**Pn**	**01 06 22.0**	**0.0**
	baz=247							
T38A	**Diamond**	**11.31**	**53**	P		**Pn**	**01 06 22.6**	**-0.5**
	baz=240							
R37A	**Teagarden Farm**	**11.67**	**47**	P		**Pn**	**01 06 28.4**	**+0.4**
	baz=233							
S38A	**Stockton**	**11.88**	**51**	P		**Pn**	**01 06 29.9**	**-0.9**
	baz=238							
X301	**Greenbrier Sit**	**11.96**	**64**	*e*Pn		**Pn**	**01 06 33.0**	**+1.0**
U40A	**Yellville**	**12.02**	**59**	P		**Pn**	**01 06 32.7**	**-0.2**
	baz=246							
W41B	**Gary Mavity, V**	**12.06**	**65**	P		**Pn**	**01 06 33.2**	**-0.1**
	baz=252							
WHAR	**Wooly Hollow**	**12.06**	**64**	*e*Pn		**Pn**	**01 06 34.4**	**+1.0**
R38A	**Fenwick Farm,**	**12.19**	**49**	P		**Pn**	**01 06 34.4**	**-0.6**
	baz=236							
PDAR	**Pinedale Array**	**12.44**	**346**	Pn		**Pn**	**01 06 41.0**	**+2.2**
	0.1nm,0.3s,baz=151,slow=11,SNR=2.5							
T40A	**Mansfield**	**12.61**	**56**	P		**Pn**	**01 06 40.8**	**0.0**
	baz=244							
S40A	**Lebanon**	**12.83**	**54**	P		**Pn**	**01 06 42.9**	**-1.0**
	baz=242							
NVAR	**Mina Array Bea**	**12.99**	**310**	Pn		**Pn**	**01 06 48.4**	**+2.1**
	baz=133,slow=13,SNR=5.8							
NVAR				LR		LR	01 12 17.8	
	comp=Z,61nm,18.9s,baz=151,slow=40							
ECSD	**EROS Data Cent**	**14.82**	**26**	*e*Pn		**P**	**01 07 14.0**	**-3.1**
AFDM	**Forest Hills D**	**15.05**	**307**	*e*Pn		**P**	**01 07 18.0**	**-1.8**
WVT	**Waverly**	**15.78**	**65**	*e*Pn		**P**	**01 07 26.3**	**-1.4**
USIN	**University of**	**16.47**	**59**	*e*Pn		**Pn**	**01 07 31.4**	**-1.2**
	25nm,0.8s							
HDIL	**Hopedale**	**16.47**	**49**	*e*Pn		**Pn**	**01 07 31.7**	**-0.9**
	45nm,0.8s							
BMO	**Blue Mountains**	**16.86**	**330**	*e*Pn		**Pn**	**01 07 35.4**	**-2.2**
JFWS	**Jewell Farm**	**17.27**	**41**	*e*Pn		**P**	**01 07 43.7**	**-0.5**
	44nm,1.4s							
WCI	**Wyandotte Cave**	**17.57**	**60**	*e*Pn		**P**	**01 07 47.3**	**-0.3**
YBH	**Yreka Blue Hor**	**17.62**	**313**	P		**P**	**01 07 47.7**	**-0.6**
	0.1nm,0.3s,baz=101,slow=5.2,SNR=2.9							
SFIN	**Lafayette**	**17.85**	**52**	*e*Pn		**P**	**01 07 52.4**	**+1.7**
	49nm,1.5s							
TEIG	**Tepich**	**18.78**	**120**	P		**Pn**	**01 08 03.3**	**+2.0**
	0.1nm,0.3s,baz=290,slow=22,SNR=3.1							
TKL	**Tuckaleechee C**	**18.91**	**69**	P		**Pn**	**01 08 05.0**	**+2.1**
	0.2nm,0.3s,baz=219,slow=6.5,SNR=3.1							
AGMN	**Agassiz Nation**	**19.07**	**20**	*e*P		**Pn**	**01 08 05.0**	**+0.3**
	11nm,1.1s							
NEW	**Newport**	**19.62**	**337**	P		**Pn**	**01 08 11.3**	**-0.1**
	0.1nm,0.3s,baz=157,slow=12,SNR=5.2							
NEW	**Newport**	**19.62**	**337**	*e*P		**Pn**	**01 08 12.8**	**+1.4**
	2.9nm,0.7s							
B08A	**Colville Reser**	**20.51**	**333**	*e*P		Pn	01 08 21.6	-0.3
	23nm,1.5s							
ACSO	**Alum Creek Sta**	**20.67**	**56**	*e*P		Pn	01 08 24.3	+0.4
	32nm,1.4s							
ULM	**Lac du Bonnet**	**20.84**	**18**	P		**P**	**01 08 23.6**	**+0.3**
	21nm,0.8s,baz=204,slow=13,SNR=27							
AAM	**Ann Arbor**	**21.02**	**51**	*e*P		**P**	**01 08 29.8**	**+4.4**
	9.1nm,0.6s							
BLA	**Blacksburg**	**21.83**	**66**	*e*P		**P**	**01 08 38.9**	**+4.8**
	23nm,1.1s							
SSPA	**Standing Stone**	**24.50**	**59**	*e*P		**P**	**01 09 03.5**	**+2.3**
	14nm,0.8s							
SADO	**Sadowa**	**25.05**	**49**	LR		LR	01 19 51.6	
	comp=Z,42nm,20.3s,baz=244,slow=39							
YKA	**Yellowknife Ar**	**32.33**	**352**	P		**P**	**01 10 10.6**	**-0.1**
	1.6nm,1.0s,baz=160,slow=8.0,SNR=22							
YKA				PcP		**PcP**	**01 12 58.4**	**0.0**
	0.4nm,0.9s,baz=169,slow=2.2,SNR=6.9							
YKB5	**Yellowknife Ar**	**32.33**	**352**	*e*P		**P**	**01 10 09.6**	**-1.1**
YKW3	**Yellowknife Ar**	**32.39**	**352**	*e*P		**P**	**01 10 11.3**	**+0.1**
	2.9nm,1.0s							
ILAR	**Eielson Array**	**42.57**	**335**	P		**P**	**01 11 38.9**	**+1.4**
	1.0nm,0.9s,baz=133,slow=6.4,SNR=8.4							
RES	**Resolute Bay**	**44.37**	**4**	P		**P**	**01 11 52.2**	**+0.4**
	0.9nm,1.1s,baz=226,slow=6.3,SNR=4.6							
DAG	**Danmarks Havn**	**59.66**	**15**	*i* P		**P**	**01 13 45.5**	**-0.1**
	5.4nm,1.0s							
TIXI	**Tiksi**	**71.13**	**344**	P		**P**	**01 14 59.5**	**-0.5**
	1.0nm,0.4s,baz=35,slow=4.0,SNR=2.0							
CPUP	**Villa Florida**	**73.12**	**136**	P		**P**	**01 15 12.5**	**0.0**
	1.5nm,0.9s,baz=160,slow=7.3,SNR=2.5							
ARCES	**ARCESS Array B**	**73.94**	**16**	P		**P**	**01 15 16.9**	**+0.1**
	6.3nm,1.0s,baz=326,slow=6.3,SNR=8.7							
NOA	**NORSAR Array B**	**75.23**	**27**	P		**P**	**01 15 23.9**	**-0.6**
	0.6nm,0.8s,baz=303,slow=6.3,SNR=2.3							
FINES	**FINESS Array B**	**80.18**	**21**	P		**P**	**01 15 51.9**	**-0.1**
	2.2nm,0.8s,baz=359,slow=9.9,SNR=6.1							
GERES	**GERESS Array B**	**84.08**	**35**	P		**P**	**01 16 12.8**	**-0.1**
	0.3nm,0.5s,baz=328,slow=4.7,SNR=4.1							
ZALV	**Zalesovo Beam**	**95.21**	**354**	P		**P**	**01 17 06.3**	**+0.9**
	0.3nm,0.3s,baz=335,slow=6.4,SNR=3.8							
HHC	**Hu-ho-hao-te**	**100.93**	**332**	*e*P		**Pdif**	**01 17 31.5**	**-0.1**
HHC				PP		PKiKP	01 21 47.5	-10
HHC	**Hu-ho-hao-te**	**100.93**	**332**	SS		SS	01 36 05.0	-2.1
HHC				pmax		pmax		
	comp=Z,11nm,0.8s							
HHC				LR		LR		
	comp=N,32nm,12.3s							
HHC				LR		LR		
	comp=E,59nm,13.6s							
HHC				LR		LR		
	comp=Z,84nm,13.0s							
CD2	**Chengdu**	**112.67**	**333**	PKP		**PKiKP**	**01 22 21.0**	**+2.0**
WRA	**Warramunga Arr**	**125.33**	**266**	PKP		**PKPdf**	**01 22 43.2**	**-0.3**
	comp=Z,0.4nm,0.3s,baz=62,slow=2.1,SNR=7.7							
CMAR	**Chiang Mai Arr**	**125.72**	**331**	PKP		**PKPdf**	**01 22 45.1**	**+0.8**
	comp=Z,0.9nm,0.4s,baz=339,slow=4.8,SNR=5.3							
ASAR	**Alice Springs**	**127.13**	**262**	PKP		**PKPdf**	**01 22 46.9**	**0.0**
	comp=Z,0.6nm,0.9s,baz=64,slow=2.2,SNR=4.9							

*ISCJB **28** 01:17:16.9±0.5, 23°.40S±0°.04×66°.80W±0°.04, h215km±6km, mb3.1/3, Error ellipse: s-maj=7.5km s-min=4.8km az=36.2*
*IDC **28** 01:17:17.5±1.2, 23°.31S×66°.60W, h200km±11km, mb3.1/3, mb1 3.4/6, mb1mx3.2/20, mbtmp3.7/6, Error ellipse: s-maj=23.1km s-min=16.8km az=12.0*
*GUC **28** 01:17:19.0±0.5, 23°.21S×67°.47W, h272km±8km, ML4.4*
*SJA **28** 01:17:22.4±0.9, 23°.45S×66°.54W, h162km±11km, ML2.4, MW3.1*

ISC 28 01:17:17.2±0.8, 23°.38S±0°.05×66°.69W±0°.05, h205km±7km, n26, σ1$52/43, mb3.2/3, 11C, Jujuy Province

Code	Station Name	Δ°	AZ°	Phase ID		Time			Res
				Op		ISC	h	m	s	ISC
HJA	**Humahuaca**	**1.19**	**82**	*e*P		**Pn**	**01**	**17**	**51.2**	**+1.9**
HJA				*e*S		**S**	**01**	**18**	**10.7**	**-3.1**
YJA	**Yavi**	**1.62**	**42**	*e*P		**Pn**	**01**	**17**	**55.2**	**+2.2**
AZAP	**Zapla**	**1.71**	**120**	*e*P		**Pn**	**01**	**17**	**54.6**	**+1.1**
ASTB	**Santa Barbara**	**2.13**	**106**	*e*P		**Pn**	**01**	**17**	**58.9**	**+1.3**
ASTB				*e*S		**S**	**01**	**18**	**26.3**	**-2.1**
LVC	**Limon Verde**	**2.19**	**290**	P		**Pn**	**01**	**17**	**59.8**	**+1.4**
	2µm,0.3s,baz=90,slow=6.7,SNR=383									
LVC				S		**S**	**01**	**18**	**30.8**	**+0.9**
	836nm,0.3s,baz=344,slow=20,SNR=9.5									
ALOL	**LOMAS DE OLMED**	**2.52**	**100**	*e*P		**Pn**	**01**	**18**	**03.1**	**+1.4**
PB06	**IPOC Station P**	**2.74**	**284**	⇑*i*P		**Pn**	**01**	**18**	**05.3**	**+1.0**
PB06				*e*S		**S**	**01**	**18**	**40.5**	**+0.1**
PB06				AML		AML	01	18	41.0	
	comp=N,392nm,0.5s									
FSA	**Cafayete**	**2.79**	**167**	*e*P		**Pn**	**01**	**18**	**05.8**	**+1.0**
FSA				*e*S		**S**	**01**	**18**	**41.3**	**-0.4**
FSA				IAML			01	18	43.8	
	comp=Z,11nm,0.6s									
PB09	**IPOC Station P**	**2.84**	**303**	⇑*i*P		**Pn**	**01**	**18**	**06.9**	**+1.4**
PB09				*e*S		**S**	**01**	**18**	**43.6**	**+1.1**
PB09				AML		AML	01	18	47.5	
	comp=N,488nm,0.3s									
PB04	**IPOC Station P**	**3.36**	**287**	⇑*i*P		**Pn**	**01**	**18**	**11.9**	**+0.4**
PB04				*e*S		**S**	**01**	**18**	**51.5**	**-2.0**
PB04				AML		AML	01	18	56.3	
	comp=E,208nm,0.6s									
PB07	**IPOC Station P**	**3.38**	**299**	⇑*i*P		**Pn**	**01**	**18**	**12.5**	**+0.6**
PB07				*i* S		**S**	**01**	**18**	**52.7**	**-1.3**
PB07				AML		AML	01	18	53.6	
	comp=N,654nm,0.2s									
ANCH	**Antofagasta**	**3.43**	**264**	*e*P		**Pn**	**01**	**18**	**12.4**	**+0.3**
ANCH				*i* S		**S**	**01**	**18**	**52.8**	**-1.9**
PB01	**IPOC Station P**	**3.48**	**311**	⇑*i*P		**Pn**	**01**	**18**	**13.6**	**+0.6**
PB01				*e*S		**S**	**01**	**18**	**55.7**	**-0.4**
PB01				AML		AML	01	18	57.9	
	comp=N,379nm,0.3s									
PB10	**IPOC Station P**	**3.55**	**267**	⇑*i*P		**Pn**	**01**	**18**	**14.0**	**+0.3**
PB10				*i* S		**S**	**01**	**18**	**55.2**	**-2.2**
PB10				AML		AML	01	18	59.7	
	comp=E,641nm,0.4s									
PB14	**IPOC Station P**	**3.62**	**249**	⇑*i*P		**Pn**	**01**	**18**	**14.6**	**-0.2**
PB14				*e*S		**S**	**01**	**18**	**56.9**	**-2.4**
PB14				AML		AML	01	18	58.7	
	comp=E,467nm,0.8s									
PATCX	**Punta Patache**	**4.10**	**308**	⇑*i*P		**Pn**	**01**	**18**	**20.3**	**-0.3**
PATCX				*i* S		**S**	**01**	**19**	**07.2**	**-2.6**
PATCX				AML		AML	01	19	11.6	
	comp=E,193nm,0.3s									
HMBC	**Humberstone**	**4.29**	**315**	⇑*i*P		**Pn**	**01**	**18**	**22.9**	**-0.1**
HMBC				*i* S		**S**	**01**	**19**	**11.1**	**-3.0**
HMBC				AML		AML	01	19	18.3	
	comp=N,404nm,0.5s									
PB11	**IPOC Station P**	**4.54**	**322**	⇑*i*P		**Pn**	**01**	**18**	**25.9**	**-0.2**
PB11				*i* S		**S**	**01**	**19**	**17.6**	**-2.3**
MNMC	**Minye Minye**	**5.02**	**327**	⇑*i*P		**Pn**	**01**	**18**	**32.6**	**+0.2**
MNMC				*i* S		**S**	**01**	**19**	**29.6**	**-1.6**
LPAZ	**La Paz**	**7.19**	**349**	P		**Pn**	**01**	**19**	**02.0**	**+1.4**
	comp=N,1.9nm,0.3s,baz=159,slow=6.2,SNR=45									
LPAZ				S		**S**	**01**	**20**	**20.3**	**-2.2**
	comp=N,0.2nm,0.3s,baz=252,slow=20,SNR=4.5									
CPUP	**Villa Florida**	**8.99**	**111**	P		**Pn**	**01**	**19**	**23.6**	**+0.3**
	comp=N,0.1nm,0.3s,baz=297,slow=9.4,SNR=4.2									
SIV	**San Ignacio**	**9.06**	**37**	P		**Pn**	**01**	**19**	**23.6**	**-0.7**
	comp=N,1.3nm,0.3s,baz=222,slow=16,SNR=18									
TXAR	**Lajitas Array**	**63.35**	**324**	P		**P**	**01**	**27**	**25.8**	**+1.0**
	comp=N,0.1nm,0.4s,baz=153,slow=5.0,SNR=1.8									
TORD	**Torodi Ar. Bea**	**76.08**	**69**	P		**P**	**01**	**28**	**42.1**	**-0.5**
	comp=N,0.6nm,0.4s,baz=248,slow=5.4,SNR=21									
YKA	**Yellowknife Ar**	**93.65**	**340**	P		**P**	**01**	**30**	**10.1**	**+0.4**
	comp=N,0.1nm,0.5s,baz=128,slow=4.6,SNR=6.9									
MKAR	**Makanchi Array**	**145.87**	**39**	PKPbc		**PKPab**	**01**	**36**	**33.4**	**+0.2**
	comp=N,0.8nm,0.8s,baz=322,slow=4.4,SNR=3.2									

*NIED **28** 01:44:00, 38°.60N×141°.90E, h53km, Mw4.8 Best double couple: M0 1.90000×10^16 NP1:φs196.00000°, δ20.00000°, λ90.00000°. NP2:φs16.00000°, δ70.00000°, λ90.00000°.*
*MOS **28** 01:44:43.9±1.0, 38°.62N×141°.84E, h33km, mb5.3/76, MS4.0/20, Error ellipse: s-maj=6.5km s-min=4.1km az=105.8*
*ISCJB **28** 01:44:46.9±0.3, 38°.61N±0°.02×141°.77E±0°.03, h56km±2km, mb4.9/191, MS4.1/40, Error ellipse: s-maj=4.4km s-min=2.9km az=40.4*
*JMA **28** 01:44:47.0±0.1, 38°.56N×141°.89E, h48km±1km, MS4.8*
JMA Felt III J1.
*IDC **28** 01:44:48.5±1.4, 38°.59N×141°.79E, h60km±12km, mb4.5/33, mb1 4.6/42, mb1mx4.6/48, mbtmp4.8/42, MS4.0/28, Ms1 4.0/28, ms1mx3.9/38, Error ellipse: s-maj=11.7km s-min=8.4km az=110.0*
*NEIC **28** 01:44:49.0±0.4, 38°.61N×141°.75E, h62km±3km, mb4.8/89, Error ellipse: s-maj=3.5km s-min=2.6km az=138.0*
NEIC Recorded [3 JMA] in Iwate and Miyagi.

ISC 28 01:44:47.3±0.5, 38°.57N±0°.04×141°.92E±0°.03, h50km±4km, h50km:pP-P, n540, σ1$40/598, mb4.9/200, MS4.2/42, 51C-19D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time			Res
				Op		ISC	h	m	s	ISC
OFUJ	**Ofunato**	**0.55**	**339**	P		**Pn**	**01**	**44**	**58.6**	**-0.6**
OFUJ				S		**Sn**	**01**	**45**	**06.7**	**-0.9**
JMK	**Ichinoseki**	**0.67**	**305**	P		**Pn**	**01**	**45**	**00.1**	**-0.5**
JMK				S		**Sn**	**01**	**45**	**09.5**	**-0.8**
JOU	**Okura**	**1.01**	**259**	P		**Pn**	**01**	**45**	**04.4**	**-0.8**
JOU				S		**Sn**	**01**	**45**	**17.5**	**-0.8**
JOM	**Ohasama**	**1.03**	**332**	P		**Pn**	**01**	**45**	**05.1**	**-0.3**
JOM				S		**Sn**	**01**	**45**	**18.7**	**-0.1**
JMM	**Marumori**	**1.13**	**232**	P		**Pn**	**01**	**45**	**05.7**	**-1.1**
JMM				S		**Sn**	**01**	**45**	**19.7**	**-1.6**
ERM	**Erimo**	**3.57**	**15**	*c* *i*P		**Pn**	**01**	**45**	**40.3**	**+0.2**
ERM	**Erimo**	**3.57**	**15**	*e*Pn		**Pn**	**01**	**45**	**40.0**	**-0.1**
ERM				*e*S		**Sn**	**01**	**46**	**21.8**	**+0.7**
MAJO	**Matsushiro**	**3.58**	**237**	*d* *i*P		**Pn**	**01**	**45**	**41.3**	**+1.0**
MAJO	**Matsushiro**	**3.58**	**237**	*e*Pn		**Pn**	**01**	**45**	**41.4**	**+1.0**
MAT	**Matsushiro**	**3.58**	**237**	P		**Pn**	**01**	**45**	**41.4**	**+1.1**
MAT				S		**Sn**	**01**	**46**	**22.1**	**+0.8**
MJAR	**Matsushiro Arr**	**3.58**	**237**	P		**Pn**	**01**	**45**	**41.4**	**+1.0**
	66nm,0.3s,baz=40,slow=11,SNR=149									
MJAR				LR		LR	01	47	16.9	
	comp=Z,2µm,21.0s,baz=50,slow=43									
MJB9	**Matsu-Tunnel**	**3.58**	**237**	*e*Pn		**Pn**	**01**	**45**	**41.4**	**+1.1**
ASAJ	**Asahikawa**	**5.56**	**5**	P		**Pn**	**01**	**46**	**07.5**	**0.0**
	10nm,0.3s,baz=235,slow=7.5,SNR=22									
ASAJ				S		**Sn**	**01**	**47**	**11.1**	**+1.0**
	11nm,0.3s,baz=99,slow=19,SNR=3.6									
JHJ	**Hachijo jima 2**	**5.71**	**198**	P		**Pn**	**01**	**46**	**09.1**	**-0.5**
	81nm,0.3s,baz=11,slow=3.8,SNR=8.8									
JHJ				S		**Sn**	**01**	**47**	**10.3**	**-3.4**
	121nm,0.3s,baz=262,slow=22,SNR=5.9									
JHJ				LR		LR	01	48	37.9	
	comp=Z,475nm,19.6s,baz=81,slow=40									
YUK	**Yuzh-Kuril'sk**	**6.21**	**27**	*i* P		**Pn**	**01**	**46**	**15.1**	**-1.3**
YUK				*i* S		**Sn**	**01**	**47**	**21.0**	**-5.0**
YUK				pmax		pmax				
	comp=E,108nm,0.4s									
YUK				pmax		pmax				
	comp=Z,281nm,0.4s									
YUK				pmax		pmax				
	comp=N,50nm,0.2s									
SHO	**Shikotan**	**6.46**	**33**	*i* P		**Pn**	**01**	**46**	**16.7**	**-3.1**
SHO				*i* S		**Sn**	**01**	**47**	**25.1**	**-7.0**
SHO				pmax		pmax				
	comp=E,61nm,0.5s									
KUR	**Kuril'sk**	**8.00**	**32**	*e*P		**Pn**	**01**	**46**	**40.3**	**-0.5**
KUR				*e*S		**Sn**	**01**	**48**	**04.4**	**-5.4**
KUR				pmax		pmax				
	comp=Z,47nm,0.6s									
KUR				smax		smax				
	comp=N,86nm,0.6s									
KUR				smax		smax				
	comp=E,116nm,0.6s									
YSS	**Yuzh-Sakhalins**	**8.40**	**4**	⇑*e*P		**Pn**	**01**	**46**	**46.4**	**0.0**
YSS				*e*S		**Sn**	**01**	**48**	**19.2**	**-0.6**
YSS				pmax		pmax				
	comp=Z,70nm,1.0s									
YSS				MLR		MLR				
	comp=Z,500nm,13.0s									
YSS	**Yuzh-Sakhalins**	**8.40**	**4**	*e*Pn		**Pn**	**01**	**46**	**46.3**	**0.0**
MSHR	**Mys Shultsa**	**9.12**	**299**	*c* *i*P		**Pn**	**01**	**46**	**55.7**	**-0.5**
USRK	**Ussuriysk Ar.**	**9.34**	**310**	P		**Pn**	**01**	**46**	**59.8**	**+0.6**
	comp=Z,2.2nm,0.3s,baz=123,slow=14,SNR=58									
USRK				LR		LR	01	50	26.5	
	comp=Z,965nm,20.3s,baz=118,slow=36									
JNU	**Nakatsue**	**10.48**	**242**	P		**Pn**	**01**	**47**	**16.4**	**+1.4**
	comp=Z,4.5nm,0.3s,baz=69,slow=3.8,SNR=37									
JNU				LR		LR	01	51	37.5	
	comp=Z,1µm,20.9s,baz=109,slow=39									
MDJ	**Mudanjiang**	**11.03**	**307**	P		**Pn**	**01**	**47**	**24.5**	**+2.2**
MDJ				S		**Sn**	**01**	**49**	**22.0**	**-2.1**
MDJ				PcP		**PcP**	**01**	**53**	**18.0**	**+1.0**
MDJ				ScP		**ScP**	**01**	**56**	**49.5**	**+4.2**
MDJ				PcS		**PcS**	**01**	**56**	**53.3**	**+2.6**
MDJ	**Mudanjiang**	**11.03**	**307**	ScS		ScS	02	00	24.0	+3.5
MDJ				pmax		pmax				
	comp=Z,68nm,1.1s									
MDJ				pmax		pmax				
	comp=Z,350nm,5.0s									
MDJ				LR		LR				
	comp=N,280nm,18.3s									
MDJ				LR		LR				
	comp=E,530nm,17.5s									
MDJ				LR		LR				
	comp=Z,860nm,18.3s									
MDJ	**Mudanjiang**	**11.03**	**307**	*e*Pn		**Pn**	**01**	**47**	**23.3**	**+1.0**
	comp=Z,5.1nm,0.8s									
KSRS	**Korea Array**	**11.10**	**269**	P		**Pn**	**01**	**47**	**24.6**	**+1.3**
	comp=Z,2.6nm,0.3s,baz=79,slow=13,SNR=40									
KSRS				LR		LR	01	51	19.9	
	comp=Z,796nm,20.9s,baz=86,slow=36									
KSAR	**Wonju Array Be**	**11.13**	**269**	P		**Pn**	**01**	**47**	**24.6**	**+0.8**
KSAR	**Wonju Array Be**	**11.13**	**269**	P		**Pn**	**01**	**47**	**24.6**	**+0.8**
CBIJ	**Chichi jima**	**11.44**	**179**	P		**Pn**	**01**	**47**	**29.9**	**+1.8**
JCJ	**Chichijima**	**11.45**	**179**	P		**Pn**	**01**	**47**	**29.9**	**+1.8**
	comp=Z,14nm,0.3s,baz=334,slow=18,SNR=3.4									
TYV	**Tymovskoe**	**12.30**	**2**	*e*P		**Pn**	**01**	**47**	**39.0**	**-0.7**
KLR	**Kul'dur**	**12.92**	**329**	P		**Pn**	**01**	**47**	**49.0**	**+0.9**
	comp=Z,0.5nm,0.3s,baz=123,slow=16,SNR=7.4									
KLR				LR		LR	01	52	51.7	
	comp=Z,749nm,18.2s,baz=141,slow=38									
CN2	**Changchun**	**13.46**	**298**	*e*P		**Pn**	**01**	**47**	**57.8**	**+2.3**
CN2				*e*S		**S**	**01**	**50**	**41.3**	**-3.5**
CN2				pmax		pmax				
	comp=Z,10.0nm,0.8s									
CN2				pmax		pmax				
	comp=Z,300nm,4.0s									
CN2				LR		LR				
	comp=N,700nm,16.0s									
CN2				LR		LR				
	comp=E,500nm,16.0s									
CN2				LR		LR				
	comp=Z,400nm,18.0s									
SNY	**Shenyang**	**14.39**	**289**	⇑P		P	01	48	25.0	+11
SNY				S		**S**	**01**	**51**	**07.5**	**+3.6**
SNY				pmax		pmax				
	comp=Z,220nm,11.5s									
SNY				LR		LR				
	comp=N,310nm,13.2s									
SNY				LR		LR				
	comp=E,670nm,19.1s									
SNY				LR		LR				
	comp=Z,1µm,19.1s									
NKL	**Nikolayevsk**	**14.61**	**357**	*e*P		Pn	01	48	03.7	-7.1
NKL				pmax		pmax				
	comp=Z,30nm,1.3s									
DL2	**Dalian**	**15.84**	**278**	P		**Pn**	**01**	**48**	**27.5**	**+0.6**
DL2				S		**Sn**	**01**	**51**	**22.3**	**+0.9**
DL2				pmax		pmax				
	comp=Z,95nm,1.2s									
DL2				pmax		pmax				
	comp=Z,190nm,5.1s									
DL2				LR		LR				
	comp=E,480nm,24.0s									
DL2				LR		LR				
	comp=Z,660nm,25.5s									
JOW	**Kunigami**	**16.38**	**228**	P		**Pn**	**01**	**48**	**33.6**	**-0.2**
	comp=Z,2.0nm,0.3s,baz=349,slow=8.8,SNR=7.0									
PETK	**Petropavlovsk-**	**18.16**	**32**	P		**Pn**	**01**	**48**	**58.0**	**+2.3**
	comp=Z,0.1nm,0.3s,baz=207,slow=9.2,SNR=3.2									
PETK				LR		LR	01	56	53.7	
	comp=Z,133nm,19.2s,baz=217,slow=40									
PETK	**Petropavlovsk-**	**18.16**	**32**	P		**Pn**	**01**	**48**	**58.0**	**+2.3**
PETK				MLR		MLR				
	comp=Z,133nm,19.2s									
SSE	**Sheshan**	**18.56**	**253**	P		**P**	**01**	**48**	**58.3**	**-1.7**
SSE				pmax		pmax				
	comp=Z,37nm,0.7s									
SSE

YAK pmax pmax
comp=N,14nm,0.8s
YAK smax smax
comp=N,198nm,2.7s
YAK smax smax
comp=E,119nm,3.0s
YAK MLR MLR
comp=Z,299nm,17.0s
YAK MLR MLR
comp=N,166nm,15.0s
YAK MLR MLR
comp=E,80nm,17.0s
YAK Yakutsk 24.67 346 *e*P **P 01 50 02.4 -0.7**
comp=E,106nm,0.9s
SEY Seymchan 25.21 11 P **P 01 50 09.2 +1.2**
comp=E,36nm,0.9s,baz=202,slow=6.4,SNR=67
SEY Seymchan 25.21 11⇑ *e*P **P 01 50 09.1 +1.1**
BOD Bodaibo 26.47 326 *e*P **P 01 50 18.2 -1.2**
BOD pmax pmax
comp=Z,30nm,0.8s
ULN Ulaanbaatar 26.86 302 *de*P **P 01 50 23.1 -0.2**
ULN pmax pmax
comp=Z,35nm,1.2s
ULN Ulaanbaatar 26.86 302 *e*P **P 01 50 22.9 -0.4**
comp=Z,25nm,1.0s
XAN Xi'an 26.89 271 P **P 01 50 22.5 -1.1**
XAN pP pP 01 50 32.5 -3.9
XAN sP sP 01 50 37.5 -4.8
XAN PP **PnPn 01 51 10.8 +3.4**
XAN S **S 01 54 51.5 -5.4**
XAN pmax pmax
comp=Z,27nm,0.6s
XAN pmax pmax
comp=Z,96nm,5.9s
XAN LR LR
comp=N,230nm,20.2s
XAN LR LR
comp=Z,240nm,25.3s
SONA1 Songino Array 27.29 301 *e*P **P 01 50 25.6 -1.6**
SONM Songino Array 27.30 301 P **P 01 50 26.0 -1.2**
comp=Z,9.7nm,0.7s,baz=112,slow=8.7,SNR=26
SONM PcP **PcP 01 53 45.4 -0.2**
comp=Z,3.4nm,0.7s,baz=69,slow=1.7,SNR=5.0
ENH Enshi 27.89 263 *e*P **P 01 50 31.3 -1.3**
comp=Z,198nm,0.7s
H11N2 WAKE ISLAND Hy 28.63 124 T T 02 20 56.5
baz=316,slow=75,SNR=2767
H11N1 WAKE ISLAND Hy 28.64 124 T T 02 20 57.1
baz=316,slow=75,SNR=3719
H11N3 WAKE ISLAND Hy 28.65 124 T T 02 20 57.7
baz=316,slow=75,SNR=3796
H11S1 WAKE ISLAND Hy 29.39 126 T T 02 21 53.9
baz=318,slow=76,SNR=1164
H11S3 WAKE ISLAND Hy 29.40 126 T T 02 21 54.0
baz=318,slow=76,SNR=2002
H11S2 WAKE ISLAND Hy 29.41 126 T T 02 21 55.6
baz=318,slow=76,SNR=1509
TLY Talaya 29.66 309 P **P 01 50 48.1 +0.1**
comp=Z,22nm,0.8s,baz=110,slow=3.9,SNR=27
TLY PcP **PcP 01 53 52.2 +0.9**
comp=Z,1.7nm,0.3s,baz=152,slow=3.9,SNR=4.0
TLY LR LR 02 03 21.6
comp=Z,413nm,18.7s,baz=106,slow=38
TLY Talaya 29.66 309 *e*P **P 01 50 47.8 -0.2**
TLY *e*S **S 01 55 46.4 +6.4**
TLY pmax pmax
comp=Z,34nm,1.0s
TLY MLR MLR
comp=Z,392nm,18.0s
TLY Talaya 29.66 309 *e*P **P 01 50 47.3 -0.7**
comp=Z,27nm,0.9s
TLY PcP **PcP 01 53 52.2 +0.9**
ZAK Zakamensk 29.66 306 *e*P **P 01 50 47.2 -1.0**
ZAK pmax pmax
comp=Z,23nm,0.9s
ZAK pmax pmax
comp=Z,4.0nm,1.1s
LZH Lanzhou 30.24 277 *e*P **P 01 50 53.3 -0.2**
LZH pP pP 01 51 06.3 -0.1
LZH sP sP 01 51 10.3 -2.0
LZH PP **PnPn 01 51 51.0 -1.7**
LZH *e*S **S 01 55 48.0 -1.7**
LZH sS sS 01 56 06.3 -5.2
LZH SS **SnSn 01 57 25.0 -2.1**
LZH pmax pmax
comp=Z,65nm,1.0s
LZH pmax pmax
comp=Z,120nm,4.0s
LZH LR LR
comp=N,210nm,11.5s
LZH LR LR
comp=E,350nm,12.8s
LZH LR LR
comp=Z,480nm,14.0s
MOY Mondy 31.28 308 *e*P **P 01 51 02.0 -0.5**
MOY pmax pmax
comp=Z,23nm,1.1s
GYA Guiyang 31.90 258⇑ *i*P **P 01 51 06.5 -1.7**
GYA pP pP 01 51 20.0 -1.1
GYA PP **PnPn 01 52 15.8 +1.5**
GYA PcP **PcP 01 54 00.3 +2.5**
GYA S **S 01 56 15.5 -0.3**
GYA sS sS 01 56 34.3 -3.3
GYA ScP **ScP 01 57 40.5 +3.6**
GYA SS **SnSn 01 58 07.5 -0.1**
GYA Guiyang 31.90 258 ScS ScS 02 01 36.0 +0.3
GYA pmax pmax
comp=Z,80nm,0.8s
GYA pmax pmax
comp=Z,130nm,5.2s
GYA LR LR
comp=N,1μm,16.0s
GYA LR LR
comp=E,1μm,15.9s
GYA LR LR
comp=Z,1μm,16.2s
CD2 Chengdu 32.10 268 P **P 01 51 08.3 -1.5**
CD2 sP pP 01 51 23.0 +0.3
CD2 PP **PP 01 52 20.8 -2.1**
CD2 S **S 01 56 18.0 -0.7**
CD2 sS sS 01 56 35.3 -5.2
CD2 SS **SS 01 58 36.3 -1.5**
CD2 pmax pmax
comp=Z,100nm,0.8s
CD2 pmax pmax
comp=Z,130nm,7.8s
CD2 LR LR
comp=E,340nm,19.2s
CD2 LR LR
comp=Z,350nm,21.6s
BILL Bilibino 32.44 17⇑ *e*P **P 01 51 12.0 -0.3**
BILL *e* 01 52 14.5
BILL pmax pmax
comp=Z,11nm,1.0s
BILL MLR MLR
comp=Z,130nm,19.0s
GTA Gaotai 32.52 285 *e*P **P 01 51 12.5 -1.1**
GTA pP pP 01 51 22.8 -3.7
GTA sP sP 01 51 27.3 -5.1
GTA PcP **PcP 01 53 59.3 0.0**
GTA S **S 01 56 23.8 -1.5**
GTA sS sS 01 56 40.5 -6.6
GTA ScP **ScP 01 57 39.5 +0.6**
GTA PcS **PcS 01 57 44.5 0.0**
GTA SS **SnSn 01 58 20.3 -2.2**
GTA pmax pmax
comp=Z,9.0nm,1.3s
GTA pmax pmax
comp=Z,95nm,5.0s
GTA LR LR
comp=N,250nm,19.0s
GTA LR LR
comp=E,500nm,16.6s
GTA LR LR
comp=Z,570nm,17.6s
TIXI Tiksi 33.82 353 P **P 01 51 23.2 -1.1**
comp=Z,7.6nm,0.8s,baz=145,slow=6.3,SNR=14
TIXI Tiksi 33.82 353 *ce*P **P 01 51 23.1 -1.1**
TIXI pmax pmax
comp=Z,7.0nm,0.7s
TIXI Tiksi 33.82 353 *e*P **P 01 51 23.0 -1.2**
comp=Z,7.7nm,0.8s
QIZ Qiongzhong 33.94 244 P **P 01 51 28.3 +2.4**
QIZ S **S 01 56 51.3 +4.0**
QIZ pmax pmax
comp=Z,6.0nm,0.9s
QIZ LR LR
comp=N,91nm,20.6s
QIZ LR LR
comp=E,45nm,24.1s
KMI Kunming 35.61 260 P **P 01 51 40.3 -0.2**
KMI pP pP 01 51 51.5 -2.1
KMI sP sP 01 51 56.5 -3.0
KMI PP **PnPn 01 52 56.5 -4.5**
KMI S **S 01 57 11.0 -2.4**
KMI sS sS 01 57 29.0 -6.4
KMI SS **SnSn 01 59 28.0 -10**
KMI pmax pmax
comp=Z,29nm,0.7s
KMI pmax pmax
comp=Z,180nm,5.5s
KMI LR LR
comp=N,400nm,7.0s
KMI LR LR
comp=E,640nm,7.7s
KMI LR LR
comp=Z,310nm,16.4s
KRAR Krasnoyarsk 36.65 315 *e*P **P 01 51 47.1 -1.7**
KRAR pmax pmax
comp=Z,51nm,0.5s
PANO Nakornpanom 38.92 247 P P 01 52 14.9 +6.6
NONG Nongkai 39.40 250 P **P 01 52 12.4 0.0**
comp=Z,39nm,0.8s,comp=Z,8μm
SKNT Sakolnakorn 39.48 248 P **P 01 52 12.7 -0.4**
comp=Z,16nm,1.4s,comp=Z,9μm
SWI Sorong 40.45 197 P **P 01 52 21.1 +0.1**
comp=Z,20nm,0.9s,comp=Z,1μm
WMQ Urumqi 40.53 295 P **P 01 52 21.8 +0.3**
WMQ pP pP 01 52 32.3 -2.5
WMQ sP sP 01 52 36.3 -4.3
WMQ PP **PnPn 01 54 01.0 +1.4**
WMQ pmax pmax
comp=Z,52nm,0.6s
WMQ pmax pmax
comp=Z,93nm,3.6s
WMQ LR LR
comp=N,90nm,26.6s
WMQ LR LR
comp=E,44nm,20.6s
WMQ LR LR
comp=Z,120nm,29.6s
KHON Khomkaen 40.74 248 P P 01 52 35.8 +12
JAY Jayapura 40.90 182 LR LR 02 09 33.1
comp=Z,8.5nm,19.9s,baz=169,slow=36
LOEI Loei 41.14 251 P **P 01 52 23.4 -3.4**
comp=Z,16nm,0.7s,comp=Z,2μm
ZAA0 Zalesovo Array 41.19 311 *e*P **P 01 52 26.1 -0.7**
ZALV Zalesovo Beam 41.19 311 P **P 01 52 26.1 -0.7**
comp=Z,25nm,0.5s,baz=87,slow=7.2,SNR=129
ZALV PcP **PcP 01 54 24.6 -0.4**
comp=Z,7.9nm,0.5s,baz=104,slow=2.0,SNR=7.6
ZALV ScP **ScP 01 58 09.7 -0.9**
comp=Z,0.6nm,0.3s,baz=108,slow=3.2,SNR=2.2
ZALV LR LR 02 10 16.7
comp=Z,252nm,19.3s,baz=71,slow=37
UTTA Uttaradit 41.52 252 P **P 01 52 30.4 +0.6**
comp=Z,8.1nm,0.8s
CHAI Chaiyaphum 41.63 248 P **P 01 52 30.1 -0.7**
comp=Z,11nm,0.8s
LAMP Lampang 41.73 254 P P 01 52 36.3 +4.7
NRIK Noril'sk 42.05 334 P **P 01 52 32.9 -0.7**
comp=Z,7.9nm,0.5s,baz=110,slow=8.3,SNR=12
NRIK LR LR 02 10 57.4
comp=Z,425nm,19.2s,baz=108,slow=37
CMMT Chiang Mai 42.07 254 P **P 01 52 34.0 -0.4**
comp=Z,51nm,0.6s,comp=Z,447nm
NVS Novosibirsk 42.09 312⇑ *i*P **P 01 52 33.5 -0.6**
NVS *i* 01 54 27.4
NVS pmax pmax
comp=Z,30nm,0.7s
NVS pmax pmax
comp=N,2.0nm,0.3s
NVS pmax pmax
comp=E,21nm,0.9s
MRSI Marisa 42.11 211 P **P 01 52 35.6 +0.9**
CMAR Chiang Mai Arr 42.29 254 P **P 01 52 35.4 -0.7**
comp=E,2.2nm,0.5s,baz=47,slow=7.5,SNR=12
CMAR PcP **PcP 01 54 29.2 -0.1**
comp=E,1.9nm,0.5s,baz=4.8,slow=1.8,SNR=4.9
CMAR LR LR 02 11 02.9
comp=E,88nm,19.1s,baz=156,slow=37
CM01 Chiang Mai Arr 42.30 254 *e*P **P 01 52 35.7 -0.6**
LSA Lhasa 42.49 274 P **P 01 52 38.5 +0.2**
LSA pmax pmax
comp=Z,18nm,0.9s
LSA Lhasa 42.49 274 *e*P **P 01 52 37.6 -0.7**
LSA pmax pmax
comp=Z,22nm,0.6s
LSA Lhasa 42.49 274 *e*P **P 01 52 37.6 -0.7**
comp=Z,22nm,0.6s
SANI Sanana 43.01 204 P **P 01 52 42.9 +0.9**
comp=Z,41nm,0.9s,comp=Z,388nm
NAYO Nakonayok 43.16 247 P **P 01 52 43.3 +0.1**
comp=Z,9.6nm,1.1s
CHBT CHBT 43.48 245 P **P 01 52 45.7 -0.1**
comp=Z,26nm,0.8s
MK01 Makanchi Array 43.66 301 *e*P **P 01 52 46.5 -0.5**
MK31 Makanchi Array 43.66 301 *i* P **P 01 52 46.0 -1.0**
MK31 pmax pmax
comp=Z,37nm,1.0s
MK31 Makanchi Array 43.66 301 *e*P **P 01 52 46.6 -0.3**
MKAR Makanchi Array 43.66 301 P **P 01 52 46.6 -0.4**
comp=Z,16nm,0.7s,baz=85,slow=10.0,SNR=83
MKAR PcP **PcP 01 54 32.2 -1.3**
comp=Z,2.5nm,0.7s,baz=72,slow=4.1,SNR=2.4
MKAR LR LR 02 11 32.4
comp=Z,120nm,20.9s,baz=67,slow=37
NLAI Namlea 43.80 202 P **P 01 52 49.7 +1.4**
comp=Z,16nm,0.7s,comp=Z,1μm
MAKZ Makanchi 43.87 301 P **P 01 52 47.1 -1.6**
MAKZ pmax pmax
comp=Z,54nm,1.3s
MAKZ Makanchi 43.87 301 *e*P **P 01 52 48.2 -0.5**
comp=Z,58nm,1.3s
SVW2 Sparrevohn 44.06 38 *e*P **P 01 52 51.4 +1.4**
comp=Z,10nm,1.0s
SRDT SRDT 44.73 249 P **P 01 52 55.6 -0.3**
comp=Z,62nm,0.9s
KHLT Khaolaem Dam 44.84 250 P **P 01 52 56.6 -0.1**
comp=Z,11nm,1.1s
PHET Kaeng Krachan 45.31 247 P **P 01 53 00.6 +0.2**
comp=Z,20nm,0.8s,comp=Z,173nm
KURK Kurchatov 45.32 307 P **P 01 53 00.1 0.0**
KURK 01 54 38.5
KURK pmax pmax
comp=Z,132nm,0.8s
KURK pmax pmax
comp=Z,6.0nm,0.7s
KURK Kurchatov 45.32 307 *e*P **P 01 52 59.5 -0.5**
comp=Z,149nm,0.9s
KURK PcP **PcP 01 54 38.5 -0.5**
KURBB Kurchatov Arra 45.39 307 P **P 01 53 00.1 -0.6**
comp=Z,99nm,0.6s,baz=82,slow=8.2,SNR=680
KURBB PcP **PcP 01 54 38.5 -0.8**
comp=Z,5.7nm,0.7s,baz=81,slow=4.2,SNR=4.9
KDAK Kodiak Island 45.70 43 *i* P **P 01 53 03.5 +0.5**
SPU Mount Spurr 45.77 38 *e*P **P 01 53 04.4 +0.8**
KTH Kantishna Hill 46.26 35 *e*P **P 01 53 08.5 +1.0**
comp=Z,18nm,1.2s
RC01 Rabbit Creek A 46.90 38 *e*P **P 01 53 12.9 +0.5**
comp=Z,6.3nm,0.9s
KSM Kuching 46.91 226 *e*P **P 01 53 13.7 +0.8**
comp=Z,12nm,0.8s
MCK McKinley 47.14 35 *e*P **P 01 53 14.5 +0.2**
MCK pmax pmax
comp=Z,9.0nm,1.0s
MCK McKinley 47.14 35 *e*P **P 01 53 14.5 +0.2**
comp=Z,8.7nm,1.0s
PMR Palmer 47.16 37 *e*P **P 01 53 14.7 +0.3**
PMR pmax pmax
comp=Z,7.0nm,0.7s
PMR Palmer 47.16 37 *e*P **P 01 53 14.7 +0.3**
comp=Z,6.9nm,0.7s
GUN Gumba 47.42 275 *e*P **P 01 53 17.0 -0.3**
comp=Z,197nm,0.9s
SML Sawmill 47.52 37 *e*P **P 01 53 17.5 +0.2**
SML pmax pmax
comp=Z,2.0nm,1.0s
SML Sawmill 47.52 37 *e*P **P 01 53 17.5 +0.2**
comp=Z,2.4nm,1.0s
KKN Kakani 47.94 275 *e*P **P 01 53 20.9 -0.3**
comp=Z,155nm,0.8s
ILAR Eielson Array 47.99 33 P **P 01 53 21.1 +0.4**
comp=Z,3.6nm,0.7s,baz=270,slow=6.6,SNR=42
ILB Eielson Array 47.99 33 *e*P **P 01 53 21.2 +0.4**
IL1 Eielson Array 47.99 33 *e*P **P 01 53 20.6 -0.2**
KAPI Kappang 47.99 210 P **P 01 53 21.2 -0.1**
comp=Z,26nm,1.1s,baz=3.7,slow=2.0,SNR=7.4
KAPI Kappang 47.99 210 *e*P **P 01 53 21.9 +0.6**
DMN Daman 48.16 275 *e*P **P 01 53 22.6 -0.4**
comp=Z,36nm,0.6s
GKN Gorkha 48.35 275 *e*P **P 01 53 23.7 -0.6**
comp=Z,179nm,1.1s
SKLT Songkhla 48.60 241 P **P 01 53 26.6 +0.5**
comp=Z,40nm,0.9s
BBKI Banjar Baru 48.74 217 P **P 01 53 27.6 +0.4**
comp=Z,71nm,0.9s
TRTT Trang 48.76 242 P **P 01 53 27.7 +0.3**
comp=Z,32nm,0.9s,comp=Z,591nm
KOLN Koldanda 49.27 276 *e*P **P 01 53 31.1 -0.3**
comp=Z,67nm,0.9s
TKM2 Tokmak 2 49.27 297 *e*P **P 01 53 31.3 +0.1**
TKM2 pmax pmax
comp=Z,40nm,0.9s
TKM2 Tokmak 2 49.27 297 *e*P **P 01 53 31.3 +0.1**
comp=Z,40nm,0.9s
MENT Mentasta 49.55 35 *e*P **P 01 53 34.2 +1.3**
comp=Z,9.0nm,0.9s
CHKZ Chkalovo 49.57 312 *i* P **P 01 53 31.2 -1.8**
CHKZ pmax pmax
comp=Z,24nm,0.7s
PYUN Piuthan 49.59 276 *e*P **P 01 53 33.7 -0.1**
comp=Z,222nm,0.9s
BVA0 Borovoye Array 49.85 311 *i* P **P 01 53 34.1 -1.1**
BVA0 pmax pmax
comp=Z,18nm,0.8s
BRVK Borovoye 49.90 312 *ce*P **P 01 53 35.1 -0.5**
BRVK pmax pmax
comp=Z,40nm,1.2s
BRVK Borovoye 49.90 312 *e*P **P 01 53 34.8 -0.8**
comp=Z,27nm,0.9s
BRVK *e*PcP **PcP 01 54 55.0 -0.3**
KULM Kulim 49.94 239 *e*P **P 01 53 36.2 -0.1**
comp=Z,29nm,0.8s
AAK Ala-Archa 50.13 297 *e*P **P 01 53 36.1 -1.6**
AAK pmax pmax
comp=Z,19nm,1.0s
KSH Kashi 50.16 293 P **P 01 53 41.5 +3.6**
KSH *es*P pP 01 53 55.5 +4.0
KSH *e*ScP **ScP 01 58 52.5 +4.2**
KSH PcS **PcS 01 58 56.8 +2.9**
KSH S **S 02 00 49.8 +3.6**
KSH ScS **ScS 02 03 26.8 +1.9**
KSH pmax pmax
comp=Z,16nm,0.9s
KSH pmax pmax
comp=Z,90nm,2.8s
KSH LR LR
comp=N,74nm,4.5s
KSH LR LR
comp=E,98nm,5.0s
KSH LR LR
comp=Z,150nm,14.1s
IPM Ipoh 50.29 238 *e*P **P 01 53 38.2 -0.8**
comp=Z,52nm,0.8s
EGAK Eagle 50.43 33 *e*P **P 01 53 39.4 0.0**
comp=Z,15nm,1.5s
EKS2 Erkin-Say 50.62 298 *e*P **P 01 53 40.8 -0.6**
EKS2 pmax pmax
comp=Z,11nm,0.9s
EKS2 Erkin-Say 50.62 298 *e*P **P 01 53 40.8 -0.6**
comp=Z,11nm,0.9s
ZRNK Zerenda 50.68 312 *e*P **P 01 53 41.1 -0.4**
ZRNK pmax pmax
comp=Z,34nm,0.8s
ZRNK Zerenda 50.68 312 *e*P **P 01 53 41.1 -0.4**
comp=Z,34nm,0.8s
MNAS Manas 51.56 298 P **P 01 53 47.6 -0.9**
MNAS pmax pmax
comp=Z,26nm,0.9s
KK31 Karatay Array 52.71 299 *i* P **P 01 53 56.2 -0.7**
KK31 pmax pmax
comp=Z,18nm,0.8s
INK Inuvik 52.84 28 P **P 01 53 58.1 +0.8**
comp=Z,4.9nm,0.7s,baz=300,slow=6.7,SNR=30
INK Inuvik 52.84 28 *e*P **P 01 53 58.0 +0.6**
comp=Z,17nm,1.5s
BKNI Bangkinang 53.40 235 P **P 01 54 03.0 +0.8**
SDSI Sungai Dareh 54.12 233 P **P 01 54 07.8 +0.4**
PWJI Pagerwojo 54.17 218 P **P 01 54 05.6 -2.1**
comp=Z,95nm,0.7s
SVE Sverdlovsk 54.27 318 *d i*P **P 01 54 08.1 +0.1**
SVE pmax pmax
comp=Z,80nm,1.0s
GSI Gunungsitoli 54.94 239 P **P 01 54 12.8 -0.6**
comp=Z,98nm,1.1s
GSI Gunungsitoli 54.94 239 *e*P **P 01 54 12.8 -0.6**
comp=Z,96nm,1.1s
LHSI Lahat 55.12 229 P **P 01 54 15.1 +0.5**
MDSI Maura Dua 55.27 228 P **P 01 54 14.3 -1.4**
comp=Z,40nm,1.1s
LEM Lembang 55.27 223 P P 01 54 21.7 +5.8
SOKR Solikamsk 55.36 322 *c i*P **P 01 54 13.4 -2.4**
SOKR pmax pmax
comp=Z,27nm,1.4s
ARU Arti 55.48 318 *e*P **P 01 54 16.2 -0.6**
ARU pmax pmax
comp=Z,53nm,1.0s
ARU Arti 55.48 318 *e*P **P 01 54 16.2 -0.6**
comp=Z,52nm,1.0s
KBL Kabul 57.25 290 *e*P **P 01 54 29.2 -0.8**
KBL pmax pmax
comp=Z,29nm,1.0s
KBL Kabul 57.25 290 *e*P **P 01 54 29.2 -0.8**
comp=Z,28nm,1.0s
AB31 Akbulak array 57.27 310 *i* P **P 01 54 28.7 -0.9**
AB31 pmax pmax
comp=Z,22nm,0.7s
AKTO Aktyubinsk 57.95 311 LR LR 02 20 52.6
comp=Z,140nm,18.3s,slow=37
AKTO Aktyubinsk 57.95 311 P **P 01 54 32.8 -1.6**
AKTO pmax pmax
comp=Z,29nm,1.0s
FITZ Fitzroy Crossi 58.41 198 *e*P **P 01 54 37.6 -0.2**
comp=Z,10nm,1.0s
WRAB Tennant Creek 58.62 188 *e*P **P 01 54 38.3 -1.0**
WRAB pmax pmax
comp=Z,49nm,0.9s
WRAB Tennant Creek 58.62 188 *e*P **P 01 54 38.4 -0.9**
comp=Z,26nm,0.9s
WB2 Warramunga Arr 58.63 188 *e*P **P 01 54 38.8 -0.6**
comp=Z,22nm,1.0s
WRA Warramunga Ar 58.63 188 P **P 01 54 38.5 -0.9**
comp=Z,17nm,0.8s,baz=7.1,slow=7.3,SNR=72
WRA Warramunga Arr 58.63 188 P **P 01 54 38.5 -0.9**
WRA pmax pmax
comp=Z,18nm,0.9s
HYB Hyderabad 58.65 268 *i* P **P 01 54 39.0 -0.8**
KBS Kingsbay 59.22 350 *e*P **P 01 54 42.8 0.0**
KBS pmax pmax
comp=Z,15nm,0.8s
KBS Kingsbay 59.22 350 *e*P **P 01 54 42.8 0.0**
comp=Z,15nm,0.8s
RES Resolute Bay 61.02 15 P **P 01 54 54.7 -0.4**
comp=Z,6.8nm,0.8s,baz=308,slow=6.0,SNR=27
RES LR LR 02 21 41.6
comp=Z,72nm,18.1s,baz=340,slow=36
RES Resolute Bay 61.02 15 *e*P **P 01 54 54.6 -0.5**
comp=Z,10nm,1.0s
TMCR Tamitsa 61.59 331 *e*P **P 01 54 58.4 -0.7**
TMCR pmax pmax
comp=Z,56nm,1.2s
YKW3 Yellowknife Ar 62.24 31 *e*P **P 01 55 03.7 +0.2**
comp=Z,13nm,1.6s
YKA Yellowknife Ar 62.28 31 P **P 01 55 03.8 0.0**
comp=Z,2.9nm,0.7s,baz=301,slow=6.7,SNR=63
YKB5 Yellowknife Ar 62.28 31 *e*P **P 01 55 02.6 -1.2**
AS01 Alice Springs 62.36 188 *e*P **P 01 55 03.4 -1.3**
AS31 Alice Springs 62.36 188 *e*P **P 01 55 04.5 -0.3**
comp=Z,2.9nm,0.6s
ASAR Alice Springs 62.36 188 P **P 01 55 04.2 -0.5**
comp=Z,5.7nm,0.8s,baz=9.4,slow=6.5,SNR=46
KLMR Klimovskoe 62.68 327 *e*P **P 01 55 04.3 -2.1**
KLMR *e* 01 57 21.7
KLMR pmax pmax
comp=Z,22nm,1.5s
ARCES ARCESS Array B 62.70 339 P **P 01 55 06.3 -0.3**
comp=Z,6.5nm,0.8s,baz=55,slow=7.8,SNR=17

ARCES LR LR 02 27 20.1
comp=Z,79nm,18.3s,baz=50,slow=41
GEYT Alibeck 63.45 298 P **P 01 55 11.5 -0.5**
comp=Z,13nm,0.8s,baz=31,slow=3.8,SNR=30
GEYT LR LR 02 24 50.2
comp=Z,130nm,18.5s,baz=190,slow=38
KTK1 Kautokeino 63.66 339 *eP* **P 01 55 13.0 +0.1**
KTK1 IAmb IAmb 01 55 13.3
comp=Z,21nm,0.9s
HEF Hetta 63.93 339 *eP* **P 01 55 14.2 -0.4**
DAG Danmarks Havn 64.28 355 *i* P **P 01 55 15.7 -1.1**
comp=Z,14nm,0.9s
DAG Danmarks Havn 64.28 355 *i* P **P 01 55 15.7 -1.1**
DAG pmax pmax
comp=Z,11nm,0.9s
MOS Moscow 66.26 323 *eP* **P 01 55 28.0 -1.9**
MOS *e* 01 55 46.2
KULLO Kullorsuaq 66.41 5 *i* P **P 01 55 30.0 -0.6**
comp=Z,21nm,1.2s
KULLO Kullorsuaq 66.41 5 *i* P **P 01 55 30.0 -0.6**
KULLO pmax pmax
comp=Z,21nm,1.2s
VRH Novokhopyorsk 66.71 318 *eP* **P 01 55 31.5 -1.4**
VRH pmax pmax
comp=Z,20nm,0.7s
OBN Obninsk 67.11 323 *ceP* **P**
OBN *e* 01 56 03.0
OBN *ePPP* PPP 01 59 40.7
OBN pmax pmax
comp=Z,45nm,1.7s
OBN MLR MLR
comp=Z,138nm,16.0s
LPSR Galich'ya Gora 67.38 320 *eP* **P 01 55 36.0 -1.1**
LPSR pmax pmax
comp=Z,20nm,0.8s
FIA1 FINESS Array S 67.64 332 *eP* **P 01 55 38.1 -0.5**
FINES FINESS Array B 67.64 332 P **P 01 55 38.0 -0.6**
comp=Z,18nm,0.7s,baz=62,slow=8.9,SNR=55
FINES LR LR 02 30 34.2
comp=Z,131nm,18.2s,baz=52,slow=41
FINES FINESS Array B 67.64 332 P **P 01 55 38.0 -0.6**
FINES pmax pmax
comp=Z,18nm,0.7s
FINES MLR MLR
comp=Z,131nm,18.2s
VSR Storozhevoye 68.04 319 *eP* **P 01 55 40.1 -1.2**
VSR pmax pmax
comp=Z,20nm,0.7s
SUMG Summit 69.15 0 *i* P **P 01 55 48.6 +0.2**
comp=Z,22nm,0.9s
SUMG Summit 69.15 0 *eP* **P 01 55 48.6 +0.2**
SUMG pmax pmax
comp=Z,24nm,0.9s
SUMG Summit 69.15 0 *eP* **P 01 55 48.6 +0.2**
comp=Z,24nm,0.9s
VSU Vasula 69.34 329 *ceP* **P 01 55 49.1 -0.1**
VSU pmax pmax
comp=Z,71nm,1.0s
GOF Gofitskoye 69.37 312⇑ *eP* **P 01 55 49.3 -0.4**
GOF pmax pmax
comp=Z,80nm,0.9s
GUDG Gudauri 69.97 309 P **P 01 55 54.1 +0.4**
STKA Stephens Creek 70.09 180 P **P 01 55 54.1 +0.1**
comp=Z,1.0nm,0.5s,baz=321,slow=15,SNR=2.9
ZEI Tsey 70.14 309 *eP* **P 01 55 51.4 -3.3**
ZEI pmax pmax
comp=Z,23nm,0.6s
KIV Kislovodsk 70.21 311 *eP* **P 01 55 54.8 -0.2**
KIV *e* 01 56 11.1
KIV pmax pmax
comp=Z,96nm,1.0s
KIV MLR MLR
comp=Z,77nm,19.0s
KIV Kislovodsk 70.21 311 *eP* **P 01 55 54.4 -0.6**
comp=Z,76nm,0.9s
KBZ Khabaz 70.21 310 P **P 01 55 54.8 -0.1**
comp=Z,26nm,0.9s,baz=72,slow=4.2,SNR=78
KBZ LR LR 02 31 38.9
comp=Z,104nm,18.4s,baz=42,slow=40
TBLG Delisi 70.22 308 P **P 01 55 56.4 +1.3**
TBLG Delisi 70.22 308 P **P 01 55 56.3 +1.3**
ONI Oni 70.52 309 P **P 01 55 56.9 0.0**
ONI Oni 70.52 309 P **P 01 55 56.9 0.0**
NEY Neytrino 70.59 310⇓ *iP* **P 01 55 57.1 -0.4**
NEY pmax pmax
comp=Z,3.0nm,0.9s
JTMT Jette 70.61 44 *eP* **P 01 55 58.7 +1.3**
SCO Scoresbysund 70.63 354 *i* P **P 01 55 57.0 +0.1**
comp=Z,12nm,1.1s
SCO Scoresbysund 70.63 354 *i* P **P 01 55 57.0 +0.1**
SCO pmax pmax
comp=Z,12nm,1.1s
SWMT Swartz Lake 70.90 44 *eP* **P 01 56 00.4 +1.1**
NSHM Saint Helena R 70.95 56 *eP* **P 01 56 00.2 +0.7**
GNI Garni 71.11 307 LR LR 02 30 26.8
comp=Z,129nm,19.5s,baz=76,slow=39
GNI Garni 71.11 307 *ceP* **P 01 56 00.9 +0.2**
GNI pmax pmax
comp=Z,116nm,1.7s
GNI Garni 71.11 307 *eP* **P 01 56 00.3 -0.3**
comp=Z,24nm,1.4s
CHVG Ch'k'valeri 71.28 310 P **P 01 56 01.3 -0.1**
CHVG Ch'k'valeri 71.28 310⇓ *iP* **P 01 56 01.6 +0.2**
IZAR Zarasai 71.33 327 *eP* **P 01 56 00.8 -0.6**
IZAR IAmb IAmb 01 56 02.7
comp=Z,10nm,1.1s
IDID Didziasalis 71.41 327 *eP* **P 01 56 01.3 -0.6**
IDID IAmb IAmb 01 56 03.2
comp=Z,11nm,0.9s
ISAL Salakas 71.50 327 *eP* **P 01 56 01.9 -0.6**
ISAL IAmb IAmb 01 56 03.9
comp=Z,21nm,1.0s
EPOS Posof 71.59 309 *i* P **P 01 56 04.2 +0.6**
NACGM Naroch 71.67 327 *e* **P 01 56 04.0 +0.5**
SOC Sochi 72.17 312 *eP* P 01 56 17.9 +11
SOC pmax pmax
comp=Z,32nm,0.9s
SOC MLR MLR
comp=Z,165nm,18.0s
DAGI Agillar 72.33 309 *i* P **P 01 56 08.4 +0.5**
FCC Fort Churchill 72.45 27 *eP* **P 01 56 07.6 -0.5**
FCC pmax pmax
comp=Z,10.0nm,1.0s
FCC Fort Churchill 72.45 27 *eP* **P 01 56 07.6 -0.5**
comp=Z,10nm,1.0s
DBAD Bademkaya 72.50 309 *i* P **P 01 56 09.2 +0.2**
CMB Columbia Colle 72.66 55 *eP* **P 01 56 10.6 +0.8**
CMB pmax pmax
comp=Z,9.0nm,1.3s
CMB Columbia Colle 72.66 55 *eP* **P 01 56 10.6 +0.8**
comp=Z,8.8nm,1.3s
NC405 NORSAR Array S 72.72 337 *eP* **P 01 56 09.5 -0.2**
NC303 NORSAR Array S 72.73 337 *eP* **P 01 56 09.6 -0.2**
ANN Anapa 72.76 314 *eP* **P 01 56 09.2 -1.0**
ANN *e* 01 56 27.4
ANN *eS* **S 02 05 33.4 +1.4**
ANN pmax pmax
comp=Z,28nm,0.8s
ANN MLR MLR
comp=Z,149nm,18.0s
ANN MLR MLR
comp=N,95nm,18.0s
LRM Limekiln Ridge 72.77 45 *eP* **P 01 56 11.5 +0.9**
EGMT Eagleton 72.86 42 *eP* **P 01 56 11.8 +0.9**
comp=N,13nm,0.9s
NC204 NORSAR Array S 72.88 338 *eP* **P 01 56 10.8 0.0**
NB201 NORSAR Array S 72.89 337 *eP* **P 01 56 10.5 -0.3**
NB2 NORSAR Subarra 72.93 337 P **P 01 56 10.2 -0.8**
comp=Z,25nm,0.9s,baz=38,slow=6.2
NB2 NORSAR Subarra 72.93 337 P **P 01 56 10.2 -0.8**
baz=38,slow=6.2
NOA NORSAR Array B 72.93 337 P **P 01 56 10.5 -0.5**
comp=Z,18nm,0.8s,baz=38,slow=6.0,SNR=86
NOA PP **PP 01 58 55.1 +2.0**
comp=Z,2.3nm,1.1s,baz=41,slow=8.7,SNR=3.5
NOA LR LR 02 30 49.9
comp=Z,158nm,21.5s,baz=40,slow=38
DLMT Dillon 72.97 45 *eP* **P 01 56 12.5 +0.8**
comp=Z,5.9nm,0.9s
NBO02 NORSAR Array S 73.03 337 *eP* **P 01 56 11.2 -0.4**
HLID Hailey 73.04 48 *eP* **P 01 56 13.5 +1.3**
comp=Z,12nm,1.8s
NBO00 NORSAR Array S 73.07 337 *eP* **P 01 56 11.5 -0.3**
NAO01 NORSAR Array S 73.18 337 *eP* **P 01 56 12.2 -0.3**
EKAR Karacoban 73.31 307 *i* P **P 01 56 15.0 +1.0**

AKASG Malin Array Be 73.33 322 P **P 01 56 12.6 -0.9**
comp=Z,18nm,0.7s,baz=46,slow=6.1,SNR=86
AKASG LR LR 02 31 13.0
comp=Z,138nm,19.5s,baz=45,slow=38
AKASG Malin Array Be 73.33 322 P **P 01 56 12.6 -0.9**
AKASG pmax pmax
comp=Z,20nm,0.7s
AKASG MLR MLR
comp=Z,138nm,19.5s
AKBB Malin Array Si 73.33 322 *eP* **P 01 56 12.7 -0.8**
AKBB pmax pmax
comp=Z,26nm,0.8s
AKBB Malin Array Si 73.33 322 *eP* **P 01 56 12.7 -0.8**
comp=Z,26nm,0.8s
KIEV Kiev 73.34 322 *eP* **P 01 56 12.8 -0.8**
KIEV pmax pmax
comp=Z,26nm,0.9s
KIEV Kiev 73.34 322 *eP* **P 01 56 12.8 -0.8**
comp=Z,26nm,0.9s
ERZM Erzurum 73.36 308 *i* P **P 01 56 15.1 +0.9**
AK11 Malin Array Si 73.37 322 *eP* **P 01 56 12.8 -0.9**
NV01 Mina Array Sit 73.75 54 *eP* **P 01 56 17.5 +1.0**
NVAR Mina Array Bea 73.75 54 P **P 01 56 17.4 +0.9**
comp=Z,2.5nm,0.8s,baz=285,slow=6.0,SNR=14
SUW Suwalki 73.81 327 *eP* **P 01 56 15.4 -0.8**
GCMT Greycliff 74.31 44 *eP* **P 01 56 21.0 +1.5**
KELT Kelkit 74.51 309 *i* P **P 01 56 21.3 +0.4**
SIM Simferopol' 74.52 315 *di* P **P 01 56 20.3 -0.2**
SIM *e* 01 56 38.0
SIM pmax pmax
comp=Z,26nm,0.7s
SIM MLR MLR
comp=N,60nm,18.2s
YFT Old Faithful 74.52 45 *eP* **P 01 56 24.1 +3.2**
comp=N,5.3nm,0.9s
KONO Kongsberg 74.52 337 *eP* **P 01 56 20.4 +0.1**
KONO pmax pmax
comp=Z,15nm,0.9s
KONO Kongsberg 74.52 337 *eP* **P 01 56 20.4 +0.1**
comp=Z,15nm,0.9s
GRSN GIUNIGRSN 74.63 310 *i* P **P 01 56 20.6 -0.8**
H17A Grant Village 74.70 45 *eP* **P 01 56 24.4 +2.5**
comp=Z,9.1nm,1.0s
IMW Indian Meadow 74.81 46 *eP* **P 01 56 23.9 +1.2**
comp=Z,5.0nm,0.8s
ORDU Ordu-Boztepe 74.84 310 *i* P **P 01 56 22.7 +0.2**
FXWY Fox Creek 74.92 46 *eP* **P 01 56 25.1 +1.8**
comp=Z,4.6nm,0.9s
MOOW Moose Ponds 75.01 46 *eP* **P 01 56 24.4 +0.7**
comp=Z,8.8nm,1.4s
MOOW *ePP* **PP 01 59 10.2 -1.4**
SUSE Susehri 75.11 310 *i* P **P 01 56 23.1 -1.2**
ASK Askoy 75.12 339 *eP* **P 01 56 23.6 -0.1**
ASK IAmb IAmb 01 56 24.6
comp=Z,15nm,0.7s
SORM Soroca 75.46 321⇑ *iP* **P 01 56 25.2 -0.7**
SORM Soroca 75.46 321⇑ P **P 01 56 25.2 -0.7**
R11A Troy Canyon, C 75.50 52 *eP* **P 01 56 27.5 +0.9**
comp=Z,6.8nm,1.3s
CUZAR Zara_SIVAS 75.57 310 *i* P **P 01 56 22.6 -4.3**
BLS5 Blasjo 75.64 338 *eP* **P 01 56 27.1 +0.3**
ERBA Erbaa 75.69 311 *i* P **P 01 56 27.8 +0.3**
HWUT Hardware Ranch 75.90 48 *eP* **P 01 56 29.8 +1.0**
comp=Z,20nm,1.7s
TPNV Topopah Spring 75.94 54 *eP* **P 01 56 30.3 +1.2**
TPNV pmax pmax
comp=Z,6.0nm,1.0s
TPNV Topopah Spring 75.94 54 *eP* **P 01 56 30.2 +1.2**
comp=Z,6.0nm,1.0s
DUG Dugway, Tooele 76.05 50 *eP* **P 01 56 30.7 +1.0**
DUG pmax pmax
comp=Z,6.0nm,0.9s
DUG Dugway, Tooele 76.05 50 *eP* **P 01 56 30.7 +1.0**
comp=Z,5.8nm,0.9s
HAVZ Havza 76.05 312 *i* P **P 01 56 30.2 +0.7**
CUKAN kangal_SIVAS 76.11 309 *i* P **P 01 56 30.2 +0.2**
KMY Karmoy 76.17 339 *eP* **P 01 56 30.1 +0.5**
KMY IAmb IAmb 01 56 30.6
comp=Z,19nm,0.9s
TCUT Toone Canyon 76.30 48 *eP* **P 01 56 33.0 +1.9**
comp=Z,9.4nm,0.8s
BOYT Boyabat 76.31 312 *i* P **P 01 56 31.3 +0.4**
BW06 Boulder Array 76.31 46 *eP* **P 01 56 31.9 +0.7**
comp=Z,4.3nm,0.7s
PD31 Pinedale Array 76.31 46 *eP* **P 01 56 31.9 +0.7**
PDAR Pinedale Array 76.31 46 P **P 01 56 31.8 +0.7**
comp=Z,3.3nm,0.7s,baz=267,slow=2.3,SNR=26
SNART Snartemo 76.31 337 *eP* **P 01 56 30.8 +0.2**
SNART IAmb IAmb 01 56 31.3
comp=Z,18nm,1.0s
LVV L'vov 76.38 324 *eP* **P 01 56 31.0 -0.1**
BEL Belsk 76.38 327 *eP* **P 01 56 31.3 +0.2**
PSUT Pine Spring 76.46 51 *eP* **P 01 56 32.8 +0.7**
comp=Z,18nm,1.6s
AKCD Akcadag 76.47 308 *i* P **P 01 56 32.6 +0.6**
CUALT Altinyayla-SIV 76.57 310 *i* P **P 01 56 34.0 +1.4**
NLU North Lily Min 76.64 49 *eP* **P 01 56 34.6 +1.5**
comp=Z,3.8nm,1.0s
CUSAR Sarkisla-SIVAS 76.78 310 *i* P **P 01 56 33.9 +0.1**
SURC SANLIURFA_SURC 76.92 307 *i* P **P 01 56 34.5 0.0**
COAL Corum-Alaca 77.00 311 *i* P **P 01 56 35.3 +0.4**
KWP Kalwaria Pacla 77.12 324 *eP* **P 01 56 35.6 +0.3**
KWP Kalwaria Pacla 77.12 324⇑ *iP* **P 01 56 35.8 +0.5**
KWP Kalwaria Pacla 77.12 324⇑ P **P 01 56 35.8 +0.5**
GZT Gaziantep 77.28 308 *i* P **P 01 56 37.6 +1.0**
KSRV Kasrt alli 77.30 306 *eP* **P 01 56 35.8 -0.8**
BUR08 Bucovina Ar. S 77.34 322 *eP* **P 01 56 36.8 0.0**
BURAR Bucovina Array 77.36 322⇑ *iP* **P 01 56 36.8 0.0**
BURAR Bucovina Array 77.36 322⇑ P **P 01 56 36.8 0.0**
TESR Tescani 77.41 320⇑ *iP* **P 01 56 36.9 -0.1**
MSU Marysvale 77.50 51 *eP* **P 01 56 39.1 +1.2**
MSU *e* 01 56 54.8
MSU Marysvale 77.50 51 *eP* **P 01 56 39.1 +1.2**
MSU *ePcP* **pP 01 56 54.8 +2.6**
CFR Carcaliu 77.56 318⇑ *iP* **P 01 56 37.5 -0.3**
CFR Carcaliu 77.56 318⇑ P **P 01 56 37.5 -0.3**
P17A Butcher Ranch, 77.74 49 *eP* **P 01 56 40.7 +1.5**
comp=Z,7.6nm,0.9s
CDAG Cicekdag 77.77 311 *i* P **P 01 56 39.3 0.0**
LCMT Little Creek M 77.79 52 *eP* **P 01 56 41.1 +1.6**
comp=Z,6.6nm,1.2s
MTPU Mount Pierson 77.79 51 *eP* **P 01 56 41.6 +1.9**
comp=Z,5.0nm,0.8s
KOLS Kolonicke sedl 77.81 324 *eP* **P 01 56 38.8 -0.4**
KOLS *e* 01 56 57.3
VRI Vrincioaia 77.82 320⇑ *iP* **P 01 56 39.3 0.0**
VRI Vrincioaia 77.82 320⇑ P **P 01 56 39.3 0.0**
PLOR Plostina 77.87 320⇓ *iP* **P 01 56 39.7 +0.1**
PLOR Plostina 77.87 320⇓ P **P 01 56 39.7 +0.1**
ANDIN Andirin 77.89 308 *i* P **P 01 56 40.6 +0.6**
TIRR Tirgusor 77.91 318 *eP* **P 01 56 39.0 -0.8**
TIRR pmax pmax
comp=Z,11nm,1.1s
TIRR Tirgusor 77.91 318 *eP* **P 01 56 39.0 -0.8**
comp=Z,11nm,1.1s
P18A Preston Nutter 77.94 49 *eP* **P 01 56 41.8 +1.3**
comp=Z,4.7nm,0.9s
STHS Stebnicka Huta 77.94 325 *eP* **P 01 56 40.2 +0.3**
OJC Ojcow 77.99 326 *eP* **P 01 56 40.2 +0.1**
OJC Ojcow 77.99 326 *eP* **P 01 56 40.3 +0.1**
OJC pmax pmax
comp=Z,37nm,1.1s
OJC Ojcow 77.99 326 *eP* **P 01 56 40.3 +0.1**
comp=Z,36nm,1.1s
ULM Lac du Bonnet 78.00 34 P **P 01 56 40.2 0.0**
comp=Z,3.5nm,0.6s,baz=287,slow=10,SNR=4.9
UZH Uzhgorod 78.02 324 *eP* **P 01 56 39.5 -0.8**
UZH *e* 01 56 46.9
KNB Kanab 78.05 52 *eP* **P 01 56 43.1 +2.2**
KNB pmax pmax
comp=Z,13nm,1.5s
KNB Kanab 78.05 52 *eP* **P 01 56 43.1 +2.2**
comp=Z,13nm,1.5s
SRU San Rafael Swe 78.10 49 *eP* **P 01 56 42.4 +1.2**
SRU pmax pmax
comp=Z,9.0nm,0.7s
SRU San Rafael Swe 78.10 49 *eP* **P 01 56 42.4 +1.2**
comp=Z,9.4nm,0.7s
BR131 Keskin Array S 78.14 312 *eP* **P 01 56 41.0 -0.4**
BRTR Keskin Array B 78.14 312 P **P 01 56 41.0 -0.4**
comp=Z,4.6nm,0.9s,baz=114,slow=3.1,SNR=31
BRTR LR LR 02 35 54.5
comp=Z,47nm,18.7s,baz=47,slow=39
BRTR Keskin Array B 78.14 312 P **P 01 56 41.0 -0.4**

BRTR pmax pmax
comp=Z,4.0nm,0.7s
BRTR MLR MLR
comp=Z,47nm,18.7s
ARCR ARCALIA 78.15 322⇓ *iP* **P 01 56 42.2 +1.1**
CRVS Cervenica-Dubn 78.21 324 *eP* **P 01 56 41.4 0.0**
TRPA Tarpa 78.27 323⇑ *eP* **P 01 56 42.2 +0.5**
DRWC Darouich 78.30 308 *eP* **P 01 56 42.2 0.0**
BCAM Yenicaga 78.33 313 *i* P **P 01 56 43.1 +0.8**
NIE Niedzica 78.36 325 *eP* **P 01 56 42.6 +0.4**
RSSD Black Hills 78.42 42 *eP* **P 01 56 43.5 +0.6**
RSSD pmax pmax
comp=Z,2.0nm,0.6s
RSSD Black Hills 78.42 42 *eP* **P 01 56 43.5 +0.6**
comp=Z,2.3nm,0.6s
DOPR Dopca 78.42 320⇑ *iP* **P 01 56 43.5 +0.8**
MLR Muntele Rosu 78.47 320⇓ *iP* **P 01 56 42.9 -0.2**
MLR Muntele Rosu 78.47 320⇓ P **P 01 56 42.9 -0.2**
MLR Muntele Rosu 78.47 320 *eP* **P 01 56 43.0 -0.2**
comp=Z,16nm,1.3s
ANTO Ankara 78.53 312 *eP* **P 01 56 43.8 +0.3**
ANTO pmax pmax
comp=Z,23nm,0.8s
ANTO Ankara 78.53 312 *eP* **P 01 56 43.8 +0.3**
comp=Z,23nm,0.8s
BBAL Bala 78.56 312 *i* P **P 01 56 43.6 0.0**
BR231 Keskin MP Arra 78.56 312 *eP* **P 01 56 44.0 +0.4**
O20A White River Ci 78.77 47 *eP* **P 01 56 45.5 +0.6**
comp=Z,4.3nm,0.9s
CJR Cluj-Napoca 78.78 322⇑ *iP* **P 01 56 44.5 -0.1**
CJR Cluj-Napoca 78.78 322⇑ P **P 01 56 44.5 -0.1**
BTCH Batrach 78.80 307 *eP* **P 01 56 44.0 -1.0**
KKUL Konya-Kulu 78.92 312 *i* P **P 01 56 46.0 +0.4**
LANS Liptovska Anna 78.92 326 *eP* **P 01 56 46.2 +0.8**
KECS Kecovo 78.96 325 *eP* **P 01 56 46.0 +0.5**
KECS *e* 01 57 01.7
VOIR 78.96 320⇑ *iP* **P 01 56 45.8 +0.1**
VOIR 78.96 320⇑ P **P 01 56 45.8 +0.1**
OKC Ostrava-Krasne 78.99 327 *eP* **P 01 56 45.6 0.0**
KSP Ksiaz 79.01 328 *eP* **P 01 56 45.9 +0.1**
BTAS Taskesti 79.10 314 *i* P **P 01 56 46.4 -0.2**
DRGR 79.15 322⇓ *iP* **P 01 56 46.4 -0.3**
DRGR 79.15 322⇓ P **P 01 56 46.4 -0.3**
WRDH Warideh 79.16 307 *eP* **P 01 56 45.5 -1.5**
ARR Arges 79.22 320⇑ *iP* **P 01 56 48.0 +0.9**
MORC Moravsky Berou 79.29 327⇑ *iP* **P 01 56 47.6 +0.2**
MORC Moravsky Berou 79.29 327⇑ P **P 01 56 47.6 +0.2**
MORC Moravsky Berou 79.29 327 *eP* **P 01 56 47.5 +0.2**
comp=Z,72nm,0.9s
AUMIH MIHALICIK 79.29 313 *i* P **P 01 56 47.3 -0.4**
RABH Abou Rabah 79.34 306 *eP* **P 01 56 47.1 -0.9**
KERG Konya-Eregli 79.34 310 *i* P **P 01 56 47.6 -0.4**
DPC Dobruska-Polom 79.37 328 *eP* **P 01 56 48.3 +0.5**
DPC *ePCP* **PcP 01 56 57.0 +1.2**
DPC *epP* **pP 01 57 05.0 +2.8**
DPC *ePP* **PP 01 59 46.2 -1.4**
UPC Upice 79.38 328 *eP* **P 01 56 48.0 +0.2**
KRLC Kraliky 79.39 328 *eP* **P 01 56 48.1 +0.2**
KRLC *ex* x 01 56 51.5
KRLC *ePP* **PP 01 59 47.5 -0.2**
BIDA Albida 79.53 306 *eP* **P 01 56 47.0 -2.1**
N23A Red Feather La 79.57 46 *eP* **P 01 56 50.7 +1.3**
comp=Z,5.9nm,0.9s
PSZ Piszkesteto 79.64 325⇓ *iP* **P 01 56 49.6 +0.2**
PSZ Piszkesteto 79.64 325⇓ *eP* **P 01 56 49.5 +0.2**
PSZ Piszkesteto 79.64 325⇓ P **P 01 56 49.6 +0.2**
PSZ Piszkesteto 79.64 325 *eP* **P 01 56 49.6 +0.2**
comp=Z,28nm,1.2s
VYHS Vyhne 79.69 325 *eP* **P 01 56 49.4 -0.1**
HAWK Haweek 79.80 306 *eP* **P 01 56 47.6 -2.8**
ESKT Eskisehir 79.89 313 *i* P **P 01 56 50.4 -0.6**
Y14A Wickenburg 79.89 55 *eP* **P 01 56 52.1 +1.2**
WUAZ Wupatki 79.91 53 *eP* **P 01 56 52.6 +1.4**
comp=Z,2.5nm,0.8s
BRG Berggiesshubel 79.94 330 *eP* **P 01 56 50.6 -0.1**
comp=Z,14nm,0.9s
BRG *e* 01 59 51.6
comp=Z,6.9nm,1.2s
comp=N,176nm,23.3s
comp=E,83nm,16.0s
comp=Z,176nm,23.3s
PVCC Panska Ves 79.95 329 *eP* **P 01 56 51.1 +0.2**
PVCC AMS AMS 02 34 50.0
comp=Z,200nm,14.3s
CLL Collm 79.97 330⇑ *iP* **P 01 56 50.5 -0.4**
comp=Z,27nm,0.9s
CLL *i* 01 56 54.5
CLL LmV 02 35 00.0
comp=Z,100nm,18.4s
CLL Collm 79.97 330 *eP* **P 01 56 50.5 -0.4**
CLL pmax pmax
comp=Z,30nm,0.8s
CLL Collm 79.97 330 *eP* **P 01 56 50.5 -0.4**
comp=Z,30nm,0.8s
SIRR Siria 80.03 323⇓ *iP* **P 01 56 51.7 +0.3**
SZH Strazhica 80.03 318 *eP* **P 01 56 49.3 -2.1**
VRAC Vranov 80.05 327⇑ *iP* **P 01 56 51.8 +0.3**
VRAC Vranov 80.05 327⇑ P **P 01 56 51.9 +0.4**
MARH Ras Al Marh 80.06 306 *eP* **P 01 56 51.4 -0.8**
ZALF Zalf 80.22 304 *eP* **P 01 56 52.0 -0.7**
GOPC GO Pecny, Ondr 80.34 328 *eP* **P 01 56 53.2 +0.2**
PRA Prague 80.36 329 *eP* **P 01 56 53.5 +0.4**
PRU Pruhonice 80.38 329 *eP* **P 01 56 53.4 +0.2**
PRU *epP* **pP 01 57 10.7 +3.1**
PRU AMS AMS 02 34 30.0
comp=Z,200nm,18.7s
ULDT Uludag 80.44 314 *i* P **P 01 56 54.1 +0.1**
BZS Buzias 80.52 322⇑ *iP* **P 01 56 53.6 -0.4**
BZS Buzias 80.52 322⇑ P **P 01 56 53.6 -0.4**
TREC Trest 80.53 328 *eP* **P 01 56 53.9 -0.1**
TREC *epP* **pP 01 57 11.5 +3.0**
TREC AMS AMS 02 34 20.0
comp=Z,200nm,15.6s
MVCO Mesa Verde 80.55 50 *eP* **P 01 56 55.8 +1.1**
comp=Z,1.9nm,0.6s
PKS7 Kunszentmiklos 80.62 324 *eP* **P 01 56 52.8 -1.7**
PKSG 80.71 325⇓ *eP* **P 01 56 55.1 +0.1**
SALA Sala 80.75 304 *eP* **P 01 56 55.0 -0.7**
CSKK Cs˙ákako 80.79 325 *eP* **P 01 56 55.9 +0.4**
BRBR Barbar 80.80 305 *eP* **P 01 56 54.6 -1.4**
GDZ Gediz 80.96 313 *i* P **P 01 56 55.5 -1.2**
PKST T˙'s 80.97 325⇓ *eP* **P 01 56 56.3 -0.2**
NKC Novy Kostel 81.03 330 *eP* **P 01 56 56.5 -0.2**
NKC *epP* **pP 01 57 14.4 +3.3**
MDVR Moldovita 81.08 321⇑ *iP* **P 01 56 56.7 -0.4**
MPEP Malo Peshtene 81.10 319 *eP* **P 01 56 57.0 -0.2**
S22A 4UR Ranch, Cre 81.18 48 *eP* **P 01 56 58.6 +0.5**
TCHB Talchebab 81.27 305 *eP* **P 01 56 54.2 -4.1**
SOP Sopron 81.31 326⇑ *eP* **P 01 56 58.7 +0.5**
PKS9 Tamasi 81.37 324 *eP* **P 01 56 58.1 -0.4**
CONA Conrad Observa 81.42 327 *iP* **P 01 56 59.4 +0.5**
comp=Z,15nm,0.9s,SNR=13
CSS Mathiatis 81.43 308 *eP* **P 01 56 58.9 -0.2**
comp=Z,2.8nm,0.7s
KHC Kasperske Hory 81.44 329 *eP* **P 01 56 58.9 -0.1**
KHC *ePCP* **PcP 01 57 08.5 +3.6**
KHC *epP* **pP 01 57 17.5 +4.1**
KHC Kasperske Hory 81.44 329 *eP* **P 01 56 58.9 -0.1**
KHC pmax pmax
comp=Z,6.0nm,0.8s
KHC Kasperske Hory 81.44 329 *eP* **P 01 56 58.9 -0.1**
comp=Z,6.3nm,0.8s
PKSM Moragy 81.48 324⇑ *iP* **P 01 56 58.4 -0.7**
PKSM Moragy 81.48 324⇑ *eP* **P 01 56 58.3 -0.8**
PKSM Moragy 81.48 324⇑ P **P 01 56 58.4 -0.7**
GEC2 GERESS Array S 81.62 328 *eP* **P 01 56 59.9 0.0**
GEC2 pmax pmax
comp=Z,12nm,1.1s
GEC2 GERESS Array S 81.62 328 *eP* **P 01 56 59.9 0.0**
comp=Z,12nm,1.1s
GERES GERESS Array B 81.62 328 P **P 01 56 59.5 -0.4**
comp=Z,6.5nm,0.8s,baz=38,slow=5.0,SNR=46
GERES LR LR 02 35 44.4
comp=Z,174nm,20.8s,baz=38,slow=38
GEA0 GERESS Array S 81.62 328 *eP* **P 01 56 59.3 -0.6**
WTSB Winterswijk 81.71 334 *eP* **P 01 56 57.2 -3.0**
ESK Eskdalemuir 81.84 341 *iP* **P 01 57 02.2 +1.3**
GRFO Grafenberg 81.94 330 *eP* **P 01 57 02.0 +0.5**
GRFO pmax pmax
comp=Z,24nm,0.8s
GRFO Grafenberg 81.94 330 *eP* **P 01 57 02.0 +0.5**
comp=Z,24nm,0.8s
SDCO Great Sand Dun 81.96 48 *eP* **P 01 57 03.4 +1.2**

	comp=Z,4.7nm,1.3s							
MOA	**Molln**	**82.16**	**327**	*i* P		**P**	**01 57 02.5**	**-0.2**
	comp=Z,12nm,1.2s							
MMB	**Musomiste**	**82.37**	**318**	*e*P		**P**	**01 57 03.9**	**0.0**
ECSD	**EROS Data Cent**	**82.47**	**39**	*e*P		**P**	**01 57 04.1**	**-0.3**
	comp=Z,6.8nm,0.9s							
KKB	**Krupnik**	**82.50**	**319**	*e*P		**P**	**01 57 01.9**	**-2.7**
PERS	**Pernice**	**82.74**	**326**	*i* P		**P**	**01 57 05.4**	**-0.4**
SOKA	**Soboth**	**82.74**	**326**	*i* P		**P**	**01 57 05.7**	**-0.1**
	comp=Z,33nm,1.1s,SNR=16							
HGN	**Heimansgroeve**	**83.02**	**334**	*e*P		**P**	**01 57 06.0**	**-1.0**
BEBN	**Eben Emael**	**83.08**	**334**	P		**P**	**01 57 06.9**	**-0.5**
OBKA	**Obir**	**83.08**	**326**	*i* P		**P**	**01 57 07.2**	**-0.5**
	comp=Z,8.5nm,0.7s							
MEM	**Membach**	**83.12**	**333**	P		**P**	**01 57 07.2**	**-0.4**
	comp=Z,16nm,1.2s							
MEM				AP		**pP**	**01 57 25.2**	**+3.1**
KBA	**Koelnbreinsper**	**83.15**	**327**	*i* P		**P**	**01 57 07.8**	**-0.3**
	comp=Z,17nm,0.8s,SNR=9.2							
VAY	**Valandovo**	**83.16**	**319**	*i* P		**P**	**01 57 08.2**	**+0.1**
BLY	**Banja Luka**	**83.26**	**324⇑**	*i* P		**P**	**01 57 08.0**	**-0.4**
SKO	**Skopje**	**83.27**	**320**	*i* P		**P**	**01 57 09.3**	**+0.7**
ANMO	**Albuquerque**	**83.30**	**50⇑**	*e*P		**P**	**01 57 09.1**	**0.0**
ANMO				pmax		pmax		
	comp=Z,3.0nm,0.8s							
ANMO	**Albuquerque**	**83.30**	**50**	*e*P		**P**	**01 57 09.6**	**+0.6**
	comp=Z,13nm,1.4s							
MYKA	**Terra Mystica**	**83.38**	**327**	*i* P		**P**	**01 57 08.3**	**-0.8**
	comp=Z,9.0nm,0.5s,SNR=5.3							
VISS	**Visnje**	**83.51**	**326**	*i* P		**P**	**01 57 08.8**	**-0.9**
BCLA	**Clavier**	**83.52**	**334**	P		**P**	**01 57 09.1**	**-0.6**
BCLA				AP		**pP**	**01 57 27.0**	**+2.8**
BOJS	**Bojanci**	**83.56**	**325**	*i* P		**P**	**01 57 09.2**	**-0.7**
SCHQ	**Schefferville**	**83.75**	**16**	P		**P**	**01 57 10.7**	**-0.1**
	comp=Z,5.4nm,0.7s,baz=354,slow=4.0,SNR=10							
SCHQ				LR		LR	02 38 14.5	
	comp=Z,46nm,18.3s,baz=28,slow=38							
ABTA	**Abfaltersbach**	**83.77**	**328**	*i* P		**P**	**01 57 10.2**	**-1.0**
	comp=Z,14nm,1.1s,SNR=5.4							
JAVS	**Javornik**	**83.78**	**326**	*e*P		**P**	**01 57 09.8**	**-1.4**
SNF	**Seneffe**	**83.80**	**334**	P		**P**	**01 57 11.0**	**-0.1**
WLF	**Walferdange**	**83.86**	**333**	P		**P**	**01 57 11.2**	**-0.2**
MOTA	**Moosalm**	**83.87**	**329**	*i* PcP		**P**	**01 57 12.4**	**+0.7**
	comp=Z,14nm,0.9s,SNR=14							
RETA	**Reutte**	**83.89**	**329**	*i* P		**P**	**01 57 11.7**	**-0.1**
	comp=Z,27nm,0.9s,SNR=14							
BIA	**Bitola**	**84.03**	**319**	*i* P		**P**	**01 57 11.9**	**-0.7**
DOU	**Dourbes**	**84.04**	**334**	P		**P**	**01 57 11.6**	**-0.8**
BFO	**Black Forest**	**84.16**	**331**	*i* P		**P**	**01 57 13.0**	**0.0**
BFO	**Black Forest**	**84.16**	**331**	*e*P		**P**	**01 57 12.6**	**-0.4**
	comp=Z,24nm,0.9s							
OHR	**Ohrid**	**84.23**	**319**	*i* P		**P**	**01 57 13.1**	**-0.4**
FETA	**Feichten**	**84.28**	**329**	*i* P		**P**	**01 57 13.6**	**-0.2**
	comp=Z,16nm,0.8s,SNR=11							
DAVA	**Damuels**	**84.41**	**329**	*i* PcP		**P**	**01 57 14.3**	**-0.1**
	comp=Z,35nm,0.9s,SNR=12							
PMOR	**Pomariorio Ree**	**84.43**	**114**	*e*T		T	03 30 35.4	
	comp=Z,57nm,0.2s							
DSB	**Dublin**	**84.52**	**342**	*e*P		**P**	**01 57 14.4**	**-0.3**
	comp=Z,19nm,0.9s							
ECH	**Echery**	**84.70**	**332⇑**	*e*P		**P**	**01 57 15.1**	**-0.6**
PPT2	**Papeete2**	**84.98**	**117**	*e*LR		LR	02 23 49.1	
	comp=Z,249nm,25.2s							
PPT2	**Papeete2**	**84.98**	**117**	*e*T		T	03 31 14.3	
	comp=Z,6.1nm,0.3s							
MOF	**Molkenrain**	**85.01**	**331⇑**	*e*P		**P**	**01 57 16.8**	**-0.6**
TIAR	**Tiarei**	**85.12**	**117**	*e*T		T	03 31 22.4	
	comp=Z,4.9nm,0.3s							
TUE	**Stuetta**	**85.28**	**329**	*e*P		**P**	**01 57 18.4**	**-0.6**
	comp=Z,16nm,0.9s							
LOMF	**Lomont**	**85.54**	**331⇑**	*e*P		**P**	**01 57 19.4**	**-0.7**
TAOE	**Nuku Hiva Isla**	**86.16**	**104**	*e*LR		LR	02 24 13.1	
	comp=Z,169nm,22.3s							
MNTX	**Cornudas Mount**	**86.17**	**52**	*e*P		**P**	**01 57 24.0**	**+0.6**
	comp=Z,1.7nm,0.8s							
MEH	**Mehetia**	**86.23**	**116**	*e*T		T	03 32 48.0	
	comp=Z,40nm,0.2s							
DAMY	**Dhamar**	**86.80**	**286**	*e*P		**P**	**01 57 27.9**	**+0.8**
	comp=Z,24nm,1.0s							
AQU	**L'Aquila**	**86.85**	**324**	*e*P		**P**	**01 57 26.3**	**-0.3**
AQU				pmax		pmax		
	comp=Z,44nm,1.7s							
AQU	**L'Aquila**	**86.85**	**324**	*e*P		**P**	**01 57 26.3**	**-0.3**
	comp=Z,44nm,1.7s							
PLDF	**La Plantade**	**87.89**	**332**	*e*P		**P**	**01 57 30.9**	**-0.6**
LBL	**Lubilhac**	**88.66**	**332**	*e*P		**P**	**01 57 33.8**	**-1.4**
TX31	**Lajitas Ar. Si**	**88.87**	**53**	*e*P		**P**	**01 57 37.1**	**+0.6**
TXAR	**Lajitas Array**	**88.87**	**53**	P		**P**	**01 57 37.0**	**+0.5**
	comp=Z,1.7nm,0.7s,baz=293,slow=3.5,SNR=27							
KEST	**Kesra**	**94.04**	**323**	P		**P**	**01 57 59.7**	**-0.6**
	comp=Z,2.9nm,0.9s,baz=0.0,slow=13,SNR=2.3							
KEST				LR		LR	02 45 19.6	
	comp=Z,170nm,18.5s,baz=305,slow=39							
ES19	**SONSECA Array**	**96.04**	**334**	*e*P		**P**	**01 58 08.9**	**-0.5**
ESDC	**Sonseca Array**	**96.09**	**334**	P		**P**	**01 58 08.9**	**-0.6**
	comp=Z,0.9nm,0.7s,baz=11,slow=4.7,SNR=9.3							
ESDC				LR		LR	02 46 36.5	
	comp=Z,92nm,19.4s,baz=200,slow=39							
KMBO	**Kilima Mbogo**	**102.16**	**278**	P		**Pdif**	**01 58 36.9**	**-0.5**
	comp=Z,0.6nm,0.2s,baz=43,slow=8.1,SNR=4.1							
KMBO	**Kilima Mbogo**	**102.16**	**278**	*i* P		**Pdif**	**01 58 37.4**	**0.0**
KMBO				pmax		pmax		
	comp=Z,1.0nm,0.2s							
VNDA	**Vanda**	**116.47**	**175**	PKP		**PKPdf**	**02 03 23.3**	**-0.9**
	comp=Z,0.6nm,0.7s,baz=302,slow=5.1,SNR=4.4							
TORD	**Torodi Ar. Bea**	**116.52**	**316**	PKP		**PKPdf**	**02 03 25.3**	**-0.9**
	comp=Z,1.1nm,1.0s,baz=32,slow=2.8,SNR=6.6							
DBIC	**Dimbokro**	**125.43**	**318**	PKP		**PKPdf**	**02 03 42.1**	**-1.2**
	comp=Z,3.5nm,0.8s,baz=8.1,slow=3.7,SNR=7.6							
VNA2	**Neumayer--Watz**	**143.90**	**197**	PKP		PKPab	02 04 11.5	-1.7
	baz=99,slow=2.6							
VNA3	**Neumayer Olymp**	**144.15**	**195**	PKP		**PKPab**	**02 04 14.0**	**-0.1**
VNA1	**Neumayer--Stat**	**144.30**	**197**	PKP		**PKPab**	**02 04 14.1**	**-0.5**
LPAZ	**La Paz**	**145.56**	**58**	PKPbc		**PKPbc**	**02 04 21.4**	**+0.1**
	comp=Z,7.9nm,0.8s,baz=346,slow=4.6,SNR=37							
LPAZ	**La Paz**	**145.56**	**58**	*e*PKPdf		**PKPdf**	**02 04 21.1**	**-0.1**
LPAZ				PKPbc		**PKPbc**	**02 04 21.4**	**+0.1**
LVC	**Limon Verde**	**149.24**	**68**	*e*PKPbc		**PKPbc**	**02 04 31.7**	**+0.5**
LCO	**Las Campanas**	**151.39**	**80**	*e*PKPdf		**PKPdf**	**02 04 31.1**	**+1.2**
LCO				*e*PKPbc		**PKiKP**	**02 04 36.4**	**-0.1**
PLCA	**Paso Flores**	**154.98**	**105**	PKPab		**PKPab**	**02 05 00.6**	**+1.6**
	comp=Z,2.5nm,0.8s,baz=294,slow=6.5,SNR=4.7							

*IDC **28** 01:47:15.6±0.5,35°.35N×142°.76E,h0km,mb4.3/20, mb1 4.5/26,mb1mx4.3/47,mbtmp4.3/26,ML3.7/5,Error ellipse: s-maj=15.3km s-min=14.1km az=75.0*
*ISCJB **28** 01:47:16.1±1.8,35°.25N±0°.04×142°.72E±0°.05, h15km±11km,mb4.3/27,Error ellipse: s-maj=7.6km s-min=6.2km az=22.0*
*JMA **28** 01:47:18.0±0.4,35°.40N×142°.69E,h43km,M4.4*
*NEIC **28** 01:47:19.1±2.5,35°.27N×142°.72E,h23km±17km,mb4.5/8, Error ellipse: s-maj=9.4km s-min=6.4km az=64.0*

ISC 28 01:47:17.9±4.2,35°.35N±0°.06×142°.73E±0°.07,h15km±26km, n49,σ1°42/62,mb4.4/27,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID			Time	Res
				Op		ISC	h m s	ISC
CHOJ	**Chosi**	**1.56**	**283**	P		**Pn**	**01 47 43.7**	**-1.3**
CHOJ				*e*S		**Sn**	**01 48 02.5**	**-2.5**
BSO1	**Boso 1**	**1.59**	**245**	P		**Pn**	**01 47 44.0**	**-1.0**
JHO	**Hitachi**	**2.15**	**306**	P		**Pn**	**01 47 52.0**	**-1.2**
JHO				S		**Sn**	**01 48 16.5**	**-3.1**
JFK	**Kawauchi**	**2.50**	**324**	P		**Pn**	**01 47 56.3**	**-1.7**
JFK				*e*S		**Sn**	**01 48 24.9**	**-3.4**
JFT	**Otama**	**2.89**	**319**	*e*S		**Sn**	**01 48 35.7**	**-2.2**
JHJ	**Hachijo jima 2**	**3.30**	**228**	Pn		**Pn**	**01 48 08.5**	**-0.5**
	31nm,0.3s,baz=66,slow=20,SNR=2.0							
JHJ				Sn		**Sn**	**01 48 44.3**	**-3.6**
	461nm,0.3s,baz=72,slow=22,SNR=8.9							
MJAR	**Matsushiro Arr**	**3.85**	**289**	Pn		**Pn**	**01 48 17.3**	**+0.8**
	9.8nm,0.3s,baz=98,slow=8.8,SNR=5.3							
MJAR				Sn		**Sn**	**01 49 04.0**	**+2.5**
	9.3nm,0.3s,baz=100,slow=22,SNR=3.6							
MAJO	**Matsushiro**	**3.85**	**289**	*e*Pn		**Pn**	**01 48 17.5**	**+0.9**
MAT	**Matsushiro**	**3.85**	**289**	P		**Pn**	**01 48 17.8**	**+1.2**
MAT				*e*S		**Sn**	**01 49 03.4**	**+1.8**
ERM	**Erimo**	**6.66**	**3**	Pn		**Pn**	**01 48 52.1**	**-3.0**
CBIJ	**Chichi jima**	**8.24**	**183**	Pn		**Pn**	**01 49 15.7**	**-1.2**
CBIJ				Sn		Sn	01 50 40.6	-9.2
JCJ	**Chichijima**	**8.25**	**183**	Pn		**Pn**	**01 49 15.7**	**-1.2**
	baz=104,slow=19							
JCJ				Sn		Sn	01 50 40.6	-9.2
ASAJ	**Asahikawa**	**8.75**	**359**	Pn		**Pn**	**01 49 21.8**	**-2.0**
	3.2nm,0.3s,baz=204,slow=14,SNR=3.6							
ASAJ				Sn		Sn	01 50 53.0	-9.1
	1.3nm,0.3s,baz=125,slow=33,SNR=2.3							
USRK	**Ussuriysk Ar.**	**12.08**	**320**	Pn		**Pn**	**01 50 10.9**	**+1.5**
	0.8nm,0.3s,baz=121,slow=14,SNR=5.8							
KSRS	**Korea Array**	**12.11**	**284**	Pn		**Pn**	**01 50 10.8**	**+1.0**
	0.1nm,0.3s,baz=98,slow=14,SNR=3.0							
KSAR	**Wonju Array Be**	**12.14**	**284**	Pn		**Pn**	**01 50 10.8**	**+0.6**
HIA	**Hailar**	**21.84**	**317**	*e*P		**P**	**01 52 11.4**	**+1.7**
	6.9nm,0.4s							
ULN	**Ulaanbaatar**	**29.19**	**306**	*e*P		**P**	**01 53 15.7**	**-3.1**
SONM	**Songino Array**	**29.62**	**306**	P		**P**	**01 53 23.6**	**+1.1**
	6.6nm,0.9s,baz=98,slow=9.5,SNR=7.9							
SONM				PcP		**PcP**	**01 56 27.9**	**+1.0**
	0.6nm,0.5s,baz=111,slow=1.5,SNR=3.9							
ZALV	**Zalesovo Beam**	**43.83**	**314**	P		**P**	**01 55 23.1**	**+0.1**
	5.7nm,0.5s,baz=98,slow=7.7,SNR=5.6							
ZALV				PcP		**PcP**	**01 57 09.3**	**0.0**
	3.7nm,0.7s,baz=78,slow=3.3,SNR=4.9							
MKAR	**Makanchi Array**	**45.92**	**304**	P		**P**	**01 55 40.1**	**+0.3**
	2.1nm,0.6s,baz=88,slow=10,SNR=4.3							
MKAR				PcP		**PcP**	**01 57 17.2**	**+0.5**
	1.2nm,0.6s,baz=93,slow=4.3,SNR=3.1							
KURK	**Kurchatov**	**47.81**	**309**	P		**P**	**01 55 54.5**	**0.0**
KURK				PcP		**PcP**	**01 57 23.8**	**+0.6**
KURBB	**Kurchatov Arra**	**47.88**	**309**	P		**P**	**01 55 54.5**	**-0.6**
	3.2nm,0.8s,baz=82,slow=7.6,SNR=3.9							
KURBB				PcP		**PcP**	**01 57 23.8**	**+0.3**
	1.2nm,0.8s,baz=89,slow=3.5,SNR=3.1							
SML	**Sawmill**	**49.73**	**36**	*e*P		**P**	**01 56 09.6**	**+0.5**
	2.8nm,0.7s							
ILAR	**Eielson Array**	**50.35**	**32**	P		**P**	**01 56 14.1**	**+0.2**
	5.3nm,0.7s,baz=260,slow=6.1,SNR=16							
TKM2	**Tokmak 2**	**51.37**	**300**	*e*P		**P**	**01 56 22.3**	**+0.3**
	1.8nm,0.6s							
INK	**Inuvik**	**55.40**	**27**	P		**P**	**01 56 51.1**	**+0.1**
	3.9nm,0.7s,baz=300,slow=7.1,SNR=7.0							
WRAB	**Tennant Creek**	**55.55**	**190**	*e*P		**P**	**01 56 50.4**	**-2.2**
	10.0nm,1.1s							
WRA	**Warramunga Arr**	**55.56**	**190**	P		**P**	**01 56 52.3**	**-0.4**
	8.4nm,0.9s,baz=7.5,slow=7.5,SNR=5.4							
WRA				PcP		**PcP**	**01 57 53.5**	**+1.0**
	0.8nm,0.4s,baz=0.8,slow=4.1,SNR=2.8							
ASAR	**Alice Springs**	**59.29**	**189**	P		**P**	**01 57 18.8**	**-0.1**
	2.4nm,0.7s,baz=4.9,slow=6.7,SNR=4.2							
ABKAR	**Akbulak array**	**59.84**	**311**	*e*P		**P**	**01 57 21.9**	**-0.6**
	2.3nm,0.7s							
RES	**Resolute Bay**	**63.96**	**14**	P		**P**	**01 57 49.8**	**0.0**
	3.0nm,0.6s,baz=323,slow=5.8,SNR=7.2							
YKA	**Yellowknife Ar**	**64.73**	**30**	P		**P**	**01 57 54.8**	**-0.2**
	0.9nm,0.8s,baz=297,slow=6.6,SNR=3.8							
STKA	**Stephens Creek**	**66.89**	**181**	P		**P**	**01 58 09.7**	**+0.5**
	1.5nm,0.6s,baz=341,slow=8.6,SNR=3.4							
FINES	**FINESS Array B**	**70.79**	**333**	P		**P**	**01 58 34.0**	**+0.7**
	1.8nm,0.8s,baz=67,slow=11,SNR=2.4							
KBZ	**Khabaz**	**72.80**	**312**	P		**P**	**01 58 46.4**	**+0.7**
	4.8nm,0.8s,baz=85,slow=4.6,SNR=3.9							
KIV	**Kislovodsk**	**72.81**	**312**	*e*P		**P**	**01 58 47.2**	**+1.3**
	8.6nm,0.7s							
NVAR	**Mina Array Bea**	**75.14**	**53**	P		**P**	**01 59 00.8**	**+1.1**
	2.6nm,0.7s,baz=291,slow=5.8,SNR=10							
NB2	**NORSAR Subarra**	**76.14**	**338**	P		**P**	**01 59 04.4**	**-0.4**
	comp=Z,2.7nm,0.7s,baz=40,slow=5.9							
NOA	**NORSAR Array B**	**76.14**	**338**	P		**P**	**01 59 04.6**	**-0.2**
	comp=Z,2.2nm,0.7s,baz=39,slow=5.7,SNR=5.4							
AKASG	**Malin Array Be**	**76.27**	**323**	P		**P**	**01 59 05.5**	**-0.2**
	comp=Z,1.7nm,0.4s,baz=47,slow=6.1,SNR=7.2							
H17A	**Grant Village**	**76.51**	**45**	*e*P		**P**	**01 59 09.4**	**+1.8**
	comp=Z,2.3nm,0.7s							
PDAR	**Pinedale Array**	**78.08**	**46**	P		**P**	**01 59 16.6**	**+0.3**
	comp=Z,1.0nm,0.7s,baz=261,slow=2.4,SNR=3.7							
BRTR	**Keskin Array B**	**80.76**	**312**	P		**P**	**01 59 31.4**	**+0.5**
	comp=Z,2.7nm,0.9s,baz=119,slow=3.6,SNR=6.8							
GERES	**GERESS Array B**	**84.69**	**329**	P		**P**	**01 59 51.1**	**0.0**
	comp=Z,0.4nm,0.6s,baz=51,slow=5.3,SNR=4.2							
TXAR	**Lajitas Array**	**90.29**	**53**	P		**P**	**02 00 19.0**	**+0.5**
	comp=Z,1.0nm,0.7s,baz=298,slow=2.7,SNR=6.8							
TORD	**Torodi Ar. Bea**	**119.27**	**315**	PKP		**PKPdf**	**02 06 06.3**	**-0.7**
	comp=Z,0.3nm,0.5s,baz=31,slow=1.2,SNR=2.9							
LPAZ	**La Paz**	**146.56**	**63**	PKPbc		**PKPbc**	**02 07 00.1**	**+0.2**
	comp=Z,1.9nm,0.6s,baz=315,slow=3.9,SNR=3.9							
PLCA	**Paso Flores**	**153.35**	**112**	PKPbc		**PKPbc**	**02 07 16.1**	**+0.8**
	comp=Z,1.1nm,0.7s,baz=268,slow=9.6,SNR=3.0							
PLCA				PKPab		**PKPab**	**02 07 26.6**	**-0.9**
	comp=Z,1.8nm,0.9s,baz=249,slow=3.3,SNR=2.6							

*CSEM **28** 01:54:53.8,43°.43N×12°.47E,h7km,MD1.7/6*
ROM 28 01:54:53.8±0.1,43°.43N×12°.47E,h7km±1km,Md1.7/6, Ml0.9/3,Error ellipse: s-maj=0.7km s-min=0.5km az=167.0,Central Italy

Code	Station Name	Δ°	AZ°	Phase ID			Time	Res
				Op		ISC	h m s	ISC
ATPC	**Poggio Castell**	**0.06**	**351**	Pg		Pg	01 54 55.6	+0.1
ATPC				Sg		Sg	01 54 56.9	+0.2
	115nm,0.2s							
ATPC	**Poggio Castell**	**0.06**	**351**	Pg		Pg	01 54 55.6	+0.1
ATPC				Sg		Sg	01 54 56.9	+0.2
	115nm,0.2s							
ATVO	**AVT- Monte Val**	**0.06**	**226**	Pg		Pg	01 54 55.8	+0.2
ATVO				Sg		Sg	01 54 57.3	+0.5
ATVO	**AVT- Monte Val**	**0.06**	**226**	Pg		Pg	01 54 55.8	+0.2
ATVO				Sg		Sg	01 54 57.3	+0.5
PIEI	**Pieia**	**0.12**	**24**	Pg		Pg	01 54 56.9	+0.4
PIEI				Sg		Sg	01 54 59.3	+1.0
	27nm,0.2s							
PIEI	**Pieia**	**0.12**	**24**	Pg		Pg	01 54 56.9	+0.4
PIEI				Sg		Sg	01 54 59.3	+1.0
	27nm,0.2s							
BADI	**Badiali**	**0.18**	**297**	Pg		Pg	01 54 58.1	+0.6
BADI				Sg		Sg	01 55 01.3	+1.2
	25nm,0.2s							
BADI	**Badiali**	**0.18**	**297**	Pg		Pg	01 54 58.1	+0.6
BADI				Sg		Sg	01 55 01.3	+1.2
	25nm,0.2s							
FRON	**Frontone**	**0.21**	**64**	Pg		Pg	01 54 58.5	+0.5
FRON				Sg		Sg	01 55 02.1	+1.3
FRON	**Frontone**	**0.21**	**64**	Pg		Pg	01 54 58.5	+0.5
FRON				Sg		Sg	01 55 02.1	+1.3
SSFR	**Montelago di S**	**0.23**	**87**	Pg		Pg	01 54 59.1	+0.7
SSFR				Sg		Sg	01 55 03.0	+1.6
	16nm,0.2s							
SSFR	**Montelago di S**	**0.23**	**87**	Pg		Pg	01 54 59.1	+0.7
SSFR				Sg		Sg	01 55 03.0	+1.6
	16nm,0.2s							
SMOL	**Smolenice**	**6.15**	**32**	*e*P		Pg	01 56 53.3	+1.8

PLV 28 02:01:50.4±1.4,21°.97N×103°.46E,h14km±15km,ML3.6, Vietnam

Code	Station Name	Δ°	AZ°	Phase ID			Time	Res
				Op		ISC	h m s	ISC
MLVB	**It Ong**	**0.29**	**284**	*e*Pg		Pn	02 02 04.5	+4.4
MLVB				*e*Sg		Sn	02 02 14.1	+7.8
MLVB				AML		AML	02 02 20.7	
	comp=N,2μm,0.5s							
TGV	**Tuan Giao**	**0.38**	**185**	*e*Pg		Pg	02 01 57.9	-0.2
TGV				*e*Sg		Sg	02 02 03.2	-0.2
TGV				AML		AML	02 02 04.5	
	comp=E,4μm,0.6s							
SPV	**Sa-pa**	**0.51**	**44**	*e*Pg		Pb	02 02 01.0	-0.2
SPV				*e*Sg		Sg	02 02 07.4	+0.1
DBV	**Dienbien**	**0.70**	**215**	*e*Pg		Pb	02 02 04.5	0.0
DBV				*e*Sg		Sg	02 02 13.1	-0.4
TTVN	**Tram Tau**	**0.97**	**121**	*e*Pg		Pn	02 02 10.6	+1.0
TTVN				*e*Sg		Sn	02 02 23.1	-0.1
TTVN				AML		AML	02 02 28.6	
	comp=N,3μm,0.4s							
VTVB	**Vinh Tuy**	**1.37**	**78**	*e*Pg		Pg	02 02 17.1	+0.3
VTVB				*e*Sg		Sg	02 02 34.6	+0.1
HGVB	**Ha Giang**	**1.66**	**59**	*e*Pg		Pg	02 02 22.7	+0.3
HGVB				*e*Sg		Sg	02 02 43.9	-0.1
HBVN	**Hoa-Binh**	**2.10**	**122**	*e*Pg		Pb	02 02 29.4	+1.1
HBVN				*e*Sg		Sg	02 02 58.0	0.0
BCVB	**Bac Can**	**2.15**	**92**	*e*Pg		Pg	02 02 31.6	-0.1
BCVB				*e*Sg		Sg	02 02 59.3	-0.4

*IDC **28** 02:04:09.2±0.5,3°.67S×144°.26E,h0km,mb4.5/23, mb1 4.6/25,mb1mx4.5/44,mbtmp4.5/25,ML4.5/2,MS3.8/11, Ms1 3.8/11,ms1mx3.6/29,Error ellipse: s-maj=17.8km s-min=12.6km az=97.0*
*ISCJB **28** 02:04:11.0±0.2,3°.71S±0°.03×144°.47E±0°.03,h26km,*
mb4.7/78,MS3.8/14,Error ellipse: s-maj=5.3km s-min=4.3km az=145.3
*MOS **28** 02:04:13.1±1.0,3°.66S×144°.21E,h41km,mb5.0/20,Error ellipse: s-maj=11.1km s-min=7.3km az=108.5*
*NEIC **28** 02:04:16.1±0.8,3°.67S×144°.21E,h54km±8km,mb4.8/32, Error ellipse: s-maj=7.2km s-min=5.9km az=130.0*
*DJA **28** 02:04:20.4±0.6,4°.5S×14°.4E°,h58km±7km,M4.9/31, mb5.0/31,mB5.4/9,MLv5.0/1,Mw(mB)4.9/9*

ISC 28 02:04:12.6±0.4,3.71S±0°.06×144°.44E±0°.06,h26km,n188, σ1°35/176,mb4.8/77,MS3.9/14,6C,Near north coast of New Guinea

Code	Station Name	Δ°	AZ°	Phase ID			Time	Res
				Op		ISC	h m s	ISC
MANU	**Manus Island**	**3.36**	**61**	*e*Pn		**Pb**	**02 05 09.7**	**-1.9**
MANU				*e*Sn		**Sn**	**02 05 43.9**	**+1.2**
JAY	**Jayapura**	**3.91**	**288**	Pn		Pn	02 05 08.1	-3.0
	0.5nm,0.3s,baz=93,slow=22,SNR=14							
JAY	**Jayapura**	**3.91**	**288**	P		**Pn**	**02 05 08.7**	**-2.4**
GENI	**Genyem**	**4.41**	**284**	P		**Pn**	**02 05 18.4**	**+0.5**
PMG	**Port Moresby**	**6.27**	**155**	Pn		Pn	02 05 48.7	+5.2
	8.7nm,0.3s,baz=53,slow=3.6,SNR=14							
PMG	**Port Moresby**	**6.27**	**155**	*c* P		Pn	02 05 48.8	+5.3
PMG	**Port Moresby**	**6.27**	**155**	*e*Pn		Pn	02 05 49.3	+5.7
PMG				*e*Sn		**Sn**	**02 06 54.6**	**+0.2**
COEN	**Coen**	**10.26**	**187**	*e*Pn		Pn	02 06 42.1	+3.8
COEN				*e*Sn		Sn	02 08 12.4	-20
RKPI	**Ransiki, Papua**	**10.48**	**282**	P		**Pn**	**02 06 43.7**	**+2.4**
	93nm,0.9s,3μm							
FAKI	**Fak Fak**	**12.19**	**273**	P		**Pn**	**02 07 06.4**	**+1.6**
	28nm,1.0s							
SWI	**Sorong**	**13.47**	**282**	P		**Pn**	**02 07 23.7**	**+1.5**
	35nm,1.1s,852nm							
SAUI	**Saumlaki**	**13.74**	**251**	P		**Pn**	**02 07 27.5**	**+1.6**
	496nm,1.4s							
BNDI	**Bandanaira**	**14.52**	**266**	P		**Pn**	**02 07 38.2**	**+1.6**
	299nm,0.9s							
MSAI	**Masohi**	**15.48**	**271**	P		**Pn**	**02 07 51.3**	**+1.8**
	14nm,0.6s,2μm							
MTN	**Manton Dam**	**15.98**	**235**	*e*Pn		**Pn**	**02 07 55.0**	**-0.8**
	48nm,1.3s							
HNR	**Honiara**	**16.42**	**111**	Pn		**P**	**02 08 05.4**	**+1.4**
	4.3nm,0.3s,baz=139,slow=6.1,SNR=4.0							
GUMO	**Guam**	**17.19**	**1**	LR		LR	02 14 08.3	
	comp=Z,166nm,19.0s,baz=159,slow=35							
LBMI	**Labuha**	**17.20**	**280**	P		**P**	**02 08 13.6**	**+0.9**
	96nm,0.7s,999nm							
NLAI	**Namlea**	**17.31**	**271**	P		**P**	**02 08 14.4**	**+0.4**
	35nm,0.9s							
TNTI	**Ternate**	**17.63**	**284**	P		**P**	**02 08 18.7**	**+1.2**
	66nm,1.4s							
SANI	**Sanana**	**18.50**	**275**	P		**Pn**	**02 08 29.2**	**+1.9**
	35nm,1.0s							
WRAB	**Tennant Creek**	**18.89**	**211**	*c* P		**P**	**02 08

comp=Z,16nm,1.5s,comp=Z,338nm
CHTO Chiang Mai 50.06 298 *e*P **P** **02 13 05.3 -0.4**
CHTO pmax pmax
comp=Z,17nm,1.1s
CHTO Chiang Mai 50.06 298 *e*P **P** **02 13 05.3 -0.4**
comp=Z,17nm,1.1s
XAN Xi'an 50.31 321 P **P** **02 13 07.8 +0.5**
XAN pP sP 02 13 22.5 +4.0
XAN pmax pmax
comp=Z,13nm,1.5s
XAN pmax pmax
comp=Z,110nm,5.9s
BJI Beijing 50.68 332 P **P** **02 13 10.3 +0.3**
BJI pmax pmax
comp=Z,9.0nm,1.3s
CD2 Chengdu 51.86 315 P **P** **02 13 18.0 -1.1**
CD2 pmax pmax
comp=Z,3.0nm,0.8s
HHC Hu-ho-hao-te 53.56 329 *e*P **P** **02 13 33.5 +1.9**
HHC pmax pmax
comp=Z,20nm,1.1s
HHC pmax pmax
comp=Z,140nm,9.3s
KLR Kul'dur 53.87 350 P **P** **02 13 33.4 -0.1**
comp=Z,1.4nm,0.8s,baz=240,slow=2.8,SNR=3.8
KLR LR LR 02 32 59.9
comp=Z,91nm,21.5s,baz=170,slow=32
LZH Lanzhou 54.82 320 *e*P **P** **02 13 43.0 +2.1**
LZH pP sP 02 13 57.8 +5.7
LZH sP pP 02 14 05.0 +16
LZH pmax pmax
comp=Z,20nm,1.0s
NKL Nikolayevsk 56.74 357 *e*P **P** **02 13 54.8 +0.7**
PEA0 Petropavlovsk- 57.70 9 *e*P **P** **02 14 02.0 +1.1**
PETK Petropavlovsk- 57.70 9 P **P** **02 14 01.9 +1.0**
comp=Z,6.8nm,0.7s,baz=166,slow=7.8,SNR=7.5
PETK LR LR 02 34 16.0
comp=Z,40nm,21.9s,baz=194,slow=31
PETK Petropavlovsk- 57.70 9 P **P** **02 14 02.0 +1.0**
SHL Shillong 58.64 303 *e*P **P** **02 14 08.0 -0.2**
GTA Gaotai 59.36 321 *e*P **P** **02 14 14.0 +1.0**
GTA pP pP 02 14 19.5 -1.6
GTA sP sP 02 14 22.5 -1.7
GTA PcP **PcP** **02 15 02.0 +1.2**
GTA S **S** **02 22 19.5 -0.9**
GTA sS sS 02 22 30.0 -3.8
GTA Gaotai 59.36 321 SS SS 02 26 15.5 -0.2
ULN Ulaanbaatar 60.90 332 *e*P **P** **02 14 23.5 +0.2**
ULN pmax pmax
comp=Z,15nm,1.3s
ULN Ulaanbaatar 60.90 332 *e*P **P** **02 14 23.5 +0.2**
comp=Z,15nm,1.3s
SONM Songino Array 61.18 332 P **P** **02 14 25.6 +0.3**
comp=Z,1.6nm,0.8s,baz=152,slow=7.1,SNR=11
SONM PKP2bc 02 43 52.2
comp=Z,2.8nm,1.0s,baz=276,slow=1.7,SNR=14
SONA1 Songino Array 61.19 332 *e*P **P** **02 14 25.1 -0.2**
MA2 Magadan 63.29 4 *i*P **P** **02 14 39.3 +0.3**
ZAK Zakamensk 64.43 332 *e*P **P** **02 14 47.3 +0.5**
ZAK pmax pmax
comp=Z,13nm,1.3s
GUN Gumba 64.48 303 *e*P **P** **02 14 48.7 +0.8**
comp=Z,40nm,0.8s
KKN Kakani 64.95 303 *e*P **P** **02 14 51.5 +0.7**
comp=Z,39nm,0.8s
DMN Daman 65.03 303 *e*P **P** **02 14 52.3 +0.9**
comp=Z,97nm,1.2s
GKN Gorkha 65.55 303 *e*P **P** **02 14 55.1 +0.5**
comp=Z,50nm,0.8s
PPT Papeete 66.00 107 LR LR 02 40 56.8
comp=Z,87nm,21.0s,baz=130,slow=33
BOD Bodaibo 66.04 343 *e*P **P** **02 14 56.4 -0.5**
BOD pmax pmax
comp=Z,6.0nm,1.1s
KOLN Koldanda 66.35 302 *e*P **P** **02 15 00.5 +0.7**
comp=Z,43nm,0.8s
MOY Mondy 66.36 332 *e*P **P** **02 15 00.5 +1.2**
SEY Seymchan 66.74 4 P **P** **02 15 02.0 +0.7**
comp=Z,2.6nm,0.7s,baz=151,slow=7.7,SNR=5.6
SEY Seymchan 66.74 4 *e*P **P** **02 15 01.0 -0.3**
PYUN Piuthan 66.97 303 *e*P **P** **02 15 04.2 +0.4**
comp=Z,106nm,1.0s
HYB Hyderabad 68.28 290 *i*P **P** **02 15 12.0 0.0**
WMQ Urumqi 69.40 320 *e*P **P** **02 15 19.3 +0.7**
WMQ pP sP 02 15 34.5 +4.6
WMQ sP PcP 02 15 41.3 -0.6
WMQ PP **PP** **02 17 54.5 +2.3**
WMQ pmax pmax
comp=Z,4.0nm,0.8s
WMQ pmax pmax
comp=Z,34nm,4.2s
WMQ LR LR
comp=N,70nm,18.8s
WMQ LR LR
comp=E,73nm,24.4s
WMQ LR LR
comp=Z,16nm,18.8s
BILL Bilibino 73.21 8 *e*P **P** **02 15 42.0 +1.0**
BILL *e* 02 15 59.3
BILL *e* 02 18 23.7
BILL pmax pmax
comp=Z,2.0nm,1.0s
BILL MLR MLR
comp=Z,30nm,18.0s
MK01 Makanchi Array 74.10 321 *e*P **P** **02 15 46.8 +0.1**
MKAR Makanchi Array 74.12 321 P **P** **02 15 46.8 0.0**
comp=Z,1.6nm,0.6s,baz=108,slow=7.8,SNR=11
VNDA Vanda 74.34 176 LR LR 02 48 21.8
comp=Z,63nm,18.3s,baz=327,slow=36
ZAA0 Zalesovo Array 75.73 328 *e*P **P** **02 15 54.6 -1.3**
ZALV Zalesovo Beam 75.73 328 P **P** **02 15 55.3 -0.6**
comp=Z,5.2nm,0.8s,baz=108,slow=5.0,SNR=18
ZALV Zalesovo Beam 75.73 328 *i*P **P** **02 15 55.9 0.0**
ZALV pmax pmax
comp=Z,5.0nm,0.8s
TIXI Tiksi 75.91 355 P **P** **02 15 55.9 -0.6**
comp=Z,1.5nm,0.3s,baz=178,slow=1.5,SNR=5.4
TIXI Tiksi 75.91 355 *e*P **P** **02 15 56.0 -0.6**
TIXI pmax pmax
comp=Z,2.0nm,0.9s
TIXI Tiksi 75.91 355 *e*P **P** **02 15 55.5 -1.0**
comp=Z,3.2nm,0.8s
KSH Kashi 75.96 312 *e*P **P** **02 15 59.8 +2.1**
KSH *e*pP PcP 02 16 16.5 +6.5
KSH S **S** **02 25 37.8 -1.6**
KSH Kashi 75.96 312 ScS **SKSac** **02 26 06.5 -0.5**
KSH pmax pmax
comp=Z,87nm,3.7s
KSH LR LR
comp=N,85nm,5.3s
KSH LR LR
comp=E,74nm,5.5s
KSH LR LR
comp=Z,170nm,5.3s
TKM2 Tokmak 2 77.23 315 *e*P **P** **02 16 03.7 -1.3**
TKM2 pmax pmax
comp=Z,5.0nm,0.8s
TKM2 Tokmak 2 77.23 315 *e*P **P** **02 16 03.7 -1.3**
comp=Z,5.5nm,0.8s
KURK Kurchatov 77.86 324 *e*P **P** **02 16 06.9 -1.1**
KURK pmax pmax
comp=Z,19nm,1.4s
KURK Kurchatov 77.86 324 *e*P **P** **02 16 06.9 -1.1**
comp=Z,19nm,1.4s
AAK Ala-Archa 77.93 315 *i*P **P** **02 16 07.5 -1.3**
AAK pmax pmax
comp=Z,11nm,1.0s
AAK Ala-Archa 77.93 315 *e*P **P** **02 16 07.9 -0.9**
comp=Z,5.1nm,0.9s
EKS2 Erkin-Say 78.44 315 *e*P **P** **02 16 10.4 -1.2**
EKS2 pmax pmax
comp=Z,11nm,0.9s
EKS2 Erkin-Say 78.44 315 *e*P **P** **02 16 10.4 -1.2**
comp=Z,11nm,0.9s
SVW2 Sparrevohn 79.26 25 *e*P **P** **02 16 13.6 -1.9**
comp=Z,19nm,1.4s
RSO Redoubt South 80.20 27 *e*P **P** **02 16 21.9 +1.0**
PMR Palmer 82.28 26 *e*P **P** **02 16 31.1 -0.5**
PMR pmax pmax
comp=Z,18nm,0.4s
PMR Palmer 82.28 26 *e*P **P** **02 16 31.1 -0.5**
comp=Z,18nm,0.4s
KTH Kantishna Hill 82.31 24 *e*P **P** **02 16 31.6 -0.3**
comp=Z,10nm,1.1s
NRIK Noril'sk 82.33 343 P **P** **02 16 32.4 +0.7**
comp=Z,4.2nm,0.7s,baz=130,slow=6.5,SNR=6.0

TRF Thorofare Moun 82.52 24 *e*P **P** **02 16 33.4 +0.3**
comp=Z,28nm,1.8s
SML Sawmill 82.71 26 *e*P **P** **02 16 35.3 +1.3**
SML pmax pmax
comp=Z,21nm,1.0s
SML Sawmill 82.71 26 *e*P **P** **02 16 35.3 +1.3**
comp=Z,21nm,1.0s
MLY Manley 82.99 23 *e*P **P** **02 16 35.1 -0.2**
comp=Z,21nm,1.6s
RND Reindeer 83.10 25 *e*P **P** **02 16 35.0 -0.9**
RND pmax pmax
comp=Z,11nm,0.8s
RND Reindeer 83.10 25 *e*P **P** **02 16 35.0 -0.9**
comp=Z,11nm,0.8s
MCK McKinley 83.19 24 *e*P **P** **02 16 34.9 -1.5**
MCK pmax pmax
comp=Z,9.0nm,0.9s
MCK McKinley 83.19 24 *e*P **P** **02 16 34.9 -1.5**
comp=Z,8.7nm,0.9s
MAW Mawson 83.37 202 P **P** **02 16 38.1 +1.0**
comp=Z,5.8nm,0.7s,baz=108,slow=5.2,SNR=8.6
MAW LR LR 02 50 18.3
comp=Z,107nm,19.1s,baz=63,slow=33
MAW Mawson 83.37 202 *e*P **P** **02 16 36.9 -0.3**
MAW pmax pmax
comp=Z,2.0nm,0.8s
MAW Mawson 83.37 202 *e*P **P** **02 16 36.9 -0.3**
comp=Z,1.5nm,0.8s
BRVK Borovoye 83.50 324*c i*P **P** **02 16 38.4 +0.3**
BRVK pmax pmax
comp=Z,17nm,1.0s
BRVK Borovoye 83.50 324 *e*P **P** **02 16 39.4 +1.3**
comp=Z,19nm,1.0s
DHY Denali Highway 83.59 25 *e*P **P** **02 16 38.6 0.0**
comp=Z,9.3nm,1.0s
DIV Divide 83.62 27 *e*P **P** **02 16 39.9 +1.2**
comp=Z,7.1nm,0.9s
KLU Klutina 83.68 27 *e*P **P** **02 16 38.7 -0.3**
comp=Z,29nm,1.4s
WRH Wood River Hil 83.81 24 *e*P **P** **02 16 39.6 +0.1**
comp=Z,13nm,1.0s
CCB Clear Creek Bu 84.00 24 *e*P **P** **02 16 39.3 -1.1**
comp=Z,10nm,1.0s
COLD Coldfoot 84.10 21 *e*P **P** **02 16 41.8 +0.8**
comp=Z,4.7nm,0.9s
ZRNK Zerenda 84.22 324 *e*P **P** **02 16 41.2 -0.7**
ZRNK pmax pmax
comp=Z,11nm,1.1s
ZRNK Zerenda 84.22 324 *e*P **P** **02 16 41.1 -0.7**
comp=Z,11nm,1.1s
IL1 Eielson Array 84.41 24 *e*P **P** **02 16 41.6 -0.9**
ILAR Eielson Array 84.41 24 P **P** **02 16 42.0 -0.5**
comp=Z,4.7nm,0.8s,baz=254,slow=5.1,SNR=41
ILB Eielson Array 84.41 24 *e*P **P** **02 16 42.3 -0.2**
DOT Dot Lake 85.19 25 *e*P **P** **02 16 47.3 +0.8**
comp=Z,24nm,1.0s
EGAK Eagle 86.74 24 *e*P **P** **02 16 54.3 +0.2**
comp=Z,4.6nm,0.9s
DAWY Dawson 87.30 25 *e*P **P** **02 16 56.7 -0.2**
comp=Z,4.9nm,0.8s
GEYT Alibeck 89.35 308 P **P** **02 17 07.1 -0.2**
comp=Z,2.1nm,0.6s,baz=166,slow=3.1,SNR=6.6
GEYT PKKPbc **PKKPbc** **02 34 45.0 +0.8**
comp=Z,1.9nm,0.3s,baz=247,slow=9.5,SNR=4.0
GEYT LR LR 03 01 01.9
comp=Z,38nm,19.7s,baz=20,slow=38
INK Inuvik 90.48 22 P **P** **02 17 11.8 +0.1**
comp=Z,1.6nm,0.8s,baz=263,slow=6.2,SNR=8.3
INK Inuvik 90.48 22 *e*P **P** **02 17 11.3 -0.4**
comp=Z,9.5nm,1.7s
ARU Arti 90.78 326*c i*P P 02 17 10.1 -3.3
ARU 02 20 44.9
ARU S **SKSac** **02 27 36.6 -6.8**
ARU pmax pmax
comp=Z,6.0nm,1.2s
SYO Syowa Base 91.84 200‖ *i*P **P** **02 17 18.0 -0.1**
SYO Syowa Base 91.84 200‖ *e*X P 02 17 23.2 +5.1
NVAR Mina Array Bea 97.98 52 P Pdif 02 17 49.7 +2.5
comp=Z,0.4nm,0.7s,baz=258,slow=4.5,SNR=4.8
NVAR LR LR 02 54 33.1
comp=Z,47nm,20.6s,baz=274,slow=31
YKA Yellowknife Ar 98.34 27 P **P** **02 17 48.0 +0.2**
comp=Z,0.5nm,0.7s,baz=280,slow=4.7,SNR=12
YKA PKiKP **PKiKP** **02 22 20.9 +0.8**
comp=Z,0.1nm,0.5s,baz=299,slow=1.4,SNR=3.7
YKA PKKPbc **PKKPbc** **02 34 18.7 -2.8**
comp=Z,0.3nm,0.7s,baz=98,slow=2.6,SNR=9.7
ZEI Tsey 100.24 313 *e*P **Pdif** **02 17 52.8 -4.3**
ZEI pmax pmax
comp=Z,7.0nm,1.4s
KIV Kislovodsk 101.03 314 *e*P **Pdif** **02 17 57.5 -2.9**
KIV *e* 02 22 06.3
KIV pmax pmax
comp=Z,2.0nm,0.9s
KIV MLR MLR
comp=Z,32nm,17.0s
OBN Obninsk 103.21 326 *e*P **Pdif** **02 18 07.1 -2.6**
OBN *e* 02 22 25.3
OBN pmax pmax
comp=Z,5.0nm,0.9s
OBN MLR MLR
comp=Z,35nm,15.0s
DGMT Dagmar 106.85 40 *e*Pdif **Pdif** **02 18 23.9 -2.3**
GERES GERESS Array B 118.58 325 PKP **PKPdf** **02 22 58.3 -0.2**
comp=Z,0.6nm,0.7s,baz=114,slow=1.6,SNR=6.5
SCHQ Schefferville 123.09 21 PKP **PKPdf** **02 23 07.0 +0.1**
comp=Z,4.3nm,0.8s,baz=255,slow=6.4,SNR=6.0
PLCA Paso Flores 125.42 148 PKP **PKPdf** **02 23 13.7 +1.8**
comp=Z,5.4nm,0.8s,baz=269,slow=2.3,SNR=7.8
TOA0 Torodi Ar. Sit 142.02 287 *e*PKPdf **PKPdf** **02 23 40.7 -2.8**
TORD Torodi Ar. Bea 142.02 287 PKhKP PKPpre 02 23 38.8
comp=Z,0.5nm,0.4s,baz=76,slow=2.2,SNR=18
TORD PKP **PKPdf** **02 23 42.4 -1.1**
comp=Z,0.5nm,0.4s,baz=65,slow=2.6,SNR=18
LPAZ La Paz 142.16 123 PKhKP PKPpre 02 23 41.8
comp=Z,1.6nm,0.6s,baz=229,slow=3.7,SNR=8.5
LPAZ La Paz 142.16 123 *e*PKPdf **PKPdf** **02 23 41.5 -3.0**
LPAZ PKPpre PKPpre 02 23 41.8
CPUP Villa Florida 143.45 146 PKhKP PKPpre 02 23 42.9
comp=Z,4.1nm,0.9s,baz=218,slow=3.2,SNR=7.4
CPUP Villa Florida 143.45 146 PKPpre PKPpre 02 23 42.9
CPUP *e*PKPdf PKPbc 02 23 43.4 +0.4
SDV Santo Domingo 144.78 80 *e*PKPbc **PKPdf** **02 23 48.6 0.0**
KIC Kosan Boka 149.19 276 *e*PKP1 **PKPbc** **02 24 01.8 +1.8**
comp=Z,112nm,1.7s
DBIC Dimbokro 149.28 277 PKPbc **PKPbc** **02 24 00.9 +0.6**
comp=Z,2.9nm,0.4s,baz=33,slow=2.5,SNR=18
TIC Toumodi 149.45 277 *e*PKP1 **PKPbc** **02 24 02.1 +1.4**
LIC Lamto 149.48 276 *e*PKP1 **PKPbc** **02 24 02.5 +1.8**

*KRSC **28** 02:15:34.6±0.9, 56°.28N×163°.22E, h22km±7km, ML4.5*
*IDC **28** 02:15:34.5±0.6, 56°.31N×162°.53E, h0km, mb3.9/26, mb1 4.1/28, mb1mx4.0/53, mbtmp3.9/28, ML4.3/2, MS3.2/6, Ms1 3.2/6, ms1mx2.9/56, Error ellipse: s-maj=16.8km s-min=11.6km az=164.0*
*MOS **28** 02:15:36.6±1.8, 56°.50N×162°.56E, h14km, mb4.4/25, Error ellipse: s-maj=9.3km s-min=5.0km az=65.4*
*NEIC **28** 02:15:42.4±0.9, 56°.35N×162°.30E, h53km±10km, mb4.4/29, Error ellipse: s-maj=11.5km s-min=6.0km az=153.0*
ISC 28 02:15:37.4±0.9, 56°.32N±0°.04×162°.94E±0°.03, h18km±4km, n172, σ2s18/174, mb4.2/63, MS3.6/7, 1C, Near east coast of Kamchatka Peninsula

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
KBG	**Krutoberegovo**	**0.14**	**242**	*i* P		**Pg**	**02 15 40.7**	**-0.9**
KBG				*e*S		**Sg**	**02 15 44.8**	**+0.5**
SMKR	**Semkarok**	**0.86**	**288**	*i* P		**Pb**	**02 15 53.5**	**-0.3**
SMKR				*i* S		**Sb**	**02 16 06.7**	**+1.8**
SMKR	**Semkarok**	**0.86**	**288**	PN		**Pb**	**02 15 53.5**	**-0.3**
BDR	**Baidarnaya**	**0.99**	**285**	*i* P		**Pb**	**02 15 55.9**	**-0.2**
BDR				*i* S		**Sb**	**02 16 11.3**	**+2.5**
SRKR	**Sorokina**	**1.03**	**289**	*i* P		**Pn**	**02 15 56.6**	**-0.5**
SRKR				*i* S		**Sn**	**02 16 12.9**	**+1.7**
SRKR	**Sorokina**	**1.03**	**289**	PN		**Pn**	**02 15 56.6**	**-0.5**
ZLN	**Zelenaya**	**1.23**	**256**	*i* P		**Pn**	**02 16 00.0**	**+0.2**
ZLN				*e*S		**Sn**	**02 16 17.3**	**+1.3**
ZLN	**Zelenaya**	**1.23**	**256**	PN		**Pn**	**02 16 00.0**	**+0.2**
ZLN				S		**Sn**	**02 16 17.3**	**+1.3**
CIRR	**Tsirk**	**1.24**	**261**	*e*P		**Pn**	**02 16 00.0**	**0.0**
CIRR				*e*S		**Sn**	**02 16 17.2**	**+0.9**
CIRR	**Tsirk**	**1.24**	**261**	PN		**Pn**	**02 16 00.0**	**0.0**
CIRR				S		**Sn**	**02 16 17.2**	**+0.9**

KLY Klyuchi 1.27 271 *i*P **Pn** **02 15 58.3 -2.0**
KLY *i*S **Sn** **02 16 15.5 -1.4**
LGNR Loginova 1.28 260 *i*P **Pn** **02 16 01.0 +0.4**
LGNR *i*S **Sb** **02 16 19.8 +2.5**
LGNR Loginova 1.28 260 PN **Pn** **02 16 01.0 +0.4**
KRSR Krestovskiy 1.33 266 *i*P **Pn** **02 16 01.0 -0.1**
KRSR *e*S **Sn** **02 16 19.9 +1.5**
KRSR Krestovskiy 1.33 266 PN **Pn** **02 16 01.0 -0.1**
KRSR S **Sn** **02 16 19.9 +1.5**
BKI Bering 2.05 122 *e*P **Pn** **02 16 08.0 -2.9**
BKI *e*S **Sn** **02 16 32.5 -3.5**
BKI Bering 2.05 122 PN **Pn** **02 16 08.0 -2.9**
ESO Esso 2.41 262 *e*P **Pn** **02 16 18.0 +2.1**
ESO *e*S **Sb** **02 16 49.5 0.0**
ESO Esso 2.41 262 PN **Pn** **02 16 18.0 +2.1**
ESO S **Sb** **02 16 49.5 0.0**
OSSR Ossora 2.94 1 *e*P **Pn** **02 16 23.3 +0.2**
OSSR *e*S **Sn** **02 16 57.8 -0.1**
KII Karymskiy 3.04 223 *e*P **Pn** **02 16 25.8 +1.1**
KII Karymskiy 3.04 223 PN **Pn** **02 16 25.8 +1.1**
NLC Nalytchevo 3.78 215 *e*P **Pn** **02 16 35.4 +0.7**
NLC *e*S **Sn** **02 17 21.2 +2.5**
NLC Nalytchevo 3.78 215 PN **Pn** **02 16 35.4 +0.7**
NLC S **Sn** **02 17 21.2 +2.5**
SDLR Sedlovina 3.85 219 *e*P **Pn** **02 16 37.0 +1.2**
SDLR Sedlovina 3.85 219 PN **Pn** **02 16 37.0 +1.2**
KRX Arik 3.87 222 *e*P **Pn** **02 16 38.1 +2.0**
KRER Koryakskii 3.88 220 *e*P **Pn** **02 16 37.8 +1.6**
SMAR Somma 3.89 220 *e*P **Pn** **02 16 37.7 +1.3**
SMAR Somma 3.89 220 PN **Pn** **02 16 37.7 +1.3**
GNL Ganaly 3.90 230 *i*P **Pn** **02 16 38.6 +2.1**
GNL Ganaly 3.90 230 PN **Pn** **02 16 38.6 +2.1**
AVH Avacha 3.91 220 *e*P **Pn** **02 16 38.3 +1.7**
AVH Avacha 3.91 220 PN **Pn** **02 16 38.3 +1.7**
KOK Koryaka 3.92 221 *e*P **Pn** **02 16 40.0 +3.2**
KOK Koryaka 3.92 221 PN **Pn** **02 16 40.0 +3.2**
UGLR Uglovaya 3.92 219 *i*P **Pn** **02 16 38.1 +1.3**
DALK Dalny 4.09 218 *e*P **Pn** **02 16 39.6 +0.6**
PET Petropavlovsk 4.13 219 *e*P **Pn** **02 16 40.5 +0.9**
PET Petropavlovsk 4.13 219 *e*PN **Pn** **02 16 40.8 +1.2**
PET MLR MLR
comp=Z,578nm,11.0s
PET MLR MLR
comp=Z,801nm,9.0s
PET Petropavlovsk 4.13 219 *e*Pn **Pn** **02 16 39.5 -0.1**
PET *e*S **Sn** **02 17 21.1 -6.4**
PEA0 Petropavlovsk- 4.43 225 *e*Pn **Pn** **02 16 44.9 +1.2**
PEA0B Petropavlovsk- 4.43 225 *e*Pn **Pn** **02 16 43.9 +0.2**
PETK Petropavlovsk- 4.43 225 Pn **Pn** **02 16 45.3 +1.7**
comp=Z,3.5nm,0.3s,baz=66,slow=17,SNR=33
PETK LR LR 02 18 17.0
comp=Z,107nm,21.3s,baz=333,slow=38
TILK Tilichiki 4.47 21 *e*P **Pn** **02 16 45.2 +1.1**
KRMR Karymshinskiy 4.48 221 *e*P **Pn** **02 16 46.5 +2.2**
KRMR *e*S **Sn** **02 17 37.7 +1.8**
RUS Russkaya 4.68 215 *e*P **Pn** **02 16 47.5 +0.5**
RUS Russkaya 4.68 215 PN **Pn** **02 16 47.5 +0.5**
MTVR Mutnovka 4.74 218 *e*P **Pn** **02 16 50.2 +2.1**
APC Apacha 4.78 227 *e*P **Pn** **02 16 50.4 +1.9**
APC Apacha 4.78 227 PN **Pn** **02 16 50.4 +1.9**
ASAK Asacha 4.92 219 *e*P **Pn** **02 16 53.4 +2.9**
PAU Pauzhetka 6.06 219 *e*P **Pn** **02 17 09.6 +3.5**
PAU Pauzhetka 6.06 219 PN **Pn** **02 17 09.6 +3.5**
SKR Severo-Kuril's 6.96 219 *e*PN **Pn** **02 17 20.2 +1.8**
MA2 Magadan 7.25 302 Pn **Pn** **02 17 18.4 -3.9**
comp=Z,1.0nm,0.3s,baz=84,slow=15,SNR=1.9
MA2 LR LR 02 20 22.0
comp=Z,36nm,19.8s,baz=128,slow=41
BILL Bilibino 11.86 6 *e*PN **Pn** **02 18 24.7 -0.7**
BILL pmax pmax
comp=Z,2.0nm,0.9s
BILL MLR MLR
comp=Z,132nm,14.0s
NKL Nikolayevsk 13.23 265 *e*PN **P** **02 18 54.8 +0.9**
NKL pmax pmax
comp=Z,20nm,0.9s
YAK Yakutsk 17.82 302 *e*P **Pn** **02 19 40.4 -3.8**
YAK pmax pmax
comp=Z,12nm,0.5s
HABR Khabarovsk 18.64 257 *e*P **P** **02 19 51.4 -2.5**
HABR *e*S **Sn** **02 23 22.8 +0.8**
HABR pmax pmax
comp=E,32nm,1.5s
HABR pmax pmax
comp=Z,42nm,1.5s
HABR pmax pmax
comp=N,5.0nm,0.9s
HABR MLR MLR
comp=Z,154nm,16.0s
ERM Erimo 19.19 230 *e*P **Pn** **02 20 00.8 -0.1**
ERM pmax pmax
comp=Z,31nm,1.1s
KLR Kul'dur 20.02 262 P **P** **02 20 07.4 -1.6**
comp=Z,0.1nm,0.3s,baz=60,slow=12,SNR=9.8
TIXI Tiksi 20.96 330 P **P** **02 20 19.0 +0.1**
comp=Z,1.2nm,0.3s,baz=125,slow=13,SNR=3.7
TIXI LR LR 02 28 02.3
comp=Z,99nm,19.8s,baz=136,slow=36
TIXI Tiksi 20.96 330 P **P** **02 20 19.0 +0.1**
TIXI pmax pmax
comp=Z,1.0nm,0.3s
TIXI MLR MLR
comp=Z,99nm,19.8s
TIXI Tiksi 20.96 330 *e*Pn **P** **02 20 24.7 +5.8**
comp=Z,8.1nm,0.9s
TT01 Tatalina 21.46 55 *e*P P 02 20 30.9 +6.4
USRK Ussuriysk Ar. 22.98 251 P **P** **02 20 41.0 +0.1**
comp=Z,2.1nm,0.9s,baz=34,slow=14,SNR=3.1
RSO Redoubt South 23.24 61 *e*P P 02 20 50.4 +6.8
BPAW Bear Paw Mtn. 23.68 52 *e*P **P** **02 20 52.0 +4.3**
comp=Z,20nm,1.4s
KTH Kantishna Hill 23.74 53 *e*P **P** **02 20 53.1 +4.8**
comp=Z,37nm,1.8s
MLY Manley 23.76 50 *e*P **P** **02 20 52.2 +3.8**
comp=Z,31nm,1.8s
KDAK Kodiak Island 23.91 68 *i*P **P** **02 20 54.8 +5.0**
TRF Thorofare Moun 24.03 54 *e*P **P** **02 20 55.9 +4.7**
comp=Z,14nm,0.8s
COLD Coldfoot 24.05 44 *e*P **P** **02 20 54.2 +3.1**
comp=Z,5.9nm,1.0s
MSHR Mys Shultsa 24.55 249*c i*P **P** **02 20 53.3 -2.5**
MCK McKinley 24.61 53 *e*P **P** **02 21 00.2 +3.9**
MCK pmax pmax
comp=Z,11nm,1.2s
MCK McKinley 24.61 53 *e*P **P** **02 21 00.2 +3.9**
comp=Z,11nm,1.2s
RND Reindeer 24.68 53 *e*P **P** **02 20 58.8 +1.9**
RND pmax pmax
comp=Z,8.0nm,1.1s
RND Reindeer 24.68 53 *e*P **P** **02 20 58.8 +1.9**
comp=Z,8.1nm,1.1s
MDM Murphy Dome 24.83 50 *e*P **P** **02 21 01.6 +3.4**
comp=Z,6.2nm,1.0s
WRH Wood River Hil 24.92 51 *e*P **P** **02 21 01.1 +2.1**
comp=Z,10nm,0.9s
COLA College 25.00 50 *e*P **P** **02 21 02.6 +2.9**
COLA pmax pmax
comp=Z,9.0nm,1.0s
COLA College 25.00 50 *e*P **P** **02 21 02.6 +2.9**
comp=Z,8.9nm,1.0s
CCB Clear Creek Bu 25.03 50 *e*P **P** **02 21 02.8 +2.8**
comp=Z,13nm,1.2s
SML Sawmill 25.13 57 *e*P **P** **02 21 05.4 +4.4**
SML pmax pmax
comp=Z,9.0nm,0.8s
SML Sawmill 25.13 57 *e*P **P** **02 21 05.4 +4.4**
comp=Z,8.9nm,0.8s
DHY Denali Highway 25.38 54 *e*P **P** **02 21 06.5 +3.1**
comp=Z,4.5nm,0.8s
IL1 Eielson Array 25.42 50 *e*P **P** **02 21 07.3 +3.8**
ILAR Eielson Array 25.42 50 P **P** **02 21 03.7 +0.2**
comp=Z,3.3nm,0.8s,baz=265,slow=9.5,SNR=19
ILAR LR LR 02 31 53.1
comp=Z,88nm,18.1s,baz=74,slow=38
ILAR Eielson Array 25.42 50 *e*P **P** **02 21 07.0 +3.5**
ILAR pmax pmax
comp=Z,3.0nm,0.8s
ILB Eielson Array 25.42 50 *e*P **P** **02 21 08.4 +4.9**
SCM Sheep Creek Mo 25.60 57 *e*P **P** **02 21 07.8 +2.5**
SCM pmax pmax
comp=Z,21nm,0.8s
SCM Sheep Creek Mo 25.60 57 *e*P **P** **02 21 07.8 +2.5**
comp=Z,21nm,0.8s
MJA0 Matsu Arr-Jizo 25.85 230 *e*P **P** **02 21 07.0 -0.7**

MJA0 pmax pmax
comp=Z,3.0nm,0.6s
MJAR Matsushiro Arr 25.86 231 P **P** **02 21 05.8 -2.1**
comp=Z,3.1nm,0.6s,baz=26,slow=7.7,SNR=8.4
MJAR Matsushiro Arr 25.86 231 P **P** **02 21 05.8 -2.1**
MJAR pmax pmax
comp=Z,4.0nm,0.7s
FYU Fort Yukon 26.00 46 *eP* **P** **02 21 10.4 +1.7**
comp=Z,1.5nm,0.8s
BOD Bodaibo 26.18 294 *eP* **P** **02 21 11.7 +1.2**
BOD pmax pmax
comp=Z,4.0nm,1.2s
KLU Klutina 26.32 57 *eP* **P** **02 21 14.9 +3.1**
comp=Z,8.4nm,0.9s
BMRM Bremner River 27.06 58 *eP* **P** **02 21 22.6 +4.1**
comp=Z,9.8nm,1.1s
EGAK Eagle 27.85 49 *eP* **P** **02 21 27.8 +2.4**
comp=Z,5.1nm,0.8s
DAWY Dawson 28.74 51 *eP* **P** **02 21 36.0 +2.6**
comp=Z,0.4nm,0.4s
INK Inuvik 30.32 41 P **P** **02 21 49.8 +2.4**
comp=Z,3.8nm,0.7s,baz=284,slow=7.1,SNR=14
INK Inuvik 30.32 41 *eP* P 02 21 51.3 +4.0
INK pmax pmax
comp=Z,5.0nm,0.8s
INK Inuvik 30.32 41 *eP* P 02 21 51.3 +4.0
comp=Z,5.4nm,0.8s
BJI Beijing 34.40 262 P **P** **02 22 21.3 -2.0**
BJI S **S** **02 27 48.8 -1.3**
BJI pmax pmax
comp=Z,6.0nm,0.8s
BJI pmax pmax
comp=Z,140nm,3.3s
BJI LR LR
comp=N,310nm,14.8s
BJI LR LR
comp=E,190nm,14.2s
BJI LR LR
comp=Z,53nm,18.4s
ULN Ulaanbaatar 34.48 280 *eP* **P** **02 22 21.3 -2.8**
ULN pmax pmax
comp=Z,1.0nm,0.9s
DLBC Dease Lake 34.85 58 P **P** **02 22 29.6 +2.4**
comp=Z,1.6nm,0.5s,baz=179,slow=22,SNR=3.5
DLBC Dease Lake 34.85 58 *eP* P 02 22 34.3 +7.2
comp=Z,5.0nm,1.1s
SONM Songino Array 34.85 280 P **P** **02 22 26.6 -0.7**
comp=Z,1.2nm,0.8s,baz=54,slow=8.2,SNR=8.2
SONM Songino Array 34.85 280 *eP* **P** **02 22 27.1 -0.2**
SONM pmax pmax
comp=Z,1.0nm,0.8s
HHC Hu-ho-hao-te 36.40 267 *eP* **P** **02 22 43.0 +2.4**
HHC pmax pmax
comp=Z,24nm,0.7s
HHC pmax pmax
comp=Z,98nm,8.6s
H11N2 WAKE ISLAND Hy 36.66 174 T T 03 01 25.5
baz=357,slow=76,SNR=1536
H11N3 WAKE ISLAND Hy 36.67 174 T T 03 01 31.3
baz=357,slow=76,SNR=1546
H11N1 WAKE ISLAND Hy 36.67 174 T T 03 01 31.5
baz=357,slow=76,SNR=1583
H11S1 WAKE ISLAND Hy 37.86 174 T T 03 02 59.6
baz=353,slow=74,SNR=46
H11S3 WAKE ISLAND Hy 37.87 174 T T 03 03 02.6
baz=353,slow=74,SNR=52
H11S2 WAKE ISLAND Hy 37.88 174 T T 03 03 02.6
baz=353,slow=74,SNR=48
YKW3 Yellowknife Ar 39.66 46 *eP* P 02 23 11.5 +3.8
comp=Z,3.7nm,0.7s
YKA Yellowknife Ar 39.70 46 P **P** **02 23 08.7 +0.7**
comp=Z,2.4nm,0.8s,baz=299,slow=8.2,SNR=26
YKA PcP **PcP** **02 25 14.1 -0.1**
comp=Z,0.1nm,0.6s,baz=307,slow=3.3,SNR=3.8
YKA Yellowknife Ar 39.70 46 P **P** **02 23 08.7 +0.7**
YKA 02 25 14.1
YKA pmax pmax
comp=Z,4.0nm,0.7s
YKB5 Yellowknife Ar 39.70 46 *eP* **P** **02 23 11.2 +3.1**
RES Resolute Bay 39.70 24 P **P** **02 23 07.4 -0.5**
comp=Z,0.8nm,1.1s,baz=333,slow=4.5,SNR=2.4
GTA Gaotai 43.93 275 *eP* **P** **02 23 42.5 -0.6**
GTA pP sP 02 23 52.8 +1.9
GTA sP pP 02 23 56.5 +7.8
GTA S **S** **02 30 10.0 -3.6**
GTA sS sS 02 30 26.5 +3.7
GTA SS SS 02 33 19.0 -11
GTA pmax pmax
comp=Z,8.0nm,1.2s
GTA pmax pmax
comp=Z,100nm,7.1s
GTA LR LR
comp=N,170nm,17.6s
GTA LR LR
comp=E,120nm,19.0s
GTA LR LR
comp=Z,130nm,16.6s
NEW Newport 46.93 64 LR LR 02 44 04.3
comp=Z,59nm,18.5s,baz=340,slow=36
KURK Kurchatov 47.46 301 P **P** **02 24 09.8 -0.9**
KURK pmax pmax
comp=Z,1.0nm,0.5s
KURK Kurchatov 47.46 301 P **P** **02 24 09.8 -0.9**
WMQ Urumqi 47.49 288 *eP* **P** **02 24 10.8 -0.3**
WMQ pP sP 02 24 28.0 +9.1
WMQ sP pP 02 24 34.8 +18
WMQ LR LR
comp=N,56nm,17.8s
WMQ LR LR
comp=E,110nm,25.2s
WMQ LR LR
comp=Z,16nm,20.8s
KURBB Kurchatov Arra 47.56 301 P **P** **02 24 09.8 -1.7**
comp=Z,1.2nm,0.5s,baz=57,slow=8.2,SNR=13
CD2 Chengdu 47.95 264 P **P** **02 24 12.0 -2.8**
CD2 pmax pmax
comp=Z,1.0nm,0.5s
MKAR Makanchi Array 48.27 295 P **P** **02 24 15.6 -1.5**
comp=Z,0.9nm,0.6s,baz=79,slow=6.3,SNR=6.5
MKAR Makanchi Array 48.27 295 *eP* **P** **02 24 14.7 -2.4**
MKAR pmax pmax
comp=Z,1.0nm,0.7s
BRVK Borovoye 49.72 308 *eP* **P** **02 24 26.9 -1.1**
BRVK pmax pmax
comp=Z,3.0nm,0.8s
FCC Fort Churchill 49.94 42 *eP* P 02 24 34.1 +4.5
FCC pmax pmax
comp=Z,7.0nm,0.8s
FCC Fort Churchill 49.94 42 *eP* P 02 24 34.1 +4.5
comp=Z,7.0nm,0.8s
ARCES ARCESS Array B 50.72 342 P **P** **02 24 33.2 -2.2**
comp=Z,3.0nm,0.9s,baz=33,slow=12,SNR=2.5
ARU Arti 52.15 317 *eP* **P** **02 24 45.5 -0.7**
ARU pmax pmax
comp=Z,1.0nm,0.9s
NVAR Mina Array Bea 53.18 74 P P 02 24 57.5 +3.1
comp=Z,0.2nm,0.5s,baz=306,slow=6.6,SNR=2.4
PDAR Pinedale Array 54.57 65 P **P** **02 25 06.2 +1.6**
comp=Z,0.2nm,0.4s,baz=337,slow=2.1,SNR=3.1
AAK Ala-Archa 55.14 296 P **P** **02 25 07.1 -1.5**
comp=Z,2.2nm,0.8s,baz=135,slow=4.7,SNR=5.4
AAK Ala-Archa 55.14 296 *eP* **P** **02 25 06.8 -1.8**
AAK pmax pmax
comp=Z,6.0nm,0.9s
ULM Lac du Bonnet 55.44 50 P P 02 25 13.7 +3.3
comp=Z,4.6nm,0.5s,baz=303,slow=7.7,SNR=6.5
ULM Lac du Bonnet 55.44 50 *eP* P 02 25 16.1 +5.7
ULM pmax pmax
comp=Z,5.0nm,0.5s
ULM Lac du Bonnet 55.44 50 *eP* **P** **02 25 12.5 +2.2**
comp=Z,6.0nm,0.7s
KKAR Karatay Array 56.76 299 *eP* **P** **02 25 18.6 -1.4**
KKAR pmax pmax
comp=Z,1.0nm,0.5s
KKAR Karatay Array 56.76 299 *eP* **P** **02 25 18.6 -1.4**
comp=Z,0.8nm,0.5s
AGMN Agassiz Nation 56.91 51 *eP* P 02 25 25.9 +5.0
comp=Z,5.1nm,0.8s
FINES FINESS Array B 57.79 337 P **P** **02 25 26.9 0.0**
comp=Z,1.4nm,0.8s,baz=19,slow=8.1,SNR=4.7
FINES FINESS Array B 57.79 337 *eP* **P** **02 25 28.7 +1.8**
FINES pmax pmax
comp=Z,1.0nm,0.8s
CMAR Chiang Mai Arr 60.45 259 P **P** **02 25 44.8 -1.2**
comp=Z,1.0nm,0.5s,baz=15,slow=6.0,SNR=5.1
OBN Obninsk 60.66 328 *eP* **P** **02 25 46.9 0.0**
OBN pmax pmax
comp=Z,3.0nm,0.8s
NB2 NORSAR Subarra 60.88 345 P P 02 25 53.5 +5.2
comp=Z,0.7nm,0.7s,baz=18,slow=6.9
NOA NORSAR Array B 60.88 345 P **P** **02 25 47.8 -0.5**
comp=Z,0.2nm,0.6s,baz=53,slow=23,SNR=2.6
MNTX Cornudas Mount 65.15 70 *eP* **P** **02 26 19.7 +2.6**
comp=Z,5.3nm,1.1s
WMOK Wichita Mounta 66.11 63 *eP* **P** **02 26 24.5 +1.2**
WMOK pmax pmax
comp=Z,5.0nm,0.8s
WMOK Wichita Mounta 66.11 63 *eP* **P** **02 26 24.5 +1.2**
comp=Z,5.2nm,0.8s
AKASG Malin Array Be 66.67 330 P **P** **02 26 25.6 -0.9**
comp=Z,1.1nm,0.6s,baz=32,slow=6.6,SNR=5.3
AKASG Malin Array Be 66.67 330 *eP* **P** **02 26 26.9 +0.4**
AKASG pmax pmax
comp=Z,1.0nm,0.6s
TX31 Lajitas Ar. Si 67.92 70 *eP* **P** **02 26 36.2 +1.3**
TXAR Lajitas Array 67.92 70 P **P** **02 26 36.0 +1.1**
comp=Z,3.2nm,0.7s,baz=304,slow=4.7,SNR=14
TXAR Lajitas Array 67.92 70 P **P** **02 26 36.0 +1.1**
TXAR pmax pmax
comp=Z,1.0nm,0.7s
KBZ Khabaz 68.29 318 P **P** **02 26 37.4 +0.5**
comp=Z,1.1nm,0.8s,baz=88,slow=4.6,SNR=2.7
ZEI Tsey 68.71 316 *eP* P
ZEI pmax pmax
comp=Z,7.0nm,1.3s
VRAC Vranov 71.07 337 LR LR 03 01 05.2
comp=Z,34nm,21.0s,baz=21,slow=38
GERES GERESS Array B 72.11 339 P **P** **02 27 00.5 +0.1**
comp=Z,0.3nm,0.6s,baz=350,slow=5.0,SNR=2.4
BRTR Keskin Array B 75.14 322 P **P** **02 27 18.6 +0.2**
comp=Z,0.3nm,0.7s,baz=90,slow=0.3,SNR=2.2
WRA Warramunga Arr 79.71 207 P **P** **02 27 41.8 -2.0**
comp=Z,1.6nm,1.0s,baz=9.8,slow=6.2,SNR=7.0
WRA Warramunga Arr 79.71 207 P **P** **02 27 41.8 -2.0**
WRA pmax pmax
comp=Z,1.0nm,0.4s
AS01 Alice Springs 83.38 207 *eP* **P** **02 28 01.0 -2.2**
ASAR Alice Springs 83.39 207 P **P** **02 28 02.9 -0.4**
comp=Z,1.7nm,0.8s,baz=18,slow=4.7,SNR=12
ESDC Sonseca Array 83.73 350 P **P** **02 28 04.6 -0.4**
comp=Z,0.1nm,0.4s,baz=6.1,slow=5.3,SNR=2.7
STKA Stephens Creek 89.71 198 P **P** **02 28 33.7 -0.2**
comp=Z,2.3nm,0.8s,baz=5.3,slow=4.7,SNR=3.5

IDC ***28*** *02:17:37.1±5.0,26˚.24N×96˚.75E,h151km±60km, mb3.0/3, mb1 3.2/4, mb1mx2.8/55, mbtmp3.4/4, Error ellipse: s-maj=118.6km s-min=22.3km az=59.0*
ISC 28 02:17:15.2±1.5,25˚.3N±0˚.1×97˚.05E±0˚.09, h10km, n10, σ1s97/12, mb3.5/3, Myanmar-China border region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SHL	**Shillong**	**4.68**	**274**	*e*PN	**Pb**	**02 18 34.0**	**-3.5**
SHL				*e*PS	**Pg**	**02 18 47.0**	**+2.1**
SHL				*e*SN	**Sn**	**02 19 20.5**	**-0.1**
SHL				*e*SG	**Sg**	**02 19 46.0**	**+0.4**
CMAR	**Chiang Mai Arr**	**7.06**	**165**	P	**Pg**	**02 19 30.7**	**+0.2**
	0.2nm,0.3s,baz=338,slow=12,SNR=11						
GUN	**Gumba**	**10.32**	**287**	*e*P	**Pn**	**02 19 45.9**	**+2.1**
	14nm,0.3s						
KKN	**Kakani**	**10.82**	**286**	*e*P	**Pn**	**02 19 52.7**	**+2.2**
	12nm,0.2s						
GKN	**Gorkha**	**11.42**	**286**	*e*P	**Pn**	**02 19 59.7**	**+1.1**
	12nm,0.4s						
KOLN	**Koldanda**	**12.29**	**284**	*e*P	**Pn**	**02 20 10.4**	**-0.1**
	7.5nm,0.4s						
PYUN	**Piuthan**	**12.87**	**285**	*e*P	**Pn**	**02 20 17.6**	**-0.9**
	9.2nm,0.4s						
MKAR	**Makanchi Array**	**24.44**	**335**	P	**P**	**02 22 31.8**	**-2.3**
	1.5nm,0.7s,baz=134,slow=10,SNR=7.8						
KURBB	**Kurchatov Arra**	**29.00**	**335**	P	**P**	**02 23 16.1**	**+1.0**
	0.2nm,0.6s,baz=135,slow=9.4,SNR=3.4						
WRA	**Warramunga Arr**	**57.79**	**138**	P	P	02 27 18.6	+12
	0.5nm,1.0s,baz=320,slow=7.6,SNR=2.7						

NIED ***28*** *02:20:00, 35˚.40N×142˚.70E, h5km, Mw4.1 Best double couple: M0 1.49000×10^15 NP1:ϕ=22.00000°, δ29.00000°, λ-81.00000°. NP2:ϕ=192.00000°, δ61.00000°, λ-95.00000°.*
IDC ***28*** *02:20:43.6±0.6, 35˚.31N×142˚.77E, h0km, mb4.1/19, mb1 4.3/22, mb1mx4.1/46, mbtmp4.1/22, ML3.3/3, MS3.3/3, Ms1 3.3/3, ms1mx2.8/41, Error ellipse: s-maj=17.0km s-min=15.4km az=148.0*
NEIC ***28*** *02:20:45.2±0.4, 35˚.39N×142˚.78E, h10km, mb4.3/5, Error ellipse: s-maj=8.9km s-min=8.3km az=106.0*
JMA ***28*** *02:20:47.4±0.4, 35˚.37N×142˚.65E, h60km, M3.9*
ISCJB ***28*** *02:20:49.3±0.4, 35˚.29N±0˚.04×142˚.52E±0˚.04, h56km, mb4.1/24, MS3.5/2, Error ellipse: s-maj=6.0km s-min=4.9km az=154.9*
ISC 28 02:20:51.2±0.6, 35˚.35N±0˚.05×142˚.57E±0˚.07, h56km, n45, σ1s50/49, mb4.1/24, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CHOJ	**Chosi**	**1.44**	**285**	P	**Pn**	**02 21 12.8**	**-2.1**
CHOJ				*e*S	**Sn**	**02 21 30.9**	**-1.9**
BSO1	**Boso 1**	**1.48**	**242**	P	**Pn**	**02 21 12.8**	**-2.2**
BSO1				*e*S	**Sn**	**02 21 32.2**	**-0.8**
JAG	**Ashikaga**	**2.75**	**294**	P	**Pn**	**02 21 30.1**	**-2.7**
JFT	**Otama**	**2.81**	**321**	P	**Pn**	**02 21 32.3**	**-1.4**
JFT				S	**Sn**	**02 22 04.3**	**-2.2**
JOD2	**Odawara 2**	**2.85**	**269**	P	**Pn**	**02 21 32.5**	**-1.7**
JOD2				*e*S	**Sn**	**02 22 06.4**	**-0.9**
JRY	**Ryogami san**	**3.06**	**284**	P	**Pn**	**02 21 36.1**	**-1.0**
JHJ2	**Mitsune**	**3.19**	**226**	S	**Sn**	**02 22 13.1**	**-2.6**
JHJ	**Hachijo jima 2**	**3.21**	**227**	Pn	Pn	02 21 35.7	-3.4
	25nm,0.3s,baz=246,slow=20,SNR=4.6						
JHJ				Sn	**Sn**	**02 22 12.6**	**-3.5**
	155nm,0.3s,baz=239,slow=23,SNR=9.8						
JYN	**Shimob**	**3.29**	**274**	P	**Pn**	**02 21 39.2**	**-1.1**
MJAR	**Matsushiro Arr**	**3.73**	**290**	Pn	**Pn**	**02 21 45.1**	**-1.2**
	5.3nm,0.3s,baz=99,slow=9.4,SNR=20						
MJAR				LR	LR	02 23 29.5	
	comp=Z,214nm,20.1s,baz=115,slow=43						
MAJO	**Matsushiro**	**3.73**	**290**	*e*Pn	**Pn**	**02 21 45.6**	**-0.8**
MAJO				*e*S	Sn	02 22 36.8	+7.7
MAT	**Matsushiro**	**3.73**	**290**	P	**Pn**	**02 21 46.1**	**-0.2**
MAT				S	**Sn**	**02 22 30.1**	**+1.1**
MAT	**Matsushiro**	**3.73**	**290**	P	**Pn**	**02 21 45.5**	**-0.8**
JMK	**Ichinoseki**	**3.75**	**344**	P	**Pn**	02 21 42.2	-4.4
JMK				S	**Sn**	**02 22 24.1**	**-5.3**
JOM	**Ohasama**	**4.24**	**347**	P	Pn	02 21 49.5	-3.7
ERM	**Erimo**	**6.67**	**4**	*e*Pn	Pn	02 22 20.3	-6.2
ASAJ	**Asahikawa**	**8.76**	**0**	Pn	Pn	02 22 49.5	-5.5
	2.0nm,0.3s,baz=222,slow=14,SNR=5.1						
USRK	**Ussuriysk Ar.**	**12.00**	**321**	Pn	**Pn**	**02 23 39.2**	**-0.3**
	0.3nm,0.3s,baz=130,slow=14,SNR=7.5						
SONM	**Songino Array**	**29.51**	**306**	P	**P**	**02 26 51.7**	**+1.4**
	4.6nm,1.0s,baz=109,slow=8.2,SNR=12						
SONM				LR	LR	02 38 59.6	
	comp=Z,94nm,18.8s,baz=113,slow=37						
TIXI	**Tiksi**	**37.07**	**353**	P	**P**	**02 27 55.3**	**-0.2**
	1.9nm,0.4s,baz=142,slow=2.0,SNR=3.6						
CMAR	**Chiang Mai Arr**	**42.02**	**258**	P	**P**	**02 28 38.1**	**+0.9**
	1.0nm,0.3s,baz=60,slow=7.5,SNR=4.3						
ZALV	**Zalesovo Beam**	**43.74**	**314**	P	**P**	**02 28 51.5**	**+0.6**
	2.4nm,0.5s,baz=91,slow=6.7,SNR=11						
ZALV				PcP	**PcP**	**02 30 36.6**	**-0.1**
	1.5nm,0.6s,baz=110,slow=1.6,SNR=5.3						
PMG	**Port Moresby**	**44.73**	**174**	*e*P	**P**	**02 28 57.9**	**-1.1**
	2.6nm,0.3s						
MKAR	**Makanchi Array**	**45.81**	**304**	P	**P**	**02 29 07.6**	**+0.1**
	1.6nm,0.8s,baz=91,slow=9.7,SNR=6.0						
MKAR				PcP	**PcP**	**02 30 45.1**	**+1.0**
	0.7nm,0.7s,baz=105,slow=5.0,SNR=2.6						
KURK	**Kurchatov**	**47.71**	**309**	P	**P**	**02 29 23.3**	**+1.2**
KURBB	**Kurchatov Arra**	**47.78**	**309**	P	**P**	**02 29 23.3**	**+0.6**
	1.5nm,0.7s,baz=85,slow=8.7,SNR=11						
SML	**Sawmill**	**49.80**	**36**	*e*P	**P**	**02 29 38.8**	**+0.7**
	1.4nm,0.7s						
ILAR	**Eielson Array**	**50.42**	**32**	P	**P**	**02 29 42.4**	**-0.3**
	2.8nm,0.7s,baz=265,slow=6.2,SNR=34						
AAK	**Ala-Archa**	**52.12**	**300**	P	**P**	**02 29 57.7**	**+1.7**
	0.8nm,0.4s,baz=314,slow=4.4,SNR=3.7						
INK	**Inuvik**	**55.46**	**27**	P	**P**	**02 30 19.2**	**-0.4**
	1.9nm,0.7s,baz=285,slow=7.1,SNR=9.0						
WRAB	**Tennant Creek**	**55.53**	**189**	*e*P	**P**	**02 30 20.9**	**+0.2**
	4.7nm,0.9s						
WRA	**Warramunga Arr**	**55.54**	**189**	P	**P**	**02 30 20.6**	**-0.2**
	3.5nm,0.8s,baz=8.1,slow=7.5,SNR=13						
ASAR	**Alice Springs**	**59.27**	**189**	P	**P**	**02 30 47.0**	**0.0**
	0.8nm,0.7s,baz=14,slow=9.4,SNR=8.6						
ABKAR	**Akbulak array**	**59.74**	**311**	*e*P	**P**	**02 30 50.8**	**+0.7**
	0.9nm,0.5s						
RES	**Resolute Bay**	**63.99**	**14**	*e*P	**P**	**02 31 18.0**	**-0.2**
	1.4nm,0.6s						
YKA	**Yellowknife Ar**	**64.79**	**30**	P	**P**	**02 31 22.6**	**-1.0**
	0.4nm,0.8s,baz=295,slow=6.7,SNR=7.9						
KBZ	**Khabaz**	**72.71**	**312**	P	**P**	**02 32 14.8**	**+1.6**
	3.4nm,0.9s,baz=65,slow=4.4,SNR=10						
NVAR	**Mina Array Bea**	**75.25**	**53**	P	**P**	**02 32 28.6**	**+0.1**
	1.4nm,0.7s,baz=290,slow=6.0,SNR=6.6						
NOA	**NORSAR Array B**	**76.09**	**338**	P	**P**	**02 32 33.2**	**+0.6**
	1.1nm,0.7s,baz=39,slow=5.7,SNR=6.2						
AKASG	**Malin Array Be**	**76.20**	**323**	P	**P**	**02 32 33.8**	**+0.4**
	0.9nm,0.4s,baz=48,slow=6.1,SNR=7.9						
AKASG				LR	LR	03 07 35.7	
	comp=Z,26nm,19.8s,baz=20,slow=37						
PDAR	**Pinedale Array**	**78.17**	**46**	P	**P**	**02 32 45.4**	**+0.5**
	0.2nm,0.3s,baz=247,slow=1.9,SNR=4.3						
BRTR	**Keskin Array B**	**80.67**	**312**	P	**P**	**02 32 59.7**	**+1.3**
	1.9nm,0.9s,baz=100,slow=3.5,SNR=8.1						
TXAR	**Lajitas Array**	**90.40**	**53**	P	**P**	**02 33 47.1**	**+0.2**
	0.6nm,0.8s,baz=306,slow=1.1,SNR=4.9						
TORD	**Torodi Ar. Bea**	**119.18**	**315**	PKP	**PKPdf**	**02 39 34.0**	**-0.6**
	0.3nm,1.1s,baz=141,slow=1.7,SNR=3.2						
LPAZ	**La Paz**	**146.68**	**63**	PKPbc	**PKPdf**	**02 40 27.0**	**+0.7**
	1.0nm,0.8s,baz=96,slow=0.7,SNR=5.6						

NIED ***28*** *02:26:00, 41˚.70N×144˚.30E, h23km, Mw4.1 Best double couple: M0 1.37000×10^15 NP1:ϕ=268.00000°, δ31.00000°, λ162.00000°. NP2:ϕ=13.00000°, δ81.00000°, λ60.00000°.*
IDC ***28*** *02:26:19.6±1.1, 41˚.48N×143˚.84E, h0km, mb3.9/12, mb1 4.0/14, mb1mx3.8/39, mbtmp3.9/14, ML3.3/2, MS3.4/2, Ms1 3.4/2, ms1mx2.7/48, Error ellipse: s-maj=25.0km s-min=22.0km az=107.0*
JMA ***28*** *02:26:23.2±0.3, 41˚.68N×144˚.28E, h28km±3km, M3.9*
NEIC ***28*** *02:26:24.5±0.8, 41˚.46N×143˚.95E, h35km, mb4.2/5, Error ellipse: s-maj=17.0km s-min=13.3km az=112.0*
ISC 28 02:26:23.9±1.0, 41˚.77N±0˚.08×144˚.37E±0˚.08, h34km, n27, σ0s87/27, mb3.9/17, Hokkaido region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ERM	**Erimo**	**0.94**	**286**	*e*Pg	**Pn**	**02 26 40.6**	**0.0**
ERM				*e*S	**Sb**	**02 26 55.0**	**+1.2**
JEM	**Erimo**	**0.94**	**286**	P	**Pn**	**02 26 40.4**	**-0.2**
JCH	**Churui**	**1.13**	**319**	P	**Pn**	**02 26 43.5**	**+0.3**
JCH				*e*S	**Sb**	**02 26 58.7**	**-0.5**
JOB	**Onbets**	**1.20**	**341**	P	**Pb**	**02 26 45.4**	**-0.7**
JAK	**Akkeshi**	**1.25**	**11**	P	**Pb**	**02 26 45.9**	**-1.0**
JAK				*e*S	**Sb**	**02 27 03.0**	**+0.3**
JNBK	**Urakawa-nobuka**	**1.31**	**293**	P	**Pn**	**02 26 46.3**	**+0.6**
JAR	**Ashorobuto**	**1.59**	**344**	P	**Pn**	**02 26 49.9**	**+0.3**
ASAJ	**Asahikawa**	**2.68**	**332**	Pn	Pn	**02 27 05.9**	**+1.3**
	3.5nm,0.3s,baz=230,slow=11,SNR=9.9						
ASAJ				Sn	**Sb**	**02 27 41.7**	**-1.9**
	12nm,0.3s,baz=225,slow=17,SNR=4.8						
ASAJ				LR	LR	02 28 30.1	
	comp=Z,332nm,21.1s,baz=192,slow=47						
MJAR	**Matsushiro Arr**	**7.08**	**225**	Pn	Pn	02 27 58.4	-6.7
	0.6nm,0.3s,baz=57,slow=16,SNR=2.5						
SONM	**Songino Array**	**27.41**	**296**	P	**P**	**02 32 05.2**	**-1.1**
	1.5nm,0.8s,baz=86,slow=9.5,SNR=11						
TLY	**Talaya**	**29.27**	**304**	P	**P**	**02 32 21.6**	**-1.0**
	2.3nm,0.2s,baz=334,slow=3.3,SNR=4.6						
ZALV	**Zalesovo Beam**	**40.59**	**308**	P	**P**	**02 34 00.6**	**+0.6**
	1.5nm,0.6s,baz=88,slow=8.7,SNR=5.9						
MKAR	**Makanchi Array**	**43.71**	**299**	P	**P**	**02 34 25.8**	**+0.3**
	0.7nm,0.5s,baz=81,slow=9.3,SNR=5.3						
ILAR	**Eielson Array**	**44.29**	**35**	P	P	02 34 34.8	+4.9
	0.8nm,0.9s,baz=272,slow=6.8,SNR=5.9						
KURK	**Kurchatov**	**44.96**	**305**	*e*P	**P**	**02 34 35.9**	**+0.5**
	2.1nm,0.5s						
KURBB	**Kurchatov Arra**	**45.04**	**305**	P	**P**	**02 34 36.3**	**+0.3**
	2.4nm,0.5s,baz=72,slow=9.1,SNR=13						
TKM2	**Tokmak 2**	**49.51**	**296**	*e*P	**P**	**02 35 12.0**	**+0.8**
	2.3nm,0.8s						
KKAR	**Karatay Array**	**52.83**	**298**	*e*P	**P**	**02 35 36.5**	**+0.6**
	0.8nm,0.5s						
ABKAR	**Akbulak array**	**56.70**	**309**	*e*P	**P**	**02 36 04.6**	**+0.8**
	0.6nm,0.4s						
RES	**Resolute Bay**	**57.44**	**16**	*e*P	**P**	**02 36 09.7**	**+1.1**
	1.9nm,0.7s						
YKA	**Yellowknife Ar**	**58.58**	**32**	P	P	02 36 22.2	+5.5
	0.2nm,0.7s,baz=304,slow=6.8,SNR=4.5						
ARCES	**ARCESS Array B**	**60.38**	**339**	LR	LR	03 05 02.5	
	comp=Z,56nm,20.4s,baz=42,slow=38						
WRA	**Warramunga Arr**	**62.10**	**191**	P	**P**	**02 36 39.7**	**-1.5**
	0.6nm,0.9s,baz=8.0,slow=6.9,SNR=3.7						
FINES	**FINESS Array B**	**65.69**	**332**	P	**P**	**02 37 04.3**	**-0.2**
	1.1nm,0.6s,baz=40,slow=7.0,SNR=8.5						
KBZ	**Khabaz**	**69.56**	**311**	P	**P**	**02 37 28.9**	**-0.2**
	1.8nm,0.8s,baz=46,slow=7.9,SNR=6.1						
NOA	**NORSAR Array B**	**70.69**	**338**	P	**P**	**02 37 36.4**	**+0.6**
	0.6nm,0.7s,baz=36,slow=6.2,SNR=4.3						
AKASG	**Malin Array Be**	**71.94**	**323**	P	**P**	**02 37 43.5**	**+0.1**
	0.6nm,0.5s,baz=44,slow=5.9,SNR=5.1						

ISCJB ***28*** *02:29:21.5±0.3, 6˚.84N±0˚.03×73˚.07W±0˚.04, h165km±3km, mb3.4/6, Error ellipse: s-maj=7.8km s-min=3.9km az=37.9*
IDC ***28*** *02:29:22.5±0.6, 6˚.74N×72˚.94W, h165km±7km, mb3.3/7, mb1 3.6/10, mb1mx3.3/32, mbtmp3.9/10, Error ellipse: s-maj=20.5km s-min=7.3km az=133.0*
FUNV ***28*** *02:29:23.3, 6˚.81N×73˚.09W, h170km, MW4.0*
RSNC ***28*** *02:29:24.2±0.8, 6˚.80N×73˚.16W, h148km±5km, ML3.8*
ISC 28 02:29:22.4±0.7, 6˚.82N±0˚.04×73˚.07W±0˚.05, h161km±5km, n42, σ1s06/59, mb3.4/6, 11C-1D, Northern Colombia

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
BTLC	**Betulia, Santa**	**0.22**	**296**	*e*P	**Pn**	**02 29 44.5**	**+0.1**
BARC	**Barichara**	**0.25**	**206**	*i* P	**Pn**	**02 29 44.0**	**-0.4**
BARC				*e*S	**Sn**	**02 29 59.3**	**-2.1**
BARC				*i*		02 30 00.6	
	comp=Z,3μm,0.2s						
PAMC	**Pamplona, Colo**	**0.63**	**36**	*e*P	**Pn**	**02 29 46.9**	**+0.5**
PAMC				*e*S	**Sn**	**02 30 04.2**	**-0.4**
PAMC				*i*		02 30 06.3	
	comp=Z,353nm,0.4s						
BRRC	**Barranca, Sant**	**0.69**	**294**	⇑*i* P	**Pn**	**02 29 45.9**	**-0.2**
BRRC				*e*S	**Sn**	**02 30 02.9**	**-1.3**
BRRC				*i*		02 30 05.4	
	comp=Z,1μm,0.2s						
RUSC	**La Rusia**	**0.92**	**181**	*e*P	**Pn**	**02 29 47.9**	**-0.4**
RUSC				*e*S	**Sn**	**02 30 06.8**	**-1.2**
RUSC				*i*		02 30 07.9	
	comp=Z,1μm,0.3s						
CBRI	**Barrientos, No**	**0.93**	**17**	*e*P	**Pn**	**02 29 48.6**	**+0.6**
CBRI				*e*S	**Sn**	**02 30 06.5**	**-1.1**
CBRI				*i*		02 30 10.6	
	comp=Z,515nm,0.4s						
GRMC	**Gramalote, San**	**0.93**	**17**	*i* P	**Pn**	**02 29 49.9**	**+2.0**
GRMC				*e*S	**Sn**	**02 30 09.3**	**+1.8**
GRMC				*i*		02 30 11.1	
	comp=Z,773nm,0.3s						
CAPV	**Capacho**	**1.28**	**36**	⇑*i* P	**Pn**	**02 29 51.9**	**+0.9**
CAPV				*e*S	**Sn**	**02 30 13.4**	**+0

SDV	**Santo Domingo**	**3.17**	**50**	P	**Pn**	**02 30 13.4**	**+0.8**
	comp=Z,28nm,0.3s,baz=232,slow=9.9,SNR=46						
SDV				S	**Sn**	**02 30 50.9**	**-0.6**
	comp=Z,50nm,0.3s,baz=21,slow=15,SNR=26						
ELOV	**Elorza**	**3.57**	**87**	*eP*	**Pn**	**02 30 17.9**	**+0.4**
PRAC	**Prado**	**3.58**	**210**	*eP*	**Pn**	**02 30 17.7**	**+0.1**
PRAC				*eS*	**Sn**	**02 30 59.9**	**-0.6**
VIRV	**Villa del Rosa**	**3.72**	**10**⇑	*iP*	**Pn**	**02 30 18.6**	**-0.8**
VIRV				*eS*	**Sn**	**02 31 01.4**	**-2.3**
QARV	**Quebrada Arrib**	**4.20**	**37**⇑	*iP*	**Pn**	**02 30 26.1**	**+0.4**
SANV	**Sanarito**	**4.40**	**53**⇑	*eP*	**Pn**	**02 30 28.1**	**-0.2**
CURV	**Curariqua**	**4.42**	**44**⇑	*eP*	**Pn**	**02 30 28.4**	**-0.1**
DABV	**Dabajuro**	**4.73**	**30**⇑	*eP*	**Pn**	**02 30 32.7**	**+0.2**
TEPV	**Terepaima**	**4.95**	**51**⇑	*iP*	**Pn**	**02 30 35.3**	**-0.2**
SIQV	**Siquisique**	**4.99**	**40**⇑	*iP*	**Pn**	**02 30 34.7**	**-1.2**
BAUV	**El Baul**	**5.41**	**67**	*eP*	**Pn**	**02 30 40.1**	**-1.4**
MONV	**Montecano**	**5.95**	**31**⇓	*eP*	**Pn**	**02 30 47.7**	**-0.9**
TURV	**Turiamo**	**6.30**	**55**	*eP*	**Pn**	**02 30 52.1**	**-1.2**
MERV	**Las Mercedes**	**7.13**	**70**	*eP*	**Pn**	**02 31 03.1**	**-1.2**
BIRV	**Birongo**	**7.64**	**61**	*eP*	**Pn**	**02 31 10.1**	**-1.0**
CUPV	**Cœpira**	**7.89**	**65**	*eP*	**Pn**	**02 31 13.6**	**-0.9**
SJG	**San Juan**	**13.10**	**30**	P	**Pn**	**02 32 21.5**	**-1.0**
	comp=Z,1.3nm,0.3s,baz=30,slow=20,SNR=3.8						
TEIG	**Tepich**	**19.88**	**314**	P	**P**	**02 33 42.8**	**+1.5**
	comp=Z,2.3nm,0.4s,baz=269,slow=24,SNR=7.0						
TXAR	**Lajitas Array**	**36.50**	**312**	P	**P**	**02 36 13.4**	**+1.0**
	comp=Z,0.4nm,0.4s,baz=128,slow=9.1,SNR=9.4						
PDAR	**Pinedale Array**	**48.11**	**324**	P	**P**	**02 37 46.5**	**+0.2**
	comp=Z,0.2nm,0.5s,baz=95,slow=10.0,SNR=2.6						
SCHQ	**Schefferville**	**48.14**	**5**	P	**P**	**02 37 47.4**	**+1.4**
	comp=Z,3.0nm,0.6s,baz=207,slow=6.9,SNR=8.1						
YKA	**Yellowknife Ar**	**63.28**	**340**	P	**P**	**02 39 33.5**	**-0.1**
	comp=Z,0.5nm,0.5s,baz=133,slow=6.6,SNR=31						
TORD	**Torodi Ar. Bea**	**73.69**	**78**	P	**P**	**02 40 37.5**	**-1.7**
	comp=Z,0.5nm,1.1s,baz=284,slow=6.2,SNR=5.3						
NOA	**NORSAR Array B**	**81.30**	**29**	P	**P**	**02 41 21.6**	**+0.9**
	comp=Z,0.4nm,0.7s,baz=238,slow=14,SNR=2.5						
ASAR	**Alice Springs**	**149.15**	**234**	PKPbc	**PKPbc**	**02 48 51.3**	**-1.4**
	comp=Z,0.2nm,0.5s,baz=118,slow=3.6,SNR=4.3						
WRA	**Warramunga Arr**	**150.38**	**241**	PKPbc	**PKPbc**	**02 48 55.2**	**-0.5**
	comp=Z,0.4nm,0.4s,baz=107,slow=2.7,SNR=4.8						

*ISCJB **28** 02:46:21.5±0.8,38˚16N±0˚03×141˚92E±0˚09,h52km±7km, mb3.7/7,Error ellipse: s-maj=11.4km s-min=5.1km az=13.5*
*JMA **28** 02:46:23.1±0.1,38˚20N×141˚81E,h47km±1km,M3.6*
JMA Felt I J1.
*IDC **28** 02:46:23.4±2.3,38˚19N×141˚95E,h52km±20km,mb3.4/7, mb1 3.6/11,mb1mx3.3/53,mbtmp3.7/11,ML3.7/3,Error ellipse: s-maj=28.6km s-min=14.1km az=99.0*

ISC 28 02:46:22.5±1.5,38˚17N±0˚05×141˚89E±0˚09,h41km±14km, n29,σ0°72/33,mb3.6/7,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**0.51**	**304**	P	P	**Pn**	**02 46 33.5**	**+0.1**
JIO				S	S	**Sn**	**02 46 40.6**	**-0.5**
JMM	**Marumori**	**0.91**	**251**	P	P	**Pn**	**02 46 38.7**	**-0.2**
JMM				S	S	**Sn**	**02 46 50.6**	**-0.3**
OFUJ	**Ofunato**	**0.93**	**350**	P	P	**Pn**	**02 46 38.9**	**-0.2**
JMK	**Ichinoseki**	**0.94**	**326**	P	P	**Pn**	**02 46 39.3**	**0.0**
JOU	**Okura**	**0.98**	**282**	P	P	**Pn**	**02 46 40.0**	**+0.1**
JOU				S	S	**Sn**	**02 46 52.3**	**-0.3**
JFK	**Kawauchi**	**1.13**	**225**	P	P	**Pn**	**02 46 42.0**	**0.0**
JFK				S	S	**Sn**	**02 46 55.7**	**-0.6**
JOM	**Ohasama**	**1.38**	**341**	P	P	**Pn**	**02 46 45.6**	**+0.3**
JOM				S	S	**Sn**	**02 47 02.7**	**+0.3**
JFT	**Otama**	**1.39**	**243**	P	P	**Pn**	**02 46 46.2**	**+0.8**
JFT				S	S	**Sn**	**02 47 03.0**	**+0.4**
JYK	**Kaneyama**	**1.41**	**302**	P	P	**Pn**	**02 46 45.8**	**+0.1**
JYK				S	S	**Sn**	**02 47 03.0**	**-0.1**
JYS	**Shirataka**	**1.43**	**273**	P	P	**Pn**	**02 46 46.4**	**+0.3**
JYS				S	S	**Sn**	**02 47 03.6**	**-0.1**
JRG	**Rokugo**	**1.57**	**322**	P	P	**Pn**	**02 46 48.6**	**+0.7**
JRG				S	S	**Sn**	**02 47 07.9**	**+0.9**
MJAR	**Matsushiro Arr**	**3.35**	**242**	P	P	**Pn**	**02 47 14.9**	**+2.5**
	2.4nm,0.3s,baz=56,slow=11,SNR=7.3							
MAT	**Matsushiro**	**3.35**	**242**	P	P	Pn	02 47 15.8	+3.4
MAT				*eS*	S	Sn	02 47 57.6	+6.7
JHJ	**Hachijo jima 2**	**5.32**	**199**	P	P	**Pn**	**02 47 40.5**	**+1.0**
	17nm,0.3s,baz=76,slow=15,SNR=5.1							
JHJ				S	S	**Sn**	**02 48 39.0**	**-0.5**
	21nm,0.3s,baz=66,slow=19,SNR=3.8							
ASAJ	**Asahikawa**	**5.97**	**5**	P	P	**Pn**	**02 47 47.5**	**-0.7**
	2.1nm,0.3s,baz=202,slow=14,SNR=5.0							
ASAJ				S	S	**Sn**	**02 48 56.4**	**+1.1**
	0.4nm,0.3s,baz=232,slow=19,SNR=2.8							
USRK	**Ussuriysk Ar.**	**9.58**	**312**	P	P	**Pn**	**02 48 38.7**	**+0.8**
	0.4nm,0.3s,baz=124,slow=15,SNR=7.2							
H11N2	**WAKE ISLAND Hy**	**28.43**	**123**	T	T		03 22 29.3	
	baz=316,slow=76,SNR=126							
H11N1	**WAKE ISLAND Hy**	**28.44**	**123**	T	T		03 22 30.0	
	baz=316,slow=76,SNR=231							
H11N3	**WAKE ISLAND Hy**	**28.45**	**123**	T	T		03 22 30.7	
	baz=316,slow=76,SNR=196							
H11S1	**WAKE ISLAND Hy**	**29.18**	**125**	T	T		03 23 27.0	
	baz=318,slow=76,SNR=108							
H11S3	**WAKE ISLAND Hy**	**29.19**	**125**	T	T		03 23 27.1	
	baz=318,slow=76,SNR=93							
H11S2	**WAKE ISLAND Hy**	**29.20**	**125**	T	T		03 23 30.2	
	baz=318,slow=76,SNR=107							
MKAR	**Makanchi Array**	**43.84**	**301**	P	**P**		**02 54 25.1**	**+0.5**
	0.6nm,0.8s,baz=86,slow=10,SNR=3.0							
KURBB	**Kurchatov Arra**	**45.61**	**307**	P	**P**		**02 54 37.9**	**-0.6**
	0.7nm,0.4s,baz=81,slow=8.2,SNR=10							
ILAR	**Eielson Array**	**48.34**	**33**	P	**P**		**02 54 59.6**	**0.0**
	0.3nm,0.7s,baz=292,slow=4.8,SNR=3.6							
WRA	**Warramunga Arr**	**58.24**	**188**	P	**P**		**02 56 12.3**	**-0.4**
	0.4nm,0.4s,baz=5.9,slow=7.4,SNR=5.4							
ASAR	**Alice Springs**	**61.96**	**188**	P	**P**		**02 56 38.1**	**-0.2**
	0.4nm,0.7s,baz=16,slow=7.7,SNR=4.3							
HFS	**Hagfors**	**73.21**	**336**	P	**P**		**02 57 48.4**	**-0.4**
	0.7nm,0.5s,baz=72,slow=4.7,SNR=4.8							
NOA	**NORSAR Array B**	**73.28**	**337**	P	**P**		**02 57 48.5**	**-0.8**
	0.6nm,0.8s,baz=65,slow=5.3,SNR=3.5							

IDC 28 02:49:43.2±1.2,60˚48N×61˚17E,h0km,mb3.1/1, mb1 3.6/5,mb1mx3.2/55,mbtmp3.5/5,ML2.9/4,Error ellipse: s-maj=18.3km s-min=12.1km az=66.0,Ural Mountains region

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
ARU	**Arti**	**4.29**	**200**	Pn	Pn	Pn	02 50 50.3	+0.6
	0.0nm,0.3s,baz=288,slow=6.4,SNR=7.5							
ARU				Sn	Sn	Sn	02 51 39.2	-1.2
	0.0nm,0.3s,baz=116,slow=21,SNR=11							
BVAR	**Borovoye Array**	**9.02**	**142**	Pn	Pn	Pn	02 51 54.2	-0.4
	0.6nm,0.3s,baz=330,slow=13,SNR=9.0							
BVAR				Sn	Sn	Sn	02 53 31.6	-5.1
	0.4nm,0.3s,baz=327,slow=25,SNR=4.3							
FINES	**FINESS Array B**	**16.94**	**289**	Pn	Pn	Pn	02 53 36.4	-4.9
	0.1nm,0.3s,baz=82,slow=10.0,SNR=3.8							
ARCES	**ARCESS Array B**	**17.30**	**316**	Pn	Pn	Pn	02 53 38.6	-7.1
	0.1nm,0.3s,baz=98,slow=13,SNR=2.6							
YKA	**Yellowknife Ar**	**57.30**	**358**	P	P	P	02 59 31.2	-0.9
	0.2nm,0.8s,baz=2.7,slow=7.3,SNR=5.8							

*ISCJB **28** 02:59:27.6±0.8,5˚39S±0˚07×147˚6E±0˚2,h170km, mb3.7/8,Error ellipse: s-maj=22.5km s-min=9.2km az=9.8*
*IDC **28** 02:59:31.5±2.0,5˚48S×147˚40E,h190km±19km,mb3.5/8, mb1 3.7/10,mb1mx3.5/36,mbtmp4.1/10,Error ellipse: s-maj=28.3km s-min=12.0km az=109.0*

ISC 28 02:59:29.4±1.0,5˚43S±0˚09×147˚4E±0˚2,h170km,n12, σ1°00/14,mb3.8/8,Eastern New Guinea region

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**3.95**	**183**	P	P	**Pn**	**03 00 30.8**	**+1.1**
	9.0nm,0.3s,baz=8.8,slow=8.9,SNR=15							
PMG				S	S	**Sn**	**03 01 16.0**	**-0.8**
	17nm,0.3s,baz=163,slow=21,SNR=16							
CTA	**Charters Tower**	**14.61**	**184**	P	P	P	03 02 52.5	+2.4
	0.4nm,0.3s,baz=3.2,slow=13,SNR=6.2							
WRA	**Warramunga Arr**	**19.20**	**220**	P	P	**P**	**03 03 41.1**	**+0.6**
	2.3nm,0.3s,baz=48,slow=12,SNR=50							
WRA				S	S	**S**	**03 07 07.9**	**-1.3**
	0.0nm,0.3s,baz=44,slow=20,SNR=3.3							
ASAR	**Alice Springs**	**22.29**	**214**	P	P	**P**	**03 04 13.7**	**+0.6**
	5.5nm,0.5s,baz=48,slow=8.9,SNR=63							
ASAR				S	S	**S**	**03 08 05.0**	**-0.8**
	0.6nm,0.8s,baz=33,slow=22,SNR=2.5							
FITZ	**Fitzroy Crossi**	**24.68**	**238**	P	P	**P**	**03 04 35.8**	**+0.9**
	10nm,0.5s,baz=66,slow=9.0,SNR=40							
STKA	**Stephens Creek**	**26.86**	**191**	P	P	**P**	**03 04 53.8**	**-0.6**
	0.8nm,0.4s,baz=9.5,slow=12,SNR=4.2							
SONM	**Songino Array**	**64.09**	**331**	P	P	**P**	**03 09 46.7**	**+1.2**
	0.3nm,0.3s,baz=123,slow=5.3,SNR=2.9							
VNDA	**Vanda**	**72.45**	**177**	P	P	**P**	**03 10 37.1**	**+0.3**
	1.3nm,0.7s,baz=349,slow=5.6,SNR=8.1							
MKAR	**Makanchi Array**	**77.30**	**320**	P	P	**P**	**03 11 05.1**	**-0.1**
	0.2nm,0.3s,baz=108,slow=7.9,SNR=2.9							
ZALV	**Zalesovo Beam**	**78.73**	**328**	P	P	**P**	**03 11 11.9**	**-0.9**
	1.2nm,0.4s,baz=107,slow=4.8,SNR=4.3							
ILAR	**Eielson Array**	**84.82**	**23**	P	P	**P**	**03 11 44.0**	**-0.5**
	0.2nm,0.7s,baz=237,slow=6.1,SNR=3.9							
TORD	**Torodi Ar. Bea**	**145.31**	**285**	PKPbc	**PKPdf**		**03 18 46.5**	**-1.5**
	0.4nm,0.6s,baz=68,slow=3.5,SNR=11							

*ISCJB **28** 03:01:51.6±0.4,33˚30N±0˚02×35˚42E±0˚03,h3km±4km, Error ellipse: s-maj=4.8km s-min=2.5km az=34.5*
*CSEM **28** 03:01:51.8±0.1,33˚31N×35˚42E,h2km,MD2.4,Error ellipse: s-maj=3.0km s-min=1.5km az=124.0*
*NSSC **28** 03:01:51.7±1.3,33˚29N×35˚44E,h0km±4km,MD1.3,ML2.2*
*GRAL **28** 03:01:52.5±0.3,33˚30N×35˚41E,h0km±2km,MD3.1*
*GII **28** 03:01:52.2±0.0,33˚19N×35˚41E,h1km,MD2.4/6*

ISC 28 03:01:51.6±0.9,33˚30N±0˚02×35˚41E±0˚02,h14km±7km, n49,σ0°50/86,Jordan-Syria region

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
MMA0B	**Mount Meron ar**	**0.29**	**180**		Pg	**Pg**	**03 01 57.6**	**-0.1**
MMA0B					Sg	**Sg**	**03 02 02.3**	**+0.5**
NAQL	**Naqoura**	**0.29**	**230**	*eP*	**Pg**	**Pg**	**03 01 57.7**	**0.0**
NAQL				*eS*	**Sg**	**Sg**	**03 02 01.6**	**-0.2**
NAQL	**Naqoura**	**0.29**	**230**	*eP*	**Pg**	**Pg**	**03 01 57.7**	**0.0**
NAQL				*eS*	**Sg**	**Sg**	**03 02 01.6**	**-0.2**
HNTI	**Hanita**	**0.29**	**221**	Pg	**Pg**	**Pg**	**03 01 58.0**	**+0.2**
HNTI				Sg	**Sb**	**Sb**	**03 02 02.9**	**-0.6**
HNTI	**Hanita**	**0.29**	**221**	Pg	**Pg**	**Pg**	**03 01 58.0**	**+0.2**
HNTI				Sg	**Sb**	**Sb**	**03 02 02.9**	**-0.6**
RCY	**Rachaya**	**0.41**	**62**	*eP*	**Pg**	**Pg**	**03 01 59.7**	**-0.1**
RCY				*eS*	**Sg**	**Sg**	**03 02 05.1**	**-0.3**
DQRL	**Deir Qamar**	**0.42**	**19**	*eP*	**Pg**	**Pg**	**03 02 00.0**	**-0.1**
DQRL				*eS*	**Sg**	**Sg**	**03 02 05.7**	**-0.2**
DQRL	**Deir Qamar**	**0.42**	**19**	*eP*	**Pg**	**Pg**	**03 02 00.0**	**-0.1**
DQRL				*eS*	**Sg**	**Sg**	**03 02 05.7**	**-0.2**
BRBR	**Barbar**	**0.47**	**77**	*eP*	**Pg**	**Pg**	**03 02 00.8**	**-0.2**
BRBR				*eS*	**Sg**	**Sg**	**03 02 07.8**	**+0.5**
BRBR	comp=N,323nm,0.5s			AML	AML	AML	03 02 09.9	
BRBR	comp=E,222nm,0.4s			AML	AML	AML	03 02 12.3	
BRBR	**Barbar**	**0.47**	**77**	*eP*	**Pg**	**Pg**	**03 02 00.8**	**-0.2**
BRBR				*eS*	**Sg**	**Sg**	**03 02 07.8**	**+0.5**
KSHT	**Keshet**	**0.47**	**133**	Pg	**Pg**	**Pb**	**03 02 01.5**	**-0.2**
KSHT	**Keshet**	**0.47**	**133**	Pg	**Pg**	**Pb**	**03 02 01.5**	**-0.2**
BLGI	**Bet Lehem HaGe**	**0.60**	**198**	Pg	**Pg**	**Pb**	**03 02 03.6**	**-0.3**
BLGI				Sg	**Sb**	**Sb**	**03 02 11.7**	**-0.5**
BLGI	**Bet Lehem HaGe**	**0.60**	**198**	Pg	**Pg**	**Pb**	**03 02 03.6**	**-0.3**
BLGI				Sg	**Sb**	**Sb**	**03 02 11.7**	**-0.5**
BHL	**Bhannes**	**0.63**	**19**	*eP*	**Pg**	**Pg**	**03 02 03.9**	**-0.2**
BHL	**Bhannes**	**0.63**	**19**	*eP*	**Pg**	**Pg**	**03 02 03.9**	**-0.2**
QASN	**Qassioun**	**0.76**	**72**	*eP*	**Pg**	**Pg**	**03 02 06.3**	**-0.2**
QASN				*eS*	**Sb**	**Sb**	**03 02 17.4**	**+0.4**
QASN	comp=E,506nm,0.4s			AML	AML	AML	03 02 19.6	
QASN	comp=N,330nm,0.7s			AML	AML	AML	03 02 19.7	
QASN	**Qassioun**	**0.76**	**72**	*eP*	**Pg**	**Pg**	**03 02 06.3**	**-0.2**
QASN				*eS*	**Sb**	**Sb**	**03 02 17.5**	**+0.4**
OFRI	**'Ofer**	**0.77**	**208**	Pg	**Pg**	**Pg**	**03 02 06.6**	**0.0**
OFRI	**'Ofer**	**0.77**	**208**	Pg	**Pg**	**Pg**	**03 02 06.6**	**0.0**
TCHB	**Talchebab**	**0.79**	**143**	*eP*	**Pg**	**Pg**	**03 02 07.0**	**0.0**
TCHB				*eS*	**Sb**	**Sb**	**03 02 17.8**	**0.0**
TCHB	comp=E,96nm,0.3s			AML	AML	AML	03 02 24.9	
TCHB	comp=N,192nm,0.5s			AML	AML	AML	03 02 25.3	
TCHB	**Talchebab**	**0.79**	**143**	*eP*	**Pg**	**Pg**	**03 02 07.0**	**0.0**
TCHB				*eS*	**Sb**	**Sb**	**03 02 17.8**	**0.0**
TOTH	**TOTAH**	**0.86**	**86**	*eP*	**Pg**	**Pg**	**03 02 07.6**	**-0.7**
TOTH				*eS*	**Sg**	**Sg**	**03 02 19.3**	**-0.2**
TOTH	comp=N,46nm,0.2s			AML	AML	AML	03 02 23.9	
TOTH	comp=E,32nm,0.5s			AML	AML	AML	03 02 32.6	
TOTH	**TOTAH**	**0.86**	**86**	*eP*	**Pg**	**Pg**	**03 02 07.6**	**-0.7**
TOTH				*eS*	**Sg**	**Sg**	**03 02 19.3**	**-0.2**
MMLI	**Mount Malkishu**	**0.86**	**179**	Pg	**Pg**	**Pg**	**03 02 08.2**	**-0.2**
MMLI				Sg	**Sb**	**Sb**	**03 02 20.1**	**+0.1**
HMDT	**Nahal Hemdat**	**1.05**	**174**	Pg	**Pg**	**Pb**	**03 02 11.5**	**-0.2**
HMDT				Sg	**Sn**	**Sn**	**03 02 26.1**	**-0.4**
HMDT	**Nahal Hemdat**	**1.05**	**174**	Pg	**Pg**	**Pb**	**03 02 11.5**	**-0.2**
HMDT				Sg	**Sn**	**Sn**	**03 02 26.1**	**-0.4**
HWQ	**Hawqa**	**1.07**	**25**	*eP*	**Pg**	**Pb**	**03 02 11.7**	**-0.4**
HWQ	**Hawqa**	**1.07**	**25**	*eP*	**Pg**	**Pb**	**03 02 11.7**	**-0.4**
SLTI	**Sal'it**	**1.10**	**196**	Pg	**Pg**	**Pn**	**03 02 12.7**	**-0.1**
SLTI				Sg	**Sn**	**Sn**	**03 02 28.0**	**+0.2**
SLTI	**Sal'it**	**1.10**	**196**	Pg	**Pg**	**Pn**	**03 02 12.7**	**-0.1**
SLTI				Sg	**Sn**	**Sn**	**03 02 28.0**	**+0.2**
MARH	**Ras Al Marh**	**1.15**	**51**	*eP*	**Pg**	**Pb**	**03 02 13.3**	**-0.2**
MARH				*eS*	**Sn**	**Sn**	**03 02 29.3**	**-0.1**
FKH	**Fakeheh**	**1.26**	**41**	*eP*	**Pn**	**Pn**	**03 02 14.9**	**-0.1**
FKH				*eS*	**Sn**	**Sn**	**03 02 31.8**	**0.0**
FKH	**Fakeheh**	**1.26**	**41**	*eP*	**Pn**	**Pn**	**03 02 14.9**	**-0.1**
FKH				*eS*	**Sn**	**Sn**	**03 02 31.8**	**0.0**
SALA	**Sala**	**1.26**	**118**	*eP*	**Pn**	**Pn**	**03 02 15.2**	**+0.1**
SALA				*eS*	**Sn**	**Sn**	**03 02 31.8**	**-0.2**
SALA	comp=N,69nm,0.2s			AML	AML	AML	03 02 34.8	
SALA	comp=E,6.6nm,0.3s			AML	AML	AML	03 02 35.0	
SALA	**Sala**	**1.26**	**118**	*eP*	**Pn**	**Pn**	**03 02 15.2**	**+0.1**
SALA				*eS*	**Sn**	**Sn**	**03 02 31.8**	**-0.2**
ZALF	**Zalf**	**1.66**	**103**	*eP*	**Pb**	**Pb**	**03 02 21.3**	**-0.8**
ZALF				*eS*	**Sb**	**Sb**	**03 02 43.1**	**+0.1**
ZALF	comp=N,21nm,0.2s			AML	AML	AML	03 02 47.4	
ZALF	comp=E,23nm,0.8s			AML	AML	AML	03 02 50.5	
ZALF	**Zalf**	**1.66**	**103**	*eP*	**Pb**	**Pb**	**03 02 21.3**	**-0.8**
ZALF				*eS*	**Sb**	**Sb**	**03 02 43.1**	**+0.1**
DSI	**Dead Sea**	**1.73**	**181**	Pn	**Pb**	**Pb**	**03 02 22.4**	**-0.8**
DSI				Sn	**Sb**	**Sb**	**03 02 45.9**	**+1.1**
DSI	**Dead Sea**	**1.73**	**181**	Pn	**Pb**	**Pb**	**03 02 22.4**	**-0.8**
DSI				Sn	**Sb**	**Sb**	**03 02 45.9**	**+1.1**
ROOS	**tl_alroos**	**1.79**	**61**	*eP*	**Pb**	**Pb**	**03 02 24.9**	**+0.6**
ROOS				*eS*	**Sb**	**Sb**	**03 02 47.3**	**+0.6**
ROOS	comp=E,67nm,0.6s			AML	AML	AML	03 02 53.3	
ROOS	comp=N,41nm,0.6s			AML	AML	AML	03 03 01.6	
ROOS	**tl_alroos**	**1.79**	**61**	*eP*	**Pb**	**Pb**	**03 02 24.9**	**+0.6**
ROOS				*eS*	**Sb**	**Sb**	**03 02 47.3**	**+0.6**
RABH	**Abou Rabah**	**1.88**	**53**	*eP*	**Pb**	**Pb**	**03 02 25.6**	**-0.1**
RABH				*eS*	**Sb**	**Sb**	**03 02 49.5**	**+0.4**
RABH	comp=N,37nm,0.4s			AML	AML	AML	03 02 53.8	
RABH	comp=E,24nm,0.4s			AML	AML	AML	03 02 56.1	
RABH	**Abou Rabah**	**1.88**	**53**	*eP*	**Pb**	**Pb**	**03 02 25.6**	**-0.1**
RABH				*eS*	**Sb**	**Sb**	**03 02 49.5**	**+0.4**
MZDA	**Masada**	**1.99**	**181**	Pn	**Pb**	**Pb**	**03 02 26.6**	**-1.0**
MZDA	**Masada**	**1.99**	**181**	Pn	**Pb**	**Pb**	**03 02 26.6**	**-1.0**
PRNI	**Paran**	**2.96**	**187**	Pn	**Pn**	**Pn**	**03 02 40.1**	**+1.7**
PRNI	**Paran**	**2.96**	**187**	Pn	**Pn**	**Pn**	**03 02 40.1**	**+1.7**

*ISCJB **28** 03:14:03.0±0.4,38˚92N±0˚02×16˚09E±0˚04,h63km±5km, Error ellipse: s-maj=5.9km s-min=3.0km az=32.9*
*CSEM **28** 03:14:03.8±0.1,38˚91N×16˚09E,h54km±3km,ML4.0/18, Error ellipse: s-maj=3.6km s-min=1.9km az=122.0*
*ROM **28** 03:14:03.7±0.1,38˚93N×16˚05E,h49km±2km,Ml3.2/36, Error ellipse: s-maj=1.6km s-min=1.0km az=112.0*
*BEO **28** 03:14:05.6±1.3,38˚87N×16˚91E,h0km,M3.3/3*

ISC 28 03:14:03.6±1.2,38˚92N±0˚02×16˚10E±0˚03,h57km±6km, n96,σ0°94/139,Southern Italy

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
GRI	**Girifalco**	**0.27**	**112**	*ePg*	**Pn**	**Pn**	**03 14 12.8**	**-0.4**
GRI				Sg	**Sn**	**Sn**	**03 14 19.7**	**-0.5**
	2µm,0.6s							
GRI	**Girifalco**	**0.27**	**112**	*ePg*	**Pn**	**Pn**	**03 14 12.8**	**-0.4**
GRI				Sg	**Sn**	**Sn**	**03 14 19.7**	**-0.5**
	2µm,0.6s							
CAR1	**CAROLEI**	**0.34**	**15**	Pg	Pn	**Pn**	**03 14 13.6**	**-0.3**
CAR1				Sg	Sn	**Sn**	**03 14 21.2**	**-0.1**
	3µm,0.6s							
CAR1	**CAROLEI**	**0.34**	**15**	Pg	Pn	**Pn**	**03 14 13.6**	**-0.3**
CAR1				Sg	Sn	**Sn**	**03 14 21.2**	**-0.1**
	3µm,0.6s							
JOPP	**Joppolo**	**0.36**	**208**		Pg	**Pn**	**03 14 13.5**	**-0.5**
JOPP					Sg	**Sn**	**03 14 20.7**	**-0.7**
	6µm,0.2s							
JOPP	**Joppolo**	**0.36**	**208**		Pg	**Pn**	**03 14 13.5**	**-0.5**
JOPP					Sg	**Sn**	**03 14 20.7**	**-0.7**
	6µm,0.2s							
SERS	**Sersale**	**0.47**	**76**		Pg	**Pn**	**03 14 15.6**	**+0.4**
SERS					Sg	**Sn**	**03 14 24.6**	**+1.0**
	891nm,0.4s							
SERS	**Sersale**	**0.47**	**76**		Pg	**Pn**	**03 14 15.6**	**+0.4**
SERS					Sg	**Sn**	**03 14 24.6**	**+1.0**
	891nm,0.4s							
PLAC	**Placanica**	**0.54**	**151**	*ePg*	Pg	**Pn**	**03 14 15.9**	**0.0**
PLAC					Sg	**Sn**	**03 14 25.5**	**+0.8**
	2µm,0.6s							
PLAC	**Placanica**	**0.54**	**151**	*ePg*	Pg	**Pn**	**03 14 15.9**	**0.0**
PLAC					Sg	**Sn**	**03 14 25.5**	**+0.8**
	2µm,0.6s							
TIP	**Timpagrande**	**0.57**	**63**		Pg	**Pn**	**03 14 16.7**	**+0.5**
TIP					Sg	**Sn**	**03 14 26.8**	**+1.3**
	975nm,0.8s							
TIP	**Timpagrande**	**0.57**	**63**		Pg	**Pn**	**03 14 16.7**	**+0.5**
TIP					Sg	**Sn**	**03 14 26.8**	**+1.3**
	975nm,0.8s							
CEL	**Celeste**	**0.68**	**194**		Pg	**Pn**	**03 14 17.1**	**-0.4**
CEL					Sg	**Sn**	**03 14 27.3**	**-0.3**
	669nm,0.5s							
CEL	**Celeste**	**0.68**	**194**		Pg	**Pn**	**03 14 17.1**	**-0.4**
CEL					Sg	**Sn**	**03 14 27.3**	**-0.3**
	669nm,0.5s							
STR3	**STROMBOLI 3**	**0.69**	**260**		Pg	**Pn**	**03 14 17.3**	**-0.2**
STR3	**STROMBOLI 3**	**0.69**	**260**		Pg	**Pn**	**03 14 17.3**	**-0.2**
MSCL	**Scilla**	**0.73**	**199**		Pg	**Pn**	**03 14 17.8**	**-0.3**
MSCL					Sg	**Sn**	**03 14 28.4**	**-0.3**
	1µm,0.4s							
MSCL	**Scilla**	**0.73**	**199**		Pg	**Pn**	**03 14 17.8**	**-0.3**
MSCL					Sg	**Sn**	**03 14 28.4**	**-0.3**
	1µm,0.4s							
LADO	**San Nicola del**	**0.77**	**62**	Pg	Pg	**Pn**	**03 14 18.6**	**0.0**
	556nm,0.5s							
LADO	**San Nicola del**	**0.77**	**62**	Pg	Pg	**Pn**	**03 14 18.6**	**0.0**
	556nm,0.5s							
PIPA	**Pietrapaola**	**0.79**	**44**	Pg	Pg	**Pn**	**03 14 19.7**	**+0.8**
	844nm,0.9s							
PIPA	**Pietrapaola**	**0.79**	**44**

	193nm,0.4s							
CMPR	**Campora**	1.52	336	Pg	Pn	03	14	28.9 +0.3
	151nm,0.4s							
CMPR	**Campora**	1.52	336	Pg	Pn	03	14	28.9 +0.3
	151nm,0.4s							
CDRU	**Civita di Ruta**	1.68	339	Pg	Pn	03	14	31.0 +0.2
	77nm,0.4s							
CDRU	**Civita di Ruta**	1.68	339	Pg	Pn	03	14	31.0 +0.2
	77nm,0.4s							
TAR1	**Taranto**	1.84	29	*e*Pn	Pn	03	14	31.8 -1.0
MRLC	**Muro Lucano**	1.89	346	Pg	Pn	03	14	35.4 +1.8
	64nm,0.5s							
MRLC	**Muro Lucano**	1.89	346	Pg	Pn	03	14	35.4 +1.8
	64nm,0.5s							
SG1	**Sgolgore (BA)**	1.97	13	*e*Pn	Pn	03	14	35.6 +1.0
MCRV	**Calabrutti - M**	1.99	339	Pg	Pn	03	14	36.0 +1.0
	58nm,0.4s							
MCRV	**Calabrutti - M**	1.99	339	Pg	Pn	03	14	36.0 +1.0
	58nm,0.4s							
CDT	**Castel del Mon**	2.16	4	*e*Pn	Pn	03	14	37.8 +0.6
BAI	**Bari**	2.26	15	*e*Pn	Pn	03	14	39.2 +0.7
USI	**Ustica**	2.29	266	Pg	Pn	03	14	39.1 +0.1
	603nm,1.3s							
USI	**Ustica**	2.29	266	Pg	Pn	03	14	39.1 +0.1
	603nm,1.3s							
MS1	**Monte Sant'Ang**	2.78	358	*e*Pn	Pn	03	14	48.3 +2.6
TIR	**Tirane**	3.77	49	*e*Pn	Pn	03	14	58.6 -0.5
TIR				*e*Sn	Sn	03	15	39.1 -3.1
TIR	**Tirane**	3.77	49	*e*Pn	Pn	03	14	58.6 -0.5
TIR				*e*Sn	Sn	03	15	39.1 -3.1
STON	**Ston**	4.13	17	*e*Pn	Pn	03	15	03.4 -0.6
STON				Sn	Sn	03	15	47.3 -3.8
STON	**Ston**	4.13	17	*e*Pn	Pn	03	15	03.4 -0.6
STON				Sn	Sn	03	15	47.2 -3.8
SJES	**Sjenica**	5.23	33	*e*Pn	Pn	03	15	20.9 +1.6
SJES				*e*Sn	Sn	03	16	17.4 -0.9
SJES	**Sjenica**	5.23	33	*e*Pn	Pn	03	15	20.9 +1.6
SJES				*e*Sn	Sn	03	16	17.4 -0.9
BBLS	**Lazići**	5.53	26	*e*Pn	Pn	03	15	26.7 +3.4
IVAS	**Ivanjica**	5.56	32	*e*Pn	Pn	03	15	23.9 +0.1
IVAS	**Ivanjica**	5.56	32	*e*Pn	Pn	03	15	23.9 +0.1
UDBI	**Udbina**	5.61	358	*e*Pn	Pn	03	15	26.0 +1.6
UDBI				Sn	Sn	03	16	28.5 +1.0
UDBI	**Udbina**	5.61	358	*e*Pn	Pn	03	15	26.0 +1.6
UDBI				Sn	Sn	03	16	28.4 +1.0
NVLJ	**Novalja**	5.71	351	*i* Pn	Pn	03	15	27.0 +1.2
NVLJ	**Novalja**	5.71	351	*i* Pn	Pn	03	15	26.9 +1.2
BARS	**Barje**	5.82	46	*e*Pn	Pn	03	15	26.8 -0.5
BARS	**Barje**	5.82	46	*e*Pn	Pn	03	15	26.8 -0.5
ZAPS	**Zavoj**	6.58	47	*e*Pn	Pn	03	15	37.1 -0.5
ZAPS	**Zavoj**	6.58	47	*e*Pn	Pn	03	15	38.2 +0.6
ZAPS	**Zavoj**	6.58	47	*e*Pn	Pn	03	15	38.2 +0.6

*ISCJB **28** 03:21:42.7±0.5,37°.46N±0°.09×134°.81E±0°.09,h378km, mb3.0/7, Error ellipse: s-maj=12.7km s-min=8.4km az=31.7*
*IDC **28** 03:21:43.2±1.1,37°.33N×134°.84E,h381km±13km,mb2.7/7, mb1 3.0/11,mb1mx2.8/50,mbtmp3.5/11, Error ellipse: s-maj=18.0km s-min=14.4km az=77.0*
*JMA **28** 03:21:44.1±0.3,37°.36N×134°.86E,h377km±4km, M3.1*

ISC 28 03:21:43.2±0.8,**37°.4N**±0°.1×**134°.86E**±0°.1†0,**h378km**,**n18,** σ0§**80**/19,**mb3.0/7,Sea of Japan**

Code	Station Name	Δ°	AZ°	Op	Phase ID	ISC	Time h m s	Res ISC
JKY	**Yasaka**	**1.77**	**173**	P		**Pn**	**03 22 36.5**	**+0.7**
JKSM	**Kasumi**	**1.80**	**185**	P		**Pn**	**03 22 36.6**	**+0.7**
JSZ	**Suzu**	**2.00**	**87**	P		**Pn**	**03 22 38.2**	**+1.2**
JWT	**Wachi**	**2.15**	**168**	P		**Pn**	**03 22 39.1**	**+0.9**
JNG	**Nsakai**	**2.78**	**110**	P		**Pn**	**03 22 44.1**	**+1.1**
MAT	**Matsushiro**	**2.81**	**106**	P		**Pn**	**03 22 43.8**	**+0.6**
MJAR	**Matsushiro Arr**	**2.81**	**106**	P		**Pn**	**03 22 43.9**	**+0.7**
	3.0nm,0.3s,baz=286,slow=10,SNR=32							
JHU	**Hanno**	**3.88**	**112**	P		**Pn**	**03 22 53.6**	**+0.9**
JHU				*e*S		**S**	**03 23 48.4**	**-0.5**
KSRS	**Korea Array**	**5.52**	**273**	P		**Pn**	**03 23 10.7**	**+1.1**
	0.3nm,0.3s,baz=91,slow=11,SNR=5.4							
USRK	**Ussuriysk Ar.**	**7.14**	**343**	P		**P**	**03 23 28.7**	**0.0**
	0.6nm,0.3s,baz=156,slow=11,SNR=12							
ASAJ	**Asahikawa**	**8.92**	**39**	P		**Pn**	**03 23 47.6**	**-0.8**
	5.5nm,0.3s,baz=217,slow=15,SNR=36							
SONM	**Songino Array**	**23.28**	**306**	P		**P**	**03 26 18.7**	**-0.3**
	0.5nm,0.6s,baz=95,slow=7.2,SNR=3.3							
MKAR	**Makanchi Array**	**39.47**	**301**	P		**P**	**03 28 37.8**	**-0.7**
	0.4nm,0.8s,baz=95,slow=7.7,SNR=2.2							
KURBB	**Kurchatov Arra**	**41.63**	**307**	P		**P**	**03 28 55.6**	**-0.2**
	0.6nm,0.7s,baz=87,slow=8.6,SNR=5.0							
ILAR	**Eielson Array**	**51.99**	**32**	P		**P**	**03 30 15.2**	**+0.4**
	0.3nm,0.6s,baz=270,slow=6.1,SNR=5.3							
WRA	**Warramunga Arr**	**57.02**	**181**	P		**P**	**03 30 50.5**	**-0.6**
	1.6nm,0.6s,baz=356,slow=7.7,SNR=14							
ASAR	**Alice Springs**	**60.73**	**181**	P		**P**	**03 31 15.4**	**-0.9**
	0.3nm,0.4s,baz=4.4,slow=5.3,SNR=4.6							
YKA	**Yellowknife Ar**	**66.06**	**28**	P		**P**	**03 31 50.7**	**+0.4**
	0.1nm,0.5s,baz=316,slow=6.7,SNR=6.0							

*ISK **28** 03:24:40.9,40°.68N×34°.40E,h9km,MD2.9*
*DDA **28** 03:24:41.3,40°.64N×34°.39E,h7km,Md2.7*
*CSEM **28** 03:24:41.5±0.2,40°.66N×34°.38E,h2km,MD2.9, Error ellipse: s-maj=3.3km s-min=3.1km az=154.0*

ISC 28 03:24:41.2±1.0,**40°.66N**±0°.02×**34°.37E**±0°.02,**h18**km±7km, **n33,** σ0§**49**/58,**Turkey**

Code	Station Name	Δ°	AZ°	Op	Phase ID	ISC	Time h m s	Res ISC
TOS	**Tosya**	**0.46**	**325**	*e*PG		**Pg**	**03 24 50.4**	**-0.2**
TOS				*e*SG		**Sb**	**03 24 57.2**	**-0.1**
TOS	**Tosya**	**0.46**	**325**	*e*Pg		**Pg**	**03 24 50.4**	**-0.2**
TOS				*e*Sg		**Sb**	**03 24 57.2**	**-0.1**
CORM	**Corum**	**0.52**	**157**	*e*PG		**Pg**	**03 24 51.6**	**-0.1**
CORM				*e*SG		**Sb**	**03 24 59.4**	**+0.1**
CORM	**Corum**	**0.52**	**157**	*e*Pg		**Pg**	**03 24 51.6**	**-0.1**
CORM				*e*Sg		**Sb**	**03 24 59.4**	**+0.1**
CANT	**Cankiri**	**0.57**	**265**	*e*PG		**Pb**	**03 24 52.9**	**+0.2**
CANT				*e*SG		**Sb**	**03 25 01.7**	**+1.1**
COAL	**Corum-Alaca**	**0.62**	**130**	*i* P		**Pg**	**03 24 53.4**	**-0.2**
COAL				*i* S		**Sg**	**03 25 01.9**	**-0.1**
COAL	**Corum-Alaca**	**0.62**	**130**	P		**Pg**	**03 24 53.4**	**-0.2**
COAL				S		**Sg**	**03 25 01.9**	**-0.1**
ILGA	**Ilgaz**	**0.63**	**309**	*i* P		**Pb**	**03 24 53.9**	**+0.1**
ILGA				*i* S		**Sg**	**03 25 01.8**	**-0.4**
ILGA	**Ilgaz**	**0.63**	**309**	P		**Pb**	**03 24 53.9**	**+0.1**
ILGA				S		**Sg**	**03 25 01.8**	**-0.4**
ELDT	**Eldivan**	**0.73**	**257**	*i* P		**Pb**	**03 24 56.0**	**+0.3**
ELDT				*i* S		**Sb**	**03 25 05.8**	**+0.3**
ELDT	**Eldivan**	**0.73**	**257**	P		**Pb**	**03 24 56.0**	**+0.3**
ELDT				S		**Sb**	**03 25 05.8**	**+0.3**
BOYT	**Boyabat**	**0.86**	**28**	*i* P		**Pg**	**03 24 58.0**	**-0.1**
BOYT				*i* S		**Sn**	**03 25 10.4**	**-0.4**
BOYT	**Boyabat**	**0.86**	**28**	P		**Pg**	**03 24 58.0**	**-0.1**
BOYT				S		**Sn**	**03 25 10.4**	**-0.4**
BYBT	**Boyabat**	**0.86**	**20**	*e*PG		**Pb**	**03 24 57.5**	**-0.2**
BYBT				*e*SG		**Sg**	**03 25 09.6**	**+0.2**
BYBT	**Boyabat**	**0.86**	**20**	*e*Pg		**Pb**	**03 24 57.5**	**-0.2**
BYBT				*e*Sg		**Sg**	**03 25 09.6**	**+0.2**
CDAG	**Cicekdag**	**1.04**	**180**	*i* P		**Pb**	**03 25 00.8**	**+0.1**
CDAG				*i* S		**Sg**	**03 25 14.7**	**-0.3**
CDAG	**Cicekdag**	**1.04**	**180**	P		**Pb**	**03 25 00.8**	**+0.1**
CDAG				S		**Sg**	**03 25 14.7**	**-0.3**
HAVZ	**Havza**	**1.11**	**68**	*i* P		**Pg**	**03 25 02.3**	**-0.4**
HAVZ				*i* S		**Sg**	**03 25 17.7**	**+0.5**
HAVZ	**Havza**	**1.11**	**68**	P		**Pg**	**03 25 02.3**	**-0.4**
HAVZ				S		**Sg**	**03 25 17.7**	**+0.5**
YOZ	**Yozgat**	**1.25**	**144**	*e*PN		**Pg**	**03 25 05.1**	**-0.4**
YOZ	**Yozgat**	**1.25**	**144**	*e*Pn		**Pg**	**03 25 05.1**	**-0.4**
KVT	**Kavak**	**1.34**	**71**	*e*PN		**Pb**	**03 25 06.0**	**+0.1**
KVT	**Kavak**	**1.34**	**71**	*e*Pn		**Pb**	**03 25 06.0**	**+0.1**
LOD	**Lodumlu**	**1.45**	**238**	*e*PN		**Pb**	**03 25 08.3**	**+0.6**
LOD	**Lodumlu**	**1.45**	**238**	*e*Pn		**Pb**	**03 25 08.3**	**+0.6**
SAMS	**Samsun-Alacam**	**1.55**	**63**	*i* P		**Pg**	**03 25 10.6**	**-0.4**
SAMS				*i* S		**Sg**	**03 25 32.1**	**+1.0**
SAMS	**Samsun-Alacam**	**1.55**	**63**	P		**Pg**	**03 25 10.6**	**-0.4**
SAMS				S		**Sg**	**03 25 32.1**	**+1.0**
AFSR	**Af˙ar-Bala (A**	**1.57**	**220**	*e*PN		**Pb**	**03 25 09.9**	**+0.1**
AFSR	**Af˙ar-Bala (A**	**1.57**	**220**	*e*Pn		**Pb**	**03 25 09.9**	**+0.1**
ERBA	**Erbaa**	**1.82**	**89**	*i* P		**Pg**	**03 25 15.2**	**-1.0**
ERBA				*i* S		**Sg**	**03 25 40.9**	**+1.1**
ERBA	**Erbaa**	**1.82**	**89**	P		**Pg**	**03 25 15.2**	**-1.0**
ERBA				S		**Sg**	**03 25 40.9**	**+1.1**

KKUL	**Konya-Kulu**	**1.86**	**217**	*i* P		**Pg**	**03 25 16.2**	**-0.7**
KKUL				*i* S		**Sg**	**03 25 41.7**	**+0.6**
KKUL	**Konya-Kulu**	**1.86**	**217**	P		**Pg**	**03 25 16.2**	**-0.7**
KKUL				S		**Sg**	**03 25 41.7**	**+0.6**

*NIED **28** 03:28:00,37°.20N×142°.70E,h14km,Mw3.8 Best double couple: M0≤5.00000×10^14 NP1:φs≥12.00000°,δ≥35.00000°, λ≥28.00000°. NP2:φs≥258.00000°,δ≥75.00000°,λ≥121.00000°.*
*ISCJB **28** 03:28:49.3±0.7,37°.10N±0°.07×142°.77E±0°.06,h9km, mb3.7/11, Error ellipse: s-maj=10.5km s-min=7.0km az=175.0*
*JMA **28** 03:28:52.3±0.4,37°.17N×142°.71E,h69km,M3.9*
*IDC **28** 03:28:56.4±3.4,37°.01N×142°.65E,h49km±30km,mb3.4/11, mb1 3.6/13,mb1mx3.4/44,mbtmp3.7/13,ML2.7/2, Error ellipse: s-maj=24.5km s-min=18.7km az=92.0*

ISC 28 03:28:51.5±0.9,**37°.19N**±0°.09×**142°.70E**±0°.08,**h9km**,**n28,** σ1§**08**/25,**mb3.7**/11,**Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Op	Phase ID	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**1.46**	**277**	P		**Pn**	**03 29 17.3**	**-0.8**
JIO	**Ouri**	**1.65**	**320**	P		**Pn**	**03 29 19.9**	**-0.7**
JMM	**Marumori**	**1.66**	**295**	P		**Pn**	**03 29 19.6**	**-1.1**
JMM				S		**Sn**	**03 29 41.3**	**-0.8**
JFT	**Otama**	**1.91**	**280**	P		**Pn**	**03 29 23.8**	**-0.4**
JFT				*e*S		**Sn**	**03 29 47.0**	**-1.4**
JOU	**Okura**	**1.99**	**307**	P		**Pn**	**03 29 25.3**	**-0.1**
JMK	**Ichinoseki**	**2.11**	**327**	P		**Pn**	**03 29 26.9**	**0.0**
JYK	**Kaneyama**	**2.52**	**314**	P		**Pn**	**03 29 32.7**	**0.0**
JAG	**Ashikaga**	**2.71**	**255**	P		**Pn**	**03 29 34.7**	**-0.6**
MJAR	**Matsushiro Arr**	**3.66**	**261**	P		**Pn**	**03 29 49.0**	**+0.8**
	2.3nm,0.3s,baz=82,slow=15,SNR=17							
MJAR				S		**Sn**	**03 30 30.5**	**-1.0**
	4.9nm,0.3s,baz=91,slow=13,SNR=5.6							
MAT	**Matsushiro**	**3.66**	**261**	P		**Pn**	**03 29 49.8**	**+1.5**
MAT				S		**Sn**	**03 30 34.2**	**+2.6**
USRK	**Ussuriysk Ar.**	**10.72**	**314**	P		Pn	03 31 30.3	+5.2
	0.2nm,0.3s,baz=121,slow=14,SNR=6.1							
H11N2	**WAKE ISLAND Hy**	**27.36**	**123**	T		T	04 03 27.8	
	baz=315,slow=75,SNR=34							
H11N1	**WAKE ISLAND Hy**	**27.37**	**123**	T		T	04 03 27.3	
	baz=315,slow=75,SNR=27							
H11N3	**WAKE ISLAND Hy**	**27.38**	**123**	T		T	04 03 28.7	
	baz=315,slow=75,SNR=25							
H11S1	**WAKE ISLAND Hy**	**28.10**	**125**	T		T	04 04 19.4	
	baz=317,slow=76,SNR=18							
H11S3	**WAKE ISLAND Hy**	**28.10**	**125**	T		T	04 04 19.6	
	baz=317,slow=76,SNR=20							
H11S2	**WAKE ISLAND Hy**	**28.11**	**125**	T		T	04 04 21.6	
	baz=317,slow=76,SNR=19							
SONM	**Songino Array**	**28.55**	**303**	P		**P**	**03 34 48.4**	**+0.8**
	1.5nm,0.7s,baz=96,slow=8.5,SNR=8.1							
ZALV	**Zalesovo Beam**	**42.56**	**312**	P		**P**	**03 36 48.0**	**+0.6**
	0.7nm,0.5s,baz=90,slow=7.4,SNR=5.2							
MKAR	**Makanchi Array**	**44.90**	**302**	P		**P**	**03 37 05.2**	**-1.2**
	0.4nm,0.6s,baz=92,slow=9.8,SNR=2.3							
KURBB	**Kurchatov Arra**	**46.71**	**308**	P		**P**	**03 37 21.1**	**+0.5**
	2.0nm,0.5s,baz=82,slow=8.1,SNR=16							
ILAR	**Eielson Array**	**48.81**	**32**	P		**P**	**03 37 36.9**	**+0.2**
	0.4nm,0.9s,baz=262,slow=6.8,SNR=4.6							
BVAR	**Borovoye Array**	**51.22**	**312**	P		**P**	**03 37 55.1**	**-0.1**
	0.2nm,0.4s,baz=87,slow=8.8,SNR=3.3							
WRA	**Warramunga Arr**	**57.37**	**189**	P		**P**	**03 38 38.6**	**-1.5**
	1.6nm,0.9s,baz=8.5,slow=7.7,SNR=7.5							
ASAR	**Alice Springs**	**61.10**	**189**	P		**P**	**03 39 04.2**	**-1.8**
	0.6nm,0.7s,baz=10,slow=5.3,SNR=5.2							
YKA	**Yellowknife Ar**	**63.15**	**31**	P		**P**	**03 39 19.8**	**+0.5**
	0.2nm,0.9s,baz=299,slow=7.7,SNR=3.0							
FINES	**FINESS Array B**	**69.15**	**333**	P		**P**	**03 39 58.2**	**+0.5**
	0.9nm,0.8s,baz=4.6,slow=7.0,SNR=2.9							
AKASG	**Malin Array Be**	**74.79**	**323**	P		**P**	**03 40 32.5**	**+0.6**
	0.2nm,0.3s,baz=46,slow=7.9,SNR=4.2							

*JMA **28** 03:37:29.6±0.2,43°.19N×146°.62E,h60km±2km,M3.1*
*SKHL **28** 03:37:29.5±0.3,43°.17N×146°.84E,h49km±4km,mb4.6/2*

ISC 28 03:37:28.3±2.5,**43°.1N**±0°.1×**146°.79E**±0°.09,**h34km**±4km, **n11,** σ0§**88**/19,**Kuril Islands**

Code	Station Name	Δ°	AZ°	Op	Phase ID	ISC	Time h m s	Res ISC
SHO	**Shikotan**	**0.75**	**2**	*e*P		**Pb**	**03 37 42.8**	**-0.2**
SHO				AMB	AMB		03 37 43.0	
	220nm,0.3s							
SHO				*i* S		**Sb**	**03 37 52.5**	**-0.5**
SHO				A	A		03 37 53.1	
	760nm,0.3s							
SHO				A	A		03 37 53.1	
	540nm,0.3s							
NEM2	**Nemuro 2**	**0.80**	**288**	P		**Pn**	**03 37 43.5**	**+0.4**
NEM2				*e*S		**Sn**	**03 37 53.7**	**-0.1**
YUK	**Yuzh-Kuril'sk**	**1.13**	**324**	*i* P		**Pn**	**03 37 47.6**	**-0.1**
YUK				AMB	AMB		03 37 51.2	
	200nm,0.2s							
YUK				*i* S		**Sn**	**03 38 01.4**	**-0.6**
YUK				A	A		03 38 02.3	
	390nm,0.2s							
YUK				A	A		03 38 02.3	
	480nm,0.2s							
JRA	**Rausu**	**1.46**	**304**	P		**Pn**	**03 37 52.4**	**+0.2**
JRA				*e*S		**Sn**	**03 38 09.2**	**-0.9**
JAK	**Akkeshi**	**1.54**	**266**	P		**Pn**	**03 37 53.5**	**+0.3**
JAK				*e*S		**Sn**	**03 38 11.1**	**-0.9**
JNK	**Nakash**	**1.58**	**288**	P		**Pn**	**03 37 53.9**	**+0.1**
JNK				*e*S		**Sn**	**03 38 12.0**	**-1.0**
JOB	**Onbets**	**2.18**	**265**	P		**Pn**	**03 38 02.5**	**+0.5**
JAR	**Ashorobuto**	**2.21**	**276**	P		**Pn**	**03 38 03.4**	**+0.8**
JAR				*e*S		**Sn**	**03 38 28.2**	**-0.5**
KUR	**Kuril'sk**	**2.25**	**20**	*e*P		**Pn**	**03 38 03.2**	**+0.2**
KUR				*e*S		**Sn**	**03 38 29.0**	**-0.5**
KUR				A	A		03 38 31.3	
	80nm,0.2s							
KUR				A	A		03 38 31.3	
	90nm,0.2s							
JTKR	**Abashiri--Toko**	**2.26**	**293**	P		**Pn**	**03 38 03.8**	**+0.7**
YSS	**Yuzh-Sakhalins**	**4.78**	**325**	*e*P		**Pn**	**03 38 40.3**	**+2.5**

*ISCJB **28** 03:56:22.7±0.4,30°.61N±0°.04×105°.81W±0°.03,h10km, Error ellipse: s-maj=5.3km s-min=3.8km az=170.9*
*MEX **28** 03:56:25.7±0.5,30°.66N×105°.54W,h10km,MD4.1*
*NEIC **28** 03:56:25.6±0.5,30°.74N×105°.78W,h10km,mb4.0/1, MD4.1(MEX), Error ellipse: s-maj=8.1km s-min=4.0km az=2.0*

ISC 28 03:56:22.6±0.8,**30°.65N**±0°.04×**105°.79W**±0°.03,**h10**km,**n49,** σ2§**43**/62,**Texas-Mexico border region**

Code	Station Name	Δ°	AZ°	Op	Phase ID	ISC	Time h m s	Res ISC
MNTX	**Cornudas Mount**	**1.10**	**18**	*e*Pg		**Pg**	**03 56 42.6**	**-1.1**
MNTX				*e*S		**Sg**	**03 56 55.9**	**-2.2**
CGIG		**1.91**	**262**	*e*P		**Pb**	**03 56 58.3**	**+0.7**
CGIG				*e*S		**Sb**	**03 57 23.8**	**+2.2**
CGIG		**1.91**	**262**	*e*P		**Pb**	**03 56 58.3**	**+0.7**
CGIG				*e*S		**Sb**	**03 57 23.8**	**+2.2**
GDL2	**Guadalupe Moun**	**1.97**	**38**	*e*Pn		**Pb**	**03 56 58.3**	**-0.3**
GDL2				*e*Sn		**Sg**	**03 57 24.2**	**-1.6**
TX31	**Lajitas Ar. Si**	**2.26**	**125**	*e*Pn		**Pn**	**03 57 03.2**	**+3.1**
CLNB	**Carlsbad**	**2.29**	**45**	*e*Pn		**Pb**	**03 57 04.0**	**-0.1**
CLNB				*e*Sn		**Sb**	**03 57 32.6**	**+0.1**
121A	**Cookes Peak, D**	**2.53**	**318**	*e*Pn		**Pn**	**03 57 05.5**	**+1.6**
121A				*e*S		**Sg**	**03 57 43.5**	**-0.5**
121A	**Cookes Peak, D**	**2.53**	**318**	*i* P		**Pn**	**03 57 05.6**	**+1.6**
121A				*e*S		**Sb**	**03 57 37.3**	**-2.3**
CPRX	**Cap Rock**	**2.88**	**34**	*e*Pn		**Pn**	**03 57 07.0**	**-1.7**
319A	**Douglas**	**3.08**	**284**	*e*Pn		**Pn**	**03 57 14.2**	**+2.7**
319A	**Douglas**	**3.08**	**284**	*e*P		**Pn**	**03 57 13.9**	**+2.4**
319A				*e*S		**Sb**	**03 57 53.5**	**-1.8**
Y22D	**IRIS PASSCAL I**	**3.54**	**345**	*e*Pn		**Pn**	**03 57 19.4**	**+1.6**
BNM	**Barren Site**	**3.56**	**349**	*e*Pn		**Pn**	**03 57 19.6**	**+1.5**
HPIG		**3.70**	**178**	*e*P		Pn	03 57 12.3	-7.7
HPIG				*e*S		**Sn**	**03 58 03.6**	**-0.3**
HPIG		**3.70**	**178**	*e*P		Pn	03 57 12.3	-7.7
HPIG				*e*S		**Sn**	**03 58 03.6**	**-0.3**
LPM	**Los Pinos Moun**	**3.72**	**349**	*e*Pn		**Pn**	**03 57 21.6**	**+1.4**
LAZ	**Ladron**	**3.91**	**343**	*e*Pn		**Pn**	**03 57 24.7**	**+1.8**
MSTX	**Muleshoe**	**4.18**	**37**	*e*Pn		**Pn**	**03 57 28.9**	**+2.4**
MSTX				*e*S		**Sn**	**03 58 18.2**	**+2.8**
ANMO	**Albuquerque**	**4.32**	**353**	*e*Pn		**Pn**	**03 57 30.6**	**+2.1**
ANMO				*e*S		**Sb**	**03 58 35.1**	**+4.1**
ANMO	**Albuquerque**	**4.32**	**353**	*e*P		**Pn**	**03 57 30.1**	**+1.6**
ANMO				*e*S		**Sn**	**03 58 21.0**	**+1.9**
TUC	**Tucson**	**4.58**	**292**	*e*Pn		**Pn**	**03 57 34.0**	**+2.1**
TUC				*e*S		**Sg**	**03 58 46.2**	**-3.4**
HSIG		**4.77**	**251**	*e*Pn		**Pn**	**03 57 33.6**	**-1.0**
HSIG				*e*Lg		Lg	03 58 56.6	
JCT	**Junction City**	**5.17**	**90**	*e*Pn		**Pn**	**03 57 42.8**	**+2.8**
JCT				*e*S		Sg	03 59 02.9	-5.5
AMTX	**Amarillo**	**5.46**	**38**	*e*Pn		**Pn**	**03 57 46.2**	**+2.2**
AMTX				*e*S		**Sg**	**03 59 14.8**	**-3.0**
W18A	**Petrified Fore**	**5.55**	**324**	*e*Pn		**Pn**	**03 57 48.2**	**+2.7**
	25nm,0.7s							
W18A				*e*Pg		**Pg**	**03 58 07.8**	**-1.2**
W18A				*e*S		**Sg**	**03 59 17.9**	**-3.1**
ABTX	**Abilene, Hawle**	**5.60**	**68**	*e*Pn		**Pn**	**03 57 48.1**	**+2.2**
ABTX				*e*S		Sb	03 59 14.6	+7.0
X16A	**Lo Mia Camp, P**	**6.07**	**310**	*e*Pn		**Pn**	**03 57 55.8**	**+3.2**
214A	**Organ Pipe Nat**	**6.15**	**284**	*e*Pn		**Pn**	**03 57 56.4**	**+2.8**
	41nm,0.6s							
214A				*e*S		**Sg**	**03 59 37.3**	**-2.7**
WUAZ	**Wupatki**	**6.75**	**317**	*e*Pn		**Pn**	**03 58 04.1**	**+2.3**
WUAZ				*e*Pg		Pg	03 58 27.8	-3.9
WUAZ				*e*S		**Sg**	**03 59 53.2**	**-5.9**
MVCO	**Mesa Verde**	**6.92**	**342**	*e*Pn		**Pn**	**03 58 07.4**	**+3.2**
MVCO				*e*Pg		Pg	03 58 32.3	-2.8
MVCO				*e*S		**Sg**	**04 00 02.6**	**-2.1**
Y14A	**Wickenburg**	**6.93**	**300**	*e*Pn		**Pn**	**03 58 07.1**	**+2.8**
SDCO	**Great Sand Dun**	**7.08**	**2**	*e*Pn		Pn	03 58 14.4	+7.9
SDCO				*e*Pg		Pb	03 58 30.7	+4.9
SDCO				*e*S		Sb	03 59 58.7	+8.2
113A	**Mohawk Valley,**	**7.12**	**289**	*e*Pn		**Pn**	**03 58 09.8**	**+3.1**
S22A	**4UR Ranch, Cre**	**7.13**	**353**	*e*Pn		Pn	03 58 14.4	+7.2
WMOK	**Wichita Mounta**	**7.17**	**54**	*e*Pn		**Pn**	**03 58 07.5**	**0.0**
WMOK				*e*S		Sb	03 59 46.1	-6.8
WHTX	**Lake Whitney,**	**7.25**	**77**	*e*Pn		**Pn**	**03 58 11.8**	**+3.1**
WHTX				*e*Pg		Pg	03 58 37.4	-4.1
WHTX				*e*S		**Sb**	**03 59 50.2**	**-4.9**
Y12C	**Blythe**	**8.02**	**295**	*e*Pn		**Pn**	**03 58 22.0**	**+2.9**
GLA	**Glamis**	**8.05**	**290**	*e*Pn		**Pn**	**03 58 22.5**	**+2.9**
W13A	**Hualapai Mount**	**8.13**	**305**	*e*Pn		**Pn**	**03 58 22.3**	**+1.5**
W34A	**Bridge Creek,**	**8.14**	**54**	*e*Pg		Pn	03 58 25.4	+4.5
	27nm,0.7s							
W34A				*e*S		Sb	04 00 19.4	-1.2
Q24A	**Divide**	**8.31**	**3**	*e*Pn		**Pn**	**03 58 23.8**	**+0.4**
HKT	**Hockley**	**8.63**	**92**	*e*Pn		**Pn**	**03 58 29.9**	**+2.4**
V34A	**Guthrie**	**8.64**	**51**	*e*Pn		Pn	03 58 31.8	+4.1
MTPU	**Mount Pierson**	**9.07**	**326**	*e*Pn		Pn	03 58 37.5	+3.6
PFO	**Pinyon Flats O**	**9.52**	**291**	*e*Pn		**Pn**	**03 58 42.3**	**+2.5**
	0.6nm,0.3s							
TUL1	**

SONM	**Songino Array**	**58.51**	**343**	P	**P**	**04 19 41.8**	**-1.1**
	1.0nm,0.8s,baz=191,slow=7.1,SNR=5.1						
MKAR	**Makanchi Array**	**67.69**	**328**	P	**P**	**04 20 42.2**	**-1.3**
	1.7nm,0.6s,baz=131,slow=7.7,SNR=11						
ZALV	**Zalesovo Beam**	**71.32**	**335**	P	**P**	**04 21 03.2**	**-2.3**
	3.1nm,0.4s,baz=134,slow=4.5,SNR=14						
ABKAR	**Akbulak array**	**81.75**	**322**	*eP*	**P**	**04 22 03.2**	**-1.2**
	0.4nm,0.4s						
QSPA	**South Pole Qui**	**82.21**	**180**	*eP*	**P**	**04 22 08.1**	**+1.5**
	17nm,0.8s						
ARCES	**ARCESS Array B**	**101.53**	**339**	PKiKP	**PKiKP**	**04 27 58.8**	**-1.1**
	4.0nm,1.0s,baz=84,slow=0.7,SNR=7.2						
YKA	**Yellowknife Ar**	**109.40**	**26**	PKiKP	**PKiKP**	**04 28 14.0**	**-0.6**
	0.3nm,0.6s,baz=293,slow=1.6,SNR=8.9						
GERES	**GERESS Array B**	**111.59**	**320**	PKiKP	**PKiKP**	**04 28 17.4**	**-1.8**
	0.6nm,0.7s,baz=112,slow=1.4,SNR=5.1						
TORD	**Torodi Ar. Bea**	**126.79**	**281**	PKP	**PKPdf**	**04 28 48.6**	**-0.7**
	1.2nm,0.7s,baz=50,slow=2.2,SNR=15						
CPUP	**Villa Florida**	**145.74**	**172**	PKPbc	**PKPab**	**04 29 25.9**	**+0.9**
	2.1nm,0.6s,baz=153,slow=2.5,SNR=8.6						
LPAZ	**La Paz**	**151.37**	**147**	PKPbc	**PKPbc**	**04 29 41.7**	**+1.5**
	1.9nm,0.4s,baz=19,slow=3.0,SNR=22						
LPAZ				PKPab	**PKPab**	**04 29 50.9**	**+2.2**
	2.6nm,0.6s,baz=214,slow=6.3,SNR=11						

DJA 28 04:20:31.7±0.3, 8°S±3°×11°6E±°, h10km, M3.7/13, MLv3.7/13, Bali Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SRBI	**Singaraja**	**1.18**	**244**	P	Pg	04 20 55.1	+0.8
SRBI				S	Sb	04 21 06.2	-3.2
TWSI	**Taliwang, Sumb**	**1.30**	**153**	P	Pb	04 20 56.2	-0.1
TWSI				S	Sb	04 21 12.6	-0.6
DNP	**Denpasar**	**1.53**	**224**	P	Pn	04 20 58.7	-0.4
PLAI	**Plampang**	**1.94**	**130**	P	Pn	04 21 01.9	-2.8
PLAI				S	Sn	04 21 23.2	-6.0
JAGI	**Jajag, Banyuwa**	**2.29**	**247**	P	Pn	04 21 09.7	+0.1
GMJI	**Gumukmas**	**2.90**	**256**	P	Pn	04 21 17.6	-0.3
BWJI	**Bawean**	**3.98**	**295**	P	Pn	04 21 32.3	-0.6
BBKI	**Banjar Baru**	**4.33**	**341**	P	Pn	04 21 37.9	+0.3
BSSI	**Bau Bau, Buton**	**4.41**	**72**	P	Pn	04 21 38.5	-0.3

JMA 28 04:38:38.8±0.2, 37.80N×143.63E, h37km, M3.6, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**1.91**	**291**	P	Pn	04 39 10.2	+1.4
JIO				S	Sn	04 39 33.5	+1.9
OFUJ	**Ofunato**	**2.00**	**310**	P	Pn	04 39 11.4	+1.4
OFUJ				*e*S	Sn	04 39 35.3	+1.5
JMK	**Ichinoseki**	**2.22**	**302**	P	Pn	04 39 14.8	+1.8
JMK				S	Sn	04 39 41.0	+1.9
JOM	**Ohasama**	**2.48**	**313**	S	Sn	04 39 47.7	+2.1
JFT	**Otama**	**2.63**	**265**	S	Sn	04 39 51.8	+2.5
JYK	**Kaneyama**	**2.80**	**294**	P	Pn	04 39 23.5	+2.5
JYK				*e*S	Sn	04 39 56.7	+3.1
JAW	**Awa shima**	**3.52**	**282**	S	Sn	04 40 15.4	+4.2
JCH	**Churui**	**4.81**	**358**	P	Pn	04 39 48.9	+0.3
JCH				*e*S	Sn	04 40 41.6	-1.5

*ISCJB **28** 04:39:38.7±0.5, 36°.34N±0°.04×139°.79E±0°.07, h122km±3km, mb3.5/9, Error ellipse: s-maj=9.5km s-min=7.1km az=1.8*
*IDC **28** 04:39:40.2±1.2, 36°.34N×139°.66E, h119km±11km, mb3.3/9, mb1 3.5/10, mb1mx3.3/37, mbtmp3.7/10, Error ellipse: s-maj=24.9km s-min=9.3km az=67.0*
*JMA **28** 04:39:40.7±0.1, 36°.32N×139°.83E, h107km±1km, M3.4*
ISC 28 04:39:39.7±0.8, 36°.34N±0°.05×139°.81E±0°.06, h115km±6km, n29, σ0§80/32, mb3.4/9, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JAG	**Ashikaga**	**0.30**	**286**	P	**Pn**	**04 39 56.1**	**+0.1**
JAG				S	**Sn**	**04 40 08.2**	**-0.2**
JYT	**Yasato**	**0.33**	**110**	P	**Pn**	**04 39 56.2**	**+0.1**
JYT				S	**Sn**	**04 40 07.7**	**-0.8**
JKT	**Katashina**	**0.62**	**313**	P	**Pn**	**04 39 58.5**	**+0.5**
JKT				S	**Sn**	**04 40 12.0**	**+0.2**
JRY	**Ryogami san**	**0.80**	**246**	P	**Pn**	**04 40 00.1**	**+0.7**
JRY				S	**Sn**	**04 40 15.1**	**+0.8**
JFY	**Yanaizu**	**1.07**	**356**	P	**Pn**	**04 40 02.5**	**+0.5**
JOD2	**Odawara 2**	**1.23**	**209**	P	**Pn**	**04 40 03.7**	**0.0**
JOD2				S	**Sn**	**04 40 21.0**	**-0.9**
JFT	**Otama**	**1.25**	**20**	P	**Pn**	**04 40 04.5**	**+0.6**
MJAR	**Matsushiro Arr**	**1.30**	**279**	P	**Pn**	**04 40 04.5**	**0.0**
	19nm,0.3s,baz=111,slow=9.6,SNR=91						
MJAR				S	**Sn**	**04 40 21.8**	**-1.6**
	9.2nm,0.3s,baz=114,slow=14,SNR=10						
MAT	**Matsushiro**	**1.31**	**279**	P	**Pn**	**04 40 05.3**	**+0.8**
MAT				S	**Sn**	**04 40 24.3**	**+0.9**
MAT	**Matsushiro**	**1.31**	**279**	P	**Pn**	**04 40 05.3**	**+0.8**
JYN	**Shimob**	**1.33**	**231**	P	**Pn**	**04 40 05.5**	**+0.6**
JYN				S	**Sn**	**04 40 24.4**	**+0.4**
JNS	**Sasagawa**	**1.52**	**345**	P	**Pn**	**04 40 07.5**	**+0.5**
JHJ	**Hachijo jima 2**	**3.22**	**180**	P	**Pn**	**04 40 28.5**	**-0.1**
	39nm,0.3s,baz=325,slow=22,SNR=7.9						
JHJ				S	**Sn**	**04 41 07.4**	**+0.9**
	65nm,0.3s,baz=89,slow=23,SNR=9.2						
SONM	**Songino Array**	**27.12**	**306**	P	**P**	**04 45 10.8**	**-1.0**
	0.8nm,0.7s,baz=107,slow=8.3,SNR=4.1						
H11N2	**WAKE ISLAND Hy**	**28.94**	**118**	T	T	05 15 59.3	
	baz=314,slow=75,SNR=4.7						
H11N1	**WAKE ISLAND Hy**	**28.95**	**118**	T	T	05 15 59.1	
	baz=314,slow=75,SNR=9.4						
H11N3	**WAKE ISLAND Hy**	**28.96**	**118**	T	T	05 15 56.4	
	baz=314,slow=75,SNR=5.2						
H11S1	**WAKE ISLAND Hy**	**29.61**	**120**	T	T	05 16 54.4	
	baz=316,slow=76,SNR=7.3						
H11S3	**WAKE ISLAND Hy**	**29.61**	**120**	T	T	05 16 53.9	
	baz=316,slow=76,SNR=4.8						
H11S2	**WAKE ISLAND Hy**	**29.62**	**120**	T	T	05 16 43.8	
	baz=316,slow=76,SNR=5.3						
MKAR	**Makanchi Array**	**43.40**	**302**	P	**P**	**04 47 29.0**	**-1.6**
	0.6nm,0.6s,baz=102,slow=14,SNR=3.4						
ILAR	**Eielson Array**	**50.77**	**32**	P	**P**	**04 48 28.1**	**+0.5**
	0.8nm,0.8s,baz=275,slow=6.5,SNR=8.0						
WRA	**Warramunga Arr**	**56.22**	**186**	P	**P**	**04 49 07.3**	**-0.5**
	0.5nm,0.4s,baz=0.8,slow=7.6,SNR=3.3						
ASAR	**Alice Springs**	**59.94**	**186**	P	**P**	**04 49 35.6**	**+1.8**
	0.2nm,0.5s,baz=13,slow=10,SNR=3.1						
YKA	**Yellowknife Ar**	**85.05**	**30**	P	**P**	**04 50 07.6**	**+0.4**
	0.3nm,0.7s,baz=304,slow=6.7,SNR=11						
FINES	**FINESS Array B**	**68.82**	**332**	P	**P**	**04 50 31.4**	**+0.3**
	1.0nm,0.8s,baz=57,slow=5.1,SNR=3.0						
AKASG	**Malin Array Be**	**74.05**	**322**	P	**P**	**04 51 02.5**	**-0.1**
	0.1nm,0.3s,baz=63,slow=8.5,SNR=2.1						
NB2	**NORSAR Subarra**	**74.32**	**337**	P	**P**	**04 51 04.3**	**+0.2**
	comp=Z,0.4nm,0.5s,baz=41,slow=5.9						
NOA	**NORSAR Array B**	**74.32**	**337**	P	**P**	**04 51 03.6**	**-0.5**
	comp=Z,0.4nm,0.6s,baz=13,slow=5.5,SNR=4.5						

IDC 28 04:48:31.2±8.7, 36°.24N×143°.65E, h0km, mb3.9/2, mb1 4.0/3, mb1mx3.4/45, mbtmp3.7/3, ML3.2/1, MS2.6/1, Ms1 2.6/1, ms1mx2.2/36, Error ellipse: s-maj=192.6km s-min=45.4km az=35.0, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MJAR	**Matsushiro Arr**	**4.40**	**276**	Pn	Pn	04 49 39.0	-0.3
	1.3nm,0.3s,baz=91,slow=16,SNR=6.0						
KSRS	**Korea Array**	**12.66**	**280**	LR	LR	04 56 08.8	
	comp=Z,22nm,18.1s,baz=225,slow=36						
WRA	**Warramunga Arr**	**56.56**	**191**	P	P	04 58 15.8	+0.2
	2.0nm,0.9s,baz=7.7,slow=7.5,SNR=7.9						
ASAR	**Alice Springs**	**60.29**	**190**	P	P	04 58 41.2	-0.3
	0.8nm,0.9s,baz=11,slow=8.1,SNR=5.4						

*IDC **28** 04:49:20.8±2.6, 36°.42N×142°.33E, h0km, mb3.7/4, mb1 3.8/5, mb1mx3.4/45, mbtmp3.7/5, ML3.5/1, Error ellipse: s-maj=72.8km s-min=28.2km az=62.0*
*ISCJB **28** 04:49:21.8±1.2, 36°.4N±0°.1×142°.4E±0°.1, h19km, mb3.7/4, Error ellipse: s-maj=15.2km s-min=11.0km az=156.0*
*JMA **28** 04:49:25.1±0.3, 36°.43N×142°.07E, h85km, M3.2*
ISC 28 04:49:24.9±1.5, 36°.4N±0°.1×142°.09E±0°.10, h19km, n10, σ1§05/13, mb3.8/4, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**1.21**	**236**	P	**Pb**	**04 49 47.6**	**+0.5**
CHOJ				*e*S	**Sg**	**04 50 04.3**	**+0.2**
JHO	**Hitachi**	**1.25**	**281**	P	**Pn**	**04 49 47.2**	**-0.2**
JHO				S	**Sn**	**04 50 04.2**	**+0.5**
JAG	**Ashikaga**	**2.13**	**272**	P	**Pn**	**04 49 59.8**	**+0.3**
JRY	**Ryogami san**	**2.60**	**263**	P	**Pn**	**04 50 06.3**	**+0.2**
MJAR	**Matsushiro Arr**	**3.13**	**274**	Pn	**Pn**	**04 50 14.2**	**+0.9**
	5.3nm,0.3s,baz=95,slow=9.6,SNR=20						
MAT	**Matsushiro**	**3.13**	**274**	P	**Pn**	**04 50 14.8**	**+1.5**
MAT				S	**Sb**	**04 50 56.3**	**-1.6**
SONM	**Songino Array**	**28.60**	**305**	P	**P**	**04 55 20.7**	**+0.7**
	1.4nm,0.8s,baz=106,slow=10,SNR=7.0						
ZALV	**Zalesovo Beam**	**42.76**	**313**	P	**P**	**04 57 21.4**	**+0.6**
	0.6nm,0.4s,baz=81,slow=9.2,SNR=3.6						
MKAR	**Makanchi Array**	**44.93**	**303**	P	**P**	**04 57 36.6**	**-1.8**
	0.8nm,0.6s,baz=91,slow=9.3,SNR=2.4						
WRA	**Warramunga Arr**	**56.49**	**189**	P	**P**	**04 59 05.2**	**-0.6**
	0.2nm,0.4s,baz=4.1,slow=7.1,SNR=2.8						

*IDC **28** 04:51:46.3±1.3, 15°.12N×94°.40W, h0km, mb3.6/9, mb1 4.0/12, mb1mx3.8/50, mbtmp3.7/12, ML4.0/2, MS3.2/2, Ms1 3.3/2, ms1mx2.6/31, Error ellipse: s-maj=40.1km s-min=21.5km az=56.0*
*MEX **28** 04:51:52.5±1.0, 15°.17N×94°.53W, h16km±205km, MD4.1*
*NEIC **28** 04:51:52.5, 15°.17N×94°.53W, h16km, mb3.9/2, MD4.1(MEX), After MEX.*
ISC 28 04:51:46.4±2.8, 15°.1N±0°.1×94°.50W±0°.04, h0km±16km, n26, σ1§59/30, mb3.7/9, Near coast of Oaxaca

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PCIG		**1.37**	**64**	*i* P	**Pn**	**04 52 13.5**	**+0.8**
PCIG				*e*S	**Sg**	**04 52 28.8**	**-1.7**
PCIG		**1.37**	**64**	*i* P	**Pn**	**04 52 13.5**	**+0.8**
PCIG				*e*S	**Sg**	**04 52 28.8**	**-1.7**
HUIG	**Huatulco**	**1.69**	**293**	*e*P	**Pn**	**04 52 16.4**	**-0.7**
HUIG				*e*S	Sn	04 52 33.6	-5.9
HUIG	**Huatulco**	**1.69**	**293**	*e*P	**Pn**	**04 52 16.4**	**-0.7**
HUIG				*e*S	Sn	04 52 33.6	-5.9
CMIG	**Matias Romero**	**2.02**	**349**	Pn	Pn	04 52 20.8	-0.9
	baz=171,slow=15						
CMIG				Sn	Sn	04 52 41.9	-5.6
	550nm,0.3s,baz=302,slow=15,SNR=70						
TGIG		**2.13**	**38**	*e*P	**Pn**	**04 52 24.3**	**+1.0**
TGIG				*e*S	**Sn**	**04 52 48.2**	**-2.2**
TGIG		**2.13**	**38**	*e*P	**Pn**	**04 52 24.3**	**+1.0**
TGIG				*e*S	**Sn**	**04 52 48.2**	**-2.2**
VHO	**Vista Hermosa**	**2.91**	**313**	*e*P	**Pn**	**04 52 35.6**	**+1.5**
VHO				*e*S	**Sn**	**04 53 07.1**	**-2.8**
VHO	**Vista Hermosa**	**2.91**	**313**	*e*P	**Pn**	**04 52 35.6**	**+1.5**
VHO				*e*S	**Sn**	**04 53 07.1**	**-2.8**
PNIG	**Pinotepa**	**3.72**	**291**	*e*P	**Pn**	**04 52 45.6**	**+0.4**
PNIG	**Pinotepa**	**3.72**	**291**	*e*P	**Pn**	**04 52 45.6**	**+0.4**
TEIG	**Tepich**	**7.82**	**48**	Pn	**Pn**	**04 53 41.4**	**0.0**
	4.6nm,0.3s,baz=89,slow=24,SNR=30						
TEIG				Sn	Sn	04 55 05.2	-5.6
	1.2nm,0.3s,baz=336,slow=20,SNR=2.3						
TEIG	**Tepich**	**7.82**	**48**	*e*Pn	**Pn**	**04 53 43.1**	**+1.6**
TEIG				Sn	Sn	04 55 05.2	-5.6
TXAR	**Lajitas Array**	**16.50**	**331**	Pn	**Pn**	**04 55 41.1**	**+1.7**
	0.1nm,0.3s,baz=144,slow=10,SNR=6.0						
WMOK	**Wichita Mounta**	**19.93**	**350**	*e*P	**P**	**04 56 22.6**	**+2.8**
	13nm,2.1s						
AMTX	**Amarillo**	**20.73**	**343**	*e*P	**P**	**04 56 31.4**	**+2.7**
	2.3nm,0.3s						
ANMO	**Albuquerque**	**22.50**	**334**	P	**P**	**04 56 49.4**	**+1.6**
	0.7nm,0.8s,baz=113,slow=17,SNR=3.7						
PDAR	**Pinedale Array**	**30.46**	**338**	P	**P**	**04 58 01.0**	**0.0**
	0.3nm,0.9s,baz=159,slow=8.7,SNR=2.5						
NVAR	**Mina Array Bea**	**31.32**	**322**	P	**P**	**04 58 09.5**	**+0.8**
	0.1nm,0.4s,baz=134,slow=8.5,SNR=4.0						
NVAR				LR	LR	05 12 19.9	
	comp=Z,82nm,18.3s,baz=223,slow=39						
NNA	**Nana**	**32.09**	**146**	LR	LR	05 08 40.6	
	comp=Z,23nm,21.1s,baz=295,slow=32						
YKA	**Yellowknife Ar**	**49.43**	**348**	P	**P**	**05 00 37.4**	**-0.4**
	0.6nm,0.6s,baz=154,slow=7.3,SNR=24						
INK	**Inuvik**	**58.71**	**344**	P	**P**	**05 01 45.3**	**-0.2**
	1.0nm,0.8s,baz=132,slow=7.2,SNR=5.8						
PLCA	**Paso Flores**	**59.83**	**159**	P	**P**	**05 01 53.6**	**-0.1**
	1.6nm,1.1s,baz=333,slow=4.8,SNR=3.1						
ILAR	**Eielson Array**	**60.89**	**337**	P	**P**	**05 02 00.8**	**+0.2**
	0.4nm,0.8s,baz=162,slow=4.4,SNR=5.7						
EKA	**Eskdalemuir Ar**	**78.49**	**36**	P	**P**	**05 03 49.0**	**-0.3**
	1.6nm,0.8s,baz=279,slow=5.6,SNR=5.4						
TORD	**Torodi Ar. Bea**	**92.46**	**76**	P	**P**	**05 04 59.2**	**-0.8**
	0.3nm,0.9s,baz=284,slow=5.8,SNR=2.4						

JMA 28 04:57:29.8±0.1, 39.55N×142.66E, h24km±1km, M3.6, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MIYJ	**Miyakonagasawa**	**0.65**	**273**	P	Pb	04 57 42.3	-0.2
MIYJ				S	Sb	04 57 51.4	+0.2
JTH	**Tanohata**	**0.73**	**303**	P	Pb	04 57 43.7	-0.1
JTH				S	Sb	04 57 53.6	+0.3
OFUJ	**Ofunato**	**0.90**	**239**	P	Pb	04 57 46.6	-0.1
OFUJ				*e*S	Sb	04 57 58.0	-0.3
JOM	**Ohasama**	**1.06**	**266**	P	Pn	04 57 49.3	+0.1
JOM				*e*S	Sn	04 58 03.2	0.0
JKZ	**Kuzumaki**	**1.11**	**293**	P	Pn	04 57 50.0	+0.1
JKZ				*e*S	Sb	04 58 04.1	-0.4
JANG	**Nango**	**1.20**	**313**	P	Pn	04 57 50.9	-0.3
JANG				*e*S	Sn	04 58 06.1	-0.6
JMK	**Ichinoseki**	**1.27**	**242**	P	Pn	04 57 52.3	+0.3
JMK				S	Sb	04 58 08.6	-0.3
JIO	**Ouri**	**1.50**	**223**	*e*S	Sn	04 58 14.1	+0.2
JRG	**Rokugo**	**1.58**	**265**	P	Pb	04 57 58.1	-0.1
JRG				S	Sb	04 58 19.1	+1.4
JAH	**Hinai**	**1.68**	**293**	P	Pb	04 57 59.4	-0.7
JAH				S	Sb	04 58 21.2	+0.4
JTM	**Tenmabayashi**	**1.74**	**316**	P	Pn	04 57 59.5	+1.1
JTM				*e*S	Sb	04 58 21.2	-1.1
JYK	**Kaneyama**	**1.90**	**251**	P	Pb	04 58 02.9	-0.8
JYK				*e*S	Sb	04 58 26.5	-0.4

*IDC **28** 04:58:32.0±1.3, 30°.82N×105°.89W, h0km, mb3.9/4, mb1 4.0/7, mb1mx3.7/52, mbtmp3.7/7, ML4.3/2, MS2.8/3, Ms1 2.9/3, ms1mx2.5/39, Error ellipse: s-maj=32.5km s-min=7.9km az=51.0*
*ISCJB **28** 04:58:33.4±0.3, 30°.70N±0°.03×105°.74W±0°.03, h10km, mb3.6/4, MS3.3/1, Error ellipse: s-maj=4.4km s-min=3.4km az=174.6*
*NEIC **28** 04:58:34.6±1.8, 30°.68N×105°.75W, h9km±13km, mb4.1/3, MW3.6, MD4.1(MEX), Error ellipse: s-maj=6.8km s-min=4.8km az=187.0, Moment Tensor Solution. s17 Moment tensor: Scale 10¹⁴Nm; Mrr=2.10; Mθθ=1.10; Mϕϕ=3.20; Mrθ=0.24; Mrϕ=-0.97; Mθϕ=-1.92; Best double couple: Mw=3.50000×10¹⁴ NP1:ϕs=6.00000°, δ65.00000°, λ=-68.00000°. NP2:ϕs=143.00000°, δ33.00000°, λ=-128.00000°. Principal axes: T 3.9600, Plg17.0000°, Azm80.0000°; N -1.0800, Plg20.0000°, Azm176.0000°; P -2.8900, Plg63.0000°, Azm312.0000°;*
NEIC Felt at El Paso, Texas.
*MEX **28** 04:58:35.8±0.9, 30°.71N×105°.54W, h10km, MD4.1*
ISC 28 04:58:34.2±0.5, 30.69N±0°.04×105.66W±0°.02, h10km, n67, σ1§77/61, mb3.5/4, Texas-Mexico border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MNTX	**Cornudas Mount**	**1.03**	**13**	*e*Pg	**Pg**	**04 58 52.1**	**-1.9**
MNTX				*e*S	**Sg**	**04 59 05.5**	**-2.0**
GDL2	**Guadalupe Moun**	**1.87**	**36**	*e*Pn	**Pn**	**04 59 07.6**	**+1.2**
CGIG		**2.03**	**261**	*e*P	Pn	04 59 08.3	-0.3
CGIG				*e*S	**Sn**	**04 59 34.7**	**+0.6**
CGIG		**2.03**	**261**	*e*P	Pn	04 59 08.3	-0.3
CGIG				*e*S	**Sn**	**04 59 34.7**	**+0.6**
CLNB	**Carlsbad**	**2.18**	**44**	*e*Pn	**Pb**	**04 59 13.5**	**-0.4**
CLNB				*e*Sn	**Sg**	**04 59 42.4**	**-2.0**
TX31	**Lajitas Ar. Si**	**2.19**	**128**	*e*Pn	**Pn**	**04 59 12.7**	**+1.9**
TXAR	**Lajitas Array**	**2.19**	**128**	Pn	**Pn**	**04 59 12.8**	**+2.0**
	64nm,0.3s,baz=282,slow=12,SNR=290						
TXAR				Lg	Lg	04 59 48.3	
	237nm,0.3s,baz=308,slow=31,SNR=37						
121A	**Cookes Peak, D**	**2.58**	**316**	*e*Pn	Pn	04 59 15.2	-1.0
121A				*e*S	**Sn**	**04 59 50.8**	**+3.1**
121A	**Cookes Peak, D**	**2.58**	**316**	*e*P	Pn	04 59 15.1	-1.1
121A				*e*S	**Sn**	**04 59 45.8**	**-1.9**
319A	**Douglas**	**3.18**	**283**	*e*Pn	Pn	04 59 23.6	-0.9
319A	**Douglas**	**3.18**	**283**	*e*P	Pn	04 59 23.5	-0.9
319A				*i* S	**Sn**	**05 00 02.6**	**+0.1**
Y22D	**IRIS PASSCAL I**	**3.54**	**343**	*e*Pn	**Pn**	**04 59 29.4**	**+0.1**
BNM	**Barren Site**	**3.54**	**347**	*e*Pn	**Pn**	**04 59 29.1**	**-0.4**
LPM	**Los Pinos Moun**	**3.70**	**347**	*e*Pn	**Pn**	**04 59 31.3**	**-0.4**
HPIG		**3.74**	**180**	*e*Pn	**Pn**	**04 59 33.7**	**+1.5**
HPIG				*e*S	**Sn**	**05 00 14.9**	**-1.6**
HPIG		**3.74**	**180**	*e*P	**Pn**	**04 59 33.5**	**+1.2**
HPIG				*e*S	**Sn**	**05 00 14.9**	**-1.6**
LAZ	**Ladron**	**3.90**	**342**	*e*Pn	**Pn**	**04 59 34.3**	**-0.2**
MSTX	**Muleshoe**	**4.08**	**36**	*e*Pn	**Pn**	**04 59 38.6**	**+1.8**
MSTX				*e*S	**Sg**	**05 00 40.8**	**-4.4**
ANMO	**Albuquerque**	**4.29**	**351**	Pn	**Pn**	**04 59 38.4**	**-1.4**
	0.7nm,0.3s,baz=174,slow=15,SNR=23						
ANMO				Lg	Lg	05 00 44.2	
	16nm,0.3s,baz=340,slow=10.0,SNR=9.5						
ANMO	**Albuquerque**	**4.29**	**351**	*e*Pn	**Pn**	**04 59 40.0**	**+0.2**
ANMO				Lg	Lg	05 00 44.2	
ANMO				*e*S	**Sb**	**05 00 44.9**	**+3.0**
ANMO	**Albuquerque**	**4.29**	**351**	*e*P	**Pn**	**04 59 39.7**	**-0.1**
ANMO				*e*S	**Sn**	**05 00 28.4**	**-1.7**
TUC	**Tucson**	**4.67**	**292**	*e*Pn	Pn	04 59 43.7	-1.1
TUC				*e*S	**Sb**	**05 00 57.9**	**+5.5**
HSIG		**4.89**	**251**	*e*Pn	Pn	04 59 47.4	-0.4
HSIG				*i* S	**Sn**	**05 00 45.1**	**+0.7**
HSIG		**4.89**	**251**	*e*P	**Pn**	**04 59 48.4**	**+0.6**
HSIG				*i* S	**Sn**	**05 00 45.1**	**+0.7**
JCT	**Junction City**	**5.05**	**91**	*e*Pn	Pn	04 59 52.6	+2.5
JCT				*e*Pg	Pg	05 00 07.3	-3.7
JCT				*e*S	Sn	05 00 54.5	+5.9
AMTX	**Amarillo**	**5.36**	**38**	*e*Pn	**Pn**	**04 59 56.4**	**+2.1**
AMTX				*e*Pg	Pb	05 00 11.5	+3.5
AMTX				*e*S	**Sb**	**05 01 16.9**	**+4.6**
ABTX	**Abilene, Hawle**	**5.48**	**68**	*e*Pn	**Pn**	**04 59 57.1**	**+1.2**
ABTX				*e*Pg	Pb	05 00 13.8	+3.8
ABTX				*e*S	**Sb**	**05 01 18.3**	**+2.5**
W18A	**Petrified Fore**	**5.59**	**323**	*e*Pn	**Pn**	**04 59 58.4**	**+0.9**
W18A				*e*Pg	Pb	05 00 18.5	+6.6
W18A				*e*S	Sb	05 01 27.8	+8.7
X16A	**Lo Mia Camp, P**	**6.13**	**309**	*e*Pn	**Pn**	**05 00 05.4**	**+0.3**
214A	**Organ Pipe Nat**	**6.25**	**283**	*e*Pn	Pn	05 00 06.0	-0.5
	62nm,0.5s						
214A				*e*S	Sb	05 01 46.8	+8.9
WUAZ	**Wupatki**	**6.79**	**317**	*e*Pn	**Pn**	**05 00 15.5**	**+1.4**
	27nm,0.8s						
WUAZ				*e*Pg	Pb	05 00 38.9	+6.4
WUAZ				*e*S	Sb	05 02 02.9	+9.2
MVCO	**Mesa Verde**	**6.92**	**341**	*e*Pn	**Pn**	**05 00 17.0**	**+1.2**
MVCO				*e*Pg	Pb	05 00 41.0	+6.4
MVCO				*e*S	Sb	05 02 05.1	+7.8
Y14A	**Wickenburg**	**7.01**	**299**	*e*Pn	**Pn**	**05 00 16.7**	**-0.3**
SDCO	**Great Sand Dun**	**7.04**	**1**	*e*Pn	**Pn**	**05 00 20.2**	**+2.6**
	10nm,0.7s						
SDCO				*e*Pg	Pb	05 00 42.0	+5.4
SDCO				*e*S	Sb	05 02 10.1	+9.3
WMOK	**Wichita Mounta**	**7.06**	**53**	*e*Pn	**Pn**	**05 00 18.2**	**+0.5**
WMOK				*e*S	Sg	05 02 14.3	-6.6
S22A	**4UR Ranch, Cre**	**7.10**	**352**	*e*Pn	**Pn**	**05 00 21.1**	**+2.7**
WHTX	**Lake Whitney,**	**7.13**	**77**	*e*Pn	**Pn**	**05 00 20.2**	**+1.6**
WHTX				*e*Pg	Pg	05 00 45.8	-5.1
WHTX				*e*S	**Sg**	**05 02 22.3**	**-1.0**
113A	**Mohawk Valley,**	**7.21**	**289**	*e*Pn	**Pn**	**05 00 20.1**	**+0.4**
LPIG	**La Paz**	**7.75**	**213**	LR	LR	05 02 40.4	
	comp=Z,22nm,21.3s,baz=196,slow=32						
W34A	**Bridge Creek,**	**8.03**	**54**	*e*Pn	Pn	05 00 34.8	+3.9
W34A				*e*S	Sg	05 02 43.4	-8.3
Y12C	**Blythe**	**8.11**	**294**	*e*Pn	**Pn**	**05 00 32.0**	**+0.1**
GLA	**Glamis**	**8.14**	**289**	*e*Pn	**Pn**	**05 00 32.8**	**+0.3**
W13A	**Hualapai Mount**	**8.19**	**305**	*e*Pn	**Pn**	**05 00 34.2**	**+0.9**
W13A				*e*Pg	Pb	05 00 45.4	-11
Q24A	**Divide

	baz=315,slow=76,SNR=24						
H11S2	**WAKE ISLAND Hy**	**28.75**	**123**	T	T	05 43 11.7	
	baz=315,slow=76,SNR=25						
ZALV	**Zalesovo Beam**	**42.07**	**313**	P	**P**	**05 14 42.2**	**-0.3**
	0.3nm,0.3s,baz=101,slow=6.0,SNR=2.1						
MKAR	**Makanchi Array**	**44.24**	**302**	P	**P**	**05 15 01.3**	**+1.0**
	0.2nm,0.5s,baz=80,slow=10,SNR=4.3						
KURBB	**Kurchatov Arra**	**46.14**	**308**	P	**P**	**05 15 16.2**	**+1.0**
	0.3nm,0.2s,baz=87,slow=8.9,SNR=4.9						
ILAR	**Eielson Array**	**49.66**	**32**	P	**P**	**05 15 40.3**	**-2.0**
	0.2nm,0.6s,baz=258,slow=7.0,SNR=3.2						
WRA	**Warramunga Arr**	**56.86**	**188**	P	**P**	**05 16 36.9**	**+1.2**
	0.8nm,1.0s,baz=5.6,slow=7.0,SNR=2.8						

JMA 28 05:09:04.2±0.1, 38°28N×141°80E, h54km±1km, M3.8, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**0.40**	**296**	P	Pn	05 09 14.8	+0.2
JIO				S	Sn	05 09 21.8	-0.2
OFUJ	**Ofunato**	**0.81**	**353**	P	Pn	05 09 19.5	0.0
OFUJ				S	Sn	05 09 30.3	-0.4
JMK	**Ichinoseki**	**0.81**	**326**	P	Pn	05 09 19.9	+0.4
JMK				S	Sn	05 09 30.6	-0.1
JMM	**Marumori**	**0.90**	**243**	P	Pn	05 09 20.4	-0.2
JMM				S	Sn	05 09 32.2	-0.5
JOU	**Okura**	**0.90**	**276**	P	Pn	05 09 20.8	+0.1
JOU				S	Sn	05 09 32.9	+0.1
JFK	**Kawauchi**	**1.17**	**219**	P	Pn	05 09 24.3	0.0
JFK				S	Sn	05 09 39.4	+0.1
JOM	**Ohasama**	**1.25**	**342**	P	Pn	05 09 25.7	+0.2
JOM				S	Sn	05 09 41.6	+0.3
JYK	**Kaneyama**	**1.30**	**300**	P	Pn	05 09 26.1	+0.1
JYS	**Shirataka**	**1.37**	**268**	P	Pn	05 09 27.4	+0.4
JYS				S	Sn	05 09 44.8	+0.8
JFT	**Otama**	**1.39**	**237**	P	Pn	05 09 27.8	+0.6
JFT				S	Sn	05 09 44.8	+0.3
JRG	**Rokugo**	**1.44**	**321**	P	Pn	05 09 28.7	+0.8
JRG				S	Sn	05 09 47.0	+1.2
MAT	**Matsushiro**	**3.34**	**240**	P	Pn	05 09 56.0	+2.0
MAT				S	Sn	05 10 32.2	-0.3

*ROM **28** 05:12:20.9±0.3, 40°.56N×18°.92E, h26km±4km, MI3.2/18, Error ellipse: s-maj=6.0km s-min=3.3km az=14.0*
*ISCJB **28** 05:12:21.3±1.8, 40°.54N±0°.03×18°.90E±0°.03, h27km±18km, Error ellipse: s-maj=6.1km s-min=3.6km az=20.2*
*CSEM **28** 05:12:22.2±0.2, 40°.54N×18°.92E, h30km, ML3.2, Error ellipse: s-maj=6.5km s-min=3.5km az=14.0*
*THE **28** 05:12:22.5, 40°.50N×18°.87E, h30km±5km, ML3.1/5, Error ellipse: s-maj=6.5km s-min=1.5km az=304.0*

ISC 28 05:12:21.1±1.1, 40°57N±0°.03×18°94E±0°.02, h26km±13km, n75, σ1s06/99, Adriatic Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MESG	**Mesagne**	**0.83**	**271**	Pn	**Pb**	**05 12 35.8**	**-1.2**
MESG				Sn	**Sn**	**05 12 48.5**	**-0.1**
	265nm,0.5s						
MESG	**Mesagne**	**0.83**	**271**	Pn	**Pb**	**05 12 35.8**	**-1.2**
MESG				Sn	**Sn**	**05 12 48.5**	**-0.1**
	265nm,0.5s						
TIR	**Tirane**	**1.04**	**42**	Pn	**Pn**	**05 12 41.2**	**+1.1**
TIR	**Tirane**	**1.04**	**42**	Pn	**Pn**	**05 12 41.2**	**+1.1**
KEK	**Kerkira**	**1.08**	**142**	Pn	**Pn**	**05 12 40.4**	**-0.2**
KEK				Sn	**Sn**	**05 12 56.0**	**+1.2**
KEK	**Kerkira**	**1.08**	**142**	P	**Pn**	**05 12 40.5**	**-0.2**
KEK				S	**Sn**	**05 12 55.2**	**+0.4**
KEK	**Kerkira**	**1.08**	**142**	P	**Pn**	**05 12 40.5**	**-0.2**
KEK				Sn	**Sn**	**05 12 56.0**	**+1.2**
TAR1	**Taranto**	**1.27**	**268**	*e*Pg	**Pb**	**05 12 43.7**	**-0.6**
TAR1				Sg	**Sb**	**05 13 02.9**	**+2.8**
SGD	**Sagiada**	**1.38**	**134**	P	**Pb**	**05 12 45.4**	**-0.8**
SGD				S	**Sb**	**05 13 03.1**	**-0.3**
SGD	**Sagiada**	**1.38**	**134**	P	**Pb**	**05 12 45.4**	**-0.8**
NOCI	**Noci**	**1.45**	**279**	Pn	**Pn**	**05 12 45.0**	**-0.6**
	537nm,0.4s						
NOCI	**Noci**	**1.45**	**279**	Pn	**Pn**	**05 12 45.0**	**-0.6**
	537nm,0.4s						
IGT	**Igoumenitsa**	**1.49**	**134**	P	**Pn**	**05 12 46.5**	**+0.3**
IGT				S	**Sb**	**05 13 05.9**	**-0.7**
IGT	**Igoumenitsa**	**1.49**	**134**	P	**Pn**	**05 12 46.5**	**+0.3**
OHR	**Ohrid**	**1.51**	**69**	*i* Pn	**Pb**	**05 12 47.8**	**-0.6**
OHR				*i* Sn	**Sb**	**05 13 10.1**	**+2.9**
OHR	**Ohrid**	**1.51**	**69**	*i* Pn	**Pb**	**05 12 47.8**	**-0.6**
NEST	**Nestorio**	**1.61**	**95**	P	**Pb**	**05 12 49.5**	**-0.8**
NEST				S	**Sb**	**05 13 10.0**	**-0.3**
NEST	**Nestorio**	**1.61**	**95**	P	**Pb**	**05 12 49.5**	**-0.8**
NEST				S	**Sb**	**05 13 10.0**	**-0.3**
LTRZ	**Laterza**	**1.62**	**272**	Pn	**Pn**	**05 12 48.1**	**+0.1**
	293nm,0.4s						
LTRZ	**Laterza**	**1.62**	**272**	Pn	**Pn**	**05 12 48.1**	**+0.1**
	293nm,0.4s						
BAI	**Bari**	**1.65**	**289**	*e*Pn	**Pb**	**05 12 50.4**	**-0.5**
BAI				Sn	**Sb**	**05 13 13.9**	**+2.6**
MATE	**Matera**	**1.71**	**273**	Pn	**Pb**	**05 12 51.3**	**-0.5**
	279nm,0.4s						
MATE	**Matera**	**1.71**	**273**	Pn	**Pb**	**05 12 51.3**	**-0.5**
	279nm,0.4s						
JAN	**Janina**	**1.73**	**121**	P	**Pn**	**05 12 50.4**	**+0.9**
JAN				S	**Sn**	**05 13 11.1**	**+0.4**
JAN	**Janina**	**1.73**	**121**	P	**Pn**	**05 12 50.4**	**+0.9**
SG1	**Sgolgore (BA)**	**1.74**	**280**	*e*Pn	**Pb**	**05 12 51.6**	**-0.8**
AMUR	**Altamura**	**1.81**	**281**	Pn	**Pn**	**05 12 50.0**	**-0.6**
	475nm,1.0s						
AMUR	**Altamura**	**1.81**	**281**	Pn	**Pn**	**05 12 50.0**	**-0.6**
	475nm,1.0s						
BIA	**Bitola**	**1.86**	**75**	P	**Pb**	**05 12 53.0**	**-1.5**
BIA	**Bitola**	**1.86**	**75**	*i* Pn	**Pb**	**05 12 53.7**	**-0.8**
BIA				*i* Sn	**Sb**	**05 13 19.9**	**+2.6**
BIA	**Bitola**	**1.86**	**75**	P	**Pb**	**05 12 53.0**	**-1.5**
BIA	**Bitola**	**1.86**	**75**	*i* Pn	**Pb**	**05 12 53.7**	**-0.8**
FNA	**Florina**	**1.86**	**83**	P	**Pb**	**05 12 52.6**	**-1.9**
FNA				S	**Sb**	**05 13 16.2**	**-1.2**
FNA	**Florina**	**1.86**	**83**	P	**Pb**	**05 12 52.6**	**-1.9**
FNA				S	**Sb**	**05 13 16.2**	**-1.2**
MIGL	**Miglionico**	**1.91**	**272**	Pn	**Pn**	**05 12 53.3**	**+1.3**
	590nm,0.5s						
MIGL	**Miglionico**	**1.91**	**272**	Pn	**Pn**	**05 12 53.3**	**+1.3**
	590nm,0.5s						
KPRO	**Kipourio**	**1.95**	**108**	P	**Pn**	**05 12 53.9**	**+1.2**
KPRO	**Kipourio**	**1.95**	**108**	P	**Pn**	**05 12 53.9**	**+1.2**
CDT	**Castel del Mon**	**2.09**	**285**	*e*Pn	**Pb**	**05 12 57.9**	**-0.4**
SALB	**San Lorenzo Be**	**2.11**	**252**	Pn	**Pn**	**05 12 54.4**	**-0.4**
	124nm,0.5s						
SALB	**San Lorenzo Be**	**2.11**	**252**	Pn	**Pn**	**05 12 54.4**	**-0.4**
	124nm,0.5s						
MRVN	**Minervino Murg**	**2.14**	**284**	Pn	**Pn**	**05 12 55.1**	**-0.1**
	126nm,0.6s						
MRVN	**Minervino Murg**	**2.14**	**284**	Pn	**Pn**	**05 12 55.1**	**-0.1**
	126nm,0.6s						
TIP	**Timpagrande**	**2.18**	**231**	Pn	**Pn**	**05 12 55.4**	**-0.4**
	81nm,1.0s						
TIP	**Timpagrande**	**2.18**	**231**	P	**Pn**	**05 12 55.5**	**-0.4**
TIP	**Timpagrande**	**2.18**	**231**	P	**Pn**	**05 12 55.5**	**-0.4**
LKD2	**Lefkada island**	**2.22**	**143**	P	**Pn**	**05 12 56.4**	**+0.1**
LKD2				S	**Sn**	**05 13 23.5**	**+0.6**
LKD2	**Lefkada island**	**2.22**	**143**	P	**Pn**	**05 12 56.4**	**+0.1**
LKD2				S	**Sn**	**05 13 23.5**	**+0.6**
ACER	**Acerenza**	**2.29**	**276**	Pn	**Pn**	**05 12 58.0**	**+0.7**
	890nm,1.1s						
ACER	**Acerenza**	**2.29**	**276**	Pn	**Pn**	**05 12 58.0**	**+0.7**
	890nm,1.1s						
SERS	**Sersale**	**2.32**	**229**	Pn	**Pn**	**05 12 58.2**	**+0.5**
	39nm,0.6s						
SERS	**Sersale**	**2.32**	**229**	Pn	**Pn**	**05 12 58.2**	**+0.5**
	39nm,0.6s						
SIRI	**Monte Sirino -**	**2.38**	**262**	Pn	**Pn**	**05 12 59.9**	**+1.3**
	86nm,0.5s						
SIRI	**Monte Sirino -**	**2.38**	**262**	Pn	**Pn**	**05 12 59.9**	**+1.3**
	86nm,0.5s						
CUC	**Castrocucco**	**2.46**	**257**	Pn	**Pn**	**05 13 00.8**	**+1.1**
	132nm,0.6s						
CUC	**Castrocucco**	**2.46**	**257**	Pn	**Pn**	**05 13 00.8**	**+1.1**
	132nm,0.6s						
STON	**Ston**	**2.48**	**338**	*i* Pn	**Pn**	**05 12 59.2**	**-0.7**
STON				Sn	**Sn**	**05 13 28.9**	**-0.3**
STON	**Ston**	**2.48**	**338**	*i* Pn	**Pn**	**05 12 59.1**	**-0.7**
STON				Sn	**Sn**	**05 13 28.9**	**-0.3**
MSAG	**Monte S. Angel**	**2.56**	**297**	Pn	**Pn**	**05 13 00.7**	**-0.3**
	125nm,0.6s						
MSAG	**Monte S. Angel**	**2.56**	**297**	Pn	**Pn**	**05 13 00.7**	**-0.3**
	125nm,0.6s						
MGR	**Morigerati**	**2.63**	**262**	Pn	**Pn**	**05 13 03.1**	**+1.2**
	82nm,0.7s						
MGR	**Morigerati**	**2.63**	**262**	Pn	**Pn**	**05 13 03.1**	**+1.2**
	82nm,0.7s						
SGRT	**San Giovanni R**	**2.69**	**297**	Pn	**Pn**	**05 13 02.2**	**-0.6**
	97nm,0.7s						
SGRT	**San Giovanni R**	**2.69**	**297**	Pn	**Pn**	**05 13 02.2**	**-0.6**
	97nm,0.7s						
VLS	**Valsamata**	**2.71**	**151**	P	**Pn**	**05 13 02.5**	**-0.6**
VLS				S	**Sn**	**05 13 34.0**	**-1.0**
VLS	**Valsamata**	**2.71**	**151**	P	**Pn**	**05 13 02.5**	**-0.6**
VLS				S	**Sn**	**05 13 34.0**	**-1.0**
BULG	**Bulgheria - Ca**	**2.77**	**261**	Pn	**Pn**	**05 13 04.8**	**+0.9**
	87nm,0.6s						
BULG	**Bulgheria - Ca**	**2.77**	**261**	Pn	**Pn**	**05 13 04.8**	**+0.9**
	87nm,0.6s						
CDRU	**Civita di Ruta**	**2.77**	**269**	Pn	**Pn**	**05 13 05.3**	**+1.3**
	33nm,0.5s						
CDRU	**Civita di Ruta**	**2.77**	**269**	Pn	**Pn**	**05 13 05.3**	**+1.3**
	33nm,0.5s						
KFL	**Anninata**	**2.85**	**149**	P	**Pn**	**05 13 05.2**	**+0.3**
KFL	**Anninata**	**2.85**	**149**	P	**Pn**	**05 13 05.2**	**+0.3**
VAY	**Valandovo**	**2.85**	**74**	*i* Pn	**Pb**	**05 13 12.7**	**+1.5**
NVLJ	**Novalja**	**4.99**	**324**	*e*Pn	**Pn**	**05 13 34.8**	**+0.4**
NVLJ				Sn	**Sn**	**05 14 28.8**	**-2.5**
NVLJ	**Novalja**	**4.99**	**324**	*e*Pn	**Pn**	**05 13 34.8**	**+0.4**
NVLJ				Sn	**Sn**	**05 14 28.7**	**-2.5**

TAP 28 05:19:17.2, 21°23N×121°88E, h182km, ML3.7, D, Taiwan region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LAY	**Lan-yu**	**0.86**	**339**	*e*P	Pn	05 19 44.1	0.0
	baz=339						
LAY				*e*S	Sn	05 20 03.1	-2.0
	baz=339						
TSEB	**Hengchuen, Pin**	**1.13**	**306**	P	Pn	05 19 47.1	+1.1
	baz=302						
TSEB				S	Sn	05 20 08.5	+0.1
	baz=302						
TWK1	**Hengchun**	**1.23**	**305**	P	Pn	05 19 47.1	+0.4
	baz=303						
TWK1				S	Sn	05 20 09.1	-0.6
	baz=303						
HEN	**Hengchun**	**1.31**	**306**	*e*P	Pn	05 19 48.0	+0.5
	baz=298						
HEN				S	Sn	05 20 09.8	-1.2
	baz=298						
TAW	**Tawu**	**1.45**	**321**	*e*P	Pn	05 19 48.5	-0.2
	baz=315						
TAW				*e*S	Sn	05 20 12.1	-1.2
	baz=315						
EAST	**Anshuo**	**1.49**	**320**	P	Pn	05 19 49.0	-0.3
	baz=320						
EAST				*e*S	Sn	05 20 12.8	-1.4
	baz=320						
SCZT	**Fangliau**	**1.63**	**314**	P	Pn	05 19 50.7	+0.2
	baz=319						
SCZT				S	Sn	05 20 15.2	-1.2
	baz=319						
TWG	**Pinlang**	**1.75**	**335**	P	Pn	05 19 51.3	-0.4
	baz=329						
TWG				*e*S	Sn	05 20 17.0	-1.6
	baz=329						
TWP	**Hsiaoliuchiu**	**1.79**	**308**	*e*P	Pn	05 19 54.2	+2.0
	baz=309						
TWP				*e*S	Sn	05 20 22.1	+2.7
	baz=309						
SSD	**Sandimen**	**1.90**	**323**	P	Pn	05 19 53.5	+0.2
	baz=328						
SSD				*e*S	Sn	05 20 18.9	-2.5
	baz=328						
ELDTW	**Lidau**	**2.10**	**338**	*e*P	Pn	05 19 55.8	+0.2
	baz=338						
ELDTW				*e*S	Sn	05 20 25.6	0.0
	baz=338						
TWF1	**Yuli**	**2.18**	**346**	*e*P	Pn	05 19 56.8	+0.5
	baz=338						
TWF1				*e*S	Sn	05 20 25.8	-1.1
	baz=338						
SGST	**Jiashian**	**2.20**	**327**	*e*P	Pn	05 19 55.2	-1.4
	baz=327						
SGST				*e*S	Sn	05 20 27.3	0.0
	baz=327						
CHN1	**Nanshi**	**2.31**	**327**	*e*P	Pn	05 19 58.2	+0.4
	baz=327						
CHN1				*e*S	Sn	05 20 28.6	-0.9
	baz=327						
YUS	**Yu-Shan**	**2.41**	**339**	P	Pn	05 20 00.3	+0.9
	baz=335						
YUS				*e*S	Sn	05 20 31.2	-1.0
	baz=335						
CHN4	**Tsaushan**	**2.42**	**331**	P	Pn	05 19 58.6	-0.5
	baz=331						
CHN4				S	Sn	05 20 30.9	-0.8
	baz=331						
ALS	**Alishan**	**2.48**	**337**	*e*P	Pn	05 20 00.4	+0.4
	baz=336						
ALS				*e*S	Sn	05 20 32.8	-0.6
	baz=336						
CHN5	**Tsauling**	**2.60**	**335**	P	Pn	05 20 01.1	-0.1
	baz=335						
CHN5				S	Sn	05 20 35.2	-0.4
	baz=335						
WDT	**Danda**	**2.60**	**345**	*e*P	Pn	05 20 02.4	+0.9
	baz=349						
WDT				*e*S	Sn	05 20 35.3	-0.8
	baz=349						
TYC	**Yuchr**	**2.82**	**341**	*e*P	Pn	05 20 03.8	+0.1
	baz=335						
TYC				*e*S	Sn	05 20 38.5	-1.6
	baz=335						
WHF	**Hehuan Shan**	**2.95**	**349**	*e*P	Pn	05 20 06.4	+0.6
	baz=354						
WHF				*e*S	Sn	05 20 41.4	-2.3
	baz=354						
TWT	**Tachien**	**3.08**	**348**	*e*P	Pn	05 20 10.5	+3.5
	baz=341						
TWT				*e*S	Sn	05 20 46.6	+0.7
	baz=341						
PNG	**Penghu**	**3.17**	**318**	*e*P	Pn	05 20 07.6	-0.3
	baz=323						
PNG				*e*S	Sn	05 20 44.5	-3.0
	baz=323						

*ISCJB **28** 05:19:39.0±0.6, 40°.49N±0°.02×18°.88E±0°.02, h2km±4km, Error ellipse: s-maj=3.0km s-min=2.5km az=37.9*
*ROM **28** 05:19:40.8±0.2, 40°.56N×18°.92E, h28km, MI3.2/17, Error ellipse: s-maj=4.6km s-min=2.8km az=7.0*
*TIR **28** 05:19:40.2, 40°.46N×19°.98E, h25km, ML3.3*
*PDG **28** 05:19:40.6±0.6, 40°.57N×18°.91E, h13km±1km, ML2.9/12, Error ellipse: s-maj=0.9km s-min=1.1km az=0.0*
*CSEM **28** 05:19:41.7±0.1, 40°.46N×18°.86E, h20km, ML2.5, Error ellipse: s-maj=3.7km s-min=3.0km az=18.0*
*THE **28** 05:19:43.3, 40°.49N×19°.16E, h6km±2km, ML2.9/5, Error ellipse: s-maj=2.6km s-min=1.5km az=200.0*
*BEO **28** 05:19:48.4±0.8, 40°.98N×19°.04E, h0km, M2.5/5*

ISC 28 05:19:39.8±1.1, 40°58N±0°.02×18°90E±0°.02, h13km±9km, n135, σ0s99/187, 6C-14D, Adriatic Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MESG	**Mesagne**	**0.80**	**271**	Pn	**Pb**	**05 19 55.8**	**+0.3**
MESG				Sn	**Sn**	**05 20 08.7**	**+0.2**
	193nm,0.4s						
MESG	**Mesagne**	**0.80**	**271**	Pn	**Pb**	**05 19 55.8**	**+0.3**
MESG				Sn	**Sn**	**05 20 08.7**	**+0.2**
	193nm,0.4s						
TIR	**Tirane**	**1.06**	**43**	*i* PG	**Pn**	**05 20 01.1**	**+0.7**
TIR				*i* SG	**Sn**	**05 20 17.6**	**+2.5**
TIR	**Tirane**	**1.06**	**43**	Pn	**Pn**	**05 20 01.0**	**+0.6**
TIR	**Tirane**	**1.06**	**43**	*e*Pg	**Pn**	**05 20 02.6**	**+2.2**
TIR	**Tirane**	**1.06**	**43**	Pn	**Pn**	**05 20 01.0**	**+0.6**
TIR	**Tirane**	**1.06**	**43**	*e*Pg	**Pn**	**05 20 02.6**	**+2.2**
TIR				*i* Sg	**Sn**	**05 20 17.6**	**+2.5**
KEK	**Kerkira**	**1.10**	**141**	Pn	**Pn**	**05 20 00.8**	**-0.2**
KEK	**Kerkira**	**1.10**	**141**	P	**Pn**	**05 20 00.8**	**-0.2**
KEK				S	**Sb**	**05 20 15.1**	**+0.1**
KEK	**Kerkira**	**1.10**	**141**	P	**Pn**	**05 20 00.8**	**-0.2**
KEK				S	**Sb**	**05 20 15.1**	**+0.1**
TAR1	**Taranto**	**1.23**	**268**	*e*Pg	**Pn**	**05 20 02.6**	**-0.1**
TAR1				Sg	**Sn**	**05 20 23.0**	**+3.8**
SGD	**Sagiada**	**1.41**	**133**	P	**Pn**	**05 20 05.1**	**0.0**
SGD				S	**Sn**	**05 20 23.7**	**+0.2**
SGD	**Sagiada**	**1.41**	**133**	P	**Pn**	**05 20 05.1**	**0.0**
SGD				S	**Sn**	**05 20 23.7**	**+0.2**
NOCI	**Noci**	**1.41**	**279**	Pn	**Pn**	**05 20 05.0**	**-0.2**
	515nm,0.3s						
NOCI	**Noci**	**1.41**	**279**	Pn	**Pn**	**05 20 05.0**	**-0.2**
	515nm,0.3s						
ULC	**Ulcinj**	**1.41**	**11**	*i* Pg	**Pb**	**05 20 05.8**	**-0.2**
ULC				*e*Sg	**Sg**	**05 20 27.5**	**+2.2**
ULC	**Ulcinj**	**1.41**	**11**	*i* Pg	**Pb**	**05 20 05.8**	**-0.2**
ULC				*e*Sg	**Sg**	**05 20 27.5**	**+2.2**
IGT	**Igoumenitsa**	**1.52**	**133**	P	**Pb**	**05 20 07.7**	**-0.1**
IGT				S	**Sb**	**05 20 26.5**	**-0.4**
IGT	**Igoumenitsa**	**1.52**	**133**	P	**Pb**	**05 20 07.7**	**-0.1**
IGT				S	**Sb**	**05 20 26.5**	**-0.4**
OHR	**Ohrid**	**1.54**	**69**	*i* Pn	**Pg**	**05 20 08.5**	**-0.8**
OHR				*i* Sn	**Sg**	**05 20 31.3**	**+1.9**
OHR	**Ohrid**	**1.54**	**69**	*i* Pn	**Pg**	**05 20 08.5**	**-0.8**
OHR				*i* Sn	**Sg**	**05 20 31.2**	**+1.9**
LTRZ	**Laterza**	**1.58**	**272**	Pn	**Pn**	**05 20 07.6**	**0.0**
	257nm,0.4s						
LTRZ	**Laterza**	**1.58**	**272**	Pn	**Pn**	**05 20 07.6**	**0.0**
	257nm,0.4s						
BAI	**Bari**	**1.62**	**290**	*e*Pn	**Pn**	**05 20 08.1**	**0.0**
BAI				Sn	**Sg**	**05 20 31.5**	**-0.5**
DRME	**Dracevica, Mon**	**1.62**	**8**	*i* Pn	**Pb**	**05 20 09.9**	**+0.2**
DRME				*e*Sn	**Sg**	**05 20 33.4**	**+1.3**
DRME	**Dracevica, Mon**	**1.62**	**8**	*i* Pn	**Pb**	**05 20 09.9**	**+0.2**
DRME				*e*Sn	**Sg**	**05 20 33.4**	**+1.3**
NEST	**Nestorio**	**1.65**	**95**	P	**Pb**	**05 20 09.5**	**-0.6**
NEST				S	**Sn**	**05 20 29.5**	**-0.1**
NEST	**Nestorio**	**1.65**	**95**	P	**Pb**	**05 20 09.5**	**-0.6**
NEST				S	**Sn**	**05 20 29.5**	**-0.1**
SG1	**Sgolgore (BA)**	**1.71**	**280**	*e*Pn	**Pg**	**05 20 11.8**	**-0.8**
BUM	**Brajici-Budva**	**1.72**	**360**	*e*Pn	**Pb**	**05 20 11.6**	**+0.2**
BUM				*e*Sn	**Sg**	**05 20 35.9**	**+0.6**
BUM	**Brajici-Budva**	**1.72**	**360**	*e*Pn	**Pb**	**05 20 11.6**	**+0.2**
BUM				*e*Sn	**Sg**	**05 20 35.9**	**+0.6**
JAN	**Janina**	**1.76**	**121**	P	**Pb**	**05 20 11.1**	**-0.8**
JAN				S	**Sn**	**05 20 32.1**	**-0.1**
JAN	**Janina**	**1.76**	**121**	P	**Pb**	**05 20 11.1**	**-0.8**
JAN				S	**Sn**	**05 20 32.1**	**-0.1**
AMUR	**Altamura**	**1.77**	**282**	Pn	**Pn**	**05 20 10.0**	**-0.2**
	294nm,0.7s						
AMUR	**Altamura**	**1.77**	**282**	Pn	**Pn**	**05 20 10.0**	**-0.2**
	294nm,0.7s						
MIGL	**Miglionico**	**1.87**	**272**	Pn	**Pn**	**05 20 12.7**	**+1.1**
	2µm,1.1s						
MIGL	**Miglionico**	**1.87**	**272**	Pn	**Pn**	**05 20 12.7**	**+1.1**
	2µm,1.1s						
PDG	**Podgorica**	**1.87**	**8**	P	**Pg**	**05 20 17.0**	**+1.3**
PDG	**Podgorica**	**1.87**	**8**	*e*Pg	**Pg**	**05 20 14.6**	**-1.1**
PDG				*e*Sg	**Sn**	**05 20 35.0**	**0.0**
PDG	**Podgorica**	**1.87**	**8**	*i* Pn	**Pb**	**05 20 13.5**	**-0.4**
PDG	**Podgorica**	**1.87**	**8**	*e*Pg	**Pg**	**05 20 14.6**	**-1.1**
PDG	**Podgorica**	**1.87**	**8**	P	**Pg**	**05 20 17.0**	**+1.3**
PDG				*e*Sn	**Sg**	**05 20 38.9**	**-1.1**
TTG	**Podgorica**	**1.87**	**8**	*i* Pn	**Pb**	**05 20 13.5**	**-0.4**
TTG				*e*Sn	**Sg**	**05 20 38.9**	**-1.1**
BIA	**Bitola**	**1.89**	**76**	P	**Pb**	**05 20 13.4**	**-0.9**
BIA				S	**Sb**	**05 20 37.6**	**-0.3**
BIA	**Bitola**	**1.89**	**76**	*i* Pn	**Pb**	**05 20 14.1**	**-0.1**
BIA	**Bitola**	**1.89**	**76**	P	**Pb**	**05 20 13.4**	**-0.9**
BIA	**Bitola**	**1.89**	**76**	*i* Pn	**Pb**	**05 20 14.1**	**-0.2**
BIA				S	**Sb**	**05 20 37.6**	**-0.3**
HCY	**Herceg Novi**	**1.90**	**351**	*i* Pn	**Pb**	**05 20 13.9**	**-0.4**
HCY				*e*Sn	**Sg**	**05 20 39.0**	**-0.9**
HCY	**Herceg Novi**	**1.90**	**351**	*i* Pn	**Pb**	**05 20 13.9**	**-0.4**
HCY				*e*Sn	**Sg**	**05 20 39.9**	**-0.9**
FNA	**Florina**	**1.90**	**83**	P	**Pn**	**05 20 12.5**	**+0.6**
FNA				S	**Sn**	**05 20 35.8**	**+0.1**
FNA	**Florina**	**1.90**	**83**	P	**Pn**	**05 20 12.5**	**+0.6**
FNA				S	**Sn**	**05 20 35.8**	**+0.1**
PIPA	**Pietrapaola**	**1.93**	**236**	Pn	**Pn**	**05 20 12.5**	**+0.1**
	71nm,0.4s						
PIPA	**Pietrapaola**	**1.93**	**236**	Pn	**Pn**	**05 20 12.5**	**+0.1**
	71nm,0.4s						
ORI	**Oriolo Calabro**	**1.94**	**256**	Pn	**Pn**	**05 20 13.3**	**+0.8**
	272nm,0.4s						
ORI	**Oriolo Calabro**	**1.94**	**256**	Pn	**Pn**	**05 20 13.3**	**+0.8**
	272nm,0.4s						
CEME	**Cevo**	**1.97**	**0**	*i* Pn	**Pn**	**05 20 12.9**	**-0.1**
CEME				*e*Sn	**Sg**	**05 20 41.9**	**-1.3**
CEME	**Cevo**	**1.97**	**0**	*i* Pn	**Pn**	**05 20 12.9**	**-0.1**
CEME				*e*Sn	**Sg**	**05 20 41.9**	**-1.3**
KPRO	**Kipourio**	**1.98**	**107**	P	**Pn**	**05 20 14.2**	**+1.0**
KPRO				S	**Sn**	**05 20 37.5**	**-0.4**
KPRO	**Kipourio**	**1.98**	**107**	P	**Pn**	**05 20 14.2**	**+1.0**
KPRO				S	**Sn**	**05 20 37.5**	**-0.4**
CDT	**Castel del Mon**	**2.06**	**285**	*e*Pn	**Pb**	**05 20 18.0**	**+1.0**
SALB	**San Lorenzo Be**	**2.08**	**251**	Pn	**Pn**	**05 20 14.1**	**-0.3**
	82nm,0.3s						
SALB	**San Lorenzo Be**	**2.08**	**251**	Pn	**Pn**	**05 20 14.1**	**-0.3

MGR	**Morigerati**	**2.59**	**261**	Pn	**Pn**	**05 20 22.8**	**+1.3**
THL	**Klokotos Trika**	**2.59**	**112**	P	**Pn**	**05 20 22.0**	**+0.5**
THL	**Klokotos Trika**	**2.59**	**112**	P	**Pn**	**05 20 22.0**	**+0.5**
UPM	**Unac-Piva**	**2.63**	**0**	⇓*i*Pn	**Pb**	**05 20 24.8**	**-2.0**
UPM				*e*Sn	**Sb**	**05 20 57.8**	**-1.3**
UPM	**Unac-Piva**	**2.63**	**0**	⇓*i*Pn	**Pb**	**05 20 24.8**	**-2.0**
UPM				*e*Sn	**Sb**	**05 20 57.8**	**-1.3**
PDO	**Prodromos**	**2.65**	**137**	P	**Pn**	**05 20 22.2**	**0.0**
PDO	**Prodromos**	**2.65**	**137**	P	**Pn**	**05 20 22.2**	**0.0**
SGRT	**San Giovanni R** 101nm,0.7s	**2.66**	**297**	Pn	**Pn**	**05 20 22.5**	**+0.1**
SGRT	**San Giovanni R** 101nm,0.7s	**2.66**	**297**	Pn	**Pn**	**05 20 22.5**	**+0.1**
VLS	**Valsamata**	**2.73**	**151**	P	**Pn**	**05 20 22.6**	**-0.7**
VLS	**Valsamata**	**2.73**	**151**	P	**Pn**	**05 20 22.6**	**-0.7**
BULG	**Bulgheria - Ca** 76nm,0.7s	**2.74**	**261**	Pn	**Pn**	**05 20 24.1**	**+0.6**
BULG	**Bulgheria - Ca** 76nm,0.7s	**2.74**	**261**	Pn	**Pn**	**05 20 24.1**	**+0.6**
LIT	**Litokhoron**	**2.79**	**99**	P	**Pn**	**05 20 24.7**	**+0.6**
LIT	**Litokhoron**	**2.79**	**99**	P	**Pn**	**05 20 24.7**	**+0.6**
EVR	**Evrytania**	**2.79**	**125**	P	**Pn**	**05 20 25.0**	**+0.8**
EVR	**Evrytania**	**2.79**	**125**	P	**Pn**	**05 20 25.0**	**+0.8**
SJES	**Sjenica**	**2.80**	**16**	*e*Pn	**Pb**	**05 20 29.6**	**-0.2**
SJES	**Sjenica**	**2.80**	**16**	*e*Pn	**Pb**	**05 20 29.6**	**-0.2**
KFL	**Anninata**	**2.87**	**149**	P	**Pn**	**05 20 25.3**	**+0.1**
KFL	**Anninata**	**2.87**	**149**	P	**Pn**	**05 20 25.3**	**+0.1**
ANX	**Ano Chora**	**3.06**	**129**	P	**Pn**	**05 20 29.1**	**+1.1**
ANX	**Ano Chora**	**3.06**	**129**	P	**Pn**	**05 20 29.1**	**+1.1**
AGG	**Agios Georgios**	**3.06**	**119**	P	**Pn**	**05 20 29.1**	**+1.1**
AGG	**Agios Georgios**	**3.06**	**119**	P	**Pn**	**05 20 29.1**	**+1.1**
BARS	**Barje**	**3.13**	**43**	*e*Pn	**Pb**	**05 20 34.9**	**-0.4**
IVAS	**Ivanjica**	**3.14**	**17**	*e*Pn	**Pb**	**05 20 34.3**	**-1.2**
IVAS	**Ivanjica**	**3.14**	**17**	*e*Pn	**Pb**	**05 20 34.3**	**-1.2**
BBLS	**Lazići**	**3.31**	**6**	*e*Pn	**Pb**	**05 20 35.3**	**-3.1**
BBLS	**Lazići**	**3.31**	**6**	*e*Pn	**Pb**	**05 20 35.3**	**-3.1**
DIVS	**Divibare**	**3.61**	**13**	*e*Pn	Pn	05 20 39.5	+3.9
DIVS	**Divibare**	**3.61**	**13**	*e*Pn	Pn	05 20 39.5	+3.9
ZAPS	**Zavoj**	**3.88**	**45**	*e*Pn	Pn	05 20 42.8	+3.6
ZAPS	**Zavoj**	**3.88**	**45**	*e*Pn	Pn	05 20 42.8	+3.6
NVLJ	**Novalja**	**4.97**	**325**	*e*Pn	**Pn**	**05 20 54.5**	**+0.3**
NVLJ				Sn	**Sn**	**05 21 50.5**	**-0.9**
NVLJ	**Novalja**	**4.97**	**325**	*e*Pn	**Pn**	**05 20 54.4**	**+0.3**
NVLJ				Sn	**Sn**	**05 21 50.5**	**-0.9**

*CSEM **28** 05:20:01.0,42°.40N×13°.39E,h10km,MD2.0/8*

ROM 28 05:20:01.0±0.1,42°.40N×13°.39E,h10km,Md2.0/8,Ml1.5/4, Error ellipse: s-maj=1.2km s-min=1.1km az=58.0, Central Italy

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AQU	**L'Aquila**	**0.04**	**172**	Pg	Pg	05 20 03.0	0.0
AQU				Sg	Sg	05 20 04.6	+0.2
AQU	**L'Aquila**	**0.04**	**172**	Pg	Pg	05 20 03.0	0.0
AQU				Sg	Sg	05 20 04.6	+0.2
T0104	**Madonna delle**	**0.06**	**229**	Pg	Pg	05 20 03.2	+0.1
T0104				Sg	Sg	05 20 04.7	+0.1
CAMP	**Campotosto**	**0.14**	**5**	Pg	Pg	05 20 04.8	+0.5
CAMP				Sg	Sg	05 20 07.2	+0.6
CAMP	**Campotosto** 63nm,0.4s	**0.14**	**5**	Pg	Pg	05 20 04.8	+0.5
CAMP				Sg	Sg	05 20 07.2	+0.6
FAGN	**Fagnano**	**0.19**	**133**	Pg	Pg	05 20 06.0	+0.9
FAGN				Sg	Sg	05 20 09.7	+1.9
FAGN	**Fagnano**	**0.19**	**133**	Pg	Pg	05 20 06.0	+0.9
FAGN				Sg	Sg	05 20 09.7	+1.9
SMA1	**SAN MARTINO**	**0.24**	**350**	Pg	Pg	05 20 07.1	+1.2
SMA1	**SAN MARTINO**	**0.24**	**350**	Pg	Pg	05 20 07.1	+1.2
FIAM	**Fiamignano**	**0.24**	**238**	Pg	Pg	05 20 07.1	+1.1
FIAM				Sg	Sg	05 20 10.8	+1.5
FIAM	**Fiamignano**	**0.24**	**238**	Pg	Pg	05 20 07.1	+1.1
FIAM				Sg	Sg	05 20 10.8	+1.5
TERO	**Teramo**	**0.28**	**34**	Pg	Pg	05 20 06.9	+0.3
TERO				Sg	Sg	05 20 11.5	+1.2
TERO	**Teramo** 65nm,0.5s	**0.28**	**34**	Pg	Pg	05 20 06.9	+0.3
TERO				Sg	Sg	05 20 11.5	+1.2
VCEL	**Villa Celiera**	**0.33**	**90**	Pg	Pg	05 20 08.2	+0.6
VCEL	**Villa Celiera**	**0.33**	**90**	Pg	Pg	05 20 08.2	+0.6
LNSS	**Leonessa**	**0.33**	**308**	Pg	Pg	05 20 08.2	+0.5
LNSS				Sg	Sb	05 20 14.0	-0.6
LNSS	**Leonessa** 37nm,0.4s	**0.33**	**308**	Pg	Pg	05 20 08.2	+0.5
LNSS				Sg	Sb	05 20 14.0	-0.6
PTQR	**Pietraquaria**	**0.37**	**179**	Pg	Pg	05 20 08.8	+0.4
PTQR	**Pietraquaria**	**0.37**	**179**	Pg	Pg	05 20 08.8	+0.4
NRCA	**Norcia**	**0.48**	**335**	Pg	Pg	05 20 10.6	+0.1
NRCA				Sg	Sb	05 20 18.3	-0.6
NRCA	**Norcia** 43nm,0.1s	**0.48**	**335**	Pg	Pg	05 20 10.6	+0.1
NRCA				Sg	Sb	05 20 18.3	-0.6

*ISCJB **28** 05:20:36.9±1.1,48°.9S±0°.1×124°.1E±0°.3,h10km,mb3.9/5, MS3.7/7, Error ellipse: s-maj=30.6km s-min=17.3km az=170.5*
*IDC **28** 05:20:37.7±1.3,48°.83S×124°.05E,h0km,mb4.0/5, mb1 4.4/6,mb1mx4.1/16,mbtmp4.2/6,ML2.7/1,MS3.7/7, Ms1 3.7/7,ms1mx3.4/20,Error ellipse: s-maj=47.2km s-min=23.8km az=89.0*

ISC 28 05:20:39.0±1.2,48°.9S±0°.1×124°.1E±0°.3,h10km,n20, σ0s86/8,mb3.9/5,MS3.8/7,Western Indian-Antarctic Ridge

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
H01W1	**Cape Leeuwin H** baz=154,slow=74,SNR=47	**15.75**	**329**	T	T	05 40 30.3	
H01W2	**Cape Leeuwin H** baz=154,slow=74,SNR=38	**15.75**	**329**	T	T	05 40 31.5	
H01W3	**Cape Leeuwin H** baz=154,slow=74,SNR=42	**15.77**	**329**	T	T	05 40 28.4	
NWAO	**Narrogin (SRO)** 1.5nm,0.3s,baz=108,slow=0.1,SNR=9.1	**16.71**	**340**	Pn	**Pn**	**05 24 33.2**	**+0.2**
STKA	**Stephens Creek** 2.5nm,0.8s,baz=195,slow=14,SNR=3.8	**21.50**	**44**	P	**P**	**05 25 28.6**	**+0.8**
STKA				LR	LR	05 32 10.8	
ASAR	**Alice Springs** 2.3nm,0.8s,baz=194,slow=9.9,SNR=15	**26.31**	**21**	P	**P**	**05 26 15.0**	**+0.2**
ASAR				LR	LR	05 36 43.6	
WRA	**Warramunga Arr** 1.3nm,1.0s,baz=201,slow=9.0,SNR=2.9	**30.00**	**20**	P	**P**	**05 26 46.1**	**-1.6**
FITZ	**Fitzroy Crossi** comp=Z,181nm,18.7s,baz=193,slow=34	**30.69**	**3**	LR	LR	05 37 49.8	
VNDA	**Vanda** 3.3nm,0.8s,baz=305,slow=11,SNR=20	**32.19**	**166**	P	**P**	**05 27 06.3**	**-0.1**
VNDA				LR	LR	05 38 49.3	
H08S2	**Diego Garcia H** baz=138	**59.59**	**296**	T	T	06 35 04.4	
H08S1	**Diego Garcia H** baz=138	**59.60**	**296**	T	T	06 35 05.2	
H08S3	**Diego Garcia H** baz=138	**59.61**	**296**	T	T	06 35 05.6	
CMAR	**Chiang Mai Arr** 1.0nm,0.3s,baz=175,slow=4.5,SNR=6.8	**70.64**	**335**	P	**P**	**05 31 54.9**	**+0.3**
CMAR				LR	LR	06 04 11.9	
MJAR	**Matsushiro Arr** comp=Z,73nm,18.8s,baz=206,slow=37	**85.94**	**11**	LR	LR	06 08 38.4	
PLCA	**Paso Flores** comp=Z,141nm,18.9s,baz=180,slow=34	**89.87**	**169**	LR	LR	06 11 35.5	
H10S2	**ASCENSION HYDR** baz=155	**111.97**	**225**	T	T	07 41 35.5	
H10S3	**ASCENSION HYDR** baz=155	**111.99**	**225**	T	T	07 41 42.3	
H10S1	**ASCENSION HYDR** baz=155	**111.99**	**225**	T	T	07 41 33.5	
PDAR	**Pinedale Array** 0.3nm,0.8s,baz=216,slow=4.0,SNR=3.5	**142.79**	**79**	PKP	**PKPdf**	**05 40 12.2**	**0.0**
YKA	**Yellowknife Ar** 1.1nm,0.8s,baz=271,slow=3.0,SNR=14	**145.53**	**44**	PKPbc	**PKPab**	**05 40 17.0**	**+0.5**

*CSEM **28** 05:21:01.7,42°.40N×13°.39E,h8km,MD2.0/9*

ROM 28 05:21:01.7±0.1,42°.40N×13°.39E,h8km,Md2.0/9,Ml1.4/4, Error ellipse: s-maj=1.1km s-min=1.0km az=89.0, Central Italy

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AQU	**L'Aquila**	**0.05**	**172**	Pg	Pg	05 21 03.8	+0.3
AQU				Sg	Sg	05 21 05.1	+0.3
AQU	**L'Aquila**	**0.05**	**172**	Pg	Pg	05 21 03.8	+0.3
AQU				Sg	Sg	05 21 05.1	+0.3
T0104	**Madonna delle**	**0.06**	**223**	Pg	Pg	05 21 03.9	+0.3
T0104				Sg	Sg	05 21 05.5	+0.5
CAMP	**Campotosto**	**0.13**	**5**	Pg	Pg	05 21 05.2	+0.5
CAMP				Sg	Sg	05 21 07.7	+0.8
CAMP	**Campotosto** 63nm,0.4s	**0.13**	**5**	Pg	Pg	05 21 05.2	+0.5
CAMP				Sg	Sg	05 21 07.7	+0.8
FAGN	**Fagnano**	**0.20**	**134**	Pg	Pg	05 21 06.6	+0.8
FAGN				Sg	Sg	05 21 10.4	+1.9
FAGN	**Fagnano**	**0.20**	**134**	Pg	Pg	05 21 06.6	+0.8
FAGN				Sg	Sg	05 21 10.4	+1.9
SMA1	**SAN MARTINO**	**0.23**	**349**	Pg	Pg	05 21 08.1	+1.7
SMA1				Sg	Sg	05 21 11.5	+1.9
SMA1	**SAN MARTINO**	**0.23**	**349**	Pg	Pg	05 21 08.1	+1.7
SMA1				Sg	Sg	05 21 11.5	+1.9
FIAM	**Fiamignano**	**0.24**	**237**	Pg	Pg	05 21 07.5	+0.9
FIAM				Sg	Sg	05 21 11.5	+1.5
FIAM	**Fiamignano**	**0.24**	**237**	Pg	Pg	05 21 07.5	+0.9
FIAM				Sg	Sg	05 21 11.5	+1.5
TERO	**Teramo**	**0.27**	**35**	Pg	Pg	05 21 07.5	+0.4
TERO				Sg	Sg	05 21 12.1	+1.4
TERO	**Teramo** 65nm,0.5s	**0.27**	**35**	Pg	Pg	05 21 07.5	+0.4
TERO				Sg	Sg	05 21 12.1	+1.4
LNSS	**Leonessa** 37nm,0.4s	**0.33**	**308**	Pg	Pg	05 21 08.9	+0.7
LNSS				Sg	Sb	05 21 14.8	-0.5
LNSS	**Leonessa** 37nm,0.4s	**0.33**	**308**	Pg	Pg	05 21 08.9	+0.7
LNSS				Sg	Sb	05 21 14.8	-0.5
VCEL	**Villa Celiera**	**0.33**	**91**	Pg	Pg	05 21 09.1	+0.8
VCEL				Sg	Sb	05 21 14.9	-0.5
VCEL	**Villa Celiera**	**0.33**	**91**	Pg	Pg	05 21 09.1	+0.8
VCEL				Sg	Sb	05 21 14.9	-0.5
NRCA	**Norcia**	**0.48**	**335**	Pg	Pg	05 21 11.3	+0.3
NRCA				Sg	Sb	05 21 19.0	-0.6
NRCA	**Norcia** 43nm,0.1s	**0.48**	**335**	Pg	Pg	05 21 11.3	+0.3
NRCA				Sg	Sb	05 21 19.0	-0.6

WEL 28 05:22:57.3±0.4,39°.10S×175°.23E,h146km±3km,ML3.6/9, 2C,Error ellipse: s-maj=3.2km s-min=2.5km az=90.0, North Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WNVZ	**Wahianoa**	**0.36**	**129**	PN	Pn	05 23 17.8	0.0
TUVZ	**Tukino**	**0.37**	**118**	PN	Pn	05 23 17.9	+0.1
TUVZ				SN	Sn	05 23 33.5	+0.2
VRZ	**Vera Road**	**0.37**	**266**	⇑PN	Pn	05 23 17.1	-0.5
MOVZ	**Moawhango**	**0.51**	**128**	PN	Pn	05 23 17.8	-0.5
MOVZ				SN	Sn	05 23 33.5	-0.8
WAZ	**Wanganui**	**0.68**	**196**	⇑PN	Pn	05 23 19.8	+0.5
BHHZ	**Black Hill Sta**	**0.75**	**122**	PN	Pn	05 23 19.3	-0.6
KWHZ	**Kaweka Forest**	**0.98**	**110**	PN	Pn	05 23 21.7	+0.2
KWHZ				SN	Sn	05 23 40.1	0.0
BKZ	**Black Stump Fm**	**0.98**	**94**	PN	Pn	05 23 20.5	-1.1
PNHZ	**Pukenui**	**1.11**	**138**	PN	Pn	05 23 22.7	+0.1
TSZ	**Takapari Road**	**1.11**	**150**	PN	Pn	05 23 22.9	+0.2
MCHZ	**McNeill Hill**	**1.19**	**107**	PN	Pn	05 23 23.6	+0.2
WPHZ	**Waipukurau**	**1.34**	**136**	SN	Sn	05 23 45.9	-0.2
DVHZ	**Dannevirke**	**1.40**	**149**	SN	Sn	05 23 46.2	-1.0
PRWZ	**Pori Road**	**1.56**	**159**	PN	Pn	05 23 27.4	+0.2
PXZ	**Pawanui**	**1.57**	**127**	AML	AML	05 23 35.4	
PXZ				AML	AML	05 23 58.7	
MRZ	**Mangatainoka R**	**1.58**	**170**	PN	Pn	05 23 27.2	-0.3
MRZ				SN	Sn	05 23 49.4	-1.2
ANWZ	**Angora Road**	**1.66**	**145**	PN	Pn	05 23 28.3	0.0
OGWZ	**Otaki Gorge**	**1.72**	**182**	PN	Pn	05 23 28.9	0.0
BFZ	**Birch Farm**	**1.76**	**154**	PN	Pn	05 23 29.1	-0.3
KIW	**Kapiti Island**	**1.78**	**188**	PN	Pn	05 23 29.1	-0.5
HOWZ	**Holdsworth Sta**	**1.81**	**173**	PN	Pn	05 23 29.5	-0.5
CAW	**Cannon Point**	**2.01**	**184**	PN	Pn	05 23 31.8	-0.5
RIGZ	**Rimuhau**	**2.01**	**80**	PN	Pn	05 23 30.5	-1.8
MTW	**Mount Morrison**	**2.07**	**174**	PN	Pn	05 23 32.2	-0.8
TCW	**Tory Channel**	**2.23**	**199**	PN	Pn	05 23 34.2	-0.8
MSWZ	**Moikau Station**	**2.31**	**180**	PN	Pn	05 23 35.0	-1.0
TRWZ	**Traveller**	**2.32**	**172**	PN	Pn	05 23 35.2	-0.9
PLWZ	**Palliser**	**2.47**	**180**	PN	Pn	05 23 36.6	-1.2
TUWZ	**Tuamarina**	**2.53**	**203**	PN	Pn	05 23 37.3	-1.3
NNZ	**Nelson**	**2.55**	**213**	PN	Pn	05 23 37.2	-1.5
QRZ	**Quartz Range**	**2.70**	**229**	PN	Pn	05 23 38.4	-2.3
BSWZ	**Blackbirch Sta**	**2.81**	**201**	PN	Pn	05 23 41.0	-1.1
KHZ	**Kahutara**	**3.56**	**201**	PN	Pn	05 23 50.0	-1.6
OXZ	**Oxford**	**4.86**	**209**	PN	Pn	05 24 05.6	-3.2
MQZ	**McQueen's Vall**	**5.00**	**202**	PN	Pn	05 24 06.6	-3.9

*NNC **28** 05:52:24.5±3.7,45°.63N×85°.30E,h0km,mb3.7,mpv3.2, Error ellipse: s-maj=29.0km s-min=20.0km az=90.0*
*SOME **28** 05:52:25.7,45°.92N×84°.98E,h10km*

ISC 28 05:52:28.1±1.8,45°.66N±0°.05×85°.09E±0°.10,h10km,n17, σ2s67/29,6C-3D,Northern Xinjiang

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ZSN	**Zaisan** 32nm,0.6s	**1.85**	**345**	*e*P	**Pg**	**05 53 01.7**	**-1.9**
ZSN				⇑*i*S	**Sg**	**05 53 27.1**	**-0.5**
MK31	**Makanchi Array** 134nm,0.7s	**2.25**	**301**	⇑Pn	**Pn**	**05 53 04.9**	**-0.5**
MK31				⇓Sn	**Sn**	**05 53 34.7**	**+1.5**
MAKZ	**Makanchi** 251nm,0.8s,baz=119,slow=29	**2.44**	**299**	⇓Pn	**Pn**	**05 53 08.1**	**0.0**
MAKZ				⇑Sn	**Sb**	**05 53 41.9**	**-0.5**
DJR	**Jarkent** 145nm,0.7s	**3.99**	**252**	*e*P	**Pb**	**05 53 38.6**	**+0.1**
DJR				*e*S	**Sg**	**05 54 32.1**	**-4.0**
KTMS	**Ketmen** 16nm,0.5s	**4.04**	**238**	*e*P	**Pb**	**05 53 40.4**	**+0.9**
KTMS				*e*S	**Sg**	**05 54 34.3**	**-3.7**
KAPS	**Kapalarasan** 38nm,0.7s	**4.05**	**267**	*e*P	**Pb**	**05 53 40.1**	**+0.6**
KAPS				⇑*i*S	**Sg**	**05 54 34.6**	**-3.5**
SHLS	**Shalkode** 4.7nm,0.6s	**4.49**	**238**	*e*P	**Pb**	**05 53 47.5**	**+0.4**
SHLS				*e*S	**Sg**	**05 54 47.2**	**-5.1**
PDGK	**Podgornoye** 12nm,0.6s	**4.64**	**242**	⇑Pn	**Pn**	**05 53 37.4**	**-0.8**
PDGK				⇑Pg	**Pb**	**05 53 49.9**	**+0.4**
PDGK				⇓Lg	Lg	05 54 51.9	
UZB	**Uzynbulak** 1.5nm,0.4s	**5.02**	**242**	*e*P	**Pb**	**05 53 56.4**	**+0.3**
UZB				*e*S	**Sb**	**05 55 01.7**	**+5.1**
KPKS	**Kokpek** 14nm,0.5s	**5.08**	**247**	*e*P	**Pb**	**05 53 57.8**	**+0.8**
KPKS				*e*S	**Sb**	**05 55 03.8**	**+5.7**
ARXS	**Arharly** 58nm,0.7s	**5.35**	**257**	*e*P	Pb	05 54 05.0	+3.2
ARXS				*e*S	**Sg**	**05 55 16.7**	**-3.2**
KURS	**Kuram** 4.2nm,0.5s	**5.40**	**249**	*e*P	**Pg**	**05 54 08.3**	**-3.1**
KURS				*e*S	**Sg**	**05 55 21.7**	**+0.4**
SEM	**Semipalatinsk** 7.8nm,0.9s	**5.75**	**327**	*e*P	**Pb**	**05 54 09.2**	**+0.7**
SEM				*e*S	Sb	05 55 23.0	+5.6
CHKK	**Chushkaly** 1.5nm,0.6s	**6.03**	**256**	*e*P	**Pb**	**05 54 14.0**	**+0.7**
CHKK				*e*S	Sb	05 55 31.6	+6.1
MDOK	**Medeo** 2.8nm,0.4s	**6.28**	**249**	*e*P	Pg	05 54 24.7	-3.6
MDOK				*e*S	**Sg**	**05 55 49.7**	**+0.2**
IZV	**Izvestkoviy** 7.1nm,0.5s	**6.62**	**250**	*e*P	**Pg**	**05 54 32.5**	**-2.3**
IZV				*e*S	**Sg**	**05 56 03.1**	**+2.6**
DGS	**Degeres** 14nm,0.7s	**7.09**	**253**	*e*P	Pg	05 54 37.4	-6.4
DGS				*e*S	**Sg**	**05 56 11.5**	**-4.2**

*KRSC **28** 05:55:41.2±1.3,51°.40N×153°.69E,h450km±25km,ML4.7*
*ISCJB **28** 05:55:42.0±0.4,51°.47N±0°.06×153°.62E±0°.06,h450km, mb3.6/23,Error ellipse: s-maj=8.4km s-min=3.8km az=155.9*
*MOS **28** 05:55:42.7±1.1,51°.69N×153°.33E,h441km,mb4.0/10, Error ellipse: s-maj=11.7km s-min=7.3km az=68.6*
*IDC **28** 05:55:44.9±1.2,51°.99N×152°.99E,h420km±12km, mb3.3/22,mb1 3.5/27,mb1mx3.3/52,mbtmp4.1/27,Error ellipse: s-maj=11.9km s-min=9.8km az=149.0*

ISC 28 05:55:43.7±0.6,51°.53N±0°.08×153°.61E±0°.07,h450km,n91, σ1s82/117,mb3.7/23,4C-1D,Northwest of Kuril Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SKR	**Severo-Kuril's**	**1.79**	**117**	*i*P	**P**	**05 56 42.0**	**-1.1**
SKR				*e*S	**S**	**05 57 28.3**	**-3.0**
SKR	**Severo-Kuril's**	**1.79**	**117**	*e*Pn	P	05 56 39.4	-3.7
SKR				*e*S	S	05 57 26.5	-4.8
SKR	comp=N,60nm,0.5s			pmax	pmax		
SKR	comp=E,80nm,0.5s			pmax	pmax		
SKR	comp=Z,150nm,0.5s			pmax	pmax		
SKR	comp=N,190nm,0.2s			smax	smax		
SKR	comp=E,110nm,0.4s			smax	smax		
PAU	**Pauzhetka**	**2.00**	**90**	*i*P	**P**	**05 56 43.3**	**-0.9**
PAU	**Pauzhetka**	**2.00**	**90**	PN	**P**	**05 56 43.3**	**-0.9**
APC	**Apacha**	**2.60**	**56**	*e*P	**P**	**05 56 45.8**	**-1.9**
APC	**Apacha**	**2.60**	**56**	PN	**P**	**05 56 45.8**	**-1.9**
ASAK	**Asacha**	**2.79**	**70**	*i*P	**P**	**05 56 48.8**	**-0.4**
PETK	**Petropavlovsk-** comp=E,12nm,0.3s,baz=222,slow=4.3,SNR=190	**2.97**	**56**	P	**P**	**05 56 48.7**	**-1.7**
MTVR	**Mutnovka**	**2.99**	**69**	P	**P**	**05 56 49.8**	**-0.9**
MTVR				S	**S**	**05 57 42.5**	**-2.8**
KRMR	**Karymshinskiy**	**3.08**	**63**	*i*P	**P**	**05 56 50.0**	**-1.2**
KRMR				S	**S**	**05 57 42.1**	**-4.0**
RUS	**Russkaya**	**3.17**	**71**	*i*P	**P**	**05 56 50.9**	**-1.0**
RUS				*i*S	S	05 57 42.3	-5.1
RUS	**Russkaya**	**3.17**	**71**	PN	**P**	**05 56 50.9**	**-1.0**
RUS				S	S	05 57 42.3	-5.1
GNL	**Ganaly**	**3.42**	**49**	*i*P	**P**	**05 56 52.2**	**-1.8**
GNL	**Ganaly**	**3.42**	**49**	PN	**P**	**05 56 52.2**	**-1.8**
PET	**Petropavlovsk**	**3.44**	**62**	*e*P	**P**	**05 56 53.7**	**-0.3**
PET				*e*S	**S**	**05 57 47.3**	**-4.0**
PET	**Petropavlovsk**	**3.44**	**62**	⇑*i*PN	**P**	**05 56 53.3**	**-0.7**
PET				*e*S	**S**	**05 57 48.0**	**-3.3**
PET	comp=Z,148nm,1.0s			pmax	pmax		
PET	comp=N,158nm,0.6s			smax	smax		
PET	comp=E,210nm,0.5s			smax	smax		
DALK	**Dalny**	**3.50**	**62**	*i*P	**P**	**05 56 54.1**	**-0.4**
DALK				*e*S	**S**	**05 57 48.6**	**-3.6**
KOK	**Koryaka**	**3.55**	**58**	*e*P	**P**	**05 56 54.8**	**-0.2**
KOK	**Koryaka**	**3.55**	**58**	PN	**P**	**05 56 54.8**	**-0.2**
KRX	**Arik**	**3.59**	**57**	*i*P	**P**	**05 56 54.6**	**-0.8**
AVH	**Avacha**	**3.59**	**59**	*i*P	**P**	**05 56 54.9**	**-0.5**
AVH				*e*S	**S**	**05 57 51.3**	**-2.5**
AVH	**Avacha**	**3.59**	**59**	PN	**P**	**05 56 54.9**	**-0.5**
AVH				S	**S**	**05 57 51.3**	**-2.5**
UGLR	**Uglovaya**	**3.62**	**60**	*e*P	**P**	**05 56 55.8**	**+0.2**
UGLR				S	**S**	**05 57 51.4**	**-2.8**
KRER	**Koryakskii**	**3.62**	**59**	*i*P	**P**	**05 56 54.9**	**-0.8**
KRER				*e*S	**S**	**05 57 52.0**	**-2.4**
SMAR	**Somma**	**3.63**	**59**	*e*P	**P**	**05 56 55.2**	**-0.6**
SMAR				*i*S	**S**	**05 57 51.1**	**-3.4**
SMAR	**Somma**	**3.63**	**59**	PN	**P**	**05 56 55.2**	**-0.6**
SMAR				S	**S**	**05 57 51.1**	**-3.4**
SDLR	**Sedlovina**	**3.68**	**59**	*i*P	**P**	**05 56 55.6**	**-0.5**
SDLR				*i*S	**S**	**05 57 51.5**	**-3.6**
SDLR	**Sedlovina**	**3.68**	**59**	PN	**P**	**05 56 55.6**	**-0.5**
SDLR				S	**S**	**05 57 51.5**	**-3.6**
NLC	**Nalytchevo**	**3.89**	**63**	*e*P	**P**	**05 56 56.5**	**-1.2**
NLC				*e*S	**S**	**05 57 53.9**	**-4.1**
NLC	**Nalytchevo**	**3.89**	**63**	PN	**P**	**05 56 56.5**	**-1.2**
NLC				S	**S**	**05 57 53.9**	**-4.1**
ESO	**Esso**	**5.34**	**32**	*i*P	**P**	**05 57 10.8**	**-0.4**
ESO	**Esso**	**5.34**	**32**	PN	**P**	**05 57 10.8**	**-0.4**
TUMD	**Tumrok D**	**5.49**	**45**	*e*P	**P**	**05 57 12.8**	**+0.1**
TUMD				*e*S	**S**	**05 58 23.5**	**-1.9**
LGNR	**Loginova**	**6.20**	**40**	*e*P	**P**	**05 57 21.1**	**+0.9**
LGNR				*e*S	**S**	**05 58 38.4**	**-0.7**
LGNR	**Loginova**	**6.20**	**40**	PN	**P**	**05 57 21.1**	**+0.9**
LGNR				S	**S**	**05 58 38.4**	**-0.7**
ZLN	**Zelenaya**	**6.20**	**41**	*e*P	**P**	**05 57 20.8**	**+0.8**
ZLN				*e*S	**S**	**05 58 38.4**	**-0.4**
ZLN	**Zelenaya**	**6.20**	**41**	PN	**P**	**05 57 20.8**	**+0.8**
ZLN				S	**S**	**05 58 38.4**	**-0.4**
CIRR	**Tsirk**	**6.25**	**40**	P	**P**	**05 57 21.1**	**+0.6**
CIRR				*e*S	**S**	**05 58 38.5**	**-1.2**
CIRR	**Tsirk**	**6.25**	**40**	PN	**P**	**05 57 21.1**	**+0.6**
CIRR				S	**S**	**05 58 38.5**	**-1.2**
KRSR	**Krestovskiy**	**6.25**	**38**	*e*P	**P**	**05 57 20.4**	**0.0**
KRSR				*e*S	**S**	**05 58 38.0**	**-1.7**
KRSR	**Krestovskiy**	**6.25**	**38**	PN	**P**	**05 57 20.4**	**0.0**
KRSR				S	**S**	**05 58 38.0**	**-1.7**
BDR	**Baidarnaya**	**6.75**	**39**	*i*P	**P**	**05 57 26.1**	**+0.5**
BDR				*e*S	**S**	**05 58 47.5**	**-1.7**
SRKR	**Sorokina**	**6.79**	**38**	*i*P	**P**	**05 57 26.9**	**+0.8**
SRKR				*i*S	**S**	**05 58 47.7**	**-2.3**
SRKR	**Sorokina**	**6.79**	**38**	PN	**P**	**05 57 26

SONM	**Songino Array**	**30.35**	**282**	P		**P**	**06 01 16.8**	**-0.2**
	comp=Z,0.5nm,0.6s,baz=83,slow=7.5,SNR=2.8							
KDAK	**Kodiak Island**	**31.02**	**57**	*i* P		P	06 01 26.1	+3.6
ILAR	**Eielson Array**	**32.72**	**43**	P		**P**	**06 01 40.0**	**+3.0**
	comp=Z,0.8nm,0.8s,baz=272,slow=9.2,SNR=11							
INK	**Inuvik**	**37.51**	**36**	P		**P**	**06 02 19.6**	**+2.5**
	comp=Z,1.1nm,0.4s,baz=300,slow=8.4,SNR=33							
ZALV	**Zalesovo Beam**	**40.23**	**301**	P		**P**	**06 02 37.6**	**-1.8**
	comp=Z,0.7nm,0.4s,baz=56,slow=7.6,SNR=2.9							
MKAR	**Makanchi Array**	**45.18**	**293**	*ce*P		**P**	**06 03 17.7**	**-0.9**
	comp=Z,2.0nm,0.7s,baz=56,slow=7.5,SNR=12							
MKAR	**Makanchi Array**	**45.18**	**293**	*ce*P		**P**	**06 03 18.5**	**-0.2**
MKAR					pmax	pmax		
	comp=Z,2.0nm,0.7s							
YKA	**Yellowknife Ar**	**46.96**	**39**	P		**P**	**06 03 34.5**	**+2.5**
	comp=Z,0.4nm,0.5s,baz=302,slow=7.0,SNR=11							
YKA					PcP	**pP**		
	comp=Z,0.6nm,0.5s,baz=309,slow=3.7,SNR=19							
YKA					ScP	ScP	06 08 13.1	+7.6
	comp=Z,0.2nm,0.6s,baz=301,slow=3.7,SNR=5.4							
BVAR	**Borovoye Array**	**48.17**	**306**		P	**P**	**06 03 40.3**	**-1.0**
	comp=Z,1.9nm,0.6s,baz=51,slow=7.8,SNR=9.7							
BRVK	**Borovoye**	**48.21**	**306**	*ce*P		**P**	**06 03 41.6**	**0.0**
ARU	**Arti**	**51.77**	**315**	P		**P**	**06 04 06.8**	**-1.0**
	comp=Z,3.1nm,0.3s,baz=36,slow=3.4,SNR=7.3							
ARCES	**ARCESS Array B**	**53.46**	**340**	P		**P**	**06 04 18.8**	**-0.9**
	comp=Z,1.4nm,0.5s,baz=34,slow=8.8,SNR=7.7							
CMAR	**Chiang Mai Arr**	**53.94**	**253**	P		**P**	**06 04 26.9**	**+3.1**
	comp=Z,2.1nm,0.3s,baz=29,slow=6.8,SNR=6.8							
AKTO	**Aktyubinsk**	**55.85**	**310**	P		**P**	**06 04 36.1**	**-0.7**
	comp=Z,2.0nm,0.5s,baz=66,slow=9.0,SNR=9.6							
FINES	**FINESS Array B**	**59.87**	**334**	P		**P**	**06 05 03.2**	**-0.9**
	comp=Z,1.6nm,0.5s,baz=38,slow=9.6,SNR=10							
FINES	**FINESS Array B**	**59.87**	**334**	*i* P		**P**	**06 05 03.9**	**-0.2**
NB2	**NORSAR Subarra**	**63.82**	**341**	P		**P**	**06 05 29.8**	**-0.3**
	comp=Z,1.2nm,0.6s,baz=24,slow=6.5							
NOA	**NORSAR Array B**	**63.82**	**341**	P		**P**	**06 05 29.2**	**-0.9**
	comp=Z,1.6nm,0.6s,baz=25,slow=6.6,SNR=10							
AKASG	**Malin Array Be**	**67.77**	**325**	P		**P**	**06 05 53.8**	**-1.2**
	comp=Z,1.1nm,0.4s,baz=32,slow=6.5,SNR=6.9							
KBZ	**Khabaz**	**67.81**	**313**	P		**P**	**06 05 55.5**	**+0.3**
	comp=Z,3.5nm,0.7s,baz=189,slow=4.2,SNR=9.7							
ZEI	**Tsey**	**68.07**	**312**	*e*P		**P**	**06 05 57.1**	**-0.1**
ZEI					pmax	pmax		
	comp=Z,9.0nm,1.3s							
SCHQ	**Schefferville**	**68.79**	**24**	P		**P**	**06 06 02.5**	**+1.3**
	comp=Z,1.3nm,0.4s,baz=343,slow=4.5,SNR=6.1							
WRA	**Warramunga Arr**	**73.14**	**199**	P		P	06 06 31.9	+4.7
	comp=Z,2.6nm,0.6s,baz=15,slow=6.0,SNR=12							
GERES	**GERESS Array B**	**74.31**	**334**	P		**P**	**06 06 34.0**	**+0.2**
	comp=Z,0.2nm,0.3s,baz=350,slow=4.5,SNR=5.5							
GERES	**GERESS Array B**	**74.31**	**334**	P		**P**	**06 06 34.0**	**+0.2**
TXAR	**Lajitas Array**	**74.91**	**62**	P		P	06 06 42.2	+4.7
	comp=Z,0.2nm,0.4s,baz=331,slow=5.4,SNR=2.7							
BRTR	**Keskin Array B**	**75.14**	**316**	P		**P**	**06 06 39.6**	**+0.9**
	comp=Z,0.4nm,0.4s,baz=85,slow=4.6,SNR=3.2							
ASAR	**Alice Springs**	**76.84**	**199**	P		P	06 06 54.0	+6.0
	comp=Z,3.3nm,0.7s,baz=10,slow=5.4,SNR=36							
PLCA	**Paso Flores**	**148.01**	**88**	PKPbc		**PKPab**	**06 14 41.1**	**-0.3**
	comp=Z,1.1nm,0.6s,baz=269,slow=6.8,SNR=4.3							

*ATH **28** 06:02:53.0,38°.34N×26°.38E,h31km±1km, ML2.6/4, Error ellipse: s-maj=3.3km s-min=1.0km az=239.0*
*ISK **28** 06:02:52.1,38°.30N×26°.41E,h5km, MD2.7*
*DDA **28** 06:02:53.8,38°.36N×26°.46E,h16km, Ml3.1*
*ISCJB **28** 06:02:53.5±0.4,38°.34N±0°.02×26°.40E±0°.03,h13km±2km, Error ellipse: s-maj=4.2km s-min=3.1km az=147.5*
*CSEM **28** 06:02:53.2±0.1,38°.32N×26°.40E,h12km, ML3.1, Error ellipse: s-maj=3.4km s-min=2.4km az=63.0*
*THE **28** 06:02:54.3,38°.34N×26°.40E,h16km, ML2.8/4, Error ellipse: s-maj=1.1km s-min=0.5km az=269.0*

ISC 28 06:02:53.3±0.8,38°.34N±0°.02×26°.41E±0°.02,h15km±6km, n58,σ0s59/92,Aegean Sea

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
ZEY	**ˉzmir**	**0.12**	**143**	*i* P		**P**	**Pb**	**06 02 57.3**	**0.0**
ZEY				*i* S			Sb	06 03 00.2	+0.4
URLA	**Izmir**	**0.15**	**80**	*i* P		**P**	**Pg**	**06 02 57.2**	**-0.1**
URLA				*i* S			**Sg**	**06 03 00.0**	**+0.1**
URLA	**Izmir**	**0.15**	**80**	P		**P**	**Pg**	**06 02 57.2**	**-0.1**
URLA				S			**Sg**	**06 03 00.0**	**+0.1**
CHOS	**Chios island**	**0.29**	**281**	P		**P**	**Pb**	**06 03 00.5**	**+0.3**
CHOS				S			**Sb**	**06 03 05.3**	**+0.4**
CHOS	**Chios island**	**0.29**	**281**	P		**P**	**Pb**	**06 03 00.5**	**+0.3**
CHOS				S			**Sb**	**06 03 05.2**	**+0.4**
CHOS	**Chios island**	**0.29**	**281**	P		**P**	**Pb**	**06 03 00.8**	**+0.6**
CHOS				S			**Sb**	**06 03 05.2**	**+0.4**
CHOS					AML	AML	06 03 05.5		
	comp=N,1715μm,0.3s								
CHOS					AML	AML	06 03 05.6		
	comp=E,1730μm,0.2s								
BLCB	**Balcova**	**0.50**	**84**	*e*PG		**Pg**	**06 03 02.3**	**-0.9**
BLCB				*e*SG		**Sg**	**06 03 09.4**	**-0.5**
BLCB	**Balcova**	**0.50**	**84**	*e*Pg		**Pg**	**06 03 02.3**	**-0.9**
BLCB				*e*Sg		**Sg**	**06 03 09.4**	**-0.5**
SMG	**Samos**	**0.71**	**152**	P		**Pb**	**06 03 07.5**	**+0.1**
SMG				S		**Sn**	**06 03 18.3**	**-1.1**
SMG	**Samos**	**0.71**	**152**	P		**Pb**	**06 03 07.3**	**0.0**
SMG				S		**Sn**	**06 03 18.3**	**-1.1**
SMG	**Samos**	**0.71**	**152**	P		**Pb**	**06 03 07.3**	**0.0**
SMG				S		**Sn**	**06 03 18.3**	**-1.1**
SMG					AML	AML	06 03 20.5		
	comp=N,1700μm,0.4s								
SMG					AML	AML	06 03 20.7		
	comp=E,2161μm,0.3s								
DKL	**Dikili**	**0.83**	**27**	*e*PG		**Pg**	**06 03 09.1**	**-0.3**
DKL				*e*SG		**Sb**	**06 03 21.4**	**+1.0**
DKL	**Dikili**	**0.83**	**27**	*e*Pg		**Pb**	**06 03 09.1**	**-0.3**
DKL				*e*Sg		**Sb**	**06 03 21.4**	**+1.0**
GCAM	**G?zelcaml?**	**0.91**	**134**	*i* P		**Pb**	**06 03 10.7**	**0.0**
GCAM				*i* S		**Sn**	**06 03 24.6**	**+0.4**
GCAM	**G?zelcaml?**	**0.91**	**134**	P		**Pb**	**06 03 10.7**	**0.0**
GCAM				S		**Sn**	**06 03 24.6**	**+0.4**
PRK	**Paraskevi**	**0.92**	**353**	P		**Pb**	**06 03 10.4**	**-0.5**
PRK				S		**Sn**	**06 03 24.0**	**-0.5**
PRK	**Paraskevi**	**0.92**	**353**	P		**Pb**	**06 03 10.4**	**-0.5**
PRK				S		**Sg**	**06 03 23.4**	**+0.2**
PRK	**Paraskevi**	**0.92**	**353**	P		**Pb**	**06 03 10.4**	**-0.5**
PRK				S		**Sg**	**06 03 23.4**	**+0.2**
PRK					AML	AML	06 03 24.9		
	comp=E,1102μm,0.5s								
PRK					AML	AML	06 03 25.0		
	comp=N,1062μm,0.4s								
SIGR	**SIGRI**	**0.98**	**334**	*e*PG		**Pb**	**06 03 11.7**	**-0.2**
SIGR	**SIGRI**	**0.98**	**334**	P		**Pb**	**06 03 11.8**	**-0.1**
SIGR				S		**Sg**	**06 03 24.9**	**-0.2**
SIGR	**SIGRI**	**0.98**	**334**	P		**Pb**	**06 03 11.8**	**-0.1**
SIGR				S		**Sb**	**06 03 24.1**	**-0.5**
SIGR	**SIGRI**	**0.98**	**334**	P		**Pn**	**06 03 12.5**	**0.0**
SIGR				S		**Sb**	**06 03 24.1**	**-0.5**
SIGR					AML	AML	06 03 25.1		
	comp=N,354μm,0.4s								
SIGR					AML	AML	06 03 25.2		
	comp=E,349μm,0.4s								
AYVA	**Ayvalik**	**1.00**	**12**	*i* P		**Pb**	**06 03 11.6**	**-0.7**
AYVA				*i* S		**Sn**	**06 03 26.5**	**0.0**
AYVA	**Ayvalik**	**1.00**	**12**	P		**Pb**	**06 03 11.6**	**-0.7**
AYVA				S		**Sn**	**06 03 26.5**	**0.0**
AKS	**Akhisar**	**1.22**	**63**	*e*PN		**Pb**	**06 03 16.3**	**+0.1**
AKS	**Akhisar**	**1.22**	**63**	*e*Pn		**Pb**	**06 03 16.3**	**+0.1**
AYDB	**Zeytinkoy-Aydi**	**1.23**	**108**	*e*PN		**Pn**	**06 03 15.8**	**-0.2**
AYDB				*e*SN		**Sg**	**06 03 33.2**	**+0.1**
AYDB	**Zeytinkoy-Aydi**	**1.23**	**108**	*e*Pn		**Pn**	**06 03 15.8**	**-0.2**
AYDB				*e*Sn		**Sg**	**06 03 33.2**	**+0.1**
AYDN	**Tasoluk**	**1.34**	**120**	*i* P		**Pn**	**06 03 17.1**	**-0.4**
AYDN				*i* S		**Sb**	**06 03 35.4**	**+0.2**
AYDN	**Tasoluk**	**1.34**	**120**	P		**Pn**	**06 03 17.1**	**-0.4**
AYDN				S		**Sb**	**06 03 35.3**	**+0.2**
APE	**Apeiranthos**	**1.44**	**209**	*e*PN		**Pn**	**06 03 18.7**	**-0.2**
APE	**Apeiranthos**	**1.44**	**209**	P		**Pn**	**06 03 18.7**	**-0.2**
APE				S		**Sn**	**06 03 37.2**	**-0.4**
APE	**Apeiranthos**	**1.44**	**209**	P		**Pn**	**06 03 18.7**	**-0.2**
APE				S		**Sn**	**06 03 37.2**	**-0.4**
APE	**Apeiranthos**	**1.44**	**209**	P		**Pn**	**06 03 18.6**	**-0.2**
BODT	**Bodrum**	**1.46**	**150**	*e*PN		**Pn**	**06 03 19.3**	**+0.3**
BODT	**Bodrum**	**1.46**	**150**	P		**Pn**	**06 03 18.9**	**-0.2**
BODT				S		**Sn**	**06 03 37.4**	**-0.5**
BODT	**Bodrum**	**1.46**	**150**	P		**Pn**	**06 03 18.9**	**-0.2**
BODT	**Bodrum**	**1.46**	**150**	*e*Pn		**Pn**	**06 03 19.3**	**+0.3**
BODT				S		**Sn**	**06 03 37.4**	**-0.5**

EZN	**Ezine**	**1.49**	**357**	*e*PN		**Pb**	**06 03 20.7**	**0.0**
EZN	**Ezine**	**1.49**	**357**	P		**Pn**	**06 03 19.5**	**0.0**
EZN	**Ezine**	**1.49**	**357**	P		**Pn**	**06 03 19.5**	**0.0**
EZN	**Ezine**	**1.49**	**357**	*e*Pn		**Pb**	**06 03 20.7**	**0.0**
BDRM	**Kayabasi**	**1.51**	**147**	*i* P		**Pg**	**06 03 22.9**	**+0.6**
BDRM				*i* S		**Sg**	**06 03 43.8**	**+1.9**
KARY	**Karystos**	**1.59**	**260**	P		**Pn**	**06 03 20.2**	**-0.6**
KARY				S		**Sn**	**06 03 40.6**	**-0.4**
KARY	**Karystos**	**1.59**	**260**	P		**Pn**	**06 03 20.2**	**-0.6**
KARY				S		**Sn**	**06 03 40.6**	**-0.4**
BALB	**Balikesir**	**1.73**	**41**	*e*PN		**Pb**	**06 03 24.0**	**-0.8**
BALB	**Balikesir**	**1.73**	**41**	*e*Pn		**Pb**	**06 03 24.0**	**-0.8**
KULA	**Kula-Manisa**	**1.77**	**83**	*e*PN		**Pn**	**06 03 24.2**	**+0.7**
KULA	**Kula-Manisa**	**1.77**	**83**	*e*Pn		**Pn**	**06 03 24.2**	**+0.7**
LIA	**Limnos Island**	**1.83**	**329**	P		**Pn**	**06 03 24.4**	**+0.2**
GELI	**Tayfur-Gelibol**	**2.06**	**1**	*e*PN		**Pn**	**06 03 28.7**	**+1.4**
GELI	**Tayfur-Gelibol**	**2.06**	**1**	*e*Pn		**Pn**	**06 03 28.7**	**+1.4**
SMTH	**Samothraki Isl**	**2.24**	**343**	P		**Pn**	**06 03 30.0**	**+0.2**
SMTH	**Samothraki Isl**	**2.24**	**343**	P		**Pn**	**06 03 30.0**	**+0.2**
RKY	**Sarkoy-Tekirda**	**2.42**	**14**	*e*PN		**Pn**	**06 03 33.9**	**+1.5**
RKY	**Sarkoy-Tekirda**	**2.42**	**14**	*e*Pn		**Pn**	**06 03 33.9**	**+1.5**
ALN	**Alexandroupoli**	**2.58**	**354**	P		**Pn**	**06 03 35.2**	**+0.8**
ALN	**Alexandroupoli**	**2.58**	**354**	P		**Pn**	**06 03 35.2**	**+0.8**

*IDC **28** 06:03:09.4±1.2,18°.74N×120°.01E,h0km, mb3.9/4, mb1 1.1/4, mb1mx3.6/46, mbtmp3.9/4, MS2.9/1, Ms1 3.1/1, ms1mx2.4/54, Error ellipse: s-maj=77.3km s-min=23.6km az=68.0*
*MAN **28** 06:03:13,18°.71N×120°.06E,h2km, mb4.4, ML3.2, MS3.1*

ISC 28 06:03:10.6±2.3,18°.7N±0°.1×119°.9E±0°.1,h7km±13km,n10, σ1s09/14,mb3.8/4,3C,Philippine Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
PIP	**Pasuquin**	**0.76**	**122**	*i* P		**Pn**	**Pn**	**06 03 27.6**	**-0.2**
PIP				*e*S		**Sn**	**Sn**	**06 03 40.9**	**+1.3**
SIPP	**Brgy, Tapao**	**0.94**	**148**	*i* P		**Pg**	**Pn**	**06 03 29.7**	**+1.0**
SIPP				*e*S		**Sg**	**Sn**	**06 03 39.4**	**-1.7**
ABRA	**Dolores**	**1.30**	**146**	*e*P		**Pn**	**Pn**	**06 03 35.9**	**+0.7**
ABRA				*e*S		**Sn**	**Sn**	**06 03 54.6**	**+1.7**
APYP	**Conner**	**1.51**	**125**	*e*P		**Pn**	**Pn**	**06 03 38.8**	**+0.7**
APYP				*e*S		**Sn**	**Sn**	**06 03 57.1**	**-0.9**
BCPH	**Baguio City Da**	**2.42**	**165**	*i* P		**Pb**	**Pn**	**06 03 54.6**	**0.0**
BCPH				*i* S		**Sb**	**Sn**	**06 04 23.8**	**-0.9**
CMAR	**Chiang Mai Arr**	**19.90**	**273**	LR		LR	LR	06 14 18.1	
	comp=Z,37nm,20.5s,baz=220,slow=34								
WRA	**Warramunga Arr**	**40.95**	**159**	P		**P**	**P**	**06 10 53.2**	**-0.9**
	1.7nm,0.9s,baz=339,slow=9.2,SNR=6.8								
MKAR	**Makanchi Array**	**41.63**	**321**	P		**P**	**P**	**06 10 59.5**	**0.0**
	1.4nm,0.9s,baz=123,slow=8.8,SNR=7.2								
ASAR	**Alice Springs**	**44.29**	**162**	P		**P**	**P**	**06 11 21.3**	**0.0**
	1.3nm,0.5s,baz=338,slow=7.0,SNR=16								
YKA	**Yellowknife Ar**	**88.43**	**22**	P		**P**	**P**	**06 16 02.9**	**-0.4**
	0.3nm,0.6s,baz=313,slow=4.5,SNR=10								

*DHMR **28** 06:26:33.9±1.2, 11°.96N×44°.01E, h15km±21km, ML4.4*
*IDC **28** 06:26:35.9±1.9, 11°.96N×44°.10E, h0km, mb3.8/10, mb1 3.9/11, mb1mx3.7/67, mbtmp3.8/11, ML3.2/1, MS3.5/2, Ms1 3.5/2, ms1mx2.6/50, Error ellipse: s-maj=46.8km s-min=21.4km az=175.0*

ISC 28 06:26:39.5±0.8,12°.30N±0°.06×44°.15E±0°.06,h10km,n17, σ1s54/21,mb3.7/10,1C,Western Arabian Peninsula

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
ADEN	**Aden**	**0.94**	**60**	*i* P		**Pb**	**Pb**	**06 26 56.9**	**-1.1**
ADEN				*i* S		**Sn**	**Sn**	**06 27 14.2**	**+1.9**
ADEN					AML	AML	AML	06 27 19.1	
	comp=N,7μm,0.5s								
UDYN	**Al 'Udayn**	**1.67**	**354**	*i* P		**Pn**	**Pn**	**06 27 08.9**	**0.0**
UDYN				*i* S		**Sg**	**Sn**	**06 27 35.3**	**+2.1**
DHBB	**Dhamar BB**	**2.27**	**6**	*i* P		**Pb**	**Pb**	**06 27 10.3**	**-1.5**
DHBB				*i* S		**Sg**	**Sn**	**06 27 54.4**	**+1.8**
HAJJ	**Hajjah**	**3.42**	**351**	*i* P		**Pn**	**Pn**	**06 27 33.2**	**0.0**
HAJJ				*i* S		**Sb**	**Sn**	**06 28 21.0**	**-1.2**
HAJJ					AML	AML	AML	06 28 35.1	
	comp=Z,2μm,0.6s								
FURI	**Furi**	**6.35**	**238**	P		**P**	**Pb**	**06 28 28.8**	**-1.6**
FURI				S		**Sb**	**Sb**	**06 29 50.5**	**+3.8**
WSAR	**Wadi Sarin**	**17.55**	**50**	P		**P**	**P**	**06 30 46.0**	**+0.4**
	comp=Z,0.1nm,0.3s,baz=254,slow=13,SNR=3.1								
WSAR					LR	LR		06 38 10.6	
	comp=Z,90nm,18.8s,baz=236,slow=39								
BRTR	**Keskin Array B**	**28.86**	**343**	P		**P**	**P**	**06 32 39.4**	**+0.9**
	comp=Z,1.1nm,0.9s,baz=141,slow=8.0,SNR=6.2								
MATP	**Matopo**	**35.98**	**206**	LR		LR		06 48 03.3	
	comp=Z,94nm,19.0s,baz=38,slow=36								
TORD	**Torodi Ar. Bea**	**41.38**	**276**	P		**P**	**P**	**06 34 23.8**	**-2.6**
	comp=Z,1.0nm,0.9s,baz=104,slow=7.6,SNR=6.3								
GERES	**GERESS Array B**	**44.32**	**331**	P		**P**	**P**	**06 34 49.5**	**-0.3**
	comp=Z,0.6nm,0.7s,baz=136,slow=6.5,SNR=5.5								
BVAR	**Borovoye Array**	**45.72**	**22**	P		**P**	**P**	**06 35 01.8**	**+1.1**
	comp=Z,0.7nm,0.7s,baz=243,slow=6.5,SNR=4.9								
MKAR	**Makanchi Array**	**47.01**	**35**	P		**P**	**P**	**06 35 10.7**	**-0.3**
	comp=Z,1.3nm,0.9s,baz=237,slow=6.5,SNR=5.8								
KURBB	**Kurchatov Arra**	**47.40**	**29**	P		**P**	**P**	**06 35 14.2**	**+0.3**
	comp=Z,0.6nm,0.8s,baz=230,slow=7.5,SNR=8.1								
ESDC	**Sonseca Array**	**50.34**	**312**	P		**P**	**P**	**06 35 36.9**	**+0.1**
	comp=Z,0.1nm,0.3s,baz=99,slow=6.6,SNR=4.1								
ZALV	**Zalesovo Beam**	**52.49**	**29**	P		**P**	**P**	**06 35 52.2**	**-0.4**
	comp=Z,0.4nm,0.3s,baz=251,slow=9.1,SNR=4.0								
CMAR	**Chiang Mai Arr**	**53.03**	**76**	P		**P**	**P**	**06 35 56.3**	**-0.9**
	comp=Z,1.2nm,0.3s,baz=281,slow=9.6,SNR=10.0								
SONM	**Songino Array**	**62.42**	**42**	P		**P**	**P**	**06 37 03.1**	**+0.2**
	comp=Z,1.0nm,0.7s,baz=220,slow=5.8,SNR=4.2								

*ISCJB **28** 06:29:30.7±0.8,8°.38N±0°.04×73°.19W±0°.06,h132km±6km, Error ellipse: s-maj=10.7km s-min=6.2km az=26.1*
*RSNC **28** 06:29:32.7±0.5,8°.30N×73°.24W,h126km±4km, ML2.3*
*FUNV **28** 06:29:32.5,8°.36N×73°.22W,h131km, MW2.5*

ISC 28 06:29:30.7±1.8,8°.36N±0°.05×73°.21W±0°.07,h133km±11km, n19,σ0s74/30,1D,Northern Colombia

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
OCAC	**Ocana**	**0.16**	**220**	*e*P		**Pn**	**Pn**	**06 29 49.4**	**+0.3**
OCAC				*e*S		**Sn**	**Sn**	**06 30 03.0**	**0.0**
OCAC				*i*				06 30 04.6	
	comp=Z,51nm,0.1s								
GRMC	**Gramalote, San**	**0.76**	**148**	*e*P		**Pn**	**Pn**	**06 29 51.7**	**-0.4**
GRMC				*e*S		**Sn**	**Sn**	**06 30 06.4**	**-1.9**
GRMC				*i*				06 30 07.3	
	comp=Z,105nm,0.2s								
CBRI	**Barrientos, No**	**0.76**	**147**	*e*P		**Pn**	**Pn**	**06 29 53.0**	**+0.8**
CBRI				*e*S		**Sn**	**Sn**	**06 30 08.7**	**+0.3**
CBRI				*i*				06 30 11.1	
	comp=Z,73nm,0.4s								
CAPV	**Capacho**	**1.02**	**119**	*i* P		**Pn**	**Pn**	**06 29 55.2**	**+0.9**
CAPV				*e*S		**Sn**	**Sn**	**06 30 12.6**	**+0.3**
PAMC	**Pamplona, Colo**	**1.14**	**153**	*e*P		**Pn**	**Pn**	**06 29 56.4**	**+0.6**
PAMC				*e*S		**Sn**	**Sn**	**06 30 14.7**	**-0.1**
PAMC				*i*				06 30 15.6	
	comp=Z,18nm,0.2s								
BRRC	**Barranca, Sant**	**1.34**	**202**	*e*P		**Pn**	**Pn**	**06 29 57.5**	**+0.2**
BRRC				*e*S		**Sn**	**Sn**	**06 30 17.0**	**-0.6**
BRRC				*i*				06 30 19.6	
	comp=Z,55nm,0.2s								
BARC	**Barichara**	**1.76**	**179**	*e*P		**Pn**	**Pn**	**06 30 02.7**	**+0.4**
BARC				*e*S		**Sn**	**Sn**	**06 30 26.2**	**-0.2**
BARC				*i*				06 30 29.6	
	comp=Z,37nm,0.5s								
VIGV	**El Vigia**	**1.89**	**75**	*e*P		**Pn**	**Pn**	**06 30 04.8**	**+1.2**
VIGV				*e*S		**Sn**	**Sn**	**06 30 27.8**	**-0.9**
VIRV	**Villa del Rosa**	**2.27**	**20**	*e*P		**Pn**	**Pn**	**06 30 08.5**	**+0.3**
VIRV				*e*S		**Sn**	**Sn**	**06 30 36.0**	**-1.1**
SOCV	**Socops**	**2.33**	**92**	*e*P		**Pn**	**Pn**	**06 30 09.5**	**+0.5**
SOCV				*e*S		**Sn**	**Sn**	**06 30 37.7**	**-0.8**
RUSC	**La Rusia**	**2.46**	**177**	*e*P		**Pn**	**Pn**	**06 30 11.8**	**+0.8**
RUSC				*i*				06 30 13.9	
	comp=Z,3.4nm,0.2s								
RUSC						*e*S	**Sn**	**06 30 41.3**	**-0.6**
QARV	**Quebrada Arrib**	**3.23**	**55**	*e*P		**Pn**	**Pn**	**06 30 21.5**	**+1.1**
CURV	**Curarigua**	**3.60**	**63**	*e*P		**Pn**	**Pn**	**06 30 25.8**	**+0.4**
SANV	**Sanarito**	**3.81**	**72**	*e*P		**Pn**	**Pn**	**06 30 26.3**	**+0.2**
ELOV	**Elorza**	**3.94**	**110**	*e*P		**Pn**	**Pn**	**06 30 29.9**	**+0.2**
TEPV	**Terepaima**	**4.28**	**68**	*e*P		**Pn**	**Pn**	**06 30 34.0**	**-0.2**
MONV	**Montecano**	**4.79**	**42**	*e*P		**Pn**	**Pn**	**06 30 42.0**	**+1.0**
MAPV	**Macapo**	**4.92**	**72**	*e*P		**Pn**	**Pn**	**06 30 43.2**	**+0.4**
BAUV	**El Baul**	**5.15**	**83**	*e*P		**Pn**	**Pn**	**06 30 45.8**	**-0.1**

*IDC **28** 06:31:00.2±0.7,18°.79N×120°.08E,h0km,mb4.2/12, mb1 4.3/13,mb1mx3.9/64,mbtmp4.2/13,ML3.2/1,MS3.1/3, Ms1 3.1/3,ms1mx2.6/48, Error ellipse: s-maj=36.2km s-min=15.1km az=65.0*
*MAN **28** 06:31:05,18°.76N×120°.07E,h14km,mb4.7,ML3.6,MS3.6*

ISC 28 06:31:00.7±2.2,18°.82N±0°.07×120°.0E±0°.1,h1km±14km, n22,σ0s95/24,mb4.3/12,2C-1D,Luzon

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
PIP	**Pasuquin**	**0.76**	**131**	*i* P		**Pn**	**Pn**	**06 31 18.7**	**+0.2**
PIP				*i* S		**Sn**	**Sn**	**06 31 31.0**	**+0.4**
SIPP	**Brgy, Tapao**	**0.99**	**155**	*e*P		**Pn**	**Pn**	**06 31 22.6**	**+0.9**
SIPP				*e*S		**Sg**	**Sg**	**06 31 30.4**	**-2.1**
ABRA	**Dolores**	**1.34**	**150**	*e*P		**Pn**	**Pn**	**06 31 26.8**	**+0.2**
ABRA				*e*S		**Sg**	**Sg**	**06 31 43.3**	**-0.5**
APYP	**Conner**	**1.51**	**129**	*e*P		**Pg**	**Pg**	**06 31 29.8**	**+0.2**
APYP				*e*S		**Sg**	**Sg**	**06 31 50.6**	**+1.5**
BCPH	**Baguio City Da**	**2.49**	**167**	*i* P		**Pn**	**Pn**	**06 31 44.4**	**+2.0**
BCPH				*i* S		**Sn**	**Sn**	**06 32 14.5**	**+0.9**
CAUP	**Cauayan**	**2.54**	**137**	*e*P		**Pb**	**Pb**	**06 31 47.0**	**-0.1**
DAV	**Davao City (W)**	**12.88**	**154**	LR		LR	LR	06 40 16.3	
	comp=Z,31nm,18.3s,baz=329,slow=43								
KSRS	**Korea Array**	**19.81**	**19**	P		**P**	**P**	**06 35 33.1**	**+0.5**
	0.1nm,0.3s,baz=204,slow=12,SNR=4.8								
CMAR	**Chiang Mai Arr**	**19.97**	**272**	LR		LR	LR	06 43 57.6	
	comp=Z,38nm,18.7s,baz=185,slow=39								
KLR	**Kul'dur**	**31.77**	**15**	LR		LR	LR	06 51 08.7	
	comp=Z,73nm,18.7s,baz=89,slow=38								
WRA	**Warramunga Arr**	**41.01**	**159**	P		**P**	**P**	**06 38 44.0**	**-1.6**
	1.9nm,0.8s,baz=339,slow=9.1,SNR=8.1								
MKAR	**Makanchi Array**	**41.60**	**321**	P		**P**	**P**	**06 38 50.7**	**+0.5**
	2.6nm,0.8s,baz=113,slow=9.3,SNR=10.0								
ASAR	**Alice Springs**	**44.35**	**162**	P		**P**	**P**	**06 39 12.3**	**-0.4**
	1.8nm,0.4s,baz=338,slow=6.8,SNR

CMAR	**Chiang Mai Arr**	**53.13**	**76**	P		**P**	**06 48 44.8**	**+0.3**
	2.0nm,0.3s,baz=273,slow=8.0,SNR=7.8							
NOA	**NORSAR Array B**	**54.55**	**341**	LR		LR	07 13 10.7	
	comp=Z,16nm,18.6s,baz=275,slow=37							
SONM	**Songino Array**	**62.67**	**42**	P		**P**	**06 49 52.0**	**+0.9**
	1.4nm,0.9s,baz=253,slow=6.5,SNR=5.7							

JMA 28 06:48:34.7±0.3, 36.38N×143.94E, h52km, M3.7, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
BSO1	**Boso 1**	**2.97**	**235**	P		Pn	06 49 20.6	+1.8
JFT	**Otama**	**3.10**	**293**	*e*S		Sn	06 49 58.9	+1.9
JMK	**Ichinoseki**	**3.35**	**321**	P		Pn	06 49 26.3	+1.7
JMK				*e*S		Sn	06 50 04.7	+1.6
JRY	**Ryogami san**	**4.09**	**266**	P		Pn	06 49 36.0	+1.3
JRY				*e*S		Sn	06 50 22.1	+0.8
JOD2	**Odawara 2**	**4.10**	**256**	*e*S		Sn	06 50 23.3	+1.8
JCH	**Churui**	**6.24**	**356**	P		Pn	06 50 02.6	-1.6
JCH				*e*S		Sn	06 51 09.4	-4.7
JTKR	**Abashiri--Toko**	**7.58**	**360**	P		Pn	06 50 21.8	-0.7
JTKR				*e*S		Sn	06 51 42.5	-4.5

*ISCJB **28** 06:52:06.8±1.0, 11.°93N±0.°08×44.°10E±0.°07, h4km, Error ellipse: s-maj=14.2km s-min=4.5km az=137.6*
*DHMR **28** 06:52:07.7±0.6, 12.°09N×44.°03E, h3km±33km, ML4.3*
*ARO **28** 06:52:09.7, 12.°N±6.°×4.°4E±.°, h11km±11km, ML3.6*
ISC 28 06:52:07.0±1.1, 12.°11N±0.°07×44.°01E±0.°07, h4km, n11, σ0.63/15, Western Arabian Peninsula

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
OBO	**Obock**	**0.71**	**260**	*e*P		**Pb**	**06 52 22.3**	**+0.3**
MCAD	**Moucha**	**0.87**	**245**	*e*P		**Pb**	**06 52 24.8**	**+0.2**
ATA	**Atar**	**1.02**	**231**	*e*P		**Pb**	**06 52 26.9**	**-0.3**
TDD	**Tadjoura Ara**	**1.12**	**255**	*e*P		**Pb**	**06 52 28.8**	**-0.2**
ADEN	**Aden**	**1.16**	**55**	*i* P		**Pg**	**06 52 29.3**	**0.0**
ADEN				*i* S		**Sb**	**06 52 45.7**	**+0.7**
ADEN				AML		AML	06 52 56.0	
	comp=E,8μm,0.5s							
ATD	**Arta Tunnel**	**1.28**	**243**	*e*P		**Pg**	**06 52 31.0**	**-0.5**
ATD				*e*S		**Sn**	**06 52 48.6**	**-0.7**
SGH	**Sud-Ghoubbet**	**1.51**	**244**	*e*P		**Pn**	**06 52 35.1**	**+0.2**
MAOD	**Malaho**	**1.75**	**270**	*e*P		**Pn**	**06 52 38.7**	**+0.6**
GBR	**Grand-Bara**	**1.79**	**238**	*e*P		**Pn**	**06 52 39.1**	**+0.4**
UDYN	**Al 'Udayn**	**1.85**	**359**	*i* P		**Pb**	**06 52 41.5**	**0.0**
UDYN				*i* S		**Sg**	**06 53 07.6**	**+1.1**
UDYN				AML		AML	06 53 09.7	
	comp=Z,3μm,0.3s							
DHBB	**Dhamar BB**	**2.48**	**9**	*i* P		**Pb**	**06 52 51.3**	**-1.0**
DHBB				*i* S		**Sg**	**06 53 25.9**	**-0.8**

*NNC **28** 06:52:36.4±2.1, 45.°92N×85.°16E, h0km, mb3.7, mpv3.3, Error ellipse: s-maj=17.7km s-min=12.9km az=119.0*
*SOME **28** 06:52:36.2, 45.°57N×85.°10E, h5km*
ISC 28 06:52:42.4±1.9, 45.°96N±0.°06×84.°72E±0.°09, h10km, n14, σ3.54/23, 3C-3D, Northern Xinjiang

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
ZSN	**Zaisan**	**1.51**	**352**	*e*P		**Pg**	**06 53 12.0**	**+0.6**
	34nm,0.5s							
ZSN				*e*S		**Sg**	**06 53 37.0**	**+5.9**
	76nm,0.3s							
MK31	**Makanchi Array**	**1.88**	**297**		⇑Pn	**Pn**	**06 53 14.0**	**-0.6**
	3.4nm,0.3s,baz=111,slow=14,SNR=131							
MK31					⇑Lg	Lg	06 53 44.9	
	157nm,0.5s,baz=113,slow=29							
MAKZ	**Makanchi**	**2.08**	**295**		⇓Pn	**Pn**	**06 53 16.7**	**-0.7**
	21nm,0.8s							
MAKZ					⇑Lg	Lg	06 53 52.2	
	212nm,0.8s							
KAPS	**Kapalarasan**	**3.82**	**262**	*e*P		**Pb**	**06 53 49.8**	**-0.1**
	6.5nm,0.5s							
KAPS				*e*S		**Sb**	**06 54 42.9**	**+6.7**
	22nm,0.4s							
DJR	**Jarkent**	**3.84**	**247**	*e*P		**Pb**	**06 53 49.2**	**-1.2**
	20nm,0.6s							
DJR				*e*S		**Sb**	**06 54 41.7**	**+4.7**
	19nm,0.5s							
KTMS	**Ketmen**	**4.00**	**233**	*e*P		**Pb**	**06 53 49.8**	**-3.2**
	11nm,0.5s							
KTMS				*e*S		**Sb**	**06 54 43.6**	**+2.2**
	37nm,0.4s							
MNBS	**Baschi**	**4.85**	**250**	*e*P		**Pb**	**06 54 09.2**	**+1.6**
	4.9nm,0.5s							
MNBS				*e*S		**Sg**	**06 55 15.5**	**-2.7**
	24nm,0.6s							
UZB	**Uzynbulak**	**4.94**	**237**	*e*P		**Pb**	**06 54 08.4**	**-0.7**
	3.2nm,0.3s							
UZB				*e*S		**Sb**	**06 55 14.2**	**+5.5**
	12nm,0.5s							
KPKS	**Kokpek**	**4.97**	**242**	*e*P		**Pb**	**06 54 09.2**	**-0.3**
	14nm,0.3s							
KPKS				*e*S		**Sb**	**06 55 16.3**	**+7.0**
	48nm,0.5s							
ARXS	**Arharly**	**5.18**	**253**	*e*P		**Pb**	**06 54 15.3**	**+2.2**
	4.1nm,0.3s							
ARXS				*e*S		**Sg**	**06 55 25.9**	**-2.8**
	21nm,0.4s							
KURS	**Kuram**	**5.28**	**244**	*e*P		**Pb**	**06 54 11.3**	**-3.4**
	11nm,1.0s							
KURS				*e*S		**Sb**	**06 55 19.4**	**+1.3**
	6.0nm,0.8s							
SEM	**Semipalatinsk**	**5.36**	**328**	*e*P		Pg	06 54 18.7	-6.4
	3.9nm,0.1s							
SEM				*e*S		**Sg**	**06 55 32.3**	**-2.3**
	22nm,0.5s							
KURK	**Kurchatov**	**6.26**	**322**		⇓Pn	**Pn**	**06 54 11.7**	**-3.1**
	2.7nm,0.7s							
KURK					⇓Lg	Lg	06 56 05.0	
	61nm,0.7s							
TNSS	**Tian-Shan**	**6.27**	**245**	*e*P		**Pb**	**06 54 33.3**	**+1.3**
	4.2nm,1.3s							
TNSS				*e*S		Sb	06 55 56.9	+10
	14nm,0.8s							

DHMR 28 07:02:02.4±0.7, 12.°11N×44.°11E, h3km±43km, ML3.7, Western Arabian Peninsula

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
ADEN	**Aden**	**1.08**	**52**	*i* P		Pg	07 02 22.2	-1.0
ADEN				*i* S		Sb	07 02 38.2	0.0
ADEN				AML		AML	07 02 49.1	
	comp=E,2μm,0.5s							
UDYN	**Al 'Udayn**	**1.85**	**356**	*i* P		Pb	07 02 36.1	-0.9
UDYN				*i* S		Sg	07 03 01.7	-0.2
UDYN				AML		AML	07 03 05.0	
	comp=E,819nm,0.5s							
DHBB	**Dhamar BB**	**2.46**	**6**	*i* S		Sb	07 03 19.6	+1.3

*ISCJB **28** 07:13:36.9±1.0, 11.°93N±0.°09×44.°10E±0.°08, h4km, Error ellipse: s-maj=15.8km s-min=5.0km az=140.6*
*ARO **28** 07:13:39.5, 12.°N±3.°×4.°4E±.°, h15km±5km, ML3.3*
ISC 28 07:13:36.3±1.2, 12.°05N±0.°08×44.°02E±0.°08, h4km, n9, σ0.74/12, Western Arabian Peninsula

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
OBO	**Obock**	**0.72**	**265**	*e*P		**Pn**	**07 13 52.5**	**-0.8**
MCAD	**Moucha**	**0.85**	**248**	*e*P		**Pn**	**07 13 54.5**	**-0.6**
ATA	**Atar**	**0.99**	**234**	*e*P		**Pn**	**07 13 56.9**	**-0.1**
TDD	**Tadjoura Ara**	**1.12**	**258**	*e*P		**Pn**	**07 13 59.1**	**+0.4**
ADEN	**Aden**	**1.19**	**52**	*i* P		**Pn**	**07 13 59.8**	**+0.2**
ADEN				*e*			07 13 59.9	
	baz=181,slow=4.1							
ADEN				*i* S		**Sn**	**07 14 16.3**	**+0.1**
ADEN				AML		AML	07 14 26.3	
	comp=E,2μm,0.5s							
ATD	**Arta Tunnel**	**1.26**	**246**	*e*P		**Pb**	**07 14 01.1**	**+0.4**
ATD				*e*S		**Sn**	**07 14 18.7**	**+0.5**
SGH	**Sud-Ghoubbet**	**1.49**	**246**	*e*P		**Pg**	**07 14 04.9**	**0.0**
GBR	**Grand-Bara**	**1.77**	**240**	*e*P		**Pb**	**07 14 08.6**	**-0.7**
UDYN	**Al 'Udayn**	**1.91**	**358**	*i* P		**Pb**	**07 14 10.8**	**-1.0**
UDYN				*i* S		**Sg**	**07 14 39.0**	**+1.3**

*IDC **28** 07:22:06.9±0.5, 18.°76N×120.°04E, h0km, mb4.5/32, mb1 4.5/35, mb1mx4.4/69, mbtmp4.4/35, ML3.8/3, MS3.9/18, Ms1 4.0/18, ms1mx3.7/50, Error ellipse: s-maj=17.1km s-min=11.0km az=72.0*
*MAN **28** 07:22:09, 18.°75N×119.°87E, h19km, mb5.0, ML3.9, MS4.0*
*BKK **28** 07:22:11.0±3.9, 20.°N±24.°×12.°0E±3.°5, h10km, M4.2/12, mB4.9/5, mb4.2/12, Mw(mB)4.2/5*
*ISCJB **28** 07:22:11.9±0.5, 18.°82N±0.°03×120.°04E±0.°03, h46km±6km, mb4.6/79, MS4.1/27, Error ellipse: s-maj=5.2km s-min=4.7km az=146.0*
*MOS **28** 07:22:11.5±0.9, 18.°74N×119.°99E, h46km, mb5.1/24, MS4.2/5, Error ellipse: s-maj=10.2km s-min=5.6km az=108.4*
*NEIC **28** 07:22:13.4±1.2, 18.°76N×120.°06E, h46km±11km, mb4.7/24, Error ellipse: s-maj=5.7km s-min=4.0km az=86.0*
ISC 28 07:22:11.4±0.6, 18.°77N±0.°04×120.°11E±0.°04, h27km±4km, n170, σ1.81/192, mb4.7/79, MS4.1/28, 17C-9D, Luzon

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
PIP	**Pasuquin**	**0.66**	**133**	⇑*i* P		**Pb**	**07 22 24.8**	**+0.4**
PIP				*e*S		**Sn**	**07 22 37.9**	**+3.4**
SIPP	**Brgy, Tapao**	**0.91**	**158**	⇓*e* P		**Pb**	**07 22 28.0**	**-0.6**
SIPP				*i* S		Sn	07 22 48.0	+7.3
ABRA	**Dolores**	**1.26**	**153**	*e*P		**Pn**	**07 22 33.3**	**+0.1**
ABRA				*e*S		**Sb**	**07 22 52.0**	**+1.8**
APYP	**Conner**	**1.41**	**130**	*e*P		**Pn**	**07 22 36.0**	**+0.7**
APYP				*e*S		**Sb**	**07 22 57.1**	**+2.4**
SGCP	**Mt. Cagua**	**1.91**	**106**	*e*P		**Pb**	**07 22 45.2**	**-0.5**
SGCP				*e*S		**Sb**	**07 23 11.3**	**+2.1**
CVP	**Callao Caves**	**1.95**	**123**	⇓*e*P		**Pn**	**07 22 44.7**	**+2.0**
BOLP	**Bolinao**	**2.39**	**184**	*e*P		**Pn**	**07 22 47.2**	**-1.6**
BCPH	**Baguio City Da**	**2.42**	**169**	⇑*i* P		**Pn**	**07 22 48.1**	**-1.3**
BCPH				*i* S		**Sb**	**07 23 21.7**	**-2.2**
CAUP	**Cauayan**	**2.44**	**138**	*e*P		**Pb**	**07 22 53.5**	**-1.2**
PCPH	**Palayan**	**3.33**	**163**	⇑*e*P		**Pn**	**07 23 04.0**	**+2.3**
QZH	**Quanzhou**	**6.30**	**347**	P		Pn	07 23 35.3	-7.2
QZH				S		Sn	07 24 43.0	-11
QZH				LR		LR		
	comp=N,3μm,11.4s							
QZH				LR		LR		
	comp=E,2μm,11.4s							
QZH				LR		LR		
	comp=Z,4μm,12.4s							
GZH	**Guangzhou**	**7.64**	**305**	Pn		Pn	07 23 55.8	-5.2
GZH				Sn		Sn	07 25 15.8	-11
QIZ	**Qiongzhong**	**9.72**	**273**	P		**Pn**	**07 24 31.5**	**+1.9**
QIZ				S		**Sn**	**07 26 20.3**	**+2.4**
QIZ				LR		LR		
	comp=N,390nm,10.6s							
QIZ				LR		LR		
	comp=E,490nm,11.4s							
DAV	**Davao City (W)**	**12.79**	**155**	LR		LR	07 31 04.0	
	comp=E,652nm,19.1s,baz=322,slow=42							
WHN	**Wuhan**	**12.83**	**337**	P		**P**	**07 25 22.8**	**+0.1**
WHN				S		Sn	07 27 52.0	+18
WHN				LR		LR		
	comp=N,3μm,12.0s							
WHN				LR		LR		
	comp=E,2μm,12.6s							
WHN				LR		LR		
	comp=Z,4μm,10.6s							
NJ2	**Nanjing**	**13.27**	**355**	*e*P		**Pn**	**07 25 18.3**	**+0.2**
NJ2				S		**Sn**	**07 27 41.8**	**-2.9**
NJ2				LR		LR		
	comp=N,1μm,13.0s							
NJ2				LR		LR		
	comp=E,1μm,16.3s							
NJ2				LR		LR		
	comp=Z,1μm,16.3s							
GYA	**Guiyang**	**14.57**	**304**	P		**Pn**	**07 25 37.8**	**+1.8**
GYA				pP		pP	07 25 46.5	
GYA				sP		P	07 25 52.0	+10
GYA				S		**Sn**	**07 28 19.5**	**+2.7**
GYA				sS		S	07 28 37.3	+1.7
GYA				ScS		ScS	07 30 50.5	-429
GYA				pmax		pmax		
	comp=Z,20nm,0.8s							
GYA				pmax		pmax		
	comp=Z,120nm,4.7s							
GYA				LR		LR		
	comp=N,3μm,12.6s							
GYA				LR		LR		
	comp=E,2μm,13.9s							
GYA				LR		LR		
	comp=Z,4μm,12.2s							
JNU	**Nakatsue**	**17.24**	**32**	P		**Pn**	**07 26 10.9**	**+0.5**
	comp=Z,0.1nm,0.3s,baz=178,slow=2.4,SNR=5.0							
KMI	**Kunming**	**17.30**	**294**	P		**P**	**07 26 13.0**	**+0.4**
KMI				pP		sP	07 26 22.0	-1.4
KMI				PP		**PnPn**	**07 26 27.8**	**+6.2**
KMI				sP		pP	07 26 28.5	+8.6
KMI				S		**Sn**	**07 29 22.8**	**-0.4**
KMI				sS		sS	07 29 37.3	-5.8
KMI				SS		**SnSn**	**07 29 45.3**	**+8.6**
KMI				pmax		pmax		
	comp=Z,15nm,0.7s							
KMI				pmax		pmax		
	comp=Z,290nm,5.3s							
KMI				LR		LR		
	comp=N,2μm,12.7s							
KMI				LR		LR		
	comp=E,1μm,10.9s							
KMI				LR		LR		
	comp=Z,1μm,15.7s							
TIA	**Tai'an**	**17.57**	**352**	⇑P		**Pn**	**07 26 14.5**	**+0.1**
TIA				S		S	07 29 53.3	+17
TIA				pmax		pmax		
	comp=Z,30nm,1.4s							
TIA				pmax		pmax		
	comp=Z,410nm,9.0s							
TIA				LR		LR		
	comp=N,780nm,13.0s							
TIA				LR		LR		
	comp=E,1μm,13.0s							
TIA				LR		LR		
	comp=Z,920nm,15.0s							
LOEI	**Loei**	**17.95**	**269**	P		Pn	07 26 13.7	-5.6
	comp=Z,16nm,1.0s,comp=Z,653nm							
SBUM	**Sibu**	**17.97**	**206**	*e*Pn		**P**	**07 26 20.8**	**+1.0**
	comp=Z,20nm,1.1s							
CHBT	**CHBT**	**18.12**	**253**	P		**P**	**07 26 22.2**	**+0.7**
	comp=Z,42nm,1.7s,comp=Z,3μm							
XAN	**Xi'an**	**18.19**	**329**	P		**Pn**	**07 26 19.5**	**-2.5**
XAN				pP		sP	07 26 30.5	-2.5
XAN				sP		pP	07 26 35.8	+6.3
XAN				S		Sn	07 29 35.8	-8.5
XAN				pmax		pmax		
	comp=Z,14nm,1.8s							
XAN				pmax		pmax		
	comp=Z,200nm,6.1s							
XAN				LR		LR		
	comp=N,810nm,13.2s							
XAN				LR		LR		
	comp=E,980nm,12.1s							
XAN				LR		LR		
	comp=Z,1μm,12.1s							
PBKT	**Sadao Pong**	**18.37**	**266**	P		Pn	07 26 33.1	+8.8
NAYO	**Nakonayok**	**18.54**	**259**	P		**Pn**	**07 26 27.8**	**+1.3**
	comp=Z,13nm,1.9s,comp=Z,603nm							
UTTA	**Uttaradit**	**18.60**	**270**	P		Pn	07 26 37.2	+10
CD2	**Chengdu**	**19.11**	**312**	P		**P**	**07 26 31.0**	**-1.3**
CD2				sP		sP	07 26 47.3	+4.2
CD2				PP		**PnPn**	**07 26 51.0**	**+4.8**
CD2				S		**Sn**	**07 30 04.5**	**-2.1**
CD2				sS		sS	07 30 24.0	+4.5
CD2				SS		**SnSn**	**07 30 29.8**	**+8.9**
CD2				pmax		pmax		
	comp=Z,40nm,1.0s							
CD2				pmax		pmax		
	comp=Z,330nm,11.6s							
CD2				LR		LR		
	comp=N,2μm,12.0s							
CD2				LR		LR		
	comp=Z,2μm,12.0s							
KSM	**Kuching**	**19.70**	**210**	*e*P		**P**	**07 26 37.5**	**-1.3**
	comp=Z,41nm,1.3s							
KSAR	**Wonju Array Be**	**19.81**	**19**	P		**P**	**07 26 40.4**	**+0.6**
KSAR	**Wonju Array Be**	**19.81**	**19**	P		**P**	**07 26 40.4**	**+0.6**
KSRS	**Korea Array**	**19.83**	**19**	P		**P**	**07 26 40.4**	**+0.3**
	comp=Z,0.2nm,0.3s,baz=203,slow=12,SNR=8.5							
KSRS				LR		LR	07 34 38.3	
	comp=Z,111nm,18.8s,baz=206,slow=38							
KS01	**Wonju Array Si**	**19.84**	**19**	*e*P		**P**	**07 26 40.3**	**+0.1**
TIY	**Taiyuan**	**20.03**	**342**	*e*P		**P**	**07 26 42.3**	**0.0**
TIY				sP		sP	07 27 13.5	+20
TIY				S		**S**	**07 30 20.5**	**-5.7**
TIY				SS		SnSn	07 31 20.8	+37
TIY				pmax		pmax		
	comp=Z,300nm,9.0s							
TIY				LR		LR		
	comp=N,1μm,9.0s							
TIY				LR		LR		
	comp=E,420nm,9.5s							
TIY				LR		LR		
	comp=Z,760nm,9.4s							
CMMT	**Chiang Mai**	**20.03**	**274**	P		**P**	**07 26 42.4**	**-0.1**
	comp=Z,8.7nm,2.6s,comp=Z,439nm							
CM01	**Chiang Mai Arr**	**20.05**	**272**	*e*P		**Pn**	**07 26 44.8**	**+0.3**
CMAR	**Chiang Mai Arr**	**20.06**	**273**	P		**P**	**07 26 41.9**	**-0.9**
	comp=Z,0.5nm,0.3s,baz=79,slow=9.3,SNR=13							
CMAR				LR		LR	07 34 28.0	
	comp=Z,251nm,18.7s,baz=106,slow=37							
DL2	**Dalian**	**20.11**	**3**	P		**P**	**07 26 42.5**	**-0.5**
DL2				S		**S**	**07 30 25.0**	**-2.5**
DL2				pmax		pmax		
	comp=Z,51nm,1.5s							
DL2				pmax		pmax		
	comp=Z,290nm,5.1s							
DL2				LR		LR		
	comp=N,850nm,13.8s							
DL2				LR		LR		
	comp=E,630nm,13.6s							
DL2				LR		LR		
	comp=Z,650nm,15.1s							
PHET	**Kaeng Krachan**	**20.54**	**257**	P		Pn	07 26 51.5	+1.3
	comp=Z,4.5nm,1.2s							
KHLT	**Khaolaem Dam**	**20.97**	**262**	P		**P**	**07 26 53.1**	**+0.4**
	comp=Z,6.9nm,2.1s,comp=Z,184nm							
BJT	**Baijiatuao**	**21.44**	**352**	*e*P		**P**	**07 26 57.9**	**+0.4**
BJT				pmax		pmax		
	comp=Z,78nm,1.3s							
BJT	**Baijiatuao**	**21.44**	**352**	*e*P		**P**	**07 26 57.9**	**+0.4**
	comp=Z,78nm,1.3s							
BJI	**Beijing**	**21.46**	**352**	P		**P**	**07 26 57.5**	**-0.2**
BJI				pP		**sP**	**07 27 06.8**	**-1.8**
BJI				sP		pP	07 27 11.5	+6.4
BJI				S		**S**	**07 30 57.0**	**+2.6**
BJI				sS		sS	07 31 14.0	+7.8
BJI				pmax		pmax		
	comp=Z,53nm,1.4s							
BJI				pmax		pmax		
	comp=Z,440nm,3.0s							
BJI				LR		LR		
	comp=N,560nm,14.0s							
BJI				LR		LR		
	comp=E,460nm,11.9s							
BJI				LR		LR		
	comp=Z,240nm,14.7s							
LZH	**Lanzhou**	**22.43**	**324**	⇑P		**P**	**07 27 08.0**	**-0.4**
LZH				pP		sP	07 27 18.8	-0.5
LZH				sP		pP	07 27 23.0	+7.2
LZH				PP		**PnPn**	**07 27 36.0**	**+4.2**
LZH				*e*S		S	07 31 04.0	-9.4
LZH				sS		sS	07 31 20.0	-5.8
LZH				SS		**SnSn**	**07 31 51.0**	**+8.4**
LZH				pmax		pmax		
	comp=Z,100nm,1.3s							
LZH				pmax		pmax		
	comp=Z,370nm,4.0s							
LZH				LR		LR		
	comp=N,1μm,10.9s							
LZH				LR		LR		
	comp=E,1μm,13.2s							
LZH				LR		LR		
	comp=Z,1μm,15.2s							
TRTT	**Trang**	**22.62**	**244**	P		**P**	**07 27 13.0**	**+2.7**
	comp=Z,34nm,1.1s							
SURT	**Suratani**	**22.85**	**248**	P		**P**	**07 27 12.4**	**-0.4**
HHC	**Hu-ho-hao-te**	**23.19**	**343**	*e*P		**P**	**07 27 19.0**	**+2.8**
HHC				PP		PnPn	07 27 58.0	+16
HHC				S		Sn	07 31 35.5	-9.2
HHC				pmax		pmax		
	comp=Z,27nm,0.9s							
HHC				pmax		pmax		
	comp=Z,240nm,8.9s							
HHC				LR		LR		
	comp=N,770nm,13.9s							
HHC				LR		LR		
	comp=E,530nm,14.9s							
HHC				LR		LR		
	comp=Z,540nm,15.2s							
BTO	**Baotou**	**23.42**	**340**	*e*P		**P**	**07 27 17.5**	**-1.0**
IPM	**Ipoh**	**23.43**	**235**	*e*P		**P**	**07 27 17.2**	**-1.5**
	comp=Z,16nm,0.9s							
KAPI	**Kappang**	**23.64**	**181**	P		**P**	**07 27 20.7**	**+0.1**
	comp=Z,11nm,0.9s,baz=51,slow=5.9,SNR=5.6							
KAPI				LR		LR	07 38 05.0	
	comp=Z,174nm,18.1s,baz=32,slow=41							
MAJO	**Matsushiro**	**23.81**	**38**	⇓*e*P		**P**	**07 27 22.2**	**+0.1**
MAJO				pmax		pmax		
	comp=Z,73nm,1.3s							
MJAR	**Matsushiro Arr**	**23.81**	**38**	P		**P**	**07 27 21.9**	**-0.3**
	comp=Z,4.7nm,0.9s,baz=229,slow=8.6,SNR=6.4							
GUMO	**Guam**	**24.32**	**99**	LR		LR	07 35 46.0	
	comp=Z,262nm,19.7s,baz=276,slow=34							
MSHR	**Mys Shultsa**	**25.52**	**19**	⇓*e*P		**P**	**07 27 40.0**	**+2.4**
MDJ	**Mudanjiang**	**26.96**	**15**	P		**P**	**07 27 51.0**	**+0.3**
MDJ				pP		sP	07 28 02.0	0.0
MDJ				sP		pP	07 28 05.8	+7.2
MDJ				PcP		**PcP**	**07 31 11.5**	**-0.6**
MDJ				S		**S**	**07 32 27.0**	**+0.8**
MDJ				ScP		**ScP**	**07 34 48.3**	**-2.3**
MDJ				PcS		**PcS**	**07 34 52.8**	**-0.6**
MDJ	**Mudanjiang**	**26.96**	**15**	ScS		ScS	07 38 39.8	-1.6
MDJ				pmax		pmax		
	comp=Z,11nm,1.1s							
MDJ				pmax		pmax		
	comp=Z,170nm,5.5s							
MDJ				LR		LR		
	comp=N,250nm,11.2s							
MDJ				LR		LR		
	comp=E,410nm,12.6s							
MDJ				LR		LR		
	comp=Z,450nm,12.6s							
GTA	**Gaotai**	**27.04**	**324**	⇑P		**P**	**07 27 51.0**	**-0.6**
GTA				pP		sP	07 28 02.0	-0.9
GTA				sP		pP	07 28 06.0	+6.4
GTA				PcP		**PcP**	**07 31 13.0**	**+0.5**
GTA				S		**S**	**07 32 25.5**	**-2.3**
GTA				sS		sS	07 32 47.3	+6.3
GTA				SS		SnSn	07 33 45.5	+10
GTA				pmax		pmax		
	comp=Z,9.0nm,1.1s							
GTA				pmax		pmax		
	comp=Z,120nm,5.7s							
GTA				LR		LR		
	comp=N,570nm,11.9s							
GTA				LR		LR		
	comp=E,620nm,12.8s							
GTA				LR		LR		
	comp=Z,760nm,12.8s							
USRK	**Ussuriysk Ar.**	**27.24**	**19**	P		**P**	**07 27 54.2**	**+1.1**
	comp=Z,2.2nm,0.7s,baz=207,slow=8.1,SNR=4.3							
ERM	**Erimo**	**30.34**	**35**	⇓*e*P		**P**	**07 28 23.0**	**+2.2**
ERM				pmax		pmax		
	comp=Z,37nm,1.2s							
ULN	**Ulaanbaatar**	**30.91**	**343**	⇓*e*P		**P**	**07 28 25.4**	**-0.5**
ULN				pmax		pmax		
	comp=Z,15nm,1.7s							
SONM	**Songino Array**	**31.07**	**342**	P		**P**	**07 28 27.0**	**-0.3**
	comp=Z,0.9nm,0.4s,baz=162,slow=10,SNR=8.2							
SONM				LR		LR	07 40 45.8	
	comp=Z,247nm,19.9s,baz=141,slow=36			

TLY					MLR	MLR			
	comp=Z,232nm,12.0s								
WMQ	**Urumqi**	**36.90**	**320**		P	**P**	**07 29 17.5**	**-0.4**
WMQ					pP	sP	07 29 31.3	+2.0
WMQ					sP	pP	07 29 36.5	+10
WMQ					S	**S**	**07 35 03.5**	**+2.3**
WMQ					SS	**SnSn**	**07 37 30.3**	**-4.3**
WMQ					pmax	pmax			
	comp=Z,7.0nm,0.6s								
WMQ					pmax	pmax			
	comp=Z,110nm,4.0s								
WMQ					LR	LR			
	comp=N,320nm,13.2s								
WMQ					LR	LR			
	comp=E,210nm,12.0s								
WMQ					LR	LR			
	comp=Z,150nm,21.6s								
FITZ	**Fitzroy Crossi**	**37.05**	**171**		P	**P**	**07 29 18.3**	**-1.0**
	comp=Z,4.5nm,0.7s,baz=328,slow=3.3,SNR=6.4								
FITZ	**Fitzroy Crossi**	**37.05**	**171**	*eP*		**P**	**07 29 18.9**	**-0.4**
	comp=Z,17nm,1.1s								
NKL	**Nikolayevsk**	**37.85**	**20**	*eP*		**P**	**07 29 25.2**	**-0.5**
BOD	**Bodaibo**	**39.25**	**355**	*eP*		**P**	**07 29 35.6**	**-1.8**
BOD					pmax	pmax			
	comp=Z,4.0nm,1.7s								
WRAB	**Tennant Creek**	**40.92**	**159**	*c iP*		**P**	**07 29 50.3**	**-1.4**
WRAB					pmax	pmax			
	comp=Z,70nm,1.2s								
WRAB	**Tennant Creek**	**40.92**	**159**	*eP*		**P**	**07 29 51.1**	**-0.6**
	comp=Z,30nm,1.2s								
WRA	**Warramunga Arr**	**40.93**	**159**	P		**P**	**07 29 50.6**	**-1.2**
	comp=Z,15nm,0.9s,baz=340,slow=9.1,SNR=41								
WB2	**Warramunga Arr**	**40.93**	**159**	*eP*		**P**	**07 29 51.1**	**-0.7**
	comp=Z,26nm,1.0s								
MK01	**Makanchi Array**	**41.68**	**321**	*eP*		**P**	**07 29 57.1**	**-0.6**
MK31	**Makanchi Array**	**41.70**	**321**	*eP*		**P**	**07 29 58.1**	**+0.2**
MK31	**Makanchi Array**	**41.70**	**321**	*eP*		**P**	**07 29 58.1**	**+0.2**
MKAR	**Makanchi Array**	**41.70**	**321**	P		**P**	**07 29 57.7**	**-0.2**
	comp=Z,9.8nm,0.9s,baz=117,slow=8.9,SNR=39								
MKAR					PcP	**PcP**	**07 31 53.7**	**-0.5**
	comp=Z,2.4nm,0.8s,baz=101,slow=6.3,SNR=3.5								
MKAR					LR	LR	07 46 20.5		
	comp=Z,147nm,18.9s,baz=116,slow=35								
MKAR	**Makanchi Array**	**41.70**	**321**	*eP*		**P**	**07 29 58.1**	**+0.2**
MKAR							07 31 53.7		
MKAR	**Makanchi Array**	**41.70**	**321**	*eP*		**P**	**07 29 58.1**	**+0.2**
MKAR					PcP	**PcP**	**07 31 53.7**	**-0.5**
MAKZ	**Makanchi**	**41.89**	**321**	*eP*		**P**	**07 29 59.6**	**+0.2**
MAKZ					pmax	pmax			
	comp=Z,16nm,1.1s								
MAKZ	**Makanchi**	**41.89**	**321**	*eP*		**P**	**07 29 59.6**	**+0.2**
	comp=Z,16nm,1.1s								
SKR	**Severo-Kuril's**	**42.74**	**33**	*eP*		**P**	**07 30 06.1**	**-0.2**
KSH	**Kashi**	**43.22**	**308**	P		**P**	**07 30 12.5**	**+2.0**
KSH				*es*	P	sP	07 30 30.8	+8.8
KSH				*eP*	P	**PcP**	**07 31 55.8**	**-3.8**
KSH				*eP*	cP	PP	07 32 01.0	+10
KSH				S		**S**	**07 36 37.0**	**+1.1**
KSH				pmax	pmax				
	comp=Z,13nm,1.0s								
KSH				pmax	pmax				
	comp=Z,110nm,4.4s								
KSH				LR	LR				
	comp=N,490nm,14.1s								
KSH				LR	LR				
	comp=E,320nm,13.5s								
KSH				LR	LR				
	comp=Z,360nm,15.5s								
YAK	**Yakutsk**	**43.73**	**7**	LR		LR	07 49 29.4		
	comp=Z,115nm,19.3s,baz=204,slow=38								
YAK	**Yakutsk**	**43.73**	**7**	*eP*		**P**	**07 30 14.0**	**-0.1**
YAK				pmax	pmax				
	comp=Z,8.0nm,0.8s								
AS31	**Alice Springs**	**44.28**	**162**	*eP*		**P**	**07 30 18.8**	**-0.1**
	comp=Z,5.1nm,0.4s								
ASAR	**Alice Springs**	**44.28**	**162**	P		**P**	**07 30 18.8**	**-0.2**
	comp=Z,8.5nm,0.4s,baz=339,slow=6.7,SNR=108								
AS01	**Alice Springs**	**44.29**	**162**	*eP*		**P**	**07 30 18.3**	**-0.8**
ZALV	**Zalesovo Beam**	**44.34**	**331**	P		**P**	**07 30 18.1**	**-1.0**
	comp=Z,2.1nm,0.6s,baz=106,slow=6.9,SNR=13								
ZALV					LR	LR	07 49 31.5		
	comp=Z,188nm,19.5s,baz=124,slow=37								
TKM2	**Tokmak 2**	**44.49**	**313**	*eP*		**P**	**07 30 20.0**	**-0.8**
TKM2					pmax	pmax			
	comp=Z,4.0nm,0.7s								
TKM2	**Tokmak 2**	**44.49**	**313**	*eP*		**P**	**07 30 20.0**	**-0.8**
	comp=Z,3.9nm,0.7s								
PETK	**Petropavlovsk-**	**44.94**	**31**	P		**P**	**07 30 24.1**	**+0.2**
	comp=Z,9.0nm,1.0s,baz=200,slow=3.0,SNR=5.6								
AAK	**Ala-Archa**	**45.17**	**312**	P		**P**	**07 30 26.2**	**0.0**
	comp=Z,0.8nm,0.3s,baz=82,slow=12,SNR=6.0								
AAK	**Ala-Archa**	**45.17**	**312**	*deP*		**P**	**07 30 25.9**	**-0.3**
AAK					pmax	pmax			
	comp=Z,6.0nm,1.0s								
NVS	**Novosibirsk**	**45.62**	**331**	*i* P		**P**	**07 30 28.7**	**-0.6**
EKS2	**Erkin-Say**	**45.69**	**312**	*eP*		**P**	**07 30 29.9**	**-0.3**
EKS2					pmax	pmax			
	comp=Z,17nm,1.4s								
EKS2	**Erkin-Say**	**45.69**	**312**	*eP*		**P**	**07 30 29.9**	**-0.3**
	comp=Z,17nm,1.4s								
KURK	**Kurchatov**	**45.72**	**324**	P		**P**	**07 30 29.5**	**-0.7**
KURK	**Kurchatov**	**45.72**	**324**	P		**P**	**07 30 29.4**	**-0.7**
KURBB	**Kurchatov Arra**	**45.73**	**324**	P		**P**	**07 30 29.4**	**-0.7**
	comp=Z,13nm,0.8s,baz=123,slow=7.7,SNR=11								
KBL	**Kabul**	**47.77**	**300**	*eP*		**P**	**07 30 46.3**	**-0.5**
KBL					pmax	pmax			
	comp=Z,39nm,1.4s								
KBL	**Kabul**	**47.77**	**300**	*eP*		**P**	**07 30 46.3**	**-0.5**
	comp=Z,38nm,1.4s								
KKAR	**Karatay Array**	**48.12**	**311**	*eP*		**P**	**07 30 48.9**	**-0.2**
KKAR					pmax	pmax			
	comp=Z,5.0nm,0.6s								
KKAR	**Karatay Array**	**48.12**	**311**	*eP*		**P**	**07 30 48.9**	**-0.2**
	comp=Z,4.5nm,0.6s								
SEY	**Seymchan**	**49.39**	**19**	*iP*		**P**	**07 30 59.5**	**+1.1**
BVAR	**Borovoye Array**	**51.32**	**324**	P		**P**	**07 31 12.8**	**-0.4**
	comp=Z,0.9nm,0.4s,baz=108,slow=14,SNR=8.1								
BVAR					PcP	**PcP**	**07 32 26.8**	**-1.0**
	comp=Z,3.2nm,0.9s,baz=122,slow=5.6,SNR=6.4								
BRVK	**Borovoye**	**51.39**	**324**	*d iP*		**P**	**07 31 13.0**	**-0.8**
BRVK					pmax	pmax			
	comp=Z,24nm,1.7s								
BRVK	**Borovoye**	**51.39**	**324**	*eP*		**P**	**07 31 13.3**	**-0.5**
	comp=Z,24nm,1.4s								
ZRNK	**Zerenda**	**52.07**	**323**	*eP*		**P**	**07 31 18.7**	**-0.1**
ZRNK	**Zerenda**	**52.07**	**323**	*eP*		**P**	**07 31 18.7**	**-0.1**
TIXI	**Tiksi**	**53.13**	**3**	*c iP*		**P**	**07 31 25.6**	**-0.7**
TIXI					pmax	pmax			
	comp=Z,39nm,1.7s								
TIXI	**Tiksi**	**53.13**	**3**	*eP*		**P**	**07 31 25.6**	**-0.7**
	comp=Z,38nm,1.4s								
NRIK	**Noril'sk**	**54.37**	**346**	P		**P**	**07 31 35.7**	**+0.2**
	comp=Z,14nm,0.9s,baz=134,slow=6.4,SNR=29								
NRIK					LR	LR	07 55 33.5		
	comp=Z,182nm,21.4s,baz=139,slow=37								
STKA	**Stephens Creek**	**54.41**	**157**	P		**P**	**07 31 36.7**	**+0.5**
	comp=Z,9.9nm,0.8s,baz=337,slow=7.6,SNR=18								
STKA	**Stephens Creek**	**54.41**	**157**	*eP*		**P**	**07 31 36.9**	**+0.6**
STKA	**Stephens Creek**	**54.41**	**157**	*eP*		**P**	**07 31 36.9**	**+0.6**
ABKAR	**Akbulak array**	**56.60**	**317**	*eP*		**P**	**07 31 50.8**	**-1.0**
	comp=Z,3.7nm,0.4s								
GEYT	**Alibeck**	**56.79**	**303**	P		**P**	**07 31 54.0**	**+0.5**
	comp=Z,22nm,0.9s,baz=108,slow=4.8,SNR=34								
GEYT					LR	LR	07 58 57.2		
	comp=Z,238nm,20.2s,baz=85,slow=39								
BILL	**Bilibino**	**57.10**	**19**	*eP*		**P**	**07 31 55.5**	**+0.5**
BILL				*e*			07 34 02.6		
BILL					pmax	pmax			
	comp=Z,3.0nm,0.8s								
BILL					MLR	MLR			
	comp=Z,110nm,15.0s								
BILL	**Bilibino**	**57.10**	**19**	*eP*		**P**	**07 31 55.5**	**+0.5**
SVE	**Sverdlovsk**	**57.87**	**326**	*eP*		**P**	**07 32 00.5**	**-0.2**
SVE					pmax	pmax			
	comp=Z,58nm,1.3s								
AKTO	**Aktyubinsk**	**58.03**	**318**	P		**P**	**07 32 01.9**	**0.0**
	comp=Z,13nm,0.9s,baz=92,slow=7.2,SNR=27								
ARU	**Arti**	**58.88**	**325**	P		**P**	**07 32 07.2**	**-0.5**
	comp=Z,4.8nm,0.4s,baz=101,slow=3.2,SNR=27								
ARU					LR	LR	07 57 41.2		
	comp=Z,97nm,20.1s,baz=128,slow=36								
ARU	**Arti**	**58.88**	**325**	*d iP*		**P**	**07 32 07.0**	**-0.8**
ARU							07 32 51.2		
ARU					S	**S**	**07 40 12.2**	**+0.4**
ARU					pmax	pmax			
	comp=Z,50nm,1.7s								
ARU	**Arti**	**58.88**	**325**	*eP*		**P**	**07 32 07.3**	**-0.5**
	comp=Z,16nm,0.6s								
SOKR	**Solikamsk**	**60.54**	**329**	*c iP*		**P**	**07 32 17.2**	**-1.8**
SOKR					pmax	pmax			
	comp=Z,26nm,1.2s								
SOKR					MLR	MLR			
	comp=Z,199nm,17.0s								
GNI	**Garni**	**67.11**	**306**	*deP*		**P**	**07 33 02.7**	**-0.3**
GNI					pmax	pmax			
	comp=Z,25nm,1.5s								
ZEI	**Tsey**	**67.49**	**309**	*eP*		**P**	**07 33 03.6**	**-1.8**
ZEI					pmax	pmax			
	comp=Z,27nm,1.5s								
KBZ	**Khabaz**	**68.14**	**310**	P		**P**	**07 33 08.6**	**-0.5**
	comp=Z,3.6nm,0.9s,baz=86,slow=5.0,SNR=10								
KBZ					LR	LR	08 05 40.3		
	comp=Z,126nm,22.0s,baz=88,slow=38								
KIV	**Kislovodsk**	**68.27**	**311**	*eP*		**P**	**07 33 08.8**	**-1.3**
KIV				*e*			07 33 34.6		
KIV				*e*			07 35 39.0		
KIV				pmax	pmax				
	comp=Z,8.0nm,0.4s								
KIV				MLR	MLR				
	comp=Z,167nm,20.0s								
NEY	**Neytrino**	**68.31**	**310**	*eP*		**P**	**07 33 11.2**	**+0.7**
NEY					pmax	pmax			
	comp=Z,1.0nm,1.1s								
KLMR	**Klimovskoe**	**69.22**	**329**	*eP*		**P**	**07 33 12.9**	**-2.7**
KLMR				*e*	PP	**pP**	**07 33 22.5**	**-1.7**
KLMR					pmax	pmax			
	comp=Z,27nm,1.4s								
VSR	**Storozhevoye**	**69.97**	**319**	*eP*		**P**	**07 33 18.9**	**-1.5**
LPSR	**Galich'ya Gora**	**69.99**	**320**	*eP*		**P**	**07 33 18.7**	**-1.8**
LPSR					pmax	pmax			
	comp=Z,10.0nm,1.0s								
OBN	**Obninsk**	**71.15**	**323**	*eP*		**P**	**07 33 25.0**	**-2.5**
OBN				*e*			07 33 44.4		
OBN				*e*			07 36 05.2		
OBN				pmax	pmax				
	comp=Z,9.0nm,0.5s								
OBN				MLR	MLR				
	comp=Z,113nm,16.0s								
COLD	**Coldfoot**	**72.74**	**24**	*eP*		**P**	**07 33 37.5**	**+0.6**
	comp=Z,11nm,1.8s								
BPAW	**Bear Paw Mtn.**	**72.82**	**27**	*eP*		**P**	**07 33 38.3**	**+0.9**
	comp=Z,4.5nm,1.4s								
KTH	**Kantishna Hill**	**72.92**	**28**	*eP*		**P**	**07 33 38.7**	**+0.6**
	comp=Z,4.3nm,1.0s								
MCK	**McKinley**	**73.77**	**28**	*eP*		**P**	**07 33 43.8**	**+0.8**
MCK					pmax	pmax			
	comp=Z,15nm,1.3s								
MCK	**McKinley**	**73.77**	**28**	*eP*		**P**	**07 33 43.8**	**+0.8**
	comp=Z,15nm,1.3s								
COLA	**College**	**74.05**	**26**	*eP*		**P**	**07 33 44.8**	**+0.3**
COLA					pmax	pmax			
	comp=Z,3.0nm,1.0s								
ARCES	**ARCESS Array B**	**74.17**	**339**	P		**P**	**07 33 44.5**	**-0.8**
	comp=Z,3.1nm,1.0s,baz=52,slow=5.9,SNR=4.2								
SML	**Sawmill**	**74.38**	**30**	*eP*		**P**	**07 33 47.1**	**+0.4**
SML					pmax	pmax			
	comp=Z,4.0nm,1.2s								
SML	**Sawmill**	**74.38**	**30**	*eP*		**P**	**07 33 47.0**	**+0.4**
	comp=Z,3.6nm,1.2s								
ILAR	**Eielson Array**	**74.47**	**26**	P		**P**	**07 33 46.3**	**-0.8**
	comp=Z,1.2nm,0.8s,baz=273,slow=5.3,SNR=12								
SPITS	**Spitsbergen Ar**	**74.54**	**348**	P		**P**	**07 33 47.4**	**+0.1**
	comp=Z,16nm,1.1s,baz=74,slow=8.8,SNR=4.6								
ASF	**Jabal al Asfar**	**74.66**	**299**	P		**P**	**07 33 49.1**	**+0.2**
	comp=Z,1.5nm,0.5s,baz=29,slow=6.1,SNR=4.4								
FINES	**FINESS Array B**	**75.61**	**330**	P		**P**	**07 33 52.9**	**-0.8**
	comp=Z,3.0nm,0.8s,baz=123,slow=9.5,SNR=10								
FINES					LR	LR	08 09 48.1		
	comp=Z,164nm,18.4s,baz=177,slow=38								
AKASG	**Malin Array Be**	**76.25**	**319**	P		**P**	**07 33 55.5**	**-2.1**
	comp=Z,0.9nm,0.5s,baz=63,slow=5.8,SNR=6.9								
KIEV	**Kiev**	**76.27**	**319**	*eP*		**P**	**07 33 55.8**	**-1.8**
KIEV					pmax	pmax			
	comp=Z,3.0nm,1.0s								
EGAK	**Eagle**	**76.86**	**26**	*eP*		**P**	**07 34 00.9**	**+0.2**
	comp=Z,3.6nm,0.9s								
SKAG	**Skagway**	**81.18**	**30**	*eP*		**P**	**07 34 25.6**	**+1.1**
	comp=Z,6.6nm,1.2s								
CRVS	**Cervenica-Dubn**	**81.58**	**319**	*eP*		**P**	**07 34 26.1**	**-0.8**
HFS	**Hagfors**	**81.78**	**331**	P		**P**	**07 34 26.3**	**-1.3**
	comp=Z,1.5nm,0.5s,baz=93,slow=3.0,SNR=8.8								
KECS	**Kecovo**	**82.33**	**319**	*eP*		**P**	**07 34 30.5**	**-0.3**
NB2	**NORSAR Subarra**	**82.52**	**332**	P		**P**	**07 34 29.7**	**-1.9**
	comp=Z,7.8nm,1.1s,baz=65,slow=5.6								
NOA	**NORSAR Array B**	**82.52**	**332**	P		**P**	**07 34 30.1**	**-1.5**
	comp=Z,3.3nm,0.9s,baz=65,slow=5.2,SNR=8.7								
NOA					LR	LR	08 14 23.9		
	comp=Z,151nm,18.4s,baz=40,slow=38								
KMBO	**Kilima Mbogo**	**83.59**	**267**	P		**P**	**07 34 37.8**	**-0.5**
	comp=Z,0.9nm,0.4s,baz=107,slow=9.9,SNR=4.8								
VRAC	**Vranov**	**84.44**	**320**	P		**P**	**07 34 41.0**	**-0.7**
	comp=Z,2.3nm,0.5s,baz=76,slow=8.5,SNR=4.9								
VRAC	**Vranov**	**84.44**	**320**	P		**P**	**07 34 41.0**	**-0.7**
BRG	**Berggiesshubel**	**85.39**	**322**	*eP*		**P**	**07 34 45.8**	**-0.6**
	comp=Z,7.5nm,1.0s								
BRG				*e*			07 34 54.7		
	comp=Z,5.4nm,1.2s								
GERES	**GERESS Array B**	**86.37**	**321**	P		**P**	**07 34 50.5**	**-0.8**
	comp=Z,0.5nm,0.2s,baz=74,slow=5.7,SNR=8.6								
YKA	**Yellowknife Ar**	**88.33**	**22**	P		**P**	**07 35 00.5**	**+0.1**
	comp=Z,3.2nm,0.9s,baz=316,slow=4.7,SNR=63								
DAVOX	**Davos/Dischmat**	**89.58**	**320**	P		**P**	**07 35 06.2**	**-0.8**
	comp=Z,1.6nm,0.5s,baz=58,slow=1.9,SNR=4.7								
BFO	**Black Forest**	**89.79**	**322**	*i* P		**P**	**07 35 07.8**	**+0.2**
NVAR	**Mina Array Bea**	**101.06**	**43**	P		**Pdif**	**07 36 00.8**	**+1.3**
	comp=Z,0.5nm,0.8s,baz=270,slow=6.1,SNR=4.4								

DHMR 28 07:27:11.2±0.4, 12°.12N×44°.09E, h3km±21km, ML3.8, Western Arabian Peninsula

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
ADEN	**Aden**	**1.09**	**53**	*i* S		Sb		07 27 47.2	-0.2
UDYN	**Al 'Udayn**	**1.84**	**356**	*i* P		Pn		07 27 44.5	+0.7
UDYN				*i* S		Sg		07 28 10.3	-0.1
UDYN				AML	AML			07 28 16.3	
	comp=Z,1μm,0.7s								
DHBB	**Dhamar BB**	**2.46**	**7**	*i* P		Pb		07 27 54.4	-1.8
DHBB				*i* S		Sb		07 28 28.2	+1.3

DJA 28 07:34:17.2±0.3, 3°.9N±3°×97°.8E±°, h10km, M3.7/12, mb4.0/1, MLv3.5/12, Northern Sumatera

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
TSI	**Tuntungan**	**0.29**	**78**	P	Pg	07 34 23.4	+0.3
KCSI	**Kotacane, Aceh**	**0.51**	**279**	P	Pg	07 34 22.1	-5.1
KCSI				S	Sg	07 34 28.8	-5.2
MLSI	**Meulaboh, Aceh**	**2.04**	**294**	P	Pn	07 34 52.2	+0.5
MLSI				S	Sn	07 35 18.3	+1.0
LHMI	**Lhok Sumawe**	**2.22**	**323**	P	Pn	07 34 51.5	-2.6
GSI	**Gunungsitoli**	**2.24**	**198**	P	Pn	07 34 54.3	0.0
MNSI	**Mandailing Nat**	**2.93**	**154**	P	Pn	07 35 03.4	-0.5
BKNI	**Bangkinang**	**4.14**	**138**	P	Pn	07 35 19.9	-0.7
PDSI	**Padang**	**4.84**	**153**	P	Pn	07 35 29.5	-0.7
SDSI	**Sungai Dareh**	**5.36**	**144**	P	Pn	07 35 37.0	-0.4

*ISCJB **28** 07:37:05.5±0.3, 54°.82N±0°.03×166°.03E±0°.03, h26km, mb4.1/19, MS3.6/1, Error ellipse: s-maj=4.7km s-min=2.6km az=164.5*
*KRSC **28** 07:37:06.1±1.8, 54°.87N×165°.89E, h54km±14km, ML4.6*
*NEIC **28** 07:37:07.0±3.2, 55°.08N×166°.02E, h22km±24km, mb4.1/8, Error ellipse: s-maj=12.9km s-min=6.8km az=150.0*
*MOS **28** 07:37:08.2±1.1, 54°.92N×165°.98E, h59km, mb4.4/8, Error ellipse: s-maj=10.7km s-min=8.6km az=141.3*
*IDC **28** 07:37:09.6±3.0, 55°.00N×165°.94E, h49km±36km, mb3.8/11, mb1 4.1/12, mb1mx3.6/57, mbtmp4.1/12, ML3.3/1, MS3.1/2, Ms1 3.2/2, ms1mx2.7/46, Error ellipse: s-maj=29.4km s-min=18.6km az=166.0*

ISC 28 07:37:06.5±0.6, 54°.82N±0°.05×166°.10E±0°.05, h26km, n79, σ1°53/117, mb4.1/19, Komandorsky Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
BKI	**Bering**	**0.39**	**349**	*i* P		P	**Pn**	**07 37 16.6**	**+0.2**
BKI				*i* S		S	**Sn**	**07 37 22.7**	**-0.3**
BKI	**Bering**	**0.39**	**349**	PN		P	**Pn**	**07 37 16.6**	**+0.2**
BKI						S	**Sn**	**07 37 22.7**	**-0.3**
MKZ	**Mys Kozlova**	**2.55**	**266**	*e* P		P	**Pn**	**07 37 46.9**	**+0.8**
MKZ				*e* S		S	**Sn**	**07 38 14.3**	**-1.9**
MKZ	**Mys Kozlova**	**2.55**	**266**	PN		P	**Pn**	**07 37 46.9**	**+0.8**
MKZ						S	**Sn**	**07 38 14.3**	**-1.9**
SMKR	**Semkarok**	**3.16**	**306**	*e* P		P	**Pn**	**07 37 54.8**	**+0.3**
SMKR				*e* S		S	**Sn**	**07 38 29.8**	**-1.6**
SMKR	**Semkarok**	**3.16**	**306**	PN		P	**Pn**	**07 37 54.8**	**+0.3**
SMKR						S	**Sn**	**07 38 29.8**	**-1.6**
ZLN	**Zelenaya**	**3.25**	**294**	*e* P		P	**Pn**	**07 37 57.4**	**+1.6**
ZLN				*e* S		S	**Sn**	**07 38 35.2**	**+1.6**
ZLN	**Zelenaya**	**3.25**	**294**	PN		P	**Pn**	**07 37 57.4**	**+1.6**
ZLN						S	**Sn**	**07 38 35.2**	**+1.6**
BDR	**Baidarnaya**	**3.27**	**304**	*e* P		P	**Pn**	**07 37 56.8**	**+0.7**
BDR				*e* S		S	**Sn**	**07 38 32.7**	**-1.5**
TUMD	**Tumrok D**	**3.30**	**279**	*e* P		P	**Pn**	**07 37 57.5**	**+1.0**
TUMD				*e* S		S	**Sn**	**07 38 34.9**	**0.0**
CIRR	**Tsirk**	**3.31**	**295**	*e* P		P	**Pn**	**07 37 57.9**	**+1.2**
CIRR				*e* S		S	**Sn**	**07 38 34.6**	**-0.6**
CIRR	**Tsirk**	**3.31**	**295**	PN		P	**Pn**	**07 37 57.9**	**+1.2**
CIRR						S	**Sn**	**07 38 34.6**	**-0.6**
LGNR	**Loginova**	**3.33**	**295**	*e* P		P	**Pn**	**07 37 59.1**	**+2.0**
LGNR				*e* S		S	**Sn**	**07 38 36.0**	**+0.1**
LGNR	**Loginova**	**3.33**	**295**	PN		P	**Pn**	**07 37 59.1**	**+2.0**
LGNR						S	**Sn**	**07 38 36.0**	**+0.1**
SRKR	**Sorokina**	**3.34**	**305**	*e* P		P	**Pn**	**07 37 59.1**	**+2.1**
SRKR				*e* S		S	**Sn**	**07 38 36.8**	**+1.0**
SRKR	**Sorokina**	**3.34**	**305**	PN		P	**Pn**	**07 37 59.1**	**+2.1**
SRKR						S	**Sn**	**07 38 36.8**	**+1.0**
KLY	**Klyuchi**	**3.43**	**298**	*e* P		P	**Pn**	**07 37 58.7**	**+0.5**
KLY				*e* S		S	**Sn**	**07 38 35.6**	**-2.4**
KRSR	**Krestovskiy**	**3.44**	**296**	*e* P		P	**Pn**	**07 38 00.1**	**+1.7**
KRSR				*e* S		S	**Sn**	**07 38 38.4**	**0.0**
KRSR	**Krestovskiy**	**3.44**	**296**	PN		P	**Pn**	**07 38 00.1**	**+1.7**
KRSR						S	**Sn**	**07 38 38.4**	**0.0**
NLC	**Nalytchevo**	**4.31**	**250**	*e* P		P	**Pn**	**07 38 11.4**	**+1.1**
NLC				*e* S		S	**Sn**	**07 38 57.3**	**-2.4**
NLC	**Nalytchevo**	**4.31**	**250**	PN		P	**Pn**	**07 38 11.4**	**+1.1**
NLC						S	**Sn**	**07 38 57.3**	**-2.4**
ESO	**Esso**	**4.36**	**288**	*e* P		P	**Pn**	**07 38 12.8**	**+1.8**
ESO				*e* S		S	**Sn**	**07 38 59.5**	**-1.5**
ESO	**Esso**	**4.36**	**288**	PN		P	**Pn**	**07 38 12.8**	**+1.8**
ESO						S	**Sn**	**07 38 59.5**	**-1.5**
SDLR	**Sedlovina**	**4.52**	**253**	*e* P		P	**Pn**	**07 38 14.8**	**+1.5**
SDLR				*e* S		S	**Sn**	**07 39 04.1**	**-1.0**
SDLR	**Sedlovina**	**4.52**	**253**	PN		P	**Pn**	**07 38 14.8**	**+1.5**
SDLR						S	**Sn**	**07 39 04.1**	**-1.0**
SMAR	**Somma**	**4.58**	**253**	*e* P		P	**Pn**	**07 38 15.4**	**+1.3**
SMAR				*e* S		S	**Sn**	**07 39 06.0**	**-0.5**
SMAR	**Somma**	**4.58**	**253**	PN		P	**Pn**	**07 38 15.4**	**+1.3**
SMAR						S	**Sn**	**07 39 06.0**	**-0.5**
UGLR	**Uglovaya**	**4.58**	**252**	*e* P		P	**Pn**	**07 38 15.8**	**+1.6**
UGLR				*e* S		S	**Sn**	**07 39 05.4**	**-1.2**
KRER	**Koryakskii**	**4.59**	**254**	*e* P		P	**Pn**	**07 38 16.1**	**+1.8**
KRER				*e* S		S	**Sn**	**07 39 05.5**	**-1.3**
AVH	**Avacha**	**4.61**	**253**	*e* P		P	**Pn**	**07 38 16.8**	**+2.3**
AVH				*e* S		S	**Sn**	**07 39 06.3**	**-0.8**
AVH	**Avacha**	**4.61**	**253**	PN		P	**Pn**	**07 38 16.8**	**+2.3**
AVH						S	**Sn**	**07 39 06.3**	**-0.8**
KRX	**Arik**	**4.62**	**255**	*e* P		P	**Pn**	**07 38 16.7**	**+2.0**
KRX				*e* S		S	**Sn**	**07 39 05.8**	**-1.8**
KOK	**Koryaka**	**4.66**	**254**	*e* P		P	**Pn**	**07 38 17.1**	**+2.0**
KOK				*e* S		S	**Sn**	**07 39 05.9**	**-2.4**
KOK	**Koryaka**	**4.66**	**254**	PN		P	**Pn**	**07 38 17.1**	**+2.0**
DALK	**Dalny**	**4.70**	**251**	*e* P		P	**Pn**	**07 38 17.1**	**+1.5**
DALK				*e* S		S	**Sn**	**07 39 06.7**	**-2.4**
OSSR	**Ossora**	**4.74**	**341**	*e* P		P	**Pn**	**07 38 16.9**	**+0.8**
OSSR				*e* S		S	**Sn**	**07 39 07.3**	**-2.8**
PET	**Petropavlovsk**	**4.75**	**251**	*e* P	

CSEM ***28*** *07:40:27.4±0.5, 35°.21N×27°.86E, h10km, ML2.8, Error ellipse: s-maj=14.0km s-min=6.1km az=158.0*

ISK ***28*** *07:40:28.4, 35°.22N×27°.92E, h78km, MD3.5*

ISC 28 07:40:26.5±1.5, 35°.18N±0°.07×27°.84E±0°.05, h10km, n31, σ0s.85/37, Dodecanese Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
KARP	**Karpathos**	**0.67**	**304**	P	**Pg**	**07 40 38.4**	**-1.0**
KARP				S	**Sg**	**07 40 48.8**	**+0.6**
KARP	**Karpathos**	**0.67**	**304**	P	**Pg**	**07 40 38.4**	**-1.0**
KARP				S	**Sg**	**07 40 48.8**	**+0.6**
KARP				AML	AML	07 40 52.3	
	comp=E,1520μm,0.4s						
KARP				AML	AML	07 40 55.0	
	comp=N,1857μm,0.4s						
ARG	**Arkhangelos**	**1.06**	**13**	P	**Pb**	**07 40 46.2**	**-0.8**
ZKR	**Zakros**	**1.33**	**268**	P	**Pb**	**07 40 51.4**	**-0.2**
ZKR				S	**Sg**	**07 41 10.8**	**+1.5**
ZKR	**Zakros**	**1.33**	**268**	P	**Pb**	**07 40 51.4**	**-0.2**
ZKR				S	**Sg**	**07 41 10.8**	**+1.5**
ZKR				AML	AML	07 41 25.2	
	comp=N,650μm,0.6s						
ZKR				AML	AML	07 41 29.8	
	comp=E,591μm,0.7s						
NIS1	**Nisyros Isl.**	**1.52**	**340**	*e*PN	**Pb**	**07 40 54.4**	**-0.4**
NIS1				*e*SN	**Sb**	**07 41 14.5**	**+0.3**
NIS1	**Nisyros Isl.**	**1.52**	**340**	*e*Pn	**Pb**	**07 40 54.4**	**-0.4**
NIS1	**Nisyros Isl.**	**1.52**	**340**	P	**Pg**	**07 40 56.1**	**+0.4**
NIS1				*e*Sn	**Sb**	**07 41 14.5**	**+0.3**
NIS1	**Nisyros Isl.**	**1.52**	**340**	P	**Pg**	**07 40 56.1**	**+0.4**
DALY	**Dalyan (Mu˘la**	**1.77**	**22**	*e*PN	**Pn**	**07 40 57.4**	**+0.3**
DALY	**Dalyan (Mu˘la**	**1.77**	**22**	*e*Pn	**Pn**	**07 40 57.4**	**+0.3**
FETY	**Fethiye**	**1.77**	**34**	*e*PN	**Pn**	**07 40 57.2**	**-0.1**
FETY	**Fethiye**	**1.77**	**34**	*e*Pn	**Pn**	**07 40 57.2**	**-0.1**
BODT	**Bodrum**	**1.93**	**347**	*e*PN	**Pn**	**07 41 00.0**	**+0.6**
BODT	**Bodrum**	**1.93**	**347**	*e*Pn	**Pn**	**07 41 00.0**	**+0.6**
LAST	**Lasithi**	**1.93**	**270**	P	**Pn**	**07 41 00.2**	**+0.7**
LAST	**Lasithi**	**1.93**	**270**	P	**Pn**	**07 41 00.2**	**+0.7**
YER	**Yerkesik**	**1.99**	**10**	*e*PN	**Pn**	**07 41 00.5**	**+0.3**
YER	**Yerkesik**	**1.99**	**10**	*e*Pn	**Pn**	**07 41 00.5**	**+0.3**
ELL	**Elmali**	**2.30**	**46**	*e*PN	**Pn**	**07 41 04.8**	**+0.2**
ELL	**Elmali**	**2.30**	**46**	*e*Pn	**Pn**	**07 41 04.8**	**+0.2**
THR5	**Thira Island,**	**2.37**	**302**	*e*PN	**Pb**	**07 41 07.4**	**-1.9**
THR5	**Thira Island,**	**2.37**	**302**	*e*Pn	**Pb**	**07 41 07.4**	**-1.9**
IDI	**Anoyia**	**2.42**	**274**	P	**Pb**	**07 41 08.6**	**-1.5**
IDI	**Anoyia**	**2.42**	**274**	P	**Pb**	**07 41 08.6**	**-1.5**
AYDB	**Zeytinkoy-Aydi**	**2.77**	**1**	*e*PN	**Pn**	**07 41 11.0**	**0.0**
AYDB	**Zeytinkoy-Aydi**	**2.77**	**1**	*e*Pn	**Pn**	**07 41 11.0**	**0.0**
KULA	**Kula-Manisa**	**3.40**	**11**	*e*PN	**Pn**	**07 41 20.4**	**+0.8**
KULA	**Kula-Manisa**	**3.40**	**11**	*e*Pn	**Pn**	**07 41 20.4**	**+0.8**
SUTC	**Sutluce-Ispart**	**3.43**	**47**	*e*PN	**Pn**	**07 41 20.7**	**+0.5**
SUTC	**Sutluce-Ispart**	**3.43**	**47**	*e*Pn	**Pn**	**07 41 20.7**	**+0.5**

IDC ***28*** *07:42:32.5±0.7, 10°.28S×160°.46E, h0km, mb4.5/22, mb1 4.7/22, mb1mx4.6/35, mbtmp4.5/22, MS5.1/28, Ms1 5.1/28, ms1mx5.0/35, Error ellipse: s-maj=23.2km s-min=15.1km az=128.0*

NEIC ***28*** *07:42:34.9±0.2, 9.97S×160.49E, h11km, mb5.4/93, ME5.1, MS5.4/297, MW5.7, MW5.7, Error ellipse: s-maj=6.7km s-min=4.7km az=130.0, Moment Tensor Solution. s28 Moment tensor: Scale 10^17 Nm; Mrr=0.45; Mθθ=1.78; Mφφ=2.23; Mrθ=1.82; Mθφ=-1.37; Mφr=2.84; Best double couple: M=4.20000×10^17 NP1:φs=312.00000°, δ85.00000°, λ=-121.00000°. NP2:φs=214.00000°, δ32.00000°, λ=-10.00000°. Principal axes: T 4.7400, Plg33.0000°, Azm68.0000°; N -1.6000, Plg31.0000°, Azm315.0000°; P -3.1400, Plg42.0000°, Azm193.0000°; Depth from synthetics of broadband displacement seismograms. Energy computed from CMT mechanism.*

NEIC ***28*** *07:42:34.0±0.0, 9.98S×160.33E, h15km, Moment Tensor Solution. s6 Moment tensor: Scale 10^17 Nm; Mrr=1.35; Mθθ=0.00; Mφφ=-1.34; Mrθ=3.96; Mθφ=0.67; Mφr=-3.06; Best double couple: M=5.20000×10^17 NP1:φs=129.00000°, δ83.00000°, λ=81.00000°. NP2:φs=0.00000°, δ=11.00000°, λ=141.00000°. Principal axes: T 5.3000, Plg51.0000°, Azm29.0000°; N -0.1500, Plg8.0000°, Azm130.0000°; P -5.1500, Plg37.0000°, Azm227.0000°;*

GCMT ***28*** *07:42:35.3±0.1, 10.23S×160.45E, h12km, MW5.6/126, Moment Tensor Solution. s97,c167; s126,c263; Duration: 1s6 Moment tensor: Scale 10^17 Nm; Mrr=1.50±.02; Mθθ=0.43±.02; Mφφ=-1.06±.02; Mrθ=1.81±.07; Mθφ=0.73±.02; Mφr=2.39±.07; Best double couple: M=3.36300×10^17 NP1:φs=143.00000°, δ=77.00000°, λ=88.00000°. NP2:φs=330.00000°, δ=14.00000°, λ=97.00000°. Principal axes: T 3.3430, Plg58.0000°, Azm51.0000°; N 0.0460, Plg2.0000°, Azm144.0000°; P -3.3820, Plg32.0000°, Azm235.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface/mantle waves, cutoff=50s.*

MOS ***28*** *07:42:36.7±1.2, 10.01S×160.43E, h33km, mb5.2/42, MS5.2/20 Error ellipse: s-maj=8.7km s-min=7.5km az=79.6*

BJI ***28*** *07:42:37.1, 9.56S×160.41E, h12km, mb4.9/56, mB5.5/52, Ms5.5/57, Ms7 5.1/55*

ISCJB ***28*** *07:42:37.0±0.2, 10.09S±0.03×160.47E±0.03, h37km, mb5.1/146, MS5.4/447, Error ellipse: s-maj=4.8km s-min=3.7km az=156.9*

ISC 28 07:42:38.5±0.3, 10.06S±0.04×160.60E±0.04, h37km, n650, σ2s.23/339, mb5.2/146, MS5.4/447, 16C-11D, Bougainville-Solomon Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
HNR	**Honiara**	**0.90**	**314**	Pn	**Pn**	**07 42 50.0**	**-4.4**
	2μm,0.3s,baz=156,slow=2.8,SNR=232						
HNR				Sn	**Sn**	**07 43 03.5**	**-2.7**
	5μm,0.3s,baz=81,slow=21,SNR=12						
HNR	**Honiara**	**0.90**	**314**	*i* P	Pn	07 42 49.5	-5.0
HNR				*i* S	**Sn**	**07 43 07.0**	**+0.7**
HNR	**Honiara**	**0.90**	**314**	*e*P	**Pn**	**07 42 50.1**	**-4.4**
HNR				*e*		07 43 00.4	
HNR	**Honiara**	**0.90**	**314**	*e*Pg	**Pn**	**07 42 50.1**	**-4.4**
HNR				*e*Sg	**Sn**	**07 43 00.4**	**-5.9**
HNR				*e*Sn	Sn	07 43 03.5	-2.7
DZM	**Mont Dzumac**	**13.19**	**156**	Pn	**Pn**	**07 45 45.0**	**+1.6**
	0.4nm,0.3s,baz=340,slow=12,SNR=9.6						
DZM				LR	LR	07 50 20.3	
	comp=Z,9μm,18.2s,baz=347,slow=36						
PMG	**Port Moresby**	**13.26**	**272**	Pn	**Pn**	**07 45 44.2**	**-0.1**
	0.5nm,0.3s,baz=99,slow=8.3,SNR=6.4						
PMG				LR	LR	07 50 28.5	
	comp=Z,26μm,19.4s,baz=105,slow=36						
PMG	**Port Moresby**	**13.26**	**272**	*e*Pn	Pn	07 45 37.5	-6.8
PMG				*e*Sn	**Sn**	**07 48 09.1**	**-1.5**
CTA	**Charters Tower**	**17.05**	**233**	Pn	**Pn**	**07 46 34.5**	**+0.4**
	1.6nm,0.3s,baz=48,slow=14,SNR=19						
CTA				LR	LR	07 52 26.1	
	comp=Z,14μm,20.4s,baz=68,slow=35						
CTAO	**Charters Tower**	**17.05**	**233**	*e*P	**Pn**	**07 46 33.0**	**-1.2**
CTAO				pmax	pmax		
	comp=Z,1μm,2.0s						
CTAO	**Charters Tower**	**17.05**	**233**	*e*Pn	**Pn**	**07 46 33.0**	**-1.2**
	comp=Z,1μm,2.0s						
CTAO				*e*Sn	**Sn**	**07 49 38.0**	**-4.8**
COEN	**Coen**	**17.48**	**255**	*e*Pn	**Pn**	**07 46 38.3**	**-1.2**
	comp=Z,572nm,1.8s						
COEN				*e*Sn	**Sn**	**07 49 49.1**	**-4.0**
EIDS	**Eidsvold**	**17.70**	**209**	*e*P	**P**	**07 46 42.8**	**0.0**
	comp=Z,61nm,1.0s						
EIDS				*e*S	**S**	**07 50 05.3**	**+0.6**
MSVF	**Nonsavu**	**18.57**	**116**	*e*P	**Pn**	**07 46 53.6**	**+0.7**
MSVF				pmax	pmax		
	comp=Z,560nm,1.9s						
MSVF	**Nonsavu**	**18.57**	**116**	*e*P	**Pn**	**07 46 53.6**	**+0.7**
	comp=Z,555nm,1.9s						
KWAJ	**Kwajalein Atol**	**20.00**	**21**	*e*P	**P**	**07 47 05.0**	**-3.0**
KWAJ	**Kwajalein Atol**	**20.00**	**21**	*e*P	**P**	**07 47 05.0**	**-3.0**
	comp=Z,1μm,1.8s						
JAY	**Jayapura**	**21.13**	**289**	P	**P**	**07 47 18.6**	**-1.8**
	comp=Z,1.8nm,0.5s,baz=263,slow=23,SNR=10						
JAY	**Jayapura**	**21.13**	**289**	P	**P**	**07 47 18.6**	**-1.8**
LHI	**Lord Howe Isla**	**21.40**	**184**	PFAKE		07 47 30.0	+7.0
LHI				LR	LR		
	comp=Z,4μm,18.0s						
ARMA	**Armidale**	**21.91**	**201**	*e*P	**P**	**07 47 28.2**	**-0.5**
	comp=Z,278nm,1.5s						
ARMA				LR	LR		
	comp=Z,6μm,19.0s						
WR0	**Warramunga Arr**	**26.99**	**246**	PFAKE		07 48 30.0	+13
WR0				LR	LR		
	comp=Z,5μm,21.0s						
WR9	**Warramunga Arr**	**27.01**	**246**	PFAKE		07 48 30.0	+13
WR9				LR	LR		
	comp=Z,4μm,20.0s						
WR8	**Warramunga Arr**	**27.02**	**246**	PFAKE		07 48 30.0	+13
WR8				LR	LR		
	comp=Z,6μm,18.0s						
WR7	**Warramunga Arr**	**27.04**	**246**	PFAKE		07 48 30.0	+12
WR7				LR	LR		
	comp=Z,4μm,18.0s						
WB0	**Warramunga Arr**	**27.06**	**246**	PFAKE		07 48 30.0	+12
WB0				LR	LR		
	comp=Z,4μm,21.0s						
WR6	**Warramunga Arr**	**27.06**	**246**	PFAKE		07 48 30.0	+12
WR6				LR	LR		
	comp=Z,5μm,18.0s						
WB9	**Warramunga Arr**	**27.08**	**246**	PFAKE		07 48 30.0	+12
WB9				LR	LR		
	comp=Z,9μm,20.0s						
WR5	**Warramunga Arr**	**27.08**	**246**	PFAKE		07 48 30.0	+12
WR5				LR	LR		
	comp=Z,5μm,18.0s						
WB8	**Warramunga Arr**	**27.09**	**246**	PFAKE		07 48 30.0	+12
WB8				LR	LR		
	comp=Z,4μm,20.0s						
WR4	**Warramunga Arr**	**27.10**	**246**	PFAKE		07 48 30.0	+12
WR4				LR	LR		
	comp=Z,4μm,21.0s						
WB6	**Warramunga Arr**	**27.11**	**246**	PFAKE		07 48 30.0	+12
WB6				LR	LR		
	comp=Z,4μm,20.0s						
WB5	**Warramunga Arr**	**27.12**	**246**	PFAKE		07 48 30.0	+12
WB5				LR	LR		
	comp=Z,4μm,21.0s						
WR3	**Warramunga Arr**	**27.12**	**246**	PFAKE		07 48 30.0	+12
WR3				LR	LR		
	comp=Z,5μm,21.0s						
WB4	**Warramunga Arr**	**27.13**	**246**	PFAKE		07 48 30.0	+12
WB4				LR	LR		
	comp=Z,4μm,20.0s						
WC2	**Warramunga Arr**	**27.13**	**246**	PFAKE		07 48 30.0	+12
WC2				LR	LR		
	comp=Z,6μm,22.0s						
WC3	**Warramunga Arr**	**27.14**	**246**	PFAKE		07 48 30.0	+12
WC3				LR	LR		
	comp=Z,5μm,18.0s						
WB3	**Warramunga Arr**	**27.14**	**246**	PFAKE		07 48 30.0	+12
WB3				LR	LR		
	comp=Z,5μm,21.0s						
WR2	**Warramunga Arr**	**27.14**	**246**	PFAKE		07 48 30.0	+12
WR2				LR	LR		
	comp=Z,4μm,21.0s						
WRAB	**Tennant Creek**	**27.15**	**246**	*d* iP	**P**	**07 48 15.7**	**-2.8**
WRAB				pmax	pmax		
	comp=Z,143nm,1.2s						
WRAB	**Tennant Creek**	**27.15**	**246**	*e*P	**P**	**07 48 17.2**	**-1.2**
	comp=Z,227nm,1.5s						
WRAB				LR	LR		
	comp=Z,5μm,18.0s						
WB2	**Warramunga Arr**	**27.15**	**246**	*e*P	**P**	**07 48 15.8**	**-2.8**
	comp=Z,240nm,1.5s						
WB2				LR	LR		
	comp=Z,5μm,22.0s						
WC1	**Warramunga Arr**	**27.16**	**246**	PFAKE		07 48 30.0	+11
WC1				LR	LR		
	comp=Z,3μm,19.0s						
WR1	**Warramunga Arr**	**27.16**	**246**	*e*P	**P**	**07 48 15.8**	**-2.8**
	comp=Z,196nm,1.4s						
WR1				LR	LR		
	comp=Z,5μm,18.0s						
WRA	**Warramunga Arr**	**27.16**	**246**	P	**P**	**07 48 15.8**	**-2.8**
	comp=Z,24nm,0.8s,baz=74,slow=9.6,SNR=73						
WRA				LR	LR	07 58 27.4	
	comp=Z,4μm,21.2s,baz=65,slow=35						
WC4	**Warramunga Arr**	**27.17**	**246**	PFAKE		07 48 30.0	+11
WC4				LR	LR		
	comp=Z,4μm,21.0s						
CAN	**Canberra**	**27.28**	**201**	PFAKE		07 48 30.0	+10
CAN				LR	LR		
	comp=Z,8μm,19.0s						
AFI	**Afiamalu**	**27.28**	**101**	LR	LR	07 57 22.1	
	comp=Z,8μm,18.2s,baz=283,slow=32						
AFI	**Afiamalu**	**27.28**	**101**	PFAKE		07 48 30.0	+10
AFI				LR	LR		
	comp=Z,10μm,21.0s						
OUZ	**Omahuta**	**27.71**	**157**	PFAKE		07 48 30.0	+6.7
OUZ				LR	LR		
	comp=Z,4μm,22.0s						
RAO	**Raoul Island**	**27.73**	**137**	LR	LR	07 58 00.9	
	comp=Z,1μm,18.7s,baz=311,slow=34						
STKA	**Stephens Creek**	**27.94**	**216**	P	**P**	**07 48 22.8**	**-2.7**
	comp=Z,6.5nm,0.6s,baz=44,slow=7.7,SNR=13						
STKA				LR	LR	07 59 07.7	
	comp=Z,7μm,18.3s,baz=37,slow=36						
STKA	**Stephens Creek**	**27.94**	**216**	*e*P	**P**	**07 48 24.5**	**-0.9**
STKA				pmax	pmax		
	comp=Z,12nm,1.2s						
STKA				MLR	MLR		
	comp=Z,2μm,18.0s						
STKA	**Stephens Creek**	**27.94**	**216**	*e*P	**P**	**07 48 24.5**	**-0.9**
	comp=Z,12nm,1.2s						
STKA				LR	LR		
	comp=Z,2μm,18.0s						
GUMO	**Guam**	**28.21**	**326**	LR	LR	07 59 09.0	
	comp=Z,3μm,19.3s,baz=144,slow=35						
GUMO	**Guam**	**28.21**	**326**	PFAKE		07 48 40.0	+12
GUMO				LR	LR		
	comp=Z,3μm,20.0s						
KNTN	**Kanton**	**28.43**	**77**	PFAKE		07 48 40.0	+10
KNTN				LR	LR		
	comp=Z,4μm,18.0s						
AS01	**Alice Springs**	**28.80**	**239**	*e*P	**P**	**07 48 30.3**	**-2.9**
AS31	**Alice Springs**	**28.84**	**239**	*e*P	**P**	**07 48 31.5**	**-2.0**
	comp=Z,3.9nm,0.7s						
AS31				LR	LR		
	comp=Z,100nm,18.0s						
ASAR	**Alice Springs**	**28.84**	**239**	P	**P**	**07 48 30.0**	**-3.6**
	comp=Z,6.9nm,0.8s,baz=68,slow=9.7,SNR=31						
ASAR				LR	LR	08 00 01.1	
	comp=Z,10μm,18.0s,baz=67,slow=37						
ASAR	**Alice Springs**	**28.84**	**239**	P	**P**	**07 48 30.0**	**-3.6**
ASAR				pmax	pmax		
	comp=Z,7.0nm,0.9s						
ASAR				MLR	MLR		
	comp=Z,10μm,18.0s						
MTN	**Manton Dam**	**29.00**	**262**	*e*P	**P**	**07 48 33.7**	**-1.3**
	comp=Z,38nm,1.1s						
MTN				LR	LR		
	comp=Z,3μm,21.0s						
FAKI	**Fak Fak**	**29.03**	**282**	PFAKE		07 48 40.0	+4.7
FAKI				LR	LR		
	comp=Z,6μm,21.0s						
MXZ	**Matakaoa Point**	**31.69**	**153**	PFAKE		07 49 10.0	+11
MXZ				LR	LR		
	comp=Z,3μm,20.0s						
URZ	**Urewera**	**31.75**	**155**	PFAKE		07 49 10.0	+11
URZ				LR	LR		
	comp=Z,2μm,18.0s						
BBOO	**Buckleboo**	**32.00**	**221**	*e*P	**P**	**07 49 00.1**	**-1.3**
	comp=Z,72nm,1.3s						
BBOO				LR	LR		
	comp=Z,6μm,19.0s						
BKZ	**Black Stump Fm**	**32.27**	**157**	PFAKE		07 49 10.0	+6.3
BKZ				LR	LR		
	comp=Z,3μm,20.0s						
SNZO	**South Karori**	**33.52**	**161**	PFAKE		07 49 30.0	+16
SNZO				LR	LR		
	comp=Z,3μm,19.0s						
LTZ	**Lake Taylor**	**34.16**	**165**	PFAKE		07 49 30.0	+10
LTZ				LR	LR		
	comp=Z,4μm,18.0s						
KHZ	**Kahutara**	**34.17**	**163**	PFAKE		07 49 30.0	+10
KHZ				LR	LR		
	comp=Z,5μm,18.0s						
FOZ	**Fox Glacier**	**34.30**	**168**	*e*P	**P**	**07 49 23.8**	**+2.6**
	comp=Z,142nm,1.6s						
OXZ	**Oxford**	**34.61**	**165**	*e*P	**P**	**07 49 24.8**	**+0.9**
	comp=Z,102nm,1.6s						
OXZ				LR	LR		
	comp=Z,5μm,18.0s						
TAU	**Tasmania Unive**	**34.72**	**197**	*e*P	**P**	**07 49 25.6**	**+0.7**
TAU				pmax	pmax		
	comp=Z,230nm,1.7s						
TAU	**Tasmania Unive**	**34.72**	**197**	*e*P	**P**	**07 49 25.6**	**+0.7**
	comp=Z,231nm,1.7s						
RPZ	**Rata Peaks**	**34.74**	**167**	P	**P**	**07 49 29.0**	**+3.9**
	comp=Z,7.5nm,0.8s,baz=25,slow=5.5,SNR=7.6						
TNTI	**Ternate**	**34.78**	**286**	PFAKE		07 49 30.0	+4.2
TNTI				LR	LR		
	comp=Z,4μm,22.0s						
FITZ	**Fitzroy Crossi**	**34.79**	**253**	P	**P**	**07 49 22.6**	**-3.3**
	comp=Z,17nm,0.8s,baz=98,slow=6.3,SNR=31						
FITZ	**Fitzroy Crossi**	**34.79**	**253**	*e*P	**P**	**07 49 24.2**	**-1.6**
	comp=Z,59nm,1.1s						
FITZ				LR	LR		
	comp=Z,4μm,18.0s						
WKZ	**Wanaka**	**35.40**	**170**	PFAKE		07 49 40.0	+9.3
WKZ				LR	LR		
	comp=Z,4μm,18.0s						
DCZ	**Deep Cove**	**35.73**	**172**	*e*P	P	07 49 38.5	+5.0
	comp=Z,78nm,1.3s						
MLZ	**Mavora Lakes**	**35.77**	**171**	*e*P	**P**	**07 49 35.9**	**+2.0**
	comp=Z,137nm,1.7s						
PYZ	**Puysegur Point**	**36.35**	**173**	PFAKE		07 49 50.0	+11
PYZ				LR	LR		
	comp=Z,3μm,18.0s						
MMRI	**Maumere**	**37.86**	**269**	*e*P	**P**	**07 49 49.7**	**-2.5**
	comp=Z,210nm,1.4s						
DAV	**Davao City (W)**	**38.81**	**295**	PFAKE		07 50 10.0	+10
DAV				LR	LR		
	comp=Z,2μm,22.0s						
MBWA	**Marble Bar**	**40.76**	**249**	*e*P	**P**	**07 50 14.3**	**-2.0**
	comp=Z,55nm,1.1s						
MBWA				LR	LR		
	comp=Z,3μm,20.0s						
KAPI	**Kappang**	**40.78**	**274**	PFAKE		07 50 30.0	+14
KAPI				LR	LR		
	comp=Z,1μm,19.0s						
JCJ	**Chichijima**	**41.03**	**335**	LR	LR	08 04 49.5	
	comp=Z,2μm,21.1s,baz=157,slow=32						
MIDW	**Midway**	**43.61**	**29**	PFAKE		07 50 50.0	+11
MIDW				LR	LR		
	comp=Z,3μm,20.0s						
MYLDM	**Lahad Datu**	**44.58**	**288**	⇓P	**P**	**07 50 47.9**	**+0.6**
TSM	**Tawau**	**44.88**	**286**	⇓P	**P**	**07 50 50.2**	**+0.5**
JAGI	**Jajag, Banyuwa**	**45.84**	**268**	*e*P	**P**	**07 50 56.8**	**-0.6**
	comp=Z,78nm,1.1s						
NWAO	**Narrogin (SRO)**	**45.89**	**234**	PFAKE		07 51 10.0	+12
NWAO				LR	LR		
	comp=Z,10μm,18.0s						
SDKM	**Sandakan**	**45.96**	**288**	⇓P	**P**	**07 50 58.7**	**+0.3**
KKM	**Kota Kinabalu**	**47.01**	**288**	⇑P	**P**	**07 51 06.4**	**-0.3**
KKM	**Kota Kinabalu**	**47.01**	**288**	*e*P	**P**	**07 51 07.2**	**+0.5**
	comp=Z,35nm,1.0s						
PPT	**Papeete**	**48.84**	**105**	LR	LR	08 08 21.9	
PPT2	**Papeete2**	**48.84**	**105**	*e*P	**P**	**07 51 20.0**	**-0.8**
	comp=Z,2μm,18.9s,baz=276,slow=32						
PPT2				*e*S	**S**	**07 58 14.8**	**-7.3**
	comp=Z,38nm,1.3s						
PPT2				*e*LQ	LQ	08 02 56.8	
	comp=Z,1μm,25.0s						
PPT2				*e*LR	LR	08 04 55.2	
	comp=Z,2μm,24.2s						
TVO	**Taravao**	**49.16**	**105**	*e*P	**P**	**07 51 22.1**	**-1.1**
	comp=Z,5μm,23.0s,baz=277						
SBUM	**Sibu**	**49.75**	**282**	⇓P	**P**	**07 51 27.7**	**0.0**
SBUM	**Sibu**	**49.75**	**282**	*e*P	**P**	**07 51 28.0**	**+0.3**
	comp=Z,19nm,1.1s						
INU	**Inuyama**	**50.37**	**335**	PFAKE		07 51 40.0	+8.1
INU				LR	LR		
	comp=Z,93nm,2.0s						
PMOR	**Pomariorio Ree**	**50.43**	**101**	*e*P	**P**	**07 51 32.6**	**-0.2**
	comp=Z,2μm,20.0s						
VAH	**Vaihoa**	**50.69**	**101**	*e*P	**P**	**07 51 34.1**	**-0.6**
	comp=Z,161nm,1.3s						
MJAR	**Matsushiro Arr**	**50.92**	**337**	P	**P**	**07 51 36.1**	**-0.1**
	comp=Z,107nm,1.4s						
MAJO	**Matsushiro**	**50.92**	**337**	⇑*e*P	**P**	**07 51 34.5**	**-1.6**
	comp=Z,5.9nm,1.0s,baz=169,slow=8.2,SNR=7.0						
MAJO				pmax	pmax		
	comp=Z,28nm,0.9s						
MAJO	**Matsushiro**	**50.92**	**337**	PFAKE		07 51 50.0	+14
MAJO				LR	LR		
	comp=Z,2μm,20.0s						
MJB9	**Matsu-Tunnel**	**50.92**	**337**	PFAKE		07 51 50.0	+14
MJB9				LR	LR		
	comp=Z,500nm,19.0s						
KSM	**Kuching**	**51.35**	**280**	⇑P	**P**	**07 51 39.4**	**-0.4**
KSM	**Kuching**	**51.35**	**280**	PFAKE		07 51 50.0	+10
KSM				LR	LR		
	comp=Z,700nm,19.0s						
TATO	**Taipei**	**51.64**	**313**	PFAKE		07 51 50.0	+8.3
TATO				LR	LR		
	comp=Z,1μm,18.0s						
POHA	**Pohakuloa**	**52.38**	**55**	PFAKE		07 52 00.0	+12
POHA				LR	LR		
	comp=Z,4μm,20.0s						
HPAH	**Hawaii Prepara**	**52.39**	**55**	PFAKE		07 52 00.0	+13
HPAH				LR	LR		
	comp=Z,4μm,19.0s						
UWE	**Uwekahuna**	**52.41**	**56**	PFAKE		07 52 00.0	+12
UWE				LR	LR		
	comp=Z,4μm,20.0s						
LEM	**Lembang**	**52.46**	**269**	LR	LR	08 14 49.2	
	comp=Z,830nm,21.9s,slow=37						
QZH	**Quanzhou**	**53.73**	**311**	⇑*i* P	**P**	**07 51 55.5**	**-1.7**
QZH				S	**S**	**07 59 21.3**	**-7.9**
QZH				LR	LR		
	comp=Z,1μm,14.5s						
QZH				LR	LR		
	comp=Z,1μm,13.8s						
QZH				LR	LR		
	comp=Z,2μm,19.6s						
ERM	**Erimo**	**54.24**	**344**	PFAKE		07 52 10.0	+9.5
ERM				LR	LR		
	comp=Z,4μm,20.0s						
KSRS	**Korea Array**	**56.32**	**329**	P	**P**	**07 52 14.6**	**-1.1**
	comp=Z,4.2nm,0.9s,baz=139,slow=6.6,SNR=8.4						
KSRS				LR	LR	08 13 58.4	
	comp=Z,988nm,19.9s,baz=124,slow=33						
ASAJ	**Asahikawa**	**56.34**	**344**	P	**P**	**07 52 20.2**	**+4.5**
	comp=Z,20nm,1.0s,baz=174,slow=10,SNR=7.4						
ASAJ				LR	LR	08 14 07.8	
	comp=Z,2μm,21.7s,baz=178,slow=34						
KS01	**Wonju Array Si**	**56.35**	**329**	*e*P	**P**	**07 52 17.1**	**+1.2**
INCN	**Inchon**	**57.00**	**328**	PFAKE		07 52 30.0	+9.4
INCN				LR	LR		
	comp=Z,2μm,18.0s						
MYKOM	**Kota Tinggi**	**57.70**	**279**	⇓P	**P**	**07 52 25.7**	**-0.3**
NJ2	**Nanjing**	**57.84**	**318**	*e*P	**P**	**07 52 28.0**	**+1.5**
NJ2				pmax	pmax		
	comp=Z,45nm,1.2s						
KGM	**Kluang**	**58.27**	**279**	⇑P	**P**	**07 52 29.6**	**-0.3

	comp=N,2µm,18.0s							
SKR				MLR	MLR			
	comp=E,3µm,18.0s							
SKR				MLR	MLR			
	comp=Z,3µm,18.0s							
DL2	**Dalian**	**60.73**	**326**	P	**P**	**07**	**52**	**46.0 -0.4**
DL2				S	**S**	**08**	**01**	**00.5 -0.4**
DL2				pmax	pmax			
	comp=Z,35nm,0.9s							
DL2				pmax	pmax			
	comp=Z,240nm,7.2s							
DL2				LR	LR			
	comp=Z,2µm,15.6s							
DL2				LR	LR			
	comp=Z,950nm,22.4s							
DL2				LR	LR			
	comp=Z,1µm,19.9s							
MDJ	**Mudanjiang**	**61.23**	**335**	PFAKE		07	53	00.0 +10
MDJ				LR	LR			
	comp=Z,1µm,22.0s							
SKNT	**Sakolnakorn**	**62.08**	**295**	P	**P**	**07**	**52**	**58.5 +2.5**
	comp=Z,70nm,0.9s							
CN2	**Changchun**	**62.40**	**332**	*e*P	**P**	**07**	**52**	**58.8 +1.3**
CN2				*e*S	**S**	**08**	**01**	**22.5 +0.7**
CN2				pmax	pmax			
	comp=Z,10.0nm,0.7s							
CN2				pmax	pmax			
	comp=Z,300nm,4.0s							
CN2				LR	LR			
	comp=Z,2µm,18.0s							
CN2				LR	LR			
	comp=Z,1µm,18.0s							
CN2				LR	LR			
	comp=Z,1µm,16.0s							
HABR	**Khabarovsk**	**62.50**	**341**	*e*P	**P**	**07**	**52**	**56.1 -2.0**
HABR				*e*		07	53	35.4
HABR				*e*		07	55	13.7
HABR				*e*S	**S**	**08**	**01**	**23.9 +1.1**
HABR				*e*		08	02	48.5
HABR				*e*SS	**SS**	**08**	**05**	**29.2 +1.6**
HABR				pmax	pmax			
	comp=N,33nm,1.7s							
HABR				pmax	pmax			
	comp=Z,68nm,1.7s							
HABR				pmax	pmax			
	comp=E,63nm,1.7s							
HABR				MLR	MLR			
	comp=Z,799nm,19.0s							
TYV	**Tymovskoe**	**62.65**	**347**	*e*P	**P**	**07**	**53**	**00.5 +1.5**
TYV				*e*S	**S**	**08**	**01**	**29.0 +4.4**
TYV				pmax	pmax			
	comp=Z,52nm,1.4s							
TYV				pmax	pmax			
	comp=Z,500nm,6.0s							
TYV				smax	smax			
	comp=E,2µm,10.0s							
RKT	**Rikitea**	**62.67**	**111**	*e*S	**S**	**08**	**01**	**21.0 -5.1**
	comp=E,913nm,27.5s							
RKT				*e*LQ	LQ	08	08	42.4
	comp=E,2µm,33.5s							
RKT				*e*LR	LR	08	11	24.3
	comp=E,4µm,27.5s,baz=276							
PET	**Petropavlovsk**	**62.85**	**359**	*e*P	P	07	52	55.5 -4.9
PET				*e*S	**S**	**08**	**01**	**22.4 -4.7**
PET				*e*PS	**PnS**	**08**	**01**	**46.8 +0.1**
PET				*e*SS	**SS**	**08**	**05**	**28.5 -4.5**
PET				pmax	pmax			
	comp=Z,280nm,11.7s							
PET				pmax	pmax			
	comp=Z,509nm,15.0s							
PET				MLR	MLR			
	comp=Z,998nm,17.0s							
PET				MLR	MLR			
	comp=Z,1µm,17.0s							
PET	**Petropavlovsk**	**62.85**	**359**	PFAKE		07	53	10.0 +10
PET				LR	LR			
	comp=Z,1µm,21.0s							
PEA0	**Petropavlovsk-**	**62.97**	**358**	*e*P	**P**	**07**	**53**	**01.5 +0.4**
PEA0B	**Petropavlovsk-**	**62.97**	**358**	PFAKE		07	53	10.0 +8.9
PEA0B				LR	LR			
	comp=Z,1µm,21.0s							
PETK	**Petropavlovsk-**	**62.97**	**358**	P	**P**	**07**	**53**	**02.4 +1.2**
	comp=Z,3.1nm,0.7s,baz=146,slow=7.9,SNR=5.5							
PETK				LR	LR	08	17	42.5
	comp=Z,706nm,21.3s,baz=168,slow=33							
PEA1	**Petropavlovsk-**	**62.97**	**358**	*e*P	**P**	**07**	**53**	**02.4 +1.2**
TRTT	**Trang**	**63.20**	**284**	P	P	07	53	11.8 +8.3
	comp=Z,28nm,1.1s							
NONG	**Nongkai**	**63.22**	**296**	P	P	07	53	08.4 +4.9
	comp=Z,35nm,1.4s,comp=Z,2µm							
ENH	**Enshi**	**63.40**	**311**	PFAKE		07	53	10.0 +5.5
ENH				LR	LR			
	comp=Z,600nm,19.0s							
GYA	**Guiyang**	**63.72**	**306**	⇑*i*P	**P**	**07**	**53**	**11.3 +4.5**
GYA				PcP	**PcP**	**07**	**53**	**44.0 +1.2**
GYA				PP	**PP**	**07**	**55**	**31.5 +4.1**
GYA				ScP		07	57	45.3
GYA				S	**S**	**08**	**01**	**42.8 +3.6**
GYA				SKS	**SKSac**	**08**	**02**	**58.0 0.0**
GYA				SS	**SS**	**08**	**05**	**51.3 +3.6**
GYA				pmax	pmax			
	comp=Z,20nm,1.0s							
GYA				pmax	pmax			
	comp=Z,180nm,8.2s							
GYA				LR	LR			
	comp=Z,7µm,20.6s							
GYA				LR	LR			
	comp=Z,6µm,20.9s							
GYA				LR	LR			
	comp=Z,6µm,21.0s							
KLR	**Kul'dur**	**64.25**	**339**	P	**P**	**07**	**53**	**10.5 +0.8**
	comp=Z,8.5nm,1.1s,baz=118,slow=4.8,SNR=10							
KLR				LR	LR	08	18	05.8
	comp=Z,992nm,21.5s,baz=146,slow=33							
SURT	**Suratani**	**64.35**	**285**	P	P	07	53	16.3 +5.3
	comp=Z,8.1nm,3.2s							
BJT	**Baijiatuau**	**64.60**	**323**	PFAKE		07	53	20.0 +7.8
BJT				LR	LR			
	comp=Z,1µm,18.0s							
BJI	**Beijing**	**64.61**	**324**	P	**P**	**07**	**53**	**16.3 +4.1**
BJI				S	**S**	**08**	**01**	**51.5 +2.0**
BJI				ScS	**ScS**	**08**	**03**	**07.5 +3.6**
BJI				pmax	pmax			
	comp=Z,14nm,1.6s							
BJI				pmax	pmax			
	comp=Z,260nm,4.1s							
BJI				LR	LR			
	comp=Z,2µm,20.4s							
BJI				LR	LR			
	comp=Z,910nm,24.1s							
BJI				LR	LR			
	comp=Z,2µm,25.4s							
PBKT	**Sadao Pong**	**64.64**	**294**	P	P	07	53	18.5 +5.6
	comp=Z,16nm,3.3s							
PHET	**Kaeng Krachan**	**64.69**	**289**	P	P	07	53	20.3 +7.0
	comp=Z,7.5nm,1.1s							
NKL	**Nikolayevsk**	**65.22**	**347**	*e*P	**P**	**07**	**53**	**15.0 -0.9**
NKL				*e*S	**S**	**08**	**02**	**01.0 +4.6**
NKL				pmax	pmax			
	comp=N,200nm,4.0s							
NKL				pmax	pmax			
	comp=Z,450nm,4.5s							
NKL				smax	smax			
	comp=E,2µm,10.0s							
UTTA	**Uttaradit**	**65.41**	**295**	P	P	07	53	23.6 +5.7
	comp=E,4.0nm,1.1s,comp=E,46nm							
CASY	**Casey**	**65.51**	**200**	*e*P	**P**	**07**	**53**	**18.4 +0.7**
	comp=E,120nm,1.6s							
CASY				LR	LR			
	comp=Z,2µm,18.0s							
NANT	**Nan**	**65.65**	**296**	P	**P**	**07**	**53**	**21.6 +2.2**
	comp=Z,6.3nm,1.1s,comp=Z,97nm							
XAN	**Xi'an**	**65.77**	**314**	P	**P**	**07**	**53**	**24.5 +4.5**
XAN				pP	pP	07	53	31.8 +0.5
XAN				PP	**PP**	**07**	**55**	**50.8 +5.6**
XAN				S	**S**	**08**	**02**	**03.3 -0.8**
XAN				ScS	**ScS**	**08**	**03**	**14.0 +0.7**
XAN				pmax	pmax			
	comp=Z,16nm,1.5s							
XAN				pmax	pmax			
	comp=Z,130nm,4.9s							
XAN				LR	LR			
	comp=Z,780nm,16.2s							
XAN				LR	LR			
	comp=Z,1µm,18.2s							
XAN				LR	LR			
	comp=Z,1µm,17.2s							
KMI	**Kunming**	**66.32**	**303**	P	**P**	**07**	**53**	**25.8 +1.9**
KMI				pP	pP	07	53	29.0 -6.2
KMI				sP	sP	07	53	30.3 -9.2
KMI				PP	**PP**	**07**	**55**	**54.0 +3.6**
KMI				S	**S**	**08**	**02**	**12.0 +0.6**
KMI				SS	**SS**	**08**	**06**	**30.3 +1.8**
KMI				pmax	pmax			
	comp=Z,24nm,0.9s							
KMI				pmax	pmax			
	comp=Z,320nm,7.0s							
KMI				LR	LR			
	comp=Z,600nm,17.7s							
KMI				LR	LR			
	comp=Z,600nm,18.4s							
KMI				LR	LR			
	comp=Z,980nm,18.7s							
LAMP	**Lampang**	**66.50**	**295**	P	**P**	**07**	**53**	**29.0 +4.1**
	comp=Z,9.0nm,1.0s							
CM01	**Chiang Mai Arr**	**67.07**	**295**	*e*P	**P**	**07**	**53**	**28.4 -0.2**
CMAR	**Chiang Mai Arr**	**67.09**	**295**	P	**P**	**07**	**53**	**28.4 -0.3**
	comp=Z,1.5nm,0.4s,baz=121,slow=4.7,SNR=6.9							
CMAR				LR	LR	08	23	44.5
	comp=Z,612nm,19.6s,baz=116,slow=37							
CMMT	**Chiang Mai**	**67.21**	**295**	P	P	07	53	34.3 +4.9
	comp=Z,17nm,1.4s,comp=Z,578nm							
CHTO	**Chiang Mai**	**67.22**	**295**	*e*P	**P**	**07**	**53**	**29.5 +0.1**
CHTO				pmax	pmax			
	comp=Z,21nm,1.1s							
CHTO	**Chiang Mai**	**67.22**	**295**	*e*P	**P**	**07**	**53**	**29.5 +0.1**
	comp=Z,20nm,1.1s							
HHC	**Hu-ho-hao-te**	**67.87**	**322**	*e*P	**P**	**07**	**53**	**34.0 +0.7**
HHC				S	**S**	**08**	**02**	**32.0 +2.7**
HHC				ScS	**SKSac**	**08**	**03**	**28.5 -0.4**
HHC				pmax	pmax			
	comp=Z,19nm,1.1s							
HHC				pmax	pmax			
	comp=Z,320nm,6.4s							
HHC				LR	LR			
	comp=Z,4µm,16.1s							
HHC				LR	LR			
	comp=Z,3µm,16.2s							
HHC				LR	LR			
	comp=Z,4µm,18.4s							
CD2	**Chengdu**	**68.02**	**309**	P	**P**	**07**	**53**	**33.5 -0.9**
CD2				PP	**PP**	**07**	**56**	**03.5 -1.4**
CD2				S	**S**	**08**	**02**	**33.5 +2.1**
CD2				sS	sS	08	02	39.5 -11
CD2				SS	**SS**	**08**	**06**	**57.0 +2.6**
CD2				pmax	pmax			
	comp=Z,20nm,0.5s							
CD2				pmax	pmax			
	comp=Z,200nm,4.8s							
HIA	**Hailar**	**69.10**	**333**	PFAKE		07	53	50.0 +9.3
HIA				LR	LR			
	comp=Z,1µm,21.0s							
MA2	**Magadan**	**69.85**	**355**	P	**P**	**07**	**53**	**46.1 +1.1**
	comp=Z,17nm,0.9s,baz=188,slow=5.4,SNR=7.3							
MA2				LR	LR	08	20	33.6
	comp=Z,853nm,21.8s,baz=200,slow=33							
LZH	**Lanzhou**	**70.39**	**314**	*e*P	**P**	**07**	**53**	**51.0 +1.9**
LZH				pP	pP	07	53	55.3 -5.2
LZH				sP	sP	07	53	57.8 -7.0
LZH				PP	**PP**	**07**	**56**	**29.0 +3.5**
LZH				*e*S	**S**	**08**	**03**	**02.0 +2.5**
LZH				sS	sS	08	03	08.3 -10
LZH				pmax	pmax			
	comp=Z,36nm,1.0s							
LZH				pmax	pmax			
	comp=Z,340nm,4.0s							
LZH				LR	LR			
	comp=Z,1µm,16.1s							
LZH				LR	LR			
	comp=Z,1µm,15.0s							
LZH				LR	LR			
	comp=Z,1µm,17.1s							
MIR	**Mirnyy**	**71.98**	**203**	*i*P	**P**	**07**	**53**	**58.0 0.0**
MIR				pmax	pmax			
	comp=Z,12nm,2.0s							
SEY	**Seymchan**	**73.05**	**356**	P	**P**	**07**	**54**	**05.8 +1.6**
	comp=Z,9.2nm,0.9s,baz=130,slow=5.3,SNR=6.9							
SEY	**Seymchan**	**73.05**	**356**	⇑*e*P	**P**	**07**	**54**	**05.3 +1.0**
ULN	**Ulaanbaatar**	**74.59**	**326**	*ce*P	**P**	**07**	**54**	**14.4 +0.5**
ULN				pmax	pmax			
	comp=Z,4.0nm,1.0s							
ULN	**Ulaanbaatar**	**74.59**	**326**	*e*P	**P**	**07**	**54**	**14.9 +1.0**
	comp=Z,53nm,1.1s							
ULN				LR	LR			
	comp=Z,800nm,19.0s							
GTA	**Gaotai**	**74.77**	**316**	⇑P	**P**	**07**	**54**	**15.3 +0.2**
GTA				pP	pP	07	54	20.8 -5.7
GTA				sP	PcP	07	54	24.0 -5.1
GTA				S	**S**	**08**	**03**	**50.8 +1.5**
GTA				sS	sS	08	04	03.0 -5.2
GTA				SKS	**SKSac**	**08**	**04**	**18.3 -2.8**
GTA				pmax	pmax			
	comp=Z,6.0nm,1.5s							
GTA				pmax	pmax			
	comp=Z,130nm,5.9s							
GTA				LR	LR			
	comp=Z,1µm,16.6s							
GTA				LR	LR			
	comp=Z,810nm,16.6s							
GTA				LR	LR			
	comp=Z,1µm,17.6s							
SONA0	**Songino Array**	**74.94**	**326**	*e*P	**P**	**07**	**54**	**16.6 +0.8**
	comp=Z,33nm,0.7s							
SONM	**Songino Array**	**74.94**	**326**	P	**P**	**07**	**54**	**16.7 +0.8**
	comp=Z,2.8nm,0.7s,baz=149,slow=6.4,SNR=6.4							
SONM				LR	LR	08	29	04.5
	comp=Z,844nm,18.0s,baz=112,slow=37							
SONA1	**Songino Array**	**74.94**	**326**	*e*P	**P**	**07**	**54**	**16.2 +0.3**
YAK	**Yakutsk**	**75.80**	**346**	LR	LR	08	25	34.9
	comp=Z,1µm,20.5s,baz=149,slow=34							
YAK	**Yakutsk**	**75.80**	**346**	*e*P	**P**	**07**	**54**	**20.6 +0.3**
YAK				pmax	pmax			
	comp=Z,14nm,1.0s							
YAK	**Yakutsk**	**75.80**	**346**	PFAKE		07	54	30.0 +10
YAK				LR	LR			
	comp=Z,1µm,18.0s							
OHAK	**Old Harbor**	**76.95**	**24**	*e*P	**P**	**07**	**54**	**28.6 +1.7**
	comp=Z,72nm,1.6s							
OHAK				LR	LR			
	comp=Z,2µm,20.0s							
BOD	**Bodaibo**	**77.55**	**337**	*e*P	**P**	**07**	**54**	**30.0 -0.3**
BOD				pmax	pmax			
	comp=Z,15nm,1.8s							
LSA	**Lhasa**	**77.57**	**303**	PFAKE		07	54	40.0 +8.4
LSA				LR	LR			
	comp=Z,800nm,21.0s							
KDAK	**Kodiak Island**	**77.61**	**24**	*i*P	**P**	**07**	**54**	**33.4 +2.8**
KDAK	**Kodiak Island**	**77.61**	**24**	*e*P	**P**	**07**	**54**	**30.8 +0.2**
	comp=Z,16nm,0.9s							
KDAK				LR	LR			
	comp=Z,2µm,20.0s							
BILL	**Bilibino**	**78.01**	**2***c*	*i*P	**P**	**07**	**54**	**31.5 -1.1**
BILL				*e*		07	54	40.9
BILL				pmax	pmax			
	comp=Z,15nm,1.1s							
BILL				MLR	MLR			
	comp=Z,850nm,18.0s							
BILL	**Bilibino**	**78.01**	**2**	*e*P	**P**	**07**	**54**	**32.6 0.0**
	comp=Z,42nm,0.9s							
BILL				LR	LR			
	comp=Z,1µm,20.0s							
ZAK	**Zakamensk**	**78.05**	**327**	*e*P	**P**	**07**	**54**	**33.8 +0.5**
ZAK				pmax	pmax			
	comp=Z,19nm,1.4s							
ZAK				pmax	pmax			
	comp=Z,6.0nm,1.1s							
TLY	**Talaya**	**78.55**	**328**	LR	LR	08	26	23.2
	comp=Z,554nm,19.9s,baz=126,slow=33							
TLY	**Talaya**	**78.55**	**328***c*	*i*P	P	07	54	41.3 +5.3
TLY				*e*S	**S**	**08**	**04**	**29.1 -0.7**
TLY				*e*		08	04	53.6
TLY				pmax	pmax			
	comp=Z,39nm,2.1s							
TLY	**Talaya**	**78.55**	**328**	PFAKE		07	54	50.0 +14
TLY				LR	LR			
	comp=Z,700nm,18.0s							
SVW2	**Sparrevohn**	**78.84**	**20**	*e*P	**P**	**07**	**54**	**38.1 +0.7**
	comp=Z,45nm,1.2s							
SVW2				LR	LR			
	comp=Z,2µm,18.0s							
TNA	**Tin City**	**78.95**	**13**	PFAKE		07	54	50.0 +12
TNA				LR	LR			
	comp=Z,800nm,18.0s							
HOM	**Homer**	**79.25**	**22**	PFAKE		07	54	50.0 +10
HOM				LR	LR			
	comp=Z,2µm,20.0s							
RSO	**Redoubt South**	**79.38**	**22**	*e*P	**P**	**07**	**54**	**40.0 -0.6**
BRLK	**Bradley Lake**	**79.60**	**23**	*e*P	**P**	**07**	**54**	**41.5 -0.1**
	comp=Z,42nm,1.2s							
BRLK				LR	LR			
	comp=Z,3µm,20.0s							
QSPA	**South Pole Qui**	**79.94**	**180**	*e*P	**P**	**07**	**54**	**43.7 +0.2**
QSPA				LR	LR			
	comp=Z,2µm,19.0s							
MOY	**Mondy**	**79.95**	**327**	*e*P	P	07	54	53.1 +9.3
TT01	**Tatalina**	**80.01**	**19**	*e*P	**P**	**07**	**54**	**44.1 +0.4**
TTA	**Tatalina**	**80.03**	**19**	*e*P	**P**	**07**	**54**	**44.3 +0.4**
TTA				pmax	pmax			
	comp=Z,21nm,1.2s							
TTA	**Tatalina**	**80.03**	**19**	*e*P	**P**	**07**	**54**	**44.3 +0.4**
	comp=Z,21nm,1.3s							
TTA				LR	LR			
	comp=Z,800nm,20.0s							
SEW	**Seward**	**80.37**	**23**	*e*P	**P**	**07**	**54**	**46.6 +1.0**
	comp=Z,23nm,1.0s							
SEW				LR	LR			
	comp=Z,2µm,20.0s							
RC01	**Rabbit Creek A**	**80.91**	**22**	*e*P	**P**	**07**	**54**	**48.2 -0.3**
	comp=Z,54nm,1.6s							
RC01				LR	LR			
	comp=Z,2µm,20.0s							
PPLA	**Purkeypile**	**81.25**	**20**	*e*P	**P**	**07**	**54**	**48.9 -1.6**
	comp=Z,45nm,1.5s							
PPLA				LR	LR			
	comp=Z,1µm,20.0s							
PMR	**Palmer**	**81.45**	**22**	*e*P	**P**	**07**	**54**	**51.1 -0.3**
PMR				pmax	pmax			
	comp=Z,40nm,1.3s							
PMR				MLR	MLR			
	comp=Z,2µm,20.0s							
PMR	**Palmer**	**81.45**	**22**	*e*P	**P**	**07**	**54**	**51.1 -0.3**
	comp=Z,40nm,1.3s							
PMR				LR	LR			
	comp=Z,2µm,20.0s							
CAST	**Castle Rocks**	**81.64**	**20**	*e*P	**P**	**07**	**54**	**51.7 -0.8**
	comp=Z,34nm,1.2s							
CAST				LR	LR			
	comp=Z,2µm,19.0s							
SML	**Sawmill**	**81.89**	**22**	*e*P	**P**	**07**	**54**	**54.0 +0.2**
SML				pmax	pmax			
	comp=Z,65nm,1.5s							
SML	**Sawmill**	**81.89**	**22**	*e*P	**P**	**07**	**54**	**54.0 +0.2**
	comp=Z,65nm,1.6s							
SML				LR	LR			
	comp=Z,2µm,20.0s							
EYAK	**Cordova Ski Ar**	**82.09**	**24**	PFAKE		07	55	00.0 +5.2
EYAK				LR	LR			
	comp=Z,2µm,20.0s							
KTH	**Kantishna Hill**	**82.12**	**20**	*e*P	**P**	**07**	**54**	**54.0 -1.0**
	comp=Z,18nm,1.0s							
KTH				LR	LR			
	comp=Z,2µm,20.0s							
TRF	**Thorofare Moun**	**82.26**	**20**	*e*P	**P**	**07**	**54**	**54.8 -1.1**
	comp=Z,22nm,1.1s							
TRF				LR	LR			
	comp=Z,2µm,20.0s							
SCM	**Sheep Creek Mo**	**82.27**	**22**	*e*P	**P**	**07**	**54**	**55.2 -0.6**
SCM				pmax	pmax			
	comp=Z,33nm,1.0s							
SCM	**Sheep Creek Mo**	**82.27**	**22**	*e*P	**P**	**07**	**54**	**55.2 -0.6**
	comp=Z,32nm,1.0s							
SCM				LR	LR			
	comp=Z,2µm,20.0s							
DIV	**Divide**	**82.43**	**23**	PFAKE		07	55	10.0 +13
DIV				LR	LR			
	comp=Z,3µm,20.0s							
BPAW	**Bear Paw Mtn.**	**82.46**	**19**	*e*P	**P**	**07**	**54**	**55.6 -1.2**
	comp=Z,22nm,1.3s							
BPAW				LR	LR			
	comp=Z,1µm,20.0s							
KLU	**Klutina**	**82.59**	**23**	*e*P	**P**	**07**	**54**	**57.5 0.0**
	comp=Z,33nm,1.4s							
KLU				LR	LR			
	comp=Z,2µm,20.0s							
RND	**Reindeer**	**82.72**	**21**	*e*P	**P**	**07**	**54**	**57.4 -0.8**
RND				pmax	pmax			
	comp=Z,48nm,1.2s							
RND	**Reindeer**	**82.72**	**21**	*e*P	**P**	**07**	**54**	**57.4 -0.8**
	comp=Z,48nm,1.2s							
RND				LR	LR			
	comp=Z,2µm,20.0s							
BMRM	**Bremner River**	**82.80**	**24**	*e*P	**P**	**07**	**54**	**58.2 -0.4**
	comp=Z,67nm,1.7s							
BMRM				LR	LR			
	comp=Z,2µm,21.0s							
MCK	**McKinley**	**82.91**	**20**	*e*P	**P**	**07**	**54**	**58.5 -0.5**
MCK				pmax	pmax			
	comp=Z,43nm,1.0s							
MCK	**McKinley**	**82.91**	**20**	*e*P	**P**	**07**	**54**	**58.5 -0.5**
	comp=Z,43nm,1.0s							
MCK				LR	LR			
	comp=Z,2µm,20.0s							
BWN	**Browne**	**83.01**	**20**	*e*P	**P**	**07**	**54**	**59.3 -0.3**
	comp=Z,61nm,1.2s							
BWN				LR	LR			
	comp=Z,2µm,20.0s							
DHY	**Denali Highway**	**83.03**	**21**	*e*P	**P**	**07**	**54**	**59.7 -0.2**
	comp=Z,64nm,1.8s							
DHY				LR	LR			
	comp=Z,2µm,20.0s							
MLY	**Manley**	**83.17**	**19**	*e*P	**P**	**07**	**54**	**60.0 -0.4**
	comp=Z,18nm,1.2s							
MLY				LR	LR			
	comp=Z,1µm,18.0s							
CRQM	**Cirque**	**83.26**	**24**	*e*P	**P**	**07**	**55**	**01.8 +0.7**
	comp=Z,28nm,1.1s							
CRQM				LR	LR			
	comp=Z,2µm,18.0s							
PAX	**Paxson**	**83.66**	**22**	*e*P	**P**	**07**	**55**	**02.3 -0.7**
PAX				pmax	pmax			
	comp=Z,47nm,1.9s							
PAX				MLR	MLR			
	comp=Z,2µm,20.0s							
PAX	**Paxson**	**83.66**	**22**	*e*P	**P**	**07**	**55**	**02.3 -0.7**
	comp=Z,47nm,1.9s							
PAX				LR	LR			
	comp=Z,2µm,20.0s							
WRH	**Wood River Hil**	**83.67**	**20**	*e*P	**P**	**07**	**55**	**02.0 -0.9**
	comp=Z,22nm,1.1s							
WRH				LR	LR			
	comp=Z,2µm,20.0s							
MAW	**Mawson**	**83.71**	**202**	LR	LR	08	27	22.2
	comp=Z,1µm,21.6s,baz=76,slow=32							
MAW	**Mawson**	**83.71**	**202**	*e*P	**P**	**07**	**55**	**03.7 +0.6**
MAW				pmax	pmax			
	comp=Z,9.0nm,1.3s							
MAW	**Mawson**	**83.71**	**202**	*e*P	**P**	**07**	**55**	**03.7 +0.6**
	comp=Z,9.0nm,1.3s							
MAW				LR	LR			
	comp=Z,400nm,22.0s							
BALM	**Baldy**	**83.74**	**24**	*e*P	**P**	**07**	**55**	**03.7 +0.2**
BALM				pmax	pmax			
	comp=Z,19nm,1.0s							
BALM				MLR	MLR			
	comp=Z,1µm,20.0s							
BALM	**Baldy**	**83.74**	**24**	*e*P	**P**	**07**	**55**	**03.7 +0.2**
	comp=Z,19nm,1.0s							
BALM				LR	LR			
	comp=Z,1µm,20.0s							
CCB	**Clear Creek Bu**	**83.87**	**20**	*e*P	**P**	**07**	**55**	**02.8 -1.2**
	comp=Z,21nm,1.4s							
CCB				LR	LR			
	comp=Z,2µm,20.0s							
MDM	**Murphy Dome**	**83.93**	**19**	*e*P	**P**	**07**	**55**	**03.1 -1.2**
	comp=Z,36nm,1.3s							
MDM				LR	LR			
	comp=Z,1µm,19.0s							
COLA	**College**	**84.00**	**20***c*	*i*P	**P**	**07**	**55**	**02.9 -1.7**
COLA				pmax	pmax			
	comp=Z,9.0nm,0.9s							
COLA	**College**	**84.00**	**20**	*e*P	**P**	**07**	**55**	**03.8 -0.8**
	comp=Z,21nm,0.8s							
COLA				LR	LR			
	comp=Z,2µm,19.0s							
HDA	**Harding Lake**	**84.01**	**20**	*e*P	**P**	**07**	**55**	**03.8 -0.8**
	comp=Z,26nm,1.0s							
HDA				LR	LR			
	comp=Z,1µm,19.0s							
TIXI	**Tiksi**	**84.22**	**350**	⇑*i*P	**P**	**07**	**55**	**06.8 +1.2**

TIXI pmax pmax
comp=Z,13nm,1.3s
TIXI Tiksi 84.22 350 PFAKE 07 55 20.0 +14
TIXI LR LR
comp=Z,1μm,18.0s
IL1 Eielson Array 84.26 20 *e*P **P 07 55 03.3 -2.6**
ILAR Eielson Array 84.26 20 P **P 07 55 04.7 -1.3**
comp=Z,2.2nm,0.5s,baz=250,slow=5.1,SNR=43
ILAR LR LR 08 28 57.5
comp=Z,2μm,19.5s,baz=232,slow=33
ILB Eielson Array 84.26 20 *e*P **P 07 55 04.7 -1.3**
MENT Mentasta 84.28 22 PFAKE 07 55 20.0 +14
MENT LR LR
comp=Z,1μm,19.0s
DOT Dot Lake 84.57 22 *e*P **P 07 55 07.5 0.0**
comp=Z,41nm,1.1s
COLD Coldfoot 84.80 17 PFAKE 07 55 20.0 +11
COLD LR LR
comp=Z,1μm,19.0s
WMQ Urumqi 84.85 316 P **P 07 55 12.0 +2.5**
WMQ pP PcP 07 55 14.0 +1.2
WMQ sP pP 07 55 17.5 -3.6
WMQ S **S 08 05 34.3 -1.0**
WMQ SS **SS 08 11 10.3 +1.8**
WMQ pmax pmax
comp=Z,5.0nm,1.6s
WMQ pmax pmax
comp=Z,39nm,4.2s
WMQ LR LR
comp=Z,500nm,17.0s
WMQ LR LR
comp=Z,260nm,14.2s
WMQ LR LR
comp=Z,300nm,19.8s
CRAG Craig 85.24 32 PFAKE 07 55 20.0 +9.0
CRAG LR LR
comp=Z,3μm,18.0s
HYB Hyderabad 85.50 288 *i* P **P 07 55 14.0 +0.8**
HYB *e*SKS **SKSac 08 05 36.0 -0.3**
HYB *e*S **SKKSac 08 05 44.0 +0.9**
KCPM Cahto Peak 85.65 49 PFAKE 07 55 20.0 +6.3
KCPM LR LR
comp=Z,100nm,21.0s
JCC Jacoby Creek, 85.66 47 PFAKE 07 55 20.0 +6.6
JCC LR LR
comp=Z,2μm,20.0s
KMRM Mail Ridge 85.72 48 PFAKE 07 55 20.0 +6.1
KMRM LR LR
comp=Z,2μm,18.0s
MCCM Marconi Confer 85.74 50 PFAKE 07 55 20.0 +6.1
MCCM LR LR
comp=Z,2μm,18.0s
HOPS Hopland Field 85.84 49 PFAKE 07 55 20.0 +5.6
HOPS LR LR
comp=Z,2μm,18.0s
KHMM Horse Mountain 85.89 47 PFAKE 07 55 30.0 +15
KHMM LR LR
comp=Z,1μm,18.0s
FYU Fort Yukon 85.90 19 PFAKE 07 55 20.0 +5.9
FYU LR LR
comp=Z,2μm,19.0s
SKAG Skagway 85.95 27 *e*P **P 07 55 15.6 +1.2**
comp=Z,38nm,1.5s
SKAG LR LR
comp=Z,2μm,21.0s
WRAK Wrangell Islan 86.04 31 PFAKE 07 55 30.0 +15
WRAK LR LR
comp=Z,3μm,18.0s
EGAK Eagle 86.26 21 *e*P **P 07 55 16.5 +0.6**
comp=Z,31nm,1.1s
EGAK LR LR
comp=Z,2μm,20.0s
SAO San Andreas Ge 86.47 52 PFAKE 07 55 30.0 +12
SAO LR LR
comp=Z,2μm,18.0s
DAWY Dawson 86.53 22 PFAKE 07 55 30.0 +13
DAWY LR LR
comp=Z,2μm,21.0s
N02D Trinity Center 86.66 48 P **P 07 55 19.7 +1.1**
baz=254
M02C Callahan 86.67 47 P **P 07 55 19.7 +1.1**
baz=254
WDC Whiskeytown Da 86.67 48 *e*P **P 07 55 19.5 +1.0**
WDC pmax pmax
comp=Z,28nm,1.4s
WDC Whiskeytown Da 86.67 48 *e*P **P 07 55 19.5 +1.0**
comp=Z,28nm,1.4s
WDC LR LR
comp=Z,1μm,19.0s
YBH Yreka Blue Hor 86.87 47 *e*P **P 07 55 20.5 +0.9**
YBH pmax pmax
comp=Z,17nm,1.1s
YBH Yreka Blue Hor 86.87 47 *e*P **P 07 55 20.5 +0.9**
comp=Z,17nm,1.1s
YBH LR LR
comp=Z,1μm,20.0s
HUMO Hull Mountain 86.94 46 *e*P **P 07 55 20.3 +0.5**
comp=Z,41nm,1.5s
HUMO LR LR
comp=Z,2μm,19.0s
SNCC San Nicolas Is 87.11 56 PFAKE 07 55 30.0 +9.2
SNCC LR LR
comp=Z,3μm,19.0s
ORV Oroville 87.16 49 PFAKE 07 55 30.0 +9.1
ORV LR LR
comp=Z,1μm,18.0s
COR Corvallis 87.27 44 PFAKE 07 55 30.0 +8.7
COR LR LR
comp=Z,2μm,21.0s
AFDM Forest Hills D 87.40 50 *e*P **P 07 55 21.8 -0.3**
comp=Z,48nm,1.8s
AFDM LR LR
comp=Z,1μm,21.0s
F03A Seaside 87.49 43 PFAKE 07 55 30.0 +7.7
F03A LR LR
comp=Z,2μm,19.0s
M04C Macdoel 87.51 47 P **P 07 55 23.6 +0.9**
baz=254
CMB Columbia Colle 87.61 51 *e*P **P 07 55 21.3 -1.9**
CMB pmax pmax
comp=Z,6.0nm,1.0s
CMB MLR MLR
comp=Z,3μm,18.0s
CMB Columbia Colle 87.61 51 *e*P **P 07 55 21.3 -1.9**
comp=Z,6.3nm,1.0s
CMB LR LR
comp=Z,3μm,18.0s
E03A Lebam 87.67 42 PFAKE 07 55 30.0 +6.9
E03A LR LR
comp=Z,2μm,20.0s
NLWA Neilton Lookou 87.72 41 PFAKE 07 55 30.0 +6.5
NLWA LR LR
comp=Z,2μm,19.0s
DLBC Dease Lake 88.00 30 *e*P **P 07 55 25.1 +0.5**
comp=Z,16nm,1.5s
DLBC LR LR
comp=Z,2μm,18.0s
H04A Detroit Lake 88.06 44 PFAKE 07 55 40.0 +15
H04A LR LR
comp=Z,1μm,20.0s
OSI Osito Audit: C 88.08 55 PFAKE 07 55 40.0 +14
OSI LR LR
comp=Z,3μm,20.0s
F04A Amboy 88.25 43 PFAKE 07 55 40.0 +14
F04A LR LR
comp=Z,2μm,19.0s
J05D Fort Rock, OR 88.34 46 P **P 07 55 27.0 +0.3**
baz=255
PGC Sidney 88.36 40 PFAKE 07 55 40.0 +14
PGC LR LR
comp=Z,2μm,21.0s
PASC Pasadena Art C 88.42 55 PFAKE 07 55 40.0 +13
PASC LR LR
comp=Z,3μm,20.0s
K05A Summer Lake 88.44 46 *e*P **P 07 55 29.5 +2.3**
comp=Z,116nm,1.9s
K05A LR LR
comp=Z,1μm,20.0s
WAKR Walker 88.45 51 *e*P **P 07 55 27.2 -0.2**
ISA Isabella, Lake 88.53 54 PFAKE 07 55 40.0 +12
ISA LR LR
comp=Z,3μm,21.0s
MWC Mount Wilson 88.53 55 PFAKE 07 55 40.0 +12
MWC LR LR
comp=Z,3μm,20.0s
MOD Modoc Plateau 88.65 47 PFAKE 07 55 40.0 +12
MOD LR LR
comp=Z,900nm,20.0s
LON Longmire 88.88 42 PFAKE 07 55 40.0 +11
LON LR LR
comp=Z,1μm,22.0s
D05A Enumclaw 88.89 42 PFAKE 07 55 40.0 +11
D05A LR LR
comp=Z,2μm,20.0s
LRMC Laurel Mtn Rad 89.11 54 P **P 07 55 31.4 +1.0**
baz=257
NV01 Mina Array Sit 89.30 51 *e*P **P 07 55 31.5 +0.1**
NVAR Mina Array Bea 89.30 51 P **P 07 55 31.7 +0.3**
comp=Z,1.7nm,0.7s,baz=239,slow=6.3,SNR=12
NVAR LR LR 08 31 40.6
comp=Z,2μm,18.2s,baz=272,slow=33
BAR Barrett 89.32 57 PFAKE 07 55 40.0 +8.6
BAR LR LR
comp=Z,2μm,20.0s
MK01 Makanchi Array 89.36 318 *e*P **P 07 55 31.8 +0.6**
DAC Darwin (Calif) 89.36 53 *e*P **P 07 55 32.0 +0.3**
DAC pmax pmax
comp=Z,21nm,1.1s
DAC Darwin (Calif) 89.36 53 *e*P **P 07 55 32.0 +0.3**
comp=Z,21nm,1.1s
DAC LR LR
comp=Z,2μm,22.0s
MK31 Makanchi Array 89.37 318 *e*P **P 07 55 33.9 +2.6**
MK31 Makanchi Array 89.37 318 *e*P **P 07 55 33.9 +2.6**
MK32 Makanchi Array 89.37 318 *e*P **P 07 55 31.6 +0.4**
MKAR Makanchi Array 89.37 318 P **P 07 55 31.6 +0.3**
comp=Z,0.6nm,0.7s,baz=104,slow=5.1,SNR=11
MKAR LR LR 08 35 02.5
comp=Z,512nm,21.4s,baz=98,slow=35
MKAR Makanchi Array 89.37 318 P **P 07 55 31.6 +0.3**
MKAR pmax pmax
comp=Z,2.0nm,0.7s
MKAR MLR MLR
comp=Z,512nm,21.4s
MKAR Makanchi Array 89.37 318 *e*P **P 07 55 33.9 +2.7**
MPMC Manual Prospec 89.39 53 P **P 07 55 32.6 +0.7**
baz=257
NV11 Mina Array Sit 89.41 51 *e*P **P 07 55 32.3 +0.5**
comp=Z,66nm,1.8s
NV11 LR LR
comp=Z,2μm,19.0s
B06A Marblemount 89.57 41 PFAKE 07 55 40.0 +7.9
B06A LR LR
comp=Z,2μm,20.0s
MAKZ Makanchi 89.58 318 PFAKE 07 55 40.0 +7.8
MAKZ LR LR
comp=Z,600nm,20.0s
PFO Pinyon Flats O 89.69 56 PFAKE 07 55 40.0 +6.8
PFO LR LR
comp=Z,3μm,19.0s
LTY Liberty 89.77 42 PFAKE 07 55 40.0 +6.8
LTY LR LR
comp=Z,2μm,20.0s
GSC Goldstone, Bar 89.77 54 PFAKE 07 55 40.0 +6.5
GSC LR LR
comp=Z,3μm,20.0s
ZALV Zalesovo Beam 89.83 325 P **P 07 55 33.3 +0.1**
comp=Z,0.7nm,0.4s,baz=116,slow=3.4,SNR=2.9
ZAA1 Zalesovo Array 89.83 325 *e*P **P 07 55 33.3 +0.1**
FURC Furnace Creek, 89.98 53 P **P 07 55 35.2 +0.9**
baz=258
WVOR Wild Horse Val 89.98 47 *e*P **P 07 55 34.3 -0.1**
WVOR pmax pmax
comp=Z,80nm,1.5s
WVOR Wild Horse Val 89.98 47 *e*P **P 07 55 34.3 -0.1**
comp=Z,80nm,1.5s
WVOR LR LR
comp=Z,2μm,19.0s
HEC Hector,Ludlow 90.05 55 P **P 07 55 35.6 +0.8**
baz=258
E07A Sunnyside 90.13 43 PFAKE 07 55 50.0 +15
E07A LR LR
comp=Z,2μm,19.0s
BELC Belle Mtn. Jos 90.15 56 P **P 07 55 36.3 +0.9**
baz=258
HAWA Hanford 90.31 43 PFAKE 07 55 50.0 +14
HAWA LR LR
comp=Z,2μm,19.0s
TUQ Turquoise Moun 90.51 54 P **P 07 55 37.7 +0.7**
baz=258
TPNV Topopah Spring 90.56 53 P **P 07 55 38.1 +0.8**
baz=258
TPNV Topopah Spring 90.56 53 *e*P **P 07 55 37.6 +0.3**
TPNV *e* 07 59 12.9
TPNV pmax pmax
comp=Z,20nm,1.1s
TPNV Topopah Spring 90.56 53 *e*P **P 07 55 37.6 +0.3**
comp=Z,20nm,1.1s
TPNV *e*PP **PP 07 59 12.9 +0.3**
TPNV LR LR
comp=Z,1μm,22.0s
GMRC Granite Mounta 90.58 55 P **P 07 55 38.1 +0.7**
baz=258
INK Inuvik 90.66 20 P **P 07 55 35.8 -0.9**
comp=Z,1.9nm,0.8s,baz=287,slow=4.7,SNR=8.3
IRM Iron Mountain 90.88 56 P **P 07 55 39.4 +0.8**
baz=259
D08A Wollman Farm, 90.88 42 PFAKE 07 55 50.0 +12
D08A LR LR
comp=Z,2μm,18.0s
GLA Glamis 90.92 57 PFAKE 07 55 50.0 +11
GLA LR LR
comp=Z,2μm,21.0s
B08A Colville Reser 90.92 41 *e*P **P 07 55 37.7 -0.8**
comp=Z,11nm,1.3s
B08A LR LR
comp=Z,2μm,19.0s
NVS Novosibirsk 90.97 326 *e*P **P 07 55 41.8 +3.3**
SYO Syowa Base 91.20 198‖ *e*P **P 07 55 40.5 +1.2**
SYO Syowa Base 91.20 198‖ *e*PcP **PcP 07 55 42.8 +2.5**
E09A Wood Farm, Sta 91.27 43 PFAKE 07 55 50.0 +10
E09A LR LR
comp=Z,2μm,19.0s
Y12C Blythe 91.30 56 PFAKE 07 55 50.0 +9.5
Y12C LR LR
comp=Z,2μm,20.0s
R11A Troy Canyon, C 91.36 51 P **P 07 55 41.9 +0.9**
baz=258
R11A Troy Canyon, C 91.36 51 *e*P **P 07 55 41.8 +0.8**
comp=Z,20nm,1.4s
R11A LR LR
comp=Z,2μm,18.0s
BMO Blue Mountains 91.47 45 *e*P **P 07 55 41.6 +0.4**
BMO pmax pmax
comp=Z,25nm,1.4s
BMO Blue Mountains 91.47 45 *e*P **P 07 55 41.6 +0.4**
comp=Z,25nm,1.4s
BMO LR LR
comp=Z,2μm,19.0s
C09A Chrisman Ranch 91.48 42 PFAKE 07 55 50.0 +9.0
C09A LR LR
comp=Z,2μm,20.0s
113A Mohawk Valley, 91.74 57 PFAKE 07 55 50.0 +7.4
113A LR LR
comp=Z,2μm,21.0s
F10A Beach Ranch, E 91.77 44 *e*P **P 07 55 42.6 0.0**
comp=Z,55nm,1.6s
F10A LR LR
comp=Z,1μm,20.0s
SRIG Santa Rosalia 92.05 63 PFAKE 07 55 50.0 +5.9
SRIG LR LR
comp=Z,2μm,19.0s
W13A Hualapai Mount 92.08 55 *e*P **P 07 55 45.3 +0.9**
comp=Z,28nm,1.8s
W13A LR LR
comp=Z,3μm,20.0s
ELK Elko 92.11 49 *e*P **P 07 55 45.2 +0.8**
ELK pmax pmax
comp=Z,16nm,1.3s
ELK Elko 92.11 49 *e*P **P 07 55 45.2 +0.8**
comp=Z,16nm,1.3s
ELK LR LR
comp=Z,1μm,21.0s
MFID Camas Ranch 92.21 46 *e*P **P 07 55 45.2 +0.5**
comp=Z,50nm,1.8s
MFID LR LR
comp=Z,1μm,20.0s
KSH Kashi 92.21 310 *e*P P 07 55 50.3 +5.5
KSH *es*P pP 07 55 56.5 0.0
KSH SKS **SKSac 08 06 22.5 +7.0**
KSH S **ScS 08 06 54.0 +6.4**
KSH pmax pmax
comp=Z,250nm,9.0s
KSH LR LR
comp=Z,940nm,18.0s
KSH LR LR
comp=Z,260nm,13.0s
KSH LR LR
comp=Z,670nm,20.1s
NEW Newport 92.33 42 P **P 07 55 45.1 0.0**
baz=258
NEW Newport 92.33 42 *e*P **P 07 55 44.7 -0.3**
NEW pmax pmax
comp=Z,11nm,1.1s
NEW Newport 92.33 42 *e*P **P 07 55 44.7 -0.3**
comp=Z,11nm,1.1s
NEW LR LR
comp=Z,2μm,20.0s
Y14A Wickenburg 92.58 56 PFAKE 07 56 00.0 +13
Y14A LR LR
comp=Z,6μm,20.0s
KURK Kurchatov 92.67 321 *e*P **P 07 55 47.5 +1.0**
KURK Kurchatov 92.67 321 *e*P **P 07 55 47.5 +1.0**
comp=Z,27nm,1.7s
KURK LR LR
comp=Z,800nm,20.0s
KURBB Kurchatov Arra 92.71 321 P **P 07 55 47.9 +1.3**
comp=Z,1.7nm,1.0s,baz=109,slow=3.2,SNR=6.1
PSUT Pine Spring 92.73 52 *e*P **P 07 55 47.8 +0.4**
comp=Z,15nm,1.4s
LCMT Little Creek M 92.94 53 *e*P **P 07 55 49.7 +1.5**
comp=Z,30nm,1.7s
LCMT LR LR
comp=Z,2μm,20.0s
CCUT Cedar City 92.94 53 PFAKE 07 56 00.0 +12
CCUT LR LR
comp=Z,2μm,21.0s
TKM2 Tokmak 2 93.14 313 PFAKE 07 56 00.0 +11
TKM2 LR LR
comp=Z,600nm,20.0s
HLID Hailey 93.25 46 P **P 07 55 50.5 +1.0**
baz=259
HLID Hailey 93.25 46 *e*P **P 07 55 50.3 +0.7**
comp=Z,21nm,1.4s
HLID LR LR
comp=Z,1μm,20.0s
KNB Kanab 93.27 53 *e*P **P 07 55 52.4 +2.6**
KNB pmax pmax
comp=Z,33nm,1.4s
KNB Kanab 93.27 53 *e*P **P 07 55 52.4 +2.6**
comp=Z,33nm,1.5s
KNB LR LR
comp=Z,2μm,20.0s
NRIK Noril'sk 93.46 340 P **P 07 55 50.6 +1.0**
comp=Z,1.2nm,0.6s,baz=126,slow=5.7,SNR=2.7
NRIK LR LR 08 37 35.0
comp=Z,1μm,21.0s,baz=108,slow=35
HSIG 93.47 61 PFAKE 07 56 00.0 +9.3
HSIG LR LR
comp=Z,3μm,19.0s
SLBS Sierra La Lagu 93.48 67 PFAKE 07 56 00.0 +9.0
SLBS LR LR
comp=Z,2μm,21.0s
U15A North Rim 93.59 54 PFAKE 07 56 00.0 +8.6
U15A LR LR
comp=Z,3μm,20.0s
PKCU Pink Cliffs 93.74 53 PFAKE 07 56 00.0 +7.8
PKCU LR LR
comp=Z,2μm,21.0s
BGU Big Grassy Mou 93.79 49 *e*P **P 07 55 51.6 -0.5**
comp=Z,27nm,1.9s
BGU LR LR
comp=Z,900nm,21.0s
DUG Dugway, Tooele 93.82 50 PFAKE 07 56 00.0 +7.8
DUG LR LR
comp=Z,2μm,18.0s
AAK Ala-Archa 93.88 312‖ *e*P **P 07 55 53.5 +1.0**
AAK pmax pmax
comp=Z,4.0nm,1.5s
AAK Ala-Archa 93.88 312 PFAKE 07 56 00.0 +7.5
AAK LR LR
comp=Z,500nm,20.0s
X16A Lo Mia Camp, P 93.94 56 PFAKE 07 56 00.0 +7.0
X16A LR LR
comp=Z,2μm,22.0s
MTPU Mount Pierson 93.94 52 *e*P **P 07 55 54.4 +1.2**
comp=Z,43nm,1.8s
MTPU LR LR
comp=Z,1μm,20.0s
MSU Marysvale 94.03 52 *e*P **P 07 55 56.0 +2.7**
HVU Hansel Valley 94.12 48 *e*P **P 07 55 55.3 +1.7**
HVU pmax pmax
comp=Z,62nm,1.9s
HVU Hansel Valley 94.12 48 *e*P **P 07 55 55.3 +1.7**
comp=Z,62nm,1.9s
HVU LR LR
comp=Z,1μm,18.0s
TUC Tucson 94.14 58 PFAKE 07 56 00.0 +6.2
TUC LR LR
comp=Z,2μm,18.0s
MSO Missoula 94.17 43 PFAKE 07 56 00.0 +6.4
MSO LR LR
comp=Z,2μm,20.0s
WUAZ Wupatki 94.17 55 PFAKE 07 56 00.0 +6.0
WUAZ LR LR
comp=Z,3μm,20.0s
SPUT South Promonto 94.28 49 PFAKE 07 56 00.0 +5.6
SPUT LR LR
comp=Z,900nm,21.0s
NLU North Lily Min 94.34 50 PFAKE 07 56 10.0 +15
NLU LR LR
comp=Z,2μm,18.0s
EKS2 Erkin-Say 94.41 312 PFAKE 07 56 00.0 +5.1
EKS2 LR LR
comp=Z,600nm,18.0s
WALA Waterton Lakes 94.58 41 PFAKE 07 56 10.0 +15
WALA LR LR
comp=Z,2μm,19.0s
MCMT McKenzie Canyo 94.58 45 *e*P **P 07 55 56.2 +0.4**
MPU Maple Canyon 94.69 50 PFAKE 07 56 10.0 +14
MPU LR LR
comp=Z,2μm,18.0s
DLMT Dillon 94.84 45 PFAKE 07 56 10.0 +13
DLMT LR LR
comp=Z,1μm,20.0s
TMUT Trail Mountain 94.90 51 PFAKE 07 56 10.0 +13
TMUT LR LR
comp=Z,1μm,19.0s
JLU Jordanelle 94.92 50 PFAKE 07 56 10.0 +13
JLU LR LR
comp=Z,1μm,18.0s
TCUT Toone Canyon 95.03 49 PFAKE 07 56 10.0 +12
TCUT LR LR
comp=Z,1μm,19.0s
319A Douglas 95.26 59 PFAKE 07 56 10.0 +11
319A LR LR
comp=Z,3μm,18.0s
P17A Butcher Ranch, 95.28 51 PFAKE 07 56 10.0 +11
P17A LR LR
comp=Z,1μm,21.0s
SRU San Rafael Swe 95.40 51 PFAKE 07 56 10.0 +10
SRU LR LR
comp=Z,2μm,18.0s
W18A Petrified Fore 95.43 55 PFAKE 07 56 10.0 +10
W18A LR LR
comp=Z,2μm,21.0s
AHID Auburn Hatcher 95.50 48 PFAKE 07 56 10.0 +10
AHID LR LR
comp=Z,900nm,19.0s
BOZ Bozeman (W) 95.56 45 PFAKE 07 56 10.0 +10
BOZ LR LR
comp=Z,1μm,20.0s
P18A Preston Nutter 95.68 51 PFAKE 07 56 10.0 +9.0
P18A LR LR
comp=Z,1μm,20.0s
REDW Red Top Meadow 95.77 47 PFAKE 07 56 10.0 +8.8
REDW LR LR
comp=Z,1μm,20.0s
IMW Indian Meadow 95.79 47 PFAKE 07 56 10.0 +8.7
IMW LR LR
comp=Z,1μm,19.0s
SNOW Snow King Moun 95.86 47 PFAKE 07 56 10.0 +8.4
SNOW LR LR
comp=Z,1μm,20.0s
YMR Madison River 95.88 46 PFAKE 07 56 10.0 +8.3
YMR LR LR
comp=Z,1μm,19.0s
MOOW Moose Ponds 95.90 47 *e*P **P 07 56 03.7 +1.9**

MOOW comp=Z,14nm,1.7s LR LR

YFT **Old Faithful** **95.94** **46** PFAKE 07 56 10.0 +8.0
YFT comp=Z,2µm,18.0s LR LR

FLWY **Flagg Ranch** **95.98** **46** PFAKE 07 56 10.0 +7.9
FLWY comp=Z,3µm,18.0s LR LR

LOHW **Long Hollow** **95.99** **47** *e*P **P** **07 56 04.9 +2.8**
LOHW comp=Z,1µm,18.0s comp=Z,20nm,1.8s LR LR

H17A **Grant Village** **96.11** **46** PFAKE 07 56 10.0 +7.2
H17A comp=Z,1µm,19.0s LR LR

LKWY **Lake** **96.26** **46** PFAKE 07 56 10.0 +6.5
LKWY comp=Z,2µm,19.0s LR LR

YKA **Yellowknife Ar** **96.44** **28** P **P** **07 56 02.6 -0.8**
comp=Z,1.5nm,0.7s,baz=262,slow=4.7,SNR=33

YKB5 **Yellowknife Ar** **96.44** **28** *e*P **P** **07 56 02.6 -0.8**
BW06 **Boulder Array** **96.63** **48** *e*P **P** **07 56 05.6 +0.5**
BW06 comp=Z,1µm,19.0s LR LR

PD31 **Pinedale Array** **96.63** **48** *e*P **P** **07 56 06.6 +1.5**
PDAR **Pinedale Array** **96.63** **48** P **P** **07 56 06.6 +1.5**
comp=Z,0.7nm,0.7s,baz=242,slow=3.2,SNR=6.5
PDAR LR LR 08 37 38.8
comp=Z,931nm,18.1s,baz=264,slow=34

MVCO **Mesa Verde** **96.71** **53** PFAKE 07 56 20.0 +14
MVCO comp=Z,3µm,20.0s LR LR

KBL **Kabul** **96.89** **304** PFAKE 07 56 20.0 +14
KBL comp=Z,400nm,20.0s LR LR

RLMT **Red Lodge** **97.14** **46** PFAKE 07 56 20.0 +13
RLMT comp=Z,1µm,20.0s LR LR

EGMT **Eagleton** **97.16** **43** P **P** **07 56 07.2 0.0**
baz=263

EGMT **Eagleton** **97.16** **43** *e*P **P** **07 56 07.0 -0.2**
EGMT comp=Z,16nm,1.4s LR LR

O20A **White River Ci** **97.28** **51** PFAKE 07 56 20.0 +12
O20A comp=Z,1µm,19.0s LR LR

Y22D **IRIS PASSCAL I** **97.59** **57** PFAKE 07 56 20.0 +10
Y22D comp=Z,2µm,20.0s LR LR

HPIG **97.79** **64** PFAKE 07 56 20.0 +9.3
HPIG comp=Z,2µm,21.0s LR LR

ANMO **Albuquerque** **98.08** **56** PFAKE 07 56 20.0 +8.2
ANMO comp=Z,2µm,20.0s LR LR

S22A **4UR Ranch, Cre** **98.10** **53** PFAKE 07 56 20.0 +8.0
S22A comp=Z,1µm,19.0s LR LR

SMCO **Snowmass** **98.14** **52** PFAKE 07 56 20.0 +7.7
SMCO comp=Z,3µm,20.0s LR LR

BRVK **Borovoye** **98.14** **322**⇑ *e*P Pdif 07 56 13.3 +1.9
BRVK comp=Z,2µm,21.0s pmax pmax
comp=Z,10.0nm,2.0s

BRVK **Borovoye** **98.14** **322** PFAKE 07 56 20.0 +8.6
BRVK comp=Z,1µm,20.0s LR LR

MNTX **Cornudas Mount** **98.60** **59** PFAKE 07 56 20.0 +6.0
MNTX comp=Z,2µm,19.0s LR LR

K22A **Casper** **98.84** **48** PFAKE 07 56 30.0 +15
K22A comp=Z,800nm,21.0s LR LR

ZRNK **Zerenda** **98.90** **322** PFAKE 07 56 20.0 +5.2
ZRNK comp=Z,900nm,21.0s LR LR

N23A **Red Feather La** **99.10** **50** PFAKE 07 56 30.0 +14
N23A comp=Z,900nm,18.0s LR LR

ISCO **Idaho Springs** **99.25** **51** PFAKE 07 56 30.0 +13
ISCO comp=Z,2µm,18.0s LR LR

PHWY **Pilot Hill** **99.51** **50** PFAKE 07 56 30.0 +12
PHWY comp=Z,1µm,18.0s LR LR

Q24A **Divide** **99.53** **52** PFAKE 07 56 30.0 +12
Q24A comp=Z,1µm,21.0s LR LR

T25A **Trinidad** **99.95** **54** *e*Pdif **Pdif** **07 56 19.6 -0.6**
comp=Z,6.9nm,0.6s
T25A comp=Z,3µm,19.0s LR LR

ZAIG **Zacatecas** **100.08** **69** PFAKE 07 56 30.0 +8.9
ZAIG comp=Z,900nm,22.0s LR LR

RSSD **Black Hills** **100.76** **47** PFAKE 07 56 30.0 +6.4
RSSD comp=Z,800nm,18.0s LR LR

DGMT **Dagmar** **100.89** **42** PFAKE 07 56 30.0 +6.2
DGMT comp=Z,800nm,18.0s LR LR

MOIG **Morelia** **100.99** **72** PFAKE 07 56 40.0 +15
MOIG comp=Z,1µm,18.0s LR LR

MSTX **Muleshoe** **101.01** **57** PFAKE 07 56 40.0 +15
MSTX comp=Z,2µm,20.0s LR LR

KSCO **Kaye Shedlock'** **101.50** **52** PFAKE 07 56 40.0 +13
KSCO comp=Z,2µm,20.0s LR LR

AMTX **Amarillo** **101.98** **56** PFAKE 07 56 40.0 +11
AMTX comp=Z,1µm,20.0s LR LR

OGNE **Ogallala** **102.06** **50** PFAKE 07 56 40.0 +11
OGNE comp=Z,2µm,18.0s LR LR

UNM **Universidad Na** **102.84** **72** PFAKE 07 56 40.0 +6.6
UNM comp=Z,800nm,18.0s LR LR

TLIG **Tlapa** **103.22** **74** PFAKE 07 56 50.0 +15
TLIG comp=Z,1µm,18.0s LR LR

JCT **Junction City** **103.26** **61** PFAKE 07 56 50.0 +15
JCT comp=Z,3µm,19.0s LR LR

ABTX **Abilene, Hawle** **103.53** **59** PFAKE 07 56 50.0 +14
ABTX comp=Z,2µm,18.0s LR LR

CBKS **Cedar Bluff** **103.74** **52** PFAKE 07 56 50.0 +13
CBKS comp=Z,2µm,20.0s LR LR

WMOK **Wichita Mounta** **104.36** **57** PFAKE 07 56 50.0 +10
WMOK comp=Z,2µm,19.0s LR LR

ARU **Arti** **104.97** **326** PFAKE 07 56 50.0 +8.3
ARU comp=Z,900nm,19.0s LR LR

BGNE **Belgrade** **105.00** **50** PFAKE 08 01 10.0
BGNE comp=Z,2µm,19.0s LR LR

W34A **Bridge Creek,** **105.20** **56** PFAKE 08 01 10.0
W34A comp=Z,2µm,20.0s LR LR

WHTX **Lake Whitney,** **105.35** **60** PFAKE 08 01 10.0
WHTX comp=Z,2µm,19.0s LR LR

U34A **Anderson Ranch** **105.42** **55** PFAKE 08 01 10.0
U34A comp=Z,2µm,20.0s LR LR

V34A **Guthrie** **105.42** **56** PFAKE 08 01 10.0
V34A comp=Z,1µm,22.0s LR LR

ECSD **EROS Data Cent** **106.11** **47** PFAKE 08 01 10.0
ECSD comp=Z,2µm,20.0s LR LR

KSU1 **Kansas State U** **106.18** **52** PFAKE 08 01 10.0
KSU1 comp=Z,3µm,20.0s LR LR

ULM **Lac du Bonnet** **106.32** **41** PFAKE 08 01 10.0
ULM comp=Z,1µm,19.0s LR LR

AGMN **Agassiz Nation** **106.45** **43** PFAKE 08 01 10.0
AGMN comp=Z,900nm,18.0s LR LR

FCC **Fort Churchill** **106.48** **32** PFAKE 08 01 10.0
FCC comp=Z,3µm,20.0s LR LR

HKT **Hockley** **106.66** **62** PFAKE 08 01 10.0
HKT comp=Z,2µm,20.0s LR LR

TUL1 **Leonard** **106.83** **56** PFAKE 08 01 10.0
TUL1 comp=Z,2µm,22.0s LR LR

HHAR **Hobbs** **108.32** **55** PFAKE 08 01 10.0
HHAR comp=Z,2µm,20.0s LR LR

MIAR **Mount Ida** **108.64** **57** PFAKE 08 01 10.0
MIAR comp=Z,2µm,21.0s LR LR

SCIA **State Center** **108.69** **49** PFAKE 08 01 10.0
SCIA comp=Z,2µm,18.0s LR LR

SPMN **Marine on St.** **108.76** **46** PFAKE 08 01 10.0
SPMN comp=Z,2µm,19.0s LR LR

WLAR **White Oak Lake** **109.03** **58** PFAKE 08 01 20.0
WLAR comp=Z,2µm,20.0s LR LR

EYMN **Ely** **109.39** **43** PFAKE 08 01 20.0
EYMN comp=Z,900nm,20.0s LR LR

KBS **Kingsbay** **109.44** **354** PFAKE 08 01 10.0
KBS comp=Z,700nm,22.0s LR LR

X301 **Greenbrier Sit** **109.60** **56** PFAKE 08 01 20.0
X301 comp=Z,2µm,19.0s LR LR

UALR **University of** **109.66** **57** PFAKE 08 01 20.0
UALR comp=Z,2µm,20.0s LR LR

WHAR **Wooly Hollow** **109.69** **56** PFAKE 08 01 20.0
WHAR comp=Z,1µm,19.0s LR LR

JFWS **Jewell Farm** **110.80** **48** PFAKE 08 01 20.0
JFWS comp=Z,900nm,20.0s LR LR

PBMO **Poplar Bluff** **111.13** **54** PFAKE 08 01 20.0
PBMO comp=Z,2µm,20.0s LR LR

SLM **Saint Louis** **111.17** **52** PFAKE 08 01 20.0
SLM comp=Z,2µm,22.0s LR LR

COWI **Conover** **111.22** **44** PFAKE 08 01 20.0
COWI comp=Z,1µm,19.0s LR LR

VBMS **Vicksburg** **111.24** **59** PFAKE 08 01 20.0
VBMS comp=Z,3µm,19.0s LR LR

MET **Memphis--Engin** **111.62** **56** PFAKE 08 01 20.0
MET comp=Z,2µm,19.0s LR LR

HDIL **Hopedale** **111.74** **50** PFAKE 08 01 20.0
HDIL comp=Z,1µm,20.0s LR LR

PVMO **Portageville** **111.74** **55** PFAKE 08 01 20.0
PVMO comp=Z,1µm,18.0s LR LR

SIUC **Southern Illin** **112.04** **53** PFAKE 08 01 20.0
SIUC comp=Z,2µm,20.0s LR LR

HALT **Halls** **112.06** **55** PFAKE 08 01 20.0
HALT comp=Z,1611µm,20.0s LR LR

OXF **Oxford** **112.08** **57** PFAKE 08 01 20.0
OXF comp=Z,2µm,20.0s LR LR

LVZ **Lovozero** **112.30** **341** PFAKE 08 01 20.0
LVZ comp=Z,900nm,22.0s LR LR

OLIL **Olney** **112.83** **52** PFAKE 08 01 20.0
OLIL comp=Z,2µm,20.0s LR LR

APA **Apatity** **112.88** **341**⇓ *i*PKIKP PKiKP 08 01 02.0 -8.9
APA *i* PS **PS** **08 11 30.0 -4.6**
APA *i* SS SS 08 17 38.0 -1.2
APA pmax pmax
comp=Z,1µm,1.2s
APA MLR MLR
comp=Z,1µm,23.0s

TEIG **Tepich** **113.14** **72** PFAKE 08 01 20.0
TEIG comp=Z,700nm,18.0s LR LR

PLAL **Pickwick Lake** **113.15** **56** PFAKE 08 01 20.0
PLAL comp=Z,2µm,18.0s LR LR

WVT **Waverly** **113.27** **55** PFAKE 08 01 20.0
WVT comp=Z,2µm,19.0s LR LR

SFIN **Lafayette** **113.42** **50** PFAKE 08 01 20.0
SFIN comp=Z,2µm,18.0s LR LR

BLO **Bloomington** **114.00** **52** PFAKE 08 01 20.0 +6.1
BLO comp=Z,3µm,20.0s LR LR

ARE0 **ARCESS Array S** **114.06** **344** PFAKE 08 01 20.0 +6.8
ARE0 comp=Z,800nm,20.0s LR LR

LRAL **Lakeview Retre** **114.17** **58** PFAKE 08 01 30.0 +16
LRAL comp=Z,2µm,19.0s LR LR

WCI **Wyandotte Cave** **114.29** **53** PFAKE 08 01 30.0 +15
WCI comp=Z,3µm,20.0s LR LR

JTS **JuntasAbangare** **115.59** **83** PFAKE 08 01 30.0 +12
JTS comp=Z,1µm,19.0s LR LR

AAM **Ann Arbor** **115.70** **48** PFAKE 08 01 30.0 +13
AAM comp=Z,2µm,18.0s LR LR

CPCT **Cooper Cave** **116.01** **56** PFAKE 08 01 30.0 +12
CPCT comp=Z,1µm,19.0s LR LR

GNI **Garni** **116.15** **310**⇑ *i*PKIKP **PKPdf** **08 01 15.6 -2.7**
GNI **Garni** **116.15** **310** PFAKE 08 01 30.0 +12
GNI comp=Z,400nm,21.0s LR LR

HDC **Heredia** **116.38** **84** PFAKE 08 01 30.0 +11
HDC comp=Z,800nm,19.0s LR LR

ACSO **Alum Creek Sta** **116.56** **50** PFAKE 08 01 30.0 +11
ACSO comp=Z,2µm,18.0s LR LR

TKL **Tuckaleechee C** **116.59** **55** PFAKE 08 01 30.0 +11
TKL comp=Z,1µm,19.0s LR LR

TZTN **Tazewell** **116.66** **54** PFAKE 08 01 30.0 +11
TZTN comp=Z,2µm,18.0s LR LR

KIV **Kislovodsk** **116.94** **314** *e*PKIKP **PKPdf** **08 01 19.7 +0.1**
KIV *e* 08 02 27.5
KIV pmax pmax
comp=Z,2.0nm,0.9s
KIV MLR MLR
comp=Z,545nm,18.0s

KIV **Kislovodsk** **116.94** **314** PFAKE 08 01 30.0 +10
KIV comp=Z,700nm,20.0s LR LR

NEY **Neytrino** **117.06** **314**⇓ *i*PKIKP **PKPdf** **08 01 17.4 -2.5**
GOGA **Godfrey** **117.09** **58** PFAKE 08 01 30.0 +10
GOGA comp=Z,2µm,18.0s LR LR

TIGA **Tifton** **117.17** **60** PFAKE 08 01 30.0 +10
TIGA comp=Z,2µm,20.0s LR LR

OBN **Obninsk** **117.30** **328** *e*PKIKP **PKPdf** **08 01 19.2 -0.5**
OBN *e* 08 02 31.6
OBN pmax pmax
comp=Z,3.0nm,0.8s
OBN MLR MLR
comp=Z,541nm,16.0s

OBN **Obninsk** **117.30** **328** PFAKE 08 01 30.0 +10
OBN comp=Z,700nm,18.0s LR LR

DAMY **Dhamar** **117.68** **281** PFAKE 08 01 30.0 +8.0
DAMY comp=Z,400nm,18.0s LR LR

SADO **Sadowa** **118.38** **44** PFAKE 08 01 30.0 +7.8
SADO comp=Z,1µm,20.0s LR LR

ERPA **Erie** **118.41** **47** PFAKE 08 01 30.0 +7.7
ERPA comp=Z,2µm,18.0s LR LR

KMSC **Kings Mountain** **118.63** **55** PFAKE 08 01 30.0 +7.0
KMSC comp=Z,2µm,20.0s LR LR

MCWV **Mont Chateau** **119.03** **50** PFAKE 08 01 30.0 +6.4
MCWV comp=Z,1µm,18.0s LR LR

BLA **Blacksburg** **119.04** **53** PFAKE 08 01 30.0 +6.2
BLA comp=Z,1µm,20.0s LR LR

DWPF **Disney Wildern** **119.30** **63** PFAKE 08 01 40.0 +16
DWPF comp=Z,1µm,19.0s LR LR

NHSC **New Hope** **119.86** **58** PFAKE 08 01 40.0 +15
NHSC comp=Z,2µm,20.0s LR LR

SSPA **Standing Stone** **120.29** **49** PFAKE 08 01 40.0 +14
SSPA comp=Z,2µm,19.0s LR LR

ANN **Anapa** **120.36** **316** *i* PKIKP **PKPdf** **08 01 19.5 -6.5**
ANN pmax pmax
comp=Z,21nm,1.0s

OTAV **Otavalo** **120.48** **96** PFAKE 08 01 40.0 +12
OTAV comp=Z,700nm,20.0s LR LR

BCIP **Isla Barro Col** **120.48** **85** PFAKE 08 01 40.0 +13
BCIP comp=Z,700nm,20.0s LR LR

CBN **Corbin Frederi** **121.22** **51** PFAKE 08 01 40.0 +12
CBN comp=Z,3µm,20.0s LR LR

CNNC **Cliffs of the** **121.40** **55** PFAKE 08 01 40.0 +12
CNNC comp=Z,2µm,20.0s LR LR

LONY **Lake Ozonia** **121.54** **43** PFAKE 08 01 40.0 +12
LONY comp=Z,1µm,19.0s LR LR

KSPA **Keystone Colle** **121.61** **47** PFAKE 08 01 40.0 +11
KSPA comp=Z,2µm,18.0s LR LR

SCHQ **Schefferville** **121.80** **30** PFAKE 08 01 40.0 +12
SCHQ comp=Z,2µm,19.0s LR LR

NCB **Newcomb** **121.99** **44** PFAKE 08 01 40.0 +11
NCB comp=Z,1µm,22.0s LR LR

FRNY **Flat Rock** **122.14** **43** PFAKE 08 01 40.0 +11
FRNY comp=Z,1µm,18.0s LR LR

LUPA **Lehigh Univers** **122.15** **48** PFAKE 08 01 40.0 +10
LUPA comp=Z,2µm,19.0s LR LR

KMBO **Kilima Mbogo** **122.54** **262** PFAKE 08 01 40.0 +8.6
KMBO comp=Z,600nm,21.0s LR LR

ODNJ **Ogdensburg** **122.58** **47** PFAKE 08 01 40.0 +10
ODNJ comp=Z,2µm,20.0s LR LR

BRNJ **Basking Ridge** **122.72** **48** PFAKE 08 01 40.0 +9.4
BRNJ comp=Z,3µm,18.0s LR LR

TRY **Troy** **122.76** **45** PFAKE 08 01 40.0 +9.3
TRY comp=Z,2µm,21.0s LR LR

FURI **Furi** **122.77** **274** PFAKE 08 01 40.0 +8.1
FURI comp=Z,600nm,20.0s LR LR

PAL **Palisades** **123.11** **47** PFAKE 08 01 40.0 +8.6
PAL comp=Z,2µm,19.0s LR LR

AKASG **Malin Array Be** **123.22** **325** PKP **PKPdf** **08 01 30.5 -0.8**
comp=Z,1.4nm,0.7s,baz=62,slow=2.3,SNR=4.1

AKBB **Malin Array Si** **123.22** **325** PFAKE 08 01 40.0 +8.7
AKBB comp=Z,900nm,20.0s LR LR

KIEV **Kiev** **123.23** **325**⇓ *i*PKIKP **PKPdf** **08 01 30.7 -0.6**
KIEV **Kiev** **123.23** **325** PFAKE 08 01 40.0 +8.7
KIEV comp=Z,800nm,20.0s LR LR

LMQ **La Malbaie** **123.24** **39** PFAKE 08 01 40.0 +8.5
LMQ comp=Z,2µm,18.0s LR LR

HNH **Hanover** **123.40** **44** PFAKE 08 01 40.0 +8.1
HNH comp=Z,3µm,20.0s LR LR

YLE **Yale** **123.71** **47** PFAKE 08 01 40.0 +7.5
YLE comp=Z,2µm,19.0s LR LR

QUA2 **Belchertown** **123.83** **45** PFAKE 08 01 40.0 +7.3
QUA2 comp=Z,2µm,18.0s LR LR

FFD **Franklin Falls** **123.91** **44** PFAKE 08 01 40.0 +7.2
FFD comp=Z,3µm,20.0s LR LR

HRV **Adam Dziewonsk** **124.31** **45** PFAKE 08 01 40.0 +6.4
HRV comp=Z,1µm,18.0s LR LR

NB2 **NORSAR Subarra** **124.34** **343** PKPdf **PKPdf** **08 01 30.3 -2.9**
comp=Z,3.5nm,1.4s,baz=39,slow=1.9

HELC **Santa Helena** **124.36** **89** PFAKE 08 01 50.0 +15
HELC comp=Z,1µm,19.0s LR LR

WES **Weston** **124.51** **45** PFAKE 08 01 40.0 +6.0
WES comp=Z,3µm,19.0s LR LR

BRYW **Bryant College** **124.52** **46** PFAKE 08 01 40.0 +5.9
BRYW comp=Z,3µm,20.0s LR LR

PRAC **Prado** **124.61** **92** PFAKE 08 01 50.0 +15
PRAC comp=Z,400nm,22.0s LR LR

PKME **Peaks-Kenny Pk** **124.82** **41** PFAKE 08 01 50.0 +15
PKME comp=Z,1µm,20.0s LR LR

WVL **Waterville** **124.85** **42** PFAKE 08 01 50.0 +15
WVL comp=Z,2µm,22.0s LR LR

LPAZ **La Paz** **125.13** **118** PKP **PKPdf** **08 01 37.3 +0.5**
comp=Z,1.7nm,0.9s,baz=278,slow=3.2,SNR=6.2

LPAZ **La Paz** **125.13** **118** PKIKP **PKPdf** **08 01 37.3 +0.5**
LPAZ comp=Z,1.0nm,0.9s pmax pmax

KONO **Kongsberg** **125.94** **342** PFAKE 08 01 50.0 +14
KONO comp=Z,700nm,22.0s LR LR

CSS **Mathiatis** **126.07** **306** PFAKE 08 01 50.0 +13
CSS comp=Z,100nm,21.0s LR LR

TIRR **Tirgusor** **126.49** **319** PFAKE 08 01 50.0 +12
TIRR comp=Z,500nm,18.0s LR LR

LSZ **Lusaka** **126.55** **243** PFAKE 08 01 50.0 +11
LSZ comp=Z,1µm,20.0s LR LR

MLR **Muntele Rosu** **127.61** **321** PFAKE 08 01 50.0 +10
MLR comp=Z,500nm,20.0s LR LR

KOLS **Kolonicke sedl** **127.99** **326** *e*PKP **PKPdf** **08 01 44.1 +3.6**
UZH **Uzhgorod** **128.15** **326** *e*PKHKP PKPpre 08 01 25.0
UZH *i* 08 01 38.8
UZH *e* 08 03 40.6
UZH *e* 08 08 50.2
UZH MLR MLR
comp=Z,400nm,18.0s

PAPH **Port-au-Prince** **128.21** **74** PFAKE 08 01 50.0 +8.2
PAPH comp=Z,900nm,19.0s LR LR

STHS **Stebnicka Huta** **128.27** **327** *e*PKP **PKPdf** **08 01 42.3 +1.2**
CPUP **Villa Florida** **128.36** **135** PKP **PKPdf** **08 01 42.2 +0.3**
comp=Z,4.6nm,0.9s,baz=259,slow=3.4,SNR=7.3

RGN **Rugen** **128.59** **336** PFAKE 08 01 50.0 +8.6
RGN comp=Z,800nm,22.0s LR LR

SDDR **Presa de Saban** **129.15** **74** PFAKE 08 01 50.0 +6.4
SDDR comp=Z,1µm,20.0s LR LR

SDV **Santo Domingo** **129.49** **87** PFAKE 08 02 00.0 +15
SDV comp=Z,700nm,18.0s LR LR

OKC **Ostrava-Krasne** **129.63** **329** *e*PP PP 08 03 56.9 +3.1
OKC *e*SS SS 08 21 14.7 +0.8
OKC AMS AMS 09 04 30.0
comp=Z,600nm,16.1s

DRLN Deer Lake 129.71 32 PFAKE 08 01 50.0 +6.2
DRLN LR LR
comp=Z,4µm,20.0s
PSZ Piszkesteto 129.87 326 PFAKE 08 01 50.0 +5.8
PSZ LR LR
comp=Z,800nm,21.0s
MORC Moravsky Berou 129.97 329 PFAKE 08 01 50.0 +5.7
MORC LR LR
comp=Z,3µm,19.0s
DPC Dobruska-Polom 130.20 331 *e*PP PP 08 04 05.4 +7.9
DPC *e*SS SS 08 21 23.3 +2.4
DPC AMS AMS 09 04 10.0
comp=Z,700nm,19.8s
UPC Upice 130.25 331 AMS AMS 09 01 10.0
comp=Z,900nm,17.6s
PVCC Panska Ves 130.91 332 *ex* PP 08 04 13.8 +12
PVCC AMS AMS 09 03 20.0
comp=Z,900nm,19.7s
CLL Collm 131.07 334 *e*PP PP 08 04 05.0 +2.0
CLL *e*PS **PS** **08 14 24.0 +6.9**
CLL *e*SS SS 08 21 33.0 +1.7
CLL Collm 131.07 334 PFAKE 08 02 00.0 +14
CLL LR LR
comp=Z,1µm,20.0s
GOPC GO Pecny, Ondr 131.23 331 *e*PP PP 08 04 04.7 +0.6
GOPC *e*SS SS 08 21 36.1 +2.7
GOPC AMS AMS 09 02 40.0
comp=Z,1µm,18.9s
PRU Pruhonice 131.29 331 *e*PP PP 08 04 04.5 0.0
PRU *e*SS SS 08 21 33.9 -0.2
PRU AMS AMS 09 02 20.0
comp=Z,1µm,17.6s
TREC Trest 131.30 330 AMS AMS 09 01 40.0
comp=Z,800nm,18.2s
NKC Novy Kostel 132.09 333 AMS AMS 09 01 00.0
comp=Z,1µm,20.0s
KHC Kasperske Hory 132.34 331 *ex* SS 08 21 36.1 -11
KHC AMS AMS 09 02 50.0
comp=Z,1µm,20.1s
KHC Kasperske Hory 132.34 331 PFAKE 08 02 00.0 +11
KHC LR LR
comp=Z,500nm,19.0s
GEC2 GERESS Array S 132.47 331 PFAKE 08 02 00.0 +11
GEC2 LR LR
comp=Z,1µm,19.0s
GERES GERESS Array B 132.47 331 PKP **PKPdf** **08 01 48.1 -1.1**
comp=Z,0.4nm,0.2s,baz=285,slow=34,SNR=2.0
SAML Samuel 132.51 112 PFAKE 08 02 00.0 +10
SAML LR LR
comp=Z,200nm,18.0s
IDI Anoyia 132.57 309 PFAKE 08 02 00.0 +10
IDI LR LR
comp=Z,300nm,19.0s
BBSR BB Station 132.74 55 PFAKE 08 02 00.0 +10
BBSR LR LR
comp=Z,700nm,21.0s
GRFO Grafenberg 133.03 333 PFAKE 08 02 00.0 +10
GRFO LR LR
comp=Z,900nm,20.0s
ESK Eskdalemuir 133.08 347 PFAKE 08 02 00.0 +10
ESK LR LR
comp=Z,800nm,19.0s
TSUM Tsumeb 133.37 231 PFAKE 08 02 00.0 +8.2
TSUM LR LR
comp=Z,2µm,19.0s
TIR Tirane 133.49 319 PFAKE 08 02 00.0 +8.8
TIR LR LR
comp=Z,600nm,22.0s
TRI Trieste 134.54 327 PFAKE 08 02 00.0 +7.0
TRI LR LR
comp=Z,700nm,18.0s
STU Stuttgart 134.60 334 PFAKE 08 02 00.0 +7.0
STU LR LR
comp=Z,800nm,19.0s
WLF Walferdange 135.17 337 PFAKE 08 02 00.0 +5.9
WLF LR LR
comp=Z,600nm,20.0s
BFO Black Forest 135.31 334 PFAKE 08 02 00.0 +5.6
BFO LR LR
comp=Z,700nm,20.0s
TUE Stuetta 136.23 331 PFAKE 08 02 10.0 +14
TUE LR LR
comp=Z,600nm,20.0s
TIP Timpagrande 136.65 318 PFAKE 08 02 10.0 +13
TIP LR LR
comp=Z,500nm,22.0s
CUC Castrocucco 136.82 320 PFAKE 08 02 10.0 +12
CUC LR LR
comp=Z,300nm,19.0s
AQU L'Aquila 136.89 324 PFAKE 08 02 10.0 +12
AQU LR LR
comp=Z,600nm,21.0s
VLC Villacollemand 137.36 328 PFAKE 08 02 10.0 +12
VLC LR LR
comp=Z,400nm,20.0s
CEL Celeste 137.71 317 PFAKE 08 02 10.0 +11
CEL LR LR
comp=Z,400nm,20.0s
BNI Bardonecchia 138.54 332 PFAKE 08 02 10.0 +9.4
BNI LR LR
comp=Z,1µm,19.0s
CLTB Caltabellotta 139.86 318 PFAKE 08 02 10.0 +6.8
CLTB LR LR
comp=Z,600nm,20.0s
KEST Kesra 143.46 319 PFAKE 08 02 20.0 +10
KEST LR LR
comp=Z,600nm,21.0s
PBRG Braganca 146.47 343 *i* P **PKPab** **08 02 22.6 +5.6**
PGAV Gavieira, Arco 146.75 345 *i* P **PKPab** **08 02 23.6 +5.5**
PGAV Gavieira, Arco 146.75 345 *e*LR LR 08 55 28.1
comp=Z,585nm,18.0s
PCAB Cabril 146.92 344 *i* P **PKPab** **08 02 23.6 +4.9**
MVO Moncorvo 147.15 343 *i* P **PKPab** **08 02 25.1 +5.4**
MVO Moncorvo 147.15 343 *e*LR LR 08 58 01.3
comp=Z,662nm,20.0s
POLO Lamas de Olo 147.17 344 *i* P **PKPab** **08 02 25.0 +5.2**
ESDC Sonseca Array 147.46 338 PKPbc **PKPbc** **08 02 19.3 +0.4**
comp=Z,0.3nm,0.3s,baz=43,slow=2.3,SNR=7.6
ESLA Sonseca Array 147.46 338 PFAKE 08 02 30.0 +9.1
ESLA LR LR
comp=Z,1µm,21.0s
PAB San Pablo 147.72 338 PFAKE 08 02 30.0 +8.0
PAB LR LR
comp=Z,900nm,20.0s
MTE Manteigas 148.00 343 *i* P **PKPab** **08 02 25.2 +2.2**
MTE Manteigas 148.00 343 *e*LR LR 08 55 48.6
comp=Z,666nm,20.0s
MTE Manteigas 148.00 343 PFAKE 08 02 30.0 +7.0
MTE LR LR
comp=Z,700nm,19.0s
PCBR Castelo Branco 148.50 342 *i* P **PKPab** **08 02 26.9 +2.0**
PCAS Casmilo, Conde 148.60 344 *i* P **PKPab** **08 02 29.2 +3.9**
PMRV Marv??o 148.85 342 *i* P **PKPab** **08 02 29.1 +2.7**
PMRV Marv??o 148.85 342 *e*LR LR 08 59 00.9
comp=Z,684nm,18.0s
PESTR Estremoz 149.43 342 *i* P **PKPab** **08 02 31.1 +2.3**
PMTG Montargil 149.43 343 *e*PKPdf **PKPdf** **08 02 21.6 +2.0**
PBAR Barrancos 149.88 340 *i* P **PKPab** **08 02 29.2 -1.4**
PBEJ Beja 150.28 341 *e*PKPab **PKPab** **08 02 30.8 -1.5**
PNCL Nicolau / Gran 150.41 342 *e*PKPdf **PKPdf** **08 02 21.8 +0.7**
MESJ Messejana 150.57 342 *e*PKPab **PKPab** **08 02 36.2 +2.8**
PCVE Castro Verde 150.70 341 *e*PKPab **PKPab** **08 02 33.4 -0.6**
PVAQ Vaqueiros 150.81 341 *i* P **PKPab** **08 02 32.9 -1.5**
PVAQ Vaqueiros 150.81 341 *e*LR LR 08 57 42.1
comp=Z,843nm,20.0s
PBDV Barranco-do-Ve 151.02 341 *e*PKPab **PKPab** **08 02 34.1 -1.3**
MORF Marmelete 151.19 342 *e*PKPab **PKPab** **08 02 33.5 -2.6**
PFVI Vila Bisbo 151.40 342 *i* P **PKPab** **08 02 36.2 -0.7**
PFVI Vila Bisbo 151.40 342 PFAKE 08 02 30.0 +1.2
PFVI LR LR
comp=Z,1µm,19.0s
TOC2 Torodi Ar. Sit 159.08 280 PFAKE 08 02 40.0 +6.3
TOC2 LR LR
comp=Z,900nm,20.0s
TOC3 Torodi Ar. Sit 159.09 280 PFAKE 08 02 40.0 +6.3
TOC3 LR LR
comp=Z,900nm,20.0s
TOB2 Torodi Ar. Sit 159.10 280 PFAKE 08 02 40.0 +6.3
TOB2 LR LR
comp=Z,900nm,19.0s
TOC1 Torodi Ar. Sit 159.10 281 PFAKE 08 02 40.0 +6.3
TOC1 LR LR
comp=Z,1µm,20.0s
TOB3 Torodi Ar. Sit 159.10 280 PFAKE 08 02 40.0 +6.3
TOB3 LR LR
comp=Z,900nm,20.0s
TOC4 Torodi Ar. Sit 159.11 280 PFAKE 08 02 40.0 +6.3
TOC4 LR LR
comp=Z,900nm,20.0s
TOA0 Torodi Ar. Sit 159.11 280 *e*PKPdf **PKPdf** **08 02 39.5 +5.8**
TOA0 LR LR
comp=Z,900nm,20.0s
TOB1 Torodi Ar. Sit 159.11 281 PFAKE 08 02 40.0 +6.3
TOB1 LR LR
comp=Z,900nm,20.0s
TORD Torodi Ar. Bea 159.11 280 PKP **PKPdf** **08 02 34.0 +0.3**
comp=Z,0.4nm,0.7s,baz=180,slow=0.4,SNR=3.1
TORD PKPab **PKPab** **08 03 10.3 -0.3**
comp=Z,3.1nm,1.0s,baz=87,slow=5.0,SNR=7.5
TOA1 Torodi Ar. Sit 159.11 280 *e*PKPdf **PKPdf** **08 02 34.0 +0.3**
TOA1 *e*PKPab **PKPab** **08 03 10.3 -0.3**
TOA1 LR LR
comp=Z,900nm,20.0s
TOB4 Torodi Ar. Sit 159.12 280 PFAKE 08 02 40.0 +6.3
TOB4 LR LR
comp=Z,900nm,20.0s
TOB5 Torodi Ar. Sit 159.12 281 PFAKE 08 02 40.0 +6.3
TOB5 LR LR
comp=Z,900nm,20.0s
TOC7 Torodi Ar. Sit 159.12 281 PFAKE 08 02 40.0 +6.3
TOC7 LR LR
comp=Z,900nm,20.0s
TOC5 Torodi Ar. Sit 159.13 280 PFAKE 08 02 40.0 +6.2
TOC5 LR LR
comp=Z,1µm,20.0s
DBIC Dimbokro 165.22 258 PKPab **PKPab** **08 03 36.4 -1.0**
comp=Z,5.3nm,0.9s,baz=104,slow=6.5,SNR=5.7

KRSC 28 08:05:05.2±1.7, 49°.97N×157°.19E, h21km±37km, ML3.9, East of Kuril Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SKR	**Severo-Kuril's**	**0.99**	**317**	*e*P	Pb	08 05 23.1	-0.5
SKR				*e*S	Sb	08 05 35.7	-0.5
PAU	**Pauzhetka**	**1.52**	**351**	*e*P	Pb	08 05 32.8	+0.1
PAU				*e*S	Sb	08 05 52.8	+1.3
ASAK	**Asacha**	**2.46**	**10**	*e*P	Pb	08 05 46.9	-1.8
RUS	**Russkaya**	**2.61**	**18**	*e*P	Pn	08 05 48.6	+2.5
RUS				*e*S	Sb	08 06 20.4	-2.3
DALK	**Dalny**	**3.22**	**17**	*e*S	Sb	08 06 36.9	-3.5
UGLR	**Uglovaya**	**3.40**	**17**	*e*P	Pn	08 06 00.7	+3.6
AVH	**Avacha**	**3.44**	**16**	*e*P	Pb	08 06 01.8	-3.6
SMAR	**Somma**	**3.45**	**16**	*e*P	Pn	08 06 01.4	+3.5
NLC	**Nalytchevo**	**3.48**	**22**	*e*S	Sn	08 06 40.5	+1.9
KRER	**Koryakskii**	**3.48**	**16**	*e*P	Pn	08 06 02.2	+3.9
KRER				*e*S	Sn	08 06 43.5	+4.5
SDLR	**Sedlovina**	**3.48**	**17**	*e*P	Pn	08 06 01.1	+2.9
KRX	**Arik**	**3.52**	**14**	*e*P	Pn	08 06 02.6	+3.9
GNL	**Ganaly**	**3.76**	**7**	*e*P	Pn	08 06 05.6	+3.5

*MAN **28** 08:05:28, 18°.79N×119°.47E, h11km, mb5.0, ML3.9, MS4.0*
*IDC **28** 08:05:30.8±0.8, 18°.67N×120°.01E, h0km, mb4.0/9, mb1 4.1/10, mb1mx3.8/45, mbtmp3.9/10, MS4.6/4, Ms1 4.5/4, ms1mx3.8/35, Error ellipse: s-maj=42.2km s-min=16.1km az=66.0*
*ISCJB **28** 08:05:33.0±0.6, 18°.71N±0°.07×119°.74E±0°.10, h24km, mb4.0/9, MS4.6/4, Error ellipse: s-maj=15.8km s-min=6.5km az=145.0*

ISC 28 08:05:34.4±0.7, 18°.57N±0°.08×119°.81E±0°.10, h24km, n17, σ0s96/16, mb4.0/9, MS4.7/4, 1C, Philippine Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ABRA	**Dolores**	**1.25**	**137**	*e*P	**Pn**	**08 05 57.2**	**+0.7**
APYP	**Conner**	**1.53**	**117**	*e*P	**Pn**	**08 06 01.1**	**+0.8**
APYP				*e*S	**Sb**	**08 06 22.6**	**+1.5**
BCPH	**Baguio City Da**	**2.29**	**161**	↑*i*P	**Pn**	**08 06 11.1**	**+0.1**
BCPH				*i* S	**Sb**	**08 06 43.0**	**-0.2**
CAUP	**Cauayan**	**2.51**	**130**	*e*P	**Pb**	**08 06 17.3**	**-1.5**
KSRS	**Korea Array**	**20.12**	**19**	P	**P**	**08 10 05.7**	**-0.9**
	baz=203,slow=12,SNR=4.6						
WRA	**Warramunga Arr**	**40.84**	**159**	P	**P**	**08 13 13.7**	**-0.8**
	2.2nm,0.8s,baz=340,slow=9.1,SNR=9.6						
MKAR	**Makanchi Array**	**41.68**	**321**	P	**P**	**08 13 21.5**	**+0.3**
	1.7nm,0.9s,baz=109,slow=9.1,SNR=8.1						
ASAR	**Alice Springs**	**44.17**	**161**	P	**P**	**08 13 42.4**	**+0.8**
	2.1nm,0.8s,baz=339,slow=6.8,SNR=15						
AAK	**Ala-Archa**	**45.10**	**312**	LR	LR	08 34 17.3	
	comp=Z,273nm,19.9s,baz=80,slow=38						
KURBB	**Kurchatov Arra**	**45.73**	**324**	P	**P**	**08 13 53.5**	**-0.1**
	2.0nm,0.9s,baz=124,slow=8.1,SNR=13						
STKA	**Stephens Creek**	**54.33**	**157**	P	**P**	**08 14 59.6**	**+0.5**
	1.8nm,0.7s,baz=336,slow=4.2,SNR=3.8						
NRIK	**Noril'sk**	**54.51**	**347**	P	**P**	**08 14 59.2**	**-0.7**
	4.0nm,1.0s,baz=102,slow=5.0,SNR=5.0						
GEYT	**Alibeck**	**56.67**	**304**	P	**P**	**08 15 17.2**	**+1.2**
	0.9nm,0.3s,baz=83,slow=4.6,SNR=4.3						
KBZ	**Khabaz**	**68.05**	**310**	LR	LR	08 51 42.5	
	comp=Z,446nm,19.2s,baz=46,slow=41						
AKASG	**Malin Array Be**	**76.22**	**319**	P	**P**	**08 17 21.7**	**+0.8**
	0.3nm,0.3s,baz=97,slow=11,SNR=5.4						
AKASG				LR	LR	08 54 13.2	
	comp=Z,355nm,18.9s,baz=35,slow=38						
YKA	**Yellowknife Ar**	**88.62**	**22**	P	**P**	**08 18 24.1**	**-1.2**
	0.4nm,0.8s,baz=320,slow=4.7,SNR=9.2						
KEST	**Kesra**	**94.92**	**310**	LR	LR	09 09 03.7	
	comp=Z,528nm,20.8s,baz=326,slow=40						

*ISCJB **28** 08:05:57.3±0.8, 38°.24N±0°.04×141°.84E±0°.10, h59km±7km, mb3.8/12, Error ellipse: s-maj=13.4km s-min=5.5km az=18.8*
*JMA **28** 08:05:58.4±0.1, 38°.25N×141°.77E, h56km±1km, M3.9*
JMA Felt I J1.
*IDC **28** 08:05:58.7±2.8, 38°.21N×141°.82E, h58km±26km, mb3.5/12, mb1 3.8/15, mb1mx3.6/37, mbtmp3.8/15, ML3.4/3, Error ellipse: s-maj=26.6km s-min=14.6km az=115.0*

ISC 28 08:05:57.7±1.5, 38°.23N±0°.06×141°.9E±0°.1, h47km±14km, n34, σ0s73/38, mb3.7/12, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**0.48**	**298**	P	**Pn**	**08 06 08.9**	**+0.4**
JIO				S	**Sn**	**08 06 16.3**	**+0.1**
JMK	**Ichinoseki**	**0.89**	**324**	P	**Pn**	**08 06 14.1**	**+0.3**
JMK				S	**Sn**	**08 06 25.3**	**-0.4**
JMM	**Marumori**	**0.94**	**248**	P	**Pn**	**08 06 14.2**	**-0.2**
JMM				S	**Sn**	**08 06 25.8**	**-0.9**
JOU	**Okura**	**0.97**	**279**	P	**Pn**	**08 06 14.8**	**-0.1**
JOU				S	**Sn**	**08 06 26.9**	**-0.7**
JFK	**Kawauchi**	**1.18**	**223**	P	**Pn**	**08 06 18.0**	**+0.3**
JFK				S	**Sn**	**08 06 32.7**	**+0.1**
JOM	**Ohasama**	**1.33**	**340**	P	**Pn**	**08 06 20.3**	**+0.5**
JOM				S	**Sn**	**08 06 36.4**	**+0.1**
JYK	**Kaneyama**	**1.38**	**300**	P	**Pn**	**08 06 20.4**	**-0.1**
JFT	**Otama**	**1.42**	**240**	P	**Pn**	**08 06 21.7**	**+0.7**
JFT				S	**Sn**	**08 06 38.3**	**-0.2**
JYS	**Shirataka**	**1.43**	**270**	P	**Pn**	**08 06 21.3**	**+0.1**
JRG	**Rokugo**	**1.52**	**320**	P	**Pn**	**08 06 22.8**	**+0.4**
JRG				S	**Sn**	**08 06 41.9**	**+0.8**
JYA	**Atsumi**	**1.75**	**283**	P	**Pn**	**08 06 25.4**	**-0.1**
MJAR	**Matsushiro Ar**	**3.38**	**241**	P	**Pn**	**08 06 49.5**	**+1.6**
	4.2nm,0.3s,baz=42,slow=11,SNR=16						
MAT	**Matsushiro**	**3.38**	**241**	P	**Pn**	**08 06 49.7**	**+1.8**
MAT				S	**Sn**	**08 07 28.6**	**+1.9**
ASAJ	**Asahikawa**	**5.91**	**5**	P	**Pn**	**08 07 22.3**	**-0.3**
	1.8nm,0.3s,baz=214,slow=13,SNR=10.0						
USRK	**Ussuriysk Ar.**	**9.55**	**312**	P	**Pn**	**08 08 13.1**	**+0.6**
	0.7nm,0.3s,baz=121,slow=14,SNR=12						
MA2	**Magadan**	**22.11**	**12**	P	**P**	**08 10 49.3**	**+0.5**
	2.2nm,0.7s,baz=226,slow=8.6,SNR=3.8						
SEY	**Seymchan**	**25.55**	**11**	P	**P**	**08 11 22.8**	**+1.0**
	0.8nm,0.6s,baz=194,slow=8.3,SNR=3.8						
H11N2	**WAKE ISLAND Hy 28.46**	**123**		T	T	08 42 00.2	
	baz=316,slow=75,SNR=362						
H11N1	**WAKE ISLAND Hy 28.47**	**123**		T	T	08 42 11.5	
	baz=316,slow=75,SNR=277						
H11N3	**WAKE ISLAND Hy 28.48**	**123**		T	T	08 42 04.5	
	baz=316,slow=75,SNR=130						
H11S1	**WAKE ISLAND Hy 29.22**	**125**		T	T	08 43 03.9	
	baz=318,slow=76,SNR=63						
H11S3	**WAKE ISLAND Hy 29.22**	**125**		T	T	08 43 02.2	
	baz=318,slow=76,SNR=54						
H11S2	**WAKE ISLAND Hy 29.23**	**125**		T	T	08 43 02.9	
	baz=318,slow=76,SNR=49						
MKAR	**Makanchi Array**	**43.81**	**301**	P	**P**	**08 13 58.1**	**-0.8**
	0.6nm,0.6s,baz=94,slow=10,SNR=4.2						
KURBB	**Kurchatov Arra**	**45.57**	**307**	P	**P**	**08 14 12.0**	**-0.7**
	1.3nm,0.5s,baz=83,slow=8.6,SNR=10.0						
ILAR	**Eielson Array**	**48.29**	**33**	P	**P**	**08 14 33.2**	**-0.5**
	0.5nm,0.7s,baz=269,slow=6.8,SNR=6.8						
INK	**Inuvik**	**53.16**	**28**	P	**P**	**08 15 10.8**	**+0.5**
	1.0nm,0.6s,baz=299,slow=7.2,SNR=7.1						
WRA	**Warramunga Arr**	**58.29**	**188**	P	**P**	**08 15 46.6**	**-1.1**
	0.8nm,0.5s,baz=6.1,slow=7.2,SNR=14						
ASAR	**Alice Springs**	**62.02**	**188**	P	**P**	**08 16 12.7**	**-0.4**
	0.5nm,0.7s,baz=6.4,slow=4.7,SNR=5.0						
YKA	**Yellowknife Ar**	**62.59**	**31**	P	**P**	**08 16 16.3**	**-0.2**
	0.4nm,0.7s,baz=301,slow=6.6,SNR=11						
YKA				PcP	**PcP**	**08 16 54.9**	**-0.2**
	0.2nm,0.7s,baz=298,slow=3.6,SNR=5.7						
NVAR	**Mina Array Bea**	**73.98**	**54**	P	**P**	**08 17 28.9**	**+0.4**
	0.7nm,0.8s,baz=281,slow=3.8,SNR=4.7						
PDAR	**Pinedale Array**	**76.56**	**46**	P	**P**	**08 17 43.6**	**+0.3**
	0.7nm,0.6s,baz=275,slow=1.4,SNR=9.7						
TXAR	**Lajitas Array**	**89.10**	**53**	P	**P**	**08 18 48.5**	**+0.2**
	0.6nm,0.6s,baz=319,slow=3.5,SNR=9.1						
LPAZ	**La Paz**	**145.76**	**59**	PKPbc	**PKPdf**	**08 25 32.1**	**-0.1**
	1.8nm,0.6s,baz=18,slow=3.3,SNR=9.6						

IDC 28 08:13:30.0±42.0, 15°.00S×170°.99W, h0km, mb4.0/3, mb1 4.2/3, mb1mx3.6/37, mbtmp4.0/3, Error ellipse: s-maj=832.6km s-min=175.0km az=79.0, Samoa Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
STKA	**Stephens Creek**	**46.25**	**240**	P	P	08 21 57.4	0.0
	1.8nm,0.9s,baz=86,slow=13,SNR=3.6						
WRA	**Warramunga Arr**	**52.20**	**256**	P	P	08 22 43.0	-0.2
	0.4nm,0.4s,baz=93,slow=6.8,SNR=23						
ASAR	**Alice Springs**	**52.45**	**252**	P	P	08 22 44.9	-0.1
	3.7nm,0.6s,baz=88,slow=8.2,SNR=81						

*ISCJB **28** 08:24:23.6±0.5, 41°.12N±0°.03×34°.76E±0°.03, h0km, Error ellipse: s-maj=3.8km s-min=3.6km az=160.7*
*DDA **28** 08:24:23.4, 41°.12N×34°.74E, h7km, Md2.7, Suspected Mining explosion.*
*CSEM **28** 08:24:23.8±0.2, 41°.12N×34°.76E, h2km, MD2.7, Error ellipse: s-maj=3.6km s-min=3.2km az=167.0, Suspected Mining explosion.*
*ISK **28** 08:24:23.3, 41°.14N×34°.79E, h5km, ML2.6*

ISC 28 08:24:22.0±0.9, 41°.15N±0°.03×34°.75E±0°.03, h0km, n18, σ0s43/34, Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
BOYT	**Boyabat**	**0.29**	**24**	*i* P	**Pb**	**08 24 29.9**	**-0.3**
BOYT				*i* S	**Sb**	**08 24 35.6**	**0.0**
BOYT	**Boyabat**	**0.29**	**24**	P	**Pb**	**08 24 29.9**	**-0.3**
BOYT				S	**Sb**	**08 24 35.6**	**0.0**
HAVZ	**Havza**	**0.74**	**96**	*i* P	**Pb**	**08 24 37.7**	**-0.1**
HAVZ				*i* S	**Sb**	**08 24 48.7**	**+0.2**
HAVZ	**Havza**	**0.74**	**96**	P	**Pb**	**08 24 37.7**	**-0.1**
HAVZ				S	**Sb**	**08 24 48.7**	**+0.2**
ILGA	**Ilgaz**	**0.78**	**263**	*i* P	**Pb**	**08 24 39.0**	**+0.3**
ILGA				*i* S	**Sb**	**08 24 49.7**	**-0.3**
ILGA	**Ilgaz**	**0.78**	**263**	P	**Pb**	**08 24 39.0**	**+0.3**
ILGA				S	**Sb**	**08 24 49.7**	**-0.3**
COAL	**Corum-Alaca**	**0.92**	**168**	*i* P	**Pb**	**08 24 40.7**	**-0.2**
COAL				*i* S	**Sb**	**08 24 52.7**	**-0.9**
COAL	**Corum-Alaca**	**0.92**	**168**	P	**Pb**	**08 24 40.7**	**-0.2**
COAL				S	**Sb**	**08 24 52.7**	**-0.9**
CORM	**Corum**	**0.98**	**185**	*e*PG	**Pb**	**08 24 42.2**	**+0.3**
CORM				*e*SG	**Sb**	**08 24 56.1**	**+0.7**
CORM	**Corum**	**0.98**	**185**	*e*Pg	**Pb**	**08 24 42.3**	**+0.3**
CORM				*e*Sg	**Sb**	**08 24 56.1**	**+0.7**
BZK	**Bozkurt**	**0.98**	**326**	*e*PG	**Pn**	**08 24 43.2**	**+0.2**
BZK				*e*SG	**Sn**	**08 24 57.7**	**+0.1**
BZK	**Bozkurt**	**0.98**	**326**	*e*Pg	**Pn**	**08 24 43.2**	**+0.2**
BZK				*e*Sg	**Sn**	**08 24 57.7**	**+0.1**
KVT	**Kavak**	**0.99**	**94**	*e*PG	**Pb**	**08 24 42.0**	**0.0**
KVT				*e*SG	**Sb**	**08 24 55.7**	**+0.1**
KVT	**Kavak**	**0.99**	**94**	*e*Pg	**Pb**	**08 24 42.0**	**0.0**
KVT				*e*Sg	**Sb**	**08 24 55.7**	**+0.1**
ELDT	**Eldivan**	**1.20**	**237**	*i* P	**Pb**	**08 24 45.8**	**+0.1**
ELDT				*i* S	**Sn**	**08 25 03.5**	**+0.2**
ELDT	**Eldivan**	**1.20**	**237**	P	**Pb**	**08 24 45.8**	**+0.1**
ELDT				S	**Sn**	**08 25 03.5**	**+0.2**
AFSR	**Af˘ar-Bala (A**	**2.13**	**217**	*e*PN	**Pb**	**08 25 00.6**	**-1.0**
AFSR	**Af˘ar-Bala (A**	**2.13**	**217**	*e*Pn	**Pb**	**08 25 00.6**	**-1.0**

*CSEM **28** 08:26:17.4±0.8, 38°.18N×29°.97E, h1km, MD2.8, Error ellipse: s-maj=35.0km s-min=15.8km az=48.0, Suspected Mining explosion.*

DDA 28 08:26:28.9, 38°.71N×29°.31E, h7km, Md2.8, Suspected Mining explosion., Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
KHAL	**Karahalli**	**0.37**	**157**	*i* P	Pg	08 26 36.6	+0.6
KHAL				*i* S	Sg	08 26 41.6	+0.7
GDZ	**Gediz**	**0.40**	**19**	*i* P	Pg	08 26 36.9	+0.1
GDZ				*i* S	Sg	08 26 43.3	+1.2
GDZ	**Gediz**	**0.40**	**19**	P	Pg	08 26 36.9	+0.1
KULA	**Kula-Manisa**	**0.54**	**249**	*e*PG	Pg	08 26 39.4	0.0
KULA	**Kula-Manisa**	**0.54**	**249**	*e*Pg	Pg	08 26 39.4	0.0
DEMI	**Demirci**	**0.57**	**306**	*i* P	Pg	08 26 40.2	+0.3
DEMI				*i* S	Sg	08 26 48.3	+0.9
DEMI	**Demirci**	**0.57**	**306**	P	Pg	08 26 40.2	+0.3
TVSB	**Tavsanli**	**0.75**	**9**	*e*PG	Pb	08 26 44.0	-0.3
TVSB				*e*SG	Sn	08 26 59.2	+1.5
TVSB	**Tavsanli**	**0.75**	**9**	*e*Pg	Pb	08 26 44.0	-0.4
TVSB				*e*Sg	Sn	08 26 59.2	+1.5
DURS	**Dursunbey**	**1.10**	**324**	*i* P	Pn	08 26 51.2	+0.3
DURS				*i* S	Sn	08 27 07.8	+1.4

GUC 28 08:32:36.7±0.4, 34°.48S×70°.73W, h118km±3km, ML3.5, 1C-3D, Chile-Argentina border region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ANTU	**Antumapu**	**0.92**	**5**	↑*i*P	Pn	08 32 57.6	-0.2
ANTU				*i* S	Sn	08 33 13.4	-0.4
ANTU				IAML		08 33 16.6	
	comp=E,1µm,0.3s						
CHPI	**Pichilemu**	**1.05**	**275**	↓*i*P	Pn	08 32 58.8	-0.3
CHPI				*i* S	Sn	08 33 15.6	-0.4
CLCH	**Cerro Calan**	**1.10**	**9**	↓*i*P	Pn	08 32 59.3	-0.1
CLCH				*i* S	Sn	08 33 16.7	-0.3
CLCH				IAML		08 33 18.0	
	comp=E,1µm,0.7s						
TALC	**Talca**	**1.18**	**219**	↓*i*P	Pn	08 33 00.1	-0.2
TALC				*i* S	Sn	08 33 17.8	-0.5
PEL	**Peldehue**	**1.34**	**2**	*e*P	Pn	08 33 02.2	0.0
PEL				*i* S	Sn	08 33 21.5	-0.1
PEL				IAML		08 33 22.9	
	comp=N,1µm,0.3s						
ROCH	**El Roble**	**1.52**	**351**	*e*P	Pn	08 33 04.5	-0.1
ROCH				*i* S	Sn	08 33 25.9	+0.2
ROCH				IAML		08 33 28.8	
	comp=N,549nm,0.7s						

*ISK **28** 08:32:36.5, 39°.65N×29°.77E, h12km, MD2.5*
*ISCJB **28** 08:32:38.6±0.5, 39°.70N±0°.02×29°.47E±0°.04, h0km, Error ellipse: s-maj=4.0km s-min=3.3km az=5.5*
*CSEM **28** 08:32:38.4±0.4, 39°.71N×29°.46E, h1km, MD2.5, Error ellipse: s-maj=8.5km s-min=5.9km az=98.0, Suspected Mining explosion.*
*DDA **28** 08:32:38.3, 39°.70N×29°.47E, h7km, Md2.8, Suspected Mining explosion.*

ISC 28 08:32:38.6±0.9, 39°.72N±0°.02×29°.46E±0°.03, h0km, n20, σ0s77/34, Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
TVSB	**Tavsanli**	**0.27**	**179**	*e*PG	**Pg**	**08 32 43.2**	**-0.5**
TVSB				*e*SG	**Sg**	**08 32 48.2**	**+1.0**
TVSB	**Tavsanli**	**0.27**	**179**	*e*Pg	**Pg**	**08 32 43.2**	**-0.5**
TVSB				*e*Sg	**Sg**	**08 32 48.2**	**+1.0**

IGD				*i* S	**Sb**	08 32 59.0	**-1.5**		
IZI	**Iznik**	**0.62**	**1**	*e*PG	**Pg**	08 32 51.0	**+0.4**		
IZI				*e*SG	**Sb**	08 33 01.5	**-0.3**		
IZI	**Iznik**	**0.62**	**1**	*e*Pg	**Pg**	08 32 51.0	**+0.4**		
IZI				*e*Sg	**Sb**	08 33 01.5	**-0.3**		
GDZ	**Gediz**	**0.63**	**178**	*i* P	**Pg**	08 32 50.1	**-0.5**		
GDZ				*i* S	**Sg**	08 32 59.6	**+0.9**		
GDZ	**Gediz**	**0.63**	**178**	P	**Pg**	08 32 50.1	**-0.5**		
GDZ				S	**Sg**	08 32 59.6	**+0.9**		
DURS	**Dursunbey**	**0.77**	**262**	*i* P	**Pg**	08 32 52.9	**-0.5**		
DURS				*i* S	**Sb**	08 33 04.9	**-1.1**		
DURS	**Dursunbey**	**0.77**	**262**	P	**Pg**	08 32 52.9	**-0.5**		
DURS				S	**Sb**	08 33 04.9	**-1.1**		
BORA	**Eskisehir**	**0.79**	**78**	*i* P	**Pg**	08 32 53.5	**-0.2**		
BORA				*i* S	**Sb**	08 33 06.0	**-0.5**		
BORA	**Eskisehir**	**0.79**	**78**	S	**Sb**	08 33 06.0	**-0.5**		
DEMI	**Demirci**	**0.88**	**221**	*i* P	**Pg**	08 32 55.3	**-0.3**		
DEMI				*i* S	**Sb**	08 33 09.3	**0.0**		
DEMI	**Demirci**	**0.88**	**221**	P	**Pg**	08 32 55.3	**-0.3**		
DEMI				S	**Sb**	08 33 09.3	**0.0**		
ARMT	**Armutlu**	**0.96**	**332**	*e*PN	**Pn**	08 32 59.0	**-0.5**		
ARMT				*e*SN	**Sn**	08 33 15.3	**+1.4**		
ARMT	**Armutlu**	**0.96**	**332**	*e*Pn	**Pn**	08 32 59.0	**-0.5**		
ARMT				*e*Sn	**Sn**	08 33 15.3	**+1.4**		
GULT	**Gulveren**	**1.08**	**48**	*e*PG	Pg	08 32 55.5	-3.9		
ESKT	**Eskisehir**	**1.09**	**100**	*i* P	**Pg**	08 32 59.2	**-0.4**		
ESKT				*i* S	**Sb**	08 33 14.6	**-0.8**		
SEYT	**Eskypehyr**	**1.09**	**100**	S	**Sb**	08 33 14.6	**-0.8**		
HRT	**Hereke**	**1.12**	**8**	*e*PN	**Pg**	08 32 59.2	**-0.8**		
HRT	**Hereke**	**1.12**	**8**	*e*Pn	**Pg**	08 32 59.2	**-0.8**		

JMA 28 08:38:25.1±0.2, 37.46N×141.90E, h16km±2km, M3.6, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JFK	**Kawauchi**	**0.82**	**264**	P	Pb	08 38 40.8	-0.2
JFK				S	Sg	08 38 52.0	0.0
ONAJ	**Iwakimizuishiy**	**0.95**	**248**	P	Pb	08 38 43.1	-0.1
ONAJ				S	Sb	08 38 55.3	-0.2
JMM	**Marumori**	**0.97**	**295**	P	Pb	08 38 43.0	-0.5
JMM				S	Sb	08 38 55.9	-0.1
JIO	**Ouri**	**1.08**	**336**	P	Pb	08 38 44.8	-0.7
JIO				S	Sb	08 38 58.2	-1.2
JFT	**Otama**	**1.25**	**273**	P	Pb	08 38 48.1	-0.1
JFT				S	Sn	08 39 04.4	+0.1
JOU	**Okura**	**1.33**	**313**	P	Pb	08 38 49.4	-0.3
JOU				S	Sb	08 39 06.8	+0.3
JHO	**Hitachi**	**1.36**	**232**	P	Pn	08 38 49.3	-0.1
JHO				S	Sn	08 39 05.1	-2.1

*SJA **28** 08:38:39.6±0.6, 27.43S×71.38W, h225km±25km, ML3.2, MW3.1*
*GUC **28** 08:38:41.9±3.4, 27.65S×71.29W, h65km, ML3.5*
*ISCJB **28** 08:38:43.3±1.5, 27.71S±0.05×71.3W±0.1, h18km, Error ellipse: s-maj=16.4km s-min=4.9km az=19.9*

ISC 28 08:38:41.4±2.2, 27.63S±0.07×71.4W±0.1, h18km, n12, σ2s34/19, 4C, Near coast of northern Chile

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CDCH	**Caldera**	**0.77**	**43**	*i* S	**Sg**	**08 39 08.0**	**+1.3**
CPCH	**Copiapo**	**0.98**	**74**	⇑*i* P	**Pb**	**08 38 59.8**	**-0.1**
CPCH				*i* S	**Sb**	**08 39 10.2**	**-2.3**
VACH	**Vallenar**	**1.10**	**149**	⇑*i* P	**Pb**	**08 39 01.6**	**-0.4**
VACH				*i* S	**Sb**	**08 39 13.3**	**-2.8**
LSCH	**La Serena**	**2.27**	**176**	⇑*i* P	**Pn**	**08 39 15.8**	**-2.3**
LSCH				*e*S	**Sn**	**08 39 44.0**	**-1.6**
LSCH				AML	AML	08 39 58.2	
	comp=E,337nm,0.4s						
TLL	**Tololo Astrono**	**2.58**	**168**	⇑*i* P	**Pn**	**08 39 23.4**	**+0.8**
TLL				*i* S	**Sn**	**08 39 52.5**	**-1.2**
TLL				AML	AML	08 40 05.3	
	comp=N,262nm,0.6s						
VCA	**Vinchina**	**3.04**	**112**	*e*P	**Pb**	**08 39 32.0**	**-3.0**
VCA				*e*S	**Sb**	**08 40 11.4**	**-0.5**
RTLL	**Cerro Villicun**	**4.49**	**146**	*e*P	**Pn**	**08 39 50.6**	**+2.0**
RTLS	**Leoncito**	**4.54**	**157**	*e*P	**Pn**	**08 39 52.6**	**+3.0**
RTLS				*e*S	**Sn**	**08 40 46.3**	**+4.2**
AVFE	**Valle Fertil**	**4.59**	**132**	*e*P	**Pn**	**08 39 51.3**	**+1.3**
AVFE				IAML		08 41 05.4	
	comp=Z,22nm,0.6s						
AUSP	**Uspallata**	**4.90**	**159**	*e*P	**Pn**	**08 39 57.4**	**+2.9**
AUSP				*e*S	**Sn**	**08 40 54.0**	**+3.1**
CYA	**Choya**	**5.03**	**101**	*e*P	**Pn**	**08 39 55.9**	**-0.1**
CYA				IAML		08 41 16.7	
	comp=Z,6.7nm,0.5s						
ASAL	**Salagasta**	**5.42**	**156**	*e*P	**Pn**	**08 40 03.5**	**+2.0**

IDC 28 09:13:53.3±1.9, 4.34S×122.89E, h0km, mb3.8/2, mb1 4.1/4, mb1mx3.6/46, mbtmp3.8/4, ML3.3/2, Error ellipse: s-maj=46.3km s-min=22.8km az=36.0, Sulawesi

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
KAPI	**Kappang**	**3.19**	**258**	Pn	Pn	09 14 44.9	+0.1
	3.9nm,0.3s,baz=127,slow=5.4,SNR=14						
KAPI				Sn	Sn	09 15 23.3	-0.4
	6.9nm,0.3s,baz=12,slow=22,SNR=4.2						
WRA	**Warramunga Arr**	**19.11**	**145**	P	P	09 18 16.8	-1.2
	0.1nm,0.3s,baz=327,slow=13,SNR=11						
ASAR	**Alice Springs**	**21.96**	**152**	P	P	09 18 49.7	+0.8
	2.7nm,0.7s,baz=337,slow=13,SNR=18						
CMAR	**Chiang Mai Arr**	**32.71**	**315**	P	P	09 20 27.9	+0.1
	1.2nm,0.3s,baz=136,slow=7.1,SNR=5.4						

*NIED **28** 09:15:00, 36.40N×141.60E, h11km, Mw4.3 Best double couple: M0 2.72000×10^15 NP1:φs 23.00000°, δ75.00000°, λ-5.00000°. NP2:φs 114.00000°, δ85.00000°, λ-165.00000°.*
*IDC **28** 09:15:00.4±0.6, 36.34N×141.89E, h0km, mb4.1/22, mb1 4.3/25, mb1mx4.1/53, mbtmp4.1/25, ML4.1/3, MS3.3/3, Ms1 3.3/3, ms1mx3.1/55, Error ellipse: s-maj=15.7km s-min=14.0km az=137.0*
*ISCJB **28** 09:15:01.4±0.4, 36.38N±0.04×141.91E±0.05, h19km, mb4.2/30, Error ellipse: s-maj=6.1km s-min=4.7km az=33.5*
*NEIC **28** 09:15:02.4±3.4, 36.40N×141.93E, h12km±20km, mb4.5/10, Error ellipse: s-maj=11.1km s-min=6.7km az=143.0*
*JMA **28** 09:15:04.1±0.3, 36.37N×141.65E, h72km, M4.2*

ISC 28 09:15:03.4±0.6, 36.39N±0.05×141.83E±0.07, h19km, n64, σ0s75/63, mb4.2/30, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CHOJ	**Chosi**	**1.04**	**229**	P	**Pb**	**09 15 21.8**	**-0.9**
CHOJ				*e*S	**Sn**	**09 15 36.0**	**-0.9**
JHO	**Hitachi**	**1.04**	**283**	P	**Pb**	**09 15 21.0**	**-1.7**
ONAJ	**Iwakimizuishiy**	**1.09**	**311**	P	**Pn**	**09 15 23.5**	**-0.2**
JFK	**Kawauchi**	**1.24**	**322**	P	**Pn**	**09 15 25.3**	**-0.5**
JFT	**Otama**	**1.65**	**314**	P	**Pn**	**09 15 30.7**	**-0.6**
JFT				*e*S	**Sn**	**09 15 51.8**	**-0.1**
JMM	**Marumori**	**1.69**	**331**	P	**Pn**	**09 15 30.7**	**-1.2**
BSO1	**Boso 1**	**1.86**	**202**	P	**Pn**	**09 15 33.4**	**-0.3**
BSO3	**Boso 3**	**1.91**	**215**	P	**Pn**	**09 15 34.2**	**-0.4**
JAG	**Ashikaga**	**1.92**	**272**	P	**Pn**	**09 15 33.8**	**-1.2**
JFY	**Yanaizu**	**1.98**	**302**	P	**Pn**	**09 15 35.6**	**-0.3**
JKT	**Katashina**	**2.11**	**281**	P	**Pn**	**09 15 37.5**	**-0.2**
MJAR	**Matsushiro Arr**	**2.92**	**274**	Pn	**Pn**	**09 15 49.5**	**+0.6**
	15nm,0.3s,baz=112,slow=8.5,SNR=64						
MJAR				LR	LR	09 17 13.5	
	comp=Z,330nm,18.2s,baz=85,slow=45						
MAJO	**Matsushiro**	**2.92**	**274**	*e*Pn	**Pn**	**09 15 49.9**	**+1.1**
MAT	**Matsushiro**	**2.92**	**274**	P	**Pn**	**09 15 48.9**	**+0.1**
MAT				S	**Sn**	**09 16 22.6**	**-0.9**
JHJ	**Hachijo jima 2**	**3.67**	**208**	Pn	**Pn**	**09 15 58.6**	**-0.4**
	26nm,0.3s,baz=331,slow=20,SNR=9.8						
JHJ				Sn	**Sn**	**09 16 39.7**	**-2.1**
	46nm,0.3s,baz=261,slow=20,SNR=3.5						
ERM	**Erimo**	**5.72**	**10**	*e*Pn	**Pn**	**09 16 25.1**	**-2.0**
ASAJ	**Asahikawa**	**7.75**	**4**	Pn	**Pn**	**09 16 54.1**	**-0.9**
	4.1nm,0.3s,baz=208,slow=13,SNR=16						
ASAJ				Sn	**Sn**	**09 18 20.9**	**-1.3**
	1.2nm,0.3s,baz=49,slow=27,SNR=2.9						
JNU	**Nakatsue**	**9.58**	**253**	LR	LR	09 21 01.1	
	comp=Z,231nm,19.0s,baz=114,slow=38						
USRK	**Ussuriysk Ar.**	**10.83**	**319**	Pn	Pn	09 17 40.8	+3.5
	0.3nm,0.3s,baz=132,slow=14,SNR=10.0						
KSRS	**Korea Array**	**11.19**	**280**	Pn	Pn	09 17 46.3	+4.1
	0.2nm,0.3s,baz=91,slow=14,SNR=7.7						
KSRS				LR	LR	09 21 59.6	
	comp=Z,184nm,18.8s,baz=96,slow=37						
KSAR	**Wonju Array Be**	**11.22**	**280**	Pn	Pn	09 17 46.3	+3.7
YAK	**Yakutsk**	**26.77**	**347**	P	**P**	**09 20 41.5**	**-0.2**
	19nm,0.4s,baz=168,slow=2.2,SNR=7.6						
YAK	**Yakutsk**	**26.77**	**347**	*e*P	**P**	**09 20 41.1**	**-0.6**
	49nm,0.9s						
YAK				P	pP	09 20 41.5	-6.0
SEY	**Seymchan**	**27.36**	**11**	P	**P**	**09 20 48.1**	**+1.1**
	4.0nm,0.9s,baz=196,slow=6.8,SNR=9.8						
H11N2	**WAKE ISLAND Hy**	**27.53**	**120**	T	T	09 49 21.3	
	baz=313,slow=75,SNR=100						
H11N1	**WAKE ISLAND Hy**	**27.54**	**120**	T	T	09 49 20.4	
	baz=313,slow=75,SNR=73						
H11N3	**WAKE ISLAND Hy**	**27.55**	**120**	T	T	09 49 25.5	
	baz=313,slow=75,SNR=108						
ENH	**Enshi**	**27.62**	**267**	*e*P	**P**	**09 20 49.1**	**-0.6**
	9.4nm,0.6s						
ULN	**Ulaanbaatar**	**28.00**	**305**	*e*P	**P**	**09 20 53.5**	**+0.4**
	3.1nm,0.7s						
H11S1	**WAKE ISLAND Hy**	**28.23**	**122**	T	T	09 50 16.3	
	baz=314,slow=75,SNR=92						
H11S3	**WAKE ISLAND Hy**	**28.23**	**122**	T	T	09 50 21.4	
	baz=314,slow=75,SNR=68						
H11S2	**WAKE ISLAND Hy**	**28.25**	**122**	T	T	09 50 20.6	
	baz=314,slow=75,SNR=47						
SONM	**Songino Array**	**28.43**	**305**	P	**P**	**09 20 57.2**	**+0.3**
	9.9nm,0.8s,baz=108,slow=6.7,SNR=32						
TLY	**Talaya**	**31.01**	**312**	P	**P**	**09 21 20.3**	**+0.7**
	2.9nm,0.6s,baz=111,slow=6.6,SNR=5.5						
TLY	**Talaya**	**31.01**	**312**	*e*P	**P**	**09 21 20.1**	**+0.5**
	2.3nm,0.7s						
TLY				P	**P**	**09 21 20.3**	**+0.7**
TIXI	**Tiksi**	**35.97**	**353**	P	**P**	**09 22 01.9**	**-0.5**
	1.5nm,0.5s						
CMAR	**Chiang Mai Arr**	**41.66**	**256**	P	**P**	**09 22 51.9**	**+1.1**
	0.9nm,0.3s,baz=52,slow=5.7,SNR=8.0						
ZALV	**Zalesovo Beam**	**42.60**	**313**	P	**P**	**09 22 58.5**	**+0.5**
	6.7nm,0.8s,baz=91,slow=6.5,SNR=18						
MKAR	**Makanchi Array**	**44.75**	**303**	P	**P**	**09 23 16.0**	**+0.5**
	2.8nm,0.7s,baz=87,slow=9.9,SNR=24						
KURK	**Kurchatov**	**46.60**	**309**	*e*P	**P**	**09 23 29.9**	**0.0**
	14nm,0.7s						
KURK				P	**P**	**09 23 30.5**	**+0.6**
KURBB	**Kurchatov Arra**	**46.66**	**309**	P	**P**	**09 23 30.5**	**+0.1**
	5.9nm,0.7s,baz=83,slow=7.9,SNR=66						
ILAR	**Eielson Array**	**49.86**	**32**	P	**P**	**09 23 55.3**	**+0.3**
	0.5nm,0.7s,baz=252,slow=6.5,SNR=6.8						
TKM2	**Tokmak 2**	**50.23**	**299**	*e*P	**P**	**09 23 59.3**	**+0.9**
	4.9nm,0.7s						
AAK	**Ala-Archa**	**51.09**	**299**	P	**P**	**09 24 05.2**	**+0.4**
	1.6nm,0.6s,baz=112,slow=5.6,SNR=3.9						
AAK	**Ala-Archa**	**51.09**	**299**	*e*P	**P**	**09 24 05.0**	**+0.2**
	1.2nm,0.6s						
AAK				P	**P**	**09 24 05.2**	**+0.4**
BVAR	**Borovoye Array**	**51.26**	**313**	P	**P**	**09 24 06.2**	**+0.5**
	1.5nm,0.6s,baz=71,slow=6.4,SNR=7.0						
KKAR	**Karatay Array**	**53.74**	**301**	*e*P	**P**	**09 24 24.3**	**0.0**
INK	**Inuvik**	**54.81**	**27**	P	**P**	**09 24 32.0**	**+0.5**
	1.1nm,0.7s,baz=307,slow=7.6,SNR=9.0						
INK	**Inuvik**	**54.81**	**27**	P	**P**	**09 24 32.0**	**+0.5**
INK				*e*P	**P**	**09 24 32.2**	**+0.6**
WRA	**Warramunga Arr**	**56.47**	**188**	P	**P**	**09 24 43.0**	**-1.0**
	1.3nm,0.8s,baz=7.8,slow=7.7,SNR=13						
ARU	**Arti**	**57.07**	**319**	*e*P	**P**	**09 24 48.0**	**+0.1**
	5.7nm,0.8s						
ABKAR	**Akbulak array**	**58.61**	**311**	*e*P	**P**	**09 24 59.0**	**+0.1**
	2.1nm,0.6s						
ASAR	**Alice Springs**	**60.19**	**188**	P	**P**	**09 25 09.9**	**-0.1**
	0.6nm,0.8s,baz=13,slow=7.5,SNR=7.4						
YKA	**Yellowknife Ar**	**64.20**	**30**	P	**P**	**09 25 36.9**	**+0.4**
	1.2nm,0.8s,baz=300,slow=6.6,SNR=27						
FINES	**FINESS Array B**	**69.54**	**332**	P	**P**	**09 26 10.8**	**+0.3**
	1.8nm,0.7s,baz=59,slow=7.4,SNR=7.9						
KBZ	**Khabaz**	**71.58**	**311**	P	**P**	**09 26 24.2**	**+1.1**
	1.5nm,0.7s,baz=86,slow=2.8,SNR=5.3						
NB2	**NORSAR Subarra**	**74.91**	**338**	P	**P**	**09 26 43.0**	**+0.3**
	comp=Z,3.5nm,0.8s,baz=41,slow=5.9						
NOA	**NORSAR Array B**	**74.91**	**338**	P	**P**	**09 26 42.9**	**+0.2**
	comp=Z,3.1nm,0.7s,baz=39,slow=5.8,SNR=16						
AKASG	**Malin Array Be**	**75.01**	**323**	P	**P**	**09 26 43.4**	**0.0**
	comp=Z,2.2nm,0.6s,baz=48,slow=6.1,SNR=6.1						
NVAR	**Mina Array Bea**	**75.11**	**53**	P	**P**	**09 26 44.7**	**+0.2**
	comp=Z,1.1nm,0.7s,baz=282,slow=5.7,SNR=9.3						
PDAR	**Pinedale Array**	**77.88**	**46**	P	**P**	**09 27 00.1**	**-0.1**
	comp=Z,0.4nm,0.6s,baz=298,slow=1.6,SNR=6.6						
GERES	**GERESS Array B**	**83.44**	**328**	P	**P**	**09 27 29.9**	**+0.3**
	comp=Z,0.4nm,0.4s,baz=29,slow=6.1,SNR=5.0						
TXAR	**Lajitas Array**	**90.25**	**53**	P	**P**	**09 28 03.3**	**+0.1**
	comp=Z,0.5nm,0.8s,baz=258,slow=1.8,SNR=6.0						
LPAZ	**La Paz**	**146.72**	**61**	PKPbc	**PKPab**	**09 34 45.5**	**-0.9**
	comp=Z,1.1nm,0.5s,baz=337,slow=1.7,SNR=9.8						

*NIED **28** 09:27:00, 37.40N×141.80E, h47km, Mw5.6 Best double couple: M0 2.72000×10^17 NP1:φs 20.00000°, δ38.00000°, λ92.00000°. NP2:φs 197.00000°, δ52.00000°, λ88.00000°.*
*BJI **28** 09:27:44.9, 37.38N×141.72E, h46km, mb5.4/87, mB5.3/56, Ms5.3/97, Ms7 5.2/91*
*MOS **28** 09:27:45.2±0.8, 37.68N×141.63E, h28km, mb5.8/108, MS5.1/48, Error ellipse: s-maj=5.7km s-min=3.7km az=97.3*
*IDC **28** 09:27:45.5±4.6, 37.44N×141.75E, h28km±31km, mb5.2/43, mb1 5.3/48, mb1mx5.3/57, mbtmp5.4/48, ML5.0/5, MS5.1/40, Ms1 5.1/40, ms1mx5.0/46, Error ellipse: s-maj=11.5km s-min=8.6km az=87.0*
*ISCJB **28** 09:27:46.9±0.3, 37.44N±0.02×141.69E±0.01, h49km±2km, mb5.6/310, MS5.2/226, Error ellipse: s-maj=3.0km s-min=1.8km az=161.9*
*JMA **28** 09:27:46.7±0.1, 37.41N×141.78E, h44km±3km, M5.7*
JMA Felt IV J1.
*NEIC **28** 09:27:47.2±0.1, 37.46N×141.65E, h38km, mb5.8/145, ME5.3, MS5.1/135, MW5.5, Error ellipse: s-maj=2.8km s-min=2.0km az=146.0, Depth from synthetics of broadband displacement seismograms. Energy computed from CMT mechanism.*
NEIC Recorded [4 JMA] in Fukushima and Miyagi.
*GCMT **28** 09:27:47.2±0.1, 37.50N×141.85E, h43km, MW5.6/118, Moment Tensor Solution. s110,c198; s118,c262; Duration: 1s5 Moment tensor: Scale 10^17Nm; Mrr 2.98±.04; Mθθ-0.38±.03; Mφφ-2.60±.03; Mrθ-0.05±.03; Mθφ-0.73±.02; Mφr-0.38±.03; Best double couple: M0 2.92500×10^17 NP1:φs 196.00000°, δ49.00000°, λ89.00000°. NP2:φs 18.00000°, δ41.00000°, λ92.00000°. Principal axes: T 3.0060, Plg86.0000°, Azm91.0000°; N -0.1580, Plg1.0000°, Azm196.0000°; P -2.8430, Plg4.0000°, Azm287.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface/mantle waves, cutoff=50s.*
*NEIC **28** 09:27:48.0±0.0, 37.29N×141.65E, h48km, Moment Tensor Solution. s14 Moment tensor: Scale 10^17Nm; Mrr 2.28; Mθθ-0.69; Mφφ-1.58; Mrθ 0.11; Mθφ-0.59; Mφr 1.07; Best double couple: M0 2.40000×10^17 NP1:φs 18.00000°, δ58.00000°, λ83.00000°. NP2:φs 212.00000°, δ32.00000°, λ102.00000°. Principal axes: T 2.5600, Plg75.0000°, Azm266.0000°; N -0.4400, Plg6.0000°, Azm21.0000°; P -2.1100, Plg13.0000°, Azm113.0000°;*

ISC 28 09:27:47.9±0.3, 37.49N±0.03×141.70E±0.03, h45km±2km, h45km:pP-P, n1647, σ1s07/1736, mb5.7/353, MS5.1/231, 124C-77D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JFK	**Kawauchi**	**0.67**	**260**	⇓P	**Pn**	**09 28 00.6**	**-0.5**
JFK				S	**Sn**	**09 28 10.4**	**-0.1**
JMM	**Marumori**	**0.81**	**298**	⇓P	**Pn**	**09 28 03.2**	**+0.3**
JMM				S	**Sn**	**09 28 15.0**	**+1.1**
ONAJ	**Iwakimizuishiy**	**0.81**	**242**	⇓P	**Pn**	**09 28 02.3**	**-0.8**
ONAJ				*e*S	**Sn**	**09 28 13.3**	**-0.8**
JIO	**Ouri**	**1.00**	**344**	⇓P	**Pn**	**09 28 05.9**	**+0.4**
JIO				S	**Sn**	**09 28 19.5**	**+1.0**
JFT	**Otama**	**1.08**	**272**	⇓P	**Pn**	**09 28 07.4**	**+0.8**
JFT				S	**Sn**	**09 28 23.1**	**+2.6**
JOU	**Okura**	**1.20**	**317**	⇓P	**Pn**	**09 28 09.1**	**+0.9**
JYS	**Shirataka**	**1.48**	**300**	⇓P	**Pn**	**09 28 13.3**	**+1.2**
JYS				S	**Sn**	**09 28 35.0**	**+4.7**
JMK	**Ichinoseki**	**1.51**	**346**	⇑P	**Pn**	**09 28 13.5**	**+1.1**
JMK				S	**Sn**	**09 28 34.0**	**+3.1**
JFY	**Yanaizu**	**1.59**	**268**	⇓P	**Pn**	**09 28 14.2**	**+0.6**
JYK	**Kaneyama**	**1.77**	**324**	⇓P	**Pn**	**09 28 17.4**	**+1.3**
JYA	**Atsumi**	**1.91**	**306**	⇓P	**Pn**	**09 28 19.4**	**+1.4**
JNS	**Sasagawa**	**1.92**	**281**	⇓P	**Pn**	**09 28 19.0**	**+1.0**
MJAR	**Matsushiro Arr**	**2.95**	**252**	Pn	**Pn**	**09 28 33.3**	**+1.0**
	195nm,0.3s,baz=81,slow=16,SNR=469						
MJAR				Sn	**Sn**	**09 29 11.8**	**+5.4**
	293nm,0.3s,baz=88,slow=30,SNR=6.6						
MJAR				LR	LR	09 30 05.0	
	comp=Z,48μm,19.6s,baz=80,slow=47						
MAJO	**Matsushiro**	**2.95**	**252**	*d*P	**Pn**	**09 28 33.5**	**+1.3**
MAJO	**Matsushiro**	**2.95**	**252**	*e*Pn	**Pn**	**09 28 33.6**	**+1.3**
MAT	**Matsushiro**	**2.95**	**252**	P	**Pn**	**09 28 33.4**	**+1.2**
MAT				S	**Sn**	**09 29 09.6**	**+3.2**
MJB9	**Matsu-Tunnel**	**2.95**	**252**	*e*Pn	**Pn**	**09 28 33.6**	**+1.4**
JHJ	**Hachijo jima 2**	**4.63**	**200**	Pn	**Pn**	**09 28 53.4**	**-1.9**
	511nm,0.3s,baz=317,slow=11,SNR=68						
JHJ				Sn	**Sn**	**09 29 42.8**	**-5.0**
	1μm,0.3s,baz=53,slow=23,SNR=6.4						
JHJ				LR	LR	09 30 56.7	
	comp=Z,23μm,21.8s,baz=97,slow=42						
ERM	**Erimo**	**4.66**	**14**	⇓*i* P	**Pn**	**09 28 54.8**	**-0.8**
ERM				pmax	pmax		
	comp=Z,534nm,1.0s						
ERM	**Erimo**	**4.66**	**14**	*e*Pn	**Pn**	**09 28 55.2**	**-0.4**
ASAJ	**Asahikawa**	**6.66**	**6**	Pn	**Pn**	**09 29 22.4**	**-0.7**
	comp=Z,25nm,0.3s,baz=226,slow=11,SNR=101						
ASAJ				Sn	**Sn**	**09 30 37.4**	**-0.2**
	comp=Z,104nm,0.3s,baz=14,slow=33,SNR=7.4						
YUK	**Yuzh-Kuril'sk**	**7.26**	**24**	*i* P	**Pn**	**09 29 29.4**	**-1.9**
YUK				*i* S	**Sn**	**09 30 47.0**	**-5.4**
YUK				pmax	pmax		
	comp=E,847nm,0.3s						
YUK				pmax	pmax		
	comp=Z,1μm,0.3s						
YUK				pmax	pmax		
	comp=N,337nm,0.2s						
YUK				MLR	MLR		
	comp=Z,5μm,12.0s						
SHO	**Shikotan**	**7.47**	**30**	*i* P	Pn	09 29 30.9	-3.3
SHO				*i* S	Sn	09 30 48.8	-8.8
SHO				pmax	pmax		
	comp=Z,541nm,0.5s						
SHO				pmax	pmax		
	comp=E,196nm,0.3s						
KUR	**Kuril'sk**	**9.02**	**29**	*e*P	**Pn**	**09 29 53.6**	**-1.8**
KUR				*e*S	Sn	09 31 29.1	-6.4
KUR				pmax	pmax		
	comp=N,155nm,0.6s						
KUR				pmax	pmax		
	comp=E,213nm,0.6s						
KUR				pmax	pmax		
	comp=Z,415nm,0.6s						
KUR				smax	smax		
	comp=N,350nm,0.5s						
KUR				smax	smax		
	comp=E,972nm,0.5s						
YSS	**Yuzh-Sakhalins**	**9.49**	**4**	*α i* P	**Pn**	**09 30 01.5**	**-0.4**
YSS				*e*S	**Sn**	**09 31 41.8**	**-5.3**
YSS				pmax	pmax		
	comp=Z,130nm,0.5s						
YSS				MLR	MLR		
	comp=Z,4μm,12.0s						
YSS				MLR	MLR		
	comp=N,3μm,10.0s						
YSS				MLR	MLR		
	comp=E,3μm,15.0s						
YSS	**Yuzh-Sakhalins**	**9.49**	**4**	*e*Pn	**Pn**	**09 30 01.7**	**-0.2**
MSHR	**Mys Shultsa**	**9.54**	**305**	*d i*P	**Pn**	**09 30 05.0**	**+2.4**
JNU	**Nakatsue**	**9.85**	**247**	Pn	**Pn**	**09 30 09.5**	**+2.5**
	comp=E,4.2nm,0.3s,baz=65,slow=8.1,SNR=54						
JNU				LR	LR	09 34 17.2	
	comp=E,15μm,21.0s,baz=64,slow=40						
USRK	**Ussuriysk Ar.**	**9.95**	**315**	Pn	**Pn**	**09 30 10.4**	**+2.3**
	comp=E,3.7nm,0.3s,baz=122,slow=14,SNR=47						
USRK				LR	LR	09 33 53.3	
	comp=E,16μm,18.1s,baz=125,slow=37						
CBIJ	**Chichi jima**	**10.37**	**178**	Pn	Pn	09 30 09.6	-4.5
CBIJ				Sn	Sn	09 31 59.0	-10
JCJ	**Chichijima**	**10.37**	**178**	Pn	Pn	09 30 09.6	-4.5
	comp=E,82nm,0.3s,baz=283,slow=16,SNR=58						
JCJ				Sn	Sn	09 31 59.0	-10
KSRS	**Korea Array**	**10.95**	**274**	Pn	Pn	09 30 26.6	+4.7
	comp=E,6.6nm,0.3s,baz=85,slow=14,SNR=98						
KSRS				LR	LR	09 34 26.3	
	comp=E,12μm,19.7s,baz=65,slow=36						
KSRS				PcP	**PcP**	**09 36 18.9**	**+0.6**
	baz=80,slow=0.7,SNR=4.8						
KS01	**Wonju Array Si**	**10.97**	**274**	*e*Pn	Pn	09 30 26.4	+4.2
KS15	**Wonju Array Si**	**10.98**	**274**	*e*Pn	Pn	09 30 27.1	+4.8
KSAR	**Wonju Array Be**	**10.98**	**274**	P	Pn	09 30

CN2					LR	LR			
	comp=Z,6μm,18.0s								
SNY	**Shenyang**	**14.61**	**293**	⇑P	**Pn**	**09**	**31**	**13.0**	**+1.4**
SNY				pP	P	09	31	20.8	+3.7
SNY				pmax	pmax				
	comp=Z,100nm,1.7s								
SNY				pmax	pmax				
	comp=Z,3μm,12.0s								
SNY				LR	LR				
	comp=Z,5μm,17.5s								
SNY				LR	LR				
	comp=Z,13μm,19.2s								
SNY				LR	LR				
	comp=Z,20μm,18.5s								
JOW	**Kunigami**	**15.54**	**231**	Pn	**Pn**	**09**	**31**	**25.4**	**+1.5**
	comp=Z,6.8nm,0.3s,baz=354,slow=8.8,SNR=12								
NKL	**Nikolayevsk**	**15.68**	**358**	*e*P	**Pn**	**09**	**31**	**22.0**	**-3.5**
NKL				*e*S	Sn	09	34	09.0	-8.9
NKL				pmax	pmax				
	comp=Z,300nm,3.0s								
NKL				pmax	pmax				
	comp=N,13nm,1.0s								
NKL				pmax	pmax				
	comp=E,17nm,1.0s								
NKL				pmax	pmax				
	comp=Z,22nm,1.0s								
NKL				smax	smax				
	comp=E,700nm,8.0s								
NKL				MLR	MLR				
	comp=N,2μm,20.0s								
NKL				MLR	MLR				
	comp=E,6μm,20.0s								
NKL				MLR	MLR				
	comp=Z,4μm,16.0s								
DL2	**Dalian**	**15.84**	**281**	P	**Pn**	**09**	**31**	**28.0**	**+0.3**
DL2				S	**Sn**	**09**	**34**	**19.0**	**-3.2**
DL2				pmax	pmax				
	comp=Z,37nm,0.8s								
DL2				pmax	pmax				
	comp=Z,780nm,6.1s								
DL2				LR	LR				
	comp=Z,7μm,18.0s								
DL2				LR	LR				
	comp=Z,10μm,19.0s								
OKH	**Okha**	**16.08**	**3**	*e*P	**P**	**09**	**31**	**34.0**	**+0.6**
OKH				MLR	MLR				
	comp=Z,4μm,16.0s								
SKR	**Severo-Kuril's**	**16.73**	**33**	*e*P	Pn	09	31	33.9	-4.9
SKR				pmax	pmax				
	comp=Z,230nm,0.9s								
SKR				pmax	pmax				
	comp=N,80nm,0.5s								
SKR				pmax	pmax				
	comp=E,160nm,0.9s								
SKR				MLR	MLR				
	comp=N,5μm,18.0s								
SKR				MLR	MLR				
	comp=E,3μm,18.0s								
SKR				MLR	MLR				
	comp=Z,7μm,18.0s								
SSE	**Sheshan**	**18.09**	**255**	P	**P**	**09**	**31**	**53.8**	**-2.0**
SSE				pP	**pP**	**09**	**32**	**02.0**	**-4.4**
SSE				sP	sP	09	32	06.0	-6.2
SSE				S	**Sn**	**09**	**35**	**14.0**	**-2.7**
SSE				pmax	pmax				
	comp=Z,17nm,0.6s								
SSE				pmax	pmax				
	comp=Z,190nm,3.6s								
SSE				LR	LR				
	comp=Z,4μm,21.8s								
SSE				LR	LR				
	comp=Z,5μm,21.8s								
SSE				LR	LR				
	comp=Z,7μm,21.1s								
PEA0	**Petropavlovsk-**	**19.18**	**30**	*e*P	**P**	**09**	**32**	**07.0**	**-0.6**
PEA0B	**Petropavlovsk-**	**19.18**	**30**	*e*P	**P**	**09**	**32**	**07.6**	**0.0**
	comp=Z,336nm,1.4s								
PETK	**Petropavlovsk-**	**19.18**	**30**	P	**P**	**09**	**32**	**07.5**	**-0.1**
	comp=Z,3.1nm,0.3s,baz=203,slow=8.2,SNR=64								
PETK				PcP	**PcP**	**09**	**36**	**29.8**	**+0.2**
	baz=122,slow=5.6,SNR=3.7								
PETK				LR	LR	09	39	27.7	
	comp=Z,2μm,21.9s,baz=216,slow=37								
PET	**Petropavlovsk**	**19.51**	**32**	*c i*P	**P**	**09**	**32**	**11.6**	**+0.5**
PET				*e*S	**S**	**09**	**35**	**44.5**	**-4.4**
PET				pmax	pmax				
	comp=Z,1μm,3.4s								
PET				pmax	pmax				
	comp=Z,948nm,11.9s								
PET				pmax	pmax				
	comp=Z,160nm,0.7s								
PET				smax	smax				
	comp=E,2μm,14.5s								
PET				smax	smax				
	comp=N,1μm,16.2s								
PET				MLR	MLR				
	comp=Z,5μm,22.0s								
PET				MLR	MLR				
	comp=Z,4μm,21.0s								
PET	**Petropavlovsk**	**19.51**	**32**	*e*P	**P**	**09**	**32**	**11.7**	**+0.5**
	comp=Z,101nm,0.7s								
NJ2	**Nanjing**	**19.52**	**261**	*e*P	**P**	**09**	**32**	**11.5**	**+0.1**
NJ2				pmax	pmax				
	comp=Z,27nm,0.5s								
NJ2				pmax	pmax				
	comp=Z,210nm,3.7s								
NJ2				LR	LR				
	comp=Z,4μm,16.3s								
NJ2				LR	LR				
	comp=Z,5μm,26.0s								
NJ2				LR	LR				
	comp=Z,6μm,22.8s								
TIA	**Tai'an**	**19.70**	**274**	⇓P	**P**	**09**	**32**	**12.0**	**-1.3**
TIA				PP	sP	09	32	35.3	+5.5
TIA				S	**S**	**09**	**35**	**47.0**	**-6.0**
TIA				pmax	pmax				
	comp=Z,140nm,1.2s								
TIA				pmax	pmax				
	comp=Z,920nm,4.0s								
TIA				LR	LR				
	comp=Z,4μm,18.0s								
TIA				LR	LR				
	comp=Z,5μm,18.0s								
TIA				LR	LR				
	comp=Z,6μm,16.0s								
HIA	**Hailar**	**19.75**	**314**	*e*P	**P**	**09**	**32**	**13.4**	**-0.4**
HIA				pmax	pmax				
	comp=Z,26nm,0.5s								
HIA	**Hailar**	**19.75**	**314**	*e*P	**P**	**09**	**32**	**13.4**	**-0.4**
	comp=Z,26nm,0.5s								
BJI	**Beijing**	**20.04**	**285**	P	**P**	**09**	**32**	**16.3**	**-0.8**
BJI				pP	**pP**	**09**	**32**	**25.8**	**-2.0**
BJI				sP	**sP**	**09**	**32**	**32.8**	**-0.8**
BJI				S	**S**	**09**	**35**	**52.8**	**-7.0**
BJI				sS	**sS**	**09**	**36**	**12.5**	**-4.7**
BJI				PcP	**PcP**	**09**	**36**	**29.3**	**-2.0**
BJI				pmax	pmax				
	comp=Z,110nm,1.5s								
BJI				pmax	pmax				
	comp=Z,670nm,3.9s								
BJI				LR	LR				
	comp=Z,3μm,14.6s								
BJI				LR	LR				
	comp=Z,2μm,22.9s								
BJI				LR	LR				
	comp=Z,4μm,30.6s								
BJT	**Baijiatuau**	**20.05**	**285**	*e*P	**P**	**09**	**32**	**16.2**	**-0.9**
BJT				pmax	pmax				
	comp=Z,84nm,0.7s								
BJT				MLR	MLR				
	comp=Z,5μm,20.0s								
BJT	**Baijiatuau**	**20.05**	**285**	*e*P	**P**	**09**	**32**	**16.2**	**-0.9**
	comp=Z,84nm,0.7s								
BJT				LR	LR				
	comp=Z,5μm,20.0s								
TATO	**Taipei**	**21.26**	**240**	*e*P	**P**	**09**	**32**	**30.2**	**0.0**
TATO				LR	LR				
	comp=Z,2μm,20.0s								
CLNS	**Chul'man**	**22.36**	**335**	*e*P	**P**	**09**	**32**	**40.4**	**-1.5**
CLNS				*e**PP	pP	09	32	47.7	-5.1
CLNS				*e*		09	33	01.0	
CLNS				*e*		09	36	36.6	
CLNS				*e*S	**S**	**09**	**36**	**40.3**	**-4.3**
CLNS				*e*SS	**SnSn**	**09**	**37**	**17.6**	**+2.5**
CLNS				pmax	pmax				
	comp=Z,98nm,0.9s								
CLNS				pmax	pmax				
	comp=N,73nm,0.9s								
CLNS				pmax	pmax				
	comp=E,23nm,0.9s								
CLNS				pmax	pmax				
	comp=Z,49nm,0.8s								
CLNS				pmax	pmax				
	comp=N,104nm,1.0s								
CLNS				pmax	pmax				
	comp=E,49nm,0.8s								
CLNS				smax	smax				
	comp=N,2μm,10.4s								
CLNS				smax	smax				
	comp=E,1μm,10.7s								
CLNS				MLR	MLR				
	comp=Z,5μm,17.0s								
CLNS				MLR	MLR				
	comp=E,2μm,14.0s								
CLNS				MLR	MLR				
	comp=N,3μm,15.0s								
MA2	**Magadan**	**22.86**	**12**	P	**P**	**09**	**32**	**47.2**	**+0.1**
	comp=N,165nm,0.8s,baz=219,slow=8.9,SNR=91								
MA2	**Magadan**	**22.86**	**12**	P	**P**	**09**	**32**	**47.2**	**+0.1**
MA2				LR	LR				
	comp=Z,14nm,19.0s								
TIY	**Taiyuan**	**23.15**	**280**	*e*P	**P**	**09**	**32**	**49.3**	**-1.0**
TIY				pP	**pP**	**09**	**33**	**00.8**	**-0.6**
TIY				sP	**sP**	**09**	**33**	**10.0**	**+2.9**
TIY				S	**S**	**09**	**36**	**55.0**	**-3.5**
TIY				LR	LR				
	comp=Z,2μm,16.1s								
TIY				LR	LR				
	comp=Z,5μm,15.8s								
TIY				LR	LR				
	comp=Z,5μm,15.7s								
QZH	**Quanzhou**	**23.31**	**244**	⇑*i*P	P	09	32	46.0	-5.9
QZH				S	S	09	36	50.3	-11
QZH				pmax	pmax				
	comp=Z,330nm,0.5s								
QZH				pmax	pmax				
	comp=Z,760nm,3.1s								
QZH				LR	LR				
	comp=Z,2μm,10.9s								
QZH				LR	LR				
	comp=Z,2μm,9.6s								
QZH				LR	LR				
	comp=Z,10μm,20.2s								
HHC	**Hu-ho-hao-te**	**23.55**	**288**	*e*P	**P**	**09**	**32**	**52.5**	**-1.7**
HHC				sP	pP	09	33	07.5	+1.8
HHC				S	S	09	36	57.0	-8.0
HHC				pmax	pmax				
	comp=Z,47nm,0.7s								
HHC				pmax	pmax				
	comp=Z,350nm,7.8s								
HHC				LR	LR				
	comp=Z,8μm,16.2s								
HHC				LR	LR				
	comp=Z,7μm,17.3s								
HHC				LR	LR				
	comp=Z,6μm,22.1s								
WHN	**Wuhan**	**23.65**	**261**	P	**P**	**09**	**32**	**55.0**	**-0.1**
WHN				S	S	09	36	57.5	-9.1
WHN				pmax	pmax				
	comp=Z,310nm,0.8s								
WHN				pmax	pmax				
	comp=Z,710nm,9.4s								
WHN				LR	LR				
	comp=Z,5μm,14.2s								
WHN				LR	LR				
	comp=Z,11μm,20.4s								
WHN				LR	LR				
	comp=Z,12μm,18.6s								
GUMO	**Guam**	**23.97**	**172**	*e*P	**pP**	**09**	**33**	**13.4**	**+3.4**
GUMO				MLR	MLR				
	comp=Z,2μm,20.0s								
GUMO	**Guam**	**23.97**	**172**	*e*pP	**pP**	**09**	**33**	**13.4**	**+3.4**
GUMO				LR	LR				
	comp=Z,2μm,20.0s								
CIT	**Chita**	**24.51**	**315**	*e*P	**P**	**09**	**33**	**02.6**	**-0.3**
CIT				*e*		09	37	19.0	
CIT				pmax	pmax				
	comp=Z,527nm,1.7s								
BTO	**Baotou**	**24.73**	**287**	*e*P	**P**	**09**	**33**	**05.5**	**+0.5**
YAK	**Yakutsk**	**25.68**	**347**	P	**P**	**09**	**33**	**13.5**	**+0.3**
	comp=Z,144nm,0.4s,baz=158,slow=3.3,SNR=39								
YAK				LR	LR	09	43	44.0	
	comp=Z,6μm,18.7s,baz=132,slow=37								
YAK	**Yakutsk**	**25.68**	**347**	*c i*P	**P**	**09**	**33**	**12.5**	**-0.7**
YAK				*e*		09	33	46.4	
YAK				*e*		09	36	41.3	
YAK				*e*S	**S**	**09**	**37**	**36.2**	**-2.2**
YAK				*e*		09	44	06.6	
YAK				pmax	pmax				
	comp=Z,348nm,0.9s								
YAK				pmax	pmax				
	comp=E,40nm,1.2s								
YAK				pmax	pmax				
	comp=N,132nm,1.1s								
YAK				pmax	pmax				
	comp=N,192nm,1.0s								
YAK				pmax	pmax				
	comp=Z,235nm,1.0s								
YAK				pmax	pmax				
	comp=E,101nm,1.5s								
YAK				smax	smax				
	comp=E,1μm,2.3s								
YAK				smax	smax				
	comp=N,4μm,2.5s								
YAK				MLR	MLR				
	comp=Z,6μm,17.0s								
YAK				MLR	MLR				
	comp=N,4μm,15.0s								
YAK				MLR	MLR				
	comp=E,1μm,15.0s								
YAK	**Yakutsk**	**25.68**	**347**	*e*P	**P**	**09**	**33**	**12.7**	**-0.5**
	comp=E,324nm,0.8s								
YAK				*e*S	**S**	**09**	**37**	**39.2**	**+0.9**
SEY	**Seymchan**	**26.30**	**11**	P	**P**	**09**	**33**	**20.6**	**+1.7**
	comp=E,80nm,0.7s,baz=197,slow=7.0,SNR=186								
SEY	**Seymchan**	**26.30**	**11**	*c*eP	**P**	**09**	**33**	**19.9**	**+1.0**
XAN	**Xi'an**	**26.74**	**273**	P	**P**	**09**	**33**	**22.0**	**-1.3**
XAN				pP	pP	09	33	31.0	-4.2
XAN				sP	sP	09	33	35.3	-5.3
XAN				S	S	09	37	44.5	-11
XAN				pmax	pmax				
	comp=E,58nm,0.6s								
XAN				pmax	pmax				
	comp=E,260nm,3.8s								
XAN				LR	LR				
	comp=E,2μm,17.2s								
XAN				LR	LR				
	comp=E,1μm,19.2s								
XAN				LR	LR				
	comp=E,3μm,19.2s								
BOD	**Bodaibo**	**27.27**	**327**	*e*P	**P**	**09**	**33**	**27.1**	**-0.5**
BOD				pmax	pmax				
	comp=Z,122nm,0.9s								
ULN	**Ulaanbaatar**	**27.29**	**303**	*d i*P	**P**	**09**	**33**	**28.8**	**+0.7**
ULN				pmax	pmax				
	comp=Z,142nm,1.2s								
ULN	**Ulaanbaatar**	**27.29**	**303**	*e*P	**P**	**09**	**33**	**27.3**	**-0.9**
	comp=Z,322nm,1.7s								
ULN				LR	LR				
	comp=Z,2μm,21.0s								
ULN	**Ulaanbaatar**	**27.29**	**303**	P	**P**	**09**	**33**	**28.8**	**+0.7**
	SNR=53								
ULN	**Ulaanbaatar**	**27.29**	**303**	P	**P**	**09**	**33**	**28.8**	**+0.7**
	SNR=53								
ENH	**Enshi**	**27.60**	**264**	*e*P	**P**	**09**	**33**	**30.2**	**-0.8**
	comp=Z,252nm,0.8s								
ENH				LR	LR				
	comp=Z,4μm,22.0s								
SONA1	**Songino Array**	**27.72**	**303**	*e*P	**P**	**09**	**33**	**32.0**	**0.0**
SONM	**Songino Array**	**27.72**	**303**	P	**P**	**09**	**33**	**32.7**	**+0.7**
	comp=Z,67nm,0.8s,baz=102,slow=8.5,SNR=94								
SONM				LR	LR	09	44	56.0	
	comp=Z,3μm,18.7s,baz=92,slow=37								
HKC	**Hong Kong Obse**	**28.12**	**245**	P	**P**	**09**	**33**	**38.0**	**+2.4**
H11N2	**WAKE ISLAND Hy**	**28.19**	**122**	T	T	10	03	56.7	
	baz=315,slow=75,SNR=629								
H11N1	**WAKE ISLAND Hy**	**28.20**	**122**	T	T	10	03	55.4	
	baz=315,slow=75,SNR=825								
H11N3	**WAKE ISLAND Hy**	**28.21**	**122**	T	T	10	03	57.6	
	baz=315,slow=75,SNR=638								
GZH	**Guangzhou**	**28.25**	**248**	P	P	09	33	31.0	-5.7
GZH				S	S	09	38	08.5	-11
GZH				pmax	pmax				
	comp=Z,690nm,3.0s								
H11S1	**WAKE ISLAND Hy**	**28.92**	**124**	T	T	10	04	50.0	
	baz=316,slow=76,SNR=729								
H11S3	**WAKE ISLAND Hy**	**28.92**	**124**	T	T	10	04	52.6	
	baz=316,slow=76,SNR=823								
H11S2	**WAKE ISLAND Hy**	**28.94**	**124**	T	T	10	04	52.1	
	baz=316,slow=76,SNR=584								
IRK	**Irkutsk**	**29.96**	**312**	*e*P	**P**	**09**	**33**	**51.8**	**+0.1**
IRK				*e*S	**S**	**09**	**38**	**46.6**	**+0.5**
IRK				pmax	pmax				
	comp=Z,99nm,2.4s								
ZAK	**Zakamensk**	**30.17**	**308**	*e*P	**P**	**09**	**33**	**53.8**	**+0.1**
ZAK				*e*		09	38	44.6	
ZAK				pmax	pmax				
	comp=Z,41nm,1.0s								
TLY	**Talaya**	**30.20**	**310**	*e*P	**P**	**09**	**33**	**53.8**	**-0.1**
TLY				*e*		09	35	01.2	
TLY				*e*S	**S**	**09**	**38**	**49.6**	**-0.4**
TLY				pmax	pmax				
	comp=Z,43nm,0.8s								
TLY				MLR	MLR				
	comp=Z,4μm,16.0s								
TLY	**Talaya**	**30.20**	**310**	*e*P	**P**	**09**	**33**	**54.1**	**+0.2**
	comp=Z,39nm,0.8s								
TLY				LR	LR				
	comp=Z,4μm,21.0s								
LZH	**Lanzhou**	**30.21**	**279**	*e*P	**P**	**09**	**33**	**54.3**	**0.0**
LZH				pP	pP	09	34	04.8	-1.5
LZH				sP	sP	09	34	12.3	+0.5
LZH				PP	**PnPn**	**09**	**34**	**54.0**	**+0.9**
LZH				S	**S**	**09**	**38**	**49.0**	**-1.7**
LZH				sS	sS	09	39	10.3	-0.6
LZH				SS	**SnSn**	**09**	**40**	**25.0**	**-2.3**
LZH				pmax	pmax				
	comp=Z,200nm,1.6s								
LZH				pmax	pmax				
	comp=Z,430nm,4.0s								
LZH				LR	LR				
	comp=Z,2μm,14.2s								
LZH				LR	LR				
	comp=Z,4μm,14.1s								
LZH				LR	LR				
	comp=Z,6μm,17.6s								
GYA	**Guiyang**	**31.52**	**260**	⇑*i*P	**P**	**09**	**34**	**06.8**	**+0.9**
GYA				pP	pP	09	34	20.0	+2.1
GYA				PP	**PnPn**	**09**	**35**	**12.3**	**+2.1**
GYA				PcP	**PcP**	**09**	**37**	**00.5**	**+2.6**
GYA				S	**S**	**09**	**39**	**11.8**	**+0.6**
GYA				sS	sS	09	39	33.3	+1.9
GYA				ScP	**ScP**	**09**	**40**	**39.0**	**+1.7**
GYA				SS	**SnSn**	**09**	**41**	**01.0**	**+1.8**
GYA				ScS	**ScS**	**09**	**44**	**33.5**	**-1.9**
GYA				pmax	pmax				
	comp=Z,80nm,0.8s								
GYA				pmax	pmax				
	comp=Z,230nm,5.8s								
GYA				LR	LR				
	comp=Z,11μm,16.8s								
GYA				LR	LR				
	comp=Z,10μm,17.0s								
GYA				LR	LR				
	comp=Z,11μm,16.9s								
MOY	**Mondy**	**31.82**	**310**	*e*P	**P**	**09**	**34**	**08.2**	**0.0**
MOY				pmax	pmax				
	comp=Z,110nm,2.6s								
CD2	**Chengdu**	**31.90**	**270**	P	**P**	**09**	**34**	**08.8**	**-0.3**
CD2				sP	sP	09	34	27.5	+1.0
CD2				S	**S**	**09**	**39**	**14.0**	**-3.0**
CD2				sS	sS	09	39	38.5	+1.3
CD2				pmax	pmax				
	comp=Z,80nm,0.7s								
CD2				pmax	pmax				
	comp=Z,300nm,3.7s								
CD2				LR	LR				
	comp=Z,4μm,18.0s								
CD2				LR	LR				
	comp=Z,5μm,18.0s								
GTA	**Gaotai**	**32.65**	**287**	⇑P	**P**	**09**	**34**	**15.3**	**-0.3**
GTA				PcP	**PcP**	**09**	**37**	**01.0**	**+0.2**
GTA				S	**S**	**09**	**39**	**28.3**	**-0.3**
GTA				PcS	**PcS**	**09**	**40**	**46.8**	**+0.7**
GTA				SS	**SnSn**	**09**	**41**	**25.5**	**-0.7**
GTA				ScS	**ScS**	**09**	**44**	**40.5**	**-0.2**
GTA				pmax	pmax				
	comp=Z,14nm,0.9s								
GTA				pmax	pmax				
	comp=Z,190nm,5.5s								
GTA				LR	LR				
	comp=Z,2μm,18.1s								
GTA				LR	LR				
	comp=Z,3μm,18.5s								
GTA				LR	LR				
	comp=Z,5μm,22.3s								
QIZ	**Qiongzhong**	**33.32**	**245**	P	**P**	**09**	**34**	**23.0**	**+1.5**
QIZ				pP	**pP**	**09**	**34**	**32.5**	**-1.1**
QIZ				S	**S**	**09**	**39**	**43.5**	**+4.4**
QIZ				sS	**sS**	**09**	**40**	**00.3**	**+0.9**
QIZ				pmax	pmax				
	comp=Z,16nm,1.1s								
QIZ				LR	LR				
	comp=Z,940nm,18.6s								
QIZ				LR	LR				
	comp=Z,460nm,21.6s								
BILL	**Bilibino**	**33.53**	**16**	*c i*P	**P**	**09**	**34**	**22.2**	**-0.6**
BILL				*e*		09	35	34.8	
BILL				*e*PPP	PPP	09	35	45.1	
BILL				*e*S	S	09	39	33.9	-7.4
BILL				*e*SS	**SnSn**	**09**	**41**	**49.7**	**+3.0**
BILL				pmax	pmax				
	comp=Z,115nm,1.2s								
BILL				MLR	MLR				
	comp=Z,2μm,24.0s								
BILL	**Bilibino**	**33.53**	**16**	*e*P	**P**	**09**	**34**	**21.3**	**-1.5**
	comp=Z,111nm,1.2s								
BILL				LR	LR				
	comp=Z,1μm,19.0s								
DAV	**Davao City (W)**	**33.64**	**210**	PFAKE		09	34	40.0	+16
DAV				LR	LR				
	comp=Z,2μm,22.0s								
TIXI	**Tiksi**	**34.87**	**353**	P	**P**	**09**	**34**	**33.6**	**-0.7**
	comp=Z,8.6nm,0.4s,baz=144,slow=8.5,SNR=34								
TIXI	**Tiksi**	**34.87**	**353**	*e*P	**P**	**09**	**34**	**33.4**	**-1.0**
	comp=Z,85nm,1.5s								
TIXI				LR	LR				
	comp=Z,3μm,20.0s								
KMI	**Kunming**	**35.25**	**261**	P	**P**	**09**	**34**	**38.8**	**+0.3**
KMI				pP	pP	09	34	53.0	+2.4
KMI				sP	sP	09	34	58.0	+2.0
KMI				PP	**PP**	**09**	**35**	**58.8**	**-0.2**
KMI				S	**S**	**09**	**40**	**05.0**	**-4.3**
KMI				sS	sS	09	40	29.8	+0.1
KMI				SS	**SnSn**	**09**	**42**	**25.0**	**-4.9**
KMI				pmax	pmax				
	comp=Z,110nm,0.8s								
KMI				pmax	pmax				
	comp=Z,360nm,4.3s								
KMI				LR	LR				
	comp=Z,2μm,20.6s								
KMI				LR	LR				
	comp=Z,3μm,20.0s								
KMI				LR	LR				
	comp=Z,5μm,23.1s								
MIDW	**Midway**	**35.38**	**93**	PFAKE		09	34	50.0	+11
MIDW				LR	LR				
	comp=Z,4μm,22.0s								
KRAR	**Krasnoyarsk**	**37.29**	**316**	⇓*i*P	**P**	**09**	**34**	**55.8**	**+0.6**
KRAR				pmax	pmax				
	comp=Z,153nm,1.6s								
NIKH	**Nikolski High**	**37.31**	**49**	*e*P	**P**	**09**	**34**	**56.0**	**+0.6**
	comp=Z,190nm,0.7s								
PANO	**Nakornpanom**	**38.34**	**248**	P	**P**	**09**	**35**	**05.5**	**+0.9**
	comp=Z,52nm,0.9s								
MYLDM	**Lahad Datu**	**38.51**	**219**	*e*P	**P**	**09**	**35**	**08.1**	**+2.2**
	comp=Z,139nm,1.0s								
SDKM	**Sandakan**	**38.78**	**221**	⇑P	**P**	**09**	**35**	**09.6**	**+1.3**
TNTI	**Ternate**	**38.86**	**203**	P	**P**	**09**	**35**	**11.2**	**+2.4**
	comp=Z,158nm,2.0s,comp=Z,4μm								
TNTI	**Ternate**	**38.86**	**203**	*e*P	**P**	**09**	**35**	**08.4**	**-0.4**
	comp=Z,100nm,0.8s								
NONG	**Nongkai**	**38.87**	**251**	P	**P**	**09**	**35**	**08.9**	**-0.1**
	comp=Z,94nm,1.2s								
SKNT	**Sakolnakorn**	**38.92**	**249**	P	**P**	**09**	**35**	**09.3**	**-0.1**
	comp=Z,120nm,1.0s,comp=Z,2μm								
KKM	**Kota Kinabalu**	**38.97**	**223**	⇑P	**P**	**09**	**35**	**11.7**	**+1.8**

KKM	**Kota Kinabalu**	**38.97**	**223**	*e*P	**P**	**09 35 11.6**	**+1.8**
KKM				*e*pP	**pP**	**09 35 23.4**	**+1.2**
KKM				LR	LR		
	comp=Z,1μm,20.0s						
SWI	**Sorong**	**39.37**	**197**	P	**P**	**09 35 12.0**	**-1.1**
	comp=Z,62nm,0.9s,comp=Z,1μm						
RKPI	**Ransiki, Papua**	**39.43**	**192**	P	**P**	**09 35 11.2**	**-2.4**
	comp=Z,105nm,0.7s						
TSM	**Tawau**	**39.58**	**219**	⇑P	**P**	**09 35 16.1**	**+1.2**
JAY	**Jayapura**	**39.81**	**182**	P	P	09 35 13.5	-3.3
	comp=Z,23nm,1.5s,comp=Z,496nm						
GENI	**Genyem**	**39.91**	**182**	P	**P**	**09 35 17.6**	**+0.1**
	comp=Z,92nm,1.6s,comp=Z,4μm						
LBMI	**Labuha**	**40.15**	**202**	P	P	09 35 24.9	+5.3
KHON	**Khomkaen**	**40.18**	**249**	P	**P**	**09 35 21.6**	**+1.7**
	comp=Z,54nm,0.8s						
KMSI	**Cibinong**	**40.21**	**208**	P	**P**	**09 35 21.7**	**+1.6**
	comp=Z,868nm,0.8s						
TNA	**Tin City**	**40.35**	**30**	*e*P	**P**	**09 35 21.9**	**+1.2**
	comp=Z,302nm,1.6s						
WMQ	**Urumqi**	**40.84**	**296**	P	**P**	**09 35 26.5**	**+1.4**
WMQ				pP	pP	09 35 38.8	+1.3
WMQ				sP	sP	09 35 44.3	+1.5
WMQ				PP	**PnPn**	**09 37 04.3**	**+0.1**
WMQ				PcP	**PcP**	**09 37 29.8**	**+4.5**
WMQ				S	**S**	**09 41 34.0**	**+0.9**
WMQ				SS	SS	09 44 26.8	-8.5
WMQ				ScS	**ScS**	**09 45 26.5**	**+0.4**
WMQ				pmax	pmax		
	comp=Z,63nm,0.8s						
WMQ				pmax	pmax		
	comp=Z,500nm,3.6s						
WMQ				LR	LR		
	comp=Z,750nm,20.8s						
WMQ				LR	LR		
	comp=Z,1μm,18.6s						
WMQ				LR	LR		
	comp=Z,2μm,27.0s						
UTTA	**Uttaradit**	**41.02**	**253**	P	**P**	**09 35 26.8**	**0.0**
	comp=Z,10nm,0.9s,comp=Z,96nm						
MRSI	**Marisa**	**41.10**	**211**	P	**P**	**09 35 27.4**	**0.0**
	comp=Z,146nm,1.1s,comp=Z,3μm						
FAKI	**Fak Fak**	**41.15**	**194**	P	**P**	**09 35 26.5**	**-1.3**
	comp=Z,126nm,1.0s,comp=Z,2μm						
FAKI	**Fak Fak**	**41.15**	**194**	*e*P	**P**	**09 35 26.6**	**-1.3**
LAMP	**Lampang**	**41.26**	**255**	P	**P**	**09 35 29.7**	**+0.9**
	comp=Z,16nm,0.7s,comp=Z,158nm						
PBKT	**Sadao Pong**	**41.42**	**251**	P	**P**	**09 35 30.0**	**-0.1**
	comp=Z,58nm,0.9s,comp=Z,1μm						
CMMT	**Chiang Mai**	**41.62**	**255**	P	**P**	**09 35 31.9**	**+0.1**
	comp=Z,41nm,1.5s,comp=Z,666nm						
CHTO	**Chiang Mai**	**41.62**	**255**	*e*P	**P**	**09 35 31.7**	**-0.1**
CHTO				pmax	pmax		
	comp=Z,24nm,0.8s						
CHTO	**Chiang Mai**	**41.62**	**255**	*e*P	**P**	**09 35 31.7**	**-0.1**
	comp=Z,24nm,0.8s						
CHTO				LR	LR		
	comp=Z,2μm,20.0s						
CHTO	**Chiang Mai**	**41.62**	**255**	P	**P**	**09 35 31.2**	**-0.5**
SNR=26							
CHTO	**Chiang Mai**	**41.62**	**255**	P	**P**	**09 35 31.2**	**-0.5**
SNR=26							
ZAA0	**Zalesovo Array**	**41.78**	**312**	*e*P	P	09 35 35.9	+3.3
ZAA0				*e*pP	pP	09 35 40.8	-4.2
ZALV	**Zalesovo Beam**	**41.78**	**312**	P	**P**	**09 35 32.4**	**-0.2**
	comp=Z,57nm,0.7s,baz=88,slow=6.2,SNR=147						
ZALV				PcP	**PcP**	**09 37 28.1**	**+0.1**
	comp=Z,21nm,0.7s,baz=107,slow=3.0,SNR=3.8						
ZALV				LR	LR	09 53 43.8	
	comp=Z,4μm,18.1s,baz=76,slow=37						
CMAR	**Chiang Mai Arr**	**41.83**	**255**	P	**P**	**09 35 33.6**	**+0.2**
	comp=Z,9.1nm,0.8s,baz=46,slow=6.0,SNR=42						
CMAR				PcP	**PcP**	**09 37 29.6**	**+0.7**
	comp=Z,12nm,1.0s,baz=21,slow=2.7,SNR=8.4						
CMAR				LR	LR	09 54 04.5	
	comp=Z,2μm,19.8s,baz=60,slow=38						
CM01	**Chiang Mai Arr**	**41.84**	**255**	*e*P	**P**	**09 35 33.8**	**+0.3**
SANI	**Sanana**	**41.95**	**204**	P	**P**	**09 35 34.6**	**+0.2**
	comp=Z,134nm,0.6s,comp=Z,2μm						
LUWI	**Luwuk**	**42.15**	**209**	P	**P**	**09 35 35.5**	**-0.5**
	comp=Z,135nm,0.8s,comp=Z,3μm						
LUWI	**Luwuk**	**42.15**	**209**	*e*P	**P**	**09 35 35.2**	**-0.8**
	comp=Z,74nm,0.6s						
LSA	**Lhasa**	**42.39**	**275**	P	**P**	**09 35 40.0**	**+1.5**
LSA				S	**S**	**09 41 52.5**	**-4.7**
LSA				pmax	pmax		
	comp=Z,32nm,1.0s						
LSA				LR	LR		
	comp=Z,620nm,21.0s						
LSA				LR	LR		
	comp=Z,1μm,30.7s						
LSA				LR	LR		
	comp=Z,2μm,30.7s						
LSA	**Lhasa**	**42.39**	**275**	*e*P	**P**	**09 35 38.8**	**+0.3**
LSA				pmax	pmax		
	comp=Z,103nm,1.0s						
LSA				MLR	MLR		
	comp=Z,2μm,20.0s						
LSA	**Lhasa**	**42.39**	**275**	*e*P	**P**	**09 35 38.8**	**+0.3**
	comp=Z,103nm,1.0s						
LSA				LR	LR		
	comp=Z,2μm,20.0s						
ZSN	**Zaisan**	**42.54**	**302**	*i* P	**P**	**09 35 40.9**	**+1.9**
	comp=Z,2μm,0.9s						
ZSN				*e*S	**S**	**09 42 01.2**	**+3.0**
ZSN				LR	LR	09 53 43.1	
	comp=Z,530nm,12.1s						
NVS	**Novosibirsk**	**42.69**	**313**	⇑*i* P	**P**	**09 35 40.2**	**+0.2**
NVS				*i* S	**S**	**09 41 59.4**	**-0.6**
NVS				pmax	pmax		
	comp=Z,90nm,0.7s						
NVS				pmax	pmax		
	comp=N,9.0nm,0.5s						
NVS				pmax	pmax		
	comp=E,44nm,0.6s						
NVS				smax	smax		
	comp=N,38nm,1.8s						
CHBT	**CHBT**	**42.87**	**245**	P	**P**	**09 35 43.6**	**+1.7**
	comp=N,86nm,1.3s						
NRIK	**Noril'sk**	**42.95**	**335**	P	**P**	**09 35 41.6**	**-0.3**
	comp=N,19nm,0.5s,baz=112,slow=8.6,SNR=31						
NRIK				LR	LR	09 54 43.7	
	comp=N,3μm,18.7s,baz=108,slow=38						
BNDI	**Bandanaira**	**43.22**	**197**	P	**P**	**09 35 44.7**	**+0.1**
	comp=N,578nm,1.0s,comp=N,5μm						
SHL	**Shillong**	**43.64**	**269**	*e*P	**P**	**09 35 48.0**	**-0.3**
SHL				IAmb	IAmb	09 35 53.7	
SHL				*e*S	**S**	**09 42 15.0**	**0.0**
MK01	**Makanchi Array**	**44.07**	**302**	*e*P	**P**	**09 35 50.3**	**-1.0**
MK31	**Makanchi Array**	**44.07**	**302**	*i* P	**P**	**09 35 51.2**	**-0.1**
MK31				pmax	pmax		
	comp=Z,66nm,0.7s						
MK31	**Makanchi Array**	**44.07**	**302**	*e*P	**P**	**09 35 51.4**	**0.0**
MKAR	**Makanchi Array**	**44.07**	**302**	P	**P**	**09 35 51.2**	**-0.1**
	comp=Z,60nm,0.7s,baz=87,slow=9.2,SNR=367						
MKAR				LR	LR	09 55 46.0	
	comp=Z,1μm,18.1s,baz=82,slow=38						
MKAR	**Makanchi Array**	**44.07**	**302**	*e*P	**P**	**09 35 51.4**	**+0.1**
MKAR	**Makanchi Array**	**44.07**	**302**	*e*P	**P**	**09 35 51.4**	**+0.1**
SBUM	**Sibu**	**44.15**	**225**	⇑P	**P**	**09 35 53.2**	**+1.0**
SRDT	**SRDT**	**44.20**	**250**	P	**P**	**09 35 55.4**	**+2.8**
	comp=Z,189nm,1.9s,comp=Z,4μm						
MAKZ	**Makanchi**	**44.28**	**302**	*e*P	**P**	**09 35 52.9**	**-0.1**
MAKZ				pmax	pmax		
	comp=Z,67nm,0.8s						
MAKZ	**Makanchi**	**44.28**	**302**	*e*P	**P**	**09 35 52.9**	**-0.1**
	comp=Z,67nm,0.8s						
KHLT	**Khaolaem Dam**	**44.31**	**251**	P	**P**	**09 35 54.9**	**+1.4**
	comp=Z,23nm,1.0s,comp=Z,575nm						
PHET	**Kaeng Krachan**	**44.74**	**248**	P	**P**	**09 35 57.7**	**+0.8**
	comp=Z,72nm,0.7s,comp=Z,545nm						
BKB	**Balikpapan**	**44.87**	**216**	P	**P**	**09 35 58.3**	**+0.3**
	comp=Z,376nm,0.8s,comp=Z,5μm						
TT01	**Tatalina**	**44.91**	**35**	*e*P	**P**	**09 35 58.5**	**+0.7**
TTA	**Tatalina**	**44.92**	**35**	*e*P	**P**	**09 35 58.7**	**+0.8**
TTA				pmax	pmax		
	comp=Z,46nm,1.1s						
TTA	**Tatalina**	**44.92**	**35**	*e*P	**P**	**09 35 58.7**	**+0.8**
	comp=Z,46nm,1.1s						
SVW2	**Sparrevohn**	**45.02**	**38**	*e*P	**P**	**09 35 60.0**	**+1.3**
	comp=Z,117nm,0.9s						
KURK	**Kurchatov**	**45.83**	**308**	*e*P	**P**	**09 36 04.9**	**-0.3**
KURK				pmax	pmax		
	comp=Z,200nm,0.9s						
KURK	**Kurchatov**	**45.83**	**308**	*e*P	**P**	**09 36 04.9**	**-0.3**
	comp=Z,204nm,0.9s						
KURK				LR	LR		
	comp=Z,8μm,20.0s						
KURBB	**Kurchatov Arra**	**45.90**	**308**	P	**P**	**09 36 05.4**	**-0.3**
	comp=Z,69nm,0.5s,baz=83,slow=8.4,SNR=456						
SPSI	**Sidrap Palu**	**46.01**	**211**	P	**P**	**09 36 06.2**	**-0.7**
	comp=Z,58nm,0.8s,comp=Z,1μm						
KSM	**Kuching**	**46.03**	**226**	⇑P	**P**	**09 36 08.1**	**+0.9**
KSM	**Kuching**	**46.03**	**226**	*e*P	**P**	**09 36 07.5**	**+0.4**
	comp=Z,73nm,0.8s						
TARA	**Tarawa**	**46.03**	**134**	PFAKE		09 36 20.0	+13
TARA				LR	LR		
	comp=Z,254nm,22.0s						
OHAK	**Old Harbor**	**46.27**	**43**	*e*P	**P**	**09 36 08.0**	**-0.5**
	comp=Z,147nm,0.9s						
RSO	**Redoubt South**	**46.41**	**39**	*e*P	**P**	**09 36 10.8**	**+1.0**
STKI	**Sintang**	**46.53**	**224**	P	**P**	**09 36 11.8**	**+0.8**
	comp=Z,92nm,1.3s,comp=Z,21μm						
SHLS	**Shalkode**	**46.53**	**297**	*i* P	**P**	**09 36 10.4**	**-0.7**
	comp=Z,498nm,0.9s						
KDAK	**Kodiak Island**	**46.61**	**42**	*i* P	**P**	**09 36 10.8**	**-0.4**
KDAK	**Kodiak Island**	**46.61**	**42**	*e*P	**P**	**09 36 11.1**	**-0.1**
	comp=Z,290nm,0.8s						
KDAK				LR	LR		
	comp=Z,2μm,20.0s						
PPLA	**Purkeypile**	**46.67**	**35**	*e*P	**P**	**09 36 13.2**	**+1.4**
	comp=Z,351nm,1.5s						
CAST	**Castle Rocks**	**46.72**	**34**	*e*P	**P**	**09 36 13.2**	**+1.1**
	comp=Z,86nm,0.9s						
SPU	**Mount Spurr**	**46.73**	**38**	*e*P	**P**	**09 36 13.0**	**+0.8**
PDGK	**Podgornoye**	**46.77**	**298**	P	**P**	**09 36 12.0**	**-0.6**
PDGK				pmax	pmax		
	comp=Z,110nm,1.2s						
PMG	**Port Moresby**	**46.93**	**173**	P	**P**	**09 36 16.5**	**+2.4**
	comp=Z,12nm,0.7s,baz=22,slow=2.8,SNR=3.5						
PMG	**Port Moresby**	**46.93**	**173**	P	**P**	**09 36 13.7**	**-0.4**
PMG				MLR	MLR		
	comp=Z,1μm,20.0s						
PMG	**Port Moresby**	**46.93**	**173**	P	**P**	**09 36 13.7**	**-0.4**
PMG				P	**P**	**09 36 16.5**	**+2.4**
PMG				LR	LR		
	comp=Z,1μm,20.0s						
KAPI	**Kappang**	**46.97**	**211**	P	**P**	**09 36 15.2**	**+0.8**
	comp=Z,21nm,0.5s,baz=34,slow=5.7,SNR=11						
KAPI	**Kappang**	**46.97**	**211**	*e*P	**P**	**09 36 15.9**	**+1.5**
	comp=Z,128nm,1.1s						
KAPI				LR	LR		
	comp=Z,716nm,20.0s						
HOM	**Homer**	**46.99**	**40**	*e*P	**P**	**09 36 15.5**	**+1.4**
	comp=Z,218nm,0.9s						
UZB	**Uzunbulak**	**47.14**	**297**	*i* P	**P**	**09 36 14.4**	**-1.3**
	comp=Z,363nm,1.0s						
UZB				*e*S	**S**	**09 43 05.3**	**+0.2**
UZB				LR	LR	09 56 15.4	
	comp=Z,1μm,17.6s						
BPAW	**Bear Paw Mtn.**	**47.22**	**34**	*e*P	**P**	**09 36 16.7**	**+0.7**
	comp=Z,38nm,0.6s						
KTH	**Kantishna Hill**	**47.24**	**34**	*e*P	**P**	**09 36 17.0**	**+0.8**
	comp=Z,137nm,0.9s						
GUN	**Gunba**	**47.34**	**275**	*e*P	**P**	**09 36 17.6**	**-0.1**
	comp=Z,259nm,0.5s						
MLY	**Manley**	**47.34**	**32**	*e*P	**P**	**09 36 17.9**	**+1.0**
	comp=Z,100nm,1.0s						
BRLK	**Bradley Lake**	**47.37**	**39**	*e*P	**P**	**09 36 16.8**	**-0.4**
	comp=Z,91nm,1.0s						
KTGM	**Kuala Trenggan**	**47.53**	**237**	⇓P	**P**	**09 36 19.9**	**+1.0**
TRF	**Thorofare Moun**	**47.53**	**34**	*e*P	**P**	**09 36 18.9**	**+0.4**
	comp=Z,86nm,0.9s						
COLD	**Coldfoot**	**47.65**	**29**	*e*P	**P**	**09 36 20.6**	**+1.4**
	comp=Z,177nm,1.8s						
BSSI	**Bau Bau, Buton**	**47.70**	**209**	P	**P**	**09 36 21.5**	**+1.3**
	comp=Z,62nm,0.9s,comp=Z,5μm						
BBKI	**Banjar Baru**	**47.78**	**218**	P	**P**	**09 36 20.4**	**-0.4**
	comp=Z,189nm,0.8s						
RC01	**Rabbit Creek A**	**47.86**	**38**	*e*P	**P**	**09 36 21.3**	**+0.3**
	comp=Z,182nm,1.1s						
KKN	**Kakani**	**47.86**	**276**	*e*P	**P**	**09 36 21.5**	**-0.2**
	comp=Z,298nm,0.7s						
PKIN	**Phulchoki**	**47.87**	**275**	*e*P	**P**	**09 36 22.0**	**+0.2**
	comp=Z,98nm,0.7s						
BWN	**Browne**	**47.89**	**33**	*e*P	**P**	**09 36 23.2**	**+2.1**
	comp=Z,337nm,1.0s						
SKLT	**Songkhla**	**47.92**	**241**	P	**P**	**09 36 23.2**	**+1.3**
	comp=Z,72nm,1.1s,comp=Z,826nm						
SURT	**Suratani**	**47.98**	**245**	P	**P**	**09 36 23.4**	**+1.0**
	comp=Z,32nm,0.9s,comp=Z,522nm						
SEW	**Seward**	**48.07**	**39**	*e*P	**P**	**09 36 22.6**	**+0.2**
	comp=Z,156nm,1.2s						
DMN	**Daman**	**48.08**	**275**	*e*P	**P**	**09 36 23.1**	**-0.3**
	comp=Z,137nm,0.8s						
TRTT	**Trang**	**48.11**	**243**	P	P	09 36 27.0	+3.6
	comp=Z,49nm,0.9s,comp=Z,1μm						
PMR	**Palmer**	**48.12**	**37**	*e*P	**P**	**09 36 22.8**	**-0.1**
PMR				pmax	pmax		
	comp=Z,150nm,1.1s						
PMR	**Palmer**	**48.12**	**37**	*e*P	**P**	**09 36 22.8**	**-0.1**
	comp=Z,149nm,1.1s						
MCK	**McKinley**	**48.13**	**34**	*e*P	**P**	**09 36 23.3**	**+0.3**
MCK				pmax	pmax		
	comp=Z,90nm,0.9s						
MCK	**McKinley**	**48.13**	**34**	*e*P	**P**	**09 36 23.3**	**+0.3**
	comp=Z,90nm,0.9s						
RND	**Reindeer**	**48.17**	**34**	*e*P	**P**	**09 36 23.3**	**-0.1**
RND				pmax	pmax		
	comp=Z,120nm,0.8s						
RND	**Reindeer**	**48.17**	**34**	*e*P	**P**	**09 36 23.3**	**-0.1**
	comp=Z,118nm,0.8s						
KRAB	**Krabi**	**48.19**	**244**	P	P	09 36 27.4	+3.4
	comp=Z,241nm,0.7s,comp=Z,2μm						
GKN	**Gorkha**	**48.28**	**276**	*e*P	**P**	**09 36 24.6**	**-0.2**
	comp=Z,270nm,0.5s						
CHKK	**Chushkaly**	**48.36**	**299**	*i* P	**P**	**09 36 25.0**	**-0.1**
	comp=Z,482nm,0.7s						
CHKK				*e*S	**S**	**09 43 22.6**	**+0.5**
MDM	**Murphy Dome**	**48.41**	**32**	*e*P	**P**	**09 36 26.0**	**+0.8**
	comp=Z,167nm,0.9s						
WRH	**Wood River Hil**	**48.48**	**33**	*e*P	**P**	**09 36 25.9**	**+0.3**
	comp=Z,58nm,0.8s						
SML	**Sawmill**	**48.49**	**37**	*e*P	**P**	**09 36 26.1**	**+0.3**
SML				pmax	pmax		
	comp=Z,160nm,0.8s						
SML	**Sawmill**	**48.49**	**37**	*e*P	**P**	**09 36 26.1**	**+0.3**
	comp=Z,164nm,0.8s						
AAA	**Alma-Ata**	**48.56**	**298**	*e*P	**P**	**09 36 28.3**	**+1.6**
AAA				*e*S	**S**	**09 43 27.2**	**+2.1**
AAA				pmax	pmax		
	comp=Z,500nm,4.5s						
AAA				smax	smax		
	comp=E,2μm,17.3s						
AAA				MLR	MLR		
	comp=Z,6μm,19.0s						
COLA	**College**	**48.57**	**32***c*	*i*P	**P**	**09 36 26.9**	**+0.6**
COLA				pmax	pmax		
	comp=Z,42nm,0.8s						
COLA	**College**	**48.57**	**32**	*e*P	**P**	**09 36 27.0**	**+0.7**
	comp=Z,75nm,0.7s						
COLA				LR	LR		
	comp=Z,851nm,22.0s						
CCB	**Clear Creek Bu**	**48.60**	**33**	*e*P	**P**	**09 36 26.6**	**+0.1**
	comp=Z,64nm,1.3s						
PBKI	**Pangkalan Bun**	**48.74**	**222**	P	**P**	**09 36 31.1**	**+2.9**
	comp=Z,184nm,1.3s						
KUU	**Kurty**	**48.81**	**299**	*i* P	**P**	**09 36 28.1**	**-0.5**
	comp=Z,840nm,1.1s						
KUU				*e*S	**S**	**09 43 28.5**	**0.0**
KUU				LR	LR	09 57 24.6	
	comp=Z,973nm,14.6s						
DHY	**Denali Highway**	**48.86**	**35**	*e*P	**P**	**09 36 28.8**	**0.0**
	comp=Z,55nm,0.7s						
SCM	**Sheep Creek Mo**	**48.97**	**36**	*e*P	**P**	**09 36 30.0**	**+0.5**
SCM				pmax	pmax		
	comp=Z,150nm,0.9s						
SCM	**Sheep Creek Mo**	**48.97**	**36**	*e*P	**P**	**09 36 30.0**	**+0.5**
	comp=Z,154nm,0.9s						
HDA	**Harding Lake**	**48.98**	**33**	*e*P	**P**	**09 36 29.4**	**-0.1**
	comp=Z,98nm,0.8s						
IL1	**Eielson Array**	**48.99**	**33**	*e*P	**P**	**09 36 28.5**	**-1.1**
ILAR	**Eielson Array**	**48.99**	**33**	P	**P**	**09 36 29.3**	**-0.3**
	comp=Z,85nm,0.7s,baz=263,slow=5.5,SNR=709						
ILAR				LR	LR	09 58 05.8	
	comp=Z,620nm,21.9s,baz=280,slow=37						
ILAR				PKPPKP	**P'P'df**	**10 07 34.0**	**-2.3**
	comp=Z,0.6nm,1.0s,baz=125,slow=3.1,SNR=4.3						
ILAR				P4KPbc		10 14 04.2	
	comp=Z,0.2nm,0.8s,baz=255,slow=3.5,SNR=4.3						
ILAR	**Eielson Array**	**48.99**	**33**	P	**P**	**09 36 29.3**	**-0.3**
ILAR				pmax	pmax		
	comp=Z,89nm,0.7s						
ILAR				MLR	MLR		
	comp=Z,620nm,21.9s						
ILB	**Eielson Array**	**48.99**	**33**	*e*P	**P**	**09 36 29.4**	**-0.1**
PKDT	**Phuket**	**49.04**	**244**	P	**P**	**09 36 31.8**	**+1.3**
	comp=Z,148nm,1.1s,comp=Z,3μm						
KOLN	**Koldanda**	**49.20**	**276**	*e*P	**P**	**09 36 31.7**	**-0.3**
	comp=Z,98nm,0.6s						
KULM	**Kulim**	**49.24**	**240**	⇓P	**P**	**09 36 33.0**	**+0.9**
KULM	**Kulim**	**49.24**	**240**	*e*P	**P**	**09 36 31.9**	**-0.2**
	comp=Z,93nm,1.4s						
KULM				LR	LR		
	comp=Z,1μm,21.0s						
BOK	**Bokaro**	**49.26**	**271**	*e*P	**P**	**09 36 32.3**	**+0.1**
BOK				IAmb	IAmb	09 36 33.7	
	comp=Z,30nm,0.6s						
MMRI	**Maumere**	**49.37**	**206**	P	**P**	**09 36 32.5**	**-0.5**
	comp=Z,130nm,0.7s,comp=Z,7μm						
MMRI	**Maumere**	**49.37**	**206**	*e*P	**P**	**09 36 32.5**	**-0.5**
	comp=Z,71nm,0.7s						
PYUN	**Piuthan**	**49.54**	**277**	*e*P	**P**	**09 36 34.4**	**-0.1**
	comp=Z,760nm,0.9s						
IPM	**Ipoh**	**49.57**	**239**	⇑P	**P**	**09 36 35.3**	**+0.6**
IPM	**Ipoh**	**49.57**	**239**	*e*P	**P**	**09 36 33.5**	**-1.1**
	comp=Z,42nm,0.7s						
FYU	**Fort Yukon**	**49.60**	**30**	*e*P	**P**	**09 36 35.9**	**+1.7**
	comp=Z,685nm,1.8s						
DGPR	**DIGLIPUR**	**49.61**	**254**	*e*P	**P**	**09 36 34.5**	**-0.4**
DGPR				IAmb	IAmb	09 36 40.2	
	comp=Z,124nm,1.0s						
TKM2	**Tokmak 2**	**49.61**	**298**	*i* P	**P**	**09 36 35.1**	**+0.2**
TKM2				pmax	pmax		
	comp=Z,42nm,0.5s						
TKM2	**Tokmak 2**	**49.61**	**298**	*e*P	**P**	**09 36 35.3**	**+0.4**
	comp=Z,107nm,0.6s						
TKM2				LR	LR		
	comp=Z,6μm,20.0s						
KLU	**Klutina**	**49.67**	**37**	*e*P	**P**	**09 36 35.6**	**+0.7**
	comp=Z,210nm,1.3s						
BRZS	**Berezniki**	**49.70**	**308**	*i* P	**P**	**09 36 34.5**	**-0.8**
	comp=Z,190nm,0.8s						
BRZS				*e*S	**S**	**09 43 40.5**	**-0.3**
HNR	**Honiara**	**49.71**	**156**	PFAKE		09 36 50.0	+14
HNR				LR	LR		
	comp=Z,2μm,21.0s						
MYKOM	**Kota Tinggi**	**49.71**	**234**	⇓P	**P**	**09 36 37.1**	**+1.5**
MYKOM	**Kota Tinggi**	**49.71**	**234**	*e*P	**P**	**09 36 35.8**	**+0.1**
	comp=Z,45nm,1.3s						
PAX	**Paxson**	**49.73**	**35**	*e*P	**P**	**09 36 36.2**	**+0.8**
PAX				pmax	pmax		
	comp=Z,51nm,0.8s						
PAX	**Paxson**	**49.73**	**35**	*e*P	**P**	**09 36 36.2**	**+0.8**
	comp=Z,51nm,0.8s						
SOEI	**Soe**	**49.76**	**203**	P	**P**	**09 36 35.6**	**-0.4**
	comp=Z,197nm,0.8s,comp=Z,3μm						
SOEI	**Soe**	**49.76**	**203**	*e*P	**P**	**09 36 35.3**	**-0.7**
	comp=Z,280nm,1.0s						
DIV	**Divide**	**49.78**	**37**	*e*P	**P**	**09 36 36.5**	**+0.8**
	comp=Z,236nm,1.1s						
EYAK	**Cordova Ski Ar**	**49.86**	**38**	*e*P	**P**	**09 36 37.0**	**+0.8**
	comp=Z,239nm,1.2s						
CHKZ	**Chkalovo**	**50.17**	**313**	*i* P	**P**	**09 36 38.3**	**-0.3**
CHKZ				pmax	pmax		
	comp=Z,37nm,0.5s						
DOT	**Dot Lake**	**50.30**	**34**	*e*P	**P**	**09 36 39.5**	**-0.1**
	comp=Z,167nm,0.8s						
FRU	**Bishkek**	**50.33**	**298**	*e*P	**P**	**09 36 39.0**	**-1.1**
FRU				*e*		09 36 51.5	
FRU				*e*		09 38 01.0	
FRU				*e*S	**S**	**09 43 51.0**	**+1.3**
FRU				pmax	pmax		
	comp=Z,100nm,1.8s						
FRU				smax	smax		
	comp=E,350nm,3.0s						
BMRM	**Bremner River**	**50.36**	**37**	*e*P	**P**	**09 36 41.0**	**+0.9**
	comp=E,169nm,1.1s						
BATI	**Baumata**	**50.37**	**203**	P	**P**	**09 36 40.3**	**-0.3**
	comp=E,52nm,1.2s						
RAGM	**Ragged Mountai**	**50.40**	**38**	*e*P	**P**	**09 36 41.5**	**+1.0**
	comp=E,353nm,1.4s						
KSH	**Kashi**	**50.43**	**294**	P	P	09 36 45.0	+4.0
KSH				*e*sP	sP	09 37 03.0	+4.1
KSH				*e*PcP	**PcP**	**09 38 01.8**	**+3.0**
KSH				*e*PP	PP	09 38 42.5	+5.8
KSH				*e*ScP	**ScP**	**09 41 53.8**	**+2.8**
KSH				S	**S**	**09 43 55.3**	**+3.9**
KSH				ScS	**ScS**	**09 46 29.8**	**+1.5**
KSH				SS	**SS**	**09 47 27.5**	**+2.2**
KSH				pmax	pmax		
	comp=E,35nm,0.8s						
KSH				pmax	pmax		
	comp=E,320nm,3.5s						
KSH				LR	LR		
	comp=E,3μm,15.8s						
KSH				LR	LR		
	comp=E,3μm,16.0s						
KSH				LR	LR		
	comp=E,5μm,15.7s						
BVA0	**Borovoye Array**	**50.43**	**312**	*i* P	**P**	**09 36 40.7**	**0.0**
BVA0				pmax	pmax		
	comp=Z,46nm,0.9s						
BVAR	**Borovoye Array**	**50.43**	**312**	P	**P**	**09 36 40.5**	**-0.2**
	comp=Z,21nm,0.5s,baz=80,slow=9.2,SNR=83						
BVAR				PcP	**PcP**	**09 37 58.5**	**+0.1**
	comp=Z,23nm,0.7s,baz=106,slow=2.2,SNR=5.3						
BVAR				LR	LR	09 59 12.9	
	comp=Z,3μm,18.6s,baz=82,slow=37						
AAK	**Ala-Archa**	**50.47**	**298**	P	**P**	**09 36 41.8**	**+0.4**
	comp=Z,23nm,0.6s,baz=108,slow=5.5,SNR=51						
AAK				LR	LR	09 59 29.0	
	comp=Z,5μm,19.4s,baz=54,slow=38						
AAK	**Ala-Archa**	**50.47**	**298**	*i* P	**P**	**09 36 39.8**	**-1.6**
AAK				pmax	pmax		
	comp=Z

comp=Z,190nm,1.8s
DDI Dehra Dun 52.42 282 eP P 09 36 55.9 0.0
DDI IAmb IAmb 09 36 57.3
comp=Z,38nm,0.5s
JAGI Jajag, Banyuwa 52.48 215 P P 09 36 54.7 -1.7
comp=Z,47nm,1.0s
KCSI Kotacane, Aceh 52.49 241 P P 09 36 55.3 -1.3
comp=Z,48nm,1.2s,comp=Z,813nm
BKNI Bangkinang 52.64 235 P P 09 36 58.3 +0.7
comp=Z,222nm,1.0s
BKNI Bangkinang 52.64 235 eP P 09 36 57.5 -0.2
comp=Z,296nm,1.1s
SMLA Simla 52.76 283 i P P 09 36 58.1 -0.3
SMLA IAmb IAmb 09 36 59.5
comp=Z,176nm,1.1s
DHRM DHARAMSHALA 52.95 285 eP P 09 36 59.0 -1.1
DHRM IAmb IAmb 09 37 03.6
comp=Z,108nm,1.1s
KK31 Karatay Array 53.09 300 i P P 09 37 00.6 -0.1
KK31 pmax pmax
comp=Z,56nm,1.1s
KKAR Karatay Array 53.09 300 eP P 09 37 00.5 -0.2
KKAR Karatay Array 53.09 300 eP P 09 37 00.5 -0.2
PWJI Pagerwojo 53.21 218 P P 09 37 00.6 -1.1
comp=Z,250nm,0.8s,comp=Z,3µm
MNSI Mandailing Nat 53.25 237 P P 09 37 02.0 -0.1
comp=Z,102nm,0.6s,comp=Z,4µm
THN Thein Dam 53.32 286 eP P 09 37 00.0 -2.5
THN ex x 09 37 20.0
CHLP Challavanipeta 53.47 266 eP P 09 37 03.9 +0.1
CHLP IAmb IAmb 09 37 05.5
comp=Z,54nm,1.3s
CHLP eS S **09 44 32.9 -0.3**
CHLP IVMs_BB IVMs_BB 09 59 27.2
comp=Z,479nm,28.4s
UGM Wanagama 53.75 219 P P 09 37 04.4 -1.4
comp=Z,300nm,0.9s
IUG Iuzhnay 53.75 299 i P P 09 37 06.5 +0.8
comp=Z,613nm,0.9s
IUG eS S **09 44 38.7 +1.8**
IUG i LR LR 10 00 35.6
comp=Z,1µm,17.1s
INK Inuvik 53.88 27 eP P 09 37 06.6 +0.6
INK pmax pmax
comp=Z,110nm,1.0s
INK Inuvik 53.88 27 eP P 09 37 06.6 +0.6
comp=Z,115nm,1.0s
KIP Kipapa 54.03 89⇑ eP P 09 37 09.4 +1.6
KIP pmax pmax
comp=Z,2µm,2.5s
KIP Kipapa 54.03 89 eP P 09 37 08.8 +1.0
comp=Z,103nm,0.8s
GSI Gunungsitoli 54.23 239 P P 09 37 09.7 +0.4
comp=Z,528nm,0.8s,comp=Z,5µm
GSI Gunungsitoli 54.23 239 eP P 09 37 08.9 -0.4
comp=Z,308nm,0.7s
KLI Kotabumi 54.32 227 P P 09 37 09.9 0.0
comp=Z,171nm,1.0s,comp=Z,5µm
MDSI Maura Dua 54.41 228 P P 09 37 09.3 -1.3
comp=Z,76nm,1.3s,comp=Z,1µm
VIS Vishakhapatnam 54.48 266 eP P 09 37 11.0 -0.1
VIS IAmb IAmb 09 37 13.3
comp=Z,62nm,1.4s
MASI Maura Aman, Be 54.53 231 P P 09 37 12.0 +0.5
comp=Z,236nm,0.8s,comp=Z,7µm
SVE Sverdlovsk 54.95 318 *d i* P **P 09 37 14.5 +0.5**
SVE eS S **09 44 52.9 +0.5**
SVE pmax pmax
comp=Z,213nm,0.9s
SVE MLR MLR
comp=Z,5µm,17.0s
SVE MLR MLR
comp=E,4µm,18.0s
SKAG Skagway 55.20 38 eP P 09 37 17.1 +1.4
comp=E,117nm,1.1s
CGJI Cibinong 55.26 225 P P 09 37 14.4 -2.3
comp=E,47nm,0.7s,comp=E,4µm
PVM Polavaram 56.09 266 eP P 09 37 22.6 -0.1
PVM IAmb IAmb 09 37 23.7
comp=Z,22nm,0.8s
PVM eS S **09 45 08.3 -0.2**
PVM IVMsBB 10 01 10.6
comp=Z,402nm,29.1s
SOKR Solikamsk 56.10 322 *c i* P **P 09 37 20.8 -1.3**
SOKR S S **09 45 06.2 -1.3**
SOKR SS SS **09 48 55.3 +1.7**
SOKR pmax pmax
comp=Z,94nm,1.1s
SOKR MLR MLR
comp=Z,1µm,18.0s
ARU Arti 56.17 318 P P 09 37 22.6 -0.1
comp=Z,84nm,0.5s
ARU LR LR 10 03 01.0
comp=Z,2µm,21.2s,baz=68,slow=38
ARU Arti 56.17 318 *c i* P **P 09 37 22.5 -0.2**
ARU 09 38 18.0
ARU 09 39 27.0
ARU PPP PPP 09 40 42.7
ARU S S **09 45 10.0 +1.5**
ARU 09 47 03.2
ARU SS SS **09 48 51.7 -3.2**
ARU SSS SSS 09 50 58.4
ARU pmax pmax
comp=Z,228nm,1.0s
ARU MLR MLR
comp=Z,4µm,17.0s
ARU Arti 56.17 318 eP P 09 37 22.7 -0.1
comp=Z,254nm,1.1s
BHPL Bhopal 56.26 275 eP P 09 37 22.5 -1.5
BHPL IAmb IAmb 09 37 24.7
comp=Z,66nm,1.4s
POHA Pohakuloa 56.88 90 eP P 09 37 29.9 +1.3
comp=Z,102nm,0.7s
MLOA Mauna Loa Obse 56.96 90 eP P 09 37 29.5 +0.1
RPR Rampur 57.07 269 eP P 09 37 29.6 0.0
RPR IAmb IAmb 09 37 30.6
comp=Z,114nm,1.4s
RPR eS S **09 45 21.8 +0.4**
RPR IVMs_BB IVMs_BB 10 04 27.6
comp=Z,534nm,18.1s
FITZ Fitzroy Crossi 57.33 198 P P 09 37 30.7 -0.6
comp=Z,45nm,1.2s,baz=28,slow=5.9,SNR=23
FITZ Fitzroy Crossi 57.33 198 eP P 09 37 30.8 -0.6
comp=Z,82nm,1.3s
CTA Charters Tower 57.43 175 P P 09 37 31.4 -0.7
comp=Z,12nm,0.8s,baz=345,slow=8.3,SNR=6.9
CTAO Charters Tower 57.43 175 eP P 09 37 31.6 -0.4
CTAO pmax pmax
comp=Z,79nm,1.6s
CTAO Charters Tower 57.43 175 eP P 09 37 31.6 -0.4
comp=Z,79nm,1.6s
CTAO LR LR
comp=Z,597nm,19.0s
KBL Kabul 57.46 291 eP P 09 37 32.1 -0.4
KBL pmax pmax
comp=Z,86nm,1.1s
KBL Kabul 57.46 291 eP P 09 37 32.1 -0.4
comp=Z,86nm,1.1s
WRAB Tennant Creek 57.53 188 *c i* P **P 09 37 31.0 -1.7**
WRAB pmax pmax
comp=Z,380nm,1.7s
WRAB Tennant Creek 57.53 188 eP P 09 37 31.1 -1.7
comp=Z,315nm,1.8s
WRAB LR LR
comp=Z,1µm,22.0s
WB2 Warramunga Arr 57.54 188 eP P 09 37 31.1 -1.7
WRA Warramunga Arr 57.54 188 P P 09 37 30.9 -1.8
comp=Z,33nm,0.5s,baz=6.2,slow=7.3,SNR=487
WRA LR LR 10 01 44.1
comp=Z,694nm,20.2s,baz=5.0,slow=36
WRA PKP2bc 10 07 26.4
comp=Z,2.4nm,1.0s,baz=174,slow=2.2,SNR=4.5
WRA Warramunga Arr 57.54 188 P P 09 37 31.0 -1.8
WRA pmax pmax
comp=Z,33nm,0.5s
CRAG Craig 57.57 42 eP P 09 37 34.5 +1.9
comp=Z,95nm,1.0s
WRAK Wrangell Islan 57.66 41 eP P 09 37 34.6 +1.4
comp=Z,69nm,1.0s
WRAK LR LR
comp=Z,749nm,20.0s
FUNA Funafuti 57.66 135 PFAKE 09 37 50.0 +16
FUNA LR LR
comp=Z,16µm,19.0s
SRSP Sriramsagar 57.78 270 eP P 09 37 33.9 -0.8
SRSP IAmb IAmb 09 37 35.6
comp=Z,124nm,1.4s
SRSP eS S **09 45 28.5 -2.3**
SRSP IVMs_BB IVMs_BB 10 04 41.2
comp=Z,564nm,21.3s
AB31 Akbulak array 57.82 310 *i* P **P 09 37 34.0 -0.5**
AB31 pmax pmax
comp=Z,20nm,0.5s
ABKAR Akbulak array 57.82 310 eP P 09 37 34.0 -0.5
DLBC Dease Lake 58.13 38 eP P 09 37 38.4 +1.7
comp=Z,151nm,1.0s
ADKI Addanki 58.19 266 eP P 09 37 37.8 +0.3
ADKI IAmb IAmb 09 37 39.2
comp=Z,152nm,2.0s
ADKI eS S **09 45 33.8 -2.4**
ADKI IVMsBB 10 00 45.1
comp=Z,505nm,28.3s
NJS Nagarjunasagar 58.32 267 eP P 09 37 37.8 -0.7
NJS IAmb IAmb 09 37 39.5
comp=Z,33nm,1.1s
NJS eS S **09 45 38.2 +0.4**
NJS IVMs_BB IVMs_BB 10 04 32.2
comp=Z,417nm,19.0s
HYB Hyderabad 58.44 268 *i* P **P 09 37 38.0 -1.4**
HYB *e*pP **pP 09 37 52.0 -0.2**
HYB eS S **09 45 40.0 +0.5**
HYB Hyderabad 58.44 268 eP P 09 37 37.3 -2.1
HYB IAmb IAmb 09 37 40.6
comp=Z,45nm,0.9s
HYBB Hyderabad (bro 58.44 268 eP P 09 37 38.5 -0.9
HYBB IAmb IAmb 09 37 40.1
comp=Z,81nm,1.3s
HYBB eS S **09 45 39.2 -0.3**
HYBB IVMs_BB IVMs_BB 10 05 07.7
comp=Z,466nm,17.9s
AKTO Aktyubinsk 58.54 312 P P 09 37 39.4 -0.1
comp=Z,39nm,0.8s,baz=74,slow=11,SNR=56
AKTO LR LR 10 04 11.0
comp=Z,2µm,18.5s,baz=69,slow=37
AKTO PKP2ab 10 07 42.8
comp=Z,0.7nm,0.6s,baz=231,slow=1.8,SNR=4.2
AKTO Aktyubinsk 58.54 312 P P 09 37 39.5 -0.1
AKTO pmax pmax
comp=Z,40nm,0.7s
SRLM Srisailam 58.90 267 eP P 09 37 41.9 -0.7
SRLM IAmb IAmb 09 37 43.4
comp=Z,33nm,1.0s
SRLM eS S **09 45 43.0 -2.5**
SRLM IVMs_BB IVMs_BB 10 02 21.1
comp=Z,460nm,24.0s
RCLA Racherla 59.22 266 eP P 09 37 44.3 -0.4
RCLA IAmb IAmb 09 37 45.8
comp=Z,42nm,0.9s
RCLA eS S **09 45 49.7 +0.2**
RCLA IVMs_BB IVMs_BB 10 03 18.2
comp=Z,471nm,30.1s
MDRS Chennai 59.56 263 eP P 09 37 45.8 -1.3
MDRS IAmb IAmb 09 37 49.9
comp=Z,808nm,2.8s
SKHT Srikalahasti 59.60 264 eP P 09 37 47.3 0.0
SKHT IAmb IAmb 09 37 49.0
comp=Z,67nm,0.9s
SKHT eS S **09 45 55.1 +0.7**
SKHT IVMs_BB IVMs_BB 10 05 13.4
comp=Z,260nm,3.9s
KLRI Killari 59.64 270 eP P 09 37 46.6 -1.1
KLRI IAmb IAmb 09 37 54.3
comp=Z,60nm,0.6s
KLRI eS S **09 45 53.2 -1.8**
KLRI IVMs_BB IVMs_BB 10 06 48.2
comp=Z,683nm,17.7s
HOPEN Hopen 59.65 346 eP P 09 37 48.0 +1.2
HOPEN IAmb IAmb 09 37 48.8
comp=Z,112nm,1.0s
SPA0 Spitsbergen Ar 60.12 349 eP P 09 37 50.2 +0.1
SPA0 IAMs_20 IAMs_20 10 05 08.5
comp=Z,2µm,20.2s
SPA0 Spitsbergen Ar 60.12 349 eP P 09 37 50.9 +0.8
KBS Kingsbay 60.25 350 eP P 09 37 51.3 +0.4
KBS *e*pP **pP 09 38 05.2 +1.4**
KBS eS S **09 46 03.4 +2.3**
KBS Kingsbay 60.25 350 eP P 09 37 51.9 +1.0
KBS pmax pmax
comp=Z,86nm,0.9s
KBS Kingsbay 60.25 350 eP P 09 37 51.9 +1.0
comp=Z,86nm,0.8s
KBS LR LR
comp=Z,697nm,22.0s
URV Uravakonda 60.85 267 eP P 09 37 55.2 -0.7
URV IAmb IAmb 09 37 56.8
comp=Z,46nm,1.1s
URV eS S **09 46 10.8 +0.3**
URV IVMs_BB IVMs_BB 10 03 43.2
comp=Z,279nm,10.5s
HSPB Hornsund (broa 61.05 348 eP P 09 37 57.4 +1.1
HSPB IAmb IAmb 09 37 58.4
comp=Z,178nm,1.1s
HSPB eS S **09 46 12.2 +0.8**
AS01 Alice Springs 61.26 188 eP P 09 37 56.4 -2.1
AS31 Alice Springs 61.27 188 eP P 09 37 57.4 -1.1
comp=Z,11nm,1.0s
ASAR Alice Springs 61.27 188 P P 09 37 57.1 -1.4
comp=Z,37nm,1.0s,baz=9.3,slow=5.3,SNR=138
ASAR LR LR 10 04 10.1
comp=Z,810nm,20.8s,baz=2.0,slow=36
ASAR PKP2bc 10 07 16.9
comp=Z,1.7nm,0.8s,baz=179,slow=4.0,SNR=5.2
ASAR Alice Springs 61.27 188 P P 09 37 57.1 -1.4
ASAR pmax pmax
comp=Z,29nm,0.9s
ASAR MLR MLR
comp=Z,810nm,20.8s
POO Poona 61.57 272 eP P 09 37 59.5 -1.4
POO IAmb IAmb 09 38 02.4
comp=Z,245nm,2.0s
LVZ Lovozero 61.79 336 *d i* P **P 09 38 02.0 +0.5**
LVZ pmax pmax
comp=Z,48nm,0.8s
LVZ Lovozero 61.79 336 eP P 09 38 01.9 +0.3
comp=Z,236nm,0.8s
LVZ LR LR
comp=Z,2µm,19.0s
MBWA Marble Bar 61.90 203 eP P 09 38 01.8 -1.0
comp=Z,154nm,1.3s
MBWA LR LR
comp=Z,685nm,19.0s
MBWA Marble Bar 61.90 203 P P 09 38 01.6 -1.1
SNR=5.8
MBWA Marble Bar 61.90 203 P P 09 38 01.6 -1.1
SNR=5.8
RES Resolute Bay 62.10 15 eP P 09 38 03.1 -0.4
RES pmax pmax
comp=Z,100nm,1.0s
RES Resolute Bay 62.10 15 eP P 09 38 03.1 -0.4
comp=Z,104nm,1.0s
APA Apatity 62.37 336 ⇓ *i* P **P 09 38 06.0 +0.7**
APA *i* 09 38 40.0
APA *i* 09 40 27.0
APA *i* S **S 09 46 26.0 -2.3**
APA *i* PS **PnS 09 46 49.0 +0.7**
APA *i* 09 47 48.0
APA *i* SS **SS 09 50 34.0 +2.5**
APA pmax pmax
comp=Z,7.0nm,0.8s
APA MLR MLR
comp=Z,3µm,18.0s
BHJ Bhuj 62.39 279 eP P 09 38 06.9 +0.7
BHJ IAmb IAmb 09 38 08.9
comp=Z,76nm,1.2s
TMCR Tamitsa 62.45 331 eP P 09 38 06.3 +0.3
TMCR pmax pmax
comp=Z,89nm,1.0s
KEV Kevo 63.10 339 eP P 09 38 10.7 +0.5
KEV pmax pmax
comp=Z,40nm,0.9s
KEV Kevo 63.10 339 eP P 09 38 10.7 +0.5
comp=Z,40nm,0.8s
KEV LR LR
comp=Z,1µm,22.0s
EIDS Eidsvold 63.15 170 eP P 09 38 11.2 +0.3
comp=Z,54nm,1.0s
YKW3 Yellowknife Ar 63.26 30 eP P 09 38 11.3 -0.1
comp=Z,224nm,1.7s
GOA Goa 63.27 269 eP P 09 38 11.8 -0.3
GOA IAmb IAmb 09 38 13.3
comp=Z,479nm,1.8s
YKA Yellowknife Ar 63.30 30 P P 09 38 11.4 -0.3
comp=Z,28nm,0.7s,baz=302,slow=6.4,SNR=480
YKA Yellowknife Ar 63.30 30 P P 09 38 11.4 -0.3
YKA pmax pmax
comp=Z,29nm,0.7s
YKB5 Yellowknife Ar 63.30 30 eP P 09 38 08.6 -3.0
HAMF Hammerfest 63.46 341 eP P 09 38 12.8 +0.2
KLMR Klimovskoe 63.49 328 eP P 09 38 11.1 -1.8
KLMR *e**SP **pP 09 38 24.4 -1.5**
KLMR *e* 09 40 31.0
KLMR pmax pmax
comp=Z,107nm,1.4s
ARA0 ARCESS Array S 63.65 339 eP P 09 38 13.8 0.0
ARCES ARCESS Array B 63.65 339 P P 09 38 13.8 -0.1
comp=Z,25nm,0.7s,baz=52,slow=7.6,SNR=105
ARCES LR LR 10 10 01.1
comp=Z,1µm,18.6s,baz=46,slow=40
ARE0 ARCESS Array S 63.65 339 eP P 09 38 14.1 +0.2
ARE0 IAMs_20 IAMs_20 10 07 04.9
comp=Z,2µm,20.8s
ARE0 ARCESS Array S 63.65 339 eP P 09 38 13.8 -0.1
comp=Z,31nm,0.8s
GEYT Alibeck 63.81 299 P P 09 38 15.9 +0.4
comp=Z,23nm,0.6s,baz=29,slow=3.4,SNR=34
GEYT LR LR 10 08 42.3
comp=Z,1µm,18.6s,baz=105,slow=38
KTK1 Kautokeino 64.61 339 eP P 09 38 20.5 +0.4
KTK1 IAmb IAmb 09 38 21.6
comp=Z,67nm,1.0s
MSVF Nonsavu 64.72 141 PFAKE 09 38 30.0 +8.4
MSVF LR LR
comp=Z,2µm,19.0s
DAG Danmarks Havn 65.34 355 ⇑ *i* P **P 09 38 24.4 -0.4**
comp=Z,88nm,0.9s
DAG Danmarks Havn 65.34 355 ⇑ *i* P **P 09 38 24.4 -0.4**
DAG pmax pmax
comp=Z,74nm,0.9s
TRO Tromso 65.36 341 eP P 09 38 25.2 +0.3
TRO IAmb IAmb 09 38 26.2
comp=Z,52nm,0.8s
TRO eS S **09 47 06.7 +1.5**
PGC Sidney 65.86 46 eP P 09 38 29.3 +0.8
XMAS Kiritimati 65.88 107 PFAKE 09 38 40.0 +11
XMAS LR LR
comp=Z,3.0nm,21.0s
NLWA Neilton Lookou 66.24 48 eP P 09 38 30.7 -0.4
comp=Z,215nm,1.3s
NLWA LR LR
comp=Z,1µm,22.0s
A04D Lummi Island 66.25 46 P P 09 38 30.9 -0.2
baz=300
CMW Cultus Mountai 66.74 46 P P 09 38 35.1 +0.8
B05A Bryant 66.83 46 P P 09 38 35.6 +0.8
baz=301,SNR=7.3
E03A Lebam 66.85 48 eP P 09 38 36.9 +1.9
comp=Z,169nm,1.3s
MOS Moscow 67.02 323 *α i* P **P 09 38 34.9 -0.9**
MOS *e* 09 38 46.0
MOS *e* 09 39 04.9
MOS *e* 09 40 58.4
MOS *e*PPP PPP 09 42 39.0
MOS *e*S **S 09 47 26.7 +0.8**
MOS *e* 09 47 51.5
MOS pmax pmax
comp=Z,500nm,2.3s
MOS pmax pmax
comp=Z,199nm,1.8s
MOS smax smax
comp=E,800nm,3.4s
MOS smax smax
comp=N,800nm,3.3s
MOS MLR MLR
comp=Z,2µm,19.0s
B06A Marblemount 67.05 46 eP P 09 38 37.1 +0.9
comp=Z,159nm,1.4s
AFI Afiamalu 67.25 130 PFAKE 09 38 50.0 +12
AFI LR LR
comp=Z,2µm,19.0s
VRH Novokhopyorsk 67.39 318 eP P 09 38 37.3 -1.0
VRH *e**SP **pP 09 38 51.6 +0.2**
VRH *e*S **S 09 47 25.1 -5.4**
VRH pmax pmax
comp=Z,60nm,0.8s
VRH smax smax
comp=N,270nm,2.5s
VRH MLR MLR
comp=Z,3µm,17.0s
F04D Rainier, OR 67.41 49 P P 09 38 39.5 +0.9
baz=301
KULLO Kullorsuaq 67.50 5 *i* P **P 09 38 38.1 -0.5**
KULLO Kullorsuaq 67.50 5 *i* P **P 09 38 38.1 -0.5**
KULLO MLR MLR
comp=Z,1µm,21.0s
STEI Steigen 67.51 341 eP P 09 38 39.4 +0.6
C06D Leavenworth 67.70 46 P P 09 38 40.9 +0.5
baz=302,SNR=5.9
G03D McMinnville, O 67.71 50 P P 09 38 40.0 -0.4
baz=301
LON Longmire 67.78 48 eP P 09 38 41.9 +0.9
LON pmax pmax
comp=Z,18nm,0.9s
LON Longmire 67.78 48 eP P 09 38 41.9 +0.9
comp=Z,18nm,0.9s
LVP Lakeview Peak 67.78 48 P P 09 38 42.3 +1.2
LOF Lofoten 67.80 341 eP P 09 38 41.6 +1.0
OBN Obninsk 67.87 323 *c i* P **P 09 38 41.2 0.0**
OBN *i* 09 38 48.7
OBN *e* 09 39 05.8
OBN *e* 09 41 10.4
OBN eS S **09 47 34.8 -1.2**
OBN pmax pmax
comp=Z,235nm,2.5s
OBN MLR MLR
comp=Z,1µm,18.0s
OBN Obninsk 67.87 323 *e*pP **pP 09 38 55.0 +0.7**
OBN LR LR
comp=Z,1µm,19.0s
COR Corvallis 68.01 50 eP P 09 38 44.2 +1.9
COR pmax pmax
comp=Z,250nm,1.0s
COR Corvallis 68.01 50 eP P 09 38 44.2 +1.9
comp=Z,249nm,1.0s
LPSR Galich'ya Gora 68.10 320 eP P 09 38 42.6 -0.1
LPSR *e**SP **pP 09 38 56.7 +0.9**
LPSR *e*S **S 09 47 34.6 -4.3**
LPSR pmax pmax
comp=Z,80nm,0.9s
LPSR smax smax
comp=N,230nm,2.8s
LPSR MLR MLR
comp=Z,3µm,17.0s
LTY Liberty 68.18 47 eP P 09 38 44.2 +0.8
comp=Z,158nm,1.6s
ETW Entiat 68.19 46 P P 09 38 43.8 +0.2
ARMA Armidale 68.19 171 eP P 09 38 43.7 +0.1
comp=Z,107nm,1.4s
WTV Waterville 68.36 46 P P 09 38 44.4 -0.1
B08A Colville Reser 68.36 45 P P 09 38 44.7 +0.2
I03D Drain, OR 68.45 51 P P 09 38 46.3 +1.2
baz=302,SNR=15
FIA1 FINESS Array S 68.52 332 eP P 09 38 44.3 -0.9
FIA1 *e*P **P 09 38 44.8 -0.4**
FINES FINESS Array B 68.52 332 P P 09 38 44.9 -0.3
comp=Z,84nm,0.8s,baz=53,slow=7.4,SNR=181
FINES LR LR 10 13 51.8
comp=Z,2µm,18.5s,baz=38,slow=40
FINES FINESS Array B 68.52 332 P P 09 38 44.9 -0.3
FINES pmax pmax
comp=Z,83nm,0.8s
FINES MLR MLR
comp=Z,2µm,18.5s
H04A Detroit Lake 68.64 50 eP P 09 38 47.4 +1.0
comp=Z,168nm,1.0s
VSR Storozhevoye 68.74 319 eP P 09 38 46.4 -0.3
VSR *e**SP **pP 09 38 59.7 -0.1**
VSR *e*S S 09 47 39.8 -6.8
VSR pmax pmax
comp=Z,100nm,1.0s
VSR smax smax
comp=N,190nm,6.4s
VSR MLR MLR
comp=Z,3µm,16.0s
G05D Wamic, OR 68.87 49 P P 09 38 48.3 +0.6
baz=302,SNR=10
I04A Tendick Farm, 68.97 51 P P 09 38 48.8 +0.3
baz=302,SNR=26

GNBR Gunib 68.99 308 *e*P **P** 09 38 49.0 +0.4
GNBR *e* 09 39 02.8
GNBR pmax pmax
comp=Z,27nm,0.7s
STKA Stephens Creek 69.01 180 P **P** 09 38 48.0 -0.5
comp=Z,46nm,0.8s,baz=343,slow=7.3,SNR=72
STKA LR LR 10 08 02.6
comp=Z,791nm,21.8s,baz=5.7,slow=35
STKA Stephens Creek 69.01 180 *e*P **P** 09 38 47.5 -1.0
STKA pmax pmax
comp=Z,12nm,0.9s
STKA Stephens Creek 69.01 180 *e*P **P** 09 38 47.5 -1.0
comp=Z,12nm,0.8s
MOR8 Moi Rana 69.01 340 *e*P **P** 09 38 46.7 -1.5
MOR8 IAmb IAmb 09 38 48.1
comp=Z,110nm,0.9s
L02D Cave Junction, 69.10 52 P **P** 09 38 49.8 +0.7
baz=302,SNR=15
KONS Konsvik 69.13 340 *e*P **P** 09 38 49.7 +0.8
CROR Criterion Ridg 69.20 49 P **P** 09 38 50.5 +0.6
C09A Chrisman Ranch 69.25 45 *e*P **P** 09 38 50.4 +0.3
comp=Z,210nm,1.4s
HUMO Hull Mountain 69.27 52 *e*P **P** 09 38 51.6 +1.4
G06A Carlson Farm, 69.28 48 *e*P **P** 09 38 51.3 +1.0
comp=Z,95nm,1.0s
STOK Stokkvaagen 69.28 340 *e*P **P** 09 38 50.8 +1.0
D08A Wollman Farm, 69.29 46 *e*P **P** 09 38 50.7 +0.4
comp=Z,125nm,1.4s
HAWA Hanford 69.30 47 *e*P **P** 09 38 51.1 +0.7
comp=Z,58nm,1.0s
HAWA *ep*P **pP** 09 39 04.9 +1.4
HAWA LR LR
comp=Z,774nm,20.0s
BTLR Botlikh 69.31 308 *e*P **P** 09 38 50.0 -0.6
BTLR *e* 09 39 04.7
BTLR pmax pmax
comp=Z,29nm,0.7s
I05D Terrebonne, OR 69.33 50 P **P** 09 38 51.4 +0.7
baz=302,SNR=23
JCC Jacoby Creek, 69.54 54 *e*P **P** 09 38 52.3 +0.5
comp=Z,133nm,1.2s
NEW Newport 69.64 44 LR LR 10 06 17.3
comp=Z,427nm,21.0s,baz=326,slow=33
NEW Newport 69.64 44 P **P** 09 38 52.7 +0.2
baz=304,SNR=40
NEW Newport 69.64 44 *e*P **P** 09 38 52.8 +0.2
NEW pmax pmax
comp=Z,86nm,1.1s
NEW Newport 69.64 44 *e*P **P** 09 38 52.8 +0.2
comp=Z,86nm,1.1s
KHMM Horse Mountain 69.70 54 *e*P **P** 09 38 54.8 +1.7
comp=Z,108nm,1.1s
YBH Yreka Blue Hor 69.89 52 LR LR 10 03 60.0
comp=Z,395nm,21.2s,baz=320,slow=31
YBH Yreka Blue Hor 69.89 52 *e*P **P** 09 38 55.0 +0.8
YBH pmax pmax
comp=Z,78nm,1.1s
YBH Yreka Blue Hor 69.89 52 *e*P **P** 09 38 55.0 +0.8
comp=Z,78nm,1.1s
GOF Gofitskoye 69.96 312⇑ *e*P **P** 09 38 54.7 +0.3
GOF pmax pmax
comp=Z,104nm,1.0s
J05D Fort Rock, OR 69.97 50 P **P** 09 38 55.8 +1.1
baz=303,SNR=32
M02C Callahan 69.98 53 P **P** 09 38 55.9 +1.2
baz=303,SNR=30
K04D Chiloquin, OR 70.00 51 P **P** 09 38 55.4 +0.5
baz=303,SNR=7.3
E09A Wood Farm, Sta 70.04 46 *e*P **P** 09 38 55.9 +1.0
comp=Z,154nm,1.3s
KMRM Mail Ridge 70.06 54 *e*P **P** 09 38 57.5 +2.3
comp=Z,81nm,1.0s
BBOO Buckleboo 70.14 185 *e*P **P** 09 38 54.6 -0.8
comp=Z,108nm,1.0s
SUMG Summit 70.23 0 *i* P **P** 09 38 56.5 +0.4
comp=Z,200nm,1.4s
SUMG Summit 70.23 0 *i* P **P** 09 38 56.5 +0.4
SUMG pmax pmax
comp=Z,200nm,1.4s
SUMG MLR MLR
comp=Z,2µm,18.0s
SUMG Summit 70.23 0 *e*P **P** 09 38 56.2 +0.1
N02D Trinity Center 70.30 53 P **P** 09 38 57.5 +0.8
baz=303,SNR=33
M04C Macdoel 70.41 52 P **P** 09 38 58.2 +0.7
baz=303,SNR=54
K05A Summer Lake 70.48 51 P **P** 09 38 59.0 +1.0
DGRG David-gareji 70.50 308 P P 09 39 12.3 +14
GUDG Gudauri 70.51 309 P **P** 09 38 58.6 +0.5
WDC Whiskeytown Da 70.62 53 *e*P **P** 09 38 59.1 +0.6
WDC pmax pmax
comp=Z,61nm,1.0s
WDC Whiskeytown Da 70.62 53 *e*P **P** 09 38 59.1 +0.6
comp=Z,61nm,0.9s
ZEI Tsey 70.68 309 *e*P **P** 09 38 56.4 -2.8
ZEI pmax pmax
comp=Z,211nm,1.5s
TBLG Delisi 70.75 308 P **P** 09 39 01.3 +2.0
TBLG Delisi 70.75 308 P **P** 09 39 01.3 +2.0
KBZ Khabaz 70.78 311 P **P** 09 38 59.5 +0.1
comp=Z,33nm,0.8s,baz=56,slow=4.6,SNR=73
KBZ PKP2ab 10 06 51.6
comp=Z,0.9nm,0.5s,baz=267,slow=3.8,SNR=7.3
KBZ LR LR 10 14 51.6
comp=Z,2µm,18.5s,baz=52,slow=40
KIV Kislovodsk 70.78 311 *c i*P **P** 09 38 59.7 +0.1
KIV *i* 09 39 13.3
KIV *e* 09 39 20.6
KIV *e*S **S** 09 48 11.4 +0.4
KIV *e*SS **SS** 09 52 45.2 +2.2
KIV pmax pmax
comp=Z,119nm,1.0s
KIV MLR MLR
comp=Z,1µm,17.0s
KIV Kislovodsk 70.78 311 *e*P **P** 09 39 00.2 +0.7
comp=Z,234nm,1.1s
KIV LR LR
comp=Z,1µm,19.0s
F10A Beach Ranch, E 70.87 46 *e*P **P** 09 39 00.3 +0.2
comp=Z,34nm,0.9s
NSS Namsos 70.94 339 *e*P **P** 09 39 00.5 +0.5
NSS IAmb IAmb 09 39 01.1
comp=Z,41nm,1.0s
WALA Waterton Lakes 70.95 42 *e*P **P** 09 39 01.0 +0.4
WSAR Wadi Sarin 70.97 285 P **P** 09 39 01.3 +0.3
comp=Z,19nm,1.0s,baz=101,slow=12,SNR=10
WBK Wadi Bani Khal 71.05 284 P **P** 09 39 02.1 +0.7
SNR=11
WBK Wadi Bani Khal 71.05 284 P **P** 09 39 02.1 +0.7
SNR=11
ONI Oni 71.07 309 P **P** 09 39 01.6 +0.2
ONI Oni 71.07 309 P **P** 09 39 01.5 +0.2
HOPS Hopland Field 71.14 55 *e*P **P** 09 39 03.3 +1.5
comp=Z,73nm,1.1s
NEY Neytrino 71.15 310 *de*P **P** 09 39 03.0 +1.1
NEY pmax pmax
comp=Z,4.0nm,1.0s
BSMT Bassoo Peak 71.17 44 *e*P **P** 09 39 02.8 +0.7
BIDO Bidbid 71.20 286 P **P** 09 39 02.3 0.0
SNR=12
BIDO Bidbid 71.20 286 P **P** 09 39 02.3 0.0
SNR=12
O03D Paynes Creek 71.25 53 P **P** 09 39 02.5 +0.1
baz=304,SNR=41
BANOM Banah 71.28 289 *i* P **P** 09 39 02.9 +0.1
SNR=8.1
BANOM Banah 71.28 289 P **P** 09 39 02.9 +0.1
MOD Modoc Plateau 71.30 51 *e*P **P** 09 39 03.9 +1.0
comp=Z,74nm,1.0s
BLMT Blacktail Moun 71.31 43 *e*P **P** 09 39 01.4 -1.5
BMO Blue Mountains 71.45 47 *e*P **P** 09 39 04.1 +0.4
BMO pmax pmax
comp=Z,85nm,0.9s
BMO Blue Mountains 71.45 47 *e*P **P** 09 39 04.1 +0.4
comp=Z,85nm,0.9s
BMO LR LR
comp=Z,464nm,20.0s
JTMT Jette 71.51 44 *e*P **P** 09 39 04.5 +0.5
SMDO Samad 71.51 285 P **P** 09 39 05.1 +0.8
SNR=14
SMDO Samad 71.51 285 P **P** 09 39 05.1 +0.8
SNR=14
YBMT Yellow Bay 71.59 43 *e*P **P** 09 39 05.0 +0.5
GNI Garni 71.61 307 P **P** 09 39 06.4 +1.6
comp=Z,23nm,0.8s,baz=194,slow=3.1,SNR=15
GNI Garni 71.61 307 *i* P **P** 09 39 05.5 +0.7
SNR=12
GNI Garni 71.61 307 *c i*P **P** 09 39 05.2 +0.4
GNI pmax pmax
comp=Z,75nm,1.1s
GNI Garni 71.61 307 *e*P **P** 09 39 05.1 +0.3
comp=Z,395nm,1.0s
GNI P **P** 09 39 06.4 +1.6
GNI LR LR
comp=Z,2µm,20.0s
GNI Garni 71.61 307 P **P** 09 39 05.3 +0.5
SNR=15
GNI Garni 71.61 307 P **P** 09 39 05.3 +0.5
SNR=15
SCO Scoresbysund 71.68 354⇑ *i*P **P** 09 39 04.7 +0.3
comp=Z,81nm,1.2s
SCO Scoresbysund 71.68 354⇑ *i*P **P** 09 39 04.7 +0.3
SCO pmax pmax
comp=Z,81nm,1.2s
AKH Akhalkalaki 71.70 308 P **P** 09 39 05.3 0.0
AKH Akhalkalaki 71.70 308⇓ *i*P **P** 09 39 06.2 +0.9
AKH Akhalkalaki 71.70 308 P **P** 09 39 05.3 0.0
MCCM Marconi Confer 71.73 56 *e*P **P** 09 39 06.2 +1.0
comp=Z,85nm,0.8s
SWMT Swartz Lake 71.80 44 *e*P **P** 09 39 06.0 +0.3
CHVG Ch'k'valeri 71.83 310⇓ *i*P **P** 09 39 06.9 +1.0
ORV Oroville 71.85 54 *e*P **P** 09 39 06.0 0.0
ORV pmax pmax
comp=Z,85nm,1.1s
ORV Oroville 71.85 54 *e*P **P** 09 39 06.0 0.0
comp=Z,85nm,1.1s
JMDO Jabal Madar 71.85 285 P **P** 09 39 06.5 +0.3
SNR=9.9
JMDO Jabal Madar 71.85 285 P **P** 09 39 06.5 +0.3
SNR=9.9
UOSS Minazif 71.88 288 *e*P **P** 09 39 06.2 -0.3
comp=Z,3.3nm,0.8s
HATD Hatta, Dubai 72.00 288 *i* P **P** 09 39 07.6 +0.5
SNR=22
HATD Hatta, Dubai 72.00 288 P **P** 09 39 07.7 +0.5
SNR=8.9
HATD Hatta, Dubai 72.00 288 P **P** 09 39 07.7 +0.5
SNR=8.9
WVOR Wild Horse Val 72.03 50 *e*P **P** 09 39 07.8 +0.6
WVOR pmax pmax
comp=Z,120nm,1.2s
WVOR Wild Horse Val 72.03 50 *e*P **P** 09 39 07.8 +0.6
comp=Z,123nm,1.3s
WVOR LR LR
comp=Z,607nm,20.0s
EPOS Posof 72.12 309⇑ *i*P **P** 09 39 08.3 +0.4
ASHO Ashiyiah 72.14 288 *i* P **P** 09 39 08.3 +0.3
SNR=12
ASHO Ashiyiah 72.14 288 P **P** 09 39 07.5 -0.6
SNR=7.6
ASHO Ashiyiah 72.14 288 P **P** 09 39 07.5 -0.6
SNR=7.6
IZAR Zarasai 72.14 328 *e*P **P** 09 39 08.2 +0.7
IZAR IAmb IAmb 09 39 23.9
comp=Z,20nm,0.6s
IDID Didziasalis 72.22 327 *e*P **P** 09 39 08.7 +0.8
IDID IAmb IAmb 09 39 24.4
comp=Z,26nm,0.8s
MSO Missoula 72.23 44 P **P** 09 39 08.0 -0.3
baz=306,SNR=28
MSO Missoula 72.23 44 *e*P **P** 09 39 08.4 +0.1
comp=Z,63nm,1.0s
MICGM Minsk 72.24 326⇓ *e*P **P** 09 39 09.0 +0.9
MICGM PM 09 39 10.0
comp=Z,0.2nm,2.0s
MICGM *e*PcP **pP** 09 39 22.0 +0.8
MICGM *e*PP PP 09 41 38.0 -10
MICGM *e*S **S** 09 48 26.0 -1.3
MICGM *e*LR LR 10 09 42.0
MICGM LRM MLR 10 14 00.0
comp=Z,3.1nm,15.0s
MNK Minsk 72.24 326⇓ *e*P **P** 09 39 09.0 +0.9
MNK *e* 09 39 22.0
MNK *e*S **S** 09 48 26.0 -1.3
MNK pmax pmax
comp=Z,220nm,2.0s
MNK MLR MLR
comp=Z,3µm,15.0s
ISAL Salakas 72.31 327 *e*P **P** 09 39 09.2 +0.8
ISAL IAmb IAmb 09 39 25.1
comp=Z,38nm,0.6s
BSY Bisya 72.34 285 P **P** 09 39 09.1 -0.1
SNR=11
BSY Bisya 72.34 285 P **P** 09 39 09.1 -0.1
SNR=11
TBLU Trondheim 72.41 339 *e*P **P** 09 39 08.5 -0.4
FAQ Al Faqa, Dubai 72.46 288 *i* P **P** 09 39 09.8 -0.1
SNR=8.8
NACGM Naroch 72.47 327 *e*P **P** 09 39 10.0 +0.6
NACGM *e*PcP **pP** 09 39 24.0 +1.4
NACGM *e*S **S** 09 48 29.0 -0.8
NACGM *e*PS PnS 09 48 54.0 -11
NACGM *e*SS **SS** 09 53 10.0 +1.9
NACGM *e*LQ LQ 10 07 02.0
NACGM *e*LR LR 10 12 24.0
AFDM Forest Hills D 72.53 54 *e*P **P** 09 39 10.8 +0.7
ARQ Araqi 72.53 286 P **P** 09 39 10.1 -0.2
SNR=15
ARQ Araqi 72.53 286 P **P** 09 39 10.1 -0.2
SNR=15
CHMT Chamberlain Mo 72.56 44 *e*P **P** 09 39 10.2 -0.3
SOC Sochi 72.76 312 *c i*P P 09 39 24.4 +13
SOC *e* 09 48 37.5
SOC MLR MLR
comp=Z,1µm,18.0s
CAN Canberra 72.76 174 PFAKE 09 39 20.0 +8.7
CAN LR LR
comp=Z,913nm,22.0s
DAGI Agillar 72.87 309⇑ *i*P **P** 09 39 12.0 -0.2
DBOC Borcka 72.87 309⇑ *i*P **P** 09 39 11.6 -0.5
MFID Camas Ranch 73.15 48 *e*P **P** 09 39 14.3 +0.5
ILULI Ilulissat 73.19 5⇑ *i*P **P** 09 39 12.9 -0.5
comp=Z,60nm,0.8s
ILULI Ilulissat 73.19 5⇑ *i*P **P** 09 39 12.9 -0.5
ILULI pmax pmax
comp=Z,60nm,0.8s
ANN Anapa 73.38 314 *e*P **P** 09 39 14.4 -0.5
ANN *e* 09 39 29.0
ANN *e*S **S** 09 48 38.0 -2.5
ANN pmax pmax
comp=Z,116nm,1.8s
ANN pmax pmax
comp=N,30nm,1.9s
ANN pmax pmax
comp=E,30nm,1.9s
ANN pmax pmax
comp=Z,98nm,2.5s
ANN MLR MLR
comp=N,2µm,19.0s
ANN MLR MLR
comp=E,841nm,19.0s
ANN MLR MLR
comp=Z,961nm,19.0s
CMB Columbia Colle 73.42 55 *e*P **P** 09 39 15.8 +0.3
CMB Columbia Colle 73.42 55 *e*P **P** 09 39 15.8 +0.3
SAO San Andreas Ge 73.45 56 *e*P **P** 09 39 16.2 +0.6
SAO San Andreas Ge 73.45 56 *e*P **P** 09 39 16.2 +0.6
FCC Fort Churchill 73.49 27 *e*P **P** 09 39 15.0 -0.3
FCC Fort Churchill 73.49 27 *e*P **P** 09 39 15.0 -0.3
LRM Limekiln Ridge 73.66 45 *e*P **P** 09 39 17.3 +0.3
NWAO Narrogin (SRO) 73.68 201 PFAKE 09 39 30.0 +13
NWAO LR LR
comp=Z,669nm,21.0s
MOL Molde 73.71 340 *e*P **P** 09 39 17.4 +0.8
HAKT HAKKARI 73.74 305⇑ *i*P **P** 09 39 16.7 -0.9
WAKR Walker 73.77 54 *e*P **P** 09 39 18.3 +0.7
EGMT Eagleton 73.78 42 P **P** 09 39 17.5 +0.1
baz=308,SNR=94
EGMT Eagleton 73.78 42 *e*P **P** 09 39 17.6 +0.2
EGMT LR LR
comp=Z,723nm,21.0s
EKAR Karacoban 73.82 307⇑ *i*P **P** 09 39 19.0 +1.0
NB2 NORSAR Subarra 73.85 337 P **P** 09 39 17.3 -0.2
comp=Z,92nm,0.9s,baz=39,slow=6.2
NB2 NORSAR Subarra 73.85 337 P **P** 09 39 17.3 -0.2
baz=39,slow=6.2
NOA NORSAR Array B 73.85 337 P **P** 09 39 17.3 -0.2
comp=Z,49nm,0.8s,baz=39,slow=5.9,SNR=191
NOA LR LR 10 15 25.9
comp=Z,2µm,19.9s,baz=45,slow=39
NOA NORSAR Array B 73.85 337 P **P** 09 39 17.3 -0.2
NOA pmax pmax
comp=Z,48nm,0.8s
NOA MLR MLR
comp=Z,2µm,19.9s
DLMT Dillon 73.86 45 *e*P **P** 09 39 18.3 +0.3
HLID Hailey 73.90 47 P **P** 09 39 19.0 +0.7
baz=307,SNR=79
HLID Hailey 73.90 47 *e*P **P** 09 39 18.9 +0.6
HLID LR LR
comp=Z,754nm,21.0s
LCCM Lewis and Clar 73.97 44 *e*P **P** 09 39 19.1 +0.4
NC602 NORSAR Array S 73.99 337 *e*P **P** 09 39 18.3 0.0
NC602 IAmb IAmb 09 39 19.2
comp=Z,82nm,1.4s
MCMT McKenzie Canyo 74.04 46 *e*P **P** 09 39 19.2 0.0
AKASG Malin Array Be 74.07 322 P **P** 09 39 18.4 -0.6
comp=Z,14nm,0.4s,baz=46,slow=6.3,SNR=108
AKASG LR LR 10 15 22.2
comp=Z,2µm,18.7s,baz=50,slow=38
AKASG Malin Array Be 74.07 322 *i* P **P** 09 39 18.3 -0.6
AKASG pmax pmax
comp=Z,15nm,0.4s
AKBB Malin Array Si 74.07 322 *e*P **P** 09 39 18.9 -0.1
AKBB Malin Array Si 74.07 322 *e*P **P** 09 39 18.9 -0.1
KIEV Kiev 74.09 322 *c i*P **P** 09 39 18.2 -0.8
KIEV pmax pmax
comp=Z,47nm,1.0s
KIEV Kiev 74.09 322 *e*P **P** 09 39 18.2 -0.8
KIEV LR LR
comp=Z,2µm,21.0s
AK11 Malin Array Si 74.12 322 *e*P **P** 09 39 18.8 -0.4
AKN Aaknes 74.17 340 *e*P **P** 09 39 19.9 +0.5
AKN *e*S **S** 09 48 51.9 +2.9
BOZ Bozeman (W) 74.23 44 P **P** 09 39 20.4 +0.3
baz=308,SNR=134
BOZ Bozeman (W) 74.23 44 *e*P **P** 09 39 20.8 +0.6
BOZ Bozeman (W) 74.23 44 *e*P **P** 09 39 20.8 +0.6
BOZ LR LR
comp=Z,640nm,22.0s
BGMT Barton Gulch 74.25 45 *e*P **P** 09 39 20.9 +0.5
KOPT Kop Dagi 74.36 309⇑ *i*P **P** 09 39 21.6 +0.4
NV01 Mina Array Sit 74.53 53 *e*P **P** 09 39 21.9 -0.3
NVAR Mina Array Bea 74.53 53 P **P** 09 39 22.7 +0.5
comp=Z,60nm,0.8s,baz=288,slow=5.3,SNR=328
NVAR LR LR 10 05 28.2
comp=Z,361nm,21.8s,baz=310,slow=30
SUW Suwalki 74.62 327 *e*P **P** 09 39 21.8 -0.3
SUW *ep*P **PcP** 09 39 36.6 +0.4
SUW LMZ LR 10 15 03.0
NV11 Mina Array Sit 74.63 53 *e*P **P** 09 39 23.1 +0.4
MLAC Mammoth, Mammo 74.66 54 P **P** 09 39 23.5 +0.6
baz=306,SNR=24
QLMT Earthquake Lak 74.84 45 *e*P **P** 09 39 24.3 +0.5
YHB Horse Butte 75.02 45 *e*P **P** 09 39 25.7 +0.8
EUZM Uzumlu 75.04 309⇑ *i*P **P** 09 39 25.2 +0.2
KELT Kelkit 75.06 309⇑ *i*P **P** 09 39 25.5 +0.4
ELK Elko 75.08 50 LR LR 10 10 28.6
comp=Z,408nm,19.4s,baz=135,slow=34
ELK Elko 75.08 50 *e*P **P** 09 39 26.1 +0.8
ELK Elko 75.08 50 *e*P **P** 09 39 26.1 +0.8
YMC Maple Creek 75.12 45 *e*P **P** 09 39 26.2 +0.8
SIM Simferopol' 75.16 316 *d i*P **P** 09 39 26.2 +0.8
SIM *i* 09 39 40.0
SIM pmax pmax
comp=Z,52nm,0.9s
SIM MLR MLR
comp=Z,570nm,14.9s
RCTC Rector, Farmer 75.16 56 P **P** 09 39 25.0 -0.5
baz=306,SNR=10
FOO Floro 75.18 340 *e*P **P** 09 39 26.0 +0.8
FOO IAmb IAmb 09 39 26.8
comp=Z,27nm,0.8s
YHH Holmes Hill 75.19 45 *e*P **P** 09 39 26.6 +0.6
YMR Madison River 75.20 45 *e*P **P** 09 39 27.3 +1.4
GCMT Greycliff 75.22 43 *e*P **P** 09 39 26.4 +0.6
HYA Hoyanger 75.23 339 *e*P **P** 09 39 26.2 +0.8
SMMC Simmler 75.24 57 P **P** 09 39 26.7 +0.7
baz=306,SNR=8.0
YPM Purple Mountai 75.26 45 *e*P **P** 09 39 27.6 +1.3
MCID Moose Creek 75.37 45 *e*P **P** 09 39 28.4 +1.5
TIN Tinemaha, Big 75.39 54 P **P** 09 39 27.2 +0.3
baz=306,SNR=11
ORDU Ordu-Boztepe 75.41 311⇑ *i*P **P** 09 39 25.9 -1.0
YFT Old Faithful 75.41 45 *e*P **P** 09 39 29.7 +2.6
SFJD Kangerlussuaq 75.41 5 *e*P **P** 09 39 26.7 +0.3
SFJD Kangerlussuaq 75.41 5 *e*P **P** 09 39 26.7 +0.3
SFJD LR LR
comp=Z,725nm,22.0s
KONO Kongsberg 75.45 337 *e*P **P** 09 39 26.2 -0.5
KONO *ep*P **pP** 09 39 40.9 +0.9
KONO *e*S **S** 09 49 03.0 -0.2
KONO Kongsberg 75.45 337 *e*P **P** 09 39 27.4 +0.7
KONO Kongsberg 75.45 337 *e*P **P** 09 39 27.4 +0.7
KONO LR LR
comp=Z,3µm,21.0s
KLNR Kaliningrad 75.45 329 *i* P **P** 09 39 27.2 +0.4
KLNR pmax pmax
comp=Z,50nm,1.0s
LKWY Lake 75.58 45 *e*P **P** 09 39 30.0 +1.9
LKWY pmax pmax
comp=Z,117nm,1.1s
LKWY MLR MLR
comp=Z,683nm,20.0s
LKWY Lake 75.58 45 *e*P **P** 09 39 30.0 +1.9
comp=Z,117nm,1.1s
LKWY LR LR
comp=Z,683nm,20.0s
H17A Grant Village 75.59 45 P **P** 09 39 30.3 +2.1
baz=309,SNR=163
H17A Grant Village 75.59 45 *e*P **P** 09 39 30.5 +2.3
PKM Mcpherson Peak 75.61 57 P **P** 09 39 28.7 +0.3
baz=306,SNR=14
IMW Indian Meadow 75.69 45 *e*P **P** 09 39 29.9 +1.1
SUE Sulen 75.71 340 *e*P **P** 09 39 28.7 +0.5
SUE IAmb IAmb 09 39 29.9
comp=Z,98nm,1.5s
FLWY Flagg Ranch 75.71 45 *e*P **P** 09 39 30.8 +2.0
YTP The Promontory 75.75 45 *e*P **P** 09 39 30.8 +1.6
MARD Mardin 75.78 306⇑ *i*P **P** 09 39 29.4 +0.2
RLMT Red Lodge 75.86 44 P **P** 09 39 29.9 +0.3
baz=309,SNR=50
RLMT Red Lodge 75.86 44 *e*P **P** 09 39 30.4 +0.7
RLMT LR LR
comp=Z,643nm,22.0s
MOOW Moose Ponds 75.89 45 *e*P **P** 09 39 30.8 +0.9
HVU Hansel Valley 75.94 48 *e*P **P** 09 39 30.9 +0.8
HVU Hansel Valley 75.94 48 *e*P **P** 09 39 30.9 +0.8
SBC Santa Barbara 75.94 57 P **P** 09 39 30.5 +0.5
baz=306
GRAC Grapevine Rang 75.98 54 P **P** 09 39 30.9 +0.6
baz=306,SNR=46
ISA Isabella, Lake 76.04 56 P **P** 09 39 29.9 -0.8
baz=306,SNR=18
ISA Isabella, Lake 76.04 56 *e*P **P** 09 39 30.6 -0.1
ISA Isabella, Lake 76.04 56 *e*P **P** 09 39 30.6 -0.1
KEMA Kemaliye 76.05 309⇑ *i*P **P** 09 39 31.3 +0.6
LOHW Long Hollow 76.06 45 *e*P **P** 09 39 31.8 +0.9
ASK Askoy 76.07 339 *e*P **P** 09 39 30.5 +0.3
ASK IAmb IAmb 09 39 32.1
comp=Z,44nm,0.8s
SNOW Snow King Moun 76.07 46 *e*P **P** 09 39 32.0 +1.1
REDW Red Top Meadow 76.08 46 *e*P **P** 09 39 31.6 +0.7
CUZAR Zara_SIVAS 76.12 310⇑ *i*P **P** 09 39 31.1 -0.1
ARVC Arvin 76.12 56 P **P** 09 39 30.8 -0.3
baz=306,SNR=17
ODD1 Odda 76.13 338 *e*P **P** 09 39 31.6 +1.0
ODD1 IAmb IAmb 09 39 32.5
comp=Z,43nm,0.9s
MTUT Morton Thiokol 76.17 48 *e*P **P** 09 39 32.4 +1.0
SORM Soroca 76.18 321⇓ *i*P **P** 09 39 31.1 0.0
ELZG Elazig 76.21 308⇑ *i*P **P** 09 39 32.5 +0.8
SCZ2 Santa Cruz Isl 76.25 58 P **P** 09 39 31.9 +0.1
baz=306
DAC Darwin (Calif) 76.26 55 *e*P **P** 09 39 32.2 +0.1
DAC Darwin (Calif) 76.26 55 *e*P **P** 09 39 32.1 +0.1
AHID Auburn Hatcher 76.30 46 *e*P **P** 09 39 33.0 +0.8
AHID LR LR
comp=Z,587nm,20.0s
R11A Troy Canyon, C 76.30 52 P **P** 09 39 32.7 +0.4
baz=307,SNR=167
R11A Troy Canyon, C 76.30 52 *e*P **P** 09 39 32.6 +0.4
BGU Big Grassy Mou 76.31 49 *e*P **P** 09 39 32.8 +0.6
BEI Bear River Ran 76.31 47 *e*P **P** 09 39 33.0 +0.8
DGMT Dagmar 76.34 39 P **P** 09 39 32.0 -0.1

baz=312,SNR=32
DGMT Dagmar 76.34 39 *e*P **P** 09 39 32.0 -0.1
DGMT LR LR
comp=Z,582nm,20.0s
SPUT South Promonto 76.42 48 *e*P **P** 09 39 34.5 +1.7
MPMC Manual Prospec 76.45 55 P **P** 09 39 33.5 +0.3
baz=307,SNR=63
OSI Osito Audit: C 76.50 57 P **P** 09 39 33.5 +0.3
baz=306,SNR=8.3
OSI Osito Audit: C 76.50 57 *e*P **P** 09 39 34.7 +1.5
HDU Hyde Park 76.52 47 *e*P **P** 09 39 34.1 +0.7
A25A Svangstu Ranch 76.56 38 P **P** 09 39 33.5 +0.1
baz=312,SNR=26
BLG Laguna Peak, P 76.57 57 P **P** 09 39 33.2 -0.4
baz=306
BLS5 Blasjo 76.58 338 *e*P **P** 09 39 34.0 +0.8
BLS5 IAmb IAmb 09 39 35.1
comp=Z,62nm,1.1s
FURC Furnace Creek, 76.62 54 P **P** 09 39 34.4 +0.6
baz=307,SNR=86
HAVZ Havza 76.64 312⇑ *i*P **P** 09 39 34.1 +0.2
LRMC Laurel Mtn Rad 76.67 56 P **P** 09 39 33.9 -0.5
baz=307
KIS Kishinev 76.69 320⇑ *i*P **P** 09 39 34.0 0.0
comp=Z,600nm,1.5s
KIS Kishinev 76.69 320 *i* PcP **PcP** 09 39 48.0 +2.7
KIS Kishinev 76.69 320 *e*PP PP 09 42 12.0 -14
KIS *e*S **S** 09 49 16.0 -1.3
KIS Kishinev 76.69 320α *i*P **P** 09 39 34.0 0.0
KIS *i* 09 39 48.0
KIS *e*S **S** 09 49 16.0 -1.3
KIS *e*PS PnS 09 49 41.0 -19
KIS pmax pmax
comp=Z,600nm,1.5s
KIS pmax pmax
comp=Z,500nm,2.0s
KIS MLR MLR
comp=N,2μm,16.0s
KIS MLR MLR
comp=E,2μm,16.0s
KIS MLR MLR
comp=Z,4μm,16.0s
KIS MLR MLR
comp=Z,4μm,16.0s
TPNV Topopah Spring 76.72 54 P **P** 09 39 35.1 +0.4
baz=307,SNR=114
TPNV Topopah Spring 76.72 54 *e*P **P** 09 39 35.0 +0.4
TPNV Topopah Spring 76.72 54 *e*P **P** 09 39 35.0 +0.3
BMUT Black Mountain 76.73 47 *e*P **P** 09 39 35.5 +0.8
SNCC San Nicolas Is 76.76 58 P **P** 09 39 35.3 +0.6
baz=306
EDW2 Edwards Air Fo 76.82 56 P **P** 09 39 35.3 +0.2
baz=307,SNR=43
RSUT Red Spur Mount 76.82 47 *e*P **P** 09 39 36.0 +0.8
FSU Fish Springs 76.83 50 *e*P **P** 09 39 35.9 +0.7
MCU Monte Cristo P 76.88 48 *e*P **P** 09 39 36.2 +0.6
DUG Dugway, Tooele 76.89 49 P **P** 09 39 36.0 +0.6
baz=308,SNR=115
DUG Dugway, Tooele 76.89 49 *e*P **P** 09 39 36.1 +0.6
DUG Dugway, Tooele 76.89 49 *e*P **P** 09 39 36.1 +0.6
DUG *e*P **P** 09 39 36.3 +0.8
DUG LR LR
comp=Z,495nm,19.0s
BOYT Boyabat 76.90 312 *i* P **P** 09 39 35.6 +0.2
DECC Green Verdugo 76.97 57 P **P** 09 39 35.7 -0.2
baz=307
B25A Knox Farm, Ray 76.99 38 P **P** 09 39 36.0 +0.2
baz=312,SNR=11
AKCD Akcadag 77.00 308⇑ *i*P **P** 09 39 36.7 +0.6
KMY Karmoy 77.11 339 *e*P **P** 09 39 37.4 +1.3
A26A Wade Farm, Ken 77.11 37 P **P** 09 39 36.5 +0.1
baz=313,SNR=49
PASC Pasadena Art C 77.12 57 *e*P **P** 09 39 37.2 +0.5
LVV L'vov 77.14 324 *e*P **P** 09 39 36.6 +0.1
LVV *e* 09 39 49.6
LVV *e*S **S** 09 49 21.4 -0.8
LVV *e*PS **PnS** 09 50 11.4 +5.9
LVV *e*SS **SS** 09 54 20.0 +0.8
LVV *e*SSS SSS 09 57 38.6
LVV MLR MLR
comp=E,2μm,15.0s
LVV MLR MLR
comp=N,3μm,16.0s
LVV MLR MLR
comp=Z,3μm,16.0s
BSD Bornholm Skovb 77.15 332⇑ *i*P **P** 09 39 35.6 -0.8
comp=Z,225nm,1.5s
BSD *i* 09 39 49.8
BSD Bornholm Skovb 77.15 332⇑ *i*P **P** 09 39 35.6 -0.8
BSD *i* 09 39 49.8
BSD pmax pmax
comp=Z,220nm,1.5s
BSD MLR MLR
comp=Z,1μm,17.0s
TCUT Toone Canyon 77.15 48 *e*P **P** 09 39 38.3 +1.2
MWC Mount Wilson 77.17 57 *e*P **P** 09 39 37.8 +0.6
MWC Mount Wilson 77.17 57 *e*P **P** 09 39 37.8 +0.6
BW06 Boulder Array 77.19 46 P **P** 09 39 37.1 -0.1
baz=310,SNR=79
BW06 Boulder Array 77.19 46 *e*P **P** 09 39 36.2 -1.0
BW06 *e*P **P** 09 39 37.1 -0.1
BW06 LR LR
comp=Z,724nm,21.0s
PD31 Pinedale Array 77.19 46 *e*P **P** 09 39 37.1 -0.1
PDAR Pinedale Array 77.19 46 P **P** 09 39 37.0 -0.1
comp=Z,35nm,0.6s,baz=267,slow=1.9,SNR=363
BEL Belsk 77.19 327 *e*P **P** 09 39 37.2 +0.5
BEL *e*pP **pP** 09 39 51.3 +1.3
BEL LMZ LR 10 16 44.1
STAV Stavanger 77.20 338 *e*P **P** 09 39 37.9 +1.3
IAS Iasi 77.21 320⇓ *i*P **P** 09 39 37.8 +0.9
CTU Camp Tracy 77.22 48 *e*P **P** 09 39 38.3 +1.0
BORG Borgarnes 77.22 353 *i* P P 09 39 40.6 +3.9
SNART Snartemo 77.24 337 *e*P **P** 09 39 37.9 +1.0
PSUT Pine Spring 77.27 51 *e*P **P** 09 39 38.4 +0.6
GMU Granite Mounta 77.28 48 *e*P **P** 09 39 38.4 +0.6
FMP Fort Macarthur 77.32 57 P **P** 09 39 37.8 0.0
baz=307
C25A Freed Ranch, W 77.32 39 P **P** 09 39 37.9 +0.2
baz=312,SNR=6.9
LEOM Leova 77.33 319⇓ *i*P **P** 09 39 39.5 +1.9
SHOC Shoshone, Teco 77.34 54 P **P** 09 39 38.1 +0.1
baz=307,SNR=24
GSC Goldstone, Bar 77.35 55 P **P** 09 39 38.3 +0.2
baz=307,SNR=38
GSC Goldstone, Bar 77.35 55 *e*P **P** 09 39 38.7 +0.6
GSC Goldstone, Bar 77.35 55 *e*P **P** 09 39 38.7 +0.6
B26A Jensen Ranch, 77.37 38 P **P** 09 39 38.3 +0.4
baz=313,SNR=56
CIS Catalina Islan 77.42 58 P **P** 09 39 38.5 +0.1
baz=307
BFSC Mount Baldy Ra 77.43 57 P **P** 09 39 38.5 -0.1
baz=307,SNR=19
JLU Jordanelle 77.45 48 *e*P **P** 09 39 39.8 +1.1
A27A Ledoux Ranch, 77.46 37 P **P** 09 39 38.7 +0.4
baz=314
NLU North Lily Min 77.48 49 *e*P **P** 09 39 39.3 +0.4
RRX Edison Barstow 77.48 56 P **P** 09 39 39.0 +0.3
baz=307
COAL Corum-Alaca 77.58 311⇑ *i*P **P** 09 39 39.7 +0.3
SCI2 San Clemente I 77.58 58 P **P** 09 39 39.3 0.0
baz=307
COP Copenhagen 77.62 333 *i* P **P** 09 39 39.8 +0.8
COP *i* 09 39 54.0
COP Copenhagen 77.62 333 *i* P **P** 09 39 39.8 +0.8
COP *i* 09 39 54.0
COP MLR MLR
comp=Z,700nm,15.0s
D25A Fairfield 77.66 39 P **P** 09 39 39.8 +0.2
baz=312,SNR=24
GZT Gaziantep 77.80 308⇑ *i*P **P** 09 39 41.2 +0.6
C26A Wahner Farm, P 77.81 38 P **P** 09 39 40.7 +0.4
baz=313,SNR=29
B27A Peters Farms, 77.83 37 P **P** 09 39 40.5 +0.1
baz=314,SNR=6.9
ILGA Ilgaz 77.83 313⇑ *i*P **P** 09 39 41.5 +0.7
TUQ Turquoise Moun 77.84 55 P **P** 09 39 41.2 +0.2
baz=308,SNR=37
KWP Kalwaria Pacla 77.89 324 *e*P **P** 09 39 41.1 +0.4
KWP *e*pP **pP** 09 39 54.8 +0.8
KWP LMZ LR 10 17 36.9
KWP Kalwaria Pacla 77.89 324⇓ *i*P **P** 09 39 41.7 +1.0
TLCR 77.89 318⇓ *i*P **P** 09 39 41.5 +0.7
BBRC Big Bear Solar 77.90 56 P **P** 09 39 41.3 -0.1
baz=307,SNR=15

LEVU Levan 77.92 49 *e*P **P** 09 39 42.1 +0.7
HEC Hector,Ludlow 77.94 55 P **P** 09 39 41.6 +0.2
baz=307,SNR=12
A28A Rude Farm, Bot 77.95 37 P **P** 09 39 41.2 +0.1
baz=314,SNR=81
E25A Miller Ranch, 78.06 40 P **P** 09 39 42.1 +0.3
baz=313,SNR=32
BUR08 Bucovina Ar. S 78.08 322 *e*P **P** 09 39 42.5 +0.6
BURAR Bucovina Array 78.09 322⇓ *i*P **P** 09 39 42.6 +0.6
MURC Murrieta 78.12 57 P **P** 09 39 42.1 -0.2
baz=307,SNR=14
TESR Tescani 78.13 320⇓ *i*P **P** 09 39 42.3 +0.2
MUD Monsted U'grnd 78.14 335⇑ *i*P **P** 09 39 41.8 -0.1
comp=Z,97nm,1.3s
MUD Monsted U'grnd 78.14 335⇑ *i*P **P** 09 39 41.8 -0.1
MUD pmax pmax
comp=Z,97nm,1.3s
MUD MLR MLR
comp=Z,3μm,22.0s
C27A Sayler Ranch, 78.18 38 P **P** 09 39 42.7 +0.2
baz=314,SNR=17
D26A Manning 78.19 39 P **P** 09 39 42.3 -0.1
baz=313,SNR=23
SGU Sterling 78.22 50 *e*P **P** 09 39 44.0 +0.9
B28A Dugan Ranch, T 78.23 37 P **P** 09 39 42.7 +0.1
baz=314,SNR=80
CFR Carcaliu 78.25 319⇓ *i*P **P** 09 39 42.9 +0.1
MSU Marysvale 78.32 50 *e*P **P** 09 39 44.6 +1.0
MSU Marysvale 78.32 50 *e*P **P** 09 39 44.6 +1.0
CDAG Cicekdag 78.34 311⇑ *i*P **P** 09 39 43.1 -0.5
ELDT Eldivan 78.36 312⇑ *i*P **P** 09 39 43.8 +0.1
PETR Petrinti 78.36 319⇓ *i*P **P** 09 39 45.7 +2.3
GMRC Granite Mounta 78.41 55 P **P** 09 39 44.2 +0.1
baz=308,SNR=60
TMUT Trail Mountain 78.41 49 *e*P **P** 09 39 44.9 +0.7
ANDN Andirin 78.42 309⇑ *i*P **P** 09 39 44.4 +0.4
F25A Bowman 78.42 40 P **P** 09 39 44.1 +0.3
baz=313,SNR=22
ODBI Odobesti 78.42 319⇓ *i*P **P** 09 39 45.8 +2.1
A29A Manning Farm, 78.43 36 P **P** 09 39 43.6 -0.1
baz=315,SNR=104
VRI Vrincioaia 78.53 320⇓ *i*P **P** 09 39 44.8 +0.5
E26A Carlson Angus 78.56 39 P **P** 09 39 44.4 -0.2
baz=313,SNR=27
AVNS Nevsehir-Avano 78.57 310⇑ *i*P **P** 09 39 44.8 0.0
PLOR Plostina 78.58 320⇓ *i*P **P** 09 39 45.9 +1.3
P17A Butcher Ranch, 78.58 49 *e*P **P** 09 39 45.7 +0.8
KOLS Kolonicke sedl 78.58 324 *e*P **P** 09 39 45.5 +0.9
KOLS *e* 09 40 00.1
KOLS *e*L L 10 17 53.2
TIRR Tirgusor 78.59 318⇓ *i*P **P** 09 39 44.8 +0.2
TIRR Tirgusor 78.59 318 *e*P **P** 09 39 44.2 -0.4
TIRR pmax pmax
comp=Z,38nm,1.0s
TIRR Tirgusor 78.59 318 *e*P **P** 09 39 44.2 -0.4
comp=Z,38nm,1.0s
D27A Center 78.59 38 P **P** 09 39 44.8 +0.1
baz=314,SNR=11
LCMT Little Creek M 78.59 52 *e*P **P** 09 39 45.7 +0.7
LDFC Landfair 78.59 55 *e*P **P** 09 39 45.6 +0.6
PFO Pinyon Flats O 78.60 56 LR LR 10 07 46.3
comp=Z,1μm,21.9s,baz=289,slow=30
PFO Pinyon Flats O 78.60 56 P **P** 09 39 45.1 0.0
baz=308,SNR=26
PFO Pinyon Flats O 78.60 56 *e*P **P** 09 39 45.1 0.0
PFO Pinyon Flats O 78.60 56 *e*P **P** 09 39 45.1 0.0
109C Camp Elliot, M 78.61 57 P **P** 09 39 44.9 0.0
baz=307,SNR=11
MTPU Mount Pierson 78.61 51 *e*P **P** 09 39 46.4 +1.0
BELC Belle Mtn. Jos 78.67 56 P **P** 09 39 44.9 -0.6
baz=308,SNR=21
HARR Harsova 78.69 318⇓ *i*P **P** 09 39 46.2 +1.0
B29A Wagenman Farm, 78.69 36 P **P** 09 39 45.3 +0.1
baz=315,SNR=50
STHS Stebnicka Huta 78.72 325 *e*P **P** 09 39 46.5 +1.2
STHS *e*PP PP 09 42 37.4 -5.8
BR131 Keskin Array S 78.72 312 *e*P **P** 09 39 45.5 -0.2
BRTR Keskin Array B 78.72 312 P **P** 09 39 45.4 -0.2
comp=Z,14nm,0.9s,baz=79,slow=3.5,SNR=51
BRTR LR LR 10 20 22.5
comp=Z,533nm,19.3s,baz=50,slow=40
EFOR EFORIE 78.72 317⇑ *i*P P 09 39 48.8 +3.4
C28A Hausauer Farms 78.72 37 P **P** 09 39 45.6 +0.2
baz=314,SNR=21
GRER 78.73 319⇓ *i*P **P** 09 39 48.1 +2.7
H08N1 Diego Carcia H 78.75 253 P **P** 09 39 46.6 +1.0
baz=70,slow=3.0,SNR=5.6
H08N2 Diego Garcia H 78.75 253 P **P** 09 39 46.8 +1.3
baz=70,slow=3.0,SNR=3.9
H08N3 Diego Garcia H 78.77 253 P **P** 09 39 47.0 +1.3
baz=70,slow=3.0,SNR=4.0
P18A Preston Nutter 78.78 48 *e*P **P** 09 39 47.0 +0.8
OJC Ojcow 78.79 326 *e*P **P** 09 39 45.9 +0.2
OJC *e*pP **pP** 09 39 59.9 +0.9
OJC *e*S **S** 09 49 39.2 -0.7
OJC LMZ LR 10 17 46.3
OJC Ojcow 78.79 326 *e*P **P** 09 39 45.4 -0.3
OJC Ojcow 78.79 326 *e*P **P** 09 39 45.4 -0.3
UZH Uzhgorod 78.79 324⇑ *i*P **P** 09 39 46.2 +0.5
UZH *e* 09 39 53.4
UZH *e* 09 40 00.6
UZH *i* S **S** 09 49 38.7 -1.2
UZH MLR MLR
comp=N,4μm,15.0s
UZH MLR MLR
comp=E,4μm,15.0s
UZH MLR MLR
comp=Z,3μm,15.0s
A30A Hoffart Farm, 78.85 36 P **P** 09 39 45.8 -0.3
baz=316,SNR=99
KNB Kanab 78.85 52 *e*P **P** 09 39 47.5 +1.0
KNB Kanab 78.85 52 *e*P **P** 09 39 47.5 +1.0
F26A Lodgepole 78.88 40 P **P** 09 39 46.1 -0.2
baz=313,SNR=29
ARCR ARCALIA 78.88 322⇓ *i*P **P** 09 39 47.6 +1.3
BMR Baia Mare 78.89 323⇓ *i*P **P** 09 39 47.6 +1.3
PKCU Pink Cliffs 78.90 51 *e*P **P** 09 39 48.6 +1.6
G25A Newell 78.94 41 P **P** 09 39 46.4 -0.3
baz=313,SNR=24
BCAM Yenicaga 78.94 313⇑ *i*P **P** 09 39 47.0 +0.1
SRU San Rafael Swe 78.94 49 *e*P **P** 09 39 47.4 +0.4
SRU San Rafael Swe 78.94 49 *e*P **P** 09 39 47.4 +0.4
K22A Casper 78.97 44 P **P** 09 39 46.7 -0.3
baz=311,SNR=39
K22A Casper 78.97 44 *e*P **P** 09 39 47.4 +0.4
BTU Barney Top 78.98 51 *e*P **P** 09 39 48.7 +1.3
CRVS Cervenica-Dubn 78.98 324 *e*P **P** 09 39 47.1 +0.3
CRVS *e* 09 40 01.7
ULM Lac du Bonnet 79.00 34 P **P** 09 39 46.8 0.0
comp=Z,47nm,0.8s,baz=314,slow=6.4,SNR=52
ULM LR LR 10 15 54.9
comp=Z,546nm,21.0s,baz=330,slow=37
ULM Lac du Bonnet 79.00 34 *e*P **P** 09 39 45.9 -0.9
ULM Lac du Bonnet 79.00 34 *e*P **P** 09 39 45.9 -0.9
D28A Regan 79.00 38 P **P** 09 39 47.0 +0.1
baz=314,SNR=14
BAR Barrett 79.02 57 *e*P **P** 09 39 47.8 +0.5
TRPA Tarpa 79.03 323⇑ *e*P **P** 09 39 47.5 +0.5
E27A Carson 79.04 39 P **P** 09 39 47.4 +0.2
baz=314,SNR=52
MMU Miners Mountai 79.05 50 *e*P **P** 09 39 48.5 +0.8
MONP2 Monument Peak 79.06 57 P **P** 09 39 47.3 -0.4
baz=308,SNR=17
NEE2 Needles Airpor 79.10 55 P **P** 09 39 47.6 -0.1
baz=308,SNR=9.0
ANTO Ankara 79.13 312 *e*P **P** 09 39 48.5 +0.7
ANTO Ankara 79.13 312 *e*P **P** 09 39 48.5 +0.7
ANTO LR LR
comp=Z,20nm,20.0s
ISR Istrita 79.13 319⇓ *i*P **P** 09 39 48.8 +1.1
IRM Iron Mountain 79.13 55 P **P** 09 39 48.0 +0.1
baz=308,SNR=50
DOPR Dopca 79.14 320⇓ *i*P **P** 09 39 48.8 +1.1
BBAL Bala 79.14 312⇑ *i*P **P** 09 39 47.9 -0.1
NIE Niedzica 79.14 325 *e*P **P** 09 39 48.1 +0.4
NIE *e*S **S** 09 49 44.9 +1.1
NIE LMZ LR 10 18 37.9
BR231 Keskin MP Arra 79.15 312 *e*P **P** 09 39 46.1 -1.9
MLR Muntele Rosu 79.18 320⇓ *i*P **P** 09 39 48.6 +0.5
B30A Myrvik Farm, E 79.19 36 P **P** 09 39 47.8 -0.1
baz=316,SNR=87
F27A Lemmon 79.19 40 P **P** 09 39 48.0 0.0
baz=314,SNR=48
PSN Preselentsi 79.23 317 P **P** 09 39 49.2 +1.0

H25A Fruitdale 79.23 41 P **P** 09 39 48.0 -0.3
baz=313,SNR=24
BC3 Big Chuckawall 79.24 56 P **P** 09 39 48.7 +0.2
baz=308,SNR=42
G26A Maurine 79.29 40 P **P** 09 39 48.8 +0.2
baz=313,SNR=64
AKSY AKSARAY - Alti 79.33 311⇑ *i*P **P** 09 39 48.9 -0.1
RSSD Black Hills 79.34 42 *e*P **P** 09 39 48.8 -0.3
RSSD Black Hills 79.34 42 *e*P **P** 09 39 48.8 -0.3
A31A Linda, St. Vin 79.37 35 P **P** 09 39 48.2 -0.6
baz=316,SNR=8.0
E28A Huff 79.37 38 P **P** 09 39 48.6 -0.4
baz=314,SNR=22
SWSC Sam W. Stewart 79.44 57 P **P** 09 39 49.1 -0.4
baz=308,SNR=20
KKUL Konya-Kulu 79.50 312⇑ *i*P **P** 09 39 50.2 +0.3
CJR Cluj-Napoca 79.51 322⇓ *i*P **P** 09 39 51.2 +1.4
B31A Greenbush Farm 79.52 36 P **P** 09 39 49.3 -0.4
baz=316,SNR=35
D29A Pettibone, Tap 79.57 38 P **P** 09 39 49.6 -0.4
baz=315,SNR=15
I25A Rochford 79.57 42 P **P** 09 39 50.1 -0.2
baz=313,SNR=49
G27A Dupree 79.58 40 P **P** 09 39 50.0 -0.2
baz=314,SNR=56
O20A White River Ci 79.64 47 P **P** 09 39 50.8 +0.1
baz=311,SNR=50
O20A White River Ci 79.64 47 *e*P **P** 09 39 50.8 +0.1
C30A Mose, Pekin 79.65 37 P **P** 09 39 50.2 -0.3
baz=316,SNR=42
H26A Fairpoint 79.67 41 P **P** 09 39 50.6 -0.1
baz=313,SNR=44
A32A Rocking H Ranc 79.69 35 P **P** 09 39 50.1 -0.5
baz=317,SNR=38
PDMCI Parker Dam,Lak 79.70 55 P **P** 09 39 51.1 +0.2
baz=308,SNR=39
LANS Liptovska Anna 79.71 326 *e*P **P** 09 39 53.2 +2.4
LANS *e* 09 40 06.6
KECS Kecovo 79.73 325 *e*P **P** 09 39 52.9 +2.0
KECS *e* 09 40 07.3
KECS *e*PP **PP** 09 42 47.5 -4.2
DED Mersin 79.77 309⇑ *i*P **P** 09 39 50.8 -0.5
Y12C Blythe 79.79 55 P **P** 09 39 51.6 +0.2
baz=308,SNR=29
Y12C Blythe 79.79 55 *e*P **P** 09 39 51.6 +0.2
OKC Ostrava-Krasne 79.79 327 *e*P **P** 09 39 51.6 +0.5
OKC *e*pP **pP** 09 40 05.8 +1.3
OKC *e*x x 09 40 14.9
OKC *e*S **S** 09 49 50.8 +0.3
OKC AMS AMS 10 18 30.0
comp=Z,2μm,18.8s
MTUR Matau 79.82 320⇑ *i*P **P** 09 39 54.5 +3.0
F28A McLaughlin 79.82 39 P **P** 09 39 51.4 0.0
baz=314,SNR=47
KSP Ksiaz 79.83 328 *e*P **P** 09 39 51.6 +0.3
KSP *e*pP **pP** 09 40 05.7 +1.0
KSP LMZ LR 10 19 02.0
DRGR 79.89 322⇓ *i*P **P** 09 39 52.6 +0.8
E29A Napoleon 79.89 38 P **P** 09 39 51.3 -0.5
baz=315,SNR=13
KERG Konya-Eregli 79.89 310⇑ *i*P **P** 09 39 51.2 -0.9
C31A Landman Farms, 79.94 36 P **P** 09 39 51.6 -0.4
baz=316,SNR=50
ARR Arges 79.94 320⇓ *i*P **P** 09 39 53.5 +1.4
D30A Buchanan 79.94 37 P **P** 09 39 51.8 -0.3
baz=315,SNR=54
J25A Sunshine Ranch 79.96 42 P **P** 09 39 51.7 -0.6
baz=313,SNR=8.6
PRD Provadia 79.98 317 P **P** 09 39 51.9 -0.3
H27A Howes 80.02 41 P **P** 09 39 52.5 0.0
baz=314,SNR=77
GLA Glamis 80.02 56 P **P** 09 39 52.9 +0.1
baz=308,SNR=30
GLA Glamis 80.02 56 *e*P **P** 09 39 53.6 +0.8
GLA Glamis 80.02 56 *e*P **P** 09 39 53.6 +0.8
I26A New Underwood 80.02 41 P **P** 09 39 52.8 +0.2
baz=313,SNR=55
B32A Ashes, Strandq 80.05 35 P **P** 09 39 51.7 -0.9
baz=317,SNR=93
MORC Moravsky Berou 80.10 327⇓ *i*P **P** 09 39 53.7 +0.8
A33A Warroad 80.18 34 P **P** 09 39 52.5 -0.8
baz=317,SNR=87
DPC Dobruska-Polom 80.19 328 *e*P **P** 09 39 53.8 +0.4
DPC *e*pP **pP** 09 40 08.5 +1.8
DPC *e*S **S** 09 49 52.3 -2.5
DPC AMS AMS 10 18 50.0
comp=Z,2μm,16.7s
UPC Upice 80.20 328 *e*P **P** 09 39 53.8 +0.4
UPC *e*S **S** 09 49 56.2 +1.4
UPC AMS AMS 10 18 50.0
comp=Z,2μm,17.7s
RAR Rarotonga 80.25 126 PFAKE 09 40 10.0 +16
RAR LR LR
comp=Z,2μm,21.0s
E30A Jud 80.30 38 P **P** 09 39 53.6 -0.4
baz=315,SNR=34
G28A Parade 80.31 40 P **P** 09 39 53.9 -0.2
baz=314,SNR=42
LOT Lotru 80.32 321⇓ *i*P **P** 09 39 54.9 +0.7
F29A Eureka 80.32 39 P **P** 09 39 54.0 -0.2
baz=315,SNR=20
KDHN Kadinhani 80.40 311⇑ *i*P **P** 09 39 53.8 -0.9
J26A Sides Ranch, S 80.40 42 P **P** 09 39 54.5 -0.2
baz=313,SNR=34
PSZ Piszkesteto 80.42 325⇓ *i*P **P** 09 39 55.5 +0.9
PSZ Piszkesteto 80.42 325⇑ *e*P **P** 09 39 55.1 +0.5
PSZ Piszkesteto 80.42 325 *e*P **P** 09 39 54.9 +0.3
PSZ pmax pmax
comp=Z,128nm,1.3s
PSZ MLR MLR
comp=Z,2μm,19.0s
PSZ Piszkesteto 80.42 325 *e*P **P** 09 39 54.9 +0.3
comp=Z,128nm,1.3s
PSZ LR LR
comp=Z,2μm,19.0s
I27A Quinn 80.42 41 P **P** 09 39 54.9 +0.2
baz=314,SNR=70
AGMN Agassiz Nation 80.43 35 P **P** 09 39 53.6 -1.0
baz=317,SNR=53
AGMN Agassiz Nation 80.43 35 *e*P **P** 09 39 53.8 -0.9
AGMN LR LR
comp=Z,956nm,21.0s
N23A Red Feather La 80.45 45 P **P** 09 39 55.9 +0.7
baz=312,SNR=59
N23A Red Feather La 80.45 45 *e*P **P** 09 39 55.9 +0.7
PHWY Pilot Hill 80.46 45 *e*P **P** 09 39 55.2 0.0
C32A Crookston 80.47 36 P **P** 09 39 54.0 -0.9
baz=317,SNR=13
D31A Mcclaflin, Tow 80.48 37 P **P** 09 39 54.4 -0.5
baz=316,SNR=26
VYHS Vyhne 80.48 325 *e*P **P** 09 39 56.1 +1.2
VYHS *e* 09 40 10.9
VYHS *e*PP PP 09 42 49.2 -8.6
BORA Eskisehir 80.49 313⇑ *i*P **P** 09 39 54.2 -1.0
ESKT Eskisehir 80.49 313 *i* P **P** 09 39 54.9 -0.4
H28A Mission Ridge 80.53 40 P **P** 09 39 55.4 +0.1
baz=314,SNR=43
B33A Robert and Kas 80.58 35 P **P** 09 39 54.4 -1.0
baz=317,SNR=16
WUAZ Wupatki 80.70 52 P **P** 09 39 57.2 +0.7
baz=310,SNR=108
WUAZ Wupatki 80.70 52 *e*P **P** 09 39 57.1 +0.5
WUAZ LR LR
comp=Z,572nm,20.0s
F30A Leola 80.71 38 P **P** 09 39 55.4 -0.8
baz=315
SZH Strazhica 80.71 318 P **P** 09 39 56.8 +0.6
G29A Hoven 80.72 39 P **P** 09 39 55.9 -0.4
baz=315,SNR=7.3
KMER Konya-Meram 80.73 311⇑ *i*P **P** 09 39 56.1 -0.5
D32A Dogwood Acres, 80.75 36 P **P** 09 39 55.8 -0.5
baz=317,SNR=17
E31A Nome 80.75 37 P **P** 09 39 55.9 -0.5
baz=316,SNR=38
BRG Berggiesshubel 80.77 330 *e*P **P** 09 39 56.2 -0.2
comp=Z,81nm,1.3s
BRG *e*pP **pP** 09 40 09.3 -0.4
comp=Z,56nm,1.1s
BRG *e*PP **PP** 09 42 58.0 -2.1
comp=Z,6.6nm,0.9s
BRG SS SS 09 55 25.0 +11
SIRR Siria 80.78 323⇓ *i*P **P** 09 39 57.3 +0.8
PVCC Panska Ves 80.78 329 *e*P **P** 09 39 57.1 +0.6
PVCC AMS AMS 10 19 00.0
comp=Z,2μm,15.9s

CLL	**Collm**	80.81	330	*i*	P		P	09 39 56.0	-0.6
	comp=Z,107nm,1.2s									
CLL				*e*	Plp			09 39 59.0		
	comp=Z,300nm,18.5s									
CLL				*i*				09 40 11.0		
CLL				*e*	PP		PP	09 43 12.0	+12	
CLL				*e*	S		S	09 50 00.0	-1.1	
	comp=N,300nm,15.6s									
CLL				*e*	S		S	09 50 00.0	-1.1	
	comp=E,400nm,18.2s									
CLL				*e*	S		S	09 50 00.0	-1.1	
	comp=Z,300nm,14.3s									
CLL				*e*	SS		SS	09 55 16.0	+2.0	
CLL				*e*				09 59 36.0		
B34A	**Aery, Baudette**	80.84	34		P		P	09 39 55.8	-1.0	
	baz=318,SNR=34									
VRAC	**Vranov**	80.86	327	⇓	*i* P		P	09 39 58.6	+1.7	
C33A	**Trail**	80.87	35		P		P	09 39 56.1	-0.9	
	baz=317,SNR=49									
I28A	**Midland**	80.93	41		P		P	09 39 57.4	0.0	
	baz=314,SNR=107									
H29A	**Onida**	80.98	40		P		P	09 39 57.4	-0.3	
	baz=315,SNR=36									
SMCO	**Snowmass**	81.00	47	*e*	P		P	09 39 58.7	+0.3	
J27A	**Elkhorn Farm,**	81.01	42		P		P	09 39 58.1	+0.1	
	baz=314,SNR=68									
F31A	**Hecla**	81.08	38		P		P	09 39 57.9	-0.3	
	baz=316,SNR=41									
SMOL	**Smolenice**	81.09	326	*e*	P		P	09 40 00.2	+2.0	
SMOL				*e*				09 40 13.8		
E32A	**Braaten, Kindr**	81.11	37		P		P	09 39 57.8	-0.5	
	baz=317,SNR=6.8									
ERMK	**Ermenek**	81.13	310	⇑	*i* P		P	09 39 58.0	-0.9	
BUD	**Budapest**	81.14	325	⇑	*e* P		P	09 39 58.6	+0.2	
G30A	**Faulkton**	81.16	39		P		P	09 39 58.3	-0.3	
	baz=315,SNR=41									
GOPC	**GO Pecny, Ondr**	81.17	328	*e*	P		P	09 39 58.9	+0.4	
GOPC				*e*	pP		pP	09 40 13.2	+1.3	
GOPC				*ex*			x	09 40 21.6		
GOPC				*e*	S		S	09 50 03.4	-1.6	
GOPC					AMS		AMS	10 19 00.0		
	comp=Z,2µm,17.5s									
PRA	**Prague**	81.19	329		AMS		AMS	10 19 10.0		
	comp=Z,2µm,16.2s									
PRU	**Pruhonice**	81.21	329	*e*	P		P	09 39 59.0	+0.3	
PRU				*e*	pP		pP	09 40 12.8	+0.7	
PRU				*e*	S		S	09 50 04.8	-0.6	
PRU				*e*	SS		SS	09 55 20.0	-0.1	
PRU					AMS		AMS	10 19 00.0		
	comp=Z,2µm,15.8s									
BZS	**Buzias**	81.26	322	⇓	*i* P		P	09 39 59.2	+0.1	
D33A	**AnnSam, Waubun**	81.29	36		P		P	09 39 58.2	-1.0	
	baz=317,SNR=24									
J28A	**Allard Ranch,**	81.29	41		P		P	09 39 59.6	+0.2	
	baz=314,SNR=62									
C34A	**RKJ Ranch, Bem**	81.34	35		P		P	09 39 58.7	-0.8	
	baz=318,SNR=13									
B35A	**Bob, Littlefor**	81.34	34		P		P	09 39 59.1	-0.4	
	baz=319,SNR=31									
TREC	**Trest**	81.34	328	*e*	P		P	09 39 59.8	+0.3	
TREC				*e*	pP		pP	09 40 14.2	+1.3	
TREC					AMS		AMS	10 19 20.0		
	comp=Z,2µm,16.9s									
I29A	**Vivian Onida**	81.36	40		P		P	09 39 59.3	-0.4	
	baz=315,SNR=31									
KAC	**Achnashellach**	81.37	343	*e*	P		P	09 40 00.3	+0.8	
ISCO	**Idaho Springs**	81.37	46		P		P	09 40 00.7	+0.5	
	baz=312,SNR=28									
ISCO	**Idaho Springs**	81.37	46	*e*	P		P	09 40 00.7	+0.5	
ISCO	**Idaho Springs**	81.37	46	*e*	P		P	09 40 00.7	+0.5	
ISCO					LR		LR			
	comp=Z,582nm,20.0s									
MVCO	**Mesa Verde**	81.39	49		P		P	09 40 00.6	+0.4	
	baz=311,SNR=64									
MVCO	**Mesa Verde**	81.39	49	*e*	P		P	09 40 00.7	+0.4	
MVCO					LR		LR			
	comp=Z,579nm,21.0s									
PKS7	**Kunszentmiklos**	81.39	324	*e*	P		P	09 40 00.9	+1.2	
ASF	**Jabal al Asfar**	81.44	304		P		P	09 40 01.1	+0.7	
	comp=Z,17nm,0.9s,baz=2.3,slow=1.2,SNR=21									
PKSG		81.49	325	*e*	P		P	09 40 01.2	+0.9	
PKS6	**Bocsa**	81.53	324	*e*	P		P	09 39 59.3	-1.2	
BAGO	**Egridir - ISPA**	81.53	312	⇑	*i* P		P	09 40 00.4	-0.4	
G31A	**Conde**	81.55	38		P		P	09 40 00.3	-0.4	
	baz=316,SNR=17									
CSKK	**Cs¸kako**	81.57	325	⇓	*e* P		P	09 40 02.0	+1.3	
GDZ	**Gediz**	81.57	313	⇑	*i* P		P	09 40 00.5	-0.6	
KPL	**Plockton**	81.60	343	*e*	P		P	09 40 01.0	+0.4	
KPL					AMB		AMB	09 40 03.0		
	comp=Z,82nm,1.4s									
F32A	**Veblen**	81.61	37		P		P	09 40 00.3	-0.6	
	baz=317,SNR=33									
D34A	**Park Rapids**	81.63	35		P		P	09 40 00.1	-0.9	
	baz=318,SNR=35									
EDU	**Dundee**	81.66	341	*e*	P		P	09 40 01.4	+0.4	
KSB	**Sheil Bridge**	81.66	343	*e*	P		P	09 40 01.6	+0.7	
E33A	**Westby DABS, E**	81.68	36		P		P	09 40 01.0	-0.3	
	baz=317,SNR=17									
C35A	**Jirik Farms, M**	81.73	34		P		P	09 40 00.5	-1.0	
	baz=318,SNR=34									
SUSD	**Miller**	81.74	39		P		P	09 40 01.4	-0.3	
	baz=316,SNR=21									
PKST	**T''s**	81.75	325	*e*	P		P	09 40 01.5	-0.2	
GAZI	**Gazipasa**	81.76	310	⇑	*i* P		P	09 40 00.6	-1.4	
PKS2	**Kecel**	81.78	324	*e*	P		P	09 40 02.9	+1.1	
J29A	**Okreek**	81.78	41		P		P	09 40 01.4	-0.5	
	baz=315,SNR=32									
MPEP	**Malo Peshtene**	81.80	319		P		P	09 40 02.9	+0.9	
SART	**Tekirdag**	81.80	316	⇑	*i* P		P	09 40 01.7	-0.5	
ISP	**Isparta**	81.80	312		PFAKE			09 40 10.0	+7.7	
ISP					LR		LR			
	comp=Z,747nm,22.0s									
DURS	**Dursunbey**	81.81	314	⇑	*i* P		P	09 40 01.6	-0.6	
MDVR	**Moldovita**	81.81	321	⇓	*i* P		P	09 40 02.2	+0.1	
NKC	**Novy Kostel**	81.87	330	*e*	P		P	09 40 02.2	-0.1	
NKC				*e*	pP		pP	09 40 16.6	+0.9	
NKC				*ex*			x	09 40 26.2		
NKC					AMS		AMS	10 20 00.0		
	comp=Z,2µm,14.7s									
G32A	**Webster**	81.88	38		P		P	09 40 02.1	-0.3	
	baz=316,SNR=26									
I30A	**Oacoma**	81.88	40		P		P	09 40 02.3	-0.2	
	baz=315,SNR=48									
H31A	**Wolsey**	81.95	39		P		P	09 40 02.0	-0.8	
	baz=316,SNR=6.3									
CSS	**Mathiatis**	81.96	308	*e*	P		P	09 40 02.4	-0.7	
	comp=Z,15nm,0.8s									
CSS					LR		LR			
	comp=Z,223nm,22.0s									
W18A	**Petrified Fore**	81.98	52		P		P	09 40 03.9	+0.5	
	baz=310,SNR=6.6									
W18A	**Petrified Fore**	81.98	52	*e*	P		P	09 40 05.0	+1.6	
214A	**Organ Pipe Nat**	82.03	56		P		P	09 40 03.6	+0.1	
	baz=309,SNR=24									
214A	**Organ Pipe Nat**	82.03	56	*e*	P		P	09 40 02.8	-0.7	
	comp=Z,772nm,1.8s									
F33A	**5 Mile Ranch,**	82.03	37		P		P	09 40 02.8	-0.4	
	baz=317,SNR=46									
S22A	**4UR Ranch, Cre**	82.03	48		P		P	09 40 04.6	+0.9	
	baz=312,SNR=96									
S22A	**4UR Ranch, Cre**	82.03	48	*e*	P		P	09 40 04.6	+0.9	
DEMI	**Demirci**	82.05	314	⇑	*i* P		P	09 40 02.4	-1.1	
KHAL	**Karahalli**	82.05	313	⇑	*i* P		P	09 40 03.0	-0.5	
E34A	**Wadena**	82.07	36		P		P	09 40 02.7	-0.7	
	baz=318,SNR=25									
SOP	**Sopron**	82.10	326	⇑	*e* P		P	09 40 03.8	+0.3	
ESY	**Stoneypath**	82.11	341	*e*	P		P	09 40 03.9	+0.5	
PKS9	**Tamasi**	82.14	324	*e*	P		P	09 40 04.1	+0.4	
PGB	**Panagyurishte**	82.14	319		P		P	09 40 04.5	+0.6	
URZ	**Urewera**	82.15	153		P		P	09 40 02.9	-0.7	
	comp=Z,18nm,0.9s,baz=320,slow=8.2,SNR=5.1									
D35A	**Remer**	82.16	35		P		P	09 40 02.6	-1.2	
	baz=318,SNR=13									
PLD	**Plovdiv**	82.17	318		P		P	09 40 03.5	-0.5	
C36A	**Pine Crest Far**	82.19	34		P		P	09 40 03.3	-0.7	
	baz=319,SNR=25									
Q24A	**Divide**	82.20	46		P		P	09 40 05.0	+0.4	
	baz=312,SNR=24									
Q24A	**Divide**	82.20	46	*e*	P		P	09 40 05.2	+0.6	
BALY	**Balya**	82.20	315	⇑	*i* P		P	09 40 03.9	-0.4	
CONA	**Conrad Observa**	82.22	327	*i*	P		P	09 40 04.8	+0.6	
	comp=Z,73nm,1.3s,SNR=37									
CONA				*i*	sP		pP	09 40 18.6	+0.9	
	comp=Z,84nm,1.5s									
I31A	**Royce, Wessing**	82.25	39		P		P	09 40 04.0	-0.4	
	baz=316									
PKSM	**Moragy**	82.25	324	⇓	*i* P		P	09 40 04.3	0.0	
PKSM	**Moragy**	82.25	324	⇑	*e* P		P	09 40 03.6	-0.7	
J30A	**Dallas**	82.27	40		P		P	09 40 04.1	-0.4	
	baz=315,SNR=49									
KHC	**Kasperske Hory**	82.27	329	*e*	P		P	09 40 04.5	+0.1	
KHC				*e*	pP		pP	09 40 19.1	+1.3	
KHC				*e*	S		S	09 50 17.1	+0.7	
KHC				*e*	SS		SS	09 55 37.9	+1.9	
KHC					AMS		AMS	10 21 00.0		
	comp=Z,2µm,16.9s									
KHC	**Kasperske Hory**	82.27	329	*e*	P		P	09 40 04.1	-0.3	
KHC					pmax		pmax			
	comp=Z,18nm,0.9s									
KHC	**Kasperske Hory**	82.27	329	*e*	P		P	09 40 04.1	-0.3	
	comp=Z,18nm,0.9s									
E35A	**Pequot Lakes**	82.39	35		P		P	09 40 04.2	-0.8	
	baz=318,SNR=16									
G33A	**Ortonville**	82.44	37		P		P	09 40 05.1	-0.1	
	baz=317,SNR=56									
GEC2	**GERESS Array S**	82.44	328	*e*	P		P	09 40 05.6	+0.2	
GEC2	**GERESS Array S**	82.44	328	*e*	P		P	09 40 05.5	+0.2	
GERES	**GERESS Array B**	82.44	328		P		P	09 40 05.5	+0.2	
	comp=Z,17nm,0.9s,baz=42,slow=4.2,SNR=56									
GERES					PKKPbc		PKKPbc	09 58 29.9	-0.8	
	comp=Z,0.4nm,0.3s,baz=264,slow=2.7,SNR=5.6									
GERES					LR		LR	10 20 12.3		
	comp=Z,2µm,18.1s,baz=22,slow=38									
GEA0	**GERESS Array S**	82.45	328	*e*	P		P	09 40 04.4	-1.0	
KORT	**Korkueli**	82.45	311	⇑	*i* P		P	09 40 04.8	-0.9	
H32A	**Carlson Farm,**	82.45	38		P		P	09 40 04.5	-0.9	
	baz=317,SNR=20									
RZN	**Rozhen**	82.46	318		P		P	09 40 06.1	+0.4	
D36A	**Goodland**	82.48	34		P		P	09 40 04.6	-0.9	
	baz=319,SNR=15									
C37A	**Embarrass**	82.50	33		P		P	09 40 04.7	-0.9	
	baz=320,SNR=24									
F34A	**Alexandria**	82.56	36		P		P	09 40 05.3	-0.7	
	baz=318,SNR=21									
OGNE	**Ogallala**	82.59	43		P		P	09 40 06.0	-0.4	
	baz=314,SNR=7.1									
OGNE	**Ogallala**	82.59	43	*e*	P		P	09 40 07.2	+0.9	
OGNE					LR		LR			
	comp=Z,501nm,20.0s									
EYMN	**Ely**	82.63	33		P		P	09 40 05.7	-0.6	
	baz=320,SNR=21									
EYMN	**Ely**	82.63	33	*e*	P		P	09 40 05.5	-0.7	
EYMN					LR		LR			
	comp=Z,769nm,20.0s									
H33A	**Prehn Over Nor**	82.66	38		P		P	09 40 06.3	-0.2	
	baz=317,SNR=92									
K30A	**Basset**	82.67	41		P		P	09 40 06.5	-0.1	
	baz=315,SNR=49									
J31A	**Geddes**	82.67	40		P		P	09 40 06.1	-0.5	
	baz=316,SNR=6.1									
AKHS	**Akhisar**	82.67	314	⇑	*i* P		P	09 40 05.7	-0.9	
G34A	**Benson**	82.78	37		P		P	09 40 06.8	-0.3	
	baz=318,SNR=40									
I32A	**Karley and Nic**	82.78	39		P		P	09 40 06.4	-0.8	
	baz=317,SNR=22									
GRFO	**Grafenberg**	82.79	330	*e*	P		P	09 40 08.0	+1.0	
GRFO	**Grafenberg**	82.79	330	*e*	P		P	09 40 08.0	+1.0	
ESK	**Eskdalemuir**	82.80	341	*i*	P		P	09 40 09.0	+2.0	
ESK	**Eskdalemuir**	82.80	341	*e*	P		P	09 40 08.4	+1.4	
ESK					LR		LR			
	comp=Z,2µm,21.0s									
SDCO	**Great Sand Dun**	82.82	47		P		P	09 40 08.1	+0.3	
	baz=312,SNR=59									
SDCO	**Great Sand Dun**	82.82	47	*e*	P		P	09 40 08.2	+0.5	
SDCO					LR		LR			
	comp=Z,480nm,22.0s									
D37A	**Cotton**	82.83	34		P		P	09 40 06.0	-1.3	
	baz=320									
F35A	**Swanville**	82.83	36		P		P	09 40 06.4	-0.9	
	baz=318,SNR=19									
ARSA	**Arzberg**	82.89	326	*i*	P		P	09 40 08.4	+0.8	
	comp=Z,47nm,1.4s,SNR=15									
C38A	**Sawbill Land.**	82.90	33		P		P	09 40 07.0	-0.7	
	baz=320,SNR=31									
ECK	**Cauldkaine Hil**	82.90	341	⇑	*e* P		P	09 40 07.2	-0.3	
BEHE	**Becsehely**	82.92	325	⇑	*e* P		P	09 40 07.9	+0.1	
E36A	**McGregor**	82.94	35		P		P	09 40 07.1	-0.8	
	baz=319,SNR=29									
MOA	**Molln**	82.97	327	*i*	P		P	09 40 08.3	+0.2	
	comp=Z,41nm,1.2s,SNR=18									
BOZC	**Bozcaada**	83.01	316	⇑	*i* P		P	09 40 07.5	-0.9	
MMB	**Musomiste**	83.05	318		P		P	09 40 08.6	0.0	
J32A	**Parkston**	83.07	39		P		P	09 40 08.0	-0.7	
	baz=316,SNR=19									
I33A	**Coleman**	83.10	38		P		P	09 40 08.5	-0.3	
	baz=317,SNR=9.8									
TUC	**Tucson**	83.13	54	*e*	P		P	09 40 09.5	+0.3	
TUC					pmax		pmax			
	comp=Z,105nm,1.5s									
TUC					MLR		MLR			
	comp=Z,774nm,20.0s									
TUC	**Tucson**	83.13	54	*e*	P		P	09 40 09.5	+0.3	
	comp=Z,105nm,1.5s									
TUC					LR		LR			
	comp=Z,774nm,20.0s									
H34A	**Spellman Lake,**	83.14	37		P		P	09 40 08.6	-0.4	
	baz=318,SNR=15									
K31A	**O'Neill**	83.14	40		P		P	09 40 08.9	-0.2	
	baz=316,SNR=36									
KKB	**Krupnik**	83.20	319		P		P	09 40 10.2	+0.9	
E37A	**Wrenshall**	83.29	34		P		P	09 40 08.9	-0.8	
	baz=320									
F36A	**Milaca**	83.31	35		P		P	09 40 08.7	-1.2	
	baz=319,SNR=16									
C39A	**Grand Marais**	83.32	32		P		P	09 40 09.2	-0.6	
	baz=321,SNR=8.6									
BBO1	**Bothel**	83.33	340	*e*	P		P	09 40 10.9	+1.2	
G35A	**Watkins**	83.35	36		P		P	09 40 09.8	-0.2	
	baz=318,SNR=11									
GMK	**Mull of Kintyr**	83.39	342	*e*	P		P	09 40 10.8	+0.8	
ECSD	**EROS Data Cent**	83.42	38		P		P	09 40 09.9	-0.5	
	baz=317,SNR=79									
ECSD	**EROS Data Cent**	83.42	38	*e*	P		P	09 40 09.9	-0.5	
ECSD					LR		LR			
	comp=Z,582nm,19.0s									
L31A	**Butterfield Fa**	83.42	41		P		P	09 40 10.1	-0.4	
	baz=316,SNR=70									
KESW	**Keswick, Cumbr**	83.42	340	⇑	*e* P		P	09 40 10.4	+0.2	
AYDN	**Tasoluk**	83.47	313	⇑	*i* P		P	09 40 11.2	+0.4	
K32A	**Verdigre**	83.52	40		P		P	09 40 10.2	-0.8	
	baz=316,SNR=8.1									
PERS	**Pernice**	83.54	326	*i*	P		P	09 40 10.9	-0.2	
PERS				*e*				09 40 25.2		
PERS				*i*	S		S	09 50 27.5	-1.9	
SOKA	**Soboth**	83.54	326	*i*	P		P	09 40 11.0	-0.1	
	comp=Z,100nm,1.3s,SNR=44									
J33A	**Davis**	83.55	39		P		P	09 40 10.4	-0.7	
	baz=317,SNR=13									
I34A	**Hadley**	83.56	38		P		P	09 40 10.6	-0.6	
	baz=318,SNR=6.8									
H35A	**Sunnyside Ranc**	83.57	37		P		P	09 40 11.3	+0.1	
	baz=318,SNR=101									
HPK	**Haverah Park**	83.57	339		AMS		AMS	10 20 44.0		
	comp=Z,1µm,16.6s									
GAL1	**Galloway**	83.60	341	⇑	*e* P		P	09 40 11.0	0.0	
KSCO	**Kaye Shedlock'**	83.60	45		P		P	09 40 11.2	-0.4	
	baz=314,SNR=6.4									
KSCO	**Kaye Shedlock'**	83.60	45	*e*	P		P	09 40 12.7	+1.0	
KSCO				*e*	pP		pP	09 40 21.6	-3.4	
G36A	**St. Michael**	83.68	36		P		P	09 40 11.3	-0.4	
	baz=319,SNR=8.5									
GCAM	**G?zelcaml?**	83.81	313	⇑	*i* P		P	09 40 12.3	-0.2	
VAY	**Valandovo**	83.86	319		*i* P		P	09 40 12.8	+0.1	
ZEY	**¨zmir**	83.86	314	⇑	*i* P		P	09 40 12.1	-0.6	
T25A	**Trinidad**	83.86	47		P		P	09 40 13.5	+0.4	
	baz=313,SNR=76									
T25A	**Trinidad**	83.86	47	*e*	P		P	09 40 13.6	+0.4	
OBKA	**Obir**	83.89	326	*i*	P		P	09 40 13.2	+0.4	
	comp=Z,13nm,0.8s									
M31A	**Lambtecht Ranc**	83.95	41		P		P	09 40 12.5	-0.7	
	baz=316,SNR=12									
BEBN	**Eben Emael**	83.97	334		P		P	09 40 12.8	-0.2	
BEBN					AP		pP	09 40 28.0	+1.5	
KBA	**Koelnbreinsper**	83.97	327	*i*	P		P	09 40 13.6	+0.2	
	comp=Z,74nm,1.8s,SNR=18									
L32A	**Elgin**	83.97	40		P		P	09 40 12.9	-0.4	
	baz=316,SNR=14									
SKO	**Skopje**	83.98	320	*i*	P		P	09 40 14.5	+1.2	
LHO	**Holmfirth**	84.00	339	*e*	P		P	09 40 13.8	+0.6	
MEM	**Membach**	84.00	333		P		P	09 40 13.9	+0.6	
	comp=Z,36nm,1.5s									
MEM					AP		pP	09 40 27.5	+0.8	
PLE	**Pljevlja**	84.02	322	⇑	*i* P		P	09 40 12.6	-1.0	
SNZO	**South Karori**	84.03	156		PFAKE			09 40 20.0	+6.8	
SNZO					LR		LR			
	comp=Z,1µm,22.0s									
K33A	**Hardington**	84.05	39		P		P	09 40 13.3	-0.4	
	baz=317,SNR=18									
LAZ	**Ladron**	84.07	51	*e*	P		P	09 40 14.8	+0.6	
J34A	**George**	84.07	38		P		P	09 40 13.1	-0.7	
	baz=318									
H36A	**Jessenland, He**	84.09	36		P		P	09 40 14.0	+0.2	
	baz=319,SNR=33									
IVA	**Berane**	84.11	321	⇑	*i* P		P	09 40 14.0	-0.1	
ANMO	**Albuquerque**	84.12	50	*c*	*i* P		P	09 40 14.8	+0.4	
ANMO					pmax		pmax			
	comp=Z,74nm,1.1s									
ANMO	**Albuquerque**	84.12	50	*e*	P		P	09 40 14.9	+0.4	
ANMO					LR		LR			
	comp=Z,510nm,21.0s									
BDRM	**Kayabasi**	84.12	313	⇑	*i* P		P	09 40 13.7	-0.5	
I35A	**Creekview Farm**	84.13	37		P		P	09 40 13.1	-0.9	
	baz=318,SNR=11									
SPMN	**Marine on St.**	84.13	35		P		P	09 40 13.7	-0.3	
	baz=320,SNR=16									
SPMN	**Marine on St.**	84.13	35	*e*	P		P	09 40 14.0	0.0	
PMOR	**Pomariorio Ree**	84.16	114	*e*	T		T	11 12 42.0		
	comp=Z,51nm,0.2s									
MYKA	**Terra Mystica**	84.19	327	*i*	P		P	09 40 13.6	-0.7	
	comp=Z,28nm,0.9s,SNR=10									
L33A	**Hoskins**	84.23	40		P		P	09 40 13.8	-0.8	
	baz=317,SNR=8.8									
WIM	**Isle of Man**	84.23	341	*e*	P		P	09 40 14.3	0.0	
PVY	**Plav**	84.28	321	⇑	*i* P		P	09 40 14.5	-0.5	
STU	**Stuttgart**	84.32	331	*e*	P		P	09 40 14.9	0.0	
STU					pmax		pmax			
	comp=Z,97nm,1.0s									
STU	**Stuttgart**	84.32	331	*e*	P		P	09 40 14.9	0.0	
	comp=Z,97nm,1.0s									
N31A	**Bailey Ranch,**	84.33	42		P		P	09 40 14.5	-0.7	
	baz=316,SNR=7.5									
BGNE	**Belgrade**	84.33	41		P		P	09 40 14.2	-0.9	
	baz=316,SNR=18									
BGNE	**Belgrade**	84.33	41	*e*	P		P	09 40 15.0	-0.2	
BOJS	**Bojanci**	84.34	325	*i*	P		P	09 40 14.4	-0.7	
BOJS				*i*				09 40 30.0		
BOJS				*e*	S		S	09 50 33.2	-4.2	
UPM	**Unac-Piva**	84.35	322	*e*	P		P	09 40 14.6	-0.8	
J35A	**Milford**	84.38	38		P		P	09 40 14.5	-0.8	
	baz=318,SNR=7.4									
BCLA	**Clavier**	84.41	334		P		P	09 40 16.0	+0.7	
	comp=Z,34nm,1.7s									
BCLA					AP		pP	09 40 29.5	+0.7	
Y22D	**IRIS PASSCAL I**	84.42	51		P		P	09 40 16.3	+0.4	
	baz=312,SNR=12									
Y22D	**IRIS PASSCAL I**	84.42	51	*e*	P		P	09 40 17.3	+1.4	
LPM	**Los Pinos Moun**	84.44	51	*e*	P		P	09 40 16.4	+0.4	
K34A	**Le Mars**	84.44	39		P		P	09 40 15.1	-0.6	
	baz=318,SNR=26									
I36A	**Fitzsimmons Fa**	84.47	37		P		P	09 40 15.3	-0.4	
	baz=319,SNR=19									
GMM	**Mts of Mourne**	84.48	342	*e*	P		P	09 40 16.2	+0.7	
WTTA	**Wattenberg**	84.54	328	*i*	P		P	09 40 15.9	-0.4	
	comp=Z,39nm,1.6s,SNR=6.2									
BNM	**Barren Site**	84.55	51	*e*	P		P	09 40 17.0	+0.4	
CWF	**Charnwood Fore**	84.56	338	⇑	*e* P		P	09 40 15.7	-0.3	
CWF					AMB		AMB	09 40 17.0		
	comp=Z,46nm,1.7s									
CWF					AMS		AMS	10 19 40.1		
	comp=Z,2µm,20.0s									
H37A	**Dierke Farm, C**	84.56	36		P		P	09 40 16.2	-0.1	
	baz=320,SNR=24									
JAVS	**Javornik**	84.57	326	*i*	P		P	09 40 15.1	-1.3	
JAVS				*e*				09 40 28.5		
JAVS				*e*	S		S	09 50 38.3	-1.6	
ABTA	**Abfaltersbach**	84.58

baz=316,SNR=7.6
ULC Ulcinj 85.10 321 ⇑ *i*P **P** 09 40 19.3 +0.3
RPZ Rata Peaks 85.10 159 P **P** 09 40 18.6 0.0
comp=Z,15nm,0.9s,baz=14,slow=5.7,SNR=5.3
FETA Feichten 85.11 329 *i* P **P** 09 40 18.9 -0.2
comp=Z,45nm,1.1s,SNR=16
HCY Herceg Novi 85.12 322 ⇑ *i*P **P** 09 40 18.8 -0.2
HSIG 85.14 57 *e*P **P** 09 40 19.9 +0.4
L35A Bielow Farm, R 85.14 39 P **P** 09 40 18.4 -0.8
baz=318,SNR=7.9
N33A J Bar K, Exete 85.18 41 P **P** 09 40 18.0 -1.4
baz=317
HLM1 Long Mynd 85.20 339 ⇑ *e*P **P** 09 40 19.1 -0.2
HLM1 AMS AMS 10 23 13.3
comp=Z,1µm,17.8s
YRE Yr Eifl 85.22 340 *e*P **P** 09 40 20.0 +0.7
J37A Redenius Farm, 85.22 37 P **P** 09 40 19.0 -0.6
baz=319,SNR=24
APE Apeiranthos 85.23 314 ⇓ *i*P **P** 09 40 18.6 -1.2
TIR Tirane 85.24 320 ⇓ *i*P **P** 09 40 19.7 0.0
TIR Tirane 85.24 320 PFAKE 09 40 30.0 +10
TIR LR LR
comp=Z,4µm,19.0s
DAVA Damuels 85.25 329 *i* PcP **P** 09 40 19.9 +0.1
comp=Z,37nm,0.9s,SNR=31
DAVA *i* sP **pP** 09 40 34.7 +1.4
comp=Z,73nm,0.9s
I38A Scanlan Farm, 85.25 36 P **P** 09 40 19.0 -0.7
baz=320,SNR=27
K36A Gilmore City 85.29 38 P **P** 09 40 19.5 -0.4
baz=319,SNR=19
CBKS Cedar Bluff 85.34 44 P **P** 09 40 19.3 -1.1
baz=316,SNR=9.6
CBKS Cedar Bluff 85.34 44 *e*P **P** 09 40 20.2 -0.1
CBKS Cedar Bluff 85.34 44 *e*P **P** 09 40 20.2 -0.1
CBKS LR LR
comp=Z,514nm,21.0s
P32A Huiting Farm, 85.38 42 P **P** 09 40 19.5 -0.9
baz=316,SNR=55
LBZ Lake Benmore 85.48 160 *e*P **P** 09 40 20.8 +0.3
DSB Dublin 85.49 341 *e*P **P** 09 40 21.0 +0.4
M35A Neola 85.55 39 P **P** 09 40 20.8 -0.4
baz=318,SNR=39
ECH Echery 85.56 331 ⇓ *e*P **P** 09 40 21.9 +0.7
L36A Harm Buss Farm 85.59 38 P **P** 09 40 21.1 -0.3
baz=318,SNR=14
K37A Belmond 85.59 37 P **P** 09 40 21.0 -0.4
baz=319,SNR=31
O33A Hebron 85.59 41 P **P** 09 40 20.3 -1.2
baz=317
N34A Lincoln 85.60 40 P **P** 09 40 20.3 -1.2
baz=317,SNR=24
STRD Stroud 85.65 338 *e*P **P** 09 40 20.9 -0.6
STRD AMB AMB 09 40 23.4
comp=Z,225nm,1.3s
HMNX Herstmonceux 85.69 337 AMS AMS 10 22 48.4
comp=Z,2µm,18.9s
MCH1 Michaelchurch 85.70 339 *e*P **P** 09 40 22.5 +0.7
J38A Wedel Dairy, R 85.73 36 P **P** 09 40 21.6 -0.4
baz=320,SNR=10
SANT Santorini 85.75 313 PFAKE 09 40 30.0 +7.6
SANT LR LR
comp=Z,630nm,19.0s
WOL Wolverton 85.78 338 AMS AMS 10 20 41.3
comp=Z,2µm,25.1s
MONM Monmouth 85.78 339 ⇑ *e*P **P** 09 40 22.1 0.0
MONM AMB AMB 09 40 24.5
comp=Z,92nm,1.1s
MONM AMS AMS 10 22 00.0
comp=Z,1µm,17.8s
Q32A Meitler Ranch, 85.86 43 P **P** 09 40 22.3 -0.6
baz=316,SNR=18
MOF Molkenrain 85.87 331 ⇓ *e*P **P** 09 40 23.3 +0.5
LPW Lampeter 85.89 340 ⇑ *e*P **P** 09 40 22.6 -0.1
LPW AMS AMS 10 21 55.5
comp=Z,1µm,18.4s
MEH Mehetia 85.92 116 *e*T T 11 14 53.0
comp=Z,55nm,0.2s
O34A Beatrice 85.98 41 P **P** 09 40 22.4 -1.0
baz=317,SNR=24
P33A Williams Farm, 86.00 42 P **P** 09 40 22.6 -0.9
baz=317
M36A Felix, Anita 86.00 39 P **P** 09 40 23.2 -0.3
baz=318,SNR=32
L37A Phoenix Point, 86.02 38 P **P** 09 40 23.1 -0.4
baz=319,SNR=15
N35A Tabor 86.02 40 P **P** 09 40 23.3 -0.3
baz=318,SNR=52
TAOE Nuku Hiva Isla 86.06 104 *e*S **S** 09 50 58.2 +2.8
comp=Z,264nm,25.5s
TAOE Nuku Hiva Isla 86.06 104 *e*LR LR 10 07 33.0
comp=Z,3µm,25.3s,baz=314
TAOE Nuku Hiva Isla 86.06 104 *e*T T 11 15 10.7
comp=Z,109nm,0.3s
K38A Parkersburg 86.10 37 P **P** 09 40 23.2 -0.7
baz=320,SNR=8.8
TUE Stuetta 86.12 329 *e*P **P** 09 40 23.7 -0.5
comp=Z,53nm,1.2s
TUE LR LR
comp=Z,1µm,19.0s
R32A Long Quarter, 86.19 43 P **P** 09 40 23.4 -1.1
baz=316,SNR=14
Q33A Connelly Farm, 86.24 42 P **P** 09 40 23.8 -0.9
baz=317,SNR=29
O35A Humboldt 86.33 40 P **P** 09 40 24.3 -0.8
baz=318,SNR=13
P34A Walnut Farm, R 86.38 41 P **P** 09 40 24.3 -1.1
baz=317,SNR=58
L38A Oak Wood Farm, 86.39 37 P **P** 09 40 24.7 -0.7
baz=320,SNR=9.3
LOMF Lomont 86.40 331 ⇓ *e*P **P** 09 40 25.6 +0.2
N36A Muff Farm, Cla 86.40 39 P **P** 09 40 25.4 -0.1
baz=318,SNR=22
M37A Trindle Farm, 86.41 39 P **P** 09 40 25.4 -0.1
baz=319,SNR=24
SCIA State Center 86.45 38 *e*P **P** 09 40 26.4 +0.7
SCIA LR LR
comp=Z,668nm,22.0s
S32A Newby Ranch, P 86.58 44 P **P** 09 40 26.0 -0.4
baz=316,SNR=28
LAST Lasithi 86.59 313 ⇓ *i*P **P** 09 40 26.4 -0.2
R33A Olander Ranch, 86.66 43 P **P** 09 40 26.0 -0.8
baz=317,SNR=22
Q34A Chapman 86.78 42 P **P** 09 40 26.5 -0.8
baz=317,SNR=43
P35A Duane Minner, 86.81 41 P **P** 09 40 26.6 -0.9
baz=318,SNR=26
KSU1 Kansas State U 86.82 42 P **P** 09 40 27.1 -0.4
baz=317,SNR=43
KSU1 Kansas State U 86.82 42 *e*P **P** 09 40 26.8 -0.7
KSU1 LR LR
comp=Z,571nm,21.0s
N37A Lee Faris, Mou 86.82 39 P **P** 09 40 27.3 -0.2
baz=319,SNR=55
M38A Pleasantville 86.83 38 P **P** 09 40 27.2 -0.3
baz=319,SNR=21
IDI Anoyia 86.84 313 P **P** 09 40 26.8 -1.0
comp=Z,32nm,0.8s,baz=29,slow=9.6,SNR=18
IDI Anoyia 86.84 313 ⇓ *i*P **P** 09 40 26.3 -1.5
IDI Anoyia 86.84 313 *e*P **P** 09 40 26.1 -1.7
comp=Z,60nm,0.8s
IDI P **P** 09 40 26.8 -1.0
O36A Bolckow 86.91 40 P **P** 09 40 27.6 -0.3
baz=318,SNR=76
DAMY Dhamar 86.93 286 *e*P **P** 09 40 29.7 +0.9
comp=Z,22nm,0.9s
T32A Huddler Ranch, 86.96 44 P **P** 09 40 27.9 -0.4
baz=316,SNR=32
MNTX Cornudas Mount 86.97 52 P **P** 09 40 28.1 -0.3
baz=313,SNR=40
MNTX Cornudas Mount 86.97 52 *e*P **P** 09 40 28.2 -0.2
MNTX LR LR
comp=Z,452nm,19.0s
MSTX Muleshoe 87.01 49 P **P** 09 40 28.5 -0.2
baz=314,SNR=19
MSTX Muleshoe 87.01 49 *e*P **P** 09 40 28.8 +0.1
AMTX Amarillo 87.02 47 P **P** 09 40 28.7 0.0
baz=315
AMTX Amarillo 87.02 47 *e*P **P** 09 40 29.1 +0.4
R34A Isabella, Hill 87.06 42 P **P** 09 40 28.1 -0.7
baz=317,SNR=12
JFWS Jewell Farm 87.08 35 *e*P **P** 09 40 28.4 -0.3
JFWS Jewell Farm 87.08 35 *e*P **P** 09 40 28.4 -0.3
JFWS LR LR
comp=Z,978nm,21.0s
SIVA Sivas 87.08 313 ⇓ *i*P **P** 09 40 29.3 +0.5
P36A Good Intent, A 87.17 40 P **P** 09 40 28.5 -0.7
baz=318,SNR=45
S33A Kaszmaul Farm, 87.17 43 P **P** 09 40 29.2 -0.1
baz=317,SNR=13
N38A Joes South For 87.28 38 P **P** 09 40 29.4 -0.3
baz=319,SNR=37
Q35A Mercer Eighty, 87.30 41 P **P** 09 40 29.4 -0.4
baz=318,SNR=80
O37A Wolven Farm, M 87.30 39 P **P** 09 40 29.5 -0.3
baz=319,SNR=27
DYA Yadsworthy 87.36 339 ⇑ *e*P **P** 09 40 29.4 -0.6
DYA AMS AMS 10 24 38.3
comp=Z,1µm,16.5s
T33A Patterson Ranc 87.41 44 P **P** 09 40 29.9 -0.5
baz=317,SNR=14
U32A Winter Ranch, 87.49 45 P **P** 09 40 30.6 -0.3
baz=316
Q36A Arnold C. Orve 87.52 41 P **P** 09 40 30.2 -0.8
baz=318,SNR=9.7
VLC Villacollemand 87.55 327 PFAKE 09 40 40.0 +9.0
VLC LR LR
comp=Z,648nm,20.0s
S34A Willow Spring 87.58 43 P **P** 09 40 30.7 -0.5
baz=317,SNR=18
N39A Derby Farms, D 87.58 38 P **P** 09 40 30.8 -0.3
baz=320,SNR=45
R35A Emporia Munici 87.61 42 P **P** 09 40 31.4 +0.1
baz=318,SNR=25
AQU L'Aquila 87.63 324 *e*P **P** 09 40 32.1 +0.7
AQU pmax pmax
comp=Z,36nm,0.8s
AQU MLR MLR
comp=Z,1µm,20.0s
AQU L'Aquila 87.63 324 *e*P **P** 09 40 32.1 +0.7
comp=Z,36nm,0.8s
AQU LR LR
comp=Z,1µm,20.0s
VAL Valentia 87.63 343 *e*P **P** 09 40 31.7 +0.6
P37A Lathrop 87.63 40 P **P** 09 40 31.1 -0.3
baz=319,SNR=47
O38A Galt 87.67 39 P **P** 09 40 31.4 -0.2
baz=319,SNR=20
V32A Arapaho 87.94 45 P **P** 09 40 33.2 +0.2
baz=316,SNR=33
CCA1 Carnmenellis 87.95 339 AMS AMS 10 24 57.8
comp=Z,1µm,16.2s
U33A Lingo Farm, Me 87.95 44 P **P** 09 40 32.8 -0.3
baz=317,SNR=19
R36A Gordon, Harris 87.97 41 P **P** 09 40 32.7 -0.4
baz=318,SNR=21
S35A Otter Creek Ra 88.02 42 P **P** 09 40 33.1 -0.2
baz=318,SNR=44
P38A Dawn 88.02 39 P **P** 09 40 33.0 -0.3
baz=319,SNR=47
T34A McClaskey Farm 88.03 43 P **P** 09 40 33.1 -0.3
baz=317,SNR=20
O39A Kirksville 88.03 38 P **P** 09 40 33.3 -0.1
baz=320,SNR=23
Q37A Longview Farm, 88.11 40 P **P** 09 40 32.7 -1.1
baz=319,SNR=5.1
W32A Sentinel 88.26 46 P **P** 09 40 34.5 0.0
baz=316,SNR=47
U34A Anderson Ranch 88.27 44 P **P** 09 40 34.7 +0.2
baz=317,SNR=29
U34A Anderson Ranch 88.27 44 *e*P **P** 09 40 35.0 +0.5
CUC Castrocucco 88.29 321 *e*P **P** 09 40 33.3 -1.3
comp=Z,7.2nm,0.7s
CUC LR LR
comp=Z,1µm,20.0s
V33A Lossen Ranch, 88.30 45 P **P** 09 40 34.5 -0.2
baz=317,SNR=14
R37A Teagarden Farm 88.34 41 P **P** 09 40 33.9 -0.9
baz=318,SNR=23
BNI Bardonecchia 88.36 330 PFAKE 09 40 50.0 +15
BNI LR LR
comp=Z,2µm,19.0s
S36A Lake Cedric, C 88.37 42 P **P** 09 40 34.8 -0.2
baz=318,SNR=15
TIP Timpagrande 88.44 320 ⇓ *i*P **P** 09 40 34.9 -0.5
TIP Timpagrande 88.44 320 *e*P **P** 09 40 34.7 -0.7
comp=Z,69nm,1.3s
TIP LR LR
comp=Z,2µm,20.0s
O40A La Belle 88.46 38 P **P** 09 40 35.1 -0.3
baz=320,SNR=38
Q38A Cooks Store, C 88.47 40 P **P** 09 40 34.5 -0.9
baz=319,SNR=26
T35A Sooner Cattle 88.48 43 P **P** 09 40 35.5 -0.1
baz=318,SNR=23
W33A Caddo, Fort Co 88.68 45 P **P** 09 40 37.1 +0.6
baz=316,SNR=19
T36A Boggs Farm, Ca 88.71 42 P **P** 09 40 36.3 -0.3
baz=318,SNR=40
V34A Guthrie 88.72 44 P **P** 09 40 36.6 0.0
baz=317,SNR=57
V34A Guthrie 88.72 44 *e*P **P** 09 40 36.7 0.0
Q39A Willow Grove F 88.74 39 P **P** 09 40 36.4 -0.3
baz=320,SNR=30
X32A Elmer 88.74 46 P **P** 09 40 36.3 -0.5
baz=316,SNR=30
S37A Fort Scott 88.75 41 P **P** 09 40 35.9 -0.9
baz=318,SNR=53
U35A Pawnee 88.76 43 P **P** 09 40 36.7 -0.2
baz=317,SNR=12
PLDF La Plantade 88.77 332 ⇓ *e*P **P** 09 40 38.5 +1.7
WMOK Wichita Mounta 88.80 46 *e*P **P** 09 40 36.7 -0.4
WMOK Wichita Mounta 88.80 46 *e*P **P** 09 40 36.7 -0.4
WMOK LR LR
comp=Z,514nm,19.0s
P40A Paris 88.83 39 P **P** 09 40 36.9 -0.2
baz=320,SNR=29
AGO Saint Agoulin 88.88 333 ⇓ *e*P **P** 09 40 39.2 +2.0
R38A Fenwick Farm, 88.91 41 P **P** 09 40 36.5 -1.1
baz=319,SNR=17
SSB Saint Sauveur 89.00 331 PFAKE 09 40 50.0 +12
SSB LR LR
comp=Z,1µm,21.0s
W34A Bridge Creek, 89.01 45 P **P** 09 40 38.4 +0.3
baz=317,SNR=14
W34A Bridge Creek, 89.01 45 *e*P **P** 09 40 38.8 +0.7
X33A Lawton 89.10 46 P **P** 09 40 38.0 -0.5
baz=316,SNR=17
V35A Meyer Ranch, C 89.14 44 P **P** 09 40 38.3 -0.4
baz=317,SNR=22
PYM Petit Puy Mans 89.18 332 ⇓ *e*P **P** 09 40 40.4 +1.7
T37A Cheneyville 18 89.18 42 P **P** 09 40 38.4 -0.4
baz=318,SNR=24
Q40A Laux Farm, Aux 89.23 39 P **P** 09 40 38.7 -0.3
baz=320,SNR=25
R39A Chumby, Stover 89.26 40 P **P** 09 40 38.2 -0.9
baz=320
U36A Oologah 89.28 43 P **P** 09 40 38.9 -0.4
baz=318,SNR=7.6
SLBS Sierra La Lagu 89.29 60 *e*P **P** 09 40 40.8 +1.2
S38A Stockton 89.33 41 P **P** 09 40 38.3 -1.2
baz=319,SNR=21
HDIL Hopedale 89.37 36 P **P** 09 40 39.3 -0.3
baz=322,SNR=21
HDIL Hopedale 89.37 36 *e*P **P** 09 40 39.5 -0.1
HDIL LR LR
comp=Z,646nm,22.0s
Y33A Hilltop Ranch, 89.41 46 P **P** 09 40 39.4 -0.5
baz=316,SNR=26
X34A Smith Ranch, M 89.44 45 P **P** 09 40 40.2 +0.1
baz=317,SNR=28
LBL Lubilhac 89.53 332 ⇓ *e*P **P** 09 40 42.3 +1.9
W35A Tecumseh 89.57 44 P **P** 09 40 40.5 -0.2
baz=317
T38A Diamond 89.57 42 P **P** 09 40 40.0 -0.7
baz=319,SNR=59
CEL Celeste 89.58 320 *e*P **P** 09 40 40.6 -0.1
comp=Z,71nm,0.9s
CEL LR LR
comp=Z,1µm,19.0s
S39A Bolivar 89.59 41 P **P** 09 40 39.8 -1.0
baz=319,SNR=34
U37A Salina 89.61 42 P **P** 09 40 40.3 -0.5
baz=318,SNR=6.9
TUL1 Leonard 89.61 43 P **P** 09 40 40.7 -0.2
baz=318,SNR=37
TUL1 Leonard 89.61 43 *e*P **P** 09 40 40.6 -0.2
V36A Jenks 89.62 43 P **P** 09 40 40.7 -0.2
baz=318,SNR=27
TX31 Lajitas Ar. Si 89.66 53 *e*P **P** 09 40 40.5 -0.9
TX31 *e*P **P** 09 40 41.2 -0.1
TXAR Lajitas Array 89.67 53 P **P** 09 40 41.2 -0.1
comp=Z,36nm,0.7s,baz=301,slow=3.0,SNR=319
TXAR PP PP 09 44 18.9 +5.9
comp=Z,3.9nm,1.1s,baz=307,slow=4.6,SNR=3.9
TXAR PKKPbc **PKKPbc** 09 58 15.1 +1.8
comp=Z,0.8nm,0.8s,baz=145,slow=5.9,SNR=5.1
TXAR LR LR 10 14 20.8
comp=Z,542nm,22.0s,baz=0.0,slow=31
TXAR Lajitas Array 89.67 53 P **P** 09 40 41.2 -0.1
TXAR 09 44 19.0
TXAR pmax pmax
comp=Z,35nm,0.7s
TXAR pmax pmax
comp=Z,4.0nm,1.1s
R40A Maddies Statio 89.67 40 P **P** 09 40 40.4 -0.7
baz=320,SNR=43
ABTX Abilene, Hawle 89.81 48 P **P** 09 40 41.9 -0.1
baz=316,SNR=48
ABTX Abilene, Hawle 89.81 48 *e*P **P** 09 40 41.2 -0.7
ABTX *e*P **P** 09 40 41.8 -0.1
Z33A Whitaker Ranch 89.85 47 P **P** 09 40 41.8 -0.3
baz=316,SNR=28
W36A Wetumka 89.94 44 P **P** 09 40 42.2 -0.2
baz=318,SNR=28
Y34A Reagan Ranch, 89.95 46 P **P** 09 40 42.2 -0.3
baz=317,SNR=14
U38A Gravette 89.97 42 P **P** 09 40 42.1 -0.5
baz=319,SNR=28
ATD Arta Tunnel 89.97 284 P **P** 09 40 43.6 +0.6
comp=Z,10nm,0.8s,baz=86,slow=5.4,SNR=5.5
V37A Hulbert 89.98 43 P **P** 09 40 42.3 -0.3
baz=318,SNR=24
HPIG 90.02 55 *e*P **P** 09 40 43.2 +0.1
T39A Clever 90.06 41 P **P** 09 40 42.1 -0.8
baz=319,SNR=17
X35A Drake 90.07 45 P **P** 09 40 42.4 -0.7
baz=317,SNR=49
S40A Lebanon 90.08 40 P **P** 09 40 42.1 -1.0
baz=320,SNR=28
SADO Sadowa 90.19 28 *e*P **P** 09 40 43.7 +0.3
133A Hamilton Ranch 90.25 47 P **P** 09 40 43.5 -0.4
baz=316,SNR=20
Z34A Collier Ranch, 90.28 46 P **P** 09 40 43.9 -0.2
baz=317,SNR=24
X36A Centrahoma 90.29 44 P **P** 09 40 44.0 0.0
baz=318,SNR=57
HHAR Hobbs 90.33 42 *e*P **P** 09 40 43.6 -0.6
W37B Quinton 90.38 44 P **P** 09 40 44.4 -0.1
baz=318,SNR=31
Y35A Marietta 90.39 45 P **P** 09 40 44.1 -0.4
baz=317,SNR=17
V38A Canehill 90.39 42 P **P** 09 40 44.1 -0.5
baz=319,SNR=63
T40A Mansfield 90.41 40 P **P** 09 40 43.6 -1.0
baz=320,SNR=34
SLM Saint Louis 90.42 38 *e*P **P** 09 40 44.7 +0.2
SLM Saint Louis 90.42 38 *e*P **P** 09 40 44.7 +0.2
AAM Ann Arbor 90.48 32 *e*P **P** 09 40 46.1 +1.4
AAM Ann Arbor 90.48 32 *e*P **P** 09 40 46.1 +1.4
AAM LR LR
comp=Z,673nm,19.0s
U39A Green Forest 90.49 41 P **P** 09 40 44.1 -0.9
baz=319,SNR=46
TRQ Mont Tremblant 90.53 24 *e*P **P** 09 40 44.6 -0.4
SFIN Lafayette 90.53 35 P **P** 09 40 44.9 -0.1
baz=323,SNR=15
SFIN Lafayette 90.53 35 *e*P **P** 09 40 45.4 +0.3
LMQ La Malbaie 90.63 21 *e*P **P** 09 40 45.8 +0.3
233A Rising Star 90.69 48 P **P** 09 40 46.0 +0.1
baz=316,SNR=39
Z35A Perchaven, San 90.69 46 P **P** 09 40 45.6 -0.3
baz=317,SNR=33
134A White-Moore Ra 90.77 47 P **P** 09 40 46.1 -0.2
baz=317,SNR=33
V39A Pettigrew 90.82 42 P **P** 09 40 46.0 -0.5
baz=319,SNR=32
X37A Clayton 90.82 44 P **P** 09 40 46.6 +0.1
baz=318,SNR=25
U40A Yellville 90.84 41 P **P** 09 40 46.0 -0.6
baz=320,SNR=79
W38A Poteau 90.93 43 P **P** 09 40 46.6 -0.4
baz=319,SNR=26
X38A Whitesboro 91.06 43 P **P** 09 40 47.3 -0.3
baz=319,SNR=36
Y37A Hugo 91.13 44 P **P** 09 40 47.8 -0.2
baz=318,SNR=15
333A Richland Sprin 91.13 48 P **P** 09 40 48.0 0.0
baz=316,SNR=58
234A Clairette 91.14 47 P **P** 09 40 47.9 -0.2
baz=317,SNR=75
135A Vickery Place, 91.16 46 P **P** 09 40 48.0 -0.2
baz=317,SNR=15
Z36A Blue Ridge 91.20 45 P **P** 09 40 47.6 -0.7
baz=318,SNR=47
W39A Magazine 91.23 42 P **P** 09 40 47.8 -0.6
baz=319,SNR=14
JCT Junction City 91.25 49 P **P** 09 40 48.3 -0.3
baz=316,SNR=31
JCT Junction City 91.25 49 *e*P **P** 09 40 48.2 -0.4
JCT Junction City 91.25 49 *e*P **P** 09 40 48.2 -0.4
JCT LR LR
comp=Z,568nm,21.0s
V40A Witts Springs 91.28 41 P **P** 09 40 47.8 -0.9
baz=320,SNR=23
OLIL Olney 91.37 37 *e*P **P** 09 40 49.4 +0.5
CLTB Caltabellotta 91.44 322 PFAKE 09 41 00.0 +11
CLTB LR LR
comp=Z,1µm,20.0s
433A Art 91.48 49 P **P** 09 40 49.1 -0.5
baz=316,SNR=23
WHTX Lake Whitney, 91.55 47 P **P** 09 40 49.9 0.0
baz=317,SNR=53
WHTX Lake Whitney, 91.55 47 *e*P **P** 09 40 50.0 0.0
X39A Fountain Ranch 91.57 43 P **P** 09 40 49.8 -0.2
baz=319,SNR=43
334A Lometa 91.57 48 P **P** 09 40 49.7 -0.4
baz=317,SNR=54
W40A Ferguson Farm, 91.61 42 P **P** 09 40 49.7 -0.4
baz=320,SNR=17
SIUC Southern Illin 91.64 38 *e*P **P** 09 40 49.9 -0.3
Y38A Idabel 91.66 44 P **P** 09 40 49.7 -0.7
baz=319,SNR=13
Z37A Pogue Cattle C 91.71 45 P **P** 09 40 50.2 -0.4
baz=318,SNR=20
136A Ennis 91.73 46 P **P** 09 40 50.3 -0.4
baz=318,SNR=16
VSL Villasalto 91.74 325 PFAKE 09 41 00.0 +9.3
VSL LR LR
comp=Z,758nm,22.0s
BLO Bloomington 91.76 35 *e*P **P** 09 40 51.1 +0.3
BLO Bloomington 91.76 35 *e*P **P** 09 40 51.1 +0.3
MIAR Mount Ida 91.83 43 P **P** 09 40 50.9 -0.3
baz=319,SNR=60
MIAR Mount Ida 91.83 43 *e*P **P** 09 40 51.2 0.0
MIAR Mount Ida 91.83 43 *e*P **P** 09 40 51.2 0.0
MIAR LR LR
comp=Z,590nm,21.0s
434A Burnet 91.93 48 P **P** 09 40 50.9 -0.8
baz=317,SNR=22
LONY Lake Ozonia 91.93 25 *e*P **P** 09 40 50.8 -0.7
comp=Z,150nm,2.1s
LONY LR LR
comp=Z,601nm,22.0s
X301 Greenbrier Sit 91.93 42 *e*P **P** 09 40 51.4 -0.2
WHAR Wooly Hollow 91.95 41 *e*P **P** 09 40 51.6 -0.2
533A Kerrville 92.00 49 P **P** 09 40 51.8 -0.3
baz=316,SNR=7.5
Y39A Lockesburg 92.01 43 P **P** 09 40 51.7 -0.3
baz=319,SNR=53
Z38A Mt. Pleasant 92.03 44 P **P** 09 40 51.3 -0.8
baz=318,SNR=6.2
W41A Tony Mavity, V 92.06 42 P **P** 09 40 51.7 -0.6
baz=320,SNR=28
W41B Gary Mavity, V 92.06 42 P **P** 09 40 51.5 -0.7
baz=320,SNR=28
FRNY Flat Rock 92.07 24 *e*P **P** 09 40 52.5 +0.4
236A Katherine and 92.08 46 P **P** 09 40 51.3 -1.0
baz=318,SNR=7.2
137A Heron Place, G 92.08 45 P **P** 09 40 52.0 -0.4
baz=318
335A Moody 92.08 47 P **P** 09 40 51.8 -0.7
baz=317,SNR=6.4
WDD Wied Dalam 92.11 320 PFAKE 09 41 00.0 +7.6
WDD LR LR
comp=Z,1µm,19.0s
ERPA Erie 92.12 30 *e*P **P** 09 40 53.4 +1.0
X40A Basin Creek Fa 92.27 42 P **P** 09 40 52.8 -0.5
baz=320,SNR=20
UALR University of 92.32 42 *e*P **P** 09 40 53.9 +0.5
336A Riesel 92.35 47 P **P** 09 40 53.3 -0.3

	baz=317,SNR=20							
435B	**Jarrell**	92.35	48	P		P	09 40 53.4	-0.3
	baz=317							
633A	**Saathoff Ranch**	92.36	50	P		P	09 40 53.3	-0.4
	baz=316,SNR=20							
534A	**Blanco**	92.37	49	P		P	09 40 53.3	-0.6
	baz=316,SNR=27							
Y40A	**Okolona**	92.39	43	P		P	09 40 53.1	-0.7
	baz=319,SNR=15							
138A	**Matatall Enter**	92.41	45	P		P	09 40 54.0	+0.1
	baz=318,SNR=7.0							
ACSO	**Alum Creek Sta**	92.47	33	*e*P		P	09 40 54.6	+0.6
ACSO				LR		LR		
	comp=Z,708nm,20.0s							
Z39A	**Irene McRaven,**	92.48	44	P		P	09 40 54.1	-0.1
	baz=319							
237A	**Washetta, Mont**	92.49	46	P		P	09 40 54.2	0.0
	baz=318							
WCI	**Wyandotte Cave**	92.62	36	*e*P		P	09 40 55.0	+0.2
WCI	**Wyandotte Cave**	92.62	36	*e*P		P	09 40 55.0	+0.2
NCB	**Newcomb**	92.62	25	PFAKE			09 41 10.0	+15
NCB				LR		LR		
	comp=Z,9μm,20.0s							
832A	**Faith Ranch, C**	92.71	51	P		P	09 40 55.4	0.0
	baz=316,SNR=12							
WLAR	**White Oak Lake**	92.73	43	*e*P		P	09 40 55.9	+0.5
M54A	**Oil Creek Stat**	92.77	30	P		P	09 40 55.4	0.0
	baz=328,SNR=6.6							
139A	**Bunkhouse Ranc**	92.78	44	P		P	09 40 55.6	-0.1
	baz=319							
733A	**Divot King Ran**	92.81	50	P		P	09 40 56.0	+0.1
	baz=316,SNR=7.6							
436A	**Wall Ranch, Ga**	92.83	47	P		P	09 40 56.2	+0.3
	baz=317,SNR=6.0							
238A	**Jacksonville**	92.88	45	P		P	09 40 55.5	-0.6
	baz=318							
Z40A	**Long Farm, Mag**	92.90	43	P		P	09 40 55.8	-0.3
	baz=319,SNR=13							
535A	**Dale**	92.91	48	P		P	09 40 56.0	-0.3
	baz=317							
634A	**China Grove, S**	92.91	49	P		P	09 40 56.1	-0.1
	baz=316							
MDV	**Middlebury**	92.95	24	*e*P		P	09 40 57.0	+0.9
337A	**Centerville**	92.95	46	P		P	09 40 56.1	-0.3
	baz=318							
PKME	**Peaks-Kenny Pk**	93.01	21	*e*P		P	09 40 57.2	+0.8
PKME				LR		LR		
	comp=Z,913nm,19.0s							
833A	**Chaparral WMA,**	93.04	51	P		P	09 40 56.7	-0.1
	baz=316,SNR=10							
N54A	**Moraine State**	93.10	30	P		P	09 40 57.0	0.0
	baz=328,SNR=9.3							
437A	**Phantom Ranch,**	93.17	47	P		P	09 40 58.0	+0.6
	baz=318							
734A	**La Parita Cree**	93.17	50	P		P	09 40 56.8	-0.6
	baz=316,SNR=6.8							
536A	**Bastrop**	93.17	48	P		P	09 40 56.9	-0.5
	baz=317,SNR=7.9							
Z41A	**Richland Creek**	93.22	43	P		P	09 40 58.0	+0.4
	baz=320							
239A	**Gary**	93.24	45	P		P	09 40 57.8	+0.1
	baz=319							
338A	**Crockett**	93.25	46	P		P	09 40 57.9	+0.1
	baz=318							
635A	**Leesville**	93.25	49	P		P	09 40 58.1	+0.2
	baz=317							
140A	**Cam and Jess,**	93.27	44	P		P	09 40 57.9	+0.1
	baz=319							
NATX	**Nacogdoches**	93.32	45	P		P	09 40 59.2	+1.1
	comp=Z,31nm,1.0s							
NATX				LR		LR		
	comp=Z,1μm,21.0s							
Y42A	**Garnett, Star**	93.33	42	P		P	09 40 58.1	0.0
	baz=320,SNR=6.9							
ACCN	**Adirondack Com**	93.33	25	*e*P		P	09 40 59.1	+1.1
WVL	**Waterville**	93.54	22	*e*P		P	09 41 00.1	+1.3
WVT	**Waverly**	93.57	38	*e*P		P	09 40 59.2	+0.1
WVT	**Waverly**	93.57	38	*e*P		P	09 40 59.2	+0.1
438A	**Sam Houston St**	93.61	46	P		P	09 40 58.5	-0.9
	baz=318							
537A	**Green Hill Far**	93.61	47	P		P	09 40 59.4	0.0
	baz=318,SNR=5.4							
636A	**Smothers Creek**	93.61	48	P		P	09 40 59.5	0.0
	baz=317,SNR=10							
240A	**Hunter Patters**	93.62	45	P		P	09 40 59.4	-0.1
	baz=319							
933A	**Laredo**	93.62	51	P		P	09 41 00.3	+0.7
	baz=316,SNR=22							
735A	**Kenedy**	93.62	49	P		P	09 41 00.3	+0.7
	baz=317,SNR=6.0							
141A	**Papa Simpson,**	93.66	44	P		P	09 40 59.8	+0.2
	baz=320							
Z42A	**Norrel Spur, H**	93.67	43	P		P	09 40 59.5	-0.2
	baz=320,SNR=9.3							
834A	**Tilden**	93.69	50	P		P	09 41 00.5	+0.6
	baz=316							
339A	**Huntington**	93.70	45	P		P	09 40 59.9	+0.1
	baz=319							
Y43A	**Makayla and Ka**	93.73	41	P		P	09 40 59.9	0.0
	baz=321							
439A	**Center Grove,**	93.98	46	P		P	09 41 01.6	+0.4
	baz=318							
HKT	**Hockley**	93.99	47	*e*P		P	09 41 02.2	+1.1
HKT	**Hockley**	93.99	47	*e*P		P	09 41 02.2	+1.1
736A	**Circle Diamond**	93.99	49	P		P	09 41 01.7	+0.5
	baz=317,SNR=5.5							
835A	**Beeville**	94.02	50	P		P	09 41 02.2	+0.9
	baz=317							
OXF	**Oxford**	94.05	40	*e*P		P	09 41 01.2	-0.2
OXF	**Oxford**	94.05	40	*e*P		P	09 41 01.2	-0.2
Y44A	**Strider, Charl**	94.06	41	P		P	09 41 01.3	-0.1
	baz=321							
637A	**Eagle Lake**	94.07	48	P		P	09 41 02.4	+0.8
	baz=318							
934A	**Benavides**	94.09	51	P		P	09 41 02.6	+0.9
	baz=316							
241A	**Mo Tay, Goldon**	94.10	44	P		P	09 41 01.9	+0.3
	baz=320							
Z43A	**Armstrong Fami**	94.10	42	P		P	09 41 01.5	-0.1
	baz=321							
142A	**Monroe**	94.23	43	P		P	09 41 02.4	+0.2
	baz=320							
O56A	**Blue Knob Stat**	94.26	30	P		P	09 41 02.3	-0.1
	baz=329,SNR=6.7							
MCWV	**Mont Chateau**	94.26	31	*e*P		P	09 41 03.2	+0.9
034A	**Hebbronville**	94.38	51	P		P	09 41 03.9	+0.9
	baz=316,SNR=11							
143A	**Socs Landing,**	94.40	43	P		P	09 41 02.6	-0.5
	baz=320							
Z44A	**Pea Ridge, Bel**	94.48	42	P		P	09 41 03.8	+0.4
	baz=321							
341A	**Kurthwood**	94.48	45	P		P	09 41 03.3	-0.1
	baz=319							
Y45A	**Yeager Farm, C**	94.49	41	P		P	09 41 03.5	+0.1
	baz=322							
242A	**Grayson**	94.49	43	P		P	09 41 03.8	+0.4
	baz=320							
539A	**Cross D Ranch,**	94.52	46	P		P	09 41 03.7	+0.1
	baz=318							
638A	**Rosharon**	94.61	47	P		P	09 41 03.4	-0.7
	baz=318							
N59A	**State Game Lan**	94.76	28	P		P	09 41 03.6	-1.0
	baz=331							
KEST	**Kesra**	94.80	323	P		P	09 41 04.8	-0.1
	comp=Z,17nm,1.1s,baz=251,slow=3.7,SNR=7.6							
KEST				LR		LR	10 29 05.7	
	comp=Z,1μm,19.4s,baz=2.5,slow=39							
KEST	**Kesra**	94.80	323	*e*P		P	09 41 05.7	+0.8
Y46A	**Houston**	94.83	40	P		P	09 41 04.3	-0.7
	baz=322,SNR=7.0							
ZAIG	**Zacatecas**	94.91	57	*e*P		P	09 41 07.0	+1.0
ZAIG				*e*			09 41 19.4	
738A	**Farr-Stevens R**	94.92	48	P		P	09 41 05.4	-0.1
	baz=318							
144A	**Alexander Plac**	94.98	42	P		P	09 41 05.8	+0.1
	baz=321							
243A	**Waterproof**	94.99	43	P		P	09 41 06.1	+0.4
	baz=320							
035Z	**Hargill**	95.19	51	P		P	09 41 07.2	+0.5
	baz=316							
VBMS	**Vicksburg**	95.25	42	P		P	09 41 07.1	+0.1
	baz=321							
TZTN	**Tazewell**	95.26	35	*e*P		P	09 41 07.4	+0.5
145A	**Houston Renfro**	95.27	42	P		P	09 41 06.6	-0.4
	baz=321							
244A	**Avery, Jackson**	95.30	42	P		P	09 41 07.3	+0.1
	baz=321,SNR=6.3							
146A	**Union**	95.70	41	P		P	09 41 08.6	-0.4
	baz=322							
CPCT	**Cooper Cave**	95.71	36	*e*P		P	09 41 09.1	+0.1
245A	**Little AP, Sta**	95.73	42	P		P	09 41 08.7	-0.4
	baz=321							
344A	**Westbrook Farm**	95.73	43	P		P	09 41 09.2	+0.1
	baz=321							
Z47A	**Carrollton**	95.77	40	P		P	09 41 08.8	-0.4
	baz=322							
147A	**Livingston**	96.08	40	P		P	09 41 10.3	-0.4
	baz=322							
BLA	**Blacksburg**	96.09	33	*e*P		P	09 41 11.7	+0.9
BLA	**Blacksburg**	96.09	33	*e*P		P	09 41 11.7	+0.9
BLA				LR		LR		
	comp=Z,596nm,19.0s							
246A	**Jackson Lee, B**	96.15	41	P		P	09 41 11.1	+0.1
	baz=322							
CBN	**Corbin Frederi**	96.50	30	PFAKE			09 41 20.0	+7.5
CBN				LR		LR		
	comp=Z,790nm,20.0s							
ESDC	**Sonseca Array**	96.98	334	P		P	09 41 14.1	-0.6
	comp=Z,3.4nm,0.7s,baz=17,slow=4.1,SNR=16							
ESDC				LR		LR	10 29 43.7	
	comp=Z,2μm,20.5s,baz=45,slow=38							
ESLA	**Sonseca Array**	96.98	334	*e*P		P	09 41 15.1	+0.3
PAB	**San Pablo**	97.23	334	P		Pdif	09 41 16.0	0.0
PAB				pmax		pmax		
	comp=Z,5.0nm,0.9s							
PAB				MLR		MLR		
	comp=Z,2μm,20.0s							
PAB	**San Pablo**	97.23	334	P		Pdif	09 41 16.0	+0.1
	comp=Z,5.1nm,0.9s							
PAB				LR		LR		
	comp=Z,2μm,20.0s							
KMSC	**Kings Mountain**	97.43	34	P		P	09 41 16.2	-0.6
	baz=327							
MTE	**Manteigas**	97.51	337	PFAKE			09 41 30.0	+13
MTE				LR		LR		
	comp=Z,1μm,21.0s							
GOGA	**Godfrey**	97.87	37	PFAKE			09 41 30.0	+11
GOGA				LR		LR		
	comp=Z,693nm,22.0s							
BRAL	**Brewton**	97.90	41	PFAKE			09 41 30.0	+11
BRAL				LR		LR		
	comp=Z,658nm,20.0s							
RKT	**Rikitea**	98.72	112	*e*LR		LR	10 13 39.3	
	comp=Z,2μm,24.8s,baz=308							
CNNC	**Cliffs of the**	98.84	32	PFAKE			09 41 30.0	+6.9
CNNC				LR		LR		
	comp=Z,1μm,19.0s							
NHSC	**New Hope**	99.65	35	PFAKE			09 41 40.0	+13
NHSC				LR		LR		
	comp=Z,1μm,20.0s							
KMBO	**Kilima Mbogo**	102.13	278	PFAKE			09 41 50.0	+12
KMBO				LR		LR		
	comp=Z,419nm,22.0s							
RTC	**Rabat Centre**	103.10	334	PFAKE			09 41 50.0	+7.9
RTC				LR		LR		
	comp=Z,3μm,19.0s							
TEIG	**Tepich**	105.79	48	PFAKE			09 46 20.0	
TEIG				LR		LR		
	comp=Z,265nm,20.0s							
BBSR	**BB Station**	106.26	23	PFAKE			09 46 20.0	
BBSR				LR		LR		
	comp=Z,285nm,20.0s							
GTBY	**Guantanamo Bay**	113.20	38	PFAKE			09 46 30.0	
GTBY				LR		LR		
	comp=Z,429nm,22.0s							
MTDJ	**Mount Denham**	113.40	41	PFAKE			09 46 30.0	
MTDJ				LR		LR		
	comp=Z,434nm,22.0s							
GRTK	**Grand Turk**	113.67	33	PFAKE			09 46 30.0	
GRTK				LR		LR		
	comp=Z,697nm,20.0s							
JTS	**JuntasAbangare**	115.45	52	PFAKE			09 46 40.0	+15
JTS				LR		LR		
	comp=Z,330nm,19.0s							
SDDR	**Presa de Saban**	115.81	35	PFAKE			09 46 40.0	+14
SDDR				LR		LR		
	comp=Z,794nm,20.0s							
TORD	**Torodi Ar. Bea**	117.17	315	PKP		PKPdf	09 46 27.4	-1.2
	comp=Z,4.1nm,0.9s,baz=45,slow=1.6,SNR=21							
TORD				PP		PP	09 47 37.6	-0.7
	comp=Z,7.1nm,1.0s,baz=38,slow=5.3,SNR=12							
TORD				PKKPbc		PKKPbc	09 56 52.8	+1.1
	comp=Z,1.4nm,0.9s,baz=198,slow=2.7,SNR=7.1							
LSZ	**Lusaka**	117.70	272	PFAKE			09 46 40.0	+10
LSZ				LR		LR		
	comp=Z,601nm,20.0s							
SJG	**San Juan**	118.79	30	PFAKE			09 46 40.0	+8.4
SJG				LR		LR		
	comp=Z,556nm,22.0s							
BCIP	**Isla Barro Col**	119.47	49	PFAKE			09 46 40.0	+7.0
BCIP				LR		LR		
	comp=Z,381nm,21.0s							
PAYG	**Puerto Ayora**	119.80	65	PFAKE			09 46 50.0	+16
PAYG				LR		LR		
	comp=Z,1μm,21.0s							
MAW	**Mawson**	120.05	206	PKP		PKPdf	09 46 31.5	-0.9
	comp=Z,8.0nm,0.8s,baz=359,slow=0.7,SNR=15							
MAW				PKKPbc		PKKPbc	09 56 41.9	-0.2
	comp=Z,1.9nm,0.6s,baz=249,slow=8.6,SNR=5.2							
ANWB	**Willy Bob**	120.85	26	PFAKE			09 46 50.0	+14
ANWB				LR		LR		
	comp=Z,607nm,19.0s							
MOTC	**Monteria, Cord**	122.21	45	*e*P		PKPdf	09 46 37.4	-0.9
FDF	**Fort de France**	123.78	27	PFAKE			09 46 50.0	+8.7
FDF				LR		LR		
	comp=Z,704nm,21.0s							
OCAC	**Ocana**	123.95	43	*e*P		PKPdf	09 46 39.7	-2.2
GRMC	**Gramalote, San**	124.67	43	*e*P		PKPdf	09 46 42.0	-1.3
CBRI	**Barrientos, No**	124.67	43	*e*P		PKPdf	09 46 43.7	+0.4
BRRC	**Barranca, Sant**	124.67	44	*e*P		PKPdf	09 46 43.1	0.0
SDV	**Santo Domingo**	124.83	40	*e*PKPdf		PKPdf	09 46 43.4	-0.2
SDV				LR		LR		
	comp=Z,320nm,19.0s							
SDV	**Santo Domingo**	124.83	40	*e*P		PKPdf	09 46 43.1	-0.5
GUYC	**Guyana, Colomb**	125.25	47	*e*P		PKPdf	09 46 44.2	-0.5
NORC	**Norcasia**	125.28	47	*e*P		PKPdf	09 46 43.7	-0.6
BARC	**Barichara**	125.39	44	*e*P		PKPdf	09 46 44.8	+0.1
GRGR	**Grenville**	125.99	29	PFAKE			09 47 00.0	+14
GRGR				LR		LR		
	comp=Z,869nm,19.0s							
RUSC	**La Rusia**	126.02	45	*e*P		PKPdf	09 46 44.8	-1.5
DBIC	**Dimbokro**	126.11	317	PKP		PKPdf	09 46 45.3	-0.5
	comp=Z,13nm,0.8s,baz=24,slow=2.1,SNR=19							
ROSC	**El Rosal**	126.18	47	PKP		PKPdf	09 46 46.8	+0.4
	comp=Z,2.4nm,0.6s,baz=121,slow=4.7,SNR=11							
TIC	**Toumodi**	126.22	317	*e*PKP1		PKPdf	09 46 45.1	-0.9
KIC	**Kosan Boka**	126.31	317	*e*PKP1		PKPdf	09 46 45.5	-0.7
	comp=Z,43nm,0.9s							
LIC	**Lamto**	126.57	317	*e*PKP1		PKPdf	09 46 45.9	-0.8
	comp=Z,56nm,1.6s							
BOSA	**Boshof**	126.88	260	PKP		PKPdf	09 46 47.1	+0.2
	comp=Z,4.7nm,0.7s,baz=48,slow=1.6,SNR=11							
BOSA	**Boshof**	126.88	260	PKIKP		PKPdf	09 46 47.1	+0.2
BOSA				pmax		pmax		
	comp=Z,8.0nm,0.7s							
QSPA	**South Pole Qui**	127.23	180	*e*PKPdf		PKPdf	09 46 45.1	-1.2
QSPA				LR		LR		
	comp=Z,686nm,19.0s							
OTAV	**Otavalo**	127.27	54	*e*PKPdf		PKPdf	09 46 47.9	-0.7
OTAV				LR		LR		
	comp=Z,364nm,21.0s							
OTAV	**Otavalo**	127.27	54	*e*P		PKPdf	09 46 48.2	-0.4
TSUM	**Tsumeb**	128.29	274	PFAKE			09 47 00.0	+10
TSUM				LR		LR		
	comp=Z,671nm,21.0s							
SYO	**Syowa Base**	128.71	207	*e*pPKPdf		pPKPdf	09 47 02.0	-1.0
NNA	**Nana**	137.21	64	*i* PKIKP		PKPdf	09 47 08.1	+1.4
NNA	**Nana**	137.21	64	*e*PKPdf		PKPdf	09 47 06.8	+0.1
NNA				LR		LR		
	comp=Z,342nm,21.0s							
PTGA	**Pitinga**	138.32	34	PFAKE			09 47 20.0	+11
PTGA				LR		LR		
	comp=Z,40μm,21.0s							
VNA2	**Neumayer--Watz**	142.82	196	PKP		PKPdf	09 47 11.3	-3.8
	baz=97,slow=2.9							
VNA3	**Neumayer Olymp**	143.06	195	PKP		PKPab	09 47 11.2	+0.1
VNA1	**Neumayer--Stat**	143.22	196	PKP		PKPab	09 47 12.0	+0.4
ASCN	**Ascension**	143.44	318	PFAKE			09 47 30.0	+12
ASCN				LR		LR		
	comp=Z,2μm,21.0s							
SAML	**Samuel**	143.76	45	PFAKE			09 47 30.0	+11
SAML				LR		LR		
	comp=Z,358nm,21.0s							
SHEL	**Horse Pasture**	144.15	298	*i* PKIKP		PKPdf	09 47 18.5	-0.6
LPAZ	**La Paz**	146.27	59	*e*P		PKPdf	09 47 22.8	-0.7
LPAZ	**La Paz**	146.27	59	PKPbc		PKPdf	09 47 23.8	+0.3
	comp=Z,87nm,1.0s,baz=345,slow=3.5,SNR=151							
RCBR	**Riachuelo**	148.41	355	*e*PKPbc		PKPbc	09 47 29.5	-0.5
RCBR				LR		LR		
	comp=Z,383nm,19.0s							
LVC	**Limon Verde**	149.80	69	*e*PKPdf		PKPdf	09 47 30.5	+1.6
LVC				LR		LR		
	comp=Z,1μm,22.0s							
LCO	**Las Campanas**	151.73	82	*e*PKPbc		PKPbc	09 47 37.7	-0.2
LCO				LR		LR		
	comp=Z,752nm,20.0s							
YJA	**Yavi**	152.02	65	*e*P		PKPdf	09 47 34.2	+1.8
HJA	**Humahuaca**	152.74	66	*e*P		PKPbc	09 47 40.9	+0.4
ROC1	**El Roble**	152.98	90	*e*P		PKPbc	09 47 40.2	-0.4
VCA	**Vinchina**	153.56	80	*e*P		PKPdf	09 47 35.1	+1.0
AZAP	**Zapla**	153.60	68	*e*P		PKPdf	09 47 35.0	+0.6
AGUA	**GUANDACOL**	153.67	81	*e*P		PKPdf	09 47 34.6	+0.4
RTLS	**Leoncito**	153.95	87	*e*P		PKPdf	09 47 35.1	+0.3
FSA	**Cafayete**	153.98	72	*e*P		PKPdf	09 47 34.6	-0.2
AUSP	**Uspallata**	154.03	88	*e*P		PKPdf	09 47 35.1	+0.3
AMOG	**MOGNA**	154.26	84	*e*P		PKPdf	09 47 35.9	+0.9
RTLL	**Cerro Villicun**	154.43	85	*e*P		PKPdf	09 47 35.4	+0.3
RTCV	**Cerro Valdivia**	154.57	86	*e*P		PKPdf	09 47 34.8	-0.5
ASAL	**Salagasta**	154.59	88	*e*P		PKPdf	09 47 34.5	-0.8
ARCO	**CERRO ARCO**	154.60	89	*e*P		PKPdf	09 47 35.9	+0.4
AAGR	**Agrelo**	154.76	89	*e*P		PKPdf	09 47 36.5	+0.9
PLCA	**Paso Flores**	154.85	107	*e*P		PKPbc	09 47 41.5	-2.7
PLCA	**Paso Flores**	154.85	107	PKPbc		PKPbc	09 47 44.0	-0.1
	comp=Z,14nm,1.0s,baz=282,slow=3.9,SNR=14							
PLCA	**Paso Flores**	154.85	107	PKIKP		PKPbc	09 47 44.0	-0.1
PLCA				pmax		pmax		
	comp=Z,14nm,1.0s							
AVFE	**Valle Fertil**	154.97	83	*e*P		PKPdf	09 47 36.2	+0.2
CYA	**Choya**	155.30	77	*e*P		PKPdf	09 47 36.4	0.0
ACAN	**Cantal**	155.79	86	*e*P		PKPdf	09 47 36.9	0.0
MRA	**San Martin**	157.01	86	*e*P		PKPdf	09 47 35.5	-3.1
EFI	**East Falkland**	160.11	142	PFAKE			09 47 50.0	+8.5
EFI				LR		LR		
	comp=Z,1μm,20.0s							
CPUP	**Villa Florida**	160.43	61	PKP		PKPdf	09 47 42.0	-0.7
	comp=Z,2.1nm,0.8s,baz=320,slow=2.8,SNR=4.7							
CPUP				PKPab		PKPab	09 48 22.9	-1.0
	comp=Z,5.7nm,0.7s,baz=300,slow=5.4,SNR=11							
TRQA	**Tornquist**	161.28	99	PFAKE			09 47 50.0	+6.7
TRQA				LR		LR		
	comp=Z,578nm,20.0s							
SPB	**Sao Paulo**	164.09	32	PFAKE			09 48 00.0	+14
SPB				LR		LR		
	comp=Z,507nm,21.0s							

IDC 28 09:38:32.0±12.0, 59°33S×141°22W, h0km, mb3.7/2, mb1 4.0/2, mb1mx3.7/22, mbtmp3.7/2, Error ellipse: s-maj=1048.0km s-min=46.7km az=158.0, Pacific-Antarctic Ridge

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
ASAR	**Alice Springs**	67.37	262	P		P	09 49 29.5	+0.6
	1.1nm,1.0s,baz=137,slow=5.3,SNR=5.6							
H01W1	**Cape Leeuwin H**	67.51	239	T		T	11 04 17.2	
	baz=142,slow=76,SNR=46							
H01W2	**Cape Leeuwin H**	67.51	239	T		T	11 04 25.8	
	baz=142,slow=76,SNR=44							
H01W3	**Cape Leeuwin H**	67.52	239	T		T	11 04 28.8	
	baz=142,slow=76,SNR=44							
WRA	**Warramunga Arr**	70.25	264	P		P	09 49 46.3	-0.6
	0.6nm,0.9s,baz=149,slow=5.5,SNR=5.1							
YKA	**Yellowknife Ar**	123.21	14	PKP		PKPdf	09 57 28.0	-0.9
	0.1nm,0.8s,baz=205,slow=2.7,SNR=3.0							
ILAR	**Eielson Array**	123.86	357	PKP		PKPdf	09 57 30.7	+0.5
	0.9nm,1.0s,baz=204,slow=1.9,SNR=6.7							

IDC 28 09:50:44.1±1.3, 37°15N×142°27E, h0km, mb3.4/3, mb1 3.6/4, mb1mx3.3/54, mbtmp3.3/4, ML3.0/1, Error ellipse: s-maj=52.1km s-min=25.9km az=126.0
ISCJB 28 09:50:48.1±1.5, 37°42N±0°05×141°90E±0°08, h23km±8km, mb3.5/3, Error ellipse: s-maj=12.1km s-min=6.8km az=31.5
JMA 28 09:50:50.1±0.1, 37°41N×141°79E, h38km±2km, M3.6
ISC 28 09:50:47.1±2.0, 37°41N±0°06×141°91E±0°07, h17km±11km, n21, σ1s05/23, mb3.6/3, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
JFK	**Kawauchi**	0.83	268	P		Pn	09 51 04.0	0.0
JFK				S		Sg	09 51 14.0	-0.3
ONAJ	**Iwakimizuishiy**	0.94	251	S		Sb	09 51 16.6	-0.6
JMM	**Marumori**	1.00	298	P		Pn	09 51 06.6	+0.2
JMM				S		Sb	09 51 18.4	-0.5
JIO	**Ouri**	1.14	337	P		Pg	09 51 09.1	0.0
JIO				S		Sb	09 51 22.3	-0.5
JFT	**Otama**	1.26	276	P		Pn	09 51 10.0	+0.1
JFT				S		Sb	09 51 25.5	-0.8
JOU	**Okura**	1.38	314	P		Pb	09 51 12.8	+0.4
JMK	**Ichinoseki**	1.64	341	P		Pb	09 51 16.9	+0.1
JMK				S		Sn	09 51 36.0	+0.2
JYS	**Shirataka**	1.67	300	P		Pb	09 51 17.0	-0.5
JFY	**Yanaizu**	1.76	271	P		Pn	09 51 17.9	+1.1
JFY				S		Sn	09 51 39.1	+0.3
JYK	**Kaneyama**	1.94	321	P		Pn	09 51 20.8	+1.5
JYK				*e*S		Sn	09 51 43.5	+0.1
MJAR	**Matsushiro Arr**	3.09	255	Pn		Pn	09 51 37.0	+1.8
	1.5nm,0.3s,baz=72,slow=17,SNR=7.4							
MAT	**Matsushiro**	3.09	255	P		Pn	09 51 38.0	+2.9
MAT				S		Sn	09 52 12.6	+0.9

	comp=E,2µm,0.3s						
CHCP	**Chirah Chowk**	**2.85**	**281**	P	**Pg**	**09 53 54.1**	**-2.1**
DDI	**Dehra Dun**	**3.10**	**157**	*e*P	**Pn**	**09 53 53.9**	**+2.5**
DDI				*e*S	**Sn**	**09 54 29.2**	**+0.2**
DDI				IAML		09 54 41.8	
	comp=E,584nm,0.5s						
DDI				IAML		09 54 42.3	
	comp=N,656nm,1.2s						
JOSI	**Joshimath**	**3.61**	**136**	*e*P	**Pn**	**09 53 59.3**	**+0.7**
CEP	**Cherat**	**3.99**	**281**	P	**Pb**	**09 54 08.2**	**-4.4**
THW	**Thamme Wali**	**4.12**	**266**	P	Pb	09 54 09.5	-5.3
RTK	**Rohtak**	**4.14**	**183**	*ex*	x	09 54 15.9	
NDI	**New Delhi**	**4.51**	**173**	*e*P	**Pn**	**09 54 10.9**	**+0.1**
NDI				*e*S	**Sn**	**09 55 02.1**	**-1.7**
LGTI	**Lohaghat**	**4.84**	**139**	*e*P	**Pn**	**09 54 15.3**	**+0.1**
SONA	**Sohna**	**4.93**	**175**	*e*P	**Pn**	**09 54 17.3**	**+0.8**
SONA				*e*S	**Sn**	**09 55 10.8**	**-3.3**
SONA				AML	AML	09 55 35.2	
	comp=E,84nm,1.2s						
KUDL	**Kundal**	**5.02**	**181**	*e*P	**Pn**	**09 54 17.1**	**-0.6**
KHET	**Khetri**	**5.14**	**188**	*e*P	**Pn**	**09 54 20.0**	**+0.6**
KHET				*e*S	**Sn**	**09 55 15.3**	**-3.9**
KSH	**Kashi**	**6.34**	**355**	Pn	**Pn**	**09 54 38.5**	**+2.4**
KSH				Sn	**Sn**	**09 55 48.5**	**-0.6**
KSH				smax	smax		
	comp=N,47nm,0.4s						
KSH				smax	smax		
	comp=E,66nm,0.5s						
AAK	**Ala-Archa**	**9.59**	**351**	Pn	**Pn**	**09 55 23.7**	**+3.2**
	comp=E,2.2nm,0.3s,baz=147,slow=7.2,SNR=13						
AAK	**Ala-Archa**	**9.59**	**351**	*e*Pn	**Pn**	**09 55 23.6**	**+3.0**
	comp=E,4.5nm,0.4s						
AAK				Pn	Pn	09 55 23.7	+3.2
EKS2	**Erkin-Say**	**9.73**	**347**	*e*Pn	**Pn**	**09 55 26.1**	**+3.6**
	comp=E,7.3nm,0.7s						
TKM2	**Tokmak 2**	**9.76**	**356**	*e*Pn	**Pn**	**09 55 26.6**	**+3.7**
	comp=E,6.2nm,0.6s						
KKAR	**Karatay Array**	**11.01**	**336**	*e*Pn	**Pn**	**09 55 41.8**	**+1.8**
	comp=E,11nm,0.5s						
MKAR	**Makanchi Array**	**14.27**	**16**	Pn	**Pn**	**09 56 24.1**	**-0.4**
	comp=E,0.5nm,0.3s,baz=198,slow=12,SNR=17						
MKAR				Sn	**Sn**	**09 58 56.6**	**-6.6**
	comp=E,0.4nm,0.3s,baz=194,slow=24,SNR=7.0						
HYB	**Hyderabad**	**15.79**	**173**	*i* P	**Pn**	**09 56 40.0**	**-5.0**
HYB				*e*S	**Sn**	**09 59 43.0**	**+2.4**
KURBB	**Kurchatov Arra**	**17.48**	**4**	P	**Pn**	**09 57 06.3**	**+0.1**
	comp=E,0.3nm,0.3s,baz=193,slow=11,SNR=28						
KURK	**Kurchatov**	**17.58**	**4**	P	**Pn**	**09 57 06.3**	**-1.1**
KURK				*e*Pn	**P**	**09 57 07.0**	**-1.5**
ABKAR	**Akbulak array**	**20.31**	**327**	*e*P	Pn	09 57 40.7	+0.3
	comp=E,4.9nm,0.6s						
BVAR	**Borovoye Array**	**20.34**	**349**	P	Pn	09 57 40.4	-0.3
	comp=E,5.2nm,0.5s,baz=156,slow=11,SNR=32						
BRVK	**Borovoye**	**20.39**	**349**	*e*P	Pn	09 57 40.7	-0.6
	comp=E,14nm,0.7s						
ZALV	**Zalesovo Beam**	**21.56**	**13**	P	**P**	**09 57 52.9**	**+0.9**
	comp=E,3.1nm,0.4s,baz=190,slow=7.3,SNR=8.2						
AKTO	**Aktyubinsk**	**22.02**	**327**	P	**P**	**09 57 59.8**	**+2.8**
	comp=E,12nm,0.6s,baz=115,slow=11,SNR=22						
CHTO	**Chiang Mai**	**24.57**	**120**	*e*P	**P**	**09 58 20.8**	**-2.0**
	comp=E,2.9nm,0.6s						
CMAR	**Chiang Mai Arr**	**24.79**	**121**	P	**P**	**09 58 23.8**	**-1.1**
	comp=E,4.2nm,0.6s,baz=309,slow=9.5,SNR=27						
SONM	**Songino Array**	**26.75**	**48**	P	**P**	**09 58 43.8**	**+1.3**
	comp=E,1.5nm,0.4s,baz=237,slow=10.0,SNR=5.4						
BRTR	**Keskin Array B**	**34.93**	**293**	P	**P**	**09 59 57.0**	**+2.2**
	comp=E,2.9nm,1.0s,baz=106,slow=8.7,SNR=7.8						
AKASG	**Malin Array Be**	**38.62**	**311**	P	**P**	**10 00 27.9**	**+2.1**
	comp=E,0.4nm,0.4s,baz=83,slow=6.4,SNR=4.7						
FINES	**FINESS Array B**	**42.80**	**327**	P	**P**	**10 01 02.2**	**+2.0**
	comp=E,0.7nm,0.5s,baz=114,slow=9.4,SNR=7.2						
KLR	**Kul'dur**	**43.47**	**51**	P	**P**	**10 01 06.3**	**+0.4**
	comp=E,1.6nm,1.0s,baz=274,slow=11,SNR=4.0						
ARCES	**ARCESS Array B**	**45.97**	**338**	P	**P**	**10 01 27.4**	**+1.9**
	comp=E,2.5nm,0.5s,baz=108,slow=8.1,SNR=16						
NB2	**NORSAR Subarra**	**49.78**	**325**	P	**P**	**10 01 56.1**	**+0.9**
	comp=Z,2.3nm,1.0s,baz=93,slow=7.9						
NOA	**NORSAR Array B**	**49.78**	**325**	P	**P**	**10 01 56.5**	**+1.2**
	comp=Z,1.2nm,0.8s,baz=95,slow=7.5,SNR=5.7						
SPITS	**Spitsbergen Ar**	**51.77**	**347**	P	**P**	**10 02 11.9**	**+1.9**
	comp=E,2.2nm,0.7s,baz=112,slow=11,SNR=4.1						
SEY	**Seymchan**	**54.64**	**33**	P	**P**	**10 02 31.0**	**-0.2**
	comp=Z,1.7nm,0.6s,baz=297,slow=4.7,SNR=6.2						
TORD	**Torodi Ar. Bea**	**70.40**	**273**	P	**P**	**10 04 16.4**	**-1.0**
	comp=Z,1.2nm,0.7s,baz=62,slow=4.0,SNR=9.7						
BPAW	**Bear Paw Mtn.**	**76.05**	**20**	*e*P	**P**	**10 04 50.1**	**+0.1**
WRA	**Warramunga Arr**	**76.31**	**125**	P	**P**	**10 04 50.3**	**-1.7**
	comp=Z,0.9nm,0.5s,baz=320,slow=6.4,SNR=26						
INK	**Inuvik**	**76.35**	**11**	P	**P**	**10 04 52.3**	**+0.8**
	comp=Z,1.2nm,0.5s,baz=338,slow=6.4,SNR=21						
ILAR	**Eielson Array**	**76.61**	**18**	P	**P**	**10 04 53.2**	**0.0**
	comp=Z,1.0nm,0.5s,baz=305,slow=4.7,SNR=15						
PAX	**Paxson**	**78.45**	**18**	*e*P	**P**	**10 05 03.4**	**-0.2**
	comp=Z,1.9nm,0.6s						
ASAR	**Alice Springs**	**78.56**	**128**	P	**P**	**10 05 02.9**	**-1.7**
	comp=Z,0.9nm,0.7s,baz=314,slow=5.5,SNR=18						
SML	**Sawmill**	**78.61**	**20**	*e*P	**P**	**10 05 03.7**	**-0.7**
DAWY	**Dawson**	**78.99**	**15**	*e*P	**P**	**10 05 06.2**	**-0.3**
	comp=Z,2.8nm,0.9s						
YKA	**Yellowknife A**	**84.23**	**5**	P	**P**	**10 05 34.0**	**-0.1**
	comp=Z,1.3nm,0.6s,baz=343,slow=5.1,SNR=59						
STKA	**Stephens Creek**	**89.10**	**130**	P	**P**	**10 05 57.3**	**-1.0**
	comp=Z,2.1nm,0.9s,baz=285,slow=5.5,SNR=4.0						

*ISCJB **28** 09:56:43.5±1.5, 34.9°N±0.1°×34.67°E±0.07°, h9km±13km, Error ellipse: s-maj=18.8km s-min=9.3km az=9.7*
*CSEM **28** 09:56:43.3±0.6, 34.86°N×34.69°E, h10km, MD3.5, Error ellipse: s-maj=13.5km s-min=7.0km az=165.0*
*DDA **28** 09:56:45.2, 35.06°N×34.70°E, h24km, Md3.5*

ISC 28 09:56:43.2±1.7, 34.99°N±0.07°×34.64°E±0.05, h8km±12km, n16, σ0.968/28, Cyprus region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
LFK	**Lefkose**	**0.95**	**288**	*e*PG	**Pn**	**09 57 03.5**	**+0.5**
LFK				*e*SG	**Sn**	**09 57 17.3**	**+0.5**
LFK	**Lefkose**	**0.95**	**288**	*e*Pg	**Pn**	**09 57 03.5**	**+0.5**
LFK				*e*Sg	**Sn**	**09 57 17.3**	**+0.5**
LEF	**Lefka**	**1.44**	**276**	*e*PN	**Pg**	**09 57 10.7**	**-0.1**
LEF	**Lefka**	**1.44**	**276**	*e*Pn	**Pg**	**09 57 10.7**	**-0.1**
KIZK	**Mersin**	**1.54**	**345**	*i* P	**Pg**	**09 57 13.0**	**+0.2**
KIZK				*i* S	**Sg**	**09 57 33.6**	**+0.9**
KIZK	**Mersin**	**1.54**	**345**	P	**Pg**	**09 57 13.0**	**+0.2**
KIZK				S	**Sg**	**09 57 33.6**	**+0.9**
YAYL	**Yayladag**	**1.59**	**49**	*i* P	**Pb**	**09 57 12.6**	**-0.4**
YAYL				*i* S	**Sg**	**09 57 34.3**	**0.0**
YAYL	**Yayladag**	**1.59**	**49**	P	**Pb**	**09 57 12.6**	**-0.4**
YAYL				S	**Sg**	**09 57 34.3**	**0.0**
MERS	**Mersin**	**1.88**	**357**	*e*PN	**Pn**	**09 57 16.4**	**+0.6**
MERS	**Mersin**	**1.88**	**357**	*e*Pn	**Pn**	**09 57 16.4**	**+0.6**
DED	**Mersin**	**1.97**	**4**	*i* P	**Pb**	**09 57 19.4**	**0.0**
DED				*i* S	**Sb**	**09 57 43.8**	**-0.4**
ERMK	**Ermenek**	**2.16**	**320**	*i* P	**Pn**	**09 57 19.9**	**+0.1**
ERMK				*i* S	**Sb**	**09 57 50.0**	**+0.1**
ERMK	**Ermenek**	**2.16**	**320**	P	**Pn**	**09 57 19.9**	**+0.1**
ERMK				S	**Sb**	**09 57 50.0**	**+0.1**
GULE	**Gulek**	**2.29**	**3**	*i* P	**Pg**	**09 57 27.3**	**+0.1**
GULE				*i* S	**Sb**	**09 57 53.5**	**-0.1**
KERG	**Konya-Eregli**	**2.45**	**350**	*i* P	**Pb**	**09 57 26.0**	**-1.7**
KERG				*i* S	**Sb**	**09 57 57.4**	**-0.8**
KERG	**Konya-Eregli**	**2.45**	**350**	P	**Pb**	**09 57 26.0**	**-1.7**
KERG				S	**Sb**	**09 57 57.4**	**-0.8**

MEX 28 09:57:31.2±0.3, 14.21°N×92.13°W, h15km, MD3.7, Near coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
THIG		**0.71**	**349**	*e*P	Pg	09 57 43.6	-1.5
THIG				*i* S	Sg	09 57 51.7	-2.7
PCIG		**1.82**	**325**	*e*P	Pn	09 57 58.8	-3.2
PCIG				*e*S	Sn	09 58 20.1	-4.8
CCIG	**Comitan**	**2.06**	**360**	*e*P	Pn	09 58 02.5	-3.0
CCIG				*e*S	Sn	09 58 27.0	-4.1

*CSEM **28** 10:00:14.8±0.3, 55.95°N×15.61°E, h2km, ML2.5, Error ellipse: s-maj=7.4km s-min=4.2km az=136.0, Mining explosion.*

UPP 28 10:00:15.2±0.4, 55.99°N×15.58E, h0km, ML2.5, Explosion, Baltic Sea

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
BSD	**Bornholm Skovb**	**0.95**	**204**	*i* P	Pg	10 00 32.8	-0.6
BSD	**Bornholm Skovb**	**0.95**	**204**	*i* P	Pg	10 00 32.8	-0.6
DEL	**Delary**	**1.07**	**298**	P	Pg	10 00 35.4	-0.3
DEL				S	Sn	10 00 52.7	-0.3
DEL	**Delary**	**1.07**	**298**	P	Pg	10 00 35.4	-0.3
DEL				S	Sn	10 00 52.7	-0.3
OSKU	**Oskarshamn**	**1.24**	**13**	P	Pg	10 00 38.3	-0.7
OSKU	**Oskarshamn**	**1.24**	**13**	P	Pg	10 00 38.3	-0.7
LUNU	**Lund**	**1.26**	**254**	P	Pg	10 00 38.7	-0.6
LUNU				S	Sg	10 00 55.7	+0.2
LUNU	**Lund**	**1.26**	**254**	P	Pg	10 00 38.7	-0.5
LUNU				S	Sg	10 00 55.7	+0.2
BJUU	**Bjuv**	**1.44**	**275**	P	Pn	10 00 41.5	-0.9
BJUU	**Bjuv**	**1.44**	**275**	P	Pn	10 00 41.5	-1.0
BYXU	**Byxelkrok**	**1.53**	**31**	P	Pn	10 00 43.4	-0.3
BYXU	**Byxelkrok**	**1.53**	**31**	P	Pn	10 00 43.4	-0.3
ASPU	**Aespoe**	**1.54**	**21**	P	Pn	10 00 43.6	-0.2
ASPU	**Aespoe**	**1.54**	**21**	P	Pn	10 00 43.6	-0.3
EKSU	**Eksjoe**	**1.60**	**355**	P	Pn	10 00 44.6	-0.1
EKSU	**Eksjoe**	**1.60**	**355**	P	Pn	10 00 44.6	-0.1
GNOU	**Gnosjoe**	**1.65**	**323**	P	Pn	10 00 45.2	-0.2
GNOU	**Gnosjoe**	**1.65**	**323**	P	Pn	10 00 45.2	-0.2
VSTU	**Vaestervik**	**1.76**	**17**	P	Pn	10 00 47.4	+0.6
VSTU	**Vaestervik**	**1.76**	**17**	P	Pn	10 00 47.4	+0.5
FABU	**Falkenberg**	**1.89**	**304**	P	Pn	10 00 48.2	-0.4
FABU	**Falkenberg**	**1.89**	**304**	P	Pn	10 00 48.2	-0.4

IDC 28 10:01:35.1±1.3, 26.45N×110.09E, h0km, mb3.4/5, mb1 3.6/5, mb1mx3.4/40, mbtmp3.4/5, MS4.2/1, Ms1 4.2/1, ms1mx3.2/35, Error ellipse: s-maj=80.1km s-min=22.0km az=68.0, Southeastern China

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SONM	**Songino Array**	**21.54**	**353**	P	P	10 06 27.0	+1.0
	0.7nm,0.5s,baz=183,slow=12,SNR=4.1						
MKAR	**Makanchi Array**	**29.91**	**320**	P	P	10 07 44.5	-0.1
	0.4nm,0.8s,baz=142,slow=7.3,SNR=3.6						
WRA	**Warramunga Arr**	**51.77**	**151**	P	P	10 10 45.2	+0.5
	0.4nm,0.5s,baz=332,slow=8.7,SNR=7.6						
ASAR	**Alice Springs**	**54.89**	**153**	P	P	10 11 07.2	-0.4
	0.3nm,0.5s,baz=331,slow=6.9,SNR=8.7						
ASAR				LR	LR	10 34 28.8	
	comp=Z,245nm,21.0s,baz=199,slow=36						
YKA	**Yellowknife Ar**	**84.46**	**19**	P	P	10 14 08.8	-0.6
	0.1nm,0.7s,baz=322,slow=3.9,SNR=3.8						

JMA 28 10:07:36.8±0.1, 35.80N×140.06E, h65km±1km, M1.4, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JAG	**Ashikaga**	**0.79**	**322**	S	Sn	10 08 04.9	+0.9
JOD2	**Odawara 2**	**0.96**	**236**	P	Pn	10 07 53.9	-0.6
JOD2				S	Sn	10 08 06.7	-0.9
JRY	**Ryogami san**	**0.96**	**283**	P	Pn	10 07 55.6	+1.0
JYN	**Shimob**	**1.27**	**257**	P	Pn	10 07 58.9	+0.3
JYN				S	Sn	10 08 14.9	-0.1

JMA 28 10:24:03.2±0.1, 36.78N×138.16E, h4km±3km, M0.4, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MAT	**Matsushiro**	**0.24**	**171**	P	Pg	10 24 07.9	+0.1
MAT				S	Sg	10 24 11.6	+0.6
MAT	**Matsushiro**	**0.24**	**171**	P	Pg	10 24 07.9	+0.1
MAT				*e*S	Sg	10 24 11.5	+0.5
JNG	**Nsakai**	**0.38**	**187**	P	Pg	10 24 10.5	0.0
JNG				*e*S	Sg	10 24 16.3	+0.9

*KRNET **28** 10:26:26.1±0.1, 39.75°N×76.03°E, mb3.5*
*NNC **28** 10:26:28.4±3.0, 39.61°N×75.95E, h0km, mb3.9, mpv3.6, Error ellipse: s-maj=26.0km s-min=10.8km az=139.0*

ISC 28 10:26:32.0±2.2, 39.87N±0.10°×75.81E±0.07, h10km, n14, σ1.918/28, 22C-4D, Southern Xinjiang

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SFK	**Sufi-Kurgan**	**1.78**	**275**	⇑*e*P	**Pn**	**10 27 02.5**	**-0.6**
	baz=279						
SFK				⇑*e*S	**Sg**	**10 27 29.5**	**+0.1**
	baz=279						
SFK	**Sufi-Kurgan**	**1.78**	**275**	⇓P	**Pn**	**10 27 02.7**	**-0.4**
	13nm,0.3s						
SFK				⇓S	**Sg**	**10 27 28.7**	**-0.6**
	38nm,0.4s						
KZA	**Kyzart**	**2.25**	**349**	⇑*i*P	**Pn**	**10 27 09.4**	**-0.3**
	baz=346						
KZA				⇑*i*S	**Sb**	**10 27 40.1**	**-1.0**
	baz=346						
ULHL	**Ulahol**	**2.40**	**8**	⇑*i*P	**Pn**	**10 27 10.9**	**-0.7**
	baz=3.0						
ULHL				⇑*i*S	**Sn**	**10 27 42.2**	**+1.1**
	baz=3.0						
OHH	**Osh**	**2.41**	**287**	⇑*e*P	**Pn**	**10 27 12.2**	**+0.6**
	baz=288						
OHH				⇑*e*S	**Sb**	**10 27 45.5**	**+0.1**
	baz=288						
KDJ	**Kajisay**	**2.49**	**24**	⇑*e*P	**Pn**	**10 27 12.4**	**-0.3**
	baz=20						
KDJ				⇑*e*S	**Sb**	**10 27 46.0**	**-1.6**
	baz=20						
UCH	**Uchtor**	**2.56**	**338**	⇓*i*P	**Pn**	**10 27 14.5**	**+0.6**
	baz=336						
UCH				⇓*i*S	**Sb**	**10 27 49.3**	**-0.6**
	baz=336						
BOOM	**Boomskoye usch**	**2.62**	**2**	⇑*e*P	**Pn**	**10 27 15.5**	**+0.9**
	baz=359						
BOOM				⇑*e*S	**Sb**	**10 27 50.7**	**-0.8**
	baz=359						
AML	**Almayashu**	**2.77**	**325**	⇑*i*P	**Pn**	**10 27 17.5**	**+0.6**
	baz=324						
AML				⇑*i*S	**Sb**	**10 27 54.2**	**-1.9**
	baz=324						
AAK	**Ala-Archa**	**2.94**	**341**	⇑*i*P	**Pn**	**10 27 19.5**	**+0.6**
	baz=339						
AAK				⇑*i*S	**Sb**	**10 27 58.3**	**-2.3**
	baz=339						
AAK	**Ala-Archa**	**2.94**	**341**	P	**Pn**	**10 27 19.7**	**+0.8**
	10nm,0.3s						
AAK				S	**Sb**	**10 27 59.8**	**-0.8**
	34nm,0.6s						
TKM2	**Tokmak 2**	**3.06**	**357**	⇑*i*P	**Pn**	**10 27 21.6**	**+1.0**
	baz=354						
TKM2				⇑*i*S	**Sb**	**10 28 01.8**	**-2.2**
	baz=354						
TKM2	**Tokmak 2**	**3.06**	**357**	⇑P	**Pn**	**10 27 21.8**	**+1.3**
	7.8nm,0.5s						
TKM2				⇑S	**Sb**	**10 28 03.8**	**-0.2**
	26nm,0.6s						
ANVS	**Anan'yevo**	**3.23**	**25**	⇑*e*P	**Pn**	**10 27 22.4**	**-0.6**
	baz=22						
ANVS				⇑*e*S	**Sn**	**10 28 04.2**	**+2.6**
	baz=22						

*ISCJB **28** 10:36:27.0±2.4, 38.1°N±0.1°×38.07°E±0.08, h10km±9km, Error ellipse: s-maj=24.6km s-min=7.5km az=17.6*
*CSEM **28** 10:36:27.3±0.4, 38.07°N×38.06E, h12km, MD2.5, Error ellipse: s-maj=11.9km s-min=2.5km az=12.0*
*ISK **28** 10:36:28.0, 38.21°N×38.10E, h3km, MD2.5*
*DDA **28** 10:36:30.3, 38.26°N×38.10E, h7km, Md2.6*

ISC 28 10:36:28.3±2.5, 38.2N±0.2×38.09E±0.04, h17km±11km, n8, σ0.842/16, Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
AKCD	**Akcadag**	**0.18**	**315**	*i* P	**Pb**	**10 36 33.5**	**+0.1**
AKCD				*i* S	**Sb**	**10 36 36.4**	**-0.4**
AKCD	**Akcadag**	**0.18**	**315**	P	**Pb**	**10 36 33.5**	**+0.1**
AKCD				S	**Sb**	**10 36 36.4**	**-0.4**
DARE	**Darende-Malaty**	**0.62**	**311**	*e*PG	**Pg**	**10 36 40.5**	**-0.2**
DARE				*e*SG	**Sb**	**10 36 49.7**	**+0.3**
DARE	**Darende-Malaty**	**0.62**	**311**	*e*Pg	**Pg**	**10 36 40.5**	**-0.2**
DARE				*e*Sg	**Sb**	**10 36 49.7**	**+0.3**
SVRC	**Sivrice-ELAZID**	**0.98**	**77**	*e*PG	**Pg**	**10 36 47.2**	**-0.2**
SVRC				*e*SG	**Sn**	**10 37 01.2**	**+0.1**
SVRC	**Sivrice-ELAZID**	**0.98**	**77**	*e*Pg	**Pg**	**10 36 47.2**	**-0.2**
SVRC				*e*Sg	**Sn**	**10 37 01.2**	**+0.1**
PTK	**Pertek**	**1.25**	**54**	*e*PN	**Pg**	**10 36 52.0**	**-0.6**
PTK				*e*SN	**Sg**	**10 37 09.6**	**+0.6**
PTK	**Pertek**	**1.25**	**54**	*e*Pn	**Pg**	**10 36 52.0**	**-0.6**
PTK				*e*Sn	**Sg**	**10 37 09.6**	**+0.6**

*NIED **28** 10:42:00, 42.60N×145.10E, h26km, Mw4.0 Best double couple: M0 1.16000×10^15 NP1:φs41.00000°, δ58.00000°, λ-165.00000°. NP2:φs303.00000°, δ77.00000°, λ-33.00000°.*
*JMA **28** 10:42:43.4, 42.53N×145.08E, h53km±1km, M4.2*
JMA Felt I J1.
*MOS **28** 10:42:43.3±1.3, 42.52N×144.99E, h53km, mb4.3/11, Error ellipse: s-maj=14.3km s-min=9.3km az=78.1*
*ISCJB **28** 10:42:44.0±0.7, 42.57N±0.05×145.06E±0.05, h54km±5km, mb4.0/22, MS4.6/1, Error ellipse: s-maj=9.5km s-min=4.4km az=151.7*
*NEIC **28** 10:42:45.0±1.1, 42.52N×145.00E, h49km±10km, mb4.4/6, Error ellipse: s-maj=11.2km s-min=9.5km az=138.0*
NEIC Recorded [1 JMA] in eastern and southeastern Hokkaido.
*SKHL **28** 10:42:44.4±0.4, 42.53N×145.06E, h58km±3km, mb4.5/3*
*IDC **28** 10:42:46.3±2.4, 42.43N×144.99E, h64km±19km, mb3.7/15, mb1 3.9/18, mb1mx3.7/55, mbtmp4.0/18, MS3.9/2, Ms1 3.9/2, ms1mx2.8/65, Error ellipse: s-maj=16.8km s-min=16.3km az=134.0*

ISC 28 10:42:44.4±1.3, 42.55N±0.06×145.08E±0.04, h42km±11km, n66, σ1.900/74, mb4.1/22, 8C-2D, Hokkaido region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JAK	**Akkeshi**	**0.53**	**328**	⇑P	**Pn**	**10 42 55.3**	**-0.4**
JAK				*e*S	**Sn**	**10 43 04.3**	**+0.6**
NEM2	**Nemuro 2**	**0.95**	**30**	⇑P	**Pn**	**10 43 01.1**	**-0.2**
NEM2				*e*S	**Sn**	**10 43 13.8**	**+0.1**
JOB	**Onbets**	**0.99**	**292**	⇓P	**Pn**	**10 43 01.4**	**-0.4**
JOB				*e*S	**Sn**	**10 43 14.8**	**+0.2**
JNK	**Nakash**	**1.07**	**346**	⇑P	**Pn**	**10 43 02.3**	**-0.7**
JNK				*e*S	**Sn**	**10 43 15.9**	**-0.8**
JAR	**Ashorobuto**	**1.22**	**308**	⇑P	**Pn**	**10 43 04.5**	**-0.5**
JAR				*e*S	**Sn**	**10 43 19.9**	**-0.5**
JCH	**Churui**	**1.27**	**274**	⇓P	**Pn**	**10 43 05.6**	**-0.1**
JCH				*e*S	**Sn**	**10 43 22.0**	**+0.4**
MYR	**Moyori**	**1.36**	**260**	*e*P	**Pn**	**10 43 07.0**	**+0.1**
JRA	**Rausu**	**1.39**	**1**	⇑P	**Pn**	**10 43 07.0**	**-0.3**
JRA				*e*S	**Sn**	**10 43 24.0**	**-0.5**
ERM	**Erimo**	**1.52**	**250**	*e*P	**Pn**	**10 43 10.1**	**+1.0**
ERM	**Erimo**	**1.52**	**250**	*e*PN	**Pn**	**10 43 10.1**	**+1.0**
ERM	**Erimo**	**1.52**	**250**	*e*Pn	**Pn**	**10 43 10.1**	**+1.0**
JEM	**Erimo**	**1.52**	**250**	P	**Pn**	**10 43 09.5**	**+0.4**
YUK	**Yuzh-Kuril'sk**	**1.59**	**21**	*e*P	**Pn**	**10 43 10.0**	**-0.1**
YUK				AMB	AMB	10 43 10.7	
	100nm,0.2s						
YUK				*i* S	**Sn**	**10 43 29.3**	**-0.1**
YUK				A	A	10 43 30.4	
	760nm,0.4s						
YUK				A	A	10 43 30.4	
	900nm,0.4s						
YUK	**Yuzh-Kuril'sk**	**1.59**	**21**	*c i*PN	**Pn**	**10 43 09.9**	**-0.1**
YUK				*i* S	**Sn**	**10 43 29.1**	**-0.3**
YUK				pmax	pmax		
	comp=Z,850nm,0.5s						
YUK				pmax	pmax		
	comp=E,721nm,0.1s						
YUK				pmax	pmax		
	comp=N,363nm,0.2s						
YUK				smax	smax		
	comp=N,4µm,0.4s						
YUK				smax	smax		
	comp=E,10µm,0.5s						
JTKR	**Abashiri--Toko**	**1.66**	**329**	⇑P	**Pn**	**10 43 11.3**	**+0.2**
HRK	**Horoka**	**1.70**	**303**	*e*P	**Pn**	**10 43 11.7**	**0.0**
HRK				*e*S	**Sn**	**10 43 32.4**	**+0.1**
JNBK	**Urakawa-nobuka**	**1.75**	**262**	P	**Pn**	**10 43 11.6**	**-0.6**
SHO	**Shikotan**	**1.84**	**43**	*i* P	**Pn**	**10 43 13.3**	**-0.2**
SHO				AMB	AMB	10 43 14.5	
	comp=E,80nm,0.2s						
SHO				*i* S	**Sn**	**10 43 34.6**	**-0.9**
SHO				A	A	10 43 44.1	
	comp=E,130nm,0.2s						
SHO				A	A	10 43 44.1	
	comp=E,290nm,0.2s						
SHO	**Shikotan**	**1.84**	**43**	*c i*PN	**Pn**	**10 43 13.3**	**-0.2**
SHO				*i* S	**Sn**	**10 43 34.6**	**-0.9**
SHO				pmax	pmax		
	comp=E,55nm,0.6s						
SHO				pmax	pmax		
	comp=Z,161nm,0.6s						
SHO				pmax	pmax		
	comp=N,57nm,0.2s						
SHO				smax	smax		
	comp=N,2µm,0.5s						
SHO				smax	smax		
	comp=E,3µm,0.6s						
JKA	**Kamikawa-asahi**	**2.40**	**312**	*e*P	**Pn**	**10 43 22.2**	**+1.1**
ASAJ	**Asahikawa**	**2.40**	**312**	P	**Pn**	**10 43 22.2**	**+1.0**
	comp=E,20nm,0.3s,baz=159,slow=11,SNR=44						
ASAJ				S	**Sn**	**10 43 53.4**	**+4.1**
	comp=E,31nm,0.3s,baz=59,slow=33,SNR=37						
KUR	**Kuril'sk**	**3.36**	**36**	*e*P	**Pn**

KURK	Kurchatov	44.96	304	P		P		10 50 55.5	+0.5
KURBB	Kurchatov Arra	45.04	304	P		P		10 50 55.5	-0.2
	comp=Z,4.2nm,0.2s,baz=74,slow=8.9,SNR=2.9								
EGAK	Eagle	45.79	35	*e*P		P		10 51 01.0	-0.4
	comp=Z,2.1nm,0.5s								
INK	Inuvik	48.20	30	P		P		10 51 20.8	+0.7
	comp=Z,2.3nm,0.6s,baz=301,slow=7.2,SNR=31								
INK	Inuvik	48.20	30	*e*P		P		10 51 20.3	+0.2
	comp=Z,4.6nm,0.9s								
INK				P		P		10 51 20.8	+0.7
BVAR	Borovoye Array	49.10	310	P		P		10 51 27.4	+0.1
	comp=Z,0.5nm,0.3s,baz=82,slow=10,SNR=2.3								
SPITS	Spitsbergen Ar	55.67	349	P		P		10 52 14.9	-0.8
	comp=Z,2.1nm,0.8s,baz=76,slow=5.2,SNR=4.0								
RES	Resolute Bay	56.55	16	*e*P		P		10 52 21.6	-0.3
RES				pmax	pmax				
	comp=Z,3.0nm,0.7s								
RES	Resolute Bay	56.55	16	*e*P		P		10 52 21.6	-0.3
	comp=Z,3.4nm,0.7s								
ABKAR	Akbulak array	56.63	309	*e*P		P		10 52 22.5	-0.4
	comp=Z,0.4nm,0.4s								
YKA	Yellowknife Ar	57.64	33	P		P		10 52 30.0	+0.2
	comp=Z,0.9nm,0.7s,baz=303,slow=6.9,SNR=25								
YKA	Yellowknife Ar	57.64	33	*e*P		P		10 52 30.0	+0.2
YKA	Yellowknife Ar	57.64	33	P		P		10 52 30.0	+0.2
YKA				pmax	pmax				
	comp=Z,1.0nm,0.7s								
WRA	Warramunga Arr	62.96	191	P		P		10 53 06.0	-0.6
	comp=Z,0.6nm,0.9s,baz=6.6,slow=7.5,SNR=3.5								
FINES	FINESS Array B	65.25	332	P		P		10 53 20.5	-0.7
	comp=Z,1.2nm,0.6s,baz=41,slow=6.1,SNR=6.4								
KBZ	Khabaz	69.45	311	P		P		10 53 47.3	-0.7
	comp=Z,0.5nm,0.4s,baz=63,slow=2.3,SNR=2.6								
NVAR	Mina Array Bea	69.50	56	P		P		10 53 48.6	-0.2
	comp=Z,0.6nm,0.7s,baz=283,slow=7.0,SNR=4.4								
NOA	NORSAR Array B	70.17	338	P		P		10 53 51.9	-0.3
	comp=Z,0.5nm,0.6s,baz=36,slow=6.2,SNR=3.3								
PDAR	Pinedale Array	71.84	48	P		P		10 54 03.7	+0.7
	comp=Z,0.5nm,0.6s,baz=253,slow=2.4,SNR=6.6								
TXAR	Lajitas Array	84.58	55	P		P		10 55 14.8	+1.4
	comp=Z,0.2nm,0.6s,baz=273,slow=1.7,SNR=3.1								
KEST	Kesra	92.23	325	LR		LR		11 41 44.0	
	comp=Z,257nm,21.9s,baz=186,slow=38								

JMA 28 10:45:43.4±0.2, 36.71N×142.12E, h27km±4km, M3.5, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	Kawauchi	1.19	304	P	Pn	10 46 04.6	+0.2
JHO	Hitachi	1.25	266	P	Pn	10 46 05.2	+0.1
JHO				S	Sn	10 46 21.2	+0.1
JMM	Marumori	1.57	318	P	Pn	10 46 09.7	+0.3
JFT	Otama	1.64	300	P	Pb	10 46 11.7	-1.2
JFT				S	Sb	10 46 32.5	-0.7
JOU	Okura	2.02	325	P	Pb	10 46 17.6	-1.8
JOU				S	Sb	10 46 42.7	-1.4
MAT	Matsushiro	3.15	268	P	Pn	10 46 33.1	+1.8
MAT				S	Sn	10 47 10.5	+2.5

IDC 28 10:53:57.5±8.9, 1.40N×124.60E, h0km, mb3.5/3, mb1 3.7/3, mb1mx3.4/38, mbtmp3.6/3, Error ellipse: s-maj=193.3km s-min=137.4km az=65.0, Minahassa Peninsula, Sulawesi

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	Warramunga Arr	23.27	156	P	P	10 59 06.2	-0.6
	0.5nm,0.4s,baz=334,slow=11,SNR=11						
ASAR	Alice Springs	26.51	161	P	P	10 59 38.7	+1.7
	0.2nm,0.5s,baz=344,slow=9.5,SNR=5.8						
STKA	Stephens Creek	36.81	155	P	P	11 01 06.0	-1.3
	1.7nm,0.7s,baz=335,slow=6.9,SNR=4.0						

CSEM 28 10:55:04.7±0.3, 40.69N×37.66E, h10km, MD2.6, Error ellipse: s-maj=7.4km s-min=5.9km az=154.0
ISCJB 28 10:55:05.2±0.6, 40.68N±0.03×37.64E±0.05, h3km±12km, Error ellipse: s-maj=6.2km s-min=5.4km az=32.9
DDA 28 10:55:05.3, 40.68N×37.66E, h7km, Md2.6
ISC 28 10:55:04.0±1.3, 40.71N±0.03×37.68E±0.03, h2km±12km, n16, σ0.54, 28, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ORDU	Ordu-Boztepe	0.31	26	*e*P	Pb	10 55 11.8	-0.5
ORDU				*i* S	Sb	10 55 18.1	+0.2
ORDU	Ordu-Boztepe	0.31	26	P	Pb	10 55 11.8	-0.5
ORDU				S	Sb	10 55 18.1	+0.2
RSDY	Resadiye-TOKAT	0.41	221	*e*PG	Pg	10 55 11.7	-0.1
RSDY				*e*SG	Sg	10 55 18.2	+1.1
RSDY	Resadiye-TOKAT	0.41	221	*e*Pg	Pg	10 55 11.7	-0.1
RSDY				*e*Sg	Sg	10 55 18.2	+1.1
SUSE	Susehri	0.64	141	*i* P	Pb	10 55 17.9	-0.1
SUSE				*i* S	Sb	10 55 27.2	-0.2
SUSE	Susehri	0.64	141	P	Pb	10 55 17.9	-0.1
SUSE				S	Sb	10 55 27.2	-0.2
ERBA	Erbaa	0.70	268	*i* P	Pb	10 55 18.7	-0.3
ERBA				*i* S	Sb	10 55 28.8	-0.3
ERBA	Erbaa	0.70	268	P	Pb	10 55 18.7	-0.3
ERBA				S	Sb	10 55 28.8	-0.3
CUZAR	Zara_SIVAS	0.82	175	*i* P	Pb	10 55 20.6	-0.5
CUZAR				*i* S	Sb	10 55 32.0	-0.6
CUZAR	Zara_SIVAS	0.82	175	P	Pb	10 55 20.6	-0.5
CUZAR				S	Sb	10 55 32.0	-0.6
ESPY	Espiye-Giresun	0.82	75	*e*PG	Pg	10 55 19.3	-0.5
ESPY	Espiye-Giresun	0.82	75	*e*Pg	Pg	10 55 19.3	-0.5
SVSK	Karacayir	0.95	214	*e*PG	Pg	10 55 21.3	-0.8
SVSK	Karacayir	0.95	214	*e*Pg	Pg	10 55 21.3	-0.8
KELT	Kelkit	1.33	114	*i* P	Pn	10 55 30.1	+0.4
KELT				*i* S	Sn	10 55 48.5	+0.4
KELT	Kelkit	1.33	114	P	Pn	10 55 30.1	+0.4
KELT				S	Sn	10 55 48.5	+0.4

IDC 28 11:05:10.3±7.3, 2.87N×126.67E, h0km, mb3.6/4, mb1 3.9/4, mb1mx3.5/37, mbtmp3.7/4, Error ellipse: s-maj=125.1km s-min=100.5km az=118.0, Northern Molucca Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	Fitzroy Crossi	20.86	183	P	P	11 09 54.9	+0.9
	2.2nm,1.1s,baz=4.8,slow=13,SNR=3.4						
WRA	Warramunga Arr	23.89	162	P	P	11 10 25.9	0.0
	2.0nm,1.2s,baz=339,slow=10,SNR=13						
ASAR	Alice Springs	27.30	165	P	P	11 10 56.8	-0.1
	0.5nm,0.4s,baz=348,slow=8.7,SNR=8.1						
STKA	Stephens Creek	37.35	159	P	P	11 12 24.0	-0.7
	1.7nm,0.8s,baz=322,slow=11,SNR=3.8						

IDC 28 11:17:49.3±0.7, 31.89N×83.89E, h0km, mb3.7/17, mb1 3.8/21, mb1mx3.6/73, mbtmp3.7/21, ML3.3/3, MS3.4/3, Ms1 3.5/3, ms1mx2.9/56, Error ellipse: s-maj=22.4km s-min=14.3km az=48.0
ISCJB 28 11:17:54.1±0.4, 32.14N±0.04×83.86E±0.10, h33km, mb3.7/19, MS3.4/3, Error ellipse: s-maj=12.6km s-min=5.4km az=162.2
ISC 28 11:17:55.5±0.5, 32.05N±0.07×83.84E±0.08, h35km, n32, σ1.71/32, mb3.7/19, MS3.3/3, Xizang

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PYUN	Piuthan	4.01	191	*e*P	Pn	11 18 56.0	+1.4
LGTI	Lohaghat	4.03	231	*e*P	Pn	11 19 13.4	+19
GKN	Gorkha	4.09	170	*e*P	Pn	11 18 58.0	+2.2
	44nm,0.5s						
KOLN	Koldanda	4.27	183	*e*P	Pn	11 19 00.2	+1.9
	148nm,0.5s						
KKN	Kakani	4.43	163	*e*P	Pn	11 19 02.0	+1.5
	48nm,0.7s						
GUN	Gumba	4.49	156	*e*P	Pn	11 19 03.1	+1.7
	47nm,0.4s						
PKIN	Phulchoki	4.66	163	*e*P	Pn	11 19 06.0	+2.3
	36nm,0.6s						
AAK	Ala-Archa	12.90	328	Pn	Pn	11 20 58.0	+1.4
	0.1nm,0.3s,baz=190,slow=11,SNR=2.0						
AAK				Sn	Sn	11 23 22.4	+3.4
	0.3nm,0.3s,baz=176,slow=14,SNR=1.9						
MKAR	Makanchi Array	14.77	356	Pn	Pn	11 21 19.5	-2.3
	baz=181,slow=15,SNR=3.6						
LZH	Lanzhou	17.06	71	*e*P	P	11 21 55.0	+2.1
LZH				pP	pP	11 22 03.3	+1.2
LZH				sP	sP	11 22 05.3	-1.2
LZH				S	S	11 25 11.5	+2.6
LZH				sS	sS	11 25 22.3	-1.1
LZH				SS	SnSn	11 25 26.3	+13
LZH				pmax	pmax		
	comp=Z,21nm,1.0s						
LZH				pmax	pmax		
	comp=Z,110nm,4.0s						
LZH				LR	LR		
	comp=N,300nm,12.7s						
LZH				LR	LR		
	comp=E,260nm,11.4s						
LZH				LR	LR		
	comp=Z,400nm,13.2s						
KURBB	Kurchatov Arra	18.97	350	P	P	11 22 12.4	-1.3
	comp=Z,0.0nm,0.3s,baz=168,slow=10,SNR=8.1						
CMAR	Chiang Mai Arr	19.20	131	P	P	11 22 14.5	-2.0
	comp=Z,0.2nm,0.3s,baz=321,slow=13,SNR=5.7						
GEYT	Alibeck	21.84	293	P	P	11 22 44.4	-0.5
	comp=Z,1.1nm,0.5s,baz=84,slow=13,SNR=2.7						
ZALV	Zalesovo Beam	21.90	2	P	P	11 22 43.8	-1.5
	comp=Z,1.9nm,0.6s,baz=181,slow=12,SNR=6.1						
BVAR	Borovoye Array	23.11	339	P	P	11 22 58.7	+0.5
	comp=Z,0.2nm,0.3s,baz=144,slow=10,SNR=2.0						
SONM	Songino Array	23.28	41	P	P	11 23 00.1	0.0
	comp=Z,0.9nm,0.6s,baz=223,slow=9.8,SNR=2.8						
AKTO	Aktyubinsk	26.51	321	P	P	11 23 30.7	+1.1
	comp=Z,1.6nm,0.8s,baz=118,slow=7.0,SNR=6.9						
AKTO				LR	LR	11 35 33.1	
	comp=Z,85nm,18.6s,baz=137,slow=40						
GNI	Garni	32.40	296	LR	LR	11 39 23.3	
	comp=Z,37nm,18.2s,baz=89,slow=40						
KLR	Kul'dur	39.47	50	P	P	11 25 23.4	+1.0
	comp=Z,0.9nm,0.6s,baz=251,slow=5.7,SNR=3.8						
AKASG	Malin Array Be	43.92	312	P	P	11 25 59.5	+0.8
	comp=Z,0.8nm,0.5s,baz=77,slow=8.2,SNR=5.3						
MLR	Muntele Rosu	46.14	304	P	P	11 26 17.7	+1.0
	comp=Z,0.8nm,0.7s,baz=127,slow=11,SNR=3.4						
FINES	FINESS Array B	47.09	326	P	P	11 26 24.0	+0.3
	comp=Z,0.7nm,0.5s,baz=84,slow=5.7,SNR=3.4						
KAPI	Kappang	50.26	131	P	P	11 26 50.4	+1.8
	comp=Z,2.0nm,0.3s,baz=330,slow=16,SNR=2.5						
HFS	Hagfors	53.02	324	P	P	11 27 08.1	-0.6
	comp=Z,1.1nm,0.7s,baz=126,slow=9.7,SNR=2.1						
NOA	NORSAR Array B	54.21	325	P	P	11 27 19.1	+1.7
	comp=Z,0.6nm,0.7s,baz=87,slow=7.2,SNR=3.5						
NOA				LR	LR	11 51 05.6	
	comp=Z,54nm,19.1s,baz=215,slow=37						
WRA	Warramunga Arr	70.79	130	P	P	11 29 07.0	-1.6
	comp=Z,0.6nm,0.5s,baz=326,slow=6.4,SNR=12						
ASAR	Alice Springs	73.20	133	P	P	11 29 21.5	-1.6
	comp=Z,0.3nm,0.5s,baz=316,slow=6.0,SNR=5.5						
ILAR	Eielson Array	75.71	20	P	P	11 29 36.3	-0.8
	comp=Z,0.3nm,0.6s,baz=312,slow=4.8,SNR=4.0						
TORD	Torodi Ar. Bea	76.56	277	P	P	11 29 40.7	-2.0
	comp=Z,0.4nm,0.9s,baz=56,slow=5.6,SNR=2.2						
BOSA	Boshof	82.09	229	P	P	11 30 11.2	-1.5
	comp=Z,5.4nm,1.1s,baz=31,slow=5.9,SNR=2.4						
YKA	Yellowknife Ar	84.62	8	P	P	11 30 24.1	-0.9
	comp=Z,0.2nm,0.5s,baz=336,slow=5.3,SNR=7.2						
ULM	Lac du Bonnet	98.06	360	P	P	11 31 26.6	-1.7
	comp=Z,1.6nm,0.4s,baz=9.1,slow=2.0,SNR=2.3						

IDC 28 11:18:32.3±0.7, 32.04N×84.21E, h0km, mb3.9/21, mb1 4.1/24, mb1mx3.9/75, mbtmp3.9/24, ML3.7/3, MS3.6/1, Ms1 3.6/1, ms1mx2.7/52, Error ellipse: s-maj=21.0km s-min=13.8km az=52.0
NEIC 28 11:18:33.9±0.4, 32.09N×84.19E, h10km, mb4.2/2, Error ellipse: s-maj=12.8km s-min=6.2km az=48.0
ISCJB 28 11:18:35.4±0.5, 32.14N±0.08×84.28E±0.10, h33km, mb3.9/23, MS3.6/1, Error ellipse: s-maj=15.0km s-min=7.2km az=136.5
ISC 28 11:18:37.5±0.7, 32.1N±0.1×84.3E±0.1, h35km, n37, σ1.902/33, mb4.0/23, Xizang

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LSA	Lhasa	6.40	111	*e*Pn	Pn	11 20 09.2	-0.6
WMQ	Urumqi	11.97	12	*e*P	Pn	11 21 16.3	-9.4
WMQ				pmax	pmax		
	comp=Z,7.0nm,0.3s						
AAK	Ala-Archa	13.03	326	Pn	Pn	11 21 39.7	-0.6
MKAR	Makanchi Array	14.71	355	Pn	Pn	11 22 02.3	-0.8
	comp=Z,0.1nm,0.3s,baz=175,slow=14,SNR=3.8						
KKAR	Karatay Array	15.42	319	Pn	Pn	11 22 10.8	-1.6
HYB	Hyderabad	15.54	201	*i* P	Pn	11 22 08.5	-5.6
CHTO	Chiang Mai	18.73	132	P	P	11 22 52.8	-0.4
KURBB	Kurchatov Arra	18.95	349	P	P	11 22 54.5	-1.0
	comp=Z,0.0nm,0.3s,baz=171,slow=11,SNR=7.8						
CMAR	Chiang Mai Arr	18.99	132	P	P	11 22 55.6	-0.6
	comp=Z,0.6nm,0.3s,baz=321,slow=11,SNR=5.6						
KURK	Kurchatov	19.03	349	P	P	11 22 54.5	-1.8
ZALV	Zalesovo Beam	21.80	1	P	P	11 23 25.8	-0.5
	comp=Z,3.1nm,0.7s,baz=182,slow=12,SNR=6.3						
GEYT	Alibeck	22.14	292	P	P	11 23 30.9	+0.7
	comp=Z,1.7nm,0.4s,baz=78,slow=3.4,SNR=2.9						
SONM	Songino Array	22.98	41	P	P	11 23 40.3	+1.2
	comp=Z,0.6nm,0.4s,baz=222,slow=13,SNR=2.8						
BVAR	Borovoye Array	23.16	338	P	P	11 23 40.8	+0.1
	comp=Z,0.4nm,0.3s,baz=142,slow=7.3,SNR=3.3						
ABKAR	Akbulak array	24.98	320	*e*P	P	11 23 57.3	-0.4
	comp=Z,1.8nm,0.5s						
AKTO	Aktyubinsk	26.67	321	P	P	11 24 13.3	+0.2
	comp=Z,1.9nm,0.5s,baz=113,slow=13,SNR=8.2						
ARU	Arti	30.13	331	P	P	11 24 43.7	-0.1
	comp=Z,2.3nm,0.4s,baz=139,slow=22,SNR=5.4						
ARU	Arti	30.13	331	P	P	11 24 42.3	-1.5
	comp=Z,5.3nm,0.9s						
ARU				P	P	11 24 43.7	-0.1
KSAR	Wonju Array Be	35.97	69	P	P	11 25 39.9	+5.0
KSRS	Korea Array	36.00	69	P	P	11 25 39.9	+4.7
	comp=Z,0.5nm,0.5s,baz=279,slow=9.1,SNR=3.2						
KLR	Kul'dur	39.14	50	LR	LR	11 42 54.2	
	comp=Z,89nm,19.5s,baz=17,slow=37						
AKASG	Malin Array Be	44.13	312	P	P	11 26 40.6	-1.9
	comp=Z,1.1nm,0.4s,baz=78,slow=7.9,SNR=5.5						
MLR	Muntele Rosu	46.39	304	P	P	11 27 00.8	+0.2
	comp=Z,1.1nm,0.6s,baz=108,slow=6.4,SNR=4.7						
FINES	FINESS Array B	47.22	326	P	P	11 27 06.8	+0.1
	comp=Z,1.0nm,0.6s,baz=126,slow=9.7,SNR=3.6						
ARCES	ARCESS Array B	49.43	337	P	P	11 27 24.8	+1.1
	comp=Z,2.8nm,0.9s,baz=83,slow=7.5,SNR=3.3						
HFS	Hagfors	53.16	324	P	P	11 27 53.1	+1.4
	comp=Z,1.0nm,0.5s,baz=113,slow=10.0,SNR=3.5						
GERES	GERESS Array B	54.27	310	P	P	11 28 01.8	+1.7
	comp=Z,0.4nm,0.2s,baz=77,slow=14,SNR=3.7						
SPITS	Spitsbergen Ar	54.28	346	P	P	11 28 00.7	+1.0
	comp=Z,3.7nm,0.7s,baz=125,slow=4.4,SNR=8.7						
NB2	NORSAR Subarra	54.35	325	P	P	11 28 01.1	+0.7
	comp=Z,1.3nm,0.7s,baz=87,slow=7.4						
NOA	NORSAR Array B	54.35	325	P	P	11 28 00.4	0.0
	comp=Z,1.1nm,0.7s,baz=87,slow=7.3,SNR=5.7						
WRA	Warramunga Arr	70.57	130	P	P	11 29 49.0	-0.3
	comp=Z,0.9nm,0.6s,baz=326,slow=6.4,SNR=12						
ASAR	Alice Springs	73.00	133	P	P	11 30 03.8	0.0
	comp=Z,0.6nm,0.6s,baz=312,slow=5.8,SNR=8.1						
ILAR	Eielson Array	75.51	20	P	P	11 30 18.2	+0.3
	comp=Z,0.5nm,0.7s,baz=312,slow=4.6,SNR=4.3						
INK	Inuvik	75.99	14	P	P	11 30 23.0	+2.5
	comp=Z,0.5nm,0.6s,baz=337,slow=5.3,SNR=4.1						
TORD	Torodi Ar. Bea	76.90	277	P	P	11 30 26.2	-0.5
	comp=Z,0.5nm,0.7s,baz=36,slow=5.4,SNR=3.1						
BOSA	Boshof	82.42	229	P	P	11 30 56.5	+0.1
	comp=Z,5.9nm,1.0s,baz=40,slow=7.2,SNR=2.8						
YKA	Yellowknife Ar	84.48	9	P	P	11 31 06.6	+0.3
	comp=Z,0.3nm,0.6s,baz=336,slow=5.3,SNR=9.0						

KRSC 28 11:19:49.8±1.3, 56.15N×163.66E, h26km±9km, ML4.3
ISCJB 28 11:19:51.7±0.8, 56.20N±0.02×163.58E±0.04, h25km±6km, mb3.9/26, MS3.4/3, Error ellipse: s-maj=4.5km s-min=3.3km az=37.5
MOS 28 11:19:53.8±0.9, 56.21N×163.42E, h47km, mb4.1/21, Error ellipse: s-maj=10.6km s-min=6.2km az=65.0
IDC 28 11:19:56.3±2.8, 56.24N×163.19E, h46km±27km, mb3.6/26, mb1 3.8/28, mb1mx3.7/67, mbtmp3.9/28, ML3.4/2, MS3.4/3, Ms1 3.4/3, ms1mx2.8/51, Error ellipse: s-maj=17.1km s-min=12.0km az=152.0
ISC 28 11:19:51.4±1.4, 56.19N±0.03×163.52E±0.03, h12km±8km, n92, σ1.923/121, mb3.9/26, MS3.3/3, Near east coast of Kamchatka Peninsula

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KBG	Krutoberegovo	0.46	279	*e*P	Pg	11 20 00.4	0.0
KBG				*e*S	Sg	11 20 06.7	+0.2
SMKR	Semkarok	1.21	290	*e*P	Pn	11 20 13.3	-0.8
SMKR				*e*S	Sn	11 20 30.3	-0.2
SMKR	Semkarok	1.21	290	PN	Pn	11 20 13.3	-0.8
SMKR				S	Sn	11 20 30.3	-0.2
BDR	Baidarnaya	1.34	288	*e*P	Pn	11 20 15.8	-0.2
BDR				*e*S	Sg	11 20 34.3	-0.2
SRKR	Sorokina	1.39	291	*e*P	Pn	11 20 16.4	-0.2
SRKR				*e*S	Sb	11 20 35.4	+0.5
SRKR	Sorokina	1.39	291	PN	Pn	11 20 16.4	-0.2
SRKR				S	Sb	11 20 35.4	+0.5
ZLN	Zelenaya	1.53	265	*e*P	Pn	11 20 19.2	+0.6
ZLN				*e*S	Sg	11 20 40.1	-0.5
ZLN	Zelenaya	1.53	265	PN	Pn	11 20 19.2	+0.6
ZLN				S	Sg	11 20 40.1	-0.5
CIRR	Tsirk	1.55	269	*e*P	Pn	11 20 19.4	+0.5
CIRR				*e*S	Sb	11 20 40.3	+0.6
CIRR	Tsirk	1.55	269	PN	Pn	11 20 19.4	+0.5
CIRR				S	Sb	11 20 40.3	+0.6
LGNR	Loginova	1.58	267	*e*P	Pb	11 20 20.3	-0.5
LGNR				*e*S	Sb	11 20 41.5	+0.6
LGNR	Loginova	1.58	267	PN	Pb	11 20 20.3	-0.5
LGNR				S	Sb	11 20 41.5	+0.6
KLY	Klyuchi	1.60	276	*e*P	Pn	11 20 18.1	-1.4
KLY				*e*S	Sn	11 20 37.8	-2.3
KRSR	Krestovskiy	1.65	272	*e*P	Pn	11 20 20.4	+0.1
KRSR				*e*S	Sb	11 20 43.2	+0.7
KRSR	Krestovskiy	1.65	272	PN	Pn	11 20 20.4	+0.1
KRSR				S	Sb	11 20 43.2	+0.7
BKI	Bering	1.70	124	*e*P	Pn	11 20 20.6	-0.3
BKI				*e*S	Sn	11 20 42.0	-0.5
BKI	Bering	1.70	124	PN	Pn	11 20 20.6	-0.3
BKI				S	Sn	11 20 42.0	-0.5
MKZ	Mys Kozlova	1.93	213	*e*P	Pn	11 20 23.3	-0.6
MKZ				*e*S	Sn	11 20 46.6	-1.4
MKZ	Mys Kozlova	1.93	213	PN	Pn	11 20 23.3	-0.6
MKZ				S	Sn	11 20 46.6	-1.4
TUMD	Tumrok D	2.02	242	*e*P	Pn	11 20 25.8	+0.5
ESO	Esso	2.71	266	*e*P	Pn	11 20 36.3	+1.5
ESO				*e*S	Sn	11 21 10.1	+2.6
ESO	Esso	2.71	266	PN	Pn	11 20 36.3	+1.5
ESO				S	Sn	11 21 10.1	+2.6
OSSR	Ossora	3.08	356	*e*P	Pn	11 20 40.2	+0.4
OSSR				*e*S	Sn	11 21 16.4	-0.2
KII	Karymskiy	3.18	229	*e*P	Pn	11 20 42.7	+1.5
KII	Karymskiy	3.18	229	PN	Pn	11 20 42.7	+1.5
NLC	Nalytchevo	3.87	220	*e*P	Pn	11 20 52.2	+1.6
NLC				*e*S	Sn	11 21 34.7	-1.3
NLC	Nalytchevo	3.87	220	PN	Pn	11 20 52.2	+1.6
NLC				S	Sn	11 21 34.7	-1.3
SDLR	Sedlovina	3.96	225	*e*P	Pn	11 20 53.1	+1.1
SDLR				*e*S	Sn	11 21 40.0	+1.6
SDLR	Sedlovina	3.96	225	PN	Pn	11 20 53.1	+1.1
SDLR				S	Sn	11 21 40.0	+1.6
KRER	Koryakskii	4.00	226	*e*P	Pn	11 20 54.0	+1.4
KRER				*e*S	Sn	11 21 41.0	+1.6
KRX	Arik	4.00	227	*e*P	Pn	11 20 54.5	+2.0
SMAR	Somma	4.00	225	*e*P	Pn	11 20 53.9	+1.2
SMAR				*e*S	Sn	11 21 39.8	+0.2
SMAR	Somma	4.00	225	PN	Pn	11 20 53.9	+1.2
SMAR				S	Sn	11 21 39.8	+0.2
AVH	Avacha	4.03	225	*e*P	Pn	11 20 54.4	+1.5
AVH				*e*S	Sn	11 21 41.1	+1.1
AVH	Avacha	4.03	225	PN	Pn	11 20 54.4	+1.5
AVH				S	Sn	11 21 41.1	+1.1
UGLR	Uglovaya	4.04	224	*e*P	Pn	11 20 54.3	+1.2
KOK	Koryaka	4.05	226	*e*P	Pn	11 20 56.1	+2.9
KOK	Koryaka	4.05	226	PN	Pn	11 20 56.1	+2.9
GNL	Ganaly	4.07	234	*e*P	Pn	11 20 54.9	+1.4
GNL	Ganaly	4.07	234	PN	Pn	11 20 54.9	+1.4
DALK	Dalny	4.20	223	*e*P	Pn	11 20 56.0	+0.8
PET	Petropavlovsk	4.25	224	*e*P	Pn	11 20 57.5	+1.7
PET	Petropavlovsk	4.25	224	*e*PN	Pn	11 20 57.4	+1.7
PET				*e*S	Sn	11 21 44.6	-0.6
PET				smax	smax		
	comp=N,126nm,0.6s						
PET				smax	smax		
	comp=E,105nm,0.9s						
TILK	Tilichiki	4.49	17	*e*P	Pn	11 21 00.0	+0.8
TILK				*e*S	Sn	11 21 51.0	-0.3
PETK	Petropavlovsk-	4.57	230	P	Pn	11 21 02.2	+1.9
	comp=E,2.6nm,0.3s,baz=62,slow=16,SNR=43						
PETK				S	Sn	11 21 59.6	+6.2
	comp=E,1.8nm,0.3s,baz=52,slow=19,SNR=3.8						
KRMR	Karymshinskiy	4.60	225	*e*P	Pn	11 21 02.6	+1.9
KRMR				*e*S	Sn	11 21 54.7	+0.8
RUS	Russkaya	4.76	220	*e*P	Pn	11 21 03.9	+1.0
RUS	Russkaya	4.76	220

JAY	**Jayapura**	**61.40 206**	LR	LR	11 52 25.8	
	comp=Z,24nm,20.8s,baz=193,slow=32					
AKASG	**Malin Array Be**	**66.95 330**	P	**P**	**11 30 41.4**	**-1.8**
	comp=Z,0.4nm,0.4s,baz=26,slow=6.6,SNR=2.9					
TXAR	**Lajitas Array**	**67.66 71**	P	**P**	**11 30 49.5**	**+1.3**
	comp=Z,1.0nm,0.6s,baz=304,slow=4.3,SNR=11					
EKA	**Eskdalemuir Ar**	**68.31 352**	P	**P**	**11 30 52.3**	**+0.5**
	comp=Z,0.2nm,0.3s,baz=18,slow=6.1,SNR=6.8					
KBZ	**Khabaz**	**68.61 318**	P	**P**	**11 30 53.2**	**-0.6**
	comp=Z,0.9nm,0.5s,baz=84,slow=9.2,SNR=3.7					
BRTR	**Keskin Array B**	**75.44 322**	P	**P**	**11 31 35.4**	**+0.3**
	comp=Z,1.0nm,0.8s,baz=45,slow=5.6,SNR=3.8					
WRA	**Warramunga Arr**	**79.74 208**	P	**P**	**11 31 58.7**	**-0.2**
	comp=Z,0.8nm,0.7s,baz=15,slow=5.7,SNR=6.1					
ASAR	**Alice Springs**	**83.41 207**	P	**P**	**11 32 18.2**	**-0.1**
	comp=Z,1.0nm,0.8s,baz=9.4,slow=6.2,SNR=5.8					
ESDC	**Sonseca Array**	**83.92 350**	P	**P**	**11 32 21.8**	**+0.8**
	comp=Z,0.2nm,0.3s,baz=11,slow=6.0,SNR=4.4					
STKA	**Stephens Creek**	**89.68 199**	P	**P**	**11 32 48.8**	**0.0**
	comp=Z,0.8nm,0.6s,baz=15,slow=5.5,SNR=2.6					

*CSEM **28** 11:21:25.8±0.5,60.94N×29.15E,h2km,ML2.0,Error ellipse: s-maj=9.2km s-min=5.5km az=121.0,Mining explosion.*
*ISCJB **28** 11:21:26.5±0.9,61.05N±0.04×29.02E±0.09,h0km,Error ellipse: s-maj=6.6km s-min=4.6km az=31.9*
*HEL **28** 11:21:27.8±0.3,60.90N×29.20E,h0km,ML2.0,Explosion*
*IDC **28** 11:21:29.8±2.2,60.86N×28.99E,h0km,mb1 3.4/2, mb1mx2.9/56,mbtmp3.2/2,ML2.9/2,Error ellipse: s-maj=17.9km s-min=11.9km az=164.0*

ISC 28 11:21:25.5±1.1,60.95N±0.05×29.25E±0.05,h0km,n27, σ0.96/42,Baltic States-Belarus-Northwestern Russia

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
VJF	**Virojoki**	**0.93**	**245**	PB		**Pb**	**11 21 44.4**	**0.0**
VJF				SB		**Sb**	**11 21 56.8**	**-0.4**
VJF	**Virojoki**	**0.93**	**245**	Pb		**Pb**	**11 21 44.3**	**0.0**
VJF				Sb		**Sb**	**11 21 56.8**	**-0.4**
FIA0	**FINESS Array S**	**1.61**	**289**	PG		**Pg**	**11 21 56.3**	**-0.1**
	baz=111							
FIA0	**FINESS Array S**	**1.61**	**289**	Pg		**Pg**	**11 21 56.3**	**-0.1**
FINES	**FINESS Array B**	**1.61**	**289**	Pg		**Pg**	**11 21 56.3**	**-0.1**
	1.2nm,0.3s,baz=114,slow=16,SNR=25							
FINES				Lg		Lg	11 22 17.8	
	3.6nm,0.3s,baz=106,slow=29,SNR=44							
FINES				Rg		Rg	11 22 23.8	
	39nm,0.8s,baz=118,slow=31,SNR=41							
PVF	**Pernaja**	**1.71**	**258**	PG		**Pb**	**11 21 57.7**	**-0.1**
PVF				MSG			11 22 18.1	
	comp=Z,11nm,0.2s							
PVF				SN		**Sg**	**11 22 21.2**	**+0.8**
PVF	**Pernaja**	**1.71**	**258**	Pg		**Pb**	**11 21 57.6**	**-0.1**
PVF				Sn		**Sg**	**11 22 21.2**	**+0.8**
KAF	**Kangasniemi**	**1.83**	**311**	PG		**Pg**	**11 22 01.2**	**+0.6**
KAF				MSG			11 22 22.7	
	comp=Z,8.9nm,0.2s							
KAF				SG		**Sg**	**11 22 24.4**	**+0.1**
KAF	**Kangasniemi**	**1.83**	**311**	Pg		**Pg**	**11 22 01.1**	**+0.6**
KAF				Sg		**Sg**	**11 22 24.4**	**+0.1**
JOF	**Joensuu**	**2.21**	**25**	PB		**Pg**	**11 22 07.3**	**-0.5**
JOF				SB		**Sg**	**11 22 35.8**	**-0.5**
JOF	**Joensuu**	**2.21**	**25**	Pb		**Pg**	**11 22 07.2**	**-0.5**
JOF				Sb		**Sg**	**11 22 35.8**	**-0.5**
SUF	**Sumiainen**	**2.31**	**322**	PG		**Pg**	**11 22 09.4**	**-0.3**
SUF				MSG			11 22 36.7	
	comp=Z,4.7nm,0.2s							
SUF				SG		**Sg**	**11 22 39.6**	**0.0**
SUF	**Sumiainen**	**2.31**	**322**	Pg		**Pg**	**11 22 09.4**	**-0.3**
SUF				Sg		**Sg**	**11 22 39.6**	**0.0**
KEF	**Keuruu**	**2.43**	**302**	PG		**Pg**	**11 22 10.9**	**-1.0**
KEF				MSG			11 22 39.6	
	comp=Z,4.9nm,0.2s							
KEF				SG		**Sg**	**11 22 42.0**	**-1.4**
KEF	**Keuruu**	**2.43**	**302**	Pg		**Pg**	**11 22 10.9**	**-1.0**
KEF				Sg		**Sg**	**11 22 42.0**	**-1.4**
MEF	**Metsahovi**	**2.50**	**255**	PG		**Pg**	**11 22 11.9**	**+0.7**
MEF				SG		**Sb**	**11 22 41.7**	**-0.8**
MEF	**Metsahovi**	**2.50**	**255**	*eP*		**Pb**	**11 22 11.4**	**+0.2**
	SNR=50							
MEF	**Metsahovi**	**2.50**	**255**	Pg		**Pb**	**11 22 11.9**	**+0.7**
MEF				*eS*		**Sb**	**11 22 41.7**	**-0.8**
	comp=Z,8.2nm,0.9s,SNR=50							
MTSE	**Matsula**	**3.54**	**233**	*eS*		**Sn**	**11 23 00.6**	**-3.5**
	SNR=50							
VAF	**Ylistaro**	**3.75**	**307**	SG		**Sg**	**11 23 25.9**	**+0.1**
VAF	**Ylistaro**	**3.75**	**307**	Sg		**Sg**	**11 23 25.8**	**+0.1**
OUFX	**Oulainen**	**4.02**	**331**	PG		**Pg**	**11 22 41.7**	**-0.8**
OUFX	**Oulainen**	**4.02**	**331**	Pg		**Pg**	**11 22 41.7**	**-0.8**
OUL	**Oulu**	**4.43**	**341**	SG		**Sg**	**11 23 46.2**	**-1.3**
OUL	**Oulu**	**4.43**	**341**	Sg		**Sg**	**11 23 46.2**	**-1.3**
NOA	**NORSAR Array B**	**8.76**	**279**	Pn		**Pn**	**11 23 34.0**	**+0.7**
	comp=Z,0.1nm,0.3s,baz=108,slow=13,SNR=2.2							
ARCES	**ARCESS Array B**	**8.77**	**351**	Pn		**Pn**	**11 23 35.8**	**+2.5**
	comp=Z,0.1nm,0.3s,baz=172,slow=12,SNR=6.4							
ARCES				Sn		**Sn**	**11 25 13.3**	**+0.6**
	comp=Z,0.1nm,0.3s,baz=170,slow=26,SNR=2.7							

*CSEM **28** 11:23:24.8±0.6,34.53N×36.25E,h10km,ML3.0,Error ellipse: s-maj=10.8km s-min=6.7km az=173.0*
*NSSC **28** 11:23:24.5±1.8,34.51N×36.20E,h0km,10km,ML2.2*
*GRAL **28** 11:23:24.2±0.3,34.60N×36.37E,h7km±3km,MD3.0*

ISC 28 11:23:23.8±2.3,34.58N±0.10×36.26E±0.05,h7km±10km, n16,σ0.28/28,Jordan-Syria region

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
FKH	**Fakeheh**	**0.35**	**159**	*eP*		**Pg**	**11 23 30.6**	**-0.2**
FKH				*eS*		**Sg**	**11 23 35.4**	**0.0**
FKH	**Fakeheh**	**0.35**	**159**	*eP*		**Pg**	**11 23 30.6**	**-0.2**
FKH				*eS*		**Sg**	**11 23 35.4**	**0.0**
HWQ	**Hawqa**	**0.39**	**221**	*eP*		**Pb**	**11 23 32.8**	**-0.3**
HWQ				*eS*		**Sb**	**11 23 39.1**	**-0.2**
HWQ	**Hawqa**	**0.39**	**221**	*eP*		**Pb**	**11 23 32.8**	**-0.3**
HWQ				*eS*		**Sb**	**11 23 39.2**	**-0.2**
MARH	**Ras Al Marh**	**0.58**	**161**	*eP*		**Pg**	**11 23 34.7**	**-0.3**
MARH				*eS*		**Sg**	**11 23 43.1**	**+0.4**
MARH				AML		AML	11 23 47.9	
	comp=N,313nm,0.4s							
MARH				AMB		AMB	11 23 49.6	
	comp=E,327nm,0.6s							
MARH	**Ras Al Marh**	**0.58**	**161**	*eP*		**Pg**	**11 23 34.7**	**-0.3**
MARH				*eS*		**Sg**	**11 23 43.1**	**+0.4**
	comp=E,313nm,0.4s							
BHL	**Bhannes**	**0.83**	**217**	*eP*		**Pb**	**11 23 40.7**	**0.0**
BHL	**Bhannes**	**0.83**	**217**	*eP*		**Pb**	**11 23 40.7**	**0.0**
ROOS	**tl_alroos**	**0.95**	**115**	*eP*		**Pn**	**11 23 43.6**	**+0.1**
ROOS				*eS*		**Sn**	**11 23 57.5**	**+0.2**
ROOS				AML		AML	11 24 02.6	
	comp=E,161nm,0.6s							
ROOS				AML		AML	11 24 05.5	
	comp=N,148nm,0.8s							
ROOS	**tl_alroos**	**0.95**	**115**	*eP*		**Pn**	**11 23 43.6**	**+0.1**
ROOS				*eS*		**Sn**	**11 23 57.5**	**+0.2**
	comp=N,148nm,0.8s							
DQRL	**Deir Qamar**	**1.04**	**213**	*eP*		**Pg**	**11 23 43.8**	**+0.1**
DQRL	**Deir Qamar**	**1.04**	**213**	*eP*		**Pg**	**11 23 43.8**	**+0.1**
BRBR	**Barbar**	**1.19**	**192**	*eP*		**Pg**	**11 23 46.5**	**-0.1**
BRBR				*eS*		**Sb**	**11 24 02.6**	**+0.2**
BRBR				AML		AML	11 24 12.4	
	comp=N,62nm,0.7s							
BRBR				AML		AML	11 24 15.9	
	comp=E,57nm,0.5s							
BRBR	**Barbar**	**1.19**	**192**	*eP*		**Pg**	**11 23 46.5**	**-0.1**
BRBR				*eS*		**Sb**	**11 24 02.6**	**+0.2**
	comp=E,57nm,0.5s							
SALA	**Sala**	**1.90**	**168**	*eP*		**Pn**	**11 23 57.2**	**+0.4**
SALA				*eS*		**Sn**	**11 24 20.6**	**-0.5**
SALA				AML		AML	11 24 29.6	
	comp=E,5.3nm,0.4s							
SALA				AML		AML	11 24 34.8	
	comp=N,55nm,0.4s							
SALA	**Sala**	**1.90**	**168**	*eP*		**Pn**	**11 23 57.2**	**+0.4**
SALA				*eS*		**Sn**	**11 24 20.6**	**-0.5**
	comp=N,55nm,0.4s							

*IDC **28** 11:40:58.3±0.5,6.38S×132.53E,h0km,mb4.7/19, mb1 4.7/25,mb1mx4.7/36,mbtmp4.7/25,ML4.2/5,MS4.1/18, Ms1 4.1/18,ms1mx3.8/34,Error ellipse: s-maj=16.1km s-min=11.1km az=83.0*
*NEIC **28** 11:40:59.8±0.2,6.41S×132.54E,h10km,mb4.7/23,Error ellipse: s-maj=5.7km s-min=4.6km az=58.0*
*ISCJB **28** 11:41:01.2±0.2,6.42S±0.03×132.55E±0.03,h33km, mb4.8/79,MS4.2/23,Error ellipse: s-maj=4.1km s-min=3.9km az=169.5*
*MOS **28** 11:41:01.7±1.0,6.38S×132.66E,h38km,mb4.8/20,Error ellipse: s-maj=11.9km s-min=7.1km az=113.6*
*DJA **28** 11:41:01.7±0.7,6.5S±2×13.3E±,h17km±6km,M5.1/67, mB5.6/25,mb5.0/67,MLv5.2/11,Mw(mB)5.0/25,Mwp5.4/1*

ISC 28 11:41:03.2±0.3,6.46S±0.04×132.51E±0.05,h35km,n192, σ1.9/30/183,mb4.8/79,MS4.2/24,9C-4D,Tanimbar Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
SAUI	**Saumlaki**	**1.94**	**218**	P		Pn	11 41 37.5	+3.8
SAUI	**Saumlaki**	**1.94**	**218**	*e*Pn		Pn	11 41 37.4	+3.8
BNDI	**Bandanaira**	**3.23**	**306**	P		**Pn**	**11 41 51.6**	**+0.2**
FAKI	**Fak Fak**	**3.52**	**356**	P		**Pn**	**11 41 52.6**	**-2.9**
FAKI	**Fak Fak**	**3.52**	**356**	*e*Pn		**Pn**	**11 41 52.4**	**-3.1**
MSAI	**Masohi**	**4.72**	**311**	P		**Pn**	**11 42 12.3**	**+0.3**
RKPI	**Ransiki, Papua**	**5.18**	**19**	P		**Pn**	**11 42 17.0**	**-1.3**
	1µm,0.7s,11µm5.3nm							
SIJI	**Sorong**	**5.69**	**347**	Pn		**Pn**	**11 42 23.3**	**-1.9**
	9.4nm,0.3s,baz=162,slow=13,SNR=2.3							
SIJI				Sn		**Sn**	**11 43 26.9**	**-2.5**
	13nm,0.3s,baz=273,slow=23,SNR=6.8							
SWI	**Sorong**	**5.69**	**347**	P		**Pn**	**11 42 23.9**	**-1.4**
	116nm,0.8s,2µm1.5nm							
NLAI	**Namlea**	**6.27**	**300**	P		**Pn**	**11 42 34.3**	**+1.1**
	124nm,0.5s,3µm0.6nm							
MTN	**Manton Dam**	**6.49**	**192**	*e*Pn		**Pn**	**11 42 34.9**	**-1.4**
LBMI	**Labuha**	**7.64**	**319**	P		**Pn**	**11 42 50.9**	**-1.2**
	419nm,0.9s,4µm1.3nm							
SANI	**Sanana**	**7.84**	**304**	P		**Pn**	**11 42 55.6**	**+0.8**
	253nm,0.7s,2µm0.8nm							
GENI	**Genyem**	**8.54**	**64**	P		**Pn**	**11 43 04.2**	**-0.2**
	123nm,1.4s,2µm							
SOEI	**Soe**	**8.80**	**248**	P		**Pn**	**11 43 08.4**	**+0.3**
	280nm,0.9s,2µm							
SOEI	**Soe**	**8.80**	**248**	*e*Pn		**Pn**	**11 43 08.2**	**+0.1**
TNTI	**Ternate**	**8.83**	**324**	P		**Pn**	**11 43 09.1**	**+0.7**
	110nm,0.8s,2µm7µm							
TNTI	**Ternate**	**8.83**	**324**	*e*Pn		**Pn**	**11 43 08.0**	**-0.4**
JAY	**Jayapura**	**9.05**	**65**	Pn		**Pn**	**11 43 09.8**	**-1.7**
	0.3nm,0.3s,baz=261,slow=20,SNR=25							
JAY				Sn		**Sn**	**11 44 53.1**	**+0.7**
	0.1nm,0.3s,baz=90,slow=20,SNR=2.4							
JAY	**Jayapura**	**9.05**	**65**	P		**Pn**	**11 43 09.6**	**-1.9**
	117nm,0.8s,800nm							
BATI	**Baumata**	**9.52**	**246**	Pn		**Pn**	**11 43 17.2**	**-0.6**
	9.3nm,0.3s,baz=52,slow=19,SNR=11							
BATI				Sn		**Sn**	**11 45 05.5**	**+1.8**
	baz=197,slow=19							
BATI	**Baumata**	**9.52**	**246**	P		**Pn**	**11 43 18.8**	**+0.9**
	80nm,0.7s							
MMRI	**Maumere**	**10.41**	**257**	P		**Pn**	**11 43 32.9**	**+2.7**
	114nm,1.0s							
MMRI	**Maumere**	**10.41**	**257**	*e*Pn		**Pn**	**11 43 32.0**	**+1.8**
LUWI	**Luwuk**	**11.11**	**299**	P		Pn	11 43 52.9	+13
LUWI	**Luwuk**	**11.11**	**299**	*e*Pn		**Pn**	**11 43 38.5**	**-1.1**
MRSI	**Marisa**	**12.60**	**303**	P		**Pn**	**11 44 00.0**	**-0.1**
	56nm,1.0s							
KAPI	**Kappang**	**12.78**	**276**	Pn		**Pn**	**11 44 03.6**	**+1.1**
	0.4nm,0.3s,baz=82,slow=16,SNR=1.9							
KAPI				Sn		**Sn**	**11 46 20.3**	**-3.3**
	1.5nm,0.3s,baz=187,slow=16,SNR=3.2							
COEN	**Coen**	**12.87**	**126**	*e*Pn		**Pn**	**11 44 01.4**	**-2.3**
SPSI	**Sidrap Palu**	**12.93**	**280**	P		Pn	11 44 07.8	+3.2
	26nm,0.7s,476nm							
TTSI	**Tana Toraja**	**13.10**	**284**	P		**Pn**	**11 44 09.0**	**+2.2**
	47nm,1.0s,680nm							
FITZ	**Fitzroy Crossi**	**13.38**	**209**	Pn		Pn	11 44 06.9	-3.7
	3.6nm,0.3s,baz=34,slow=11,SNR=78							
FITZ				Sn		Sn	11 46 31.8	-6.5
	3.4nm,0.3s,baz=182,slow=12,SNR=4.5							
FITZ	**Fitzroy Crossi**	**13.38**	**209**	*e*Pn		**Pn**	**11 44 08.6**	**-2.1**
FITZ				Sn		Sn	11 46 31.8	-6.4
WRAB	**Tennant Creek**	**13.52**	**173**	*e*P		Pn	11 44 07.3	-5.3
WRAB	**Tennant Creek**	**13.52**	**173**	*e*Pn		Pn	11 44 08.7	-3.9
WRA	**Warramunga Arr**	**13.52**	**173**	Pn		Pn	11 44 07.7	-5.1
	3.3nm,0.3s,baz=352,slow=13,SNR=70							
WRA				Sn		Sn	11 46 34.5	-7.3
	3.1nm,0.3s,baz=355,slow=23,SNR=5.5							
WB2	**Warramunga Arr**	**13.53**	**173**	*e*Pn		Pn	11 44 08.0	-4.7
PLAI	**Plampang**	**14.79**	**260**	P		**Pn**	**11 44 28.2**	**-1.8**
	70nm,0.8s							
PMG	**Port Moresby**	**14.80**	**102**	Pn		**Pn**	**11 44 29.1**	**-0.9**
	0.6nm,0.3s,baz=203,slow=14,SNR=4.0							
PMG				LR		LR	11 51 04.6	
	comp=Z,1µm,19.9s,baz=14,slow=41							
PMG	**Port Moresby**	**14.80**	**102**	*e*P		**Pn**	**11 44 28.8**	**-1.3**
PMG	**Port Moresby**	**14.80**	**102**	*e*Pn		**Pn**	**11 44 29.7**	**-0.4**
DAV	**Davao City (W)**	**15.11**	**333**	LR		LR	11 51 47.0	
	comp=Z,673nm,19.4s,baz=130,slow=43							
TWSI	**Taliwang, Sumb**	**15.66**	**261**	P		**Pn**	**11 44 40.0**	**-1.4**
	21nm,0.7s							
AS31	**Alice Springs**	**17.16**	**176**	*e*Pn		**Pn**	**11 44 55.8**	**-4.6**
	21nm,0.8s							
ASAR	**Alice Springs**	**17.16**	**176**	P		Pn	11 44 55.1	-5.3
	1.7nm,0.3s,baz=352,slow=14,SNR=94							
ASAR				S		**Sn**	**11 48 10.2**	**-0.2**
	0.6nm,0.3s,baz=0.4,slow=30,SNR=4.2							
AS01	**Alice Springs**	**17.17**	**176**	*e*Pn		Pn	11 44 54.1	-6.3
BBKI	**Banjar Baru**	**17.85**	**279**	P		**P**	**11 45 10.3**	**+0.8**
	169nm,0.8s,5µm							
MYLDM	**Lahad Datu**	**18.14**	**309**	*e*Pn		**P**	**11 45 15.0**	**+2.4**
	63nm,1.1s							
CTA	**Charters Tower**	**19.02**	**137**	P		**P**	**11 45 22.5**	**+0.3**
	1.9nm,0.3s,baz=323,slow=12,SNR=36							
CTAO	**Charters Tower**	**19.02**	**137**	*e*P		**Pn**	**11 45 23.2**	**+0.1**
CTAO					pmax	pmax		
	comp=Z,48nm,0.7s							
CTAO	**Charters Tower**	**19.02**	**137**	*e*P		**Pn**	**11 45 23.2**	**+0.1**
	comp=Z,48nm,0.7s							
MBWA	**Marble Bar**	**19.15**	**219**	*e*P		**P**	**11 45 22.0**	**-1.7**
	comp=Z,34nm,0.8s							
KKM	**Kota Kinabalu**	**20.46**	**307**	*e*P		**P**	**11 45 37.2**	**-0.9**
	comp=Z,41nm,0.8s							
TBJI	**Tambak Boyo**	**20.53**	**268**	P		Pn	11 45 40.1	-1.0
	comp=Z,117nm,1.5s,comp=Z,4µm							
PWJI	**Pagerwojo**	**20.60**	**264**	P		Pn	11 45 40.9	-1.1
	comp=Z,26nm,1.9s							
SBUM	**Sibu**	**22.11**	**293**	*e*P		**P**	**11 45 53.2**	**-2.5**
	comp=Z,12nm,0.8s							
KSM	**Kuching**	**23.52**	**289**	*e*P		**P**	**11 46 09.3**	**-1.1**
	comp=Z,11nm,0.8s							
CBJI	**Citeko**	**25.50**	**269**	P		**P**	**11 46 28.3**	**-0.3**
	comp=Z,318nm,0.5s							
BBOO	**Buckleboo**	**26.43**	**173**	*e*P		**P**	**11 46 37.2**	**+0.4**
	comp=Z,34nm,0.8s							
STKA	**Stephens Creek**	**26.68**	**163**	P		**P**	**11 46 37.9**	**-1.2**
	comp=Z,16nm,0.8s,baz=339,slow=8.6,SNR=27							
STKA				LR		LR	11 57 52.7	
	comp=Z,2µm,18.2s,baz=332,slow=38							
STKA	**Stephens Creek**	**26.68**	**163**	*e*P		**P**	**11 46 38.3**	**-0.8**
STKA					pmax	pmax		
	comp=Z,7.0nm,0.9s							
STKA	**Stephens Creek**	**26.68**	**163**	*e*P		**P**	**11 46 38.3**	**-0.8**
	comp=Z,7.2nm,0.9s							
HNR	**Honiara**	**27.33**	**98**	LR		LR	11 59 32.0	
	comp=Z,415nm,18.9s,baz=253,slow=41							
NWAO	**Narrogin (SRO)**	**29.93**	**206**	P		**P**	**11 47 09.2**	**+1.2**
	comp=Z,20nm,0.8s,baz=271,slow=0.1,SNR=8.5							
SDSI	**Sungai Dareh**	**31.49**	**279**	P		**P**	**11 47 24.1**	**+2.1**
	comp=Z,15nm,1.1s							
MNSI	**Mandailing Nat**	**33.65**	**281**	P		**P**	**11 47 43.5**	**+2.5**
	comp=Z,23nm,1.0s							
KULM	**Kulim**	**33.88**	**289**	*e*P		**P**	**11 47 43.5**	**+0.6**
	comp=Z,18nm,0.6s							
TRTT	**Trang**	**35.68**	**293**	P		**P**	**11 48 00.0**	**+1.5**
	comp=Z,18nm,0.8s							
PANO	**Nakornpanom**	**36.20**	**311**	P		**P**	**11 48 02.7**	**-0.2**
	comp=Z,43nm,1.0s							
DZM	**Mont Dzumac**	**36.24**	**119**	P		**P**	**11 48 04.7**	**+1.4**
	comp=Z,6.6nm,0.9s,baz=206,slow=8.0,SNR=3.6							
SKNT	**Sakolnakorn**	**36.57**	**310**	P		**P**	**11 48 05.9**	**-0.2**
	comp=Z,13nm,0.7s,comp=Z,2µm							
SURT	**Suratani**	**36.93**	**294**	P		**P**	**11 48 10.6**	**+1.4**
	comp=Z,4.9nm,0.8s							
KHON	**Khomkaen**	**37.09**	**308**	P		**P**	**11 48 11.2**	**+0.7**
	comp=Z,18nm,0.8s							
LHMI	**Lhok Sumawe**	**37.35**	**287**	P		**P**	**11 48 13.2**	**+0.4**
	comp=Z,100nm,0.8s							
MLSI	**Meulaboh, Aceh**	**37.59**	**286**	P		**P**	**11 48 13.9**	**-0.9**
	comp=Z,118nm,0.8s							
PBKT	**Sadao Pong**	**38.69**	**307**	P		**P**	**11 48 24.0**	**0.0**
	comp=Z,10.0nm,0.8s,comp=Z,1µm							
SRDT	**SRDT**	**39.05**	**302**	P		**P**	**11 48 28.2**	**+1.2**
	comp=Z,48nm,0.6s,comp=Z,8µm							
JNU	**Nakatsue**	**39.39**	**358**	P		**P**	**11 48 29.0**	**-0.7**
	comp=Z,26nm,0.9s,baz=205,slow=5.6,SNR=9.5							
UTTA	**Uttaradit**	**39.67**	**308**	P		**P**	**11 48 33.4**	**+1.2**
	comp=Z,4.2nm,0.8s							
WHN	**Wuhan**	**40.70**	**336**	P		**P**	**11 48 41.8**	**+1.3**
WHN				S		S	11 54 57.5	+9.0
WHN				pmax		pmax		
	comp=Z,44nm,0.8s							
WHN				LR		LR		
	comp=N,690nm,16.9s							
WHN				LR		LR		
	comp=E,330nm,10.8s							
WHN				LR		LR		
	comp=Z,1µm,27.4s							
LAMP	**Lampang**	**40.84**	**308**	P		**P**	**11 48 42.4**	**+0.5**
	comp=Z,4.0nm,0.7s							
GYA	**Guiyang**	**41.22**	**324**	P		**P**	**11 48 47.0**	**+2.0**
GYA				pmax		pmax		
	comp=Z,10.0nm,1.0s							
CRAI	**Chiangrai**	**41.25**	**311**	P		**P**	**11 48 48.2**	**+2.9**
	comp=Z,34nm,0.7s,comp=Z,6µm							
CMAR	**Chiang Mai Arr**	**41.34**	**307**	P		**P**	**11 48 45.5**	**-0.5**
	comp=Z,3.1nm,0.5s,baz=139,slow=7.7,SNR=30							
CMAR				PcP		**PcP**	**11 50 46.0**	**+1.9**
	comp=Z,1.7nm,0.6s,baz=164,slow=2.6,SNR=6.1							
CMAR	**Chiang Mai Arr**	**41.34**	**307**	*ce*P		**P**	**11 48 46.4**	**+0.4**
CMAR				pmax		pmax		
	comp=Z,5.0nm,0.6s							
CMMT	**Chiang Mai**	**41.53**	**308**	P		**P**	**11 48 47.7**	**+0.1**
	comp=Z,8.6nm,0.8s							
CHTO	**Chiang Mai**	**41.54**	**308**	*e*P		**P**	**11 48 47.9**	**+0.2**
CHTO				pmax		pmax		
	comp=Z,6.0nm,0.8s							
CHTO	**Chiang Mai**	**41.54**	**308**	*e*P		**P**	**11 48 47.9**	**+0.2**
	comp=Z,6.0nm,0.8s							
ENH	**Enshi**	**42.68**	**330**	*e*P		**P**	**11 48 56.6**	**-0.2**
	comp=Z,11nm,0.7s							
KMI	**Kunming**	**42.71**	**318**	P		**P**	**11 48 58.8**	**+1.4**
KMI				pmax		pmax		
	comp=Z,22nm,0.7s							
KMI				pmax		pmax		
	comp=Z,66nm,5.1s							
MJAR	**Matsushiro Arr**	**43.10**	**7**	P		**P**	**11 48 58.4**	**-1.7**
	comp=Z,10nm,0.7s,baz=188,slow=9.0,SNR=23							
MJAR				LR		LR	12 06 58.6	
	comp=Z,167nm,19.5s,baz=175,slow=36							
MAJO	**Matsushiro**	**43.10**	**7**	*d*iP		**P**	**11 48 59.1**	**-1.0**
MAJO	**Matsushiro**	**43.10**	**7**	*e*P		**P**	**11 48 59.5**	**-0.6**
	comp=Z,25nm,0.8s							
MJB9	**Matsu-Tunnel**	**43.11**	**7**	*e*P		**P**	**11 48 59.6**	**-0.6**
	comp=Z,6.6nm,0.9s							
KSAR	**Wonju Array Be**	**43.88**	**355**	P		**P**	**11 49 06.3**	**0.0**
KSAR	**Wonju Array Be**	**43.88**	**355**	P		**P**	**11 49 06.2**	**0.0**
KSRS	**Korea Array**	**43.89**	**355**	P		**P**	**11 49 06.2**	**-0.1**
	comp=Z,6.8nm,0.8s,baz=178,slow=10,SNR=27							
KSRS				LR		LR	12 08 31.4	
	comp=Z,269nm,19.8s,baz=162,slow=38							
KS01	**Wonju Array Si**	**43.92**	**355**	*e*P		**P**	**11 49 06.3**	**-0.3**
XAN	**Xi'an**	**46.05**	**333**	P		**P**	**11 49 22.8**	**-0.9**
XAN				pP		pP	11 49 30.3	-3.8
XAN				pmax		pmax		
	comp=Z,10.0nm,1.0s							
XAN				LR		LR		
	comp=N,250nm,22.3s							
XAN				LR		LR		
	comp=Z,320nm,26.3s							
CD2	**Chengdu**	**46.23**	**325**	P		**P**	**11 49 25.0**	**-0.2**
CD2				pmax		pmax		
	comp=Z,2.0nm,0.6s							
BJI	**Beijing**	**48.66**	**343**	P		**P**	**11 49 44.0**	**+0.2**
BJI				S		S	11 56 50.8	+7

ULN Ulaanbaatar 58.56 340 *c iP* **P 11 50 56.4 -0.1**
ULN pmax pmax
comp=Z,11nm,0.8s
ULN Ulaanbaatar 58.56 340 *e*P **P 11 50 57.0 +0.5**
comp=Z,10nm,0.7s
SONM Songino Array 58.76 340 P **P 11 50 57.6 -0.2**
comp=Z,3.6nm,0.7s,baz=144,slow=7.9,SNR=15
SONM LR LR 12 18 30.7
comp=Z,206nm,21.6s,baz=119,slow=38
SONA1 Songino Array 58.77 340 *e*P **P 11 50 58.1 +0.2**
PYUN Piuthan 58.83 308 *e*P **P 11 50 58.7 -0.1**
comp=Z,132nm,0.8s
NKL Nikolayevsk 59.78 6 *e*P **P 11 51 05.0 +0.4**
NKL pmax pmax
comp=Z,13nm,1.0s
ZAK Zakamensk 62.01 339 *e*P **P 11 51 19.1 -0.8**
ZAK pmax pmax
comp=Z,5.0nm,1.1s
POO Poona 62.93 294 *e*P **P 11 51 24.0 -2.7**
TLY Talaya 62.97 340 *e*P **P 11 51 26.7 +0.4**
TLY pmax pmax
comp=Z,4.0nm,0.9s
TLY MLR MLR
comp=Z,120nm,18.0s
TLY Talaya 62.97 340 *e*P **P 11 51 27.2 +0.9**
PETK Petropavlovsk- 63.06 17 P **P 11 51 27.6 +0.8**
comp=Z,7.5nm,0.7s,baz=178,slow=3.1,SNR=11
PETK LR LR 12 19 43.1
comp=Z,63nm,19.6s,baz=204,slow=37
PET Petropavlovsk 63.26 17 *e*P **P 11 51 28.3 +0.2**
PET pmax pmax
comp=Z,7.0nm,0.9s
MOY Mondy 63.88 339 *e*P **P 11 51 34.1 +1.7**
WMQ Urumqi 64.33 326 P **P 11 51 36.3 +0.8**
WMQ pP pP 11 51 42.8 -3.4
WMQ sP sP 11 51 45.3 -5.0
WMQ PcP **PcP 11 52 07.8 -2.1**
WMQ pmax pmax
comp=Z,13nm,0.8s
WMQ pmax pmax
comp=Z,48nm,3.6s
WMQ LR LR
comp=N,160nm,25.4s
WMQ LR LR
comp=E,85nm,25.4s
WMQ LR LR
comp=Z,95nm,27.8s
BOD Bodaibo 65.80 349 *e*P **P 11 51 44.0 -0.6**
BOD pmax pmax
comp=Z,5.0nm,1.2s
YAK Yakutsk 68.32 359 *e*P **P 11 52 00.4 -0.1**
YAK Yakutsk 68.32 359 *e*P **P 11 52 00.4 -0.1**
MK01 Makanchi Array 69.14 326 *e*P **P 11 52 06.3 +0.3**
MK31 Makanchi Array 69.16 326 *e*P **P 11 52 06.6 +0.4**
MK31 Makanchi Array 69.16 326 *e*P **P 11 52 06.6 +0.4**
MKAR Makanchi Array 69.16 326 P **P 11 52 06.5 +0.3**
comp=Z,12nm,0.7s,baz=120,slow=7.8,SNR=53
MKAR LR LR 12 25 27.5
comp=Z,57nm,19.5s,baz=116,slow=39
MKAR Makanchi Array 69.16 326 *e*P **P 11 52 06.6 +0.4**
KSH Kashi 69.33 316 *e*P **P 11 52 09.3 +1.8**
KSH *e*pP pP 11 52 15.8 -2.5
KSH *e*sP sP 11 52 18.5 -3.9
KSH *e*PP **PP 11 54 44.8 +3.7**
KSH S **S 12 01 12.5 +0.5**
KSH Kashi 69.33 316 SS SS 12 05 43.5 +3.9
KSH pmax pmax
comp=Z,17nm,0.8s
KSH pmax pmax
comp=Z,83nm,4.6s
KSH LR LR
comp=N,85nm,5.8s
KSH LR LR
comp=E,88nm,4.6s
KSH LR LR
comp=Z,140nm,5.9s
MAKZ Makanchi 69.35 325 *e*P **P 11 52 07.5 +0.2**
MAKZ Makanchi 69.35 325 *e*P **P 11 52 07.5 +0.2**
SEY Seymchan 70.84 9⇑ *e*P **P 11 52 16.8 +0.8**
TKM2 Tokmak 2 71.17 319 *e*P **P 11 52 19.7 +0.9**
TKM2 Tokmak 2 71.17 319 *e*P **P 11 52 19.7 +0.9**
AAK Ala-Archa 71.76 319⇑ *e*P **P 11 52 22.8 +0.5**
AAK Ala-Archa 71.76 319 *e*P **P 11 52 24.0 +1.7**
ZALV Zalesovo Beam 72.22 333 P **P 11 52 23.7 -0.9**
comp=Z,7.7nm,0.7s,baz=121,slow=5.3,SNR=32
ZALV LR LR 12 26 21.0
comp=Z,81nm,21.5s,baz=82,slow=38
EKS2 Erkin-Say 72.24 319 *e*P **P 11 52 26.9 +1.7**
EKS2 Erkin-Say 72.24 319 *e*P **P 11 52 26.9 +1.7**
VNDA Vanda 72.70 174 P **P 11 52 27.1 0.0**
comp=Z,6.2nm,0.8s,baz=317,slow=7.6,SNR=34
VNDA LR LR 12 24 09.0
comp=Z,234nm,19.3s,baz=348,slow=36
KURK Kurchatov 73.38 328 *e*P **P 11 52 32.3 +0.8**
KURK Kurchatov 73.38 328 *e*P **P 11 52 32.3 +0.8**
NVS Novosibirsk 73.51 333 *e*P **P 11 52 31.8 -0.4**
KKAR Karatay Array 74.59 318 *e*P **P 11 52 38.8 0.0**
KKAR pmax pmax
comp=Z,5.0nm,0.8s
KKAR Karatay Array 74.59 318 *e*P **P 11 52 38.8 0.0**
comp=Z,4.9nm,0.8s
MAW Mawson 76.37 202 P **P 11 52 49.9 +1.4**
comp=Z,5.2nm,0.6s,baz=102,slow=8.9,SNR=23
MAW LR LR 12 24 10.4
comp=Z,235nm,20.3s,baz=62,slow=34
TIXI Tiksi 77.98 359⇓ *i* P **P 11 52 56.7 -0.7**
TIXI pmax pmax
comp=Z,3.0nm,1.0s
TIXI Tiksi 77.98 359 *e*P **P 11 52 57.0 -0.5**
BILL Bilibino 78.04 12⇑ *e*P **P 11 53 00.7 +2.9**
BILL pmax pmax
comp=Z,1.0nm,1.2s
BRVK Borovoye 79.02 327⇑ *e*P **P 11 53 03.4 -0.2**
BRVK pmax pmax
comp=Z,3.0nm,0.8s
NRIK Noril'sk 81.65 345 LR LR 12 32 04.4
comp=Z,314nm,20.6s,baz=123,slow=38
GEYT Alibeck 81.78 310 P **P 11 53 20.0 +1.2**
comp=Z,1.4nm,0.3s,baz=126,slow=7.3,SNR=2.7
GEYT LR LR 12 35 32.7
comp=Z,96nm,20.3s,baz=85,slow=40
QSPA South Pole Qui 83.52 180 *e*P **P 11 53 27.0 -0.4**
comp=Z,61nm,0.7s
ABKAR Akbulak array 83.65 321 *e*P **P 11 53 28.4 +0.3**
comp=Z,1.3nm,0.6s
SYO Syowa Base 85.07 201⇑ *e*P **P 11 53 35.0 0.0**
ARU Arti 86.57 328 *d iP* **P 11 53 43.4 +0.7**
ARU 11 57 03.5
ARU S S 12 04 06.6 -10
ARU pmax pmax
comp=Z,2.0nm,0.7s
COLA College 91.41 25⇓ *e*P **P 11 54 05.6 +0.3**
COLA pmax pmax
comp=Z,2.0nm,0.8s
ILAR Eielson Array 91.80 25 P **P 11 54 05.6 -1.6**
comp=Z,1.2nm,0.7s,baz=274,slow=4.5,SNR=16
GNI Garni 92.41 310 LR LR 12 41 58.4
comp=Z,31nm,22.0s,baz=94,slow=40
ZEI Tsey 93.32 313 *e*P P 11 54 19.2 +4.2
ZEI pmax pmax
comp=Z,10.0nm,1.4s
EGAK Eagle 94.22 25 *e*P **P 11 54 17.9 -0.4**
comp=Z,2.8nm,0.9s
KIV Kislovodsk 94.31 314 *e*P **P 11 54 18.4 -0.9**
KIV pmax pmax
comp=Z,2.0nm,0.8s
KMBO Kilima Mbogo 95.10 268 P **P 11 54 24.1 +0.3**
comp=Z,2.7nm,0.7s,baz=83,slow=7.7,SNR=9.2
KMBO Kilima Mbogo 95.10 268 *i* P **P 11 54 26.0 +2.2**
KMBO pmax pmax
comp=Z,3.0nm,0.7s
KLMR Klimovskoe 97.05 330 *e*P **P 11 54 28.5 -2.8**
KLMR pmax pmax
comp=Z,2.0nm,0.6s
OBN Obninsk 98.66 325 *e*P Pdif 11 54 41.1 +2.5
OBN *e* 11 58 35.6
OBN pmax pmax
comp=Z,5.0nm,1.0s
MMAI Mount Meron Ar 99.43 302 LR LR 12 46 49.8
comp=Z,34nm,20.0s,baz=145,slow=40
FINES FINESS Array B 103.48 332 Pdiff **Pdif 11 54 58.3 -1.7**
comp=Z,0.7nm,0.6s,baz=76,slow=4.2,SNR=3.1
YKA Yellowknife Ar 106.16 26 Pdiff **Pdif 11 55 10.6 -1.3**
comp=Z,0.2nm,0.8s,baz=291,slow=4.9,SNR=4.1
YKA PKKPbc **PKKPdf 12 10 58.1 -0.9**
comp=Z,0.2nm,0.7s,baz=103,slow=2.0,SNR=6.0
KEST Kesra 120.48 308 PKP **PKPdf 11 59 52.5 +0.8**
comp=Z,1.2nm,0.5s,baz=340,slow=2.4,SNR=2.7
TXAR Lajitas Array 122.51 59 PKP **PKPdf 11 59 57.1 +1.3**
comp=Z,0.5nm,0.8s,baz=186,slow=2.5,SNR=5.2
PLCA Paso Flores 128.48 158 PKP **PKPdf 12 00 09.1 +2.2**
comp=Z,2.3nm,0.7s,baz=253,slow=6.1,SNR=5.0
TORD Torodi Ar. Bea 131.15 282 PKP **PKPdf 12 00 13.8 +1.2**
comp=Z,4.2nm,0.8s,baz=65,slow=2.0,SNR=23
DBIC Dimbokro 137.66 273 PKP **PKPdf 12 00 25.2 +0.5**
comp=Z,3.8nm,0.8s,baz=143,slow=5.9,SNR=4.1
CPUP Villa Florida 146.04 164 PKPbc **PKPab 12 00 40.6 -0.1**
comp=Z,11nm,0.6s,baz=200,slow=2.1,SNR=26
LPAZ La Paz 149.54 138 PKPbc **PKPbc 12 00 51.8 +1.1**
comp=Z,11nm,0.8s,baz=163,slow=1.2,SNR=32

IDC ***28*** *11:49:13.6±0.9, 6°.52S×132°.45E, h0km, mb4.1/9, mb1 4.3/15, mb1mx4.1/39, mbtmp4.2/15, ML3.8/5, Error ellipse: s-maj=28.9km s-min=19.6km az=84.0*
NEIC ***28*** *11:49:14.6±0.4, 6°.54S×132°.54E, h10km, mb4.1/2, Error ellipse: s-maj=10.0km s-min=6.7km az=86.0*
ISCJB ***28*** *11:49:15.5±0.4, 6°.55S±0°.04×132°.58E±0°.05, h33km, mb4.0/11, Error ellipse: s-maj=7.1km s-min=5.8km az=14.3*
DJA ***28*** *11:49:19.7±0.3, 6°S×13°×13°3E±°, h10km, M4.6/13, mb4.7/13, MLv4.5/11*
ISC 28 11:49:18.7±0.6, 6°.43S±0°.07×132°.57E±0°.08, h35km, n41, σ1§13/38, mb4.0/11, Tanimbar Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
SAUI	**Saumlaki**	**1.99**	**219**	P		P	Pn	11 49 56.9	+7.0
FAKI	**Fak Fak**	**3.51**	**355**	P		**Pn**	**Pn**	**11 50 09.3**	**-1.5**
FAKI	**Fak Fak**	**3.51**	**355**	*e*Pn		**Pn**	**Pn**	**11 50 09.3**	**-1.5**
MSAI	**Masohi**	**4.75**	**310**	P		**Pn**	**Pn**	**11 50 28.5**	**+0.6**
RKPI	**Ransiki, Papua**	**5.15**	**18**	P		**Pn**	**Pn**	**11 50 33.0**	**-0.4**
SIJI	**Sorong**	**5.68**	**347**	Pn		**Pn**	**Pn**	**11 50 40.1**	**-0.6**
	11nm,0.3s,baz=173,slow=12,SNR=1.9								
SIJI						Sn	**Sn**	**11 51 43.5**	**-1.3**
	19nm,0.3s,baz=270,slow=20,SNR=4.3								
SWI	**Sorong**	**5.69**	**347**	P		**Pn**	**Pn**	**11 50 39.5**	**-1.3**
	36nm,0.8s,0.3nm								
NLAI	**Namlea**	**6.31**	**300**	P		**Pn**	**Pn**	**11 50 51.3**	**+2.0**
	43nm,0.6s,0.5nm								
LBMI	**Labuha**	**7.67**	**318**	P		**Pn**	**Pn**	**11 51 08.1**	**+0.1**
	107nm,1.0s,0.4nm								
SANI	**Sanana**	**7.88**	**303**	P		**Pn**	**Pn**	**11 51 11.9**	**+1.0**
	65nm,0.7s,0.3nm								
GENI	**Genyem**	**8.48**	**64**	P		**Pn**	**Pn**	**11 51 20.0**	**+0.9**
	41nm,0.7s								
TNTI	**Ternate**	**8.85**	**324**	P		**Pn**	**Pn**	**11 51 24.5**	**+0.3**
	40nm,0.9s								
TNTI	**Ternate**	**8.85**	**324**	*e*Pn		**Pn**	**Pn**	**11 51 24.3**	**+0.2**
	36nm,0.8s								
SOEI	**Soe**	**8.86**	**248**	P		P	Pn	11 51 29.8	+5.3
	70nm,1.0s								
JAY	**Jayapura**	**8.99**	**65**	Pn		**Pn**	**Pn**	**11 51 27.0**	**+0.7**
	0.0nm,0.3s,baz=269,slow=22,SNR=3.9								
JAY	**Jayapura**	**8.99**	**65**	P		**Pn**	**Pn**	**11 51 26.8**	**+0.6**
	20nm,0.9s								
BATI	**Baumata**	**9.58**	**246**	Pn		**Pn**	**Pn**	**11 51 34.3**	**+0.1**
	baz=72,slow=19								
BATI						Sn	**Sn**	**11 53 21.2**	**+0.4**
	1.8nm,0.3s,baz=65,slow=24,SNR=4.0								
MMRI	**Maumere**	**10.48**	**257**	P		P	Pn	11 51 51.3	+4.8
KAPI	**Kappang**	**12.83**	**276**	Pn		**Pn**	**Pn**	**11 52 16.1**	**-2.7**
	1.8nm,0.3s,baz=155,slow=17,SNR=2.5								
FITZ	**Fitzroy Crossi**	**13.40**	**210**	Pn		P	Pn	11 52 22.5	-4.4
	0.3nm,0.3s,baz=32,slow=13,SNR=6.3								
FITZ						Sn	Sn	11 54 45.3	-10
	1.0nm,0.3s,baz=185,slow=19,SNR=6.5								
WRAB	**Tennant Creek**	**13.53**	**173**	P		P	Pn	11 52 24.8	-3.5
WRA	**Warramunga Arr**	**13.54**	**173**	Pn		P	Pn	11 52 25.0	-3.4
	0.3nm,0.3s,baz=354,slow=13,SNR=4.7								
WRA						Sn	Sn	11 54 51.5	-6.2
	0.5nm,0.3s,baz=357,slow=25,SNR=4.3								
ASAR	**Alice Springs**	**17.18**	**176**	P			**Pn**	**11 53 13.2**	**-3.0**
	0.2nm,0.3s,baz=352,slow=13,SNR=2.2								
ASAR						S	**S**	**11 56 35.5**	**+0.8**
	0.2nm,0.3s,baz=348,slow=26,SNR=4.4								
CMAR	**Chiang Mai Arr**	**41.38**	**307**	P			**P**	**11 57 00.8**	**-1.0**
	1.1nm,0.4s,baz=127,slow=6.9,SNR=7.1								
MJAR	**Matsushiro Arr**	**43.08**	**7**	P			**P**	**11 57 14.8**	**-0.6**
	2.2nm,0.8s,baz=192,slow=9.8,SNR=5.3								
MAJO	**Matsushiro**	**43.08**	**7**	P			**P**	**11 57 15.1**	**-0.3**
KSAR	**Wonju Array Be**	**43.87**	**355**	P			**P**	**11 57 21.9**	**+0.1**
KSRS	**Korea Array**	**43.88**	**355**	P			**P**	**11 57 21.8**	**+0.1**
	1.8nm,0.9s,baz=174,slow=10.0,SNR=6.5								
USRK	**Ussuriysk Ar.**	**50.40**	**359**	P			**P**	**11 58 12.8**	**+0.2**
	1.4nm,0.6s,baz=190,slow=7.0,SNR=3.4								
MCQ	**Macquarie Isla**	**52.43**	**161**	P			**P**	**11 58 26.9**	**-0.8**
MKAR	**Makanchi Array**	**69.18**	**326**	P			**P**	**12 00 22.9**	**+1.1**
	1.9nm,0.7s,baz=123,slow=7.9,SNR=14								
TKM2	**Tokmak 2**	**71.20**	**319**	*e*P			**P**	**12 00 34.5**	**0.0**
	0.8nm,0.5s								
ZALV	**Zalesovo Beam**	**72.23**	**333**	P			**P**	**12 00 40.2**	**0.0**
	1.3nm,0.6s,baz=116,slow=4.6,SNR=6.8								
KURBB	**Kurchatov Arra**	**73.39**	**327**	P			**P**	**12 00 47.8**	**+0.6**
	1.1nm,0.9s,baz=128,slow=5.1,SNR=12								
KURK	**Kurchatov**	**73.39**	**328**	P			**P**	**12 00 47.8**	**+0.6**
BVAR	**Borovoye Array**	**78.97**	**327**	P			**P**	**12 01 19.4**	**+0.6**
	0.3nm,0.3s,baz=90,slow=5.8,SNR=2.8								
NRIK	**Noril'sk**	**81.65**	**345**	P			**P**	**12 01 35.1**	**+2.3**
	9.6nm,0.6s,baz=144,slow=3.3,SNR=3.7								
ABKAR	**Akbulak array**	**83.67**	**321**	P			**P**	**12 01 43.8**	**0.0**
	2.3nm,1.6s								
TORD	**Torodi Ar. Bea**	**131.20**	**282**	PKP		**PKPdf**		**12 08 27.7**	**-0.5**
	0.2nm,0.5s,baz=186,slow=1.4,SNR=2.4								
CPUP	**Villa Florida**	**146.04**	**164**	PKPbc		**PKPdf**		**12 08 55.3**	**+0.3**
	1.1nm,0.6s,baz=218,slow=3.3,SNR=2.1								
LPAZ	**La Paz**	**149.51**	**138**	PKPbc		**PKPbc**		**12 09 07.7**	**+1.5**
	0.7nm,0.7s,baz=226,slow=6.8,SNR=2.9								

IDC 28 12:03:14.9±3.3, 54°.17N×87°.37E, h0km, mb1 3.2/2, mb1mx3.0/35, mbtmp3.2/2, ML2.8/2, Error ellipse: s-maj=31.0km s-min=18.3km az=51.0, Southwestern Siberia

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
I46RU	**ZALESOVO INFRA**	**1.52**	**263**	*i*				12 12 20.0	
	baz=79,slow=338,SNR=3.0								
ZALV	**Zalesovo Beam**	**1.52**	**263**	Pg		Pg	Pn	12 03 41.7	-1.6
	4.2nm,0.3s,baz=79,slow=16,SNR=21								
ZALV						Lg	Lg	12 04 03.0	
	1.9nm,0.3s,baz=85,slow=29,SNR=5.2								
KURBB	**Kurchatov Arra**	**6.47**	**240**	Pn		Pn	Pn	12 04 52.4	+1.1
	0.2nm,0.3s,baz=53,slow=13,SNR=7.9								
MKAR	**Makanchi Array**	**8.06**	**206**	Pn		Pn	Pn	12 05 14.0	+0.9
	0.2nm,0.3s,baz=28,slow=16,SNR=2.8								

GUC ***28*** *12:03:53.6±0.8, 34°.58S×70°.97W, h24km±551km, ML3.7*
SJA ***28*** *12:03:53.0±0.5, 34°.49S×71°.46W, h18km±46km, ML2.9, MW3.3*
ISC 28 12:03:52.4±1.3, 34°.57S±0°.05×70°.92W±0°.05, h5km±13km, n12, σ0§62/20, 3C-2D, Chile-Argentina border region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
CHPI	**Pichilemu**	**0.91**	**281**	*i*	*i*P	**Pg**		**12 04 10.0**	**+0.1**
CHPI					*i* S	**Sg**		**12 04 21.9**	**+0.2**
TALC	**Talca**	**1.01**	**215**	*e*P		**Pg**		**12 04 11.8**	**0.0**
TALC					*i* S	**Sg**		**12 04 24.8**	**-0.2**
ANTU	**Antumapu**	**1.03**	**14**⇑	*i*P		**Pn**		**12 04 13.2**	**-0.2**
ANTU					*i* S	**Sb**		**12 04 27.2**	**+0.7**
ANTU					IAML			12 04 28.0	
	comp=E,3μm,0.2s								
CLCH	**Cerro Calan**	**1.21**	**15**⇑	*i*P		**Pn**		**12 04 16.2**	**+0.1**
CLCH					*i* S	**Sn**		**12 04 32.7**	**-0.2**
CLCH					IAML			12 04 36.5	
	comp=E,2μm,0.5s								
PEL	**Peldehue**	**1.44**	**8**⇑	*e*P		**Pn**		**12 04 19.1**	**0.0**
PEL					*i* S	**Sg**		**12 04 38.9**	**+0.4**
PEL					IAML			12 04 40.6	
	comp=N,1μm,0.4s								
ROC1	**El Roble**	**1.59**	**357**	*e*P		**Pb**		**12 04 22.3**	**-0.1**
ROC1					*e*S	**Sg**		**12 04 43.6**	**0.0**
ROCH	**El Roble**	**1.60**	**357**	*i*P		**Pb**		**12 04 22.2**	**-0.2**
ROCH					*i* S	**Sg**		**12 04 43.8**	**+0.1**
ROCH					IAML			12 04 45.0	
	comp=N,5μm,0.3s								
AAGR	**Agrelo**	**2.29**	**50**	*e*P		**Pg**		**12 04 37.0**	**+0.8**
ARCO	**CERRO ARCO**	**2.39**	**44**	*e*P		**Pg**		**12 04 38.0**	**-0.2**
ARCO				IAML				12 05 17.3	
	comp=Z,52nm,0.7s								
ASAL	**Salagasta**	**2.63**	**42**	*e*P		**Pb**		**12 04 40.8**	**+0.7**
AUSP	**Uspallata**	**2.67**	**29**	*e*P		**Pb**		**12 04 40.9**	**+0.1**
AUSP					*e*S	**Sg**		**12 05 16.6**	**-1.6**
RTLS	**Leoncito**	**3.08**	**27**	*e*P		**Pb**		**12 04 46.6**	**-1.2**

KRSC 28 12:25:24.7±1.1, 49°.93N×156°.97E, h20km±19km, ML3.8, Kuril Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
SKR	**Severo-Kuril's**	**0.94**	**324**	*e*P			Pb	12 25 41.3	-0.9
SKR				*e*S			Sb	12 25 53.7	-0.5
PAU	**Pauzhetka**	**1.55**	**356**	*e*P			Pb	12 25 52.7	+0.1
PAU				*e*S			Sb	12 26 12.0	+0.2
ASAK	**Asacha**	**2.53**	**13**	*e*P			Pn	12 26 06.4	+1.7
RUS	**Russkaya**	**2.69**	**21**	*e*P			Pb	12 26 09.5	-2.6
RUS				*e*S			Sb	12 26 42.4	-2.3
PET	**Petropavlovsk**	**3.28**	**18**	*e*S			Sb	12 26 57.4	-4.1
UGLR	**Uglovaya**	**3.48**	**19**	*e*P			Pn	12 26 21.6	+3.8
AVH	**Avacha**	**3.52**	**18**	*e*P			Pn	12 26 22.3	+4.0
SMAR	**Somma**	**3.53**	**18**	*e*P			Pn	12 26 22.2	+3.6
KRER	**Koryakskii**	**3.56**	**17**	*e*P			Pn	12 26 22.9	+4.0
SDLR	**Sedlovina**	**3.56**	**19**	*e*P			Pn	12 26 21.8	+2.9
GNL	**Ganaly**	**3.82**	**9**	*e*P			Pb	12 26 27.2	-4.3
MKZ	**Mys Kozlova**	**5.48**	**30**	*e*P			Pn	12 26 49.4	+4.3

MAN 28 12:28:36, 9°.89N×122°.71E, h82km, mb4.0, ML2.8, MS2.5, 2C, Negros

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
JAP	**San Jose, Anti**	**1.13**	**319**⇑	*e*P			Pn	12 28 58.0	+1.2
JAP				*e*S			Sn	12 29 24.6	+12
RCP	**Roxas**	**1.66**	**1**⇑	*e*P			Pn	12 29 12.4	+8.9
RCP				*e*S			Sn	12 29 35.1	+11

ISCJB ***28*** *12:34:24.5±0.5, 33°.32N±0°.02×35°.41E±0°.04, h10km±3km, Error ellipse: s-maj=6.0km s-min=2.8km az=30.3*
CSEM ***28*** *12:34:24.7±0.1, 33°.32N×35°.42E, h10km, MD2.0, Error ellipse: s-maj=3.9km s-min=1.7km az=118.0*
GRAL ***28*** *12:34:25.3±0.3, 33°.32N×35°.38E, h1km±2km, MD2.8*
GII ***28*** *12:34:25.0±0.0, 33°.25N×35°.42E, h4km, MD2.0/4*
NSSC ***28*** *12:34:26.2±1.2, 33°.30N×35°.50E, h18km±8km, ML1.7*
ISC 28 12:34:24.5±0.9, 33°.33N±0°.02×35°.43E±0°.03, h15km±7km, n43, σ0§58/70, Jordan-Syria region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
KSDI	**Kefar Szold**	**0.24**	**125**	Pg		Pg	**Pg**	**12 34 29.7**	**0.0**
KSDI				Sg		Sg	**Sb**	**12 34 33.8**	**-0.6**
MMA0B	**Mount Meron ar**	**0.31**	**184**	Pg		Pg	**Pg**	**12 34 30.5**	**-0.5**
MMA0B				Sg		Sg	**Sg**	**12 34 35.6**	**+0.1**
MMA0B	**Mount Meron ar**	**0.31**	**184**	Pg		Pg	**Pg**	**12 34 30.5**	**-0.5**
MMA0B				Sg		Sg	**Sg**	**12 34 35.6**	**+0.1**
MMB2	**Mount Meron ar**	**0.32**	**185**	Pg		Pg	**Pg**	**12 34 30.8**	**-0.4**
MMB2	**Mount Meron ar**	**0.32**	**185**	Pg		Pg	**Pg**	**12 34 30.8**	**-0.4**
HNTI	**Hanita**	**0.32**	**221**	Pg		Pg	**Pg**	**12 34 31.1**	**-0.1**
HNTI				Sg		Sg	**Sg**	**12 34 36.1**	**+0.3**
HNTI	**Hanita**	**0.32**	**221**	Pg		Pg	**Pg**	**12 34 31.1**	**-0.1**
HNTI				Sg		Sg	**Sg**	**12 34 36.1**	**+0.3**
RCY	**Rachaya**	**0.38**	**64**	*e*P			**Pb**	**12 34 32.9**	**-0.1**
RCY				*e*S			**Sb**	**12 34 38.3**	**-0.4**
DQRL	**Deir Qamar**	**0.40**	**18**	*e*P			**Pg**	**12 34 32.7**	**+0.2**
DQRL				*e*S			**Sg**	**12 34 38.2**	**+0.2**
DQRL	**Deir Qamar**	**0.40**	**18**	*e*P			**Pg**	**12 34 32.7**	**+0.2**
DQRL				*e*S			**Sg**	**12 34 38.2**	**+0.2**
BRBR	**Barbar**	**0.45**	**79**	*e*P			**Pb**	**12 34 33.9**	**-0.2**
BRBR				*e*S			**Sb**	**12 34 41.0**	**+0.3**
BRBR				AML		AML	AML	12 34 43.0	
	comp=N,127nm,0.5s								
BRBR				AML		AML	AML	12 34 45.3	
	comp=E,98nm,0.5s								
BRBR	**Barbar**	**0.45**	**79**	*e*P			**Pb**	**12 34 33.9**	**-0.2**
BRBR				*e*S			**Sb**	**12 34 41.0**	**+0.3**
	comp=E,98nm,0.5s								
KSHT	**Keshet**	**0.47**	**137**	Pg		Pg	**Pb**	**12 34 34.5**	**0.0**
KSHT	**Keshet**	**0.47**	**137**	Pg		Pg	**Pb**	**12 34 34.5**	**0.0**
BHL	**Bhannes**	**0.60**	**18**	*e*P			**Pg**	**12 34 36.5**	**+0.1**
BHL	**Bhannes**	**0.60**	**18**	*e*P			**Pg**	**12 34 36.5**	**+0.1**
BLGI	**Bet Lehem HaGe**	**0.62**	**199**	Pg		Pg	**Pg**	**12 34 36.6**	**-0.1**
BLGI				Sg		Sg	**Sb**	**12 34 45.3**	**-0.3**
BLGI	**Bet Lehem HaGe**	**0.62**	**199**	Pg		Pg	**Pg**	**12 34 36.6**	**-0.1**
BLGI				Sg		Sg	**Sb**	**12 34 45.3**	**-0.3**
OFRI	**'Ofer**	**0.80**	**208**	Pg		Pg	**Pb**	**12 34 39.8**	**-0.2**
OFRI				Sg		Sg	**Sn**	**12 34 51.4**	**-1.3**
OFRI	**'Ofer**	**0.80**	**208**	Pg		Pg	**Pb**	**12 34 39.8**	**-0.2**
OFRI				Sg		Sg	**Sn**	**12 34 51.4**	**-1.3**
TCHB	**Talchebab**	**0.80**	**145**	*e*P			**Pb**	**12 34 39.8**	**-0.3**
TCHB	**Talchebab**	**0.80**	**145**	*e*P			**Pb**	**12 34 39.8**	**-0.3**
TOTH	**TOTAH**	**0.84**	**87**	*e*P			**Pg**	**12 34 40.9**	**+0.1**
TOTH	**TOTAH**	**0.84**	**87**	*e*P			**Pg**	**12 34 40.9**	**+0.1**
MMLI	**Mount Malkishu**	**0.89**	**180**	Pg		Pg	**Pb**	**12 34 41.3**	**-0.2**
MMLI				Sg		Sg	**Sg**	**12 34 53.3**	**-0.1**
MMLI	**Mount Malkishu**	**0.89**	**180**	Pg		Pg	**Pb**	**12 34 41.3**	**-0.2**
MMLI				Sg		Sg	**Sg**	**12 34 53.3**	**-0.1**
HWQ	**Hawqa**	**1.04**	**24**	*e*P			**Pn**	**12 34 44.5**	**-0.1**
HWQ	**Hawqa**	**1.04**	**24**	*e*P			**Pn**	**12 34 44.5**	**-0.1**
HMDT	**Nahal Hemdat**	**1.07**	**176**	Pg		Pg	**Pb**	**12 34 44.4**	**-0.3**
HMDT				Sg		Sg	**Sn**	**12 34 59.9**	**+0.4**
HMDT	**Nahal Hemdat**	**1.07**	**176**	Pg		Pg	**Pb**	**12 34 44.4**	**-0.3**
HMDT				Sg		Sg	**Sn**	**12 34 59.9**	**+0.4**
MARH	**Ras Al Marh**	**1.12**	**51**	*e*P			**Pg**	**12 34 46.5**	**+0.3**
MARH				*e*S			**Sb**	**12 34 59.7**	**-0.6**
MARH				AML		AML	AML	12 35 08.2	
	comp=N,27nm,0.3s								
MARH				AML		AML	AML	12 35 08.7	
	comp=E,48nm,0.3s								
MARH	**Ras Al Marh**	**1.12**	**51**	*e*P			**Pg**	**12 34 46.5**	**+0.3**
MARH				*e*S			**Sb**	**12 34 59.7**	**-0.6**
	comp=E,48nm,0.3s								
SLTI	**Sal'it

JFK				S	**Sg**	12 39 41.1	+0.5
JHO	**Hitachi**	**0.51**	**210**	⇑P	**Pb**	12 39 41.1	0.0
JHO				S	**Sb**	12 39 48.4	-0.2
JFT	**Otama**	**0.64**	**317**	⇑P	**Pg**	12 39 42.8	+0.4
JFT				S	**Sg**	12 39 51.1	+0.3
JSB	**Shiboa**	**0.78**	**264**	⇑P	**Pb**	12 39 46.1	+0.3
JSB				S	**Sb**	12 39 56.5	+0.1
JMM	**Marumori**	**0.82**	**355**	⇑P	**Pg**	12 39 45.7	-0.1
JMM				S	**Sg**	12 39 56.5	0.0
JFY	**Yanaizu**	**1.00**	**291**	⇑P	**Pg**	12 39 49.4	0.0
MJAR	**Matsushiro Arr**	**2.21**	**258**	Pn	**Pb**	12 40 09.4	-0.8
	5.7nm,0.3s,baz=82,slow=16,SNR=38						
MJAR				Sn	**Sb**	12 40 37.2	-0.4
	10nm,0.3s,baz=65,slow=24,SNR=10						
MAT	**Matsushiro**	**2.21**	**258**	P	**Pb**	12 40 09.0	-1.2
MAT				S	**Sb**	12 40 38.1	+0.5
ASAJ	**Asahikawa**	**7.18**	**10**	Pn	**Pn**	12 41 14.0	-1.3
	0.3nm,0.3s,baz=74,slow=20,SNR=4.3						
ZALV	**Zalesovo Beam**	**41.59**	**312**	P	**P**	12 47 18.1	0.0
	0.8nm,0.5s,baz=74,slow=8.1,SNR=4.3						
MKAR	**Makanchi Array**	**43.75**	**302**	P	**P**	12 47 37.0	+1.2
	0.2nm,0.4s,baz=82,slow=12,SNR=3.0						
WRA	**Warramunga Arr**	**57.02**	**187**	P	**P**	12 49 16.6	+0.3
	0.5nm,0.6s,baz=4.6,slow=7.3,SNR=8.6						
FINES	**FINESS Array B**	**68.60**	**332**	P	**P**	12 50 33.4	+0.3
	1.3nm,0.7s,baz=74,slow=10,SNR=4.8						

*SOME **28** 12:51:57.5, 40˚.87N×69˚.65E, h10km*
*KRNET **28** 12:51:58.0±0.1, 40˚.87N×69˚.63E, mb2.6*
*NNC **28** 12:52:01.3±2.6, 40˚.94N×69˚.49E, h141km±79km, mb2.2, mpv3.2, Error ellipse: s-maj=47.5km s-min=16.3km az=30.0*

ISC 28 12:51:58.1±1.6, 40˚.88N±0˚.05×69˚.72E±0˚.05, h12km±12km, n17, σt1.278/29, 11C-4D, Tajikistan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BTK	**Batken**	**1.18**	**134**	⇑*e*P	**Pg**	**12 52 21.7**	**+0.9**
	baz=131						
BTK				⇑*i*S	**Sn**	**12 52 38.8**	**+2.4**
	baz=131						
IUG	**Iuzhnay**	**1.29**	**10**	*e*P	**Pn**	**12 52 21.1**	**-0.9**
	30nm,0.2s						
IUG				*e*S	**Sb**	**12 52 37.7**	**-1.2**
	352nm,0.6s						
CHM	**Chimkent**	**1.44**	**357**	*e*P	**Pg**	**12 52 27.1**	**+1.2**
	246nm,0.1s						
CHM				*e*S	**Sg**	**12 52 46.1**	**+1.5**
	423nm,0.2s						
BRLS	**Borolday**	**1.91**	**359**	*e*P	**Pb**	**12 52 32.5**	**-0.3**
	43nm,0.3s						
BRLS				*e*S	**Sb**	**12 52 57.5**	**+0.9**
	85nm,0.4s						
ARK	**Arkit**	**1.93**	**61**	⇓*i*P	**Pb**	**12 52 34.1**	**+0.9**
	baz=62						
ARK				⇓*i*S	**Sg**	**12 53 01.2**	**+1.1**
	baz=62						
KK31	**Karatay Array**	**2.30**	**15**	Pn	**Pb**	**12 52 39.6**	**0.0**
	6.4nm,0.3s,baz=197,slow=16,SNR=94						
KK31				⇓Sn	**Sb**	**12 53 09.6**	**+1.6**
	48nm,0.5s,baz=203,slow=26						
OHH	**Osh**	**2.36**	**98**	⇑*i*P	**Pb**	**12 52 40.9**	**+0.3**
	baz=97						
OHH				⇑*i*S	**Sb**	**12 53 11.8**	**+2.1**
	baz=97						
MNAS	**Manas**	**2.63**	**52**	⇑*e*P	**Pb**	**12 52 44.9**	**-0.4**
	baz=52						
MNAS				⇑*i*S	**Sb**	**12 53 19.0**	**+1.3**
	baz=52						
MNAS	**Manas**	**2.63**	**52**	⇑Pn	**Pb**	**12 52 44.2**	**-1.1**
	4.2nm,0.4s						
MNAS				⇓Sn	**Sb**	**12 53 18.8**	**+1.1**
	15nm,0.5s						
SFK	**Sufi-Kurgan**	**3.02**	**105**	⇑*i*P	**Pb**	**12 52 49.9**	**-2.0**
	baz=105						
SFK				⇑*i*S	**Sb**	**12 53 28.2**	**-0.6**
	baz=105						
SFK	**Sufi-Kurgan**	**3.02**	**105**	⇑Pn	**Pb**	**12 52 51.5**	**-0.4**
	1.9nm,0.3s						
MRKS	**Merke**	**3.22**	**53**	*e*P	**Pb**	**12 52 56.7**	**+1.4**
	12nm,0.2s						
MRKS				*e*S	**Sb**	**12 53 37.8**	**+3.3**
	16nm,0.2s						
AAK	**Ala-Archa**	**3.98**	**62**	⇑Lg	Lg	12 54 07.4	
	7.5nm,0.7s						
DGS	**Degeres**	**5.09**	**60**	*e*P	Pb	12 53 31.5	+4.3
	4.4nm,0.6s						
DGS				*e*S	**Sg**	**12 54 37.4**	**-4.1**
	13nm,0.4s						
IZV	**Izvestkoviy**	**5.58**	**65**	*e*P	**Pg**	**12 53 42.2**	**-2.7**
	5.6nm,0.4s						
IZV				*e*S	**Sg**	**12 54 56.3**	**-0.8**
	6.1nm,0.4s						
TNSS	**Tian-Shan**	**5.81**	**66**	*e*P	**Pg**	**12 53 48.8**	**-0.6**
	4.3nm,0.4s						
TNSS				*e*S	**Sg**	**12 55 07.2**	**+2.7**
	6.5nm,0.4s						
AB31	**Akbulak array**	**10.85**	**324**	P	**Pn**	**12 54 31.6**	**-1.5**
	0.2nm,0.3s,baz=133,slow=14,SNR=8.4						

IDC 28 12:56:53.1±4.2, 17˚.68S×177˚.44W, h0km, mb3.9/4, mb1 4.1/4, mb1mx3.7/38, mbtmp3.9/4, Error ellipse: s-maj=182.2km s-min=32.9km az=139.0, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
STKA	**Stephens Creek**	**39.55**	**241**	P	P	13 04 26.9	+0.9
	0.6nm,0.3s,baz=92,slow=12,SNR=4.4						
WRA	**Warramunga Arr**	**45.58**	**259**	P	P	13 05 14.6	-0.8
	0.3nm,0.3s,baz=98,slow=7.6,SNR=21						
ASAR	**Alice Springs**	**45.74**	**254**	P	P	13 05 16.4	-0.2
	2.6nm,0.6s,baz=88,slow=8.1,SNR=76						
ILAR	**Eielson Array**	**85.46**	**13**	P	P	13 09 32.2	0.0
	0.3nm,0.4s,baz=219,slow=5.0,SNR=7.8						

*CSEM **28** 12:57:57.6±0.2, 40˚.53N×35˚.76E, h5km, MD2.6, Error ellipse: s-maj=3.6km s-min=3.4km az=136.0*
*ISK **28** 12:57:57.2, 40˚.50N×35˚.74E, h9km, MD2.7*
*DDA **28** 12:57:57.1, 40˚.54N×35˚.75E, h7km, Md2.6*

ISC 28 12:57:57.5±1.1, 40˚.52N±0˚.03×35˚.75E±0˚.02, h7km±10km, n22, σ0.940/38, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HAVZ	**Havza**	**0.56**	**358**	*i*P	**Pg**	**12 58 08.3**	**0.0**
HAVZ	**Havza**	**0.56**	**358**	P	**Pg**	**12 58 08.3**	**0.0**
COAL	**Corum-Alaca**	**0.64**	**246**	*i*P	**Pg**	**12 58 09.9**	**+0.1**
COAL				*i*S	**Sb**	**12 58 19.6**	**-0.6**
COAL	**Corum-Alaca**	**0.64**	**246**	P	**Pg**	**12 58 09.9**	**+0.1**
COAL				S	**Sb**	**12 58 19.6**	**-0.6**
ERBA	**Erbaa**	**0.79**	**77**	*i*P	**Pg**	**12 58 12.5**	**-0.1**
ERBA				*i*S	**Sg**	**12 58 22.8**	**0.0**
ERBA	**Erbaa**	**0.79**	**77**	P	**Pg**	**12 58 12.5**	**-0.1**
ERBA				S	**Sg**	**12 58 22.8**	**0.0**
CORM	**Corum**	**0.92**	**249**	*e*PG	**Pg**	**12 58 15.3**	**+0.1**
CORM				*e*SG	**Sb**	**12 58 28.3**	**0.0**
CORM	**Corum**	**0.92**	**249**	*e*Pg	**Pg**	**12 58 15.3**	**+0.1**
CORM				*e*Sg	**Sb**	**12 58 28.3**	**0.0**
YOZ	**Yozgat**	**0.93**	**201**	*e*PG	**Pg**	**12 58 15.4**	**-0.1**
YOZ				*e*SG	**Sb**	**12 58 28.4**	**-0.4**
YOZ	**Yozgat**	**0.93**	**201**	*e*Pg	**Pg**	**12 58 15.4**	**-0.1**
YOZ				*e*Sg	**Sb**	**12 58 28.4**	**-0.4**
SVSK	**Karacayir**	**1.13**	**122**	*e*PN	**Pb**	**12 58 19.2**	**-0.2**
SVSK				*e*SN	**Sn**	**12 58 35.0**	**-0.5**
SVSK	**Karacayir**	**1.13**	**122**	*e*Pn	**Pb**	**12 58 19.2**	**-0.2**
SVSK				*e*Sn	**Sn**	**12 58 35.0**	**-0.5**
CUSAR	**Sarkisla-SIVAS**	**1.16**	**161**	*i*P	**Pn**	**12 58 21.6**	**+1.2**
CUSAR				*i*S	**Sn**	**12 58 36.6**	**+0.1**
CUSAR	**Sarkisla-SIVAS**	**1.16**	**161**	P	**Pn**	**12 58 21.6**	**+1.2**
CUSAR				S	**Sn**	**12 58 36.6**	**+0.1**
DIKM	**Dikmen**	**1.19**	**342**	*e*PN	**Pn**	**12 58 20.8**	**+0.1**
DIKM				*e*SN	**Sn**	**12 58 37.5**	**+0.4**
DIKM	**Dikmen**	**1.19**	**342**	*e*Pn	**Pn**	**12 58 20.8**	**+0.1**
DIKM				*e*Sn	**Sn**	**12 58 37.5**	**+0.4**
CDAG	**Cicekdag**	**1.38**	**230**	*i*P	**Pn**	**12 58 23.1**	**-0.3**
CDAG	**Cicekdag**	**1.38**	**230**	P	**Pn**	**12 58 23.1**	**-0.3**
SNOP	**Sinop**	**1.56**	**345**	*e*PN	**Pn**	**12 58 26.0**	**+0.3**
SNOP	**Sinop**	**1.56**	**345**	*e*Pn	**Pn**	**12 58 26.0**	**+0.3**
ILGA	**Ilgaz**	**1.63**	**290**	*i*P	**Pb**	**12 58 28.1**	**0.0**
ILGA				*i*S	**Sg**	**12 58 50.0**	**0.0**
ILGA	**Ilgaz**	**1.63**	**290**	P	**Pb**	**12 58 28.1**	**0.0**
ILGA				S	**Sg**	**12 58 50.0**	**0.0**

*IGIL **28** 13:04:27.8, 32˚.33N×7˚.67W, h0km*
*INMG **28** 13:04:28.8±0.9, 32˚.26N×7˚.66W, h31km, MD2.9, ML2.5, Error ellipse: s-maj=9.4km s-min=5.2km az=89.0*
*CSEM **28** 13:04:31.0±0.3, 32˚.61N×7˚.64W, h10km, mb4.3, Error ellipse: s-maj=9.1km s-min=5.6km az=86.0*

MDD 28 13:04:27.1±2.7, 32˚.32N×7˚.69W, h0km, mb4.3/5, Error ellipse: s-maj=38.7km s-min=23.0km az=88.0, PRXIMO, Morocco

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PFVI	**Vila Bisbo**	**4.89**	**349**	*e*Pn	Pn	13 05 40.6	-1.3
PFVI				*e*Sn	Sn	13 06 34.3	-5.0
PFVI				A	A	13 06 37.5	
	6.7nm,0.7s						
PFVI	**Vila Bisbo**	**4.89**	**349**	P	Pn	13 05 40.6	-1.3
	4.3nm,0.1s,SNR=7.9						
PFVI				S	Sn	13 06 35.0	-4.3
	1.9nm,0.1s,SNR=7.9						
PFVI	**Vila Bisbo**	**4.89**	**349**	P	Pn	13 05 40.6	-1.3
	4.3nm,0.1s,SNR=7.9						
PFVI				S	Sn	13 06 35.0	-4.3
	1.9nm,0.1s,SNR=7.9						
PBDV	**Barranco-do-Ve**	**4.92**	**358**	*e*Pn	Pn	13 05 41.0	-1.3
PBDV				*e*Sn	Sn	13 06 36.1	-3.8
PBDV				A	A	13 06 40.6	
	2.6nm,0.2s						
PBDV	**Barranco-do-Ve**	**4.92**	**358**	P	Pn	13 05 41.0	-1.3
PBDV				S	Sn	13 06 36.1	-3.8
	2.6nm,0.2s						
PBDV	**Barranco-do-Ve**	**4.92**	**358**	P	Pn	13 05 41.0	-1.3
PBDV				S	Sn	13 06 36.1	-3.8
	2.6nm,0.2s						
MORF	**Marmelete**	**5.04**	**351**	*e*P	Pn	13 05 42.3	-1.6
MORF	**Marmelete**	**5.04**	**351**	*e*Pn	Pn	13 05 42.5	-1.5
MORF				*e*Sn	Sn	13 06 38.3	-4.6
MORF				A	A	13 06 43.1	
	3.6nm,0.3s						
MORF	**Marmelete**	**5.04**	**351**	P	Pn	13 05 42.5	-1.5
MORF				S	Sn	13 06 38.3	-4.6
	3.6nm,0.3s						
MORF	**Marmelete**	**5.04**	**351**	P	Pn	13 05 42.5	-1.5
MORF				S	Sn	13 06 38.3	-4.6
	3.6nm,0.3s						
PVAQ	**Vaqueiros**	**5.07**	**360**	*e*Pn	Pn	13 05 42.6	-1.8
PVAQ				*e*Sn	Sn	13 06 39.4	-4.3
PVAQ				A	A	13 06 40.8	
	5.9nm,0.5s						
PVAQ	**Vaqueiros**	**5.07**	**360**	P	Pn	13 05 42.6	-1.8
PVAQ				S	Sn	13 06 39.4	-4.3
	5.9nm,0.5s						
PVAQ	**Vaqueiros**	**5.07**	**360**	P	Pn	13 05 42.6	-1.8
PVAQ				S	Sn	13 06 39.4	-4.3
	5.9nm,0.5s						
EGRO	**El Granado**	**5.21**	**2**	P	Pn	13 05 45.3	-0.9
	1.2nm,0.1s,SNR=7.9						
EGRO				S	Sn	13 06 42.6	-4.4
	1.9nm,0.2s,SNR=7.9						
EGRO	**El Granado**	**5.21**	**2**	P	Pn	13 05 45.3	-0.9
	1.2nm,0.1s,SNR=7.9						
EGRO				S	Sn	13 06 42.6	-4.4
	1.9nm,0.2s,SNR=7.9						
PCVE	**Castro Verde**	**5.31**	**357**	*e*Pn	Pn	13 05 46.7	-0.9
PCVE				*e*Sn	Sn	13 06 44.3	-5.2
PCVE				A	A	13 06 48.0	
	4.3nm,0.6s						
PCVE	**Castro Verde**	**5.31**	**357**	P	Pn	13 05 46.7	-0.9
PCVE				S	Sn	13 06 44.3	-5.2
	4.3nm,0.6s						
PCVE	**Castro Verde**	**5.31**	**357**	P	Pn	13 05 46.7	-0.9
PCVE				S	Sn	13 06 44.3	-5.2
	4.3nm,0.6s						
EMIN	**Mina Concepcio**	**5.50**	**8**	P	Pn	13 05 48.7	-1.6
	1.9nm,0.1s,SNR=7.9						
EMIN				S	Sn	13 06 48.7	-5.5
	1.1nm,0.1s,SNR=7.9						
EMIN	**Mina Concepcio**	**5.50**	**8**	P	Pn	13 05 48.7	-1.6
	1.9nm,0.1s,SNR=7.9						
EMIN				S	Sn	13 06 48.7	-5.5
	1.1nm,0.1s,SNR=7.9						
MESJ	**Messejana**	**5.53**	**356**	*e*P	Pn	13 05 49.2	-1.4
MESJ	**Messejana**	**5.53**	**356**	*e*Sn	Sn	13 06 50.2	-4.6
MESJ				A	A	13 06 55.2	
	3.6nm,0.4s						
MESJ	**Messejana**	**5.53**	**356**	S	Sn	13 06 50.2	-4.6
	3.6nm,0.4s						
MESJ	**Messejana**	**5.53**	**356**	S	Sn	13 06 50.2	-4.6
	3.6nm,0.4s						
PBEJ	**Beja**	**5.70**	**359**	*e*Sn	Sn	13 06 52.9	-6.2
PBEJ				A	A	13 06 56.0	
	2.6nm,0.3s						
PBEJ	**Beja**	**5.70**	**359**	S	Sn	13 06 52.9	-6.2
	1.3nm,0.3s						
PBEJ	**Beja**	**5.70**	**359**	S	Sn	13 06 52.9	-6.2
	1.3nm,0.3s						
PNCL	**Nicolau / Gran**	**5.82**	**353**	*e*Pn	Pn	13 05 53.0	-1.7
PNCL				*e*Sn	Sn	13 06 57.0	-5.1
PNCL				A	A	13 07 08.1	
	2.1nm,0.5s						
PNCL	**Nicolau / Gran**	**5.82**	**353**	*e*Pn	Pn	13 05 53.0	-1.7
PNCL				*e*Sn	Sn	13 06 57.0	-5.1
	2.1nm,0.5s						
PBAR	**Barrancos**	**5.87**	**5**	*e*Pn	Pn	13 05 54.2	-1.1
PBAR				*e*Sn	Sn	13 06 58.1	-5.2
PBAR				A	A	13 07 00.9	
	7.0nm,0.4s						
PBAR	**Barrancos**	**5.87**	**5**	P	Pn	13 05 54.2	-1.1
PBAR				S	Sn	13 06 58.1	-5.2
	7.0nm,0.4s						
PBAR	**Barrancos**	**5.87**	**5**	P	Pn	13 05 54.2	-1.1
PBAR				S	Sn	13 06 58.1	-5.2
	7.0nm,0.4s						
ECAB	**El Cabril**	**6.04**	**17**	P	Pn	13 05 56.5	-1.1
	0.9nm,0.2s,SNR=7.9						
ECAB				S	Sn	13 07 01.6	-5.9
	0.4nm,0.2s,SNR=7.9						
ECAB	**El Cabril**	**6.04**	**17**	P	Pn	13 05 56.5	-1.2
	0.9nm,0.2s,SNR=7.9						
ECAB				S	Sn	13 07 01.6	-5.9
	0.4nm,0.2s,SNR=7.9						
EADA	**Adamuz**	**6.37**	**23**	P	Pn	13 06 01.3	-0.9
	1.2nm,0.1s,SNR=7.9						
EADA				S	Sn	13 07 09.6	-6.0
	0.2nm,0.1s,SNR=7.9						
EADA	**Adamuz**	**6.37**	**23**	P	Pn	13 06 01.3	-0.9
	1.2nm,0.1s,SNR=7.9						
EADA				S	Sn	13 07 09.6	-6.0
	0.2nm,0.1s,SNR=7.9						
EBAD	**Badajoz**	**6.45**	**5**	P	Pn	13 06 02.3	-1.0
	1.0nm,0.1s,SNR=7.9						
EBAD				S	Sn	13 07 12.4	-5.1
	0.0nm,0.3s,SNR=7.9						
EBAD	**Badajoz**	**6.45**	**5**	P	Pn	13 06 02.3	-1.0
	1.0nm,0.1s,SNR=7.9						
EBAD				S	Sn	13 07 12.4	-5.1
	SNR=7.9						
PMTG	**Montargil**	**6.75**	**356**	*e*Pn	Pn	13 06 06.0	-1.4
PMTG				*e*Sn	Sn	13 07 18.5	-6.5
PMTG				A	A	13 07 23.2	
	1.7nm,0.3s						
PMTG	**Montargil**	**6.75**	**356**	*e*Pn	Pn	13 06 06.0	-1.4
PMTG				*e*Sn	Sn	13 07 18.5	-6.5
	1.7nm,0.3s						
PMRV	**Marv??o**	**7.10**	**2**	*e*Pn	Pn	13 06 11.1	-1.1
PMRV	**Marv??o**	**7.10**	**2**	P	Pn	13 06 11.1	-1.1
PMRV	**Marv??o**	**7.10**	**2**	P	Pn	13 06 11.1	-1.1

*IDC **28** 13:07:41.6±0.6, 10˚.16N×103˚.74W, h0km, mb4.7/21, mb1 4.8/25, mb1mx4.7/39, mbtmp4.7/25, ML4.0/4, MS5.4/25, Ms1 5.4/25, ms1mx5.3/31, Error ellipse: s-maj=21.1km s-min=10.0km az=63.0*
*MOS **28** 13:07:42.2±1.2, 10˚.18N×103˚.64W, h10km, mb5.4/50, MS5.3/46, Error ellipse: s-maj=11.6km s-min=4.7km az=99.2*
*GCMT **28** 13:07:43.8±0.1, 10˚.40N×103˚.72W, h15km, MW5.8/126, Moment Tensor Solution. s116,c238; s126,c409; Duration: 1s9 Moment tensor: Scale 10^17 Nm; Mrr-0.40±.05; Mθθ-2.20±.05; Mϕϕ2.59±.06; Mrθ-0.28±.15; Mθϕ5.86±.04; Mϕr-0.46±.17; Best double couple: Mo6.35200×10^17 NP1:ϕ169.00000°, δ87.00000°, λ177.00000°. NP2:ϕ259.00000°, δ87.00000°, λ3.00000°. Principal axes: T 6.5680, Plg4.0000°, Azm124.0000°; N -0.4370, Plg86.0000°, Azm307.0000°; P -6.1360, Plg0.0000°, Azm214.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface/mantle waves, cutoff=50s.*
*NEIC **28** 13:07:43.9±0.3, 10˚.13N×103˚.61W, h10km, mb5.3/196, MS5.4/296, MW5.8, MW5.8 Error ellipse: s-maj=6.9km s-min=4.6km az=51.0, Moment Tensor Solution. s45 Moment tensor: Scale 10^17 Nm; Mrr0.37; Mθθ-2.42; Mϕϕ2.05; Mrθ-0.99; Mθϕ5.82; Mϕr-1.32; Best double couple: Mo6.50000×10^17 NP1:ϕ168.00000°, δ79.00000°, λ170.00000°. NP2:ϕ260.00000°, δ80.00000°, λ11.00000°. Principal axes: T 6.4900, Plg15.0000°, Azm125.0000°; N -0.0700, Plg75.0000°, Azm302.0000°; P -6.4200, Plg1.0000°, Azm34.0000°;*
*NEIC **28** 13:07:44.0±0.0, 10˚.38N×103˚.80W, h15km, Moment Tensor Solution. s12 Moment tensor: Scale 10^17 Nm; Mrr0.00; Mθθ-2.70; Mϕϕ2.80; Mrθ-4.80; Mθϕ4.60; Mϕr0.00; Best double couple: Mo7.00000×10^17 NP1:ϕ75.00000°, δ86.00000°, λ-40.00000°. NP2:ϕ168.00000°, δ49.00000°, λ-175.00000°. Principal axes: T 6.5000, Plg24.0000°, Azm128.0000°; N 1.3000, Plg49.0000°, Azm251.0000°; P -7.8000, Plg29.0000°, Azm23.0000°;*
*BJI **28** 13:07:44.7, 10˚.20N×103˚.60W, h12km, mB5.7/23, Ms5.9/28, Ms7 5.7/27*
*ISCJB **28** 13:07:45.4±0.2, 10˚.44N±0˚.03×103˚.54W±0˚.02, h33km, mb5.2/222, MS5.5/447, Error ellipse: s-maj=3.9km s-min=3.2km az=40.1*

ISC 28 13:07:48.0±0.3, 10˚.36N±0˚.03×103˚.63W±0˚.03, h35km, n1144, σ2.938/871, mb5.3/221, MS5.4/448, 3C-2D, Northern East Pacific Rise

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ZIIG	**Zihuatanejo**	**7.51**	**16**	P	**Pn**	**13 09 34.1**	**-1.0**
ZIIG				S	**Sn**	**13 10 54.0**	**-5.0**
MMIG	**Aquila**	**7.89**	**2**	P	**Pn**	**13 09 41.6**	**+1.3**
MMIG				S	**Sn**	**13 11 11.1**	**+2.7**
TLIG	**Tlapa**	**8.69**	**34**	*e*Pn	**Pn**	**13 09 49.8**	**-1.6**
CJM	**Chamela**	**9.19**	**352**	P	**Pn**	**13 10 01.1**	**+2.9**
CJM				S	**Sn**	**13 11 45.9**	**+5.5**
MOIG	**Morelia**	**9.56**	**14**	*e*Pn	**Pn**	**13 10 05.6**	**+2.2**
CMIG	**Matias Romero**	**10.81**	**51**	Pn	**Pn**	**13 10 20.5**	**+0.1**
	0.3nm,0.3s,baz=216,slow=9.6,SNR=13						
CMIG				Sn	Sn	13 12 30.8	+11
	0.2nm,0.3s,baz=324,slow=19,SNR=2.1						
CMIG				LR	LR	13 13 36.6	
	comp=Z,31μm,21.6s,baz=226,slow=32						
H06S1	**SOCORRO T**	**10.94**	**320**	T	T	13 21 47.9	
	SNR=34						
H06E1	**SOCORRO T-PHAS**	**10.95**	**321**	T	T	13 21 50.7	
	SNR=86						
ZAIG	**Zacatecas**	**12.38**	**5**	*e*Pn	**Pn**	**13 10 44.3**	**+2.1**
CCIG	**Comitan**	**12.64**	**61**	*e*Pn	**Pn**	**13 10 44.6**	**-0.9**
SLBS	**Sierra La Lagu**	**14.56**	**336**	*e*Pn	**Pn**	**13 11 14.1**	**+2.4**
LPIG	**La Paz**	**15.08**	**336**	Pn	**Pn**	**13 11 19.7**	**+1.1**
	2.4nm,0.3s,baz=174,slow=6.6,SNR=12						
LPIG				Sn	**S**	**13 14 21.3**	**+0.4**
	8.0nm,0.3s,baz=254,slow=18,SNR=3.0						
LPIG				LR	LR	13 15 43.1	
	comp=Z,41μm,18.5s,baz=158,slow=32						
HPIG		**16.60**	**354**	*e*Pn	**P**	**13 11 41.9**	**+1.4**
	404nm,2.0s						
035Z	**Hargill**	**16.86**	**17**	P	**P**	**13 11 43.1**	**0.0**
	baz=199						
PAYG	**Puerto Ayora**	**17.21**	**129**	*e*Pn	**P**	**13 11 45.2**	**-1.9**
	256nm,1.1s						
034A	**Hebbronville**	**17.26**	**15**	P	**P**	**13 11 48.5**	**+0.9**
	baz=196,SNR=23						
035A	**Encino**	**17.30**	**17**	P	**P**	**13 11 48.2**	**+0.2**
	baz=198						
933A	**Laredo**	**17.65**	**13**	P	**P**	**13 11 53.4**	**+1.5**
	baz=194,SNR=16						
TEIG	**Tepich**	**17.75**	**55**	P	**P**	**13 11 54.7**	**+1.7**
	0.2nm,0.3s,baz=196,slow=20,SNR=4.8						
TEIG				S	**S**	**13 15 22.1**	**+6.5**
	0.1nm,0.3s,baz=287,slow=19,SNR=1.6						
TEIG				LR	LR	13 18 42.3	
	comp=Z,3μm,20.9s,baz=110,slow=37						
TEIG	**Tepich**	**17.75**	**55**	*e*Pn	**P**	**13 11 51.5**	**-1.5**
	256nm,1.8s						
TEIG				S	**S**	**13 15 22.1**	**+6.5**
934A	**Benavides**	**17.82**	**15**	P	**P**	**13 11 55.3**	**+1.5**
	baz=196,SNR=6.3						
KVTX	**Kingsville**	**17.93**	**17**	*e*Pn	**P**	**13 11 53.8**	**-1.2**
	298nm,1.2s						
936A	**North Padre Is**	**17.99**	**18**	P	**P**	**13 11 57.2**	**+1.6**
	baz=200						
832A	**Faith Ranch, C**	**18.16**	**10**	P	**P**	**13 11 58.8**	**+1.3**
	baz=191,SNR=18						
834A	**Tilden**	**18.31**	**14**	P	**Pn**	**13 12 00.7**	**+1.4**
	baz=196						
833A	**Chaparral WMA,**	**18.31**	**12**	P	**Pn**	**13 12 00.7**	**+1.3**
	baz=193,SNR=9.2						
JTS	**JuntasAbangare**	**18.38**	**89**	*e*P	**P**	**13 11 59.1**	**-0.9**
JTS				pmax	pmax		
	comp=Z,110nm,1.3s						
JTS	**JuntasAbangare**	**18.38**	**89**	*e*P	**P**	**13 11 59.1**	**-0.9**
	comp=Z,110nm,1.3s						
835A	**Beeville**	**18.65**	**16**	P	**Pn**	**13 12 04.3**	**+0.9**
	baz=198						
733A	**Divot King Ran**	**18.71**	**12**	P	**Pn**	**13 12 05.1**	**+0.9**
	baz=193,SNR=12						
TX31	**Lajitas Ar. Si**	**18.88**	**360**	*e*P	**Pn**	**13 12 07.2**	**+0.8**
TXAR	**Lajitas Array**	**18.88**	**360**	P	**Pn**	**13 12 07.7**	**+1.3**
	comp=Z,0.2nm,0.3s,baz=181,slow=10.0,SNR=48						
TXAR				LR	LR	13 18 35.9	
	comp=Z,15μm,18.6s,baz=0.0,slow=34						
734A	**La Parita Cree**	**19.00**	**14**	P	**Pn**	**13 12 07.3**	**-0.3**
	baz=195						
735A	**Kenedy**	**19.20**	**16**	P	**Pn**	**13 12 10.3**	**+0.3**
	baz=197						
633A	**Saathoff Ranch**	**19.46**	**12

	comp=Z,244nm,1.5s								
HKT					MLR		MLR		
	comp=Z,15µm,18.0s								
HKT	**Hockley**	**20.81**	**19**	*e*P		Pn		13 12 27.6	-1.3
	comp=Z,244nm,1.5s								
HKT					LR		LR		
	comp=Z,15µm,18.0s								
434A	**Burnet**	**20.96**	**13**	P		Pn		13 12 28.7	-2.1
	baz=195,SNR=24								
435B	**Jarrell**	**21.09**	**15**	P		**P**		**13 12 29.9**	**+0.4**
	baz=196								
538A	**Harpers Horsep**	**21.17**	**20**	P		**P**		**13 12 29.7**	**-0.6**
	baz=202								
436A	**Wall Ranch, Ga**	**21.28**	**16**	P		**P**		**13 12 31.5**	**-0.1**
	baz=198								
MNTX	**Cornudas Mount**	**21.30**	**356**	P		**P**		**13 12 33.0**	**+1.3**
	baz=175,SNR=86								
MNTX	**Cornudas Mount**	**21.30**	**356**	*e*P		**P**		**13 12 33.1**	**+1.3**
	comp=Z,243nm,1.4s								
MNTX					LR		LR		
	comp=Z,12µm,22.0s								
333A	**Richland Sprin**	**21.31**	**11**	P		**P**		**13 12 32.5**	**+0.7**
	baz=192,SNR=19								
539A	**Cross D Ranch,**	**21.34**	**22**	P		**P**		**13 12 32.9**	**+0.8**
	baz=204								
334A	**Lometa**	**21.46**	**13**	P		**P**		**13 12 34.4**	**+0.9**
	baz=194,SNR=22								
437A	**Phantom Ranch,**	**21.53**	**18**	P		**P**		**13 12 35.0**	**+0.8**
	baz=200								
319A	**Douglas**	**21.56**	**347**	*e*P		**P**		**13 12 35.8**	**+1.1**
	comp=Z,202nm,1.3s								
319A					LR		LR		
	comp=Z,9µm,20.0s								
335A	**Moody**	**21.60**	**15**	P		**P**		**13 12 35.6**	**+0.7**
	baz=196,SNR=12								
438A	**Sam Houston St**	**21.66**	**19**	P		**P**		**13 12 34.1**	**-1.5**
	baz=202								
336A	**Riesel**	**21.85**	**16**	P		**P**		**13 12 35.8**	**-1.8**
	baz=198								
439A	**Center Grove,**	**21.94**	**21**	P		**P**		**13 12 37.0**	**-1.6**
	baz=204								
233A	**Rising Star**	**22.00**	**11**	P		**P**		**13 12 38.1**	**-1.1**
	baz=192,SNR=11								
337A	**Centerville**	**22.06**	**18**	P		**P**		**13 12 38.4**	**-1.4**
	baz=200								
234A	**Clairette**	**22.13**	**12**	P		**P**		**13 12 39.8**	**-0.9**
	baz=194,SNR=14								
440A	**Kirbyville**	**22.19**	**23**	P		**P**		**13 12 40.1**	**-1.2**
	baz=206								
WHTX	**Lake Whitney,**	**22.27**	**14**	P		**P**		**13 12 41.3**	**-0.9**
	baz=196,SNR=8.9								
WHTX	**Lake Whitney,**	**22.27**	**14**	*e*P		**P**		**13 12 42.6**	**+0.4**
	comp=Z,669nm,1.9s								
WHTX					LR		LR		
	comp=Z,12µm,19.0s								
338A	**Crockett**	**22.28**	**19**	P		**P**		**13 12 41.1**	**-1.1**
	baz=202,SNR=7.6								
121A	**Cookes Peak, D**	**22.40**	**351**	P		**P**		**13 12 42.9**	**-0.8**
	baz=169,SNR=40								
121A	**Cookes Peak, D**	**22.40**	**351**	*e*P		**P**		**13 12 45.1**	**+1.4**
	comp=Z,184nm,1.4s								
ABTX	**Abilene, Hawle**	**22.46**	**9**	P		**P**		**13 12 43.2**	**-1.1**
	baz=190,SNR=17								
ABTX	**Abilene, Hawle**	**22.46**	**9**	*e*P		**P**		**13 12 42.7**	**-1.5**
	comp=Z,118nm,1.0s								
ABTX					LR		LR		
	comp=Z,23µm,20.0s								
543A	**St. Martinvill**	**22.49**	**28**	P		**P**		**13 12 43.6**	**-0.9**
	baz=211								
441A	**DeRidder**	**22.49**	**24**	P		**P**		**13 12 44.2**	**-0.3**
	baz=207								
339A	**Huntington**	**22.51**	**21**	P		**P**		**13 12 44.2**	**-0.5**
	baz=204								
236A	**Katherine and**	**22.52**	**16**	P		**P**		**13 12 43.6**	**-1.2**
	baz=198,SNR=9.4								
133A	**Hamilton Ranch**	**22.57**	**10**	P		**P**		**13 12 44.2**	**-1.1**
	baz=192,SNR=16								
134A	**White-Moore Ra**	**22.70**	**12**	P		**P**		**13 12 46.2**	**-0.5**
	baz=194								
237A	**Washetta, Mont**	**22.72**	**17**	P		**P**		**13 12 46.2**	**-0.8**
	baz=200								
340A	**Bronson**	**22.82**	**22**	P		**P**		**13 12 45.9**	**-2.1**
	baz=205								
TUC	**Tucson**	**22.83**	**344**	*e*P		**P**		**13 12 48.4**	**+0.3**
TUC					pmax		pmax		
	comp=Z,238nm,1.8s								
TUC					MLR		MLR		
	comp=Z,8µm,19.0s								
TUC	**Tucson**	**22.83**	**344**	*e*P		**P**		**13 12 48.4**	**+0.3**
	comp=Z,238nm,1.8s								
TUC					LR		LR		
	comp=Z,8µm,19.0s								
135A	**Vickery Place,**	**22.83**	**14**	P		**P**		**13 12 46.9**	**-1.1**
	baz=196								
544A	**White Castle**	**22.83**	**29**	P		**P**		**13 12 45.8**	**-2.4**
	baz=213								
238A	**Jacksonville**	**22.93**	**19**	P		**P**		**13 12 47.9**	**-1.2**
	baz=202,SNR=7.8								
136A	**Ennis**	**22.97**	**16**	P		**P**		**13 12 47.7**	**-1.8**
	baz=198								
341A	**Kurthwood**	**23.02**	**23**	P		**P**		**13 12 48.4**	**-1.6**
	baz=207,SNR=10								
646A	**Port Sulphur**	**23.07**	**32**	P		**P**		**13 12 48.1**	**-2.4**
	baz=216								
443A	**Delano Plantat**	**23.10**	**27**	P		**P**		**13 12 48.5**	**-2.3**
	baz=211								
545A	**Edgard**	**23.11**	**30**	P		**P**		**13 12 47.5**	**-3.4**
	baz=214								
214A	**Organ Pipe Nat**	**23.11**	**340**	P		**P**		**13 12 49.9**	**-1.2**
	baz=157,SNR=18								
214A	**Organ Pipe Nat**	**23.11**	**340**	*e*P		**P**		**13 12 49.9**	**-1.2**
	comp=Z,585nm,1.7s								
239A	**Gary**	**23.16**	**20**	P		**P**		**13 12 49.2**	**-2.3**
	baz=203								
Z33A	**Whitaker Ranch**	**23.26**	**10**	P		**P**		**13 12 51.3**	**-1.1**
	baz=192,SNR=17								
137A	**Heron Place, G**	**23.30**	**17**	P		**P**		**13 12 51.5**	**-1.3**
	baz=200								
342A	**Flagon Creek P**	**23.40**	**25**	P		**P**		**13 12 51.6**	**-2.2**
	baz=209,SNR=6.5								
240A	**Hunter Patters**	**23.43**	**21**	P		**P**		**13 12 52.2**	**-1.8**
	baz=205,SNR=5.4								
BCIP	**Isla Barro Col**	**23.48**	**91**	*e*P		**P**		**13 12 54.0**	**-0.8**
	comp=Z,270nm,1.9s								
BCIP					LR		LR		
	comp=Z,14µm,20.0s								
BCIP	**Isla Barro Col**	**23.48**	**91**	*e*P		**P**		**13 12 57.7**	**+2.9**
Z34A	**Collier Ranch,**	**23.50**	**12**	P		**P**		**13 12 53.6**	**-1.2**
	baz=194,SNR=5.2								
MSTX	**Muleshoe**	**23.52**	**2**	P		**P**		**13 12 53.0**	**-2.1**
	baz=182,SNR=13								
MSTX	**Muleshoe**	**23.52**	**2**	*e*P		**P**		**13 12 55.5**	**+0.5**
	comp=Z,571nm,1.9s								
MSTX					LR		LR		
	comp=Z,15µm,19.0s								
444A	**Pine Grove**	**23.54**	**29**	P		**P**		**13 12 52.8**	**-2.4**
	baz=213								
138A	**Matatall Enter**	**23.55**	**18**	P		**P**		**13 12 53.5**	**-1.8**
	baz=201								
Z35A	**Perchaven, San**	**23.61**	**13**	P		**P**		**13 12 53.5**	**-2.3**
	baz=196								
343A	**Vidalia**	**23.62**	**26**	P		**P**		**13 12 53.8**	**-2.1**
	baz=210								
241A	**Mo Tay, Goldon**	**23.73**	**23**	P		**P**		**13 12 55.2**	**-1.8**
	baz=207								
445A	**Amite**	**23.74**	**29**	P		**P**		**13 12 53.8**	**-3.4**
	baz=214								
Z36A	**Blue Ridge**	**23.75**	**15**	P		**P**		**13 12 54.7**	**-2.5**
	baz=198,SNR=12								
139A	**Bunkhouse Ranc**	**23.79**	**20**	P		**P**		**13 12 55.4**	**-2.1**
	baz=203								
Y22D	**IRIS PASSCAL I**	**23.80**	**353**	P		**P**		**13 12 55.5**	**-2.3**
	baz=172								
Y22D	**IRIS PASSCAL I**	**23.80**	**353**	PFAKE				13 13 10.0	+12
Y22D					LR		LR		
	comp=Z,7µm,20.0s								
BNM	**Barren Site**	**23.84**	**354**	*e*P		**P**		**13 13 00.3**	**+2.0**
Z37A	**Pogue Cattle C**	**23.90**	**17**	P		**P**		**13 12 56.6**	**-1.9**
	baz=200								
Y33A	**Hilltop Ranch,**	**23.98**	**10**	P		**P**		**13 12 57.1**	**-2.3**
	baz=192								
LPM	**Los Pinos Moun**	**24.00**	**354**	*e*P		**P**		**13 13 00.8**	**+1.0**
140A	**Cam and Jess,**	**24.04**	**21**	P		**P**		**13 12 58.2**	**-1.6**
	baz=205								
242A	**Grayson**	**24.07**	**24**	P		**P**		**13 12 57.9**	**-2.2**
	baz=208								
Y34A	**Reagan Ranch,**	**24.10**	**12**	P		**P**		**13 12 58.4**	**-2.0**
	baz=194,SNR=13								
Z38A	**Mt. Pleasant**	**24.13**	**18**	P		**P**		**13 12 58.9**	**-1.9**
	baz=201								
LAZ	**Ladron**	**24.15**	**353**	*e*P		**P**		**13 13 02.7**	**+1.5**
344A	**Westbrook Farm**	**24.16**	**28**	P		**P**		**13 12 58.7**	**-2.3**
	baz=212								
113A	**Mohawk Valley,**	**24.18**	**339**	*e*P		**P**		**13 13 01.5**	**+0.3**
	comp=Z,241nm,2.0s								
113A					LR		LR		
	comp=Z,7µm,19.0s								
243A	**Waterproof**	**24.19**	**26**	P		**P**		**13 12 58.1**	**-3.2**
	baz=210								
Y35A	**Marietta**	**24.21**	**13**	P		**P**		**13 12 59.6**	**-1.8**
	baz=196,SNR=11								
141A	**Papa Simpson,**	**24.25**	**22**	P		**P**		**13 12 59.7**	**-2.1**
	baz=206								
446A	**Poplarville**	**24.27**	**31**	P		**P**		**13 12 59.1**	**-2.9**
	baz=216								
X32A	**Elmer**	**24.28**	**9**	P		**P**		**13 13 00.6**	**-1.5**
	baz=190,SNR=14								
345A	**Thompson Farm,**	**24.37**	**29**	P		**P**		**13 13 00.1**	**-2.9**
	baz=214								
Z39A	**Irene McRaven,**	**24.38**	**19**	P		**P**		**13 13 00.3**	**-2.6**
	baz=203								
AMTX	**Amarillo**	**24.48**	**4**	P		**P**		**13 13 02.0**	**-2.0**
	baz=184								
AMTX	**Amarillo**	**24.48**	**4**	*e*P		**P**		**13 13 03.0**	**-1.0**
	comp=Z,95nm,1.0s								
X33A	**Lawton**	**24.52**	**10**	P		**P**		**13 13 01.6**	**-2.8**
	baz=192								
142A	**Monroe**	**24.58**	**24**	P		**P**		**13 13 02.1**	**-2.6**
	baz=208								
ANMO	**Albuquerque**	**24.61**	**354**	P		**P**		**13 13 07.4**	**+2.0**
	comp=Z,16nm,1.1s,baz=165,slow=13,SNR=28								
ANMO					S		**S**		
	comp=Z,0.6nm,0.04s,baz=194,slow=16,SNR=2.4								
ANMO	**Albuquerque**	**24.61**	**354**	*e*P		**P**		**13 13 05.7**	**+0.4**
ANMO					pmax		pmax		
	comp=Z,12nm,1.5s								
ANMO	**Albuquerque**	**24.61**	**354**	*e*P		**P**		**13 13 06.0**	**+0.6**
	comp=Z,98nm,1.4s								
ANMO					S		**S**		
ANMO					LR		LR		
	comp=Z,11µm,18.0s								
Y37A	**Hugo**	**24.63**	**16**	P		**P**		**13 13 03.0**	**-2.3**
	baz=199,SNR=7.0								
Z40A	**Long Farm, Mag**	**24.66**	**21**	P		**P**		**13 13 03.9**	**-1.6**
	baz=204								
WMOK	**Wichita Mounta**	**24.67**	**10**	*e*P		**P**		**13 13 06.2**	**+0.5**
WMOK					pmax		pmax		
	comp=Z,58nm,1.4s								
WMOK					MLR		MLR		
	comp=Z,20µm,19.0s								
WMOK	**Wichita Mounta**	**24.67**	**10**	*e*P		**P**		**13 13 06.2**	**+0.5**
	comp=Z,58nm,1.4s								
WMOK					LR		LR		
	comp=Z,20µm,19.0s								
244A	**Avery, Jackson**	**24.68**	**27**	P		**P**		**13 13 03.0**	**-2.7**
	baz=212								
X35A	**Drake**	**24.69**	**13**	P		**P**		**13 13 04.7**	**-1.2**
	baz=196,SNR=32								
346A	**Big Creek Wild**	**24.71**	**30**	P		**P**		**13 13 03.1**	**-2.9**
	baz=215								
X34A	**Smith Ranch, M**	**24.71**	**11**	P		**P**		**13 13 04.6**	**-1.4**
	baz=194,SNR=21								
GLA	**Glamis**	**24.83**	**337**	P		**P**		**13 13 04.9**	**-2.2**
	baz=153,SNR=22								
GLA	**Glamis**	**24.83**	**337**	*e*P		**P**		**13 13 05.4**	**-1.7**
GLA					pmax		pmax		
	comp=Z,68nm,1.3s								
GLA					MLR		MLR		
	comp=Z,12µm,19.0s								
GLA	**Glamis**	**24.83**	**337**	*e*P		**P**		**13 13 05.4**	**-1.7**
	comp=Z,68nm,1.3s								
GLA					LR		LR		
	comp=Z,12µm,19.0s								
Y38A	**Idabel**	**24.84**	**18**	P		**P**		**13 13 05.6**	**-1.5**
	baz=201								
Z41A	**Richland Creek**	**24.87**	**22**	P		**P**		**13 13 05.0**	**-2.5**
	baz=206,SNR=12								
VBMS	**Vicksburg**	**24.90**	**27**	P		**P**		**13 13 05.3**	**-2.4**
	baz=212								
VBMS	**Vicksburg**	**24.90**	**27**	PFAKE				13 13 20.0	+12
VBMS					LR		LR		
	comp=Z,3µm,22.0s								
143A	**Socs Landing,**	**24.93**	**25**	P		**P**		**13 13 04.9**	**-3.1**
	baz=209,SNR=7.8								
W32A	**Sentinel**	**24.98**	**9**	P		**P**		**13 13 06.5**	**-2.0**
	baz=190,SNR=15								
X16A	**Lo Mia Camp, P**	**24.99**	**345**	*e*P		**P**		**13 13 09.5**	**+0.7**
	comp=Z,66nm,1.3s								
X16A					LR		LR		
	comp=Z,8µm,22.0s								
Y14A	**Wickenburg**	**25.00**	**341**	*e*P		**P**		**13 13 08.9**	**+0.2**
	comp=Z,390nm,1.5s								
Y14A					LR		LR		
	comp=Z,50µm,21.0s								
X36A	**Centrahoma**	**25.00**	**14**	P		**P**		**13 13 07.0**	**-1.6**
	baz=197,SNR=14								
245A	**Little AP, Sta**	**25.03**	**28**	P		**P**		**13 13 06.1**	**-2.8**
	baz=213,SNR=6.3								
Y39A	**Lockesburg**	**25.05**	**19**	P		**P**		**13 13 06.7**	**-2.4**
	baz=202								
SWSC	**Sam W. Stewart**	**25.12**	**335**	P		**P**		**13 13 08.4**	**-1.3**
	baz=151,SNR=6.8								
W33A	**Caddo, Fort Co**	**25.13**	**10**	P		**P**		**13 13 08.9**	**-0.9**
	baz=192,SNR=9.8								
WLAR	**White Oak Lake**	**25.15**	**21**	*e*P		**P**		**13 13 09.6**	**-0.4**
	comp=Z,197nm,1.1s								
WLAR					LR		LR		
	comp=Z,8µm,18.0s								
347A	**Saraland**	**25.18**	**32**	P		**P**		**13 13 07.9**	**-2.4**
	baz=217								
Z42A	**Norrel Spur, H**	**25.21**	**23**	P		**P**		**13 13 09.8**	**-0.7**
	baz=208								
BAR	**Barrett**	**25.26**	**334**	*e*P		**P**		**13 13 10.9**	**-0.2**
	comp=Z,109nm,1.4s								
BAR					LR		LR		
	comp=Z,12µm,18.0s								
W18A	**Petrified Fore**	**25.27**	**348**	P		**P**		**13 13 11.0**	**-0.2**
	baz=166,SNR=23								
W18A	**Petrified Fore**	**25.27**	**348**	*e*P		**P**		**13 13 11.1**	**-0.2**
	comp=Z,138nm,1.4s								
W18A					LR		LR		
	comp=Z,5µm,18.0s								
X37A	**Clayton**	**25.27**	**16**	P		**P**		**13 13 10.1**	**-1.0**
	baz=199								
144A	**Alexander Plac**	**25.29**	**27**	P		**P**		**13 13 10.2**	**-1.1**
	baz=211								
W34A	**Bridge Creek,**	**25.33**	**11**	P		**P**		**13 13 10.8**	**-0.9**
	baz=193								
W34A	**Bridge Creek,**	**25.33**	**11**	*e*P		**P**		**13 13 14.4**	**+2.7**
	comp=Z,233nm,1.8s								
W34A					LR		LR		
	comp=Z,16µm,20.0s								
MONP2	**Monument Peak**	**25.34**	**334**	P		**P**		**13 13 11.1**	**-0.9**
	baz=150,SNR=8.6								
Y12C	**Blythe**	**25.34**	**338**	P		**P**		**13 13 10.5**	**-1.2**
	baz=154,SNR=7.7								
Y12C	**Blythe**	**25.34**	**338**	*e*P		**P**		**13 13 12.3**	**+0.6**
	comp=Z,71nm,1.4s								
Y12C					LR		LR		
	comp=Z,7µm,21.0s								
246A	**Jackson Lee, B**	**25.38**	**30**	P		**P**		**13 13 11.6**	**-0.5**
	baz=215								
Y40A	**Okolona**	**25.39**	**20**	P		**P**		**13 13 11.0**	**-1.1**
	baz=204,SNR=6.2								
Z43A	**Armstrong Fami**	**25.44**	**25**	P		**P**		**13 13 11.4**	**-1.2**
	baz=209								
W35A	**Tecumseh**	**25.44**	**13**	P		**P**		**13 13 11.3**	**-1.3**
	baz=195,SNR=8.2								
145A	**Houston Renfro**	**25.49**	**28**	P		**P**		**13 13 12.0**	**-1.1**
	baz=212								
X38A	**Whitesboro**	**25.50**	**17**	P		**P**		**13 13 11.5**	**-1.7**
	baz=200,SNR=24								
348A	**Jackson**	**25.53**	**33**	P		**P**		**13 13 12.3**	**-1.1**
	baz=218								
X39A	**Fountain Ranch**	**25.57**	**18**	P		**P**		**13 13 12.1**	**-1.7**
	baz=202,SNR=14								
W36A	**Wetumka**	**25.58**	**14**	P		**P**		**13 13 13.4**	**-0.5**
	baz=197								
V32A	**Arapaho**	**25.59**	**9**	P		**P**		**13 13 12.7**	**-1.3**
	baz=190								
BC3	**Big Chuckawall**	**25.61**	**337**	P		**P**		**13 13 13.1**	**-1.2**
	baz=152,SNR=25								
109C	**Camp Elliot, M**	**25.63**	**333**	P		**P**		**13 13 13.0**	**-1.3**
	baz=148								
247A	**Quitman**	**25.67**	**31**	P		**P**		**13 13 11.9**	**-2.8**
	baz=216								
PDMCI	**Parker Dam,Lak**	**25.70**	**340**	P		**P**		**13 13 14.5**	**-0.5**
	baz=156,SNR=16								
Y42A	**Garnett, Star**	**25.77**	**23**	P		**P**		**13 13 14.4**	**-1.2**
	baz=207								
MIAR	**Mount Ida**	**25.77**	**19**	P		**P**		**13 13 14.6**	**-1.1**
	baz=203,SNR=8.9								
MIAR	**Mount Ida**	**25.77**	**19**	*e*P		**P**		**13 13 14.0**	**-1.6**
MIAR					pmax		pmax		
	comp=Z,64nm,1.1s								
MIAR					MLR		MLR		
	comp=Z,7µm,19.0s								
MIAR	**Mount Ida**	**25.77**	**19**	*e*P		**P**		**13 13 14.0**	**-1.6**
	comp=Z,64nm,1.1s								
MIAR					LR		LR		
	comp=Z,7µm,19.0s								
W37B	**Quinton**	**25.78**	**16**	P		**P**		**13 13 15.1**	**-0.5**
	baz=199,SNR=19								
V33A	**Lossen Ranch,**	**25.81**	**10**	P		**P**		**13 13 14.6**	**-1.3**
	baz=192								
Z44A	**Pea Ridge, Bel**	**25.84**	**26**	P		**P**		**13 13 14.9**	**-1.3**
	baz=211								
146A	**Union**	**25.93**	**29**	P		**P**		**13 13 15.6**	**-1.4**
	baz=214								
IRM	**Iron Mountain**	**25.93**	**338**	P		**P**		**13 13 17.0**	**-0.2**
	baz=154,SNR=33								
V34A	**Guthrie**	**25.96**	**11**	P		**P**		**13 13 15.8**	**-1.5**
	baz=194								
V34A	**Guthrie**	**25.96**	**11**	*e*P		**P**		**13 13 15.2**	**-2.1**
	comp=Z,78nm,1.0s								
V34A					LR		LR		
	comp=Z,18µm,18.0s								
W38A	**Poteau**	**25.97**	**17**	P		**P**		**13 13 14.8**	**-2.5**
	baz=201,SNR=7.4								
X40A	**Basin Creek Fa**	**25.97**	**21**	P		**P**		**13 13 14.9**	**-2.5**
	baz=205								
PFO	**Pinyon Flats O**	**25.97**	**335**	P		**P**		**13 13 18.1**	**+0.5**
	comp=Z,20nm,1.2s,baz=157,slow=9.7,SNR=17								
PFO					LR		LR	13 21 34.9	
	comp=Z,11µm,20.3s,baz=148,slow=32								
PFO	**Pinyon Flats O**	**25.97**	**335**	P		**P**		**13 13 15.3**	**-2.3**
	baz=150,SNR=12								
PFO	**Pinyon Flats O**	**25.97**	**335**	*i* P		**P**		**13 13 20.0**	**+2.4**
WUAZ	**Wupatki**	**26.02**	**345**	P		**P**		**13 13 16.5**	**-1.6**
	baz=163,SNR=42								
WUAZ	**Wupatki**	**26.02**	**345**	*e*P		**P**		**13 13 18.4**	**+0.4**
	comp=Z,93nm,1.1s								
WUAZ					LR		LR		
	comp=Z,6µm,20.0s								
V35A	**Meyer Ranch, C**	**26.03**	**13**	P		**P**		**13 13 16.2**	**-1.8**
	baz=195								
BELC	**Belle Mtn. Jos**	**26.12**	**336**	P		**P**		**13 13 16.9**	**-2.1**
	baz=152,SNR=17								
248A	**Dixon Mills**	**26.15**	**32**	P		**P**		**13 13 16.6**	**-2.4**
	baz=217								
TUMC	**Tumaco**	**26.15**	**107**	*e*P		**P**		**13 13 18.9**	**-0.3**
TUMC				*e*P		**pP**		**13 13 23.1**	**-6.1**
Y43A	**Makayla and Ka**	**26.18**	**24**	P		**P**		**13 13 16.7**	**-2.6**
	baz=209								
U32A	**Winter Ranch,**	**26.24**	**8**	P		**P**		**13 13 16.8**	**-3.2**
	baz=190								
V36A	**Jenks**	**26.26**	**14**	P		**P**		**13 13 17.3**	**-2.8**
	baz=197								
MURC	**Murrieta**	**26.28**	**334**	P		**P**		**13 13 18.0**	**-2.3**
	baz=149								
NEE2	**Needles Airpor**	**26.29**	**339**	P		**P**		**13 13 18.6**	**-1.7**
	baz=155								
W39A	**Magazine**	**26.30**	**18**	P		**P**		**13 13 18.1**	**-2.3**
	baz=202,SNR=16								
GRGC	**Isla de Gorgon**	**26.30**	**104**	*e*P		**P**		**13 13 17.8**	**-2.9**
147A	**Livingston**	**26.34**	**30**	P		**P**		**13 13 18.3**	**-2.5**
	baz=216,SNR=9.3								
W13A	**Hualapai Mount**	**26.35**	**341**	*e*P		**P**		**13 13 21.8**	**+0.7**
	comp=Z,52nm,1.4s								
W13A					LR		LR		
	comp=Z,10µm,22.0s								
UALR	**University of**	**26.40**	**21**	*e*P		**P**		**13 13 21.9**	**+0.6**
UALR					LR		LR		
	comp=Z,8µm,19.0s								
TUL1	**Leonard**	**26.42**	**14**	P		**P**		**13 13 18.5**	**-2.9**
	baz=197								
TUL1	**Leonard**	**26.42**	**14**	*e*P		**P**		**13 13 22.1**	**+0.7**
	comp=Z,58nm,1.0s								
TUL1					LR		LR		
	comp=Z,8µm,21.0s								
U33A	**Lingo Farm, Me**	**26.44**	**10**	P		**P**		**13 13 19.9**	**-1.7**
	baz=192								
Y44A	**Strider, Charl**	**26.52**	**26**	P		**P**		**13 13 19.8**	**-2.6**
	baz=210								
W40A	**Ferguson Farm,**	**26.53**	**20**	P		**P**		**13 13 19.1**	**-3.4**
	baz=204								
U34A	**Anderson Ranch**	**26.55**	**11**	P		**P**		**13 13 19.4**	**-3.2**
	baz=193								
U34A	**Anderson Ranch**	**26.55**	**11**	*e*P		**P**		**13 13 22.9**	**+0.3**
	comp=Z,82nm,1.2s								
U34A					LR		LR		
	comp=Z,19µm,19.0s								
V37A	**Hulbert**	**26.56**	**16**	P		**P**		**13 13 18.9**	**-3.8**
	baz=199								
U35A	**Pawnee**	**26.64**	**12**	P		**P**		**13 13 20.4**	**-3.1**
	baz=195								
T25A	**Trinidad**	**26.67**	**359**	P		**P**		**13 13 22.8**	**-1.3**
	baz=178,SNR=23								
T25A	**Trinidad**	**26.67**	**359**	*e*P		**P**		**13 13 24.2**	**+0.2**
	comp=Z,145nm,1.6s								
T25A					LR		LR		
	comp=Z,10µm,20.0s								
GMRC	**Granite Mounta**	**26.68**	**338**	P		**P**		**13 13 21.2**	**-2.8**
	baz=153,SNR=13								
BBRC	**Big Bear Solar**	**26.73**	**335**	P		**P**		**13 13 21.9**	**-2.7**
	baz=150								
Y45A	**Yeager Farm, C**	**26.73**	**27**	P		**P**		**13 13 21.7**	**-2.6**
	baz=212								
V38A	**Canehill**	**26.74**	**17**	P		**P**		**13 13 22.0**	**-2.3**
	baz=200,SNR=7.2								
LDFC	**Landfair**	**26.74**	**339**	*e*P		**P**		**13 13 25.8**	**+1.2**
	comp=Z,119nm,1.3s								
LDFC					LR		LR		
	comp=Z,8µm,18.0s								

U15A LR LR
comp=Z,4µm,19.0s
V40A Witts Springs 27.17 19 P **P** 13 13 25.9 -2.4
baz=204
T34A McClaskey Farm 27.18 11 P **P** 13 13 26.1 -2.2
baz=194
MWC Mount Wilson 27.18 333 *eP* **P** 13 13 28.5 -0.1
MWC pmax pmax
comp=Z,107nm,1.3s
MWC MLR MLR
comp=Z,10µm,18.0s
MWC Mount Wilson 27.18 333 *eP* **P** 13 13 28.5 -0.1
comp=Z,107nm,1.3s
MWC LR LR
comp=Z,10µm,18.0s
PASC Pasadena Art C 27.20 333 *eP* **P** 13 13 30.7 +2.2
comp=Z,93nm,1.4s
PASC LR LR
comp=Z,8µm,19.0s
T35A Sooner Cattle 27.21 13 P **P** 13 13 26.0 -2.7
baz=195
Z48A Northport 27.26 30 P **P** 13 13 28.7 -0.4
baz=216,SNR=8.2
HHAR Hobbs 27.26 17 *eP* **P** 13 13 29.9 +0.8
comp=Z,53nm,1.3s
HHAR LR LR
comp=Z,6µm,21.0s
LRAL Lakeview Retre 27.27 32 *eP* **P** 13 13 32.5 +3.4
comp=Z,54nm,1.3s
LRAL LR LR
comp=Z,1µm,19.0s
U38A Gravette 27.28 16 P **P** 13 13 26.3 -3.0
baz=200
RRX Edison Barstow 27.29 336 P **P** 13 13 26.0 -3.3
baz=150
CMBC Cumbal 27.30 108 *eP* **P** 13 13 32.6 +2.4
DWPF Disney Wildern 27.32 47 PFAKE 13 13 40.0 +10
DWPF LR LR
comp=Z,7µm,20.0s
SDCO Great Sand Dun 27.32 357 P **P** 13 13 28.9 -1.0
baz=176,SNR=15
SDCO Great Sand Dun 27.32 357 *eP* **P** 13 13 32.2 +2.3
comp=Z,48nm,1.4s
SDCO LR LR
comp=Z,4µm,20.0s
DECC Green Verdugo 27.33 333 P **P** 13 13 27.0 -2.7
baz=147
OXF Oxford 27.33 26 *eP* **P** 13 13 31.7 +2.0
OXF pmax pmax
comp=Z,75nm,1.2s
OXF MLR MLR
comp=Z,3µm,21.0s
OXF Oxford 27.33 26 *eP* **P** 13 13 31.7 +2.0
comp=Z,75nm,1.2s
OXF LR LR
comp=Z,3µm,21.0s
TUQ Turquoise Moun 27.36 338 P **P** 13 13 27.7 -2.4
baz=153
S22A 4UR Ranch, Cre 27.42 354 P **P** 13 13 28.9 -1.9
baz=173,SNR=34
S22A 4UR Ranch, Cre 27.42 354 *eP* **P** 13 13 32.2 +1.3
comp=Z,39nm,1.1s
S22A LR LR
comp=Z,15µm,18.0s
T36A Boggs Farm, Ca 27.49 14 P **P** 13 13 29.8 -1.3
baz=196
U39A Green Forest 27.49 18 P **P** 13 13 29.5 -1.7
baz=202
Y47A UCPARC, Winfie 27.54 29 P **P** 13 13 29.8 -1.8
baz=215,SNR=5.6
BLG Laguna Peak, P 27.55 331 P **P** 13 13 29.8 -1.9
baz=146
S32A Newby Ranch, P 27.55 8 P **P** 13 13 29.8 -1.9
baz=190
GSC Goldstone, Bar 27.58 336 P **P** 13 13 30.2 -1.8
baz=151,SNR=16
GSC Goldstone, Bar 27.58 336 *eP* **P** 13 13 34.5 +2.4
GSC pmax pmax
comp=Z,80nm,1.5s
GSC MLR MLR
comp=Z,14µm,19.0s
GSC Goldstone, Bar 27.58 336 *eP* **P** 13 13 34.5 +2.4
comp=Z,80nm,1.5s
GSC LR LR
comp=Z,14µm,19.0s
S33A Kaszmaul Farm, 27.59 10 P **P** 13 13 30.3 -1.7
baz=192
MOTC Monteria, Cord 27.62 91 *eP* **P** 13 13 31.8 -0.7
MOTC *eP* **P** 13 13 32.6 +0.1
MOTC *eP* **P** 13 13 34.2 +1.7
MET Memphis--Engin 27.63 25 PFAKE 13 13 50.0 +18
MET LR LR
comp=Z,7µm,19.0s
U40A Yellville 27.66 19 P **P** 13 13 29.2 -3.5
baz=203
EDW2 Edwards Air Fo 27.71 334 P **P** 13 13 29.9 -3.3
baz=149,SNR=14
HBAR Harrisburg 27.72 23 PFAKE 13 13 50.0 +17
HBAR LR LR
comp=Z,18564µm,19.0s
T37A Cheneyville 18 27.79 15 P **P** 13 13 30.8 -2.9
baz=198,SNR=11
OSI Osito Audit: C 27.81 333 P **P** 13 13 31.2 -2.8
baz=147
OSI Osito Audit: C 27.81 333 PFAKE 13 13 50.0 +16
OSI LR LR
comp=Z,7µm,19.0s
KNB Kanab 27.81 344 *eP* **P** 13 13 35.2 +1.0
KNB pmax pmax
comp=Z,133nm,1.5s
KNB MLR MLR
comp=Z,6µm,20.0s
KNB Kanab 27.81 344 *eP* **P** 13 13 35.2 +1.0
comp=Z,132nm,1.5s
KNB LR LR
comp=Z,6µm,20.0s
S34A Willow Spring 27.85 11 P **P** 13 13 32.8 -1.5
baz=194
POPC Popayan, Colom 27.86 104 *eP* **P** 13 13 34.2 -0.7
T38A Diamond 27.87 16 P **P** 13 13 32.0 -2.5
baz=200,SNR=10
SHOC Shoshone, Teco 27.90 338 P **P** 13 13 32.5 -2.4
baz=153
LCMT Little Creek M 27.92 343 *eP* **P** 13 13 33.2 -2.0
comp=Z,36nm,1.2s
LCMT LR LR
comp=Z,7µm,20.0s
S35A Otter Creek Ra 27.99 12 P **P** 13 13 34.7 -0.9
baz=195
TIGA Tifton 28.02 39 PFAKE 13 13 50.0 +14
TIGA LR LR
comp=Z,5µm,21.0s
PKCU Pink Cliffs 28.08 345 *eP* **P** 13 13 36.3 -0.5
comp=Z,184nm,1.8s
PKCU LR LR
comp=Z,8µm,18.0s
LRMC Laurel Mtn Rad 28.09 335 P P 13 13 32.8 -3.9
baz=150,SNR=10
HELC Santa Helena 28.11 96 *eP* **P** 13 13 35.0 -2.2
T39A Clever 28.12 18 P **P** 13 13 33.3 -3.4
baz=202,SNR=7.3
SBC Santa Barbara 28.13 331 P **P** 13 13 34.1 -2.7
baz=145
S36A Lake Cedric, C 28.19 14 P **P** 13 13 34.5 -2.9
baz=197
ARVC Arvin 28.29 333 P **P** 13 13 35.4 -2.9
baz=147,SNR=7.0
R33A Olander Ranch, 28.29 9 P **P** 13 13 35.1 -3.2
baz=192
R32A Long Quarter, 28.29 8 P **P** 13 13 35.1 -3.1
baz=190
PLAL Pickwick Lake 28.32 28 PFAKE 13 13 50.0 +11
PLAL LR LR
comp=Z,3µm,22.0s
GNAR Gosnell 28.33 24 PFAKE 13 13 50.0 +11
GNAR LR LR
comp=Z,16404µm,19.0s
R34A Isabella, Hill 28.41 11 P **P** 13 13 35.8 -3.5
baz=193
S37A Fort Scott 28.41 15 P **P** 13 13 35.8 -3.6
baz=198
GUYC Guyana, Colomb 28.43 98 *eP* P 13 13 44.1 +3.8
CCUT Cedar City 28.46 344 PFAKE 13 13 50.0 +10
CCUT LR LR
comp=Z,8µm,20.0s
T40A Mansfield 28.50 19 P **P** 13 13 37.8 -2.4
baz=203,SNR=13

MPMC Manual Prospec 28.51 336 P **P** 13 13 38.7 -1.7
baz=151,SNR=31
Q24A Divide 28.52 358 P **P** 13 13 38.5 -2.1
baz=177,SNR=9.0
Q24A Divide 28.52 358 *eP* **P** 13 13 42.8 +2.1
comp=Z,86nm,2.0s
Q24A LR LR
comp=Z,10µm,21.0s
S38A Stockton 28.53 16 P **P** 13 13 38.8 -1.6
baz=200
PKM Mcpherson Peak 28.54 331 P **P** 13 13 39.4 -1.4
baz=145,SNR=5.9
KSCO Kaye Shedlock' 28.55 2 P **P** 13 13 38.1 -2.6
baz=182
KSCO Kaye Shedlock' 28.55 2 *eP* **P** 13 13 42.5 +1.8
comp=Z,102nm,1.4s
KSCO LR LR
comp=Z,10µm,18.0s
CBKS Cedar Bluff 28.55 6 P **P** 13 13 37.8 -2.8
baz=188
CBKS Cedar Bluff 28.55 6 *eP* **P** 13 13 40.7 +0.1
CBKS pmax pmax
comp=Z,32nm,1.0s
CBKS MLR MLR
comp=Z,20µm,18.0s
CBKS Cedar Bluff 28.55 6 *eP* **P** 13 13 40.6 +0.1
comp=Z,32nm,1.0s
CBKS LR LR
comp=Z,20µm,18.0s
ISA Isabella, Lake 28.58 334 P **P** 13 13 38.0 -2.9
baz=148,SNR=11
ISA Isabella, Lake 28.58 334 *eP* **P** 13 13 43.5 +2.6
ISA pmax pmax
comp=Z,82nm,1.4s
ISA MLR MLR
comp=Z,11µm,18.0s
ISA Isabella, Lake 28.58 334 *eP* **P** 13 13 43.5 +2.6
comp=Z,82nm,1.4s
ISA LR LR
comp=Z,11µm,18.0s
MTPU Mount Pierson 28.62 346 *eP* **P** 13 13 44.2 +2.6
comp=Z,70nm,1.6s
MTPU LR LR
comp=Z,6µm,19.0s
FURC Furnace Creek, 28.62 337 P **P** 13 13 39.1 -2.1
baz=152
R35A Emporia Munici 28.63 12 P **P** 13 13 38.9 -2.4
baz=195
DAC Darwin (Calif) 28.74 336 *eP* **P** 13 13 43.1 +0.6
DAC pmax pmax
comp=Z,75nm,1.6s
DAC MLR MLR
comp=Z,12µm,21.0s
DAC Darwin (Calif) 28.74 336 *eP* **P** 13 13 43.0 +0.6
comp=Z,76nm,1.6s
DAC LR LR
comp=Z,12µm,21.0s
S39A Bolivar 28.75 17 P **P** 13 13 40.0 -2.4
baz=201
R36A Gordon, Harris 28.79 13 P **P** 13 13 41.3 -1.4
baz=197
TPNV Topopah Spring 28.83 339 P **P** 13 13 41.8 -1.4
baz=154,SNR=31
TPNV Topopah Spring 28.83 339 *eP* **P** 13 13 44.5 +1.3
TPNV pmax pmax
comp=Z,71nm,1.4s
TPNV MLR MLR
comp=Z,14µm,18.0s
TPNV Topopah Spring 28.83 339 *eP* **P** 13 13 44.5 +1.3
comp=Z,70nm,1.4s
TPNV LR LR
comp=Z,14µm,18.0s
PVMO Portageville 28.85 24 PFAKE 13 14 00.0 +17
PVMO LR LR
comp=Z,6µm,19.0s
SMCO Snowmass 28.86 355 *eP* **P** 13 13 45.4 +1.7
comp=Z,54nm,1.3s
SMCO LR LR
comp=Z,22µm,18.0s
NORC Norcasia 28.87 97 *eP* **P** 13 13 44.1 +0.4
NORC *eP* **pP** 13 13 48.6 -5.1
Q32A Meitler Ranch, 28.87 8 P **P** 13 13 40.6 -2.8
baz=190
PBMO Poplar Bluff 28.89 22 PFAKE 13 14 00.0 +16
PBMO LR LR
comp=Z,6µm,20.0s
GLAT Glass 28.89 24 PFAKE 13 14 00.0 +16
GLAT LR LR
comp=Z,8359µm,18.0s
S40A Lebanon 28.92 18 P **P** 13 13 41.4 -2.4
baz=203
R37A Teagarden Farm 28.93 14 P **P** 13 13 41.2 -2.8
baz=198
SMMC Simmler 28.97 332 P **P** 13 13 42.0 -2.4
baz=155
Q33A Connelly Farm, 28.99 9 P **P** 13 13 42.2 -2.2
baz=192
PARMO Parma 29.05 23 PFAKE 13 14 00.0 +15
PARMO LR LR
comp=Z,13419µm,19.0s
R38A Fenwick Farm, 29.05 16 P **P** 13 13 42.8 -2.2
baz=200
MSU Marysvale 29.06 346 *eP* **P** 13 13 47.8 +2.4
MSU Marysvale 29.06 346 *eP* **P** 13 13 47.8 +2.4
Q34A Chapman 29.07 11 P **P** 13 13 42.8 -2.4
baz=194
GTBY Guantanamo Bay 29.08 68 *eP* **P** 13 13 46.9 +1.4
comp=Z,48nm,0.9s
GTBY LR LR
comp=Z,3µm,21.0s
FLOC Florencia 29.13 106 *eP* **P** 13 13 45.7 -0.3
PRAC Prado 29.26 101 *eP* **P** 13 13 45.3 -1.9
PRAC *eP* **P** 13 13 49.0 +1.8
GRAC Grapevine Rang 29.28 337 P **P** 13 13 44.9 -2.2
baz=152,SNR=6.3
SRU San Rafael Swe 29.29 349 *eP* **P** 13 13 49.4 +2.1
SRU pmax pmax
comp=Z,45nm,1.3s
SRU MLR MLR
comp=Z,6µm,20.0s
SRU San Rafael Swe 29.29 349 *eP* **P** 13 13 49.4 +2.1
comp=Z,45nm,1.3s
SRU LR LR
comp=Z,6µm,20.0s
KSU1 Kansas State U 29.30 11 P **P** 13 13 44.9 -2.4
baz=194
KSU1 Kansas State U 29.30 11 PFAKE 13 14 00.0 +13
KSU1 LR LR
comp=Z,12µm,19.0s
ISCO Idaho Springs 29.38 357 P **P** 13 13 46.1 -2.1
baz=176,SNR=10
ISCO Idaho Springs 29.38 357 *eP* **P** 13 13 49.7 +1.5
ISCO pmax pmax
comp=Z,21nm,1.1s
ISCO MLR MLR
comp=Z,10µm,18.0s
ISCO Idaho Springs 29.38 357 *eP* **P** 13 13 49.7 +1.5
comp=Z,21nm,1.1s
ISCO LR LR
comp=Z,10µm,18.0s
WVT Waverly 29.39 27 *eP* **P** 13 13 48.7 +0.7
WVT pmax pmax
comp=Z,21nm,0.8s
WVT MLR MLR
comp=Z,2µm,20.0s
WVT Waverly 29.39 27 *eP* **P** 13 13 48.7 +0.7
comp=Z,21nm,0.8s
WVT LR LR
comp=Z,2µm,20.0s
Q36A Arnold C. Orve 29.41 13 P **P** 13 13 44.5 -3.6
baz=196
P33A Williams Farm, 29.44 9 P **P** 13 13 45.8 -2.7
baz=192
RCTC Rector, Farmer 29.46 334 P **P** 13 13 46.2 -2.4
baz=148
P32A Huiting Farm, 29.49 8 P **P** 13 13 46.1 -2.8
baz=190
GOGA Godfrey 29.49 36 PFAKE 13 14 00.0 +11
GOGA LR LR
comp=Z,3µm,20.0s
PSUT Pine Spring 29.52 344 *eP* **P** 13 13 51.4 +2.0
comp=Z,61nm,1.9s
PSUT LR LR
comp=Z,9µm,22.0s
ROSC El Rosal 29.55 98 P **P** 13 13 50.5 +0.3
comp=Z,6.0nm,0.5s,baz=289,slow=4.9,SNR=8.7
ROSC LR LR 13 23 01.4
comp=Z,6µm,18.9s,baz=294,slow=31
Q37A Longview Farm, 29.56 15 P **P** 13 13 47.2 -2.3
baz=198
TMUT Trail Mountain 29.60 348 *eP* **P** 13 13 52.6 +2.4
comp=Z,54nm,1.4s
TMUT LR LR
comp=Z,5µm,20.0s
R40A Maddes Statio 29.62 18 P **P** 13 13 48.1 -1.9
baz=203
TIN Tinemaha, Big 29.67 336 P **P** 13 13 48.6 -2.1
baz=150
P17A Butcher Ranch, 29.68 349 *eP* **P** 13 13 53.3 +2.5
comp=Z,69nm,1.3s
P17A LR LR
comp=Z,5µm,21.0s
P34A Walnut Farm, R 29.70 11 P **P** 13 13 48.5 -2.2
baz=193
BRRC Barranca, Sant 29.74 94 *eP* **P** 13 13 50.7 -0.7
P18A Preston Nutter 29.74 350 *eP* **P** 13 13 50.2 -1.3
comp=Z,78nm,1.7s
P18A LR LR
comp=Z,5µm,19.0s
P35A Duane Minner, 29.83 12 P **P** 13 13 49.7 -2.2
baz=195
Q38A Cooks Store, C 29.86 16 P **P** 13 13 49.8 -2.3
baz=200,SNR=6.8
R11A Troy Canyon, C 29.86 341 P **P** 13 13 50.5 -1.9
baz=156,SNR=18
R11A Troy Canyon, C 29.86 341 *eP* **P** 13 13 54.2 +1.8
comp=Z,67nm,1.8s
R11A LR LR
comp=Z,4µm,18.0s
O31A Woolen Ranch, 29.92 7 P **P** 13 13 51.0 -1.7
baz=188
O20A White River Ci 29.94 353 P **P** 13 13 51.1 -2.0
baz=171,SNR=27
O20A White River Ci 29.94 353 *eP* **P** 13 13 55.2 +2.1
comp=Z,78nm,1.1s
O20A LR LR
comp=Z,7µm,22.0s
O33A Hebron 30.08 9 P **P** 13 13 52.2 -1.9
baz=192
P36A Good Intent, A 30.09 13 P **P** 13 13 52.3 -2.0
baz=196
Q39A Willow Grove F 30.11 17 P **P** 13 13 52.4 -2.0
baz=201,SNR=5.7
SIUC Southern Illin 30.17 23 PFAKE 13 14 10.0 +15
SIUC LR LR
comp=Z,6µm,20.0s
P37A Lathrop 30.26 14 P **P** 13 13 53.1 -2.6
baz=198
SJAC San Juan de Ar 30.28 101 *eP* **P** 13 13 57.6 +1.4
Q40A Laux Farm, Aux 30.33 18 P **P** 13 13 53.6 -2.7
baz=203,SNR=6.1
BARC Barichara 30.34 95 *eP* **P** 13 13 56.0 -0.9
O34A Beatrice 30.34 11 P **P** 13 13 53.2 -3.1
baz=193,SNR=9.6
MPU Maple Canyon 30.38 348 *eP* **P** 13 13 58.9 +1.9
comp=Z,93nm,1.3s
MLAC Mammoth, Mammo 30.41 336 P **P** 13 13 54.7 -2.6
baz=150,SNR=17
NLU North Lily Min 30.42 347 *eP* **P** 13 14 00.4 +3.1
comp=Z,71nm,1.7s
NLU LR LR
comp=Z,4µm,18.0s
CPCT Cooper Cave 30.43 32 *eP* **P** 13 13 58.8 +1.5
comp=Z,28nm,1.1s
N23A Red Feather La 30.48 357 P **P** 13 13 54.8 -3.1
baz=176
N23A Red Feather La 30.48 357 *eP* **P** 13 13 59.9 +1.9
comp=Z,51nm,1.4s
N23A LR LR
comp=Z,9µm,22.0s
OGNE Ogallala 30.50 2 P **P** 13 13 55.6 -2.3
baz=183
OGNE Ogallala 30.50 2 *eP* **P** 13 13 59.4 +1.5
comp=Z,246nm,1.5s
OGNE LR LR
comp=Z,16µm,18.0s
P38A Dawn 30.50 15 P **P** 13 13 54.9 -2.9
baz=200
GRMC Gramalote, San 30.55 92 *eP* **P** 13 14 00.3 +1.6
ATAH Atahualpa 30.55 124 P **P** 13 13 59.3 +0.3
comp=Z,9.7nm,0.7s,baz=323,slow=7.8,SNR=9.6
ATAH LR LR 13 23 44.3
comp=Z,32µm,20.4s,baz=314,slow=32
RUSC La Rusia 30.55 96 *eP* **P** 13 13 57.7 -1.5
RUSC *eP* **P** 13 13 58.9 -0.2
RUSC *eP* P 13 14 05.9 +6.8
CBRI Barrientos, No 30.55 92 *eP* **P** 13 14 00.1 +1.3
O35A Humboldt 30.57 12 P **P** 13 13 55.2 -3.1
baz=195
SLM Saint Louis 30.61 21 PFAKE 13 14 10.0 +11
SLM LR LR
comp=Z,8µm,22.0s
N31A Bailey Ranch, 30.62 7 P **P** 13 13 55.8 -3.2
baz=189
O36A Bolckow 30.64 13 P **P** 13 13 56.2 -2.8
baz=197
N32A Stulken Farm, 30.65 8 P **P** 13 13 55.6 -3.6
baz=190
PAMC Pamplona, Colo 30.70 93 *eP* **P** 13 13 59.7 -0.7
PAMC *eP* **P** 13 14 02.6 +2.2
PAMC *eP* **P** 13 14 02.6 +2.2
DUG Dugway, Tooele 30.82 346 P **P** 13 13 57.5 -3.3
baz=162,SNR=28
DUG Dugway, Tooele 30.82 346 *eP* **P** 13 14 03.6 +2.8
DUG pmax pmax
comp=Z,61nm,1.3s
DUG MLR MLR
comp=Z,6µm,19.0s
DUG Dugway, Tooele 30.82 346 *eP* **P** 13 14 03.6 +2.8
comp=Z,61nm,1.3s
DUG LR LR
comp=Z,6µm,19.0s
P40A Paris 30.83 18 P **P** 13 13 58.0 -2.7
baz=202,SNR=13
SAO San Andreas Ge 30.83 331 *eP* **P** 13 14 02.9 +2.1
SAO pmax pmax
comp=Z,56nm,1.5s
SAO MLR MLR
comp=Z,10µm,19.0s
SAO San Andreas Ge 30.83 331 *eP* **P** 13 14 02.9 +2.1
comp=Z,56nm,1.5s
SAO LR LR
comp=Z,10µm,19.0s
NV11 Mina Array Sit 30.84 337 *eP* **P** 13 14 04.0 +3.0
comp=Z,62nm,1.5s
NV11 LR LR
comp=Z,9µm,20.0s
O37A Wolven Farm, M 30.86 14 P **P** 13 13 57.8 -3.2
baz=198
PHWY Pilot Hill 30.86 357 PFAKE 13 14 10.0 +8.6
PHWY LR LR
comp=Z,6µm,20.0s
NV01 Mina Array Sit 30.89 337 *eP* **P** 13 14 01.9 +0.3
NVAR Mina Array Bea 30.89 337 P **P** 13 14 02.9 +1.3
comp=Z,13nm,1.2s,baz=167,slow=8.9,SNR=43
NVAR LR LR 13 24 21.9
comp=Z,10µm,21.9s,baz=152,slow=32
JLU Jordanelle 30.91 348 *eP* **P** 13 14 04.1 +2.4
comp=Z,40nm,1.4s
JLU LR LR
comp=Z,7µm,19.0s
O38A Galt 30.98 15 P **P** 13 13 58.5 -3.5
baz=200
TKL Tuckaleechee C 30.99 32 *eP* **P** 13 14 04.9 +2.7
TKL pmax pmax
comp=Z,24nm,0.9s
TKL MLR MLR
comp=Z,3µm,22.0s
TKL Tuckaleechee C 30.99 32 *eP* **P** 13 14 04.9 +2.7
comp=Z,24nm,0.9s
TKL LR LR
comp=Z,3µm,22.0s
N34A Lincoln 31.01 11 P **P** 13 13 59.0 -3.2
baz=194
USIN University of 31.01 25 *eP* **P** 13 14 03.5 +1.2
comp=Z,94nm,0.9s
USIN LR LR
comp=Z,4µm,20.0s
CTU Camp Tracy 31.06 348 *eP* **P** 13 14 06.0 +3.0
comp=Z,35nm,1.1s
CTU LR LR
comp=Z,6µm,20.0s
URIC Uribia, Colomb 31.07 85 *eP* **P** 13 14 01.8 -1.4
M31A Lambtecht Ranc 31.14 7 P **P** 13 14 00.8 -2.6

baz=189
N35A Tabor 31.19 12 P P 13 14 00.2 -3.7
baz=195
NHSC New Hope 31.27 40 PFAKE 13 14 20.0 +15
NHSC LR LR
comp=Z,4μm,20.0s
N36A Muff Farm, Cla 31.29 13 P P 13 14 00.6 -4.2
baz=196
BGNE Belgrade 31.30 8 P P 13 14 01.5 -3.4
baz=190
BGNE Belgrade 31.30 8 PFAKE 13 14 20.0 +15
BGNE LR LR
comp=Z,16μm,18.0s
O39A Kirksville 31.36 16 P P 13 14 01.6 -3.7
baz=201
PAPH Port-au-Prince 31.37 71 PFAKE 13 14 20.0 +14
PAPH LR LR
comp=Z,6μm,18.0s
CMB Columbia Colle 31.40 334 eP P 13 14 07.2 +1.3
CMB pmax pmax
comp=Z,22nm,1.1s
CMB MLR MLR
comp=Z,7μm,22.0s
CMB Columbia Colle 31.40 334 eP P 13 14 07.2 +1.3
comp=Z,22nm,1.1s
CMB LR LR
comp=Z,7μm,22.0s
WAKR Walker 31.40 336 eP P 13 14 07.2 +1.2
N37A Lee Faris, Mou 31.41 14 P P 13 14 01.7 -4.1
baz=198
O40A La Belle 31.43 17 P P 13 14 02.4 -3.6
baz=202,SNR=14
OLIL Olney 31.49 24 eP P 13 14 07.9 +1.4
OLIL LR LR
comp=Z,5μm,20.0s
BGU Big Grassy Mou 31.56 346 eP P 13 14 09.9 +2.5
comp=Z,69nm,1.7s
BGU LR LR
comp=Z,5μm,21.0s
M33A Taylor Creek F 31.61 9 P P 13 14 03.5 -4.0
baz=192
M34A Aspy Farms, Fr 31.64 10 P P 13 14 05.0 -2.8
baz=193
N38A Joes South For 31.68 15 P P 13 14 05.3 -2.9
baz=200
M35A Neola 31.77 11 P P 13 14 05.5 -3.5
baz=195
TZTN Tazewell 31.78 32 PFAKE 13 14 20.0 +11
TZTN LR LR
comp=Z,4μm,22.0s
SPUT South Promonto 31.80 347 eP P 13 14 12.8 +3.3
comp=Z,63nm,1.2s
SPUT LR LR
comp=Z,5μm,18.0s
WCI Wyandotte Cave 31.81 26 eP P 13 14 10.7 +1.3
WCI pmax pmax
comp=Z,34nm,0.9s
WCI MLR MLR
comp=Z,5μm,18.0s
WCI Wyandotte Cave 31.81 26 eP P 13 14 10.7 +1.3
comp=Z,34nm,0.9s
WCI LR LR
comp=Z,5μm,18.0s
L32A Elgin 31.91 8 P P 13 14 08.1 -2.1
baz=190
M36A Felix, Anita 31.94 13 P P 13 14 08.2 -2.3
baz=196
N39A Derby Farms, D 31.95 16 P P 13 14 07.9 -2.7
baz=201,SNR=8.7
KMSC Kings Mountain 31.96 36 P P 13 14 07.7 -3.1
baz=224
KMSC Kings Mountain 31.96 36 PFAKE 13 14 20.0 +9.3
KMSC LR LR
comp=Z,3μm,21.0s
ELK Elko 31.96 343 eP P 13 14 13.5 +2.5
ELK pmax pmax
comp=Z,52nm,1.8s
ELK MLR MLR
comp=Z,6μm,21.0s
ELK Elko 31.96 343 eP P 13 14 13.5 +2.5
comp=Z,52nm,1.8s
ELK LR LR
comp=Z,6μm,21.0s
L31A Butterfield Fa 31.97 7 P P 13 14 08.9 -1.9
baz=189
M37A Trindle Farm, 32.05 14 P P 13 14 09.5 -2.0
baz=198
L34A Svendsen Farm, 32.12 10 P P 13 14 09.4 -2.7
baz=193
L33A Hoskins 32.17 9 P P 13 14 09.4 -3.1
baz=192
M38A Pleasantville 32.27 15 P P 13 14 11.2 -2.2
baz=199,SNR=6.6
HVU Hansel Valley 32.32 347 eP P 13 14 15.5 +1.5
HVU pmax pmax
comp=Z,72nm,1.5s
HVU MLR MLR
comp=Z,6μm,18.0s
HVU Hansel Valley 32.32 347 eP P 13 14 15.4 +1.5
comp=Z,72nm,1.5s
HVU LR LR
comp=Z,6μm,18.0s
K30A Basset 32.38 6 P P 13 14 09.9 -4.5
baz=187
SDDR Presa de Saban 32.39 71 PFAKE 13 14 30.0 +15
SDDR LR LR
comp=Z,4μm,18.0s
AFDM Forest Hills D 32.42 334 eP P 13 14 16.3 +1.6
comp=Z,38nm,1.4s
AFDM LR LR
comp=Z,7μm,20.0s
L35A Bielow Farm, R 32.42 11 P P 13 14 09.7 -5.0
baz=195
K31A O'Neill 32.42 7 P P 13 14 08.9 -5.9
baz=189
BLO Bloomington 32.50 25 eP P 13 14 17.0 +1.6
BLO pmax pmax
comp=Z,43nm,0.9s
BLO MLR MLR
comp=Z,5μm,19.0s
BLO Bloomington 32.50 25 eP P 13 14 17.0 +1.6
comp=Z,43nm,0.9s
BLO LR LR
comp=Z,5μm,19.0s
SDV Santo Domingo 32.56 90 PFAKE 13 14 30.0 +14
SDV LR LR
comp=Z,8μm,19.0s
SDV Santo Domingo 32.56 90 eP P 13 14 14.1 -2.3
SDV eP P 13 14 14.9 -1.5
K32A Verdigre 32.56 8 P P 13 14 11.4 -4.5
baz=190
L36A Harm Buss Farm 32.58 12 P P 13 14 11.6 -4.6
baz=196
MCCM Marconi Confer 32.62 331 PFAKE 13 14 30.0 +14
MCCM LR LR
comp=Z,5μm,19.0s
K33A Hardington 32.64 9 P P 13 14 11.2 -5.4
baz=192
HDIL Hopedale 32.65 20 P P 13 14 11.4 -5.3
baz=207,SNR=10
HDIL Hopedale 32.65 20 eP P 13 14 17.1 +0.4
comp=Z,93nm,0.8s
HDIL LR LR
comp=Z,8μm,21.0s
PD31 Pinedale Array 32.70 352 eP P 13 14 17.9 +0.5
PDAR Pinedale Array 32.70 352 P P 13 14 17.9 +0.5
comp=Z,9.9nm,1.0s,baz=165,slow=7.7,SNR=44
PDAR LR LR 13 28 21.6
comp=Z,3μm,18.2s,baz=192,slow=38
BW06 Boulder Array 32.70 352 P P 13 14 11.4 -6.0
baz=169,SNR=31
BW06 Boulder Array 32.70 352 eP P 13 14 17.1 -0.3
SCIA State Center 32.73 14 PFAKE 13 14 30.0 +13
SCIA LR LR
comp=Z,7μm,19.0s
J27A Elkhorn Farm, 32.80 2 P P 13 14 13.2 -5.0
baz=183
L37A Phoenix Point, 32.81 14 P P 13 14 12.6 -5.5
baz=198
J26A Sides Ranch, S 32.84 1 P P 13 14 13.5 -4.9
baz=181
K34A Le Mars 32.87 10 P P 13 14 15.0 -3.6
baz=194
J25A Sunshine Ranch 32.91 360 P P 13 14 14.1 -5.0
baz=180,SNR=8.6
AHID Auburn Hatcher 32.94 350 eP P 13 14 21.4 +1.9
comp=Z,38nm,1.1s
AHID LR LR
comp=Z,7μm,21.0s
J28A Allard Ranch, 33.01 3 P P 13 14 15.4 -4.5
baz=184
L38A Oak Wood Farm, 33.02 15 P P 13 14 15.3 -4.6
baz=199
J30A Dallas 33.04 6 P P 13 14 15.7 -4.5
baz=187
J29A Okreek 33.05 4 P P 13 14 15.8 -4.5
baz=186
K35A Storm Lake 33.07 11 P P 13 14 15.8 -4.6
baz=195
GRTK Grand Turk 33.08 66 PFAKE 13 14 30.0 +9.3
GRTK LR LR
comp=Z,3μm,18.0s
K36A Gilmore City 33.15 12 P P 13 14 16.0 -5.1
baz=196
ORV Oroville 33.15 334 eP P 13 14 24.3 +3.2
ORV pmax pmax
comp=Z,102nm,1.4s
ORV MLR MLR
comp=Z,7μm,20.0s
ORV Oroville 33.15 334 eP P 13 14 24.3 +3.2
comp=Z,102nm,1.4s
ORV LR LR
comp=Z,7μm,20.0s
J32A Parkston 33.27 8 P P 13 14 18.1 -4.1
baz=190
SFIN Lafayette 33.30 23 P P 13 14 18.1 -4.3
baz=210,SNR=17
SFIN Lafayette 33.30 23 PFAKE 13 14 40.0 +18
SFIN LR LR
comp=Z,5μm,20.0s
J33A Davis 33.35 9 P P 13 14 18.0 -4.8
baz=192
HOPS Hopland Field 33.39 332 PFAKE 13 14 40.0 +17
HOPS LR LR
comp=Z,10μm,18.0s
K37A Belmond 33.45 13 P P 13 14 18.3 -5.3
baz=198,SNR=7.9
J34A George 33.48 10 P P 13 14 19.1 -4.8
baz=194
REDW Red Top Meadow 33.48 350 eP P 13 14 25.4 +1.2
comp=Z,140nm,1.6s
REDW LR LR
comp=Z,4μm,20.0s
I25A Rochford 33.54 360 P P 13 14 20.2 -4.4
baz=180
K38A Parkersburg 33.54 15 P P 13 14 19.4 -5.1
baz=199
I26A New Underwood 33.56 1 P P 13 14 20.8 -3.9
baz=181
I28A Midland 33.59 3 P P 13 14 21.3 -3.6
baz=184
I27A Quinn 33.62 2 P P 13 14 22.0 -3.2
baz=183
I30A Oacoma 33.63 5 P P 13 14 21.6 -3.6
baz=187
RSSD Black Hills 33.64 359 eP P 13 14 27.9 +2.3
RSSD pmax pmax
comp=Z,42nm,1.4s
RSSD MLR MLR
comp=Z,9μm,18.0s
RSSD Black Hills 33.64 359 eP P 13 14 27.9 +2.3
comp=Z,42nm,1.4s
RSSD LR LR
comp=Z,9μm,18.0s
I29A Vivian Onida 33.66 4 P P 13 14 20.6 -4.9
baz=186
LOHW Long Hollow 33.68 351 eP P 13 14 27.6 +1.7
comp=Z,44nm,1.1s
LOHW LR LR
comp=Z,7μm,20.0s
J35A Milford 33.69 11 P P 13 14 21.2 -4.6
baz=195
ECSD EROS Data Cent 33.81 9 P P 13 14 22.7 -4.1
baz=192,SNR=19
ECSD EROS Data Cent 33.81 9 eP P 13 14 27.8 +1.1
comp=Z,74nm,1.4s
ECSD LR LR
comp=Z,14μm,18.0s
J36A Seneca 1, Swea 33.83 12 P P 13 14 22.8 -4.2
baz=196
MOOW Moose Ponds 33.84 351 eP P 13 14 29.1 +1.7
comp=Z,36nm,1.4s
MOOW LR LR
comp=Z,7μm,20.0s
I31A Royce, Wessing 33.84 7 P P 13 14 24.1 -3.0
baz=189
O03D Paynes Creek 33.89 335 P P 13 14 24.8 -2.9
baz=147,SNR=10.0
BLA Blacksburg 33.95 34 eP P 13 14 31.1 +2.9
BLA pmax pmax
comp=Z,45nm,1.1s
BLA MLR MLR
comp=Z,3μm,20.0s
BLA Blacksburg 33.95 34 eP P 13 14 31.1 +2.9
comp=Z,45nm,1.1s
BLA LR LR
comp=Z,3μm,20.0s
I32A Karley and Nic 33.97 8 P P 13 14 24.8 -3.4
baz=191
J37A Redenius Farm, 33.98 13 P P 13 14 22.6 -5.8
baz=198,SNR=11
IMW Indian Meadow 34.01 351 eP P 13 14 30.9 +2.0
comp=Z,37nm,1.3s
IMW LR LR
comp=Z,7μm,21.0s
I33A Coleman 34.09 9 P P 13 14 23.3 -5.9
baz=192
H25A Fruitdale 34.14 0 P P 13 14 24.3 -5.4
baz=180,SNR=12
H26A Fairpoint 34.14 1 P P 13 14 24.4 -5.4
baz=182
FLWY Flagg Ranch 34.16 351 eP P 13 14 31.9 +1.8
comp=Z,99nm,1.3s
FLWY LR LR
comp=Z,5μm,19.0s
H27A Howes 34.18 2 P P 13 14 24.6 -5.4
baz=183,SNR=8.4
SUSD Miller 34.20 6 P P 13 14 25.3 -4.9
baz=188
I35A Creekview Farm 34.21 11 P P 13 14 24.8 -5.5
baz=195
I34A Hadley 34.23 10 P P 13 14 25.9 -4.6
baz=194
J38A Wedel Dairy, R 34.24 15 P P 13 14 25.5 -5.1
baz=200
H28A Miss Ridge 34.27 3 P P 13 14 26.8 -4.0
baz=184
H29A Onida 34.27 4 P P 13 14 26.8 -4.0
baz=186
H31A Wolsey 34.29 7 P P 13 14 27.9 -3.1
baz=189
HLID Hailey 34.38 346 P P 13 14 28.3 -3.7
baz=161,SNR=30
HLID Hailey 34.38 346 eP P 13 14 34.4 +2.3
comp=Z,62nm,1.4s
HLID LR LR
comp=Z,6μm,21.0s
H32A Carlson Farm, 34.44 8 P P 13 14 29.7 -2.6
baz=191,SNR=7.7
H17A Grant Village 34.44 351 P P 13 14 29.6 -3.0
baz=168,SNR=14
H17A Grant Village 34.44 351 eP P 13 14 36.0 +3.4
comp=Z,56nm,1.4s
H17A LR LR
comp=Z,13μm,20.0s
WDC Whiskeytown Da 34.44 334 eP P 13 14 33.1 +0.8
WDC pmax pmax
comp=Z,52nm,1.4s
WDC MLR MLR
comp=Z,4μm,20.0s
WDC Whiskeytown Da 34.44 334 eP P 13 14 33.1 +0.8
comp=Z,52nm,1.4s
WDC LR LR
comp=Z,4μm,20.0s
JFWS Jewell Farm 34.47 17 eP P 13 14 34.5 +1.9
JFWS pmax pmax
comp=Z,58nm,1.5s
JFWS MLR MLR
comp=Z,6μm,20.0s
JFWS Jewell Farm 34.47 17 eP P 13 14 34.5 +1.9
comp=Z,58nm,1.5s
JFWS LR LR
comp=Z,6μm,20.0s
YFT Old Faithful 34.54 351 eP P 13 14 36.8 +3.5
comp=Z,35nm,1.0s
YFT LR LR
comp=Z,8μm,21.0s
WVOR Wild Horse Val 34.55 340 eP P 13 14 35.4 +2.0
WVOR pmax pmax
comp=Z,125nm,2.0s
WVOR MLR MLR
comp=Z,7μm,18.0s
WVOR Wild Horse Val 34.55 340 eP P 13 14 35.4 +2.0
comp=Z,125nm,2.0s
WVOR LR LR
comp=Z,7μm,18.0s
I36A Fitzsimmons Fa 34.56 12 P P 13 14 31.0 -2.3
baz=197
LKWY Lake 34.58 351 eP P 13 14 37.0 +3.2
LKWY pmax pmax
comp=Z,80nm,1.7s
LKWY MLR MLR
comp=Z,16μm,21.0s
LKWY Lake 34.58 351 eP P 13 14 37.0 +3.2
comp=Z,80nm,1.7s
LKWY LR LR
comp=Z,16μm,21.0s
MFID Camas Ranch 34.60 344 eP P 13 14 36.1 +2.3
comp=Z,60nm,1.6s
MFID LR LR
comp=Z,4μm,20.0s
NNA Nana 34.66 129 PFAKE 13 14 40.0 +5.5
NNA LR LR
comp=Z,10μm,18.0s
KMRM Mail Ridge 34.67 332 eP P 13 14 36.1 +1.7
comp=Z,125nm,1.3s
KMRM LR LR
comp=Z,14μm,18.0s
MOD Modoc Plateau 34.67 338 PFAKE 13 14 50.0 +16
MOD LR LR
comp=Z,5μm,21.0s
G28A Parade 34.67 3 P P 13 14 31.7 -2.6
baz=185
I37A Lemond, Waseca 34.69 13 P P 13 14 31.5 -2.9
baz=198,SNR=14
G25A Newell 34.71 0 P P 13 14 32.1 -2.6
baz=180
H33A Prehn Over Nor 34.71 9 P P 13 14 31.9 -2.7
baz=192
YMR Madison River 34.77 351 eP P 13 14 38.2 +2.9
comp=Z,56nm,1.3s
YMR LR LR
comp=Z,6μm,19.0s
G26A Maurine 34.82 1 P P 13 14 33.0 -2.6
baz=182,SNR=21
N02D Trinity Center 34.84 334 P P 13 14 33.3 -2.6
baz=146
H34A Spellman Lake, 34.85 10 P P 13 14 33.0 -2.8
baz=194
G29A Hoven 34.86 5 P P 13 14 33.7 -2.2
baz=186
G30A Faulkton 34.86 6 P P 13 14 33.6 -2.3
baz=188
G27A Dupree 34.93 2 P P 13 14 33.9 -2.6
baz=183
ACSO Alum Creek Sta 34.94 28 eP P 13 14 38.5 +1.9
comp=Z,49nm,1.0s
ACSO LR LR
comp=Z,4μm,19.0s
I38A Scanlan Farm, 34.96 14 P P 13 14 33.4 -3.4
baz=200,SNR=9.5
RLMT Red Lodge 34.98 353 P P 13 14 34.3 -2.9
baz=170,SNR=16
RLMT Red Lodge 34.98 353 eP P 13 14 38.5 +1.3
comp=Z,32nm,1.3s
RLMT LR LR
comp=Z,4μm,20.0s
QLMT Earthquake Lak 35.00 350 eP P 13 14 40.4 +3.0
H35A Sunnyside Ranc 35.05 11 P P 13 14 35.3 -2.2
baz=195
G31A Conde 35.06 7 P P 13 14 34.6 -3.0
baz=189
H36A Jessenland, He 35.11 12 P P 13 14 34.4 -3.7
baz=197
M04C Macdoel 35.16 336 P P 13 14 36.1 -2.6
baz=148,SNR=12
G32A Webster 35.17 8 P P 13 14 34.9 -3.7
baz=190
KHMM Horse Mountain 35.20 333 eP P 13 14 41.9 +2.8
comp=Z,35nm,1.1s
KHMM LR LR
comp=Z,13μm,19.0s
M02C Callahan 35.25 335 P P 13 14 36.2 -3.2
baz=146,SNR=6.2
MCMT McKenzie Canyo 35.26 349 P P 13 14 42.1 +2.6
G33A Ortonville 35.26 9 P P 13 14 34.8 -4.5
baz=192
JCC Jacoby Creek, 35.29 333 eP P 13 14 42.3 +2.7
comp=Z,123nm,1.4s
JCC LR LR
comp=Z,10μm,18.0s
H37A Dierke Farm, C 35.33 13 P P 13 14 35.8 -4.2
baz=198
F26A Lodgepole 35.38 1 P P 13 14 39.0 -1.4
baz=182
F27A Lemmon 35.42 2 P P 13 14 39.3 -1.4
baz=183
G34A Benson 35.43 10 P P 13 14 36.7 -4.1
baz=194
F25A Bowman 35.45 0 P P 13 14 36.9 -4.1
baz=180
YBH Yreka Blue Hor 35.47 335 eP P 13 14 41.8 +0.5
YBH pmax pmax
comp=Z,48nm,1.8s
YBH MLR MLR
comp=Z,4μm,19.0s
YBH Yreka Blue Hor 35.47 335 eP P 13 14 41.8 +0.5
comp=Z,48nm,1.8s
YBH LR LR
comp=Z,4μm,19.0s
F29A Eureka 35.50 5 P P 13 14 38.8 -2.6
baz=186
F30A Leola 35.57 6 P P 13 14 39.8 -2.2
baz=188
K05A Summer Lake 35.60 338 eP P 13 14 44.8 +2.3
comp=Z,147nm,1.4s
K05A LR LR
comp=Z,3μm,18.0s
G35A Watkins 35.62 11 P P 13 14 39.2 -3.2
baz=195
F31A Hecla 35.68 6 P P 13 14 40.8 -2.1
baz=189
GCMT Greycliff 35.69 353 eP P 13 14 44.3 +1.1
DLMT Dillon 35.72 349 eP P 13 14 45.8 +2.4
comp=Z,94nm,1.4s
DLMT LR LR
comp=Z,4μm,19.0s
G36A St. Michael 35.78 12 P P 13 14 40.1 -3.7
baz=197
F32A Veblen 35.82 8 P P 13 14 42.0 -2.2
baz=191
BOZ Bozeman (W) 35.83 350 P P 13 14 41.1 -3.3
baz=167,SNR=22
BOZ Bozeman (W) 35.83 350 PFAKE 13 15 00.0 +16
BOZ LR LR
comp=Z,5μm,19.0s
K04D Chiloquin, OR 35.84 337 P P 13 14 41.7 -2.8
baz=149
F33A 5 Mile Ranch, 35.91 9 P P 13 14 42.3 -2.6
baz=192
SPMN Marine on St. 35.97 13 P P 13 14 42.3 -3.1
baz=198
SPMN Marine on St. 35.97 13 eP P 13 14 46.1 +0.7
comp=Z,74nm,1.5s
SPMN LR LR
comp=Z,9μm,19.0s
E27A Carson 35.99 2 P P 13 14 44.4 -1.3
baz=183
E26A Carlson Angus 36.00 1 P P 13 14 45.0 -0.8
baz=182
E25A Miller Ranch, 36.02 0 P P 13 14 44.7 -1.2
baz=180
F34A Alexandria 36.03 10 P P 13 14 44.2 -1.8
baz=194
MCWV Mont Chateau 36.04 32 eP P 13 14 47.4 +1.3
comp=Z,21nm,0.8s
MCWV LR LR
comp=Z,2μm,18.0s
LRM Limekiln Ridge 36.14 350 eP P 13 14 47.9 +0.8
MPR Mayaguez 36.16 73 PFAKE 13 15 00.0 +13
MPR LR LR
comp=Z,3μm,20.0s

E28A Huff 36.18 3 P P 13 14 44.6 -2.6
baz=185
L02D Cave Junction, 36.20 335 P P 13 14 46.0 -1.4
baz=146,SNR=6.2
J05D Fort Rock, OR 36.21 338 P P 13 14 45.3 -2.4
baz=150,SNR=10
F35A Swanville 36.22 11 P P 13 14 45.7 -1.8
baz=195
E30A Jud 36.24 6 P P 13 14 45.7 -2.1
baz=188
E29A Napoleon 36.25 5 P P 13 14 45.7 -2.1
baz=187
HUMO Hull Mountain 36.30 336 PFAKE 13 15 00.0 +12
HUMO LR LR
comp=Z,9µm,20.0s
AAM Ann Arbor 36.31 25 PFAKE 13 15 00.0 +12
AAM LR LR
comp=Z,4µm,18.0s
BMO Blue Mountains 36.34 344 eP P 13 14 50.3 +1.6
comp=Z,78nm,1.8s
BMO LR LR
comp=Z,5µm,20.0s
CBN Corbin Frederi 36.37 36 PFAKE 13 15 00.0 +11
CBN LR LR
comp=Z,4µm,20.0s
E31A Nome 36.41 7 P P 13 14 46.2 -3.0
baz=189
F36A Milaca 36.42 12 P P 13 14 46.5 -2.7
baz=197,SNR=11
E32A Braaten, Kindr 36.54 8 P P 13 14 47.1 -3.2
baz=191
D26A Manning 36.56 1 P P 13 14 48.4 -2.1
baz=182,SNR=9.7
E33A Westby DABS, E 36.60 9 P P 13 14 48.6 -2.2
baz=192
D25A Fairfield 36.67 0 P P 13 14 49.3 -2.2
baz=180
D27A Center 36.67 2 P P 13 14 49.7 -1.7
baz=183
D29A Pettibone, Tap 36.74 5 P P 13 14 49.3 -2.6
baz=187
E34A Wadena 36.75 10 P P 13 14 49.8 -2.3
baz=194
D28A Regan 36.80 3 P P 13 14 49.1 -3.4
baz=185
D30A Buchanan 36.86 6 P P 13 14 48.9 -4.1
baz=188
D31A Mcclaflin, Tow 36.91 7 P P 13 14 51.7 -1.7
baz=190
E35A Pequot Lakes 36.92 11 P P 13 14 51.7 -1.8
baz=195
N54A Moraine State 36.94 30 P P 13 14 50.9 -2.8
baz=221
SJG San Juan 37.08 74 PFAKE 13 15 10.0 +15
SJG LR LR
comp=Z,3µm,21.0s
D32A Dogwood Acres, 37.08 7 P P 13 14 50.8 -4.0
baz=191
I04A Tendick Farm, 37.09 337 P P 13 14 51.2 -3.8
baz=148
E36A McGregor 37.10 12 P P 13 14 52.9 -2.2
baz=197,SNR=7.2
O56A Blue Knob Stat 37.16 32 P P 13 14 50.8 -4.9
baz=223
I05D Terrebonne, OR 37.16 339 P P 13 14 53.3 -2.3
baz=150
C25A Freed Ranch, W 37.23 0 P P 13 14 53.1 -3.1
baz=181
D33A AnnSam, Waubun 37.25 9 P P 13 14 52.2 -4.1
baz=193
C27A Sayler Ranch, 37.28 2 P P 13 14 54.0 -2.5
baz=183
D34A Park Rapids 37.30 10 P P 13 14 52.1 -4.6
baz=194
E37A Wrenshall 37.33 13 P P 13 14 53.2 -3.8
baz=198
C28A Hausauer Farms 37.34 4 P P 13 14 53.9 -3.1
baz=185
CHMT Chamberlain Mo 37.34 349 eP P 13 14 58.9 +1.6
F10A Beach Ranch, E 37.35 344 eP P 13 14 58.2 +0.9
comp=Z,133nm,1.9s
HUMP Col San Antoni 37.37 74 PFAKE 13 15 10.0 +12
HUMP LR LR
comp=Z,3µm,21.0s
C26A Wahner Farm, P 37.37 2 P P 13 14 55.0 -2.3
baz=182,SNR=13
ALLY Alegheny Colle 37.39 29 PFAKE 13 15 10.0 +12
ALLY LR LR
comp=Z,6µm,22.0s
MSO Missoula 37.39 348 P P 13 14 55.0 -2.6
baz=163,SNR=12
MSO Missoula 37.39 348 eP P 13 14 59.2 +1.5
comp=Z,57nm,1.4s
MSO LR LR
comp=Z,7µm,21.0s
C30A Mose, Pekin 37.48 6 P P 13 14 55.1 -3.1
baz=188
D35A Remer 37.49 11 P P 13 14 54.7 -3.7
baz=196
SDMD Soldier's Deli 37.50 35 PFAKE 13 15 10.0 +11
SDMD LR LR
comp=Z,2µm,20.0s
M54A Oil Creek Stat 37.51 30 P P 13 14 54.3 -4.3
baz=221
C31A Landman Farms, 37.64 7 P P 13 14 56.0 -3.6
baz=189
G06A Carlson Farm, 37.70 340 eP P 13 15 03.0 +2.7
comp=Z,186nm,1.9s
G06A LR LR
comp=Z,12µm,18.0s
COWI Conover 37.71 17 eP P 13 15 00.7 +0.5
comp=Z,56nm,1.0s
COWI LR LR
comp=Z,5µm,20.0s
D36A Goodland 37.75 12 P P 13 14 56.9 -3.7
baz=197
H04A Detroit Lake 37.76 338 eP P 13 15 02.8 +2.1
comp=Z,139nm,1.6s
H04A LR LR
comp=Z,7µm,20.0s
SSPA Standing Stone 37.78 33 PFAKE 13 15 10.0 +9.1
SSPA LR LR
comp=Z,3µm,18.0s
B25A Knox Farm, Ray 37.79 1 P P 13 14 57.3 -3.6
baz=181
ERPA Erie 37.82 29 PFAKE 13 15 10.0 +8.8
ERPA LR LR
comp=Z,5µm,19.0s
C32A Crookston 37.82 8 P P 13 14 57.5 -3.7
baz=191
C33A Trail 37.86 9 P P 13 14 57.9 -3.6
baz=192
D37A Cotton 37.89 12 P P 13 14 58.1 -3.6
baz=198,SNR=12
C34A RKJ Ranch, Bem 37.89 10 P P 13 14 58.9 -2.8
baz=194
EGMT Eagleton 37.90 353 P P 13 15 00.2 -1.7
baz=170,SNR=30
EGMT Eagleton 37.90 353 eP P 13 15 03.2 +1.3
comp=Z,110nm,1.3s
EGMT LR LR
comp=Z,6µm,20.0s
B26A Jensen Ranch, 37.91 2 P P 13 14 59.8 -2.2
baz=182
B27A Peters Farms, 37.98 3 P P 13 14 59.8 -2.6
baz=184
DGMT Dagmar 37.99 359 P P 13 15 00.8 -1.8
baz=179,SNR=15
DGMT Dagmar 37.99 359 eP P 13 15 03.6 +1.0
comp=Z,94nm,1.1s
SWMT Swartz Lake 38.05 349 eP P 13 15 04.5 +1.2
B28A Dugan Ranch, T 38.07 4 P P 13 15 00.0 -3.2
baz=185
E09A Wood Farm, Sta 38.09 344 PFAKE 13 15 20.0 +17
E09A LR LR
comp=Z,5µm,20.0s
COR Corvallis 38.10 337 PFAKE 13 15 20.0 +17
COR LR LR
comp=Z,8µm,19.0s
C35A Jirik Farms, M 38.10 11 P P 13 15 00.4 -3.1
baz=195
B29A Wagenman Farm, 38.15 5 P P 13 15 01.2 -2.8
baz=187,SNR=9.3
B30A Myrvik Farm, E 38.23 6 P P 13 15 02.0 -2.6
baz=188,SNR=11
B31A Greenbush Farm 38.27 6 P P 13 15 02.6 -2.3
baz=189
C36A Pine Crest Far 38.37 12 P P 13 15 02.7 -3.1
baz=197,SNR=11
AGMN Agassiz Nation 38.38 8 P P 13 15 03.2 -2.6
baz=192,SNR=19
AGMN Agassiz Nation 38.38 8 PFAKE 13 15 20.0 +14
AGMN LR LR
comp=Z,5µm,19.0s
B32A Ashes, Strandq 38.38 8 P P 13 15 02.6 -3.2
baz=191
HAWA Hanford 38.38 342 eP P 13 15 08.7 +2.8
comp=Z,144nm,2.0s
HAWA LR LR
comp=Z,5µm,18.0s
B33A Robert and Kas 38.39 9 P P 13 15 01.8 -4.1
baz=193
A26A Wade Farm, Ken 38.44 2 P P 13 15 03.3 -3.1
baz=182
A25A Swangstu Ranch 38.46 1 P P 13 15 03.5 -3.1
baz=181
C37A Embarrass 38.48 12 P P 13 15 03.4 -3.3
baz=198
A28A Rude Farm, Bot 38.53 4 P P 13 15 03.1 -4.1
baz=185,SNR=12
BENWA Benson Ranch 38.55 342 P P 13 15 10.3 +2.9
A29A Manning Farm, 38.62 5 P P 13 15 04.3 -3.6
baz=187,SNR=8.8
E07A Sunnyside 38.63 342 eP P 13 15 10.3 +2.3
comp=Z,110nm,1.4s
E07A LR LR
comp=Z,4µm,18.0s
MDW Midway 38.65 342 P P 13 15 11.1 +3.0
MDW Midway 38.65 342 P P 13 15 11.1 +3.0
C38A Sawbill Land. 38.67 13 P P 13 15 04.7 -3.6
baz=200
A30A Hoffart Farm, 38.72 6 P P 13 15 05.4 -3.2
baz=188,SNR=12
B34A Aery, Baudette 38.75 10 P P 13 15 05.2 -3.7
baz=194,SNR=12
B35A Bob, Littlefor 38.78 11 P P 13 15 04.8 -4.4
baz=196
D08A Wollman Farm, 38.81 343 eP P 13 15 11.4 +2.0
comp=Z,54nm,1.4s
D08A LR LR
comp=Z,4µm,19.0s
A31A Linda, St. Vin 38.83 7 P P 13 15 06.1 -3.4
baz=190
EYMN Ely 38.84 13 P P 13 15 05.5 -4.2
baz=199
EYMN Ely 38.84 13 PFAKE 13 15 20.0 +10
EYMN LR LR
comp=Z,10µm,18.0s
A32A Rocking H Ranc 38.90 7 P P 13 15 06.7 -3.5
baz=191
F04A Amboy 38.92 339 eP P 13 15 12.5 +2.1
comp=Z,77nm,1.5s
F04A LR LR
comp=Z,2µm,20.0s
C39A Grand Marais 39.03 14 P P 13 15 08.5 -2.8
baz=201
A33A Warroad 39.07 9 P P 13 15 09.9 -1.7
baz=193,SNR=8.7
N59A State Game Lan 39.13 34 P P 13 15 09.4 -2.8
baz=226
LUPA Lehigh Univers 39.13 35 PFAKE 13 15 20.0 +7.8
LUPA LR LR
comp=Z,3µm,20.0s
EBG Ellensburg 39.16 342 P P 13 15 15.6 +3.1
GLK Glacier Lake 39.19 340 P P 13 15 15.4 +2.5
MMNY Mt. Morris Dam 39.30 30 PFAKE 13 15 30.0 +16
MMNY LR LR
comp=Z,11µm,19.0s
C09A Chrisman Ranch 39.31 344 eP P 13 15 15.3 +1.6
comp=Z,63nm,1.4s
C09A LR LR
comp=Z,4µm,18.0s
F03A Seaside 39.33 338 PFAKE 13 15 30.0 +16
F03A LR LR
comp=Z,6µm,18.0s
LON Longmire 39.42 340 eP P 13 15 17.1 +2.4
LON pmax pmax
comp=Z,37nm,1.2s
LON MLR MLR
comp=Z,9µm,18.0s
LON Longmire 39.42 340 eP P 13 15 17.1 +2.4
comp=Z,37nm,1.2s
LON LR LR
comp=Z,9µm,18.0s
NEW Newport 39.45 346 P P 13 15 14.0 -0.8
baz=159,SNR=28
NEW Newport 39.45 346 eP P 13 15 15.2 +0.3
NEW pmax pmax
comp=Z,77nm,1.1s
NEW MLR MLR
comp=Z,5µm,21.0s
NEW Newport 39.45 346 eP P 13 15 15.2 +0.3
comp=Z,77nm,1.1s
NEW LR LR
comp=Z,5µm,21.0s
LTY Liberty 39.51 342 eP P 13 15 16.3 +0.9
comp=Z,30nm,1.1s
LTY LR LR
comp=Z,5µm,19.0s
WALA Waterton Lakes 39.52 349 eP P 13 15 17.6 +2.1
comp=Z,52nm,1.1s
WALA LR LR
comp=Z,6µm,19.0s
E03A Lebam 39.86 338 PFAKE 13 15 30.0 +12
E03A LR LR
comp=Z,6µm,18.0s
D05A Enumclaw 39.87 340 eP P 13 15 21.0 +2.7
comp=Z,242nm,1.8s
ODNJ Ogdensburg 39.89 35 PFAKE 13 15 30.0 +11
ODNJ LR LR
comp=Z,4µm,21.0s
TUM Tumwater 40.03 339 PFAKE 13 15 30.0 +10
TUM LR LR
comp=Z,26µm,20.0s
B08A Colville Reser 40.11 344 eP P 13 15 22.3 +2.0
comp=Z,38nm,1.3s
B08A LR LR
comp=Z,4µm,19.0s
C06D Leavenworth 40.17 342 P P 13 15 18.5 -2.3
baz=153
PAL Palisades 40.23 36 PFAKE 13 15 30.0 +8.6
PAL LR LR
comp=Z,4µm,18.0s
SADO Sadowa 40.26 27 PFAKE 13 15 30.0 +8.5
SADO LR LR
comp=Z,4µm,18.0s
ULM Lac du Bonnet 40.29 8 P P 13 15 21.1 -0.5
comp=Z,11nm,1.0s,baz=188,slow=9.1,SNR=8.1
ULM LR LR 13 30 37.7
comp=Z,5µm,20.4s,baz=198,slow=34
ULM Lac du Bonnet 40.29 8 eP P 13 15 21.8 +0.1
ULM pmax pmax
comp=Z,80nm,1.3s
ULM Lac du Bonnet 40.29 8 eP P 13 15 21.8 +0.1
comp=Z,80nm,1.3s
NLWA Neilton Lookou 40.69 339 eP P 13 15 28.7 +3.6
comp=Z,68nm,1.1s
NLWA LR LR
comp=Z,5µm,18.0s
B06A Marblemount 40.88 342 eP P 13 15 28.6 +2.0
comp=Z,35nm,0.9s
B06A LR LR
comp=Z,5µm,21.0s
YLE Yale 40.99 36 PFAKE 13 15 40.0 +12
YLE LR LR
comp=Z,5µm,22.0s
TAOE Nuku Hiva Isla 41.05 244 eS S 13 21 35.3 -4.0
comp=Z,634nm,25.6s
TAOE eLQ LQ 13 24 51.3
comp=Z,11µm,27.4s
TAOE eLR LR 13 26 28.2
comp=Z,9µm,25.7s,baz=61
TAOE Nuku Hiva Isla 41.05 244 eT T 13 58 35.4
comp=Z,100nm,0.2s
GRGR Grenville 41.18 83 PFAKE 13 15 40.0 +10
GRGR LR LR
comp=Z,3µm,19.0s
A04D Lummi Island 41.44 341 P P 13 15 28.6 -2.6
baz=151
TRY Troy 41.51 34 PFAKE 13 15 40.0 +8.1
TRY LR LR
comp=Z,5µm,20.0s
SVB Belmont 41.55 82 PFAKE 13 15 40.0 +7.4
SVB LR LR
comp=Z,3µm,22.0s
PGC Sidney 41.62 340 PFAKE 13 15 50.0 +17
PGC LR LR
comp=Z,4µm,21.0s
FDF Fort de France 41.65 79 PFAKE 13 15 40.0 +6.5
FDF LR LR
comp=Z,3µm,19.0s
QUA2 Belchertown 41.95 35 PFAKE 13 15 50.0 +15
QUA2 LR LR
comp=Z,4µm,18.0s
ACCN Adirondack Com 41.95 33 PFAKE 13 15 50.0 +14
ACCN LR LR
comp=Z,6µm,18.0s
BBSR BB Station 42.02 53 PFAKE 13 15 50.0 +14
BBSR LR LR
comp=Z,4µm,18.0s
NCB Newcomb 42.06 32 PFAKE 13 15 50.0 +14
NCB LR LR
comp=Z,2µm,19.0s
BRYW Bryant College 42.18 36 PFAKE 13 15 50.0 +13
BRYW LR LR
comp=Z,8µm,21.0s
LONY Lake Ozonia 42.33 31 eP P 13 15 41.7 +3.1
comp=Z,19nm,1.1s
LONY LR LR
comp=Z,4µm,19.0s
HRV Adam Dziewonsk 42.54 35 PFAKE 13 15 50.0 +10
HRV LR LR
comp=Z,4µm,21.0s
WES Weston 42.60 36 PFAKE 13 15 50.0 +9.2
WES LR LR
comp=Z,7µm,20.0s
HNH Hanover 42.91 34 PFAKE 13 16 00.0 +17
HNH LR LR
comp=Z,4µm,19.0s
FRNY Flat Rock 42.98 31 PFAKE 13 16 00.0 +16
FRNY LR LR
comp=Z,5µm,18.0s
FFD Franklin Falls 43.11 34 PFAKE 13 16 00.0 +15
FFD LR LR
comp=Z,5µm,20.0s
TRQ Mont Tremblant 43.48 29 eP P 13 15 49.8 +1.8
LPAZ La Paz 43.99 127 P P 13 15 51.4 -1.6
comp=Z,19nm,0.9s,baz=315,slow=6.8,SNR=49
LPAZ La Paz 43.99 127 eP P 13 15 51.5 -1.6
LPAZ pmax pmax
comp=Z,50nm,1.1s
LPAZ La Paz 43.99 127 eP P 13 15 51.5 -1.6
comp=Z,50nm,1.1s
SAML Samuel 44.59 114 eP P 13 15 54.1 -3.1
comp=Z,29nm,1.0s
SAML LR LR
comp=Z,3µm,20.0s
PTGA Pitinga 44.81 102 P P 13 15 57.7 -1.2
comp=Z,22nm,1.0s,baz=291,slow=7.7,SNR=19
PTGA Pitinga 44.81 102 eP P 13 15 58.1 -0.9
comp=Z,43nm,1.1s
PTGA LR LR
comp=Z,4µm,20.0s
PB11 IPOC Station P 44.89 132 eP P 13 15 58.9 -0.8
comp=Z,48nm,1.2s
PB11 LR LR
comp=Z,3µm,19.0s
WVL Waterville 44.91 34 PFAKE 13 16 10.0 +11
WVL LR LR
comp=Z,8µm,20.0s
RKT Rikitea 45.26 222 eS S 13 22 38.5 -2.0
comp=Z,1µm,26.3s
RKT eLR LR 13 28 37.3
comp=Z,14µm,29.0s
RKT Rikitea 45.26 222 eT T 14 03 49.8
comp=Z,23nm,0.3s
PKME Peaks-Kenny Pk 45.55 34 PFAKE 13 16 20.0 +16
PKME LR LR
comp=Z,3µm,22.0s
PB01 IPOC Station P 45.82 133 eP P 13 16 06.5 -0.5
comp=Z,48nm,1.5s
PB01 LR LR
comp=Z,4µm,22.0s
PB04 IPOC Station P 46.18 135 PFAKE 13 16 20.0 +10
PB04 LR LR
comp=Z,6µm,20.0s
BBB Bella Bella 46.21 339 LR LR 13 33 55.8
comp=Z,4µm,20.9s,baz=162,slow=34
LMQ La Malbaie 46.49 31 PFAKE 13 16 20.0 +8.2
LMQ LR LR
comp=Z,6µm,19.0s
PB10 IPOC Station P 46.69 136 PFAKE 13 16 20.0 +6.4
PB10 LR LR
comp=Z,6µm,20.0s
LVC Limon Verde 47.23 134 P P 13 16 15.3 -3.0
comp=Z,33nm,0.9s,baz=236,slow=6.8,SNR=4.9
LVC Limon Verde 47.23 134 eP P 13 16 18.8 +0.5
comp=Z,134nm,1.9s
LVC LR LR
comp=Z,5µm,21.0s
LMN Caledonia Moun 48.43 36 PFAKE 13 16 40.0 +13
LMN LR LR
comp=Z,5µm,21.0s
FCC Fort Churchill 48.84 7 PFAKE 13 16 40.0 +10
FCC LR LR
comp=Z,7µm,18.0s
LCO Las Campanas 50.42 142 PFAKE 13 16 50.0 +7.4
LCO LR LR
comp=Z,8µm,19.0s
VAH Vaihoa 50.46 240 eP P 13 16 42.9 +0.1
comp=Z,73nm,1.0s
UWE Uwekahuna 50.58 287 PFAKE 13 17 00.0 +16
UWE LR LR
comp=Z,8µm,21.0s
PMOR Pomariorio Ree 50.58 241 eP P 13 16 43.8 +0.1
comp=Z,100nm,1.1s
PMOR Pomariorio Ree 50.58 241 eT T 14 10 36.7
comp=Z,10nm,0.3s
CRAG Craig 50.62 339 eP P 13 16 46.1 +2.8
comp=Z,71nm,1.3s
CRAG LR LR
comp=Z,2µm,20.0s
POHA Pohakuloa 50.82 287 PFAKE 13 17 00.0 +14
POHA LR LR
comp=Z,10µm,20.0s
HPAH Hawaii Prepara 50.99 287 PFAKE 13 17 00.0 +13
HPAH LR LR
comp=Z,9µm,19.0s
WRAK Wrangell Islan 51.10 340 eP P 13 16 49.5 +2.5
comp=Z,66nm,1.4s
WRAK LR LR
comp=Z,3µm,20.0s
HLK Haleakala 51.54 288 PFAKE 13 17 00.0 +8.8
HLK LR LR
comp=Z,8µm,19.0s
DLBC Dease Lake 52.01 343 eP P 13 16 55.3 +1.4
comp=Z,108nm,1.6s
DLBC LR LR
comp=Z,7µm,18.0s
YKA Yellowknife Ar 52.65 354 P P 13 16 57.6 -0.9
comp=Z,1.6nm,0.7s,baz=164,slow=7.8,SNR=33
YKB5 Yellowknife Ar 52.65 354 eP P 13 16 56.9 -1.5
YKW3 Yellowknife Ar 52.72 354 eP P 13 16 59.6 +0.7
comp=Z,44nm,1.5s
TIAR Tiarei 53.00 239 eP P 13 17 01.4 -0.4
comp=Z,22nm,1.1s
TIAR Tiarei 53.00 239 eT T 14 13 38.2
comp=Z,2.2nm,0.3s
SCHQ Schefferville 53.02 26 P P 13 17 01.3 0.0
comp=Z,36nm,1.0s,baz=243,slow=5.2,SNR=15
SCHQ LR LR 13 43 16.6
comp=Z,3µm,18.9s,baz=230,slow=40
SCHQ Schefferville 53.02 26 eP P 13 17 01.4 0.0
comp=Z,44nm,1.0s
TVO Taravao 53.03 238 eT T 14 13 40.1
comp=Z,1.1nm,0.3s
PPT Papeete 53.20 239 LR LR 13 33 30.8
comp=Z,3µm,19.2s,baz=58,slow=29
PPT2 Papeete2 53.21 239 eP P 13 17 03.5 +0.1
comp=Z,49nm,1.3s
PPT2 eS S 13 24 30.5 -1.9
comp=Z,2µm,27.0s
PPT2 eLQ LQ 13 29 47.1
comp=Z,10µm,29.5s
PPT2 eLR LR 13 32 07.8
comp=Z,8µm,26.0s,baz=52
KIP Kipapa 53.22 289 PFAKE 13 17 20.0 +17
KIP LR LR
comp=Z,6µm,19.0s
OPA Opana 53.23 289 PFAKE 13 17 20.0 +17
OPA LR LR
comp=Z,6µm,19.0s

PAE Paea 53.25 239 eP P 13 17 03.2 -0.3
comp=Z,10nm,1.2s
XMAS Kiritimati 54.07 265 PFAKE 13 17 20.0 +10
XMAS LR LR
comp=Z,6µm,18.0s
DRLN Deer Lake 54.43 35 PFAKE 13 17 20.0 +8.3
DRLN LR LR
comp=Z,3µm,19.0s
SKAG Skagway 54.48 341 eP P 13 17 14.2 +2.4
comp=Z,60nm,1.4s
SKAG LR LR
comp=Z,3µm,20.0s
KEKH Kekaha 54.83 290 PFAKE 13 17 30.0 +15
KEKH LR LR
comp=Z,8µm,18.0s
CPUP Villa Florida 57.91 130 P P 13 17 35.5 -1.5
comp=Z,8.3nm,0.9s,baz=314,slow=8.6,SNR=16
CPUP Villa Florida 57.91 130 eP P 13 17 35.9 -1.0
CPUP Villa Florida 57.91 130 eP P 13 17 35.9 -1.0
BALM Baldy 58.02 339 eP P 13 17 39.8 +2.5
BALM pmax pmax
comp=Z,46nm,1.3s
BALM MLR MLR
comp=Z,2µm,18.0s
BALM Baldy 58.02 339 eP P 13 17 39.8 +2.5
comp=Z,46nm,1.3s
BALM LR LR
comp=Z,2µm,18.0s
RAGM Ragged Mountai 58.43 337 eP P 13 17 42.9 +2.8
comp=Z,98nm,1.3s
RAGM LR LR
comp=Z,3µm,22.0s
BMRM Bremner River 58.78 338 PFAKE 13 18 00.0 +17
BMRM LR LR
comp=Z,2µm,20.0s
EYAK Cordova Ski Ar 58.94 337 eP P 13 17 45.8 +2.2
comp=Z,62nm,1.2s
EYAK LR LR
comp=Z,4µm,22.0s
DAWY Dawson 59.24 343 eP P 13 17 45.5 -0.2
comp=Z,32nm,1.0s
PLCA Paso Flores 59.31 151 P P 13 17 45.5 -1.0
comp=Z,9.3nm,0.9s,baz=351,slow=11,SNR=12
PLCA LR LR 13 37 55.1
comp=Z,9µm,18.9s,baz=346,slow=31
PLCA Paso Flores 59.31 151 eP P 13 17 46.0 -0.5
PLCA pmax pmax
comp=Z,27nm,1.2s
PLCA Paso Flores 59.31 151 eP P 13 17 46.0 -0.5
comp=Z,27nm,1.2s
DIV Divide 59.32 338 PFAKE 13 18 00.0 +14
DIV LR LR
comp=Z,3µm,20.0s
KLU Klutina 59.61 338 eP P 13 17 48.6 +0.3
comp=Z,40nm,1.0s
KLU LR LR
comp=Z,2µm,20.0s
MENT Mentasta 59.79 340 eP P 13 17 49.6 +0.1
comp=Z,66nm,1.6s
MENT LR LR
comp=Z,2µm,22.0s
SEW Seward 60.13 336 eP P 13 17 53.3 +1.6
comp=Z,78nm,1.6s
SEW LR LR
comp=Z,3µm,22.0s
KDAK Kodiak Island 60.20 332 P P 13 18 08.8 +17
comp=Z,18nm,1.2s,baz=130,slow=3.5,SNR=5.4
KDAK Kodiak Island 60.20 332 eP P 13 17 54.3 +2.0
KDAK MLR MLR
comp=Z,3µm,21.0s
KDAK Kodiak Island 60.20 332 eP P 13 17 54.3 +2.0
KDAK LR LR
comp=Z,3µm,21.0s
OHAK Old Harbor 60.24 331 eP P 13 17 54.4 +1.8
comp=Z,96nm,1.2s
OHAK LR LR
comp=Z,4µm,21.0s
EGAK Eagle 60.28 343 eP P 13 17 53.2 +0.4
comp=Z,32nm,1.1s
EGAK LR LR
comp=Z,3µm,19.0s
DOT Dot Lake 60.39 341 eP P 13 17 53.6 0.0
comp=Z,80nm,0.9s
DOT LR LR
comp=Z,5µm,20.0s
PAX Paxson 60.41 339 eP P 13 17 54.4 +0.6
PAX pmax pmax
comp=Z,62nm,1.5s
PAX MLR MLR
comp=Z,2µm,19.0s
PAX Paxson 60.41 339 eP P 13 17 54.4 +0.6
comp=Z,62nm,1.5s
PAX LR LR
comp=Z,2µm,19.0s
BRLK Bradley Lake 60.53 335 eP P 13 17 55.1 +0.6
comp=Z,67nm,1.1s
BRLK LR LR
comp=Z,2µm,20.0s
SML Sawmill 60.71 337 eP P 13 17 55.4 -0.4
SML pmax pmax
comp=Z,65nm,1.0s
SML MLR MLR
comp=Z,2µm,20.0s
SML Sawmill 60.71 337 eP P 13 17 55.4 -0.4
comp=Z,65nm,1.0s
SML LR LR
comp=Z,2µm,20.0s
HOM Homer 60.79 334 PFAKE 13 18 10.0 +14
HOM LR LR
comp=Z,2µm,21.0s
RC01 Rabbit Creek A 60.82 336 eP P 13 17 57.2 +0.8
comp=Z,32nm,1.0s
RC01 LR LR
comp=Z,2µm,20.0s
PMR Palmer 60.88 337 eP P 13 17 56.4 -0.4
PMR pmax pmax
comp=Z,139nm,1.5s
PMR MLR MLR
comp=Z,2µm,20.0s
PMR Palmer 60.88 337 eP P 13 17 56.4 -0.4
comp=Z,140nm,1.5s
PMR LR LR
comp=Z,2µm,20.0s
INK Inuvik 61.12 348 P P 13 17 58.1 -0.3
comp=Z,12nm,1.1s,baz=135,slow=6.8,SNR=14
INK LR LR 13 43 36.9
comp=Z,4µm,20.1s,baz=148,slow=35
INK Inuvik 61.12 348 eP P 13 17 58.3 -0.1
INK pmax pmax
comp=Z,31nm,1.0s
INK Inuvik 61.12 348 eP P 13 17 58.2 -0.1
comp=Z,31nm,1.0s
DHY Denali Highway 61.14 339 eP P 13 17 58.9 0.0
comp=Z,27nm,1.0s
DHY LR LR
comp=Z,2µm,18.0s
SPU Mount Spurr 61.80 336 eP P 13 18 03.4 +0.2
HDA Harding Lake 61.85 340 eP P 13 18 04.1 +0.7
comp=Z,67nm,1.6s
HDA LR LR
comp=Z,2µm,20.0s
RND Reindeer 61.88 339 eP P 13 18 04.3 +0.6
RND pmax pmax
comp=Z,134nm,1.1s
RND MLR MLR
comp=Z,2µm,20.0s
RND Reindeer 61.88 339 eP P 13 18 04.3 +0.6
comp=Z,134nm,1.1s
RND LR LR
comp=Z,2µm,20.0s
TRQA Tornquist 61.92 144 PFAKE 13 18 10.0 +5.7
TRQA LR LR
comp=Z,10µm,18.0s
IL1 Eielson Array 62.06 341 eP P 13 18 03.4 -1.5
ILAR Eielson Array 62.06 341 P P 13 18 04.0 -0.8
comp=Z,12nm,1.0s,baz=151,slow=4.9,SNR=58
ILAR LR LR 13 44 49.3
comp=Z,2µm,19.5s,baz=142,slow=36
ILB Eielson Array 62.06 341 eP P 13 18 04.1 -0.8
MCK McKinley 62.10 339 eP P 13 18 05.5 +0.3
MCK pmax pmax
comp=Z,55nm,1.0s
MCK MLR MLR
comp=Z,2µm,19.0s
MCK McKinley 62.10 339 eP P 13 18 05.5 +0.3
comp=Z,55nm,1.0s
MCK LR LR
comp=Z,2µm,19.0s
WRH Wood River Hil 62.27 340 eP P 13 18 06.0 -0.2
comp=Z,22nm,1.0s
WRH LR LR
comp=Z,2µm,19.0s
CCB Clear Creek Bu 62.29 340 eP P 13 18 05.7 -0.6
comp=Z,28nm,1.1s
CCB LR LR
comp=Z,2µm,21.0s
TRF Thorofare Moun 62.42 338 eP P 13 18 07.4 0.0
comp=Z,231nm,1.8s
TRF LR LR
comp=Z,3µm,19.0s
COLA College 62.45 340⇑ eP P 13 18 07.0 -0.4
COLA pmax pmax
comp=Z,5.0nm,0.8s
BWN Browne 62.56 339 eP P 13 18 09.5 +1.3
comp=Z,116nm,0.9s
BWN LR LR
comp=Z,2µm,21.0s
MDM Murphy Dome 62.63 340 eP P 13 18 07.9 -0.8
comp=Z,14nm,0.8s
KTH Kantishna Hill 62.71 338 eP P 13 18 09.9 +0.6
comp=Z,52nm,1.1s
KTH LR LR
comp=Z,2µm,19.0s
FYU Fort Yukon 62.74 343 eP P 13 18 09.5 +0.1
comp=Z,107nm,1.4s
FYU LR LR
comp=Z,3µm,20.0s
PPLA Purkeypile 62.80 337 PFAKE 13 18 20.0 +10
PPLA LR LR
comp=Z,3µm,22.0s
SDPT Sand Point 63.00 328 PFAKE 13 18 20.0 +8.8
SDPT LR LR
comp=Z,3µm,20.0s
BPAW Bear Paw Mtn. 63.05 339 eP P 13 18 11.0 -0.5
comp=Z,23nm,1.0s
BPAW LR LR
comp=Z,2µm,18.0s
CAST Castle Rocks 63.06 338 eP P 13 18 10.5 -1.1
comp=Z,55nm,1.1s
CAST LR LR
comp=Z,2µm,22.0s
SVW2 Sparrevohn 63.21 335 eP P 13 18 12.1 -0.5
comp=Z,38nm,1.1s
SVW2 LR LR
comp=Z,2µm,20.0s
MLY Manley 63.52 340 eP P 13 18 14.3 -0.3
comp=Z,70nm,1.4s
MLY LR LR
comp=Z,2µm,20.0s
JOHN Johnston Islan 64.15 284 PFAKE 13 18 30.0 +11
JOHN LR LR
comp=Z,6µm,19.0s
TT01 Tatalina 64.30 336 eP P 13 18 19.8 +0.2
TTA Tatalina 64.31 336 eP P 13 18 20.0 +0.1
TTA pmax pmax
comp=Z,39nm,1.1s
TTA Tatalina 64.31 336 eP P 13 18 20.0 +0.1
comp=Z,39nm,1.1s
SPB Sao Paulo 64.46 122 PFAKE 13 18 30.0 +8.6
SPB LR LR
comp=Z,8µm,20.0s
RES Resolute Bay 64.49 3 eP P 13 18 20.1 -0.6
RES pmax pmax
comp=Z,13nm,1.1s
RES Resolute Bay 64.49 3 eP P 13 18 20.1 -0.6
comp=Z,13nm,1.1s
COLD Coldfoot 64.67 342 eP P 13 18 23.2 +1.2
comp=Z,38nm,1.2s
COLD LR LR
comp=Z,3µm,19.0s
AKUT Akutan 65.48 325 PFAKE 13 18 40.0 +12
AKUT LR LR
comp=Z,5µm,20.0s
UNV Unalaska Valle 65.81 325 eP P 13 18 32.1 +2.5
comp=Z,293nm,1.8s
UNV LR LR
comp=Z,5µm,22.0s
SFJD Kangerlussuaq 66.61 20 PFAKE 13 18 50.0 +15
SFJD LR LR
comp=Z,2µm,19.0s
NIKH Nikolski High 66.94 323 PFAKE 13 18 50.0 +13
NIKH LR LR
comp=Z,5µm,20.0s
SPIA Saint Paul Isl 68.75 328 PFAKE 13 19 00.0 +12
SPIA LR LR
comp=Z,3µm,20.0s
RCBR Riachuelo 69.33 100 PFAKE 13 19 00.0 +7.3
RCBR LR LR
comp=Z,4µm,18.0s
TNA Tin City 70.12 337 eP P 13 18 58.7 +2.1
comp=Z,27nm,1.1s
TNA LR LR
comp=Z,1µm,20.0s
MIDW Midway 70.91 296 PFAKE 13 19 10.0 +8.0
MIDW LR LR
comp=Z,5µm,20.0s
GAMB Gambell 71.14 334 PFAKE 13 19 20.0 +17
GAMB LR LR
comp=Z,1µm,20.0s
SUMG Summit 72.86 17 eP P 13 19 15.0 +1.6
SUMG pmax pmax
comp=Z,45nm,1.2s
SUMG MLR MLR
comp=Z,5µm,18.0s
SUMG Summit 72.86 17 eP P 13 19 15.0 +1.6
comp=Z,46nm,1.2s
SUMG LR LR
comp=Z,5µm,18.0s
EFI East Falkland 73.19 152 PFAKE 13 19 30.0 +15
EFI LR LR
comp=Z,4µm,18.0s
CMLA Cha da Macela 74.36 54 PFAKE 13 19 30.0 +7.6
CMLA LR LR
comp=Z,2µm,20.0s
BORG Borgarnes 77.42 26 LR LR 13 54 24.6
comp=Z,2µm,18.8s,baz=291,slow=36
BILL Bilibino 80.51 338 d iP P 13 19 56.1 -0.1
BILL pmax pmax
comp=Z,8.0nm,1.3s
BILL Bilibino 80.51 338 eP P 13 19 55.9 -0.4
comp=Z,12nm,1.0s
BILL LR LR
comp=Z,2µm,21.0s
PMOZ Porto Moniz, M 81.49 58 eLR LR 13 46 02.6
comp=Z,1µm,20.0s
JMIC Jan Mayen 81.95 19 LR LR 13 58 02.3
comp=Z,1µm,18.4s,baz=284,slow=37
TARA Tarawa 83.31 270 PFAKE 13 20 20.0 +8.0
TARA LR LR
comp=Z,3µm,19.0s
KBS Kingsbay 84.66 10 PFAKE 13 20 30.0 +12
KBS LR LR
comp=Z,3µm,21.0s
DSB Dublin 86.09 37 PFAKE 13 20 40.0 +15
DSB LR LR
comp=Z,2µm,20.0s
PET Petropavlovsk 86.42 323 eP P 13 20 28.9 +2.1
PET e 13 23 50.2
PET e 13 30 52.1
PET eS S 13 31 02.6 +2.3
PET ePS PnS 13 32 03.8 +2.1
PET eSS SS 13 36 45.4 +5.2
PET eSSS SSS 13 40 18.2
PET pmax pmax
comp=Z,101nm,14.9s
PET Petropavlovsk 86.42 323 PFAKE 13 20 40.0 +13
PET LR LR
comp=Z,2µm,21.0s
PMAFR Mafra 86.92 51 eP P 13 20 31.6 +1.9
PMAFR Mafra 86.92 51 eS S 13 31 11.5 +5.6
PEA0 Petropavlovsk- 86.96 323 eP P 13 20 29.1 -0.5
PEA0B Petropavlovsk- 86.96 323 PFAKE 13 20 40.0 +10
PEA0B LR LR
comp=Z,2µm,21.0s
PETK Petropavlovsk- 86.96 323 P P 13 20 28.3 -1.3
comp=Z,3.5nm,0.9s,baz=90,slow=10,SNR=3.0
PETK LR LR 13 52 40.4
comp=Z,1µm,20.9s,baz=81,slow=31
PGAV Gavieira, Arco 87.11 48 eP P 13 20 31.0 +0.3
comp=Z,94nm,1.6s
PGAV Gavieira, Arco 87.11 48 eLR LR 13 48 30.2
comp=Z,1µm,20.0s
SEY Seymchan 87.13 334⇑ eP P 13 20 29.7 -0.5
PCAS Casmilo, Conde 87.31 50 eP P 13 20 31.9 +0.4
comp=Z,45nm,1.3s
PCAS Casmilo, Conde 87.31 50 eS S 13 31 14.7 +5.1
PCAB Cabril 87.34 48 eP P 13 20 31.6 -0.1
comp=Z,51nm,1.6s
ESK Eskdalemuir 87.43 34 PFAKE 13 20 40.0 +8.2
ESK LR LR
comp=Z,2µm,22.0s
EKA Eskdalemuir Ar 87.45 34 P P 13 20 31.5 -0.4
comp=Z,1.9nm,0.8s,baz=280,slow=8.5,SNR=3.2
POLO Lamas de Olo 87.57 49 eP P 13 20 33.4 +0.5
comp=Z,22nm,1.4s
POLO Lamas de Olo 87.57 49 eS S 13 31 17.8 +5.5
PFVI Vila Bisbo 87.62 53 eS S 13 31 16.8 +4.2
PFVI Vila Bisbo 87.62 53 PFAKE 13 20 40.0 +6.9
PFVI LR LR
comp=Z,2µm,20.0s
PVRL Vila Real 87.65 49 eP P 13 20 33.4 +0.2
comp=Z,42nm,1.8s
PNCL Nicolau / Gran 87.66 52 eP P 13 20 33.3 0.0
comp=Z,19nm,2.5s
PNCL Nicolau / Gran 87.66 52 eS S 13 31 17.2 +4.2
PMTG Montargil 87.71 51 eP P 13 20 33.9 +0.4
comp=Z,42nm,1.7s
PMTG Montargil 87.71 51 eS S 13 31 13.7 +0.3
MORF Marmelete 87.72 53 eP P 13 20 34.3 +0.7
MORF AMS AMS 13 56 06.5
comp=Z,1µm,21.7s
MORF Marmelete 87.72 53 eP P 13 20 36.6 +2.9
MORF Marmelete 87.72 53 eS S 13 31 22.7 +8.9
MORF Marmelete 87.72 53 eP P 13 20 34.3 +0.7
MESJ Messejana 87.95 52 eP P 13 20 35.3 +0.7
MESJ eS S 13 31 03.1 -13
MESJ AMS AMS 13 57 21.0
comp=Z,1µm,17.7s
MESJ Messejana 87.95 52 eP P 13 20 34.9 +0.2
MESJ Messejana 87.95 52 eP P 13 20 35.3 +0.7
MESJ eS S 13 31 03.1 -13
MTE Manteigas 87.96 49 eP P 13 20 34.5 -0.2
comp=Z,37nm,1.4s
MTE Manteigas 87.96 49 eS S 13 31 24.8 +8.9
MTE Manteigas 87.96 49 eLQ LQ 13 43 50.5
MTE eLR LR 13 48 57.5
comp=Z,2µm,18.0s
EVO Evora 87.98 51 eP P 13 20 36.9 +2.1
URZ Urewera 88.04 231 PFAKE 13 20 50.0 +15
URZ LR LR
comp=Z,3µm,20.0s
PCVE Castro Verde 88.14 52 eP P 13 20 35.7 +0.2
comp=Z,29nm,1.6s
PCVE Castro Verde 88.14 52 eS S 13 31 15.8 -1.8
MVO Moncorvo 88.18 49 eS S 13 31 25.6 +7.6
MVO Moncorvo 88.18 49 eLQ LQ 13 43 49.0
MVO eLR LR 13 48 47.0
comp=Z,1µm,18.0s
PBEJ Beja 88.19 52 eP P 13 20 38.1 +2.3
comp=Z,25nm,2.2s
PESTR Estremoz 88.23 51 eS S 13 31 23.5 +5.0
PBRG Braganca 88.26 48 eP P 13 20 37.0 +0.9
comp=Z,22nm,1.8s
PMRV Marv??o 88.27 50 eLR LR 13 48 48.4
comp=Z,2µm,20.0s
PBDV Barranco-do-Ve 88.30 53 eS S 13 31 31.1 +12
PVAQ Vaqueiros 88.43 52 eS S 13 31 25.3 +4.9
PVAQ Vaqueiros 88.43 52 eLQ LQ 13 44 07.4
PVAQ eLR LR 13 48 36.6
comp=Z,1µm,20.0s
BKZ Black Stump Fm 88.74 230 PFAKE 13 20 50.0 +12
BKZ LR LR
comp=Z,4µm,19.0s
PBAR Barrancos 88.80 52 eP P 13 20 38.4 -0.3
comp=Z,39nm,1.6s
PBAR Barrancos 88.80 52 eS S 13 31 28.9 +5.1
RTC Rabat Centre 89.83 56 PFAKE 13 21 00.0 +16
RTC LR LR
comp=Z,4µm,20.0s
PAB San Pablo 90.54 50 PFAKE 13 21 00.0 +13
PAB LR LR
comp=Z,2µm,18.0s
SNZO South Karori 90.58 228 PFAKE 13 21 00.0 +13
SNZO LR LR
comp=Z,3µm,18.0s
ESDC Sonseca Array 90.80 50 P P 13 20 47.5 -0.6
comp=Z,0.2nm,0.3s,baz=303,slow=11,SNR=3.3
ESDC LR LR 14 00 18.0
comp=Z,816nm,18.0s,baz=285,slow=35
ESLA Sonseca Array 90.80 50 PFAKE 13 21 00.0 +12
ESLA LR LR
comp=Z,2µm,19.0s
TIXI Tiksi 91.17 345⇑ eP P 13 20 47.1 -1.9
TIXI pmax pmax
comp=Z,31nm,1.3s
TIXI Tiksi 91.17 345 eP P 13 20 47.6 -1.4
comp=Z,23nm,1.0s
TIXI LR LR
comp=Z,2µm,20.0s
KHZ Kahutara 91.67 227 PFAKE 13 21 00.0 +8.2
KHZ LR LR
comp=Z,4µm,18.0s
MDT Midelt 91.92 56 P P 13 20 52.3 -1.2
comp=Z,0.7nm,0.7s,baz=297,slow=9.0,SNR=3.1
MDT LR LR 13 57 54.9
comp=Z,754nm,19.9s,slow=33
THZ Tophouse 91.99 228 PFAKE 13 21 00.0 +6.6
THZ LR LR
comp=Z,5µm,21.0s
KONO Kongsberg 92.47 28 PFAKE 13 21 10.0 +15
KONO LR LR
comp=Z,2µm,20.0s
MQZ McQueen's Vall 92.57 226 PFAKE 13 21 10.0 +14
MQZ LR LR
comp=Z,4µm,18.0s
NOA NORSAR Array B 92.59 26 LR LR 14 03 32.7
comp=Z,997nm,19.3s,baz=300,slow=36
ARCES ARCESS Array B 92.94 16 LR LR 14 04 12.3
comp=Z,2µm,18.2s,baz=323,slow=36
ARE0 ARCESS Array S 92.94 16 PFAKE 13 21 10.0 +13
ARE0 LR LR
comp=Z,2µm,20.0s
KEV Kevo 93.19 15 PFAKE 13 21 10.0 +12
KEV LR LR
comp=Z,3µm,20.0s
HFS Hagfors 94.09 26 LR LR 14 02 55.9
comp=Z,105nm,21.3s,baz=304,slow=35
ODZ Otahua Downs 94.24 225 PFAKE 13 21 10.0 +6.3
ODZ LR LR
comp=Z,6µm,19.0s
FOZ Fox Glacier 94.56 227 PFAKE 13 21 20.0 +15
FOZ LR LR
comp=Z,5µm,19.0s
WLF Walferdange 94.62 38 PFAKE 13 21 20.0 +15
WLF LR LR
comp=Z,2µm,20.0s
SSB Saint Sauveur 95.17 42 PFAKE 13 21 20.0 +12
SSB LR LR
comp=Z,1µm,22.0s
WKZ Wanaka 95.35 226 PFAKE 13 21 20.0 +11
WKZ LR LR
comp=Z,6µm,18.0s
WHZ Wether Hill Ro 96.25 225 PFAKE 13 21 20.0 +7.2
WHZ LR LR
comp=Z,6µm,20.0s
BFO Black Forest 96.46 39 PFAKE 13 21 30.0 +16
BFO LR LR
comp=Z,2µm,20.0s
LVZ Lovozero 96.47 15 PFAKE 13 21 30.0 +17
LVZ LR LR
comp=Z,2µm,21.0s
RGN Rugen 96.58 32 PFAKE 13 21 30.0 +16
RGN LR LR
comp=Z,1µm,20.0s
BNI Bardonecchia 96.67 42 PFAKE 13 21 30.0 +15
BNI LR LR
comp=Z,2µm,19.0s
STU Stuttgart 96.81 38 PFAKE 13 21 30.0 +15
STU LR LR
comp=Z,2µm,20.0s
YAK Yakutsk 96.87 338 eP P 13 21 13.7 -1.6
YAK pmax pmax
comp=Z,4.0nm,0.7s
YAK Yakutsk 96.87 338 PFAKE 13 21 30.0 +15
YAK LR LR
comp=Z,1µm,20.0s
PYZ Puysegur Point 97.17 224 PFAKE 13 21 30.0 +13
PYZ LR LR

comp=Z,6µm,20.0s
GRFO Grafenberg 97.63 36 PFAKE 13 21 30.0 +11
GRFO LR LR
comp=Z,900nm,20.0s
TUE Stuetta 97.84 40 PFAKE 13 21 30.0 +10
TUE LR LR
comp=Z,1µm,20.0s
HNR Honiara 97.92 262 LR LR 13 57 47.4
comp=Z,714nm,19.6s,baz=64,slow=31
CLL Collm 97.92 35 *i* (P) Pdif 13 21 19.9 -0.5
CLL *e*PP **PP 13 25 20.0 +1.3**
comp=Z,200nm,10.1s
CLL *e*SKSac **SKSac 13 32 04.0 +8.6**
CLL *e*S **ScS 13 32 50.0 +5.6**
CLL *e*PS **PS 13 34 10.0 -1.7**
CLL *e*SS **SS 13 39 31.0 +5.7**
CLL L L 14 05 00.0
comp=Z,1µm,21.6s
CLL Collm 97.92 35 PFAKE 13 21 30.0 +10
CLL LR LR
comp=Z,1µm,20.0s
NKC Novy Kostel 98.10 36 AMS AMS 14 05 20.0
comp=Z,2µm,19.0s
FINES FINESS Array B 98.36 22 P **P 13 21 20.9 -1.2**
comp=Z,2.5nm,1.1s,baz=306,slow=4.7,SNR=4.2
BRG Berggiesshubel 98.65 35 *e*P Pdif 13 21 29.6 +5.9
comp=Z,15nm,1.5s
BRG SKS SKSac 13 32 11.0 +12
BRG S **ScS 13 32 56.0 +5.5**
BRG PS **PS 13 34 18.0 -1.6**
BRG SS **SS 13 39 33.0 -2.5**
comp=N,1µm,20.5s
comp=E,981nm,25.5s
comp=Z,1µm,25.4s
PVCC Panska Ves 99.16 35 AMS AMS 14 03 10.0
comp=Z,1µm,20.5s
KHC Kasperske Hory 99.25 36 *e*SKS **SKSac 13 32 12.0 +10**
KHC *e*PS PS 13 34 18.8 -7.6
KHC *e*SS SS 13 39 53.5 +9.3
KHC AMS AMS 14 04 10.0
comp=Z,2µm,20.3s
KHC Kasperske Hory 99.25 36 PFAKE 13 21 40.0 +14
KHC LR LR
comp=Z,700nm,20.0s
PRU Pruhonice 99.41 35 *e*SKS SKSac 13 32 14.6 +12
PRU *ex* x 13 34 18.5
PRU *e*SS **SS 13 39 52.9 +6.7**
PRU AMS AMS 14 09 20.0
comp=Z,1µm,16.7s
VLC Villacollemand 99.45 42 PFAKE 13 21 40.0 +13
VLC LR LR
comp=Z,400nm,20.0s
GEC2 GERESS Array S 99.46 37 PFAKE 13 21 40.0 +13
GEC2 LR LR
comp=Z,2µm,21.0s
GERES GERESS Array B 99.46 37 LR LR 14 09 03.8
comp=Z,1µm,18.6s,baz=294,slow=37
GOPC GO Pecny, Ondr 99.58 35 *e*SKS **SKSac 13 32 13.1 +9.2**
GOPC *e*PS PS 13 34 23.6 -6.2
GOPC *e*SS **SS 13 39 54.1 +5.4**
GOPC AMS AMS 14 09 20.0
comp=Z,1µm,17.1s
ERM Erimo 99.78 316 PFAKE 13 21 40.0 +11
ERM LR LR
comp=Z,4µm,20.0s
UPC Upice 99.98 34 *e*SKS **SKSac 13 32 13.9 +8.1**
UPC *e*PS PS 13 34 25.9 -8.1
UPC *e*SS **SS 13 39 59.7 +5.6**
UPC AMS AMS 14 05 50.0
comp=Z,2µm,20.2s
DPC Dobruska-Polom 100.23 34 *e*SKS **SKSac 13 32 16.1 +9.0**
DPC *e*SS **SS 13 40 01.8 +4.1**
DPC AMS AMS 14 06 00.0
comp=Z,2µm,21.5s
TREC Trest 100.28 36 *ex* **SP 13 34 28.2 -4.2**
TREC AMS AMS 14 07 30.0
comp=Z,2µm,20.4s
QSPA South Pole Qui 100.31 180 PFAKE 13 21 40.0 +9.3
QSPA LR LR
comp=Z,2µm,20.0s
VSL Villasalto 100.63 46 PFAKE 13 21 40.0 +7.3
VSL LR LR
comp=Z,1µm,20.0s
TRI Trieste 100.94 39 PFAKE 13 21 50.0 +16
TRI LR LR
comp=Z,1µm,21.0s
MORC Moravsky Berou 101.20 34 PFAKE 13 21 50.0 +15
MORC LR LR
comp=Z,5µm,20.0s
OKC Ostrava-Krasne 101.50 34 *e*SS SS 13 40 20.5 +5.2
OKC AMS AMS 14 06 50.0
comp=Z,1µm,20.3s
AQU L'Aquila 102.21 42 PFAKE 13 21 50.0 +10
AQU LR LR
comp=Z,1µm,20.0s
TOC7 Torodi Ar. Sit 102.28 74 PFAKE 13 21 50.0 +10
TOC7 LR LR
comp=Z,1µm,20.0s
TOB5 Torodi Ar. Sit 102.28 74 PFAKE 13 21 50.0 +9.5
TOB5 LR LR
comp=Z,1µm,20.0s
TORD Torodi Ar. Bea 102.29 74 PKKPbc PKKPbc 13 37 41.2 -1.2
comp=Z,0.6nm,0.8s,baz=104,slow=4.8,SNR=4.0
TOC2 Torodi Ar. Sit 102.32 74 PFAKE 13 21 50.0 +9.3
TOC2 LR LR
comp=Z,1µm,20.0s
TOC3 Torodi Ar. Sit 102.32 74 PFAKE 13 21 50.0 +9.3
TOC3 LR LR
comp=Z,1µm,20.0s
PSZ Piszkesteto 103.50 35 PFAKE 13 22 00.0 +15
PSZ LR LR
comp=Z,1µm,21.0s
CLTB Caltabellotta 104.15 47 PFAKE 13 22 00.0 +11
CLTB LR LR
comp=Z,2µm,22.0s
UZH Uzhgorod 104.44 34 *e*P **Pdif 13 21 45.8 -3.6**
UZH *e*S **Sdif 13 33 31.8 -7.1**
UZH *i* SS **SS 13 41 02.0 +6.3**
UZH MLR MLR
comp=N,2µm,20.0s
UZH MLR MLR
comp=E,800nm,20.0s
UZH MLR MLR
comp=Z,700nm,20.0s
RABL Rabaul 104.70 268 PFAKE 13 22 00.0 +8.7
RABL LR LR
comp=Z,2µm,18.0s
CUC Castrocucco 104.91 44 PFAKE 13 26 20.0
CUC LR LR
comp=Z,1µm,20.0s
MAJO Matsushiro 105.55 313 PFAKE 13 26 20.0
MAJO LR LR
comp=Z,3µm,22.0s
MJB9 Matsu-Tunnel 105.55 313 PFAKE 13 26 20.0
MJB9 LR LR
comp=Z,800nm,22.0s
CEL Celeste 105.76 45 PFAKE 13 26 20.0
CEL LR LR
comp=Z,700nm,21.0s
WDD Wied Dalam 105.83 48 PFAKE 13 26 20.0
WDD LR LR
comp=Z,1µm,21.0s
TIP Timpagrande 105.93 44 PFAKE 13 26 20.0
TIP LR LR
comp=Z,1µm,21.0s
KIEV Kiev 106.72 29 PFAKE 13 26 20.0
KIEV LR LR
comp=Z,1µm,20.0s
AKBB Malin Array Si 106.72 29 PFAKE 13 26 20.0
AKBB LR LR
comp=Z,1µm,19.0s
OBN Obninsk 106.74 23 PFAKE 13 26 20.0
OBN LR LR
comp=Z,2µm,19.0s
TIR Tirane 106.93 41 PFAKE 13 26 20.0
TIR LR LR
comp=Z,1µm,22.0s
INU Inuyama 106.94 312 PFAKE 13 26 20.0
INU LR LR
comp=Z,2µm,22.0s
MDJ Mudanjiang 107.20 323 PFAKE 13 26 20.0
MDJ LR LR
comp=Z,2µm,21.0s
ARMA Armidale 107.83 241 PFAKE 13 26 20.0
ARMA LR LR
comp=Z,1µm,18.0s
GUMO Guam 108.00 288 PFAKE 13 26 20.0
GUMO LR LR
comp=Z,2µm,22.0s
MLR Muntele Rosu 108.30 35 PFAKE 13 26 20.0
MLR LR LR
comp=Z,2µm,22.0s
MANU Manus Island 109.06 271 PFAKE 13 26 30.0
MANU LR LR
comp=Z,1µm,22.0s
HIA Hailar 109.48 332 PFAKE 13 26 30.0
HIA LR LR
comp=Z,2µm,19.0s
CAN Canberra 110.06 236 PFAKE 13 26 30.0
CAN LR LR
comp=Z,1µm,19.0s
TIRR Tirgusor 110.31 35 PFAKE 13 26 30.0
TIRR LR LR
comp=Z,1µm,20.0s
ARU Arti 111.83 11 PFAKE 13 26 30.0
ARU LR LR
comp=Z,2µm,19.0s
INCN Inchon 113.09 318 PFAKE 13 26 30.0
INCN LR LR
comp=Z,2µm,20.0s
SANT Santorini 113.28 43 PFAKE 13 26 30.0
SANT LR LR
comp=Z,600nm,20.0s
IDI Anoyia 113.49 44 PFAKE 13 26 30.0
IDI LR LR
comp=Z,600nm,19.0s
TLY Talaya 113.87 342 PFAKE 13 26 40.0
TLY LR LR
comp=Z,2µm,20.0s
LAST Lasithi 113.96 44 PFAKE 13 26 40.0
LAST LR LR
comp=Z,600nm,21.0s
COEN Coen 114.78 259 PFAKE 13 26 40.0 +14
COEN LR LR
comp=Z,1µm,19.0s
ANN Anapa 114.80 30 *i* PKIKP **PKiKP 13 26 24.9 -0.3**
ANN *e* 13 33 14.8
ANN *e*PS **PKKPab 13 37 08.0 -2.0**
ANN pmax pmax
comp=Z,12nm,0.6s
ANN MLR MLR
comp=E,275nm,22.0s
ANN MLR MLR
comp=Z,2µm,22.0s
ANN MLR MLR
comp=N,1µm,22.0s
KARP Karpathos 114.89 43 PFAKE 13 26 40.0 +14
KARP LR LR
comp=Z,300nm,22.0s
ISP Isparta 115.70 39 PFAKE 13 26 40.0 +13
ISP LR LR
comp=Z,500nm,22.0s
ANTO Ankara 115.76 36 PFAKE 13 26 40.0 +13
ANTO LR LR
comp=Z,1µm,22.0s
BR231 Keskin MP Arra 115.76 36 *e*PKPdf **PKPdf 13 26 27.0 -0.3**
ULN Ulaanbaatar 115.96 338 PFAKE 13 26 40.0 +12
ULN LR LR
comp=Z,2µm,22.0s
BRTR Keskin Array B 116.34 36 PKP **PKPdf 13 26 27.4 -1.1**
comp=Z,1.6nm,1.0s,baz=193,slow=0.4,SNR=4.8
STKA Stephens Creek 116.40 240 PKP **PKPdf 13 26 27.7 -0.9**
comp=Z,1.8nm,0.9s,baz=94,slow=3.3,SNR=3.0
STKA Stephens Creek 116.40 240 PKIKP **PKPdf 13 26 27.7 -0.9**
STKA MLR MLR
comp=Z,300nm,20.0s
STKA Stephens Creek 116.40 240 PKP **PKPdf 13 26 27.7 -0.9**
STKA LR LR
comp=Z,300nm,20.0s
BRVK Borovoye 116.62 4 PFAKE 13 26 40.0 +12
BRVK LR LR
comp=Z,3µm,20.0s
ZRNK Zerenda 116.63 5 PFAKE 13 26 40.0 +11
ZRNK LR LR
comp=Z,2µm,21.0s
SOC Sochi 116.80 29 *e*PKIKP PKPdf 13 26 42.9 +14
SOC 13 33 14.4
BJI Beijing 117.77 326 PKP **PKPdf 13 26 31.5 +0.5**
BJI AMB AMB
comp=Z,220nm,4.6s
BJI LR LR
comp=Z,710nm,21.3s
BJI LR LR
comp=Z,2µm,20.8s
BJI LR LR
comp=Z,2µm,21.9s
BJT Baijiatuau 117.78 326 PFAKE 13 26 40.0 +8.9
BJT LR LR
comp=Z,2µm,20.0s
KIV Kislovodsk 117.89 27 *e*PKIKP **PKPdf 13 26 26.2 -5.1**
KIV *e* 13 27 42.1
KIV pmax pmax
comp=Z,2.0nm,0.9s
KIV Kislovodsk 117.89 27 PFAKE 13 26 40.0 +8.7
KIV LR LR
comp=Z,1µm,20.0s
ABKAR Akbulak array 118.91 12 *e*PKPdf **PKPdf 13 26 33.7 +0.7**
KURK Kurchatov 119.15 358 PFAKE 13 26 50.0 +17
KURK LR LR
comp=Z,2µm,21.0s
CSS Mathiatis 119.26 40 PFAKE 13 26 50.0 +16
CSS LR LR
comp=Z,100nm,22.0s
HHC Hu-ho-hao-te 119.58 330 *e*PKP **PKPdf 13 26 30.0 -4.7**
HHC PP **PP 13 27 57.5 +1.3**
HHC SS SS 13 44 22.8 +5.7
HHC AMB AMB
comp=Z,70nm,8.6s
HHC LR LR
comp=Z,1µm,19.5s
HHC LR LR
comp=Z,1µm,19.0s
HHC LR LR
comp=Z,1µm,20.1s
BBOO Buckleboo 120.97 238 PFAKE 13 26 50.0 +13
BBOO LR LR
comp=Z,2µm,19.0s
GNI Garni 121.83 28 PFAKE 13 26 50.0 +11
GNI LR LR
comp=Z,800nm,20.0s
MAW Mawson 122.11 174 PKP **PKPdf 13 26 37.9 -0.6**
comp=Z,2.2nm,0.7s,baz=198,slow=0.9,SNR=3.8
MAW Mawson 122.11 174 PKIKP **PKPdf 13 26 37.9 -0.6**
MAW MLR MLR
comp=Z,400nm,20.0s
MAW Mawson 122.11 174 PKP **PKPdf 13 26 37.9 -0.6**
MAW LR LR
comp=Z,400nm,20.0s
TSUM Tsumeb 122.70 106 PFAKE 13 26 50.0 +8.8
TSUM LR LR
comp=Z,3µm,19.0s
MK31 Makanchi Array 122.86 355 *e*PKIKP **PKPdf 13 26 40.4 -0.3**
MK31 Makanchi Array 122.86 355 *e*PKPdf **PKPdf 13 26 40.4 -0.3**
MKAR Makanchi Array 122.86 355 PKP **PKPdf 13 26 39.2 -1.5**
comp=Z,0.8nm,0.8s,baz=7.7,slow=3.4,SNR=6.8
MKAR PKKPbc **PKKPbc 13 36 30.9 -3.8**
comp=Z,0.8nm,0.9s,baz=204,slow=2.7,SNR=4.6
MKAR Makanchi Array 122.86 355 *e*PKIKP **PKPdf 13 26 40.4 -0.3**
MKAR Makanchi Array 122.86 355 *e*PKPdf **PKPdf 13 26 40.4 -0.3**
MKAR PKKPbc **PKKPbc 13 36 30.9 -3.8**
MAKZ Makanchi 122.87 355 PFAKE 13 26 50.0 +9.3
MAKZ LR LR
comp=Z,1µm,21.0s
MK01 Makanchi Array 122.89 355 *e*PKPdf **PKPdf 13 26 39.6 -1.1**
WRAB Tennant Creek 123.46 253 PFAKE 13 26 50.0 +7.5
WRAB LR LR
comp=Z,2µm,19.0s
WRA Warramunga Arr 123.47 253 PKP **PKPdf 13 26 41.0 -1.5**
comp=Z,4.8nm,0.9s,baz=87,slow=1.7,SNR=16
AS01 Alice Springs 123.71 248 *e*PKPdf **PKPdf 13 26 40.8 -2.1**
TATO Taipei 123.72 309 PFAKE 13 26 50.0 +7.1
TATO LR LR
comp=Z,2µm,20.0s
ASAR Alice Springs 123.75 248 PKP **PKPdf 13 26 41.4 -1.7**
comp=Z,2.7nm,0.9s,baz=89,slow=1.8,SNR=12
FAKI Fak Fak 124.08 273 PFAKE 13 27 00.0 +16
FAKI LR LR
comp=Z,3µm,21.0s
WMQ Urumqi 125.11 350 *e*PKP **PKPdf 13 26 44.5 -0.7**
WMQ PP **PP 13 28 37.3 +4.2**
WMQ SS SS 13 45 33.5 +7.0
WMQ AMB AMB
comp=Z,14nm,12.2s
WMQ LR LR
comp=Z,600nm,20.4s
WMQ LR LR
comp=Z,580nm,20.4s
WMQ LR LR
comp=Z,720nm,25.6s
WHN Wuhan 125.36 319 PKP **PKPdf 13 26 45.3 -0.6**
WHN LR LR
comp=Z,2µm,16.4s
WHN LR LR
comp=Z,4µm,19.9s
WHN LR LR
comp=Z,4µm,19.5s
GTA Gaotai 125.90 338 *e*PKP **PKPdf 13 26 47.3 +0.4**
GTA PP **PP 13 28 44.0 +5.2**
GTA SKS **SKSdf 13 33 58.5 +2.0**
GTA SKKS **SKKSac 13 35 36.0 +0.3**
GTA SS **SS 13 45 41.8 +4.7**
GTA AMB AMB
comp=Z,93nm,6.9s
GTA LR LR
comp=Z,810nm,20.9s
GTA LR LR
comp=Z,1µm,21.4s
GTA LR LR
comp=Z,2µm,20.0s
MTN Manton Dam 126.38 262 PFAKE 13 27 00.0 +12
MTN LR LR
comp=Z,2µm,20.0s
TKM2 Tokmak 2 126.98 1 *e*PKIKP **PKPdf 13 26 51.1 +2.2**
TKM2 MLR MLR
comp=Z,3µm,21.0s
TKM2 Tokmak 2 126.98 1 *e*PKPdf **PKPdf 13 26 51.1 +2.2**
TKM2 LR LR
comp=Z,3µm,21.0s
LZH Lanzhou 127.04 332 *e*PKP **PKPdf 13 26 44.5 -4.7**
LZH sPKP 13 26 50.5
LZH PP **PP 13 28 48.5 +1.9**
LZH SS SS 13 45 55.0 +3.3
LZH AMB AMB
comp=Z,130nm,5.2s
LZH LR LR
comp=Z,960nm,18.0s
LZH LR LR
comp=Z,2µm,19.0s
LZH LR LR
comp=Z,2µm,20.0s
EKS2 Erkin-Say 127.19 2 PFAKE 13 27 00.0 +11
EKS2 LR LR
comp=Z,3µm,22.0s
DAV Davao City (W) 128.04 287 PFAKE 13 27 00.0 +8.6
DAV LR LR
comp=Z,2µm,22.0s
TNTI Ternate 128.08 279 PFAKE 13 27 00.0 +8.5
TNTI LR LR
comp=Z,2µm,20.0s
ENH Enshi 128.56 323 PFAKE 13 27 00.0 +7.9
ENH LR LR
comp=Z,2µm,22.0s
GEYT Alibeck 129.02 19 PKP **PKPdf 13 26 52.8 0.0**
comp=Z,7.0nm,1.0s,baz=33,slow=3.5,SNR=7.2
KSH Kashi 130.38 0 *e*PKP **PKPdf 13 26 57.5 +2.1**
KSH *e*PP **PP 13 29 14.5 +6.6**
KSH PKS **PKSdf 13 30 32.5 +0.4**
KSH SKS **SKSdf 13 34 07.5 +2.8**
KSH SKKS **SKKSac 13 36 04.5 +0.9**
KSH SS **SS 13 46 38.5 +6.5**
KSH AMB AMB
comp=Z,77nm,3.2s
KSH LR LR
comp=Z,450nm,14.9s
KSH LR LR
comp=Z,1µm,18.4s
KSH LR LR
comp=Z,2µm,22.1s
CD2 Chengdu 131.27 328 PKP **PKPdf 13 26 56.0 -1.3**
CD2 sPKP 13 27 00.5
CD2 SKS **SKSdf 13 34 07.5 +1.0**
CD2 SKKS **SKKSac 13 36 09.0 -0.4**
CD2 SS **SS 13 46 47.5 +3.6**
CD2 AMB AMB
comp=Z,130nm,10.2s
CD2 LR LR
comp=Z,1µm,20.4s
CD2 LR LR
comp=Z,2µm,21.6s
FITZ Fitzroy Crossi 131.74 255 PKP **PKPdf 13 26 58.4 +0.1**
comp=Z,5.0nm,1.0s,baz=214,slow=5.2,SNR=5.5
FITZ Fitzroy Crossi 131.74 255 PKP **PKPdf 13 26 58.4 +0.1**
FITZ LR LR
comp=Z,1µm,20.0s
LSZ Lusaka 132.84 101 PFAKE 13 27 10.0 +9.4
LSZ LR LR
comp=Z,2µm,19.0s
LUWI Luwuk 132.97 278 PFAKE 13 27 10.0 +9.2
LUWI LR LR
comp=Z,1µm,20.0s
GYA Guiyang 133.03 322 Pdif **Pdif 13 23 56.8 -0.5**
GYA PKP **PKPdf 13 27 00.5 -0.3**
GYA PP **PP 13 29 30.5 +4.6**
GYA PKS **PKSdf 13 30 35.5 -2.0**
GYA SKKS 13 36 20.8
GYA SS **SS 13 47 10.5 +4.5**
GYA AMB AMB
comp=Z,180nm,8.4s
GYA LR LR
comp=Z,430nm,21.6s
GYA LR LR
comp=Z,290nm,22.0s
GYA LR LR
comp=Z,390nm,21.6s
MMRI Maumere 134.76 268 PFAKE 13 27 20.0 +16
MMRI LR LR
comp=Z,900nm,20.0s
KBL Kabul 134.81 9 PFAKE 13 27 20.0 +16
KBL LR LR
comp=Z,1µm,19.0s
MYLDM Lahad Datu 135.30 288 PFAKE 13 27 20.0 +15
MYLDM LR LR
comp=Z,4µm,20.0s
QIZ Qiongzhong 135.94 311 PKP **PKPdf 13 27 06.0 -0.2**
QIZ PP **PP 13 29 44.5 -0.1**
QIZ SS SS 13 47 46.0 +4.5
QIZ AMB AMB
comp=Z,99nm,4.2s
QIZ LR LR
comp=Z,110nm,17.5s
QIZ LR LR
comp=Z,280nm,24.6s
NWAO Narrogin (SRO) 136.26 233 PFAKE 13 27 20.0 +14
NWAO LR LR
comp=Z,1µm,19.0s
KMI Kunming 136.36 324 PKP **PKPdf 13 27 07.3 +0.1**
KMI PP **PP 13 29 50.8 +3.8**
KMI SKKS 13 36 38.8
KMI AMB AMB
comp=Z,140nm,3.4s
KMI LR LR
comp=Z,660nm,18.1s
KMI LR LR
comp=Z,1µm,19.2s
KMI LR LR
comp=Z,2µm,20.2s
KKM Kota Kinabalu 137.11 291 PFAKE 13 27 20.0 +11
KKM LR LR
comp=Z,2µm,21.0s
LSA Lhasa 137.71 341 PFAKE 13 27 20.0 +10
LSA LR LR
comp=Z,2µm,22.0s
FURI Furi 137.89 64 PFAKE 13 27 20.0 +10
FURI LR LR
comp=Z,600nm,20.0s
DAMY Dhamar 139.77 53 PFAKE 13 27 30.0 +16
DAMY LR LR
comp=Z,700nm,21.0s
UOSS Minazif 139.78 29 PFAKE 13 27 30.0 +17
UOSS LR LR
comp=Z,500nm,20.0s
KMBO Kilima Mbogo 140.06 79 PFAKE 13 27 30.0 +16
KMBO LR LR
comp=Z,1µm,19.0s
SBUM Sibu 142.11 288 PFAKE 13 27 30.0 +12

SBUM				LR	LR			
	comp=Z,1μm,20.0s							
CHTO	**Chiang Mai**	**143.45**	**322**	*e*PKIKP	PKPbc	13 27 17.9	+0.8	
CHTO				MLR	MLR			
	comp=Z,900nm,20.0s							
CHTO	**Chiang Mai**	**143.45**	**322**	*e*PKPdf	PKPbc	13 27 17.9	+0.8	
CHTO				LR	LR			
	comp=Z,900nm,20.0s							
CMAR	**Chiang Mai Arr**	**143.72**	**322**	PKP	PKPbc	13 27 18.2	+0.3	
	comp=Z,0.9nm,0.3s,baz=56,slow=3.6,SNR=9.3							
CMAR				PP	**PP**	**13 30 25.5**	**-6.6**	
	comp=Z,0.2nm,0.3s,baz=12,slow=4.6,SNR=2.9							
KSM	**Kuching**	**144.24**	**287**	*e*PKPdf	**PKPab**	**13 27 18.1**	**-1.2**	
KSM				LR	LR			
	comp=Z,1μm,20.0s							
MYKOM	**Kota Tinggi**	**150.11**	**292**	PFAKE		13 27 40.0	-2.1	
MYKOM				LR	LR			
	comp=Z,1μm,22.0s							
KULM	**Kulim**	**151.25**	**302**	*e*PKPbc	**PKPbc**	**13 27 38.6**	**-0.3**	
KULM				*e*PKPab	**PKPab**	**13 27 48.9**	**+2.0**	
KULM				LR	LR			
	comp=Z,900nm,19.0s							
IPM	**Ipoh**	**151.36**	**300**	*e*PKPbc	**PKPbc**	**13 27 38.5**	**-0.7**	
IPM				LR	LR			
	comp=Z,1μm,21.0s							
HYB	**Hyderabad**	**152.32**	**356**	*i* PKP	**PKPbc**	**13 27 42.0**	**+0.7**	
BKNI	**Bangkinang**	**153.27**	**292**	PFAKE		13 27 50.0	-5.3	
BKNI				LR	LR			
	comp=Z,1μm,19.0s							

JMA 28 13:09:30.6±0.2, 38°.46N×144°.55E, h24km, M3.6, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
OFUJ	**Ofunato**	**2.34**	**286**	P	Pn	13 10 08.7	+1.2
MIYJ	**Miyakonagasawa**	**2.40**	**299**	P	Pn	13 10 09.3	+0.9
MIYJ				*e*S	Sn	13 10 38.2	+1.1
JIO	**Ouri**	**2.51**	**271**	P	Pn	13 10 11.1	+1.2
JIO				S	Sn	13 10 40.9	+1.1
JMK	**Ichinoseki**	**2.65**	**282**	P	Pn	13 10 13.4	+1.6
JMK				S	Sn	13 10 46.0	+2.8
JOM	**Ohasama**	**2.73**	**293**	P	Pn	13 10 14.4	+1.4
JOM				*e*S	Sn	13 10 46.9	+1.7
JANG	**Nango**	**3.03**	**310**	P	Pn	13 10 18.9	+1.9
JANG				*e*S	Sn	13 10 53.2	+0.6
JYK	**Kaneyama**	**3.31**	**279**	P	Pn	13 10 23.1	+2.2
JFT	**Otama**	**3.46**	**256**	P	Pn	13 10 25.2	+2.2
JFT				S	Sn	13 11 05.4	+2.2
JKB	**Kayabe**	**4.36**	**323**	P	Pn	13 10 37.2	+2.0
JRY	**Ryogami san**	**5.12**	**243**	P	Pn	13 10 47.1	+1.2

*IDC **28** 13:12:18.2±0.9, 10°.01N×103°.97W, h0km, mb3.9/7, mb1 4.2/8, mb1mx4.0/41, mbtmp4.0/8, ML3.0/1, Error ellipse: s-maj=41.3km s-min=18.1km az=66.0*
*ISCJB **28** 13:12:20.9±1.1, 10°.0N±0°.1×103°.8W±0°.2, h33km, mb4.0/7, Error ellipse: s-maj=27.9km s-min=16.3km az=162.1*

ISC 28 13:12:23.6±1.0, 10°.0N±0°.1×103°.9W±0°.2, h35km, n11, σ1§30/11, mb4.3/7, Northern East Pacific Rise

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CMIG	**Matias Romero**	**11.21**	**50**	Pn	**Pn**	**13 15 01.0**	**-0.5**
	0.1nm,0.3s,baz=210,slow=20,SNR=4.2						
TXAR	**Lajitas Array**	**19.19**	**1**	P	**Pn**	**13 16 47.3**	**+1.6**
	0.1nm,0.3s,baz=182,slow=8.9,SNR=3.5						
ANMO	**Albuquerque**	**24.90**	**355**	P	**P**	**13 17 44.8**	**+1.2**
	1.8nm,1.0s,baz=135,slow=10.0,SNR=2.4						
PDAR	**Pinedale Array**	**32.97**	**352**	P	**P**	**13 18 55.5**	**+0.1**
	2.0nm,1.1s,baz=163,slow=14,SNR=3.7						
LPAZ	**La Paz**	**44.01**	**126**	P	**P**	**13 20 30.8**	**+2.0**
	5.2nm,1.0s,baz=318,slow=9.7,SNR=5.5						
YKA	**Yellowknife Ar**	**52.93**	**354**	P	**P**	**13 21 35.1**	**-1.0**
	0.3nm,0.6s,baz=163,slow=7.6,SNR=4.4						
CPUP	**Villa Florida**	**57.91**	**130**	P	**P**	**13 22 10.8**	**-1.8**
	2.7nm,0.9s,baz=321,slow=6.5,SNR=3.9						
PLCA	**Paso Flores**	**59.16**	**151**	P	**P**	**13 22 21.2**	**+0.1**
	2.2nm,0.8s,baz=347,slow=11,SNR=3.7						
ILAR	**Eielson Array**	**62.27**	**341**	P	**P**	**13 22 41.0**	**-0.8**
	1.9nm,0.8s,baz=158,slow=5.5,SNR=9.4						
WRA	**Warramunga Arr**	**123.13**	**253**	PKP	**PKPdf**	**13 31 18.1**	**+0.5**
	1.1nm,0.9s,baz=89,slow=2.6,SNR=6.7						
ASAR	**Alice Springs**	**123.40**	**248**	PKP	**PKPdf**	**13 31 18.2**	**+0.3**
	0.7nm,1.0s,baz=91,slow=1.8,SNR=5.1						

*ISCJB **28** 13:24:33.7±0.5, 53°.81N±0°.07×164°.94W±0°.06, h35km, mb4.1/12, MS4.0/1, Error ellipse: s-maj=10.0km s-min=4.7km az=171.2*
*IDC **28** 13:24:34.3±4.9, 53°.91N×165°.40W, h28km±30km, mb3.8/10, mb1 4.0/11, mb1mx3.6/53, mbtmp3.9/11, Error ellipse: s-maj=28.0km s-min=24.0km az=31.0*
*NEIC **28** 13:24:35.8±0.9, 53°.84N×165°.05W, h41km±9km, mb4.3/5, ML3.8(AEIC), Error ellipse: s-maj=16.1km s-min=7.9km az=161.0*

ISC 28 13:24:34.9±0.7, 53°.8N±0°.1×165°.06W±0°.05, h35km, n42, σ1§34/40, mb4.2/12, Fox Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
AKUT	**Akutan**	**0.56**	**312**	*e*Pn	**Pn**	**13 24 47.7**	**+1.3**
AKUT				*e*Sn	**Sn**	**13 24 56.3**	**+1.8**
UNV	**Unalaska Valle**	**0.86**	**276**	*e*Pn	**Pn**	**13 24 50.9**	**+0.5**
UNV				*e*Sn	**Sn**	**13 25 01.0**	**-0.7**
NIKH	**Nikolski High**	**2.41**	**252**	*e*Pn	**Pn**	**13 25 12.6**	**+0.9**
SDPT	**Sand Point**	**3.11**	**57**	*e*Pn	**Pn**	**13 25 22.1**	**+0.8**
SDPT				*e*Sn	**Sn**	**13 25 57.1**	**-0.1**
OHAK	**Old Harbor**	**7.53**	**58**	*e*Pn	**Pn**	**13 26 21.7**	**-0.3**
KDAK	**Kodiak Island**	**8.11**	**55**	Pn	Pn	13 26 45.1	+15
	0.9nm,0.3s,baz=153,slow=5.1,SNR=12						
KDAK					Sn	13 28 13.2	+13
	baz=345,slow=19,SNR=3.4						
KDAK	**Kodiak Island**	**8.11**	**55**	*e*Pn	**Pn**	**13 26 28.5**	**-1.4**
KDAK					Sn	13 28 13.2	+13
RSO	**Redoubt South**	**9.47**	**40**	*e*Pn	**Pn**	**13 26 51.7**	**+2.9**
TT01	**Tatalina**	**10.32**	**24**	*e*Pn	**Pn**	**13 27 01.4**	**+1.2**
SEW	**Seward**	**10.62**	**47**	*e*Pn	**Pn**	**13 27 04.5**	**+0.2**
SCM	**Sheep Creek Mo**	**12.41**	**42**	*e*Pn	**Pn**	**13 27 29.1**	**+0.3**
KLU	**Klutina**	**12.81**	**45**	*e*Pn	**Pn**	**13 27 33.6**	**-0.8**
PAX	**Paxson**	**13.75**	**40**	*e*Pn	**Pn**	**13 27 47.7**	**+0.5**
ILAR	**Eielson Array**	**14.35**	**33**	Pn	**Pn**	**13 27 53.4**	**-1.9**
	baz=207,slow=14,SNR=3.1						
SKAG	**Skagway**	**17.23**	**59**	*e*Pn	**Pn**	**13 28 29.6**	**-2.9**
	8.0nm,1.0s						
CRAG	**Craig**	**18.49**	**72**	*e*P	**P**	**13 28 45.6**	**-2.0**
	78nm,1.6s						
DLBC	**Dease Lake**	**19.94**	**62**	P	**P**	**13 29 03.9**	**+0.3**
	2.9nm,0.9s,baz=250,slow=9.9,SNR=5.6						
INK	**Inuvik**	**20.75**	**33**	P	**P**	**13 29 10.7**	**-1.4**
	1.4nm,0.5s,baz=248,slow=10,SNR=20						
INK	**Inuvik**	**20.75**	**33**	*e*P	**P**	**13 29 10.9**	**-1.2**
	3.7nm,0.6s						
YKA	**Yellowknife Ar**	**27.36**	**51**	P	**P**	**13 30 17.5**	**+1.3**
	1.4nm,0.8s,baz=276,slow=10,SNR=22						
YKA				PcP	**PcP**	**13 33 35.0**	**+0.6**
	0.2nm,0.7s,baz=295,slow=2.9,SNR=4.4						
YKA				ScP	**ScP**	**13 37 13.3**	**+1.5**
	0.1nm,0.5s,baz=285,slow=3.5,SNR=3.8						
YKB5	**Yellowknife Ar**	**27.36**	**51**	*e*P	**P**	**13 30 17.1**	**+0.9**
WAKR	**Walker**	**34.44**	**97**	*e*P	**P**	**13 31 21.2**	**+2.1**
NV01	**Mina Array Sit**	**35.16**	**97**	*e*P	**P**	**13 31 24.9**	**-0.4**
NVAR	**Mina Array Bea**	**35.16**	**97**	P	**P**	**13 31 28.0**	**+2.6**
	5.4nm,0.8s,baz=293,slow=8.6,SNR=35						
R11A	**Troy Canyon, C**	**36.82**	**94**	*e*P	**P**	**13 31 39.5**	**-0.1**
	4.7nm,1.0s						
DAC	**Darwin (Calif)**	**37.03**	**99**	*e*P	**P**	**13 31 40.8**	**-0.5**
	7.4nm,1.0s						
H11N2	**WAKE ISLAND Hy**	**40.21**	**223**	T	T	14 15 04.9	
	baz=26,slow=76,SNR=134						
H11N3	**WAKE ISLAND Hy**	**40.22**	**223**	T	T	14 14 53.2	
	baz=26,slow=76,SNR=171						
H11N1	**WAKE ISLAND Hy**	**40.23**	**223**	T	T	14 15 06.0	
	baz=26,slow=76,SNR=105						
H11S1	**WAKE ISLAND Hy**	**41.39**	**223**	T	T	14 16 19.7	
	baz=25,slow=76,SNR=192						
H11S2	**WAKE ISLAND Hy**	**41.40**	**223**	T	T	14 16 24.3	
	baz=25,slow=76,SNR=199						
H11S3	**WAKE ISLAND Hy**	**41.41**	**223**	T	T	14 16 28.2	
	baz=25,slow=76,SNR=126						
TX31	**Lajitas Ar. Si**	**50.18**	**94**	*e*P	**P**	**13 33 28.2**	**+1.1**
TXAR	**Lajitas Array**	**50.18**	**94**	P	**P**	**13 33 28.3**	**+1.2**
	5.0nm,0.8s,baz=300,slow=5.5,SNR=42						

WMQ	**Urumqi**	**64.67**	**310**	P	**P**	**13 35 10.0**	**+1.1**	
WMQ				pP	pP	13 35 21.5	+1.9	
WMQ				sP	sP	13 35 25.5	+1.8	
WMQ				pmax	pmax			
	comp=Z,2.0nm,0.8s							
WMQ				pmax	pmax			
	comp=Z,23nm,4.6s							
WMQ				LR	LR			
	comp=N,71nm,22.8s							
WMQ				LR	LR			
	comp=E,78nm,24.0s							
WMQ				LR	LR			
	comp=Z,130nm,28.4s							
FINES	**FINESS Array B**	**64.80**	**354**	P	**P**	**13 35 08.6**	**-0.8**	
	comp=Z,1.4nm,0.7s,baz=5.7,slow=5.7,SNR=7.1							
NB2	**NORSAR Subarra**	**65.51**	**2**	P	**P**	**13 35 14.1**	**+0.1**	
	comp=Z,0.5nm,0.6s,baz=358,slow=6.2							
NOA	**NORSAR Array B**	**65.51**	**2**	P	**P**	**13 35 14.2**	**+0.2**	
	comp=Z,1.3nm,0.9s,baz=360,slow=6.3,SNR=3.4							
CD2	**Chengdu**	**66.37**	**290**	P	**P**	**13 35 18.3**	**-1.8**	
CD2				pmax	pmax			
	comp=Z,1.0nm,0.5s							
BRTR	**Keskin Array B**	**85.50**	**346**	P	**P**	**13 37 08.5**	**-0.6**	
	comp=Z,0.5nm,0.4s,baz=354,slow=1.2,SNR=3.2							
ESDC	**Sonseca Array**	**85.52**	**15**	P	**P**	**13 37 07.7**	**-1.3**	
	comp=Z,0.1nm,0.3s,baz=354,slow=5.2,SNR=3.3							
ASAR	**Alice Springs**	**93.30**	**233**	P	**P**	**13 37 46.0**	**+0.2**	
	comp=Z,0.3nm,0.9s,baz=15,slow=7.7,SNR=3.1							

JMA 28 13:26:41.3±0.3, 36°.66N×142°.23E, h28km, M3.6, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**1.23**	**291**	P	Pb	13 27 03.5	-0.4
ONAJ				S	Sn	13 27 18.9	+0.5
JFK	**Kawauchi**	**1.29**	**303**	P	Pn	13 27 03.5	-0.1
JFK				*e*S	Sn	13 27 20.3	+0.3
JHO	**Hitachi**	**1.34**	**268**	P	Pn	13 27 04.0	-0.1
JMM	**Marumori**	**1.66**	**317**	P	Pn	13 27 09.2	+0.6
JMM				S	Sn	13 27 29.5	+0.5
JFT	**Otama**	**1.74**	**300**	P	Pn	13 27 10.8	+1.1
JFT				S	Sn	13 27 31.9	+1.0
JOU	**Okura**	**2.11**	**324**	P	Pb	13 27 16.9	-2.0
JOU				*e*S	Sn	13 27 41.4	+1.3
MAT	**Matsushiro**	**3.24**	**269**	P	Pn	13 27 32.5	+2.2
MAT				S	Sn	13 28 08.4	+0.5

JMA 28 13:30:32.0±0.1, 38°.43N×144°.10E, h21km, M3.7, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
OFUJ	**Ofunato**	**2.01**	**290**	P	Pn	13 31 05.7	+1.0
OFUJ				*e*S	Sn	13 31 30.4	+1.3
JIO	**Ouri**	**2.16**	**271**	P	Pn	13 31 07.5	+0.8
JIO				S	Sn	13 31 34.3	+1.4
JTH	**Tanohata**	**2.30**	**312**	S	Sn	13 31 38.0	+1.7
JMK	**Ichinoseki**	**2.31**	**284**	P	Pn	13 31 10.4	+1.6
JMK				*e*S	Sn	13 31 38.0	+1.4
JOM	**Ohasama**	**2.42**	**296**	P	Pn	13 31 12.0	+1.6
JOM				*e*S	Sn	13 31 40.8	+1.4
JMM	**Marumori**	**2.67**	**259**	P	Pn	13 31 14.8	+1.1
JMM				S	Sn	13 31 46.2	+0.8
JOU	**Okura**	**2.70**	**270**	S	Sn	13 31 48.6	+2.4
JANG	**Nango**	**2.79**	**315**	P	Pn	13 31 16.6	+1.2
JRG	**Rokugo**	**2.87**	**291**	P	Pn	13 31 18.7	+2.2
JRG				*e*S	Sn	13 31 53.0	+2.6
JYK	**Kaneyama**	**2.97**	**281**	P	Pn	13 31 20.0	+2.1
JYK				S	Sn	13 31 54.8	+2.0
JFT	**Otama**	**3.11**	**254**	P	Pn	13 31 21.1	+1.3
JFT				S	Sn	13 31 58.4	+2.1

IDC 28 13:31:17.6±11.0, 9°.36N×102°.94W, h0km, mb3.5/3, mb1 3.8/4, mb1mx3.6/30, mbtmp3.4/4, ML3.4/1, Error ellipse: s-maj=370.2km s-min=106.7km az=112.0, Northern East Pacific Rise

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
TXAR	**Lajitas Array**	**19.89**	**358**	P	P	13 35 50.9	+0.1
	0.0nm,0.3s,baz=180,slow=14,SNR=4.0						
ANMO	**Albuquerque**	**25.67**	**353**	P	P	13 36 49.5	0.0
	0.9nm,0.6s,baz=145,slow=9.2,SNR=2.8						
YKA	**Yellowknife Ar**	**53.72**	**353**	P	P	13 40 41.3	+0.1
	0.1nm,0.6s,baz=161,slow=7.8,SNR=3.6						
ILAR	**Eielson Array**	**63.23**	**341**	P	P	13 41 47.4	-0.2
	1.0nm,0.9s,baz=152,slow=5.1,SNR=9.8						

IDC 28 13:32:37.9±3.0, 18°.67N×39°.69E, h0km, mb3.5/3, mb1 3.6/3, mb1mx3.3/27, mbtmp3.6/3, Error ellipse: s-maj=75.9km s-min=32.8km az=148.0, Red Sea

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
BRTR	**Keskin Array B**	**21.62**	**347**	P	P	13 37 29.8	0.0
	1.4nm,1.0s,baz=155,slow=11,SNR=4.6						
TORD	**Torodi Ar. Bea**	**36.90**	**267**	P	P	13 39 48.6	-0.1
	1.4nm,0.9s,baz=80,slow=6.6,SNR=7.9						
MKAR	**Makanchi Array**	**44.71**	**41**	P	P	13 40 52.7	-0.1
	0.5nm,0.8s,baz=248,slow=7.6,SNR=3.5						

*IDC **28** 14:01:45.0±1.6, 36°.72N×141°.51E, h0km, mb3.3/3, mb1 3.5/7, mb1mx3.4/38, mbtmp3.5/7, ML3.4/3, Error ellipse: s-maj=39.2km s-min=20.3km az=80.0*
*ISCJB **28** 14:01:48.4±0.9, 36°.84N±0°.04×141°.28E±0°.08, h41km±10km, mb3.2/3, Error ellipse: s-maj=10.6km s-min=6.5km az=13.8*
*JMA **28** 14:01:50.3±0.1, 36°.89N×141°.11E, h50km±1km, M3.7*
JMA Felt I J1.

ISC 28 14:01:49.6±1.6, 36°.86N±0°.04×141°.26E±0°.09, h31km±9km, n15, σ1§17/25, mb3.2/3, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.44**	**304**	P	**Pb**	**14 01 59.5**	**+0.3**
ONAJ				S	**Sb**	**14 02 05.9**	**+0.1**
JFK	**Kawauchi**	**0.59**	**329**	P	**Pb**	**14 02 01.5**	**-0.1**
JFK				S	**Sb**	**14 02 09.2**	**-0.6**
JHO	**Hitachi**	**0.61**	**246**	P	**Pb**	**14 02 01.5**	**-0.3**
JHO				S	**Sb**	**14 02 09.5**	**-0.6**
JFT	**Otama**	**0.99**	**312**	P	**Pn**	**14 02 07.3**	**-0.1**
JFT				S	**Sn**	**14 02 19.0**	**-1.3**
JMM	**Marumori**	**1.07**	**340**	P	**Pn**	**14 02 08.0**	**-0.5**
JMM				S	**Sn**	**14 02 20.7**	**-1.7**
JSB	**Shiboa**	**1.08**	**276**	P	**Pn**	**14 02 08.1**	**-0.5**
JSB				S	**Sn**	**14 02 20.9**	**-1.7**
JFY	**Yanaizu**	**1.36**	**294**	P	**Pn**	**14 02 11.7**	**-0.8**
JFY				*e*S	**Sn**	**14 02 28.2**	**-1.3**
MJAR	**Matsushiro Arr**	**2.47**	**264**	Pn	**Pn**	**14 02 27.9**	**+0.1**
	4.8nm,0.3s,baz=86,slow=15,SNR=26						
MJAR				Sn	**Sn**	**14 02 57.0**	**+0.1**
	7.5nm,0.3s,baz=104,slow=16,SNR=15						
MAT	**Matsushiro**	**2.47**	**264**	P	**Pn**	**14 02 28.1**	**+0.3**
MAT				S	**Sn**	**14 02 56.5**	**-0.5**
JHJ	**Hachijo jima 2**	**3.92**	**198**	Pn	**Pn**	**14 02 47.6**	**0.0**
	7.3nm,0.3s,baz=335,slow=21,SNR=12						
JHJ				Sn	**Sn**	**14 03 31.6**	**-1.0**
	8.4nm,0.3s,baz=231,slow=19,SNR=4.4						
ASAJ	**Asahikawa**	**7.32**	**8**	Pn	**Pn**	**14 03 34.2**	**-0.1**
	0.7nm,0.3s,baz=229,slow=14,SNR=9.4						
USRK	**Ussuriysk Ar.**	**10.17**	**319**	Pn	**Pn**	**14 04 16.6**	**+3.1**
	0.1nm,0.3s,baz=120,slow=14,SNR=4.2						
MKAR	**Makanchi Array**	**44.11**	**302**	P	**P**	**14 09 57.0**	**+2.0**
	0.3nm,0.7s,baz=72,slow=9.3,SNR=2.6						
WRA	**Warramunga Arr**	**56.87**	**188**	P	**P**	**14 11 30.0**	**-1.5**
	0.3nm,0.6s,baz=4.5,slow=7.3,SNR=4.9						
ASAR	**Alice Springs**	**60.60**	**188**	P	**P**	**14 11 56.9**	**-0.5**
	0.1nm,0.6s,baz=4.3,slow=8.5,SNR=3.6						

*IDC **28** 14:04:37.4±0.7, 37°.13N×142°.67E, h0km, mb4.1/17, mb1 4.2/23, mb1mx4.1/43, mbtmp4.1/23, ML3.7/6, Error ellipse: s-maj=18.6km s-min=14.6km az=137.0*
*ISCJB **28** 14:04:38.7±1.2, 37°.16N±0°.03×142°.67E±0°.04, h25km±8km, mb4.3/46, MS4.6/2, Error ellipse: s-maj=5.9km s-min=4.1km az=42.6*

*JMA **28** 14:04:38.2±0.2, 37°.17N×142°.67E, h23km, M4.5*
*NEIC **28** 14:04:38.4±0.5, 37°.15N×142°.72E, h10km, mb4.5/10, Error ellipse: s-maj=10.5km s-min=7.6km az=144.0*
*MOS **28** 14:04:41.6±1.4, 37°.31N×142°.55E, h37km, mb4.7/27, Error ellipse: s-maj=9.7km s-min=6.3km az=113.1*

ISC 28 14:04:38.8±2.4, 37°.14N±0°.04×142°.62E±0°.06, h12km±15km, n113, σ1§36/120, mb4.4/46, 7C-5D, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JFK	**Kawauchi**	**1.41**	**280**	P	**Pn**	**14 05 02.7**	**-1.7**
JFK				*e*S	**Sn**	**14 05 22.3**	**-0.7**
ONAJ	**Iwakimizuishiy**	**1.46**	**269**	P	**Pn**	**14 05 04.5**	**-0.5**
ONAJ				*e*S	**Sn**	**14 05 22.5**	**-1.6**
JMM	**Marumori**	**1.63**	**297**	P	**Pn**	**14 05 06.6**	**-0.7**
JMM				S	**Sn**	**14 05 27.7**	**-0.5**
JIO	**Ouri**	**1.66**	**323**	P	**Pn**	**14 05 06.4**	**-1.3**
JIO				*e*S	**Sn**	**14 05 27.5**	**-1.4**
JHO	**Hitachi**	**1.73**	**253**	P	**Pn**	**14 05 08.0**	**-0.7**
JHO				S	**Sn**	**14 05 29.5**	**-1.2**
JFT	**Otama**	**1.86**	**282**	P	**Pn**	**14 05 10.7**	**+0.2**
JOU	**Okura**	**1.98**	**309**	P	**Pn**	**14 05 11.9**	**-0.2**
JOU				*e*S	**Sn**	**14 05 35.7**	**-1.2**
CHOJ	**Chosi**	**2.02**	**225**	P	**Pn**	**14 05 12.8**	**+0.2**
CHOJ				*e*S	**Sn**	**14 05 37.5**	**-0.3**
OFUJ	**Ofunato**	**2.08**	**339**	P	**Pn**	**14 05 12.2**	**-1.3**
JMK	**Ichinoseki**	**2.12**	**329**	P	**Pn**	**14 05 13.4**	**-0.7**
JMK				*e*S	**Sn**	**14 05 39.3**	**-1.1**
JYK	**Kaneyama**	**2.52**	**316**	P	**Pn**	**14 05 19.5**	**-0.1**
JOM	**Ohasama**	**2.56**	**336**	P	**Pn**	**14 05 19.4**	**-0.6**
JAG	**Ashikaga**	**2.64**	**255**	P	**Pn**	**14 05 21.7**	**+0.5**
JAG				S	**Sn**	**14 05 53.3**	**+0.1**
JRY	**Ryogami san**	**3.20**	**251**	P	**Pn**	**14 05 29.6**	**+0.7**
JOD2	**Odawara 2**	**3.42**	**238**	P	**Pn**	**14 05 32.3**	**+0.4**
JOD2				*e*S	**Sn**	**14 06 12.1**	**-0.3**
MJAR	**Matsushiro Arr**	**3.59**	**262**	Pn	**Pn**	**14 05 35.9**	**+1.6**
	5.6nm,0.3s,baz=86,slow=15,SNR=12						
MJAR				Sn	**Sn**	**14 06 19.7**	**+3.1**
	8.2nm,0.3s,baz=94,slow=12,SNR=6.0						
MAJO	**Matsushiro**	**3.59**	**262**	*e*P	**Pn**	**14 05 35.7**	**+1.4**
MAJO	**Matsushiro**	**3.59**	**262**	*e*Pn	**Pn**	**14 05 36.0**	**+1.6**
MAT	**Matsushiro**	**3.59**	**262**	P	**Pn**	**14 05 35.8**	**+1.5**
MAT				S	**Sn**	**14 06 12.5**	**-4.2**
MJB9	**Matsu-Tunnel**	**3.59**	**262**	*e*Pn	**Pn**	**14 05 35.3**	**+0.9**
JHJ	**Hachijo jima 2**	**4.63**	**211**	Pn	**Pn**	**14 05 48.2**	**-0.4**
	13nm,0.3s,baz=336,slow=21,SNR=6.1						
JHJ				Sn	**Sn**	**14 06 38.7**	**-3.7**
	14nm,0.3s,baz=355,slow=14,SNR=3.5						
ASAJ	**Asahikawa**	**6.97**	**360**	Pn	**Pn**	**14 06 19.4**	**-1.3**
	1.3nm,0.3s,baz=218,slow=11,SNR=7.8						
ASAJ				Sn	**Sn**	**14 07 37.9**	**-2.0**
	0.2nm,0.3s,baz=144,slow=18,SNR=1.8						
KUR	**Kuril'sk**	**9.00**	**24**	*e*P	Pn	14 06 52.2	+3.7
KUR				S	**Sn**	**14 08 31.5**	**+1.8**
YSS	**Yuzh-Sakhalins**	**9.81**	**1**	*e*P	**Pn**	**14 06 57.6**	**-2.0**
CBIJ	**Chichi jima**	**10.02**	**182**	Pn	**Pn**	**14 07 00.6**	**-1.9**
JCJ	**Chichijima**	**10.02**	**182**	Pn	**Pn**	**14 07 00.6**	**-1.9**
	5.8nm,0.3s,baz=313,slow=19,SNR=3.3						
MSHR	**Mys Shultsa**	**10.35**	**305**	*e*P	**Pn**	**14 07 08.5**	**+1.5**
JNU	**Nakatsue**	**10.42**	**251**	Pn	**Pn**	**14 07 10.4**	**+2.3**
	0.3nm,0.3s,baz=55,slow=7.6,SNR=4.4						
USRK	**Ussuriysk Ar.**	**10.72**	**314**	Pn	**Pn**	**14 07 15.1**	**+3.1**
	0.4nm,0.3s,baz=138,slow=12,SNR=12						
KSRS	**Korea Array**	**11.72**	**276**	Pn	Pn	14 07 29.4	+3.7
	0.1nm,0.3s,baz=87,slow=14,SNR=3.3						
KSAR	**Wonju Array Be**	**11.75**	**276**	P	Pn	14 07 29.4	+3.3
KSAR	**Wonju Array Be**	**11.75**	**276**	Pn	Pn	14 07 29.4	+3.3
KLR	**Kul'dur**	**14.44**	**330**	Pn	**Pn**	**14 08 01.6**	**-1.2**
	0.2nm,0.3s,baz=131,slow=12,SNR=5.7						
BJI	**Beijing**	**20.85**	**286**	P	**P**	**14 09 18.3**	**-2.1**
BJI				pmax	pmax		
	comp=Z,4.0nm,0.6s						
MA2	**Magadan**	**23.06**	**11**	P	**P**	**14 09 44.9**	**+1.1**
	comp=Z,5.4nm,0.8s,baz=207,slow=11,SNR=3.7						
HHC	**Hu-ho-hao-te**	**24.36**	**288**	*e*P	**P**	**14 09 56.0**	**-0.7**
HHC				pmax	pmax		
	comp=Z,24nm,0.9s						
HHC				pmax	pmax		
	comp=Z,540nm,7.4s						
YAK	**Yakutsk**	**26.19**	**346**	*e*P	**P**	**14 10 12.8**	**-0.1**
YAK				pmax	pmax		
	comp=Z,9.0nm,0.4s						
SEY	**Seymchan**	**26.51**	**10**	P	**P**	**14 10 16.7**	**+0.9**
	comp=Z,2.5nm,0.7s,baz=199,slow=9.1,SNR=6.9						
SEY	**Seymchan**	**26.51**	**10**	*e*P	**P**	**14 10 16.1**	**+0.

MK31	**Makanchi Array**	**44.88**	**302**	*e*P		**P**	**14 12 52.4**	**-0.7**
MKAR	**Makanchi Array**	**44.88**	**302**	P		**P**	**14 12 53.5**	**+0.5**
	comp=Z,1.8nm,0.7s,baz=87,slow=10.0,SNR=20							
MKAR	**Makanchi Array**	**44.88**	**302**	*e*P		**P**	**14 12 52.1**	**-0.9**
MAKZ	**Makanchi**	**45.09**	**302**	*e*P		**P**	**14 12 57.5**	**+2.8**
MAKZ					pmax	pmax		
	comp=Z,3.0nm,0.7s							
MAKZ	**Makanchi**	**45.09**	**302**	*e*P		**P**	**14 12 57.5**	**+2.8**
	comp=Z,2.6nm,0.7s							
KURK	**Kurchatov**	**46.63**	**308**	*e*P		**P**	**14 13 05.0**	**-1.7**
KURK					pmax	pmax		
	comp=Z,10.0nm,0.6s							
KURK	**Kurchatov**	**46.63**	**308**	*e*P		**P**	**14 13 05.0**	**-1.7**
	comp=Z,9.9nm,0.6s							
MDM	**Murphy Dome**	**48.31**	**32**	*e*P		**P**	**14 13 17.5**	**-2.1**
	comp=Z,3.7nm,0.8s							
IL1	**Eielson Array**	**48.89**	**32**	*e*P		**P**	**14 13 22.8**	**-1.3**
ILAR	**Eielson Array**	**48.89**	**32**	P		**P**	**14 13 24.1**	**0.0**
	comp=Z,1.8nm,0.8s,baz=264,slow=6.4,SNR=20							
ILB	**Eielson Array**	**48.89**	**32**	*e*P		**P**	**14 13 22.6**	**-1.5**
TKM2	**Tokmak 2**	**50.43**	**299**	*e*P		P	14 13 32.6	-3.8
TKM2					pmax	pmax		
	comp=Z,4.0nm,0.6s							
TKM2	**Tokmak 2**	**50.43**	**299**	*e*P		P	14 13 32.6	-3.8
	comp=Z,3.7nm,0.6s							
BRVK	**Borovoye**	**51.27**	**313**	*e*P		**P**	**14 13 43.2**	**+0.9**
BRVK					pmax	pmax		
	comp=Z,2.0nm,0.8s							
AAK	**Ala-Archa**	**51.29**	**299**	*e*P		**P**	**14 13 42.6**	**-0.2**
AAK					pmax	pmax		
	comp=Z,25nm,3.9s							
ZRNK	**Zerenda**	**52.05**	**313**	*e*P		**P**	**14 13 47.2**	**-1.0**
ZRNK					pmax	pmax		
	comp=Z,15nm,1.5s							
ZRNK	**Zerenda**	**52.05**	**313**	*e*P		**P**	**14 13 47.1**	**-1.0**
	comp=Z,15nm,1.5s							
INK	**Inuvik**	**53.85**	**27**	P		**P**	**14 14 01.6**	**+0.5**
	comp=Z,0.9nm,0.8s,baz=315,slow=3.2,SNR=5.1							
KKAR	**Karatay Array**	**53.91**	**300**	*e*P		**P**	**14 14 02.7**	**+0.7**
KKAR	**Karatay Array**	**53.91**	**300**	*e*P		**P**	**14 14 02.7**	**+0.7**
SVE	**Sverdlovsk**	**55.71**	**319**	*e*P		**P**	**14 14 16.0**	**+1.2**
SVE					pmax	pmax		
	comp=Z,12nm,0.9s							
ARU	**Arti**	**56.92**	**319**	*c i*P		**P**	**14 14 24.0**	**+0.5**
ARU				S		**S**	**14 22 18.3**	**+1.3**
ARU				SS		**SS**	**14 26 03.1**	**-1.6**
ARU					pmax	pmax		
	comp=Z,18nm,1.7s							
ARU	**Arti**	**56.92**	**319**	*e*P		**P**	**14 14 23.4**	**0.0**
	comp=Z,9.5nm,1.0s							
WRAB	**Tennant Creek**	**57.30**	**189**	*e*P		**P**	**14 14 26.8**	**+0.3**
WRAB					pmax	pmax		
	comp=Z,10.0nm,1.1s							
WRA	**Warramunga Arr**	**57.31**	**189**	P		**P**	**14 14 27.0**	**+0.4**
	comp=Z,1.7nm,0.9s,baz=6.3,slow=7.4,SNR=6.5							
WRA	**Warramunga Arr**	**57.31**	**189**	*i* P		**P**	**14 14 27.2**	**+0.7**
WRA					pmax	pmax		
	comp=Z,2.0nm,1.0s							
ABKAR	**Akbulak array**	**58.61**	**310**	*e*P		**P**	**14 14 34.6**	**-0.9**
	comp=Z,2.2nm,0.6s							
HYB	**Hyderabad**	**59.17**	**269**	*i* P		**P**	**14 14 39.0**	**-0.9**
AS01	**Alice Springs**	**61.03**	**189**	*e*P		**P**	**14 14 52.4**	**+0.2**
YKA	**Yellowknife Ar**	**63.23**	**30**	P		**P**	**14 15 06.8**	**+0.2**
	comp=Z,0.4nm,0.8s,baz=303,slow=6.7,SNR=8.2							
KLMR	**Klimovskoe**	**64.18**	**328**	*e*P		**P**	**14 15 10.7**	**-2.2**
KLMR				*e*			14 15 45.6	
KLMR					pmax	pmax		
	comp=Z,10.0nm,1.2s							
ARCES	**ARCESS Array B**	**64.24**	**340**	P		**P**	**14 15 15.3**	**+2.1**
	comp=Z,16nm,1.4s,baz=57,slow=8.8,SNR=4.1							
OBN	**Obninsk**	**68.59**	**324**	*e*P		**P**	**14 15 39.2**	**-2.0**
OBN				*e*			14 16 07.1	
OBN				*e*			14 18 09.7	
OBN					pmax	pmax		
	comp=Z,2.0nm,0.9s							
FIA1	**FINESS Array S**	**69.17**	**333**	*e*P		**P**	**14 15 45.4**	**+0.7**
FINES	**FINESS Array B**	**69.17**	**333**	P		**P**	**14 15 45.0**	**+0.2**
	comp=Z,3.1nm,0.7s,baz=42,slow=8.8,SNR=12							
FINES	**FINESS Array B**	**69.17**	**333**	P		**P**	**14 15 45.0**	**+0.2**
FINES					pmax	pmax		
	comp=Z,3.0nm,0.7s							
KBZ	**Khabaz**	**71.57**	**311**	P		**P**	**14 16 00.9**	**+1.2**
	comp=Z,0.6nm,0.4s,baz=95,slow=3.8,SNR=3.9							
KIV	**Kislovodsk**	**71.57**	**311**	*e*P		**P**	**14 16 00.0**	**+0.1**
KIV					pmax	pmax		
	comp=Z,7.0nm,1.0s							
BOZ	**Bozeman (W)**	**73.96**	**45**	*e*P		**P**	**14 16 17.0**	**+2.8**
BOZ					pmax	pmax		
	comp=Z,7.0nm,0.8s							
BOZ	**Bozeman (W)**	**73.96**	**45**	*e*P		**P**	**14 16 17.0**	**+2.8**
	comp=Z,6.6nm,0.8s							
NVAR	**Mina Array Bea**	**74.15**	**54**	P		**P**	**14 16 16.8**	**+1.4**
	comp=Z,0.9nm,0.9s,baz=279,slow=5.8,SNR=5.5							
NB2	**NORSAR Subarra**	**74.46**	**338**	P		**P**	**14 16 16.8**	**+0.2**
	comp=Z,4.4nm,0.9s,baz=38,slow=6.2							
NOA	**NORSAR Array B**	**74.46**	**338**	P		**P**	**14 16 17.1**	**+0.4**
	comp=Z,0.8nm,0.7s,baz=40,slow=5.8,SNR=5.5							
AKASG	**Malin Array Be**	**74.80**	**323**	P		**P**	**14 16 19.1**	**+0.4**
	comp=Z,1.0nm,0.5s,baz=45,slow=5.9,SNR=7.4							
AKASG	**Malin Array Be**	**74.80**	**323**	*ce*P		**P**	**14 16 19.7**	**+1.0**
AKASG					pmax	pmax		
	comp=Z,1.0nm,0.5s							
KIEV	**Kiev**	**74.81**	**323**	*e*P		**P**	**14 16 18.7**	**-0.1**
KIEV					pmax	pmax		
	comp=Z,7.0nm,1.8s							
PDAR	**Pinedale Array**	**76.90**	**46**	P		**P**	**14 16 31.1**	**-0.1**
	comp=Z,0.4nm,0.6s,baz=222,slow=2.0,SNR=4.1							
GERES	**GERESS Array B**	**83.13**	**329**	P		**P**	**14 17 05.6**	**+1.0**
	comp=Z,0.3nm,0.2s,baz=42,slow=10,SNR=2.2							
LPAZ	**La Paz**	**145.80**	**61**	PKPbc		**PKPbc**	**14 24 19.2**	**+0.1**
	comp=Z,1.5nm,0.9s,baz=356,slow=5.2,SNR=5.5							

IDC 28 14:10:21.9±4.3, 6.85S×131.93E, h0km, mb3.4/1, mb1 3.3/3, mb1mx3.2/32, mbtmp3.1/3, ML3.1/2, Error ellipse: s-maj=294.6km s-min=33.9km az=74.0, Tanimbar Islands region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
WRA	**Warramunga Arr**	**13.23**	**170**	Pn	Pn	14 13 32.0	+0.9
	0.1nm,0.3s,baz=351,slow=13,SNR=6.1						
WRA				Sn	Sn	14 15 55.4	-3.7
	0.1nm,0.3s,baz=358,slow=22,SNR=3.2						
ASAR	**Alice Springs**	**16.83**	**174**	Pn	Pn	14 14 18.2	-0.9
	0.1nm,0.3s,baz=352,slow=13,SNR=8.9						
MKAR	**Makanchi Array**	**69.16**	**326**	P	P	14 21 30.3	0.0
	0.3nm,0.7s,baz=122,slow=6.4,SNR=3.5						

GUC 28 14:12:51.3±0.6, 20.56S×69.30W, h81km±3km, ML3.7, Northern Chile

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
PB01	**IPOC Station P**	**0.51**	**200**	*i* P	Pn	14 13 05.7	+0.4
PB01				*i* S	Sn	14 13 16.1	+0.3
PB01				IAML		14 13 17.8	
	comp=E,4μm,0.2s						
HMBC	**Humberstone**	**0.61**	**297**	*i* P	Pn	14 13 06.6	+0.3
HMBC				*i* S	Sn	14 13 17.9	+0.5
HMBC				IAML		14 13 21.1	
	comp=E,5μm,0.5s						
PATCX	**Punta Patache**	**0.84**	**252**	*i* P	Pn	14 13 09.0	+0.4
PATCX				*i* S	Sn	14 13 22.7	+1.2
PATCX				IAML		14 13 26.4	
	comp=N,3μm,0.3s						
PB11	**IPOC Station P**	**0.86**	**337**	*i* P	Pn	14 13 09.3	+0.3
PB11				*i* S	Sn	14 13 23.2	+1.2
PSGC	**Pisagua**	**1.23**	**321**	*i* P	Pn	14 13 13.4	+0.1
PSGC				*i* S	Sn	14 13 30.6	+0.8
PSGC				IAML		14 13 34.1	
	comp=E,2μm,0.4s						
PB09	**IPOC Station P**	**1.23**	**177**	*i* P	Pn	14 13 13.9	+0.5
PB09				*i* S	Sn	14 13 31.5	+1.4
PB09				IAML		14 13 33.6	
	comp=E,4μm,0.4s						
MNMC	**Minye Minye**	**1.45**	**349**	*i* P	Pn	14 13 16.9	+0.6
MNMC				*i* S	Sn	14 13 36.0	+1.0
PB04	**IPOC Station P**	**1.94**	**204**	*i* P	Pn	14 13 23.2	+0.6
PB04				*i* S	Sn	14 13 47.8	+1.5
PB12	**IPOC Station P**	**2.16**	**333**	*i* P	Pn	14 13 25.5	0.0
PB12				*i* S	Sn	14 13 53.3	+1.8

*CSEM **28** 14:34:55.7, 38.62N×29.19W, h3km, ML2.7*
PDA 28 14:34:55.7±0.9, 38.62N×29.19W, h3km±4km, MD3.5, ML2.7, Error ellipse: s-maj=7.0km s-min=5.9km az=36.0, Azores Islands

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
PCED	**Cedros**	**0.39**	**89**	*e*P	Pg	14 35 02.5	-0.6
PCED				*e*S	Sg	14 35 07.9	-0.2
PCED	**Cedros**	**0.39**	**89**	*e*P	Pg	14 35 02.5	-0.6
PCED				*e*S	Sg	14 35 07.9	-0.2
PCED				A	A	14 35 10.8	
	352nm,0.3s						
CALA	**Caldeira**	**0.39**	**96**	*e*P	Pg	14 35 03.2	0.0
CALA				*e*S	Sg	14 35 08.0	-0.2
CALA	**Caldeira**	**0.39**	**96**	*e*P	Pg	14 35 03.2	0.0
CALA				*e*S	Sg	14 35 08.0	-0.2
HOR	**Horta**	**0.45**	**102**	*e*S	Sg	14 35 09.4	-0.8
HOR	**Horta**	**0.45**	**102**	*e*S	Sg	14 35 09.4	-0.8
HOR				A	A	14 35 12.2	
	470nm,0.2s						
PCAN	**Candelaria**	**0.58**	**106**	*e*P	Pg	14 35 05.6	-1.2
PCAN				*e*S	Sg	14 35 13.3	-1.0
PCAN	**Candelaria**	**0.58**	**106**	*e*P	Pg	14 35 05.6	-1.2
PCAN				*e*S	Sg	14 35 13.3	-1.0
PCAN				A	A	14 35 15.8	
	253nm,0.2s						
PICO	**Pico**	**0.61**	**101**	*e*P	Pg	14 35 06.4	-1.1
PICO				*e*S	Sg	14 35 14.4	-1.0
PICO	**Pico**	**0.61**	**101**	*e*P	Pg	14 35 06.4	-1.1
PICO				*e*S	Sg	14 35 14.4	-1.0
PICO				A	A	14 35 15.7	
	454nm,0.3s						
ROSA	**Rosais**	**0.75**	**82**	*e*P	Pg	14 35 08.1	-2.0
ROSA				*e*S	Sg	14 35 17.9	-1.9
ROSA	**Rosais**	**0.75**	**82**	*e*P	Pg	14 35 08.1	-2.0
ROSA				*e*S	Sg	14 35 17.9	-1.9
ROSA				A	A	14 35 18.5	
	196nm,0.2s						
PMAN	**Manadas**	**0.86**	**89**	*e*S	Sg	14 35 20.6	-2.9
PMAN	**Manadas**	**0.86**	**89**	*e*S	Sg	14 35 20.6	-2.9
PMAN				A	A	14 35 31.7	
	73nm,0.5s						
PGRA	**Graciosa**	**1.03**	**66**	*e*S	Sg	14 35 24.2	-4.6
PGRA	**Graciosa**	**1.03**	**66**	*e*S	Sg	14 35 24.2	-4.6
PGRA				A	A	14 35 25.0	
	69nm,0.3s						

*IDC **28** 14:44:27.4±0.8, 37.05N×144.72E, h0km, mb3.8/7, mb1 4.0/13, mb1mx3.7/71, mbtmp3.9/13, ML3.6/5, Error ellipse: s-maj=21.7km s-min=17.9km az=88.0*
*ISCJB **28** 14:44:29.9±0.7, 37.12N±0.05×144.44E±0.06, h26km, mb3.9/7, Error ellipse: s-maj=7.4km s-min=6.2km az=162.2*
*JMA **28** 14:44:32.2±0.4, 37.20N×144.27E, h25km, M3.8*
ISC 28 14:44:31.4±1.0, 37.20N±0.06×144.49E±0.08, h26km, n30, σ2906/35, mb3.8/7, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**2.79**	**298**	P	**Pn**	**14 45 14.5**	**+0.1**
JFK	**Kawauchi**	**2.89**	**274**	P	**Pn**	**14 45 15.7**	**-0.1**
JFK				S	**Sn**	**14 45 47.8**	**-2.0**
OFUJ	**Ofunato**	**2.92**	**311**	P	**Pn**	**14 45 16.8**	**+0.7**
JMK	**Ichinoseki**	**3.12**	**305**	P	**Pn**	**14 45 19.9**	**+1.0**
JMK				*e*S	**Sn**	**14 45 55.0**	**-0.4**
JFT	**Otama**	**3.33**	**277**	P	**Pn**	**14 45 22.7**	**+0.9**
JFT				*e*S	**Sn**	**14 46 00.4**	**-0.1**
JOM	**Ohasama**	**3.39**	**313**	P	**Pn**	**14 45 23.6**	**+0.9**
JOM				*e*S	**Sn**	**14 46 00.9**	**-1.2**
JYK	**Kaneyama**	**3.69**	**299**	P	**Pn**	**14 45 27.5**	**+0.8**
JRY	**Ryogami san**	**4.65**	**257**	P	**Pn**	**14 45 39.8**	**-0.2**
JRY				S	**Sn**	**14 46 30.5**	**-2.7**
JOD2	**Odawara 2**	**4.78**	**248**	P	**Pn**	**14 45 41.9**	**+0.2**
JOD2				*e*S	**Sn**	**14 46 34.0**	**-2.3**
MJAR	**Matsushiro Arr**	**5.08**	**265**	Pn	**Pn**	**14 45 47.2**	**+1.3**
	3.9nm,0.3s,baz=69,slow=12,SNR=26						
MJAR				Sn	**Sn**	**14 46 43.8**	**0.0**
	1.6nm,0.3s,baz=59,slow=23,SNR=4.5						
MAT	**Matsushiro**	**5.08**	**265**	P	**Pn**	**14 45 47.3**	**+1.4**
MAT				S	**Sn**	**14 46 40.8**	**-3.0**
JCH	**Churui**	**5.48**	**351**	P	**Pn**	**14 45 50.1**	**-1.2**
JCH				S	**Sn**	**14 46 48.4**	**-5.1**
JHJ	**Hachijo jima 2**	**5.61**	**225**	Pn	**Pn**	**14 45 51.5**	**-1.7**
	8.1nm,0.3s,baz=347,slow=23,SNR=9.7						
JHJ				Sn	**Sn**	**14 46 51.2**	**-5.5**
	24nm,0.3s,baz=129,slow=23,SNR=8.8						
ASAJ	**Asahikawa**	**7.06**	**349**	Pn	**Pn**	**14 46 12.4**	**-0.7**
	1.1nm,0.3s,baz=208,slow=9.0,SNR=12						
ASAJ				Sn	**Sn**	**14 47 28.4**	**-4.1**
	0.2nm,0.3s,baz=6.0,slow=19,SNR=2.7						
USRK	**Ussuriysk Ar.**	**11.78**	**310**	Pn	**Pn**	**14 47 19.0**	**+1.3**
	0.2nm,0.3s,baz=119,slow=12,SNR=4.2						
KSRS	**Korea Array**	**13.20**	**276**	Pn	**Pn**	**14 47 40.2**	**+3.2**
	0.2nm,0.3s,baz=95,slow=14,SNR=4.5						
KLR	**Kul'dur**	**15.17**	**326**	Pn	**P**	**14 48 08.0**	**-0.7**
	0.1nm,0.3s,baz=142,slow=14,SNR=7.0						
H11N2	**WAKE ISLAND Hy**	**26.17**	**126**	T	T	15 16 56.5	
	baz=317,slow=74,SNR=152						
H11N1	**WAKE ISLAND Hy**	**26.18**	**126**	T	T	15 16 49.7	
	baz=317,slow=74,SNR=74						
H11N3	**WAKE ISLAND Hy**	**26.19**	**126**	T	T	15 16 55.9	
	baz=317,slow=74,SNR=113						
H11S1	**WAKE ISLAND Hy**	**26.94**	**128**	T	T	15 17 52.5	
	baz=319,slow=76,SNR=29						
H11S3	**WAKE ISLAND Hy**	**26.94**	**128**	T	T	15 17 52.8	
	baz=319,slow=76,SNR=27						
H11S2	**WAKE ISLAND Hy**	**26.96**	**128**	T	T	15 17 51.9	
	baz=319,slow=76,SNR=32						
MKAR	**Makanchi Array**	**46.11**	**303**	P	**P**	**14 52 55.3**	**+1.9**
	0.8nm,0.8s,baz=84,slow=9.9,SNR=8.5						
KURBB	**Kurchatov Arra**	**47.84**	**308**	P	**P**	**14 53 08.1**	**+1.4**
	1.6nm,0.5s,baz=82,slow=8.1,SNR=17						
BVAR	**Borovoye Array**	**52.28**	**313**	P	**P**	**14 53 42.3**	**+1.9**
	0.4nm,0.4s,baz=81,slow=9.2,SNR=4.8						
WRA	**Warramunga Arr**	**57.63**	**191**	P	**P**	**14 54 18.2**	**-1.1**
	2.2nm,0.5s,baz=9.5,slow=7.1,SNR=26						
ASAR	**Alice Springs**	**61.35**	**191**	P	**P**	**14 54 44.2**	**-0.7**
	1.0nm,0.6s,baz=6.5,slow=6.9,SNR=24						
YKA	**Yellowknife Ar**	**62.42**	**31**	P	**P**	**14 54 51.4**	**-0.3**
	0.1nm,0.6s,baz=294,slow=6.7,SNR=2.8						
NVAR	**Mina Array Bea**	**72.90**	**55**	P	**P**	**14 55 59.3**	**+0.7**
	0.3nm,0.3s,baz=284,slow=8.0,SNR=5.9						

IDC 28 14:46:10.7±1.8, 4.30N×126.46E, h0km, mb3.4/5, mb1 3.6/5, mb1mx3.4/52, mbtmp3.4/5, Error ellipse: s-maj=119.3km s-min=20.5km az=70.0, Talaud Islands

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
FITZ	**Fitzroy Crossi**	**22.28**	**182**	P	P	14 51 09.3	-0.3
	1.1nm,0.7s,baz=352,slow=11,SNR=3.6						
WRA	**Warramunga Arr**	**25.31**	**162**	P	P	14 51 38.1	-1.2
	0.7nm,0.8s,baz=342,slow=10,SNR=7.0						
ASAR	**Alice Springs**	**28.73**	**166**	P	P	14 52 11.4	+1.3
	0.2nm,0.5s,baz=343,slow=11,SNR=7.5						
MKAR	**Makanchi Array**	**56.93**	**325**	P	P	14 55 57.6	-0.2
	0.1nm,0.4s,baz=129,slow=8.2,SNR=4.5						
KURBB	**Kurchatov Arra**	**61.11**	**327**	P	P	14 56 26.8	+0.1
	0.4nm,0.7s,baz=122,slow=6.3,SNR=4.9						

*IDC **28** 14:51:02.5±1.9, 34.88N×142.87E, h0km, mb3.8/2, mb1 3.9/5, mb1mx3.4/55, mbtmp3.8/5, ML3.2/3, Error ellipse: s-maj=45.1km s-min=28.8km az=77.0*
*ISCJB **28** 14:51:05.4±0.9, 34.98N±0.06×142.90E±0.07, h42km, mb3.9/2, Error ellipse: s-maj=9.0km s-min=7.5km az=42.7*
*JMA **28** 14:51:07.0±0.5, 35.04N×142.80E, h61km, M3.5*
ISC 28 14:51:07.0±1.5, 34.92N±0.07×142.82E±0.10, h42km, n19, σ1870/22, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
BSO1	**Boso 1**	**1.54**	**260**	P	Pn	14 51 32.8	+1.4
BSO1				*e*S	**Sn**	**14 51 50.7**	**+0.8**
CHOJ	**Chosi**	**1.78**	**296**	P	**Pn**	**14 51 35.7**	**+0.4**
BSO3	**Boso 3**	**1.90**	**267**	P	Pn	14 51 38.6	+1.9
BSO3				*e*S	**Sn**	**14 52 00.8**	**+1.5**
BSO4	**Boso 4**	**2.04**	**273**	P	Pn	14 51 40.5	+1.8
BSO4				S	**Sn**	**14 52 04.0**	**+1.1**
JCN	**Nagara**	**2.20**	**284**	P	Pn	14 51 42.8	+1.8
JHO	**Hitachi**	**2.48**	**313**	P	**Pn**	**14 51 45.2**	**+0.2**
JOD2	**Odawara 2**	**3.08**	**277**	P	**Pn**	**14 51 52.6**	**-0.5**
JHJ	**Hachijo jima 2**	**3.10**	**235**	Pn	**Pn**	**14 51 52.0**	**-1.3**
	9.0nm,0.3s,baz=4.7,slow=21,SNR=13						
JHJ				Sn	**Sn**	**14 52 24.8**	**-4.3**
	7.5nm,0.3s,baz=171,slow=23,SNR=5.9						
JAG	**Ashikaga**	**3.12**	**300**	P	**Pn**	**14 51 54.0**	**+0.3**
JFT	**Otama**	**3.27**	**323**	P	**Pn**	**14 51 56.3**	**+0.5**
JFT				S	**Sn**	**14 52 33.5**	**0.0**
JMM	**Marumori**	**3.36**	**332**	P	**Pn**	**14 51 55.9**	**-1.1**
JRY	**Ryogami san**	**3.38**	**290**	P	**Pn**	**14 51 57.8**	**+0.6**
JYN	**Shimob**	**3.54**	**281**	P	**Pn**	**14 51 59.3**	**-0.3**
JYN				S	**Sn**	**14 52 40.2**	**-0.1**
MJAR	**Matsushiro Arr**	**4.08**	**295**	Pn	**Pn**	**14 52 06.9**	**0.0**
	0.7nm,0.3s,baz=102,slow=8.3,SNR=18						
MAT	**Matsushiro**	**4.08**	**295**	P	**Pn**	**14 52 07.6**	**+0.7**
MAT				*e*S	**Sn**	**14 52 48.6**	**-4.9**
JMK	**Ichinoseki**	**4.22**	**343**	P	**Pn**	**14 52 08.0**	**-0.8**
ASAJ	**Asahikawa**	**9.18**	**359**	Pn	**Pn**	**14 53 16.4**	**-0.5**
	0.3nm,0.3s,baz=193,slow=20,SNR=7.3						
WRA	**Warramunga Arr**	**55.15**	**190**	P	**P**	**15 00 36.6**	**+1.3**
	1.3nm,0.8s,baz=10,slow=7.5,SNR=8.8						
ASAR	**Alice Springs**	**58.88**	**190**	P	**P**	**15 01 02.8**	**+1.1**
	0.7nm,0.8s,baz=17,slow=13,SNR=9.2						

*IDC **28** 14:52:15.1±7.6, 4.75N×95.17E, h74km±57km, mb3.4/6, mb1 3.6/7, mb1mx3.2/54, mbtmp3.7/7, ML3.0/1, Error ellipse: s-maj=114.1km s-min=18.4km az=54.0*
ISC 28 14:52:11.8±1.6, 4.6N±0.2×94.9E±0.2, h48km, n11, σ0974/9, mb3.8/6, Off west coast of northern Sumatera

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
PSI	**Prapat**	**4.44**	**114**	P	**Pn**	**14 53 17.9**	**+1.1**
	0.9nm,0.3s,baz=328,slow=19,SNR=9.4						
PSI				S	**Sn**	**14 54 06.9**	**-0.4**
	0.9nm,0.3s,baz=352,slow=9.8,SNR=4.8						
CMAR	**Chiang Mai Arr**	**14.31**	**16**	P	**P**	**14 55 37.5**	**-0.3**
	0.2nm,0.3s,baz=209,slow=11,SNR=21						
H08S2	**Diego Garcia H**	**25.43**	**241**	T	T	15 24 42.9	
	baz=62,slow=76,SNR=34						
H08S3	**Diego Garcia H**	**25.43**	**242**	T	T	15 24 41.5	
	baz=62,slow=76,SNR=9.8						
H08S1	**Diego Garcia H**	**25.45**	**241**	T	T	15 24 42.7	
	baz=62,slow=76,SNR=11						
MKAR	**Makanchi Array**	**43.40**	**347**	P	**P**	**15 00 09.9**	**+0.2**
	0.3nm,0.4s,baz=167,slow=7.5,SNR=10						
WRA	**Warramunga Arr**	**45.84**	**124**	P	**P**	**15 00 28.7**	**-0.9**
	1.4nm,0.6s,baz=302,slow=9.3,SNR=11						
ASAR	**Alice Springs**	**47.32**	**128**	P	**P**	**15 00 40.5**	**-0.7**
	0.2nm,0.5s,baz=298,slow=7.6,SNR=12						
ZALV	**Zalesovo Beam**	**49.85**	**352**	P	**P**	**15 00 59.9**	**-0.2**
	0.5nm,0.5s,baz=193,slow=7.8,SNR=3.4						
FINES	**FINESS Array B**	**75.90**	**332**	P	**P**	**15 03 53.5**	**+0.3**
	0.5nm,0.4s,baz=98,slow=6.3,SNR=5.7						
ARCES	**ARCESS Array B**	**78.55**	**340**	P	**P**	**15 04 08.3**	**+0.4**
	2.8nm,1.0s,baz=79,slow=6.3,SNR=4.7						

*IDC **28** 15:01:50.3±1.1, 37.73N×143.48E, h0km, mb3.5/6, mb1 3.7/9, mb1mx3.5/47, mbtmp3.6/9, ML2.1/2, Error ellipse: s-maj=27.7km s-min=21.1km az=91.0*
*ISCJB **28** 15:01:52.9±0.9, 37.55N±0.09×143.5E±0.1, h33km, mb3.5/6, Error ellipse: s-maj=14.9km s-min=10.0km az=135.7*
ISC 28 15:01:54.9±1.1, 37.66N±0.09×143.5E±0.1, h35km, n10, σ1944/12, mb3.6/6, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
MJAR	**Matsushiro Arr**	**4.34**	**257**	Pn	**Pn**	**15 02 57.2**	**-1.2**
	0.1nm,0.3s,baz=63,slow=11,SNR=4.3						
MAT	**Matsushiro**	**4.34**	**257**	P	**Pn**	**15 02 58.2**	**-0.2**
MAT				*e*S	**Sn**	**15 03 50.1**	**+2.3**
JHJ	**Hachijo jima 2**	**5.44**	**215**	Pn	**Pn**	**15 03 12.8**	**-0.7**
	9.0nm,0.3s,baz=66,slow=20,SNR=4.5						
JHJ				Sn	**Sn**	**15 04 12.8**	**-2.0**
	3.7nm,0.3s,baz=61,slow=19,SNR=2.7						
USRK	**Ussuriysk Ar.**	**10.85**	**311**	Pn	**Pn**	**15 04 25.8**	**-1.8**
	0.2nm,0.3s,baz=123,slow=16,SNR=3.3						
ZALV	**Zalesovo Beam**	**42.70**	**312**	P	**P**	**15 09 48.7**	**+0.5**
	0.8nm,0.6s,baz=90,slow=7.8,SNR=4.1						
CMAR	**Chiang Mai Arr**	**43.23**	**256**	P	**P**	**15 09 53.6**	**+0.7**
	0.2nm,0.5s,baz=41,slow=8.4,SNR=3.4						
MKAR	**Makanchi Array**	**45.17**	**302**	P	**P**	**15 10 08.8**	**+0.6**
	0.6nm,0.6s,baz=84,slow=10,SNR=6.7						
ILAR	**Eiel

8.2nm,0.9s
WUAZ Wupatki 26.28 346 *e*P **P** **15 11 05.7 -0.2**
5.3nm,1.0s
MTDJ Mount Denham 26.54 69 *e*P **P** **15 11 06.0 -2.3**
62nm,1.4s
W13A Hualapai Mount 26.60 341 *e*P **P** **15 11 10.2 +1.3**
7.9nm,1.6s
TUL1 Leonard 26.68 14 *e*P **P** **15 11 07.5 -1.7**
6.5nm,0.7s
U34A Anderson Ranch 26.81 11 *e*P **P** **15 11 09.7 -0.8**
42nm,1.7s
OTAV Otavalo 26.89 110 *e*P **P** **15 11 13.2 +1.2**
10nm,1.1s
T25A Trinidad 26.95 359 *e*P **P** **15 11 12.5 +0.5**
7.4nm,1.1s
LDFC Landfair 27.00 339 *e*P **P** **15 11 12.9 +0.6**
8.5nm,1.1s
X301 Greenbrier Sit 27.05 21 *e*P **P** **15 11 13.3 +0.7**
14nm,0.9s
WHAR Wooly Hollow 27.14 21 *e*P **P** **15 11 15.7 +2.3**
18nm,1.2s
MVCO Mesa Verde 27.36 352 *e*P **P** **15 11 17.1 +1.4**
14nm,1.5s
HHAR Hobbs 27.52 17 *e*P **P** **15 11 17.9 +1.1**
9.2nm,1.2s
S22A 4UR Ranch, Cre 27.69 355 *e*P **P** **15 11 21.9 +3.2**
4.9nm,1.1s
ROSC El Rosal 29.52 98 LR LR 15 20 35.9
comp=Z,182nm,21.3s,baz=284,slow=30
PHWY Pilot Hill 31.14 357 *e*P **P** **15 11 51.9 +2.7**
16nm,0.8s
NV01 Mina Array Sit 31.14 337 *e*P **P** **15 11 46.4 -2.8**
NVAR Mina Array Bea 31.14 337 P **P** **15 11 48.0 -1.2**
0.7nm,0.7s,baz=160,slow=6.9,SNR=4.4
NVAR LR LR 15 22 08.9
comp=Z,244nm,19.6s,baz=164,slow=32
BW06 Boulder Array 32.97 352 *e*P **P** **15 12 06.0 +0.7**
PDAR Pinedale Array 32.97 352 P **P** **15 12 04.0 -1.2**
1.1nm,0.8s,baz=161,slow=8.5,SNR=3.8
SFIN Lafayette 33.55 23 *e*P **P** **15 12 09.7 -0.3**
17nm,0.7s
LOHW Long Hollow 33.95 351 *e*P P 15 12 16.9 +3.2
2.6nm,0.8s
ECSD EROS Data Cent 34.08 9 *e*P **P** **15 12 14.7 +0.2**
9.4nm,1.4s
HLID Hailey 34.65 346 *e*P **P** **15 12 17.3 -2.5**
1.8nm,0.9s
AGMN Agassiz Nation 38.65 8 *e*P **P** **15 12 52.7 -0.8**
10nm,0.8s
ABVI Anegada Island 38.95 73 *e*P **P** **15 12 55.2 -1.2**
194nm,1.0s
ULM Lac du Bonnet 40.55 8 P **P** **15 13 08.9 -0.5**
5.3nm,0.8s,baz=206,slow=14,SNR=3.2
ULM LR LR 15 31 29.9
comp=Z,87nm,18.2s,baz=301,slow=38
ULM Lac du Bonnet 40.55 8 *e*P **P** **15 13 08.8 -0.6**
11nm,1.2s
LPAZ La Paz 43.83 126 P **P** **15 13 38.4 +1.1**
3.9nm,0.9s,baz=311,slow=7.9,SNR=14
LPAZ LR LR 15 29 51.5
comp=Z,165nm,20.9s,baz=11,slow=33
LPAZ La Paz 43.83 126 *e*P **P** **15 13 38.0 +0.8**
5.5nm,0.9s
SAML Samuel 44.48 114 *e*P **P** **15 13 40.4 -1.3**
3.4nm,0.8s
YKA Yellowknife Ar 52.92 354 P **P** **15 14 45.6 -0.3**
0.7nm,0.7s,baz=164,slow=7.0,SNR=5.7
YKA PcP **PcP** **15 15 54.8 +0.3**
0.4nm,0.7s,baz=158,slow=3.7,SNR=3.9
YKB5 Yellowknife Ar 52.92 354 *e*P **P** **15 14 48.8 +2.9**
YKB5 *e*PcP **PcP** **15 15 54.8 +0.3**
SCHQ Schefferville 53.27 26 P **P** **15 14 51.4 +2.8**
6.0nm,0.7s,baz=195,slow=7.5,SNR=4.4
SCHQ LR LR 15 37 44.8
comp=Z,103nm,19.4s,baz=72,slow=36
SCHQ Schefferville 53.27 26 *e*P **P** **15 14 50.7 +2.0**
17nm,1.4s
CPUP Villa Florida 57.74 130 P **P** **15 15 21.6 +0.4**
1.4nm,0.8s,baz=270,slow=4.0,SNR=2.8
PLCA Paso Flores 59.07 151 LR LR 15 34 59.1
comp=Z,150nm,20.8s,baz=159,slow=30
INK Inuvik 61.39 348 P **P** **15 15 44.0 -1.7**
0.7nm,0.6s,baz=157,slow=14,SNR=3.3
RND Reindeer 62.13 339 *e*P **P** **15 15 52.5 +1.7**
4.9nm,0.9s
IL1 Eielson Array 62.32 341 *e*P **P** **15 15 50.0 -2.0**
ILAR Eielson Array 62.32 341 P **P** **15 15 49.9 -2.2**
1.2nm,0.8s,baz=150,slow=4.7,SNR=12
ILB Eielson Array 62.32 341 *e*P **P** **15 15 50.2 -1.8**
TRF Thorofare Moun 62.67 338 *e*P **P** **15 15 55.6 +1.0**
6.4nm,1.0s
CAST Castle Rocks 63.31 338 *e*P **P** **15 15 58.8 +0.2**
4.3nm,1.0s
TIXI Tiksi 91.43 345 *e*P **P** **15 18 34.8 -0.9**
2.5nm,0.9s
NOA NORSAR Array B 92.83 26 LR LR 16 01 07.7
comp=Z,19nm,19.2s,baz=0.0,slow=36
ARCES ARCESS Array B 93.20 16 LR LR 16 00 25.3
comp=Z,64nm,18.4s,baz=350,slow=35
WR1 Warramunga Arr 123.39 253 *e*PKPdf **PKPdf** **15 24 26.4 -1.5**
WRA Warramunga Arr 123.39 253 PKP **PKPdf** **15 24 26.4 -1.5**
0.5nm,0.9s,baz=91,slow=3.3,SNR=3.6
ASAR Alice Springs 125.65 248 PKP **PKPdf** **15 24 26.9 -1.3**
0.4nm,1.0s,baz=71,slow=2.4,SNR=3.6

ISCJB ***28*** *15:11:03.1±1.7, 18°.6S×0°.4×172°.6W±0°.3, h10km, mb4.5/8, Error ellipse: s-maj=59.2km s-min=22.9km az=145.7*
NEIC ***28*** *15:11:08.6±1.2, 18°.67S×172°.62W, h35km, mb4.7/4, Error ellipse: s-maj=45.9km s-min=17.4km az=146.0*
IDC ***28*** *15:11:11.0±26.0, 19°.07S×173°.51W, h0km, mb3.8/4, mb1 3.9/4, mb1mx3.6/26, mbtmp3.8/4, Error ellipse: s-maj=476.0km s-min=147.4km az=74.0*
ISC 28 15:11:04.9±1.9, 18°.7S±0°.4×172°.6W±0°.3, h10km, n12, σ0°69/12, mb4.0/8, Tonga Islands region

Code	Station Name	Δ°	AZ°	Phase	Op	ID	Time h m s	Res ISC
CTA	**Charters Tower**	**38.78**	**261**	P		**P**	**15 18 30.9**	**+0.9**
	1.1nm,0.3s,baz=74,slow=15,SNR=2.3							
STKA	**Stephens Creek**	**43.16**	**243**	P		**P**	**15 19 05.5**	**-0.5**
	1.3nm,0.8s,baz=72,slow=6.4,SNR=3.1							
STKA	**Stephens Creek**	**43.16**	**243**	*e*P		**P**	**15 19 05.6**	**-0.4**
	7.9nm,1.9s							
AS01	**Alice Springs**	**49.86**	**254**	*e*P		**P**	**15 19 57.7**	**-1.1**
AS31	**Alice Springs**	**49.91**	**254**	*e*P		**P**	**15 19 59.4**	**+0.3**
	2.2nm,1.4s							
ASAR	**Alice Springs**	**49.91**	**254**	P		**P**	**15 19 59.2**	**+0.1**
	0.4nm,0.5s,baz=90,slow=8.5,SNR=27							
WB2	**Warramunga Arr**	**49.91**	**259**	*e*P		**P**	**15 19 59.5**	**+0.3**
WR1	**Warramunga Arr**	**49.92**	**259**	*e*P		**P**	**15 19 59.5**	**+0.2**
WRA	**Warramunga Arr**	**49.92**	**259**	P		**P**	**15 19 59.5**	**+0.2**
	0.4nm,0.7s,baz=96,slow=7.4,SNR=15							
GUMO	**Guam**	**52.78**	**304**	*e*P		**P**	**15 20 20.4**	**-0.2**
	412nm,1.4s							
MTN	**Manton Dam**	**54.29**	**267**	*e*P		**P**	**15 20 30.5**	**-1.3**
	56nm,1.8s							
SAO	**San Andreas Ge**	**73.27**	**41**	*e*P		**P**	**15 22 36.7**	**+0.1**
	52nm,1.8s							

IDC 28 15:41:59.4±2.0, 4°.41S×122°.76E, h0km, mb3.1/2, mb1 3.4/4, mb1mx3.2/39, mbtmp3.2/4, ML2.9/2, MS3.0/1, Ms1 3.0/1, ms1mx2.7/10, Error ellipse: s-maj=47.3km s-min=23.8km az=35.0, Sulawesi

Code	Station Name	Δ°	AZ°	Phase	Op	ID	Time h m s	Res ISC
KAPI	**Kappang**	**3.06**	**259**	Pn		Pn	15 42 48.7	-0.2
	1.9nm,0.3s,baz=119,slow=4.8,SNR=4.9							
KAPI				Sn		Sn	15 43 28.0	+1.7
	2.6nm,0.3s,baz=18,slow=20,SNR=5.0							
WRA	**Warramunga Arr**	**19.12**	**145**	P		P	15 46 24.1	0.0
	0.0nm,0.3s,baz=314,slow=13,SNR=5.0							
ASAR	**Alice Springs**	**21.96**	**152**	P		P	15 46 55.1	+0.2
	0.8nm,0.9s,baz=341,slow=15,SNR=5.6							
GUMO	**Guam**	**28.31**	**51**	LR		LR	15 59 37.9	
	comp=Z,29nm,20.1s,baz=92,slow=37							
CMAR	**Chiang Mai Arr**	**32.67**	**315**	P		P	15 48 33.4	-0.1
	0.3nm,0.6s,baz=131,slow=6.9,SNR=4.3							

ISCJB ***28*** *16:06:24.1±0.4, 47°.17N±0°.04×150°.87E±0°.05, h173km±3km, mb4.2/67, Error ellipse: s-maj=7.0km s-min=3.4km az=140.1*
SKHL ***28*** *16:06:24.4±0.5, 47°.05N×150°.85E, h160km±9km, mb4.7/6, msh5.6/4*
MOS ***28*** *16:06:24.8±1.0, 47°.32N×150°.79E, h175km, mb4.3/35, Error ellipse: s-maj=7.8km s-min=6.3km az=85.3*
NEIC ***28*** *16:06:26.7±0.5, 47°.26N×150°.81E, h180km±4km, mb4.4/26, Error ellipse: s-maj=6.1km s-min=3.2km az=142.0*
IDC ***28*** *16:06:26.4±1.4, 47°.20N×150°.80E, h176km±12km, mb3.7/27, mb1 3.8/36, mb1mx3.8/54, mbtmp4.2/36, MS4.0/1, Ms1 4.0/1, ms1mx2.5/42, Error ellipse: s-maj=12.2km s-min=8.5km az=137.0*
ISC 28 16:06:25.8±0.5, 47°.18N±0°.06×150°.83E±0°.05, h174km±4km, n219, σ1°11/234, mb4.2/67, 7C-5D, Kuril Islands

Code	Station Name	Δ°	AZ°	Phase	Op	ID	Time h m s	Res ISC
KUR	**Kuril'sk**	**2.83**	**228**	*e*P		**Pn**	**16 07 11.0**	**-1.0**
KUR					AMB	AMB	16 07 12.6	
	120nm,0.5s							
KUR				*e*S		**Sn**	**16 07 47.8**	**-0.2**
KUR					A	A	16 07 49.2	
	320nm,0.5s							
KUR					A	A	16 07 49.2	
	170nm,0.5s							
KUR	**Kuril'sk**	**2.83**	**228**	*c i*P	N	**Pn**	**16 07 12.6**	**+0.6**
KUR				*i*	S	**Sn**	**16 07 49.6**	**+1.6**
KUR					pmax	pmax		
	comp=Z,74nm,0.6s							
KUR					pmax	pmax		
	comp=N,39nm,0.5s							
KUR					pmax	pmax		
	comp=E,26nm,0.3s							
KUR					smax	smax		
	comp=N,210nm,0.4s							
KUR					smax	smax		
	comp=E,68nm,0.2s							
SHO	**Shikotan**	**4.34**	**222**	*e*P		Pn	16 07 26.5	-4.5
SHO					AMB	AMB	16 07 29.0	
	comp=E,20nm,0.2s							
SHO				*e*S		Sn	16 08 14.0	-8.1
SHO					A	A	16 08 19.6	
	comp=E,170nm,0.4s							
SHO					A	A	16 08 19.6	
	comp=E,120nm,0.4s							
SHO	**Shikotan**	**4.34**	**222**	*c i*P	N	Pn	16 07 27.0	-4.0
SHO					pmax	pmax		
	comp=E,38nm,0.3s							
SHO					pmax	pmax		
	comp=E,67nm,0.3s							
SHO					pmax	pmax		
	comp=N,19nm,0.2s							
YUK	**Yuzh-Kuril'sk**	**4.69**	**230**	*i* P		**Pn**	**16 07 34.2**	**-1.4**
YUK					AMB	AMB	16 07 39.6	
	comp=N,20nm,0.3s							
YUK				*i*	S	**Sn**	**16 08 28.6**	**-1.6**
YUK					A	A	16 08 39.1	
	comp=N,230nm,0.4s							
YUK					A	A	16 08 39.1	
	comp=N,130nm,0.4s							
YUK	**Yuzh-Kuril'sk**	**4.69**	**230**	*c i*PN		**Pn**	**16 07 34.1**	**-1.5**
YUK				*i*	S	**Sn**	**16 08 28.0**	**-2.2**
YUK					pmax	pmax		
	comp=Z,191nm,0.3s							
YUK					pmax	pmax		
	comp=E,95nm,0.2s							
YUK					pmax	pmax		
	comp=N,149nm,0.6s							
YUK					smax	smax		
	comp=N,231nm,0.5s							
YUK					smax	smax		
	comp=E,131nm,0.2s							
SKR	**Severo-Kuril's**	**4.94**	**43**	*e*P		**Pn**	**16 07 38.1**	**-0.6**
SKR					AMB	AMB	16 07 42.2	
	comp=E,70nm,0.8s							
SKR				*e*S		**Sn**	**16 08 35.2**	**-0.8**
SKR					A	A	16 08 38.8	
	comp=E,90nm,0.3s							
SKR	**Severo-Kuril's**	**4.94**	**43**	*e*PN		Pn	16 07 34.9	-3.8
SKR				*e*S		**Sn**	**16 08 32.6**	**-3.4**
SKR					pmax	pmax		
	comp=N,50nm,0.3s							
SKR					pmax	pmax		
	comp=E,70nm,0.3s							
SKR					pmax	pmax		
	comp=Z,100nm,0.3s							
SKR					smax	smax		
	comp=N,50nm,0.5s							
SKR					smax	smax		
	comp=E,100nm,0.5s							
JRA	**Rausu**	**5.15**	**233**	P		**Pn**	**16 07 40.4**	**-1.1**
NEM2	**Nemuro 2**	**5.24**	**225**	P		Pn	16 07 38.5	-4.1
NEM2				*e*S		Sn	16 08 34.2	-8.7
YSS	**Yuzh-Sakhalins**	**5.52**	**271**	*e*P		**Pn**	**16 07 45.1**	**-1.2**
YSS	**Yuzh-Sakhalins**	**5.52**	**271**	*e*PN		**Pn**	**16 07 47.3**	**+1.0**
PAU	**Pauzhetka**	**5.80**	**40**	*e*P		**Pn**	**16 07 48.5**	**-1.5**
PAU					AMB	AMB	16 07 50.7	
	comp=E,60nm,0.9s							
JTKR	**Abashiri--Toko**	**5.82**	**239**	P		**Pn**	**16 07 49.9**	**-0.4**
JAK	**Akkeshi**	**6.03**	**228**	P		Pn	16 07 49.2	-3.8
JAK				*e*S		Sn	16 08 53.4	-8.2
JMP	**Maruseppu**	**6.12**	**242**	P		**Pn**	**16 07 54.3**	**0.0**
JAR	**Ashorobuto**	**6.32**	**235**	P		**Pn**	**16 07 56.0**	**-0.8**
TYV	**Tymovskoe**	**6.51**	**307**	*e*PN		Pn	16 08 03.2	+3.9
JKA	**Kamikawa-asahi**	**6.53**	**245**	*e*P		**Pn**	**16 08 01.1**	**+1.5**
ASAJ	**Asahikawa**	**6.53**	**245**	P		**Pn**	**16 08 01.1**	**+1.4**
	comp=E,8.8nm,0.3s,baz=71,slow=13,SNR=84							
ASAJ	**Asahikawa**	**6.53**	**245**	P		**Pn**	**16 08 00.9**	**+1.3**
JOB	**Onbets**	**6.54**	**232**	P		**Pn**	**16 07 57.4**	**-2.4**
JKK2	**Kamakawa 2**	**6.57**	**243**	P		**Pn**	**16 08 00.4**	**+0.3**
HRK	**Horoka**	**6.58**	**238**	*e*P		**Pn**	**16 07 59.7**	**-0.6**
MYR	**Moyori**	**7.26**	**230**	*e*P		Pn	16 08 05.6	-3.7
PEA0	**Petropavlovsk-**	**7.39**	**34**	*e*Pn		**Pn**	**16 08 10.5**	**-0.4**
PEA0B	**Petropavlovsk-**	**7.39**	**34**	*e*Pn		**Pn**	**16 08 10.7**	**-0.2**
PEA0B				*e*Sn		Sn	16 09 23.8	-10
PETK	**Petropavlovsk-**	**7.39**	**34**	P		**Pn**	**16 08 10.8**	**-0.1**
	comp=E,1.1nm,0.3s,baz=214,slow=12,SNR=22							
PEA1	**Petropavlovsk-**	**7.40**	**34**	*e*Pn		**Pn**	**16 08 10.8**	**-0.2**
ERM	**Erimo**	**7.52**	**229**	*e*P		**Pn**	**16 08 12.7**	**0.0**
ERM	**Erimo**	**7.52**	**229**	*i*P		**Pn**	**16 08 12.7**	**0.0**
ERM	**Erimo**	**7.52**	**229**	*e*Pn		**Pn**	**16 08 09.8**	**-2.9**
ERM				*e*Sn		Sn	16 09 29.0	-8.1
JNBK	**Urakawa-nobuka**	**7.55**	**232**	*e*S		Sn	16 09 28.6	-9.3
PET	**Petropavlovsk**	**7.71**	**38**	*e*P		**Pn**	**16 08 14.4**	**-0.7**
PET	**Petropavlovsk**	**7.71**	**38**	*e*PN		**Pn**	**16 08 14.3**	**-0.8**
PET				*e*S		**Sn**	**16 09 38.9**	**-2.6**
PET					MLR	MLR		
	comp=Z,165nm,13.0s							
PET					MLR	MLR		
	comp=Z,74nm,13.0s							
PET	**Petropavlovsk**	**7.71**	**38**	*e*Pn		**Pn**	**16 08 13.4**	**-1.7**
JKB	**Kayabe**	**8.77**	**236**	P		**Pn**	**16 08 26.3**	**-2.8**
JKB				*e*S		Sn	16 09 57.2	-10
JYM2	**Yakumo 2**	**9.01**	**240**	P		**Pn**	**16 08 30.2**	**-2.1**
JANG	**Nango**	**9.57**	**228**	*e*S		Sn	16 10 12.2	-14
GRNR	**Gornyy**	**10.13**	**296**	*e*P		**Pn**	**16 08 47.5**	**+0.6**
GRNR					AMB	AMB	16 08 50.0	
	comp=Z,30nm,1.0s							
HABR	**Khabarovsk**	**10.69**	**283**	*e*P		**Pn**	**16 08 53.2**	**-1.0**
HABR	**Khabarovsk**	**10.69**	**283**	*e*PN		**Pn**	**16 08 53.2**	**-1.0**
HABR				*e*S		**S**	**16 10 52.9**	**-0.7**
HABR					pmax	pmax		
	comp=N,34nm,1.8s							
HABR					pmax	pmax		
	comp=E,30nm,1.8s							
HABR					pmax	pmax		
	comp=Z,28nm,1.8s							
HABR					MLR	MLR		
	comp=Z,29nm,14.0s							
MA2	**Magadan**	**12.42**	**360**	P		**Pn**	**16 09 16.5**	**+0.1**
	comp=Z,0.2nm,0.3s,baz=138,slow=15,SNR=3.3							
EKMR	**Ekimchan**	**12.88**	**304**	*e*P		**Pn**	**16 09 22.6**	**+0.2**
EKMR					AMB	AMB	16 09 31.5	
	comp=Z,20nm,0.7s							
KLR	**Kul'dur**	**12.89**	**286**	P		**P**	**16 09 24.3**	**-2.5**
	comp=Z,0.7nm,0.3s,baz=89,slow=10,SNR=19							
USRK	**Ussuriysk Ar.**	**13.50**	**264**	P		**Pn**	**16 09 31.2**	**+0.9**
	comp=Z,1.6nm,0.3s,baz=70,slow=12,SNR=39							
MJA0	**Matsu Arr-Jizo**	**14.15**	**226**	*e*P		**P**	**16 09 41.5**	**+0.6**
MJA0					pmax	pmax		
	comp=Z,1.0nm,0.3s							
MJB9	**Matsu-Tunnel**	**14.17**	**226**	*e*Pn		**P**	**16 09 40.7**	**-0.4**
MAJO	**Matsushiro**	**14.17**	**226**	*e*P		**P**	**16 09 40.8**	**-0.3**
MAJO	**Matsushiro**	**14.17**	**226**	*e*Pn		**P**	**16 09 40.8**	**-0.3**
MJAR	**Matsushiro Arr**	**14.17**	**226**	P		**P**	**16 09 40.7**	**-0.4**
	comp=Z,0.7nm,0.3s,baz=7.5,slow=14,SNR=7.0							
MDJ	**Mudanjiang**	**15.00**	**268**	*e*Pn		**Pn**	**16 09 48.5**	**-0.4**
BMKR	**Bomnak**	**15.73**	**307**	*e*P		**P**	**16 09 58.1**	**0.0**
BMKR					AMB	AMB	16 10 03.0	
	comp=Z,30nm,0.6s							
SEY	**Seymchan**	**15.81**	**3**	P		**P**	**16 09 59.7**	**+0.7**
	comp=Z,0.3nm,0.3s,baz=171,slow=9.0,SNR=21							
SEY	**Seymchan**	**15.81**	**3**	*e*P		**P**	**16 10 00.2**	**+1.3**
SEY	**Seymchan**	**15.81**	**3**	*i*P		**P**	**16 10 00.2**	**+1.3**
ZEA	**Zeya**	**16.34**	**302**	*e*P		**Pn**	**16 10 06.6**	**+1.4**
ZEA					AMB	AMB	16 10 09.5	
	comp=Z,30nm,0.9s							
KROS	**Kirovskiy**	**16.68**	**305**	*e*P		**Pn**	**16 10 09.1**	**-0.2**
KROS					AMB	AMB	16 10 11.6	
	comp=Z,10.0nm,0.7s							
KROS					AMB	AMB	16 10 11.6	
	comp=Z,40nm,0.7s							
KROS					AMB	AMB	16 10 11.6	
	comp=Z,20nm,0.7s							
YAK	**Yakutsk**	**19.13**	**329**	P		**P**	**16 10 36.0**	**+0.9**
	comp=Z,0.0nm,0.3s,baz=145,slow=0.9,SNR=21							
YAK	**Yakutsk**	**19.13**	**329**	*e*P		**P**	**16 10 36.1**	**+0.9**
YAK				*e*S		**S**	**16 13 59.4**	**-3.0**
YAK					pmax	pmax		
	comp=Z,82nm,0.8s							
YAK					pmax	pmax		
	comp=E,38nm,1.3s							
YAK					pmax	pmax		
	comp=N,39nm,1.1s							
YAK					smax	smax		
	comp=E,56nm,3.7s							
YAK					smax	smax		
	comp=N,62nm,3.3s							
YAK	**Yakutsk**	**19.13**	**329**	*e*P		**P**	**16 10 36.1**	**+0.9**
	comp=N,121nm,0.8s							
KSRS	**Korea Array**	**19.47**	**248**	P		**Pn**	**16 10 40.4**	**-1.9**
	comp=N,0.7nm,0.3s,baz=51,slow=11,SNR=19							
KSRS	**Korea Array**	**19.47**	**248**	*e*P		**Pn**	**16 10 40.9**	**-1.4**
KSRS	**Korea Array**	**19.47**	**248**	*e*P		**Pn**	**16 10 40.9**	**-1.4**
KSRS					pmax	pmax		
	comp=Z,1.0nm,0.3s							
KS01	**Wonju Array Si**	**19.47**	**248**	*e*P		**Pn**	**16 10 40.9**	**-1.4**
KS15	**Wonju Array Si**	**19.50**	**248**	*e*P		**P**	**16 10 40.6**	**+1.2**
KSAR	**Wonju Array Be**	**19.50**	**248**	P		**P**	**16 10 40.4**	**+1.0**
KSAR	**Wonju Array Be**	**19.50**	**248**	P		**P**	**16 10 40.4**	**+1.0**
JNU	**Nakatsue**	**20.65**	**234**	P		**P**	**16 10 53.4**	**+1.6**
	comp=Z,4.5nm,0.7s,baz=50,slow=4.5,SNR=5.4							
BILL	**Bilibino**	**22.36**	**15**	*e*P		**P**	**16 11 07.4**	**-1.6**
BILL	**Bilibino**	**22.36**	**15**	*i*P		**P**	**16 11 07.4**	**-1.6**
BILL				*e**PP		**pP**	**16 11 43.9**	**+4.0**
BILL					pmax	pmax		
	comp=Z,6.0nm,2.0s							
BILL	**Bilibino**	**22.36**	**15**	*e*P		**P**	**16 11 08.0**	**-1.0**
	comp=Z,3.4nm,0.8s							
BOD	**Bodaibo**	**24.50**	**309**	*e*P		**P**	**16 11 27.7**	**-1.0**
BOD					pmax	pmax		
	comp=Z,3.0nm,1.2s							
BJI	**Beijing**	**25.93**	**267**	P		**P**	**16 11 42.5**	**+0.8**
BJI					pmax	pmax		
	comp=Z,11nm,0.7s							
BJI					pmax	pmax		
	comp=Z,89nm,3.2s							
TIXI	**Tiksi**	**26.62**	**345**	P		**P**	**16 11 47.1**	**-0.5**
	comp=Z,1.0nm,0.3s,baz=154,slow=10,SNR=4.3							
TIXI	**Tiksi**	**26.62**	**345**	*e*P		**P**	**16 11 46.7**	**-0.8**
	comp=Z,2.9nm,1.0s							
HHC	**Hu-ho-hao-te**	**28.71**	**272**	*e*P		**P**	**16 12 08.0**	**+1.4**
HHC					pmax	pmax		
	comp=Z,32nm,1.0s							
HHC					pmax	pmax		
	comp=Z,85nm,8.6s							
ULN	**Ulaanbaatar**	**29.28**	**288**	*e*P		**P**	**16 12 12.2**	**+0.6**
ULN	**Ulaanbaatar**	**29.28**	**288**	*i*P		**P**	**16 12 12.2**	**+0.6**
ULN					pmax	pmax		
	comp=Z,9.0nm,0.8s							
ULN	**Ulaanbaatar**	**29.28**	**288**	*e*P		**P**	**16 12 14.0**	**+2.3**
	comp=Z,8.5nm,0.8s							
SONA0	**Songino Array**	**29.71**	**288**	*e*P		**P**	**16 12 15.3**	**-0.1**
	comp=Z,4.1nm,0.8s							
SONM	**Songino Array**	**29.71**	**288**	P		**P**	**16 12 15.3**	**-0.1**
	comp=Z,1.4nm,0.8s,baz=91,slow=12,SNR=3.6							
H11N2	**WAKE ISLAND Hy**	**30.36**	**149**	T		T	16 44 01.6	
	baz=340,slow=76,SNR=69							
H11N1	**WAKE ISLAND Hy**	**30.37**	**149**	T		T	16 44 03.1	
	baz=340,slow=76,SNR=48							
H11N3	**WAKE ISLAND Hy**	**30.38**	**149**	T		T	16 44 02.9	
	baz=340,slow=76,SNR=29							
TLY	**Talaya**	**30.59**	**296**	*e*P		**P**	**16 12 21.8**	**-1.2**
TLY	**Talaya**	**30.59**	**296**	*e*P		**P**	**16 12 21.8**	**-1.2**
TLY					pmax	pmax		
	comp=Z,5.0nm,0.9s							
ZAK	**Zakamensk**	**31.07**	**294**	*e*P		**P**	**16 12 26.5**	**-0.8**
ZAK					pmax	pmax		
	comp=Z,3.0nm,1.1s							
H11S1	**WAKE ISLAND Hy**	**31.42**	**150**	T		T	16 45 27.4	
	baz=340,slow=76,SNR=29							
H11S3	**WAKE ISLAND Hy**	**31.43**	**150**	T		T	16 45 23.2	
	baz=340,slow=76,SNR=26							
H11S2	**WAKE ISLAND Hy**	**31.44**	**150**	T		T	16 45 24.2	
	baz=340,slow=76,SNR=23							
TT01	**Tatalina**	**33.14**	**42**	*e*P		**P**	**16 12 45.6**	**+0.6**
TTA	**Tatalina**	**33.14**	**42**	*e*P		**P**	**16 12 45.5**	**+0.3**
TTA					pmax	pmax		
	comp=Z,18nm,1.8s							
TTA	**Tatalina**	**33.14**	**42**	*e*P		**P**	**16 12 45.5**	**+0.3**
	comp=Z,18nm,1.8s							
SVW2	**Sparrevohn**	**33.30**	**45**	*e*P		P	16 12 50.0	+3.5
	comp=Z,11nm,1.4s							
XAN	**Xi'an**	**34.00**	**263**	P		**P**	**16 12 53.0**	**+0.1**
XAN					pmax	pmax		
	comp=Z,11nm,0.6s							
COLD	**Coldfoot**	**35.86**	**35**	*e*P		**P**	**16 13 08.8**	**+0.4**
	comp=Z,5.4nm,1.0s							
ENH	**Enshi**	**35.92**	**257**	*e*P		**P**	**16 13 08.8**	**-0.6**
	comp=Z,5.9nm,0.9s							
BWN	**Browne**	**36.09**	**40**	*e*P		**P**	**16 13 10.4**	**0.0**
	comp=Z,24nm,1.2s							
LZH	**Lanzhou**	**36.32**	**270**	*e*P		**P**	**16 13 13.5**	**+0.7**
LZH					pP	pP	16 13 49.8	+0.2
LZH					sP	sP	16 14 10.0	+0.6
LZH					pmax	pmax		
	comp=Z,18nm,1.0s							
HDA	**Harding Lake**	**37.18**	**39**	*e*P		**P**	**16 13 20.5**	**+0.9**
	comp=Z,8.3nm,1.1s							
ILAR	**Eielson Array**	**37.19**	**39**	P		**P**	**16 13 20.2**	**+0.6**
	comp=Z,0.7nm,0.7s,baz=267,slow=7.8,SNR=7.3							
ILB	**Eielson Array**	**37.19**	**39**	*e*P		**P**	**16 13 20.2**	**+0.6**
GTA	**Gaotai**	**37.36**	**277**	*e*P		**P**	**16 13 23.0**	**+1.5**
GTA					pP	sP	16 14 08.5	-10
GTA					sP	PP	16 14 28.5	-22
GTA					S	**S**	**16

MK31 pmax pmax
comp=Z,6.0nm,0.6s
MK31 Makanchi Array 45.35 296 *e*P **P** **16 14 25.6 -0.7**
MK32 Makanchi Array 45.35 296 *e*P **P** **16 14 26.1 -0.2**
MK32 *e*PcP **PcP** **16 16 03.1 +0.5**
MK32 *e*ScP **ScP** **16 19 40.3 +1.6**
MKAR Makanchi Array 45.35 296 P **P** **16 14 26.1 -0.2**
comp=Z,6.2nm,0.6s,baz=69,slow=7.9,SNR=82
MKAR pP **pP** **16 15 06.3 +1.8**
comp=Z,1.5nm,0.8s,baz=68,slow=8.0,SNR=2.8
MKAR PcP **PcP** **16 16 03.1 +0.5**
comp=Z,0.7nm,0.5s,baz=60,slow=2.9,SNR=6.9
MKAR ScP **ScP** **16 19 40.3 +1.6**
comp=Z,0.6nm,0.7s,baz=57,slow=4.5,SNR=6.2
MK01 Makanchi Array 45.35 296 *e*P **P** **16 14 25.9 -0.4**
MAKZ Makanchi 45.53 296 *e*P **P** **16 14 27.1 -0.7**
MAKZ pmax pmax
comp=Z,5.0nm,0.8s
MAKZ Makanchi 45.53 296 *e*P **P** **16 14 27.1 -0.7**
comp=Z,4.6nm,0.8s
KURK Kurchatov 45.82 302 *e*P **P** **16 14 29.2 -0.7**
KURK Kurchatov 45.82 302 *e*P **P** **16 14 29.2 -0.7**
KURK pmax pmax
comp=Z,8.0nm,0.7s
KURK Kurchatov 45.82 302 *e*P **P** **16 14 29.2 -0.7**
comp=Z,7.7nm,0.7s
LSA Lhasa 48.69 271 *e*P **P** **16 14 54.1 +1.1**
LSA pmax pmax
comp=Z,7.0nm,0.6s
LSA Lhasa 48.69 271 *e*P **P** **16 14 54.0 +1.1**
comp=Z,6.5nm,0.6s
CHKZ Chkalovo 48.95 309 *i* P **P** **16 14 52.8 -1.2**
CHKZ pmax pmax
comp=Z,10.0nm,0.8s
BVAR Borovoye Array 49.37 308 LR LR 16 36 27.0
comp=Z,172nm,21.8s,baz=253,slow=36
BRVK Borovoye 49.41 308 *e*P **P** **16 14 57.1 -0.4**
BRVK Borovoye 49.41 308 *d i*P **P** **16 14 57.1 -0.4**
BRVK pmax pmax
comp=Z,6.0nm,0.7s
BRVK Borovoye 49.41 308 *e*P **P** **16 14 56.7 -0.8**
comp=Z,7.4nm,0.9s
ZRNK Zerenda 50.14 309 *i* P **P** **16 15 01.9 -1.1**
ZRNK pmax pmax
comp=Z,6.0nm,0.8s
ZRNK Zerenda 50.14 309 *e*P **P** **16 15 02.4 -0.7**
comp=Z,6.0nm,0.8s
CHTO Chiang Mai 50.71 254 *e*P **P** **16 15 08.4 +0.7**
CHTO pmax pmax
comp=Z,7.0nm,1.0s
CHTO Chiang Mai 50.71 254 *e*P **P** **16 15 08.4 +0.7**
comp=Z,6.8nm,1.0s
CM31 Chiang Mai Arr 50.97 254 *e*P **P** **16 15 10.7 +1.1**
CMAR Chiang Mai Arr 50.97 254 P **P** **16 15 10.8 +1.2**
comp=Z,2.2nm,0.9s,baz=34,slow=7.2,SNR=18
CM01 Chiang Mai Arr 50.98 254 *e*P **P** **16 15 10.2 +0.5**
TKM2 Tokmak 2 51.40 295 *i* P **P** **16 15 12.7 -0.1**
TKM2 pmax pmax
comp=Z,3.0nm,0.7s
TKM2 Tokmak 2 51.40 295 *e*P **P** **16 15 13.2 +0.3**
comp=Z,3.3nm,0.8s
YKA Yellowknife Ar 51.51 36 P **P** **16 15 13.5 +0.5**
comp=Z,0.9nm,0.4s,baz=300,slow=6.9,SNR=18
YKB5 Yellowknife Ar 51.51 36 *e*P **P** **16 15 13.6 +0.5**
AAK Ala-Archa 52.24 295 *e*P **P** **16 15 19.0 0.0**
AAK Ala-Archa 52.24 295 *d i*P **P** **16 15 19.0 0.0**
AAK *i* *P **pP** **16 16 00.8 +2.6**
AAK pmax pmax
comp=Z,15nm,0.7s
AAK Ala-Archa 52.24 295 *e*P **P** **16 15 18.8 -0.2**
comp=Z,6.9nm,0.8s
EKS2 Erkin-Say 52.66 295 *e*P **P** **16 15 22.3 +0.3**
EKS2 pmax pmax
comp=Z,8.0nm,0.7s
EKS2 Erkin-Say 52.66 295 *e*P **P** **16 15 22.3 +0.3**
comp=Z,8.3nm,0.7s
GUN Gumba 53.41 273 *e*P **P** **16 15 28.5 +0.5**
comp=Z,8.8nm,0.3s
ARU Arti 53.63 316 *e*P **P** **16 15 28.2 -0.5**
ARU Arti 53.63 316 *d i*P **P** **16 15 28.2 -0.5**
ARU *P **pP** **16 16 09.6 +1.5**
ARU 16 16 32.2
ARU 16 17 26.3
ARU PPP PPP 16 18 44.2
ARU S **S** **16 22 48.2 -0.1**
ARU 16 24 52.5
ARU SS **SS** **16 26 29.6 -1.0**
ARU pmax pmax
comp=Z,20nm,1.2s
ARU Arti 53.63 316 *e*P **P** **16 15 27.8 -0.9**
comp=Z,12nm,0.6s
KKN Kakani 53.89 273 *e*P **P** **16 15 32.0 +0.7**
comp=Z,6.2nm,0.4s
PKIN Phulchoki 53.95 273 *e*P **P** **16 15 32.5 +0.7**
comp=Z,3.9nm,0.4s
DMN Daman 54.13 273 *e*P **P** **16 15 34.1 +1.0**
GKN Gorkha 54.20 274 *e*P **P** **16 15 34.1 +0.7**
comp=Z,22nm,0.5s
KKAR Karatay Array 54.41 297 *e*P **P** **16 15 34.6 0.0**
KKAR Karatay Array 54.41 297 *e*P **P** **16 15 34.6 0.0**
KOLN Koldanda 55.05 275 *e*P **P** **16 15 40.5 +0.9**
comp=Z,11nm,0.5s
PYUN Piuthan 55.25 275 *e*P **P** **16 15 42.3 +1.2**
comp=Z,18nm,0.7s
ARA0 ARCESS Array S 56.92 340 *e*P **P** **16 15 51.7 -0.4**
ARA0 *e*PcP **PcP** **16 16 46.0 +0.7**
ARCES ARCESS Array B 56.92 340 P **P** **16 15 51.7 -0.4**
comp=Z,2.9nm,0.9s,baz=51,slow=6.4,SNR=8.0
ARCES PcP **PcP** **16 16 46.0 +0.7**
comp=Z,3.5nm,1.0s,baz=63,slow=5.6,SNR=4.0
AB31 Akbulak array 56.94 309 P **P** **16 15 52.2 -0.3**
AB31 pmax pmax
comp=Z,4.0nm,0.5s
ABKAR Akbulak array 56.94 309 *e*P **P** **16 15 52.1 -0.4**
KLMR Klimovskoe 58.92 328 *e*P **P** **16 16 03.2 -2.8**
KLMR pmax pmax
comp=Z,8.0nm,0.7s
KBL Kabul 60.45 290 *e*P **P** **16 16 16.3 -0.9**
KBL pmax pmax
comp=Z,7.0nm,0.6s
KBL Kabul 60.45 290 *e*P **P** **16 16 16.3 -0.9**
comp=Z,6.6nm,0.6s
FIA1 FINESS Array S 62.97 334 *e*P **P** **16 16 32.2 -1.0**
FIA1 *e*PcP **PcP** **16 17 10.2 +0.5**
FIA0 FINESS Array S 62.97 334 *e*P **P** **16 16 32.7 -0.6**
FIA0 FINESS Array S 62.97 334 *e*P **P** **16 16 32.7 -0.6**
FINES FINESS Array B 62.97 334 P **P** **16 16 32.7 -0.6**
comp=Z,8.3nm,0.6s,baz=46,slow=8.2,SNR=37
FINES pP **PcP** **16 17 10.8 +1.2**
comp=Z,1.7nm,0.4s,baz=48,slow=3.3,SNR=3.7
FINES FINESS Array B 62.97 334 *e*P **P** **16 16 32.2 -1.1**
FINES FINESS Array B 62.97 334 *e*P **P** **16 16 32.2 -1.1**
FINES pmax pmax
comp=Z,8.0nm,0.6s
NV01 Mina Array Sit 63.61 61 *e*P **P** **16 16 39.3 +1.1**
NVAR Mina Array Bea 63.61 61 P **P** **16 16 39.3 +1.1**
comp=Z,0.5nm,0.6s,baz=306,slow=7.7,SNR=1.8
OBN Obninsk 64.06 324 *e*P **P** **16 16 38.9 -1.6**
OBN Obninsk 64.06 324 *e*P **P** **16 16 38.9 -1.6**
OBN pmax pmax
comp=Z,2.0nm,0.9s
GEYT Alibeck 65.03 299 P **P** **16 16 47.3 +0.1**
comp=Z,1.0nm,0.4s,baz=357,slow=7.2,SNR=2.9
PD31 Pinedale Array 65.74 53 *e*P **P** **16 16 52.2 +0.2**
PDAR Pinedale Array 65.74 53 P **P** **16 16 52.2 +0.2**
comp=Z,0.4nm,0.5s,baz=273,slow=2.8,SNR=4.8
NC405 NORSAR Array S 67.12 340 *e*P **P** **16 16 59.8 -0.3**
NB2 NORSAR Subarra 67.30 340 P **P** **16 17 00.6 -0.7**
comp=Z,2.8nm,0.7s,baz=30,slow=6.5
NB200 NORSAR Array S 67.30 340 *e*P **P** **16 17 01.1 -0.1**
NOA NORSAR Array B 67.30 340 P **P** **16 17 01.1 -0.1**
comp=Z,2.5nm,0.7s,baz=29,slow=6.4,SNR=12
NOA NORSAR Array B 67.30 340 *e*P **P** **16 17 00.7 -0.6**
NOA NORSAR Array B 67.30 340 *e*P **P** **16 17 00.7 -0.6**
NOA pmax pmax
comp=Z,3.0nm,0.7s
WR1 Warramunga Arr 68.44 197 *e*P **P** **16 17 07.6 -1.2**
WRA Warramunga Arr 68.44 197 P **P** **16 17 07.6 -1.2**
comp=Z,1.2nm,0.6s,baz=17,slow=6.9,SNR=16
WRA Warramunga Arr 68.44 197 *e*P **P** **16 17 07.0 -1.8**
WRA pmax pmax
comp=Z,1.0nm,0.6s
KIV Kislovodsk 69.37 313 *ce*P **P** **16 17 15.6 +1.1**
KIV *i* *P **pP** **16 17 55.5 -0.3**
KIV pmax pmax
comp=Z,12nm,0.7s
KIV Kislovodsk 69.37 313 *e*P **P** **16 17 15.6 +1.1**
comp=Z,12nm,0.7s
KBZ Khabaz 69.42 313 P **P** **16 17 14.7 0.0**
comp=Z,4.9nm,0.7s,baz=56,slow=5.6,SNR=17
ZEI Tsey 69.59 311 *e*P **P** **16 17 15.8 -0.2**
ZEI pmax pmax
comp=Z,10.0nm,0.9s
AKASG Malin Array Be 70.31 325 P **P** **16 17 18.9 -1.0**
comp=Z,1.5nm,0.4s,baz=35,slow=6.4,SNR=13
AKASG Malin Array Be 70.31 325 *e*P **P** **16 17 18.9 -1.0**
AKASG pmax pmax
comp=Z,3.0nm,0.5s
KIEV Kiev 70.32 325 *e*P **P** **16 17 19.6 -0.4**
KIEV Kiev 70.32 325⇑ *e*P **P** **16 17 19.6 -0.4**
KIEV pmax pmax
comp=Z,5.0nm,0.7s
ANN Anapa 71.30 316 *e*P **P** **16 17 26.0 0.0**
ANN *e*PP **pP** **16 18 11.2 +3.7**
ANN pmax pmax
comp=Z,13nm,1.3s
AS01 Alice Springs 72.14 196 *e*P **P** **16 17 31.0 -0.2**
AS31 Alice Springs 72.15 196 *e*P **P** **16 17 31.3 0.0**
comp=Z,2.2nm,1.4s
ASAR Alice Springs 72.15 196 P **P** **16 17 31.4 +0.1**
comp=Z,2.1nm,0.9s,baz=9.7,slow=6.1,SNR=30
SCHQ Schefferville 73.50 22 P **P** **16 17 39.3 +0.4**
comp=Z,2.4nm,0.5s,baz=335,slow=5.9,SNR=13
SCHQ Schefferville 73.50 22 *e*P **P** **16 17 39.2 +0.3**
comp=Z,20nm,1.4s
BUR08 Bucovina Ar. S 74.33 325 *e*P **P** **16 17 43.9 -0.1**
STHS Stebnicka Huta 74.34 328 *e*P **P** **16 17 43.9 0.0**
BR101 Keskin Array S 76.99 315 *e*P **P** **16 18 00.1 +0.8**
BRTR Keskin Array B 76.99 315 P **P** **16 18 00.1 +0.8**
comp=Z,1.6nm,0.8s,baz=89,slow=4.7,SNR=11
KHC Kasperske Hory 77.15 333 *e*P **P** **16 18 00.8 +0.9**
KHC *ex* x 16 18 05.8
GERES GERESS Array B 77.37 333 P **P** **16 18 00.9 -0.2**
comp=Z,0.8nm,0.5s,baz=35,slow=5.5,SNR=9.6
GERES GERESS Array B 77.37 333 *e*P **P** **16 18 01.7 +0.6**
GERES GERESS Array B 77.37 333 *e*P **P** **16 18 01.7 +0.6**
GERES pmax pmax
comp=Z,1.0nm,0.5s
GEA0 GERESS Array S 77.37 333 *e*P **P** **16 18 00.8 -0.3**
LTX Lajitas 78.63 59 *e*P **P** **16 18 09.0 +0.6**
LTX Lajitas 78.63 59 *e*P **P** **16 18 09.0 +0.6**
TXAR Lajitas Array 78.63 59 P **P** **16 18 09.0 +0.6**
comp=Z,0.5nm,0.6s,baz=296,slow=4.0,SNR=8.1
TXAR pP **pP** **16 18 48.6 -2.1**
comp=Z,0.4nm,0.5s,baz=308,slow=4.5,SNR=3.6
DAVOX Davos/Dischmat 80.38 334 P **P** **16 18 19.0 +1.3**
comp=Z,2.1nm,0.6s,baz=315,slow=9.2,SNR=2.6
DAVOX Davos/Dischmat 80.38 334 *e*P **P** **16 18 19.0 +1.3**
DAVOX pmax pmax
comp=Z,2.0nm,0.6s
KEST Kesra 90.52 330 P **P** **16 19 08.2 +0.3**
comp=Z,2.2nm,0.8s,baz=24,slow=10.0,SNR=2.9
KEST Kesra 90.52 330 *e*P **P** **16 19 08.2 +0.3**
comp=Z,25nm,1.8s
ESDC Sonseca Array 90.65 341 P **P** **16 19 08.4 0.0**
comp=Z,0.2nm,0.3s,baz=356,slow=4.5,SNR=4.2

JMA 28 16:11:55.4±0.5, 40°.80N×145°.19E, h46km, M3.7, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JCH	**Churui**	**2.60**	**329**	P		16 12 35.8	+0.8
JCH				S		16 13 07.3	+2.0
JNBK	**Urakawa-nobuka**	**2.63**	**316**	P		16 12 37.7	+2.4
JNBK				S		16 13 08.9	+3.0
MIYJ	**Miyakonagasawa**	**2.72**	**253**	P		16 12 37.9	+1.4
JANG	**Nango**	**2.81**	**271**	P		16 12 39.1	+1.3
JANG				*e*S		16 13 12.3	+1.9
JAR	**Ashorobuto**	**3.08**	**340**	P		16 12 42.5	+0.9
JAR				S		16 13 18.0	+0.9
JOM	**Ohasama**	**3.14**	**254**	P		16 12 44.3	+2.0
JTM	**Tenmabayashi**	**3.16**	**278**	P		16 12 44.8	+2.2
JTM				*e*S		16 13 20.2	+1.1
JOT	**Ohata**	**3.29**	**289**	P		16 12 46.4	+2.0
JOT				*e*S		16 13 23.4	+1.2
JKB	**Kayabe**	**3.47**	**297**	*e*S		16 13 27.5	+0.8
JTKR	**Abashiri--Toko**	**3.69**	**345**	P		16 12 50.8	+0.9
JTKR				*e*S		16 13 32.7	+0.6

JMA 28 16:24:15.5±0.2, 35°.85N×140°.94E, h14km±2km, M2.2, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CHOJ	**Chosi**	**0.16**	**204**	P		16 24 19.3	-0.1
CHOJ				S		16 24 22.1	0.0
JHO	**Hitachi**	**0.82**	**339**	P		16 24 31.3	-0.1
JHO				S		16 24 42.3	-0.1

*IDC **28** 16:24:38.2±1.6, 35°.96N×141°.43E, h0km, mb3.6/5, mb1 3.7/8, mb1mx3.4/48, mbtmp3.7/8, ML3.5/3, MS3.7/1, Ms1 3.9/1, ms1mx2.3/38, Error ellipse: s-maj=43.5km s-min=19.5km az=74.0*
*ISCJB **28** 16:24:46.9±1.2, 36°.63N±0°.05×140°.81E±0°.10, h22km±5km, mb3.6/5, MS3.6/1, Error ellipse: s-maj=14.6km s-min=6.1km az=31.6*
*JMA **28** 16:24:48.8, 36°.70N×140°.61E, h7km±1km, M3.2*
JMA Felt I J1.
ISC 28 16:24:47.1±1.7, 36°.60N±0°.08×140°.74E±0°.09, h13km±7km, n21, σ0°.83/19, mb3.6/5, 3C, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JHO	**Hitachi**	**0.14**	**275**	⇑P		**16 24 51.1**	**+0.5**
JHO				S		**16 24 52.7**	**-0.4**
ONAJ	**Iwakimizuishiy**	**0.50**	**5**	P		**16 24 57.3**	**+0.3**
ONAJ				S		**16 25 03.3**	**-0.4**
JYT	**Yasato**	**0.58**	**230**	⇑P		**16 24 59.9**	**-1.1**
JYT				S		**16 25 07.8**	**+0.6**
JSB	**Shiboa**	**0.76**	**299**	⇑P		**16 25 01.2**	**-0.6**
JFK	**Kawauchi**	**0.77**	**8**	P		**16 25 02.0**	**-0.1**
JFT	**Otama**	**0.97**	**341**	P		**16 25 05.2**	**-0.7**
JFT				S		16 25 16.3	-2.3
JAG	**Ashikaga**	**1.05**	**261**	P		**16 25 06.6**	**-0.8**
JFY	**Yanaizu**	**1.16**	**314**	P		**16 25 08.2**	**-0.8**
MJAR	**Matsushiro Arr**	**2.04**	**269**	Pn		**16 25 22.2**	**+1.0**
	12nm,0.3s,baz=84,slow=15,SNR=41						
MJAR				Sn		**16 25 47.0**	**+0.5**
	17nm,0.3s,baz=98,slow=30,SNR=14						
MAT	**Matsushiro**	**2.04**	**269**	P		**16 25 22.5**	**+1.3**
MAT				S		**16 25 47.9**	**+1.3**
JHJ	**Hachijo jima 2**	**3.56**	**193**	Pn		16 25 29.3	-13
	36nm,0.3s,baz=324,slow=20,SNR=18						
JHJ				Sn		16 26 03.2	-21
	14nm,0.3s,baz=53,slow=20,SNR=3.5						
ASAJ	**Asahikawa**	**7.64**	**10**	Pn		**16 26 38.6**	**+0.6**
	0.3nm,0.3s,baz=221,slow=19,SNR=4.1						
H11S1	**WAKE ISLAND Hy 29.08**	**121**		T		17 01 20.5	
	baz=314,slow=76,SNR=32						
H11S3	**WAKE ISLAND Hy 29.09**	**121**		T		17 01 18.0	
	baz=314,slow=76,SNR=22						
H11S2	**WAKE ISLAND Hy 29.10**	**121**		T		17 01 19.2	
	baz=314,slow=76,SNR=26						
CMAR	**Chiang Mai Arr**	**40.87**	**255**	LR		16 50 52.9	
	comp=Z,90nm,19.6s,baz=220,slow=38						
ZALV	**Zalesovo Beam**	**41.81**	**313**	P		**16 32 36.3**	**+0.1**
	0.4nm,0.3s,baz=84,slow=5.9,SNR=3.4						
MKAR	**Makanchi Array**	**43.90**	**302**	P		**16 32 52.8**	**-0.5**
	0.6nm,0.7s,baz=87,slow=12,SNR=3.7						
KURBB	**Kurchatov Arra**	**45.85**	**308**	P		**16 33 08.0**	**-0.8**
	1.2nm,0.4s,baz=85,slow=7.8,SNR=5.2						
WRA	**Warramunga Arr**	**56.56**	**187**	P		16 34 17.6	-12
	0.2nm,0.3s,baz=5.6,slow=7.5,SNR=7.6						
ASAR	**Alice Springs**	**60.29**	**187**	P		16 34 45.4	-10
	0.3nm,0.8s,baz=0.9,slow=6.6,SNR=3.3						

JMA 28 16:30:04.4, 36°.70N×140°.63E, h7km, M2.5, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JHO	**Hitachi**	**0.10**	**209**	P		16 30 06.7	0.0
JHO				S		16 30 08.3	0.0
ONAJ	**Iwakimizuishiy**	**0.42**	**19**	P		16 30 12.7	+0.1
ONAJ				*e*S		16 30 18.4	+0.2
JFK	**Kawauchi**	**0.69**	**16**	P		16 30 17.4	-0.4
JFT	**Otama**	**0.85**	**344**	P		16 30 20.6	-0.1
MAT	**Matsushiro**	**1.96**	**266**	P		16 30 38.3	+0.3
MAT				S		16 31 04.1	-0.9

*NIED **28** 16:40:00, 36°.70N×142°.10E, h20km, Mw3.6 Best double couple: M0 3.31000×10^14 NP1:φs=208.00000°, δ14.00000°, λ108.00000°. NP2:φs=10.00000°, δ77.00000°, λ86.00000°.*
*IDC **28** 16:40:42.0±2.0, 36°.67N×142°.25E, h0km, mb3.5/4, mb1 3.6/7, mb1mx3.4/39, mbtmp3.6/7, ML3.4/3, Error ellipse: s-maj=44.5km s-min=23.6km az=81.0*
*JMA **28** 16:40:44.9±0.4, 36°.71N×142°.11E, h25km±5km, M3.8*
ISC 28 16:40:45.7±1.1, 36°.64N±0°.05×141°.82E±0°.08, h19km, n14, σ1s16/18, mb3.3/4, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.94**	**300**	P		**16 41 04.6**	**+0.6**
JFK	**Kawauchi**	**1.05**	**314**	P		**16 41 06.0**	**0.0**
JMM	**Marumori**	**1.47**	**327**	P		**16 41 11.4**	**+0.2**
JFT	**Otama**	**1.47**	**307**	P		**16 41 13.2**	**-0.9**
JFT				S		**16 41 34.1**	**+0.8**
JIO	**Ouri**	**1.85**	**349**	P		**16 41 16.6**	**+0.3**
JOU	**Okura**	**1.95**	**332**	P		**16 41 19.3**	**-1.3**
JOU				S		**16 41 44.4**	**-0.2**
MJAR	**Matsushiro Arr**	**2.91**	**269**	Pn		**16 41 34.7**	**-2.1**
	6.9nm,0.3s,baz=94,slow=9.4,SNR=71						
MAT	**Matsushiro**	**2.91**	**269**	P		**16 41 35.0**	**-1.9**
MAT				S		**16 42 12.1**	**0.0**
JHJ	**Hachijo jima 2**	**3.89**	**206**	Pn		**16 41 45.4**	**+1.0**
	10.0nm,0.3s,baz=334,slow=18,SNR=18						
JHJ				Sn		**16 42 29.6**	**0.0**
	22nm,0.3s,baz=270,slow=20,SNR=3.8						
ASAJ	**Asahikawa**	**7.49**	**4**	Pn		**16 42 32.2**	**-1.6**
	0.4nm,0.3s,baz=185,slow=28,SNR=5.6						
SONM	**Songino Array**	**28.27**	**304**	P		**16 46 39.3**	**+1.5**
	0.9nm,0.7s,baz=118,slow=11,SNR=5.4						
ZALV	**Zalesovo Beam**	**42.42**	**313**	P		**16 48 40.1**	**+1.3**
	0.2nm,0.3s,baz=98,slow=6.3,SNR=3.5						
MKAR	**Makanchi Array**	**44.60**	**303**	P		**16 48 57.4**	**+0.8**
	0.4nm,0.8s,baz=91,slow=9.7,SNR=4.0						
WRA	**Warramunga Arr**	**56.72**	**188**	P		**16 50 28.0**	**-0.1**
	0.3nm,1.0s,baz=5.9,slow=7.1,SNR=3.4						

*NIED **28** 16:43:00, 38°.60N×141°.90E, h38km, Mw3.7 Best double couple: M0 3.92000×10^14 NP1:φs=188.00000°, δ17.00000°, λ80.00000°. NP2:φs=19.00000°, δ73.00000°, λ93.00000°.*
*ISCJB **28** 16:43:50.8±1.0, 38°.58N±0°.04×142°.0E±0°.1, h51km±8km, mb3.5/6, Error ellipse: s-maj=14.9km s-min=6.0km az=12.7.*
*JMA **28** 16:43:52.3±0.1, 38°.62N×141°.91E, h49km±1km, M3.7*
JMA Felt II J1.
*IDC **28** 16:43:53.0±2.6, 38°.64N×141°.86E, h53km±24km, mb3.3/6, mb1 3.5/9, mb1mx3.3/37, mbtmp3.7/9, ML3.4/3, Error ellipse: s-maj=36.1km s-min=16.9km az=91.0*
ISC 28 16:43:51.9±1.6, 38°.58N±0°.05×142°.0E±0°.1, h44km±13km, n27, σ1s00/27, mb3.5/6, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**0.49**	**255**	P		**16 44 03.1**	**+0.4**
JIO				S		**16 44 10.2**	**-0.2**
OFUJ	**Ofunato**	**0.55**	**336**	P		**16 44 03.4**	**0.0**
OFUJ				S		**16 44 11.2**	**-0.4**
JMK	**Ichinoseki**	**0.69**	**303**	P		**16 44 05.3**	**+0.1**
JMK				S		**16 44 14.4**	**-0.4**
JOM	**Ohasama**	**1.03**	**330**	P		**16 44 09.9**	**0.0**
JOM				*e*S		**16 44 23.2**	**0.0**
JOU	**Okura**	**1.04**	**258**	P		**16 44 10.2**	**+0.2**
JOU				*e*S		**16 44 23.4**	**0.0**
JMM	**Marumori**	**1.16**	**233**	P		**16 44 11.7**	**0.0**
JMM				S		**16 44 26.1**	**-0.3**
JYK	**Kaneyama**	**1.30**	**286**	P		**16 44 13.6**	**+0.1**
JRG	**Rokugo**	**1.31**	**309**	P		**16 44 13.7**	**-0.1**
JFK	**Kawauchi**	**1.48**	**216**	P		**16 44 16.5**	**+0.4**
JFK				*e*S		**16 44 34.0**	**-0.3**
JYS	**Shirataka**	**1.53**	**257**	P		**16 44 17.2**	**+0.5**
MJAR	**Matsushiro Arr**	**3.61**	**237**	P		**16 44 47.5**	**+2.2**
	2.5nm,0.3s,baz=41,slow=12,SNR=12						
ASAJ	**Asahikawa**	**5.55**	**5**	P		**16 45 12.1**	**+0.2**
	1.2nm,0.3s,baz=197,slow=7.0,SNR=9.4						
JHJ	**Hachijo jima 2**	**5.73**	**199**	P		**16 45 14.0**	**-0.3**
	2.7nm,0.3s,baz=66,slow=20,SNR=4.0						
USRK	**Ussuriysk Ar.**	**9.36**	**310**	P		**16 46 07.0**	**+3.0**
	0.2nm,0.3s,baz=258,slow=21,SNR=5.0						
KSRS	**Korea Array**	**11.13**	**269**	P		16 46 32.5	+4.1
	0.1nm,0.3s,baz=80,slow=13,SNR=4.1						
SEY	**Seymchan**	**25.19**	**11**	P		**16 49 13.7**	**+0.8**
	1.3nm,0.8s,baz=215,slow=14,SNR=4.5						
H11N2	**WAKE ISLAND Hy 28.61**	**124**		T		17 20 11.5	
	baz=317,slow=75,SNR=34						
H11N1	**WAKE ISLAND Hy 28.62**	**124**		T		17 20 09.2	
	baz=317,slow=75,SNR=88						
H11N3	**WAKE ISLAND Hy 28.63**	**124**		T		17 20 09.9	
	baz=317,slow=75,SNR=61						
H11S1	**WAKE ISLAND Hy 29.38**	**126**		T		17 21 09.7	
	baz=318,slow=76,SNR=42						
H11S3	**WAKE ISLAND Hy 29.38**	**126**		T		17 21 01.8	
	baz=318,slow=76,SNR=60						
H11S2	**WAKE ISLAND Hy 29.39**	**126**		T		17 21 11.5	
	baz=318,slow=76,SNR=56						
ZALV	**Zalesovo Beam**	**41.21**	**311**	P		**16 51 31.8**	**-0.2**
	1.0nm,0.4s,baz=90,slow=5.9,SNR=7.3						
MKAR	**Makanchi Array**	**43.68**	**301**	P		**16 51 51.4**	**-0.8**
	0.4nm,0.5s,baz=86,slow=8.9,SNR=7.6						
WRA	**Warramunga Arr**	**58.65**	**188**	P		**16 53 44.0**	**-0.7**
	0.3nm,0.6s,baz=6.6,slow=7.2,SNR=4.8						
ASAR	**Alice Springs**	**62.38**	**188**	P		**16 54 11.8**	**+1.8**
	0.2nm,0.8s,baz=12,slow=4.8,SNR=3.3						
AKASG	**Malin Array Be**	**73.34**	**322**	P		**16 55 17.1**	**-1.6**
	0.2nm,0.3s,baz=38,slow=5.5,SNR=4.2						

*IDC **28** 16:45:00.6±1.2, 35°.33N×142°.65E, h0km, mb3.5/5, mb1 3.7/6, mb1mx3.4/36, mbtmp3.6/6, ML3.3/1, MS2.6/1, Ms1 2.6/1, ms1mx2.2/33, Error ellipse: s-maj=33.6km s-min=21.7km az=106.0*
*ISCJB **28** 16:45:05.7±1.0, 35°.3N±0°.1×142°.6E±0°.2, h56km, mb3.6/5, Error ellipse: s-maj=25.8km s-min=11.5km az=36.8*
ISC 28 16:45:07.6±1.2, 35°.3N±0°.2×142°.5E±0°.2, h56km, n7, σ1s77/7, mb3.6/5, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JHJ	**Hachijo jima 2**	**3.11**	**227**	Pn		**16 45 51.9**	**-2.3**
	9.3nm,0.3s,baz=65,slow=20,SNR=7.8						
JHJ				Sn		**16 46 31.1**	**+0.9**
	51nm,0.3s,baz=72,slow=22,SNR=8.9						
JCJ	**Chichijima**	**8.17**	**182**	LR		16 50 35.4	
	comp=Z,50nm,21.8s,baz=284,slow=41						
ZALV	**Zalesovo Beam**	**43.74**	**314**	P		**16 53 07.0**	**-0.1**
	0.6nm,0.4s,baz=94,slow=6.5,SNR=3.6						
MKAR	**Makanchi Array**	**45.80**	**304**	P		**16 53 25.4**	**+1.8**
	0.3nm,0.6s,baz=86,slow=10,SNR=3.2						
ILAR	**Eielson Array**	**50.52**	**32**	P		**16 53 58.8**	**-0.9**
	0.4nm,0.7s,baz=252,slow=5.6,SNR=3.4						
WRA	**Warramunga Arr**	**55.47**	**189**	P		**16 54 37.7**	**+1.1**
	0.6nm,0.6s,baz=7.4,slow=7.5,SNR=5.3						
ASAR	**Alice Springs**	**59.19**	**189**	P		**16 55 04.0**	**+1.2**
	0.2nm,0.4s,baz=1.9,slow=5.9,SNR=5.2						

IDC 28 16:51:33.2±1.9, 2°.41N×124°.78E, h0km, mb3.0/3, mb1 3.2/3, mb1mx3.1/35, mbtmp3.0/3, Error ellipse: s-maj=209.4km s-min=25.0km az=64.0, Celebes Sea

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
WRA	**Warramunga Arr**	**24.11**	**158**	P		16 56 50.0	-1.0
	0.2nm,0.6s,baz=336,slow=11,SNR=8.3						
ASAR	**Alice Springs**	**

mb1mx3.8/33,mbtmp3.7/8,ML3.3/3,MS3.0/3,Ms1 3.1/3, ms1mx2.8/25,Error ellipse: s-maj=33.6km s-min=20.3km az=25.0

ISCJB ***28*** *16:53:22.0±0.9,8.98S±0.07×80.69W±0.08,h33km, mb3.8/4,MS3.0/1,Error ellipse: s-maj=12.5km s-min=9.5km az=144.5*

ISC 28 16:53:24.5±1.1,8.91S±0.08×80.7W±0.1,h35km,n9, σ1§09/11,mb3.8/4,Off coast of northern Peru

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
ATAH	**Atahualpa**	**2.85**	**52**	Pn		**Pn**	**16 54 08.2**	**+0.1**
	1.6nm,0.3s,baz=223,slow=4.1,SNR=4.6							
ATAH				Sn		**Sn**	**16 54 41.7**	**+0.3**
	19nm,0.3s,baz=131,slow=6.5,SNR=7.9							
NNA	**Nana**	**4.84**	**129**	Pn		**Pn**	**16 54 35.1**	**+0.1**
	3.8nm,0.3s,baz=303,slow=12,SNR=7.8							
NNA				Sn		**Sn**	**16 55 28.3**	**-1.5**
	14nm,0.3s,baz=186,slow=4.7,SNR=7.2							
NNA				LR	LR		16 56 42.9	
	comp=Z,94nm,19.4s,baz=327,slow=41							
LPAZ	**La Paz**	**14.25**	**122**	Pn		**Pn**	**16 56 45.7**	**+1.2**
	0.1nm,0.3s,baz=264,slow=10,SNR=2.0							
LPAZ				LR	LR		17 02 49.2	
	comp=Z,88nm,19.7s,baz=19,slow=40							
SIV	**San Ignacio**	**20.37**	**112**	P		**P**	**16 57 59.1**	**+0.7**
	2.7nm,0.8s,baz=303,slow=12,SNR=6.7							
SIV				LR	LR		17 06 41.1	
	comp=Z,61nm,18.1s,baz=4.5,slow=39							
PTGA	**Pitinga**	**22.15**	**70**	P		**P**	**16 58 15.8**	**-1.8**
	1.9nm,0.4s,baz=255,slow=13,SNR=8.2							
PDAR	**Pinedale Array**	**57.80**	**335**	P		**P**	**17 03 12.2**	**-0.5**
	0.4nm,0.8s,baz=88,slow=4.6,SNR=3.3							
NVAR	**Mina Array Bea**	**58.72**	**326**	P		**P**	**17 03 18.5**	**-0.7**
	0.5nm,0.6s,baz=150,slow=6.2,SNR=3.8							
ILAR	**Eielson Array**	**88.19**	**337**	P		**P**	**17 06 11.7**	**0.0**
	0.8nm,0.9s,baz=149,slow=3.3,SNR=6.8							
WRA	**Warramunga Arr**	**135.18**	**230**	PKP		**PKPdf**	**17 12 42.5**	**+1.1**
	0.3nm,0.4s,baz=119,slow=2.1,SNR=8.3							

IDC 28 17:00:09.6±10.0,26.10S×179.81W,h478km±115km, mb3.1/3,mb1 3.3/4,mb1mx3.0/20,mbtmp4.1/4,Error ellipse: s-maj=91.3km s-min=44.6km az=25.0,South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
URZ	**Urewera**	**12.40**	**191**	P		P	17 02 52.4	0.0
	0.9nm,0.3s,baz=342,slow=13,SNR=3.9							
URZ				S		S	17 05 07.0	+0.3
	0.2nm,0.3s,baz=343,slow=19,SNR=2.7							
STKA	**Stephens Creek**	**34.12**	**251**	P		P	17 06 13.9	+0.3
	0.8nm,0.4s,baz=91,slow=12,SNR=7.0							
ASAR	**Alice Springs**	**41.90**	**263**	P		P	17 07 17.2	-0.1
	1.1nm,0.4s,baz=96,slow=8.2,SNR=42							
WRA	**Warramunga Arr**	**42.48**	**268**	P		P	17 07 21.4	-0.6
	1.4nm,0.4s,baz=107,slow=6.1,SNR=62							
NB2	**NORSAR Subarra**	**44.27**	**351**	PKP		PKPdf	17 18 52.1	+2.2
	comp=Z,1.3nm,1.1s,baz=17,slow=2.6							
NOA	**NORSAR Array B**	**44.27**	**351**	PKP		PKPdf	17 18 50.0	+0.1
	comp=Z,0.5nm,0.6s,baz=22,slow=2.6,SNR=4.1							

MEX 28 17:09:47.8±0.5,16.23N×97.79W,h37km±9km,MD3.6, Oaxaca

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
PNIG	**Pinotepa**	**0.36**	**296**	*i* P		Pn	17 09 55.1	-1.3
PNIG				*i* S		Sn	17 10 00.8	-2.4
VHO	**Vista Hermosa**	**1.31**	**50**	*e*P		Pn	17 10 08.0	-1.8
VHO				*e*S		Sn	17 10 24.1	-2.1
TLIG	**Tlapa**	**1.52**	**331**	*e*P		Pn	17 10 11.3	-1.2
TLIG				*i* S		Sn	17 10 28.6	-2.5
HUIG	**Huatulco**	**1.68**	**106**	*i* P		Pn	17 10 12.5	-2.2
HUIG				*e*S		Sn	17 10 33.3	-1.8
MEIG	**Mezcala**	**2.43**	**314**	*e*P		Pn	17 10 22.7	-2.3
MEIG				*e*S		Sn	17 10 51.1	-2.4
CAIG	**El Cayaco**	**2.51**	**289**	*e*P		Pn	17 10 24.7	-1.4
CAIG				*i* S		Sn	17 10 50.5	-4.9

NIED ***28*** *17:17:00,39.10N×142.40E,h35km,Mw4.2 Best double couple: M₀2.50000×10¹⁵ NP1:φ=20.00000°,δ9.00000°, λ-53.00000°. NP2:φ=163.00000°,δ82.00000°, λ-96.00000°.*

MOS ***28*** *17:17:53.8±1.2,39.17N×142.52E,h33km,mb4.4/25,Error ellipse: s-maj=9.3km s-min=6.4km az=86.4*

ISCJB ***28*** *17:17:54.4±0.6,39.13N±0.03×142.46E±0.05,h39km±4km, mb4.2/40,MS3.2/7,Error ellipse: s-maj=6.8km s-min=5.0km az=27.2*

JMA ***28*** *17:17:55.1±0.1,39.14N×142.39E,h35km±1km,M4.3 JMA Felt III J1.*

IDC ***28*** *17:17:58.0±2.0,39.09N×142.30E,h52km±18km,mb3.9/21, mb1 4.1/26,mb1mx4.0/46,mbtmp4.2/26,ML4.1/3,MS3.3/14, Ms1 3.3/14,ms1mx3.1/45,Error ellipse: s-maj=15.9km s-min=11.8km az=113.0*

NEIC ***28*** *17:17:58.2±0.9,39.09N×142.39E,h57km±8km,mb4.6/12, Error ellipse: s-maj=10.0km s-min=6.7km az=113.0*

NEIC Recorded [3 JMA] in Iwate.

ISC 28 17:17:55.4±1.0,39.12N±0.04×142.37E±0.06,h32km±6km, n100,σ1§05/96,mb4.2/40,MS3.3/7,9C-4D,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**0.55**	**266**	P		**Pb**	**17 18 06.5**	**-0.1**
OFUJ				S		**Sb**	**17 18 14.4**	**0.0**
MIYJ	**Miyakonagasawa**	**0.63**	**317**	P		**Pb**	**17 18 07.2**	**-0.8**
MIYJ				S		**Sb**	**17 18 15.9**	**-0.7**
JOM	**Ohasama**	**0.91**	**293**	P		**Pn**	**17 18 11.7**	**-0.2**
JOM				S		**Sn**	**17 18 23.7**	**-0.3**
JTH	**Tanohata**	**0.91**	**335**	P		**Pn**	**17 18 11.1**	**-0.9**
JTH				*e*S		**Sn**	**17 18 23.3**	**-0.7**
JMK	**Ichinoseki**	**0.91**	**260**	P		**Pn**	**17 18 11.9**	**-0.1**
JMK				S		**Sn**	**17 18 23.8**	**-0.2**
JIO	**Ouri**	**1.04**	**231**	P		**Pn**	**17 18 13.1**	**-0.6**
JKZ	**Kuzumaki**	**1.18**	**317**	P		**Pn**	**17 18 16.0**	**+0.2**
JKZ				S		**Sn**	**17 18 30.8**	**0.0**
JRG	**Rokugo**	**1.38**	**282**	P		**Pn**	**17 18 18.9**	**+0.5**
JRG				S		**Sb**	**17 18 37.1**	**-0.6**
JANG	**Nango**	**1.42**	**333**	P		**Pn**	**17 18 18.9**	**0.0**
JANG				*e*S		**Sn**	**17 18 36.8**	**+0.3**
ERM	**Erimo**	**2.96**	**11**	*e*P		**Pn**	**17 18 40.3**	**+0.2**
MAJO	**Matsushiro**	**4.18**	**233**	*de*P		Pn	17 19 00.6	+3.7
MAJO	**Matsushiro**	**4.18**	**233**	*e*P		**Pn**	**17 18 59.2**	**+2.3**
MAT	**Matsushiro**	**4.18**	**233**	P		**Pn**	**17 18 59.4**	**+2.5**
MAT				S		Sn	17 19 51.4	+6.7
MJAR	**Matsushiro Arr**	**4.18**	**233**	P		**Pn**	**17 18 59.6**	**+2.7**
	12nm,0.3s,baz=40,slow=11,SNR=172							
MJAR				LR	LR		17 20 48.0	
	comp=Z,639nm,18.7s,baz=50,slow=41							
ASAJ	**Asahikawa**	**5.00**	**2**	P		**Pn**	**17 19 09.2**	**+1.0**
	5.1nm,0.3s,baz=218,slow=8.4,SNR=33							
ASAJ				S		Sn	17 20 12.4	+7.6
	4.6nm,0.3s,baz=334,slow=25,SNR=5.7							
ASAJ				LR	LR		17 21 28.6	
	comp=Z,100nm,21.6s,baz=324,slow=42							
ASAJ	**Asahikawa**	**5.00**	**2**	*e*Pn		**Pn**	**17 19 10.0**	**+1.8**
ASAJ				S		Sn	17 20 12.4	+7.6
YUK	**Yuzh-Kuril'sk**	**5.57**	**27**	*i* P		**Pn**	**17 19 14.5**	**-1.4**
YUK				*i* S		Sn	17 20 12.0	-6.8
YUK				pmax	pmax			
	comp=Z,101nm,0.2s							
SHO	**Shikotan**	**5.81**	**34**	*i* P		**Pn**	**17 19 16.9**	**-2.4**
SHO				*i* S		Sn	17 20 17.3	-7.5
SHO				pmax	pmax			
	comp=Z,75nm,0.8s							
JHJ2	**Mitsune**	**6.34**	**200**	*e*P		**Pn**	**17 19 27.3**	**+0.7**
JHJ	**Hachijo jima 2**	**6.34**	**200**	P		**Pn**	**17 19 27.3**	**+0.7**
	comp=Z,32nm,0.3s,baz=284,slow=21,SNR=15							
JHJ				S		**Sn**	**17 20 35.4**	**-2.6**
	comp=Z,7.9nm,0.3s,baz=73,slow=19,SNR=3.1							
JHJ				LR	LR		17 22 14.5	
	comp=Z,225nm,19.6s,baz=84,slow=41							
KUR	**Kuril'sk**	**7.35**	**32**	*e*P		**Pn**	**17 19 39.7**	**-0.7**
KUR				*e*S		Sn	17 20 56.2	-6.4
KUR				pmax	pmax			
	comp=E,11nm,0.3s							
KUR				pmax	pmax			
	comp=Z,16nm,0.3s							
KUR				smax	smax			
	comp=N,56nm,0.4s							
KUR				smax	smax			
	comp=E,25nm,0.2s							
USRK	**Ussuriysk Ar.**	**9.28**	**307**	P		Pn	17 20 10.6	+3.8
	comp=E,0.3nm,0.3s,baz=112,slow=13,SNR=12							
USRK				LR		LR	17 23 25.9	
	comp=E,216nm,20.4s,baz=143,slow=35							
MDJ	**Mudanjiang**	**10.99**	**304**	*e*P		Pn	17 20 35.5	+5.1
	comp=E,20nm,1.3s							
KSRS	**Korea Array**	**11.48**	**266**	P		Pn	17 20 42.5	+5.6
	comp=E,0.4nm,0.3s,baz=83,slow=13,SNR=6.2							
KSRS				LR		LR	17 24 42.0	
	comp=E,180nm,18.8s,baz=91,slow=35							
KSAR	**Wonju Array Be**	**11.51**	**266**	P		Pn	17 20 42.6	+5.2
KSAR	**Wonju Array Be**	**11.51**	**266**	P		Pn	17 20 42.5	+5.1
KLR	**Kul'dur**	**12.65**	**327**	P		**Pn**	**17 20 54.8**	**+1.9**
	comp=E,0.1nm,0.3s,baz=112,slow=12,SNR=3.7							
KLR				LR		LR	17 25 45.7	
	comp=E,114nm,18.6s,baz=136,slow=37							
PETK	**Petropavlovsk-**	**17.52**	**32**	LR		LR	17 28 16.9	
	comp=E,78nm,20.4s,baz=205,slow=35							
MA2	**Magadan**	**21.16**	**12**	P		**P**	**17 22 37.4**	**-0.2**
	comp=E,6.4nm,0.7s,baz=225,slow=10,SNR=11							
MA2				LR		LR	17 31 02.6	
	comp=E,62nm,18.5s,baz=256,slow=37							
YAK	**Yakutsk**	**24.23**	**345**	P		**P**	**17 23 07.9**	**-1.0**
	comp=E,6.9nm,0.3s,baz=166,slow=0.9,SNR=6.3							
YAK				LR		LR	17 34 20.6	
	comp=E,57nm,18.6s,baz=162,slow=40							
SEY	**Seymchan**	**24.60**	**11**	P		**P**	**17 23 14.1**	**+1.7**
	comp=E,2.6nm,0.6s,baz=191,slow=8.8,SNR=17							
SEY	**Seymchan**	**24.60**	**11**	*e*P		**P**	**17 23 13.4**	**+1.0**
BOD	**Bodaibo**	**26.22**	**325**	*e*P		**P**	**17 23 25.4**	**-1.6**
BOD				*e*			17 24 29.1	
BOD				pmax	pmax			
	comp=Z,3.0nm,1.1s							
ULN	**Ulaanbaatar**	**26.88**	**301**	*e*P		**P**	**17 23 32.8**	**-0.5**
ULN				pmax	pmax			
	comp=Z,5.0nm,1.7s							
SONM	**Songino Array**	**27.32**	**300**	P		**P**	**17 23 37.5**	**+0.2**
	comp=Z,1.7nm,0.6s,baz=96,slow=9.5,SNR=7.4							
SONM				LR		LR	17 34 57.7	
	comp=Z,109nm,19.2s,baz=98,slow=37							
ENH	**Enshi**	**28.32**	**262**	*e*P		**P**	**17 23 45.0**	**-1.3**
	comp=Z,9.0nm,0.6s							
H11N2	**WAKE ISLAND Hy**	**28.65**	**125**	T		T	17 54 11.3	
	baz=318,slow=75,SNR=1115							
H11N1	**WAKE ISLAND Hy**	**28.66**	**125**	T		T	17 54 10.7	
	baz=318,slow=75,SNR=927							
H11N3	**WAKE ISLAND Hy**	**28.67**	**125**	T		T	17 54 11.4	
	baz=318,slow=75,SNR=786							
H11S1	**WAKE ISLAND Hy**	**29.44**	**127**	T		T	17 55 13.4	
	baz=319,slow=76,SNR=150							
H11S3	**WAKE ISLAND Hy**	**29.44**	**127**	T		T	17 55 13.6	
	baz=319,slow=76,SNR=137							
H11S2	**WAKE ISLAND Hy**	**29.45**	**127**	T		T	17 55 14.7	
	baz=319,slow=76,SNR=128							
TLY	**Talaya**	**29.59**	**308**	LR		LR	17 36 31.5	
	comp=Z,71nm,18.1s,baz=100,slow=38							
ZAK	**Zakamensk**	**29.63**	**305**	*e*P		**P**	**17 23 57.5**	**-0.3**
ZAK				pmax	pmax			
	comp=Z,3.0nm,1.1s							
BILL	**Bilibino**	**31.82**	**17**	*e*P		**P**	**17 24 16.6**	**-0.1**
BILL				*e*PPP		PPP	17 25 25.7	
BILL				pmax	pmax			
	comp=Z,5.0nm,1.5s							
TIXI	**Tiksi**	**33.32**	**352**	*e*P		**P**	**17 24 28.9**	**-0.9**
TIXI				pmax	pmax			
	comp=Z,4.0nm,2.0s							
ZALV	**Zalesovo Beam**	**41.10**	**311**	P		**P**	**17 25 36.2**	**+0.3**
	comp=Z,3.4nm,0.5s,baz=90,slow=7.8,SNR=27							
ZALV				PcP		**PcP**	**17 27 34.2**	**-0.9**
	comp=Z,0.5nm,0.5s,baz=136,slow=2.6,SNR=2.5							
ZALV	**Zalesovo Beam**	**41.10**	**311**	P		**P**	**17 25 36.3**	**+0.3**
ZALV							17 27 34.2	
ZALV				pmax	pmax			
	comp=Z,4.0nm,0.5s							
ZALV				pmax	pmax			
	comp=Z,1.0nm,0.5s							
NRIK	**Noril'sk**	**41.71**	**334**	LR		LR	17 43 49.7	
	comp=Z,41nm,18.7s,baz=115,slow=37							
CHTO	**Chiang Mai**	**42.56**	**254**	*e*P		**P**	**17 25 47.7**	**-0.6**
CHTO				pmax	pmax			
	comp=Z,3.0nm,0.8s							
CHTO	**Chiang Mai**	**42.56**	**254**	*e*P		**P**	**17 25 47.7**	**-0.6**
	comp=Z,3.1nm,0.8s							
CMAR	**Chiang Mai Arr**	**42.78**	**254**	P		**P**	**17 25 50.8**	**+0.7**
	comp=Z,1.7nm,0.7s,baz=45,slow=7.4,SNR=27							
LSA	**Lhasa**	**42.80**	**273**	*e*P		**P**	**17 25 51.8**	**+1.0**
LSA				pmax	pmax			
	comp=Z,4.0nm,0.8s							
LSA	**Lhasa**	**42.80**	**273**	*e*P		**P**	**17 25 51.8**	**+1.0**
	comp=Z,3.7nm,0.8s							
MKAR	**Makanchi Array**	**43.68**	**300**	P		**P**	**17 25 57.4**	**+0.2**
	comp=Z,4.6nm,0.8s,baz=85,slow=9.5,SNR=54							
MKAR				LR		LR	17 44 36.0	
	comp=Z,39nm,21.5s,baz=88,slow=37							
KURK	**Kurchatov**	**45.27**	**307**	*e*P		**P**	**17 26 09.4**	**-0.3**
KURK				pmax	pmax			
	comp=Z,22nm,0.8s							
KURK	**Kurchatov**	**45.27**	**307**	*e*P		**P**	**17 26 09.4**	**-0.3**
	comp=Z,22nm,0.8s							
ILAR	**Eielson Array**	**47.34**	**33**	P		**P**	**17 26 26.7**	**+0.9**
	comp=Z,3.4nm,0.6s,baz=264,slow=6.1,SNR=49							
ILAR				LR		LR	17 47 27.8	
	comp=Z,23nm,19.5s,baz=274,slow=37							
KSM	**Kuching**	**47.54**	**226**	*e*P		**P**	**17 26 28.5**	**+0.6**
	comp=Z,7.4nm,0.9s							
GUN	**Gumba**	**47.73**	**274**	*e*P		**P**	**17 26 30.3**	**+0.6**
	comp=Z,26nm,0.6s							
KKN	**Kakani**	**48.25**	**274**	*e*P		**P**	**17 26 34.2**	**+0.6**
	comp=Z,18nm,0.6s							
DMN	**Daman**	**48.47**	**274**	*e*P		**P**	**17 26 35.7**	**+0.3**
	comp=Z,13nm,0.9s							
GKN	**Gorkha**	**48.65**	**275**	*e*P		**P**	**17 26 36.7**	**+0.1**
	comp=Z,16nm,0.6s							
DOT	**Dot Lake**	**48.66**	**35**	*e*P		**P**	**17 26 36.3**	**+0.2**
	comp=Z,4.0nm,0.6s							
TKM2	**Tokmak 2**	**49.33**	**297**	*e*P		**P**	**17 26 42.6**	**+0.9**
TKM2				pmax	pmax			
	comp=Z,9.0nm,0.8s							
TKM2	**Tokmak 2**	**49.33**	**297**	*e*P		**P**	**17 26 42.6**	**+0.9**
	comp=Z,8.9nm,0.8s							
KOLN	**Koldanda**	**49.56**	**275**	*e*P		**P**	**17 26 43.9**	**+0.2**
	comp=Z,12nm,0.7s							
BRVK	**Borovoye**	**49.80**	**311**	*ce*P		**P**	**17 26 44.9**	**0.0**
BRVK				pmax	pmax			
	comp=Z,2.0nm,0.6s							
BRVK	**Borovoye**	**49.80**	**311**	*e*P		**P**	**17 26 45.1**	**+0.2**
	comp=Z,3.1nm,0.6s							
PYUN	**Piuthan**	**49.88**	**276**	*e*P		**P**	**17 26 46.5**	**+0.5**
	comp=Z,61nm,0.9s							
AAK	**Ala-Archa**	**50.19**	**297**	*de*P		**P**	**17 26 48.6**	**+0.4**
AAK				pmax	pmax			
	comp=Z,5.0nm,0.9s							
AAK	**Ala-Archa**	**50.19**	**297**	*e*P		**P**	**17 26 47.5**	**-0.7**
	comp=Z,2.0nm,0.6s							
INK	**Inuvik**	**52.19**	**28**	P		**P**	**17 27 04.0**	**+1.5**
	comp=Z,1.3nm,0.6s,baz=290,slow=8.4,SNR=9.0							
KKAR	**Karatay Array**	**52.76**	**299**	*e*P		**P**	**17 27 07.0**	**-0.2**
KKAR				pmax	pmax			
	comp=Z,2.0nm,0.6s							
KKAR	**Karatay Array**	**52.76**	**299**	*e*P		**P**	**17 27 07.0**	**-0.2**
	comp=Z,2.3nm,0.6s							
ARU	**Arti**	**55.31**	**318**	*c i*P		**P**	**17 27 24.8**	**-0.8**
ARU							17 28 24.0	
ARU							17 29 25.4	
ARU				S		**S**	**17 35 06.1**	**-1.2**
ARU				SS		**SS**	**17 38 46.7**	**-4.6**
ARU				pmax	pmax			
	comp=Z,7.0nm,0.6s							
ARU	**Arti**	**55.31**	**318**	*e*P		**P**	**17 27 25.6**	**-0.1**
	comp=Z,7.2nm,0.6s							
ABKAR	**Akbulak array**	**57.19**	**309**	*e*P		**P**	**17 27 38.8**	**-0.3**
	comp=Z,5.6nm,0.6s							
WRAB	**Tennant Creek**	**59.22**	**189**	*e*P		**P**	**17 27 52.8**	**-0.7**
WRAB	**Tennant Creek**	**59.22**	**189**	*e*P		**P**	**17 27 52.8**	**-0.7**
WRA	**Warramunga Arr**	**59.23**	**189**	P		**P**	**17 27 53.0**	**-0.6**
	comp=Z,5.3nm,0.5s,baz=6.5,slow=7.1,SNR=136							
WRA	**Warramunga Arr**	**59.23**	**189**	*ce*P		P	17 28 03.9	+10
WRA				pmax	pmax			
	comp=Z,4.0nm,0.4s							
YKA	**Yellowknife Ar**	**61.63**	**31**	P		**P**	**17 28 10.3**	**+0.8**
	comp=Z,0.3nm,0.6s,baz=297,slow=6.2,SNR=5.2							
ASAR	**Alice Springs**	**62.95**	**189**	P		**P**	**17 28 18.6**	**-0.2**
	comp=Z,2.0nm,0.7s,baz=14,slow=11,SNR=44							
GEYT	**Alibeck**	**63.50**	**298**	P		**P**	**17 28 22.4**	**-0.1**
	comp=Z,2.3nm,0.5s,baz=58,slow=3.7,SNR=6.3							
FINES	**FINESS Array B**	**67.33**	**332**	P		**P**	**17 28 46.9**	**+0.1**
	comp=Z,0.7nm,0.5s,baz=24,slow=9.4,SNR=6.1							
FINES	**FINESS Array B**	**67.33**	**332**	*i* P		**P**	**17 28 47.7**	**+1.0**
FINES				pmax	pmax			
	comp=Z,1.0nm,0.6s							
KIV	**Kislovodsk**	**70.12**	**311**	*e*P		**P**	**17 29 06.2**	**+1.6**
KIV				pmax	pmax			
	comp=Z,6.0nm,1.0s							
KBZ	**Khabaz**	**70.12**	**311**	P		**P**	**17 29 04.1**	**-0.4**
	comp=Z,1.3nm,0.4s,baz=78,slow=3.3,SNR=5.8							
NB2	**NORSAR Subarra**	**72.56**	**337**	P		**P**	**17 29 19.2**	**+0.2**
	comp=Z,0.8nm,0.6s,baz=40,slow=6.2							
NOA	**NORSAR Array B**	**72.56**	**337**	P		**P**	**17 29 19.3**	**+0.4**
	comp=Z,0.5nm,0.6s,baz=39,slow=6.0,SNR=4.8							
AKASG	**Malin Array Be**	**73.11**	**322**	P		**P**	**17 29 22.2**	**-0.1**
	comp=Z,2.9nm,0.4s,baz=44,slow=6.5,SNR=29							
KIEV	**Kiev**	**73.12**	**322**	*ce*P		**P**	**17 29 22.1**	**-0.3**
KIEV				pmax	pmax			
	comp=Z,2.0nm,0.9s							
NVAR	**Mina Array Bea**	**73.15**	**54**	P		**P**	**17 29 24.6**	**+1.5**
	comp=Z,0.7nm,0.7s,baz=307,slow=5.5,SNR=4.2							
PDAR	**Pinedale Array**	**75.68**	**46**	P		**P**	**17 29 38.3**	**+0.5**
	comp=Z,0.7nm,0.6s,baz=264,slow=2.0,SNR=9.6							
STHS	**Stebnicka Huta**	**77.69**	**325**	*e*pP		pP	17 29 56.8	-1.9
BRTR	**Keskin Array B**	**78.03**	**312**	P		**P**	**17 29 51.6**	**+0.7**
	comp=Z,0.5nm,0.6s,baz=101,slow=3.7,SNR=4.0							
BRTR	**Keskin Array B**	**78.03**	**312**	*ce*P		**P**	**17 29 51.2**	**+0.2**
CLL	**Collm**	**79.66**	**330**	*e*(P)		**P**	**17 30 00.0**	**+0.5**
CLL				*e*pP		**pP**	**17 30 09.0**	**-0.5**
TXAR	**Lajitas Array**	**88.26**	**53**	P		**P**	**17 30 44.5**	**+0.6**
	comp=Z,0.3nm,0.5s,baz=295,slow=3.7,SNR=5.1							

ISCJB ***28*** *17:24:48.7±0.4,16.83S±0.09×174.33W±0.08,h124km, mb4.4/17,Error ellipse: s-maj=15.4km s-min=7.2km az=141.6*

IDC ***28*** *17:24:50.8±2.3,16.95S×174.24W,h134km±21km, mb4.0/11,mb1 4.2/14,mb1mx3.9/36,mbtmp4.4/14,MS3.6/3, Ms1 3.6/3,ms1mx3.1/26,Error ellipse: s-maj=22.9km s-min=11.7km az=139.0*

NEIC ***28*** *17:24:51.1±1.2,16.93S×174.25W,h137km±12km,mb4.6/7, Error ellipse: s-maj=14.2km s-min=8.7km az=145.0*

ISC 28 17:24:49.7±0.5,17.05S±0.1×174.17W±0.10,h124km,n37, σ1§25/29,mb4.4/17,Tonga Islands

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
AFI	**Afiamalu**	**3.83**	**37**	P		**Pn**	**17 25 48.0**	**+0.9**
	89nm,0.3s,baz=171,slow=3.1,SNR=77							
AFI				S		**Sn**	**17 26 29.2**	**-2.5**
	147nm,0.3s,baz=45,slow=22,SNR=18							
AFI				LR	LR		17 26 50.3	
	comp=Z,311nm,19.1s,baz=316,slow=31							
MSVF	**Nonsavu**	**7.47**	**263**	*e*P		Pn	17 26 44.9	+8.8
	57nm,0.8s							
RAR	**Rarotonga**	**14.23**	**109**	P		**P**	**17 28 09.0**	**-0.2**
	1.2nm,0.3s,baz=258,slow=6.8,SNR=3.5							
DZM	**Mont Dzumac**	**18.96**	**251**	P		**Pn**	**17 29 02.9**	**-0.6**
	0.4nm,0.3s,baz=56,slow=15,SNR=4.3							
URZ	**Urewera**	**22.53**	**198**	P		**P**	**17 29 39.9**	**+0.7**
	12nm,0.4s,baz=284,slow=2.8,SNR=13							
URZ	**Urewera**	**22.53**	**198**	*e*P		**P**	**17 29 39.7**	**+0.5**
	22nm,0.6s							
PAE	**Paea**	**23.48**	**95**	*e*T		T	17 53 35.0	
	5.3nm,0.3s							
PPT2	**Papeete2**	**23.48**	**95**	*e*LR		LR	17 35 00.0	
	296nm,32.8s							
PPT2	**Papeete2**	**23.48**	**95**	*e*T		T	17 53 37.1	
	4.7nm,0.2s							
PPT	**Papeete**	**23.48**	**95**	LR		LR	17 37 03.4	
	comp=Z,95nm,19.5s,baz=284,slow=31							
TIAR	**Tiarei**	**23.70**	**95**	*e*T		T	17 53 52.3	
	3.5nm,0.3s							
TVO	**Taravao**	**23.79**	**96**	*e*T		T	17 53 57.9	
	2.1nm,0.3s							
RPZ	**Rata Peaks**	**29.44**	**202**	P		**P**	**17 30 42.1**	**+0.5**
	3.5nm,0.4s,baz=25,slow=5.4,SNR=4.7							
CTAO	**Charters Tower**	**37.59**	**259**	*e*P		**P**	**17 31 52.0**	**-0.5**
STKA	**Stephens Creek**	**42.62**	**241**	P		**P**	**17 32 33.9**	**0.0**
	8.1nm,0.6s,baz=85,slow=8.8,SNR=22							
WRAB	**Tennant Creek**	**48.77**	**258**	*e*P		**P**	**17 33 20.3**	**-2.1**
	3.0nm,0.5s							
WRA	**Warramunga Arr**	**48.78**	**258**	P		**P**	**17 33 21.1**	**-1.4**
	3.3nm,0.4s,baz=96,slow=7.0,SNR=117							
ASAR	**Alice Springs**	**48.94**	**253**	P		**P**	**17 33 22.6**	**-1.0**
	70nm,0.7s,baz=88,slow=8.5,SNR=530							
SOEI	**So

JOW	Kunigami	3.21	219	P		Pn	17 37 04.7	-1.3	
JIH	Iheya	3.24	225	P		Pn	17 37 05.3	-1.0	
JNTH	Nagotoyohara	3.60	218	P		Pn	17 37 10.3	-0.9	
JNU	Nakatsue	3.75	5	Pn		Pn	17 37 14.1	+0.7	
	7.5nm,0.3s,baz=200,slow=7.6,SNR=65								
JNU				Sn		Sn	17 37 55.9	-0.4	
	baz=198,slow=19,SNR=2.6								
KSAR	Wonju Array Be	8.34	345	Pn		Pn	17 38 15.2	-1.2	
KSRS	Korea Array	8.35	346	Pn		Pn	17 38 15.2	-1.2	
	0.1nm,0.3s,baz=200,slow=9.1,SNR=2.9								
KSRS				LR		LR	17 41 50.8		
	comp=Z,407nm,18.3s,baz=175,slow=40								
JHJ	Hachijo jima 2	8.77	62	LR		LR	17 41 23.7		
	comp=Z,247nm,21.3s,baz=46,slow=35								
MAJO	Matsushiro	9.63	40	*e*Pn		Pn	17 38 33.7	-0.3	
MJAR	Matsushiro Arr	9.63	40	Pn		Pn	17 38 34.1	0.0	
	1.0nm,0.3s,baz=242,slow=14,SNR=6.0								
USRK	Ussuriysk Ar.	14.85	4	LR		LR	17 45 29.8		
	comp=Z,141nm,21.0s,baz=167,slow=37								
ENH	Enshi	18.27	278	*e*P		Pn	17 40 29.7	+1.3	
	10nm,1.0s								
KLR	Kul'dur	19.85	2	P		P	17 40 44.0	-1.3	
	0.2nm,0.3s,baz=185,slow=5.8,SNR=12								
ULN	Ulaanbaatar	25.85	322	*e*P		P	17 41 45.5	-0.2	
	4.3nm,1.0s								
SONM	Songino Array	26.19	321	P		P	17 41 48.3	-0.4	
	1.2nm,0.7s,baz=142,slow=9.5,SNR=4.7								
SONM				LR		LR	17 53 27.3		
	comp=Z,221nm,20.2s,baz=102,slow=39								
PETK	Petropavlovsk-	30.97	32	LR		LR	17 55 22.0		
	comp=Z,61nm,20.7s,baz=257,slow=37								
MKAR	Makanchi Array	41.05	309	P		P	17 43 57.6	+0.3	
	0.2nm,0.4s,baz=89,slow=10,SNR=6.3								
MKAR				LR		LR	18 02 54.4		
	comp=Z,48nm,18.4s,baz=126,slow=39								
ZALV	Zalesovo Beam	41.06	320	P		P	17 43 56.5	-0.8	
	0.4nm,0.6s,baz=101,slow=7.9,SNR=5.3								
ZALV				LR		LR	18 02 55.7		
	comp=Z,171nm,18.4s,baz=78,slow=39								
KURK	Kurchatov	44.02	314	P		P	17 44 21.5	+0.2	
KURBB	Kurchatov Arra	44.06	314	P		P	17 44 21.5	-0.1	
	2.9nm,0.8s,baz=101,slow=8.9,SNR=17								
NRIK	Noril'sk	46.93	341	LR		LR	18 06 07.5		
	comp=Z,52nm,18.5s,baz=132,slow=38								
WRA	Warramunga Arr	49.17	175	P		P	17 45 01.2	-0.6	
	0.3nm,0.8s,baz=353,slow=8.0,SNR=4.6								
KKAR	Karatay Array	49.32	303	*e*P		P	17 45 03.0	0.0	
	1.3nm,0.7s								
BVAR	Borovoye Array	49.34	316	LR		LR	18 07 51.5		
	comp=Z,279nm,18.7s,baz=73,slow=38								
BRVK	Borovoye	49.41	316	*e*P		P	17 45 03.0	-0.4	
	4.9nm,1.0s								
ASAR	Alice Springs	52.83	176	P		P	17 45 30.1	+0.7	
	0.8nm,1.0s,baz=7.7,slow=13,SNR=8.0								
ABKAR	Akbulak array	56.02	312	*e*P		P	17 45 52.1	-0.3	
	3.7nm,0.8s								
ARU	Arti	56.22	321	LR		LR	18 12 27.2		
	comp=Z,112nm,20.3s,baz=57,slow=39								
ARU	Arti	56.22	321	*e*P		P	17 45 52.8	-0.9	
	4.4nm,1.2s								
AKTO	Aktyubinsk	57.11	313	LR		LR	18 12 40.1		
	comp=Z,207nm,18.5s,slow=38								
ILAR	Eielson Array	60.72	29	P		P	17 46 24.6	-0.3	
	0.8nm,0.9s,baz=291,slow=7.8,SNR=8.2								
STKA	Stephens Creek	61.82	169	P		P	17 46 32.5	0.0	
	1.8nm,1.0s,baz=338,slow=11,SNR=2.9								
KBZ	Khabaz	68.75	309	P		P	17 47 18.0	+0.5	
	2.2nm,0.9s,baz=30,slow=4.5,SNR=4.7								
FINES	FINESS Array B	71.13	331	LR		LR	18 22 08.0		
	comp=Z,131nm,18.1s,baz=93,slow=39								
AKASG	Malin Array Be	74.46	320	P		P	17 47 51.2	-0.5	
	0.3nm,0.3s,baz=62,slow=5.9,SNR=4.0								
YKA	Yellowknife Ar	74.83	26	P		P	17 47 54.3	+0.6	
	0.6nm,0.7s,baz=304,slow=5.5,SNR=12								
BRTR	Keskin Array B	76.70	308	P		P	17 48 05.5	+0.5	
	1.2nm,0.8s,baz=105,slow=5.7,SNR=8.0								
NOA	NORSAR Array B	77.39	334	P		P	17 48 08.2	-0.2	
	0.3nm,0.6s,baz=49,slow=5.7,SNR=3.4								
NVAR	Mina Array Bea	86.88	47	P		P	17 48 59.9	+1.1	
	1.3nm,0.7s,baz=291,slow=6.4,SNR=6.9								
PDAR	Pinedale Array	89.46	40	P		P	17 49 11.3	+0.4	
	0.7nm,0.8s,baz=259,slow=1.5,SNR=4.6								

NEIC ***28*** *17:41:56.1±1.6,8.88S×109.78E,h24km±11km,mb4.9/14, Error ellipse: s-maj=9.4km s-min=6.8km az=223.0*

NEIC Felt [II] at Bantul and Yogyakarta.

MOS ***28*** *17:41:57.1±1.2,8.73S×110.01E,h43km,mb5.0/17, Error ellipse: s-maj=14.2km s-min=7.1km az=112.3*

DJA ***28*** *17:41:57.7±0.7,9.3S×111.0E±*,h12km±5km,M4.9/27, mb4.8/26,mB5.3/15,MLv5.3/27,Mw(mB)4.7/15*

ISCJB ***28*** *17:41:59.0±0.5,8.91S±0.05×109.82E±0.02,h64km±4km, mb4.6/49,Error ellipse: s-maj=7.9km s-min=3.5km az=13.0*

IDC ***28*** *17:41:59.3±0.7,8.81S×109.94E,h47km±6km, mb4.3/21, mb1 4.4/23,mb1mx4.3/34, mbtmp4.5/23,MS3.9/19, Ms1 3.9/19,ms1mx3.7/36,Error ellipse: s-maj=17.2km s-min=10.6km az=63.0*

ISC 28 17:41:59.6±0.6, 8.83S±0.06×109.85E±0.03, h51km±5km, n166,σ1s74/172, mb4.7/49, MS3.9/16, 9C-5D, Jawa

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	h	Time m	s	Res ISC
				Op						
UGM	**Wanagama**	**1.13**	**36**	P		**Pn**	**17**	**42**	**19.6**	**+0.4**
UGM				S		**Sn**	**17**	**42**	**35.9**	**+2.2**
WOJI	**Wonogiri, Jawa**	**1.45**	**47**	P		**Pn**	**17**	**42**	**24.3**	**+0.8**
WOJI				S		**Sn**	**17**	**42**	**44.0**	**+2.6**
PCJI	**Pacitan**	**1.46**	**64**	P		**Pn**	**17**	**42**	**26.0**	**+2.4**
PCJI				S		**Sn**	**17**	**42**	**42.9**	**+1.3**
CMJI	**Cimerak**	**1.73**	**307**	P		**Pn**	**17**	**42**	**27.2**	**-0.1**
CMJI				S		**Sn**	**17**	**42**	**48.3**	**0.0**
PWJI	**Pagerwojo**	**2.10**	**68**	P		**Pn**	**17**	**42**	**32.7**	**+0.4**
PWJI				S		**Sn**	**17**	**42**	**52.9**	**-4.3**
NGJI	**Ngawi**	**2.16**	**48**	P		**Pn**	**17**	**42**	**36.5**	**+3.3**
NGJI				S		Sn	17	43	10.9	+12
CISI	**Cisompet, Garu**	**2.38**	**302**	P		**Pn**	**17**	**42**	**36.1**	**-0.1**
CISI				S		**Sn**	**17**	**43**	**04.0**	**-0.2**
CISI	**Cisompet, Garu**	**2.38**	**302**	*e*Pn		**Pn**	**17**	**42**	**35.4**	**-0.8**
TBJI	**Tambak Boyo**	**2.82**	**45**	P		**Pn**	**17**	**42**	**45.1**	**+2.9**
LEM	**Lembang**	**2.98**	**312**	P		Pn	17	42	53.2	+8.7
	82nm,0.3s,baz=68,slow=14,SNR=85									
LEM				S		Sn	17	43	30.2	+11
	112nm,0.3s,baz=27,slow=21,SNR=11									
LEM				LR		LR	17	44	21.5	
	comp=Z,3μm,18.0s,baz=162,slow=47									
LEM	**Lembang**	**2.98**	**312**	P		**Pn**	**17**	**42**	**46.5**	**+2.0**
CNJI	**Cibinong**	**3.09**	**299**	P		**Pn**	**17**	**42**	**45.9**	**0.0**
GMJI	**Gumukmas**	**3.60**	**81**	P		**Pn**	**17**	**42**	**54.9**	**+2.0**
GMJI				S		**Sn**	**17**	**43**	**39.9**	**+5.7**
SKJI	**Sukabumi**	**3.73**	**299**	P		**Pn**	**17**	**42**	**56.3**	**+1.6**
SKJI				S		**Sn**	**17**	**43**	**41.4**	**+3.9**
TNG	**Tangerang**	**4.13**	**310**	P		**Pn**	**17**	**43**	**01.4**	**+1.2**
TNG				S		**Sn**	**17**	**43**	**52.2**	**+4.9**
JAGI	**Jajag, Banyuwa**	**4.27**	**85**	P		**Pn**	**17**	**43**	**03.2**	**+1.0**
JAGI	**Jajag, Banyuwa**	**4.27**	**85**	*e*Pn		**Pn**	**17**	**43**	**02.4**	**+0.2**
XMIS	**Christmas Isla**	**4.45**	**248**	*e*Pn		Pn	17	42	59.3	-5.3
ABJI	**Asem Bagus**	**4.46**	**77**	P		**Pn**	**17**	**43**	**07.3**	**+2.5**
SBJI	**Serang**	**4.57**	**306**	P		**Pn**	**17**	**43**	**08.1**	**+1.9**
CGJI	**Cibinong**	**4.67**	**298**	P		**Pn**	**17**	**43**	**08.4**	**+0.8**
DNP	**Denpasar**	**5.30**	**89**	P		**Pn**	**17**	**43**	**18.2**	**+1.9**
	626nm,0.8s,11μm7.0nm									
SRBI	**Singaraja**	**5.36**	**82**	P		**Pn**	**17**	**43**	**17.9**	**+0.8**
	233nm,0.8s,3μm2.2nm									
BLSI	**Bandar Lampung**	**5.72**	**307**	P		**Pn**	**17**	**43**	**22.8**	**+0.8**
KASI	**Kota Agung**	**6.24**	**301**	P		**Pn**	**17**	**43**	**30.1**	**+0.9**
	142nm,1.1s,2μm0.8nm									
KLI	**Kotabumi**	**6.33**	**308**	P		**Pn**	**17**	**43**	**30.7**	**+0.3**
	180nm,0.9s,2μm0.8nm									
PBKI	**Pangkalan Bun**	**6.35**	**17**	P		**Pn**	**17**	**43**	**33.4**	**+2.7**
	239nm,0.9s,2μm1.6nm									
LWLI	**Liwa**	**6.88**	**303**	P		**Pn**	**17**	**43**	**39.5**	**+1.4**
TWSI	**Taliwang, Sumb**	**6.95**	**90**	P		**Pn**	**17**	**43**	**40.2**	**+1.2**
	104nm,0.6s,3μm0.8nm									
MDSI	**Maura Dua**	**7.09**	**307**	P		**Pn**	**17**	**43**	**43.0**	**+2.1**
	62nm,1.2s,855nm0.2nm									
BBKI	**Banjar Baru**	**7.29**	**43**	P		**Pn**	**17**	**43**	**46.3**	**+2.8**
PPBI	**Pangkal Pinang**	**7.59**	**331**	P		**Pn**	**17**	**43**	**51.6**	**+4.0**
	56nm,1.1s,720nm0.3nm									
PMBI	**Palembang**	**7.74**	**319**	P		**Pn**	**17**	**43**	**52.0**	**+2.3**
PLAI	**Plampang**	**7.84**	**91**	P		**Pn**	**17**	**43**	**51.7**	**+0.6**
	334nm,0.9s,2μm1.4nm									
LHSI	**Lahat**	**8.01**	**308**	P		**Pn**	**17**	**43**	**55.2**	**+1.7**
STKI	**Sintang**	**8.99**	**10**	P		**Pn**	**17**	**44**	**11.6**	**+4.8**
	30nm,1.4s,4μm									

KSM	**Kuching**	**10.25**	**3**	Pn		**Pn**	**17**	**44**	**20.8**	**-3.3**
	13nm,1.0s									
KAPI	**Kappang**	**10.54**	**70**	P		**Pn**	**17**	**44**	**27.2**	**-0.8**
	0.8nm,0.3s,baz=55,slow=22,SNR=6.9									
KAPI				LR		LR	17	48	59.3	
	comp=Z,696nm,21.5s,baz=326,slow=40									
KAPI	**Kappang**	**10.54**	**70**	Pn		**Pn**	**17**	**44**	**24.0**	**-4.1**
	68nm,1.2s									
BSSI	**Bau Bau, Buton**	**10.88**	**77**	P		**Pn**	**17**	**44**	**35.0**	**+2.2**
SPSI	**Sidrap Palu**	**10.98**	**64**	P		Pn	17	44	39.6	+5.5
MMRI	**Maumere**	**12.25**	**90**	P		**Pn**	**17**	**44**	**50.8**	**-0.7**
	65nm,1.0s,1μm									
MMRI	**Maumere**	**12.25**	**90**	*e*Pn		**Pn**	**17**	**44**	**47.2**	**-4.3**
	27nm,0.5s									
BKNI	**Bangkinang**	**12.64**	**316**	P		**Pn**	**17**	**44**	**58.6**	**+1.8**
SOEI	**Soe**	**14.26**	**95**	P		**Pn**	**17**	**45**	**16.0**	**-3.0**
SOEI	**Soe**	**14.26**	**95**	*e*Pn		**Pn**	**17**	**45**	**14.5**	**-4.5**
	71nm,0.8s									
MRSI	**Marisa**	**15.19**	**53**	P		**P**	**17**	**45**	**34.4**	**-0.7**
	30nm,0.8s									
MBWA	**Marble Bar**	**15.52**	**143**	*e*Pn		Pn	17	45	27.9	-7.4
PSI	**Prapat**	**15.88**	**316**	LR		LR	17	52	32.8	
	comp=Z,734nm,20.8s,baz=131,slow=40									
SANI	**Sanana**	**17.41**	**68**	P		**P**				
	45nm,1.0s									
FITZ	**Fitzroy Crossi**	**17.90**	**123**	P		**Pn**	**17**	**46**	**02.5**	**-2.5**
	0.4nm,0.3s,baz=304,slow=6.8,SNR=13									
FITZ				S		Sn	17	49	06.5	-17
	0.6nm,0.3s,baz=110,slow=17,SNR=8.0									
FITZ				LR		LR	17	53	57.7	
	comp=Z,272nm,18.4s,baz=302,slow=40									
NLAI	**Namlea**	**18.03**	**73**	P		Pn	17	46	14.3	+7.7
LBMI	**Labuha**	**19.37**	**66**	P		**Pn**	**17**	**46**	**23.4**	**+0.6**
	117nm,1.0s,923nm									
TNTI	**Ternate**	**19.89**	**62**	P		**Pn**	**17**	**46**	**30.5**	**+1.5**
	82nm,1.3s,1μm									
TNTI	**Ternate**	**19.89**	**62**	*e*P		**Pn**	**17**	**46**	**29.1**	**+0.1**
	101nm,1.0s									
BNDI	**Bandanaira**	**20.37**	**79**	P		Pn	17	46	34.9	+0.2
DAV	**Davao City (W)**	**22.26**	**45**	LR		LR	17	55	53.6	
	comp=Z,264nm,21.6s,baz=218,slow=38									
NWAO	**Narrogin (SRO)**	**24.93**	**165**	P		**P**	**17**	**47**	**16.9**	**-1.2**
	20nm,0.8s,baz=266,slow=0.2,SNR=7.1									
WRA	**Warramunga Arr**	**26.13**	**118**	P		**P**	**17**	**47**	**28.6**	**-0.5**
	9.0nm,0.7s,baz=291,slow=11,SNR=64									
WRA				LR		LR	17	59	18.8	
	comp=Z,172nm,19.8s,baz=255,slow=40									
WRAB	**Tennant Creek**	**26.13**	**118**	*c i*	P	**P**	**17**	**47**	**29.1**	**-0.1**
WRAB					pmax	pmax				
	comp=Z,27nm,0.7s									
WRAB	**Tennant Creek**	**26.13**	**118**	*e*P		**P**	**17**	**47**	**28.2**	**-0.9**
	comp=Z,9.8nm,0.6s									
ASAR	**Alice Springs**	**27.34**	**126**	P		**P**	**17**	**47**	**39.0**	**-1.0**
	comp=Z,4.1nm,0.7s,baz=306,slow=11,SNR=36									
ASAR					PcP	**PcP**	**17**	**50**	**59.4**	**+0.9**
	comp=Z,1.5nm,0.6s,baz=320,slow=1.5,SNR=8.3									
ASAR					pPcP		17	51	14.6	
	comp=Z,1.8nm,0.8s,baz=310,slow=2.1,SNR=5.6									
ASAR				LR		LR	18	00	03.1	
	comp=Z,238nm,18.5s,baz=305,slow=40									
CMAR	**Chiang Mai Arr**	**29.17**	**338**	P		**P**	**17**	**47**	**55.9**	**-0.5**
	comp=Z,0.8nm,0.6s,baz=175,slow=8.1,SNR=8.3									
CMAR					PcP	**PcP**	**17**	**51**	**04.8**	**+1.9**
	comp=Z,1.3nm,0.8s,baz=202,slow=3.1,SNR=6.4									
CMAR					pPcP		17	51	19.9	
	comp=Z,2.7nm,0.8s,baz=202,slow=3.2,SNR=10.0									
CMAR				LR		LR	18	01	00.0	
	comp=Z,260nm,20.4s,baz=163,slow=39									
CMAR	**Chiang Mai Arr**	**29.17**	**338**	*ce*P		**P**	**17**	**47**	**58.5**	**+2.2**
CMAR					pmax	pmax				
	comp=Z,2.0nm,0.7s									
CHTO	**Chiang Mai**	**29.50**	**339**	*e*P		**P**	**17**	**47**	**56.8**	**-2.4**
CHTO					pmax	pmax				
	comp=Z,2.0nm,0.6s									
CHTO	**Chiang Mai**	**29.50**	**339**	*e*P		**P**	**17**	**47**	**56.8**	**-2.4**
	comp=Z,1.9nm,0.6s									
H08S2	**Diego Garcia H**	**36.98**	**269**	T		T	18	27	44.5	
	baz=93,slow=76,SNR=26									
H08S3	**Diego Garcia H**	**36.99**	**269**	T		T	18	27	45.4	
	baz=93,slow=76,SNR=50									
H08S1	**Diego Carcia H**	**37.00**	**269**	T		T	18	28	14.2	
	baz=93,slow=76,SNR=26									
STKA	**Stephens Creek**	**37.33**	**132**	P		**P**	**17**	**49**	**07.0**	**-0.3**
	comp=Z,9.6nm,0.6s,baz=308,slow=8.4,SNR=57									
STKA					PcP	**PcP**	**17**	**51**	**26.6**	**+0.9**
	comp=Z,3.7nm,0.6s,baz=307,slow=2.5,SNR=3.0									
STKA					pPcP		17	51	42.0	
	comp=Z,4.7nm,0.5s,baz=324,slow=4.4,SNR=3.9									
STKA				LR		LR	18	04	35.4	
	comp=Z,243nm,21.6s,baz=316,slow=36									
SHL	**Shillong**	**38.40**	**333**	*e*P		**P**	**17**	**49**	**19.0**	**+2.5**
ENH	**Enshi**	**38.88**	**360**	P		**P**	**17**	**49**	**19.5**	**-0.7**
HYB	**Hyderabad**	**40.46**	**310**	*i* P		**P**	**17**	**49**	**33.0**	**-0.6**
LSA	**Lhasa**	**42.33**	**336**	P		**P**	**17**	**49**	**50.5**	**+1.3**
LSA					pmax	pmax				
	comp=Z,11nm,0.7s									
LSA	**Lhasa**	**42.33**	**336**	*e*P		**P**	**17**	**49**	**49.5**	**+0.3**
LSA					pmax	pmax				
	comp=Z,7.0nm,0.6s									
LSA	**Lhasa**	**42.33**	**336**	*e*P		**P**	**17**	**49**	**49.5**	**+0.3**
	comp=Z,7.2nm,0.6s									
XAN	**Xi'an**	**42.64**	**359**	P		**P**	**17**	**49**	**51.0**	**-0.2**
XAN					pP	pP	17	49	58.0	-6.8
XAN					S	S	17	54	52.5	-78
XAN					pmax	pmax				
	comp=Z,6.0nm,0.8s									
XAN				LR		LR				
	comp=E,140nm,16.2s									
XAN				LR		LR				
	comp=Z,170nm,21.3s									
GUN	**Gumba**	**43.27**	**328**	*e*P		**P**	**17**	**49**	**56.1**	**-0.6**
	comp=Z,12nm,0.6s									
DMN	**Daman**	**43.43**	**327**	*e*P		**P**	**17**	**49**	**57.7**	**-0.3**
	comp=Z,9.6nm,0.6s									
GKN	**Gorkha**	**43.99**	**327**	*e*P		**P**	**17**	**50**	**01.9**	**-0.5**
	comp=Z,4.0nm,0.3s									
KOLN	**Koldanda**	**44.38**	**326**	*e*P		**P**	**17**	**50**	**05.3**	**-0.2**
	comp=Z,12nm,0.6s									
POO	**Poona**	**44.73**	**308**	*ex*		**P**	**17**	**50**	**06.0**	**-2.2**
PYUN	**Piuthan**	**44.97**	**326**	*e*P		**P**	**17**	**50**	**10.4**	**+0.2**
GTA	**Gaotai**	**48.89**	**350**	*e*P		**P**	**17**	**50**	**42.5**	**+1.9**
GTA					pP	pP	17	50	47.3	-7.0
GTA					sP	sP	17	50	49.5	-11
GTA					pmax	pmax				
	comp=Z,3.0nm,1.1s									
KSAR	**Wonju Array Be**	**49.03**	**19**	P		**P**	**17**	**50**	**42.3**	**+0.8**
KSAR	**Wonju Array Be**	**49.03**	**19**	P		**P**	**17**	**50**	**42.2**	**+0.8**
KSRS	**Korea Array**	**49.06**	**19**	P		**P**	**17**	**50**	**42.2**	**+0.6**
	comp=Z,2.5nm,0.8s,baz=204,slow=7.6,SNR=6.5									
MAJO	**Matsushiro**	**52.41**	**29**	*e*P		**P**	**17**	**51**	**04.3**	**-2.7**
MAJO					pmax	pmax				
	comp=Z,53nm,1.0s									
MAT	**Matsushiro**	**52.41**	**29**	P		**P**	**17**	**51**	**05.9**	**-1.1**
MJAR	**Matsushiro Arr**	**52.41**	**29**	P		**P**	**17**	**51**	**06.0**	**-1.0**
	comp=Z,8.4nm,0.9s,baz=206,slow=8.0,SNR=24									
USRK	**Ussuriysk Ar.**	**56.47**	**19**	P		**P**	**17**	**51**	**36.1**	**-0.1**
	comp=Z,6.7nm,0.7s,baz=205,slow=3.6,SNR=16									
SONM	**Songino Array**	**56.50**	**357**	P		**P**	**17**	**51**	**36.7**	**+0.1**
	comp=Z,1.4nm,0.5s,baz=174,slow=8.9,SNR=6.1									
SONM					PcP	**PcP**	**17**	**52**	**32.9**	**0.0**
	comp=Z,2.2nm,0.9s,baz=163,slow=3.3,SNR=3.6									
ULN	**Ulaanbaatar**	**56.50**	**358**	*d*	P	**P**	**17**	**51**	**36.4**	**-0.3**
ULN					pmax	pmax				
	comp=Z,1.0nm,1.0s									
KSH	**Kashi**	**57.45**	**329**	*e*P		**P**	**17**	**51**	**42.3**	**-1.2**
TKM2	**Tokmak 2**	**60.23**	**332**	*e*P		**P**	**17**	**52**	**02.0**	**-0.8**
TKM2					pmax	pmax				
	comp=Z,10.0nm,0.9s									
TKM2	**Tokmak 2**	**60.23**	**332**	*e*P		**P**	**17**	**52**	**02.0**	**-0.8**
	comp=Z,9.9nm,0.9s									
AAK	**Ala-Archa**	**60.53**	**331**		*e*P	**P**	**17**	**52**	**05.1**	**+0.2**
AAK					pmax	pmax				
	comp=Z,7.0nm,1.0s									
MKAR	**Makanchi Array**	**60.58**	**339**	P		**P**	**17**	**52**	**04.9**	**0.0**
	comp=Z,3.0nm,0.6s,baz=149,slow=7.8,SNR=44									
MKAR				LR		LR	18	20	18.6	
	comp=Z,63nm,21.8s,baz=137,slow=38									
EKS2	**Erkin-Say**	**60.91**	**330**	*e*P		**P**	**17**	**52**	**06.3**	**-1.1**
EKS2					pmax	pmax				
	comp=Z,5.0nm,0.8s									
EKS2	**Erkin-Say**	**60.91**	**330**	*e*P		**P**	**17**	**52**	**06.3**	**-1.1**
	comp=Z,5.2nm,0.8s									
KLR	**Kul'dur**	**60.93**	**16**	*i* P		**P**	**17**	**52**	**06.7**	**-0.5**
KURK	**Kurchatov**	**65.20**	**339**	*e*P		**P**	**17**	**52**	**35.2**	**-0.3**
KURK					pmax	pmax				
	comp=Z,13nm,0.9s									
KURK	**Kurchatov**	**65.20**	**339**	*e*P		**P**	**17**	**52**	**35.2**	**-0.3**
	comp=Z,13nm,0.9s									
ZALV	**Zalesovo Beam**	**66.03**	**344**	P		**P**	**17**	**52**	**40.3**	**-0.4**
	comp=Z,4.1nm,0.4s,baz=143,slow=3.6,SNR=27									
MAW	**Mawson**	**66.47**	**198**	P		**P**	**17**	**52**	**43.7**	**+0.3**
	comp=Z,7.3nm,0.7s,baz=65,slow=5.2,SNR=23									
MAW				LR		LR	18	15	14.2	
	comp=Z,128nm,21.8s,baz=62,slow=30									
BOD	**Bodaibo**	**66.51**	**2**	*e*P		**P**	**17**	**52**	**42.5**	**-1.2**
BOD					pmax	pmax				
	comp=Z,40nm,1.2s									
GEYT	**Alibeck**	**67.00**	**318**	P		**P**	**17**	**52**	**47.7**	**+0.2**
	comp=Z,11nm,1.0s,baz=147,slow=6.5,SNR=24									
GEYT				LR		LR	18	24	12.7	
	comp=Z,84nm,21.1s,baz=150,slow=38									
NVS	**Novosibirsk**	**67.25**	**344**	*e*P		**P**	**17**	**52**	**47.7**	**-0.8**
BRVK	**Borovoye**	**70.23**	**336**	*d*	P	**P**	**17**	**53**	**06.4**	**-0.7**
BRVK					pmax	pmax				
	comp=Z,6.0nm,1.2s									
BRVK	**Borovoye**	**70.23**	**336**	*e*P		**P**	**17**	**53**	**07.0**	**-0.1**
	comp=Z,4.9nm,1.0s									
YAK	**Yakutsk**	**72.31**	**10**	*e*P		**P**	**17**	**53**	**18.6**	**-0.9**
YAK				*e*			17	53	33.2	
YAK				*e*			17	56	04.3	
YAK				*e*S		**S**	**18**	**02**	**35.0**	**-3.7**
YAK				*e*			18	03	16.5	
YAK				*e**SS		**SKKSac**	**18**	**03**	**19.6**	**0.0**
YAK				*e*SS		**SS**	**18**	**07**	**12.8**	**-5.1**
YAK					pmax	pmax				
	comp=Z,29nm,0.9s									
YAK					pmax	pmax				
	comp=N,7.0nm,1.0s									
YAK					pmax	pmax				
	comp=E,4.0nm,1.3s									
YAK					pmax	pmax				
	comp=Z,32nm,2.8s									
YAK					pmax	pmax				
	comp=N,23nm,2.8s									
YAK					pmax	pmax				
	comp=E,33nm,3.3s									
YAK					smax	smax				
	comp=E,42nm,2.6s									
YAK					smax	smax				
	comp=N,43nm,2.6s									
YAK	**Yakutsk**	**72.31**	**10**	*e*P		**P**	**17**	**53**	**18.7**	**-0.9**
	comp=N,36nm,0.8s									
ABKAR	**Akbulak array**	**72.43**	**328**	*e*P		**P**	**17**	**53**	**20.7**	**+0.2**
	comp=N,22nm,0.9s									
KMBO	**Kilima Mbogo**	**72.63**	**272**	P		**P**	**17**	**53**	**24.3**	**+1.5**
	comp=N,1.0nm,0.4s,baz=127,slow=3.7,SNR=5.3									
KMBO				LR		LR	18	20	07.3	
	comp=N,170nm,20.4s,baz=93,slow=32									
KMBO	**Kilima Mbogo**	**72.63**	**272**	*i* P		**P**	**17**	**53**	**24.7**	**+1.9**
KMBO					pmax	pmax				
	comp=Z,1.0nm,0.4s									
VNDA	**V

TXAR				PKP	**PKPdf**	**18 01 27.9**	**+0.1**
	comp=Z,0.8nm,0.9s,baz=267,slow=0.9,SNR=5.2							
CPUP	**Villa Florida**	**142.89**	**199**	PKP	**PKPdf**	**18 01 28.0**	**-0.3**
	comp=Z,1.3nm,0.7s,baz=79,slow=3.8,SNR=3.2							
ABTX	**Abilene, Hawle**	**143.88**	**45**	PKPdf	PKPbc	18 01 28.2	+0.5
JCT	**Junction City**	**144.93**	**48**	*e*PKIKP	**PKPdf**	**18 01 32.4**	**+0.6**
JCT	**Junction City**	**144.93**	**48**	*e*PKPdf	**PKPdf**	**18 01 32.4**	**+0.6**
WHTX	**Lake Whitney,**	**145.75**	**44**	*e*PKPbc	**PKPab**	**18 01 35.2**	**+1.2**
MIAR	**Mount Ida**	**146.58**	**37**	*e*PKP2	**PKPab**	**18 01 36.8**	**-0.3**
MIAR	**Mount Ida**	**146.58**	**37**	*e*PKPbc	**PKPab**	**18 01 36.8**	**-0.3**
LPAZ	**La Paz**	**154.96**	**185**	PKP	**PKPdf**	**18 01 49.6**	**+1.0**
	comp=Z,0.9nm,0.8s,baz=58,slow=5.1,SNR=4.5							
LPAZ				PKPbc	**PKiKP**	**18 01 58.8**	**+1.4**
	comp=Z,0.6nm,0.5s,baz=29,slow=3.0,SNR=4.0							
LPAZ				pPKPbc	**pPKPbc**	**18 02 13.2**	**+0.4**
	comp=Z,1.9nm,0.6s,baz=182,slow=2.4,SNR=4.7							

ISCJB ***28*** *17:44:59.0±0.4,59°.02N±0°.03×23°.08E±0°.04, h0km, Error ellipse: s-maj=3.9km s-min=3.3km az=171.8*
IDC ***28*** *17:44:58.7±3.3,58°.85N×23°.38E, h0km, mb1 3.0/3, mb1mx2.9/33, mbtmp2.9/3, ML2.6/3, Error ellipse: s-maj=38.4km s-min=12.8km az=163.0*
CSEM ***28*** *17:44:59.9±0.2,59°.00N×23°.14E, h2km, ML1.8, Error ellipse: s-maj=5.1km s-min=3.9km az=177.0, Mining explosion.*
HEL ***28*** *17:45:00.2±0.1,58°.99N×23°.05E, h0km, ML1.8, ML2.1(UPP), Explosion*
UPP ***28*** *17:45:01.9±2.1,59°.14N×22°.86E, h0km, ML2.1, Suspected explosion*

ISC 28 17:44:59.4±0.8, 59°.01N±0°.03×23°.11E±0°.03, h0km, n54, σ0s88/72, Baltic States-Belarus-Northwestern Russia

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
MTSE	**Matsula**	**0.47**	**129**	*e*P	**Pg**	**17 45 08.5**	**0.0**
MTSE				*e*S	**Sg**	**17 45 15.2**	**+0.6**
MTSE	**Matsula**	**0.47**	**129**	P	**Pg**	**17 45 08.4**	**0.0**
MTSE				S	**Sg**	**17 45 15.1**	**+0.6**
MEF	**Metsahovi**	**1.38**	**28**	*e*P	**Pg**	**17 45 24.8**	**-0.9**
MEF				*e*S	**Sg**	**17 45 43.4**	**-0.2**
MEF	**Metsahovi**	**1.38**	**28**	P	**Pg**	**17 45 24.8**	**-0.9**
MEF				S	**Sg**	**17 45 43.3**	**-0.2**
SLIT	**Slitere, Latvi**	**1.45**	**198**	*e*P	**Pn**	**17 45 25.8**	**-1.1**
SLIT				*e*S	**Sg**	**17 45 45.2**	**-0.8**
SLIT	**Slitere, Latvi**	**1.45**	**198**	P	**Pn**	**17 45 25.8**	**-1.1**
SLIT				S	**Sg**	**17 45 45.2**	**-0.8**
ARBE	**Arbavere**	**1.54**	**73**	P	**Pn**	**17 45 26.1**	**-2.0**
ARBE				S	**Sg**	**17 45 48.5**	**-0.3**
VSU	**Vasula**	**1.97**	**105**	*e*P	**Pb**	**17 45 35.6**	**-0.5**
VSU				*e*S	**Sn**	**17 45 59.8**	**+0.4**
VSU	**Vasula**	**1.97**	**105**	P	**Pb**	**17 45 35.6**	**-0.5**
VSU				S	**Sn**	**17 45 59.7**	**+0.4**
AAL	**Aland**	**1.97**	**308**	P	**Pn**	**17 45 34.3**	**+0.3**
AAL				S	**Sn**	**17 45 60.0**	**+0.6**
AAL	**Aland**	**1.97**	**308**	*e*P	**Pn**	**17 45 34.4**	**+0.4**
AAL				*e*S	**Sn**	**17 45 59.7**	**+0.3**
AAL	**Aland**	**1.97**	**308**	P	**Pn**	**17 45 34.3**	**+0.3**
AAL				S	**Sn**	**17 45 59.6**	**+0.3**
PVF	**Pernaja**	**2.07**	**41**	*e*P	**Pn**	**17 45 36.5**	**+1.1**
PVF				*e*SB	**Sb**	**17 46 04.2**	**0.0**
PVF	**Pernaja**	**2.07**	**41**	P	**Pn**	**17 45 36.5**	**+1.1**
PVF				Sb	**Sb**	**17 46 04.2**	**0.0**
RAF	**Rauma**	**2.13**	**342**	*e*P	**Pn**	**17 45 37.3**	**+1.1**
RAF				*e*SG	**Sb**	**17 46 05.5**	**-0.2**
RAF	**Rauma**	**2.13**	**342**	P	**Pn**	**17 45 37.3**	**+1.1**
NRTU	**Norrtaelje**	**2.39**	**288**	P	**Pn**	**17 45 40.1**	**+0.3**
NRTU	**Norrtaelje**	**2.39**	**288**	*e*P	**Pn**	**17 45 40.1**	**+0.3**
NRTU	**Norrtaelje**	**2.39**	**288**	P	**Pn**	**17 45 40.1**	**+0.3**
NYNU	**Nynaeshamn**	**2.64**	**272**	P	**Pn**	**17 45 43.7**	**+0.5**
NYNU	**Nynaeshamn**	**2.64**	**272**	*e*P	**Pn**	**17 45 43.7**	**+0.5**
NYNU	**Nynaeshamn**	**2.64**	**272**	P	**Pn**	**17 45 43.7**	**+0.5**
GRAU	**Graesoe**	**2.67**	**302**	P	**Pn**	**17 45 43.4**	**-0.2**
GRAU	**Graesoe**	**2.67**	**302**	*e*P	**Pn**	**17 45 43.4**	**-0.2**
GRAU	**Graesoe**	**2.67**	**302**	P	**Pn**	**17 45 43.4**	**-0.2**
VJF	**Virojoki**	**2.72**	**54**	*e*P	**Pn**	**17 45 44.1**	**-0.2**
VJF				*e*S	**Sn**	**17 46 19.3**	**+1.5**
VJF	**Virojoki**	**2.72**	**54**	P	**Pn**	**17 45 44.1**	**-0.2**
VJF				S	**Sn**	**17 46 19.3**	**+1.5**
GOTU	**Gotland**	**2.74**	**243**	P	**Pn**	**17 45 46.9**	**+2.4**
GOTU	**Gotland**	**2.74**	**243**	*e*P	**Pn**	**17 45 46.9**	**+2.4**
GOTU	**Gotland**	**2.74**	**243**	P	**Pn**	**17 45 46.9**	**+2.4**
FINES	**FINESS Array B**	**2.85**	**30**	Pn	**Pn**	**17 45 47.1**	**+0.9**
	0.5nm,0.3s,baz=205,slow=12,SNR=28							
FINES				Sn	**Sn**	**17 46 22.7**	**+1.6**
	0.7nm,0.3s,baz=198,slow=22,SNR=13							
FLYU	**Flymyra**	**2.89**	**295**	P	**Pn**	**17 45 47.0**	**+0.4**
FLYU	**Flymyra**	**2.89**	**295**	*e*P	**Pn**	**17 45 47.0**	**+0.4**
FLYU	**Flymyra**	**2.89**	**295**	P	**Pn**	**17 45 47.0**	**+0.4**
FIBU	**Brunna**	**3.07**	**289**	P	**Pn**	**17 45 49.5**	**+0.4**
BACU	**Backbrunna**	**3.18**	**288**	P	**Pn**	**17 45 51.3**	**+0.7**
BACU	**Backbrunna**	**3.18**	**288**	*e*P	**Pn**	**17 45 51.3**	**+0.7**
BACU	**Backbrunna**	**3.18**	**288**	P	**Pn**	**17 45 51.3**	**+0.7**
OSTU	**Oestervaala**	**3.27**	**294**	P	**Pn**	**17 45 52.2**	**+0.3**
OSTU	**Oestervaala**	**3.27**	**294**	*e*P	**Pn**	**17 45 52.2**	**+0.3**
OSTU	**Oestervaala**	**3.27**	**294**	P	**Pn**	**17 45 52.2**	**+0.3**
KEF	**Keuruu**	**3.28**	**15**	MSG		17 46 42.7	
	comp=Z,1.8nm,0.1s							
VIKU	**Vikbolandet**	**3.38**	**264**	P	**Pn**	**17 45 53.5**	**+0.1**
VIKU	**Vikbolandet**	**3.38**	**264**	*e*P	**Pn**	**17 45 53.5**	**+0.1**
VIKU	**Vikbolandet**	**3.38**	**264**	P	**Pn**	**17 45 53.5**	**+0.1**
ESKU	**Eskilstuna**	**3.47**	**277**	P	**Pn**	**17 45 55.1**	**+0.5**
ESKU	**Eskilstuna**	**3.47**	**277**	*e*P	**Pn**	**17 45 55.1**	**+0.5**
ESKU	**Eskilstuna**	**3.47**	**277**	P	**Pn**	**17 45 55.1**	**+0.5**
KAF	**Kangasniemi**	**3.49**	**26**	MSG		17 46 53.0	
	comp=Z,1.8nm,0.2s							
SUF	**Sumiainen**	**4.01**	**20**	MSG		17 47 09.0	
	comp=Z,1.4nm,0.2s							
VAF	**Ylistaro**	**4.05**	**357**	*e*P	**Pn**	**17 46 04.1**	**+1.5**
VAF				*e*S	**Sn**	**17 46 51.0**	**+0.3**
VAF				MSG		17 47 05.7	
	comp=Z,1.4nm,0.2s							
VAF	**Ylistaro**	**4.05**	**357**	P	**Pn**	**17 46 04.1**	**+1.5**
VAF				S	**Sn**	**17 46 50.9**	**+0.3**
NOA	**NORSAR Array B**	**6.30**	**294**	Pn	**Pn**	**17 46 32.7**	**-0.8**
	comp=Z,0.2nm,0.3s,baz=104,slow=13,SNR=4.9							
NOA				Sn	**Sn**	**17 47 45.5**	**-0.7**
	comp=Z,0.1nm,0.3s,baz=125,slow=23,SNR=2.6							
ARCES	**ARCESS Array B**	**10.62**	**5**	Pn	**Pn**	**17 47 31.2**	**-1.3**
	comp=Z,0.1nm,0.3s,baz=182,slow=13,SNR=9.9							

NIED ***28*** *17:50:00, 40°.20N×142°.90E, h38km, Mw3.8 Best double couple: M○4.97000×10^14 NP1:φs57.00000°, δ30.00000°, λ-86.00000°. NP2:φs233.00000°, δ60.00000°, λ-92.00000°.*
IDC ***28*** *17:50:26.6±1.4, 40°.03N×142°.88E, h0km, mb3.5/4, mb1 3.7/4, mb1mx3.4/35, mbtmp3.5/4, Error ellipse: s-maj=37.3km s-min=30.5km az=88.0*
ISCJB ***28*** *17:50:29.9±1.2, 40°.18N±0°.04×142°.96E±0°.07, h20km±8km, mb3.4/4, Error ellipse: s-maj=9.5km s-min=6.6km az=20.1*
JMA ***28*** *17:50:30.2±0.2, 40°.18N×142°.90E, h16km±2km, M3.8*

ISC 28 17:50:27.2±1.8, 40°.22N±0°.04×142°.99E±0°.06, h5km±11km, n17, σ0s61/26, mb3.4/4, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JTH	**Tanohata**	**0.90**	**252**	P	**Pn**	**17 50 46.0**	**-0.6**
JTH				*e*S	**Sg**	**17 50 56.7**	**+0.4**
MIYJ	**Miyakonagasawa**	**1.10**	**235**	P	**Pn**	**17 50 49.1**	**-0.2**
JANG	**Nango**	**1.14**	**278**	P	**Pn**	**17 50 49.8**	**+0.1**
JKZ	**Kuzumaki**	**1.29**	**260**	P	**Pg**	**17 50 52.4**	**+0.4**
JKZ				S	**Sg**	**17 51 08.6**	**-0.1**
JOM	**Ohasama**	**1.50**	**241**	P	**Pb**	**17 50 55.6**	**+0.1**
JOM				*e*S	**Sn**	**17 51 14.5**	**-0.1**
OFUJ	**Ofunato**	**1.52**	**222**	P	**Pg**	**17 50 56.3**	**-0.1**
OFUJ				S	**Sn**	**17 51 14.4**	**-0.8**
JTM	**Tenmabayashi**	**1.57**	**292**	P	**Pg**	**17 50 57.2**	**-0.1**
JTM				S	**Sn**	**17 51 16.3**	**0.0**
JAH	**Hinai**	**1.80**	**270**	P	**Pb**	**17 51 00.8**	**+0.2**
JAH				S	**Sn**	**17 51 21.8**	**-0.2**
JMK	**Ichinoseki**	**1.86**	**228**	P	**Pb**	**17 51 01.1**	**-0.5**
JMK				S	**Sn**	**17 51 23.7**	**+0.2**
JOT	**Ohata**	**1.88**	**309**	P	**Pb**	**17 51 01.8**	**-0.1**
JOT				S	**Sb**	**17 51 25.0**	**-0.6**
JRG	**Rokugo**	**1.99**	**246**	P	**Pb**	**17 51 04.4**	**+0.6**
JKB	**Kayabe**	**2.23**	**319**	P	**Pb**	**17 51 07.8**	**-0.1**
JKB				S	**Sb**	**17 51 34.9**	**-0.9**
JCH	**Churui**	**2.41**	**7**	P	**Pb**	**17 51 10.5**	**-0.6**
ZALV	**Zalesovo Beam**	**40.76**	**310**	P	**P**	**17 58 09.5**	**+0.6**
	0.6nm,0.3s,baz=80,slow=7.5,SNR=3.8							
MKAR	**Makanchi Array**	**43.55**	**300**	P	**P**	**17 58 31.9**	**+0.2**
	0.2nm,0.5s,baz=86,slow=8.7,SNR=3.9							
ILAR	**Eielson Array**	**46.16**	**34**	P	**P**	**17 58 54.0**	**+1.7**
	0.2nm,0.6s,baz=273,slow=7.7,SNR=3.1							
WRA	**Warramunga Arr**	**60.39**	**189**	P	**P**	**18 00 36.3**	**-1.1**
	0.2nm,0.5s,baz=8.0,slow=7.1,SNR=7.0							

IDC 28 18:04:52.6±3.1, 7°.07S×133°.96E, h0km, mb3.3/1, mb1 3.3/3, mb1mx3.2/26, mbtmp3.2/3, ML3.3/2, Error ellipse: s-maj=134.5km s-min=27.9km az=80.0, Aru Islands region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
WRA	**Warramunga Arr**	**12.80**	**178**	Pn	Pn	18 07 56.7	+0.6
	0.2nm,0.3s,baz=356,slow=13,SNR=13						
WRA				Sn	Sn	18 10 23.1	+3.7
	0.3nm,0.3s,baz=359,slow=23,SNR=2.5						
ASAR	**Alice Springs**	**16.50**	**180**	Pn	Pn	18 08 45.1	-0.6
	0.1nm,0.3s,baz=358,slow=14,SNR=8.3						
ASAR				Sn	Sn	18 11 48.3	-1.4
	0.1nm,0.3s,baz=0.8,slow=28,SNR=2.3						
MKAR	**Makanchi Array**	**70.48**	**325**	P	P	18 16 09.2	0.0
	0.1nm,0.5s,baz=120,slow=5.6,SNR=2.1						

CSEM ***28*** *18:07:17.8, 38°.60N×29°.23W, h4km, ML2.6*
PDA 28 18:07:17.8±0.6, 38°.60N×29°.23W, h4km±3km, MD3.5, ML2.6, Error ellipse: s-maj=5.8km s-min=4.3km az=23.0, Azores Islands

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
CALA	**Caldeira**	**0.41**	**93**	*e*P	Pg	18 07 25.4	-0.4
CALA				*e*S	Sg	18 07 31.0	-0.2
CALA	**Caldeira**	**0.41**	**93**	*e*P	Pg	18 07 25.4	-0.4
CALA				*e*S	Sg	18 07 31.0	-0.2
PCED	**Cedros**	**0.41**	**86**	*e*P	Pg	18 07 25.1	-0.7
PCED				*e*S	Sg	18 07 30.8	-0.4
PCED	**Cedros**	**0.41**	**86**	*e*P	Pg	18 07 25.1	-0.7
PCED				*e*S	Sg	18 07 30.8	-0.4
PCED				A	A	18 07 33.5	
	311nm,0.3s						
HOR	**Horta**	**0.48**	**99**	*e*P	Pg	18 07 26.0	-0.9
HOR	**Horta**	**0.48**	**99**	*e*P	Pg	18 07 26.0	-0.9
HOR				A	A	18 07 34.0	
	523nm,0.3s						
PCAN	**Candelaria**	**0.60**	**103**	*e*S	Sg	18 07 35.7	-1.4
PCAN	**Candelaria**	**0.60**	**103**	*e*S	Sg	18 07 35.7	-1.4
PCAN				A	A	18 07 38.6	
	290nm,0.1s						
PICO	**Pico**	**0.64**	**99**	*e*P	Pg	18 07 28.7	-1.3
PICO				*e*S	Sg	18 07 37.0	-1.3
PICO	**Pico**	**0.64**	**99**	*e*P	Pg	18 07 28.7	-1.3
PICO				*e*S	Sg	18 07 37.0	-1.3
PICO				A	A	18 07 38.5	
	380nm,0.3s						
ROSA	**Rosais**	**0.78**	**81**	*e*P	Pg	18 07 30.6	-2.2
ROSA				*e*S	Sg	18 07 40.4	-2.5
ROSA	**Rosais**	**0.78**	**81**	*e*P	Pg	18 07 30.6	-2.2
ROSA				*e*S	Sg	18 07 40.4	-2.5
ROSA				A	A	18 07 41.2	
	223nm,0.2s						
PMAN	**Manadas**	**0.89**	**88**	*e*P	Pg	18 07 32.5	-2.4
PMAN				*e*S	Sg	18 07 43.1	-3.4
PMAN	**Manadas**	**0.89**	**88**	*e*P	Pg	18 07 32.5	-2.4
PMAN				*e*S	Sg	18 07 43.1	-3.4
PMAN				A	A	18 07 45.4	
	56nm,0.2s						
PGRA	**Graciosa**	**1.06**	**66**	*e*S	Sg	18 07 47.0	-5.0
PGRA	**Graciosa**	**1.06**	**66**	*e*S	Sg	18 07 47.0	-5.0
PGRA				A	A	18 07 47.6	
	54nm,0.3s						
ADH	**Angra Heroismo**	**1.56**	**87**	A	A	18 07 43.9	
	50nm,0.1s						

NIED ***28*** *18:10:00, 29°.30N×130°.60E, h32km, Mw4.4 Best double couple: M○3.93000×10^15 NP1:φs69.00000°, δ44.00000°, λ127.00000°. NP2:φs202.00000°, δ56.00000°, λ59.00000°.*
IDC ***28*** *18:10:18.0±0.8, 29°.43N×130°.54E, h0km, mb3.6/14, mb1 3.8/19, mb1mx3.7/44, mbtmp3.6/19, ML3.2/5, MS3.4/13, Ms1 3.4/13, ms1mx3.2/51, Error ellipse: s-maj=21.6km s-min=14.8km az=101.0*
JMA ***28*** *18:10:28.3±0.2, 29°.32N×130°.60E, h13km, M4.0*

ISC 28 18:10:22.1±0.6, 29°.20N±0°.04×130°.78E±0°.06, h34km, n44, σ2s13/41, mb3.6/14, MS3.6/8, Ryukyu Islands

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JNN	**Nakanoshima**	**1.02**	**309**	P	**Pb**	**18 10 44.0**	**+2.7**
JNN				S	**Sb**	**18 10 55.3**	**+0.9**
JYAK	**Yakushimahirau**	**1.06**	**347**	P	Pb	18 10 45.7	+3.7
JYAK				*e*S	**Sb**	**18 10 58.4**	**+2.7**
JZK	**Kikaishima**	**1.13**	**219**	P	Pb	18 10 52.7	+10
JAM	**Amami Oshima**	**1.29**	**233**	P	Pb	18 10 51.7	+5.8
JKC	**Kuchinoerabu**	**1.36**	**338**	P	Pb	18 10 50.9	+3.9
JTAJ	**Takarajima**	**1.38**	**269**	P	**Pb**	**18 10 50.7**	**+3.3**
JTAJ				*e*S	**Sb**	**18 11 03.9**	**-0.8**
JTN	**Tanegashima 3**	**1.46**	**7**	P	**Pb**	**18 10 52.0**	**+3.2**
JAMN	**Amaminishikomi**	**1.70**	**236**	*e*S	**Sb**	**18 11 17.1**	**+3.3**
JTSR	**Tashiro 2**	**1.96**	**4**	*e*S	**Sb**	**18 11 22.1**	**+0.7**
JTK	**Tokunoshima**	**2.14**	**229**	P	**Pb**	**18 11 03.4**	**+3.2**
JTK				*e*S	**Sb**	**18 11 28.3**	**+1.9**
JOKE	**Okinoerabujima**	**2.67**	**227**	P	**Pb**	**18 11 09.7**	**+0.4**
JOKE				*e*S	**Sb**	**18 11 41.5**	**-0.2**
JOW	**Kunigami**	**3.23**	**224**	Pn	**Pn**	**18 11 11.4**	**+0.9**
	4.4nm,0.3s,baz=118,slow=22,SNR=16						
JOW				Sn	**Sn**	**18 11 52.6**	**+4.8**
	16nm,0.3s,baz=56,slow=20,SNR=4.1						
JOW	**Kunigami**	**3.23**	**224**	P	**Pn**	**18 11 11.4**	**+0.9**
JOW	**Kunigami**	**3.23**	**224**	P	**Pb**	**18 11 18.8**	**-0.1**
JNU	**Nakatsue**	**3.91**	**1**	Pn	**Pn**	**18 11 18.0**	**-1.8**
	2.9nm,0.3s,baz=219,slow=3.5,SNR=28						
JNU				LR	LR	18 12 12.6	
	comp=Z,117nm,20.3s,baz=124,slow=31						
JAGN	**Aguni-jima**	**4.07**	**231**	P	**Pb**	**18 11 29.3**	**-3.8**
JKE	**Kume jima 2**	**4.55**	**232**	P	Pn	18 11 34.7	+6.1
KSRS	**Korea Array**	**8.57**	**345**	Pn	**Pn**	**18 12 21.4**	**-2.3**
	0.0nm,0.3s,baz=161,slow=27,SNR=3.4						
KSRS				LR	LR	18 15 42.6	
	comp=Z,222nm,20.9s,baz=176,slow=39						
MJAR	**Matsushiro Arr**	**9.62**	**39**	Pn	**Pn**	**18 12 36.9**	**-1.3**
	0.5nm,0.3s,baz=236,slow=16,SNR=4.1						
MJAR				LR	LR	18 15 22.3	
	comp=Z,36nm,19.8s,baz=210,slow=32						
JCJ	**Chichijima**	**10.28**	**99**	LR	LR	18 16 23.2	
	comp=Z,171nm,21.4s,baz=262,slow=35						
USRK	**Ussuriysk Ar.**	**15.00**	**3**	LR	LR	18 19 28.9	
	comp=Z,79nm,21.7s,baz=161,slow=37						
KLR	**Kul'dur**	**20.02**	**2**	P	**P**	**18 14 49.5**	**-2.4**
	0.1nm,0.3s,baz=193,slow=5.3,SNR=6.2						
KLR				LR	LR	18 21 51.7	
	comp=Z,123nm,19.8s,baz=197,slow=35						
GUMO	**Guam**	**20.30**	**137**	LR	LR	18 21 34.1	
	comp=Z,63nm,21.5s,baz=57,slow=33						
SONM	**Songino Array**	**26.47**	**321**	P	**P**	**18 15 55.3**	**-0.9**
	1.7nm,0.6s,baz=134,slow=12,SNR=2.5						
SONM				LR	LR	18 27 47.7	
	comp=Z,187nm,18.5s,baz=107,slow=40						
CMAR	**Chiang Mai Arr**	**30.93**	**257**	P	**P**	**18 16 36.0**	**0.0**
	0.1nm,0.3s,baz=64,slow=4.1,SNR=3.3						
CMAR				LR	LR	18 30 58.9	
	comp=Z,121nm,18.2s,baz=162,slow=40						
GUN	**Gumba**	**39.28**	**279**	*e*P	**P**	**18 17 47.3**	**-0.9**
	8.9nm,0.4s						
KKN	**Kakani**	**39.82**	**279**	*e*P	**P**	**18 17 51.5**	**-1.1**
DMN	**Daman**	**40.02**	**279**	*e*P	**P**	**18 17 53.9**	**-0.3**
KOLN	**Koldanda**	**41.28**	**280**	*e*P	**P**	**18 18 04.9**	**+0.3**
	4.5nm,0.6s						
MKAR	**Makanchi Array**	**41.34**	**309**	P	**P**	**18 18 03.0**	**-1.7**
	0.4nm,0.5s,baz=91,slow=10,SNR=8.4						
MKAR				LR	LR	18 37 06.5	
	comp=Z,52nm,18.7s,baz=104,slow=39						
ZALV	**Zalesovo Beam**	**41.35**	**320**	P	**P**	**18 18 00.8**	**-3.7**
	0.4nm,0.4s,baz=120,slow=8.7,SNR=2.8						
ZALV				LR	LR	18 36 50.0	
	comp=Z,99nm,18.5s,baz=82,slow=39						
PYUN	**Piuthan**	**41.73**	**281**	*e*P	**P**	**18 18 07.6**	**-0.7**
WRA	**Warramunga Arr**	**48.98**	**176**	P	**P**	**18 19 07.5**	**+2.1**
	0.8nm,0.7s,baz=353,slow=8.1,SNR=4.3						
ASAR	**Alice Springs**	**52.65**	**176**	P	**P**	**18 19 35.8**	**+2.8**
	0.2nm,0.7s,baz=8.1,slow=14,SNR=6.6						
ILAR	**Eielson Array**	**60.76**	**29**	P	**P**	**18 20 30.7**	**+0.5**
	0.6nm,0.9s,baz=306,slow=7.3,SNR=4.6						
KBZ	**Khabaz**	**69.04**	**309**	P	**P**	**18 21 23.5**	**-0.8**
	0.7nm,0.5s,baz=29,slow=4.8,SNR=2.9						
FINES	**FINESS Array B**	**71.40**	**331**	P	**P**	**18 21 36.9**	**-1.5**
	0.3nm,0.4s,baz=76,slow=8.0,SNR=4.9						
FINES				LR	LR	18 53 40.1	
	comp=Z,69nm,18.3s,baz=86,slow=37						
AKASG	**Malin Array Be**	**74.74**	**320**	LR	LR	18 57 31.8	
	comp=Z,64nm,18.8s,baz=70,slow=38						
YKA	**Yellowknife Ar**	**74.88**	**26**	P	**P**	**18 21 59.2**	**+0.1**
	0.3nm,0.7s,baz=301,slow=5.9,SNR=6.4						
BRTR	**Keskin Array B**	**76.99**	**308**	P	**P**	**18 22 10.5**	**-1.2**
	0.7nm,0.7s,baz=100,slow=6.5,SNR=5.6						
NB2	**NORSAR Subarra**	**77.64**	**334**	P	**P**	**18 22 11.2**	**-3.6**
	comp=Z,1.7nm,1.0s,baz=50,slow=5.9						
NOA	**NORSAR Array B**	**77.64**	**334**	P	**P**	**18 22 14.8**	**-0.1**
	comp=Z,0.6nm,0.7s,baz=48,slow=5.5,SNR=2.9						
GERES	**GERESS Array B**	**84.18**	**324**	P	**P**	**18 22 50.0**	**0.0**
	comp=Z,0.1nm,0.3s,baz=18,slow=4.1,SNR=2.2						
PDAR	**Pinedale Array**	**89.44**	**40**	P	**P**	**18 23 18.1**	**+2.1**
	comp=Z,0.1nm,0.3s,baz=243,slow=4.0,SNR=1.9						

JMA 28 18:10:22.6±0.1, 29°.32N×130°.59E, h32km, Ryukyu Islands

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JNN	**Nakanoshima**	**0.81**	**310**	P	Pn	18 10 37.4	-0.4
JNN				*e*S	Sb	18 10 49.2	+0.2
JYAK	**Yakushimahirau**	**0.92**	**356**	P	Pn	18 10 39.5	+0.2
JKC	**Kuchinoerabu**	**1.19**	**343**	P	Pn	18 10 43.4	+0.4
JTAJ	**Takarajima**	**1.22**	**263**	P	Pn	18 10 44.3	+0.8
JAM	**Amami Oshima**	**1.25**	**224**	P	Pn	18 10 44.5	+0.6
JTN	**Tanegashima 3**	**1.37**	**14**	P	Pn	18 10 46.3	+0.7
JAMN	**Amaminishikomi**	**1.64**	**230**	P	Pn	18 10 50.2	+1.0
JTSR	**Tashiro 2**	**1.86**	**9**	P	Pn	18 10 53.2	+0.9
JTK	**Tokunoshima**	**2.10**	**224**	P	Pn	18 10 56.9	+1.3
JOKE	**Okinoerabujima**	**2.64**	**223**	P	Pn	18 11 03.8	+0.8
JIH	**Iheya**	**3.25**	**226**	P	Pn	18 11 11.5	+0.2
JNTH	**Nagotoyohara**	**3.60**	**220**	P	Pn	18 11 16.5	+0.3
JAGN	**Aguni-jima**	**4.02**	**228**	P	Pn	18 11 22.8	+0.8

ISCJB ***28*** *18:13:10.8±1.1, 30°.63S±0°.04×71°.45W±0°.09, h26km±9km, Error ellipse: s-maj=12.8km s-min=6.0km az=6.2*
SJA ***28*** *18:13:10.1±0.6, 30°.70S×71°.50W, h70km±7km, ML3.1*
GUC ***28*** *18:13:11.3±0.3, 30°.62S×71°.28W, h45km±2km, ML3.0*

ISC 28 18:13:09.7±2.0, 30°.64S±0°.04×71°.50W±0°.10, h12km±12km, n10, σ0s97/17, Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
LSCH	**La Serena**	**0.76**	**17**	*i* P	**Pb**	**18 13 25.0**	**+0.3**
LSCH				*i* S	**Sb**	**18 13 35.2**	**+0.2**
LSCH				IAML		18 13 36.3	
	comp=N,918nm,0.2s						
TLL	**Tololo Astrono**	**0.76**	**52**	*i* P	**Pg**	**18 13 24.3**	**-0.2**
TLL				*i* S	**Sg**	**18 13 34.0**	**-0.4**
TLL				IAML		18 13 35.7	
	comp=N,1μm,0.2s						
VACH	**Vallenar**	**2.15**	**18**	*i* P	**Pn**	**18 13 45.2**	**-0.1**
VACH				*i* S	**Sn**	**18 14 10.9**	**-1.0**
ROCH	**El Roble**	**2.37**	**170**	*i* P	**Pn**	**18 13 49.8**	**+1.3**
ROCH				*i* S	**Sn**	**18 14 18.8**	**+1.3**
ROCH				IAML		18 14 33.5	
	comp=N,122nm,0.5s						
ROC1	**El Roble**	**2.37**	**170**	*e*P	**Pn**	**18 13 48.1**	**-0.5**
ROC1				*e*S	**Sn**	**18 14 15.6**	**-2.0**
AUSP	**Uspall

baz=259
SMLT Sun Moon Lake 1.74 246 *e*P **Pn 18 22 43.0 +0.3**
baz=238
SMLT S **Sn 18 23 05.8 +0.6**
baz=238
TWF1 Yuli 1.75 224 P **Pn 18 22 42.4 -0.4**
baz=229
TWF1 S **Sn 18 23 04.2 -1.1**
baz=229
TYC Yuchr 1.77 247 P **Pn 18 22 43.7 +0.7**
baz=248
TYC *e*S **Sn 18 23 06.6 +1.0**
baz=248
TCU Taichung 1.84 256 *e*S **Sn 18 23 07.7 +0.4**
baz=253
JTJ Tarama 1.89 89 P **Pn 18 22 44.1 -0.4**
JTJ S **Sn 18 23 08.0 -0.3**
YUS Yu-Shan 1.90 234 ⇓P **Pn 18 22 45.8 +0.7**
baz=228
YUS S **Sn 18 23 08.8 -0.6**
baz=228
CHKT Chengkung 1.90 218 P **Pn 18 22 44.1 -0.6**
baz=211
CHKT S **Sn 18 23 07.5 -1.1**
baz=211
WNT Mingjian 1.92 248 *e*S **Sn 18 23 10.9 +1.7**
baz=246
ALS Alishan 2.00 237 P **Pn 18 22 47.3 +1.1**
baz=230
ALS S **Sn 18 23 12.3 +1.0**
baz=230
ELDTW Lidau 2.05 226 P **Pn 18 22 46.3 -0.4**
baz=224
ELDTW *e*S **Sn 18 23 12.2 0.0**
baz=224
CHN5 Tsauling 2.05 241 *e*P **Pn 18 22 47.6 +0.9**
baz=248
CHN5 S **Sn 18 23 13.9 +1.7**
baz=248
STYT Tauyuan 2.24 230 *e*P **Pn 18 22 50.3 +1.1**
baz=229
STYT *e*S **Sn 18 23 17.7 +1.1**
baz=229
CHN4 Tsaushan 2.25 236 *e*P **Pn 18 22 50.2 +1.1**
baz=235
CHN4 *e*S **Sn 18 23 18.5 +1.8**
baz=235
TWG Pinlang 2.29 219 *e*S **Sn 18 23 16.4 -1.2**
baz=222
WTP Ta-pu 2.29 234 *e*P **Pn 18 22 48.6 -1.2**
baz=232
WTP *e*S **Sn 18 23 19.0 +1.2**
baz=232
JIRB Irabujima 2.32 84 S **Sn 18 23 18.2 -0.1**
CHN1 Nanshi 2.39 234 *e*P **Pn 18 22 53.0 +1.9**
baz=232
CHN1 *e*S **Sn 18 23 20.9 +0.8**
baz=232
WSF Szhu 2.41 247 *e*S **Sn 18 23 20.5 +0.2**
baz=245
SGST Jiashian 2.42 231 *e*S **Sn 18 23 21.6 +1.0**
baz=230
ECL Taimali 2.53 218 *e*P **Pn 18 22 52.2 -0.6**
baz=211
ECL *e*S **Sn 18 23 21.7 -1.6**
baz=211
SSD Sandimen 2.61 225 *e*P **Pn 18 22 55.0 +1.1**
baz=224
SSD *e*S **Sn 18 23 26.9 +1.7**
baz=224
TWM1 Shoushan 2.70 229 *e*S **Sn 18 23 31.4 +4.1**
baz=228
LAY Lan-yu 2.75 201 *e*P **Pn 18 22 55.5 -0.3**
baz=195
LAY *e*S **Sn 18 23 26.6 -1.9**
baz=195
EAST Anshuo 2.76 217 *e*P **Pn 18 22 55.4 -0.6**
baz=213
EAST *e*S **Sn 18 23 26.3 -2.4**
baz=213
PNG Penghu 3.00 250 *e*S **Sn 18 23 31.8 -2.6**
baz=249

IDC 28 18:26:41.0±1.6,**3°.74N**×**128°.65E, h0**km,**mb3.8**/6, **mb1 4.0**/6,**mb1mx3.6**/41,**mbtmp3.8**/6,**MS3.0**/1,**Ms1 3.0**/1, **ms1mx2.4**/45,**Error ellipse: s-maj=71.0km s-min=18.2km az=64.0,North of Halmahera**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**21.90**	**188**	P	P	18 31 35.5	-0.4
	1.5nm,0.5s,baz=22,slow=11,SNR=11						
WRA	**Warramunga Arr**	**24.18**	**167**	P	P	18 31 59.8	+0.3
	4.8nm,0.7s,baz=346,slow=10,SNR=30						
ASAR	**Alice Springs**	**27.71**	**170**	P	P	18 32 31.6	+0.2
	0.3nm,0.4s,baz=356,slow=8.1,SNR=9.1						
CMAR	**Chiang Mai Arr**	**32.53**	**299**	P	P	18 33 14.3	+0.3
	0.5nm,0.7s,baz=106,slow=6.7,SNR=7.1						
MJAR	**Matsushiro Arr**	**33.81**	**14**	LR	LR	18 44 13.8	
	comp=Z,27nm,21.1s,baz=205,slow=31						
STKA	**Stephens Creek**	**37.50**	**162**	P	P	18 33 56.2	-0.5
	2.0nm,0.6s,baz=352,slow=8.7,SNR=7.9						
MKAR	**Makanchi Array**	**58.65**	**324**	P	P	18 36 40.0	-0.2
	0.5nm,0.4s,baz=114,slow=7.6,SNR=16						

*NIED **28** 18:37:00,29.°30N×130.°50E,h14km,Mw4.2 Best double couple: M₀1.98000×10¹⁵ NP1:φs=335.00000°,δ12.00000°, λ=-131.00000°. NP2:φs=197.00000°,δ81.00000°, λ=-82.00000°.*
*ISCJB **28** 18:37:03.8±0.6,29.°36N±0.°04×130.°50E±0.°08, h59km±6km, mb3.6/9,MS3.2/4,Error ellipse: s-maj=12.6km s-min=4.0km az=22.8*
*JMA **28** 18:37:03.8±0.1,29.°34N×130.°53E,h34km,M3.9*
*IDC **28** 18:37:04.7±1.6,29.°41N×130.°41E,h44km±16km, mb3.4/9, mb1 3.6/14,mb1mx3.5/49,mbtmp3.6/14,ML3.4/4,MS3.1/7, Ms1 3.2/7,ms1mx2.9/30,Error ellipse: s-maj=23.1km s-min=10.4km az=106.0*

ISC 28 18:37:05.0±1.1,**29.°38N**±0.°05×**130.°46E**±0.°08,**h50**km±11km, **n33**,σ0**°66**/**37**,**mb3.6**/9,**MS3.2**/4,**Ryukyu Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JNN	**Nakanoshima**	**0.69**	**312**	P	**Pn**	**18 37 17.8**	**-0.8**
JNN				*e*S	**Sn**	**18 37 29.3**	**+0.9**
JYAK	**Yakushimahirau**	**0.86**	**3**	P	**Pn**	**18 37 20.3**	**-0.6**
JYAK				*e*S	**Sn**	**18 37 33.3**	**+0.9**
JKC	**Kuchinoerabu**	**1.10**	**348**	P	**Pn**	**18 37 24.1**	**-0.1**
JKC				*e*S	**Sn**	**18 37 39.4**	**+1.1**
JTAJ	**Takarajima**	**1.12**	**259**	P	**Pn**	**18 37 24.6**	**+0.3**
JTAJ				*e*S	**Sn**	**18 37 39.0**	**+0.3**
JZK	**Kikaishima**	**1.14**	**202**	P	**Pn**	**18 37 24.5**	**-0.2**
JAM	**Amami Oshima**	**1.22**	**218**	P	**Pn**	**18 37 25.2**	**-0.5**
JAM				*e*S	**Sn**	**18 37 41.6**	**+0.5**
JTN	**Tanegashima 3**	**1.35**	**19**	P	**Pn**	**18 37 26.7**	**-0.8**
JAMN	**Amaminishikomi**	**1.59**	**225**	P	**Pn**	**18 37 30.4**	**-0.4**
JTSR	**Tashiro 2**	**1.83**	**13**	P	**Pn**	**18 37 34.0**	**-0.1**
JTSR				*e*S	**Sn**	**18 37 57.0**	**+0.9**
JTK	**Tokunoshima**	**2.07**	**220**	P	**Pn**	**18 37 37.0**	**-0.3**
JTK				*e*S	**Sn**	**18 38 02.5**	**+0.6**
JOKE	**Okinoerabujima**	**2.61**	**220**	P	**Pn**	**18 37 44.0**	**-0.7**
JOKE				*e*S	**Sn**	**18 38 15.7**	**+0.5**
JOW	**Kunigami**	**3.19**	**218**	P	**Pn**	**18 37 52.4**	**-0.2**
	baz=103,slow=17						
JOW				S	**Sn**	**18 38 29.1**	**-0.3**
	baz=107,slow=19						
JOW	**Kunigami**	**3.19**	**218**	P	**Pn**	**18 37 51.9**	**-0.8**
JIH	**Iheya**	**3.21**	**224**	P	**Pn**	**18 37 52.2**	**-0.7**
JNU	**Nakatsue**	**3.75**	**5**	P	**Pn**	**18 38 00.5**	**+0.1**
	4.0nm,0.3s,baz=189,slow=12,SNR=45						
JNU				LR	LR	18 39 23.5	
	comp=Z,51nm,20.9s,baz=124,slow=37						
JKE	**Kume jima 2**	**4.45**	**228**	P	**Pn**	**18 38 09.3**	**-0.7**
KSRS	**Korea Array**	**8.33**	**346**	P	**Pn**	**18 39 02.1**	**-1.0**
	0.1nm,0.3s,baz=161,slow=14,SNR=3.0						
KSRS				LR	LR	18 42 04.7	
	comp=Z,84nm,18.8s,baz=178,slow=36						
MJAR	**Matsushiro Arr**	**9.66**	**40**	P	**Pn**	**18 39 20.9**	**-0.5**
	0.8nm,0.3s,baz=244,slow=14,SNR=9.2						
ASAJ	**Asahikawa**	**17.61**	**30**	LR	LR	18 48 01.8	
	comp=Z,112nm,20.7s,baz=72,slow=37						
KLR	**Kul'dur**	**19.85**	**2**	P	**P**	**18 41 31.4**	**-0.3**
	0.2nm,0.3s,baz=180,slow=7.8,SNR=6.1						
GUMO	**Guam**	**20.62**	**137**	LR	LR	18 47 59.7	
	comp=Z,36nm,20.9s,baz=50,slow=32						
CMAR	**Chiang Mai Arr**	**30.70**	**256**	LR	LR	18 55 35.1	
	comp=Z,82nm,18.2s,baz=184,slow=36						
PETK	**Petropavlovsk-**	**30.99**	**32**	LR	LR	18 55 57.9	
	comp=Z,32nm,20.0s,baz=254,slow=37						
MKAR	**Makanchi Array**	**41.01**	**309**	P	**P**	**18 44 42.8**	**-0.5**
	0.3nm,0.3s,baz=87,slow=10,SNR=5.4						
ZALV	**Zalesovo Beam**	**41.03**	**320**	P	**P**	**18 44 42.6**	**-0.6**
	0.5nm,0.5s,baz=100,slow=8.8,SNR=3.1						
FITZ	**Fitzroy Crossi**	**47.43**	**186**	P	**P**	**18 45 35.4**	**+0.6**
	2.0nm,1.1s,baz=354,slow=10,SNR=4.2						
WRA	**Warramunga Arr**	**49.18**	**175**	P	**P**	**18 45 48.1**	**-0.1**
	0.6nm,0.8s,baz=356,slow=9.3,SNR=5.3						
ASAR	**Alice Springs**	**52.84**	**176**	P	**P**	**18 46 16.4**	**+0.6**
	0.7nm,0.9s,baz=8.7,slow=14,SNR=9.8						
ILAR	**Eielson Array**	**60.74**	**29**	P	**P**	**18 47 11.6**	**+0.3**
	0.3nm,0.8s,baz=274,slow=7.7,SNR=4.5						
ARCES	**ARCESS Array B**	**67.81**	**338**	LR	LR	19 22 00.3	
	comp=Z,39nm,18.9s,baz=78,slow=40						
FINES	**FINESS Array B**	**71.10**	**331**	P	**P**	**18 48 17.1**	**-0.8**
	0.3nm,0.3s,baz=78,slow=5.9,SNR=7.0						
YKA	**Yellowknife Ar**	**74.85**	**26**	P	**P**	**18 48 39.5**	**-0.4**
	0.3nm,0.7s,baz=302,slow=5.4,SNR=5.9						
BRTR	**Keskin Array B**	**76.66**	**308**	P	**P**	**18 48 52.1**	**+1.1**
	0.6nm,0.7s,baz=89,slow=5.5,SNR=5.7						

IDC 28 18:42:41.7±1.5,**6°.33S**×**147°.13E, h0**km,**mb3.1**/2, **mb1 3.4**/4,**mb1mx3.3**/40,**mbtmp3.2**/4,**ML3.2**/1,**Error ellipse: s-maj=60.6km s-min=24.0km az=105.0,Eastern New Guinea region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**3.06**	**180**	P	Pn	18 43 32.6	+1.3
	2.3nm,0.3s,baz=347,slow=8.6,SNR=15						
PMG				Sn		18 44 08.6	0.0
	6.4nm,0.3s,baz=265,slow=18,SNR=3.9						
WRA	**Warramunga Arr**	**18.37**	**221**	P	Pn	18 46 57.8	-0.3
	0.1nm,0.3s,baz=42,slow=12,SNR=7.1						
ASAR	**Alice Springs**	**21.42**	**215**	P	P	18 47 30.2	-1.3
	0.2nm,0.6s,baz=48,slow=9.0,SNR=7.3						
ILAR	**Eielson Array**	**85.73**	**23**	P	P	18 55 21.8	-0.6
	0.3nm,0.7s,baz=252,slow=4.6,SNR=3.2						
TORD	**Torodi Ar. Bea**	**145.30**	**284**	PKPbc	PKPdf	19 02 22.8	+0.2
	0.5nm,0.5s,baz=68,slow=3.7,SNR=6.7						

*ISCJB **28** 18:57:52.4±0.4,23.°30S±0.°06×179.°89E±0.°09,h535km, mb4.0/20,Error ellipse: s-maj=11.1km s-min=8.6km az=2.2*
*IDC **28** 18:57:53.0±0.7,23.°29S×179.°87E,h527km±6km,mb3.6/20, mb1 3.7/23,mb1mx3.6/47,mbtmp4.5/23,Error ellipse: s-maj=12.2km s-min=11.3km az=103.0*

ISC 28 18:57:53.1±1.0,**23.°34S**±0.°08×**179.°97E**±0.°09,**h535**km,**n47**, σ1⁹**17**/**54**,**mb3.9**/20,**4C-2D,South of Fiji Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**6.19**	**163**	P	**P**	**18 59 32.4**	**-0.2**
	47nm,0.3s,baz=93,slow=23,SNR=4.2						
AFI	**Afiamalu**	**12.21**	**41**	P	**P**	**19 00 30.8**	**-3.2**
	4.9nm,0.3s,baz=84,slow=19,SNR=3.8						
URZ	**Urewera**	**15.08**	**189**	P	**P**	**19 01 02.0**	**-1.3**
	9.6nm,0.3s,baz=55,slow=2.9,SNR=27						
URZ				S	**S**	**19 03 37.4**	**-2.8**
	1.9nm,0.3s,baz=61,slow=22,SNR=6.4						
RAR	**Rarotonga**	**18.87**	**87**	P	**P**	**19 01 39.2**	**-0.5**
	0.8nm,0.3s,baz=193,slow=1.4,SNR=3.1						
RPZ	**Rata Peaks**	**21.62**	**198**	P	**P**	**19 02 04.2**	**-0.1**
	13nm,0.6s,baz=338,slow=1.7,SNR=9.5						
CTA	**Charters Tower**	**31.45**	**269**	P	**P**	**19 03 31.3**	**+0.3**
	16nm,0.4s,baz=92,slow=11,SNR=50						
PMG	**Port Moresby**	**34.29**	**288**	P	**P**	**19 03 53.8**	**-1.2**
	14nm,0.9s,baz=93,slow=5.5,SNR=5.3						
STKA	**Stephens Creek**	**34.91**	**247**	P	**P**	**19 04 00.5**	**+0.4**
	0.8nm,0.4s,baz=101,slow=14,SNR=6.2						
ASAR	**Alice Springs**	**42.10**	**260**	P	**P**	**19 04 58.0**	**-0.6**
	3.6nm,0.5s,baz=94,slow=6.4,SNR=87						
ASAR				ScP	**ScP**	**19 09 42.6**	**+2.1**
	0.9nm,0.7s,baz=103,slow=4.7,SNR=6.0						
WRA	**Warramunga Arr**	**42.42**	**266**	P	**P**	**19 04 60.0**	**-1.1**
	6.3nm,0.5s,baz=92,slow=8.5,SNR=177						
FITZ	**Fitzroy Crossi**	**50.85**	**265**	P	**P**	**19 06 04.2**	**-0.6**
	2.8nm,0.5s,baz=99,slow=8.1,SNR=12						
VNDA	**Vanda**	**54.94**	**185**	P	**P**	**19 06 34.2**	**+1.3**
	1.4nm,0.8s,baz=4.1,slow=6.7,SNR=6.1						
JOW	**Kunigami**	**70.59**	**312**	P	**P**	**19 08 14.7**	**0.0**
	7.9nm,0.5s,baz=218,slow=2.7,SNR=4.1						
MJAR	**Matsushiro Ar**	**71.42**	**326**	P	**P**	**19 08 18.8**	**-0.6**
	3.0nm,0.8s,baz=163,slow=5.5,SNR=8.9						
KSRS	**Korea Array**	**77.80**	**320**	P	**P**	**19 08 55.5**	**+0.4**
	2.1nm,0.7s,baz=137,slow=6.3,SNR=11						
MAW	**Mawson**	**78.27**	**200**	P	**P**	**19 08 57.8**	**+0.6**
	7.0nm,0.9s,baz=138,slow=7.1,SNR=10						
PETK	**Petropavlovsk-**	**78.55**	**347**	P	**P**	**19 08 58.5**	**-0.3**
	4.3nm,0.6s,baz=122,slow=8.4,SNR=6.2						
USRK	**Ussuriysk Ar.**	**80.28**	**327**	P	**P**	**19 09 09.2**	**+1.0**
	3.3nm,0.9s,baz=120,slow=3.9,SNR=4.9						
SYO	**Syowa Base**	**83.55**	**193**⇓	*e*P	**P**	**19 09 23.2**	**-1.3**
PLCA	**Paso Flores**	**88.68**	**134**	P	**P**	**19 09 51.5**	**+1.8**
	2.2nm,0.8s,baz=300,slow=9.4,SNR=3.8						
SEY	**Seymchan**	**88.72**	**348**	P	**P**	**19 09 49.4**	**+0.4**
	0.5nm,0.3s,baz=120,slow=4.2,SNR=8.6						
CMAR	**Chiang Mai Arr**	**89.31**	**290**	P	**P**	**19 09 54.1**	**+1.3**
	0.7nm,0.7s,baz=138,slow=3.2,SNR=9.7						
CMAR				pP	**pP**	**19 11 50.6**	**0.0**
	0.4nm,0.9s,baz=108,slow=2.9,SNR=1.9						
TXAR	**Lajitas Array**	**90.16**	**58**	P	**P**	**19 09 58.6**	**+1.9**
	1.3nm,0.8s,baz=208,slow=8.0,SNR=11						
ILAR	**Eielson Array**	**91.49**	**14**	P	**P**	**19 10 01.6**	**-0.3**
	0.5nm,0.9s,baz=227,slow=5.7,SNR=3.7						
ILAR				pP	**pP**	**19 12 00.3**	**+0.3**
	0.4nm,0.6s,baz=242,slow=4.4,SNR=3.4						
PDAR	**Pinedale Array**	**92.31**	**44**	P	**P**	**19 10 07.3**	**+0.9**
	0.4nm,0.6s,baz=197,slow=4.6,SNR=4.1						
ZALV	**Zalesovo Beam**	**111.50**	**321**	PKiKP	**PKiKP**	**19 15 25.4**	**-0.9**
	0.5nm,0.6s,baz=132,slow=2.2,SNR=3.6						
MKAR	**Makanchi Array**	**111.75**	**313**	PKiKP	**PKiKP**	**19 15 26.0**	**-1.0**
	0.2nm,0.3s,baz=56,slow=0.5,SNR=4.4						
MKAR				PKKPbc	**PKKPab**	**19 26 31.7**	**0.0**
	0.4nm,0.6s,baz=252,slow=3.5,SNR=4.2						
ARCES	**ARCESS Array B**	**131.33**	**348**	pPKP	pPKPdf	19 18 10.4	+0.9
	5.2nm,1.1s,baz=60,slow=2.9,SNR=2.7						
FINES	**FINESS Array B**	**137.90**	**342**	PKhKP	PKPpre	19 16 07.1	
	0.3nm,0.3s,baz=64,slow=4.4,SNR=5.7						
FINES				PKP	**PKPdf**	**19 16 16.1**	**-0.2**
	0.5nm,0.4s,baz=87,slow=2.5,SNR=6.5						
FINES				SKPbc	**SKPbc**	**19 19 00.5**	**+0.6**
	1.5nm,0.6s,baz=48,slow=2.8,SNR=6.6						
NB2	**NORSAR Subarra**	**141.52**	**351**	PKP	PKPpre	19 16 18.2	
	comp=Z,0.7nm,0.5s,baz=14,slow=3.1						
NOA	**NORSAR Array B**	**141.52**	**351**	PKhKP	PKPpre	19 16 18.6	
	comp=Z,1.0nm,0.6s,baz=16,slow=4.6,SNR=6.3						
AKASG	**Malin Array Be**	**144.48**	**328**	PKP	**PKPdf**	**19 16 28.0**	**-0.3**
	comp=Z,3.2nm,0.4s,baz=45,slow=4.3,SNR=45						
AKASG				SKPbc	**SKiKP**	**19 19 17.8**	**+0.2**
	comp=Z,0.4nm,0.3s,baz=43,slow=3.0,SNR=8.3						
BRTR	**Keskin Array B**	**147.21**	**308**	PKPbc	**PKPbc**	**19 16 36.5**	**-0.2**
	comp=Z,1.5nm,0.6s,baz=166,slow=4.9,SNR=13						
BRTR				pPKPbc	**pPKPbc**	**19 18 37.7**	**-2.9**
	comp=Z,0.3nm,0.7s,baz=107,slow=5.0,SNR=2.1						
KWP	**Kalwaria Pacla**	**148.26**	**331**⇑	*i*P	**PKPbc**	**19 16 39.8**	**+1.0**
CFR	**Carcaliu**	**148.38**	**320**⇓	*i*P	**PKPbc**	**19 16 40.0**	**+0.8**
BURAR	**Bucovina Array**	**148.49**	**326**⇑	*i*P	**PKPbc**	**19 16 41.6**	**+2.0**
OKC	**Ostrava-Krasne**	**149.95**	**336**	*e*PKP	**PKPbc**	**19 16 43.8**	**+0.9**
UPC	**Upice**	**150.13**	**339**	*e*PKP	**PKPbc**	**19 16 44.4**	**+1.1**
DPC	**Dobruska-Polom**	**150.16**	**339**	*e*PKP	**PKPbc**	**19 16 44.7**	**+1.3**
KRLC	**Kraliky**	**150.24**	**338**	*e*PKP	**PKPbc**	**19 16 44.6**	**+1.0**
ARR	**Arges**	**150.25**	**324**⇑	*i*P	**PKPbc**	**19 16 45.6**	**+1.8**
CLL	**Collm**	**150.31**	**343**⇓	*i*P	**PKPbc**	**19 16 44.2**	**+0.5**
	comp=Z,8.0nm,0.6s						
CLL				*i*		19 18 53.9	
BRG	**Berggiesshubel**	**150.44**	**342**	*i* PKP	**PKPbc**	**19 16 44.7**	**+0.7**
	comp=Z,6.7nm,0.5s						
PVCC	**Panska Ves**	**150.57**	**341**	*e*PKP	**PKPbc**	**19 16 45.4**	**+1.1**
KHC	**Kasperske Hory**	**152.10**	**341**	*e*PKP	**PKPbc**	**19 16 48.7**	**+0.8**
GERES	**GERESS Array B**	**152.32**	**340**	PKPbc	**PKPbc**	**19 16 48.3**	**-0.1**
	comp=Z,0.6nm,0.5s,baz=45,slow=2.5,SNR=6.7						
GERES				pPKPbc	**pPKPbc**	**19 18 52.8**	**-0.8**
	comp=Z,0.1nm,0.3s,baz=50,slow=3.1,SNR=2.3						
TORD	**Torodi Ar. Bea**	**169.74**	**189**	PKP	**PKPdf**	**19 16 59.5**	**-0.5**
	comp=Z,1.5nm,1.1s,baz=285,slow=12,SNR=4.3						
TORD				PKPab	**PKPab**	**19 18 18.2**	**+0.5**
	comp=Z,2.5nm,0.8s,baz=174,slow=3.9,SNR=12						

JMA 28 19:10:56.1,36.°95N×140.°77E,h26km±1km,**M2.8,Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.15**	**9**	P	Pb	19 11 01.2	-0.2
ONAJ				S	Sb	19 11 04.9	-0.2
JHO	**Hitachi**	**0.38**	**206**	P	Pb	19 11 04.0	-0.3
JHO				S	Sb	19 11 09.6	-0.3
JFK	**Kawauchi**	**0.42**	**11**	P	Pb	19 11 04.7	-0.5
JFK				S	Sb	19 11 11.0	-0.3
JFT	**Otama**	**0.66**	**329**	P	Pb	19 11 09.1	0.0
JFT				S	Sb	19 11 18.3	+0.3
JMM	**Marumori**	**0.92**	**1**	P	Pn	19 11 12.6	-0.7
JMM				S	Sb	19 11 24.8	-0.3
JOU	**Okura**	**1.42**	**357**	P	Pb	19 11 21.6	-0.3
JOU				S	Sb	19 11 40.0	+0.5
MAT	**Matsushiro**	**2.10**	**260**	P	Pn	19 11 31.4	+1.8
MAT				S	Sb	19 11 58.4	-0.7

IDC 28 19:22:17.3±2.8,**2.°85N**×**99.°59E, h128**km±65km,**mb2.9**/3, **mb1 3.2**/3,**mb1mx2.9**/35,**mbtmp3.3**/3,**Error ellipse: s-maj=212.9km s-min=22.5km az=55.0,Northern Sumatera**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PSI	**Prapat**	**0.66**	**266**	P	Pn	19 22 39.4	+2.1
	25nm,0.3s,baz=158,slow=5.1,SNR=68						
PSI				S	Sn	19 22 53.5	+1.1
	12nm,0.3s,baz=150,slow=4.8,SNR=20						
WRA	**Warramunga Arr**	**40.95**	**125**	P	P	19 29 48.7	+1.0
	0.3nm,0.4s,baz=303,slow=9.1,SNR=8.2						
ASAR	**Alice Springs**	**42.55**	**130**	P	P	19 30 00.8	+0.1
	0.2nm,0.7s,baz=300,slow=7.3,SNR=5.5						
MKAR	**Makanchi Array**	**46.28**	**344**	P	P	19 30 30.5	+0.6
	0.1nm,0.3s,baz=149,slow=11,SNR=3.5						

*ISCJB **28** 19:50:54.7±0.4,23.°76N±0.°02×121.°85E±0.°02,h33km±2km, Error ellipse: s-maj=3.7km s-min=2.5km az=139.0*
*TAP **28** 19:50:54.5,23.°79N×121.°81E,h37km±1km,ML2.7,D*
*JMA **28** 19:50:54.2±0.1,23.°75N×121.°82E,h36km±2km*

ISC 28 19:50:53.9±1.1,**23.°75N**±0.°02×**121.°83E**±0.°02,**h27**km±12km, **n40**,σ0**°48**/**78**,**Taiwan**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HWA	**Hwalien**	**0.30**	**318**	*e*P	**Pn**	**19 51 02.8**	**+0.1**
	baz=317						
HWA				*e*S	**Sn**	**19 51 08.5**	**+0.2**
	baz=317						
ESL	**Shilin**	**0.37**	**280**	*e*P	**Pn**	**19 51 03.3**	**-0.2**
	baz=274						
ESL				*e*S	**Sn**	**19 51 10.1**	**+0.2**
	baz=274						
TWD	**Chiawan**	**0.39**	**327**	*i* P	**Pn**	**19 51 03.7**	**-0.2**
	baz=327						
TWD				*i* S	**Sn**	**19 51 10.0**	**-0.5**
	baz=327						
EHY	**Hungye**	**0.53**	**242**	P	**Pn**	**19 51 05.7**	**-0.1**
	baz=237						
EHY				S	**Sn**	**19 51 13.2**	**-0.6**
	baz=237						
TWF1	**Yuli**	**0.63**	**231**	P	**Pn**	**19 51 07.3**	**+0.1**
	baz=226						
TWF1				S	**Sn**	**19 51 16.1**	**-0.3**
	baz=226						
WHF	**Hehuan Shan**	**0.65**	**307**	*e*P	**Pb**	**19 51 07.5**	**+0.5**
	baz=306						
WHF				*e*S	**Sb**	**19 51 15.6**	**-0.2**
	baz=306						
ENA	**Nanau**	**0.68**	**353**	P	**Pn**	**19 51 07.6**	**-0.2**
	baz=355						
ENA				*e*S	**Sn**	**19 51 16.9**	**-0.7**
	baz=355						
CHKT	**Chengkung**	**0.78**	**213**	*e*P	**Pb**	**19 51 08.9**	**+0.1**
	baz=210						
CHKT				*e*S	**Sb**	**19 51 18.6**	**-0.4**
	baz=210						
TWT	**Tachien**	**0.78**	**310**	*e*P	**Pn**	**19 51 09.4**	**+0.1**
	baz=308						
TWT				*e*S	**Sb**	**19 51 19.5**	**+0.2**
	baz=308						
NNS	**Nan Shan**	**0.80**	**329**	P	**Pn**	**19 51 09.7**	**0.0**
	baz=329						
NNS				S	**Sb**	**19 51 19.7**	**-0.2**
	baz=329						
YUS	**Yu-Shan**	**0.85**	**252**	P	**Pn**	**19 51 11.2**	**+0.6**
	baz=249						
YUS				*e*S	**Sb**	**19 51 21.9**	**+0.4**
	baz=249						
TWC	**Suao**	**0.85**	**1**	P	**Pn**	**19 51 10.4**	**+0.2**
	baz=3.0						
TWC				S	**Sn**	**19 51 21.6**	**-0.3**
	baz=3.0						
SMLT	**Sun Moon Lake**	**0.86**	**279**	*e*P	**Pn**	**19 51 10.6**	**+0.1**
	baz=276						
SMLT				*e*S	**Sn**	**19 51 22.1**	**-0.2**
	baz=276						
TYC	**Yuchr**	**0.90**	**280**	*e*P	**Pn**	**19 51 11.2**	**+0.3**
	baz=277						
TYC				*e*S	**Sn**	**19 51 23.0**	**-0.1**
	baz=277						
ENTT	**Nioudou**	**0.92**	**345**	*e*P	**Pb**	**19 51 11.1**	**-0.1**
	baz=345						
ENTT				*e*S	**Sb**	**19 51 22.9**	**-0.2**
	baz=345						
ELDTW	**Lidau**	**0.93**	**233**	*e*P	**Pb**	**19 51 11.2**	**-0.4**
	baz=230						
ELDTW				*e*S	**Sb**	**19 51 23.4**	**-0.2**
	baz=230						
ALS	**Alishan**	**0.97**	**256**	*e*P	**Pn**	**19 51 12.7**	**+0.6**
	baz=253						
ALS				*e*S	**Sb**	**19 51 25.0**	**+0.2**
	baz=253						
TWE	**Neicheng**	**0.98**	**351**	*e*P	**Pn**	**19 51 12.0**	**+0.1**
	baz=353						
TWE				*e*S	**Sb**	**19 51 24.5**	**-0.2**
	baz=353						
NSK	**Sanguang**	**1.02**	**335**	P	**Pn**	**19 51 12.7**	**+0.1**
	baz=335						
NSK				S	**Sb**	**19 51 24.9**	**-1.1**
	baz=335						
CHN5	**Tsauling**	**1.07**	**262**	*e*P	**Pb**	**19 51 14.2**	**+0.4**

baz=243
CHN1 *eS* **Sb** **19 51 34.4 -0.2**
baz=243
SGST Jiashian 1.32 240 *eP* **Pb** **19 51 18.2 0.0**
baz=237
SGST *eS* **Sb** **19 51 34.5 -0.2**
baz=237
ECL Taimali 1.40 215 *eP* **Pb** **19 51 19.0 -0.5**
baz=213
ECL *eS* **Sn** **19 51 34.4 -1.0**
baz=213
SSD Sandimen 1.49 228 *eP* **Pb** **19 51 20.5 -0.4**
baz=225
SSD *eS* **Sn** **19 51 38.6 +1.0**
baz=225
EAST Anshuo 1.64 214 *eP* **Pb** **19 51 22.9 -0.6**
baz=212
EAST *eS* **Sb** **19 51 42.9 -0.8**
baz=212
IRIF Iriomote-Funau 1.83 71 P **Pn** **19 51 24.8 +1.1**
IRIF *eS* **Sn** **19 51 46.4 +0.4**
JKRS Kuro-shima 2.05 76 P **Pn** **19 51 27.8 +1.1**
JKRS *eS* **Sn** **19 51 52.4 +1.0**
JIJ Ishigaki jima 2.20 73 P **Pn** **19 51 29.1 +0.3**
JIJ S **Sn** **19 51 54.5 -0.6**
JISG Ishigakijimahi 2.41 69 P **Pn** **19 51 32.0 +0.3**
JISG *eS* **Sn** **19 51 59.2 -1.2**
JTJ Tarama 2.77 71 P **Pn** **19 51 37.1 +0.5**

GEN ***28*** *20:14:37.6, 44.˚73N× 10.˚08E, h0km, ML3.0*
ISCJB ***28*** *20:14:37.5± 0.2, 44.˚70N± 0.˙01× 9.˚99E± 0.˙01, h15km± 1km, Error ellipse: s-maj=2.1km s-min=1.6km az=151.0*
CSEM ***28*** *20:14:38.2± 0.1, 44.˚68N× 10.˚01E, h10km, ML3.2/37, Error ellipse: s-maj=2.3km s-min=1.8km az=161.0*
ROM ***28*** *20:14:38.8± 0.1, 44.˚63N× 10.˚00E, h25km± 2km, Ml3.0/26, Error ellipse: s-maj=2.2km s-min=1.7km az=122.0*
LDG ***28*** *20:14:39.6± 0.1, 44.˚67N× 10.˚09E, h10km, Ml3.1/25, Error ellipse: s-maj=2.5km s-min=2.0km az=20.0*
PRU ***28*** *20:14:40.1, 44.˚71N× 10.˚20E, h9km*
STR ***28*** *20:14:45.0± 0.4, 44.˚96N× 9.˚28E, h5km, Ml3.0, Error ellipse: s-maj=0.0km s-min=0.0km az=0.0*

ISC 28 20:14:39.0± 0.8, **44.˚64N**± 0.˙01 × **10.˚02E**± 0.˙01, **h18**km± 2km, **n243**, σ 1 **s17**/390, **2D**, **Northern Italy**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
GRAM	**Graiana**	**0.15**	**169**	P	**Pb**	**20 14 43.0**	**+0.4**
GRAM				S	**Sg**	**20 14 46.7**	**+0.4**
PRMA	**PARMA**	**0.24**	**60**	Pg	**Pb**	**20 14 44.3**	**-0.3**
PRMA				Sg	**Sg**	**20 14 49.9**	**+1.6**
PRMA	**PARMA**	**0.24**	**60**	Pg	**Pb**	**20 14 44.3**	**-0.3**
PRMA				Sg	**Sg**	**20 14 49.9**	**+1.6**
CODM	**Codolo**	**0.28**	**206**	P	**Pg**	**20 14 45.5**	**+0.3**
CODM				S	**Sb**	**20 14 50.2**	**+0.5**
ERBM	**Eremo**	**0.36**	**129**	Pg	**Pg**	**20 14 46.2**	**-0.3**
ERBM				Sg	**Sb**	**20 14 53.3**	**+1.1**
ERBM	**Eremo**	**0.36**	**129**	Pg	**Pg**	**20 14 46.2**	**-0.3**
ERBM				Sg	**Sb**	**20 14 53.3**	**+1.1**
SC2M	**Scurtabo**	**0.42**	**236**	Pg	**Pg**	**20 14 47.4**	**-0.3**
SC2M				Sg	**Sg**	**20 14 54.5**	**+0.9**
SC2M	**Scurtabo**	**0.42**	**236**	P	**Pg**	**20 14 47.3**	**-0.4**
SC2M				Sg	**Sg**	**20 14 54.5**	**+0.9**
BOB	**Bobbio (Coli)**	**0.43**	**287**	Pg	**Pg**	**20 14 47.8**	**0.0**
BOB				Sg	**Sb**	**20 14 55.4**	**+1.1**
	1μm,0.3s						
BOB	**Bobbio (Coli)**	**0.43**	**287**	Pg	**Pg**	**20 14 47.8**	**0.0**
BOB				Sg	**Sb**	**20 14 55.4**	**+1.1**
	1μm,0.3s						
MSSA	**Maissana**	**0.49**	**228**	Pg	**Pg**	**20 14 48.4**	**-0.5**
MSSA				Sg	**Sg**	**20 14 56.1**	**+0.6**
	564nm,0.2s						
MSSA	**Maissana**	**0.49**	**228**	Pg	**Pg**	**20 14 48.4**	**-0.5**
MSSA				Sg	**Sg**	**20 14 56.1**	**+0.6**
	564nm,0.2s						
NOVE	**Novellara**	**0.52**	**72**	Pg	**Pb**	**20 14 49.4**	**-0.1**
NOVE				Sg	**Sn**	**20 14 59.1**	**-0.7**
	2μm,0.7s						
NOVE	**Novellara**	**0.52**	**72**	Pg	**Pb**	**20 14 49.4**	**-0.1**
NOVE				Sg	**Sn**	**20 14 59.1**	**-0.7**
	2μm,0.7s						
SARO	**Sassorosso**	**0.53**	**149**	P	**Pb**	**20 14 48.5**	**-1.3**
SARO				S	**Sb**	**20 14 57.0**	**-0.1**
VLC	**Villacollemand**	**0.55**	**152**	Pg	**Pb**	**20 14 49.2**	**-0.8**
VLC				Sg	**Sg**	**20 14 58.0**	**+0.6**
	297nm,0.4s						
VLC	**Villacollemand**	**0.55**	**152**	Pg	**Pb**	**20 14 49.2**	**-0.8**
VLC				Sg	**Sg**	**20 14 58.0**	**+0.6**
	297nm,0.4s						
PLMA	**Palmaria, Port**	**0.61**	**192**	Pg	**Pb**	**20 14 50.1**	**-0.8**
PLMA				Sg	**Sb**	**20 14 58.7**	**-0.4**
	539nm,0.3s						
PLMA	**Palmaria, Port**	**0.61**	**192**	Pg	**Pb**	**20 14 50.1**	**-0.8**
PLMA				Sg	**Sb**	**20 14 58.7**	**-0.4**
	539nm,0.3s						
CTL8	**Castelleone**	**0.66**	**344**	Pg	**Pg**	**20 14 52.8**	**+0.8**
	446nm,0.7s						
CTL8	**Castelleone**	**0.66**	**344**	Pg	**Pg**	**20 14 52.8**	**+0.8**
	446nm,0.7s						
BDI	**Bagni Di Lucca**	**0.71**	**144**	Pg	**Pb**	**20 14 51.8**	**-1.0**
BDI				Sg	**Sg**	**20 15 03.2**	**+0.8**
BDI	**Bagni Di Lucca**	**0.71**	**144**	Pg	**Pb**	**20 14 51.8**	**-1.0**
BDI				Sg	**Sg**	**20 15 03.2**	**+0.8**
ZCCA	**Zocca**	**0.74**	**113**	Pg	**Pg**	**20 14 54.0**	**+0.5**
	357nm,0.8s						
ZCCA	**Zocca**	**0.74**	**113**	Pg	**Pg**	**20 14 54.0**	**+0.5**
	357nm,0.8s						
SBPO	**S.Benedetto Po**	**0.76**	**57**	Pg	**Pb**	**20 14 53.8**	**+0.2**
	1μm,0.4s						
SBPO	**S.Benedetto Po**	**0.76**	**57**	Pg	**Pb**	**20 14 53.8**	**+0.2**
	1μm,0.4s						
RAVA	**Ravarino**	**0.79**	**81**	Pg	**Pn**	**20 14 55.7**	**+0.6**
	674nm,0.2s						
RAVA	**Ravarino**	**0.79**	**81**	Pg	**Pn**	**20 14 55.7**	**+0.6**
	674nm,0.2s						
POPM	**Popiglio**	**0.80**	**138**	P	**Pb**	**20 14 53.7**	**-0.6**
MAIM	**Mastiano**	**0.80**	**155**	Pg	**Pb**	**20 14 54.0**	**-0.4**
MAIM				Sg	**Sb**	**20 15 05.1**	**+0.3**
	192nm,0.4s						
MAIM	**Mastiano**	**0.80**	**155**	P	**Pb**	**20 14 54.0**	**-0.4**
MAIM				Sg	**Sb**	**20 15 05.1**	**+0.3**
	192nm,0.4s						
FNVD	**Fontana Vidola**	**0.92**	**121**	Pg	**Pb**	**20 14 56.2**	**-0.2**
	483nm,0.6s						
FNVD	**Fontana Vidola**	**0.92**	**121**	Pg	**Pb**	**20 14 56.2**	**-0.2**
	483nm,0.6s						
SALO	**Salr**	**1.04**	**20**	Pg	**Pb**	**20 14 58.2**	**-0.2**
SALO				Sg	**Sg**	**20 15 13.6**	**+0.8**
	712nm,0.6s						
SALO	**Salr**	**1.04**	**20**	Pg	**Pb**	**20 14 58.2**	**-0.2**
SALO				Sg	**Sg**	**20 15 13.6**	**+0.8**
	712nm,0.6s						
FIU	**Minerbio Fiu**	**1.05**	**90**	Pg	**Pg**	**20 15 00.2**	**+0.9**
	1μm,0.7s						
FIU	**Minerbio Fiu**	**1.05**	**90**	Pg	**Pg**	**20 15 00.2**	**+0.9**
	1μm,0.7s						
PCP	**Piancastagn**	**1.06**	**265**	Pg	**Pb**	**20 14 58.5**	**-0.3**
	403nm,0.8s						
PCP	**Piancastagn**	**1.06**	**265**	Pg	**Pb**	**20 14 58.5**	**-0.3**
	403nm,0.8s						
SEI	**Scarperia**	**1.12**	**121**	Pg	**Pn**	**20 15 00.1**	**+0.3**
	377nm,0.3s						
SEI	**Scarperia**	**1.12**	**121**	Pg	**Pn**	**20 15 00.1**	**+0.3**
	377nm,0.3s						
MDI	**Monti di Nese**	**1.16**	**349**	Pg	**Pn**	**20 14 59.6**	**-0.7**
MDI				Sg	**Sg**	**20 15 17.1**	**+0.6**
MDI	**Monti di Nese**	**1.16**	**349**	Pg	**Pn**	**20 14 59.6**	**-0.7**
MDI				Sg	**Sg**	**20 15 17.1**	**+0.6**
ROTM	**Rocchetta Tana**	**1.21**	**280**	P	**Pg**	**20 15 02.7**	**+0.4**
MAGA	**Magasa**	**1.21**	**20**	Pg	**Pn**	**20 15 00.1**	**-1.0**
MAGA				Sg	**Sb**	**20 15 17.2**	**+0.5**
	639nm,0.4s						
MAGA	**Magasa**	**1.21**	**20**	Pg	**Pn**	**20 15 00.1**	**-1.0**
MAGA				Sg	**Sb**	**20 15 17.2**	**+0.5**
	639nm,0.4s						
QLNO	**Quiliano**	**1.24**	**256**	Pg	**Pn**	**20 15 01.3**	**-0.1**
	88nm,0.5s						
QLNO	**Quiliano**	**1.24**	**256**	Pg	**Pn**	**20 15 01.3**	**-0.1**
	88nm,0.5s						
ROVR	**Rover¨¤ Verone**	**1.25**	**36**	Pg	**Pn**	**20 15 00.9**	**-0.7**
	902nm,0.6s						
ROVR	**Rover¨¤ Verone**	**1.25**	**36**	Pg	**Pn**	**20 15 00.9**	**-0.7**
	902nm,0.6s						
CMPO	**Campotto Po**	**1.27**	**92**	Pg	**Pg**	**20 15 03.4**	**-0.2**
	704nm,1.0s						
CMPO	**Campotto Po**	**1.27**	**92**	Pg	**Pg**	**20 15 03.4**	**-0.2**
	704nm,1.0s						
MARN	**Marana (Italy)**	**1.30**	**40**	*e*Pg	**Pn**	**20 15 01.4**	**-0.9**
MARN				*e*Sg	**Sn**	**20 15 18.2**	**-1.0**
MARN	**Marana (Italy)**	**1.30**	**40** ‖	*e*Pg	**Pn**	**20 15 01.4**	**-0.9**
MARN				*e*Sg	**Sn**	**20 15 18.2**	**-1.0**
FINB	**Finale Ligure**	**1.30**	**250**	Pg	**Pn**	**20 15 01.9**	**-0.3**
	230nm,0.4s						
FINB	**Finale Ligure**	**1.30**	**250**	Pg	**Pn**	**20 15 01.9**	**-0.3**
	230nm,0.4s						
TEOL	**Teolo**	**1.37**	**58**	Pg	**Pn**	**20 15 03.7**	**+0.5**
TEOL	**Teolo**	**1.37**	**58**	Pg	**Pn**	**20 15 03.7**	**+0.5**
TEOL	**Teolo**	**1.37**	**58**	*e*Pg	**Pn**	**20 15 03.4**	**+0.3**
RNI	**Roncone**	**1.40**	**17**	*e*Pg	**Pn**	**20 15 03.0**	**-0.8**
RNI				*e*Sg	**Sn**	**20 15 21.2**	**-0.7**
RNI	**Roncone**	**1.40**	**17**	*e*Pg	**Pn**	**20 15 03.0**	**-0.8**
RNI				*e*Sg	**Sn**	**20 15 21.2**	**-0.7**
MABI	**Malga Bissina**	**1.45**	**14**	Pg	**Pn**	**20 15 03.6**	**-0.9**
	85nm,0.6s						
MABI	**Malga Bissina**	**1.45**	**14**	Pg	**Pn**	**20 15 03.6**	**-0.9**
	85nm,0.6s						
MUGIO	**Muggio**	**1.46**	**332**	Pg	**Pn**	**20 15 03.8**	**-0.6**
MUGIO	**Muggio**	**1.46**	**332**	Pg	**Pn**	**20 15 03.8**	**-0.6**
ADRI	**Adria, Italy**	**1.47**	**74**	*e*Pg	**Pb**	**20 15 06.3**	**+0.5**
ADRI				*e*Sg	**Sg**	**20 15 27.3**	**+0.8**
ADRI	**Adria, Italy**	**1.47**	**74**	*e*Pg	**Pb**	**20 15 06.3**	**+0.5**
ADRI				*e*Sg	**Sg**	**20 15 27.3**	**+0.8**
DDS	**Dosso del Somm**	**1.49**	**33**	*e*Pg	**Pn**	**20 15 04.0**	**-1.0**
DDS				*e*Sg	**Sn**	**20 15 23.2**	**-0.8**
DDS	**Dosso del Somm**	**1.49**	**33**	*e*Pg	**Pn**	**20 15 04.0**	**-1.0**
DDS				*e*Sg	**Sn**	**20 15 23.2**	**-0.8**
RORO	**Rocca Rossa**	**1.50**	**250**	P	**Pn**	**20 15 05.1**	**+0.1**
ASQU	**Asqua**	**1.53**	**123**	Pg	**Pb**	**20 15 06.8**	**+0.1**
	91nm,0.7s						
ASQU	**Asqua**	**1.53**	**123**	Pg	**Pb**	**20 15 06.8**	**+0.1**
	91nm,0.7s						
PANI	**Panarotta**	**1.68**	**33**	*e*Pg	**Pn**	**20 15 06.8**	**-0.9**
PANI	**Panarotta**	**1.68**	**33**	*e*Pg	**Pn**	**20 15 06.8**	**-0.9**
IMI	**Imperia**	**1.70**	**245**	P	**Pn**	**20 15 07.2**	**-0.5**
CRE	**Caprese Michel**	**1.72**	**126**	Pg	**Pb**	**20 15 09.7**	**-0.4**
	80nm,0.5s						
CRE	**Caprese Michel**	**1.72**	**126**	Pg	**Pb**	**20 15 09.7**	**-0.4**
	80nm,0.5s						
CGRP	**Cima Grappa**	**1.76**	**45**	Pg	**Pn**	**20 15 08.1**	**-0.6**
	205nm,0.7s						
CGRP	**Cima Grappa**	**1.76**	**45**	*e*Pg	**Pn**	**20 15 08.1**	**-0.6**
CGRP				*e*Sg	**Sn**	**20 15 31.0**	**+0.2**
CGRP	**Cima Grappa**	**1.76**	**45**	*e*Pg	**Pn**	**20 15 08.1**	**-0.6**
CGRP				*e*Sg	**Sn**	**20 15 31.0**	**+0.2**
CARE	**Lago del Cares**	**1.84**	**15**	*e*Pg	**Pn**	**20 15 09.5**	**-0.4**
CARE	**Lago del Cares**	**1.84**	**15**	*e*Pg	**Pn**	**20 15 09.5**	**-0.4**
NEGI	**Seborga**	**1.85**	**245**	P	**Pn**	**20 15 09.4**	**-0.4**
NEGI				S	**Sn**	**20 15 32.0**	**-0.7**
MTLO	**Montello**	**1.88**	**51**	*e*Pn	**Pn**	**20 15 09.8**	**-0.3**
MTLO				*e*Sn	**Sn**	**20 15 33.2**	**-0.1**
MTLO	**Montello**	**1.88**	**51** ‖	*e*Pn	**Pn**	**20 15 09.8**	**-0.3**
MTLO				*e*Sn	**Sn**	**20 15 33.2**	**-0.1**
OZOL	**Ozolo**	**1.90**	**22**	*e*Pn	**Pn**	**20 15 10.5**	**-0.1**
OZOL	**Ozolo**	**1.90**	**22**	*e*Pn	**Pn**	**20 15 10.5**	**-0.1**
VARN	**Col Varnada, M**	**2.00**	**47**	*e*Pn	**Pn**	**20 15 11.7**	**-0.1**
VARN	**Col Varnada, M**	**2.00**	**47**	*e*Pn	**Pn**	**20 15 11.7**	**-0.1**
SBF	**Sospel**	**2.02**	**248**	*e*Pn	**Pn**	**20 15 12.1**	**0.0**
	SNR=1.0						
SBF				*e*Sn	**Sn**	**20 15 37.5**	**+0.6**
	63nm,0.3s,SNR=1.0						
SBF	**Sospel**	**2.02**	**248**	*e*Pn	**Pn**	**20 15 12.1**	**0.0**
	SNR=1.0						
SBF				*e*Sn	**Sn**	**20 15 37.5**	**+0.6**
	31nm,0.3s,SNR=1.0						
APPI	**Appiano**	**2.02**	**24**	Pg	**Pn**	**20 15 11.8**	**-0.4**
	138nm,0.3s						
APPI	**Appiano**	**2.02**	**24**	Pg	**Pn**	**20 15 11.8**	**-0.4**
	138nm,0.3s						
LUCF	**Luceram**	**2.06**	**250**	Pn	**Pn**	**20 15 14.0**	**+1.2**
LUCF	**Luceram**	**2.06**	**250**	Pg	**Pb**	**20 15 18.0**	**+2.1**
LUCF				Sg	**Sb**	**20 15 42.7**	**+1.4**
LUCF	**Luceram**	**2.06**	**250**	Pn	**Pn**	**20 15 14.0**	**+1.2**
LUCF	**Luceram**	**2.06**	**250**	Pg	**Pb**	**20 15 18.0**	**+2.1**
LUCF				Sg	**Sb**	**20 15 42.7**	**+1.4**
FAU	**Forcella Aurin**	**2.10**	**40**	*e*Pn	**Pn**	**20 15 13.2**	**-0.2**
FAU				*e*Sn	**Sn**	**20 15 38.5**	**-0.6**
FAU	**Forcella Aurin**	**2.10**	**40**	*e*Pn	**Pn**	**20 15 13.2**	**-0.2**
FAU				*e*Sn	**Sn**	**20 15 38.5**	**-0.6**
ATPC	**Poggio Castell**	**2.10**	**123**	Pg	**Pn**	**20 15 14.6**	**+1.3**
	78nm,0.8s						
ATPC	**Poggio Castell**	**2.10**	**123**	Pg	**Pn**	**20 15 14.6**	**+1.3**
	78nm,0.8s						
AGOR	**Agordo**	**2.17**	**40**	*e*Pn	**Pn**	**20 15 14.6**	**+0.3**
MVIF	**Mont Vial**	**2.19**	**251**	Pn	**Pn**	**20 15 15.6**	**+1.0**
MVIF	**Mont Vial**	**2.19**	**251**	Pg	**Pg**	**20 15 20.8**	**-0.3**
MVIF				Sg	**Sb**	**20 15 45.5**	**+0.5**
MVIF	**Mont Vial**	**2.19**	**251**	Pn	**Pn**	**20 15 15.6**	**+1.0**
MVIF	**Mont Vial**	**2.19**	**251**	Pg	**Pg**	**20 15 20.8**	**-0.3**
MVIF				Sg	**Sb**	**20 15 45.5**	**+0.5**
OG22	**Abries**	**2.20**	**276**	Pn	**Pn**	**20 15 13.9**	**-0.9**
OG22	**Abries**	**2.20**	**276**	Pg	**Pn**	**20 15 16.7**	**+1.9**
OG22				Sg	**Sn**	**20 15 39.7**	**-1.9**
OG22	**Abries**	**2.20**	**276**	Pn	**Pn**	**20 15 13.9**	**-0.9**
OG22	**Abries**	**2.20**	**276**	Pg	**Pn**	**20 15 16.7**	**+1.9**
PGF	**Pioggiola**	**2.22**	**200**	*e*Pn	**Pn**	**20 15 14.2**	**-0.8**
	SNR=1.0						
PGF				*e*Sn	**Sn**	**20 15 40.5**	**-1.5**
	17nm,0.2s,SNR=1.0						
PGF	**Pioggiola**	**2.22**	**200**	*e*Pn	**Pn**	**20 15 14.2**	**-0.8**
	SNR=1.0						
PGF				*e*Sn	**Sn**	**20 15 40.5**	**-1.5**
	8.7nm,0.2s,SNR=1.0						
POLC	**Polcenigo**	**2.23**	**51**	*e*Pn	**Pn**	**20 15 14.5**	**-0.4**
POLC	**Polcenigo**	**2.23**	**51**	*e*Pn	**Pn**	**20 15 14.5**	**-0.4**
MBDF	**Montbardon**	**2.32**	**273**	*e*Pn	**Pn**	**20 15 17.4**	**+1.0**
	SNR=1.0						
MBDF				*e*Sn	**Sn**	**20 15 45.2**	**+0.7**
MBDF				*e*Sg	**Sg**	**20 15 54.0**	**+0.3**
	79nm,0.6s						
MBDF	**Montbardon**	**2.32**	**273**	*e*Pn	**Pn**	**20 15 17.4**	**+1.0**
	SNR=1.0						
MBDF				*e*Sn	**Sn**	**20 15 45.2**	**+0.7**
MBDF				*e*Sg	**Sg**	**20 15 54.0**	**+0.3**
	40nm,0.6s						
CIMO	**Cimolais**	**2.38**	**45**	*e*Pn	**Pn**	**20 15 16.8**	**-0.3**
CIMO	**Cimolais**	**2.38**	**45**	*e*Pn	**Pn**	**20 15 16.8**	**-0.3**
CALN	**Calern**	**2.42**	**250**	Pn	**Pn**	**20 15 20.0**	**+2.2**
CALN	**Calern**	**2.42**	**250**	Pg	**Pb**	**20 15 24.3**	**+2.2**
CALN				Sg	**Sb**	**20 15 53.1**	**+1.4**
CALN	**Calern**	**2.42**	**250**	Pn	**Pn**	**20 15 20.0**	**+2.2**
CALN	**Calern**	**2.42**	**250**	Pg	**Pb**	**20 15 24.3**	**+2.2**
CALN				Sg	**Sb**	**20 15 53.1**	**+1.4**
FETA	**Feichten**	**2.43**	**11**	*i* Pn	**Pn**	**20 15 18.4**	**+0.5**
	3.7nm,0.4s						
FETA				*i* Sn	**Sn**	**20 15 48.6**	**+1.4**
	10nm,0.4s						
FETA	**Feichten**	**2.43**	**11**	Pn	**Pn**	**20 15 18.4**	**+0.5**
	3.7nm,0.4s						
FETA				Sn	**Sn**	**20 15 48.6**	**+1.4**
	10nm,0.4s						
LPG	**La Plagne**	**2.47**	**291**	*e*Pn	**Pn**	**20 15 18.9**	**+0.3**
	SNR=1.0						
LPG				*e*Sn	**Sn**	**20 15 47.8**	**-0.6**
LPG				*e*Sg	**Sg**	**20 15 58.8**	**+0.3**
	42nm,0.7s,SNR=1.0						
LPG	**La Plagne**	**2.47**	**291**	*e*Pn	**Pn**	**20 15 18.9**	**+0.3**
	SNR=1.0						
LPG				*e*Sn	**Sn**	**20 15 47.8**	**-0.6**
LPG				*e*Sg	**Sg**	**20 15 58.8**	**+0.3**
	21nm,0.7s,SNR=1.0						
LPL	**La Plagne**	**2.49**	**292**	*e*Pn	**Pn**	**20 15 19.4**	**+0.6**
	SNR=1.0						
LPL				*e*Sn	**Sn**	**20 15 48.9**	**+0.1**
LPL				*e*Sg	**Sg**	**20 15 59.1**	**+0.1**
	33nm,0.4s						
LPL	**La Plagne**	**2.49**	**292**	*e*Pn	**Pn**	**20 15 19.4**	**+0.6**
	SNR=1.0						
LPL				*e*Sn	**Sn**	**20 15 48.9**	**+0.1**
LPL				*e*Sg	**Sg**	**20 15 59.1**	**+0.1**
	16nm,0.4s						
DAVA	**Damuels**	**2.65**	**358**	*e*Pn	**Pn**	**20 15 22.6**	**+1.7**
	14nm,0.3s,SNR=9.7						
DAVA				*i* Sn	**Sn**	**20 15 54.9**	**+2.4**
	20nm,0.4s						
DAVA	**Damuels**	**2.65**	**358**	Pn	**Pn**	**20 15 22.6**	**+1.7**
	14nm,0.3s,SNR=9.7						
DAVA				Sn	**Sn**	**20 15 54.9**	**+2.4**
	20nm,0.4s						
FRF	**La Foret Royal**	**2.66**	**247**	*e*Pn	**Pn**	**20 15 21.4**	**+0.5**
	SNR=1.0						
FRF				*e*Sn	**Sn**	**20 15 53.3**	**+0.6**
FRF				*e*Sg	**Sg**	**20 16 04.5**	**0.0**
	15nm,0.4s,SNR=1.0						
FRF	**La Foret Royal**	**2.66**	**247**	*e*Pn	**Pn**	**20 15 21.4**	**+0.5**
	SNR=1.0						
FRF				*e*Sn	**Sn**	**20 15 53.3**	**+0.6**
FRF				*e*Sg	**Sg**	**20 16 04.5**	**0.0**
	7.3nm,0.4s,SNR=1.0						
CLUD	**Cludinico**	**2.71**	**47**	*e*Pn	**Pn**	**20 15 21.6**	**0.0**
CLUD	**Cludinico**	**2.71**	**47**	*e*Pn	**Pn**	**20 15 21.6**	**0.0**
SQTA	**Sankt Quirin**	**2.71**	**17**	*i* Pn	**Pn**	**20 15 23.3**	**+1.6**
SQTA	**Sankt Quirin**	**2.71**	**17**	Pn	**Pn**	**20 15 23.3**	**+1.6**
ABTA	**Abfaltersbach**	**2.73**	**39**	*e*Pn	**Pn**	**20 15 22.3**	**+0.3**
	3.5nm,0.4s,SNR=7.1						
ABTA				*i* Sn	**Sn**	**20 15 55.3**	**+0.7**
	18nm,0.3s						
ABTA				*i* Sg	**Sg**	**20 16 09.1**	**+2.3**
	28nm,0.7s						
ABTA	**Abfaltersbach**	**2.73**	**39**	Pn	**Pn**	**20 15 22.3**	**+0.3**
	3.5nm,0.4s,SNR=7.1						
ABTA				Sn	**Sn**	**20 15 55.3**	**+0.7**
	18nm,0.3s						
ABTA				Sg	**Sg**	**20 16 09.1**	**+2.3**
	28nm,0.7s						
MOTA	**Moosalm**	**2.81**	**15**	*e*Pn	**Pn**	**20 15 25.4**	**+2.4**
	6.5nm,0.4s,SNR=12						
MOTA				*i* Sn	**Sb**	**20 16 01.4**	**-1.2**
	5.3nm,0.3s						
MOTA	**Moosalm**	**2.81**	**15**	Pn	**Pn**	**20 15 25.4**	**+2.4**
	6.5nm,0.4s,SNR=12						
ZOU	**Zoufplan**	**2.82**	**46**	*e*Pn	**Pn**	**20 15 23.7**	**+0.4**
WTTA	**Wattenberg**	**2.85**	**23**	*i* Pn	**Pn**	**20 15 25.7**	**+2.0**
	3.0nm,0.2s						
WTTA				*i* Sn	**Sn**	**20 15 57.4**	**-0.3**
	12nm,0.3s						
WTTA	**Wattenberg**	**2.85**	**23**	Pn	**Pn**	**20 15 25.7**	**+2.0**
	3.0nm,0.2s						
WTTA				Sn	**Sn**	**20 15 57.4**	**-0.3**
	12nm,0.3s						
LMR	**La Mourre**	**2.85**	**244**	*e*Pn	**Pn**	**20 15 23.0**	**-0.6**
LMR				*e*Sn	**Sn**	**20 15 56.7**	**-0.7**
	36nm,0.4s						
LMR	**La Mourre**	**2.85**	**244**	*e*Pn	**Pn**	**20 15 23.0**	**-0.6**
LMR				*e*Sn	**Sn**	**20 15 56.7**	**-0.7**
	18nm,0.4s						
RETA	**Reutte**	**2.89**	**10**	*i* Pn	**Pn**	**20 15 25.0**	**+0.9**
	2.7nm,0.2s						
RETA				*i* Sn	**Sn**	**20 15 60.0**	**+1.5**
	7.5nm,0.3s						
RETA	**Reutte**	**2.89**	**10**	Pn	**Pn**	**20 15 25.0**	**+0.9**
	2.7nm,0.2s						
RETA				Sn	**Sn**	**20 16 00.0**	**+1.5**
	7.5nm,0.3s						
WATA	**Walderalm**	**2.90**	**21**	*e*Pn	**Pn**	**20 15 25.7**	**+1.3**
	2.5nm,0.1s,SNR=6.1						
WATA				*i* Sn	**Sb**	**20 16 02.9**	**-2.6**
	6.1nm,0.2s						
WATA	**Walderalm**	**2.90**	**21**	Pn	**Pn**	**20 15 25.7**	**+1.3**
	2.5nm,0.1s,SNR=6.1						
WATA				Sn	**Sb**	**20 16 02.9**	**-2.6**
	6.1nm,0.2s						
ORIF	**Oris-en-Rattie**	**2.96**	**277**	*e*Pn	**Pn**	**20 15 26.4**	**+1.2**
	SNR=1.0						
ORIF				*e*Sn	**Sn**	**20 16 00.7**	**+0.4**
	29nm,0.5s						
ORIF	**Oris-en-Rattie**	**2.96**	**277**	*e*Pn	**Pn**	**20 15 26.4**	**+1.2**
	SNR=1.0						
ORIF				*e*Sn	**Sn**	**20 16 00.7**	**+0.4**
	14nm,0.5s						
SKDS	**Skadanscina**	**2.97**	**71**	*i* Pn	**Pn**	**20 15 23.6**	**-1.5**
SKDS				*i* Sn	**Sn**	**20 15 57.7**	**-2.6**
SKDS	**Skadanscina**	**2.97**	**71**	*i* Pn	**Pn**	**20 15 23.6**	**-1.5**
SKDS				*i* Sn	**Sn**	**20 15 57.7**	**-2.6**
DRE	**Drenchia**	**2.97**	**58**	*e*Pn	**Pn**	**20 15 25.9**	**+0.7**
DRE	**Drenchia**	**2.97**	**58**	*e*Pn	**Pn**	**20 15 25.9**	**+0.7**
VOJS	**Vojsko**	**3.06**	**62**	*i* Pn	**Pn**	**20 15 25.7**	**-0.7**
VOJS				*i* Sn	**Sn**	**20 16 01.6**	**-1.0**
VOJS	**Vojsko**	**3.06**	**62**	*i* Pn	**Pn**	**20 15 25.7**	**-0.7**
VOJS				*i* Sn	**Sn**	**20 16 01.6**	**-1.0**
ACOM	**Acomizza, Ital**	**3.10**	**51**	*e*Pn	**

UDBI				Sn	**Sn**	20 16 25.4	-2.9				
UDBI	**Udbina**	**4.10**	**90**	*e*Pn	**Pn**	**20 15 41.0**	**+0.2**				
UDBI				Sn	**Sn**	20 16 25.4	-2.9				
HAU	**Haudompre**	**4.22**	**324**	*e*Pn	**Pn**	**20 15 42.0**	**-0.3**				
	SNR=1.0										
HAU				*e*Sn	**Sn**	**20 16 29.1**	**-2.0**				
	15nm,0.3s										
HAU	**Haudompre**	**4.22**	**324**	*e*Pn	**Pn**	**20 15 42.0**	**-0.3**				
	SNR=1.0										
HAU				*e*Sn	**Sn**	**20 16 29.1**	**-2.0**				
	7.6nm,0.3s										
CDF	**Champ du Feu**	**4.22**	**334**	*e*Pn	**Pn**	**20 15 40.0**	**-2.4**				
	SNR=1.0										
CDF				*e*Sn	**Sn**	**20 16 28.9**	**-2.3**				
	8.6nm,0.3s										
CDF	**Champ du Feu**	**4.22**	**334**	*e*Pn	**Pn**	**20 15 40.0**	**-2.4**				
	SNR=1.0										
CDF				*e*Sn	**Sn**	**20 16 28.9**	**-2.3**				
	4.3nm,0.3s										
MOA	**Molln**	**4.35**	**41**	*i* Pn	**Pn**	**20 15 44.6**	**+0.4**				
	1.9nm,0.3s										
MOA				*i* Sn	**Sn**	**20 16 35.0**	**+0.6**				
	1.5nm,0.2s										
MOA	**Molln**	**4.35**	**41**	Pn	**Pn**	**20 15 44.6**	**+0.4**				
	1.9nm,0.3s										
MOA				Sn	**Sn**	**20 16 35.0**	**+0.6**				
	1.5nm,0.2s										
LASF	**Ste Croix**	**4.46**	**265**	*e*Pn	**Pn**	**20 15 46.5**	**+0.9**				
	SNR=1.0										
LASF				*e*Sn	**Sn**	**20 16 36.1**	**-0.9**				
	SNR=1.0										
LASF				*e*Sg	**Sg**	**20 17 00.7**	**-1.4**				
	3.8nm,0.5s,SNR=1.0										
LASF	**Ste Croix**	**4.46**	**265**	*e*Pn	**Pn**	**20 15 46.5**	**+0.9**				
	SNR=1.0										
LASF				*e*Sn	**Sn**	**20 16 36.1**	**-0.9**				
	SNR=1.0										
LASF				*e*Sg	**Sg**	**20 17 00.7**	**-1.4**				
	1.9nm,0.5s,SNR=1.0										
LANF	**Langenberg**	**4.60**	**341**	Pn	**Pn**	**20 15 47.6**	**+0.1**				
LANF	**Langenberg**	**4.60**	**341**	Pn	**Pn**	**20 15 47.6**	**+0.1**				
ARSA	**Arzberg**	**4.64**	**54**	*i* Pn	**Pn**	**20 15 48.3**	**+0.2**				
	1.1nm,0.2s										
ARSA				*i* Sn	**Sn**	**20 16 40.1**	**-1.4**				
	0.7nm,0.2s										
ARSA	**Arzberg**	**4.64**	**54**	Pn	**Pn**	**20 15 48.3**	**+0.2**				
	1.1nm,0.2s										
ARSA				Sn	**Sn**	**20 16 40.1**	**-1.4**				
	0.7nm,0.2s										
SMF	**Signal de Mont**	**4.78**	**297**	*e*Pn	**Pn**	**20 15 50.5**	**+0.5**				
	SNR=1.0										
SMF				*e*Sn	**Sn**	**20 16 43.4**	**-1.4**				
	6.5nm,0.4s										
SMF	**Signal de Mont**	**4.78**	**297**	*e*Pn	**Pn**	**20 15 50.5**	**+0.5**				
	SNR=1.0										
SMF				*e*Sn	**Sn**	**20 16 43.4**	**-1.4**				
	3.2nm,0.4s										
PAGF	**Fort de Pagny**	**4.91**	**324**	*e*Pn	**Pn**	**20 15 51.9**	**+0.1**				
	baz=146										
PAGF				*e*Sn	**Sn**	**20 16 45.8**	**-2.3**				
	2.2nm,0.5s										
PAGF	**Fort de Pagny**	**4.91**	**324**	*e*Pn	**Pn**	**20 15 51.9**	**+0.1**				
PAGF				*e*Sn	**Sn**	**20 16 45.8**	**-2.3**				
	1.1nm,0.5s										
SFTF	**Sexfontaines**	**4.96**	**318**	*e*Pn	**Pn**	**20 15 52.6**	**+0.1**				
	baz=131										
SFTF	**Sexfontaines**	**4.96**	**318**	*e*Pn	**Pn**	**20 15 52.6**	**+0.1**				
LOR	**Lormes**	**5.04**	**304**	*e*Pn	**Pn**	**20 15 53.7**	**+0.1**				
	baz=125,SNR=1.0										
LOR				*e*Sn	**Sn**	**20 16 49.5**	**-1.8**				
	10nm,0.4s,SNR=1.0										
LOR	**Lormes**	**5.04**	**304**	*e*Pn	**Pn**	**20 15 53.7**	**+0.1**				
	SNR=1.0										
LOR				*e*Sn	**Sn**	**20 16 49.5**	**-1.8**				
	5.1nm,0.4s,SNR=1.0										
KHC	**Kasperske Hory**	**5.11**	**27**	*e*PN	**Pn**	**20 15 53.8**	**-0.8**				
KHC				*ex*	x	20 16 00.9					
KHC				*e*SN	**Sn**	**20 16 49.3**	**-3.7**				
KHC				*ex*	x	20 17 05.5					
KHC	**Kasperske Hory**	**5.11**	**27**	Pn	**Pn**	**20 15 53.8**	**-0.8**				
KHC				Sn	**Sn**	**20 16 49.3**	**-3.7**				
AVF	**Avril sur Loir**	**5.14**	**297**	*e*Pn	**Pn**	**20 15 55.0**	**0.0**				
	SNR=1.0										
AVF	**Avril sur Loir**	**5.14**	**297**	*e*Pn	**Pn**	**20 15 55.0**	**0.0**				
	SNR=1.0										
SSF	**Saint Saulge**	**5.16**	**300**	*e*Pn	**Pn**	**20 15 55.0**	**-0.2**				
	SNR=1.0										
SSF				*e*Sn	**Sn**	**20 16 52.1**	**-2.1**				
	3.6nm,0.3s										
SSF				*e*Sg	**Sg**	**20 17 21.4**	**-3.0**				
	3.1nm,0.5s,SNR=1.0										
SSF	**Saint Saulge**	**5.16**	**300**	*e*Pn	**Pn**	**20 15 55.0**	**-0.2**				
	SNR=1.0										
SSF				*e*Sn	**Sn**	**20 16 52.1**	**-2.1**				
	1.8nm,0.3s										
SSF				*e*Sg	**Sg**	**20 17 21.4**	**-3.0**				
	1.5nm,0.5s,SNR=1.0										
MEZF	**Maizieres J'vi**	**5.16**	**320**	*e*Pn	**Pn**	**20 15 55.6**	**+0.4**				
	baz=139										
MEZF	**Maizieres J'vi**	**5.16**	**320**	*e*Pn	**Pn**	**20 15 55.6**	**+0.4**				
CONA	**Conrad Observa**	**5.21**	**49**	*i* Pn	**Pn**	**20 15 56.0**	**0.0**				
	1.0nm,0.2s										
CONA				*i* Sn	**Sn**	**20 16 53.7**	**-2.0**				
	2.3nm,0.2s										
CONA	**Conrad Observa**	**5.21**	**49**	Pn	**Pn**	**20 15 56.0**	**0.0**				
	1.0nm,0.2s										
CONA				Sn	**Sn**	**20 16 53.7**	**-2.0**				
	2.3nm,0.2s										
BGF	**Bois d'Agland**	**5.39**	**293**	*e*Pn	**Pn**	**20 15 58.5**	**+0.1**				
	SNR=1.0										
BGF				*e*Sn	**Sn**	**20 16 57.9**	**-2.0**				
	14nm,0.4s										
BGF	**Bois d'Agland**	**5.39**	**293**	*e*Pn	**Pn**	**20 15 58.5**	**+0.1**				
	SNR=1.0										
BGF				*e*Sn	**Sn**	**20 16 57.9**	**-2.0**				
	6.8nm,0.4s										
CAF	**Calviac**	**5.67**	**276**	*e*Pn	**Pn**	**20 16 03.0**	**+0.7**				
	SNR=1.0										
CAF	**Calviac**	**5.67**	**276**	*e*Pn	**Pn**	**20 16 03.0**	**+0.7**				
	SNR=1.0										
TCF	**Toulx Ste Croi**	**5.74**	**289**	*e*Pn	**Pn**	**20 16 03.6**	**+0.4**				
TCF				*e*Sn	**Sn**	**20 17 06.3**	**-2.2**				
	3.6nm,0.4s,SNR=1.0										
TCF	**Toulx Ste Croi**	**5.74**	**289**	*e*Pn	**Pn**	**20 16 03.6**	**+0.4**				
MTLF	**Montolieu**	**5.78**	**260**	*e*Pn	**Pn**	**20 16 04.0**	**+0.2**				
	SNR=1.0										
MTLF				*e*Sn	**Sn**	**20 17 08.1**	**-1.5**				
	3.3nm,0.5s										
MTLF	**Montolieu**	**5.78**	**260**	*e*Pn	**Pn**	**20 16 04.0**	**+0.2**				
	SNR=1.0										
STON	**Ston**	**5.83**	**105**	*e*Pn	**Pn**	**20 16 03.9**	**-0.7**				
STON	**Ston**	**5.83**	**105**	*e*Pn	**Pn**	**20 16 03.8**	**-0.7**				
TREC	**Trest**	**5.97**	**37**	*e*PN	**Pn**	**20 16 05.6**	**-0.8**				
TREC				*e*SN	**Sn**	**20 17 10.7**	**-3.5**				
TREC				*ex*	x	20 17 25.6					
TREC	**Trest**	**5.97**	**37**	Pn	**Pn**	**20 16 05.6**	**-0.8**				
RJF	**Les Rejaudoux**	**6.07**	**279**	*e*Pn	**Pn**	**20 16 08.6**	**+0.8**				
RJF	**Les Rejaudoux**	**6.07**	**279**	*e*Pn	**Pn**	**20 16 08.6**	**+0.8**				
GOPC	**GO Pecny, Ondr**	**6.19**	**30**	*e*SN	**Sn**	**20 17 15.5**	**-4.1**				
GOPC				*ex*	x	20 17 27.5					
GIVF	**Givet**	**6.50**	**329**	*e*Pn	**Pn**	**20 16 13.3**	**-0.4**				
GIVF	**Givet**	**6.50**	**329**	*e*Pn	**Pn**	**20 16 13.3**	**-0.4**				
DPC	**Dobruska-Polom**	**7.12**	**35**	*e*SN	**Sn**	**20 17 38.5**	**-4.2**				
EPF	**Esparros**	**7.18**	**260**	*e*Pn	**Pn**	**20 16 23.3**	**+0.2**				
EPF	**Esparros**	**7.18**	**260**	*e*Pn	**Pn**	**20 16 23.3**	**+0.2**				

*CSEM **28** 20:15:22.7±0.2,44.64N×10.00E,h20km,ML2.5,Error ellipse: s-maj=3.5km s-min=2.7km az=1.0*
*GEN **28** 20:15:22.0,44.69N×10.06E,h20km,ML2.5*
ROM 28 20:15:23.0±0.2,44.63N×10.01E,h21km±5km,Ml2.3/12, Error ellipse: s-maj=2.3km s-min=1.9km az=176.0, Northern Italy

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GRAM	**Graiana**	**0.15**	**165**	P	Pb	20 15 26.8	-2.4
GRAM				S	Sb	20 15 30.7	-2.8
PRMA	**PARMA**	**0.25**	**58**	Pg	Pb	20 15 28.2	-0.9
PRMA				Sg	Sb	20 15 33.8	+0.4
PRMA	**PARMA**	**0.25**	**58**	Pg	Pb	20 15 28.2	-0.9
PRMA				Sg	Sb	20 15 33.8	+0.4
CODM	**Codolo**	**0.27**	**206**	P	Pb	20 15 29.1	-0.3
CODM				S	Sb	20 15 34.0	+0.3
ERBM	**Eremo**	**0.36**	**127**	Pg	Pb	20 15 30.3	-0.3
ERBM				Sg	Sb	20 15 37.0	+1.2
ERBM	**Eremo**	**0.36**	**127**	Pg	Pb	20 15 30.3	-0.3
ERBM				Sg	Sb	20 15 37.0	+1.2
SC2M	**Scurtabo**	**0.41**	**236**	Pg	Pb	20 15 31.2	-0.3
SC2M				Sg	Sb	20 15 38.4	+1.1
SC2M	**Scurtabo**	**0.41**	**236**	P	Pb	20 15 31.2	-0.3
SC2M				S	Sb	20 15 38.3	+1.0
BOB	**Bobbio (Coli)**	**0.42**	**289**	Pg	Pb	20 15 31.5	-0.2
BOB				Sg	Sb	20 15 39.4	+1.7
	258nm,0.3s						
BOB	**Bobbio (Coli)**	**0.42**	**289**	Pg	Pb	20 15 31.5	-0.2
BOB				Sg	Sb	20 15 39.4	+1.7
	258nm,0.3s						
MSSA	**Maissana**	**0.48**	**228**	Pg	Pb	20 15 32.3	-0.4
MSSA				Sg	Sb	20 15 39.9	+0.7
	200nm,0.2s						
MSSA	**Maissana**	**0.48**	**228**	Pg	Pb	20 15 32.3	-0.4
MSSA				Sg	Sb	20 15 39.9	+0.7
	200nm,0.2s						
NOVE	**Novellara**	**0.53**	**72**	Pg	Pb	20 15 33.3	-0.3
	78nm,0.7s						
NOVE	**Novellara**	**0.53**	**72**	Pg	Pb	20 15 33.3	-0.3
	78nm,0.7s						
SARO	**Sassorosso**	**0.53**	**148**	P	Pb	20 15 33.2	-0.5
SARO				S	Sb	20 15 40.7	-0.2
VLC	**Villacollemand**	**0.54**	**150**	Pg	Pb	20 15 34.2	+0.3
VLC				Sg	Sb	20 15 42.4	+1.1
	99nm,0.4s						
VLC	**Villacollemand**	**0.54**	**150**	Pg	Pb	20 15 34.2	+0.3
VLC				Sg	Sb	20 15 42.4	+1.1
	99nm,0.4s						
PLMA	**Palmaria, Port**	**0.59**	**191**	Pg	Pb	20 15 34.2	-0.6
	167nm,0.3s						
PLMA	**Palmaria, Port**	**0.59**	**191**	Pg	Pb	20 15 34.2	-0.6
	167nm,0.3s						
BDI	**Bagni Di Lucca**	**0.71**	**144**	Pg	Pb	20 15 36.4	-0.3
BDI				Sg	Sn	20 15 47.4	-0.7
BDI	**Bagni Di Lucca**	**0.71**	**144**	Pg	Pb	20 15 36.4	-0.3
BDI				Sg	Sn	20 15 47.4	-0.7
ZCCA	**Zocca**	**0.74**	**112**	Pg	Pn	20 15 38.6	+0.3
	82nm,0.8s						
ZCCA	**Zocca**	**0.74**	**112**	Pg	Pn	20 15 38.6	+0.3
	82nm,0.8s						
POPM	**Popiglio**	**0.79**	**137**	P	Pb	20 15 37.7	-0.4
POPM				S	Sb	20 15 48.3	-0.1
MAIM	**Mastiano**	**0.80**	**154**	Pg	Pb	20 15 38.0	-0.1
	72nm,0.4s						
MAIM	**Mastiano**	**0.80**	**154**	Pg	Pb	20 15 38.0	-0.1
	72nm,0.4s						
FNVD	**Fontana Vidola**	**0.92**	**120**	Pg	Pn	20 15 41.7	+0.9
	44nm,0.6s						
FNVD	**Fontana Vidola**	**0.92**	**120**	Pg	Pn	20 15 41.7	+0.9
	44nm,0.6s						
PCP	**Piancastagn**	**1.05**	**266**	Pg	Pn	20 15 43.0	+0.4
	134nm,0.8s						
PCP	**Piancastagn**	**1.05**	**266**	Pg	Pn	20 15 43.0	+0.4
	134nm,0.8s						
MDI	**Monti di Nese**	**1.16**	**350**	Pg	Pb	20 15 45.0	+0.5
MDI	**Monti di Nese**	**1.16**	**350**	Pg	Pb	20 15 45.0	+0.5
MAGA	**Magasa**	**1.22**	**21**	Pg	Pb	20 15 45.6	+0.1
	58nm,0.4s						
MAGA	**Magasa**	**1.22**	**21**	Pg	Pb	20 15 45.6	+0.1
	58nm,0.4s						
ROVR	**Rover^α Verone**	**1.26**	**36**	Pg	Pn	20 15 45.8	+0.3
	190nm,0.6s						
ROVR	**Rover^α Verone**	**1.26**	**36**	Pg	Pn	20 15 45.8	+0.3
	190nm,0.6s						
FINB	**Finale Ligure**	**1.29**	**250**	Pg	Pn	20 15 46.1	+0.3
	38nm,0.4s						
FINB	**Finale Ligure**	**1.29**	**250**	Pg	Pn	20 15 46.1	+0.3
	38nm,0.4s						

*NIED **28** 20:20:00,36.70N×142.10E,h23km,Mw3.6 Best double couple: M○2.66000×10^14 NP1:φ○222.00000°,δ21.00000°, λ107.00000°. NP2:φ○23.00000°,δ70.00000°,λ84.00000°.*
JMA 28 20:20:03.7±0.3,36.70N×142.10E,h27km±4km,M3.7,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**1.12**	**291**	P	Pn	20 20 23.4	-0.2
JFK	**Kawauchi**	**1.19**	**305**	P	Pn	20 20 24.4	-0.1
JHO	**Hitachi**	**1.23**	**266**	P	Pn	20 20 25.5	+0.3
JHO				*e*S	Sn	20 20 41.0	0.0
JMM	**Marumori**	**1.56**	**319**	P	Pn	20 20 30.1	+0.4
JMM				*e*S	Sb	20 20 50.2	-1.1
JFT	**Otama**	**1.63**	**301**	P	Pn	20 20 31.8	+1.2
JFT				S	Sb	20 20 52.8	-0.4
JIO	**Ouri**	**1.85**	**341**	P	Pn	20 20 34.8	+1.2
JIO				S	Sn	20 20 57.4	+1.3
JOU	**Okura**	**2.02**	**326**	P	Pb	20 20 38.0	-1.7
JOU				S	Sb	20 21 02.6	-1.8
MAT	**Matsushiro**	**3.14**	**268**	P	Pn	20 20 53.8	+2.4
MAT				*e*S	Sb	20 21 33.5	-3.0

*NSSC **28** 20:29:02.8±1.2,36.01N×40.53E,h9km±6km,ML2.7*
*ISCJB **28** 20:29:03.4±1.0,36.02N±0.05×40.53E±0.06,h4km±8km, Error ellipse: s-maj=8.2km s-min=7.6km az=26.3*
*CSEM **28** 20:29:03.4±0.5,36.00N×40.54E,h2km,ML2.7,Error ellipse: s-maj=10.3km s-min=8.7km az=177.0*
*ISK **28** 20:29:05.0,36.22N×40.69E,h5km,MD3.7*
ISC 28 20:29:02.9±1.2,36.00N±0.04×40.53E±0.04,h6km±11km, n26,σ1§14/34,Jordan-Syria region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MZRK	**Al-Mazaregh**	**0.20**	**151**	*e*P	**Pg**	**20 29 06.9**	**+0.1**
MZRK	**Al-Mazaregh**	**0.20**	**151**	*e*P	**Pg**	**20 29 06.9**	**+0.1**
SFNV	**Sufian**	**0.54**	**321**	*e*P	**Pg**	**20 29 13.5**	**+0.2**
SFNV				*e*S	**Sg**	**20 29 20.8**	**+0.4**
SFNV				AML	AML	20 29 21.3	
	comp=N,1μm,0.4s						
SFNV				AML	AML	20 29 24.1	
	comp=E,833nm,0.5s						
SFNV	**Sufian**	**0.54**	**321**	*e*P	**Pg**	**20 29 13.5**	**+0.2**
SFNV				*e*S	**Sg**	**20 29 20.8**	**+0.4**
	comp=E,833nm,0.5s						
KBSD	**Kabsdagh**	**1.00**	**0**	*e*P	**Pg**	**20 29 21.9**	**-0.2**
KBSD				*e*S	**Sg**	**20 29 34.1**	**-0.9**
KBSD				AML	AML	20 29 39.3	
	comp=E,90nm,0.3s						
KBSD				AML	AML	20 29 44.2	
	comp=N,61nm,0.4s						
KBSD	**Kabsdagh**	**1.00**	**0**	*e*P	**Pg**	**20 29 21.9**	**-0.2**
KBSD				*e*S	**Sg**	**20 29 34.2**	**-0.9**
	comp=N,61nm,0.4s						
MNKR	**ALMNKUR**	**1.03**	**267**	*e*P	**Pg**	**20 29 22.4**	**-0.2**
MNKR				*e*S	**Sg**	**20 29 35.4**	**-0.5**
MNKR				AML	AML	20 29 42.9	
	comp=E,545nm,0.2s						
MNKR				AML	AML	20 29 43.9	
	comp=N,179nm,0.2s						
MNKR	**ALMNKUR**	**1.03**	**267**	*e*P	**Pg**	**20 29 22.4**	**-0.2**
MNKR				*e*S	**Sg**	**20 29 35.4**	**-0.5**
	comp=N,179nm,0.2s						
MAZI	**Mazidag**	**1.46**	**357**	*e*PN	**Pn**	**20 29 30.0**	**+0.1**
MAZI				*e*SN	**Sn**	**20 29 48.4**	**-1.1**
MAZI	**Mazidag**	**1.46**	**357**	*e*Pn	**Pn**	**20 29 30.0**	**+0.1**
MAZI				*e*Sn	**Sn**	**20 29 48.4**	**-1.1**
DIY	**Diyarbakir**	**1.91**	**353**	*e*Pn	**Pb**	**20 29 38.2**	**0.0**
DYBB	**Diyarbakir**	**1.98**	**351**	*e*PN	**Pn**	**20 29 38.2**	**+1.1**
URFA	**Urfa**	**1.99**	**317**	*e*PN	**Pb**	**20 29 40.3**	**+0.7**
URFA	**Urfa**	**1.99**	**317**	*e*Pn	**Pb**	**20 29 40.3**	**+0.7**
SIRT	**Sirnak**	**2.14**	**45**	*e*PN	**Pn**	**20 29 39.8**	**+0.4**
SIRT	**Sirnak**	**2.14**	**45**	*e*Pn	**Pn**	**20 29 39.8**	**+0.4**
SVRC	**Sivrice-ELAZID**	**2.57**	**338**	*e*PN	**Pn**	**20 29 47.2**	**+1.9**
SVRC	**Sivrice-ELAZID**	**2.57**	**338**	*e*Pn	**Pn**	**20 29 47.2**	**+1.9**
CUKT	**Cukurca**	**2.77**	**62**	*e*PN	**Pn**	**20 29 49.2**	**+1.2**
CUKT	**Cukurca**	**2.77**	**62**	*e*Pn	**Pn**	**20 29 49.2**	**+1.2**
GAZ	**Gaziantep**	**2.92**	**295**	*e*PN	**Pb**	**20 29 54.9**	**-0.5**
GAZ	**Gaziantep**	**2.92**	**295**	*e*Pn	**Pb**	**20 29 54.9**	**-0.5**
PTK	**Pertek**	**3.03**	**343**	*e*PN	**Pn**	**20 29 54.1**	**+2.5**
PTK	**Pertek**	**3.03**	**343**	*e*Pn	**Pn**	**20 29 54.1**	**+2.5**
KMRS	**Kahramanmaras**	**3.28**	**298**	*e*PN	**Pb**	**20 29 59.7**	**-1.9**
KMRS	**Kahramanmaras**	**3.28**	**298**	*e*Pn	**Pb**	**20 29 59.7**	**-1.9**

DDA 28 20:29:57.2,37.40N×39.23E,h7km,Md2.6,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ATAB	**Bozova**	**0.75**	**276**	*i* P	Pg	20 30 11.5	0.0
ATAB				*i* S	Sb	20 30 22.8	-0.1
ELZG	**Elazig**	**1.11**	**350**	*i* P	Pg	20 30 17.6	-1.0
ELZG				*i* S	Sg	20 30 31.9	-1.2
GZT	**Gaziantep**	**1.33**	**269**	*i* P	Pg	20 30 26.3	+3.7
AKCD	**Akcadag**	**1.37**	**311**	*i* P	Pn	20 30 20.8	-2.1
AKCD				*i* S	Sn	20 30 42.7	+1.4

*ISK **28** 20:33:49.4,40.34N×25.78E,h8km,MD2.7*
*DDA **28** 20:33:49.1,40.37N×25.83E,h6km,Md2.7*
*ISCJB **28** 20:33:50.2±0.5,40.35N±0.03×25.79E±0.03,h7km±6km, Error ellipse: s-maj=4.7km s-min=3.8km az=40.9*
*ATH **28** 20:33:50.5,40.35N×25.79E,h11km±4km,ML1.4/2,Error ellipse: s-maj=4.1km s-min=1.1km az=296.0*
*CSEM **28** 20:33:50.2±0.2,40.34N×25.81E,h8km,ML1.4,Error ellipse: s-maj=6.0km s-min=4.0km az=123.0*
ISC 28 20:33:49.6±1.1,40.38N±0.03×25.79E±0.02,h13km±10km, n30,σ0§43/44,Aegean Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SMTH	**Samothraki Isl**	**0.22**	**295**	P	**Pb**	**20 33 55.5**	**+0.1**
SMTH				S	**Sb**	**20 33 58.8**	**-0.5**
SMTH	**Samothraki Isl**	**0.22**	**295**	P	**Pb**	**20 33 55.5**	**+0.1**
SMTH				S	**Sb**	**20 33 58.8**	**-0.5**
SMTH				AML	AML	20 33 59.0	
	comp=E,437μm,0.2s						
SMTH				AML	AML	20 33 59.2	
	comp=N,421μm,0.2s						
ENEZ	**Enez**	**0.45**	**38**	*e*PG	**Pb**	**20 33 59.4**	**0.0**
ENEZ				*e*SG	**Sb**	**20 34 06.8**	**+0.7**
ENEZ	**Enez**	**0.45**	**38**	*e*Pg	**Pb**	**20 33 59.4**	**0.0**
ENEZ				*e*Sg	**Sb**	**20 34 06.8**	**+0.7**
GELI	**Tayfur-Gelibol**	**0.53**	**88**	*e*PG	**Pb**	**20 34 00.3**	**-0.3**
GELI				*e*SG	**Sb**	**20 34 08.2**	**+0.1**
GELI	**Tayfur-Gelibol**	**0.53**	**88**	*e*Pg	**Pb**	**20 34 00.3**	**-0.3**
GELI	**Tayfur-Gelibol**	**0.53**	**88**	*e*Sg	**Sb**	**20 34 08.2**	**+0.1**
ALN	**Alexandroupoli**	**0.56**	**21**	*e*PG	**Pb**	**20 34 01.3**	**+0.2**
ALN	**Alexandroupoli**	**0.56**	**21**	*e*Pg	**Pb**	**20 34 01.3**	**+0.2**
ALN	**Alexandroupoli**	**0.56**	**21**	P	**Pb**	**20 34 01.6**	**+0.5**
ALN				S	**Sb**	**20 34 09.5**	**+0.5**
ALN	**Alexandroupoli**	**0.56**	**21**	P	**Pb**	**20 34 01.6**	**+0.5**
ALN				S	**Sb**	**20 34 09.5**	**+0.5**
ALN				AML	AML	20 34 09.9	
	comp=E,52μm,0.2s						
ALN				AML	AML	20 34 10.0	
	comp=N,38μm,0.3s						
BOZC	**Bozcaada**	**0.57**	**159**	*i* P	**Pg**	**20 34 00.9**	**+0.1**
BOZC				*i* S	**Sg**	**20 34 08.5**	**+0.1**
ERIK	**Erikli-Kesan**	**0.63**	**62**	*e*PG	**Pb**	**20 34 02.5**	**+0.2**
ERIK	**Erikli-Kesan**	**0.63**	**62**	*e*Pg	**Pb**	**20 34 02.5**	**+0.2**
LIA	**Limnos Island**	**0.67**	**224**	P	**Pb**	**20 34 02.8**	**-0.2**
LIA				S	**Sb**	**20 34 12.2**	**0.0**
EZN	**Ezine**	**0.69**	**143**	*e*PG	**Pg**	**20 34 02.8**	**-0.2**
EZN	**Ezine**	**0.69**	**143**	*e*Pg	**Pg**	**20 34 02.8**	**-0.2**
KESN	**Edirne-Kesan**	**0.81**	**56**	*i* P	**Pg**	**20 34 04.8**	**-0.6**
KESN				*i* S	**Sn**	**20 34 19.1**	**-0.1**
KESN	**Edirne-Kesan**	**0.81**	**56**	P	**Pg**	**20 34 04.8**	**-0.6**
KESN				S	**Sn**	**20 34 19.1**	**-0.1**
SIGR	**SIGRI**	**1.17**	**177**	*e*PN	**Pn**	**20 34 11.4**	**-0.1**
SIGR	**SIGRI**	**1.17**	**177**	*e*Pn	**Pn**	**20 34 11.4**	**-0.1**
SIGR	**SIGRI**	**1.17**	**177**	P	**Pg**	**20 34 11.9**	**-0.1**
SIGR				S	**Sn**	**20 34 27.8**	**+0.5**
SIGR	**SIGRI**	**1.17**	**177**	P	**Pg**	**20 34 11.9**	**-0.1**
SIGR				S	**Sn**	**20 34 27.8**	**+0.5**
KNL	**Bal¯–kesir**	**1.33**	**94**	*i* P	**Pn**	**20 34 12.2**	**-1.3**
KNL				*i* S	**Sg**	**20 34 33.7**	**+1.1**
OUR	**Ouranopolis**	**1.38**	**269**	*e*PN	**Pn**	**20 34 14.5**	**0.0**
OUR	**Ouranopolis**	**1.38**	**269**	*e*Pn	**Pn**	**20 34 14.5**	**0.0**
EDRB	**Edirne**	**1.64**	**26**	*e*PN	**Pb**	**20 34 19.8**	**+0.2**
EDRB	**Edirne**	**1.64**	**26**	*e*Pn	**Pb**	**20 34 19.8**	**+0.2**
SRS	**Serrai**	**1.82**	**295**	P	**Pg**	**20 34 24.2**	**-0.4**
SRS	**Serrai**	**1.82**	**295**	P	**Pg**	**20 34 24.2**	**-0.4**

*IDC **28** 20:49:45.4±0.9,35.19N×27.90E,h0km,mb3.8/10, mb1 3.7/19,mb1mx3.6/58,mbtmp3.

TURN				*i* S	**Sb**	**20 50 43.4**	**0.0**
TURN	**Turunc**	**1.82**	**19**	P	**Pn**	**20 50 18.4**	**-0.1**
TURN				S	**Sb**	**20 50 43.4**	**0.0**
NPS	**Neapolis**	**1.85**	**274**	P	**Pg**	**20 50 22.9**	**-0.9**
BDRM	**Kayabasi**	**1.95**	**350**	*i* P	**Pn**	**20 50 20.8**	**+0.6**
BDRM				*i* S	**Sb**	**20 50 47.7**	**+0.8**
BDRM	**Kayabasi**	**1.95**	**350**	*i* P	**Pn**	**20 50 20.8**	**+0.6**
BDRM				S	**Sb**	**20 50 47.7**	**+0.8**
LAST	**Lasithi**	**1.96**	**271**	⇓*i* P	**Pb**	**20 50 24.0**	**+0.7**
LAST	**Lasithi**	**1.96**	**271**	P	**Pb**	**20 50 23.9**	**+0.6**
LAST	**Lasithi**	**1.96**	**271**	P	**Pb**	**20 50 23.9**	**+0.6**
BODT	**Bodrum**	**1.96**	**347**	*e*PN	**Pn**	**20 50 21.4**	**+1.0**
BODT	**Bodrum**	**1.96**	**347**	P	**Pn**	**20 50 21.5**	**+1.0**
BODT				S	**Sn**	**20 50 45.7**	**+1.1**
BODT	**Bodrum**	**1.96**	**347**	P	**Pn**	**20 50 21.5**	**+1.0**
BODT				S	**Sn**	**20 50 45.7**	**+1.1**
YER	**Yerkesik**	**2.01**	**9**	*e*PN	**Pn**	**20 50 22.1**	**+0.9**
YER	**Yerkesik**	**2.01**	**9**	P	**Pn**	**20 50 21.6**	**+0.4**
YER				S	**Sb**	**20 50 47.6**	**-1.3**
YER	**Yerkesik**	**2.01**	**9**	P	**Pn**	**20 50 21.6**	**+0.4**
YER	**Yerkesik**	**2.01**	**9**	*e*Pn	**Pn**	**20 50 22.1**	**+0.9**
YER				S	**Sb**	**20 50 47.6**	**-1.3**
ELL	**Elmali**	**2.30**	**45**	*e*PN	**Pn**	**20 50 26.9**	**+1.7**
ELL	**Elmali**	**2.30**	**45**	*e*Pn	**Pn**	**20 50 26.9**	**+1.7**
SANT	**Santorini**	**2.31**	**303**	⇑*i*P	**Pb**	**20 50 27.6**	**-1.7**
SANT	**Santorini**	**2.31**	**303**	⇑*i*P	**Pb**	**20 50 27.6**	**-1.7**
THR6	**Thira Island,**	**2.34**	**302**	P	**Pn**	**20 50 25.0**	**-0.7**
THR6	**Thira Island,**	**2.34**	**302**	P	**Pn**	**20 50 25.0**	**-0.7**
THR3	**Thira Island,**	**2.37**	**303**	P	**Pn**	**20 50 27.0**	**+1.0**
THR3	**Thira Island,**	**2.37**	**303**	P	**Pn**	**20 50 27.0**	**+1.0**
THR5	**Thira Island,**	**2.41**	**302**	*e*PN	**Pb**	**20 50 29.4**	**-1.5**
THR5	**Thira Island,**	**2.41**	**302**	P	**Pb**	**20 50 26.7**	**+0.1**
THR5	**Thira Island,**	**2.41**	**302**	P	**Pb**	**20 50 26.7**	**+0.1**
THR5	**Thira Island,**	**2.41**	**302**	*e*Pn	**Pb**	**20 50 29.4**	**-1.5**
IDI	**Anoyia**	**2.44**	**274**	Pn	**Pn**	**20 50 28.1**	**+1.0**
	comp=N,7.1nm,0.3s,baz=74,slow=17,SNR=33						
IDI	**Anoyia**	**2.44**	**274**	⇑*i*P	**Pb**	**20 50 31.0**	**-0.6**
IDI	**Anoyia**	**2.44**	**274**	P	**Pb**	**20 50 30.1**	**-1.5**
IDI	**Anoyia**	**2.44**	**274**	P	**Pb**	**20 50 30.1**	**-1.5**
IDI				AML	AML	20 51 09.0	
	comp=E,248µm,0.6s						
IDI				AML	AML	20 51 11.9	
	comp=N,346µm,0.8s						
AYDN	**Tasoluk**	**2.51**	**0**	*i* P	**Pn**	**20 50 28.9**	**+0.9**
AYDN				*i* S	**Sn**	**20 50 56.2**	**-2.0**
AYDN	**Tasoluk**	**2.51**	**0**	P	**Pn**	**20 50 28.9**	**+0.9**
AYDN				S	**Sn**	**20 50 56.2**	**-2.0**
SIVA	**Sivas**	**2.51**	**268**	⇑*i*P	**Pb**	**20 50 31.6**	**-1.1**
SIVA	**Sivas**	**2.51**	**268**	⇑*i*P	**Pb**	**20 50 31.6**	**-1.1**
SIVA	**Sivas**	**2.51**	**268**	P	**Pb**	**20 50 32.0**	**-0.7**
GCAM	**G?zelcaml?**	**2.60**	**349**	*i* P	**Pn**	**20 50 30.5**	**+1.3**
GCAM	**G?zelcaml?**	**2.60**	**349**	P	**Pn**	**20 50 30.5**	**+1.3**
SMG	**Samos**	**2.69**	**342**	P	**Pn**	**20 50 31.5**	**+1.0**
SMG	**Samos**	**2.69**	**342**	P	**Pn**	**20 50 31.5**	**+1.0**
SMG	**Samos**	**2.69**	**342**	P	**Pn**	**20 50 31.2**	**+0.8**
APE	**Apeiranthos**	**2.70**	**316**	*e*PN	**Pn**	**20 50 32.4**	**+1.8**
APE	**Apeiranthos**	**2.70**	**316**	⇑*i*P	**Pn**	**20 50 32.2**	**+1.6**
APE	**Apeiranthos**	**2.70**	**316**	P	**Pn**	**20 50 31.2**	**+0.6**
APE	**Apeiranthos**	**2.70**	**316**	P	**Pn**	**20 50 31.2**	**+0.6**
APE	**Apeiranthos**	**2.70**	**316**	*e*Pn	**Pn**	**20 50 32.4**	**+1.8**
APE	**Apeiranthos**	**2.70**	**316**	P	**Pn**	**20 50 30.6**	**+0.1**
KORT	**Korkueli**	**2.73**	**47**	P	**Pn**	**20 50 32.8**	**+1.6**
KORT	**Korkueli**	**2.73**	**47**	P	**Pn**	**20 50 32.8**	**+1.6**
DENT	**Denizli**	**2.77**	**19**	*e*PN	**Pn**	**20 50 32.6**	**+1.0**
DENT	**Denizli**	**2.77**	**19**	*e*Pn	**Pn**	**20 50 32.6**	**+1.0**
AYDB	**Zeytinkoy-Aydi**	**2.79**	**0**	*e*PN	**Pn**	**20 50 33.1**	**+1.1**
AYDB	**Zeytinkoy-Aydi**	**2.79**	**0**	*e*Pn	**Pn**	**20 50 33.1**	**+1.1**
GVD	**Gavdhos**	**3.12**	**265**	P	Pn	20 50 39.7	+3.3
GVD	**Gavdhos**	**3.12**	**265**	P	Pn	20 50 39.7	+3.3
IMMV	**Iera Moni Meta**	**3.19**	**277**	P	**Pb**	**20 50 42.3**	**-2.0**
ZEY	**¯zmir**	**3.28**	**341**	*i* P	**Pn**	**20 50 40.0**	**+1.6**
IZM	**Izmir**	**3.28**	**352**	*e*PN	**Pn**	**20 50 40.1**	**+1.5**
IZM	**Izmir**	**3.28**	**352**	*e*Pn	**Pn**	**20 50 40.1**	**+1.5**
BLCB	**Balcova**	**3.30**	**349**	*e*PN	**Pn**	**20 50 40.7**	**+1.9**
BLCB	**Balcova**	**3.30**	**349**	*e*Pn	**Pn**	**20 50 40.7**	**+1.9**
URLA	**Izmir**	**3.37**	**343**	*i* P	**Pn**	**20 50 40.9**	**+1.1**
URLA	**Izmir**	**3.37**	**343**	P	**Pn**	**20 50 40.9**	**+1.1**
KULA	**Kula-Manisa**	**3.42**	**10**	*e*PN	**Pn**	**20 50 41.1**	**+0.5**
KULA	**Kula-Manisa**	**3.42**	**10**	P	**Pn**	**20 50 40.4**	**-0.2**
KULA	**Kula-Manisa**	**3.42**	**10**	P	**Pn**	**20 50 40.4**	**-0.2**
KULA	**Kula-Manisa**	**3.42**	**10**	*e*Pn	**Pn**	**20 50 41.1**	**+0.5**
SUTC	**Sutluce-Ispart**	**3.44**	**46**	*e*PN	**Pn**	**20 50 42.8**	**+2.0**
SUTC	**Sutluce-Ispart**	**3.44**	**46**	*e*Pn	**Pn**	**20 50 42.8**	**+2.0**
KHL	**Karahalli**	**3.44**	**22**	*e*PN	**Pn**	**20 50 42.4**	**+1.6**
KHL	**Karahalli**	**3.44**	**22**	*e*Pn	**Pn**	**20 50 42.4**	**+1.6**
KHAL	**Karahalli**	**3.47**	**22**	*i* P	**Pn**	**20 50 41.7**	**+0.4**
KHAL	**Karahalli**	**3.47**	**22**	P	**Pn**	**20 50 41.7**	**+0.4**
CHOS	**Chios island**	**3.55**	**336**	*e*PN	**Pn**	**20 50 44.1**	**+1.8**
CHOS	**Chios island**	**3.55**	**336**	P	**Pn**	**20 50 43.0**	**+0.7**
CHOS	**Chios island**	**3.55**	**336**	*e*Pn	**Pn**	**20 50 44.1**	**+1.8**
CHOS	**Chios island**	**3.55**	**336**	P	**Pn**	**20 50 43.0**	**+0.7**
AKMC	**Akamas**	**3.66**	**91**	P	**Pn**	**20 50 44.3**	**+0.5**
	baz=268						
AKMC	**Akamas**	**3.66**	**91**	P	**Pn**	**20 50 44.3**	**+0.5**
BAGO	**Egridir - ISPA**	**3.69**	**39**	*i* P	**Pn**	**20 50 45.3**	**+1.1**
AKS	**Akhisar**	**3.73**	**359**	*e*PN	**Pn**	**20 50 46.4**	**+1.7**
AKS	**Akhisar**	**3.73**	**359**	*e*Pn	**Pn**	**20 50 46.4**	**+1.7**
GAZI	**Gazipasa**	**3.78**	**72**	*i* P	**Pn**	**20 50 45.7**	**+0.3**
GAZI	**Gazipasa**	**3.78**	**72**	P	**Pn**	**20 50 45.7**	**+0.3**
ALFC	**Alefka**	**3.88**	**88**	P	**Pn**	**20 50 47.2**	**+0.4**
	baz=267						
ALFC				S	**Sn**	**20 51 31.3**	**-0.5**
ALFC	**Alefka**	**3.88**	**88**	P	**Pn**	**20 50 47.2**	**+0.4**
ALFC				S	**Sn**	**20 51 31.3**	**-0.5**
DEMI	**Demirci**	**3.95**	**10**	*i* P	**Pn**	**20 50 48.4**	**+0.6**
DEMI				*i* S	**Sn**	**20 51 29.9**	**-3.8**
DEMI	**Demirci**	**3.95**	**10**	P	**Pn**	**20 50 48.4**	**+0.6**
HMAT	**Matruh**	**4.09**	**189**	P	**Pn**	**20 50 51.3**	**+1.5**
	baz=191						
HMAT				AMP		20 51 00.0	
	comp=E,70µm,0.7s,logA/T=5.0,baz=191						
HMAT				S	**Sn**	**20 51 37.7**	**+0.6**
	baz=191						
HMAT	**Matruh**	**4.09**	**189**	P	**Pn**	**20 50 51.3**	**+1.5**
HMAT				S	**Sn**	**20 51 37.7**	**+0.6**
SZAC	**Souni**	**4.14**	**94**	P	**Pn**	**20 50 51.1**	**+0.7**
	baz=273						
SZAC				S	**Sn**	**20 51 37.0**	**-1.2**
SZAC	**Souni**	**4.14**	**94**	P	**Pn**	**20 50 51.1**	**+0.7**
SZAC				S	**Sn**	**20 51 37.0**	**-1.2**
GDZ	**Gediz**	**4.14**	**18**	*i* P	**Pn**	**20 50 51.1**	**+0.6**
GDZ	**Gediz**	**4.14**	**18**	P	**Pn**	**20 50 51.1**	**+0.6**
SLUM	**Salum**	**4.27**	**212**	P	**Pn**	**20 50 54.1**	**+2.0**
	baz=213						
SLUM				AMP		20 51 00.0	
	comp=N,30µm,1.1s,logA/T=4.5,baz=213						
SLUM				S	**Sn**	**20 51 42.3**	**+0.9**
	baz=213						
SLUM	**Salum**	**4.27**	**212**	P	**Pn**	**20 50 54.1**	**+2.0**
SLUM				S	**Sn**	**20 51 42.3**	**+0.9**
VLI	**Veliai**	**4.30**	**293**	P	**Pn**	**20 50 52.8**	**+0.2**
VLI	**Veliai**	**4.30**	**293**	P	**Pn**	**20 50 52.8**	**+0.2**
ERMK	**Ermenek**	**4.36**	**69**	*i* P	**Pn**	**20 50 55.6**	**+2.0**
ERMK				*i* S	**Sn**	**20 50 48.8**	**+4.9**
ERMK	**Ermenek**	**4.36**	**69**	P	**Pn**	**20 50 55.6**	**+2.0**
ERMK				S	**Sn**	**20 51 48.8**	**+4.9**
SIGR	**SIGRI**	**4.37**	**339**	*e*PN	**Pn**	**20 50 55.8**	**+2.4**
SIGR	**SIGRI**	**4.37**	**339**	*e*Pn	**Pn**	**20 50 55.8**	**+2.4**
MAMC	**Mammari**	**4.38**	**88**	P	**Pn**	**20 50 55.0**	**+1.3**
	baz=267						
MAMC	**Mammari**	**4.38**	**88**	P	**Pn**	**20 50 55.0**	**+1.3**
KRND	**KRANIDI**	**4.42**	**302**	P	**Pn**	**20 50 56.6**	**+2.4**
KRND	**KRANIDI**	**4.42**	**302**	P	**Pn**	**20 50 56.6**	**+2.4**
DID	**Didima**	**4.42**	**304**	P	**Pn**	**20 50 56.2**	**+1.9**
DID	**Didima**	**4.42**	**304**	P	**Pn**	**20 50 56.2**	**+1.9**
DURS	**Dursunbey**	**4.47**	**6**	*i* P	**Pn**	**20 50 55.9**	**+0.9**
DURS	**Dursunbey**	**4.47**	**6**	P	**Pn**	**20 50 55.9**	**+0.9**
CSS	**Mathiatis**	**4.48**	**91**	Pn	**Pn**	**20 50 54.9**	**-0.2**
CSS				Sn	**Sn**	**20 50 45.9**	**-0.8**
CSS	**Mathiatis**	**4.48**	**91**	Pn	**Pn**	**20 50 54.9**	**-0.2**
CSS				S	**Sn**	**20 51 46.0**	**-0.8**
BALB	**Balikesir**	**4.49**	**0**	*e*PN	**Pn**	**20 50 57.2**	**+2.1**
BALB	**Balikesir**	**4.49**	**0**	*e*Pn	**Pn**	**20 50 57.2**	**+2.1**
KONT	**Konya--Tatoy**	**4.57**	**51**	*e*PN	**Pn**	**20 50 59.2**	**+2.9**
KONT	**Konya--Tatoy**	**4.57**	**51**	*e*Pn	**Pn**	**20 50 59.2**	**+2.9**
BALY	**Balya**	**4.59**	**358**	*i* P	**Pn**	**20 50 57.2**	**+0.6**
BALY	**Balya**	**4.59**	**358**	P	**Pn**	**20 50 57.2**	**+0.6**
LTK	**Loutraki**	**4.88**	**307**	P	Pn	20 51 04.5	+4.0
KIZT	**Kizilcal**	**4.92**	**40**	*e*PN	**Pn**	**20 51 03.5**	**+2.3**
KIZT	**Kizilcal**	**4.92**	**40**	*e*Pn	**Pn**	**20 51 03.5**	**+2.3**
VLX	**Vlachokerasia**	**4.96**	**298**	P	**Pn**	**20 51 03.0**	**+1.2**
VLX	**Vlachokerasia**	**4.96**	**298**	P	**Pn**	**20 51 03.0**	**+1.2**
PYL	**PYLOS**	**5.26**	**291**	P	**Pn**	**20 51 06.2**	**+0.4**
PYL	**PYLOS**	**5.26**	**291**	P	**Pn**	**20 51 06.2**	**+0.4**
LPK	**Lapseki**	**5.29**	**351**	*e*PN	**Pn**	**20 51 08.8**	**+2.6**
LPK	**Lapseki**	**5.29**	**351**	*e*Pn	**Pn**	**20 51 08.8**	**+2.6**
GELI	**Tayfur-Gelibol**	**5.36**	**349**	*e*PN	**Pn**	**20 51 09.8**	**+2.7**
GELI	**Tayfur-Gelibol**	**5.36**	**349**	*e*Pn	**Pn**	**20 51 09.8**	**+2.7**
KLV	**Kalavryta, Ach**	**5.43**	**304**	P	Pn	20 51 12.4	+4.2
ALN	**Alexandroupoli**	**5.92**	**346**	P	**Pn**	**20 51 16.0**	**+1.2**
ALN	**Alexandroupoli**	**5.92**	**346**	P	**Pn**	**20 51 16.0**	**+1.2**
HNTI	**Hanita**	**6.40**	**107**	Sn	**Sn**	**20 52 33.4**	**-0.6**
HNTI	**Hanita**	**6.40**	**107**	Sn	**Sn**	**20 52 33.4**	**-0.6**
GLL	**Jalalah**	**6.43**	**149**	P	**Pn**	**20 51 22.7**	**+0.8**
	baz=149						
GLL	**Jalalah**	**6.43**	**149**	P	**Pn**	**20 51 22.7**	**+0.8**
BRTR	**Keskin Array B**	**6.48**	**43**	Pn	**Pn**	**20 51 23.4**	**+0.8**
	comp=N,0.2nm,0.3s,baz=222,slow=15,SNR=6.0						
BRTR				Sn	**Sn**	**20 52 38.0**	**+1.9**
	comp=N,0.2nm,0.3s,baz=218,slow=22,SNR=6.0						
MMAI	**Mount Meron Ar**	**6.60**	**107**	Pn	**Pn**	**20 51 23.1**	**-1.2**
	comp=N,3.1nm,0.3s,baz=293,slow=13,SNR=16						
MMAI				Sn	**Sn**	**20 52 39.3**	**+0.2**
	comp=N,3.2nm,0.3s,baz=268,slow=25,SNR=6.9						
MMA1	**Mount Meron ar**	**6.60**	**107**	Pn	**Pn**	**20 51 23.4**	**-0.9**
MMA1				Sn	**Sn**	**20 52 38.8**	**-0.3**
MMA1	**Mount Meron ar**	**6.60**	**107**	Pn	**Pn**	**20 51 23.4**	**-0.9**
MMA1				Sn	**Sn**	**20 52 38.8**	**-0.3**
KSDI	**Kefar Szold**	**6.74**	**105**	Pn	**Pn**	**20 51 25.8**	**-0.4**
KSDI				Sn	**Sn**	**20 52 43.3**	**+0.9**
KSDI	**Kefar Szold**	**6.74**	**105**	Pn	**Pn**	**20 51 25.8**	**-0.4**
KSDI				Sn	**Sn**	**20 52 43.3**	**+0.9**
MMLI	**Mount Malkishu**	**6.84**	**111**	Pn	**Pn**	**20 51 25.8**	**-1.8**
MMLI				Sn	**Sn**	**20 52 44.2**	**-0.7**
MMLI	**Mount Malkishu**	**6.84**	**111**	Pn	**Pn**	**20 51 25.8**	**-1.8**
MMLI				Sn	**Sn**	**20 52 44.2**	**-0.7**
HMDT	**Nahal Hemdat**	**7.00**	**112**	Pn	**Pn**	**20 51 29.8**	**+0.1**
HMDT				Sn	**Sn**	**20 52 48.9**	**+0.1**
HMDT	**Nahal Hemdat**	**7.00**	**112**	Pn	**Pn**	**20 51 29.8**	**+0.1**
HMDT				Sn	**Sn**	**20 52 48.9**	**+0.1**
REVI	**Revivim**	**7.06**	**124**	Pn	**Pn**	**20 51 30.6**	**+0.1**
REVI	**Revivim**	**7.06**	**124**	Pn	**Pn**	**20 51 30.6**	**+0.1**
DSI	**Dead Sea**	**7.22**	**117**	Pn	**Pn**	**20 51 32.8**	**0.0**
DSI				Sn	**Sn**	**20 52 54.9**	**+0.6**
DSI	**Dead Sea**	**7.22**	**117**	Pn	**Pn**	**20 51 32.8**	**0.0**
DSI				Sn	**Sn**	**20 52 54.9**	**+0.6**
HNKL	**Nakhl**	**7.33**	**134**	P	**Pn**	**20 51 34.8**	**+0.6**
	baz=134						
HNKL				S	**Sn**	**20 52 55.2**	**-1.6**
	baz=134						
HNKL				AMP		20 53 00.0	
	comp=N,10µm,0.9s,logA/T=4.0,baz=134						
HNKL	**Nakhl**	**7.33**	**134**	P	**Pn**	**20 51 34.8**	**+0.6**
HNKL				S	**Sn**	**20 52 55.2**	**-1.6**
MZDA	**Masada**	**7.35**	**119**	Pn	**Pn**	**20 51 34.4**	**-0.1**
MZDA				Sn	**Sn**	**20 52 57.9**	**+0.6**
MZDA	**Masada**	**7.35**	**119**	Pn	**Pn**	**20 51 34.4**	**-0.1**
MZDA				Sn	**Sn**	**20 52 57.9**	**+0.6**
KRMI	**Paran Flat**	**7.65**	**129**	Pn	**Pn**	**20 51 37.3**	**-1.4**
KRMI	**Paran Flat**	**7.65**	**129**	Pn	**Pn**	**20 51 37.3**	**-1.4**
ZFRI	**Zfri**	**7.67**	**125**	Pn	**Pn**	**20 51 37.8**	**-1.0**
ZFRI	**Zfri**	**7.67**	**125**	Pn	**Pn**	**20 51 37.8**	**-1.0**
PRNI	**Paran**	**7.68**	**127**	Pn	**Pn**	**20 51 38.6**	**-0.4**
PRNI	**Paran**	**7.68**	**127**	Pn	**Pn**	**20 51 38.6**	**-0.4**
HRFI	**Mount Harif**	**7.91**	**128**	Pn	**Pn**	**20 51 41.7**	**-0.5**
HRFI	**Mount Harif**	**7.91**	**128**	Pn	**Pn**	**20 51 41.7**	**-0.5**
HFRF	**Wahat Farafira**	**7.98**	**177**	P	**Pn**	**20 51 44.3**	**+1.1**
	baz=177						
HFRF	**Wahat Farafira**	**7.98**	**177**	P	**Pn**	**20 51 44.3**	**+1.1**
MBRI	**Mt Berech**	**7.99**	**130**	Pn	**Pn**	**20 51 42.6**	**-0.8**
MBRI	**Mt Berech**	**7.99**	**130**	Pn	**Pn**	**20 51 42.6**	**-0.8**
ASF	**Jabal al Asfar**	**8.09**	**109**	Pn	**Pn**	**20 51 44.8**	**+0.1**
	comp=N,0.3nm,0.3s,baz=206,slow=8.2,SNR=5.2						
EIL	**Elat**	**8.10**	**130**	Pn	**Pn**	**20 51 44.2**	**-0.6**
	comp=N,0.9nm,0.3s,baz=289,slow=4.3,SNR=7.4						
EIL				Sn	**Sn**	**20 53 15.6**	**-0.3**
	comp=N,0.9nm,0.3s,baz=90,slow=18,SNR=6.4						
EIL	**Elat**	**8.10**	**130**	Pn	**Pn**	**20 51 44.9**	**+0.1**
EIL	**Elat**	**8.10**	**130**	Pn	**Pn**	**20 51 44.9**	**+0.1**
MLR	**Muntele Rosu**	**10.44**	**353**	Pn	**Pn**	**20 52 17.4**	**+0.6**
	comp=N,0.0nm,0.3s,baz=156,slow=20,SNR=2.6						
MLR	**Muntele Rosu**	**10.44**	**353**	⇑*i*P	Pn	20 52 21.9	+5.0
VOIR		**10.50**	**349**	⇑*i*P	Pn	20 52 22.7	+5.0
MDVR	**Moldovita**	**10.72**	**336**	⇓*i*P	Pn	20 52 24.4	+3.8
KBZ	**Khabaz**	**14.42**	**49**	Pn	**P**	**20 53 15.4**	**-2.5**
	comp=N,0.0nm,0.3s,baz=203,slow=12,SNR=1.8						
STHS	**Stebnicka Huta**	**15.07**	**343**	*e*P	P	20 53 31.1	+5.9
AKASG	**Malin Array Be**	**15.58**	**3**	Pn	**Pn**	**20 53 27.0**	**+0.4**
	comp=N,0.4nm,0.3s,baz=193,slow=11,SNR=3.1						
GERES	**GERESS Array B**	**17.23**	**327**	P	**Pn**	**20 53 48.2**	**+0.5**
	comp=N,0.2nm,0.3s,baz=139,slow=15,SNR=3.6						
GERES				LR	LR	21 01 05.6	
	comp=N,58nm,18.1s,baz=11,slow=40						
KHC	**Kasperske Hory**	**17.50**	**327**	*e*P	**Pn**	**20 53 51.5**	**+0.5**
KHC				*e*pP	**pP**	**20 53 57.8**	**+0.3**
CLL	**Collm**	**19.39**	**331**	*e*P	**Pn**	**20 54 18.0**	**+4.0**
GEYT	**Alibeck**	**24.41**	**75**	P	**P**	**20 55 05.0**	**-0.5**
	comp=N,1.0nm,0.4s,baz=275,slow=5.2,SNR=3.3						
ESDC	**Sonseca Array**	**25.61**	**290**	P	**P**	**20 55 15.8**	**-0.5**
	comp=N,0.6nm,0.5s,baz=83,slow=9.7,SNR=7.5						
FINES	**FINESS Array B**	**26.34**	**358**	P	**P**	**20 55 21.6**	**-1.0**
	comp=N,0.7nm,0.5s,baz=163,slow=13,SNR=7.8						
HFS	**Hagfors**	**26.64**	**344**	P	**P**	**20 55 24.5**	**-0.9**
	comp=N,0.7nm,0.4s,baz=158,slow=16,SNR=6.5						
AKTO	**Aktyubinsk**	**26.65**	**46**	P	**P**	**20 55 25.2**	**-0.3**
	comp=N,1.5nm,0.5s,baz=252,slow=9.8,SNR=5.6						
NOA	**NORSAR Array B**	**28.03**	**343**	P	**P**	**20 55 36.3**	**-1.6**
	comp=N,0.3nm,0.5s,baz=149,slow=8.4,SNR=3.5						
TORD	**Torodi Ar. Bea**	**32.23**	**234**	P	**P**	**20 56 16.6**	**+1.2**
	comp=N,1.1nm,0.5s,baz=31,slow=8.9,SNR=26						
ARCES	**ARCESS Array B**	**34.47**	**359**	P	**P**	**20 56 33.9**	**-0.5**
	comp=N,1.0nm,0.7s,baz=169,slow=7.4,SNR=4.2						
MKAR	**Makanchi Array**	**41.93**	**57**	P	**P**	**20 57 38.0**	**+0.5**
	comp=N,0.5nm,0.6s,baz=282,slow=6.4,SNR=5.4						
ZALV	**Zalesovo Beam**	**43.41**	**46**	P	**P**	**20 57 49.4**	**0.0**
	comp=N,0.4nm,0.3s,baz=280,slow=8.6,SNR=3.1						
PYUN	**Piuthan**	**46.96**	**83**	*e*P	**P**	**20 58 19.8**	**+1.6**
	comp=N,15nm,0.5s						
KOLN	**Koldanda**	**47.59**	**83**	*e*P	**P**	**20 58 24.3**	**+1.2**
	comp=N,6.5nm,0.6s						
GKN	**Gorkha**	**48.34**	**82**	*e*P	**P**	**20 58 29.9**	**+1.1**
	comp=N,5.1nm,0.5s						
DMN	**Daman**	**48.87**	**82**	*e*P	**P**	**20 58 34.1**	**+1.0**
	comp=N,5.4nm,0.5s						
KKN	**Kakani**	**48.94**	**82**	*e*P	**P**	**20 58 34.3**	**+0.7**
	comp=N,4.3nm,0.6s						
GUN	**Gumba**	**49.38**	**81**	*e*P	**P**	**20 58 37.5**	**+0.4**
	comp=N,32nm,1.4s						

ISCJB ***28*** *20:52:39.5±0.4, 8.°47S±0.°07×115.°72E±0.°04, h10km, mb3.6/3, Error ellipse: s-maj=10.4km s-min=4.0km az=19.1*

DJA ***28*** *20:52:41.7±0.3, 8.°S±4.°×11.°6E±.°, h16km±4km, M4.2/8, mb4.6/1, MLv3.9/8*

IDC ***28*** *20:52:41.1±10.0, 7.°94S×116.°52E, h0km, mb3.5/3, mb1 3.8/4, mb1mx3.4/38, mbtmp3.6/4, ML3.5/1, Error ellipse: s-maj=214.4km s-min=146.3km az=34.0*

ISC 28 20:52:40.5±0.8, 8.°43S±0.°06×115.°72E±0.°04, h10km, n19, σ0s80/23, mb3.5/3, Bali region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
DNP	**Denpasar**	**0.56**	**244**	P	**Pg**	**20 52 52.2**	**+0.8**
DNP				S	**Sb**	**20 53 01.8**	**+1.3**
SRBI	**Singaraja**	**0.60**	**304**	P	**Pg**	**20 52 52.8**	**+0.5**
SRBI				S	**Sb**	**20 53 01.9**	**+0.1**
TWSI	**Taliwang, Sumb**	**1.19**	**105**	P	**Pn**	**20 53 03.1**	**-0.2**
TWSI				S	**Sb**	**20 53 19.1**	**+0.4**
JAGI	**Jajag, Banyuwa**	**1.55**	**268**	P	**Pn**	**20 53 06.9**	**-1.3**
ABJI	**Asem Bagus**	**1.60**	**293**	P	**Pn**	**20 53 08.9**	**+0.1**
ABJI				S	**Sn**	**20 53 29.1**	**-0.4**
PLAI	**Plampang**	**2.07**	**101**	P	**Pn**	**20 53 16.0**	**+0.6**
GMJI	**Gumukmas**	**2.25**	**274**	P	**Pn**	**20 53 18.0**	**+0.1**
PWJI	**Pagerwojo**	**3.90**	**276**	P	**Pn**	**20 53 40.3**	**-0.2**
TBJI	**Tambak Boyo**	**4.16**	**292**	P	**Pn**	**20 53 44.2**	**+0.2**
PCJI	**Pacitan**	**4.50**	**273**	P	**Pn**	**20 53 48.8**	**0.0**
WOJI	**Wonogiri, Jawa**	**4.78**	**277**	P	**Pn**	**20 53 52.7**	**0.0**
BBKI	**Banjar Baru**	**5.01**	**350**	P	**Pn**	**20 53 55.8**	**0.0**
BASI	**Baing, Sumba**	**5.12**	**111**	P	**Pn**	**20 53 57.7**	**+0.4**
UGM	**Wanagama**	**5.17**	**275**	P	**Pn**	**20 53 58.1**	**+0.1**
BSSI	**Bau Bau, Buton**	**5.25**	**65**	P	**Pn**	**20 53 59.8**	**+0.7**
FITZ	**Fitzroy Crossi**	**13.62**	**136**	Pn	**Pn**	**20 55 52.8**	**-1.1**
	0.2nm,0.3s,baz=332,slow=14,SNR=6.7						
FITZ				Sn	Sn	20 58 17.4	-8.0
	0.1nm,0.3s,baz=189,slow=19,SNR=2.5						
WRA	**Warramunga Arr**	**21.35**	**124**	P	**P**	**20 57 26.5**	**-1.6**
	0.8nm,0.6s,baz=303,slow=12,SNR=10						
ASAR	**Alice Springs**	**23.09**	**133**	P	**P**	**20 57 45.3**	**-1.3**
	0.9nm,0.6s,baz=310,slow=8.6,SNR=9.5						
STKA	**Stephens Creek**	**33.51**	**138**	P	**P**	**20 59 21.5**	**+1.2**
	3.5nm,1.2s,baz=286,slow=7.4,SNR=2.6						

NSSP ***28*** *20:59:16.9, 38.°60N×44.°62E, h5km, Ms2.9*

CSEM ***28*** *20:59:18.9±0.4, 38.°63N×44.°62E, h2km, ML2.6, Error ellipse: s-maj=13.6km s-min=7.3km az=13.0*

TEH ***28*** *20:59:19.7, 38.°60N×44.°60E, h5km, ML2.6*

ISK ***28*** *20:59:20.7, 38.°65N×44.°30E, h5km, ML2.6*

ISC 28 20:59:17.3±1.2, 38.°49N±0.°04×44.°55E±0.°03, h5km±13km, n21, σ0s68/29, 3C, Turkey-Iran border region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CLDR	**Caldiran**	**0.82**	**323**	*e*PG	**Pg**	**20 59 33.1**	**+0.1**
CLDR				*e*SG	**Sg**	**20 59 42.3**	**-1.3**
CLDR	**Caldiran**	**0.82**	**323**	*e

1.4nm,0.5s,baz=82,slow=7.1,SNR=8.8
ZALV LR LR 21 25 20.5
comp=Z,58nm,18.6s,baz=72,slow=37
CMAR Chiang Mai Arr 42.65 255 P **P 21 07 15.2 0.0**
0.6nm,0.8s,baz=43,slow=6.4,SNR=6.8
NRIK Noril'sk 42.97 335 LR LR 21 26 00.8
comp=Z,75nm,19.2s,baz=134,slow=37
LSA Lhasa 43.12 275 *e*P **P 21 07 21.2 +1.7**
MKAR Makanchi Array 44.54 302 P **P 21 07 30.4 +0.2**
3.5nm,0.7s,baz=87,slow=9.1,SNR=24
MKAR LR LR 21 27 23.6
comp=Z,33nm,18.5s,baz=134,slow=38
KURK Kurchatov 46.23 308 *e*P **P 21 07 42.8 -0.6**
29nm,0.7s
GUN Gumba 48.06 276 *e*P **P 21 08 00.9 +2.5**
9.1nm,0.4s
ILAR Eielson Array 48.30 33 P **P 21 07 59.6 +0.2**
1.6nm,0.6s,baz=268,slow=6.3,SNR=20
KKN Kakani 48.58 276 *e*P **P 21 08 04.2 +1.8**
3.3nm,0.2s
GKN Gorkha 48.99 276 *e*P **P 21 08 05.3 -0.1**
14nm,0.8s
KOLN Koldanda 49.91 277 *e*P **P 21 08 15.7 +3.2**
3.8nm,0.5s
TKM2 Tokmak 2 50.12 298 *e*P **P 21 08 13.9 0.0**
8.5nm,0.9s
PYUN Piuthan 50.24 277 *e*P pP 21 08 18.0 -3.9
27nm,0.8s
EKS2 Erkin-Say 51.47 298 *e*P **P 21 08 23.5 -0.5**
1.8nm,0.7s
INK Inuvik 53.24 27 P **P 21 08 36.7 +0.2**
1.2nm,0.6s,baz=318,slow=7.2,SNR=5.8
KKAR Karatay Array 53.58 300 *e*P **P 21 08 38.9 -0.5**
5.5nm,0.9s
ARU Arti 56.42 318 *e*P **P 21 08 60.0 +0.2**
5.0nm,0.8s
DLBC Dease Lake 57.40 39 P **P 21 09 07.5 +0.7**
3.0nm,0.9s,baz=260,slow=9.0,SNR=4.6
WRAB Tennant Creek 57.97 189 *e*P **P 21 09 10.7 -0.4**
WRA Warramunga Arr 57.98 189 P **P 21 09 10.7 -0.5**
4.9nm,0.6s,baz=6.3,slow=7.1,SNR=52
ABKAR Akbulak array 58.19 310 *e*P **P 21 09 11.8 -0.6**
1.3nm,0.7s
RES Resolute Bay 61.59 15 P **P 21 09 35.5 +0.2**
4.5nm,0.9s,baz=305,slow=7.3,SNR=16
ASAR Alice Springs 61.71 189 P **P 21 09 37.1 +0.4**
1.7nm,0.7s,baz=16,slow=6.7,SNR=22
YKA Yellowknife Ar 62.63 31 P **P 21 09 42.4 0.0**
0.8nm,0.7s,baz=302,slow=6.4,SNR=15
ARCES ARCESS Array B 63.61 340 P **P 21 09 47.0 -1.8**
2.2nm,0.9s,baz=46,slow=6.4,SNR=2.6
ARCES pP **pP 21 09 55.3 -0.6**
3.5nm,0.9s,baz=354,slow=7.6,SNR=2.4
GEYT Alibeck 64.31 299 P **P 21 09 53.4 -0.7**
0.5nm,0.4s,baz=124,slow=13,SNR=3.2
GEYT pP **pP 21 10 00.6 -0.5**
2.4nm,0.8s,baz=54,slow=7.5,SNR=4.7
FINES FINESS Array B 68.58 333 P **P 21 10 19.8 -1.0**
1.6nm,0.7s,baz=48,slow=5.9,SNR=6.5
FINES pP **pP 21 10 28.7 +0.8**
5.3nm,0.8s,baz=49,slow=8.8,SNR=12
STKA Stephens Creek 69.34 181 P **P 21 10 25.4 -0.4**
1.5nm,0.8s,baz=142,slow=8.1,SNR=2.8
KIV Kislovodsk 71.13 311 *e*P **P 21 10 36.5 -0.5**
6.0nm,0.8s
KBZ Khabaz 71.13 311 P **P 21 10 37.2 +0.4**
1.7nm,0.8s,baz=35,slow=6.4,SNR=4.7
NB2 NORSAR Subarra 73.84 338 P **P 21 10 52.4 -0.4**
comp=Z,7.2nm,1.2s,baz=38,slow=6.2
NOA NORSAR Array B 73.84 338 P **P 21 10 52.8 0.0**
comp=Z,0.7nm,0.7s,baz=40,slow=5.9,SNR=4.1
NOA pP **pP 21 11 00.7 +0.7**
comp=Z,2.4nm,0.9s,baz=39,slow=5.9,SNR=10
NOA LR LR 21 47 49.7
comp=Z,29nm,18.6s,baz=25,slow=39
AKASG Malin Array Be 74.27 323 P **P 21 10 55.1 -0.3**
comp=Z,0.5nm,0.4s,baz=46,slow=5.9,SNR=5.5
AKASG pP **pP 21 11 02.3 -0.2**
comp=Z,2.1nm,0.6s,baz=44,slow=6.0,SNR=6.2
BRTR Keskin Array B 79.06 312 P **P 21 11 22.6 -0.4**
comp=Z,0.3nm,0.6s,baz=50,slow=4.0,SNR=3.2
BRTR pP **pP 21 11 29.9 -0.2**
comp=Z,1.1nm,0.9s,baz=60,slow=4.9,SNR=5.0
DPC Dobruska-Polom 80.31 328 *e*pP pP 21 11 38.2 +1.6
KHC Kasperske Hory 82.38 329 *e*pP pP 21 11 48.6 +1.0
GERES GERESS Array B 82.56 329 P **P 21 11 40.3 -1.0**
comp=Z,0.4nm,0.9s,baz=158,slow=11,SNR=3.1
TXAR Lajitas Array 88.86 53 P **P 21 12 13.2 +0.2**
comp=Z,0.8nm,0.8s,baz=311,slow=2.7,SNR=8.0
LPAZ La Paz 145.45 60 PKPbc **PKPab 21 18 58.2 +0.3**
comp=Z,2.4nm,0.7s,baz=2.1,slow=4.0,SNR=12

*GEN **28** 21:03:01.8,44.°72N×10.°06E,h0km,ML2.5*
*ISCJB **28** 21:03:02.8±0.2,44.°64N±0.°02×10.°02E±0.°02,h29km±2km, Error ellipse: s-maj=3.1km s-min=2.0km az=161.0*
*CSEM **28** 21:03:02.4±0.1,44.°66N×10.°03E,h15km,ML2.9/30, Error ellipse: s-maj=2.5km s-min=2.2km az=167.0*
*ROM **28** 21:03:02.6±0.1,44.°63N×10.°02E,h26km±2km, Ml2.6/24, Error ellipse: s-maj=1.7km s-min=1.4km az=144.0*
*LDG **28** 21:03:03.5±0.1,44.°63N×10.°10E,h10km, Ml2.8/19, Error ellipse: s-maj=2.8km s-min=2.3km az=59.0*
ISC 28 21:03:02.7±0.9,44.°65N±0.°02×10.°03E±0.°01,h19km±6km, n163,σ1s08/256,Northern Italy

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
GRAM	**Graiana**	**0.16**	**170**	P	**Pg**	**21 03 07.0**	**-0.3**
GRAM				S	**Sb**	**21 03 11.0**	**+3.3**
PRMA	**PARMA**	**0.23**	**60**	Pg	**Pb**	**21 03 08.4**	**+0.3**
PRMA				Sg	**Sb**	**21 03 14.0**	**+2.5**
	2μm,0.3s						
PRMA	**PARMA**	**0.23**	**60**	Pg	**Pb**	**21 03 08.4**	**+0.3**
PRMA				Sg	**Sb**	**21 03 14.0**	**+2.5**
	2μm,0.3s						
CODM	**Codolo**	**0.29**	**207**	P	**Pg**	**21 03 09.1**	**0.0**
CODM				S	**Sb**	**21 03 14.4**	**+0.8**
ERBM	**Eremo**	**0.36**	**129**	Pg	**Pb**	**21 03 10.3**	**-0.3**
ERBM				Sg	**Sb**	**21 03 17.3**	**+1.4**
	353nm,0.8s						
ERBM	**Eremo**	**0.36**	**129**	Pg	**Pb**	**21 03 10.3**	**-0.3**
ERBM				Sg	**Sb**	**21 03 17.3**	**+1.4**
	353nm,0.8s						
SC2M	**Scurtabo**	**0.43**	**236**	Pg	**Pg**	**21 03 11.4**	**-0.2**
SC2M				Sg	**Sb**	**21 03 18.4**	**+0.5**
	700nm,0.3s						
SC2M	**Scurtabo**	**0.43**	**236**	P	**Pg**	**21 03 11.3**	**-0.3**
SC2M				S	**Sg**	**21 03 18.2**	**+0.6**
BOB	**Bobbio (Coli)**	**0.43**	**286**	Pg	**Pg**	**21 03 11.6**	**-0.1**
BOB				Sg	**Sb**	**21 03 19.3**	**+1.2**
	546nm,0.3s						
BOB	**Bobbio (Coli)**	**0.43**	**286**	Pg	**Pg**	**21 03 11.6**	**-0.1**
BOB				Sg	**Sb**	**21 03 19.3**	**+1.2**
	546nm,0.3s						
MSSA	**Maissana**	**0.49**	**228**	Pg	**Pg**	**21 03 12.4**	**-0.4**
MSSA				Sg	**Sg**	**21 03 20.0**	**+0.5**
	311nm,0.4s						
MSSA	**Maissana**	**0.49**	**228**	Pg	**Pg**	**21 03 12.4**	**-0.4**
MSSA				Sg	**Sg**	**21 03 20.0**	**+0.5**
	311nm,0.4s						
NOVE	**Novellara**	**0.51**	**73**	Pg	**Pb**	**21 03 13.4**	**+0.3**
	545nm,0.4s						
NOVE	**Novellara**	**0.51**	**73**	Pg	**Pb**	**21 03 13.4**	**+0.3**
	545nm,0.4s						
VLC	**Villacollemand**	**0.55**	**152**	Pg	**Pg**	**21 03 13.4**	**-0.4**
VLC				Sg	**Sb**	**21 03 21.9**	**+0.7**
	200nm,0.6s						
VLC	**Villacollemand**	**0.55**	**152**	Pg	**Pg**	**21 03 13.4**	**-0.4**
VLC				Sg	**Sb**	**21 03 21.9**	**+0.7**
	200nm,0.6s						
PLMA	**Palmaria, Port**	**0.61**	**192**	Pg	**Pg**	**21 03 14.1**	**-0.8**
PLMA				Sg	**Sg**	**21 03 22.7**	**-0.3**
	269nm,0.4s						
PLMA	**Palmaria, Port**	**0.61**	**192**	Pg	**Pg**	**21 03 14.1**	**-0.8**
PLMA				Sg	**Sg**	**21 03 22.7**	**-0.3**
	269nm,0.4s						
CTL8	**Castelleone**	**0.66**	**343**	Pg	**Pn**	**21 03 17.6**	**+0.6**
CTL8	**Castelleone**	**0.66**	**343**	Pg	**Pn**	**21 03 17.6**	**+0.6**
BDI	**Bagni Di Lucca**	**0.71**	**145**	Pg	**Pg**	**21 03 15.9**	**-0.9**
BDI				Sg	**Sb**	**21 03 27.1**	**+1.1**
	161nm,0.3s						
BDI	**Bagni Di Lucca**	**0.71**	**145**	Pg	**Pg**	**21 03 15.9**	**-0.9**
BDI				Sg	**Sb**	**21 03 27.1**	**+1.1**
	161nm,0.3s						
ZCCA	**Zocca**	**0.74**	**113**	Pg	**Pn**	**21 03 18.2**	**0.0**
	114nm,0.5s						
ZCCA	**Zocca**	**0.74**	**113**	Pg	**Pn**	**21 03 18.2**	**0.0**
	114nm,0.5s						
POPM	**Popiglio**	**0.80**	**139**	P	**Pg**	**21 03 17.9**	**-0.4**
POPM				S	**Sb**	**21 03 28.9**	**+0.5**
MAIM	**Mastiano**	**0.80**	**155**	Pg	**Pb**	**21 03 18.6**	**+0.5**
MAIM				Sg	**Sb**	**21 03 29.2**	**+0.6**
	73nm,0.3s						
MAIM	**Mastiano**	**0.80**	**155**	Pg	**Pb**	**21 03 18.6**	**+0.5**
MAIM	**Mastiano**	**0.80**	**155**	P	**Pn**	**21 03 18.9**	**-0.2**
MAIM				Sg	**Sb**	**21 03 29.2**	**+0.6**
	73nm,0.3s						
FNVD	**Fontana Vidola**	**0.92**	**121**	Pg	**Pg**	**21 03 20.4**	**-0.3**
FNVD	**Fontana Vidola**	**0.92**	**121**	Pg	**Pg**	**21 03 20.4**	**-0.3**
SALO	**Salr**	**1.03**	**20**	Pg	**Pn**	**21 03 22.4**	**+0.1**
	363nm,0.7s						
SALO	**Salr**	**1.03**	**20**	Pg	**Pn**	**21 03 22.4**	**+0.1**
	363nm,0.7s						
PCP	**Piancastagn**	**1.06**	**265**	Pg	**Pb**	**21 03 22.5**	**-0.1**
	131nm,0.8s						
PCP	**Piancastagn**	**1.06**	**265**	P	**Pb**	**21 03 22.2**	**-0.4**
PCP	**Piancastagn**	**1.06**	**265**	Pg	**Pb**	**21 03 22.5**	**-0.1**
	131nm,0.8s						
PCP				S	**Sb**	**21 03 37.3**	**+1.1**
MDI	**Monti di Nese**	**1.15**	**349**	Pg	**Pb**	**21 03 23.7**	**-0.4**
	52nm,0.4s						
MDI	**Monti di Nese**	**1.15**	**349**	Pg	**Pb**	**21 03 23.7**	**-0.4**
	52nm,0.4s						
MAGA	**Magasa**	**1.21**	**20**	Pg	**Pn**	**21 03 24.0**	**-0.7**
	339nm,0.5s						
MAGA	**Magasa**	**1.21**	**20**	Pg	**Pn**	**21 03 24.0**	**-0.7**
	339nm,0.5s						
ROVR	**Rover¨α Verone**	**1.24**	**36**	Pg	**Pn**	**21 03 24.8**	**-0.4**
	245nm,0.3s						
ROVR	**Rover¨α Verone**	**1.24**	**36**	Pg	**Pn**	**21 03 24.8**	**-0.4**
	245nm,0.3s						
QLNO	**Quiliano**	**1.25**	**256**	Pg	**Pn**	**21 03 25.1**	**-0.1**
	39nm,0.5s						
QLNO	**Quiliano**	**1.25**	**256**	Pg	**Pn**	**21 03 25.1**	**-0.1**
	39nm,0.5s						
MARN	**Marana (Italy)**	**1.30**	**40**	*e*P	**Pn**	**21 03 25.4**	**-0.5**
MARN				*e*S	**Sg**	**21 03 43.7**	**-1.1**
MARN	**Marana (Italy)**	**1.30**	**40**	*e*Pg	**Pn**	**21 03 25.4**	**-0.5**
MARN				*e*Sg	**Sg**	**21 03 43.7**	**-1.1**
FINB	**Finale Ligure**	**1.31**	**250**	Pg	**Pn**	**21 03 25.9**	**-0.1**
	119nm,0.5s						
FINB	**Finale Ligure**	**1.31**	**250**	Pg	**Pn**	**21 03 25.9**	**-0.1**
	119nm,0.5s						
TEOL	**Teolo**	**1.36**	**58**	Pg	**Pn**	**21 03 26.6**	**-0.2**
TEOL	**Teolo**	**1.36**	**58**	Pg	**Pn**	**21 03 26.6**	**-0.2**
TEOL				*e*Sg	**Sg**	**21 03 46.8**	**-0.2**
TEOL	**Teolo**	**1.36**	**58**	*e*Pg	**Pn**	**21 03 27.1**	**+0.3**
TEOL				*e*Sg	**Sg**	**21 03 46.8**	**-0.2**
RNI	**Roncone**	**1.40**	**17**	*e*Pg	**Pn**	**21 03 27.2**	**-0.3**
RNI				*e*Sg	**Sn**	**21 03 45.5**	**0.0**
RNI	**Roncone**	**1.40**	**17**	*e*Pg	**Pn**	**21 03 27.2**	**-0.3**
RNI				*e*Sg	**Sn**	**21 03 45.5**	**0.0**
MABI	**Malga Bissina**	**1.45**	**13**	Pg	**Pn**	**21 03 27.6**	**-0.5**
	38nm,0.5s						
MABI	**Malga Bissina**	**1.45**	**13**	Pg	**Pn**	**21 03 27.6**	**-0.5**
	38nm,0.5s						
SASS	**Sassa´´´´**	**1.47**	**161**	Pg	**Pn**	**21 03 28.2**	**0.0**
	48nm,0.7s						
SASS	**Sassa´´´´**	**1.47**	**161**	Pg	**Pn**	**21 03 28.2**	**0.0**
	48nm,0.7s						
DDS	**Dosso del Somm**	**1.48**	**33**	*e*Pg	**Pn**	**21 03 27.9**	**-0.7**
DDS	**Dosso del Somm**	**1.48**	**33**	*e*Pg	**Pn**	**21 03 27.9**	**-0.7**
RORO	**Rocca Rossa**	**1.50**	**250**	Pg	**Pn**	**21 03 28.7**	**0.0**
	24nm,0.5s						
RORO	**Rocca Rossa**	**1.50**	**250**	P	**Pn**	**21 03 28.8**	**0.0**
VARE	**Varese**	**1.51**	**324**	Pg	**Pn**	**21 03 29.4**	**+0.5**
	34nm,0.4s						
VARE	**Varese**	**1.51**	**324**	Pg	**Pn**	**21 03 29.4**	**+0.5**
	34nm,0.4s						
ASQU	**Asqua**	**1.52**	**123**	Pg	**Pb**	**21 03 30.9**	**+0.5**
	30nm,0.7s						
ASQU	**Asqua**	**1.52**	**123**	Pg	**Pb**	**21 03 30.9**	**+0.5**
	30nm,0.7s						
PANI	**Panarotta**	**1.68**	**33**	*e*Pg	**Pn**	**21 03 30.9**	**-0.4**
PANI	**Panarotta**	**1.68**	**33**	*e*Pg	**Pn**	**21 03 30.9**	**-0.4**
IMI	**Imperia**	**1.70**	**245**	Pg	**Pn**	**21 03 31.2**	**-0.2**
	45nm,0.4s						
IMI	**Imperia**	**1.70**	**245**	P	**Pn**	**21 03 31.3**	**-0.2**
IMI				S	**Sn**	**21 03 51.3**	**-1.4**
CGRP	**Cima Grappa**	**1.76**	**45**	*e*Pn	**Pn**	**21 03 31.9**	**-0.4**
CGRP	**Cima Grappa**	**1.76**	**45**	*e*Pn	**Pn**	**21 03 31.9**	**-0.4**
TRAV	**Traversella**	**1.83**	**299**	P	**Pn**	**21 03 32.8**	**-0.5**
CARE	**Lago del Cares**	**1.84**	**14**	*e*Pn	**Pn**	**21 03 33.5**	**-0.1**
CARE	**Lago del Cares**	**1.84**	**14**	*e*Pn	**Pn**	**21 03 33.5**	**-0.1**
NEGI	**Seborga**	**1.85**	**245**	P	**Pn**	**21 03 33.4**	**-0.1**
MTLO	**Montello**	**1.87**	**51**	*e*Pn	**Pn**	**21 03 33.9**	**+0.2**
MTLO				*e*Sn	**Sn**	**21 03 57.1**	**+0.3**
MTLO	**Montello**	**1.87**	**51**	*e*Pn	**Pn**	**21 03 33.9**	**+0.2**
MTLO				*e*Sn	**Sn**	**21 03 57.1**	**+0.3**
ENR	**Entracque**	**1.92**	**258**	P	**Pn**	**21 03 34.4**	**0.0**
ENR				S	**Sn**	**21 03 59.0**	**+0.9**
SATI	**Passo dei Sala**	**1.96**	**310**	P	**Pn**	**21 03 35.8**	**+0.5**
STV	**Sant Anna di V**	**1.98**	**259**	P	**Pn**	**21 03 35.5**	**+0.2**
SBF	**Sospel**	**2.02**	**248**	*e*Pn	**Pn**	**21 03 36.4**	**+0.5**
	SNR=1.0						
SBF				*e*Sn	**Sn**	**21 04 01.8**	**+1.1**
	32nm,0.3s						
SBF	**Sospel**	**2.02**	**248**	*e*Pn	**Pn**	**21 03 36.4**	**+0.5**
	SNR=1.0						
SBF				*e*Sn	**Sn**	**21 04 01.8**	**+1.1**
	16nm,0.3s						
PGF	**Pioggiola**	**2.23**	**200**	*e*Pn	**Pn**	**21 03 38.2**	**-0.5**
	SNR=1.0						
PGF				*e*Sn	**Sn**	**21 04 04.2**	**-1.6**
	8.8nm,0.3s						
PGF	**Pioggiola**	**2.23**	**200**	*e*Pn	**Pn**	**21 03 38.2**	**-0.5**
	SNR=1.0						
PGF				*e*Sn	**Sn**	**21 04 04.2**	**-1.6**
	4.4nm,0.3s						
MBDF	**Montbardon**	**2.33**	**273**	*e*Pn	**Pn**	**21 03 41.2**	**+1.1**
	SNR=1.0						
MBDF				*e*Sn	**Sn**	**21 04 09.2**	**+0.9**
	35nm,0.6s,SNR=1.0						
MBDF	**Montbardon**	**2.33**	**273**	*e*Pn	**Pn**	**21 03 41.2**	**+1.1**
	SNR=1.0						
MBDF				*e*Sn	**Sn**	**21 04 09.2**	**+0.9**
	18nm,0.6s,SNR=1.0						
LPG	**La Plagne**	**2.47**	**291**	*e*Pn	**Pn**	**21 03 43.3**	**+1.0**
LPG	**La Plagne**	**2.47**	**291**	*e*P	**Pb**	**21 03 46.1**	**-0.6**
LPG				*e*Sn	**Sn**	**21 04 12.6**	**+0.5**
	6.1nm,0.3s						
LPG	**La Plagne**	**2.47**	**291**	*e*Pn	**Pn**	**21 03 43.3**	**+1.0**
LPG	**La Plagne**	**2.47**	**291**	*e*P	**Pb**	**21 03 46.1**	**-0.6**
LPG				*e*Sn	**Sn**	**21 04 12.6**	**+0.5**
	3.0nm,0.3s						
LPL	**La Plagne**	**2.49**	**292**	*e*Pn	**Pn**	**21 03 42.9**	**+0.4**
	SNR=1.0						
LPL				*e*Sn	**Sn**	**21 04 13.0**	**+0.5**
	19nm,0.4s,SNR=1.0						
LPL	**La Plagne**	**2.49**	**292**	*e*Pn	**Pn**	**21 03 42.9**	**+0.4**
	SNR=1.0						
LPL				*e*Sn	**Sn**	**21 04 13.0**	**+0.5**
	9.4nm,0.4s,SNR=1.0						
DAVA	**Damuels**	**2.64**	**358**	*i* Pn	**Pn**	**21 03 46.7**	**+2.2**
	4.8nm,0.3s						
DAVA				*i* Sn	**Sb**	**21 04 19.6**	**-2.1**
	6.2nm,0.3s						
DAVA	**Damuels**	**2.64**	**358**	Pn	**Pn**	**21 03 46.7**	**+2.2**
	4.8nm,0.3s						
DAVA				Sn	**Sb**	**21 04 19.6**	**-2.1**
	6.2nm,0.3s						
FRF	**La Foret Royal**	**2.67**	**247**	*e*Pn	**Pn**	**21 03 45.4**	**+0.7**
	SNR=1.0						
FRF				*e*Sn	**Sn**	**21 04 16.6**	**+0.1**
	6.4nm,0.2s,SNR=1.0						
FRF	**La Foret Royal**	**2.67**	**247**	*e*Pn	**Pn**	**21 03 45.4**	**+0.7**
	SNR=1.0						
FRF				*e*Sn	**Sn**	**21 04 16.6**	**+0.1**
	3.2nm,0.2s,SNR=1.0						
CLUD	**Cludinico**	**2.70**	**47**	*e*Pn	**Pn**	**21 03 45.6**	**+0.4**
CLUD	**Cludinico**	**2.70**	**47**	*e*Pn	**Pn**	**21 03 45.6**	**+0.4**
VINO	**Villanova**	**2.80**	**54**	*e*Pn	**Pn**	**21 03 45.8**	**-0.7**
VINO	**Villanova**	**2.80**	**54**	*e*Pn	**Pn**	**21 03 45.8**	**-0.7**
MOTA	**Moosalm**	**2.80**	**15**	*i* Pn	**Pn**	**21 03 49.4**	**+2.7**
	2.6nm,0.4s						
MOTA				*i* Sn	**Sb**	**21 04 24.9**	**-1.3**
	5.0nm,0.4s						
MOTA	**Moosalm**	**2.80**	**15**	Pn	**Pn**	**21 03 49.4**	**+2.7**
	2.6nm,0.4s						
WTTA	**Wattenberg**	**2.85**	**23**	*i* Pn	**Pn**	**21 03 49.8**	**+2.5**
WTTA				*i* Sn	**Sn**	**21 04 23.4**	**+2.2**
WTTA	**Wattenberg**	**2.85**	**23**	Pn	**Pn**	**21 03 49.8**	**+2.5**
WTTA				Sn	**Sn**	**21 04 23.4**	**+2.2**
LMR	**La Mourre**	**2.86**	**244**	*e*Pn	**Pn**	**21 03 47.1**	**-0.2**
LMR				*e*Sn	**Sn**	**21 04 21.1**	**-0.1**
	14nm,0.4s						
LMR	**La Mourre**	**2.86**	**244**	*e*Pn	**Pn**	**21 03 47.1**	**-0.2**
LMR				*e*Sn	**Sn**	**21 04 21.1**	**-0.1**
	6.9nm,0.4s						
RETA	**Reutte**	**2.89**	**10**	*i* Pn	**Pn**	**21 03 49.1**	**+1.3**
RETA				*i* Sn	**Sn**	**21 04 24.6**	**+2.6**
	4.9nm,0.4s						
RETA	**Reutte**	**2.89**	**10**	Pn	**Pn**	**21 03 49.1**	**+1.3**
RETA				Sn	**Sn**	**21 04 24.6**	**+2.6**
	4.9nm,0.4s						
ORIF	**Oris-en-Rattie**	**2.97**	**277**	*e*Pn	**Pn**	**21 03 50.0**	**+1.1**
ORIF	**Oris-en-Rattie**	**2.97**	**277**	*e*P	**Pb**	**21 03 52.9**	**-2.1**
	SNR=1.0						
ORIF				*e*Sn	**Sn**	**21 04 24.2**	**+0.2**
	14nm,0.5s,SNR=1.0						
ORIF	**Oris-en-Rattie**	**2.97**	**277**	*e*Pn	**Pn**	**21 03 50.0**	**+1.1**
ORIF	**Oris-en-Rattie**	**2.97**	**277**	*e*P	**Pb**	**21 03 52.9**	**-2.1**
	SNR=1.0						
ORIF				*e*Sn	**Sn**	**21 04 24.2**	**+0.2**
	7.2nm,0.5s,SNR=1.0						
VOJS	**Vojsko**	**3.05**	**62**	*i* Sn	**Sn**	**21 04 25.4**	**-0.7**
VOJS	**Vojsko**	**3.05**	**62**	*i* Sn	**Sn**	**21 04 25.4**	**-0.7**
JAVS	**Javornik**	**3.11**	**65**	*i* Pn	**Pn**	**21 03 50.6**	**-0.3**
JAVS				*e*Sn	**Sn**	**21 04 26.8**	**-0.7**
JAVS	**Javornik**	**3.11**	**65**	Pn	**Pn**	**21 03 50.6**	**-0.3**
JAVS				*e*Sn	**Sn**	**21 04 26.8**	**-0.7**
SMRF	**Simiane la Rot**	**3.27**	**260**	*e*Pn	**Pn**	**21 03 54.9**	**+1.9**
	SNR=1.0						
SMRF				*e*Sn	**Sn**	**21 04 31.4**	**+0.1**
	10nm,0.6s						
SMRF	**Simiane la Rot**	**3.27**	**260**	*e*Pn	**Pn**	**21 03 54.9**	**+1.9**
	SNR=1.0						
SMRF				*e*Sn	**Sn**	**21 04 31.4**	**+0.1**
	5.2nm,0.6s						
KBA	**Koelnbreinsper**	**3.36**	**42**	*i* Pn	**Pn**	**21 03 55.6**	**+1.2**
	0.9nm,0.3s						
KBA				*i* Sn	**Sn**	**21 04 35.3**	**+1.5**
	3.5nm,0.3s						
KBA				*i* Sg	**Sg**	**21 04 52.1**	**+1.5**
	6.4nm,0.6s						
KBA	**Koelnbreinsper**	**3.36**	**42**	Pn	**Pn**	**21 03 55.6**	**+1.2**
	0.9nm,0.3s						
KBA				Sn	**Sn**	**21 04 35.3**	**+1.5**
	3.5nm,0.3s						
KBA				Sg	**Sg**	**21 04 52.1**	**+1.5**
	6.4nm,0.6s						
CABF	**La Chapelle**	**3.39**	**307**	*e*Pn	**Pn**	**21 03 55.8**	**+1.1**
	SNR=1.0						
CABF				*e*Sn	**Sn**	**21 04 34.1**	**-0.4**
	5.7nm,0.5s,SNR=1.0						
CABF	**La Chapelle**	**3.39**	**307**	*e*Pn	**Pn**	**21 03 55.8**	**+1.1**
	SNR=1.0						
CABF				*e*Sn	**Sn**	**21 04 34.1**	**-0.4**
	2.8nm,0.5s,SNR=1.0						
NVLJ	**Novalja**	**3.46**	**90**	*e*Pn	**Pn**	**21 03 55.2**	**-0.3**
NVLJ				Sn	**Sn**	**21 04 34.1**	**-1.8**
NVLJ	**Novalja**	**3.46**	**90**	*e*Pn	**Pn**	**21 03 55.2**	**-0.3**
NVLJ				Sn	**Sn**	**21 04 34.1**	**-1.9**
VIVF	**Saint-Julien-l**	**3.82**	**275**	*e*Pn	**Pn**	**21 04 01.6**	**+1.0**
	SNR=1.0						
VIVF				*e*Sn	**Sn**	**21 04 44.2**	**-0.8**
	3.3nm,0.4s,SNR=1.0						
VIVF	**Saint-Julien-l**	**3.82**	**275**	*e*Pn	**Pn**	**21 04 01.6**	**+1.0**
	SNR=1.0						
VIVF				*e*Sn	**Sn**	**21 04 44.2**	**-0.8**
	1.6nm,0.4s,SNR=1.0						
HINF	**Hinteralfeld**	**3.86**	**326**	*e*Pn	**Pn**	**21 04 00.9**	**-0.2**
	SNR=1.0						
HINF				*e*Sn	**Sn**	**21 04 44.6**	**-1.4**
	6.2nm,0.4s,SNR=1.0						
HINF	**Hinteralfeld**	**3.86**	**326**	*e*Pn	**Pn**	**21 04 00.9**	**-0.2**
	SNR=1.0						
HINF				*e*Sn	**Sn**	**21 04 44.6**	**-1.4**
	3.1nm,0.4s,SNR=1.0						
UDBI	**Udbina**	**4.10**	**90**	*e*Pn	**Pn**	**21 04 05.1**	**+0.7**
UDBI				Sn	**Sn**	**21 04 50.8**	**-1.1**
UDBI	**Udbina**	**4.10**	**90**	*e*Pn	**Pn**	**21 04 05.1**	**+0.7**
UDBI				Sn	**Sn**	**21 04 50.7**	**-1.2**
HAU	**Haudompre**	**4.22**	**324**	*e*Pn	**Pn**	**21 04 06.0**	**0.0**
	SNR=1.0						
HAU				*e*Sn	**Sn**	**21 04 52.6**	**-2.1**
	5.8nm,0.3s,SNR=1.0						
HAU	**Haudompre**	**4.22**	**324**	*e*Pn	**Pn**	**21 04 06.0**	**0.0**
	SNR=1.0						
HAU				*e*Sn	**Sn**	**21 04 52.6**	**-2.1**
	2.9nm,0.3s,SNR=1.0						
CDF	**Champ du Feu**	**4.22**	**334**	*e*Pn	**Pn**	**21 04 05.3**	**-0.8**
	SNR=1.0						
CDF				*e*Sn	**Sn**	**21 04 53.2**	**-1.7**
	3.6nm,0.3s,SNR=1.0						
CDF	**Champ du Feu**	**4.22**	**334**	*e*Pn	**Pn**	**21 04 05.3**	**-0.8**
	SNR=1.0						
CDF				*e*Sn	**Sn**	**21 04 53.2**	**-1.7**
	1.8nm,0.3s,SNR=1.0						
LASF	**Ste Croix**	**4.46**	**265**	*e*Pn	**Pn**	**21 04 10.3**	**+0.9**
	SNR=1.0						
LASF				*e*Sn	**Sn**	**

MTLF	**Montolieu**	**5.78**	**260**	*e*Pn	**Pn**	**21 04 28.6**	**+1.1**
	SNR=1.0						
MTLF					**Sn**	**21 05 31.6**	**-1.7**
	0.6nm,0.4s						
STON	**Ston**	**5.83**	**105**	*e*Pn	**Pn**	**21 04 29.1**	**+1.0**
STON					**Sn**	**21 05 29.9**	**-4.5**
STON	**Ston**	**5.83**	**105**	*e*Pn	**Pn**	**21 04 29.1**	**+1.0**
RJF	**Les Rejaudoux**	**6.08**	**279**	*e*Pn	**Pn**	**21 04 32.4**	**+0.9**
RJF	**Les Rejaudoux**	**6.08**	**279**	*e*Pn	**Pn**	**21 04 32.4**	**+0.9**

MEX 28 21:03:43.1±0.6, 15°92N×97°69W, h16km±11km, MD3.6, Near coast of Oaxaca

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PNIG	**Pinotepa**	**0.63**	**318**	*e*P	Pg	21 03 53.4	-2.2
PNIG				*e*S	Sg	21 04 00.9	-3.0
VHO	**Vista Hermosa**	**1.47**	**39**	*i* P	Pn	21 04 05.8	-3.3
VHO				*e*S	Sn	21 04 22.4	-5.6
HUIG	**Huatulco**	**1.53**	**96**	*e*P	Pn	21 04 05.7	-4.1
HUIG				*e*S	Sn	21 04 23.7	-5.7
TLIG	**Tlapa**	**1.83**	**333**	*e*P	Pn	21 04 11.0	-3.2
TLIG				*e*S	Sn	21 04 32.9	-4.2

NIED ***28*** *21:13:00.3±1.0, 31°.20N×131°.90E, h26km, Mw4.0 Best double couple: Mo1.16000×10^15 NP1:φ=206.00000°, δ=45.00000°, λ=73.00000°. NP2:φ=49.00000°, δ=47.00000°, λ=106.00000°.*
ISCJB ***28*** *21:13:21.3±0.7, 31°.16N±0.04×131°.97E±0.07, h29km, mb3.4/7, MS2.6/2, Error ellipse: s-maj=8.7km s-min=5.3km az=15.7*
JMA ***28*** *21:13:22.1±0.2, 31°.18N×131°.92E, h26km±2km, M3.6*
IDC ***28*** *21:13:27.2±1.8, 31°.27N×131°.42E, h59km±16km, mb3.3/7, mb1 3.5/11, mb1mx3.3/44, mbtmp3.7/11, MS2.9/5, Ms1 2.9/5, ms1mx2.8/20, Error ellipse: s-maj=27.3km s-min=13.6km az=115.0*

ISC 28 21:13:22.4±0.9, 31°.18N±0°.04×131°.88E±0°.07, h29km, n26, σ1§15/27, mb3.5/7, 7C-1D, Kyushu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JNAR	**Kushima--Naru**	**0.62**	**304**	⇓P	**Pb**	**21 13 34.6**	**-0.2**
JNAR				*e*S	**Sn**	**21 13 43.9**	**-0.3**
JTSR	**Tashiro 2**	**0.82**	**269**	⇑P	**Pb**	**21 13 38.0**	**0.0**
JTN	**Tanegashima 3**	**0.93**	**236**	⇑P	**Pb**	**21 13 40.4**	**+0.5**
JTZ	**Takazaki**	**0.99**	**317**	⇑P	**Pn**	**21 13 40.1**	**-0.1**
JTZ				*e*S	**Sb**	**21 13 54.0**	**+0.5**
JTSN	**Tsuno**	**1.11**	**344**	⇑P	**Pn**	**21 13 42.3**	**+0.3**
JTSN				*e*S	**Sb**	**21 13 57.3**	**+0.2**
JSU	**Suzuyama**	**1.26**	**285**	⇑P	**Pn**	**21 13 44.4**	**+0.4**
JZO	**Okuchi**	**1.45**	**312**	⇑P	**Pn**	**21 13 47.0**	**+0.3**
JYAK	**Yakushimahirau**	**1.50**	**232**	P	**Pb**	**21 13 48.9**	**-0.7**
JYAK				*e*S	**Sb**	**21 14 08.0**	**-0.3**
JKC	**Kuchinoerabu**	**1.61**	**244**	P	**Pn**	**21 13 49.5**	**+0.7**
JIU2	**Izumi 2**	**1.64**	**327**	⇑P	**Pn**	**21 13 50.0**	**+0.8**
JTO	**Tosashimizu**	**1.85**	**25**	P	**Pn**	**21 13 51.6**	**-0.6**
JNU	**Nakatsue**	**2.12**	**337**	P	**Pn**	**21 13 56.9**	**+1.0**
	5.9nm,0.3s,baz=200,slow=9.9,SNR=33						
JOW	**Kunigami**	**5.36**	**217**	P	**Pn**	**21 14 42.8**	**+2.4**
	baz=133,slow=18						
JOW				S	**Sn**	**21 15 41.2**	**+0.2**
	0.7nm,0.3s,baz=126,slow=19,SNR=3.9						
JHJ	**Hachijo jima 2**	**6.98**	**72**	P	Pn	21 15 12.6	+10
	6.3nm,0.3s,baz=0.0,slow=10,SNR=2.2						
KSRS	**Korea Array**	**7.06**	**334**	P	**Pn**	**21 15 06.1**	**+2.4**
	0.1nm,0.3s,baz=154,slow=14,SNR=3.8						
KSRS				LR	LR	21 18 05.3	
	comp=Z,131nm,19.9s,baz=151,slow=41						
USRK	**Ussuriysk Ar.**	**13.00**	**0**	LR	LR	21 21 39.9	
	comp=Z,82nm,18.2s,baz=173,slow=38						
KLR	**Kul'dur**	**18.03**	**360**	P	**P**	**21 17 32.7**	**+1.8**
	0.2nm,0.3s,baz=209,slow=6.5,SNR=6.4						
KLR				LR	LR	21 24 28.1	
	comp=Z,33nm,18.4s,baz=188,slow=37						
GUMO	**Guam**	**21.20**	**143**	LR	LR	21 25 31.5	
	comp=Z,38nm,20.7s,baz=114,slow=34						
SONM	**Songino Array**	**25.58**	**318**	P	**P**	**21 18 47.0**	**-1.9**
	2.3nm,1.0s,baz=142,slow=9.3,SNR=6.7						
PETK	**Petropavlovsk-**	**28.82**	**33**	LR	LR	21 31 34.5	
	comp=Z,13nm,20.7s,baz=163,slow=38						
CMAR	**Chiang Mai Arr**	**32.33**	**255**	P	**P**	**21 19 48.5**	**-0.8**
	0.5nm,0.8s,baz=55,slow=8.1,SNR=6.7						
MKAR	**Makanchi Array**	**40.88**	**307**	P	**P**	**21 21 00.2**	**-1.6**
	0.2nm,0.2s,baz=88,slow=11,SNR=3.4						
FINES	**FINESS Array B**	**70.14**	**331**	P	**P**	**21 24 30.2**	**-1.5**
	0.5nm,0.7s,baz=64,slow=6.3,SNR=2.8						
YKA	**Yellowknife Ar**	**72.70**	**26**	P	**P**	**21 24 48.7**	**+1.6**
	0.2nm,0.7s,baz=305,slow=5.9,SNR=4.2						
NOA	**NORSAR Array B**	**76.27**	**334**	P	**P**	**21 25 07.7**	**-0.4**
	0.4nm,0.7s,baz=50,slow=5.7,SNR=3.6						
BRTR	**Keskin Array B**	**76.51**	**308**	P	**P**	**21 25 10.9**	**+1.0**
	0.3nm,0.7s,baz=42,slow=4.7,SNR=3.6						

IDC ***28*** *21:37:52.5±0.6, 18°.77N×119°.98E, h0km, mb4.2/21, mb1 4.3/24, mb1mx4.1/53, mbtmp4.2/24, ML3.5/2, MS3.4/9, Ms1 3.4/9, ms1mx3.0/40, Error ellipse: s-maj=18.3km s-min=13.4km az=78.0*
NEIC ***28*** *21:37:55.2±2.2, 18°.75N×119°.95E, h16km±14km, mb4.5/24, Error ellipse: s-maj=5.3km s-min=3.9km az=100.0*
ISCJB ***28*** *21:37:56.3±0.6, 18°.77N±0°.03×119°.93E±0°.04, h37km±6km, mb4.4/50, MS3.6/9, Error ellipse: s-maj=6.9km s-min=4.4km az=159.6*
MAN ***28*** *21:38:01, 18°.51N×120°.20E, h8km, mb5.2, ML4.2, MS4.4*

ISC 28 21:37:57.0±0.9, 18.74N±0°.04×120.06E±0°.05, h29km±7km, n95, σ1§69/110, mb4.4/50, MS3.5/10, 3C-1D, Luzon

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PIP	**Pasuquin**	**0.67**	**128**	⇑*i*P	**Pn**	**21 38 11.2**	**+0.6**
PIP				*e*S	**Sn**	**21 38 23.6**	**+3.4**
SIPP	**Brgy, Tapao**	**0.90**	**155**	⇑*e*P	**Pb**	**21 38 13.9**	**-0.1**
SIPP				*e*S	**Sb**	**21 38 25.1**	**-0.5**
ABRA	**Dolores**	**1.25**	**150**	*e*P	**Pb**	**21 38 19.3**	**-0.7**
ABRA				*e*S	**Sn**	**21 38 34.9**	**+0.5**
APYP	**Conner**	**1.42**	**128**	*e*P	**Pb**	**21 38 22.6**	**-0.3**
APYP				*e*S	**Sb**	**21 38 41.3**	**+0.7**
SGCP	**Mt. Cagua**	**1.95**	**104**	*e*P	**Pb**	**21 38 31.7**	**-0.2**
CVP	**Callao Caves**	**1.97**	**121**	⇓*e*P	**Pb**	**21 38 31.2**	**-1.0**
BCPH	**Baguio City Da**	**2.40**	**168**	⇑*i*P	**Pb**	**21 38 39.2**	**-0.4**
BCPH				*i* S	**Sb**	**21 39 11.1**	**+2.2**
CAUP	**Cauayan**	**2.45**	**136**	*e*P	**Pb**	**21 38 39.4**	**-1.0**
TWG	**Pinlang**	**4.17**	**13**	*e*Pn	**Pn**	**21 38 56.8**	**-2.0**
TPUB	**Ta-pu**	**4.57**	**7**	*e*Pn	**Pn**	**21 39 04.1**	**-0.2**
YULB	**Yu-li**	**4.77**	**14**	*e*Pn	**Pn**	**21 39 06.0**	**-1.1**
SSLB	**Suanglung**	**5.09**	**9**	*e*Pn	**Pn**	**21 39 10.1**	**-1.4**
NACB	**Ninganchiao**	**5.59**	**15**	*e*Pn	**Pn**	**21 39 18.3**	**0.0**
YHNB	**Yeheng**	**6.03**	**11**	*e*Pn	**Pn**	**21 39 25.9**	**+1.6**
GZH	**Guangzhou**	**7.62**	**306**	P	Pn	21 39 40.3	-5.9
DAV	**Davao City (W)**	**12.78**	**154**	LR	LR	21 46 59.2	
	comp=Z,171nm,20.6s,baz=1,5,slow=43						
WHN	**Wuhan**	**12.84**	**337**	P	**P**	**21 41 09.0**	**+0.8**
WHN				S	Sn	21 43 41.8	+22
WHN				LR	LR		
	comp=N,620nm,12.4s						
WHN				LR	LR		
	comp=E,640nm,13.6s						
WHN				LR	LR		
	comp=Z,850nm,11.6s						
GYA	**Guiyang**	**14.55**	**304**	*e*P	**Pn**	**21 41 22.0**	**+0.8**
GYA				pmax	pmax		
	comp=Z,10.0nm,0.8s						
KMI	**Kunming**	**17.27**	**295**	P	**P**	**21 41 57.3**	**-0.4**
KMI				pP	pP	21 42 04.5	-0.9
KMI				sP	sP	21 42 09.8	+0.8
KMI				PP	**PnPn**	**21 42 11.8**	**+5.1**
KMI				S	**Sn**	**21 45 05.5**	**-2.4**
KMI				sS	S	21 45 18.3	+2.0
KMI				SS	**SnSn**	**21 45 27.5**	**+6.1**
KMI				pmax	pmax		
	comp=Z,5.0nm,1.0s						
KMI				pmax	pmax		
	comp=Z,99nm,5.9s						
KMI				LR	LR		
	comp=N,270nm,13.7s						
KMI				LR	LR		
	comp=E,240nm,12.7s						
KMI				LR	LR		
	comp=Z,260nm,14.4s						
JNU	**Nakatsue**	**17.30**	**32**	P	**Pn**	**21 41 55.5**	**-1.0**
	comp=Z,0.2nm,0.3s,baz=94,slow=15,SNR=2.5						

CD2	**Chengdu**	**19.09**	**312**	P	**P**	**21 42 16.5**	**-1.1**
CD2				sP	sP	21 42 29.8	+0.9
CD2				S	**Sn**	**21 45 49.5**	**-2.3**
CD2				sS	sS	21 46 06.3	+1.2
CD2				SS	**SnSn**	**21 46 12.5**	**+6.5**
CD2				pmax	pmax		
	comp=Z,20nm,0.7s						
CD2				pmax	pmax		
	comp=Z,110nm,5.5s						
CD2				LR	LR		
	comp=N,360nm,10.8s						
CD2				LR	LR		
	comp=Z,450nm,10.3s						
KSM	**Kuching**	**19.64**	**210**	*e*P	**P**	**21 42 23.1**	**-0.5**
	comp=Z,9.1nm,1.0s						
LUWI	**Luwuk**	**19.84**	**172**	*e*P	**Pn**	**21 42 26.6**	**-0.8**
	comp=Z,56nm,1.2s						
KSAR	**Wonju Array Be**	**19.85**	**19**	P	**P**	**21 42 25.6**	**-0.1**
KSRS	**Korea Array**	**19.88**	**19**	P	**P**	**21 42 25.6**	**-0.3**
	baz=203,slow=12,SNR=12						
KSRS				LR	LR	21 49 41.6	
	comp=Z,36nm,19.4s,baz=228,slow=36						
CHTO	**Chiang Mai**	**19.99**	**274**	*e*P	**P**	**21 42 26.6**	**-0.8**
	comp=Z,15nm,1.9s						
CM01	**Chiang Mai Arr**	**20.00**	**272**	*e*P	**P**	**21 42 26.4**	**-1.2**
CM31	**Chiang Mai Arr**	**20.02**	**273**	*e*P	**P**	**21 42 26.9**	**-0.8**
CMAR	**Chiang Mai Arr**	**20.02**	**273**	P	**P**	**21 42 25.5**	**-2.2**
	comp=Z,0.0nm,0.3s,baz=87,slow=8.1,SNR=12						
CMAR				PcP	**PcP**	**21 46 44.5**	**+1.1**
	comp=Z,0.1nm,0.3s,baz=126,slow=1.2,SNR=8.3						
CMAR				LR	LR	21 50 24.2	
	comp=Z,85nm,18.8s,baz=175,slow=38						
BJI	**Beijing**	**21.49**	**352**	P	**P**	**21 42 42.8**	**-0.6**
BJI				pmax	pmax		
	comp=Z,15nm,1.4s						
INU	**Inuyama**	**22.34**	**39**	*e*P	**P**	**21 42 53.9**	**+1.3**
	comp=Z,51nm,1.0s						
LZH	**Lanzhou**	**22.43**	**324**	*e*P	**P**	**21 42 53.5**	**-0.3**
LZH				pP	sP	21 43 03.5	-1.7
LZH				sP	pP	21 43 07.8	+6.2
LZH				PP	**PnPn**	**21 43 21.5**	**+4.2**
LZH				*e*S	**S**	**21 46 56.0**	**-2.7**
LZH				sS	Sn	21 47 12.3	+0.2
LZH				pmax	pmax		
	comp=Z,20nm,1.0s						
LZH				pmax	pmax		
	comp=Z,100nm,4.8s						
LZH				LR	LR		
	comp=N,370nm,12.4s						
LZH				LR	LR		
	comp=E,290nm,10.6s						
LZH				LR	LR		
	comp=Z,310nm,11.4s						
HHC	**Hu-ho-hao-te**	**23.21**	**343**	*e*P	**P**	**21 43 01.8**	**0.0**
HHC				pmax	pmax		
	comp=Z,23nm,0.9s						
HHC				pmax	pmax		
	comp=Z,75nm,8.0s						
KAPI	**Kappang**	**23.61**	**181**	*e*P	**P**	**21 43 06.0**	**+0.3**
	comp=Z,38nm,1.3s						
MAJO	**Matsushiro**	**23.86**	**38**	*e*P	**P**	**21 43 10.6**	**+2.5**
	comp=Z,29nm,0.9s						
MJAR	**Matsushiro Arr**	**23.86**	**38**	P	**P**	**21 43 07.1**	**-1.0**
	comp=Z,6.1nm,0.4s,baz=226,slow=8.5,SNR=7.4						
MJB9	**Matsu-Tunnel**	**23.86**	**38**	*e*P	**P**	**21 43 10.0**	**+1.9**
	comp=Z,7.3nm,0.9s						
PSI	**Prapat**	**26.06**	**235**	P	**P**	**21 43 27.4**	**-1.0**
	comp=Z,2.9nm,0.4s,baz=84,slow=7.5,SNR=4.4						
GTA	**Gaotai**	**27.04**	**324**	*e*P	**P**	**21 43 36.8**	**-0.2**
GTA				pP	pP	21 43 45.8	+0.5
GTA				sP	sP	21 43 49.8	+1.0
GTA				S	**S**	**21 48 11.0**	**-2.1**
GTA				sS	sS	21 48 26.0	-0.9
GTA				SS	**SnSn**	**21 49 28.3**	**+7.8**
GTA				pmax	pmax		
	comp=Z,2.0nm,1.0s						
GTA				pmax	pmax		
	comp=Z,40nm,5.7s						
GTA				LR	LR		
	comp=N,150nm,15.7s						
GTA				LR	LR		
	comp=E,240nm,13.3s						
GTA				LR	LR		
	comp=Z,140nm,10.5s						
USRK	**Ussuriysk Ar.**	**27.29**	**19**	P	**P**	**21 43 38.4**	**-0.6**
	comp=Z,2.6nm,0.8s,baz=218,slow=4.6,SNR=5.5						
SONM	**Songino Array**	**31.09**	**342**	P	**P**	**21 44 11.3**	**-1.6**
	comp=Z,0.8nm,0.7s,baz=150,slow=12,SNR=3.8						
SONA1	**Songino Array**	**31.10**	**342**	*e*P	**P**	**21 44 12.4**	**-0.6**
KLR	**Kul'dur**	**31.84**	**15**	P	**P**	**21 44 19.2**	**-0.2**
	comp=Z,1.5nm,0.8s,baz=278,slow=4.6,SNR=4.0						
XMIS	**Christmas Isla**	**32.33**	**207**	*e*P	**P**	**21 44 23.0**	**-1.0**
	comp=Z,64nm,1.0s						
TLY	**Talaya**	**35.33**	**342**	LR	LR	22 00 03.0	
	comp=Z,63nm,18.2s,baz=90,slow=38						
WMQ	**Urumqi**	**36.90**	**320**	*e*P	**P**	**21 45 03.0**	**-0.3**
WMQ				pmax	pmax		
	comp=Z,2.0nm,0.6s						
WMQ				pmax	pmax		
	comp=Z,89nm,4.2s						
WMQ				LR	LR		
	comp=N,27nm,18.4s						
WMQ				LR	LR		
	comp=E,16nm,18.4s						
WMQ				LR	LR		
	comp=Z,28nm,18.4s						
FITZ	**Fitzroy Crossi**	**37.02**	**171**	*e*P	**P**	**21 45 04.3**	**-0.1**
FITZ				*e*pP	**pP**	**21 45 12.1**	**-0.8**
COCO	**West Island**	**38.33**	**218**	*e*P	**P**	**21 45 15.1**	**-0.5**
	comp=Z,496nm,1.6s						
WRA	**Warramunga Ar**	**40.91**	**159**	P	**P**	**21 45 36.8**	**-0.3**
	comp=Z,2.3nm,0.8s,baz=339,slow=8.8,SNR=11						
WB2	**Warramunga Array**	**40.92**	**159**	*e*P	**P**	**21 45 37.0**	**-0.1**
	comp=Z,13nm,1.1s						
MK01	**Makanchi Array**	**41.68**	**321**	*e*P	**P**	**21 45 42.9**	**-0.3**
MK31	**Makanchi Array**	**41.69**	**321**	*e*P	**P**	**21 45 43.5**	**+0.2**
MKAR	**Makanchi Array**	**41.69**	**321**	P	**P**	**21 45 42.9**	**-0.3**
	comp=Z,5.0nm,0.9s,baz=114,slow=5.2,SNR=5.0						
MKAR				PcP	**PcP**	**21 47 39.1**	**-0.4**
	comp=Z,1.2nm,0.8s,baz=116,slow=5.5,SNR=4.6						
MAKZ	**Makanchi**	**41.89**	**321**	*e*P	**P**	**21 45 45.0**	**+0.2**
	comp=Z,6.3nm,1.0s						
KSH	**Kashi**	**43.20**	**308**	P	**P**	**21 45 58.5**	**+2.7**
KSH				*es*P	sP	21 46 11.8	+4.0
KSH				*e*ScP	**ScP**	**21 51 34.5**	**+0.2**
KSH				PcS	**PcS**	**21 51 38.5**	**+1.0**
KSH				S	**S**	**21 52 23.3**	**+2.3**
KSH				pmax	pmax		
	comp=Z,71nm,6.4s						
KSH				LR	LR		
	comp=N,80nm,5.9s						
KSH				LR	LR		
	comp=E,93nm,5.0s						
AS31	**Alice Springs**	**44.26**	**162**	*e*P	**P**	**21 46 04.0**	**-0.2**
	comp=E,1.6nm,0.8s						
ASAR	**Alice Springs**	**44.26**	**162**	P	**P**	**21 46 04.8**	**+0.6**
	comp=E,1.8nm,0.7s,baz=339,slow=6.6,SNR=19						
ASAR				LR	LR	22 06 52.7	
	comp=E,36nm,19.0s,baz=268,slow=39						
AS01	**Alice Springs**	**44.27**	**162**	*e*P	**P**	**21 46 04.3**	**0.0**
ZAA0	**Zalesovo Array**	**44.35**	**331**	*e*P	**P**	**21 46 04.1**	**-0.5**
ZALV	**Zalesovo Beam**	**44.35**	**331**	P	**P**	**21 46 03.9**	**-0.7**
	comp=E,1.6nm,0.8s,baz=115,slow=6.8,SNR=8.3						
ZALV				LR	LR	22 05 06.9	
	comp=E,56nm,18.7s,baz=68,slow=37						
TKM2	**Tokmak 2**	**44.48**	**313**	*e*P	**P**	**21 46 04.5**	**-1.6**
	comp=E,2.0nm,1.0s						
AAK	**Ala-Archa**	**45.16**	**312**	*e*P	**P**	**21 46 10.7**	**-0.8**
	comp=E,14nm,2.0s						
PET	**Petropavlovsk**	**45.42**	**32**	*e*P	**P**	**21 46 13.7**	**+0.6**
	comp=E,22nm,1.2s						
EKS2	**Erkin-Say**	**45.68**	**312**	*e*P	**P**	**21 46 14.7**	**-0.8**
	comp=E,2.0nm,1.0s						
KURK	**Kurchatov**	**45.72**	**324**	P	**P**	**21 46 15.2**	**-0.4**
KURBB	**Kurchatov Arra**	**45.73**	**324**	P	**P**	**21 46 15.2**	**-0.4**
	comp=E,4.8nm,0.8s,baz=123,slow=8.1,SNR=34						
KWAJ	**Kwajalein Atol**	**47.10**	**95**	*e*P	**P**	**21 46 27.7**	**+0.8**
	comp=E,225nm,1.0s						
KBL	**Kabul**	**47.75**	**300**	*e*P	**P**	**21 46 32.5**	**+0.5**
	comp=E,24nm,0.3s						
HNR	**Honiara**	**48.28**	**122**	LR	LR	22 03 40.3	
	comp=E,63nm,19.3s,baz=347,slow=32						
BVAR	**Borovoye Array**	**51.32**	**324**	PcP	**PcP**	**21 48 12.5**	**-0.8**
	comp=E,1.4nm,0.8s,baz=160,slow=4.7,SNR=4.9						
BRVK	**Borovoye**	**51.39**	**324**	*e*P	**P**	**21 46 58.5**	**-0.7**
	comp=E,3.0nm,0.9s						

ZRNK	**Zerenda**	**52.07**	**323**	*e*P	**P**	**21 47 03.7**	**-0.5**
	comp=E,3.3nm,0.9s						
TIXI	**Tiksi**	**53.16**	**3**	*e*P	**P**	**21 47 11.6**	**-0.4**
	comp=E,5.8nm,1.1s						
NRIK	**Noril'sk**	**54.40**	**346**	P	**P**	**21 47 20.9**	**-0.1**
	comp=E,3.9nm,0.5s,baz=132,slow=6.2,SNR=5.8						
NRIK				LR	LR	22 11 06.6	
	comp=E,48nm,19.2s,baz=129,slow=37						
STKA	**Stephens Creek**	**54.40**	**157**	P	**P**	**21 47 21.6**	**0.0**
	comp=E,4.0nm,0.9s,baz=351,slow=5.8,SNR=6.9						
STKA	**Stephens Creek**	**54.40**	**157**	*e*P	**P**	**21 47 21.5**	**-0.1**
	comp=E,5.5nm,1.4s						
ABKAR	**Akbulak array**	**56.59**	**317**	*e*P	**P**	**21 47 37.1**	**-0.1**
	comp=E,4.9nm,0.8s						
GEYT	**Alibeck**	**56.77**	**303**	P	**P**	**21 47 38.4**	**-0.4**
	comp=E,8.1nm,0.8s,baz=116,slow=3.4,SNR=20						
BILL	**Bilibino**	**57.14**	**19**	*e*P	**P**	**21 47 41.4**	**+0.6**
	comp=E,3.2nm,0.6s						
AKTO	**Aktyubinsk**	**58.02**	**318**	P	**P**	**21 47 46.8**	**-0.5**
	comp=E,4.6nm,0.9s,baz=85,slow=5.6,SNR=18						
ARU	**Arti**	**58.89**	**325**	P	**P**	**21 47 52.8**	**-0.4**
	comp=E,6.1nm,0.8s,baz=91,slow=3.1,SNR=8.3						
ARU	**Arti**	**58.89**	**325**	*e*P	**P**	**21 47 52.3**	**-0.8**
	comp=E,9.1nm,0.9s						
KBZ	**Khabaz**	**68.12**	**310**	P	**P**	**21 48 54.0**	**-0.4**
	comp=E,2.2nm,0.8s,baz=80,slow=2.9,SNR=4.4						
MLY	**Manley**	**72.86**	**26**	*e*P	**P**	**21 49 24.2**	**+1.2**
	comp=E,13nm,1.8s						
BPAW	**Bear Paw Mtn.**	**72.87**	**27**	*e*P	**P**	**21 49 24.3**	**+1.1**
	comp=E,3.4nm,1.0s						
ARCES	**ARCESS Array B**	**74.19**	**339**	LR	LR	22 27 50.6	
	comp=E,42nm,18.8s,baz=61,slow=40						
ILAR	**Eielson Array**	**74.52**	**26**	P	**P**	**21 49 33.0**	**+0.2**
	comp=E,0.6nm,0.8s,baz=271,slow=6.5,SNR=6.0						
FINES	**FINESS Array B**	**75.61**	**330**	P	**P**	**21 49 38.4**	**-0.7**
	comp=E,1.7nm,0.8s,baz=90,slow=5.7,SNR=7.5						
AKASG	**Malin Array Be**	**76.25**	**319**	P	**P**	**21 49 41.7**	**-1.2**
	comp=E,0.3nm,0.3s,baz=64,slow=5.7,SNR=4.0						
MENT	**Mentasta**	**76.29**	**28**	*e*P	**P**	**21 49 42.5**	**-0.5**
	comp=E,28nm,0.2s						
NB2	**NORSAR Subarra**	**82.53**	**332**	P	**P**	**21 50 15.5**	**-1.5**
	comp=Z,0.6nm,0.7s,baz=65,slow=5.1						
NOA	**NORSAR Array B**	**82.53**	**332**	P	**P**	**21 50 15.6**	**-1.5**
	comp=Z,1.7nm,0.9s,baz=64,slow=5.2,SNR=7.9						
CLL	**Colln**	**85.75**	**323**	*i* P	**P**	**21 50 32.8**	**-0.7**
	comp=Z,3.0nm,1.0s						
YKA	**Yellowknife Ar**	**88.38**	**22**	P	**P**	**21 50 46.2**	**+0.2**
	comp=Z,1.5nm,0.7s,baz=314,slow=4.5,SNR=37						
YKB5	**Yellowknife Ar**	**88.38**	**22**	*e*P	**P**	**21 50 45.8**	**-0.2**

ISCJB ***28*** *21:42:23.5±0.6, 34°.56N±0°.08×137°.50E±0°.06, h317km±5km, mb3.0/4, Error ellipse: s-maj=13.1km s-min=8.1km az=166.1*
JMA ***28*** *21:42:23.4±0.3, 34°.53N×137°.44E, h320km±3km, M3.0*
IDC ***28*** *21:42:24.5±1.7, 34°.52N×137°.85E, h317km±49km, mb2.9/4, mb1 3.1/5, mb1mx2.7/56, mbtmp3.5/5, Error ellipse: s-maj=140.9km s-min=18.3km az=62.0*

ISC 28 21:42:24.4±0.9, 34°.53N±0°.08×137°.43E±0°.06, h309km±7km, n27, σ1§29/38, mb3.0/4, Near south coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JAA	**Atsumi**	**0.26**	**293**	P	**Pn**	**21 43 04.3**	**+0.7**
JAA				S	**S**	**21 43 35.3**	**+0.5**
TK04	**Tokai 4**	**0.39**	**111**	P	**Pn**	**21 43 05.2**	**+1.5**
HMMJ	**Hamamatsu 2**	**0.40**	**36**	P	**Pn**	**21 43 04.3**	**+0.5**
HMMJ				S	**S**	**21 43 36.0**	**+0.8**
JIE	**Ise**	**0.62**	**257**	P	**Pn**	**21 43 04.6**	**+0.2**
TK02	**Tokai 2**	**0.64**	**155**	P	**Pn**	**21 43 05.5**	**+1.2**
JAO	**Obara**	**0.75**	**349**	P	**Pn**	**21 43 05.3**	**+0.5**
JAO				*e*S	**S**	**21 43 37.4**	**+0.4**
JNY	**Yasuok**	**0.90**	**23**	P	**Pn**	**21 43 05.8**	**+0.4**
JKN2	**Miekihoku**	**1.00**	**254**	P	**Pn**	**21 43 05.9**	**+0.1**
JGM	**Miyama**	**1.31**	**334**	P	**Pn**	**21 43 07.7**	**+0.4**
JOD2	**Odawara 2**	**1.54**	**61**	P	**Pn**	**21 43 09.7**	**+0.9**
JWZ	**Kozaga**	**1.74**	**236**	P	**Pn**	**21 43 09.5**	**-0.7**
JWZ				S	**S**	**21 43 42.9**	**-3.7**
JWT	**Wachi**	**1.83**	**295**	P	**Pn**	**21 43 10.7**	**0.0**
JWT				S	**S**	**21 43 45.2**	**-2.4**
JRY	**Ryogami san**	**1.91**	**39**	P	**Pn**	**21 43 12.3**	**+1.0**
MAT	**Matsushiro**	**2.11**	**17**	P	**Pn**	**21 43 13.0**	**+0.3**
MAT				S	**S**	**21 43 51.0**	**-0.4**
MAT	**Matsushiro**	**2.11**	**17**	P	**Pn**	**21 43 13.1**	**+0.3**
MJAR	**Matsushiro Arr**	**2.11**	**17**	P	**Pn**	**21 43 12.9**	**+0.1**
	4.1nm,0.3s,baz=194,slow=9.2,SNR=54						
BSO4	**Boso 4**	**2.44**	**78**	P	**Pn**	**21 43 15.7**	**+0.3**
BSO4				S	**S**	**21 43 56.6**	**+0.4**
JAG	**Ashikaga**	**2.51**	**40**	P	**Pn**	**21 43 15.6**	**-0.

PRZ			⇑*i*S	Sn	21 49 28.8	-0.4	
	baz=254						
KURS	**Kuram**	**1.71 285**	*e*P	**Pn**	**21 49 08.9**	**0.0**	
KURS	3.0nm,0.3s		*e*S	**Sg**	**21 49 33.5**	**+0.7**	
	6.3nm,0.2s						
MNBS	**Baschi**	**1.80 305**	*e*P	**Pn**	**21 49 08.7**	**-1.4**	
MNBS	1.8nm,0.2s		*e*S	**Sn**	**21 49 33.5**	**-0.2**	
	38nm,0.2s						
ANVS	**Anan'yevo**	**2.06 263**	⇑*i*P	**Pn**	**21 49 13.6**	**-0.2**	
	baz=266						
ANVS			⇑*i*S	**Sb**	**21 49 42.4**	**0.0**	
	baz=266						
KAPS	**Kapalarasan**	**2.35 341**	*e*P	**Pb**	**21 49 20.2**	**-0.9**	
KAPS	12nm,0.3s		*e*S	**Sg**	**21 49 53.2**	**-0.2**	
	31nm,0.1s						
TDK	**Taldyqorghan**	**2.43 324**	*e*P	**Pb**	**21 49 21.7**	**-0.7**	
TDK	49nm,0.1s		*e*S	**Sg**	**21 49 55.8**	**-0.2**	
	99nm,0.2s						
KOTS	**Kotyrbulak**	**2.44 275**	*e*P	**Pb**	**21 49 20.6**	**-2.1**	
KOTS	2.6nm,0.3s		*e*S	**Sb**	**21 49 53.9**	**+0.5**	
	3.4nm,0.4s						
TNSS	**Tian-Shan**	**2.57 271**	*e*P	**Pb**	**21 49 22.8**	**-2.1**	
TNSS	1.3nm,0.3s		*e*S	**Sb**	**21 49 57.4**	**+0.3**	
	2.2nm,0.2s						
AAA	**Alma-Ata**	**2.57 276**	*e*P	**Pb**	**21 49 23.3**	**-1.4**	
AAA	32nm,0.2s		*e*S	**Sb**	**21 49 58.6**	**+1.8**	
	52nm,0.4s						
KDJ	**Kajisay**	**2.59 250**	⇑*e*P	**Pn**	**21 49 20.4**	**-0.6**	
KDJ	baz=253		⇑*e*S	**Sn**	**21 49 53.5**	**+0.3**	
	baz=253						
CHKK	**Chushkaly**	**2.63 289**	*e*P	**Pb**	**21 49 25.0**	**-0.8**	
CHKK	2.0nm,0.2s		*e*S	**Sb**	**21 50 00.7**	**+2.0**	
	2.4nm,0.1s						
IZV	**Izvestkoviy**	**2.81 271**	*e*P	**Pb**	**21 49 27.9**	**-1.0**	
IZV	2.3nm,0.5s		*e*S	**Sb**	**21 50 06.0**	**+2.2**	
	5.6nm,0.4s						
KTBS	**Karatobe**	**2.82 285**	*e*P	**Pb**	**21 49 28.9**	**-0.1**	
KTBS	0.7nm,0.3s		*e*S	**Sg**	**21 50 07.2**	**-1.2**	
	0.7nm,0.2s						
MTBS	**Maitube**	**2.94 273**	*e*P	**Pg**	**21 49 35.9**	**+1.7**	
MTBS	6.8nm,0.2s		*e*S	Sg	21 50 20.0	+7.7	
	35nm,0.2s						
KUU	**Kurty**	**3.10 287**	*e*P	**Pb**	**21 49 32.5**	**-1.3**	
KUU	8.5nm,0.3s		*e*S	**Sb**	**21 50 13.6**	**+1.5**	
	28nm,0.2s						
ULHL	**Ulahol**	**3.21 257**	⇑*i*P	**Pn**	**21 49 29.5**	**-0.1**	
ULHL	baz=259		⇑*i*S	**Sn**	**21 50 09.0**	**+0.4**	
	baz=259						
KST	**Kastek**	**3.29 271**	*e*P	**Pb**	**21 49 36.2**	**-0.8**	
KST	8.2nm,0.4s		⇓*i*S	**Sb**	**21 50 20.3**	**+2.8**	
	107nm,0.3s						
BOOM	**Boomskoye usch**	**3.37 262**	⇓*e*P	**Pn**	**21 49 31.3**	**-0.4**	
BOOM	baz=264		⇓*e*S	**Sn**	**21 50 13.9**	**+1.5**	
	baz=264						
DGS	**Degeres**	**3.42 275**	*e*P	**Pb**	**21 49 37.8**	**-1.6**	
DGS	0.6nm,0.3s		*e*S	**Sb**	**21 50 23.3**	**+1.7**	
	1.3nm,0.2s						
TKM2	**Tokmak 2**	**3.56 269**	⇓*i*P	**Pn**	**21 49 35.2**	**+0.8**	
TKM2	baz=271		⇓*i*S	**Sn**	**21 50 17.6**	**+0.3**	
	baz=271						
TKM2	**Tokmak 2**	**3.56 269**	⇓Pg	Pn	21 49 37.5	+3.0	
TKM2	3.9nm,0.4s		⇑Lg	Lg	21 50 26.3		
	19nm,0.6s						
NRN	**Naryn**	**3.68 245**	⇑*e*P	**Pn**	**21 49 35.2**	**-1.0**	
NRN	baz=247		⇑*e*S	**Sn**	**21 50 20.8**	**+0.4**	
	baz=247						
MK31	**Makanchi Array**	**3.95 19**	⇓Pn	**Pn**	**21 49 38.6**	**-1.0**	
MK31	0.1nm,0.2s,baz=198,slow=12,SNR=18		Pg	**Pb**	**21 49 49.0**	**+0.7**	
	1.2nm,0.3s,baz=199,slow=17,SNR=14						
KZA	**Kyzart**	**3.96 257**	⇑*i*P	**Pn**	**21 49 40.4**	**+0.3**	
KZA	baz=259		⇑*i*S	**Sn**	**21 50 26.9**	**-0.6**	
	baz=259						
KBK	**Karagaybulak**	**4.06 266**	⇑*i*P	**Pn**	**21 49 42.0**	**+0.7**	
KBK	baz=268		⇑*i*S	**Sn**	**21 50 29.3**	**-0.3**	
	baz=268						
CHMS	**Chumysh**	**4.17 271**	⇑*i*P	**Pn**	**21 49 43.1**	**+0.4**	
CHMS	baz=273		⇑*i*S	**Sn**	**21 50 32.6**	**+0.4**	
	baz=273						
USP	**Ospenovka**	**4.35 275**	⇑*i*P	**Pn**	**21 49 45.8**	**+0.6**	
USP	baz=276		⇑*i*S	**Sn**	**21 50 36.8**	**+0.2**	
	baz=276						

IDC ***28*** *21:52:22.3±0.6, 18°.78N×120°.08E, h0km, mb3.9/18, mb1 4.0/19, mb1mx3.9/47, mbtmp3.9/19, ML3.7/1, MS3.0/1, Ms1 3.2/1, ms1mx2.5/32, Error ellipse: s-maj=22.5km s-min=14.4km az=68.0*

NEIC ***28*** *21:52:26.6±3.3, 18°.78N×120°.07E, h29km±23km, mb4.4/2, Error ellipse: s-maj=12.2km s-min=9.3km az=72.0*

MAN ***28*** *21:52:30, 18°.48N×120°.08E, h15km, mb4.8, ML3.7, MS3.7*

ISC 28 21:52:23.1±1.8, 18°.78N±0°.04×119°.99E±0°.08, h6km±12km, n33, σ0s92/42, mb3.8/19, 2C-1D, Philippine Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PIP	**Pasuquin**	**0.75**	**127**	⇑*i*P	**Pn**	**21 52 41.2**	**+1.0**
PIP				*e*S	**Sn**	**21 52 54.4**	**+2.4**
SIPP	**Brgy, Tapao**	**0.96**	**153**	⇓*e*P	**Pn**	**21 52 44.1**	**+0.9**
SIPP				*e*S	**Sn**	**21 52 55.4**	**-1.9**
ABRA	**Dolores**	**1.32**	**149**	*e*P	**Pg**	**21 52 49.5**	**+1.1**
ABRA				*e*S	**Sg**	**21 53 04.5**	**-1.0**
APYP	**Conner**	**1.50**	**127**	*e*P	**Pg**	**21 52 52.8**	**+0.9**
APYP				*e*S	**Sg**	**21 53 11.2**	**-0.1**
SGCP	**Mt. Cagua**	**2.02**	**105**	*e*P	**Pg**	**21 53 01.9**	**+0.1**
BCPH	**Baguio City Da**	**2.45**	**167**	⇑*i*P	**Pb**	**21 53 06.5**	**-1.3**
BCPH				*i*S	**Sb**	**21 53 37.8**	**-0.5**
CAUP	**Cauayan**	**2.53**	**136**	*e*P	**Pb**	**21 53 07.8**	**-1.1**
YULB	**Yu-li**	**4.75**	**15**	*e*Pn	**Pn**	**21 53 36.0**	**+0.7**
YULB				*e*Sn	**Sn**	**21 54 29.9**	**-0.8**
SSLB	**Suanglung**	**5.06**	**10**	*e*Pn	**Pn**	**21 53 40.4**	**+0.8**
	21nm,0.8s						
SSLB				*e*Sn	**Sn**	**21 54 37.9**	**-0.6**
KSAR	**Wonju Array Be**	**19.84**	**19**	P	**Pn**	**21 56 56.0**	**-0.3**
KSRS	**Korea Array**	**19.86**	**19**	P	**Pn**	**21 56 56.0**	**-0.5**
	0.2nm,0.3s,baz=202,slow=12,SNR=6.2						
CMAR	**Chiang Mai Arr**	**19.95**	**272**	P	Pn	21 56 57.8	0.0
	0.5nm,0.9s,baz=89,slow=8.5,SNR=5.7						
CMAR				PcP	**PcP**	**22 01 13.3**	**+0.3**
	0.4nm,0.6s,baz=177,slow=1.7,SNR=6.2						
CMAR				LR	LR	22 04 16.2	
	comp=Z,37nm,18.1s,baz=20,slow=36						
MJAR	**Matsushiro Arr**	**23.87**	**38**	P	**P**	**21 57 36.4**	**-1.1**
	1.7nm,0.9s,baz=230,slow=9.1,SNR=5.1						
USRK	**Ussuriysk Ar.**	**27.27**	**19**	P	**P**	**21 58 08.7**	**+0.4**
	1.2nm,0.7s,baz=204,slow=7.6,SNR=4.5						
SONM	**Songino Array**	**31.03**	**342**	P	**P**	**21 58 40.6**	**-1.2**
	0.5nm,0.7s,baz=157,slow=7.8,SNR=3.7						
WRA	**Warramunga Arr**	**40.98**	**159**	P	**P**	**22 00 06.0**	**-1.0**
	1.5nm,0.8s,baz=340,slow=8.8,SNR=6.3						
MKAR	**Makanchi Array**	**41.62**	**321**	P	**P**	**22 00 12.0**	**-0.1**
	2.5nm,0.9s,baz=118,slow=9.7,SNR=19						
MKAR				PcP	**PcP**	**22 02 08.8**	**-0.4**
	0.4nm,0.4s,baz=114,slow=3.6,SNR=5.5						
ZALV	**Zalesovo Beam**	**44.28**	**331**	P	**P**	**22 00 33.6**	**0.0**
	0.8nm,0.6s,baz=120,slow=7.5,SNR=5.0						
ASAR	**Alice Springs**	**44.32**	**162**	P	**P**	**22 00 34.3**	**+0.1**
	0.7nm,0.5s,baz=339,slow=6.7,SNR=15						
KKAR	**Karatay Array**	**48.03**	**312**	*e*P	**P**	**22 01 04.2**	**+0.9**
	2.5nm,0.8s						
BVAR	**Borovoye Array**	**51.25**	**324**	P	**P**	**22 01 28.7**	**+1.1**
	0.2nm,0.4s,baz=110,slow=7.8,SNR=4.3						
BVAR				PcP	**PcP**	**22 02 42.3**	**-0.5**
	0.6nm,0.7s,baz=151,slow=6.6,SNR=3.1						
NRIK	**Noril'sk**	**54.34**	**346**	P	**P**	**22 01 50.7**	**+0.5**
	2.4nm,0.7s,baz=122,slow=10,SNR=4.5						
STKA	**Stephens Creek**	**54.46**	**157**	P	**P**	**22 01 51.6**	**+0.1**
	1.5nm,0.6s,baz=340,slow=6.3,SNR=5.0						
GEYT	**Ailbeck**	**56.70**	**303**	P	**P**	**22 02 09.0**	**+1.2**
	4.6nm,0.8s,baz=122,slow=5.4,SNR=12						
AKTO	**Aktyubinsk**	**57.95**	**318**	P	**P**	**22 02 17.4**	**+1.1**
	2.9nm,0.8s,baz=86,slow=7.8,SNR=7.9						
ARU	**Arti**	**58.81**	**325**	P	**P**	**22 02 22.8**	**+0.6**
	3.5nm,0.7s,baz=89,slow=3.7,SNR=8.6						
ARU	**Arti**	**58.81**	**325**	*e*P	**P**	**22 02 22.6**	**+0.3**
	2.9nm,0.8s						
ILAR	**Eielson Array**	**74.51**	**26**	P	**P**	**22 04 03.0**	**+0.7**
	0.5nm,0.7s,baz=261,slow=5.5,SNR=6.0						
FINES	**FINESS Array B**	**75.55**	**330**	P	**P**	**22 04 08.4**	**+0.1**
	0.7nm,0.7s,baz=60,slow=12,SNR=3.9						
NOA	**NORSAR Array B**	**82.46**	**332**	P	**P**	**22 04 45.6**	**-0.8**
	0.9nm,0.9s,baz=66,slow=5.0,SNR=3.2						
GERES	**GERESS Array B**	**86.29**	**321**	P	**P**	**22 05 05.0**	**-1.1**
	0.1nm,0.3s,baz=71,slow=5.8,SNR=3.7						
YKA	**Yellowknife Ar**	**88.36**	**22**	P	**P**	**22 05 15.8**	**+0.1**
	0.8nm,0.6s,baz=313,slow=4.4,SNR=22						
TZTN	**Tazewell**	**120.64**	**22**	*e*PKPdf	**PKPdf**	**22 11 16.8**	**+0.3**

JMA 28 21:59:19.6±0.3, 37°.98N×144°.40E, h4km, M3.7, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**2.41**	**298**	P	**Pn**	22 00 00.7	+0.9
OFUJ				S	**Sn**	22 00 30.9	+1.2
JIO	**Ouri**	**2.45**	**282**	P	**Pn**	22 00 01.1	+0.8
JIO				S	**Sn**	22 00 31.4	+0.7
MIYJ	**Miyakonagasawa**	**2.57**	**309**	P	**Pn**	22 00 02.6	+0.6
JMK	**Ichinoseki**	**2.68**	**292**	P	**Pn**	22 00 04.8	+1.3
JMK				S	**Sn**	22 00 38.1	+1.7
JOM	**Ohasama**	**2.85**	**302**	P	**Pn**	22 00 07.8	+1.9
JFT	**Otama**	**3.25**	**263**	P	**Pn**	22 00 13.2	+1.8
JFT				S	**Sn**	22 00 51.5	+0.9
JYK	**Kaneyama**	**3.31**	**288**	P	**Pn**	22 00 14.2	+2.0
JCH	**Churui**	**4.70**	**351**	P	**Pn**	22 00 29.9	-1.3
JRY	**Ryogami san**	**4.82**	**248**	P	**Pn**	22 00 32.9	0.0
JRY				S	**Sn**	22 01 26.6	-2.6

ISCJB ***28*** *21:59:27.6±0.5, 6°.81N±0°.04×73°.06W±0°.05, h166km±4km, mb3.1/2, Error ellipse: s-maj=9.3km s-min=3.6km az=42.1*

FUNV ***28*** *21:59:27.9, 6°.68N×73°.09W, h175km, MW3.2*

IDC ***28*** *21:59:28.5±2.7, 6°.61N×72°.80W, h173km±35km, mb2.8/2, mb1 3.2/4, mb1mx2.9/29, mbtmp3.4/4, Error ellipse: s-maj=128.3km s-min=8.5km az=134.0*

RSNC ***28*** *21:59:30.1±0.9, 6°.76N×73°.09W, h150km±5km, ML3.1*

ISC 28 21:59:28.1±1.0, 6°.77N±0°.05×73°.01W±0°.05, h164km±6km, n31, σ1s48/52, 1D, Northern Colombia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BARC	**Barichara**	**0.25**	**224**	*i* P	**Pn**	**21 59 50.2**	**-0.4**
BARC				*e*S	**Sn**	**22 00 05.1**	**-2.6**
BARC				*i*		22 00 08.1	
	comp=Z,272nm,0.2s						
BTLC	**Betulia, Santa**	**0.29**	**300**	*e*P	**Pn**	**21 59 50.3**	**-0.4**
GIRC	**Giron, Santand**	**0.36**	**329**	*e*P	**Pn**	**21 59 50.3**	**-0.4**
PAMC	**Pamplona, Colo**	**0.64**	**29**	*e*P	**Pn**	**21 59 53.0**	**+0.5**
PAMC				*e*S	**Sn**	**22 00 10.5**	**-0.6**
BRRC	**Barranca, Sant**	**0.77**	**296**	*i* P	**Pn**	**21 59 52.1**	**-0.5**
BRRC				*e*S	**Sn**	**22 00 09.7**	**-1.7**
BRRC				*i*		22 00 11.8	
	comp=Z,160nm,0.1s						
RUSC	**La Rusia**	**0.88**	**185**	*e*P	**Pn**	**21 59 54.0**	**+0.1**
RUSC				*e*S	**Sn**	**22 00 13.1**	**-0.7**
RUSC				*i*		22 00 14.6	
	comp=Z,98nm,0.3s						
CBRI	**Barrientos, No**	**0.96**	**13**	*i* P	**Pn**	**21 59 54.8**	**+0.5**
CBRI				*e*S	**Sn**	**22 00 13.0**	**-1.3**
GRMC	**Gramalote, San**	**0.96**	**12**	*i* P	**Pn**	**21 59 56.0**	**+1.8**
GRMC				*e*S	**Sn**	**22 00 15.9**	**+1.6**
GRMC				*i*		22 00 17.0	
	comp=Z,126nm,0.3s						
CAPV	**Capacho**	**1.29**	**32**	⇓*i*P	**Pn**	**21 59 58.0**	**+1.0**
CAPV				*e*S	**Sn**	**22 00 20.1**	**+0.8**
OCAC	**Ocana**	**1.49**	**348**	*e*P	**Pn**	**21 59 58.4**	**-0.5**
OCAC				*e*S	**Sn**	**22 00 22.7**	**+0.1**
OCAC				*i*		22 00 25.7	
	comp=Z,73nm,0.3s						
NORC	**Norcasia**	**2.20**	**237**	*e*P	**Pn**	**22 00 05.9**	**-0.6**
NORC				*e*S	**Sn**	**22 00 34.7**	**-1.6**
ROSC	**El Rosal**	**2.32**	**214**	P	**Pn**	**22 00 09.3**	**+1.0**
	comp=Z,11nm,0.3s,baz=45,slow=20,SNR=18						
ROSC				S	**Sn**	**22 00 40.8**	**+1.5**
	comp=Z,19nm,0.3s,baz=28,slow=18,SNR=16						
ROSC	**El Rosal**	**2.32**	**214**	*e*S	**Sn**	**22 00 37.5**	**-1.8**
ROSC				*i*		22 00 46.0	
	comp=Z,134nm,0.6s						
HELC	**Santa Helena**	**2.57**	**257**	*e*P	**Pn**	**22 00 10.7**	**-0.5**
HELC				*e*S	**Sn**	**22 00 42.5**	**-2.0**
HELC				*i*		22 00 48.4	
	comp=Z,46nm,0.2s						
SOCV	**Socops**	**2.61**	**55**	*e*P	**Pn**	**22 00 12.3**	**+1.0**
SOCV				*e*S	**Sn**	**22 00 44.6**	**-0.2**
VIGV	**El Vigia**	**2.62**	**38**	*e*P	**Pn**	**22 00 12.2**	**+0.7**
VIGV				*e*S	**Sn**	**22 00 45.4**	**+0.2**
GUYC	**Guyana, Colomb**	**2.82**	**237**	*e*P	**Pn**	**22 00 14.7**	**+0.3**
GUYC				*e*S	**Sn**	**22 00 48.1**	**-2.1**
GUYC				*i*		22 00 56.6	
	comp=Z,128nm,0.4s						
SDV	**Santo Domingo**	**3.16**	**48**	P	**Pn**	**22 00 18.3**	**0.0**
	comp=Z,13nm,0.3s,baz=233,slow=9.6,SNR=14						
SDV				S	**Sn**	**22 00 57.8**	**+0.7**
	comp=Z,3.5nm,0.3s,baz=225,slow=20,SNR=5.8						
SDV	**Santo Domingo**	**3.16**	**48**	*e*P	**Pn**	**22 00 19.6**	**+1.4**
TOLC	**Tolima**	**3.16**	**227**	*e*P	**Pn**	**22 00 19.6**	**+1.1**
DBBC	**Dabeiba**	**3.19**	**275**	*e*P	**Pn**	**22 00 18.4**	**-0.2**
PRAC	**Prado**	**3.57**	**212**	*e*P	**Pn**	**22 00 24.2**	**+0.9**
PRAC				*e*S	**Sn**	**22 01 05.3**	**-0.9**
PRAC				*i*		22 01 12.3	
	comp=Z,123nm,0.3s						
SJAC	**San Juan de Ar**	**3.60**	**195**	*e*P	**Pn**	**22 00 23.7**	**-0.1**
VIRV	**Villa del Rosa**	**3.75**	**9**	*e*P	**Pn**	**22 00 25.1**	**-0.5**
VIRV				*e*S	**Sn**	**22 01 08.2**	**-2.4**
CURV	**Curarigua**	**4.41**	**43**	*e*P	**Pn**	**22 00 34.7**	**+0.4**
CURV				*e*S	**Sn**	**22 01 23.9**	**-1.9**
DABV	**Dabajuro**	**4.74**	**29**	*e*P	**Pn**	**22 00 39.1**	**+0.6**
DABV				*e*S	**Sn**	**22 01 30.6**	**-3.0**
BAUV	**El Baul**	**5.37**	**66**	*e*P	**Pn**	**22 00 46.0**	**-0.7**
BAUV				*e*S	**Sn**	**22 01 43.8**	**-4.5**
MAPV	**Macapo**	**5.43**	**56**	*e*P	**Pn**	**22 00 47.3**	**-0.3**
MAPV				*e*S	**Sn**	**22 01 45.8**	**-4.1**
MONV	**Montecano**	**5.96**	**30**	*e*P	**Pn**	**22 00 53.8**	**-0.7**
PDAR	**Pinedale Array**	**48.18**	**324**	P	**P**	**22 07 53.7**	**+1.4**
	comp=Z,0.2nm,0.5s,baz=97,slow=12,SNR=2.9						
YKA	**Yellowknife Ar**	**63.35**	**340**	P	**P**	**22 09 40.3**	**+0.8**
	comp=Z,0.2nm,0.6s,baz=136,slow=6.9,SNR=4.3						

NIED ***28*** *22:04:00, 37°.60N×141°.60E, h56km, Mw3.9 Best double couple: M0 6.90000×10^14 NP1:ϕs 10.00000°, δ 39.00000°, λ 55.00000°. NP2:ϕs 232.00000°, δ 58.00000°, λ 115.00000°.*

ISCJB ***28*** *22:04:30.1±0.8, 37°.60N±0°.04×141°.70E±0°.08, h49km±6km, mb3.7/9, Error ellipse: s-maj=10.5km s-min=5.8km az=15.6*

IDC ***28*** *22:04:32.4±0.8, 37°.58N×141°.62E, h54km±7km, mb3.5/9, mb1 3.7/13, mb1mx3.5/34, mbtmp3.8/13, MS2.6/2, Ms1 2.6/2, ms1mx2.2/34, Error ellipse: s-maj=14.2km s-min=9.4km az=128.0*

JMA ***28*** *22:04:32.2±0.1, 37°.65N×141°.58E, h45km±2km, M3.9*

JMA Felt II J1.

ISC 28 22:04:32.2±0.8, 37°.63N±0°.04×141°.63E±0°.07, h48km±7km, n34, σ1s14/39, mb3.6/9, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**0.65**	**247**	P	**Pn**	**22 04 44.8**	**-0.5**
JFK				S	**Sn**	**22 04 53.0**	**-1.7**
JMM	**Marumori**	**0.71**	**290**	P	**Pn**	**22 04 45.3**	**-0.6**
JMM				S	**Sn**	**22 04 54.5**	**-1.4**
ONAJ	**Iwakimizuishiy**	**0.84**	**232**	P	**Pn**	**22 04 47.3**	**-0.5**
ONAJ				S	**Sn**	**22 04 58.1**	**-1.1**
JIO	**Ouri**	**0.86**	**345**	P	**Pn**	**22 04 47.5**	**-0.4**
JIO				S	**Sn**	**22 04 58.2**	**-1.2**
JFT	**Otama**	**1.03**	**264**	P	**Pn**	**22 04 50.5**	**+0.2**
JFT				*e*S	**Sn**	**22 05 03.2**	**-0.5**
JOU	**Okura**	**1.06**	**314**	P	**Pn**	**22 04 50.2**	**-0.5**
JOU				S	**Sn**	**22 05 03.5**	**-0.9**
JYS	**Shirataka**	**1.37**	**296**	P	**Pn**	**22 04 54.9**	**0.0**
JYS				*e*S	**Sn**	**22 05 11.2**	**-0.8**
MJAR	**Matsushiro Arr**	**2.94**	**249**	P	**Pn**	**22 05 16.5**	**+0.1**
	5.8nm,0.3s,baz=74,slow=15,SNR=38						
MJAR				S	**Sn**	**22 05 50.5**	**0.0**
	31nm,0.3s,baz=78,slow=30,SNR=18						
MJAR				LR	LR	22 06 40.4	
	comp=Z,79nm,20.5s,baz=80,slow=44						
MAT	**Matsushiro**	**2.94**	**250**	P	**Pn**	**22 05 17.5**	**+1.1**
MAT				S	**Sn**	**22 05 52.2**	**+1.7**
JHJ	**Hachijo jima 2**	**4.74**	**199**	P	**Pn**	**22 05 39.8**	**-1.4**
	35nm,0.3s,baz=311,slow=22,SNR=9.8						
JHJ				S	**Sn**	**22 06 33.4**	**-1.4**
	31nm,0.3s,baz=266,slow=23,SNR=6.0						
ASAJ	**Asahikawa**	**6.53**	**6**	P	**Pn**	**22 06 05.8**	**+0.3**
	1.6nm,0.3s,baz=213,slow=17,SNR=8.3						
USRK	**Ussuriysk Ar.**	**9.81**	**315**	P	**Pn**	**22 06 51.3**	**+0.7**
	0.4nm,0.3s,baz=134,slow=13,SNR=9.8						
JNU	**Nakatsue**	**9.86**	**246**	LR	LR	22 11 02.6	
	comp=Z,46nm,18.9s,baz=301,slow=40						
SONM	**Songino Array**	**27.60**	**303**	P	**P**	**22 10 15.3**	**+0.3**
	0.6nm,0.5s,baz=103,slow=9.2,SNR=3.2						
H11N2	**WAKE ISLAND Hy**	**28.31**	**122**	T	T	22 40 32.8	
	baz=315,slow=75,SNR=265						
H11N1	**WAKE ISLAND Hy**	**28.32**	**122**	T	T	22 40 34.8	
	baz=315,slow=75,SNR=309						
H11N3	**WAKE ISLAND Hy**	**28.32**	**122**	T	T	22 40 34.2	
	baz=315,slow=75,SNR=244						
H11S1	**WAKE ISLAND Hy**	**29.04**	**124**	T	T	22 41 34.7	
	baz=317,slow=76,SNR=198						
H11S3	**WAKE ISLAND Hy**	**29.04**	**124**	T	T	22 41 34.0	
	baz=317,slow=76,SNR=162						
H11S2	**WAKE ISLAND Hy**	**29.06**	**124**	T	T	22 41 35.9	
	baz=317,slow=76,SNR=128						
ZALV	**Zalesovo Beam**	**41.65**	**312**	P	**P**	**22 12 15.2**	**-0.3**
	0.5nm,0.4s,baz=63,slow=7.3,SNR=4.0						
MKAR	**Makanchi Array**	**43.95**	**302**	P	**P**	**22 12 33.5**	**-0.9**
	0.5nm,0.4s,baz=81,slow=10,SNR=7.4						
GUN	**Gumba**	**47.27**	**275**	*e*P	**P**	**22 13 04.6**	**+3.4**
	6.4nm,0.3s						
KKN	**Kakani**	**47.80**	**275**	*e*P	**P**	**22 13 07.5**	**+2.3**
	5.2nm,0.5s						
GKN	**Gorkha**	**48.21**	**276**	*e*P	**P**	**22 13 07.8**	**-0.5**
	4.9nm,0.4s						
ILAR	**Eielson Array**	**48.90**	**33**	P	**P**	**22 13 12.7**	**-0.2**
	0.5nm,0.8s,baz=270,slow=6.6,SNR=5.5						
ILAR				pP	**pP**	**22 13 26.6**	**+0.6**
	0.3nm,0.7s,baz=272,slow=6.9,SNR=2.7						
KOLN	**Koldanda**	**49.13**	**276**	*e*P	**P**	**22 13 16.7**	**+1.3**
	1.4nm,0.2s						
PYUN	**Piuthan**	**49.47**	**277**	*e*P	**P**	**22 13 17.7**	**-0.3**
WRA	**Warramunga Arr**	**57.67**	**188**	P	**P**	**22 14 17.0**	**-0.7**
	1.9nm,0.5s,baz=7.8,slow=7.7,SNR=34						
ASAR	**Alice Springs**	**61.40**	**188**	P	**P**	**22 14 43.3**	**0.0**
	0.9nm,0.7s,baz=9.2,slow=5.9,SNR=9.8						
ASAR				pP	**pP**	**22 14 57.5**	**+0.6**
	0.5nm,0.7s,baz=16,slow=7.3,SNR=3.4						
YKA	**Yellowknife Ar**	**63.21**	**30**	P	**P**	**22 14 55.7**	**+0.7**
	0.2nm,0.7s,baz=302,slow=6.5,SNR=4.4						
YKA				pP	**pP**	**22 15 09.9**	**+1.3**
	0.2nm,0.6s,baz=304,slow=6.8,SNR=3.5						
FINES	**FINESS Array B**	**68.37**	**332**	P	**P**	**22 15 28.3**	**0.0**
	0.4nm,0.6s,baz=27,slow=12,SNR=4.3						
AKASG	**Malin Array Be**	**73.94**	**322**	P	**P**	**22 16 00.3**	**-1.8**
	0.6nm,0.4s,baz=46,slow=6.2,SNR=5.5						
PDAR	**Pinedale Array**	**77.13**	**46**	pP	pP	22 16 35.4	+0.6
	0.4nm,0.6s,baz=247,slow=3.8,SNR=3.5						

NIED ***28*** *22:21:00, 37°.00N×138°.70E, h5km, Mw3.8 Best double couple: M0 6.06000×10^14 NP1:ϕs 218.00000°, δ 43.00000°, λ 80.00000°. NP2:ϕs 52.00000°, δ 48.00000°, λ 99.00000°.*

IDC ***28*** *22:21:53.6±1.2, 37°.14N×138°.67E, h0km, mb3.7/4, mb1 3.9/6, mb1mx3.5/45, mbtmp3.8/6, ML3.6/2, MS3.0/6, Ms1 3.0/6, ms1mx2.7/38, Error ellipse: s-maj=30.6km s-min=10.6km az=110.0*

ISCJB ***28*** *22:21:55.8±0.4, 37°.06N±0°.02×138°.68E±0°.04, h25km±4km, mb3.7/4, MS3.1/3, Error ellipse: s-maj=4.9km s-min=4.1km az=16.1*

JMA ***28*** *22:21:56.2, 37°.04N×138°.71E, h9km±1km, M3.5*

JMA Felt III J1.

ISC 28 22:21:55.5±1.2, 37°.07N±0°.03×138°.69E±0°.03, h11km±9km, n24, σ0s72/30, mb3.8/4, MS3.1/3, 2C-4D, Near west coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHK	**Hiroka**	**0.32**	**56**	P	**Pb**	**22 22 02.3**	**-0.9**
JHK				S	**Sb**	**22 22 07.2**	**-1.2**
JJN	**Nakama**	**0.42**	**274**	⇓P	**Pb**	**22 22 04.7**	**-0.2**
IJN				S	**S

*ISCJB **28** 22:36:40.5±0.5, 38°.48N±0°.03×31°.52E±0°.03, h8km±6km, Error ellipse: s-maj=5.0km s-min=4.2km az=173.1*
*CSEM **28** 22:36:40.6±0.3, 38°.51N×31°.50E, h2km, MD2.5, Error ellipse: s-maj=6.1km s-min=3.6km az=31.0*
*DDA **28** 22:36:40.4, 38°.51N×31°.49E, h7km, Md2.5*
*ISK **28** 22:36:43.8, 38°.52N×31°.81E, h7km, MD2.5*

ISC 28 22:36:39.9±1.1, 38°.47N±0°.03×31°.52E±0°.02, h5km±10km, n26, σ0s81/47, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KDHN	**Kadinhani**	**0.47**	**84**	*i* P	**Pb**	**22 36 50.8**	**+0.1**
KDHN				*i* S	**Sb**	**22 36 57.2**	**-0.8**
KDHN	**Kadinhani**	**0.47**	**84**	P	**Pb**	**22 36 50.8**	**+0.1**
KDHN				S	**Sb**	**22 36 57.2**	**-0.8**
KIZT	**Kizilcal**	**0.49**	**35**	*e*PG	**Pb**	**22 36 51.4**	**+0.2**
KIZT				*e*SG	**Sg**	**22 36 57.0**	**+1.2**
KIZT	**Kizilcal**	**0.49**	**35**	*e*Pg	**Pb**	**22 36 51.4**	**+0.2**
KIZT				*e*Sg	**Sg**	**22 36 57.0**	**+1.2**
BOLV	**Bolvadin**	**0.51**	**299**	*i* P	**Pg**	**22 36 50.0**	**+0.3**
BOLV				*i* S	**Sg**	**22 36 57.0**	**+0.6**
BOLV	**Bolvadin**	**0.51**	**299**	P	**Pg**	**22 36 50.0**	**+0.3**
BOLV				S	**Sg**	**22 36 57.0**	**+0.6**
LADK	**Ladik-KONYA**	**0.72**	**112**	*e*PG	**Pb**	**22 36 54.8**	**-0.1**
LADK				*e*SG	**Sg**	**22 37 02.9**	**-0.1**
LADK	**Ladik-KONYA**	**0.72**	**112**	*e*Pg	**Pb**	**22 36 54.8**	**-0.1**
LADK				*e*Sg	**Sg**	**22 37 02.9**	**-0.1**
BAGO	**Egridir - ISPA**	**0.75**	**230**	*i* P	**Pb**	**22 36 55.0**	**-0.5**
BAGO				*i* S	**Sb**	**22 37 06.1**	**0.0**
KONT	**Konya--Tatoy**	**0.84**	**128**	*e*PG	**Pn**	**22 36 58.1**	**-0.4**
KONT				*e*SG	**Sb**	**22 37 08.7**	**0.0**
KONT	**Konya--Tatoy**	**0.84**	**128**	*e*Pg	**Pn**	**22 36 58.1**	**-0.4**
KONT				*e*Sg	**Sb**	**22 37 08.7**	**0.0**
AUSIV	**SIVRIHISAR**	**0.96**	**1**	*i* P	**Pg**	**22 36 57.2**	**-1.2**
AUSIV				*i* S	**Sg**	**22 37 10.8**	**-0.1**
AUSIV	**SIVRIHISAR**	**0.96**	**1**	P	**Pg**	**22 36 57.2**	**-1.2**
AUSIV				S	**Sg**	**22 37 10.9**	**-0.1**
SVRH	**Sivrihisar-ESK**	**0.97**	**0**	*e*PG	**Pn**	**22 37 02.6**	**+2.3**
CHBY	**Cihanbeyli**	**1.08**	**84**	*e*PG	**Pg**	**22 37 00.6**	**0.0**
CHBY	**Cihanbeyli**	**1.08**	**84**	*e*Pg	**Pg**	**22 37 00.6**	**0.0**
ESKT	**Eskisehir**	**1.17**	**334**	*i* P	**Pg**	**22 37 01.6**	**-0.8**
ESKT				*i* S	**Sg**	**22 37 15.1**	**-2.4**
SEYT	**Eskypehyr**	**1.17**	**334**	P	**Pg**	**22 37 01.5**	**-0.8**
SEYT				S	**Sg**	**22 37 15.1**	**-2.4**
AUMIH	**MIHALICIK**	**1.39**	**359**	*i* P	**Pb**	**22 37 06.6**	**+0.1**
AUMIH				*i* S	**Sn**	**22 37 25.6**	**+0.6**
AUMIH	**MIHALICIK**	**1.39**	**359**	P	**Pb**	**22 37 06.6**	**+0.1**
AUMIH				S	**Sn**	**22 37 25.6**	**+0.6**
AFSR	**Afar-Bala (A**	**1.55**	**51**	*e*PN	**Pg**	**22 37 09.7**	**+0.1**
AFSR	**Afar-Bala (A**	**1.55**	**51**	*e*Pn	**Pg**	**22 37 09.7**	**+0.1**
KHAL	**Karahalli**	**1.60**	**267**	*i* P	**Pb**	**22 37 10.1**	**+0.1**
KHAL				*i* S	**Sg**	**22 37 31.9**	**+0.8**
KHAL	**Karahalli**	**1.60**	**267**	P	**Pb**	**22 37 10.1**	**+0.1**
KHAL				S	**Sg**	**22 37 32.0**	**+0.8**
BORA	**Eskisehir**	**1.63**	**330**	*i* P	**Pn**	**22 37 09.5**	**+0.1**
BORA				*i* S	**Sn**	**22 37 30.6**	**-0.3**
BORA	**Eskisehir**	**1.63**	**330**	P	**Pn**	**22 37 09.5**	**+0.1**
BORA				S	**Sn**	**22 37 30.5**	**-0.3**

JMA 28 22:40:56.8, 37°.03N×140°.61E, h8km±2km, M2.5, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.17**	**65**	P	Pg	22 41 00.3	0.0
JFK	**Kawauchi**	**0.40**	**32**	P	Pg	22 41 04.5	-0.1
JFK				S	Sg	22 41 09.9	+0.1
JHO	**Hitachi**	**0.42**	**185**	P	Pg	22 41 04.8	-0.2
JHO				S	Sg	22 41 11.0	+0.5
JFT	**Otama**	**0.53**	**336**	P	Pg	22 41 07.3	+0.1
JFT				S	Sg	22 41 14.7	+0.5
JMM	**Marumori**	**0.85**	**10**	P	Pg	22 41 12.5	-0.6
JMM				S	Sg	22 41 24.0	-0.1
JOU	**Okura**	**1.33**	**2**	P	Pn	22 41 21.5	-0.3
JOU				S	Sb	22 41 39.2	-0.1
JIO	**Ouri**	**1.54**	**22**	S	Sn	22 41 44.4	-0.3
MAT	**Matsushiro**	**1.99**	**257**	P	Pn	22 41 32.0	+1.2
MAT				S	Sb	22 41 58.7	+0.5

*ISCJB **28** 22:44:59.3±0.9, 22°.91S±0°.04×70°.64W±0°.08, h32km±6km, mb4.0/6, Error ellipse: s-maj=12.1km s-min=5.0km az=16.6*
*NEIC **28** 22:44:59.9±3.9, 22°.87S×70°.72W, h26km±29km, mb4.2/3, Error ellipse: s-maj=22.2km s-min=14.4km az=94.0*
*GUC **28** 22:44:59.7±0.6, 23°.03S×70°.17W, h35km±3km, ML3.7*
*IDC **28** 22:45:03.0±5.3, 22°.96S×70°.47W, h52km±35km, mb3.6/3, mb1 3.8/5, mb1mx3.5/27, mbtmp3.9/5, ML3.8/2, MS2.8/4, Ms1 2.8/4, ms1mx2.7/27, Error ellipse: s-maj=52.1km s-min=25.6km az=23.0*

ISC 28 22:44:59.4±1.4, 22°.90S±0°.03×70°.66W±0°.08, h24km±11km, n25, σ1s18/26, mb4.1/6, Near coast of northern Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PB10	**IPOC Station P**	**0.62**	**171**	*i* P	**Pb**	**22 45 11.5**	**-0.2**
PB10				*i* S	**Sb**	**22 45 19.9**	**0.0**
PB04	**IPOC Station P**	**0.73**	**40**	*i* P	**Pb**	**22 45 13.1**	**-0.6**
PB04				*i* S	**Sb**	**22 45 22.7**	**-0.6**
PB06	**IPOC Station P**	**1.02**	**79**	IAML		22 45 29.2	
	comp=N,9μm,0.3s						
PB07	**IPOC Station P**	**1.37**	**32**	*i* P	**Pn**	**22 45 23.2**	**0.0**
PB07				*i* S	**Sn**	**22 45 40.4**	**-0.3**
LVC	**Limon Verde**	**1.64**	**80**	P	**Pn**	**22 45 27.0**	**-0.1**
	comp=N,13μm,0.3s,baz=250,slow=9.3,SNR=611						
LVC				S	**Sn**	**22 45 45.8**	**-1.8**
	baz=64,slow=10						
PB14	**IPOC Station P**	**1.73**	**172**	*i* P	**Pn**	**22 45 28.1**	**-0.4**
PB14				*i* S	**Sn**	**22 45 49.1**	**-0.8**
PB14				IAML		22 45 54.0	
	comp=E,1μm,0.4s						
PATCX	**Punta Patache**	**2.12**	**13**	*i* P	**Pn**	**22 45 33.3**	**-0.2**
PATCX				*i* S	**Sb**	**22 46 03.7**	**+0.5**
PATCX				IAML		22 46 15.0	
	comp=E,779nm,1.1s						
PB01	**IPOC Station P**	**2.14**	**31**	*i* P	**Pn**	**22 45 34.2**	**+0.4**
PB01				*i* S	**Sn**	**22 45 59.9**	**+0.3**
LCO	**Las Campanas**	**6.09**	**180**	*e*Pn	**Pn**	**22 46 29.2**	**+1.0**
ARE	**Arequipa**	**6.45**	**353**	*e*P	Pn	22 46 30.0	-3.3
ARE				*e*S	**Sn**	**22 47 43.0**	**-3.3**
LPAZ	**La Paz**	**6.99**	**20**	P	**Pn**	**22 46 44.0**	**+3.0**
	comp=E,0.7nm,0.3s,baz=211,slow=5.9,SNR=12						
LPAZ				LR	LR	22 49 13.8	
	comp=E,19nm,19.8s,baz=274,slow=36						
SIV	**San Ignacio**	**11.35**	**54**	P	**Pn**	**22 47 41.3**	**+1.0**
	comp=E,1.0nm,0.3s,baz=238,slow=12,SNR=11						
SIV				LR	LR	22 52 48.5	
	comp=E,115nm,18.5s,baz=188,slow=41						
NNA	**Nana**	**12.35**	**330**	LR	LR	22 52 09.2	
	comp=E,46nm,20.0s,baz=175,slow=34						
CPUP	**Villa Florida**	**12.60**	**108**	LR	LR	22 52 43.4	
	comp=E,56nm,21.1s,baz=234,slow=37						
SAML	**Samuel**	**15.61**	**29**	*e*Pn	**Pn**	**22 48 38.9**	**+0.8**
	comp=E,1.1nm,0.8s						
PTGA	**Pitinga**	**24.36**	**27**	P	**P**	**22 50 15.4**	**-0.4**
	comp=E,1.5nm,0.6s,baz=192,slow=19,SNR=3.1						
MIAR	**Mount Ida**	**61.14**	**338**	*e*P	**P**	**22 55 13.1**	**+1.2**
	comp=E,1.1nm,0.5s						
TORD	**Torodi Ar. Bea**	**79.34**	**71**	P	**P**	**22 57 02.9**	**-0.9**
	comp=E,1.5nm,0.5s,baz=256,slow=5.4,SNR=17						
WALA	**Waterton Lakes**	**81.35**	**333**	*e*P	**P**	**22 57 13.8**	**-0.1**
	comp=E,1.2nm,0.5s						
NEW	**Newport**	**82.15**	**331**	*e*P	**P**	**22 57 18.6**	**+0.5**
	comp=E,0.7nm,0.4s						
YKA	**Yellowknife Ar**	**91.97**	**341**	P	**P**	**22 58 05.3**	**-0.3**
	comp=E,0.2nm,0.7s,baz=133,slow=4.3,SNR=5.7						
H11S2	**WAKE ISLAND Hyd**	**26.44**	**277**	T	T	01 23 25.6	
	baz=106,slow=74,SNR=126						
H11S1	**WAKE ISLAND Hyd**	**26.45**	**277**	T	T	01 23 19.5	
	baz=106,slow=74,SNR=131						
H11S3	**WAKE ISLAND Hyd**	**26.45**	**277**	T	T	01 23 19.3	
	baz=106,slow=74,SNR=98						
MKAR	**Makanchi Array**	**147.71**	**36**	PKPbc	**PKPbc**	**23 04 42.1**	**+0.1**
	comp=E,0.2nm,0.3s,baz=306,slow=2.9,SNR=3.9						

*NEIC **28** 23:04:09.5, 38°.45S×175°.85E, h181km, MG4.1(WEL), After WEL.*

WEL 28 23:04:10.5±0.4, 38°.46S×175°.89E, h172km±3km, ML4.1/19, 22C-15D, Error ellipse: s-maj=1.9km s-min=1.6km az=0.0, North Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TLZ	**Tolley Road**	**0.30**	**295**	PN	Pn	23 04 33.6	-0.1
TLZ	**Tolley Road**	**0.30**	**295**	Pn	Pn	23 04 33.6	-0.1
HSRZ	**Hossack Road**	**0.32**	**63**	Pn	Pn	23 04 33.8	+0.1
HLRZ	**Highlands Stat**	**0.42**	**61**	⇓PN	Pn	23 04 34.5	+0.4
KARZ	**Kaharoa**	**0.52**	**33**	⇓PN	Pn	23 04 34.3	-0.1
KARZ	**Kaharoa**	**0.52**	**33**	Pn	Pn	23 04 34.3	-0.1
TARZ	**Mount Tarawera**	**0.54**	**66**	⇓PN	Pn	23 04 34.5	-0.1
TARZ	**Mount Tarawera**	**0.54**	**66**	Pn	Pn	23 04 34.5	-0.1
KATZ	**Kakaramea**	**0.54**	**196**	Pn	Pn	23 04 35.1	+0.4
KATZ	**Kakaramea**	**0.54**	**196**	Pn	Pn	23 04 35.1	+0.5
MRHZ	**Matea Rd**	**0.56**	**132**	⇓PN	Pn	23 04 34.4	-0.2
MRHZ					SN	23 04 52.1	-1.1
KRVZ	**Karewarewa**	**0.66**	**197**	PN	Pn	23 04 35.3	0.0
KRVZ	**Karewarewa**	**0.66**	**197**	Pn	Pn	23 04 35.3	0.0
WTVZ	**West Tongariro**	**0.69**	**199**	PN	Pn	23 04 35.5	0.0
WTVZ					SN	23 04 54.7	-0.1
WTVZ	**West Tongariro**	**0.69**	**199**	Pn	Pn	23 04 35.5	0.0
WTVZ					Sn	23 04 54.7	-0.1
TWVZ	**Taurewa**	**0.70**	**210**	⇑PN	Pn	23 04 35.4	-0.1
TWVZ	**Taurewa**	**0.70**	**210**	Pn	Pn	23 04 35.4	-0.1
OTVZ	**Oturere**	**0.72**	**194**	PN	Pn	23 04 35.7	0.0
OTVZ	**Oturere**	**0.72**	**194**	Pn	Pn	23 04 35.7	0.0
NGZ	**Ngauruhoe**	**0.75**	**197**	PN	Pn	23 04 35.8	0.0
NGZ	**Ngauruhoe**	**0.75**	**197**	Pn	Pn	23 04 35.8	0.0
TUVZ	**Tukino**	**0.83**	**193**	⇑PN	Pn	23 04 36.4	+0.1
TUVZ	**Tukino**	**0.83**	**193**	Pn	Pn	23 04 36.4	+0.1
FWVZ	**Far West T-bar**	**0.84**	**198**	PN	Pn	23 04 36.4	-0.1
FWVZ	**Far West T-bar**	**0.84**	**198**	Pn	Pn	23 04 36.4	-0.1
BKZ	**Black Stump Fm**	**0.85**	**146**	⇓PN	Pn	23 04 36.2	-0.1
BKZ					AML	23 04 57.4	
BKZ					AML	23 04 59.2	
BKZ	**Black Stump Fm**	**0.85**	**146**	Pn	Pn	23 04 36.2	0.0
WHVZ	**Whangaehu Hut**	**0.85**	**196**	PN	Pn	23 04 36.5	-0.1
WHVZ	**Whangaehu Hut**	**0.85**	**196**	Pn	Pn	23 04 36.5	-0.1
TRVZ	**Turoa**	**0.88**	**197**	PN	Pn	23 04 36.4	-0.3
WNVZ	**Wahianoa**	**0.90**	**194**	⇑PN	Pn	23 04 36.7	-0.1
WNVZ	**Wahianoa**	**0.90**	**194**	Pn	Pn	23 04 36.7	-0.1
PKVZ	**Pokaka**	**0.93**	**207**	PN	Pn	23 04 36.7	-0.2
MOVZ	**Moawhango**	**0.95**	**186**	⇑PN	Pn	23 04 36.7	-0.4
MOVZ	**Moawhango**	**0.95**	**186**	Pn	Pn	23 04 36.7	-0.4
NMHZ	**Naumai**	**0.96**	**132**	PN	Pn	23 04 37.9	+0.7
NMHZ	**Naumai**	**0.96**	**132**	Pn	Pn	23 04 37.9	+0.7
URZ	**Urewera**	**0.98**	**79**	PN	Pn	23 04 36.4	-0.8
URZ					SN	23 04 56.3	-1.5
URZ					AML	23 04 57.5	
URZ	**Urewera**	**0.98**	**79**	Pn	Pn	23 04 36.4	-0.8
BHHZ	**Black Hill Sta**	**1.04**	**172**	PN	Pn	23 04 37.5	-0.3
BHHZ	**Black Hill Sta**	**1.04**	**172**	Pn	Pn	23 04 37.5	-0.3
RAHZ	**Arahi**	**1.04**	**116**	⇓PN	Pn	23 04 38.1	+0.3
RAHZ	**Arahi**	**1.04**	**116**	Pn	Pn	23 04 38.1	+0.3
KWHZ	**Kaweka Forest**	**1.05**	**157**	PN	Pn	23 04 38.0	+0.2
VRZ	**Vera Road**	**1.10**	**233**	⇑PN	Pn	23 04 38.0	-0.2
VRZ	**Vera Road**	**1.10**	**233**	Pn	Pn	23 04 38.0	-0.2
MCHZ	**McNeill Hill**	**1.17**	**148**	PN	Pn	23 04 39.4	+0.7
MCHZ	**McNeill Hill**	**1.17**	**148**	Pn	Pn	23 04 39.4	+0.7
ARHZ	**Aropaoanui**	**1.18**	**133**	⇓PN	Pn	23 04 39.3	+0.5
ARHZ	**Aropaoanui**	**1.18**	**133**	Pn	Pn	23 04 39.3	+0.5
SNGZ	**Shannon Statio**	**1.18**	**106**	⇓PN	Pn	23 04 39.0	+0.1
SNGZ	**Shannon Statio**	**1.18**	**106**	Pn	Pn	23 04 39.0	+0.1
RAGZ	**Rawiri**	**1.20**	**92**	⇓PN	Pn	23 04 38.8	-0.3
RAGZ	**Rawiri**	**1.20**	**92**	Pn	Pn	23 04 38.8	-0.3
WHHZ	**Waihua**	**1.22**	**121**	PN	Pn	23 04 39.4	+0.3
KRHZ	**Kereru**	**1.24**	**162**	PN	Pn	23 04 39.3	0.0
MWZ	**Matawai**	**1.30**	**85**	⇓PN	Pn	23 04 39.3	-0.6
MWZ					AML	23 05 01.4	
MWZ					AML	23 05 02.4	
MWZ	**Matawai**	**1.30**	**85**	Pn	Pn	23 04 39.3	-0.6
MHEZ	**Mangahewa**	**1.37**	**243**	⇑PN	Pn	23 04 40.6	+0.2
MHEZ	**Mangahewa**	**1.37**	**243**	Pn	Pn	23 04 40.6	+0.2
WAZ	**Wanganui**	**1.47**	**208**	⇑PN	Pn	23 04 41.0	-0.5
WAZ	**Wanganui**	**1.47**	**208**	Pn	Pn	23 04 41.0	-0.5
PNHZ	**Pukenui**	**1.47**	**171**	PN	Pn	23 04 41.1	-0.4
PNHZ	**Pukenui**	**1.47**	**171**	Pn	Pn	23 04 41.1	-0.4
RIGZ	**Rimuhau**	**1.49**	**100**	⇓PN	Pn	23 04 41.6	-0.1
KNZ	**Kokohu**	**1.51**	**112**	⇓PN	Pn	23 04 41.6	-0.1
KNZ					AML	23 05 06.9	
KNZ					AML	23 05 07.2	
KNZ	**Kokohu**	**1.51**	**112**	Pn	Pn	23 04 41.6	-0.1
CKHZ	**Cape Kidnapper**	**1.52**	**143**	PN	Pn	23 04 42.2	+0.3
CKHZ	**Cape Kidnapper**	**1.52**	**143**	Pn	Pn	23 04 42.2	+0.3
LREZ	**Lake Rotokare**	**1.53**	**229**	⇑PN	Pn	23 04 42.0	0.0
KAHZ	**Kahuranaki**	**1.54**	**150**	PN	Pn	23 04 42.4	+0.2
KAHZ	**Kahuranaki**	**1.54**	**150**	Pn	Pn	23 04 42.4	+0.2
TKGZ	**Te Karaka**	**1.54**	**90**	⇑PN	Pn	23 04 42.2	0.0
TKGZ	**Te Karaka**	**1.54**	**90**	Pn	Pn	23 04 42.2	0.0
TSZ	**Takapari Road**	**1.60**	**178**	⇑PN	Pn	23 04 42.3	-0.5
TSZ					AML	23 05 08.7	
TSZ					AML	23 05 09.0	
TSZ	**Takapari Road**	**1.60**	**178**	Pn	Pn	23 04 42.3	-0.5
PREZ	**Palmer Road**	**1.61**	**236**	PN	Pn	23 04 42.7	-0.1
PREZ	**Palmer Road**	**1.61**	**236**	Pn	Pn	23 04 42.7	-0.1
NEZ	**North Egmont**	**1.61**	**239**	⇑PN	Pn	23 04 42.8	-0.2
NEZ	**North Egmont**	**1.61**	**239**	Pn	Pn	23 04 42.8	-0.2
PRGZ	**Paritu Road**	**1.63**	**107**	PN	Pn	23 04 42.9	-0.2
PRGZ	**Paritu Road**	**1.63**	**107**	Pn	Pn	23 04 42.9	-0.2
HAZ	**Te Kaha**	**1.65**	**65**	⇓PN	Pn	23 04 41.9	-1.4
PKE	**Pukeiti**	**1.66**	**243**	PN	Pn	23 04 43.0	-0.3
PKE	**Pukeiti**	**1.66**	**243**	Pn	Pn	23 04 43.0	-0.3
WPHZ	**Waipukurau**	**1.66**	**165**	⇑PN	Pn	23 04 43.0	-0.3
WPHZ	**Waipukurau**	**1.66**	**165**	Pn	Pn	23 04 43.0	-0.3
TWGZ	**Tauwhareparae**	**1.67**	**81**	Pn	Pn	23 04 43.2	-0.3
TWGZ	**Tauwhareparae**	**1.67**	**81**	Pn	Pn	23 04 43.2	-0.3
KHEZ	**Kahui Hut**	**1.68**	**240**	PN	Pn	23 04 43.3	-0.4
KHEZ	**Kahui Hut**	**1.68**	**240**	Pn	Pn	23 04 43.3	-0.4
MHGZ	**Mahia Peninsul**	**1.73**	**114**	⇓PN	Pn	23 04 44.1	+0.1
MHGZ	**Mahia Peninsul**	**1.73**	**114**	Pn	Pn	23 04 44.1	+0.1
PXZ	**Pawanui**	**1.74**	**155**	PN	Pn	23 04 43.8	-0.3
PXZ					AML	23 05 10.8	
PXZ					AML	23 05 10.9	
PXZ					AML	23 05 11.3	
PXZ					AML	23 05 11.3	
PXZ	**Pawanui**	**1.74**	**155**	Pn	Pn	23 04 43.9	-0.3
OHWZ	**Ohakea**	**1.80**	**194**	⇑PN	Pn	23 04 44.5	-0.3
PKGZ	**Pakihiroa**	**1.82**	**72**	PN	Pn	23 04 44.4	-0.7
CNGZ	**Carnagh Statio**	**1.82**	**92**	PN	Pn	23 04 45.1	+0.1
CNGZ	**Carnagh Statio**	**1.82**	**92**	Pn	Pn	23 04 45.1	+0.1
DVHZ	**Dannevirke**	**1.85**	**173**	⇑PN	Pn	23 04 44.4	-0.9
DVHZ	**Dannevirke**	**1.85**	**173**	Pn	Pn	23 04 44.4	-0.9
PRHZ	**Porangahau**	**1.90**	**162**	⇑PN	Pn	23 04 45.2	-0.6
PRHZ	**Porangahau**	**1.90**	**162**	Pn	Pn	23 04 45.2	-0.6
POWZ	**Post Office Ro**	**1.93**	**183**	⇑PN	Pn	23 04 45.1	-1.1
POWZ	**Post Office Ro**	**1.93**	**183**	Pn	Pn	23 04 45.1	-1.1
ANWZ	**Angora Road**	**2.05**	**167**	PN	Pn	23 04 46.7	-0.8
WMGZ	**Waiomatatini S**	**2.09**	**73**	PN	Pn	23 04 47.2	-0.9
WMGZ	**Waiomatatini S**	**2.09**	**73**	Pn	Pn	23 04 47.2	-0.9
PRWZ	**Pori Road**	**2.10**	**178**	⇑PN	Pn	23 04 47.0	-1.0
PRWZ	**Pori Road**	**2.10**	**178**	Pn	Pn	23 04 47.0	-1.0
MXZ	**Matakaoa Point**	**2.11**	**66**	PN	Pn	23 04 47.5	-0.7
MXZ					AML	23 05 16.7	
MXZ					AML	23 05 17.5	
MXZ	**Matakaoa Point**	**2.11**	**66**	Pn	Pn	23 04 47.5	-0.7
MRZ	**Mangatainoka R**	**2.21**	**186**	PN	Pn	23 04 47.7	-1.6
MRZ	**Mangatainoka R**	**2.21**	**186**	Pn	Pn	23 04 47.7	-1.6
BFZ	**Birch Farm**	**2.24**	**173**	PN	Pn	23 04 48.2	-1.4
BFZ					AML	23 05 18.7	
BFZ					AML	23 05 18.7	
BFZ					AML	23 05 20.7	
BFZ					AML	23 05 20.7	
BFZ	**Birch Farm**	**2.24**	**173**	Pn	Pn	23 04 48.2	-1.4
TIWZ	**Tintock**	**2.31**	**180**	⇓PN	Pn	23 04 49.1	-1.4
TIWZ					AML	23 05 20.3	
TIWZ					AML	23 05 20.7	
TIWZ	**Tintock**	**2.31**	**180**	Pn	Pn	23 04 49.1	-1.4
OGWZ	**Otaki Gorge**	**2.42**	**193**	PN	Pn	23 04 50.1	-1.7
OGWZ	**Otaki Gorge**	**2.42**	**193**	Pn	Pn	23 04 50.1	-1.7
HOWZ	**Holdsworth Sta**	**2.45**	**187**	⇑PN	Pn	23 04 50.2	-2.0
HOWZ	**Holdsworth Sta**	**2.45**	**187**	Pn	Pn	23 04 50.2	-2.0
KIW	**Kapiti Island**	**2.52**	**197**	⇑PN	Pn	23 04 50.8	-2.1
KIW					AML	23 05 23.8	
KIW					AML	23 05 24.3	
KIW	**Kapiti Island**	**2.52**	**197**	Pn	Pn	23 04 50.8	-2.1
TMWZ	**Te Maipa**	**2.65**	**180**	PN	Pn	23 04 52.3	-2.1
TMWZ	**Te Maipa**	**2.65**	**180**	Pn	Pn	23 04 52.3	-2.1
MTW	**Mount Morrison**	**2.71**	**186**	⇑PN	Pn	23 04 52.8	-2.4
MTW					AML	23 05 28.1	
MTW					AML	23 05 28.5	
MTW	**Mount Morrison**	**2.71**	**186**	Pn	Pn	23 04 52.8	-2.4
CAW	**Cannon Point**	**2.72**	**193**	PN	Pn	23 04 53.2	-2.1
CAW					AML	23 05 28.2	
CAW					AML	23 05 28.7	
CAW	**Cannon Point**	**2.72**	**193**	Pn	Pn	23 04 53.2	-2.1
DUWZ	**D'Urville Isla**	**2.79**	**212**	PN	Pn	23 04 53.7	-2.4
DUWZ	**D'Urville Isla**	**2.79**	**212**	Pn	Pn	23 04 53.6	-2.6
TRWZ	**Traveller**	**2.94**	**183**	PN	Pn	23 04 55.6	-2.4
TRWZ					AML	23 05 33.0	
TRWZ					AML	23 05 33.2	
TRWZ	**Traveller**	**2.94**	**183**	Pn	Pn	23 04 55.6	-2.4
PAWZ	**Paruwai Farm**	**2.94**	**187**	PN	Pn	23 04 55.3	-2.7
PAWZ					AML	23 05 33.8	
PAWZ					AML	23 05 34.6	
PAWZ	**Paruwai Farm**	**2.94**	**187**	Pn	Pn	23 04 55.4	-2.7
WEL	**Wellington**	**2.95**	**197**	PN	Pn	23 04 55.7	-2.3
WEL					AML	23 04 56.3	
WEL					AML	23 04 56.6	
WEL	**Wellington**	**2.95**	**197**	Pn	Pn	23 04 55.8	-2.3
MSWZ	**Moikau Station**	**2.99**	**189**	⇑PN	Pn	23 04 55.9	-2.8
MSWZ					AML	23 05 31.9	
MSWZ					AML	23 05 33.9	
MSWZ	**Moikau Station**	**2.99**	**189**	Pn	Pn	23 04 55.9	-2.7
TCW	**Tory Channel**	**3.02**	**204**	PN	Pn	23 04 56.3	-2.5
TCW					AML	23 04 57.0	
TCW					AML	23 04 57.8	
TCW	**Tory Channel**	**3.02**	**204**	Pn	Pn	23 04 56.3	-2.5
BHW	**Baring Head**	**3.05**	**195**	⇑PN	Pn	23 04 56.5	-2.8
BHW					AML	23 05 32.9	
BHW					AML	23 05 33.3	
BHW	**Baring Head**	**3.05**	**195**	Pn	Pn	23 04 56.5	-2.8
PLWZ	**Palliser**	**3.15**	**189**	PN	Pn	23 04 57.5	-3.0
PLWZ	**Palliser**	**3.15**	**189**	Pn	Pn	23 04 57.5	-3.0
TUWZ	**Tuamarina**	**3.32**	**206**	PN	Pn	23 04 59.6	-3.1
TUWZ					AML	23 05 00.9	
TUWZ					AML	23 05 01.2	
TUWZ	**Tuamarina**	**3.32**	**206**	Pn	Pn	23 04 59.6	-3.1
NNZ	**Nelson**	**3.36**	**214**	PN	Pn	23 05 00.1	-3.1
NNZ	**Nelson**	**3.36**	**214**	Pn	Pn	23 05 00.1	-3.1
QRZ	**Quartz Range**	**3.51**	**227**	PN	Pn	23 05 01.1	-3.9
QRZ	**Quartz Range**	**3.51**	**227**	Pn	Pn	23 05 01.1	-3.9
CMWZ	**Cape Campbell**	**3.53**	**201**	PN	Pn	23 05 03.2	-2.1
CMWZ	**Cape Campbell**	**3.53**	**201**	Pn	Pn	23 05 03.2	-2.1
BSWZ	**Blackbirch Sta**	**3.60**	**205**	PN	Pn	23 05 03.3	-2.9
BSWZ	**Blackbirch Sta**	**3.60**	**205**	Pn	Pn	23 05 03.3	-2.9
THZ	**Tophouse**	**4.01**	**214**	PN	Pn	23 05 07.9	-3.7
THZ	**Tophouse**	**

JNBK			S	**Sn**	**23 14 17.6**	**+0.1**
JKB	**Kayabe**	**4.12 329**	S	**Sn**	**23 14 18.2**	**-2.8**
JCH	**Churui**	**4.24 355**	P	**Pn**	**23 13 33.7**	**-0.8**
JCH			S	**Sn**	**23 14 20.5**	**-3.3**
JRY	**Ryogami san**	**4.64 241**	P	**Pn**	**23 13 39.9**	**-0.1**
JRY			S	**Sn**	**23 14 30.7**	**-3.0**
MJAR	**Matsushiro Arr**	**4.88 250**	Pn	**Pn**	**23 13 43.6**	**+0.1**
	4.1nm,0.3s,baz=79,slow=17,SNR=15					
MAT	**Matsushiro**	**4.89 250**	P	**Pn**	**23 13 44.8**	**+1.3**
MAT			*e*S	**Sn**	**23 14 36.4**	**-3.4**
ASAJ	**Asahikawa**	**5.80 351**	Pn	**Pn**	**23 13 55.7**	**-0.4**
	4.1nm,0.3s,baz=248,slow=7.7,SNR=14					
JHJ	**Hachijo jima 2**	**6.23 214**	Sn	Sn	23 15 03.6	-9.4
	6.1nm,0.3s,baz=227,slow=19,SNR=1.8					
USRK	**Ussuriysk Ar.**	**10.67 307**	Pn	**Pn**	**23 15 05.7**	**+3.0**
	0.3nm,0.3s,baz=109,slow=14,SNR=6.8					
USRK			LR	LR	23 19 00.3	
	comp=Z,145nm,18.9s,baz=132,slow=36					
JCJ	**Chichijima**	**11.35 188**	LR	LR	23 20 17.2	
	comp=Z,24nm,21.2s,baz=140,slow=41					
JNU	**Nakatsue**	**11.80 247**	LR	LR	23 20 12.1	
	comp=Z,156nm,19.6s,baz=70,slow=39					
KSRS	**Korea Array**	**12.65 271**	LR	LR	23 20 09.7	
	comp=Z,84nm,19.5s,baz=50,slow=36					
KLR	**Kul'dur**	**13.92 325**	Pn	**Pn**	**23 15 50.0**	**+2.9**
	0.1nm,0.3s,baz=145,slow=10.0,SNR=4.4					
KLR			LR	LR	23 21 20.2	
	comp=Z,69nm,19.1s,baz=136,slow=38					
PETK	**Petropavlovsk-**	**17.54 29**	P	**P**	**23 16 36.6**	**+1.2**
	0.5nm,0.3s,baz=260,slow=17,SNR=3.4					
MA2	**Magadan**	**21.66 10**	P	**P**	**23 17 21.5**	**+1.3**
	4.1nm,0.2s,baz=233,slow=7.8,SNR=5.1					
SEY	**Seymchan**	**25.11 9**	P	**P**	**23 17 55.5**	**+1.1**
	6.0nm,0.9s,baz=194,slow=3.9,SNR=9.8					
H11N2	**WAKE ISLAND Hy**	**27.26 127**	T	T	23 46 34.9	
	baz=319,slow=75,SNR=8.3					
H11N1	**WAKE ISLAND Hy**	**27.27 127**	T	T	23 46 35.0	
	baz=319,slow=75,SNR=8.2					
H11N3	**WAKE ISLAND Hy**	**27.28 127**	T	T	23 46 35.8	
	baz=319,slow=75,SNR=8.9					
SONM	**Songino Array**	**28.71 301**	P	**P**	**23 18 27.1**	**-0.1**
	0.7nm,0.8s,baz=82,slow=10,SNR=5.0					
SONM			LR	LR	23 29 50.2	
	comp=Z,78nm,19.5s,baz=100,slow=36					
TIXI	**Tiksi**	**34.21 352**	P	**P**	**23 19 14.5**	**-0.5**
	0.9nm,0.2s,baz=6.3,slow=3.2,SNR=3.8					
ZALV	**Zalesovo Beam**	**42.48 311**	P	**P**	**23 20 26.4**	**+1.6**
	0.5nm,0.4s,baz=103,slow=7.7,SNR=3.9					
MKAR	**Makanchi Array**	**45.08 301**	P	**P**	**23 20 47.2**	**+1.4**
	1.1nm,0.7s,baz=89,slow=8.4,SNR=6.4					
ILAR	**Eielson Array**	**47.29 33**	P	**P**	**23 21 04.7**	**+1.7**
	0.3nm,0.8s,baz=268,slow=7.2,SNR=2.5					
WRA	**Warramunga Arr**	**58.71 191**	P	**P**	**23 22 26.2**	**-1.5**
	1.4nm,0.8s,baz=10.0,slow=7.5,SNR=6.4					
YKA	**Yellowknife Ar**	**61.64 31**	P	**P**	**23 22 47.4**	**+0.1**
	0.2nm,0.7s,baz=302,slow=6.5,SNR=3.5					
ASAR	**Alice Springs**	**62.44 190**	P	**P**	**23 22 51.9**	**-1.1**
	0.4nm,0.8s,baz=9.1,slow=7.7,SNR=3.3					
ASAR			pP	**sP**	**23 23 03.9**	**+4.6**
	0.6nm,0.7s,baz=9.4,slow=8.3,SNR=3.7					
GEYT	**Alibeck**	**64.89 299**	LR	LR	23 51 52.2	
	comp=Z,30nm,19.1s,baz=20,slow=36					
FINES	**FINESS Array B**	**68.52 333**	P	**P**	**23 23 31.3**	**-0.7**
	1.0nm,0.7s,baz=132,slow=2.8,SNR=6.5					
FINES			pP	sP	23 23 44.0	+5.8
	1.9nm,0.6s,baz=51,slow=7.6,SNR=5.7					
NB2	**NORSAR Subarra**	**73.68 338**	P	**P**	**23 24 03.4**	**+0.1**
	comp=Z,0.6nm,0.6s,baz=36,slow=6.2					
NOA	**NORSAR Array B**	**73.68 338**	P	**P**	**23 24 03.1**	**-0.2**
	comp=Z,0.7nm,0.9s,baz=92,slow=3.9,SNR=2.8					
NOA			pP	**PcP**	**23 24 14.7**	**-4.4**
	comp=Z,0.7nm,0.6s,baz=38,slow=5.8,SNR=5.7					
AKASG	**Malin Array Be**	**74.41 323**	P	**P**	**23 24 07.5**	**-0.2**
	comp=Z,0.1nm,0.2s,baz=44,slow=6.7,SNR=3.8					
AKASG			pP	**PcP**	**23 24 19.5**	**-2.8**
	comp=Z,0.5nm,0.4s,baz=44,slow=5.8,SNR=2.8					
PDAR	**Pinedale Array**	**75.31 47**	P	**P**	**23 24 13.3**	**-0.1**
	comp=Z,0.2nm,0.4s,baz=265,slow=4.2,SNR=3.4					
PDAR			pP	**PcP**	**23 24 24.6**	**-2.0**
	comp=Z,0.5nm,0.5s,baz=298,slow=3.2,SNR=4.4					
VRAC	**Vranov**	**81.03 328**	LR	LR	00 05 03.3	
	comp=Z,27nm,18.1s,baz=356,slow=39					

*ISN **28** 23:25:30.7±0.8, 37.14N×42.14E, h0km±4km, ML3.1*
*NSSC **28** 23:25:31.7±0.8, 36.88N×41.88E, h0km±10km, ML2.3*
*ISK **28** 23:25:31.9, 36.80N×41.83E, h5km, MD2.9*
*ISCJB **28** 23:25:32.6±0.8, 36.79N±0.03×41.86E±0.03, h5km±7km, Error ellipse: s-maj=5.0km s-min=4.1km az=37.5*
*CSEM **28** 23:25:32.7±0.2, 36.80N×41.84E, h2km, MD2.7, Error ellipse: s-maj=5.8km s-min=3.1km az=143.0*
*DDA **28** 23:25:33.4, 36.91N×41.78E, h2km, Md2.7*

ISC 28 23:25:32.6±1.4, 36.80N±0.04×41.82E±0.03, h1km±12km, n32, σ0 s52/48, Iraq

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SIRN	**S¯-rnak**	**0.84**	**34**	*i* P	**Pg**	**23 25 48.5**	**-0.3**
SIRN				*i* S	**Sg**	**23 26 00.3**	**+0.6**
SIRN	**S¯-rnak**	**0.84**	**34**	P	**Pg**	**23 25 48.5**	**-0.3**
SIRN				S	**Sg**	**23 26 00.3**	**+0.6**
SIRT	**Sirnak**	**0.86**	**35**	*e*PG	**Pg**	**23 25 48.9**	**-0.2**
SIRT				*e*SG	**Sg**	**23 26 01.1**	**+0.9**
SIRT	**Sirnak**	**0.86**	**35**	*e*Pg	**Pg**	**23 25 48.9**	**-0.2**
SIRT				*e*Sg	**Sg**	**23 26 01.1**	**+0.9**
MARD	**Mardin**	**0.98**	**302**	*i* P	**Pg**	**23 25 51.5**	**0.0**
MARD				*i* S	**Sb**	**23 26 05.2**	**-0.8**
KBSD	**Kabsdagh**	**1.04**	**282**	*e*P	**Pg**	**23 25 52.4**	**-0.3**
KBSD				*e*S	**Sb**	**23 26 07.6**	**-0.2**
KBSD				AML	AML	23 26 11.5	
	comp=Z,75nm,0.6s						
KBSD	**Kabsdagh**	**1.04**	**282**	*e*P	**Pg**	**23 25 52.4**	**-0.3**
KBSD				*e*S	**Sb**	**23 26 07.6**	**-0.2**
	comp=Z,75nm,0.6s						
MSL	**Mosul**	**1.11**	**111**	*e*Pg	Pg	23 25 54.0	+0.1
MSL				*e*Sg	Sn	23 26 11.0	-0.3
BTMN	**Batman**	**1.18**	**338**	*i* P	**Pg**	**23 25 55.3**	**+0.1**
BTMN				*i* S	**Sb**	**23 26 11.0**	**-0.6**
BTMN	**Batman**	**1.18**	**338**	P	**Pg**	**23 25 55.3**	**+0.1**
BTMN				S	**Sb**	**23 26 11.0**	**-0.6**
MAZI	**Mazidag**	**1.28**	**301**	*e*PN	**Pg**	**23 25 56.8**	**-0.4**
MAZI	**Mazidag**	**1.28**	**301**	*e*Pn	**Pg**	**23 25 56.8**	**-0.4**
MZRK	**Al-Mazaregh**	**1.35**	**225**	*e*P	**Pg**	**23 25 58.5**	**-0.1**
MZRK				*e*S	**Sn**	**23 26 18.0**	**+0.7**
MZRK				AML	AML	23 26 24.0	
	comp=Z,69nm,0.3s						
MZRK	**Al-Mazaregh**	**1.35**	**225**	*e*P	**Pg**	**23 25 58.5**	**-0.1**
MZRK				*e*S	**Sn**	**23 26 18.0**	**+0.7**
	comp=Z,69nm,0.3s						
SFNV	**Sufian**	**1.43**	**255**	*e*P	**Pn**	**23 25 59.3**	**-0.5**
SFNV				*e*S	**Sn**	**23 26 19.2**	**-0.1**
SFNV				AML	AML	23 26 25.3	
	comp=Z,27nm,0.5s						
SFNV	**Sufian**	**1.43**	**255**	*e*P	**Pn**	**23 25 59.3**	**-0.5**
SFNV				*e*S	**Sn**	**23 26 19.2**	**-0.1**
	comp=Z,27nm,0.5s						
CUKT	**Cukurca**	**1.50**	**72**	*e*PN	**Pn**	**23 25 60.0**	**-0.8**
CUKT	**Cukurca**	**1.50**	**72**	*e*Pn	**Pn**	**23 26 00.0**	**-0.8**
DIY	**Diyarbakir**	**1.68**	**311**	*e*Pn	**Pb**	**23 26 03.9**	**-0.5**
DIYA	**Diyarbakir**	**1.76**	**310**	*i* P	**Pn**	**23 26 04.4**	**+0.1**
DIYA				*i* S	**Sb**	**23 26 28.3**	**-0.1**
DIYA	**Diyarbakir**	**1.76**	**310**	P	**Pn**	**23 26 04.4**	**+0.1**
DIYA				S	**Sb**	**23 26 28.3**	**-0.1**
DYBB	**Diyarbakir**	**1.77**	**311**	*e*PN	**Pn**	**23 26 03.9**	**-0.6**
GEVA	**Gevas**	**1.80**	**33**	*i* P	**Pn**	**23 26 05.4**	**+0.4**
GEVA				*i* S	**Sg**	**23 26 31.1**	**+0.5**
GEVA	**Gevas**	**1.80**	**33**	P	**Pn**	**23 26 05.4**	**+0.4**
GEVA				S	**Sg**	**23 26 31.1**	**+0.5**
MNKR	**ALMNKUR**	**2.23**	**248**	*e*P	**Pn**	**23 26 11.0**	**+0.2**
MNKR				*e*S	**Sn**	**23 26 40.1**	**+1.1**
MNKR				AML	AML	23 26 45.6	
	comp=Z,98nm,0.2s						
MNKR	**ALMNKUR**	**2.23**	**248**	*e*P	**Pn**	**23 26 11.0**	**+0.2**
MNKR				*e*S	**Sn**	**23 26 40.1**	**+1.1**
	comp=Z,98nm,0.2s						
BINT	**Bingol**	**2.33**	**333**	*e*Pn	**Pn**	**23 26 12.5**	**+0.3**
BNGB	**Bing¨l**	**2.37**	**338**	*e*PN	**Pn**	**23 26 12.5**	**-0.3**
IKRK	**Kirkuk**	**2.47**	**124**	*e*Pn	Pn	23 26 13.0	-1.1
IKRK				*i* Sn	Sn	23 26 42.5	-2.4
SVRC	**Sivrice-ELAZID**	**2.55**	**309**	*e*PN	**Pn**	**23 26 15.0**	**-0.2**
SVRC	**Sivrice-ELAZID**	**2.55**	**309**	*e*Pn	**Pn**	**23 26 15.0**	**-0.2**
BHD	**Baghdad**	**4.10**	**148**	*e*Pn	Pn	23 26 37.5	+1.1
BHD				*i* Sn	Sn	23 27 25.0	0.0

ROM 28 23:28:44.7±0.2, 41.68N×13.87E, h10km±1km, Md1.9/3, Ml0.9/3, Error ellipse: s-maj=1.3km s-min=0.6km az=125.0, Southern Italy

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
POFI	**Posta Fibreno**	**0.13**	**290**	Pg	Pg	23 28 48.1	+0.3
POFI				Sg	Sg	23 28 50.9	+1.0
	30nm,0.5s						
CERA	**Filignano**	**0.14**	**125**	Pg	Pg	23 28 48.4	+0.5
CERA				Sg	Sg	23 28 51.1	+1.0
	52nm,0.6s						
VVLD	**Villa Vallelon**	**0.27**	**317**	Pg	Pg	23 28 50.6	+0.4
VVLD				Sg	Sb	23 28 55.8	-0.6
	9.0nm,0.3s						

*CSEM **28** 23:30:28.4, 37.91N×23.53E, h17km, ML1.1/5*

ATH 28 23:30:28.4, 37.91N×23.53E, h17km±4km, ML1.1/4, Error ellipse: s-maj=4.2km s-min=1.0km az=89.0, Southern Greece

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ATH	**Athens Observa**	**0.16**	**66**	P	Pg	23 30 32.4	-0.3
VLY	**Voula,Athens**	**0.22**	**104**	P	Pg	23 30 33.2	-0.3
VLY				S	Sg	23 30 37.1	+0.1
VLY	**Voula,Athens**	**0.22**	**104**	P	Pg	23 30 33.2	-0.3
VLY				S	Sg	23 30 37.1	+0.1
VLY				AML	AML	23 30 38.3	
	comp=N,118μm,0.4s						
VLY				AML	AML	23 30 39.2	
	comp=E,148μm,0.4s						
PTL	**Penteli**	**0.30**	**62**	P	Pg	23 30 35.0	+0.1
PTL	**Penteli**	**0.30**	**62**	P	Pg	23 30 35.0	0.0
VILL	**Villia**	**0.31**	**327**	P	Pg	23 30 34.8	-0.3
VILL				S	Sb	23 30 40.2	-0.1
VIL2	**Platees**	**0.37**	**326**	P	Pg	23 30 34.8	-1.3
VIL2				S	Sg	23 30 40.2	-1.1
VIL2				AML	AML	23 30 40.5	
	comp=N,78μm,0.4s						
VIL2				AML	AML	23 30 42.9	
	comp=E,100μm,0.3s						
LTK	**Loutraki**	**0.46**	**285**	P	Pg	23 30 37.4	-0.3
LTK	**Loutraki**	**0.46**	**285**	P	Pg	23 30 37.4	-0.3
LTK				AML	AML	23 30 45.7	
	comp=E,144μm,0.5s						
LTK				AML	AML	23 30 50.0	
	comp=N,63μm,0.5s						
DID	**Didima**	**0.46**	**210**	P	Pg	23 30 37.5	-0.2
DID				S	Sb	23 30 45.2	+0.6
DID	**Didima**	**0.46**	**210**	P	Pg	23 30 37.5	-0.2
DID				S	Sb	23 30 45.2	+0.7
DID				AML	AML	23 30 46.3	
	comp=N,44μm,0.4s						
DID				AML	AML	23 30 47.1	
	comp=E,37μm,0.5s						
EREA	**Eretria**	**0.60**	**32**	P	Pb	23 30 40.7	+0.2
EREA	**Eretria**	**0.60**	**32**	P	Pb	23 30 40.7	+0.2
PROD	**Prodromos**	**0.61**	**306**	P	Pb	23 30 41.1	+0.5
PROD	**Prodromos**	**0.61**	**306**	P	Pb	23 30 41.1	+0.5
THAL	**Thalero**	**0.70**	**281**	P	Pb	23 30 41.5	-0.6
THAL	**Thalero**	**0.70**	**281**	P	Pb	23 30 41.5	-0.5
KARY	**Karystos**	**0.73**	**80**	P	Pg	23 30 42.8	+0.1
KARY	**Karystos**	**0.73**	**80**	P	Pg	23 30 42.8	+0.2
LKR	**Lokris**	**0.85**	**331**	P	Pb	23 30 43.2	-1.5
LKR	**Lokris**	**0.85**	**331**	P	Pb	23 30 43.2	-1.4
DSF	**Desfina**	**0.94**	**303**	P	Pg	23 30 46.6	0.0
DSF	**Desfina**	**0.94**	**303**	P	Pg	23 30 46.6	0.0
KLV	**Kalavryta, Ach**	**1.10**	**278**	P	Pg	23 30 49.7	0.0
KLV	**Kalavryta, Ach**	**1.10**	**278**	P	Pg	23 30 49.7	0.0

*THE **28** 23:30:35.9, 45.18N×16.96E, h4km±25km, ML4.3/2, Error ellipse: s-maj=33.0km s-min=3.5km az=323.0*
*ISCJB **28** 23:30:41.7±0.3, 44.755N±0.009×17.34E±0.01, h1km±2km, mb4.2/29, MS3.6/14, Error ellipse: s-maj=1.7km s-min=1.2km az=34.6*
*IDC **28** 23:30:43.3±0.5, 44.78N×17.25E, h0km, mb4.0/17, mb1 4.1/35, mb1mx4.0/69, mbtmp4.0/35, ML4.0/16, MS3.4/22, Ms1 3.4/22, ms1mx3.3/58, Error ellipse: s-maj=10.0km s-min=7.5km az=51.0*
*LDG **28** 23:30:43.0±0.1, 44.77N×17.34E, h10km, Ml4.4/15, Error ellipse: s-maj=2.9km s-min=2.1km az=30.0*
*BEO **28** 23:30:43.5±0.3, 44.78N×17.31E, h9km±2km, M4.4/1*
*CSEM **28** 23:30:43.3±0.1, 44.74N×17.34E, h2km, mb4.3/20, ML4.5/6, Mw4.2, Error ellipse: s-maj=1.8km s-min=1.3km az=34.0*
*MOS **28** 23:30:43.0±1.3, 44.77N×17.17E, h10km, mb4.3/21, Error ellipse: s-maj=4.6km s-min=4.1km az=132.5*
*PDG **28** 23:30:44.1±0.5, 44.74N×17.33E, h21km±1km, MD4.2/6, ML4.2/10, Error ellipse: s-maj=0.5km s-min=0.8km az=0.0*
*ROM **28** 23:30:44.4±0.3, 44.74N×17.31E, h10km, Ml4.5/25, Error ellipse: s-maj=5.0km s-min=2.6km az=68.0*
*NEIC **28** 23:30:44.9±1.4, 44.81N×17.28E, h9km±10km, mb4.3/18, MW4.2, ML4.4(LDG), Error ellipse: s-maj=3.1km s-min=2.6km az=196.0, Moment Tensor Solution. s20 Moment tensor: Scale 10^15 Nm; Mrr=0.18; Mθθ=1.47; Mφφ=1.65; Mrθ=0.49; Mrφ=1.90; Mθφ=0.52; Best double couple: M=2.60000×10^15 NP1:φ=340.00000°, δ=76.00000°, λ=175.00000°. NP2:φ=71.00000°, δ=85.00000°, λ=14.00000°. Principal axes: T 2.7100, Plg13.0000°, Azm296.0000°; N -0.3200, Plg75.0000°, Azm91.0000°; P -2.3900, Plg6.0000°, Azm204.0000°;*
*PRU **28** 23:30:46.3, 44.81N×17.36E, h14km, M4.3*
*TIR **28** 23:30:53.4, 44.01N×16.22E, h5km, ML4.5*
*STR **28** 23:31:01.2±0.4, 44.99N×15.56E, h10km, Ml4.5, Error ellipse: s-maj=0.0km s-min=0.0km az=0.0*

ISC 28 23:30:44.6±0.8, 44.76N±0.02×17.31E±0.02, h8km±5km, n785, σ1 s21/873, mb4.2/29, MS3.6/14, 67C-46D, Northwestern Balkan Peninsula

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BLY	**Banja Luka**	**0.09**	**264**	↑*i*P	**Pg**	**23 30 46.5**	**-0.4**
BLY	**Banja Luka**	**0.09**	**264**	↑P	**Pg**	**23 30 46.4**	**-0.4**
BLY				*i* Sg	**Sg**	**23 30 48.6**	**+0.1**
BLY	**Banja Luka**	**0.09**	**264**	↑*i*P	**Pg**	**23 30 46.5**	**-0.4**
BLY				*i* Sg	**Sg**	**23 30 48.6**	**+0.1**
SISC	**Sisak**	**0.97**	**317**	*i* Pg	**Pg**	**23 31 02.5**	**-0.8**
SISC				Sg	**Sb**	**23 31 16.1**	**-0.8**
SISC	**Sisak**	**0.97**	**317**	*i* Pg	**Pg**	**23 31 02.5**	**-0.8**
SISC				Sg	**Sb**	**23 31 16.1**	**-0.8**
UDBI	**Udbina**	**1.13**	**259**	*i* Pg	**Pg**	**23 31 04.7**	**-1.7**
UDBI				Sg	**Sg**	**23 31 20.1**	**-0.8**
UDBI	**Udbina**	**1.13**	**259**	*i* Pg	**Pg**	**23 31 04.6**	**-1.7**
UDBI				Sg	**Sg**	**23 31 20.1**	**-0.8**
HAPS	**Han Pijesak,Bl**	**1.35**	**119**	↑*i*Pg	Pn	23 31 06.6	-3.3
HAPS				*e*Sg	**Sb**	**23 31 25.7**	**-2.1**
BLJ	**Bijeljina**	**1.39**	**88**	*e*Pg	**Pn**	**23 31 07.2**	**-3.1**
BLJ				*e*Sg	**Sb**	**23 31 24.6**	**-4.2**
ZAG	**Zagreb**	**1.42**	**319**	↑*i*Pg	**Pn**	**23 31 10.2**	**-0.5**
ZAG				*e*Sg	**Sg**	**23 31 30.4**	**+0.1**
TEKS	**Tekeris**	**1.59**	**97**	*e*Pg	**Pn**	**23 31 11.9**	**-1.3**
TEKS				*e*Sg	**Sb**	**23 31 34.7**	**0.0**
TEKS	**Tekeris**	**1.59**	**97**	↓*i*Pn	**Pn**	**23 31 11.6**	**-1.6**
TEKS	**Tekeris**	**1.59**	**97**	*e*Pg	**Pn**	**23 31 11.9**	**-1.3**
TEKS				*e*Sn	**Sn**	**23 31 33.2**	**-0.8**
TEKS				*e*Sg	**Sb**	**23 31 34.7**	**0.0**
BOJS	**Bojanci**	**1.64**	**298**	*i* Pn	**Pn**	**23 31 13.4**	**-0.3**
BOJS				*e*Sn	**Sg**	**23 31 37.9**	**+0.6**
BOJS	**Bojanci**	**1.64**	**298**	Pn	**Pn**	**23 31 13.4**	**-0.3**
BOJS				*e*Sn	**Sg**	**23 31 37.9**	**+0.6**
CRES	**Cresnjev**	**1.69**	**310**	*i* Pn	**Pn**	**23 31 14.0**	**-0.5**
CRES				*e*Sn	**Sg**	**23 31 40.6**	**+1.7**
CRES	**Cresnjev**	**1.69**	**310**	↑*i*Pn	**Pn**	**23 31 14.0**	**-0.5**
CRES				*e*Sn	**Sb**	**23 31 37.2**	**-0.2**
PKSM	**Moragy**	**1.73**	**32**	↓*i*P	**Pn**	**23 31 13.4**	**-1.5**
PKSM	**Moragy**	**1.73**	**32**	*e*Pn	**Pn**	**23 31 13.5**	**-1.5**
PKSM	**Moragy**	**1.73**	**32**	↓*i*P	**Pn**	**23 31 13.4**	**-1.5**
PKSM	**Moragy**	**1.73**	**32**	*e*Pn	**Pn**	**23 31 14.9**	**-0.1**
PKSM	**Moragy**	**1.73**	**32**	*e*Pg	**Pg**	**23 31 16.7**	**-1.0**
PKSM				*e*Sn	**Sn**	**23 31 37.2**	**0.0**
BBLS	**Lazići**	**1.75**	**120**	*e*Pg	**Pn**	**23 31 14.2**	**-1.1**
BBLS	**Lazići**	**1.75**	**120**	↑*i*Pn	**Pn**	**23 31 13.9**	**-1.4**
BBLS	**Lazići**	**1.75**	**120**	*e*Pg	**Pn**	**23 31 14.2**	**-1.1**
BBLS				*e*Sn	**Sn**	**23 31 36.1**	**-1.7**
BEHE	**Becsehely**	**1.75**	**348**	↑*e*SKSdf	**Pb**	**23 31 15.5**	**-1.6**
BEHE	**Becsehely**	**1.75**	**348**	↑*i*Pn	**Pb**	**23 31 15.4**	**-1.6**
BEHE				*e*Sn	**Sn**	**23 31 37.6**	**-0.2**
NVLJ	**Novalja**	**1.75**	**264**	*e*Pn	**Pn**	**23 31 13.3**	**-2.0**
NVLJ				Sn	**Sn**	**23 31 37.2**	**-0.7**
NVLJ	**Novalja**	**1.75**	**264**	*e*Pn	**Pn**	**23 31 13.3**	**-2.0**
NVLJ				Sn	**Sn**	**23 31 37.1**	**-0.7**
FGSL	**Fruska Gora**	**1.82**	**76**	*e*Pn	**Pn**	**23 31 14.4**	**-1.8**
FGSL				*e*Sg	**Sg**	**23 31 42.3**	**-0.7**
FRGS	**Fruska Gora**	**1.82**	**76**	*e*Pn	**Pn**	**23 31 14.4**	**-1.8**
FRGS				*e*Sg	**Sg**	**23 31 42.3**	**-0.7**
STON	**Ston**	**1.91**	**171**	*e*Pn	**Pn**	**23 31 16.5**	**-0.9**
STON				Sn	**Sb**	**23 31 43.9**	**+0.3**
STON	**Ston**	**1.91**	**171**	*e*Pg	**Pn**	**23 31 17.4**	**0.0**
STON	**Ston**	**1.91**	**171**	*e*Pn	**Pn**	**23 31 16.5**	**-0.9**
STON	**Ston**	**1.91**	**171**	*e*Pg	**Pn**	**23 31 17.4**	**0.0**
STON				*e*Sn	**Sn**	**23 31 40.6**	**-1.0**
GBRS	**Gornja Briga**	**1.93**	**294**	*i* Pn	**Pn**	**23 31 17.8**	**0.0**
GBRS				*e*Sn	**Sg**	**23 31 46.4**	**-0.3**
UPM	**Unac-Piva**	**1.93**	**143**	↓*i*Pn	**Pn**	**23 31 16.9**	**-1.0**
UPM				*e*Sn	**Sn**	**23 31 41.9**	**-0.7**
UPM	**Unac-Piva**	**1.93**	**143**	↑*i*Pn	**Pn**	**23 31 17.0**	**-1.0**
UPM				*e*Sn	**Sn**	**23 31 41.5**	**-1.1**
PKS9	**Tamasi**	**1.95**	**20**	↓*e*Pn	**Pn**	**23 31 16.8**	**-1.2**
PKS9	**Tamasi**	**1.95**	**20**	*e*Pg	**Pg**	**23 31 21.9**	**-0.1**
DIVS	**Divibare**	**2.03**	**108**	*e*Pn	**Pn**	**23 31 17.4**	**-1.8**
DIVS				*e*Sg	**Sb**	**23 31 48.1**	**+0.9**
DIVS	**Divibare**	**2.03**	**108**	*e*Pn	**Pn**	**23 31 17.4**	**-1.8**
DIVS				*e*Sg	**Sb**	**23 31 48.1**	**+0.9**
BRY	**Bratogost**	**2.06**	**154**	↓*i*Pn	**Pn**	**23 31 18.6**	**-1.0**
BRY				*e*Sn	**Sn**	**23 31 44.7**	**-0.9**
BRY	**Bratogost**	**2.06**	**154**	↓*i*Pn	**Pn**	**23 31 18.6**	**-1.0**
BRY				*e*Sn	**Sn**	**23 31 44.7**	**-0.9**
PLE	**Pljevlja**	**2.07**	**133**	↓*i*Pn	**Pn**	**23 31 18.8**	**-1.0**
PLE				*e*Sn	**Sn**	**23 31 44.8**	**-1.0**
PLE	**Pljevlja**	**2.07**	**133**	↓*i*Pn	**Pn**	**23 31 18.8**	**-1.0**
PLE				*e*Sn	**Sn**	**23 31 44.8**	**-1.0**
TREB	**Trebinje**	**2.17**	**159**	↑*i*Pn	**Pn**	**23 31 21.2**	**+0.1**
TREB	**Trebinje**	**2.17**	**159**	*e*Pn	**Pn**	**23 31 20.6**	**-0.5**
TREB				*e*Sn	**Sn**	**23 31 47.2**	**-1.1**
CEY	**Cerknica**	**2.26**	**297**	*e*Pn	**Pn**	**23 31 22.3**	**-0.1**
CEY				*e*Sn	**Sn**	**23 31 50.8**	**+0.3**
TRUS	**Trudelj**	**2.28**	**103**	*e*Pn	**Pn**	**23 31 20.9**	**-1.6**
TRUS	**Trudelj**	**2.28**	**103**	*e*Pn	**Pn**	**23 31 20.9**	**-1.6**
NKY	**Niksic**	**2.29**	**147**	↓*i*Pn	**Pn**	**23 31 22.3**	**-0.6**
NKY				*e*Sn	**Sn**	**23 31 50.5**	**-0.9**
NKME	**Niksic**	**2.32**	**149**	↓*i*Pn	**Pn**	**23 31 22.2**	**-0.9**
NKME				*e*Sn	**Sn**	**23 31 51.4**	**-0.5**
LJU	**Ljubljana**	**2.35**	**304**	↑*e*Pn	**Pn**	**23 31 23.0**	**-0.5**
LJU	**Ljubljana**	**2.35**	**304**	↑*i*Pn	**Pn**	**23 31 23.0**	**-0.5**
LJU				*e*Sn	**Sn**	**23 31 52.5**	**0.0**
IVAS	**Ivanjica**	**2.36**	**119**	*e*Pn	**Pn**	**23 31 22.4**	**-1.3**
IVAS				*e*Sn	**Sn**	**23 31 52.6**	**-0.3**
IVAS	**Ivanjica**	**2.36**	**119**	*e*Pn	**Pn**	**23 31 22.4**	**-1.3**
IVAS				*e*Sn	**Sn**	**23 31 52.6**	**-0.3**
PKS6	**Bocsa**	**2.42**	**40**	↓*e*Pn	**Pn**	**23 31 23.0**	**-1.5**
PKS6	**Bocsa**	**2.42**	**40**	*e*Pg	**Pg**	**23 31 29.8**	**-1.3**
PERS	**Pernice**	**2.43**	**321**	*i* Pn	**Pn**	**23 31 24.2**	**-0.5**
PERS				*i* Sn	**Sn**	**23 31 53.0**	**-1.6**
PERS	**Pernice**	**2.43**	**321**	*i* Pn	**Pn**	**23 31 24.2**	**-0.5**
PERS				*i* Sn	**Sn**	**23 31 53.0**	**-1.6**
SJES	**Sjenica**	**2.43**	**127**	*e*Pn	**Pn**	**23 31 23.9**	**-0.9**
HCY	**Herceg Novi**	**2.46**	**159**	↑*i*Pn	**Pn**	**23 31 25.0**	**-0.1**

	7.9nm,0.2s,SNR=16											
OFFI	**Offida**	3.19	236		Pn		Pn	23 31 36.5	+1.3			
	7µm,0.7s											
OFFI	**Offida**	3.19	236		Pn		Pn	23 31 36.5	+1.3			
	7µm,0.7s											
VINO	**Villanova**	3.21	299		Pn		Pn	23 31 35.1	-0.2			
	1µm,0.8s											
VINO	**Villanova**	3.21	299		Pn		Pn	23 31 35.1	-0.2			
	1µm,0.8s											
ACOM	**Acomizza, Ital**	3.21	305		Pn		Pn	23 31 35.2	-0.3			
	1µm,0.8s											
ACOM	**Acomizza, Ital**	3.21	305		Pn		Pn	23 31 35.2	-0.3			
	1µm,0.8s											
MSAG	**Monte S. Angel**	3.21	199		Pn		Pn	23 31 34.3	-1.2			
	1µm,0.6s											
MSAG	**Monte S. Angel**	3.21	199		Pn		Pn	23 31 34.3	-1.2			
	1µm,0.6s											
CING	**Cingoli**	3.27	246		Pn		Pn	23 31 36.1	-0.2			
	813nm,0.7s											
CING	**Cingoli**	3.27	246		Pn		Pn	23 31 36.1	-0.2			
	813nm,0.7s											
PESA	**Pesaro**	3.31	257		Pn		Pn	23 31 37.6	+0.9			
PESA	**Pesaro**	3.31	257		Pn		Pn	23 31 37.6	+0.9			
CAFR	**Castel Frentan**	3.33	221		Pn		Pn	23 31 37.9	+1.0			
CAFR	**Castel Frentan**	3.33	221		Pn		Pn	23 31 37.9	+1.0			
CONA	**Conrad Observa**	3.33	343	*i*	Pn		Pn	23 31 37.1	+0.1			
	223nm,0.4s,SNR=299											
CONA				*i*	Sn		Sn	23 32 16.7	0.0			
	189nm,0.5s											
CONA	**Conrad Observa**	3.33	343		Pn		Pn	23 31 37.1	+0.1			
	223nm,0.4s,SNR=299											
CONA					Sn		Sn	23 32 16.7	0.0			
	189nm,0.5s											
BOVS	**Bovan**	3.35	108	*e*	Pn		Pn	23 31 36.1	-1.2			
BOVS	**Bovan**	3.35	108	*e*	Pn		Pn	23 31 36.1	-1.2			
ARVD	**Arcevia**	3.39	250		Pn		Pn	23 31 37.6	-0.3			
	690nm,0.7s											
ARVD	**Arcevia**	3.39	250		Pn		Pn	23 31 37.6	-0.3			
	690nm,0.7s											
SIRR	**Siria**	3.41	62⇑	*i*	P		Pn	23 31 37.4	-0.7			
SIRR	**Siria**	3.41	62⇑	*i*	P		Pn	23 31 37.4	-0.7			
FSSB	**Fossombrone**	3.43	253		Pn		Pn	23 31 38.2	-0.2			
	2µm,0.6s											
FSSB	**Fossombrone**	3.43	253		Pn		Pn	23 31 38.2	-0.2			
	2µm,0.6s											
TERO	**Teramo**	3.44	233		Pn		Pn	23 31 38.4	-0.1			
	1µm,0.8s											
TERO	**Teramo**	3.44	233		Pn		Pn	23 31 38.4	-0.1			
	1µm,0.8s											
VCEL	**Villa Celiera**	3.46	228		Pn		Pn	23 31 38.7	-0.2			
	2µm,0.9s											
VCEL	**Villa Celiera**	3.46	228		Pn		Pn	23 31 38.7	-0.2			
	2µm,0.9s											
BOLS	**Boljevac**	3.46	104	*e*	Pn		Pn	23 31 36.0	-2.8			
BOLS	**Boljevac**	3.46	104	*e*	Pn		Pn	23 31 36.0	-2.8			
SNTG	**Esanatoglia**	3.50	246		Pn		Pn	23 31 39.0	-0.3			
	2µm,1.4s											
SNTG	**Esanatoglia**	3.50	246		Pn		Pn	23 31 39.0	-0.3			
	2µm,1.4s											
FDMO	**Fiordimonte**	3.51	242		Pn		Pn	23 31 39.2	-0.3			
	2µm,1.1s											
FDMO	**Fiordimonte**	3.51	242		Pn		Pn	23 31 39.2	-0.3			
	2µm,1.1s											
SSFR	**Montelago di S**	3.52	250		Pn		Pn	23 31 39.2	-0.5			
	836nm,0.7s											
SSFR	**Montelago di S**	3.52	250		Pn		Pn	23 31 39.2	-0.5			
	836nm,0.7s											
FRON	**Frontone**	3.53	251		Pn		Pn	23 31 39.6	-0.1			
	1µm,0.8s											
FRON	**Frontone**	3.53	251		Pn		Pn	23 31 39.6	-0.1			
	1µm,0.8s											
STAL	**STALIGIAL**	3.57	297		Pn		Pn	23 31 40.3	0.0			
	2µm,1.2s											
STAL	**STALIGIAL**	3.57	297		Pn		Pn	23 31 40.3	0.0			
	2µm,1.2s											
CIGN	**Sant'Elia a Pi**	3.57	210		Pn		Pn	23 31 39.9	-0.4			
	2µm,1.7s											
CIGN	**Sant'Elia a Pi**	3.57	210		Pn		Pn	23 31 39.9	-0.4			
	2µm,1.7s											
CAMP	**Campotosto**	3.60	233		Pn		Pn	23 31 40.8	0.0			
	116nm,0.5s											
CAMP	**Campotosto**	3.60	233		Pn		Pn	23 31 40.8	0.0			
	116nm,0.5s											
KBA	**Koelnbreinsper**	3.61	311	*i*	Pn		Pn	23 31 41.3	+0.2			
	6.3nm,0.2s,SNR=26											
KBA				*i*	Sn		Sn	23 32 25.0	+1.0			
	134nm,0.6s											
KBA	**Koelnbreinsper**	3.61	311		Pn		Pn	23 31 41.3	+0.2			
	6.3nm,0.2s,SNR=26											
KBA					Sn		Sn	23 32 25.0	+1.0			
	134nm,0.6s											
POLC	**Polcenigo**	3.62	292		Pn		Pn	23 31 41.3	+0.3			
	2µm,0.7s											
POLC	**Polcenigo**	3.62	292		Pn		Pn	23 31 41.3	+0.3			
	2µm,0.7s											
PSZ	**Piszkesteto**	3.63	29	‖	*i*P		Pn	23 31 39.4	-1.8			
PSZ	**Piszkesteto**	3.63	29	‖	*e*Pn		Pn	23 31 39.4	-1.8			
PSZ					*e*Sn		Sn	23 32 21.3	-3.0			
PSZ	**Piszkesteto**	3.63	29		*e*P		Pn	23 31 39.4	-1.8			
PSZ	**Piszkesteto**	3.63	29		*e*P		Pn	23 31 39.4	-1.8			
PSZ					*e*Sn		Sn	23 32 21.3	-3.0			
PSZ	**Piszkesteto**	3.63	29		*e*Pn		Pn	23 31 39.4	-1.8			
RM32	**Poggio Cancell**	3.65	235		Pn		Pn	23 31 41.6	+0.1			
	1µm,0.9s											
RM32	**Poggio Cancell**	3.65	235		Pn		Pn	23 31 41.6	+0.1			
	1µm,0.9s											
PIEI	**Pieia**	3.65	252		Pn		Pn	23 31 41.1	-0.3			
	624nm,0.9s											
PIEI	**Pieia**	3.65	252		Pn		Pn	23 31 41.1	-0.3			
	624nm,0.9s											
BAI	**Bari**	3.66	185	*e*	Pn		Pn	23 31 40.0	-1.6			
FVI	**Forni Avoltri**	3.67	302		Pn		Pn	23 31 42.2	+0.4			
	2µm,1.6s											
FVI	**Forni Avoltri**	3.67	302		Pn		Pn	23 31 42.2	+0.4			
	2µm,1.6s											
INTR	**Introdacqua**	3.70	223		Pn		Pn	23 31 41.9	-0.3			
	2µm,1.0s											
INTR	**Introdacqua**	3.70	223		Pn		Pn	23 31 41.9	-0.3			
	2µm,1.0s											
DJES	**Djerdap**	3.71	90⇑	*i*	Pn		Pn	23 31 41.0	-1.3			
DJES	**Djerdap**	3.71	90⇑	*i*	Pn		Pn	23 31 41.0	-1.3			
AQU	**L'Aquila**	3.72	231	*e*	P		Pn	23 31 44.0	+1.5			
AQU	**L'Aquila**	3.72	231	*e*	Pn		Pn	23 31 42.4	-0.1			
AQU	**L'Aquila**	3.72	231	*e*	P		Pn	23 31 44.0	+1.5			
AQU				*e*	Sn		Sn	23 32 25.7	-0.8			
AQU	**L'Aquila**	3.72	231	*e*	Pn		Pn	23 31 44.0	+1.5			
MOA	**Molln**	3.74	327	*i*	Pn		Pn	23 31 43.2	+0.5			
	121nm,0.3s,SNR=207											
MOA				*i*	Sn		Sn	23 32 26.3	-0.7			
	386nm,0.5s											
MOA	**Molln**	3.74	327		Pn		Pn	23 31 43.2	+0.5			
	121nm,0.3s,SNR=207											
MOA					Sn		Sn	23 32 26.3	-0.7			
	386nm,0.5s											
CDT	**Castel del Mon**	3.75	192	*e*	Pn		Pn	23 31 42.7	-0.2			
SMOL	**Smolenice**	3.76	1	*e*			Pn	23 31 42.3	-0.6			
SMOL				*e*				23 31 49.9				
SMOL				*e*				23 32 24.1				
MRVN	**Minervino Murg**	3.79	193		Pn		Pn	23 31 42.1	-1.2			
	385nm,0.8s											
MRVN	**Minervino Murg**	3.79	193		Pn		Pn	23 31 42.1	-1.2			
	385nm,0.8s											
BARS	**Barje**	3.79	119	*e*	Pn		Pn	23 31 42.2	-1.2			
BARS				*e*	Sn		Sn	23 32 24.5	-3.7			
BARS	**Barje**	3.79	119	*e*	Pn		Pn	23 31 42.2	-1.2			
VYHS	**Vyhne**	3.88	15	*e*	Pg		Pg	23 31 57.5	-1.4			
VYHS	**Vyhne**	3.88	15	*e*			Pn	23 31 44.0	-0.6			
VYHS	**Vyhne**	3.88	15	*e*	PG		Pg	23 31 57.5	-1.4			
VYHS				*e*				23 32 27.4				
VYHS				*e*	LG		Lg	23 33 06.2				
TIR	**Tirane**	3.89	150	*i*	PN		Pn	23 31 45.2	+0.5			
TIR				*i*	SN		Sb	23 32 41.2	+0.6			
TIR	**Tirane**	3.89	150	⇑	*i*P		Pn	23 31 45.2	+0.5			
TIR	**Tirane**	3.89	150	*e*	Pn		Pn	23 31 43.5	-1.2			
TIR	**Tirane**	3.89	150	*e*	P		Pn	23 31 45.6	+0.9			
TIR	**Tirane**	3.89	150	*e*	Pn		Pn	23 31 43.5	-1.2			
TIR	**Tirane**	3.89	150	*e*	P		Pn	23 31 45.6	+0.9			
TIR	**Tirane**	3.89	150	*e*	Pn		Pn	23 31 45.5	+0.9			
ABTA	**Abfaltersbach**	3.90	302	*i*	Pn		Pn	23 31 45.8	+0.8			
	15nm,0.2s,SNR=28											
ABTA				*i*	Sn		Sg	23 32 46.7	-3.3			
ABTA	**Abfaltersbach**	3.90	302		Pn		Pn	23 31 45.8	+0.8			
	15nm,0.2s,SNR=28											
SG1	**Sgolgore (BA)**	3.94	187	*i*	Pn		Pn	23 31 43.9	-1.6			
DEV	**Deva**	4.10	72⇑	*i*	P		Pn	23 31 46.3	-1.3			
DEV	**Deva**	4.10	72⇑	*i*	P		Pn	23 31 46.3	-1.3			
SKO	**Skopje**	4.10	131		P		Pn	23 31 46.4	-1.2			
SKO	**Skopje**	4.10	131	⇑	*i*Pn		Pn	23 31 46.8	-0.8			
SKO	**Skopje**	4.10	131		P		Pn	23 31 46.4	-1.2			
SKO	**Skopje**	4.10	131	⇑	*i*Pn		Pn	23 31 46.8	-0.8			
ZAPS	**Zavoj**	4.12	109		*e*Pn		Pn	23 31 47.2	-0.6			
MATE	**Matera**	4.13	186	⇑	*i*P		Pn	23 31 46.5	-1.5			
MATE	**Matera**	4.13	186	⇑	*i*P		Pn	23 31 46.5	-1.5			
TAR1	**Taranto**	4.23	180		*e*Pn		Pn	23 31 48.1	-1.3			
DRGR		4.29	60	‖	*i*P		Pn	23 31 49.4	-0.8			
DRGR		4.29	60	‖	*i*P		Pn	23 31 49.4	-0.8			
KECS	**Kecovo**	4.32	29		*e*Pg		Pg	23 32 08.0	+0.7			
KECS	**Kecovo**	4.32	29		*e*		Pn	23 31 50.0	-0.6			
KECS	**Kecovo**	4.32	29		*e*PG		Pg	23 32 08.0	+0.7			
KECS					*e*LG		Lg	23 33 27.7				
OHR	**Ohrid**	4.45	144	*i*	Pn		Pn	23 31 54.7	+2.2			
OHR	**Ohrid**	4.45	144	*i*	Pn		Pn	23 31 54.7	+2.2			
VRAC	**Vranov**	4.58	354		Pn		Pn	23 31 53.3	-0.8			
	8.0nm,0.3s,baz=202,slow=12,SNR=39											
VRAC					Sn		Sn	23 32 43.9	-3.7			
	18nm,0.3s,baz=119,slow=7.3,SNR=8.0											
VRAC					LR		LR	23 33 36.2				
	comp=Z,151nm,21.3s,baz=20,slow=38											
VRAC	**Vranov**	4.58	354	⇑	*i*P		Pn	23 31 53.5	-0.7			
LOT	**Lotru**	4.62	79	⇑	*i*P		Pn	23 31 53.6	-1.3			
LOT	**Lotru**	4.62	79	⇑	*i*P		Pn	23 31 53.6	-1.3			
LANS	**Liptovska Anna**	4.63	18		*e*		Pn	23 31 54.9	-0.1			
WTTA	**Wattenberg**	4.68	304		*i* Pn		Pn	23 31 57.4	+1.7			
	12nm,0.2s,SNR=13											
WTTA	**Wattenberg**	4.68	304		Pn		Pn	23 31 57.4	+1.7			
	12nm,0.2s,SNR=13											
TREC	**Trest**	4.71	345	⇑	*e*PN		Pn	23 31 55.8	-0.1			
TREC					*e*SN		Sn	23 32 48.8	-1.9			
TREC					AMS		AMS	23 34 00.0				
	comp=Z,800nm,9.5s											
TREC	**Trest**	4.71	345		Pn		Pn	23 31 55.8	-0.1			
TREC					Sn		Sn	23 32 48.8	-1.9			
WATA	**Walderalm**	4.75	305	*i*	Pn		Pn	23 31 58.1	+1.4			
	14nm,0.2s,SNR=60											
WATA	**Walderalm**	4.75	305		Pn		Pn	23 31 58.1	+1.4			
	14nm,0.2s,SNR=60											
BIA	**Bitola**	4.76	140	⇑	*i*Pn		Pn	23 31 57.0	+0.2			
BIA	**Bitola**	4.76	140	⇑	*i*Pn		Pn	23 31 56.9	+0.2			
GEA0	**GERESS Array S**	4.77	330		*e*Pn		Pn	23 31 56.8	-0.1			
GEA0	**GERESS Array S**	4.77	330		*e*Pn		Pn	23 31 56.9	-0.1			
GEC2	**GERESS Array S**	4.78	330		*e*P		Pn	23 31 57.4	+0.4			
GEC2	**GERESS Array S**	4.78	330		*e*P		Pn	23 31 57.4	+0.4			
GEC2	**GERESS Array S**	4.78	330		*e*Pn		Pn	23 31 57.4	+0.4			
GERES	**GERESS Array B**	4.78	330		Pn		Pn	23 31 57.3	+0.3			
	28nm,0.3s,baz=150,slow=14,SNR=906											
GERES					Sn		Sn	23 32 50.0	-2.6			
	9.2nm,0.3s,baz=143,slow=30,SNR=2.9											
CJR	**Cluj-Napoca**	4.81	64	⇑	*i*P		Pn	23 31 57.9	+0.5			
CJR	**Cluj-Napoca**	4.81	64	⇑	*i*P		Pn	23 31 57.9	+0.5			
MPEP	**Malo Peshtene**	4.84	105		*i* P		Pn	23 31 56.8	-1.0			
CUC	**Castrocucco**	4.89	194		*e*Pn		Pn	23 31 57.8	-0.7			
CUC	**Castrocucco**	4.89	194		*e*Pn		Pn	23 31 57.8	-0.7			
SQTA	**Sankt Quirin**	4.92	302		*i* Pn		Pn	23 32 00.7	+1.8			
SQTA	**Sankt Quirin**	4.92	302		Pn		Pn	23 32 00.7	+1.8			
TRPA	**Tarpa**	4.94	45		*e*sPb		Pg	23 32 19.2	0.0			
FNA	**Florina**	4.97	142		P		Pn	23 31 59.7	+0.1			
FNA					S		Sn	23 33 01.3	+4.0			
FNA	**Florina**	4.97	142		P		Pn	23 31 59.7	+0.1			
VLC	**Villacollemand**	5.00	266		*e*Pn		Pn	23 32 00.7	+0.8			
VLC	**Villacollemand**	5.00	266		*e*Pn		Pn	23 32 00.7	+0.8			
MORC	**Moravsky Berou**	5.02	2	‖	*i*P		Pn	23 32 00.3	-0.1			
MORC	**Moravsky Berou**	5.02	2		*e*P		Pn	23 32 00.2	-0.1			
MORC	**Moravsky Berou**	5.02	2		*e*Pn		Pn	23 32 00.2	-0.2			
MORC					*e*Sn		Sn	23 32 55.5	-3.0			
MORC	**Moravsky Berou**	5.02	2		*e*Pn		Pn	23 32 00.2	-0.1			
CRVS	**Cervenica-Dubn**	5.03	33		*e*Pg		Pg	23 32 21.0	+0.1			
CRVS	**Cervenica-Dubn**	5.03	33		*e*		Pn	23 31 59.7	-0.6			
CRVS	**Cervenica-Dubn**	5.03	33		*e*PG		Pg	23 32 21.0	+0.1			
MOTA	**Moosalm**	5.04	303		*i* Pn		Pn	23 32 02.6	+2.0			
	22nm,0.3s,SNR=53											
MOTA	**Moosalm**	5.04	303		Pn		Pn	23 32 02.6	+2.0			
	22nm,0.3s,SNR=53											
KHC	**Kasperske Hory**	5.07	331	⇑	*i*PN		Pn	23 32 01.3	+0.4			
KHC					*ex*		x	23 32 10.0				
KHC					*e*SN		Sn	23 32 57.7	-1.9			
KHC					*ex*		x	23 33 11.3				
KHC					AMS		AMS	23 34 00.0				
	comp=Z,1µm,7.5s											
KHC	**Kasperske Hory**	5.07	331		*e*P		Pn	23 32 01.3	+0.4			
KHC	**Kasperske Hory**	5.07	331		Pn		Pn	23 32 01.3	+0.4			
KHC					Sn		Sn	23 32 57.7	-1.9			
KHC	**Kasperske Hory**	5.07	331		*e*Pn		Pn	23 32 01.3	+0.4			
NIE	**Niedzica**	5.09	23		*e*Pn		Pn	23 32 01.6	+0.4			
NIE					*e*Pb		Pn	23 32 02.1	+0.9			
NIE	**Niedzica**	5.09	23		*e*Pn		Pn	23 32 01.7	+0.5			
KKB	**Krupnik**	5.11	122		*i* P		Pn	23 32 01.4	0.0			
OKC	**Ostrava-Krasne**	5.11	6	‖	*i*PN		Pn	23 32 01.5	0.0			
OKC					*ex*		x	23 32 09.3				
OKC					*e*SN		Sn	23 32 58.2	-2.5			
OKC					AMS		AMS	23 34 30.0				
	comp=Z,1µm,9.0s											
OKC	**Ostrava-Krasne**	5.11	6		Pn		Pn	23 32 01.5	0.0			
OKC					Sn		Sn	23 32 58.2	-2.5			
FETA	**Feichten**	5.12	299		*e*Pn		Pn	23 32 03.1	+1.3			
	34nm,0.7s,SNR=26											
FETA				*i*	Sg		Sg	23 33 31.6	+2.5			
	159nm,0.9s											
FETA	**Feichten**	5.12	299		Pn		Pn	23 32 03.1	+1.3			
	34nm,0.7s,SNR=26											
FETA					Sg		Sg	23 33 31.6	+2.5			
	159nm,0.9s											
NEST	**Nestorio**	5.14	146		P		Pn	23 32 02.0	0.0			
NEST					S		Sn	23 33 08.6	+7.0			
NEST	**Nestorio**	5.14	146		P		Pn	23 32 02.0	0.0			
VAY	**Valandovo**	5.16	130		P		Pn	23 32 00.9	-1.3			
VAY	**Valandovo**	5.16	130	‖	*i*Pn		Pn	23 32 01.3	-0.8			
VAY	**Valandovo**	5.16	130		*e*Pn		Pn	23 32 01.4	-0.8			
VAY	**Valandovo**	5.16	130		P		Pn	23 32 00.9	-1.3			
VAY	**Valandovo**	5.16	130		*e*Pn		Pn	23 32 01.4	-0.8			
UZH	**Uzhgorod**	5.17	40		*e*P		Pn	23 32 03.5	+1.2			
UZH					*e*S		Sn	23 33 02.3	+0.2			
UZH					MLR		MLR					
	comp=Z,1µm,9.0s											
UZH	**Uzhgorod**	5.17	40		*e*P		Pn	23 32 03.5	+1.2			
UZH					*e*S		Sn	23 33 02.3	+0.2			
	comp=Z,1µm,9.0s											
ARR	**Arges**	5.22	81	⇑	*i*P		Pn	23 32 02.9	-0.2			
ARR	**Arges**	5.22	81	⇑	*i*P		Pn	23 32 02.9	-0.2			
FUORN	**Ofenpass-Fuorn**	5.28	293		*e*Pn		Pn	23 32 05.8	+1.8			
FUORN	**Ofenpass-Fuorn**	5.28	293		*e*Pn		Pn	23 32 05.8	+1.8			
RETA	**Reutte**	5.31	303		*i* Pn		Pn	23 32 05.1	+0.9			
	comp=Z,4.4nm,0.3s,SNR=11											
RETA				*i*	Sg		Sg	23 33 42.6	+7.6			
	comp=Z,116nm,0.7s											
RETA	**Reutte**	5.31	303		Pn		Pn	23 32 05.1	+0.9			
	comp=Z,4.4nm,0.3s,SNR=11											
GRG	**Griva**	5.33	134		P		Pn	23 32 03.7	-0.8			
GRG	**Griva**	5.33	134		P		Pn	23 32 03.7	-0.8			
KRLC	**Kraliky**	5.33	356	⇑	*e*PN		Pn	23 32 04.5	0.0			
KRLC					*e*SN		Sn	23 33 03.4	-2.7			
KRLC	**Kraliky**	5.33	356		Pn		Pn	23 32 04.5	0.0			
KRLC					Sn		Sn	23 33 03.4	-2.7			
RAC	**Raciborz**	5.36	6		*e*Pn		Pn	23 32 06.1	+1.2			
RAC					*e*Sn		Sn	23 33 11.0	+4.3			
RAC					*e*Sg		Sg	23 33 40.5	+3.9			
KEK	**Kerkira**	5.37	159		P		Pn	23 32 03.0	-2.0			
KEK	**Kerkira**	5.37	159		P		Pn	23 32 03.0	-2.0			
STHS	**Stebnicka Huta**	5.38	29		*e*Pg		Pg	23 32 28.7	+1.1			
STHS	**Stebnicka Huta**	5.38	29		*e*		Pn	23 32 06.4	+1.3			
STHS	**Stebnicka Huta**	5.38	29		*e*PG		Pg	23 32 28.7	+1.1			
STHS					*e*LG		Lg	23 34 05.8				
KOLS	**Kolonicke sedl**	5.38	37		*e*		Pn	23 32 05.3	+0.1			
KOLS	**Kolonicke sedl**	5.38	37		*e*PG		Pg	23 32 28.9	+1.2			
KOLS					*e*SG		Sg	23 33 47.2	+10			
KOLS					*e*LG		Lg	23 34 05.1				
ARCR	**ARCALIA**	5.43	62	‖	*i*P		Pn	23 32 05.5	-0.4			
GOPC	**GO Pecny, Ondr**	5.43	342	⇑	*e*PN		Pn	23 32 05.9	0.0			
GOPC					*ex*		x	23 32 14.3				
GOPC					*e*PG		Pg	23 32 30.6	+1.9			
GOPC					AMS		AMS	23 34 20.0				
	comp=Z,700nm,10.7s											
GOPC	**GO Pecny, Ondr**	5.43	342		Pn		Pn	23 32 05.9	0.0			
PGB	**Panagyurishte**	5.44	112		*i* P		Pn	23 32 05.7	-0.4			
KNT	**Kendrikon**	5.45	129		P		Pn	23 32 05.1	-1.1			
KNT	**Kendrikon**	5.45	129		P		Pn	23 32 05.1	-1.1			
HUMR	**Humele**	5.48	90	‖	*i*P		Pn	23 32 05.3	-1.2			
VOIR		5.52	80	‖	*i*P		Pn	23 32 07.7	+0.5			
KZN	**Kozani**	5.54	142		P		Pn	23 32 07.0	-0.4			
KZN	**Kozani**	5.54	142		P		Pn	23 32 07.0	-0.4			
PRU	**Pruhonice**	5.56	341	⇑	*e*PN		Pn	23 32 07.8	+0.2			
PRU					*ex*		x	23 32 15.6				
PRU					AMS		AMS	23 34 20.0				
	comp=Z,700nm,11.1s											
PRU	**Pruhonice**	5.56	341		Pn		Pn	23 32 07.8	+0.2			
DAVOX	**Davos/Dischmat**	5.58	294		Pn		Pn	23 32 09.0	+1.0			
	comp=Z,4.4nm,0.3s,baz=12,slow=5.7,SNR=48											
DAVOX					Lg		Lg	23 33 37.1				
	comp=Z,5.1nm,0.3s,baz=345,slow=23,SNR=3.4											
DAVOX					LR		LR	23 34 51.8				
	comp=Z,782nm,19.2s,baz=106,slow=45											
SGD	**Sagiada**	5.58	156		P		Pn	23 32 06.8	-1.1			
SGD	**Sagiada**	5.58	156		P		Pn	23 32 06.8	-1.1			
TIP	**Timpagrande**	5.59	184	⇑	*i*P		Pn	23 32 07.4	-0.8			
TIP	**Timpagrande**	5.59	184		P		Pn	23 32 06.4	-1.8			
TIP	**Timpagrande**	5.59	184		P		Pn	23 32 06.4	-1.8			
TIP	**Timpagrande**	5.59	184		*e*Pn		Pn	23 32 08.1	-0.1			
TIP	**Timpagrande**	5.59

CLL	Collm	7.16	338	eP	Pn	23	32	29.3	-0.3
CLL	Collm	7.16	338	eP	Pn	23	32	29.3	-0.3
CLL	Collm	7.16	338	ePn	Pn	23	32	29.2	-0.3
FELD	Feldberg im Sc	7.16	299	P	Pn	23	32	29.8	+0.1
LUCF	Luceram	7.20	267	P	Pn	23	32	29.3	-1.0
LUCF	Luceram	7.20	267	P	Pn	23	32	29.3	-1.0
SENIN	Lac Senin/Sane	7.21	286	ePn	Pn	23	32	30.9	+0.4
SENIN	Lac Senin/Sane	7.21	286	ePn	Pn	23	32	30.9	+0.4
REVF	Revere	7.21	265	P	Pn	23	32	29.5	-0.9
REVF	Revere	7.21	265	P	Pn	23	32	29.5	-0.9
KALE	Kalithea	7.32	149	P	Pn	23	32	31.9	+0.1
KALE	Kalithea	7.32	149	P	Pn	23	32	31.9	+0.1
BBS	Basel-Blauen	7.33	295	P	Pn	23	32	32.2	+0.2
MVIF	Mont Vial	7.34	267	P	Pn	23	32	31.9	-0.3
MVIF	Mont Vial	7.34	267	P	Pn	23	32	31.9	-0.3
EDRB	Edirne	7.47	110	P	Pn	23	32	32.3	-1.5
EDRB	Edirne	7.47	110	P	Pn	23	32	32.3	-1.5
ALN	Alexandroupoli	7.49	118	P	Pn	23	32	33.0	-1.1
ALN	Alexandroupoli	7.49	118	P	Pn	23	32	33.0	-1.1
MBDF	Montbardon	7.51	273	ePn	Pn	23	32	32.0	-2.5
MBDF				eSn	Sn	23	33	50.2	-10
	comp=Z,101nm,0.7s								
MBDF	Montbardon	7.51	273	eP	Pn	23	32	32.0	-2.5
MBDF				e		23	33	50.2	
MBDF	Montbardon	7.51	273	ePn	Pn	23	32	32.0	-2.5
MBDF	Montbardon	7.51	273	ePn	Pn	23	32	32.0	-2.5
MBDF				eSn	Sn	23	33	50.2	-10
LPG	La Plagne	7.51	279	eP	Pn	23	32	36.1	+1.5
LPG				eSn	Sn	23	33	51.2	-8.9
	comp=Z,126nm,0.7s								
LPG	La Plagne	7.51	279	eP	Pn	23	32	36.1	+1.5
LPG				e		23	33	51.2	
LPG	La Plagne	7.51	279	eP	Pn	23	32	36.1	+1.5
LPG	La Plagne	7.51	279	eP	Pn	23	32	36.1	+1.5
LPG				eSn	Sn	23	33	51.2	-8.9
LPL	La Plagne	7.52	280	eP	Pn	23	32	36.0	+1.2
LPL				eSn	Sn	23	33	51.2	-9.1
	comp=Z,108nm,0.7s								
LPL	La Plagne	7.52	280	eP	Pn	23	32	36.0	+1.2
LPL				e		23	33	51.2	
LPL	La Plagne	7.52	280	eP	Pn	23	32	36.0	+1.2
LPL	La Plagne	7.52	280	eP	Pn	23	32	36.0	+1.2
LPL				eSn	Sn	23	33	51.2	-9.1
CALN	Calern	7.55	266	P	Pn	23	32	34.3	-0.8
CALN	Calern	7.55	266	P	Pn	23	32	34.3	-0.8
TOD	Tromm	7.55	313	P	Pn	23	32	36.4	+1.4
VAE	Valguarnera	7.60	198	Pn	Pn	23	32	36.9	+1.2
	comp=Z,0.2nm,0.3s,baz=207,slow=18,SNR=1.8								
MOF	Molkenrain	7.70	297	P	Pn	23	32	37.1	0.0
MOF	Molkenrain	7.70	297	P	Pn	23	32	37.1	0.0
LOMF	Lomont	7.74	293	P	Pn	23	32	36.8	-0.8
LOMF	Lomont	7.74	293	P	Pn	23	32	36.8	-0.8
LANF	Langenberg	7.76	306	P	Pn	23	32	39.1	+1.2
LANF	Langenberg	7.76	306	P	Pn	23	32	39.1	+1.2
FRF	La Foret Royal	7.76	265	ePn	Pn	23	32	36.6	-1.3
FRF				eSn	Sn	23	33	56.4	-10
	comp=Z,68nm,0.5s								
FRF	La Foret Royal	7.76	265	eP	Pn	23	32	36.6	-1.3
FRF				e		23	33	56.4	
FRF	La Foret Royal	7.76	265	ePn	Pn	23	32	36.6	-1.3
FRF	La Foret Royal	7.76	265	ePn	Pn	23	32	36.6	-1.3
FRF				eSn	Sn	23	33	56.4	-10
KTD	Kalmit	7.78	309	P	Pn	23	32	38.9	+0.8
CLTB	Caltabellotta	7.81	205	ePn	Pn	23	32	41.0	+2.4
ECH	Echery	7.81	300	P	Pn	23	32	37.8	-0.8
ECH	Echery	7.81	300	P	Pn	23	32	37.8	-0.8
CDF	Champ du Feu	7.82	301	ePn	Pn	23	32	37.6	-1.1
CDF	Champ du Feu	7.82	301	eP	Pn	23	32	37.6	-1.1
CDF	Champ du Feu	7.82	301	ePn	Pn	23	32	37.6	-1.1
CDF	Champ du Feu	7.82	301	ePn	Pn	23	32	37.6	-1.1
HINF	Hinteralfeld	7.86	297	ePn	Pn	23	32	38.0	-1.3
HINF				eSn	Sn	23	33	58.4	-10
	comp=Z,85nm,0.8s								
HINF	Hinteralfeld	7.86	297	eP	Pn	23	32	38.0	-1.3
HINF				e		23	33	58.4	
HINF	Hinteralfeld	7.86	297	ePn	Pn	23	32	38.0	-1.3
HINF	Hinteralfeld	7.86	297	ePn	Pn	23	32	38.0	-1.3
HINF				eSn	Sn	23	33	58.4	-10
VSL	Villasalto	7.90	231	ePn	Pn	23	32	42.2	+2.5
LMR	La Mourre	7.91	263	ePn	Pn	23	32	38.4	-1.5
LMR				eSn	Sn	23	33	59.5	-10
	comp=Z,25nm,0.4s								
LMR	La Mourre	7.91	263	eP	Pn	23	32	38.4	-1.5
LMR				e		23	33	59.5	
LMR	La Mourre	7.91	263	ePn	Pn	23	32	38.4	-1.5
LMR	La Mourre	7.91	263	ePn	Pn	23	32	38.4	-1.5
LMR				eSn	Sn	23	33	59.5	-10
TIRR	Tirgusor	7.93	88	iP	Pn	23	32	39.0	-1.1
TIRR	Tirgusor	7.93	88	eP	Pn	23	32	41.0	+0.9
TIRR	Tirgusor	7.93	88	eP	Pn	23	32	41.0	+0.9
TIRR	Tirgusor	7.93	88	ePn	Pn	23	32	41.0	+0.9
GDM	Grand'Maison	7.95	277	P	Pn	23	32	38.8	-1.8
GDM	Grand'Maison	7.95	277	P	Pn	23	32	38.8	-1.8
CABF	La Chapelle	8.08	287	ePn	Pn	23	32	41.3	-1.0
CABF	La Chapelle	8.08	287	eP	Pn	23	32	41.3	-1.0
CABF	La Chapelle	8.08	287	ePn	Pn	23	32	41.3	-1.0
CABF	La Chapelle	8.08	287	ePn	Pn	23	32	41.3	-1.0
ORIF	Oris-en-Rattie	8.13	275	eP	Pn	23	32	42.2	-0.8
ORIF				eSn	Sn	23	34	05.7	-9.4
	comp=Z,80nm,0.6s								
ORIF	Oris-en-Rattie	8.13	275	eP	Pn	23	32	42.2	-0.8
ORIF				e		23	34	05.7	
ORIF	Oris-en-Rattie	8.13	275	eP	Pn	23	32	42.2	-0.8
ORIF	Oris-en-Rattie	8.13	275	eP	Pn	23	32	42.2	-0.8
ORIF				eSn	Sn	23	34	05.7	-9.4
GRN	Grenoble	8.21	277	P	Pn	23	32	43.0	-1.1
GRN	Grenoble	8.21	277	P	Pn	23	32	43.0	-1.1
HAU	Haudompre	8.25	297	ePn	Pn	23	32	43.1	-1.4
HAU	Haudompre	8.25	297	eP	Pn	23	32	43.1	-1.4
HAU	Haudompre	8.25	297	ePn	Pn	23	32	43.1	-1.4
HAU	Haudompre	8.25	297	ePn	Pn	23	32	43.1	-1.4
KIS	Kishinev	8.34	70	eP	Pg	23	33	25.0	+0.9
KIS				LRM	MLR	23	36	20.0	
	comp=Z,300nm,12.0s								
ABH	Alteburg	8.38	311	P	Pn	23	32	47.3	+1.0
SMRF	Simiane la Rot	8.45	269	eP	Pn	23	32	47.0	-0.3
SMRF				eSn	Sn	23	34	13.0	-10
	comp=Z,17nm,0.6s								
SMRF	Simiane la Rot	8.45	269	eP	Pn	23	32	47.0	-0.3
SMRF	Simiane la Rot	8.45	269	eP	Pn	23	32	47.0	-0.3
SMRF				eSn	Sn	23	34	13.0	-10
RUP	Ruppelstein	8.55	309	P	Pn	23	32	49.5	+0.8
PAGF	Fort de Pagny	8.83	300	eP	Pn	23	32	53.6	+1.1
	baz=124								
PAGF	Fort de Pagny	8.83	300	eP	Pn	23	32	53.6	+1.1
PAGF	Fort de Pagny	8.83	300	eP	Pn	23	32	53.6	+1.1
AYVA	Ayvalik	8.85	125	iP	Pn	23	32	52.7	0.0
AYVA	Ayvalik	8.85	125	P	Pn	23	32	52.7	0.0
VIVF	Saint-Julien-l	8.99	275	ePn	Pn	23	32	52.8	-1.9
VIVF				eSn	Sn	23	34	25.6	-11
	comp=Z,52nm,0.9s								
VIVF	Saint-Julien-l	8.99	275	eP	Pn	23	32	52.8	-1.9
VIVF	Saint-Julien-l	8.99	275	ePn	Pn	23	32	52.8	-1.9
VIVF	Saint-Julien-l	8.99	275	ePn	Pn	23	32	52.8	-1.9
VIVF				eSn	Sn	23	34	25.6	-11
WLF	Walferdange	9.04	307	P	Pn	23	32	56.7	+1.3
WLF	Walferdange	9.04	307	eP	Pn	23	32	55.3	-0.1
WLF	Walferdange	9.04	307	ePn	Pn	23	32	55.2	-0.1
WLF	Walferdange	9.04	307	ePn	Pn	23	32	55.2	-0.1
SSB	Saint Sauveur	9.06	278	eP	Pn	23	32	53.8	-1.9
SSB	Saint Sauveur	9.06	278	eP	Pn	23	32	53.8	-1.9
SSB	Saint Sauveur	9.06	278	ePn	Pn	23	32	53.8	-1.9
BALY	Balya	9.14	120	iP	Pn	23	32	56.4	-0.4
BALY	Balya	9.14	120	P	Pn	23	32	56.4	-0.4
SFTF	Sexfontaines	9.14	296	eP	Pn	23	32	56.8	0.0
	baz=121								
SFTF	Sexfontaines	9.14	296	eP	Pn	23	32	56.8	0.0
SFTF	Sexfontaines	9.14	296	eP	Pn	23	32	56.8	0.0
MEZF	Maizieres J'vi	9.23	298	eP	Pn	23	32	58.7	+0.8
	baz=119								
MEZF	Maizieres J'vi	9.23	298	eP	Pn	23	32	58.7	+0.8
MEZF	Maizieres J'vi	9.23	298	eP	Pn	23	32	58.7	+0.8
URLA	Izmir	9.44	129	iP	Pn	23	33	01.4	+0.4
URLA	Izmir	9.44	129	P	Pn	23	33	01.4	+0.4
MEM	Membach	9.61	312	P	Pn	23	33	03.9	+0.7
SMF	Signal de Mont	9.62	286	ePn	Pn	23	33	01.9	-1.4
SMF				eSn	Sn	23	34	40.9	-11
	comp=Z,24nm,0.5s								
SMF	Signal de Mont	9.62	286	eP	Pn	23	33	01.9	-1.4
SMF	Signal de Mont	9.62	286	ePn	Pn	23	33	01.9	-1.4
SMF	Signal de Mont	9.62	286	ePn	Pn	23	33	01.9	-1.4
SMF				eSn	Sn	23	34	40.9	-11
LASF	Ste Croix	9.66	271	ePn	Pn	23	33	01.1	-2.7
LASF	Ste Croix	9.66	271	ePn	Pn	23	33	01.1	-2.7
LOR	Lormes	9.69	290	ePn	Pn	23	33	03.3	-1.0
	baz=115								
LOR				eSn	Sn	23	34	42.8	-11
	comp=Z,16nm,0.5s								
LOR	Lormes	9.69	290	eP	Pn	23	33	03.3	-1.0
LOR	Lormes	9.69	290	ePn	Pn	23	33	03.3	-1.0
LOR	Lormes	9.69	290	ePn	Pn	23	33	03.3	-1.0
LOR				eSn	Sn	23	34	42.8	-11
PLDF	La Plantade	9.72	282	P	Pn	23	33	03.2	-1.5
PLDF	La Plantade	9.72	282	P	Pn	23	33	03.2	-1.5
HGN	Heimansgroeve	9.73	312	eP	Pn	23	33	05.8	+1.0
HGN				eS	Sn	23	34	49.9	-4.3
HGN	Heimansgroeve	9.73	312	eP	Pn	23	33	05.8	+1.0
BCLA	Clavier	9.89	309	P	Pn	23	33	08.1	+1.1
SSF	Saint Saulge	9.90	288	ePn	Pn	23	33	05.8	-1.3
SSF	Saint Saulge	9.90	288	eP	Pn	23	33	05.8	-1.3
SSF	Saint Saulge	9.90	288	ePn	Pn	23	33	05.8	-1.3
SSF	Saint Saulge	9.90	288	ePn	Pn	23	33	05.8	-1.3
AVF	Avril sur Loir	9.97	287	ePn	Pn	23	33	06.4	-1.6
AVF	Avril sur Loir	9.97	287	eP	Pn	23	33	06.4	-1.6
AVF	Avril sur Loir	9.97	287	ePn	Pn	23	33	06.4	-1.6
AVF	Avril sur Loir	9.97	287	ePn	Pn	23	33	06.4	-1.6
KIEV	Kiev	9.97	49	eP	Pn	23	33	09.9	+1.8
KIEV	Kiev	9.97	49	ePn	Pn	23	33	08.1	0.0
KIEV	Kiev	9.97	49	ePn	Pn	23	33	08.1	0.0
LBL	Lubilhac	9.98	278	P	Pn	23	33	06.4	-1.9
LBL	Lubilhac	9.98	278	P	Pn	23	33	06.4	-1.9
AKASG	Malin Array Be	9.98	49	Pn	Pn	23	33	08.3	+0.1
	comp=Z,0.4nm,0.3s,baz=236,slow=12,SNR=6.8								
AKASG	Malin Array Be	9.98	49	ceP	Pn	23	33	14.6	+6.4
AKASG				pmax	pmax				
	comp=Z,1.0nm,0.8s								
AKBB	Malin Array Si	9.98	49	eP	Pn	23	33	08.5	+0.3
AKBB	Malin Array Si	9.98	49	ePn	Pn	23	33	08.5	+0.3
AKBB	Malin Array Si	9.98	49	ePn	Pn	23	33	08.5	+0.3
GIVF	Givet	10.01	307	eP	Pn	23	33	08.9	+0.3
GIVF	Givet	10.01	307	eP	Pn	23	33	08.9	+0.3
GIVF	Givet	10.01	307	eP	Pn	23	33	08.9	+0.3
GIVF	Givet	10.01	307	eP	Pn	23	33	08.9	+0.3
SUW	Suwalki	10.02	20	ePn	Pn	23	33	08.9	+0.3
SUW	Suwalki	10.02	20	ePn	Pn	23	33	09.0	+0.3
KLNR	Kaliningrad	10.03	10	eP	Pn	23	33	09.6	+0.7
KLNR	Kaliningrad	10.03	10	eP	Pn	23	33	09.6	+0.7
AGO	Saint Agoulin	10.06	282	P	Pn	23	33	08.1	-1.3
AGO	Saint Agoulin	10.06	282	P	Pn	23	33	08.1	-1.3
DOU	Dourbes	10.13	306	P	Pn	23	33	12.4	+2.1
	comp=Z,8.3nm,1.6s								
PYM	Petit Puy Mans	10.14	281	P	Pn	23	33	08.3	-2.2
PYM	Petit Puy Mans	10.14	281	P	Pn	23	33	08.3	-2.2
BGF	Bois d'Agland	10.29	285	ePn	Pn	23	33	09.5	-3.0
BGF				eSn	Sn	23	34	56.7	-11
	comp=Z,27nm,0.6s								
BGF	Bois d'Agland	10.29	285	eP	Pn	23	33	09.5	-3.0
BGF	Bois d'Agland	10.29	285	ePn	Pn	23	33	09.5	-3.0
BGF				eSn	Sn	23	34	56.7	-11
SANT	Santorini	10.41	141	ePn	Pn	23	33	16.4	+2.1
TCF	Toulx Ste Croi	10.71	284	ePn	Pn	23	33	16.7	-1.6
TCF	Toulx Ste Croi	10.71	284	eP	Pn	23	33	16.7	-1.6
TCF	Toulx Ste Croi	10.71	284	ePn	Pn	23	33	16.7	-1.6
TCF	Toulx Ste Croi	10.71	284	ePn	Pn	23	33	16.7	-1.6
CAF	Calviac	10.83	276	ePn	Pn	23	33	18.0	-2.0
CAF				eSn	Sn	23	35	09.9	-11
	comp=Z,15nm,0.7s								
CAF	Calviac	10.83	276	eP	Pn	23	33	18.0	-2.0
CAF	Calviac	10.83	276	ePn	Pn	23	33	18.0	-2.0
CAF	Calviac	10.83	276	ePn	Pn	23	33	18.0	-2.0
CAF				eSn	Sn	23	35	09.9	-11
KEST	Kesra	10.87	217	Pn	Pn	23	33	21.9	+1.3
	comp=Z,0.3nm,0.3s,baz=323,slow=12,SNR=7.5								
KEST				LR	LR	23	37	29.0	
	comp=Z,184nm,21.2s,baz=343,slow=37								
KEST	Kesra	10.87	217	ePn	Pn	23	33	22.6	+2.0
KEST	Kesra	10.87	217	ePn	Pn	23	33	22.6	+2.0
MTLF	Montolieu	10.96	268	ePn	Pn	23	33	19.2	-2.5
MTLF	Montolieu	10.96	268	eP	Pn	23	33	19.2	-2.5
MTLF	Montolieu	10.96	268	ePn	Pn	23	33	19.2	-2.5
MTLF	Montolieu	10.96	268	ePn	Pn	23	33	19.2	-2.5
IDI	Anoyia	11.09	146	Pn	Pn	23	33	21.8	-1.8
	comp=Z,1.0nm,0.3s,baz=317,slow=19,SNR=7.6								
KARP	Karpathos	11.88	137	ePn	Pn	23	33	35.3	+0.9
KARP	Karpathos	11.88	137	ePn	Pn	23	33	35.3	+0.9
MFF	Saint Martin d	12.35	285	eP	Pn	23	33	40.9	+0.2
MFF	Saint Martin d	12.35	285	eP	Pn	23	33	40.9	+0.2
MFF	Saint Martin d	12.35	285	eP	Pn	23	33	40.9	+0.2
MFF	Saint Martin d	12.35	285	eP	Pn	23	33	40.9	+0.2
BR231	Keskin MP Arra	12.45	108	ePn	Pn	23	33	43.2	+1.0
BR231	Keskin MP Arra	12.45	108	ePn	Pn	23	33	43.2	+1.0
FLN	La Foliniere	12.84	294	eP	Pn	23	33	47.0	-0.3
	baz=108								
FLN	La Foliniere	12.84	294	eP	Pn	23	33	47.0	-0.3
FLN	La Foliniere	12.84	294	eP	Pn	23	33	47.0	-0.3
FLN	La Foliniere	12.84	294	eP	Pn	23	33	47.0	-0.3
GRR	Gorron	13.02	293	eP	Pn	23	33	50.8	+1.1
GRR	Gorron	13.02	293	eP	Pn	23	33	50.8	+1.1
GRR	Gorron	13.02	293	eP	Pn	23	33	50.8	+1.1
GRR	Gorron	13.02	293	eP	Pn	23	33	50.8	+1.1
BR131	Keskin Array S	13.10	107	ePn	Pn	23	33	52.1	+1.1
BR131	Keskin Array S	13.10	107	ePn	Pn	23	33	52.1	+1.1
BRTR	Keskin Array B	13.10	107	Pn	Pn	23	33	50.8	-0.3
	comp=Z,0.1nm,0.3s,baz=298,slow=10,SNR=8.6								
BRTR				LR	LR	23	39	25.0	
	comp=Z,84nm,19.6s,baz=293,slow=40								
ANN	Anapa	14.29	83	eP	Pn	23	34	03.7	-3.5
ANN				eS	Sn	23	36	42.3	-3.5
ANN				pmax	pmax				
	comp=Z,17nm,1.5s								
ANN				MLR	MLR				
	comp=Z,410nm,14.0s								
ANN				MLR	MLR				
	comp=N,328nm,14.0s								
CWF	Charnwood Fore	14.62	310	ePn	Pn	23	34	10.7	-0.9
CWF	Charnwood Fore	14.62	310	ePn	Pn	23	34	10.7	-0.9
VSU	Vasula	14.89	20	ceP	Pn	23	34	16.1	+0.8
VSU				pmax	pmax				
	comp=Z,20nm,0.7s								
DYA	Yadsworthy	15.39	299	ePn	Pn	23	34	22.0	0.0
	comp=Z,49nm,1.3s								
DYA	Yadsworthy	15.39	299	ePn	Pn	23	34	21.9	0.0
	comp=Z,49nm,1.3s								
HFS	Hagfors	15.55	353	Pn	Pn	23	34	23.4	-0.6
	comp=Z,0.3nm,0.3s,baz=178,slow=13,SNR=9.8								
CSS	Mathiatis	15.69	123	ePn	P	23	34	28.5	-1.6
	comp=Z,23nm,1.7s								
VSR	Storozhevoye	15.96	58	eP	Pn	23	34	29.3	-0.1
VSR				pmax	pmax				
	comp=Z,10.0nm,1.3s								
OBN	Obninsk	16.10	43	LR	LR	23	41	19.3	
	comp=Z,153nm,18.2s,baz=262,slow=40								
OBN	Obninsk	16.10	43	deP	P	23	34	34.4	-0.1
OBN				pmax	pmax				
	comp=Z,44nm,2.5s								
OBN				MLR	MLR				
	comp=Z,178nm,14.0s								
OBN	Obninsk	16.10	43	ePn	Pn	23	34	31.4	+0.3
	comp=Z,56nm,1.7s								
OBN	Obninsk	16.10	43	eP	P	23	34	34.4	-0.1
	comp=Z,178nm,14.0s								
OBN	Obninsk	16.10	43	ePn	Pn	23	34	31.4	+0.3
	comp=Z,56nm,1.7s								
LPSR	Galich'ya Gora	16.25	53	eP	Pn	23	34	32.4	-0.6
LPSR				pmax	pmax				
	comp=Z,5.0nm,0.8s								
NC602	NORSAR Array S	16.37	350	ePn	Pn	23	34	33.4	-1.2
NC602	NORSAR Array S	16.37	350	ePn	Pn	23	34	33.4	-1.2
ES19	SONSECA Array	16.49	260	ePn	P	23	34	37.8	-1.2
ESDC	Sonseca Array	16.55	260	Pn	Pn	23	34	35.8	-1.2
	comp=Z,0.5nm,0.3s,baz=67,slow=12,SNR=57								
ESLA	Sonseca Array	16.55	260	ePn	P	23	34	38.3	-1.3
	comp=Z,12nm,0.8s								
NAO01	NORSAR Array S	16.56	349	ePn	Pn	23	34	35.4	-1.6
NAO01	NORSAR Array S	16.56	349	ePn	Pn	23	34	35.4	-1.6
NB2	NORSAR Subarra	16.70	350	P	Pn	23	34	37.6	-1.3
	comp=Z,2.6nm,0.8s,baz=165,slow=11								
NB201	NORSAR Array S	16.70	350	ePn	Pn	23	34	38.4	-0.4
NB201	NORSAR Array S	16.70	350	ePn	Pn	23	34	38.4	-0.4
NOA	NORSAR Array B	16.70	350	Pn	Pn	23	34	36.5	-2.4
	comp=Z,0.1nm,0.3s,baz=165,slow=11,SNR=10.0								
NOA				LR	LR	23	40	39.8	
	comp=Z,24nm,18.5s,baz=170,slow=36								
NC405	NORSAR Array S	16.71	351	ePn	Pn	23	34	38.5	-0.4
NC405	NORSAR Array S	16.71	351	ePn	Pn	23	34	38.5	-0.4
NBO00	NORSAR Array S	16.75	349	ePn	Pn	23	34	38.7	-0.8
NBO00	NORSAR Array S	16.75	349	ePn	Pn	23	34	38.7	-0.8
NBO02	NORSAR Array S	16.76	349	ePn	Pn	23	34	39.3	-0.2
NBO02	NORSAR Array S	16.76	349	ePn	Pn	23	34	39.3	-0.2
EKA	Eskdalemuir Ar	16.81	316	Pn	Pn	23	34	40.3	+0.1
	baz=116,slow=14,SNR=6.2								
ESK	Eskdalemuir	16.82	316	iP	P	23	34	43.8	+1.3
ESK	Eskdalemuir	16.82	316	iP	P	23	34	43.8	+1.3
NC303	NORSAR Array S	16.87	350	ePn	Pn	23	34	39.3	-1.5
NC303	NORSAR Array S	16.87	350	ePn	Pn	23	34	39.3	-1.5
PAB	San Pablo	16.87	260	eP	Pn	23	34	41.9	+0.8
PAB				pmax	pmax				
	comp=Z,13nm,0.8s								
PAB	San Pablo	16.87	260	ePn	Pn	23	34	41.9	+0.8
	comp=Z,13nm,0.8s								
MOS	Moscow	16.94	42	eP	Pn	23	34	41.1	-0.7
MOS				pmax	pmax				
	comp=Z,44nm,1.0s								
MOS	Moscow	16.94	42	eP	Pn	23	34	41.1	-0.7
	comp=Z,44nm,1.0s								
NC204	NORSAR Array S	16.99	349	ePn	Pn	23	34	42.2	-0.3
NC204	NORSAR Array S	16.99	349	ePn	Pn	23	34	42.2	-0.3
FINES	FINESS Array B	17.49	14	P	Pn	23	34	47.5	-1.1
	comp=Z,1.7nm,0.3s,baz=189,slow=12,SNR=24								
FINES				LR	LR	23	41	41.4	
	comp=Z,105nm,20.9s,baz=194,slow=38								
FIA1	FINESS Array S	17.50	14	ePn	Pn	23	34	47.5	-1.2
FIA1	FINESS Array S	17.50	14	ePn	Pn	23	34	47.5	-1.2
VRH	Novokhopyorsk	17.52	60	eP	Pn	23	34	49.0	-0.1
VRH				pmax	pmax				
	comp=Z,20nm,1.7s								
VRH	Novokhopyorsk	17.52	60	eP	Pn	23	34	49.0	-0.1
	comp=Z

	comp=Z,4.9nm,0.7s								
FURI	**Furi**	**40.23**	**146**	*e*P		**P**		**23 38 22.6**	**+0.4**
	comp=Z,4.9nm,0.7s								
KBL	**Kabul**	**40.51**	**86**	*e*P		**P**		**23 38 24.3**	**0.0**
KBL				pmax	pmax				
	comp=Z,4.0nm,1.2s								
KBL	**Kabul**	**40.51**	**86**	*e*P		**P**		**23 38 24.3**	**0.0**
	comp=Z,4.3nm,1.2s								
KBL	**Kabul**	**40.51**	**86**	*e*P		**P**		**23 38 24.3**	**0.0**
	comp=Z,4.3nm,1.2s								
AAK	**Ala-Archa**	**40.67**	**72**⇑	*e*P		**P**		**23 38 27.5**	**+2.1**
AAK				pmax	pmax				
	comp=Z,3.0nm,1.0s								
AAK	**Ala-Archa**	**40.67**	**72**	*e*P		**P**		**23 38 25.4**	**-0.1**
	comp=Z,1.9nm,0.8s								
AAK	**Ala-Archa**	**40.67**	**72**	*e*P		**P**		**23 38 25.4**	**-0.1**
	comp=Z,1.9nm,0.8s								
NRIK	**Noril'sk**	**42.14**	**30**	LR		LR		23 58 12.5	
	comp=Z,60nm,18.7s,baz=334,slow=39								
DBIC	**Dimbokro**	**42.58**	**214**	P		**P**		**23 38 40.0**	**-1.1**
	comp=Z,2.1nm,0.6s,baz=4.9,slow=9.5,SNR=6.0								
DBIC	**Dimbokro**	**42.58**	**214**	P		**P**		**23 38 40.0**	**-1.1**
DBIC				pmax	pmax				
	comp=Z,2.0nm,0.6s								
DBIC	**Dimbokro**	**42.58**	**214**	P		**P**		**23 38 40.0**	**-1.1**
	comp=Z,2.0nm,0.6s								
ZAA0	**Zalesovo Array**	**43.35**	**53**	*e*P		**P**		**23 38 46.8**	**-0.2**
ZAA0	**Zalesovo Array**	**43.35**	**53**	*e*P		**P**		**23 38 46.8**	**-0.2**
ZALV	**Zalesovo Beam**	**43.35**	**53**	P		**P**		**23 38 47.0**	**0.0**
	comp=Z,1.2nm,0.7s,baz=292,slow=8.0,SNR=7.7								
ZALV				LR		LR		23 57 44.9	
	comp=Z,67nm,19.8s,baz=252,slow=37								
MKAR	**Makanchi Array**	**44.20**	**63**	P		**P**		**23 38 53.1**	**-0.8**
	comp=Z,1.0nm,0.8s,baz=278,slow=8.3,SNR=6.7								
MKAR				LR		LR		00 00 45.0	
	comp=Z,25nm,19.6s,baz=298,slow=41								
MKAR	**Makanchi Array**	**44.20**	**63***c**e*P			**P**		**23 38 55.2**	**+1.2**
MKAR				pmax	pmax				
	comp=Z,1.0nm,0.7s								
MK01	**Makanchi Array**	**44.21**	**63**	*e*P		**P**		**23 38 53.9**	**-0.2**
MK01	**Makanchi Array**	**44.21**	**63**	*e*P		**P**		**23 38 53.9**	**-0.2**
WMQ	**Urumqi**	**48.90**	**65**	*e*P		**P**		**23 39 32.0**	**+1.0**
WMQ				pmax	pmax				
	comp=Z,2.0nm,0.6s								
WMQ				pmax	pmax				
	comp=Z,23nm,3.8s								
WMQ				LR	LR				
	comp=N,73nm,19.8s								
WMQ				LR	LR				
	comp=E,27nm,21.4s								
WMQ				LR	LR				
	comp=Z,16nm,18.0s								
FRB	**Frobisher Bay**	**49.35**	**324**	P		**P**		**23 39 33.5**	**-0.4**
	comp=Z,2.8nm,0.7s,baz=55,slow=5.6,SNR=6.3								
TIXI	**Tiksi**	**54.36**	**21**⇑	*e*P		**P**		**23 40 12.8**	**+1.6**
TIXI				pmax	pmax				
	comp=Z,1.0nm,1.0s								
TIXI	**Tiksi**	**54.36**	**21**	*e*P		**P**		**23 40 11.7**	**+0.5**
	comp=Z,7.4nm,1.8s								
TIXI	**Tiksi**	**54.36**	**21**	*e*P		**P**		**23 40 11.7**	**+0.5**
	comp=Z,7.4nm,1.8s								
SONA1	**Songino Array**	**58.25**	**52**	*e*P		**P**		**23 40 39.5**	**0.0**
SONA1	**Songino Array**	**58.25**	**52**	*e*P		**P**		**23 40 39.5**	**0.0**
SONM	**Songino Array**	**58.25**	**52**	P		**P**		**23 40 39.0**	**-0.5**
	comp=Z,0.6nm,0.5s,baz=297,slow=6.5,SNR=4.7								
ULN	**Ulaanbaatar**	**58.60**	**52**⇑	*e*P		**P**		**23 40 44.2**	**+2.2**
ULN				pmax	pmax				
	comp=Z,1.0nm,1.2s								
ULN	**Ulaanbaatar**	**58.60**	**52**	*e*P		**P**		**23 40 41.8**	**-0.2**
	comp=Z,12nm,2.0s								
ULN	**Ulaanbaatar**	**58.60**	**52**	*e*P		**P**		**23 40 41.8**	**-0.2**
	comp=Z,12nm,2.0s								
ASCN	**Ascension**	**59.71**	**217**	*e*P		**P**		**23 40 50.7**	**+0.9**
	comp=Z,313nm,1.4s								
ASCN	**Ascension**	**59.71**	**217**	*e*P		**P**		**23 40 50.7**	**+0.9**
	comp=Z,313nm,1.4s								
YAK	**Yakutsk**	**60.59**	**30**	LR		LR		00 09 48.1	
	comp=Z,38nm,18.4s,baz=290,slow=39								
SHEL	**Horse Pasture**	**63.97**	**205**	*i* P		P		23 41 24.1	+5.7
SADO	**Sadowa**	**64.18**	**308**	LR		LR		00 06 02.7	
	comp=Z,44nm,20.0s,baz=100,slow=33								
BILL	**Bilibino**	**65.13**	**12**	*e*P		**P**		**23 41 27.4**	**+2.0**
BILL				pmax	pmax				
	comp=Z,1.0nm,1.0s								
BILL				MLR	MLR				
	comp=Z,64nm,18.0s								
BILL	**Bilibino**	**65.13**	**12**	*e*P		**P**		**23 41 27.4**	**+2.0**
	comp=Z,64nm,18.0s								
INK	**Inuvik**	**65.16**	**348**	P		**P**		**23 41 26.1**	**+0.6**
	comp=Z,0.9nm,1.0s,baz=1.5,slow=7.0,SNR=3.0								
HHC	**Hu-ho-hao-te**	**65.34**	**56**	*e*P		**P**		**23 41 26.8**	**-0.6**
HHC				pmax	pmax				
	comp=Z,13nm,0.7s								
HHC				pmax	pmax				
	comp=Z,76nm,8.6s								
YKA	**Yellowknife Ar**	**66.39**	**338**	P		**P**		**23 41 32.9**	**-0.7**
	comp=Z,0.6nm,0.8s,baz=36,slow=5.8,SNR=9.2								
ULM	**Lac du Bonnet**	**69.03**	**321**	LR		LR		00 11 16.9	
	comp=Z,44nm,18.2s,baz=320,slow=35								
MA2	**Magadan**	**69.23**	**23**	LR		LR		00 16 09.4	
	comp=Z,85nm,18.3s,baz=320,slow=39								
BPAW	**Bear Paw Mtn.**	**71.09**	**355**	*e*P		**P**		**23 42 03.2**	**+0.2**
	comp=Z,2.9nm,1.9s								
BPAW	**Bear Paw Mtn.**	**71.09**	**355**	*e*P		**P**		**23 42 03.2**	**+0.2**
	comp=Z,2.9nm,1.9s								
CMAR	**Chiang Mai Arr**	**71.38**	**82**	P		**P**		**23 42 04.7**	**-0.7**
	comp=Z,0.9nm,0.3s,baz=312,slow=7.8,SNR=6.5								
PDAR	**Pinedale Array**	**80.79**	**323**	P		**P**		**23 42 57.3**	**-1.7**
	comp=Z,0.5nm,0.7s,baz=36,slow=5.5,SNR=4.4								
PDAR				LR		LR		00 21 26.5	
	comp=Z,29nm,18.5s,baz=46,slow=38								
WMOK	**Wichita Mounta**	**81.95**	**312**	*e*P		**P**		**23 43 05.3**	**+0.3**
WMOK				pmax	pmax				
	comp=Z,4.0nm,1.0s								
WMOK	**Wichita Mounta**	**81.95**	**312**	*e*P		**P**		**23 43 05.2**	**+0.3**
	comp=Z,3.6nm,1.0s								
WMOK	**Wichita Mounta**	**81.95**	**312**	*e*P		**P**		**23 43 05.2**	**+0.3**
	comp=Z,3.6nm,1.0s								
TXAR	**Lajitas Array**	**88.75**	**312**	P		**P**		**23 43 39.7**	**+0.6**
	comp=Z,1.6nm,0.8s,baz=56,slow=4.2,SNR=19								
TXAR				LR		LR		00 21 53.3	
	comp=Z,43nm,18.1s,baz=0.0,slow=35								
ASAR	**Alice Springs**	**124.92**	**90**	PKP		**PKPdf**		**23 49 46.2**	**+0.8**
	comp=Z,0.4nm,0.7s,baz=290,slow=3.1,SNR=4.1								
ASAR	**Alice Springs**	**124.92**	**90**	PKIKP		**PKPdf**		**23 49 46.2**	**+0.8**
ASAR				pmax	pmax				
	comp=Z,1.0nm,0.9s								

IDC 28 23:31:01.3±1.5,**4°20N**×**126°58E, h0**km**, mb3.6/5, mb1 3.8/5, mb1mx3.5**/45**, mbtmp3.7**/5**, MS3.8**/2**, Ms1 3.8**/2**, ms1mx2.8**/46**, Error ellipse: s-maj=101.9km s-min=22.7km az=68.0, Talaud Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LEM	**Lembang**	**21.87**	**240**	LR	LR	23 46 02.7	
	comp=Z,70nm,18.2s,baz=298,slow=41						
FITZ	**Fitzroy Crossi**	**22.18**	**182**	P	P	23 36 00.0	+0.9
	0.8nm,0.4s,baz=2.0,slow=7.8,SNR=7.3						
WRA	**Warramunga Arr**	**25.17**	**163**	P	P	23 36 27.7	-0.9
	2.5nm,0.7s,baz=340,slow=10,SNR=20						
ASAR	**Alice Springs**	**28.60**	**166**	P	P	23 36 59.8	+0.3
	0.2nm,0.5s,baz=340,slow=8.0,SNR=4.1						
ASAR				PcP	PcP	23 40 10.6	-0.3
	0.3nm,0.4s,baz=341,slow=2.0,SNR=4.5						
STKA	**Stephens Creek**	**38.62**	**159**	P	P	23 38 26.1	-0.3
	1.5nm,0.6s,baz=330,slow=8.6,SNR=4.4						
MKAR	**Makanchi Array**	**57.09**	**325**	P	P	23 40 49.5	0.0
	0.3nm,0.4s,baz=117,slow=7.5,SNR=8.1						
BBB	**Bella Bella**	**96.02**	**37**	LR	LR	00 18 47.9	
	comp=Z,175nm,21.5s,baz=66,slow=30						

JMA 28 23:34:18.9±0.5,**38.06N**×**144.08E, h0**km**, M3.5, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**2.15**	**299**	P	Pn	23 34 56.3	+0.3
JIO	**Ouri**	**2.19**	**281**	S	Sn	23 35 25.4	+1.2
JMK	**Ichinoseki**	**2.41**	**293**	P	Pb	23 35 01.5	-1.7
JTH	**Tanohata**	**2.55**	**318**	P	Pb	23 35 03.6	-1.9
JOM	**Ohasama**	**2.60**	**304**	P	Pn	23 35 03.2	+1.1
JMM	**Marumori**	**2.60**	**267**	P	Pn	23 35 03.0	+0.7
JMM				S	Sn	23 35 35.2	+0.6
JFK	**Kawauchi**	**2.63**	**256**	S	Sn	23 35 35.2	-0.2
JOU	**Okura**	**2.71**	**278**	S	Sn	23 35 39.4	+2.2
JRG	**Rokugo**	**3.01**	**297**	*e*S	Sn	23 35 47.2	+2.7
JFT	**Otama**	**3.01**	**261**	S	Sn	23 35 46.4	+1.7
JYK	**Kaneyama**	**3.04**	**287**	P	Pn	23 35 10.4	+2.1
JANG	**Nango**	**3.05**	**320**	P	Pn	23 35 08.4	0.0

NIED ***28*** *23:45:00, 36.90N×141.80E, h17km, Mw4.0 Best double couple: M0 1.04000×10^15 NP1:φs351.00000°, δ22.00000°, λ-115.00000°. NP2:φs199.00000°, δ70.00000°, λ-80.00000°.*

IDC ***28*** *23:45:10.8±0.7, 36.76N×142.20E, h0km, mb4.0/14, mb1 4.1/22, mb1mx4.0/47, mbtmp4.0/22, ML3.9/7, MS3.2/4, Ms1 3.2/4, ms1mx2.7/41, Error ellipse: s-maj=17.4km s-min=13.4km az=109.0*

ISCJB ***28*** *23:45:11.3±0.5, 36.72N±0.04×142.16E±0.06, h19km, mb4.0/17, MS3.7/1, Error ellipse: s-maj=6.9km s-min=5.1km az=16.6*

NEIC ***28*** *23:45:14.3±2.2, 36.75N×142.15E, h24km±16km, mb4.5/3, Error ellipse: s-maj=10.2km s-min=7.1km az=116.0*

JMA ***28*** *23:45:15.4±0.5, 36.86N×141.78E, h37km, M4.0*

ISC 28 23:45:13.6±0.6,**36.73N**±0.06×**142.15E**±0.08,**h19**km**, n47,** σ1§**14/40, mb4.1/17, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**1.14**	**289**	P	Pn	23 45 31.0	-3.6
JFK	**Kawauchi**	**1.20**	**302**	P	Pn	23 45 31.4	-4.0
JFT	**Otama**	**1.65**	**299**	P	**Pn**	**23 45 39.0**	**-2.5**
JIO	**Ouri**	**1.83**	**340**	P	**Pn**	**23 45 42.4**	**-1.7**
JOU	**Okura**	**2.01**	**325**	P	**Pn**	**23 45 44.1**	**-2.5**
JMK	**Ichinoseki**	**2.33**	**342**	P	**Pn**	**23 45 50.0**	**-1.0**
JYK	**Kaneyama**	**2.60**	**328**	P	**Pn**	**23 45 53.2**	**-1.4**
JOM	**Ohasama**	**2.82**	**346**	P	**Pn**	**23 45 56.8**	**-0.8**
MJAR	**Matsushiro Arr**	**3.17**	**268**	Pn	**Pn**	**23 46 01.8**	**-0.7**
	31nm,0.3s,baz=98,slow=10,SNR=203						
MJAR				LR	LR	23 47 39.6	
	comp=Z,269nm,18.5s,baz=95,slow=47						
MAJO	**Matsushiro**	**3.17**	**268**	*e*Pn	**Pn**	**23 46 02.1**	**-0.4**
MAT	**Matsushiro**	**3.17**	**268**	P	**Pn**	**23 46 01.8**	**-0.7**
MAT				*e*S	**Sn**	**23 46 39.8**	**-0.1**
JHJ	**Hachijo jima 2**	**4.09**	**209**	Pn	**Pn**	**23 46 15.0**	**-0.2**
	24nm,0.3s,baz=335,slow=17,SNR=14						
JHJ				Sn	**Sn**	**23 47 01.5**	**-1.0**
	29nm,0.3s,baz=75,slow=20,SNR=4.9						
ERM	**Erimo**	**5.33**	**8**	*e*Pn	**Pn**	**23 46 32.7**	**+0.5**
ASAJ	**Asahikawa**	**7.39**	**3**	Pn	**Pn**	**23 46 58.9**	**-1.4**
	3.6nm,0.3s,baz=232,slow=10,SNR=12						
CBIJ	**Chichi jima**	**9.61**	**180**	Pn	**Pn**	**23 47 30.6**	**-0.3**
JCJ	**Chichijima**	**9.61**	**180**	Pn	**Pn**	**23 47 30.6**	**-0.3**
	4.8nm,0.3s,baz=284,slow=19,SNR=3.7						
JNU	**Nakatsue**	**9.93**	**252**	Pn	**Pn**	**23 47 36.9**	**+1.6**
	0.4nm,0.3s,baz=86,slow=12,SNR=4.7						
USRK	**Ussuriysk Ar.**	**10.74**	**317**	Pn	**Pn**	**23 47 48.1**	**+1.8**
	0.3nm,0.3s,baz=126,slow=14,SNR=4.0						
KSRS	**Korea Array**	**11.38**	**278**	Pn	**Pn**	**23 47 57.3**	**+2.2**
	0.3nm,0.3s,baz=90,slow=13,SNR=5.3						
KSRS				LR	LR	23 52 00.3	
	comp=Z,86nm,20.2s,baz=93,slow=36						
KSAR	**Wonju Array Be**	**11.42**	**278**	Pn	**Pn**	**23 47 57.3**	**+1.7**
KLR	**Kul'dur**	**14.61**	**332**	Pn	**Pn**	**23 48 40.5**	**+1.3**
	0.1nm,0.3s,baz=140,slow=7.9,SNR=3.1						
KLR				LR	LR	23 54 09.3	
	comp=Z,74nm,18.7s,baz=137,slow=37						
SEY	**Seymchan**	**26.98**	**10**	P	**P**	**23 50 52.9**	**-0.9**
	3.3nm,0.7s,baz=200,slow=5.3,SNR=9.4						
H11N2	**WAKE ISLAND Hy**	**27.49**	**121**	T	T	00 20 15.6	
	baz=313,slow=75,SNR=68						
H11N1	**WAKE ISLAND Hy**	**27.50**	**121**	T	T	00 20 28.7	
	baz=313,slow=75,SNR=37						
H11N3	**WAKE ISLAND Hy**	**27.51**	**121**	T	T	00 20 17.5	
	baz=313,slow=75,SNR=40						
ENH	**Enshi**	**27.89**	**266**	*e*P	**P**	**23 51 00.9**	**-1.5**
	5.7nm,0.5s						
H11S1	**WAKE ISLAND Hy**	**28.20**	**123**	T	T	00 21 18.3	
	baz=316,slow=76,SNR=21						
H11S3	**WAKE ISLAND Hy**	**28.20**	**123**	T	T	00 21 10.1	
	baz=316,slow=76,SNR=17						
H11S2	**WAKE ISLAND Hy**	**28.22**	**123**	T	T	00 21 23.8	
	baz=316,slow=76,SNR=12						
SONM	**Songino Array**	**28.44**	**304**	P	**P**	**23 51 07.0**	**-0.3**
	4.6nm,0.7s,baz=103,slow=8.5,SNR=17						
CMAR	**Chiang Mai Arr**	**41.99**	**256**	P	**P**	**23 53 04.0**	**+0.3**
	1.1nm,0.3s,baz=41,slow=4.0,SNR=4.2						
ZALV	**Zalesovo Beam**	**42.55**	**313**	P	**P**	**23 53 07.2**	**-0.6**
	3.4nm,0.8s,baz=93,slow=7.1,SNR=12						
NRIK	**Noril'sk**	**43.79**	**335**	P	**P**	**23 53 18.4**	**+0.8**
	0.7nm,0.3s,baz=78,slow=2.6,SNR=3.5						
MKAR	**Makanchi Array**	**44.78**	**302**	P	**P**	**23 53 24.6**	**-1.3**
	0.6nm,0.5s,baz=84,slow=9.7,SNR=6.6						
KURK	**Kurchatov**	**46.58**	**308**	*e*P	**P**	**23 53 39.4**	**-0.6**
	3.6nm,0.5s						
ILAR	**Eielson Array**	**49.44**	**32**	P	**P**	**23 54 01.4**	**-0.6**
	1.2nm,0.6s,baz=258,slow=6.2,SNR=13						
INK	**Inuvik**	**54.39**	**27**	P	**P**	**23 54 38.8**	**0.0**
	1.2nm,0.5s,baz=307,slow=6.8,SNR=11						
WRA	**Warramunga Arr**	**56.85**	**189**	P	**P**	**23 54 57.2**	**+0.3**
	1.2nm,0.5s,baz=6.8,slow=7.1,SNR=17						
ABKAR	**Akbulak array**	**58.58**	**310**	*e*P	**P**	**23 55 08.3**	**-0.7**
	1.6nm,0.7s						
ASAR	**Alice Springs**	**60.57**	**189**	P	**P**	**23 55 23.6**	**+0.7**
	1.0nm,0.8s,baz=9.0,slow=6.3,SNR=12						
YKA	**Yellowknife Ar**	**63.77**	**30**	P	**P**	**23 55 44.1**	**+0.2**
	0.4nm,0.7s,baz=302,slow=6.6,SNR=9.3						
FINES	**FINESS Array B**	**69.35**	**333**	P	**P**	**23 56 20.4**	**+0.9**
	1.1nm,0.6s,baz=129,slow=2.0,SNR=5.3						
NB2	**NORSAR Subarra**	**74.69**	**338**	P	**P**	**23 56 52.2**	**+0.6**
	comp=Z,0.5nm,0.7s,baz=39,slow=6.2						
NOA	**NORSAR Array B**	**74.69**	**339**	P	**P**	**23 56 52.5**	**+0.8**
	comp=Z,0.4nm,0.6s,baz=39,slow=5.7,SNR=4.6						
AKASG	**Malin Array Be**	**74.89**	**323**	LR	LR	00 32 54.1	
	comp=Z,33nm,18.0s,baz=55,slow=38						
TXAR	**Lajitas Array**	**89.84**	**53**	P	**P**	**23 58 11.3**	**-0.2**
	comp=Z,0.6nm,0.7s,baz=298,slow=2.4,SNR=6.7						
LPAZ	**La Paz**	**146.33**	**61**	PKPbc	**PKPbc**	**00 04 54.7**	**+0.4**
	comp=Z,0.5nm,0.6s,baz=352,slow=4.7,SNR=3.6						

IDC ***28*** *23:49:32.8±1.9, 36.89N×140.87E, h0km, mb3.4/2, mb1 3.6/3, mb1mx3.2/54, mbtmp3.3/3, ML2.9/1, Error ellipse: s-maj=27.4km s-min=21.4km az=6.0*

ISCJB ***28*** *23:49:34.2±0.9, 37.12N±0.03×140.85E±0.07, h10km±4km, mb3.4/2, Error ellipse: s-maj=10.3km s-min=5.1km az=16.0*

JMA ***28*** *23:49:35.3, 37.14N×140.79E, h4km±1km, M3.2*

JMA Felt II J1.

ISC 28 23:49:34.1±1.1,**37.08N**±0.05×**140.85E**±0.06,**h9**km±6km**, n14,** σ0§**47/18, 6C-1D, Eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.04**	**295**	⇑P	**Pg**	**23 49 36.2**	**+0.2**
ONAJ				S	**Sg**	**23 49 36.8**	**-0.5**
JFK	**Kawauchi**	**0.28**	**4**	⇑P	**Pg**	**23 49 40.2**	**+0.4**
JFK				S	**Sg**	**23 49 43.6**	**0.0**
JHO	**Hitachi**	**0.52**	**205**	⇓P	**Pb**	**23 49 45.8**	**+0.4**
JHO				S	**Sb**	**23 49 53.3**	**+0.3**
JFT	**Otama**	**0.60**	**317**	⇑P	**Pg**	**23 49 45.8**	**+0.2**
JFT				S	**Sg**	**23 49 53.2**	**-0.3**
JSB	**Shiboa**	**0.75**	**262**	⇑P	**Pb**	**23 49 49.8**	**+0.5**
JSB				S	**Sb**	**23 50 00.0**	**+0.3**
JMM	**Marumori**	**0.78**	**357**	⇑P	**Pg**	**23 49 49.0**	**-0.2**
JMM				S	**Sg**	**23 49 58.9**	**-0.5**
JFY	**Yanaizu**	**0.97**	**290**	⇑P	**Pg**	**23 49 52.7**	**0.0**
JFY				S	**Sg**	**23 50 04.7**	**-0.6**
MJAR	**Matsushiro Arr**	**2.19**	**256**	Pn	**Pn**	**23 50 10.4**	**-0.2**
	3.6nm,0.3s,baz=77,slow=16,SNR=8.3						
MJAR				Lg	Lg	23 50 41.0	
	9.9nm,0.3s,baz=83,slow=30,SNR=13						
MAT	**Matsushiro**	**2.19**	**257**	P	**Pn**	**23 50 10.6**	**0.0**
H11S1	**WAKE ISLAND Hy**	**29.27**	**122**	T	T	00 26 20.2	
	baz=314,slow=75,SNR=8.7						
H11S3	**WAKE ISLAND Hy**	**29.27**	**122**	T	T	00 26 14.1	
	baz=314,slow=75,SNR=9.7						
H11S2	**WAKE ISLAND Hy**	**29.28**	**122**	T	T	00 26 16.8	
	baz=314,slow=75,SNR=7.0						
ZALV	**Zalesovo Beam**	**41.55**	**312**	P	**P**	**23 57 22.3**	**+0.6**
	0.2nm,0.3s,baz=89,slow=9.4,SNR=2.7						
WRA	**Warramunga Arr**	**57.05**	**187**	P	**P**	**23 59 19.5**	**-1.0**
	0.5nm,0.8s,baz=2.4,slow=7.5,SNR=6.0						

MEX 28 23:55:19.4±0.7,**15.80N**×**94.16W, h73**km±13**km, MD3.6, Near coast of Oaxaca**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PCIG		**0.91**	**96**	*e*P	Pn	23 55 36.0	-0.9
PCIG				*e*S	Sn	23 55 48.4	-1.6
TGIG		**1.40**	**45**	*i* P	Pn	23 55 42.0	-1.1
TGIG				*e*S	Sn	23 55 58.6	-2.4
HUIG	**Huatulco**	**1.88**	**269**	*e*P	Pn	23 55 48.4	-1.0
HUIG				*e*S	Sn	23 56 10.1	-2.3

JMA 28 23:58:16.3, 36.86N×140.66E, h7km±1**km, M2.5, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHO	**Hitachi**	**0.26**	**196**	P	Pg	23 58 21.6	+0.2
JHO				S	Sg	23 58 25.2	+0.3
JFT	**Otama**	**0.71**	**339**	S	Sg	23 58 39.6	+0.5
JMM	**Marumori**	**1.01**	**6**	S	Sg	23 58 48.6	-0.2
MAT	**Matsushiro**	**2.00**	**262**	P	Pn	23 58 51.6	+1.1
MAT				S	Sb	23 59 17.4	-0.6

ISCJB ***28*** *23:59:59.9±0.8, 42.16N±0.05×139.10E±0.05, h19km±7km, mb3.9/21, MS4.2/1, Error ellipse: s-maj=8.5km s-min=5.5km az=157.5*

NIED ***29*** *00:00:00, 42.20N×139.30E, h8km, Mw4.0 Best double couple: M0 1.14000×10^15 NP1:φs183.00000°, δ23.00000°, λ53.00000°. NP2:φs42.00000°, δ72.00000°, λ104.00000°.*

JMA ***29*** *00:00:01.5±0.1, 42.11N×139.20E, h18km±1km, M3.9*

JMA Felt II J1.

IDC ***29*** *00:00:03.6±3.8, 42.11N×139.12E, h33km±29km, mb3.7/20, mb1 3.9/24, mb1mx3.7/55, mbtmp3.8/24, ML3.1/3, MS3.4/3, Ms1 3.4/3, ms1mx2.7/39, Error ellipse: s-maj=16.0km s-min=12.8km az=144.0*

ISC 29 00:00:00.7±1.5,**42.13N**±0.05×**139.18E**±0.04,**h13**km±9km**, n39,** σ1§**28/41, mb4.0/21, Hokkaido region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JOSM	**Okushiri--Mats**	**0.23**	**102**	P	**Pb**	**00 00 06.4**	**-0.3**
JOSM				*e*S	**Sb**	**00 00 09.7**	**-0.9**
JSH	**Shimam**	**0.82**	**51**	P	**Pg**	**00 00 16.1**	**-0.6**
JSH				*e*S	**Sg**	**00 00 26.6**	**-0.9**
JYM2	**Yakumo 2**	**0.89**	**90**	P	**Pg**	**00 00 17.8**	**-0.1**
JYM2				*e*S	**Sb**	**00 00 29.5**	**-0.2**
JSR	**Shiriuchi**	**1.10**	**122**	P	**Pb**	**00 00 21.5**	**-0.1**
JSR				*e*S	**Sb**	**00 00 35.4**	**-0.5**
JNB	**Noboribetsu**	**1.42**	**76**	P	**Pn**	**00 00 25.2**	**-1.0**
JNB				*e*S	**Sn**	**00 00 43.1**	**-1.6**
ASAJ	**Asahikawa**	**3.19**	**50**	Pn	**Pn**	**00 00 53.1**	**+2.5**
	1.1nm,0.3s,baz=268,slow=20,SNR=2.8						
ASAJ				Sn	**Sn**	**00 01 30.2**	**+1.7**
	2.6nm,0.3s,baz=137,slow=30,SNR=3.7						
MJAR	**Matsushiro Arr**	**5.63**	**188**	Pn	**Pn**	**00 01 26.9**	**+2.8**
	baz=4.5,slow=16,SNR=3.4						
MJAR				Sn	**Sn**	**00 02 25.7**	**-2.9**
	0.5nm,0.3s,baz=67,slow=30,SNR=4.0						
USRK	**Ussuriysk Ar.**	**5.65**	**294**	Pn	**Pn**	**00 01 23.7**	**-0.6**
	4.0nm,0.3s,baz=97,slow=14,SNR=45						
USRK				Sn	**Sn**	**00 02 26.7**	**-2.4**
	1.7nm,0.3s,baz=105,slow=25,SNR=9.9						
USRK				LR	LR	00 03 21.7	
	comp=Z,141nm,20.6s,baz=34,slow=35						
KLR	**Kul'dur**	**8.80**	**326**	LR	LR	00 05 14.8	
	comp=Z,97nm,19.5s,baz=123,slow=35						
KSRS	**Korea Array**	**9.84**	**245**	Pn	**Pn**	**00 02 23.7**	**+1.9**
	0.5nm,0.3s,baz=144,slow=32,SNR=3.5						
KSRS				Sn	**Sn**	**00 04 13.9**	**+1.9**
	0.4nm,0.3s,baz=57,slow=14,SNR=4.2						
SEY	**Seymchan**	**22.24**	**16**	P	**P**	**00 04 56.0**	**-0.9**
	1.1nm,0.3s,baz=224,slow=7.5,SNR=3.9						
H11N2	**WAKE ISLAND Hy**	**32.37**	**125**	T	T	00 40 05.2	
	baz=321,slow=76,SNR=9.2						
H11N1	**WAKE ISLAND Hy**	**32.38**	**125**	T	T	00 40 43.3	
	SNR=7.3						
H11N3	**WAKE ISLAND Hy**	**32.39**	**125**	T	T	00 40 10.7	
	baz=313,sl

H11N1	**WAKE ISLAND Hy**	**27.78**	**121**	T	T	00 44 02.4
	baz=314,slow=75,SNR=3.8					
H11N3	**WAKE ISLAND Hy**	**27.79**	**121**	T	T	00 44 00.5
	baz=314,slow=75,SNR=4.5					
SONM	**Songino Array**	**28.16**	**304**	P	P	00 14 51.7 +3.3
	0.8nm,0.8s,baz=117,slow=8.7,SNR=3.7					
H11S1	**WAKE ISLAND Hy**	**28.49**	**123**	T	T	00 44 51.2
	SNR=2.7					
ZALV	**Zalesovo Beam**	**42.27**	**313**	P	P	00 16 52.9 +3.6
	0.7nm,0.7s,baz=78,slow=9.2,SNR=3.9					
MKAR	**Makanchi Array**	**44.49**	**302**	P	P	00 17 11.1 +3.7
	0.3nm,0.6s,baz=91,slow=13,SNR=2.9					
WRA	**Warramunga Arr**	**56.96**	**188**	P	**P**	**00 18 41.3 -0.2**
	0.3nm,0.5s,baz=6.9,slow=7.5,SNR=3.4					
TXAR	**Lajitas Array**	**89.94**	**53**	P	**P**	**00 21 56.2 +0.6**
	0.4nm,1.0s,baz=316,slow=6.3,SNR=3.8					

JMA 29 00:11:48.3±0.1, 38°.46N×142°.20E, h25km±1km, M3.7, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**0.67**	**270**	P	Pb	00 12 01.0	-0.3
JIO				S	Sb	00 12 09.5	-0.7
OFUJ	**Ofunato**	**0.75**	**326**	P	Pb	00 12 02.4	-0.2
OFUJ				S	Sb	00 12 12.3	-0.1
JMK	**Ichinoseki**	**0.91**	**303**	P	Pb	00 12 05.0	-0.4
JMK				S	Sb	00 12 17.4	+0.3
JOU	**Okura**	**1.21**	**266**	P	Pn	00 12 09.9	+0.2
JOU				S	Sn	00 12 25.2	-0.1
JOM	**Ohasama**	**1.23**	**325**	P	Pn	00 12 10.1	+0.1
JOM				S	Sn	00 12 25.8	0.0
JYK	**Kaneyama**	**1.51**	**288**	P	Pn	00 12 14.3	+0.5

JMA 29 00:12:33.5, 36°.81N×140°.56E, h5km±1km, M2.6, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JHO	**Hitachi**	**0.20**	**178**	P	Pg	00 12 37.5	+0.1
JHO				S	Sg	00 12 40.3	+0.3
JMM	**Marumori**	**1.07**	**10**	S	Sg	00 13 07.6	-0.3
MAT	**Matsushiro**	**1.91**	**263**	P	Pn	00 13 06.6	-0.1
MAT				S	Sb	00 13 32.4	-0.6

IDC ***29*** *00:13:04.5±1.0, 37°.16N×143°.77E, h0km, mb3.4/7, mb1 3.7/8, mb1mx3.5/35, mbtmp3.4/8, ML3.4/1, Error ellipse: s-maj=35.2km s-min=23.9km az=124.0*
ISCJB ***29*** *00:13:08.2±0.7, 37°.30N±0°.05×143°.51E±0°.05, h33km, mb3.4/7, Error ellipse: s-maj=7.8km s-min=5.8km az=168.1*
JMA ***29*** *00:13:10.3±0.3, 37°.40N×143°.38E, h35km, M3.5*

ISC 29 00:13:10.0±0.9, 37°.32N±0°.07×143°.50E±0°.08, h35km, n18, σ0§95/22, mb3.5/7, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**2.04**	**304**	P	**Pn**	**00 13 41.3**	**-0.6**
JIO				S	**Sn**	**00 14 05.3**	**-0.8**
JFK	**Kawauchi**	**2.09**	**272**	*e*S	**Sn**	**00 14 06.7**	**-0.7**
ONAJ	**Iwakimizuishiy**	**2.17**	**265**	*e*S	**Sn**	**00 14 08.3**	**-1.0**
JMM	**Marumori**	**2.22**	**285**	P	**Pn**	**00 13 44.4**	**+0.1**
JMM				*e*S	**Sn**	**00 14 09.8**	**-0.6**
OFUJ	**Ofunato**	**2.27**	**321**	S	**Sn**	**00 14 10.2**	**-1.6**
JOU	**Okura**	**2.47**	**296**	P	**Pn**	**00 13 48.3**	**+0.5**
JFT	**Otama**	**2.52**	**275**	S	**Sn**	**00 14 19.3**	**+1.2**
CHOJ	**Chosi**	**2.67**	**234**	*e*S	**Sn**	**00 14 20.4**	**-1.2**
JOM	**Ohasama**	**2.76**	**322**	P	**Pn**	**00 13 52.4**	**+0.6**
JOM				*e*S	**Sn**	**00 14 23.1**	**-0.8**
MJAR	**Matsushiro Arr**	**4.31**	**261**	Pn	**Pn**	**00 14 14.4**	**+1.3**
	1.7nm,0.3s,baz=91,slow=14,SNR=6.4						
MAT	**Matsushiro**	**4.31**	**261**	P	**Pn**	**00 14 13.5**	**+0.4**
MAT				*e*S	**Sn**	**00 15 01.8**	**-0.3**
ILAR	**Eielson Array**	**48.36**	**33**	P	**P**	**00 21 48.1**	**+0.2**
	0.3nm,0.6s,baz=243,slow=7.0,SNR=3.9						
INK	**Inuvik**	**53.37**	**27**	P	**P**	**00 22 26.0**	**+0.5**
	0.5nm,0.6s,baz=328,slow=4.7,SNR=3.6						
WRA	**Warramunga Arr**	**57.61**	**190**	P	**P**	**00 22 55.3**	**-1.2**
	0.5nm,0.8s,baz=10,slow=7.2,SNR=4.1						
YKA	**Yellowknife Ar**	**62.72**	**31**	P	**P**	**00 23 30.8**	**-0.3**
	0.2nm,1.0s,baz=300,slow=7.3,SNR=3.0						
FINES	**FINESS Array B**	**69.33**	**333**	P	**P**	**00 24 15.3**	**+1.8**
	0.8nm,0.9s,baz=48,slow=8.3,SNR=3.1						
NOA	**NORSAR Array B**	**74.55**	**338**	P	**P**	**00 24 45.5**	**+0.6**
	0.2nm,0.6s,baz=45,slow=9.9,SNR=2.6						
TXAR	**Lajitas Array**	**88.62**	**54**	P	**P**	**00 25 59.4**	**-0.3**
	0.1nm,0.6s,baz=306,slow=3.0,SNR=2.6						

NIED ***29*** *00:14:00, 37°.30N×143°.50E, h5km, Mw4.1 Best double couple: M0 1.86000×10^15 NP1:φ=31.00000°, δ=29.00000°, λ=-97.00000°. NP2:φ=219.00000°, δ=61.00000°, λ=-86.00000°.*
IDC ***29*** *00:14:33.6±0.8, 37°.22N×143°.74E, h0km, mb3.8/16, mb1 4.0/20, mb1mx3.9/38, mbtmp3.9/20, ML3.9/4, MS3.2/9, Ms1 3.2/9, ms1mx3.0/34, Error ellipse: s-maj=21.7km s-min=15.5km az=121.0*
ISCJB ***29*** *00:14:36.9±0.5, 37°.30N±0°.04×143°.55E±0°.04, h33km, mb3.9/23, MS3.1/3, Error ellipse: s-maj=6.2km s-min=4.3km az=143.7*
JMA ***29*** *00:14:37.0±0.3, 37°.31N×143°.47E, h34km, M4.2*
NEIC ***29*** *00:14:39.0±0.6, 37°.32N×143°.67E, h35km, mb4.3/7, Error ellipse: s-maj=12.5km s-min=8.9km az=135.0*

ISC 29 00:14:38.9±0.7, 37°.34N±0°.05×143°.53E±0°.07, h35km, n55, σ1§49/48, mb3.8/23, MS3.3/3, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**2.05**	**303**	P	**Pn**	**00 15 10.2**	**-0.7**
JIO				S	**Sn**	**00 15 34.3**	**-0.9**
JFK	**Kawauchi**	**2.12**	**271**	P	**Pn**	**00 15 10.9**	**-0.9**
JFK				S	**Sn**	**00 15 35.6**	**-1.3**
JMK	**Ichinoseki**	**2.43**	**312**	P	**Pn**	**00 15 15.3**	**-0.7**
JFT	**Otama**	**2.55**	**275**	P	**Pn**	**00 15 17.8**	**+0.1**
JFT				S	**Sn**	**00 15 48.2**	**+0.6**
JOM	**Ohasama**	**2.76**	**321**	P	**Pn**	**00 15 20.9**	**+0.3**
JOM				S	**Sn**	**00 15 52.1**	**-0.6**
JYK	**Kaneyama**	**2.96**	**303**	P	**Pn**	**00 15 23.7**	**+0.4**
BSO1	**Boso 1**	**3.39**	**218**	*e*S	**Sn**	**00 16 07.0**	**-0.5**
JAG	**Ashikaga**	**3.40**	**256**	P	**Pn**	**00 15 28.9**	**-0.5**
JAG				*e*S	**Sn**	**00 16 07.6**	**-0.8**
JANG	**Nango**	**3.41**	**333**	S	**Sn**	**00 16 06.6**	**-2.2**
JRY	**Ryogami san**	**3.95**	**252**	P	**Pn**	**00 15 36.2**	**-0.8**
JRY				S	**Sn**	**00 16 19.8**	**-2.3**
JOD2	**Odawara 2**	**4.15**	**241**	P	**Pn**	**00 15 38.2**	**-1.5**
MJAR	**Matsushiro Arr**	**4.34**	**261**	Pn	**Pn**	**00 15 42.8**	**+0.5**
	9.9nm,0.3s,baz=87,slow=15,SNR=26						
MJAR					Sn	**Sn**	**00 16 32.3**	**+0.6**
	2.4nm,0.3s,baz=96,slow=25,SNR=5.6						
MJAR					LR	LR	00 17 25.6
	comp=Z,202nm,20.9s,baz=80,slow=39						
MAJO	**Matsushiro**	**4.34**	**261**	*e*Pn	Pn	00 15 43.4	+1.1
MAT	**Matsushiro**	**4.34**	**261**	P	**Pn**	**00 15 42.8**	**+0.4**
MAT				S	**Sn**	**00 16 32.7**	**+1.0**
ERM	**Erimo**	**4.67**	**357**	*e*Pn	**Pn**	**00 15 46.4**	**-0.4**
JHJ	**Hachijo jima 2**	**5.21**	**217**	Pn	**Pn**	**00 15 52.1**	**-2.2**
	12nm,0.3s,baz=88,slow=22,SNR=4.4						
JHJ					Sn	**Sn**	**00 16 49.2**	**-4.0**
	38nm,0.3s,baz=48,slow=23,SNR=3.3						
JCH	**Churui**	**5.27**	**359**	P	**Pn**	**00 15 53.7**	**-1.3**
JCH				S	**Sn**	**00 16 48.7**	**-5.7**
ASAJ	**Asahikawa**	**6.80**	**354**	P	**Pn**	**00 16 16.1**	**-0.1**
	3.7nm,0.3s,baz=207,slow=4.8,SNR=10						
ASAJ					LR	LR	00 19 32.7
	comp=Z,179nm,19.7s,baz=147,slow=43						
USRK	**Ussuriysk Ar.**	**11.11**	**312**	Pn	Pn	00 17 18.9	+3.8
	0.1nm,0.3s,baz=106,slow=12,SNR=5.9						
USRK					LR	LR	00 21 20.0
	comp=Z,173nm,20.5s,baz=155,slow=36						
JNU	**Nakatsue**	**11.17**	**252**	LR	LR	00 22 26.5
	comp=Z,70nm,19.1s,baz=314,slow=42						
KSRS	**Korea Array**	**12.42**	**275**	Pn	Pn	00 17 35.7	+2.7
	0.2nm,0.3s,baz=91,slow=11,SNR=4.2						
KSRS					LR	LR	00 21 50.7
	comp=Z,113nm,20.9s,baz=39,slow=35						
KSAR	**Wonju Array Be**	**12.45**	**275**	Pn	Pn	00 17 35.7	+2.2
KLR	**Kul'dur**	**14.63**	**328**	Pn	**Pn**	**00 18 01.9**	**-1.2**
	0.1nm,0.3s,baz=124,slow=14,SNR=5.8						
KLR					LR	LR	00 23 33.6
	comp=Z,110nm,19.9s,baz=142,slow=36						
GUMO	**Guam**	**23.69**	**177**	LR	LR	00 26 18.3
	comp=Z,29nm,20.1s,baz=108,slow=30						
YAK	**Yakutsk**	**26.17**	**345**	*e*P	**P**	**00 20 10.2**	**+0.6**
	5.5nm,0.4s						
SEY	**Seymchan**	**26.19**	**9**	P	**P**	**00 20 11.7**	**+1.8**
	1.5nm,0.4s,baz=200,slow=6.9,SNR=7.9						
H11N2	**WAKE ISLAND Hy**	**26.89**	**124**	T	T	00 47 53.9	
	baz=316,slow=75,SNR=24						
H11N1	**WAKE ISLAND Hy**	**26.90**	**124**	T	T	00 48 00.2	
	baz=316,slow=75,SNR=24						
H11N3	**WAKE ISLAND Hy**	**26.91**	**124**	T	T	00 48 03.4	
	baz=316,slow=75,SNR=25						
H11S1	**WAKE ISLAND Hy**	**27.64**	**126**	T	T	00 48 55.2	
	baz=318,slow=76,SNR=13						
H11S3	**WAKE ISLAND Hy**	**27.64**	**126**	T	T	00 48 55.1	
	baz=318,slow=76,SNR=18						
H11S2	**WAKE ISLAND Hy**	**27.66**	**126**	T	T	00 48 56.6	
	baz=318,slow=76,SNR=12						
SONM	**Songino Array**	**29.03**	**303**	P	P	00 20 38.7	+3.1
	1.7nm,0.9s,baz=113,slow=10,SNR=4.5						
ZALV	**Zalesovo Beam**	**42.96**	**312**	P	**P**	**00 22 35.3**	**+1.1**
	3.1nm,0.9s,baz=87,slow=6.1,SNR=9.6						
ZALV					PcP	**PcP**	**00 24 24.9**	**+0.7**
	1.1nm,0.5s,baz=94,slow=4.0,SNR=4.4						
CMAR	**Chiang Mai Arr**	**43.21**	**257**	P	P	00 22 37.9	+1.2
	0.8nm,0.3s,baz=47,slow=7.2,SNR=6.2						
CMAR					LR	LR	00 43 36.5	
	comp=Z,44nm,20.6s,baz=320,slow=40						
MKAR	**Makanchi Array**	**45.39**	**302**	P	**P**	**00 22 55.0**	**+1.1**
	0.9nm,0.7s,baz=82,slow=9.1,SNR=6.1						
KURK	**Kurchatov**	**47.07**	**308**	*e*P	**P**	**00 23 07.7**	**+0.7**
	3.0nm,0.6s						
ILAR	**Eielson Array**	**48.33**	**33**	P	**P**	**00 23 16.6**	**+0.2**
	0.6nm,0.6s,baz=262,slow=6.1,SNR=6.7						
TKM2	**Tokmak 2**	**50.97**	**299**	*e*P	P	00 23 38.9	+1.7
	1.7nm,0.4s						
EKS2	**Erkin-Say**	**52.32**	**299**	*e*P	**P**	**00 23 47.9**	**+0.7**
	0.6nm,0.4s						
INK	**Inuvik**	**53.34**	**27**	P	**P**	**00 23 55.1**	**+1.0**
	0.6nm,0.6s,baz=292,slow=5.5,SNR=7.7						
KKAR	**Karatay Array**	**54.43**	**301**	*e*P	**P**	**00 24 03.5**	**+1.0**
	1.8nm,0.8s						
WRA	**Warramunga Arr**	**57.63**	**190**	P	**P**	**00 24 24.1**	**-1.4**
	0.7nm,0.8s,baz=11,slow=7.1,SNR=4.7						
ABKAR	**Akbulak array**	**59.03**	**311**	*e*P	**P**	**00 24 35.7**	**+0.7**
	0.4nm,0.5s						
ASAR	**Alice Springs**	**61.36**	**190**	P	**P**	**00 24 51.4**	**+0.2**
	0.2nm,0.5s,baz=315,slow=49,SNR=3.5						
YKA	**Yellowknife Ar**	**62.68**	**31**	P	**P**	**00 24 59.3**	**-0.4**
	0.1nm,0.7s,baz=306,slow=6.0,SNR=4.1						
ARCES	**ARCESS Array B**	**64.30**	**340**	LR	LR	01 00 03.8	
	comp=Z,22nm,20.3s,baz=84,slow=42						
GEYT	**Ailbeck**	**65.16**	**300**	P	**P**	**00 25 16.7**	**+0.3**
	0.7nm,0.7s,baz=34,slow=3.7,SNR=3.8						
FINES	**FINESS Array B**	**69.32**	**333**	P	**P**	**00 25 43.0**	**+0.7**
	1.3nm,0.6s,baz=52,slow=7.5,SNR=7.5						
KBZ	**Khabaz**	**71.97**	**311**	P	P	00 26 00.3	+1.6
	1.9nm,0.9s,baz=187,slow=5.4,SNR=3.4						
NB2	**NORSAR Subarra**	**74.54**	**338**	P	**P**	**00 26 14.2**	**+0.5**
	comp=Z,0.5nm,0.6s,baz=40,slow=5.9						
NOA	**NORSAR Array B**	**74.54**	**338**	P	**P**	**00 26 14.5**	**+0.8**
	comp=Z,0.6nm,0.6s,baz=39,slow=5.8,SNR=5.1						
IMW	**Indian Meadow**	**74.75**	**46**	*e*P	**P**	**00 26 13.0**	**-2.5**
	comp=Z,8.0nm,0.6s						
BRTR	**Keskin Array B**	**79.90**	**313**	P	P	00 26 46.5	+2.2
	comp=Z,0.3nm,0.7s,baz=46,slow=23,SNR=2.4						
GERES	**GERESS Array B**	**83.33**	**329**	P	**P**	**00 27 02.8**	**+0.6**
	comp=Z,0.2nm,0.5s,baz=346,slow=10.0,SNR=3.7						

JMA 29 00:26:30.5±0.2, 37°.33N×143°.54E, h50km, M3.5, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**2.06**	**304**	P	Pn	00 27 03.8	+1.1
JIO				S	Sn	00 27 28.2	+1.0
JFK	**Kawauchi**	**2.12**	**272**	P	Pn	00 27 04.5	+0.9
JFK				*e*S	Sn	00 27 29.8	+1.0
ONAJ	**Iwakimizuishiy**	**2.20**	**265**	S	Sn	00 27 31.4	+0.7
JMM	**Marumori**	**2.25**	**285**	P	Pn	00 27 06.2	+1.0
JMM				S	Sn	00 27 32.8	+1.1
OFUJ	**Ofunato**	**2.29**	**320**	P	Pn	00 27 06.4	+0.7
OFUJ				*e*S	Sn	00 27 32.8	+0.1
JMK	**Ichinoseki**	**2.44**	**312**	P	Pn	00 27 09.0	+1.1
JMK				*e*S	Sn	00 27 37.9	+1.4
JOU	**Okura**	**2.50**	**295**	*e*S	Sn	00 27 40.1	+2.1
JFT	**Otama**	**2.56**	**275**	S	Sn	00 27 42.1	+2.7
JOM	**Ohasama**	**2.77**	**321**	S	Sn	00 27 45.8	+1.1

ISCJB ***29*** *00:27:10.7±1.2, 37°.35N±0°.06×143°.58E±0°.09, h35km, mb3.6/2, MS3.5/2, Error ellipse: s-maj=11.3km s-min=7.7km az=146.0*
JMA ***29*** *00:27:11.6±0.2, 37°.34N×143°.50E, h43km, M3.5*
IDC ***29*** *00:27:18.4±1.3, 35°.84N×142°.79E, h0km, mb3.4/3, mb1 3.7/4, mb1mx3.4/32, mbtmp3.4/4, ML3.4/1, MS3.4/2, Ms1 3.4/2, ms1mx2.7/23, Error ellipse: s-maj=42.6km s-min=28.2km az=111.0*

ISC 29 00:27:12.7±1.8, 37°.38N±0°.09×143°.5E±0°.1, h35km, n19, σ0§73/14, mb3.6/3, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**2.04**	**302**	P	**Pn**	**00 27 44.5**	**-0.1**
JIO				S	**Sn**	**00 28 08.7**	**-0.1**
JFK	**Kawauchi**	**2.13**	**270**	*e*S	**Sn**	**00 28 10.2**	**-0.8**
ONAJ	**Iwakimizuishiy**	**2.21**	**264**	*e*S	**Sn**	**00 28 11.7**	**-1.3**
JMM	**Marumori**	**2.24**	**283**	P	**Pn**	**00 27 46.9**	**-0.4**
JMM				*e*S	**Sn**	**00 28 13.5**	**-0.2**
OFUJ	**Ofunato**	**2.25**	**320**	S	**Sn**	**00 28 13.6**	**-0.4**
JMK	**Ichinoseki**	**2.41**	**311**	*e*S	**Sn**	**00 28 18.4**	**+0.4**
JFT	**Otama**	**2.56**	**274**	*e*S	**Sn**	**00 28 22.5**	**+0.9**
JOM	**Ohasama**	**2.74**	**320**	S	**Sn**	**00 28 26.3**	**+0.3**
MJAR	**Matsushiro Arr**	**4.35**	**261**	Pn	**Pn**	**00 28 17.4**	**+1.0**
	2.9nm,0.3s,baz=88,slow=16,SNR=11						
MAT	**Matsushiro**	**4.36**	**261**	P	**Pn**	**00 28 17.3**	**+0.9**
H11N2	**WAKE ISLAND Hy**	**26.90**	**124**	T	T	00 59 27.7	
	baz=323,slow=76,SNR=4.0						
H11N3	**WAKE ISLAND Hy**	**26.92**	**124**	T	T	00 59 29.3	
	baz=311,slow=76,SNR=4.1						
H11S1	**WAKE ISLAND Hy**	**27.66**	**126**	T	T	01 00 22.9	
	baz=316,slow=74,SNR=7.0						
H11S3	**WAKE ISLAND Hy**	**27.66**	**127**	T	T	01 00 23.0	
	baz=129,slow=74,SNR=6.8						
ILAR	**Eielson Array**	**48.29**	**33**	P	P	00 36 13.3	+23
	0.3nm,0.8s,baz=257,slow=8.2,SNR=3.2						
LEM	**Lembang**	**55.31**	**225**	LR	LR	01 00 05.4	
	comp=Z,44nm,19.7s,slow=37						
WRA	**Warramunga Arr**	**57.67**	**190**	P	**P**	**00 36 59.6**	**-0.1**
	0.4nm,0.6s,baz=11,slow=7.5,SNR=5.7						
ASAR	**Alice Springs**	**61.39**	**190**	P	**P**	**00 37 24.9**	**-0.4**
	0.3nm,0.6s,baz=4.3,slow=4.9,SNR=2.9						
YBH	**Yreka Blue Hor**	**68.78**	**53**	LR	LR	01 05 45.1	
	comp=Z,18nm,18.4s,baz=126,slow=33						

ISCJB ***29*** *00:32:09.4±0.7, 51°.41N±0°.03×16°.18E±0°.03, h0km, Error ellipse: s-maj=5.0km s-min=2.8km az=9.9*
CSEM ***29*** *00:32:10.2±0.4, 51°.44N×16°.15E, h2km, ML3.0/8, Error ellipse: s-maj=6.8km s-min=3.6km az=175.0*
PRU ***29*** *00:32:12.1, 51°.40N×16°.14E, h0km*

ISC 29 00:32:11.1±1.0, 51°.41N±0°.05×16°.14E±0°.02, h0km, n35, σ1§04/65, Poland

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
KSP	**Ksiaz**	**0.58**	**170**	*e*Pg	**Pg**	**00 32 22.6**	**+0.4**
KSP				*e*Sg	**Sg**	**00 32 30.9**	**+1.3**
KSP	**Ksiaz**	**0.58**	**170**	*e*Pg	**Pg**	**00 32 22.6**	**+0.4**
KSP				*e*Sg	**Sg**	**00 32 30.9**	**+1.3**
UPC	**Upice**	**0.91**	**185**	*e*PG	**Pg**	**00 32 28.8**	**+0.3**
UPC				*e*SG	**Sg**	**00 32 41.5**	**+1.2**
	comp=Z,48nm,0.3s						
UPC	**Upice**	**0.91**	**185**	Pg	**Pg**	**00 32 28.8**	**+0.3**
UPC				Sg	**Sg**	**00 32 41.5**	**+1.2**
	48nm,0.3s						
DPC	**Dobruska-Polom**	**1.07**	**174**	*e*PG	**Pg**	**00 32 31.4**	**-0.2**
DPC				*e*SG	**Sg**	**00 32 46.3**	**+0.9**
	comp=Z,20nm,0.3s						
DPC	**Dobruska-Polom**	**1.07**	**174**	Pg	**Pg**	**00 32 31.4**	**-0.2**
DPC				Sg	**Sg**	**00 32 46.3**	**+0.9**
	20nm,0.3s						
PVCC	**Panska Ves**	**1.33**	**229**	*e*PG	**Pn**	**00 32 36.7**	**-0.2**
PVCC				*e*SG	**Sb**	**00 32 55.2**	**+0.7**
	comp=Z,56nm,0.3s						
PVCC	**Panska Ves**	**1.33**	**229**	Pg	**Pn**	**00 32 36.7**	**-0.2**
PVCC				Sg	**Sb**	**00 32 55.2**	**+0.7**
	56nm,0.3s						
KRLC	**Kraliky**	**1.40**	**163**	*e*PG	**Pn**	**00 32 37.6**	**-0.3**
KRLC				*e*SG	**Sg**	**00 32 56.5**	**+0.5**
KRLC	**Kraliky**	**1.40**	**163**	Pg	**Pn**	**00 32 37.6**	**-0.3**
KRLC				Sg	**Sg**	**00 32 56.5**	**+0.5**
BRG	**Berggiesshubel**	**1.49**	**250**	PG	**Pb**	**00 32 39.3**	**-0.3**
BRG				SG	**Sn**	**00 32 59.4**	**+0.2**
	23nm,0.4s						
PRA	**Prague**	**1.73**	**220**	*e*SG	**Sg**	**00 33 07.6**	**+1.1**
	comp=Z,4.8nm,0.2s						
PRA	**Prague**	**1.73**	**220**	Sg	**Sg**	**00 33 07.6**	**+1.1**
	4.8nm,0.2s						
GOPC	**GO Pecny, Ondr**	**1.73**	**210**	*e*PG	**Pb**	**00 32 43.5**	**-0.2**
GOPC				*e*SG	**Sb**	**00 33 07.2**	**+1.2**
	comp=Z,9.5nm,0.3s						
GOPC	**GO Pecny, Ondr**	**1.73**	**210**	Pg	**Pb**	**00 32 43.5**	**-0.2**
GOPC				Sg	**Sb**	**00 33 07.2**	**+1.2**
	9.5nm,0.3s						
PRU	**Pruhonice**	**1.75**	**216**	*e*PG	**Pb**	**00 32 43.6**	**-0.5**
PRU				*e*SG	**Sb**	**00 33 07.4**	**+0.8**
	comp=Z,13nm,0.4s						
PRU	**Pruhonice**	**1.75**	**216**	Pg	**Pb**	**00 32 43.6**	**-0.5**
PRU				Sg	**Sb**	**00 33 07.4**	**+0.8**
	13nm,0.4s						
MORC	**Moravsky Berou**	**1.86**	**151**	*e*Pn	**Pn**	**00 32 43.3**	**-1.0**
MORC				*e*Sg	**Sb**	**00 33 09.8**	**-0.1**
CLL	**Collm**	**1.97**	**268**	*i* Pn	**Pb**	**00 32 46.8**	**-1.0**
CLL				*i* Pg	**Pg**	**00 32 48.3**	**-0.6**
CLL				*i*		00 32 51.4	
CLL				*e*Sg	**Sg**	**00 33 15.0**	**+0.6**
	comp=Z,9.0nm,0.5s						
OKC	**Ostrava-Krasne**	**2.03**	**140**	*e*SG	**Sb**	**00 33 14.9**	**+0.3**
	comp=Z,7.6nm,0.4s						
OKC	**Ostrava-Krasne**	**2.03**	**140**	Sg	**Sb**	**00 33 14.9**	**+0.3**
	comp=Z,7.6nm,0.4s						
VRAC	**Vranov**	**2.13**	**172**	*e*Pn	**Pn**	**00 32 48.1**	**+0.2**
VRAC				*e*Sg	**Sg**	**00 33 19.4**	**0.0**
OJC	**Ojcow**	**2.61**	**116**	*e*Pg	**Pg**	**00 33 00.9**	**-0.2**
OJC				*e*Sg	**Sg**	**00 33 35.5**	**+0.7**
OJC	**Ojcow**	**2.61**	**116**	*e*Pg	**Pg**	**00 33 00.9**	**-0.2**
OJC				*e*Sg	**Sg**	**00 33 35.5**	**+0.7**
KHC	**Kasperske Hory**	**2.81**	**217**	*e*PN	**Pn**	**00 32 57.3**	**-0.1**
KHC				*e*PG	**Pb**	**00 33 03.1**	**+0.9**
KHC				*e*SN	**Sn**	**00 33 30.5**	**-1.5**
KHC				*e*SG	**Sg**	**00 33 40.6**	**-0.9**
	comp=Z,6.0nm,0.3s						
KHC	**Kasperske Hory**	**2.81**	**217**	Pn	**Pn**	**00 32 57.3**	**-0.1**
SMOL	**Smolenice**	**3.02**	**164**	*e*PG	**Pb**	**00 33 04.2**	**-1.5**
SMOL				*e*SG	**Sg**	**00 33 47.4**	**-0.6**
LANS	**Liptovska Anna**	**3.11**	**135**	*e*Pg	**Pg**	**00 33 09.3**	**-1.4**
LANS				*e*Sg	**Sg**	**00 33 50.9**	**-0.1**
LANS	**Liptovska Anna**	**3.11**	**135**	*e*PG	**Pg**	**00 33 09.3**	**-1.4**
LANS				*e*SG	**Sg**	**00 33 50.9**	**-0.1**
NIE	**Niedzica**	**3.33**	**125**	*e*P	**Pg**	**00 33 15.2**	**+0.4**
NIE				*e*S	**Sg**	**00 33 59.6**	**+1.7**
VYHS	**Vyhne**	**3.40**	**148**	*e*Sg	**Sg**	**00 33 58.2**	**-2.1**
VYHS	**Vyhne**	**3.40**	**148**	*e*SG	**Sg**	**00 33 58.2**	**-2.1**
STHS	**Stebnicka Huta**	**3.83**	**119**	*e*Pg	**Pg**	**00 33 23.6**	**-0.8**
STHS				*e*Sg	**Sg**	**00 34 17.2**	**+3.3**
STHS	**Stebnicka Huta**	**3.83**	**119**	*e*	**Pn**	**00 33 12.3**	**+1.1**
STHS	**Stebnicka Huta**	**3.83**	**119**	*e*PG	**Pg**	**00 33 23.6**	**-0.8**
STHS				*e*SG	**Sg**	**00 34 17.2**	**+3.3**
STHS				*e*LG	Lg	00 34 26.1	

DDA ***29*** *00:35:53.7, 39°.40N×29°.49E, h7km, Md2.6*
ISK ***29*** *00:35:53.5, 39°.35N×29°.49E, h3km, MD2.6*
ISCJB ***29*** *00:35:54.1±0.6, 39°.39N±0°.03×29°.49E±0°.05, h8km±4km, Error ellipse: s-maj=6.9km s-min=4.9km az=9.5*
CSEM ***29*** *00:35:54.0±0.2, 39°.39N×29°.51E, h5km, MD2.6, Error ellipse: s-maj=4.5km s-min=3.0km az=88.0*

ISC 29 00:35:54.2±1.0, 39°.39N±0°.03×29°.50E±0°.04, h8km±7km, n17, σ0§46/29, Turkey

| Code | Station Name | Δ° | AZ° |

YOA	**Uoyan**	**1.13**	**45**	⇑*i*PG	**Pg**	**00 39 32.0**	**-0.6**
YOA				*i*		00 39 48.6	
YOA				pmax	pmax		
	comp=Z,276nm,0.3s						
YOA				smax	smax		
	comp=N,3μm,0.6s						
SYVR	**Suvo**	**1.71**	**186**	*e*Pg	**Pn**	**00 39 41.6**	**+0.3**
SYVR				*e*Sg	**Sb**	**00 40 04.5**	**+0.1**
SYVR				*e*		00 40 07.6	
SYVR				Pmax			
	comp=N,79nm,0.6s						
SYVR				max			
	comp=N,669nm,0.7s						
SYVR	**Suvo**	**1.71**	**186**	*e*PN	**Pn**	**00 39 41.6**	**+0.3**
SYVR				*e*		00 40 04.4	
SYVR				pmax	pmax		
	comp=Z,91nm,0.8s						
SYVR				smax	smax		
	comp=N,675nm,0.8s						
UKT	**Uakit**	**1.91**	**85**	⇑*i*Pg	**Pb**	**00 39 45.6**	**-0.6**
UKT				*e*Sg	**Sg**	**00 40 11.8**	**-0.4**
UKT				*e*		00 40 14.3	
UKT				Pmax			
	comp=N,538nm,1.0s						
UKT				max			
	comp=N,525nm,0.4s						
UKT	**Uakit**	**1.91**	**85**	⇑*i*PN	**Pb**	**00 39 45.7**	**-0.5**
UKT				*e*		00 40 11.6	
UKT				pmax	pmax		
	comp=Z,311nm,0.5s						
UKT				smax	smax		
	comp=N,526nm,0.3s						
SVKR	**Severomuysk**	**2.00**	**66**	*e*Pg	**Pb**	**00 39 47.1**	**-0.7**
SVKR				*e*Sg	**Sg**	**00 40 15.0**	**-0.2**
SVKR				Pmax			
	comp=N,265nm,0.4s						
SVKR				Smax			
	comp=N,2μm,0.6s						
SVKR	**Severomuysk**	**2.00**	**66**	*e*PN	**Pb**	**00 39 46.9**	**-0.9**
SVKR				*e*		00 40 14.5	
SVKR				pmax	pmax		
	comp=Z,267nm,0.5s						
SVKR				smax	smax		
	comp=N,2μm,0.6s						
OGRR	**Ongureny**	**2.33**	**224**	*e*Pn	**Pn**	**00 39 50.4**	**+0.6**
OGRR				*e*Pg	**Pb**	**00 39 51.8**	**-1.5**
OGRR				*e*Sg	**Sb**	**00 40 22.0**	**-0.2**
OGRR				Pmax			
	comp=N,94nm,0.5s						
OGRR				Smax			
	comp=N,347nm,0.5s						
OGRR	**Ongureny**	**2.33**	**224**	*e*PN	**Pn**	**00 39 50.4**	**+0.6**
OGRR				*e*		00 39 53.1	
OGRR				*e*		00 40 22.0	
OGRR				pmax	pmax		
	comp=Z,95nm,0.3s						
OGRR				smax	smax		
	comp=E,410nm,0.4s						
BOD	**Bodaibo**	**3.21**	**38**	*e*Pn	**Pn**	**00 40 02.7**	**+0.8**
BOD				*e*Pg	**Pb**	**00 40 08.1**	**-0.3**
BOD				*e*Sn	**Sn**	**00 40 41.3**	**+0.8**
BOD				*e*Sg	**Sb**	**00 40 50.5**	**+2.8**
BOD				Pmax			
	comp=E,17nm,0.4s						
BOD				Smax			
	comp=E,149nm,1.0s						
NLYR	**Nelyaty**	**3.25**	**67**	*e*PN	**Pn**	**00 40 03.5**	**+1.0**
NLYR				*e*		00 40 10.8	
NLYR				*e*		00 40 51.5	
NLYR				pmax	pmax		
	comp=Z,66nm,0.8s						
NLYR				smax	smax		
	comp=E,600nm,0.8s						
ZRHB	**Zarechye**	**3.36**	**215**	*e*Pg	**Pb**	**00 40 09.6**	**-1.4**
ZRHB				*e*Sg	**Sb**	**00 40 53.7**	**+1.6**
ZRHB				Pmax			
	comp=E,56nm,0.6s						
ZRHB				Smax			
	comp=E,745nm,1.2s						
TRG	**Tyrgan**	**3.48**	**223**	⇑*e*Pn	**Pn**	**00 40 06.2**	**+0.5**
TRG				*e*		00 40 08.9	
TRG				*e*Pg	**Pb**	**00 40 11.5**	**-1.6**
TRG				*e*Sg	**Sb**	**00 40 56.2**	**+0.6**
TRG				Pmax			
	comp=E,30nm,0.6s						
TRG				Smax			
	comp=E,148nm,0.4s						
TRG	**Tyrgan**	**3.48**	**223**	*e*PN	**Pn**	**00 40 06.2**	**+0.5**
TRG				*e*		00 40 13.5	
TRG				*e*S	**Sn**	**00 40 45.8**	**-1.5**
TRG				*e*		00 40 56.5	
TRG				pmax	pmax		
	comp=Z,29nm,0.5s						
TRG				smax	smax		
	comp=E,149nm,0.4s						
CIT	**Chita**	**3.86**	**149**	*e*	Pn	00 40 04.6	-6.3
CIT				*e*Sg	**Sb**	**00 41 09.9**	**+3.5**
CIT				Smax			
	comp=E,288nm,0.2s						
KAB	**Kabansk**	**3.95**	**215**	*e*	Pg	00 40 40.7	+14
KAB				*e*Sg	**Sb**	**00 41 12.7**	**+3.7**
KAB				Smax			
	comp=E,362nm,0.8s						
HRMR	**Khuramsha**	**4.23**	**209**	*e*	Pn	00 40 19.3	+3.3
HRMR				*e*Pg	**Pb**	**00 40 26.2**	**+0.4**
HRMR				*e*Sg	**Sb**	**00 41 20.5**	**+3.5**
HRMR				Pmax			
	comp=E,54nm,0.6s						
HRMR				Smax			
	comp=E,291nm,0.5s						
CRS	**Chara**	**4.72**	**68**	*e*Pg	**Pb**	**00 40 36.2**	**+2.0**
CRS				*e*Sg	**Sg**	**00 41 39.4**	**-3.2**
CRS				Pmax			
	comp=E,41nm,0.8s						
CRS				Smax			
	comp=E,154nm,1.4s						
CRS	**Chara**	**4.72**	**68**	*e*PN	Pg	00 40 37.8	-3.7
CRS				*e*		00 41 37.5	
CRS				pmax	pmax		
	comp=Z,66nm,1.0s						
CRS				smax	smax		
	comp=E,151nm,1.4s						
IRK	**Irkutsk**	**4.74**	**231**	*e*Sg	**Sb**	**00 41 34.9**	**+3.3**
IRK				Smax			
	comp=E,313nm,0.6s						
LSTR	**Listvyanka**	**4.77**	**225**	*e*	**Sn**	**00 41 16.2**	**-2.7**
LSTR				*e*Sg	**Sb**	**00 41 36.0**	**+3.5**
TLY	**Talaya**	**5.41**	**230**	*e*Pn	**Pn**	**00 40 31.5**	**-0.6**
TLY				*e*		00 40 42.7	
TLY				*e*Pg	**Pb**	**00 40 45.9**	**+0.1**
TLY				*e*		00 41 33.5	
TLY				*e*Sg	**Sb**	**00 41 55.7**	**+4.8**
TLY				Pmax			
	comp=E,16nm,0.9s						
TLY				Smax			
	comp=E,62nm,0.9s						
TLY	**Talaya**	**5.41**	**230**	*e*PN	**Pn**	**00 40 31.2**	**-0.9**
TLY				*e*		00 40 48.3	
TLY				*e*S	**Sn**	**00 41 31.6**	**-3.0**
TUP	**Tupik**	**5.65**	**95**	*e*Pn	**Pn**	**00 40 36.2**	**+0.7**
TUP				*e*Pg	**Pb**	**00 40 52.6**	**+2.6**
TUP				*e*Sg	**Sg**	**00 42 07.9**	**-4.5**
TUP				Pmax			
	comp=E,11nm,0.4s						
TUP				Smax			
	comp=E,131nm,1.3s						
TUP	**Tupik**	**5.65**	**95**	*e*PN	**Pn**	**00 40 35.7**	**+0.2**
TUP				*e*		00 40 52.6	
TUP				*e*S	**Sn**	**00 41 40.1**	**-0.6**
TUP				*e*		00 42 06.8	
TUP				pmax	pmax		
	comp=Z,23nm,0.7s						
TUP				smax	smax		
	comp=N,130nm,1.4s						
KPC	**Khapcheranga**	**5.80**	**166**	*e*Pn	**Pn**	**00 40 36.7**	**-0.8**
KPC				Pg	**Pb**	**00 40 55.2**	**+2.7**
KPC				*e*Sn	**Sn**	**00 41 40.7**	**-3.6**
KPC				*e*Sg	Sg	00 42 10.2	-6.9
KPC				Pmax			
	comp=N,2.0nm,0.4s						
KPC				Smax			
	comp=N,96nm,1.1s						
ARS	**Arshan**	**5.81**	**237**	*e*Pn	**Pn**	**00 40 37.8**	**+0.2**
ARS				Pg	**Pb**	**00 40 52.7**	**+0.1**
ARS				*e*Sn	**Sn**	**00 41 40.9**	**-3.6**
ARS				*e*Sg	**Sb**	**00 42 08.3**	**+5.9**
ARS				Pmax			
	comp=N,32nm,0.5s						
ARS				Smax			
	comp=N,275nm,0.5s						
ARS	**Arshan**	**5.81**	**237**	*e*PN	**Pn**	**00 40 38.3**	**+0.7**
ARS				*e*		00 40 57.0	
ARS				*e*S	**Sn**	**00 41 41.6**	**-2.9**
ARS				*e*		00 42 08.3	
ARS				pmax	pmax		
	comp=Z,32nm,0.4s						
ARS				smax	smax		
	comp=N,275nm,0.5s						
ZAK	**Zakamensk**	**6.54**	**223**	*e*Pn	**Pn**	**00 40 48.0**	**+0.3**
ZAK				*e*		00 40 50.9	
ZAK				*e*Pg	**Pb**	**00 41 06.7**	**+1.6**
ZAK				*e*Sg	Sb	00 42 30.9	+7.4
ZAK				Pmax			
	comp=N,5.0nm,0.4s						
ZAK				Smax			
	comp=N,51nm,1.4s						
ZAK	**Zakamensk**	**6.54**	**223**	*e*PN	**Pn**	**00 40 50.7**	**+3.0**
ZAK				*e*		00 42 31.4	
ZAK				pmax	pmax		
	comp=Z,7.0nm,0.6s						
ZAK				smax	smax		
	comp=E,41nm,1.0s						
MOY	**Mondy**	**6.66**	**240**	*e*Pn	**Pn**	**00 40 50.5**	**+1.1**
MOY				*e*		00 40 59.5	
MOY				*e*		00 42 06.2	
MOY				*e*Sg	Sb	00 42 34.8	+7.8
MOY				max			
	comp=E,15nm,0.4s						
MOY				Smax			
	comp=E,78nm,1.3s						
MOY	**Mondy**	**6.66**	**240**	*e*PN	**Pn**	**00 40 50.2**	**+0.8**
MOY				*e*		00 41 11.5	
MOY				*e*		00 42 35.8	
MOY				pmax	pmax		
	comp=Z,8.0nm,0.4s						
MOY				smax	smax		
	comp=E,78nm,1.4s						
ORL	**Orlik**	**6.80**	**250**	*e*	**Pn**	**00 40 52.1**	**+0.8**
ORL				*e*		00 42 08.2	
ORL				*e*Sg	Sb	00 42 39.8	+8.8
ORL				Smax			
	comp=E,78nm,1.3s						
ORL	**Orlik**	**6.80**	**250**	*e*PN	**Pn**	**00 40 52.0**	**+0.8**
ORL				*e*		00 41 13.6	
ORL				*e*		00 42 40.9	
ORL				pmax	pmax		
	comp=Z,17nm,0.7s						
ORL				smax	smax		
	comp=N,82nm,1.1s						

JMA 29 00:58:39.7, 36°32N×140°82E, h54km±1km, M2.5, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JHO	**Hitachi**	**0.35**	**325**	P	Pn	00 58 49.6	-0.1
JHO				S	Sn	00 58 56.6	-0.3
CHOJ	**Chosi**	**0.62**	**177**	P	Pn	00 58 52.5	-0.1
CHOJ				S	Sn	00 59 01.8	-0.1
ONAJ	**Iwakimizuishiy**	**0.78**	**359**	P	Pn	00 58 54.6	-0.1
ONAJ				S	Sn	00 59 05.0	-0.7
MAT	**Matsushiro**	**2.12**	**277**	P	Pn	00 59 13.7	+1.0
MAT				*e*S	Sn	00 59 39.5	+1.6

NIED ***29*** *01:13:00.37˝.50N×142˝.60E, h20km, Mw4.5 Best double couple: M₀6.95000×10¹⁵ NP1:φ=221.00000°, δ=8.00000°, λ=95.00000°. NP2:φ=36.00000°, δ=82.00000°, λ=89.00000°.*

IDC ***29*** *01:13:49.2±0.5, 37˝.46N×142˝.55E, h0km, mb4.5/29, mb1 4.6/34, mb1mx4.5/44, mbtmp4.5/34, ML4.6/4, MS3.8/35, Ms1 3.9/35, ms1mx3.7/57, Error ellipse: s-maj=14.3km s-min=12.1km az=113.0*

BJI ***29*** *01:13:50.6, 37˝.48N×142˝.56E, h28km, mb4.9/65, mB4.8/43, Ms4.3/59, Ms7 4.2/55*

JMA ***29*** *01:13:50.9±0.2, 37˝.47N×142˝.59E, h25km, M4.6*

JMA Felt I J1.

ISCJB ***29*** *01:13:51.6±0.8, 37˝.47N±0˝.02×142˝.52E±0˝.03, h26km±5km, mb4.7/132, MS4.1/53, Error ellipse: s-maj=4.4km s-min=3.2km az=145.7*

MOS ***29*** *01:13:52.9±1.1, 37˝.57N×142˝.46E, h33km, mb5.1/62, MS4.0/15, Error ellipse: s-maj=6.8km s-min=4.4km az=108.8*

NEIC ***29*** *01:13:54.4±0.7, 37˝.49N×142˝.45E, h32km±4km, mb4.8/62, Error ellipse: s-maj=5.2km s-min=3.5km az=133.0*

NEIC Recorded [1 JMA] in Fukushima and Miyagi.

ISC 29 01:13:52.4±0.5, 37°47N±0˝.04×142°46E±0˝.04, h20km±3km, h20km:pP-P, n340, σ1§12/342, mb4.8/133, MS4.2/54, 23C-14D, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JFK	**Kawauchi**	**1.27**	**266**	P	**Pn**	**01 14 14.5**	**-0.5**
JFK				S	**Sb**	**01 14 31.8**	**+0.3**
JIO	**Ouri**	**1.32**	**318**	P	**Pn**	**01 14 15.0**	**-0.6**
JIO				S	**Sb**	**01 14 32.9**	**0.0**
ONAJ	**Iwakimizuishiy**	**1.38**	**255**	P	**Pn**	**01 14 16.4**	**-0.1**
ONAJ				S	**Sb**	**01 14 34.8**	**+0.1**
JMM	**Marumori**	**1.38**	**287**	P	**Pn**	**01 14 16.1**	**-0.4**
JMM				*e*S	**Sb**	**01 14 35.4**	**+0.7**
JOU	**Okura**	**1.68**	**303**	P	**Pn**	**01 14 20.9**	**+0.3**
JFT	**Otama**	**1.69**	**272**	P	**Pn**	**01 14 21.6**	**+0.8**
JFT				S	**Sb**	**01 14 43.7**	**0.0**
JMK	**Ichinoseki**	**1.77**	**327**	P	**Pn**	**01 14 21.6**	**-0.3**
JYK	**Kaneyama**	**2.20**	**312**	P	**Pn**	**01 14 27.7**	**-0.1**
JOM	**Ohasama**	**2.20**	**336**	P	**Pn**	**01 14 27.7**	**-0.1**
JNS	**Sasagawa**	**2.52**	**279**	P	**Pn**	**01 14 33.8**	**+1.6**
JAG	**Ashikaga**	**2.63**	**247**	P	**Pn**	**01 14 35.0**	**+1.3**
JAG				*e*S	**Sn**	**01 15 06.7**	**+1.7**
JAW	**Awa shima**	**2.72**	**292**	P	**Pn**	**01 14 36.5**	**+1.5**
JANG	**Nango**	**2.99**	**346**	P	**Pn**	**01 14 37.5**	**-1.2**
BSO1	**Boso 1**	**3.06**	**204**	P	**Pn**	**01 14 39.6**	**+0.5**
BSO1				S	**Sn**	**01 15 16.1**	**+1.2**
MJAR	**Matsushiro Arr**	**3.53**	**256**	Pn	**Pn**	**01 14 47.8**	**+1.7**
	68nm,0.3s,baz=81,slow=14,SNR=329						
MJAR				Sn	**Sn**	**01 15 29.3**	**+2.0**
	baz=73,slow=17,SNR=4.2						
MJAR				LR	LR	01 16 25.2	
	comp=Z,1μm,19.4s,baz=75,slow=44						
MAJO	**Matsushiro**	**3.53**	**256**	*c i*P	**Pn**	**01 14 48.3**	**+2.2**
MAJO	**Matsushiro**	**3.53**	**256**	*e*Pn	**Pn**	**01 14 47.9**	**+1.8**
MAT	**Matsushiro**	**3.53**	**256**	P	**Pn**	**01 14 48.0**	**+1.9**
MAT				*e*S	**Sb**	**01 15 32.8**	**-3.8**
MJB9	**Matsu-Tunnel**	**3.53**	**256**	*e*Pn	**Pn**	**01 14 48.6**	**+2.5**
ERM	**Erimo**	**4.57**	**7**	*c i*P	**Pn**	**01 14 58.2**	**-2.1**
ERM	**Erimo**	**4.57**	**7**	*e*Pn	**Pn**	**01 14 58.5**	**-1.8**
ERM				*e*Sn	**Sn**	**01 15 50.5**	**-2.3**
JHJ2	**Mitsune**	**4.86**	**207**	*e*Pn	**Pn**	**01 15 03.0**	**-1.4**
JHJ2				*e*Sn	**Sn**	**01 15 57.8**	**-2.2**
JHJ	**Hachijo jima 2**	**4.87**	**208**	Pn	**Pn**	**01 15 03.5**	**-0.9**
	186nm,0.3s,baz=310,slow=14,SNR=37						
JHJ				Sn	**Sn**	**01 15 58.1**	**-2.1**
	449nm,0.3s,baz=291,slow=22,SNR=19						
INU	**Inuyama**	**4.88**	**246**	*e*Pn	**Pn**	**01 15 07.2**	**+2.6**
ASAJ	**Asahikawa**	**6.64**	**1**	Pn	**Pn**	**01 15 27.5**	**-1.3**
	14nm,0.3s,baz=213,slow=9.6,SNR=36						
ASAJ	**Asahikawa**	**6.64**	**1**	*e*Pn	**Pn**	**01 15 27.7**	**-1.1**
SHO	**Shikotan**	**7.20**	**26**	*i* P	**Pn**	**01 15 37.6**	**+1.2**
SHO				*i* S	Sn	01 16 48.7	-8.9
KUR	**Kuril'sk**	**8.75**	**26**	P	**Pn**	**01 15 57.7**	**0.0**
KUR				*e*S	Sn	01 17 29.0	-6.7
KUR				smax	smax		
	comp=N,63nm,0.6s						
KUR				smax	smax		
	comp=E,46nm,0.6s						
YSS	**Yuzh-Sakhalins**	**9.48**	**1**	*e*P	**Pn**	**01 16 06.9**	**-0.8**
YSS	**Yuzh-Sakhalins**	**9.48**	**1**	*e*Pn	**Pn**	**01 16 06.9**	**-0.8**
MSHR	**Mys Shultsa**	**10.06**	**304**	*e*P	**Pn**	**01 16 16.7**	**+1.1**
CBIJ	**Chichi jima**	**10.35**	**181**	*e*Pn	Pn	01 16 15.1	-4.7
CBIJ				*e*Sn	Sn	01 18 06.2	-8.9
JCJ	**Chichijima**	**10.35**	**181**	Pn	Pn	01 16 16.1	-3.7
	comp=E,21nm,0.3s,baz=278,slow=22,SNR=12						
JCJ				LR	LR	01 22 25.8	
	comp=E,66nm,20.2s,baz=350,slow=50						
USRK	**Ussuriysk Ar.**	**10.39**	**314**	Pn	**Pn**	**01 16 22.2**	**+1.9**
	comp=E,2.5nm,0.3s,baz=121,slow=13,SNR=27						
USRK				LR	LR	01 20 07.4	
	comp=E,1μm,19.2s,baz=123,slow=36						
JNU	**Nakatsue**	**10.41**	**249**	Pn	**Pn**	**01 16 23.1**	**+2.5**
	comp=E,1.0nm,0.3s,baz=53,slow=9.1,SNR=10						
JNU				LR	LR	01 20 35.2	
	comp=E,285nm,20.7s,baz=100,slow=39						
JNU	**Nakatsue**	**10.41**	**249**	*e*Pn	**Pn**	**01 16 22.6**	**+2.0**
KSRS	**Korea Array**	**11.56**	**274**	Pn	Pn	01 16 40.7	+4.5
	comp=E,1.1nm,0.3s,baz=88,slow=14,SNR=18						
KSRS				LR	LR	01 21 04.6	
	comp=E,778nm,18.1s,baz=93,slow=37						
KS01	**Wonju Array Si**	**11.58**	**274**	*e*Pn	Pn	01 16 42.2	+5.7
KS15	**Wonju Array Si**	**11.59**	**274**	*e*Pn	Pn	01 16 42.8	+6.2
KSAR	**Wonju Array Be**	**11.59**	**274**	P	Pn	01 16 40.7	+4.1
KSAR	**Wonju Array Be**	**11.59**	**274**	Pn	Pn	01 16 40.7	+4.1
MDJ	**Mudanjiang**	**12.05**	**310**	P	P	01 16 51.5	-4.2
MDJ				S	**Sn**	**01 18 57.5**	**+0.9**
MDJ				pmax	pmax		
	comp=Z,42nm,0.7s						
MDJ				pmax	pmax		
	comp=Z,100nm,6.2s						
MDJ				LR	LR		
	comp=N,520nm,20.4s						
MDJ				LR	LR		
	comp=E,570nm,16.5s						
MDJ				LR	LR		
	comp=Z,970nm,15.5s						
MDJ	**Mudanjiang**	**12.05**	**310**	*e*Pn	**Pn**	**01 16 44.9**	**+2.1**
	comp=Z,39nm,0.8s						
HABR	**Khabarovsk**	**12.25**	**336**	*e*P	**Pn**	**01 16 43.3**	**-2.3**
HABR				*e*S	**Sn**	**01 18 58.6**	**-2.9**
HABR				pmax	pmax		
	comp=Z,50nm,2.0s						
HABR				MLR	MLR		
	comp=Z,692nm,16.0s						
TYV	**Tymovskoe**	**13.39**	**1**	*e*P	**Pn**	**01 17 03.0**	**+1.9**
TYV				pmax	pmax		
	comp=Z,20nm,0.8s						
TYV				MLR	MLR		
	comp=E,1μm,14.0s						
TYV				MLR	MLR		
	comp=Z,500nm,15.0s						
KLR	**Kul'dur**	**14.08**	**330**	Pn	**Pn**	**01 17 09.9**	**-0.7**
	comp=Z,0.4nm,0.3s,baz=134,slow=13,SNR=16						
KLR				LR	LR	01 22 35.9	
	comp=Z,796nm,19.2s,baz=126,slow=37						
KLR	**Kul'dur**	**14.08**	**330**	P	**Pn**	**01 17 10.0**	**-0.7**
KLR				MLR	MLR		
	comp=Z,796nm,19.2s						
CN2	**Changchun**	**14.37**	**301**	*e*P	**Pn**	**01 17 15.5**	**+0.9**
CN2				*e*S	**Sn**	**01 19 53.5**	**+0.2**
CN2				LR	LR		
	comp=Z,700nm,18.0s						
CN2				LR	LR		
	comp=Z,700nm,18.0s						
CN2				LR	LR		
	comp=Z,500nm,19.0s						
SNY	**Shenyang**	**15.18**	**293**	⇑P	**Pn**	**01 17 25.5**	**0.0**
SNY				pmax	pmax		
	comp=Z,200nm,3.9s						
SNY				LR	LR		
	comp=Z,640nm,13.5s						
SNY				LR	LR		
	comp=Z,1μm,17.3s						
SNY				LR	LR		
	comp=Z,1μm,17.2s						
JOW	**Kunigami**	**16.01**	**233**	Pn	**P**	**01 17 41.8**	**+2.0**
	comp=Z,1.8nm,0.3s,baz=73,slow=13,SNR=3.9						
DL2	**Dalian**	**16.44**	**281**	P	**P**	**01 17 44.3**	**-0.2**
DL2				S	**Sn**	**01 20 43.0**	**-0.8**
DL2				pmax	pmax		
	comp=Z,68nm,0.7s						
DL2				LR	LR		
	comp=Z,460nm,12.7s						
DL2				LR	LR		
	comp=Z,500nm,14.2s						
DL2				LR	LR		
	comp=Z,580nm,16.2s						
PETK	**Petropavlovsk-**	**18.89**	**29**	P	**Pn**	**01 18 13.6**	**+1.5**
	comp=Z,0.1nm,0.3s,baz=218,slow=11,SNR=2.6						
PET	**Petropavlovsk**	**19.21**	**31**	*e*P	Pn	01 18 22.3	+6.4
NJ2	**Nanjing**	**20.12**	**261**	*e*P	Pn	01 18 26.5	-0.3
NJ2				pmax	pmax		
	comp=Z,27nm,0.5s						
TIA	**Tai'an**	**20.30**	**274**	*e*P	**P**	**01 18 25.3**	**-1.7**
TIA				pmax	pmax		
	comp=Z,20nm,0.7s						
TIA				LR	LR		
	comp=Z,430nm,18.1s						
TIA				LR	LR		
	comp=Z,680nm,14.3s						
TIA				LR	LR		
	comp=Z,550nm,12.6s						
BJI	**Beijing**	**20.64**	**285**	P	**P**	**01 18 29.3**	**-1.3**
BJI				S	**S**	**01 22 20.0**	**-0.2**
BJI				pmax	pmax		
	comp=Z,17nm,0.5s						
BJI				LR	LR		
	comp=Z,290nm,14.8s						
BJI				LR	LR		
	comp=Z,160nm,11.9s						
BJI				LR	LR		
	comp=Z,170nm,20.7s						
BJT	**Baijiatuan**	**20.64**	**285**	*e*P	**P**	**01 18 29.1**	**-1.5**
BJT				pmax	pmax		
	comp=Z,23nm,0.6s						
BJT	**Baijiatuan**	**20.64**	**285**	*e*P	**P**	**01 18 29.1**	**-1.5**
	comp=Z,23nm,0.6s						
YOJ	**Yonaguni jima**	**21.08**	**238**	*e*P	**P**	**01 18 36.0**	**+0.6**
YOJ				pmax	pmax		
	comp=Z,42nm,1.1s						
YOJ	**Yonaguni jima**	**21.08**	**238**	*e*P	**P**	**01 18 36.0**	**+0.6**
	comp=Z,42nm,1.1s						
YHNB	**Yeheng**	**22.06**	**241**	*e*P	**P**	**01 18 46.2**	**+0.1**
	comp=Z,20nm,0.8s						
CLNS	**Chul'man**	**22.63**	**334**	*e*P	**P**	**01 18 52.2**	**+0.3**
CLNS				pmax	pmax		
	comp=Z,18nm,0.9s						
CLNS				pmax	pmax		
	comp=E,6.0nm,0.6s						
CLNS				pmax	pmax		
	comp=N,17nm,1.0s						
MA2	**Magadan**	**22.76**	**11**	P	**P**	**01 18 52.8**	**-0.3**
	comp=N,6.7nm,0.6s,baz=216,slow=14,SNR=5.9						
MA2				LR	LR	01 28 25.1	
	comp=N,132nm,19.0s,baz=154,slow=38						
SSLB	**Suanglung**	**22.92**	**240**	*e*P	**P**	**01 18 54.9**	**-0.3**
	comp=N,13nm,0.7s						
YULB	**Yu-li**	**22.95**	**238**	*e*P	**P**	**01 18 55.2**	**-0.3**
	comp=N,8.0nm,0.6s						
TPUB	**Ta-pu**	**23.47**	**239**	*e*P	**P**	**01 18 57.6**	**-3.1**
	comp=N,33nm,0.9s						
GUMO	**Guam**	**23.88**	**174**	LR	LR	01 27 28.8	
	comp=N,91nm,21.6s,baz=98,slow=34						
HHC	**Hu-ho-hao-te**	**24.13**	**288**	*e*P	**P**	**01 19 07.5**	**+0.5**
HHC				S	**S**	**01 23 20.0**	**-3.9**
HHC				pmax	pmax		
	comp=N,17nm,0.9s						
HHC				pmax	pmax		
	comp=N,63nm,7.1s						
HHC				LR	LR		
	comp=N,1μm,14.3s						
HHC				LR	LR		
	comp=N,3μm,15.6s						
HHC				LR	LR		
	comp=N,1μm,13.3s						
WHN	**Wuhan**	**24.25**	**262**	P	**P**	**01 19 07.8**	**-0.3**
WHN				S	**S**	**01 23 26.5**	**+0.8**
WHN				LR	LR		
	comp=N,500nm,13.1s						
WHN				LR	LR		
	comp=N,1μm,16.2s						
WHN				LR	LR		
	comp=N,970nm,19.1s						
CIT	**Chita**	**24.95**	**315**	*e*P	**P**	**01 19 14.6**	**+0.3**
CIT				*e*		01 19 23.0	
YAK	**Yakutsk**	**25.83**	**346**	P	**P**	**01 19 22.6**	**+0.5**
	comp=N,19nm,0.4s,baz=190,slow=1.3,SNR=5.3						
YAK				LR	LR	01 30 55.2	
	comp=N,140nm,18.5s,baz=164,slow=40						
YAK	**Yakutsk**	**25.83**	**346**	*e*P	**P**	**01 19 22.0**	**-0.1**
YAK				pmax	pmax		
	comp=Z,27nm,0.9s						
YAK				pmax	pmax		
	comp=N,12nm,1.5s						
YAK				pmax	pmax		

comp=E,7.0nm,1.2s
YAK Yakutsk 25.83 346 *e*P P **01 19 21.4 -0.7**
comp=E,49nm,0.6s
SEY Seymchan 26.20 10 P P **01 19 26.1 +0.7**
comp=E,10nm,0.6s,baz=191,slow=8.0,SNR=35
XAN Xi'an 27.35 273 P P **01 19 35.5 -0.7**
XAN pP pP 01 19 42.0 -0.3
XAN pmax pmax
comp=E,21nm,0.7s
XAN pmax pmax
comp=E,47nm,6.2s
XAN LR LR
comp=E,170nm,12.7s
XAN LR LR
comp=E,270nm,14.5s
BOD Bodaibo 27.61 327 *e*P P **01 19 37.7 -0.5**
BOD pmax pmax
comp=Z,28nm,1.0s
H11N2 WAKE ISLAND Hy 27.67 123 T T 01 48 33.2
baz=315,slow=75,SNR=740
H11N1 WAKE ISLAND Hy 27.68 123 T T 01 48 37.9
baz=315,slow=75,SNR=559
H11N3 WAKE ISLAND Hy 27.69 123 T T 01 48 37.5
baz=315,slow=75,SNR=625
ULN Ulaanbaatar 27.81 303*ce*P P **01 19 40.5 +0.3**
ULN pmax pmax
comp=Z,10.0nm,0.6s
ULN Ulaanbaatar 27.81 303 *e*P P **01 19 40.6 +0.3**
comp=Z,10nm,0.6s
ENH Enshi 28.20 265 *e*P P **01 19 43.8 0.0**
comp=Z,68nm,0.7s
SONA1 Songino Array 28.24 303 *e*P P **01 19 44.6 +0.5**
SONM Songino Array 28.24 303 P P **01 19 45.1 +1.0**
comp=Z,23nm,0.7s,baz=98,slow=8.9,SNR=42
SONM LR LR 01 31 21.8
comp=Z,242nm,19.1s,baz=74,slow=37
H11S1 WAKE ISLAND Hy 28.41 125 T T 01 49 28.0
baz=317,slow=76,SNR=314
H11S3 WAKE ISLAND Hy 28.41 125 T T 01 49 28.1
baz=317,slow=76,SNR=266
H11S2 WAKE ISLAND Hy 28.43 125 T T 01 49 32.5
baz=317,slow=76,SNR=232
ZAK Zakamensk 30.66 308 *e*P P **01 20 04.6 -0.9**
ZAK pmax pmax
comp=Z,13nm,1.0s
TLY Talaya 30.68 310 LR LR 01 33 02.0
comp=Z,455nm,18.7s,baz=78,slow=38
TLY Talaya 30.68 310 *e*P P 01 20 00.1 -5.5
TLY pmax pmax
comp=Z,12nm,1.0s
TLY MLR MLR
comp=Z,369nm,13.0s
LZH Lanzhou 30.82 279 *e*P P **01 20 07.3 +0.2**
LZH pP sP 01 20 15.8 0.0
LZH sP pP 01 20 19.3 +6.1
LZH pmax pmax
comp=Z,22nm,1.0s
LZH pmax pmax
comp=Z,120nm,5.0s
LZH LR LR
comp=Z,240nm,12.3s
LZH LR LR
comp=Z,470nm,14.2s
LZH LR LR
comp=Z,460nm,18.2s
GYA Guiyang 32.12 260⇑ *i*P P **01 20 19.0 +0.4**
GYA pP sP 01 20 27.3 +0.1
GYA PP **PnPn 01 21 25.5 +1.1**
GYA PcP **PcP 01 23 09.0 +1.5**
GYA S **S 01 25 28.5 -1.6**
GYA ScP **ScP 01 26 50.3 +0.4**
GYA SS **SnSn 01 27 20.8 +0.1**
GYA ScS **ScS 01 30 47.5 -1.5**
GYA pmax pmax
comp=Z,20nm,0.8s
GYA pmax pmax
comp=Z,130nm,5.2s
GYA LR LR
comp=Z,830nm,16.4s
GYA LR LR
comp=Z,690nm,16.2s
GYA LR LR
comp=Z,740nm,16.6s
MOY Mondy 32.30 309 *e*P P **01 20 20.2 +0.3**
CD2 Chengdu 32.51 270 P P **01 20 21.0 -0.9**
CD2 sP sP 01 20 32.5 +2.0
CD2 PP **PP 01 21 34.3 -1.1**
CD2 S **S 01 25 34.0 -2.0**
CD2 sS sS 01 25 47.8 +1.7
CD2 pmax pmax
comp=Z,30nm,0.5s
CD2 pmax pmax
comp=Z,50nm,3.5s
CD2 LR LR
comp=Z,330nm,15.6s
CD2 LR LR
comp=Z,390nm,15.6s
GTA Gaotai 33.24 287 *e*P P **01 20 28.3 0.0**
GTA pP sP 01 20 37.5 +0.6
GTA sP pP 01 20 41.5 +7.1
GTA S **S 01 25 45.5 -1.8**
GTA sS sS 01 26 01.3 +3.8
GTA SS **SnSn 01 27 50.0 +2.5**
GTA pmax pmax
comp=Z,8.0nm,1.0s
GTA pmax pmax
comp=Z,80nm,6.4s
GTA LR LR
comp=Z,170nm,16.2s
GTA LR LR
comp=Z,260nm,16.6s
GTA LR LR
comp=Z,280nm,18.5s
BILL Bilibino 33.37 16⇑ *i*P P **01 20 28.1 -0.8**
BILL *i* 01 20 37.0
BILL *e*S **S 01 25 49.0 +0.5**
BILL pmax pmax
comp=Z,2.0nm,0.9s
BILL MLR MLR
comp=Z,73nm,16.0s
BILL Bilibino 33.37 16 *e*P P **01 20 28.9 0.0**
comp=Z,4.6nm,0.4s
TIXI Tiksi 34.96 353⇓ *i*P P **01 20 41.6 -1.0**
TIXI pmax pmax
comp=Z,1.0nm,0.9s
TIXI Tiksi 34.96 353 *e*P P **01 20 41.1 -1.5**
comp=Z,5.1nm,1.1s
KMI Kunming 35.85 262 P P **01 20 52.0 +0.9**
KMI pP sP 01 21 00.0 +0.2
KMI sP pP 01 21 03.3 +6.0
KMI PP **PP 01 22 12.5 -0.2**
KMI S **S 01 26 26.5 -1.6**
KMI sS sS 01 26 40.0 +1.7
KMI SS **SnSn 01 28 46.3 -5.2**
KMI pmax pmax
comp=Z,15nm,0.8s
KMI pmax pmax
comp=Z,72nm,4.6s
KMI LR LR
comp=Z,200nm,14.4s
KMI LR LR
comp=Z,320nm,18.3s
KMI LR LR
comp=Z,310nm,18.6s
SGSI Sangihe 37.04 209 P P **01 20 58.2 -2.8**
comp=Z,345nm,0.7s
WMQ Urumqi 41.39 297 P P **01 21 38.5 +1.3**
WMQ pP sP 01 21 46.5 +0.5
WMQ sP pP 01 21 49.3 +5.8
WMQ S **S 01 27 50.5 -0.5**
WMQ sS sS 01 28 02.8 +1.5
WMQ pmax pmax
comp=Z,9.0nm,0.6s
WMQ pmax pmax
comp=Z,32nm,4.0s
WMQ LR LR
comp=Z,25nm,17.8s
WMQ LR LR
comp=Z,66nm,18.0s
WMQ LR LR
comp=Z,68nm,17.8s
SANI Sanana 42.19 205 P P 01 21 40.6 -3.3
comp=Z,15nm,0.7s
CHTO Chiang Mai 42.21 256 *e*P P **01 21 44.6 +0.5**
CHTO pmax pmax
comp=Z,5.0nm,0.7s
CHTO Chiang Mai 42.21 256 *e*P P **01 21 44.6 +0.5**
comp=Z,5.5nm,0.7s
ZAA0 Zalesovo Array 42.24 312 *e*P P **01 21 43.6 -0.4**
ZALV Zalesovo Beam 42.24 312 P P **01 21 44.2 +0.3**
comp=Z,18nm,0.7s,baz=92,slow=7.1,SNR=86
ZALV PcP **PcP 01 23 37.7 +0.1**
comp=Z,1.4nm,0.5s,baz=134,slow=2.1,SNR=2.7
ZALV LR LR 01 39 58.4
comp=Z,297nm,18.3s,baz=70,slow=37
CMAR Chiang Mai Arr 42.42 256 P P **01 21 46.9 +1.0**
comp=Z,0.9nm,0.4s,baz=48,slow=6.7,SNR=4.9
CMAR LR LR 01 40 41.2
comp=Z,93nm,18.3s,baz=61,slow=38
LSA Lhasa 43.00 275 *e*P P **01 21 52.7 +1.7**
LSA pmax pmax
comp=Z,11nm,0.5s
LSA Lhasa 43.00 275 *e*P P **01 21 52.7 +1.7**
comp=Z,11nm,0.5s
NVS Novosibirsk 43.14 313 *e*P P **01 21 51.3 0.0**
NVS pmax pmax
comp=E,20nm,1.0s
NVS pmax pmax
comp=Z,26nm,1.0s
NRIK Noril'sk 43.22 335 P P **01 21 51.5 -0.2**
comp=Z,4.8nm,0.4s,baz=109,slow=8.7,SNR=10
NRIK LR LR 01 41 00.5
comp=Z,397nm,18.1s,baz=109,slow=38
SHL Shillong 44.25 270 *e*P P 01 21 55.0 -5.8
MK01 Makanchi Array 44.59 302 *e*P P **01 22 03.1 +0.1**
MK31 Makanchi Array 44.60 302 *i*P P **01 22 03.2 +0.1**
MK31 pmax pmax
comp=Z,12nm,0.7s
MK31 Makanchi Array 44.60 302 *e*P P **01 22 03.6 +0.5**
MKAR Makanchi Array 44.60 302 P P **01 22 03.2 +0.1**
comp=Z,6.0nm,0.7s,baz=87,slow=9.9,SNR=32
MKAR PcP **PP 01 23 47.2 +0.1**
comp=Z,0.5nm,0.4s,baz=63,slow=5.6,SNR=1.9
MKAR LR LR 01 41 10.6
comp=Z,62nm,20.7s,baz=98,slow=37
MAKZ Makanchi 44.80 302 *e*P P **01 22 05.3 +0.5**
MAKZ pmax pmax
comp=Z,19nm,0.9s
MAKZ Makanchi 44.80 302 *e*P P **01 22 05.3 +0.5**
comp=Z,19nm,0.9s
KDAK Kodiak Island 46.21 42 *i*P P **01 22 16.6 +0.9**
KURK Kurchatov 46.32 308 *e*P P **01 22 16.5 -0.2**
KURK pmax pmax
comp=Z,64nm,0.9s
KURK Kurchatov 46.32 308 *e*P P **01 22 16.5 -0.2**
comp=Z,64nm,0.9s
SPU Mount Spurr 46.38 38 *e*pP pP 01 22 27.1 +3.8
CAST Castle Rocks 46.39 34 *e*P P 01 22 20.1 +3.0
comp=Z,4.1nm,0.8s
PMG Port Moresby 46.84 174 LR LR 01 39 54.2
comp=Z,28nm,20.6s,baz=303,slow=33
PMG Port Moresby 46.84 174 *e*P P **01 22 22.5 +1.5**
PMG pmax pmax
comp=Z,28nm,1.0s
PMG Port Moresby 46.84 174 *e*P P **01 22 22.5 +1.5**
comp=Z,28nm,1.0s
BPAW Bear Paw Mtn. 46.90 33 *e*P P **01 22 22.2 +1.1**
comp=Z,0.5nm,0.6s
MLY Manley 47.03 32 *e*P P 01 22 26.0 +3.9
comp=Z,14nm,1.6s
TRF Thorofare Moun 47.20 34 *e*P P **01 22 25.0 +1.4**
comp=Z,3.0nm,0.7s
PDGK Podgornoye 47.31 298 P P **01 22 24.7 +0.2**
PDGK pmax pmax
comp=Z,34nm,0.9s
COLD Coldfoot 47.36 29 *e*P P **01 22 25.6 +1.0**
comp=Z,2.5nm,0.9s
MCK McKinley 47.80 34 *e*P P **01 22 29.1 +1.0**
MCK pmax pmax
comp=Z,3.0nm,0.7s
MCK McKinley 47.80 34 *e*P P **01 22 29.1 +1.0**
comp=Z,3.1nm,0.7s
RND Reindeer 47.84 34 *e*P P **01 22 30.9 +2.4**
RND pmax pmax
comp=Z,29nm,2.0s
RND Reindeer 47.84 34 *e*P P **01 22 30.9 +2.4**
comp=Z,29nm,2.0s
GUN Gumba 47.94 276 *e*P P **01 22 30.4 +0.3**
comp=Z,213nm,1.0s
MDM Murphy Dome 48.10 32 *e*P P **01 22 31.6 +1.2**
comp=Z,8.4nm,1.0s
SML Sawmill 48.14 37 *e*P P **01 22 31.5 +0.8**
SML pmax pmax
comp=Z,1.0nm,0.7s
SML Sawmill 48.14 37 *e*P P **01 22 31.5 +0.8**
comp=Z,1.4nm,0.7s
KKN Kakani 48.47 276 *e*P P **01 22 34.3 +0.3**
comp=Z,98nm,0.7s
PKIN Phulchoki 48.48 276 *e*P P **01 22 34.7 +0.6**
comp=Z,22nm,0.6s
IL1 Eielson Array 48.67 33 *e*P P **01 22 33.8 -0.9**
ILAR Eielson Array 48.67 33 P P **01 22 35.4 +0.6**
comp=Z,2.1nm,0.7s,baz=267,slow=6.8,SNR=16
ILAR LR LR 01 44 14.6
comp=Z,29nm,19.6s,baz=261,slow=38
ILB Eielson Array 48.67 33 *e*P P **01 22 35.4 +0.6**
GKN Gorkha 48.89 277 *e*P P **01 22 37.4 +0.3**
comp=Z,125nm,0.7s
DIV Divide 49.42 37 *e*P P **01 22 41.4 +0.8**
comp=Z,4.1nm,0.6s
KULM Kulim 49.76 240 *e*P P **01 22 43.3 -0.4**
comp=Z,30nm,1.4s
KOLN Koldanda 49.81 277 *e*P P **01 22 44.5 +0.3**
comp=Z,24nm,0.7s
DOT Dot Lake 49.97 34 *e*P P **01 22 45.1 +0.3**
comp=Z,5.5nm,0.6s
IPM Ipoh 50.09 239 *e*P P **01 22 45.8 -0.3**
comp=Z,14nm,0.9s
PYUN Piuthan 50.14 278 *e*P P **01 22 47.0 +0.3**
comp=Z,166nm,1.0s
TKM2 Tokmak 2 50.16 298 P P **01 22 45.6 -1.1**
TKM2 pmax pmax
comp=Z,16nm,0.6s
TKM2 Tokmak 2 50.16 298 *e*P P **01 22 47.5 +0.8**
comp=Z,16nm,0.6s
CHKZ Chkalovo 50.62 313 P P **01 22 48.9 -0.8**
CHKZ pmax pmax
comp=Z,8.0nm,0.6s
FRU Bishkek 50.87 299 *e*P P **01 22 54.0 +2.2**
BVA0 Borovoye Array 50.90 312 *i*P P **01 22 51.9 +0.1**
BVA0 pmax pmax
comp=Z,6.0nm,0.7s
BVAR Borovoye Array 50.90 312 P P **01 22 51.8 0.0**
comp=Z,5.5nm,0.6s,baz=72,slow=7.5,SNR=40
BVAR PcP **PcP 01 24 08.3 +0.2**
comp=Z,3.1nm,0.7s,baz=90,slow=4.4,SNR=3.7
BRVK Borovoye 50.95 312*ci*P P **01 22 52.0 -0.2**
BRVK pmax pmax
comp=Z,7.0nm,0.6s
BRVK Borovoye 50.95 312 *e*P P **01 22 51.0 -1.3**
comp=Z,11nm,0.8s
KSH Kashi 50.99 294 P P 01 22 57.5 +4.6
KSH *es*P sP 01 23 08.5 +6.8
KSH PcS **PcS 01 28 08.0 +1.4**
KSH S **S 01 30 12.5 +3.5**
KSH ScS **ScS 01 32 42.5 -0.1**
KSH pmax pmax
comp=Z,12nm,0.8s
KSH pmax pmax
comp=Z,90nm,4.4s
KSH LR LR
comp=Z,220nm,13.8s
KSH LR LR
comp=Z,190nm,11.5s
KSH LR LR
comp=Z,380nm,15.1s
AAK Ala-Archa 51.02 298⇑ *e*P P **01 22 53.2 +0.1**
AAK pmax pmax
comp=Z,15nm,0.7s
AAK Ala-Archa 51.02 298 *e*P P **01 22 53.7 +0.6**
comp=Z,7.1nm,0.7s
EGAK Eagle 51.12 32 *e*P P **01 22 54.6 +1.2**
comp=Z,1.9nm,0.7s
COEN Coen 51.16 179 *e*P P **01 22 55.0 +0.8**
comp=Z,22nm,1.1s
EKS2 Erkin-Say 51.51 299 *e*P P **01 22 57.3 +0.5**
EKS2 pmax pmax
comp=Z,7.0nm,0.6s
EKS2 Erkin-Say 51.51 299 *e*P P **01 22 57.3 +0.5**
comp=Z,6.7nm,0.6s
ZRNK Zerenda 51.73 312 P P **01 22 57.3 -0.8**
ZRNK pmax pmax
comp=Z,17nm,1.0s
ZRNK Zerenda 51.73 312 *e*P P **01 22 58.2 +0.1**
comp=Z,22nm,1.0s
MNAS Manas 52.46 299 P P **01 23 03.1 -0.7**
MNAS pmax pmax
comp=Z,11nm,0.6s
INK Inuvik 53.61 27 P P **01 23 12.2 +0.5**
comp=Z,0.8nm,0.4s,baz=294,slow=7.6,SNR=8.6
KK31 Karatay Array 53.63 300 *i*P P **01 23 12.1 -0.2**
KK31 pmax pmax
comp=Z,4.0nm,0.5s
KKAR Karatay Array 53.63 300 *e*P P **01 23 12.6 +0.3**
KKAR pmax pmax
comp=Z,7.0nm,0.6s
KKAR Karatay Array 53.63 300 *e*P P **01 23 12.6 +0.3**
comp=Z,7.3nm,0.6s
GSI Gunungsitoli 54.74 240 *e*P P **01 23 21.2 +0.5**
comp=Z,32nm,0.9s
SVE Sverdlovsk 55.37 319⇓ *e*P P **01 23 25.3 +0.6**
SVE pmax pmax
comp=Z,28nm,0.8s
SVE MLR MLR
comp=Z,493nm,16.0s
ARU Arti 56.59 319*ci*P P **01 23 33.3 -0.1**
ARU 01 24 29.0
ARU 01 25 38.4
ARU S **S 01 31 23.8 -0.2**
ARU SS SS 01 35 02.1 -8.9
ARU pmax pmax
comp=Z,23nm,0.7s
ARU MLR MLR
comp=Z,346nm,17.0s
ARU Arti 56.59 319 *e*P P **01 23 33.4 0.0**
comp=Z,28nm,0.5s
FITZ Fitzroy Crossi 57.51 199 *e*P P **01 23 40.8 +0.5**
comp=Z,4.1nm,0.8s
WRAB Tennant Creek 57.61 189*ce*P P **01 23 40.4 -0.6**
WRAB pmax pmax
comp=Z,21nm,0.7s
WRAB Tennant Creek 57.61 189 *e*P P **01 23 39.7 -1.2**
comp=Z,16nm,0.8s
WB2 Warramunga Arr 57.62 189 *e*P P **01 23 40.5 -0.5**
comp=Z,19nm,0.8s
WRA Warramunga Arr 57.62 189 P P **01 23 40.5 -0.6**
comp=Z,11nm,0.9s,baz=8.0,slow=7.2,SNR=50
KBL Kabul 58.04 291 *e*P P **01 23 44.2 -0.1**
KBL pmax pmax
comp=Z,15nm,0.9s
KBL Kabul 58.04 291 *e*P P **01 23 44.2 -0.1**
comp=Z,15nm,0.9s
AB31 Akbulak array 58.30 310 *i*P P **01 23 45.0 -0.6**
AB31 pmax pmax
comp=Z,7.0nm,0.6s
AKTO Aktyubinsk 59.00 312 P P **01 23 50.5 -0.1**
comp=Z,6.1nm,0.8s,baz=72,slow=12,SNR=19
AKTO Aktyubinsk 59.00 312 P P **01 23 49.5 -1.0**
AKTO pmax pmax
comp=Z,7.0nm,0.9s
HYB Hyderabad 59.05 269 *i*P P **01 23 52.0 +0.7**
HYB *e* 01 24 00.0
SPITS Spitsbergen Ar 60.25 349 LR LR 01 53 22.2
comp=Z,63nm,18.9s,baz=75,slow=39
AS01 Alice Springs 61.34 189 *e*P P **01 24 05.0 -1.7**
AS31 Alice Springs 61.34 189 *e*P P **01 24 06.8 +0.1**
comp=Z,2.5nm,0.6s
ASAR Alice Springs 61.34 189 P P **01 24 06.3 -0.4**
comp=Z,3.3nm,0.8s,baz=14,slow=6.2,SNR=30
TMCR Tamitsa 62.76 331 *e*P P **01 24 15.4 -0.4**
TMCR pmax pmax
comp=Z,11nm,0.4s
YKA Yellowknife Ar 63.01 31 P P **01 24 17.1 -0.3**
comp=Z,0.3nm,0.6s,baz=301,slow=6.0,SNR=11
KLMR Klimovskoe 63.83 328 *e*P P **01 24 21.8 -1.1**
KLMR *e**PP **pP 01 24 29.5 +0.1**
KLMR *e* 01 26 41.7
KLMR *e*PPP PPP 01 28 11.3
KLMR pmax pmax
comp=Z,7.0nm,0.7s
ARCES ARCESS Array B 63.88 340 P P **01 24 23.2 +0.1**
comp=Z,3.9nm,0.8s,baz=47,slow=7.7,SNR=22
ARCES ARCESS Array B 63.88 340 P P **01 24 23.2 +0.1**
ARCES pmax pmax
comp=Z,5.0nm,0.8s
GEYT Alibeck 64.35 299 P P **01 24 27.0 +0.2**
comp=Z,6.2nm,0.7s,baz=26,slow=3.8,SNR=22
GEYT LR LR 01 55 32.3
comp=Z,81nm,18.4s,baz=65,slow=39
DAG Danmarks Havn 65.41 355 *i*P P **01 24 32.2 -0.8**
comp=Z,3.4nm,0.8s
DAG *e* 01 24 40.2
DAG Danmarks Havn 65.41 355 *i*P P **01 24 32.2 -0.8**
DAG *e* 01 24 40.2
DAG pmax pmax
comp=Z,3.0nm,0.8s
MOS Moscow 67.39 324 *e*P P 01 24 50.5 +4.5
MOS pmax pmax
comp=Z,45nm,1.2s
VRH Novokhopyorsk 67.81 318 *e*P P **01 24 46.5 -2.2**
VRH *e**SP **sP 01 24 56.6 -1.1**
VRH pmax pmax
comp=Z,10.0nm,0.6s
VRH MLR MLR
comp=Z,460nm,18.0s
OBN Obninsk 68.24 323 LR LR 01 57 13.0
comp=Z,100nm,19.3s,baz=89,slow=38
OBN Obninsk 68.24 323*ce*P P **01 24 50.8 -0.5**
OBN *i* 01 25 00.1
OBN *e*S S 01 33 40.9 -10
OBN *e*SS **SS 01 38 11.6 -1.2**
OBN pmax pmax
comp=Z,18nm,1.7s
OBN MLR MLR
comp=Z,171nm,15.0s
LPSR Galich'ya Gora 68.50 320 *e*P P **01 24 51.5 -1.5**
LPSR *e**SP **sP 01 25 01.1 -0.9**
LPSR pmax pmax
comp=Z,7.0nm,0.6s
LPSR MLR MLR
comp=Z,240nm,14.0s
FIA1 FINESS Array S 68.81 333 *e*P P **01 24 54.5 -0.3**
comp=Z,15nm,0.7s
FINES FINESS Array B 68.81 333 P P **01 24 54.6 -0.2**
comp=Z,11nm,0.6s,baz=46,slow=8.2,SNR=57
FINES PP **PP 01 27 27.6 +1.4**
comp=Z,2.5nm,1.0s,baz=89,slow=12,SNR=2.7
FINES LR LR 01 59 47.9
comp=Z,118nm,18.2s,baz=42,slow=40
FINES FINESS Array B 68.81 333 *i*P P **01 24 54.5 -0.3**
FINES pmax pmax
comp=Z,11nm,0.6s
STKA Stephens Creek 69.00 181 P P **01 24 57.3 +1.1**
comp=Z,0.8nm,0.5s,baz=11,slow=7.9,SNR=3.3
VSR Storozhevoye 69.15 319 *e*P P **01 24 55.8 -1.3**
VSR *e**SP **sP 01 25 05.6 -0.5**
VSR pmax pmax
comp=Z,9.0nm,0.5s
VSR MLR MLR
comp=Z,500nm,16.0s
YBH Yreka Blue Hor 69.41 53 P P **01 24 58.4 -0.6**
comp=Z,1.0nm,0.3s,baz=196,slow=4.8,SNR=3.0
JMIC Jan Mayen 69.86 350 LR LR 01 56 30.8
comp=Z,22nm,19.3s,baz=258,slow=37
SUMG Summit 70.24 0 *i*P P **01 25 04.2 +0.2**
comp=Z,4.5nm,0.6s
SUMG Summit 70.24 0 *i*P P **01 25 04.2 +0.2**
SUMG pmax pmax
comp=Z,5.0nm,0.6s
SUMG Summit 70.24 0 *e*P P **01 25 04.3 +0.2**
comp=Z,9.1nm,0.8s
GOF Gofitskoye 70.42 312⇑ *e*P P **01 25 05.2 +0.1**
GOF pmax pmax
comp=Z,21nm,0.5s
VSU Vasula 70.50 330*ce*P P **01 25 04.6 -0.6**
VSU pmax pmax
comp=Z,36nm,1.7s
NCK Nalchik 70.96 310⇑ *e*P P **01 25 08.6 +0.2**
NCK pmax pmax
comp=Z,4.0nm,0.8s
GUDG Gudauri 70.99 309 P P **01 25 10.5 +1.6**
ZEI Tsey 71.17 310 *e*P P **01 25 08.4 -1.5**
ZEI pmax pmax
comp=Z,17nm,0.9s
TBLG Delisi 71.23 308 P P **01 25 12.5 +2.3**
TBLG Delisi 71.23 308 P P **01 25 12.4 +2.3**
KVAR Kislovodsk Arr 71.24 311 LR LR 02 01 22.5
comp=Z,121nm,18.2s,slow=40
KBZ Khabaz 71.25 311 P P **01 25 10.9 +0.8**

comp=Z,111nm,0.9s,baz=67,slow=2.9,SNR=22
KBZ LR LR 01 59 01.4
comp=Z,67nm,18.1s,baz=40,slow=38
KIV Kislovodsk 71.25 311 *de*P **P 01 25 11.3 +1.1**
KIV *i* 01 25 19.7
KIV pmax pmax
comp=Z,21nm,1.0s
KIV MLR MLR
comp=Z,132nm,18.0s
KIV Kislovodsk 71.25 311 *e*P **P 01 25 11.1 +0.9**
comp=Z,21nm,0.8s
ONI Oni 71.55 310 P P **01 25 12.5 +0.5**
WSAR Wadi Sarin 71.56 285 LR LR 02 01 11.8
comp=Z,65nm,18.2s,slow=40
NEY Neytrino 71.62 311⇑ *e*P **P 01 25 14.1 +1.5**
NEY pmax pmax
comp=Z,1.0nm,0.9s
GNI Garni 72.11 307 *d i*P **P 01 25 16.6 +1.0**
GNI pmax pmax
comp=Z,45nm,1.2s
GNI Garni 72.11 307 *e*P **P 01 25 15.9 +0.3**
comp=Z,9.8nm,0.9s
EGMT Eagleton 73.39 42 *e*P **P 01 25 23.2 +0.2**
comp=Z,23nm,0.7s
NC405 NORSAR Array S 73.89 337 *e*P **P 01 25 25.6 +0.1**
NC204 NORSAR Array S 74.05 338 *e*P **P 01 25 26.9 +0.3**
NVAR Mina Array Bea 74.05 54 P P 01 25 23.9 -3.3
comp=Z,0.7nm,0.2s,baz=16,slow=35,SNR=2.1
NB201 NORSAR Array S 74.07 339 *e*P **P 01 25 26.6 0.0**
NB2 NORSAR Subarra 74.10 338 P **P 01 25 26.4 -0.4**
comp=Z,6.8nm,0.8s,baz=37,slow=6.2
NOA NORSAR Array B 74.10 338 P **P 01 25 26.7 -0.1**
comp=Z,6.0nm,0.8s,baz=38,slow=5.8,SNR=43
NOA LR LR 02 00 53.0
comp=Z,128nm,19.8s,baz=30,slow=38
NBO02 NORSAR Array S 74.20 338 *e*P **P 01 25 27.1 -0.2**
NBO00 NORSAR Array S 74.24 338 *e*P **P 01 25 27.8 +0.2**
AKASG Malin Array Be 74.46 323 P **P 01 25 28.7 -0.3**
comp=Z,5.4nm,0.4s,baz=45,slow=6.3,SNR=38
AKASG LR LR 02 00 55.8
comp=Z,116nm,18.2s,baz=50,slow=38
AKBB Malin Array Si 74.46 323 *e*P **P 01 25 29.1 +0.1**
AKBB pmax pmax
comp=Z,23nm,1.4s
AKBB Malin Array Si 74.46 323 *e*P **P 01 25 29.1 +0.1**
comp=Z,23nm,1.4s
KIEV Kiev 74.47 323 *c i*P **P 01 25 28.5 -0.6**
KIEV pmax pmax
comp=Z,10.0nm,1.1s
KIEV Kiev 74.47 323 *e*P **P 01 25 28.7 -0.4**
comp=Z,9.8nm,0.5s
AK11 Malin Array Si 74.50 323 *e*P **P 01 25 29.1 -0.2**
H17A Grant Village 75.17 45 *e*P **P 01 25 33.4 -0.2**
comp=Z,3.7nm,1.0s
SFJD Kangerlussuaq 75.38 5 LR LR 02 00 01.7
comp=Z,54nm,20.8s,baz=324,slow=37
FRB Frobisher Bay 76.15 14 P **P 01 25 38.0 -0.4**
comp=Z,4.9nm,0.6s,baz=334,slow=5.9,SNR=16
HWUT Hardware Ranch 76.31 48 *e*P **P 01 25 40.5 +0.4**
comp=Z,1.7nm,0.8s
DUG Dugway, Tooele 76.43 50 *e*P **P 01 25 40.6 -0.2**
DUG pmax pmax
comp=Z,14nm,0.7s
DUG Dugway, Tooele 76.43 50 *e*P **P 01 25 40.6 -0.2**
comp=Z,14nm,0.7s
SORM Soroca 76.58 321⇑ *i*P **P 01 25 40.6 -0.6**
CWU Camp Williams 76.71 49 *e*P **P** 01 25 45.5 +3.1
BW06 Boulder Array 76.76 46 *e*P **P 01 25 41.7 -0.9**
PDAR Pinedale Array 76.76 46 P **P 01 25 42.2 -0.4**
comp=Z,0.5nm,0.5s,baz=282,slow=2.9,SNR=5.5
WTU Western Traver 76.79 49 *e*P **P 01 25 44.5 +1.7**
GMU Granite Mounta 76.83 49 *e*P **P** 01 25 47.9 +4.8
BUR08 Bucovina Ar. S 78.47 322 *e*P **P 01 25 52.6 +0.7**
BURAR Bucovina Array 78.48 322⇓ *i*P **P 01 25 52.2 +0.2**
TESR Tescani 78.53 321⇑ *i*P **P 01 25 52.5 +0.3**
CFR Carcaliu 78.67 319⇓ *i*P **P 01 25 53.2 +0.3**
VRI Vrincioaia 78.93 320⇓ *i*P **P 01 25 55.3 +0.9**
PLOR Plostina 78.98 320⇓ *i*P **P 01 25 55.8 +1.1**
STHS Stebnicka Huta 79.08 325 *e*P **P 01 25 56.2 +1.0**
UZH Uzhgorod 79.16 324 *e*P **P 01 25 55.2 -0.4**
UZH *e* 01 26 01.9
BR131 Keskin Array S 79.18 312 *e*P **P 01 25 56.5 +0.4**
BRTR Keskin Array B 79.18 312 P **P 01 25 56.5 +0.4**
comp=Z,2.3nm,0.7s,baz=94,slow=5.0,SNR=17
BRTR PP **PP 01 28 56.5 +1.4**
comp=Z,1.2nm,1.0s,baz=85,slow=6.0,SNR=4.0
BRTR LR LR 02 05 56.5
comp=Z,38nm,19.7s,baz=45,slow=40
ARCR ARCALIA 79.27 322⇑ *i*P **P 01 25 57.6 +1.4**
CRVS Cervenica-Dubn 79.35 325 *e*P **P 01 25 57.0 +0.4**
CRVS *e* 01 26 05.7
DOPR Dopca 79.54 321⇓ *i*P **P 01 25 58.5 +0.8**
MLR Muntele Rosu 79.59 320 LR LR 02 03 54.8
comp=Z,50nm,18.9s,baz=46,slow=38
MLR Muntele Rosu 79.59 320⇓ *i*P **P 01 25 58.7 +0.5**
MLR Muntele Rosu 79.59 320 *e*P **P 01 25 58.6 +0.4**
MLR pmax pmax
comp=Z,18nm,1.5s
MLR Muntele Rosu 79.59 320 *e*P **P 01 25 58.6 +0.4**
comp=Z,18nm,1.5s
BR231 Keskin MP Arra 79.62 313 *e*P **P 01 25 57.2 -1.2**
LANS Liptovska Anna 80.07 326 *e*P **P 01 26 01.7 +1.1**
VOIR 80.08 321⇓ *i*P **P 01 26 02.0 +1.2**
KECS Kecovo 80.10 325 *e*P **P 01 26 00.4 -0.3**
DRGR 80.28 323⇑ *i*P **P 01 26 02.2 +0.4**
ARR Arges 80.34 321⇓ *i*P **P 01 26 03.6 +1.5**
MORC Moravsky Berou 80.44 327 *e*P **P 01 26 03.4 +0.8**
MORC pmax pmax
comp=Z,33nm,1.2s
MORC Moravsky Berou 80.44 327 *e*P **P 01 26 03.4 +0.8**
comp=Z,33nm,1.2s
DPC Dobruska-Polom 80.53 328 *e*P **P 01 26 03.3 +0.3**
UPC Upice 80.54 329 AMS AMS 02 04 40.0
comp=Z,200nm,14.2s
KRLC Kraliky 80.54 328 *e*P **P 01 26 03.5 +0.4**
KRLC *e*pP **sP 01 26 12.9 +0.7**
PSZ Piszkesteto 80.78 325⇑ *i*P **P 01 26 05.9 +1.4**
PSZ Piszkesteto 80.78 325 *e*P **P 01 26 04.4 -0.1**
PSZ pmax pmax
comp=Z,10.0nm,1.0s
PSZ Piszkesteto 80.78 325 *e*P **P 01 26 04.4 -0.1**
comp=Z,9.9nm,1.0s
VYHS Vyhne 80.83 326 *e*P **P 01 26 05.4 +0.7**
PVCC Panska Ves 81.11 329 *e*P **P 01 26 06.8 +0.7**
PVCC AMS AMS 02 05 00.0
comp=Z,200nm,16.5s
CLL Collm 81.13 331 *i*P **P 01 26 06.0 -0.1**
comp=Z,7.0nm,1.1s
CLL *e*pP **sP 01 26 15.0 -0.2**
CLL L L 02 05 00.0
comp=Z,200nm,18.3s
CLL Collm 81.13 331 *e*P **P 01 26 06.3 +0.1**
CLL pmax pmax
comp=Z,9.0nm,1.1s
CLL Collm 81.13 331 *e*P **P 01 26 06.2 +0.1**
comp=Z,9.4nm,1.1s
VRAC Vranov 81.20 328 LR LR 02 05 01.9
comp=Z,120nm,18.2s,baz=27,slow=38
GOPC GO Pecny, Ondr 81.50 329 AMS AMS 02 05 00.0
comp=Z,200nm,17.8s
PRU Pruhonice 81.54 329 *e*P **P 01 26 09.3 +0.9**
PRU AMS AMS 02 05 00.0
comp=Z,200nm,17.0s
TREC Trest 81.68 328 *e*P **P 01 26 09.6 +0.4**
GDZ Gediz 82.03 314 *i*P **P 01 26 12.0 +0.7**
MMAI Mount Meron Ar 82.39 306 LR LR 02 06 37.3
comp=Z,80nm,18.8s,baz=135,slow=38
CSS Mathiatis 82.45 308 *e*P **P 01 26 13.8 +0.4**
comp=Z,2.8nm,0.7s
KHAL Karahalli 82.50 313 *i*P **P 01 26 13.8 0.0**
CONA Conrad Observa 82.57 327 *i*P **P 01 26 15.0 +1.0**
comp=Z,4.5nm,1.1s
CONA *i*pP **sP 01 26 23.4 +0.4**
comp=Z,5.6nm,1.1s
KHC Kasperske Hory 82.60 329 *e*P **P 01 26 14.3 +0.3**
KHC AMS AMS 02 05 50.0
comp=Z,300nm,16.7s
KHC Kasperske Hory 82.60 329 *e*P **P 01 26 14.3 +0.3**
KHC pmax pmax
comp=Z,2.0nm,1.0s
KHC Kasperske Hory 82.60 329 *e*P **P 01 26 14.3 +0.3**
comp=Z,1.9nm,1.0s
GERES GERESS Array B 82.78 329 P **P 01 26 14.8 -0.2**
comp=Z,1.3nm,0.5s,baz=43,slow=5.9,SNR=14
GERES PP **PP 01 29 20.7 -3.6**
comp=Z,0.3nm,0.6s,baz=25,slow=11,SNR=2.9
GERES LR LR 02 05 58.7
comp=Z,130nm,20.0s,baz=44,slow=38
GEA0 GERESS Array S 82.78 329 *e*P **P 01 26 14.6 -0.4**
KORT Korkueli 82.92 312 *i*P **P 01 26 15.8 -0.2**
GRFO Grafenberg 83.11 331 *e*P **P 01 26 16.2 -0.4**
GRFO pmax pmax
comp=Z,5.0nm,0.6s
GRFO Grafenberg 83.11 331 *e*P **P 01 26 16.2 -0.4**
comp=Z,5.1nm,0.6s
ARSA Arzberg 83.24 327 *i*P P 01 26 12.1 -5.2
comp=Z,3.0nm,1.1s
PMOR Pomariorio Ree 83.59 114 *e*T T 02 58 17.2
comp=Z,6.1nm,0.2s
ANMO Albuquerque 83.66 50 P **P 01 26 22.8 +2.8**
comp=Z,1.2nm,0.8s,baz=289,slow=6.1,SNR=3.9
ANMO Albuquerque 83.66 50⇑ *e*P P 01 26 23.8 +3.8
ANMO pmax pmax
comp=Z,2.0nm,1.2s
ANMO Albuquerque 83.66 50 *e*P **P 01 26 20.4 +0.4**
comp=Z,3.3nm,1.1s
SOKA Soboth 83.89 327 *i*P P **01 26 21.0 +0.3**
comp=Z,6.1nm,1.0s
AYDN Tasoluk 83.92 313 *i*P **P 01 26 21.4 +0.4**
PPT2 Papeete2 84.10 117 *e*LR LR 01 52 51.0
comp=Z,116nm,22.5s
PPT2 Papeete2 84.10 117 *e*T T 02 58 53.6
comp=Z,2.8nm,0.2s
BDRM Kayabasi 84.58 313 *i*P **P 01 26 24.0 -0.4**
EIL Elat 84.84 304 LR LR 02 08 34.8
comp=Z,53nm,18.2s,baz=62,slow=39
RETA Reutte 85.05 329 *i*PcP **P 01 26 26.9 +0.3**
comp=Z,4.1nm,0.8s
PDG Podgorica 85.14 322⇑ *i*P **P 01 26 26.9 -0.1**
BFO Black Forest 85.33 331 *i*P **P 01 26 28.5 +0.6**
OHR Ohrid 85.34 320 *i*P **P 01 26 28.0 -0.1**
FETA Feichten 85.44 329 *i*P **P 01 26 28.2 -0.5**
comp=Z,3.8nm,1.0s
TAOE Nuku Hiva Isla 85.47 105 *e*LR LR 01 53 30.9
comp=Z,117nm,23.8s
DAVA Damuels 85.57 330 *i*PcP **P 01 26 29.4 0.0**
comp=Z,5.5nm,1.1s
FUORN Ofenpass-Fuorn 85.95 329 *e*P **P 01 26 31.7 +0.3**
comp=Z,5.3nm,0.7s
TIP Timpagrande 88.84 321⇓ *i*P **P 01 26 45.3 +0.1**
TX31 Lajitas Ar. Si 89.19 53 *e*P **P 01 26 49.8 +2.8**
TXAR Lajitas Array 89.19 53 P **P 01 26 46.8 -0.2**
comp=Z,0.7nm,0.6s,baz=297,slow=2.7,SNR=6.5
KEST Kesra 95.17 323 LR LR 02 15 22.9
comp=Z,167nm,18.3s,baz=316,slow=39
ESDC Sonseca Array 97.26 335 P Pdif 01 27 24.3 +0.3
comp=Z,0.2nm,0.6s,baz=3.8,slow=4.5,SNR=4.5
TORD Torodi Ar. Bea 117.61 316 PKP **PKPdf 01 32 36.9 -0.6**
comp=Z,0.6nm,1.1s,baz=147,slow=25,SNR=3.2
SNAA Sanae 141.41 197 *e*PKIKP **PKPdf 01 33 20.6 -0.2**
SNAA Sanae 141.41 197 *e*PKPdf **PKPdf 01 33 20.6 -0.2**
LPAZ La Paz 145.75 60 PKPbc **PKPbc 01 33 31.1 -0.1**
comp=Z,1.2nm,0.5s,baz=52,slow=5.7,SNR=6.6

NIED ***29*** *01:20:00, 37.70N×142.30E, h17km, Mw3.5 Best double couple: M₀2.15000×10¹⁴ NP1:φ=343.00000°, δ=17.00000°, λ=-108.00000°. NP2:φ=182.00000°, δ=73.00000°, λ=-84.00000°.*

JMA 29 01:20:13.2±0.2, 37.66N×142.28E, h15km±4km, M3.6, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**1.08**	**317**	P	Pb	01 20 33.0	-0.6
JIO				S	Sb	01 20 46.5	-1.0
JFK	**Kawauchi**	**1.16**	**256**	P	Pn	01 20 34.5	-0.4
JFK				S	Sb	01 20 49.6	-0.1
JMM	**Marumori**	**1.20**	**280**	P	Pn	01 20 35.1	-0.3
JMM				S	Sb	01 20 50.2	-0.6
ONAJ	**Iwakimizuishiy**	**1.30**	**245**	P	Pn	01 20 36.7	-0.2
ONAJ				S	Sb	01 20 53.6	-0.4
JOU	**Okura**	**1.46**	**299**	P	Pn	01 20 39.4	+0.4
JOU				S	Sn	01 20 58.0	+0.1
JFT	**Otama**	**1.55**	**265**	P	Pb	01 20 41.2	-0.4
JFT				*e*S	Sb	01 21 01.2	+0.1
JHO	**Hitachi**	**1.72**	**233**	P	Pn	01 20 42.3	-0.3
MAT	**Matsushiro**	**3.44**	**252**	P	Pb	01 21 10.1	-3.8
MAT				*e*S	Sn	01 21 51.0	+4.2

IDC 29 01:25:03.9±5.6, 16.41N×105.58W, h0km, mb3.6/6, mb1 3.8/7, mb1mx3.7/34, mbtmp3.5/7, Error ellipse: s-maj=102.1km s-min=59.5km az=2.0, Off coast of Michoacan

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
TXAR	**Lajitas Array**	**12.99**	**7**	Pn	Pn	01 28 12.7	+2.8
	baz=208,slow=10.0,SNR=4.1						
NVAR	**Mina Array Bea**	**24.62**	**335**	P	P	01 30 26.0	-0.4
	0.6nm,0.3s,baz=130,slow=18,SNR=2.4						
PDAR	**Pinedale Array**	**26.49**	**353**	P	P	01 30 42.4	-0.8
	0.4nm,0.7s,baz=162,slow=6.3,SNR=3.2						
YKA	**Yellowknife Ar**	**46.47**	**354**	P	P	01 33 32.7	+0.2
	0.2nm,0.8s,baz=173,slow=7.3,SNR=5.3						
SCHQ	**Schefferville**	**48.54**	**29**	P	P	01 33 48.4	-0.3
	2.1nm,0.7s,baz=251,slow=18,SNR=3.3						
INK	**Inuvik**	**54.84**	**348**	P	P	01 34 35.9	+0.3
	0.9nm,0.8s,baz=203,slow=9.2,SNR=3.7						
ILAR	**Eielson Array**	**55.76**	**340**	P	P	01 34 42.5	+0.3
	0.4nm,0.8s,baz=160,slow=8.3,SNR=4.2						

NIED ***29*** *01:25:00, 38.30N×142.10E, h32km, Mw3.6 Best double couple: M₀2.52000×10¹⁴ NP1:φ=98.00000°, δ=29.00000°, λ=161.00000°. NP2:φ=205.00000°, δ=81.00000°, λ=63.00000°.*

ISCJB ***29*** *01:25:06.8±0.9, 38.24N±0.04×142.09E±0.08, h52km±8km, mb3.5/11, Error ellipse: s-maj=11.2km s-min=5.6km az=15.4*

JMA ***29*** *01:25:07.8±0.1, 38.28N×142.03E, h49km±1km, M3.8*

JMA Felt I J1.

IDC ***29*** *01:25:10.8±2.8, 38.26N×142.04E, h73km±25km, mb3.3/11, mb1 3.5/14, mb1mx3.3/54, mbtmp3.6/14, Error ellipse: s-maj=24.7km s-min=18.2km az=105.0*

ISC 29 01:25:07.1±0.7, 38.22N±0.04×142.12E±0.10, h39km±5km, n34, σ0.95/38, mb3.6/11, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**0.65**	**292**	P	**Pn**	**01 25 19.8**	**-0.1**
JIO				S	**Sn**	**01 25 28.1**	**-0.9**
OFUJ	**Ofunato**	**0.94**	**338**	P	**Pn**	**01 25 23.5**	**-0.2**
OFUJ				S	**Sn**	**01 25 34.6**	**-1.3**
JMK	**Ichinoseki**	**1.02**	**316**	P	**Pn**	**01 25 24.7**	**-0.2**
JMK				S	**Sn**	**01 25 36.9**	**-1.1**
JMM	**Marumori**	**1.11**	**252**	P	**Pn**	**01 25 26.0**	**0.0**
JMM				S	**Sn**	**01 25 39.3**	**-0.8**
JOU	**Okura**	**1.16**	**278**	P	**Pn**	**01 25 27.0**	**+0.2**
JOU				S	**Sn**	**01 25 40.9**	**-0.5**
JFK	**Kawauchi**	**1.30**	**230**	P	**Pn**	**01 25 29.3**	**+0.5**
JFK				S	**Sn**	**01 25 45.0**	**0.0**
JOM	**Ohasama**	**1.41**	**333**	P	**Pn**	**01 25 30.4**	**+0.1**
JOM				S	**Sn**	**01 25 47.5**	**-0.2**
JYK	**Kaneyama**	**1.55**	**297**	P	**Pn**	**01 25 32.2**	**+0.1**
JYK				*e*S	**Sn**	**01 25 50.5**	**-0.5**
JFT	**Otama**	**1.58**	**244**	P	**Pn**	**01 25 33.6**	**+1.1**
JFT				*e*S	**Sn**	**01 25 52.5**	**+0.8**
JYS	**Shirataka**	**1.62**	**271**	P	**Pn**	**01 25 33.6**	**+0.5**
JYS				S	**Sn**	**01 25 52.8**	**0.0**
JRG	**Rokugo**	**1.66**	**316**	P	**Pn**	**01 25 33.9**	**+0.3**
JRG				S	**Sn**	**01 25 54.2**	**+0.5**
MJAR	**Matsushiro Arr**	**3.54**	**243**	P	Pn	01 26 03.1	+3.6
	1.1nm,0.3s,baz=87,slow=14,SNR=8.9						
MAT	**Matsushiro**	**3.54**	**243**	P	Pn	01 26 03.2	+3.7
MAT				S	Sn	01 26 46.4	+6.3
JHJ	**Hachijo jima 2**	**5.43**	**201**	P	**Pn**	**01 26 25.3**	**-0.1**
	7.4nm,0.3s,baz=53,slow=22,SNR=3.0						
JHJ				S	**Sn**	**01 27 25.6**	**-1.0**
	9.1nm,0.3s,baz=110,slow=24,SNR=3.6						
ASAJ	**Asahikawa**	**5.91**	**3**	P	**Pn**	**01 26 34.7**	**+2.7**
	0.7nm,0.3s,baz=190,slow=24,SNR=2.8						
USRK	**Ussuriysk Ar.**	**9.70**	**311**	P	**Pn**	**01 27 26.8**	**+2.9**
	0.3nm,0.3s,baz=130,slow=14,SNR=9.0						
SONM	**Songino Array**	**27.62**	**302**	P	**P**	**01 30 49.6**	**-1.2**
	1.2nm,0.6s,baz=135,slow=16,SNR=2.9						
H11N2	**WAKE ISLAND Hy**	**28.30**	**124**	T	T	02 01 36.1	
	baz=77,slow=74,SNR=60						
H11N1	**WAKE ISLAND Hy**	**28.31**	**124**	T	T	02 01 21.8	
	baz=317,slow=74,SNR=72						
H11N3	**WAKE ISLAND Hy**	**28.32**	**124**	T	T	02 00 56.2	
	SNR=44						
H11S1	**WAKE ISLAND Hy**	**29.06**	**126**	T	T	02 02 22.0	
	baz=318,slow=76,SNR=24						
H11S3	**WAKE ISLAND Hy**	**29.06**	**126**	T	T	02 02 15.8	
	baz=318,slow=76,SNR=24						
H11S2	**WAKE ISLAND Hy**	**29.07**	**126**	T	T	02 02 17.0	
	baz=318,slow=76,SNR=25						
ZALV	**Zalesovo Beam**	**41.55**	**311**	P	**P**	**01 32 49.6**	**-0.9**
	1.0nm,0.6s,baz=83,slow=6.7,SNR=4.4						
MKAR	**Makanchi Array**	**43.98**	**301**	P	**P**	**01 33 12.0**	**+1.6**
	0.5nm,0.6s,baz=87,slow=8.5,SNR=3.2						
ILAR	**Eielson Array**	**48.20**	**33**	P	**P**	**01 33 43.7**	**+0.4**
	0.4nm,0.7s,baz=259,slow=7.3,SNR=4.6						
WRA	**Warramunga Arr**	**58.31**	**189**	P	**P**	**01 34 57.6**	**-0.3**
	0.4nm,0.4s,baz=4.8,slow=6.6,SNR=4.3						
ASAR	**Alice Springs**	**62.03**	**189**	P	**P**	**01 35 24.0**	**+0.5**
	0.3nm,0.7s,baz=23,slow=7.3,SNR=4.2						
YKA	**Yellowknife Ar**	**62.51**	**31**	P	**P**	**01 35 26.2**	**0.0**
	0.1nm,0.6s,baz=305,slow=6.3,SNR=3.2						
FINES	**FINESS Array B**	**68.03**	**332**	P	**P**	**01 36 01.1**	**-0.8**
	0.3nm,0.5s,baz=26,slow=9.9,SNR=2.8						
NOA	**NORSAR Array B**	**73.31**	**337**	P	**P**	**01 36 33.9**	**-0.3**
	0.3nm,0.7s,baz=126,slow=9.7,SNR=2.7						
PDAR	**Pinedale Array**	**76.44**	**46**	P	**P**	**01 36 53.2**	**+0.3**
	0.3nm,0.5s,baz=259,slow=0.9,SNR=2.4						
TXAR	**Lajitas Array**	**88.96**	**53**	P	**P**	**01 37 57.5**	**-0.4**
	0.3nm,0.7s,baz=254,slow=2.3,SNR=4.3						
LPAZ	**La Paz**	**145.61**	**59**	PKPbc	**PKPbc**	**01 44 42.6**	**+0.1**
	0.4nm,0.3s,baz=92,slow=5.8,SNR=2.9						

IDC ***29*** *01:26:55.2±2.0, 18.49N×108.60W, h0km, mb3.5/6, mb1 3.9/7, mb1mx3.7/31, mbtmp3.5/7, ML3.2/1, Error ellipse: s-maj=72.0km s-min=24.3km az=62.0*

ISCJB ***29*** *01:26:58.8±1.1, 18.6N±0.1×108.60W±0.06, h33km, mb3.5/6, Error ellipse: s-maj=19.8km s-min=8.1km az=170.2*

ISC 29 01:27:00.5±1.3, 18.5N±0.2×108.61W±0.09, h35km, n11, σ1.9/01/11, mb3.5/6, Revilla Gigedo Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
H06E1	**SOCORRO T-PHAS**	**2.22**	**278**	T	T	01 29 30.3	
H06S1	**SOCORRO T**	**2.24**	**276**	Pn	**Pn**	**01 27 35.2**	**0.0**
H06S1				Sn	**Sn**	**01 28 00.7**	**-0.9**
	SNR=18						
H06S1				T	T	01 29 38.0	
	SNR=7.3						
H06N1	**SOCORRO T-PHAS**	**2.29**	**280**	Pn	**Pn**	**01 27 38.0**	**+2.2**
H06N1				Sn	**Sn**	**01 28 01.8**	**-0.9**
	SNR=9.2						
LPIG	**La Paz**	**5.80**	**344**	Pn	Pn	01 28 15.2	-8.8
	15nm,0.3s,baz=169,slow=6.0,SNR=4.5						
TXAR	**Lajitas Array**	**11.69**	**22**	Pn	**Pn**	**01 29 45.5**	**+0.5**
	0.0nm,0.3s,baz=199,slow=16,SNR=11						
NVAR	**Mina Array Bea**	**21.59**	**339**	P	**P**	**01 31 47.2**	**-0.3**
	0.7nm,0.3s,baz=149,slow=11,SNR=2.5						
PDAR	**Pinedale Array**	**24.21**	**358**	P	**P**	**01 32 13.1**	**-1.0**
	0.4nm,0.6s,baz=150,slow=11,SNR=3.1						
YKA	**Yellowknife Ar**	**44.15**	**356**	P	**P**	**01 35 04.9**	**-0.5**
	0.3nm,0.8s,baz=175,slow=7.6,SNR=8.2						
INK	**Inuvik**	**52.22**	**349**	P	**P**	**01 36 07.8**	**+0.2**
	0.8nm,0.8s,baz=128,slow=4.6,SNR=4.0						
LPAZ	**La Paz**	**52.74**	**128**	P	**P**	**01 36 12.8**	**-0.2**
	0.6nm,0.5s,baz=216,slow=6.6,SNR=2.3						
ILAR	**Eielson Array**	**52.83**	**341**	P	**P**	**01 36 12.3**	**+0.1**
	0.5nm,0.8s,baz=157,slow=6.2,SNR=5.3						

IDC 29 01:28:42.6±26.0, 27.30S×178.62E, h636km±213km, mb2.4/2, mb1 2.8/3, mb1mx2.5/38, mbtmp3.7/3, Error ellipse: s-maj=354.6km s-min=60.8km az=135.0, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
DZM	**Mont Dzumac**	**12.23**	**293**	P	P	01 31 23.6	-0.1
	1.4nm,0.3s,baz=116,slow=23,SNR=11						
ASAR	**Alice Springs**	**40.37**	**265**	P	P	01 35 28.6	+0.6
	0.2nm,0.5s,baz=102,slow=8.6,SNR=2.7						
WRA	**Warramunga Arr**	**41.06**	**270**	P	P	01 35 33.0	-0.5
	0.5nm,0.5s,baz=109,slow=7.4,SNR=2.4						
FINES	**FINESS Array B**	**141.21**	**339**	PKhKP	PKPpre	01 46 58.0	
	2.6nm,0.4s,baz=48,slow=4.3,SNR=37						
NB2	**NORSAR Subarra**	**145.20**	**349**	PKP	PKPdf	01 47 09.0	+0.2
	comp=Z,0.6nm,0.6s,baz=15,slow=2.8						
NOA	**NORSAR Array B**	**145.20**	**349**	PKPbc	PKPdf	01 47 09.3	+0.5
	comp=Z,0.7nm,0.6s,baz=15,slow=4.3,SNR=6.8						
HFS	**Hagfors**	**145.59**	**347**	PKPbc	PKPbc	01 47 10.5	-0.5
	comp=Z,1.1nm,0.5s,baz=117,slow=2.3,SNR=4.0						
AKASG	**Malin Array Be**	**147.05**	**323**	PKPbc	PKPbc	01 47 15.1	-0.2
	comp=Z,0.6nm,0.5s,baz=51,slow=2.5,SNR=4.0						
BRTR	**Keskin Array B**	**148.48**	**302**	PKPbc	PKPbc	01 47 18.6	-0.9
	comp=Z,0.3nm,0.5s,baz=168,slow=2.2,SNR=2.7						

DDA ***29*** *01:32:44.8, 40.78N×34.91E, h7km, Md2.6*

ISCJB ***29*** *01:32:45.6±0.5, 40.80N±0.03×34.89E±0.05, h9km±6km, Error ellipse: s-maj=6.2km s-min=3.7km az=24.3*

CSEM ***29*** *01:32:45.7±0.1, 40.79N×34.88E, h5km, MD2.6, Error ellipse: s-maj=3.7km s-min=2.4km az=116.0*

ISK ***29*** *01:32:45.5, 40.80N×34.88E, h5km, MD2.6*

ISC 29 01:32:45.4±1.1, 40.81N±0.03×34.89E±0.03, h14km±10km, n20, σ0.13/36, Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
COAL	**Corum-Alaca**	**0.56**	**173**	*i* P	**Pg**	**01 32 56.4**	**-0.1**
COAL				*i* S	**Sg**	**01 33 04.0**	**+0.1**
COAL	**Corum-Alaca**	**0.56**	**173**	P	**Pg**	**01 32 56.4**	**-0.1**
COAL				S	**Sg**	**01 33 04.0**	**+0.1**
BOYT	**Boyabat**	**0.61**	**1**	*i* P	**Pb**	**01 32 58.2**	**+0.2**
BOYT				*i* S	**Sb**	**01 33 06.5**	**0.0**
BOYT	**Boyabat**	**0.61**	**1**	P	**Pb**	**01 32 58.2**	**+0.2**
BOYT				S	**Sb**	**01 33 06.5**	**0.0**
CORM	**Corum**	**0.66**	**198**	*e*PG	**Pg**	**01 32 58.5**	**+0.1**
CORM				*e*SG	**Sb**	**01 33 07.8**	**-0.1**
CORM	**Corum**	**0.66**	**198**	*e*Pg	**Pg**	**01 32 58.5**	**+0.1**
CORM				*e*Sg	**Sb**	**01 33 07.8**	**-0.1**
BYBT	**Boyabat**	**0.66**	**352**	*e*PG	**Pg**	**01 32 58.3**	**-0.1**
BYBT	**Boyabat**	**0.66**	**352**	*e*Pg	**Pg**	**01 32 58.3**	**-0.1**
TOS	**Tosya**	**0.69**	**289**	*e*PG	**Pb**	**01 32 59.4**	**0.0**
TOS	**Tosya**	**0.69**	**289**	*e*Pg	**Pb**	**01 32 59.4**	**0.0**
DIKM	**Dikmen**	**0.88**	**18**	*e*PG	**Pn**	**01 33 03.3**	**-0.2**
DIKM				*e*SG	**Sn**	**01 33 16.2**	**+0.1**
DIKM	**Dikmen**	**0.88**	**18**	*e*Pg	**Pn**	**01 33 03.3**	**-0.2**
DIKM				*e*Sg	**Sn**	**01 33 16.2**	**+0.1**
KVT	**Kavak**	**0.92**	**72**	*e*PG	**Pn**	**01 33 03.8**	**-0.2**
KVT				*e*SG	**Sn**	**01 33 17.1**	**+0.1**
KVT	**Kavak**	**0.92**	**72**	*e*Pg	**Pn**	**01 33 03.8**	**-0.2**
KVT				*e*Sg	**Sn**	**01 33 17.1**	**+0.1**
SAMS	**Samsun-Alacam**	**1.12**	**60**	*i* P	**Pn**	**01 33 06.8**	**0.0**
SAMS				*i* S	**Sb**	**01 33 21.0**	**-0.1**
SAMS	**Samsun-Alacam**	**1.12**	**60**	P	**Pn**	**01 33 06.8**	**0.0**
SAMS

ISC 29 02:00:35.2±0.4, 6.77S±0.05×102.52E±0.05, h35km, n112, σ1.64/122, mb4.6/42, MS4.3/6, 2D, Southwest of Sumatera

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
LWLI	Liwa	2.32	41	P	Pn	02 01 09.4	-1.6
LWLI				S	Sn	02 01 35.8	-2.6
KASI	Kota Agung	2.32	58	P	Pn	02 01 09.5	-1.4
KASI				S	Sn	02 01 35.1	-3.2
MNAI	Manna	2.44	10	P	Pn	02 01 09.8	-2.7
MNAI	Manna	2.44	10	*e*Pn	Pn	02 01 09.9	-2.6
MNAI				*e*Sn	Sn	02 01 38.9	-2.2
MDSI	Maura Dua	2.81	36	P	Pn	02 01 16.3	-1.3
MDSI				S	Sn	02 01 47.4	-2.8
KLI	Kotabumi	3.00	51	P	Pn	02 01 20.0	-0.2
BLSI	Bandar Lampung	3.05	63	P	Pn	02 01 20.3	-0.6
BLSI				S	Sn	02 01 54.2	-2.0
LHSI	Lahat	3.09	19	P	Pn	02 01 20.3	-1.2
LHSI				S	Sn	02 01 55.1	-2.2
CGJI	Cibinong	3.15	87	P	Pn	02 01 21.0	-1.3
CGJI				S	Sn	02 01 54.6	-4.2
MASI	Maura Aman, Be	3.62	356	P	Pn	02 01 26.4	-2.4
CBJI	Citeko	4.31	86	P	Pn	02 01 38.5	+0.2
CBJI				S	Sn	02 02 28.9	+1.5
CNJI	Cibinong	4.60	97	P	Pn	02 01 40.7	-1.6
LEM	Lembang	5.06	91	Pn	Pn	02 01 55.4	+6.7
	47nm,0.3s,baz=92,slow=3.7,SNR=20						
LEM	Lembang	5.06	91	P	Pn	02 01 48.3	-0.4
CISI	Cisompet, Garu	5.31	99	P	Pn	02 01 51.0	-1.1
	187nm,0.5s,5μm1.2nm						
CISI	Cisompet, Garu	5.31	99	*e*Pn	Pn	02 01 50.8	-1.3
CISI				*e*Sn	Sn	02 02 45.1	-6.9
PPBI	Pangkal Pinang	5.83	38	P	Pn	02 02 09.0	+10
CMJI	Cimerak	5.96	100	P	Pn	02 02 00.3	-0.7
	264nm,0.5s,4μm1.2nm						
PDSI	Padang	6.18	340	P	Pn	02 02 01.0	-3.0
	34nm,0.5s,0.3nm						
COCO	West Island	7.77	226	*e*Pn	Pn	02 02 24.0	-1.9
SMRI	Semarang	7.87	92	*e*Pn	Pn	02 02 28.6	+1.5
UGM	Wanagama	8.02	99	*e*Pn	Pn	02 02 28.6	-0.6
WOJI	Wonogiri, Jawa	8.40	98	P	Pn	02 02 43.2	+8.7
PWJI	Pagerwojo	9.29	98	P	Pn	02 02 45.4	-1.3
	103nm,0.9s						
ABJI	Asem Bagus	11.66	96	P	Pn	02 03 18.0	-1.2
KULM	Kulim	12.13	351	*e*Pn	Pn	02 03 23.5	-2.1
SBUM	Sibu	13.33	47	*e*Pn	Pn	02 03 43.1	+1.1
KAPI	Kappang	17.23	85	LR	LR	02 12 26.3	
	comp=Z,152nm,21.1s,baz=280,slow=41						
KAPI	Kappang	17.23	85	*e*Pn	Pn	02 04 31.5	-1.7
KKM	Kota Kinabalu	18.68	47	*e*P	P	02 04 50.0	-0.5
	27nm,1.0s						
MMRI	Maumere	19.62	97	*e*P	P	02 05 00.2	-0.7
	111nm,1.1s						
MYLDM	Lahad Datu	19.88	54	*e*P	Pn	02 05 05.0	-0.4
	41nm,0.9s						
BATI	Baumata	21.18	101	P	P	02 05 19.8	+2.0
	17nm,0.5s						
SOEI	Soe	21.72	99	*e*P	P	02 05 22.5	-1.2
	187nm,0.8s						
MBWA	Marble Bar	21.95	132	*e*P	P	02 05 26.1	+0.2
	20nm,1.3s						
FITZ	Fitzroy Crossi	25.19	119	P	P	02 05 58.4	+0.8
	3.3nm,0.8s,baz=265,slow=5.6,SNR=9.1						
CM01	Chiang Mai Arr	25.28	352	*e*P	P	02 05 58.1	-0.3
CMAR	Chiang Mai Arr	25.32	352	P	P	02 05 58.5	-0.3
	17nm,0.7s,baz=181,slow=9.0,SNR=51						
CHTO	Chiang Mai	25.67	352	*e*P	P	02 06 01.6	-0.4
	14nm,1.0s						
QIZ	Qiongzhong	26.64	16	P	P	02 06 12.3	+1.6
QIZ				S	S	02 10 49.3	+5.7
QIZ				LR	LR		
	comp=N,61nm,15.3s						
QIZ				LR	LR		
	comp=E,83nm,12.0s						
H08S2	Diego Garcia H	29.80	266	T	T	02 37 50.7	
	SNR=62						
H08S3	Diego Garcia H	29.81	266	T	T	02 38 24.5	
	baz=328,slow=74,SNR=67						
H08S1	Diego Garcia H	29.82	266	T	T	02 38 28.9	
	baz=88,slow=74,SNR=51						
H01W3	Cape Leeuwin H	29.95	161	T	T	02 38 09.8	
	baz=339,slow=76,SNR=16						
H01W2	Cape Leeuwin H	29.96	161	T	T	02 38 23.5	
	baz=339,slow=76,SNR=16						
H01W1	Cape Leeuwin H	29.97	161	T	T	02 38 28.1	
	baz=339,slow=76,SNR=17						
KMI	Kunming	31.71	0	P	P	02 06 57.0	+1.0
KMI				pP	pP	02 07 07.5	+1.4
KMI				sP	sP	02 07 11.5	+1.2
KMI				PP	PP	02 08 05.5	-2.6
KMI				S	S	02 12 05.8	+2.2
KMI				SS	SnSn	02 13 58.0	+5.9
KMI				pmax	pmax		
	comp=Z,14nm,1.0s						
KMI				pmax	pmax		
	comp=Z,91nm,8.3s						
KMI				LR	LR		
	comp=N,380nm,12.4s						
KMI				LR	LR		
	comp=E,280nm,11.6s						
KMI				LR	LR		
	comp=Z,460nm,12.9s						
GYA	Guiyang	33.28	7	P	P	02 07 11.5	+1.9
GYA				pmax	pmax		
	comp=Z,10.0nm,0.8s						
WRA	Warramunga Arr	33.53	116	P	P	02 07 12.2	+0.4
	3.9nm,0.7s,baz=288,slow=11,SNR=14						
WRAB	Tennant Creek	33.53	116	*e*P	P	02 07 11.8	0.0
	7.9nm,0.9s						
ASAR	Alice Springs	34.50	123	P	P	02 07 20.4	+0.2
	0.7nm,0.6s,baz=304,slow=8.1,SNR=5.8						
ASAR				PcP	PcP	02 10 04.0	+8.9
	1.4nm,0.7s,baz=297,slow=2.2,SNR=8.9						
AS01	Alice Springs	34.54	123	*e*P	P	02 07 21.9	+1.4
CD2	Chengdu	37.49	2	P	P	02 07 46.8	+1.1
CD2				sP	sP	02 08 00.0	-0.1
CD2				PP	PnPn	02 09 13.3	+0.6
CD2				S	S	02 13 36.0	+3.7
CD2				sS	sS	02 13 51.5	+2.4
CD2				pmax	pmax		
	comp=Z,30nm,0.8s						
CD2				pmax	pmax		
	comp=Z,90nm,4.7s						
CD2				LR	LR		
	comp=N,310nm,13.8s						
CD2				LR	LR		
	comp=Z,300nm,15.0s						
GUN	Gumba	38.05	336	*e*P	P	02 07 50.9	+0.1
	36nm,0.6s						
KKN	Kakani	38.19	335	*e*P	P	02 07 53.1	+1.2
	12nm,0.5s						
GKN	Gorkha	38.65	334	*e*P	P	02 07 56.0	+0.3
	37nm,1.0s						
KOLN	Koldanda	38.91	333	*e*P	P	02 07 58.3	+0.4
	10nm,0.7s						
PYUN	Piuthan	39.47	332	*e*P	P	02 08 02.4	-0.2
XAN	Xi'an	41.04	8	P	P	02 08 14.3	-1.0
XAN				pP	pP	02 08 21.8	-3.8
XAN				S	S	02 14 25.3	-0.3
XAN				pmax	pmax		
	comp=Z,15nm,0.8s						
XAN				pmax	pmax		
	comp=Z,58nm,4.2s						
XAN				LR	LR		
	comp=E,190nm,13.6s						
XAN				LR	LR		
	comp=Z,200nm,12.7s						
LZH	Lanzhou	42.65	2	*e*P	P	02 08 29.3	+0.7
LZH				pP	pP	02 08 37.5	-1.4
LZH				sP	sP	02 08 41.0	-2.1
LZH				PP	PP	02 10 10.0	+2.0
LZH				*e*S	S	02 14 51.0	+1.4
LZH				SS	SS	02 17 56.0	-4.9
LZH				pmax	pmax		
	comp=Z,28nm,1.0s						
LZH				pmax	pmax		
	comp=Z,81nm,4.0s						
LZH				LR	LR		
	comp=N,300nm,12.5s						
LZH				LR	LR		
	comp=E,500nm,13.0s						
LZH				LR	LR		
	comp=Z,440nm,13.9s						
STKA	Stephens Creek	44.15	130	P	P	02 08 41.1	+0.4
	2.3nm,0.6s,baz=313,slow=7.1,SNR=8.3						
STKA				PcP	PcP	02 10 34.4	+9.1
	1.7nm,0.5s,baz=325,slow=8.0,SNR=2.8						
GTA	Gaotai	46.02	357	*e*P	P	02 08 56.8	+1.3
GTA				pP	pP	02 09 07.3	+1.5
GTA				sP	sP	02 09 11.3	+1.3
GTA				PcP	PcP	02 10 32.0	+0.3
GTA				S	S	02 15 42.5	+4.0
GTA				sS	sS	02 15 59.0	+3.4
GTA				SS	SS	02 19 01.0	-3.0
GTA				pmax	pmax		
	comp=Z,4.0nm,0.9s						
GTA				pmax	pmax		
	comp=Z,61nm,6.2s						
GTA				LR	LR		
	comp=N,290nm,16.6s						
GTA				LR	LR		
	comp=E,220nm,17.1s						
GTA				LR	LR		
	comp=Z,190nm,14.3s						
HHC	Hu-ho-hao-te	48.11	9	*e*P	P	02 09 14.8	+3.1
HHC				pmax	pmax		
	comp=Z,19nm,0.9s						
HHC				pmax	pmax		
	comp=Z,80nm,7.5s						
BJI	Beijing	48.26	14	P	P	02 09 12.5	-0.2
BJI				pmax	pmax		
	comp=Z,14nm,0.8s						
KS15	Wonju Array Si	49.96	26	*e*P	P	02 09 26.4	+0.6
KSAR	Wonju Array Be	49.96	26	P	P	02 09 25.6	-0.2
KSRS	Korea Array	49.99	26	P	P	02 09 25.6	-0.4
	6.9nm,0.7s,baz=226,slow=7.8,SNR=13						
KS01	Wonju Array Si	49.99	26	*e*P	P	02 09 26.0	0.0
WMQ	Urumqi	52.12	346	P	P	02 09 42.8	+0.8
WMQ				pP	pP	02 09 51.5	-1.0
WMQ				sP	sP	02 09 57.8	+1.1
WMQ				pmax	pmax		
	comp=Z,9.0nm,0.8s						
WMQ				pmax	pmax		
	comp=Z,40nm,3.8s						
KSH	Kashi	52.20	334	*e*P	P	02 09 47.8	+5.0
KSH				*e*pP	sP	02 09 57.5	+0.1
KSH				*e*PP	PP	02 11 48.0	+6.5
KSH				PcS	PcS	02 14 54.5	+2.0
KSH				S	S	02 17 12.0	+6.8
KSH				pmax	pmax		
	comp=Z,51nm,3.0s						
KSH				LR	LR		
	comp=N,57nm,9.0s						
KSH				LR	LR		
	comp=E,100nm,7.1s						
CN2	Changchun	54.45	20	*e*P	P	02 10 01.0	+2.0
SONM	Songino Array	54.48	3	P	P	02 09 59.7	+0.3
	4.9nm,0.7s,baz=186,slow=4.2,SNR=3.7						
TKM2	Tokmak 2	55.19	336	*e*P	P	02 10 04.8	+0.1
	4.8nm,1.0s						
EKS2	Erkin-Say	55.73	335	*e*P	P	02 10 09.0	+0.5
	5.5nm,1.1s						
MK01	Makanchi Array	56.26	343	*e*P	P	02 10 11.5	-0.6
MK31	Makanchi Array	56.28	343	*e*P	P	02 10 12.2	0.0
MKAR	Makanchi Array	56.28	343	P	P	02 10 12.1	-0.2
	8.5nm,0.9s,baz=148,slow=8.0,SNR=32						
USRK	Ussuriysk Ar.	57.28	25	P	P	02 10 18.9	-0.5
	7.2nm,0.6s,baz=219,slow=6.1,SNR=18						
KURK	Kurchatov	60.87	343	*e*P	P	02 10 43.5	-0.6
	10nm,0.9s						
ZAA0	Zalesovo Array	62.31	348	*e*P	P	02 10 53.4	-0.3
ZALV	Zalesovo Beam	62.31	348	P	P	02 10 53.3	-0.4
	7.8nm,0.6s,baz=170,slow=4.4,SNR=43						
BRVK	Borovoye	65.57	339	*e*P	P	02 11 15.2	0.0
	2.4nm,0.6s						
ZRNK	Zerenda	65.94	339	*e*P	P	02 11 16.9	-0.7
	4.6nm,0.9s						
ABKAR	Akbulak array	67.01	331	*e*P	P	02 11 24.0	-0.5
ARU	Arti	72.56	336	*e*P	P	02 11 58.4	-0.2
	4.9nm,0.7s						
KBZ	Khabaz	73.54	319	P	P	02 12 04.4	-0.2
	1.5nm,0.8s,baz=348,slow=2.5,SNR=4.1						
SYO	Syowa Base	74.21	199	‖*e*P	P	02 12 07.4	-0.6
SYO	Syowa Base	74.21	199	‖*e*pP	P	02 12 11.6	+3.6
PETK	Petropavlovsk-	75.62	31	P	P	02 12 16.2	-0.3
	4.1nm,0.9s,baz=253,slow=4.5,SNR=2.8						
NRIK	Noril'sk	76.65	355	P	P	02 12 21.6	-0.3
	2.3nm,0.4s,baz=219,slow=3.4,SNR=2.9						
VNDA	Vanda	77.02	169	P	P	02 12 24.7	+0.6
	0.6nm,0.8s,baz=306,slow=10,SNR=3.6						
CSS	Mathiatis	77.12	308	*e*P	P	02 12 25.3	-0.2
	3.7nm,1.1s						
BRTR	Keskin Array B	78.39	313	P	P	02 12 31.8	-0.7
	0.3nm,0.5s,baz=124,slow=6.8,SNR=4.1						
BR231	Keskin MP Arra	79.05	313	*e*P	P	02 12 35.8	-0.4
SUR	Sutherland	79.42	238	*e*P	P	02 12 36.6	-1.9
	46nm,1.3s						
AKASG	Malin Array Be	84.78	322	P	P	02 13 06.1	+0.2
	0.3nm,0.3s,baz=90,slow=6.1,SNR=4.1						
MLR	Muntele Rosu	85.48	317	*e*P	P	02 13 10.3	+0.7
	4.7nm,0.9s						
BUR08	Bucovina Ar. S	86.50	319	*e*P	P	02 13 15.3	+0.7
SNAA	Sanae	88.40	198	*e*P	P	02 13 25.2	+1.9
	221nm,0.8s						
KOLS	Kolonicke sedl	88.69	319	*e*P	P	02 13 26.1	+1.1
KOLS				*e*		02 13 34.4	
STHS	Stebnicka Huta	89.45	320	*e*P	P	02 13 29.9	+1.3
STHS				*e*		02 13 37.5	
FINES	FINESS Array B	89.48	332	P	P	02 13 28.5	+0.1
	0.5nm,0.5s,baz=98,slow=5.8,SNR=6.7						
YKA	Yellowknife Ar	118.13	19	PKP	PKPdf	02 19 16.8	-1.4
	0.2nm,1.0s,baz=288,slow=1.6,SNR=2.8						
YKA				PKKPbc	PKKPab	02 29 50.8	+10
	0.1nm,0.7s,baz=127,slow=3.8,SNR=5.0						
BW06	Boulder Array	134.34	33	*e*PKPdf	PKPdf	02 19 50.1	+0.1
MTPU	Mount Pierson	135.77	40	*e*PKPdf	PKPdf	02 19 51.4	-1.7
MNTX	Cornudas Mount	144.03	43	*e*PKPdf	PKPdf	02 20 08.0	+0.2
WMOK	Wichita Mounta	145.94	32	*e*PKPbc	PKPdf	02 20 10.6	-0.4
TXAR	Lajitas Array	146.64	44	PKPbc	PKPab	02 20 15.1	0.0
	1.4nm,0.7s,baz=310,slow=1.8,SNR=17						
WCI	Wyandotte Cave	147.68	13	*e*PKPbc	PKPbc	02 20 16.2	-0.3
JCT	Junction City	148.45	39	*e*PKPbc	PKPbc	02 20 19.5	+0.6
WVT	Waverly	149.28	17	*e*PKPbc	PKPbc	02 20 20.8	+0.1
HKT	Hockley	151.20	35	*e*PKPbc	PKPbc	02 20 25.2	-0.3
HKT				*e*PKPab	PKPab	02 20 33.2	0.0

*ISCJB **29** 02:03:02.9±0.9, 61.88N±0.04×152.1W±0.2, h122km±6km, mb3.0/1, Error ellipse: s-maj=12.3km s-min=5.9km az=162.7*

*NEIC **29** 02:03:04.3, 61.69N×152.21W, h123km, MG3.0(AEIC), After AEIC.*

*IDC **29** 02:03:05.4±8.1, 61.69N×151.40W, h82km±86km, mb2.7/1, mb1 3.2/3, mb1mx3.0/38, mbtmp3.1/3, ML3.0/2, Error ellipse: s-maj=75.9km s-min=60.8km az=125.0*

ISC 29 02:03:04.2±1.4, 61.88N±0.05×152.15W±0.09, h115km±10km, n17, σ0.83/28, Southern Alaska

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PPLA	Purkeypile	1.02	359	*e*Pn	Pn	02 03 26.3	+0.1
PPLA				*e*Sn	Sn	02 03 43.4	+0.5
RC01	Rabbit Creek A	1.40	123	*e*Pn	Pn	02 03 30.2	0.0
RC01				*e*Sn	Sn	02 03 50.7	+0.8
PMR	Palmer	1.47	100	*e*Pn	Pn	02 03 30.0	-0.9
PMR				*e*Sn	Sn	02 03 51.3	+0.1
KTH	Kantishna Hill	1.77	18	*e*Pn	Pn	02 03 34.3	-0.4
KTH				*e*Sn	Sn	02 03 58.1	+0.2
TRF	Thorofare Moun	1.80	28	*e*Pn	Pn	02 03 34.9	-0.1
TRF				*e*Sn	Sn	02 03 59.5	+0.8
SML	Sawmill	1.81	91	*e*Pn	Pn	02 03 34.6	-0.5
SML				*e*Sn	Sn	02 03 58.6	-0.1
SEW	Seward	2.21	142	*e*Pn	Pn	02 03 39.2	-0.9
SEW				*e*Sn	Sn	02 04 05.7	-1.9
BPAW	Bear Paw Mtn.	2.29	13	*e*Pn	Pn	02 03 40.2	-0.9
BPAW				*e*Sn	Sn	02 04 08.1	-1.4
MCK	McKinley	2.38	37	*e*Pn	Pn	02 03 41.9	-0.3
MCK				*e*Sn	Sn	02 04 10.5	-0.8
PAX	Paxson	3.29	68	*e*Pn	Pn	02 03 54.0	-0.3
PAX				*e*Sn	Sn	02 04 33.1	+0.2
COLA	College	3.58	31	*e*Pn	Pn	02 03 56.9	-1.0
COLA				*e*Sn	Sn	02 04 31.2	-8.2
ILAR	Eielson Array	3.75	37	P	Pn	02 03 59.3	-0.9
	3.4nm,0.3s,baz=225,slow=13,SNR=96						
ILAR				S	Sn	02 04 43.4	-0.2
	2.6nm,0.3s,baz=207,slow=15,SNR=8.2						
DOT	Dot Lake	4.12	61	*e*Pn	Pn	02 04 04.7	-0.5
DOT				*e*Sn	Sn	02 04 41.2	-11
COLD	Coldfoot	5.44	8	*e*Pn	Pn	02 04 21.9	-1.0
	3.6nm,0.6s						
EGAK	Eagle	5.74	55	*e*Pn	Pn	02 04 26.4	-0.6
	7.3nm,0.3s						
YKA	Yellowknife Ar	17.37	71	P	Pn	02 06 59.0	-0.1
	0.0nm,0.3s,baz=282,slow=10,SNR=6.7						
TXAR	Lajitas Array	45.30	113	P	P	02 11 11.7	+1.4
	0.1nm,0.3s,baz=292,slow=5.7,SNR=2.6						

IDC 29 02:15:52.0±14.0, 7.33S×131.74E, h176km±160km, mb3.4/2, mb1 3.2/6, mb1mx3.1/26, mbtmp3.7/6, ML3.6/4, MS3.4/3, Ms1 3.4/3, ms1mx2.9/18, Error ellipse: s-maj=100.3km s-min=32.5km az=20.0, Tanimbar Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
FITZ	Fitzroy Crossi	12.25	208	P	Pn	02 18 40.8	-0.1
	0.1nm,0.3s,baz=36,slow=10,SNR=9.5						
FITZ				S	S	02 21 04.7	+0.5
	0.2nm,0.3s,baz=178,slow=12,SNR=3.5						
WRA	Warramunga Arr	12.79	169	P	Pn	02 18 47.2	-0.7
	0.5nm,0.3s,baz=343,slow=14,SNR=12						
WRA				S	Sn	02 21 11.8	+1.9
	0.3nm,0.3s,baz=0.3,slow=22,SNR=3.8						
WRA				LR	LR	02 24 24.2	
	comp=Z,159nm,20.0s,baz=330,slow=40						
ASAR	Alice Springs	16.38	173	P	Pn	02 19 33.2	+1.0
	0.2nm,0.3s,baz=354,slow=9.2,SNR=6.4						
CTA	Charters Tower	18.95	133	P	P	02 19 59.2	-0.7
	0.3nm,0.3s,baz=298,slow=15,SNR=3.0						
STKA	Stephens Creek	26.10	161	LR	LR	02 32 48.4	
	comp=Z,124nm,18.3s,baz=346,slow=39						
HNR	Honiara	27.98	96	LR	LR	02 32 21.6	
	comp=Z,54nm,18.0s,baz=241,slow=35						
MKAR	Makanchi Array	69.45	326	P	P	02 26 42.0	+0.8
	0.6nm,0.6s,baz=111,slow=6.6,SNR=4.4						
ZALV	Zalesovo Beam	72.64	333	P	P	02 26 59.8	-0.4
	0.3nm,0.2s,baz=108,slow=9.5,SNR=2.6						

*DDA **29** 02:27:21.6, 38.31N×26.44E, h23km, Ml3.2*

*ATH **29** 02:27:22.2, 38.26N×26.42E, h32km±1km, ML2.9/4, Error ellipse: s-maj=2.5km s-min=1.1km az=252.0*

*ISK **29** 02:27:22.7, 38.27N×26.52E, h6km, MD3.1*

*ISCJB **29** 02:27:22.9±0.4, 38.27N±0.02×26.47E±0.03, h10km±3km, Error ellipse: s-maj=4.3km s-min=3.5km az=146.3*

*THE **29** 02:27:22.8, 38.32N×26.51E, h1km±2km, ML3.1/4, Error ellipse: s-maj=2.3km s-min=0.5km az=234.0*

*CSEM **29** 02:27:22.6±0.1, 38.26N×26.47E, h2km, ML3.2, Error ellipse: s-maj=3.9km s-min=2.8km az=66.0*

ISC 29 02:27:21.6±1.0, 38.28N±0.02×26.46E±0.02, h19km±2km, n90, σ0.92/113, Aegean Sea

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ZEY	˜zmir	0.05	138	*i* P	Pg	02 27 25.6	+0.6
URLA	Izmir	0.14	51	*i* P	Pg	02 27 26.1	+0.2
URLA	Izmir	0.14	51	P	Pg	02 27 26.1	+0.2
CHOS	Chios island	0.34	289	PG	Pn	02 27 30.7	-1.0
CHOS				*e*SG	Sn	02 27 36.6	-1.5
CHOS	Chios island	0.34	289	P	Pn	02 27 30.4	-1.3
CHOS				S	Sn	02 27 35.9	-2.2
CHOS	Chios island	0.34	289	P	Pn	02 27 30.6	-1.0
CHOS				S	Sb	02 27 35.3	+1.1
CHOS				*e*Sg	Sn	02 27 36.6	-1.5
CHOS	Chios island	0.34	289	P	Pn	02 27 30.6	-1.0
CHOS				S	Sb	02 27 35.3	+1.1
CHOS				AML	AML	02 27 36.1	
	comp=E,3898μm,0.2s						
CHOS				AML	AML	02 27 36.1	
	comp=N,3136μm,0.2s						
BLCB	Balcova	0.47	76	PG	Pg	02 27 31.4	+0.2
BLCB				*e*SG	Sg	02 27 37.5	-0.1
BLCB	Balcova	0.47	76	*i* Pg	Pg	02 27 31.4	+0.2
BLCB				*e*Sg	Sg	02 27 37.5	-0.1
SMG	Samos	0.64	152	P	Pn	02 27 35.3	-0.4
SMG				S	Sn	02 27 45.2	-0.2
SMG	Samos	0.64	152	P	Pn	02 27 35.3	-0.4
SMG				S	Sn	02 27 45.1	-0.2
SMG	Samos	0.64	152	P	Pn	02 27 35.5	-0.3
SMG				S	Sn	02 27 45.1	-0.2
SMG				AML	AML	02 27 47.3	
	comp=E,7790μm,0.2s						
SMG				AML	AML	02 27 47.3	
	comp=N,5124μm,0.2s						
IZM	Izmir	0.64	79	PG	Pg	02 27 34.9	+0.5
IZM				*e*SG	Sg	02 27 43.8	+0.8
IZM	Izmir	0.64	79	*i* Pg	Pg	02 27 34.9	+0.5
IZM				*e*Sg	Sg	02 27 43.8	+0.8
GCAM	G?zelcaml?	0.84	133	*i* P	Pn	02 27 39.0	+0.6
GCAM	G?zelcaml?	0.84	133	P	Pn	02 27 39.0	+0.6
DKL	Dikili	0.87	23	*e*PG	Pn	02 27 39.6	+0.8
DKL	Dikili	0.87	23	*e*Pg	Pn	02 27 39.6	+0.8
PRK	Paraskevi	0.98	351	P	Pg	02 27 40.6	-0.1
PRK				S	Sn	02 27 54.4	+0.6
PRK	Paraskevi	0.98	351	P	Pg	02 27 40.8	+0.1
PRK				S	Sn	02 27 55.0	+1.2
PRK	Paraskevi	0.98	351	P	Pg	02 27 40.8	+0.1
PRK				S	Sn	02 27 55.0	+1.2
PRK				AML	AML	02 27 55.6	
	comp=E,2101μm,0.8s						
PRK				AML	AML	02 27 56.5	
	comp=N,1122μm,0.4s						
AYVA	Ayvalik	1.05	10	*i* P	Pb	02 27 41.1	-0.1
AYVA	Ayvalik	1.05	10	P	Pb	02 27 41.1	-0.1
SIGR	SIGRI	1.05	333	*e*PG	Pg	02 27 43.7	+1.7
SIGR	SIGRI	1.05	333	P	Pg	02 27 41.7	-0.3
SIGR				S	Sg	02 27 56.1	+0.3
SIGR	SIGRI	1.05	333	P	Pg	02 27 42.5	+0.5
SIGR	SIGRI	1.05	333	*e*Pg	Pg	02 27 43.7	+1.7
SIGR				S	Sg	02 27 56.1	+0.3
SIGR	SIGRI	1.05	333	P	Pg	02 27 42.5	+0.5
SIGR				S	Sn	02 27 55.5	+0.1
SIGR				AML	AML	02 27 56.2	
	comp=N,538μm,0.5s						
SIGR				AML	AML	02 27 56.4	
	comp=E,422μm,0.3s						
AYDB	Zeytinkoy-Aydi	1.18	106	*e*PN	Pg	02 27 44.8	+0.4
AYDB	Zeytinkoy-Aydi	1.18	106	*e*Pn	Pg	02 27 44.8	+0.4
AKHS	Akhisar	1.22	60	*i* P	Pg	02 27 45.6	+0.4
AKHS				*i* S	Sg	02 28 02.2	+1.0
AKHS	Akhisar	1.22	60	P	Pg	02 27 45.6	+0.4
AKHS				S	Sg	02 28 02.2	+1.0
AKS	Ak

DURS	**Dursunbey**	**2.05**	**49**	*i* P		**Pn**	**02 27 55.1**	**-0.2**
LPK	**Lapseki**	**2.11**	**6**	*e*PN		**Pb**	**02 27 59.5**	**+0.3**
LPK	**Lapseki**	**2.11**	**6**	*e*PN		**Pb**	**02 27 59.5**	**+0.3**
GELI	**Tayfur-Gelibol**	**2.12**	**0**	*e*PN		**Pb**	**02 27 59.8**	**+0.3**
GELI	**Tayfur-Gelibol**	**2.12**	**0**	*e*Pn		**Pb**	**02 27 59.8**	**+0.3**
DALY	**Dalyan (Mu˘la**	**2.27**	**129**	*e*PN		**Pb**	**02 28 01.3**	**-0.7**
DALY	**Dalyan (Mu˘la**	**2.27**	**129**	*e*Pn		**Pb**	**02 28 01.3**	**-0.7**
EDC	**Edincik**	**2.34**	**27**	*e*PN		**Pb**	**02 28 02.6**	**-0.6**
EDC	**Edincik**	**2.34**	**27**	*e*Pn		**Pb**	**02 28 02.6**	**-0.6**
KHAL	**Karahalli**	**2.38**	**87**	*i* P		**Pb**	**02 28 02.4**	**-1.6**
KHAL	**Karahalli**	**2.38**	**87**	P		**Pb**	**02 28 02.4**	**-1.6**
RKY	**Sarkoy-Tekirda**	**2.47**	**13**	*e*PN		**Pb**	**02 28 04.6**	**-0.9**
RKY	**Sarkoy-Tekirda**	**2.47**	**13**	*e*Pn		**Pb**	**02 28 04.6**	**-0.9**
KCTX	**Karacabey (Bur**	**2.47**	**36**	*e*PN		**Pb**	**02 28 04.3**	**-1.2**
KCTX	**Karacabey (Bur**	**2.47**	**36**	*e*Pn		**Pb**	**02 28 04.3**	**-1.2**
MRMT	**Marmara Adasi**	**2.48**	**20**	*e*PN		**Pb**	**02 28 04.6**	**-1.1**
MRMT	**Marmara Adasi**	**2.48**	**20**	*e*Pn		**Pb**	**02 28 04.6**	**-1.1**
GDZ	**Gediz**	**2.50**	**70**	*i* P		**Pg**	**02 28 10.2**	**+0.6**
TVSB	**Tavsanli**	**2.62**	**62**	*e*PN		**Pb**	**02 28 06.4**	**-1.7**
TVSB	**Tavsanli**	**2.62**	**62**	*e*Pn		**Pb**	**02 28 06.4**	**-1.7**
ALN	**Alexandroupoli**	**2.64**	**353**	*e*PN		**Pb**	**02 28 07.2**	**-1.1**
ALN	**Alexandroupoli**	**2.64**	**353**	*e*Pn		**Pb**	**02 28 07.2**	**-1.1**
FETY	**Fethiye**	**2.65**	**127**	*e*PN		**Pb**	**02 28 06.3**	**-2.3**
FETY	**Fethiye**	**2.65**	**127**	*e*Pn		**Pb**	**02 28 06.3**	**-2.3**
MDNY	**Mudanya-Bursa**	**2.81**	**41**	*e*PN		**Pb**	**02 28 09.2**	**-2.0**
MDNY	**Mudanya-Bursa**	**2.81**	**41**	*e*Pn		**Pb**	**02 28 09.2**	**-2.0**

CSEM ***29*** *02:32:32.0, 36˚.58N×21˚.81E, h27km, ML2.1/4*
ATH 29 02:32:32.0, 36˚.58N×21˚.81E, h27km±1km, ML2.1/4, Error ellipse: s-maj=3.0km s-min=1.2km az=34.0, Southern Greece

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PYL	**PYLOS**	**0.32**	**350**	P	Pb	02 32 39.9	+0.5
PYL				S	Sb	02 32 44.8	+0.4
PYL	**PYLOS**	**0.32**	**350**	P	Pb	02 32 39.9	+0.5
PYL				S	Sb	02 32 44.8	+0.3
PYL				AML	AML	02 32 45.7	
	comp=N,1470μm,0.4s						
PYL				AML	AML	02 32 46.5	
	comp=E,1207μm,0.4s						
ITM	**Ithomi**	**0.60**	**9**	P	Pb	02 32 43.8	-0.2
ITM				S	Sb	02 32 52.4	+0.2
ITM	**Ithomi**	**0.60**	**9**	P	Pb	02 32 43.8	-0.2
ITM				S	Sb	02 32 52.4	+0.2
ITM				AML	AML	02 32 55.6	
	comp=N,388μm,0.3s						
ITM				AML	AML	02 32 59.4	
	comp=E,270μm,0.3s						
VLX	**Vlachokerasia**	**0.91**	**30**	P	Pb	02 32 49.3	+0.1
VLX				S	Sn	02 33 04.0	+2.6
VLX	**Vlachokerasia**	**0.91**	**30**	P	Pb	02 32 49.3	+0.1
VLX				S	Sn	02 33 04.0	+2.6
VLX				AML	AML	02 33 08.5	
	comp=N,205μm,0.7s						
VLX				AML	AML	02 33 10.5	
	comp=E,154μm,0.5s						
VLI	**Veliai**	**0.92**	**81**	P	Pb	02 32 49.8	+0.5
VLI				S	Sn	02 33 03.9	+2.4
VLI	**Veliai**	**0.92**	**81**	P	Pb	02 32 49.8	+0.6
VLI				S	Sn	02 33 03.9	+2.5
AMT	**Artemida-Makis**	**0.95**	**355**	P	Pn	02 32 49.7	+0.1
AMT				S	Sn	02 33 04.3	+2.0
AMT	**Artemida-Makis**	**0.95**	**355**	P	Pn	02 32 49.7	0.0
AMT				S	Sn	02 33 04.3	+1.9
AMT				AML	AML	02 33 09.5	
	comp=E,231μm,0.3s						
AMT				AML	AML	02 33 10.8	
	comp=N,293μm,0.4s						
KYTH	**Kithira**	**1.03**	**107**	P	Pb	02 32 52.2	+0.9
KYTH	**Kithira**	**1.03**	**107**	P	Pb	02 32 52.2	+1.0
KRND	**KRANIDI**	**1.34**	**53**	P	Pb	02 32 56.3	-0.1
KRND	**KRANIDI**	**1.34**	**53**	P	Pb	02 32 56.3	-0.1
DRO	**Drossia**	**1.37**	**357**	P	Pb	02 32 57.4	+0.5
DRO	**Drossia**	**1.37**	**357**	P	Pb	02 32 57.4	+0.5
ZKS	**Zakynthos**	**1.38**	**324**	P	Pb	02 32 57.6	+0.5
ZKS	**Zakynthos**	**1.38**	**324**	P	Pb	02 32 57.6	+0.5
DID	**Didima**	**1.47**	**51**	P	Pb	02 32 57.8	-0.8
DID	**Didima**	**1.47**	**51**	P	Pb	02 32 57.8	-0.8
KLV	**Kalavryta, Ach**	**1.48**	**10**	P	Pb	02 32 59.3	+0.4
KLV	**Kalavryta, Ach**	**1.48**	**10**	P	Pb	02 32 59.3	+0.4
RLS	**Riolos of Patr**	**1.50**	**350**	P	Pb	02 33 00.9	+1.8
KFL	**Anninata**	**1.73**	**332**	P	Pb	02 33 02.8	-0.2
KFL	**Anninata**	**1.73**	**332**	P	Pb	02 33 02.8	-0.2
VLS	**Valsamata**	**1.86**	**329**	P	Pb	02 33 04.9	-0.5
LKD2	**Lefkada island**	**2.38**	**338**	P	Pn	02 33 11.7	+2.4
LKD2	**Lefkada island**	**2.38**	**338**	P	Pn	02 33 11.7	+2.4

ISCJB ***29*** *02:39:16.5±0.7, 25˚.39N±0˚.06×94˚.86E±0˚.05, h74km±8km, mb4.2/57, Error ellipse: s-maj=10.3km s-min=5.6km az=30.3*
BJI ***29*** *02:39:16.5, 25˚.51N×94˚.93E, h63km, mb4.5/14, mB4.5/5, ML4.3/3*
MOS ***29*** *02:39:18.3±1.1, 25˚.41N×95˚.03E, h94km, mb4.4/46, Error ellipse: s-maj=15.0km s-min=5.7km az=112.7*
NEIC ***29*** *02:39:21.0±0.7, 25˚.36N×95˚.10E, h105km±7km, mb4.3/19, Error ellipse: s-maj=8.3km s-min=5.4km az=53.0*
IDC ***29*** *02:39:21.6±0.6, 25˚.40N×95˚.11E, h108km±4km, mb3.9/27, mb1 4.0/28, mb1mx3.8/53, mbtmp4.2/28, MS2.8/1, Ms1 3.0/1, ms1mx2.5/53, Error ellipse: s-maj=20.8km s-min=10.1km az=54.0*
BKK ***29*** *02:39:54.8±2.1, 22˚.N±32˚×9˚.5E±2˚.2, h287km±27km, M3.6/3, mb3.2/1, MLv3.9/3*
ISC 29 02:39:17.7±0.5, 25˚.38N±0˚.06×94˚.87E±0˚.06, h71km±3km, h70km:pP-P, n123, σ1§32/143, mb4.3/57, 9C-9D, Myanmar-India border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SHL	**Shillong**	**2.71**	**275**	*e*P	**Pn**	**02 39 59.0**	**-0.1**
SHL				*i* S	**Sn**	**02 40 30.0**	**-0.9**
LSA	**Lhasa**	**5.42**	**323**	*e*P	Pn	02 40 32.9	-3.6
LSA				pmax	pmax		
	comp=Z,22nm,0.6s						
LSA	**Lhasa**	**5.42**	**323**	*e*Pn	Pn	02 40 32.9	-3.6
	comp=Z,22nm,0.6s						
LSA				*e*Sn	Sn	02 41 24.3	-14
CHTO	**Chiang Mai**	**7.55**	**149**	P	**Pn**	**02 41 07.3**	**+2.2**
CHTO	**Chiang Mai**	**7.55**	**149**	*e*P	**Pn**	**02 41 06.7**	**+1.5**
CHTO	**Chiang Mai**	**7.55**	**149**	*e*Pn	**Pn**	**02 41 06.7**	**+1.5**
CMMT	**Chiang Mai**	**7.55**	**149**	P	**Pn**	**02 41 07.1**	**+1.9**
CMAR	**Chiang Mai Arr**	**7.86**	**150**	P	**Pn**	**02 41 11.2**	**+1.8**
	comp=Z,1.4nm,0.3s,baz=327,slow=13,SNR=63						
CMAR				LR	LR	02 44 51.2	
	comp=Z,65nm,19.0s,baz=330,slow=42						
CM01	**Chiang Mai Arr**	**7.90**	**150**	*e*Pn	**Pn**	**02 41 11.2**	**+1.3**
LAMP	**Lampang**	**8.13**	**146**	P	**Pn**	**02 41 14.9**	**+1.8**
GUN	**Gumba**	**8.43**	**289**	*e*P	**Pn**	**02 41 18.0**	**+0.5**
	comp=Z,227nm,0.4s						
PKIN	**Phulchoki**	**8.77**	**287**	*e*P	**Pn**	**02 41 22.3**	**+0.3**
	comp=Z,89nm,0.3s						
KKN	**Kakani**	**8.91**	**288**	*e*P	**Pn**	**02 41 24.0**	**0.0**
	comp=Z,120nm,0.4s						
DMN	**Daman**	**9.02**	**286**	*e*P	**Pn**	**02 41 25.1**	**-0.4**
	comp=Z,32nm,0.3s						
GKN	**Gorkha**	**9.52**	**288**	*e*P	**Pn**	**02 41 31.9**	**-0.3**
	comp=Z,244nm,0.5s						
BWNR	**Bhubaneshwar**	**9.77**	**241**	*e*P	**Pn**	**02 41 35.1**	**-0.4**
BWNR				*e*P	**Pn**	**02 41 35.8**	**+0.3**
BWNR				IAML		02 41 38.6	
	comp=N,197nm,0.3s						
BWNR				IAML		02 41 40.8	
	comp=E,113nm,0.2s						
BWNR				*e*S	**Sn**	**02 43 17.6**	**-6.0**
KOLN	**Koldanda**	**10.37**	**286**	*e*P	**Pn**	**02 41 42.8**	**-1.0**
	comp=E,37nm,0.3s						
PYUN	**Piuthan**	**10.96**	**287**	*e*P	**Pn**	**02 41 49.8**	**-2.1**
	comp=E,74nm,0.5s						
JOSI	**Joshimath**	**14.47**	**294**	*e*P	**Pn**	**02 42 37.4**	**-1.8**
JOSI				*e*S	Sn	02 45 05.1	-13
GTA	**Gaotai**	**14.60**	**15**	P	**P**	**02 42 45.3**	**+0.1**
GTA				pP	pP	02 42 52.8	
GTA				sP	sP	02 42 55.8	
GTA				pmax	pmax		
	comp=Z,6.0nm,1.0s						
XAN	**Xi'an**	**14.94**	**51**	P	**Pn**	**02 42 45.5**	**+0.5**
XAN				pP	P	02 42 51.8	+2.9
XAN				pmax	pmax		
	comp=Z,7.0nm,0.8s						
SONA	**Sohna**	**16.13**	**284**	*e*P	**Pn**	**02 42 59.9**	**-0.3**
SONA				*e*S	Sn	02 45 43.7	-15
KUDL	**Kundal**	**16.65**	**284**	*ex*	**Pn**	**02 43 04.3**	**-2.3**
KUDL				*e*S	Sn	02 45 55.8	-15
HYB	**Hyderabad**	**17.12**	**246**	*i* P	**P**	**02 43 16.0**	**+2.8**
HYB				*e*		02 43 33.0	
KHET	**Khetri**	**17.24**	**283**	*e*P	**Pn**	**02 43 14.0**	**+0.1**
KHET				*e*S	Sn	02 46 08.9	-16
SFK	**Sufi-Kurgan**	**23.07**	**314**	P	**P**	**02 44 18.2**	**+0.6**
SFK				pmax	pmax		
	comp=Z,14nm,0.8s						
MK01	**Makanchi Array**	**23.58**	**338**	*e*P	**P**	**02 44 22.5**	**+0.5**
TKM2	**Tokmak 2**	**23.58**	**323**	P	**P**	**02 44 22.8**	**+0.5**
TKM2				pmax	pmax		
	comp=Z,8.0nm,1.0s						
TKM2	**Tokmak 2**	**23.58**	**323**	*e*P	**P**	**02 44 23.6**	**+1.3**
	comp=Z,11nm,1.1s						
MK31	**Makanchi Array**	**23.61**	**338**	*e*P	**P**	**02 44 22.7**	**+0.5**
MK31				pmax	pmax		
	comp=Z,11nm,0.6s						
MK31	**Makanchi Array**	**23.61**	**338**	*e*P	**P**	**02 44 23.1**	**+0.9**
MKAR	**Makanchi Array**	**23.61**	**338**	P	**P**	**02 44 22.8**	**+0.6**
	comp=Z,11nm,0.6s,baz=152,slow=9.2,SNR=80						
MKAR				pP	**sP**		
	comp=Z,2.8nm,0.6s,baz=149,slow=10,SNR=3.7						
MKAR				ScP	**ScP**	**02 51 36.2**	**-1.0**
	comp=Z,0.3nm,0.3s,baz=100,slow=2.8,SNR=5.3						
MKAR	**Makanchi Array**	**23.61**	**338**	*ce*P	**P**	**02 44 22.7**	**+0.5**
MKAR				pmax	pmax		
	comp=Z,11nm,0.6s						
MKAR	**Makanchi Array**	**23.61**	**338**	*e*P	**P**	**02 44 23.1**	**+0.9**
MKAR				pP	**sP**	**02 44 45.6**	**-1.2**
MKAR				ScP	**ScP**	**02 51 36.2**	**-1.0**
MAKZ	**Makanchi**	**23.73**	**338**	*e*P	**P**	**02 44 25.0**	**+1.7**
MAKZ				pmax	pmax		
	comp=Z,49nm,1.6s						
MAKZ	**Makanchi**	**23.73**	**338**	*e*P	**P**	**02 44 25.0**	**+1.7**
	comp=Z,49nm,1.6s						
AAK	**Ala-Archa**	**24.01**	**321**	P	**P**	**02 44 29.0**	**+2.9**
	comp=Z,5.1nm,0.7s,baz=144,slow=7.5,SNR=14						
AAK	**Ala-Archa**	**24.01**	**321**	*ce*P	**P**	**02 44 28.8**	**+2.7**
AAK				pmax	pmax		
	comp=Z,8.0nm,0.8s						
AAK	**Ala-Archa**	**24.01**	**321**	*e*P	**P**	**02 44 29.4**	**+3.3**
	comp=Z,9.9nm,1.1s						
SONM	**Songino Array**	**24.19**	**19**	P	**P**	**02 44 27.2**	**-0.4**
	comp=Z,3.3nm,0.5s,baz=195,slow=10,SNR=3.8						
ULN	**Ulaanbaatar**	**24.42**	**20**	*e*P	**P**	**02 44 29.4**	**-0.3**
ULN				pmax	pmax		
	comp=Z,5.0nm,0.7s						
ULN	**Ulaanbaatar**	**24.42**	**20**	*e*P	**P**	**02 44 29.3**	**-0.4**
	comp=Z,4.9nm,0.6s						
EKS2	**Erkin-Say**	**24.44**	**320**	*e*P	**P**	**02 44 32.3**	**+2.4**
EKS2				pmax	pmax		
	comp=Z,9.0nm,0.8s						
EKS2	**Erkin-Say**	**24.44**	**320**	*e*P	**P**	**02 44 32.3**	**+2.4**
	comp=Z,8.9nm,0.8s						
MNAS	**Manas**	**25.09**	**318**	P	**P**	**02 44 36.8**	**+0.9**
MNAS				pmax	pmax		
	comp=Z,8.0nm,0.8s						
ZAK	**Zakamensk**	**25.80**	**12**	*e*P	**P**	**02 44 42.3**	**+0.2**
ZAK				pmax	pmax		
	comp=Z,3.0nm,1.3s						
KURBB	**Kurchatov Arra**	**28.17**	**338**	P	**P**	**02 45 04.2**	**+0.9**
	comp=Z,3.0nm,0.6s,baz=148,slow=9.5,SNR=32						
KURBB				pP	**sP**	**02 45 26.8**	**-1.7**
	comp=Z,0.6nm,0.7s,baz=146,slow=9.2,SNR=3.3						
KURBB				PcP	**PcP**	**02 48 16.0**	**+0.5**
	comp=Z,0.6nm,0.7s,baz=178,slow=2.6,SNR=5.8						
KURBB				ScP	**ScP**	**02 51 48.9**	**-1.4**
	comp=Z,1.2nm,0.8s,baz=164,slow=2.7,SNR=8.3						
KURK	**Kurchatov**	**28.22**	**338**	*e*P	**P**	**02 45 04.5**	**+0.8**
KURK				*ᵗ*PP	**sP**	**02 45 26.8**	**-2.1**
KURK						02 48 16.0	
KURK				pmax	pmax		
	comp=Z,5.0nm,0.6s						
KURK	**Kurchatov**	**28.22**	**338**	*e*P	**P**	**02 45 04.5**	**+0.8**
	comp=Z,4.7nm,0.6s						
KURK				pP	**sP**	**02 45 26.8**	**-2.1**
KURK				PcP	**PcP**	**02 48 16.0**	**+0.4**
KURK				ScP	**ScP**	**02 51 48.9**	**-1.5**
OTUK	**Ortayu**	**28.89**	**328**	P	**P**	**02 45 08.1**	**-1.7**
OTUK				pmax	pmax		
	comp=Z,3.0nm,0.6s						
ZALV	**Zalesovo Beam**	**29.50**	**348**	P	**P**	**02 45 15.8**	**+0.8**
	comp=Z,1.6nm,0.4s,baz=156,slow=7.6,SNR=8.3						
ZALV				pP	**sP**	**02 45 40.0**	**-0.3**
	comp=Z,1.2nm,0.6s,baz=153,slow=7.5,SNR=2.9						
NVS	**Novosibirsk**	**30.66**	**347**	*e*P	**P**	**02 45 25.7**	**+0.5**
NVS				pmax	pmax		
	comp=N,4.0nm,0.4s						
NVS				pmax	pmax		
	comp=E,3.0nm,0.4s						
NVS				pmax	pmax		
	comp=Z,4.0nm,0.4s						
BVAR	**Borovoye Array**	**33.17**	**333**	P	**P**	**02 45 48.3**	**+1.0**
	comp=Z,1.8nm,0.5s,baz=139,slow=13,SNR=14						
BVAR				pP	**sP**	**02 46 11.7**	**-1.0**
	comp=Z,0.4nm,0.4s,baz=243,slow=36,SNR=2.6						
BVAR				PcP	**PcP**	**02 48 28.8**	**+0.1**
	comp=Z,0.9nm,0.6s,baz=116,slow=3.4,SNR=5.3						
BVAR				ScP	**ScP**	**02 52 07.0**	**+0.2**
	comp=Z,0.8nm,0.8s,baz=133,slow=6.5,SNR=3.7						
BRVK	**Borovoye**	**33.24**	**333**	*d* P	**P**	**02 45 48.5**	**+0.5**
BRVK				pmax	pmax		
	comp=Z,4.0nm,1.0s						
BRVK	**Borovoye**	**33.24**	**333**	*e*P	**P**	**02 45 49.2**	**+1.3**
	comp=Z,2.9nm,0.6s						
GEYT	**Alibeck**	**33.48**	**301**	P	**P**	**02 45 53.0**	**+2.6**
	comp=Z,1.2nm,0.5s,baz=53,slow=7.4,SNR=3.5						
CHKZ	**Chkalovo**	**33.56**	**334**	P	**P**	**02 45 48.8**	**-1.9**
CHKZ				pmax	pmax		
	comp=Z,8.0nm,0.9s						
ZRNK	**Zerenda**	**33.71**	**332**	P	P	02 45 48.8	-3.2
ZRNK				pmax	pmax		
	comp=Z,2.0nm,0.6s						
AB31	**Akbulak array**	**36.10**	**320**	*i* P	**P**	**02 46 14.0**	**+1.3**
AB31				pmax	pmax		
	comp=Z,5.0nm,0.6s						
AKTO	**Aktyubinsk**	**37.76**	**321**	P	**P**	**02 46 28.0**	**+1.3**
	comp=Z,2.6nm,0.8s,baz=110,slow=7.2,SNR=14						
AKTO	**Aktyubinsk**	**37.76**	**321**	P	**P**	**02 46 28.0**	**+1.3**
AKTO				pmax	pmax		
	comp=Z,3.0nm,0.8s						
ARU	**Arti**	**40.59**	**330**	P	**P**	**02 46 51.4**	**+1.2**
	comp=Z,4.1nm,0.2s,baz=143,slow=18,SNR=4.6						
ARU	**Arti**	**40.59**	**330**	*d* P	**P**	**02 46 50.7**	**+0.5**
ARU						02 48 23.9	
ARU				pmax	pmax		
	comp=Z,3.0nm,0.6s						
ARU	**Arti**	**40.59**	**330**	*e*P	**P**	**02 46 51.0**	**+0.8**
NRIK	**Noril'sk**	**44.20**	**356**	P	**P**	**02 47 19.8**	**+0.5**
	comp=Z,9.3nm,0.7s,baz=163,slow=6.8,SNR=4.8						
VRH	**Novokhopyorsk**	**47.73**	**317**	*e*P	**P**	**02 47 47.4**	**+0.1**
VRH				pmax	pmax		
	comp=Z,8.0nm,0.6s						
VSR	**Storozhevoye**	**49.31**	**317**	*e*P	**P**	**02 47 59.5**	**0.0**
VSR				pmax	pmax		
	comp=Z,4.0nm,0.7s						
LPSR	**Galich'ya Gora**	**49.70**	**319**	*e*P	**P**	**02 48 02.6**	**+0.2**
LPSR				pmax	pmax		
	comp=Z,6.0nm,0.6s						
TIXI	**Tiksi**	**50.07**	**13**	*e*P	**P**	**02 48 04.1**	**-0.8**
TIXI				pmax	pmax		
	comp=Z,14nm,2.5s						
TIXI	**Tiksi**	**50.07**	**13**	*e*P	**P**	**02 48 03.4**	**-1.5**
	comp=Z,4.5nm,0.4s						
MA2	**Magadan**	**51.31**	**33**	*e*P	**P**	**02 48 13.1**	**-1.4**
KLMR	**Klimovskoe**	**51.43**	**329**	*e*P	**P**	**02 48 13.6**	**-1.7**
KLMR				pmax	pmax		
	comp=Z,11nm,1.3s						
BR131	**Keskin Array S**	**52.62**	**302**	*e*P	**P**	**02 48 25.4**	**+0.7**
BRTR	**Keskin Array B**	**52.62**	**302**	P	**P**	**02 48 25.7**	**+1.0**
	comp=Z,1.3nm,0.7s,baz=116,slow=8.8,SNR=9.2						
SEY	**Seymchan**	**53.04**	**29**	*e*P	**P**	**02 48 24.8**	**-2.4**
AKASG	**Malin Array Be**	**55.51**	**315**	P	**P**	**02 48 45.2**	**-0.2**
	comp=Z,2.3nm,0.6s,baz=79,slow=6.4,SNR=21						
KIEV	**Kiev**	**55.52**	**315**	*e*P	**P**	**02 48 45.1**	**-0.4**
KIEV				pmax	pmax		
	comp=Z,3.0nm,0.8s						
KIEV	**Kiev**	**55.52**	**315**	*e*P	**P**	**02 48 45.0**	**-0.5**
	comp=Z,3.8nm,0.7s						
CFR	**Carcaliu**	**56.35**	**309**	*i* P	**P**	**02 48 52.1**	**+0.6**
VRI	**Vrincioaia**	**57.30**	**310**	*i* P	**P**	**02 48 59.9**	**+1.7**
VSU	**Vasula**	**57.34**	**325**	*e*P	**P**	**02 48 58.8**	**+0.6**
VSU				pmax	pmax		
	comp=Z,23nm,1.7s						
PLOR	**Plostina**	**57.35**	**310**	*i* P	**P**	**02 49 00.3**	**+1.7**
MLR	**Muntele Rosu**	**57.87**	**309**	P	**P**	**02 49 04.1**	**+1.7**
	comp=Z,0.8nm,0.5s,baz=329,slow=1.1,SNR=16						
MLR	**Muntele Rosu**	**57.87**	**309**	*i* P	**P**	**02 49 04.4**	**+2.0**
MLR	**Muntele Rosu**	**57.87**	**309**	*e*P	**P**	**02 49 03.6**	**+1.2**
	comp=Z,5.2nm,0.7s						
FINES	**FINESS Array B**	**57.92**	**328**	P	**P**	**02 49 02.8**	**+0.6**
	comp=Z,2.5nm,0.6s,baz=95,slow=7.2,SNR=14						
FINES				pP	**sP**	**02 49 28.9**	**+0.3**
	comp=Z,0.7nm,0.6s,baz=101,slow=9.9,SNR=2.5						
FINES	**FINESS Array B**	**57.92**	**328**	*i* P	**P**	**02 49 02.7**	**+0.4**
FINES				pmax	pmax		
	comp=Z,3.0nm,0.6s						
BURAR	**Bucovina Array**	**58.22**	**312**	*i* P	**P**	**02 49 05.6**	**+0.9**
BUR08	**Bucovina Ar. S**	**58.23**	**312**	*e*P	**P**	**02 49 05.2**	**+0.4**
ARR	**Arges**	**58.80**	**309**	*i* P	**P**	**02 49 09.6**	**+0.8**
WRA	**Warramunga Arr**	**59.17**	**136**	P	**P**	**02 49 10.6**	**-0.9**
	comp=Z,1.2nm,0.7s,baz=324,slow=7.4,SNR=5.1						
WRA				pP	**sP**	**02 49 36.2**	**-1.7**
	comp=Z,0.7nm,0.9s,baz=62,slow=16,SNR=2.8						
ARCES	**ARCESS Array B**	**59.26**	**337**	P	**P**	**02 49 11.9**	**+0.4**
	comp=Z,2.3nm,0.6s,baz=87,slow=6.6,SNR=18						
KWP	**Kalwaria Pacla**	**59.73**	**314**	*i* P	**P**	**02 49 15.7**	**+0.6**
BILL	**Bilibino**	**59.77**	**24**	*e*P	**P**	**02 49 13.9**	**-1.1**
BILL				*e*		02 49 48.3	
BILL				*e*		02 51 26.0	
BILL				pmax	pmax		
	comp=Z,4.0nm,1.7s						
BILL	**Bilibino**	**59.77**	**24**	*e*P	**P**	**02 49 14.0**	**-1.0**
	comp=Z,2.5nm,0.4s						
ASAR	**Alice Springs**	**61.70**	**139**	P	**P**	**02 49 27.8**	**-0.9**
	comp=Z,0.4nm,0.5s,baz=320,slow=6.9,SNR=8.1						
ASAR				pP	**sP**	**02 49 54.2**	**-0.9**
	comp=Z,1.0nm,0.7s,baz=96,slow=7.0,SNR=8.0						
SPITS	**Spitsbergen Ar**	**62.98**	**347**	P	**P**	**02 49 36.5**	**0.0**
	comp=Z,3.9nm,0.9s,baz=116,slow=11,SNR=12						
HFS	**Hagfors**	**63.99**	**327**	P	**P**	**02 49 43.8**	**+0.3**
	comp=Z,5.5nm,0.5s,baz=104,slow=6.3,SNR=44						
NB2	**NORSAR Subarra**	**65.10**	**328**	P	**P**	**02 49 50.2**	**-0.5**
	comp=Z,2.6nm,0.6s,baz=82,slow=6.5						
NOA	**NORSAR Array B**	**65.10**	**328**	P	**P**	**02 49 50.5**	**-0.1**
	comp=Z,2.5nm,0.6s,baz=83,slow=6.5,SNR=23						
NOA	**NORSAR Array B**	**65.10**	**328**	P	**P**	**02 49 50.6**	**-0.1**
NOA				pmax	pmax		
	comp=Z,2.0nm,0.6s						
GERES	**GERESS Array B**	**65.68**	**314**	P	**P**	**02 49 55.4**	**+0.6**
	comp=Z,1.3nm,0.6s,baz=62,slow=6.3,SNR=11						
GEA0	**GERESS Array S**	**65.69**	**314**	*e*P	**P**	**02 49 55.3**	**+0.5**
DAVOX	**Davos/Dischmat**	**68.66**	**313**	P	**P**	**02 50 13.4**	**-0.4**
	comp=Z,2.1nm,0.6s,baz=150,slow=9.5,SNR=4.9						
EKA	**Eskdalemuir Ar**	**73.88**	**324**	P	**P**	**02 50 45.3**	**+0.4**
	comp=Z,2.3nm,0.4s,baz=71,slow=5.6,SNR=20						
ESK	**Eskdalemuir**	**73.91**	**324**	*e*P	**P**	**02 50 45.4**	**+0.4**
ESK				pmax	pmax		
	comp=Z,4.0nm,0.7s						
ESK	**Eskdalemuir**	**73.91**	**324**	*e*P	**P**	**02 50 45.4**	**+0.4**
	comp=Z,4.4nm,0.7s						
LSZ	**Lusaka**	**76.47**	**246**	*e*P	**P**	**02 51 00.7**	**+0.2**
LSZ				pmax	pmax		
	comp=Z,3.0nm,0.6s						
LSZ	**Lusaka**	**76.47**	**246**	*e*P	**P**	**02 51 00.7**	**+0.2**
	comp=Z,2.7nm,0.6s						
MLY	**Manley**	**76.86**	**23**	*e*P	**P**	**02 51 01.5**	**-0.3**
	comp=Z,3.3nm,1.0s						
BPAW	**Bear Paw Mtn.**	**77.27**	**24**	*e*P	**P**	**02 51 03.0**	**-1.1**
	comp=Z,4.6nm,1.0s						
COLA	**College**	**77.97**	**23**	*e*P	**P**	**02 51 06.8**	**-1.1**
COLA				pmax	pmax		
	comp=Z,3.0nm,1.0s						
COLA	**College**	**77.97**	**23**	*e*P	**P**	**02 51 07.0**	**-1.0**
	comp=Z,3.3nm,0.9s						
MCK	**McKinley**	**78.23**	**24**	*e*P	**P**	**02 51 08.0**	**-1.5**
MCK				pmax	pmax		
	comp=Z,2.0nm,0.6s						
MCK	**McKinley**	**78.23**	**24**	*e*P	**P**	**02 51 08.0**	**-1.5**
	comp=Z,1.7nm,0.6s	

EGRO				S		Sn	02 57 29.7	-1.5
	0.5nm,0.4s,SNR=7.9							
EGRO	**El Granado**	**5.20**	**340**	P		**Pn**	**02 56 33.8**	**+1.4**
	0.2nm,0.1s,SNR=7.9							
EGRO				S		Sn	02 57 29.7	-1.5
	0.5nm,0.4s,SNR=7.9							
EMIN	**Mina Concepcio**	**5.23**	**347**	P		**Pn**	**02 56 34.5**	**+1.7**
	0.2nm,0.1s,SNR=7.9							
EMIN				S		Sn	02 57 30.7	-1.3
	0.1nm,0.2s,SNR=7.9							
EMIN	**Mina Concepcio**	**5.23**	**347**	P		**Pn**	**02 56 34.5**	**+1.7**
	0.2nm,0.1s,SNR=7.9							
EMIN				S		Sn	02 57 30.7	-1.3
	0.1nm,0.2s,SNR=7.9							
ECAB	**El Cabril**	**5.40**	**359**	P		**Pn**	**02 56 35.1**	**-0.2**
	0.1nm,0.1s,SNR=7.9							
ECAB				S		Sn	02 57 34.9	-1.6
	0.2nm,0.1s,SNR=7.9							
ECAB	**El Cabril**	**5.40**	**359**	P		**Pn**	**02 56 35.1**	**-0.2**
	0.1nm,0.1s,SNR=7.9							
ECAB				S		Sn	02 57 34.9	-1.6
	0.2nm,0.1s,SNR=7.9							
EBAD	**Badajoz**	**6.25**	**347**	P		**Pn**	**02 56 48.5**	**+1.6**
	0.5nm,0.1s,SNR=7.9							
EBAD				S		Sn	02 57 54.6	-2.6
	0.1nm,0.3s,SNR=7.9							
EBAD	**Badajoz**	**6.25**	**347**	P		**Pn**	**02 56 48.5**	**+1.6**
	0.5nm,0.1s,SNR=7.9							
EBAD				S		Sn	02 57 54.6	-2.6
	0.1nm,0.3s,SNR=7.9							

IDC ***29*** *02:58:57.4±1.0,36˚.36N×143˚.82E,h0km,mb3.3/5, mb1 3.6/7,mb1mx3.4/40,mbtmp3.4/7,ML3.3/2,Error ellipse: s-maj=37.6km s-min=20.5km az=105.0*

ISCJB ***29*** *02:59:01.1±0.9,36˚.55N±0˚.08×143˚.67E±0˚.06,h33km, mb3.4/5,Error ellipse: s-maj=12.2km s-min=7.0km az=9.7*

JMA ***29*** *02:59:01.5±0.3,36˚.53N×143˚.61E,h46km,M3.6*

ISC 29 02:59:02.7±1.0,**36˚.52N**±0˚.09×**143˚.65E**±0˚.08,**h35**km,**n17, σ1§02/20,mb3.4/5,Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**2.36**	**285**	P	**Pn**	**02 59 38.9**	**-0.1**
ONAJ				S	**Sn**	**03 00 06.8**	**0.0**
JFK	**Kawauchi**	**2.38**	**292**	P	**Pn**	**02 59 38.8**	**-0.4**
JFK				S	**Sn**	**03 00 06.6**	**-0.6**
JHO	**Hitachi**	**2.48**	**273**	P	**Pn**	**02 59 40.4**	**-0.2**
JHO				S	**Sn**	**03 00 08.3**	**-1.4**
JMM	**Marumori**	**2.65**	**301**	P	**Pn**	**02 59 42.5**	**-0.4**
JMM				S	**Sn**	**03 00 13.5**	**-0.2**
JIO	**Ouri**	**2.66**	**317**	P	**Pn**	**02 59 42.2**	**-0.9**
JIO				*e*S	**Sn**	**03 00 13.4**	**-0.7**
JFT	**Otama**	**2.83**	**292**	P	**Pn**	**02 59 46.0**	**+0.5**
JFT				*e*S	**Sn**	**03 00 18.6**	**+0.3**
JOU	**Okura**	**3.01**	**309**	P	**Pn**	**02 59 48.0**	**+0.1**
MJAR	**Matsushiro Arr**	**4.38**	**272**	Pn	**Pn**	**03 00 07.5**	**+0.7**
	0.4nm,0.3s,baz=85,slow=8.8,SNR=2.9						
ASAJ	**Asahikawa**	**7.63**	**354**	Pn	**Pn**	**03 00 50.4**	**-0.9**
	0.8nm,0.3s,baz=230,slow=27,SNR=3.0						
H11N2	**WAKE ISLAND Hy**	**26.35**	**123**	T	T	03 31 43.0	
	baz=314,slow=75,SNR=7.9						
H11N1	**WAKE ISLAND Hy**	**26.36**	**123**	T	T	03 31 46.0	
	baz=314,slow=75,SNR=4.3						
H11N3	**WAKE ISLAND Hy**	**26.37**	**123**	T	T	03 31 44.1	
	baz=314,slow=75,SNR=6.4						
ILAR	**Eielson Array**	**48.97**	**32**	P	**P**	**03 07 46.0**	**+0.7**
	0.3nm,0.9s,baz=282,slow=5.4,SNR=3.7						
WRA	**Warramunga Arr**	**56.84**	**190**	P	**P**	**03 08 40.8**	**-3.0**
	0.6nm,0.7s,baz=13,slow=7.4,SNR=4.7						
ASAR	**Alice Springs**	**60.56**	**190**	P	**P**	**03 09 10.0**	**+0.4**
	0.1nm,0.3s,baz=0.8,slow=6.5,SNR=3.9						
YKA	**Yellowknife Ar**	**63.34**	**31**	P	**P**	**03 09 28.4**	**+0.5**
	0.1nm,0.7s,baz=312,slow=8.3,SNR=3.8						
NOA	**NORSAR Array B**	**75.34**	**338**	P	**P**	**03 10 43.7**	**+1.5**
	0.3nm,0.7s,baz=38,slow=5.7,SNR=2.9						

MEX 29 02:59:26.8±0.7,**18˚.29N**×**102˚.64W,h5km,MD3.5, Michoacan**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MMIG	**Aquila**	**0.68**	**270**	*e*P	Pg	02 59 38.5	-1.3
MMIG				*e*S	Sg	02 59 48.8	+0.2
ZIIG	**Zihuatanejo**	**1.30**	**121**	*i* P	Pn	02 59 48.4	-3.3
ZIIG				*e*S	Sg	03 00 04.3	-4.4
EZ5V		**1.50**	**323**	*e*P	Pn	02 59 51.3	-3.4
EZ5V				*e*S	Sn	03 00 09.9	-4.8
R15V		**1.55**	**305**	*e*P	Pn	02 59 50.7	-4.4
R15V				*e*S	Sn	03 00 10.8	-4.9
ARIG	**Puente Sto Nin**	**2.17**	**90**	*i* P	Pn	03 00 00.2	-3.5

MEX 29 03:30:39.6±0.3,**17˚.12N**×**99˚.27W,h51**km±7km,**MD3.5, Guerrero**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
TLIG	**Tlapa**	**0.80**	**57**	*e*P	Pn	03 30 53.3	-1.6
TLIG				*e*S	Sn	03 31 04.0	-2.0
MEIG	**Mezcala**	**0.86**	**338**	*e*P	Pn	03 30 54.0	-1.6
MEIG				*e*S	Sn	03 31 05.4	-2.0
CAIG	**El Cayaco**	**0.95**	**266**	*e*P	Pn	03 30 55.1	-1.6
CAIG				*e*S	Sn	03 31 07.0	-2.3
PNIG	**Pinotepa**	**1.31**	**123**	*e*P	Pn	03 31 00.2	-1.4
PNIG				*e*S	Sn	03 31 15.8	-2.4

ISCJB ***29*** *03:31:50.4±0.6,26˚.22N±0˚.07×140˚.4E±0˚.1,h400km, mb3.4/13,Error ellipse: s-maj=13.1km s-min=10.1km az=2.3*

IDC ***29*** *03:31:51.6±0.5,26˚.39N×140˚.77E,h414km±5km,mb3.2/13, mb1 3.4/15,mb1mx3.1/53,mbtmp4.0/15,Error ellipse: s-maj=19.5km s-min=12.3km az=98.0*

JMA ***29*** *03:31:54.4±0.2,26˚.68N×141˚.18E,h417km,M3.7*

ISC 29 03:31:51.1±0.8,**26˚.3N**±0˚.1×**140˚.6E**±0˚.1,**h400**km,**n27, σ1§55/29,mb3.4/13,Bonin Islands region**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CBIJ	**Chichi jima**	**1.64**	**59**	P	**Pn**	**03 32 47.6**	**+2.6**
CBIJ				S	**S**	**03 33 29.3**	**+0.8**
JCJ	**Chichijima**	**1.64**	**59**	P	**Pn**	**03 32 47.5**	**+2.6**
	38nm,0.3s,baz=100,slow=23,SNR=28						
JCJ				S	**S**	**03 33 29.7**	**+1.2**
	88nm,0.3s,baz=263,slow=22,SNR=19						
JHJ2	**Mitsune**	**6.86**	**354**	P	**P**	**03 33 35.1**	**+1.4**
JHJ	**Hachijo jima 2**	**6.87**	**354**	P	**P**	**03 33 34.3**	**+0.5**
	55nm,0.3s,baz=41,slow=22,SNR=14						
BSO1	**Boso 1**	**8.37**	**2**	P	**P**	**03 33 50.4**	**+0.5**
BSO4	**Boso 4**	**8.70**	**359**	P	**P**	**03 33 54.2**	**+0.2**
JIE	**Ise**	**8.77**	**338**	P	**P**	**03 33 57.7**	**+2.8**
JOD2	**Odawara 2**	**9.06**	**352**	P	**P**	**03 33 59.2**	**+1.0**
JRY	**Ryogami san**	**9.83**	**352**	P	**Pn**	**03 34 07.5**	**+0.4**
MJAR	**Matsushiro Arr**	**10.45**	**349**	P	**Pn**	**03 34 14.3**	**+0.1**
	0.7nm,0.3s,baz=64,slow=32,SNR=5.6						
KSRS	**Korea Array**	**15.49**	**319**	P	**P**	**03 35 11.8**	**+3.1**
	0.3nm,0.3s,baz=145,slow=8.6,SNR=5.3						
CMAR	**Chiang Mai Arr**	**39.17**	**267**	P	**P**	**03 38 43.1**	**+0.6**
	0.8nm,0.4s,baz=42,slow=11,SNR=6.1						
WRA	**Warramunga Arr**	**46.33**	**188**	P	**P**	**03 39 39.4**	**+0.2**
	1.1nm,0.3s,baz=7.7,slow=8.0,SNR=20						
MKAR	**Makanchi Array**	**49.92**	**310**	P	**P**	**03 40 05.9**	**-0.1**
	0.5nm,0.5s,baz=98,slow=8.7,SNR=3.7						
ASAR	**Alice Springs**	**50.06**	**188**	P	**P**	**03 40 08.6**	**+1.3**
	0.1nm,0.3s,baz=16,slow=7.6,SNR=2.8						
ILAR	**Eielson Array**	**59.12**	**28**	P	**P**	**03 41 09.0**	**-1.9**
	0.5nm,0.6s,baz=264,slow=6.4,SNR=6.1						
INK	**Inuvik**	**64.37**	**24**	P	**P**	**03 41 44.4**	**-1.0**
	0.3nm,0.4s,baz=263,slow=9.0,SNR=4.3						
YKA	**Yellowknife Ar**	**73.54**	**28**	P	**P**	**03 42 40.0**	**-1.2**
	0.6nm,0.6s,baz=296,slow=5.8,SNR=19						
ARCES	**ARCESS Array B**	**73.86**	**341**	P	**P**	**03 42 41.9**	**-1.1**
	2.6nm,0.7s,baz=70,slow=8.3,SNR=12						
KBZ	**Khabaz**	**77.53**	**113**	P	**P**	**03 43 03.5**	**-0.5**
	1.5nm,0.7s,baz=102,slow=4.9,SNR=4.1						
FINES	**FINESS Array B**	**78.06**	**333**	P	**P**	**03 43 05.2**	**-1.3**
	1.3nm,0.4s,baz=71,slow=4.5,SNR=18						
AKASG	**Malin Array Be**	**82.44**	**323**	P	**P**	**03 43 29.1**	**-0.7**
	0.2nm,0.3s,baz=45,slow=6.0,SNR=5.6						
NB2	**NORSAR Subarra**	**83.85**	**338**	P	**P**	**03 43 34.6**	**-2.2**
	comp=Z,0.8nm,0.6s,baz=49,slow=4.6						
NOA	**NORSAR Array B**	**83.85**	**338**	P	**P**	**03 43 34.9**	**-1.9**
	comp=Z,1.4nm,0.6s,baz=45,slow=4.9,SNR=8.6						
BRTR	**Keskin Array B**	**85.52**	**312**	P	**P**	**03 43 43.9**	**-1.7**
	comp=Z,0.3nm,0.6s,baz=215,slow=4.1,SNR=3.6						
TORD	**Torodi Ar. Bea**	**124.04**	**309**	PKP	**PKPdf**	**03 50 02.1**	**-1.4**
	comp=Z,0.2nm,0.6s,baz=63,slow=1.0,SNR=3.9						
PTGA	**Pitinga**	**147.80**	**41**	PKPbc	**PKPdf**	**03 50 47.1**	**+0.1**
	comp=Z,4.6nm,0.9s,baz=336,slow=10,SNR=5.0						

ISCJB ***29*** *03:40:30.6±0.8,11˚.2S±0˚.1×75˚.30W±0˚.08,h33km,mb3.1/2, Error ellipse: s-maj=15.0km s-min=11.2km az=22.6*

IDC ***29*** *03:40:31.1±2.5,11˚.39S×75˚.47W,h35km±27km,mb3.4/3, mb1 3.6/7,mb1mx3.4/25,mbtmp3.6/7,ML3.4/4,Error ellipse: s-maj=28.0km s-min=20.4km az=48.0*

ISC 29 03:40:32.1±1.0,**11˚.3S**±0˚.1×**75˚.4W**±0˚.1,**h35**km,**n8,σ0§76/8, Central Peru**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
NNA	**Nana**	**1.60**	**244**	Pg	**Pn**	**03 40 58.1**	**+0.1**
	125nm,0.3s,baz=82,slon=12,SNR=80						
NNA				Lg	Lg	03 41 18.0	
	202nm,0.3s,baz=99,slow=15,SNR=44						
NNA				LR	LR	03 41 48.6	
	comp=Z,199nm,20.6s,baz=145,slow=53						
ATAH	**Atahualpa**	**5.09**	**324**	Pn	**Pn**	**03 41 47.2**	**+0.8**
	1.8nm,0.3s,baz=154,slow=4.0,SNR=7.5						
ATAH				Sn	Sn	03 42 53.8	+10
	3.0nm,0.3s,baz=96,slow=19,SNR=3.9						
ATAH				Lg	Lg	03 43 14.6	
	2.4nm,0.3s,baz=118,slow=11,SNR=4.1						
LPAZ	**La Paz**	**8.61**	**126**	Pn	**Pn**	**03 42 36.0**	**+1.0**
	0.1nm,0.3s,baz=304,slow=12,SNR=1.8						
LPAZ				Lg	Lg	03 44 57.7	
	0.1nm,0.3s,baz=144,slow=13,SNR=3.6						
SIV	**San Ignacio**	**14.66**	**110**	Pn	**Pn**	**03 43 57.2**	**+0.1**
	0.3nm,0.3s,baz=310,slow=14,SNR=4.4						
SIV				Lg	Lg	03 48 26.6	
	0.3nm,0.3s,baz=64,slow=17,SNR=4.1						
PTGA	**Pitinga**	**18.55**	**57**	P	**P**	**03 44 45.4**	**-0.7**
	0.5nm,0.3s,baz=224,slow=14,SNR=3.4						
SDV	**Santo Domingo**	**20.59**	**13**	P	**P**	**03 45 08.8**	**+0.3**
	2.4nm,0.3s,baz=303,slow=2.4,SNR=2.3						
YKA	**Yellowknife Ar**	**79.60**	**343**	P	**P**	**03 52 34.7**	**-0.7**
	0.1nm,0.7s,baz=140,slow=5.7,SNR=3.6						
TORD	**Torodi Ar. Bea**	**80.22**	**74**	P	**P**	**03 52 39.4**	**-0.4**
	0.4nm,0.8s,baz=258,slow=4.8,SNR=3.8						

JMA 29 03:41:47.0±0.2,**37˚.43N**×**143˚.48E,h45**km,**M3.8,Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**1.97**	**302**	P	Pn	03 42 19.1	+1.2
JIO				S	Sn	03 42 42.4	+1.0
JFK	**Kawauchi**	**2.08**	**269**	P	Pn	03 42 20.4	+1.0
JFK				S	Sn	03 42 44.9	+0.9
ONAJ	**Iwakimizuishiy**	**2.16**	**262**	P	Pn	03 42 21.7	+1.1
ONAJ				S	Sn	03 42 47.1	+0.9
JMM	**Marumori**	**2.18**	**282**	P	Pn	03 42 22.1	+1.4
JMM				S	Sn	03 42 47.8	+1.4
OFUJ	**Ofunato**	**2.18**	**320**	P	Pn	03 42 21.5	+0.8
OFUJ				S	Sn	03 42 47.1	+0.6
JMK	**Ichinoseki**	**2.34**	**311**	P	Pn	03 42 24.2	+1.2
JMK				S	Sn	03 42 52.5	+2.0
JOU	**Okura**	**2.42**	**294**	P	Pn	03 42 26.0	+2.0
JOU				S	Sn	03 42 54.8	+2.4
JFT	**Otama**	**2.50**	**273**	S	Sn	03 42 56.6	+2.1
JOM	**Ohasama**	**2.67**	**321**	P	Pn	03 42 29.0	+1.6
JOM				S	Sn	03 42 59.8	+1.3
CHOJ	**Chosi**	**2.73**	**232**	P	Pn	03 42 28.9	+0.7
JANG	**Nango**	**3.31**	**333**	P	Pn	03 42 37.6	+1.3
JANG				S	Sn	03 43 15.0	+0.5
MAT	**Matsushiro**	**4.31**	**260**	P	Pn	03 42 53.0	+2.9
MAT				*e*S	Sn	03 43 41.0	+1.9

IDC 29 03:45:51.4±2.8,**5˚.11S**×**135˚.27E,h0**km,**mb3.6**/3, **mb1 3.7**/5,**mb1mx3.5**/42,**mbtmp3.6**/5,**ML3.7/2,MS3.6**/1, **Ms1 3.6**/1,**ms1mx2.6**/36,**Error ellipse: s-maj=144.1km s-min=28.4km az=82.0,Irian Jaya region**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
WRA	**Warramunga Arr**	**14.77**	**183**	Pn	Pn	03 49 20.1	-1.7
	0.3nm,0.3s,baz=3.7,slow=12,SNR=9.8						
WRA				Sn	Sn	03 51 59.1	-7.3
	0.2nm,0.3s,baz=356,slow=23,SNR=3.8						
ASAR	**Alice Springs**	**18.50**	**184**	P	Pn	03 50 10.0	+0.7
	0.3nm,0.3s,baz=3.0,slow=12,SNR=23						
AFI	**Afiamalu**	**52.86**	**104**	LR	LR	04 15 36.7	
	comp=Z,58nm,21.2s,baz=114,slow=34						
MKAR	**Makanchi Array**	**69.64**	**324**	P	P	03 57 01.2	-1.6
	0.3nm,0.5s,baz=107,slow=10,SNR=2.8						
ZALV	**Zalesovo Beam**	**72.33**	**331**	P	P	03 57 19.5	+0.6
	0.4nm,0.3s,baz=140,slow=9.2,SNR=2.6						
KURBB	**Kurchatov Arra**	**73.75**	**326**	P	P	03 57 28.4	+1.0
	0.2nm,0.5s,baz=106,slow=6.8,SNR=2.7						

NIED ***29*** *03:56:00,36˚.00N×133˚.30E,h14km,Mw3.5 Best double couple: M0 2.25000×10^14 NP1:φs245.00000°,δ76.00000°, λ170.00000°. NP2:φs338.00000°,δ80.00000°,λ15.00000°.*

ISCJB ***29*** *03:56:07.7±0.7,35˚.99N±0˚.03×133˚.31E±0˚.04,h15km±9km, mb3.4/2,Error ellipse: s-maj=6.0km s-min=5.4km az=165.5*

JMA ***29*** *03:56:07.8,35˚.98N×133˚.33E,h16km,M4.0*

JMA Felt I J1.

IDC ***29*** *03:56:07.5±1.3,36˚.03N×133˚.20E,h0km,mb3.4/2, mb1 3.5/5,mb1mx3.3/57,mbtmp3.3/5,ML3.1/3,Error ellipse: s-maj=28.6km s-min=16.3km az=129.0*

ISC 29 03:56:07.8±1.1,**35˚.97N**±0˚.03×**133˚.36E**±0˚.04,**h8**km±9km, **n12,σ0§98/20,6C-1D,Western Honshu**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JOI	**OKI**	**0.34**	**344**	⇑P	**Pg**	**03 56 14.4**	**-0.1**
JOI				S	**Sg**	**03 56 19.1**	**+0.1**
JNM	**Ikuma**	**0.54**	**210**	⇑P	**Pg**	**03 56 18.4**	**+0.1**
JNM				S	**Sg**	**03 56 25.6**	**+0.2**
JKR	**Kurayoshi**	**0.69**	**147**	⇑P	**Pg**	**03 56 21.4**	**+0.2**
JKR				S	**Sg**	**03 56 30.9**	**+0.6**
JHS	**Saijyo**	**0.98**	**192**	⇑P	**Pb**	**03 56 26.1**	**-1.0**
JHS				S	**Sb**	**03 56 39.3**	**-1.0**
JKSM	**Kasumi**	**1.12**	**109**	⇓P	**Pn**	**03 56 28.6**	**-1.2**
JKSM				S	**Sb**	**03 56 43.7**	**-0.5**
JGT2	**ShimaneMisato**	**1.14**	**218**	⇑P	**Pn**	**03 56 28.5**	**-1.5**
JGT2				S	**Sb**	**03 56 43.3**	**-1.4**
JAD	**Aida**	**1.22**	**147**	⇑P	**Pn**	**03 56 30.2**	**-0.9**
JAD				S	**Sb**	**03 56 46.5**	**-0.4**
JNU	**Nakatsue**	**3.50**	**217**	Pn	**Pn**	**03 57 03.1**	**+0.6**
	4.0nm,0.3s,baz=31,slow=4.5,SNR=53						
JNU				Pg	**Pb**	**03 57 10.9**	**+0.9**
	12nm,0.3s,baz=45,slow=1.2,SNR=22						
JNU				Lg	Lg	03 57 56.6	
	3.9nm,0.3s,baz=132,slow=19,SNR=9.2						
MJAR	**Matsushiro Arr**	**3.96**	**80**	Pn	Pn	03 57 11.6	+2.8
	0.5nm,0.3s,baz=273,slow=14,SNR=3.9						
KSRS	**Korea Array**	**4.62**	**290**	Pn	**Pn**	**03 57 17.6**	**-0.3**
	1.1nm,0.3s,baz=103,slow=14,SNR=9.8						
KSRS				Sn	**Sn**	**03 58 10.6**	**-1.0**
	2.0nm,0.3s,baz=112,slow=23,SNR=8.0						
ILAR	**Eielson Array**	**53.83**	**31**	P	**P**	**04 05 31.1**	**+0.3**
	0.1nm,0.5s,baz=285,slow=8.3,SNR=2.8						
WRA	**Warramunga Arr**	**55.61**	**179**	P	**P**	**04 05 46.0**	**+1.9**
	1.1nm,1.2s,baz=356,slow=7.6,SNR=2.7						

ISCJB ***29*** *03:57:23.0±0.3,36˚.63N±0˚.02×71˚.23E±0˚.04,h218km±4km, mb3.9/29,Error ellipse: s-maj=5.5km s-min=3.8km az=172.5*

MOS ***29*** *03:57:23.0±1.3,36˚.55N×71˚.40E,h223km,mb4.1/14,Error ellipse: s-maj=11.0km s-min=5.6km az=88.4*

IDC ***29*** *03:57:24.9±0.6,36˚.53N×71˚.25E,h226km±3km,mb3.6/22, mb1 3.7/28,mb1mx3.6/58,mbtmp4.2/28,Error ellipse: s-maj=11.8km s-min=8.1km az=160.0*

BJI ***29*** *03:57:26.1,36˚.83N×71˚.37E,h224km,mb4.4/13,mB4.3/8*

NNC ***29*** *03:57:28.1±1.1,36˚.98N×71˚.10E,h213km±10km,mb3.5, mpv5.0,Error ellipse: s-maj=12.2km s-min=5.6km az=156.0*

ISC 29 03:57:25.0±0.4,**36˚.60N**±0˚.04×**71˚.24E**±0˚.05,**h227**km±3km,

h227km:pP-P,n87,σ1§83/120,mb4.0/29,18C-9D, Afghanistan-Tajikistan border region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CEP	**Cherat**	**2.82**	**169**	⇑P	**Pn**	**03 58 14.3**	**0.0**
CEP				S	**S**	**03 58 51.0**	**-1.9**
DZET	**Dzherino**	**2.92**	**320**	⇑P	**Pn**	**03 58 13.8**	**-1.5**
	432nm,0.3s						
DZET				⇓S	**S**	**03 58 49.6**	**-5.2**
	3μm,0.5s						
DZET	**Dzherino**	**2.92**	**320**	PN	**Pn**	**03 58 13.7**	**-1.5**
DZET				pmax	pmax		
	comp=Z,432nm,0.3s						
CHCP	**Chirah Chowk**	**3.37**	**150**	P	**Pn**	**03 58 20.9**	**+0.5**
THW	**Thamme Wali**	**3.81**	**174**	P	**Pn**	**03 58 25.2**	**-0.5**
THW				S	**S**	**03 59 11.0**	**-2.4**
SFK	**Sufi-Kurgan**	**3.85**	**27**	⇑P	**Pn**	**03 58 25.6**	**-0.6**
	comp=Z,183nm,0.4s						
SFK				⇓S	**S**	**03 59 10.8**	**-3.5**
	comp=Z,253nm,0.3s						
SFK	**Sufi-Kurgan**	**3.85**	**27**	PN	**Pn**	**03 58 25.5**	**-0.6**
SFK				S	**S**	**03 59 10.8**	**-3.5**
SFK				pmax	pmax		
	comp=Z,183nm,0.4s						
SFK				smax	smax		
	comp=N,253nm,0.3s						
KSH	**Kashi**	**4.74**	**51**	P	Pn	03 58 31.5	-5.4
KSH				S	S	03 59 18.0	-16
KSH				smax	smax		
	comp=N,360nm,0.4s						
KSH				smax	smax		
	comp=N,450nm,0.8s						
SARP	**Sargodha**	**4.81**	**165**	P	**Pn**	**03 58 37.0**	**-0.8**
THN	**Thein Dam**	**5.56**	**137**	*e*P	**Pn**	**03 58 44.2**	**-2.9**
THN				*e*S	**S**	**03 59 47.0**	**-5.2**
MNAS	**Manas**	**5.96**	**9**	⇑P	**Pn**	**03 58 51.4**	**-0.8**
	comp=N,129nm,0.4s						
MNAS				⇑S	**S**	**03 59 56.7**	**-5.0**
	comp=N,423nm,0.6s						
MNAS	**Manas**	**5.96**	**9**	PN	**Pn**	**03 58 51.4**	**-0.8**
MNAS				pmax	pmax		
	comp=Z,129nm,0.4s						
KK31	**Karatay Array**	**6.52**	**355**	P	**Pn**	**03 58 58.0**	**-1.2**
	comp=Z,8.6nm,0.3s,baz=178,slow=12,SNR=301						
KK31				⇓S	S	04 00 08.0	-6.4
	comp=Z,94nm,0.5s,baz=0.0,slow=0.1,SNR=7.3						
KK31	**Karatay Array**	**6.52**	**355**	PN	**Pn**	**03 58 58.0**	**-1.2**
KK31				pmax	pmax		
	comp=Z,9.0nm,0.3s						
AAK	**Ala-Archa**	**6.53**	**22**	P	**Pn**	**03 58 59.0**	**-0.5**
	comp=Z,46nm,0.3s,baz=168,slow=6.5,SNR=154						
AAK				S	**S**	**04 00 11.9**	**-2.9**
	comp=Z,4.4nm,0.3s,baz=143,slow=24,SNR=13						
AAK	**Ala-Archa**	**6.53**	**22**	⇑P	**Pn**	**03 58 59.0**	**-0.5**
	comp=Z,65nm,0.6s						
AAK				⇑S	**S**	**04 00 11.8**	**-3.1**
	comp=Z,158nm,0.9s						
AAK	**Ala-Archa**	**6.53**	**22**	PN	**Pn**	**03 58 58.8**	**-0.7**
AAK				S	**S**	**04 00 11.7**	**-3.1**
AAK				pmax	pmax		
	comp=Z,65nm,0.6s						
AAK				smax	smax		
	comp=N,158nm,0.9s						
FRU	**Bishkek**	**6.75**	**22**	*e*PN	**Pn**	**03 59 01.0**	**-1.1**
FRU				*e*S	**S**	**04 00 16.0**	**-3.7**
FRU				pmax	pmax		
	comp=Z,130nm,1.8s						
FRU				smax	smax		
	comp=E,300nm,1.6s						
SDNR	**Sundarnagar**	**6.96**	**135**	*e*P	**Pn**	**03 59 03.0**	**-1.9**
SDNR				*e*S	S	04 00 16.0	-8.7
TKM2	**Tokmak 2**	**7.15**	**27**	⇑P	**Pn**	**03 59 06.7**	**-0.7**
	comp=E,200nm,0.7s						
TKM2				⇑S	**S**	**04 00 25.8**	**-3.5**
	comp=E,88nm,1.1s						
PDGK	**Podgornoye**	**9.23**	**41**	⇑P	**Pn**	**03 59 32.4**	**-1.5**
	comp=E,18nm,0.8s						
PDGK	**Podgornoye**	**9.23**	**41**	P	**Pn**	**03 59 32.3**	**-1.5**
PDGK				pmax	pmax		
	comp=Z,18nm,0.8s						
GEYT	**Alibeck**	**10.55**	**281**	P	**Pn**	**03 59 48.1**	**-2.7**
	comp=Z,1.4nm,0.3s,baz=116,slow=6.8,SNR=5.0						
GEYT				S	**S**	**04 01 44.1**	**-4.9**
	comp=Z,4.8nm,0.3s,baz=108,slow=13,SNR=6.2						
OTUK	**Ortayu**	**11.67**	**4**	⇑P	**Pn**	**04 00 03.0**	**-1.8**
	comp=Z,16nm,0.7s						
OTUK	**Ortayu**	**11.67**	**4**	P	**Pn**	**04 00 02.4**	**-2.4**
OTUK				pmax	pmax		
	comp=Z,16nm,0.7s						
PYUN	**Piuthan**	**13.04**	**127**	*e*P	**Pn**	**04 00 20.7**	**-1.7**
	comp=Z,82nm,0.6s						
MK31	**Makanchi Array**	**13.10**	**36**	⇓P	**Pn**	**04 00 22.4**	**-0.3**
	comp=Z,4.8nm,0.7s,baz=0.0,slow=0.1,SNR=17						
MK31	**Makanchi Array**	**13.10**	**36**	P	**Pn**	**04 00 21.7**	**-1.0**
MK31				pmax	pmax		
	comp=Z,5.0nm,0.8s						
MKAR	**Makanch

comp=Z,10.0nm,0.6s

NCK	**Nalchik**	**22.19**	**297**	⇑	*e*P	**P**	**04 02 04.9**	**+2.4**
NCK					*i* *P	**pP**	**04 02 42.6**	**+1.3**
NCK					pmax	pmax		
	comp=Z,16nm,0.4s							
GTA	**Gaotai**	**22.65**	**74**		*e*P	**P**	**04 02 08.5**	**+1.6**
GTA					pmax	pmax		
	comp=Z,5.0nm,1.0s							
KBZ	**Khabaz**	**22.73**	**297**		P	**P**	**04 02 08.1**	**+0.8**
	comp=Z,1.4nm,0.6s,baz=104,slow=11,SNR=3.4							
MMAI	**Mount Meron Ar**	**29.54**	**274**		P	**P**	**04 03 09.9**	**+1.4**
	comp=Z,0.5nm,0.4s,baz=306,slow=50,SNR=2.9							
BRTR	**Keskin Array B**	**29.59**	**288**		P	**P**	**04 03 09.8**	**+0.9**
	comp=Z,2.7nm,0.6s,baz=106,slow=9.3,SNR=25							
BRTR					pP	**pP**	**04 03 55.5**	**+1.0**
	comp=Z,0.9nm,0.7s,baz=101,slow=7.8,SNR=4.2							
CMAR	**Chiang Mai Arr**	**30.33**	**119**	*ce*	P	**P**	**04 03 12.8**	**-2.7**
CMAR					pmax	pmax		
	comp=Z,1.0nm,0.3s							
AKASG	**Malin Array Be**	**33.04**	**309**		P	**P**	**04 03 39.5**	**+0.7**
	comp=Z,0.8nm,0.4s,baz=80,slow=7.4,SNR=8.6							
AKASG					pP	**pP**	**04 04 24.0**	**-0.7**
	comp=Z,0.5nm,0.4s,baz=86,slow=7.1,SNR=4.9							
AKASG					sP	**sP**	**04 04 51.2**	**+0.2**
	comp=Z,0.6nm,0.5s,baz=7.8,slow=17,SNR=3.8							
BOD	**Bodaibo**	**35.15**	**39**	*e*	P	**P**	**04 03 57.3**	**+0.5**
BOD					pmax	pmax		
	comp=Z,3.0nm,1.7s							
FINES	**FINESS Array B**	**37.51**	**326**		P	**P**	**04 04 17.2**	**+0.6**
	comp=Z,1.4nm,0.3s,baz=120,slow=9.2,SNR=23							
FINES					pP	**pP**	**04 05 03.9**	**+0.3**
	comp=Z,0.5nm,0.4s,baz=160,slow=6.1,SNR=2.5							
FINES					sP	**sP**	**04 05 30.0**	**+0.4**
	comp=Z,1.0nm,0.6s,baz=125,slow=12,SNR=2.8							
ARCES	**ARCESS Array B**	**41.13**	**337**		P	**P**	**04 04 47.6**	**+1.1**
	comp=Z,0.9nm,0.4s,baz=114,slow=7.9,SNR=15							
ARCES					sP	**sP**	**04 06 00.8**	**+0.9**
	comp=Z,2.6nm,0.8s,baz=111,slow=9.2,SNR=5.0							
GERES	**GERESS Array B**	**43.03**	**305**		P	**P**	**04 05 03.0**	**+0.8**
	comp=Z,0.3nm,0.4s,baz=77,slow=7.0,SNR=4.5							
NB2	**NORSAR Subarra**	**44.42**	**323**		P	**P**	**04 05 12.7**	**-0.3**
	comp=Z,1.9nm,0.4s,baz=98,slow=7.9							
NOA	**NORSAR Array B**	**44.42**	**323**		P	**P**	**04 05 12.7**	**-0.3**
	comp=Z,1.8nm,0.5s,baz=104,slow=7.3,SNR=19							
NOA					pP	**pP**	**04 06 02.7**	**+1.4**
	comp=Z,0.4nm,0.6s,baz=96,slow=8.1,SNR=2.5							
NOA					sP	**sP**	**04 06 26.5**	**-0.4**
	comp=Z,1.5nm,0.7s,baz=95,slow=8.1,SNR=5.2							
KLR	**Kul'dur**	**44.93**	**54**		P	**P**	**04 05 18.1**	**+1.0**
	comp=Z,1.6nm,0.4s,baz=270,slow=8.1,SNR=8.4							
KONO	**Kongsberg**	**45.13**	**321**	*e*	P	**P**	**04 05 17.7**	**-0.8**
KONO					pmax	pmax		
	comp=Z,44nm,1.3s							
TIXI	**Tiksi**	**45.61**	**22**		P	**P**	**04 05 22.6**	**+0.5**
	comp=Z,5.3nm,0.3s,baz=276,slow=4.0,SNR=12							
TIXI					pP	**pP**	**04 06 12.2**	**+1.5**
	comp=Z,2.9nm,0.6s,baz=274,slow=4.3,SNR=4.7							
TIXI	**Tiksi**	**45.61**	**22**	⇓	*e*P	**P**	**04 05 22.1**	**0.0**
TIXI					*i* *P	**pP**	**04 06 13.7**	**+3.1**
TIXI					pmax	pmax		
	comp=Z,4.0nm,0.7s							
USRK	**Ussuriysk Ar.**	**45.95**	**61**		P	**P**	**04 05 26.3**	**+1.1**
	comp=Z,1.5nm,0.6s,baz=142,slow=40,SNR=2.6							
KMBO	**Kilima Mbogo**	**49.04**	**228**		P	**P**	**04 05 50.5**	**+1.0**
	comp=Z,1.5nm,0.5s,baz=37,slow=12,SNR=6.2							
KEST	**Kesra**	**49.19**	**289**		P	**P**	**04 05 49.5**	**-0.8**
	comp=Z,3.1nm,0.5s,baz=312,slow=2.0,SNR=13							
SEY	**Seymchan**	**54.23**	**34**		P	**P**	**04 06 27.2**	**+0.3**
	comp=Z,0.7nm,0.3s,baz=257,slow=16,SNR=4.1							
SEY	**Seymchan**	**54.23**	**34**	⇑	*e*P	**P**	**04 06 27.9**	**+1.0**
ESDC	**Sonseca Array**	**57.58**	**298**		P	**P**	**04 06 51.2**	**0.0**
	comp=Z,1.6nm,0.7s,baz=56,slow=7.2,SNR=15							
ESDC					pP	**PcP**	**04 07 42.3**	**+0.6**
	comp=Z,0.2nm,0.4s,baz=61,slow=7.1,SNR=4.5							
TORD	**Torodi Ar. Bea**	**65.91**	**269**		P	**P**	**04 07 45.1**	**-1.7**
	comp=Z,2.8nm,0.5s,baz=50,slow=5.9,SNR=90							
TORD					pP	**pP**	**04 08 38.2**	**-0.9**
	comp=Z,0.6nm,0.6s,baz=48,slow=6.7,SNR=2.3							
INK	**Inuvik**	**73.78**	**9**		P	**P**	**04 08 34.7**	**+0.9**
	comp=Z,2.3nm,0.5s,baz=348,slow=6.8,SNR=26							
INK					sP	**sP**	**04 09 52.3**	**+0.7**
	comp=Z,0.5nm,0.5s,baz=342,slow=5.7,SNR=3.2							
COLA	**College**	**74.33**	**16**	*ce*	P	**P**	**04 08 37.3**	**+0.3**
COLA					pmax	pmax		
	comp=Z,4.0nm,0.9s							
ILAR	**Eielson Array**	**74.63**	**16**		P	**P**	**04 08 38.5**	**-0.3**
	comp=Z,1.3nm,1.0s,baz=304,slow=4.3,SNR=8.4							
ILAR					pP	**pP**	**04 09 33.7**	**+1.3**
	comp=Z,0.5nm,0.9s,baz=343,slow=5.3,SNR=4.6							
YKA	**Yellowknife Ar**	**81.14**	**3**		P	**P**	**04 09 15.0**	**+0.4**
	comp=Z,0.7nm,0.3s,baz=350,slow=5.4,SNR=69							
YKA					pP	**pP**	**04 10 09.8**	**+0.8**
	comp=Z,0.5nm,0.6s,baz=350,slow=5.5,SNR=4.2							
YKA					sP	**sP**	**04 10 34.2**	**+1.1**
	comp=Z,0.6nm,0.6s,baz=350,slow=5.6,SNR=6.9							
WRA	**Warramunga Arr**	**81.88**	**122**		P	**P**	**04 09 18.3**	**-0.8**
	comp=Z,2.3nm,0.6s,baz=322,slow=4.9,SNR=16							
WRAB	**Tennant Creek**	**81.88**	**122**	⇑	*e*P	P	04 09 15.7	-3.4
WRAB					pmax	pmax		
	comp=Z,10.0nm,0.7s							
ASAR	**Alice Springs**	**84.15**	**125**		P	**P**	**04 09 29.9**	**-0.7**
	comp=Z,2.7nm,0.6s,baz=313,slow=5.0,SNR=32							
ASAR	**Alice Springs**	**84.15**	**125**		P	**P**	**04 09 30.0**	**-0.7**
ASAR					pmax	pmax		
	comp=Z,3.0nm,0.6s							

*CSEM **29** 03:57:52.3, 39.30N×27.67W, h5km, ML2.6*
PDA 29 03:57:52.3±0.9, 39.30N×27.67W, h5km, MD3.6, ML2.6, Error ellipse: s-maj=5.8km s-min=2.5km az=175.0, Azores Islands

Code	Station Name	Δ°	AZ°	Phase ID		Time			Res
				Op	ISC	h	m	s	ISC
PGRA	**Graciosa**	**0.36**	**223**	*e*P	Pg	03	57	58.5	-0.8
PGRA				*e*S	Sg	03	58	03.9	-0.1
PGRA	**Graciosa**	**0.36**	**223**	*e*P	Pg	03	57	58.5	-0.8
PGRA				*e*S	Sg	03	58	03.9	-0.1
PGRA				A	A	03	58	05.4	
	568nm,0.1s								
ADH	**Angra Heroismo**	**0.72**	**152**	*e*P	Pg	03	58	03.8	-2.4
ADH				*e*S	Sg	03	58	13.1	-2.5
ADH	**Angra Heroismo**	**0.72**	**152**	*e*P	Pg	03	58	03.8	-2.4
ADH				*e*S	Sg	03	58	13.1	-2.5
ADH				A	A	03	58	14.9	
	93nm,0.3s								
ROSA	**Rosais**	**0.73**	**218**	*e*P	Pg	03	58	04.5	-1.8
ROSA				*e*S	Sg	03	58	13.1	-2.6
ROSA	**Rosais**	**0.73**	**218**	*e*P	Pg	03	58	04.5	-1.8
ROSA				*e*S	Sg	03	58	13.1	-2.6
ROSA				A	A	03	58	15.6	
	100nm,0.1s								
PMAN	**Manadas**	**0.74**	**206**	*e*P	Pg	03	58	04.2	-2.3
PMAN				*e*S	Sg	03	58	13.7	-2.4
PMAN	**Manadas**	**0.74**	**206**	*e*P	Pg	03	58	04.2	-2.3
PMAN				*e*S	Sg	03	58	13.7	-2.4
PMAN				A	A	03	58	16.6	
	166nm,0.2s								
PICO	**Pico**	**0.99**	**217**	*e*P	Pg	03	58	08.0	-3.3
PICO				*e*S	Sg	03	58	20.1	-4.0
PICO	**Pico**	**0.99**	**217**	*e*P	Pg	03	58	08.0	-3.3
PICO				*e*S	Sg	03	58	20.1	-4.0
PICO				A	A	03	58	22.3	
	69nm,0.2s								
PCAN	**Candelaria**	**1.05**	**218**	*e*P	Pg	03	58	08.7	-3.7
PCAN				*e*S	Sg	03	58	20.9	-5.1
PCAN	**Candelaria**	**1.05**	**218**	*e*P	Pg	03	58	08.7	-3.7
PCAN				*e*S	Sg	03	58	20.9	-5.1
PCAN				A	A	03	58	24.1	
	28nm,0.1s								
PSET	**Sete Cidades**	**2.12**	**133**	*e*S	Sn	03	58	47.1	-8.0
PSET	**Sete Cidades**	**2.12**	**133**	*e*S	Sn	03	58	47.1	-8.0
PSET				A	A	03	58	55.1	
	26nm,0.3s								
PDA	**Ponta Delgada**	**2.21**	**134**	*e*P	Pn	03	58	25.3	-4.2
PDA				*e*S	Sn	03	58	49.0	-8.2
PDA	**Ponta Delgada**	**2.21**	**134**	*e*P	Pn	03	58	25.3	-4.2
PDA				*e*S	Sn	03	58	49.0	-8.2
PDA				A	A	03	58	52.0	
	24nm,0.2s								
CMLA	**Cha da Macela**	**2.27**	**132**	*e*P	Pn	03	58	26.0	-4.5
CMLA				*e*S	Sn	03	58	51.1	-7.8
CMLA	**Cha da Macela**	**2.27**	**132**	*e*P	Pn	03	58	26.0	-4.5
CMLA				*e*S	Sn	03	58	51.1	-7.8

*NIED **29** 04:00:00, 36.00N×133.30E, h8km, Mw3.7 Best double couple: M₀3.40000×10¹⁴ NP1:φs334.00000°, δ57.00000°, λ-3.00000°. NP2:φs65.00000°, δ88.00000°, λ-147.00000°.*
JMA 29 04:00:55.8, 35.98N×133.33E, h17km, M3.9, 5C-1D, Western Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time			Res
				Op	ISC	h	m	s	ISC
JOI	**OKI**	**0.32**	**348**	⇑P	Pg	04	01	02.4	-0.2
JOI				S	Sg	04	01	07.1	-0.1
JNM	**Ikuma**	**0.54**	**207**	⇑P	Pg	04	01	06.3	-0.3
JKR	**Kurayoshi**	**0.72**	**146**	P	Pb	04	01	09.4	-0.5
JKR				S	Sg	04	01	18.9	-0.6
JHS	**Saijyo**	**0.99**	**190**	⇑P	Pb	04	01	14.1	-0.5
JGT2	**ShimaneMisato**	**1.13**	**217**	⇑P	Pn	04	01	16.5	-0.4
JGT2				S	Sb	04	01	31.2	-0.2
JKSM	**Kasumi**	**1.15**	**109**	⇓P	Pn	04	01	16.6	-0.5
JKSM				S	Sb	04	01	31.8	-0.1
JAD	**Aida**	**1.24**	**146**	⇑P	Pn	04	01	18.2	-0.2
JAD				S	Sb	04	01	34.4	-0.1

*ISCJB **29** 04:01:25.1±0.7, 27.01N±0.09×143.72E±0.08, h10km, mb4.0/11, Error ellipse: s-maj=12.3km s-min=9.7km az=7.8*
*IDC **29** 04:01:25.9±1.0, 26.91N×143.62E, h0km, mb3.8/7, mb1 3.9/8, mb1mx3.7/48, mbtmp3.8/8, ML3.7/1, Error ellipse: s-maj=23.7km s-min=20.1km az=62.0*
*NEIC **29** 04:01:27.3±0.7, 26.96N×143.62E, h10km, mb4.1/3, Error ellipse: s-maj=18.4km s-min=9.7km az=77.0*
ISC 29 04:01:27.4±1.0, 27.0N±0.1×143.58E±0.08, h10km, n15, σ1s0.0, 18, mb4.0/11, Bonin Islands region

Code	Station Name	Δ°	AZ°	Phase ID		Time			Res
				Op	ISC	h	m	s	ISC
CBIJ	**Chichi jima**	**1.25**	**277**	*e*Pn	**Pn**	**04**	**01**	**51.4**	**+0.5**
CBIJ				*e*Sn	**Sb**	**04**	**02**	**04.7**	**-2.6**
CBIJ				Sn	**Sn**	**04**	**02**	**08.3**	**+0.4**
JCJ	**Chichijima**	**1.25**	**277**	Pn	**Pg**	**04**	**01**	**51.9**	**+0.5**
	19nm,0.3s,baz=265,slow=22,SNR=12								
JCJ				Sn	**Sb**	**04**	**02**	**08.3**	**+1.0**
	baz=270,slow=20								
MJAR	**Matsushiro Arr**	**10.59**	**336**	Pn	**Pn**	**04**	**03**	**58.1**	**-1.1**
	0.6nm,0.3s,baz=162,slow=10,SNR=3.7								
MAJO	**Matsushiro**	**10.59**	**336**	*e*Pn	**Pn**	**04**	**03**	**58.5**	**-0.7**
WRAB	**Tennant Creek**	**47.47**	**192**	*e*P	**P**	**04**	**10**	**02.1**	**-0.4**
	1.6nm,0.5s								
WRA	**Warramunga Arr**	**47.48**	**192**	P	**P**	**04**	**10**	**02.2**	**-0.5**
	2.4nm,0.6s,baz=12,slow=8.4,SNR=13								
ZALV	**Zalesovo Beam**	**50.41**	**319**	P	**P**	**04**	**10**	**26.7**	**+1.9**
	0.6nm,0.5s,baz=100,slow=7.7,SNR=3.9								
ASAR	**Alice Springs**	**51.19**	**191**	P	**P**	**04**	**10**	**30.5**	**-0.6**
	0.4nm,0.5s,baz=8.9,slow=6.6,SNR=4.4								
MKAR	**Makanchi Array**	**51.52**	**310**	P	**P**	**04**	**10**	**33.9**	**+0.6**
	0.5nm,0.5s,baz=97,slow=7.4,SNR=3.4								
KURK	**Kurchatov**	**53.97**	**315**	*e*P	**P**	**04**	**10**	**51.7**	**+0.4**
	11nm,1.0s								
KURBB	**Kurchatov Arra**	**54.02**	**314**	P	**P**	**04**	**10**	**52.1**	**+0.4**
	2.0nm,0.5s,baz=92,slow=7.7,SNR=22								
KKAR	**Karatay Array**	**60.17**	**306**	*e*P	**P**	**04**	**11**	**35.5**	**0.0**
	0.7nm,0.4s								
ABKAR	**Akbulak array**	**66.08**	**315**	*e*P	**P**	**04**	**12**	**14.5**	**-0.1**
	0.6nm,0.6s								
YKA	**Yellowknife Ar**	**71.67**	**29**	P	**P**	**04**	**12**	**49.4**	**+0.3**
	0.2nm,0.7s,baz=290,slow=5.8,SNR=3.5								
FINES	**FINESS Array B**	**78.61**	**334**	P	**P**	**04**	**13**	**28.9**	**-0.3**
	0.7nm,0.8s,baz=51,slow=4.4,SNR=3.0								

*SOME **29** 04:36:50.9, 46.97N×74.13E, h0km*
*NNC **29** 04:36:52.1±1.3, 46.91N×73.96E, h4km±18km, mb3.1, mpv2.8, Error ellipse: s-maj=28.4km s-min=5.4km az=83.0, Suspected Mining explosion.*
ISC 29 04:36:49.9±1.1, 46.92N±0.05×74.15E±0.06, h0km, n14, σ1s81/25, 10C-2D, Central Kazakhstan

Code	Station Name	Δ°	AZ°	Phase ID		Time			Res
				Op	ISC	h	m	s	ISC
OTUK	**Ortayu**	**1.81**	**318**	⇑P	**Pg**	**04**	**37**	**23.6**	**-0.9**
	4.4nm,0.4s								
OTUK				⇑S	**Sb**	**04**	**37**	**45.6**	**-1.5**
	25nm,0.7s								
KUU	**Kurty**	**3.40**	**152**	*e*P	**Pb**	**04**	**37**	**52.8**	**+1.8**
	6.5nm,0.6s								
KUU				⇑*i*S	**Sg**	**04**	**38**	**36.5**	**-2.5**
	8.4nm,0.4s								
CHKK	**Chushkaly**	**3.65**	**146**	*e*P	**Pg**	**04**	**37**	**58.9**	**-0.9**
	4.0nm,0.3s								
CHKK				*e*S	**Sg**	**04**	**38**	**47.6**	**+0.5**
	17nm,0.5s								
KTBS	**Karatobe**	**3.67**	**150**	*e*P	**Pg**	**04**	**37**	**58.6**	**-1.7**
KTBS				*e*S	**Sg**	**04**	**38**	**47.0**	**-0.8**
ARXS	**Arharly**	**3.74**	**135**	*e*P	**Pg**	**04**	**37**	**59.9**	**-1.7**
	4.7nm,0.8s								
ARXS				*e*S	**Sg**	**04**	**38**	**49.2**	**-0.8**
	9.0nm,0.7s								
DGS	**Degeres**	**3.85**	**162**	*e*P	**Pg**	**04**	**38**	**02.3**	**-1.5**
	5.1nm,0.5s								
DGS				*e*S	**Sg**	**04**	**38**	**53.2**	**-0.5**
	12nm,0.6s								
KST	**Kastek**	**4.08**	**161**	*e*P	**Pb**	**04**	**38**	**05.4**	**+2.7**
	1.3nm,0.2s								
KST				*e*S	**Sg**	**04**	**38**	**58.7**	**-2.4**
	11nm,0.7s								
MNBS	**Baschi**	**4.12**	**132**	*e*P	**Pg**	**04**	**38**	**07.3**	**-1.6**
	1.5nm,0.9s								
MNBS				*e*S	**Sg**	**04**	**39**	**01.8**	**-0.5**
	13nm,0.6s								
TKM2	**Tokmak 2**	**4.13**	**165**	⇑Pg	**Pb**	**04**	**38**	**06.2**	**+2.6**
	1.6nm,0.6s								
TKM2				⇑Lg	Lg	04	39	03.7	
	8.6nm,0.8s								
IZV	**Izvestkoviy**	**4.26**	**155**	*e*P	**Pg**	**04**	**38**	**09.0**	**-2.5**
	5.9nm,0.6s								
IZV				*e*S	**Sg**	**04**	**39**	**04.9**	**-1.8**
	11nm,0.8s								
AAK	**Ala-Archa**	**4.29**	**177**	⇑Pg	**Pg**	**04**	**38**	**10.3**	**-1.8**
	3.8nm,0.9s								
AAK				⇓Lg	Lg	04	39	07.8	
	6.8nm,0.6s								
TNSS	**Tian-Shan**	**4.35**	**152**	*e*P	**Pg**	**04**	**38**	**13.7**	**+0.3**
	3.2nm,0.7s								
TNSS				*e*S	**Sg**	**04**	**39**	**13.0**	**+3.2**
	13nm,0.8s								
MNAS	**Manas**	**4.58**	**195**	⇓Pg	**Pg**	**04**	**38**	**16.1**	**-1.7**
	0.7nm,0.7s								
MNAS				⇑Lg	Lg	04	39	15.7	
	2.7nm,0.6s								
KK31	**Karatay Array**	**4.60**	**215**	⇑Pn	**Pn**	**04**	**38**	**01.2**	**+0.4**
	0.1nm,0.2s,baz=29,slow=13,SNR=9.8								
KK31				⇑Sn	**Sn**	**04**	**38**	**55.7**	**+0.8**
	0.8nm,0.5s								
KK31				⇑Lg	Lg	04	39	14.4	
	0.9nm,0.5s								

*NIED **29** 04:38:00, 30.20N×130.90E, h50km, Mw4.7 Best double couple: M₀1.34000×10¹⁶ NP1:φs351.00000°, δ55.00000°, λ-170.00000°. NP2:φs255.00000°, δ82.00000°, λ-36.00000°.*
*MOS **29** 04:38:35.7±0.9, 30.36N×130.83E, h46km, mb5.3/44, Error ellipse: s-maj=8.8km s-min=4.7km az=110.3*
*BJI **29** 04:38:35.6, 30.13N×130.94E, h54km, mb4.7/60, mB4.6/40, Ms4.1/41, Ms7 3.9/38*
*JMA **29** 04:38:36.9±0.1, 30.24N×130.95E, h44km±1km, M4.6*
JMA Felt III J1.
*ISCJB **29** 04:38:36.1±0.3, 30.24N±0.02×130.90E±0.03, h54km±2km, mb4.8/126, MS3.8/35, Error ellipse: s-maj=4.7km s-min=3.5km az=40.6*
*NEIC **29** 04:38:37.8±0.5, 30.26N×130.78E, h51km±4km, mb4.8/58, Error ellipse: s-maj=5.0km s-min=3.9km az=120.0*
NEIC Recorded [3 JMA] on Tanega-shima.
*IDC **29** 04:38:37.8±1.2, 30.29N×130.74E, h51km±10km, mb4.4/36, mb1 4.5/42, mb1mx4.4/69, mbtmp4.7/42, ML4.3/6, MS3.7/28, Ms1 3.7/28, ms1mx3.6/46, Error ellipse: s-maj=13.0km s-min=7.5km az=102.0*
ISC 29 04:38:37.6±0.6, 30.25N±0.04×130.90E±0.04, h51km±5km, n301, σ1s70/333, mb4.8/129, MS3.8/37, 32C-12D, Kyushu

Code	Station Name	Δ°	AZ°	Phase ID		Time			Res
				Op	ISC	h	m	s	ISC
JYAK	**Yakushimahirau**	**0.34**	**268**	P	**Pn**	**04**	**38**	**46.3**	**-0.8**
JYAK				*e*S	**Sn**	**04**	**38**	**52.8**	**-1.2**
JTN	**Tanegashima 3**	**0.41**	**9**	⇓P	**Pn**	**04**	**38**	**46.7**	**-1.2**
JTN				*e*S	**Sn**	**04**	**38**	**53.9**	**-1.3**
JKC	**Kuchinoerabu**	**0.65**	**289**	⇑P	**Pn**	**04**	**38**	**50.4**	**-0.3**
JKC				*e*S	**Sn**	**04**	**39**	**00.7**	**+0.6**
JTSR	**Tashiro 2**	**0.91**	**1**	⇓P	**Pn**	**04**	**38**	**54.0**	**-0.2**
JTSR				S	**Sn**	**04**	**39**	**07.0**	**+0.6**
JNN	**Nakanoshima**	**0.98**	**246**	⇓P	**Pn**	**04**	**38**	**55.0**	**-0.1**
JNN				S	**Sn**	**04**	**39**	**08.8**	**+0.9**
JSU	**Suzuyama**	**1.31**	**343**	⇑P	**Pn**	**04**	**38**	**59.1**	**-0.5**
JNAR	**Kushima--Naru**	**1.31**	**14**	⇓P	**Pn**	**04**	**38**	**59.7**	**+0.2**
JTZ	**Takazaki**	**1.65**	**5**	P	**Pn**	**04**	**39**	**04.0**	**-0.2**
JSJ	**Shimokoshiki**	**1.75**	**325**	⇑P	**Pn**	**04**	**39**	**04.3**	**-1.2**
JSJ				*e*S	**Sn**	**04**	**39**	**25.8**	**-0.9**
JNU	**Nakatsue**	**2.86**	**360**	P	**Pn**	**04**	**39**	**21.4**	**+0.6**
	27nm,0.3s,baz=168,slow=5.2,SNR=103								
JNU				S	**Sn**	**04**	**39**	**54.1**	**0.0**
	107nm,0.3s,baz=35,slow=23,SNR=12								
JNU				LR	LR	04	40	48.1	
	comp=Z,1μm,20.6s,baz=226,slow=46								
JOW	**Kunigami**	**4.12**	**215**	P	**Pn**	**04**	**39**	**37.4**	**-0.6**
	22nm,0.3s,baz=121,slow=29,SNR=16								
JOW				S	**Sn**	**04**	**40**	**23.7**	**-1.2**
	43nm,0.3s,baz=187,slow=30,SNR=6.7								
INU	**Inuyama**	**7.23**	**44**	*e*Pn	**Pn**	**04**	**40**	**21.0**	**+0.3**
KS15	**Wonju Array Si**	**7.60**	**342**	*e*Pn	**Pn**	**04**	**40**	**28.1**	**+2.4**
KSAR	**Wonju Array Be**	**7.60**	**342**	P	**Pn**	**04**	**40**	**25.4**	**-0.3**
KSAR	**Wonju Array Be**	**7.60**	**342**	P	**Pn**	**04**	**40**	**25.4**	**-0.3**
KSRS	**Korea Array**	**7.60**	**342**	P	**Pn**	**04**	**40**	**25.3**	**-0.3**
	2.6nm,0.3s,baz=161,slow=15,SNR=14								
KSRS				LR	LR	04	43	43.9	
	comp=Z,787nm,18.5s,baz=158,slow=41								
KS01	**Wonju Array Si**	**7.63**	**342**	*e*Pn	**Pn**	**04**	**40**	**28.4**	**+2.3**
JHJ	**Hachijo jima 2**	**8.09**	**67**	P	**Pn**	**04**	**40**	**33.6**	**+1.2**
	43nm,0.3s,baz=88,slow=6.1,SNR=6.7								
MAJO	**Matsushiro**	**8.75**	**42**	*c* *i*P	**Pn**	**04**	**40**	**42.1**	**+0.6**
MAJO	**Matsushiro**	**8.75**	**42**	*e*Pn	**Pn**	**04**	**40**	**41.7**	**+0.1**
MAT	**Matsushiro**	**8.75**	**42**	P	**Pn**	**04**	**40**	**41.8**	**+0.3**
MAT				*e*S	**Sn**	**04**	**42**	**18.0**	**-0.8**
MJB9	**Matsu-Tunnel**	**8.75**	**42**	*e*Pn	**Pn**	**04**	**40**	**42.3**	**+0.8**
MJAR	**Matsushiro Arr**	**8.75**	**42**	P	**Pn**	**04**	**40**	**42.4**	**+0.9**
	15nm,0.3s,baz=236,slow=14,SNR=35								
YHNB	**Yeheng**	**10.12**	**239**	*e*Pn	**Pn**	**04**	**40**	**59.7**	**-0.6**
CBIJ	**Chichi jima**	**10.39**	**105**	P	**Pn**	**04**	**41**	**03.0**	**-1.0**
JCJ	**Chichijima**	**10.39**	**105**	P	**Pn**	**04**	**41**	**03.0**	**-1.0**
	10nm,0.3s,baz=311,slow=21,SNR=4.3								
JCJ				LR	LR	04	44	34.5	
	comp=Z,216nm,21.7s,slow=34								
NJ2	**Nanjing**	**10.48**	**283**	*e*P	**Pn**	**04**	**41**	**07.0**	**+1.9**
NJ2				pmax	pmax				
	comp=Z,52nm,0.6s								
SSLB	**Suanglung**	**10.96**	**236**	*e*Pn	**Pn**	**04**	**41**	**10.5**	**-1.3**
TPUB	**Ta-pu**	**11.49**	**235**	*e*Pn	**Pn**	**04**	**41**	**17.7**	**-1.3**
TIA	**Tai'an**	**12.97**	**301**	⇑P	**Pn**	**04**	**41**	**41.0**	**+1.8**
TIA				pmax	pmax				
	comp=Z,30nm,0.5s								
TIA				LR	LR				
	comp=N,320nm,13.5s								
TIA				LR	LR				
	comp=E,530nm,12.2s								
TIA				LR	LR				
	comp=Z,460nm,12.6s								
SNY	**Shenyang**	**12.98**	**335**	⇑P	**Pn**	**04**	**41**	**35.3**	**-3.9**
SNY				S	S	04	44	35.0	+10
SNY				pmax	pmax				
	comp=Z,150nm,12.0s								
SNY				LR	LR				
	comp=N,440nm,19.3s								
SNY				LR	LR				
	comp=E,860nm,18.4s								
SNY				LR	LR				
	comp=Z,740nm,15.3s								
USRK	**Ussuriysk Ar.**	**13.95**	**3**	P	**P**	**04**	**42**	**00.8**	**+1.7**
	comp=Z,3.5nm,0.3s,baz=183,slow=9.6,SNR=40				

QIZ Qiongzhong 22.12 245 P P 04 43 27.3 -1.7
QIZ S S 04 47 31.5 +1.6
QIZ LR LR
comp=Z,170nm,19.9s
QIZ LR LR
comp=Z,96nm,18.0s
TYV Tymovskoe 22.39 20 *e*P **P 04 43 30.8 -0.7**
LZH Lanzhou 23.35 292 *e*P **P 04 43 42.0 +0.3**
LZH pP pP 04 43 55.8 +2.0
LZH sP sP 04 44 03.8 +3.7
LZH PP **PnPn 04 44 15.0 +5.6**
LZH *e*S **S 04 47 47.0 -3.9**
LZH sS sS 04 48 07.3 -5.1
LZH SS **SnSn 04 48 35.0 +5.6**
LZH pmax pmax
comp=Z,23nm,1.1s
LZH pmax pmax
comp=Z,140nm,6.2s
LZH LR LR
comp=Z,340nm,12.8s
LZH LR LR
comp=Z,410nm,13.6s
LZH LR LR
comp=Z,380nm,14.5s
CD2 Chengdu 23.36 279 P P 04 43 41.8 +0.1
CD2 pP pP 04 43 54.0 +0.1
CD2 sP sP 04 44 00.5 +0.4
CD2 PP **PnPn 04 44 15.8 +6.2**
CD2 S **S 04 47 50.8 -0.2**
CD2 sS sS 04 48 11.8 -0.7
CD2 SS **SnSn 04 48 33.0 +3.3**
CD2 pmax pmax
comp=Z,50nm,0.6s
CD2 pmax pmax
comp=Z,130nm,4.7s
CD2 LR LR
comp=Z,480nm,22.8s
CD2 LR LR
comp=Z,340nm,16.8s
NKL Nikolayevsk 23.97 15 *e*P **P 04 43 53.0 +5.9**
NKL MLR MLR
comp=N,300nm,16.0s
NKL MLR MLR
comp=Z,450nm,16.0s
ULN Ulaanbaatar 25.38 321 *c e*P **P 04 43 59.2 -1.0**
ULN pmax pmax
comp=Z,33nm,1.2s
ULN Ulaanbaatar 25.38 321 *e*P **P 04 43 58.9 -1.3**
comp=Z,22nm,0.9s
KMI Kunming 25.42 265 P **P 04 44 01.0 +0.1**
KMI pP pP 04 44 13.5 -0.2
KMI sP sP 04 44 19.0 -0.8
KMI PP **PnPn 04 44 41.0 +3.0**
KMI S **S 04 48 19.0 -5.5**
KMI sS sS 04 48 42.5 -3.8
KMI SS **SnSn 04 49 23.5 +3.1**
KMI pmax pmax
comp=Z,8.0nm,0.8s
KMI pmax pmax
comp=Z,73nm,4.1s
KMI LR LR
comp=Z,250nm,18.2s
KMI LR LR
comp=Z,170nm,15.9s
KMI LR LR
comp=Z,170nm,20.6s
SONM Songino Array 25.73 320 P **P 04 44 02.0 -1.3**
comp=Z,11nm,0.5s,baz=140,slow=11,SNR=7.0
SONM LR LR 04 55 07.9
comp=Z,260nm,20.5s,baz=96,slow=39
SONA1 Songino Array 25.73 320 *e*P **P 04 44 03.6 +0.2**
GTA Gaotai 27.00 298 *e*P **P 04 44 14.5 -0.4**
GTA pP pP 04 44 27.5 -0.3
GTA sP sP 04 44 32.8 -1.0
GTA PcP **PcP 04 47 36.3 +0.9**
GTA S **S 04 48 46.8 -2.1**
GTA sS sS 04 49 07.3 -3.5
GTA SS **SnSn 04 50 03.3 +4.8**
GTA pmax pmax
comp=Z,4.0nm,0.9s
GTA pmax pmax
comp=Z,68nm,6.4s
GTA LR LR
comp=Z,130nm,20.4s
GTA LR LR
comp=Z,200nm,19.0s
GTA LR LR
comp=Z,190nm,19.0s
ZAK Zakamensk 28.85 322 *e*P **P 04 44 30.1 -1.1**
ZAK pmax pmax
comp=Z,6.0nm,1.1s
TLY Talaya 29.41 324 P **P 04 44 36.3 +0.2**
comp=Z,1.7nm,0.7s,baz=216,slow=7.5,SNR=3.0
TLY LR LR 04 57 46.0
comp=Z,152nm,18.2s,baz=128,slow=39
TLY Talaya 29.41 324 *e*P **P 04 44 38.5 +2.4**
TLY pmax pmax
comp=Z,7.0nm,1.9s
TLY MLR MLR
comp=Z,114nm,15.0s
TNTI Ternate 29.51 187 P **P 04 44 38.2 +1.0**
comp=Z,87nm,1.1s
TNTI Ternate 29.51 187 *e*P **P 04 44 37.9 +0.7**
comp=Z,98nm,1.0s
BOD Bodaibo 29.95 342 *e*P **P 04 44 39.5 -1.2**
BOD pmax pmax
comp=Z,3.0nm,1.0s
PETK Petropavlovsk- 30.05 33 LR LR 04 57 47.2
comp=Z,100nm,18.2s,baz=223,slow=38
MOY Mondy 30.76 323 *e*P **P 04 44 48.0 -0.2**
CHTO Chiang Mai 31.12 256 *e*P **P 04 44 50.7 -0.8**
CHTO pmax pmax
comp=Z,3.0nm,0.6s
CHTO Chiang Mai 31.12 256 *e*P **P 04 44 50.7 -0.8**
comp=Z,3.1nm,0.6s
YAK Yakutsk 31.80 359 *e*P **P 04 44 56.7 -0.3**
YAK Yakutsk 31.80 359 *e*P **P 04 44 56.7 -0.3**
MA2 Magadan 32.26 19 P **P 04 45 02.5 +1.4**
comp=Z,4.0nm,0.8s,baz=199,slow=11,SNR=4.0
FAKI Fak Fak 33.01 178 P **P 04 45 09.1 +1.1**
comp=Z,63nm,1.0s,comp=Z,509nm
FAKI Fak Fak 33.01 178 *e*P **P 04 45 08.7 +0.7**
comp=Z,60nm,1.0s
KSM Kuching 34.66 218 *e*P **P 04 45 22.9 +0.5**
comp=Z,8.9nm,0.7s
SEY Seymchan 35.50 17 P **P 04 45 30.5 +1.4**
comp=Z,3.1nm,0.5s,baz=196,slow=8.6,SNR=13
SEY Seymchan 35.50 17 ⇓ *e*P **P 04 45 30.0 +0.9**
WMQ Urumqi 36.64 304 P **P 04 45 39.8 +0.5**
WMQ pP pP 04 45 51.5 -1.0
WMQ sP sP 04 45 57.0 -1.4
WMQ PcP **PcP 04 48 00.0 -1.3**
WMQ S **S 04 51 20.8 +1.9**
WMQ pmax pmax
comp=Z,8.0nm,0.6s
WMQ pmax pmax
comp=Z,25nm,3.6s
WMQ LR LR
comp=Z,39nm,23.8s
WMQ LR LR
comp=Z,87nm,25.0s
KAPI Kappang 36.66 199 LR LR 05 00 17.3
comp=Z,70nm,21.7s,baz=49,slow=36
GUN Gumba 39.23 278 *e*P **P 04 46 01.2 -0.4**
comp=Z,122nm,0.8s
KKN Kakani 39.77 278 *e*P **P 04 46 05.3 -0.6**
comp=Z,38nm,0.8s
DMN Daman 39.97 278 *e*P **P 04 46 07.2 -0.4**
comp=Z,9.7nm,0.6s
GKN Gorkha 40.27 279 *e*P **P 04 46 09.2 -0.8**
comp=Z,15nm,0.5s
ZAA0 Zalesovo Array 40.62 319 *e*P **P 04 46 11.4 -0.9**
ZALV Zalesovo Beam 40.62 319 P **P 04 46 11.4 -0.9**
comp=Z,4.4nm,0.4s,baz=101,slow=7.7,SNR=29
ZALV LR LR 05 04 21.9
comp=Z,150nm,20.5s,baz=70,slow=38
MK01 Makanchi Array 40.77 308 *e*P **P 04 46 13.2 -0.5**
MK31 Makanchi Array 40.78 308 *e*P **P 04 46 13.8 0.0**
MK31 Makanchi Array 40.78 308 *e*P **P 04 46 13.8 0.0**
MKAR Makanchi Array 40.78 308 P **P 04 46 13.8 0.0**
comp=Z,14nm,0.6s,baz=94,slow=10,SNR=75
MKAR LR LR 05 04 22.4
comp=Z,99nm,20.7s,baz=75,slow=38
TWSI Taliwang, Sumb 41.04 201 P **P 04 46 16.6 +0.5**
comp=Z,22nm,1.0s

KOLN Koldanda 41.21 279 *e*P **P 04 46 17.6 -0.2**
comp=Z,20nm,0.7s
TIXI Tiksi 41.47 359 P **P 04 46 18.3 -0.8**
comp=Z,8.0nm,0.3s,baz=158,slow=3.8,SNR=24
TIXI Tiksi 41.47 359 ⇑ *e*P **P 04 46 18.2 -0.8**
TIXI pmax pmax
comp=Z,20nm,1.0s
TIXI Tiksi 41.47 359 *e*P **P 04 46 18.1 -0.9**
comp=Z,14nm,0.7s
PYUN Piuthan 41.65 279 *e*P **P 04 46 21.4 0.0**
comp=Z,64nm,0.9s
NVS Novosibirsk 41.76 320 *e*P **P 04 46 21.4 -0.3**
NVS pmax pmax
comp=N,9.0nm,1.3s
NVS pmax pmax
comp=E,18nm,1.3s
NVS pmax pmax
comp=Z,26nm,1.3s
PMG Port Moresby 42.41 156 ⇓ *e*P **P 04 46 31.1 +3.7**
PMG pmax pmax
comp=Z,151nm,1.2s
PDGK Podgornoye 42.57 303 P **P 04 46 28.0 -0.4**
PDGK pmax pmax
comp=Z,32nm,0.8s
MDSI Maura Dua 42.98 221 P **P 04 46 33.3 +1.3**
comp=Z,9.7nm,0.8s,comp=Z,1μm
BILL Bilibino 43.13 19 *d e*P **P 04 46 33.5 +0.9**
BILL *i* 04 46 44.0
BILL *i* 04 46 50.5
BILL pmax pmax
comp=Z,7.0nm,0.7s
BILL MLR MLR
comp=Z,96nm,17.0s
BILL Bilibino 43.13 19 *e*P **P 04 46 33.4 +0.9**
comp=Z,7.4nm,0.7s
KURK Kurchatov 43.66 313 P **P 04 46 36.5 -0.6**
KURK pmax pmax
comp=Z,36nm,0.6s
KURK Kurchatov 43.66 313 *e*P **P 04 46 36.2 -1.0**
comp=Z,23nm,0.8s
KURBB Kurchatov Arra 43.71 313 P **P 04 46 37.1 -0.4**
comp=Z,15nm,0.8s,baz=100,slow=8.8,SNR=102
KSH Kashi 45.39 297 P **P 04 46 55.5 +4.2**
KSH *e*sP sP 04 47 13.3 +2.6
KSH *e*ScP **ScP 04 52 21.3 +2.8**
KSH S **S 04 53 34.0 +5.0**
KSH pmax pmax
comp=Z,15nm,0.6s
KSH pmax pmax
comp=Z,97nm,4.1s
TKM2 Tokmak 2 45.42 302 P **P 04 46 52.4 +0.8**
TKM2 pmax pmax
comp=Z,41nm,0.6s
TKM2 Tokmak 2 45.42 302 *e*P **P 04 46 52.5 +0.8**
comp=Z,67nm,1.0s
COEN Coen 45.51 163 *e*P **P 04 46 52.3 +0.1**
FRU Bishkek 46.15 302 ⇓ *i*P **P 04 46 57.0 -0.1**
FRU pmax pmax
comp=Z,50nm,1.4s
NRIK Noril'sk 46.22 340 P **P 04 46 55.8 -1.4**
comp=Z,18nm,0.7s,baz=114,slow=9.2,SNR=14
NRIK LR LR 05 08 12.1
comp=Z,180nm,18.1s,baz=116,slow=38
AAK Ala-Archa 46.25 302 LR LR 05 07 37.8
comp=Z,57nm,18.2s,baz=94,slow=38
AAK Ala-Archa 46.25 302 P **P 04 46 58.3 +0.2**
AAK pmax pmax
comp=Z,18nm,0.9s
AAK Ala-Archa 46.25 302 *e*P **P 04 46 58.0 -0.1**
comp=Z,17nm,0.9s
EKS2 Erkin-Say 46.77 302 *e*P **P 04 47 02.4 +0.3**
EKS2 pmax pmax
comp=Z,10.0nm,0.8s
EKS2 Erkin-Say 46.77 302 *e*P **P 04 47 02.4 +0.3**
comp=Z,9.5nm,0.8s
SFK Sufi-Kurgan 47.23 298 P **P 04 47 06.0 +0.1**
SFK pmax pmax
comp=Z,19nm,0.7s
OTUK Ortayu 47.59 309 P **P 04 47 08.1 -0.2**
OTUK pmax pmax
comp=Z,30nm,0.6s
MNAS Manas 47.73 302 P **P 04 47 10.0 +0.4**
MNAS pmax pmax
comp=Z,16nm,0.9s
HNR Honiara 48.33 140 LR LR 05 07 25.0
comp=Z,46nm,18.4s,baz=340,slow=36
FITZ Fitzroy Crossi 48.34 187 *e*P **P 04 47 14.9 +0.7**
comp=Z,10nm,0.7s
CHKZ Chkalovo 48.85 317 P **P 04 47 17.0 -0.8**
CHKZ pmax pmax
comp=Z,15nm,0.9s
BVA0 Borovoye Array 48.95 316 P **P 04 47 18.4 -0.2**
BVA0 pmax pmax
comp=Z,31nm,0.7s
BRVK Borovoye 49.02 316 *c i*P **P 04 47 18.8 -0.3**
BRVK pmax pmax
comp=Z,50nm,0.7s
BRVK Borovoye 49.02 316 *e*P **P 04 47 18.5 -0.7**
comp=Z,51nm,0.6s
KK31 Karatay Array 49.13 303 *i*P **P 04 47 20.4 +0.2**
KK31 pmax pmax
comp=Z,12nm,0.5s
KKAR Karatay Array 49.13 303 *e*P **P 04 47 20.2 0.0**
KKAR pmax pmax
comp=Z,27nm,0.6s
KKAR Karatay Array 49.13 303 *e*P **P 04 47 20.2 0.0**
comp=Z,27nm,0.6s
ZRNK Zerenda 49.78 316 *e*P **P 04 47 24.7 -0.3**
ZRNK pmax pmax
comp=Z,48nm,0.6s
ZRNK Zerenda 49.78 316 *e*P **P 04 47 24.7 -0.3**
comp=Z,48nm,0.6s
WRAB Tennant Creek 50.00 176 ⇑ *e*P **P 04 47 27.7 +0.8**
WRAB pmax pmax
comp=Z,20nm,1.0s
WRAB Tennant Creek 50.00 176 *e*P **P 04 47 26.4 -0.6**
comp=Z,15nm,1.3s
WRA Warramunga Arr 50.01 176 P **P 04 47 27.3 +0.3**
comp=Z,6.0nm,0.8s,baz=352,slow=8.1,SNR=31
WRA LR LR 05 08 00.9
comp=Z,76nm,21.4s,baz=175,slow=35
WB2 Warramunga Arr 50.01 176 *e*P **P 04 47 27.4 +0.4**
comp=Z,9.3nm,0.9s
DZET Dzherino 50.99 297 P **P 04 47 35.1 +0.6**
DZET pmax pmax
comp=Z,80nm,0.7s
AS31 Alice Springs 53.68 177 *e*P **P 04 47 55.2 +0.9**
comp=Z,2.2nm,0.5s
ASAR Alice Springs 53.69 177 P **P 04 47 55.3 +0.9**
comp=Z,4.3nm,0.5s,baz=10,slow=13,SNR=72
ASAR LR LR 05 09 36.5
comp=Z,57nm,21.9s,baz=354,slow=35
AS01 Alice Springs 53.69 177 *e*P **P 04 47 54.9 +0.5**
SVE Sverdlovsk 54.60 321 ⇑ *e*P **P 04 48 00.9 +0.2**
SVE pmax pmax
comp=Z,42nm,0.8s
AB31 Akbulak array 55.69 311 *i*P **P 04 48 08.1 -0.6**
AB31 pmax pmax
comp=Z,9.0nm,0.5s
ARU Arti 55.77 320 P **P 04 48 08.5 -0.6**
comp=Z,15nm,0.5s,baz=86,slow=3.8,SNR=41
ARU Arti 55.77 320 *c i*P **P 04 48 08.1 -1.0**
ARU S **S 04 55 54.2 +2.2**
ARU SS **SS 04 59 36.5 -1.1**
ARU pmax pmax
comp=Z,43nm,1.0s
ARU MLR MLR
comp=Z,211nm,19.0s
ARU Arti 55.77 320 *e*P **P 04 48 08.3 -0.7**
comp=Z,32nm,0.9s
SOKR Solikamsk 56.49 324 *d i*P **P 04 48 11.7 -2.4**
SOKR pmax pmax
comp=Z,36nm,1.2s
AKTO Aktyubinsk 56.76 313 P **P 04 48 15.7 -0.6**
comp=Z,12nm,0.7s,baz=83,slow=6.7,SNR=16
CAST Castle Rocks 57.65 31 *e*P **P 04 48 25.3 +3.0**
comp=Z,22nm,1.8s
BPAW Bear Paw Mtn. 58.09 30 *e*P **P 04 48 25.9 +0.5**
comp=Z,3.6nm,0.8s
MLY Manley 58.13 29 *e*P **P 04 48 27.5 +1.7**
comp=Z,3.7nm,0.8s
MCK McKinley 59.02 31 *e*P **P 04 48 32.8 +0.8**
MCK pmax pmax
comp=Z,8.0nm,1.0s
MCK McKinley 59.02 31 *e*P **P 04 48 32.8 +0.8**
comp=Z,8.3nm,1.0s

RND Reindeer 59.10 31 *e*P **P 04 48 33.1 +0.6**
RND pmax pmax
comp=Z,9.0nm,0.7s
RND Reindeer 59.10 31 *e*P **P 04 48 33.1 +0.6**
comp=Z,8.6nm,0.7s
MDM Murphy Dome 59.20 29 *e*P **P 04 48 34.7 +1.5**
comp=Z,8.0nm,0.7s
WRH Wood River Hil 59.31 30 *e*pP pP 04 48 41.0 -6.9
COLA College 59.37 29 *e*P **P 04 48 34.6 +0.3**
COLA pmax pmax
comp=Z,2.0nm,0.6s
COLA College 59.37 29 *e*P **P 04 48 34.6 +0.3**
comp=Z,2.3nm,0.6s
GEYT Alibeck 59.38 299 P **P 04 48 34.2 -0.7**
comp=Z,4.8nm,0.6s,baz=48,slow=4.4,SNR=7.9
GEYT LR LR 05 17 16.7
comp=Z,69nm,19.3s,baz=60,slow=39
SML Sawmill 59.53 33 *e*P **P 04 48 34.0 -1.5**
SML Sawmill 59.53 33 *e*P **P 04 48 34.0 -1.5**
comp=Z,0.9nm,0.7s
ILAR Eielson Array 59.79 29 P **P 04 48 36.8 -0.4**
comp=Z,0.6nm,0.6s,baz=270,slow=6.3,SNR=8.7
PAX Paxson 60.67 31 *e*P **P 04 48 45.6 +2.2**
PAX pmax pmax
comp=Z,5.0nm,1.2s
PAX Paxson 60.67 31 *e*P **P 04 48 45.6 +2.2**
comp=Z,5.4nm,1.2s
DOT Dot Lake 61.19 30 *e*P **P 04 48 47.1 +0.4**
comp=Z,24nm,1.1s
MENT Mentasta 61.47 31 *e*P **P 04 48 49.5 +0.8**
comp=Z,7.2nm,0.7s
EGAK Eagle 62.21 29 *e*P **P 04 48 52.9 -0.7**
comp=Z,11nm,1.6s
STKA Stephens Creek 62.61 170 P **P 04 48 57.7 +1.1**
comp=Z,7.0nm,0.7s,baz=341,slow=6.6,SNR=20
STKA LR LR 05 15 15.8
comp=Z,40nm,21.5s,baz=19,slow=35
STKA Stephens Creek 62.61 170 *e*P **P 04 48 57.7 +1.1**
STKA pmax pmax
comp=Z,2.0nm,0.8s
STKA Stephens Creek 62.61 170 *e*P **P 04 48 57.7 +1.1**
comp=Z,1.8nm,0.8s
WSAR Wadi Sarin 63.96 283 P **P 04 49 04.8 -1.1**
comp=Z,6.6nm,1.0s,baz=133,slow=6.3,SNR=3.0
TMCR Tamitsa 64.43 331 *e*P **P 04 49 08.0 -0.2**
TMCR pmax pmax
comp=Z,29nm,0.8s
KLMR Klimovskoe 64.73 327 *e*P **P 04 49 07.6 -2.7**
KLMR *e* 04 51 30.5
KLMR pmax pmax
comp=Z,10.0nm,0.7s
SPA0 Spitsbergen Ar 65.39 348 *e*P **P 04 49 14.5 +0.1**
HATD Hatta, Dubai 65.43 285 P **P 04 49 16.0 +0.6**
FAQ Al Faqa, Dubai 65.91 286 P **P 04 49 18.8 +0.2**
VRH Novokhopyorsk 66.58 317 *e*P **P 04 49 20.3 -2.1**
VRH pmax pmax
comp=Z,20nm,0.8s
ARCES ARCESS Array B 67.14 338 P **P 04 49 25.0 -0.7**
comp=Z,4.4nm,0.6s,baz=64,slow=8.7,SNR=26
ARCES LR LR 05 24 27.0
comp=Z,155nm,18.6s,baz=54,slow=41
ARCES ARCESS Array B 67.14 338 P **P 04 49 25.0 -0.7**
MOS Moscow 67.33 322 *e*P **P 04 49 23.9 -3.1**
MOS pmax pmax
comp=Z,44nm,0.7s
GOF Gofitskoye 67.88 310 ⇑ *e*P **P 04 49 29.8 -1.0**
VSR Storozhevoye 68.09 317 *e*P **P 04 49 29.8 -2.1**
VSR pmax pmax
comp=Z,10.0nm,0.6s
OBN Obninsk 68.12 322 ⇑ *e*P **P 04 49 30.7 -1.3**
OBN pmax pmax
comp=Z,8.0nm,0.4s
OBN MLR MLR
comp=Z,92nm,17.0s
ZEI Tsey 68.13 308 *e*P **P 04 49 29.1 -3.5**
ZEI pmax pmax
comp=Z,48nm,0.6s
KBZ Khabaz 68.46 309 P **P 04 49 34.5 +0.1**
comp=Z,22nm,0.9s,baz=79,slow=2.6,SNR=36
KBZ LR LR 05 22 59.6
comp=Z,50nm,18.3s,baz=74,slow=39
GNI Garni 68.51 305 P **P 04 49 35.1 +0.1**
comp=Z,9.8nm,0.6s,baz=202,slow=4.8,SNR=6.6
GNI Garni 68.51 305 *d i*P **P 04 49 35.8 +0.8**
GNI pmax pmax
comp=Z,122nm,1.2s
GNI Garni 68.51 305 *e*P **P 04 49 35.1 +0.1**
comp=Z,69nm,0.8s
KVAR Kislovodsk Arr 68.52 309 P **P 04 49 34.8 -0.1**
comp=Z,30nm,0.9s,baz=298,slow=3.4,SNR=12
KIV Kislovodsk 68.52 309 *i*P **P 04 49 35.1 +0.1**
SNR=5.4
KIV Kislovodsk 68.52 309 *d i*P **P 04 49 35.0 +0.1**
KIV *i* 04 49 43.9
KIV pmax pmax
comp=Z,50nm,1.2s
KIV MLR MLR
comp=Z,55nm,19.0s
KIV Kislovodsk 68.52 309 *e*P **P 04 49 35.2 +0.4**
comp=Z,106nm,1.6s
NEY Neytrino 68.76 308 ⇑ *e*P **P 04 49 36.7 +0.2**
NEY pmax pmax
comp=Z,3.0nm,1.0s
AKH Akhalkalaki 68.92 306 ⇑ *i*P **P 04 49 38.8 +1.3**
FIA1 FINESS Array S 70.54 330 *e*P **P 04 49 45.8 -1.1**
comp=Z,16nm,0.6s
FINES FINESS Array B 70.54 330 P **P 04 49 45.7 -1.1**
comp=Z,16nm,0.5s,baz=68,slow=5.9,SNR=116
FINES LR LR 05 22 03.2
comp=Z,166nm,21.9s,baz=55,slow=37
SOC Sochi 70.65 310 *e*P **P 04 49 46.3 -1.6**
SOC *e* 04 52 22.9
SOC *e* PPP PPP 04 54 12.0
SOC *e*S **S 04 58 55.0 -3.2**
SOC pmax pmax
comp=Z,36nm,0.6s
DAG Danmarks Havn 71.58 353 *i*P **P 04 49 51.2 -1.7**
comp=Z,3.4nm,0.8s
DAG Danmarks Havn 71.58 353 *i*P **P 04 49 51.2 -1.7**
DAG pmax pmax
comp=Z,3.0nm,0.8s
VSU Vasula 71.63 328 ⇓ *e*P **P 04 49 52.5 -1.0**
VSU pmax pmax
comp=Z,35nm,1.0s
ANN Anapa 71.66 312 *e*P **P 04 49 52.9 -1.0**
ANN *e* 04 50 07.9
ANN *e*S **S 04 59 12.2 +2.5**
ANN pmax pmax
comp=Z,52nm,1.2s
YKA Yellowknife Ar 73.89 26 P **P 04 50 07.2 +0.4**
comp=Z,1.3nm,0.8s,baz=304,slow=5.6,SNR=27
YKB5 Yellowknife Ar 73.89 26 *e*P **P 04 50 06.8 0.0**
AKASG Malin Array Be 74.01 320 *e*P **P 04 50 06.2 -1.5**
comp=Z,5.4nm,0.5s,baz=57,slow=6.4,SNR=41
AKASG LR LR 05 25 19.3
comp=Z,71nm,18.6s,baz=70,slow=38
AKASG Malin Array Be 74.01 320 *c e*P **P 04 50 06.1 -1.7**
AKASG pmax pmax
comp=Z,6.0nm,0.4s
KIEV Kiev 74.02 320 *e*P **P 04 50 06.1 -1.8**
KIEV pmax pmax
comp=Z,10.0nm,0.6s
KIEV Kiev 74.02 320 *e*P **P 04 50 06.0 -1.8**
comp=Z,9.8nm,0.6s
AK11 Malin Array Si 74.05 320 *e*P **P 04 50 06.8 -1.2**
SUW Suwalki 75.57 325 *e*P **P 04 50 16.2 -0.5**
SORM Soroca 75.75 318 ⇑ *i*P **P 04 50 16.9 -0.9**
HFS Hagfors 76.35 333 P **P 04 50 19.7 -1.4**
comp=Z,5.6nm,0.5s,baz=74,slow=5.3,SNR=40
BR131 Keskin Array S 76.43 308 *e*P **P 04 50 21.7 -0.4**
BRTR Keskin Array B 76.43 308 P **P 04 50 21.6 -0.4**
comp=Z,13nm,0.9s,baz=94,slow=5.0,SNR=54
BRTR LR LR 05 29 19.8
comp=Z,39nm,19.8s,baz=64,slow=40
NC405 NORSAR Array S 76.51 334 *e*P **P 04 50 20.6 -1.4**
NC303 NORSAR Array S 76.57 334 *e*P **P 04 50 22.1 -0.2**
NB201 NORSAR Array S 76.71 334 *e*P **P 04 50 21.4 -1.7**
NB2 NORSAR Subarra 76.75 334 P **P 04 50 21.9 -1.4**
comp=Z,3.9nm,0.5s,baz=50,slow=5.9
NOA NORSAR Array B 76.75 334 P **P 04 50 21.6 -1.7**
comp=Z,5.0nm,0.5s,baz=49,slow=5.6,SNR=46
NOA LR LR 05 29 43.1
comp=Z,52nm,18.2s,baz=25,slow=40
NC204 NORSAR Array S 76.76 335 *e*P **P 04 50 22.6 -0.9**
NBO02 NORSAR Array S 76.87 334 *e*P **P 04 50 22.5 -1.6**
NBO00 NORSAR Array S 76.92 334 *e*P **P 04 50 23.9 -0.4**

BR231	**Keskin MP Arra**	**76.96**	**309**	*eP*		**P**	**04 50 22.0**	**-3.1**
SUMG	**Summit**	**77.19**	**357**	*i* P		**P**	**04 50 26.3**	**+0.2**
	comp=Z,11nm,0.9s							
SUMG	**Summit**	**77.19**	**357**	*i* P		**P**	**04 50 26.3**	**+0.2**
SUMG				pmax	pmax			
	comp=Z,11nm,0.9s							
SUMG	**Summit**	**77.19**	**357**	*eP*		**P**	**04 50 26.6**	**+0.5**
	comp=Z,50nm,1.9s							
CFR	**Carcaliu**	**77.34**	**315**	⇑*iP*		**P**	**04 50 26.6**	**-0.3**
TESR	**Tescani**	**77.56**	**317**	⇑*iP*		**P**	**04 50 27.9**	**-0.3**
ASF	**Jabal al Asfar**	**77.62**	**300**	P		**P**	**04 50 28.7**	**-0.2**
	comp=Z,5.8nm,0.9s,baz=48,slow=2.7,SNR=7.3							
BUR08	**Bucovina Ar. S**	**77.83**	**318**	*eP*		**P**	**04 50 29.4**	**-0.3**
BURAR	**Bucovina Array**	**77.83**	**318**	⇑*iP*		**P**	**04 50 30.0**	**+0.2**
VRI	**Vrincioaia**	**77.85**	**316**	⇑*iP*		**P**	**04 50 30.7**	**+0.9**
PLOR	**Plostina**	**77.90**	**316**	⇑*iP*		**P**	**04 50 30.4**	**+0.3**
KWP	**Kalwaria Pacla**	**78.16**	**321**	*eP*		**P**	**04 50 31.7**	**+0.2**
MMAI	**Mount Meron Ar**	**78.34**	**301**	P		**P**	**04 50 32.6**	**-0.2**
	comp=Z,2.2nm,0.5s,baz=79,slow=8.8,SNR=5.3							
MLR	**Muntele Rosu**	**78.51**	**316**	P		**P**	**04 50 33.2**	**-0.4**
	comp=Z,0.7nm,0.6s,baz=16,slow=3.5,SNR=5.8							
MLR	**Muntele Rosu**	**78.51**	**316**	*iP*		**P**	**04 50 33.5**	**-0.1**
MLR	**Muntele Rosu**	**78.51**	**316**	*eP*		**P**	**04 50 33.1**	**-0.5**
MLR				pmax	pmax			
	comp=Z,8.0nm,1.2s							
MLR	**Muntele Rosu**	**78.51**	**316**	*eP*		**P**	**04 50 33.1**	**-0.5**
	comp=Z,8.4nm,1.2s							
DOPR	**Dopca**	**78.59**	**317**	⇑*iP*		**P**	**04 50 34.6**	**+0.7**
CSS	**Mathiatis**	**78.92**	**304**	*eP*		**P**	**04 50 34.6**	**-1.2**
	comp=Z,4.6nm,1.1s							
STHS	**Stebnicka Huta**	**79.08**	**321**	*eP*		**P**	**04 50 38.2**	**+1.7**
CRVS	**Cervenica-Dubn**	**79.25**	**321**	*eP*		**P**	**04 50 37.6**	**+0.2**
ARR	**Arges**	**79.36**	**316**	⇑*iP*		**P**	**04 50 38.2**	**0.0**
OJC	**Ojcow**	**79.40**	**322**	*eP*		**P**	**04 50 38.2**	**0.0**
OJC	**Ojcow**	**79.40**	**322**	*eP*		**P**	**04 50 38.1**	**-0.1**
OJC				pmax	pmax			
	comp=Z,17nm,0.9s							
OJC	**Ojcow**	**79.40**	**322**	*eP*		**P**	**04 50 38.1**	**-0.1**
	comp=Z,17nm,0.9s							
NIE	**Niedzica**	**79.59**	**322**	*eP*		**P**	**04 50 39.5**	**+0.2**
LANS	**Liptovska Anna**	**80.19**	**322**	*eP*		**P**	**04 50 44.2**	**+1.6**
PSZ	**Piszkesteto**	**80.67**	**320**	*eP*		**P**	**04 50 44.7**	**-0.5**
PSZ				pmax	pmax			
	comp=Z,4.0nm,0.7s							
PSZ	**Piszkesteto**	**80.67**	**320**	*eP*		**P**	**04 50 44.7**	**-0.5**
	comp=Z,3.9nm,0.7s							
MORC	**Moravsky Berou**	**80.84**	**323**	⇑*iP*		**P**	**04 50 46.7**	**+0.6**
MORC	**Moravsky Berou**	**80.84**	**323**	*eP*		**P**	**04 50 46.7**	**+0.6**
MORC				pmax	pmax			
	comp=Z,17nm,0.9s							
MORC	**Moravsky Berou**	**80.84**	**323**	*eP*		**P**	**04 50 46.7**	**+0.6**
	comp=Z,17nm,0.9s							
KSP	**Ksiaz**	**80.84**	**324**	*eP*		**P**	**04 50 46.1**	**+0.1**
VYHS	**Vyhne**	**80.91**	**321**	*eP*		**P**	**04 50 47.2**	**+0.8**
KRLC	**Kraliky**	**81.06**	**323**	*eP*		**P**	**04 50 47.4**	**+0.2**
DPC	**Dobruska-Polom**	**81.12**	**324**	*eP*		**P**	**04 50 48.1**	**+0.5**
DPC				ePCP		**PcP**	**04 50 51.2**	**-2.6**
MDVR	**Moldovita**	**81.41**	**317**	⇑*iP*		**P**	**04 50 49.1**	**-0.1**
VRAC	**Vranov**	**81.62**	**323**	P		**P**	**04 50 50.7**	**+0.6**
	comp=Z,7.6nm,0.8s,baz=48,slow=3.9,SNR=5.4							
BRG	**Berggiesshubel**	**82.00**	**325**	*eP*		**P**	**04 50 54.4**	**+2.3**
	comp=Z,2.8nm,0.5s							
	comp=N,182nm,20.2s							
	comp=E,86nm,20.9s							
	comp=Z,189nm,11.9s							
BRG	**Berggiesshubel**	**82.00**	**325**	*eP*		**P**	**04 50 54.4**	**+2.3**
BRG				pmax	pmax			
	comp=Z,3.0nm,0.5s							
BRG				MLR	MLR			
	comp=N,182nm,20.2s							
BRG				MLR	MLR			
	comp=E,86nm,20.9s							
BRG				MLR	MLR			
	comp=Z,189nm,11.9s							
CLL	**Collm**	**82.18**	**326**	*iP*		**P**	**04 50 52.4**	**-0.6**
	comp=Z,8.0nm,0.9s							
CLL				*i*			04 50 57.3	
CLL				L		L	05 32 00.0	
	comp=Z,100nm,18.6s							
CLL	**Collm**	**82.18**	**326**	*eP*		**P**	**04 50 52.4**	**-0.6**
CLL				pmax	pmax			
	comp=Z,14nm,0.8s							
CLL	**Collm**	**82.18**	**326**	*eP*		**P**	**04 50 52.4**	**-0.6**
	comp=Z,14nm,0.8s							
PKSM	**Moragy**	**82.36**	**320**	⇑*iP*		**P**	**04 50 54.3**	**+0.3**
CONA	**Conrad Observa**	**82.84**	**322**	*iP*		**P**	**04 50 56.9**	**+0.2**
	comp=Z,3.1nm,0.7s							
KHC	**Kasperske Hory**	**83.28**	**324**	*eP*		**P**	**04 50 58.2**	**-0.6**
KHC				*e*PCP		**PcP**	**04 51 04.0**	**+0.8**
GERES	**GERESS Array B**	**83.40**	**324**	P		**P**	**04 50 58.2**	**-1.4**
	comp=Z,1.1nm,0.7s,baz=50,slow=8.8,SNR=9.1							
GERES				LR	LR		05 31 07.2	
	comp=Z,82nm,18.9s,baz=64,slow=38							
GEA0	**GERESS Array S**	**83.40**	**324**	*eP*		**P**	**04 50 58.8**	**-0.8**
ARSA	**Arzberg**	**83.44**	**322**	*iP*		**P**	**04 50 59.8**	**+0.1**
	comp=Z,4.0nm,0.9s							
MOA	**Molln**	**83.73**	**323**	*i* PcP		**P**	**04 51 02.1**	**+1.0**
	comp=Z,4.8nm,0.9s							
SOKA	**Soboth**	**84.06**	**321**	*iP*		**P**	**04 51 01.1**	**-1.9**
	comp=Z,6.5nm,0.9s							
PDG	**Podgorica**	**84.23**	**316**	⇑*iP*		**P**	**04 51 03.9**	**+0.2**
AGG	**Agios Georgios**	**84.28**	**312**	*eP*		**P**	**04 51 02.6**	**-1.6**
AGG				pmax	pmax			
	comp=Z,51nm,0.5s							
AGG	**Agios Georgios**	**84.28**	**312**	*eP*		**P**	**04 51 02.6**	**-1.6**
	comp=Z,51nm,0.5s							
LAST	**Lasithi**	**84.33**	**307**	⇑*iP*		**P**	**04 51 04.6**	**+0.1**
OBKA	**Obir**	**84.42**	**322**	*i* PcP		**P**	**04 51 06.6**	**+1.8**
	comp=Z,5.4nm,0.7s							
KBA	**Koelnbreinsper**	**84.70**	**323**	*i* PcP		**P**	**04 51 07.5**	**+1.1**
	comp=Z,4.2nm,0.8s							
LRM	**Limekiln Ridge**	**85.01**	**39**	*eP*		**P**	**04 51 10.6**	**+2.6**
DLMT	**Dillon**	**85.22**	**39**	*eP*		**P**	**04 51 09.8**	**+0.9**
	comp=Z,6.0nm,1.4s							
HLID	**Hailey**	**85.32**	**42**	*eP*		**P**	**04 51 10.2**	**+0.7**
	comp=Z,4.7nm,1.2s							
ABTA	**Abfaltersbach**	**85.36**	**323**	*iP*		**P**	**04 51 09.3**	**-0.2**
	comp=Z,5.8nm,1.0s							
STU	**Stuttgart**	**85.70**	**326**	*eP*		**P**	**04 51 10.7**	**-0.3**
STU				pmax	pmax			
	comp=Z,14nm,0.4s							
STU	**Stuttgart**	**85.70**	**326**	*eP*		**P**	**04 51 10.7**	**-0.3**
	comp=Z,14nm,0.4s							
NVAR	**Mina Array Bea**	**86.04**	**47**	P		**P**	**04 51 14.5**	**+1.2**
	comp=Z,0.6nm,0.5s,baz=298,slow=4.7,SNR=3.1							
EKA	**Eskdalemuir Ar**	**86.13**	**336**	P		**P**	**04 51 13.9**	**+0.9**
	comp=Z,2.0nm,0.4s,baz=46,slow=5.2,SNR=16							
ESK	**Eskdalemuir**	**86.16**	**336**	*eP*		**P**	**04 51 12.4**	**-0.8**
ESK				pmax	pmax			
	comp=Z,6.0nm,0.7s							
ESK	**Eskdalemuir**	**86.16**	**336**	*eP*		**P**	**04 51 12.3**	**-0.8**
	comp=Z,6.2nm,0.7s							
BFO	**Black Forest**	**86.42**	**326**	*iP*		**P**	**04 51 17.7**	**+3.1**
H17A	**Grant Village**	**86.94**	**39**	*eP*		**P**	**04 51 19.1**	**+1.6**
	comp=Z,3.2nm,0.8s							
FLWY	**Flagg Ranch**	**87.08**	**39**	*eP*		**P**	**04 51 20.3**	**+2.1**
	comp=Z,10nm,1.4s							
WASM	**Alta Sierra Ca**	**87.45**	**50**	*eP*		**P**	**04 51 21.1**	**+0.9**
TIP	**Timpagrande**	**87.69**	**315**	*eP*		**P**	**04 51 20.8**	**-0.2**
	comp=Z,5.9nm,0.9s							
HWUT	**Hardware Ranch**	**88.19**	**42**	*eP*		**P**	**04 51 25.9**	**+2.4**
	comp=Z,3.9nm,0.9s							
BW06	**Boulder Array**	**88.57**	**40**	*eP*		**P**	**04 51 25.7**	**+0.3**
PDAR	**Pinedale Array**	**88.57**	**40**	P		**P**	**04 51 26.2**	**+0.9**
	comp=Z,1.2nm,0.9s,baz=259,slow=1.5,SNR=7.6							
ULM	**Lac du Bonnet**	**89.78**	**28**	LR		LR	05 34 31.9	
	comp=Z,50nm,19.2s,baz=340,slow=37							
P18A	**Preston Nutter**	**90.23**	**43**	*eP*		**P**	**04 51 35.8**	**+2.5**
	comp=Z,4.3nm,0.8s							
KMBO	**Kilima Mbogo**	**93.72**	**271**	*eP*		**P**	**04 51 48.3**	**-1.5**
KMBO				pmax	pmax			
	comp=Z,2.0nm,0.9s							
KMBO	**Kilima Mbogo**	**93.72**	**271**	*eP*		**P**	**04 51 48.3**	**-1.5**
	comp=Z,2.1nm,0.9s							
SCHQ	**Schefferville**	**93.90**	**10**	P		**P**	**04 51 48.9**	**-0.7**
	comp=Z,2.5nm,0.7s,baz=17,slow=3.0,SNR=3.8							
SCHQ				LR		LR	05 38 24.0	
	comp=Z,50nm,18.4s,baz=53,slow=38							
TORD	**Torodi Ar. Bea**	**114.81**	**304**	PKP		PKPdf	04 57 12.5	-0.7
	comp=Z,0.5nm,0.6s,baz=42,slow=0.9,SNR=13							
DBIC	**Dimbokro**	**123.92**	**303**	PKP		**PKPdf**	**04 57 30.7**	**-0.1**
	comp=Z,6.1nm,0.9s,baz=352,slow=3.7,SNR=6.7							
SAML	**Samuel**	**155.05**	**35**	*e*PKPdf		**PKPdf**	**04 58 25.8**	**+0.1**
SAML				*e*PKPbc		PKPbc	04 58 34.5	

IDC 29 04:43:52.9±1.7, 2.96N×126.71E, h0km, mb3.9/5, mb1 4.1/5, mb1mx3.7/53, mbtmp3.9/5, Error ellipse: s-maj=187.8km s-min=19.2km az=66.0, Northern Molucca Sea

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
LBMI	**Labuha**	**3.66**	**168**	P	Pn	04 44 50.9	+0.1
WRA	**Warramunga Arr**	**23.96**	**162**	P	P	04 49 09.3	+0.3
	4.2nm,0.7s,baz=341,slow=10,SNR=6.4						
ASAR	**Alice Springs**	**27.37**	**166**	P	P	04 49 39.9	-0.2
	0.8nm,0.8s,baz=353,slow=6.5,SNR=2.3						
STKA	**Stephens Creek**	**37.42**	**159**	P	P	04 51 08.0	+0.1
	1.8nm,0.6s,baz=341,slow=7.5,SNR=3.5						
MKAR	**Makanchi Array**	**58.18**	**326**	P	P	04 53 49.0	+0.2
	1.0nm,0.9s,baz=134,slow=8.2,SNR=3.6						
KURBB	**Kurchatov Arra**	**62.38**	**328**	P	P	04 54 17.0	-0.4
	1.6nm,0.9s,baz=125,slow=6.2,SNR=10						

GUC 29 04:45:45.0±0.4, 24.59S×69.03W, h60km, ML3.6, 6C, Northern Chile

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PB14	**IPOC Station P**	**1.25**	**268**	⇑*iP*	Pn	04 46 07.2	+0.5
PB14				*eS*	Sn	04 46 24.6	+1.8
PB14				AML	AML	04 46 33.5	
	comp=N,1μm,0.4s						
ANCH	**Antofagasta**	**1.55**	**305**	⇑*iP*	Pn	04 46 11.1	+0.7
ANCH				*i* S	Sn	04 46 30.3	+0.7
PB10	**IPOC Station P**	**1.76**	**307**	⇑*iP*	Pn	04 46 13.7	+0.4
PB10				*i* S	Sn	04 46 34.2	-0.5
PB10				AML	AML	04 46 42.3	
	comp=N,2μm,0.3s						
PB06	**IPOC Station P**	**1.94**	**345**	⇑*iP*	Pn	04 46 16.4	+0.6
PB06				*i* S	Sn	04 46 40.4	+1.1
PB06				AML	AML	04 46 47.5	
	comp=E,310nm,0.2s						
PB04	**IPOC Station P**	**2.47**	**335**	⇑*iP*	Pn	04 46 22.5	-0.7
PB04				*i* S	Sn	04 46 49.4	-2.8
PB04				AML	AML	04 47 02.9	
	comp=E,271nm,0.5s						
PB09	**IPOC Station P**	**2.79**	**356**	⇑*iP*	Pn	04 46 28.3	+0.8
PB09				*i* S	Sn	04 46 53.9	-6.2
PB09				AML	AML	04 47 14.4	
	comp=E,634nm,0.7s						

IDC 29 04:55:53.9±1.3, 25.86N×143.45E, h0km, mb3.6/5, mb1 3.8/5, mb1mx3.4/46, mbtmp3.6/5, Error ellipse: s-maj=47.2km s-min=27.5km az=86.0, Volcano Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JCJ	**Chichijima**	**1.67**	**318**	Sn	Sg	04 56 48.3	+0.7
	baz=107,slow=19						
JCJ				LR	LR	04 56 54.6	
	comp=Z,114nm,18.8s,baz=39,slow=36						
WRA	**Warramunga Arr**	**46.38**	**192**	P	P	05 04 22.0	-0.1
	2.7nm,0.8s,baz=14,slow=8.7,SNR=12						
ZALV	**Zalesovo Beam**	**51.16**	**320**	P	P	05 04 58.8	+0.3
	0.3nm,0.4s,baz=109,slow=12,SNR=2.3						
KURBB	**Kurchatov Arra**	**54.71**	**315**	P	P	05 05 23.9	-0.9
	0.2nm,0.3s,baz=87,slow=7.5,SNR=3.3						
YKA	**Yellowknife Ar**	**72.69**	**28**	P	P	05 07 23.2	-0.1
	0.1nm,0.5s,baz=297,slow=6.9,SNR=3.6						
FINES	**FINESS Array B**	**79.55**	**334**	P	P	05 08 02.9	+0.5
	0.6nm,0.4s,baz=66,slow=6.5,SNR=5.9						

IDC 29 05:05:56.5±2.9, 54.04N×86.51E, h0km, mb1 3.1/2, mb1mx2.9/42, mbtmp3.1/2, ML2.7/2, Error ellipse: s-maj=23.7km s-min=13.8km az=63.0, Southwestern Siberia

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
I46RU	**ZALESOVO INFRA**	**1.00**	**265**	*i*		05 13 02.2	
	baz=84,slow=332,SNR=3.5						
ZALV	**Zalesovo Beam**	**1.00**	**265**	Pg	Pg	05 06 14.1	-1.5
	0.9nm,0.3s,baz=86,slow=17,SNR=12						
ZALV				Lg	Lg	05 06 29.9	
	0.8nm,0.3s,baz=87,slow=32,SNR=4.4						
KURBB	**Kurchatov Arra**	**5.97**	**238**	Pn	Pn	05 07 27.2	+1.2
	0.1nm,0.3s,baz=56,slow=14,SNR=5.8						
MKAR	**Makanchi Array**	**7.74**	**202**	Pn	Pn	05 07 51.4	+1.1
	0.2nm,0.3s,baz=24,slow=16,SNR=4.0						

*ISCJB **29** 05:24:29.7±0.5, 24.72N±0.05×122.49E±0.02, h3km±5km, Error ellipse: s-maj=8.6km s-min=2.9km az=10.3*
*JMA **29** 05:24:29.9±0.2, 24.71N×122.47E, h9km±4km, M2.2*
*TAP **29** 05:24:31.6, 24.74N×122.34E, h7km±1km, ML2.6, D*
ISC 29 05:24:29.4±1.2, 24.78N±0.07×122.50E±0.02, h10km±12km, n17, σ0.46/30, Taiwan region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
TWB1	**Santiao Chiao**	**0.52**	**296**	*eP*	**Pb**	**05 24 40.6**	**0.0**
	baz=310						
TWB1				*eS*	**Sb**	**05 24 47.4**	**-0.8**
	baz=310						
EGS		**0.52**	**277**	*eP*	**Pb**	**05 24 41.5**	**+0.9**
	baz=285						
JYNG	**Yonagunijimaku**	**0.52**	**129**	P	**Pg**	**05 24 39.6**	**0.0**
JYNG				S	**Sg**	**05 24 46.6**	**+0.2**
YOJ	**Yonaguni jima**	**0.56**	**124**	P	**Pg**	**05 24 40.4**	**+0.1**
YOJ				*eS*	**Sg**	**05 24 47.3**	**-0.5**
TWC	**Suao**	**0.61**	**254**	*eP*	**Pg**	**05 24 41.7**	**+0.3**
	baz=253						
TWC				*eS*	**Sg**	**05 24 49.0**	**-0.5**
	baz=253						
NWF	**Wu-fen Shan**	**0.71**	**294**	*eP*	**Pb**	**05 24 44.4**	**+0.4**
	baz=303						
NWF				*eS*	**Sb**	**05 24 54.0**	**+0.1**
	baz=303						
TWE	**Neicheng**	**0.76**	**266**	*eP*	**Pb**	**05 24 44.9**	**+0.1**
	baz=267						
TWE				*eS*	**Sg**	**05 24 53.1**	**-0.8**
	baz=267						
ENA	**Nanau**	**0.77**	**243**	*eP*	**Pg**	**05 24 44.7**	**+0.4**
	baz=239						
ENA				*eS*	**Sg**	**05 24 54.3**	**-0.2**
	baz=239						
ENTT	**Nioudou**	**0.86**	**261**	*eP*	**Pb**	**05 24 46.5**	**0.0**
	baz=261						
ENTT				*eS*	**Sg**	**05 24 57.4**	**+0.2**
	baz=261						
NSK	**Sanguang**	**1.04**	**265**	*eP*	**Pg**	**05 24 49.6**	**+0.1**
	baz=265						
NSK				*eS*	**Sg**	**05 25 02.2**	**-0.9**
	baz=265						
NNS	**Nan Shan**	**1.08**	**252**	*eP*	**Pb**	**05 24 50.6**	**+0.3**
	baz=250						
NNS				*eS*	**Sg**	**05 25 04.0**	**-0.2**
	baz=250						
IRIF	**Iriomote-Funau**	**1.21**	**111**	P	**Pn**	**05 24 52.5**	**+0.2**
IRIF				S	**Sb**	**05 25 07.6**	**-0.4**
WHF	**Hehuan Shan**	**1.29**	**241**	*eP*	**Pn**	**05 24 53.9**	**0.0**
	baz=238						
WHF				*eS*	**Sb**	**05 25 09.9**	**-0.9**
	baz=238						
TWT	**Tachien**	**1.31**	**247**	*eP*	**Pg**	**05 24 55.0**	**+0.3**
	baz=245						
TWT				*eS*	**Sg**	**05 25 11.7**	**-0.1**
	baz=245						
JKRS	**Kuro-shima**	**1.48**	**111**	P	**Pb**	**05 24 57.2**	**+0.2**
JIJ	**Ishigaki jima**	**1.55**	**105**	S	**Sg**	**05 25 19.1**	**-0.3**
WDT	**Danda**	**1.61**	**231**	*eP*	**Pn**	**05 24 58.6**	**+0.4**
	baz=228						

*NIED **29** 05:30:00, 36.90N×141.40E, h5km, Mw3.5 Best double couple: M0 1.70000×10^14 NP1:φs337.00000°, δ61.00000°, λ-176.00000°. NP2:φs245.00000°, δ87.00000°, λ-29.00000°.*
*ISCJB **29** 05:30:01.4±1.3, 36.93N±0.04×141.44E±0.08, h16km±9km, mb3.6/3, Error ellipse: s-maj=10.4km s-min=7.2km az=13.5*
*JMA **29** 05:30:03.3±0.1, 36.96N×141.32E, h27km±1km, M3.9*
JMA Felt I J1.
*IDC **29** 05:30:05.3±2.1, 36.29N×141.11E, h0km, mb3.6/3, mb1 3.8/5, mb1mx3.5/35, mbtmp3.7/5, ML3.1/2, Error ellipse: s-maj=43.3km s-min=22.9km az=54.0*
ISC 29 05:30:01.7±2.0, 36.94N±0.05×141.41E±0.09, h11km±10km, n19, σ0.87/20, mb3.6/3, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.51**	**288**	P	**Pg**	**05 30 12.2**	**+0.5**
ONAJ				S	**Sg**	**05 30 18.6**	**+0.1**
JFK	**Kawauchi**	**0.60**	**315**	P	**Pg**	**05 30 13.9**	**+0.5**
JFK				S	**Sg**	**05 30 21.1**	**-0.2**
JHO	**Hitachi**	**0.75**	**244**	P	**Pg**	**05 30 16.4**	**+0.2**
JHO				S	**Sg**	**05 30 25.9**	**-0.1**
JFT	**Otama**	**1.03**	**304**	P	**Pb**	**05 30 21.4**	**-0.2**
JFT				S	**Sb**	**05 30 34.2**	**-0.9**
JMM	**Marumori**	**1.04**	**332**	P	**Pb**	**05 30 21.1**	**-0.7**
JMM				S	**Sb**	**05 30 34.2**	**-1.3**
JSB	**Shiboa**	**1.19**	**272**	P	**Pn**	**05 30 24.1**	**-0.3**
JSB				S	**Sb**	**05 30 39.1**	**-0.7**
JYT	**Yasato**	**1.21**	**234**	P	**Pn**	**05 30 23.2**	**-1.4**
JYT				S	**Sb**	**05 30 38.8**	**-1.4**
MJAR	**Matsushiro Arr**	**2.60**	**262**	Pn	**Pn**	**05 30 45.1**	**+1.3**
	2.8nm,0.3s,baz=80,slow=9.1,SNR=18						
MJAR				Sn	**Sn**	**05 31 15.4**	**+0.1**
	7.5nm,0.3s,baz=69,slow=13,SNR=8.9						
MAT	**Matsushiro**	**2.60**	**262**	P	**Pn**	**05 30 44.5**	**+0.7**
MAT				*e*S	**Sn**	**05 31 16.3**	**+0.9**
JHJ	**Hachijo jima 2**	**4.04**	**200**	Pn	Pn	05 30 58.0	-5.6
	6.9nm,0.3s,baz=108,slow=20,SNR=2.2						
JHJ				Sn	Sn	05 31 40.1	-11
	8.9nm,0.3s,baz=108,slow=20,SNR=2.5						
H11N2	**WAKE ISLAND Hy**	**28.11**	**121**	T	T	06 05 21.2	
	baz=313,slow=75,SNR=80						
H11N1	**WAKE ISLAND Hy**	**28.11**	**121**	T	T	06 05 21.9	
	baz=313,slow=75,SNR=82						
H11N3	**WAKE ISLAND Hy**	**28.12**	**121**	T	T	06 05 46.0	
	baz=313,slow=75,SNR=49						
H11S1	**WAKE ISLAND Hy**	**28.82**	**123**	T	T	06 06 49.9	
	baz=314,slow=76,SNR=88						
H11S3	**WAKE ISLAND Hy**	**28.82**	**123**	T	T	06 06 50.3	
	baz=314,slow=76,SNR=18						
H11S2	**WAKE ISLAND Hy**	**28.83**	**123**	T	T	06 06 49.1	
	baz=314,slow=76,SNR=31						
MKAR	**Makanchi Array**	**44.16**	**302**	P	P	05 38 16.5	+6.1
	0.2nm,0.3s,baz=72,slow=9.3,SNR=2.8						
WRA	**Warramunga Arr**	**56.97**	**188**	P	**P**	**05 39 48.0**	**+0.7**
	0.6nm,0.5s,baz=5.0,slow=7.2,SNR=11						
ASAR	**Alice Springs**	**60.70**	**188**	P	**P**	**05 40 13.7**	**+0.6**
	0.4nm,0.7s,baz=8.1,slow=6.5,SNR=3.6						

*NIED **29** 05:45:00, 37.00N×141.20E, h68km, Mw3.5 Best double couple: M0 2.33000×10^14 NP1:φs256.00000°, δ35.00000°, λ175.00000°. NP2:φs350.00000°, δ87.00000°, λ55.00000°.*
JMA 29 05:45:37.7±0.1, 37.01N×141.13E, h50km±1km, M3.7, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.28**	**289**	P	Pn	05 45 46.5	-0.2
ONAJ				S	Sn	05 45 52.7	-0.5
JFK	**Kawauchi**	**0.41**	**330**	P	Pn	05 45 47.8	-0.2
JFK				S	Sn	05 45 54.7	-0.6
JHO	**Hitachi**	**0.60**	**229**	P	Pn	05 45 49.9	-0.3
JHO				S	Sn	05 45 58.4	-0.8
JFT	**Otama**	**0.81**	**309**	P	Pn	05 45 53.7	+0.8
JFT				S	Sn	05 46 04.8	+0.8
JMM	**Marumori**	**0.90**	**343**	P	Pn	05 45 53.8	-0.2
JMM				S	Sn	05 46 05.6	-0.4
JSB	**Shiboa**	**0.97**	**268**	P	Pn	05 45 55.7	+0.7
JYT	**Yasato**	**1.08**	**224**	P	Pn	05 45 56.3	-0.2

*IDC **29** 05:46:58.7±6.1, 13.20N×89.18W, h0km, mb3.5/5, mb1 3.9/5, mb1mx3.6/23, mbtmp3.6/5, Error ellipse: s-maj=133.2km s-min=44.6km az=8.0*
*CASC **29** 05:47:09.3±0.9, 13.22N×89.91W, h34km±16km, ML3.7*
ISC 29 05:47:08.0±2.0, 13.21N±0.07×89.96W±0.08, h29km±15km, n33, σ0.54/38, mb3.8/4, 1C-4D, El Salvador

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CUS1	**Cusmapa**	**0.69**	**1**	‖*iP*	**Pn**	**05 47 22.6**	**+0.6**
SBLS	**San Blas**	**0.70**	**28**	‖*iP*	**Pn**	**05 47 22.7**	**+0.5**
MONT	**Ecomontaæa**	**0.71**	**25**	⇑*iP*	**Pn**	**05 47 22.9**	**+0.6**
SNJE	**San Jose**	**0.73**	**28**	*iP*	**Pn**	**05 47 23.0**	**+0.4**
COLS	**Colinas**	**0.78**	**55**	*eP*	**Pn**	**05 47 23.4**	**+0.2**
COLS				*eS*	**Sn**	**05 47 34.7**	**+0.7**
BOQS	**Boqueron**	**0.84**	**52**	*eP*	**Pn**	**05 47 24.3**	**+0.2**
BOQS				*eS*	**Sn**	**05 47 35.7**	**+0.1**
SNET	**Serv Nac Est T**	**0.85**	**56**	*eP*	**Pn**	**05 47 24.1**	**0.0**
SNET				*eS*	**Sn**	**05 47 35.9**	**+0.3**
SNET				AML	AML	05 47 37.2	
	comp=Z,8μm,0.2s						
RBDL	**Robledal**	**0.93**	**16**	*eP*	**Pb**	**05 47 25.9**	**+0.2**
LFRS	**El Faro**	**0.96**	**65**	‖*iP*	**P

mpv3.6,5C-5D,Error ellipse: s-maj=11.0km s-min=6.0km az=154.0,Hindu Kush region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZET	**Dzherino**	**2.57**	**331**	⇑P	Pn	06 05 20.1	+0.2
	7.7nm,0.4s						
DZET				⇓S	Sn	06 05 53.9	+0.1
	69nm,0.5s						
SFK	**Sufi-Kurgan**	**4.22**	**34**	⇓P	Pn	06 05 40.7	+0.3
	2.3nm,0.3s						
SFK				⇓S	Sn	06 06 31.2	+0.7
	6.3nm,0.3s						
MNAS	**Manas**	**6.14**	**15**	⇑P	Pn	06 06 05.1	-0.2
	1.9nm,0.4s						
MNAS				⇑S	Sn	06 07 15.4	+0.2
	1.6nm,0.5s						
KK31	**Karatay Array**	**6.54**	**1**	P	Pn	06 06 10.1	-0.3
	0.6nm,0.2s,baz=180,slow=13,SNR=38						
KK31				⇓S	Sn	06 07 26.1	+1.6
	1.3nm,0.5s						
AAK	**Ala-Archa**	**6.83**	**26**	⇑P	Pn	06 06 14.4	0.0
	4.0nm,0.7s						
AAK				⇓S	Sn	06 07 31.8	0.0
	1.4nm,0.5s						
TKM2	**Tokmak 2**	**7.50**	**31**	⇑P	Pn	06 06 22.8	-0.5
	6.1nm,0.5s						

GUC ***29*** *06:13:52.2±0.6,20.°85S×69.°22W,h106km±3km, ML3.7*
ISCJB ***29*** *06:13:53.7±0.6,20.°86S±0.°03×69.°26W±0.°09, h98km±6km, mb3.2/2, Error ellipse: s-maj=14.8km s-min=5.2km az=171.6*
IDC ***29*** *06:13:54.5±2.0,20.°84S×69.°25W,h79km±22km, mb3.1/2, mb1 3.3/3, mb1mx3.1/25, mbtmp3.3/3, Error ellipse: s-maj=45.5km s-min=18.2km az=84.0*

ISC 29 06:13:54.8±1.0,20.°87S±0.°04×69.°27W±0.°09,h93km±8km, n14,σ1°19/24,7C-2D,Northern Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PB01	**IPOC Station P**	**0.27**	**229**	⇓*i*P	Pn	06 14 08.2	-0.4
PB01				*i* S	Sn	06 14 19.7	+0.9
PB01				AML	AML	06 14 20.9	
	comp=E,5μm,0.3s						
HMBC	**Humberstone**	**0.82**	**315**	⇑*i*P	Pn	06 14 12.0	-1.0
HMBC				*e*S	Sn	06 14 27.0	+0.4
HMBC				AML	AML	06 14 28.2	
	comp=N,3μm,0.3s						
PATCX	**Punta Patache**	**0.83**	**273**	⇑*i*P	Pn	06 14 12.5	-0.5
PATCX				*i* S	Sn	06 14 27.5	+0.9
PB09	**IPOC Station P**	**0.93**	**179**	⇑*i*P	Pn	06 14 13.5	-0.6
PB09				*i* S	Sn	06 14 28.9	+0.4
PB09				AML	AML	06 14 32.0	
	comp=E,2μm,0.3s						
PB07	**IPOC Station P**	**1.03**	**214**	⇓*i*P	Pn	06 14 14.6	-0.7
PB07				*e*S	Sn	06 14 30.9	+0.2
PSGC	**Pisagua**	**1.50**	**327**	⇑*i*P	Pn	06 14 18.8	-1.9
PSGC				*i* S	Sn	06 14 38.8	-1.6
PB04	**IPOC Station P**	**1.68**	**209**	⇑*i*P	Pn	06 14 22.1	-1.0
PB04				*i* S	Sn	06 14 43.3	-1.3
MNMC	**Minye Minye**	**1.75**	**350**	⇑*i*P	Pn	06 14 22.6	-1.7
MNMC				*e*S	Sn	06 14 45.8	-0.7
MNMC				AML	AML	06 14 48.8	
	comp=N,718nm,0.3s						
LVC	**Limon Verde**	**1.77**	**169**	P	Pn	06 14 23.3	-1.1
	comp=N,380nm,0.3s,baz=340,slow=13,SNR=114						
LVC				S	Sn	06 14 46.6	-0.3
	comp=N,1μm,0.3s,baz=142,slow=19,SNR=51						
LVC	**Limon Verde**	**1.77**	**169**	*i* S	Sn	06 14 46.2	-0.8
PB06	**IPOC Station P**	**1.85**	**189**	⇑*i*P	Pn	06 14 23.3	-2.0
PB06				*i* S	Sn	06 14 47.0	-1.5
LPAZ	**La Paz**	**4.68**	**13**	P	Pn	06 15 03.0	-0.7
	comp=N,0.5nm,0.3s,baz=217,slow=5.1,SNR=14						
PDAR	**Pinedale Array**	**73.40**	**330**	P	P	06 25 18.3	+1.3
	comp=N,0.2nm,0.5s,baz=134,slow=7.8,SNR=2.1						
TORD	**Torodi Ar. Bea**	**77.46**	**71**	P	P	06 25 41.6	+1.1
	comp=N,0.3nm,0.5s,baz=264,slow=4.4,SNR=2.6						

ISCJB ***29*** *06:14:32.0±0.9,10.°12S±0.°06×79.°0W±0.°1,h52km, mb3.6/6, MS3.1/1, Error ellipse: s-maj=16.5km s-min=6.4km az=154.2*
IDC ***29*** *06:14:33.3±1.1,9.°97S×78.°76W,h42km±6km, mb3.4/6, mb1 3.8/9, mb1mx3.6/30, mbtmp3.8/9, ML3.3/3, MS3.1/6, Ms1 3.1/6, ms1mx3.0/19, Error ellipse: s-maj=38.5km s-min=18.2km az=39.0*

ISC 29 06:14:33.9±0.9,10.°10S±0.°08×78.°8W±0.°1,h52km,n18, σ1°42/21,mb3.7/5,Near coast of Peru

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
NNA	**Nana**	**2.66**	**135**	P	Pn	06 15 15.3	+0.8
	20nm,0.3s,baz=299,slow=8.6,SNR=32						
NNA				S	Sn	06 15 48.2	+2.6
	48nm,0.3s,baz=316,slow=11,SNR=5.2						
NNA				LR	LR	06 16 26.1	
	comp=Z,123nm,21.2s,baz=326,slow=41						
ATAH	**Atahualpa**	**2.96**	**7**	P	Pn	06 15 20.4	+1.4
	38nm,0.3s,baz=148,slow=4.3,SNR=101						
ATAH				S	Sn	06 15 55.6	+2.2
	22nm,0.3s,baz=83,slow=17,SNR=3.7						
ATAH				LR	LR	06 16 38.4	
	comp=Z,131nm,21.1s,baz=196,slow=44						
OTAV	**Otavalo**	**10.27**	**2**	*e*P	Pn	06 17 00.5	+1.3
CMBC	**Cumbal**	**11.00**	**5**	*e*P	Pn	06 17 17.3	+8.2
FLOC	**Florencia**	**12.01**	**15**	*e*P	Pn	06 17 21.4	-1.1
LPAZ	**La Paz**	**12.04**	**122**	P	Pn	06 17 27.6	+4.1
	0.1nm,0.3s,baz=252,slow=13,SNR=2.5						
LPAZ				LR	LR	06 22 31.7	
	comp=Z,119nm,19.1s,baz=318,slow=40						
SJAC	**San Juan de Ar**	**14.12**	**20**	*e*P	Pn	06 17 49.0	-2.4
ROSC	**El Rosal**	**15.48**	**17**	P	Pn	06 18 08.7	-0.7
	0.4nm,0.3s,baz=198,slow=20,SNR=2.7						
ROSC				LR	LR	06 25 09.0	
	comp=Z,93nm,19.5s,baz=210,slow=41						
RUSC	**La Rusia**	**16.86**	**20**	*e*P	Pn	06 18 27.2	+0.2
SIV	**San Ignacio**	**18.20**	**111**	P	P	06 18 42.8	0.0
	0.4nm,0.3s,baz=271,slow=5.7,SNR=3.7						
SIV				LR	LR	06 25 58.4	
	comp=Z,142nm,19.0s,baz=185,slow=38						
PTGA	**Pitinga**	**20.88**	**65**	P	P	06 19 10.8	-1.2
	1.9nm,0.4s,baz=277,slow=15,SNR=5.6						
PTGA				LR	LR	06 27 51.0	
	comp=Z,77nm,20.9s,baz=238,slow=38						
TXAR	**Lajitas Array**	**45.97**	**329**	P	P	06 22 52.8	+0.5
	0.7nm,0.8s,baz=159,slow=8.7,SNR=5.6						
PDAR	**Pinedale Array**	**59.66**	**334**	P	P	06 24 32.2	-1.0
	0.3nm,0.7s,baz=141,slow=5.8,SNR=3.1						
NVAR	**Mina Array Bea**	**60.75**	**325**	P	P	06 24 40.8	+0.1
	0.7nm,0.6s,baz=151,slow=3.4,SNR=4.1						
NVAR				sP	pP	06 24 56.9	+1.8
	0.4nm,0.5s,baz=160,slow=4.7,SNR=2.8						
YKA	**Yellowknife Ar**	**77.50**	**344**	P	P	06 26 22.7	-0.9
	0.2nm,0.5s,baz=140,slow=5.9,SNR=11						
YKA				pP	pP	06 26 36.6	-1.9
	0.2nm,0.6s,baz=140,slow=6.0,SNR=4.4						
TORD	**Torodi Ar. Bea**	**83.13**	**75**	P	P	06 26 55.5	+0.5
	1.0nm,1.0s,baz=272,slow=3.6,SNR=3.8						
TORD				pP	pP	06 27 08.6	-1.4
	0.3nm,0.6s,baz=252,slow=5.1,SNR=3.6						
ASAR	**Alice Springs**	**133.67**	**223**	PKP	PKPdf	06 33 45.8	0.0
	0.3nm,0.7s,baz=116,slow=2.2,SNR=3.7						
WRA	**Warramunga Arr**	**135.81**	**227**	PKP	PKPdf	06 33 50.2	+0.3
	0.9nm,0.7s,baz=118,slow=2.3,SNR=5.8						

NIED ***29*** *06:17:00,39.°00N×142.°70E,h8km,Mw3.4 Best double couple: M₀1.64000×10¹⁴ NP1:φ₀311.00000°,δ38.00000°, λ-48.00000°. NP2:φ₀82.00000°,δ63.00000°, λ-118.00000°.*
IDC ***29*** *06:17:06.2±2.2,39.°11N×143.°20E,h0km, mb4.0/4, mb1 4.0/5, mb1mx3.5/53, mbtmp3.8/5, ML3.1/1, Error ellipse: s-maj=60.6km s-min=28.3km az=74.0*
ISCJB ***29*** *06:17:08.4±1.5,38.°98N±0.°05×142.°77E±0.°09, h16km±8km, mb3.8/4, Error ellipse: s-maj=11.3km s-min=7.9km az=5.2*
JMA ***29*** *06:17:09.2±0.1,39.°00N×142.°72E,h21km±2km,M3.6*

ISC 29 06:17:08.6±2.3,38.°98N±0.°06×142.°64E±0.°09,h7km±13km, n15,σ0°43/23,mb4.0/4,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**0.76**	**278**	P	Pb	06 17 24.7	+0.5
OFUJ				S	Sb	06 17 35.7	+0.9
MIYJ	**Miyakonagasawa**	**0.87**	**313**	P	Pb	06 17 25.8	-0.3
MIYJ				S	Sb	06 17 38.0	+0.1
JMK	**Ichinoseki**	**1.11**	**269**	P	Pn	06 17 30.4	-0.2
JMK				S	Sn	06 17 45.6	-0.5
JIO	**Ouri**	**1.14**	**243**	P	Pg	06 17 30.5	0.0
JIO				S	Sg	06 17 45.4	+0.1
JOM	**Ohasama**	**1.16**	**295**	P	Pb	06 17 30.9	-0.1
JOM				S	Sn	06 17 46.8	-0.5
JKZ	**Kuzumaki**	**1.42**	**315**	P	Pn	06 17 34.7	-0.3
JKZ				S	Sn	06 17 54.0	0.0
JRG	**Rokugo**	**1.61**	**285**	P	Pb	06 17 38.6	-0.1
JRG				eS	Sb	06 17 59.0	-0.3
JANG	**Nango**	**1.64**	**328**	P	Pn	06 17 37.7	-0.2
JANG				S	Sn	06 17 58.7	-0.5
JOU	**Okura**	**1.67**	**249**	P	Pb	06 17 39.2	-0.5
JOU				S	Sb	06 18 00.8	0.0
JYK	**Kaneyama**	**1.78**	**269**	P	Pb	06 17 41.3	-0.3
MJAR	**Matsushiro Arr**	**4.27**	**237**	Pn	Pn	06 18 18.9	+4.7
	0.8nm,0.3s,baz=48,slow=11,SNR=6.2						
MKAR	**Makanchi Array**	**43.93**	**301**	P	P	06 25 17.0	+0.9
	0.3nm,0.4s,baz=80,slow=9.1,SNR=2.2						
KURBB	**Kurchatov Arra**	**45.59**	**307**	P	P	06 25 29.7	+0.5
	1.3nm,0.4s,baz=80,slow=8.4,SNR=5.4						
WRA	**Warramunga Arr**	**59.13**	**189**	P	P	06 27 09.7	-0.2
	0.7nm,0.5s,baz=6.3,slow=7.0,SNR=10						
AKASG	**Malin Array Be**	**73.35**	**322**	P	P	06 28 40.9	0.0
	0.4nm,0.4s,baz=46,slow=5.7,SNR=4.1						

ISCJB ***29*** *06:25:33.1±0.7,31.°31S±0.°07×179.°9E±0.°2,h400km, mb2.9/2, Error ellipse: s-maj=20.1km s-min=8.0km az=19.5*
IDC ***29*** *06:25:33.8±1.4,31.°32S×179.°81E,h392km±21km, mb2.7/2, mb1 3.0/3, mb1mx2.9/23, mbtmp3.7/3, Error ellipse: s-maj=51.0km s-min=26.2km az=132.0*

ISC 29 06:25:33.1±0.9,31.°4S±0.°1×180.°0E±0.°2,h400km,n16, σ2°16/21,Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**2.81**	**41**	P	Pn	06 26 35.3	+0.4
	51nm,0.3s,baz=253,slow=20,SNR=2.9						
RAO				S	S	06 27 22.1	-2.7
	45nm,0.3s,baz=120,slow=20,SNR=3.7						
WMGZ	**Waiomatatini S**	**6.53**	**191**	PN	P	06 27 15.7	+3.8
HAZ	**Te Kaha**	**6.59**	**195**	PN	P	06 27 14.3	+1.6
HAZ				SN	S	06 28 31.3	-1.5
PUZ	**Puketiti**	**6.80**	**192**	*e*PN	P	06 27 17.7	+2.7
PUZ				SN	S	06 28 34.1	-3.1
CNGZ	**Carnagh Statio**	**7.21**	**191**	PN	P	06 27 21.1	+1.5
URZ	**Urewera**	**7.23**	**198**	P	Pn	06 27 19.9	+0.7
	2.2nm,0.3s,baz=61,slow=19,SNR=28						
URZ				S	S	06 28 43.1	-2.9
	5.2nm,0.3s,baz=63,slow=21,SNR=17						
URZ	**Urewera**	**7.23**	**198**	*e*PN	P	06 27 20.2	+0.4
URZ				SN	S	06 28 43.3	-2.8
RIGZ	**Rimuhau**	**7.51**	**193**	PN	P	06 27 25.0	+2.1
SNGZ	**Shannon Statio**	**7.67**	**196**	PN	P	06 27 27.2	+2.5
NMHZ	**Naumai**	**8.10**	**198**	PN	P	06 27 32.0	+2.4
BKZ	**Black Stump Fm**	**8.25**	**199**	PN	P	06 27 32.4	+1.2
WNVZ	**Wahianoa**	**8.68**	**203**	PN	P	06 27 37.3	+1.2
KAHZ	**Kahuranaki**	**8.74**	**196**	PN	P	06 27 38.2	+1.6
ASAR	**Alice Springs**	**41.34**	**269**	P	P	06 32 42.4	+0.3
	0.3nm,0.8s,baz=100,slow=7.5,SNR=4.9						
WRA	**Warramunga Arr**	**42.42**	**274**	P	P	06 32 50.4	-0.3
	0.8nm,0.7s,baz=113,slow=7.7,SNR=4.9						
FINES	**FINESS Array B**	**145.46**	**338**	PKPbc	PKPbc	06 44 24.6	+0.1
	2.0nm,0.6s,baz=48,slow=3.2,SNR=10						

IDC ***29*** *06:27:29.7±5.2,35.°92N×70.°83E,h62km±43km, mb3.3/7, mb1 3.6/10, mb1mx3.3/48, mbtmp3.7/10, ML3.8/3, Error ellipse: s-maj=33.8km s-min=26.8km az=16.0*
NNC ***29*** *06:27:37.9±2.1,36.°67N×70.°56E,h147km±23km, mb3.1, mpv3.8, Error ellipse: s-maj=20.7km s-min=10.6km az=161.0*
ISCJB ***29*** *06:27:38.6±1.2,36.°73N±0.°08×70.°62E±0.°09,h150km, mb3.2/6, Error ellipse: s-maj=12.4km s-min=8.4km az=142.7*

ISC 29 06:27:38.9±1.3,36.°7N±0.°1×70.°60E±0.°08,h150km,n19, σ1°67/22,mb3.2/6,3C-10D,Hindu Kush region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZET	**Dzherino**	**2.55**	**327**	⇓P	Pn	06 28 18.7	-1.9
	10nm,0.3s						
DZET				⇑S	Sn	06 28 52.4	-0.5
	24nm,0.4s						
SFK	**Sufi-Kurgan**	**4.04**	**34**	⇓P	Pn	06 28 39.1	-0.7
	14nm,0.3s						
SFK				⇓S	Sn	06 29 28.1	+0.9
	21nm,0.4s						
MNAS	**Manas**	**5.99**	**14**	⇓P	Pn	06 29 04.6	-0.9
	4.6nm,0.9s						
MNAS				⇑S	Sn	06 30 12.1	-1.0
	12nm,0.4s						
KK31	**Karatay Array**	**6.42**	**359**	⇓P	Pn	06 29 10.9	-0.2
	2.6nm,0.3s,baz=185,slow=13						
KK31				⇓S	Sn	06 30 22.7	-0.6
	10nm,0.6s,baz=187,slow=21						
AAK	**Ala-Archa**	**6.66**	**26**	P	Pn	06 29 13.5	-0.9
	3.3nm,0.3s,baz=188,slow=4.4,SNR=20						
AAK				S	Sn	06 30 28.9	-0.5
	1.0nm,0.3s,baz=135,slow=22,SNR=10						
AAK	**Ala-Archa**	**6.66**	**26**	⇓P	Pn	06 29 13.7	-0.8
	4.7nm,0.5s						
AAK				⇑S	Sn	06 30 28.8	-0.5
	6.8nm,0.5s						
TKM2	**Tokmak 2**	**7.33**	**30**	⇓P	Pn	06 29 22.0	-1.3
	5.6nm,0.5s						
TKM2				⇓S	Sn	06 30 43.8	-1.6
	4.6nm,1.1s						
AB31	**Akbulak array**	**14.78**	**332**	P	P	06 31 00.6	-1.7
	0.8nm,0.3s,baz=135,slow=12,SNR=53						
KURBB	**Kurchatov Arra**	**15.06**	**20**	P	P	06 31 08.9	+3.4
	0.2nm,0.3s,baz=209,slow=9.5,SNR=4.7						
BVAR	**Borovoye Array**	**16.35**	**360**	P	P	06 31 22.0	+2.3
	0.2nm,0.3s,baz=164,slow=12,SNR=3.3						
AKTO	**Aktyubinsk**	**16.47**	**331**	P	P	06 31 24.7	+3.6
	0.4nm,0.3s,baz=146,slow=15,SNR=14						
AKTO	**Aktyubinsk**	**16.47**	**331**	⇓P	P	06 31 22.6	+1.5
	4.8nm,0.8s						
ZALV	**Zalesovo Beam**	**19.89**	**25**	P	Pn	06 32 01.6	0.0
	3.3nm,0.5s,baz=228,slow=12,SNR=11						
ARCES	**ARCESS Array B**	**40.86**	**338**	P	P	06 35 12.3	+6.9
	1.8nm,1.0s,baz=106,slow=8.5,SNR=5.2						
NOA	**NORSAR Array B**	**44.05**	**323**	P	P	06 35 36.9	+5.5
	0.4nm,0.8s,baz=97,slow=6.9,SNR=2.6						
TORD	**Torodi Ar. Bea**	**65.40**	**268**	P	P	06 38 07.0	+1.3
	0.2nm,0.6s,baz=57,slow=5.8,SNR=2.7						
INK	**Inuvik**	**73.78**	**9**	P	P	06 39 01.0	+4.9
	0.5nm,0.5s,baz=359,slow=4.1,SNR=7.2						
YKA	**Yellowknife Ar**	**81.08**	**2**	P	P	06 39 41.1	+4.3
	0.1nm,0.4s,baz=352,slow=5.4,SNR=8.6						
WRA	**Warramunga Arr**	**82.36**	**122**	P	P	06 39 42.4	-1.7
	0.2nm,0.7s,baz=324,slow=4.5,SNR=3.3						

NIED ***29*** *06:46:00,37.°20N×141.°40E,h53km,Mw3.6 Best double couple: M₀2.87000×10¹⁴ NP1:φ₀312.00000°,δ40.00000°, λ-151.00000°. NP2:φ₀199.00000°,δ72.00000°, λ-54.00000°.*

JMA 29 06:46:09.5±0.1,37.°18N×141.°38E,h48km±1km,M3.5, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**0.44**	**295**	P	Pn	06 46 19.8	-0.2
JFK				S	Sn	06 46 26.9	-0.6
ONAJ	**Iwakimizuishiy**	**0.47**	**261**	P	Pn	06 46 20.3	0.0
ONAJ				S	Sn	06 46 27.6	-0.5
JMM	**Marumori**	**0.83**	**326**	P	Pn	06 46 24.8	-0.1
JMM				S	Sn	06 46 35.7	-0.4
JHO	**Hitachi**	**0.86**	**229**	P	Pn	06 46 24.8	-0.5
JHO				S	Sn	06 46 35.8	-1.1
JFT	**Otama**	**0.90**	**292**	P	Pn	06 46 26.6	+0.8
JFT				S	Sn	06 46 38.4	+0.6

NIED ***29*** *06:54:00,39.°30N×142.°00E,h53km,Mw4.9 Best double couple: M₀2.16000×10¹⁶ NP1:φ₀190.00000°,δ20.00000°, λ80.00000°. NP2:φ₀21.00000°,δ70.00000°,λ94.00000°.*
BJI ***29*** *06:54:45.2,39.°19N×142.°16E,h54km,mb5.0/63,mB4.9/44, Ms4.3/50,Ms7 4.1/48*
ISCJB ***29*** *06:54:47.9±0.3,39.°36N±0.°02×141.°90E±0.°03,h57km±2km, mb4.9/221,MS4.2/44,Error ellipse: s-maj=4.2km s-min=2.8km az=135.3*
JMA ***29*** *06:54:48.1±0.1,39.°34N×142.°06E,h48km±1km,M4.8*
JMA Felt IV J1.
NEIC ***29*** *06:54:49.7±0.5,39.°33N×141.°88E,h60km±4km,mb4.9/144, Error ellipse: s-maj=4.3km s-min=2.7km az=136.0*
NEIC Felt at Misawa. Recorded [4 JMA] in Iwate.
IDC ***29*** *06:54:50.2±0.8,39.°34N×141.°96E,h70km±5km,mb4.4/26, mb1 4.5/31,mb1mx4.5/36,mbtmp4.6/31,MS4.0/28, Ms1 4.0/28,ms1mx3.8/50,Error ellipse: s-maj=13.4km s-min=11.0km az=111.0*
MOS ***29*** *06:54:50.0±1.0,39.°56N×141.°85E,h72km,mb5.1/81,Error ellipse: s-maj=6.5km s-min=4.4km az=99.2*

ISC 29 06:54:47.4±0.4,39.°35N±0.°03×142.°13E±0.°04,h46km±2km, h45km:pP-P,n484,σ1°69/527,mb4.9/222,MS4.2/45, 26C-9D,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MIYJ	**Miyakonagasawa**	**0.33**	**314**	P	Pn	06 54 57.0	+0.5
MIYJ				S	Sn	06 55 03.1	+0.2
OFUJ	**Ofunato**	**0.45**	**233**	P	Pn	06 54 58.1	+0.3
OFUJ				S	Sn	06 55 05.0	-0.1
JTH	**Tanohata**	**0.62**	**341**	P	Pn	06 55 00.5	+0.5
JTH				S	Sn	06 55 09.2	+0.1
JOM	**Ohasama**	**0.66**	**281**	P	Pn	06 55 00.5	0.0
JOM				S	Sn	06 55 09.7	-0.2
JMK	**Ichinoseki**	**0.81**	**241**	P	Pn	06 55 02.4	-0.1
JMK				S	Sn	06 55 12.7	-0.7
JIO	**Ouri**	**1.08**	**215**	P	Pn	06 55 06.1	0.0
JIO				S	Sn	06 55 18.8	-1.1
JANG	**Nango**	**1.13**	**335**	P	Pn	06 55 07.1	+0.3
JANG				S	Sn	06 55 21.1	0.0
JRG	**Rokugo**	**1.16**	**273**	P	Pn	06 55 07.2	0.0
JRG				S	Sn	06 55 20.5	-1.4
JAH	**Hinai**	**1.42**	**307**	P	Pn	06 55 11.2	+0.4
JYK	**Kaneyama**	**1.44**	**253**	P	Pn	06 55 11.3	+0.2
JOU	**Okura**	**1.51**	**230**	P	Pn	06 55 12.0	0.0
ERM	**Erimo**	**2.77**	**16**	*ce*P	Pn	06 55 30.8	+1.5
ERM				pmax	pmax		
	comp=Z,265nm,1.0s						
ERM	**Erimo**	**2.77**	**16**	*e*Pn	Pn	06 55 31.0	+1.7
ERM				*e*Sn	Sn	06 56 04.7	+3.1
MJAR	**Matsushiro Arr**	**4.18**	**229**	P	Pn	06 55 51.0	+2.3
	comp=Z,21nm,0.3s,baz=36,slow=11,SNR=180						
MJAR				LR	LR	06 57 35.6	
	comp=Z,1μm,21.3s,baz=60,slow=41						
MJAR	**Matsushiro Arr**	**4.18**	**229**	P	Pn	06 55 51.0	+2.3
MJAR				pmax	pmax		
	comp=Z,21nm,0.3s						
MJAR				MLR	MLR		
	comp=Z,1μm,21.3s						
MAJO	**Matsushiro**	**4.18**	**229**	*i* P	Pn	06 55 50.7	+2.1
MAJO	**Matsushiro**	**4.18**	**229**	*e*Pn	Pn	06 55 50.9	+2.2
MAT	**Matsushiro**	**4.18**	**229**	P	Pn	06 55 50.5	+1.9
MAT				*e*S	Sn	06 56 42.4	+6.2
ASAJ	**Asahikawa**	**4.78**	**4**	P	Pn	06 55 58.0	+1.3
	comp=Z,11nm,0.3s,baz=213,slow=10,SNR=20						
ASAJ				S	Sn	06 56 52.4	+1.6
	comp=Z,15nm,0.3s,baz=234,slow=18,SNR=3.4						
ASAJ	**Asahikawa**	**4.78**	**4**	*e*Pn	Pn	06 55 58.4	+1.7
ASAJ				S	Sn	06 56 52.4	+1.6
YUK	**Yuzh-Kuril'sk**	**5.45**	**30**	*i* P	Pn	06 56 07.3	+1.3
YUK				*i* S	Sn	06 57 05.4	-2.0
YUK				pmax	pmax		
	comp=Z,526nm,0.4s						
YUK				pmax	pmax		
	comp=N,151nm,0.3s						
YUK				pmax	pmax		
	comp=E,160nm,0.4s						
YUK				MLR	MLR		
	comp=Z,1μm,8.0s						
SHO	**Shikotan**	**5.73**	**36**	*i* P	Pn	06 56 09.2	-0.6
SHO				*i* S	Sn	06 57 09.5	-4.7
SHO				pmax	pmax		
	comp=Z,159nm,0.5s						
JHJ2	**Mitsune**	**6.50**	**197**	*e*Pn	Pn	06 56 19.9	-0.6
JHJ	**Hachijo jima 2**	**6.50**	**198**	P	Pn	06 56 20.1	-0.4
	comp=Z,61nm,0.3s,baz=323,slow=22,SNR=11						
JHJ				S	Sn	06 57 29.0	-4.3
	comp=Z,117nm,0.3s,baz=69,slow=18,SNR=7.3						
KUR	**Kuril'sk**	**7.25**	**34**	*e*P	Pn	06 56 33.1	+2.3
KUR				*e*S	Sn	06 57 48.6	-3.1
KUR				pmax	pmax		
	comp=N,35nm,0.4s						
KUR				pmax	pmax		
	comp=E,36nm,0.4s						
KUR				pmax	pmax		
	comp=Z,79nm,0.4s						
KUR				smax	smax		
	comp=N,132nm,0.6s						
KUR				smax	smax		
	comp=E,267nm,0.6s						
YSS	**Yuzh-Sakhalins**	**7.62**	**3**	*e*P	Pn	06 56 36.3	+0.6
YSS				*e*S	Sn	06 57 56.9	-3.7
YSS				pmax	pmax		
	comp=Z,70nm,1.1s						
YSS				MLR	MLR		
	comp=Z,1μm,18.0s						
YSS				MLR	MLR		
	comp=N,800nm,15.0s						
YSS				MLR	MLR		
	comp=E,800nm,11.0s						
YSS	**Yuzh-Sakhalins**	**7.62**	**3**	*e*Pn	Pn	06 56 37.7	+2.0
MSHR	**Mys Shultsa**	**8.91**	**295**	*i* P	Pn	06 56 51.9	-1.5
USRK	**Ussuriysk Ar.**	**8.99**	**306**	P	Pn	06 56 55.5	+1.0
	comp=E,2.9nm,0.3s,baz=116,slow=13,SNR=87						
USRK				LR	LR	07 00 06.9	
	comp=E,2μm,21.4s,baz=107,slow=36						
HABR	**Khabarovsk**	**10.45**	**333**	*e*P	Pn	06 57 11.8	-2.6
HABR				*e*S	Sn	06 59 05.2	-4.8
HABR				pmax	pmax		
	comp=N,29nm,2.5s						
HABR				pmax	pmax		
	comp=E,50nm,2.5s						
HAB

comp=Z,0.2nm,0.3s,baz=147,slow=14,SNR=7.3
KLR LR LR 07 02 26.8
comp=Z,1µm,18.9s,baz=133,slow=37
CN2 Changchun 13.26 295 *e*P **P 06 57 57.0 -4.5**
CN2 *es*P sP 06 58 10.5
CN2 *e*S **Sn 07 00 24.5 +5.8**
CN2 pmax pmax
comp=Z,20nm,1.2s
CN2 pmax pmax
comp=Z,500nm,3.0s
CN2 LR LR
comp=Z,400nm,18.0s
CN2 LR LR
comp=Z,600nm,18.0s
CN2 LR LR
comp=Z,600nm,20.0s
NKL Nikolayevsk 13.84 356 *e*P **P 06 58 04.5 -3.4**
NKL MLR MLR
comp=N,300nm,15.0s
NKL MLR MLR
comp=Z,350nm,15.0s
DL2 Dalian 15.92 275 P **Pn 06 58 28.3 +0.2**
DL2 sP **pP 06 58 43.0 +1.2**
DL2 S **Sn 07 01 25.0 +1.5**
DL2 pmax pmax
comp=Z,110nm,1.2s
DL2 LR LR
comp=Z,570nm,17.9s
DL2 LR LR
comp=Z,560nm,17.7s
DL2 LR LR
comp=Z,750nm,25.4s
PETK Petropavlovsk- 17.42 33 P **Pn 06 58 45.2 -1.7**
comp=Z,0.2nm,0.3s,baz=232,slow=8.4,SNR=3.6
PETK LR LR 07 06 25.7
comp=Z,189nm,18.2s,baz=218,slow=40
HIA Hailar 18.78 309 *e*P **P 06 59 00.3 -2.4**
HIA pmax pmax
comp=Z,54nm,1.3s
HIA Hailar 18.78 309 *e*P **P 06 59 00.2 -2.4**
comp=Z,54nm,1.3s
BJI Beijing 19.97 280 P **P 06 59 13.5 -2.2**
BJI S **S 07 02 52.5 -5.2**
BJI pmax pmax
comp=Z,18nm,0.9s
BJI LR LR
comp=Z,140nm,10.6s
BJI LR LR
comp=Z,310nm,21.0s
BJI LR LR
comp=Z,570nm,30.1s
BJT Baijiatuau 19.98 280 *e*P **P 06 59 13.5 -2.3**
BJT pmax pmax
comp=Z,44nm,0.9s
BJT Baijiatuau 19.98 280 *e*P **P 06 59 13.5 -2.3**
comp=Z,44nm,0.9s
TIA Tai'an 19.99 269 ⇓P **P 06 59 15.0 -1.0**
TIA S **S 07 02 50.5 -7.8**
TIA pmax pmax
comp=Z,30nm,1.0s
TIA pmax pmax
comp=Z,240nm,2.7s
TIA LR LR
comp=Z,370nm,16.0s
TIA LR LR
comp=Z,500nm,20.2s
TIA LR LR
comp=Z,600nm,30.4s
NJ2 Nanjing 20.22 256 *e*P **P 06 59 17.0 -1.5**
NJ2 pmax pmax
comp=Z,29nm,0.5s
CLNS Chul'man 20.84 333 *e*P **P 06 59 24.7 -0.3**
CLNS pmax pmax
comp=N,20nm,0.9s
CLNS pmax pmax
comp=Z,27nm,0.9s
CLNS pmax pmax
comp=E,9.0nm,1.0s
MA2 Magadan 20.98 12 P **P 06 59 27.1 +0.7**
comp=E,40nm,0.7s,baz=222,slow=9.3,SNR=25
MA2 LR LR 07 07 51.5
comp=E,157nm,20.2s,baz=232,slow=37
YOJ Yonaguni jima 21.93 233 *e*P **P 06 59 36.8 -0.1**
YOJ pmax pmax
comp=Z,279nm,1.6s
YOJ Yonaguni jima 21.93 233 *e*P **P 06 59 36.8 -0.1**
comp=Z,279nm,1.6s
YHNB Yeheng 22.81 236 *e*P **P 06 59 44.0 -2.5**
comp=Z,80nm,1.5s
NACB Ninganchiao 23.02 235 *e*P **P 06 59 46.0 -2.5**
comp=Z,23nm,0.7s
HHC Hu-ho-hao-te 23.38 284 *e*P **P 06 59 52.5 +0.5**
HHC S **S 07 03 58.0 -3.6**
HHC pmax pmax
comp=Z,39nm,1.0s
HHC pmax pmax
comp=Z,70nm,6.2s
HHC LR LR
comp=Z,1µm,18.1s
HHC LR LR
comp=Z,2µm,17.3s
HHC LR LR
comp=Z,2µm,19.4s
SSLB Suanglung 23.71 235 *e*P **P 06 59 53.0 -2.1**
comp=Z,25nm,0.8s
YULB Yu-li 23.78 234 *e*P **P 06 59 53.9 -1.9**
comp=Z,21nm,0.9s
YAK Yakutsk 23.95 346 P **P 06 59 55.6 -1.4**
comp=Z,70nm,0.6s,baz=118,slow=3.1,SNR=13
YAK LR LR 07 09 51.6
comp=Z,320nm,18.6s,baz=152,slow=38
YAK Yakutsk 23.95 346 *e*P **P 06 59 55.9 -1.1**
YAK *e**PP **pP 07 00 10.0 +1.0**
YAK *e* 07 00 23.3
YAK *e* 07 03 38.4
YAK *e*S **S 07 04 04.7 -5.5**
YAK pmax pmax
comp=N,52nm,1.3s
YAK pmax pmax
comp=Z,78nm,0.8s
YAK pmax pmax
comp=E,17nm,1.1s
YAK pmax pmax
comp=Z,36nm,1.1s
YAK pmax pmax
comp=N,66nm,1.5s
YAK pmax pmax
comp=E,49nm,1.4s
YAK smax smax
comp=E,185nm,2.9s
YAK smax smax
comp=N,281nm,2.7s
YAK Yakutsk 23.95 346 *e*P **P 06 59 56.5 -0.5**
comp=N,87nm,0.6s
TWG Pinlang 24.33 234 *e*P **P 07 00 01.1 +0.2**
comp=N,199nm,0.8s
SEY Seymchan 24.41 11 P **P 07 00 02.5 +1.2**
comp=N,24nm,1.1s,baz=203,slow=7.8,SNR=39
SEY Seymchan 24.41 11 *ce*P **P 07 00 02.1 +0.9**
GUMO Guam 25.77 174 LR LR 07 10 19.8
comp=N,103nm,21.6s,baz=40,slow=36
BOD Bodaibo 25.92 325 *e*P **P 07 00 13.9 -1.0**
BOD pmax pmax
comp=Z,36nm,1.2s
ULN Ulaanbaatar 26.60 300 *ce*P **P 07 00 19.3 -2.1**
ULN pmax pmax
comp=Z,4.0nm,1.0s
ULN Ulaanbaatar 26.60 300 *e*P **P 07 00 22.1 +0.7**
comp=Z,7.4nm,0.8s
SONM Songino Array 27.04 300 LR LR 07 11 38.2
comp=Z,560nm,19.0s,baz=88,slow=37
XAN Xi'an 27.05 269 P **P 07 00 25.0 -0.5**
XAN pP pP 07 00 35.0 -2.6
XAN S **S 07 04 51.3 -8.9**
XAN pmax pmax
comp=Z,15nm,0.8s
XAN pmax pmax
comp=Z,63nm,7.7s
XAN LR LR
comp=Z,210nm,21.8s
XAN LR LR
comp=Z,290nm,25.4s
ENH Enshi 28.17 261 *e*P **P 07 00 34.5 -1.0**
comp=Z,32nm,0.8s
H11N2 WAKE ISLAND Hy 28.94 125 T T 07 31 09.1
baz=318,slow=75
H11N1 WAKE ISLAND Hy 28.95 125 T T 07 31 08.2
baz=318,slow=75,SNR=9033
H11N3 WAKE ISLAND Hy 28.95 125 T T 07 31 10.4
baz=318,slow=75
TLY Talaya 29.30 308 P **P 07 00 45.0 -0.4**
comp=Z,8.0nm,0.8s,baz=94,slow=7.8,SNR=12
TLY pP **sP 07 01 01.9 -1.0**
comp=Z,7.1nm,0.7s,baz=125,slow=6.0,SNR=6.3
TLY LR LR 07 13 03.0
comp=Z,558nm,19.0s,baz=112,slow=37
TLY Talaya 29.30 308 *e*P **P 07 00 44.7 -0.6**
TLY *e* 07 01 03.0
TLY *e*SS SS 07 07 30.7 -10
TLY pmax pmax
comp=Z,20nm,1.3s
TLY MLR MLR
comp=Z,548nm,19.0s
TLY Talaya 29.30 308 *e*P **P 07 00 45.2 -0.1**
comp=Z,17nm,1.0s
TLY pP **sP 07 01 01.9 -1.0**
ZAK Zakamensk 29.34 305 *e*P **P 07 00 44.0 -1.8**
ZAK pmax pmax
comp=Z,9.0nm,1.2s
H11S1 WAKE ISLAND Hy 29.73 127 T T 07 32 16.6
baz=319,slow=76,SNR=654
H11S3 WAKE ISLAND Hy 29.73 127 T T 07 32 22.1
baz=319,slow=76,SNR=28
H11S2 WAKE ISLAND Hy 29.74 127 T T 07 32 09.0
baz=319,slow=76,SNR=253
LZH Lanzhou 30.31 276 *e*P **P 07 00 58.0 +3.4**
LZH pP sP 07 01 12.3 +0.1
LZH sP pP 07 01 16.3 +10
LZH SS SS 07 07 29.0 -33
LZH pmax pmax
comp=Z,29nm,1.1s
LZH pmax pmax
comp=Z,130nm,4.5s
LZH LR LR
comp=Z,300nm,11.2s
LZH LR LR
comp=Z,350nm,10.6s
LZH LR LR
comp=Z,430nm,13.4s
BILL Bilibino 31.65 17 ⇓*i*P **P 07 01 06.8 +1.0**
BILL *i* 07 01 23.8
BILL pmax pmax
comp=Z,7.0nm,1.0s
BILL MLR MLR
comp=Z,117nm,20.0s
BILL Bilibino 31.65 17 *e*P **P 07 01 06.4 +0.6**
comp=Z,16nm,1.0s
GYA Guiyang 32.22 257 ⇑*i*P **P 07 01 10.0 -1.4**
GYA pP sP 07 01 27.5 -1.6
GYA PP **PP 07 02 22.0 -2.8**
GYA PcP **PcP 07 04 01.8 +2.6**
GYA S **S 07 06 25.5 +3.9**
GYA sS sS 07 06 44.5 +2.5
GYA ScP **ScP 07 07 40.0 +1.0**
GYA SS **SnSn 07 08 18.5 +2.8**
GYA ScS **ScS 07 11 38.3 +0.1**
GYA pmax pmax
comp=Z,40nm,1.0s
GYA pmax pmax
comp=Z,130nm,5.8s
GYA LR LR
comp=Z,620nm,16.4s
GYA LR LR
comp=Z,580nm,17.2s
GYA LR LR
comp=Z,630nm,16.6s
CD2 Chengdu 32.30 267 P **P 07 01 12.0 0.0**
CD2 pP pP 07 01 24.5 +0.3
CD2 S **S 07 06 22.5 0.0**
CD2 sS sS 07 06 44.3 +1.3
CD2 pmax pmax
comp=Z,20nm,0.7s
CD2 pmax pmax
comp=Z,120nm,4.7s
CD2 LR LR
comp=Z,230nm,13.7s
CD2 LR LR
comp=Z,310nm,13.2s
GTA Gaotai 32.49 284 *e*P **P 07 01 13.5 -0.2**
GTA pP pP 07 01 25.5 -0.4
GTA sP sP 07 01 31.3 0.0
GTA PcP **PcP 07 04 00.8 +1.1**
GTA S **S 07 06 24.0 -1.5**
GTA sS sS 07 06 44.0 -1.9
GTA SS **SnSn 07 08 21.3 -0.5**
GTA pmax pmax
comp=Z,7.0nm,1.2s
GTA pmax pmax
comp=Z,59nm,5.0s
GTA LR LR
comp=Z,300nm,20.0s
GTA LR LR
comp=Z,530nm,18.5s
GTA LR LR
comp=Z,580nm,18.5s
TIXI Tiksi 33.07 352 *di*P **P 07 01 17.2 -1.0**
TIXI pmax pmax
comp=Z,13nm,1.1s
TIXI Tiksi 33.07 352 *e*P **P 07 01 17.6 -0.6**
comp=Z,10nm,1.0s
QIZ Qiongzhong 34.43 243 P **P 07 01 32.0 +1.4**
QIZ S **S 07 06 58.8 +3.1**
QIZ pmax pmax
comp=Z,5.0nm,1.3s
QIZ LR LR
comp=Z,70nm,20.5s
QIZ LR LR
comp=Z,71nm,19.3s
KMI Kunming 35.92 259 P **P 07 01 43.0 -0.6**
KMI pP sP 07 01 58.8 -2.5
KMI sP pP 07 02 04.8 +8.9
KMI PP **PP 07 03 07.8 +2.0**
KMI S **S 07 07 16.5 -2.4**
KMI sS sS 07 07 40.0 +0.6
KMI SS **SnSn 07 09 42.0 -3.4**
KMI pmax pmax
comp=Z,38nm,1.2s
KMI pmax pmax
comp=Z,120nm,4.3s
KMI LR LR
comp=Z,190nm,16.9s
KMI LR LR
comp=Z,250nm,16.5s
KMI LR LR
comp=Z,280nm,22.6s
TNA Tin City 38.57 31 *e*P **P 07 02 07.2 +1.9**
comp=Z,25nm,1.0s
MYLDM Lahad Datu 40.17 218 *e*P **P 07 02 20.9 +1.8**
comp=Z,37nm,1.2s
WMQ Urumqi 40.34 295 P **P 07 02 21.3 +0.8**
WMQ pP pP 07 02 33.8 +0.9
WMQ sP sP 07 02 38.3 0.0
WMQ PcP **PcP 07 04 23.5 +0.4**
WMQ S **S 07 08 26.5 +1.4**
WMQ pmax pmax
comp=Z,30nm,1.0s
WMQ pmax pmax
comp=Z,35nm,4.0s
TNTI Ternate 40.70 203 *e*P **P 07 02 21.3 -2.2**
comp=Z,121nm,0.4s
ZALV Zalesovo Beam 40.81 310 P **P 07 02 24.0 -0.1**
comp=Z,12nm,0.5s,baz=87,slow=7.8,SNR=72
ZALV pP **sP 07 02 41.2 -0.7**
comp=Z,71nm,0.7s,baz=93,slow=7.8,SNR=26
ZALV PcP **PcP 07 04 24.2 -0.1**
comp=Z,2.4nm,0.4s,baz=95,slow=3.2,SNR=4.8
ZALV LR LR 07 20 06.4
comp=Z,524nm,18.3s,baz=68,slow=37
NRIK Noril'sk 41.42 334 P **P 07 02 28.4 -0.5**
comp=Z,3.9nm,0.5s,baz=106,slow=9.3,SNR=12
NRIK LR LR 07 20 40.3
comp=Z,476nm,20.3s,baz=112,slow=38
CHTO Chiang Mai 42.44 254 *e*P **P 07 02 37.8 -0.1**
CHTO pmax pmax
comp=Z,17nm,1.0s
CHTO Chiang Mai 42.44 254 *e*P **P 07 02 37.8 -0.1**
comp=Z,17nm,1.0s
LSA Lhasa 42.60 273 *e*P **P 07 02 40.7 +1.0**
LSA pmax pmax
comp=Z,23nm,1.2s
LSA Lhasa 42.60 273 *e*P **P 07 02 40.6 +1.0**
comp=Z,23nm,1.2s
CM31 Chiang Mai Arr 42.66 253 *e*P **P 07 02 39.8 +0.1**
CMAR Chiang Mai Arr 42.66 253 P **P 07 02 39.7 0.0**
comp=Z,2.2nm,0.3s,baz=41,slow=6.8,SNR=10
CMAR LR LR 07 19 41.9
comp=Z,98nm,20.0s,baz=47,slow=35
CMAR Chiang Mai Arr 42.66 253 P **P 07 02 39.7 0.0**
CMAR pmax pmax
comp=Z,3.0nm,0.4s
CMAR MLR MLR
comp=Z,98nm,20.0s
CM01 Chiang Mai Arr 42.67 253 *e*P **P 07 02 39.5 -0.3**
MRSI Marisa 42.87 210 P **P 07 02 42.5 +1.2**
comp=Z,27nm,1.1s,comp=Z,2µm
FAKI Fak Fak 43.03 195 *e*P **P 07 02 42.5 -0.1**
comp=Z,52nm,1.5s
TT01 Tatalina 43.20 36 *e*P **P 07 02 46.5 +3.0**
TTA Tatalina 43.21 36 *e*P **P 07 02 46.8 +3.1**
TTA pmax pmax
comp=Z,6.0nm,1.0s
TTA Tatalina 43.21 36 *e*P **P 07 02 46.8 +3.1**
comp=Z,6.1nm,1.0s
SVW2 Sparrevohn 43.35 39 *e*P **P 07 02 47.6 +2.8**
comp=Z,9.7nm,1.0s
MK01 Makanchi Array 43.40 300 *e*P **P 07 02 45.1 -0.3**
MK31 Makanchi Array 43.41 300 *i*P **P 07 02 44.6 -0.8**
MK31 pmax pmax
comp=Z,23nm,1.0s
MK31 Makanchi Array 43.41 300 *e*P **P 07 02 45.2 -0.2**
MKAR Makanchi Array 43.41 300 P **P 07 02 44.8 -0.6**
comp=Z,11nm,0.8s,baz=86,slow=9.8,SNR=60
MKAR pP **sP 07 03 02.3 -1.1**
comp=Z,30nm,0.8s,baz=84,slow=8.8,SNR=21
MKAR LR LR 07 21 26.9
comp=Z,296nm,21.2s,baz=61,slow=37
MKAR Makanchi Array 43.41 300 *i*P **P 07 02 45.0 -0.4**
MKAR pmax pmax
comp=Z,11nm,0.8s
MKAR Makanchi Array 43.41 300 *e*P **P 07 02 45.2 -0.2**
MKAR pP **sP 07 03 02.2 -1.1**
MAKZ Makanchi 43.61 300 P **P 07 02 46.7 -0.4**
MAKZ pmax pmax
comp=Z,42nm,1.5s
MSAI Masohi 44.19 199 P P 07 03 02.8 +11
RSO Redoubt South 44.75 40 *e*P **P 07 02 59.0 +2.8**
PPLA Purkeypile 44.96 36 *e*P **P 07 03 00.5 +2.7**
comp=Z,29nm,1.4s
KURK Kurchatov 44.98 306 P **P 07 02 57.5 -0.4**
KURK pmax pmax
comp=Z,107nm,1.0s
KURK Kurchatov 44.98 306 *e*P **P 07 02 57.4 -0.4**
comp=Z,94nm,0.9s
CAST Castle Rocks 45.01 35 *e*P **P 07 03 00.8 +2.9**
comp=Z,24nm,1.5s
KDAK Kodiak Island 45.02 43 *i*P **P 07 02 59.5 +1.5**
KDAK Kodiak Island 45.02 43 *e*P **P 07 03 00.8 +2.8**
SPU Mount Spurr 45.06 39 *e*P **P 07 03 01.1 +2.6**
BPAW Bear Paw Mtn. 45.49 34 *e*P **P 07 03 04.3 +2.5**
comp=Z,12nm,1.2s
KTH Kantishna Hill 45.52 35 *e*P **P 07 03 04.8 +2.7**
comp=Z,36nm,1.3s
MLY Manley 45.60 33 *e*P **P 07 03 05.4 +2.7**
comp=Z,14nm,1.0s
TRF Thorofare Moun 45.81 35 *e*P **P 07 03 07.5 +2.9**
comp=Z,20nm,1.3s
COLD Coldfoot 45.86 30 *e*P **P 07 03 07.1 +2.4**
comp=Z,14nm,1.1s
PDGK Podgornoye 46.23 296 P **P 07 03 06.7 -1.1**
PDGK pmax pmax
comp=Z,43nm,1.3s
MCK McKinley 46.41 35 *e*P **P 07 03 10.9 +1.9**
MCK pmax pmax
comp=Z,12nm,1.0s
MCK McKinley 46.41 35 *e*P **P 07 03 10.9 +1.9**
comp=Z,12nm,1.0s
SEW Seward 46.42 40 *e*P **P 07 03 11.2 +2.1**
comp=Z,13nm,1.0s
PMR Palmer 46.44 38 *e*P **P 07 03 10.4 +1.1**
PMR pmax pmax
comp=Z,8.0nm,0.9s
PMR Palmer 46.44 38 *e*P **P 07 03 10.4 +1.1**
comp=Z,8.2nm,0.9s
RND Reindeer 46.46 35 *e*P **P 07 03 11.2 +1.7**
RND pmax pmax
comp=Z,13nm,1.1s
RND Reindeer 46.46 35 *e*P **P 07 03 11.2 +1.7**
comp=Z,13nm,1.1s
MDM Murphy Dome 46.66 33 *e*P **P 07 03 13.1 +2.1**
comp=Z,18nm,1.0s
WRH Wood River Hil 46.74 34 *e*P **P 07 03 13.5 +1.9**
comp=Z,12nm,1.2s
SML Sawmill 46.81 38 *e*P **P 07 03 14.2 +2.0**
SML pmax pmax
comp=Z,17nm,0.8s
SML Sawmill 46.81 38 *e*P **P 07 03 14.2 +2.0**
comp=Z,16nm,0.8s
COLA College 46.83 33 ⇓*e*P **P 07 03 13.9 +1.7**
COLA pmax pmax
comp=Z,6.0nm,1.0s
COLA College 46.83 33 *e*P **P 07 03 14.7 +2.4**
comp=Z,12nm,0.6s
CCB Clear Creek Bu 46.86 34 *e*P **P 07 03 14.2 +1.7**
comp=Z,8.2nm,1.1s
DHY Denali Highway 47.15 36 *e*P **P 07 03 17.2 +2.2**
comp=Z,9.4nm,1.0s
IL1 Eielson Array 47.25 33 *e*P **P 07 03 16.5 +1.0**
ILAR Eielson Array 47.25 33 P **P 07 03 16.8 +1.2**
comp=Z,5.7nm,0.7s,baz=269,slow=6.3,SNR=76
ILAR LR LR 07 25 00.2
comp=Z,67nm,19.9s,baz=272,slow=38
ILB Eielson Array 47.25 33 *e*P **P 07 03 17.1 +1.5**
SCM Sheep Creek Mo 47.28 38 *e*P **P 07 03 18.0 +2.1**
SCM pmax pmax
comp=Z,16nm,1.0s
SCM Sheep Creek Mo 47.28 38 *e*P **P 07 03 18.0 +2.1**
comp=Z,16nm,1.0s
GUN Gumba 47.52 274 *e*P **P 07 03 18.4 -0.2**
comp=Z,123nm,0.8s
KSM Kuching 47.56 226 *e*P **P 07 03 18.9 +0.3**
comp=Z,20nm,0.9s
FYU Fort Yukon 47.83 31 *e*P **P 07 03 23.2 +3.2**
comp=Z,28nm,1.0s
KLU Klutina 47.98 38 *e*P **P 07 03 23.4 +2.0**
comp=Z,14nm,0.9s
KKN Kakani 48.05 274 *e*P **P 07 03 22.3 -0.2**
comp=Z,86nm,0.8s
PKIN Phulchoki 48.06 274 *e*P **P 07 03 22.5 -0.2**
comp=Z,17nm,0.5s
DIV Divide 48.10 38 *e*P **P 07 03 24.8 +2.5**
comp=Z,22nm,1.1s
EYAK Cordova Ski Ar 48.19 39 *e*P **P 07 03 25.4 +2.6**
comp=Z,15nm,0.7s
DMN Daman 48.27 274 *e*P **P 07 03 23.8 -0.5**
comp=Z,47nm,0.9s
GKN Gorkha 48.44 275 *e*P **P 07 03 24.9 -0.6**
comp=Z,89nm,0.9s
DOT Dot Lake 48.58 35 *e*P **P 07 03 26.9 +1.1**
comp=Z,26nm,1.2s
BMRM Bremner River 48.69 38 *e*P **P 07 03 29.2 +2.5**
comp=Z,21nm,0.9s
KAPI Kappang 48.74 210 *e*P **P 07 03 28.9 +1.3**
comp=Z,24nm,1.1s
RAGM Ragged Mountai 48.74 39 *e*P **P 07 03 29.9 +2.7**
comp=Z,13nm,0.8s
MENT Mentasta 48.82 36 *e*P **P 07 03 30.2 +2.5**
comp=Z,17nm,1.1s
TKM2 Tokmak 2 49.06 297 P **P 07 03 30.1 0.0**
TKM2 pmax pmax
comp=Z,55nm,1.1s
TKM2 Tokmak 2 49.06 297 *e*P **P 07 03 30.4 +0.3**
comp=Z,79nm,0.9s
KOLN Koldanda 49.35 275 *e*P **P 07 03 32.5 0.0**
comp=Z,34nm,0.6s
BBKI Banjar Baru 49.46 217 P **P 07 03 33.1 0.0**
comp=Z,42nm,0.7s,comp=Z,8µm
BRVK Borovoye 49.51 311 *i*P **P 07 03 32.9 -0.2**
BRVK pmax pmax
comp=Z,16nm,0.9s
BRVK Borovoye 49.51 311 *e*P **P 07 03 33.1 0.0**
comp=Z,29nm,1.1s
PYUN Piuthan 49.66 276 *e*P **P 07 03 34.8 -0.1**
comp=Z,195nm,1.0s
EGAK Eagle 49.69 33 *e*P **P 07 03 35.8 +1.6**
comp=Z,7.1nm,0.8s
BALM Baldy 49.76 38 *e*P **P 07 03 35.6 +0.5**
BALM pmax pmax
comp=Z,9.0nm,0.9s
BALM Baldy 49.76 38 *e*P **P 07 03 35.6 +0.5**
comp=Z,8.9nm,0.9s

FRU	Bishkek	49.76	297⇑	*i*P	P	07 03 34.0	-1.3
FRU				*i*		07 03 52.0	
FRU				pmax	pmax		
	comp=Z,60nm,2.0s						
AAK	Ala-Archa	49.92	297	P	P	07 03 36.1	-0.5
AAK				pmax	pmax		
	comp=Z,15nm,1.0s						
AAK	Ala-Archa	49.92	297	*e*P	P	07 03 36.4	-0.2
	comp=Z,24nm,0.9s						
KSH	Kashi	50.01	293	P	P	07 03 41.5	+4.2
KSH				*e*sP	sP	07 03 58.5	+3.2
KSH				*e*PcP	PcP	07 04 59.8	+3.1
KSH				*e*PP	PP	07 05 36.8	+4.5
KSH				S	S	07 10 46.3	+1.4
KSH				SS	SS	07 14 19.0	+1.1
KSH				pmax	pmax		
	comp=Z,15nm,1.1s						
KSH				pmax	pmax		
	comp=Z,160nm,5.4s						
KSH				LR	LR		
	comp=Z,420nm,11.7s						
KSH				LR	LR		
	comp=Z,220nm,10.2s						
KSH				LR	LR		
	comp=Z,120nm,9.1s						
EKS2	Erkin-Say	50.40	297	*e*P	P	07 03 40.1	-0.1
EKS2				pmax	pmax		
	comp=Z,25nm,0.9s						
EKS2	Erkin-Say	50.40	297	*e*P	P	07 03 40.1	-0.1
	comp=Z,25nm,0.9s						
MYKOM	Kota Tinggi	51.10	233	*e*P	P	07 03 46.1	+0.6
	comp=Z,14nm,1.0s						
MNAS	Manas	51.34	297	P	P	07 03 47.2	-0.1
MNAS				pmax	pmax		
	comp=Z,46nm,0.8s						
SFK	Sufi-Kurgan	51.58	294	P	P	07 03 48.6	-0.6
SFK				pmax	pmax		
	comp=Z,34nm,1.3s						
KK31	Karatay Array	52.48	299	P	P	07 03 55.1	-0.5
KK31				pmax	pmax		
	comp=Z,19nm,0.9s						
KKAR	Karatay Array	52.48	299	*e*P	P	07 03 55.3	-0.3
KKAR	Karatay Array	52.48	299	*e*P	P	07 03 55.2	-0.3
SMLA	Simla	52.68	282	*i* P	P	07 03 56.6	-0.6
SMLA				*i* S	sP	07 04 14.4	-0.9
SMLA				*i* S	sP	07 04 14.8	-0.5
SMLA				AML	AML	07 04 16.7	
	comp=E,436nm,0.5s						
SMLA				AML	AML	07 04 16.7	
	comp=N,437nm,0.5s						
MTN	Manton Dam	52.92	193	*e*P	P	07 03 58.8	-0.2
	comp=N,18nm,1.2s						
SVE	Sverdlovsk	53.80	318*d*	*i*P	P	07 04 05.6	+0.5
SVE				pmax	pmax		
	comp=Z,68nm,0.9s						
PWJI	Pagerwojo	54.88	218	P	P	07 04 12.1	-1.2
	comp=Z,27nm,0.7s						
ARU	Arti	55.02	318*c*	*i*P	P	07 04 13.6	-0.3
ARU				*e**PP	sP	07 04 31.3	-0.8
ARU						07 05 14.2	
ARU						07 06 15.3	
ARU				S	S	07 11 51.8	-0.7
ARU				SS	SS	07 15 32.0	-4.1
ARU				pmax	pmax		
	comp=Z,59nm,1.0s						
ARU				MLR	MLR		
	comp=Z,475nm,18.0s						
ARU	Arti	55.02	318	*e*P	P	07 04 13.6	-0.3
	comp=Z,49nm,0.9s						
MDSI	Maura Dua	55.91	228	P	P	07 04 20.5	-0.3
	comp=Z,15nm,1.3s						
AB31	Akbulak array	56.90	309	P	P	07 04 26.8	-0.6
AB31				pmax	pmax		
	comp=Z,13nm,0.5s						
ABKAR	Akbulak array	56.90	309	*e*P	P	07 04 27.2	-0.3
KBL	Kabul	57.14	290	*e*P	P	07 04 29.2	-0.4
KBL				pmax	pmax		
	comp=Z,27nm,1.1s						
KBL	Kabul	57.14	290	*e*P	P	07 04 29.2	-0.4
	comp=Z,27nm,1.1s						
AKTO	Aktyubinsk	57.56	311	P	P	07 04 31.2	-1.0
AKTO				pmax	pmax		
	comp=Z,20nm,0.8s						
SPA0	Spitsbergen Ar	58.37	349	*e*P	P	07 04 37.8	+0.4
KBS	Kingsbay	58.48	350	*e*P	P	07 04 39.2	+1.1
KBS				pmax	pmax		
	comp=Z,24nm,0.9s						
KBS	Kingsbay	58.48	350	*e*P	P	07 04 39.2	+1.1
	comp=Z,24nm,0.9s						
HYB	Hyderabad	58.85	267	*i* P	P	07 04 41.0	-0.6
FITZ	Fitzroy Crossi	59.20	198	*e*P	P	07 04 43.9	+0.1
	comp=Z,13nm,1.2s						
WRAB	Tennant Creek	59.42	189	*e*P	P	07 04 44.0	-1.3
WRAB				pmax	pmax		
	comp=Z,7.0nm,0.7s						
WRAB	Tennant Creek	59.42	189	*e*P	P	07 04 44.0	-1.3
	comp=Z,7.3nm,0.7s						
WB2	Warramunga Arr	59.43	189	*e*P	P	07 04 44.9	-0.5
	comp=Z,13nm,1.0s						
WRA	Warramunga Arr	59.43	189	P	P	07 04 44.5	-0.8
	comp=Z,8.5nm,0.8s,baz=6.1,slow=6.9,SNR=70						
LVZ	Lovozero	60.24	335	*e*P	P	07 04 50.3	-0.1
LVZ				pmax	pmax		
	comp=Z,14nm,1.1s						
LVZ	Lovozero	60.24	335	*e*P	P	07 04 50.3	-0.1
	comp=Z,14nm,1.1s						
TMCR	Tamitsa	60.99	331	*e*P	P	07 04 55.3	-0.2
TMCR				pmax	pmax		
	comp=Z,52nm,1.2s						
KEV	Kevo	61.48	339	*e*P	P	07 04 58.7	-0.1
KEV				pmax	pmax		
	comp=Z,95nm,1.9s						
KEV	Kevo	61.48	339	*e*P	P	07 04 58.6	-0.1
	comp=Z,95nm,1.9s						
YKW3	Yellowknife Ar	61.49	31	*e*P	P	07 04 59.3	+0.3
	comp=Z,16nm,1.6s						
YKA	Yellowknife Ar	61.53	31	P	P	07 05 00.0	+0.8
	comp=Z,1.9nm,0.8s,baz=301,slow=6.6,SNR=41						
YKB5	Yellowknife Ar	61.53	31	*e*P	P	07 04 59.3	+0.1
ARA0	ARCESS Array S	62.03	339	*e*P	P	07 05 02.7	+0.1
ARCES	ARCESS Array B	62.03	339	P	P	07 05 02.2	-0.4
	comp=Z,6.9nm,0.9s,baz=48,slow=7.3,SNR=14						
ARCES				LR	LR	07 34 56.8	
	comp=Z,95nm,21.2s,baz=47,slow=39						
ARE0	ARCESS Array S	62.03	339	*e*P	P	07 05 03.0	+0.4
	comp=Z,16nm,1.1s						
KLMR	Klimovskoe	62.11	327	*e*P	P	07 05 01.2	-1.9
KLMR				*e*		07 07 16.8	
KLMR				pmax	pmax		
	comp=Z,25nm,1.2s						
AS01	Alice Springs	63.15	188	*e*P	P	07 05 09.9	-0.6
AS31	Alice Springs	63.16	188	*e*P	P	07 05 10.5	0.0
	comp=Z,1.6nm,0.6s						
ASAR	Alice Springs	63.16	188	P	P	07 05 10.1	-0.5
	comp=Z,5.1nm,0.8s,baz=11,slow=6.4,SNR=43						
ASAR				PKP2bc		07 34 12.9	
	comp=Z,0.8nm,0.9s,baz=220,slow=3.3,SNR=4.7						
GEYT	Alibeck	63.22	298	P	P	07 05 10.8	-0.3
	comp=Z,13nm,0.8s,baz=29,slow=3.4,SNR=11						
GEYT				pP	sP	07 05 28.2	-1.1
	comp=Z,8.2nm,0.7s,baz=45,slow=4.3,SNR=3.4						
GEYT				LR	LR	07 34 25.7	
	comp=Z,120nm,19.0s,baz=55,slow=38						
DAG	Danmarks Havn	63.52	355	*i* P	P	07 05 12.1	-0.2
	comp=Z,14nm,0.9s						
DAG	Danmarks Havn	63.52	355	*i* P	P	07 05 12.1	-0.2
DAG				pmax	pmax		
	comp=Z,11nm,0.9s						
MBWA	Marble Bar	63.73	203	*e*P	P	07 05 14.2	-0.2
	comp=Z,83nm,1.9s						
MOS	Moscow	65.73	323	*e*P	P	07 05 26.3	-0.7
MOS				*e*		07 05 44.4	
MOS				pmax	pmax		
	comp=Z,75nm,1.0s						
VRH	Novokhopyorsk	66.25	317	*e*P	P	07 05 29.4	-1.0
VRH				pmax	pmax		
	comp=Z,10.0nm,0.6s						
VRH				MLR	MLR		
	comp=Z,430nm,20.0s						
OBN	Obninsk	66.59	323*c*	*i*P	P	07 05 32.2	-0.3
OBN				*i*		07 05 50.8	
OBN				*i*		07 07 59.1	
OBN				pmax	pmax		
	comp=Z,49nm,1.2s						
OBN				MLR	MLR		
	comp=Z,239nm,16.0s						
LPSR	Galich'ya Gora	66.89	320	*e*P	P	07 05 34.1	-0.4
LPSR				pmax	pmax		
	comp=Z,10.0nm,0.9s						
LPSR				MLR	MLR		
	comp=Z,110nm,15.0s						
FIA1	FINESS Array S	67.03	332	*e*P	P	07 05 35.1	-0.1
	comp=Z,22nm,0.8s						
FINES	FINESS Array B	67.03	332	P	P	07 05 34.7	-0.5
	comp=Z,15nm,0.7s,baz=46,slow=8.2,SNR=61						
FINES				LR	LR	07 37 06.6	
	comp=Z,244nm,18.5s,baz=34,slow=38						
FINES	FINESS Array B	67.03	332	*i* P	P	07 05 35.0	-0.3
FINES				pmax	pmax		
	comp=Z,15nm,0.7s						
VSR	Storozhevoye	67.57	318	*e*P	P	07 05 38.0	-0.8
VSR				pmax	pmax		
	comp=Z,10.0nm,0.8s						
VSR				MLR	MLR		
	comp=Z,220nm,15.0s						
C09A	Chrisman Ranch	67.71	46	*e*P	P	07 05 41.9	+2.1
	comp=Z,33nm,1.7s						
NEW	Newport	68.09	45	*e*P	P	07 05 44.3	+2.1
NEW				pmax	pmax		
	comp=Z,7.0nm,1.0s						
NEW	Newport	68.09	45	*e*P	P	07 05 44.3	+2.1
	comp=Z,6.8nm,1.0s						
SUMG	Summit	68.37	0	*i* P	P	07 05 45.0	+1.0
	comp=Z,14nm,0.9s						
SUMG	Summit	68.37	0	*i* P	P	07 05 45.0	+1.0
SUMG				pmax	pmax		
	comp=Z,14nm,0.9s						
SUMG	Summit	68.37	0	*e*P	P	07 05 45.1	+1.0
	comp=Z,25nm,1.1s						
K05A	Summer Lake	69.05	52	*e*P	P	07 05 51.8	+3.3
	comp=Z,29nm,1.1s						
NCK	Nalchik	69.55	310⇑	*e*P	P	07 05 51.3	-0.1
NCK				pmax	pmax		
	comp=Z,54nm,0.5s						
ZEI	Tsey	69.77	309	*e*P	P	07 05 50.8	-2.2
ZEI				pmax	pmax		
	comp=Z,36nm,1.1s						
KIV	Kislovodsk	69.82	311	*i* P	P	07 05 53.6	+0.5
	SNR=5.6						
KIV	Kislovodsk	69.82	311*c*	*i*P	P	07 05 53.8	+0.7
KIV				pmax	pmax		
	comp=Z,77nm,1.0s						
KIV				MLR	MLR		
	comp=Z,111nm,18.0s						
KIV	Kislovodsk	69.82	311	*e*P	P	07 05 54.0	+0.8
	comp=Z,70nm,1.0s						
KBZ	Khabaz	69.83	310	P	P	07 05 53.2	+0.2
	comp=Z,20nm,1.0s,baz=63,slow=4.0,SNR=27						
KBZ				LR	LR	07 41 34.5	
	comp=Z,94nm,18.6s,baz=44,slow=40						
JTMT	Jette	69.94	44	*e*P	P	07 05 56.0	+2.2
NEY	Neytrino	70.21	310⇓	*i*P	P	07 05 55.2	-0.5
NEY				pmax	pmax		
	comp=Z,3.0nm,1.1s						
SWMT	Swartz Lake	70.23	44	*e*P	P	07 05 57.3	+1.7
MSO	Missoula	70.67	45	*e*P	P	07 05 59.6	+1.3
	comp=Z,6.6nm,0.9s						
GNI	Garni	70.78	306	P	P	07 05 59.9	+0.7
GNI	Garni	70.78	306	*e*P	P	07 05 59.6	+0.4
GNI				pmax	pmax		
	comp=Z,15nm,0.8s						
GNI	Garni	70.78	306	*e*P	P	07 05 59.6	+0.4
	comp=Z,15nm,0.8s						
AKH	Akhalkalaki	70.82	308⇑	*i*P	P	07 06 00.0	+0.6
STKA	Stephens Creek	70.87	180	P	P	07 05 58.2	-1.1
	comp=Z,0.9nm,0.5s,baz=296,slow=5.4,SNR=3.6						
NACGM	Naroch	71.11	327	*e*	P	07 06 01.0	+0.4
UOSS	Minazif	71.65	287	*e*P	P	07 06 04.2	-0.2
	comp=Z,1.6nm,0.9s						
FCC	Fort Churchill	71.68	27	*e*P	P	07 06 05.0	+1.0
FCC				pmax	pmax		
	comp=Z,10.0nm,1.0s						
FCC	Fort Churchill	71.68	27	*e*P	P	07 06 05.0	+1.0
	comp=Z,9.7nm,1.0s						
HATD	Hatta, Dubai	71.77	287	*i* P	P	07 06 05.2	0.0
	SNR=9.0						
HRY	Holter Researc	71.89	44	*e*P	P	07 06 07.9	+2.2
ASHO	Ashiyiah	71.91	287	*i* P	P	07 06 05.7	-0.3
	SNR=7.7						
NC405	NORSAR Array S	72.06	337	*e*P	P	07 06 06.5	+0.2
CMB	Columbia Colle	72.08	55	*e*P	P	07 06 07.9	+1.0
CMB				pmax	pmax		
	comp=Z,8.0nm,0.9s						
CMB	Columbia Colle	72.08	55	*e*P	P	07 06 07.9	+1.0
	comp=Z,7.7nm,0.9s						
NC303	NORSAR Array S	72.08	337	*e*P	P	07 06 06.5	+0.1
LRM	Limekiln Ridge	72.11	45	*e*P	P	07 06 08.8	+1.6
EGMT	Eagleton	72.17	42	*e*P	P	07 06 09.0	+1.7
	comp=Z,12nm,0.9s						
NC204	NORSAR Array S	72.22	338	*e*P	P	07 06 07.7	+0.4
NB201	NORSAR Array S	72.24	337	*e*P	P	07 06 07.3	0.0
NB2	NORSAR Subarra	72.27	337	P	P	07 06 07.2	-0.4
	comp=Z,13nm,0.8s,baz=38,slow=5.9						
NB2	NORSAR Subarra	72.27	337	P	P	07 06 07.2	-0.4
	baz=38,slow=5.9						
NOA	NORSAR Array B	72.27	337	P	P	07 06 07.5	-0.1
	comp=Z,8.2nm,0.7s,baz=38,slow=5.9,SNR=39						
NOA				LR	LR	07 40 33.5	
	comp=Z,124nm,21.7s,baz=35,slow=38						
DLMT	Dillon	72.31	46	*e*P	P	07 06 09.4	+1.1
	comp=Z,8.6nm,0.8s						
ANN	Anapa	72.34	314	*e*P	P	07 06 07.3	-0.9
ANN				pmax	pmax		
	comp=Z,26nm,1.1s						
NBO02	NORSAR Array S	72.37	337	*e*P	P	07 06 08.1	0.0
HLID	Hailey	72.39	48	*e*P	P	07 06 10.0	+1.2
	comp=Z,5.8nm,1.2s						
NBO00	NORSAR Array S	72.41	337	*e*P	P	07 06 08.4	0.0
NAO01	NORSAR Array S	72.53	337	*e*P	P	07 06 08.6	-0.5
BOZ	Bozeman (W)	72.67	45	*e*P	P	07 06 12.1	+1.7
BOZ				pmax	pmax		
	comp=Z,9.0nm,0.6s						
BOZ	Bozeman (W)	72.67	45	*e*P	P	07 06 12.1	+1.7
	comp=Z,8.7nm,0.6s						
AKASG	Malin Array Be	72.81	322	P	P	07 06 10.3	-0.7
	comp=Z,9.9nm,0.7s,baz=44,slow=6.7,SNR=53						
AKASG				LR	LR	07 41 08.0	
	comp=Z,93nm,19.7s,baz=35,slow=38						
AKASG	Malin Array Be	72.81	322	*i* P	P	07 06 10.5	-0.4
AKASG				pmax	pmax		
	comp=Z,9.0nm,0.6s						
AKBB	Malin Array Si	72.81	322	*e*P	P	07 06 10.7	-0.2
AKBB				pmax	pmax		
	comp=Z,18nm,0.9s						
AKBB	Malin Array Si	72.81	322	*e*P	P	07 06 10.7	-0.2
	comp=Z,18nm,0.9s						
KIEV	Kiev	72.83	322⇑	*i*P	P	07 06 10.5	-0.5
KIEV				pmax	pmax		
	comp=Z,20nm,0.9s						
KIEV	Kiev	72.83	322	*e*P	P	07 06 10.7	-0.3
	comp=Z,18nm,0.9s						
AK11	Malin Array Si	72.86	322	*e*P	P	07 06 10.7	-0.5
NV01	Mina Array Sit	73.16	54	*e*P	P	07 06 15.3	+1.8
NVAR	Mina Array Bea	73.16	54	P	P	07 06 15.3	+1.8
	comp=Z,2.9nm,0.7s,baz=284,slow=5.8,SNR=11						
QLMT	Earthquake Lak	73.29	45	*e*P	P	07 06 15.5	+1.3
GCMT	Greycliff	73.64	44	*e*P	P	07 06 18.0	+1.9
YMR	Madison River	73.65	45	*e*P	P	07 06 18.8	+2.5
	comp=Z,5.1nm,0.7s						
YFT	Old Faithful	73.86	45	*e*P	P	07 06 20.3	+2.8
	comp=Z,5.8nm,0.8s						
H17A	Grant Village	74.04	45	*e*P	P	07 06 22.4	+3.8
	comp=Z,8.8nm,0.8s						
IMW	Indian Meadow	74.15	46	*e*P	P	07 06 22.1	+2.8
	comp=Z,7.1nm,0.8s						
RLMT	Red Lodge	74.28	44	*e*P	P	07 06 21.5	+1.5
	comp=Z,34nm,1.7s						
MOOW	Moose Ponds	74.36	46	*e*P	P	07 06 22.7	+2.3
	comp=Z,9.6nm,1.3s						
LOHW	Long Hollow	74.52	46	*e*P	P	07 06 23.8	+2.4
	comp=Z,14nm,1.8s						
SNOW	Snow King Moun	74.53	46	*e*P	P	07 06 24.2	+2.7
	comp=Z,4.7nm,0.8s						
REDW	Red Top Meadow	74.54	46	*e*P	P	07 06 23.4	+1.9
	comp=Z,6.3nm,0.9s						
DGMT	Dagmar	74.68	39	*e*P	P	07 06 23.6	+1.6
	comp=Z,11nm,0.9s						
SORM	Soroca	74.96	321⇑	*i*P	P	07 06 23.1	-0.4
HWUT	Hardware Ranch	75.26	48	*e*P	P	07 06 27.4	+1.7
	comp=Z,15nm,1.3s						
TPNV	Topopah Spring	75.35	54	*e*P	P	07 06 27.2	+1.0
TPNV				pmax	pmax		
	comp=Z,11nm,1.0s						
TPNV	Topopah Spring	75.35	54	*e*P	P	07 06 27.2	+1.0
	comp=Z,11nm,1.0s						
DUG	Dugway, Tooele	75.42	50	*e*P	P	07 06 25.9	-0.7
DUG				pmax	pmax		
	comp=Z,24nm,1.5s						
DUG	Dugway, Tooele	75.42	50	*e*P	P	07 06 25.9	-0.7
	comp=Z,24nm,1.5s						
BW06	Boulder Array	75.65	46	*e*P	P	07 06 29.2	+1.2
	comp=Z,4.6nm,0.6s						
PD31	Pinedale Array	75.65	46	*e*P	P	07 06 29.4	+1.5
PDAR	Pinedale Array	75.65	46	P	P	07 06 29.1	+1.2
	comp=Z,3.1nm,0.7s,baz=277,slow=1.8,SNR=29						
TCUT	Toone Canyon	75.66	48	*e*P	P	07 06 28.9	+0.9
	comp=Z,26nm,1.2s						
LVV	L'vov	75.84	324	*e*P	P	07 06 28.4	-0.2
PSUT	Pine Spring	75.85	52	*e*P	P	07 06 30.1	+1.0
	comp=Z,13nm,1.3s						
NLU	North Lily Min	76.01	50	*e*P	P	07 06 31.7	+1.7
GSC	Goldstone, Bar	76.02	56	*e*P	P	07 06 30.9	+0.9
GSC	Goldstone, Bar	76.02	56	*e*P	P	07 06 30.9	+0.9
KWP	Kalwaria Pacla	76.58	324	*e*P	P	07 06 33.6	+0.8
KWP	Kalwaria Pacla	76.58	324⇑	*i*P	P	07 06 33.5	+0.8
RGN	Rugen	76.69	332	*e*P	P	07 06 34.9	+1.6
	comp=Z,450nm,1.6s						
BUR08	Bucovina Ar. S	76.83	322	*e*P	P	07 06 34.8	+0.4
BURAR	Bucovina Array	76.85	322⇑	*i*P	P	07 06 34.8	+0.4
MSU	Marysvale	76.88	51	*e*P	P	07 06 36.4	+1.4
MSU	Marysvale	76.88	51	*e*P	P	07 06 36.4	+1.4
TESR	Tescani	76.92	320⇑	*i*P	P	07 06 35.1	+0.3
CFR	Carcaliu	77.09	318⇓	*i*P	P	07 06 35.7	0.0
P17A	Butcher Ranch,	77.11	49	*e*P	P	07 06 38.6	+2.5
	comp=Z,16nm,1.0s						
LCMT	Little Creek M	77.19	53	*e*P	P	07 06 39.1	+2.5
	comp=Z,14nm,1.1s						
ULM	Lac du Bonnet	77.27	34	P	P	07 06 36.6	0.0
	comp=Z,6.5nm,0.8s,baz=293,slow=6.2,SNR=8.0						
ULM				LR	LR	07 43 08.3	
	comp=Z,31nm,18.3s,baz=344,slow=38						
ULM	Lac du Bonnet	77.27	34	*e*P	P	07 06 36.9	+0.3
ULM				pmax	pmax		
	comp=Z,8.0nm,0.9s						
ULM	Lac du Bonnet	77.27	34	*e*P	P	07 06 36.9	+0.3
	comp=Z,8.4nm,0.9s						
KOLS	Kolonicke sedl	77.28	324	*e*P	P	07 06 37.0	+0.3
KOLS				*e*		07 06 46.4	
KOLS				pmax	pmax		
	comp=Z,7.0nm,1.0s						
KOLS	Kolonicke sedl	77.28	324	*e*P	P	07 06 37.0	+0.3
KOLS				*e*		07 06 46.4	
P18A	Preston Nutter	77.30	49	*e*P	P	07 06 39.4	+2.0
	comp=Z,8.6nm,1.1s						
VRI	Vrincioaia	77.33	320⇑	*i*P	P	07 06 38.6	+1.5
STHS	Stebnicka Huta	77.39	325	*e*P	P	07 06 38.1	+0.7
STHS				pmax	pmax		
	comp=Z,9.0nm,0.9s						
STHS	Stebnicka Huta	77.39	325	*e*P	P	07 06 38.1	+0.7
K22A	Casper	77.40	45	*e*P	P	07 06 39.4	+1.6
	comp=Z,10.0nm,0.9s						
OJC	Ojcow	77.43	326	*e*P	P	07 06 38.1	+0.5
OJC	Ojcow	77.43	326	*e*P	P	07 06 38.1	+0.5
OJC				pmax	pmax		
	comp=Z,34nm,1.1s						
OJC	Ojcow	77.43	326	*e*P	P	07 06 38.1	+0.5
	comp=Z,34nm,1.1s						
SRU	San Rafael Swe	77.47	50	*e*P	P	07 06 40.2	+2.0
SRU				pmax	pmax		
	comp=Z,10.0nm,0.8s						
SRU	San Rafael Swe	77.47	50	*e*P	P	07 06 40.2	+2.0
	comp=Z,9.7nm,0.8s						
CRVS	Cervenica-Dubn	77.67	324	*e*P	P	07 06 39.5	+0.6
CRVS	Cervenica-Dubn	77.67	324	*e*P	P	07 06 39.5	+0.6
RSSD	Black Hills	77.73	42	*e*P	P	07 06 41.0	+1.4
RSSD				pmax	pmax		
	comp=Z,9.0nm,0.8s						
RSSD	Black Hills	77.73	42	*e*P	P	07 06 41.0	+1.4
	comp=Z,8.9nm,0.8s						
BR131	Keskin Array S	77.74	312	*e*P	P	07 06 39.7	0.0
BRTR	Keskin Array B	77.74	312	P	P	07 06 39.5	-0.1
	comp=Z,2.8nm,0.8s,baz=100,slow=4.4,SNR=21						
BRTR				pP	sP	07 06 58.6	+0.3
	comp=Z,2.1nm,0.5s,baz=70,slow=3.4,SNR=4.0						
BRTR				PP	PP	07 09 35.3	+0.4
	comp=Z,2.0nm,1.0s,baz=64,slow=7.0,SNR=4.2						
BRTR				LR	LR	07 45 27.3	
	comp=Z,74nm,19.0s,baz=50,slow=39						
BRTR	Keskin Array B	77.74	312	*i* P	P	07 06 39.5	-0.1
BRTR				pmax	pmax		
	comp=Z,4.0nm,1.0s						
NIE	Niedzica	77.81	325	*e*P	P	07 06 40.7	+1.0
DOPR	Dopca	77.92	320⇑	*i*P	P	07 06 42.3	+1.9
MLR	Muntele Rosu	77.98	320⇑	*i*P	P	07 06 41.8	+0.9
MLR	Muntele Rosu	77.98	320	*e*P	P	07 06 41.3	+0.4
MLR				pmax	pmax		
	comp=Z,19nm,1.4s						
MLR	Muntele Rosu	77.98	320	*e*P	P	07 06 41.3	+0.4
	comp=Z,18nm,1.4s						
O20A	White River Ci	78.13	48	*e*P	P	07 06 41.2	-0.7
	comp=Z,8.0nm,1.0s						
ANTO	Ankara	78.13	312	*e*P	P	07 06 41.8	0.0
ANTO	Ankara	78.13	312	*e*P	P	07 06 41.8	0.0
BR231	Keskin MP Arra	78.16	312	*e*P	P	07 06 39.6	-2.4
LANS	Liptovska Anna	78.37	326	*e*P	P	07 06 43.9	+1.1
LANS	Liptovska Anna	78.37	326	*e*P	P	07 06 43.9	+1.1
KECS	Kecovo	78.42	325	*e*P	P	07 06 42.9	-0.2
KECS				pmax	pmax		
	comp=Z,3.0nm,1.0s						
KECS	Kecovo	78.42	325	*e*P	P	07 06 42.9	-0.2
KSP	Ksiaz	78.43	328	*e*P	P	07 06 43.6	+0.5
Y12C	Blythe	78.46	56	*e*P	P	07 06 42.6	-1.0
	comp=Z,7.1nm,0.9s						
VOIR		78.47	320⇓	*i*P	P	07 06 44.3	+0.8
AGMN	Agassiz Nation	78.72	35	*e*P	P	07 06 45.2	+0.5
	comp=Z,6.0nm,0.9s						
ARR	Arges	78.72	320⇑	*i*P	P	07 06 46.3	+1.4
MORC	Moravsky Berou	78.73	327⇑	*i*P	P	07 06 45.5	+0.6
MORC	Moravsky Berou	78.73	327	*e*P	P	07 06 45.4	+0.6
MORC				pmax	pmax		
	comp=Z,79nm,1.2s						
MORC	Moravsky Berou	78.73	327	*e*P	P	07 06 45.4	+0.5
	comp=Z,79nm,1.2s						
DPC	Dobruska-Polom	78.80	328	*e*P	P	07 06 46.0	+0.8
DPC				*e*pP	pP	07 06 59.5	+0.9
DPC				AMS	AMS	07 44 00.0	
	comp=Z,200nm,19.9s						
UPC	Upice	78.80	328	*e*P	P	07 06 45.6	+0.5
UPC				AMS	AMS	07 44 10.0	
	comp=Z,300nm,17.5s						
KRLC	Kraliky	78.82	328	*e*P	P	07 06 45.7	+0.4
KRLC				*e*PCP	PcP	07 06 54.0	+0.1
PHWY	Pilot Hill	78.90	45	*e*P	P	07 06 47.3	+1.1
	comp=Z,13nm,1.4s						
N23A	Red Feather La	78.91	46	*e*P	P	07 06 48.4	+2.2
	comp=Z,19nm,1.3s						
PSZ	Piszkesteto	79.10	325⇑	*i*P	P	07 06 47.5	+0.6
PSZ	Piszkesteto	79.10	325	*e*P	P	07 06 47.5	+0.6
PSZ				pmax	pmax		
	comp=Z,18nm,1.0s						
PSZ	Piszkesteto	79.10	325	*e*P	P	07 06 47.5	+0.6
	comp=Z,18nm,1.0s						
VYHS	Vyhne	79.14	326	*e*P	P	07 06 47.6	+0.5
VYHS				pmax	pmax		
	comp=Z,5.0nm,1.1s						
VYHS	Vyhne	79.14	326	*e*P	P	07 06 47.5	+0.5
Y14A	Wickenburg	79.31	55	*e*P	P	07 06 50.3	+2.0
	comp=Z,42nm,1.2s						
BRG	Berggiesshubel	79.35	330	*e*P	P	07 06 48.3	+0.2
	comp=Z,9.8nm,0.9s						
BRG	Berggiesshubel	79.35	330	*e*P	P	07 06 48.3	+0.2
BRG				pmax	pmax		
	comp=Z,10.0nm,0.9s						
CLL	Collm	79.37	330⇑	*i*P	P	07 06 47.9	-0.3
	comp=Z,20nm,1.0s						
CLL				*i*		07 06 56.3	
CLL				*e*		07 07 02.0	
CLL				L	L	07 46 00.0	
	comp=Z,100nm,18.1s						
CLL	Collm	79.37	330	*e*P	P	07 06 47.8	-0.4
CLL				pmax	pmax		
	comp=Z,21nm,0.9s						
CLL	Collm	79.37	330	*e*P	P	07 06 47.8	-0.4
	comp=Z,21nm,0.9s						
PVCC	Panska Ves	79.37	329	*e*P	P	07 06 49.2	+1.0
VRAC	Vranov	79.48	327⇑	*i*P	P	07 06 49.8	+0.9
GOPC	GO Pecny, Ondr	79.76	329	*e*P	P	07 06 50.6	+0.2

GOPC				AMS	AMS	07 44 30.0	
	comp=Z,200nm,21.1s						
PRU	**Pruhonice**	**79.80**	**329**	*e*P	**P**	**07 06 51.2**	**+0.6**
PRU				AMS	AMS	07 44 20.0	
	comp=Z,300nm,21.0s						
ISCO	**Idaho Springs**	**79.84**	**46**	*e*P	**P**	**07 06 53.5**	**+2.1**
ISCO				pmax	pmax		
	comp=Z,24nm,1.8s						
ISCO	**Idaho Springs**	**79.84**	**46**	*e*P	**P**	**07 06 53.5**	**+2.1**
	comp=Z,24nm,1.8s						
MVCO	**Mesa Verde**	**79.92**	**50**	*e*P	**P**	**07 06 54.0**	**+2.2**
	comp=Z,8.9nm,1.0s						
TREC	**Trest**	**79.96**	**328**	*e*P	**P**	**07 06 52.3**	**+0.8**
TREC				AMS	AMS	07 44 40.0	
	comp=Z,200nm,23.5s						
X16A	**Lo Mia Camp, P**	**79.98**	**54**	*e*P	**P**	**07 06 54.6**	**+2.5**
	comp=Z,7.3nm,1.0s						
BZS	**Buzias**	**80.01**	**322**	⇓ *i*P	**P**	**07 06 52.3**	**+0.5**
NKC	**Novy Kostel**	**80.44**	**330**	*e*P	**P**	**07 06 54.4**	**+0.3**
S22A	**4UR Ranch, Cre**	**80.55**	**49**	*e*P	**P**	**07 06 57.6**	**+2.4**
	comp=Z,7.4nm,1.0s						
MDVR	**Moldovita**	**80.58**	**321**	⇑ *i*P	**P**	**07 06 54.8**	**-0.1**
CONA	**Conrad Observa**	**80.86**	**327**	*i* P	**P**	**07 06 57.2**	**+0.8**
	comp=Z,13nm,1.1s,SNR=7.8						
KHC	**Kasperske Hory**	**80.86**	**329**	*e*P	**P**	**07 06 56.8**	**+0.4**
KHC				AMS	AMS	07 45 00.0	
	comp=Z,300nm,22.0s						
KHC	**Kasperske Hory**	**80.86**	**329**	*e*P	**P**	**07 06 56.6**	**+0.2**
KHC				pmax	pmax		
	comp=Z,6.0nm,1.0s						
KHC	**Kasperske Hory**	**80.86**	**329**	*e*P	**P**	**07 06 56.6**	**+0.2**
	comp=Z,6.1nm,1.0s						
PKSM	**Moragy**	**80.95**	**324**	⇑ *i*P	**P**	**07 06 56.7**	**-0.1**
GEC2	**GERESS Array S**	**81.04**	**328**	*e*P	**P**	**07 06 57.7**	**+0.3**
GEC2				pmax	pmax		
	comp=Z,5.0nm,0.9s						
GEC2	**GERESS Array S**	**81.04**	**328**	*e*P	**P**	**07 06 57.7**	**+0.3**
	comp=Z,4.9nm,0.9s						
GERES	**GERESS Array B**	**81.04**	**328**	P	**P**	**07 06 56.9**	**-0.5**
	comp=Z,3.1nm,0.6s,baz=42,slow=6.1,SNR=15						
GERES				LR	LR	07 45 49.0	
	comp=Z,212nm,20.0s,baz=63,slow=38						
GEA0	**GERESS Array S**	**81.05**	**328**	*e*P	**P**	**07 06 57.4**	**-0.1**
SDCO	**Great Sand Dun**	**81.31**	**48**	*e*P	**P**	**07 07 00.7**	**+1.4**
	comp=Z,5.6nm,1.3s						
GRFO	**Grafenberg**	**81.35**	**330**	*e*P	**P**	**07 07 00.1**	**+1.2**
GRFO				pmax	pmax		
	comp=Z,33nm,1.1s						
GRFO	**Grafenberg**	**81.35**	**330**	*e*P	**P**	**07 07 00.1**	**+1.2**
	comp=Z,33nm,1.1s						
ARSA	**Arzberg**	**81.53**	**326**	*i* P	**P**	**07 06 59.9**	**0.0**
	comp=Z,5.7nm,0.9s						
MOA	**Molln**	**81.59**	**327**	*i* P	**P**	**07 07 00.5**	**+0.3**
	comp=Z,8.9nm,1.3s						
ECSD	**EROS Data Cent**	**81.76**	**39**	*e*P	**P**	**07 07 02.0**	**+0.8**
	comp=Z,8.2nm,1.0s						
PERS	**Pernice**	**82.18**	**326**	*i* P	**P**	**07 07 03.5**	**+0.1**
SOKA	**Soboth**	**82.19**	**326**	*i* P	**P**	**07 07 03.6**	**+0.2**
	comp=Z,28nm,1.1s,SNR=16						
T25A	**Trinidad**	**82.36**	**48**	*e*P	**P**	**07 07 06.9**	**+2.2**
	comp=Z,14nm,0.9s						
MEM	**Membach**	**82.50**	**334**	P	**P**	**07 07 05.0**	**+0.2**
	comp=Z,7.6nm,1.1s						
OBKA	**Obir**	**82.53**	**326**	*i* P	**P**	**07 07 05.1**	**-0.2**
	comp=Z,8.3nm,0.8s						
KBA	**Koelnbreinsper**	**82.58**	**328**	*i* PcP	**P**	**07 07 06.9**	**+1.2**
	comp=Z,12nm,0.8s,SNR=8.4						
LAZ	**Ladron**	**82.63**	**51**	*e*P	**P**	**07 07 07.6**	**+1.4**
CRES	**Cresnjev**	**82.67**	**326**	*i* P	**P**	**07 07 05.5**	**-0.4**
ANMO	**Albuquerque**	**82.67**	**50**	*e*P	**P**	**07 07 08.6**	**+2.2**
ANMO				pmax	pmax		
	comp=Z,14nm,1.3s						
ANMO	**Albuquerque**	**82.67**	**50**	*e*P	**P**	**07 07 08.6**	**+2.2**
	comp=Z,14nm,1.3s						
BGNE	**Belgrade**	**82.71**	**41**	*e*P	**P**	**07 07 07.2**	**+1.0**
	comp=Z,22nm,0.8s						
MYKA	**Terra Mystica**	**82.82**	**327**	*i* P	**P**	**07 07 06.2**	**-0.5**
	comp=Z,9.9nm,0.9s,SNR=5.2						
BCLA	**Clavier**	**82.90**	**334**	P	**P**	**07 07 07.4**	**+0.4**
SCHQ	**Schefferville**	**82.96**	**16**	LR	LR	07 46 44.7	
	comp=Z,556nm,19.5s,baz=25,slow=38						
WTTA	**Wattenberg**	**83.14**	**329**	*i* P	**P**	**07 07 08.6**	**+0.1**
	comp=Z,6.8nm,0.8s						
ABTA	**Abfaltersbach**	**83.19**	**328**	*i* P	**P**	**07 07 07.8**	**-0.9**
	comp=Z,13nm,1.1s						
JAVS	**Javornik**	**83.22**	**326**	*i* P	**P**	**07 07 07.9**	**-0.9**
MOTA	**Moosalm**	**83.29**	**329**	*i* PcP	**P**	**07 07 10.3**	**+1.1**
	comp=Z,18nm,0.9s,SNR=7.3						
RETA	**Reutte**	**83.31**	**329**	*i* P	**P**	**07 07 09.5**	**+0.3**
	comp=Z,28nm,1.1s,SNR=11						
319A	**Douglas**	**83.35**	**55**	*e*P	**P**	**07 07 11.9**	**+2.1**
	comp=Z,14nm,1.1s						
DOU	**Dourbes**	**83.41**	**334**	P	**P**	**07 07 09.9**	**+0.3**
PDG	**Podgorica**	**83.52**	**321**	⇑ *i*P	**P**	**07 07 10.3**	**0.0**
BFO	**Black Forest**	**83.56**	**331**	*i* P	**P**	**07 07 11.2**	**+0.7**
BFO	**Black Forest**	**83.56**	**331**	*e*P	**P**	**07 07 10.8**	**+0.4**
	comp=Z,22nm,1.3s						
FETA	**Feichten**	**83.70**	**329**	*i* P	**P**	**07 07 11.5**	**+0.1**
	comp=Z,17nm,1.0s,SNR=7.9						
DAVA	**Damuels**	**83.82**	**330**	*i* P	**P**	**07 07 12.1**	**+0.1**
	comp=Z,29nm,0.9s,SNR=12						
FUORN	**Ofenpass-Fuorn**	**84.21**	**329**	*e*P	**P**	**07 07 14.6**	**+0.5**
	comp=Z,35nm,0.9s						
PMOR	**Pomariorio Ree**	**84.60**	**114**	*e*T	T	08 40 37.3	
	comp=Z,42nm,0.2s						
TUE	**Stuetta**	**84.70**	**329**	*e*P	**P**	**07 07 16.2**	**-0.4**
	comp=Z,15nm,1.1s						
PPT2	**Papeete2**	**85.19**	**117**	*e*LR	LR	07 33 59.0	
	comp=Z,215nm,22.5s						
PPT2	**Papeete2**	**85.19**	**117**	*e*T	T	08 41 21.0	
	comp=Z,11nm,0.3s						
PAE	**Paea**	**85.24**	**117**	*e*T	T	08 41 23.4	
	comp=Z,2.4nm,0.3s						
TIAR	**Tiarei**	**85.33**	**117**	*e*T	T	08 41 30.5	
	comp=Z,4.4nm,0.2s						
MSTX	**Muleshoe**	**85.53**	**49**	*e*P	**P**	**07 07 22.1**	**+1.3**
	comp=Z,7.2nm,1.0s						
TVO	**Taravao**	**85.55**	**117**	*e*T	T	08 41 46.3	
	comp=Z,0.9nm,0.3s						
MNTX	**Cornudas Mount**	**85.56**	**52**	*e*P	**P**	**07 07 21.7**	**+0.8**
	comp=Z,9.2nm,1.4s						
SENIN	**Lac Senin/Sane**	**85.58**	**330**	*e*P	**P**	**07 07 21.1**	**+0.1**
	comp=Z,8.8nm,0.8s						
TAOE	**Nuku Hiva Isla**	**86.19**	**105**	*e*LR	LR	07 34 36.6	
	comp=Z,290nm,31.3s						
MEH	**Mehetia**	**86.43**	**116**	*e*T	T	08 42 53.6	
	comp=Z,108nm,0.3s						
TX31	**Lajitas Ar. Si**	**88.27**	**53**	*e*P	**P**	**07 07 35.2**	**+1.0**
TXAR	**Lajitas Array**	**88.27**	**53**	P	**P**	**07 07 34.8**	**+0.6**
	comp=Z,0.9nm,0.7s,baz=293,slow=4.3,SNR=9.5						
HHAR	**Hobbs**	**88.72**	**42**	*e*P	**P**	**07 07 37.1**	**+1.0**
	comp=Z,6.6nm,1.1s						
SIUC	**Southern Illin**	**89.97**	**38**	*e*P	**P**	**07 07 42.7**	**+0.9**
	comp=Z,16nm,0.8s						
MIAR	**Mount Ida**	**90.24**	**43**	*e*P	**P**	**07 07 44.4**	**+1.2**
MIAR				pmax	pmax		
	comp=Z,36nm,1.7s						
MIAR	**Mount Ida**	**90.24**	**43**	*e*P	**P**	**07 07 44.4**	**+1.2**
	comp=Z,36nm,1.7s						
WHAR	**Wooly Hollow**	**90.34**	**42**	*e*P	**P**	**07 07 44.5**	**+0.9**
	comp=Z,39nm,1.7s						
KEST	**Kesra**	**93.52**	**323**	LR	LR	07 54 22.6	
	comp=Z,50nm,18.5s,baz=304,slow=38						
ESDC	**Sonseca Array**	**95.46**	**334**	P	**P**	**07 08 06.5**	**-0.7**
	comp=Z,0.5nm,0.5s,baz=14,slow=3.9,SNR=4.9						
ESDC				LR	LR	07 56 27.3	
	comp=Z,100nm,18.2s,baz=110,slow=39						
RKT	**Rikitea**	**99.11**	**112**	*e*LR	LR	07 40 32.4	
	comp=Z,247nm,26.8s						
TOA0	**Torodi Ar. Sit**	**116.08**	**316**	*e*PKPdf	**PKPdf**	**07 13 25.4**	**-0.4**
TORD	**Torodi Ar. Bea**	**116.08**	**316**	PKP	**PKPdf**	**07 13 25.2**	**-0.7**
	comp=Z,0.5nm,0.7s,baz=20,slow=2.1,SNR=4.0						
TORD				PP	**PP**	**07 14 25.9**	**-4.1**
	comp=Z,3.1nm,1.1s,baz=31,slow=5.6,SNR=5.3						
SNAA	**Sanae**	**143.12**	**198**	PKP	PKPab	07 14 11.0	+0.3
VNA2	**Neumayer--Watz**	**144.69**	**197**	PKP	**PKPab**	**07 14 16.5**	**-0.2**
	baz=100,slow=2.8						
VNA3	**Neumayer Olymp**	**144.94**	**195**	PKP	**PKPab**	**07 14 17.1**	**-0.5**
LPAZ	**La Paz**	**145.00**	**58**	PKPbc	**PKPbc**	**07 14 20.1**	**0.0**
	comp=Z,2.2nm,0.8s,baz=262,slow=1.8,SNR=6.4						
LPAZ	**La Paz**	**145.00**	**58**	*e*PKPbc	**PKPdf**	**07 14 21.2**	**+0.4**
VNA1	**Neumayer--Stat**	**145.09**	**197**	PKP	**PKPab**	**07 14 18.1**	**0.0**
PB01	**IPOC Station P**	**147.38**	**65**	*e*PKPbc	**PKPbc**	**07 14 27.3**	**+0.9**
LCO	**Las Campanas**	**151.09**	**79**	*e*PKPbc	**PKPbc**	**07 14 36.7**	**+0.9**

IDC ***29*** *07:04:20.4±1.3, 35°.31N×142°.74E, h0km, mb3.5/5, mb1 3.6/7, mb1mx3.4/38, mbtmp3.5/7, ML3.2/2, Error ellipse: s-maj=30.2km s-min=25.0km az=94.0*

JMA ***29*** *07:04:21.1±0.6, 35°.36N×142°.92E, h60km, M3.7*

ISCJB ***29*** *07:04:26.3±0.9, 35°.34N±0°.06×142°.45E±0°.09, h59km, mb3.5/5, Error ellipse: s-maj=10.4km s-min=8.0km az=179.1*

ISC 29 07:04:27.7±1.2**, 35°.35N**±0°.06×**142°.5E**±0°.1**, h59**km**, n14,** σ1§**44/18, mb3.5/5, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CHOJ	**Chosi**	**1.38**	**285**	P	**Pn**	**07 04 49.6**	**-1.2**
BSO1	**Boso 1**	**1.43**	**241**	P	**Pn**	**07 04 49.4**	**-1.5**
BSO1				X		07 05 10.5	
BSO4	**Boso 4**	**1.80**	**259**	P	**Pn**	**07 04 56.0**	**-0.4**
BSO4				X		07 05 20.8	
JFT	**Otama**	**2.78**	**322**	P	**Pn**	**07 05 07.5**	**-2.3**
JFT				S	**Sn**	**07 05 40.7**	**-1.4**
JOD2	**Odawara 2**	**2.79**	**269**	P	**Pn**	**07 05 08.7**	**-1.2**
JRY	**Ryogami san**	**3.00**	**284**	P	**Pn**	**07 05 12.5**	**-0.4**
JRY				S	**Sn**	**07 05 49.7**	**+2.1**
JHJ	**Hachijo jima 2**	**3.16**	**226**	Pn	**Pn**	**07 05 13.7**	**-1.3**
	8.2nm,0.3s,baz=54,slow=19,SNR=4.6						
JHJ				Sn	**Sn**	**07 05 50.5**	**-1.1**
	34nm,0.3s,baz=86,slow=23,SNR=4.8						
MJAR	**Matsushiro Arr**	**3.68**	**290**	Pn	**Pn**	**07 05 21.9**	**-0.2**
	1.6nm,0.3s,baz=100,slow=6.3,SNR=9.6						
MAT	**Matsushiro**	**3.68**	**290**	P	**Pn**	**07 05 22.3**	**+0.2**
MAT				*e*S	**Sn**	**07 06 02.0**	**-2.2**
ZALV	**Zalesovo Beam**	**43.70**	**314**	P	**P**	**07 12 28.2**	**+1.5**
	0.7nm,0.6s,baz=98,slow=7.8,SNR=3.3						
MKAR	**Makanchi Array**	**45.77**	**304**	P	**P**	**07 12 45.0**	**+1.7**
	0.5nm,0.8s,baz=91,slow=9.3,SNR=3.5						
KURBB	**Kurchatov Arra**	**47.74**	**309**	P	**P**	**07 12 59.5**	**+1.0**
	0.2nm,0.4s,baz=84,slow=8.2,SNR=3.0						
ILAR	**Eielson Array**	**50.46**	**32**	P	**P**	**07 13 19.3**	**+0.2**
	0.3nm,0.7s,baz=262,slow=6.3,SNR=3.9						
WRA	**Warramunga Arr**	**55.53**	**189**	P	**P**	**07 13 57.1**	**+0.2**
	0.4nm,0.6s,baz=11,slow=7.6,SNR=4.4						

TRN 29 07:11:54.7, 16°.79N×61°.24W, h27km, MD3.6, 4D, Leeward Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SEG	**Port Louis**	**0.47**	**214**	⇓ *i*P	Pn	07 12 06.9	+1.3
DEG	**La Desirade**	**0.51**	**160**	*e*P	Pn	07 12 06.6	+0.4
DEG				*e*S	Sn	07 12 15.8	+1.7
SFG	**Saint Francois**	**0.54**	**176**	*e*P	Pn	07 12 07.8	+1.2
BPA	**Boggy Peak**	**0.65**	**293**	*e*P	Pn	07 12 10.1	+2.0
BPA				*e*S	Sn	07 12 20.2	+2.7
SSG	**Sans Toucher**	**0.82**	**211**	*e*P	Pn	07 12 11.9	+1.3
DOG	**Dongo Capester**	**0.84**	**206**	⇓ *e*P	Pn	07 12 12.1	+1.3
FNG	**Fond-Bernard**	**0.85**	**211**	*e*P	Pn	07 12 12.1	+1.1
MLG	**Mont-d'or**	**0.86**	**212**	⇓ *e*P	Pn	07 12 12.4	+1.3
PHG	**Guadaloupe-2**	**0.87**	**207**	⇓ *e*P	Pn	07 12 12.6	+1.4
MGG	**Marie-Galante**	**0.87**	**185**	*i* P	Pb	07 12 12.9	+1.7
MGG				*e*S	Sn	07 12 25.6	+2.6
MLYT	**Lee's Yard**	**0.92**	**266**	*i* P	Pb	07 12 13.6	+1.6
MLYT				*e*S	Sn	07 12 27.1	+2.9
TBG	**Guadaloupe-3**	**1.01**	**203**	*e*P	Pb	07 12 14.5	+0.9
TBG				*e*S	Sb	07 12 29.2	+2.7
ANWB	**Willy Bob**	**1.02**	**329**	*e*P	Pb	07 12 13.9	+0.2
ANWB				*e*S	Sb	07 12 29.7	+3.1
DWS	**Wesley**	**1.22**	**183**	*e*P	Pb	07 12 17.6	+0.5
BBL	**Barber's Block**	**1.28**	**190**	*e*P	Pb	07 12 18.4	+0.2
BBL				*e*S	Sb	07 12 35.2	+1.0

IDC 29 07:12:46.6±3.8, 54°.32N×87°.33E, h0km, mb1 2.7/2, mb1mx2.6/46, mbtmp2.7/2, ML2.3/2, Error ellipse: s-maj=34.7km s-min=22.0km az=39.0, Southwestern Siberia

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
I46RU	**ZALESOVO INFRA**	**1.52**	**257**	*i*		07 21 40.0	
	baz=76,slow=327,SNR=1.8						
ZALV	**Zalesovo Beam**	**1.52**	**257**	Pg	Pn	07 13 12.9	-2.2
	0.9nm,0.3s,baz=78,slow=16,SNR=9.9						
ZALV				Lg	Lg	07 13 35.6	
	0.8nm,0.3s,baz=81,slow=31,SNR=5.5						
KURBB	**Kurchatov Arra**	**6.52**	**239**	Pn	Pn	07 14 24.3	+0.5
	0.1nm,0.3s,baz=56,slow=14,SNR=5.2						
MKAR	**Makanchi Array**	**8.19**	**205**	Pn	Pn	07 14 48.3	+1.6
	0.1nm,0.3s,baz=25,slow=14,SNR=2.7						

IDC 29 07:13:12.0±1.7, 41°.80N×131°.24E, h551km±17km**, mb2.3/2, mb1 2.6/5, mb1mx2.4/46, mbtmp3.3/5, Error ellipse: s-maj=42.4km s-min=25.5km az=144.0, Sea of Japan**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
USRK	**Ussuriysk Ar.**	**2.46**	**13**	P	P	07 14 23.6	-0.2
	0.4nm,0.3s,baz=191,slow=2.8,SNR=5.5						
KSRS	**Korea Array**	**5.04**	**212**	P	P	07 14 42.6	+0.4
	0.6nm,0.3s,baz=25,slow=8.9,SNR=13						
KLR	**Kul'dur**	**7.44**	**3**	P	P	07 15 04.3	+0.3
	0.4nm,0.3s,baz=174,slow=7.6,SNR=12						
MKAR	**Makanchi Array**	**34.92**	**295**	P	P	07 19 17.7	-0.2
	0.2nm,0.6s,baz=99,slow=7.8,SNR=2.8						
YKA	**Yellowknife Ar**	**63.51**	**28**	P	P	07 22 47.9	-0.1
	0.2nm,0.5s,baz=318,slow=5.5,SNR=6.3						

IDC ***29*** *07:21:07.3±0.8, 19°.34S×167°.99E, h0km, mb4.5/15, mb1 4.6/16, mb1mx4.4/34, mbtmp4.4/16, ML4.1/1, MS3.9/6, Ms1 3.9/6, ms1mx3.3/45, Error ellipse: s-maj=26.3km s-min=16.4km az=131.0*

GCMT ***29*** *07:21:09.4±0.3, 19°.29S×167°.77E, h17km±1km, MW5.0/78, Moment Tensor Solution. s32,c33; s78,c101; Duration: 0 Moment tensor: Scale 10¹⁶Nm; Mrr=-2.97±.20; Mθθ=0.86±.13; Mϕϕ=2.11±.13; Mrθ=-1.27±.39; Mϕθ=-1.12±.08; Mrϕ=1.88±.34; Best double couple: Mo=3.65800×10¹⁶ NP1:ϕs=331.00000°, δ26.00000°, λ=-86.00000°. NP2: ϕs=147.00000°, δ64.00000°, λ=-92.00000°. Principal axes: T 3.5550, Plg19.0000°, Azm239.0000°; N 0.2100, Plg2.0000°, Azm148.0000°; P -3.7600, Plg71.0000°, Azm54.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

NEIC ***29*** *07:21:09.4±0.2, 19°.26S×167°.95E, h10km, mb5.1/69 Error ellipse: s-maj=8.4km s-min=4.9km az=154.0*

ISCJB ***29*** *07:21:10.2±0.2, 19°.37S±0°.05×167°.92E±0°.04, h26km, mb5.0/94, MS3.8/7, Error ellipse: s-maj=7.2km s-min=4.7km az=150.0*

MOS ***29*** *07:21:11.6±0.9, 19°.36S×167°.92E, h36km, mb5.3/32, Error ellipse: s-maj=11.3km s-min=9.5km az=155.6*

BJI ***29*** *07:21:12.1, 19°.03S×168°.04E, h32km, mb4.8/28, mB4.9/16, Ms4.9/2, Ms7 4.6/4*

ISC 29 07:21:11.8±0.4**, 19°.37S**±0°.06×**167°.94E**±0°.07**, h26**km**, n248,** σ0§**94**/230**, mb5.0**/93**, MS3.8**/7**, 5C-4D, Vanuatu Islands region**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
DZM	**Mont Dzumac**	**3.03**	**207**	Pn	**Pn**	**07 21 56.7**	**-1.5**
	24nm,0.3s,baz=47,slow=10,SNR=150						
DZM				Sn	**Sn**	**07 22 31.2**	**-2.5**
	105nm,0.3s,baz=308,slow=18,SNR=6.9						
DZM				LR	LR	07 22 37.0	
	comp=Z,1μm,20.0s,baz=4.5,slow=29						
MSVF	**Nonsavu**	**9.73**	**82**	*e*P	**Pn**	**07 23 31.5**	**+1.3**
MSVF	**Nonsavu**	**9.73**	**82**	*e*Pn	**Pn**	**07 23 31.5**	**+1.3**
EIDS	**Eidsvold**	**16.69**	**246**	*e*Pn	**P**	**07 25 05.8**	**-0.3**
	51nm,1.2s						
ARMA	**Armidale**	**18.41**	**230**	*e*P	**Pn**	**07 25 28.8**	**+3.4**
	103nm,1.6s						
AFI	**Afiamalu**	**20.17**	**77**	LR	LR	07 32 17.8	
	comp=Z,385nm,18.3s,baz=262,slow=33						
CTA	**Charters Tower**	**20.43**	**264**	P	Pn	07 25 49.6	+0.2
	18nm,1.1s,baz=87,slow=13,SNR=5.5						
BKZ	**Black Stump Fm**	**21.07**	**161**	*e*P	**P**	**07 25 56.6**	**+2.5**
	67nm,1.5s						
RABL	**Rabaul**	**21.55**	**312**	*e*P	**P**	**07 26 00.1**	**+0.6**
	38nm,0.6s						
PMG	**Port Moresby**	**22.41**	**293**	*i* P	**P**	**07 26 08.5**	**-0.1**
PMG				pmax	pmax		
	comp=Z,75nm,0.9s						

COEN	**Coen**	**24.31**	**279**	*e*P	**P**	**07 26 28.5**	**+0.9**
	comp=Z,112nm,1.8s						
RPZ	**Rata Peaks**	**24.41**	**175**	LR	LR	07 35 12.7	
	comp=Z,235nm,19.7s,baz=340,slow=35						
MANU	**Manus Island**	**26.49**	**308**	*e*P	**P**	**07 26 47.2**	**0.0**
	comp=Z,22nm,1.0s						
STKA	**Stephens Creek**	**26.74**	**237**	P	**P**	**07 26 50.9**	**+1.5**
	comp=Z,3.5nm,0.8s,baz=61,slow=7.2,SNR=6.1						
STKA				LR	LR	07 36 16.0	
	comp=Z,248nm,21.2s,baz=333,slow=34						
STKA	**Stephens Creek**	**26.74**	**237**	*e*P	**P**	**07 26 51.4**	**+2.0**
STKA	**Stephens Creek**	**26.74**	**237**	*e*P	**P**	**07 26 51.4**	**+2.0**
	comp=Z,5.5nm,1.0s						
JAY	**Jayapura**	**31.46**	**299**	LR	LR	07 39 28.4	
	comp=Z,10.0nm,21.5s,baz=162,slow=35						
BBOO	**Buckleboo**	**31.47**	**238**	*e*P	**P**	**07 27 33.1**	**+1.7**
	comp=Z,14nm,0.8s						
WB2	**Warramunga Arr**	**31.61**	**263**	*e*P	**P**	**07 27 31.7**	**-1.1**
	comp=Z,22nm,1.4s						
WRAB	**Tennant Creek**	**31.61**	**263**	*i* P	**P**	**07 27 32.8**	**0.0**
WRAB				pmax	pmax		
	comp=Z,26nm,1.5s						
WRAB	**Tennant Creek**	**31.61**	**263**	*e*P	**P**	**07 27 32.4**	**-0.4**
	comp=Z,13nm,1.1s						
WRA	**Warramunga Arr**	**31.62**	**263**	P	**P**	**07 27 31.1**	**-1.8**
	comp=Z,4.0nm,1.0s,baz=84,slow=8.3,SNR=30						
WRA				PcP	**PcP**	**07 30 24.4**	**-0.6**
	comp=Z,1.2nm,0.7s,baz=95,slow=2.8,SNR=4.9						
AS01	**Alice Springs**	**31.86**	**256**	*e*P	**P**	**07 27 34.6**	**-0.4**
AS31	**Alice Springs**	**31.90**	**256**	*e*P	**P**	**07 27 35.4**	**0.0**
	comp=Z,4.2nm,0.8s						
ASAR	**Alice Springs**	**31.90**	**256**	P	**P**	**07 27 34.6**	**-0.7**
	comp=Z,5.9nm,0.8s,baz=83,slow=8.9,SNR=43						
MTN	**Manton Dam**	**35.90**	**275**	*e*P	**P**	**07 28 09.9**	**-0.2**
	comp=Z,26nm,1.2s						
FITZ	**Fitzroy Crossi**	**40.01**	**265**	P	**P**	**07 28 44.4**	**-0.4**
	comp=Z,14nm,1.1s,baz=81,slow=5.8,SNR=12						
FITZ				LR	LR	07 44 48.8	
	comp=Z,190nm,19.2s,baz=112,slow=36						
FITZ	**Fitzroy Crossi**	**40.01**	**265**	*e*P	**P**	**07 28 44.4**	**-0.4**
	comp=Z,18nm,0.8s						
NWAO	**Narrogin (SRO)**	**47.06**	**243**	P	**P**	**07 29 41.3**	**-0.2**
	comp=Z,15nm,0.8s,baz=85,slow=0.2,SNR=4.6						
NWAO	**Narrogin (SRO)**	**47.06**	**243**	*e*P	**P**	**07 29 40.7**	**-0.8**
NWAO				pmax	pmax		
	comp=Z,47nm,1.1s						
NWAO	**Narrogin (SRO)**	**47.06**	**243**	*e*P	**P**	**07 29 40.7**	**-0.8**
	comp=Z,47nm,1.1s						
KAPI	**Kappang**	**49.03**	**280**	P	**P**	**07 29 57.2**	**+0.3**
	comp=Z,18nm,1.2s,baz=138,slow=8.2,SNR=4.2						
KAPI	**Kappang**	**49.03**	**280**	*e*P	**P**	**07 29 57.7**	**+0.8**
	comp=Z,26nm,1.3s						
VNDA	**Vanda**	**58.26**	**182**	P	**P**	**07 31 04.2**	**+0.6**
	comp=Z,0.8nm,0.7s,baz=345,slow=7.2,SNR=4.8						
KSM	**Kuching**	**60.21**	**283**	*e*P	**P**	**07 31 17.0**	**-1.1**
	comp=Z,27nm,1.3s						
MJAR	**Matsushiro Arr**	**62.30**	**333**	P	**P**	**07 31 32.0**	**+0.2**
	comp=Z,2.7nm,1.1s,baz=170,slow=8.5,SNR=3.9						
NJ2	**Nanjing**	**69.46**	**317**	*e*P	**P**	**07 32 20.0**	**+2.1**
NJ2				pmax	pmax		
	comp=Z,37nm,0.6s						
YSS	**Yuzh-Sakhalins**	**69.81**	**342**	*e*P	**P**	**07 32 19.6**	**-0.2**
YSS				pmax	pmax		
	comp=Z,50nm,1.9s						
QSPA	**South Pole Qui**	**70.68**	**180**	*e*P	**P**	**07 32 26.1**	**+0.9**
PSI	**Prapat**	**71.23**	**280**	*e*P	**P**	**07 32 28.4**	**-1.0**
PSI				pmax	pmax		
	comp=Z,14nm,1.0s						
PSI	**Prapat**	**71.23**	**280**	*e*P	**P**	**07 32 28.4**	**-1.0**
	comp=Z,14nm,1.0s						
USRK	**Ussuriysk Ar.**	**71.30**	**334**	P	**P**	**07 32 29.4**	**+0.5**
	comp=Z,6.4nm,1.1s,baz=123,slow=3.2,SNR=7.4						
MDJ	**Mudanjiang**	**72.66**	**332**	P	**P**	**07 32 38.3**	**+1.2**
MDJ				pmax	pmax		
	comp=Z,14nm,0.8s						
MDJ				pmax	pmax		
	comp=Z,77nm,6.3s						
MDJ	**Mudanjiang**	**72.66**	**332**	*e*P	**P**	**07 32 37.3**	**+0.2**
	comp=Z,15

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
BILL				pmax	pmax		
	comp=Z,19nm,1.7s						
BILL	**Bilibino**	**87.17**	**359**	*e*P	**P**	**07 33 54.5**	**-0.6**
	comp=Z,15nm,1.2s						
WDC	**Whiskeytown Da**	**87.83**	**46**	*e*P	**P**	**07 33 59.4**	**+0.6**
WDC				pmax	pmax		
	comp=Z,23nm,1.4s						
WDC	**Whiskeytown Da**	**87.83**	**46**	*e*P	**P**	**07 33 59.4**	**+0.6**
	comp=Z,23nm,1.4s						
N02D	**Trinity Center**	**87.90**	**45**	P	**P**	**07 33 58.9**	**-0.4**
	baz=242						
M02C	**Callahan**	**88.00**	**45**	P	**P**	**07 33 59.7**	**-0.1**
	baz=242						
ORV	**Oroville**	**88.06**	**47**	*e*P	**P**	**07 33 59.5**	**-0.5**
ORV				pmax	pmax		
	comp=Z,11nm,1.0s						
ORV	**Oroville**	**88.06**	**47**	*e*P	**P**	**07 33 59.5**	**-0.5**
	comp=Z,11nm,1.0s						
AFDM	**Forest Hills D**	**88.16**	**48**	*e*P	**P**	**07 34 00.3**	**-0.2**
	comp=Z,10nm,1.0s						
CMB	**Columbia Colle**	**88.16**	**49**	*e*P	**P**	**07 34 00.3**	**-0.3**
CMB				pmax	pmax		
	comp=Z,12nm,1.0s						
CMB	**Columbia Colle**	**88.16**	**49**	*e*P	**P**	**07 34 00.3**	**-0.3**
	comp=Z,12nm,1.0s						
O03D	**Paynes Creek**	**88.19**	**46**	P	**P**	**07 34 00.3**	**-0.4**
	baz=243						
CAST	**Castle Rocks**	**88.22**	**17**	*e*P	**P**	**07 33 58.4**	**-1.8**
	comp=Z,8.1nm,0.6s						
YBH	**Yreka Blue Hor**	**88.25**	**44**	*e*P	**P**	**07 34 01.7**	**+0.7**
YBH				pmax	pmax		
	comp=Z,14nm,1.1s						
YBH	**Yreka Blue Hor**	**88.25**	**44**	*e*P	**P**	**07 34 01.7**	**+0.7**
	comp=Z,14nm,1.1s						
HUMO	**Hull Mountain**	**88.50**	**44**	*e*P	**P**	**07 34 02.3**	**+0.3**
	comp=Z,15nm,1.2s						
ISA	**Isabella, Lake**	**88.52**	**51**	P	**P**	**07 34 01.9**	**-0.5**
	baz=245						
ISA	**Isabella, Lake**	**88.52**	**51**	*e*P	**P**	**07 34 02.1**	**-0.3**
ISA				pmax	pmax		
	comp=Z,17nm,1.3s						
ISA	**Isabella, Lake**	**88.52**	**51**	*e*P	**P**	**07 34 02.1**	**-0.3**
	comp=Z,17nm,1.3s						
KLU	**Klutina**	**88.59**	**20**	*e*P	**P**	**07 34 02.5**	**+0.4**
	comp=Z,6.4nm,0.9s						
KTH	**Kantishna Hill**	**88.65**	**17**	*e*P	**P**	**07 34 01.0**	**-1.4**
	comp=Z,21nm,1.6s						
TRF	**Thorofare Moun**	**88.75**	**17**	*e*P	**P**	**07 34 01.3**	**-1.6**
	comp=Z,28nm,2.0s						
BOD	**Bodaibo**	**88.92**	**334**	*e*P	**P**	**07 34 02.5**	**-1.1**
BOD				pmax	pmax		
	comp=Z,7.0nm,1.6s						
SNAA	**Sanae**	**88.97**	**183**	P	**P**	**07 34 03.2**	**-0.7**
SNAA	**Sanae**	**88.97**	**183**	*i* P	**P**	**07 34 03.2**	**-0.7**
SNAA	**Sanae**	**88.97**	**183**	*e*P	**P**	**07 34 03.8**	**-0.1**
	comp=Z,2µm,1.8s						
RND	**Reindeer**	**89.12**	**18**	*e*P	**P**	**07 34 04.6**	**0.0**
RND				pmax	pmax		
	comp=Z,8.0nm,1.0s						
RND	**Reindeer**	**89.12**	**18**	*e*P	**P**	**07 34 04.6**	**0.0**
	comp=Z,8.3nm,1.0s						
PFO	**Pinyon Flats O**	**89.18**	**54**	P	**P**	**07 34 05.4**	**-0.2**
	baz=246						
PFO	**Pinyon Flats O**	**89.18**	**54**	*e*P	**P**	**07 34 05.6**	**0.0**
PFO				pmax	pmax		
	comp=Z,21nm,1.4s						
PFO	**Pinyon Flats O**	**89.18**	**54**	*e*P	**P**	**07 34 05.6**	**0.0**
	comp=Z,21nm,1.4s						
MCK	**McKinley**	**89.35**	**18**	*e*P	**P**	**07 34 05.5**	**-0.1**
MCK				pmax	pmax		
	comp=Z,10.0nm,1.2s						
MCK	**McKinley**	**89.35**	**18**	*e*P	**P**	**07 34 05.5**	**-0.1**
	comp=Z,9.8nm,1.2s						
I04A	**Tendick Farm,**	**89.41**	**43**	P	**P**	**07 34 06.0**	**-0.4**
	baz=242						
MPMC	**Manual Prospec**	**89.41**	**51**	P	**P**	**07 34 06.8**	**0.0**
	baz=246						
DAC	**Darwin (Calif)**	**89.42**	**51**	*e*P	**P**	**07 34 06.6**	**-0.2**
DAC				pmax	pmax		
	comp=Z,8.0nm,1.1s						
DAC	**Darwin (Calif)**	**89.42**	**51**	*e*P	**P**	**07 34 06.6**	**-0.2**
	comp=Z,8.3nm,1.1s						
GSC	**Goldstone, Bar**	**89.61**	**52**	P	**P**	**07 34 08.0**	**+0.4**
	baz=246						
VNA3	**Neumayer Olymp**	**89.61**	**181**	P	**P**	**07 34 06.0**	**-0.8**
ZAK	**Zakamensk**	**89.69**	**325**	*e*P	**P**	**07 34 06.2**	**-1.3**
ZAK				pmax	pmax		
	comp=Z,8.0nm,1.4s						
BELC	**Belle Mtn. Jos**	**89.69**	**54**	P	**P**	**07 34 07.8**	**-0.2**
	baz=246						
VNA2	**Neumayer--Watz**	**89.88**	**182**	P	**P**	**07 34 08.4**	**+0.2**
	baz=161,slow=3.4						
K05A	**Summer Lake**	**89.91**	**44**	*e*P	**P**	**07 34 09.2**	**+0.3**
	comp=Z,69nm,1.6s						
MOD	**Modoc Plateau**	**89.93**	**45**	*e*P	**P**	**07 34 09.0**	**0.0**
	comp=Z,10.0nm,0.9s						
J05D	**Fort Rock, OR**	**89.93**	**44**	P	**P**	**07 34 09.2**	**+0.3**
	baz=243						
H04A	**Detroit Lake**	**89.96**	**42**	*e*P	**P**	**07 34 08.4**	**-0.5**
	comp=Z,13nm,0.9s						
BC3	**Big Chuckawall**	**89.97**	**54**	P	**P**	**07 34 09.3**	**0.0**
	baz=247						
FURC	**Furnace Creek,**	**90.04**	**51**	P	**P**	**07 34 09.4**	**+0.1**
	baz=246						
SRIG	**Santa Rosalia**	**90.12**	**61**	*e*P	**P**	**07 34 09.6**	**-0.4**
	comp=Z,11nm,0.9s						
WRH	**Wood River Hil**	**90.16**	**18**	*e*P	**P**	**07 34 07.8**	**-1.5**
	comp=Z,19nm,1.9s						
TLY	**Talaya**	**90.17**	**326**	*e*P	**P**	**07 34 10.1**	**+0.4**
TLY				pmax	pmax		
	comp=Z,7.0nm,0.9s						
TLY	**Talaya**	**90.17**	**326**	*e*P	**P**	**07 34 09.9**	**+0.3**
	comp=Z,8.0nm,1.0s						
GLA	**Glamis**	**90.22**	**55**	*e*P	**P**	**07 34 10.8**	**+0.5**
GLA				pmax	pmax		
	comp=Z,13nm,0.8s						
GLA	**Glamis**	**90.22**	**55**	*e*P	**P**	**07 34 10.8**	**+0.5**
	comp=Z,13nm,0.8s						
SHOC	**Shoshone, Teco**	**90.25**	**52**	P	**P**	**07 34 10.3**	**-0.1**
	baz=246						
GMRC	**Granite Mounta**	**90.26**	**53**	P	**P**	**07 34 10.6**	**0.0**
	baz=247						
I05D	**Terrebonne, OR**	**90.34**	**43**	P	**P**	**07 34 10.5**	**-0.2**
	baz=243						
CCB	**Clear Creek Bu**	**90.37**	**17**	*e*P	**P**	**07 34 08.2**	**-2.0**
	comp=Z,3.4nm,1.0s						
IRM	**Iron Mountain**	**90.40**	**54**	P	**P**	**07 34 11.5**	**+0.3**
	baz=247						
MDM	**Murphy Dome**	**90.49**	**17**	*e*P	**P**	**07 34 08.8**	**-2.0**
	comp=Z,6.9nm,1.0s						
COLA	**College**	**90.53**	**17***c*	*i*P	**P**	**07 34 09.1**	**-1.8**
COLA				pmax	pmax		
	comp=Z,9.0nm,1.0s						
COLA	**College**	**90.53**	**17**	*e*P	**P**	**07 34 08.9**	**-2.0**
	comp=Z,10.0nm,1.1s						
TPNV	**Topopah Spring**	**90.69**	**51**	P	**P**	**07 34 12.4**	**-0.2**
	baz=246						
TPNV	**Topopah Spring**	**90.69**	**51**	*e*P	**P**	**07 34 12.5**	**-0.2**
TPNV				pmax	pmax		
	comp=Z,12nm,1.0s						
TPNV	**Topopah Spring**	**90.69**	**51**	*e*P	**P**	**07 34 12.5**	**-0.2**
	comp=Z,12nm,1.0s						
Y12C	**Blythe**	**90.72**	**54**	P	**P**	**07 34 12.8**	**+0.1**
	baz=247						
Y12C	**Blythe**	**90.72**	**54**	*e*P	**P**	**07 34 12.9**	**+0.3**
	comp=Z,14nm,1.2s						
IL1	**Eielson Array**	**90.73**	**18**	*e*P	**P**	**07 34 09.8**	**-2.1**
ILAR	**Eielson Array**	**90.73**	**18**	P	**P**	**07 34 09.8**	**-2.2**
	comp=Z,3.0nm,0.8s,baz=234,slow=6.1,SNR=22						
ILB	**Eielson Array**	**90.73**	**18**	*e*P	**P**	**07 34 10.3**	**-1.6**
SLBS	**Sierra La Lagu**	**90.75**	**65**	*e*P	**P**	**07 34 13.9**	**+0.9**
	comp=Z,63nm,1.9s						
113A	**Mohawk Valley,**	**90.93**	**56**	*e*P	**P**	**07 34 12.8**	**-0.8**
	comp=Z,7.8nm,1.1s						
NEE2	**Needles Airpor**	**91.04**	**53**	P	**P**	**07 34 14.2**	**+0.1**
	baz=247						
SKAG	**Skagway**	**91.09**	**25**	*e*P	**P**	**07 34 13.2**	**-0.4**
	comp=Z,11nm,1.1s						
PDMCI	**Parker Dam,Lak**	**91.23**	**54**	P	**P**	**07 34 15.2**	**+0.3**
	baz=247						
D05A	**Enumclaw**	**91.24**	**40**	*e*P	**P**	**07 34 15.5**	**+0.8**
	comp=Z,39nm,1.2s						
WVOR	**Wild Horse Val**	**91.28**	**45**	*e*P	**P**	**07 34 15.1**	**-0.1**
WVOR				pmax	pmax		
	comp=Z,19nm,1.3s						
WVOR	**Wild Horse Val**	**91.28**	**45**	*e*P	**P**	**07 34 15.1**	**-0.1**
	comp=Z,19nm,1.3s						
214A	**Organ Pipe Nat**	**91.37**	**57**	P	**P**	**07 34 16.0**	**+0.3**
	baz=248						
B05A	**Bryant**	**91.67**	**39**	P	**P**	**07 34 16.7**	**0.0**
	baz=242						
COLD	**Coldfoot**	**91.72**	**15**	*e*P	**P**	**07 34 16.6**	**+0.1**
	comp=Z,6.6nm,0.9s						
W13A	**Hualapai Mount**	**91.72**	**53**	*e*P	**P**	**07 34 17.4**	**-0.1**
	comp=Z,8.1nm,1.0s						
R11A	**Troy Canyon, C**	**91.73**	**50**	P	**P**	**07 34 16.8**	**-0.6**
	baz=247						
HSIG		**91.80**	**60**	*e*P	**P**	**07 34 17.0**	**-0.7**
	comp=Z,11nm,0.9s						
Y14A	**Wickenburg**	**91.96**	**55**	*e*P	**P**	**07 34 18.3**	**-0.2**
	comp=Z,18nm,0.9s						
HAWA	**Hanford**	**92.39**	**41**	*e*P	**P**	**07 34 19.6**	**-0.5**
	comp=Z,14nm,1.2s						
LCMT	**Little Creek M**	**92.93**	**52**	*e*P	**P**	**07 34 22.9**	**-0.1**
	comp=Z,5.8nm,0.9s						
TUC	**Tucson**	**93.10**	**57**	P	**P**	**07 34 24.1**	**+0.3**
	baz=249						
TUC	**Tucson**	**93.10**	**57**	*e*P	**P**	**07 34 23.9**	**+0.1**
TUC				pmax	pmax		
	comp=Z,8.0nm,1.0s						
TUC	**Tucson**	**93.10**	**57**	*e*P	**P**	**07 34 23.9**	**+0.1**
	comp=Z,8.1nm,1.0s						
X16A	**Lo Mia Camp, P**	**93.34**	**55**	*e*P	**P**	**07 34 25.3**	**+0.3**
	comp=Z,192nm,0.4s						
B08A	**Colville Reser**	**93.37**	**40**	*e*P	**P**	**07 34 23.6**	**-1.0**
	comp=Z,6.0nm,1.1s						
U15A	**North Rim**	**93.42**	**53**	*e*P	**P**	**07 34 25.4**	**0.0**
	comp=Z,6.1nm,0.8s						
319A	**Douglas**	**93.98**	**58**	*e*P	**P**	**07 34 28.3**	**+0.4**
	comp=Z,12nm,0.9s						
X18A	**Snowflake**	**94.53**	**55**	*e*P	**P**	**07 34 30.4**	**-0.1**
	comp=Z,5.2nm,1.1s						
TIXI	**Tiksi**	**94.62**	**348***c*	*e*P	**P**	**07 34 29.5**	**-0.2**
TIXI				pmax	pmax		
	comp=Z,7.0nm,2.5s						
WMQ	**Urumqi**	**96.41**	**314**	*e*P	**P**	**07 34 38.5**	**-0.2**
WMQ				pmax	pmax		
	comp=Z,4.0nm,0.6s						
ANMO	**Albuquerque**	**97.39**	**56***c*	*e*P	**P**	**07 34 42.5**	**-1.0**
ANMO				pmax	pmax		
	comp=Z,3.0nm,1.7s						
PDAR	**Pinedale Array**	**97.61**	**47**	P	Pdif	07 34 45.3	+0.9
	comp=Z,0.5nm,0.9s,baz=204,slow=0.9,SNR=2.5						
TXAR	**Lajitas Array**	**97.91**	**62**	P	**P**	**07 34 45.0**	**-0.8**
	comp=Z,0.6nm,0.8s,baz=212,slow=6.6,SNR=6.5						
PLCA	**Paso Flores**	**99.25**	**139**	LR	LR	08 12 32.1	
	comp=Z,86nm,18.4s,baz=198,slow=31						
YKA	**Yellowknife Ar**	**101.35**	**28**	P	**Pdif**	**07 34 59.5**	**-0.7**
	comp=Z,0.7nm,0.8s,baz=254,slow=4.7,SNR=12						
KURK	**Kurchatov**	**104.32**	**319**	PP	PP	07 39 29.4	-3.2
KURBB	**Kurchatov Arra**	**104.36**	**319**	PP	PP	07 39 29.4	-3.5
	comp=Z,0.2nm,0.3s,baz=102,slow=8.9,SNR=4.3						
ARCES	**ARCESS Array B**	**124.88**	**345**	PKP	**PKPdf**	**07 40 07.0**	**-1.8**
	comp=Z,2.6nm,1.0s,baz=76,slow=3.8,SNR=3.6						
ARCES	**ARCESS Array B**	**124.88**	**345**	PKIKP	**PKPdf**	**07 40 07.0**	**-1.8**
KLMR	**Klimovskoe**	**125.08**	**332**	*e*PKIKP	**PKPdf**	**07 40 07.4**	**-1.9**
KLMR				pmax	pmax		
	comp=Z,3.0nm,0.9s						
OBN	**Obninsk**	**128.93**	**326**	*de*PKIKP	PKPdf	07 40 25.1	+8.3
OBN				pmax	pmax		
	comp=Z,10.0nm,0.6s						
KIS	**Kishinev**	**136.80**	**319**	LRM	MLR	07 42 24.0	
	comp=Z,300nm,18.0s						
KOLS	**Kolonicke sedl**	**139.64**	**325**	*e*PKIKP	**PKPdf**	**07 40 37.6**	**+0.4**
KOLS	**Kolonicke sedl**	**139.64**	**325**	*e*PKP	**PKPdf**	**07 40 37.5**	**+0.4**
BRG	**Berggiesshubel**	**142.44**	**333**	*e*P	**PKPdf**	**07 40 38.5**	**-3.6**
	comp=Z,3.0nm,0.7s						
BRG	**Berggiesshubel**	**142.44**	**333**	*e*PKIKP	**PKPdf**	**07 40 38.5**	**-3.6**
BRG				pmax	pmax		
	comp=Z,3.0nm,0.7s						
NKC	**Novy Kostel**	**143.55**	**333**	*e*PKP	PKPbc	07 40 42.2	+0.7
CONA	**Conrad Observa**	**143.61**	**328**	*i* PKPdf	PKPbc	07 40 42.9	+1.1
	comp=Z,18nm,1.2s,SNR=8.5						
KHC	**Kasperske Hory**	**143.87**	**331**	*e*PKP	PKPbc	07 40 42.8	+0.3
KHC	**Kasperske Hory**	**143.87**	**331**	*e*PKIKP	PKPbc	07 40 43.1	+0.6
KHC	**Kasperske Hory**	**143.87**	**331**	*e*PKPdf	PKPbc	07 40 43.0	+0.6
GEC2	**GERESS Array S**	**144.02**	**331**	*e*PKIKP	PKPbc	07 40 43.8	+0.8
GEC2	**GERESS Array S**	**144.02**	**331**	*e*PKPdf	PKPbc	07 40 43.8	+0.7
GERES	**GERESS Array B**	**144.02**	**331**	PKP	PKPbc	07 40 43.0	0.0
	comp=Z,3.3nm,0.8s,baz=43,slow=2.4,SNR=16						
GEA0	**GERESS Array S**	**144.02**	**331**	*e*PKPdf	PKPbc	07 40 43.2	+0.2
ARSA	**Arzberg**	**144.23**	**327**	*i* PKPdf	PKPbc	07 40 43.7	0.0
	comp=Z,17nm,1.3s,SNR=7.3						
MOA	**Molln**	**144.45**	**329**	*i* PKPdf	PKPbc	07 40 44.5	+0.2
	comp=Z,32nm,0.9s,SNR=15						
GRFO	**Grafenberg**	**144.48**	**334**	*e*PKIKP	PKPbc	07 40 45.1	+0.8
GRFO	**Grafenberg**	**144.48**	**334**	*e*PKPdf	PKPbc	07 40 45.1	+0.7
PERS	**Pernice**	**144.85**	**327**	*i* PKPbc	**PKPab**	**07 40 45.5**	**-0.1**
SOKA	**Soboth**	**144.87**	**327**	*i* PKPdf	**PKPab**	**07 40 45.4**	**-0.3**
	comp=Z,34nm,1.0s,SNR=23						
TIR	**Tirane**	**145.11**	**316**	*e*PKIKP	**PKPdf**	**07 40 47.0**	**-0.1**
TIR	**Tirane**	**145.11**	**316**	*e*PKPbc	**PKPdf**	**07 40 47.0**	**-0.1**
OBKA	**Obir**	**145.23**	**327**	*i* PKPdf	**PKPbc**	**07 40 46.5**	**-0.4**
	comp=Z,29nm,0.9s,SNR=9.1						
KBA	**Koelnbreinsper**	**145.44**	**329**	*i* PKPdf	**PKPbc**	**07 40 47.2**	**-0.5**
	comp=Z,36nm,1.0s,SNR=23						
LJU	**Ljubljana**	**145.55**	**327**	*i* PKPbc	**PKPbc**	**07 40 48.0**	**+0.1**
MYKA	**Terra Mystica**	**145.60**	**328**	*i* PKPab	**PKPdf**	**07 40 47.3**	**-0.6**
	comp=Z,21nm,0.9s,SNR=12						
BEBN	**Eben Emael**	**145.63**	**340**	PKP	**PKPbc**	**07 40 48.1**	**+0.2**
CWF	**Charnwood Fore**	**145.66**	**348**	*e*PKPdf	**PKPdf**	**07 40 47.8**	**+0.1**
RCBR	**Riachuelo**	**145.68**	**135**	*e*PKPdf	**PKPdf**	**07 40 48.2**	**-0.8**
MEM	**Membach**	**145.69**	**339**	PKP	**PKPab**	**07 40 48.6**	**+0.1**
CADS	**Cadrg**	**145.83**	**327**	*i* PKPbc	**PKPdf**	**07 40 47.9**	**-0.3**
STU	**Stuttgart**	**146.03**	**335**	*e*PKP2	**PKPab**	**07 40 49.9**	**+0.1**
STU	**Stuttgart**	**146.03**	**335**	*e*PKPdf	**PKPab**	**07 40 49.9**	**+0.1**
ABTA	**Abfaltersbach**	**146.08**	**329**	*i* PKPbc	**PKPdf**	**07 40 48.4**	**-0.3**
	comp=Z,48nm,1.0s,SNR=21						
BCLA	**Clavier**	**146.08**	**340**	PKP	**PKPab**	**07 40 50.5**	**+0.6**
WATA	**Walderalm**	**146.09**	**331**	*i* PKPab	**PKPbc**	**07 40 49.9**	**+0.2**
	comp=Z,18nm,0.8s						
WTTA	**Wattenberg**	**146.12**	**331**	*i* PKPab	**PKPbc**	**07 40 49.7**	**-0.1**
	comp=Z,40nm,1.3s,SNR=9.7						
TRI	**Trieste**	**146.17**	**327**	*e*PKP2	**PKPdf**	**07 40 49.2**	**+0.4**
TRI	**Trieste**	**146.17**	**327**	*e*PKPdf	**PKPdf**	**07 40 49.1**	**+0.4**
MOTA	**Moosalm**	**146.30**	**331**	*i* pPKPdf	**PKPab**	**07 40 51.5**	**+0.4**
	comp=Z,21nm,0.9s,SNR=7.9						
SNF	**Seneffe**	**146.32**	**341**	PKP	**PKPab**	**07 40 51.5**	**+0.6**
RETA	**Reutte**	**146.35**	**332**	*i* PKPab	**PKPbc**	**07 40 50.3**	**0.0**
	comp=Z,11nm,0.9s,SNR=5.5						
LANF	**Langenberg**	**146.41**	**336**	PKP	**PKPab**	**07 40 51.2**	**-0.1**
WLF	**Walferdange**	**146.44**	**338**	PKP	**PKPab**	**07 40 51.6**	**+0.3**
WLF	**Walferdange**	**146.44**	**338**	*e*PKP2	**PKPbc**	**07 40 50.9**	**+0.4**
WLF	**Walferdange**	**146.44**	**338**	*e*PKPdf	**PKPbc**	**07 40 50.9**	**+0.4**
DOU	**Dourbes**	**146.59**	**340**	PKP	**PKPbc**	**07 40 51.4**	**+0.5**
FETA	**Feichten**	**146.72**	**331**	*i* PKPab	**PKPbc**	**07 40 51.4**	**-0.2**
	comp=Z,28nm,1.1s,SNR=13						
BFO	**Black Forest**	**146.73**	**335**	*i* PKP2	**PKPbc**	**07 40 51.6**	**+0.2**
BFO	**Black Forest**	**146.73**	**335**	*e*PKPbc	**PKPbc**	**07 40 51.5**	**+0.1**
DAVA	**Damuels**	**146.90**	**332**	*i* PKPab	**PKPbc**	**07 40 51.9**	**-0.2**
	comp=Z,27nm,1.3s,SNR=6.8						
FUORN	**Ofenpass-Fuorn**	**147.23**	**331**	*e*PKPbc	**PKPbc**	**07 40 53.9**	**+0.7**
ECH	**Echery**	**147.28**	**336**	PKP	**PKPbc**	**07 40 53.1**	**+0.2**
MOF	**Molkenrain**	**147.59**	**336**	PKP	**PKPbc**	**07 40 53.8**	**-0.1**
THEF	**They Montfort**	**147.71**	**337**	PKP	**PKPbc**	**07 40 54.5**	**+0.4**
TUE	**Stuetta**	**147.75**	**332**	*e*PKPbc	**PKPbc**	**07 40 54.5**	**0.0**
LOMF	**Lomont**	**148.12**	**335**	PKP	**PKPbc**	**07 40 55.7**	**+0.4**
TIP	**Timpagrande**	**148.25**	**315**	*e*PKPbc	**PKPbc**	**07 40 56.0**	**0.0**
CUC	**Castrocucco**	**148.45**	**317**	*e*PKPbc	**PKPbc**	**07 40 55.2**	**-1.2**
SENIN	**Lac Senin/Sane**	**148.72**	**334**	*e*PKPbc	**PKPbc**	**07 40 57.4**	**+0.3**
SSB	**Saint Sauveur**	**150.72**	**336**	*e*PKIKP	**PKPbc**	**07 41 01.9**	**+0.1**
SSB	**Saint Sauveur**	**150.72**	**336**	*e*PKPbc	**PKPbc**	**07 41 01.9**	**+0.1**
VSL	**Villasalto**	**152.72**	**322**	*e*PKPbc	**PKPbc**	**07 41 06.7**	**+0.1**
ESDC	**Sonseca Array**	**158.59**	**343**	PKPab	**PKPab**	**07 41 40.9**	**-1.5**
	comp=Z,0.1nm,0.2s,baz=35,slow=3.1,SNR=5.0						
TOA0	**Torodi Ar. Sit**	**165.42**	**247**	*e*PKPab	**PKPab**	**07 42 12.8**	**-0.1**
TORD	**Torodi Ar. Bea**	**165.42**	**247**	PKPab	**PKPab**	**07 42 12.0**	**-1.0**
	comp=Z,1.4nm,1.0s,baz=172,slow=4.0,SNR=5.6						

IDC 29 07:23:19.4±2.1**, 19°.14S**×**167°.78E, h0**km**, mb3.7**/3**, mb1 4.0**/4**, mb1mx3.7**/34**, mbtmp3.7**/4**, Error ellipse: s-maj=61.8km s-min=32.0km az=131.0, Vanuatu Islands region**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**3.17**	**203**	Pn	Pn	07 24 09.0	-1.7
	baz=1.9,slow=18,SNR=1.8						
DZM				Sn	Sn	07 24 43.2	-6.0
	7.5nm,0.3s,baz=307,slow=20,SNR=5.1						
WRA	**Warramunga Arr**	**31.49**	**263**	P	P	07 29 43.0	-0.2
	0.3nm,0.4s,baz=87,slow=8.4,SNR=4.3						
ASAR	**Alice Springs**	**31.81**	**256**	P	P	07 29 46.6	+0.6
	0.6nm,0.6s,baz=84,slow=8.7,SNR=3.5						
ILAR	**Eielson Array**	**90.56**	**18**	P	P	07 36 23.0	+0.1
	0.4nm,0.8s,baz=238,slow=5.2,SNR=4.1						

*ISCJB **29** 07:25:14.4±0.5, 8°.59S±0°.08×110°.33E±0°.03, h83km±8km, mb4.0/10, Error ellipse: s-maj=13.0km s-min=4.9km az=6.1*

*DJA **29** 07:25:16.4±0.5, 9°S±3°×11°0E±°, h39km±5km, M4.5/22, mB4.9/1, mb4.5/2, MLv4.4/22, Mw(mB)4.2/1*

*IDC **29** 07:25:20.7±2.4, 8°.15S×110°.54E, h143km±24km, mb3.7/10, mb1 3.8/12, mb1mx3.5/40, mbtmp4.1/12, Error ellipse: s-maj=27.7km s-min=12.9km az=57.0*

ISC 29 07:25:14.8±0.9**, 8°.47S**±0°.08×**110°.33E**±0°.04**, h92**km±7km**, n32, σ1s.82**/37**, mb4.0**/10**, Jawa**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
UGM	**Wanagama**	**0.59**	**19**	P	**Pn**	**07 25 30.1**	**-0.4**
UGM				S	**Sn**	**07 25 40.8**	**-1.4**
WOJI	**Wonogiri, Jawa**	**0.86**	**43**	P	**Pn**	**07 25 32.3**	**-0.8**
WOJI				S	**Sn**	**07 25 45.5**	**-1.3**
PCJI	**Pacitan**	**0.88**	**72**	P	**Pn**	**07 25 32.9**	**-0.4**
PCJI				S	**Sn**	**07 25 46.0**	**-1.2**
SMRI	**Semarang**	**1.42**	**4**	P	**Pn**	**07 25 41.0**	**+1.3**
SMRI				S	**Sn**	**07 26 01.7**	**+3.3**
PWJI	**Pagerwojo**	**1.52**	**73**	P	**Pn**	**07 25 41.3**	**+0.4**
PWJI				S	**Sn**	**07 26 00.4**	**-0.3**
NGJI	**Ngawi**	**1.57**	**46**	P	**Pn**	**07 25 44.3**	**+2.8**
NGJI				S	**Sn**	**07 26 04.1**	**+2.4**
CMJI	**Cimerak**	**1.99**	**290**	P	**Pn**	**07 25 47.2**	**+0.3**
CMJI				S	**Sn**	**07 26 12.1**	**+0.7**
TBJI	**Tambak Boyo**	**2.23**	**43**	P	Pn	07 25 53.1	+3.0
TBJI				S	**Sn**	**07 26 18.8**	**+1.7**
CISI	**Cisompet, Garu**	**2.65**	**290**	P	**Pn**	**07 25 56.5**	**+0.7**
CISI				S	**Sn**	**07 26 27.1**	**-0.2**
GMJI	**Gumukmas**	**3.09**	**87**	P	**Pn**	**07 26 03.0**	**+1.5**
LEM	**Lembang**	**3.15**	**301**	P	Pn	07 26 10.4	+7.8
	22nm,0.3s,baz=137,slow=14,SNR=7.7						
LEM				S	Sn	07 26 46.0	+6.6
	13nm,0.3s,baz=112,slow=19,SNR=4.3						
LEM	**Lembang**	**3.15**	**301**	P	**Pn**	**07 26 05.3**	**+2.8**
CNJI	**Cibinong**	**3.38**	**290**	P	**Pn**	**07 26 07.4**	**+1.9**
JAGI	**Jajag, Banyuwa**	**3.78**	**90**	P	**Pn**	**07 26 12.0**	**+1.1**
ABJI	**Asem Bagus**	**3.92**	**80**	P	**Pn**	**07 26 14.4**	**+1.6**
CGJI	**Cibinong**	**4.96**	**292**	P	**Pn**	**07 26 28.5**	**+1.6**
CGJI				S	**Pn**	**07 26 29.1**	**+2.2**
MDSI	**Maura Dua**	**7.29**	**303**	P	**Pn**	**07 27 01.7**	**+3.1**
	12nm,0.7s,876nm0.1nm						
PLAI	**Plampang**	**7.37**	**93**	P	**Pn**	**07 27 01.7**	**+1.9**
FITZ	**Fitzroy Crossi**	**17.69**	**124**	P	**Pn**	**07 29 17.7**	**+2.3**
	0.2nm,0.3s,baz=320,slow=7.9,SNR=2.1						
FITZ				S	Sn	07 32 16.1	-16
	0.1nm,0.3s,baz=342,slow=20,SNR=2.6						
WRA	**Warramunga Arr**	**25.87**	**119**	P	**P**	**07 30 39.2**	**+0.9**
	0.7nm,0.5s,baz=295,slow=12,SNR=6.3						
ASAR	**Alice Springs**	**27.16**	**127**	P	**P**	**07 30 50.6**	**+0.8**
	1.4nm,0.7s,baz=299,slow=8.6,SNR=9.4						
STKA	**Stephens Creek**	**37.22**	**133**	P	**P**	**07 32 19.2**	**+1.7**
	4.3nm,0.7s,baz=304,slow=8.3,SNR=6.8						
H08S2	**Diego Garcia H**	**37.47**	**268**	T	T	08 11 41.8	
	baz=94,slow=76,SNR=20						
H08S3	**Diego Garcia H**	**37.48**	**269**	T	T	08 11 43.4	
	baz=94,slow=76,SNR=17						
H08S1	**Diego Carcia H**	**37.48**	**268**	T	T	08 11 43.3	
	baz=94,slow=76,SNR=16						
MJAR	**Matsushiro Arr**	**51.87**	**29**	P	**P**	**07 34 11.0**	**-3.0**
	1.3nm,0.7s,baz=216,slow=7.7,SNR=4.8						
USRK	**Ussuriysk Ar.**	**55.97**	**19**	P	**P**	**07 34 42.8**	**-0.8**
	0.8nm,0.5s,baz=248,slow=6.1,SNR=3.4						
MKAR	**Makanchi Array**	**60.43**	**338**	P	**P**	**07 35 12.9**	**-1.8**
	0.7nm,0.4s,baz=151,slow=8.0,SNR=14						
PETK	**Petropavlovsk-**	**73.31**	**28**	P	**P**	**07 36 33.4**	**-3.0**
	4.7nm,0.7s,baz=232,slow=4.7,SNR=5.9						
VNDA	**Vanda**	**73.93**	**170**	P	**P**	**07 36 41.5**	**+1.9**
	0.6nm,0.4s,baz=301,slow=5.9,SNR=9.9						
NRIK	**Noril'sk**	**79.23**	**352**	P	**P**	**07 37 08.7**	**-0.8**
	1.5nm,0.3s,baz=190,slow=6.1,SNR=4.5						
BRTR	**Keskin Array B**	**85.27**	**311**	P	**P**	**07 37 41.7**	**-0.2**
	0.6nm,0.5s,baz=140,slow=7.8,SNR=4.8						

WEL 29 07:25:17.6±0.6**, 36°.32S**×**177°.28E, h190**km±10km**, ML3.5**/6**, 2C-2D, Error ellipse: s-maj=13.7km s-min=11.9km az=0.0, Off east coast of North Island**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
HAZ	**Te Kaha**	**1.49**	**164**	⇓PN	Pn	07 25 50.7	+0.4
HAZ				SN	Sn	07 26 15.5	-0.4
MXZ	**Matakaoa Point**	**1.49**	**147**	PN	Pn	07 25 49.4	-1.0
MXZ				SN	Sn	07 26 16.0	+0.1
PKGZ	**Pakihiroa**	**1.69**	**158**	PN	Pn	07 25 52.7	+0.4
PKGZ				SN	Sn	07 26 18.7	-0.7
WMGZ	**Waiomatatini S**	**1.75**	**149**	PN	Pn	07 25 53.1	+0.3
WMGZ				SN	Sn	07 26 19.5	-0.8
PUZ	**Puketiti**	**1.92**	**156**	⇑PN	Pn	07 25 54.3	-0.2
TWGZ	**Tauwhareparae**	**1.94**	**163**	⇑PN	Pn	07 25 55.2	+0.5
TWGZ				SN	Sn	07 26 23.1	-0.7
URZ	**Urewera**	**1.94**	**184**	PN	Pn	07 25 55.0	+0.2
MWZ	**Matawai**	**2.02**	**174**	PN	Pn	07 25 55.7	0.0
TKGZ	**Te Karaka**	**2.16**	**168**	PN	Pn	07 25 56.7	-0.4
MUGZ	**Murupara**	**2.19**	**190**	⇓PN	Pn	07 25 57.6	+0.1
CNGZ	**Carnagh Statio**	**2.28**	**161**	PN	Pn	07 25 58.1	-0.3
RIGZ	**Rimuhau**	**2.41**	**171**	PN	Pn	07 25 59.2	-0.7
SNGZ	**Shannon Statio**	**2.46**	**179**	PN	Pn	07 25 59.7	-0.7
NMHZ	**Naumai**	**2.80**	**188**	PN	Pn	07 26 03.8	-0.5
BKZ	**Black Stump Fm**	**2.91**	**192**	PN	Pn	07 26 04.3	-1.3
MCHZ	**McNeill Hill**	**3.15**	**188**	PN	Pn	07 26 07.4	-1.1
KWHZ	**Kaweka Forest**	**3.17**	**192**	PN	Pn	07 26 07.6	-1.3
PXZ	**Pawanui**	**3.72**	**185**	PN	Pn	07 26 12.7	-2.8

*ISCJB **29** 07:30:11.2±0.6, 24°.74N±0°.07×122°.51E±0°.03, h22km±11km, Error ellipse: s-maj=12.0km s-min=4.0km az=17.5*

*JMA **29** 07:30:11.0±0.2, 24°.73N×122°.48E, h6km±4km, M2.2*

*TAP **29** 07:30:12.3, 24°.76N×122°.40E, h19km±1km, ML2.5, D*

ISC 29 07:30:10.8±1.3**, 24°.75N**±0°.07×**122°.51E**±0°.03**, h19**km±3km**, n12, σ0s.25**/21**, Taiwan region**

Code	Station Name	Δ°	AZ°	Op	ISC	Time h m s	Res ISC
JYNG	**Yonagunijimaku**	**0.49**	**126**	P	**Pb**	**07 30 20.9**	**+0.1**
JYNG				*e*S	**Sb**	**07 30 28.0**	**+0.3**
EGS		**0.54**	**281**	*e*P	**Pn**	**07 30 23.1**	**-0.3**
	baz=280						
YOJ	**Yonaguni jima**	**0.54**	**122**	P	**Pb**	**07 30 21.7**	**+0.2**
YOJ				S	**Sb**	**07 30 28.9**	**+0.1**
TWB1	**Santiao Chiao**	**0.54**	**299**	P	**Pb**	**07 30 21.9**	**+0.3**
	baz=303						
TWB1				S	**Sg**	**07 30 28.8**	**-0.2**
	baz=303						
TWC	**Suao**	**0.62**	**257**	*i* P	**Pg**	**07 30 23.1**	**0.0**
	baz=252						
TWC				*e*S	**Sg**	**07 30 31.2**	**-0.1**
	baz=252						
NWF	**Wu-fen Shan**	**0.74**	**296**	*e*P	**Pg**	**07 30 25.4**	**+0.1**
	baz=298						
NWF				*e*S	**Sb**	**07 30 35.0**	**+0.2**
	baz=298						
TWE	**Neicheng**	**0.77**	**268**	*e*P	**Pg**	**07 30 26.1**	**+0.2**
	baz=266						
TWE				*e*S	**Sb**	**07 30 35.2**	**-0.4**
	baz=266						
ENA	**Nanau**	**0.77**	**246**	*e*P	**Pg**	**07 30 25.9**	**0.0**
	baz=240						
ENA				*e*S	**Sg**	**07 30 36.2**	**+0.1**
	baz=240						
ENTT	**Nioudou**	**0.86**	**263**	*e*P	**Pg**	**07 30 27.8**	**+0.1**
	baz=260						
ENTT				*e*S	**Sb**	**07 30 38.4**	**0.0**
	baz=260						
NSK	**Sanguang**	**1.05**	**266**	*e*P	**Pn**	**07 30 30.6**	**+0.1**
	baz=264						
NSK				*e*S	**Sb**	**07 30 43.6**	**-0.2**
	baz=264						
IRIF	**Iriomote-Funau**	**1.18**	**110**	P	**Pg**	**07 30 33.7**	**0.0**
JKRS	**Kuro-shima**	**1.46**	**110**	*e*S	**Sn**	**07 30 54.1**	**-0.5**

*IDC **29** 07:31:48.0±0.6,33.96S×72.11W,h0km,mb4.3/11, mb1 4.4/13,mb1mx4.3/29,mbtmp4.3/13,ML4.2/2,MS4.0/9, Ms1 4.0/9,ms1mx3.7/30,Error ellipse: s-maj=29.1km s-min=16.6km az=83.0*

*ISCJB **29** 07:31:49.0±1.1,34.05S±0.03×72.46W±0.04,h18km±8km, mb4.8/38,MS4.0/6,Error ellipse: s-maj=5.9km s-min=4.7km az=31.7*

*NEIC **29** 07:31:50.0,34.06S×72.28W,h28km,mb5.0/31, ML4.5(GUC),After GUC.*

NEIC Felt at San Antonio, Santiago, Valparaiso and Vina del Mar.

*GUC **29** 07:31:50.1±0.8,34.06S×72.28W,h28km±4km,ML4.5*

*BJI **29** 07:31:52.2,34.00S×72.20W,h27km,mB4.9/3,Ms5.1/2, Ms7 4.7/2*

ISC 29 07:31:51.4±1.3,34.02S±0.04×72.28W±0.06,h23km±9km, n143,σ1§08/149,mb5.0/38,MS4.1/6,6C-2D,Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
CHPI	**Pichilemu**	**0.43**	**148**	⇓*i*P		**Pb**	**07 31 59.0**	**-1.4**
CHPI				*i* S		**Sb**	**07 32 06.1**	**-0.5**
ANTU	**Antumapu**	**1.45**	**72**	⇑*i*P		**Pn**	**07 32 16.6**	**+0.4**
ANTU				*i* S		**Sb**	**07 32 36.0**	**+0.3**
ANTU				IAML			07 32 40.8	
	comp=E,10μm,0.5s							
TALC	**Talca**	**1.47**	**159**	⇓*i*P		**Pn**	**07 32 15.8**	**-0.7**
TALC				*i* S		**Sn**	**07 32 35.7**	**+0.7**
ROC1	**El Roble**	**1.49**	**46**	*e*P		**Pn**	**07 32 16.8**	**-0.2**
ROC1				*e*S		**Sb**	**07 32 40.9**	**+3.8**
ROC1	**El Roble**	**1.49**	**46**	*e*Pn		**Pn**	**07 32 16.8**	**-0.2**
ROCH	**El Roble**	**1.49**	**46**	⇑*i*P		**Pn**	**07 32 16.6**	**-0.4**
ROCH				*i* S		**Sb**	**07 32 38.3**	**+1.1**
ROCH				AML		AML	07 32 51.9	
	comp=N,12μm,0.5s							
FSR	**Penalolen**	**1.56**	**70**	*i* P		**Pn**	**07 32 18.1**	**+0.3**
FSR				*i* S		**Sb**	**07 32 39.1**	**+0.1**
CLCH	**Cerro Calan**	**1.58**	**67**	⇑*i*P		**Pn**	**07 32 18.6**	**+0.4**
CLCH				*i* S		**Sb**	**07 32 40.4**	**+0.7**
CLCH				AML		AML	07 32 52.5	
	comp=E,7μm,0.6s							
PEL	**Peldehue**	**1.60**	**57**	⇑*i*P		**Pn**	**07 32 18.8**	**+0.5**
PEL				*i* S		**Sb**	**07 32 40.2**	**+0.2**
PEL				IAML			07 32 51.0	
	comp=E,9μm,0.4s							
YECH	**El Yeso**	**1.86**	**80**	⇑*i*P		**Pb**	**07 32 23.6**	**-1.4**
YECH				*i* S		**Sb**	**07 32 48.2**	**+0.2**
COCH	**Cobquecura**	**2.14**	**191**	IAML			07 33 03.8	
	comp=E,6μm,1.1s							
CCSP	**San Pedro de C**	**2.89**	**193**	*e*P		Pn	07 32 30.1	-6.0
CCSP				*i* S		Sn	07 33 03.9	-6.2
AUSP	**Uspallata**	**3.02**	**54**	*e*P		**Pn**	**07 32 40.7**	**+2.6**
AAGR	**Agrelo**	**3.03**	**73**	*e*P		**Pb**	**07 32 42.8**	**-2.0**
ARCO	**CERRO ARCO**	**3.04**	**68**	*e*P		**Pb**	**07 32 42.0**	**-2.9**
ARCO				IAML			07 32 50.0	
	comp=E,2μm,0.4s							
ARCO				*e*S		Sb	07 33 31.8	+10
ASAL	**Salagasta**	**3.22**	**65**	*e*P		Pb	07 32 44.3	-3.7
RTLS	**Leoncito**	**3.35**	**49**	*e*P		**Pn**	**07 32 44.9**	**+2.3**
RTCV	**Cerro Valdivia**	**3.81**	**57**	*e*P		**Pn**	**07 32 50.8**	**+2.1**
SJA	**San Juan**	**4.00**	**53**	IAML			07 34 09.5	
	comp=Z,308nm,0.6s							
RTLL	**Cerro Villicun**	**4.19**	**51**	*e*P		**Pn**	**07 32 55.3**	**+1.4**
AMOG	**MOGNA**	**4.44**	**47**	*e*P		**Pn**	**07 32 58.8**	**+1.4**
LCO	**Las Campanas**	**5.18**	**16**	*e*Pn		**Pn**	**07 33 06.1**	**-1.6**
MRA	**San Martin**	**5.73**	**76**	IAML			07 35 15.7	
	comp=Z,117nm,0.6s							
VCA	**Vinchina**	**6.32**	**35**	IAML			07 35 07.5	
	comp=Z,254nm,0.6s							
PLCA	**Paso Flores**	**6.84**	**169**	IAML			07 35 39.9	
	comp=Z,37nm,0.7s							
PLCA	**Paso Flores**	**6.84**	**169**	Pn		**Pn**	**07 33 30.8**	**+0.4**
	comp=Z,0.9nm,0.3s,baz=3.2,slow=11,SNR=34							
PLCA				Lg		Lg	07 35 22.2	
	comp=Z,0.8nm,0.3s,baz=260,slow=19,SNR=2.1							
PLCA				LR		LR	07 35 43.7	
	comp=Z,172nm,21.5s,baz=12,slow=34							
PLCA	**Paso Flores**	**6.84**	**169**	*e*Pn		**Pn**	**07 33 31.1**	**+0.8**
PLCA				Lg		Lg	07 35 22.2	
CYA	**Choya**	**7.86**	**47**	IAML			07 35 50.8	
	comp=Z,52nm,0.6s							
TRQA	**Tornquist**	**9.26**	**119**	*e*Pn		**Pn**	**07 34 05.4**	**+1.9**
FSA	**Cafayete**	**9.59**	**36**	IAML			07 34 29.8	
	comp=Z,9.3nm,0.5s							
LVC	**Limon Verde**	**11.75**	**15**	Pn		Pn	07 34 32.5	-5.5
	comp=Z,15nm,0.3s,baz=163,slow=11,SNR=3.6							
LVC				LR		LR	07 39 12.8	
	comp=Z,2μm,20.2s,baz=207,slow=38							
LVC	**Limon Verde**	**11.75**	**15**	*e*Pn		**Pn**	**07 34 37.3**	**-0.7**
PB01	**IPOC Station P**	**13.16**	**12**	*e*Pn		**Pn**	**07 34 58.4**	**+1.3**
CHRN	**Cochrane**	**13.21**	**181**	*e*Pn		**Pn**	**07 34 56.5**	**-1.0**
CPUP	**Villa Florida**	**15.02**	**63**	Pn		**P**	**07 35 26.0**	**-1.5**
	comp=Z,0.6nm,0.3s,baz=237,slow=11,SNR=12							
CPUP				Sn		**Sn**	**07 38 07.2**	**-0.8**
	comp=Z,0.1nm,0.3s,baz=114,slow=20,SNR=2.1							
CPUP				LR		LR	07 42 00.2	
	comp=Z,601nm,20.1s,baz=240,slow=41							
CPUP	**Villa Florida**	**15.02**	**63**	*e*Pn		**Pn**	**07 35 21.9**	**-0.4**
CPUP				Sn		**Sn**	**07 38 07.2**	**-0.8**
LPAZ	**La Paz**	**18.05**	**13**	P		**Pn**	**07 36 01.4**	**0.0**
	comp=Z,0.4nm,0.3s,baz=188,slow=6.6,SNR=29							
LPAZ	**La Paz**	**18.05**	**13**	*e*P		**P**	**07 36 01.7**	**0.0**
LPAZ				pmax		pmax		
	comp=Z,20nm,0.9s							
LPAZ	**La Paz**	**18.05**	**13**	*e*Pn		**P**	**07 36 01.6**	**-0.1**
	comp=Z,20nm,0.9s							
EFI	**East Falkland**	**20.43**	**154**	*e*P		**P**	**07 36 26.6**	**-0.2**
	comp=Z,210nm,1.5s							
SIV	**San Ignacio**	**20.60**	**32**	P		**P**	**07 36 27.8**	**-1.2**
	comp=Z,10nm,0.7s,baz=223,slow=10,SNR=39							
SIV				LR		LR	07 46 00.9	
	comp=Z,664nm,19.8s,baz=224,slow=42							
USHA	**Ushuaia**	**20.98**	**174**	P		**P**	**07 36 33.1**	**+0.4**
	comp=Z,28nm,0.7s,baz=346,slow=9.9,SNR=2.3							
NNA	**Nana**	**22.33**	**348**	LR		LR	07 43 33.9	
	comp=Z,95nm,20.6s,baz=178,slow=32							
SPB	**Sao Paulo**	**24.07**	**71**	*e*P		**P**	**07 37 05.3**	**+0.3**
	comp=Z,47nm,1.1s							
SAML	**Samuel**	**26.32**	**21**	*e*P		**P**	**07 37 25.2**	**-0.4**
	comp=Z,19nm,1.0s							
PTGA	**Pitinga**	**35.07**	**22**	*e*P		**P**	**07 38 42.2**	**-0.6**
	comp=Z,22nm,1.1s							
HDC	**Heredia**	**45.20**	**343**	*e*P		**P**	**07 40 07.1**	**+0.2**
	comp=Z,18nm,0.5s							
VNA3	**Neumayer Olymp**	**49.41**	**158**	P		**P**	**07 40 39.2**	**+0.3**
VNA2	**Neumayer--Watz**	**50.07**	**157**	P		**P**	**07 40 44.8**	**+0.9**
	baz=281,slow=8.8							
SNAA	**Sanae**	**51.64**	**158**	P		**P**	**07 40 56.5**	**+0.6**
SNAA	**Sanae**	**51.64**	**158**	*e*P		**P**	**07 40 56.3**	**+0.5**
	comp=Z,2μm,1.5s							
CDVI	**St. Croix**	**51.98**	**9**	*e*P		**P**	**07 40 58.6**	**-0.2**
	comp=Z,57nm,0.6s							
CBYP	**Canovanas**	**52.36**	**8**	*e*P		**P**	**07 41 00.8**	**-0.9**
	comp=Z,40nm,0.8s							
GTBY	**Guantanamo Bay**	**53.72**	**357**	*e*P		**P**	**07 41 11.5**	**-0.1**
	comp=Z,65nm,1.1s							
TEIG	**Tepich**	**56.06**	**342**	*e*P		**P**	**07 41 28.0**	**-0.5**
	comp=Z,64nm,2.0s							
QSPA	**South Pole Qui**	**56.21**	**180**	*e*P		**P**	**07 41 30.6**	**+1.2**
VNDA	**Vanda**	**64.04**	**191**	P		**P**	**07 42 24.0**	**+1.3**
	comp=Z,0.5nm,0.7s,baz=134,slow=6.2,SNR=5.3							
SYO	**Syowa Base**	**65.92**	**159**	⇑*e*P		P	07 42 29.0	-6.0
544A	**White Castle**	**66.24**	**342**	P		**P**	**07 42 37.5**	**+0.1**
	baz=163							
HPIG		**68.40**	**328**	*e*P		**P**	**07 42 51.0**	**-0.4**
	comp=Z,15nm,1.4s							
Z47A	**Carrollton**	**68.50**	**346**	P		**P**	**07 42 51.8**	**+0.2**
	baz=166							
533A	**Kerrville**	**68.58**	**335**	P		**P**	**07 42 52.8**	**+0.5**
	baz=156							
Y47A	**UCPARC, Winfie**	**69.13**	**346**	P		**P**	**07 42 56.0**	**+0.4**
	baz=166							
JCT	**Junction City**	**69.22**	**335**	*e*P		**P**	**07 42 57.1**	**+0.8**
	comp=Z,9.5nm,0.8s							
433A	**Art**	**69.22**	**335**	P		**P**	**07 42 56.6**	**+0.3**
	baz=156							
Y46A	**Houston**	**69.32**	**345**	P		**P**	**07 42 57.0**	**+0.3**
	baz=165							
TXAR	**Lajitas Array**	**69.66**	**331**	P		**P**	**07 42 59.5**	**+0.5**
	comp=Z,0.9nm,0.6s,baz=154,slow=8.1,SNR=15							
TX31	**Lajitas Ar. Si**	**69.66**	**331**	*e*P		**P**	**07 42 59.8**	**+0.7**
WHTX	**Lake Whitney,**	**69.81**	**337**	*e*P		**P**	**07 43 00.0**	**+0.2**
	comp=Z,9.3nm,0.6s							
CPCT	**Cooper Cave**	**70.06**	**349**	*e*P		**P**	**07 43 01.4**	**+0.1**
	comp=Z,34nm,1.8s							
SWET	**Sewanee**	**70.06**	**348**	*e*P		**P**	**07 43 01.5**	**+0.1**
	comp=Z,4.1nm,0.8s							
TKL	**Tuckaleechee C**	**70.15**	**350**	*e*P		**P**	**07 43 01.8**	**-0.1**
	comp=Z,45nm,1.7s							
WVT	**Waverly**	**71.29**	**347**	*e*P		**P**	**07 43 08.7**	**-0.1**
	comp=Z,25nm,0.7s							
W41B	**Garyy Mavity, V**	**71.33**	**343**	P		**P**	**07 43 10.1**	**+1.1**
	baz=163							
X301	**Greenbrier Sit**	**71.43**	**343**	*e*P		**P**	**07 43 10.0**	**+0.3**
	comp=Z,12nm,0.8s							
W39A	**Magazine**	**71.74**	**342**	P		**P**	**07 43 12.2**	**+0.7**
	baz=161							
Y33A	**Hilltop Ranch,**	**72.05**	**337**	P		**P**	**07 43 13.7**	**+0.2**
	baz=157							
MNTX	**Cornudas Mount**	**72.43**	**331**	P		**P**	**07 43 15.6**	**-0.2**
	baz=152							
MNTX	**Cornudas Mount**	**72.43**	**331**	*e*P		**P**	**07 43 15.3**	**-0.5**
	comp=Z,6.1nm,1.0s							
MAW	**Mawson**	**73.21**	**164**	P		**P**	**07 43 20.6**	**+0.6**
	comp=Z,6.7nm,0.8s,baz=208,slow=8.0,SNR=5.9							
MAW	**Mawson**	**73.21**	**164**	*e*P		**P**	**07 43 21.0**	**+1.0**
	comp=Z,1.7nm,0.9s							
MSTX	**Muleshoe**	**73.44**	**334**	P		**P**	**07 43 22.3**	**+0.5**
	baz=154							
MSTX	**Muleshoe**	**73.44**	**334**	*e*P		**P**	**07 43 22.4**	**+0.6**
	comp=Z,9.8nm,0.9s							
R39A	**Chumby, Stover**	**74.51**	**343**	P		**P**	**07 43 28.5**	**+0.6**
	baz=162							
DBIC	**Dimbokro**	**75.38**	**71**	P		**P**	**07 43 33.0**	**-0.4**
	comp=Z,4.4nm,0.8s,baz=169,slow=7.9,SNR=4.6							
DBIC				LR		LR	08 14 17.7	
	comp=Z,101nm,19.6s,baz=214,slow=34							
DBIC	**Dimbokro**	**75.38**	**71**	*e*P		**P**	**07 43 33.5**	**0.0**
	comp=Z,72nm,1.9s							
P40A	**Paris**	**75.44**	**344**	P		**P**	**07 43 34.3**	**+1.2**
	baz=163							
LAZ	**Ladron**	**75.50**	**331**	*e*P		**P**	**07 43 33.9**	**-0.1**
ANMO	**Albuquerque**	**75.71**	**332**	*e*P		**P**	**07 43 36.1**	**+1.0**
	comp=Z,3.7nm,0.9s							
N39A	**Derby Farms, D**	**76.83**	**344**	P		**P**	**07 43 42.2**	**+1.2**
	baz=163							
X16A	**Lo Mia Camp, P**	**77.35**	**328**	*e*P		**P**	**07 43 45.1**	**+0.7**
	comp=Z,5.2nm,0.9s							
M38A	**Pleasantville**	**77.50**	**344**	P		**P**	**07 43 44.5**	**-0.2**
	baz=162							
KNB	**Kanab**	**80.14**	**328**	*e*P		**P**	**07 44 00.6**	**+1.0**
	comp=Z,9.7nm,1.3s							
BOSA	**Boshof**	**80.24**	**118**	P		**P**	**07 44 00.4**	**-0.2**
	comp=Z,3.2nm,0.7s,baz=208,slow=1.0,SNR=5.5							
ECSD	**EROS Data Cent**	**80.51**	**342**	P		**P**	**07 44 01.2**	**0.0**
	baz=160							
ECSD	**EROS Data Cent**	**80.51**	**342**	*e*P		**P**	**07 44 01.3**	**0.0**
	comp=Z,4.6nm,0.8s							
H35A	**Sunnyside Ranc**	**80.99**	**344**	P		**P**	**07 44 03.7**	**-0.1**
	baz=161							
J29A	**Okreek**	**81.21**	**340**	P		**P**	**07 44 05.8**	**+0.7**
	baz=157							
P18A	**Preston Nutter**	**81.26**	**331**	*e*P		**P**	**07 44 04.9**	**-0.9**
	comp=Z,20nm,1.4s							
F36A	**Milaca**	**81.81**	**345**	P		**P**	**07 44 07.6**	**-0.5**
	baz=162							
E36A	**McGregor**	**82.37**	**346**	P		**P**	**07 44 10.7**	**-0.4**
	baz=163							
URZ	**Urewera**	**83.49**	**228**	LR		LR	08 13 02.8	
	comp=Z,125nm,18.0s,baz=8.0,slow=30							
PDAR	**Pinedale Array**	**83.69**	**333**	P		**P**	**07 44 19.3**	**+1.0**
	comp=Z,0.3nm,0.7s,baz=148,slow=5.2,SNR=2.7							
NVAR	**Mina Array Bea**	**83.79**	**325**	P		**P**	**07 44 19.4**	**+0.5**
	comp=Z,0.4nm,0.5s,baz=125,slow=4.5,SNR=2.9							
ELK	**Elko**	**84.28**	**329**	*e*P		**P**	**07 44 21.1**	**-0.2**
	comp=Z,2.5nm,0.9s							
TOA0	**Torodi Ar. Sit**	**84.41**	**70**	*e*P		**P**	**07 44 22.2**	**-0.1**
	comp=Z,9.4nm,0.8s							
TORD	**Torodi Ar. Bea**	**84.41**	**70**	P		**P**	**07 44 21.9**	**-0.4**
	comp=Z,6.9nm,0.8s,baz=254,slow=3.9,SNR=33							
TORD				LR		LR	08 20 11.8	
	comp=Z,48nm,18.1s,baz=200,slow=34							
B32A	**Ashes, Strandq**	**84.87**	**344**	P		**P**	**07 44 23.3**	**-0.4**
	baz=160							
A33A	**Warroad**	**85.12**	**345**	P		**P**	**07 44 25.0**	**-0.1**
	baz=161							
B30A	**Myrvik Farm, E**	**85.34**	**343**	P		**P**	**07 44 26.1**	**-0.1**
	baz=159							
LKWY	**Lake**	**85.55**	**334**	*e*P		**P**	**07 44 29.1**	**+1.5**
	comp=Z,20nm,0.9s							
RLMT	**Red Lodge**	**85.62**	**335**	P		**P**	**07 44 27.3**	**-0.7**
	baz=150							
RLMT	**Red Lodge**	**85.62**	**335**	*e*P		**P**	**07 44 28.3**	**+0.3**
	comp=Z,14nm,1.8s							
RAO	**Raoul Island**	**85.69**	**238**	LR		LR	08 15 23.1	
	comp=Z,268nm,21.0s,baz=62,slow=30							
A29A	**Manning Farm,**	**86.00**	**343**	P		**P**	**07 44 29.1**	**-0.4**
	baz=158							
WVOR	**Wild Horse Val**	**87.14**	**328**	*e*P		**P**	**07 44 36.8**	**+1.4**
	comp=Z,83nm,0.6s							
SCHQ	**Schefferville**	**88.62**	**3**	P		**P**	**07 44 41.6**	**-0.4**
	comp=Z,3.3nm,1.0s,baz=162,slow=6.4,SNR=4.3							
YKA	**Yellowknife Ar**	**102.02**	**341**	P		**Pdif**	**07 45 42.2**	**-0.6**
	comp=Z,0.1nm,0.6s,baz=145,slow=4.7,SNR=3.2							
BR231	**Keskin MP Arra**	**121.44**	**61**	*e*PKPdf		**PKPdf**	**07 50 43.2**	**+0.4**
BR131	**Keskin Array S**	**122.02**	**61**	*e*PKPdf		**PKPdf**	**07 50 43.6**	**-0.4**
BRTR	**Keskin Array B**	**122.02**	**61**	PKP		**PKPdf**	**07 50 43.5**	**-0.4**
	comp=Z,1.0nm,0.7s,baz=186,slow=3.5,SNR=6.3							
AK11	**Malin Array Si**	**122.32**	**48**	*e*PKPdf		**PKPdf**	**07 50 43.4**	**-0.6**
AKASG	**Malin Array Be**	**122.36**	**48**	PKP		**PKPdf**	**07 50 43.1**	**-1.0**
	comp=Z,0.4nm,0.3s,baz=268,slow=2.6,SNR=4.3							
BRVK	**Borovoye**	**147.37**	**43**	*e*PKPbc		**PKPbc**	**07 51 33.2**	**+0.6**
MYKOM	**Kota Tinggi**	**147.73**	**173**	*e*PKPbc		**PKPbc**	**07 51 34.6**	**-0.2**
HYB	**Hyderabad**	**149.10**	**115**	*i* PKP		**PKPdf**	**07 51 36.0**	**+1.9**
HYB				*e*			07 51 43.5	
KKAR	**Karatay Array**	**149.74**	**61**	*e*PKPbc		**PKPbc**	**07 51 39.1**	**0.0**
EKS2	**Erkin-Say**	**152.17**	**62**	*e*PKPbc		**PKPbc**	**07 51 45.5**	**+0.5**
AAK	**Ala-Archa**	**152.70**	**62**	*e*PKPbc		**PKPbc**	**07 51 46.5**	**+0.3**
KURK	**Kurchatov**	**153.03**	**43**	*e*PKPbc		**PKPbc**	**07 51 46.5**	**+0.1**
TKM2	**Tokmak 2**	**153.46**	**61**	*e*PKPbc		**PKPbc**	**07 51 48.0**	**+0.1**
KSH	**Kashi**	**154.07**	**69**	*e*PKPbc		**PKPdf**	**07 51 40.0**	**-1.2**
KSH				*ep*PKP		pPKPdf	07 51 51.0	+1.9
KSH				*e*PP		**PP**	**07 55 42.0**	**+3.8**
KSH				SKS		**SKSdf**	**07 58 41.8**	**-4.8**
KSH				SKKS		**SKKSac**	**08 02 26.3**	**-0.2**
KSH				AMB		AMB		
	comp=Z,67nm,4.1s							
ZAA0	**Zalesovo Array**	**154.35**	**32**	*e*PKPdf		**PKPdf**	**07 51 40.2**	**-0.7**
ZAA0				*e*PKPbc		**PKPbc**	**07 51 49.1**	**-0.1**
ZALV	**Zalesovo Beam**	**154.35**	**32**	PKP		**PKPdf**	**07 51 40.6**	**-0.3**
	comp=Z,0.5nm,0.4s,baz=238,slow=2.8,SNR=4.5							
ZALV				PKPbc		**PKiKP**	**07 51 49.1**	**-0.1**
	comp=Z,4.6nm,0.6s,baz=305,slow=3.4,SNR=15							
MKAR	**Makanchi Array**	**156.93**	**49**	PKP		**PKPdf**	**07 51 42.8**	**-1.8**
	comp=Z,0.5nm,0.8s,baz=270,slow=2.6,SNR=2.6							
MKAR				PKPab		**PKPab**	**07 52 14.3**	**-0.5**
	comp=Z,1.6nm,0.6s,baz=281,slow=4.1,SNR=8.8							
WMQ	**Urumqi**	**161.65**	**52**	*e*PKP		**PKPdf**	**07 51 50.0**	**-0.3**
WMQ				LR		LR		
	comp=Z,24nm,23.2s							
WMQ				LR		LR		
	comp=Z,93nm,26.4s							
WMQ				LR		LR		
	comp=Z,48nm,23.2s							
CN2	**Changchun**	**163.13**	**311**	*e*PKP		**PKPdf**	**07 51 50.5**	**-1.1**
KMI	**Kunming**	**170.13**	**153**	PKP		**PKPdf**	**07 51 58.3**	**+0.4**
NJ2	**Nanjing**	**170.45**	**261**	*e*PKP		**PKPdf**	**07 51 56.8**	**-0.7**
GYA	**Guiyang**	**172.41**	**173**	*e*PKP		**PKPdf**	**07 51 59.0**	**+0.2**
GYA				PKPab		**PKPab**	**07 53 25.0**	**+1.8**
GYA				PKS		**PKSdf**	**07 55 30.5**	**-0.8**
GYA				PP		**PP**	**07 57 16.8**	**+3.4**
GYA				AMB		AMB		
	comp=Z,120nm,8.4s							
HHC	**Hu-ho-hao-te**	**172.53**	**337**	*e*PKP		**PKPdf**	**07 51 56.3**	**-2.1**
CD2	**Chengdu**	**175.44**	**132**	PKP		**PKPdf**	**07 51 59.0**	**-0.7**
LZH	**Lanzhou**	**176.22**	**56**	*e*PKP		**PKPdf**	**07 51 59.3**	**-0.6**
LZH				pPKP		pPKPdf	07 52 04.8	-3.0
LZH				sPKP			07 52 07.0	

*IDC **29** 07:36:17.0±0.6,19.36S×168.03E,h0km,mb4.7/20, mb1 4.8/21,mb1mx4.7/34,mbtmp4.6/21,ML4.7/1,MS4.3/13, Ms1 4.3/13,ms1mx3.9/31,Error ellipse: s-maj=18.7km s-min=14.3km az=130.0*

*NEIC **29** 07:36:19.5±0.2,19.16S×167.92E,h10km,mb5.2/88,Error ellipse: s-maj=6.3km s-min=4.8km az=129.0*

*GCMT **29** 07:36:19.5±0.2,19.22S×167.73E,h14km,MW5.1/106, Moment Tensor Solution. s62,c77; s106,c168; Duration: 0 Moment tensor: Scale 10^{16}Nm; M_{rr}-5.95±.19; $M_{\theta\theta}$0.36±.13; $M_{\phi\phi}$5.58±.14; $M_{r\theta}$0.72±.33; $M_{\theta\phi}$-2.52±.10; $M_{\phi r}$0.71±.27; Best double couple: M_o6.36700×10^{16} NP1:ϕ_s168.00000°,δ48.00000°,λ-77.00000°. NP2: ϕ_s328.00000°,δ44.00000°,λ-104.00000°. Principal axes: T 6.6110, Plg2.0000°, Azm248.0000°; N -0.4940, Plg10.0000°, Azm339.0000°; P -6.1230, Plg80.0000°, Azm148.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

*ISCJB **29** 07:36:20.4±0.2,19.25S±0.04×167.89E±0.04,h26km, mb5.1/114,MS4.2/16 Error ellipse: s-maj=6.0km s-min=4.5km az=150.1*

*MOS **29** 07:36:21.4±1.0,19.23S×167.83E,h33km,mb5.3/36,Error ellipse: s-maj=10.1km s-min=8.7km az=136.6*

*BJI **29** 07:36:23.5,19.10S×167.90E,h35km,mb4.8/36,mB5.2/25, Ms5.0/12,Ms7 4.8/9*

ISC 29 07:36:22.0±0.3,19.31S±0.05×167.87E±0.06,h26km,n313, σ1§22/300,mb5.1/114,MS4.2/16,6C-3D,Vanuatu Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**3.06**	**206**	Pn		**Pn**	**07 37 06.5**	**-2.2**
	98nm,0.3s,baz=69,slow=15,SNR=85							
DZM				Sn		**Sn**	**07 37 40.7**	**-3.9**
	109nm,0.3s,baz=52,slow=24,SNR=7.0							
DZM				LR		LR	07 37 48.5	
	comp=Z,5μm,19.7s,baz=27,slow=30							
MSVF	**Nonsavu**	**9.78**	**82**	*e*P		Pn	07 38 44.3	+3.1
MSVF	**Nonsavu**	**9.78**	**82**	*e*Pn		Pn	07 38 44.3	+3.1
HNR	**Honiara**	**12.46**	**321**	P		**Pn**	**07 39 20.0**	**+2.2**
HNR	**Honiara**	**12.46**	**321**	*e*P		**Pn**	**07 39 17.8**	**0.0**
HNR	**Honiara**	**12.46**	**321**	*e*Pn		**Pn**	**07 39 17.8**	**0.0**
OUZ	**Omahuta**	**16.64**	**163**	*e*Pn		**P**	**07 40 17.5**	**+1.8**
	271nm,1.9s							
EIDS	**Eidsvold**	**16.66**	**246**	*e*Pn		**P**	**07 40 17.6**	**+1.6**
	67nm,1.3s							
ARMA	**Armidale**	**18.40**	**230**	*e*P		**Pn**	**07 40 38.4**	**+2.9**
	57nm,1.3s							
AFI	**Afianalu**	**20.22**	**78**	LR		LR	07 47 26.4	
	comp=Z,3μm,19.3s,baz=238,slow=33							
CTA	**Charters Tower**	**20.37**	**264**	P		Pn	07 40 58.7	-0.3
	40nm,1.0s,baz=86,slow=11,SNR=17							
CTA				LR		LR	07 47 38.8	
	comp=Z,2μm,21.6s,baz=82,slow=33							
URZ	**Urewera**	**20.52**	**159**	P		Pn	07 41 00.5	-0.1
	39nm,1.3s,baz=321,slow=2.4,SNR=4.0							
URZ				LR		LR	07 48 21.5	
	comp=Z,1μm,18.4s,baz=339,slow=36							
URZ	**Urewera**	**20.52**	**159**	*e*P		Pn	07 41 00.8	+0.2
	62nm,1.1s							
BKZ	**Black Stump Fm**	**21.14**	**161**	*e*P		**P**	**07 41 06.3**	**+1.2**
	57nm,1.1s							
RABL	**Rabaul**	**21.47**	**312**	*e*P		**P**	**07 41 08.3**	**-0.5**
	50nm,0.6s							
PMG	**Port Moresby**	**22.33**	**293**	P		**P**	**07 41 19.7**	**+1.8**
	18nm,0.7s,baz=92,slow=4.3,SNR=5.6							
PMG				LR		LR	07 48 18.1	
	comp=Z,742nm,19.4s,baz=142,slow=32							
PMG	**Port Moresby**	**22.33**	**293**	*ce*P		**P**	**07 41 18.8**	**+0.8**
PMG				pmax		pmax		
	comp=Z,240nm,1.7s							
PMG	**Port Moresby**	**22.33**	**293**	*e*P		**P**	**07 41 19.1**	**+1.2**
	comp=Z,53nm,1.1s							
THZ	**Tophouse**	**22.79**	**170**	*e*P		**P**	**07 41 25.0**	**+2.3**
	comp=Z,217nm,2.0s							
CAN	**Canberra**	**23.08**	**222**	*e*P		**P**	**07 41 27.0**	**+1.2**
CAN				pmax		pmax		
	comp=Z,38nm,1.1s							
CAN	**Canberra**	**23.08**	**222**	*e*P		**P**	**07 41 26.9**	**+1.2**
	com

RKT eLR LR 08 01 08.8
comp=Z,569nm,29.2s
VNDA Vanda 58.32 182 P **P** **07 46 13.6 -0.7**
comp=Z,2.5nm,0.9s,baz=344,slow=4.5,SNR=7.7
MJAR Matsushiro Arr 62.22 333 P **P** **07 46 41.3 -0.2**
comp=Z,2.5nm,0.9s,baz=160,slow=7.8,SNR=4.1
MJAR LR LR 08 16 30.9
comp=Z,44nm,18.2s,baz=145,slow=39
MJAR Matsushiro Arr 62.22 333 P **P** **07 46 41.3 -0.2**
MJAR pmax pmax
comp=Z,2.0nm,0.9s
MJAR MLR MLR
comp=Z,44nm,18.2s
ASAJ Asahikawa 67.23 341 P **P** **07 47 14.4 +0.5**
comp=Z,18nm,1.0s,baz=204,slow=13,SNR=5.0
ASAJ Asahikawa 67.23 341 P **P** **07 47 14.4 +0.5**
ASAJ pmax pmax
comp=Z,16nm,0.9s
NJ2 Nanjing 69.37 317 *e*P **P** **07 47 29.0 +1.4**
NJ2 pmax pmax
comp=Z,39nm,0.8s
QSPA South Pole Qui 70.74 180 *e*P **P** **07 47 35.3 -0.5**
PSI Prapat 71.16 280 *e*P **P** **07 47 38.2 -1.0**
PSI pmax pmax
comp=Z,21nm,1.0s
PSI Prapat 71.16 280 *e*P **P** **07 47 38.2 -1.0**
comp=Z,21nm,1.0s
USRK Ussuriysk Ar. 71.22 334 P **P** **07 47 39.4 +0.7**
comp=Z,2.6nm,0.8s,baz=177,slow=7.3,SNR=7.6
SKNT Sakolnakorn 72.40 296 P **P** **07 47 47.9 +1.5**
comp=Z,15nm,0.9s,comp=Z,2um
PET Petropavlovsk 72.47 354 *e*P P 07 47 49.9 +3.9
PET *e*S **S** **07 57 12.0 +3.7**
PET pmax pmax
comp=Z,100nm,11.0s
MDJ Mudanjiang 72.58 332 P **P** **07 47 47.8 +0.9**
MDJ pmax pmax
comp=Z,14nm,0.9s
MDJ pmax pmax
comp=Z,180nm,8.1s
PEA0 Petropavlovsk- 72.65 354 *e*P **P** **07 47 47.9 +0.8**
PETK Petropavlovsk- 72.65 354 P **P** **07 47 47.5 +0.4**
comp=Z,6.8nm,0.8s,baz=131,slow=3.5,SNR=4.3
CN2 Changchun 73.86 329 *e*P **P** **07 47 54.5 +0.1**
CN2 *e*pP pP 07 48 02.5 -0.2
CN2 pmax pmax
comp=Z,10.0nm,1.2s
GYA Guiyang 74.81 306 P **P** **07 48 03.3 +2.8**
GYA pmax pmax
comp=Z,10.0nm,1.0s
KLR Kul'dur 75.41 336 *i* P **P** **07 48 04.0 +0.7**
BJI Beijing 76.19 322 P **P** **07 48 08.8 +0.9**
BJI pmax pmax
comp=Z,15nm,2.2s
XAN Xi'an 77.21 313 P **P** **07 48 14.0 0.0**
XAN S **S** **07 57 59.0 -3.1**
XAN pmax pmax
comp=Z,170nm,6.7s
XAN LR LR
comp=Z,150nm,19.0s
XAN LR LR
comp=Z,130nm,16.3s
KMI Kunming 77.22 303 P **P** **07 48 14.8 +0.4**
KMI pmax pmax
comp=Z,18nm,1.1s
KMI pmax pmax
comp=Z,120nm,5.3s
CMAR Chiang Mai Arr 77.36 295 P **P** **07 48 14.5 -0.5**
comp=Z,1.1nm,0.4s,baz=134,slow=4.4,SNR=6.5
MAW Mawson 77.88 202 P **P** **07 48 16.2 -0.9**
comp=Z,4.3nm,0.8s,baz=129,slow=6.7,SNR=4.4
MAW Mawson 77.88 202 *e*P **P** **07 48 18.4 +1.3**
MAW Mawson 77.88 202 *e*P **P** **07 48 18.4 +1.3**
CD2 Chengdu 79.26 308 P **P** **07 48 26.3 +0.9**
CD2 sP sP 07 48 37.3 +0.5
CD2 PP **PP** **07 51 25.8 +0.2**
CD2 S **S** **07 58 25.5 +1.2**
CD2 sS SKSac 07 58 39.0 -1.1
CD2 SS **SS** **08 03 33.0 +1.3**
CD2 pmax pmax
comp=Z,5.0nm,0.6s
CD2 pmax pmax
comp=Z,230nm,8.4s
CD2 LR LR
comp=Z,180nm,7.2s
CD2 LR LR
comp=Z,190nm,8.4s
HHC Hu-ho-hao-te 79.44 320 *e*P P 07 48 29.3 +3.1
HHC pmax pmax
comp=Z,34nm,1.2s
HHC pmax pmax
comp=Z,200nm,7.5s
MA2 Magadan 79.84 351 *e*P **P** **07 48 26.7 -1.1**
SEY Seymchan 82.88 353 *ce*P **P** **07 48 43.7 -0.1**
KDAK Kodiak Island 83.54 20 *e*P **P** **07 48 46.4 -0.9**
KDAK pmax pmax
comp=Z,75nm,1.4s
KDAK Kodiak Island 83.54 20 *e*P **P** **07 48 46.4 -0.9**
comp=Z,75nm,1.4s
GAMB Gambell 84.34 9 *e*P **P** **07 48 51.5 +0.2**
comp=Z,39nm,1.4s
SYO Syowa Base 84.50 197 ⇓ *e*P **P** **07 48 50.6 -1.7**
SVW2 Sparrevohn 85.34 17 *e*P **P** **07 48 56.4 0.0**
comp=Z,39nm,1.3s
RSO Redoubt South 85.63 18 *e*P **P** **07 48 57.6 -0.6**
ULN Ulaanbaatar 86.16 324 *d i*P **P** **07 49 01.1 +0.1**
ULN pmax pmax
comp=Z,50nm,2.5s
ULN Ulaanbaatar 86.16 324 *e*P **P** **07 49 00.9 -0.1**
comp=Z,17nm,1.0s
GTA Gaotai 86.24 314 *e*P **P** **07 49 02.5 +0.9**
GTA pP sP 07 49 13.0 -0.1
GTA sP pP 07 49 17.3 +7.3
GTA SKS **SKSac** **07 59 23.0 -3.3**
GTA S **S** **07 59 35.0 -0.3**
GTA sS sS 07 59 53.3 +4.0
GTA pmax pmax
comp=Z,5.0nm,1.3s
GTA pmax pmax
comp=Z,160nm,8.6s
GTA LR LR
comp=Z,190nm,18.1s
GTA LR LR
comp=Z,150nm,17.1s
GTA LR LR
comp=Z,120nm,16.2s
SONM Songino Array 86.51 324 LR LR 08 29 15.4
comp=Z,92nm,18.2s,baz=253,slow=37
TNA Tin City 86.59 10 *e*P **P** **07 49 01.3 -1.1**
comp=Z,41nm,1.3s
TT01 Tatalina 86.72 16 *e*P **P** **07 49 03.1 -0.2**
TTA Tatalina 86.75 16 *e*P **P** **07 49 03.0 -0.5**
TTA pmax pmax
comp=Z,15nm,1.3s
TTA Tatalina 86.75 16 *e*P **P** **07 49 03.0 -0.5**
comp=Z,15nm,1.3s
BILL Bilibino 87.10 359 *d i*P **P** **07 49 04.3 -0.7**
BILL *e* 07 49 16.1
BILL *e* 07 52 30.5
BILL eS **S** **07 59 37.3 -4.9**
BILL pmax pmax
comp=Z,29nm,2.5s
BILL Bilibino 87.10 359 *e*P **P** **07 49 04.8 -0.2**
comp=Z,12nm,1.1s
PMR Palmer 87.61 19 *e*P **P** **07 49 07.8 +0.3**
PMR pmax pmax
comp=Z,11nm,1.1s
PMR Palmer 87.61 19 *e*P **P** **07 49 07.8 +0.3**
comp=Z,11nm,1.1s
WDC Whiskeytown Da 87.83 46 *e*P **P** **07 49 08.7 -0.4**
WDC pmax pmax
comp=Z,35nm,1.4s
WDC Whiskeytown Da 87.83 46 *e*P **P** **07 49 08.7 -0.4**
comp=Z,35nm,1.4s
L02D Cave Junction, 87.86 44 P **P** **07 49 09.3 +0.1**
baz=242
N02D Trinity Center 87.90 45 P **P** **07 49 09.8 +0.3**
baz=242,SNR=6.7
EYAK Cordova Ski Ar 87.92 21 *e*P **P** **07 49 08.3 -0.8**
comp=Z,20nm,1.3s
M02C Callahan 88.00 45 P **P** **07 49 09.9 -0.1**
baz=242,SNR=7.5
ORV Oroville 88.07 47 *e*P **P** **07 49 09.1 -1.2**
ORV pmax pmax
comp=Z,26nm,1.4s
ORV Oroville 88.07 47 *e*P **P** **07 49 09.1 -1.2**
comp=Z,26nm,1.4s
AFDM Forest Hills D 88.16 48 *e*P **P** **07 49 10.1 -0.7**
comp=Z,21nm,1.2s
CAST Castle Rocks 88.19 17 *e*P **P** **07 49 07.9 -2.4**
comp=Z,12nm,1.0s
O03D Paynes Creek 88.20 46 P **P** **07 49 09.8 -1.2**
baz=243,SNR=6.6
YBH Yreka Blue Hor 88.25 45 *e*P **P** **07 49 10.3 -0.9**
YBH pmax pmax
comp=Z,33nm,1.5s
YBH Yreka Blue Hor 88.25 45 *e*P **P** **07 49 10.3 -0.9**
comp=Z,33nm,1.5s
ISA Isabella, Lake 88.53 51 P **P** **07 49 12.1 -0.6**
baz=245
BFSC Mount Baldy Ra 88.55 53 P **P** **07 49 11.9 -0.9**
baz=246
EDW2 Edwards Air Fo 88.56 52 P **P** **07 49 12.2 -0.6**
baz=245
KTH Kantishna Hill 88.61 17 *e*P **P** **07 49 10.9 -1.4**
comp=Z,6.9nm,1.0s
TRF Thorofare Moun 88.71 17 *e*P **P** **07 49 11.1 -1.8**
comp=Z,9.9nm,1.0s
I03D Drain, OR 88.76 43 P **P** **07 49 13.6 +0.2**
baz=242
BOD Bodaibo 88.83 334 *e*P **P** **07 49 12.6 -0.8**
BOD pmax pmax
comp=Z,9.0nm,1.5s
M04C Macdoel 88.85 45 P **P** **07 49 13.6 -0.5**
baz=243
SNAA Sanae 89.03 183 P **P** **07 49 13.5 -1.0**
SNAA Sanae 89.03 183 *i* P **P** **07 49 13.9 -0.5**
SNAA Sanae 89.03 183 *e*P **P** **07 49 13.5 -1.0**
comp=Z,420nm,0.7s
WAKR Walker 89.05 49 *e*P **P** **07 49 14.1 -1.1**
RND Reindeer 89.09 18 *e*P **P** **07 49 13.3 -1.3**
RND pmax pmax
comp=Z,12nm,1.0s
RND Reindeer 89.09 18 *e*P **P** **07 49 13.3 -1.3**
comp=Z,12nm,1.0s
PFO Pinyon Flats O 89.20 54 P **P** **07 49 15.2 -0.7**
baz=246
MCK McKinley 89.31 18 *e*P **P** **07 49 15.4 -0.2**
MCK pmax pmax
comp=Z,26nm,1.7s
MCK McKinley 89.31 18 *e*P **P** **07 49 15.4 -0.2**
comp=Z,26nm,1.7s
I04A Tendick Farm, 89.41 43 P **P** **07 49 16.0 -0.6**
baz=242
MPMC Manual Prospec 89.42 51 P **P** **07 49 15.2 -1.8**
baz=246,SNR=8.9
DAC Darwin (Calif) 89.44 51 *e*P **P** **07 49 16.4 -0.6**
DAC pmax pmax
comp=Z,17nm,1.3s
DAC Darwin (Calif) 89.44 51 *e*P **P** **07 49 16.4 -0.6**
comp=Z,17nm,1.3s
SWSC Sam W. Stewart 89.44 55 P **P** **07 49 15.9 -0.9**
baz=247
G03D McMinnville, O 89.53 41 P **P** **07 49 17.0 +0.1**
baz=242
ZAK Zakamensk 89.61 325 *e*P **P** **07 49 14.5 -2.9**
ZAK pmax pmax
comp=Z,9.0nm,1.6s
GSC Goldstone, Bar 89.62 52 P **P** **07 49 17.3 -0.5**
baz=246
VNA3 Neumayer Olymp 89.67 181 P **P** **07 49 16.3 -1.0**
BELC Belle Mtn. Jos 89.71 54 P **P** **07 49 17.7 -0.6**
baz=246
NV01 Mina Array Sit 89.82 49 *e*P **P** **07 49 17.7 -1.1**
NVAR Mina Array Bea 89.82 49 P **P** **07 49 17.8 -1.1**
comp=Z,4.4nm,0.8s,baz=228,slow=7.8,SNR=16
MLY Manley 89.82 16 *e*P **P** **07 49 16.6 -1.3**
comp=Z,8.4nm,1.4s
GRAC Grapevine Rang 89.90 51 P **P** **07 49 18.8 -0.2**
baz=246
K05A Summer Lake 89.91 44 *e*P **P** **07 49 19.0 -0.1**
comp=Z,54nm,1.4s
NV11 Mina Array Sit 89.92 49 *e*P **P** **07 49 18.5 -0.7**
comp=Z,20nm,1.4s
MOD Modoc Plateau 89.93 45 *e*P **P** **07 49 18.7 -0.5**
comp=Z,30nm,1.4s
J05D Fort Rock, OR 89.93 44 P **P** **07 49 18.7 -0.5**
baz=243
VNA2 Neumayer--Watz 89.94 182 P **P** **07 49 17.8 -0.8**
baz=174,slow=4.0
H04A Detroit Lake 89.96 42 *e*P **P** **07 49 18.2 -0.8**
comp=Z,41nm,1.4s
E03A Lebam 89.98 40 *e*P **P** **07 49 19.5 +0.5**
comp=Z,66nm,1.2s
BC3 Big Chuckawall 89.99 54 P **P** **07 49 18.6 -1.0**
baz=247
FURC Furnace Creek, 90.05 51 P **P** **07 49 18.5 -1.1**
baz=246,SNR=5.2
TLY Talaya 90.09 326 *e*P **P** **07 49 19.2 -0.3**
TLY pmax pmax
comp=Z,10.0nm,1.5s
TLY Talaya 90.09 326 *e*P **P** **07 49 19.6 +0.1**
comp=Z,28nm,1.8s
WRH Wood River Hil 90.12 18 *e*P **P** **07 49 17.6 -1.7**
comp=Z,9.3nm,1.2s
SRIG Santa Rosalia 90.14 61 *e*P **P** **07 49 19.5 -0.8**
comp=Z,42nm,1.5s
GLA Glamis 90.23 55 P **P** **07 49 20.1 -0.5**
baz=247
SHOC Shoshone, Teco 90.26 52 P **P** **07 49 20.1 -0.5**
baz=246
GMRC Granite Mounta 90.27 53 P **P** **07 49 20.3 -0.6**
baz=247
CCB Clear Creek Bu 90.33 18 *e*P **P** **07 49 18.5 -1.8**
comp=Z,3.7nm,0.9s
TUQ Turquoise Moun 90.33 52 P **P** **07 49 20.6 -0.6**
baz=246
I05D Terrebonne, OR 90.34 43 P **P** **07 49 20.3 -0.6**
baz=243
F04A Amboy 90.39 41 *e*P **P** **07 49 20.5 -0.5**
comp=Z,56nm,1.3s
HDA Harding Lake 90.40 18 *e*P **P** **07 49 19.4 -1.2**
comp=Z,34nm,1.3s
IRM Iron Mountain 90.42 54 P **P** **07 49 20.4 -1.1**
baz=247,SNR=6.8
MDM Murphy Dome 90.45 17 *e*P **P** **07 49 19.1 -1.8**
comp=Z,12nm,1.2s
COLA College 90.49 17 ⇓ *e*P **P** **07 49 19.2 -1.8**
COLA pmax pmax
comp=Z,11nm,1.3s
COLA College 90.49 17 *e*P **P** **07 49 19.5 -1.5**
comp=Z,28nm,0.2s
ILAR Eielson Array 90.69 18 P **P** **07 49 19.6 -2.3**
comp=Z,2.6nm,0.8s,baz=236,slow=6.0,SNR=14
ILB Eielson Array 90.69 18 *e*P **P** **07 49 21.8 -0.2**
IL1 Eielson Array 90.69 18 *e*P **P** **07 49 19.2 -2.8**
TPNV Topopah Spring 90.70 51 P **P** **07 49 21.4 -1.5**
baz=246,SNR=9.7
TPNV Topopah Spring 90.70 51 *e*P **P** **07 49 22.3 -0.6**
TPNV pmax pmax
comp=Z,22nm,1.4s
TPNV Topopah Spring 90.70 51 *e*P **P** **07 49 22.3 -0.6**
comp=Z,22nm,1.4s
DOT Dot Lake 90.72 19 *e*P **P** **07 49 23.2 +1.1**
comp=Z,18nm,1.1s
Y12C Blythe 90.74 54 P **P** **07 49 21.9 -1.0**
baz=247,SNR=6.6
Y12C Blythe 90.74 54 *e*P **P** **07 49 22.6 -0.3**
comp=Z,21nm,1.3s
G05D Wamic, OR 90.76 42 P **P** **07 49 22.5 -0.3**
baz=243
SLBS Sierra La Lagu 90.78 65 *e*P **P** **07 49 23.8 +0.4**
comp=Z,22nm,1.1s
113A Mohawk Valley, 90.95 56 *e*P **P** **07 49 23.6 -0.3**
comp=Z,17nm,1.3s
NEE2 Needles Airpor 91.06 54 P **P** **07 49 24.0 -0.4**
baz=247
SKAG Skagway 91.06 25 *e*P **P** **07 49 23.6 -0.2**
comp=Z,18nm,1.3s
LON Longmire 91.14 40 *e*P **P** **07 49 23.6 -1.0**
LON pmax pmax
comp=Z,20nm,1.5s
LON Longmire 91.14 40 *e*P **P** **07 49 23.6 -1.0**
comp=Z,20nm,1.5s
D05A Enumclaw 91.23 40 *e*P **P** **07 49 25.0 +0.1**
comp=Z,36nm,1.0s
PDMCI Parker Dam,Lak 91.24 54 P **P** **07 49 24.3 -0.9**
baz=248,SNR=7.4
WVOR Wild Horse Val 91.28 45 *e*P **P** **07 49 26.7 +1.3**
WVOR pmax pmax
comp=Z,39nm,0.7s
WVOR Wild Horse Val 91.28 45 *e*P **P** **07 49 26.7 +1.3**
comp=Z,40nm,0.7s
214A Organ Pipe Nat 91.39 57 P **P** **07 49 25.1 -0.9**
baz=248,SNR=8.4
214A Organ Pipe Nat 91.39 57 *e*P **P** **07 49 25.5 -0.6**
comp=Z,59nm,1.2s
A04D Lummi Island 91.52 38 P **P** **07 49 26.0 -0.1**
baz=242
B05A Bryant 91.67 39 P **P** **07 49 26.4 -0.4**
baz=243
COLD Coldfoot 91.68 15 *e*P **P** **07 49 26.4 -0.1**
comp=Z,8.1nm,0.9s
R11A Troy Canyon, C 91.74 50 P **P** **07 49 26.9 -0.8**
baz=247
R11A Troy Canyon, C 91.74 50 *e*P **P** **07 49 26.6 -1.1**
comp=Z,3.0nm,1.0s
W13A Hualapai Mount 91.74 53 *e*P **P** **07 49 27.3 -0.5**
comp=Z,11nm,1.1s
Y14A Wickenburg 91.98 55 *e*P **P** **07 49 28.1 -0.7**
comp=Z,32nm,1.2s
LTY Liberty 92.07 40 *e*P **P** **07 49 28.0 -0.9**
comp=Z,7.7nm,1.0s
HAWA Hanford 92.39 41 *e*P **P** **07 49 29.9 -0.4**
comp=Z,15nm,1.1s
EGAK Eagle 92.42 19 *e*P **P** **07 49 29.8 -0.2**
comp=Z,4.8nm,0.9s
ELK Elko 92.92 48 *e*P **P** **07 49 32.5 -0.7**
ELK pmax pmax
comp=Z,4.0nm,1.1s
ELK Elko 92.92 48 *e*P **P** **07 49 32.5 -0.7**
comp=Z,3.7nm,1.1s
LCMT Little Creek M 92.94 52 *e*P **P** **07 49 32.7 -0.6**
comp=Z,15nm,1.3s
TUC Tucson 93.12 57 P **P** **07 49 33.6 -0.5**
baz=249
TUC Tucson 93.12 57 *e*P **P** **07 49 33.8 -0.3**
TUC pmax pmax
comp=Z,12nm,1.2s
TUC Tucson 93.12 57 *e*P **P** **07 49 33.8 -0.3**
comp=Z,12nm,1.2s
KNB Kanab 93.25 52 *e*P **P** **07 49 34.6 -0.2**
KNB pmax pmax
comp=Z,18nm,1.5s
KNB Kanab 93.25 52 *e*P **P** **07 49 34.6 -0.2**
comp=Z,18nm,1.5s
X16A Lo Mia Camp, P 93.36 55 *e*P **P** **07 49 35.1 -0.2**
comp=Z,11nm,1.1s
B08A Colville Reser 93.36 40 *e*P **P** **07 49 34.0 -0.8**
comp=Z,10nm,1.4s
319A Douglas 94.00 58 *e*P **P** **07 49 38.0 -0.3**
comp=Z,14nm,1.0s
TIXI Tiksi 94.55 348 *i* P **P** **07 49 39.0 -0.6**
TIXI pmax pmax
comp=Z,2.0nm,0.3s
HLID Hailey 94.57 45 P **P** **07 49 39.7 -0.9**
baz=248
HLID Hailey 94.57 45 *e*P **P** **07 49 40.3 -0.3**
comp=Z,3.4nm,1.0s
NEW Newport 94.66 40 P **P** **07 49 40.7 -0.1**
baz=246
121A Cookes Peak, D 95.58 58 P **P** **07 49 44.9 -0.6**
baz=251
WMQ Urumqi 96.33 314 *e*P **P** **07 49 50.0 +1.5**
WMQ pmax pmax
comp=Z,3.0nm,0.6s
WMQ pmax pmax
comp=Z,61nm,4.4s
WMQ LR LR
comp=Z,36nm,20.0s
WMQ LR LR
comp=Z,46nm,25.0s
AHID Auburn Hatcher 96.54 47 *e*P **P** **07 49 50.1 +0.4**
comp=Z,4.6nm,0.8s
INK Inuvik 97.02 19 P **P** **07 49 49.0 -2.0**
comp=Z,3.5nm,1.1s,baz=231,slow=5.0,SNR=5.7
INK Inuvik 97.02 19 P **P** **07 49 49.0 -2.0**
INK pmax pmax
comp=Z,4.0nm,1.1s
BOZ Bozeman (W) 97.17 44 P **P** **07 49 51.5 -1.0**
baz=250
MNTX Cornudas Mount 97.25 59 P **P** **07 49 51.5 -1.4**
baz=252
ANMO Albuquerque 97.40 56 *ce*P **P** **07 49 51.0 -2.8**
baz=252
ANMO Albuquerque 97.40 56 *e*P **P** **07 49 51.0 -2.8**
ANMO pmax pmax
comp=Z,3.0nm,1.2s
ANMO Albuquerque 97.40 56 *e*P **P** **07 49 52.5 -1.2**
comp=Z,13nm,2.0s
PDAR Pinedale Array 97.61 47 P **P** **07 49 53.2 -1.4**
comp=Z,0.3nm,0.7s,baz=242,slow=3.8,SNR=3.5
TX31 Lajitas Ar. Si 97.94 62 *e*P **P** **07 49 55.4 -0.8**
TXAR Lajitas Array 97.94 62 P **P** **07 49 55.3 -0.8**
comp=Z,0.8nm,0.8s,baz=234,slow=5.2,SNR=6.7
MKAR Makanchi Array 100.89 316 P **Pdif** **07 50 08.8 -0.1**
comp=Z,0.4nm,0.8s,baz=110,slow=6.6,SNR=2.5
YKA Yellowknife Ar 101.33 28 P **Pdif** **07 50 08.9 -1.4**
comp=Z,1.1nm,0.9s,baz=255,slow=4.8,SNR=11
W32A Sentinel 103.13 57 Pdiff **Pdif** **07 50 17.4 -1.7**
baz=256
X38A Whitesboro 106.56 59 PKiKP **PKiKP** **07 54 43.9 -1.1**
baz=258
340A Bronson 106.63 62 PKiKP **PKiKP** **07 54 44.1 -1.2**
baz=257
ABKAR Akbulak array 116.03 316 *e*PKPdf **Pdif** **07 51 15.7 -0.3**
ABKAR Akbulak array 116.03 316 *e*Pdif **Pdif** **07 51 15.7 -0.3**
M54A Oil Creek Stat 119.21 53 PKiKP **PKPdf** **07 55 07.8 -1.2**
baz=270
ARCES ARCESS Array B 124.80 345 PKP **PKPdf** **07 55 18.1 -0.8**
comp=Z,1.6nm,0.8s,baz=88,slow=2.6,SNR=7.1
KLMR Klimovskoe 125.00 332 *e*PKIKP **PKPdf** **07 55 16.2 -3.2**
KLMR pmax pmax
comp=Z,10.0nm,1.5s
OBN Obninsk 128.84 326 ⇑ *i*PKIKP **PKPdf** **07 55 26.0 -0.9**
OBN *e* 07 57 37.0
OBN MLR MLR
comp=Z,84nm,19.0s
FINES FINESS Array B 130.16 337 PKP **PKPdf** **07 55 27.9 -1.4**
comp=Z,0.8nm,0.8s,baz=31,slow=3.2,SNR=2.8
AKASG Malin Array Be 134.79 324 PKP **PKPdf** **07 55 37.0 -1.3**
comp=Z,0.2nm,0.2s,baz=51,slow=1.6,SNR=4.4
NOA NORSAR Array B 135.17 344 PKP **PKPdf** **07 55 37.8 -1.0**
comp=Z,0.4nm,0.7s,baz=33,slow=2.0,SNR=3.4
BRTR Keskin Array B 135.84 308 PKP **PKPdf** **07 55 40.9 +0.1**
comp=Z,0.4nm,0.4s,baz=116,slow=2.9,SNR=3.8
DPC Dobruska-Polom 141.66 331 *e*PKP **PKPdf** **07 55 48.2 -2.8**
BRG Berggiesshuel 142.36 333 *e*P **PKPdf** **07 55 51.9 -0.3**
comp=Z,6.1nm,1.0s
BRG Berggiesshubel 142.36 333 *e*PKIKP **PKPdf** **07 55 51.9 -0.3**
BRG pmax pmax
comp=Z,6.0nm,1.0s
CONA Conrad Observa 143.53 328 *i* PKPdf PKPbc 07 55 51.6 -0.2
comp=Z,19nm,1.3s,SNR=10.0
KHC Kasperske Hory 143.79 331 *e*PKP PKPbc 07 55 52.8 +0.3
KHC *ex* x 07 56 04.5
KHC Kasperske Hory 143.79 331 *e*PKIKP **PKPdf** **07 55 53.7 -1.1**
KHC Kasperske Hory 143.79 331 *e*PKPdf **PKPdf** **07 55 53.7 -1.1**
GEC2 GERESS Array S 143.94 331 *e*PKIKP PKPbc 07 55 53.5 +0.5
GEC2 GERESS Array S 143.94 331 *e*PKPdf PKPbc 07 55 53.5 +0.5
GERES GERESS Array B 143.94 331 PKP PKPbc 07 55 52.8 -0.2
comp=Z,2.8nm,0.7s,baz=48,slow=4.0,SNR=11
GEA0 GERESS Array S 143.94 331 *e*PKPdf PKPbc 07 55 53.0 0.0
ARSA Arzberg 144.15 327 *i* PKPdf PKPbc 07 55 53.2 -0.4
comp=Z,7.0nm,0.7s,SNR=8.1
MOA Molln 144.37 329 *i* PKPdf PKPbc 07 55 54.2 -0.1
comp=Z,28nm,1.0s,SNR=15
GRFO Grafenberg 144.40 334 *e*PKIKP **PKPdf** **07 55 54.8 -1.0**
GRFO Grafenberg 144.40 334 *e*PKPdf PKPbc 07 55 54.8 +0.5
PERS Pernice 144.77 327 *i* PKPbc **PKPab** **07 55 55.3 -0.3**
PERS *i* 07 57 23.6
SOKA Soboth 144.78 327 *i* PKPdf PKPbc 07 55 55.4 -0.3
comp=Z,37nm,1.3s,SNR=20
TIR Tirane 145.03 316 *e*PKIKP **PKPdf** **07 55 56.7 -0.5**
TIR Tirane 145.03 316 *e*PKPbc **PKPdf** **07 55 56.7 -0.5**
OBKA Obir 145.14 327 *i* PKPdf **PKPbc** **07 55 56.4 -0.5**
comp=Z,18nm,0.8s,SNR=9.5
KBA Koelnbreinsper 145.35 329 *i* PKPdf **PKPbc** **07 55 56.9 -0.7**
comp=Z,34nm,0.9s,SNR=20
VISS Visnje 145.46 326 *i* PKPbc **PKPbc** **07 55 57.5 -0.3**
LJU Ljubljana 145.47 327 *i* PKPbc **PKPab** **07 55 57.7 -0.3**
LJU *i* 07 57 26.0
MYKA Terra Mystica 145.52 328 *i* PKPdf **PKPdf** **07 55 57.2 -0.7**
comp=Z,21nm,0.8s,SNR=12
BEBN Eben Emael 145.56 340 PKP **PKPbc** **07 55 57.7 -0.2**
CRNS Crni Vrh 145.58 327 *e*PKPbc **PKPdf** **07 55 57.6 -0.4**
CWF Charnwood Fore 145.59 348 *e*PKPdf **PKPdf** **07 55 57.5 -0.2**
MEM Membach 145.61 339 PKP **PKPbc** **07 55 57.9 -0.2**
CADS Cadrg 145.75 327 *e*PKPbc **PKPdf** **07 55 57.6 -0.7**

STU	**Stuttgart**	**145.95**	**335**	*e*PKP2	**PKPab**	**07 55 59.4**	**-0.3**
STU	**Stuttgart**	**145.95**	**335**	*e*PKPdf	**PKPab**	**07 55 59.4**	**-0.3**
ABTA	**Abfaltersbach**	**145.99**	**329**	*i* PKPab	**PKPdf**	**07 55 58.6**	**-0.2**
	comp=Z,32nm,1.0s,SNR=10						
BCLA	**Clavier**	**146.00**	**340**	PKP	**PKPab**	**07 55 59.7**	**-0.2**
WTTA	**Wattenberg**	**146.04**	**331**	*i* PKPab	**PKPbc**	**07 55 59.6**	**-0.2**
	comp=Z,22nm,1.1s,SNR=7.8						
TRI	**Trieste**	**146.09**	**327**	*e*PKP2	**PKPdf**	**07 55 58.3**	**-0.5**
TRI	**Trieste**	**146.09**	**327**	*e*PKPdf	**PKPdf**	**07 55 58.3**	**-0.5**
MOTA	**Moosalm**	**146.22**	**331**	*i* pPKPdf	**PKPab**	**07 56 00.8**	**-0.2**
	comp=Z,27nm,1.0s,SNR=6.8						
RETA	**Reutte**	**146.27**	**332**	*i* PKPab	**PKPbc**	**07 56 00.1**	**-0.3**
	comp=Z,15nm,0.9s,SNR=7.0						
LANF	**Langenberg**	**146.33**	**336**	PKP	**PKPab**	**07 56 00.9**	**-0.3**
WLF	**Walferdange**	**146.36**	**338**	*e*PKP2	**PKPab**	**07 56 00.8**	**-0.5**
WLF	**Walferdange**	**146.36**	**338**	*e*PKPdf	**PKPab**	**07 56 00.8**	**-0.5**
FETA	**Feichten**	**146.63**	**331**	*i* PKPab	**PKPbc**	**07 56 01.4**	**-0.1**
	comp=Z,32nm,1.1s,SNR=14						
BFO	**Black Forest**	**146.65**	**335**	*e*PKP2	**PKPbc**	**07 56 01.1**	**-0.3**
BFO	**Black Forest**	**146.65**	**335**	*e*PKPdf	**PKPbc**	**07 56 01.1**	**-0.3**
DAVA	**Damuels**	**146.81**	**332**	*i* PKPab	**PKPbc**	**07 56 01.8**	**-0.2**
	comp=Z,25nm,1.3s,SNR=9.1						
FUORN	**Ofenpass-Fuorn**	**147.15**	**331**	*e*PKPbc	**PKPbc**	**07 56 03.5**	**+0.4**
ECH	**Echery**	**147.20**	**336**	PKP	**PKPbc**	**07 56 02.9**	**0.0**
MOF	**Molkenrain**	**147.51**	**336**	PKP	**PKPbc**	**07 56 04.0**	**+0.1**
THEF	**They Montfort**	**147.63**	**337**	PKP	**PKPbc**	**07 56 04.4**	**+0.3**
TUE	**Stuetta**	**147.67**	**332**	*e*PKPbc	**PKPbc**	**07 56 04.6**	**0.0**
LOMF	**Lomont**	**148.04**	**335**	PKP	**PKPbc**	**07 56 05.5**	**+0.2**
TIP	**Timpagrande**	**148.16**	**315**	*e*PKPbc	**PKPbc**	**07 56 05.5**	**-0.4**
SENIN	**Lac Senin/Sane**	**148.64**	**334**	*e*PKPbc	**PKPbc**	**07 56 07.1**	**0.0**
PLDF	**La Plantade**	**150.41**	**337**	PKP	**PKPbc**	**07 56 12.6**	**+1.3**
AGO	**Saint Agoulin**	**150.51**	**338**	PKP	**PKPbc**	**07 56 12.4**	**+0.9**
SSB	**Saint Sauveur**	**150.64**	**336**	*e*PKIKP	**PKPbc**	**07 56 11.8**	**0.0**
SSB	**Saint Sauveur**	**150.64**	**336**	*e*PKPbc	**PKPbc**	**07 56 11.8**	**0.0**
PYM	**Petit Puy Mans**	**150.81**	**338**	PKP	**PKPbc**	**07 56 13.5**	**+1.2**
LBL	**Lubilhac**	**151.17**	**337**	PKP	**PKPbc**	**07 56 14.7**	**+1.6**
ESDC	**Sonseca Array**	**158.52**	**343**	PKPab	**PKPab**	**07 56 51.2**	**-1.1**
	comp=Z,1.0nm,0.7s,baz=36,slow=3.9,SNR=4.4						
TORD	**Torodi Ar. Bea**	**165.38**	**247**	PKP	**PKPdf**	**07 56 23.7**	**-1.4**
	comp=Z,2.1nm,1.3s,baz=211,slow=1.7,SNR=4.1						
TORD				PKPab	**PKPab**	**07 57 21.7**	**-1.3**
	comp=Z,1.3nm,1.0s,baz=90,slow=4.4,SNR=3.8						

*IDC **29** 07:37:45.7±0.7, 19°.38S × 167°.95E, h0km, mb4.6/12, mb1 4.7/13, mb1mx4.4/34, mbtmp4.5/13, Error ellipse: s-maj=27.2km s-min=17.1km az=130.0*
*NEIC **29** 07:37:47.4±0.4, 19°.16S × 167°.71E, h10km, mb4.9/9, Error ellipse: s-maj=12.7km s-min=10.8km az=132.0*
*ISCJB **29** 07:37:48.2±0.4, 19°.34S±0°.06 × 167°.78E±0°.08, h26km, mb4.6/20, Error ellipse: s-maj=11.2km s-min=7.7km az=34.4*

ISC 29 07:37:49.7±0.5, 19°.39S±0°.08 × 168°.0E±0°.1, h26km, n38, σ1s13/37, mb4.7/20, Vanuatu Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
DZM	**Mont Dzumac**	**3.01**	**208**	Pn	**Pn**	**07 38 35.2**	**-0.7**
	baz=340,slow=8.2,SNR=1.1						
DZM				Sn	**Sn**	**07 39 09.6**	**-1.7**
	117nm,0.3s,baz=313,slow=18,SNR=3.6						
MSVF	**Nonsavu**	**9.72**	**82**	*e*Pn	Pn	07 40 13.4	+5.3
OUZ	**Omahuta**	**16.54**	**164**	*e*P	**P**	**07 41 45.2**	**+2.9**
	79nm,1.0s						
URZ	**Urewera**	**20.42**	**159**	P	Pn	07 42 28.3	+1.2
	22nm,0.8s,baz=26,slow=8.2,SNR=3.8						
URZ	**Urewera**	**20.42**	**159**	*e*P	Pn	07 42 28.4	+1.4
	43nm,1.2s						
PMG	**Port Moresby**	**22.42**	**293**	P	**P**	**07 42 49.5**	**+2.8**
	11nm,0.7s,baz=135,slow=16,SNR=2.6						
COEN	**Coen**	**24.32**	**279**	*e*P	**P**	**07 43 06.6**	**+1.1**
	187nm,2.1s						
RPZ	**Rata Peaks**	**24.39**	**175**	*e*P	**P**	**07 43 06.9**	**+1.1**
	41nm,1.3s						
STKA	**Stephens Creek**	**26.73**	**237**	P	**P**	**07 43 28.4**	**+1.2**
	6.0nm,0.9s,baz=75,slow=9.3,SNR=2.9						
WRAB	**Tennant Creek**	**31.61**	**263**	*e*P	**P**	**07 44 08.8**	**-1.9**
	7.0nm,0.8s						
WRA	**Warramunga Arr**	**31.62**	**263**	P	**P**	**07 44 09.2**	**-1.6**
	3.0nm,0.5s,baz=81,slow=6.2,SNR=5.3						
WRA				PcP	**PcP**	**07 47 02.4**	**-0.5**
	0.9nm,0.8s,baz=88,slow=2.8,SNR=3.7						
ASAR	**Alice Springs**	**31.91**	**256**	P	**P**	**07 44 13.0**	**-0.3**
	8.3nm,0.6s,baz=87,slow=8.7,SNR=5.9						
FITZ	**Fitzroy Crossi**	**40.01**	**265**	P	**P**	**07 45 22.8**	**0.0**
	10nm,0.6s,baz=92,slow=7.7,SNR=6.4						
FITZ	**Fitzroy Crossi**	**40.01**	**265**	*e*P	**P**	**07 45 22.6**	**-0.1**
	26nm,0.9s						
MBWA	**Marble Bar**	**45.13**	**259**	*e*P	**P**	**07 46 04.0**	**-0.3**
	20nm,0.6s						
NWAO	**Narrogin (SRO)**	**47.06**	**243**	P	**P**	**07 46 19.1**	**-0.2**
	14nm,0.7s,baz=32,slow=1.7,SNR=4.6						
VNDA	**Vanda**	**58.24**	**182**	P	**P**	**07 47 41.7**	**+0.3**
	2.3nm,0.8s,baz=12,slow=9.6,SNR=3.7						
QSPA	**South Pole Qui**	**70.66**	**180**	*e*P	**P**	**07 49 03.4**	**+0.5**
USRK	**Ussuriysk Ar.**	**71.32**	**334**	P	**P**	**07 49 08.0**	**+1.0**
	1.5nm,0.7s,baz=126,slow=5.2,SNR=3.3						
PETK	**Petropavlovsk-**	**72.74**	**354**	P	**P**	**07 49 15.8**	**+0.5**
	8.1nm,0.7s,baz=156,slow=5.1,SNR=6.1						
MAW	**Mawson**	**77.83**	**202**	P	**P**	**07 49 45.0**	**+0.5**
	2.1nm,0.7s,baz=109,slow=9.7,SNR=3.8						
CMB	**Columbia Colle**	**88.17**	**49**	*e*P	**P**	**07 50 37.9**	**-0.7**
	47nm,1.0s						
SNAA	**Sanae**	**88.95**	**183**	P	**P**	**07 50 41.3**	**-0.5**
VNA3	**Neumayer Olymp**	**89.59**	**181**	P	**P**	**07 50 44.4**	**-0.2**
NVAR	**Mina Array Bea**	**89.82**	**49**	P	**P**	**07 50 46.1**	**-0.4**
	4.1nm,0.8s,baz=227,slow=8.6,SNR=8.5						
VNA2	**Neumayer--Watz**	**89.86**	**182**	P	**P**	**07 50 45.9**	**0.0**
	baz=177,slow=3.4						
VNA1	**Neumayer--Stat**	**90.16**	**181**	P	**P**	**07 50 47.1**	**-0.2**
COLA	**College**	**90.55**	**17**	*e*P	**P**	**07 50 46.9**	**-2.1**
	3.5nm,0.8s						
ILAR	**Eielson Array**	**90.74**	**18**	P	**P**	**07 50 47.6**	**-2.3**
	2.5nm,0.8s,baz=240,slow=4.1,SNR=7.9						
PDAR	**Pinedale Array**	**97.61**	**47**	P	**P**	**07 51 22.4**	**+0.1**
	0.2nm,0.7s,baz=273,slow=3.6,SNR=2.8						
TXAR	**Lajitas Array**	**97.91**	**62**	P	**P**	**07 51 23.8**	**0.0**
	0.7nm,0.7s,baz=213,slow=5.3,SNR=6.2						
YKA	**Yellowknife Ar**	**101.36**	**28**	P	**Pdif**	**07 51 38.1**	**-0.1**
	0.5nm,0.7s,baz=254,slow=4.9,SNR=5.3						
ARCES	**ARCESS Array B**	**124.90**	**345**	PKP	**PKPdf**	**07 56 46.1**	**-0.7**
	2.0nm,0.9s,baz=67,slow=2.3,SNR=5.3						
NOA	**NORSAR Array B**	**135.27**	**344**	PKP	**PKPdf**	**07 57 06.7**	**0.0**
	0.6nm,0.8s,baz=32,slow=2.0,SNR=3.2						
GERES	**GERESS Array B**	**144.04**	**331**	PKP	**PKPab**	**07 57 20.9**	**+0.4**
	2.8nm,0.7s,baz=33,slow=3.2,SNR=6.1						
BFO	**Black Forest**	**146.75**	**335**	*e*PKPbc	**PKPbc**	**07 57 29.0**	**-0.4**
TUE	**Stuetta**	**147.78**	**332**	*e*PKPbc	**PKPbc**	**07 57 32.4**	**-0.1**
ESDC	**Sonseca Array**	**158.62**	**343**	PKPab	**PKPab**	**07 58 20.2**	**-0.2**
	0.3nm,0.4s,baz=29,slow=3.8,SNR=3.0						

*IDC **29** 07:45:40.4±1.6, 8°.65S × 127°.69E, h0km, mb3.9/2, mb1 4.3/6, mb1mx3.8/51, mbtmp4.0/6, ML4.1/3, Error ellipse: s-maj=47.1km s-min=25.0km az=70.0*
*ISCJB **29** 07:45:48.0±2.8, 9°.3S±0°.2 × 127°.5E±0°.1, h33km, mb3.8/3, Error ellipse: s-maj=30.9km s-min=8.3km az=22.9*

ISC 29 07:45:49.6±1.7, 9°.2S±0°.1 × 127°.50E±0°.10, h35km, n8, σ1s70/10, mb3.8/3, Timor Sea

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
BATI	**Baumata**	**3.91**	**255**	Pn	**Pn**	**07 46 47.3**	**+0.1**
	baz=29,slow=20						
BATI				Sn	**Sn**	**07 47 32.1**	**+0.2**
	baz=180,slow=20						
FITZ	**Fitzroy Crossi**	**9.03**	**191**	Pn	**Pn**	**07 47 58.6**	**+1.1**
	1.3nm,0.3s,baz=17,slow=10,SNR=42						
FITZ				Sn	**Sn**	**07 49 36.6**	**-1.4**
	3.7nm,0.3s,baz=98,slow=18,SNR=4.5						
WRA	**Warramunga Arr**	**12.56**	**149**	Pn	**Pn**	**07 48 46.2**	**+0.3**
	1.5nm,0.3s,baz=329,slow=14,SNR=56						
WRA				Sn	**Sn**	**07 51 03.4**	**-1.3**
	1.4nm,0.3s,baz=329,slow=22,SNR=8.5						
ASAR	**Alice Springs**	**15.63**	**158**	Pn	**Pn**	**07 49 26.6**	**-0.8**
	0.6nm,0.3s,baz=331,slow=9.5,SNR=22						
ASAR				Sn	**Sn**	**07 52 19.5**	**-0.1**
	0.3nm,0.3s,baz=329,slow=23,SNR=4.2						
STKA	**Stephens Creek**	**26.08**	**152**	P	**P**	**07 51 23.3**	**+3.2**
	1.8nm,0.7s,baz=330,slow=9.4,SNR=7.4						
CMAR	**Chiang Mai Arr**	**39.36**	**314**	P	P	07 53 09.4	-6.6
	1.7nm,0.4s,baz=132,slow=5.4,SNR=4.4						
MKAR	**Makanchi Array**	**68.75**	**328**	P	P	07 56 43.1	-6.8
	0.3nm,0.5s,baz=127,slow=7.7,SNR=4.3						
TORD	**Torodi Ar. Bea**	**126.76**	**280**	PKP	**PKPdf**	**08 04 48.5**	**-2.1**
	0.3nm,0.6s,baz=109,slow=2.3,SNR=2.8						

IDC 29 07:54:18.0±1.4, 19°.19S × 167°.83E, h0km, mb3.9/4, mb1 4.2/5, mb1mx3.8/49, mbtmp3.8/5, ML3.8/1, Error ellipse: s-maj=55.4km s-min=25.4km az=142.0, Vanuatu Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
DZM	**Mont Dzumac**	**3.15**	**204**	Pn	Pn	07 55 07.2	-1.8
	10nm,0.3s,baz=46,slow=11,SNR=38						
DZM				Sn	Sn	07 55 41.5	-5.9
	18nm,0.3s,baz=106,slow=22,SNR=10						
WRA	**Warramunga Arr**	**31.54**	**263**	P	P	08 00 41.9	-0.3
	0.2nm,0.4s,baz=87,slow=8.3,SNR=8.7						
ASAR	**Alice Springs**	**31.85**	**256**	P	P	08 00 45.8	+0.8
	1.1nm,0.7s,baz=80,slow=8.9,SNR=11						
NVAR	**Mina Array Bea**	**89.77**	**49**	P	P	08 07 18.5	-0.3
	1.1nm,0.8s,baz=216,slow=7.3,SNR=2.5						
ILAR	**Eielson Array**	**90.58**	**18**	P	P	08 07 22.4	+0.6
	0.6nm,0.8s,baz=224,slow=6.3,SNR=6.5						
GERES	**GERESS Array B**	**143.81**	**331**	PKP	PKPbc	08 13 53.7	+0.8
	0.3nm,0.2s,baz=57,slow=3.6,SNR=2.5						

IDC 29 07:57:54.9±2.0, 19°.25S × 167°.76E, h0km, mb3.6/4, mb1 3.8/5, mb1mx3.6/50, mbtmp3.6/5, ML3.3/1, MS3.8/2, Ms1 3.8/2, ms1mx2.9/37, Error ellipse: s-maj=60.0km s-min=29.8km az=129.0, Vanuatu Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
DZM	**Mont Dzumac**	**3.07**	**204**	Pn	Pn	07 58 44.1	-0.6
	3.7nm,0.3s,baz=99,slow=18,SNR=9.9						
DZM				Sn	Sn	07 59 19.3	-2.9
	17nm,0.3s,baz=77,slow=22,SNR=6.6						
STKA	**Stephens Creek**	**26.67**	**237**	P	P	08 03 34.4	-1.3
	1.0nm,0.7s,baz=69,slow=13,SNR=2.6						
WRA	**Warramunga Arr**	**31.47**	**263**	P	P	08 04 18.8	+0.3
	0.3nm,0.5s,baz=88,slow=8.1,SNR=13						
WRA				LR	LR	08 15 37.8	
	comp=Z,203nm,19.8s,baz=125,slow=34						
ASAR	**Alice Springs**	**31.77**	**256**	P	P	08 04 22.1	+0.9
	0.7nm,0.6s,baz=83,slow=8.7,SNR=8.9						
ASAR				LR	LR	08 17 13.3	
	comp=Z,124nm,19.9s,baz=76,slow=36						
ILAR	**Eielson Array**	**90.66**	**18**	P	P	08 10 59.1	+0.1
	0.3nm,0.9s,baz=233,slow=5.5,SNR=4.0						

*IDC **29** 08:00:18.5±2.4, 52°.58N × 35°.49E, h0km, mb3.3/1, mb1 3.5/5, mb1mx3.2/66, mbtmp3.3/5, ML3.3/4, Error ellipse: s-maj=32.9km s-min=13.8km az=114.0*

ISC 29 08:00:23.3±2.5, 52°.9N±0°.1 × 34°.5E±0°.2, h10km, n6, σ1s74/7, Baltic States-Belarus-Northwestern Russia

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
AKASG	**Malin Array Be**	**3.94**	**237**	Pn	**Pn**	**08 01 25.3**	**+1.6**
	1.5nm,0.3s,baz=69,slow=14,SNR=3.3						
AKASG				Pg	**Pb**	**08 01 32.0**	**-0.6**
	2.4nm,0.3s,baz=58,slow=16,SNR=7.6						
I43RU	**DUBNA INFRASON**	**4.12**	**22**	*i*		08 29 10.0	
	baz=198,slow=316,SNR=4.7						
FINES	**FINESS Array B**	**9.66**	**335**	Pn	**Pn**	**08 02 43.5**	**+1.4**
	0.1nm,0.3s,baz=150,slow=14,SNR=3.8						
FINES				Sn	**Sn**	**08 04 31.7**	**+1.2**
	0.1nm,0.3s,baz=139,slow=26,SNR=2.8						
FINES				Lg	Lg	08 05 35.1	
	0.1nm,0.3s,baz=140,slow=31,SNR=2.4						
NOA	**NORSAR Array B**	**14.97**	**312**	Pn	**Pn**	**08 03 52.5**	**-2.2**
	0.1nm,0.3s,baz=114,slow=13,SNR=2.5						
ARCES	**ARCESS Array B**	**17.17**	**349**	P	**Pn**	**08 04 23.5**	**+0.6**
	0.3nm,0.3s,baz=162,slow=13,SNR=17						
YKA	**Yellowknife Ar**	**62.36**	**344**	P	**P**	**08 10 44.6**	**-0.7**
	0.2nm,0.5s,baz=13,slow=6.4,SNR=9.0						

IDC 29 08:02:44.8±7.7, 0°.11N × 123°.69E, h135km±94km, mb3.3/4, mb1 3.5/5, mb1mx3.1/61, mbtmp3.8/5, Error ellipse: s-maj=82.9km s-min=20.3km az=77.0, Minahassa Peninsula, Sulawesi

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
KAPI	**Kappang**	**6.43**	**218**	P	Pn	08 04 17.8	+0.6
	5.2nm,0.3s,baz=15,slow=5.0,SNR=17						
KAPI				S	Sn	08 05 29.0	-0.4
	baz=60,slow=20,SNR=1.9						
WRA	**Warramunga Arr**	**22.50**	**153**	P	P	08 07 32.7	-0.6
	0.8nm,0.4s,baz=335,slow=10.0,SNR=22						
ASAR	**Alice Springs**	**25.63**	**158**	P	P	08 08 02.1	+0.1
	0.2nm,0.3s,baz=333,slow=9.1,SNR=7.2						
STKA	**Stephens Creek**	**36.05**	**154**	P	P	08 09 33.7	+0.4
	0.9nm,0.5s,baz=333,slow=6.8,SNR=6.5						
USRK	**Ussuriysk Ar.**	**44.52**	**9**	P	P	08 10 42.7	-0.2
	0.5nm,0.4s,baz=190,slow=6.7,SNR=3.4						

IDC 29 08:12:19.9±2.5, 53°.52N × 87°.63E, h0km, mb1 3.3/3, mb1mx3.1/53, mbtmp3.3/3, ML3.1/3, 4C, Error ellipse: s-maj=22.3km s-min=13.4km az=65.0, Southwestern Siberia

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
I46RU	**ZALESOVO INFRA**	**1.72**	**285**	*i*		08 23 51.4	
	baz=100,slow=330,SNR=10						
ZALV	**Zalesovo Beam**	**1.72**	**285**	Pg	Pn	08 12 50.5	-0.7
	5.4nm,0.3s,baz=102,slow=14,SNR=22						
ZALV				Lg	Lg	08 13 13.8	
	6.6nm,0.3s,baz=103,slow=25,SNR=17						
ZALV				Rg	Rg	08 13 26.1	
	8.7nm,0.7s,baz=3.5,slow=27,SNR=5.2						
KURK	**Kurchatov**	**6.22**	**247**	⇑Lg	Lg	08 15 37.4	
	26nm,0.9s						
KURBB	**Kurchatov Arra**	**6.32**	**246**	Pn	Pn	08 13 55.2	+1.0
	0.3nm,0.3s,baz=61,slow=14,SNR=13						
KURBB				Sn	Sn	08 15 06.1	-0.9
	baz=56,slow=21,SNR=4.0						
KURBB				Lg	Lg	08 15 39.9	
	0.1nm,0.3s,baz=62,slow=32,SNR=7.3						
MK31	**Makanchi Array**	**7.56**	**209**	⇑Pn	Pn	08 14 12.2	+0.9
	0.1nm,0.3s,baz=28,slow=14,SNR=11						
MK31				⇑Sn	Sn	08 15 35.3	-2.4
	2.9nm,0.9s						
MK31				⇑Lg	Lg	08 16 14.8	
	3.8nm,0.8s,baz=37,slow=27,SNR=2.8						
MKAR	**Makanchi Array**	**7.56**	**209**	Pn	Pn	08 14 12.1	+0.7
	0.3nm,0.3s,baz=31,slow=14,SNR=10						
MKAR				Sn	Sn	08 15 37.8	+0.1
	0.1nm,0.3s,baz=29,slow=27,SNR=4.2						
MKAR				Lg	Lg	08 16 17.6	
	0.1nm,0.3s,baz=36,slow=40,SNR=3.7						
BVAR	**Borovoye Array**	**10.34**	**274**	Pn	Pn	08 14 49.0	-0.4
	0.2nm,0.3s,baz=70,slow=12,SNR=3.2						

*NIED **29** 08:29:00, 36°.60N × 140°.90E, h41km, Mw3.7 Best double couple: M₀4.41000×10¹⁴ NP1:φs98.00000°, δ24.00000°, λ-60.00000°. NP2:φs246.00000°, δ69.00000°, λ-103.00000°.*
*ISCJB **29** 08:29:06.5±0.6, 36°.57N±0°.04 × 141°.02E±0°.06, h48km±6km, mb3.6/7, Error ellipse: s-maj=9.2km s-min=5.2km az=22.4*
*IDC **29** 08:29:08.1±1.9, 36°.55N × 141°.01E, h43km±21km, mb3.3/7, mb1 3.7/11, mb1mx3.5/50, mbtmp3.8/11, ML3.7/4, Error ellipse: s-maj=16.8km s-min=10.9km az=71.0*
*JMA **29** 08:29:08.0±0.1, 36°.61N × 140°.90E, h50km±1km, M3.9*
JMA Felt II J1.

ISC 29 08:29:07.3±1.1, 36°.58N±0°.04 × 141°.05E±0°.08, h36km±1km, n20, σ0s90/32, mb3.6/7, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JHO	**Hitachi**	**0.39**	**275**	P	**Pn**	**08 29 16.9**	**+0.8**
JHO				S	**Sn**	**08 29 23.0**	**+0.2**
ONAJ	**Iwakimizuishiy**	**0.56**	**339**	P	**Pn**	**08 29 18.9**	**0.0**
ONAJ				S	**Sn**	**08 29 26.7**	**-0.2**
JYT	**Yasato**	**0.77**	**243**	P	**Pn**	**08 29 21.5**	**-0.1**
JYT				S	**Sn**	**08 29 30.7**	**-1.3**
JFK	**Kawauchi**	**0.80**	**350**	P	**Pn**	**08 29 21.9**	**-0.1**
JFK				S	**Sn**	**08 29 32.2**	**-0.5**
JFT	**Otama**	**1.10**	**329**	P	**Pn**	**08 29 26.7**	**+0.6**
JFT				S	**Sn**	**08 29 39.8**	**-0.2**
JAG	**Ashikaga**	**1.29**	**264**	P	**Pn**	**08 29 28.3**	**-0.5**
JAG				S	**Sn**	**08 29 42.6**	**-2.2**
JMM	**Marumori**	**1.30**	**351**	P	**Pn**	**08 29 29.1**	**+0.3**
JMM				*e*S	**Sn**	**08 29 44.7**	**-0.2**
JFY	**Yanaizu**	**1.36**	**308**	P	**Pn**	**08 29 29.4**	**-0.2**
JFY				S	**Sn**	**08 29 45.9**	**-0.5**
MJAR	**Matsushiro Arr**	**2.29**	**270**	P	**Pn**	**08 29 42.9**	**+0.4**
	11nm,0.3s,baz=86,slow=16,SNR=79						
MJAR				S	**Sn**	**08 30 08.9**	**-0.5**
	26nm,0.3s,baz=111,slow=16,SNR=14						
MAT	**Matsushiro**	**2.29**	**270**	P	**Pn**	**08 29 43.2**	**+0.7**
MAT				S	**Sn**	**08 30 09.7**	**+0.3**
JHJ	**Hachijo jima 2**	**3.61**	**197**	P	**Pn**	**08 30 02.2**	**+1.6**
	7.8nm,0.3s,baz=68,slow=19,SNR=4.1						
JHJ				S	**Sn**	**08 30 42.6**	**+0.8**
	56nm,0.3s,baz=73,slow=19,SNR=9.1						
ASAJ	**Asahikawa**	**7.62**	**8**	P	**Pn**	**08 30 55.8**	**+0.1**
	0.8nm,0.3s,baz=183,slow=18,SNR=4.4						
ASAJ				S	**Sn**	**08 32 18.6**	**-2.1**
	0.6nm,0.3s,baz=307,slow=20,SNR=2.3						
JCJ	**Chichijima**	**9.51**	**174**	P	**Pn**	**08 31 20.2**	**-1.3**
	4.0nm,0.3s,baz=212,slow=19,SNR=2.9						
JCJ				S	Sn	08 32 58.0	-9.2
	baz=306,slow=19						
ZALV	**Zalesovo Beam**	**42.01**	**313**	P	**P**	**08 36 55.7**	**+1.0**
	0.5nm,0.4s,baz=99,slow=7.4,SNR=3.5						
ILAR	**Eielson Array**	**50.03**	**32**	P	**P**	**08 37 58.5**	**+0.8**
	0.4nm,0.7s,baz=256,slow=5.4,SNR=5.6						
INK	**Inuvik**	**54.92**	**27**	P	**P**	**08 38 34.8**	**+0.9**
	0.6nm,0.5s,baz=289,slow=7.9,SNR=6.4						
WRA	**Warramunga Arr**	**56.57**	**188**	P	**P**	**08 38 45.4**	**-0.9**
	1.0nm,0.5s,baz=5.1,slow=7.4,SNR=29						
ASAR	**Alice Springs**	**60.30**	**188**	P	**P**	**08 39 11.7**	**-0.6**
	0.4nm,0.8s,baz=12,slow=9.5,SNR=5.5						
YKA	**Yellowknife Ar**	**64.35**	**30**	P	**P**	**08 39 38.7**	**-0.1**
	0.1nm,0.6s,baz=304,slow=6.9,SNR=5.2						
TXAR	**Lajitas Array**	**90.63**	**52**	P	**P**	**08 42 06.2**	**0.0**
	0.1nm,0.5s,baz=271,slow=4.4,SNR=2.9						

JMA 29 08:35:18.9, 37°.00N × 141°.19E, h22km, M2.6, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.33**	**288**	P	Pb	08 35 25.8	-0.4
ONAJ				S	Sb	08 35 30.0	-0.2
JFK	**Kawauchi**	**0.44**	**326**	P	Pb	08 35 27.7	-0.4
JFK				S	Sb	08 35 33.9	-0.4
JHO	**Hitachi**	**0.63**	**232**	P	Pb	08 35 31.0	-0.3
JFT	**Otama**	**0.85**	**307**	P	Pb	08 35 35.2	+0.1
JFT				S	Sb	08 35 46.6	+0.5
JMM	**Marumori**	**0.92**	**340**	P	Pb	08 35 35.6	-0.6
JMM				S	Sb	08 35 47.7	-0.3

*IDC **29** 08:35:46.7±0.6, 36°.42N × 143°.36E, h0km, mb4.2/20, mb1 4.3/25, mb1mx4.2/49, mbtmp4.2/25, ML3.3/5, MS3.1/6, Ms1 3.1/6, ms1mx2.8/64, Error ellipse: s-maj=16.3km s-min=13.6km az=114.0*
*BJI **29** 08:35:46.5, 36°.54N × 143°.83E, h30km, mb4.5/21, mB4.9/12, Ms4.7/5, Ms7 4.3/5*
*ISCJB **29** 08:35:49.8±0.3, 36°.50N±0°.03 × 143°.20E±0°.03, h29km, mb4.5/67, MS3.5/2, Error ellipse: s-maj=5.1km s-min=3.4km az=167.5*
*NEIC **29** 08:35:50.0±2.2, 36°.41N × 143°.34E, h20km±13km, mb4.7/29, Error ellipse: s-maj=5.9km s-min=4.1km az=133.0*
*JMA **29** 08:35:50.1±0.3, 36°.58N × 143°.18E, h36km, M4.2*
*MOS **29** 08:35:53.5±1.1, 37°.09N × 143°.06E, h33km, mb4.6/35, Error ellipse: s-maj=10.1km s-min=6.7km az=94.1*

ISC 29 08:35:51.4±0.5, 36°.49N±0°.05 × 143°.26E±0°.06, h29km, n143, σ1s38/143, mb4.6/67, 9C-2D, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CHOJ	**Chosi**	**2.10**	**249**	S	**Sn**

SEY	**Seymchan**	**27.06**	**9**	*eP*	**P**	**08 41 30.2**	**+0.8**		
BOD	**Bodaibo**	**28.78**	**327**	*eP*	**P**	**08 41 45.9**	**-0.5**		
BOD				pmax	pmax				
	comp=Z,4.0nm,0.8s								
ULN	**Ulaanbaatar**	**28.89**	**305**	*ceP*	**P**	**08 41 50.5**	**+2.8**		
ULN				pmax	pmax				
	comp=Z,4.0nm,0.8s								
ULN	**Ulaanbaatar**	**28.89**	**305**	*eP*	**P**	**08 41 50.2**	**+2.6**		
	comp=Z,4.6nm,0.9s								
LZH	**Lanzhou**	**31.62**	**281**	*eP*	**P**	**08 42 14.0**	**+2.0**		
LZH				pP	sP	08 42 23.0	-1.0		
LZH				sP	pP	08 42 26.5	+6.0		
LZH				pmax	pmax				
	comp=Z,15nm,1.0s								
TLY	**Talaya**	**31.80**	**311**	P	**P**	**08 42 14.7**	**+1.4**		
	comp=Z,2.1nm,0.8s,baz=93,slow=13,SNR=3.1								
TLY	**Talaya**	**31.80**	**311**	*eP*	P	08 42 17.7	+4.5		
TLY				pmax	pmax				
	comp=Z,5.0nm,1.4s								
CD2	**Chengdu**	**33.17**	**272**	P	**P**	**08 42 24.5**	**-0.9**		
CD2				pmax	pmax				
	comp=Z,1.0nm,0.5s								
GTA	**Gaotai**	**34.14**	**288**	*eP*	**P**	**08 42 34.8**	**+0.9**		
GTA				pP	sP	08 42 46.0	0.0		
GTA				PcP	**PcP**	**08 45 09.5**	**-1.1**		
GTA				S	**S**	**08 47 58.0**	**-0.4**		
GTA				sS	sS	08 48 20.3	+7.9		
GTA				SS	**SnSn**	**08 50 11.5**	**+4.3**		
GTA				pmax	pmax				
	comp=Z,3.0nm,0.9s								
GTA				pmax	pmax				
	comp=Z,80nm,5.9s								
GTA				LR	LR				
	comp=Z,110nm,15.7s								
GTA				LR	LR				
	comp=Z,130nm,15.7s								
BILL	**Bilibino**	**34.14**	**15**	*ceP*	**P**	**08 42 33.5**	**+0.1**		
BILL				pmax	pmax				
	comp=Z,3.0nm,0.5s								
TIXI	**Tiksi**	**36.02**	**352**	*eP*	**P**	**08 42 47.9**	**-1.6**		
TIXI				pmax	pmax				
	comp=Z,2.0nm,1.1s								
KMI	**Kunming**	**36.36**	**263**	P	**P**	**08 42 55.0**	**+1.7**		
KMI				pmax	pmax				
	comp=Z,15nm,0.5s								
KMI				pmax	pmax				
	comp=Z,110nm,5.4s								
WMQ	**Urumqi**	**42.41**	**298**	*eP*	**P**	**08 43 45.0**	**+1.7**		
ZAA0	**Zalesovo Array**	**43.37**	**313**	*eP*	**P**	**08 43 51.4**	**+0.4**		
ZALV	**Zalesovo Beam**	**43.37**	**313**	P	**P**	**08 43 51.4**	**+0.5**		
	comp=Z,4.6nm,0.9s,baz=93,slow=5.9,SNR=11								
TT01	**Tatalina**	**45.02**	**34**	*eP*	**P**	**08 44 04.5**	**+0.5**		
TTA	**Tatalina**	**45.03**	**34**	*eP*	**P**	**08 44 04.6**	**+0.5**		
TTA				pmax	pmax				
	comp=Z,27nm,1.9s								
TTA	**Tatalina**	**45.03**	**34**	*eP*	**P**	**08 44 04.6**	**+0.5**		
	comp=Z,27nm,1.9s								
SVW2	**Sparrevohn**	**45.06**	**37**	*eP*	**P**	**08 44 04.6**	**+0.3**		
	comp=Z,26nm,1.7s								
MK01	**Makanchi Array**	**45.66**	**303**	*eP*	**P**	**08 44 09.7**	**+0.3**		
MKAR	**Makanchi Array**	**45.66**	**303**	P	**P**	**08 44 09.6**	**+0.2**		
	comp=Z,2.1nm,0.7s,baz=86,slow=8.6,SNR=6.9								
MKAR	**Makanchi Array**	**45.66**	**303**	*i P*	**P**	**08 44 09.8**	**+0.5**		
MKAR				pmax	pmax				
	comp=Z,2.0nm,0.7s								
KDAK	**Kodiak Island**	**46.51**	**42**	*i P*	**P**	**08 44 15.8**	**0.0**		
KDAK	**Kodiak Island**	**46.51**	**42**	*eP*	**P**	**08 44 15.7**	**-0.1**		
	comp=Z,96nm,1.6s								
PPLA	**Purkeypile**	**46.77**	**35**	*eP*	**P**	**08 44 18.8**	**+0.8**		
	comp=Z,38nm,1.8s								
CAST	**Castle Rocks**	**46.84**	**34**	*eP*	**P**	**08 44 19.4**	**+1.0**		
	comp=Z,16nm,2.0s								
BPAW	**Bear Paw Mtn.**	**47.37**	**33**	*eP*	**P**	**08 44 23.1**	**+0.7**		
	comp=Z,10nm,1.8s								
KURK	**Kurchatov**	**47.43**	**309**	*eP*	**P**	**08 44 23.3**	**+0.2**		
KURK				pmax	pmax				
	comp=Z,12nm,0.9s								
KURK	**Kurchatov**	**47.43**	**309**	*eP*	**P**	**08 44 23.3**	**+0.2**		
	comp=Z,12nm,0.9s								
MLY	**Manley**	**47.53**	**32**	*eP*	**P**	**08 44 24.6**	**+0.9**		
	comp=Z,3.0nm,0.8s								
TRF	**Thorofare Moun**	**47.65**	**34**	*eP*	**P**	**08 44 26.4**	**+1.5**		
	comp=Z,7.2nm,1.3s								
PMR	**Palmer**	**48.18**	**36**	*eP*	**P**	**08 44 28.5**	**-0.2**		
PMR				pmax	pmax				
	comp=Z,8.0nm,1.1s								
PMR	**Palmer**	**48.18**	**36**	*eP*	**P**	**08 44 28.5**	**-0.2**		
	comp=Z,7.5nm,1.1s								
SML	**Sawmill**	**48.55**	**36**	*eP*	**P**	**08 44 31.9**	**+0.2**		
SML				pmax	pmax				
	comp=Z,9.0nm,1.2s								
SML	**Sawmill**	**48.55**	**36**	*eP*	**P**	**08 44 31.9**	**+0.2**		
	comp=Z,9.0nm,1.2s								
MDM	**Murphy Dome**	**48.59**	**32**	*eP*	**P**	**08 44 32.8**	**+0.9**		
	comp=Z,4.2nm,0.8s								
WRH	**Wood River Hil**	**48.64**	**33**	*eP*	**P**	**08 44 32.5**	**+0.2**		
	comp=Z,15nm,1.9s								
COLA	**College**	**48.75**	**32**	*eP*	**P**	**08 44 33.7**	**+0.7**		
COLA				pmax	pmax				
	comp=Z,3.0nm,0.9s								
SCM	**Sheep Creek Mo**	**49.03**	**36**	*eP*	**P**	**08 44 35.8**	**+0.4**		
SCM				pmax	pmax				
	comp=Z,27nm,1.7s								
SCM	**Sheep Creek Mo**	**49.03**	**36**	*eP*	**P**	**08 44 35.8**	**+0.4**		
	comp=Z,27nm,1.7s								
IL1	**Eielson Array**	**49.16**	**32**	*eP*	**P**	**08 44 36.0**	**-0.2**		
ILAR	**Eielson Array**	**49.16**	**32**	P	**P**	**08 44 36.0**	**-0.3**		
	comp=Z,2.2nm,0.7s,baz=263,slow=6.4,SNR=29								
ILB	**Eielson Array**	**49.16**	**32**	*eP*	**P**	**08 44 36.0**	**-0.3**		
KLU	**Klutina**	**49.72**	**36**	*eP*	**P**	**08 44 41.1**	**+0.5**		
	comp=Z,16nm,1.7s								
FYU	**Fort Yukon**	**49.84**	**30**	*eP*	**P**	**08 44 42.7**	**+1.4**		
	comp=Z,27nm,1.7s								
EYAK	**Cordova Ski Ar**	**49.87**	**38**	*eP*	**P**	**08 44 42.3**	**+0.6**		
	comp=Z,8.6nm,1.0s								
BMRM	**Bremner River**	**50.40**	**37**	*eP*	**P**	**08 44 46.4**	**+0.6**		
	comp=Z,8.2nm,1.2s								
DOT	**Dot Lake**	**50.43**	**34**	*eP*	**P**	**08 44 45.5**	**-0.5**		
	comp=Z,41nm,2.0s								
MENT	**Mentasta**	**50.64**	**34**	*eP*	**P**	**08 44 48.5**	**+0.9**		
	comp=Z,3.1nm,1.0s								
EGAK	**Eagle**	**51.61**	**32**	*eP*	**P**	**08 44 54.5**	**-0.3**		
	comp=Z,18nm,2.0s								
BRVK	**Borovoye**	**52.09**	**313**	*ceP*	**P**	**08 44 59.5**	**+1.0**		
BRVK				pmax	pmax				
	comp=Z,4.0nm,1.0s								
BRVK	**Borovoye**	**52.09**	**313**	*eP*	**P**	**08 44 59.3**	**+0.8**		
	comp=Z,3.8nm,0.9s								
INK	**Inuvik**	**54.19**	**27**	P	**P**	**08 45 14.0**	**+0.3**		
	comp=Z,3.0nm,0.5s,baz=294,slow=6.7,SNR=44								
WRAB	**Tennant Creek**	**56.75**	**190**	*ceP*	P	08 45 43.1	+10		
WRAB				pmax	pmax				
	comp=Z,39nm,2.5s								
WRAB	**Tennant Creek**	**56.75**	**190**	*eP*	**P**	**08 45 32.3**	**-0.3**		
	comp=Z,8.7nm,0.9s								
WB2	**Warramunga Arr**	**56.76**	**190**	*eP*	**P**	**08 45 32.1**	**-0.6**		
	comp=Z,10nm,0.8s								
WRA	**Warramunga Arr**	**56.76**	**190**	P	**P**	**08 45 31.7**	**-1.0**		
	comp=Z,4.5nm,0.7s,baz=10,slow=7.5,SNR=33								
WRA	**Warramunga Arr**	**56.76**	**190**	*ceP*	P	08 45 46.2	+13		
WRA				pmax	pmax				
	comp=Z,1.0nm,0.6s								
ARU	**Arti**	**57.74**	**319**	*d iP*	**P**	**08 45 39.5**	**+0.2**		
ARU						08 47 46.6			
ARU				S	**S**	**08 53 37.2**	**+1.1**		
ARU				SS	**SS**	**08 57 23.2**	**-3.0**		
ARU				pmax	pmax				
	comp=Z,9.0nm,1.0s								
ARU	**Arti**	**57.74**	**319**	*eP*	**P**	**08 45 40.1**	**+0.8**		
	comp=Z,9.7nm,1.0s								
ABKAR	**Akbulak array**	**59.42**	**311**	*eP*	**P**	**08 45 51.3**	**+0.2**		
AS01	**Alice Springs**	**60.47**	**190**	*eP*	**P**	**08 45 57.8**	**-0.7**		
AS31	**Alice Springs**	**60.48**	**190**	*eP*	**P**	**08 45 57.9**	**-0.7**		
	comp=Z,1.4nm,0.6s								
ASAR	**Alice Springs**	**60.48**	**190**	P	**P**	**08 45 57.8**	**-0.8**		
	comp=Z,2.4nm,0.7s,baz=16,slow=8.9,SNR=26								
YKA	**Yellowknife Ar**	**63.53**	**30**	P	**P**	**08 46 18.2**	**-0.4**		
	comp=Z,0.8nm,0.7s,baz=299,slow=6.7,SNR=21								
KLMR	**Klimovskoe**	**65.00**	**328**	*eP*	**P**	**08 46 26.3**	**-2.0**		
KLMR				pmax	pmax				
	comp=Z,6.0nm,1.4s								
ARCES	**ARCESS Array B**	**65.02**	**340**	P	**P**	**08 46 28.5**	**+0.2**		
	comp=Z,2.8nm,0.9s,baz=1.9,slow=7.3,SNR=4.4								
GEYT	**Alibeck**	**65.39**	**300**	P	**P**	**08 46 31.2**	**-0.1**		
	comp=Z,0.8nm,0.3s,baz=98,slow=2.9,SNR=2.8								
STKA	**Stephens Creek**	**68.03**	**182**	P	**P**	**08 46 47.4**	**-0.5**		
	comp=Z,0.3nm,0.3s,baz=27,slow=14,SNR=3.9								
STKA	**Stephens Creek**	**68.03**	**182**	P	**P**	**08 46 47.4**	**-0.5**		
STKA				pmax	pmax				
	comp=Z,1.0nm,0.7s								
VRH	**Novokhopyorsk**	**68.97**	**319**	*eP*	**P**	**08 46 52.6**	**-1.1**		
VRH				pmax	pmax				
	comp=Z,5.0nm,0.7s								
PUL	**Pulkovo**	**69.41**	**330**	*eP*	**P**	**08 46 55.9**	**-0.3**		
PUL				pmax	pmax				
	comp=Z,50nm,0.8s								
OBN	**Obninsk**	**69.41**	**324**	*‖eP*	**P**	**08 46 56.5**	**+0.2**		
OBN				*e*		08 47 24.7			
OBN				pmax	pmax				
	comp=Z,8.0nm,1.0s								
LPSR	**Galich'ya Gora**	**69.66**	**321**	*eP*	**P**	**08 46 59.0**	**+1.1**		
LPSR				pmax	pmax				
	comp=Z,4.0nm,0.6s								
FIA1	**FINESS Array S**	**69.98**	**333**	*eP*	**P**	**08 46 59.8**	**0.0**		
FINES	**FINESS Array B**	**69.98**	**333**	P	**P**	**08 46 59.9**	**+0.1**		
	comp=Z,3.1nm,0.8s,baz=68,slow=10,SNR=11								
VSR	**Storozhevoye**	**70.31**	**320**	*eP*	**P**	**08 47 02.1**	**+0.1**		
VSR				pmax	pmax				
	comp=Z,7.0nm,0.8s								
SUMG	**Summit**	**71.22**	**1**	*eP*	**P**	**08 47 08.5**	**+0.9**		
SUMG				pmax	pmax				
	comp=Z,8.0nm,1.1s								
SUMG	**Summit**	**71.22**	**1**	*eP*	**P**	**08 47 08.5**	**+0.9**		
	comp=Z,7.7nm,1.1s								
KBZ	**Khabaz**	**72.38**	**312**	P	**P**	**08 47 15.4**	**+0.9**		
	comp=Z,1.4nm,0.7s,baz=149,slow=5.9,SNR=2.5								
KIV	**Kislovodsk**	**72.38**	**312**	*ceP*	**P**	**08 47 17.8**	**+3.1**		
KIV				pmax	pmax				
	comp=Z,7.0nm,0.8s								
NVAR	**Mina Array Bea**	**74.12**	**54**	P	**P**	**08 47 25.9**	**+0.7**		
	comp=Z,0.7nm,0.5s,baz=274,slow=5.9,SNR=5.2								
NC405	**NORSAR Array S**	**75.04**	**338**	*eP*	**P**	**08 47 30.7**	**+0.8**		
NC303	**NORSAR Array S**	**75.06**	**338**	*eP*	**P**	**08 47 31.1**	**+1.1**		
NC204	**NORSAR Array S**	**75.20**	**338**	*eP*	**P**	**08 47 31.8**	**+0.9**		
NB201	**NORSAR Array S**	**75.22**	**338**	*eP*	**P**	**08 47 31.4**	**+0.5**		
NB2	**NORSAR Subarra**	**75.25**	**338**	P	**P**	**08 47 31.4**	**+0.2**		
	comp=Z,4.4nm,0.7s,baz=40,slow=5.9								
NOA	**NORSAR Array B**	**75.25**	**338**	P	**P**	**08 47 31.8**	**+0.6**		
	comp=Z,4.8nm,0.8s,baz=39,slow=5.7,SNR=21								
NBO02	**NORSAR Array S**	**75.35**	**338**	*eP*	**P**	**08 47 32.0**	**+0.3**		
NBO00	**NORSAR Array S**	**75.39**	**338**	*eP*	**P**	**08 47 33.1**	**+1.2**		
AKASG	**Malin Array Be**	**75.63**	**323**	P	**P**	**08 47 33.5**	**+0.1**		
	comp=Z,3.2nm,0.6s,baz=45,slow=6.1,SNR=11								
KIEV	**Kiev**	**75.64**	**323**	*eP*	**P**	**08 47 33.3**	**-0.2**		
KIEV				pmax	pmax				
	comp=Z,4.0nm,0.9s								
KONO	**Kongsberg**	**76.85**	**338**	*eP*	**P**	**08 47 37.3**	**-2.9**		
KONO				pmax	pmax				
	comp=Z,10.0nm,0.8s								
KONO	**Kongsberg**	**76.85**	**338**	*eP*	**P**	**08 47 37.3**	**-2.9**		
	comp=Z,10nm,0.8s								
PD31	**Pinedale Array**	**76.98**	**46**	*eP*	**P**	**08 47 38.7**	**-2.9**		
BUR08	**Bucovina Ar. S**	**79.64**	**323**	*eP*	**P**	**08 47 57.1**	**+1.1**		
BRTR	**Keskin Array B**	**80.32**	**313**	P	**P**	**08 48 00.5**	**+0.6**		
	comp=Z,0.7nm,0.6s,baz=108,slow=3.2,SNR=4.7								
BRTR	**Keskin Array B**	**80.32**	**313**	*ceP*	**P**	**08 47 59.9**	**0.0**		
BRTR				pmax	pmax				
	comp=Z,1.0nm,0.6s								
BR231	**Keskin MP Arra**	**80.75**	**313**	*eP*	**P**	**08 48 01.3**	**-0.9**		
CLL	**Collm**	**82.30**	**331**	*i P*	**P**	**08 48 09.8**	**-0.2**		
	comp=Z,5.0nm,0.8s								
ANMO	**Albuquerque**	**83.79**	**51**	*ceP*	**P**	**08 48 20.1**	**+1.8**		
ANMO				pmax	pmax				
	comp=Z,3.0nm,2.5s								
TX31	**Lajitas Ar. Si**	**89.26**	**53**	*eP*	**P**	**08 48 44.6**	**-0.5**		
TXAR	**Lajitas Array**	**89.26**	**53**	P	**P**	**08 48 44.9**	**-0.2**		
	comp=Z,0.4nm,0.6s,baz=297,slow=4.0,SNR=7.5								
LPAZ	**La Paz**	**145.66**	**62**	PKPbc	**PKPdf**	**08 55 28.2**	**+0.1**		
	comp=Z,2.1nm,0.9s,baz=9.7,slow=13,SNR=7.5								
LPAZ	**La Paz**	**145.66**	**62**	*e*PKPdf	**PKPdf**	**08 55 28.4**	**+0.2**		

NIED ***29*** *08:40:00, 37.90N×141.06E, h41km, Mw3.5 Best double couple: M₀2.00000×10¹⁴ NP1:φ=83.00000°, δ=33.00000°, λ=152.00000°. NP2:φ=197.00000°, δ=75.00000°, λ=60.00000°.*

JMA 29 08:40:30.3±0.1, 37.94N×141.86E, h51km±1km, M3.6, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**0.65**	**322**	P	Pn	08 40 43.6	+0.1
JIO				S	Sn	08 40 53.0	0.0
JMM	**Marumori**	**0.85**	**265**	P	Pn	08 40 46.0	0.0
JMM				S	Sn	08 40 57.4	-0.1
JFK	**Kawauchi**	**0.97**	**234**	P	Pn	08 40 47.5	-0.2
JFK				S	Sn	08 40 59.9	-0.5
JOU	**Okura**	**1.03**	**295**	P	Pn	08 40 48.8	+0.3
JOU				S	Sn	08 41 02.3	+0.3
JMK	**Ichinoseki**	**1.13**	**334**	P	Pn	08 40 50.2	+0.4
JMK				S	Sn	08 41 04.5	+0.3
OFUJ	**Ofunato**	**1.15**	**353**	P	Pn	08 40 50.2	+0.2
OFUJ				S	Sn	08 41 04.4	-0.3
ONAJ	**Iwakimizuishiy**	**1.19**	**226**	P	Pn	08 40 50.5	-0.1
JFT	**Otama**	**1.28**	**251**	P	Pn	08 40 52.8	+1.0
JFT				S	Sn	08 41 09.0	+1.1
JYS	**Shirataka**	**1.44**	**282**	P	Pn	08 40 54.9	+0.8
JYS				S	Sn	08 41 13.6	+1.7
JYK	**Kaneyama**	**1.53**	**310**	P	Pn	08 40 55.9	+0.7
JYK				S	Sn	08 41 15.0	+1.0
JOM	**Ohasama**	**1.59**	**344**	P	Pn	08 40 56.8	+0.7
JOM				S	Sn	08 41 16.0	+0.5
MAT	**Matsushiro**	**3.23**	**246**	P	Pn	08 41 20.4	+1.9
MAT				S	Sn	08 42 01.8	+6.0

IDC ***29*** *08:43:11.4±1.1, 19.36S×168.06E, h0km, mb4.3/7, mb1 4.6/8, mb1mx4.1/36, mbtmp4.3/8, ML4.3/1, MS3.3/3, Ms1 3.3/3, ms1mx3.0/42, Error ellipse: s-maj=52.2km s-min=19.7km az=147.0*

ISCJB ***29*** *08:43:13.7±0.9, 19.4S±0.1×168.0E±0.2, h26km, mb4.2/6, MS3.4/2, Error ellipse: s-maj=24.8km s-min=10.4km az=31.9*

ISC 29 08:43:15.1±1.0, 19.5S±0.2×168.1E±0.2, h26km, n11, σ0s74/10, mb4.2/6, Vanuatu Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
DZM	**Mont Dzumac**	**3.01**	**211**	Pn	**Pn**	**08 44 02.0**	**+0.7**
	33nm,0.3s,baz=56,slow=1.1,SNR=106						
DZM				Sn	**Sn**	**08 44 35.7**	**-0.8**
	7.1nm,0.3s,baz=294,slow=20,SNR=3.4						
DZM				LR	LR	08 45 06.9	
	comp=Z,360nm,18.3s,baz=70,slow=38						
CTA	**Charters Tower**	**20.56**	**265**	P	**P**	**08 47 52.2**	**+0.2**
	10nm,1.0s,baz=82,slow=12,SNR=4.6						
RPZ	**Rata Peaks**	**24.30**	**175**	LR	LR	08 56 38.5	
	comp=Z,80nm,18.3s,baz=347,slow=33						
STKA	**Stephens Creek**	**26.81**	**237**	P	**P**	**08 48 53.4**	**+0.1**
	3.6nm,0.9s,baz=86,slow=10,SNR=6.3						
WRA	**Warramunga Arr**	**31.75**	**263**	P	**P**	**08 49 36.6**	**-0.8**
	2.9nm,0.8s,baz=86,slow=8.3,SNR=31						
ASAR	**Alice Springs**	**32.02**	**256**	P	**P**	**08 49 40.1**	**+0.4**
	7.8nm,0.8s,baz=87,slow=8.8,SNR=84						
NVAR	**Mina Array Bea**	**89.77**	**49**	P	**P**	**08 56 12.0**	**+0.3**
	1.9nm,0.8s,baz=224,slow=6.4,SNR=8.5						
BBB	**Bella Bella**	**90.26**	**34**	LR	LR	09 30 18.5	
	comp=Z,19nm,18.9s,baz=144,slow=31						
ILAR	**Eielson Array**	**90.78**	**18**	P	**P**	**08 56 15.4**	**0.0**
	0.9nm,0.8s,baz=234,slow=6.7,SNR=9.4						
TXAR	**Lajitas Array**	**97.83**	**62**	P	**P**	**08 56 48.2**	**-0.6**
	0.2nm,0.7s,baz=221,slow=4.8,SNR=3.8						
YKA	**Yellowknife Ar**	**101.37**	**28**	P	**Pdif**	**08 57 04.8**	**+1.1**
	0.2nm,0.6s,baz=255,slow=4.7,SNR=7.4						

CSEM ***29*** *08:43:30.9±0.6, 39.74N×39.53E, h10km, MD2.4, Error ellipse: s-maj=12.8km s-min=6.2km az=73.0*

ISCJB ***29*** *08:43:32.4±0.8, 39.74N±0.04×39.43E±0.07, h12km, Error ellipse: s-maj=8.0km s-min=4.7km az=163.3*

DDA ***29*** *08:43:32.3, 39.73N×39.39E, h7km, Md2.6*

ISK ***29*** *08:43:33.3, 39.60N×39.38E, h22km, MD2.4*

ISC 29 08:43:30.0±1.3, 39.75N±0.04×39.58E±0.07, h12km, n17, σ0s75/22, Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
EZC	**Erzincan**	**0.18**	**271**	*e*Pg	Pb	08 43 39.8	+4.5
ERZN	**Erzincan**	**0.19**	**147**	*e*PG	Pb	08 43 39.8	+4.3
KELT	**Kelkit**	**0.47**	**328**	*i* P	**Pb**	**08 43 40.1**	**-0.3**
KELT				*i* S	**Sb**	**08 43 47.4**	**0.0**
KELT	**Kelkit**	**0.47**	**328**	P	**Pb**	**08 43 40.1**	**-0.3**
KELT				S	**Sb**	**08 43 47.4**	**0.0**
TNCL	**Tunceli-Merkez**	**0.63**	**183**	*i* P	Pg	08 43 33.8	-8.5
TNCL				*i* S	**Sn**	**08 43 54.1**	**-0.8**
TNCL	**Tunceli-Merkez**	**0.63**	**183**	P	Pg	08 43 33.8	-8.5
TNCL				S	**Sn**	**08 43 54.1**	**-0.8**
ILIC	**ilic-Erzincan**	**0.84**	**250**	*e*PG	**Pb**	**08 43 46.7**	**+0.1**
ILIC				*e*SG	**Sg**	**08 43 56.3**	**-0.9**
ILIC	**ilic-Erzincan**	**0.84**	**250**	*e*Pg	**Pb**	**08 43 46.7**	**+0.1**
ILIC				*e*Sg	**Sg**	**08 43 56.3**	**-0.9**
PTK	**Pertek**	**0.87**	**190**	*e*PG	**Pn**	**08 43 47.8**	**-0.4**
PTK	**Pertek**	**0.87**	**190**	*e*Pg	**Pn**	**08 43 47.8**	**-0.4**
KEMA	**Kemaliye**	**0.97**	**241**	*i* P	**Pg**	**08 43 48.3**	**-0.4**
KEMA	**Kemaliye**	**0.97**	**241**	P	**Pg**	**08 43 48.3**	**-0.4**
SUSE	**Susehri**	**1.16**	**294**	*i* P	**Pn**	**08 43 52.2**	**+0.1**
SUSE				*i* S	**Sn**	**08 44 08.9**	**+0.9**
SUSE	**Susehri**	**1.16**	**294**	P	**Pn**	**08 43 52.2**	**+0.1**
SUSE				S	**Sn**	**08 44 08.9**	**+0.9**
ELZG	**Elazig**	**1.33**	**201**	*i* P	**Pg**	**08 43 56.6**	**+1.0**
ELZG				*i* S	**Sg**	**08 44 14.9**	**+2.0**
SVRC	**Sivrice-ELAZID**	**1.39**	**189**	*e*PN	**Pb**	**08 43 55.7**	**-0.2**
SVRC	**Sivrice-ELAZID**	**1.39**	**189**	*e*Pn	**Pb**	**08 43 55.7**	**-0.2**

CSEM ***29*** *08:45:40.9, 35.30N×3.64W, h0km, ML2.1*

MDD 29 08:45:40.9±2.1, 35.30N×3.64W, h0km, mbLg2.1/8, Error ellipse: s-maj=19.5km s-min=8.4km az=163.0, PRXIMO, Strait of Gibraltar

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
EALB	**Alboran**	**0.81**	**38**	P	Pg	08 45 55.3	-1.0
	10nm,0.1s,SNR=7.9						
EALB				S	Sg	08 46 06.3	-0.5
	92nm,0.1s,SNR=6.3						
EALB	**Alboran**	**0.81**	**38**	P	Pg	08 45 55.3	-1.0
	10nm,0.1s,SNR=7.9						
EALB				S	Sg	08 46 06.3	-0.4
	92nm,0.1s,SNR=6.3						
ECEU	**Ceuta**	**1.54**	**293**	S	Sn	08 46 24.2	-6.0
	SNR=7.9						
ECEU	**Ceuta**	**1.54**	**293**	S	Sn	08 46 24.2	-6.0
	SNR=7.9						
EMIJ	**Mijas**	**1.56**	**324**	P	Pn	08 46 07.9	-2.0
	0.2nm,0.1s,SNR=4.0						
EMIJ				S	Sn	08 46 26.2	-4.6
	4.8nm,0.2s,SNR=7.9						
EMIJ	**Mijas**	**1.56**	**324**	P	Pn	08 46 07.9	-2.0
	0.2nm,0.1s,SNR=4.0						
EMIJ				S	Sn	08 46 26.2	-4.7
	4.8nm,0.2s,SNR=7.9						
EBER	**Berja**	**1.71**	**21**	P	Pn	08 46 07.9	-4.1
	0.8nm,0.2s,SNR=8.2						
EBER				S	Sn	08 46 29.1	-5.6
	7.8nm,0.2s,SNR=4.6						
EBER	**Berja**	**1.71**	**21**	P	Pn	08 46 07.9	-4.1
	0.8nm,0.2s,SNR=8.2						
EBER				S	Sn	08 46 29.1	-5.5
	7.8nm,0.2s,SNR=4.6						
EGOR	**Sierra Gorda,**	**1.84**	**348**	P	Pn	08 46 12.2	-1.7
	0.7nm,0.3s,SNR=7.9						
EGOR				S	Sn	08 46 36.7	-1.4
	4.4nm,0.4s,SNR=7.9						
EGOR	**Sierra Gorda,**	**1.84**	**348**	P	Pn	08 46 12.2	-1.7
	0.7nm,0.3s,SNR=7.9						
EGOR				S	Sn	08 46 36.7	-1.3
	4.4nm,0.4s,SNR=7.9						
EQUE	**Quentar**	**1.91**	**5**	P	Pn	08 46 12.9	-1.8
	0.9nm,0.3s,SNR=5.8						
EQUE				S	Sn	08 46 36.3	-3.2
	2.2nm,0.2s,SNR=4.5						
EQUE	**Quentar**	**1.91**	**5**	P	Pn	08 46 12.9	-1.8
	0.9nm,0.3s,SNR=5.8						
EQUE				S	Sn	08 46 36.3	-3.2
	2.2nm,0.2s,SNR=4.5						
EQES	**Quesada**	**2.54**	**10**	P	Pn	08 46 22.2	-1.2
	0.8nm,0.1s,SNR=8.7						
EQES				S	Sn	08 46 54.8	-0.3
	7.5nm,

λ-152.00000°. NP2:ϕ_s166.00000°,δ62.00000°, λ-3.00000°. Principal axes: T 1.8380, Plg17.0000°, Azm28.0000°; N -0.1260, Plg62.0000°, Azm263.0000°; P -1.7130, Plg21.0000°, Azm125.0000°; nsta1 refers to body waves, cutoff=50s. nsta2 refers to surface/mantle waves, cutoff=50s.

NEIC **29** 08:56:47.7±0.1,4.°03N×95.°76E,h44km,mb5.7/161,ME5.7, MS4.9/124,MW5.4 Error ellipse: s-maj=4.6km s-min=2.9km az=36.0,Moment Tensor Solution. s10 Moment tensor: Scale 10^{17}Nm; M_{rr}-0.56; $M_{\theta\theta}$0.18; $M_{\phi\phi}$0.38; $M_{r\theta}$1.06; $M_{\theta\phi}$-0.69; $M_{\phi r}$-0.25; Best double couple: Mo1.40000×10^{17} NP1:ϕ_s288.00000°,δ76.00000°, λ-116.00000°. NP2:ϕ_s173.00000°,δ30.00000°, λ-29.00000°. Principal axes: T 1.4200, Plg26.0000°, Azm39.0000°; N -0.0800, Plg26.0000°, Azm295.0000°; P -1.3400, Plg52.0000°, Azm168.0000°; Depth from synthetics of broadband displacement seismograms. Energy computed from CMT mechanism.

NEIC Felt [IV] at Banda Aceh and [III] at Meulaboh.

MOS **29** 08:56:47.3±1.0,4.°20N×95.°88E,h54km,mb6.0/109, MS4.6/54 Error ellipse: s-maj=6.7km s-min=3.7km az=114.7

ISCJB **29** 08:56:47.9±0.3,4.°02N±0.°02×95.°82E±0.°02,h62km±2km, mb5.6/286,Error ellipse: s-maj=3.3km s-min=2.2km az=42.4

IDC **29** 08:56:48.9±0.4,4.°15N×95.°91E,h55km×3km,mb5.3/57, mb1 5.2/58,mb1mx5.2/66,mbtmp5.5/58,MS4.5/44, Ms1 4.5/44,ms1mx4.3/62,Error ellipse: s-maj=9.0km s-min=5.9km az=49.0

DJA **29** 08:56:49.5±0.3,4.°N±2.°×9.°6E±.°,h56km±2km,M5.5/31, mb5.8/31,mB5.8/20,MLv6.0/4,Mw(mB)5.4/20,Mwp5.3/1

ISC 29 08:56:49.0±0.3,**4.°04N**±0.°03×**95.°80E**±0.°03,**h58**km±1km, **h58**km:**pP,n1338,**σ1s**48**/1437,**mb5.7**/301,**MS4.8**/201, **109C-25D,Northern Sumatera**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MLSI	**Meulaboh, Aceh**	**0.64**	**69**	P	**Pn**	**08 57 03.3**	**+0.9**
MLSI				S	**Sn**	**08 57 13.6**	**+1.3**
LHMI	**Lhok Sumawe**	**1.65**	**44**	P	**Pn**	**08 57 18.0**	**+2.4**
LHMI				S	**Sn**	**08 57 41.2**	**+5.5**
LHMI	**Lhok Sumawe**	**1.65**	**44**	*e*Pn	**Pn**	**08 57 18.8**	**+3.2**
KCSI	**Kotacane, Aceh**	**2.03**	**105**	P	**Pn**	**08 57 22.3**	**+1.4**
KCSI				S	**Sn**	**08 57 46.4**	**+1.2**
TSI	**Tuntungan**	**2.81**	**101**	P	**Pn**	**08 57 33.3**	**+1.8**
GSI	**Gunungsitoli**	**3.24**	**147**	P	**Pn**	**08 57 36.7**	**-0.7**
GSI	**Gunungsitoli**	**3.24**	**147**	*e*Pn	**Pn**	**08 57 36.8**	**-0.7**
GSI				*e*Sn	**Sn**	**08 58 11.7**	**-3.2**
PSI	**Prapat**	**3.35**	**111**	P	**Pn**	**08 57 40.5**	**+1.5**
PSI				LR	LR	08 59 17.2	
	comp=Z,11μm,21.4s,slow=44						
PSI	**Prapat**	**3.35**	**111**	*e*P	**Pn**	**08 57 41.0**	**+2.0**
PSI	**Prapat**	**3.35**	**111**	*e*Pn	**Pn**	**08 57 41.0**	**+2.0**
PKDT	**Phuket**	**4.58**	**33**	P	**Pn**	**08 57 56.9**	**+1.1**
MNSI	**Mandailing Nat**	**4.96**	**130**	P	**Pn**	**08 58 00.5**	**-0.5**
MNSI				S	**Pn**	**08 58 00.5**	**-0.5**
KULM	**Kulim**	**4.99**	**75**	*e*Pn	**Pn**	**08 58 03.1**	**+1.7**
KULM				*e*Sn	**Sn**	**08 58 57.3**	**-0.5**
IPM	**Ipoh**	**5.23**	**85**	*e*Pn	**Pn**	**08 58 05.8**	**+1.1**
IPM				*e*Sn	**Sn**	**08 59 01.8**	**-1.9**
TRTT	**Trang**	**5.41**	**46**	P	**Pn**	**08 58 08.3**	**+1.2**
	3μm,0.8s,30μm12nm						
SURT	**Suratani**	**5.72**	**31**	P	**Pn**	**08 58 12.6**	**+1.2**
	1μm,0.9s,11μm3.9nm						
BKNI	**Bangkinang**	**6.40**	**125**	P	**Pn**	**08 58 20.9**	**+0.2**
BKNI	**Bangkinang**	**6.40**	**125**	*e*Pn	**Pn**	**08 58 20.7**	**0.0**
PDSI	**Padang**	**6.77**	**136**	P	**Pn**	**08 58 24.8**	**-1.0**
SDSI	**Sungai Dareh**	**7.48**	**131**	P	**Pn**	**08 58 35.1**	**-0.5**
PPSI	**Pulau Pagai**	**7.96**	**148**	P	**Pn**	**08 58 40.5**	**-1.6**
MYKOM	**Kota Tinggi**	**8.34**	**105**	*e*Pn	**Pn**	**08 58 48.7**	**+1.4**
TPRI	**Tanjung Pinang**	**9.25**	**109**	P	**Pn**	**08 59 00.7**	**+0.9**
DGPR	**DIGLIPUR**	**9.51**	**343**	*e*S	**Sn**	**09 00 47.2**	**-1.7**
MASI	**Maura Aman, Be**	**9.61**	**138**	P	**Pn**	**08 59 08.2**	**-0.5**
DSRI	**Dabo**	**9.85**	**117**	P	**Pn**	**08 59 08.4**	**+0.4**
PATY	**Pattaya**	**10.15**	**29**	P	**Pn**	**08 59 14.4**	**+2.4**
	119nm,0.7s,2μm						
SRDT	**SRDT**	**10.76**	**18**	P	**Pn**	**08 59 23.9**	**+3.5**
	893nm,1.5s,12μm						
CHBT	**CHBT**	**10.80**	**36**	P	**Pn**	**08 59 23.3**	**+2.4**
	1μm,1.1s,16μm						
LHSI	**Lahat**	**10.98**	**135**	P	**Pn**	**08 59 22.6**	**-0.8**
MNAI	**Manna**	**10.99**	**139**	P	**Pn**	**08 59 21.8**	**-1.7**
MNAI	**Manna**	**10.99**	**139**	*e*Pn	**Pn**	**08 59 21.5**	**-2.0**
PMBI	**Palembang**	**11.32**	**128**	P	**Pn**	**08 59 27.2**	**-0.9**
MDSI	**Maura Dua**	**11.91**	**135**	P	**Pn**	**08 59 33.3**	**-2.2**
PPBI	**Pangkal Pinang**	**12.03**	**121**	P	**Pn**	**08 59 38.2**	**+0.5**
LWLI	**Liwa**	**12.21**	**137**	P	**Pn**	**08 59 37.7**	**-2.6**
KLI	**Kotabumi**	**12.65**	**134**	P	**Pn**	**08 59 44.3**	**-1.9**
KASI	**Kota Agung**	**12.87**	**137**	P	**Pn**	**08 59 46.0**	**-3.2**
BLSI	**Bandar Lampung**	**13.28**	**135**	P	**Pn**	**08 59 55.8**	**+1.0**
	319nm,0.7s						
PBKT	**Sadao Pong**	**13.45**	**22**	P	**Pn**	**08 59 58.9**	**+1.8**
	457nm,1.1s,4μm						
KHON	**Khomkaen**	**14.04**	**29**	P	**P**	**09 00 08.3**	**-2.8**
	450nm,0.8s,5μm						
UTTA	**Uttaradit**	**14.40**	**19**	P	**Pn**	**09 00 11.6**	**+1.8**
	158nm,0.8s,1μm						
SBJI	**Serang**	**14.43**	**134**	P	**Pn**	**09 00 07.0**	**-3.2**
CGJI	**Cibinong**	**14.47**	**137**	P	Pn	09 00 05.1	-5.7
CM01	**Chiang Mai Arr**	**14.62**	**12**	*e*Pn	**Pn**	**09 00 15.1**	**+2.3**
CM31	**Chiang Mai Arr**	**14.66**	**12**	*e*Pn	**Pn**	**09 00 15.3**	**+2.2**
CMAR	**Chiang Mai Arr**	**14.66**	**12**	P	**Pn**	**09 00 12.9**	**-0.3**
	0.8nm,0.3s,baz=201,slow=14,SNR=198						
CMAR				LR	LR	09 06 17.1	
	comp=Z,4μm,19.0s,baz=202,slow=39						
CMAR				ScP	**ScP**	**09 08 53.0**	**+1.0**
	baz=223,slow=3.6,SNR=7.2						
CMAR				ScS	**ScS**	**09 12 30.4**	**+0.5**
	0.3nm,0.3s,baz=247,slow=5.8,SNR=3.2						
KSM	**Kuching**	**14.71**	**100**	*e*Pn	**Pn**	**09 00 14.1**	**+0.2**
LAMP	**Lampang**	**14.88**	**14**	P	**Pn**	**09 00 18.0**	**+2.0**
	118nm,1.1s,924nm						
CHTO	**Chiang Mai**	**15.00**	**12**	P	**Pn**	**09 00 19.0**	**+1.3**
	2μm,1.0s,16μm						
CHTO	**Chiang Mai**	**15.00**	**12**	*e*P	**Pn**	**09 00 19.7**	**+2.0**
CHTO				pmax	pmax		
	comp=Z,327nm,0.8s						
CHTO	**Chiang Mai**	**15.00**	**12**	*e*Pn	**Pn**	**09 00 19.7**	**+2.0**
	comp=Z,327nm,0.8s						
CHTO	**Chiang Mai**	**15.00**	**12**	Pn	**Pn**	**09 00 18.9**	**+1.2**
	SNR=201						
CMMT	**Chiang Mai**	**15.00**	**12**	P	**Pn**	**09 00 19.0**	**+1.3**
	comp=Z,456nm,1.0s,comp=Z,4μm						
SKNT	**Sakolnakorn**	**15.16**	**31**	P	**Pn**	**09 00 20.9**	**+1.3**
	comp=Z,697nm,0.9s,comp=Z,9μm						
SKJI	**Sukabumi**	**15.35**	**136**	P	**Pn**	**09 00 21.9**	**-0.2**
CNJI	**Cibinong**	**15.96**	**135**	P	**Pn**	**09 00 24.9**	**-5.1**
LEM	**Lembang**	**15.99**	**132**	P	**Pn**	**09 00 31.5**	**+1.0**
	comp=Z,67nm,0.3s,baz=215,slow=3.8,SNR=14						
LEM	**Lembang**	**15.99**	**132**	P	**Pn**	**09 00 30.2**	**-0.3**
STKI	**Sintang**	**16.15**	**104**	P	**Pn**	**09 00 33.1**	**+0.7**
COCO	**West Island**	**16.15**	**176**	*e*P	**P**	**09 00 34.4**	**-0.3**
COCO				pmax	pmax		
	comp=Z,273nm,0.4s						
COCO	**West Island**	**16.15**	**176**	*e*P	**P**	**09 00 34.4**	**-0.3**
	comp=Z,273nm,0.4s						
JCJI	**Jatiwangi**	**16.26**	**130**	P	**Pn**	**09 00 34.6**	**+0.9**
SBUM	**Sibu**	**16.47**	**95**	*e*Pn	**Pn**	**09 00 36.9**	**+0.5**
	comp=Z,164nm,1.1s						
CISI	**Cisompet, Garu**	**16.62**	**134**	P	**Pn**	**09 00 33.3**	**-5.1**
CISI	**Cisompet, Garu**	**16.62**	**134**	*e*Pn	**Pn**	**09 00 32.6**	**-5.7**
	comp=Z,158nm,0.7s						
PBKI	**Pangkalan Bun**	**17.21**	**113**	P	**P**	**09 00 46.4**	**-0.1**
CMJI	**Cimerak**	**17.24**	**133**	P	**Pn**	**09 00 41.0**	**-4.9**
XMIS	**Christmas Isla**	**17.44**	**146**	*e*Pn	**Pn**	**09 00 43.1**	**-5.3**
	comp=Z,285nm,0.8s						
MDRS	**Chennai**	**17.79**	**301**	*e*P	**Pn**	**09 00 52.0**	**-0.8**
MDRS				IAmb	IAmb	09 00 57.8	
	comp=Z,34nm,0.7s						
VIS	**Vishakhapatnam**	**18.28**	**319**	*e*P	**Pn**	**09 00 59.1**	**+0.5**
VIS				IAmb	IAmb	09 01 04.7	
	comp=Z,157nm,0.8s						
VIS				*ex*	x	09 04 08.2	
SMRI	**Semarang**	**18.30**	**127**	P	**P**	**09 00 58.2**	**-0.2**
SMRI	**Semarang**	**18.30**	**127**	*e*P	**P**	**09 00 57.3**	**-1.1**
	comp=Z,613nm,1.1s						
CHLP	**Challavanipeta**	**18.40**	**322**	*e*P	**P**	**09 00 59.0**	**-0.5**
CHLP				IAmb	IAmb	09 01 04.7	
	comp=Z,195nm,0.8s						
CHLP				*e*		09 04 12.1	
CHLP				*e*S	**S**	**09 04 26.5**	**-0.1**
CHLP				IVMs_BB	IVMs_BB	09 06 30.4	
	comp=Z,654nm,25.8s						
SKHT	**Srikalahasti**	**18.58**	**302**	*e*P	**Pn**	**09 01 03.7**	**+1.4**
SKHT				IAmb	IAmb	09 01 05.4	
	comp=Z,35nm,1.0s						
SKHT				*e*S	**Sn**	**09 04 29.2**	**-0.2**
SKHT				IVMs_BB	IVMs_BB	09 07 07.6	
	comp=Z,783nm,26.3s						
BWNR	**Bhubaneshwar**	**18.87**	**330**	*e*P	**P**	**09 01 03.9**	**-0.6**
BWNR				IAmb	IAmb	09 01 08.7	
	comp=Z,448nm,0.4s						
UGM	**Wanagama**	**18.89**	**129**	P	**P**	**09 01 01.4**	**-3.5**
	comp=Z,241nm,1.3s						
UGM	**Wanagama**	**18.89**	**129**	*e*P	**P**	**09 01 01.7**	**-3.2**
	comp=Z,200nm,1.0s						
PVM	**Polavaram**	**19.12**	**314**	*e*P	**Pn**	**09 01 08.9**	**+0.2**
PVM				IAmb	IAmb	09 01 15.3	
	comp=Z,370nm,1.2s						
PVM				*e*		09 04 28.9	
PVM				*e*S	**Sn**	**09 04 42.4**	**0.0**
PVM				IVMs_BB	IVMs_BB	09 06 50.5	
	comp=Z,577nm,26.5s						
WOJI	**Wonogiri, Jawa**	**19.15**	**128**	P	**P**	**09 01 05.2**	**-2.5**
TRD	**Trivandrum**	**19.24**	**284**	*e*P	**P**	**09 01 08.5**	**-0.2**
TRD				IAmb	IAmb	09 01 16.6	
	comp=Z,108nm,1.6s						
NGJI	**Ngawi**	**19.30**	**126**	P	**Pn**	**09 01 10.9**	**0.0**
TBJI	**Tambak Boyo**	**19.31**	**124**	P	**Pn**	**09 01 10.7**	**-0.3**
ADKI	**Addanki**	**19.49**	**308**	*e*P	**Pn**	**09 01 13.4**	**+0.2**
ADKI				IAmb	IAmb	09 01 17.3	
	comp=Z,133nm,1.3s						
ADKI				*e*		09 04 35.5	
ADKI				*e*S	**S**	**09 04 49.4**	**+0.6**
ADKI				IVMs_BB	IVMs_BB	09 07 08.8	
	comp=Z,657nm,36.9s						
PCJI	**Pacitan**	**19.57**	**128**	P	**P**	**09 01 12.1**	**-0.2**
MTKI	**Muara Teweh, K**	**19.71**	**104**	P	**P**	**09 01 14.3**	**+0.4**
PWJI	**Pagerwojo**	**19.96**	**127**	P	**P**	**09 01 15.4**	**-1.1**
RCLA	**Racherla**	**20.09**	**306**	*e*P	**P**	**09 01 19.0**	**+1.1**
RCLA				IAmb	IAmb	09 01 25.3	
	comp=Z,45nm,0.9s						
RCLA				*e*		09 04 51.2	
RCLA				*e*S	**S**	**09 04 59.9**	**-0.8**
RCLA				IVMs_BB	IVMs_BB	09 07 14.9	
	comp=Z,696nm,22.6s						
QIZ	**Qiongzhong**	**20.25**	**42**	P	Pn	09 01 21.3	-0.8
QIZ				*s*P	*s*P	09 01 37.0	-2.8
QIZ				S	**S**	**09 05 06.5**	**+2.6**
QIZ				pmax	pmax		
	comp=Z,71nm,0.8s						
QIZ				LR	LR		
	comp=Z,490nm,15.6s						
QIZ				LR	LR		
	comp=Z,1μm,16.1s						
NJS	**Nagarjunasagar**	**20.42**	**309**	*e*P	**P**	**09 01 22.4**	**+0.9**
NJS				IAmb	IAmb	09 01 25.0	
	comp=Z,207nm,1.0s						
NJS				*e*		09 04 59.3	
NJS				*e*S	**S**	**09 05 07.2**	**0.0**
NJS				IVMs_BB	IVMs_BB	09 07 23.5	
	comp=Z,608nm,24.2s						
KKM	**Kota Kinabalu**	**20.43**	**84**	*e*P	**P**	**09 01 22.6**	**+0.8**
	comp=Z,411nm,1.0s						
KKM				LR	LR		
	comp=Z,913nm,19.0s						
BBKI	**Banjar Baru**	**20.43**	**111**	P	Pn	09 01 23.1	-1.2
SRLM	**Srisailam**	**20.49**	**307**	*e*P	**P**	**09 01 23.6**	**+1.2**
SRLM				IAmb	IAmb	09 01 25.6	
	comp=Z,156nm,0.9s						
SRLM				*e*		09 05 01.9	
SRLM				*e*S	**S**	**09 05 08.5**	**-0.1**
SRLM				IVMs_BB	IVMs_BB	09 07 39.4	
	comp=Z,589nm,27.7s						
URV	**Uravakonda**	**21.23**	**302**	*e*P	**P**	**09 01 31.5**	**+1.1**
URV				IAmb	IAmb	09 01 33.4	
	comp=Z,71nm,0.9s						
URV				*e*		09 05 18.4	
URV				*e*S	**S**	**09 05 22.4**	**-1.1**
URV				IVMs_BB	IVMs_BB	09 08 13.5	
	comp=Z,608nm,29.8s						
GMJI	**Gumukmas**	**21.43**	**125**	P	**P**	**09 01 32.9**	**+0.5**
HYB	**Hyderabad**	**21.51**	**309**	⇑*i*P	**P**	**09 01 35.5**	**+2.2**
	comp=Z,150nm,1.0s						
HYB				*e*		09 01 48.5	
HYB				*e*		09 01 54.0	
HYB				*e*S	**S**	**09 05 20.0**	**-8.8**
HYB	**Hyderabad**	**21.51**	**309**	*e*P	**P**	**09 01 34.5**	**+1.3**
HYB				IAmb	IAmb	09 01 36.4	
	comp=Z,88nm,0.6s						
HYBB	**Hyderabad (bro**	**21.51**	**309**	*e*P	**P**	**09 01 34.4**	**+1.1**
HYBB				IAmb	IAmb	09 01 38.3	
	comp=Z,129nm,1.0s						
HYBB				*e*S	**S**	**09 05 29.0**	**+0.2**
HYBB				IVMs_BB	IVMs_BB	09 07 45.9	
	comp=Z,436nm,44.6s						
BKB	**Balikpapan**	**21.73**	**104**	P	**P**	**09 01 37.4**	**+1.8**
SHL	**Shillong**	**21.73**	**350**	*ex*	**P**	**09 01 31.7**	**-4.1**
SHL				IAmb	IAmb	09 01 35.1	
	comp=Z,99nm,0.6s						
SHL				*i* x	x	09 05 27.0	
ABJI	**Asem Bagus**	**21.83**	**123**	P	**P**	**09 01 37.1**	**+0.4**
RPR	**Rampur**	**21.84**	**314**	*e*P	**P**	**09 01 37.5**	**+0.7**
RPR				IAmb	IAmb	09 01 41.2	
	comp=Z,259nm,1.0s						
RPR				*e*S	**S**	**09 05 35.0**	**-0.3**
RPR				IVMs_BB	IVMs_BB	09 08 51.0	
	comp=Z,524nm,25.0s						
BOK	**Bokaro**	**21.85**	**335**	*e*P	**P**	**09 01 37.4**	**+0.5**
BOK				IAmb	IAmb	09 01 39.9	
	comp=Z,284nm,0.8s						
KMI	**Kunming**	**22.00**	**17**	P	**P**	**09 01 40.0**	**+1.3**
KMI				*p*P	*p*P	09 01 54.0	+2.3
KMI				*s*P	*s*P	09 02 01.0	+2.1
KMI				PP	**PnPn**	**09 02 09.8**	**+7.0**
KMI				S	**S**	**09 05 33.8**	**-4.7**
KMI				*s*S	*s*S	09 05 59.0	-0.7
KMI				SS	**SnSn**	**09 06 18.8**	**+10**
KMI				pmax	pmax		
	comp=Z,340nm,1.1s						
KMI				pmax	pmax		
	comp=Z,1μm,4.0s						
KMI				LR	LR		
	comp=Z,3μm,16.6s						
KMI				LR	LR		
	comp=Z,3μm,18.1s						
KMI				LR	LR		
	comp=Z,4μm,17.3s						
JAGI	**Jajag, Banyuwa**	**22.12**	**124**	P	**P**	**09 01 37.9**	**-2.0**
JAGI	**Jajag, Banyuwa**	**22.12**	**124**	*e*P	**P**	**09 01 36.5**	**-3.3**
	comp=Z,1μm,1.8s						
SRSP	**Sriramsagar**	**22.58**	**312**	*e*P	**P**	**09 01 45.1**	**+0.3**
SRSP				IAmb	IAmb	09 01 48.4	
	comp=Z,389nm,1.1s						
SRSP				*e*S	**S**	**09 05 50.4**	**+1.9**
SRSP				IVMs_BB	IVMs_BB	09 08 56.1	
	comp=Z,555nm,33.0s						
MYLDM	**Lahad Datu**	**22.65**	**86**	*e*P	**P**	**09 01 46.1**	**+0.5**
	comp=Z,882nm,1.3s						
SRBI	**Singaraja**	**22.80**	**122**	P	**P**	**09 01 47.7**	**+0.6**
DNP	**Denpasar**	**23.11**	**123**	P	**P**	**09 01 50.1**	**-0.1**
KLRI	**Killari**	**23.40**	**308**	*e*P	**P**	**09 01 54.3**	**+1.3**
KLRI				IAmb	IAmb	09 01 56.6	
	comp=Z,187nm,1.0s						
KLRI				*e*S	**S**	**09 06 01.8**	**-0.3**
KLRI				IVMs_BB	IVMs_BB	09 10 56.6	
	comp=Z,692nm,24.3s						
TWSI	**Taliwang, Sumb**	**24.55**	**121**	P	**P**	**09 02 02.5**	**-1.1**
GYA	**Guiyang**	**24.60**	**24**	⇑*i*P	**P**	**09 02 03.5**	**-0.5**
GYA				pP	pP	09 02 19.5	+1.1
GYA				sP	sP	09 02 26.0	+0.7
GYA				PP	**PnPn**	**09 02 43.3**	**+5.1**
GYA				PcP	**PcP**	**09 05 42.8**	**+2.0**
GYA				S	**S**	**09 06 20.5**	**-0.8**
GYA				sS	sS	09 06 44.0	-1.7
GYA				SS	**SnSn**	**09 07 20.8**	**+8.9**
GYA				ScP	**ScP**	**09 09 15.5**	**+0.7**
GYA				pmax	pmax		
	comp=Z,130nm,0.8s						
GYA				pmax	pmax		
	comp=Z,400nm,8.4s						
GYA				LR	LR		
	comp=Z,2μm,17.2s						
GYA				LR	LR		
	comp=Z,1μm,19.5s						
GYA				LR	LR		
	comp=Z,3μm,19.0s						
MCO	**Taipa Grande**	**24.89**	**42**	P	**P**	**09 02 07.0**	**+0.5**
TTSI	**Tana Toraja**	**25.01**	**106**	P	**P**	**09 02 09.3**	**+1.5**
SPSI	**Sidrap Palu**	**25.23**	**108**	P	**P**	**09 02 09.7**	**-0.1**
PLAI	**Plampang**	**25.36**	**120**	P	**P**	**09 02 08.9**	**-2.0**
GZH	**Guangzhou**	**25.43**	**40**	⇑*i*P	**P**	**09 02 17.3**	**+5.9**
PKIN	**Phulchoki**	**25.43**	**338**	*e*P	**P**	**09 02 11.6**	**-0.1**
	comp=Z,134nm,0.9s						
HKC	**Hong Kong Obse**	**25.43**	**43**	P	**P**	**09 02 12.0**	**+0.6**
GUN	**Gumba**	**25.55**	**339**	*e*P	**P**	**09 02 12.9**	**0.0**
	comp=Z,717nm,0.8s						
KAPI	**Kappang**	**25.56**	**110**	P	**P**	**09 02 12.8**	**+0.1**
	comp=Z,332nm,1.0s,baz=291,slow=7.0,SNR=71						
KAPI				S	**S**	**09 06 36.7**	**+0.1**
	comp=Z,12nm,1.0s,baz=311,slow=20,SNR=2.6						
KAPI	**Kappang**	**25.56**	**110**	*e*P	**P**	**09 02 12.8**	**+0.1**
	comp=Z,378nm,0.9s						
KAPI				S	**S**	**09 06 36.7**	**+0.1**
KAPI				LR	LR		
	comp=Z,1μm,20.0s						
DMN	**Daman**	**25.57**	**338**	*e*P	**P**	**09 02 12.6**	**-0.3**
	comp=Z,399nm,0.9s						
KKN	**Kakani**	**25.66**	**338**	*e*P	**P**	**09 02 13.4**	**-0.4**
	comp=Z,505nm,0.9s						
POO	**Poona**	**25.85**	**306**	*e*P	**P**	**09 02 15.7**	**+0.4**
POO				IAmb	IAmb	09 02 18.4	
	comp=Z,132nm,0.2s						
LSA	**Lhasa**	**25.90**	**351**	P	**P**	**09 02 16.0**	**-0.2**
LSA				pmax	pmax		
	comp=Z,93nm,1.0s						
LSA				LR	LR		
	comp=Z,630nm,23.1s						
LSA				LR	LR		
	comp=Z,1μm,24.5s						
LSA				LR	LR		
	comp=Z,2μm,27.4s						
LSA	**Lhasa**	**25.90**	**351**	*e*P	**P**	**09 02 16.2**	**0.0**
LSA				pmax	pmax		
	comp=Z,136nm,0.7s						
LSA				MLR	MLR		
	comp=Z,806nm,20.0s						
LSA	**Lhasa**	**25.90**	**351**	*e*P	**P**	**09 02 16.2**	**0.0**
	comp=Z,136nm,0.7s						
LSA				LR	LR		
	comp=Z,806nm,20.0s						
DGAR	**Diego Garcia**	**25.93**	**244**	PFAKE		09 02 30.0	+14
DGAR				LR	LR		
	comp=Z,2μm,20.0s						
H08S2	**Diego Garcia H**	**25.99**	**244**	T	T	09 28 16.1	
	baz=68						
H08S3	**Diego Garcia H**	**25.99**	**244**	T	T	09 28 17.6	
	baz=68,slow=74						
H08S1	**Diego Carcia H**	**26.01**	**244**	T	T	09 28 17.3	
	baz=68,slow=74						
BHPL	**Bhopal**	**26.08**	**319**	*e*P	**P**	**09 02 18.6**	**+1.2**
BHPL				IAmb	IAmb	09 02 19.9	
	comp=Z,74nm,1.1s						
GKN	**Gorkha**	**26.10**	**337**	*e*P	**P**	**09 02 17.5**	**-0.1**
	comp=Z,1μm,0.8s						
KOLN	**Koldanda**	**26.31**	**335**	*e*P	**P**	**09 02 19.8**	**+0.2**
	comp=Z,1μm,0.8s						
MRSI	**Marisa**	**26.35**	**97**	P	**P**	**09 02 20.0**	**+0.1**
BSSI	**Bau Bau, Buton**	**26.65**	**112**	P	**P**	**09 02 23.4**	**+0.8**
	comp=Z,355nm,0.7s,comp=Z,3μm						
PYUN	**Piuthan**	**26.86**	**334**	*e*P	**P**	**09 02 24.5**	**-0.1**
	comp=Z,765nm,0.9s						
LQP	**Lukban**	**27.28**	**67**	‖*e*P	**P**	**09 02 30.1**	**+1.6**
LUWI	**Luwuk**	**27.42**	**100**	P	**P**	**09 02 30.2**	**+0.7**
LUWI	**Luwuk**	**27.42**	**100**	*e*P	**P**	**09 02 30.2**	**+0.7**
	comp=Z,432nm,1.1s						
RCP	**Roxas**	**27.70**	**73**	‖*e*P	**P**	**09 02 34.4**	**+2.4**
CD2	**Chengdu**	**27.76**	**15**	P	**P**	**09 02 31.8**	**-0.6**
CD2				*p*P	*p*P	09 02 47.5	+0.6
CD2				S	**S**	**09 07 11.8**	**+0.7**
CD2				*s*S	*s*S	09 07 39.3	+3.6
CD2				SS	**SnSn**	**09 08 37.0**	**+8.2**
CD2				pmax	pmax		
	comp=Z,360nm,2.1s						
CD2				pmax	pmax		
	comp=Z,230nm,13.2s						
CD2				LR	LR		
	comp=Z,2μm,18.0s						
CD2				LR	LR		
	comp=Z,2μm,16.8s						
BASI	**Baing, Sumba**	**28.45**	**120**	P	**P**	**09 02 37.3**	**-1.4**
ENH	**Enshi**	**29.12**	**25**	*e*P	**P**	**09 02 43.6**	**-0.9**
	comp=Z,105nm,1.1s						
ENH				LR	LR		
	comp=Z,2μm,21.0s						
MMRI	**Maumere**	**29.21**	**116**	P	**P**	**09 02 42.8**	**-2.7**
MMRI	**Maumere**	**29.21**	**116**	*e*P	**P**	**09 02 43.0**	**-2.5**
	comp=Z,94nm,0.9s						
LGTI	**Lohaghat**	**29.26**	**331**	*e*P	**P**	**09 02 46.5**	**+0.8**
SGSI	**Sangihe**	**29.66**	**90**	P	**P**	**09 02 51.1**	**+1.6**
DAV	**Davao City (W)**	**29.79**	**83**	LR	LR	09 17 58.5	
	comp=Z,317nm,18.8s,baz=260,slow=43						
QZH	**Quanzhou**	**30.21**	**44**	⇑*i*P	**P**	**09 02 51.0**	**-3.1**
QZH				S	**S**	**09 07 44.3**	**-5.3**
QZH				pmax	pmax		
	comp=Z,290nm,0.8s						
QZH				LR	LR		
	comp=Z,1μm,12.2s						
QZH				LR	LR		
	comp=Z,1μm,13.1s						
QZH				LR	LR		
	comp=Z,3μm,18.0s						
NDI	**New Delhi**	**30.21**	**326**	*e*P	**P**	**09 02 53.1**	**-1.0**
NDI				IAmb	IAmb	09 02 54.2	
	comp=Z,686nm,0.9s						
TPUB

SDNR	**Sundarnagar**	**32.56**	**329**	*e*P	**P**	**09 03 16.0**	**+1.2**
LZH	**Lanzhou**	**32.74**	**12**	⇑P	**P**	**09 03 16.0**	**-0.5**
LZH				pP	pP	09 03 31.5	+0.4
LZH				sP	sP	09 03 36.3	-1.7
LZH				PcP	**PcP**	**09 06 02.0**	**+1.1**
LZH				S	**S**	**09 08 27.3**	**-2.0**
LZH				sS	sS	09 08 50.5	-3.6
LZH				ScP	**ScP**	**09 09 42.0**	**+1.8**
LZH				SS	**SnSn**	**09 10 30.3**	**+0.3**
LZH				pmax	pmax		
	comp=Z,42nm,1.0s						
LZH				pmax	pmax		
	comp=Z,120nm,4.0s						
LZH				LR	LR		
	comp=Z,1μm,15.2s						
LZH				LR	LR		
	comp=Z,2μm,14.6s						
LZH				LR	LR		
	comp=Z,2μm,16.6s						
DHRM	**DHARAMSHALA**	**33.50**	**329**	*e*P	**P**	**09 03 22.7**	**-0.5**
DHRM				IAmb	IAmb	09 03 25.1	
	comp=Z,9μm,2.7s						
MSAI	**Masohi**	**33.91**	**102**	P	**P**	**09 03 27.6**	**+0.8**
THN	**Thein Dam**	**33.94**	**329**	*e*P	**P**	**09 03 24.0**	**-2.8**
THN				*ex*	x	09 08 45.0	
MBWA	**Marble Bar**	**34.31**	**138**	*e*P	**P**	**09 03 29.8**	**-0.3**
	comp=Z,178nm,1.3s						
MBWA				LR	LR		
	comp=Z,1μm,19.0s						
MBWA	**Marble Bar**	**34.31**	**138**	P	**P**	**09 03 30.6**	**+0.5**
	SNR=6.3						
MBWA	**Marble Bar**	**34.31**	**138**	P	**P**	**09 03 29.8**	**-0.3**
MBWA				P	**P**	**09 03 30.6**	**+0.5**
	SNR=6.3						
NJ2	**Nanjing**	**35.28**	**35**	*e*P	**P**	**09 03 39.0**	**+0.7**
NJ2				S	**S**	**09 09 16.8**	**+8.6**
NJ2				pmax	pmax		
	comp=Z,230nm,0.9s						
NJ2				pmax	pmax		
	comp=Z,180nm,3.7s						
NJ2				LR	LR		
	comp=Z,740nm,12.5s						
NJ2				LR	LR		
	comp=Z,1μm,13.6s						
NJ2				LR	LR		
	comp=Z,2μm,12.5s						
GTA	**Gaotai**	**35.40**	**5**	⇑P	**P**	**09 03 38.0**	**-1.5**
GTA				pP	pP	09 03 54.8	+0.7
GTA				sP	sP	09 04 01.8	+0.8
GTA				PcP	**PcP**	**09 06 09.5**	**+1.1**
GTA				S	**S**	**09 09 09.3**	**-0.9**
GTA				sS	sS	09 09 33.3	-1.8
GTA				ScP	**ScP**	**09 09 50.0**	**+0.5**
GTA				SS	**SnSn**	**09 11 31.8**	**-2.3**
GTA				ScS	**ScS**	**09 13 52.0**	**-2.0**
GTA				pmax	pmax		
	comp=Z,83nm,1.6s						
GTA				pmax	pmax		
	comp=Z,400nm,7.4s						
GTA				LR	LR		
	comp=Z,560nm,19.0s						
GTA				LR	LR		
	comp=Z,540nm,20.0s						
GTA				LR	LR		
	comp=Z,870nm,17.6s						
SWI	**Sorong**	**35.77**	**97**	P	**P**	**09 03 42.5**	**-0.3**
SSE	**Sheshan**	**36.00**	**39**	⇑P	**P**	**09 03 45.5**	**+1.0**
SSE				pP	**pP**	**09 04 01.3**	**+2.1**
SSE				S	**S**	**09 09 21.0**	**+1.7**
SSE				sS	**sS**	**09 09 44.5**	**+0.3**
SSE				pmax	pmax		
	comp=Z,86nm,0.8s						
SSE				pmax	pmax		
	comp=Z,130nm,5.1s						
SSE				LR	LR		
	comp=Z,1μm,20.4s						
SSE				LR	LR		
	comp=Z,400nm,20.4s						
SSE				LR	LR		
	comp=Z,860nm,23.6s						
FITZ	**Fitzroy Crossi**	**36.73**	**128**	P	**P**	**09 03 49.7**	**-1.3**
	comp=Z,72nm,0.7s,baz=305,slow=5.8						
FITZ				S	**S**	**09 09 29.4**	**-1.4**
	comp=Z,4.5nm,1.0s,baz=260,slow=13,SNR=2.5						
FITZ				ScP	**ScP**	**09 09 55.2**	**+0.6**
	comp=Z,18nm,0.9s,baz=39,slow=1.4,SNR=7.6						
FITZ				LR	LR	09 20 48.8	
	comp=Z,702nm,20.6s,baz=297,slow=39						
FITZ	**Fitzroy Crossi**	**36.73**	**128**	P	**P**	**09 03 49.7**	**-1.3**
	baz=37,SNR=117						
FITZ	**Fitzroy Crossi**	**36.73**	**128**	*e*P	**P**	**09 03 49.8**	**-1.3**
	comp=Z,74nm,0.6s						
FITZ				S	**S**	**09 09 29.4**	**-1.4**
FITZ				ScP	**ScP**	**09 09 55.2**	**+0.6**
TIY	**Taiyuan**	**36.81**	**22**	*e*P	**P**	**09 03 51.5**	**0.0**
TIY				pP	**pP**	**09 04 08.3**	**+2.1**
TIY				PP	**PnPn**	**09 05 19.0**	**+2.1**
TIY				S	**S**	**09 09 33.8**	**+2.1**
TIY				pmax	pmax		
	comp=Z,100nm,0.8s						
TIY				pmax	pmax		
	comp=Z,350nm,5.0s						
TIY				LR	LR		
	comp=Z,2μm,14.6s						
TIY				LR	LR		
	comp=Z,1μm,13.9s						
TIY				LR	LR		
	comp=Z,3μm,15.6s						
FAKI	**Fak Fak**	**37.07**	**100**	P	**P**	**09 03 53.2**	**-0.7**
FAKI	**Fak Fak**	**37.07**	**100**	*e*P	**P**	**09 03 53.2**	**-0.7**
	comp=Z,158nm,1.0s						
SAUI	**Saumlaki**	**37.37**	**109**	P	**P**	**09 03 57.5**	**+1.0**
TIA	**Tai'an**	**37.57**	**29**	⇑P	**P**	**09 03 57.8**	**0.0**
TIA				PP	**PP**	**09 05 22.5**	**-2.0**
TIA				S	**S**	**09 09 42.0**	**-1.1**
TIA				pmax	pmax		
	comp=Z,180nm,0.8s						
TIA				pmax	pmax		
	comp=Z,490nm,3.8s						
TIA				LR	LR		
	comp=Z,2μm,14.3s						
TIA				LR	LR		
	comp=Z,700nm,11.8s						
TIA				LR	LR		
	comp=Z,3μm,15.7s						
KNRA	**Kununurra**	**38.05**	**122**	P	**P**	**09 04 00.9**	**-1.2**
	baz=38						
MORW	**Morawa**	**38.23**	**151**	P	**P**	**09 04 04.6**	**+1.1**
	baz=38,SNR=34						
JOW	**Kunigami**	**38.43**	**51**	P	**P**	**09 04 05.8**	**+0.5**
	comp=Z,125nm,0.7s						
JOW	**Kunigami**	**38.43**	**51**	*e*P	**P**	**09 04 06.7**	**+1.5**
	comp=Z,137nm,0.7s						
BTO	**Baotou**	**38.60**	**17**	*e*P	**P**	**09 04 06.5**	**0.0**
PALU	**Palau**	**38.61**	**83**	P	**P**	**09 04 06.1**	**-0.9**
	baz=38,SNR=5.4						
RKPI	**Ransiki, Papua**	**38.75**	**97**	P	**P**	**09 04 07.8**	**-0.3**
MTN	**Manton Dam**	**38.90**	**116**	P	**P**	**09 04 08.0**	**-1.3**
	baz=39,SNR=6.3						
MTN	**Manton Dam**	**38.90**	**116**	*e*P	**P**	**09 04 07.7**	**-1.6**
	comp=Z,257nm,1.5s						
KBL	**Kabul**	**39.22**	**324**	*e*P	**P**	**09 04 11.5**	**-0.5**
KBL				pmax	pmax		
	comp=Z,46nm,0.8s						
KBL	**Kabul**	**39.22**	**324**	*e*P	**P**	**09 04 11.5**	**-0.5**
	comp=Z,46nm,0.8s						
HHC	**Hu-ho-hao-te**	**39.30**	**19**	*e*P	**P**	**09 04 13.3**	**+0.9**
HHC				PP	**PnPn**	**09 05 52.3**	**+5.5**
HHC				S	**S**	**09 10 08.5**	**-0.8**
HHC				sS	sS	09 10 37.0	+2.6
HHC				pmax	pmax		
	comp=Z,250nm,0.9s						
HHC				pmax	pmax		
	comp=Z,500nm,9.9s						
HHC				LR	LR		
	comp=Z,2μm,17.8s						
HHC				LR	LR		
	comp=Z,1μm,16.9s						
HHC				LR	LR		
	comp=Z,2μm,17.1s						
KSH	**Kashi**	**39.63**	**336**	P	**P**	**09 04 13.5**	**-1.7**
KSH				*e*pP	pP	09 04 29.3	-0.8
KSH				*e*sP	sP	09 04 37.0	+0.2
KSH				*e*PP	**PnPn**	**09 05 49.3**	**-1.4**
KSH				*e*ScP	**ScP**	**09 10 05.0**	**-0.4**
KSH				S	**S**	**09 10 08.5**	**-5.8**
KSH				pmax	pmax		
	comp=Z,82nm,1.1s						
KSH				pmax	pmax		
	comp=Z,370nm,2.8s						
KSH				LR	LR		
	comp=Z,2μm,12.1s						
KSH				LR	LR		
	comp=Z,1μm,13.4s						
KSH				LR	LR		
	comp=Z,1μm,31.2s						
BLDU	**Ballidu**	**39.83**	**151**	P	**P**	**09 04 17.5**	**+0.7**
	baz=40,SNR=28						
KDU	**Kakadu**	**40.04**	**115**	P	**P**	**09 04 17.6**	**-1.3**
	baz=40,SNR=5.7						
WBK	**Wadi Bani Khal**	**40.13**	**301**	P	**P**	**09 04 22.3**	**+2.7**
	SNR=5.2						
WBK	**Wadi Bani Khal**	**40.13**	**301**	P	**P**	**09 04 22.3**	**+2.7**
	SNR=5.2						
WMQ	**Urumqi**	**40.26**	**351**	P	**P**	**09 04 20.0**	**-0.3**
WMQ				pP	pP	09 04 37.3	+2.1
WMQ				sP	sP	09 04 44.3	+2.3
WMQ				PP	**PP**	**09 05 54.5**	**+0.5**
WMQ				PcP	**PcP**	**09 06 26.5**	**+3.3**
WMQ				ScP	**ScP**	**09 10 08.0**	**+0.3**
WMQ				S	**S**	**09 10 28.0**	**+4.4**
WMQ				ScS	**ScS**	**09 14 21.3**	**-0.1**
WMQ				pmax	pmax		
	comp=Z,27nm,1.2s						
WMQ				pmax	pmax		
	comp=Z,130nm,4.4s						
WMQ				LR	LR		
	comp=Z,220nm,17.8s						
WMQ				LR	LR		
	comp=Z,260nm,17.8s						
BJT	**Baijiatuau**	**40.27**	**24**	*e*P	**P**	**09 04 21.5**	**+1.1**
BJT				pmax	pmax		
	comp=Z,561nm,0.8s						
BJT				MLR	MLR		
	comp=Z,658nm,19.0s						
BJT	**Baijiatuau**	**40.27**	**24**	*e*P	**P**	**09 04 21.5**	**+1.1**
	comp=Z,561nm,0.8s						
BJT				LR	LR		
	comp=Z,658nm,19.0s						
BJI	**Beijing**	**40.29**	**24**	P	**P**	**09 04 21.5**	**+1.0**
BJI				PP	**PP**	**09 05 56.0**	**+1.7**
BJI				S	**S**	**09 10 23.8**	**-0.2**
BJI				pmax	pmax		
	comp=Z,410nm,1.0s						
BJI				LR	LR		
	comp=Z,590nm,21.2s						
BJI				LR	LR		
	comp=Z,700nm,20.1s						
BJI				LR	LR		
	comp=Z,1μm,30.7s						
MUN	**Mundaring**	**40.74**	**153**	P	**P**	**09 04 25.4**	**+1.1**
	baz=41						
SFK	**Sufi-Kurgan**	**41.09**	**334**	P	**P**	**09 04 28.1**	**+0.6**
SFK				pmax	pmax		
	comp=Z,213nm,0.9s						
KLBR	**Kellerberrin**	**41.14**	**151**	P	**P**	**09 04 28.2**	**+0.5**
	baz=41,SNR=44						
BIDO	**Bidbid**	**41.19**	**302**	P	**P**	**09 04 31.2**	**+3.0**
	SNR=6.3						
BIDO	**Bidbid**	**41.19**	**302**	P	**P**	**09 04 31.2**	**+3.0**
	SNR=6.3						
SHLS	**Shalkode**	**41.44**	**342**	⇑*i*P	**P**	**09 04 30.4**	**+0.2**
	comp=Z,937nm,1.0s						
SHLS				*e*S	**S**	**09 10 41.1**	**-0.3**
UZB	**Uzynbulak**	**41.70**	**341**	⇑*i*P	**P**	**09 04 32.3**	**+0.1**
	comp=Z,737nm,0.9s						
UZB				*e*S	**S**	**09 10 44.6**	**-0.5**
UZB				LQ	LQ	09 18 46.4	
UZB				LR	LR	09 22 00.1	
	comp=Z,129nm,18.1s						
BSY	**Bisya**	**41.70**	**300**	P	**P**	**09 04 35.4**	**+2.9**
	SNR=8.7						
BSY	**Bisya**	**41.70**	**300**	P	**P**	**09 04 35.4**	**+2.9**
	SNR=8.7						
PDGK	**Podgornoye**	**41.72**	**342**	P	**P**	**09 04 32.2**	**0.0**
PDGK				pmax	pmax		
	comp=Z,77nm,1.0s						
SATY	**Saty**	**41.82**	**341**	⇑*i*P	**P**	**09 04 33.5**	**+0.3**
	comp=Z,2μm,0.9s						
SATY				*i* pP	**pP**	**09 04 48.9**	**+0.8**
SATY				*i* sP	**sP**	**09 04 55.6**	**+0.7**
SATY				*e*S	**S**	**09 10 47.0**	**+0.2**
DL2	**Dalian**	**41.90**	**31**	⇑P	**P**	**09 04 34.0**	**+0.3**
DL2				pP	**pP**	**09 04 48.3**	**-0.4**
DL2				S	**S**	**09 10 48.5**	**+0.7**
DL2				pmax	pmax		
	comp=Z,370nm,3.7s						
DL2				LR	LR		
	comp=Z,590nm,16.5s						
DL2				LR	LR		
	comp=Z,1μm,19.5s						
DL2				LR	LR		
	comp=Z,1μm,17.0s						
NWAO	**Narrogin (SRO)**	**42.00**	**153**	P	**P**	**09 04 35.2**	**+0.5**
	comp=Z,222nm,0.9s,SNR=68						
NWAO	**Narrogin (SRO)**	**42.00**	**153**	P	**P**	**09 04 35.4**	**+0.7**
	baz=42,SNR=37						
NWAO	**Narrogin (SRO)**	**42.00**	**153**	*e*P	**P**	**09 04 35.5**	**+0.8**
NWAO				pmax	pmax		
	comp=Z,269nm,0.9s						
NWAO				MLR	MLR		
	comp=Z,2μm,22.0s						
NWAO	**Narrogin (SRO)**	**42.00**	**153**	*e*P	**P**	**09 04 35.5**	**+0.8**
	comp=Z,269nm,0.9s						
NWAO				LR	LR		
	comp=Z,2μm,22.0s						
NWAO	**Narrogin (SRO)**	**42.00**	**153**	P	**P**	**09 04 35.4**	**+0.8**
	SNR=9.2						
NWAO	**Narrogin (SRO)**	**42.00**	**153**	P	**P**	**09 04 35.4**	**+0.8**
	SNR=9.2						
DZET	**Dzherino**	**42.41**	**328**	P	**P**	**09 04 37.6**	**-0.5**
DZET				pmax	pmax		
	comp=Z,298nm,1.5s						
ARQ	**Araqi**	**42.50**	**301**	P	**P**	**09 04 41.4**	**+2.5**
	SNR=8.2						
ARQ	**Araqi**	**42.50**	**301**	P	**P**	**09 04 41.4**	**+2.5**
	SNR=8.2						
AAA	**Alma-Ata**	**42.50**	**340**	*i* P	**P**	**09 04 39.0**	**+0.3**
AAA				*i* S	**S**	**09 10 57.0**	**+0.3**
AAA				pmax	pmax		
	comp=Z,700nm,2.3s						
AAA				smax	smax		
	comp=E,1μm,3.9s						
AAA				MLR	MLR		
	comp=Z,600nm,9.0s						
TKM2	**Tokmak 2**	**42.68**	**338**	P	**P**	**09 04 40.1**	**-0.2**
TKM2				pmax	pmax		
	comp=Z,43nm,1.1s						
TKM2	**Tokmak 2**	**42.68**	**338**	*e*P	**P**	**09 04 40.5**	**+0.1**
	comp=Z,141nm,1.7s						
TKM2				LR	LR		
	comp=Z,790nm,22.0s						
WRKA	**Warakurna**	**42.80**	**134**	P	**P**	**09 04 40.9**	**-0.4**
	baz=43,SNR=51						
AAK	**Ala-Archa**	**42.86**	**337**	P	**P**	**09 04 42.5**	**+0.7**
	comp=Z,51nm,0.8s,baz=142,slow=9.2						
AAK				ScP	**ScP**	**09 10 19.2**	**+1.0**
	comp=Z,16nm,1.0s,baz=138,slow=4.9,SNR=7.7						
AAK				ScS	**ScS**	**09 14 37.4**	**-0.2**
	comp=Z,0.6nm,0.3s,baz=133,slow=23,SNR=3.6						
AAK	**Ala-Archa**	**42.86**	**337**	*c i*P	**P**	**09 04 42.4**	**+0.7**
AAK				pmax	pmax		
	comp=Z,145nm,0.9s						
AAK	**Ala-Archa**	**42.86**	**337**	*e*P	**P**	**09 04 42.1**	**+0.3**
	comp=Z,57nm,0.9s						
AAK				ScP	**ScP**	**09 10 19.2**	**+1.0**
AAK				ScS	**ScS**	**09 14 37.4**	**-0.2**
AAK				LR	LR		
	comp=Z,684nm,20.0s						
FRU	**Bishkek**	**42.98**	**337**	⇑*i*P	**P**	**09 04 42.0**	**-0.5**
FRU				*e*		09 05 01.0	
FRU				*e*		09 06 32.0	
FRU				*e*S	**S**	**09 11 05.0**	**+1.2**
FRU				pmax	pmax		
	comp=Z,180nm,2.0s						
FRU				smax	smax		
	comp=N,310nm,3.0s						
KMBL	**Kambalda**	**43.10**	**147**	P	**P**	**09 04 44.3**	**+0.6**
	baz=43,SNR=22						
EKS2	**Erkin-Say**	**43.17**	**336**	*e*P	**P**	**09 04 45.0**	**+0.8**
EKS2				pmax	pmax		
	comp=Z,62nm,0.8s						
EKS2				MLR	MLR		
	comp=Z,555nm,22.0s						
EKS2	**Erkin-Say**	**43.17**	**336**	*e*P	**P**	**09 04 45.0**	**+0.8**
	comp=Z,62nm,0.8s						
EKS2				LR	LR		
	comp=Z,555nm,22.0s						
KUU	**Kurty**	**43.26**	**339**	⇑*i*P	**P**	**09 04 44.2**	**-0.5**
	comp=Z,665nm,1.2s						
KUU				*i* sP	**sP**	**09 05 08.1**	**+1.5**
KUU				*e*S	**S**	**09 11 06.8**	**-1.0**
KUU				*i* sS	**sS**	**09 11 33.4**	**+0.3**
KUU				LR	LR	09 22 56.4	
	comp=Z,154nm,15.0s						
RKGY	**Rocky Gully**	**43.31**	**154**	P	**P**	**09 04 46.5**	**+1.3**
	baz=43,SNR=14						
UOSS	**Minazif**	**43.35**	**303**	*e*P	**P**	**09 04 47.0**	**+1.1**
	comp=Z,1.6nm,1.0s						
ASHO	**Ashiyiah**	**43.38**	**302**	*i* P	**P**	**09 04 48.2**	**+2.2**
	SNR=6.2						
MNAS	**Manas**	**43.55**	**335**	P	**P**	**09 04 47.3**	**0.0**
MNAS				pmax	pmax		
	comp=Z,86nm,1.0s						
INCN	**Inchon**	**43.63**	**36**	*e*P	**P**	**09 04 47.6**	**-0.3**
	comp=Z,114nm,1.0s						
INCN				LR	LR		
	comp=Z,856nm,21.0s						
JNU	**Nakatsue**	**43.69**	**44**	P	**P**	**09 04 48.1**	**-0.3**
	comp=Z,35nm,0.8s,baz=263,slow=3.5,SNR=16						
JNU				LR	LR	09 23 45.2	
	comp=Z,906nm,20.8s,baz=240,slow=37						
JNU	**Nakatsue**	**43.69**	**44**	*e*P	**P**	**09 04 48.0**	**-0.4**
	comp=Z,56nm,0.8s						
FAQ	**Al Faqa, Dubai**	**43.80**	**302**	*i* P	**P**	**09 04 51.3**	**+1.9**
	SNR=6.3						
MK01	**Makanchi Array**	**44.15**	**347**	*e*P	**P**	**09 04 50.9**	**-1.0**
MK31	**Makanchi Array**	**44.17**	**347**	*i* P	**P**	**09 04 51.1**	**-1.0**
MK31				pmax	pmax		
	comp=Z,123nm,0.9s						
MK31	**Makanchi Array**	**44.17**	**347**	*e*P	**P**	**09 04 51.5**	**-0.6**
MKAR	**Makanchi Array**	**44.17**	**347**	P	**P**	**09 04 51.4**	**-0.7**
	comp=Z,108nm,0.7s,baz=162,slow=8.3,SNR=433						
MKAR				ScS	ScS	09 14 45.0	-0.3
	comp=Z,1.2nm,0.7s,baz=143,slow=14,SNR=2.5						
MKAR				LR	LR	09 26 08.1	
	comp=Z,605nm,21.5s,baz=164,slow=40						
MAKZ	**Makanchi**	**44.26**	**346**	P	**P**	**09 04 51.2**	**-1.6**
MAKZ				pmax	pmax		
	comp=Z,79nm,0.7s						
MAKZ	**Makanchi**	**44.26**	**346**	*e*P	**P**	**09 04 51.9**	**-0.9**
	comp=Z,96nm,0.7s						
KS15	**Wonju Array Si**	**44.35**	**37**	*e*P	**P**	**09 04 53.8**	**+0.2**
KSAR	**Wonju Array Be**	**44.35**	**37**	P	**P**	**09 04 53.4**	**-0.2**
KSAR	**Wonju Array Be**	**44.35**	**37**	P	**P**	**09 04 53.4**	**-0.2**
KSAR				ScP	**ScP**	**09 10 23.1**	**-1.0**
ZSN	**Zaisan**	**44.35**	**349**	⇑*i*P	**P**	**09 04 52.8**	**-0.7**
	comp=Z,1μm,0.9s						
ZSN				*i* PP	**PP**	**09 06 38.2**	**+0.3**
ZSN				*e*S	**S**	**09 11 22.2**	**-1.4**
IUG	**luzhnay**	**44.37**	**332**	*e*P	**P**	**09 04 54.5**	**+0.7**
	comp=Z,6μm,0.9s						
IUG				*i* pP	**pP**	**09 05 11.0**	**+2.1**
IUG				*i* sP	**sP**	**09 05 17.6**	**+2.0**
IUG				*e*S	**S**	**09 11 24.2**	**-0.1**
IUG				*i* sS	**sS**	**09 11 49.5**	**-0.2**
KS01	**Wonju Array Si**	**44.38**	**37**	*e*P	**P**	**09 04 53.5**	**-0.3**
KSRS	**Korea Array**	**44.38**	**37**	P	**P**	**09 04 53.4**	**-0.4**
	comp=Z,43nm,0.8s,baz=226,slow=8.8,SNR=108						
KSRS				ScP	**ScP**	**09 10 23.1**	**-1.1**
	comp=Z,1.8nm,0.8s,baz=212,slow=4.3,SNR=4.1						
KSRS				LR	LR	09 25 19.9	
	comp=Z,644nm,18.6s,baz=234,slow=39						
KSRS	**Korea Array**	**44.38**	**37**	P	**P**	**09 04 53.4**	**-0.4**
KSRS				pmax	pmax		
	comp=Z,44nm,0.8s						
KSRS				pmax	pmax		
	comp=N,2.0nm,0.8s						
KSRS				MLR	MLR		
	comp=Z,644nm,18.6s						
SONM	**Songino Array**	**44.58**	**10**	P	**P**	**09 04 55.1**	**-0.3**
	comp=Z,166nm,0.7s,baz=190,slow=8.7,SNR=64						
SONM				PcP	**PcP**	**09 06 38.1**	**+0.5**
	comp=Z,24nm,0.6s,baz=213,slow=3.5,SNR=4.8						
SONM				LR	LR	09 25 21.8	
	comp=Z,2μm,20.8s,baz=184,slow=38						
SONM	**Songino Array**	**44.58**	**10**	P	**P**	**09 04 55.1**	**-0.3**
SONM						09 06 38.1	
SONM				pmax	pmax		
	comp=Z,166nm,0.7s						
SONM				pmax	pmax		
	comp=Z,24nm,0.6s						
SONM				MLR	MLR		
	comp=Z,2μm,20.8s						
SONA1	**Songino Array**	**44.59**	**10**	*e*P	**P**	**09 04 55.3**	**-0.2**
ULN	**Ulaanbaatar**	**44.73**	**11***c*	*i*P	**P**	**09 04 55.8**	**-0.8**
ULN				pmax	pmax		
	comp=Z,183nm,1.2s						
ULN	**Ulaanbaatar**	**44.73**	**11**	*e*P	**P**	**09 04 56.2**	**-0.4**
	comp=Z,110nm,0.8s						
ULN				LR	LR		
	comp=Z,2μm,21.0s						
ULN	**Ulaanbaatar**	**44.73**	**11**	P	**P**	**09 04 56.0**	**-0.6**
	SNR=52						
WRA	**Warramunga Arr**	**44.74**	**124**	P	**P**	**09 04 56.8**	**-0.2**
	comp=Z,304nm,0.9s,baz=301,slow=9.1,SNR=505						
WRA				ScP	**ScP**	**09 10 26.2**	**+0.1**
	comp=Z,14nm,0.9s,baz=309,slow=3.9,SNR=11						
WRA				S	**S**	**09 11 24.9**	**-5.0**
	comp=Z,18nm,1.2s,baz=296,slow=16,SNR=7.9						
WRA				LR	LR	09 24 09.1	
	comp=Z,593nm,21.7s,baz=290,slow=37						
WRA	**Warramunga Arr**	**44.74**	**124**	*i* P	**P**	**09 04 56.7**	**-0.2**
WRA				pmax	pmax		
	comp=Z,356nm,0.9s						
WRAB	**Tennant Creek**	**44.74**	**124***d*	*i*P	**P**	**09 04 56.8**	**-0.2**
WRAB				pmax	pmax		
	comp=Z,1μm,0.8s						
WRAB	**Tennant Creek**	**44.74**	**124**	*e*P	**P**	**09 04 57.0**	**0.0**
	comp=Z,419nm,0.9s						
WRAB				LR	LR		
	comp=Z,765nm,19.0s						
WB2	**Warramunga Arr**	**44.75**	**124**	*e*P	**P**	**09 04 56.9**	**-0.2**
	comp=Z,412nm,0.9s						
WR3	**Warramunga Arr**	**44.78**	**124**	P	**P**	**09 04 57.2**	**-0.1**
	baz=45						
GENI	**Genyem**	**44.83**	**98**	P	**P**	**09 04 56.6**	**-1.1**
KK31	**Karatay Array**	**44.91**	**334**	*i* P	**P**	**09 04 58.3**	**+0.3**
KK31				pmax	pmax		
	comp=Z,135nm,1.0s						
KKAR	**Karatay Array**	**44.91**	**334**	*e*P	**P**	**09 04 58.4**	**+0.4**
KKAR	**Karatay Array**	**44.91**	**334**	*e*P	**P**	**09 04 58.4**	**+0.4**
SNY	**Shenyang**	**45.08**	**29**	⇑P	**P**	**09 04 59.0**	**-0.3**
SNY				S	**S**	**09 11 34.5**	**+0.2**
SNY				pmax	pmax		
	comp=Z,240nm,0.7s						
SNY				pmax	pmax		
	comp=Z,320nm,6.1s						
SNY				LR	LR		
	comp=Z,750nm,22.0s						
SNY				LR	LR		
	comp=Z,480nm,15.7s						
SNY				LR	LR		
	comp=Z,1μm,22.0s						
JAY	**Jayapura**	**45.34**	**98**	P	**P**	**09 05 00.0**	**-1.9**
	comp=Z,3.2nm,0.6s,baz=92,slow=23,SNR=4.3						
JAY	**Jayapura**	**45.34**	**98**	P	**P**	**09 05 01.9**	**0.0**
ASAR	**Alice Springs**	**46.23**	**128**	P	**P**	**09 05 08.5**	**-0.2**
	comp=Z,76nm,0.9s,baz=298,slow=8.1,SNR=614						
ASAR				PcP	**PcP**	**09 06 43.9**	**+0.2**
	comp=Z,14nm,0.9s,baz=303,slow=3.2,SNR=5.0						
ASAR				ScP	**ScP**	**09 10 32.5**	**+0.3**
	comp=Z,11nm,0.9s,baz=302,slow=4.0,SNR=11						
ASAR				S	**S**	**09 11 48.1**	**-3.3**
	comp=Z,3.5nm,1.0s,baz=299,slow=13,SNR=6.1						
ASAR				LR	LR	09 26 53.6	
	comp=Z,720nm,20.6s,baz=297,slow=39						
AS31	**Alice Springs**	**46.23**	**128**	*e*P	**P**	**09 05 08.4**	**-0.3**
	comp=Z,60nm,1.4s						
AS01	**Alice Springs**	**46.26**	**128**	*e*P	**P**	**09 05 08.6**	**-0.4**
ZAK	**Zakamensk**	**46.61**	**7**	*e*P	**P**	**09 05 09.8**	**-1.6**
ZAK				pmax	pmax		
	comp=Z,32nm,1.3s						

	comp=Z,200nm,0.7s										
CN2						pmax	pmax				
	comp=Z,400nm,3.0s										
CN2						LR	LR				
	comp=Z,700nm,20.0s										
TLY	**Talaya**	**47.93**		**7**	P		**P**		**09 05 21.7**	**+0.2**	
	comp=Z,34nm,0.7s,baz=211,slow=6.2,SNR=58										
TLY	**Talaya**	**47.93**		**7**	*i* P		**P**		**09 05 21.8**	**+0.2**	
TLY						pmax	pmax				
	comp=Z,79nm,1.3s										
TLY	**Talaya**	**47.93**		**7**	*e*P		**P**		**09 05 21.8**	**+0.2**	
	comp=Z,46nm,0.7s										
TLY						LR	LR				
	comp=Z,1µm,20.0s										
GEYT	**Alibeck**	**48.16**	**320**		P		**P**		**09 05 24.4**	**+0.9**	
	comp=Z,52nm,0.8s,baz=142,slow=7.5,SNR=83										
GEYT						LR	LR		09 27 01.7		
	comp=Z,308nm,22.0s,baz=140,slow=38										
OTUK	**Ortayu**	**48.42**	**339**		P		**P**		**09 05 25.3**	**-0.1**	
OTUK						pmax	pmax				
	comp=Z,122nm,1.1s										
IRK	**Irkutsk**	**48.56**		**7**	*e*P		**P**		**09 05 23.0**	**-3.4**	
IRK						pmax	pmax				
	comp=Z,108nm,1.6s										
KURBB	**Kurchatov Arra**	**48.65**	**345**		P		**P**		**09 05 26.6**	**-0.4**	
	comp=Z,44nm,0.6s,baz=164,slow=7.2,SNR=232										
KURBB						PcP	**PcP**		**09 06 50.3**	**-1.4**	
	comp=Z,18nm,0.8s,baz=161,slow=3.0,SNR=7.5										
KURBB						ScP	**ScP**		**09 10 42.6**	**+0.8**	
	comp=Z,11nm,1.1s,baz=146,slow=4.4,SNR=6.6										
KURK	**Kurchatov**	**48.71**	**346**		*e*P		**P**		**09 05 27.2**	**-0.3**	
KURK									09 06 50.3		
KURK						pmax	pmax				
	comp=Z,69nm,0.8s										
KURK						MLR	MLR				
	comp=Z,2µm,22.0s										
KURK	**Kurchatov**	**48.71**	**346**		*e*P		**P**		**09 05 27.2**	**-0.3**	
	comp=Z,69nm,0.8s										
KURK						PcP	**PcP**		**09 06 50.3**	**-1.6**	
KURK						ScP	**ScP**		**09 10 42.6**	**+0.6**	
KURK						LR	LR				
	comp=Z,2µm,22.0s										
INU	**Inuyama**	**49.18**		**45**	*e*P		**P**		**09 05 31.2**	**-0.2**	
	comp=Z,37nm,0.8s										
GUMO	**Guam**	**49.32**		**76**	LR		LR		09 25 53.4		
	comp=Z,194nm,21.5s,baz=252,slow=36										
QIS	**Mount Isa**	**49.44**	**121**		P		**P**		**09 05 33.8**	**+0.2**	
	baz=49,SNR=71										
HIA	**Hailar**	**49.45**		**20**	*e*P		**P**		**09 05 33.7**	**+0.4**	
HIA						pmax	pmax				
	comp=Z,134nm,0.9s										
HIA						MLR	MLR				
	comp=Z,904nm,21.0s										
HIA	**Hailar**	**49.45**		**20**	*e*P		**P**		**09 05 33.7**	**+0.4**	
	comp=Z,134nm,0.9s										
HIA						LR	LR				
	comp=Z,904nm,21.0s										
MSHR	**Mys Shultsa**	**49.61**		**34***ce*P			**P**		**09 05 34.3**	**-0.2**	
CBIJ	**Chichi jima**	**49.82**		**58**	*e*P		**P**		**09 05 36.1**	**-0.3**	
	comp=Z,121nm,0.9s										
CIT	**Chita**	**50.05**		**14**	*e*P		**P**		**09 05 37.9**	**+0.1**	
CIT					*e*				09 06 57.8		
CIT						pmax	pmax				
	comp=Z,289nm,1.1s										
MDJ	**Mudanjiang**	**50.13**		**31**	P		**P**		**09 05 39.8**	**+1.3**	
MDJ					pP		pP		09 05 53.5	-0.3	
MDJ					sP		sP		09 05 59.5	-0.9	
MDJ					PP		**PP**		**09 07 30.8**	**-3.3**	
MDJ					ScP		**ScP**		**09 10 48.5**	**+0.2**	
MDJ					PcS		**PcS**		**09 10 53.5**	**-0.7**	
MDJ					S		**S**		**09 12 48.5**	**+2.6**	
MDJ						pmax	pmax				
	comp=Z,140nm,0.9s										
MDJ						pmax	pmax				
	comp=Z,250nm,5.9s										
MDJ						LR	LR				
	comp=Z,590nm,21.9s										
MDJ						LR	LR				
	comp=Z,800nm,26.3s										
MDJ						LR	LR				
	comp=Z,790nm,21.9s										
MDJ	**Mudanjiang**	**50.13**		**31**	*e*P		**P**		**09 05 39.6**	**+1.1**	
	comp=Z,229nm,1.3s										
MDJ						LR	LR				
	comp=Z,868nm,22.0s										
COEN	**Coen**	**50.28**	**112**		P		**P**		**09 05 39.2**	**-0.9**	
	baz=50,SNR=68										
COEN	**Coen**	**50.28**	**112**		*e*P		**P**		**09 05 38.7**	**-1.4**	
	comp=Z,187nm,1.4s										
ZALV	**Zalesovo Beam**	**50.56**	**352**		P		**P**		**09 05 41.0**	**-0.5**	
	comp=Z,256nm,0.7s,baz=180,slow=6.7,SNR=860										
ZALV						S	**S**		**09 12 49.5**	**-2.0**	
	comp=Z,14nm,1.0s,baz=173,slow=13,SNR=4.9										
ZALV						LR	LR		09 31 49.9		
	comp=Z,252nm,18.6s,baz=106,slow=42										
ZALV	**Zalesovo Beam**	**50.56**	**352**		P		**P**		**09 05 41.0**	**-0.5**	
ZALV					S		**S**		**09 12 49.5**	**-2.0**	
ZALV						pmax	pmax				
	comp=Z,252nm,0.7s										
ZALV						smax	smax				
	comp=N,14nm,1.0s										
ZALV						MLR	MLR				
	comp=Z,252nm,18.6s										
MJB9	**Matsu-Tunnel**	**50.61**		**45**	*e*P		**P**		**09 05 42.9**	**+0.6**	
	comp=Z,6.5nm,0.8s										
MAJO	**Matsushiro**	**50.61**		**45**⇑	*i* P		**P**		**09 05 42.2**	**0.0**	
MAJO						pmax	pmax				
	comp=Z,469nm,1.9s										
MAJO	**Matsushiro**	**50.61**		**45**	*e*P		**P**		**09 05 42.8**	**+0.6**	
	comp=Z,25nm,0.8s										
MAJO						LR	LR				
	comp=Z,1µm,21.0s										
MAT	**Matsushiro**	**50.61**		**45**	P		**P**		**09 05 40.9**	**-1.3**	
MAT					S		**S**		**09 12 51.6**	**-1.2**	
MJAR	**Matsushiro Arr**	**50.61**		**45**	P		**P**		**09 05 41.4**	**-0.8**	
	comp=Z,14nm,0.7s,baz=242,slow=8.8,SNR=37										
MJAR						PcP	**PcP**		**09 06 58.8**	**-0.4**	
	comp=Z,10nm,0.9s,baz=240,slow=3.2,SNR=6.1										
MJAR						ScP	**ScP**		**09 10 49.3**	**-1.3**	
	comp=Z,9.5nm,1.0s,baz=240,slow=4.4,SNR=13										
MJAR						LR	LR		09 28 18.1		
	comp=Z,771nm,20.5s,baz=245,slow=37										
USRK	**Ussuriysk Ar.**	**51.12**		**33**	P		**P**		**09 05 46.0**	**+0.1**	
	comp=Z,82nm,1.0s,baz=238,slow=6.9,SNR=82										
USRK						ScP	**ScP**		**09 10 51.2**	**-1.3**	
	comp=Z,2.1nm,0.8s,baz=180,slow=1.2,SNR=4.4										
USRK						LR	LR		09 31 00.8		
	comp=Z,665nm,18.3s,baz=211,slow=40										
NVS	**Novosibirsk**	**51.66**	**351**⇑		*i* P		**P**		**09 05 48.7**	**-1.1**	
NVS					*e*S		**S**		**09 13 03.7**	**-3.0**	
NVS						pmax	pmax				
	comp=N,119nm,1.0s										
NVS						pmax	pmax				
	comp=E,70nm,1.0s										
NVS						pmax	pmax				
	comp=Z,203nm,1.0s										
NVS						smax	smax				
	comp=N,64nm,1.8s										
NVS						smax	smax				
	comp=E,92nm,1.8s										
DAMY	**Dhamar**	**51.69**	**285**		*e*P		**P**		**09 05 54.9**	**+3.9**	
	comp=E,159nm,1.2s										
KRAR	**Krasnoyarsk**	**51.88**	**358**⇓		*i* P		**P**		**09 05 51.5**	**+0.2**	
KRAR						pmax	pmax				
	comp=Z,206nm,0.9s										
MANU	**Manus Island**	**51.89**		**96**	*e*P		**P**		**09 05 52.3**	**+0.1**	
	comp=Z,69nm,1.1s										
MTSU	**Mount Surprise**	**52.65**	**116**		P		**P**		**09 05 57.9**	**+0.1**	
	baz=53,SNR=66										
OPO	**Ambohidratompo**	**52.88**	**243**		LR		LR		09 24 24.0		
	comp=Z,442nm,20.3s,baz=72,slow=31										
BBOO	**Buckleboo**	**52.89**	**137**		P		**P**		**09 05 59.1**	**-0.2**	
	baz=53,SNR=92										
BBOO	**Buckleboo**	**52.89**	**137**		*e*P		**P**		**09 05 59.1**	**-0.2**	
	comp=Z,146nm,0.9s										
PMG	**Port Moresby**	**52.89**	**105**		P		**P**		**09 05 59.4**	**-0.2**	
	comp=Z,87nm,0.8s,baz=299,slow=3.6,SNR=20										
PMG	**Port Moresby**	**52.89**	**105**	*ce*P			**P**		**09 05 59.6**	**0.0**	
PMG						pmax	pmax				
	comp=Z,473nm,1.0s										
PMG	**Port Moresby**	**52.89**	**105**		*e*P		**P**		**09 05 59.4**	**-0.2**	
	comp=Z,120nm,1.0s										
PMG						LR	LR				
	comp=Z,632nm,21.0s										
BVA0	**Borovoye Array**	**53.13**	**341**		*i* P		**P**		**09 06 00.0**	**-0.7**	
BVA0						pmax	pmax				
	comp=Z,125nm,1.0s										
BVAR	**Borovoye Array**	**53.13**	**341**		P		**P**		**09 06 00.1**	**-0.6**	
	comp=Z,83nm,0.8s,baz=140,slow=7.7,SNR=269										
BVAR						ScP	**ScP**		**09 11 02.3**	**+1.2**	
	comp=Z,4.5nm,0.9s,baz=178,slow=8.4,SNR=3.9										
BVAR						S	**S**		**09 13 25.5**	**-1.3**	
	comp=Z,7.3nm,1.0s,baz=133,slow=10,SNR=4.9										
BVAR						LR	LR		09 32 00.8		
	comp=Z,344nm,19.2s,baz=118,slow=40										
BRVK	**Borovoye**	**53.19**	**341**	*c*	*i*P		**P**		**09 06 00.4**	**-0.7**	
BRVK						pmax	pmax				
	comp=Z,184nm,1.2s										
BRVK	**Borovoye**	**53.19**	**341**		*e*P		**P**		**09 06 00.2**	**-0.9**	
	comp=Z,120nm,0.9s										
BRVK						LR	LR				
	comp=Z,449nm,22.0s										
AB31	**Akbulak array**	**54.37**	**332**		*i* P		**P**		**09 06 09.7**	**-0.1**	
AB31						pmax	pmax				
	comp=Z,191nm,0.8s										
ABKAR	**Akbulak array**	**54.37**	**332**		*e*P		**P**		**09 06 10.0**	**+0.2**	
KLR	**Kul'dur**	**54.40**		**28**	P		**P**		**09 06 10.3**	**+0.3**	
	comp=Z,220nm,1.0s,baz=243,slow=7.5,SNR=352										
KLR						LR	LR		09 31 37.8		
	comp=Z,435nm,18.2s,baz=211,slow=38										
CTA	**Charters Tower**	**55.03**	**118**		P		**P**		**09 06 15.3**	**+0.2**	
	comp=Z,153nm,0.8s,baz=290,slow=8.9,SNR=82										
CTA						LR	LR		09 32 01.5		
	comp=Z,504nm,19.0s,baz=274,slow=38										
CTAO	**Charters Tower**	**55.03**	**118**		PFAKE				09 06 30.0	+15	
CTAO						LR	LR				
	comp=Z,1.0nm,22.0s										
HTT	**Hallett**	**55.21**	**136**		P		**P**		**09 06 16.6**	**+0.4**	
	baz=55,SNR=82										
HABR	**Khabarovsk**	**55.51**		**31**	*e*P		**P**		**09 06 15.5**	**-2.5**	
HABR					*e**PP		**pP**		**09 06 31.3**	**-2.3**	
HABR					*e**SP		**sP**		**09 06 38.3**	**-1.9**	
HABR					*e*				09 07 14.9		
HABR					*e*				09 08 19.9		
HABR					*e*PPP		PPP		09 09 33.0		
HABR					*e*S		**S**		**09 13 56.6**	**-2.4**	
HABR					*e*				09 15 59.0		
HABR					*e*SS		**SS**		**09 17 43.5**	**-1.2**	
HABR						pmax	pmax				
	comp=N,22nm,1.0s										
HABR						pmax	pmax				
	comp=E,24nm,1.0s										
HABR						pmax	pmax				
	comp=Z,92nm,1.0s										
HABR						pmax	pmax				
	comp=Z,216nm,1.0s										
HABR						MLR	MLR				
	comp=Z,265nm,17.0s										
BOD	**Bodaibo**	**55.51**		**12**	*e*P		**P**		**09 06 17.1**	**-0.8**	
BOD						pmax	pmax				
	comp=Z,101nm,1.2s										
QLP	**Quilpie**	**55.84**	**126**		P		**P**		**09 06 21.6**	**+0.8**	
	baz=56,SNR=166										
AKTO	**Aktyubinsk**	**56.09**	**332**		P		**P**		**09 06 22.0**	**-0.2**	
	comp=Z,115nm,0.9s,baz=126,slow=7.7,SNR=143										
AKTO						S	**S**		**09 14 05.1**	**-1.6**	
	comp=Z,3.1nm,0.8s,baz=129,slow=23,SNR=12										
AKTO						LR	LR		09 33 48.6		
	comp=Z,226nm,21.4s,baz=138,slow=40										
AKTO	**Aktyubinsk**	**56.09**	**332**		P		**P**		**09 06 21.7**	**-0.5**	
AKTO						pmax	pmax				
	comp=Z,220nm,1.1s										
STKA	**Stephens Creek**	**56.29**	**133**		P		**P**		**09 06 24.1**	**+0.1**	
	comp=Z,142nm,0.8s,baz=308,slow=6.5,SNR=339										
STKA						LR	LR		09 33 24.2		
	comp=Z,704nm,21.0s,baz=312,slow=39										
STKA	**Stephens Creek**	**56.29**	**133**		P		**P**		**09 06 24.1**	**+0.1**	
	baz=56,SNR=137										
STKA	**Stephens Creek**	**56.29**	**133**		*e*P		**P**		**09 06 24.1**	**+0.1**	
	comp=Z,35nm,0.8s										
ERM	**Erimo**	**56.62**		**41**	PFAKE				09 06 40.0	+14	
ERM						LR	LR				
	comp=Z,798nm,20.0s										
RABL	**Rabaul**	**56.91**		**98**	*e*P		**P**		**09 06 28.2**	**-0.4**	
	comp=Z,66nm,0.5s										
FURI	**Furi**	**56.92**	**278**		*e*P		**P**		**09 06 31.2**	**+2.1**	
	comp=Z,66nm,1.0s										
ASAJ	**Asahikawa**	**57.29**		**39**	P		**P**		**09 06 30.9**	**0.0**	
	comp=Z,35nm,1.0s,baz=270,slow=12,SNR=11										
ASAJ						LR	LR		09 32 02.9		
	comp=Z,779nm,19.5s,baz=225,slow=37										
ASAJ	**Asahikawa**	**57.29**		**39**	*e*P		**P**		**09 06 30.8**	**0.0**	
	comp=Z,212nm,1.6s										
CLNS	**Chul'man**	**57.49**		**18**	*e*P		**P**		**09 06 31.0**	**-1.0**	
CLNS						pmax	pmax				
	comp=Z,89nm,1.1s										
CLNS						pmax	pmax				
	comp=E,47nm,1.1s										
CLNS						pmax	pmax				
	comp=N,59nm,1.2s										
CLNS						MLR	MLR				
	comp=E,964nm,15.0s										
CLNS						MLR	MLR				
	comp=N,974nm,13.0s										
CLNS						MLR	MLR				
	comp=Z,2µm,14.0s										
PAF	**Port-aux-Franc**	**57.62**	**200**		PFAKE				09 06 40.0	+7.0	
PAF						LR	LR				
	comp=Z,2µm,20.0s										
GNI	**Garni**	**58.30**	**316**		LR		LR		09 35 35.8		
	comp=Z,81nm,19.5s,baz=110,slow=40										
GNI	**Garni**	**58.30**	**316**		*i* P		**P**		**09 06 38.8**	**+0.6**	
	SNR=6.9										
GNI	**Garni**	**58.30**	**316**	*ce*P			**P**		**09 06 38.6**	**+0.4**	
GNI						pmax	pmax				
	comp=Z,175nm,1.2s										
GNI	**Garni**	**58.30**	**316**		*e*P		**P**		**09 06 39.1**	**+0.9**	
	comp=Z,105nm,1.4s										
GNI	**Garni**	**58.30**	**316**		P		**P**		**09 06 38.6**	**+0.4**	
	SNR=9.8										
KMBO	**Kilima Mbogo**	**58.73**	**266**		P		**P**		**09 06 43.9**	**+2.1**	
	comp=Z,5.2nm,0.8s,baz=64,slow=10,SNR=16										
KMBO						pP	**pP**		**09 06 57.6**	**+0.2**	
	comp=Z,20nm,1.0s,baz=63,slow=6.6,SNR=11										
KMBO						LR	LR		09 29 46.3		
	comp=Z,511nm,18.9s,baz=96,slow=34										
KMBO	**Kilima Mbogo**	**58.73**	**266**		*e*P		**P**		**09 06 43.8**	**+2.1**	
	comp=Z,28nm,1.0s										
KMBO						pP	**pP**		**09 06 57.6**	**+0.2**	
KMBO	**Kilima Mbogo**	**58.73**	**266**		P		**P**		**09 06 43.7**	**+2.0**	
	SNR=10										
KMBO	**Kilima Mbogo**	**58.73**	**266**		P		**P**		**09 06 43.7**	**+2.0**	
	SNR=10										
YSS	**Yuzh-Sakhalins**	**58.84**		**36**⇑	*i* P		**P**		**09 06 42.0**	**+0.4**	
YSS					*e*S		**S**		**09 14 40.0**	**-2.9**	
YSS						pmax	pmax				
	comp=Z,400nm,1.5s										
YSS						pmax	pmax				
	comp=Z,170nm,1.0s										
YSS						MLR	MLR				
	comp=Z,900nm,20.0s										
YSS						MLR	MLR				
	comp=N,2µm,19.0s										
YSS						MLR	MLR				
	comp=E,800nm,15.0s										
YSS	**Yuzh-Sakhalins**	**58.84**		**36**	*e*P		**P**		**09 06 42.2**	**+0.6**	
	comp=E,240nm,1.1s										
YSS						LR	LR				
	comp=Z,360nm,19.0s										
TBLG	**Delisi**	**58.96**	**317**		P		**P**		**09 06 45.2**	**+2.6**	
TBLG	**Delisi**	**58.96**	**317**		P		**P**		**09 06 45.2**	**+2.6**	
TBLG	**Delisi**	**58.96**	**317**		P		**P**		**09 06 45.2**	**+2.6**	
ARPS	**Mount Arapiles**	**59.05**	**138**		P		**P**		**09 06 43.9**	**+0.7**	
	baz=59,SNR=19										
CMSA	**Cobar Meteorol**	**59.18**	**130**		P		**P**		**09 06 44.9**	**+0.7**	
	baz=59,SNR=383										
YUK	**Yuzh-Kuril'sk**	**59.31**		**40**	P		**P**		**09 06 43.3**	**-1.6**	
YUK					S		**S**		**09 14 51.3**	**+2.2**	
YUK						MLR	MLR				
	comp=Z,629nm,18.0s										
GUDG	**Gudauri**	**59.45**	**318**		P		**P**		**09 06 48.1**	**+1.9**	
GUDG	**Gudauri**	**59.45**	**318**		P		**P**		**09 06 48.1**	**+1.9**	
RMQ	**Roma**	**59.50**	**124**		P		**P**		**09 06 47.1**	**+0.5**	
	baz=60,SNR=47										
SVE	**Sverdlovsk**	**59.55**	**338**	*d*	*i*P		**P**		**09 06 46.4**	**+0.1**	
SVE					*e*S		**S**		**09 14 51.1**	**-0.7**	
SVE						pmax	pmax				
	comp=Z,419nm,1.1s										
ZEI	**Tsey**	**59.97**	**318**		*e*P		**P**		**09 06 46.5**	**-3.3**	
ZEI						pmax	pmax				
	comp=Z,92nm,0.8s										
ARU	**Arti**	**60.04**	**337**		P		**P**		**09 06 49.2**	**-0.5**	
	comp=Z,69nm,0.8s,baz=125,slow=4.1,SNR=149										
ARU					S		**S**		**09 14 56.7**	**-1.4**	
	comp=Z,5.3nm,0.2s,baz=271,slow=21,SNR=5.7										
ARU						LR	LR		09 34 43.9		
	comp=Z,416nm,21.4s,baz=128,slow=38										
ARU	**Arti**	**60.04**	**337**	*c*	*i*P		**P**		**09 06 49.0**	**-0.7**	
ARU					*PP		**pP**		**09 07 04.1**	**-1.3**	
ARU									09 09 02.9		
ARU					S		**S**		**09 14 58.8**	**+0.7**	
ARU									09 16 26.7		
ARU					SS		**SS**		**09 18 51.3**	**-4.4**	
ARU						pmax	pmax				
	comp=Z,260nm,1.2s										
ARU						MLR	MLR				
	comp=Z,504nm,25.0s										
ARU	**Arti**	**60.04**	**337**		*e*P		**P**		**09 06 49.0**	**-0.7**	
	comp=Z,185nm,1.0s										
ARU					S		**S**		**09 14 56.7**	**-1.4**	
ONI	**Oni**	**60.19**	**318**		P		**P**		**09 06 52.2**	**+1.1**	
ONI	**Oni**	**60.19**	**318**		P		**P**		**09 06 52.2**	**+1.1**	
ONI	**Oni**	**60.19**	**318**		P		**P**		**09 06 52.1**	**+1.1**	
NCK	**Nalchik**	**60.47**	**319**		*i* P		**P**		**09 06 53.5**	**+0.6**	
NCK						pmax	pmax				
	comp=Z,66nm,0.4s										
TYV	**Tymovskoe**	**60.90**		**32**	*e*P		**P**		**09 06 54.0**	**-1.6**	
TYV						pmax	pmax				
	comp=Z,118nm,1.4s										
TYV						MLR	MLR				
	comp=E,1µm,18.0s										
TYV						MLR	MLR				
	comp=Z,1µm,19.0s										
NEY	**Neytrino**	**60.95**	**318**		*i* P		**P**		**09 06 56.3**	**-0.1**	
NEY						pmax	pmax				
	comp=Z,16nm,2.0s										
KBZ	**Khabaz**	**61.03**	**319**		P		**P**		**09 06 56.8**	**+0.1**	
	comp=Z,41nm,0.8s,baz=102,slow=6.7,SNR=57										
KBZ						LR	LR		09 36 33.7		
	comp=Z,180nm,21.8s,baz=107,slow=39										
EIDS	**Eidsvold**	**61.04**	**122**		P		**P**		**09 06 57.2**	**+0.1**	
	baz=61,SNR=10.0										
EIDS	**Eidsvold**	**61.04**	**122**		*e*P		**P**		**09 06 57.2**	**+0.1**	
	comp=Z,130nm,1.4s										
NKL	**Nikolayevsk**	**61.21**		**29**	*i* P		**P**		**09 06 58.0**	**+0.3**	
NKL						pmax	pmax				
	comp=N,86nm,1.0s										
NKL						pmax	pmax				
	comp=E,110nm,1.0s										
NKL						pmax	pmax				
	comp=Z,400nm,1.0s										
NKL						MLR	MLR				
	comp=E,500nm,15.0s										
NKL						MLR	MLR				
	comp=Z,1µm,15.0s										
KVAR	**Kislovodsk Arr**	**61.26**	**319**		LR		LR		09 37 35.6		
	comp=Z,137nm,21.5s,slow=40										
KIV	**Kislovodsk**	**61.26**	**319**		*i* P		**P**		**09 06 58.6**	**+0.2**	
	SNR=9.8										
KIV	**Kislovodsk**	**61.26**	**319**	*c*	*i*P		**P**		**09 06 58.4**	**0.0**	
KIV					*i*				09 07 13.0		
KIV					*e*				09 07 39.5		
KIV					*i*S		**S**		**09 15 18.8**	**+4.5**	
KIV					*i* SS		**SS**		**09 19 13.4**	**-2.1**	
KIV						pmax	pmax				
	comp=Z,105nm,1.0s										
KIV						MLR	MLR				
	comp=Z,232nm,21.0s										
KIV	**Kislovodsk**	**61.26**	**319**		*e*P		**P**		**09 06 58.4**	**0.0**	
	comp=Z,75nm,0.9s										
KIV						LR	LR				
	comp=Z,147nm,19.0s										
GOF	**Gofitskoye**	**61.50**	**320**⇑		*e*P		**P**		**09 07 00.3**	**+0.5**	
GOF						pmax	pmax				
	comp=Z,77nm,0.9s										
TOO	**Toolangi**	**61.95**	**137**		P		**P**		**09 07 04.5**	**+1.5**	
	baz=62,SNR=48										
YNG	**Young**	**62.46**	**132**		P		**P**		**09 07 06.9**	**+0.4**	
	baz=62,SNR=23										
SOKR	**Solikamsk**	**62.97**	**339**	*c*	*i*P		**P**		**09 07 07.2**	**-2.1**	
SOKR						pmax	pmax				
	comp=Z,306nm,1.2s										
SOKR						MLR	MLR				
	comp=Z,922nm,28.0s										
SOC	**Sochi**	**63.09**	**317**		*e*P		**P**		**09 07 10.0**	**-0.5**	
SOC					*e*S		**S**		**09 15 36.5**	**-0.7**	
SOC						pmax	pmax				
	comp=Z,74nm,0.9s										
KMRS	**Kahramanmaras**	**63.12**	**310**		*e*P		**P**		**09 07 11.4**	**+0.5**	
YAK	**Yakutsk**	**63.12**		**17**	P		**P**		**09 07 09.7**	**-0.7**	
	comp=Z,106nm,0.5s,baz=229,slow=2.3,SNR=45										
YAK						LR	LR		09 37 15.0		
	comp=Z,2µm,19.4s,baz=246,slow=38										
YAK	**Yakutsk**	**63.12**	**17**	*c*	*i*P		**P**		**09 07 09.6**	**-0.7**	
YAK					*e**PP		**sP**		**09 07 32.6**	**-0.1**	
YAK					*e*				09 07 45.1		
YAK					*e*				09 09 24.2		
YAK					*e*S		**S**		**09 15 35.2**	**-1.6**	
YAK					*e**SS		sS		09 16 15.6	+12	
YAK					*e*				09 16 51.6		

comp=Z,126nm,0.8s
HNR LR LR
comp=Z,500nm,22.0s
NRIK Noril'sk 65.43 357 P **P** **09 07 24.2 -1.1**
comp=Z,84nm,0.8s,baz=154,slow=5.2,SNR=94
NRIK LR LR 09 40 16.3
comp=Z,348nm,18.6s,baz=176,slow=40
MOO Moorlands 65.56 141 P **P** **09 07 28.1 +1.5**
baz=66,SNR=7.5
CORM Corum 65.58 313 *eP* **P** **09 07 26.3 -0.7**
SNOP Sinop 65.69 315 *eP* **P** **09 07 27.1 -0.5**
TAU Tasmania Unive 65.88 141 *eP* **P** **09 07 30.3 +1.6**
TAU pmax pmax
comp=Z,95nm,0.9s
TAU MLR MLR
comp=Z,544nm,21.0s
TAU Tasmania Unive 65.88 141 *eP* **P** **09 07 30.3 +1.6**
comp=Z,95nm,0.9s
TAU LR LR
comp=Z,544nm,21.0s
BR131 Keskin Array S 66.19 312 *eP* **P** **09 07 30.8 -0.2**
BRTR Keskin Array B 66.19 312 P **P** **09 07 30.8 -0.2**
comp=Z,38nm,0.9s,baz=124,slow=6.6,SNR=163
BRTR PKP2bc 09 36 06.9
comp=Z,0.3nm,0.4s,baz=304,slow=2.6,SNR=4.1
BRTR LR LR 09 37 60.0
comp=Z,176nm,21.5s,baz=106,slow=37
BRTR Keskin Array B 66.19 312*ceP* **P** **09 07 30.7 -0.2**
BRTR pmax pmax
comp=Z,39nm,0.9s
TOS Tosya 66.26 313 *eP* **P** **09 07 31.5 +0.2**
CANT Cankiri 66.44 313 *eP* **P** **09 07 32.4 0.0**
VSR Storozhevoye 66.46 325 *eP* **P** **09 07 31.0 -1.3**
VSR pmax pmax
comp=Z,70nm,0.6s
BZK Bozkurt 66.53 314 *eP* **P** **09 07 33.3 +0.3**
AFSR Af˙ar-Bala (A 66.54 311 *eP* **P** **09 07 32.9 -0.3**
VORR Voronezh 66.62 326 P **P** **09 07 33.0 -0.3**
VORR pmax pmax
comp=Z,250nm,1.2s
KONT Konya--Tatoy 66.70 310 *eP* **P** **09 07 34.4 +0.2**
ANTO Ankara 66.85 312 *eP* **P** **09 07 35.3 +0.2**
ANTO pmax pmax
comp=Z,136nm,1.3s
ANTO Ankara 66.85 312 *eP* **P** **09 07 35.3 +0.2**
comp=Z,136nm,1.3s
ANTO LR LR
comp=Z,11nm,21.0s
LOD Lodumlu 66.88 312 *eP* **P** **09 07 34.6 -0.7**
LPSR Galich'ya Gora 67.17 326 *eP* **P** **09 07 36.1 -0.7**
LPSR pmax pmax
comp=Z,90nm,0.7s
SAFT Safranbolu 67.29 313 *eP* **P** **09 07 38.2 +0.4**
KIZT Kizilcal 67.29 311 *eP* **P** **09 07 37.5 -0.5**
SIM Simferopol' 67.34 317 *eP* **P** **09 07 35.3 -2.7**
SIM *eS* **S** **09 16 24.0 -5.2**
SIM pmax pmax
comp=Z,42nm,0.9s
SUTC Sutluce-Ispart 67.65 309 *eP* **P** **09 07 40.7 +0.4**
ISP Isparta 68.09 309 *eP* **P** **09 07 43.7 +0.7**
ISP Isparta 68.09 309 P **P** **09 07 42.5 -0.6**
ISP Isparta 68.09 309 *eP* **P** **09 07 43.2 +0.1**
ISP pmax pmax
comp=Z,138nm,1.4s
ISP MLR MLR
comp=Z,275nm,22.0s
ISP Isparta 68.09 309 *eP* **P** **09 07 43.2 +0.1**
comp=Z,138nm,1.4s
ISP LR LR
comp=Z,275nm,22.0s
MDUB Mudurnu 68.19 312 *eP* **P** **09 07 43.5 -0.1**
KDZE Karadeniz Ereo 68.21 313 *eP* **P** **09 07 42.8 -0.8**
ELL Elmali 68.35 308 *eP* **P** **09 07 44.8 +0.1**
SKR Severo-Kuril's 68.39 36 *eP* **P** **09 07 42.5 -2.0**
SKR pmax pmax
comp=N,180nm,0.9s
SKR pmax pmax
comp=E,230nm,0.9s
SKR pmax pmax
comp=Z,660nm,0.9s
GULT Gulveren 68.68 312 *eP* **P** **09 07 45.9 -0.8**
FETY Fethiye 68.98 308 *eP* **P** **09 07 48.1 -0.4**
FETY Fethiye 68.98 308 P **P** **09 07 48.3 -0.2**
FETY Fethiye 68.98 308 P **P** **09 07 48.3 -0.2**
CAVI Cavuskoy 69.13 312 *eP* **P** **09 07 48.5 -0.9**
MOS Moscow 69.20 329⇓ *iP* **P** **09 07 48.2 -1.2**
MOS *e**PP **pP** **09 08 03.7 -1.7**
MOS *e* 09 08 13.9
MOS *e* 09 10 19.0
MOS *eS* **S** **09 16 45.7 -5.1**
MOS *e**SS **sS** **09 17 11.8 -6.0**
MOS *e* 09 17 39.4
MOS pmax pmax
comp=Z,400nm,1.3s
MOS pmax pmax
comp=Z,240nm,1.1s
TVSB Tavsanli 69.25 311 *eP* **P** **09 07 50.5 +0.2**
ADVT Abdulvahap 69.26 312 *eP* **P** **09 07 49.8 -0.3**
DALY Dalyan (Mu˙la 69.35 308 *eP* **P** **09 07 50.5 -0.2**
HRT Hereke 69.40 312 *eP* **P** **09 07 50.3 -0.7**
MA2 Magadan 69.41 26 P **P** **09 07 50.8 +0.2**
comp=Z,121nm,0.7s,baz=262,slow=5.8,SNR=107
MA2 LR LR 09 42 26.4
comp=Z,506nm,18.2s,baz=256,slow=40
IZI Iznik 69.44 312 *eP* **P** **09 07 51.6 +0.2**
OBN Obninsk 69.49 328 P **P** **09 07 50.9 -0.2**
comp=Z,131nm,1.1s,baz=108,slow=0.1,SNR=43
OBN Obninsk 69.49 328*c iP* **P** **09 07 50.7 -0.5**
OBN *i* 09 08 06.3
OBN *e* 09 10 25.4
OBN *eS* **S** **09 16 51.0 -3.2**
OBN pmax pmax
comp=Z,197nm,1.2s
OBN MLR MLR
comp=Z,147nm,21.0s
OBN Obninsk 69.49 328 *eP* **P** **09 07 49.7 -1.4**
comp=Z,168nm,1.1s
OBN LR LR
comp=Z,183nm,19.0s
LSZ Lusaka 69.61 252 *eP* **P** **09 07 54.3 +1.4**
LSZ pmax pmax
comp=Z,24nm,1.1s
LSZ MLR MLR
comp=Z,818nm,20.0s
LSZ Lusaka 69.61 252 *eP* **P** **09 07 54.3 +1.4**
comp=Z,24nm,1.1s
LSZ LR LR
comp=Z,818nm,20.0s
KULA Kula-Manisa 69.67 310 *eP* **P** **09 07 53.0 +0.2**
KULA Kula-Manisa 69.67 310 P **P** **09 07 53.0 +0.2**
KULA Kula-Manisa 69.67 310 P **P** **09 07 53.0 +0.2**
ISK Istanbul-Kandi 69.90 312 *eP* **P** **09 07 53.7 -0.3**
ISK Istanbul-Kandi 69.90 312 P **P** **09 07 53.9 -0.2**
ISK Istanbul-Kandi 69.90 312 P **P** **09 07 53.9 -0.2**
ISK Istanbul-Kandi 69.90 312 P **P** **09 07 53.9 -0.2**
ARMT Armutlu 69.94 312 *eP* **P** **09 07 54.2 -0.2**
KLYT Kilyos 69.96 312 *eP* **P** **09 07 54.5 +0.2**
BGKT Bogazkoy 70.14 312 *eP* **P** **09 07 55.0 -0.4**
PEA0 Petropavlovsk- 70.18 34 *eP* **P** **09 07 54.7 -0.9**
PETK Petropavlovsk- 70.18 34 P **P** **09 07 53.9 -1.6**
comp=Z,12nm,0.7s,baz=195,slow=4.0,SNR=6.3
PETK LR LR 09 40 10.6
comp=Z,431nm,19.8s,baz=229,slow=37
PETK Petropavlovsk- 70.18 34 P **P** **09 07 53.9 -1.6**
PETK pmax pmax
comp=Z,24nm,1.0s
PETK MLR MLR
comp=Z,431nm,19.8s
KARP Karpathos 70.32 306 *eP* **P** **09 07 57.2 +0.4**
KARP Karpathos 70.32 306 P **P** **09 07 57.5 +0.7**
KARP Karpathos 70.32 306 *eP* **P** **09 07 57.8 +1.0**
comp=Z,94nm,0.9s
CTKS Kestanelik-??a 70.35 312 *eP* **P** **09 07 56.0 -0.7**
AKS Akhisar 70.39 310 *eP* **P** **09 07 57.4 +0.2**
MIR Mirnyy 70.45 181 *i* P **P** **09 07 58.0 +1.2**
MIR pmax pmax
comp=Z,12nm,1.0s
BALB Balikesir 70.49 311 *eP* **P** **09 07 56.4 -1.3**
CTYL Yalikoy Yolu 70.56 313 *eP* **P** **09 07 57.6 -0.4**
TIXI Tiksi 70.66 11 P **P** **09 07 57.0 -1.1**
comp=Z,140nm,0.8s,baz=202,slow=3.6,SNR=167
TIXI LR LR 09 42 02.1
comp=Z,854nm,18.8s,baz=226,slow=38
TIXI Tiksi 70.66 11*c iP* **P** **09 07 56.8 -1.3**
TIXI pmax pmax
comp=Z,281nm,1.2s
TIXI Tiksi 70.66 11 *eP* **P** **09 07 56.8 -1.3**
comp=Z,178nm,0.9s
PET Petropavlovsk 70.69 35 *eP* **P** **09 07 58.1 -0.5**
PET *eS* **S** **09 17 09.3 +0.9**
PET pmax pmax
comp=Z,33nm,0.6s
PET pmax pmax
comp=Z,100nm,17.8s
PET MLR MLR
comp=Z,600nm,20.0s
PET Petropavlovsk 70.69 35 *eP* **P** **09 07 58.1 -0.5**
comp=Z,70nm,0.8s
PET LR LR
comp=Z,661nm,20.0s
CASY Casey 70.95 174 *eP* **P** **09 08 01.0 +1.1**
comp=Z,99nm,0.9s
CASY LR LR
comp=Z,162nm,19.0s
TLCR 71.02 317⇓ *iP* **P** **09 08 01.2 +0.4**
PSN Preselentsi 71.11 315 *eP* **P** **09 08 01.9 +0.5**
TIRR Tirgusor 71.13 316⇑ *iP* **P** **09 08 01.8 +0.4**
TIRR Tirgusor 71.13 316 *eP* **P** **09 08 01.4 0.0**
TIRR pmax pmax
comp=Z,75nm,0.7s
TIRR Tirgusor 71.13 316 *eP* **P** **09 08 01.4 0.0**
comp=Z,75nm,0.7s
KIS Kishinev 71.46 318 *eP* **P** **09 08 03.0 -0.4**
KIS Kishinev 71.46 318 *e*PcP **PcP** **09 08 15.0 -7.7**
KIS LRM MLR 09 41 50.0
comp=Z,600nm,20.0s
KIS Kishinev 71.46 318 *eP* **P** **09 08 03.0 -0.4**
KIS *e* 09 08 15.0
KIS *e* 09 10 40.0
KIS *e* 09 17 40.0
KIS MLR MLR
comp=Z,400nm,17.0s
KIS MLR MLR
comp=Z,600nm,20.0s
CFR Carcaliu 71.48 316⇑ *iP* **P** **09 08 03.7 +0.1**
HARR Harsova 71.51 316⇓ *iP* **P** **09 08 04.4 +0.6**
NPS Neapolis 71.53 306 P **P** **09 08 01.4 -2.7**
NPS Neapolis 71.53 306 P **P** **09 08 01.4 -2.7**
NPS Neapolis 71.53 306 P **P** **09 08 01.4 -2.7**
PRD Provadia 71.56 314 *eP* **P** **09 08 04.7 +0.6**
LAST Lasithi 71.62 306⇑ *iP* **P** **09 08 05.7 +1.0**
LAST Lasithi 71.62 306 *eP* **P** **09 08 06.0 +1.2**
comp=Z,78nm,0.9s
CHOS Chios island 71.66 309 P **P** **09 08 02.8 -2.1**
CHOS Chios island 71.66 309 P **P** **09 08 02.8 -2.1**
SEY Seymchan 71.73 24 P **P** **09 08 04.6 -0.1**
comp=Z,61nm,0.9s,baz=239,slow=5.1,SNR=108
SEY Seymchan 71.73 24*ceP* **P** **09 08 03.5 -1.2**
SANT Santorini 71.81 307⇑ *iP* **P** **09 08 05.6 -0.2**
SANT Santini 71.81 307 *eP* **P** **09 08 05.4 -0.4**
comp=Z,136nm,1.0s
SANT LR LR
comp=Z,138nm,20.0s
APE Apeiranthos 71.86 308⇓ *iP* **P** **09 08 06.2 +0.1**
JMB Yambol 72.00 313 *eP* **P** **09 08 07.5 +0.7**
SORM Soroca 72.05 319⇑ *iP* **P** **09 08 06.6 -0.3**
ALN Alexandroupoli 72.10 312 P **P** **09 08 06.2 -1.2**
ALN Alexandroupoli 72.10 312 P **P** **09 08 06.2 -1.2**
ALN Alexandroupoli 72.10 312 P **P** **09 08 06.2 -1.2**
IDI Anoyia 72.11 306 P **P** **09 08 08.3 +0.6**
comp=Z,51nm,0.8s,baz=69,slow=5.0,SNR=11
IDI Anyia 72.11 306⇑ P **P** **09 08 09.2 +1.5**
IDI Anoyia 72.11 306 *eP* **P** **09 08 08.8 +1.1**
comp=Z,65nm,0.9s
SIVA Sivas 72.14 305⇑ *iP* **P** **09 08 06.5 -1.3**
AKASG Malin Array Be 72.17 322 P **P** **09 08 06.8 -0.9**
comp=Z,18nm,0.7s,baz=86,slow=5.1,SNR=56
AKASG PP **PP** **09 10 48.0 -0.6**
comp=Z,5.3nm,0.9s,baz=85,slow=8.2,SNR=5.6
AKASG LR LR 09 43 48.8
comp=Z,92nm,21.1s,baz=75,slow=39
AKBB Malin Array Si 72.17 322 *eP* **P** **09 08 06.9 -0.7**
AKBB pmax pmax
comp=Z,39nm,0.8s
AKBB Malin Array Si 72.17 322 *eP* **P** **09 08 06.8 -0.7**
comp=Z,39nm,0.8s
KIEV Kiev 72.18 322*c iP* **P** **09 08 06.8 -0.8**
KIEV pmax pmax
comp=Z,47nm,0.9s
KIEV Kiev 72.18 322 *eP* **P** **09 08 06.8 -0.8**
comp=Z,37nm,0.8s
KIEV LR LR
comp=Z,216nm,22.0s
AK11 Malin Array Si 72.20 322 *eP* **P** **09 08 06.8 -1.0**
GRER 72.33 316⇑ *iP* **P** **09 08 11.5 +2.8**
SMTH Samothraki Isl 72.42 311 P **P** **09 08 09.2 -0.1**
SMTH Samothraki Isl 72.42 311 P **P** **09 08 09.2 -0.1**
ISR Istrita 72.57 316⇑ *iP* **P** **09 08 12.4 +2.2**
VRI Vrincioaia 72.60 317 *eP* **P** **09 08 12.3 +2.0**
VRI Vrincioaia 72.60 317⇑ *iP* **P** **09 08 11.5 +1.2**
SZH Strazhica 72.63 314 *eP* **P** **09 08 10.7 +0.2**
PLOR Plostina 72.65 317⇓ *iP* **P** **09 08 11.6 +0.9**
VAM Vamos 72.69 306 P **P** **09 08 11.6 +0.6**
VAM Vamos 72.69 306 P **P** **09 08 11.6 +0.6**
VAM Vamos 72.69 306 P **P** **09 08 11.6 +0.6**
TMCR Tamitsa 72.78 337 *eP* **P** **09 08 09.1 -1.8**
TMCR pmax pmax
comp=Z,92nm,0.6s
TESR Tescani 72.80 317⇓ *iP* **P** **09 08 11.9 +0.5**
IMMV Iera Moni Meta 72.87 306 P **P** **09 08 12.1 0.0**
MLR Muntele Rosu 73.06 316 P **P** **09 08 13.9 +0.7**
comp=Z,11nm,0.9s,baz=119,slow=2.3,SNR=65
MLR pP **pP** **09 08 28.7 -0.6**
comp=Z,16nm,1.0s,baz=127,slow=2.5,SNR=12
MLR S **S** **09 17 35.2 -1.1**
comp=Z,0.2nm,0.4s,baz=36,slow=22,SNR=14
MLR Muntele Rosu 73.06 316⇑ *iP* **P** **09 08 13.9 +0.7**
MLR Muntele Rosu 73.06 316 *eP* **P** **09 08 13.9 +0.7**
comp=Z,164nm,1.2s
MLR pP **pP** **09 08 28.7 -0.6**
MLR S **S** **09 17 35.2 -1.1**
PRAR RASCA 73.26 318⇓ *iP* **P** **09 08 14.6 +0.4**
KAVA Kavala 73.26 312 P **P** **09 08 14.3 0.0**
KAVA Kavala 73.26 312 P **P** **09 08 14.3 0.0**
VLY Voula,Athens 73.34 308 P **P** **09 08 13.7 -1.1**
VLY Voula,Athens 73.34 308 P **P** **09 08 13.7 -1.1**
DOPR Dopca 73.54 317⇓ *iP* **P** **09 08 15.8 -0.1**
OUR Ouranopolis 73.56 311 P **P** **09 08 15.6 -0.4**
OUR Ouranopolis 73.56 311 P **P** **09 08 15.6 -0.4**
OUR Ouranopolis 73.56 311 P **P** **09 08 15.6 -0.4**
VOIR 73.67 316⇑ *iP* **P** **09 08 16.2 -0.5**
KYTH Kithira 73.73 306 P **P** **09 08 16.1 -1.1**
KYTH Kithira 73.73 306 P **P** **09 08 16.1 -1.1**
PAIG Paliouri 73.73 310 P **P** **09 08 17.0 0.0**
PAIG Paliouri 73.73 310 P **P** **09 08 17.0 0.0**
PAIG Paliouri 73.73 310 P **P** **09 08 17.0 0.0**
DID Didima 73.73 308 P **P** **09 08 15.4 -1.8**
DID Didima 73.73 308 P **P** **09 08 15.4 -1.8**
VILL Villia 73.76 308 P **P** **09 08 14.2 -3.2**
KRND KRANIDI 73.78 308 P **P** **09 08 15.9 -1.5**
NVR Nevrokopi 73.81 312 P **P** **09 08 17.4 -0.1**
NVR Nevrokopi 73.81 312 P **P** **09 08 17.4 -0.1**
LBTB Lobatse 73.91 243 *eP* **P** **09 08 20.0 +1.5**
LBTB pmax pmax
comp=Z,61nm,1.1s
LBTB Lobatse 73.91 243 *eP* **P** **09 08 20.0 +1.5**
comp=Z,61nm,1.1s
ARR Arges 73.94 316⇑ *iP* **P** **09 08 18.4 +0.1**
MMB Musomiste 73.94 312 *eP* **P** **09 08 17.5 -0.8**
PLG Polygyros 73.97 311 P **P** **09 08 18.2 -0.3**
PLG Polygyros 73.97 311 P **P** **09 08 18.2 -0.3**
PLG Polygyros 73.97 311 P **P** **09 08 18.2 -0.3**
SRS Serrai 73.97 312 P **P** **09 08 17.8 -0.7**
SRS Serrai 73.97 312 P **P** **09 08 17.8 -0.7**
SRS Serrai 73.97 312 P **P** **09 08 17.8 -0.7**
BURAR Bucovina Array 73.99 318⇑ *iP* **P** **09 08 19.5 +0.9**
BUR08 Bucovina Ar. S 74.00 318 *eP* **P** **09 08 19.5 +0.8**
MICGM Minsk 74.00 326⇓ *eP* P 09 08 09.0 -9.3
MICGM PM 09 08 10.0
comp=Z,0.3nm,1.0s
MNK Minsk 74.00 326⇓ *eP* P 09 08 09.0 -9.3
MNK pmax pmax
comp=Z,320nm,1.0s
LTK Loutraki 74.01 308 P **P** **09 08 16.2 -2.6**
LTK Loutraki 74.01 308 P **P** **09 08 16.2 -2.6**
LKR Lokris 74.07 309 P **P** **09 08 17.6 -1.5**
LKR Lokris 74.07 309 P **P** **09 08 17.6 -1.5**
SOH Sokhos 74.11 311 P **P** **09 08 18.4 -0.9**
SOH Sokhos 74.11 311 P **P** **09 08 18.4 -0.9**
SOH Sokhos 74.11 311 P **P** **09 08 18.4 -0.9**
MPEP Malo Peshtene 74.22 314 *eP* **P** **09 08 20.5 +0.6**
THAL Thalero 74.25 308 P **P** **09 08 19.1 -1.0**
HORT Hortiatis 74.26 311 P **P** **09 08 19.1 -1.2**
HORT Hortiatis 74.26 311 P **P** **09 08 19.1 -1.2**
PUL Pulkovo 74.35 331*ceP* **P** **09 08 19.5 -0.7**
PUL pmax pmax
comp=Z,255nm,0.7s
VLX Vlachokerasia 74.39 308 P **P** **09 08 20.7 -0.4**
VLX Vlachokerasia 74.39 308 P **P** **09 08 20.7 -0.4**
DSF Desfina 74.41 309 P **P** **09 08 19.3 -1.8**
DSF Desfina 74.41 309 P **P** **09 08 19.3 -1.8**
ARCR ARCALIA 74.46 318⇑ *iP* **P** **09 08 22.5 +1.3**
KKB Krupnik 74.46 312 *eP* **P** **09 08 20.8 -0.5**
KNT Kendrikon 74.50 312 *eP* **P** **09 08 20.6 -0.9**
KNT Kendrikon 74.50 312 P **P** **09 08 21.1 -0.4**
KNT Kendrikon 74.50 312 P **P** **09 08 21.1 -0.4**
KNT Kendrikon 74.50 312 P **P** **09 08 21.1 -0.4**
LOT Lotru 74.56 316⇓ *iP* **P** **09 08 21.6 -0.3**
AGG Agios Georgios 74.64 309 *eP* P 09 08 16.8 -5.6
AGG Agios Georgios 74.64 309 P P 09 08 16.9 -5.5
AGG Agios Georgios 74.64 309 *eP* **P** **09 08 21.1 -1.3**
AGG pmax pmax
comp=Z,67nm,1.0s
AGG Agios Georgios 74.64 309 *eP* **P** **09 08 21.1 -1.3**
comp=Z,67nm,1.0s
KLV Kalavryta, Ach 74.66 308 P **P** **09 08 21.6 -1.0**
KLV Kalavryta, Ach 74.66 308 P **P** **09 08 21.6 -1.0**
LIT Litokhoron 74.66 310 P **P** **09 08 21.7 -0.8**
LIT Litokhoron 74.66 310 P **P** **09 08 21.7 -0.8**
LIT Litokhoron 74.66 310 P **P** **09 08 21.7 -0.8**
KALE Kalithea 74.70 309 P **P** **09 08 21.7 -1.2**
KALE Kalithea 74.70 309 P **P** **09 08 21.7 -1.2**
NACGM Naroch 74.73 326 *e* **P** **09 08 22.0 -0.5**
ITM Ithomi 74.73 307 P **P** **09 08 22.7 -0.3**
ITM Ithomi 74.73 307 P **P** **09 08 22.7 -0.3**
VAY Valandovo 74.76 312 P **P** **09 08 22.6 -0.4**
VAY Valandovo 74.76 312 *i* P **P** **09 08 22.6 -0.4**
VAY Valandovo 74.76 312 P **P** **09 08 22.6 -0.4**
VAY Valandovo 74.76 312 P **P** **09 08 22.6 -0.4**
LAKA Lakka 74.81 308 P **P** **09 08 22.9 -0.6**
LAKA Lakka 74.81 308 P **P** **09 08 22.9 -0.6**
GRG Griva 74.84 311 *eP* **P** **09 08 23.2 -0.3**
GRG Griva 74.84 311 P **P** **09 08 22.9 -0.7**
GRG Griva 74.84 311 P **P** **09 08 22.9 -0.7**
GRG Griva 74.84 311 P **P** **09 08 22.9 -0.7**
PYL PYLOS 74.84 307 P **P** **09 08 22.8 -0.8**
PYL PYLOS 74.84 307 P **P** **09 08 22.8 -0.8**
IDID Didziasalis 74.86 326 *eP* **P** **09 08 23.6 +0.3**
IDID IAmb IAmb 09 08 25.1
comp=Z,72nm,1.1s
CJR Cluj-Napoca 74.90 317⇓ *iP* **P** **09 08 25.5 +1.7**
ANX Ano Chora 74.90 309 P **P** **09 08 22.9 -1.1**
DRO Drossia 74.99 308 P **P** **09 08 24.5 0.0**
BOSA Boshof 75.00 239 P **P** **09 08 25.8 +0.9**
comp=Z,18nm,1.0s,baz=89,slow=4.3,SNR=11
BOSA LR LR 09 38 25.7
comp=Z,364nm,19.3s,baz=73,slow=33
BOSA Boshof 75.00 239 *eP* **P** **09 08 26.2 +1.3**
comp=Z,38nm,1.1s
EVR Evrytania 75.03 309 P **P** **09 08 24.1 -0.7**
EVR Evrytania 75.03 309 P **P** **09 08 24.1 -0.7**
MAW Mawson 75.15 192 P **P** **09 08 26.6 +1.9**
comp=Z,34nm,0.8s,baz=20,slow=6.3,SNR=38
MAW LR LR 09 35 12.3
comp=Z,329nm,21.1s,baz=52,slow=31
MAW Mawson 75.15 192 *eP* **P** **09 08 26.6 +1.9**
comp=Z,10nm,0.9s
RLS Riolos of Patr 75.19 308 P **P** **09 08 25.4 -0.2**
RLS Riolos of Patr 75.19 308 P **P** **09 08 25.4 -0.2**
LVV L'vov 75.20 320 *eP* **P** **09 08 25.2 -0.2**
LVV *e* 09 08 40.0
PVO Paravola 75.21 309 P **P** **09 08 25.2 -0.5**
IZAR Zarasai 75.24 327 *eP* **P** **09 08 25.8 +0.3**
IZAR IAmb IAmb 09 08 27.3
comp=Z,54nm,1.2s
ISAL Salakas 75.26 327 *eP* **P** **09 08 25.9 +0.3**
ISAL IAmb IAmb 09 08 27.4
comp=Z,62nm,1.2s
ISAL *i* 09 08 41.4
AXS Araxos 75.28 308 P **P** **09 08 26.1 0.0**
PDO Prodromos 75.47 309 P **P** **09 08 27.0 -0.2**
DRGR 75.51 317⇑ *iP* **P** **09 08 28.3 +0.9**
FNA Florina 75.59 311 *eP* **P** **09 08 26.3 -1.6**
FNA Florina 75.59 311 P **P** **09 08 26.7 -1.2**
FNA Florina 75.59 311 P **P** **09 08 26.7 -1.2**
FNA Florina 75.59 311 P **P** **09 08 26.7 -1.2**
DSL Palaion Diasel 75.60 309 P **P** **09 08 27.1 -0.9**
DSL Palaion Diasel 75.60 309 P **P** **09 08 27.1 -0.9**
BIA Bitola 75.66 311 *i* P **P** **09 08 27.4 -0.8**
SKO Skopje 75.69 312 *i* P **P** **09 08 27.4 -1.0**
LVZ Lovozero 75.71 340*c iP* **P** **09 08 27.3 -0.6**
LVZ pmax pmax
comp=Z,59nm,0.7s
LVZ Lovozero 75.71 340 *eP* **P** **09 08 27.4 -0.6**
comp=Z,58nm,0.6s
LVZ LR LR
comp=Z,571nm,22.0s
VSU Vasula 75.71 330*c iP* **P** **09 08 27.8 -0.3**
VSU pmax pmax
comp=Z,271nm,1.0s
KFL Anninata 75.73 308 P **P** **09 08 28.3 -0.4**
JAN Janina 75.85 310 P **P** **09 08 29.1 -0.3**
JAN Janina 75.85 310 P **P** **09 08 29.1 -0.3**
JAN Janina 75.85 310 P **P** **09 08 29.1 -0.3**
TRPA Tarpa 75.85 310⇓ *eP* **P** **09 08 30.0 +1.2**
MDVR Moldovita 75.89 315⇑ *iP* **P** **09 08 29.0 -0.5**
LKD2 Lefkada island 75.91 309 P **P** **09 08 29.1 -0.6**
LKD2 Lefkada island 75.91 309 P **P** **09 08 29.1 -0.6**
APA Apatity 76.00 339⇑ *iP* **P** **09 08 28.2 -1.4**
APA *i* 09 08 36.8
APA *i* S **S** **09 18 04.0 -4.0**
APA pmax pmax
comp=Z,50nm,0.8s
APA MLR MLR
comp=Z,700nm,20.0s
KWP Kalwaria Pacla 76.01 320 *eP* **P** **09 08 30.6 +0.6**
KWP *ep*P **pP** **09 08 45.3 -1.0**
KWP Kalwaria Pacla 76.01 320⇑ *iP* **P** **09 08 30.9 +0.9**
OHR Ohrid 76.06 311 *i* P **P** **09 08 30.6 -1.0**
BZS Buzias 76.08 316⇑ *iP* **P** **09 08 31.0 +0.5**
UZH Uzhgorod 76.10 319 *eP* **P** **09 08 31.2 +0.7**
UZH *e* 09 08 39.6
SIRR Siria 76.14 317⇓ *iP* **P** **09 08 31.1 +0.2**
KOLS Kolonicke sedl 76.17 319 *eP* **P** **09 08 32.2 +1.2**
KOLS *e* 09 08 46.7
KOLS pmax pmax
comp=Z,121nm,1.4s
KOLS Kolonicke sedl 76.17 319 *eP* **P** **09 08 32.1 +1.1**
KOLS *e* 09 08 46.7
IGT Igoumenitsa 76.24 310 *eP* **P** **09 08 30.6 -1.0**
IGT Igoumenitsa 76.24 310 P **P** **09 08 30.8 -0.8**
IGT Igoumenitsa 76.24 310 P **P** **09 08 30.8 -0.8**
IGT Igoumenitsa 76.24 310 P **P** **09 08 30.8 -0.8**
SGD Sagiada 76.32 310 P **P** **09 08 31.5 -0.5**
SUW Suwalki 76.57 325 *eP* **P** **09 08 32.8 -0.3**
SUW *ep*P **pP** **09 08 47.8 -1.5**
KEK Kerkira 76.67 310 P **P** **09 08 33.5 -0.5**
KEK Kerkira 76.67 310 P **P** **09 08 33.5 -0.5**
CRVS Cervenica-Dubn 76.69 319 *eP* **P** **09 08 34.9 +1.0**
CRVS *e* 09 08 50.9
CRVS Cervenica-Dubn 76.69 319 *eP* **P** **09 08 34.9 +1.0**
CRVS *e* 09 08 50.9
TIR Tirane 76.79 311 *eP* **P** **09 08 34.9 +0.3**
TIR pmax pmax
comp=Z,38nm,0.8s
TIR MLR MLR
comp=Z,206nm,21.0s
TIR Tirane 76.79 311 *eP* **P** **09 08 34.9 +0.3**
comp=Z,38nm,0.8s
TIR LR LR
comp=Z,206nm,21.0s
FIA1 FINESS Array S 76.85 332 *eP* **P** **09 08 34.2 -0.3**
comp=Z,51nm,0.8s
FINES FINESS Array B 76.85 332 P **P** **09 08 34.2 -0.3**
comp=Z,39nm,0.8s,baz=102,slow=8.0,SNR=152
FINES LR LR 09 46 54.7
comp=Z,178nm,21.3s,baz=106,slow=39
PVY Plav 76.86 313⇑ *iP* **P** **09 08 34.7 -0.5**
STHS Stebnicka Huta 76.91 320 *eP* **P** **09 08 36.4 +1.2**

STHS e 09 08 52.3
STHS e 09 11 28.7
STHS pmax pmax
comp=Z,32nm,0.8s
STHS Stebnicka Huta 76.91 320 eP **P 09 08 36.4 +1.2**
STHS e 09 08 52.3
STHS ePP **PP 09 11 28.7 -0.1**
IVA Berane 76.94 313⇑ iP **P 09 08 35.1 -0.5**
KECS Kecovo 77.26 319 eP **P 09 08 37.3 +0.2**
KECS e 09 08 52.8
KECS pmax pmax
comp=Z,18nm,0.8s
KECS Kecovo 77.26 319 eP **P 09 08 37.3 +0.2**
KECS e 09 08 52.8
ULC Ulcinj 77.32 312⇑ iP **P 09 08 37.1 -0.5**
PDG Podgorica 77.36 312⇓ iP **P 09 08 37.5 -0.3**
PDG Podgorica 77.36 312 P **P 09 08 37.7 -0.1**
TTG Podgorica 77.36 312⇑ iP **P 09 08 37.5 -0.3**
TTG Podgorica 77.36 312 P **P 09 08 37.7 -0.1**
TTG Podgorica 77.36 312 P **P 09 08 37.7 -0.1**
PLE Pljevlja 77.36 313 eP **P 09 08 38.7 +0.8**
NIE Niedzica 77.52 320 eP **P 09 08 39.8 +1.2**
NIE epP **pP 09 08 54.1 -0.8**
PSZ Piszkesteto 77.58 318⇑ iP **P 09 08 39.6 +0.6**
PSZ Piszkesteto 77.58 318⇑ eP **P 09 08 39.8 +0.8**
PSZ Piszkesteto 77.58 318 eP **P 09 08 39.5 +0.6**
PSZ pmax pmax
comp=Z,92nm,1.2s
PSZ MLR MLR
comp=Z,159nm,22.0s
PSZ Piszkesteto 77.58 318 eP **P 09 08 39.5 +0.5**
comp=Z,92nm,1.2s
PSZ LR LR
comp=Z,159nm,22.0s
BEL Belsk 77.59 322 eP **P 09 08 39.4 +0.5**
BEL epP **pP 09 08 54.8 -0.3**
NKY Niksic 77.59 313⇑ iP **P 09 08 38.3 -0.9**
BUM Brajici-Budva 77.61 312⇑ iP **P 09 08 38.9 -0.4**
PKS6 Bocsa 77.62 317⇓ eP **P 09 08 40.5 +1.3**
UPM Unac-Piva 77.70 313⇑ iP **P 09 08 39.9 0.0**
PKS2 Kecel 77.85 317⇑ eP **P 09 08 42.0 +1.6**
HCY Herceg Novi 77.92 312⇑ iP **P 09 08 40.5 -0.4**
BRY Bratogost 77.93 313⇑ iP **P 09 08 40.6 -0.6**
PKS7 Kunszentmiklos 77.96 317⇓ eP **P 09 08 42.3 +1.3**
OJC Ojcow 77.96 320 eP **P 09 08 41.5 +0.5**
OJC epP **pP 09 08 56.6 -0.7**
OJC eS **S 09 18 27.6 -2.4**
OJC Ojcow 77.96 320 eP **P 09 08 41.2 +0.2**
OJC pmax pmax
comp=Z,124nm,1.3s
OJC Ojcow 77.96 320 eP **P 09 08 41.2 +0.2**
comp=Z,124nm,1.3s
LANS Liptovska Anna 78.02 319 eP **P 09 08 42.6 +1.1**
LANS Liptovska Anna 78.02 319 eP **P 09 08 42.5 +1.1**
PKSM Moragy 78.21 316⇑ iP **P 09 08 42.8 +0.3**
PKSM Moragy 78.21 316⇑ eP **P 09 08 42.8 +0.3**
VYHS Vyhne 78.35 319 eP **P 09 08 43.6 +0.4**
VYHS e 09 08 59.0
VYHS pmax pmax
comp=Z,80nm,1.8s
VYHS Vyhne 78.35 319 eP **P 09 08 43.6 +0.4**
VYHS e 09 08 59.0
KLNR Kaliningrad 78.39 325 iP **P 09 08 43.6 +0.4**
KLNR pmax pmax
comp=Z,260nm,1.2s
PKS9 Tamasi 78.50 317⇓ eP **P 09 08 43.5 -0.6**
PKSG 78.52 317⇓ eP **P 09 08 45.5 +1.4**
CSKK Cs˘‡kako 78.60 317⇓ eP **P 09 08 45.7 +1.1**
PKST T˜˜s 78.74 317⇓ eP **P 09 08 46.7 +1.3**
OKC Ostrava-Krasne 78.97 320⇑ eP **P 09 08 47.2 +0.7**
OKC epP **pP 09 09 03.2 +0.4**
OKC eS **S 09 18 40.2 -0.6**
TIP Timpagrande 78.97 309⇑ iP **P 09 08 48.1 +1.2**
TIP Timpagrande 78.97 309 P **P 09 08 47.7 +0.9**
TIP Timpagrande 78.97 309 eP **P 09 08 47.8 +0.9**
comp=Z,69nm,1.1s
TIP LR LR
comp=Z,167nm,20.0s
KEV Kevo 78.98 341 eP **P 09 08 46.1 -0.1**
KEV Kevo 78.98 341 eP **P 09 08 46.6 +0.4**
KEV pmax pmax
comp=Z,49nm,0.8s
KEV MLR MLR
comp=Z,347nm,20.0s
KEV Kevo 78.98 341 eP **P 09 08 46.6 +0.4**
comp=Z,49nm,0.8s
KEV LR LR
comp=Z,347nm,20.0s
BILL Bilibino 79.03 21 c iP **P 09 08 45.8 -0.7**
BILL eS **S 09 18 48.3 +7.5**
BILL eSS **SS 09 23 42.6 -4.7**
BILL pmax pmax
comp=Z,55nm,1.2s
BILL MLR MLR
comp=Z,758nm,19.0s
BILL Bilibino 79.03 21 eP **P 09 08 46.1 -0.5**
comp=Z,39nm,1.0s
BILL LR LR
comp=Z,822nm,19.0s
BLY Banja Luka 79.08 315⇑ iP **P 09 08 48.3 +1.0**
MATE Matera 79.11 310⇑ iP **P 09 08 47.4 -0.1**
MORC Moravsky Berou 79.35 320⇑ iP **P 09 08 49.6 +0.9**
MORC Moravsky Berou 79.35 320 eP **P 09 08 49.5 +0.9**
MORC pmax pmax
comp=Z,377nm,1.4s
MORC Moravsky Berou 79.35 320 eP **P 09 08 49.5 +0.9**
comp=Z,377nm,1.4s
ARA0 ARCESS Array S 79.41 340 eP **P 09 08 48.6 0.0**
ARCES ARCESS Array B 79.41 340 P **P 09 08 48.6 +0.1**
comp=Z,50nm,0.9s,baz=100,slow=5.5,SNR=81
ARCES LR LR 09 47 14.0
comp=Z,395nm,20.3s,baz=106,slow=38
ARE0 ARCESS Array S 79.41 340 eP **P 09 08 47.8 -0.8**
ARE0 IAmb IAmb 09 08 49.7
comp=Z,39nm,0.8s
ARE0 ARCESS Array S 79.41 340 eP **P 09 08 48.8 +0.2**
comp=Z,44nm,0.9s
BEHE Becsehely 79.53 316⇑ eP **P 09 08 51.0 +1.3**
SUR Sutherland 79.55 236 eP **P 09 08 52.8 +2.5**
comp=Z,69nm,1.1s
CEL Celeste 79.59 308 eP **P 09 08 51.8 +1.6**
comp=Z,96nm,1.0s
CEL LR LR
comp=Z,2µm,22.0s
HEF Hetta 79.73 339 eP **P 09 08 50.2 -0.2**
CUC Castrocucco 79.74 310 eP **P 09 08 50.6 -0.5**
comp=Z,99nm,1.8s
CUC LR LR
comp=Z,160nm,22.0s
SOP Sopron 79.78 318⇑ eP **P 09 08 51.8 +0.8**
PYZ Puysegur Point 79.82 138 eP **P 09 08 51.0 -0.2**
comp=Z,75nm,0.8s
KRLC Kraliky 79.87 320⇑ eP **P 09 08 52.4 +0.9**
KRLC epP **pP 09 09 07.8 0.0**
KOGS Kog 79.89 316 iP **P 09 08 52.4 +0.8**
KOGS epP **pP 09 09 07.2 -0.7**
VRAC Vranov 79.91 319 P **P 09 08 51.2 -0.5**
comp=Z,5,6nm,0.7s,baz=97,slow=5.6,SNR=10
VRAC Vranov 79.91 319⇑ iP **P 09 08 51.7 0.0**
DCZ Deep Cove 79.94 137 eP **P 09 08 52.7 +0.9**
comp=Z,75nm,0.9s
KTK1 Kautokeino 80.04 340 eP **P 09 08 52.1 +0.1**
KTK1 IAmb IAmb 09 08 52.8
comp=Z,75nm,0.9s
DPC Dobruska-Polom 80.19 320⇑ iP **P 09 08 54.3 +1.1**
DPC epP **pP 09 09 09.7 +0.1**
DPC eS **S 09 18 53.6 -0.2**
TSUM Tsumeb 80.23 250 eP **P 09 08 56.2 +2.0**
comp=Z,19nm,1.1s
TSUM LR LR
comp=Z,588nm,22.0s
KSP Ksiaz 80.25 321 eP **P 09 08 54.3 +0.8**
CONA Conrad Observa 80.27 318 iP **P 09 08 54.2 +0.4**
comp=Z,17nm,1.0s,SNR=13
CONA iSP **pP 09 09 10.2 +0.1**
comp=Z,40nm,1.6s
HAMF Hammerfest 80.32 341 eP **P 09 08 53.9 +0.4**
HAMF IAmb IAmb 09 08 54.3
comp=Z,68nm,0.9s
UPC Upice 80.40 320⇑ eP **P 09 08 55.2 +0.9**
UPC eS **S 09 18 56.6 +0.6**
UPC AMS AMS 09 51 40.0
comp=Z,200nm,21.8s
ARSA Arzberg 80.45 317 iP **P 09 08 55.5 +0.8**
comp=Z,35nm,1.1s,SNR=18
BOJS Bojanci 80.51 315 iP **P 09 08 55.6 +0.7**
BOJS iPP **pP 09 09 10.5 -0.8**
MLZ Mavora Lakes 80.56 137 eP **P 09 08 54.5 -0.8**
comp=Z,62nm,1.3s
WDD Wied Dalam 80.58 306 PFAKE 09 09 10.0 +14
WDD LR LR
comp=Z,197nm,21.0s
WHZ Wether Hill Ro 80.59 138 eP **P 09 08 55.7 +0.4**
comp=Z,42nm,0.8s
TREC Trest 80.63 319⇑ eP **P 09 08 56.3 +0.7**
TREC epP **pP 09 09 11.6 -0.4**
PERS Pernice 80.68 316 iP **P 09 08 56.8 +0.8**
comp=Z,117nm,1.2s
PERS iPP **pP 09 09 11.6 -0.7**
VAE Valguarnera 80.72 307 P **P 09 08 58.9 +2.5**
comp=Z,40nm,0.9s,baz=54,slow=4.9,SNR=6.4
SOKA Soboth 80.74 316 iP **P 09 08 57.2 +0.9**
comp=Z,65nm,1.0s,SNR=40
WKZ Wanaka 81.03 136 eP **P 09 08 58.6 +0.8**
comp=Z,74nm,1.2s
LJU Ljubljana 81.05 316 iP **P 09 08 59.0 +1.1**
comp=Z,217nm,1.1s
LJU epP **pP 09 09 13.9 -0.3**
OBKA Obir 81.06 316 iP **P 09 08 59.0 +0.9**
comp=Z,28nm,1.0s,SNR=13
GOPC GO Pecny, Ondr 81.14 320⇑ eP **P 09 08 58.9 +0.6**
GOPC epP **pP 09 09 14.4 -0.2**
GOPC eS **S 09 19 03.4 -0.3**
FOZ Fox Glacier 81.27 135 eP **P 09 08 58.7 -0.3**
comp=Z,25nm,1.0s
PRU Pruhonice 81.30 320⇑ iP **P 09 08 59.9 +0.8**
PRU epP **pP 09 09 14.9 -0.6**
PRU eS **S 09 19 05.0 -0.3**
PVCC Panska Ves 81.32 320⇑ eP **P 09 09 00.1 +0.9**
PVCC epP **pP 09 09 15.6 0.0**
PVCC AMS AMS 09 52 10.0
comp=Z,200nm,18.3s
MOA Molln 81.34 318 iP **P 09 08 59.6 +0.2**
comp=Z,14nm,0.9s,SNR=9.5
PRA Prague 81.38 320⇑ eP **P 09 09 00.2 +0.7**
PRA epP **pP 09 09 15.4 -0.5**
TRI Trieste 81.56 315 eP **P 09 09 00.4 -0.2**
TRI e 09 09 16.0
TRI Trieste 81.56 315 eP **P 09 09 00.4 -0.2**
TRI e 09 09 16.0
CADS Cadrg 81.61 316 iP **P 09 09 01.1 +0.2**
comp=Z,153nm,1.5s
CADS epP **pP 09 09 16.4 -0.9**
HOPEN Hopen 81.66 347 eP **P 09 09 00.8 +0.4**
HOPEN IAmb IAmb 09 09 02.9
comp=Z,33nm,0.8s
TRO Tromso 81.67 340 eP **P 09 09 00.1 -0.5**
TRO IAmb IAmb 09 09 01.0
comp=Z,50nm,0.8s
AQU L'Aquila 81.68 312 eP **P 09 09 02.3 +0.9**
AQU pmax pmax
comp=Z,175nm,1.1s
AQU MLR MLR
comp=Z,188nm,20.0s
AQU L'Aquila 81.68 312 eP **P 09 09 02.2 +0.9**
comp=Z,175nm,1.1s
AQU LR LR
comp=Z,188nm,20.0s
CLTB Caltabellotta 81.68 307 eP **P 09 09 01.6 +0.1**
comp=Z,67nm,1.1s
CLTB LR LR
comp=Z,87nm,21.0s
MYKA Terra Mystica 81.69 316 iP **P 09 09 01.8 +0.4**
comp=Z,17nm,0.9s,SNR=8.5
LBZ Lake Benmore 81.73 136 eP **P 09 09 01.7 +0.2**
comp=Z,72nm,1.0s
BRG Berggiesshubel 81.74 321 eP **P 09 09 02.2 +0.8**
comp=Z,31nm,1.1s
BRG iPP **pP 09 09 17.4 -0.4**
comp=Z,99nm,1.5s
BRG esP **sP 09 09 25.0 +0.8**
comp=Z,96nm,2.0s
BRG ePP **PP 09 12 06.4 -2.6**
comp=Z,21nm,1.6s
BRG S **S 09 19 11.0 +1.1**
BRG ePKKS 09 30 58.2
comp=Z,3.5nm,0.8s
BRG Berggiesshubel 81.74 321 eP **P 09 09 02.2 +0.8**
BRG i*PP **pP 09 09 17.4 -0.4**
BRG e*SP **sP 09 09 25.0 +0.8**
BRG e 09 12 06.4
BRG S **S 09 19 11.0 +1.1**
BRG pmax pmax
comp=Z,31nm,1.1s
GEA0 GERESS Array S 81.77 319 eP **P 09 09 02.6 +0.9**
GEC2 GERESS Array S 81.77 319 eP **P 09 09 02.5 +0.7**
GEC2 pmax pmax
comp=Z,107nm,1.2s
GEC2 GERESS Array S 81.77 319 eP **P 09 09 02.5 +0.7**
comp=Z,107nm,1.2s
GERES GERESS Array B 81.77 319 P **P 09 09 02.4 +0.7**
comp=Z,26nm,0.9s,baz=95,slow=6.7,SNR=62
GERES pP **pP 09 09 17.4 -0.7**
comp=Z,28nm,1.0s,baz=92,slow=6.0,SNR=10
KHC Kasperske Hory 81.87 319⇑ iP **P 09 09 02.6 +0.4**
KHC epP **pP 09 09 18.0 -0.6**
KHC eS **S 09 19 11.3 -0.1**
KHC Kasperske Hory 81.87 319 eP **P 09 09 02.7 +0.5**
KHC pmax pmax
comp=Z,5.0nm,0.8s
KHC Kasperske Hory 81.87 319 eP **P 09 09 02.7 +0.5**
comp=Z,4.5nm,0.8s
KBA Koehnreinsper 81.92 317 iP **P 09 09 02.7 0.0**
comp=Z,20nm,1.1s,SNR=12
RPZ Rata Peaks 82.19 135 P **P 09 09 03.9 0.0**
comp=Z,85nm,0.8s,baz=260,slow=1.6,SNR=41
RPZ LR LR 09 45 09.2
comp=Z,436nm,21.6s,baz=302,slow=35
RPZ Rata Peaks 82.19 135 eP **P 09 09 04.4 +0.5**
comp=Z,99nm,0.9s
ODZ Otahua Downs 82.21 136 eP **P 09 09 04.3 +0.4**
comp=Z,76nm,1.8s
SYO Syowa Base 82.26 198⇑ iP **P 09 09 04.0 +0.3**
CLL Collm 82.36 321⇑ iP **P 09 09 04.7 +0.1**
comp=Z,30nm,1.3s
CLL iPP **pP 09 09 19.9 -1.1**
comp=Z,61nm,1.4s
CLL L L 09 50 00.0
comp=Z,200nm,20.2s
CLL Collm 82.36 321 eP **P 09 09 04.5 -0.1**
CLL pmax pmax
comp=Z,74nm,1.4s
CLL Collm 82.36 321 eP **P 09 09 04.5 -0.1**
comp=Z,74nm,1.4s
ABTA Abfaltersbach 82.47 316 iP **P 09 09 05.3 -0.2**
comp=Z,24nm,1.0s,SNR=8.6
HFS Hagfors 82.58 330 P **P 09 09 05.9 +0.3**
comp=Z,63nm,1.1s,baz=94,slow=4.9,SNR=56
HFS pP **pP 09 09 21.1 -0.9**
comp=Z,51nm,1.0s,baz=113,slow=3.4,SNR=12
NKC Novy Kostel 82.66 320⇑ eP **P 09 09 06.9 +0.6**
NKC epP **pP 09 09 21.5 -1.2**
NKC AMS AMS 09 52 50.0
comp=Z,300nm,23.7s
STEI Steigen 82.73 338 eP **P 09 09 06.4 +0.3**
STEI IAmb IAmb 09 09 07.9
comp=Z,87nm,0.9s
OXZ Oxford 82.80 134 eP **P 09 09 06.9 -0.1**
comp=Z,41nm,0.9s
MOR8 Moi Rana 82.83 336 eP **P 09 09 06.3 -0.5**
MOR8 IAmb IAmb 09 09 07.0
comp=Z,51nm,0.9s
LTZ Lake Taylor 82.85 134 eP **P 09 09 07.8 +0.4**
comp=Z,42nm,1.2s
WTTA Wattenberg 83.09 317 iP **P 09 09 08.6 -0.2**
comp=Z,30nm,0.9s,SNR=9.5
THZ Tophouse 83.10 133 eP **P 09 09 08.8 0.0**
comp=Z,77nm,0.9s
WATA Walderalm 83.13 317 iP **P 09 09 08.6 -0.4**
comp=Z,22nm,1.0s,SNR=5.4
CRLZ Canterbury Las 83.27 135 eP **P 09 09 10.4 +0.9**
comp=Z,100nm,0.9s
MQZ McQueen's Vall 83.32 135 eP **P 09 09 10.1 +0.4**
comp=Z,102nm,1.2s
LOF Lofoten 83.39 338 eP **P 09 09 09.2 -0.3**
KONS Konsvik 83.39 336 eP **P 09 09 09.7 +0.1**
STOK Stokkvaagen 83.42 336 eP **P 09 09 14.1 +4.4**
GRFO Grafenberg 83.43 319 eP **P 09 09 11.7 +1.4**
GRFO e 09 09 25.9
GRFO Grafenberg 83.43 319 eP **P 09 09 11.7 +1.4**
GRFO e 09 09 25.9
MOTA Moosalm 83.45 317 iP **P 09 09 11.3 +0.7**
comp=Z,49nm,1.1s,SNR=13
NC405 NORSAR Array S 83.62 331 eP **P 09 09 11.2 +0.2**
NC602 NORSAR Array S 83.69 331 eP **P 09 09 10.8 -0.5**
NC602 IAmb IAmb 09 09 11.9
comp=Z,42nm,1.1s
NC602 NORSAR Array S 83.69 331 eP **P 09 09 11.1 -0.2**
RETA Reutte 83.69 317 iP **P 09 09 11.8 +0.1**
comp=Z,33nm,0.8s,SNR=15
KHZ Kahutara 83.69 133 eP **P 09 09 11.7 0.0**
comp=Z,48nm,1.0s
FETA Feichten 83.70 317 iP **P 09 09 12.2 +0.3**
comp=Z,22nm,0.9s,SNR=14
NSS Namsos 83.72 334 eP **P 09 09 11.2 -0.1**
NC303 NORSAR Array S 83.80 331 eP **P 09 09 11.7 -0.2**
NB201 NORSAR Array S 83.83 331 eP **P 09 09 12.1 0.0**
MSVF Nonsavu 83.86 108 eP **P 09 09 14.5 +1.4**
MSVF pmax pmax
comp=Z,99nm,1.7s
MSVF MLR MLR
comp=Z,1µm,20.0s
MSVF Nonsavu 83.86 108 eP **P 09 09 14.5 +1.4**
comp=Z,99nm,1.7s
MSVF LR LR
comp=Z,1µm,20.0s
NB2 NORSAR Subarra 83.86 331 P **P 09 09 11.9 -0.4**
comp=Z,34nm,0.9s,baz=92,slow=5.3
NB2 NORSAR Subarra 83.86 331 P **P 09 09 11.9 -0.4**
baz=92,slow=5.3
NOA NORSAR Array B 83.86 331 P **P 09 09 11.8 -0.5**
comp=Z,22nm,0.9s,baz=93,slow=5.3,SNR=61
NOA PP **PP 09 12 23.5 -2.6**
comp=Z,5.9nm,0.7s,baz=96,slow=8.6,SNR=6.2
NOA LR LR 09 49 36.1
comp=Z,206nm,21.9s,baz=105,slow=38
HSPB Hornsund (broa 83.90 347 eP **P 09 09 12.0 0.0**
SPA0 Spitsbergen Ar 83.91 348 eP **P 09 09 12.1 -0.1**
SPA0 Spitsbergen Ar 83.91 348 eP **P 09 09 12.0 -0.1**
SPITS Spitsbergen Ar 83.91 348 P **P 09 09 11.5 -0.7**
comp=Z,24nm,0.7s,baz=124,slow=12,SNR=44
SPITS pP **pP 09 09 27.6 -0.9**
comp=Z,28nm,0.7s,baz=72,slow=13,SNR=7.5
HIZ Hauiti 83.96 129 eP **P 09 09 14.6 +1.4**
comp=Z,89nm,1.1s
NAO01 NORSAR Array S 84.01 331 eP **P 09 09 13.2 +0.2**
FUORN Ofenpass-Fuorn 84.02 316 eP **P 09 09 14.4 +0.8**
NBO02 NORSAR Array S 84.04 331 eP **P 09 09 12.9 -0.2**
NBO00 NORSAR Array S 84.08 331 eP **P 09 09 12.8 -0.5**
FUNA Funafuti 84.08 99 PFAKE 09 09 20.0 +5.8
FUNA LR LR
comp=Z,8µm,19.0s
NC204 NORSAR Array S 84.09 331 eP **P 09 09 13.9 +0.5**
DAVOX Davos/Dischmat 84.29 316 P **P 09 09 15.3 +0.3**
comp=Z,46nm,0.9s,baz=113,slow=4.5,SNR=49
DAVOX pP **pP 09 09 31.0 -0.4**
comp=Z,46nm,0.9s,baz=40,slow=5.7,SNR=5.7
DAVA Damuels 84.29 317 iP **P 09 09 15.2 +0.3**
comp=Z,47nm,0.9s,SNR=15
SNZO South Karori 84.34 132 PFAKE 09 09 30.0 +15
SNZO LR LR
comp=Z,761nm,19.0s
KONO Kongsberg 84.62 329 eP **P 09 09 16.2 +0.1**
KONO IAmb IAmb 09 09 17.2
comp=Z,55nm,1.1s
KONO Kongsberg 84.62 329 eP **P 09 09 16.3 +0.3**
KONO pmax pmax
comp=Z,65nm,1.0s
KONO MLR MLR
comp=Z,365nm,21.0s
KONO Kongsberg 84.62 329 eP **P 09 09 16.3 +0.3**
comp=Z,66nm,1.0s
KONO LR LR
comp=Z,365nm,21.0s
TUE Stuetta 84.65 316 eP **P 09 09 17.1 +0.3**
comp=Z,116nm,1.7s
TUE LR LR
comp=Z,236nm,22.0s
VSL Villasalto 84.69 309 eP **P 09 09 17.4 +0.5**
comp=Z,90nm,1.2s
VSL LR LR
comp=Z,101nm,19.0s
KEST Kesra 84.79 305 P **P 09 09 19.3 +1.7**
comp=Z,39nm,0.9s,baz=356,slow=0.9,SNR=40
KEST LR LR 09 53 28.3
comp=Z,53nm,19.1s,baz=290,slow=40
KEST Kesra 84.79 305 eP **P 09 09 19.4 +1.9**
comp=Z,134nm,1.2s
KBS Kingsbay 84.88 349 eP **P 09 09 16.6 -0.4**
KBS Kingsbay 84.88 349 PFAKE 09 09 30.0 +13
KBS LR LR
comp=Z,389nm,20.0s
BFO Black Forest 85.33 318 iP **P 09 09 20.2 +0.3**
BFO Black Forest 85.33 318 eP **P 09 09 19.8 -0.1**
comp=Z,35nm,1.1s
BFO LR LR
comp=Z,187nm,21.0s
BKZ Black Stump Fm 85.33 130 eP **P 09 09 19.4 -0.7**
comp=Z,54nm,1.0s
BFZ Birch Farm 85.38 131 eP **P 09 09 19.7 -0.5**
comp=Z,149nm,1.5s
LANF Langenberg 85.66 319⇑ eP **P 09 09 22.4 +0.8**
URZ Urewera 85.67 129 P **P 09 09 21.0 -0.7**
comp=Z,65nm,1.1s,baz=349,slow=2.1,SNR=13
URZ Urewera 85.67 129 eP **P 09 09 21.5 -0.2**
comp=Z,63nm,0.9s
AKN Aaknes 85.90 332 eP **P 09 09 23.1 +0.7**
AKN IAmb IAmb 09 09 24.1
comp=Z,48nm,0.9s
AUTN L'Aution 86.05 314⇑ eP **P 09 09 24.7 +0.8**
SENIN Lac Senin/Sane 86.07 316 eP **P 09 09 24.3 +0.4**
REVF Revere 86.10 313 eP **P 09 09 24.7 +0.8**
ECH Echery 86.11 318⇑ eP **P 09 09 23.9 +0.1**
LUCF Luceram 86.11 314⇑ eP **P 09 09 25.0 +1.0**
ODD1 Odda 86.12 330 eP **P 09 09 24.5 +0.9**
MOF Molkenrain 86.14 318⇑ eP **P 09 09 23.9 -0.1**
BLS5 Blasjo 86.22 329 eP **P 09 09 25.3 +1.2**
BLS5 IAmb IAmb 09 09 25.9
comp=Z,69nm,1.1s
MVIF Mont Vial 86.25 314⇑ eP **P 09 09 25.4 +0.6**
ABSA Djebel Ababsia 86.28 306 P P 09 09 31.0 +6.0
HYA Hoyanger 86.31 331 eP **P 09 09 25.1 +0.7**
CMAH Djebel Manchou 86.32 306 P **P 09 09 26.7 +1.6**
LOMF Lomont 86.36 317⇑ eP **P 09 09 25.2 +0.1**
CALN Calern 86.45 313⇑ eP **P 09 09 26.5 +0.8**
BNI Bardonecchia 86.55 315 PFAKE 09 09 40.0 +14
BNI LR LR
comp=Z,286nm,21.0s
STAV Stavanger 86.62 329 eP **P 09 09 26.4 +0.4**
WLF Walferdange 86.72 319 P **P 09 09 28.2 +1.5**
comp=Z,37nm,1.7s
WLF AP **pP 09 09 43.6 +0.4**
WLF Walferdange 86.72 319 PFAKE 09 09 40.0 +13
WLF LR LR
comp=Z,187nm,20.0s
BER Bergen 86.75 330 eP **P 09 09 26.2 -0.4**
MEM Membach 86.78 320 P **P 09 09 26.9 -0.1**
comp=Z,24nm,1.4s
MEM AP **pP 09 09 42.6 -0.9**
ASK Askoy 86.82 330 eP **P 09 09 28.2 +1.3**
FOO Floro 86.84 331 eP **P 09 09 27.9 +0.9**
KMY Karmoy 86.85 329 eP **P 09 09 27.8 +0.7**
CKFL Kef-Lekhel 86.89 306 P **P 09 09 29.7 +1.7**
THEF They Montfort 86.89 318⇑ eP **P 09 09 27.8 +0.2**
SUE Sulen 87.00 331 eP **P 09 09 29.2 +1.5**
CTEI Djebel Teioual 87.16 306 P **P 09 09 31.5 +2.2**
BCLA Clavier 87.24 320 P **P 09 09 30.1 +0.9**
comp=Z,24nm,1.6s
BCLA AP **pP 09 09 45.4 -0.3**
GAMB Gambell 87.52 26 eP **P 09 09 30.6 +0.3**
comp=Z,84nm,1.1s
OG26 St.-Nazaire-De 87.55 314⇑ eP **P 09 09 31.9 +1.0**
DFRA Djebel Bou Aff 87.56 306 P **P 09 09 33.3 +2.1**
DOU Dourbes 87.71 320 P **P 09 09 32.3 +0.8**
comp=Z,21nm,1.9s
DOU AP **pP 09 09 47.7 -0.3**
SSB Saint Sauveur 88.05 315 eP **P 09 09 33.8 +0.6**
SSB Saint Sauveur 88.05 315 eP **P 09 09 33.9 +0.6**
SSB pmax pmax
comp=Z,42nm,1.2s
SSB MLR MLR
comp=Z,163nm,22.0s
SSB Saint Sauveur 88.05 315 eP **P 09 09 33.9 +0.6**
comp=Z,42nm,1.2s
SSB LR LR

comp=Z,163nm,22.0s
PLDF La Plantade 88.64 316⇑ *e*P **P** **09 09 38.0 +1.9**
TAM Tamanrasset 88.71 293 *e*P **P** **09 09 39.4 +2.4**
TAM pmax pmax
comp=Z,54nm,1.4s
TAM MLR MLR
comp=Z,353nm,22.0s
TAM Tamanrasset 88.71 293 *e*P **P** **09 09 39.4 +2.4**
comp=Z,54nm,1.4s
TAM LR LR
comp=Z,353nm,22.0s
VNDA Vanda 88.86 169 P **P** **09 09 37.1 +0.8**
comp=Z,12nm,0.9s,baz=294,slow=5.4,SNR=54
VNDA LR LR 09 44 00.1
comp=Z,262nm,20.4s,baz=308,slow=32
ATAF Djebel Tarf 88.90 306 P **P** **09 09 39.6 +2.0**
LBL Lubilhac 88.96 315⇑ *e*P **P** **09 09 39.7 +2.1**
AGO Saint Agoulin 88.98 316⇑ *e*P **P** **09 09 39.4 +1.8**
AKET Djebel Ketaf 89.20 306 P **P** **09 09 41.9 +2.8**
FILF Fillols 89.69 312⇑ *e*P **P** **09 09 42.5 +1.4**
EMHD Djebel Mahouad 89.94 306 P **P** **09 09 44.8 +2.3**
EBNR Beni Rached 91.08 306 P P 09 09 56.9 +9.2
CWF Charnwood Fore 91.12 323 *e*P **P** **09 09 48.7 +1.3**
CWF *e*pP **pP** **09 10 04.2 +0.2**
ETRT Tiaret 91.35 305 P **P** **09 09 51.8 +2.7**
EANR 'Ain N'Sour 91.46 306 P pP 09 10 07.7 +1.6
DAG Danmarks Havn 91.55 348 *i* P **P** **09 09 47.8 -1.1**
comp=Z,12nm,0.7s
DAG pmax pmax
comp=Z,9.0nm,0.7s
NVL N'lazarevskaya 91.79 199 *e*P **P** **09 09 53.5 +3.4**
EKA Eskdalemuir Ar 91.80 326 P **P** **09 09 51.2 +0.7**
comp=Z,7.3nm,0.9s,baz=91,slow=6.7,SNR=9.2
EKA pP **pP** **09 10 06.0 -1.1**
comp=Z,20nm,0.9s,baz=94,slow=5.1,SNR=9.8
EKA PP **PP** **09 13 28.6 -1.2**
comp=Z,5.9nm,0.8s,baz=91,slow=8.3,SNR=5.3
ESK Eskdalemuir 91.83 326 *i* P **P** **09 09 52.8 +2.2**
ESK Eskdalemuir 91.83 326 *e*P **P** **09 09 51.7 +1.1**
comp=Z,42nm,1.0s
TOA0 Torodi Ar. Sit 93.08 283 *e*P **P** **09 09 58.4 +1.1**
TORD Torodi Ar. Bea 93.08 283 P P **09 09 58.4 +1.1**
comp=Z,2.5nm,0.8s,baz=82,slow=5.2,SNR=16
TORD pP **pP** **09 10 14.0 +0.1**
comp=Z,5.2nm,0.9s,baz=90,slow=6.0,SNR=5.2
TORD PP **PP** **09 13 42.2 +1.1**
comp=Z,1.0nm,1.1s,baz=78,slow=6.6,SNR=2.2
TORD PKKPbc **PKKPbc** **09 27 06.9 +0.8**
comp=Z,0.7nm,0.8s,baz=310,slow=1.4,SNR=3.0
TORD LR LR 09 49 53.1
comp=Z,241nm,20.7s,baz=85,slow=34
AFI Afiamalu 93.31 104 PFAKE 09 10 10.0 +12
AFI LR LR
comp=Z,2μm,19.0s
QSPA South Pole Qui 93.96 180 *e*P **P** **09 10 01.6 +1.2**
QSPA LR LR
comp=Z,815nm,19.0s
SDPT Sand Point 94.46 34 *e*P **P** **09 10 03.4 +0.7**
comp=Z,366nm,1.9s
TTA Tatalina 94.60 26 *e*P **P** **09 10 04.1 +0.7**
TTA pmax pmax
comp=Z,62nm,1.4s
TTA Tatalina 94.60 26 *e*P **P** **09 10 04.1 +0.7**
comp=Z,62nm,1.4s
TT01 Tatalina 94.61 26 *e*P **P** **09 10 03.5 +0.3**
ES19 SONSECA Array 94.89 310 *e*P **P** **09 10 06.3 +1.1**
ESDC Sonseca Array 94.94 310 P **P** **09 10 05.9 +0.5**
comp=Z,3.7nm,0.7s,baz=59,slow=4.5,SNR=11
ESDC pP **pP** **09 10 21.3 -0.7**
comp=Z,2.0nm,0.5s,baz=65,slow=4.4,SNR=4.4
ESDC PKKPbc **PKKPdf** **09 27 00.9 -0.8**
comp=Z,0.2nm,0.4s,baz=262,slow=2.3,SNR=5.3
ESDC LR LR 09 57 03.9
comp=Z,48nm,20.3s,baz=140,slow=38
ESLA Sonseca Array 94.94 310 *e*P **P** **09 10 07.2 +1.7**
comp=Z,17nm,1.3s
PAB San Pablo 95.25 310 PFAKE 09 10 20.0 +13
PAB LR LR
comp=Z,160nm,19.0s
COLD Coldfoot 95.37 21 *e*P **P** **09 10 07.7 +1.0**
COLD *e* 09 10 22.5
SVW2 Sparrevohn 95.37 28 *e*P **P** **09 10 07.4 +0.5**
MLY Manley 96.04 23 *e*P **P** **09 10 10.1 +0.3**
comp=Z,41nm,1.7s
CAST Castle Rocks 96.11 25 *e*P **P** **09 10 10.6 +0.4**
comp=Z,57nm,1.1s
PPLA Purkeypile 96.26 25 *e*P **P** **09 10 11.0 0.0**
comp=Z,23nm,1.2s
BPAW Bear Paw Mtn. 96.31 24 *e*P **P** **09 10 11.3 +0.3**
comp=Z,92nm,1.3s
TRF Thorofare Moun 96.85 24 *e*P **P** **09 10 13.7 0.0**
TRF *e* 09 10 26.4
SPU Mount Spurr 96.95 27 *e*P **P** **09 10 15.4 +1.4**
MDM Murphy Dome 97.04 23 *e*P **P** **09 10 14.2 -0.2**
comp=Z,19nm,1.2s
COLA College 97.23 23 PFAKE 09 10 30.0 +15
COLA LR LR
comp=Z,247nm,22.0s
MCK McKinley 97.28 24 *e*P **P** **09 10 10.8 -4.7**
MCK McKinley 97.28 24 *e*P **P** **09 10 10.8 -4.7**
WRH Wood River Hil 97.31 23 *e*P **P** **09 10 15.0 -0.5**
comp=Z,17nm,1.2s
CCB Clear Creek Bu 97.34 23 *e*P Pdif 09 10 15.8 0.0
comp=Z,6.3nm,1.2s
FYU Fort Yukon 97.42 21 *e*P Pdif 09 10 16.8 +0.8
comp=Z,27nm,1.3s
RND Reindeer 97.45 24 *e*P **P** **09 10 15.9 -0.4**
RND pmax pmax
comp=Z,29nm,1.3s
RND Reindeer 97.45 24 *e*P **P** **09 10 15.9 -0.4**
comp=Z,29nm,1.3s
MTE Manteigas 97.51 311 *e*P Pdif 09 10 19.0 +1.9
comp=Z,12nm,1.2s
MTE LR LR
comp=Z,188nm,21.0s
IL1 Eielson Array 97.64 23 *e*P **P** **09 10 15.8 -1.2**
ILAR Eielson Array 97.64 23 P **P** **09 10 15.2 -1.9**
comp=Z,1.3nm,0.6s,baz=300,slow=4.0,SNR=19
ILAR PP **PP** **09 14 07.2 -7.7**
comp=Z,2.2nm,0.9s,baz=303,slow=7.0,SNR=4.4
ILAR PKKPbc **PKKPbc** **09 26 52.6 -3.0**
comp=Z,1.4nm,0.8s,baz=155,slow=2.3,SNR=9.1
ILB Eielson Array 97.64 23 *e*P **P** **09 10 16.6 -0.5**
OHAK Old Harbor 97.76 31 *e*P Pdif 09 10 18.6 +0.9
comp=Z,46nm,1.1s
KDAK Kodiak Island 97.92 30 *i* P Pdif 09 10 22.1 +3.7
KDAK Kodiak Island 97.92 30 *e*P Pdif 09 10 19.6 +1.2
comp=Z,108nm,1.7s
KDAK LR LR
comp=Z,413nm,19.0s
PMR Palmer 98.09 26 *e*P Pdif 09 10 19.6 +0.5
PMR pmax pmax
comp=Z,19nm,1.2s
PMR Palmer 98.09 26 *e*P Pdif 09 10 19.6 +0.5
comp=Z,19nm,1.2s
DHY Denali Highway 98.20 24 *e*P Pdif 09 10 22.4 +2.6
RTC Rabat Centre 98.20 305 PFAKE 09 10 30.0 +10
RTC LR LR
comp=Z,834nm,21.0s
SUMG Summit 98.22 347 *i* P Pdif 09 10 20.4 +0.4
SUMG Summit 98.22 347 *i* P Pdif 09 10 20.4 +0.4
SUMG Summit 98.22 347 *e*P Pdif 09 10 21.2 +1.2
comp=Z,35nm,1.3s
SML Sawmill 98.34 26 *e*P Pdif 09 10 21.3 +1.0
SML pmax pmax
comp=Z,60nm,1.3s
SML Sawmill 98.34 26 *e*P Pdif 09 10 21.3 +0.9
comp=Z,60nm,1.3s
SEW Seward 98.55 27 *e*P Pdif 09 10 21.9 +0.8
comp=Z,50nm,1.5s
SCM Sheep Creek Mo 98.77 25 *e*P Pdif 09 10 22.7 +0.5
SCM pmax pmax
comp=Z,48nm,1.6s
SCM Sheep Creek Mo 98.77 25 *e*P Pdif 09 10 22.7 +0.4
comp=Z,48nm,1.6s
PAX Paxson 99.03 24 *e*P **Pdif** **09 10 23.8 +0.4**
PAX pmax pmax
comp=Z,30nm,1.8s
PAX Paxson 99.03 24 *e*P **Pdif** **09 10 23.8 +0.4**
comp=Z,30nm,1.8s
DOT Dot Lake 99.26 23 *e*P **Pdif** **09 10 24.6 +0.2**
comp=Z,8.1nm,1.0s
KLU Klutina 99.52 25 *e*Pdif **Pdif** **09 10 27.1 +1.5**
comp=Z,23nm,1.5s
MENT Mentasta 99.74 24 *e*Pdif **Pdif** **09 10 27.2 +0.7**
comp=Z,15nm,1.2s
EGAK Eagle 99.78 21 PFAKE 09 10 40.0 +13
EGAK LR LR
comp=Z,521nm,21.0s
INK Inuvik 100.19 17 P **Pdif** **09 10 28.0 -0.3**
comp=Z,3.6nm,0.6s,baz=343,slow=4.9,SNR=28
INK pP pP 09 10 43.6 -1.3
comp=Z,7.0nm,0.9s,baz=345,slow=7.5,SNR=8.7
INK PP **PP** **09 14 31.3 -2.8**
comp=Z,5.5nm,1.1s,baz=330,slow=7.2,SNR=4.5
INK PKKPbc **PKKPbc** **09 26 44.2 -4.3**
comp=Z,1.4nm,0.9s,baz=70,slow=3.5,SNR=5.1
TRIS Tristan da Cun 106.86 233 *e*Pdif **Pdif** **09 10 59.1 +0.5**
DLBC Dease Lake 107.83 23 PKKPbc PKKPbc 09 26 24.2 -1.3
comp=Z,3.7nm,1.0s,baz=147,slow=5.2,SNR=4.3
DLBC PKKPab **PKKPdf** **09 26 38.2 -0.2**
comp=Z,2.7nm,0.9s,baz=197,slow=8.2,SNR=3.9
WRAK Wrangell Islan 108.16 26 PFAKE 09 15 20.0
WRAK LR LR
comp=Z,288nm,20.0s
YKA Yellowknife Ar 109.73 14 Pdiff **Pdif** **09 11 11.0 +0.2**
comp=Z,0.4nm,0.8s,baz=329,slow=4.4,SNR=9.2
YKA PP PP 09 15 34.8 -10
comp=Z,1.8nm,1.1s,baz=327,slow=7.1,SNR=6.0
YKA PKKPbc **PKKPbc** **09 26 16.3 -3.2**
comp=Z,1.6nm,0.8s,baz=146,slow=3.0,SNR=19
YKA PKKPab **PKKPab** **09 26 27.6 -2.5**
comp=Z,1.6nm,0.9s,baz=140,slow=4.2,SNR=13
ASCN Ascension 110.50 263 PFAKE 09 15 30.0
ASCN LR LR
comp=Z,2μm,22.0s
PPT2 Papeete2 114.67 107 *e*PS PS 09 25 50.6 -11
comp=Z,137nm,26.8s
PPT2 Papeete2 114.67 107 *e*LR LR 09 49 53.1
comp=Z,529nm,30.0s
FCC Fort Churchill 116.90 6 *e*PKIKP **PKPdf** **09 15 28.4 +1.5**
FCC Fort Churchill 116.90 6 *e*PKPdf **PKPdf** **09 15 28.4 +1.5**
NLWA Neilton Lookou 118.06 29 PFAKE 09 15 40.0 +10
NLWA LR LR
comp=Z,312nm,19.0s
B05A Bryant 118.29 28 P **PKPdf** **09 15 30.4 +0.5**
baz=316
F04D Rainier, OR 119.39 30 P **PKPdf** **09 15 32.3 +0.2**
baz=314
SCHQ Schefferville 119.59 349 PKP **PKPdf** **09 15 33.5 +1.2**
comp=Z,3.5nm,0.8s,baz=269,slow=2.9,SNR=6.7
SCHQ PKKPbc **PKKPbc** **09 25 44.0 -1.4**
comp=Z,4.0nm,0.7s,baz=184,slow=2.4,SNR=7.6
G03D McMinnville, O 119.87 31 P **PKPdf** **09 15 33.1 0.0**
baz=314
NEW Newport 120.50 25 P **PKPdf** **09 15 35.4 +1.1**
baz=321
NEW Newport 120.50 25 *e*PKIKP **PKPdf** **09 15 36.0 +1.7**
NEW MLR MLR
comp=Z,406nm,22.0s
NEW Newport 120.50 25 *e*PKPdf **PKPdf** **09 15 36.0 +1.7**
NEW LR LR
comp=Z,406nm,22.0s
HAWA Hanford 120.85 28 PFAKE 09 15 50.0 +15
HAWA LR LR
comp=Z,298nm,19.0s
I04A Tendick Farm, 121.29 32 P **PKPdf** **09 15 35.9 0.0**
baz=314
I05D Terrebonne, OR 121.46 31 P **PKPdf** **09 15 36.0 -0.3**
baz=315
J05D Fort Rock, OR 122.26 31 P **PKPdf** **09 15 37.5 -0.4**
baz=315
SWMT Swartz Lake 122.37 24 *e*PKPdf **PKPdf** **09 15 38.9 +0.9**
YBH Yreka Blue Hor 122.54 34 PKP **PKPdf** **09 15 39.5 +1.0**
comp=Z,1.0nm,0.6s,baz=256,slow=2.4,SNR=2.9
M02C Callahan 122.69 34 P **PKPdf** **09 15 38.1 -0.6**
baz=312
K05A Summer Lake 122.83 32 *e*PKPdf **PKPdf** **09 15 40.1 +1.0**
MSO Missoula 122.95 24 P **PKPdf** **09 15 38.9 -0.2**
baz=324
MSO Missoula 122.95 24 *e*PKPdf **PKPdf** **09 15 39.8 +0.7**
M04C Macdoel 122.98 33 P **PKPdf** **09 15 39.6 +0.3**
baz=314
BMO Blue Mountains 123.04 28 PFAKE 09 15 50.0 +11
BMO LR LR
comp=Z,332nm,21.0s
N02D Trinity Center 123.05 34 P **PKPdf** **09 15 39.8 +0.3**
baz=312
EGMT Eagleton 123.53 20 P **PKPdf** **09 15 40.9 +0.7**
baz=329
EGMT Eagleton 123.53 20 *e*PKPdf **PKPdf** **09 15 41.1 +0.9**
EGMT LR LR
comp=Z,228nm,20.0s
MOD Modoc Plateau 123.72 32 *e*PKPdf **PKPdf** **09 15 42.8 +2.0**
O03D Paynes Creek 124.02 34 P **PKPdf** **09 15 41.6 +0.3**
baz=313
WVOR Wild Horse Val 124.20 30 PFAKE 09 15 50.0 +8.3
WVOR LR LR
comp=Z,323nm,22.0s
DLMT Dillon 124.68 24 *e*PKPdf **PKPdf** **09 15 43.8 +1.2**
MFID Camas Ranch 124.82 28 *e*PKPdf **PKPdf** **09 15 44.8 +2.0**
BOZ Bozeman (W) 124.84 23 P **PKPdf** **09 15 43.1 +0.3**
baz=326
BOZ Bozeman (W) 124.84 23 PFAKE 09 15 50.0 +7.2
BOZ LR LR
comp=Z,238nm,20.0s
DGMT Dagmar 124.86 16 P **PKPdf** **09 15 42.9 +0.3**
baz=336
DGMT Dagmar 124.86 16 PFAKE 09 15 50.0 +7.4
DGMT LR LR
comp=Z,303nm,21.0s
ULM Lac du Bonnet 125.00 9 PKP **PKPdf** **09 15 42.6 -0.2**
comp=Z,11nm,0.8s,baz=356,slow=3.5,SNR=11
ULM Lac du Bonnet 125.00 9 *e*PKIKP **PKPdf** **09 15 43.1 +0.3**
ULM Lac du Bonnet 125.00 9 *e*PKPdf **PKPdf** **09 15 43.1 +0.3**
MCMT McKenzie Canyo 125.02 25 *e*PKPdf **PKPdf** **09 15 45.5 +2.2**
A26A Wade Farm, Ken 125.04 14 P **PKPdf** **09 15 43.7 +0.8**
baz=338
A27A Ledoux Ranch, 125.18 14 P **PKPdf** **09 15 43.9 +0.7**
baz=339
HLID Hailey 125.35 27 P **PKPdf** **09 15 44.5 +0.6**
baz=322
HLID Hailey 125.35 27 *e*PKPdf **PKPdf** **09 15 45.8 +1.8**
HLID LR LR
comp=Z,340nm,22.0s
AFDM Forest Hills D 125.40 35 *e*PKPdf **PKPdf** **09 15 46.0 +2.1**
A29A Manning Farm, 125.65 12 P **PKPdf** **09 15 44.4 +0.3**
baz=342
A30A Hoffart Farm, 125.83 11 P **PKPdf** **09 15 44.5 0.0**
baz=343
RLMT Red Lodge 126.18 22 *e*PKPdf **PKPdf** **09 15 48.0 +2.4**
RLMT LR LR
comp=Z,298nm,20.0s
A32A Rocking H Ranc 126.18 10 P **PKPdf** **09 15 44.7 -0.4**
baz=345
LKWY Lake 126.22 23 PFAKE 09 16 00.0 +14
LKWY LR LR
comp=Z,416nm,20.0s
C27A Sayler Ranch, 126.27 14 P **PKPdf** **09 15 45.6 +0.2**
baz=338
D25A Fairfield 126.31 16 P **PKPdf** **09 15 46.3 +0.8**
baz=336
A33A Warroad 126.35 9 P **PKPdf** **09 15 45.7 +0.3**
baz=346
CMB Columbia Colle 126.36 35 *e*PKIKP **PKPdf** **09 15 47.4 +1.6**
CMB Columbia Colle 126.36 35 *e*PKPdf **PKPdf** **09 15 47.4 +1.6**
B31A Greenbush Farm 126.45 11 P **PKPdf** **09 15 45.7 +0.1**
baz=343
B32A Ashes, Strandq 126.68 10 P **PKPdf** **09 15 46.4 +0.3**
baz=345
E25A Miller Ranch, 126.88 17 P **PKPdf** **09 15 46.9 +0.3**
baz=336
AGMN Agassiz Nation 126.89 10 P **PKPdf** **09 15 46.8 +0.3**
baz=346
AGMN Agassiz Nation 126.89 10 *e*PKPdf **PKPdf** **09 15 47.8 +1.3**
AGMN LR LR
comp=Z,440nm,22.0s
B34A Aery, Baudette 126.90 9 P **PKPdf** **09 15 46.4 -0.1**
baz=347
LOHW Long Hollow 126.93 24 *e*PKPdf **PKPdf** **09 15 48.6 +1.6**
B33A Robert and Kas 126.96 10 P **PKPdf** **09 15 46.6 0.0**
baz=346
C30A Mose, Pekin 126.97 12 P **PKPdf** **09 15 46.8 +0.1**
baz=342
SNOW Snow King Moun 127.00 24 *e*PKPdf **PKPdf** **09 15 49.4 +2.2**
C31A Landman Farms, 127.04 11 P **PKPdf** **09 15 47.0 +0.3**
baz=343
B35A Bob, Littlefor 127.16 8 P **PKPdf** **09 15 47.5 +0.5**
baz=348
E26A Carlson Angus 127.17 16 P **PKPdf** **09 15 47.4 +0.3**
baz=337
NV01 Mina Array Sit 127.26 34 *e*PKPdf **PKPdf** **09 15 49.8 +2.0**
NVAR Mina Array Bea 127.26 34 PKP **PKPdf** **09 15 49.5 +1.7**
comp=Z,4.4nm,0.8s,baz=292,slow=2.0,SNR=18
NV11 Mina Array Sit 127.34 33 *e*PKPdf **PKPdf** **09 15 50.2 +2.4**
C33A Trail 127.43 10 P **PKPdf** **09 15 47.9 +0.4**
baz=346
AHID Auburn Hatcher 127.43 25 PFAKE 09 16 00.0 +12
AHID LR LR
comp=Z,342nm,21.0s
RKT Rikitea 127.45 116 *e*LR LR 09 55 37.0
comp=Z,382nm,31.5s
D30A Buchanan 127.48 12 P **PKPdf** **09 15 48.4 +0.7**
baz=342
E28A Huff 127.53 14 P **PKPdf** **09 15 48.0 +0.2**
baz=339
C34A RKJ Ranch, Bem 127.68 9 P **PKPdf** **09 15 48.2 +0.2**
baz=346
F26A Lodgepole 127.68 16 P **PKPdf** **09 15 48.0 -0.1**
baz=337
C35A Jirik Farms, M 127.77 8 P **PKPdf** **09 15 48.0 -0.1**
baz=348
EYMN Ely 127.84 6 P **PKPdf** **09 15 48.1 -0.3**
baz=351
EYMN Ely 127.84 6 *e*PKPdf **PKPdf** **09 15 49.5 +1.1**
EYMN LR LR
comp=Z,356nm,19.0s
F27A Lemmon 127.84 16 P **PKPdf** **09 15 48.1 -0.4**
baz=337
C37A Embarrass 127.98 7 P **PKPdf** **09 15 48.2 -0.4**
baz=350
D33A AnnSam, Waubun 128.01 10 P **PKPdf** **09 15 48.6 0.0**
baz=345
BW06 Boulder Array 128.06 24 *e*PKPdf **PKPdf** **09 15 50.9 +1.7**
BW06 LR LR
comp=Z,269nm,20.0s
PDAR Pinedale Array 128.06 24 PKP **PKPdf** **09 15 48.5 -0.7**
comp=Z,0.4nm,0.3s,baz=219,slow=30,SNR=4.0
PDAR PP **PP** **09 17 48.4 -3.3**
comp=Z,1.3nm,0.7s,baz=343,slow=2.8,SNR=2.7
C39A Grand Marais 128.10 5 P **PKPdf** **09 15 49.1 +0.3**
baz=353
D34A Park Rapids 128.18 10 P **PKPdf** **09 15 48.6 -0.4**
baz=346
HWUT Hardware Ranch 128.18 26 *e*PKPdf **PKPdf** **09 15 51.5 +2.1**
HWUT LR LR
comp=Z,259nm,20.0s
G26A Maurine 128.21 16 P **PKPdf** **09 15 48.4 -0.8**
baz=336
G27A Dupree 128.32 16 P **PKPdf** **09 15 49.1 -0.3**
baz=337
D35A Remer 128.36 9 P **PKPdf** **09 15 49.2 -0.2**
baz=348
D37A Cotton 128.51 7 P **PKPdf** **09 15 49.1 -0.5**
baz=350
E33A Westby DABS, E 128.60 10 P **PKPdf** **09 15 50.0 +0.2**
baz=345
F30A Leola 128.62 13 P **PKPdf** **09 15 49.9 0.0**
baz=341
E34A Wadena 128.74 10 P **PKPdf** **09 15 50.5 +0.4**
baz=346
DUG Dugway, Tooele 128.74 28 P **PKPdf** **09 15 50.8 +0.4**
baz=322
DUG Dugway, Tooele 128.74 28 PFAKE 09 16 00.0 +10
DUG LR LR
comp=Z,212nm,20.0s
R11A Troy Canyon, C 128.78 32 P **PKPdf** **09 15 52.4 +1.8**
baz=318
R11A Troy Canyon, C 128.78 32 *e*PKPdf **PKPdf** **09 15 52.6 +2.0**
E35A Pequot Lakes 128.82 9 P **PKPdf** **09 15 50.7 +0.4**
baz=347
RSSD Black Hills 128.85 18 P **PKPdf** **09 15 50.9 +0.2**
baz=334
RSSD Black Hills 128.85 18 *e*PKIKP **PKPdf** **09 15 52.5 +1.9**
RSSD Black Hills 128.85 18 *e*PKPdf **PKPdf** **09 15 52.5 +1.9**
H27A Howes 128.97 16 P **PKPdf** **09 15 51.4 +0.8**
baz=337
E36A McGregor 129.03 8 P **PKPdf** **09 15 51.3 +0.7**
baz=348
I25A Rochford 129.04 18 P **PKPdf** **09 15 51.0 0.0**
baz=335
PKME Peaks-Kenny Pk 129.14 346 PFAKE 09 16 00.0 +9.2
PKME LR LR
comp=Z,354nm,20.0s
DAC Darwin (Calif) 129.18 35 *e*PKIKP **PKPdf** **09 15 53.4 +1.9**
DAC Darwin (Calif) 129.18 35 *e*PKPdf **PKPdf** **09 15 53.4 +1.9**
F33A 5 Mile Ranch, 129.19 11 P **PKPdf** **09 15 51.4 +0.4**
baz=344
G30A Faulkton 129.26 14 P **PKPdf** **09 15 51.4 +0.3**
baz=341
NLU North Lily Min 129.28 28 *e*PKPdf **PKPdf** **09 15 52.4 +0.8**
K22A Casper 129.31 21 P **PKPdf** **09 15 51.7 +0.2**
baz=331
K22A Casper 129.31 21 *e*PKPdf **PKPdf** **09 15 52.3 +0.8**
MPMC Manual Prospec 129.40 35 P **PKPdf** **09 15 52.5 +0.6**
baz=315
F35A Swanville 129.47 9 P **PKPdf** **09 15 52.0 +0.5**
baz=347
I27A Quinn 129.49 17 P **PKPdf** **09 15 52.1 +0.4**
baz=337
J25A Sunshine Ranch 129.58 19 P **PKPdf** **09 15 51.5 -0.4**
baz=334
F36A Milaca 129.63 8 P **PKPdf** **09 15 52.4 +0.7**
baz=348
G33A Ortonville 129.78 11 P **PKPdf** **09 15 52.2 +0.2**
baz=344
I28A Midland 129.80 16 P **PKPdf** **09 15 53.3 +1.1**
baz=338
COWI Conover 129.89 4 PFAKE 09 16 00.0 +7.7
COWI LR LR
comp=Z,377nm,21.0s
I29A Vivian Onida 130.01 15 P **PKPdf** **09 15 53.2 +0.6**
baz=339
G35A Watkins 130.11 9 P **PKPdf** **09 15 53.8 +1.1**
baz=347
G36A St. Michael 130.21 9 P **PKPdf** **09 15 53.5 +0.7**
baz=348
J27A Elkhorn Farm, 130.25 17 P **PKPdf** **09 15 53.6 +0.5**
baz=337
J28A Allard Ranch, 130.32 16 P **PKPdf** **09 15 53.4 +0.1**
baz=338
I30A Oacoma 130.34 14 P **PKPdf** **09 15 54.1 +0.9**
baz=340
MSU Marysvale 130.37 29 *e*PKIKP **PKPdf** **09 15 54.7 +1.0**
MSU Marysvale 130.37 29 *e*PKPdf **PKPdf** **09 15 54.6 +1.0**
H35A Sunnyside Ranc 130.56 10 P **PKPdf** **09 15 54.3 +0.7**
baz=346
LONY Lake Ozonia 130.80 351 PFAKE 09 16 00.0 +6.0
LONY LR LR
comp=Z,312nm,19.0s
O20A White River Ci 130.81 24 P **PKPdf** **09 15 55.4 +1.0**
baz=328
O20A White River Ci 130.81 24 *e*PKPdf **PKPdf** **09 15 56.1 +1.7**
I33A Coleman 130.81 12 P **PKPdf** **09 15 54.8 +0.7**
baz=343
LCMT Little Creek M 131.01 31 *e*PKPdf **PKPdf** **09 15 57.5 +2.6**
ECSD EROS Data Cent 131.15 12 PFAKE 09 16 10.0 +15
ECSD LR LR
comp=Z,442nm,22.0s
SADO Sadowa 131.20 355 PKP **PKPdf** **09 15 55.1 +0.3**
comp=Z,6.1nm,0.8s,baz=3.0,slow=2.6,SNR=3.1
SADO SKPbc **SKPab** **09 19 16.4 +1.3**
comp=Z,15nm,0.8s,baz=0.8,slow=5.6,SNR=7.3
PTCN Pitcairn Islan 131.23 120 PFAKE 09 16 10.0 +15
PTCN LR LR
comp=Z,1μm,20.0s
I37A Lemond, Waseca 131.46 9 P **PKPdf** **09 15 55.4 +0.1**
baz=348
I38A Scanlan Farm, 131.59 8 P **PKPdf** **09 15 54.5 -1.0**
baz=349
U15A North Rim 131.94 31 *e*PKPdf **PKPdf** **09 15 60.0 +3.1**
W13A Hualapai Mount 132.11 33 *e*PKPdf **PKPdf** **09 15 59.5 +2.4**
L31A Butterfield Fa 132.12 15 P **PKPdf** **09 15 54.9 -1.8**
baz=340
ISCO Idaho Springs 132.13 22 PFAKE 09 16 10.0 +13
ISCO LR LR
comp=Z,256nm,22.0s
K34A Le Mars 132.26 12 P **PKPdf** **09 15 55.8 -1.1**
baz=344
J38A Wedel Dairy, R 132.27 8 P **PKPdf** **09 15 56.4 -0.5**
baz=349
OGNE Ogallala 132.35 18 PFAKE 09 16 10.0 +13
OGNE LR LR
comp=Z,377nm,21.0s
PDMCI Parker Dam,Lak 132.56 34 P **PKPdf** **09 15 58.0 +0.4**
baz=318
K38A Parkersburg 132.89 9 P **PKPdf** **09 15 58.3 +0.3**
baz=348
L35A Bielow Farm, R 132.92 12 P **PKPdf** **09 15 58.6 +0.5**

baz=345
JFWS Jewell Farm 132.95 6 PFAKE 09 16 10.0 +12
JFWS LR LR
comp=Z,359nm,20.0s
WUAZ Wupatki 133.12 31 PFAKE 09 16 10.0 +11
WUAZ LR LR
comp=Z,223nm,20.0s
MVCO Mesa Verde 133.14 27 PFAKE 09 16 10.0 +11
MVCO LR LR
comp=Z,288nm,20.0s
Y14A Wickenburg 133.46 33 *e*PKPdf **PKPdf 09 16 01.0 +1.6**
SCIA State Center 133.54 9 PFAKE 09 16 10.0 +11
SCIA LR LR
comp=Z,351nm,21.0s
AAM Ann Arbor 133.88 359 PFAKE 09 16 10.0 +10
AAM LR LR
comp=Z,359nm,20.0s
X16A Lo Mia Camp, P 133.94 32 *e*PKPdf **PKPdf 09 16 02.5 +1.9**
SDCO Great Sand Dun 133.96 24 PFAKE 09 16 10.0 +9.4
SDCO LR LR
comp=Z,267nm,22.0s
M38A Pleasantville 134.02 9 P **PKPdf 09 16 00.9 +0.7**
baz=348
O33A Hebron 134.41 14 P **PKPdf 09 16 01.4 +0.4**
baz=341
P32A Huiting Farm, 134.57 16 P **PKPdf 09 16 02.0 +0.6**
baz=340
N59A State Game Lan 134.60 351 P **PKPdf 09 16 02.8 +1.4**
baz=12
N39A Derby Farms, D 134.66 9 P **PKPdf 09 16 02.1 +0.7**
baz=348
CBKS Cedar Bluff 135.01 17 PFAKE 09 16 10.0 +7.8
CBKS LR LR
comp=Z,291nm,20.0s
O38A Galt 135.24 10 P **PKPdf 09 16 02.9 +0.4**
baz=347
P35A Duane Minner, 135.30 13 P **PKPdf 09 16 02.9 +0.2**
baz=343
HDIL Hopedale 135.38 6 PFAKE 09 16 10.0 +7.2
HDIL LR LR
comp=Z,308nm,21.0s
O40A La Belle 135.50 8 P **PKPdf 09 16 03.3 +0.3**
baz=349
KSU1 Kansas State U 135.57 14 P **PKPdf 09 16 03.6 +0.4**
baz=342
KSU1 Kansas State U 135.57 14 *e*PKPdf **PKPdf 09 16 06.3 +3.2**
KSU1 LR LR
comp=Z,263nm,20.0s
P37A Lathrop 135.59 11 P **PKPdf 09 16 04.6 +1.4**
baz=346
O56A Blue Knob Stat 135.61 354 P **PKPdf 09 16 04.0 +0.7**
baz=8.1
Q34A Chapman 135.66 14 P **PKPdf 09 16 05.2 +1.8**
baz=342
R32A Long Quarter, 135.66 16 P **PKPdf 09 16 04.0 +0.6**
baz=339
P38A Dawn 135.71 10 P **PKPdf 09 16 04.1 +0.6**
baz=347
SFIN Lafayette 135.72 3 P **PKPdf 09 16 04.1 +0.7**
baz=356
TUC Tucson 135.91 33 P **PKPdf 09 16 04.9 +0.7**
baz=320
TUC Tucson 135.91 33 *e*PKIKP **PKPdf 09 16 06.0 +1.9**
TUC MLR MLR
comp=Z,202nm,21.0s
TUC Tucson 135.91 33 *e*PKPdf **PKPdf 09 16 06.0 +1.9**
TUC LR LR
comp=Z,202nm,21.0s
ACSO Alum Creek Sta 135.93 359 *e*PKPdf **PKPdf 09 16 06.7 +2.9**
ACSO LR LR
comp=Z,356nm,21.0s
ANMO Albuquerque 135.93 27 *e*PKIKP **PKPdf 09 16 03.3 -0.9**
ANMO MLR MLR
comp=Z,223nm,21.0s
ANMO Albuquerque 135.93 27 *e*PKPdf **PKPdf 09 16 03.3 -0.9**
ANMO LR LR
comp=Z,223nm,21.0s
Q35A Mercer Eighty, 135.94 13 P **PKPdf 09 16 04.2 +0.3**
baz=343
P40A Paris 136.05 9 P **PKPdf 09 16 04.9 +0.9**
baz=349
R34A Isabella, Hill 136.17 15 P **PKPdf 09 16 04.7 +0.3**
baz=341
Q38A Cooks Store, C 136.34 11 P **PKPdf 09 16 05.1 +0.5**
baz=346
Q39A Willow Grove F 136.37 10 P **PKPdf 09 16 05.3 +0.6**
baz=347
BNM Barren Site 136.52 27 *e*PKPdf **PKPdf 09 16 08.8 +3.4**
Q40A Laux Farm, Aux 136.57 9 P **PKPdf 09 16 05.6 +0.6**
baz=349
R37A Teagarden Farm 136.73 12 P **PKPdf 09 16 05.7 +0.3**
baz=344
T32A Huddler Ranch, 136.76 17 P **PKPdf 09 16 06.2 +0.7**
baz=338
R38A Fenwick Farm, 137.03 11 P **PKPdf 09 16 06.4 +0.5**
baz=346
R39A Chumby, Stover 137.07 10 P **PKPdf 09 16 06.4 +0.5**
baz=347
R40A Maddies Statio 137.23 9 P **PKPdf 09 16 05.8 -0.4**
baz=348
CBN Corbin Frederi 137.50 352 PFAKE 09 16 20.0 +13
CBN LR LR
comp=Z,270nm,20.0s
BLA Blacksburg 138.81 355 PFAKE 09 16 20.0 +11
BLA LR LR
comp=Z,466nm,19.0s
WMOK Wichita Mounta 139.06 18 PFAKE 09 16 20.0 +10
WMOK LR LR
comp=Z,314nm,20.0s
MNTX Cornudas Mount 139.14 28 PFAKE 09 16 20.0 +10
MNTX LR LR
comp=Z,228nm,20.0s
X38A Whitesboro 140.22 14 P PKPpre 09 16 04.9
baz=343
MIAR Mount Ida 140.62 12 PFAKE 09 16 20.0 +7.4
MIAR LR LR
comp=Z,456nm,22.0s
PLCA Paso Flores 141.46 197 PKhKP PKPpre 09 16 08.6
comp=Z,4.6nm,0.8s,baz=178,slow=4.3,SNR=9.0
PLCA Paso Flores 141.46 197 *e*PKHKP PKPpre 09 16 08.9
PLCA Paso Flores 141.46 197 *e*PKPpre PKPpre 09 16 08.9
TX31 Lajitas Ar. Si 141.92 28 *e*PKPpre PKPpre 09 16 09.7
TX31 *e*PKPdf **PKPdf 09 16 15.9 +0.8**
TXAR Lajitas Array 141.92 28 PKhKP PKPpre 09 16 09.6
comp=Z,1.4nm,0.8s,baz=231,slow=1.4,SNR=8.2
TXAR PKP **PKPdf 09 16 15.5 +0.3**
comp=Z,2.2nm,0.6s,baz=277,slow=1.5,SNR=13
TXAR PP **PP 09 19 17.5 -1.9**
comp=Z,1.4nm,0.9s,baz=350,slow=7.5,SNR=3.7
TXAR SKPbc **SKPbc 09 19 48.0 +0.1**
comp=Z,4.5nm,0.9s,baz=277,slow=0.5,SNR=12
JCT Junction City 142.57 22 *e*PKIKP **PKPdf 09 16 13.9 -2.4**
JCT MLR MLR
comp=Z,283nm,20.0s
JCT Junction City 142.57 22 *e*PKPdf **PKPdf 09 16 13.9 -2.4**
JCT LR LR
comp=Z,283nm,20.0s
GOGA Godfrey 142.75 359 PFAKE 09 16 30.0 +14
GOGA LR LR
comp=Z,395nm,21.0s
HPIG 142.87 33 *e*PKPdf **PKPdf 09 16 15.4 -1.7**
NATX Nacogdoches 143.03 15 *e*PKPdf PKPbc 09 16 13.6 -0.2
NATX LR LR
comp=Z,439nm,22.0s
LRAL Lakeview Retre 143.03 4 *e*PKPpre PKPpre 09 16 12.4
338A Crockett 143.24 16 P PKPbc 09 16 14.3 -0.1
baz=341
147A Livingston 143.29 6 P PKPbc 09 16 14.1 -0.3
baz=353
242A Grayson 143.31 11 P PKPbc 09 16 14.5 0.0
baz=347
436A Wall Ranch, Ga 143.35 18 P PKPbc 09 16 14.4 -0.3
baz=339
VBMS Vicksburg 143.45 9 P PKPbc 09 16 15.4 +0.5
baz=350
339A Huntington 143.47 15 P PKPbc 09 16 15.2 +0.2
baz=343
534A Blanco 143.47 21 P PKPbc 09 16 14.8 -0.3
baz=336
437A Phantom Ranch, 143.50 17 P PKPbc 09 16 15.3 +0.2
baz=340
340A Bronson 143.55 14 P PKPbc 09 16 14.8 -0.4
baz=344,SNR=20
244A Avery, Jackson 143.59 9 P PKPbc 09 16 15.7 +0.3
baz=349,SNR=8.4
243A Waterproof 143.62 10 P PKPbc 09 16 16.2 +0.8
baz=348
245A Little AP, Sta 143.72 8 P PKPbc 09 16 16.4 +0.7
baz=350
633A Saathoff Ranch 143.73 22 P PKPbc 09 16 16.0 +0.2
baz=334,SNR=10.0
438A Sam Houston St 143.77 17 P PKPbc 09 16 16.6 +0.7
baz=341
535A Dale 143.79 20 P PKPbc 09 16 15.8 -0.2
baz=337
341A Kurthwood 143.80 13 P PKPbc 09 16 15.9 -0.1
baz=345,SNR=9.5
246A Jackson Lee, B 143.84 7 P PKPbc 09 16 16.7 +0.6
baz=352
247A Quitman 143.87 6 P PKPbc 09 16 16.7 +0.5
baz=353
248A Dixon Mills 143.91 5 P PKPbc 09 16 16.7 +0.4
baz=354
439A Center Grove, 143.92 16 P PKPbc 09 16 16.8 +0.4
baz=342
342A Flagon Creek P 143.94 12 P PKPbc 09 16 16.9 +0.5
baz=346
537A Green Hill Far 144.15 18 P PKPbc 09 16 17.0 0.0
baz=339
344A Westbrook Farm 144.16 10 P PKPbc 09 16 17.5 +0.4
baz=349,SNR=8.9
440A Kirbyville 144.18 14 P PKPbc 09 16 17.2 0.0
baz=343
538A Harpers Horsep 144.26 17 P PKPbc 09 16 17.4 0.0
baz=341
635A Leesville 144.30 21 P **PKPab 09 16 17.3 0.0**
baz=336,SNR=5.2
733A Divot King Ran 144.34 23 P **PKPab 09 16 17.5 +0.1**
baz=334,SNR=11
441A DeRidder 144.36 13 P PKPbc 09 16 18.1 +0.4
baz=345,SNR=5.8
345A Thompson Farm, 144.41 9 P PKPbc 09 16 18.2 +0.3
baz=350,SNR=11
HKT Hockley 144.41 18 *e*PKIKP **PKPab 09 16 17.1 -0.4**
HKT Hockley 144.41 18 *e*PKPdf **PKPab 09 16 17.1 -0.4**
346A Big Creek Wild 144.42 8 P PKPbc 09 16 18.3 +0.4
baz=351,SNR=9.4
832A Faith Ranch, C 144.46 24 P PKPbc 09 16 18.3 +0.1
baz=332,SNR=10
636A Smothers Creek 144.46 20 P PKPbc 09 16 18.3 +0.2
baz=338,SNR=27
734A La Parita Cree 144.51 22 P PKPbc 09 16 18.8 +0.6
baz=335
347A Saraland 144.52 6 P **PKPdf 09 16 19.0 -0.6**
baz=353,SNR=9.7
442A Mamou 144.56 12 P PKPbc 09 16 18.9 +0.6
baz=346
348A Jackson 144.57 5 P PKPbc 09 16 19.0 +0.6
baz=354
539A Cross D Ranch, 144.58 16 P **PKPdf 09 16 19.1 -0.6**
baz=342
443A Delano Plantat 144.64 11 P PKPbc 09 16 18.8 +0.2
baz=347
833A Chaparral WMA, 144.66 24 P **PKPdf 09 16 19.4 -0.5**
baz=333
TIGA Tifton 144.72 359 P **PKPab 09 16 18.5 -0.1**
baz=1.1
637A Eagle Lake 144.74 19 P PKPbc 09 16 19.3 +0.4
baz=339,SNR=13
735A Kenedy 144.78 21 P PKPbc 09 16 19.5 +0.4
baz=336,SNR=17
444A Pine Grove 144.88 10 P **PKPdf 09 16 19.8 -0.4**
baz=349
445A Amite 144.93 9 P **PKPab 09 16 19.5 0.0**
baz=349,SNR=10
736A Circle Diamond 144.94 20 P **PKPdf 09 16 20.2 -0.1**
baz=337,SNR=18
446A Poplarville 145.02 8 P **PKPdf 09 16 20.2 -0.3**
baz=351,SNR=8.1
541A Lake Charles 145.02 14 P **PKPdf 09 16 20.7 +0.2**
baz=344
638A Rosharon 145.03 17 P **PKPdf 09 16 20.8 +0.3**
baz=340
448A Bay Minette 145.05 5 P **PKPdf 09 16 20.7 +0.2**
baz=354,SNR=8.7
447A Lucedale 145.10 7 P **PKPdf 09 16 20.7 +0.1**
baz=352,SNR=6.5
542A Morse 145.10 13 P **PKPdf 09 16 20.9 +0.3**
baz=346
834A Tilden 145.16 23 P **PKPdf 09 16 21.0 +0.3**
baz=334,SNR=13
835A Beeville 145.29 21 P **PKPdf 09 16 21.9 +0.9**
baz=336,SNR=16
543A St. Martinvill 145.29 12 P **PKPdf 09 16 21.8 +0.9**
baz=347
737A Port Lavaca 145.33 19 P **PKPdf 09 16 21.8 +0.7**
baz=338
933A Laredo 145.34 24 P **PKPdf 09 16 22.0 +0.9**
baz=333,SNR=23
544A White Castle 145.40 11 P **PKPab 09 16 22.5 +1.3**
baz=348
738A Farr-Stevens R 145.51 18 P **PKPab 09 16 22.8 +1.1**
baz=340
546A Slidell 145.52 8 P **PKPab 09 16 22.8 +1.1**
baz=350
934A Benavides 145.64 23 P **PKPab 09 16 23.3 +1.1**
baz=334,SNR=9.4
KVTX Kingsville 145.93 22 PFAKE 09 16 30.0 +6.7
KVTX LR LR
comp=Z,298nm,19.0s
CPUP Villa Florida 146.04 227 *e*P **PKPbc 09 16 22.9 -0.3**
CPUP Villa Florida 146.04 227 PKPbc **PKPbc 09 16 23.2 0.0**
comp=Z,42nm,0.9s,baz=109,slow=2.9,SNR=82
034A Hebbronville 146.06 24 P **PKPab 09 16 24.8 +1.0**
baz=334,SNR=29
645A Chauvin 146.14 10 P **PKPab 09 16 24.9 +0.9**
baz=349
646A Port Sulphur 146.14 9 P **PKPab 09 16 25.1 +1.1**
baz=350
936A North Padre Is 146.26 21 P **PKPab 09 16 25.4 +0.8**
baz=336
035A Encino 146.40 23 P **PKPab 09 16 25.9 +0.9**
baz=334,SNR=6.4
035Z Hargill 146.84 23 P **PKPab 09 16 27.0 +0.3**
baz=334
MRA San Martin 146.88 209 *e*P **PKPdf 09 16 24.6 +0.9**
AAGR Agrelo 147.73 205 *i* P **PKPbc 09 16 28.9 +0.9**
ARCO CERRO ARCO 147.98 205 *e*P **PKPdf 09 16 26.6 +1.0**
ASAL Salagasta 148.16 205 *e*P **PKPdf 09 16 26.6 +0.8**
RTCV Cerro Valdivia 148.66 206 *e*P **PKPdf 09 16 27.3 +0.7**
ROC1 El Roble 148.68 202 *e*PKPdf **PKPdf 09 16 27.9 +1.0**
AUSP Uspallata 148.71 205 *e*P **PKPdf 09 16 28.1 +1.1**
RTLS Leoncito 149.04 205 *e*P **PKPdf 09 16 28.8 +1.3**
RTLL Cerro Villicun 149.08 207 *e*P **PKPdf 09 16 28.0 +0.7**
AVFE Valle Fertil 149.16 209 *e*P **PKPdf 09 16 28.5 +1.0**
AMOG MOGNA 149.42 207 *e*P **PKPdf 09 16 29.0 +1.1**
CYA Choya 150.08 214 *e*P **PKPdf 09 16 29.7 +0.7**
LZG Guadaloupe-1 150.10 313 *e*P **PKPbc 09 16 35.5 +1.2**
BBL Barber's Block 150.26 311 *e*P **PKPbc 09 16 36.8 +2.1**
FDF Fort de France 150.51 310 PFAKE 09 16 40.0 -2.0
FDF LR LR
comp=Z,318nm,20.0s
AGUA GUANDACOL 150.63 209 *e*P **PKPdf 09 16 31.1 +1.2**
AHML Horco Molle 151.07 217 *e*P **PKPdf 09 16 31.2 +0.6**
AHML *e*P **PKPdf 09 16 31.3 +0.8**
VCA Vinchina 151.11 210 *e*P **PKPdf 09 16 32.1 +1.4**
HUMP Col San Antoni 151.49 321 *e*PKPbc **PKPbc 09 16 38.1 +0.6**
SJG San Juan 151.69 322 PFAKE 09 16 40.0 +2.1
SJG LR LR
comp=Z,251nm,20.0s
FSA Cafayete 151.95 217 *e*P **PKPdf 09 16 32.8 +0.7**
LCO Las Campanas 152.05 206 *e*PKPbc **PKPbc 09 16 38.5 -0.4**
LCO LR LR
comp=Z,388nm,22.0s
HJA Humahuaca 153.67 222 *e*P **PKPdf 09 16 37.1 +2.2**
SDDR Presa de Saban 153.83 331 *e*PKPbc **PKPbc 09 16 45.2 +2.5**
SDDR LR LR
comp=Z,297nm,20.0s
SIV San Ignacio 154.35 241 PKPbc **PKPbc 09 16 43.2 -0.7**
comp=Z,2.6nm,0.6s,baz=124,slow=5.9,SNR=6.0
SIV PKPab **PKPab 09 16 58.8 +0.6**
comp=Z,4.5nm,0.7s,baz=123,slow=7.6,SNR=9.4
YJA Yavi 154.44 223 *e*P **PKPdf 09 16 38.1 +2.0**
TEIG Tepich 155.56 9 PFAKE 09 16 50.0 -13
TEIG LR LR
comp=Z,167nm,19.0s
PTGA Pitinga 155.57 277 PKPab **PKPab 09 17 03.9 +0.4**
comp=Z,12nm,0.8s,baz=82,slow=3.8,SNR=11
LVC Limon Verde 156.33 217 PKP **PKPdf 09 16 39.9 +1.4**
comp=Z,20nm,1.0s,baz=337,slow=9.7,SNR=3.6
LVC PKPab **PKPab 09 17 07.2 +0.5**
comp=Z,56nm,0.9s,baz=148,slow=2.4,SNR=8.2
LVC Limon Verde 156.33 217 PKP **PKPdf 09 16 39.9 +1.4**
LVC PKPab **PKPab 09 17 07.2 +0.5**
LVC LR LR
comp=Z,175nm,19.0s
MTDJ Mount Denham 156.92 344 PFAKE 09 16 50.0 +11
MTDJ LR LR
comp=Z,215nm,20.0s
CCIG Comitan 158.34 21 *e*PKPab **PKPab 09 17 15.4 +0.3**
SAML Samuel 158.56 256 *e*PKPdf **PKPdf 09 16 41.9 +0.8**
SAML *e*PKPab **PKPab 09 17 16.9 +0.6**
SAML LR LR
comp=Z,387nm,21.0s
LPAZ La Paz 160.06 231 *e*P **PKPdf 09 16 44.0 +0.5**
LPAZ La Paz 160.06 231 PKP **PKPdf 09 16 44.2 +0.7**
comp=Z,6.6nm,0.9s,baz=142,slow=3.2,SNR=23
LPAZ PKPab **PKPab 09 17 24.9 +1.5**
comp=Z,18nm,0.8s,baz=118,slow=5.0,SNR=23
LPAZ pPKPab **pPKPab 09 17 40.8 +0.7**
comp=Z,7.4nm,0.6s,baz=53,slow=5.4,SNR=3.4
SDV Santo Domingo 161.35 314 PKPab **PKPab 09 17 26.9 -1.7**
comp=Z,6.1nm,0.4s,baz=59,slow=6.0,SNR=4.9
SDV pPKPab **pPKPab 09 17 43.4 -1.9**
comp=Z,20nm,0.9s,baz=28,slow=2.8,SNR=2.9
SDV Santo Domingo 161.35 314 *e*PKPab **PKPab 09 17 29.5 +0.9**
SDV pPKPab **pPKPab 09 17 43.4 -1.9**
SDV LR LR
comp=Z,262nm,21.0s
TGUH Tegucigalpa,Un 161.77 10 *e*PKPab **PKPab 09 17 30.5 +0.7**
MOTC Monteria, Cord 164.69 326 *e*P **PKPdf 09 16 49.3 +1.8**
RUSC La Rusia 165.15 312 *e*P **PKPdf 09 16 47.2 -1.3**
JTS JuntasAbangare 165.75 3 PFAKE 09 17 00.0 +12
JTS LR LR
comp=Z,557nm,22.0s
BCIP Isla Barro Col 166.18 342 PFAKE 09 17 00.0 +11
BCIP LR LR
comp=Z,279nm,19.0s
HELC Santa Helena 166.65 320 *e*P **PKPab 09 17 54.2 +2.2**
NORC Norcasia 166.67 316 *e*P **PKPdf 09 16 45.6 -3.6**
ROSC El Rosal 166.76 312 PKP **PKPdf 09 16 50.3 +0.6**
comp=Z,6.1nm,0.9s,baz=337,slow=6.8,SNR=5.8
ROSC El Rosal 166.76 312 *e*PKPdf **PKPdf 09 16 49.7 0.0**
GUYC Guyana, Colomb 167.27 316 *e*P **PKPab 09 17 55.0 +0.1**
SJAC San Juan de Ar 167.44 305 *e*P **PKPab 09 17 55.1 -0.3**
NNA Nana 169.26 222 PKP **PKPdf 09 16 51.3 +0.4**
comp=Z,6.1nm,0.4s,baz=19,slow=6.6,SNR=4.4
NNA Nana 169.26 222 PKIKP **PKPdf 09 16 51.3 +0.4**
NNA pmax pmax
comp=Z,4.0nm,0.3s
NNA Nana 169.26 222 PKP **PKPdf 09 16 51.3 +0.4**
NNA LR LR
comp=Z,200nm,19.0s
OTAV Otavalo 172.86 306 *e*PKPdf **PKPdf 09 16 53.3 0.0**
OTAV LR LR
comp=Z,215nm,19.0s
OTAV Otavalo 172.86 306 *e*P **PKPdf 09 16 50.9 -2.4**

IDC 29 09:07:21.8±3.8, 53.68N×90.59E, h0km, mb1 3.7/3, mb1mx3.4/71, mbtmp3.7/3, ML3.6/2, Error ellipse: s-maj=36.4km s-min=24.6km az=52.0, Southwestern Siberia

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time	Res
								h m s	ISC
I46RU	**ZALESOVO INFRA**	**3.43**	**277**	*i*				09 29 55.0	
	baz=90,slow=325,SNR=28								
ZALV	**Zalesovo Beam**	**3.44**	**277**	Pn		Pn		09 08 17.3	+0.8
	0.7nm,0.3s,baz=96,slow=16,SNR=2.5								
ZALV				Pg		Pb		09 08 22.6	-0.9
	5.2nm,0.3s,baz=92,slow=15,SNR=10								
ZALV				Sn		Sn		09 08 53.0	-4.9
	3.4nm,0.3s,baz=105,slow=17,SNR=3.6								
ZALV				Lg		Lg		09 09 10.2	
	8.5nm,0.3s,baz=90,slow=28,SNR=9.1								
KURBB	**Kurchatov Arra**	**8.03**	**252**	Pn		Pn		09 09 19.8	+0.3
	0.7nm,0.3s,baz=66,slow=15,SNR=7.2								
KURBB				Lg		Lg		09 11 39.5	
	0.2nm,0.3s,baz=66,slow=32,SNR=6.6								
MKAR	**Makanchi Array**	**8.70**	**221**	Pn		Pn		09 09 29.5	+0.6
	0.9nm,0.3s,baz=35,slow=17,SNR=5.9								
MKAR				Sn		Sn		09 11 01.6	-6.1
	0.1nm,0.3s,baz=51,slow=28,SNR=2.3								
MKAR				Lg		Lg		09 11 55.4	
	0.3nm,0.3s,baz=42,slow=30,SNR=5.5								

ISCJB ***29*** *09:07:22.2±3.4, 37.2N±0.1×27.9E±0.2, h0km, Error ellipse: s-maj=29.7km s-min=7.6km az=39.2*
DDA ***29*** *09:07:24.2, 37.33N×27.57E, h7km, Md2.3, Suspected Mining explosion.*

ISC 29 09:07:23.5±6.0, 37.2N±0.5×27.7E±0.7, h0km, n3, σ0=87/5, Turkey

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time	Res
								h m s	ISC
BDRM	**Kayabasi**	**0.27**	**233**	*i*	P		**Pg**	**09 07 29.0**	**+0.4**
BDRM				*i*	S		**Sb**	**09 07 35.5**	**-0.9**
AYDN	**Tasoluk**	**0.45**	**17**	*i*	P		**Pg**	**09 07 32.0**	**-0.2**
AYDN				*i*	S		**Sg**	**09 07 38.7**	**+0.7**
AYDB	**Zeytinkoy-Aydi**	**0.73**	**11**	*e*	P		**Pb**	**09 07 39.2**	**0.0**

ISCJB ***29*** *09:13:24.2±0.4, 28.13N±0.08×46.28W±0.08, h10km, mb4.2/29, MS3.2/3, Error ellipse: s-maj=12.2km s-min=10.2km az=160.2*
IDC ***29*** *09:13:24.4±0.6, 28.15N×46.30W, h0km, mb4.1/21, mb1 4.3/21, mb1mx4.1/63, mbtmp4.1/21, MS3.3/3, Ms1 3.2/3, ms1mx2.9/43, Error ellipse: s-maj=17.3km s-min=14.1km az=129.0*
NEIC ***29*** *09:13:26.0±0.3, 28.14N×46.28W, h10km, mb4.5/9, Error ellipse: s-maj=8.4km s-min=7.2km az=164.0*

ISC 29 09:13:25.8±0.6, 28.2N±0.1×46.3W±0.1, h10km, n43, σ0=74/35, mb4.3/30, MS3.0/3, Northern Mid-Atlantic Ridge

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time	Res
								h m s	ISC
SJG	**San Juan**	**20.79**	**246**	LR		LR		09 24 35.2	
	comp=Z,69nm,21.5s,baz=74,slow=32								
LONY	**Lake Ozonia**	**27.89**	**314**	*e*SKPbc		**P**		**09 19 14.5**	**-1.4**
	47nm,0.7s								
PTGA	**Pitinga**	**31.57**	**207**	P		**P**		**09 19 48.6**	**-0.1**
	6.6nm,0.8s,baz=39,slow=9.5,SNR=4.2								
ULM	**Lac du Bonnet**	**43.33**	**315**	P		**P**		**09 21 27.2**	**-0.8**
	2.6nm,0.7s,baz=105,slow=8.2,SNR=3.5								
TORD	**Torodi Ar. Bea**	**47.02**	**98**	P		**P**		**09 21 57.5**	**-0.2**
	3.6nm,0.9s,baz=301,slow=7.1,SNR=16								
H10N2	**ASCENSION HYDR**	**47.16**	**135**	T		T		10 12 19.5	
	baz=320,slow=75,SNR=20								
H10N3	**ASCENSION HYDR**	**47.16**	**135**	T		T		10 12 19.6	
	baz=320,slow=75,SNR=20								
H10N1	**ASCENSION HYDR**	**47.17**	**135**	T		T		10 12 20.2	
	baz=320,slow=75,SNR=18								
H10S1	**ASCENSION HYDR**	**47.91**	**136**	T		T		10 13 13.8	
	baz=321,slow=75,SNR=12								
H10S3	**ASCENSION HYDR**	**47.91**	**136**	T		T		10 13 13.0	
	baz=321,slow=75,SNR=14								
H10S2	**ASCENSION HYDR**	**47.93**	**136**	T		T		10 13 12.9	
	baz=321,slow=75,SNR=10								
LPAZ	**La Paz**	**48.98**	**208**	P		**P**		**09 22 13.6**	**+0.2**
	3.8nm,0.6s,baz=29,slow=7.0,SNR=12								
TXAR	**Lajitas Array**	**49.87**	**286**	P		**P**		**09 22 20.1**	**+0.4**
	1.4nm,0.8s,baz=97,slow=8.1,SNR=5.1								
TXAR				LR		LR		09 42 26.3	
	comp=Z,12nm,21.1s,baz=0.0,slow=35								
GERES	**GERESS Array B**	**49.91**	**48**	P		**P**		**09 22 18.6**	**-1.1**
	0.8nm,0.7s,baz=247,slow=6.3,SNR=3.6								
NB2	**NORSAR Subarra**	**50.15**	**32**	P		**P**		**09 22 21.6**	**+0.3**
	comp=Z,0.6nm,0.7s,baz=254,slow=7.4								
NOA	**NORSAR Array B**	**50.15**	**32**	P		**P**		**09 22 21.6**	**+0.3**
	comp=Z,1.7nm,0.8s,baz=257,slow=7.7,SNR=6.2								
HFS	**Hagfors**	**51.15**	**34**	P		**P**		**09 22 29.2**	**+0.4**
	baz=263,slow=10.0								
BW06	**Boulder Array**	**52.41**	**304**	*e*P		**P**		**09 22 38.7**	**-0.1**
	comp=Z,6.0nm,0.9s								
PDAR	**Pinedale Array**	**52.41**	**304**	P		**P**		**09 22 39.2**	**+0.5**
	comp=Z,2.7nm,0.7s,baz=82,slow=7.4,SNR=17								
RES	**Resolute Bay**	**52.58**	**345**	P		**P**		**09 22 39.3**	**+0.1**
	comp=Z,1.1nm,1.0s,baz=165,slow=4.7,SNR=3.8								
LKWY	**Lake**	**52.85**	**306**	*e*P		**P**		**09 22 43.3**	**+1.2**
LOHW	**Long Hollow**	**53.09**	**305**	*e*P		**P**		**09 22 44.6**	**+0.9**
	comp=Z,3.0nm,0.8s								
IMW	**Indian Meadow**	**53.30**	**305**	*e*P		**P**		**09 22 46.5**	**+1.1**
	comp=Z,4.5nm,0.9s								
DUG	**Dugway, Tooele**	**55.16**	**301**	*e*P		**P**		**09 23 00.1**	**+1.2**
	comp=Z,4.5nm,0.8s								
CPUP	**Villa Florida**	**55.20**	**192**	P		**P**		**09 22 58.1**	**-0.8**

	comp=Z,3.0nm,1.0s,baz=14,slow=6.2,SNR=3.3							
YKA	**Yellowknife Ar**	**55.45**	**328**	P		**P**	09 22 59.8	**-0.5**
	comp=Z,1.7nm,0.9s,baz=95,slow=7.6,SNR=23							
MFID	**Camas Ranch**	**56.88**	**305**	*e*P		**P**	09 23 12.0	**+1.0**
	comp=Z,3.4nm,0.8s							
NEW	**Newport**	**57.12**	**311**	*e*P		**P**	09 23 12.8	**+0.3**
	comp=Z,6.2nm,1.0s							
FINES	**FINESS Array B**	**57.31**	**33**	P		**P**	09 23 13.8	**+0.2**
	comp=Z,0.8nm,0.4s,baz=238,slow=8.0,SNR=6.6							
ARCES	**ARCESS Array B**	**57.57**	**23**	P		**P**	09 23 15.0	**-0.3**
	comp=Z,2.7nm,1.0s,baz=283,slow=4.5,SNR=3.9							
AKASG	**Malin Array Be**	**59.83**	**45**	P		**P**	09 23 30.6	**-0.7**
	comp=Z,1.6nm,0.6s,baz=276,slow=5.9,SNR=6.5							
YBH	**Yreka Blue Hor**	**62.19**	**305**	LR		LR	09 52 08.0	
	comp=Z,56nm,18.5s,baz=44,slow=37							
INK	**Inuvik**	**63.16**	**335**	P		**P**	09 23 52.9	**-0.6**
	comp=Z,2.6nm,0.9s,baz=70,slow=6.4,SNR=10							
BRTR	**Keskin Array B**	**65.31**	**57**	P		**P**	09 24 08.3	**-0.1**
	comp=Z,0.7nm,0.8s,baz=286,slow=5.8,SNR=4.2							
ILAR	**Eielson Array**	**69.24**	**333**	P		**P**	09 24 33.0	**+0.3**
	comp=Z,2.7nm,0.8s,baz=78,slow=4.9,SNR=26							
BMRM	**Bremner River**	**69.67**	**329**	*e*P		**P**	09 24 35.6	**+0.1**
	comp=Z,3.5nm,0.6s							
KBZ	**Khabaz**	**70.59**	**50**	P		**P**	09 24 42.2	**+0.9**
	comp=Z,1.3nm,0.5s,baz=272,slow=3.4,SNR=3.6							
PLCA	**Paso Flores**	**72.14**	**199**	P		**P**	09 24 50.9	**+0.3**
	comp=Z,1.3nm,0.6s,baz=34,slow=8.6,SNR=6.4							
AKTO	**Aktyubinsk**	**77.22**	**39**	P		**P**	09 25 20.9	**+0.8**
	baz=303,slow=7.1							
ABKAR	**Akbulak array**	**78.89**	**40**	*e*P		**P**	09 25 30.2	**+0.9**
	comp=Z,1.1nm,0.8s							
BVAR	**Borovoye Array**	**82.27**	**33**	P		**P**	09 25 48.7	**+1.3**
	comp=Z,1.9nm,0.7s,baz=308,slow=4.9,SNR=10.0							
KURK	**Kurchatov**	**87.65**	**31**	P		**P**	09 26 15.2	**+0.7**
KURBB	**Kurchatov Arra**	**87.67**	**32**	P		**P**	09 26 15.2	**+0.6**
	comp=Z,0.6nm,0.8s,baz=316,slow=5.1,SNR=6.1							

IDC 29 09:16:15.1±1.6, 2°99N×126°84E, h0km, mb3.6/5, mb1 3.8/5, mb1mx3.5/61, mbtmp3.6/5, MS3.4/1, Ms1 3.4/1, ms1mx2.8/51, Error ellipse: s-maj=101.0km s-min=22.9km az=69.0, Northern Molucca Sea

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**20.99**	**183**	P		P	09 21 00.5	+0.3
	1.7nm,1.0s,baz=359,slow=11,SNR=2.0							
WRA	**Warramunga Arr**	**23.95**	**162**	P		P	09 21 30.7	-0.5
	1.7nm,0.8s,baz=340,slow=10,SNR=12							
ASAR	**Alice Springs**	**27.38**	**166**	P		P	09 22 02.6	+0.2
	0.3nm,0.6s,baz=347,slow=7.3,SNR=4.1							
JCJ	**Chichijima**	**28.11**	**30**	LR		LR	09 32 25.2	
	comp=Z,85nm,20.0s,baz=162,slow=34							
STKA	**Stephens Creek**	**37.41**	**159**	P		P	09 23 30.1	+0.2
	1.4nm,0.8s,baz=331,slow=10,SNR=3.1							
KURBB	**Kurchatov Arra**	**62.42**	**328**	P		P	09 26 39.7	-0.1
	0.6nm,0.7s,baz=130,slow=5.5,SNR=6.5							

IDC 29 09:21:33.9±1.7, 31°55N×142°58E, h0km, mb3.9/7, mb1 3.9/13, mb1mx3.7/68, mbtmp3.9/13, ML3.6/6, Error ellipse: s-maj=56.6km s-min=16.1km az=70.0
NEIC 29 09:21:35.4±0.6, 31°58N×142°62E, h10km, mb4.3/6, Error ellipse: s-maj=18.0km s-min=6.8km az=68.0
JMA 29 09:21:36.6±0.3, 31°59N×142°42E, h72km, M3.9
ISCJB 29 09:21:38.4±0.6, 31°67N±0°05×142°4E±0°1, h49km, mb4.1/13, Error ellipse: s-maj=13.8km s-min=4.7km az=155.5

ISC 29 09:21:40.7±0.8, 31°55N±0°06×142°3E±0°1, h49km, n35, σ2s25/50, mb4.2/13, Southeast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
JHCJ	**Hachijojimakas**	**2.62**	**306**	P		Pn	09 22 17.9	**-2.6**
JHJ2	**Mitsune**	**2.63**	**307**	P		Pn	09 22 18.0	**-2.6**
JHJ2				*e*S		Sn	09 22 49.8	**-1.5**
JHJ2	**Mitsune**	**2.63**	**307**	*e*Pn		Pn	09 22 18.1	**-2.9**
JHJ2				*e*Sn		Sn	09 22 51.5	**+0.2**
JHJ	**Hachijo jima 2**	**2.66**	**307**	Pn		Pn	09 22 18.1	**-2.9**
	29nm,0.3s,baz=86,slow=19,SNR=21							
JHJ				Sn		Sn	09 22 48.9	**-3.0**
	29nm,0.3s,baz=244,slow=22,SNR=6.6							
BSO1	**Boso 1**	**3.29**	**340**	P		Pn	09 22 27.1	**-2.1**
BSO3	**Boso 3**	**3.58**	**335**	P		Pn	09 22 31.6	**-1.8**
BSO4	**Boso 4**	**3.81**	**335**	P		Pn	09 22 34.4	**-2.3**
CBIJ	**Chichi jima**	**4.44**	**182**	P		Pn	09 22 43.2	**-2.3**
CBIJ				S		Sn	09 23 31.8	**-4.2**
CBIJ	**Chichi jima**	**4.44**	**182**	Pn		Pn	09 22 43.5	**-2.0**
CBIJ				Sn		Sn	09 23 30.6	**-5.3**
JCJ	**Chichijima**	**4.44**	**182**	Pn		Pn	09 22 43.5	**-2.0**
	9.8nm,0.3s,baz=5.8,slow=20,SNR=11							
JCJ				Sn		Sn	09 23 30.6	**-5.4**
	11nm,0.3s,baz=286,slow=20,SNR=3.8							
JOD2	**Odawara 2**	**4.58**	**325**	P		Pn	09 22 45.0	**-2.4**
JOD2				*e*S		Sn	09 23 39.3	**-0.1**
JHU	**Hanno**	**4.98**	**330**	P		Pn	09 22 50.6	**-2.3**
JHU				S		Sn	09 23 45.5	**-3.6**
JRY	**Ryogami san**	**5.29**	**328**	P		Pn	09 22 55.7	**-1.4**
JRY				S		Sn	09 23 55.3	**-1.4**
JAG	**Ashikaga**	**5.41**	**335**	P		Pn	09 22 56.6	**-2.2**
JAG				S		Sn	09 23 56.4	**-3.4**
MJAR	**Matsushiro Arr**	**6.03**	**327**	Pn		Pn	09 23 05.7	**-1.6**
	2.6nm,0.3s,baz=158,slow=12,SNR=19							
MJAR				Sn		Sn	09 24 11.2	**-3.9**
	baz=158,slow=14,SNR=2.7							
MAJO	**Matsushiro**	**6.04**	**327**	*e*Pn		Pn	09 23 06.1	**-1.3**
	9.3nm,0.4s							
MAJO				*e*Sn		Sn	09 24 14.5	**-0.7**
MAT	**Matsushiro**	**6.04**	**327**	P		Pn	09 23 05.6	**-1.8**
MAT				S		Sn	09 24 12.7	**-2.4**
JNU	**Nakatsue**	**9.81**	**282**	Pn		Pn	09 24 00.8	**+1.7**
	0.3nm,0.3s,baz=112,slow=10,SNR=3.5							
KSRS	**Korea Array**	**13.25**	**300**	Pn		Pn	09 24 47.8	**+1.8**
	0.1nm,0.3s,baz=111,slow=12,SNR=6.0							
KSAR	**Wonju Array Be**	**13.27**	**300**	Pn		Pn	09 24 47.8	**+1.4**
KLR	**Kul'dur**	**19.37**	**339**	P		Pn	09 26 03.0	**-0.6**
	0.2nm,0.3s,baz=170,slow=8.9,SNR=7.0							
HIA	**Hailar**	**24.52**	**323**	*e*P		P	09 26 56.9	**+1.5**
	7.3nm,0.3s							
ZALV	**Zalesovo Beam**	**46.28**	**316**	P		P	09 30 02.3	**+1.2**
	1.2nm,0.4s,baz=111,slow=7.9,SNR=2.9							
MKAR	**Makanchi Array**	**47.83**	**307**	P		P	09 30 14.3	**+0.9**
	0.8nm,0.6s,baz=89,slow=10,SNR=5.6							
KURK	**Kurchatov**	**50.03**	**312**	*e*P		P	09 30 30.9	**+0.8**
	5.3nm,0.6s							
KURBB	**Kurchatov Arra**	**50.09**	**312**	P		P	09 30 31.4	**+0.8**
	2.4nm,0.7s,baz=88,slow=7.4,SNR=29							
WRAB	**Tennant Creek**	**51.76**	**190**	*e*P		P	09 30 44.0	**+0.7**
	2.3nm,0.8s							
WRA	**Warramunga Arr**	**51.77**	**190**	P		P	09 30 43.2	**-0.2**
	1.9nm,0.7s,baz=6.2,slow=7.7,SNR=27							
FITZ	**Fitzroy Crossi**	**51.90**	**200**	*e*P		P	09 30 45.4	**+1.0**
	1.6nm,0.7s							
BVAR	**Borovoye Array**	**54.91**	**315**	P		P	09 31 07.0	**+0.8**
	0.7nm,0.6s,baz=91,slow=6.1,SNR=3.4							
ASAR	**Alice Springs**	**55.49**	**189**	P		P	09 31 10.9	**+0.2**
	0.3nm,0.5s,baz=360,slow=5.7,SNR=9.5							
KKAR	**Karatay Array**	**56.65**	**304**	*e*P		P	09 31 20.3	**+1.5**
	2.4nm,0.9s							
ABKAR	**Akbulak array**	**62.12**	**313**	*e*P		P	09 31 57.4	**+0.9**
	0.6nm,0.4s							
BRTR	**Keskin Array B**	**83.08**	**313**	P		P	09 34 03.1	**+1.8**
	0.2nm,0.5s,baz=57,slow=5.3,SNR=3.8							
LVC	**Limon Verde**	**150.88**	**80**	*e*PKPdf		**PKPdf**	09 41 22.6	**-0.4**
LVC				*e*PKPbc		**PKPbc**	09 41 28.2	**-0.5**
LVC				*e*PKPab		**PKPab**	09 41 37.4	**+1.2**

IDC 29 09:23:41.9±1.3, 52°28N×165°31W, h0km, mb3.9/14, mb1 4.0/15, mb1mx3.8/72, mbtmp3.9/15, ML3.3/1, MS4.0/3, Ms1 4.0/3, ms1mx3.0/67, Error ellipse: s-maj=33.2km s-min=16.1km az=8.0
NEIC 29 09:23:43.4±0.8, 52°22N×165°40W, h10km, mb3.8/3, ML3.7(AEIC), Error ellipse: s-maj=15.7km s-min=9.9km az=183.0
ISCJB 29 09:23:44.7±0.6, 52°17N±0°06×165°35W±0°09, h33km, mb3.9/15, MS4.1/3, Error ellipse: s-maj=8.9km s-min=8.0km az=35.1

ISC 29 09:23:46.6±0.9, 52°20N±0°10×165°38W±0°07, h35km, n33, σ1s25/28, mb4.0/15, MS4.2/3, South of Aleutian Islands

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
UNV	**Unalaska Valle**	**1.79**	**338**	*e*Pn		**Pn**	**09 24 13.4**	**-1.6**
UNV				*e*Sn		**Sn**	**09 24 36.9**	**+0.5**
AKUT	**Akutan**	**1.96**	**353**	*e*Pn		**Pn**	**09 24 15.9**	**-1.3**
AKUT				*e*Sn		**Sn**	**09 24 41.2**	**+0.6**
SDPT	**Sand Point**	**4.29**	**41**	*e*Pn		**Pn**	**09 24 49.1**	**-0.3**
SDPT				*e*Sn		**Sn**	**09 25 37.7**	**-0.4**
KDAK	**Kodiak Island**	**9.23**	**48**	Pn		Pn	09 26 09.9	+13
	1.1nm,0.3s,baz=226,slow=6.1,SNR=21							
KDAK				Sn		Sn	09 27 46.8	+7.2
	0.3nm,0.3s,baz=349,slow=23,SNR=6.8							
ILAR	**Eielson Array**	**15.79**	**30**	Pn		**Pn**	**09 27 22.1**	**-3.9**
	0.1nm,0.3s,baz=215,slow=12,SNR=3.2							
COLD	**Coldfoot**	**16.82**	**21**	*e*Pn		**Pn**	**09 27 39.2**	**+0.2**
	3.6nm,0.8s							
COLD				*e*S		**S**	**09 30 57.2**	**+2.8**
EGAK	**Eagle**	**17.70**	**35**	*e*P		**P**	**09 27 51.8**	**+1.1**
	4.1nm,0.6s							
DLBC	**Dease Lake**	**20.88**	**59**	P		**P**	**09 28 26.9**	**+1.5**
	4.7nm,0.8s,baz=260,slow=9.0,SNR=2.1							
INK	**Inuvik**	**22.18**	**31**	P		**P**	**09 28 38.3**	**-0.9**
	8.0nm,0.9s,baz=245,slow=9.2,SNR=26							
PETK	**Petropavlovsk-**	**22.26**	**287**	P		**P**	**09 28 39.7**	**-0.6**
	3.1nm,0.7s,baz=83,slow=14,SNR=9.8							
SEY	**Seymchan**	**24.59**	**312**	P		**P**	**09 29 04.5**	**+1.4**
	1.2nm,0.6s,baz=134,slow=10,SNR=4.5							
YKA	**Yellowknife Ar**	**28.51**	**49**	P		**P**	**09 29 38.5**	**+0.2**
	0.4nm,0.6s,baz=270,slow=7.4,SNR=11							
YKA				PcP		**PcP**	**09 32 48.6**	**-0.4**
	0.4nm,0.7s,baz=281,slow=2.2,SNR=7.2							
WVOR	**Wild Horse Val**	**32.64**	**89**	*e*P		**P**	**09 30 14.8**	**-0.2**
	9.4nm,1.0s							
TIXI	**Tiksi**	**34.15**	**329**	P		**P**	**09 30 27.2**	**-0.6**
	0.6nm,0.3s,baz=92,slow=5.2,SNR=2.7							
PDAR	**Pinedale Array**	**38.02**	**82**	P		**P**	**09 31 01.7**	**+0.3**
	1.2nm,0.6s,baz=300,slow=4.2,SNR=15							
H11N2	**WAKE ISLAND Hy**	**38.95**	**224**	T		T	10 12 29.7	
	baz=28							
H11N3	**WAKE ISLAND Hy**	**38.95**	**224**	T		T	10 12 29.7	
	baz=28							
H11N1	**WAKE ISLAND Hy**	**38.96**	**224**	T		T	10 12 31.1	
	baz=28							
PFO	**Pinyon Flats O**	**39.49**	**98**	LR		LR	09 43 55.8	
	comp=Z,59nm,19.8s,baz=338,slow=31							
H11S1	**WAKE ISLAND Hy**	**40.12**	**224**	T		T	10 13 54.9	
	baz=22							
H11S2	**WAKE ISLAND Hy**	**40.13**	**224**	T		T	10 13 56.0	
	baz=22,slow=74							
H11S3	**WAKE ISLAND Hy**	**40.13**	**224**	T		T	10 13 58.4	
	baz=22,slow=74							
TXAR	**Lajitas Array**	**50.29**	**92**	P		**P**	**09 32 39.4**	**-0.3**
	0.7nm,0.5s,baz=302,slow=6.1,SNR=25							
KURK	**Kurchatov**	**64.10**	**321**	P		**P**	**09 34 17.5**	**+0.8**
KURBB	**Kurchatov Arra**	**64.21**	**321**	P		**P**	**09 34 17.5**	**+0.1**
	0.3nm,0.4s,baz=45,slow=7.7,SNR=3.7							
BVAR	**Borovoye Array**	**65.23**	**327**	P		**P**	**09 34 24.6**	**+0.5**
	0.9nm,0.5s,baz=43,slow=6.7,SNR=7.5							
MKAR	**Makanchi Array**	**65.67**	**316**	P		**P**	**09 34 26.9**	**-0.2**
	0.3nm,0.4s,baz=44,slow=7.1,SNR=4.0							
HFS	**Hagfors**	**68.02**	**1**	P		**P**	**09 34 42.0**	**+0.2**
	0.7nm,0.3s,baz=29,slow=3.3,SNR=4.9							
AKTO	**Aktyubinsk**	**71.34**	**332**	P		**P**	**09 35 03.6**	**+1.2**
	1.9nm,0.7s,baz=19,slow=7.7,SNR=6.1							
AKASG	**Malin Array Be**	**76.73**	**351**	P		**P**	**09 35 33.3**	**-0.5**
	1.1nm,0.5s,baz=15,slow=5.8,SNR=4.1							
BRTR	**Keskin Array B**	**86.97**	**345**	P		**P**	**09 36 29.0**	**+0.9**
	0.6nm,0.7s,baz=2.5,slow=5.3,SNR=4.0							
LEM	**Lembang**	**95.50**	**260**	LR		LR	10 12 39.2	
	comp=Z,86nm,21.6s,baz=160,slow=31							
PTGA	**Pitinga**	**99.99**	**78**	LR		LR	10 24 05.9	
	comp=Z,201nm,19.1s,baz=102,slow=36							

NEIC 29 09:30:33.7, 37°70S×177°23E, h122km, MG4.0(WEL), After WEL.

WEL 29 09:30:33.7±0.2, 37°68S×177°23E, h122km±1km, ML4.0/19, 15C-22D, Error ellipse: s-maj=1.3km s-min=0.9km az=0.0, Off east coast of North Island

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
HAZ	**Te Kaha**	**0.44**	**99**	⇑Pn		Pn	09 30 51.0	-0.4
HAZ				SN		Sn	09 31 04.3	-0.6
MARZ	**Manawahe**	**0.53**	**236**	Pn		Pn	09 30 52.2	+0.1
OPRZ	**Ohinepanea**	**0.56**	**253**	⇑PN		Pn	09 30 52.0	-0.1
OPRZ				SN		Sn	09 31 06.2	+0.1
OPRZ	**Ohinepanea**	**0.56**	**253**	Pn		Pn	09 30 52.0	-0.1
EDRZ	**Edgecumbe**	**0.57**	**222**	PN		Pn	09 30 52.6	+0.2
EDRZ	**Edgecumbe**	**0.57**	**222**	Pn		Pn	09 30 52.6	+0.2
URZ	**Urewera**	**0.58**	**189**	⇓PN		Pn	09 30 52.1	-0.2
URZ				SN		Sn	09 31 06.8	+0.3
URZ				AML		AML	09 31 07.9	
URZ	**Urewera**	**0.58**	**189**	Pn		Pn	09 30 52.1	-0.3
MWZ	**Matawai**	**0.69**	**160**	⇓PN		Pn	09 30 53.1	-0.1
MWZ				SN		Sn	09 31 08.4	+0.5
MWZ				AML		AML	09 31 09.5	
MWZ	**Matawai**	**0.69**	**160**	Pn		Pn	09 30 53.1	-0.1
PKGZ	**Pakihiroa**	**0.70**	**107**	⇑PN		Pn	09 30 53.3	0.0
TGRZ	**Tauranga**	**0.77**	**266**	Pn		Pn	09 30 53.8	+0.1
TWGZ	**Tauwhareparae**	**0.77**	**130**	⇓PN		Pn	09 30 54.1	+0.3
TWGZ	**Tauwhareparae**	**0.77**	**130**	Pn		Pn	09 30 54.1	+0.3
TARZ	**Mount Tarawera**	**0.79**	**226**	Pn		Pn	09 30 54.5	+0.4
RAGZ	**Rawiri**	**0.82**	**170**	PN		Pn	09 30 54.4	0.0
RAGZ	**Rawiri**	**0.82**	**170**	Pn		Pn	09 30 54.4	0.0
MXZ	**Matakaoa Point**	**0.86**	**82**	⇑PN		Pn	09 30 54.3	-0.2
MXZ				SN		Sn	09 31 10.5	+0.1
MXZ				AML		AML	09 31 11.1	
MXZ	**Matakaoa Point**	**0.86**	**82**	Pn		Pn	09 30 54.3	-0.2
RRRZ	**Republican Roa**	**0.86**	**221**	⇓PN		Pn	09 30 54.8	+0.1
RRRZ	**Republican Roa**	**0.86**	**221**	Pn		Pn	09 30 54.8	+0.1
MUGZ	**Murupara**	**0.87**	**204**	⇓PN		Pn	09 30 54.6	-0.1
TKGZ	**Te Karaka**	**0.90**	**147**	⇓PN		Pn	09 30 54.8	-0.1
TKGZ	**Te Karaka**	**0.90**	**147**	Pn		Pn	09 30 54.8	-0.1
PUZ	**Puketiti**	**0.90**	**116**	⇑PN		Pn	09 30 54.7	-0.2
PUZ				AML		AML	09 31 10.8	
PUZ				AML		AML	09 31 13.3	
PUZ	**Puketiti**	**0.90**	**116**	Pn		Pn	09 30 54.7	-0.2
WMGZ	**Waiomatatini S**	**0.95**	**99**	⇑PN		Pn	09 30 55.3	-0.1
WMGZ	**Waiomatatini S**	**0.95**	**99**	Pn		Pn	09 30 55.3	0.0
HRRZ	**Handcock Road**	**1.03**	**226**	PN		Pn	09 30 56.5	+0.3
HRRZ	**Handcock Road**	**1.03**	**226**	Pn		Pn	09 30 56.5	+0.3
PRRZ	**Plateau Road**	**1.05**	**219**	⇓PN		Pn	09 30 56.4	+0.1
PRRZ	**Plateau Road**	**1.05**	**219**	Pn		Pn	09 30 56.4	+0.1
SNGZ	**Shannon Statio**	**1.10**	**176**	⇓PN		Pn	09 30 56.9	0.0
SNGZ	**Shannon Statio**	**1.10**	**176**	Pn		Pn	09 30 56.9	0.0
RIGZ	**Rimuhau**	**1.10**	**158**	PN		Pn	09 30 57.1	+0.2
CNGZ	**Carnagh Statio**	**1.11**	**136**	PN		Pn	09 30 57.4	+0.5
CNGZ	**Carnagh Statio**	**1.11**	**136**	Pn		Pn	09 30 57.4	+0.5
ALRZ	**Allen Road**	**1.12**	**218**	⇓PN		Pn	09 30 57.2	+0.1
ALRZ	**Allen Road**	**1.12**	**218**	Pn		Pn	09 30 57.2	+0.1
RAHZ	**Arahi**	**1.23**	**185**	⇓PN		Pn	09 30 58.5	+0.2
RAHZ	**Arahi**	**1.23**	**185**	Pn		Pn	09 30 58.5	+0.2
MRHZ	**Matea Rd**	**1.31**	**209**	⇓PN		Pn	09 30 58.8	-0.4
PRGZ	**Paritu Road**	**1.34**	**158**	PN		Pn	09 30 59.3	-0.2
PRGZ	**Paritu Road**	**1.34**	**158**	Pn		Pn	09 30 59.3	-0.2
TOZ	**Tahuroa Road**	**1.37**	**268**	⇑PN		Pn	09 31 00.0	+0.3
TOZ	**Tahuroa Road**	**1.37**	**268**	Pn		Pn	09 31 00.0	+0.3
KNZ	**Kokohu**	**1.38**	**165**	⇓PN		Pn	09 30 59.6	-0.2
KNZ				AML		AML	09 30 60.0	
KNZ				AML		AML	09 31 00.5	
KNZ	**Kokohu**	**1.38**	**165**	Pn		Pn	09 30 59.6	-0.2
WHHZ	**Waihua**	**1.39**	**180**	PN		Pn	09 30 59.7	-0.2
NMHZ	**Naumai**	**1.45**	**193**	PN		Pn	09 31 00.8	+0.1
NMHZ	**Naumai**	**1.45**	**193**	Pn		Pn	09 31 00.8	+0.1
TLZ	**Tolley Road**	**1.48**	**244**	PN		Pn	09 31 01.3	+0.3
TLZ	**Tolley Road**	**1.48**	**244**	Pn		Pn	09 31 01.3	+0.3
TLZ				Sn		Sn	09 31 02.5	-19
MHGZ	**Mahia Peninsul**	**1.56**	**160**	⇓PN		Pn	09 31 01.9	0.0
MHGZ	**Mahia Peninsul**	**1.56**	**160**	Pn		Pn	09 31 01.9	0.0
ARHZ	**Aropaonui**	**1.59**	**187**	PN		Pn	09 31 02.1	-0.1
ARHZ	**Aropaoanui**	**1.59**	**187**	Pn		Pn	09 31 02.1	-0.1
BKZ	**Black Stump Fm**	**1.59**	**201**	⇓PN		Pn	09 31 01.6	-0.7
BKZ				AML		AML	09 31 25.1	
BKZ				AML		AML	09 31 29.2	
BKZ	**Black Stump Fm**	**1.59**	**201**	Pn		Pn	09 31 01.6	-0.7
RITZ	**Rihia Road**	**1.68**	**219**	⇑PN		Pn	09 31 03.6	+0.2
RITZ	**Rihia Road**	**1.68**	**219**	Pn		Pn	09 31 03.6	+0.2
MKAZ	**Moumakai**	**1.75**	**289**	⇑PN		Pn	09 31 04.2	+0.1
MKAZ	**Moumakai**	**1.75**	**289**	Pn		Pn	09 31 04.2	+0.1
MCHZ	**McNeill Hill**	**1.81**	**193**	PN		Pn	09 31 04.6	-0.2
MCHZ	**McNeill Hill**	**1.81**	**193**	Pn		Pn	09 31 04.7	-0.2
KWHZ	**Kaweka Forest**	**1.85**	**200**	⇓PN		Pn	09 31 04.7	-0.7
KRVZ	**Karewarewa**	**1.88**	**221**	PN		Pn	09 31 05.9	+0.1
KRVZ	**Karewarewa**	**1.88**	**221**	Pn		Pn	09 31 05.7	-0.2
OTVZ	**Oturere**	**1.92**	**219**	⇓PN		Pn	09 31 06.1	-0.2
OTVZ	**Oturere**	**1.92**	**219**	Pn		Pn	09 31 06.1	-0.2
WTVZ	**West Tongariro**	**1.92**	**222**	PN		Pn	09 31 06.1	-0.3
WTVZ	**West Tongariro**	**1.92**	**222**	Pn		Pn	09 31 06.1	-0.3
NGZ	**Ngauruhoe**	**1.96**	**220**	Pn		Pn	09 31 04.5	-2.3
CKHZ	**Cape Kidnapper**	**1.98**	**183**	⇑PN		Pn	09 31 06.2	-0.6
CKHZ	**Cape Kidnapper**	**1.98**	**183**	Pn		Pn	09 31 06.2	-0.6
TWVZ	**Taurewa**	**1.98**	**225**	PN		Pn	09 31 06.8	-0.2
TWVZ	**Taurewa**	**1.98**	**225**	Pn		Pn	09 31 06.8	-0.2
TUVZ	**Tukino**	**2.01**	**218**	PN		Pn	09 31 06.8	-0.6
TUVZ	**Tukino**	**2.01**	**218**	Pn		Pn	09 31 06.8	-0.6
BHHZ	**Black Hill Sta**	**2.02**	**207**	PN		Pn	09 31 06.4	-1.1
BHHZ	**Black Hill Sta**	**2.02**	**207**	Pn		Pn	09 31 06.4	-1.1
FWVZ	**Far West T-bar**	**2.05**	**219**	PN		Pn	09 31 07.5	-0.5
FWVZ	**Far West T-bar**	**2.05**	**219**	Pn		Pn	09 31 07.5	-0.5
WHVZ	**Whangaehu Hut**	**2.05**	**218**	PN		Pn	09 31 07.3	-0.7
WHVZ	**Whangaehu Hut**	**2.05**	**218**	Pn		Pn	09 31 07.3	-0.7
KRHZ	**Kereru**	**2.07**	**199**	⇓PN		Pn	09 31 06.8	-1.3
MOVZ	**Moawhango**	**2.07**	**214**	⇓PN		Pn	09 31 07.0	-1.2
MOVZ	**Moawhango**	**2.07**	**214**	Pn		Pn	09 31 07.0	-1.2
WNVZ	**Wahianoa**	**2.08**	**217**	⇓PN		Pn	09 31 07.5	-0.8
WNVZ	**Wahianoa**	**2.08**	**217**	Pn		Pn	09 31 07.5	-0.8
KAHZ	**Kahuranaki**	**2.12**	**187**	PN		Pn	09 31 07.9	-0.9
KAHZ	**Kahuranaki**	**2.12**	**187**	Pn		Pn	09 31 07.9	-0.9
PKVZ	**Pokaka**	**2.18**	**222**	PN		Pn	09 31 09.0	-0.5
PKVZ	**Pokaka**	**2.18**	**222**	Pn		Pn	09 31 09.0	-0.5
PXZ	**Pawanui**	**2.36**	**187**	PN		Pn	09 31 10.1	-1.6
PXZ				AML		AML	09 31 40.0	
PXZ				AML		AML	09 31 41.0	
PXZ	**Pawanui**	**2.36**	**187**	Pn		Pn	09 31 10.1	-1.6
PNHZ	**Pukenui**	**2.37**	**200**	⇑PN		Pn	09 31 10.1	-1.7
PNHZ	**Pukenui**	**2.37**	**200**	Pn		Pn	09 31 10.1	-1.7
WPHZ	**Waipukurau**	**2.46**	**194**	PN		Pn	09 31 11.1	-1.9
WPHZ	**Waipukurau**	**2.46**	**194**	Pn		Pn	09 31 11.1	-1.9
TSZ	**Takapari Road**	**2.57**	**202**	PN		Pn	09 31 12.3	-2.1
TSZ				AML		AML	09 31 44.8	
TSZ				AML		AML	09 31 46.3	
TSZ	**Takapari Road**	**2.57**	**202**	Pn		Pn	09 31 12.3	-2.1
PRHZ	**Porangahau**	**2.62**	**190**	⇑PN		Pn	09 31 13.3	-1.7
PRHZ	**Porangahau**	**2.62**	**190**	Pn		Pn	09 31 13.3	-1.7
WAZ	**Wanganui**	**2.71**	**220**	⇓PN		Pn	09 31 15.6	-0.7
WAZ	**Wanganui**	**2.71**	**220**	Pn		Pn	09 31 15.6	-0.7
DVHZ	**Dannevirke**	**2.74**	**197**	PN		Pn	09 31 14.2	-2.4
DVHZ	**Dannevirke**	**2.74**	**197**	Pn		Pn	09 31 14.2	-2.4
ANWZ	**Angora Road**	**2.83**	**192**	⇑PN		Pn	09 31 15.8	-2.0
OHWZ

σ1ᵍ05/404, **mb5.2**/146, **MS4.3**/6, **26C-5D, Vanuatu Islands region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**3.04**	**207**	Pn	**Pn**	**09 39 15.6**	**-1.0**
	79nm,0.3s,baz=175,slow=20,SNR=155						
DZM				Sn	**Sn**	**09 39 48.8**	**-3.5**
	76nm,0.3s,baz=86,slow=19,SNR=5.6						
DZM				LR	LR	09 39 56.5	
	comp=Z,3μm,20.6s,baz=14,slow=29						
MSVF	**Nonsavu**	**9.72**	**82**	*e*P	**Pn**	**09 40 49.4**	**+1.0**
MSVF	**Nonsavu**	**9.72**	**82**	*e*Pn	**Pn**	**09 40 49.4**	**+1.0**
HNR	**Honiara**	**12.54**	**321**	Pn	**Pn**	**09 41 23.9**	**-3.0**
	baz=43,slow=18,SNR=1.6						
HNR				LR	LR	09 45 30.4	
	comp=Z,213nm,19.8s,baz=146,slow=34						
HNR	**Honiara**	**12.54**	**321**	*e*P	P	09 41 51.0	+13
OUZ	**Omahuta**	**16.57**	**164**	*e*Pn	**P**	**09 42 22.8**	**-0.2**
	130nm,1.0s						
OUZ				*e*Sn	**Sn**	**09 45 24.7**	**+0.8**
EIDS	**Eidsvold**	**16.70**	**246**	*e*P	**P**	**09 42 24.9**	**+0.4**
	63nm,1.1s						
EIDS				*e*S	**Sn**	**09 45 30.4**	**+3.3**
ARMA	**Armidale**	**18.42**	**230**	*e*P	**P**	**09 42 43.3**	**-0.4**
	190nm,1.5s						
HIZ	**Hauiti**	**20.01**	**164**	*e*P	Pn	09 43 03.7	+1.0
	143nm,1.4s						
CTA	**Charters Tower**	**20.43**	**264**	P	Pn	09 43 07.5	-0.3
	56nm,1.0s,baz=86,slow=12,SNR=20						
URZ	**Urewera**	**20.45**	**159**	P	Pn	09 43 07.3	-0.6
	41nm,1.0s,baz=1.2,slow=5.8,SNR=7.1						
URZ	**Urewera**	**20.45**	**159**	*e*P	Pn	09 43 08.1	+0.3
	105nm,1.1s						
BKZ	**Black Stump Fm**	**21.08**	**161**	*e*P	**P**	**09 43 14.5**	**+2.0**
	87nm,1.3s						
PMG	**Port Moresby**	**22.41**	**293**	P	**P**	**09 43 27.4**	**+0.6**
	48nm,1.0s,baz=92,slow=3.1,SNR=7.3						
PMG	**Port Moresby**	**22.41**	**293**	*ce*P	**P**	**09 43 27.6**	**+0.7**
PMG				pmax	pmax		
	comp=Z,214nm,1.0s						
PMG	**Port Moresby**	**22.41**	**293**	*e*P	**P**	**09 43 27.9**	**+1.1**
	comp=Z,53nm,1.0s						
THZ	**Tophouse**	**22.73**	**170**	*e*P	**P**	**09 43 31.8**	**+1.6**
	comp=Z,152nm,1.7s						
CAN	**Canberra**	**23.09**	**223**	*e*P	**P**	**09 43 34.0**	**+0.1**
CAN				pmax	pmax		
	comp=Z,56nm,1.0s						
CAN	**Canberra**	**23.09**	**223**	*e*P	**P**	**09 43 34.0**	**+0.1**
	comp=Z,56nm,1.0s						
LTZ	**Lake Taylor**	**23.64**	**172**	*e*P	**P**	**09 43 40.6**	**+1.4**
	comp=Z,84nm,1.4s						
OXZ	**Oxford**	**24.14**	**173**	*e*P	**P**	**09 43 44.3**	**+0.4**
	comp=Z,86nm,1.3s						
FOZ	**Fox Glacier**	**24.15**	**177**	*e*P	**P**	**09 43 45.5**	**+1.5**
	comp=Z,128nm,1.1s						
COEN	**Coen**	**24.32**	**279**	*e*P	**P**	**09 43 47.0**	**+1.2**
	comp=Z,87nm,1.1s						
RPZ	**Rata Peaks**	**24.43**	**175**	P	**P**	**09 43 47.7**	**+1.2**
	comp=Z,48nm,1.0s,baz=16,slow=3.6,SNR=12						
MLZ	**Mavora Lakes**	**25.94**	**180**	*e*P	**P**	**09 44 00.8**	**+0.5**
	comp=Z,131nm,2.0s						
DCZ	**Deep Cove**	**26.04**	**181**	*e*P	**P**	**09 44 02.1**	**+0.9**
	comp=Z,52nm,1.1s						
MANU	**Manus Island**	**26.49**	**308**	*e*P	**P**	**09 44 05.5**	**0.0**
	comp=Z,44nm,1.3s						
STKA	**Stephens Creek**	**26.75**	**237**	P	**P**	**09 44 08.6**	**+0.9**
	comp=Z,27nm,1.0s,baz=65,slow=8.0,SNR=42						
STKA	**Stephens Creek**	**26.75**	**237**	*e*P	**P**	**09 44 08.5**	**+0.8**
STKA	**Stephens Creek**	**26.75**	**237**	*e*P	**P**	**09 44 08.5**	**+0.8**
	comp=Z,11nm,1.1s						
JAY	**Jayapura**	**31.46**	**299**	P	**P**	**09 44 50.7**	**+0.9**
BBOO	**Buckleboo**	**31.48**	**238**	*e*P	**P**	**09 44 50.0**	**+0.2**
	comp=Z,28nm,1.0s						
WB2	**Warramunga Arr**	**31.61**	**263**	*e*P	**P**	**09 44 49.8**	**-1.3**
	comp=Z,34nm,1.1s						
WRAB	**Tennant Creek**	**31.61**	**263**	*ce*P	**P**	**09 44 49.5**	**-1.6**
WRAB				pmax	pmax		
	comp=Z,83nm,1.2s						
WRAB	**Tennant Creek**	**31.61**	**263**	*e*P	**P**	**09 44 50.0**	**-1.2**
	comp=Z,30nm,1.1s						
WR1	**Warramunga Arr**	**31.62**	**263**	*e*P	**P**	**09 44 50.0**	**-1.2**
	comp=Z,40nm,1.1s						
WR1				*e*PcP	**PcP**	**09 47 43.0**	**-0.2**
WRA	**Warramunga Arr**	**31.62**	**263**	P	**P**	**09 44 50.0**	**-1.2**
	comp=Z,13nm,0.9s,baz=91,slow=8.8,SNR=40						
WRA				PcP	**PcP**	**09 47 43.0**	**-0.2**
	comp=Z,2.2nm,0.8s,baz=104,slow=2.7,SNR=3.2						
WRA				LR	LR	09 56 26.2	
	comp=Z,532nm,20.3s,baz=85,slow=34						
WRA	**Warramunga Arr**	**31.62**	**263**	P	**P**	**09 44 50.0**	**-1.2**
WRA						09 47 43.0	
WRA				pmax	pmax		
	comp=Z,12nm,0.9s						
WRA				pmax	pmax		
	comp=Z,2.0nm,0.8s						
WRA				MLR	MLR		
	comp=Z,532nm,20.3s						
GENI	**Genyem**	**31.86**	**298**	P	**P**	**09 44 53.8**	**+0.5**
AS01	**Alice Springs**	**31.87**	**256**	*e*P	**P**	**09 44 52.4**	**-1.0**
AS31	**Alice Springs**	**31.91**	**256**	*e*P	**P**	**09 44 53.5**	**-0.3**
	comp=Z,12nm,0.8s						
ASAR	**Alice Springs**	**31.91**	**256**	P	**P**	**09 44 53.1**	**-0.6**
	comp=Z,33nm,0.8s,baz=84,slow=8.8,SNR=219						
ASAR				PcP	**PcP**	**09 47 43.7**	**-0.3**
	comp=Z,2.1nm,1.0s,baz=82,slow=6.6,SNR=4.7						
ASAR				LR	LR	09 56 54.6	
	comp=Z,966nm,20.0s,baz=92,slow=35						
MTN	**Manton Dam**	**35.90**	**275**	*e*P	**P**	**09 45 28.1**	**-0.3**
	comp=Z,58nm,1.0s						
FITZ	**Fitzroy Crossi**	**40.01**	**265**	P	**P**	**09 46 02.9**	**-0.2**
	comp=Z,77nm,1.0s,baz=104,slow=8.4,SNR=16						
FITZ	**Fitzroy Crossi**	**40.01**	**265**	*e*P	**P**	**09 46 03.3**	**+0.2**
	comp=Z,90nm,1.0s						
PPT2	**Papeete2**	**40.26**	**95**	*e*LQ	LQ	09 55 28.3	
	comp=Z,892nm,28.2s						
PPT2				*e*LR	LR	09 57 11.6	
	comp=Z,837nm,28.5s						
SOEI	**Soe**	**43.23**	**276**	*e*P	**P**	**09 46 30.6**	**+0.9**
	comp=Z,84nm,1.1s						
MBWA	**Marble Bar**	**45.13**	**259**	*e*P	**P**	**09 46 44.9**	**+0.2**
	comp=Z,71nm,1.1s						
NWAO	**Narrogin (SRO)**	**47.07**	**243**	P	**P**	**09 46 59.5**	**-0.2**
	comp=Z,82nm,0.9s,baz=86,slow=0.0,SNR=25						
NWAO	**Narrogin (SRO)**	**47.07**	**243**	*e*P	**P**	**09 46 59.6**	**-0.2**
NWAO				*ep*P	**sP**	**09 47 10.2**	**-0.7**
KAPI	**Kappang**	**49.03**	**280**	P	**P**	**09 47 15.2**	**0.0**
	comp=Z,27nm,1.0s,baz=106,slow=4.2,SNR=12						
KAPI	**Kappang**	**49.03**	**280**	*e*P	**P**	**09 47 15.8**	**+0.6**
	comp=Z,76nm,1.2s						
TAOE	**Nuku Hiva Isla**	**51.24**	**86**	*e*LR	LR	10 02 16.7	
	comp=Z,347nm,41.9s						
JAGI	**Jajag, Banyuwa**	**53.13**	**274**	*e*P	**P**	**09 47 45.8**	**-0.3**
	comp=Z,60nm,1.1s						
MYLDM	**Lahad Datu**	**54.42**	**291**	*e*P	**P**	**09 47 56.8**	**+1.4**
	comp=Z,58nm,1.4s						
KKM	**Kota Kinabalu**	**56.83**	**291**	*e*P	**P**	**09 48 13.2**	**+0.3**
	comp=Z,75nm,1.4s						
VNDA	**Vanda**	**58.28**	**182**	P	**P**	**09 48 22.2**	**+0.2**
	comp=Z,9.7nm,1.0s,baz=2.7,slow=6.5,SNR=21						
VNDA				LR	LR	10 11 09.1	
	comp=Z,50nm,19.0s,baz=358,slow=34						
LEM	**Lembang**	**59.80**	**273**	P	P	09 48 39.3	+5.5
	comp=Z,64nm,0.8s,baz=117,slow=6.9,SNR=13						
KSM	**Kuching**	**60.21**	**283**	*e*P	**P**	**09 48 36.7**	**+0.3**
	comp=Z,43nm,1.2s						
MJAR	**Matsushiro Arr**	**62.30**	**333**	P	**P**	**09 48 49.5**	**-0.6**
	comp=Z,2.9nm,1.0s,baz=134,slow=7.0,SNR=3.9						
MJAR	**Matsushiro Arr**	**62.30**	**333**	P	**P**	**09 48 49.5**	**-0.6**
MJAR				pmax	pmax		
	comp=Z,2.0nm,0.9s						
ASAJ	**Asahikawa**	**67.29**	**340**	P	**P**	**09 49 23.7**	**+1.3**
	comp=Z,30nm,1.0s,baz=252,slow=9.6,SNR=3.4						
ASAJ	**Asahikawa**	**67.29**	**340**	*e*P	**P**	**09 49 23.7**	**+1.3**
	comp=Z,158nm,1.7s						
KSRS	**Korea Array**	**67.92**	**326**	P	**P**	**09 49 26.6**	**+0.1**
	comp=Z,0.5nm,0.4s,baz=159,slow=7.3,SNR=2.8						
KS15	**Wonju Array Si**	**67.93**	**326**	*e*P	**P**	**09 49 24.1**	**-2.5**
KSAR	**Wonju Array Be**	**67.93**	**326**	P	**P**	**09 49 26.6**	**0.0**
KSAR	**Wonju Array Be**	**67.93**	**326**	P	**P**	**09 49 26.6**	**0.0**
NJ2	**Nanjing**	**69.45**	**317**	*e*P	P	09 49 39.8	+3.6
NJ2				pmax	pmax		
	comp=Z,7.0nm,0.6s						
YSS	**Yuzh-Sakhalins**	**69.80**	**342**↑	*e*P	**P**	**09 49 39.6**	**+1.6**
YSS				pmax	pmax		
	comp=Z,30nm,0.8s						
IPM	**Ipoh**	**69.91**	**282**	*e*P	**P**	**09 49 39.8**	**+0.3**
	comp=Z,31nm,1.0s						
QSPA	**South Pole Qui**	**70.70**	**180**	*e*P	**P**	**09 49 44.4**	**+0.8**
PSI	**Prapat**	**71.24**	**280**	*e*P	**P**	**09 49 46.8**	**-0.9**
PSI				pmax	pmax		
	comp=Z,38nm,1.0s						
PSI	**Prapat**	**71.24**	**280**	*e*P	**P**	**09 49 46.8**	**-0.9**
	comp=Z,38nm,1.0s						
USRK	**Ussuriysk Ar.**	**71.29**	**334**	P	**P**	**09 49 47.5**	**+0.3**
	comp=Z,8.5nm,1.0s,baz=132,slow=2.8,SNR=12						
SKLT	**Songkhla**	**71.32**	**285**	P	**P**	**09 49 48.9**	**+0.9**
	comp=Z,37nm,1.2s						
TRTT	**Trang**	**72.42**	**285**	P	**P**	**09 49 55.6**	**+0.9**
	comp=Z,19nm,1.2s						
SKNT	**Sakolnakorn**	**72.48**	**296**	P	**P**	**09 49 55.9**	**+1.0**
	comp=Z,15nm,0.9s						
MDJ	**Mudanjiang**	**72.65**	**332**	P	**P**	**09 49 56.5**	**+1.2**
MDJ				pmax	pmax		
	comp=Z,21nm,1.1s						
MDJ				pmax	pmax		
	comp=Z,170nm,6.1s						
MDJ	**Mudanjiang**	**72.65**	**332**	*e*P	**P**	**09 49 56.8**	**+1.5**
	comp=Z,24nm,1.0s						
PETK	**Petropavlovsk-**	**72.71**	**354**	P	**P**	**09 49 55.6**	**+0.2**
	comp=Z,7.8nm,0.7s,baz=140,slow=4.6,SNR=6.7						
PEA1	**Petropavlovsk-**	**72.71**	**354**	*e*P	**P**	**09 49 55.6**	**+0.1**
KRAB	**Krabi**	**73.02**	**285**	P	**P**	**09 49 58.6**	**+0.4**
	comp=Z,318nm,0.7s,comp=Z,28μm						
CN2	**Changchun**	**73.93**	**329**	*e*P	**P**	**09 50 03.5**	**+0.6**
CN2				*ep*P	pP	09 50 11.5	+0.3
CN2				pmax	pmax		
	comp=Z,20nm,1.2s						
PBKT	**Sadao Pong**	**74.88**	**294**	P	**P**	**09 50 10.6**	**+1.6**
	comp=Z,6.8nm,1.6s,comp=Z,727nm						
GYA	**Guiyang**	**74.89**	**305**	P	**P**	**09 50 11.0**	**+2.0**
GYA				pmax	pmax		
	comp=Z,10.0nm,1.0s						
KLR	**Kul'dur**	**75.48**	**336**	P	**P**	**09 50 12.2**	**+0.5**
	comp=Z,10nm,1.1s,baz=129,slow=3.3,SNR=17						
SRDT	**SRDT**	**75.56**	**291**	P	**P**	**09 50 15.0**	**+2.1**
	comp=Z,46nm,1.4s						
KHLT	**Khaolaem Dam**	**76.21**	**291**	P	**P**	**09 50 18.4**	**+1.7**
	comp=Z,5.9nm,1.6s,comp=Z,233nm						
BJI	**Beijing**	**76.26**	**322**	P	**P**	**09 50 17.3**	**+0.9**
BJI				pmax	pmax		
	comp=Z,19nm,0.7s						
UMPA	**Umpang Tak**	**76.56**	**293**	P	**P**	**09 50 20.7**	**+2.0**
	comp=Z,3.0nm,1.3s,comp=Z,1μm						
LAMP	**Lampang**	**76.88**	**295**	P	P	09 50 26.2	+5.8
	comp=Z,4.1nm,0.9s						
XAN	**Xi'an**	**77.29**	**313**	P	P	09 50 33.0	+11
XAN				pP	sP	09 50 43.5	+10
XAN				S	**S**	**10 00 13.3**	**+2.2**
KMI	**Kunming**	**77.30**	**302**	P	**P**	**09 50 24.5**	**+1.6**
KMI				pmax	pmax		
	comp=Z,19nm,0.8s						
KMI				pmax	pmax		
	comp=Z,160nm,7.7s						
CM01	**Chiang Mai Arr**	**77.41**	**295**	*e*P	**P**	**09 50 24.8**	**+1.4**
CMAR	**Chiang Mai Arr**	**77.44**	**295**	P	**P**	**09 50 24.4**	**+0.8**
	comp=Z,4.3nm,0.8s,baz=132,slow=4.5,SNR=21						
CMAR	**Chiang Mai Arr**	**77.44**	**295**	*ce*P	**P**	**09 50 25.1**	**+1.5**
CMAR				pmax	pmax		
	comp=Z,4.0nm,0.8s						
CMMT	**Chiang Mai**	**77.59**	**295**	P	**P**	**09 50 25.7**	**+1.3**
	comp=Z,10nm,1.4s,comp=Z,384nm						
CHTO	**Chiang Mai**	**77.59**	**295**	P	**P**	**09 50 25.8**	**+1.4**
	comp=Z,45nm,1.4s						
MAW	**Mawson**	**77.86**	**202**	P	**P**	**09 50 25.9**	**+0.8**
	comp=Z,15nm,1.0s,baz=103,slow=6.6,SNR=13						
MAW	**Mawson**	**77.86**	**202**	*e*P	**P**	**09 50 26.5**	**+1.5**
MAW				pmax	pmax		
	comp=Z,5.0nm,1.0s						
MAW	**Mawson**	**77.86**	**202**	*e*P	**P**	**09 50 26.5**	**+1.5**
	comp=Z,5.0nm,1.0s						
CD2	**Chengdu**	**79.34**	**308**	P	**P**	**09 50 33.5**	**-0.4**
CD2				sP	sP	09 50 45.8	+0.5
CD2				PP	**PP**	**09 53 33.5**	**-0.8**
CD2				S	**S**	**10 00 33.3**	**+0.1**
CD2				pmax	pmax		
	comp=Z,20nm,0.4s						
CD2				pmax	pmax		
	comp=Z,220nm,9.6s						
CD2				LR	LR		
	comp=Z,150nm,7.2s						
CD2				LR	LR		
	comp=Z,90nm,9.6s						
HHC	**Hu-ho-hao-te**	**79.52**	**320**	*e*P	**P**	**09 50 36.8**	**+2.1**
HHC				pmax	pmax		
	comp=Z,37nm,1.3s						
HHC				pmax	pmax		
	comp=Z,210nm,6.0s						
LZH	**Lanzhou**	**81.90**	**313**	*e*P	**P**	**09 50 49.5**	**+1.8**
LZH				pmax	pmax		
	comp=Z,39nm,1.1s						
LZH				pmax	pmax		
	comp=Z,130nm,4.3s						
SEY	**Seymchan**	**82.93**	**353**	P	**P**	**09 50 51.1**	**-1.0**
	comp=Z,5.0nm,1.1s,baz=167,slow=9.4,SNR=6.4						
CLNS	**Chul'man**	**84.03**	**338**	*e*P	**P**	**09 50 58.9**	**+0.9**
CLNS				pmax	pmax		
	comp=Z,14nm,1.0s						
CLNS				pmax	pmax		
	comp=N,7.0nm,1.3s						
CLNS				pmax	pmax		
	comp=E,5.0nm,1.1s						
GAMB	**Gambell**	**84.37**	**9**	*e*P	**P**	**09 51 00.2**	**+0.8**
	comp=E,23nm,1.0s						
SYO	**Syowa Base**	**84.48**	**196**↑	*is*P	P	09 51 07.0	+6.8
SVW2	**Sparrevohn**	**85.36**	**17**	*e*P	**P**	**09 51 05.1**	**+0.5**
	comp=E,31nm,1.0s						
RSO	**Redoubt South**	**85.65**	**18**	*e*P	**P**	**09 51 06.5**	**+0.2**
ULN	**Ulaanbaatar**	**86.23**	**324**	*d i*P	**P**	**09 51 10.0**	**+0.6**
ULN				pmax	pmax		
	comp=Z,54nm,1.2s						
ULN	**Ulaanbaatar**	**86.23**	**324**	*e*P	**P**	**09 51 10.2**	**+0.8**
	comp=Z,52nm,1.2s						
GTA	**Gaotai**	**86.32**	**314**	*e*P	**P**	**09 51 11.0**	**+1.0**
GTA				pP	sP	09 51 21.8	+0.3
GTA				sP	pP	09 51 25.5	+7.0
GTA				SKS	**SKSac**	**10 01 32.0**	**-2.9**
GTA				S	**S**	**10 01 43.8**	**-0.4**
GTA				sS	sS	10 02 01.0	+2.9
GTA				SS	**SS**	**10 07 28.5**	**+4.0**
GTA				pmax	pmax		
	comp=Z,6.0nm,1.1s						
GTA				pmax	pmax		
	comp=Z,130nm,4.5s						
GTA				LR	LR		
	comp=Z,100nm,19.0s						
GTA				LR	LR		
	comp=Z,140nm,19.0s						
SONA0	**Songino Array**	**86.58**	**324**	*e*P	**P**	**09 51 11.3**	**+0.2**
	comp=Z,41nm,1.2s						
SONM	**Songino Array**	**86.58**	**324**	P	**P**	**09 51 11.3**	**+0.2**
	comp=Z,8.2nm,0.6s,baz=107,slow=5.0,SNR=6.4						
SONA1	**Songino Array**	**86.59**	**324**	*e*P	**P**	**09 51 11.5**	**+0.4**
YAK	**Yakutsk**	**86.62**	**343**	P	**P**	**09 51 10.4**	**-0.3**
	comp=Z,12nm,0.4s,baz=231,slow=0.9,SNR=4.8						
YAK	**Yakutsk**	**86.62**	**343**	*e*P	**P**	**09 51 10.9**	**+0.2**
YAK				pmax	pmax		
	comp=Z,29nm,1.0s						
YAK				pmax	pmax		
	comp=E,7.0nm,1.1s						
YAK				pmax	pmax		
	comp=N,9.0nm,1.1s						
TNA	**Tin City**	**86.63**	**10**	*e*P	**P**	**09 51 10.8**	**+0.1**
	comp=N,34nm,1.0s						
TT01	**Tatalina**	**86.75**	**16**	*e*P	**P**	**09 51 11.6**	**+0.2**
TTA	**Tatalina**	**86.77**	**16**	*e*P	**P**	**09 51 12.0**	**+0.4**
TTA				pmax	pmax		
	comp=Z,13nm,1.1s						
TTA	**Tatalina**	**86.77**	**16**	*e*P	**P**	**09 51 12.0**	**+0.4**
	comp=Z,13nm,1.1s						
BILL	**Bilibino**	**87.15**	**359**↓	*i*P	**P**	**09 51 12.6**	**-0.6**
BILL				*i*		09 51 31.1	
BILL				pmax	pmax		
	comp=Z,16nm,1.1s						
BILL	**Bilibino**	**87.15**	**359**	*e*P	**P**	**09 51 13.5**	**+0.2**
	comp=Z,19nm,1.1s						
KHMM	**Horse Mountain**	**87.16**	**45**	*e*P	**P**	**09 51 15.0**	**+0.9**
	comp=Z,38nm,1.2s						
PKM	**Mcpherson Peak**	**87.19**	**52**	P	**P**	**09 51 13.6**	**-0.8**
	baz=244						
PMR	**Palmer**	**87.64**	**19**	*e*P	**P**	**09 51 17.2**	**+1.5**
PMR				pmax	pmax		
	comp=Z,14nm,1.2s						
PMR	**Palmer**	**87.64**	**19**	*e*P	**P**	**09 51 17.2**	**+1.5**
	comp=Z,14nm,1.2s						
WDC	**Whiskeytown Da**	**87.81**	**46**	*e*P	**P**	**09 51 17.7**	**+0.6**
WDC				pmax	pmax		
	comp=Z,21nm,1.2s						
WDC	**Whiskeytown Da**	**87.81**	**46**	*e*P	**P**	**09 51 17.7**	**+0.6**
	comp=Z,21nm,1.2s						
N02D	**Trinity Center**	**87.89**	**45**	P	**P**	**09 51 18.3**	**+0.8**
	baz=242,SNR=7.2						
M02C	**Callahan**	**87.98**	**45**	P	**P**	**09 51 18.6**	**+0.6**
	baz=242,SNR=6.2						
ARVC	**Arvin**	**88.02**	**52**	P	**P**	**09 51 18.4**	**+0.2**
	baz=245						
ORV	**Oroville**	**88.05**	**47**	*e*P	**P**	**09 51 18.6**	**+0.4**
ORV				pmax	pmax		
	comp=Z,13nm,0.9s						
ORV	**Oroville**	**88.05**	**47**	*e*P	**P**	**09 51 18.6**	**+0.4**
	comp=Z,13nm,0.9s						
AFDM	**Forest Hills D**	**88.14**	**48**	*e*P	**P**	**09 51 18.6**	**-0.1**
	comp=Z,20nm,1.0s						
CMB	**Columbia Colle**	**88.15**	**49**	*e*P	**P**	**09 51 18.7**	**-0.1**
CMB				pmax	pmax		
	comp=Z,16nm,0.9s						
CMB	**Columbia Colle**	**88.15**	**49**	*e*P	**P**	**09 51 18.7**	**-0.1**
	comp=Z,16nm,0.9s						
O03D	**Paynes Creek**	**88.18**	**46**	P	**P**	**09 51 18.7**	**-0.2**
	baz=243,SNR=7.7						
CAST	**Castle Rocks**	**88.21**	**17**	*e*P	**P**	**09 51 16.7**	**-1.8**
	comp=Z,13nm,1.0s						
YBH	**Yreka Blue Hor**	**88.24**	**44**	P	**P**	**09 51 19.1**	**-0.1**
	comp=Z,11nm,0.9s,baz=302,slow=1.3,SNR=16						
YBH	**Yreka Blue Hor**	**88.24**	**44**	*e*P	**P**	**09 51 19.1**	**-0.1**
	comp=Z,57nm,1.6s						
SCM	**Sheep Creek Mo**	**88.38**	**20**	*e*P	**P**	**09 51 19.7**	**+0.4**
SCM				pmax	pmax		
	comp=Z,33nm,1.4s						
SCM	**Sheep Creek Mo**	**88.38**	**20**	*e*P	**P**	**09 51 19.7**	**+0.4**
	comp=Z,33nm,1.4s						
109C	**Camp Elliot, M**	**88.39**	**54**	P	**P**	**09 51 19.8**	**-0.2**
	baz=246						
HUMO	**Hull Mountain**	**88.49**	**44**	*e*P	**P**	**09 51 21.1**	**+0.8**
	comp=Z,16nm,1.0s						
ISA	**Isabella, Lake**	**88.51**	**51**	P	**P**	**09 51 20.7**	**+0.1**
	baz=245						
BFSC	**Mount Baldy Ra**	**88.52**	**53**	P	**P**	**09 51 20.9**	**+0.1**
	baz=246						
EDW2	**Edwards Air Fo**	**88.53**	**52**	P	**P**	**09 51 20.6**	**-0.1**
	baz=245						
NVL	**N'lazarevskaya**	**88.58**	**188**	*e*P	**P**	**09 51 20.7**	**+0.4**
MURC	**Murrieta**	**88.61**	**54**	P	**P**	**09 51 20.9**	**-0.1**
	baz=246						
KTH	**Kantishna Hill**	**88.64**	**17**	*e*P	**P**	**09 51 18.5**	**-2.0**
	comp=Z,8.2nm,1.0s						
TRF	**Thorofare Moun**	**88.73**	**17**	*e*P	**P**	**09 51 19.0**	**-2.1**
	comp=Z,10.0nm,1.1s						
M04C	**Macdoel**	**88.84**	**45**	P	**P**	**09 51 22.4**	**+0.4**
	baz=243						
BOD	**Bodaibo**	**88.91**	**334**	*e*P	**P**	**09 51 20.9**	**-0.9**
BOD				pmax	pmax		
	comp=Z,16nm,1.4s						
MONP2	**Monument Peak**	**88.91**	**55**	P	**P**	**09 51 22.9**	**+0.1**
	baz=246						
SNAA	**Sanae**	**88.99**	**183**	P	**P**	**09 51 21.9**	**-0.3**
SNAA	**Sanae**	**88.99**	**183**	↓*i*P	**P**	**09 51 21.6**	**-0.7**
SNAA	**Sanae**	**88.99**	**183**	*e*P	**P**	**09 51 21.7**	**-0.6**
	comp=Z,2μm,1.0s						
LRMC	**Laurel Mtn Rad**	**89.02**	**52**	P	**P**	**09 51 23.5**	**+0.4**
	baz=245						
WAKR	**Walker**	**89.03**	**48**	*e*P	**P**	**09 51 23.4**	**+0.3**
RND	**Reindeer**	**89.11**	**18**	*e*P	**P**	**09 51 21.6**	**-1.1**
RND				pmax	pmax		
	comp=Z,17nm,1.1s						
RND	**Reindeer**	**89.11**	**18**	*e*P	**P**	**09 51 21.6**	**-1.1**
	comp=Z,17nm,1.1s						
K04D	**Chiloquin, OR**	**89.28**	**44**	P	**P**	**09 51 24.1**	**0.0**
	baz=243						
DHY	**Denali Highway**	**89.30**	**19**	*e*P	**P**	**09 51 24.5**	**+0.8**
MCK	**McKinley**	**89.34**	**18**	*e*P	**P**	**09 51 26.4**	**+2.6**
MCK				pmax	pmax		
	comp=Z,20nm,1.2s						
MCK	**McKinley**	**89.34**	**18**	*e*P	**P**	**09 51 26.4**	**+2.6**
	comp=Z,20nm,1.2s						
I04A	**Tendick Farm,**	**89.39**	**43**	P	**P**	**09 51 24.2**	**-0.3**
	baz=242						
MPMC	**Manual Prospec**	**89.40**	**51**	P	**P**	**09 51 24.8**	**-0.2**
	baz=246,SNR=10						
DAC	**Darwin (Calif)**	**89.41**	**51**	*e*P	**P**	**09 51 25.3**	**+0.3**
DAC				pmax	pmax		
	comp=Z,16nm,1.3s						
DAC	**Darwin (Calif)**	**89.41**	**51**	*e*P	**P**	**09 51 25.3**	**+0.3**
	comp=Z,16nm,1.3s						
SWSC	**Sam W. Stewart**	**89.41**	**55**	P	**P**	**09 51 25.4**	**+0.6**
	baz=246						
BALM	**Baldy**	**89.46**	**22**	*e*P	**P**	**09 51 25.9**	**+1.4**
BALM				pmax	pmax		
	comp=Z,8.0nm,1.1s						
BALM	**Baldy**	**89.46**	**22**	*e*P	**P**	**09 51 25.9**	**+1.4**
	comp=Z,8.4nm,1.1s						
BWN	**Browne**	**89.53**	**17**	*e*P	**P**	**09 51 23.9**	**-0.7**
	comp=Z,33nm,1.0s						
GSC	**Goldstone, Bar**	**89.60**	**52**	P	**P**	**09 51 25.9**	**+0

	comp=Z,14nm,1.0s								
COLA	College	90.51	17	*e*P		P	09 51 27.9	-1.3	
	comp=Z,12nm,0.9s								
TPNV	Topopah Spring	90.67	51	P		P	09 51 30.7	-0.1	
	baz=246,SNR=11								
TPNV	Topopah Spring	90.67	51	*e*P		P	09 51 30.9	+0.1	
TPNV				pmax		pmax			
	comp=Z,13nm,0.9s								
TPNV	Topopah Spring	90.67	51	*e*P		P	09 51 30.9	+0.1	
	comp=Z,13nm,0.9s								
TDL	Tradedollar La	90.70	41	P		P	09 51 31.1	+0.4	
Y12C	Blythe	90.71	54	P		P	09 51 31.1	+0.3	
	baz=247,SNR=6.9								
Y12C	Blythe	90.71	54	*e*P		P	09 51 31.4	+0.5	
	comp=Z,20nm,1.0s								
ILAR	Eielson Array	90.71	18	P		P	09 51 28.1	-2.0	
	comp=Z,3.9nm,0.8s,baz=236,slow=5.8,SNR=33								
ILAR				LR		LR	10 25 01.6		
	comp=Z,76nm,21.4s,baz=237,slow=31								
ILB	Eielson Array	90.71	18	*e*P		P	09 51 28.4	-1.7	
IL1	Eielson Array	90.71	18	*e*P		P	09 51 27.9	-2.3	
SLBS	Sierra La Lagu	90.74	65	*e*P		P	09 51 32.3	+1.0	
	comp=Z,121nm,1.9s								
DOT	Dot Lake	90.74	19	*e*P		P	09 51 29.1	-1.2	
	comp=Z,14nm,1.1s								
G05D	Wamic, OR	90.75	42	P		P	09 51 30.9	+0.1	
	baz=243								
113A	Mohawk Valley,	90.92	56	*e*P		P	09 51 32.0	+0.2	
	comp=Z,16nm,1.3s								
SKAG	Skagway	91.08	25	*e*P		P	09 51 32.2	+0.3	
	comp=Z,38nm,1.5s								
LON	Longmire	91.14	40	*e*P		P	09 51 32.5	-0.1	
LON				pmax		pmax			
	comp=Z,12nm,1.1s								
LON	Longmire	91.14	40	*e*P		P	09 51 32.5	-0.1	
	comp=Z,12nm,1.1s								
PDMCI	Parker Dam,Lak	91.22	54	P		P	09 51 33.3	+0.1	
	baz=247,SNR=9.2								
D05A	Enumclaw	91.23	40	*e*P		P	09 51 33.5	+0.6	
	comp=Z,63nm,1.1s								
214A	Organ Pipe Nat	91.36	57	P		P	09 51 34.1	+0.1	
	baz=248,SNR=12								
A04D	Lummi Island	91.51	38	P		P	09 51 34.6	+0.5	
	baz=242								
MOY	Mondy	91.58	325	*e*P		P	09 51 35.1	+0.5	
B05A	Bryant	91.66	39	P		P	09 51 35.4	+0.6	
	baz=243								
COLD	Coldfoot	91.70	15	*e*P		P	09 51 35.1	+0.4	
	comp=Z,9.9nm,0.9s								
TRW	Toppenish Ridg	91.71	41	P		P	09 51 35.7	+0.5	
W13A	Hualapai Mount	91.71	53	*e*P		P	09 51 35.6	-0.2	
	comp=Z,9.7nm,0.9s								
R11A	Troy Canyon, C	91.72	50	P		P	09 51 35.4	-0.3	
	baz=247								
R11A	Troy Canyon, C	91.72	50	*e*P		P	09 51 35.3	-0.4	
	comp=Z,2.4nm,0.9s								
HSIG		91.79	60	*e*P		P	09 51 36.2	+0.2	
	comp=Z,40nm,1.5s								
Y14A	Wickenburg	91.95	55	*e*P		P	09 51 36.7	0.0	
	comp=Z,27nm,1.0s								
LTY	Liberty	92.06	40	*e*P		P	09 51 36.6	-0.3	
	comp=Z,19nm,1.4s								
RPW	Rockport	92.09	39	*e*P		P	09 51 36.6	-0.3	
HAWA	Hanford	92.38	41	*e*P		P	09 51 38.9	+0.6	
	comp=Z,20nm,1.1s								
EGAK	Eagle	92.44	19	*e*P		P	09 51 36.9	-1.2	
	comp=Z,6.5nm,0.9s								
LCMT	Little Creek M	92.92	52	*e*P		P	09 51 41.1	0.0	
	comp=Z,9.7nm,1.0s								
PSUT	Pine Spring	93.04	50	*e*P		P	09 51 41.6	-0.2	
	comp=Z,3.6nm,0.9s								
D08A	Wollman Farm,	93.05	41	*e*P		P	09 51 41.6	+0.3	
	comp=Z,4.4nm,0.8s								
TUC	Tucson	93.09	57	P		P	09 51 42.7	+0.7	
	baz=249								
TUC	Tucson	93.09	57	*e*P		P	09 51 42.4	+0.4	
TUC				pmax		pmax			
	comp=Z,11nm,1.0s								
TUC	Tucson	93.09	57	*e*P		P	09 51 42.4	+0.4	
	comp=Z,10nm,1.0s								
KNB	Kanab	93.23	52	*e*P		P	09 51 42.9	+0.2	
KNB				pmax		pmax			
	comp=Z,9.0nm,1.2s								
KNB	Kanab	93.23	52	*e*P		P	09 51 42.9	+0.2	
	comp=Z,8.7nm,1.2s								
X16A	Lo Mia Camp, P	93.33	55	*e*P		P	09 51 43.7	+0.5	
	comp=Z,10nm,0.9s								
B08A	Colville Reser	93.35	40	*e*P		P	09 51 42.5	-0.3	
	comp=Z,9.7nm,1.3s								
U15A	North Rim	93.41	53	*e*P		P	09 51 44.1	+0.4	
	comp=Z,9.3nm,0.9s								
MFID	Camas Ranch	93.55	45	*e*P		P	09 51 43.6	-0.4	
	comp=Z,5.0nm,0.9s								
F10A	Beach Ranch, E	93.66	42	*e*P		P	09 51 46.0	+1.6	
319A	Douglas	93.97	58	*e*P		P	09 51 46.4	+0.3	
	comp=Z,24nm,0.9s								
MTPU	Mount Pierson	94.08	51	*e*P		P	09 51 45.7	-1.1	
	comp=Z,6.0nm,0.4s								
MSU	Marysvale	94.25	51	*e*P		P	09 51 47.5	+0.1	
MSU	Marysvale	94.25	51	*e*P		P	09 51 47.5	+0.1	
DUG	Dugway, Tooele	94.41	49	P		P	09 51 48.5	+0.5	
	baz=248								
X18A	Snowflake	94.52	55	*e*P		P	09 51 49.5	+0.8	
	comp=Z,4.1nm,0.7s								
HLID	Hailey	94.55	45	P		P	09 51 48.7	+0.1	
	baz=248								
HLID	Hailey	94.55	45	*e*P		P	09 51 48.7	+0.1	
	comp=Z,3.1nm,0.9s								
TIXI	Tiksi	94.61	348	*ce*P		P	09 51 45.5	-2.4	
TIXI				pmax		pmax			
	comp=Z,4.0nm,1.2s								
TIXI	Tiksi	94.61	348	*e*P		P	09 51 46.6	-1.4	
NEW	Newport	94.66	40	P		P	09 51 49.3	+0.5	
	baz=246								
W18A	Petrified Fore	94.89	55	P		P	09 51 50.0	-0.3	
	baz=250								
HVU	Hansel Valley	95.01	48	*e*P		P	09 51 50.6	-0.1	
HVU				pmax		pmax			
	comp=Z,6.0nm,0.9s								
HVU	Hansel Valley	95.01	48	*e*P		P	09 51 50.6	-0.1	
	comp=Z,5.5nm,0.9s								
JLU	Jordanelle	95.52	49	*e*P		P	09 51 53.0	-0.2	
	comp=Z,2.2nm,0.8s								
121A	Cookes Peak, D	95.55	58	P		P	09 51 53.9	+0.4	
	baz=251								
WMQ	Urumqi	96.41	314	*e*P		P	09 51 57.0	+0.1	
WMQ				pmax		pmax			
	comp=Z,3.0nm,0.6s								
WMQ				pmax		pmax			
	comp=Z,50nm,4.4s								
REDW	Red Top Meadow	96.90	47	*e*P		P	09 51 59.1	-0.2	
	comp=Z,9.0nm,1.4s								
INK	Inuvik	97.05	19	P		P	09 51 58.3	-0.8	
	comp=Z,5.4nm,1.2s,baz=200,slow=6.3,SNR=7.9								
INK	Inuvik	97.05	19	P		P	09 51 58.3	-0.8	
INK				pmax		pmax			
	comp=Z,3.0nm,1.0s								
BOZ	Bozeman (W)	97.16	44	P		P	09 52 00.3	-0.1	
	baz=250								
MNTX	Cornudas Mount	97.22	59	P		P	09 52 00.7	-0.1	
	baz=252								
MNTX	Cornudas Mount	97.22	59	*e*P		Pdif	09 52 04.5	+3.5	
	comp=Z,4.4nm,1.3s								
ANMO	Albuquerque	97.38	56	P		P	09 52 01.2	-0.5	
	baz=252								
YLT	Little Thumb C	97.44	46	*e*P		P	09 52 00.1	-1.8	
PDAR	Pinedale Array	97.59	47	P		Pdif	09 52 02.7	+0.1	
	comp=Z,0.8nm,1.0s,baz=208,slow=5.1,SNR=4.2								
O20A	White River Ci	97.68	50	P		P	09 52 02.7	-0.2	
	baz=251								
TX31	Lajitas Ar. Si	97.90	62	*e*P		Pdif	09 52 04.3	+0.2	
LTX	Lajitas	97.90	62	*e*P		P	09 52 03.7	-0.4	
LTX	Lajitas	97.90	62	*e*P		P	09 52 03.6	-0.4	
TXAR	Lajitas Array	97.90	62	P		P	09 52 03.6	-0.4	
	comp=Z,1.2nm,0.8s,baz=224,slow=5.5,SNR=15								
TXAR				LR		LR	10 27 57.2		
	comp=Z,163nm,21.6s,baz=0.0,slow=30								
EGMT	Eagleton	99.17	42	Pdiff		Pdif	09 52 10.2	+0.9	
	baz=251								
K22A	Casper	99.68	48	Pdiff		Pdif	09 52 11.6	-0.2	
	baz=253								
YKA	Yellowknife Ar	101.34	28	P		Pdif	09 52 18.2	-0.2	
	comp=Z,1.0nm,0.8s,baz=254,slow=4.6,SNR=21								
YKB5	Yellowknife Ar	101.34	28	*e*Pdif		Pdif	09 52 18.4	0.0	
ZALV	Zalesovo Beam	101.47	323	P		Pdif	09 52 18.5	-0.7	
	comp=Z,0.3nm,0.3s,baz=149,slow=3.4,SNR=3.0								
ZAA1	Zalesovo Array	101.48	323	*e*Pdif		Pdif	09 52 18.5	-0.7	
433A	Art	102.11	62	Pdiff		Pdif	09 52 23.2	+0.5	
	baz=255								
534A	Blanco	102.43	62	Pdiff		Pdif	09 52 24.6	+0.5	
	baz=255								
BVAR	Borovoye Array	109.73	320	PKiKP		PKiKP	09 56 58.7	+0.2	
	comp=Z,0.5nm,0.5s,baz=90,slow=4.3,SNR=4.4								
BVAR				PP		PP	09 57 27.1	-3.4	
	comp=Z,0.2nm,0.3s,baz=95,slow=8.8,SNR=3.0								
PB01	IPOC Station P	110.93	123	*e*Pdif		Pdif	09 53 02.2	-0.1	
ARU	Arti	116.62	324	PKP		PKPdf	09 57 10.1	-1.4	
	comp=Z,3.4nm,0.3s,baz=195,slow=2.6,SNR=3.6								
ARU	Arti	116.62	324	PKIKP		PKPdf	09 57 11.1	-0.4	
CPUP	Villa Florida	116.80	134	PKP		PKPdf	09 57 11.3	-1.6	
	comp=Z,1.3nm,0.8s,baz=316,slow=15,SNR=3.3								
AKTO	Aktyubinsk	117.33	317	PKP		PKPdf	09 57 12.8	-0.3	
	comp=Z,1.7nm,0.8s,baz=198,slow=2.1,SNR=4.1								
ARA0	ARCESS Array S	124.87	345	*e*PKPdf		PKPdf	09 57 26.7	-0.3	
ARCES	ARCESS Array B	124.87	345	PKP		PKPdf	09 57 26.7	-0.3	
	comp=Z,3.9nm,0.9s,baz=52,slow=2.0,SNR=11								
KLMR	Klimovskoe	125.07	332	*e*PKIKP		PKPdf	09 57 25.1	-2.5	
KLMR				pmax		pmax			
	comp=Z,17nm,1.3s								
VRH	Novokhopyorsk	127.38	320	*e*PKIKP		PKPdf	09 57 32.0	-0.3	
VRH				pmax		pmax			
	comp=Z,5.0nm,0.4s								
KMBO	Kilima Mbogo	127.52	253	PKP		PKPdf	09 57 34.6	+0.6	
	comp=Z,0.8nm,0.3s,baz=169,slow=3.1,SNR=4.1								
ZEI	Tsey	127.74	310	*i* PKIKP		PKPdf	09 57 33.0	-0.6	
ZEI				pmax		pmax			
	comp=Z,19nm,1.1s								
KIV	Kislovodsk	128.43	311	⇑*i* PKIKP		PKPdf	09 57 40.8	+6.1	
KIV				pmax		pmax			
	comp=Z,11nm,0.9s								
LPSR	Galich'ya Gora	128.58	323	*e*PKIKP		PKPdf	09 57 34.2	-0.4	
LPSR				pmax		pmax			
	comp=Z,20nm,1.3s								
VSR	Storozhevoye	128.91	321	*e*PKIKP		PKPdf	09 57 35.8	+0.6	
VSR				pmax		pmax			
	comp=Z,10.0nm,0.9s								
OBN	Obninsk	128.92	326	⇓*i* PKIKP		PKPdf	09 57 35.9	+0.8	
OBN				pmax		pmax			
	comp=Z,38nm,1.3s								
FIA1	FINESS Array S	130.22	337	*e*PKPdf		PKPdf	09 57 36.5	-0.9	
FIA0	FINESS Array S	130.23	337	*e*PKIKP		PKPdf	09 57 36.6	-0.8	
FIA0	FINESS Array S	130.23	337	*e*PKPdf		PKPdf	09 57 36.6	-0.8	
FINES	FINESS Array B	130.23	337	PKP		PKPdf	09 57 36.6	-0.8	
	comp=Z,2.1nm,0.8s,baz=163,slow=7.2,SNR=8.0								
AKASG	Malin Array Be	134.87	324	PKP		PKPdf	09 57 45.8	-0.7	
	comp=Z,0.9nm,0.6s,baz=52,slow=2.4,SNR=7.2								
AK11	Malin Array Si	134.91	324	*e*PKPdf		PKPdf	09 57 46.6	0.0	
NB2	NORSAR Subarra	135.23	344	PKPdf		PKPdf	09 57 47.6	+0.6	
	comp=Z,5.1nm,1.4s,baz=31,slow=1.9								
NB200	NORSAR Array S	135.23	344	*e*PKPdf		PKPdf	09 57 45.5	-1.5	
NOA	NORSAR Array B	135.23	344	PKP		PKPdf	09 57 45.5	-1.5	
	comp=Z,1.3nm,0.8s,baz=38,slow=2.0,SNR=4.4								
NBO02	NORSAR Array S	135.31	344	*e*PKPdf		PKPdf	09 57 47.9	+0.8	
BR101	Keskin Array S	135.92	308	*e*PKPdf		PKPdf	09 57 46.6	-2.5	
BRTR	Keskin Array B	135.92	308	PKP		PKPdf	09 57 46.6	-2.5	
	comp=Z,1.1nm,1.1s,baz=180,slow=2.3,SNR=2.6								
BR231	Keskin MP Arra	136.53	308	*e*PKPdf		PKPdf	09 57 50.8	+0.6	
STHS	Stebnicka Huta	139.90	326	*e*PKIKP		PKPdf	09 57 56.9	+1.0	
STHS	Stebnicka Huta	139.90	326	*e*PKP		PKPdf	09 57 56.9	+1.0	
CRVS	Cervenica-Dubn	140.08	325	*e*PKIKP		PKPdf	09 57 57.0	+0.8	
CRVS	Cervenica-Dubn	140.08	325	*e*PKP		PKPdf	09 57 57.0	+0.8	
PSZ	Piszkesteto	141.51	325	eSKSdf		PKPdf	09 58 00.0	+1.1	
VYHS	Vyhne	141.72	327	*e*PKIKP		PKPdf	09 57 57.1	-2.1	
VYHS	Vyhne	141.72	327	*e*PKP		PKPdf	09 57 57.1	-2.1	
DPC	Dobruska-Polom	141.74	331	*e*PKP		PKPdf	09 57 57.0	-2.2	
BRG	Berggiesshubel	142.43	333	*e*PKP		PKPdf	09 57 56.6	-3.7	
	comp=Z,8.9nm,1.0s								
BRG	Berggiesshubel	142.43	333	*e*PKIKP		PKPdf	09 57 56.6	-3.7	
BRG				pmax		pmax			
	comp=Z,9.0nm,1.0s								
CLL	Collm	142.50	334	*i* PKP		PKPdf	09 58 03.3	+2.8	
	comp=Z,12nm,1.1s								
GOPC	GO Pecny, Ondr	142.75	331	*e*PKP		PKPdf	09 57 57.1	-3.9	
PRU	Pruhonice	142.81	331	*e*PKP		PKPdf	09 57 57.8	-3.3	
TREC	Trest	142.86	330	*e*PKP		PKPdf	09 57 58.5	-2.7	
PKSM	Moragy	143.21	324	eSKSdf		PKPbc	09 57 59.5	+0.6	
SOP	Sopron	143.41	327	eSKSdf		PKPbc	09 58 00.7	+1.3	
NKC	Novy Kostel	143.54	333	*e*PKP		PKPbc	09 58 00.3	+0.6	
CONA	Conrad Observa	143.60	328	*i* PKPdf		PKPbc	09 58 01.1	+1.1	
	comp=Z,34nm,1.2s,SNR=21								
KHC	Kasperske Hory	143.86	331	*e*PKP		PKPbc	09 58 01.2	+0.5	
KHC				*ex*		x	09 58 29.3		
KHC	Kasperske Hory	143.86	331	*e*PKIKP		PKPbc	09 58 01.3	+0.6	
KHC	Kasperske Hory	143.86	331	*e*PKPdf		PKPbc	09 58 01.3	+0.6	
GEC2	GERESS Array S	144.01	331	*e*PKIKP		PKPbc	09 58 02.1	+0.8	
GEC2	GERESS Array S	144.01	331	*e*PKPdf		PKPbc	09 58 02.1	+0.8	
GERES	GERESS Array B	144.01	331	PKP		PKPab	09 58 01.0	+0.2	
	comp=Z,6.6nm,0.9s,baz=33,slow=3.2,SNR=21								
GERES	GERESS Array B	144.01	331	PKIKP		PKPab	09 58 01.0	+0.3	
GERES				pmax		pmax			
	comp=Z,7.0nm,0.9s								
GEA0	GERESS Array S	144.01	331	*e*PKPdf		PKPbc	09 58 01.4	+0.2	
BEHE	Becsehely	144.07	325	eSKSdf		PKPbc	09 58 02.7	+1.3	
ARSA	Arzberg	144.22	327	*i* PKPdf		PKPbc	09 58 02.3	+0.4	
	comp=Z,32nm,1.2s,SNR=14								
WTSB	Winterswijk	144.26	340	*e*PKP		PKPbc	09 58 02.6	+0.8	
IVA	Berane	144.32	318	⇑*i* PKP		PKPbc	09 58 02.9	+0.5	
KOGS	Kog	144.37	326	*i* PKPbc		PKPbc	09 58 02.5	+0.2	
PLE	Pljevlja	144.40	319	⇑*i* PKP		PKPdf	09 58 03.7	-0.5	
PVY	Plav	144.42	318	⇑*i* PKP		PKPbc	09 58 02.8	0.0	
MOA	Molln	144.44	329	*i* PKPdf		PKPbc	09 58 03.1	+0.6	
	comp=Z,55nm,1.0s,SNR=46								
GRFO	Grafenberg	144.47	334	*e*PKIKP		PKPbc	09 58 03.3	+0.7	
GRFO	Grafenberg	144.47	334	*e*PKPdf		PKPbc	09 58 03.3	+0.7	
UPM	Unac-Piva	144.76	319	⇑*i* PKP		PKPab	09 58 03.5	-0.3	
PERS	Pernice	144.84	327	*i* PKPbc		PKPbc	09 58 04.1	+0.2	
PERS				*e*PP		PP	10 01 21.4	-0.6	
SOKA	Soboth	144.86	327	*i* PKPdf		PKPbc	09 58 04.3	+0.3	
	comp=Z,64nm,1.0s,SNR=52								
NKY	Niksic	144.92	319	⇑*i* PKP		PKPbc	09 58 04.7	+0.3	
TTG	Podgorica	144.95	318	⇑*i* PKP		PKPbc	09 58 04.5	+0.2	
BRY	Bratogost	145.15	319	⇑*i* PKP		PKPbc	09 58 05.1	-0.1	
ULC	Ulcinj	145.20	317	⇑*i* PKP		PKPbc	09 58 05.2	0.0	
OBKA	Obir	145.22	327	*i* PKPdf		PKPbc	09 58 05.1	-0.1	
	comp=Z,58nm,1.0s,SNR=20								
BUM	Brajici-Budva	145.25	318	⇑*i* PKP		PKPbc	09 58 05.2	-0.2	
HCY	Herceg Novi	145.42	318	⇑*i* PKP		PKPbc	09 58 04.3	-1.6	
KBA	Koelnbreinsper	145.43	329	*i* PKPdf		PKPbc	09 58 05.8	-0.2	
	comp=Z,80nm,1.1s,SNR=56								
LJU	Ljubljana	145.54	327	*i* PKPbc		PKPab	09 58 06.7	+0.3	
LJU				*i* PP		PP	10 01 24.0	-2.1	
HGN	Heimansgroeve	145.57	340	*e*PKP		PKPab	09 58 06.3	0.0	
	comp=Z,122nm,1.3s								
MYKA	Terra Mystica	145.59	328	*i* PKPab		PKPdf	09 58 06.1	-0.1	
	comp=Z,84nm,1.6s,SNR=25								
BEBN	Ebersmael	145.62	340	PKP		PKPab	09 58 07.1	+0.6	
CWF	Charnwood Fore	145.65	348	*e*PKPdf		PKPdf	09 58 06.0	+0.1	
MEM	Membach	145.68	339	PKP		PKPab	09 58 06.9	+0.2	
RCBR	Riachuelo	145.68	134	*e*PKPdf		PKPdf	09 58 06.6	-0.7	
STU	Stuttgart	146.02	335	*e*PKP2		PKPab	09 58 08.4	+0.3	
STU	Stuttgart	146.02	335	*e*PKPdf		PKPab	09 58 08.4	+0.3	
ABTA	Abfaltersbach	146.07	329	*i* PKPab		PKPdf	09 58 07.4	+0.5	
	comp=Z,85nm,0.9s,SNR=49								
BCLA	Clavier	146.07	340	PKP		PKPab	09 58 08.2	0.0	
WATA	Walderalm	146.08	331	*i* PKPab		PKPbc	09 58 08.1	+0.1	
	comp=Z,75nm,1.3s,SNR=11								
WTTA	Wattenberg	146.11	331	*i* PKPab		PKPbc	09 58 08.4	+0.3	
	comp=Z,81nm,1.3s,SNR=21								
TRI	Trieste	146.16	327	*e*PKP2		PKPdf	09 58 07.6	+0.6	
TRI	Trieste	146.16	327	*e*PKPdf		PKPdf	09 58 07.5	+0.6	
MOTA	Moosalm	146.29	331	*i* pPKPdf		PKPab	09 58 09.6	+0.2	
	comp=Z,64nm,1.1s,SNR=20								
SNF	Seneffe	146.31	341	PKP		PKPab	09 58 08.8	-0.2	
RETA	Reutte	146.34	332	*i* PKPab		PKPbc	09 58 08.8	+0.2	
	comp=Z,35nm,1.3s,SNR=14								
LANF	Langenberg	146.40	336	⇑*e*P		PKPab	09 58 09.8	+0.3	
WLF	Walferdange	146.43	338	PKP		PKPab	09 58 10.2	+0.6	
WLF	Walferdange	146.43	338	*e*PKP2		PKPab	09 58 10.2	+0.6	
WLF	Walferdange	146.43	338	*e*PKPdf		PKPab	09 58 10.2	+0.6	
DOU	Dourbes	146.58	340	PKP		PKPbc	09 58 09.5	+0.4	
FETA	Feichten	146.71	331	*i* pPKPdf		PKPbc	09 58 10.3	+0.5	
	comp=Z,54nm,1.0s,SNR=24								
BFO	Black Forest	146.72	335	*e*PKP2		PKPbc	09 58 09.8	+0.2	
BFO	Black Forest	146.72	335	*e*PKPbc		PKPbc	09 58 09.8	+0.2	
DAVA	Damuels	146.88	332	*i* PKPab		PKPbc	09 58 10.7	+0.4	
	comp=Z,54nm,1.2s,SNR=16								
FUORN	Ofenpass-Fuorn	147.22	331	*e*PKPbc		PKPbc	09 58 11.9	+0.5	
ECH	Echery	147.27	336	⇑*e*P		PKPbc	09 58 11.8	+0.6	
MOF	Molkenrain	147.58	336	*e*P		PKPbc	09 58 12.8	+0.7	
THEF	They Montfort	147.70	337	⇑*e*P		PKPbc	09 58 13.3	+0.9	
TUE	Stuetta	147.74	332	*e*PKPbc		PKPbc	09 58 13.1	+0.3	
LOMF	Lomont	148.11	335	⇑*e*P		PKPbc	09 58 14.6	+1.0	
TIP	Timpagrande	148.24	315	*e*PKPbc		PKPbc	09 58 14.7	+0.5	
CUC	Castrocucco	148.44	317	*e*PKPbc		PKPbc	09 58 13.8	-0.8	
AQU	L'Aquila	148.54	322	*e*PKP2		PKPbc	09 58 15.4	+0.6	
AQU	L'Aquila	148.54	322	*e*PKPbc		PKPbc	09 58 15.4	+0.6	
SENIN	Lac Senin/Sane	148.71	334	*e*PKPbc		PKPbc	09 58 15.7	+0.3	
GDM	Grand'Maison	150.14	334	*e*P		PKPbc	09 58 19.8	+1.0	
GRN	Grenoble	150.26	334	*e*P		PKPbc	09 58 20.2	+1.2	
PLDF	La Plantade	150.47	338	⇑*e*P		PKPbc	09 58 20.5	+1.0	
AGO	Saint Agoulin	150.58	338	⇑*e*P		PKPbc	09 58 20.3	+0.6	
SSB	Saint Sauveur	150.71	336	*e*P		PKPbc	09 58 20.9	+0.8	
SSB	Saint Sauveur	150.71	336	*e*PKIKP		PKPbc	09 58 19.9	-0.2	
SSB	Saint Sauveur	150.71	336	*e*PKPbc		PKPbc	09 58 19.9	-0.2	
PYM	Petit Puy Mans	150.88	338	⇑*e*P		PKPbc	09 58 21.3	+0.8	
OG26	St.-Nazaire-De	150.98	334	*e*P		PKPbc	09 58 21.7	+1.0	
LBL	Lubilhac	151.24	337	⇑*e*P		PKPbc	09 58 22.6	+1.3	
VSL	Villasalto	152.72	322	*e*PKPbc		PKPbc	09 58 25.1	+0.3	
KEST	Kesra	155.06	315	PKPbc		PKPbc	09 58 29.2		
	comp=Z,4.2nm,0.9s,baz=326,slow=7.3,SNR=4.2								
ES19	SONSECA Array	158.54	343	*e*PKPab		PKPab	09 59 00.8	+0.4	
ESDC	Sonseca Array	158.58	343	PKPab		PKPab	09 58 59.2	-1.4	
	comp=Z,0.3nm,0.3s,baz=14,slow=3.2,SNR=8.5								
TOA0	Torodi Ar. Sit	165.43	247	*e*PKPdf		PKPdf	09 58 32.3	-0.8	
TOA0				*e*PKPab		PKPab	09 59 31.0	-0.3	
TOA0				*e*PKPab		PKPab	09 59 31.5	+0.2	
TORD	Torodi Ar. Bea	165.43	247	PKP		PKPdf	09 58 32.4	-0.8	
	comp=Z,2.3nm,1.1s,baz=25,slow=2.4,SNR=7.6								
TORD				PKPab		PKPab	09 59 30.9	-0.4	
	comp=Z,5.0nm,1.1s,baz=95,slow=3.2,SNR=11								
TOA1	Torodi Ar. Sit	165.43	247	*e*PKPdf		PKPdf	09 58 32.4	-0.8	
TOA1				*e*PKPab		PKPab	09 59 30.9	-0.4	

IDC ***29*** *09:41:43.4± 1.4, 19°.25S× 167°.79E, h0km, mb4.1/6, mb1 4.4/7, mb1mx4.0/34, mbtmp4.1/7, ML3.7/1, Error ellipse: s-maj=52.2km s-min=23.3km az=143.0*

ISCJB ***29*** *09:41:45.1± 1.1, 19°.3S± 0°.1× 167°.7E± 0°.2, h20km, mb4.0/6, Error ellipse: s-maj=29.0km

comp=Z,751nm,19.2s,baz=90,slow=34
AS01 Alice Springs 31.78 256 *e*P **P** 09 53 35.3 -0.3
AS31 Alice Springs 31.82 256 *e*P **P** 09 53 35.8 -0.1
comp=Z,5.9nm,0.8s
ASAR Alice Springs 31.82 256 P **P** 09 53 35.8 -0.2
comp=Z,16nm,0.8s,baz=84,slow=8.8,SNR=101
ASAR PcP **PcP** 09 56 25.6 -1.1
comp=Z,1.5nm,0.9s,baz=100,slow=1.1,SNR=4.0
ASAR LR LR 10 06 18.8
comp=Z,901nm,18.3s,baz=92,slow=36
GENI Genyem 31.84 298 P **P** 09 53 36.3 +0.2
MTN Manton Dam 35.84 275 *e*P **P** 09 54 09.8 -1.0
comp=Z,27nm,0.9s
FITZ Fitzroy Crossi 39.94 265 LR LR 10 10 17.0
comp=Z,593nm,18.6s,slow=35
FITZ Fitzroy Crossi 39.94 265 *e*P **P** 09 54 45.7 +0.3
comp=Z,35nm,0.9s
PPT2 Papeete2 40.32 95 *e*LQ LQ 10 04 11.8
comp=Z,638nm,28.0s
PPT2 *e*LR LR 10 05 53.6
comp=Z,831nm,27.5s
PPT Papeete 40.32 94 LR LR 10 07 54.7
comp=Z,241nm,18.6s,baz=260,slow=31
SWI Sorong 40.33 293 P **P** 09 54 47.9 -0.8
MBWA Marble Bar 45.05 259 *e*P **P** 09 55 27.0 0.0
comp=Z,38nm,1.0s
NWAO Narrogin (SRO) 46.97 243 *e*P **P** 09 55 41.9 -0.1
NWAO pmax pmax
comp=Z,46nm,1.0s
NWAO Narrogin (SRO) 46.97 243 *e*P **P** 09 55 41.9 -0.1
comp=Z,46nm,1.0s
LUWI Luwuk 47.78 287 *e*P **P** 09 55 48.4 -0.2
comp=Z,45nm,1.1s
KAPI Kappang 48.98 281 *e*P **P** 09 55 57.3 -0.5
comp=Z,35nm,1.1s
TAOE Nuku Hiva Isla 51.32 86 *e*LR LR 10 10 58.5
comp=Z,226nm,25.2s
RKT Rikitea 53.10 105 *e*LR LR 10 11 47.8
comp=Z,298nm,29.8s
VNDA Vanda 58.18 182 P **P** 09 57 04.7 +0.4
comp=Z,3.2nm,0.9s,baz=357,slow=7.5,SNR=12
LEM Lembang 59.73 273 P P 09 57 21.9 +5.7
comp=Z,42nm,0.8s,baz=116,slow=6.4,SNR=5.4
LEM Lembang 59.73 273 P P
LEM pmax pmax
comp=Z,43nm,0.8s
KSM Kuching 60.16 283 *e*P **P** 09 57 18.6 -0.5
comp=Z,27nm,1.2s
MJAR Matsushiro Arr 62.35 333 P **P** 09 57 32.6 -0.7
comp=Z,1.6nm,0.9s,baz=159,slow=7.8,SNR=2.5
MJAR Matsushiro Arr 62.35 333 P **P** 09 57 32.6 -0.7
MJAR pmax pmax
comp=Z,1.0nm,0.8s
ASAJ Asahikawa 67.36 341 P **P** 09 58 05.5 -0.3
comp=Z,18nm,1.1s,baz=218,slow=18,SNR=3.3
NJ2 Nanjing 69.47 317 *e*P **P** 09 58 18.8 -0.5
NJ2 pmax pmax
comp=Z,16nm,0.8s
IPM Ipoh 69.86 282 *e*P **P** 09 58 21.8 -0.3
comp=Z,17nm,0.9s
YSS Yuzh-Sakhalins 69.87 342 *e*P **P** 09 58 23.2 +1.8
YSS pmax pmax
comp=Z,20nm,1.2s
QSPA South Pole Qui 70.60 180 *e*P **P** 09 58 26.6 +0.6
PSI Prapat 71.19 280 P **P** 09 58 29.2 -1.1
comp=Z,13nm,0.8s,baz=139,slow=5.6,SNR=7.2
PSI Prapat 71.19 280 *e*P **P** 09 58 29.5 -0.9
PSI pmax pmax
comp=Z,18nm,1.0s
PSI Prapat 71.19 280 *e*P **P** 09 58 29.5 -0.9
comp=Z,18nm,1.0s
USRK Ussuriysk Ar. 71.34 334 P **P** 09 58 29.4 -1.0
comp=Z,2.9nm,0.9s,baz=104,slow=6.1,SNR=4.7
TRTT Trang 72.38 285 P **P** 09 58 38.5 +1.1
comp=Z,12nm,1.5s
SKNT Sakolnakorn 72.46 296 P **P** 09 58 38.6 +0.8
comp=Z,9.3nm,1.1s,comp=Z,2um
PETK Petropavlovsk- 72.79 354 P **P** 09 58 38.6 -0.4
comp=Z,8.9nm,0.9s,baz=133,slow=8.5,SNR=5.0
CN2 Changchun 73.98 329 *e*P P 09 58 49.5 +3.4
GYA Guiyang 74.89 306 P **P** 09 58 53.3 +1.3
GYA pmax pmax
comp=Z,10.0nm,1.0s
KLR Kul'dur 75.54 336 *e*P **P** 09 58 55.9 +0.8
KHLT Khaolaem Dam 76.18 291 P **P** 09 59 01.5 +2.0
comp=Z,5.6nm,1.6s,comp=Z,346nm
KMI Kunming 77.29 303 P **P** 09 59 07.5 +1.6
KMI pmax pmax
comp=Z,13nm,1.0s
KMI pmax pmax
comp=Z,150nm,7.1s
XAN Xi'an 77.31 313 P **P** 09 59 07.0 +1.5
XAN S **S** 10 08 56.5 +2.3
XAN pmax pmax
comp=Z,110nm,6.9s
CMAR Chiang Mai Arr 77.42 295 P **P** 09 59 07.0 +0.5
comp=Z,1.0nm,0.4s,baz=132,slow=4.4,SNR=12
CMAR Chiang Mai Arr 77.42 295 *i* P **P** 09 59 07.5 +1.1
CMAR pmax pmax
comp=Z,1.0nm,0.4s
MAW Mawson 77.75 202 P **P** 09 59 08.2 +0.8
comp=Z,6.9nm,0.9s,baz=111,slow=5.6,SNR=6.1
MAW Mawson 77.75 202 *e*P **P** 09 59 08.0 +0.6
MAW pmax pmax
comp=Z,6.0nm,1.6s
MAW Mawson 77.75 202 *e*P **P** 09 59 08.0 +0.6
comp=Z,6.1nm,1.6s
CD2 Chengdu 79.34 308 P **P** 09 59 17.0 +0.1
CD2 pmax pmax
comp=Z,1.0nm,0.6s
HHC Hu-ho-hao-te 79.55 320 *e*P **P** 09 59 20.3 +2.5
HHC pmax pmax
comp=Z,24nm,1.0s
HHC pmax pmax
comp=Z,150nm,6.5s
SEY Seymchan 83.01 353 *i* P **P** 09 59 37.7 +2.2
SVW2 Sparrevohn 85.47 17 *e*P **P** 09 59 47.6 -0.5
ULN Ulaanbaatar 86.27 324‖ *e*P **P** 09 59 53.0 +0.4
ULN pmax pmax
comp=Z,21nm,1.1s
ULN Ulaanbaatar 86.27 324 *e*P **P** 09 59 53.0 +0.4
comp=Z,17nm,1.0s
GTA Gaotai 86.34 314 *e*P **P** 09 59 53.3 +0.2
GTA pP sP 10 00 04.5 -0.1
GTA sP pP 10 00 10.0 +8.5
GTA pmax pmax
comp=Z,3.0nm,1.0s
SONM Songino Array 86.62 324 P **P** 09 59 53.7 -0.5
comp=Z,3.6nm,0.6s,baz=109,slow=7.8,SNR=3.0
YAK Yakutsk 86.69 343 *i* P **P** 09 59 53.5 -0.5
YAK pmax pmax
comp=Z,15nm,0.8s
TNA Tin City 86.73 10 *e*P **P** 09 59 55.9 +1.7
TT01 Tatalina 86.86 16 *e*P **P** 09 59 54.8 -0.1
TTA Tatalina 86.88 16 *e*P **P** 09 59 56.4 +1.3
TTA Tatalina 86.88 16 *e*P **P** 09 59 56.4 +1.3
BILL Bilibino 87.24 359‖ *e*P **P** 09 59 56.1 -0.6
BILL *e* 10 00 04.6
BILL *e*S **S** 10 10 39.3 +4.8
BILL pmax pmax
comp=Z,8.0nm,1.4s
BILL MLR MLR
comp=Z,54nm,19.0s
BILL Bilibino 87.24 359 *e*P **P** 09 59 56.1 -0.6
BILL *e*pP **pP** 10 00 05.4 +0.3
WDC Whiskeytown Da 87.93 46 *e*P **P** 10 00 01.2 +0.6
WDC *e**PP **sP** 10 00 11.6 -0.5
WDC Whiskeytown Da 87.93 46 *e*P **P** 10 00 01.2 +0.6
WDC *e*pP **sP** 10 00 11.6 -0.5
AFDM Forest Hills D 88.26 48 *e*P **P** 10 00 02.5 +0.2
CMB Columbia Colle 88.26 49 *e*P **P** 10 00 01.6 -0.7
CMB pmax pmax
comp=Z,28nm,0.7s
CMB Columbia Colle 88.26 49 *e*P **P** 10 00 01.6 -0.7
comp=Z,28nm,0.7s
O03D Paynes Creek 88.30 46 P **P** 10 00 02.5 +0.1
baz=243
CAST Castle Rocks 88.32 17 *e*P **P** 10 00 00.9 -1.1
YBH Yreka Blue Hor 88.35 45 *e*P **P** 10 00 02.4 -0.3
YBH Yreka Blue Hor 88.35 45 *e*P **P** 10 00 02.4 -0.3
SSK Sunset Peak 88.59 53 *e*P **P** 10 00 04.0 -0.2
SNAA Sanae 88.89 183 P **P** 10 00 04.8 0.0
SNAA Sanae 88.89 183 *i* P **P** 10 00 03.9 -0.9
SNAA Sanae 88.89 183 *e*P **P** 10 00 04.3 -0.5
comp=Z,514nm,0.8s
WAKR Walker 89.14 49 *e*P **P** 10 00 05.3 -1.3
WAKR *e*pP **sP** 10 00 17.2 -0.9
MPMC Manual Prospec 89.51 51 P **P** 10 00 08.2 -0.2
baz=246
DAC Darwin (Calif) 89.52 51 *e*P **P** 10 00 11.3 +2.8
DAC Darwin (Calif) 89.52 51 *e*P **P** 10 00 11.3 +2.8
VNA3 Neumayer Olymp 89.53 181 P **P** 10 00 07.5 -0.2
VNA2 Neumayer--Watz 89.80 182 P **P** 10 00 09.0 0.0
baz=171,slow=4.1
NV01 Mina Array Sit 89.91 49 *e*P **P** 10 00 09.6 -0.7
NVAR Mina Array Bea 89.91 49 P **P** 10 00 08.9 -1.4
comp=Z,2.9nm,0.8s,baz=227,slow=8.6,SNR=9.7
NVAR LR LR 10 33 39.6
comp=Z,121nm,20.2s,baz=262,slow=31
K05A Summer Lake 90.01 44 *e*P **P** 10 00 10.5 0.0
K05A *e*pP **pP** 10 00 20.1 +1.0
NV11 Mina Array Sit 90.02 49 *e*P **P** 10 00 10.4 -0.3
MOD Modoc Plateau 90.03 45 *e*P **P** 10 00 10.2 -0.4
comp=Z,3.4nm,0.5s
J05D Fort Rock, OR 90.03 44 P **P** 10 00 10.6 0.0
baz=243
H04A Detroit Lake 90.06 42 *e*P **P** 10 00 11.2 +0.6
H04A *e*pP **pP** 10 00 20.4 +1.4
BC3 Big Chuckawall 90.07 54 P **P** 10 00 11.1 +0.1
baz=247
VNA1 Neumayer--Stat 90.10 181 P **P** 10 00 10.7 +0.4
FURC Furnace Creek, 90.14 51 P **P** 10 00 11.0 0.0
baz=246
TLY Talaya 90.20 326 *e*P **P** 10 00 10.5 -0.6
TLY pmax pmax
comp=Z,9.0nm,0.9s
SRIG Santa Rosalia 90.21 61 *e*P **P** 10 00 10.4 -1.2
WRH Wood River Hil 90.25 18 *e*P **P** 10 00 11.1 +0.2
I05D Terrebonne, OR 90.44 43 P **P** 10 00 11.4 -1.0
baz=243
CCB Clear Creek Bu 90.46 18 *e*P **P** 10 00 11.1 -0.8
IRM Iron Mountain 90.50 54 P **P** 10 00 13.1 +0.2
baz=247
MDM Murphy Dome 90.58 17 *e*P **P** 10 00 10.8 -1.7
TPNV Topopah Spring 90.78 51 P **P** 10 00 13.9 -0.3
baz=246
TPNV Topopah Spring 90.78 51 *e*P **P** 10 00 14.0 -0.3
TPNV Topopah Spring 90.78 51 *e*P **P** 10 00 14.0 -0.3
Y12C Blythe 90.82 54 P **P** 10 00 14.2 -0.1
baz=247
Y12C Blythe 90.82 54 *e*P **P** 10 00 14.1 -0.3
ILAR Eielson Array 90.82 18 P **P** 10 00 10.8 -2.7
comp=Z,1.9nm,1.0s,baz=237,slow=6.1,SNR=8.6
SLBS Sierra La Lagu 90.84 65 *e*P P 10 00 11.2 -3.5
SLBS *e*pP **PcP** 10 00 16.6 +0.8
DOT Dot Lake 90.85 19 *e*P **P** 10 00 13.6 -0.2
LON Longmire 91.25 40 *e*P **P** 10 00 16.3 +0.2
LON Longmire 91.25 40 *e*P **P** 10 00 16.3 +0.2
PDMCI Parker Dam,Lak 91.32 54 P **P** 10 00 16.1 -0.6
baz=247
D05A Enumclaw 91.34 40 *e*P P 10 00 20.6 +4.2
WVOR Wild Horse Val 91.38 45 *e*P P 10 00 20.7 +3.8
WVOR Wild Horse Val 91.38 45 *e*P P 10 00 20.6 +3.8
214A Organ Pipe Nat 91.47 57 P **P** 10 00 17.1 -0.4
baz=248
B05A Bryant 91.77 39 P **P** 10 00 18.6 +0.2
baz=243
COLD Coldfoot 91.81 15 *e*P **P** 10 00 19.4 +1.3
Y14A Wickenburg 92.06 55 *e*P **P** 10 00 21.1 +1.0
LTY Liberty 92.17 40 *e*P **P** 10 00 22.0 +1.6
HAWA Hanford 92.50 41 *e*P **P** 10 00 22.2 +0.4
EGAK Eagle 92.55 19 *e*P P 10 00 25.0 +3.4
LCMT Little Creek M 93.03 52 *e*P **P** 10 00 24.5 -0.1
TUC Tucson 93.20 57 P **P** 10 00 25.2 -0.4
baz=249
TUC Tucson 93.20 57 *e*P **P** 10 00 25.1 -0.4
TUC pmax pmax
comp=Z,6.0nm,1.0s
TUC Tucson 93.20 57 *e*P **P** 10 00 25.1 -0.4
comp=Z,5.6nm,1.0s
KNB Kanab 93.34 52 *e*P P 10 00 29.4 +3.2
KNB Kanab 93.34 52 *e*P P 10 00 29.4 +3.2
X16A Lo Mia Camp, P 93.44 55 *e*P **P** 10 00 27.3 +0.6
B08A Colville Reser 93.47 40 *e*P **P** 10 00 25.7 -0.6
TIXI Tiksi 94.69 348 *i* P **P** 10 00 33.3 +2.0
TIXI pmax pmax
comp=Z,3.0nm,1.5s
WMQ Urumqi 96.42 314 P **P** 10 00 40.3 +0.3
WMQ pmax pmax
comp=Z,2.0nm,0.6s
WMQ pmax pmax
comp=Z,28nm,4.0s
WMQ LR LR
comp=Z,26nm,20.0s
WMQ LR LR
comp=Z,72nm,23.0s
Y22D IRIS PASSCAL I 96.84 56 *e*P P 10 00 38.3 -3.9
TXAR Lajitas Array 98.00 62 P **P** 10 00 46.7 -0.8
comp=Z,0.5nm,0.7s,baz=237,slow=5.1,SNR=5.8
YKA Yellowknife Ar 101.45 28 P **Pdif** 10 01 00.8 -1.1
comp=Z,0.6nm,1.0s,baz=256,slow=4.9,SNR=8.3
KLMR Klimovskoe 125.12 332 *e*PKIKP **PKPdf** 10 06 08.0 -2.7
KLMR pmax pmax
comp=Z,7.0nm,1.2s
AKASG Malin Array Be 134.90 324 PKIKP **PKPdf** 10 06 28.0 -1.6
comp=Z,0.4nm,0.5s,baz=56,slow=2.3,SNR=4.3
AKASG Malin Array Be 134.90 324 PKIKP **PKPdf** 10 06 28.0 -1.6
BRTR Keskin Array B 135.92 307 PKP **PKPdf** 10 06 31.1 -1.0
comp=Z,0.3nm,0.6s,baz=48,slow=1.8,SNR=4.0
VYHS Vyhne 141.76 326 *e*PKIKP **PKPdf** 10 06 39.7 -2.5
VYHS Vyhne 141.76 326 *e*PKP **PKPdf** 10 06 39.7 -2.5
DPC Dobruska-Polom 141.78 330 *e*PKP **PKPdf** 10 06 39.6 -2.7
CLL Collm 142.55 334 *e*PKPdf **PKPdf** 10 06 44.0 +0.5
comp=Z,7.0nm,1.2s
CONA Conrad Observa 143.65 328 *i* PKPdf PKPbc 10 06 43.9 +0.8
comp=Z,15nm,1.1s,SNR=9.7
KHC Kasperske Hory 143.91 331 *e*PKP PKPbc 10 06 43.8 0.0
GERES GERESS Array B 144.06 331 PKP PKPbc 10 06 44.2 -0.2
comp=Z,3.0nm,0.8s,baz=29,slow=3.0,SNR=9.3
ARSA Arzberg 144.27 327 *i* PKPdf **PKPab** 10 06 44.7 +0.1
comp=Z,15nm,1.2s,SNR=5.9
MOA Molln 144.49 329 *i* PKPdf PKPbc 10 06 45.8 +0.2
comp=Z,28nm,1.0s,SNR=17
PERS Pernice 144.88 327 *i* PKPbc **PKPab** 10 06 46.6 -0.4
PERS *e* 10 13 29.2
SOKA Soboth 144.90 327 *i* PKPdf **PKPab** 10 06 46.6 -0.5
comp=Z,30nm,1.1s,SNR=17
OBKA Obir 145.26 327 *i* PKPdf **PKPbc** 10 06 47.6 -0.7
comp=Z,24nm,1.0s,SNR=8.1
KBA Koelnbreinsper 145.47 329 *i* PKPdf **PKPdf** 10 06 48.2 -0.8
comp=Z,32nm,1.0s,SNR=20
LJU Ljubljana 145.58 326 *i* PKPbc **PKPdf** 10 06 48.9 -0.1
LJU *e* 10 13 31.3
MYKA Terra Mystica 145.64 328 *i* PKPab **PKPdf** 10 06 48.6 -0.6
comp=Z,21nm,0.9s,SNR=12
MEM Membach 145.74 339 PKP **PKPbc** 10 06 49.6 +0.1
ABTA Abfaltersbach 146.11 329 *i* PKPbc **PKPdf** 10 06 49.7 -0.3
comp=Z,47nm,1.1s,SNR=16
BCLA Clavier 146.13 340 PKP **PKPbc** 10 06 50.3 -0.5
WTTA Wattenberg 146.16 330 *i* PKPab **PKPbc** 10 06 50.8 -0.4
comp=Z,30nm,1.1s,SNR=8.1
MOTA Moosalm 146.34 331 *i* PKPab **PKPab** 10 06 52.5 0.0
comp=Z,20nm,0.9s,SNR=8.3
SNF Seneffe 146.38 341 PKP **PKPab** 10 06 52.5 +0.2
RETA Reutte 146.39 332 *i* PKPab **PKPbc** 10 06 51.4 -0.3
comp=Z,10nm,0.9s,SNR=6.0
WLF Walferdange 146.49 338 PKP **PKPbc** 10 06 52.3 +0.4
DOU Dourbes 146.64 340 PKP **PKPbc** 10 06 52.4 +0.1
FETA Feichten 146.75 331 *i* PKPab **PKPbc** 10 06 52.7 -0.2
comp=Z,23nm,1.0s,SNR=12
DAVA Damuels 146.94 332 *i* PKPab **PKPbc** 10 06 53.1 -0.3
comp=Z,19nm,1.0s,SNR=7.8
DAVOX Davos/Dischmat 147.32 332 PKPbc **PKPbc** 10 06 54.4 -0.2
comp=Z,19nm,0.9s,baz=52,slow=1.2,SNR=22
TORD Torodi Ar. Bea 165.33 247 PKP **PKPdf** 10 07 14.2 -1.8
comp=Z,0.6nm,1.0s,baz=170,slow=2.5,SNR=2.5
TORD PKPab **PKPab** 10 08 13.2 -0.6
comp=Z,3.1nm,1.0s,baz=103,slow=6.7,SNR=8.0

*IDC **29** 09:52:12.5±690.0, **47°11N×47°60E, h0**km, **Error ellipse: s-maj=231.4km s-min=158.0km az=45.0,***
Ukraine-Moldova-Southwestern Russia region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
I31KZ	**AKTYUBINSK INF**	**7.65**	**61**	*i*		10 43 00.0	
	baz=248,slow=310,SNR=1.4						
I43RU	**DUBNA INFRASON**	**1.55**	**330**	*i*		11 00 40.0	
	baz=140,slow=316,SNR=0.5						
I46RU	**ZALESOVO INFRA**	**24.41**	**60**	*i*		12 39 01.2	
	baz=263,slow=311,SNR=2.3						

*IDC **29** 09:53:50.0±0.7, 19°29S×167°98E, h0km, mb4.2/10,*
mb1 4.5/11, mb1mx4.2/28, mbtmp4.2/11, ML4.0/1, Error
ellipse: s-maj=25.7km s-min=17.4km az=130.0
*NEIC **29** 09:53:51.4±0.4, 19°29S×167°97E, h10km, mb4.7/3, Error*
ellipse: s-maj=13.2km s-min=10.1km az=129.0
*ISCJB **29** 09:53:52.8±0.5, 19°33S±0°07×167°87E±0°1, h26km,*
mb4.3/12, Error ellipse: s-maj=14.4km s-min=9.4km
az=23.4

ISC 29 09:53:54.0±0.6, 19°35S±0°09×167°9E±0°1, h26km, n38,
σ0°77/38, mb4.3/12, 1C, Vanuatu Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
DZM	**Mont Dzumac**	**3.04**	**207**	Pn	**Pn**	**09 54 40.1**	**-0.4**
	17nm,0.3s,baz=52,slow=13,SNR=51						
DZM				Sn	**Sn**	**09 55 14.2**	**-1.9**
	108nm,0.3s,baz=124,slow=22,SNR=13						
CTA	**Charters Tower**	**20.41**	**264**	P	**P**	**09 58 30.1**	**+0.8**
	7.6nm,1.0s,baz=79,slow=9.7,SNR=2.8						
RPZ	**Rata Peaks**	**24.43**	**174**	P	**P**	**09 59 11.1**	**+0.5**
	11nm,1.1s,baz=10,slow=11,SNR=2.9						
STKA	**Stephens Creek**	**26.73**	**237**	P	**P**	**09 59 32.5**	**+1.0**
	2.1nm,0.5s,baz=71,slow=11,SNR=15						
WRAB	**Tennant Creek**	**31.59**	**263**	*e*P	**P**	**10 00 14.3**	**-0.6**
	1.6nm,0.5s						
WRA	**Warramunga Arr**	**31.60**	**263**	P	**P**	**10 00 14.6**	**-0.4**
	1.6nm,0.4s,baz=84,slow=8.3,SNR=19						
ASAR	**Alice Springs**	**31.89**	**256**	P	**P**	**10 00 17.9**	**+0.4**
	3.6nm,0.5s,baz=84,slow=8.7,SNR=51						
KAPI	**Kappang**	**49.01**	**280**	*e*P	**P**	**10 02 39.4**	**+0.4**
	2.1nm,0.3s						
VNDA	**Vanda**	**58.28**	**182**	P	**P**	**10 03 46.3**	**+0.3**
	1.2nm,0.9s,baz=346,slow=5.4,SNR=6.6						
QSPA	**South Pole Qui**	**70.70**	**180**	*e*P	**P**	**10 05 08.2**	**+0.7**
	22nm,1.0s						
PETK	**Petropavlovsk-**	**72.70**	**354**	P	**P**	**10 05 19.3**	**-0.1**
	2.3nm,0.6s,baz=140,slow=7.4,SNR=5.8						
SYO	**Syowa Base**	**84.47**	**196**‖	*i*P	**P**	**10 06 24.0**	**-0.1**
SNAA	**Sanae**	**88.99**	**183**	P	**P**	**10 06 47.4**	**+1.2**
VNA3	**Neumayer Olymp**	**89.63**	**181**	P	**P**	**10 06 49.1**	**-0.1**
NVAR	**Mina Array Bea**	**89.81**	**49**	P	**P**	**10 06 50.6**	**-0.2**
	1.5nm,0.7s,baz=222,slow=8.1,SNR=7.8						
VNA2	**Neumayer--Watz**	**89.90**	**182**	P	**P**	**10 06 51.7**	**+1.2**
	baz=188,slow=4.1						
VNA1	**Neumayer--Stat**	**90.20**	**181**	P	**P**	**10 06 53.1**	**+1.3**
ILAR	**Eielson Array**	**90.71**	**18**	P	**P**	**10 06 53.2**	**-0.9**
	1.2nm,0.7s,baz=234,slow=5.5,SNR=12						
TXAR	**Lajitas Array**	**97.92**	**62**	P	**P**	**10 07 27.8**	**-0.3**
	0.3nm,0.7s,baz=218,slow=5.4,SNR=5.2						
YKA	**Yellowknife Ar**	**101.34**	**28**	P	**Pdif**	**10 07 43.1**	**+0.7**
	0.2nm,0.6s,baz=257,slow=4.5,SNR=6.9						
KKAR	**Karatay Array**	**108.27**	**310**	*e*PKPdf	**PKiKP**	**10 12 18.2**	**-1.8**
ARCES	**ARCESS Array B**	**124.86**	**345**	PKP	**PKPdf**	**10 12 49.8**	**-1.2**
	0.9nm,0.6s,baz=40,slow=2.1,SNR=6.4						
CONA	**Conrad Observa**	**143.59**	**328**	*i* PKPdf	**PKPdf**	**10 13 26.0**	**-0.5**
	11nm,1.1s,SNR=6.7						
KHC	**Kasperske Hory**	**143.84**	**331**	*e*PKP	**PKPdf**	**10 13 26.9**	**0.0**
GERES	**GERESS Array B**	**143.99**	**331**	PKP	PKPbc	10 13 26.2	+1.0
	1.7nm,0.8s,baz=57,slow=3.6,SNR=5.2						
ARSA	**Arzberg**	**144.21**	**327**	*i* PKPdf	**PKPdf**	**10 13 27.5**	**-0.2**
	6.4nm,1.3s						
MOA	**Molln**	**144.43**	**329**	*i* PKPdf	**PKPdf**	**10 13 28.1**	**+0.2**
	13nm,1.0s,SNR=8.2						
SOKA	**Soboth**	**144.84**	**327**	*i* PKPbc	**PKPdf**	**10 13 29.0**	**+0.2**
	19nm,1.4s,SNR=11						
OBKA	**Obir**	**145.20**	**327**	*i* PKPbc	**PKPdf**	**10 13 30.1**	**+0.7**
	6.4nm,0.6s						
KBA	**Koelnbreinsper**	**145.41**	**329**	*i* PKPbc	**PKPab**	**10 13 30.5**	**+0.4**
	15nm,1.1s,SNR=9.3						
MYKA	**Terra Mystica**	**145.58**	**328**	*i* PKPbc	**PKPab**	**10 13 31.1**	**+0.6**
	12nm,0.9s						
ABTA	**Abfaltersbach**	**146.05**	**329**	*i* PKPdf	**PKPab**	**10 13 32.5**	**+0.2**
	26nm,1.3s,SNR=7.6						
WTTA	**Wattenberg**	**146.09**	**331**	*i* PKPdf	**PKPab**	**10 13 33.4**	**+0.8**
	13nm,1.3s						
RETA	**Reutte**	**146.33**	**332**	*i* PKPdf	**PKPab**	**10 13 33.5**	**+0.2**
	5.5nm,0.9s						
FETA	**Feichten**	**146.69**	**331**	*i* sPKPdf	**PKPab**	**10 13 35.2**	**+0.3**
	6.5nm,0.8s						
BFO	**Black Forest**	**146.71**	**335**	*e*PKPbc	**PKPab**	**10 13 34.8**	**+0.1**
DAVA	**Damuels**	**146.87**	**332**	*i* sPKPdf	**PKPab**	**10 13 35.8**	**+0.3**
	13nm,1.3s						
DAVOX	**Davos/Dischmat**	**147.25**	**332**	PKPbc	**PKPab**	**10 13 36.3**	**-0.8**
	6.1nm,0.5s,baz=270,slow=0.9,SNR=13						

*BYKL **29** 09:56:36.0±0.3, 55°33N×110°21E*

MOS 29 09:56:35.3±1.1, 55°34N×110°21E, h9km, **mb4.2**/1, **5C-1D,**
Error ellipse: s-maj=16.0km s-min=9.9km az=66.2, Lake
Baykal region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
NIZ	**Nizh Angarsk**	**0.58**	**319**	*e*Pg	Pb	09 56 47.4	-0.2
NIZ				*e*Sg	Sb	09 56 55.4	-0.5
NIZ				Pmax			
	58nm,0.2s						
NIZ				Smax			
	763nm,0.3s						
NIZ	**Nizh Angarsk**	**0.58**	**319**	*e*PG	Pb	09 56 47.7	+0.1
NIZ				*e*		09 56 55.4	
NIZ				pmax	pmax		
	comp=Z,48nm,0.3s						
NIZ				smax	smax		
	comp=N,756nm,0.4s						
YLYR	**Ulyunkhan**	**0.72**	**130**‖	*i*Pg	Pg	09 56 49.3	+0.2
YLYR				*e*Pb	Pn	09 56 52.0	+0.4
YLYR				*e*Sg	Sg	09 56 59.0	+0.5
YLYR				*e*		09 57 06.9	
YLYR				max			
	comp=N,133nm,0.4s						
YLYR				Smax			
	comp=N,491nm,0.2s						
YLYR	**Ulyunkhan**	**0.72**	**130**	*e*PG	Pg	09 56 49.3	+0.2
YLYR				*e*		09 56 57.8	
YLYR				pmax	pmax		
	comp=Z,135nm,0.4s						
YLYR				smax	smax		
	comp=N,729nm,0.4s						
KMO	**Kumora**	**0.78**	**45**⇑	*i*Pg	Pg	09 56 50.2	-0.2
KMO				*e*		09 56 55.5	
KMO				*e*Sg	Sg	09 57 00.7	+0.1
KMO				Pmax			
	comp=N,186nm,0.3s						
KMO				Smax			
	comp=N,967nm,0.7s						
KMO	**Kumora**	**0.78**	**45**⇑	*i*PG	Pg	09 56 50.2	-0.2
KMO				*e*		09 57 00.2	
KMO				pmax	pmax		
	comp=Z,181nm,0.3s						
KMO				smax	smax		
	comp=N,967nm,0.6s						
YOA	**Uoyan**	**1.17**	**47**	*e*Pg	Pb	09 56 57.6	0.0
YOA				*e*Sg	Sn	09 57 13.8	0.0
YOA				*e*		09 57 18.2	
YOA				Pmax			
	comp=N,285nm,0.2s						
YOA				Smax			
	comp=N,1μm,0.6s						
YOA	**Uoyan**	**1.17**	**47**⇑	*i*PG	Pb	09 56 57.6	0.0
YOA				*i*		09 57 14.0	
YOA				pmax	pmax		
	comp=Z,186nm,0.3s						
YOA				smax	smax		
	comp=N,1μm,0.4s						
SYVR	**Suvo**	**1.69**	**184**	*e*Pg	Pb	09 57 06.9	+0.3
SYVR				*e*Sg	Sg	09 57 30.1	+0.5
SYVR				*e*		09 57 33.1	
SYVR				Pmax			
	comp=N,48nm,0.4s						
SYVR				max			
	comp=N,303nm,0.7s						
SYVR	**Suvo**	**1.69**	**184**	*e*PN	Pb	09 57 07.0	+0.4
SYVR				*e*		09 57 30.5	
SYVR				pmax	pmax		
	comp=Z,49nm,0.4s						
SYVR				smax	smax		
	comp=N,391nm,1.0s						
UKT	**Uakit**	**1.95**	**84**⇑	*i*Pg	Pb	09 57 10.9	-0.2
UKT				*e*Sg	Sg	09 57 36.9	-1.1
UKT				Pmax			
	comp=N,140nm,0.4s						

UKT					Smax				
	comp=N,294nm,0.4s								
UKT	**Uakit**	**1.95**	**84**	⇑*i*	PN	Pb	09 57 10.8	-0.3	
SVKR	**Severomuysk**	**2.05**	**66**	*e*	Pn	Pb	09 57 12.3	-0.3	
SVKR				*e*	Pg	Pg	09 57 13.6	-0.9	
SVKR				*e*			09 57 15.3		
SVKR				*e*	Sg	Sg	09 57 40.7	-0.3	
SVKR					max				
	comp=N,160nm,0.4s								
SVKR					Smax				
	comp=N,938nm,0.6s								
SVKR	**Severomuysk**	**2.05**	**66**	*e*	Pn	Pb	09 57 12.1	-0.5	
SVKR				*e*			09 57 13.3		
SVKR				*e*			09 57 40.3		
SVKR					pmax	pmax			
	comp=Z,159nm,0.4s								
SVKR					smax	smax			
	comp=N,940nm,0.6s								
OGRR	**Ongureny**	**2.29**	**223**	*e*	Pn	Pb	09 57 15.4	-1.3	
OGRR				*e*	Pg	Pg	09 57 17.5	-1.6	
OGRR				*e*	Sg	Sg	09 57 47.1	-1.6	
OGRR					Pmax				
	comp=N,51nm,0.4s								
OGRR					Smax				
	comp=N,171nm,0.2s								
OGRR	**Ongureny**	**2.29**	**223**	*e*	PN	Pb	09 57 15.7	-1.0	
OGRR				*e*			09 57 18.4		
OGRR				*e*			09 57 47.3		
OGRR					pmax	pmax			
	comp=Z,51nm,0.4s								
OGRR					smax	smax			
	comp=E,193nm,0.4s								
BOD	**Bodaibo**	**3.25**	**39**	*e*	Pn	Pn	09 57 27.9	+1.5	
BOD				*e*	Pg	Pb	09 57 33.2	+0.1	
BOD				*e*			09 57 41.9		
BOD				*e*	Sn	Sn	09 58 06.6	+1.4	
BOD				*e*	Sg	Sb	09 58 15.6	+2.9	
BOD					Pmax				
	comp=E,13nm,0.3s								
BOD					Smax				
	comp=E,62nm,0.7s								
NLYR	**Nelyaty**	**3.30**	**67**	*e*	PN	Pn	09 57 28.9	+1.8	
NLYR				*e*	S	Sb	09 58 17.2	+3.0	
NLYR					smax	smax			
	comp=E,534nm,0.4s								
ZRHB	**Zarechye**	**3.33**	**214**	*e*		Pg	09 57 39.2	+0.2	
ZRHB				*e*			09 57 46.8		
ZRHB				*e*	Sg	Sg	09 58 19.1	-3.0	
TRG	**Tyrgan**	**3.45**	**223**	*e*	Pn	Pn	09 57 29.7	+0.5	
TRG				*e*			09 57 34.0		
TRG				*e*			09 57 38.5		
TRG				*e*			09 58 14.9		
TRG				*e*	Sg	Sg	09 58 22.8	-3.1	
TRG					max				
	comp=E,21nm,0.4s								
TRG					Smax				
	comp=E,78nm,0.4s								
CIT	**Chita**	**3.87**	**148**	*e*		Pn	09 57 33.3	-1.7	
CIT				*e*			09 57 45.4		
CIT				*e*			09 58 17.7		
CIT				*e*	Sg	Sg	09 58 36.3	-3.3	
CIT					Smax				
	comp=E,258nm,0.3s								
HRMR	**Khuramsha**	**4.20**	**209**	*e*	Pn	Pn	09 57 41.5	+2.0	
HRMR				*e*	Pg	Pb	09 57 50.6	+1.3	
HRMR				*e*	Sg	Sg	09 58 45.4	-4.6	
HRMR					Pmax				
	comp=E,35nm,0.6s								
HRMR					Smax				
	comp=E,151nm,0.7s								
IRK	**Irkutsk**	**4.69**	**231**	*e*	Sg	Sg	09 59 00.4	-5.5	
IRK					Smax				
	comp=E,163nm,0.5s								
LSTR	**Listvyanka**	**4.73**	**225**	*e*	Pn	Pn	09 57 48.3	+1.5	
LSTR				*e*	Pg	Pb	09 57 59.7	+1.4	
LSTR				*e*			09 58 44.0		
LSTR				*e*	Sg	Sg	09 59 01.2	-5.8	
LSTR					Pmax				
	comp=E,7.0nm,0.5s								
LSTR					Smax				
	comp=E,45nm,0.6s								
TLY	**Talaya**	**5.37**	**230**	*e*	Pn	Pn	09 57 57.0	+1.5	
TLY				*e*	Pg	Pb	09 58 10.6	+1.4	
TLY				*e*			09 58 58.4		
TLY				*e*	Sg	Sb	09 59 20.4	+6.8	
TLY				*e*			09 59 24.0		
TLY					Pmax				
	comp=E,6.0nm,0.6s								
TLY					Smax				
	comp=E,30nm,0.5s								
TLY	**Talaya**	**5.37**	**230**	*e*	PN	Pn	09 57 55.4	-0.1	
TLY				*e*			09 58 10.5		
TLY				*e*	S	Sn	09 58 54.7	-2.7	
TUP	**Tupik**	**5.70**	**95**	*e*	Pn	Pn	09 58 01.1	+1.0	
TUP				*e*			09 58 09.1		
TUP				*e*	Pg	Pb	09 58 17.9	+3.1	
TUP				*e*	Sg	Sg	09 59 33.2	-4.9	
TUP					Pmax				
	comp=E,5.0nm,0.5s								
TUP					Smax				
	comp=E,74nm,1.2s								
TUP	**Tupik**	**5.70**	**95**	*e*	PN	Pn	09 58 00.7	+0.6	
TUP				*e*			09 58 17.6		
TUP				*e*	S	Sn	09 59 04.5	-1.1	
TUP				*e*			09 59 30.6		
TUP					pmax	pmax			
	comp=Z,12nm,0.8s								
TUP					smax	smax			
	comp=N,74nm,1.4s								
ARS	**Arshan**	**5.76**	**237**	*e*	Pn	Pn	09 58 02.8	+1.8	
ARS				*e*	Pg	Pb	09 58 20.5	+4.5	
ARS				*e*	Sn	Sn	09 59 08.0	+0.8	
ARS				*e*	Sg	Sg	09 59 34.1	-6.1	
ARS					Pmax				
	comp=N,18nm,0.5s								
ARS					Smax				
	comp=N,137nm,0.5s								
ARS	**Arshan**	**5.76**	**237**	*e*	PN	Pn	09 58 03.0	+2.0	
ARS				*e*			09 58 22.1		
ARS				*e*	S	Sn	09 59 08.2	+1.0	
ARS				*e*			09 59 32.9		
ARS					pmax	pmax			
	comp=Z,18nm,0.4s								
ARS					smax	smax			
	comp=N,137nm,0.5s								
KPC	**Khapcheranga**	**5.80**	**166**	*e*		Pn	09 58 09.0	+7.5	
KPC				*e*			09 58 16.2		
KPC				*e*	Sg	Sg	09 59 34.6	-6.8	
KPC					Smax				
	comp=N,60nm,1.0s								
ZAK	**Zakamensk**	**6.50**	**223**	*e*		Pg	09 59 04.4	+25	
ZAK				*e*	Sg	Sb	09 59 55.1	+8.8	
ZAK					Smax				
	comp=N,23nm,1.1s								
MOY	**Mondy**	**6.62**	**240**	*e*	Pn	Pn	09 58 15.4	+2.6	
MOY				*e*	Pg	Pb	09 58 34.6	+4.1	
MOY				*e*			09 59 28.4		
MOY				*e*	Sg	Sg	10 00 00.2	-7.3	
MOY					max				
	comp=N,15nm,0.5s								
MOY					Smax				
	comp=N,35nm,1.2s								
ORL	**Orlik**	**6.75**	**250**	*i*	Pn	Pn	09 58 17.4	+2.8	
ORL				*e*			09 59 34.6		
ORL				*e*	Sg	Sg	10 00 05.2	-6.7	
ORL					max				
	comp=N,7.0nm,0.6s								
ORL					Smax				
	comp=N,45nm,1.0s								
ORL	**Orlik**	**6.75**	**250**	*e*	PN	Pn	09 58 17.4	+2.8	
ORL				*e*			09 58 39.0		
ORL				*e*	S	Sn	09 59 30.5	-1.1	
ORL				*e*			10 00 06.6		
ORL					pmax	pmax			
	comp=Z,4.0nm,0.4s								
ORL					smax	smax			
	comp=N,45nm,1.0s								

*ISCJB **29** 10:03:20.6±1.2, 67.70N±0.05×34.2E±0.2, h0km, Error ellipse: s-maj=10.1km s-min=7.3km az=3.4*
*HEL **29** 10:03:20.7±0.6, 67.74N×34.60E, h0km, ML2.6, Explosion*
*CSEM **29** 10:03:22.2±0.7, 67.69N×34.09E, h2km, ML2.7, Error ellipse: s-maj=14.3km s-min=9.5km az=87.0, Mining explosion.*
*NAO **29** 10:03:23.9±1.7, 67.60N×33.76E, ML2.7*

ISC 29 10:03:21.0±1.6, 67.66N±0.05×34.19E±0.09, h0km, n31, σ1§21/38, Baltic States-Belarus-Northwestern Russia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
APZ9	**Apatity**	**0.31**	**253**	Pg	**Pg**	**10 03 26.9**	**-0.1**
APZ9	**Apatity**	**0.31**	**253**	Pg	**Pg**	**10 03 26.9**	**-0.1**
APZ9	**Apatity**	**0.31**	**253**	Pg	**Pg**	**10 03 26.9**	**-0.1**
APA0	**Apatity Array** baz=90,slow=18	**0.46**	**264**	Pg	**Pg**	**10 03 29.4**	**-0.4**
APA0	**Apatity Array** baz=90,slow=18	**0.46**	**264**	Pg	**Pg**	**10 03 29.4**	**-0.4**
APA0	**Apatity Array** SNR=641	**0.46**	**264**	Pg	**Pg**	**10 03 29.4**	**-0.4**
VRF	**Varrio**	**1.75**	**275**	*e*P	**Pb**	**10 03 53.2**	**-0.7**
VRF				*e*SG	**Sg**	**10 04 19.8**	**+2.7**
VRF				MSG		10 04 22.8	
	comp=Z,61nm,0.2s						
VRF	**Varrio**	**1.75**	**275**	P	**Pb**	**10 03 53.2**	**-0.7**
VRF				Sg	**Sg**	**10 04 19.8**	**+2.7**
KU6	**Riekki**	**2.36**	**228**	*e*P	**Pb**	**10 04 02.8**	**-1.6**
KU6				MSG		10 04 36.0	
	comp=Z,19nm,0.2s						
KU6				*e*SG	**Sg**	**10 04 38.2**	**+1.4**
KU6	**Riekki**	**2.36**	**228**	P	**Pb**	**10 04 02.7**	**-1.6**
KU6				Sg	**Sg**	**10 04 38.2**	**+1.4**
MSF	**Maaselka**	**2.69**	**232**	*e*P	**Pb**	**10 04 08.6**	**-1.4**
MSF	**Maaselka**	**2.69**	**232**	P	**Pb**	**10 04 08.5**	**-1.4**
KEV	**Kevo**	**3.36**	**312**	*e*P	**Pn**	**10 04 16.2**	**+1.6**
KEV	**Kevo**	**3.36**	**312**	P	**Pn**	**10 04 16.2**	**+1.5**
RNF	**Rovaniemi**	**3.36**	**255**	*e*P	**Pn**	**10 04 15.2**	**+0.5**
RNF	**Rovaniemi**	**3.36**	**255**	P	**Pn**	**10 04 15.2**	**+0.5**
ARA0	**ARCESS Array S** baz=123,slow=16	**3.70**	**305**	Pn	**Pn**	**10 04 20.1**	**+0.8**
ARA0				Sn	**Sn**	**10 05 03.5**	**0.0**
ARA0	baz=122,slow=28			Lg	Lg	10 05 17.2	
ARA0	baz=116,slow=37						
ARA0	**ARCESS Array S** baz=123,slow=16	**3.70**	**305**	Pn	**Pn**	**10 04 20.1**	**+0.8**
ARA0				Sn	**Sn**	**10 05 03.5**	**0.0**
ARA0	baz=122,slow=28			Lg	Lg	10 05 17.2	
ARA0	baz=116,slow=37						
ARE0	**ARCESS Array S**	**3.70**	**305**	*e*P	**Pn**	**10 04 19.8**	**+0.5**
ARE0	**ARCESS Array S**	**3.70**	**305**	P	**Pn**	**10 04 19.8**	**+0.5**
HEF	**Hetta**	**4.03**	**286**	*e*SG	**Sg**	**10 05 28.6**	**-1.5**
HEF				MSG		10 05 34.0	
	comp=Z,11nm,0.2s						
HEF	**Hetta**	**4.03**	**286**	Sg	**Sg**	**10 05 28.6**	**-1.5**
JOF	**Joensuu**	**4.91**	**196**	*e*P	**Pn**	**10 04 37.9**	**+1.9**
JOF	**Joensuu**	**4.91**	**196**	P	**Pn**	**10 04 37.8**	**+1.9**
FIA0	**FINESS Array S**	**7.15**	**213**	Pn	**Pn**	**10 05 05.9**	**-0.7**
FIA0				Lg	Lg	10 07 03.5	
	baz=21,slow=28						
FIA0	**FINESS Array S**	**7.15**	**213**	Pn	**Pn**	**10 05 05.9**	**-0.7**
FIA0				Lg	Lg	10 07 03.5	
	baz=21,slow=28						
FIA0	**FINESS Array S**	**7.15**	**213**	Pn	**Pn**	**10 05 05.9**	**-0.7**
SPA0	**Spitsbergen Ar** baz=144,slow=16	**11.70**	**342**	Pn	**Pn**	**10 06 08.6**	**-0.2**
SPA0	**Spitsbergen Ar** baz=144,slow=16	**11.70**	**342**	Pn	**Pn**	**10 06 08.6**	**-0.2**
SPA0	**Spitsbergen Ar** SNR=2.0	**11.70**	**342**	Pn	**Pn**	**10 06 08.6**	**-0.2**

IDC 29 10:11:59.2±3.2, 1.94N×99.25E, h119km±11km, mb3.3/3, mb1 3.5/3, mb1mx3.0/55, mbtmp3.6/3, Error ellipse: s-maj=180.5km s-min=24.8km az=55.0, Northern Sumatera

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PSI	**Prapat**	**0.91**	**339**	P	Pn	10 12 20.3	-0.2
	16nm,0.3s,baz=344,slow=6.4,SNR=50						
PSI				S	Sn	10 12 35.8	-0.7
	7.1nm,0.3s,baz=46,slow=21,SNR=24						
WRA	**Warramunga Arr**	**40.72**	**124**	P	P	10 19 28.7	+0.1
	0.9nm,0.4s,baz=302,slow=9.0,SNR=15						
ASAR	**Alice Springs**	**42.24**	**129**	P	P	10 19 40.5	-0.6
	0.2nm,0.5s,baz=295,slow=7.2,SNR=5.1						
MKAR	**Makanchi Array**	**47.05**	**344**	P	P	10 20 18.8	-0.1
	0.4nm,0.4s,baz=154,slow=9.0,SNR=4.2						

*ISCJB **29** 10:17:30.4±0.6, 31.25N±0.05×115.63W±0.04, h5km±9km, Error ellipse: s-maj=8.2km s-min=5.9km az=25.1*
*MEX **29** 10:17:31.9±0.6, 31.24N×115.40W, h6km±21km, MD3.5*
*ECX **29** 10:17:31.3±0.6, 31.21N×115.62W, h5km, MD2.4, ML2.6*

ISC 29 10:17:30.6±1.1, 31.24N±0.05×115.63W±0.04, h8km±12km, n12, σ0§38/21, 5C, Baja California

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SPIG	**San Pedro Mart**	**0.24**	**144**	*e*P	**Pg**	**10 17 35.3**	**-0.2**
SPIG				*e*S	**Sg**	**10 17 38.6**	**-0.2**
SPIG	**San Pedro Mart**	**0.24**	**144**	*i* P	**Pg**	**10 17 35.7**	**+0.1**
SPIG				*i* S	**Sg**	**10 17 38.7**	**-0.2**
SPX	**San Pedro Mart**	**0.24**	**144**	*e*P	**Pg**	**10 17 35.7**	**+0.1**
SPX				*e*S	**Sg**	**10 17 38.8**	**-0.1**
SPX				AML	AML	10 17 39.7	
	comp=E,896nm,0.2s						
SPX				⇑*e*		10 17 39.7	
SPX				AML	AML	10 17 40.1	
	comp=N,771nm,0.4s						
SPX				⇑*e*		10 17 40.1	
ECBX	**El Chinero**	**0.55**	**65**	⇑*e*P	**Pg**	**10 17 41.0**	**-0.1**
ECBX				*e*S	**Sg**	**10 17 48.2**	**0.0**
ZAX	**El Zacaton**	**0.61**	**296**	*e*P	**Pg**	**10 17 42.2**	**-0.2**
ZAX				*e*S	**Sg**	**10 17 51.2**	**+0.8**
ZAX				AML	AML	10 17 53.1	
	comp=N,352nm,0.5s						
ZAX				⇑*e*		10 17 53.1	
ECNX	**Esteban Cantu**	**0.92**	**297**	*e*P	**Pg**	**10 17 47.9**	**-0.4**
ECNX				*e*S	**Sg**	**10 18 00.7**	**+0.4**
PBX	**Punta Banda**	**1.06**	**298**	*e*P	**Pg**	**10 17 50.3**	**-0.6**
PBX				*e*S	**Sg**	**10 18 04.9**	**+0.2**
CBX	**Cerro Bola**	**1.38**	**321**	*e*P	**Pn**	**10 17 56.4**	**+0.1**
CBX				⇑*e*		10 18 19.8	
CBX				AML	AML	10 18 19.8	
	comp=E,106nm,0.5s						
CBX	**Cerro Bola**	**1.38**	**321**	*i* P	**Pn**	**10 17 56.7**	**+0.4**
CBX				*e*S	**Sb**	**10 18 14.3**	**-0.3**
RMX	**La Rumorosa**	**1.41**	**344**	*e*P	**Pn**	**10 17 56.8**	**+0.2**
TJIG	**Tijuana**	**1.48**	**323**	*e*P	**Pn**	**10 17 57.7**	**+0.1**
TJIG				*i* S	**Sn**	**10 18 16.9**	**-0.2**
BAR	**Barrett**	**1.68**	**329**	*e*P	**Pn**	**10 18 01.1**	**+0.7**

JMA 29 10:20:43.8±0.1, 41.98N×142.88E, h49km±1km, M2.5, Hokkaido region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JEM	**Erimo**	**0.21**	**80**	P	Pn	10 20 52.1	0.0
JEM				*e*S	Sn	10 20 58.5	+0.5
JNBK	**Urakawa-nobuka**	**0.31**	**343**	P	Pn	10 20 52.8	-0.2
JNBK				*e*S	Sn	10 21 00.0	+0.5
JCH	**Churui**	**0.73**	**29**	P	Pn	10 20 57.8	-0.1
JCH				*e*S	Sn	10 21 08.5	+0.4
JBT2	**Biratori 2**	**0.89**	**335**	P	Pn	10 21 00.2	+0.3
JOB	**Onbets**	**1.16**	**37**	P	Pn	10 21 05.0	+1.3
JEW	**Eniwo**	**1.36**	**310**	P	Pn	10 21 07.0	+0.6
JKB	**Kayabe**	**1.38**	**267**	P	Pn	10 21 06.2	-0.4
JKB				*e*S	Sn	10 21 23.3	-0.4

JMA 29 10:22:54.5±0.1, 38.46N×142.28E, h21km±2km, M2.6, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**0.73**	**270**	P	Pb	10 23 08.1	-0.4
JIO				S	Sb	10 23 17.8	-0.3
OFUJ	**Ofunato**	**0.78**	**323**	P	Pb	10 23 09.3	-0.1
OFUJ				S	Sb	10 23 20.0	+0.4
JMK	**Ichinoseki**	**0.96**	**301**	P	Pb	10 23 12.2	-0.3
JMK				S	Sb	10 23 25.0	+0.2
JOM	**Ohasama**	**1.27**	**323**	P	Pn	10 23 17.1	+0.1

*ISCJB **29** 11:02:44.9±0.9, 39.08N±0.04×27.48E±0.05, h0km, Error ellipse: s-maj=6.2km s-min=4.8km az=40.9*
*ISK **29** 11:02:44.8, 39.07N×27.51E, h13km, MD2.4*
*CSEM **29** 11:02:45.2±0.4, 39.07N×27.47E, h1km, MD2.7, Error ellipse: s-maj=6.8km s-min=5.2km az=117.0, Suspected Mining explosion.*
*DDA **29** 11:02:45.8, 39.08N×27.53E, h7km, Md2.7, Suspected Mining explosion.*

ISC 29 11:02:44.0±1.3, 39.11N±0.04×27.42E±0.05, h0km, n16, σ0§28/28, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AKHS	**Akhisar**	**0.39**	**127**	*i* P	**Pg**	**11 02 51.2**	**-0.2**
AKHS				*i* S	**Sg**	**11 02 56.9**	**+0.5**
AKHS	**Akhisar**	**0.39**	**127**	P	**Pg**	**11 02 51.2**	**-0.2**
AKHS				S	**Sg**	**11 02 56.9**	**+0.5**
AKS	**Akhisar**	**0.39**	**127**	*e*PG	**Pg**	**11 02 51.5**	**+0.1**
AKS				*e*SG	**Sg**	**11 02 56.5**	**+0.1**
AKS	**Akhisar**	**0.39**	**127**	*e*Pg	**Pg**	**11 02 51.5**	**+0.1**
AKS				*e*Sg	**Sg**	**11 02 56.5**	**+0.1**
BALY	**Balya**	**0.65**	**14**	*i* P	**Pb**	**11 02 58.6**	**+0.4**
BALY	**Balya**	**0.65**	**14**	P	**Pb**	**11 02 58.6**	**+0.4**
BLCB	**Balcova**	**0.78**	**202**	*e*PG	**Pb**	**11 03 00.3**	**-0.2**
BLCB				*e*SG	**Sb**	**11 03 11.5**	**-0.1**
BLCB	**Balcova**	**0.78**	**202**	*e*Pg	**Pb**	**11 03 00.3**	**-0.2**
BLCB				*e*Sg	**Sb**	**11 03 11.5**	**-0.1**
DURS	**Dursunbey**	**0.95**	**59**	*i* P	**Pb**	**11 03 03.0**	**-0.5**
DURS				*i* S	**Sb**	**11 03 16.5**	**-0.2**
DURS	**Dursunbey**	**0.95**	**59**	P	**Pb**	**11 03 03.0**	**-0.5**
DURS				S	**Sb**	**11 03 16.5**	**-0.2**
DEMI	**Demirci**	**1.01**	**93**	*i* P	**Pb**	**11 03 04.9**	**+0.4**
DEMI				*i* S	**Sg**	**11 03 16.5**	**-0.1**
DEMI	**Demirci**	**1.01**	**93**	P	**Pb**	**11 03 04.9**	**+0.4**
DEMI				S	**Sg**	**11 03 16.5**	**-0.1**
KULA	**Kula-Manisa**	**1.14**	**121**	*e*PG	**Pg**	**11 03 05.6**	**-0.2**
KULA				*e*SG	**Sg**	**11 03 20.7**	**+0.1**
KULA	**Kula-Manisa**	**1.14**	**121**	*e*Pg	**Pg**	**11 03 05.6**	**-0.2**
KULA				*e*Sg	**Sg**	**11 03 20.7**	**+0.1**
AYDB	**Zeytinkoy-Aydi**	**1.22**	**162**	*e*PN	**Pg**	**11 03 07.4**	**0.0**
AYDB	**Zeytinkoy-Aydi**	**1.22**	**162**	*e*Pn	**Pg**	**11 03 07.4**	**0.0**

*NIED **29** 11:06:00, 27.10N×143.70E, h8km, Mw4.3 Best double couple: M0 3.18000×10^15 NP1:φs336.00000°, δ21.00000°, λ-79.00000°. NP2:φs144.00000°, δ69.00000°, λ-94.00000°.*
*BJI **29** 11:06:45.9, 26.83N×143.82E, h12km, mb4.5/29, mB4.7/16, Ms4.7/6, Ms7 4.4/7*
*IDC **29** 11:06:46.6±0.5, 26.99N×143.76E, h0km, mb4.3/30, mb1 4.5/34, mb1mx4.4/58, mbtmp4.3/34, ML3.6/4, MS3.2/8, Ms1 3.3/8, ms1mx3.0/42, Error ellipse: s-maj=14.7km s-min=10.8km az=91.0*
*NEIC **29** 11:06:48.4±0.2, 27.01N×143.77E, h10km, mb4.7/55, Error ellipse: s-maj=4.8km s-min=4.2km az=148.0*
*MOS **29** 11:06:48.9±0.9, 26.99N×143.82E, h27km, mb4.7/49, Error ellipse: s-maj=11.1km s-min=6.0km az=102.4*
*ISCJB **29** 11:06:50.3±0.2, 27.04N±0.04×143.73E±0.03, h33km, mb4.5/95, MS3.3/7, Error ellipse: s-maj=6.2km s-min=4.2km az=169.8*

ISC 29 11:06:52.2±0.4, 27.03N±0.06×143.75E±0.06, h35km, n176, σ1§05/182, mb4.6/95, MS3.4/7, 2C-1D, Bonin Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CBIJ	**Chichi jima**	**1.39**	**273**	*e*Pn	**Pn**	**11 07 13.3**	**-1.9**
CBIJ				*e*Sn	**Sn**	**11 07 31.8**	**-0.5**
JCJ	**Chichijima**	**1.39**	**273**	Pn	**Pn**	**11 07 12.6**	**-2.6**
	76nm,0.3s,baz=107,slow=24,SNR=35						
JCJ				Sn	**Sn**	**11 07 31.1**	**-1.3**
	198nm,0.3s,baz=276,slow=19,SNR=26						
JHJ2	**Mitsune**	**6.95**	**332**	*e*Pn	**Pn**	**11 08 32.1**	**+0.6**
JHJ2				*e*Sn	**Sn**	**11 09 46.5**	**-2.8**
MJAR	**Matsushiro Arr**	**10.58**	**335**	Pn	**Pn**	**11 09 19.3**	**-2.1**
	3.4nm,0.3s,baz=154,slow=10,SNR=45						
MAJO	**Matsushiro**	**10.59**	**335**	*e*P	**Pn**	**11 09 19.3**	**-2.1**
MAJO	**Matsushiro**	**10.59**	**335**	*e*Pn	**Pn**	**11 09 19.6**	**-1.8**
MAJO				*e*Sn	**Sn**	**11 11 16.4**	**-2.3**
MAT	**Matsushiro**	**10.59**	**335**	P	**Pn**	**11 09 19.3**	**-2.1**
MJB9	**Matsu-Tunnel**	**10.59**	**335**	*e*Pn	**Pn**	**11 09 19.8**	**-1.7**
JNU	**Nakatsue**	**12.68**	**302**	LR	LR	11 14 42.4	
	comp=Z,101nm,18.4s,baz=109,slow=37						
GUMO	**Guam**	**13.42**	**175**	LR	LR	11 14 02.6	
	comp=Z,63nm,20.5s,baz=89,slow=33						
KSRS	**Korea Array**	**16.92**	**312**	Pn	**Pn**	**11 10 47.0**	**+0.8**
	0.2nm,0.3s,baz=120,slow=11,SNR=14						
KSRS				LR	LR	11 17 34.4	
	comp=Z,44nm,19.6s,baz=85,slow=38						
KSAR	**Wonju Array Be**	**16.94**	**312**	P	**Pn**	**11 10 47.0**	**+0.5**
KSAR	**Wonju Array Be**	**16.94**	**312**	Pn	**Pn**	**11 10 47.0**	**+0.5**
ASAJ	**Asahikawa**	**17.07**	**357**	P	**Pn**	**11 10 47.8**	**-0.2**
	0.3nm,0.3s,baz=47,slow=19,SNR=2.4						
USRK	**Ussuriysk Ar.**	**19.58**	**334**	P	**P**	**11 11 17.3**	**+0.2**
	0.3nm,0.3s,baz=144,slow=12,SNR=6.3						
YSS	**Yuzh-Sakhalins**	**19.90**	**358**	⇑*e*P	**Pn**	**11 11 21.8**	**-0.6**
YSS				pmax	pmax		
	comp=Z,20nm,0.8s						
YULB	**Yu-li**	**20.62**	**265**	*e*P	**P**	**11 11 29.4**	**+0.7**
	comp=Z,12nm,0.7s						
SSLB	**Suanglung**	**20.83**	**266**	*e*P	**P**	**11 11 31.1**	**+0.1**
	comp=Z,22nm,0.8s						
TWG	**Pinlang**	**20.98**	**263**	*e*P	Pn	11 11 34.0	-1.1
	comp=Z,50nm,0.6s						
NJ2	**Nanjing**	**22.21**	**289**	*e*P	**P**	**11 11 45.0**	**-0.6**
NJ2				pmax	pmax		
	comp=Z,16nm,1.1s						
CN2	**Changchun**	**22.33**	**323**	*e*P	**P**	**11 11 46.8**	**0.0**
HABR	**Khabarovsk**	**22.45**	**345**	*e*P	**P**	**11 11 45.5**	**-2.5**
HABR				*e**SP	pP	11 11 49.5	-7.8
HABR				*e*PPP	PPP	11 12 16.5	
HABR				*e*S	**S**	**11 15 52.4**	**+0.2**
HABR				SSS	SSS	11 16 38.8	
HABR				MLR	MLR		
	comp=Z,49nm,16.0s						
KLR	**Kul'dur**	**24.03**	**340**	P	**P**	**11 12 03.9**	**+0.1**
	comp=Z,9.6nm,0.7s,baz=147,slow=7.2,SNR=38						
DAV	**Davao City (W)**	**26.31**	**224**	LR	LR	11 21 53.1	
	comp=Z,58nm,21.3s,baz=332,slow=34						
PETK	**Petropavlovsk-**	**28.05**	**18**	LR	LR	11 22 02.0	
	comp=Z,22nm,21.7s,baz=240,slow=33						
HHC	**Hu-ho-hao-te**	**29.86**	**306**	*e*P	**P**	**11 12 56.5**	**+0.1**
HHC				pmax	pmax		
	comp=Z,16nm,1.0s						
HHC				pmax	pmax		
	comp=Z,86nm,7.9s						
LUWI	**Luwuk**	**34.45**	**219**	*e*P	**P**	**11 13 34.7**	**-2.1**
	comp=Z,16nm,0.5s						
CD2	**Chengdu**	**35.07**	**286**	P	**P**	**11 13 40.8**	**-1.2**
CD2				pmax	pmax		
	comp=Z,1.0nm,0.5s						
ULN	**Ulaanbaatar**	**35.33**	**316**	*i* P	**P**	**11 13 44.9**	**+0.7**
ULN				pmax	pmax		
	com

TLY					pmax	pmax			
	comp=Z,4.0nm,1.0s								
TLY					MLR	MLR			
	comp=Z,82nm,18.0s								
KAPI	**Kappang**	**39.41**	**220**		P	**P**	**11 14 18.2**	**-0.7**	
	comp=Z,3.5nm,0.4s,baz=296,slow=6.5,SNR=3.7								
CMAR	**Chiang Mai Arr**	**42.01**	**268**		P	**P**	**11 14 40.7**	**+0.3**	
	comp=Z,0.9nm,0.6s,baz=51,slow=9.1,SNR=8.3								
CMAR					LR	LR	11 32 30.2		
	comp=Z,48nm,18.4s,baz=75,slow=37								
BILL	**Bilibino**	**43.22**	**12**	*i*	P	**P**	**11 14 48.7**	**-0.8**	
BILL					pmax	pmax			
	comp=Z,6.0nm,1.0s								
BILL	**Bilibino**	**43.22**	**12**	*eP*		**P**	**11 14 49.4**	**-0.1**	
	comp=Z,6.5nm,1.1s								
TIXI	**Tiksi**	**45.42**	**353**		P	**P**	**11 15 06.9**	**-0.2**	
	comp=Z,4.3nm,0.6s,baz=143,slow=5.8,SNR=14								
TIXI	**Tiksi**	**45.42**	**353**	*eP*		**P**	**11 15 07.1**	**0.0**	
TIXI					pmax	pmax			
	comp=Z,3.0nm,0.6s								
TIXI	**Tiksi**	**45.42**	**353**	*eP*		**P**	**11 15 07.5**	**+0.4**	
	comp=Z,4.9nm,0.7s								
KRAR	**Krasnoyarsk**	**46.36**	**323**	*eP*		**P**	**11 15 15.1**	**+0.4**	
KRAR					pmax	pmax			
	comp=Z,11nm,0.7s								
CTA	**Charters Tower**	**46.90**	**177**		P	**P**	**11 15 19.2**	**-0.1**	
	comp=Z,5.2nm,0.8s,baz=1.4,slow=8.8,SNR=3.8								
WRAB	**Tennant Creek**	**47.57**	**192**	*i*	P	**P**	**11 15 24.1**	**-0.4**	
WRAB					pmax	pmax			
	comp=Z,63nm,1.7s								
WRAB	**Tennant Creek**	**47.57**	**192**	*eP*		**P**	**11 15 24.5**	**0.0**	
	comp=Z,17nm,0.9s								
WB2	**Warramunga Arr**	**47.58**	**192**	*eP*		**P**	**11 15 24.7**	**+0.1**	
	comp=Z,16nm,0.8s								
WRA	**Warramunga Arr**	**47.58**	**192**		P	**P**	**11 15 23.4**	**-1.2**	
	comp=Z,13nm,0.9s,baz=10,slow=8.4,SNR=49								
WMQ	**Urumqi**	**47.74**	**306**	*eP*		**P**	**11 15 26.8**	**+1.0**	
WMQ					pmax	pmax			
	comp=Z,3.0nm,0.6s								
WMQ					pmax	pmax			
	comp=Z,12nm,3.6s								
FITZ	**Fitzroy Crossi**	**48.18**	**203**		P	**P**	**11 15 27.9**	**-1.3**	
	comp=Z,7.6nm,0.7s,baz=25,slow=10,SNR=16								
FITZ	**Fitzroy Crossi**	**48.18**	**203**	*eP*		**P**	**11 15 29.0**	**-0.2**	
ZAA0	**Zalesovo Array**	**50.45**	**319**	*eP*		**P**	**11 15 46.5**	**+0.3**	
ZALV	**Zalesovo Beam**	**50.45**	**319**		P	**P**	**11 15 46.5**	**+0.3**	
	comp=Z,1.4nm,0.7s,baz=103,slow=6.4,SNR=7.6								
ZALV					PcP	**PcP**	**11 17 03.7**	**-0.4**	
	comp=Z,1.5nm,0.5s,baz=110,slow=3.4,SNR=4.3								
ASAR	**Alice Springs**	**51.29**	**192**		P	**P**	**11 15 52.4**	**-0.6**	
	comp=Z,1.0nm,0.7s,baz=8.5,slow=5.8,SNR=26								
ASAR					LR	LR	11 37 28.1		
	comp=Z,41nm,19.0s,baz=358,slow=36								
MK01	**Makanchi Array**	**51.58**	**310**	*eP*		**P**	**11 15 55.7**	**+0.7**	
MK31	**Makanchi Array**	**51.59**	**310**	*eP*		**P**	**11 15 55.4**	**+0.4**	
MK31	**Makanchi Array**	**51.59**	**310**	*eP*		**P**	**11 15 55.4**	**+0.4**	
MKAR	**Makanchi Array**	**51.59**	**310**		P	**P**	**11 15 54.9**	**-0.1**	
	comp=Z,1.5nm,0.6s,baz=95,slow=9.1,SNR=10								
MKAR	**Makanchi Array**	**51.59**	**310**	*i*	P	**P**	**11 15 55.9**	**+0.9**	
MKAR					pmax	pmax			
	comp=Z,3.0nm,0.8s								
MKAR	**Makanchi Array**	**51.59**	**310**	*eP*		**P**	**11 15 55.4**	**+0.4**	
NRIK	**Noril'sk**	**53.22**	**338**		P	**P**	**11 16 07.1**	**+0.4**	
	comp=Z,8.2nm,0.8s,baz=110,slow=8.8,SNR=8.4								
KDAK	**Kodiak Island**	**53.58**	**37**		P	P	11 16 24.2	+15	
	comp=Z,34nm,1.2s,baz=269,slow=5.1,SNR=6.9								
KDAK	**Kodiak Island**	**53.58**	**37**	*i*	P	**P**	**11 16 09.5**	**0.0**	
KURK	**Kurchatov**	**54.02**	**315**		P	**P**	**11 16 13.6**	**+0.8**	
KURK					pmax	pmax			
	comp=Z,5.0nm,0.8s								
KURK	**Kurchatov**	**54.02**	**315**	*eP*		**P**	**11 16 13.1**	**+0.3**	
	comp=Z,13nm,1.1s								
KURBB	**Kurchatov Arra**	**54.08**	**314**		P	**P**	**11 16 13.6**	**+0.4**	
	comp=Z,4.9nm,0.8s,baz=91,slow=7.2,SNR=35								
CAST	**Castle Rocks**	**54.65**	**30**	*eP*		**P**	**11 16 17.2**	**-0.1**	
	comp=Z,9.4nm,1.0s								
BPAW	**Bear Paw Mtn.**	**55.25**	**29**	*eP*		**P**	**11 16 21.9**	**+0.3**	
	comp=Z,5.4nm,1.0s								
TRF	**Thorofare Moun**	**55.45**	**30**	*eP*		**P**	**11 16 23.3**	**+0.1**	
	comp=Z,7.7nm,0.9s								
MLY	**Manley**	**55.51**	**28**	*eP*		**P**	**11 16 24.2**	**+0.7**	
	comp=Z,5.2nm,0.9s								
PMR	**Palmer**	**55.75**	**32**	*eP*		**P**	**11 16 24.3**	**-0.8**	
PMR					pmax	pmax			
	comp=Z,9.0nm,0.7s								
PMR	**Palmer**	**55.75**	**32**	*eP*		**P**	**11 16 24.3**	**-0.8**	
	comp=Z,8.8nm,0.7s								
RND	**Reindeer**	**56.09**	**30**	*eP*		**P**	**11 16 27.1**	**-0.6**	
RND					pmax	pmax			
	comp=Z,7.0nm,0.7s								
RND	**Reindeer**	**56.09**	**30**	*eP*		**P**	**11 16 27.1**	**-0.6**	
	comp=Z,6.5nm,0.7s								
MCK	**McKinley**	**56.09**	**30**	*eP*		**P**	**11 16 26.1**	**-1.5**	
MCK					pmax	pmax			
	comp=Z,6.0nm,0.9s								
MCK	**McKinley**	**56.09**	**30**	*eP*		**P**	**11 16 26.1**	**-1.5**	
	comp=Z,6.1nm,0.9s								
COLD	**Coldfoot**	**56.13**	**25**	*eP*		**P**	**11 16 27.8**	**0.0**	
	comp=Z,9.2nm,1.0s								
SML	**Sawmill**	**56.15**	**32**	*eP*		**P**	**11 16 28.1**	**0.0**	
SML					pmax	pmax			
	comp=Z,8.0nm,0.8s								
SML	**Sawmill**	**56.15**	**32**	*eP*		**P**	**11 16 28.1**	**0.0**	
	comp=Z,8.3nm,0.8s								
MDM	**Murphy Dome**	**56.55**	**28**	*eP*		**P**	**11 16 31.8**	**+0.9**	
	comp=Z,4.2nm,0.7s								
TKM2	**Tokmak 2**	**56.59**	**305**	*eP*		**P**	**11 16 33.2**	**+1.4**	
TKM2					pmax	pmax			
	comp=Z,1.0nm,0.8s								
TKM2	**Tokmak 2**	**56.59**	**305**	*eP*		**P**	**11 16 33.2**	**+1.4**	
	comp=Z,1.5nm,0.8s								
SCM	**Sheep Creek Mo**	**56.62**	**32**	*eP*		**P**	**11 16 31.2**	**-0.3**	
SCM					pmax	pmax			
	comp=Z,17nm,0.6s								
SCM	**Sheep Creek Mo**	**56.62**	**32**	*eP*		**P**	**11 16 31.2**	**-0.3**	
	comp=Z,17nm,0.6s								
KSH	**Kashi**	**56.80**	**301**	*eP*		**P**	**11 16 36.0**	**+2.8**	
KSH				*e*	pP	pP	11 16 40.5	-3.3	
KSH					S	**S**	**11 24 28.0**	**+3.8**	
KSH					pmax	pmax			
	comp=Z,100nm,4.5s								
KSH					LR	LR			
	comp=Z,170nm,6.3s								
KSH					LR	LR			
	comp=Z,100nm,5.5s								
KSH					LR	LR			
	comp=Z,120nm,5.9s								
HDA	**Harding Lake**	**57.04**	**29**	*eP*		**P**	**11 16 33.9**	**-0.4**	
	comp=Z,13nm,1.4s								
ILAR	**Eielson Array**	**57.10**	**29**		P	**P**	**11 16 34.1**	**-0.6**	
	comp=Z,4.5nm,0.9s,baz=261,slow=5.8,SNR=39								
ILAR					PcP	**PcP**	**11 17 28.6**	**-0.6**	
	comp=Z,1.0nm,0.8s,baz=279,slow=4.4,SNR=4.1								
KLU	**Klutina**	**57.27**	**32**	*eP*		**P**	**11 16 36.5**	**+0.4**	
	comp=Z,12nm,0.6s								
AAK	**Ala-Archa**	**57.43**	**305**	*eP*		**P**	**11 16 37.0**	**-0.7**	
AAK					pmax	pmax			
	comp=Z,4.0nm,1.0s								
PAX	**Paxson**	**57.57**	**31**	*eP*		**P**	**11 16 38.3**	**0.0**	
PAX					pmax	pmax			
	comp=Z,16nm,1.5s								
PAX	**Paxson**	**57.57**	**31**	*eP*		**P**	**11 16 38.2**	**0.0**	
	comp=Z,16nm,1.5s								
BMRM	**Bremner River**	**57.89**	**33**	*eP*		**P**	**11 16 40.5**	**0.0**	
	comp=Z,7.7nm,0.7s								
FYU	**Fort Yukon**	**57.97**	**26**	*eP*		**P**	**11 16 40.4**	**-0.4**	
	comp=Z,14nm,1.0s								
DOT	**Dot Lake**	**58.24**	**30**	*eP*		**P**	**11 16 42.7**	**-0.2**	
	comp=Z,14nm,0.9s								
MENT	**Mentasta**	**58.37**	**31**	*eP*		**P**	**11 16 43.8**	**+0.1**	
	comp=Z,2.9nm,0.7s								
STKA	**Stephens Creek**	**58.62**	**182**		P	**P**	**11 16 44.6**	**-1.0**	
	comp=Z,2.5nm,0.7s,baz=339,slow=9.0,SNR=9.9								
BALM	**Baldy**	**58.99**	**33**	*eP*		**P**	**11 16 47.1**	**-1.1**	
BALM					pmax	pmax			
	comp=Z,7.0nm,0.8s								
BALM	**Baldy**	**58.99**	**33**	*eP*		**P**	**11 16 47.1**	**-1.1**	
	comp=Z,6.6nm,0.8s								
BRVK	**Borovoye**	**59.09**	**318**	*i*	P	**P**	**11 16 48.0**	**-0.9**	
BRVK					pmax	pmax			
	comp=Z,8.0nm,1.2s								
EGAK	**Eagle**	**59.55**	**29**	*eP*		**P**	**11 16 51.5**	**-0.3**	
	comp=Z,2.9nm,0.7s								
KKAR	**Karatay Array**	**60.25**	**306**	*eP*		**P**	**11 16 57.9**	**+0.8**	
KKAR					pmax	pmax			
	comp=Z,2.0nm,0.4s								
KKAR	**Karatay Array**	**60.25**	**306**	*eP*		**P**	**11 16 57.9**	**+0.8**	
	comp=Z,2.1nm,0.4s								
INK	**Inuvik**	**62.51**	**25**		P	**P**	**11 17 11.7**	**-0.1**	
	comp=Z,3.0nm,0.6s,baz=293,slow=5.1,SNR=33								
ARU	**Arti**	**65.32**	**322**		P	**P**	**11 17 29.8**	**-0.7**	
	comp=Z,4.4nm,0.3s,baz=78,slow=3.4,SNR=11								
ARU	**Arti**	**65.32**	**322**	*d*	P	**P**	**11 17 31.0**	**+0.5**	
ARU					S	**S**	**11 26 17.0**	**+5.2**	
ARU					SS	**SS**	**11 30 26.2**	**+1.6**	
ARU					pmax	pmax			
	comp=Z,14nm,1.0s								
ARU	**Arti**	**65.32**	**322**	*eP*		**P**	**11 17 31.0**	**+0.5**	
	comp=Z,12nm,1.0s								
ABKAR	**Akbulak array**	**66.13**	**315**	*eP*		**P**	**11 17 36.0**	**+0.1**	
	comp=Z,1.2nm,0.5s								
AKTO	**Aktyubinsk**	**67.04**	**316**		P	**P**	**11 17 42.2**	**+0.5**	
	comp=Z,1.4nm,0.6s,baz=74,slow=13,SNR=4.7								
SPITS	**Spitsbergen Ar**	**70.69**	**350**		P	**P**	**11 18 04.3**	**+0.4**	
	comp=Z,2.9nm,0.8s,baz=84,slow=8.7,SNR=7.2								
SPITS	**Spitsbergen Ar**	**70.69**	**350**		P	**P**	**11 18 04.3**	**+0.4**	
SPITS					pmax	pmax			
	comp=Z,4.0nm,1.0s								
YKA	**Yellowknife Ar**	**71.53**	**29**		P	**P**	**11 18 09.1**	**-0.2**	
	comp=Z,2.2nm,0.8s,baz=293,slow=5.9,SNR=39								
YKB5	**Yellowknife Ar**	**71.53**	**29**	*eP*		**P**	**11 18 08.0**	**-1.3**	
KLMR	**Klimovskoe**	**73.33**	**330**	*eP*		**P**	**11 18 18.9**	**-1.1**	
KLMR					pmax	pmax			
	comp=Z,6.0nm,1.2s								
ARCES	**ARCESS Array B**	**74.05**	**341**		P	**P**	**11 18 24.9**	**+0.9**	
	comp=Z,1.9nm,0.7s,baz=61,slow=9.9,SNR=5.1								
ARCES	**ARCESS Array B**	**74.05**	**341**		P	**P**	**11 18 25.0**	**+0.9**	
ARCES					pmax	pmax			
	comp=Z,2.0nm,0.7s								
B08A	**Colville Reser**	**74.62**	**43**	*eP*		**P**	**11 18 28.2**	**+0.3**	
	comp=Z,6.3nm,0.9s								
NEW	**Newport**	**76.01**	**43**	*eP*		**P**	**11 18 36.3**	**+0.4**	
NEW					pmax	pmax			
	comp=Z,7.0nm,0.9s								
NEW	**Newport**	**76.01**	**43**	*eP*		**P**	**11 18 36.3**	**+0.4**	
	comp=Z,7.4nm,0.9s								
BMO	**Blue Mountains**	**77.35**	**46**	*eP*		**P**	**11 18 43.3**	**-0.2**	
BMO					pmax	pmax			
	comp=Z,5.0nm,1.0s								
BMO	**Blue Mountains**	**77.35**	**46**	*eP*		**P**	**11 18 43.3**	**-0.2**	
	comp=Z,5.0nm,1.0s								
JTMT	**Jette**	**77.95**	**42**	*eP*		**P**	**11 18 47.9**	**+1.0**	
CMB	**Columbia Colle**	**78.15**	**53**	*eP*		**P**	**11 18 48.3**	**+0.2**	
CMB					pmax	pmax			
	comp=Z,8.0nm,0.9s								
CMB	**Columbia Colle**	**78.15**	**53**	*eP*		**P**	**11 18 48.3**	**+0.2**	
	comp=Z,8.1nm,0.9s								
SWMT	**Swartz Lake**	**78.23**	**43**	*eP*		**P**	**11 18 48.6**	**+0.2**	
FINES	**FINESS Array B**	**78.61**	**334**		P	**P**	**11 18 49.9**	**-0.2**	
	comp=Z,0.9nm,0.5s,baz=92,slow=5.7,SNR=6.1								
FINES	**FINESS Array B**	**78.61**	**334**	*i*	P	**P**	**11 18 51.2**	**+1.1**	
FINES					pmax	pmax			
	comp=Z,1.0nm,0.5s								
MFID	**Camas Ranch**	**78.93**	**47**	*eP*		**P**	**11 18 52.8**	**+0.4**	
	comp=Z,8.3nm,1.1s								
KBZ	**Khabaz**	**79.06**	**314**		P	**P**	**11 18 53.8**	**+0.9**	
	comp=Z,3.5nm,0.8s,baz=118,slow=5.1,SNR=9.4								
KBZ	**Khabaz**	**79.06**	**314**		P	**P**	**11 18 53.8**	**+0.9**	
KBZ					pmax	pmax			
	comp=Z,3.0nm,0.8s								
NV01	**Mina Array Sit**	**79.46**	**52**	*eP*		**P**	**11 18 56.0**	**+0.5**	
NVAR	**Mina Array Bea**	**79.46**	**52**		P	**P**	**11 18 55.8**	**+0.3**	
	comp=Z,3.2nm,0.7s,baz=268,slow=7.1,SNR=8.7								
HLID	**Hailey**	**79.78**	**46**	*eP*		**P**	**11 18 57.8**	**+0.7**	
	comp=Z,1.3nm,0.8s								
LRM	**Limekiln Ridge**	**79.96**	**44**	*eP*		**P**	**11 18 58.9**	**+0.7**	
VSU	**Vasula**	**80.12**	**332**	*eP*		**P**	**11 18 58.9**	**+0.6**	
VSU					pmax	pmax			
	comp=Z,12nm,1.0s								
BOZ	**Bozeman (W)**	**80.55**	**43**	*eP*		**P**	**11 19 02.0**	**+0.9**	
BOZ					pmax	pmax			
	comp=Z,2.0nm,0.6s								
BOZ	**Bozeman (W)**	**80.55**	**43**	*eP*		**P**	**11 19 02.0**	**+0.9**	
	comp=Z,2.0nm,0.6s								
SUMG	**Summit**	**80.65**	**1**	*eP*		**P**	**11 19 02.8**	**+1.4**	
SUMG					pmax	pmax			
	comp=Z,11nm,0.9s								
SUMG	**Summit**	**80.65**	**1**	*eP*		**P**	**11 19 02.8**	**+1.4**	
	comp=Z,11nm,0.9s								
R11A	**Troy Canyon, C**	**81.40**	**51**	*eP*		**P**	**11 19 06.2**	**+0.3**	
	comp=Z,4.7nm,1.2s								
YMR	**Madison River**	**81.44**	**44**	*eP*		**P**	**11 19 07.0**	**+0.9**	
	comp=Z,5.5nm,0.9s								
YFT	**Old Faithful**	**81.62**	**44**	*eP*		**P**	**11 19 06.5**	**-0.5**	
	comp=Z,15nm,1.5s								
H17A	**Grant Village**	**81.81**	**44**	*eP*		**P**	**11 19 10.5**	**+2.5**	
	comp=Z,3.4nm,0.7s								
IMW	**Indian Meadow**	**81.83**	**45**	*eP*		**P**	**11 19 09.4**	**+1.2**	
	comp=Z,5.3nm,0.9s								
FLWY	**Flagg Ranch**	**81.89**	**45**	*eP*		**P**	**11 19 10.3**	**+1.9**	
	comp=Z,6.1nm,0.8s								
MOOW	**Moose Ponds**	**82.03**	**45**	*eP*		**P**	**11 19 08.1**	**-1.1**	
	comp=Z,2.7nm,1.0s								
LOHW	**Long Hollow**	**82.19**	**45**	*eP*		**P**	**11 19 10.4**	**+0.4**	
	comp=Z,2.5nm,0.9s								
RLMT	**Red Lodge**	**82.25**	**43**	*eP*		**P**	**11 19 11.1**	**+0.8**	
	comp=Z,25nm,1.7s								
DUG	**Dugway, Tooele**	**82.43**	**49**	*eP*		**P**	**11 19 10.8**	**-0.4**	
DUG					pmax	pmax			
	comp=Z,5.0nm,0.7s								
DUG	**Dugway, Tooele**	**82.43**	**49**	*eP*		**P**	**11 19 10.8**	**-0.4**	
	comp=Z,5.0nm,0.7s								
BW06	**Boulder Array**	**83.27**	**45**	*eP*		**P**	**11 19 14.2**	**-1.5**	
PD31	**Pinedale Array**	**83.27**	**45**	*eP*		**P**	**11 19 14.0**	**-1.6**	
PDAR	**Pinedale Array**	**83.27**	**45**		P	**P**	**11 19 15.7**	**0.0**	
	comp=Z,1.1nm,0.8s,baz=295,slow=1.4,SNR=11								
PDAR					LR	LR	11 49 48.0		
	comp=Z,48nm,21.8s,baz=60,slow=31								
AKASG	**Malin Array Be**	**83.48**	**324**	*eP*		**P**	**11 19 15.9**	**-0.3**	
	comp=Z,3.1nm,0.8s,baz=46,slow=5.6,SNR=9.2								
AKASG	**Malin Array Be**	**83.48**	**324**	*i*	P	**P**	**11 19 15.8**	**-0.4**	
AKASG					pmax	pmax			
	comp=Z,3.0nm,0.8s								
KIEV	**Kiev**	**83.50**	**324**	*eP*		**P**	**11 19 15.1**	**-1.2**	
KIEV					pmax	pmax			
	comp=Z,4.0nm,0.9s								
LCMT	**Little Creek M**	**83.67**	**52**	*eP*		**P**	**11 19 17.9**	**+0.2**	
	comp=Z,8.9nm,1.6s								
KNB	**Kanab**	**83.96**	**52**	*eP*		**P**	**11 19 19.0**	**-0.2**	
KNB					pmax	pmax			
	comp=Z,8.0nm,1.2s								
KNB	**Kanab**	**83.96**	**52**	*eP*		**P**	**11 19 19.0**	**-0.2**	
	comp=Z,7.5nm,1.2s								
NC204	**NORSAR Array S**	**84.14**	**339**	*eP*		**P**	**11 19 20.1**	**+0.6**	
NB2	**NORSAR Subarra**	**84.18**	**339**		P	**P**	**11 19 19.1**	**-0.5**	
	comp=Z,0.4nm,0.6s,baz=43,slow=5.3								
NOA	**NORSAR Array B**	**84.18**	**339**		P	**P**	**11 19 19.4**	**-0.2**	
	comp=Z,2.7nm,1.0s,baz=40,slow=5.0,SNR=3.8								
Y14A	**Wickenburg**	**85.34**	**54**	*eP*		**P**	**11 19 26.8**	**+0.7**	
SMCO	**Snowmass**	**86.82**	**47**	*eP*		**P**	**11 19 34.3**	**+0.5**	
	comp=Z,18nm,0.7s								
BRTR	**Keskin Array B**	**87.06**	**314**		P	**P**	**11 19 34.4**	**-0.2**	
	comp=Z,1.5nm,0.8s,baz=96,slow=3.7,SNR=8.4								
BR231	**Keskin MP Arra**	**87.55**	**314**	*eP*		**P**	**11 19 34.9**	**-1.9**	
ANMO	**Albuquerque**	**89.45**	**51**	*i*	P	**P**	**11 19 46.0**	**-0.1**	
ANMO					pmax	pmax			
	comp=Z,2.0nm,1.2s								
VYHS	**Vyhne**	**90.11**	**327**	*eP*		**P**	**11 19 48.6**	**-0.1**	
VYHS	**Vyhne**	**90.11**	**327**	*eP*		**P**	**11 19 48.6**	**-0.1**	
SPMN	**Marine on St.**	**91.58**	**36**	*eP*		**P**	**11 19 56.5**	**+0.9**	
TXAR	**Lajitas Array**	**94.52**	**54**		P	**P**	**11 20 09.8**	**+0.3**	
	comp=Z,0.7nm,0.9s,baz=304,slow=2.4,SNR=7.8								
LPAZ	**La Paz**	**148.59**	**77**		PKPbc	**PKPbc**	**11 26 37.2**	**+0.3**	
	comp=Z,6.5nm,0.8s,baz=289,slow=2.5,SNR=19								
PLCA	**Paso Flores**	**148.63**	**125**		PKPbc	**PKPbc**	**11 26 35.9**	**+0.2**	
	comp=Z,3.0nm,1.1s,baz=290,slow=8.8,SNR=3.1								
SAML	**Samuel**	**148.82**	**60**	*e*	PKPdf	**PKPdf**	**11 26 32.1**	**-0.9**	
SAML				*e*	PKPbc	**PKPbc**	**11 26 36.6**	**-0.2**	
SAML				*e*	PKPab	**PKPab**	**11 26 39.8**	**-0.9**	

*IDC **29** 11:11:02.0± 1.2, 39.˚33N× 143.˚50E, h0km, mb3.5/4, mb1 3.7/5, mb1mx3.4/52, mbtmp3.5/5, ML3.2/1, Error ellipse: s-maj=41.9km s-min=24.1km az=114.0*
*ISCJB **29** 11:11:02.1± 0.9, 39.˚42N± 0.˚07× 143.˚52E± 0.˚09, h11km, mb3.6/4, Error ellipse: s-maj=11.2km s-min=7.6km az=43.4*
*JMA **29** 11:11:05.1± 0.3, 39.˚42N× 143.˚37E, h26km± 5km, M3.6*
ISC 29 11:11:03.9± 1.1, 39.˚45N± 0.˚07× 143.˚39E± 0.˚08, h11km, n15, σ 0.˚90/17, mb3.6/4, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
MIYJ	**Miyakonagasawa**	**1.22**	**277**	P		P	**Pb**	**11 11 26.6**	**-0.4**
MIYJ				*e*S			**Sb**	**11 11 42.0**	**-0.7**
JTH	**Tanohata**	**1.27**	**293**	P		P	**Pb**	**11 11 27.8**	**-0.1**
OFUJ	**Ofunato**	**1.38**	**255**	P		P	**Pn**	**11 11 28.7**	**-0.4**
JOM	**Ohasama**	**1.62**	**272**	P		P	**Pn**	**11 11 32.7**	**+0.3**
JKZ	**Kuzumaki**	**1.68**	**289**	P		P	**Pn**	**11 11 33.7**	**+0.5**
JANG	**Nango**	**1.71**	**303**	P		P	**Pn**	**11 11 33.6**	**-0.1**
JIO	**Ouri**	**1.87**	**239**	P		P	**Pn**	**11 11 35.7**	**-0.2**
JRG	**Rokugo**	**2.13**	**269**	P		P	**Pn**	**11 11 40.4**	**+0.9**
JAH	**Hinai**	**2.25**	**290**	P		P	**Pn**	**11 11 42.0**	**+1.0**
JCH	**Churui**	**3.16**	**360**	P		P	**Pn**	**11 11 53.4**	**-0.2**
JCH				*e*S			**Sn**	**11 12 30.9**	**-0.4**
MJAR	**Matsushiro Arr**	**5.01**	**236**	Pn		P	**Pn**	**11 12 20.5**	**+1.5**
	0.8nm,0.3s,baz=40,slow=12,SNR=5.7								
SEY	**Seymchan**	**24.14**	**10**	P		P	**P**	**11 16 21.7**	**+2.1**
	0.7nm,0.4s,baz=61,slow=15,SNR=3.9								
KURBB	**Kurchatov Arra**	**45.78**	**306**	P		P	**P**	**11 19 25.1**	**-0.2**
	1.1nm,0.5s,baz=81,slow=8.6,SNR=5.9								
WRA	**Warramunga Arr**	**59.68**	**190**	P		P	**P**	**11 21 07.2**	**-1.1**
	0.4nm,0.7s,baz=8.6,slow=6.8,SNR=2.6								
YKA	**Yellowknife Ar**	**60.94**	**31**	P		P	**P**	**11 21 16.5**	**0.0**
	0.2nm,0.7s,baz=305,slow=6.0,SNR=3.4								

*ISCJB **29** 11:12:12.5± 0.3, 24.˚34N± 0.˚03× 122.˚04E± 0.˚02, h24km± 5km, Error ellipse: s-maj=5.0km s-min=2.9km az=158.7*
*JMA **29** 11:12:12.2± 0.1, 24.˚31N× 121.˚99E, h39km± 3km, M2.3*
*TAP **29** 11:12:12.5, 24.˚35N× 121.˚99E, h16km, ML3.0, D*
ISC 29 11:12:12.3± 1.0, 24.˚35N± 0.˚03× 122.˚02E± 0.˚02, h20km± 2km, n25, σ 0.˚42/50, Taiwan region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
ENA	**Nanau**	**0.27**	**287**	P		P	**Pb**	**11 12 18.4**	**-0.2**
	baz=288								
ENA				*e*S			**Sb**	**11 12 22.6**	**-0.3**
	baz=288								
TWC	**Suao**	**0.30**	**329**	*i*	P	P	**Pb**	**11 12 19.2**	**+0.2**
	baz=335								
TWC					S		**Sb**	**11 12 24.1**	**+0.4**
	baz=335								
TWD	**Chiawan**	**0.47**	**236**		P	P	**Pb**	**11 12 21.9**	**0.0**
	baz=232								
TWD				*e*S			**Sb**	**11 12 28.9**	**+0.5**
	baz=232								
TWE	**Neicheng**	**0.49**	**319**	*eP*		P	**Pb**	**11 12 22.1**	**-0.2**
	baz=322								
TWE				*e*S			**Sb**	**11 12 29.3**	**+0.3**
	baz=322								
EGS		**0.50**	**350**	*i*	P	P	**Pb**	**11 12 22.8**	**+0.3**
	baz=355								
EGS				*e*S			**Sb**	**11 12 30.2**	**+0.9**
	baz=355								
ENTT	**Nioudou**	**0.51**	**305**	*i*	P	P	**Pb**	**11 12 22.5**	**-0.1**
	baz=307								
ENTT					S		**Sb**	**11 12 29.9**	**+0.3**
	baz=307								
NNS	**Nan Shan**	**0.60**	**279**	*eP*		P	**Pb**	**11 12 23.9**	**-0.4**
	baz=278								
NNS				*e*S			**Sb**	**11 12 32.5**	**+0.1**
	baz=278								
TWB1	**Santiao Chiao**	**0.66**	**357**	*eP*		P	**Pb**

0.5nm,0.4s,baz=89,slow=6.4,SNR=3.1
WRA Warramunga Arr 44.85 168 P **P 11 23 22.2 -0.7**
0.3nm,0.6s,baz=348,slow=8.8,SNR=5.0
FINES FINESS Array B 73.20 330 P **P 11 26 39.0 0.0**
0.9nm,0.5s,baz=76,slow=10.0,SNR=4.9
NOA NORSAR Array B 79.82 333 P **P 11 27 16.1 -0.5**
0.2nm,0.5s,baz=57,slow=4.9,SNR=3.3
YKA Yellowknife Ar 81.42 24 P **P 11 27 24.4 -0.6**
0.1nm,0.6s,baz=302,slow=5.0,SNR=3.7

ISK ***29*** *11:20:31.9, 39°.91N × 28°.00E, h5km, MD2.2*
ISCJB ***29*** *11:20:32.3±0.7, 39°.92N±0°.03×28°.00E±0°.06, h11km±12km, Error ellipse: s-maj=8.4km s-min=4.5km az=154.2*
CSEM ***29*** *11:20:32.5±0.1, 39°.91N × 28°.06E, h10km, MD2.2, Error ellipse: s-maj=2.3km s-min=1.7km az=62.0*
DDA ***29*** *11:20:32.7, 39°.91N × 28°.02E, h7km, Md2.6*
ISC 29 11:20:32.0±1.0, 39°.91N±0°.03×27°.99E±0°.03, h17km±7km, n20, σ0s31/29, Turkey

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
GONE	**Gonen-Balikesi**	**0.27**	**301**	*e*PG	**Pg**		**11 20 37.9**	**-0.2**
GONE				*e*SG	**Sg**		**11 20 42.1**	**-0.1**
GONE	**Gonen-Balikesi**	**0.27**	**301**	*e*Pg	**Pg**		**11 20 37.9**	**-0.2**
GONE				*e*Sg	**Sg**		**11 20 42.1**	**-0.1**
BALB	**Balikesir**	**0.28**	**198**	*e*PG	**Pg**		**11 20 38.2**	**0.0**
BALB				*e*SG	**Sb**		**11 20 42.7**	**-0.3**
BALB	**Balikesir**	**0.28**	**198**	*e*Pg	**Pg**		**11 20 38.2**	**0.0**
BALB				*e*Sg	**Sb**		**11 20 42.7**	**-0.3**
BALY	**Balya**	**0.33**	**240**	*i* P	**Pb**		**11 20 39.9**	**+0.4**
BALY	**Balya**	**0.33**	**240**	P	**Pb**		**11 20 39.9**	**+0.4**
EDC	**Edincik**	**0.45**	**347**	*e*PG	**Pg**		**11 20 41.2**	**+0.1**
EDC				*e*SG	**Sb**		**11 20 47.9**	**-0.1**
EDC	**Edincik**	**0.45**	**347**	*e*Pg	**Pg**		**11 20 41.3**	**+0.1**
EDC				*e*Sg	**Sb**		**11 20 47.9**	**-0.1**
DURS	**Dursunbey**	**0.48**	**129**	*i* P	**Pb**		**11 20 42.2**	**+0.1**
DURS				*i* S	**Sb**		**11 20 48.8**	**-0.1**
DURS	**Dursunbey**	**0.48**	**129**	P	**Pb**		**11 20 42.2**	**+0.1**
MRMT	**Marmara Adasi**	**0.76**	**337**	*e*PG	**Pb**		**11 20 47.1**	**+0.3**
MRMT				*e*SG	**Sn**		**11 20 58.3**	**-0.8**
MRMT	**Marmara Adasi**	**0.76**	**337**	*e*Pg	**Pb**		**11 20 47.1**	**+0.3**
MRMT				*e*Sg	**Sn**		**11 20 58.3**	**-0.8**
ARMT	**Armutlu**	**0.94**	**45**	*e*PG	**Pg**		**11 20 50.3**	**+0.1**
ARMT	**Armutlu**	**0.94**	**45**	*e*Pg	**Pg**		**11 20 50.3**	**+0.1**
RKY	**Sarkoy-Tekirda**	**1.00**	**322**	*e*PG	**Pn**		**11 20 51.6**	**+0.3**
RKY	**Sarkoy-Tekirda**	**1.00**	**322**	*e*Pg	**Pn**		**11 20 51.6**	**+0.3**
LPK	**Lapseki**	**1.05**	**297**	*e*PG	**Pg**		**11 20 52.6**	**+0.2**
LPK	**Lapseki**	**1.05**	**297**	*e*Pg	**Pg**		**11 20 52.7**	**+0.2**
TVSB	**Tavsanli**	**1.22**	**111**	*e*PN	**Pg**		**11 20 55.8**	**+0.1**
TVSB	**Tavsanli**	**1.22**	**111**	*e*Pn	**Pg**		**11 20 55.8**	**+0.1**

ISK ***29*** *11:26:13.2, 39°.32N × 36°.83E, h5km, MD2.9*
CSEM ***29*** *11:26:14.4±0.2, 39°.33N × 36°.73E, h5km, MD2.6, Error ellipse: s-maj=6.3km s-min=4.1km az=157.0*
DDA ***29*** *11:26:14.5, 39°.29N × 36°.71E, h8km, Md2.6*
ISC 29 11:26:14.2±0.8, 39°.32N±0°.03×36°.71E±0°.03, h10km±6km, n18, σ0s73/32, Turkey

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
CUALT	**Altinyayla-SIV**	**0.06**	**142**	*i* P	**Pg**		**11 26 16.0**	**-0.5**
CUALT				*i* S	**Sg**		**11 26 18.6**	**+0.5**
CUALT	**Altinyayla-SIV**	**0.06**	**142**	P	**Pg**		**11 26 16.0**	**-0.5**
CUALT				S	**Sg**		**11 26 18.6**	**+0.5**
CUSAR	**Sarkisla-SIVAS**	**0.38**	**286**	*i* P	**Pg**		**11 26 21.7**	**0.0**
CUSAR				*i* S	**Sb**		**11 26 28.6**	**-0.5**
CUSAR	**Sarkisla-SIVAS**	**0.38**	**286**	P	**Pg**		**11 26 21.7**	**0.0**
CUSAR				S	**Sb**		**11 26 28.6**	**-0.5**
CUKAN	**kangal_SIVAS**	**0.58**	**90**	*i* P	**Pg**		**11 26 25.1**	**-0.6**
CUKAN				*i* S	**Sb**		**11 26 35.0**	**-0.1**
CUKAN	**kangal_SIVAS**	**0.58**	**90**	P	**Pg**		**11 26 25.0**	**-0.6**
CUKAN				S	**Sb**		**11 26 35.0**	**-0.1**
SVSK	**Karacayir**	**0.64**	**20**	*e*PG	**Pg**		**11 26 25.5**	**-1.1**
SVSK				*e*SG	**Sg**		**11 26 34.5**	**-0.5**
SVSK	**Karacayir**	**0.64**	**20**	*e*Pg	**Pg**		**11 26 25.5**	**-1.1**
SVSK				*e*Sg	**Sg**		**11 26 34.5**	**-0.5**
BNN	**Bunyan**	**0.82**	**236**	*e*PG	**Pb**		**11 26 30.6**	**-0.1**
BNN				*e*SG	**Sn**		**11 26 43.6**	**-0.6**
BNN	**Bunyan**	**0.82**	**236**	*e*Pg	**Pb**		**11 26 30.6**	**-0.1**
BNN				*e*Sg	**Sn**		**11 26 43.6**	**-0.6**
CUZAR	**Zara_SIVAS**	**1.00**	**55**	*i* P	**Pn**		**11 26 34.2**	**-0.2**
CUZAR				*i* S	**Sn**		**11 26 49.5**	**+0.9**
CUZAR	**Zara_SIVAS**	**1.00**	**55**	P	**Pn**		**11 26 34.2**	**-0.2**
TOKT	**Tokat**	**1.01**	**353**	*e*PG	**Pb**		**11 26 33.8**	**-0.1**
TOKT				*e*SG	**Sb**		**11 26 47.7**	**+0.5**
TOKT	**Tokat**	**1.01**	**353**	*e*Pg	**Pb**		**11 26 33.8**	**-0.1**
TOKT				*e*Sg	**Sb**		**11 26 47.7**	**+0.5**
YOZ	**Yozgat**	**1.12**	**287**	*e*PN	**Pn**		**11 26 36.8**	**+0.6**
YOZ	**Yozgat**	**1.12**	**287**	*e*Pn	**Pn**		**11 26 36.8**	**+0.6**
SUSE	**Susehri**	**1.45**	**52**	*i* P	**Pb**		**11 26 41.6**	**+0.1**
SUSE				*i* S	**Sg**		**11 27 03.6**	**+2.6**
SUSE	**Susehri**	**1.45**	**52**	P	**Pb**		**11 26 41.6**	**+0.1**

ISCJB ***29*** *11:26:58.3±0.9, 4°.8S±0°.1×30°.15E±0°.10, h10km, mb3.5/3, MS3.2/6, Error ellipse: s-maj=18.3km s-min=11.7km az=145.1*
IDC ***29*** *11:26:58.9±1.4, 4°.85S × 30°.16E, h0km, mb3.7/3, mb1 3.8/6, mb1mx3.5/36, mbtmp3.9/6, ML2.1/1, MS3.3/9, Ms1 3.3/9, ms1mx3.1/39, Error ellipse: s-maj=30.7km s-min=22.0km az=129.0*
ISC 29 11:27:00.4±1.1, 4°.8S±0°.1×30°.1E±0°.1, h10km, n10, σ0s80/7, mb3.5/3, MS3.2/6, Lake Tanganyika region

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
DODT	**Dodoma, Tanzan**	**5.74**	**104**	*i* P	**Pn**		**11 28 26.3**	**+0.4**
DODT				*i* S	Sg		11 29 58.7	-6.2
KMBO	**Kilima Mbogo**	**7.99**	**63**	Pn	**Pn**		**11 28 56.6**	**-0.3**
	1.4nm,0.3s,baz=235,slow=19,SNR=18							
KMBO				Sn	Sn		11 30 16.8	-11
	2.9nm,0.3s,baz=216,slow=14,SNR=3.8							
KMBO				Lg	Lg		11 31 12.4	
	19nm,0.3s,baz=94,slow=23,SNR=7.0							
KMBO				LR	LR		11 32 19.6	
	comp=Z,216nm,18.4s,baz=290,slow=40							
LSZ	**Lusaka**	**10.56**	**190**	Pn	**Pn**		**11 29 31.5**	**-0.6**
	1.3nm,0.3s,baz=2.0,slow=10,SNR=8.7							
LSZ				Sn	Sn		11 31 19.1	-11
	0.9nm,0.3s,baz=35,slow=12,SNR=4.9							
LSZ				Lg	Lg		11 32 27.0	
	2.0nm,0.3s,baz=37,slow=8.7,SNR=6.6							
LSZ				LR	LR		11 33 18.1	
	comp=Z,79nm,20.6s,baz=181,slow=36							
TSUM	**Tsumeb**	**18.82**	**220**	P	**P**		**11 31 20.3**	**-0.3**
	0.4nm,0.3s,baz=27,slow=11,SNR=5.1							
TSUM				Sn	Sn		11 34 37.2	-15
	0.4nm,0.3s,baz=288,slow=14,SNR=3.7							
TSUM				LR	LR		11 38 37.9	
	comp=Z,161nm,18.2s,baz=335,slow=37							
LBTB	**Lobatse**	**20.54**	**192**	LR	LR		11 38 53.3	
	comp=Z,137nm,20.6s,baz=16,slow=35							
ATD	**Arta Tunnel**	**20.59**	**38**	LR	LR		11 39 12.7	
	comp=Z,86nm,18.4s,baz=128,slow=36							
BOSA	**Boshof**	**24.11**	**191**	P	**P**		**11 32 15.7**	**-0.8**
	1.6nm,0.6s,baz=360,slow=13,SNR=3.4							
BOSA				LR	LR		11 42 23.7	
	comp=Z,72nm,20.2s,baz=338,slow=38							
SUR	**Sutherland**	**28.77**	**197**	P	**P**		**11 32 59.7**	**+1.1**
	1.0nm,1.1s,baz=184,slow=3.0,SNR=3.0							
SUR				LR	LR		11 44 31.4	
	comp=Z,16nm,18.2s,baz=30,slow=37							
TORD	**Torodi Ar. Bea**	**33.43**	**303**	P	**P**		**11 33 39.9**	**+0.2**
	0.4nm,0.6s,baz=121,slow=8.1,SNR=3.4							
TORD				LR	LR		11 49 29.8	
	comp=Z,81nm,19.8s,baz=155,slow=40							
BRTR	**Keskin Array B**	**44.45**	**4**	LR	LR		11 56 09.1	
	comp=Z,326nm,19.4s,baz=214,slow=39							

IDC 29 12:00:51.9±75.0, 13°.88S × 167°.52E, h0km, mb3.5/3, mb1 3.7/3, mb1mx3.4/45, mbtmp3.5/3, MS2.9/2, Ms1 2.9/2, ms1mx2.6/29, Error ellipse: s-maj=1263.0km s-min=123.5km az=64.0, Vanuatu Islands

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
HNR	**Honiara**	**8.63**	**300**	LR	LR		12 05 33.7	
	comp=Z,46nm,20.1s,baz=190,slow=33							
STKA	**Stephens Creek**	**29.73**	**229**	P	P		12 06 59.6	-0.3
	0.6nm,0.5s,baz=72,slow=9.6,SNR=3.5							
WRA	**Warramunga Arr**	**32.27**	**255**	P	P		12 07 22.5	-0.1
	0.5nm,0.8s,baz=86,slow=9.3,SNR=3.6							
ASAR	**Alice Springs**	**33.20**	**248**	P	P		12 07 31.0	+0.2
	0.3nm,0.6s,baz=73,slow=9.4,SNR=5.2							
GUMO	**Guam**	**35.33**	**320**	LR	LR		12 21 27.2	
	comp=Z,31nm,20.7s,baz=112,slow=35							

IDC ***29*** *12:01:12.8±1.4, 14°.27S × 166°.72E, h0km, mb4.1/10, mb1 4.2/10, mb1mx4.0/44, mbtmp4.1/10, MS3.6/1, Ms1 3.8/1, ms1mx2.7/33, Error ellipse: s-maj=56.5km s-min=22.0km az=134.0*
ISCJB ***29*** *12:01:16.2±1.6, 14°.25S±0°.3×166°.5E±0°.3, h28km, mb4.0/10, MS4.3/2, Error ellipse: s-maj=54.7km s-min=18.3km az=41.4*
ISC 29 12:01:17.4±1.5, 14°.3S±0°.3×166°.7E±0°.3, h28km, n14, σ1s18/13, mb4.0/10, Vanuatu Islands

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
STKA	**Stephens Creek**	**28.86**	**228**	P	**P**		**12 07 14.9**	**+1.1**
	1.4nm,0.7s,baz=48,slow=8.8,SNR=7.9							
WRA	**Warramunga Arr**	**31.38**	**255**	P	**P**		**12 07 35.5**	**-0.8**
	1.2nm,0.8s,baz=87,slow=9.3,SNR=6.4							
ASAR	**Alice Springs**	**32.30**	**248**	P	**P**		**12 07 42.6**	**-1.7**
	0.7nm,0.7s,baz=72,slow=9.5,SNR=10							
DAV	**Davao City (W)**	**45.95**	**295**	LR	LR		12 27 34.9	
	comp=Z,2μm,20.0s,baz=60,slow=34							
USRK	**Ussuriysk Ar.**	**66.22**	**333**	P	**P**		**12 12 03.3**	**+0.6**
	2.1nm,0.8s,baz=192,slow=11,SNR=4.4							
CMAR	**Chiang Mai Arr**	**74.24**	**294**	P	**P**		**12 12 54.0**	**+1.6**
	1.3nm,0.8s,baz=118,slow=4.2,SNR=6.4							
CMAR				LR	LR		12 45 58.0	
	comp=Z,36nm,19.1s,baz=190,slow=36							
SEY	**Seymchan**	**77.76**	**353**	P	**P**		**12 13 11.6**	**+0.1**
	1.8nm,0.8s,baz=186,slow=11,SNR=3.6							
ILAR	**Eielson Array**	**86.27**	**18**	P	**P**		**12 13 54.8**	**-1.4**
	1.3nm,0.8s,baz=234,slow=5.6,SNR=15							
MKAR	**Makanchi Array**	**96.47**	**317**	P	**P**		**12 14 43.6**	**-0.6**
	0.9nm,0.7s,baz=102,slow=5.1,SNR=4.9							
ZALV	**Zalesovo Beam**	**96.68**	**324**	P	**P**		**12 14 43.8**	**-1.2**
	0.2nm,0.3s,baz=88,slow=5.2,SNR=4.4							
YKA	**Yellowknife Ar**	**97.40**	**27**	P	**P**		**12 14 49.3**	**+1.3**
	0.2nm,0.7s,baz=263,slow=5.4,SNR=5.0							
ARCES	**ARCESS Array B**	**119.66**	**345**	PKP	**PKPdf**		**12 20 03.5**	**-0.7**
	1.7nm,0.8s,baz=52,slow=2.0,SNR=9.3							
FINES	**FINESS Array B**	**125.08**	**338**	PKP	**PKPdf**		**12 20 14.6**	**-0.2**
	0.7nm,0.7s,baz=29,slow=3.2,SNR=2.6							
NOA	**NORSAR Array B**	**130.03**	**345**	PKP	**PKPdf**		**12 20 24.6**	**+0.3**
	0.5nm,0.6s,baz=33,slow=2.0,SNR=3.8							

IDC 29 12:07:32.2±3.8, 35°.00N × 144°.28E, h0km, mb3.6/3, mb1 3.6/4, mb1mx3.2/63, mbtmp3.4/4, ML2.8/1, MS2.6/1, Ms1 2.6/1, ms1mx2.1/48, Error ellipse: s-maj=112.5km s-min=29.7km az=60.0, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
MJAR	**Matsushiro Arr**	**5.17**	**289**	Pn	**Pn**		12 08 50.8	-0.1
	0.3nm,0.3s,baz=88,slow=15,SNR=5.4							
KSRS	**Korea Array**	**13.43**	**285**	LR	LR		12 15 44.7	
	comp=Z,28nm,19.8s,baz=215,slow=37							
H11N2	**WAKE ISLAND Hy**	**25.11**	**121**	T	T		12 40 02.8	
	baz=317,slow=75,SNR=50							
H11N1	**WAKE ISLAND Hy**	**25.12**	**121**	T	T		12 40 03.6	
	baz=317,slow=75,SNR=19							
H11N3	**WAKE ISLAND Hy**	**25.13**	**121**	T	T		12 40 04.5	
	baz=317,slow=75,SNR=35							
H11S1	**WAKE ISLAND Hy**	**25.80**	**124**	T	T		12 40 57.5	
	baz=318,slow=76,SNR=14							
H11S3	**WAKE ISLAND Hy**	**25.81**	**124**	T	T		12 40 57.9	
	baz=318,slow=76,SNR=4.8							
H11S2	**WAKE ISLAND Hy**	**25.82**	**124**	T	T		12 40 59.2	
	baz=318,slow=76,SNR=4.1							
KURBB	**Kurchatov Arra**	**49.08**	**310**	P	P		12 16 20.6	-0.4
	0.5nm,0.5s,baz=83,slow=7.9,SNR=4.1							
WRA	**Warramunga Arr**	**55.45**	**191**	P	P		12 17 08.0	-0.7
	1.2nm,0.6s,baz=12,slow=8.6,SNR=8.7							
ASAR	**Alice Springs**	**59.17**	**191**	P	P		12 17 35.8	+0.8
	0.2nm,0.7s,baz=2.7,slow=4.9,SNR=4.3							

IDC ***29*** *12:08:29.7±3.1, 27°.02N × 143°.70E, h0km, mb3.5/4, mb1 3.8/5, mb1mx3.4/63, mbtmp3.6/5, ML3.8/1, Error ellipse: s-maj=71.4km s-min=21.3km az=168.0*
ISC 29 12:08:31.5±2.3, 27°.1N±0°.3×143°.7E±0°.1, h10km, n6, σ0s59/7, mb3.6/4, Bonin Islands region

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
JCJ	**Chichijima**	**1.31**	**271**	Pn	**Pg**		**12 08 56.4**	**-0.4**
	19nm,0.3s,baz=272,slow=22,SNR=5.2							
JCJ				Sn	**Sg**		**12 09 14.2**	**+0.4**
	98nm,0.3s,baz=270,slow=22,SNR=11							
MJAR	**Matsushiro Arr**	**10.50**	**335**	Pn	**Pn**		**12 11 01.9**	**-0.3**
	0.7nm,0.3s,baz=160,slow=11,SNR=5.4							
TIXI	**Tiksi**	**45.36**	**353**	P	**P**		**12 16 50.3**	**+0.7**
	0.4nm,0.3s,baz=122,slow=5.2,SNR=2.3							
ILAR	**Eielson Array**	**57.09**	**29**	P	**P**		**12 18 17.1**	**-0.7**
	0.5nm,0.9s,baz=275,slow=4.9,SNR=4.7							
INK	**Inuvik**	**62.49**	**25**	P	**P**		**12 18 55.0**	**+0.1**
	0.2nm,0.5s,baz=297,slow=4.5,SNR=4.9							
YKA	**Yellowknife Ar**	**71.52**	**29**	P	**P**		**12 19 52.5**	**+0.2**
	0.3nm,0.8s,baz=292,slow=6.7,SNR=4.8							

ISCJB ***29*** *12:11:55.1±0.6, 37°.94N±0°.05×75°.6E±0°.1, h100km, mb3.6/5, Error ellipse: s-maj=13.6km s-min=5.5km az=162.2*
IDC ***29*** *12:11:57.9±5.2, 38°.04N × 75°.66E, h113km±36km, mb3.3/5, mb1 3.3/9, mb1mx3.1/57, mbtmp3.6/9, Error ellipse: s-maj=41.8km s-min=33.8km az=155.0*
NNC ***29*** *12:12:01.4±2.6, 38°.54N × 75°.68E, h0km, mb3.8, mpv3.4, Error ellipse: s-maj=18.9km s-min=14.7km az=161.0*
ISC 29 12:11:56.2±0.8, 37°.99N±0°.06×75°.7E±0°.1, h100km, n16, σ1s45/23, mb3.6/5, 9C-2D, Tajikistan-Xinjiang border region

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
SFK	**Sufi-Kurgan**	**2.66**	**320**	⇓Pn	**Pn**		**12 12 39.5**	**+1.9**
	3.1nm,0.1s							
SFK				⇑Sn	**Sn**		**12 13 10.1**	**+0.6**
	87nm,0.4s							
AAK	**Ala-Archa**	**4.73**	**349**	P	**Pn**		**12 13 07.3**	**+1.9**
	1.4nm,0.3s,baz=166,slow=13,SNR=16							
AAK				S	**Sn**		**12 13 59.3**	**+0.2**
	0.6nm,0.3s,baz=324,slow=18,SNR=6.8							
AAK	**Ala-Archa**	**4.73**	**349**	⇑Pn	**Pn**		**12 13 07.6**	**+2.2**
	4.6nm,0.6s							
AAK				⇑Sn	**Sn**		**12 13 57.4**	**-1.7**
	7.9nm,0.7s							
AAK				⇑Lg	Lg		12 14 13.9	
	8.6nm,1.1s							
TKM2	**Tokmak 2**	**4.92**	**359**	⇑Pn	**Pn**		**12 13 10.4**	**+2.3**
	2.5nm,0.4s							
TKM2				⇑Sn	**Sn**		**12 14 02.3**	**-1.6**
	6.3nm,0.8s							
TKM2				⇑Lg	Lg		12 14 20.3	
	7.6nm,0.9s							
MNAS	**Manas**	**5.12**	**332**	⇑Pn	**Pn**		**12 13 12.1**	**+1.4**
	3.3nm,0.5s							
MNAS				⇓Sn	**Sn**		**12 14 07.3**	**-1.3**
	6.5nm,0.3s							
KK31	**Karatay Array**	**6.47**	**324**	Pn	**Pn**		**12 13 29.4**	**+0.6**
	0.7nm,0.2s,baz=121,slow=12,SNR=39							
KK31				⇑Sn	**Sn**		**12 14 39.8**	**-1.3**
	4.5nm,0.5s,baz=126,slow=23,SNR=11							
SMLA	**Simla**	**6.95**	**170**	*e*P	**Pn**		**12 13 36.2**	**+0.7**
SMLA				*e*S	**Sn**		**12 14 52.1**	**-0.8**
MKAR	**Makanchi Array**	**10.04**	**27**	P	**Pn**		**12 14 19.0**	**+1.6**
	0.1nm,0.3s,baz=200,slow=17,SNR=3.0							
KURBB	**Kurchatov Arra**	**12.78**	**8**	P	**P**		**12 14 59.1**	**-2.1**
	0.1nm,0.3s,baz=198,slow=10,SNR=10							
BVAR	**Borovoye Array**	**15.48**	**348**	P	**Pn**		**12 15 30.5**	**+1.6**
	0.2nm,0.3s,baz=147,slow=9.5,SNR=4.1							
ZALV	**Zalesovo Beam**	**17.14**	**18**	P	**Pn**		**12 15 50.1**	**+0.9**
	0.2nm,0.3s,baz=220,slow=12,SNR=5.5							
FINES	**FINESS Array B**	**38.43**	**324**	P	**P**		**12 19 08.2**	**+0.5**
	0.6nm,0.4s,baz=116,slow=9.1,SNR=7.5							
ARCES	**ARCESS Array B**	**41.27**	**336**	P	**P**		**12 19 31.8**	**+0.6**
	1.5nm,0.7s,baz=113,slow=8.1,SNR=9.5							
NOA	**NORSAR Array B**	**45.50**	**322**	P	**P**		**12 20 04.4**	**-0.8**
	0.7nm,0.8s,baz=90,slow=7.9,SNR=3.0							
TORD	**Torodi Ar. Bea**	**69.50**	**271**	P	**P**		**12 22 53.7**	**-0.6**
	0.2nm,0.4s,baz=50,slow=5.5,SNR=3.0							
YKA	**Yellowknife Ar**	**79.51**	**5**	P	**P**		**12 23 50.8**	**-0.6**
	0.3nm,0.5s,baz=347,slow=5.6,SNR=9.5							

IDC 29 12:15:14.5±4.6, 19°.34S × 168°.05E, h0km, mb4.1/3, mb1 4.2/4, mb1mx3.8/45, mbtmp4.1/4, ML3.8/1, Error ellipse: s-maj=84.5km s-min=50.9km az=95.0, Vanuatu Islands

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**3.10**	**209**	Pn	**Pn**		12 16 04.9	0.0
	13nm,0.3s,baz=172,slow=21,SNR=67							
DZM				Sn	Sn		12 16 39.0	-3.7
	12nm,0.3s,baz=128,slow=24,SNR=3.5							
STKA	**Stephens Creek**	**26.84**	**237**	P	P		12 20 57.9	+1.1
	0.9nm,0.5s,baz=76,slow=11,SNR=7.4							
WRA	**Warramunga Arr**	**31.73**	**263**	P	P		12 21 39.5	-0.9
	0.7nm,0.4s,baz=100,slow=8.4,SNR=28							
ASAR	**Alice Springs**	**32.01**	**256**	P	P		12 21 42.9	-0.1
	3.1nm,0.6s,baz=84,slow=8.6,SNR=62							
GERES	**GERESS Array B**	**144.04**	**331**	PKP	PKPdf		12 34 51.7	-0.5
	0.5nm,0.7s,baz=50,slow=2.1,SNR=3.7							

IDC 29 12:19:56.6±2.4, 54°.12N × 87°.14E, h0km, mb1 3.1/3, mb1mx3.0/56, mbtmp3.1/3, ML2.9/3, Error ellipse: s-maj=20.7km s-min=14.7km az=58.0, Southwestern Siberia

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
I46RU	**ZALESOVO INFRA**	**1.38**	**264**	*i*			12 29 16.2	
	baz=81,slow=332,SNR=24							
ZALV	**Zalesovo Beam**	**1.38**	**264**	Pg	Pg		12 20 21.0	-2.0
	4.2nm,0.3s,baz=79,slow=16,SNR=49							
ZALV				Lg	Lg		12 20 40.9	
	4.8nm,0.3s,baz=81,slow=28,SNR=16							
ZALV				Rg	Rg		12 20 50.9	
	27nm,0.8s,baz=73,slow=24,SNR=8.4							
KURBB	**Kurchatov Arra**	**6.33**	**240**	Pn	Pn		12 21 32.0	+1.0
	0.2nm,0.3s,baz=57,slow=14,SNR=14							
KURBB				Sn	Sn		12 22 43.1	-0.8
	0.1nm,0.3s,baz=52,slow=22,SNR=7.1							
KURBB				Lg	Lg		12 23 17.9	
	0.1nm,0.3s,baz=63,slow=32,SNR=9.1							
MKAR	**Makanchi Array**	**7.96**	**205**	Pn	Pn		12 21 54.3	+0.9
	0.1nm,0.3s,baz=25,slow=12,SNR=3.0							
MKAR				Lg	Lg		12 24 06.8	
	0.1nm,0.3s,baz=20,slow=28,SNR=2.8							
BVAR	**Borovoye Array**	**10.03**	**271**	Pn	Pn		12 22 21.1	-0.6
	0.2nm,0.3s,baz=81,slow=14,SNR=2.5							
BVAR				Sn	Sn		12 24 09.6	-5.2
	0.4nm,0.3s,baz=69,slow=22,SNR=6.2							

ISCJB ***29*** *12:24:54.3±1.0, 36°.63N±0°.04×140°.74E±0°.07, h12km±4km, mb4.0/3, MS3.7/2, Error ellipse: s-maj=10.1km s-min=5.1km az=27.9*
IDC ***29*** *12:24:54.0±1.7, 36°.69N × 140°.61E, h0km, mb3.3/2, mb1 3.6/2, mb1mx3.2/47, mbtmp3.3/2, MS3.7/2, Ms1 3.7/2, ms1mx2.5/65, Error ellipse: s-maj=33.1km s-min=18.0km az=15.0*
JMA ***29*** *12:24:55.8, 36°.69N × 140°.62E, h7km±1km, M3.0*
JMA Felt III J1.
ISC 29 12:24:55.5±1.1, 36°.68N±0°.04×140°.63E±0°.08, h10km±7km, n13, σ0s39/18, mb3.6/3, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
JHO	**Hitachi**	**0.09**	**216**	P	**Pg**		**12 24 58.0**	**0.0**
JHO				S	**Sg**		**12 24 59.4**	**-0.3**
ONAJ	**Iwakimizuishiy**	**0.44**	**17**	P	**Pg**		**12 25 04.3**	**+0.2**
ONAJ				S	**Sg**		**12 25 10.3**	**+0.4**
JYT	**Yasato**	**0.58**	**218**	P	**Pg**		**12 25 06.8**	**+0.1**
JYT				S	**Sg**		**12 25 14.7**	**+0.4**
JSB	**Shiboa**	**0.64**	**297**	P	**Pb**		**12 25 08.7**	**-0.1**
JSB				S	**Sb**		**12 25 17.7**	**-0.1**
JFK	**Kawauchi**	**0.71**	**16**	P	**Pg**		**12 25 09.1**	**-0.1**
JFK				S	**Sg**		**12 25 18.6**	**+0.1**
JFT	**Otama**	**0.87**	**344**	P	**Pg**		**12 25 12.4**	**+0.2**
JFT				S	**Sb**		**12 25 23.8**	**-0.6**
MJAR	**Matsushiro Arr**	**1.96**	**267**	Pn	**Pn**		**12 25 29.5**	**+0.7**
	9.2nm,0.3s,baz=83,slow=14,SNR=41

PCYT	**Pengchaiyu**	**1.16**	**324**	⇑*i*P	**Pn**	**12 29 38.5**	**+1.4**
	baz=323							
PCYT				*e*S	**Sn**	**12 29 55.3**	**+1.1**
	baz=323							
JKRS	**Kuro-shima**	**1.17**	**113**	P	**Pn**	**12 29 38.3**	**+1.2**
JKRS				S	**Sn**	**12 29 55.3**	**+1.0**
TAP1	**Taipei**	**1.24**	**286**	*e*P	**Pn**	**12 29 36.8**	**-1.1**
	baz=285							
TAP1				*e*S	**Sn**	**12 29 55.4**	**-0.3**
	baz=285							
JIJ	**Ishigaki jima**	**1.24**	**105**	P	**Pn**	**12 29 38.6**	**+0.6**
JIJ				S	**Sn**	**12 29 55.5**	**-0.3**
TAP	**Taipei**	**1.25**	**286**	*e*P	**Pn**	**12 29 38.2**	**+0.1**
	baz=285							
TAP				*e*S	**Sn**	**12 29 56.1**	**0.0**
	baz=285							
TWY	**Chenhua**	**1.26**	**297**	⇑P	**Pn**	**12 29 39.5**	**+1.3**
	baz=297							
TWY				S	**Sn**	**12 29 56.6**	**+0.4**
	baz=297							
TWD	**Chiawan**	**1.28**	**242**	⇓*i*P	**Pn**	**12 29 38.7**	**+0.2**
	baz=233							
TWD				*e*S	**Sn**	**12 29 55.7**	**-1.0**
	baz=233							
HWA	**Hwalien**	**1.33**	**238**	⇓*i*P	**Pn**	**12 29 39.6**	**+0.5**
	baz=236							
HWA				*e*S	**Sn**	**12 29 57.6**	**0.0**
	baz=236							
NSK	**Sanguang**	**1.34**	**269**	⇓*i*P	**Pn**	**12 29 40.5**	**+1.2**
	baz=275							
NSK				*e*S	**Sn**	**12 29 57.4**	**-0.6**
	baz=275							
TWS1	**Kuangyinshan**	**1.35**	**288**	⇓*i*P	**Pn**	**12 29 40.6**	**+1.4**
	baz=287							
TWS1				*e*S	**Sn**	**12 29 58.3**	**+0.3**
	baz=287							
JISG	**Ishigakijimahi**	**1.35**	**94**	P	**Pn**	**12 29 40.0**	**+0.8**
JISG				*e*S	**Sn**	**12 29 58.4**	**+0.3**
NNS	**Nan Shan**	**1.35**	**259**	P	**Pn**	**12 29 40.1**	**+0.7**
	baz=251							
NNS				*e*S	**Sn**	**12 29 56.9**	**-1.5**
	baz=251							
ESF	**Shoufeng Towns**	**1.46**	**236**	*e*P	**Pn**	**12 29 41.0**	**+0.3**
	baz=235							
NCU	**National Centr**	**1.52**	**281**	*e*P	**Pn**	**12 29 42.9**	**+1.6**
	baz=280							
NCU				*e*S	**Sn**	**12 30 03.0**	**+1.3**
	baz=280							
WHF	**Hehuan Shan**	**1.53**	**249**	⇓*e*P	**Pn**	**12 29 42.2**	**+0.4**
	baz=248							
TEGC	**Jichi Village**	**1.54**	**230**	*e*P	**Pn**	**12 29 42.8**	**+1.3**
	baz=225							
ESL	**Shilin**	**1.55**	**236**	⇓*i*P	**Pn**	**12 29 41.8**	**+0.1**
	baz=234							
ESL				*e*S	**Sn**	**12 30 01.0**	**-1.4**
	baz=234							
TWT	**Tachien**	**1.57**	**254**	⇓*i*P	**Pn**	**12 29 43.6**	**+1.4**
	baz=248							
TWT				*e*S	**Sn**	**12 30 03.0**	**-0.2**
	baz=248							
NSTT	**Nanjuang**	**1.67**	**268**	⇓*i*P	**Pn**	**12 29 44.2**	**+1.1**
	baz=267							
NSTT				S	**Sn**	**12 30 04.4**	**-0.5**
	baz=267							
HSN	**Hsinchu**	**1.70**	**274**	*e*P	**Pn**	**12 29 44.0**	**+0.6**
	baz=274							
HSN				S	**Sn**	**12 30 05.5**	**0.0**
	baz=274							
JTJ	**Tarama**	**1.70**	**92**	P	**Pn**	**12 29 44.8**	**+1.3**
JTJ				S	**Sn**	**12 30 06.1**	**+0.5**
WDT	**Danda**	**1.81**	**239**	⇓*i*P	**Pn**	**12 29 46.0**	**+0.8**
	baz=238							
WDT				S	**Sn**	**12 30 07.7**	**-1.0**
	baz=238							
EHY	**Hungye**	**1.82**	**230**	⇓*i*P	**Pn**	**12 29 45.2**	**+0.1**
	baz=235							
NSY	**Sanyi**	**1.91**	**262**	⇓*i*P	**Pn**	**12 29 47.6**	**+1.5**
	baz=261							
NSY				S	**Sn**	**12 30 11.1**	**+0.8**
	baz=261							
TWQ1	**Liyutan**	**1.91**	**260**	⇓*i*P	**Pn**	**12 29 47.5**	**+1.4**
	baz=259							
TWQ1				*e*S	**Sn**	**12 30 10.3**	**0.0**
	baz=259							
SMLT	**Sun Moon Lake**	**1.94**	**246**	⇓*i*P	**Pn**	**12 29 48.0**	**+1.4**
	baz=239							
SMLT				*e*S	**Sn**	**12 30 13.7**	**+2.5**
	baz=239							
TWF1	**Yuli**	**1.94**	**227**	⇓*i*P	**Pn**	**12 29 46.9**	**+0.3**
	baz=234							
TYC	**Yuchr**	**1.97**	**247**	⇓*i*P	**Pn**	**12 29 48.4**	**+1.5**
	baz=239							
TYC				*e*S	**Sn**	**12 30 13.7**	**+2.1**
	baz=239							
TCU	**Taichung**	**2.04**	**255**	⇓*i*P	**Pn**	**12 29 49.3**	**+1.5**
	baz=254							
TCU				*e*S	**Sn**	**12 30 13.2**	**-0.1**
	baz=254							
CHKT	**Chengkung**	**2.08**	**220**	⇓*i*P	**Pn**	**12 29 48.4**	**+0.1**
	baz=216							
CHKT				*e*S	**Sn**	**12 30 12.3**	**-1.9**
	baz=216							
YUS	**Yu-Shan**	**2.10**	**235**	*e*P	**Pn**	**12 29 50.1**	**+1.1**
	baz=229							
YUS				*e*S	**Sn**	**12 30 14.3**	**-1.1**
	baz=229							
WNT	**Mingjian**	**2.12**	**248**	⇓*i*P	**Pn**	**12 29 50.8**	**+1.9**
	baz=246							
WNT				*e*S	**Sn**	**12 30 16.7**	**+1.5**
	baz=246							
JIRB	**Irabujima**	**2.13**	**86**	P	**Pn**	**12 29 50.3**	**+1.4**
JIRB				S	**Sn**	**12 30 15.5**	**+0.1**
ALS	**Alishan**	**2.20**	**238**	⇓*i*P	**Pn**	**12 29 51.9**	**+1.8**
	baz=231							
JIKM	**Ikemajima**	**2.21**	**84**	P	**Pn**	**12 29 51.6**	**+1.7**
JIKM				S	**Sn**	**12 30 17.6**	**+0.5**
ELDTW	**Lidau**	**2.24**	**228**	⇓*i*P	**Pn**	**12 29 50.9**	**+0.4**
	baz=227							
JMJ	**Miyako jima 2**	**2.24**	**87**	P	**Pn**	**12 29 52.5**	**+2.2**
JMJ				S	**Sn**	**12 30 18.6**	**+0.7**
JMJ	**Miyako jima 2**	**2.24**	**87**	*e*P	**Pn**	**12 29 52.6**	**+2.2**
	baz=88							
JMJ				*e*S	**Sn**	**12 30 18.2**	**+0.3**
	baz=88							
CHN5	**Tsauling**	**2.25**	**241**	⇓*i*P	**Pn**	**12 29 52.5**	**+1.9**
	baz=233							
CHN5				*e*S	**Sn**	**12 30 21.0**	**+2.7**
	baz=233							
WGK	**Gukeng**	**2.31**	**245**	*e*P	**Pn**	**12 29 53.1**	**+1.9**
	baz=243							
WGK				*e*S	**Sn**	**12 30 21.8**	**+2.4**
	baz=243							
JOGS	**Gusukube**	**2.34**	**88**	P	**Pn**	**12 29 53.2**	**+1.5**
JOGS				*e*S	**Sn**	**12 30 21.7**	**+1.5**
STYT	**Tauyuan**	**2.44**	**232**	⇓*i*P	**Pn**	**12 29 54.7**	**+1.7**
	baz=227							
STYT				*e*S	**Sn**	**12 30 24.0**	**+1.4**
	baz=227							
CHN2	**Minshiung**	**2.45**	**242**	*e*P	**Pn**	**12 29 54.8**	**+1.7**
	baz=251							
CHN2				*e*S	**Sn**	**12 30 24.7**	**+2.0**
	baz=251							
CHN4	**Tsaushan**	**2.45**	**237**	⇓*i*P	**Pn**	**12 29 55.1**	**+2.0**
	baz=235							
CHN4				*e*S	**Sn**	**12 30 24.8**	**+2.1**
	baz=235							
TWG	**Pinlang**	**2.47**	**221**	⇓*i*P	**Pn**	**12 29 53.5**	**+0.2**
	baz=226							
TWG				*e*S	**Sn**	**12 30 21.4**	**-1.8**
	baz=226							
WTCT	**Ta-ch'eng**	**2.47**	**251**	⇓P	**Pn**	**12 29 54.3**	**+0.9**
	baz=258							
WTCT				S	**Sn**	**12 30 23.4**	**+0.2**
	baz=258							
TTN	**Taitung**	**2.48**	**219**	*e*P	**Pn**	**12 29 54.0**	**+0.5**
	baz=214							
TTN				*e*S	**Sn**	**12 30 24.5**	**+1.1**
	baz=214							
WTP	**Ta-pu**	**2.49**	**235**	⇓*i*P	**Pn**	**12 29 55.4**	**+1.7**
	baz=233							
WTP				*e*S	**Sn**	**12 30 26.4**	**+2.6**
	baz=233							
CHY	**Chiayi**	**2.50**	**242**	⇓P	**Pn**	**12 29 55.8**	**+1.9**
	baz=251							
CHY				*e*S	**Sn**	**12 30 25.7**	**+1.6**
	baz=251							
TWK	**Hsinying**	**2.58**	**237**	*e*P	**Pn**	**12 29 56.6**	**+1.8**
	baz=235							
TWK				*e*S	**Sn**	**12 30 26.8**	**+1.0**
	baz=235							
CHN1	**Nanshi**	**2.59**	**235**	⇓*i*P	**Pn**	**12 29 56.6**	**+1.6**
	baz=233							
CHN1				*e*S	**Sn**	**12 30 28.8**	**+2.7**
	baz=233							
WSF	**Szhu**	**2.61**	**247**	⇓*i*P	**Pn**	**12 29 56.4**	**+1.3**
	baz=253							
WSF				*e*S	**Sn**	**12 30 27.3**	**+0.9**
	baz=253							
SGST	**Jiashian**	**2.61**	**232**	⇓P	**Pn**	**12 29 57.5**	**+2.3**
	baz=240							
SGST				*e*S	**Sn**	**12 30 29.4**	**+2.8**
	baz=240							
ECL	**Taimali**	**2.71**	**220**	*e*P	**Pn**	**12 29 56.4**	**-0.2**
	baz=218							
CHN8	**Yiju**	**2.75**	**241**	*e*P	**Pn**	**12 29 58.4**	**+1.3**
	baz=249							
CHN8				*e*S	**Sn**	**12 30 30.5**	**+0.7**
	baz=249							
CHN3	**Shinhua**	**2.78**	**235**	*e*P	**Pn**	**12 29 59.0**	**+1.7**
	baz=242							
CHN3				*e*S	**Sn**	**12 30 34.0**	**+3.5**
	baz=242							
SSD	**Sandimen**	**2.80**	**227**	*e*P	**Pn**	**12 29 59.4**	**+1.7**
	baz=225							
SCLT	**Jiali**	**2.85**	**238**	*e*P	**Pn**	**12 30 00.0**	**+1.7**
	baz=236							
SCLT				*e*S	**Sn**	**12 30 34.0**	**+1.8**
	baz=236							
TWM1	**Shoushan**	**2.89**	**230**	⇑P	**Pn**	**12 30 02.0**	**+3.0**
	baz=238							
LAY	**Lan-yu**	**2.90**	**204**	⇓*i*P	**Pn**	**12 29 58.9**	**-0.2**
	baz=199							
LAY				*e*S	**Sn**	**12 30 29.5**	**-3.9**
	baz=199							
TAI1	**Yung-k'ang**	**2.90**	**236**	*e*P	**Pn**	**12 30 00.8**	**+1.8**
	baz=234							
SGLT	**Jiouru**	**2.91**	**228**	*e*P	**Pn**	**12 30 02.1**	**+3.0**
	baz=226							
TAW	**Tawu**	**2.93**	**218**	*e*P	**Pn**	**12 29 59.7**	**+0.3**
	baz=220							
TAW				*e*S	**Sn**	**12 30 32.7**	**-1.4**
	baz=220							
EAST	**Anshuo**	**2.94**	**219**	⇓*i*P	**Pn**	**12 29 59.8**	**+0.2**
	baz=217							
PNG	**Penghu**	**3.20**	**250**	⇓*i*P	**Pn**	**12 30 03.1**	**+0.1**
	baz=248							
PNG				*e*S	**Sn**	**12 30 38.4**	**-2.0**
	baz=248							
WDGT	**Dungji**	**3.24**	**244**	⇓*i*P	**Pn**	**12 30 04.1**	**+0.6**
	baz=242							
WDGT				*e*S	**Sn**	**12 30 39.2**	**-2.1**
	baz=242							
TWP	**Hsiaoliuchiu**	**3.26**	**225**	*e*P	**Pn**	**12 30 06.4**	**+2.6**
	baz=222							
HEN	**Hengchun**	**3.30**	**216**	*e*P	**Pn**	**12 30 06.0**	**+1.6**
	baz=206							
HEN				*e*S	**Sn**	**12 30 43.5**	**+0.6**
	baz=206							
TSEB	**Hengchuen, Pin**	**3.30**	**213**	*e*P	**Pn**	**12 30 05.8**	**+1.4**
	baz=217							
TWK1	**Hengchun**	**3.31**	**215**	*e*P	**Pn**	**12 30 04.8**	**+0.2**
	baz=212							
TWK1				*e*S	**Sn**	**12 30 43.4**	**+0.1**
	baz=212							
QZH	**Quanzhou**	**3.86**	**275**	⇑*i*Pn	Pn	12 30 08.0	-3.8
QZH				Sn	Sn	12 30 48.8	-7.5
QZH				smax	smax		
	comp=N,480nm,0.7s						
QZH				smax	smax		
	comp=E,260nm,0.6s						
JKE	**Kume jima 2**	**3.92**	**65**	P	**Pn**	**12 30 13.9**	**+1.2**
JKE				*e*S	**Sn**	**12 30 58.0**	**+0.2**
KNM	**Kinmen**	**4.02**	**267**	*e*P	**Pn**	**12 30 15.3**	**+1.3**
	baz=265							
JAGN	**Aguni-jima**	**4.40**	**64**	P	**Pn**	**12 30 20.0**	**+0.9**
JAGN				*e*S	**Sn**	**12 31 10.5**	**+1.1**
JNTH	**Nagotoyohara**	**5.02**	**68**	P	**Pn**	**12 30 27.6**	**+0.1**
JNTH				S	**Sn**	**12 31 23.6**	**-0.8**
JIH	**Iheya**	**5.18**	**62**	P	**Pn**	**12 30 29.6**	**0.0**
JIH				*e*S	**Sn**	**12 31 26.9**	**-1.2**
JOW	**Kunigami**	**5.35**	**65**	P	**Pn**	**12 30 31.7**	**-0.2**
	baz=250,slow=9.4							
JOW	**Kunigami**	**5.35**	**65**	P	**Pn**	**12 30 31.4**	**-0.5**
JOW	**Kunigami**	**5.35**	**65**	*e*P	**Pn**	**12 30 31.6**	**-0.4**
	baz=66							
JOKE	**Okinerabujima**	**5.80**	**62**	P	**Pn**	**12 30 37.2**	**-0.9**
JTK	**Tokunoshima**	**6.29**	**59**	P	**Pn**	**12 30 43.7**	**-1.1**
JAMN	**Amaminishikomi**	**6.69**	**57**	P	**Pn**	**12 30 48.5**	**-1.6**
JAM	**Amami Oshima**	**7.10**	**57**	P	**Pn**	**12 30 53.7**	**-2.0**
JNU	**Nakatsue**	**10.96**	**38**	P	**Pn**	**12 31 48.1**	**0.0**
	0.9nm,0.3s,baz=224,slow=9.2,SNR=9.9							
KSRS	**Korea Array**	**13.44**	**18**	P	**Pn**	**12 32 19.4**	**-1.3**
	0.2nm,0.3s,baz=198,slow=12,SNR=3.9							
XAN	**Xi'an**	**15.27**	**311**	P	**P**	**12 32 48.8**	**+2.0**
XAN				pmax	pmax		
	comp=Z,12nm,1.8s							
MJAR	**Matsushiro Arr**	**17.71**	**45**	P	**Pn**	**12 33 15.7**	**+1.5**
	0.2nm,0.3s,baz=228,slow=8.2,SNR=3.1							
USRK	**Ussuriysk Ar.**	**20.84**	**19**	P	**P**	**12 33 47.7**	**+0.2**
	3.2nm,0.7s,baz=206,slow=9.6,SNR=8.0							
CMAR	**Chiang Mai Arr**	**23.05**	**259**	P	**P**	**12 34 11.6**	**+0.8**
	0.8nm,0.6s,baz=62,slow=8.7,SNR=6.5							
GTA	**Gaotai**	**24.32**	**313**	*e*P	**P**	**12 34 22.0**	**-0.2**
GTA				pP	pP	12 34 25.8	-19
GTA				sP	sP	12 34 28.8	-29
GTA				pmax	pmax		
	comp=Z,3.0nm,1.0s							
ASAJ	**Asahikawa**	**25.20**	**35**	P	**P**	**12 34 28.8**	**-1.3**
	comp=Z,7.9nm,1.1s,baz=216,slow=11,SNR=4.7							
KLR	**Kul'dur**	**25.46**	**14**	P	**P**	**12 34 32.0**	**-0.4**
	comp=Z,1.1nm,0.5s,baz=198,slow=8.7,SNR=8.0							
MKAR	**Makanchi Array**	**39.03**	**315**	P	**P**	**12 36 30.2**	**-0.4**
	comp=Z,0.4nm,0.4s,baz=96,slow=12,SNR=4.3							
ZALV	**Zalesovo Beam**	**40.65**	**326**	P	**P**	**12 36 42.5**	**-1.4**
	comp=Z,1.6nm,0.6s,baz=113,slow=8.0,SNR=8.8							
KURBB	**Kurchatov Arra**	**42.70**	**319**	P	**P**	**12 36 59.3**	**-1.3**
	comp=Z,0.6nm,0.4s,baz=107,slow=9.9,SNR=5.0							
WRA	**Warramunga Arr**	**45.76**	**165**	P	**P**	**12 37 27.3**	**+1.9**
	comp=Z,0.7nm,0.5s,baz=347,slow=8.8,SNR=9.4							
BVAR	**Borovoye Array**	**48.24**	**320**	P	**P**	**12 37 43.0**	**-1.3**
	comp=Z,0.5nm,0.5s,baz=120,slow=8.8,SNR=3.5							
ASAR	**Alice Springs**	**49.26**	**167**	P	P	12 37 56.7	+4.3
	comp=Z,0.2nm,0.4s,baz=350,slow=7.3,SNR=9.2							
ARCES	**ARCESS Array B**	**69.62**	**338**	P	**P**	**12 40 09.9**	**-2.0**
	comp=Z,3.5nm,1.0s,baz=58,slow=7.3,SNR=5.6							
FINES	**FINESS Array B**	**71.76**	**330**	P	**P**	**12 40 23.4**	**-1.5**
	comp=Z,1.0nm,0.4s,baz=66,slow=4.8,SNR=9.0							
NB2	**NORSAR Subarra**	**78.47**	**332**	P	**P**	**12 41 02.6**	**-0.9**
	comp=Z,0.8nm,0.5s,baz=52,slow=5.6							
NOA	**NORSAR Array B**	**78.47**	**332**	P	**P**	**12 41 02.7**	**-0.8**
	comp=Z,1.0nm,0.6s,baz=54,slow=5.6,SNR=7.2							
YKA	**Yellowknife Ar**	**81.91**	**23**	P	**P**	**12 41 22.2**	**+0.4**
	comp=Z,1.0nm,0.8s,baz=312,slow=4.9,SNR=23							

CSEM ***29*** *12:32:55.7±0.2, 45°.44N×22°.47E, h1km±2km, ML1.5, Error ellipse: s-maj=3.4km s-min=3.0km az=175.0*
BUC ***29*** *12:32:55.2±0.5, 45°.42N×22°.45E, h10km±4km, MD2.6/2, Error ellipse: s-maj=6.4km s-min=3.7km az=11.0*
BEO ***29*** *12:32:57.1±0.3, 45°.48N×22°.48E, h0km, M1.5/4*

ISC 29 12:32:56.0±1.0, 45°.46N±0°.02×22°.47E±0°.02, h7km±9km, n30, σ0°42/50, 16C-6D, Romania

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time	Res
GZR	**Gura Zlata**	**0.23**	**107**	S		**Sg**		**12 33 04.0**	**+0.3**
GZR				⇑*i*P		**Pg**		**12 33 00.4**	**-0.2**
GZR	**Gura Zlata**	**0.23**	**107**	*i* S		**Sg**		**12 33 04.0**	**+0.3**
GZR				⇑*i*P		**Pg**		**12 33 00.4**	**-0.2**
GZR	**Gura Zlata**	**0.23**	**107**	⇑*i*Pg		**Pg**		**12 33 00.4**	**-0.2**
GZR	**Gura Zlata**	**0.23**	**107**	⇑*i*P		**Pg**		**12 33 00.4**	**-0.2**
GZR				S		**Sg**		**12 33 04.0**	**+0.3**
BZS	**Buzias**	**0.62**	**285**	⇓*i*P		**Pg**		**12 33 07.9**	**0.0**
BZS	**Buzias**	**0.62**	**285**	⇓*i*P		**Pg**		**12 33 07.9**	**0.0**
BZS				*i* S		**Sg**		**12 33 16.4**	**+0.5**
BZS	**Buzias**	**0.62**	**285**	*e*Pg		**Pg**		**12 33 07.4**	**-0.5**
BZS				*e*Sg		**Sg**		**12 33 16.3**	**+0.4**
BZS	**Buzias**	**0.62**	**285**	*e*Pg		**Pg**		**12 33 07.4**	**-0.5**
BZS	**Buzias**	**0.62**	**285**	⇓*i*P		**Pg**		**12 33 07.9**	**0.0**
BZS				*e*Sg		**Sg**		**12 33 16.3**	**+0.4**
MDVR	**Moldovita**	**0.86**	**218**	⇓*i*P		**Pg**		**12 33 12.2**	**-0.4**
MDVR	**Moldovita**	**0.86**	**218**	⇓*i*P		**Pg**		**12 33 12.2**	**-0.4**
MDVR				*i* S		**Sg**		**12 33 23.7**	**-0.1**
MDVR	**Moldovita**	**0.86**	**218**	⇓*i*P		**Pg**		**12 33 12.2**	**-0.4**
MDVR				S		**Sg**		**12 33 23.7**	**-0.1**
LOT	**Lotru**	**0.92**	**90**	⇑*i*P		**Pg**		**12 33 13.2**	**-0.4**
LOT				S		**Sb**		**12 33 26.8**	**+0.1**
LOT	**Lotru**	**0.92**	**90**	⇑*i*P		**Pg**		**12 33 13.2**	**-0.4**
LOT				*i* S		**Sb**		**12 33 26.8**	**+0.1**
LOT	**Lotru**	**0.92**	**90**	⇑*i*P		**Pg**		**12 33 13.2**	**-0.4**
LOT				S		**Sb**		**12 33 26.8**	**+0.1**
SIRR	**Siria**	**0.98**	**325**	⇑*i*P		**Pg**		**12 33 14.8**	**-0.1**
SIRR	**Siria**	**0.98**	**325**	⇑*i*P		**Pg**		**12 33 14.8**	**-0.1**
SIRR				*i* S		**Sn**		**12 33 29.8**	**-0.7**
SIRR	**Siria**	**0.98**	**325**	⇑*i*P		**Pg**		**12 33 14.8**	**-0.1**
SIRR				S		**Sn**		**12 33 29.8**	**-0.7**
DRGR		**1.34**	**7**	⇑*i*P		**Pg**		**12 33 21.8**	**0.0**
DRGR		**1.34**	**7**	⇑*i*P		**Pg**		**12 33 21.8**	**0.0**
DRGR				*i* S		**Sn**		**12 33 39.8**	**+0.4**
DRGR		**1.34**	**7**	*e*Pg		**Pb**		**12 33 21.5**	**0.0**
DRGR				*e*Sg		**Sn**		**12 33 39.3**	**-0.1**
DRGR		**1.34**	**7**	*e*Pg		**Pb**		**12 33 21.5**	**0.0**
DRGR		**1.34**	**7**	⇑*i*P		**Pg**		**12 33 21.8**	**0.0**
DRGR				*e*Sg		**Sn**		**12 33 39.3**	**-0.1**
VOIR		**1.82**	**90**	⇑*i*P		**Pn**		**12 33 27.6**	**-0.2**
VOIR		**1.82**	**90**	⇑*i*P		**Pn**		**12 33 27.6**	**-0.2**
VOIR				*i* S		**Sb**		**12 33 52.8**	**+0.2**
VOIR		**1.82**	**90**	⇑*i*P		**Pn**		**12 33 27.6**	**-0.2**
VOIR				S		**Sb**		**12 33 52.8**	**+0.2**
GRUS	**Gruza**	**2.01**	**219**	*e*Pg		**Pb**		**12 33 33.1**	**+0.3**
GRUS	**Gruza**	**2.01**	**219**	*e*Pg		**Pb**		**12 33 33.1**	**+0.3**
ZAPS	**Zavoj**	**2.19**	**177**	*e*Pn		**Pb**		**12 33 35.7**	**-0.2**
ZAPS				*e*Sn		**Sb**		**12 34 03.2**	**0.0**
BARS	**Barje**	**2.68**	**190**	*e*Pn		**Pb**		**12 33 43.6**	**-0.7**
BARS				*e*Sn		**Sn**		**12 34 14.3**	**+2.0**

NSSC ***29*** *12:47:45.8±1.5, 35°.03N×41°.40E, h181km±81km, ML2.2*
CSEM ***29*** *12:47:52.0, 37°.27N×38°.52E, h17km, MD2.9*
ISK ***29*** *12:47:52.0, 37°.27N×38°.52E, h17km, MD2.9*
ISCJB ***29*** *12:47:53.7±0.8, 37°.46N±0°.05×38°.42E±0°.07, h9km, Error ellipse: s-maj=8.8km s-min=7.4km az=148.4*

ISC 29 12:47:53.2±0.9, 37°38N±0°.04×38°51E±0°.04, h9km, n18, σ2s09/24, Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time	Res
URFA	**Urfa**	**0.26**	**77**	*e*PG		**Pb**		**12 47 58.7**	**-1.4**
URFA	**Urfa**	**0.26**	**77**	*e*Pg		**Pb**		**12 47 58.7**	**-1.4**
SVRC	**Sivrice-ELAZID**	**1.18**	**32**	*e*PN		**Pg**		**12 48 15.6**	**-0.2**
SVRC				*e*SN		**Sn**		**12 48 32.7**	**+0.4**
SVRC	**Sivrice-ELAZID**	**1.18**	**32**	*e*Pn		**Pg**		**12 48 15.6**	**-0.2**
SVRC				*e*Sn		**Sn**		**12 48 32.7**	**+0.4**
KMRS	**Kahramanmaras**	**1.28**	**276**	*e*PN		**Pb**		**12 48 16.2**	**-1.3**
KMRS	**Kahramanmaras**	**1.28**	**276**	*e*Pn		**Pb**		**12 48 16.2**	**-1.3**
DARE	**Darende-Malaty**	**1.43**	**326**	*e*PN		**Pn**		**12 48 19.3**	**-0.2**
DARE	**Darende-Malaty**	**1.43**	**326**	*e*Pn		**Pn**		**12 48 19.3**	**-0.2**
MAZI	**Mazidag**	**1.55**	**87**	*e*PN		**Pn**		**12 48 19.4**	**-1.6**
MAZI	**Mazidag**	**1.55**	**87**	*e*Pn		**Pn**		**12 48 19.5**	**-1.6**
MNKR	**ALMNKUR**	**1.56**	**157**	*e*P		**Pg**		**12 48 23.6**	**+0.4**
MNKR				AML		AML		12 48 43.9	
	comp=Z,56nm,0.4s								
MNKR				*e*S		Sg		12 48 50.0	+6.5
MNKR	**ALMNKUR**	**1.56**	**157**	*e*P		**Pg**		**12 48 23.6**	**+0.4**
MNKR				*e*S		Sg		12 48 50.0	+6.5
KSRV	**Kasrt alli**	**1.57**	**165**	*e*P		**Pg**		**12 48 23.6**	**+0.3**
KSRV				*e*S		Sg		12 48 49.9	+6.3
KSRV				AML		AML		12 48 50.4	
	comp=Z,7.1nm,0.5s								
KSRV	**Kasrt alli**	**1.57**	**165**	*e*P		**Pg**		**12 48 23.6**	**+0.3**
KSRV				*e*S		Sg		12 48 49.9	+6.3
	comp=Z,7.0nm,0.5s								
SFNV	**Sufian**	**1.61**	**126**	*e*P		**Pb**		**12 48 20.2**	**-2.9**
SFNV				*e*S		**Sg**		**12 48 47.1**	**+2.2**
SFNV	**Sufian**	**1.61**	**126**	*e*P		**Pb**		**12 48 20.2**	**-2.9**
SFNV				*e*S		**Sg**		**12 48 47.1**	**+2.2**
KBSD	**Kabsdagh**	**1.67**	**103**	*e*P		**Pg**		**12 48 24.6**	**-0.6**
KBSD				AML		AML		12 48 45.9	
	comp=Z,26nm,0.5s								
KBSD				*e*S		**Sg**		**12 48 52.0**	**+5.1**
KBSD	**Kabsdagh**	**1.67**	**103**	*e*P		**Pg**		**12 48 24.6**	**-0.6**
KBSD				*e*S		**Sg**		**12 48 52.0**	**+5.1**

NIED ***29*** *12:53:00, 34°.80N×140°.10E, h59km, Mw4.0 Best double couple: M0 1.16000×10^15 NP1:φs247.00000°, δ39.00000°, λ153.00000°. NP2:φs359.00000°, δ73.00000°, λ55.00000°.*
ISCJB ***29*** *12:53:52.9±0.4, 34°.71N±0°.04×140°.11E±0°.05, h63km±3km, mb4.0/9, Error ellipse: s-maj=7.3km s-min=5.8km az=136.0*
JMA ***29*** *12:53:53.3±0.2, 34°.75N×140°.12E, h61km±2km, M3.5*
JMA Felt I J1.
IDC ***29*** *12:53:54.7±0.8, 34°.70N×

KURBB pP **pP** **13 02 33.4 +1.5**
1.4nm,0.8s,baz=87,slow=7.6,SNR=5.1
ILAR **Eielson Array 52.00 31** P **P** **13 02 57.8 +0.4**
0.2nm,0.6s,baz=283,slow=4.5,SNR=3.1
ILAR pP **pP** **13 03 12.5 -0.6**
0.5nm,0.7s,baz=276,slow=6.2,SNR=4.3
WRA **Warramunga Arr 54.66 187** P **P** **13 03 16.5 -0.9**
5.9nm,0.6s,baz=3.3,slow=7.6,SNR=90
WRA pP **pP** **13 03 34.5 +1.4**
1.2nm,0.5s,baz=3.2,slow=7.5,SNR=2.6
ASAR **Alice Springs 58.38 187** P **P** **13 03 43.0 -0.8**
1.4nm,0.5s,baz=19,slow=13,SNR=32
STKA **Stephens Creek 66.28 179** P **P** **13 04 37.1 +0.7**
0.6nm,0.4s,baz=3.1,slow=8.3,SNR=3.8
YKA **Yellowknife Ar 66.32 29** pP pP 13 04 51.8 -0.7
0.1nm,0.7s,baz=298,slow=6.6,SNR=2.6
KBZ **Khabaz 71.59 311** P **P** **13 05 09.4 +0.1**
1.2nm,0.7s,baz=27,slow=5.9,SNR=5.5
AKASG **Malin Array Be 75.45 322** P **P** **13 05 31.6 -0.3**
1.0nm,0.4s,baz=50,slow=6.7,SNR=4.2

*IDC **29** 12:57:52.9±0.8, 36°.42N×143°.38E, h0km, mb3.6/8, mb1 3.8/11, mb1mx3.6/67, mbtmp3.6/11, ML3.3/3, Error ellipse: s-maj=28.6km s-min=18.0km az=114.0*
*ISCJB **29** 12:57:55.5±0.6, 36°.55N±0°.04×143°.23E±0°.05, h29km, mb3.6/8, Error ellipse: s-maj=5.9km s-min=5.2km az=40.3*
*JMA **29** 12:57:56.1±0.2, 36°.53N×143.24E, h51km, M3.2*
ISC 29 12:57:57.3±0.8, 36°.52N±0°.05×143°.24E±0°.07, h29km, n24, σ1§26/34, mb3.6/8, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**2.07**	**295**	P	**Pn**	**12 58 29.1**	**-1.1**
JFK				*eS*	**Sn**	**12 58 53.7**	**-1.4**
JHO	**Hitachi**	**2.15**	**273**	P	**Pn**	**12 58 30.4**	**-0.8**
JFT	**Otama**	**2.53**	**294**	P	**Pn**	**12 58 36.5**	**+0.1**
JFT				S	**Sn**	**12 59 06.1**	**-0.1**
BSO1	**Boso 1**	**2.62**	**225**	*eS*	**Sn**	**12 59 08.9**	**+1.2**
JMK	**Ichinoseki**	**2.91**	**327**	P	**Pn**	**12 58 40.4**	**-1.2**
JMK				S	**Sn**	**12 59 13.8**	**-1.8**
JAG	**Ashikaga**	**3.05**	**269**	P	**Pn**	**12 58 43.5**	**-0.1**
JAG				*eS*	**Sn**	**12 59 18.3**	**-0.9**
JYK	**Kaneyama**	**3.31**	**317**	P	**Pn**	**12 58 46.9**	**-0.2**
JYK				*eS*	**Sn**	**12 59 24.6**	**-0.9**
JOM	**Ohasama**	**3.33**	**333**	P	**Pn**	**12 58 47.6**	**+0.3**
JOM				*eS*	**Sn**	**12 59 24.0**	**-1.9**
JRY	**Ryogami san**	**3.54**	**263**	P	**Pn**	**12 58 49.6**	**-0.8**
JRY				*eS*	**Sn**	**12 59 29.3**	**-2.0**
JOD2	**Odawara 2**	**3.60**	**251**	P	**Pn**	**12 58 51.8**	**+0.7**
JOD2				*eS*	**Sn**	**12 59 32.2**	**-0.4**
JYN	**Shimob**	**3.94**	**256**	P	**Pn**	**12 58 55.8**	**-0.1**
MJAR	**Matsushiro Arr**	**4.05**	**272**	Pn	**Pn**	**12 58 58.4**	**+1.0**
	0.6nm,0.3s,baz=86,slow=8.9,SNR=5.0						
MAT	**Matsushiro**	**4.05**	**272**	P	**Pn**	**12 58 58.0**	**+0.6**
MAT				*eS*	**Sn**	**12 59 45.5**	**+1.6**
JHJ	**Hachijo jima 2**	**4.43**	**221**	Pn	**Pn**	**12 59 01.9**	**-0.7**
	6.4nm,0.3s,baz=204,slow=20,SNR=3.7						
JHJ				Sn	**Sn**	**12 59 49.0**	**-4.1**
	6.4nm,0.3s,baz=60,slow=20,SNR=3.2						
ASAJ	**Asahikawa**	**7.60**	**356**	Pn	**Pn**	**12 59 44.4**	**-1.7**
	0.5nm,0.3s,baz=157,slow=13,SNR=5.1						
KURBB	**Kurchatov Arra**	**47.47**	**309**	P	**P**	**13 06 30.2**	**+0.9**
	1.4nm,0.7s,baz=84,slow=7.8,SNR=14						
ILAR	**Eielson Array**	**49.15**	**32**	P	**P**	**13 06 42.2**	**+0.1**
	0.4nm,0.7s,baz=268,slow=6.4,SNR=5.5						
INK	**Inuvik**	**54.17**	**27**	P	**P**	**13 07 20.1**	**+0.6**
	0.5nm,0.5s,baz=323,slow=3.1,SNR=6.4						
WRA	**Warramunga Arr**	**56.78**	**190**	P	**P**	**13 07 37.9**	**-0.9**
	0.6nm,0.7s,baz=8.7,slow=7.5,SNR=6.2						
ASAR	**Alice Springs**	**60.51**	**190**	P	**P**	**13 08 03.9**	**-0.9**
	0.2nm,0.5s,baz=19,slow=8.0,SNR=4.7						
YKA	**Yellowknife Ar**	**63.51**	**30**	P	**P**	**13 08 25.0**	**+0.6**
	0.1nm,0.6s,baz=302,slow=7.0,SNR=3.5						
NB2	**NORSAR Subarra**	**75.22**	**338**	P	**P**	**13 09 37.9**	**+1.0**
	comp=Z,0.7nm,0.6s,baz=40,slow=6.2						
NOA	**NORSAR Array B**	**75.22**	**338**	P	**P**	**13 09 37.9**	**+1.0**
	comp=Z,1.0nm,0.8s,baz=38,slow=5.8,SNR=4.6						
TXAR	**Lajitas Array**	**89.26**	**53**	P	**P**	**13 10 51.2**	**+0.3**
	comp=Z,0.1nm,0.6s,baz=260,slow=3.7,SNR=3.4						

*IDC **29** 13:00:11.9±2.5, 36°.37N×71°.02E, h176km±21km, mb3.7/14, mb1 3.7/20, mb1mx3.4/71, mbtmp4.1/20, Error ellipse: s-maj=16.7km s-min=14.0km az=170.0*
*ISCJB **29** 13:00:13.2±0.3, 36°.52N±0°.03×70°.90E±0°.05, h188km, mb3.9/13, Error ellipse: s-maj=6.3km s-min=3.3km az=153.4*
*NNC **29** 13:00:21.3±0.8, 37°.03N×70°.93E, h203km±5km, mb2.9, mpv4.0, Error ellipse: s-maj=7.2km s-min=3.3km az=163.0*
ISC 29 13:00:13.6±0.5, 36°.52N±0°.05×70°.93E±0°.06, h188km, n49, σ1§64/58, mb4.0/13, 7C-9D, Hindu Kush region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CEP	**Cherat**	**2.81**	**163**	P	Pn	13 01 06.6	+6.0
DZET	**Dzherino**	**2.83**	**324**	⇓P	Pn	13 01 04.7	+4.1
	113nm,0.2s						
DZET				⇓S	**Sn**	**13 01 39.2**	**+1.8**
	867nm,0.4s						
CHCP	**Chirah Chowk**	**3.44**	**145**	P	Pn	13 01 13.6	+5.5
THW	**Thamme Wali**	**3.78**	**170**	P	Pn	13 01 17.7	+5.4
SFK	**Sufi-Kurgan**	**4.03**	**29**	⇑P	**Pn**	**13 01 18.4**	**+2.9**
	10.0nm,0.4s						
SFK				⇓S	**Sn**	**13 02 03.9**	**-0.3**
	38nm,0.3s						
SARP	**Sargodha**	**4.81**	**162**	P	Pn	13 01 29.7	+4.4
MNAS	**Manas**	**6.08**	**11**	⇓P	**Pn**	**13 01 43.6**	**+1.8**
	4.7nm,0.4s						
MNAS				⇓S	**Sn**	**13 02 49.3**	**-2.2**
	68nm,0.6s						
KK31	**Karatay Array**	**6.58**	**357**	⇑P	**Pn**	**13 01 50.0**	**+1.8**
	7.1nm,0.5s						
KK31				⇑S	**Sn**	**13 02 59.7**	**-3.4**
	66nm,0.6s						
AAK	**Ala-Archa**	**6.70**	**23**	P	**Pn**	**13 01 50.6**	**+0.8**
	3.4nm,0.3s,baz=169,slow=4.7,SNR=25						
AAK				S	**Sn**	**13 03 04.7**	**-1.3**
	2.5nm,0.3s,baz=330,slow=21,SNR=10						
AAK	**Ala-Archa**	**6.70**	**23**	⇑P	**Pn**	**13 01 52.0**	**+2.1**
	2.9nm,0.3s						
AAK				⇓S	**Sn**	**13 03 04.4**	**-1.6**
	26nm,0.7s						
SDNR	**Sundarnagar**	**7.09**	**133**	*eP*	**Pn**	**13 01 57.6**	**+2.6**
SDNR				*eS*	**Sn**	**13 03 13.0**	**-2.2**
TKM2	**Tokmak 2**	**7.33**	**28**	⇑P	**Pn**	**13 02 00.2**	**+2.0**
	12nm,0.9s						
TKM2				⇓S	**Sn**	**13 03 18.5**	**-2.7**
	8.9nm,0.8s						
SMLA	**Simla**	**7.47**	**134**	*eP*	**Pn**	**13 02 02.8**	**+2.8**
SMLA				*i* S	**Sn**	**13 03 23.6**	**-0.6**
SMLA				*i* S	**Sn**	**13 03 23.9**	**-0.4**
SMLA				IAML		13 03 25.5	
	comp=E,108nm,0.6s						
SMLA				IAML		13 03 25.6	
	comp=N,74nm,0.4s						
JOSI	**Joshimath**	**9.34**	**127**	*eP*	**Pn**	**13 02 25.6**	**+1.0**
JOSI				*ex*	x	13 03 53.1	
KHET	**Khetri**	**9.38**	**153**	*eP*	**Pn**	**13 02 25.4**	**+0.5**
KHET				*eS*	Sn	13 04 04.6	-5.2
KHET				IAML		13 04 08.0	
	comp=E,20nm,0.3s						
KHET				IAML		13 04 08.3	
	comp=N,11nm,0.3s						
NDI	**New Delhi**	**9.44**	**144**	*eP*	**Pn**	**13 02 26.2**	**+0.4**
NDI				*eS*	Sn	13 04 05.5	-5.8
KUDL	**Kundal**	**9.58**	**149**	*eP*	**Pn**	**13 02 27.8**	**+0.1**
KUDL				*eS*	**Sn**	**13 04 09.8**	**-4.8**
KUDL				IAML		13 04 11.0	
	comp=E,28nm,0.5s						
KUDL				IAML		13 04 12.5	
	comp=N,10nm,0.6s						
SONA	**Sohna**	**9.75**	**146**	*eP*	**Pn**	**13 02 30.6**	**+0.9**
SONA				*eS*	Sn	13 04 13.5	-5.0
SONA				IAML		13 04 19.5	
	comp=E,21nm,0.4s						
SONA				IAML		13 04 19.9	
	comp=N,11nm,0.2s						
GEYT	**Alibeck**	**10.31**	**282**	P	**Pn**	**13 02 37.6**	**+0.5**
	comp=N,2.2nm,0.3s,baz=116,slow=12,SNR=6.5						
PYUN	**Piuthan**	**13.20**	**126**	*eP*	**Pn**	**13 03 14.9**	**+0.6**
	comp=N,48nm,0.5s						
MKAR	**Makanchi Array**	**13.31**	**36**	P	**Pn**	**13 03 16.6**	**+1.3**
	comp=N,0.3nm,0.3s,baz=215,slow=11,SNR=8.0						
KOLN	**Koldanda**	**13.82**	**126**	*eP*	**Pn**	**13 03 23.6**	**+1.6**
	comp=N,22nm,0.3s						
GKN	**Gorkha**	**14.36**	**122**	*eP*	**P**	**13 03 30.5**	**+0.1**
	comp=N,39nm,0.4s						
DMN	**Daman**	**14.93**	**123**	*eP*	**P**	**13 03 37.1**	**+0.3**
	comp=N,55nm,0.5s						
KKN	**Kakani**	**14.94**	**122**	*eP*	**P**	**13 03 36.9**	**+0.1**
	comp=N,55nm,0.6s						
AB31	**Akbulak array**	**15.04**	**331**	⇓P	**P**	**13 03 37.4**	**-0.1**
	comp=N,4.8nm,0.5s,baz=144,slow=12,SNR=91						
AB31				⇑S	**Sn**	**13 06 21.9**	**-2.7**
	comp=N,1.6nm,0.6s,baz=147,slow=21,SNR=5.4						
KURBB	**Kurchatov Arra**	**15.12**	**19**	P	**Pn**	**13 03 37.6**	**+0.1**
	comp=N,0.1nm,0.3s,baz=206,slow=12,SNR=9.9						
KURBB				S	**Sn**	**13 06 25.0**	**-1.5**
	comp=N,0.0nm,0.3s,baz=205,slow=19,SNR=4.2						
PKIN	**Phulchoki**	**15.15**	**122**	*eP*	**P**	**13 03 40.2**	**+0.9**
	comp=N,24nm,0.3s						
GUN	**Gumba**	**15.28**	**120**	*eP*	**P**	**13 03 42.0**	**+1.3**
	comp=N,29nm,0.4s						
BVA0	**Borovoye Array**	**16.51**	**359**	P	**Pn**	**13 03 56.5**	**+2.1**
	comp=N,0.1nm,0.3s,baz=148,slow=12,SNR=11						
BVAR	**Borovoye Array**	**16.51**	**359**	P	**Pn**	**13 03 55.1**	**+0.7**
	comp=N,0.7nm,0.3s,baz=163,slow=11,SNR=8.4						
AKTO	**Aktyubinsk**	**16.73**	**330**	P	**Pn**	**13 03 57.7**	**+0.6**
	comp=N,0.9nm,0.3s,baz=134,slow=9.5,SNR=3.9						
AKTO	**Aktyubinsk**	**16.73**	**330**	⇑P	**Pn**	**13 03 58.2**	**+1.1**
	comp=N,5.3nm,0.8s						
AKTO				⇓S	**S**	**13 06 57.0**	**-4.0**
	comp=N,4.6nm,1.2s						
ZALV	**Zalesovo Beam**	**19.92**	**25**	P	**P**	**13 04 30.6**	**-0.1**
	comp=N,3.6nm,0.3s,baz=223,slow=11,SNR=13						
ARU	**Arti**	**21.59**	**341**	P	**P**	**13 04 49.3**	**+0.9**
	comp=N,2.5nm,0.3s,baz=124,slow=8.3,SNR=4.4						
BRTR	**Keskin Array B**	**29.37**	**288**	P	**P**	**13 05 59.1**	**-0.1**
	comp=N,0.5nm,0.6s,baz=104,slow=6.4,SNR=3.6						
FINES	**FINESS Array B**	**37.43**	**326**	P	**P**	**13 07 08.8**	**+0.4**
	comp=N,3.0nm,0.5s,baz=120,slow=9.2,SNR=21						
KECS	**Kecovo**	**38.40**	**304**	*eP*	**P**	**13 07 16.2**	**-0.4**
ARCES	**ARCESS Array B**	**41.10**	**338**	P	**P**	**13 07 40.0**	**+1.4**
	comp=N,2.6nm,0.5s,baz=109,slow=8.3,SNR=30						
HFS	**Hagfors**	**43.02**	**322**	P	**P**	**13 07 55.3**	**+1.2**
	comp=N,4.7nm,0.5s,baz=105,slow=9.7,SNR=20						
NB2	**NORSAR Subarra**	**44.33**	**323**	P	**P**	**13 08 05.1**	**+0.4**
	comp=Z,2.7nm,0.6s,baz=94,slow=7.9						
NOA	**NORSAR Array B**	**44.33**	**323**	P	**P**	**13 08 05.5**	**+0.8**
	comp=Z,2.6nm,0.6s,baz=96,slow=7.7,SNR=19						
TORD	**Torodi Ar. Bea**	**65.66**	**269**	P	**P**	**13 10 37.4**	**-0.6**
	comp=Z,1.4nm,0.4s,baz=54,slow=6.1,SNR=23						
INK	**Inuvik**	**73.89**	**9**	P	**P**	**13 11 28.1**	**+0.8**
	comp=Z,2.6nm,0.6s,baz=354,slow=6.2,SNR=35						
ILAR	**Eielson Array**	**74.77**	**16**	P	**P**	**13 11 32.2**	**-0.4**
	comp=Z,0.7nm,0.9s,baz=310,slow=5.6,SNR=7.1						
BOSA	**Boshof**	**77.72**	**220**	P	**P**	**13 11 48.9**	**-0.9**
	comp=Z,3.7nm,0.9s,baz=100,slow=12,SNR=3.5						
YKA	**Yellowknife Ar**	**81.23**	**3**	P	**P**	**13 12 08.4**	**+0.4**
	comp=Z,0.8nm,0.4s,baz=349,slow=5.4,SNR=29						
WRA	**Warramunga Arr**	**82.05**	**122**	P	**P**	**13 12 12.0**	**-1.0**
	comp=Z,0.7nm,0.6s,baz=325,slow=5.1,SNR=8.2						
ASAR	**Alice Springs**	**84.31**	**125**	P	**P**	**13 12 23.8**	**-0.8**
	comp=Z,0.7nm,0.7s,baz=312,slow=5.5,SNR=8.1						

*NIED **29** 13:02:00, 39°.00N×142°.50E, h53km, Mw3.9 Best double couple: M0 9.15000×10^14 NP1:φs=66.00000°, δ35.00000°, λ=-111.00000°. NP2:φs=271.00000°, δ57.00000°, λ=-76.00000°.*
*ISCJB **29** 13:02:28.4±1.6, 39°.03N±0°.05×142°.5E±0°.1, h20km±12km, mb3.5/2, Error ellipse: s-maj=14.1km s-min=6.7km az=23.1*
*JMA **29** 13:02:29.4±0.1, 39°.07N×142°.44E, h32km±2km, M3.9*
JMA Felt I J1.
*IDC **29** 13:02:34.6±6.8, 39°.10N×141°.97E, h86km±86km, mb3.1/2, mb1 3.3/4, mb1mx3.0/70, mbtmp3.4/4, ML3.2/2, MS2.6/1, Ms1 2.6/1, ms1mx2.2/23, Error ellipse: s-maj=193.8km s-min=21.7km az=115.0*
ISC 29 13:02:28.0±2.1, 39°.06N±0°.05×142°.40E±0°.09, h3km±13km, n18, σ0§90/18, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**0.57**	**272**	P	**Pb**	**13 02 41.3**	**+0.7**
OFUJ				S	**Sb**	**13 02 49.3**	**+0.2**
MIYJ	**Miyakonagasawa**	**0.69**	**319**	P	**Pb**	**13 02 42.6**	**0.0**
MIYJ				S	**Sb**	**13 02 51.9**	**-0.6**
JMK	**Ichinoseki**	**0.93**	**264**	P	**Pb**	**13 02 46.7**	**0.0**
JMK				S	**Sb**	**13 02 58.9**	**-0.4**
JOM	**Ohasama**	**0.95**	**296**	P	**Pb**	**13 02 47.3**	**+0.1**
JOM				S	**Sb**	**13 02 59.9**	**-0.3**
JTH	**Tanohata**	**0.97**	**335**	P	**Pg**	**13 02 46.8**	**+0.1**
JIO	**Ouri**	**1.02**	**234**	P	**Pg**	**13 02 47.4**	**-0.1**
JIO				S	**Sg**	**13 02 59.9**	**-0.9**
JKZ	**Kuzumaki**	**1.24**	**319**	P	**Pg**	**13 02 51.6**	**-0.2**
JKZ				S	**Sb**	**13 03 07.7**	**-0.8**
MAT	**Matsushiro**	**4.16**	**234**	P	**Pn**	**13 03 33.9**	**+1.5**
MAT				*eS*	**Sn**	**13 04 21.7**	**+0.1**
MJAR	**Matsushiro Arr**	**4.16**	**234**	P	**Pn**	**13 03 33.3**	**+0.9**
	2.1nm,0.3s,baz=41,slow=12,SNR=27						
MJAR				LR	LR	13 05 32.7	
	comp=Z,76nm,18.6s,baz=105,slow=46						
ASAJ	**Asahikawa**	**5.06**	**2**	P	**Pn**	**13 03 46.5**	**+1.8**
	0.7nm,0.3s,baz=221,slow=15,SNR=4.6						
H11N2	**WAKE ISLAND Hy**	**28.60**	**125**	T	T	13 38 48.5	
	baz=318,slow=75,SNR=134						
H11N1	**WAKE ISLAND Hy**	**28.61**	**125**	T	T	13 38 48.8	
	baz=318,slow=75,SNR=105						
H11N3	**WAKE ISLAND Hy**	**28.61**	**125**	T	T	13 38 49.4	
	baz=318,slow=75,SNR=145						
H11S1	**WAKE ISLAND Hy**	**29.38**	**127**	T	T	13 39 44.9	
	baz=319,slow=76,SNR=29						
H11S3	**WAKE ISLAND Hy**	**29.39**	**127**	T	T	13 39 49.2	
	baz=319,slow=76,SNR=41						
H11S2	**WAKE ISLAND Hy**	**29.40**	**127**	T	T	13 39 46.2	
	baz=319,slow=76,SNR=30						
ILAR	**Eielson Array**	**47.37**	**33**	P	**P**	**13 11 01.4**	**-1.5**
	0.3nm,0.7s,baz=263,slow=6.2,SNR=4.1						
WRA	**Warramunga Arr**	**59.17**	**189**	P	P	13 12 26.0	-4.2
	0.3nm,0.5s,baz=6.3,slow=7.0,SNR=8.4						

IDC 29 13:04:22.8±2.2, 17°.29S×178°.81W, h515km±30km, mb3.1/10, mb1 3.4/11, mb1mx3.1/49, mbtmp3.9/11, Error ellipse: s-maj=66.7km s-min=14.3km az=151.0, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AFI	**Afiamalu**	**7.56**	**65**	P	P	13 06 15.3	0.0
	3.4nm,0.3s,baz=84,slow=3.6,SNR=5.8						
STKA	**Stephens Creek**	**38.60**	**240**	P	P	13 11 01.2	-0.3
	1.2nm,0.5s,baz=81,slow=13,SNR=4.0						
WRA	**Warramunga Arr**	**44.37**	**259**	P	P	13 11 47.1	-0.3
	0.4nm,0.8s,baz=90,slow=6.6,SNR=7.7						
ASAR	**Alice Springs**	**44.59**	**254**	P	P	13 11 49.1	0.0
	1.0nm,0.4s,baz=89,slow=7.3,SNR=17						
NVAR	**Mina Array Bea**	**79.25**	**44**	P	P	13 15 35.3	+0.5
	0.7nm,0.5s,baz=238,slow=8.5,SNR=4.0						
SEY	**Seymchan**	**83.09**	**347**	P	P	13 15 54.7	+1.0
	2.1nm,0.5s,baz=188,slow=9.6,SNR=6.1						
ILAR	**Eielson Array**	**85.37**	**13**	P	P	13 16 03.9	-1.1
	0.4nm,0.5s,baz=228,slow=5.2,SNR=5.5						
TXAR	**Lajitas Array**	**85.99**	**58**	P	P	13 16 09.1	+0.2
	0.6nm,0.7s,baz=208,slow=5.3,SNR=8.7						
PDAR	**Pinedale Array**	**87.17**	**44**	P	P	13 16 14.2	0.0
	0.3nm,0.5s,baz=204,slow=3.3,SNR=3.7						
INK	**Inuvik**	**91.39**	**15**	P	P	13 16 32.4	-0.6
	0.8nm,0.9s,baz=205,slow=3.0,SNR=3.1						
YKA	**Yellowknife Ar**	**93.93**	**25**	P	P	13 16 44.2	-0.6
	0.3nm,0.8s,baz=245,slow=4.6,SNR=6.0						

*SOME **29** 13:07:08.0, 44°.72N×82°.17E, h5km*
*NNC **29** 13:07:10.0±1.6, 44°.73N×82°.15E, h0km, mb3.3, mpv2.9, Error ellipse: s-maj=22.3km s-min=3.8km az=117.0*
*ISCJB **29** 13:07:11.2±1.3, 44°.72N±0°.06×82°.3E±0°.1, h10km, Error ellipse: s-maj=14.6km s-min=4.8km az=29.4*
ISC 29 13:07:06.0±1.9, 44°.67N±0°.06×82°.3E±0°.1, h10km, n8, σ0§88/15, 3C-6D, Northern Xinjiang

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DJR	**Jarkent**	**1.85**	**260**	⇓*i*P	**Pg**	**13 07 40.6**	**-0.9**
	4.6nm,0.2s						
DJR				⇓*i*S	**Sg**	**13 08 04.6**	**-0.8**
	7.1nm,0.4s						
MK31	**Makanchi Array**	**2.13**	**359**	⇓P	**Pg**	**13 07 46.6**	**-0.3**
	3.6nm,0.3s,baz=180,slow=13,SNR=77						
MK31				⇑S	**Sg**	**13 08 13.8**	**-0.5**
	2.4nm,0.3s,baz=182,slow=26,SNR=13						
MAKZ	**Makanchi**	**2.16**	**354**	⇓P	**Pb**	**13 07 45.8**	**+0.6**
	3.1nm,0.5s						
MAKZ				⇓S	**Sg**	**13 08 14.0**	**-1.3**
	5.7nm,0.5s						
KAPS	**Kapalarasan**	**2.20**	**287**	⇓*i*P	**Pb**	**13 07 46.4**	**+0.4**
	1.4nm,0.2s						
KAPS				⇑*i*S	**Sb**	**13 08 14.2**	**+1.0**
	4.7nm,0.3s						
SHLS	**Shalkode**	**2.33**	**230**	*eP*	**Pg**	**13 07 50.1**	**-0.5**
	5.6nm,0.1s						
SHLS				*eS*	**Sg**	**13 08 20.2**	**-0.5**
	11nm,0.2s						
PDGK	**Podgornoye**	**2.45**	**238**	⇑S	**Sb**	**13 08 21.6**	**+1.2**
	3.5nm,0.5s						
UZB	**Uzynbulak**	**2.83**	**239**	*eP*	**Pb**	**13 07 56.8**	**0.0**
	1.1nm,0.2s						
UZB				*eS*	**Sb**	**13 08 31.7**	**+0.2**
	2.1nm,0.2s						
KPKS	**Kokpek**	**2.89**	**247**	*eP*	**Pb**	**13 07 58.2**	**+0.5**
	3.5nm,0.1s						
KPKS				*eS*	**Sb**	**13 08 34.5**	**+1.4**
	8.7nm,0.3s						

*IDC **29** 13:08:27.4±0.7, 13°.53N×125°.90E, h0km, mb4.1/17, mb1 4.2/18, mb1mx3.9/72, mbtmp4.1/18, ML4.1/1, Error ellipse: s-maj=26.9km s-min=17.2km az=77.0*
*ISCJB **29** 13:08:29.4±0.5, 13°.40N±0°.05×125°.79E±0°.04, h27km, mb4.0/17, Error ellipse: s-maj=6.9km s-min=5.6km az=146.6*
*MAN **29** 13:08:30, 13°.38N×125°.82E, h32km, mb5.1, ML4.1, MS4.2*
ISC 29 13:08:31.0±0.6, 13°.37N±0°.06×125°.75E±0°.06, h27km, n27, σ1§36/33, mb4.1/17, 3D, Philippine Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PVCP	**Virac**	**1.57**	**279**	*eP*	**Pn**	**13 08 56.6**	**-0.6**
PVCP				*eS*	**Sn**	**13 09 16.7**	**0.0**
PLP	**Palo**	**2.31**	**199**	⇓*eP*	**Pn**	**13 09 05.0**	**-2.4**
PLP				*i* S	**Sn**	**13 09 35.0**	**0.0**
OCLP	**Ormoc**	**2.56**	**206**	*eP*	**Pn**	**13 09 11.0**	**+0.3**
AUQP	**San Andres**	**3.00**	**270**	*eP*	**Pn**	**13 09 17.9**	**+1.1**
AUQP				*eS*	**Sb**	**13 09 56.7**	**-3.2**
GQP	**Guinayangan**	**3.26**	**280**	⇓*eP*	**Pn**	**13 09 20.5**	**+0.1**
GQP				*eS*	**Sn**	**13 09 57.6**	**-0.7**
RCP	**Roxas**	**3.44**	**239**	⇓*eP*	**Pn**	**13 09 23.6**	**+0.7**
RCP				*eS*	**Sn**	**13 10 04.4**	**+1.5**
BOAC	**Boac**	**3.80**	**272**	*eP*	**Pn**	**13 09 28.8**	**+0.9**
BOAC				*eS*	**Sn**	**13 10 13.2**	**+1.4**
GUIM	**Jordan**	**4.12**	**229**	*eP*	**Pn**	**13 09 29.3**	**-3.0**
KAPI	**Kappang**	**19.21**	**198**	P	**Pn**	**13 12 56.8**	**+2.6**
	0.6nm,0.3s,baz=36,slow=9.1,SNR=5.1						
KSRS	**Korea Array**	**24.07**	**4**	P	**P**	**13 13 43.9**	**-0.2**
	3.5nm,1.0s,baz=187,slow=11,SNR=7.9						
CMAR	**Chiang Mai Arr**	**26.26**	**285**	P	**P**	**13 14 05.0**	**+0.6**
	2.1nm,0.9s,baz=99,slow=8.3,SNR=6.9						
ASAR	**Alice Springs**	**37.66**	**168**	P	**P**	**13 15 46.5**	**+2.4**
	0.8nm,0.6s,baz=355,slow=7.0,SNR=5.3						
STKA	**Stephens Creek**	**47.48**	**162**	P	**P**	**13 17 03.0**	**-0.8**
	2.8nm,0.8s,baz=355,slow=8.6,SNR=3.1						
MKAR	**Makanchi Array**	**49.29**	**321**	P	**P**	**13 17 18.6**	**+0.9**
	3.0nm,0.8s,baz=112,slow=8.9,SNR=18						
ZALV	**Zalesovo Beam**	**51.69**	**330**	P	**P**	**13 17 35.6**	**0.0**
	0.9nm,0.5s,baz=112,slow=6.4,SNR=2.4						
KURBB	**Kurchatov Arra**	**53.27**	**324**	P	**P**	**13 17 47.9**	**+0.6**
	4.7nm,0.6s,baz=119,slow=7.8,SNR=32						
TIXI	**Tiksi**	**58.29**	**1**	P	**P**	**13 18 21.8**	**-1.2**
	1.2nm,0.3s,baz=313,slow=4.1,SNR=4.1						
BVAR	**Borovoye Array**	**58.86**	**325**	P	**P**	**13 18 27.3**	**0.0**
	0.9nm,0.4s,baz=114,slow=6.8,SNR=8.7						
ILAR	**Eielson Array**	**76.90**	**26**	P	**P**	**13 20 20.0**	**-0.6**
	0.5nm,0.6s,baz=231,slow=5.4,SNR=5.9						
SPITS	**Spitsbergen Ar**	**80.90**	**349**	P	**P**	**13 20 42.2**	**-0.2**
	3.6nm,0.9s,baz=75,slow=9.6,SNR=6.3						
ARCES	**ARCESS Array B**	**81.13**	**339**	P	**P**	**13 20 44.0**	**+0.3**
	0.8nm,0.6s,baz=69,slow=6.6,SNR=5.9						
INK	**Inuvik**	**81.61**	**22**	P	**P**	**13 20 46.2**	**-0.1**
	2.0nm,0.9s,baz=300,slow=5.0,SNR=11						
FINES	**FINESS Array B**	**82.94**	**331**

	81nm,1.6s								
QIS	**Mount Isa**	**26.53**	**263**		P	**P**	13 14 09.0	**+1.0**	
	baz=27,SNR=7.5								
TOO	**Toolangi**	**26.62**	**222**		P	**P**	13 14 10.4	**+1.7**	
	baz=27,SNR=4.6								
STKA	**Stephens Creek**	**26.65**	**237**		P	**P**	13 14 08.4	**-0.6**	
	14nm,1.0s,baz=67,slow=8.0,SNR=20								
STKA					LR	LR	13 23 23.2		
	comp=Z,330nm,21.7s,baz=36,slow=34								
STKA	**Stephens Creek**	**26.65**	**237**		P	**P**	13 14 10.6	**+1.6**	
	baz=27,SNR=11								
HTT	**Hallett**	**29.32**	**236**		P	**P**	13 14 33.8	**+0.9**	
	baz=29,SNR=5.1								
WC3	**Warramunga Arr**	**31.47**	**263**		P	**P**	13 14 50.9	**-1.1**	
	baz=32								
WRAB	**Tennant Creek**	**31.49**	**263**		*e*P	**P**	13 14 49.9	**-2.3**	
	18nm,1.1s								
WRA	**Warramunga Arr**	**31.50**	**263**		P	**P**	13 14 50.9	**-1.4**	
	9.1nm,0.7s,baz=96,slow=7.9,SNR=77								
WRA					PcP	**PcP**	13 17 44.7	**-0.3**	
	1.6nm,0.8s,baz=82,slow=2.5,SNR=5.4								
WRA					LR	LR	13 26 38.0		
	comp=Z,322nm,20.9s,baz=110,slow=34								
ASAR	**Alice Springs**	**31.79**	**256**		P	**P**	13 14 54.3	**-0.5**	
	20nm,0.7s,baz=86,slow=8.6,SNR=146								
MTN	**Manton Dam**	**35.77**	**275**		P	**P**	13 15 30.0	**+0.6**	
	baz=36,SNR=8.3								
WRKA	**Warakurna**	**36.93**	**254**		P	**P**	13 15 38.8	**-0.5**	
	baz=37,SNR=26								
FITZ	**Fitzroy Crossi**	**39.89**	**265**		P	**P**	13 16 04.5	**+0.3**	
	baz=40,SNR=38								
PPT2	**Papeete2**	**40.38**	**95**		*e*S	**S**	13 22 19.9	**+4.6**	
	59nm,25.8s								
PPT2					*e*LQ	LQ	13 25 27.0		
	329nm,28.5s								
PPT2					*e*LR	LR	13 27 15.2		
	359nm,28.8s								
KMBL	**Kambalda**	**42.92**	**244**		P	**P**	13 16 28.9	**0.0**	
	baz=43,SNR=5.2								
SOEI	**Soe**	**43.10**	**276**		P	**P**	13 16 33.6	**+2.8**	
	144nm,1.0s								
KLBR	**Kellerberrin**	**46.45**	**245**		P	**P**	13 16 57.1	**-0.1**	
	baz=46,SNR=5.1								
NWAO	**Narrogin (SRO)**	**46.97**	**243**		P	**P**	13 17 01.6	**+0.4**	
	baz=47,SNR=8.6								
BLDU	**Ballidu**	**47.31**	**246**		P	**P**	13 17 03.7	**-0.2**	
	baz=47								
MORW	**Morawa**	**47.88**	**248**		P	**P**	13 17 08.8	**+0.4**	
	baz=48,SNR=4.5								
KAPI	**Kappang**	**48.91**	**280**		P	**P**	13 17 17.7	**+1.3**	
	10nm,0.7s,baz=133,slow=7.3,SNR=7.6								
KAPI	**Kappang**	**48.91**	**280**		*e*P	**P**	13 17 14.7	**-1.6**	
TAOE	**Nuku Hiva Isla**	**51.37**	**86**		*e*LR	LR	13 32 20.4		
	183nm,38.4s								
RKT	**Rikitea**	**53.18**	**105**		*e*LR	LR	13 33 16.8		
	166nm,35.8s								
VNDA	**Vanda**	**58.29**	**182**		P	**P**	13 18 24.0	**-0.2**	
	2.7nm,1.0s,baz=0.2,slow=6.6,SNR=8.6								
LEM	**Lembang**	**59.67**	**273**		P	P	13 18 41.4	+6.3	
	42nm,0.9s,baz=120,slow=9.0,SNR=8.4								
LEM					LR	LR	13 41 57.1		
	comp=Z,81nm,21.8s,slow=34								
JNU	**Nakatsue**	**62.98**	**326**		LR	LR	13 41 18.0		
	comp=Z,50nm,21.4s,baz=300,slow=31								
KASI	**Kota Agung**	**63.02**	**274**		P	P	13 19 00.9	+3.4	
NJ2	**Nanjing**	**69.35**	**317**		*e*P	**P**	13 19 39.5	**+1.8**	
CN2	**Changchun**	**73.85**	**329**		*e*P	P	13 20 07.8	+3.2	
GYA	**Guiyang**	**74.78**	**306**		P	**P**	13 20 11.0	**+0.5**	
GYA					pmax	pmax			
	comp=Z,10.0nm,1.0s								
KMI	**Kunming**	**77.19**	**303**		P	**P**	13 20 25.3	**+0.9**	
KMI					pmax	pmax			
	comp=Z,15nm,1.1s								
KMI					pmax	pmax			
	comp=Z,1µm,7.8s								
MAW	**Mawson**	**77.83**	**202**		P	**P**	13 20 27.0	**0.0**	
	1.7nm,0.5s,baz=111,slow=8.1,SNR=5.9								
MAW					LR	LR	13 52 07.2		
	comp=Z,93nm,18.7s,baz=180,slow=34								
CD2	**Chengdu**	**79.23**	**308**		P	**P**	13 20 34.0	**-1.4**	
CD2					pmax	pmax			
	comp=Z,7.0nm,1.1s								
HHC	**Hu-ho-hao-te**	**79.43**	**320**		*e*P	**P**	13 20 37.8	**+1.5**	
HHC					pmax	pmax			
	comp=Z,33nm,1.3s								
HHC					pmax	pmax			
	comp=Z,200nm,8.4s								
LZH	**Lanzhou**	**81.80**	**313**		*e*P	**P**	13 20 51.8	**+2.6**	
LZH					pP	pP	13 20 58.5	+0.9	
LZH					sP	sP	13 21 02.0	+1.3	
LZH					pmax	pmax			
	comp=Z,32nm,1.0s								
KDAK	**Kodiak Island**	**83.59**	**20**		LR	LR	13 51 11.6		
	comp=Z,60nm,20.9s,baz=210,slow=31								
SVW2	**Sparrevohn**	**85.39**	**17**		*e*P	**P**	13 21 06.1	**-0.7**	
	82nm,0.8s								
WDC	**Whiskeytown Da**	**87.89**	**46**		*e*P	**P**	13 21 20.3	**+0.8**	
	16nm,1.4s								
M02C	**Callahan**	**88.06**	**45**		P	**P**	13 21 20.6	**+0.1**	
	baz=242								
AFDM	**Forest Hills D**	**88.23**	**48**		*e*P	**P**	13 21 21.2	**-0.1**	
	7.7nm,1.0s								
CMB	**Columbia Colle**	**88.23**	**49**		*e*P	**P**	13 21 21.1	**-0.3**	
	5.8nm,1.0s								
O03D	**Paynes Creek**	**88.26**	**46**		P	**P**	13 21 20.1	**-1.4**	
	baz=243								
YBH	**Yreka Blue Hor**	**88.32**	**45**		LR	LR	13 52 54.4		
	comp=Z,72nm,19.6s,baz=287,slow=30								
SNAA	**Sanae**	**88.99**	**183**		P	**P**	13 21 24.0	**-0.5**	
SNAA	**Sanae**	**88.99**	**183**		*e*P	**P**	13 21 23.5	**-1.0**	
	871nm,1.0s								
MONP2	**Monument Peak**	**89.01**	**55**		P	**P**	13 21 24.9	**-0.4**	
	baz=246								
MPMC	**Manual Prospec**	**89.49**	**51**		P	**P**	13 21 26.9	**-0.6**	
	baz=246								
VNA3	**Neumayer Olymp**	**89.63**	**181**		P	**P**	13 21 26.8	**-0.6**	
BELC	**Belle Mtn. Jos**	**89.77**	**54**		P	**P**	13 21 28.4	**-0.4**	
	baz=246								
NV01	**Mina Array Sit**	**89.88**	**49**		*e*P	**P**	13 21 28.5	**-0.8**	
NVAR	**Mina Array Bea**	**89.88**	**49**		P	**P**	13 21 27.4	**-1.9**	
	1.5nm,0.8s,baz=224,slow=7.6,SNR=9.0								
NVAR					LR	LR	13 54 46.9		
	comp=Z,66nm,20.0s,baz=267,slow=31								
VNA2	**Neumayer--Watz**	**89.91**	**182**		P	**P**	13 21 28.2	**-0.4**	
	baz=158,slow=4.0								
MOD	**Modoc Plateau**	**90.00**	**45**		*e*P	**P**	13 21 29.5	**-0.1**	
	12nm,1.2s								
J05D	**Fort Rock, OR**	**90.00**	**44**		P	**P**	13 21 29.7	**+0.1**	
	baz=243								
VNA1	**Neumayer--Stat**	**90.20**	**181**		P	**P**	13 21 29.6	**-0.4**	
GLA	**Glamis**	**90.30**	**55**		P	**P**	13 21 31.6	**+0.4**	
	baz=247								
GLA	**Glamis**	**90.30**	**55**		*e*P	**P**	13 21 31.6	**+0.4**	
	18nm,1.4s								
I05D	**Terrebonne, OR**	**90.41**	**43**		P	**P**	13 21 30.5	**-0.8**	
	baz=243								
HDA	**Harding Lake**	**90.45**	**18**		*e*P	**P**	13 21 29.6	**-1.5**	
	127nm,1.0s								
IRM	**Iron Mountain**	**90.49**	**54**		P	**P**	13 21 31.5	**-0.5**	
	baz=247								
MDM	**Murphy Dome**	**90.50**	**17**		*e*P	**P**	13 21 29.6	**-1.7**	
	436nm,1.2s								
ILAR	**Eielson Array**	**90.74**	**18**		P	**P**	13 21 30.5	**-1.9**	
	1.0nm,0.7s,baz=232,slow=6.0,SNR=7.1								
113A	**Mohawk Valley,**	**91.02**	**56**		*e*P	**P**	13 21 34.5	**+0.1**	
	13nm,1.4s								
PDMCI	**Parker Dam,Lak**	**91.31**	**54**		P	**P**	13 21 35.4	**-0.3**	
	baz=247								
214A	**Organ Pipe Nat**	**91.46**	**57**		P	**P**	13 21 36.3	**-0.3**	
	baz=248								
B05A	**Bryant**	**91.73**	**39**		P	**P**	13 21 37.4	**0.0**	
	baz=243								
W13A	**Hualapai Mount**	**91.81**	**53**		*e*P	**P**	13 21 38.2	**-0.1**	
	6.8nm,1.3s								
ELK	**Elko**	**92.99**	**48**		LR	LR	14 00 06.6		
	comp=Z,34nm,18.1s,baz=136,slow=33								
LCMT	**Little Creek M**	**93.01**	**52**		*e*P	**P**	13 21 44.2	**+0.4**	
	2.9nm,0.8s								
TUC	**Tucson**	**93.19**	**57**		P	**P**	13 21 43.9	**-0.7**	
	baz=249								
TUC	**Tucson**	**93.19**	**57**		*e*P	**P**	13 21 44.0	**-0.7**	
	6.6nm,1.1s								
KNB	**Kanab**	**93.32**	**52**		*e*P	**P**	13 21 44.7	**-0.5**	
	9.2nm,1.3s								
X16A	**Lo Mia Camp, P**	**93.43**	**55**		*e*P	**P**	13 21 43.0	**-2.8**	
	7.5nm,1.4s								
319A	**Douglas**	**94.06**	**58**		*e*P	P	13 21 44.8	-4.0	
	5.0nm,0.8s								

WMQ	**Urumqi**	**96.31**	**314**		*e*P	**P**	13 21 58.0	**-0.6**	
WMQ					pmax	pmax			
	comp=Z,13nm,1.0s								
PDAR	**Pinedale Array**	**97.68**	**47**		LR	LR	14 00 37.8		
	comp=Z,27nm,19.2s,baz=318,slow=32								
TXAR	**Lajitas Array**	**98.00**	**62**		P	**P**	13 22 05.1	**-1.6**	
	0.3nm,0.9s,baz=224,slow=3.8,SNR=3.1								
TXAR					LR	LR	14 00 23.9		
	comp=Z,58nm,18.2s,baz=0.0,slow=32								
YKA	**Yellowknife Ar**	**101.38**	**28**		P	**Pdif**	13 22 19.8	**-1.0**	
	0.1nm,0.5s,baz=257,slow=4.8,SNR=4.3								
CONA	**Conrad Observa**	**143.52**	**328**		*i* PKPdf	PKPbc	13 28 02.4	+0.5	
	23nm,1.3s,SNR=8.4								
GERES	**GERESS Array B**	**143.93**	**331**		PKP	PKPbc	13 28 03.2	+0.1	
	3.9nm,0.9s,baz=45,slow=2.3,SNR=6.2								
ARSA	**Arzberg**	**144.15**	**327**		*i* PKPdf	PKPbc	13 28 03.8	0.0	
	21nm,1.6s,SNR=5.6								
KOGS	**Kog**	**144.29**	**326**		*i* PKPbc	PKPbc	13 28 04.4	+0.2	
MOA	**Molln**	**144.37**	**329**		*i* PKPdf	PKPbc	13 28 04.8	+0.4	
	33nm,1.0s,SNR=8.8								
PERS	**Pernice**	**144.76**	**327**		*i* PKPbc	PKPbc	13 28 06.1	+0.3	
SOKA	**Soboth**	**144.78**	**327**		*i* PKPdf	**PKPab**	**13 28 05.4**	**-0.4**	
	32nm,1.0s,SNR=17								
OBKA	**Obir**	**145.14**	**327**		*i* PKPab	**PKPbc**	**13 28 05.7**	**-1.4**	
	26nm,1.0s,SNR=8.7								
KBA	**Koelnbreinsper**	**145.35**	**329**		*i* PKPdf	**PKPbc**	**13 28 07.2**	**-0.6**	
	36nm,1.0s,SNR=14								
LJU	**Ljubljana**	**145.46**	**326**		*i* PKPbc	**PKPab**	**13 28 08.5**	**+0.3**	
HGN	**Heimansgroeve**	**145.51**	**340**		*e*PKP	**PKPdf**	**13 28 06.8**	**-1.1**	
	80nm,1.3s								
MYKA	**Terra Mystica**	**145.52**	**328**		*i* PKPab	**PKPdf**	**13 28 07.5**	**-0.6**	
	26nm,1.0s,SNR=12								
BEBN	**Eben Emael**	**145.57**	**340**		PKP	**PKPab**	**13 28 08.7**	**+0.3**	
CWF	**Charnwood Fore**	**145.61**	**348**		*e*PKPdf	**PKPab**	**13 28 08.4**	**0.0**	
MEM	**Membach**	**145.62**	**339**		PKP	**PKPab**	**13 28 08.6**	**0.0**	
ABTA	**Abfaltersbach**	**145.99**	**329**		*i* PKPab	**PKPdf**	**13 28 08.8**	**-0.2**	
	60nm,1.1s,SNR=18								
BCLA	**Clavier**	**146.01**	**340**		PKP	**PKPab**	**13 28 10.6**	**+0.5**	
WTTA	**Wattenberg**	**146.03**	**330**		*i* PKPab	**PKPbc**	**13 28 09.8**	**-0.2**	
	60nm,1.7s,SNR=8.1								
TRI	**Trieste**	**146.08**	**327**		*e*PKPdf	**PKPdf**	**13 28 09.1**	**+0.1**	
MOTA	**Moosalm**	**146.22**	**331**		*i* pPKPdf	**PKPab**	**13 28 11.6**	**+0.3**	
	33nm,1.1s,SNR=7.2								
RETA	**Reutte**	**146.27**	**332**		*i* PKPab	**PKPbc**	**13 28 10.5**	**-0.1**	
	16nm,1.1s,SNR=6.6								
LANF	**Langenberg**	**146.33**	**336**		PKP	**PKPab**	**13 28 11.3**	**-0.1**	
WLF	**Walferdange**	**146.37**	**338**		PKP	**PKPab**	**13 28 11.8**	**+0.3**	
DOU	**Dourbes**	**146.52**	**340**		PKP	**PKPab**	**13 28 11.6**	**-0.4**	
FETA	**Feichten**	**146.63**	**331**		*i* pPKPdf	**PKPbc**	**13 28 11.7**	**-0.1**	
	28nm,1.1s,SNR=8.7								
BFO	**Black Forest**	**146.65**	**335**		*e*PKPdf	**PKPbc**	**13 28 11.1**	**-0.5**	
DAVA	**Damuels**	**146.81**	**332**		*i* PKPab	**PKPbc**	**13 28 12.1**	**-0.2**	
	24nm,1.1s,SNR=7.6								
FUORN	**Ofenpass-Fuorn**	**147.14**	**331**		*e*PKPdf	**PKPbc**	**13 28 14.1**	**+0.7**	
DAVOX	**Davos/Dischmat**	**147.20**	**332**		PKPbc	**PKPbc**	**13 28 12.5**	**-0.8**	
	24nm,1.0s,baz=252,slow=2.1,SNR=18								
ECH	**Echery**	**147.21**	**336**		PKP	**PKPbc**	**13 28 13.3**	**+0.2**	
MOF	**Molkenrain**	**147.51**	**335**		PKP	**PKPbc**	**13 28 13.3**	**-0.8**	
THEF	**They Montfort**	**147.64**	**337**		PKP	**PKPbc**	**13 28 14.8**	**+0.5**	
TUE	**Stuetta**	**147.67**	**332**		*e*PKPbc	**PKPbc**	**13 28 14.7**	**0.0**	
LOMF	**Lomont**	**148.04**	**335**		PKP	**PKPbc**	**13 28 15.9**	**+0.4**	
TIP	**Timpagrande**	**148.14**	**315**		*e*PKPbc	**PKPbc**	**13 28 16.6**	**+0.6**	
SENIN	**Lac Senin/Sane**	**148.64**	**334**		*e*PKPbc	**PKPbc**	**13 28 17.5**	**+0.2**	
PLDF	**La Plantade**	**150.41**	**337**		PKP	**PKPbc**	**13 28 21.8**	**+0.3**	
AGO	**Saint Aguulin**	**150.52**	**338**		PKP	**PKPbc**	**13 28 21.8**	**+0.1**	
SSB	**Saint Sauveur**	**150.65**	**336**		*e*PKPbc	**PKPbc**	**13 28 22.4**	**+0.4**	
PYM	**Petit Puy Mans**	**150.82**	**338**		PKP	**PKPbc**	**13 28 22.9**	**+0.4**	
LBL	**Lubilhac**	**151.18**	**337**		PKP	**PKPbc**	**13 28 23.9**	**+0.6**	
ES19	**SONSECA Array**	**158.49**	**342**		*e*PKPab	**PKPab**	**13 29 03.4**	**+1.1**	
TOA0	**Torodi Ar. Sit**	**165.32**	**247**		*e*PKPab	**PKPab**	**13 29 32.8**	**-0.2**	
TORD	**Torodi Ar. Bea**	**165.32**	**247**		PKPab	**PKPab**	**13 29 32.7**	**-0.2**	
	3.3nm,1.0s,baz=106,slow=3.1,SNR=8.9								

NIED **29** *13:12:00,21.˙10N×121.˙90E,h110km,Mw5.2 Best double couple: M0 7.41000×10^16 NP1:φs214.00000°, δ52.00000°,λ174.00000°. NP2:φs307.00000°,δ86.00000°, λ38.00000°.*

BJI **29** *13:12:43.4,21.˚12N×122.˚29E,h177km,mb5.5/81, mB5.4/50*

NEIC **29** *13:12:45.0±0.0,21.˚18N×121.˚98E,h177km Best double couple: NP1:φs67.00000°,δ75.00000°,λ-59.00000°. NP2:φs181.00000°,δ33.00000°,λ-152.00000°. Principal axes: T 1.0700, Plg23.0000°, Azm134.0000°; N 0.0900, Plg29.0000°, Azm239.0000°; P -1.1600, Plg50.0000°, Azm11.0000°;*

MOS **29** *13:12:46.1±0.9,21.˚20N×122.˚08E,h194km,mb5.6/142, MS4.1/21 Error ellipse: s-maj=6.3km s-min=3.7km az=110.1*

ISCJB **29** *13:12:46.2±0.1,21.˚22N±0.˚01×122.˚00E±0.˚01, h189km±1km,mb5.5/338,Error ellipse: s-maj=2.2km s-min=1.7km az=2.1*

JMA **29** *13:12:46.3±0.3,21.˚14N×121.˚90E,h175km,M5.3*

NEIC **29** *13:12:46.2±0.3,21.˚13N×122.˚01E,h181km±3km, mb5.5/181,MW5.4,MW5.3,Error ellipse: s-maj=3.2km s-min=2.8km az=96.0 Best double couple: NP1: φs51.00000°,δ63.00000°,λ-60.00000°. NP2:φs179.00000°, δ39.00000°,λ-135.00000°. Principal axes: T 1.4000, Plg13.0000°, Azm120.0000°; N -0.0100, Plg27.0000°, Azm217.0000°; P -1.3900, Plg60.0000°, Azm6.0000°;*

NEIC Felt [II] at Kaohsiung. Also felt at Chungli, Fengyuan, Taichung, Tainan, Taipei and Tanshui. Felt [III PIVS] at Basco, Philippines. Also felt at Ballesteros. Recorded [2 TAP] at Changua, Chiayi, Kaoshiung, Pingtung, Taichung, Tainan, Taitung and Yunlin; [1 TAP] at Nantou and Penghu.

GCMT **29** *13:12:46.2±0.1,21.˚24N×121.˚92E,h185km±1km, MW5.3/116,Moment Tensor Solution. s93,c139; s116,c204; Duration: 1s1 Moment tensor: Scale 10^17 Nm; Mrr-0.53±.02; Mθθ-0.15±.02; Mφφ0.68±.02; Mrθ-0.92±.01; Mθφ0.59±.02; Mφr-0.25±.02; Best double couple: M0 1.28000×10^17 NP1:φs62.00000°,δ75.00000°, λ-56.00000°. NP2:φs173.00000°,δ36.00000°, λ-154.00000°. Principal axes: T 1.2630, Plg23.0000°, Azm127.0000°; N 0.0340, Plg32.0000°, Azm233.0000°; P -1.2960, Plg49.0000°, Azm9.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

TAP **29** *13:12:48.3,21.˚35N×122.˚07E,h178km±1km,ML5.9,C*

BKK **29** *13:12:48.1±0.6,21.˚N±4.˚×12.˚2E±.˚,h205km±7km,M5.1/37, mB5.4/27,mb5.2/37,MLv6.2/1,Mw(mB)4.8/27*

IDC **29** *13:12:48.6±0.7,21.˚14N×122.˚12E,h206km±6km,mb5.1/65, mb1 5.1/71,mb1mx5.1/76,mbtmp5.6/71,MS3.9/9, Ms1 3.9/9,ms1mx3.5/43,Error ellipse: s-maj=6.7km s-min=4.7km az=62.0*

MAN **29** *13:12:50,20.˚91N×121.˚89E,h183km,mb5.7,ML4.7, MS5.1*

MAN INTENSITY III - BASCO BATANES.

ISC 29 13:12:47.4±0.3,21.˚20N±0.˚02×122.˚03E±0.˚03,h195km±2km, h194km:pP-P,n1219,σ1s51/1389,mb5.5/371,43C-172D, Taiwan region

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h	m	s	Res ISC
LAY	**Lan-yu**	**0.95**	**332**	⇓*e*P			**Pn**	**13**	**13**	**14.4**	**-1.9**
	baz=325										
TSEB	**Hengchuen, Pin**	**1.26**	**304**	⇓*i*P			**Pn**	**13**	**13**	**18.3**	**-0.3**
	baz=293										
TWK1	**Hengchun**	**1.36**	**303**	⇓*i*P			**Pn**	**13**	**13**	**18.7**	**-0.7**
	baz=295										
TWK1				*e*S			**Sn**	**13**	**13**	**40.7**	**-3.6**
	baz=295										
HEN	**Hengchun**	**1.45**	**304**	⇓*i*P			**Pn**	**13**	**13**	**19.5**	**-0.6**
	baz=291										
TAW	**Tawu**	**1.56**	**318**	⇓P			**Pn**	**13**	**13**	**19.9**	**-1.3**
	baz=317										
TAW				*e*S			**Sn**	**13**	**13**	**42.8**	**-4.7**
	baz=317										
EAST	**Anshuo**	**1.61**	**317**	⇓*i*P			**Pn**	**13**	**13**	**20.3**	**-1.4**
	baz=316										
ECL	**Taimali**	**1.71**	**325**	*e*P			**Pn**	**13**	**13**	**19.4**	**-3.2**
	baz=320										
TTN	**Taitung**	**1.75**	**332**	⇓P			**Pn**	**13**	**13**	**22.3**	**-0.7**
	baz=321										
TTN				*e*S			**Sn**	**13**	**13**	**47.9**	**-2.9**
	baz=321										
TWG	**Pinlang**	**1.84**	**331**	⇓P			**Pn**	**13**	**13**	**22.0**	**-1.9**
	baz=322										
TWG				*e*S			**Sn**	**13**	**13**	**48.5**	**-4.0**
	baz=322										
TWG	**Pinlang**	**1.84**	**331**	*e*Pn			**Pn**	**13**	**13**	**21.6**	**-2.3**
TWG				*e*Sn			**Sn**	**13**	**13**	**47.0**	**-5.4**
TWP	**Hsiaoliuchiu**	**1.93**	**307**	⇓*i*P			**Pn**	**13**	**13**	**25.3**	**+0.6**
	baz=302										
TWP				*e*S			**Sn**	**13**	**13**	**53.6**	**-0.2**
	baz=302										
CHKT	**Chengkung**	**1.99**	**342**	⇓*i*P			**Pn**	**13**	**13**	**23.9**	**-1.5**
	baz=343										
CHKT				*e*S			**Sn**	**13**	**13**	**50.9**	**-4.3**
	baz=343										
SSD	**Sandimen**	**2.01**	**320**	⇓*i*P			**Pn**	**13**	**13**	**24.5**	**-1.2**
	baz=316										
SSD				*e*S			**Sn**	**13**	**13**	**52.4**	**-3.1**
	baz=316										
SGLT	**Jiouru**	**2.09**	**317**	⇓*i*P			**Pn**	**13**	**13**	**26.6**	**+0.2**
	baz=317										
SGLT				*e*S			**Sn**	**13**	**13**	**56.2**	**-0.7**
	baz=317										
KAU	**Kaohsiung**	**2.10**	**311**	⇓P			**Pn**	**13**	**13**	**26.8**	**+0.3**
	baz=299										
ELDTW	**Lidau**	**2.19**	**335**	*e*P			**Pn**	**13**	**13**	**26.1**	**-1.6**
	baz=333										
TWM1	**Shoushan**	**2.20**	**318**	⇓*i*P			**Pn**	**13**	**13**	**27.5**	**-0.1**
	baz=320										
TWF1	**Yuli**	**2.25**	**343**	⇓P			**Pn**	**13**	**13**	**26.5**	**-1.7**
	baz=332										
TWF1				*e*S			**Sn**	**13**	**13**	**57.0**	**-3.1**
	baz=332										
STYT	**Tauyuan**	**2.28**	**329**	⇓*i*P			**Pn**	**13**	**13**	**27.5**	**-1.1**
	baz=320										
STYT				*e*S			**Sn**	**13**	**13**	**56.9**	**-3.9**
	baz=320										
YULB	**Yu-li**	**2.29**	**343**	*e*Pn			**Pn**	**13**	**13**	**26.6**	**-2.0**
YULB				*e*Sn			**Sn**	**13**	**13**	**57.5**	**-3.4**
SGST	**Jiashian**	**2.31**	**325**	⇓*i*P			**Pn**	**13**	**13**	**28.0**	**-0.8**
	baz=316										
SGST				*e*S			**Sn**	**13**	**13**	**56.8**	**-4.4**
	baz=316										
EHY	**Hungye**	**2.39**	**344**	⇓P			**Pn**	**13**	**13**	**28.1**	**-1.7**
	baz=335										
EHY				*e*S			**Sn**	**13**	**13**	**58.7**	**-4.2**
	baz=335										
CHN1	**Nanshi**	**2.42**	**325**	⇓*i*P			**Pn**	**13**	**13**	**29.1**	**-0.9**
	baz=322										
CHN1				*e*S			**Sn**	**13**	**13**	**59.3**	**-4.2**
	baz=322										
CHN3	**Shinhua**	**2.42**	**321**	⇓*i*P			**Pn**	**13**	**13**	**30.2**	**+0.1**
	baz=323										
CHN3				S			**Sn**	**13**	**14**	**01.6**	**-1.9**
	baz=323										
WTP	**Ta-pu**	**2.42**	**328**	⇓*i*P			**Pn**	**13**	**13**	**28.9**	**-1.3**
	baz=319										
WTP				*e*S			**Sn**	**13**	**13**	**59.7**	**-3.9**
	baz=319										
TPUB	**Ta-pu**	**2.46**	**328**	*e*Pn			**Pn**	**13**	**13**	**28.8**	**-1.7**
TPUB				*e*Sn			**Sn**	**13**	**13**	**58.8**	**-5.5**
TAI1	**Yung-k'ang**	**2.48**	**318**	⇓*i*P			**Pn**	**13**	**13**	**30.3**	**-0.4**
	baz=321										
TAI1				*e*S			**Sn**	**13**	**14**	**00.8**	**-3.8**
	baz=321										
YUS	**Yu-Shan**	**2.49**	**337**	⇓*i*P			**Pn**	**13**	**13**	**30.9**	**-0.5**
	baz=334										
YUS				*e*S			**Sn**	**13**	**14**	**02.9**	**-2.8**
	baz=334										
TWK	**Hsinying**	**2.51**	**326**	⇓*i*P			**Pn**	**13**	**13**	**30.0**	**-1.1**
	baz=323										
TWK				*e*S			**Sn**	**13**	**14**	**01.4**	**-3.9**
	baz=323										
CHN4	**Tsaushan**	**2.52**	**328**	⇓*i*P			**Pn**	**13**	**13**	**29.8**	**-1.4**
	baz=320										
CHN4				*e*S			**Sn**	**13**	**14**	**02.5**	**-3.0**
	baz=320										
TEGC	**Jichi Village**	**2.54**	**350**	*e*P			**Pn**	**13**	**13**	**31.0**	**-0.3**
	baz=352										
ALS	**Alishan**	**2.57**	**334**	⇓*i*P			**Pn**	**13**	**13**	**30.8**	**-1.2**
	baz=324										
ALS			

baz=314
PNG eS Sn 13 14 17.1 -4.5
baz=314
TWQ1 Liyutan 3.34 340 eP Pn 13 13 39.7 -1.1
baz=338
TWQ1 eS Sn 13 14 18.8 -4.1
baz=338
JYNG Yonagunijimaku 3.35 14 P Pn 13 13 41.1 +0.2
JYNG S Sn 13 14 23.8 +0.9
YOJ Yonaguni jima 3.37 15 P Pn 13 13 41.6 +0.4
YOJ S Sn 13 14 24.4 +0.9
YOJ Yonaguni jima 3.37 15 eP Pn 13 13 41.3 +0.1
baz=10.0
YOJ Yonaguni jima 3.37 15 P Pn 13 13 40.5 -0.7
YOJ e 13 14 21.0
YOJ Yonaguni jima 3.37 15 Pn Pn 13 13 40.5 -0.7
YOJ eSn Sn 13 14 21.0 -2.5
APYP Conner 3.40 193 eP Pn 13 13 40.5 -1.1
APYP eS Sn 13 14 12.0 -12
TWC Suao 3.40 357⇓eP Pn 13 13 41.6 0.0
baz=3.0
TWC eS Sn 13 14 19.7 -4.4
baz=3.0
NSY Sanyi 3.41 340 ⇓P Pn 13 13 40.7 -1.0
baz=338
ENTT Nioudou 3.45 353 ⇓P Pn 13 13 41.9 -0.3
baz=357
ENTT eS Sn 13 14 20.4 -4.9
baz=357
CVP Callao Caves 3.48 183⇓eP Pn 13 13 41.6 -1.0
CVP *i* S Sn 13 14 25.0 -0.9
IRIF Iriomote-Funau 3.50 26 P Pn 13 13 42.6 -0.1
IRIF S Sn 13 14 27.4 +1.3
YHNB Yeheng 3.51 350 ePn Pn 13 13 42.5 -0.5
NSK Sanguang 3.52 350⇓*i*P Pn 13 13 42.8 -0.2
baz=354
TWE Neicheng 3.52 355⇓eP Pn 13 13 42.8 -0.2
baz=354
JKRS Kuro-shima 3.54 31 P Pn 13 13 43.4 +0.2
JKRS S Sn 13 14 27.7 +0.7
NSTT Nanjuang 3.55 345 ⇓P Pn 13 13 42.0 -1.4
baz=343
ILA Ilan 3.56 356 eP Pn 13 13 44.2 +0.7
baz=2.0
SIPP Brgy, Tapao 3.58 205⇑eP Pn 13 13 43.4 -0.5
SIPP eS Sn 13 13 57.6 -30
EGS 3.63 359⇓eP Pn 13 13 44.9 +0.5
baz=4.0
JIJ Ishigaki jima 3.71 31 P Pn 13 13 44.9 -0.4
JIJ S Sn 13 14 31.0 +0.2
HSN Hsinchu 3.72 345 eP Pn 13 13 44.7 -0.8
baz=336
HSN eS Sn 13 14 27.6 -3.5
baz=336
ABRA Dolores 3.74 200 eP Pn 13 13 44.9 -0.9
ABRA eS Sn 13 14 21.4 -10
TATO Taipei 3.79 353 ePn Pn 13 13 45.8 -0.6
TATO eSn Sn 13 14 30.6 -2.1
TATO Taipei 3.79 353 P Pn 13 13 45.8 -0.6
SNR=12
TWB1 Santiao Chiao 3.79 359⇑eP Pn 13 13 46.7 +0.4
baz=359
NCU National Centr 3.83 348 eP Pn 13 13 46.0 -0.9
baz=339
TAP1 Taipei 3.85 353 P Pn 13 13 45.4 -1.7
baz=352
TAP1 eS Sn 13 14 29.3 -4.8
baz=352
TAP Taipei 3.85 353 eP Pn 13 13 46.9 -0.2
baz=352
NWF Wu-fen Shan 3.86 357 eP Pn 13 13 47.8 +0.4
baz=2.0
NWF eS Sn 13 14 31.7 -2.8
baz=2.0
TWS1 Kuangyinshan 3.93 352 eP Pn 13 13 47.8 -0.2
baz=359
TWS1 eS Sn 13 14 33.0 -2.8
baz=359
JISG Ishigakijimahi 3.98 32 P Pn 13 13 48.2 -0.4
TWY Chenhua 4.08 355 eP Pn 13 13 49.7 -0.2
baz=345
JTJ Tarama 4.22 35 P Pn 13 13 51.9 +0.2
JTJ eS Sn 13 14 42.8 +0.4
CAUP Cauayan 4.24 183 eP Pn 13 13 53.0 +1.0
PCYT Pengchaiyu 4.41 0 eP Pn 13 13 54.2 0.0
baz=360
KNM Kinmen 4.61 315⇓*i*P Pn 13 13 56.7 0.0
baz=311
JIRB Irabujima 4.63 38 P Pn 13 13 57.0 +0.1
JMJ Miyako jima 2 4.69 39 P Pn 13 13 58.3 +0.6
JOGS Gusukube 4.72 41 P Pn 13 13 58.6 +0.6
JIKM Ikemajima 4.75 38 P Pn 13 13 58.5 +0.1
QZH Quanzhou 4.89 320⇑*i*P Pn 13 13 54.8 -5.4
QZH S Sn 13 14 50.5 -7.2
QZH smax smax
comp=N,4μm,0.6s
QZH smax smax
comp=E,5μm,0.8s
BCPH Baguio City Da 4.98 196⇑*i*P Pn 13 14 01.1 -0.5
BCPH *i* S Sn 13 14 57.6 -2.6
BOLP Bolinao 5.19 203 eP Pn 13 14 03.8 -0.4
BALP Baler 5.44 185 eP Pn 13 14 07.0 -0.5
SCZP Santa Cruz 5.75 201 eP Pn 13 14 10.7 -0.8
JKE Kume jima 2 6.71 40 P Pn 13 14 24.0 +0.2
LQP Lukban 7.06 184⇑eP Pn 13 14 27.4 -1.3
JAGN Aguni-jima 7.18 41 P Pn 13 14 30.3 +0.4
JJT2 Tamagusuku 2 7.19 46 P Pn 13 14 31.0 +1.0
GQP Guinayangan 7.26 177⇓eP Pn 13 14 31.5 +0.4
GQP eS Sn 13 15 49.8 -3.6
HKC Hong Kong Obse 7.38 280⇑*i*P Pn 13 14 34.0 +1.4
JNTH Nagotoyohara 7.62 45 P Pn 13 14 36.5 +0.8
BOAC Boac 7.70 181 eP Pn 13 14 37.6 +0.9
PVCP Virac 7.83 165 eP Pn 13 14 38.5 0.0
AUQP San Andres 7.86 175 eP Pn 13 14 40.2 +1.3
MCO Taipa Grande 7.93 278 P Pn 13 14 40.0 +0.2
JIH Iheya 7.95 42 P Pn 13 14 39.9 0.0
JOW Kunigami 8.00 44 P Pn 13 14 40.2 -0.4
baz=233,slow=11
JOW Kunigami 8.00 44 P Pn 13 14 41.1 +0.4
JOW Kunigami 8.00 44⇓eP Pn 13 14 40.8 +0.2
baz=46
GZH Guangzhou 8.27 285⇑*i*P Pn 13 14 43.3 -0.8
JOKE Okinoerabujima 8.56 43 P Pn 13 14 47.6 -0.3
SJMP San Jose 8.73 186 eP Pn 13 14 50.7 +0.4
OTRP Odiongan 8.79 180 eP Pn 13 14 51.3 +0.3
JTK Tokunoshima 9.09 42 P Pn 13 14 54.9 0.0
BUSP Coron 9.31 191 eP Pn 13 14 57.2 -0.6
JAMN Amaminishikomi 9.56 41 P Pn 13 15 01.7 +0.8
JMZ Minamidaito 2 9.61 60 P Pn 13 15 03.4 +1.8
RCP Roxas 9.61 176⇓eP Pn 13 15 02.8 +1.1
SSE Sheshan 9.89 356⇓P Pn 13 15 05.8 +0.6
SSE S Sn 13 16 54.5 -1.0
SSE pmax pmax
comp=Z,45nm,1.1s
SSE pmax pmax
comp=Z,130nm,6.6s
SSE LR LR
comp=N,130nm,19.4s
SSE LR LR
comp=E,470nm,19.5s
SSE LR LR
comp=Z,430nm,23.3s
JAM Amami Oshima 9.94 42 P Pn 13 15 04.9 -1.0
ENPP El Nido 10.24 195 eP Pn 13 15 08.7 -1.2
CUYO Cuyo Island 10.33 186 eP Pn 13 15 10.9 -0.2
PLP Palo 10.37 164⇑*i*P Pn 13 15 11.0 -0.6
JAP San Jose, Anti 10.39 180⇓eP Pn 13 15 14.1 +2.3
GUIM Jordan 10.53 177 eP Pn 13 15 14.0 +0.4
LLP Lapu-Lapu 10.98 170⇑eP Pn 13 15 18.7 -0.7
LLP eS S 13 17 38.2 +16
NJ2 Nanjing 11.18 346 eP Pn 13 15 21.5 -0.3
NJ2 S S 13 17 27.3 -0.5
NJ2 pmax pmax
comp=Z,34nm,0.5s
NJ2 LR LR
comp=N,930nm,7.5s
NJ2 LR LR
comp=E,2μm,9.2s
NJ2 LR LR
comp=Z,2μm,11.9s
WHN Wuhan 11.59 325 P Pn 13 15 29.3 +2.2
WHN S Sn 13 17 31.5 -4.7
WHN LR LR
comp=N,3μm,5.2s
WHN LR LR
comp=E,4μm,6.0s
WHN LR LR
comp=Z,2μm,11.4s
QIZ Qiongzhong 11.65 261 P Pn 13 15 29.3 +1.3
QIZ S Sn 13 17 36.0 -1.9
QIZ pmax pmax
comp=Z,250nm,2.9s
QIZ LR LR
comp=N,240nm,6.9s
QIZ LR LR
comp=E,1μm,6.9s
SCPH Surigao 11.83 163 eP P 13 15 35.7 +0.2
JSU Suzuyama 12.74 35 P P 13 15 47.4 +1.9
JFU Fukue jima 2 12.89 26 P Pn 13 15 44.1 +0.6
CGP Cagayan de Oro 12.93 168⇓eP Pn 13 15 45.4 +1.2
PAGZ Pagadian 13.34 174 eP Pn 13 15 49.8 +0.5
IPIL Ipil 13.34 178 eP Pn 13 15 48.5 -1.0
BUKP Musuan 13.56 167 eP Pn 13 15 52.4 +0.2
CTBH Cotabato--PC H 14.06 171 eP Pn 13 15 58.3 0.0
JNU Nakatsue 14.24 32 P Pn 13 16 01.2 +0.7
4.5nm,0.3s,baz=210,slow=5.9,SNR=137
JNU LR LR 13 21 46.3
comp=Z,509nm,21.9s,baz=152,slow=38
JNU Nakatsue 14.24 32 P Pn 13 16 01.5 +1.0
JNU Nakatsue 14.24 32 ePn Pn 13 16 00.9 +0.4
DAV Davao City (W) 14.46 166 P Pn 13 16 03.6 +0.4
11nm,0.3s,baz=74,slow=2.1,SNR=5.3
DAV LR LR 13 21 17.1
comp=Z,762nm,18.9s,baz=342,slow=35
DAV Davao City (W) 14.46 166⇓eP Pn 13 15 58.7 -4.6
DAV Davao City (W) 14.46 166 ⇓S S 13 18 39.8 -4.9
DAV Davao City (W) 14.46 166 P P 13 16 12.4 +7.7
SNR=7.2
DAV Davao City (W) 14.46 166 P P 13 16 12.4 +7.7
SNR=7.2
ENH Enshi 14.46 311 ePn Pn 13 16 04.1 +0.9
MATI Mati 14.75 163 eP Pn 13 16 05.5 -1.3
JTU Tsushima 14.78 25 P P 13 16 08.7 +0.6
GYA Guiyang 15.00 293⇑*i*P P 13 16 11.5 +0.7
GYA sP sP 13 16 56.0 -11
GYA S Sn 13 18 59.3 +1.4
GYA PcP PcP 13 21 07.3 +2.4
GYA pmax pmax
comp=Z,70nm,1.0s
GYA pmax pmax
comp=Z,400nm,8.7s
GYA LR LR
comp=N,1μm,11.7s
GYA LR LR
comp=E,1μm,14.5s
GYA LR LR
comp=Z,1μm,11.7s
KDM Kudat 15.06 200 ⇓P P 13 16 14.6 +3.2
TIA Tai'an 15.56 345 ⇓P Pn 13 16 16.5 -0.1
TIA sP sP 13 17 08.3 -5.1
TIA S S 13 19 07.8 -1.7
TIA pmax pmax
comp=Z,90nm,1.0s
TIA pmax pmax
comp=Z,1μm,3.7s
TIA LR LR
comp=N,870nm,11.8s
TIA LR LR
comp=E,730nm,15.2s
TIA LR LR
comp=Z,1μm,15.2s
KKM Kota Kinabalu 16.08 201 ⇓P Pn 13 16 25.1 +1.9
KKM Kota Kinabalu 16.08 201 eP P 13 16 22.7 0.0
135nm,0.9s
SDKM Sandakan 16.16 198 ⇓P Pn 13 16 25.8 +1.7
MYLDM Lahad Datu 16.29 193 eP Pn 13 16 27.2 +1.7
196nm,1.1s
JMN Monobe 16.30 38 P P 13 16 24.6 -0.4
INCN Inchon 16.71 13 eP P 13 16 28.7 -0.7
452nm,1.4s
INCN Inchon 16.71 13 P Pn 13 16 30.3 -0.1
SNR=11
JHS Saijyo 16.86 33 P Pn 13 16 32.2 0.0
KS15 Wonju Array Si 16.97 16 eP Pn 13 16 33.1 -0.3
KSAR Wonju Array Be 16.97 16 P Pn 13 16 33.3 -0.1
KSAR Wonju Array Be 16.97 16 P Pn 13 16 33.2 -0.1
KSAR PcP PcP 13 21 07.8 +0.4
KSAR ScP ScP 13 24 23.0 -0.9
KSRS Korea Array 16.99 16 P Pn 13 16 33.2 -0.4
5.6nm,0.3s,baz=199,slow=12,SNR=185
KSRS PcP PcP 13 21 07.8 +0.4
0.3nm,0.3s,baz=220,slow=1.8,SNR=9.4
KSRS ScP ScP 13 24 23.0 -0.9
0.3nm,0.3s,baz=190,slow=1.9,SNR=14
KS01 Wonju Array Si 17.00 16 eP P 13 16 31.8 -0.7
XAN Xi'an 17.26 321 P Pn 13 16 37.0 0.0
XAN S S 13 19 45.5 +0.5
XAN pmax pmax
comp=Z,340nm,0.8s
XAN pmax pmax
comp=Z,410nm,5.6s
JWZ Kozaga 17.26 42 P Pn 13 16 37.6 +0.6
JAD Aida 17.36 35 P Pn 13 16 39.1 +1.0
SKNT Sakolnakorn 17.57 259 P Pn 13 16 42.1 +1.4
108nm,1.1s
DL2 Dalian 17.65 359⇓P P 13 16 40.0 +0.3
DL2 sP sP 13 17 28.5 -8.0
DL2 S S 13 19 51.5 -1.2
DL2 pmax pmax
comp=Z,200nm,1.3s
DL2 pmax pmax
comp=Z,670nm,7.1s
SGSI Sangihe 17.74 168 P Pn 13 16 44.7 +2.0
1μm,0.8s
KMI Kunming 18.16 286 P Pn 13 16 48.0 +0.1
KMI PP pP 13 17 10.8 -6.8
KMI sP sP 13 17 37.0 -5.5
KMI S S 13 20 00.0 -3.6
KMI SS Sn 13 20 37.0 +24
KMI pmax pmax
comp=Z,55nm,1.1s
KMI pmax pmax
comp=Z,350nm,4.3s
KMI LR LR
comp=N,2μm,10.6s
KMI LR LR
comp=E,750nm,10.0s
KMI LR LR
comp=Z,1μm,10.7s
JWT Wachi 18.29 37 P Pn 13 16 49.5 +0.4
TIY Taiyuan 18.44 335 eP Pn 13 16 50.0 -0.8
TIY sP sP 13 17 41.5 -3.8
TIY S S 13 20 07.5 -1.1
TIY pmax pmax
comp=Z,1μm,0.8s
TIY LR LR
comp=N,830nm,7.7s
TIY LR LR
comp=E,610nm,6.2s
TIY LR LR
comp=Z,760nm,10.0s
JIE Ise 18.45 41 P Pn 13 16 51.0 +0.1
KHON Khomkaen 18.81 258 P Pn 13 16 55.8 +0.5
20nm,0.9s,990nm
CD2 Chengdu 19.03 304 P P 13 16 56.0 +1.2
CD2 pP pP 13 17 26.0 -1.0
CD2 sP sP 13 17 48.5 -3.4
CD2 S S 13 20 23.0 +2.6
CD2 PcP PcP 13 21 13.3 +2.2
CD2 pmax pmax
comp=Z,520nm,0.7s
CD2 pmax pmax
comp=Z,290nm,3.6s
INU Inuyama 19.28 40 eP Pn 13 16 59.3 -1.4
820nm,1.4s
CBIJ Chichi jima 19.30 68 eP P 13 16 55.5 -2.2
137nm,0.7s
CBIJ S S 13 20 22.2 -3.4
JCJ Chichijima 19.30 68 P P 13 16 58.3 +0.6
27nm,0.3s,baz=252,slow=3.4,SNR=13
JCJ S S 13 20 22.2 -3.4
3.7nm,0.3s,baz=157,slow=22,SNR=3.9
BJT Baijiatuau 19.42 346 eP P 13 16 56.6 -2.2
BJT pmax pmax
comp=Z,294nm,0.9s
BJT Baijiatuau 19.42 346 eP P 13 16 56.6 -2.2
comp=Z,294nm,0.9s
BJI Beijing 19.44 346 P P 13 16 58.8 -0.2
BJI sP sP 13 17 50.5 -5.7
BJI S S 13 20 26.3 -1.7
BJI pmax pmax
comp=Z,170nm,1.0s
BJI LR LR
comp=Z,310nm,9.0s
BJI LR LR
comp=Z,690nm,15.9s
JSG Sagara 19.56 43 P P 13 17 02.3 +1.9
JGF Kuroka 19.65 40 P P 13 17 03.0 +1.6
JHJ Hachijo jima 2 19.73 49 P P 13 17 04.0 +1.8
comp=Z,19nm,0.3s,baz=216,slow=12,SNR=7.0
BTM Bintulu 19.89 207⇓P Pn 13 17 06.7 -1.6
CRAI Chiangrai 20.28 271 P Pn 13 17 10.9 -2.1
comp=Z,751nm,0.9s
PBKT Sadao Pong 20.45 261 P P 13 17 12.2 +2.2
comp=Z,57nm,1.1s,comp=Z,2μm
JOD2 Odawara 2 20.50 43 P P 13 17 12.1 +1.6
UTTA Uttaradit 20.53 264 P P 13 17 13.7 +2.8
comp=Z,6.5nm,0.9s
MRSI Marisa 20.59 180 P P 13 17 12.6 +1.0
comp=Z,766nm,1.0s,comp=Z,7μm
SNY Shenyang 20.61 3⇓P P 13 17 11.0 -0.5
SNY S S 13 20 48.8 -2.0
SNY pmax pmax
comp=Z,490nm,0.9s
SNY pmax pmax
comp=Z,1μm,3.5s
SNY LR LR
comp=Z,410nm,17.8s
SNY LR LR
comp=Z,2μm,21.0s
SNY LR LR
comp=Z,670nm,26.0s
CHBT CHBT 20.61 249 P P 13 17 13.9 +2.1
comp=Z,98nm,0.9s,comp=Z,2μm
MAJO Matsushiro 20.80 39 eP P 13 17 13.5 -0.1
MAJO Matsushiro 20.80 39 eP P 13 17 13.4 -0.1
comp=Z,431nm,1.1s
MAJO LR LR
comp=Z,336nm,20.0s
MAT Matsushiro 20.80 39 P P 13 17 12.9 -0.7
MAT S S 13 20 58.6 +4.1
MAT Matsushiro 20.80 39 P P 13 17 12.1 -1.5
MJAR Matsushiro Arr 20.80 39 P P 13 17 13.5 -0.1
comp=Z,77nm,0.9s,baz=227,slow=7.7,SNR=124
MJAR PcP PcP 13 21 14.8 +0.5
comp=Z,3.8nm,0.8s,baz=188,slow=2.4,SNR=4.7
MJAR ScP ScP 13 24 32.0 -0.6
comp=Z,13nm,0.9s,baz=214,slow=3.0,SNR=22
MJB9 Matsu-Tunnel 20.80 39 eP P 13 17 13.9 +0.3
comp=Z,109nm,1.1s
MJB9 eScS ScS 13 28 22.7 +6.6
JRY Ryogami san 20.87 41 P P 13 17 15.0 +0.7
SBUM Sibu 20.94 208⇓P P 13 17 17.1 +1.8
SBUM Sibu 20.94 208 eP P 13 17 14.8 -0.5
comp=Z,163nm,0.6s
TNTI Ternate 20.96 165 P P 13 17 13.8 -1.6
comp=Z,2μm,1.1s,comp=Z,17μm
TNTI Ternate 20.96 165 eP P 13 17 13.8 -1.6
comp=Z,1μm,0.9s
LAMP Lampang 21.23 267 P P 13 17 21.1 +2.8
comp=Z,30nm,0.8s,comp=Z,274nm
HHC Hu-ho-hao-te 21.51 338 eP P 13 17 22.0 +0.8
HHC PP pP 13 17 57.5 +3.1
HHC S S 13 21 11.0 +4.1
HHC pmax pmax
comp=Z,580nm,1.0s
HHC pmax pmax
comp=Z,2μm,4.8s
LZH Lanzhou 21.73 317⇓P P 13 17 25.0 +1.5
LZH PP pP 13 17 59.3 +2.4
LZH pP sP 13 18 00.5 -21
LZH eS S 13 21 13.0 +2.3
LZH SS SnSn 13 22 04.5 +5.6
LZH pmax pmax
comp=Z,430nm,1.0s
LZH pmax pmax
comp=Z,1μm,4.0s
CMMT Chiang Mai 21.82 268 P P 13 17 25.4 +1.0
comp=Z,97nm,0.9s,comp=Z,958nm
CHTO Chiang Mai 21.82 268 P P 13 17 25.4 +1.0
comp=Z,436nm,0.9s,comp=Z,4μm
CHTO Chiang Mai 21.82 268 eP P 13 17 25.8 +1.4
CHTO pmax pmax
comp=Z,76nm,0.9s
CHTO MLR MLR
comp=Z,718nm,22.0s
CHTO Chiang Mai 21.82 268 eP P 13 17 25.8 +1.4
comp=Z,76nm,0.9s
CHTO LR LR
comp=Z,718nm,22.0s
CHTO Chiang Mai 21.82 268 P P 13 17 25.6 +1.2
SNR=43
CHTO Chiang Mai 21.82 268 P P 13 17 25.6 +1.2
SNR=43
JSD Sado 21.87 36 P P 13 17 23.7 -0.9
CM01 Chiang Mai Arr 21.88 267 eP P 13 17 26.0 +1.1
BTO Baotou 21.88 335 eP P 13 17 24.8 0.0
CM31 Chiang Mai Arr 21.89 267 eP P 13 17 27.1 +2.0
CMAR Chiang Mai Arr 21.89 267 P P 13 17 26.8 +1.7
comp=Z,89nm,0.8s,baz=72,slow=8.2,SNR=250
CMAR PcP PcP 13 21 18.0 +1.3
comp=Z,17nm,0.7s,baz=49,slow=0.7,SNR=28
CMAR ScP ScP 13 24 34.8 -0.8
comp=Z,17nm,0.9s,baz=54,slow=1.3,SNR=32
CMAR LR LR 13 27 23.5
comp=Z,198nm,18.4s,baz=70,slow=40
LUWI Luwuk 22.11 178 P P 13 17 25.9 -1.3
comp=Z,1μm,1.3s,comp=Z,10μm
LUWI Luwuk 22.11 178 eP P 13 17 24.4 -2.9
comp=Z,2μm,1.4s
LBMI Labuha 22.35 165 P P 13 17 28.4 -1.0
comp=Z,1μm,1.1s,comp=Z,8μmcomp=Z,12μm
MSHR Mys Shultsa 22.66 18*i*P P 13 17 32.8 +0.9
KSM Kuching 22.69 212⇑P P 13 17 32.4 -0.1
KSM Kuching 22.69 212 eP P 13 17 29.8 -2.8
comp=Z,70nm,0.7s
KSM ePcP PcP 13 21 17.8 -0.6
KSM LR LR
comp=Z,400nm,20.0s
CN2 Changchun 22.72 6⇓*i*P P 13 17 32.0 -0.5
CN2 epP pP 13 18 06.0 -1.4
CN2 eS S 13 21 24.3 -1.7
CN2 pmax pmax
comp=Z,100nm,1.0s
CN2 pmax pmax
comp=Z,600nm,3.0s
CN2 LR LR
comp=Z,500nm,15.0s
CN2 LR LR
comp=Z,1μm,15.0s
CN2 LR LR
comp=Z,1μm,16.0s
SRDT SRDT 22.84 256 P P 13 17 35.5 +1.6
comp=Z,87nm,0.8s,comp=Z,5μm
GUMO Guam 23.05 105 P P 13 17 35.1 -0.7
comp=Z,213nm,0.9s,baz=3.0,slow=20,SNR=4.7
GUMO Guam 23.05 105 P P 13 17 35.1 -0.7
GUMO LR LR
comp=Z,683nm,19.0s
JYA Atsumi 23.07 37 P P 13 17 36.4 +0.7
MTKI Muara Teweh, K 23.08 198 P P 13 17 37.4 +1.3
comp=Z,1μm,1.0s
KHLT Khaolaem Dam 23.17 258 P P 13 17 38.4 +1.5
comp=Z,10nm,1.1s,comp=Z,526nm
STKI Sintang 23.40 207 P P 13 17 40.5 +1.6
comp=Z,48nm,0.9s,comp=Z,20μm
SANI Sanana 23.43 170 P P 13 17 37.8 -1.4
comp=Z,631nm,0.9s,comp=Z,5μm
SWI Sorong 23.71 156 P P 13 17 41.5 -0.2
comp=Z,348nm,0.8s,comp=Z,3μm
MDJ Mudanjiang 24.18 13 P P 13 17 47.0 +1.2
MDJ pP pP 13 18 20.3 -2.8
MDJ sP PP 13 18 42.0 -2.8
MDJ pmax pmax
comp=Z,220nm,0.8s
MDJ pmax pmax
comp=Z,410nm,5.2s
MDJ LR LR
comp=Z,420nm,18.8s
MDJ LR LR
comp=Z,1μm,21.5s
MDJ LR LR
comp=Z,900nm,20.2s
MDJ Mudanjiang 24.18 13 eP P 13 17 46.1 +0.3
comp=Z,251nm,0.8s

MDJ *e*PcP **PcP** **13 21 19.8 -1.2**
MDJ LR LR
comp=Z,675nm,19.0s
TTSI Tana Toraja 24.19 185 P **P** **13 17 46.2 +0.1**
comp=Z,318nm,0.8s,comp=Z,2µm
USRK Ussuriysk Ar. 24.38 18 P **P** **13 17 48.5 +0.9**
comp=Z,65nm,0.8s,baz=205,slow=8.2,SNR=84
USRK PcP **PcP** **13 21 21.4 0.0**
comp=Z,6.1nm,0.7s,baz=219,slow=2.7,SNR=6.9
USRK ScP **ScP** **13 24 39.8 -1.9**
comp=Z,3.1nm,0.9s,baz=259,slow=1.9,SNR=4.5
NLAI Namlea 24.79 168 P **P** **13 17 52.1 +0.6**
comp=Z,2µm,0.9s,comp=Z,17µm
SPSI Sidrap Palu 25.10 185 P **P** **13 17 56.7 +2.3**
MSAI Masohi 25.31 164 P **P** **13 17 57.7 +1.4**
comp=Z,77nm,1.0s,comp=Z,601nm
TRTT Trang 25.33 242 P **P** **13 17 58.2 +1.7**
comp=Z,17nm,1.0s,comp=Z,670nm
JTM Tenmabayashi 25.35 35 P **P** **13 17 57.5 +1.1**
SURT Suratani 25.48 245 P **P** **13 17 59.1 +1.3**
comp=Z,18nm,0.8s,comp=Z,240nm
BBKI Banjar Baru 25.50 197 P **P** **13 17 56.4 -1.6**
comp=Z,389nm,1.0s,comp=Z,5µm
JOT Ohata 25.76 34 P **P** **13 18 02.3 +2.2**
FAKI Fak Fak 25.97 156 P **P** **13 18 01.2 -1.1**
comp=Z,468nm,0.8s,comp=Z,3µm
FAKI Fak Fak 25.97 156 *e*P **P** **13 18 00.2 -2.0**
comp=Z,336nm,0.7s
FAKI *e*PcP **PcP** **13 21 25.4 -0.1**
KULM Kulim 26.08 236 PFAKE 13 18 10.0 +6.8
KULM LR LR
comp=Z,314nm,21.0s
KAPI Kappang 26.14 185 P **P** **13 18 03.9 +0.1**
comp=Z,50nm,0.9s,baz=24,slow=8.9,SNR=8.8
KAPI ScP **ScP** **13 24 46.6 -0.6**
comp=Z,19nm,0.7s,baz=124,slow=0.4,SNR=14
KAPI Kappang 26.14 185 P **P** **13 18 03.9 +0.1**
KAPI ScP **ScP** **13 24 46.6 -0.6**
KAPI LR LR
comp=Z,358nm,19.0s
JSH Shimam 26.18 31 P **P** **13 18 04.9 +1.1**
MYKOM Kota Tinggi 26.19 225 *e*P **P** **13 18 05.5 +1.2**
comp=Z,17nm,0.7s
GTA Gaotai 26.29 319 ⇓P **P** **13 18 06.0 +1.0**
GTA pP pP 13 18 42.0 -2.4
GTA sP sP 13 19 02.3 -4.8
GTA PcP **PcP** **13 21 26.5 +0.5**
GTA S **S** **13 22 24.5 +1.3**
GTA sS sS 13 23 28.3 -5.4
GTA SS **SnSn** **13 23 50.3 +1.8**
GTA ScP **ScP** **13 24 47.3 -0.1**
GTA PcS **PcS** **13 25 06.5 -0.8**
GTA ScS **ScS** **13 28 35.8 -2.1**
GTA pmax pmax
comp=Z,96nm,1.2s
GTA pmax pmax
comp=Z,510nm,5.0s
GTA LR LR
comp=Z,410nm,11.4s
GTA LR LR
comp=Z,410nm,10.9s
GTA LR LR
comp=Z,730nm,9.5s
IPM Ipoh 26.31 234 *e*P **P** **13 18 04.5 -0.8**
comp=Z,32nm,0.8s
KGM Kluang 26.38 226 ⇓P **P** **13 18 08.0 +2.1**
PKDT Phuket 26.42 243 P **P** **13 18 08.3 +2.0**
comp=Z,37nm,1.1s
JEW Eniwo 27.02 33 P **P** **13 18 12.4 +1.1**
ERM Erimo 27.33 36 *e*P **P** **13 18 15.5 +1.4**
ERM pmax pmax
comp=Z,112nm,1.0s
PPBI Pangkal Pinang 27.95 216 P **P** **13 18 21.2 +1.4**
comp=Z,266nm,1.0s,comp=Z,13µm
SHL Shillong 27.98 285 *e*P **P** **13 18 20.0 -0.3**
HIA Hailar 28.07 357 *e*P **P** **13 18 18.1 -2.5**
HIA *e* 13 21 30.0
HIA pmax pmax
comp=Z,87nm,0.9s
HIA MLR MLR
comp=Z,460nm,21.0s
HIA Hailar 28.07 357 *e*P **P** **13 18 18.1 -2.5**
comp=Z,87nm,0.9s
HIA *e*PcP **PcP** **13 21 30.0 0.0**
HIA LR LR
comp=Z,460nm,21.0s
ASAJ Asahikawa 28.52 32 P **P** **13 18 25.1 +0.5**
comp=Z,45nm,0.5s,baz=239,slow=11,SNR=26
ASAJ LR LR 13 30 22.9
comp=Z,247nm,20.6s,baz=146,slow=37
ASAJ Asahikawa 28.52 32 P **P** **13 18 25.5 +0.9**
JMP Maruseppu 28.82 33 P **P** **13 18 28.9 +1.5**
PSI Prapat 28.99 234 PcP **PcP** **13 21 33.4 +0.4**
comp=Z,28nm,0.9s,baz=324,slow=1.7,SNR=13
PSI ScP **ScP** **13 24 55.0 -1.0**
comp=Z,47nm,1.0s,baz=254,slow=1.8,SNR=20
KLR Kul'dur 29.03 13 P **P** **13 18 30.0 +1.0**
comp=Z,124nm,0.8s,baz=214,slow=7.6,SNR=271
KLR PcP **PcP** **13 21 32.8 +0.5**
comp=Z,17nm,0.6s,baz=204,slow=3.5,SNR=13
KLR ScP **ScP** **13 24 54.0 -1.5**
comp=Z,9.3nm,0.9s,baz=301,slow=4.1,SNR=8.9
LSA Lhasa 29.07 293 P **P** **13 18 32.5 +2.2**
LSA Lhasa 29.07 293 *e*P **P** **13 18 30.1 -0.2**
LSA pmax pmax
comp=Z,154nm,1.5s
LSA MLR MLR
comp=Z,436nm,21.0s
LSA Lhasa 29.07 293 *e*P **P** **13 18 30.1 -0.2**
comp=Z,154nm,1.5s
LSA LR LR
comp=Z,436nm,21.0s
HABR Khabarovsk 29.15 18 *d e*P **P** **13 18 28.7 -1.4**
HABR *e**PP **pP** **13 19 09.5 -0.4**
HABR *e**SP **sP** **13 19 32.9 +0.4**
HABR *e* 13 21 30.6
HABR *e*S **S** **13 23 06.9 -0.7**
HABR *e**SS **sS** **13 24 20.1 +1.6**
HABR *e* 13 24 53.0
HABR *e* 13 28 47.4
HABR pmax pmax
comp=N,37nm,1.1s
HABR pmax pmax
comp=E,30nm,1.1s
HABR pmax pmax
comp=Z,84nm,1.1s
HABR MLR MLR
comp=Z,66nm,10.0s
ULN Ulaanbaatar 29.22 339 *d* iP **P** **13 18 31.4 +0.5**
ULN pmax pmax
comp=Z,109nm,0.9s
ULN Ulaanbaatar 29.22 339 *e*P **P** **13 18 31.4 +0.5**
comp=Z,130nm,0.9s
ULN *e*PcP **PcP** **13 21 33.2 +0.2**
ULN LR LR
comp=Z,427nm,22.0s
ULN Ulaanbaatar 29.22 339 P **P** **13 18 31.6 +0.7**
SNR=97
ULN Ulaanbaatar 29.22 339 P **P** **13 18 31.6 +0.7**
SNR=97
SONM Songino Array 29.41 338 P **P** **13 18 33.3 +0.7**
comp=Z,85nm,0.7s,baz=156,slow=9.4,SNR=34
SONA1 Songino Array 29.42 338 *e*P **P** **13 18 32.9 +0.1**
GENI Genyem 29.57 141 P **P** **13 18 34.9 +0.7**
comp=Z,97nm,0.8s,comp=Z,1µm
MMRI Maumere 29.65 180 P **P** **13 18 35.2 +0.3**
comp=Z,380nm,0.9s
MMRI Maumere 29.65 180 *e*P **P** **13 18 33.9 -0.9**
comp=Z,256nm,0.9s
JAY Jayapura 29.83 140 P **P** **13 18 35.6 -0.9**
comp=Z,1.4nm,0.8s,baz=269,slow=23,SNR=5.9
JAY ScP **ScP** **13 24 58.2 -0.5**
comp=Z,2.4nm,0.9s,baz=96,slow=23,SNR=8.6
JAY Jayapura 29.83 140 P P 13 18 43.4 +6.9
comp=Z,20nm,1.0s
MNSI Mandailing Nat 29.85 230 P **P** **13 18 38.8 +2.1**
comp=Z,46nm,0.9s
SRBI Singaraja 29.86 194 P **P** **13 18 40.5 +3.8**
comp=Z,86nm,0.7s
PLAI Plampang 30.13 188 P **P** **13 18 39.5 +0.4**
comp=Z,126nm,0.9s,comp=Z,1µm
YUK Yuzh-Kuril'sk 30.16 35 *e*P **P** **13 18 39.3 +0.2**
TWSI Taliwang, Sumb 30.18 190 P **P** **13 18 40.1 +0.6**
comp=Z,55nm,1.1s,comp=Z,919nm
NGJI Ngawi 30.22 201 P **P** **13 18 42.5 +2.6**
comp=Z,104nm,1.0s

DNP Denpasar 30.43 193 P **P** **13 18 43.1 +1.3**
comp=Z,918nm,0.9s
YSS Yuzh-Sakhalins 30.71 28 ⇓*i*P **P** **13 18 45.2 +1.3**
YSS *e*S **S** **13 23 31.5 -0.6**
YSS pmax pmax
comp=Z,1µm,2.0s
YSS pmax pmax
comp=Z,300nm,1.1s
YSS Yuzh-Sakhalins 30.71 28 *e*P **P** **13 18 44.6 +0.7**
comp=Z,464nm,1.1s
PWJI Pagerwojo 30.73 200 P **P** **13 18 44.9 +0.6**
comp=Z,82nm,0.9s
SOEI Soe 30.84 176 *e*P **P** **13 18 43.5 -1.9**
comp=Z,137nm,0.9s
SOEI Soe 30.84 176 P **P** **13 18 44.0 -1.5**
comp=Z,144nm,1.0s
WOJI Wonogiri, Jawa 30.85 202 P **P** **13 18 46.5 +1.1**
comp=Z,202nm,1.1s
KLI Kotabumi 30.89 215 P **P** **13 18 47.7 +1.8**
comp=Z,75nm,1.0s
MDSI Maura Dua 30.95 216 P **P** **13 18 47.5 +1.2**
comp=Z,35nm,0.8s
UGM Wanagama 31.06 203 P P 13 18 52.2 +4.9
comp=Z,269nm,1.5s
BATI Baumata 31.25 177 P **P** **13 18 47.4 -1.6**
comp=Z,54nm,0.7s,baz=308,slow=19
BATI Baumata 31.25 177 P **P** **13 18 48.6 -0.4**
comp=Z,43nm,0.9s
LWLI Liwa 31.46 216 P **P** **13 18 52.5 +1.6**
comp=Z,98nm,0.7s
CIT Chita 31.46 350 *e*P **P** **13 18 49.9 -0.6**
CIT *e* 13 19 33.4
CIT *e* 13 21 38.7
CIT pmax pmax
comp=Z,463nm,1.5s
CISI Cisompet, Garu 31.80 208 P **P** **13 18 55.1 +1.2**
comp=Z,141nm,0.9s
KUR Kuril'sk 32.02 36 *i* P **P** **13 18 56.6 +1.2**
ZAK Zakamensk 32.66 338 *e*P **P** **13 19 00.4 -0.7**
ZAK pmax pmax
comp=Z,43nm,1.0s
GUN Gumba 33.47 289 *e*P **P** **13 19 09.9 +1.3**
comp=Z,91nm,0.5s
TLY Talaya 33.63 339 P **P** **13 19 10.0 +0.7**
comp=Z,60nm,0.7s,baz=163,slow=5.1,SNR=106
TLY ScP **ScP** **13 25 09.8 -1.1**
comp=Z,2.2nm,0.7s,baz=171,slow=8.9,SNR=3.6
TLY Talaya 33.63 339 *e*P **P** **13 19 10.1 +0.7**
TLY *e* 13 21 45.9
TLY pmax pmax
comp=Z,79nm,0.8s
TLY MLR MLR
comp=Z,286nm,21.0s
TLY Talaya 33.63 339 *e*P **P** **13 19 10.1 +0.7**
comp=Z,79nm,0.8s
TLY *e*PcP **PcP** **13 21 45.9 +1.1**
TLY *e*ScP **ScP** **13 25 10.0 -0.9**
TLY LR LR
comp=Z,286nm,21.0s
TYV Tymovskoe 33.74 24 *e*P **P** **13 19 12.0 +1.7**
TYV pmax pmax
comp=Z,53nm,1.0s
PKIN Phulchoki 33.88 288 *e*P **P** **13 19 13.5 +1.4**
comp=Z,14nm,0.4s
MANU Manus Island 33.89 130 *e*P **P** **13 19 12.8 +0.9**
comp=Z,130nm,0.8s
IRK Irkutsk 33.91 340 *e*P **P** **13 19 11.6 -0.1**
IRK pmax pmax
comp=Z,301nm,1.1s
KKN Kakani 33.99 289 *e*P **P** **13 19 13.8 +0.8**
comp=Z,105nm,1.0s
DMN Daman 34.13 288 *e*P **P** **13 19 15.3 +1.0**
comp=Z,34nm,0.4s
MOY Mondy 34.55 337 *e*P **P** **13 19 17.9 +0.6**
MOY pmax pmax
comp=Z,147nm,2.7s
GKN Gorkha 34.57 289 *e*P **P** **13 19 18.5 +0.6**
comp=Z,62nm,0.4s
NKL Nikolayevsk 34.97 20 *e*P **P** **13 19 21.0 +0.3**
NKL *e* 13 20 45.0
NKL pmax pmax
comp=N,55nm,1.1s
NKL pmax pmax
comp=Z,160nm,1.1s
NKL pmax pmax
comp=Z,500nm,2.0s
NKL MLR MLR
comp=N,300nm,14.0s
NKL MLR MLR
comp=Z,500nm,14.0s
MTN Manton Dam 34.99 164 *e*P **P** **13 19 18.8 -2.5**
comp=Z,79nm,0.6s
KOLN Koldanda 35.48 288 *e*P **P** **13 19 26.5 +0.8**
comp=Z,82nm,0.8s
CLNS Chul'man 35.66 3 *e*P **P** **13 19 25.6 -1.0**
CLNS pmax pmax
comp=Z,114nm,1.0s
CLNS pmax pmax
comp=N,88nm,1.1s
CLNS pmax pmax
comp=E,45nm,1.0s
CHLP Challavanipeta 35.76 272 *e*P **P** **13 19 29.0 +1.0**
CHLP IAmb IAmb 13 19 30.8
comp=Z,74nm,1.1s
PYUN Piuthan 36.03 289 *e*P **P** **13 19 31.6 +1.2**
comp=Z,41nm,0.4s
WMQ Urumqi 36.31 316 P **P** **13 19 34.3 +1.8**
WMQ pP pP 13 20 10.5 -2.7
WMQ sP sP 13 20 33.3 -2.2
WMQ PcP **PcP** **13 21 53.5 +0.7**
WMQ S **S** **13 25 00.3 +1.6**
WMQ ScP **ScP** **13 25 20.0 -0.9**
WMQ SS **SS** **13 27 40.0 -5.9**
WMQ pmax pmax
comp=Z,44nm,0.8s
WMQ pmax pmax
comp=Z,220nm,3.6s
WMQ LR LR
comp=Z,89nm,18.0s
WMQ LR LR
comp=Z,66nm,16.2s
WMQ LR LR
comp=Z,73nm,14.4s
BOD Bodaibo 37.05 353 *e*P **P** **13 19 37.9 -0.4**
BOD pmax pmax
comp=Z,66nm,1.5s
PVM Polavaram 38.28 271 *e*P **P** **13 19 50.0 +0.8**
PVM IAmb IAmb 13 19 51.5
comp=Z,48nm,1.3s
PMG Port Moresby 39.17 138 P **P** **13 19 55.7 -0.9**
comp=Z,97nm,0.9s,baz=352,slow=7.2,SNR=23
PMG ScP **ScP** **13 25 31.2 -0.8**
comp=Z,23nm,0.9s,baz=282,slow=5.1,SNR=4.4
PMG Port Moresby 39.17 138 *c i*P **P** **13 19 56.5 -0.1**
PMG pmax pmax
comp=Z,504nm,1.0s
PMG Port Moresby 39.17 138 *e*P **P** **13 19 56.2 -0.4**
comp=Z,130nm,0.9s
PMG ScP **ScP** **13 25 31.2 -0.8**
PMG LR LR
comp=Z,494nm,20.0s
FITZ Fitzroy Crossi 39.22 175 *e*P **P** **13 19 55.3 -1.5**
comp=Z,144nm,1.1s
FITZ *e*ScP **ScP** **13 25 31.3 -0.7**
ZSN Zaisan 40.04 320 ⇓*i*P **P** **13 20 02.3 -1.1**
comp=Z,1µm,1.1s
ZSN *e*S **S** **13 25 53.0 -1.4**
RPR Rampur 40.13 274 *e*P **P** **13 20 05.2 +0.6**
RPR IAmb IAmb 13 20 06.6
comp=Z,130nm,1.4s
ADKI Addanki 40.15 270 *e*P **P** **13 20 06.1 +1.4**
ADKI IAmb IAmb 13 20 06.9
comp=Z,20nm,0.8s
NJS Nagarjunasagar 40.60 271 *e*P **P** **13 20 08.7 +0.3**
NJS IAmb IAmb 13 20 10.5
comp=Z,48nm,1.2s
SKHT Srikalahasti 40.95 267 *e*P **P** **13 20 12.3 +1.1**
SKHT IAmb IAmb 13 20 13.7
comp=Z,38nm,0.8s
KRAR Krasnoyarsk 40.97 335 *e*P **P** **13 20 11.8 +1.0**
KRAR pmax pmax
comp=Z,226nm,1.3s
SRSP Sriramsagar 41.00 275 *e*P **P** **13 20 12.1 +0.4**
SRSP IAmb IAmb 13 20 13.1
comp=Z,29nm,0.9s
MK01 Makanchi Array 41.03 318 *e*P **P** **13 20 12.5 +0.9**

MK31 Makanchi Array 41.04 318 *i* P **P** **13 20 12.8 +1.1**
MK31 pmax pmax
comp=Z,267nm,0.7s
MK31 Makanchi Array 41.04 318 *e*P **P** **13 20 13.3 +1.6**
MKAR Makanchi Array 41.04 318 P **P** **13 20 13.2 +1.5**
comp=Z,344nm,0.8s,baz=111,slow=9.7,SNR=1271
MKAR PcP **PcP** **13 22 07.7 0.0**
comp=Z,33nm,1.0s,baz=90,slow=6.1,SNR=3.9
MKAR ScP **ScP** **13 25 38.1 -0.8**
comp=Z,8.5nm,0.8s,baz=117,slow=4.3,SNR=11
MKAR S **S** **13 26 10.2 +0.8**
comp=Z,10nm,1.0s,baz=105,slow=18,SNR=7.9
SRLM Srisailam 41.09 270 *e*P **P** **13 20 12.6 +0.1**
SRLM IAmb IAmb 13 20 13.9
comp=Z,29nm,1.2s
HYB Hyderabad 41.11 272 *i* P **P** **13 20 14.0 +1.4**
HYBB Hyderabad (bro 41.11 272 *e*P **P** **13 20 13.4 +0.8**
HYBB IAmb IAmb 13 20 14.7
comp=Z,29nm,1.2s
YAK Yakutsk 41.15 5 P **P** **13 20 11.7 -0.4**
comp=Z,238nm,0.7s,baz=355,slow=1.5,SNR=124
YAK PcP **PcP** **13 22 07.4 -0.2**
comp=Z,52nm,0.7s,baz=237,slow=2.6,SNR=4.9
YAK LR LR 13 39 04.0
YAK Yakutsk 41.15 5 *d i*P **P** **13 20 11.5 -0.7**
YAK *e**PP **pP** **13 20 56.2 +2.4**
YAK *e* 13 21 53.4
YAK *e* 13 22 06.7
YAK *e*PPP PPP 13 22 26.6
YAK *e*S **S** **13 26 03.5 -6.8**
YAK *e**SS **sS** **13 27 17.6 -5.9**
YAK *e*SS **SS** **13 29 16.1 -5.0**
YAK *e* 13 29 48.6
YAK pmax pmax
comp=E,33nm,1.0s
YAK pmax pmax
comp=Z,395nm,1.0s
YAK pmax pmax
comp=N,122nm,1.0s
YAK pmax pmax
comp=E,105nm,2.4s
YAK pmax pmax
comp=Z,95nm,1.9s
YAK pmax pmax
comp=N,102nm,2.0s
YAK smax smax
comp=N,156nm,4.4s
YAK smax smax
comp=E,50nm,2.7s
YAK Yakutsk 41.15 5 *e*P **P** **13 20 11.7 -0.4**
comp=E,369nm,0.9s
YAK *e*PcP **PcP** **13 22 07.4 -0.2**
RCLA Racherla 41.19 269 *e*P **P** **13 20 13.2 -0.1**
RCLA IAmb IAmb 13 20 14.7
comp=Z,15nm,0.9s
MAKZ Makanchi 41.25 318 P **P** **13 20 14.6 +1.3**
MAKZ pmax pmax
comp=Z,338nm,0.9s
MAKZ Makanchi 41.25 318 *e*P **P** **13 20 14.9 +1.5**
comp=Z,309nm,0.8s
SHLS Shalkode 41.30 312 ⇓*i*P **P** **13 20 15.8 +1.8**
comp=Z,2µm,1.1s
SHLS *i* PP **PP** **13 21 55.9 +2.3**
SHLS *i* S **S** **13 26 16.8 +3.2**
PDGK Podgornoye 41.63 312 P **P** **13 20 18.2 +1.8**
PDGK pmax pmax
comp=Z,263nm,0.9s
UZB Uzynbulak 41.89 312 ⇓*i*P **P** **13 20 20.5 +1.7**
comp=Z,3µm,1.0s
UZB *e*S **S** **13 26 25.4 +3.2**
PEA0 Petropavlovsk- 41.94 32 *e*P **P** **13 20 17.9 -0.9**
PEA0B Petropavlovsk- 41.94 32 *e*P **P** **13 20 18.8 0.0**
comp=Z,193nm,1.2s
PETK Petropavlovsk- 41.94 32 P **P** **13 20 18.6 -0.2**
comp=Z,59nm,0.7s,baz=210,slow=1.9,SNR=29
PETK LR LR 13 39 19.3
comp=Z,126nm,21.0s,baz=227,slow=38
PETK Petropavlovsk- 41.94 32 P **P** **13 20 18.6 -0.2**
PETK pmax pmax
comp=Z,57nm,0.8s
PETK MLR MLR
comp=Z,126nm,21.0s
H11N1 WAKE ISLAND Hy 41.95 84 T T 14 06 06.2
baz=277,slow=75,SNR=81
H11N2 WAKE ISLAND Hy 41.96 84 T T 14 06 06.2
baz=277,slow=75,SNR=86
H11N3 WAKE ISLAND Hy 41.97 84 T T 14 06 06.2
baz=277,slow=75,SNR=78
H11S3 WAKE ISLAND Hy 41.99 86 T T 14 05 57.5
baz=281,slow=75,SNR=118
H11S1 WAKE ISLAND Hy 42.00 86 T T 14 06 14.9
baz=281,slow=75,SNR=78
H11S2 WAKE ISLAND Hy 42.01 86 T T 14 05 56.2
baz=281,slow=75,SNR=69
MBWA Marble Bar 42.16 183 *e*PcP **PcP** **13 22 11.4 -0.1**
MBWA *e*ScP **ScP** **13 25 42.6 -1.0**
SATY Saty 42.30 311 ⇓*i*P **P** **13 20 23.9 +1.9**
comp=Z,4µm,1.0s
SATY *i* pP **pP** **13 21 07.3 +3.5**
SATY *e*S **S** **13 26 31.3 +3.2**
PET Petropavlovsk 42.37 32 *d i*P **P** **13 20 23.0 +0.8**
PET *e* 13 22 11.5
PET *e*S **S** **13 26 33.2 +4.8**
PET *e**SS **sS** **13 27 41.9 0.0**
PET pmax pmax
comp=Z,227nm,1.1s
PET pmax pmax
comp=Z,100nm,11.0s
PET MLR MLR
comp=Z,100nm,19.0s
PET Petropavlovsk 42.37 32 *e*P **P** **13 20 20.7 -1.5**
comp=Z,238nm,1.1s
THN Thein Dam 42.53 295 *e*P **P** **13 20 22.0 -1.9**
THN *e*S **S** **13 26 32.6 +1.1**
WRAB Tennant Creek 42.62 163 *c i*P **P** **13 20 23.3 -1.3**
WRAB pmax pmax
comp=Z,202nm,0.9s
WRAB Tennant Creek 42.62 163 *e*P **P** **13 20 23.4 -1.3**
comp=Z,96nm,0.8s
WRA Warramunga Arr 42.62 163 P **P** **13 20 23.4 -1.4**
comp=Z,73nm,0.7s,baz=345,slow=8.9,SNR=11
WRA ScP **ScP** **13 25 44.9 -0.6**
comp=Z,28nm,0.8s,baz=345,slow=4.3,SNR=33
WRA S **S** **13 26 26.5 -6.5**
comp=Z,8.3nm,0.9s,baz=340,slow=14,SNR=15
WRA Warramunga Arr 42.62 163 *i* P **P** **13 20 23.3 -1.4**
WRA pmax pmax
comp=Z,77nm,0.7s
WB2 Warramunga Arr 42.63 163 *e*P **P** **13 20 23.4 -1.3**
comp=Z,107nm,0.8s
KLRI Killari 42.80 274 *e*P **P** **13 20 26.5 +0.2**
KLRI IAmb IAmb 13 20 28.0
comp=Z,171nm,1.4s
URV Uravakonda 42.90 269 *e*P **P** **13 20 27.6 +0.5**
URV IAmb IAmb 13 20 28.6
comp=Z,18nm,0.7s
ZALV Zalesovo Beam 43.18 329 P **P** **13 20 29.1 +0.3**
comp=Z,67nm,0.6s,baz=114,slow=7.0,SNR=350
ZALV PcP **PcP** **13 22 14.4 -0.1**
comp=Z,15nm,0.6s,baz=121,slow=7.1,SNR=4.6
ZALV ScP **ScP** **13 25 46.0 -1.2**
comp=Z,3.7nm,0.7s,baz=148,slow=3.3,SNR=4.7
ZALV S **S** **13 26 39.6 -0.7**
comp=Z,1.2nm,0.6s,baz=288,slow=38,SNR=3.5
KSH Kashi 43.22 306 ⇓*i*P **P** **13 20 34.0 +4.5**
KSH *e*pP pP 13 21 12.3 +0.8
KSH *e*sP sP 13 21 32.5 -1.0
KSH *e*PP **PcP** **13 22 21.3 +6.1**
KSH S **S** **13 26 50.0 +8.3**
KSH ScS **ScS** **13 30 12.8 +4.0**
KSH pmax pmax
comp=Z,130nm,1.0s
KSH LR LR
comp=Z,140nm,6.2s
KSH LR LR
comp=Z,200nm,8.1s
KSH LR LR
comp=Z,230nm,11.8s
AAA Alma-Ata 43.38 311 *i* P **P** **13 20 32.7 +2.1**
AAA *i* S **S** **13 26 45.6 +1.8**
AAA pmax pmax
comp=Z,200nm,0.7s
AAA smax smax
comp=E,600nm,8.2s
AAA MLR MLR

comp=Z,500nm,8.0s
AAA Alma-Ata 43.38 311 *i* P **P 13 20 32.7 +2.1**
comp=Z,1µm,1.1s
MA2 Magadan 43.46 21 P **P 13 20 30.7 -0.2**
comp=Z,57nm,0.9s,baz=229,slow=9.1,SNR=19
MA2 PcP **PP 13 22 16.0 -0.1**
comp=Z,18nm,0.8s,baz=156,slow=4.9,SNR=4.5
KUU Kurty 43.98 312⇓ *i* P **P 13 20 37.1 +1.7**
comp=Z,2µm,0.8s
KUU *i* pP **pP 13 21 19.9 +2.5**
KUU *e*S **S 13 26 54.9 +2.6**
TKM2 Tokmak 2 44.25 310 P **P 13 20 39.5 +1.8**
TKM2 pmax pmax
comp=Z,145nm,0.9s
TKM2 Tokmak 2 44.25 310 *e*P **P 13 20 39.6 +1.9**
comp=Z,147nm,0.8s
TKM2 *e*PcP **PcP 13 22 17.3 -1.4**
TKM2 LR LR
comp=Z,315nm,20.0s
NVS Novosibirsk 44.45 329⇑ *i* P **P 13 20 39.6 +0.8**
NVS *i* 13 22 18.4
NVS *i* 13 22 27.9
NVS *i* S **S 13 26 58.7 +0.1**
NVS *e*SSS SSS 13 30 09.3
NVS pmax pmax
comp=N,67nm,1.5s
NVS pmax pmax
comp=E,88nm,1.5s
NVS pmax pmax
comp=Z,126nm,1.5s
NVS pmax pmax
comp=Z,38nm,1.1s
NVS pmax pmax
comp=N,25nm,1.5s
NVS pmax pmax
comp=E,29nm,1.5s
NVS smax smax
comp=N,14nm,1.4s
NVS smax smax
comp=E,29nm,1.4s
KURK Kurchatov 44.89 322 P **P 13 20 43.3 +0.9**
KURK 13 22 20.3
KURK 13 22 31.9
KURK S **S 13 27 05.6 +0.4**
KURK pmax pmax
comp=Z,199nm,0.8s
KURK pmax pmax
comp=Z,19nm,0.7s
KURK pmax pmax
comp=Z,39nm,1.0s
KURK pmax pmax
comp=N,6.0nm,1.0s
KURK smax smax
comp=N,1.0nm,0.4s
KURK Kurchatov 44.89 322 *e*P **P 13 20 42.5 +0.1**
comp=N,204nm,0.8s
KURK *e*PcP **PcP 13 22 20.2 -0.2**
KURK PP **PP 13 22 31.9 +0.5**
KURK ScP **ScP 13 25 53.3 -1.0**
KURK S **S 13 27 05.5 +0.4**
KURK LR LR
comp=Z,476nm,22.0s
KURBB Kurchatov Arra 44.91 322 P **P 13 20 43.3 +0.8**
comp=Z,198nm,0.8s,baz=117,slow=7.7,SNR=551
KURBB PcP **PcP 13 22 20.3 -0.2**
comp=Z,19nm,0.7s,baz=119,slow=3.3,SNR=7.2
KURBB PP **PP 13 22 31.9 +0.4**
comp=Z,39nm,1.0s,baz=115,slow=10,SNR=8.6
KURBB ScP **ScP 13 25 53.3 -1.1**
comp=Z,5.7nm,1.0s,baz=103,slow=3.9,SNR=7.6
KURBB S **S 13 27 05.5 +0.2**
comp=Z,0.8nm,0.4s,baz=119,slow=13,SNR=4.3
FRU Bishkek 44.92 310⇓ *i* P **P 13 20 43.0 +0.1**
FRU *e* 13 27 06.0
FRU pmax pmax
comp=Z,190nm,1.8s
AAK Ala-Archa 44.97 310 P **P 13 20 44.8 +1.5**
comp=Z,48nm,0.8s,baz=107,slow=5.5,SNR=156
AAK ScP **ScP 13 25 54.1 -1.0**
comp=Z,6.2nm,0.7s,baz=102,slow=5.9,SNR=5.4
AAK Ala-Archa 44.97 310 *e*P **P 13 20 45.2 +1.8**
AAK pmax pmax
comp=Z,57nm,0.8s
AAK MLR MLR
comp=Z,361nm,20.0s
AAK Ala-Archa 44.97 310 *e*P **P 13 20 45.1 +1.8**
comp=Z,57nm,0.8s
AAK ScP **ScP 13 25 54.1 -1.0**
AAK LR LR
comp=Z,361nm,20.0s
SFK Sufi-Kurgan 45.18 306 P **P 13 20 47.0 +1.8**
SFK pmax pmax
comp=Z,207nm,1.1s
EKS2 Erkin-Say 45.49 309 *e*P **P 13 20 49.3 +1.9**
EKS2 pmax pmax
comp=Z,55nm,0.8s
EKS2 MLR MLR
comp=Z,318nm,21.0s
EKS2 Erkin-Say 45.49 309 *e*P **P 13 20 49.3 +1.9**
comp=Z,55nm,0.8s
EKS2 LR LR
comp=Z,318nm,21.0s
ASAR Alice Springs 46.07 165 P **P 13 20 51.3 -0.7**
comp=Z,35nm,0.8s,baz=344,slow=6.7,SNR=184
ASAR ScP **ScP 13 25 59.2 -0.4**
comp=Z,14nm,0.8s,baz=352,slow=4.6,SNR=17
ASAR S **S 13 27 19.0 -3.6**
comp=Z,6.0nm,0.9s,baz=350,slow=15,SNR=11
ASAR ScS **ScS 13 30 23.3 -3.7**
comp=Z,1.8nm,0.8s,baz=337,slow=7.1,SNR=7.1
AS01 Alice Springs 46.08 165 *e*P **P 13 20 50.5 -1.5**
MNAS Manas 46.37 309 P **P 13 20 56.4 +2.0**
MNAS pmax pmax
comp=Z,162nm,1.0s
SEY Seymchan 46.53 19 P **P 13 20 55.4 +0.4**
comp=Z,32nm,0.8s,baz=230,slow=6.0,SNR=67
SEY PcP **PcP 13 22 26.4 +0.5**
comp=Z,17nm,0.8s,baz=324,slow=1.7,SNR=4.9
SEY Seymchan 46.53 19 *i* P **P 13 20 54.6 -0.4**
CTA Charters Tower 47.38 148 P **P 13 21 01.9 -0.3**
comp=Z,63nm,0.8s,baz=330,slow=10.0,SNR=36
OTUK Ortayu 47.87 317 P **P 13 21 07.0 +1.4**
OTUK pmax pmax
comp=Z,170nm,0.9s
KK31 Karatay Array 47.93 309 P **P 13 21 07.3 +1.1**
KK31 pmax pmax
comp=Z,47nm,0.8s
KKAR Karatay Array 47.93 309 *e*P **P 13 21 07.5 +1.3**
KKAR Karatay Array 47.93 309 *e*P **P 13 21 07.5 +1.3**
HNR Honiara 48.10 125 PFAKE 13 21 20.0 +12
HNR LR LR
comp=Z,609nm,21.0s
IUG Iuzhnay 48.12 308⇓ *i* P **P 13 21 09.6 +1.8**
comp=Z,2µm,1.1s
IUG *i* pP **pP 13 21 53.3 +2.7**
IUG *e*S **S 13 27 55.2 +3.6**
BRZS Berezniki 48.17 319⇓ *i* P **P 13 21 09.2 +1.2**
comp=Z,217nm,1.0s
BRZS *i* S **S 13 27 54.7 +2.8**
KBL Kabul 48.19 298 *e*P **P 13 21 10.0 +1.4**
KBL pmax pmax
comp=Z,257nm,0.9s
KBL Kabul 48.19 298 *e*P **P 13 21 10.0 +1.4**
comp=Z,257nm,0.9s
DZET Dzherino 48.62 304 P **P 13 21 12.8 +1.1**
DZET pmax pmax
comp=Z,216nm,0.8s
BVA0 Borovoye Array 50.48 322 *i* P **P 13 21 26.0 +0.6**
BVA0 pmax pmax
comp=Z,93nm,0.9s
BVAR Borovoye Array 50.48 322 P **P 13 21 26.3 +0.9**
comp=Z,55nm,0.7s,baz=112,slow=11,SNR=331
BVAR PcP **PcP 13 22 40.5 0.0**
comp=Z,48nm,0.7s,baz=108,slow=4.8,SNR=15
BVAR ScP **ScP 13 26 16.8 -1.2**
comp=Z,17nm,0.9s,baz=113,slow=3.9,SNR=13
BVAR Borovoye Array 50.48 322 P **P 13 21 26.3 +0.9**
BVAR 13 22 40.5
BVAR pmax pmax
comp=Z,56nm,0.7s
BVAR pmax pmax
comp=Z,48nm,0.7s
BVAR pmax pmax
comp=N,17nm,0.9s
BRVK Borovoye 50.56 322 *d* iP **P 13 21 26.8 +0.9**
BRVK pmax pmax
comp=Z,203nm,1.0s
BRVK Borovoye 50.56 322 *e*PcP **PcP 13 22 40.0 -0.8**
BRVK LR LR
comp=Z,239nm,21.0s
CHKZ Chkalovo 50.57 323 P **P 13 21 26.6 +0.7**
CHKZ pmax pmax
comp=Z,176nm,0.8s
TIXI Tiksi 50.62 3 P **P 13 21 25.5 -0.6**
comp=Z,106nm,0.8s,baz=165,slow=5.7,SNR=234
TIXI PcP **PcP 13 22 40.1 -0.5**
comp=Z,24nm,0.8s,baz=349,slow=1.6,SNR=3.6
TIXI LR LR 13 44 34.9
comp=Z,299nm,21.3s,baz=193,slow=38
TIXI Tiksi 50.62 3 *d* iP **P 13 21 25.3 -0.8**
TIXI pmax pmax
comp=Z,212nm,1.1s
TIXI Tiksi 50.62 3 *e*P **P 13 21 25.2 -0.8**
comp=Z,265nm,1.1s
TIXI ePcP **PcP 13 22 40.1 -0.5**
SMY Shemya 50.64 38 *e*P **P 13 21 28.1 +1.6**
SMY pmax pmax
comp=Z,257nm,1.2s
SMY Shemya 50.64 38 *e*P **P 13 21 28.1 +1.6**
comp=Z,257nm,1.2s
ZRNK Zerenda 51.26 322 P **P 13 21 32.2 +1.1**
ZRNK pmax pmax
comp=Z,212nm,1.0s
NRIK Noril'sk 52.48 345 P **P 13 21 40.1 +0.3**
comp=Z,273nm,0.9s,baz=126,slow=7.4,SNR=178
NRIK PcP **PcP 13 22 47.8 +0.2**
comp=Z,50nm,0.8s,baz=135,slow=6.0,SNR=3.9
NRIK ScP **ScP 13 26 25.1 -1.2**
comp=Z,10nm,1.0s,baz=65,slow=4.8,SNR=3.7
NRIK Noril'sk 52.48 345 P **P 13 21 40.1 +0.3**
NRIK 13 22 47.8
NRIK pmax pmax
comp=Z,265nm,0.9s
NRIK pmax pmax
comp=Z,50nm,0.8s
NRIK pmax pmax
comp=N,10.0nm,1.0s
NWAO Narrogin (SRO) 54.01 185 *e*P **P 13 21 51.1 -0.4**
NWAO pmax pmax
comp=Z,79nm,1.1s
NWAO Narrogin (SRO) 54.01 185 *e*P **P 13 21 51.1 -0.4**
comp=Z,80nm,1.1s
EIDS Eidsvold 54.21 147 *e*P **P 13 21 52.9 -0.1**
comp=Z,34nm,0.8s
BILL Bilibino 54.23 19 *d* iP **P 13 21 53.1 +0.5**
BILL *e* 13 24 04.3
BILL *i* S S 13 29 30.5 +16
BILL *e*SS **SS 13 32 55.5 -3.3**
BILL pmax pmax
comp=Z,185nm,0.9s
BILL Bilibino 54.23 19 *e*P **P 13 21 53.2 +0.6**
comp=Z,175nm,0.8s
BILL LR LR
comp=Z,100nm,19.0s
BBOO Buckleboo 55.35 166 *e*P **P 13 22 00.9 -0.2**
comp=Z,207nm,0.8s
STKA Stephens Creek 56.00 160 P **P 13 22 05.7 -0.1**
comp=Z,44nm,0.6s,baz=338,slow=7.3,SNR=128
STKA S **S 13 29 36.8 -2.0**
comp=Z,3.8nm,0.9s,baz=211,slow=22,SNR=5.9
STKA LR LR 13 47 44.0
comp=Z,64nm,21.8s,baz=16,slow=38
STKA Stephens Creek 56.00 160 *e*P **P 13 22 05.7 -0.1**
comp=Z,10nm,0.7s
STKA S **S 13 29 36.8 -2.0**
AB31 Akbulak array 56.10 316 *i* P **P 13 22 07.1 +0.8**
AB31 pmax pmax
comp=Z,52nm,0.8s
ABKAR Akbulak array 56.10 316 *e*P **P 13 22 07.2 +0.9**
SVE Sverdlovsk 56.91 325 *c* iP **P 13 22 12.7 +0.8**
SVE pmax pmax
comp=Z,210nm,1.2s
GEYT Alibeck 57.01 302 P **P 13 22 14.9 +1.9**
comp=Z,102nm,0.8s,baz=90,slow=3.0,SNR=199
GEYT PcP **PcP 13 23 05.9 +0.1**
comp=Z,19nm,0.8s,baz=242,slow=3.2,SNR=4.6
GEYT ScP **ScP 13 26 46.4 -0.5**
comp=Z,19nm,1.0s,baz=194,slow=1.2,SNR=10
AKTO Aktyubinsk 57.46 317 P **P 13 22 16.5 +0.6**
comp=Z,19nm,0.8s,baz=91,slow=8.0,SNR=53
AKTO PcP **PcP 13 23 06.8 -0.5**
comp=Z,5.3nm,0.7s,baz=79,slow=11,SNR=3.7
AKTO Aktyubinsk 57.46 317 P **P 13 22 16.5 +0.6**
AKTO pmax pmax
comp=Z,43nm,1.1s
ARU Arti 57.96 324 P **P 13 22 19.5 +0.3**
comp=Z,54nm,0.7s,baz=99,slow=3.4,SNR=85
ARU PcP **PcP 13 23 08.8 -0.3**
comp=Z,16nm,0.5s,baz=290,slow=5.0,SNR=5.7
ARU Arti 57.96 324 *d* iP **P 13 22 19.3 +0.1**
ARU *P P **pP 13 23 05.0 +1.4**
ARU 13 23 08.5
ARU 13 24 29.4
ARU PPP PPP 13 25 55.1
ARU S **S 13 30 04.9 +1.1**
ARU SS **SS 13 33 54.2 -3.6**
ARU pmax pmax
comp=Z,194nm,1.7s
ARU Arti 57.96 324 *e*P **P 13 22 19.5 +0.3**
comp=Z,144nm,1.2s
ARU PcP **PcP 13 23 08.8 -0.3**
ARU LR LR
comp=Z,220nm,21.0s
WBK Wadi Bani Khal 58.12 284 P **P 13 22 22.1 +1.2**
SNR=8.6
WBK Wadi Bani Khal 58.12 284 P **P 13 22 22.1 +1.2**
SNR=8.6
WSAR Wadi Sarin 58.31 285 P **P 13 22 22.2 0.0**
comp=Z,36nm,0.7s,baz=121,slow=7.2,SNR=26
ARMA Armidale 58.68 150 *e*P **P 13 22 26.0 +1.3**
comp=Z,38nm,0.8s
BIDO Bidbid 58.70 285 P **P 13 22 26.2 +1.3**
SNR=14
BIDO Bidbid 58.70 285 P **P 13 22 26.2 +1.3**
SNR=14
SMDO Samad 58.87 285 P **P 13 22 27.2 +1.0**
SNR=9.3
SMDO Samad 58.87 285 P **P 13 22 27.2 +1.0**
SNR=9.3
JMDO Jabal Madar 58.96 284 P **P 13 22 27.5 +0.8**
SNR=7.9
JMDO Jabal Madar 58.96 284 P **P 13 22 27.5 +0.8**
SNR=7.9
HOQ Hoqain 59.43 286 P **P 13 22 31.0 +1.1**
SNR=18
HOQ Hoqain 59.43 286 P **P 13 22 31.0 +1.1**
SNR=18
SOKR Solikamsk 59.45 328 *d* iP **P 13 22 27.9 -1.5**
SOKR pmax pmax
comp=Z,136nm,1.6s
SOKR MLR MLR
comp=Z,266nm,17.0s
BSY Bisya 59.70 285 P **P 13 22 32.6 +0.8**
SNR=9.9
BSY Bisya 59.70 285 P **P 13 22 32.6 +0.8**
SNR=9.9
BANOM Banah 59.89 288 *i* P **P 13 22 34.8 +1.7**
SNR=25
BANOM Banah 59.89 288 P **P 13 22 35.7 +2.6**
SNR=7.4
BANOM Banah 59.89 288 P **P 13 22 34.6 +1.5**
UOSS Minazif 60.15 287 *e*P **P 13 22 35.4 +0.5**
comp=Z,2.9nm,1.1s
ARQ Araqi 60.19 285 P **P 13 22 35.9 +0.7**
SNR=13
ARQ Araqi 60.19 285 P **P 13 22 35.9 +0.7**
SNR=13
HATD Hatta, Dubai 60.24 287 *i* P **P 13 22 36.6 +1.2**
SNR=26
HATD Hatta, Dubai 60.24 287 P **P 13 22 37.3 +1.8**
SNR=7.7
HATD Hatta, Dubai 60.24 287 P **P 13 22 37.3 +1.8**
SNR=7.7
ASHO Ashiyiah 60.33 287 *i* P **P 13 22 37.2 +1.0**
SNR=26
ASHO Ashiyiah 60.33 287 P **P 13 22 37.1 +1.0**
SNR=14
ASHO Ashiyiah 60.33 287 P **P 13 22 37.1 +1.0**
SNR=14
NAZ Nazwa, Dubai 60.63 287 *i* P **P 13 22 39.0 +1.0**
SNR=8.9
NAZ Nazwa, Dubai 60.63 287 P **P 13 22 39.2 +1.1**
SNR=12
NAZ Nazwa, Dubai 60.63 287 P **P 13 22 39.2 +1.1**
SNR=12
GAMB Gambell 60.73 28 *e*P **P 13 22 39.7 +1.7**
comp=Z,173nm,1.0s
FAQ Al Faqa, Dubai 60.74 287 *i* P **P 13 22 39.5 +0.7**
SNR=9.3
FAQ Al Faqa, Dubai 60.74 287 P **P 13 22 39.7 +0.9**
SNR=7.7
FAQ Al Faqa, Dubai 60.74 287 P **P 13 22 39.7 +0.9**
SNR=7.7
CAN Canberra 61.76 155 *e*P **P 13 22 46.3 +1.0**
CAN pmax pmax
comp=Z,55nm,1.1s
CAN Canberra 61.76 155 *e*P **P 13 22 46.3 +1.0**
comp=Z,55nm,1.1s
TNA Tin City 62.65 26 *e*P **P 13 22 52.6 +1.8**
comp=Z,88nm,0.9s
FUNA Funafuti 63.42 112 PFAKE 13 23 10.0 +13
FUNA LR LR
comp=Z,10µm,19.0s
ABTO Aybut 64.54 280 P **P 13 23 04.3 +0.2**
SNR=6.7
ABTO Aybut 64.54 280 P **P 13 23 04.3 +0.2**
SNR=6.7
SDPT Sand Point 65.77 38 *e*P **P 13 23 10.7 -0.6**
comp=Z,85nm,0.6s
DGRG David-gareji 66.49 307 P **P 13 23 17.9 +1.6**
DGRG David-gareji 66.49 307 P **P 13 23 17.8 +1.6**
CHGN Chignik 66.88 37 *e*P **P 13 23 17.6 -0.7**
TBLG Delisi 66.92 307 P **P 13 23 21.8 +2.8**
TBLG Delisi 66.92 307 P **P 13 23 21.7 +2.8**
GUDG Gudauri 67.01 308 P **P 13 23 22.0 +2.3**
GNI Garni 67.15 306 P **P 13 23 22.2 +1.6**
comp=Z,19nm,0.6s,baz=162,slow=2.3,SNR=34
GNI Garni 67.15 306 *i* P **P 13 23 22.4 +1.8**
SNR=14
GNI Garni 67.15 306 *e*P **P 13 23 19.2 -1.4**
comp=Z,222nm,1.6s
GNI LR LR
comp=Z,149nm,20.0s
GNI Garni 67.15 306 P **P 13 23 22.2 +1.6**
SNR=24
GNI Garni 67.15 306 P **P 13 23 22.2 +1.6**
SNR=24
MSVF Nonsavu 67.16 121 *e*P **P 13 23 22.5 +1.8**
MSVF pmax pmax
comp=Z,89nm,0.9s
MSVF Nonsavu 67.16 121 *e*P **P 13 23 22.5 +1.8**
comp=Z,89nm,0.9s
ZEI Tsey 67.38 309 *e*P **P 13 23 22.6 +0.6**
ZEI pmax pmax
comp=Z,145nm,0.9s
NCK Nalchik 67.50 309 *e*P **P 13 23 23.0 +0.5**
NCK pmax pmax
comp=Z,32nm,1.0s
GOF Gofitskoye 67.67 311⇑ *e*P **P 13 23 24.7 +1.2**
GOF pmax pmax
comp=Z,91nm,1.1s
TT01 Tatalina 67.70 29 *e*P **P 13 23 25.0 +1.7**
TTA Tatalina 67.71 29 *e*P **P 13 23 25.3 +1.8**
TTA pmax pmax
comp=Z,275nm,1.3s
TTA Tatalina 67.71 29 *e*P **P 13 23 25.3 +1.8**
comp=Z,275nm,1.3s
ONI Oni 67.74 309 P **P 13 23 25.7 +1.6**
ONI Oni 67.74 309 P **P 13 23 25.7 +1.6**
VRH Novokhopyorsk 67.77 318 *e*P **P 13 23 23.9 -0.1**
VRH *e*S **S 13 32 05.4 -0.5**
VRH pmax pmax
comp=Z,150nm,0.9s
VRH pmax pmax
comp=Z,70nm,0.8s
VRH smax smax
comp=N,110nm,1.4s
AKH Akhalkalaki 67.89 307⇑ *i* P **P 13 23 27.1 +1.9**
KBZ Khabaz 67.97 310 P **P 13 23 26.3 +0.9**
comp=N,43nm,0.9s,baz=94,slow=5.8,SNR=73
SVW2 Sparrevohn 68.02 31 *e*P **P 13 23 27.3 +1.9**
comp=N,82nm,0.8s
KVAR Kislovodsk Arr 68.08 310 P **P 13 23 27.1 +0.9**
comp=N,85nm,0.8s,baz=189,slow=4.6,SNR=48
KIV Kislovodsk 68.08 310 *i* P **P 13 23 27.4 +1.2**
SNR=21
KIV Kislovodsk 68.08 310 *d* iP **P 13 23 27.2 +1.0**
KIV *e* 13 23 51.2
KIV *e*PP **pP 13 24 14.5 +2.5**
KIV *i* S **S 13 32 13.5 +3.4**
KIV *e*SS **SS 13 36 39.1 +3.0**
KIV pmax pmax
comp=Z,115nm,1.0s
KIV Kislovodsk 68.08 310 *e*P **P 13 23 27.3 +1.0**
comp=Z,126nm,0.9s
KIV LR LR
comp=Z,102nm,20.0s
KLMR Klimovskoe 68.10 328 *e*P **P 13 23 25.1 -0.8**
KLMR *e* 13 23 49.4
KLMR pmax pmax
comp=Z,196nm,1.4s
NEY Neytrino 68.17 309 *e*P **P 13 23 27.7 +0.8**
NEY pmax pmax
comp=Z,9.0nm,0.8s
TMCR Tamitsa 68.54 332 *e*P **P 13 23 28.6 +0.1**
TMCR pmax pmax
comp=Z,147nm,0.9s
CHVG Ch'k'valeri 68.71 309 P **P 13 23 31.3 +1.2**
CHVG Ch'k'valeri 68.71 309⇓ *i* P **P 13 23 30.5 +0.4**
LPSR Galich'ya Gora 69.31 320 *e*P **P 13 23 33.4 -0.1**
LPSR *e*S **S 13 32 22.8 -1.2**
LPSR pmax pmax
comp=Z,220nm,1.5s
LPSR pmax pmax
comp=Z,110nm,0.7s
LPSR smax smax
comp=N,170nm,2.2s
VSR Storozhevoye 69.37 318 *e*P **P 13 23 33.5 -0.4**
VSR *e*S **S 13 32 22.9 -1.8**
VSR pmax pmax
comp=Z,90nm,0.9s
VSR pmax pmax
comp=Z,170nm,1.0s
VSR smax smax
comp=N,90nm,1.6s
CAST Castle Rocks 69.44 29 *e*P **P 13 23 35.8 +1.6**
comp=N,250nm,0.8s
PPLA Purkeypile 69.45 29 *e*P **P 13 23 35.9 +1.5**
comp=N,231nm,1.2s
RSO Redoubt South 69.46 32 *e*P **P 13 23 35.8 +1.2**
LVZ Lovozero 69.58 336 *d* iP **P 13 23 34.6 -0.3**
LVZ pmax pmax
comp=Z,37nm,0.9s
LVZ Lovozero 69.58 336 *e*P **P 13 23 34.8 -0.1**
comp=Z,40nm,0.7s
LVZ LR LR
comp=Z,126nm,21.0s
OHAK Old Harbor 69.59 35 *e*P **P 13 23 35.7 +0.6**
comp=Z,136nm,0.9s
MOS Moscow 69.64 323 *e*P **P 13 23 34.6 -0.8**
MOS *e* 13 23 56.7
MOS *e* 13 32 23.6
MOS *e* 13 33 13.3
MOS pmax pmax
comp=Z,300nm,1.5s
MOS pmax pmax
comp=Z,187nm,1.3s
SPU Mount Spurr 69.72 31 *e*P **P 13 23 36.6 +0.7**
COLD Coldfoot 69.80 24 *e*P **P 13 23 38.0 +1.7**
comp=Z,130nm,1.2s
MLY Manley 69.84 27 *e*P **P 13 23 38.2 +1.5**
comp=Z,239nm,1.0s
BPAW Bear Paw Mtn. 69.85 28 *e*P **P 13 23 38.1 +1.5**
comp=Z,369nm,1.2s
KDAK Kodiak Island 69.89 35 P P 13 23 52.8 +16
comp=Z,160nm,0.8s,baz=284,slow=1.9,SNR=92
KDAK Kodiak Island 69.89 35 *i* P **P 13 23 37.4 +0.5**
KDAK Kodiak Island 69.89 35 *e*P **P 13 23 37.7 +0.8**
comp=Z,222nm,0.9s
KTH Kantishna Hill 69.94 28 *e*P **P 13 23 38.4 +1.1**
comp=Z,107nm,0.9s
APA Apatity 70.09 336⇑ *i* P **P 13 23 36.8 -1.2**
APA *i* S **S 13 32 27.0 -5.6**
APA pmax pmax
comp=Z,110nm,0.8s
TRF Thorofare Moun 70.24 28 *e*P **P 13 23 39.9 +0.7**
comp=Z,95nm,1.2s
SOC Sochi 70.27 310 *e*P **P 13 23 38.4 -1.1**
SOC *e* 13 26 16.6

SOC eS S 13 32 35.0 -0.5
SOC pmax pmax
comp=Z,70nm,0.9s
OBN Obninsk 70.33 323 *d* iP P 13 23 39.6 0.0
OBN *i* *PP sP 13 24 50.5 +3.8
OBN *i* 13 26 18.0
OBN eS S 13 32 30.3 -5.4
OBN pmax pmax
comp=Z,100nm,1.2s
OBN Obninsk 70.33 323 eP P 13 23 39.6 0.0
comp=Z,168nm,1.2s
OBN LR LR
comp=Z,154nm,22.0s
BWN Browne 70.50 28 eP P 13 23 42.2 +1.7
comp=Z,219nm,1.0s
MCK McKinley 70.80 28 eP P 13 23 42.5 +0.1
MCK pmax pmax
comp=Z,303nm,1.0s
MCK McKinley 70.80 28 eP P 13 23 42.5 +0.1
comp=Z,303nm,1.0s
RC01 Rabbit Creek A 70.84 31 eP P 13 23 43.2 +0.5
comp=Z,270nm,1.8s
RND Reindeer 70.88 28 eP P 13 23 43.5 +0.5
RND pmax pmax
comp=Z,319nm,0.8s
RND Reindeer 70.88 28 eP P 13 23 43.5 +0.5
comp=Z,319nm,0.8s
MDM Murphy Dome 70.91 27 eP P 13 23 44.1 +1.0
comp=Z,436nm,1.2s
KBSD Kabsdagh 70.97 303 eP P 13 23 45.7 +1.8
WRH Wood River Hil 71.05 27 eP P 13 23 44.1 +0.2
comp=Z,131nm,0.9s
PMR Palmer 71.05 30 eP P 13 23 44.2 +0.3
PMR pmax pmax
comp=Z,117nm,0.8s
PMR Palmer 71.05 30 eP P 13 23 44.1 +0.3
comp=Z,117nm,0.8s
COLA College 71.08 27 *d* iP P 13 23 44.4 +0.4
COLA pmax pmax
comp=Z,70nm,1.0s
COLA College 71.08 27 eP P 13 23 44.7 +0.7
comp=Z,87nm,1.0s
CCB Clear Creek Bu 71.14 27 eP P 13 23 44.5 +0.1
comp=Z,67nm,1.0s
MZRK Al-Mazaregh 71.14 302 eP P 13 23 47.5 +2.5
SEW Seward 71.14 32 eP P 13 23 44.8 +0.4
comp=Z,111nm,1.0s
HOPEN Hopen 71.18 346 eP P 13 23 45.1 +0.7
HOPEN eS S 13 32 46.8 +1.9
SML Sawmill 71.39 30 eP P 13 23 46.8 +0.8
SML pmax pmax
comp=Z,174nm,0.9s
SML Sawmill 71.39 30 eP P 13 23 46.8 +0.8
comp=Z,174nm,0.9s
SFNV Sufian 71.44 303 eP P 13 23 47.9 +1.1
IL1 Eielson Array 71.50 27 eP P 13 23 44.8 -1.8
ILAR Eielson Array 71.50 27 P P 13 23 46.1 -0.4
comp=Z,26nm,0.8s,baz=268,slow=4.7,SNR=93
ILAR PKP2bc 13 51 32.2
comp=Z,0.6nm,1.0s,baz=180,slow=2.6,SNR=4.0
ILAR Eielson Array 71.50 27 P P 13 23 46.2 -0.4
ILAR pmax pmax
comp=Z,27nm,0.8s
ILB Eielson Array 71.50 27 eP P 13 23 46.1 -0.4
HDA Harding Lake 71.54 27 eP P 13 23 46.6 -0.2
comp=Z,127nm,1.0s
DHY Denali Highway 71.60 29 eP P 13 23 47.8 +0.4
comp=Z,51nm,0.7s
ANN Anapa 71.64 312 *d* iP P 13 23 47.8 +0.1
ANN *e*PP pP 13 24 36.1 +2.1
ANN *e*PPP PPP 13 28 12.1
ANN eS S 13 32 51.2 0.0
ANN pmax pmax
comp=Z,358nm,1.2s
ANN pmax pmax
comp=N,88nm,1.3s
ANN pmax pmax
comp=E,69nm,1.3s
FYU Fort Yukon 71.84 25 eP P 13 23 50.3 +1.8
comp=E,176nm,1.1s
SCM Sheep Creek Mo 71.85 30 eP P 13 23 49.8 +1.0
SCM pmax pmax
comp=Z,282nm,0.8s
SCM Sheep Creek Mo 71.85 30 eP P 13 23 49.8 +1.0
comp=Z,282nm,0.8s
KEV Kevo 72.03 339 eP P 13 23 49.9 +0.3
KEV pmax pmax
comp=Z,87nm,0.8s
KEV MLR MLR
comp=Z,129nm,19.0s
KEV Kevo 72.03 339 eP P 13 23 49.9 +0.3
comp=Z,87nm,0.8s
KEV LR LR
comp=Z,129nm,19.0s
KSRV Kasrt alli 72.44 302 eP P 13 23 54.0 +1.3
PAX Paxson 72.47 29 eP P 13 23 53.3 +0.8
PAX pmax pmax
comp=Z,107nm,1.0s
PAX Paxson 72.47 29 eP P 13 23 53.3 +0.8
comp=Z,107nm,1.0s
SPA0 Spitsbergen Ar 72.55 348 eP P 13 23 53.2 +0.6
SPA0 IAmb IAmb 13 23 54.6
comp=Z,141nm,1.1s
SPA0 Spitsbergen Ar 72.55 348 eP P 13 23 53.4 +0.8
SPITS Spitsbergen Ar 72.55 348 P P 13 23 53.0 +0.4
comp=Z,56nm,0.8s,baz=88,slow=8.6,SNR=94
SPITS Spitsbergen Ar 72.55 348 P P 13 23 53.0 +0.4
SPITS pmax pmax
comp=Z,56nm,0.8s
KLU Klutina 72.58 30 eP P 13 23 54.2 +1.0
comp=Z,90nm,0.8s
ARA0 ARCESS Array S 72.59 339 eP P 13 23 53.2 +0.2
ARCES ARCESS Array B 72.59 339 P P 13 23 53.2 +0.2
comp=Z,56nm,0.7s,baz=72,slow=7.8,SNR=148
ARCES PKiKP **PKiKP 13 29 50.4 -1.5**
comp=Z,0.6nm,0.6s,baz=119,slow=0.7,SNR=8.5
ARE0 ARCESS Array S 72.59 339 eP P 13 23 53.2 +0.2
ARE0 IAmb IAmb 13 23 54.6
comp=Z,76nm,0.8s
ARE0 ARCESS Array S 72.59 339 eP P 13 23 53.4 +0.4
comp=Z,78nm,0.8s
DIV Divide 72.73 31 eP P 13 23 55.1 +1.1
comp=Z,195nm,1.0s
PUL Pulkovo 72.79 328 *i* P P 13 23 54.3 +0.1
PUL pmax pmax
comp=Z,201nm,0.9s
EYAK Cordova Ski Ar 72.86 31 eP P 13 23 55.9 +1.2
comp=Z,480nm,1.7s
HAMF Hammerfest 72.92 340⇓ *i* P P 13 23 55.0 +0.1
HAMF IAmb IAmb 13 23 56.3
comp=Z,88nm,0.9s
DOT Dot Lake 72.94 28 eP P 13 23 55.4 +0.2
comp=Z,316nm,1.0s
KBS Kingsbay 73.10 349 eP P 13 23 56.2 +0.4
KBS Kingsbay 73.10 349 eP P 13 23 56.1 +0.3
KBS pmax pmax
comp=Z,44nm,1.0s
KBS MLR MLR
comp=Z,142nm,20.0s
KBS Kingsbay 73.10 349 eP P 13 23 56.1 +0.3
comp=Z,44nm,1.0s
KBS LR LR
comp=Z,142nm,20.0s
HSPB Hornsund (broa 73.13 347⇓ *i* P P 13 23 56.4 +0.4
HSPB IAmb IAmb 13 23 58.0
comp=Z,117nm,1.1s
MENT Mentasta 73.26 28 eP P 13 23 57.7 +0.7
comp=Z,134nm,1.1s
BMRM Bremner River 73.32 31 eP P 13 23 58.3 +0.9
comp=Z,162nm,1.0s
RAGM Ragged Mountai 73.42 31 eP P 13 23 59.4 +1.3
comp=Z,225nm,1.1s
KTK1 Kautokeino 73.50 338⇓ *i* P P 13 23 58.5 +0.2
KTK1 IAmb IAmb 13 23 59.8
comp=Z,73nm,0.7s
DAMY Dhamar 73.54 280 eP P 13 24 01.6 +1.7
comp=Z,36nm,0.9s
KIP Kipapa 73.61 73 *i* P P 13 23 59.7 -0.1
KIP pmax pmax
comp=Z,382nm,1.0s
AFI Afiamalu 73.75 112 LR LR 13 50 36.2
comp=Z,81nm,19.4s,baz=82,slow=31
EGAK Eagle 73.90 26 eP P 13 24 01.3 +0.7
comp=Z,126nm,0.8s
EGAK LR LR
comp=Z,96nm,19.0s

SIM Simferopol' 73.91 312 *c* iP P 13 24 02.0 +0.9
SIM *e* 13 26 53.0
SIM eS SKSac 13 34 04.0 +14
SIM pmax pmax
comp=Z,120nm,1.0s
RABH Abou Rabah 74.22 301 eP P 13 24 04.7 +1.5
ROOS tl_alroos 74.22 301 eP P 13 24 05.1 +1.8
BALM Baldy 74.37 30 eP P 13 24 04.6 +1.0
BALM pmax pmax
comp=Z,95nm,1.0s
BALM Baldy 74.37 30 eP P 13 24 04.6 +1.0
comp=Z,94nm,1.0s
FIA1 FINESS Array S 74.41 330 eP P 13 24 03.8 +0.1
FINES FINESS Array B 74.41 330 P P 13 24 03.7 0.0
comp=Z,125nm,0.8s,baz=86,slow=7.8,SNR=342
ZALF Zalf 74.51 300 eP P 13 24 05.7 +0.8
TRO Tromso 74.77 339 eP P 13 24 05.6 0.0
TRO IAmb IAmb 13 24 06.8
comp=Z,61nm,1.0s
ARNB Al Arnab 74.82 303 eP P 13 24 06.6 -0.1
DAWY Dawson 74.83 27 eP P 13 24 07.2 +1.1
comp=Z,169nm,0.8s
VSU Vasula 74.90 327 *d* iP P 13 24 06.7 +0.2
VSU pmax pmax
comp=Z,665nm,1.1s
MARH Ras Al Marh 74.91 301 eP P 13 24 08.5 +1.0
SALA Sala 75.06 300 eP P 13 24 09.5 +1.3
ASF Jabal al Asfar 75.07 299 P P 13 24 09.7 +1.5
comp=Z,36nm,0.9s,baz=42,slow=2.4,SNR=42
TOTH TOTAH 75.13 300 eP P 13 24 07.9 -0.5
QASN Qassioun 75.20 301 eP P 13 24 05.6 -3.3
MRIV Mauritius Mete 75.36 241 eP P 13 24 10.0 +0.2
MICGM Minsk 75.37 323⇓ eP P 13 24 10.0 +0.7
MICGM PM 13 24 11.0
comp=Z,0.6nm,1.0s
MNK Minsk 75.37 323⇓ eP P 13 24 10.0 +0.7
MNK pmax pmax
comp=Z,560nm,1.0s
BRBR Barbar 75.50 300 eP P 13 24 10.7 0.0
BR131 Keskin Array S 75.58 307 eP P 13 24 11.2 +0.2
BRTR Keskin Array B 75.58 307 P P 13 24 11.1 +0.1
comp=Z,41nm,1.0s,baz=111,slow=5.9,SNR=112
BRTR PP **PP 13 27 06.7 +3.8**
comp=Z,7.6nm,0.8s,baz=94,slow=8.5,SNR=9.6
BRTR S **S 13 33 36.5 +0.6**
comp=Z,1.0nm,1.1s,baz=124,slow=6.1,SNR=4.7
AKASG Malin Array Be 75.62 319 P P 13 24 10.3 -0.4
comp=Z,78nm,0.9s,baz=61,slow=6.2,SNR=169
AKASG Malin Array Be 75.62 319 P P 13 24 10.4 -0.4
AKASG pmax pmax
comp=Z,106nm,0.9s
AKBB Malin Array Si 75.62 319 eP P 13 24 10.5 -0.3
AKBB pmax pmax
comp=Z,114nm,0.9s
AKBB Malin Array Si 75.62 319 eP P 13 24 10.5 -0.3
comp=Z,114nm,0.9s
KIEV Kiev 75.63 319 *d* iP P 13 24 10.2 -0.6
KIEV pmax pmax
comp=Z,111nm,1.0s
KIEV Kiev 75.63 319 eP P 13 24 10.5 -0.4
comp=Z,105nm,0.9s
KIEV LR LR
comp=Z,110nm,19.0s
AK11 Malin Array Si 75.66 319 eP P 13 24 10.5 -0.5
TCHB Talchebab 75.69 300 eP P 13 24 09.7 -1.9
INK Inuvik 75.69 22 P P 13 24 11.2 +0.4
comp=Z,110nm,1.0s,baz=293,slow=6.3,SNR=248
INK Inuvik 75.69 22 eP P 13 24 11.1 +0.2
INK pmax pmax
comp=Z,164nm,1.0s
INK Inuvik 75.69 22 eP P 13 24 11.1 +0.2
comp=Z,164nm,1.0s
IDID Didziasalis 75.77 324 eP P 13 24 11.7 +0.1
IDID IAmb IAmb 13 24 14.1
comp=Z,130nm,0.9s
NACGM Naroch 75.87 324 eP P 13 24 13.0 +0.9
NACGM PM 13 24 14.0
comp=Z,1.5nm,1.0s
IZAR Zarasai 75.92 325 eP P 13 24 12.4 0.0
IZAR IAmb IAmb 13 24 14.9
comp=Z,102nm,0.9s
ATD Arta Tunnel 75.93 277 P P 13 24 13.6 +0.3
comp=Z,39nm,1.0s,baz=303,slow=4.9,SNR=8.4
ISAL Salakas 76.03 324 eP P 13 24 13.1 0.0
ISAL IAmb IAmb 13 24 14.6
comp=Z,75nm,1.0s
MMAI Mount Meron Ar 76.05 300 P P 13 24 15.1 +1.3
comp=Z,22nm,0.7s,baz=70,slow=7.2,SNR=31
ANTO Ankara 76.17 308 eP P 13 24 14.9 +0.6
ANTO pmax pmax
comp=Z,90nm,0.9s
ANTO MLR MLR
comp=Z,6.0nm,20.0s
ANTO Ankara 76.17 308 eP P 13 24 14.9 +0.6
comp=Z,90nm,0.9s
ANTO LR LR
comp=Z,6.0nm,20.0s
BR231 Keskin MP Arra 76.19 308 eP P 13 24 11.7 -2.7
POHA Pohakuloa 76.32 74 eP P 13 24 17.1 +1.5
comp=Z,73nm,0.8s
STEI Steigen 76.65 338 eP P 13 24 16.3 +0.1
STEI IAmb IAmb 13 24 17.5
comp=Z,248nm,0.8s
SORM Soroca 76.89 317⇓ *i* P P 13 24 17.7 -0.3
CSS Mathiatis 77.15 303 eP P 13 24 20.3 +0.6
comp=Z,50nm,0.8s
CSS LR LR
comp=Z,29nm,20.0s
LOF Lofoten 77.15 339 eP P 13 24 18.5 -0.6
LOF IAmb IAmb 13 24 21.2
comp=Z,72nm,0.8s
RER Riviere de l'E 77.21 241 eP P 13 24 21.4 +1.1
comp=Z,91nm,0.8s
EIL Elat 77.38 297 P P 13 24 22.0 +0.9
comp=Z,52nm,1.1s,baz=64,slow=2.9,SNR=33
TLCR 77.46 314⇑ *i* P P 13 24 22.0 +0.8
MOR8 Moi Rana 77.65 337⇓ *i* P P 13 24 20.7 -1.2
MOR8 IAmb IAmb 13 24 22.0
comp=Z,130nm,0.8s
CFR Carcaliu 77.92 314⇓ *i* P P 13 24 24.0 +0.2
TIRR Tirgusor 77.95 313⇓ *i* P P 13 24 24.6 +0.6
TIRR Tirgusor 77.95 313 eP P 13 24 23.6 -0.4
TIRR pmax pmax
comp=Z,55nm,0.9s
TIRR Tirgusor 77.95 313 eP P 13 24 23.6 -0.4
comp=Z,55nm,0.9s
KONS Konsvik 77.99 337 eP P 13 24 23.7 0.0
KONS IAmb IAmb 13 24 24.8
comp=Z,86nm,0.9s
STOK Stokkvaagen 78.10 337 eP P 13 24 23.9 -0.4
SUW Suwalki 78.14 323 eP P 13 24 24.7 -0.1
SKAG Skagway 78.18 31 eP P 13 24 26.0 +1.0
comp=Z,124nm,1.0s
HARR Harsova 78.21 313⇑ *i* P P 13 24 26.4 +1.0
PETR Petresti 78.36 315⇓ *i* P P 13 24 28.4 +2.2
GIRR Girov 78.44 316⇓ *i* P P 13 24 27.1 +0.4
ISP Isparta 78.46 306 eP P 13 24 27.0 0.0
ISP pmax pmax
comp=Z,86nm,0.8s
ISP MLR MLR
comp=Z,101nm,21.0s
ISP Isparta 78.46 306 eP P 13 24 27.0 0.0
comp=Z,86nm,0.8s
ISP LR LR
comp=Z,101nm,21.0s
ODBI Odobesti 78.46 315⇑ *i* P P 13 24 33.8 +7.1
TESR Tescani 78.49 315⇓ *i* P P 13 24 27.2 +0.3
PRAR RASCA 78.49 316⇓ *i* P P 13 24 27.3 +0.4
VRI Vrincioaia 78.64 315⇑ *i* P P 13 24 29.0 +1.2
RPZ Rata Peaks 78.69 146 P P 13 24 28.4 +0.5
comp=Z,36nm,0.6s,baz=283,slow=2.4,SNR=47
RPZ Rata Peaks 78.69 146 eP P 13 24 28.4 +0.5
comp=Z,40nm,0.6s
PLOR Plostina 78.70 315⇑ *i* P P 13 24 28.6 +0.5
LBZ Lake Benmore 78.71 147 eP P 13 24 28.9 +0.9
comp=Z,18nm,0.7s
ISR Istrita 79.01 314⇑ *i* P P 13 24 31.4 +1.6
PRD Provadia 79.04 312 eP P 13 24 30.2 +0.3
BURAR Bucovina Array 79.06 317⇓ *i* P P 13 24 30.8 +0.7
BUR08 Bucovina Ar. S 79.06 317 eP P 13 24 30.4 +0.3
LVV L'vov 79.06 319⇑ *i* P P 13 24 29.6 -0.3
LVV *e* 13 27 29.4
LVV *e*PPP PPP 13 29 21.0
LVV eS S 13 34 14.8 +2.1
LVV *e*SS SS 13 39 18.8 -3.5

LVV pmax pmax
comp=Z,250nm,2.0s
MLR Muntele Rosu 79.28 315⇓ *i* P P 13 24 31.9 +0.5
MLR Muntele Rosu 79.28 315 eP P 13 24 31.7 +0.3
MLR pmax pmax
comp=Z,80nm,1.0s
MLR Muntele Rosu 79.28 315 eP P 13 24 31.7 +0.3
comp=Z,80nm,1.0s
NSS Namsos 79.30 336 eP P 13 24 30.4 -0.5
NSS IAmb IAmb 13 24 31.6
comp=Z,56nm,0.7s
SULR 79.34 314⇑ *i* P P 13 24 32.9 +1.3
SECR 79.35 314⇑ *i* P P 13 24 33.9 +2.2
DAG Danmarks Havn 79.42 351⇓ *i* P P 13 24 30.9 -0.5
comp=Z,104nm,1.0s
DAG *i* 13 27 31.6
DAG Danmarks Havn 79.42 351⇓ *i* P P 13 24 30.9 -0.5
DAG *i* 13 27 31.6
DAG pmax pmax
comp=Z,100nm,1.0s
DOPR Dopca 79.49 315⇓ *i* P P 13 24 32.9 +0.5
KLNR Kaliningrad 79.56 325 *i* P P 13 24 32.9 +0.4
KLNR pmax pmax
comp=Z,155nm,1.0s
ARCR ARCALIA 79.79 317⇓ *i* P P 13 24 35.3 +1.3
VOIR 79.90 315⇓ *i* P P 13 24 34.8 +0.1
KWP Kalwaria Pacla 79.93 319 eP P 13 24 35.4 +0.7
KWP Kalwaria Pacla 79.93 319⇓ *i* P P 13 24 35.2 +0.5
BMR Baia Mare 80.13 317⇑ *i* P P 13 24 37.5 +1.7
ARR Arges 80.20 315⇑ *i* P P 13 24 37.1 +0.9
HUMR Humele 80.25 314⇓ *i* P P 13 24 36.8 +0.3
BEL Belsk 80.27 322 eP P 13 24 37.1 +0.7
CJR Cluj-Napoca 80.40 316⇑ *i* P P 13 24 39.0 +1.7
XMAS Kiritimati 80.43 92 PFAKE 13 24 50.0 +12
XMAS LR LR
comp=Z,3.0nm,22.0s
KOLS Kolonicke sedl 80.45 319 eP P 13 24 37.6 +0.2
KOLS pmax pmax
comp=Z,25nm,0.9s
KOLS Kolonicke sedl 80.45 319 eP P 13 24 37.6 +0.2
PVL Pavlikeni 80.46 313 eP P 13 24 38.9 +1.3
HFS Hagfors 80.54 331 P P 13 24 37.4 -0.3
comp=Z,80nm,0.7s,baz=90,slow=5.9,SNR=186
HFS PP **PP 13 27 44.4 +1.0**
comp=Z,9.8nm,0.8s,baz=67,slow=11,SNR=3.7
UZH Uzhgorod 80.54 318 eP P 13 24 36.8 -1.1
UZH *e* 13 25 26.6
UZH *e* 13 25 47.0
TBLU Trondheim 80.56 335⇓ *i* P P 13 24 37.2 -0.6
TBLU IAmb IAmb 13 24 38.3
comp=Z,171nm,0.9s
TRPA Tarpa 80.57 318⇓ eP P 13 24 38.6 +0.5
LOT Lotru 80.74 315⇓ *i* P P 13 24 40.0 +0.8
CRAG Craig 80.83 34 eP P 13 24 40.7 +1.4
comp=Z,71nm,0.8s
WRAK Wrangell Islan 80.84 33 eP P 13 24 41.0 +1.7
comp=Z,76nm,0.9s
STHS Stebnicka Huta 80.90 319 eP P 13 24 40.6 +0.8
STHS pmax pmax
comp=Z,48nm,1.0s
STHS Stebnicka Huta 80.90 319 eP P 13 24 40.6 +0.8
KDZ Kurdzhali 80.94 311 eP P 13 24 40.5 +0.3
DRGR 80.95 317⇓ *i* P P 13 24 40.8 +0.6
CRVS Cervenica-Dubn 80.96 319 eP P 13 24 41.0 +0.8
CRVS Cervenica-Dubn 80.96 319 eP P 13 24 41.0 +0.8
NC405 NORSAR Array S 80.97 333 eP P 13 24 39.8 -0.2
NC303 NORSAR Array S 81.07 333 eP P 13 24 40.2 -0.2
DLBC Dease Lake 81.11 30 P P 13 24 42.4 +1.6
comp=Z,36nm,0.9s,baz=299,slow=5.7,SNR=52
DLBC Dease Lake 81.11 30 eP P 13 24 42.5 +1.6
comp=Z,171nm,1.5s
DEV Deva 81.15 316⇓ *i* P P 13 24 42.3 +1.1
NB201 NORSAR Array S 81.18 333 eP P 13 24 40.6 -0.5
NB2 NORSAR Subarra 81.22 333 P P 13 24 40.8 -0.6
comp=Z,82nm,0.7s,baz=63,slow=5.6
NB2 NORSAR Subarra 81.22 333 P P 13 24 40.8 -0.6
baz=63,slow=5.6
NOA NORSAR Array B 81.22 333 P P 13 24 40.7 -0.6
comp=Z,51nm,0.8s,baz=68,slow=4.7,SNR=306
NOA NORSAR Array B 81.22 333 P P 13 24 40.7 -0.6
NOA pmax pmax
comp=Z,88nm,0.8s
NC602 NORSAR Array S 81.22 332 eP P 13 24 40.8 -0.5
NC602 IAmb IAmb 13 24 41.9
comp=Z,42nm,0.8s
NC602 NORSAR Array S 81.22 332 eP P 13 24 40.5 -0.7
NC204 NORSAR Array S 81.30 333 eP P 13 24 41.7 -0.1
NBO02 NORSAR Array S 81.37 333 eP P 13 24 40.9 -1.2
SRE Strehaia 81.39 315⇑ *i* P P 13 24 43.7 +1.2
NBO00 NORSAR Array S 81.41 333 eP P 13 24 42.0 -0.3
NAO01 NORSAR Array S 81.45 332 eP P 13 24 41.9 -0.6
OJC Ojcow 81.46 321 eP P 13 24 43.4 +0.6
OJC Ojcow 81.46 321 eP P 13 24 43.3 +0.6
OJC pmax pmax
comp=Z,213nm,0.8s
OJC Ojcow 81.46 321 eP P 13 24 43.3 +0.6
comp=Z,213nm,0.8s
NIE Niedzica 81.47 320 eP P 13 24 43.9 +1.0
RES Resolute Bay 81.47 9 P P 13 24 42.6 +0.3
comp=Z,114nm,1.0s,baz=316,slow=5.6,SNR=298
RES Resolute Bay 81.47 9 eP P 13 24 42.6 +0.3
comp=Z,109nm,0.9s
PGB Panagyurishte 81.50 312 eP P 13 24 43.8 +0.6
MPEP Malo Peshtene 81.50 313 eP P 13 24 43.3 +0.2
KECS Kecovo 81.71 319 eP P 13 24 44.2 +0.1
KECS pmax pmax
comp=Z,29nm,0.9s
KECS Kecovo 81.71 319 eP P 13 24 44.2 +0.1
KARP Karpathos 81.75 305 eP P 13 24 44.3 -0.3
comp=Z,54nm,1.0s
SIRR Siria 81.81 316⇑ *i* P P 13 24 45.6 +0.9
JMIC Jan Mayen 81.90 345 P P 13 24 45.0 +0.4
comp=Z,102nm,0.9s,baz=176,slow=2.0,SNR=3.9
OSL Oslo 81.96 332 eP P 13 24 45.4 +0.3
OSL IAmb IAmb 13 24 46.3
comp=Z,103nm,0.6s
MOL Molde 81.98 335 eP P 13 24 45.6 +0.5
LANS Liptovska Anna 82.08 320 eP P 13 24 47.2 +1.2
LANS Liptovska Anna 82.08 320 eP P 13 24 47.2 +1.2
BZS Buzias 82.09 316⇑ *i* P P 13 24 46.3 +0.2
BSD Bornholm Skovb 82.16 326⇓ *i* P P 13 24 46.0 -0.2
comp=Z,225nm,1.3s
BSD Bornholm Skovb 82.16 326⇓ *i* P P 13 24 46.0 -0.2
BSD pmax pmax
comp=Z,220nm,1.3s
PSZ Piszkesteto 82.30 318⇑ *i* P P 13 24 48.1 +0.8
PSZ Piszkesteto 82.30 318⇓ eP P 13 24 47.7 +0.4
PSZ Piszkesteto 82.30 318 eP P 13 24 47.6 +0.4
PSZ pmax pmax
comp=Z,103nm,1.3s
PSZ MLR MLR
comp=Z,101nm,19.0s
PSZ Piszkesteto 82.30 318 eP P 13 24 47.6 +0.4
comp=Z,103nm,1.3s
PSZ LR LR
comp=Z,101nm,19.0s
MDVR Moldovita 82.34 315⇑ *i* P P 13 24 47.6 +0.1
AKN Aaknes 82.40 335 eP P 13 24 48.0 +0.6
AKN IAmb IAmb 13 24 49.2
comp=Z,278nm,0.8s
RAC Raciborz 82.46 321 eP P 13 24 49.1 +1.2
KKB Krupnik 82.49 312 eP P 13 24 48.7 +0.4
OKC Ostrava-Krasne 82.59 321⇓ eP P 13 24 49.5 +0.9
OKC eSKS S 13 34 51.5 +2.3
KONO Kongsberg 82.60 332 eP P 13 24 48.1 -0.3
KONO IAmb IAmb 13 24 49.6
comp=Z,64nm,1.1s
KONO Kongsberg 82.60 332 eP P 13 24 48.1 -0.3
KONO pmax pmax
comp=Z,60nm,1.1s
KONO MLR MLR
comp=Z,305nm,19.0s
KONO Kongsberg 82.60 332 eP P 13 24 48.1 -0.3
comp=Z,60nm,1.1s
KONO LR LR
comp=Z,305nm,19.0s
VYHS Vyhne 82.72 319 eP P 13 24 50.1 +0.7
VYHS pmax pmax
comp=Z,81nm,1.1s
VYHS Vyhne 82.72 319 eP P 13 24 50.1 +0.7
VYHS eS S 13 34 47.1 -3.5
SANT Santorini 82.76 306⇑ *i* P P 13 24 49.9 +0.1
SANT Santorini 82.76 306 eP P 13 24 48.7 -1.1
comp=Z,129nm,1.1s

SANT LR LR
comp=Z,146nm,22.0s
MORC Moravsky Berou 82.97 321 ⇓*i*P **P 13 24 51.6 +0.9**
MORC Moravsky Berou 82.97 321 *e*P **P 13 24 51.2 +0.5**
MORC pmax pmax
comp=Z,343nm,1.1s
MORC Moravsky Berou 82.97 321 *e*P **P 13 24 51.2 +0.5**
comp=Z,343nm,1.1s
BUD Budapest 83.01 318⇓*e*P **P 13 24 51.2 +0.4**
PKS6 Bocsa 83.02 317⇓*e*P **P 13 24 52.0 +1.1**
PKS7 Kunszentmiklos 83.10 318 *e*P **P 13 24 51.6 +0.3**
COP Copenhagen 83.16 327⇓*i*P **P 13 24 51.6 +0.2**
comp=Z,58nm,1.1s
COP Copenhagen 83.16 327⇓*i*P **P 13 24 51.6 +0.2**
COP pmax pmax
comp=Z,58nm,1.1s
LAST Lasithi 83.17 305⇓*i*P **P 13 24 51.8 -0.2**
LAST Lasithi 83.17 305 *e*P **P 13 24 52.0 0.0**
comp=Z,114nm,1.0s
KSP Ksiaz 83.25 322 *e*P **P 13 24 52.8 +0.8**
HYA Hoyanger 83.27 334⇓*i*P **P 13 24 52.0 +0.2**
HYA IAmb IAmb 13 24 53.2
comp=Z,198nm,0.8s
PKS2 Kecel 83.29 317⇑*e*P **P 13 24 53.6 +1.3**
KRLC Kraliky 83.29 321⇓*i*P **P 13 24 52.9 +0.6**
PKSG 83.44 318⇓*e*P **P 13 24 53.5 +0.5**
DPC Dobruska-Polom 83.44 322⇓*i*P **P 13 24 54.0 +0.9**
FOO Floro 83.50 335 *e*P **P 13 24 53.1 +0.1**
FOO IAmb IAmb 13 24 54.4
comp=Z,171nm,1.1s
CSKK Cs˙ákako 83.53 318⇓*e*P **P 13 24 54.0 +0.5**
UPC Upice 83.56 322⇓*i*P **P 13 24 54.2 +0.6**
SMOL Smolenice 83.56 320 *e*P **P 13 24 55.0 +1.3**
SMOL Smolenice 83.56 320 *e*P **P 13 24 55.0 +1.3**
IDI Anoyia 83.58 305 P **P 13 24 55.0 +0.9**
comp=Z,24nm,0.8s,baz=7.8,slow=5.2,SNR=6.4
IDI Anoyia 83.58 305⇓*i*P **P 13 24 53.2 -0.9**
PKST T˜s 83.72 318⇓*e*P **P 13 24 54.6 +0.1**
VRAC Vranov 83.73 321 P **P 13 24 55.5 +1.0**
comp=Z,116nm,0.8s,baz=74,slow=4.3,SNR=146
VRAC Vranov 83.73 321⇓*i*P **P 13 24 55.7 +1.2**
SIVA Sivas 83.74 305⇓*i*P **P 13 24 55.1 +0.3**
ODD1 Odda 83.75 333 *e*P **P 13 24 54.5 +0.1**
ODD1 IAmb IAmb 13 24 55.8
comp=Z,110nm,0.8s
PKSM Moragy 83.76 317⇑*i*P **P 13 24 54.8 +0.1**
PKSM Moragy 83.76 317⇓*e*P **P 13 24 55.0 +0.3**
HOMB Homborsund 83.78 331 *e*P **P 13 24 54.0 -0.5**
HOMB IAmb IAmb 13 24 55.6
comp=Z,117nm,1.1s
PKS9 Tamasi 83.84 318⇓*e*P **P 13 24 55.6 +0.5**
SUE Sulen 83.91 334 *e*P **P 13 24 55.7 +0.7**
SUE IAmb IAmb 13 24 56.6
comp=Z,184nm,1.0s
ASK Askoy 84.05 334 *e*P **P 13 24 56.4 +0.6**
ASK IAmb IAmb 13 24 57.1
comp=Z,86nm,0.8s
BLS5 Blasjo 84.09 332⇓*i*P **P 13 24 56.3 +0.2**
BLS5 IAmb IAmb 13 24 57.7
comp=Z,181nm,0.8s
AGG Agios Georgios 84.09 309 *e*P **P 13 24 55.0 -1.6**
AGG pmax pmax
comp=Z,185nm,0.9s
AGG Agios Georgios 84.09 309 *e*P **P 13 24 55.0 -1.6**
comp=Z,185nm,0.9s
SNART Snartemo 84.33 331 *e*P **P 13 24 57.2 -0.1**
PVCC Panska Ves 84.37 322⇓*e*P **P 13 24 58.5 +0.8**
MUD Monsted U'grnd 84.39 329⇓*i*P **P 13 24 57.9 +0.3**
comp=Z,233nm,1.0s
MUD Monsted U'grnd 84.39 329⇓*i*P **P 13 24 57.9 +0.3**
MUD pmax pmax
comp=Z,230nm,1.0s
SOP Sopron 84.44 319⇓*e*P **P 13 24 58.5 +0.4**
KULLO Kullorsuaq 84.45 360⇓*i*P **P 13 24 57.7 +0.1**
KULLO Kullorsuaq 84.45 360⇓*i*P **P 13 24 57.7 +0.1**
GOPC GO Pecny, Ondr 84.52 322⇓*i*P **P 13 24 59.2 +0.7**
BRG Berggiesshubel 84.57 323 *e*P **P 13 24 59.0 +0.3**
comp=Z,105nm,1.2s
BRG Berggiesshubel 84.57 323 *e*P **P 13 24 59.0 +0.3**
BRG pmax pmax
comp=Z,105nm,1.2s
PRU Pruhonice 84.63 322⇓*e*P **P 13 24 59.5 +0.5**
PRU *e*SKS **S 13 35 09.0 -0.6**
PRA Prague 84.66 322⇓*e*P **P 13 25 00.3 +1.2**
KMY Karmoy 84.72 333 *e*P **P 13 24 59.7 +0.5**
KMY IAmb IAmb 13 25 00.7
comp=Z,89nm,0.9s
CONA Conrad Observa 84.76 320 *i* P **P 13 25 00.4 +0.6**
comp=Z,112nm,1.2s,SNR=76
BEHE Becsehely 84.83 318⇓*e*P **P 13 25 01.1 +1.0**
PDG Podgorica 84.90 314⇓*i*P **P 13 25 00.7 +0.2**
CLL Collm 84.90 323⇓*i*P **P 13 25 00.4 +0.1**
comp=Z,123nm,1.1s
CLL *e*pP **pP 13 25 53.0 +4.9**
CLL *e*PP **PP 13 28 18.0 -1.2**
comp=Z,17nm,1.1s
CLL L L 14 06 00.0
comp=Z,100nm,21.1s
CLL Collm 84.90 323 *e*P **P 13 25 00.4 +0.1**
CLL pmax pmax
comp=Z,105nm,0.9s
CLL Collm 84.90 323 *e*P **P 13 25 00.3 +0.1**
comp=Z,105nm,0.9s
TIR Tirane 84.92 312⇑*i*P **P 13 25 01.1 +0.5**
TIR Tirane 84.92 312 *e*P **P 13 25 01.1 +0.5**
TIR pmax pmax
comp=Z,143nm,0.9s
TIR MLR MLR
comp=Z,111nm,20.0s
TIR Tirane 84.92 312 *e*P **P 13 25 01.1 +0.5**
comp=Z,142nm,0.9s
TIR LR LR
comp=Z,111nm,20.0s
BBB Bella Bella 84.95 36 P **P 13 25 00.5 0.0**
comp=Z,24nm,1.0s,baz=234,slow=6.8,SNR=4.5
SCO Scoresbysund 85.13 349⇓*i*P **P 13 25 01.3 +0.3**
comp=Z,76nm,1.2s
SCO Scoresbysund 85.13 349⇓*i*P **P 13 25 01.3 +0.3**
SCO pmax pmax
comp=Z,76nm,1.2s
KOGS Kog 85.17 318 *i* P **P 13 25 01.8 +0.1**
ARSA Arzberg 85.27 319 *i* P **P 13 25 02.5 +0.2**
comp=Z,54nm,1.4s,SNR=25
BLY Banja Luka 85.31 316⇑*i*P **P 13 25 03.0 +0.5**
YKW3 Yellowknife Ar 85.36 23 *e*P **P 13 25 02.7 +0.3**
comp=Z,95nm,0.8s
YKW3 *e*PKKPbc **PKKPbc 13 43 03.6 -4.0**
YKA Yellowknife Ar 85.41 23 P **P 13 25 02.9 +0.3**
comp=Z,105nm,0.9s,baz=312,slow=4.7,SNR=816
YKA PKiKP **PKiKP 13 30 10.9 -0.8**
comp=Z,0.5nm,0.6s,baz=318,slow=1.7,SNR=5.1
YKA PKKP **PKKPdf 13 42 56.0 -2.3**
comp=Z,0.3nm,0.8s,baz=108,slow=2.0,SNR=5.2
YKA PKKPbc **PKKPbc 13 43 03.8 -3.7**
comp=Z,2.3nm,0.4s,baz=131,slow=2.5,SNR=55
YKA SKKPbc SKKPbc 13 46 21.1 -2.9
comp=Z,0.3nm,0.6s,baz=132,slow=2.2,SNR=7.1
YKB5 Yellowknife Ar 85.41 23 *e*P **P 13 25 01.6 -0.9**
KMBO Kilima Mbogo 85.53 267 P **P 13 25 05.4 +1.0**
comp=Z,24nm,1.0s,baz=55,slow=6.8,SNR=39
KMBO Kilima Mbogo 85.53 267 *e*P **P 13 25 05.5 +1.0**
KMBO pmax pmax
comp=Z,43nm,1.1s
KMBO MLR MLR
comp=Z,115nm,20.0s
KMBO Kilima Mbogo 85.53 267 *e*P **P 13 25 05.5 +1.1**
comp=Z,43nm,1.1s
KMBO LR LR
comp=Z,115nm,20.0s
KMBO Kilima Mbogo 85.53 267 P **P 13 25 05.4 +1.0**
SNR=15
KMBO Kilima Mbogo 85.53 267 P **P 13 25 05.4 +1.0**
SNR=15
SUMG Summit 85.54 354⇓*i*P **P 13 25 03.9 +0.3**
comp=Z,117nm,0.9s
SUMG Summit 85.54 354 *e*P **P 13 25 03.9 +0.3**
SUMG pmax pmax
comp=Z,123nm,0.9s
SUMG Summit 85.54 354 *e*P **P 13 25 03.9 +0.3**
comp=Z,123nm,0.9s
KHC Kasperske Hory 85.58 321⇓*i*P **P 13 25 04.0 +0.2**
KHC *ex* x 13 25 26.2
KHC *e*pP **pP 13 25 46.5 -5.1**
KHC *e*SKS **S 13 35 16.6 -2.5**
KHC AMS AMS 14 04 20.0
comp=Z,200nm,17.6s
KHC Kasperske Hory 85.58 321 *e*P **P 13 25 02.9 -0.9**
KHC pmax pmax
comp=Z,14nm,1.2s
KHC Kasperske Hory 85.58 321 *e*P **P 13 25 02.9 -0.9**
comp=Z,14nm,1.2s
GEC2 GERESS Array S 85.64 321 *e*P **P 13 25 04.3 +0.1**
GEC2 pmax pmax
comp=Z,84nm,1.6s
GEC2 GERESS Array S 85.64 321 *e*P **P 13 25 04.3 +0.1**
comp=Z,84nm,1.6s
GERES GERESS Array B 85.64 321 P **P 13 25 04.2 0.0**
comp=Z,7.9nm,0.6s,baz=58,slow=5.0,SNR=50
GEA0 GERESS Array S 85.64 321 *e*P **P 13 25 03.6 -0.6**
NKC Novy Kostel 85.72 323⇓*e*P **P 13 25 04.6 +0.2**
MOA Molln 85.76 320 *i* P **P 13 25 05.0 +0.3**
comp=Z,34nm,0.9s,SNR=16
PERS Pernice 85.79 319 *i* P **P 13 25 04.9 0.0**
SOKA Soboth 85.82 319 *i* P **P 13 25 05.1 0.0**
comp=Z,39nm,1.2s,SNR=26
OBKA Obir 86.19 319 *i* P **P 13 25 06.7 -0.2**
comp=Z,23nm,1.2s,SNR=9.8
LJU Ljubljana 86.42 318 *i* P **P 13 25 08.0 +0.1**
KBA Koelnbreinsper 86.67 320 *i* P **P 13 25 08.8 -0.6**
comp=Z,17nm,0.7s,SNR=14
GRFO Grafenberg 86.67 323 *e*P **P 13 25 09.2 +0.1**
GRFO pmax pmax
comp=Z,19nm,0.7s
GRFO Grafenberg 86.67 323 *e*P **P 13 25 09.2 +0.1**
comp=Z,19nm,0.7s
MYKA Terra Mystica 86.70 319 *e*P **P 13 25 08.6 -0.8**
comp=Z,8.7nm,0.5s
TRI Trieste 87.05 318 *e*P **P 13 25 10.7 -0.2**
TRI pmax pmax
comp=Z,17nm,0.8s
TRI Trieste 87.05 318 *e*P **P 13 25 10.7 -0.2**
comp=Z,17nm,0.8s
ABTA Abfaltersbach 87.33 320 *i* P **P 13 25 11.3 -1.1**
comp=Z,23nm,0.9s,SNR=11
WTTA Wattenberg 87.61 320 *i* P **P 13 25 13.2 -0.7**
comp=Z,26nm,0.8s,SNR=8.1
MOTA Moosalm 87.89 321 *i* PcP **P 13 25 15.2 +0.1**
comp=Z,24nm,1.0s,SNR=9.9
WTSB Winterswijk 87.92 326 *e*P **P 13 25 14.6 -0.3**
comp=Z,39nm,0.7s
TIP Timpagrande 87.99 311⇓*i*P **P 13 25 16.1 +0.5**
TIP Timpagrande 87.99 311 *e*P **P 13 25 15.3 -0.3**
comp=Z,58nm,1.4s
TIP LR LR
comp=Z,89nm,20.0s
RETA Reutte 88.02 321 *i* P **P 13 25 15.4 -0.3**
comp=Z,11nm,1.1s,SNR=6.2
FETA Feichten 88.27 320 *i* P **P 13 25 16.5 -0.5**
comp=Z,26nm,1.0s,SNR=15
CUC Castrocucco 88.28 312 *e*P **P 13 25 16.3 -0.7**
comp=Z,17nm,1.2s
CUC LR LR
comp=Z,81nm,19.0s
DAVA Damuels 88.64 321 *i* P **P 13 25 18.4 -0.3**
comp=Z,17nm,1.1s,SNR=6.1
FUORN Ofenpass-Fuorn 88.74 320 *e*P **P 13 25 19.5 +0.2**
comp=Z,48nm,0.9s
AQU L'Aquila 88.83 315 *e*P **P 13 25 20.4 +0.9**
AQU pmax pmax
comp=Z,81nm,1.0s
AQU MLR MLR
comp=Z,125nm,19.0s
AQU L'Aquila 88.83 315 *e*P **P 13 25 20.4 +0.9**
comp=Z,81nm,1.0s
AQU LR LR
comp=Z,125nm,19.0s
DAVOX Davos/Dischmat 88.89 320 P **P 13 25 19.9 0.0**
comp=Z,15nm,0.8s,baz=74,slow=3.1,SNR=24
LANF Langenberg 88.96 323⇓*e*P **P 13 25 20.0 +0.1**
CEL Celeste 89.00 311 *e*P **P 13 25 20.6 +0.2**
comp=Z,118nm,0.9s
CEL LR LR
comp=Z,1µm,22.0s
BFO Black Forest 89.00 322 *i* P **P 13 25 20.0 -0.2**
BFO Black Forest 89.00 322 *e*P **P 13 25 19.4 -0.7**
comp=Z,52nm,1.2s
BFO LR LR
comp=Z,175nm,21.0s
HGN Heimansgroeve 89.03 325 *e*P **P 13 25 19.8 -0.3**
comp=Z,32nm,0.8s
MEM Membach 89.07 325 P **P 13 25 20.2 -0.2**
comp=Z,28nm,1.3s
BEBN Eben Emael 89.14 325 P **P 13 25 22.0 +1.3**
PGC Sidney 89.30 37 *e*P **P 13 25 23.3 +1.9**
comp=Z,62nm,0.9s
TUE Stuetta 89.36 320 *e*P **P 13 25 21.9 -0.3**
comp=Z,41nm,1.1s
TUE LR LR
comp=Z,175nm,19.0s
WLF Walferdange 89.51 324 P **P 13 25 23.4 +1.0**
comp=Z,90nm,1.2s
WLF Walferdange 89.51 324 *e*P **P 13 25 23.0 +0.6**
WLF pmax pmax
comp=Z,121nm,1.0s
WLF MLR MLR
comp=Z,178nm,19.0s
WLF Walferdange 89.51 324 *e*P **P 13 25 23.0 +0.6**
comp=Z,121nm,1.0s
WLF LR LR
comp=Z,178nm,19.0s
BCLA Clavier 89.55 325 P **P 13 25 22.8 +0.2**
comp=Z,27nm,1.5s
OSR Olympics--Salm 89.61 38 P **P 13 25 25.3 +2.3**
A04D Lummi Island 89.68 37 P **P 13 25 24.2 +1.0**
baz=302
NLWA Neilton Lookou 89.72 38 *e*P **P 13 25 25.8 +2.2**
comp=Z,56nm,1.0s
ECH Echery 89.73 323⇓*e*P **P 13 25 23.2 -0.4**
VLC Villacollemand 89.89 318 PFAKE 13 25 40.0 +16
VLC LR LR
comp=Z,81nm,19.0s
MOF Molkenrain 89.94 322⇓*e*P **P 13 25 24.2 -0.4**
SNF Seneffe 90.04 326 P **P 13 25 25.2 +0.3**
DOU Dourbes 90.11 325 P **P 13 25 25.2 -0.1**
comp=Z,24nm,1.1s
B05A Bryant 90.27 37 P **P 13 25 27.2 +1.2**
baz=303,SNR=11
E03A Lebam 90.34 39 *e*P **P 13 25 28.4 +2.0**
comp=Z,52nm,0.9s
LOMF Lomont 90.38 322⇓*e*P **P 13 25 26.3 -0.4**
THEF They Montfort 90.38 323⇓*e*P **P 13 25 26.3 -0.3**
VAE Valguarnera 90.39 311 P **P 13 25 26.9 0.0**
comp=Z,25nm,0.9s,baz=336,slow=24,SNR=4.6
SENIN Lac Senin/Sane 90.63 321 *e*P **P 13 25 28.2 +0.1**
comp=Z,119nm,2.0s
EKA Eskdalemuir Ar 90.70 332 P **P 13 25 27.6 -0.3**
comp=Z,13nm,0.7s,baz=57,slow=2.9,SNR=28
EKA PP **PP 13 29 05.3 0.0**
comp=Z,4.6nm,0.9s,baz=40,slow=7.9,SNR=3.4
EKA Eskdalemuir Ar 90.70 332 P **P 13 25 27.6 -0.3**
EKA 13 29 05.4
EKA pmax pmax
comp=Z,14nm,0.7s
EKA pmax pmax
comp=Z,5.0nm,0.9s
ESK Eskdalemuir 90.73 332 *i* P **P 13 25 28.2 +0.2**
ESK Eskdalemuir 90.73 332 *e*P **P 13 25 28.1 0.0**
comp=Z,86nm,1.3s
ESK LR LR
comp=Z,310nm,20.0s
D05A Enumclaw 90.91 38 *e*P **P 13 25 31.2 +2.2**
comp=Z,69nm,1.0s
C06D Leavenworth 91.13 37 P **P 13 25 31.2 +1.1**
baz=304
CLTB Caltabellotta 91.19 311 PFAKE 13 25 40.0 +9.3
CLTB LR LR
comp=Z,70nm,21.0s
G03D McMinnville, O 91.23 40 P **P 13 25 31.7 +1.1**
baz=302
FMW Mount Fremont 91.23 38 P **P 13 25 32.3 +1.5**
TDL Tradedollar La 91.24 39 P **P 13 25 32.5 +1.7**
LON Longmire 91.25 38 *e*P **P 13 25 32.1 +1.3**
LON pmax pmax
comp=Z,22nm,1.1s
LON Longmire 91.25 38 *e*P **P 13 25 32.1 +1.3**
comp=Z,22nm,1.1s
F04A Amboy 91.34 39 *e*P **P 13 25 32.5 +1.5**
comp=Z,49nm,0.8s
MTMW Mount Mitchell 91.42 39 P **P 13 25 33.2 +1.7**
CWF Charnwood Fore 91.51 329 *e*P **P 13 25 31.3 -0.4**
comp=Z,170nm,2.0s
LTY Liberty 91.62 37 *e*P **P 13 25 33.6 +1.2**
comp=Z,31nm,1.2s
BNI Bardonecchia 91.70 320 PFAKE 13 25 40.0 +7.1
BNI LR LR
comp=Z,188nm,22.0s
B08A Colville Reser 91.75 36 *e*P **P 13 25 34.0 +1.0**
comp=Z,36nm,0.9s
WTV Waterville 91.78 37 P **P 13 25 34.1 +1.0**
SFJD Kangerlussuaq 91.90 357 P **P 13 25 33.1 0.0**
comp=Z,28nm,0.8s,baz=20,slow=5.8,SNR=16
SFJD Kangerlussuaq 91.90 357 *i* P **P 13 25 32.9 -0.2**
comp=Z,32nm,0.8s
SFJD Kangerlussuaq 91.90 357 *e*P **P 13 25 33.0 -0.2**
SFJD pmax pmax
comp=Z,38nm,0.8s
SFJD Kangerlussuaq 91.90 357 *e*P **P 13 25 33.0 -0.1**
comp=Z,38nm,0.8s
I03D Drain, OR 91.98 41 P **P 13 25 34.5 +0.5**
baz=302
SAW Saint Andrews 92.08 36 P **P 13 25 35.7 +1.1**
H04A Detroit Lake 92.16 40 *e*P **P 13 25 36.1 +1.2**
comp=Z,38nm,1.1s
VFP Flag Point 92.24 39 P **P 13 25 36.9 +1.5**
G05D Wamic, OR 92.37 39 P **P 13 25 36.8 +0.9**
baz=304
I04A Tendick Farm, 92.50 41 P **P 13 25 37.0 +0.5**
baz=303,SNR=8.6
L02D Cave Junction, 92.63 43 P **P 13 25 38.0 +0.9**
baz=302
C09A Chrisman Ranch 92.65 36 *e*P **P 13 25 38.1 +1.0**
comp=Z,22nm,1.0s
D08A Wollman Farm, 92.72 37 *e*P **P 13 25 38.8 +1.4**
comp=Z,20nm,0.8s
HAWA Hanford 92.76 38 *e*P **P 13 25 39.3 +1.7**
comp=Z,26nm,1.1s
G06A Carlson Farm, 92.77 39 *e*P **P 13 25 39.5 +1.7**
comp=Z,53nm,1.3s
HUMO Hull Mountain 92.80 42 *e*P **P 13 25 39.4 +1.5**
comp=Z,32nm,1.3s
SSB Saint Sauveur 92.84 321 *e*P **P 13 25 38.1 +0.1**
SSB pmax pmax
comp=Z,16nm,1.0s
SSB MLR MLR
comp=Z,119nm,19.0s
SSB Saint Sauveur 92.84 321 *e*P **P 13 25 38.1 +0.1**
comp=Z,16nm,1.0s
SSB LR LR
comp=Z,119nm,19.0s
I05D Terrebonne, OR 92.85 40 P **P 13 25 39.2 +1.0**
baz=303,SNR=5.5
VSL Villasalto 92.89 314 *e*P **P 13 25 38.6 +0.2**
comp=Z,64nm,1.4s
VSL LR LR
comp=Z,106nm,21.0s
PLDF La Plantade 92.98 322⇓*e*P **P 13 25 38.9 +0.2**
NEW Newport 93.00 35 P **P 13 25 38.8 +0.1**
comp=Z,24nm,0.9s,baz=286,slow=3.8,SNR=34
NEW Newport 93.00 35 P **P 13 25 40.0 +1.2**
baz=307
NEW Newport 93.00 35 *e*P **P 13 25 40.1 +1.4**
NEW pmax pmax
comp=Z,32nm,0.9s
NEW Newport 93.00 35 *e*P **P 13 25 40.1 +1.4**
comp=Z,32nm,0.9s
AGO Saint Agoulin 93.22 322⇓*e*P **P 13 25 39.9 +0.2**
YBH Yreka Blue Hor 93.42 43 P **P 13 25 41.7 +0.9**
comp=Z,13nm,0.9s,baz=287,slow=2.2,SNR=16
YBH Yreka Blue Hor 93.42 43 *e*P **P 13 25 42.2 +1.3**
comp=Z,13nm,1.0s
PYM Petit Puy Mans 93.46 322 *e*P **P 13 25 41.3 +0.4**
E09A Wood Farm, Sta 93.47 37 *e*P **P 13 25 42.6 +1.7**
comp=Z,22nm,1.1s
J05D Fort Rock, OR 93.50 41 P **P 13 25 42.7 +1.4**
baz=304,SNR=11
M02C Callahan 93.51 43 P **P 13 25 42.2 +0.9**
baz=302
K04D Chiloquin, OR 93.54 42 P **P 13 25 42.1 +0.6**
baz=303
LBL Lubilhac 93.62 322 *e*P **P 13 25 42.0 +0.3**
N02D Trinity Center 93.83 43 P **P 13 25 43.7 +0.9**
baz=302
M04C Macdoel 93.94 42 P **P 13 25 44.2 +0.9**
baz=303,SNR=16
K05A Summer Lake 94.01 41 *e*P **P 13 25 45.4 +1.6**
comp=Z,52nm,1.0s
WDC Whiskeytown Da 94.14 44 *e*P **P 13 25 44.9 +0.8**
WDC pmax pmax
comp=Z,15nm,0.9s
WDC Whiskeytown Da 94.14 44 *e*P **P 13 25 44.9 +0.8**
comp=Z,15nm,0.9s
WALA Waterton Lakes 94.19 33 *e*P **P 13 25 45.8 +1.6**
comp=Z,54nm,1.1s
BSMT Bassoo Peak 94.49 34 *e*P **P 13 25 47.0 +1.2**
O03D Paynes Creek 94.77 44 P **P 13 25 46.8 -0.3**
baz=303
KEST Kesra 94.81 311 P **P 13 25 47.7 +0.4**
comp=Z,8.9nm,0.9s,baz=290,slow=4.1,SNR=7.0
KEST Kesra 94.81 311 *e*P **P 13 25 47.8 +0.4**
comp=Z,12nm,1.0s
JTMT Jette 94.82 34 *e*P **P 13 25 48.5 +1.3**
MOD Modoc Plateau 94.83 42 *e*P **P 13 25 48.6 +1.2**
comp=Z,27nm,0.9s
YBMT Yellow Bay 94.89 34 *e*P **P 13 25 49.0 +1.5**
BMO Blue Mountains 94.92 38 *e*P **P 13 25 48.6 +0.9**
comp=Z,13nm,1.1s
BMO LR LR
comp=Z,124nm,22.0s
FRB Frobisher Bay 94.93 5 P **P 13 25 46.8 -0.3**
comp=Z,20nm,0.7s,baz=351,slow=5.4,SNR=50
FRB PP **PP 13 29 33.4 -4.6**
comp=Z,7.4nm,0.9s,baz=6.9,slow=8.2,SNR=6.4
FCC Fort Churchill 94.94 18 *e*P **P 13 25 47.0 -0.3**
FCC pmax pmax
comp=Z,21nm,1.3s
FCC Fort Churchill 94.94 18 *e*P **P 13 25 47.0 -0.3**
comp=Z,21nm,1.3s
SWMT Swartz Lake 95.12 34 *e*P **P 13 25 49.5 +1.0**
ORV Oroville 95.37 44 *e*P **P 13 25 50.2 +0.5**
ORV pmax pmax
comp=Z,16nm,0.8s
ORV Oroville 95.37 44 *e*P **P 13 25 50.2 +0.5**
comp=Z,16nm,0.8s
WVOR Wild Horse Val 95.55 40 *e*P **P 13 25 50.3 -0.3**
WVOR pmax pmax
comp=Z,31nm,1.0s
WVOR Wild Horse Val 95.55 40 *e*P **P 13 25 50.3 -0.3**
comp=Z,31nm,1.0s
MSO Missoula 95.58 35 P **P 13 25 50.5 -0.2**
baz=309
MSO Missoula 95.58 35 *e*P **P 13 25 51.4 +0.7**
comp=Z,16nm,1.2s
AFDM Forest Hills D 96.04 44 *e*P **P 13 25 53.6 +0.7**
comp=Z,14nm,0.8s
MFID Camas Ranch 96.64 38 *e*P **P 13 25 56.8 +1.3**
comp=Z,10nm,0.9s
CMB Columbia Colle 96.93 45 *e*P **P 13 25 57.7 +0.8**
CMB pmax pmax
comp=Z,18nm,0.9s
CMB Columbia Colle 96.93 45 *e*P **P 13 25 57.7 +0.8**
comp=Z,18nm,0.9s
EGMT Eagleton 96.95 32 P **P 13 25 57.0 +0.2**
baz=312
EGMT Eagleton 96.95 32 *e*P **P 13 25 57.5 +0.7**
comp=Z,47nm,1.9s
EGMT LR LR
comp=Z,112nm,21.0s
LRM Limekiln Ridge 97.02 35 *e*P Pdif 13 25 58.6 +1.1
DLMT Dillon 97.23 35 *e*P Pdif 13 25 58.9 +0.6
comp=Z,17nm,1.1s
WAKR Walker 97.29 44 *e*P Pdif 13 25 59.9 +1.2
HLID Hailey 97.36 38 P Pdif 13 25 60.0 +1.1
baz=308
HLID Hailey 97.36 38 *e*P Pdif 13 26 00.5 +1.6
comp=Z,8.1nm,1.0s
HLID LR LR
comp=Z,101nm,19.0s
BOZ Bozeman (W) 97.57 35 P **P 13 25 59.8 0.0**
baz=311
BOZ Bozeman (W) 97.57 35 *e*P Pdif 13 26 00.7 +0.9
BOZ pmax pmax
comp=Z,6.0nm,1.2s
BOZ MLR MLR
comp=Z,77nm,19.0s
BOZ Bozeman (W) 97.57 35 *e*P Pdif 13 26 00.7 +1.0
comp=Z,5.5nm,1.2s
BOZ LR LR
comp=Z,77nm,19.0s
NV01 Mina Array Sit 98.06 44 *e*P Pdif 13 26 02.9 +0.6

NVAR	**Mina Array Bea**	**98.06**	**44**	P	Pdif	13 26 02.4	+0.2		
	comp=Z,10nm,0.9s,baz=275,slow=5.3,SNR=33								
NVAR				PP	**PP**	**13 30 02.0**	**-1.2**		
	comp=Z,2.1nm,0.8s,baz=294,slow=7.8,SNR=5.7								
NV11	**Mina Array Sit**	**98.16**	**44**	*eP*	Pdif	13 26 03.7	+1.2		
	comp=Z,8.9nm,1.3s								
MLAC	**Mammoth, Mammo**	**98.17**	**44**	Pdiff	Pdif	13 26 03.5	+0.7		
	baz=305								
LKWY	**Lake**	**98.94**	**35**	PFAKE		13 26 20.0	+14		
LKWY				LR	LR				
	comp=Z,259nm,19.0s								
H17A	**Grant Village**	**98.95**	**35**	Pdiff	Pdif	13 26 07.4	+1.3		
	baz=311								
RLMT	**Red Lodge**	**99.16**	**34**	Pdiff	**Pdif**	**13 26 07.3**	**+0.4**		
	baz=313								
RLMT	**Red Lodge**	**99.16**	**34**	PFAKE		13 26 20.0	+13		
RLMT				LR	LR				
	comp=Z,131nm,19.0s								
DGMT	**Dagmar**	**99.28**	**29**	Pdiff	**Pdif**	**13 26 07.4**	**+0.2**		
	baz=317								
AHID	**Auburn Hatcher**	**99.74**	**37**	PFAKE		13 26 20.0	+10		
AHID				LR	LR				
	comp=Z,109nm,20.0s								
R11A	**Troy Canyon, C**	**99.84**	**42**	Pdiff	**Pdif**	**13 26 10.6**	**+0.5**		
	baz=307								
MPMC	**Manual Prospec**	**99.96**	**45**	Pdiff	**Pdif**	**13 26 11.2**	**+0.5**		
	baz=305								
FURC	**Furnace Creek,**	**100.13**	**45**	Pdiff	**Pdif**	**13 26 11.8**	**+0.7**		
	baz=306								
SNCC	**San Nicolas Is**	**100.16**	**48**	Pdiff	**Pdif**	**13 26 11.2**	**-0.1**		
	baz=304								
TPNV	**Topopah Spring**	**100.25**	**44**	Pdiff	**Pdif**	**13 26 11.9**	**0.0**		
	baz=306								
EDW2	**Edwards Air Fo**	**100.29**	**46**	Pdiff	**Pdif**	**13 26 11.8**	**-0.2**		
	baz=305								
DUG	**Dugway, Tooele**	**100.40**	**40**	PFAKE		13 26 20.0	+7.5		
DUG				LR	LR				
	comp=Z,152nm,20.0s								
BW06	**Boulder Array**	**100.59**	**36**	PFAKE		13 26 30.0	+17		
BW06				LR	LR				
	comp=Z,106nm,20.0s								
PDAR	**Pinedale Array**	**100.59**	**36**	P	**Pdif**	**13 26 13.2**	**-0.2**		
	comp=Z,0.5nm,0.7s,baz=201,slow=1.3,SNR=5.3								
PDAR				PP	**PP**	**13 30 20.2**	**-1.9**		
	comp=Z,2.6nm,1.1s,baz=318,slow=2.0,SNR=4.8								
PDAR				PKKPbc	**PKKPbc**	**13 42 27.6**	**-0.5**		
	comp=Z,0.3nm,0.7s,baz=146,slow=2.9,SNR=4.6								
CIS	**Catalina Islan**	**100.84**	**48**	Pdiff	**Pdif**	**13 26 14.3**	**-0.2**		
	baz=304								
GSC	**Goldstone, Bar**	**100.85**	**45**	Pdiff	**Pdif**	**13 26 14.2**	**-0.2**		
	baz=306								
SCI2	**San Clemente I**	**100.99**	**48**	Pdiff	**Pdif**	**13 26 14.8**	**-0.2**		
	baz=304								
D26A	**Manning**	**101.15**	**29**	Pdiff	**Pdif**	**13 26 15.0**	**-0.5**		
	baz=318								
ESDC	**Sonseca Array**	**101.22**	**320**	PP	PP	13 30 23.2	-3.6		
	comp=Z,2.1nm,0.8s,baz=45,slow=7.4,SNR=6.0								
VNDA	**Vanda**	**101.24**	**172**	P	**Pdif**	**13 26 15.7**	**+0.7**		
	comp=Z,0.8nm,0.6s,baz=334,slow=7.1,SNR=8.2								
VNDA				PP	**PP**	**13 30 24.6**	**-2.2**		
	comp=Z,4.2nm,0.9s,baz=287,slow=3.7,SNR=12								
VNDA				PKKPbc	**PKKPbc**	**13 42 25.4**	**-1.9**		
	comp=Z,3.3nm,0.8s,baz=216,slow=1.1,SNR=22								
ULM	**Lac du Bonnet**	**101.37**	**24**	P	**Pdif**	**13 26 15.7**	**-0.6**		
	comp=Z,3.3nm,0.7s,baz=91,slow=3.7,SNR=3.5								
PAB	**San Pablo**	**101.54**	**321**	PFAKE		13 26 30.0	+13		
PAB				LR	LR				
	comp=Z,144nm,19.0s								
C28A	**Hausauer Farms**	**101.54**	**28**	Pdiff	**Pdif**	**13 26 18.1**	**+0.9**		
	baz=320								
MURC	**Murrieta**	**101.57**	**47**	Pdiff	**Pdif**	**13 26 18.1**	**+0.4**		
	baz=305								
E27A	**Carson**	**102.00**	**29**	Pdiff	**Pdif**	**13 26 20.3**	**+1.0**		
	baz=319								
F27A	**Lemmon**	**102.20**	**30**	Pdiff	**Pdif**	**13 26 21.3**	**+1.1**		
	baz=318								
G26A	**Maurine**	**102.36**	**31**	Pdiff	**Pdif**	**13 26 21.4**	**+0.5**		
	baz=318								
MONP2	**Monument Peak**	**102.50**	**47**	Pdiff	**Pdif**	**13 26 22.6**	**+0.6**		
	baz=306								
AGMN	**Agassiz Nation**	**102.95**	**25**	PFAKE		13 26 40.0	+17		
AGMN				LR	LR				
	comp=Z,144nm,19.0s								
B35A	**Bob, Littlefor**	**103.72**	**24**	Pdiff	**Pdif**	**13 26 26.8**	**0.0**		
	baz=326								
SCHQ	**Schefferville**	**103.90**	**5**	PKiKP	**PKiKP**	**13 30 43.1**	**-1.0**		
	comp=Z,4.2nm,0.8s,baz=352,slow=9.3,SNR=4.9								
TAM	**Tamanrasset**	**104.23**	**302**	PFAKE		13 26 40.0	+10		
TAM				LR	LR				
	comp=Z,148nm,19.0s								
ISCO	**Idaho Springs**	**104.78**	**36**	PFAKE		13 26 40.0	+7.8		
ISCO				LR	LR				
	comp=Z,71nm,20.0s								
EYMN	**Ely**	**104.89**	**23**	PFAKE		13 26 40.0	+7.9		
EYMN				LR	LR				
	comp=Z,122nm,22.0s								
MVCO	**Mesa Verde**	**104.90**	**40**	PFAKE		13 26 40.0	+7.3		
MVCO				LR	LR				
	comp=Z,125nm,19.0s								
W18A	**Petrified Fore**	**105.52**	**42**	Pdiff		13 30 48.9			
	baz=311								
BOSA	**Boshof**	**105.55**	**245**	PKKPbc	PKKPbc	13 42 14.3	+1.4		
	comp=Z,2.0nm,0.5s,baz=275,slow=3.6,SNR=6.3								
OGNE	**Ogallala**	**105.86**	**33**	PFAKE		13 31 00.0			
OGNE				LR	LR				
	comp=Z,152nm,20.0s								
F36A	**Milaca**	**105.87**	**25**	PKiKP	**PKiKP**	**13 30 47.9**	**-0.1**		
	baz=326								
SDCO	**Great Sand Dun**	**106.28**	**38**	PKiKP	**PKiKP**	**13 30 49.5**	**+0.1**		
	baz=314								
SDCO	**Great Sand Dun**	**106.28**	**38**	PFAKE		13 31 00.0			
SDCO				LR	LR				
	comp=Z,109nm,22.0s								
ECSD	**EROS Data Cent**	**106.30**	**28**	PKiKP	**PKiKP**	**13 30 48.7**	**-0.1**		
	baz=323								
ECSD	**EROS Data Cent**	**106.30**	**28**	PFAKE		13 31 00.0			
ECSD				LR	LR				
	comp=Z,195nm,20.0s								
TUC	**Tucson**	**106.64**	**45**	PFAKE		13 31 00.0			
TUC				LR	LR				
	comp=Z,73nm,20.0s								
RTC	**Rabat Centre**	**106.66**	**318**	PFAKE		13 31 00.0			
RTC				LR	LR				
	comp=Z,349nm,19.0s								
SYO	**Syowa Base**	**106.92**	**202**	*i*PP	PP	13 31 13.0	+4.0		
ANMO	**Albuquerque**	**107.64**	**40**	PKiKP	**PKiKP**	**13 30 52.5**	**+0.7**		
	baz=313								
I38A	**Scanlan Farm,**	**107.85**	**25**	PKiKP	**PKiKP**	**13 30 51.7**	**0.0**		
	baz=326								
121A	**Cookes Peak, D**	**108.44**	**43**	PKiKP	**PKiKP**	**13 30 53.8**	**+0.4**		
	baz=311								
N34A	**Lincoln**	**108.64**	**30**	PKiKP	**PKiKP**	**13 30 53.6**	**+0.3**		
	baz=322								
P34A	**Walnut Farm, R**	**109.50**	**31**	PKiKP	**PKiKP**	**13 30 55.0**	**0.0**		
	baz=322								
M38A	**Pleasantville**	**109.66**	**27**	PKiKP	**PKiKP**	**13 30 54.5**	**-0.7**		
	baz=325								
P35A	**Duane Minner,**	**109.91**	**30**	PKiKP	**PKiKP**	**13 30 55.3**	**-0.4**		
	baz=322								
Q34A	**Chapman**	**109.94**	**31**	PKiKP	**PKiKP**	**13 30 55.8**	**0.0**		
	baz=322								
R34A	**Isabella, Hill**	**110.27**	**32**	PKiKP	**PKiKP**	**13 30 56.3**	**-0.2**		
	baz=321								
AMTX	**Amarillo**	**110.48**	**37**	PKiKP	**PKiKP**	**13 30 57.6**	**+0.6**		
	baz=317								
MNTX	**Cornudas Mount**	**110.51**	**42**	PKiKP	**PKiKP**	**13 30 57.6**	**+0.5**		
	baz=313								
MNTX	**Cornudas Mount**	**110.51**	**42**	PFAKE		13 31 10.0			
MNTX				LR	LR				
	comp=Z,111nm,19.0s								
Q36A	**Arnold C. Orve**	**110.62**	**30**	PKiKP	**PKiKP**	**13 30 56.7**	**-0.4**		
	baz=323								
P37A	**Lathrop**	**110.63**	**29**	PKiKP	**PKiKP**	**13 30 56.6**	**-0.5**		
	baz=324								
P38A	**Dawn**	**110.97**	**29**	PKiKP	**PKiKP**	**13 30 57.6**	**-0.1**		
	baz=325								
R36A	**Gordon, Harris**	**111.10**	**31**	PKiKP	**PKiKP**	**13 30 57.6**	**-0.4**		
	baz=323								
Q37A	**Longview Farm,**	**111.16**	**30**	PKiKP	**PKiKP**	**13 30 57.7**	**-0.4**		
	baz=324								
S35A	**Otter Creek Ra**	**111.21**	**32**	PKiKP	**PKiKP**	**13 30 58.2**	**0.0**		
	baz=322								
T34A	**McClaskey Farm**	**111.29**	**33**	PKiKP	**PKiKP**	**13 30 58.0**	**-0.4**		
	baz=321								
R37A	**Teagarden Farm**	**111.43**	**30**	PKiKP	**PKiKP**	**13 30 58.2**	**-0.4**		
	baz=323								
S36A	**Lake Cedric, C**	**111.53**	**31**	PKiKP	**PKiKP**	**13 30 58.6**	**-0.3**		
	baz=322								
Q39A	**Willow Grove F**	**111.70**	**29**	PKiKP	**PKiKP**	**13 30 58.7**	**-0.4**		
	baz=325								
P40A	**Paris**	**111.71**	**28**	PKiKP	**PKiKP**	**13 30 58.6**	**-0.5**		
	baz=326								
T35A	**Sooner Cattle**	**111.71**	**33**	PKiKP	**PKiKP**	**13 30 58.8**	**-0.4**		
	baz=321								
S37A	**Fort Scott**	**111.87**	**31**	PKiKP	**PKiKP**	**13 30 59.1**	**-0.4**		
	baz=323								
T36A	**Boggs Farm, Ca**	**111.92**	**32**	PKiKP	**PKiKP**	**13 30 59.2**	**-0.4**		
	baz=322								
R38A	**Fenwick Farm,**	**111.97**	**30**	PKiKP	**PKiKP**	**13 30 58.9**	**-0.8**		
	baz=324								
WMOK	**Wichita Mounta**	**112.19**	**36**	PFAKE		13 31 10.0			
WMOK				LR	LR				
	comp=Z,106nm,19.0s								
TORD	**Torodi Ar. Bea**	**112.20**	**295**	PKiKP	**PKiKP**	**13 30 60.0**	**-0.7**		
	comp=Z,2.1nm,0.4s,baz=41,slow=1.5,SNR=24								
TORD				PP	**PP**	**13 31 49.2**	**+1.2**		
	comp=Z,2.9nm,0.7s,baz=58,slow=5.9,SNR=5.3								
TORD				PKKPbc	**PKKPbc**	**13 41 52.9**	**+1.5**		
	comp=Z,1.8nm,0.6s,baz=261,slow=1.4,SNR=14								
R39A	**Chumby, Stover**	**112.26**	**29**	PKiKP	**PKiKP**	**13 30 59.7**	**-0.5**		
	baz=325								
T37A	**Cheneyville 18**	**112.34**	**31**	PKiKP	**PKiKP**	**13 31 00.2**	**-0.2**		
	baz=323								
S38A	**Stockton**	**112.41**	**30**	PKiKP	**PKiKP**	**13 30 60.0**	**-0.5**		
	baz=324								
V35A	**Meyer Ranch, C**	**112.44**	**34**	PKiKP	**PKiKP**	**13 31 00.8**	**+0.2**		
	baz=321								
AAM	**Ann Arbor**	**112.51**	**20**	PFAKE		13 31 10.0			
AAM				LR	LR				
	comp=Z,191nm,21.0s								
R40A	**Maddies Statio**	**112.63**	**29**	PKiKP	**PKiKP**	**13 31 00.6**	**-0.3**		
	baz=325								
S39A	**Bolivar**	**112.64**	**30**	PKiKP	**PKiKP**	**13 31 00.9**	**-0.1**		
	baz=324								
T38A	**Diamond**	**112.71**	**31**	PKiKP	**PKiKP**	**13 31 00.8**	**-0.3**		
	baz=323								
LONY	**Lake Ozonia**	**112.77**	**13**	PFAKE		13 31 10.0			
LONY				LR	LR				
	comp=Z,163nm,19.0s								
Y33A	**Hilltop Ranch,**	**112.83**	**36**	PKiKP	**PKiKP**	**13 31 01.7**	**+0.3**		
	baz=319								
TUL1	**Leonard**	**112.86**	**33**	PKiKP	**PKiKP**	**13 31 01.6**	**+0.2**		
	baz=322								
V36A	**Jenks**	**112.88**	**33**	PKiKP	**PKiKP**	**13 31 01.5**	**+0.1**		
	baz=322								
S40A	**Lebanon**	**113.09**	**29**	PKiKP	**PKiKP**	**13 31 01.4**	**-0.4**		
	baz=325								
U38A	**Gravette**	**113.14**	**31**	PKiKP	**PKiKP**	**13 31 01.5**	**-0.5**		
	baz=323								
T39A	**Clever**	**113.15**	**30**	PKiKP	**PKiKP**	**13 31 01.7**	**-0.2**		
	baz=324								
TXAR	**Lajitas Array**	**113.20**	**43**	PKiKP	**PKiKP**	**13 31 02.5**	**+0.1**		
	comp=Z,4.6nm,0.6s,baz=225,slow=1.0,SNR=60								
TXAR				PP	**PP**	**13 31 51.4**	**-3.1**		
	comp=Z,1.8nm,0.9s,baz=308,slow=4.1,SNR=4.0								
TXAR				PKKPbc	**PKKPab**	**13 41 54.4**	**-4.1**		
	comp=Z,0.7nm,0.7s,baz=146,slow=6.9,SNR=6.3								
V37A	**Hulbert**	**113.21**	**32**	PKiKP	**PKiKP**	**13 31 02.0**	**-0.1**		
	baz=322								
W36A	**Wetumka**	**113.24**	**34**	PKiKP	**PKiKP**	**13 31 02.1**	**-0.1**		
	baz=321								
ABTX	**Abilene, Hawle**	**113.29**	**38**	PKiKP	**PKiKP**	**13 31 02.4**	**+0.1**		
	baz=318								
X35A	**Drake**	**113.42**	**35**	PKiKP	**PKiKP**	**13 31 02.5**	**0.0**		
	baz=320								
T40A	**Mansfield**	**113.45**	**30**	PKiKP	**PKiKP**	**13 31 01.9**	**-0.6**		
	baz=325								
NCB	**Newcomb**	**113.46**	**13**	PFAKE		13 31 10.0			
NCB				LR	LR				
	comp=Z,3μm,19.0s								
V38A	**Canehill**	**113.59**	**32**	PKiKP	**PKiKP**	**13 31 02.3**	**-0.5**		
	baz=323								
X36A	**Centrahoma**	**113.61**	**34**	PKiKP	**PKiKP**	**13 31 02.9**	**0.0**		
	baz=321								
U39A	**Green Forest**	**113.62**	**31**	PKiKP	**PKiKP**	**13 31 02.3**	**-0.6**		
	baz=324								
W37B	**Quinton**	**113.65**	**33**	PKiKP	**PKiKP**	**13 31 02.7**	**-0.2**		
	baz=322								
133A	**Hamilton Ranch**	**113.71**	**37**	PKiKP	**PKiKP**	**13 31 03.6**	**+0.5**		
	baz=318								
U40A	**Yellville**	**113.94**	**30**	PKiKP	**PKiKP**	**13 31 03.1**	**-0.3**		
	baz=324								
V39A	**Pettigrew**	**113.98**	**31**	PKiKP	**PKiKP**	**13 31 03.1**	**-0.5**		
	baz=324								
Z35A	**Perchaven, San**	**114.09**	**35**	PKiKP	PKPdf	13 31 03.7	-0.1		
	baz=320								
233A	**Rising Star**	**114.16**	**38**	PKiKP	**PKiKP**	**13 31 04.4**	**+0.3**		
	baz=318								
W38A	**Poteau**	**114.16**	**32**	PKiKP	PKPdf	13 31 03.7	-0.2		
	baz=323								
134A	**White-Moore Ra**	**114.20**	**37**	PKiKP	**PKiKP**	**13 31 04.3**	**+0.2**		
	baz=319								
PTCN	**Pitcairn Islan**	**114.28**	**109**	PFAKE		13 31 20.0	+16		
PTCN				LR	LR				
	comp=Z,881nm,19.0s								
X38A	**Whitesboro**	**114.32**	**33**	PKiKP	PKPdf	13 31 04.3	0.0		
	baz=322								
V40A	**Witts Springs**	**114.40**	**31**	PKiKP	**PKiKP**	**13 31 04.1**	**-0.3**		
	baz=324								
W39A	**Magazine**	**114.42**	**32**	PKiKP	**PKiKP**	**13 31 04.1**	**-0.3**		
	baz=323								
M54A	**Oil Creek Stat**	**114.45**	**18**	PKiKP	**PKiKP**	**13 31 04.0**	**-0.3**		
	baz=338								
ACSO	**Alum Creek Sta**	**114.59**	**21**	PFAKE		13 31 20.0	+15		
ACSO				LR	LR				
	comp=Z,197nm,21.0s								
234A	**Clairette**	**114.60**	**37**	PKiKP	PKPdf	13 31 05.1	+0.2		
	baz=319								
333A	**Richland Sprin**	**114.62**	**38**	PKiKP	PKPdf	13 31 05.1	+0.2		
	baz=318								
JCT	**Junction City**	**114.76**	**39**	PKiKP	PKPdf	13 31 05.5	+0.3		
	baz=317								
JCT	**Junction City**	**114.76**	**39**	PFAKE		13 31 20.0	+15		
JCT				LR	LR				
	comp=Z,574nm,21.0s								
W40A	**Ferguson Farm,**	**114.78**	**31**	PKiKP	**PKiKP**	**13 31 04.9**	**-0.2**		
	baz=324								
X39A	**Fountain Ranch**	**114.81**	**32**	PKiKP	PKPdf	13 31 05.3	+0.1		
	baz=323								
433A	**Art**	**114.98**	**39**	PKiKP	PKPdf	13 31 05.7	+0.1		
	baz=318								
WHTX	**Lake Whitney,**	**114.99**	**37**	PKiKP	**PKiKP**	**13 31 05.4**	**-0.1**		
	baz=319								
334A	**Lometa**	**115.04**	**38**	PKiKP	**PKPdf**	**13 31 05.8**	**+0.1**		
	baz=318								
MIAR	**Mount Ida**	**115.05**	**32**	PKiKP	**PKPdf**	**13 31 05.8**	**+0.1**		
	baz=323								
434A	**Burnet**	**115.41**	**38**	PKiKP	**PKiKP**	**13 31 06.1**	**-0.3**		
	baz=318								
533A	**Kerrville**	**115.51**	**39**	PKiKP	**PKPdf**	**13 31 06.7**	**0.0**		
	baz=317								
534A	**Blanco**	**115.87**	**39**	PKiKP	**PKPdf**	**13 31 07.2**	**-0.2**		
	baz=318								
O56A	**Blue Knob Stat**	**115.91**	**17**	PKiKP	**PKPdf**	**13 31 06.9**	**-0.3**		
	baz=339								
N59A	**State Game Lan**	**116.03**	**15**	PKiKP	**PKPdf**	**13 31 07.1**	**-0.2**		
	baz=342								
139A	**Bunkhouse Ranc**	**116.11**	**34**	PKiKP	**PKPdf**	**13 31 07.6**	**-0.1**		
	baz=322								
832A	**Faith Ranch, C**	**116.24**	**41**	PKiKP	**PKiKP**	**13 31 08.8**	**+0.7**		
	baz=316								
733A	**Divot King Ran**	**116.34**	**40**	PKiKP	**PKPdf**	**13 31 08.2**	**-0.1**		
	baz=317								
833A	**Chaparral WMA,**	**116.56**	**41**	PKiKP	**PKiKP**	**13 31 09.3**	**+0.5**		
	baz=316								
536A	**Bastrop**	**116.65**	**38**	PKiKP	**PKPdf**	**13 31 08.3**	**-0.6**		
	baz=319								
338A	**Crockett**	**116.65**	**35**	PKiKP	**PKPdf**	**13 31 08.0**	**-0.8**		
	baz=321								
NATX	**Nacogdoches**	**116.69**	**35**	PFAKE		13 31 20.0	+11		
NATX				LR	LR				
	comp=Z,282nm,20.0s								
734A	**La Parita Cree**	**116.69**	**40**	PKiKP	**PKiKP**	**13 31 09.6**	**+0.7**		
	baz=317								
635A	**Leesville**	**116.75**	**39**	PKiKP	**PKiKP**	**13 31 09.7**	**+0.7**		
	baz=318								
Y43A	**Makayla and Ka**	**116.84**	**30**	PKiKP	**PKiKP**	**13 31 09.6**	**+0.5**		
	baz=325								
438A	**Sam Houston St**	**117.03**	**36**	PKiKP	**PKPdf**	**13 31 09.0**	**-0.6**		
	baz=320								
537A	**Green Hill Far**	**117.07**	**37**	PKiKP	**PKPdf**	**13 31 09.6**	**-0.1**		
	baz=320								
636A	**Smothers Creek**	**117.10**	**38**	PKiKP	**PKiKP**	**13 31 10.6**	**+0.9**		
	baz=319								
933A	**Laredo**	**117.15**	**41**	PKiKP	**PKiKP**	**13 31 10.5**	**+0.6**		
	baz=316								
834A	**Tilden**	**117.22**	**40**	PKiKP	**PKiKP**	**13 31 10.8**	**+0.8**		
	baz=317								
Y45A	**Yeager Farm, C**	**117.53**	**29**	PKiKP	**PKPdf**	**13 31 10.4**	**0.0**		
	baz=327								
835A	**Beeville**	**117.53**	**40**	PKiKP	**PKiKP**	**13 31 11.6**	**+1.0**		
	baz=318								
934A	**Benavides**	**117.62**	**41**	PKiKP	**PKiKP**	**13 31 11.9**	**+1.1**		
	baz=317								
Y46A	**Houston**	**117.82**	**29**	PKiKP	**PKPdf**	**13 31 10.8**	**-0.2**		
	baz=327								
034A	**Hebbronville**	**117.91**	**41**	PKiKP	**PKiKP**	**13 31 12.9**	**+1.6**		
	baz=317								
737A	**Port Lavaca**	**117.99**	**38**	PKiKP	**PKPdf**	**13 31 10.7**	**-0.7**		
	baz=319								
CBN	**Corbin Frederi**	**118.17**	**17**	PFAKE		13 31 20.0	+8.5		
CBN				LR	LR				
	comp=Z,111nm,19.0s								
Y47A	**UCPARC, Winfie**	**118.25**	**28**	PKiKP	**PKPdf**	**13 31 11.1**	**-0.7**		
	baz=328								
540A	**Vidor**	**118.26**	**35**	PKiKP	**PKPdf**	**13 31 11.0**	**-0.9**		
	baz=322								
145A	**Houston Renfro**	**118.39**	**31**	PKiKP	**PKiKP**	**13 31 12.5**	**+0.4**		
	baz=326								
244A	**Avery, Jackson**	**118.49**	**31**	PKiKP	**PKiKP**	**13 31 12.4**	**0.0**		
	baz=325								
Z47A	**Carrollton**	**118.75**	**29**	PKiKP	**PKPdf**	**13 31 12.3**	**-0.4**		
	baz=328								
147A	**Livingston**	**119.10**	**29**	PKiKP	**PKPdf**	**13 31 13.0**	**-0.5**		
	baz=328								
247A	**Quitman**	**119.47**	**30**	PKiKP	**PKiKP**	**13 31 14.3**	**+0.1**		
	baz=327								
KMSC	**Kings Mountain**	**119.74**	**22**	PKiKP	**PKPdf**	**13 31 14.3**	**-0.3**		
	baz=335								
347A	**Saraland**	**120.04**	**30**	PKiKP	**PKiKP**	**13 31 15.6**	**+0.2**		
	baz=327								
348A	**Jackson**	**120.33**	**30**	PKiKP	**PKiKP**	**13 31 16.2**	**+0.3**		
	baz=328								
GOGA	**Godfrey**	**120.50**	**25**	PFAKE		13 31 30.0	+14		
GOGA				LR	LR				
	comp=Z,86nm,20.0s								
SNAA	**Sanae**	**120.65**	**198**	PKP	**PKPdf**	**13 31 14.9**	**-0.3**		
DBIC	**Dimbokro**	**120.99**	**292**	PKP	**PKPdf**	**13 31 16.9**	**-0.6**		
	comp=Z,14nm,0.7s,baz=48,slow=2.2,SNR=17								
DBIC				PKKPbc	**PKKPab**	**13 41 22.9**	**-0.3**		
	comp=Z,2.6nm,0.4s,baz=222,slow=1.9,SNR=5.5								
DBIC	**Dimbokro**	**120.99**	**292**	PKIKP	**PKPdf**	**13 31 17.0**	**-0.6**		
DBIC				pmax	pmax				
	comp=Z,3.0nm,0.4s								
KIC	**Kosan Boka**	**121.04**	**292**	*e*PKIKP	**PKPdf**	**13 31 17.1**	**-0.6**		
	comp=Z,61nm,0.8s								
TIC	**Toumodi**	**121.14**	**292**	*e*PKIKP	**PKPdf**	**13 31 17.4**	**-0.5**		
LIC	**Lamto**	**121.36**	**292**	*e*PKIKP	**PKPdf**	**13 31 17.6**	**-0.7**		
	comp=Z,31nm,0.8s								
TIGA	**Tifton**	**122.18**	**26**	PKiKP	**PKPdf**	**13 31 19.1**	**-0.3**		
	baz=332								
VNA2	**Neumayer--Watz**	**122.30**	**197**	PKP	**PKPdf**	**13 31 18.6**	**+0.3**		
	baz=75,slow=1.4								
VNA1	**Neumayer--Stat**	**122.69**	**198**	PKP	**PKPdf**	**13 31 19.4**	**+0.3**		
VNA3	**Neumayer Olymp**	**122.75**	**197**	PKP	**PKPdf**	**13 31 19.1**	**-0.1**		
TEIG	**Tepich**	**129.27**	**38**	PFAKE		13 31 50.0	+17		
TEIG				LR	LR				
	comp=Z,90nm,19.0s								
ASCN	**Ascension**	**135.94**	**281**	PFAKE		13 32 00.0	+14		
ASCN				LR	LR				
	comp=Z,2μm,21.0s								
JTS	**JuntasAbangare**	**138.99**	**43**	PFAKE		13 32 00.0	+8.4		
JTS				LR	LR				
	comp=Z,201nm,20.0s								
BCIP	**Isla Barro Col**	**142.96**	**38**	PFAKE		13 32 10.0	+11		
BCIP				LR	LR				
	comp=Z,125nm,19.0s								
USHA	**Ushuaia**	**145.50**	**169**	PKPbc	**PKPbc**	**13 32 02.5**	**+0.2**		
	comp=Z,212nm,0.9s,baz=180,slow=4.4,SNR=12								
SVB	**Belmont**	**145.59**	**6**	*e*PKPdf	**PKPbc**	**13 32 03.8**	**0.0**		
GRGR	**Grenville**	**146.68**	**7**	*e*PKPdf	**PKPbc**	**13 32 06.6**	**-0.4**		
DBBC	**Dabeiba**	**146.73**	**34**	*e*P	**PKPab**	**13 32 08.6**	**-0.3**		
SOLC	**Bahia Solano**	**146.73**	**37**	*e*P	**PKPbc**	**13 32 07.8**	**+0

W18A	**Petrified Fore**	**23.37**	**327**	*e*P	P	13 29 58.2	-1.4
DUG	**Dugway, Tooele**	**28.84**	**330**	P	P	13 30 44.8	-4.5
	18nm,1.6s						

IDC ***29*** *13:30:55.2±0.8, 31°.03N×103°.77E, h0km, mb3.7/13, mb1 3.9/14, mb1mx3.6/70, mbtmp3.7/14, ML3.7/1, Error ellipse: s-maj=26.6km s-min=15.5km az=59.0*
BJI ***29*** *13:30:57.1, 30°.98N×103°.37E, h13km, ML3.9/17, Ms3.6/9, Ms7 3.5/7*

ISC 29 13:30:57.6±0.6, 31°.06N±0°.04×103°.57E±0°.06, h16km, n20, σ1§58/26, mb3.8/13, 1D, Sichuan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CD2	**Chengdu**	**0.22**	**134**	⇓*i*Pg	**Pb**	**13 31 03.8**	**+0.6**
CD2				Sg	**Sb**	**13 31 09.3**	**+2.3**
CD2				smax	smax		
	comp=N,16μm,0.8s						
CD2				smax	smax		
	comp=E,33μm,0.7s						
LZH	**Lanzhou**	**5.02**	**2**	*e*Pg	**Pg**	**13 32 32.0**	**-1.7**
LZH				Sg	**Sg**	**13 33 39.0**	**+0.4**
LZH				smax	smax		
	comp=N,340nm,1.3s						
LZH				smax	smax		
	comp=E,90nm,1.2s						
LZH				LR	LR		
	comp=N,620nm,6.6s						
LZH				LR	LR		
	comp=E,430nm,6.6s						
LZH				LR	LR		
	comp=Z,360nm,8.8s						
GYA	**Guiyang**	**5.33**	**149**	Pn	**Pn**	**13 32 18.0**	**+1.4**
GYA				Sn	**Sn**	**13 33 18.0**	**+0.3**
GYA				Sg	**Sg**	**13 33 47.3**	**-1.4**
GYA				smax	smax		
	comp=N,120nm,0.9s						
GYA				smax	smax		
	comp=E,140nm,0.8s						
XAN	**Xi'an**	**5.40**	**55**	Pn	**Pn**	**13 32 19.0**	**+1.4**
XAN				Pg	**Pg**	**13 32 39.0**	**-2.0**
XAN				Sn	**Sn**	**13 33 22.0**	**+2.6**
XAN				Sg	**Sg**	**13 33 50.3**	**-0.7**
XAN				smax	smax		
	comp=N,300nm,0.9s						
XAN				smax	smax		
	comp=E,160nm,0.8s						
GTA	**Gaotai**	**8.88**	**341**	*e*P	Pn	13 33 53.5	+48
GTA				pP		13 33 56.8	
GTA				sP		13 34 00.0	
GTA				pmax	pmax		
	comp=Z,2.0nm,0.9s						
CMAR	**Chiang Mai Arr**	**13.23**	**200**	Pn	**Pn**	**13 34 04.3**	**-0.5**
	comp=Z,0.1nm,0.3s,baz=7.0,slow=11,SNR=5.3						
WMQ	**Urumqi**	**17.88**	**320**	*e*P	**Pn**	**13 35 04.5**	**-1.2**
KSRS	**Korea Array**	**21.08**	**66**	P	**P**	**13 35 38.0**	**-3.1**
	comp=Z,0.2nm,0.3s,baz=249,slow=9.4,SNR=2.4						
MKAR	**Makanchi Array**	**22.71**	**320**	P	**P**	**13 36 00.2**	**+1.6**
	comp=Z,0.8nm,0.7s,baz=128,slow=11,SNR=5.7						
AAK	**Ala-Archa**	**25.85**	**305**	P	**P**	**13 36 31.5**	**+2.9**
	comp=Z,0.7nm,0.3s,baz=79,slow=11,SNR=3.5						
ZALV	**Zalesovo Beam**	**26.56**	**335**	P	**P**	**13 36 36.0**	**+1.4**
	comp=Z,2.1nm,0.7s,baz=141,slow=7.0,SNR=7.3						
KURBB	**Kurchatov Arra**	**27.00**	**324**	P	**P**	**13 36 39.1**	**+0.5**
	comp=Z,0.8nm,0.8s,baz=131,slow=9.0,SNR=7.3						
TIXI	**Tiksi**	**42.88**	**11**	P	**P**	**13 38 54.9**	**+0.1**
	comp=Z,0.8nm,0.3s,baz=246,slow=3.5,SNR=4.1						
WRA	**Warramunga Arr**	**58.69**	**146**	P	**P**	**13 40 54.8**	**+0.2**
	comp=Z,1.0nm,0.7s,baz=338,slow=7.5,SNR=10.0						
ASAR	**Alice Springs**	**61.69**	**148**	P	**P**	**13 41 14.6**	**-0.5**
	comp=Z,0.6nm,0.9s,baz=336,slow=7.0,SNR=6.0						
NOA	**NORSAR Array B**	**64.45**	**327**	P	**P**	**13 41 32.1**	**-0.9**
	comp=Z,0.4nm,0.7s,baz=74,slow=7.1,SNR=3.2						
ILAR	**Eielson Array**	**70.07**	**25**	P	**P**	**13 42 08.4**	**-0.1**
	comp=Z,0.4nm,0.8s,baz=332,slow=5.7,SNR=4.4						
STKA	**Stephens Creek**	**72.22**	**147**	P	**P**	**13 42 20.1**	**-1.8**
	comp=Z,1.7nm,0.9s,baz=0.4,slow=11,SNR=3.0						
INK	**Inuvik**	**72.34**	**19**	P	**P**	**13 42 23.5**	**+1.3**
	comp=Z,1.1nm,0.8s,baz=333,slow=8.2,SNR=5.8						
YKA	**Yellowknife Ar**	**81.86**	**17**	P	**P**	**13 43 16.6**	**+0.9**
	comp=Z,0.5nm,0.7s,baz=332,slow=5.4,SNR=7.1						

JMA 29 13:31:53.8±0.2, 28°.54N×140°.77E, h297km, M3.8, Bonin Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CBIJ	**Chichi jima**	**1.91**	**139**	P	Pn	13 32 39.8	+0.2
CBIJ				*e*S	S	13 33 16.0	-0.1
JHHJ	**Haha-jima-NKT**	**2.28**	**146**	P	Pn	13 32 42.7	0.0
JHHJ				S	S	13 33 20.2	-1.4
BSO1	**Boso 1**	**6.10**	**2**	*e*S	S	13 34 35.6	-0.4
BSO3	**Boso 3**	**6.25**	**358**	P	Pn	13 33 26.4	+0.8
BSO3				*e*S	S	13 34 38.7	-1.0
JOD2	**Odawara 2**	**6.85**	**348**	P	Pn	13 33 34.8	+1.5
JOD2				*e*S	S	13 34 51.8	-1.8
JRY	**Ryogami san**	**7.62**	**349**	P	Pn	13 33 43.3	+0.7
JRY				*e*S	S	13 35 07.8	-3.0
JAG	**Ashikaga**	**7.94**	**352**	P	Pn	13 33 45.8	-0.7

NEIC 29 13:35:21.2, 59°.76N×153°.61W, h131km, mb4.3/5, After AEIC., Southern Alaska

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KDAK	**Kodiak Island**	**2.06**	**165**	*e*Pn	Pn	13 35 54.4	-1.5
SEW	**Seward**	**2.12**	**79**	*e*Pn	Pn	13 35 54.5	-2.1
SEW				*e*Sn	Sn	13 36 21.8	-2.0
RC01	**Rabbit Creek A**	**2.33**	**54**	*e*Pn	Pn	13 35 58.0	-1.3
RC01				*e*Sn	Sn	13 36 25.4	-3.2
OHAK	**Old Harbor**	**2.56**	**176**	*e*Pn	Pn	13 35 59.9	-2.1
OHAK				*e*Sn	Sn	13 36 31.4	-2.1
PMR	**Palmer**	**2.87**	**48**	*e*Pn	Pn	13 36 03.9	-2.1
PMR				*e*Sn	Sn	13 36 37.2	-3.3
PPLA	**Purkeypile**	**3.22**	**12**	*e*Pn	Pn	13 36 10.2	-0.5
PPLA				*e*Sn	Sn	13 36 48.5	-0.5
SML	**Sawmill**	**3.30**	**49**	*e*Pn	Pn	13 36 09.5	-2.2
SML				*e*Sn	Sn	13 36 47.0	-3.7
KTH	**Kantishna Hill**	**4.01**	**17**	*e*Pn	Pn	13 36 19.2	-1.8
KTH				*e*Sn	Sn	13 37 05.2	-2.3
TRF	**Thorofare Moun**	**4.03**	**22**	*e*Pn	Pn	13 36 19.9	-1.4
TRF				*e*Sn	Sn	13 37 07.6	-0.4
DIV	**Divide**	**4.12**	**67**	*e*Pn	Pn	13 36 20.8	-1.7
BPAW	**Bear Paw Mtn.**	**4.52**	**15**	*e*Pn	Pn	13 36 25.9	-2.0
BPAW				*e*Sn	Sn	13 37 13.8	-5.9
MCK	**McKinley**	**4.56**	**27**	*e*Pn	Pn	13 36 26.0	-2.3
BMRM	**Bremner River**	**4.63**	**71**	*e*Pn	Pn	13 36 27.7	-1.6
BMRM				*e*Sn	Sn	13 37 18.8	-3.5
PAX	**Paxson**	**5.07**	**47**	*e*Pn	Pn	13 36 33.1	-2.0
	12nm,0.4s						
COLA	**College**	**5.79**	**25**	*e*Pn	Pn	13 36 42.5	-2.1
	5.7nm,0.8s						
COLA				*e*Sn	Sn	13 37 47.2	-2.6
DOT	**Dot Lake**	**5.98**	**45**	*e*Pn	Pn	13 36 47.0	-0.3
	7.2nm,0.3s						
COLD	**Coldfoot**	**7.64**	**10**	*e*Pn	Pn	13 37 08.4	-1.2
	5.4nm,1.1s						
DLBC	**Dease Lake**	**12.18**	**86**	*e*Pn	Pn	13 38 10.6	+0.5
	5.2nm,0.4s						

IDC 29 13:38:56.4±1.8, 2°.73N×124°.93E, h0km, mb3.7/4, mb1 3.9/4, mb1mx3.5/39, mbtmp3.8/4, MS3.2/1, Ms1 3.2/1, ms1mx2.5/42, Error ellipse: s-maj=185.9km s-min=24.8km az=63.0, Celebes Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**24.35**	**158**	P	P	13 44 16.3	-0.1
	2.0nm,0.7s,baz=336,slow=11,SNR=22						
ASAR	**Alice Springs**	**27.66**	**162**	P	P	13 44 47.5	+1.4
	0.2nm,0.3s,baz=343,slow=7.9,SNR=12						
HNR	**Honiara**	**36.92**	**110**	LR	LR	14 00 48.1	
	comp=Z,35nm,20.6s,baz=127,slow=36						
STKA	**Stephens Creek**	**37.88**	**157**	P	P	13 46 14.1	-1.3
	2.1nm,0.8s,baz=345,slow=6.5,SNR=4.8						
MKAR	**Makanchi Array**	**57.37**	**326**	P	P	13 48 46.3	-0.3
	0.2nm,0.3s,baz=124,slow=5.7,SNR=5.3						

ZUR ***29*** *13:40:30.7, 47°.97N×8°.64E, h0km, ML1.6/2, Suspected Mining explosion.*
ISCJB ***29*** *13:40:32.8±0.8, 47°.91N±0°.05×8°.71E±0°.04, h0km, Error ellipse: s-maj=7.4km s-min=4.2km az=170.9*
CSEM ***29*** *13:40:32.8±0.2, 47°.94N×8°.67E, h1km, ML2.5/5, Error ellipse: s-maj=4.4km s-min=2.4km az=174.0, Suspected Mining explosion.*
VIE ***29*** *13:40:33.5±0.7, 48°.01N×8°.82E, h0km, mb1.2/1, ml2.0/4, Error ellipse: s-maj=5.6km s-min=4.1km az=22.0, Suspected Mining explosion.*

ISC 29 13:40:31.1±1.3, 48°.04N±0°.07×8°.64E±0°.03, h0km, n14, σ0§55/24, 4C, Germany

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SLE	**Schleitheim** 464nm,0.3s	**0.29**	**200**	⇑*i*Pg	**Pg**	**13 40 37.0**	**+0.3**
SLE	464nm,0.3s			*e*Sg	**Sg**	**13 40 40.4**	**-0.1**
SLE	**Schleitheim** 464nm,0.3s	**0.29**	**200**	⇑*i*Pg	**Pg**	**13 40 37.0**	**+0.3**
SLE	464nm,0.3s			*e*Sg	**Sg**	**13 40 40.4**	**-0.1**
GUT	**Gutenstein**	**0.32**	**84**	⇑*i*Pg	**Pb**	**13 40 39.4**	**-0.3**
GUT				*e*Sg	**Sb**	**13 40 44.5**	**-0.9**
GUT	**Gutenstein**	**0.32**	**84**	⇑*i*Pg	**Pb**	**13 40 39.4**	**-0.3**
GUT				*e*Sg	**Sb**	**13 40 44.5**	**-0.9**
KIZ	**Kirchzarten** 28nm,0.9s	**0.49**	**260**	*e*Pg	**Pb**	**13 40 42.5**	**-0.2**
KIZ	**Kirchzarten** 28nm,0.9s	**0.49**	**260**	*e*Pg	**Pb**	**13 40 42.5**	**-0.2**
DAVA	**Damuels** 1.2nm,0.2s	**1.13**	**132**	*i* Pg	**Pb**	**13 40 53.0**	**-0.5**
DAVA	8.7nm,0.4s			*e*Sg	**Sg**	**13 41 07.6**	**+0.3**
DAVA	**Damuels** 1.2nm,0.2s	**1.13**	**132**	Pg	**Pb**	**13 40 53.0**	**-0.5**
DAVA	8.7nm,0.4s			Sg	**Sg**	**13 41 07.6**	**+0.3**
RETA	**Reutte** 1.1nm,0.2s	**1.53**	**110**	*e*Pg	**Pg**	**13 41 01.4**	**+1.0**
RETA	4.1nm,0.3s			*e*Sg	**Sg**	**13 41 19.7**	**-0.6**
RETA	**Reutte** 1.1nm,0.2s	**1.53**	**110**	Pg	**Pg**	**13 41 01.4**	**+1.0**
RETA	4.1nm,0.3s			Sg	**Sg**	**13 41 19.7**	**-0.6**
FETA	**Feichten**	**1.74**	**125**	*e*Pn	**Pn**	**13 41 03.1**	**+0.3**
FETA	0.2nm,0.1s			*i* Pg	**Pg**	**13 41 04.9**	**+0.4**
FETA	1.1nm,0.2s			*e*Sg	**Sg**	**13 41 27.7**	**+0.6**
FETA	**Feichten**	**1.74**	**125**	Pn	**Pn**	**13 41 03.1**	**+0.3**
MOTA	**Moosalm** 7.7nm,0.4s	**1.80**	**112**	Sg	**Sg**	**13 41 29.0**	**0.0**
MOTA	**Moosalm** 7.7nm,0.4s	**1.80**	**112**	Sg	**Sg**	**13 41 29.0**	**0.0**

MAN 29 13:54:45, 19°.22N×120°.70E, h16km, mb4.5, ML3.4, MS3.3, 1D, Philippine Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PIP	**Pasuquin**	**0.89**	**185**	⇓*i*P	Pb	13 55 01.8	-0.3
APYP	**Conner**	**1.44**	**159**	*e*P	Pn	13 55 09.4	-1.1
APYP				*e*S	Sb	13 55 30.4	+0.8
ABRA	**Dolores**	**1.56**	**180**	*e*P	Pb	13 55 13.1	-0.4
ABRA				*e*S	Sn	13 55 32.3	+0.4
CAUP	**Cauayan**	**2.50**	**155**	*e*P	Pn	13 55 26.8	+1.8

CSEM ***29*** *14:00:16.5±0.2, 39°.90N×33°.05E, h8km, MD2.5, Error ellipse: s-maj=4.4km s-min=4.0km az=126.0*
ISK ***29*** *14:00:16.2, 39°.88N×33°.05E, h7km, MD2.5*
DDA ***29*** *14:00:17.0, 39°.88N×33°.08E, h8km, Ml2.7*

ISC 29 14:00:16.6±1.1, 39°.90N±0°.02×33°.08E±0°.02, h4km±9km, n30, σ0§75/52, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LOD	**Lodumlu**	**0.24**	**269**	*e*PG	**Pg**	**14 00 21.0**	**-0.3**
LOD				*e*SG	**Sg**	**14 00 24.9**	**+0.4**
LOD	**Lodumlu**	**0.24**	**269**	*e*Pg	**Pg**	**14 00 21.0**	**-0.3**
LOD				*e*Sg	**Sg**	**14 00 24.9**	**+0.4**
BBAL	**Bala**	**0.35**	**174**	*i* P	**Pg**	**14 00 23.4**	**-0.1**
BBAL				*i* S	**Sb**	**14 00 29.7**	**-1.8**
BBAL	**Bala**	**0.35**	**174**	P	**Pg**	**14 00 23.4**	**-0.1**
BBAL				S	**Sb**	**14 00 29.7**	**-1.8**
AFSR	**Af˙ar-Bala (A**	**0.45**	**181**	*e*PG	**Pg**	**14 00 25.0**	**-0.2**
AFSR				*e*SG	**Sg**	**14 00 31.5**	**+0.4**
AFSR	**Af˙ar-Bala (A**	**0.45**	**181**	*e*Pg	**Pg**	**14 00 25.0**	**-0.2**
AFSR				*e*Sg	**Sg**	**14 00 31.5**	**+0.4**
ELDT	**Eldivan**	**0.65**	**24**	*i* P	**Pg**	**14 00 28.7**	**-0.4**
ELDT				*i* S	**Sb**	**14 00 39.8**	**-0.3**
ELDT	**Eldivan**	**0.65**	**24**	P	**Pg**	**14 00 28.7**	**-0.4**
ELDT				S	**Sb**	**14 00 39.8**	**-0.3**
KKUL	**Konya-Kulu**	**0.73**	**190**	*i* P	**Pg**	**14 00 30.7**	**0.0**
KKUL				*i* S	**Sb**	**14 00 42.3**	**-0.1**
KKUL	**Konya-Kulu**	**0.73**	**190**	P	**Pg**	**14 00 30.7**	**0.0**
KKUL				S	**Sb**	**14 00 42.3**	**-0.1**
SERE	**Sereflikochisa**	**1.02**	**158**	*e*PG	**Pg**	**14 00 36.0**	**-0.2**
SERE	**Sereflikochisa**	**1.02**	**158**	*e*Pg	**Pg**	**14 00 36.0**	**-0.2**
CDAG	**Cicekdag**	**1.03**	**105**	*i* P	**Pg**	**14 00 36.0**	**-0.4**
CDAG				*i* S	**Sn**	**14 00 52.5**	**-0.4**
CDAG	**Cicekdag**	**1.03**	**105**	P	**Pg**	**14 00 36.0**	**-0.4**
CDAG				S	**Sn**	**14 00 52.5**	**-0.4**
BCAM	**Yenicaga**	**1.20**	**320**	*i* P	**Pg**	**14 00 39.6**	**0.0**
BCAM				*i* S	**Sn**	**14 00 58.3**	**+1.2**
BCAM	**Yenicaga**	**1.20**	**320**	P	**Pg**	**14 00 39.7**	**0.0**
BCAM				S	**Sn**	**14 00 58.3**	**+1.2**
CORM	**Corum**	**1.23**	**76**	*e*PN	**Pg**	**14 00 40.5**	**+0.4**
CORM				*e*SN	**Sn**	**14 00 58.2**	**+0.6**
CORM	**Corum**	**1.23**	**76**	*e*Pn	**Pg**	**14 00 40.5**	**+0.4**
CORM				*e*Sn	**Sn**	**14 00 58.2**	**+0.6**
AUMIH	**MIHALICIK**	**1.23**	**269**	*i* P	**Pg**	**14 00 39.8**	**-0.3**
AUMIH				*i* S	**Sn**	**14 00 57.6**	**-0.1**
AUMIH	**MIHALICIK**	**1.23**	**269**	P	**Pg**	**14 00 39.8**	**-0.3**
AUMIH				S	**Sn**	**14 00 57.6**	**-0.1**
ILGA	**Ilgaz**	**1.25**	**23**	*i* P	**Pg**	**14 00 38.5**	**-2.2**
ILGA				*i* S	**Sn**	**14 00 59.6**	**+1.1**
ILGA	**Ilgaz**	**1.25**	**23**	P	**Pg**	**14 00 38.5**	**-2.2**
ILGA				S	**Sn**	**14 00 59.6**	**+1.1**
SVRH	**Sivrihisar-ESK**	**1.28**	**250**	*e*PN	**Pg**	**14 00 40.6**	**-0.5**
SVRH	**Sivrihisar-ESK**	**1.28**	**250**	*e*Pn	**Pg**	**14 00 40.6**	**-0.5**
COAL	**Corum-Alaca**	**1.51**	**76**	*i* P	**Pb**	**14 00 45.3**	**+0.1**
COAL				*i* S	**Sg**	**14 01 05.9**	**+0.9**
COAL	**Corum-Alaca**	**1.51**	**76**	P	**Pb**	**14 00 45.3**	**+0.1**
COAL				S	**Sg**	**14 01 05.9**	**+0.9**
YOZ	**Yozgat**	**1.75**	**98**	*e*PN	**Pn**	**14 00 47.9**	**+0.1**
YOZ	**Yozgat**	**1.75**	**98**	*e*Pn	**Pn**	**14 00 47.9**	**+0.1**
GULA	**Gulagac**	**1.79**	**149**	*e*PN	**Pn**	**14 00 48.2**	**-0.2**
GULA	**Gulagac**	**1.79**	**149**	*e*Pn	**Pn**	**14 00 48.2**	**-0.2**

ISK ***29*** *14:12:26.5, 41°.60N×35°.45E, h5km, MD2.5*
CSEM ***29*** *14:12:27.4±0.3, 41°.62N×35°.46E, h2km, MD2.5, Error ellipse: s-maj=7.6km s-min=4.7km az=35.0*
DDA ***29*** *14:12:29.1, 41°.49N×35°.29E, h5km, Ml2.7*

ISC 29 14:12:27.0±1.0, 41°.63N±0°.03×35°.48E±0°.03, h8km±9km, n28, σ0§78/46, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DIKM	**Dikmen**	**0.17**	**276**	*e*PG	**Pg**	**14 12 30.3**	**-0.2**
DIKM				*e*SG	**Sg**	**14 12 33.2**	**+0.3**
DIKM	**Dikmen**	**0.17**	**276**	*e*Pg	**Pg**	**14 12 30.3**	**-0.2**
DIKM				*e*Sg	**Sg**	**14 12 33.2**	**+0.3**
SNOP	**Sinop**	**0.44**	**332**	*e*PG	**Pb**	**14 12 36.7**	**-0.3**
SNOP				*e*SG	**Sb**	**14 12 44.1**	**+0.4**
SNOP	**Sinop**	**0.44**	**332**	*e*Pg	**Pb**	**14 12 36.7**	**-0.3**
SNOP				*e*Sg	**Sb**	**14 12 44.1**	**+0.4**
BOYT	**Boyabat**	**0.48**	**244**	*i* P	**Pg**	**14 12 35.7**	**-0.7**
BOYT				*i* S	**Sg**	**14 12 43.3**	**+0.7**
BOYT	**Boyabat**	**0.48**	**244**	P	**Pg**	**14 12 35.7**	**-0.7**
BOYT				S	**Sg**	**14 12 43.3**	**+0.7**
BYBT	**Boyabat**	**0.56**	**253**	*e*PG	**Pg**	**14 12 37.3**	**-0.5**
BYBT	**Boyabat**	**0.56**	**253**	*e*Pg	**Pg**	**14 12 37.3**	**-0.5**
HAVZ	**Havza**	**0.59**	**162**	*i* P	**Pg**	**14 12 37.8**	**-0.6**
HAVZ				*i* S	**Sb**	**14 12 47.7**	**-0.3**
HAVZ	**Havza**	**0.59**	**162**	P	**Pg**	**14 12 37.8**	**-0.6**
HAVZ				S	**Sb**	**14 12 47.7**	**-0.3**
KVT	**Kavak**	**0.70**	**142**	*e*PG	**Pg**	**14 12 40.6**	**+0.1**
KVT				*e*SG	**Sb**	**14 12 51.5**	**+0.3**
KVT	**Kavak**	**0.70**	**142**	*e*Pg	**Pg**	**14 12 40.6**	**+0.1**
KVT				*e*Sg	**Sb**	**14 12 51.5**	**+0.3**
TOS	**Tosya**	**1.25**	**242**	*e*PN	**Pg**	**14 12 51.0**	**0.0**
TOS	**Tosya**	**1.25**	**242**	*e*Pn	**Pg**	**14 12 51.0**	**0.0**
ERBA	**Erbaa**	**1.35**	**134**	*i* P	**Pg**	**14 12 52.8**	**-0.2**
ERBA				*i* S	**Sg**	**14 13 12.5**	**+2.0**
ERBA	**Erbaa**	**1.35**	**134**	P	**Pg**	**14 12 52.8**	**-0.2**
ERBA				S	**Sg**	**14 13 12.5**	**+2.0**
COAL	**Corum-Alaca**	**1.43**	**195**	*i* P	**Pn**	**14 12 52.6**	**-0.7**
COAL				*i* S	**Sg**	**14 13 13.9**	**+1.0**
COAL	**Corum-Alaca**	**1.43**	**195**	P	**Pn**	**14 12 52.6**	**-0.7**
COAL				S	**Sg**	**14 13 13.9**	**+1.0**
CORM	**Corum**	**1.59**	**204**	*e*PN	**Pb**	**14 12 56.3**	**-0.4**
CORM	**Corum**	**1.59**	**204**	*e*Pn	**Pb**	**14 12 56.3**	**-0.4**
ORDU	**Ordu-Boztepe**	**1.90**	**109**	*i* P	**Pn**	**14 12 59.3**	**-0.5**
ORDU				*i* S	**Sg**	**14 13 27.8**	**-0.4**
ORDU	**Ordu-Boztepe**	**1.90**	**109**	P	**Pn**	**14 12 59.3**	**-0.5**
ORDU				S	**Sg**	**14 13 27.8**	**-0.4**
YOZ	**Yozgat**	**2.00**	**184**	*e*PN	**Pb**	**14 13 02.2**	**-1.4**
YOZ	**Yozgat**	**2.00**	**184**	*e*Pn	**Pb**	**14 13 02.2**	**-1.4**
CDAG	**Cicekdag**	**2.18**	**203**	*i* P	**Pb**	**14 13 06.0**	**-0.7**
CDAG				*i* S	**Sb**	**14 13 34.3**	**+0.4**
CDAG	**Cicekdag**	**2.18**	**203**	P	**Pb**	**14 13 06.0**	**-0.7**
CDAG				S	**Sb**	**14 13 34.3**	**+0.4**
BNN	**Bunyan**	**2.79**	**174**	*e*PN	**Pn**	**14 13 13.6**	**+1.5**
BNN	**Bunyan**	**2.79**	**174**	*e*Pn	**Pn**	**14 13 13.6**	**+1.5**

NEIC ***29*** *14:24:04.0, 16°.80N×94°.24W, h134km, MD4.2(MEX), After MEX.*

MEX 29 14:24:04.3±0.5, 16°.80N×94°.24W, h135km±14km, MD4.3, Oaxaca

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TGIG		**1.07**	**91**	*i* P	Pn	14 24 26.7	-1.6
TGIG				*e*S	Sn	14 24 45.1	-1.6
TGIG		**1.07**	**91**	*i* P	Pn	14 24 26.7	-1.6
TGIG				*e*S	Sn	14 24 45.1	-1.6
TGBT	**Tuxtla Gutierr**	**1.10**	**91**	*i* P	Pn	14 24 27.1	-1.5
TGBT				*e*S	Sn	14 24 45.5	-1.5
PCIG		**1.46**	**138**	*e*P	Pn	14 24 31.1	-1.3
PCIG				*e*S	Sn	14 24 52.3	-1.4
PCIG		**1.46**	**138**	*e*P	Pn	14 24 31.1	-1.3
PCIG				*e*S	Sn	14 24 52.3	-1.4
HUIG	**Huatulco**	**2.07**	**241**	*e*P	Pn	14 24 37.8	-1.6
HUIG				*i* S	Sn	14 25 04.7	-1.5
HUIG	**Huatulco**	**2.07**	**241**	*e*P	Pn	14 24 37.8	-1.6
HUIG				*i* S	Sn	14 25 04.7	-1.5
OXBJ	**Oaxaca**	**2.39**	**277**	*e*S	Sn	14 25 13.8	+0.1
VHO	**Vista Hermosa**	**2.40**	**277**	*e*P	Pn	14 24 43.0	-0.7
VHO				*e*S	Sn	14 25 12.3	-1.6
VHO	**Vista Hermosa**	**2.40**	**277**	*e*P	Pn	14 24 43.0	-0.7
VHO				*e*S	Sn	14 25 12.3	-1.6
PANG	**Puerto Angel**	**2.42**	**243**	*e*P	Pn	14 24 42.4	-1.4
TEIG	**Tepich**	**6.61**	**58**	Pn	Pn	14 25 30.6	-8.4

BKK ***29*** *14:25:21.0±1.5, 28°.N±17°×9°.6E±3°.7, h386km±107km, M4.2/4, mB5.3/2, mb4.2/4, Mw(mB)4.7/2*
IDC ***29*** *14:25:44.7±0.7, 26°.07N×96°.97E, h0km, mb3.9/13, mb1 4.0/14, mb1mx3.8/51, mbtmp3.9/14, ML4.0/1, MS3.2/10, Ms1 3.2/10, ms1mx2.9/75, Error ellipse: s-maj=50.3km s-min=13.7km az=60.0*
ISCJB ***29*** *14:25:45.2±0.4, 26°.00N±0°.06×96°.85E±0°.06, h16km, mb3.9/18, MS3.2/9, Error ellipse: s-maj=9.5km s-min=6.1km az=40.4*
NEIC ***29*** *14:25:48.8±0.5, 26°.03N×97°.05E, h35km, mb4.0/5, Error ellipse: s-maj=16.6km s-min=8.0km az=56.0*

ISC 29 14:25:46.6±0.6, 26°.05N±0°.06×97°.03E±0°.08, h16km, n42, σ1§56/39, mb4.0/18, MS3.3/9, 2C, Myanmar

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SHL	**Shillong**	**4.67**	**265**	*e*PN	**Pn**	**14 26 58.0**	**+1.5**
SHL				*i* SN	**Sn**	**14 27 48.0**	**-2.5**
LSA	**Lhasa** 32nm,0.6s	**6.35**	**306**	*e*Pn	**Pn**	**14 27 20.0**	**+0.1**
LSA				*e*Sn	**Sn**	**14 28 37.0**	**+4.6**
CRAI	**Chiangrai** 132nm,0.9s,44μm	**6.56**	**151**	P	Pn	14 27 26.3	+3.9
CRAI	132nm,0.9s,44μm			S	Sb	14 29 08.1	+10
CHTO	**Chiang Mai**	**7.41**	**166**	P	**Pn**	**14 27 36.5**	**+2.3**
CHTO				S	**Sb**	**14 29 25.4**	**+2.3**
CHTO	**Chiang Mai** 5.4nm,0.8s	**7.41**	**166**	*e*Pn	**Pn**	**14 27 31.6**	**-2.6**
CHTO				*e*Sn	**Sn**	**14 28 55.2**	**-2.8**
CMMT	**Chiang Mai** 5.4nm,0.6s	**7.41**	**166**	P	**Pn**	**14 27 35.3**	**+1.1**
CMMT	5.4nm,0.6s			S	**Sb**	**14 29 25.5**	**+2.3**
CMAR	**Chiang Mai Arr** 0.5nm,0.3s,baz=338,slow=13,SNR=7.0	**7.76**	**166**	Pn	**Pn**	**14 27 39.9**	**+1.0**
CMAR	baz=358,slow=27,SNR=4.1			Lg	Lg	14 29 51.4	
CMAR	comp=Z,52nm,19.8s,baz=285,slow=43			LR	LR	14 31 23.3	
LAMP	**Lampang**	**7.87**	**162**	P	Pn	14 27 49.2	+8.8
GUN	**Gumba** 41nm,0.3s	**10.12**	**283**	*e*P	**Pn**	**14 28 11.5**	**-0.1**
PKIN	**Phulchoki** 25nm,0.4s	**10.51**	**

comp=Z,0.6nm,0.7s,baz=82,slow=6.3,SNR=2.7
NOA LR LR 15 06 49.7
comp=Z,17nm,18.1s,baz=215,slow=38
GERES GERESS Array B 66.62 314 P **P** **14 36 36.0 -0.3**
comp=Z,0.3nm,0.3s,baz=48,slow=2.0,SNR=4.7
GERES LR LR 15 09 37.1
comp=Z,24nm,18.3s,baz=64,slow=40
ESDC Sonseca Array 81.65 310 P **P** **14 38 04.3 +0.1**
comp=Z,0.5nm,0.3s,baz=15,slow=6.2,SNR=8.1
YKA Yellowknife Ar 88.21 14 P **P** **14 38 36.0 -0.6**
comp=Z,0.2nm,0.6s,baz=330,slow=4.4,SNR=6.0
URZ Urewera 98.47 128 LR LR 15 23 25.5
comp=Z,39nm,21.8s,baz=5.0,slow=35

JMA 29 14:29:56.6, 37.05N×140.66E, h9km±2km, M2.7, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.12**	**65**	P	Pg	14 29 59.5	0.0
ONAJ				S	Sg	14 30 01.4	-0.1
JFK	**Kawauchi**	**0.36**	**28**	P	Pg	14 30 03.7	0.0
JFK				S	Sg	14 30 08.5	0.0
JHO	**Hitachi**	**0.44**	**189**	P	Pg	14 30 05.2	-0.1
JHO				S	Sg	14 30 11.5	+0.4
JFT	**Otama**	**0.53**	**331**	P	Pg	14 30 07.2	+0.2
JFT				S	Sg	14 30 14.3	+0.3
MAT	**Matsushiro**	**2.03**	**256**	P	Pn	14 30 32.0	+1.0
MAT				S	Sb	14 30 59.6	+0.5

NIED ***29*** *14:31:00, 37.20N×141.50E, h47km, Mw3.6 Best double couple: M0 2.92000×10^14 NP1:φs=225.00000°, δ=41.00000°, λ=77.00000°. NP2:φs=62.00000°, δ=51.00000°, λ=101.00000°.*
IDC ***29*** *14:31:46.6±1.3, 37.11N×141.83E, h0km, mb3.4/4, mb1 3.6/6, mb1mx3.3/51, mbtmp3.4/6, ML3.1/2, MS2.7/1, Ms1 2.7/1, ms1mx2.1/37, Error ellipse: s-maj=33.5km s-min=22.8km az=103.0*
JMA ***29*** *14:31:52.4±0.1, 37.22N×141.55E, h46km±2km, M3.7*
JMA Felt I J1.
ISC 29 14:31:48.6±1.7, 37.20N±0.04×141.74E±0.07, h14km±10km, n15, σ1§15/23, mb3.4/4, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JFK	**Kawauchi**	**0.71**	**284**	P	**Pn**	**14 32 04.1**	**-0.1**
JFK				S	**Sg**	**14 32 12.0**	**+0.3**
ONAJ	**Iwakimizuishiy**	**0.76**	**263**	P	**Pn**	**14 32 04.8**	**-0.1**
ONAJ				S	**Sg**	**14 32 13.3**	**+0.1**
JMM	**Marumori**	**1.00**	**312**	P	**Pn**	**14 32 08.3**	**0.0**
JMM				*e*S	**Sb**	**14 32 20.0**	**-0.8**
JHO	**Hitachi**	**1.10**	**238**	P	**Pg**	**14 32 09.5**	**-0.4**
JHO				S	**Sb**	**14 32 22.1**	**-1.6**
JFT	**Otama**	**1.16**	**286**	P	**Pg**	**14 32 11.1**	**+0.2**
JFT				S	**Sb**	**14 32 23.6**	**-1.8**
JIO	**Ouri**	**1.29**	**346**	P	**Pg**	**14 32 13.1**	**-0.3**
JIO				S	**Sb**	**14 32 28.0**	**-1.1**
JOU	**Okura**	**1.44**	**324**	P	**Pb**	**14 32 15.4**	**+0.1**
JOU				S	**Sn**	**14 32 33.0**	**-0.1**
MJAR	**Matsushiro Arr**	**2.90**	**258**	Pn	**Pn**	**14 32 36.6**	**+2.2**
	2.0nm,0.3s,baz=71,slow=10,SNR=7.8						
MAT	**Matsushiro**	**2.90**	**258**	P	**Pn**	**14 32 37.1**	**+2.6**
MAT				*e*S	**Sn**	**14 33 10.3**	**+1.1**
JHJ	**Hachijo jima 2**	**4.37**	**202**	Pn	**Pn**	**14 32 55.3**	**+0.6**
	3.7nm,0.3s,baz=65,slow=19,SNR=3.3						
JHJ				Sn	**Sn**	**14 33 44.6**	**-0.8**
	11nm,0.3s,baz=73,slow=19,SNR=3.8						
PETK	**Petropavlovsk-**	**19.41**	**30**	LR	LR	14 42 51.5	
	comp=Z,25nm,20.8s,baz=198,slow=34						
MKAR	**Makanchi Array**	**44.25**	**302**	P	**P**	**14 39 57.4**	**-0.2**
	0.2nm,0.4s,baz=89,slow=12,SNR=3.7						
ILAR	**Eielson Array**	**49.22**	**32**	P	**P**	**14 40 37.4**	**+1.3**
	0.3nm,0.7s,baz=251,slow=6.2,SNR=4.6						
WRA	**Warramunga Arr**	**57.26**	**188**	P	**P**	**14 41 34.6**	**-1.1**
	0.4nm,0.6s,baz=5.6,slow=7.4,SNR=8.2						
ASAR	**Alice Springs**	**60.99**	**188**	P	**P**	**14 42 01.1**	**-0.4**
	0.2nm,0.9s,baz=22,slow=6.0,SNR=4.8						

ISK ***29*** *14:32:20.5, 40.19N×34.94E, h5km, MD2.5*
DDA ***29*** *14:32:21.4, 40.06N×34.98E, h7km, Ml2.7*
ISCJB ***29*** *14:32:22.6±0.5, 40.09N±0.03×34.87E±0.04, h10km, Error ellipse: s-maj=4.7km s-min=4.5km az=19.4*
CSEM ***29*** *14:32:22.1±0.3, 40.07N×34.90E, h2km, ML2.7, Error ellipse: s-maj=6.1km s-min=5.7km az=145.0*
ISC 29 14:32:22.5±0.8, 40.07N±0.03×34.92E±0.03, h10km, n16, σ1§19/31, Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
COAL	**Corum-Alaca**	**0.19**	**15**	*i* P	**Pg**	**14 32 25.3**	**-1.4**
COAL				*i* S	**Sg**	**14 32 28.5**	**-1.0**
COAL	**Corum-Alaca**	**0.19**	**15**	P	**Pg**	**14 32 25.3**	**-1.4**
COAL				S	**Sg**	**14 32 28.5**	**-1.0**
CORM	**Corum**	**0.25**	**296**	*e*PG	**Pg**	**14 32 26.3**	**-1.4**
CORM				*e*SG	**Sg**	**14 32 30.8**	**-0.4**
CORM	**Corum**	**0.25**	**296**	*e*Pg	**Pg**	**14 32 26.3**	**-1.4**
CORM				*e*Sg	**Sg**	**14 32 30.8**	**-0.4**
YOZ	**Yozgat**	**0.53**	**144**	*e*PG	**Pb**	**14 32 33.5**	**-0.5**
YOZ				*e*SG	**Sb**	**14 32 43.3**	**+1.6**
YOZ	**Yozgat**	**0.53**	**144**	*e*Pg	**Pb**	**14 32 33.5**	**-0.5**
YOZ				*e*Sg	**Sb**	**14 32 43.3**	**+1.6**
CDAG	**Cicekdag**	**0.61**	**224**	*i* P	**Pg**	**14 32 33.4**	**-1.1**
CDAG				*i* S	**Sb**	**14 32 43.3**	**-0.9**
CDAG	**Cicekdag**	**0.61**	**224**	P	**Pg**	**14 32 33.4**	**-1.1**
CDAG				S	**Sb**	**14 32 43.3**	**-0.9**
HAVZ	**Havza**	**1.17**	**31**	*i* P	**Pb**	**14 32 43.8**	**-1.1**
HAVZ				*i* S	**Sn**	**14 33 02.8**	**+1.6**
HAVZ	**Havza**	**1.17**	**31**	P	**Pb**	**14 32 43.8**	**-1.1**
HAVZ				S	**Sn**	**14 33 02.8**	**+1.6**
ELDT	**Eldivan**	**1.22**	**291**	*i* P	**Pg**	**14 32 45.7**	**-0.3**
ELDT				*i* S	**Sn**	**14 33 05.2**	**+2.8**
ELDT	**Eldivan**	**1.22**	**291**	P	**Pg**	**14 32 45.7**	**-0.3**
BOYT	**Boyabat**	**1.35**	**359**	*i* P	**Pb**	**14 32 47.5**	**-0.4**
BOYT				*i* S	**Sg**	**14 33 07.3**	**+1.3**
BOYT	**Boyabat**	**1.35**	**359**	P	**Pb**	**14 32 47.5**	**-0.4**
BOYT				S	**Sg**	**14 33 07.3**	**+1.3**
SVSK	**Karacayir**	**1.60**	**95**	*e*PN	**Pn**	**14 32 51.2**	**+0.3**
SVSK				*e*SN	**Sg**	**14 33 13.4**	**-0.7**
SVSK	**Karacayir**	**1.60**	**95**	*e*Pn	**Pn**	**14 32 51.2**	**+0.3**
SVSK				*e*Sn	**Sg**	**14 33 13.4**	**-0.7**

NIED ***29*** *14:33:00, 36.30N×140.90E, h35km, Mw3.8 Best double couple: M0 6.34000×10^14 NP1:φs=221.00000°, δ16.00000°, λ100.00000°. NP2:φs=31.00000°, δ75.00000°, λ87.00000°.*
IDC ***29*** *14:33:29.2±0.9, 36.38N×140.85E, h0km, mb3.7/8, mb1 3.8/10, mb1mx3.5/57, mbtmp3.7/10, ML3.1/2, MS3.1/3, Ms1 3.1/3, ms1mx2.5/57, Error ellipse: s-maj=19.4km s-min=16.1km az=1.0*
ISCJB ***29*** *14:33:32.9±0.9, 36.38N±0.05×140.90E±0.08, h41km±7km, mb3.7/8, MS4.0/1, Error ellipse: s-maj=12.3km s-min=6.9km az=35.0*
JMA ***29*** *14:33:33.1±0.1, 36.34N×140.90E, h40km±1km, M3.8*
JMA Felt II J1.
ISC 29 14:33:32.8±1.7, 36.43N±0.05×140.89E±0.07, h24km±12km, n24, σ0§64/22, mb3.6/8, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JHO	**Hitachi**	**0.32**	**305**	P	**Pn**	**14 33 42.0**	**0.0**
JHO				S	**Sn**	**14 33 47.9**	**0.0**
JYT	**Yasato**	**0.60**	**251**	P	**Pb**	**14 33 44.8**	**+0.2**
JYT				S	**Sb**	**14 33 52.7**	**+0.1**
ONAJ	**Iwakimizuishiy**	**0.68**	**354**	P	**Pn**	**14 33 47.0**	**0.0**
ONAJ				S	**Sn**	**14 33 56.6**	**-0.3**
JFK	**Kawauchi**	**0.94**	**359**	P	**Pn**	**14 33 50.5**	**-0.1**
JFK				S	**Sb**	**14 34 02.5**	**0.0**
JAG	**Ashikaga**	**1.16**	**270**	P	**Pn**	**14 33 53.6**	**0.0**
JAG				S	**Sb**	**14 34 07.8**	**-1.0**
MJAR	**Matsushiro Arr**	**2.16**	**274**	Pn	**Pn**	**14 34 07.9**	**+0.5**
	5.2nm,0.3s,baz=121,slow=8.5,SNR=9.9						
MJAR				Lg	Lg	14 34 35.6	
	17nm,0.3s,baz=163,slow=23,SNR=11						
MJAR				LR	LR	14 35 07.9	
	comp=Z,167nm,18.7s,baz=115,slow=47						
MAT	**Matsushiro**	**2.17**	**274**	P	**Pn**	**14 34 08.6**	**+1.1**
MAT				S	**Sn**	**14 34 33.9**	**+0.3**
JHJ	**Hachijo jima 2**	**3.42**	**196**	Pn	**Pn**	**14 34 24.9**	**+0.1**
	4.8nm,0.3s,baz=107,slow=14,SNR=1.8						
KSRS	**Korea Array**	**10.43**	**280**	LR	LR	14 39 42.6	
	comp=Z,42nm,19.9s,baz=100,slow=36						
H11N2	**WAKE ISLAND Hy**	**28.21**	**119**	T	T	15 08 47.7	
	baz=312,slow=75,SNR=36						
H11N1	**WAKE ISLAND Hy**	**28.22**	**119**	T	T	15 08 46.8	
	baz=312,slow=75,SNR=29						
H11N3	**WAKE ISLAND Hy**	**28.23**	**119**	T	T	15 08 22.0	
	baz=312,slow=75,SNR=22						
H11S1	**WAKE ISLAND Hy**	**28.89**	**121**	T	T	15 09 41.4	
	baz=314,slow=76,SNR=61						
H11S3	**WAKE ISLAND Hy**	**28.89**	**121**	T	T	15 09 35.2	
	baz=314,slow=76,SNR=38						
H11S2	**WAKE ISLAND Hy**	**28.91**	**121**	T	T	15 09 42.4	
	baz=314,slow=76,SNR=23						
ZALV	**Zalesovo Beam**	**42.02**	**313**	P	**P**	**14 41 22.0**	**-0.1**
	3.0nm,0.9s,baz=87,slow=7.6,SNR=9.7						
MKAR	**Makanchi Array**	**44.09**	**303**	P	**P**	**14 41 38.7**	**-0.3**
	0.3nm,0.3s,baz=82,slow=9.2,SNR=3.8						
ILAR	**Eielson Array**	**50.23**	**32**	P	**P**	**14 42 27.6**	**+1.0**
	0.5nm,0.7s,baz=279,slow=6.7,SNR=6.2						
BVAR	**Borovoye Array**	**50.67**	**313**	LR	LR	15 02 58.7	
	comp=Z,150nm,19.8s,baz=74,slow=35						
WRA	**Warramunga Arr**	**56.41**	**187**	P	**P**	**14 43 10.9**	**-1.5**
	0.3nm,0.6s,baz=3.1,slow=7.2,SNR=4.7						
ARU	**Arti**	**56.54**	**319**	P	**P**	**14 43 12.1**	**-0.9**
	1.6nm,0.3s,baz=76,slow=4.3,SNR=4.4						
ASAR	**Alice Springs**	**60.13**	**187**	P	**P**	**14 43 38.1**	**-0.3**
	0.2nm,0.6s,baz=8.3,slow=6.1,SNR=4.4						
YKA	**Yellowknife Ar**	**64.54**	**30**	P	**P**	**14 44 08.2**	**+0.7**
	0.3nm,0.7s,baz=300,slow=6.5,SNR=5.7						
FINES	**FINESS Array B**	**69.15**	**332**	P	**P**	**14 44 37.3**	**+0.4**
	0.8nm,0.7s,baz=46,slow=4.0,SNR=3.6						

TRN 29 14:35:24.4, 15.16N×60.47W, h54km, MD3.6, 1C-3D, Leeward Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MVM	**Montagne Vaucl**	**0.73**	**214**	*e*P	Pn	14 35 40.3	+1.5
BAMF	**Morne Balai**	**0.74**	**242**	*e*P	Pn	14 35 40.5	+1.6
SVN	**Savane Anatole**	**0.74**	**245**	*e*P	Pn	14 35 40.8	+1.9
LPMF	**Morne Lapointe**	**0.76**	**219**	*e*P	Pn	14 35 40.2	+1.2
CXM	**Morne La Croix**	**0.76**	**243**	*e*P	Pn	14 35 40.8	+1.6
CXM				*e*S	Sn	14 35 52.1	+2.0
GBMF	**Grand Be**	**0.76**	**242**	*e*P	Pn	14 35 40.8	+1.5
DLPL	**La Plaine**	**0.77**	**283**	*e*P	Pn	14 35 41.5	+2.2
DLPL				*e*S	Sn	14 35 53.0	+3.0
FDF	**Fort de France**	**0.78**	**237**	⇓ *i* P	Pn	14 35 40.6	+1.2
FDF	**Fort de France**	**0.78**	**237**	⇓ *i* P	Pn	14 35 40.8	+1.3
FDF	**Fort de France**	**0.78**	**237**	*e*P	Pn	14 35 40.9	+1.4
FDF				*e*S	Sn	14 35 52.3	+1.8
PML	**Morne Lenard**	**0.79**	**241**	*e*P	Pn	14 35 41.0	+1.5
PCM	**Pelee Case Pet**	**0.79**	**244**	*e*P	Pn	14 35 40.5	+0.9
PCM	**Pelee Case Pet**	**0.79**	**244**	*e*P	Pn	14 35 41.2	+1.6
ZAM	**Aeronautique**	**0.80**	**223**	*e*P	Pn	14 35 40.8	+1.2
TRMF	**Trois Ilets**	**0.84**	**222**	*e*P	Pn	14 35 41.5	+1.3
DWS	**Wesley**	**0.91**	**297**	*e*P	Pn	14 35 42.4	+1.4
DWS				*e*S	Sn	14 35 55.3	+2.0
BBL	**Barber's Block**	**1.03**	**291**	*e*P	Pn	14 35 44.6	+1.9
MGG	**Marie-Galante**	**1.11**	**313**	⇓ *i* P	Pn	14 35 45.2	+1.5
MGG				*e*S	Sn	14 35 59.9	+1.9
DEG	**La Desirade**	**1.28**	**334**	*e*P	Pn	14 35 47.2	+1.1
DEG				*e*S	Sn	14 36 03.6	+1.5
TBG	**Guadaloupe-3**	**1.32**	**301**	*e*P	Pn	14 35 48.1	+1.5
TBG				*e*S	Sn	14 36 04.7	+1.5
PHG	**Guadaloupe-2**	**1.41**	**307**	*e*P	Pn	14 35 49.5	+1.6
MCLT	**Moule a Chique**	**1.52**	**198**	*e*P	Pn	14 35 50.0	+0.8
MCLT				*e*S	Sn	14 36 09.6	+1.7
SVV	**Soufriere Volc**	**1.97**	**202**	*e*P	Pn	14 35 58.0	+2.5
SVV				*e*S	Sn	14 36 21.4	+2.3
SVB	**Belmont**	**2.03**	**202**	⇑ *i* P	Pn	14 35 58.0	+1.8
SVB				*e*S	Sn	14 36 21.7	+1.3
FCV	**Fort Charlotte**	**2.13**	**201**	*e*P	Pn	14 35 59.7	+2.1
FCV				*e*S	Sn	14 36 24.5	+1.6
MLYT	**Lee's Yard**	**2.27**	**313**	*e*P	Pn	14 36 01.6	+2.2
MLYT				*e*S	Sn	14 36 27.6	+1.4
BPA	**Boggy Peak**	**2.30**	**325**	*e*P	Pn	14 36 02.1	+2.2
BPA				*e*S	Sn	14 36 28.0	+0.9
TOSP	**Speyside**	**3.84**	**181**	*e*P	Pn	14 36 22.9	+1.8
TOSP				*e*S	Sn	14 37 04.8	-0.1

CSEM ***29*** *14:46:53.9±0.6, 37.19N×28.44E, h20km, MD2.6, Error ellipse: s-maj=15.2km s-min=8.7km az=64.0*
ISCJB ***29*** *14:46:55.5±1.0, 37.06N±0.06×28.36E±0.08, h15km±10km, Error ellipse: s-maj=12.9km s-min=7.6km az=44.8*
ISK ***29*** *14:46:56.5, 37.11N×28.24E, h13km, MD2.6*
ISC 29 14:46:54.9±1.3, 37.18N±0.06×28.39E±0.08, h17km±6km, n9, σ1§30/16, Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
YER	**Yerkesik**	**0.10**	**241**	*e*PG	**Pg**	**14 47 01.0**	**+0.4**
YER				*e*SG	**Sg**	**14 47 01.0**	**0.0**
YER	**Yerkesik**	**0.10**	**241**	*e*Pg	**Pg**	**14 46 59.0**	**+0.4**
YER				*e*Sg	**Sg**	**14 47 01.0**	**0.0**
TURN	**Turunc**	**0.35**	**151**	*i* S	**Sg**	**14 47 05.6**	**-1.7**
TURN	**Turunc**	**0.35**	**151**	S	**Sg**	**14 47 05.6**	**-1.7**
AYDN	**Tasoluk**	**0.63**	**320**	*i* P	**Pg**	**14 47 06.8**	**-0.6**
AYDN				*i* S	**Sg**	**14 47 14.0**	**-1.8**
AYDN	**Tasoluk**	**0.63**	**320**	P	**Pg**	**14 47 06.8**	**-0.6**
AYDN				S	**Sg**	**14 47 14.0**	**-1.8**
AYDB	**Zeytinkoy-Aydi**	**0.86**	**333**	*e*PG	**Pn**	**14 47 13.9**	**+1.5**
AYDB				*e*SG	**Sn**	**14 47 26.5**	**+1.8**
BODT	**Bodrum**	**0.87**	**262**	*e*PG	**Pb**	**14 47 11.4**	**-0.3**
BODT				*e*SG	**Sb**	**14 47 22.2**	**-0.8**
BODT	**Bodrum**	**0.87**	**262**	*e*Pg	**Pb**	**14 47 11.4**	**-0.3**
BODT				*e*Sg	**Sb**	**14 47 22.2**	**-0.8**

ISK ***29*** *14:47:48.7, 39.92N×33.07E, h5km, MD2.5*
ISCJB ***29*** *14:47:49.7±0.8, 39.88N±0.04×33.10E±0.05, h1km±9km, Error ellipse: s-maj=6.5km s-min=5.8km az=151.8*
CSEM ***29*** *14:47:49.5±0.3, 39.89N×33.09E, h8km, MD2.5, Error ellipse: s-maj=7.3km s-min=5.8km az=100.0*
DDA ***29*** *14:47:50.0, 39.86N×33.07E, h7km, Md2.7*
ISC 29 14:47:49.6±1.1, 39.89N±0.03×33.06E±0.03, h5km±10km, n14, σ1§09/26, Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
LOD	**Lodumlu**	**0.23**	**269**	*e*PG	**Pg**	**14 47 53.9**	**-0.2**
LOD				*e*SG	**Sg**	**14 47 57.7**	**+0.5**
LOD	**Lodumlu**	**0.23**	**269**	*e*Pg	**Pg**	**14 47 53.9**	**-0.2**
LOD				*e*Sg	**Sg**	**14 47 57.7**	**+0.5**
AFSR	**Afˆar-Bala (A**	**0.45**	**179**	*e*PG	**Pg**	**14 47 58.4**	**+0.2**
AFSR				*e*SG	**Sb**	**14 48 05.5**	**-1.5**
AFSR	**Afˆar-Bala (A**	**0.45**	**179**	*e*Pg	**Pg**	**14 47 58.4**	**+0.2**
AFSR				*e*Sg	**Sb**	**14 48 05.5**	**-1.5**
ELDT	**Eldivan**	**0.66**	**25**	*i* P	**Pg**	**14 48 01.6**	**-0.7**
ELDT				*i* S	**Sb**	**14 48 13.3**	**+0.1**
ELDT	**Eldivan**	**0.66**	**25**	P	**Pg**	**14 48 01.6**	**-0.7**
ELDT				S	**Sb**	**14 48 13.3**	**+0.1**
KKUL	**Konya-Kulu**	**0.73**	**189**	*i* P	**Pg**	**14 48 03.8**	**+0.2**
KKUL	**Konya-Kulu**	**0.73**	**189**	P	**Pg**	**14 48 03.8**	**+0.2**
CDAG	**Cicekdag**	**1.04**	**105**	*i* P	**Pb**	**14 48 09.4**	**-0.8**
CDAG				*i* S	**Sn**	**14 48 28.6**	**+2.6**
BCAM	**Yenicaga**	**1.20**	**321**	*i* P	**Pn**	**14 48 13.1**	**0.0**
BCAM				*i* S	**Sn**	**14 48 31.2**	**+1.4**
BCAM	**Yenicaga**	**1.20**	**321**	P	**Pn**	**14 48 13.1**	**0.0**
BCAM				S	**Sn**	**14 48 31.2**	**+1.4**
CORM	**Corum**	**1.24**	**76**	*e*PN	**Pb**	**14 48 12.7**	**-0.8**
CORM				*e*SN	**Sn**	**14 48 30.1**	**-0.7**
CORM	**Corum**	**1.24**	**76**	*e*Pn	**Pb**	**14 48 12.7**	**-0.8**
CORM				*e*Sn	**Sn**	**14 48 30.1**	**-0.7**
COAL	**Corum-Alaca**	**1.52**	**76**	*i* P	**Pg**	**14 48 18.4**	**-0.4**
COAL				*i* S	**Sg**	**14 48 41.0**	**+2.6**

ISCJB ***29*** *14:48:03.4±0.9, 2.77S±0.10×137.80E±0.07, h33km, mb3.8/3, Error ellipse: s-maj=14.8km s-min=9.2km az=158.8*
IDC ***29*** *14:48:08.9±3.7, 2.84S×138.08E, h81km±45km, mb3.6/3, mb1 3.9/6, mb1mx3.4/47, mbtmp4.0/6, ML3.7/2, Error ellipse: s-maj=33.5km s-min=14.5km az=82.0*
ISC 29 14:48:05.6±1.0, 2.8S±0.1×137.82E±0.09, h35km, n7, σ1§75/8, mb3.9/3, Irian Jaya

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JAY	**Jayapura**	**2.89**	**85**	P	**Pn**	**14 48 49.7**	**+0.5**
	2.0nm,0.3s,baz=253,slow=19,SNR=36						
JAY				S	**Sn**	**14 49 20.9**	**-2.0**
	6.1nm,0.3s,baz=90,slow=23,SNR=17						
PMG	**Port Moresby**	**11.39**	**126**	P	**Pn**	**14 50 47.2**	**+1.3**
	0.9nm,0.3s,baz=270,slow=8.1,SNR=3.8						
WRA	**Warramunga Arr**	**17.41**	**191**	P	**Pn**	**14 52 06.6**	**+0.8**
	0.7nm,0.3s,baz=12,slow=12,SNR=13						
WRA				S	Sn	14 55 10.6	-8.1
	0.4nm,0.3s,baz=360,slow=23,SNR=5.7						
FITZ	**Fitzroy Crossi**	**19.36**	**217**	S	S	14 55 56.5	-9.1
	0.5nm,0.3s,baz=176,slow=10,SNR=10						
ASAR	**Alice Springs**	**21.12**	**190**	P	**P**	**14 52 47.9**	**+0.4**
	3.4nm,0.4s,baz=9.1,slow=11,SNR=48						
ASAR				S	**S**	**14 56 37.9**	**-2.8**
	2.8nm,0.7s,baz=10,slow=24,SNR=14						
CMAR	**Chiang Mai Arr**	**43.70**	**300**	P	**P**	**14 56 07.0**	**-0.6**
	0.8nm,0.7s,baz=124,slow=6.9,SNR=5.4						
MKAR	**Makanchi Array**	**69.29**	**323**	P	**P**	**14 59 09.7**	**+0.3**
	0.8nm,0.7s,baz=113,slow=8.2,SNR=5.7						

IDC 29 14:51:45.6±1.7, 26.59N×141.14E, h0km, mb3.5/2, mb1 3.8/3, mb1mx3.3/65, mbtmp3.5/3, ML3.7/1, Error ellipse: s-maj=43.6km s-min=18.4km az=132.0, Bonin Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JCJ	**Chichijima**	**1.06**	**61**	Pn	Pn	14 52 07.7	0.0
	4.9nm,0.3s,baz=258,slow=23,SNR=8.8						
JCJ				Sn	Sn	14 52 24.4	+1.3
	77nm,0.3s,baz=273,slow=23,SNR=21						
MJAR	**Matsushiro Arr**	**10.23**	**347**	Pn	Pn	14 54 13.3	-0.4
	0.7nm,0.3s,baz=164,slow=18,SNR=6.6						
WRA	**Warramunga Arr**	**46.72**	**189**	P	P	15 00 16.8	+0.3
	0.8nm,0.5s,baz=12,slow=8.3,SNR=6.1						
ASAR	**Alice Springs**	**50.45**	**189**	P	P	15 00 44.7	-0.5
	0.2nm,0.7s,baz=3.0,slow=5.4,SNR=4.2						

IDC ***29*** *14:59:50.3±0.9, 19.33S×168.03E, h0km, mb4.2/8, mb1 4.5/9, mb1mx4.1/32, mbtmp4.3/9, ML4.5/1, MS3.2/3, Ms1 3.2/3, ms1mx2.8/32, Error ellipse: s-maj=33.3km s-min=19.0km az=134.0*
ISCJB ***29*** *14:59:52.5±0.9, 19.41S±0.10×168.0E±0.2, h26km, mb4.2/7, MS3.1/2, Error ellipse: s-maj=23.9km s-min=10.2km az=26.5*
ISC 29 14:59:54.3±0.9, 19.4S±0.1×168.0E±0.2, h26km, n12, σ0§83/11, mb4.2/7, Vanuatu Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
DZM	**Mont Dzumac**	**3.02**	**208**	Pn	**Pn**	**15 00 40.0**	**-0.4**
	58nm,0.3s,baz=215,slow=0.9,SNR=86						
DZM				Sn	**Sn**	**15 01 15.1**	**-0.7**
	56nm,0.3s,baz=319,slow=19,SNR=4.6						
DZM				LR	LR	15 01 53.3	
	comp=Z,324nm,21.4s,baz=34,slow=40						
AFI	**Afiamalu**	**20.15**	**77**	LR	LR	15 10 48.8	
	comp=Z,120nm,21.0s,baz=97,slow=33						
CTA	**Charters Tower**	**20.45**	**264**	P	Pn	15 04 32.2	0.0
	3.7nm,0.7s,baz=85,slow=15,SNR=3.7						
STKA	**Stephens Creek**	**26.75**	**237**	P	**P**	**15 05 32.9**	**+0.9**
	3.3nm,0.9s,baz=66,slow=8.4,SNR=8.0						
STKA				LR	LR	15 14 57.4	
	comp=Z,44nm,19.9s,baz=25,slow=34						
WRA	**Warramunga Arr**	**31.64**	**263**	P	**P**	**15 06 15.1**	**-0.5**
	1.0nm,0.4s,baz=87,slow=8.3,SNR=40						
ASAR	**Alice Springs**	**31.92**	**256**	P	**P**	**15 06 18.2**	**+0.2**
	4.9nm,0.7s,baz=86,slow=8.7,SNR=72						
VNDA	**Vanda**	**58.23**	**182**	P	**P**	**15 09 47.0**	**+1.0**
	1.2nm,0.9s,baz=29,slow=4.6,SNR=5.6						
PETK	**Petropavlovsk-**	**72.75**	**354**	P	**P**	**15 11 20.5**	**+0.6**
	4.3nm,0.7s,baz=140,slow=5.8,SNR=7.2						
NVAR	**Mina Array Bea**	**89.81**	**49**	P	**P**	**15 12 50.6**	**-0.4**
	1.7nm,0.8s,baz=226,slow=7.9,SNR=5.4						
ILAR	**Eielson Array**	**90.75**	**18**	P	**P**	**15 12 53.4**	**-1.1**
	1.1nm,0.8s,baz=233,slow=5.4,SNR=12						
YKA	**Yellowknife Ar**	**101.36**	**28**	P	**Pdif**	**15 13 42.0**	**-0.7**
	0.3nm,0.6s,baz=255,slow=4.9,SNR=7.1						
ARCES	**ARCESS Array B**	**124.91**	**345**	PKP	**PKPdf**	**15 18 52.0**	**+0.6**
	0.3nm,0.5s,baz=3.8,slow=2.7,SNR=3.6						

KRSC 29 15:10:59.0±1.5, 50.58N×157.79E, h48km±24km, ML3.7, Kuril Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SKR	**Severo-Kuril's**	**1.07**	**276**	*e*P	Pn	15 11 18.4	+0.9
SKR				*e*S	Sn	15 11

UPC Upice 1.03 183 Pg **Pg** **15 38 52.9 +0.6**
UPC Sg **Sg** **15 39 05.9 +0.2**
175nm,0.4s
DPC Dobruska-Polom 1.20 173 *i* PG **Pg** **15 38 55.7 +0.3**
DPC *e*SG **Sg** **15 39 10.4 -0.5**
comp=Z,76nm,0.5s
DPC Dobruska-Polom 1.20 173 Pg **Pg** **15 38 55.7 +0.3**
DPC Sg **Sg** **15 39 10.4 -0.5**
76nm,0.5s
DPC Dobruska-Polom 1.20 173 *e*Pg **Pg** **15 38 55.8 +0.3**
DPC *e*Sg **Sb** **15 39 13.0 +0.9**
PVCC Panska Ves 1.40 224 *e*PG **Pn** **15 38 59.7 +0.4**
PVCC *e*SG **Sb** **15 39 18.5 +0.6**
comp=Z,164nm,0.3s
PVCC Panska Ves 1.40 224 Pg **Pn** **15 38 59.7 +0.4**
PVCC Sg **Sb** **15 39 18.5 +0.6**
164nm,0.3s
BRG Berggiesshubel 1.51 245 PN **Pn** **15 39 00.8 -0.1**
BRG PG **Pg** **15 39 02.7 +1.2**
BRG SG **Sn** **15 39 22.3 +1.1**
101nm,0.5s
BRG Berggiesshubel 1.51 245 Pn **Pn** **15 39 01.2 +0.3**
BRG Berggiesshubel 1.51 245 *e*Pn **Pn** **15 39 01.2 +0.3**
BRG *e*Pg **Pg** **15 39 02.6 +1.1**
BRG *e*Sg **Sn** **15 39 22.4 +1.1**
KRLC Kraliky 1.53 163 *e*PG **Pn** **15 39 01.6 +0.5**
KRLC *e*SG **Sg** **15 39 20.6 -0.9**
KRLC Kraliky 1.53 163 Pg **Pn** **15 39 01.6 +0.5**
KRLC Sg **Sg** **15 39 20.6 -0.9**
PRA Prague 1.81 216 *e*PN **Pn** **15 39 05.3 +0.3**
PRA *e*SG **Sb** **15 39 30.2 +0.4**
PRA Prague 1.81 216 Pn **Pn** **15 39 05.3 +0.3**
PRA Sg **Sb** **15 39 30.2 +0.4**
GOPC GO Pecny, Ondr 1.83 208 *e*PG **Pb** **15 39 07.2 +0.4**
GOPC *e*SG **Sb** **15 39 30.2 -0.1**
GOPC GO Pecny, Ondr 1.83 208 Pg **Pb** **15 39 07.2 +0.4**
GOPC Sg **Sb** **15 39 30.2 -0.1**
FBE Freiberg 1.84 251 Pn **Pb** **15 39 07.2 +0.3**
FBE Sg **Sg** **15 39 32.1 +0.6**
FBE Freiberg 1.84 251 *e*Pn **Pb** **15 39 07.2 +0.3**
FBE *e*Sg **Sg** **15 39 32.1 +0.6**
PRU Pruhonice 1.84 213 *e*PN **Pn** **15 39 05.1 -0.3**
PRU *e*PG **Pb** **15 39 06.9 -0.1**
PRU *e*SG **Sb** **15 39 30.8 +0.2**
comp=Z,77nm,0.6s
PRU Pruhonice 1.84 213 Pn **Pn** **15 39 05.1 -0.3**
CLL Collm 1.96 264 *i* Pn **Pn** **15 39 07.1 +0.2**
comp=Z,9.0nm,0.5s
CLL *i* Pg **Pg** **15 39 10.3 +0.3**
CLL *i* 15 39 14.5
CLL *i* Sg **Sg** **15 39 36.3 +1.0**
comp=Z,46nm,0.6s
CLL Collm 1.96 264 Pn **Pn** **15 39 07.1 +0.2**
CLL Collm 1.96 264 *e*Pn **Pn** **15 39 07.1 +0.2**
MORC Moravsky Berou 1.99 152 Pn **Pn** **15 39 07.6 +0.2**
MORC Sg **Sb** **15 39 35.3 +0.5**
MORC Moravsky Berou 1.99 152 *e*Pn **Pn** **15 39 07.6 +0.2**
MORC *e*Sg **Sb** **15 39 35.3 +0.5**
OKC Ostrava-Krasne 2.14 142 *e*PG **Pg** **15 39 13.3 -0.2**
OKC *e*SG **Sb** **15 39 39.9 +0.7**
comp=Z,104nm,0.6s
OKC Ostrava-Krasne 2.14 142 Pg **Pg** **15 39 13.6 +0.1**
OKC Sg **Sb** **15 39 40.1 +0.9**
OKC Ostrava-Krasne 2.14 142 *e*Pg **Pg** **15 39 13.6 +0.1**
OKC *e*Sg **Sb** **15 39 40.1 +0.9**
VRAC Vranov 2.25 172 Pn **Pn** **15 39 11.9 +0.8**
comp=Z,4.0nm,0.3s,baz=352,slow=17,SNR=12
VRAC Lg Lg 15 39 43.3
comp=Z,6.2nm,0.3s,baz=61,slow=19,SNR=10
VRAC Vranov 2.25 172 *e*Pn **Pn** **15 39 11.8 +0.8**
VRAC *e*Sg **Sb** **15 39 43.7 +1.2**
TANN Tannenbergstha 2.56 245 Pn **Pn** **15 39 16.3 +0.9**
TANN Sg **Sg** **15 39 54.7 -0.1**
TANN Tannenbergstha 2.56 245 *e*Pn **Pn** **15 39 16.3 +0.9**
TANN *e*Sg **Sg** **15 39 54.7 -0.1**
WERD Werda 2.64 247 Pn **Pn** **15 39 17.1 +0.8**
WERD Werda 2.64 247 Pg **Pg** **15 39 23.0 0.0**
WERD Sg **Sg** **15 39 56.7 -0.5**
WERD Werda 2.64 247 *e*Pn **Pn** **15 39 17.1 +0.8**
WERD *e*Pg **Pg** **15 39 23.0 0.0**
WERD *e*Sg **Sg** **15 39 56.7 -0.5**
NKC Novy Kostel 2.66 242 *e*PN **Pn** **15 39 17.5 +0.9**
NKC *e*PG **Pb** **15 39 22.7 +1.7**
NKC *e*SG **Sg** **15 40 00.1 +2.2**
comp=Z,82nm,0.6s
NKC Novy Kostel 2.66 242 Pn **Pn** **15 39 17.5 +0.9**
NKC Novy Kostel 2.66 242 Pg **Pb** **15 39 22.7 +1.7**
NKC Sg **Sg** **15 40 00.1 +2.2**
comp=Z,82nm,0.6s
OJC Ojcow 2.69 118 *e*Pg **Pg** **15 39 24.4 +0.4**
OJC *e*Sg **Sg** **15 40 00.0 +1.2**
OJC Ojcow 2.69 118 Pn **Pn** **15 39 17.7 +0.7**
OJC Ojcow 2.69 118 *e*Pg **Pg** **15 39 24.4 +0.4**
OJC *e*Sg **Sg** **15 40 00.0 +1.2**
OJC Ojcow 2.69 118 *e*Pn **Pn** **15 39 17.7 +0.7**
OJC *e*Pg **Pg** **15 39 24.4 +0.4**
KHC Kasperske Hory 2.90 215 *e*PN **Pn** **15 39 20.2 +0.2**
KHC *e*PG **Pb** **15 39 26.6 +1.4**
KHC *e*SG **Sg** **15 40 05.8 +0.1**
comp=Z,31nm,0.6s
KHC Kasperske Hory 2.90 215 Pn **Pn** **15 39 20.2 +0.2**
MOX Moxa 2.97 254 Pn **Pn** **15 39 22.4 +1.5**
MOX Moxa 2.97 254 Pg **Pg** **15 39 29.6 +0.2**
MOX Moxa 2.97 254 *e*Pn **Pn** **15 39 22.4 +1.5**
MOX *e*Pg **Pg** **15 39 29.6 +0.2**
MANZ Manzenberg 2.98 240 Pn **Pn** **15 39 22.1 +1.1**
MANZ Manzenberg 2.98 240 *e*Pn **Pn** **15 39 22.1 +1.1**
ROTZ Rotzenmuhle 3.05 236 Pn **Pn** **15 39 22.9 +0.9**
ROTZ Rotzenmuhle 3.05 236 *e*Pn **Pn** **15 39 22.9 +0.9**
GEC2 GERESS Array S 3.11 211 Pn **Pn** **15 39 24.0 +1.1**
GEC2 GERESS Array S 3.11 211 *e*Pn **Pn** **15 39 24.0 +1.1**
GERES GERESS Array B 3.11 211 Pn **Pn** **15 39 23.2 +0.3**
comp=Z,2.4nm,0.3s,baz=29,slow=12,SNR=42
GERES Sn **Sn** **15 39 58.7 -2.0**
comp=Z,3.1nm,0.3s,baz=27,slow=18,SNR=5.7
GERES Lg Lg 15 40 09.7
comp=Z,5.8nm,0.3s,baz=32,slow=28,SNR=9.3
WET Wettzell 3.16 222 Pn **Pn** **15 39 24.1 +0.5**
WET Wettzell 3.16 222 *e*Pn **Pn** **15 39 24.1 +0.5**
LANS Liptovska Anna 3.22 137 *e*Sg **Sg** **15 40 15.8 0.0**
LANS Liptovska Anna 3.22 137 *e*SG **Sg** **15 40 15.8 0.0**
NIE Niedzica 3.42 127 *e*P **Pg** **15 39 27.9 -0.1**
NIE *e*S **Sg** **15 40 22.4 +0.1**
VYHS Vyhne 3.52 149 *e*Pn **Pn** **15 39 28.5 +0.1**
VYHS *e*Sg **Sg** **15 40 24.8 -0.7**
VYHS Vyhne 3.52 149 *e*PN **Pn** **15 39 28.5 +0.1**
VYHS *e* 15 39 39.9
VYHS Vyhne 3.52 149 *e*SG **Sg** **15 40 24.8 -0.7**
VYHS *e*LG Lg 15 40 38.4
CONA Conrad Observa 3.62 183 *i* Pn **Pn** **15 39 30.7 +0.9**
comp=Z,2.0nm,0.2s
CONA *e*Sg **Sg** **15 40 26.3 -2.4**
comp=Z,39nm,0.5s
CONA Conrad Observa 3.62 183 Pn **Pn** **15 39 30.7 +0.9**
comp=Z,2.0nm,0.2s
CONA Sg **Sg** **15 40 26.3 -2.4**
comp=Z,39nm,0.5s
GRA1 Grafenberg Arr 3.62 241 Pn Pn 15 39 26.5 -3.3
GRF Grafenberg Arr 3.62 241 *e*Pn Pn 15 39 26.5 -3.3
BSD Bornholm Skovb 3.65 349 *i* P **Pn** **15 39 31.0 +0.8**
BSD *i* S **Sn** **15 40 12.9 -1.1**
BSD Bornholm Skovb 3.65 349 *i* P **Pn** **15 39 31.0 +0.8**
BSD *i* S **Sn** **15 40 12.9 -1.1**
MOA Molln 3.88 199 *i* Pn **Pn** **15 39 34.4 +1.0**
comp=Z,6.6nm,0.4s
MOA *e*Sg **Sg** **15 40 36.4 -0.7**
comp=Z,23nm,0.5s
MOA Molln 3.88 199 Pn **Pn** **15 39 34.4 +1.0**
comp=Z,6.6nm,0.4s
MOA Sg **Sg** **15 40 36.4 -0.7**
comp=Z,23nm,0.5s
STHS Stebnicka Huta 3.91 121 *e*Pn **Pn** **15 39 34.6 +0.8**
STHS Stebnicka Huta 3.91 121 *e*PN **Pn** **15 39 34.6 +0.8**
STHS *e* 15 39 48.1
STHS Stebnicka Huta 3.91 121 *e*SG **Sg** **15 40 43.1 +5.1**
STHS *e*LG Lg 15 40 55.9
KECS Kecovo 4.16 136 *e*Sg **Sg** **15 40 45.6 -0.6**
KECS Kecovo 4.16 136 *e* **Pb** **15 39 49.8 +3.2**
KECS Kecovo 4.16 136 *e*SG **Sg** **15 40 45.6 -0.6**
KECS *e*LG Lg 15 40 58.9
ARSA Arzberg 4.31 185 *i* Pn **Pn** **15 39 42.0 +2.7**
comp=Z,2.2nm,0.3s
ARSA Sg **Sg** **15 40 48.4 -2.5**
comp=Z,36nm,0.8s
ARSA Arzberg 4.31 185 Pn **Pn** **15 39 42.0 +2.7**
comp=Z,2.2nm,0.3s
ARSA Sg **Sg** **15 40 48.4 -2.5**
comp=Z,36nm,0.8s
CRVS Cervenica-Dubn 4.33 125 *e*Pn **Pn** **15 39 41.1 +1.5**
CRVS *e*Sg **Sg** **15 40 51.9 +0.2**
CRVS Cervenica-Dubn 4.33 125 *e*PN **Pn** **15 39 41.1 +1.5**
CRVS *e* 15 39 55.9
KOLS Kolonicke sedl 4.74 121 *e*Pn **Pn** **15 39 45.7 +0.5**
KOLS Kolonicke sedl 4.74 121 *e*PN **Pn** **15 39 45.7 +0.5**
KOLS *e* 15 40 04.7
KOLS *e*LG Lg 15 41 35.5
KBA Koelnbreinsper 4.81 203 *i* Pn **Pn** **15 39 47.4 +1.0**
comp=Z,5.1nm,0.4s
KBA *e*Sg **Sg** **15 41 07.1 0.0**
comp=Z,14nm,0.6s
KBA Koelnbreinsper 4.81 203 Pn **Pn** **15 39 47.4 +1.0**
comp=Z,5.1nm,0.4s
KBA Sg **Sg** **15 41 07.1 0.0**
comp=Z,14nm,0.6s
DAVOX Davos/Dischmat 6.27 223 Pn **Pn** **15 40 06.5 +0.1**
comp=Z,0.5nm,0.3s,baz=50,slow=16,SNR=3.4
DAVOX Lg Lg 15 41 54.9
comp=Z,0.6nm,0.3s,baz=19,slow=16,SNR=3.0
AKASG Malin Array Be 8.30 91 Pn **Pn** **15 40 33.4 -0.6**
comp=Z,1.1nm,0.3s,baz=280,slow=12,SNR=5.4
AKASG Sn **Sn** **15 42 03.3 -5.1**
comp=Z,0.6nm,0.3s,baz=280,slow=23,SNR=2.8
AKASG Lg Lg 15 43 01.1
comp=Z,0.2nm,0.3s,baz=278,slow=28,SNR=2.7
HFS Hagfors 8.72 352 Pn **Pn** **15 40 39.1 -0.7**
comp=Z,0.2nm,0.3s,baz=179,slow=9.8,SNR=4.2
NOA NORSAR Array B 9.90 346 Pn **Pn** **15 40 54.3 -1.7**
comp=Z,0.1nm,0.3s,baz=161,slow=12,SNR=2.9
FINES FINESS Array B 11.34 25 Pn **Pn** **15 41 14.0 -1.6**
comp=Z,0.2nm,0.3s,baz=208,slow=12,SNR=8.2
FINES Sn Sn 15 43 15.8 -7.1
comp=Z,0.2nm,0.3s,baz=205,slow=20,SNR=5.0
EKA Eskdalemuir Ar 12.09 296 Pn **Pn** **15 41 26.2 +0.3**
baz=99,slow=12,SNR=2.8
ARCES ARCESS Array B 18.60 10 Pn **P** **15 42 47.7 -3.2**
comp=Z,0.2nm,0.3s,baz=190,slow=14,SNR=10
YKA Yellowknife Ar 59.83 336 P **P** **15 48 40.5 +1.4**
comp=Z,0.2nm,0.6s,baz=31,slow=6.5,SNR=5.8

IDC ***29*** *15:38:37.8±13.0, 13.14N×41.67E, h0km, mb3.6/5, mb1 3.7/5, mb1mx3.3/47, mbtmp3.6/5, MS3.1/6, Ms1 3.1/6, ms1mx2.9/37, Error ellipse: s-maj=280.3km s-min=44.9km az=11.0*

DHMR ***29*** *15:38:54.5±0.8, 15.05N×42.43E, h2km±40km, ML3.8*

ISC 29 15:38:50.4±3.4, 14.6N±0.1×42.0E±0.2, h9km, n13, σ1s00/8, mb3.6/5, MS2.9/5, Western Arabian Peninsula

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
HAJJ	**Hajjah**	**1.89**	**54**	*i* P	Pn	15 39 18.3	-4.8
HAJJ				*i* S	Sn	15 39 37.7	-9.5
HAJJ				AML	AML	15 39 51.3	
comp=Z,2μm,0.3s							
UDYN	**Al 'Udayn**	**1.99**	**108**	*i* P	**Pg**	**15 39 28.0**	**-0.6**
UDYN				*i* S	**Sg**	**15 39 54.3**	**-0.1**
UDYN				AML	AML	15 40 08.9	
comp=E,1μm,0.3s							
DHBB	**Dhamar BB**	**2.30**	**90**	*i* P	**Pn**	**15 39 30.3**	**+1.5**
DHBB				*i* S	**Sn**	**15 39 57.2**	**-0.2**
WSAR	**Wadi Sarin**	**17.91**	**59**	LR	LR	15 51 24.3	
comp=E,146nm,19.1s,slow=40							
IDI	**Anoyia**	**25.74**	**326**	LR	LR	15 55 39.0	
comp=E,34nm,18.3s,baz=289,slow=38							
BRTR	**Keskin Array B**	**26.11**	**345**	P	**P**	**15 44 25.4**	**+0.6**
comp=E,0.5nm,0.7s,baz=165,slow=12,SNR=5.5							
GEYT	**Alibeck**	**27.29**	**29**	LR	LR	15 56 52.2	
comp=E,50nm,18.5s,baz=75,slow=38							
MLR	**Muntele Rosu**	**33.67**	**339**	LR	LR	15 59 04.6	
comp=E,12nm,21.3s,baz=114,slow=35							
GERES	**GERESS Array B**	**41.34**	**332**	P	P	15 46 34.4	-2.3
comp=E,0.9nm,0.7s,baz=157,slow=7.1,SNR=6.2							
MKAR	**Makanchi Array**	**46.43**	**38**	P	**P**	**15 47 17.4**	**-0.2**
comp=E,0.6nm,0.7s,baz=233,slow=8.0,SNR=3.7							
MKAR				LR	LR	16 09 25.5	
comp=E,40nm,18.5s,baz=202,slow=39							
KURBB	**Kurchatov Arra**	**46.49**	**32**	P	**P**	**15 47 16.9**	**-1.1**
comp=E,0.1nm,0.3s,baz=233,slow=8.6,SNR=3.7							
NOA	**NORSAR Array B**	**51.45**	**341**	LR	LR	16 12 15.5	
comp=E,7.7nm,18.4s,baz=210,slow=38							
ZALV	**Zalesovo Beam**	**51.56**	**31**	P	**P**	**15 47 55.8**	**-1.0**
comp=E,0.6nm,0.6s,baz=245,slow=9.2,SNR=5.1							

JMA 29 15:50:44.1, 37.02N×140.69E, h10km±1km, M2.5, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.12**	**47**	P	Pg	15 50 47.1	+0.1
ONAJ				S	Sg	15 50 49.2	+0.1
JFK	**Kawauchi**	**0.38**	**23**	P	Pg	15 50 51.6	0.0
JFK				S	Sg	15 50 57.0	+0.4
JHO	**Hitachi**	**0.42**	**193**	P	Pg	15 50 52.1	-0.2
JHO				S	Sg	15 50 57.9	0.0
MAT	**Matsushiro**	**2.05**	**257**	P	Pn	15 51 19.7	+1.0
MAT				S	Sb	15 51 47.1	+0.1

IDC 29 15:55:54.9±13.0, 21.37S×177.62W, h430km±104km, mb3.2/6, mb1 3.3/7, mb1mx3.0/37, mbtmp4.1/7, Error ellipse: s-maj=131.6km s-min=35.5km az=53.0, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
DZM	**Mont Dzumac**	**14.83**	**264**	P	P	15 59 05.4	+0.6
0.7nm,0.3s,baz=106,slow=18,SNR=4.7							
RPZ	**Rata Peaks**	**24.19**	**200**	P	P	16 00 35.6	+0.4
2.8nm,0.6s,baz=34,slow=6.6,SNR=3.7							
CTA	**Charters Tower**	**33.77**	**266**	P	P	16 01 58.9	-0.4
2.7nm,0.4s,baz=92,slow=11,SNR=12							
STKA	**Stephens Creek**	**37.74**	**245**	P	P	16 02 30.6	-1.7
1.4nm,0.9s,baz=96,slow=10,SNR=2.7							
ASAR	**Alice Springs**	**44.67**	**258**	P	P	16 03 27.9	0.0
1.2nm,0.7s,baz=89,slow=8.6,SNR=35							
ASAR				PcP	PcP	16 05 00.8	-1.1
0.2nm,0.5s,baz=107,slow=3.9,SNR=6.4							
WRA	**Warramunga Arr**	**44.84**	**263**	P	P	16 03 29.1	-0.3
0.8nm,0.3s,baz=96,slow=7.5,SNR=65							
FITZ	**Fitzroy Crossi**	**53.27**	**263**	P	P	16 04 33.9	+1.7
1.6nm,1.0s,baz=102,slow=5.9,SNR=3.8							

IDC ***29*** *16:00:37.0±0.7, 19.35S×168.01E, h0km, mb4.5/16, mb1 4.6/17, mb1mx4.4/38, mbtmp4.5/17, ML4.5/1, MS3.6/13, Ms1 3.6/13, ms1mx3.3/32, Error ellipse: s-maj=19.0km s-min=16.0km az=124.0*

ISCJB ***29*** *16:00:39.5±0.3, 19.40S±0.04×167.85E±0.06, h26km, mb4.7/33, MS3.6/11, Error ellipse: s-maj=8.0km s-min=6.5km az=3.6*

BJI ***29*** *16:00:40.5, 19.08S×167.89E, h28km, mb4.7/20, mB5.0/13, Ms4.7/3, Ms7 4.3/4*

NEIC ***29*** *16:00:42.6±1.2, 19.40S×167.88E, h38km±11km, mb4.9/12, Error ellipse: s-maj=8.1km s-min=7.2km az=180.0*

ISC 29 16:00:41.0±0.4, 19.42S±0.07×167.85E±0.08, h26km, n89, σ0s93/76, mb4.8/32, MS3.6/11, 2C, Vanuatu Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
DZM	**Mont Dzumac**	**2.95**	**206**	Pn	**Pn**	**16 01 26.1**	**-0.3**
63nm,0.3s,baz=72,slow=16,SNR=253							
DZM				Sn	**Sn**	**16 02 00.5**	**-0.5**
138nm,0.3s,baz=323,slow=18,SNR=12							
DZM				LR	LR	16 02 31.3	
comp=Z,742nm,21.5s,baz=40,slow=37							
MSVF	**Nonsavu**	**9.82**	**82**	*e*Pn	**Pn**	**16 03 01.3**	**+0.6**
HNR	**Honiara**	**12.53**	**321**	LR	LR	16 07 38.4	
comp=Z,100nm,20.3s,baz=83,slow=34							
OUZ	**Omahuta**	**16.54**	**163**	Pn	**Pn**	**16 04 31.7**	**+0.4**
CTA	**Charters Tower**	**20.34**	**264**	P	Pn	16 05 18.2	+0.6
20nm,1.0s,baz=93,slow=14,SNR=7.8							
URZ	**Urewera**	**20.43**	**159**	LR	LR	16 12 39.0	
comp=Z,169nm,19.1s,baz=344,slow=35							
URZ	**Urewera**	**20.43**	**159**	*e*P	**P**	**16 05 16.5**	**+0.2**

PMG Port Moresby 22.35 294 P **P** **16 05 38.5 +1.3**
23nm,1.1s,baz=131,slow=12,SNR=3.3
OXZ Oxford 24.10 172 *e*P **P** **16 05 54.8 +0.3**
69nm,1.7s
FOZ Fox Glacier 24.10 176 *e*P **P** **16 05 56.1 +1.6**
35nm,0.9s
RPZ Rata Peaks 24.38 174 P **P** **16 05 57.8 +0.8**
6.5nm,0.6s,baz=357,slow=3.4,SNR=6.6
RPZ LR LR 16 14 04.9
comp=Z,109nm,18.2s,baz=4.0,slow=33
RPZ Rata Peaks 24.38 174 *e*P **P** **16 05 58.0 +1.0**
DCZ Deep Cove 25.98 181 *e*P **P** **16 06 12.7 +1.1**
17nm,1.0s
STKA Stephens Creek 26.64 237 P **P** **16 06 19.2 +1.4**
8.4nm,0.9s,baz=74,slow=10,SNR=31
STKA LR LR 16 15 43.3
comp=Z,99nm,21.4s,baz=49,slow=34
RAR Rarotonga 30.39 99 LR LR 16 16 15.8
comp=Z,79nm,21.1s,baz=276,slow=31
WB2 Warramunga Arr 31.52 263 *e*P **P** **16 07 00.6 -0.6**
WRAB Tennant Creek 31.52 263 *e*P **P** **16 07 00.5 -0.7**
16nm,1.0s
WRA Warramunga Arr 31.53 263 P **P** **16 07 01.0 -0.4**
4.0nm,0.4s,baz=86,slow=8.4,SNR=82
WRA PcP **PcP** **16 09 54.0 0.0**
0.9nm,0.7s,baz=94,slow=2.7,SNR=5.3
AS01 Alice Springs 31.77 256 *e*P **P** **16 07 02.6 -0.8**
AS31 Alice Springs 31.81 256 *e*P **P** **16 07 03.5 -0.3**
6.9nm,0.8s
ASAR Alice Springs 31.81 256 P **P** **16 07 04.2 +0.3**
17nm,0.8s,baz=85,slow=8.7,SNR=248
ASAR LR LR 16 20 04.6
comp=Z,195nm,18.1s,baz=107,slow=36
MTN Manton Dam 35.82 275 *e*P **P** **16 07 35.6 -3.0**
23nm,1.0s
FITZ Fitzroy Crossi 39.92 265 P **P** **16 08 14.2 +0.9**
23nm,0.8s,baz=110,slow=7.6,SNR=41
FITZ Fitzroy Crossi 39.92 265 *e*P **P** **16 08 13.6 +0.3**
29nm,0.8s
PPT2 Papeete2 40.34 95 *e*LR LR 16 19 32.6
174nm,28.0s
PPT Papeete 40.35 95 LR LR 16 20 44.2
comp=Z,102nm,21.6s,baz=278,slow=30
MBWA Marble Bar 45.03 259 *e*P **P** **16 08 55.1 +0.2**
34nm,0.8s
NWAO Narrogin (SRO) 46.97 243 *e*P **P** **16 09 09.1 -0.9**
28nm,0.8s
KAPI Kappang 48.95 281 P **P** **16 09 26.6 +1.0**
7.2nm,0.9s,baz=127,slow=9.0,SNR=5.5
KAPI LR LR 16 30 41.3
comp=Z,43nm,18.2s,baz=139,slow=37
DAV Davao City (W) 49.25 298 P **P** **16 09 28.2 +0.4**
231nm,0.4s,baz=6.5,slow=0.7,SNR=4.1
VNDA Vanda 58.22 182 P **P** **16 10 32.8 +0.3**
2.1nm,0.8s,baz=350,slow=8.6,SNR=8.5
LEM Lembang 59.71 273 LR LR 16 36 07.1
comp=Z,47nm,18.9s,slow=36
NJ2 Nanjing 69.43 317 *e*P **P** **16 11 46.0 -1.0**
NJ2 pmax pmax
comp=Z,16nm,0.7s
QSPA South Pole Qui 70.64 180 *e*P **P** **16 11 54.1 -0.1**
PETK Petropavlovsk- 72.75 354 P **P** **16 12 06.6 -0.1**
3.2nm,0.6s,baz=128,slow=6.2,SNR=10
CN2 Changchun 73.94 329 *e*P **P** **16 12 16.3 +2.4**
GYA Guiyang 74.85 306 P **P** **16 12 20.0 +0.2**
GYA pmax pmax
comp=Z,10.0nm,1.0s
KLR Kul'dur 75.50 336 P **P** **16 12 23.6 +0.8**
2.0nm,1.0s,baz=100,slow=2.4,SNR=3.7
KMI Kunming 77.26 303 P **P** **16 12 33.3 -0.4**
KMI pmax pmax
comp=Z,9.0nm,0.6s
KMI pmax pmax
comp=Z,110nm,5.5s
CM01 Chiang Mai Arr 77.35 295 *e*P P 16 12 30.4 -3.7
CMAR Chiang Mai Arr 77.38 295 P **P** **16 12 36.0 +1.7**
1.1nm,0.9s,baz=128,slow=4.4,SNR=12
MAW Mawson 77.78 202 P **P** **16 12 36.9 +1.4**
5.1nm,0.8s,baz=93,slow=9.6,SNR=6.4
CD2 Chengdu 79.31 308 P **P** **16 12 44.0 -0.7**
CD2 pmax pmax
comp=Z,1.0nm,0.5s
HHC Hu-ho-hao-te 79.51 320 *e*P **P** **16 12 47.0 +1.4**
HHC pmax pmax
comp=Z,14nm,0.7s
HHC pmax pmax
comp=Z,71nm,7.4s
SYO Syowa Base 84.39 197 *e*P **P** **16 13 09.4 -1.3**
SYO Syowa Base 84.39 197 *e*PcP **PcP** **16 13 13.2 -1.2**
ULN Ulaanbaatar 86.23 324 *e*P **P** **16 13 20.8 +0.5**
7.6nm,0.9s
TNA Tin City 86.70 10 *e*P **P** **16 13 22.1 +0.1**
8.6nm,1.0s
BILL Bilibino 87.21 359 *e*P **P** **16 13 24.8 +0.4**
10nm,1.3s
SNAA Sanae 88.92 183 P **P** **16 13 33.0 0.0**
SNAA Sanae 88.92 183 *e*P **P** **16 13 32.2 -0.7**
VNA3 Neumayer Olymp 89.56 181 P **P** **16 13 35.8 -0.1**
VNA2 Neumayer--Watz 89.84 182 P **P** **16 13 37.4 +0.2**
baz=174,slow=3.8
NV01 Mina Array Sit 89.90 49 *e*P **P** **16 13 36.5 -1.8**
NVAR Mina Array Bea 89.90 49 P **P** **16 13 37.6 -0.6**
1.3nm,0.7s,baz=218,slow=7.7,SNR=5.3
NVAR LR LR 16 50 21.9
comp=Z,41nm,18.1s,baz=261,slow=33
VNA1 Neumayer--Stat 90.13 181 P **P** **16 13 38.9 +0.4**
ILAR Eielson Array 90.79 18 P **P** **16 13 39.4 -2.1**
1.0nm,0.8s,baz=237,slow=4.5,SNR=8.6
WMQ Urumqi 96.38 314 *e*P **P** **16 14 08.0 +0.2**
WMQ pmax pmax
comp=Z,6.0nm,0.6s
WMQ pmax pmax
comp=Z,25nm,3.6s
PDAR Pinedale Array 97.70 47 LR LR 16 53 55.2
comp=Z,23nm,18.2s,baz=232,slow=33
TXAR Lajitas Array 98.00 62 P Pdif 16 14 15.6 +0.1
0.3nm,0.7s,baz=215,slow=6.1,SNR=3.4
TXAR LR LR 16 52 32.5
comp=Z,40nm,18.4s,baz=0.0,slow=32
YKA Yellowknife Ar 101.43 28 P **Pdif** **16 14 29.7 -0.1**
0.2nm,0.6s,baz=256,slow=4.7,SNR=6.4
ARCES ARCESS Array B 124.90 345 PKP **PKPdf** **16 19 37.8 -0.3**
1.7nm,0.7s,baz=51,slow=2.3,SNR=4.9
AKASG Malin Array Be 134.86 324 PKP **PKPdf** **16 19 56.5 -0.9**
0.2nm,0.3s,baz=56,slow=2.0,SNR=4.0
DPC Dobruska-Polom 141.74 330 *e*PKP **PKPdf** **16 20 07.8 -2.4**
CONA Conrad Observa 143.60 328 *i* PKPdf **PKPdf** **16 20 12.3 -1.4**
6.1nm,0.9s,SNR=5.5
KHC Kasperske Hory 143.87 331 *e*PKP PKPbc 16 20 12.5 +0.8
KHC *ep*PKP pPKPdf 16 20 22.8 +0.1
GERES GERESS Array B 144.01 331 PKP PKPbc 16 20 12.8 +0.6
1.9nm,0.8s,baz=29,slow=3.0,SNR=11
ARSA Arzberg 144.22 327 *e*PKPdf PKPbc 16 20 12.7 -0.1
3.9nm,0.9s
MOA Molln 144.45 329 *i* PKPdf **PKPdf** **16 20 14.4 -0.6**
12nm,0.9s,SNR=9.4
PERS Pernice 144.84 327 *i* PKPbc PKPbc 16 20 15.1 +0.3
PERS *i* 16 20 25.6
SOKA Soboth 144.86 327 *i* PKPdf PKPbc 16 20 15.3 +0.3
11nm,0.7s,SNR=15
GCIS Gornji Cirnik 145.07 325 *i* PKPbc **PKPdf** **16 20 16.2 +0.1**
GCIS *i* 16 20 26.8
OBKA Obir 145.22 327 *i* PKPdf **PKPdf** **16 20 16.2 -0.3**
11nm,0.9s,SNR=6.3
PDKS Podkum 145.28 326 *e*PKPbc **PKPdf** **16 20 16.7 +0.2**
KBA Koelnbreinsper 145.43 329 *i* PKPab **PKPbc** **16 20 16.7 -0.2**
15nm,0.9s,SNR=12
LJU Ljubljana 145.54 326 *i* PKPbc **PKPab** **16 20 17.7 +0.4**
LJU *i* 16 20 28.1
MYKA Terra Mystica 145.60 328 *i* PKPab **PKPab** **16 20 17.4 -0.2**
9.2nm,0.9s,SNR=5.6
MEM Membach 145.70 339 PKP **PKPab** **16 20 17.5 -0.2**
ABTA Abfaltersbach 146.07 329 *i* PKPab **PKPbc** **16 20 18.3 -0.5**
19nm,1.0s,SNR=9.5
BCLA Clavier 146.09 340 PKP **PKPab** **16 20 19.6 +0.4**
WTTA Wattenberg 146.12 330 *i* PKPab **PKPbc** **16 20 19.2 +0.1**
9.0nm,0.9s
MOTA Moosalm 146.30 331 *i* PKiKP **PKPab** **16 20 20.7 +0.4**
5.8nm,0.7s
RETA Reutte 146.35 332 *i* PKPab **PKPbc** **16 20 19.7 +0.1**
5.5nm,1.0s
WLF Walferdange 146.45 338 PKP **PKPab** **16 20 20.8 +0.2**
DOU Dourbes 146.60 340 PKP **PKPbc** **16 20 20.4 +0.3**
FETA Feichten 146.71 331 *i* PKPab **PKPab** **16 20 21.2 -0.7**
10nm,1.1s
DAVA Damuels 146.89 332 *e*PKPab **PKPbc** **16 20 21.2 -0.1**
9.3nm,1.4s

ESDC	**Sonseca Array**	**158.61**	**342**	PKPab	**PKPab**	**16 21 12.0**	**+0.3**
	0.2nm,0.4s,baz=357,slow=3.1,SNR=3.3							
TORD	**Torodi Ar. Bea**	**165.32**	**247**	PKPab	**PKPab**	**16 21 42.0**	**+0.2**
	1.6nm,1.0s,baz=45,slow=0.2,SNR=4.9							

*DDA **29** 16:07:39.9, 40˚.39N×26˚.97E, h7km, Md2.7*
*ISK **29** 16:07:39.4, 40˚.45N×26˚.94E, h16km, MD2.3*
*CSEM **29** 16:07:39.6±0.2, 40˚.44N×26˚.94E, h18km±2km, MD2.3, Error ellipse: s-maj=3.1km s-min=1.5km az=8.0*
*ISCJB **29** 16:07:40.1±0.6, 40˚.45N±0˚.04×26˚.95E±0˚.03, h12km±7km, Error ellipse: s-maj=6.6km s-min=3.9km az=178.6*

ISC 29 16:07:39.8±0.9, 40˚.45N±0˚.04×26˚.93E±0˚.02, h17km±6km, n17, σ0°35/34, Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
LPK	**Lapseki**	**0.16**	**239**	*e*PG		**Pb**	**16 07 43.7**	**-0.5**
LPK				*e*SG		**Sg**	**16 07 47.0**	**+0.2**
LPK	**Lapseki**	**0.16**	**239**	*e*Pg		**Pb**	**16 07 43.7**	**-0.5**
LPK				*e*Sg		**Sg**	**16 07 47.0**	**+0.2**
KRBG	**Karabiga-Canak**	**0.28**	**102**	*e*PG		**Pg**	**16 07 45.9**	**-0.1**
KRBG				*e*SG		**Sg**	**16 07 50.2**	**0.0**
KRBG	**Karabiga-Canak**	**0.28**	**102**	*e*Pg		**Pg**	**16 07 45.9**	**-0.1**
KRBG				*e*Sg		**Sg**	**16 07 50.2**	**0.0**
RKY	**Sarkoy-Tekirda**	**0.30**	**38**	*e*PG		**Pg**	**16 07 46.1**	**-0.1**
RKY				*e*SG		**Sb**	**16 07 51.1**	**-0.3**
RKY	**Sarkoy-Tekirda**	**0.30**	**38**	*e*Pg		**Pg**	**16 07 46.2**	**-0.1**
RKY				*e*Sg		**Sb**	**16 07 51.1**	**-0.3**
SART	**Tekirdag**	**0.30**	**38**	*i* P		**Pb**	**16 07 46.7**	**0.0**
SART				*i* S		**Sb**	**16 07 51.8**	**+0.4**
SART	**Tekirdag**	**0.30**	**38**	P		**Pb**	**16 07 46.7**	**0.0**
SART				S		**Sb**	**16 07 51.8**	**+0.4**
ERIK	**Erikli-Kesan**	**0.39**	**304**	*e*PG		**Pg**	**16 07 47.8**	**+0.1**
ERIK				*e*SG		**Sb**	**16 07 54.0**	**+0.3**
ERIK	**Erikli-Kesan**	**0.39**	**304**	*e*Pg		**Pg**	**16 07 47.8**	**+0.1**
ERIK				*e*Sg		**Sb**	**16 07 54.1**	**+0.3**
MRMT	**Marmara Adasi**	**0.53**	**73**	*e*PG		**Pg**	**16 07 50.0**	**-0.3**
MRMT				*e*SG		**Sb**	**16 07 57.8**	**-0.1**
MRMT	**Marmara Adasi**	**0.53**	**73**	*e*Pg		**Pg**	**16 07 50.0**	**-0.3**
MRMT				*e*Sg		**Sb**	**16 07 57.8**	**-0.1**
EDC	**Edincik**	**0.72**	**98**	*e*PG		**Pb**	**16 07 53.7**	**-0.1**
EDC				*e*SG		**Sg**	**16 08 03.9**	**+0.5**
EDC	**Edincik**	**0.72**	**98**	*e*Pg		**Pb**	**16 07 53.7**	**-0.1**
EDC				*e*Sg		**Sg**	**16 08 03.9**	**+0.5**
ALN	**Alexandroupoli**	**0.81**	**304**	*e*PG		**Pg**	**16 07 55.6**	**+0.1**
ALN				*e*SG		**Sb**	**16 08 07.4**	**-0.5**
ALN	**Alexandroupoli**	**0.81**	**304**	*e*Pg		**Pg**	**16 07 55.6**	**+0.1**
ALN				*e*Sg		**Sn**	**16 08 07.4**	**-0.5**
BOZC	**Bozcaada**	**0.91**	**228**	*i* P		**Pb**	**16 07 56.8**	**-0.3**
BOZC				*i* S		**Sn**	**16 08 11.5**	**+1.1**

*CSEM **29** 16:16:08.5±1.4, 49˚.96N×18˚.51E, h1km, Error ellipse: s-maj=23.0km s-min=15.8km az=89.0*

PRU 29 16:16:08.6, 49˚.85N×18˚.54E, h0km, 1D, Czech and Slovak Republics

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
OKC	**Ostrava-Krasne**	**0.26**	**267**	⇓*i*PG		Pg	16 16 13.9	+0.4
OKC				*e*SG		Sg	16 16 16.8	0.0
	comp=Z,17nm,0.3s							
OKC	**Ostrava-Krasne**	**0.26**	**267**	Pg		Pg	16 16 13.9	+0.4
OKC				Sg		Sg	16 16 16.8	0.0
	17nm,0.3s							
MORC	**Moravsky Berou**	**0.65**	**264**	*e*Pg		Pg	16 16 21.4	+0.4
MORC				*e*Sg		Sg	16 16 28.6	-0.9
DPC	**Dobruska-Polom**	**1.51**	**290**	*e*PG		Pn	16 16 36.1	-0.9
DPC				*e*SG		Sg	16 16 56.9	-0.3
DPC	**Dobruska-Polom**	**1.51**	**290**	Pg		Pn	16 16 36.1	-0.9
DPC				Sg		Sg	16 16 56.9	-0.3

IDC 29 16:26:46.0±1.3, 59˚.67S×29˚.81W, h0km, mb3.9/2, mb1 3.9/2, mb1mx3.6/22, mbtmp3.8/2, Error ellipse: s-maj=69.5km s-min=54.2km az=97.0, South Sandwich Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
H10S2	**ASCENSION HYDR**	**51.88**	**19**	T		T	17 32 10.4	
	baz=186,slow=74							
H10S3	**ASCENSION HYDR**	**51.89**	**19**	T		T	17 32 11.4	
	baz=186							
H10S1	**ASCENSION HYDR**	**51.90**	**19**	T		T	17 32 11.7	
	baz=186,slow=74							
H10N1	**ASCENSION HYDR**	**53.00**	**19**	T		T	17 33 36.6	
	baz=194							
H10N3	**ASCENSION HYDR**	**53.00**	**19**	T		T	17 33 34.7	
	baz=194							
H10N2	**ASCENSION HYDR**	**53.02**	**19**	T		T	17 33 31.1	
	baz=194							
TORD	**Torodi Ar. Bea**	**76.89**	**32**	P		P	16 38 39.8	-0.1
	0.6nm,0.5s,baz=199,slow=5.8,SNR=4.6							
ASAR	**Alice Springs**	**95.90**	**165**	P		P	16 40 14.2	-0.4
	0.4nm,1.0s,baz=175,slow=4.4,SNR=4.8							
INK	**Inuvik**	**147.63**	**318**	PKPbc		PKPbc	16 46 30.2	-0.3
	2.3nm,1.2s,baz=108,slow=2.9,SNR=3.5							
ILAR	**Eielson Array**	**151.34**	**307**	PKPbc		PKPbc	16 46 40.4	+0.5
	0.9nm,1.0s,baz=146,slow=3.0,SNR=5.3							
ILAR				PKPab		PKPab	16 46 46.8	-1.5
	1.0nm,1.0s,baz=203,slow=2.2,SNR=4.3							

IDC 29 16:27:06.3±9.1, 7˚.18S×129˚.95E, h75km±68km, mb3.3/1, mb1 3.4/4, mb1mx3.1/40, mbtmp3.5/4, ML3.3/3, Error ellipse: s-maj=73.3km s-min=56.1km az=164.0, Banda Sea

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
FITZ	**Fitzroy Crossi**	**11.64**	**201**	P		Pn	16 29 49.7	+0.2
	0.1nm,0.3s,baz=16,slow=12,SNR=9.0							
FITZ				S		Sn	16 31 59.0	+1.2
	0.1nm,0.3s,baz=100,slow=19,SNR=2.3							
WRA	**Warramunga Arr**	**13.38**	**162**	P		Pn	16 30 13.2	+0.1
	0.2nm,0.3s,baz=339,slow=13,SNR=19							
WRA				S		Sn	16 32 40.2	0.0
	0.1nm,0.3s,baz=345,slow=26,SNR=3.5							
ASAR	**Alice Springs**	**16.82**	**167**	P		Pn	16 30 56.9	-0.3
	0.1nm,0.3s,baz=343,slow=10,SNR=2.4							
STKA	**Stephens Creek**	**26.86**	**158**	P		P	16 32 40.1	0.0
	0.4nm,0.4s,baz=340,slow=15,SNR=2.3							

*DDA **29** 16:37:16.6, 38˚.71N×40˚.23E, h7km, Md2.7*
*ISK **29** 16:37:16.4, 38˚.83N×40˚.26E, h18km, MD2.4*
*CSEM **29** 16:37:17.0±0.6, 39˚.08N×40˚.16E, h10km, MD2.4, Error ellipse: s-maj=16.8km s-min=9.5km az=15.0*

ISC 29 16:37:16.8±1.1, 38˚.83N±0˚.05×40˚.24E±0˚.03, h15km±10km, n16, σ0°45/25, Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
BINT	**Bingol**	**0.20**	**76**	*e*Pg		Pg	16 37 24.3	+2.7
BINT				*e*Sg		Sg	16 37 30.3	+5.4
BGOL	**Bingol**	**0.37**	**65**	*i* P		**Pb**	**16 37 25.3**	**+0.1**
BGOL				*i* S		**Sg**	**16 37 30.0**	**+0.3**
BGOL	**Bingol**	**0.37**	**65**	P		**Pb**	**16 37 25.3**	**+0.1**
BGOL				S		**Sg**	**16 37 30.0**	**+0.3**
BNGB	**Bing˜¶l**	**0.38**	**64**	*e*PG		**Pg**	**16 37 24.3**	**-0.3**
BNGB				*e*SG		**Sg**	**16 37 30.2**	**+0.3**
TNCL	**Tunceli-Merkez**	**0.61**	**298**	*i* P		**Pb**	**16 37 29.0**	**-0.4**
TNCL				*i* S		**Sn**	**16 37 40.3**	**-0.5**
TNCL	**Tunceli-Merkez**	**0.61**	**298**	P		**Pb**	**16 37 29.0**	**-0.4**
TNCL				S		**Sn**	**16 37 40.3**	**-0.5**
PTK	**Pertek**	**0.66**	**276**	*e*PG		**Pb**	**16 37 30.1**	**-0.1**
PTK				*e*SG		**Sb**	**16 37 40.1**	**+0.7**
PTK	**Pertek**	**0.66**	**276**	*e*Pg		**Pb**	**16 37 30.1**	**-0.1**
PTK				*e*Sg		**Sb**	**16 37 40.1**	**+0.7**
BNGL	**BINGOL**	**0.72**	**80**	*i* P		**Pg**	**16 37 30.5**	**-0.5**
BNGL				*i* S		**Sn**	**16 37 40.1**	**-0.5**
ERZN	**Erzincan**	**0.86**	**332**	*e*PG		**Pb**	**16 37 33.5**	**0.0**
ERZN				*e*SG		**Sb**	**16 37 45.9**	**+1.1**
SVRC	**Sivrice-ELAZID**	**0.86**	**239**	*e*PG		**Pb**	**16 37 33.7**	**+0.2**
SVRC				*e*SG		**Sn**	**16 37 46.5**	**-0.4**
SVRC	**Sivrice-ELAZID**	**0.86**	**239**	*e*Pg		**Pb**	**16 37 33.7**	**+0.2**
SVRC				*e*Sg		**Sn**	**16 37 46.5**	**-0.4**
EZC	**Erzincan**	**1.15**	**324**	*e*Pg		Pb	16 37 33.5	-5.0
EZC				*e*Sg		Sg	16 37 45.9	-8.2
MAZI	**Mazidag**	**1.38**	**173**	*e*PN		**Pn**	**16 37 41.5**	**-0.1**
MAZI	**Mazidag**	**1.38**	**173**	*e*Pn		**Pn**	**16 37 41.5**	**-0.1**
MARD	**Mardin**	**1.57**	**164**	*i* P		**Pn**	**16 37 44.6**	**+0.3**

*BJI **29** 16:41:28.9, 15˚.10N×41˚.59E, h10km, mb4.5/23, mB4.9/16, Ms4.5/10, Ms7 4.5/9*
*ISCJB **29** 16:41:31.1±0.2, 15˚.13N±0˚.02×42˚.12E±0˚.02, h10km, mb4.5/84, MS3.7/21, Error ellipse: s-maj=4.1km s-min=2.6km az=42.2*
*IDC **29** 16:41:31.3±0.8, 15˚.09N×42˚.06E, h0km, mb4.3/18, mb1 4.4/22, mb1mx4.3/39, mbtmp4.4/22, ML3.9/4, MS3.7/21, Ms1 3.7/21, ms1mx3.5/40, Error ellipse: s-maj=18.4km s-min=16.5km az=10.0*
*DHMR **29** 16:41:31.8±0.6, 15˚.09N×42˚.36E, h4km±7km, ML4.9*
*STR **29** 16:41:31.5±0.0, 14˚.97N×41˚.80E, Mb4.6, Error ellipse: s-maj=0.0km s-min=0.0km az=123.0*
*NEIC **29** 16:41:32.1±4.6, 15˚.09N×42˚.03E, h10km±30km, mb4.6/26, Error ellipse: s-maj=9.7km s-min=7.5km az=203.0*
*CSEM **29** 16:41:32.3±0.2, 15˚.03N×42˚.06E, h10km, mb4.5/42, Error ellipse: s-maj=8.1km s-min=5.4km az=24.0*
*MOS **29** 16:41:32.2±1.3, 15˚.11N×42˚.01E, h20km, mb4.7/35, Error ellipse: s-maj=10.8km s-min=5.5km az=96.7*
*ARO **29** 16:41:33.2, 15˚.N×41˚.×4˚.2E±10˚.0, h15km±99km, ML5.0*
*DSN **29** 16:41:49.8±4.6, 16˚.66N×43˚.06E, h10km, mb5.2, Error ellipse: s-maj=4.9km s-min=2.6km az=7.0*

ISC 29 16:41:32.9±0.4, 15˚.19N±0˚.04×42˚.15E±0˚.04, h10km, n355, σ1°50/355, mb4.5/83, MS3.8/22, 31C-20D, Western Arabian Peninsula

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
HAJJ	**Hajjah**	**1.48**	**70**	⇑*i*P		Pn	16 41 56.4	-3.4
HAJJ				*i* S		**Sn**	**16 42 16.2**	**-3.2**
HAJJ				AML		AML	16 42 23.2	
	comp=Z,10μm,0.5s							
SANA	**San'a**	**1.99**	**84**	⇑*i*P		**Pn**	**16 42 05.0**	**-2.0**
SANA				*i* S		**Sn**	**16 42 30.4**	**-1.7**
SANA				AML		AML	16 42 48.1	
	comp=E,42μm,0.5s							
UDYN	**Al 'Udayn**	**2.14**	**125**	⇑*i*P		**Pn**	**16 42 06.5**	**-2.3**
UDYN				*i* S		**Sn**	**16 42 33.6**	**-2.0**
DHBB	**Dhamar BB**	**2.25**	**106**	*i* P		**Pn**	**16 42 08.6**	**-1.9**
DHBB				*i* S		**Sn**	**16 42 36.7**	**-1.9**
DAMY	**Dhamar**	**2.25**	**106**	*e*Pn		**Pn**	**16 42 08.4**	**-2.1**
DAMY				*e*Sn		**Sn**	**16 42 38.8**	**+0.2**
DAMY	**Dhamar**	**2.25**	**106**	*e*Pn		**Pn**	**16 42 08.4**	**-2.1**
DAMY				*e*Sn		**Sn**	**16 42 38.8**	**+0.2**
MAOD	**Malaho**	**3.08**	**179**	*e*P		**Pn**	**16 42 19.0**	**-2.7**
OBO	**Obock**	**3.38**	**161**	*e*P		**Pn**	**16 42 23.8**	**-1.9**
TDD	**Tadjoura Ara**	**3.45**	**168**	*e*P		**Pn**	**16 42 25.0**	**-1.7**
MCAD	**Moucha**	**3.59**	**163**	*e*P		**Pn**	**16 42 27.6**	**-1.1**
LDLD	**Lac de Lave**	**3.60**	**175**	*e*P		**Pn**	**16 42 27.7**	**-1.2**
ADEN	**Aden**	**3.65**	**131**	*i* P		**Pn**	**16 42 28.5**	**-1.0**
ADEN				*i* S		**Sn**	**16 43 12.8**	**+0.1**
ATD	**Arta Tunnel**	**3.71**	**169**	Pn		**Pn**	**16 42 28.7**	**-1.6**
	comp=E,12nm,0.3s,baz=348,slow=8.2,SNR=40							
ATD				Lg		Lg	16 43 30.3	
	comp=E,38nm,0.3s,baz=51,slow=22,SNR=7.5							
ATD				LR		LR	16 43 36.3	
	comp=E,242nm,20.1s,baz=50,slow=34							
ATD	**Arta Tunnel**	**3.71**	**169**	*e*P		**Pn**	**16 42 28.3**	**-2.0**
ATD				*e*S		**Sn**	**16 43 13.6**	**-0.5**
SGH	**Sud-Ghoubbet**	**3.76**	**173**	*e*P		**Pn**	**16 42 29.1**	**-2.0**
ATA	**Atar**	**3.86**	**164**	*e*P		**Pn**	**16 42 31.5**	**-0.9**
GBR	**Grand-Bara**	**4.03**	**176**	*e*P		**Pn**	**16 42 33.4**	**-1.3**
FURI	**Furi**	**7.12**	**209**	*e*PN		Pn	16 43 22.2	+4.7
FURI					SN	**Sb**	**16 45 05.3**	**+3.1**
ARQ	**Araqi**	**15.79**	**57**	Pn		**P**	**16 45 20.0**	**+0.6**
	SNR=18							
EIL	**Elat**	**15.86**	**336**	Pn		**P**	**16 45 21.1**	**+1.0**
	comp=E,0.1nm,0.3s,baz=326,slow=6.6,SNR=6.6							
EIL				Lg		Lg	16 50 00.0	
	comp=E,0.1nm,0.3s,baz=42,slow=18,SNR=4.4							
EIL				LR		LR	16 50 09.4	
	comp=E,421nm,19.6s,baz=252,slow=32							
NAZ	**Nazwa, Dubai**	**15.99**	**50**	*i* P		**Pn**	**16 45 14.1**	**-3.9**
	SNR=7.8							
NAZ	**Nazwa, Dubai**	**15.99**	**50**	P		**Pn**	**16 45 14.1**	**-3.9**
	SNR=7.8							
ASHO	**Ashiyiah**	**16.11**	**52**	Pn		**Pn**	**16 45 17.3**	**-2.4**
	SNR=7.2							
HATD	**Hatta, Dubai**	**16.25**	**52**	*i* P		**Pn**	**16 45 17.7**	**-3.7**
	SNR=8.0							
HATD	**Hatta, Dubai**	**16.25**	**52**	P		**Pn**	**16 45 17.7**	**-3.7**
	SNR=8.0							
UOSS	**Minazif**	**16.37**	**51**	P		**Pn**	**16 45 18.8**	**-4.1**
	SNR=7.9							
KMBO	**Kilima Mbogo**	**16.93**	**197**	Pn		**P**	**16 45 31.4**	**-0.8**
	comp=E,0.1nm,0.3s,baz=33,slow=16,SNR=2.9							
KMBO				Lg		Lg	16 50 31.4	
	comp=E,0.1nm,0.3s,baz=82,slow=19,SNR=2.6							
KMBO				LR		LR	16 51 42.5	
	comp=E,392nm,18.9s,baz=62,slow=36							
KMBO	**Kilima Mbogo**	**16.93**	**197**	*e*P		**Pn**	**16 45 28.1**	**-2.2**
KMBO				pmax		pmax		
	comp=Z,6.0nm,1.3s							
KMBO	**Kilima Mbogo**	**16.93**	**197**	*e*P		**Pn**	**16 45 28.1**	**-2.2**
	comp=Z,6.0nm,1.3s							
KMBO	**Kilima Mbogo**	**16.93**	**197**	*e*Pn		**Pn**	**16 45 28.1**	**-2.2**
	comp=Z,6.5nm,1.3s							
KMBO				Lg		Lg	16 50 31.4	
SMDO	**Samad**	**16.93**	**60**	P		**Pn**	**16 45 28.1**	**-2.0**
	SNR=29							
SMDO	**Samad**	**16.93**	**60**	Pn		**Pn**	**16 45 28.1**	**-2.0**
	SNR=29							
BANOM	**Banah**	**17.00**	**49**	P		**Pn**	**16 45 27.1**	**-3.9**
BANOM	**Banah**	**17.00**	**49**	Pn		**Pn**	**16 45 29.4**	**-1.6**
	SNR=5.5							
BIDO	**Bidbid**	**17.19**	**59**	P		**Pn**	**16 45 33.4**	**+0.1**
	SNR=19							
BIDO	**Bidbid**	**17.19**	**59**	P		**Pn**	**16 45 33.4**	**+0.1**
	SNR=19							
BIDO	**Bidbid**	**17.19**	**59**	Pn		**Pn**	**16 45 33.4**	**+0.1**
	SNR=19							
WSAR	**Wadi Sarin**	**17.49**	**60**	P		**P**	**16 45 38.9**	**+0.7**
	comp=Z,1.0nm,0.3s,baz=266,slow=9.9,SNR=14							
WSAR				LR		LR	16 53 08.6	
	comp=Z,498nm,19.6s,baz=236,slow=40							
ASF	**Jabal al Asfar**	**17.57**	**345**	P		**P**	**16 45 39.8**	**+0.7**
	comp=Z,0.1nm,0.3s,baz=70,slow=1.6,SNR=9.9							
ASF				Lg		Lg	16 50 41.6	
	comp=Z,0.2nm,0.3s,baz=54,slow=20,SNR=3.6							
ZALF	**Zalf**	**18.18**	**347**	*e*P		**P**	**16 45 47.1**	**+1.3**
MMAI	**Mount Meron Ar**	**18.77**	**342**	P		**Pn**	**16 45 54.1**	**+1.4**
	comp=Z,0.2nm,0.3s,baz=140,slow=12,SNR=12							
MMAI				LR		LR	16 52 51.3	
	comp=Z,113nm,18.1s,baz=130,slow=36							
BRBR	**Barbar**	**18.99**	**344**	*e*P		**Pn**	**16 45 57.6**	**+2.1**
ROOS	**tl_alroos**	**19.40**	**348**	*e*P		Pn	16 46 06.6	+6.3
MZRK	**Al-Mazaregh**	**20.59**	**357**	*e*P		Pn	16 46 18.8	+4.4
CSS	**Mathiatis**	**21.22**	**340**	*e*P		**P**	**16 46 15.5**	**-3.4**
	comp=Z,16nm,1.0s							
BTCH	**Batrach**	**21.37**	**347**	*e*P		**P**	**16 46 22.8**	**+2.1**
GNI	**Garni**	**24.96**	**5**	P		**P**	**16 46 60.0**	**+3.2**
	comp=Z,11nm,0.9s,baz=149,slow=3.5,SNR=13							
GNI				LR		LR	16 58 35.7	
	comp=Z,48nm,19.6s,baz=176,slow=41							
GNI	**Garni**	**24.96**	**5**	*i* P		**P**	**16 47 00.4**	**+3.6**
	SNR=5.9							
GNI	**Garni**	**24.96**	**5**	*d i*P		**P**	**16 46 58.6**	**+1.8**
GNI				pmax		pmax		
	comp=Z,116nm,1.7s							
GNI	**Garni**	**24.96**	**5**	P		**P**	**16 47 00.4**	**+3.6**
	SNR=5.9							
GNI	**Garni**	**24.96**	**5**	*e*P		**P**	**16 46 56.8**	**0.0**
	comp=Z,34nm,1.3s							
GNI	**Garni**	**24.96**	**5**	P		**P**	**16 47 00.5**	**+3.7**
	SNR=7.6							
GNI	**Garni**	**24.96**	**5**	P		**P**	**16 47 00.5**	**+3.7**
	SNR=7.6							
IDI	**Anoyia**	**25.30**	**325**	P		**P**	**16 47 00.1**	**+0.4**
	comp=Z,28nm,1.1s,baz=150,slow=9.9,SNR=5.3							
BR131	**Keskin Array S**	**25.55**	**345**	*e*P		**P**	**16 47 03.7**	**+1.6**
BR131	**Keskin Array S**	**25.55**	**345**	*e*P		**P**	**16 47 03.7**	**+1.6**
BRTR	**Keskin Array B**	**25.55**	**345**	P		**P**	**16 47 03.6**	**+1.5**
	comp=Z,6.8nm,1.1s,baz=162,slow=8.6,SNR=29							
BRTR				PcP		**PcP**	**16 50 34.2**	**+0.8**
	comp=Z,0.7nm,0.8s,baz=162,slow=1.3,SNR=4.0							
BRTR				LR		LR	16 56 30.5	
	comp=Z,128nm,18.8s,baz=150,slow=35							
BR231	**Keskin MP Arra**	**25.89**	**343**	*e*P		**P**	**16 47 01.7**	**-3.4**
GEYT	**Alibeck**	**26.69**	**29**	P		**P**	**16 47 13.8**	**+1.5**
	comp=Z,3.8nm,0.7s,baz=190,slow=7.5,SNR=7.1							
GEYT				LR		LR	16 59 30.9	
	comp=Z,171nm,18.2s,baz=225,slow=40							
ZEI	**Tsey**	**27.54**	**3**	*e*P		**P**	**16 47 20.7**	**+0.6**
ZEI				pmax		pmax		
	comp=Z,17nm,0.9s							
KBZ	**Khabaz**	**28.45**	**1**	P		**P**	**16 47 29.8**	**+1.9**
	comp=Z,4.1nm,1.0s,baz=175,slow=1.8,SNR=5.4							
KIV	**Kislovodsk**	**28.67**	**1**	*i* P		**P**	**16 47 31.4**	**+1.4**
KIV				*e*			16 48 20.3	
KIV				*i* S		S	16 52 26.2	+7.3
KIV				pmax		pmax		
	comp=Z,9.0nm,1.0s							
KIV				MLR		MLR		
	comp=Z,142nm,15.0s							
KIV	**Kislovodsk**	**28.67**	**1**	*i* P		**P**	**16 47 31.4**	**+1.4**
	comp=Z,9.0nm,1.0s							
KVAR	**Kislovodsk Arr**	**28.67**	**1**	P		**P**	**16 47 32.5**	**+2.4**
	comp=Z,5.8nm,0.8s,baz=87,slow=8.2,SNR=5.8							
KVAR				LR		LR	16 59 00.7	
	comp=Z,38nm,21.5s,baz=134,slow=36							
AGG	**Agios Georgios**	**29.44**	**327**	*e*P		**P**	**16 47 34.0**	**-2.9**
AGG				pmax		pmax		
	comp=Z,56nm,0.9s							
AGG	**Agios Georgios**	**29.44**	**327**	*e*P		**P**	**16 47 34.0**	**-2.9**
	comp=Z,56nm,0.9s							
ANN	**Anapa**	**29.78**	**353**	*e*P		**P**	**16 47 40.7**	**+1.0**
ANN				pmax		pmax		
	comp=Z,12nm,0.9s							
ANN				MLR		MLR		
	comp=Z,121nm,11.0s							
ANN	**Anapa**	**29.78**	**353**	*e*P		**P**	**16 47 40.7**	**+1.0**
	comp=Z,121nm,11.0s							
TIRR	**Tirgusor**	**31.41**	**341**	⇓*i*P		**P**	**16 47 55.3**	**+1.1**
TIRR	**Tirgusor**	**31.41**	**341**	*e*P		**P**	**16 47 52.9**	**-1.3**
TIRR				pmax		pmax		
	comp=Z,14nm,1.1s							
TIRR	**Tirgusor**	**31.41**	**341**	*e*P		**P**	**16 47 52.9**	**-1.3**
	comp=Z,14nm,1.1s							
TIRR	**Tirgusor**	**31.41**	**341**	*e*P		**P**	**16 47 52.9**	**-1.3**
	comp=Z,14nm,1.1s							
CFR	**Carcaliu**	**32.15**	**341**	⇓*i*P		**P**	**16 48 00.8**	**+0.2**
CFR	**Carcaliu**	**32.15**	**341**	⇓*i*P		**P**	**16 48 00.8**	**+0.2**
TIP	**Timpagrande**	**32.67**	**322**	⇓*i*P		**P**	**16 48 06.2**	**+0.8**
TIP	**Timpagrande**	**32.67**	**322**	*e*P		**P**	**16 48 05.9**	**+0.5**
	comp=Z,9.1nm,1.0s							
TIP	**Timpagrande**	**32.67**	**322**	*e*P		**P**	**16 48 06.0**	**+0.5**
	comp=Z,9.1nm,1.0s							
MLR	**Muntele Rosu**	**33.15**	**339**	⇓*i*P		**P**	**16 48 11.9**	**+2.3**
MLR	**Muntele Rosu**	**33.15**	**339**	*e*P		**P**	**16 48 08.7**	**-0.9**
MLR				pmax		pmax		
	comp=Z,8.0nm,1.0s							
MLR	**Muntele Rosu**	**33.15**	**339**	*e*P		**P**	**16 48 08.7**	**-0.9**
	comp=Z,8.0nm,1.0s							
MLR	**Muntele Rosu**	**33.15**	**339**	*e*P		**P**	**16 48 08.7**	**-0.9**
	comp=Z,8.3nm,1.0s							
VRI	**Vrincioaia**	**33.21**	**340**	⇑*i*P		**P**	**16 48 11.5**	**+1.5**
VRI	**Vrincioaia**	**33.21**	**340**	⇑*i*P		**P**	**16 48 11.5**	**+1.5**
PLOR	**Plostina**	**33.22**	**340**	⇓*i*P		**P**	**16 48 12.3**	**+2.2**
PLOR	**Plostina**	**33.22**	**340**	⇓*i*P		**P**	**16 48 12.3**	**+2.2**
VOIR		**33.42**	**338**	⇓*i*P		**P**	**16 48 13.1**	**+1.2**
VOIR		**33.42**	**338**	⇓*i*P		**P**	**16 48 13.1**	**+1.2**
ARR	**Arges**	**33.51**	**337**	⇑*i*P		**P**	**16 48 13.2**	**+0.5**
ARR	**Arges**	**33.51**	**337**	⇑*i*P		**P**	**16 48 13.2**	**+0.5**
PDG	**Podgorica**	**33.53**	**329**	⇓*i*P		**P**	**16 48 13.5**	**+0.7**
PDG	**Podgorica**	**33.53**	**329**	⇓*i*P		**P**	**16 48 13.5**	**+0.7**
CUC	**Castrocucco**	**33.75**	**322**	*e*P		**P**	**16 48 13.7**	**-1.1**
	comp=Z,4.9nm,1.0s							
CUC	**Castrocucco**	**33.75**	**322**	*e*P		**P**	**16 48 13.7**	**-1.1**
	comp=Z,4.9nm,1.0s							
LOT	**Lotru**	**33.91**	**337**	⇑*i*P		**P**	**16 48 16.7**	**+0.5**
LOT	**Lotru**	**33.91**	**337**	⇑*i*P		**P**	**16 48 16.7**	**+0.5**
GZR	**Gura Zlata**	**34.25

VYHS pmax pmax
comp=Z,9.0nm,1.2s
VYHS Vyhne 38.35 335 *e*P **P 16 48 54.5 +0.5**
comp=Z,9.2nm,1.2s
VYHS Vyhne 38.35 335 *e*P **P 16 48 54.5 +0.5**
VYHS *e* 17 16 37.3
NIE Niedzica 38.51 337 *e*P **P 16 48 56.0 +0.6**
NIE Niedzica 38.51 337 *e*P **P 16 48 56.0 +0.6**
LANS Liptovska Anna 38.62 336 *e*P **P 16 48 57.0 +0.7**
LANS Liptovska Anna 38.62 336 *e*P **P 16 48 57.0 +0.7**
LANS Liptovska Anna 38.62 336 *e*P **P 16 48 57.0 +0.7**
LANS *e* 17 16 35.2
PERS Pernice 38.62 330 *e*P **P 16 48 57.0 +0.6**
PERS Pernice 38.62 330 *e*P **P 16 48 57.0 +0.6**
TRI Trieste 38.65 328 *e*P **P 16 48 55.3 -1.2**
TRI pmax pmax
comp=Z,30nm,1.0s
TRI Trieste 38.65 328 *e*P **P 16 48 55.3 -1.2**
comp=Z,30nm,1.0s
TRI Trieste 38.65 328 *e*P **P 16 48 55.3 -1.2**
comp=Z,30nm,1.0s
SOKA Soboth 38.69 330 *i* P **P 16 48 57.7 +0.7**
comp=Z,12nm,1.2s,SNR=10
SOKA Soboth 38.69 330 P **P 16 48 57.7 +0.7**
comp=Z,12nm,1.2s,SNR=10
OBKA Obir 38.80 329 *e*P **P 16 48 59.0 +1.0**
comp=Z,7.3nm,1.0s
OBKA Obir 38.80 329 P **P 16 48 59.0 +1.0**
comp=Z,7.3nm,1.0s
ARSA Arzberg 38.86 331 *i* P **P 16 48 59.2 +0.8**
comp=Z,14nm,0.9s,SNR=12
ARSA Arzberg 38.86 331 P **P 16 48 59.2 +0.8**
comp=Z,14nm,0.9s,SNR=12
AAK Ala-Archa 38.95 39 *e*P **P 16 49 02.2 +2.9**
AAK pmax pmax
comp=Z,4.0nm,0.9s
AAK Ala-Archa 38.95 39 *e*P **P 16 49 00.3 +0.9**
comp=Z,5.4nm,1.3s
AAK Ala-Archa 38.95 39 *e*P **P 16 49 00.3 +0.9**
comp=Z,5.4nm,1.3s
CONA Conrad Observa 39.20 332 *i* P **P 16 49 02.0 +0.7**
comp=Z,12nm,1.2s,SNR=9.2
CONA Conrad Observa 39.20 332 P **P 16 49 02.0 +0.7**
comp=Z,12nm,1.2s,SNR=9.2
TORD Torodi Ar. Bea 39.24 272 P **P 16 49 01.2 -0.7**
comp=Z,2.8nm,0.7s,baz=91,slow=7.7,SNR=20
TORD LR LR 17 04 06.5
comp=Z,274nm,18.8s,baz=195,slow=35
MYKA Terra Mystica 39.34 329 *e*P **P 16 49 03.1 +0.6**
comp=Z,9.8nm,1.2s
MYKA Terra Mystica 39.34 329 P **P 16 49 03.1 +0.6**
comp=Z,9.8nm,1.2s
OJC Ojcow 39.36 337 *e*P **P 16 49 02.1 -0.3**
OJC Ojcow 39.36 337 *e*P **P 16 49 02.2 -0.2**
OKC Ostrava-Krasne 39.69 336 *e*P **P 16 49 06.1 +0.9**
OKC Ostrava-Krasne 39.69 336 P **P 16 49 06.1 +0.9**
KBA Koelnbreinsper 39.80 329 *i* P **P 16 49 06.7 +0.3**
comp=Z,10.0nm,1.2s,SNR=7.4
KBA Koelnbreinsper 39.80 329 P **P 16 49 06.7 +0.3**
comp=Z,10.0nm,1.2s,SNR=7.4
MORC Moravsky Berou 39.88 335⇓ *i*P **P 16 49 07.3 +0.4**
MORC Moravsky Berou 39.88 335 *e*P **P 16 49 06.2 -0.7**
MORC pmax pmax
comp=Z,48nm,1.2s
MORC Moravsky Berou 39.88 335 *e*P **P 16 49 06.2 -0.7**
comp=Z,48nm,1.2s
MORC Moravsky Berou 39.88 335 *e*P **P 16 49 06.2 -0.7**
comp=Z,48nm,1.2s
MOA Molln 39.89 331 *i* P **P 16 49 07.4 +0.5**
comp=Z,15nm,1.0s,SNR=11
MOA Molln 39.89 331 P **P 16 49 07.4 +0.5**
comp=Z,15nm,1.0s,SNR=11
VRAC Vranov 39.91 334 LR LR 17 07 43.5
comp=Z,33nm,19.1s,baz=128,slow=39
VRAC Vranov 39.91 334⇓ *i*P **P 16 49 07.6 +0.5**
VRAC Vranov 39.91 334⇓ *i*P **P 16 49 07.6 +0.5**
ABTA Abfaltersbach 39.99 328 *i* P **P 16 49 08.4 +0.5**
comp=Z,8.3nm,1.1s
ABTA Abfaltersbach 39.99 328 P **P 16 49 08.4 +0.5**
comp=Z,8.3nm,1.1s
OBN Obninsk 40.07 355⇑ *i*P **P 16 49 08.5 +0.3**
OBN *i* 16 49 19.6
OBN *e* 16 50 38.5
OBN *e*S **S 16 55 10.1 -4.0**
OBN pmax pmax
comp=Z,7.0nm,0.8s
OBN MLR MLR
comp=Z,63nm,14.0s
KOLN Koldanda 40.36 65 *e*P **P 16 49 11.9 +0.5**
comp=Z,27nm,0.8s
KRLC Kraliky 40.42 335 *e*P **P 16 49 11.3 -0.1**
KRLC Kraliky 40.42 335 P **P 16 49 11.3 -0.1**
DPC Dobruska-Polom 40.82 335 *e*P **P 16 49 15.0 +0.3**
DPC Dobruska-Polom 40.82 335 P **P 16 49 15.0 +0.3**
GEA0 GERESS Array S 40.85 331 *e*P **P 16 49 14.9 -0.1**
GEA0 GERESS Array S 40.85 331 *e*P **P 16 49 14.9 -0.1**
GEC2 GERESS Array S 40.86 331 *e*P **P 16 49 15.1 0.0**
GEC2 pmax pmax
comp=Z,22nm,1.0s
GEC2 GERESS Array S 40.86 331 *e*P **P 16 49 15.1 0.0**
comp=Z,22nm,1.0s
GEC2 GERESS Array S 40.86 331 *e*P **P 16 49 15.1 0.0**
comp=Z,22nm,1.0s
GERES GERESS Array B 40.86 331 P **P 16 49 15.0 0.0**
comp=Z,9.8nm,0.8s,baz=137,slow=6.8,SNR=65
UPC Upice 41.07 335 *e*P **P 16 49 17.0 +0.3**
UPC Upice 41.07 335 P **P 16 49 17.0 +0.3**
FUORN Ofenpass-Fuorn 41.08 326 *e*P **P 16 49 16.7 -0.4**
comp=Z,19nm,1.5s
FUORN Ofenpass-Fuorn 41.08 326 *e*P **P 16 49 16.7 -0.4**
comp=Z,19nm,1.5s
FETA Feichten 41.09 327 *i* P **P 16 49 17.3 +0.2**
comp=Z,11nm,1.0s,SNR=6.7
FETA Feichten 41.09 327 P **P 16 49 17.3 +0.2**
comp=Z,11nm,1.0s,SNR=6.7
KHC Kasperske Hory 41.12 331 *e*P **P 16 49 16.6 -0.5**
KHC *ex* x 16 49 30.5
KHC Kasperske Hory 41.12 331 *e*P **P 16 49 14.7 -2.4**
KHC pmax pmax
comp=Z,5.0nm,1.1s
KHC Kasperske Hory 41.12 331 P **P 16 49 16.6 -0.5**
KHC Kasperske Hory 41.12 331 *e*P **P 16 49 14.7 -2.4**
comp=Z,5.2nm,1.1s
GOPC GO Pecny, Ondr 41.15 333 *e*P **P 16 49 17.5 +0.2**
GOPC GO Pecny, Ondr 41.15 333 P **P 16 49 17.5 +0.2**
KSP Ksiaz 41.21 335 *e*P **P 16 49 18.0 +0.2**
KSP Ksiaz 41.21 335 *e*P **P 16 49 18.1 +0.2**
GKN Gorkha 41.30 65 *e*P **P 16 49 20.4 +1.3**
comp=Z,64nm,1.4s
PRU Pruhonice 41.31 333 *e*P **P 16 49 18.1 -0.5**
PRU Pruhonice 41.31 333 P **P 16 49 18.1 -0.5**
DAVOX Davos/Dischmat 41.39 326 LR LR 17 08 28.7
comp=Z,39nm,19.4s,baz=92,slow=39
PRA Prague 41.42 333 *e*P **P 16 49 19.7 +0.2**
PRA Prague 41.42 333 P **P 16 49 19.7 +0.2**
SUW Suwalki 41.48 343 *e*P **P 16 49 19.8 -0.2**
SUW Suwalki 41.48 343 *e*P **P 16 49 19.8 -0.2**
DMN Daman 41.66 65 *e*P **P 16 49 22.8 +0.7**
comp=Z,40nm,0.9s
PVCC Panska Ves 41.70 334 *e*P **P 16 49 21.9 +0.1**
PVCC Panska Ves 41.70 334 P **P 16 49 21.9 +0.1**
DAVA Damuels 41.71 327 *i* P **P 16 49 21.7 -0.4**
comp=Z,20nm,0.8s,SNR=9.3
DAVA Damuels 41.71 327 P **P 16 49 21.7 -0.4**
comp=Z,20nm,0.8s,SNR=9.3
KKN Kakani 41.84 65 *e*P **P 16 49 24.1 +0.6**
comp=Z,62nm,1.2s
PKIN Phulchoki 41.91 66 *e*P **P 16 49 24.4 +0.2**
comp=Z,29nm,1.1s
BRG Berggiesshubel 42.22 334 *e*P **P 16 49 25.8 -0.2**
comp=Z,2.7nm,1.1s
BRG Berggiesshubel 42.22 334 *e*P **P 16 49 25.8 -0.2**
BRG pmax pmax
comp=Z,3.0nm,1.1s
GUN Gumba 42.38 65 *e*P **P 16 49 28.6 +0.5**
comp=Z,67nm,1.0s
SENIN Lac Senin/Sane 42.56 324 *e*P **P 16 49 27.1 -2.1**
comp=Z,32nm,1.8s
SENIN Lac Senin/Sane 42.56 324 *e*P **P 16 49 27.1 -2.1**
comp=Z,32nm,1.8s
SPAK Spaichingen-Ko 42.80 327⇑ *e*P **P 16 49 31.2 +0.3**
CLL Collm 42.94 333⇑ *i*P **P 16 49 31.7 -0.2**
comp=Z,15nm,1.2s
CLL Collm 42.94 333 *e*P **P 16 49 30.2 -1.7**
CLL pmax pmax
comp=Z,18nm,1.2s
CLL Collm 42.94 333 *e*P **P 16 49 30.2 -1.7**
comp=Z,18nm,1.2s
CLL Collm 42.94 333 *e*P **P 16 49 30.2 -1.7**
comp=Z,18nm,1.2s
ARU Arti 43.02 13 LR LR 17 12 04.9
comp=Z,56nm,18.8s,baz=197,slow=42
ARU Arti 43.02 13*d* *i*P **P 16 49 33.5 +1.0**
ARU 16 51 11.8
ARU S **S 16 56 01.7 +3.8**
ARU SS **SS 16 59 07.3 -2.7**
ARU pmax pmax
comp=Z,5.0nm,1.0s
ARU Arti 43.02 13 *e*P **P 16 49 30.6 -1.9**
comp=Z,4.1nm,0.9s
FELD Feldberg im Sc 43.07 326⇑ *e*P **P 16 49 33.0 -0.2**
BBS Basel-Blauen 43.09 326⇑ *e*P **P 16 49 33.0 -0.2**
BFO Black Forest 43.18 327 *i* P **P 16 49 34.2 +0.3**
BFO Black Forest 43.18 327 *e*P **P 16 49 31.6 -2.4**
comp=Z,12nm,1.0s
LOMF Lomont 43.40 325⇑ *e*P **P 16 49 36.0 +0.2**
LOMF Lomont 43.40 325⇑ *e*P **P 16 49 36.0 +0.2**
MOF Molkenrain 43.52 326⇑ *e*P **P 16 49 36.6 -0.2**
MOF Molkenrain 43.52 326⇑ *e*P **P 16 49 36.6 -0.2**
SSB Saint Sauveur 43.58 321 *e*P **P 16 49 35.6 -1.6**
SSB pmax pmax
comp=Z,5.0nm,0.9s
SSB Saint Sauveur 43.58 321 *e*P **P 16 49 35.6 -1.6**
comp=Z,4.9nm,0.9s
SSB Saint Sauveur 43.58 321 *e*P **P 16 49 35.6 -1.6**
comp=Z,4.9nm,0.9s
ECH Echery 43.73 326 *e*P **P 16 49 38.1 -0.3**
ECH Echery 43.73 326 *e*P **P 16 49 38.1 -0.3**
TOD Tromm 43.74 329⇑ *e*P **P 16 49 38.2 -0.2**
LANF Langenberg 43.85 328⇑ *e*P **P 16 49 39.2 -0.1**
LANF Langenberg 43.85 328⇑ *e*P **P 16 49 39.2 -0.1**
LBL Lubilhac 44.34 321⇑ *e*P **P 16 49 43.8 +0.4**
LBL Lubilhac 44.34 321⇑ *e*P **P 16 49 43.8 +0.4**
THEF They Montfort 44.37 326 *e*P **P 16 49 43.1 -0.4**
THEF They Montfort 44.37 326 *e*P **P 16 49 43.1 -0.4**
PLDF La Plantade 44.49 322 *e*P **P 16 49 44.2 -0.3**
PLDF La Plantade 44.49 322 *e*P **P 16 49 44.2 -0.3**
RUP Ruppelstein 44.68 328⇑ *e*P **P 16 49 45.9 -0.1**
VSU Vasula 44.70 349 *e*P **P 16 49 45.0 -0.9**
VSU pmax pmax
comp=Z,16nm,1.0s
PYM Petit Puy Mans 44.74 321 *e*P **P 16 49 45.2 -1.4**
PYM Petit Puy Mans 44.74 321 *e*P **P 16 49 45.2 -1.4**
AGO Saint Agoulin 44.82 322⇑ *e*P **P 16 49 46.8 -0.4**
AGO Saint Agoulin 44.82 322⇑ *e*P **P 16 49 46.8 -0.4**
KLMR Klimovskoe 45.63 358 *e*P **P 16 49 51.3 -2.0**
KLMR pmax pmax
comp=Z,16nm,1.3s
MAKZ Makanchi 45.69 38 *e*P **P 16 49 56.8 +2.8**
MAKZ pmax pmax
comp=Z,8.0nm,0.9s
MAKZ Makanchi 45.69 38 *e*P **P 16 49 56.8 +2.8**
comp=Z,7.7nm,0.9s
MAKZ Makanchi 45.69 38 *e*P **P 16 49 56.8 +2.8**
comp=Z,7.7nm,0.9s
MEM Membach 45.77 328 P **P 16 49 54.7 +0.1**
comp=Z,10nm,1.3s
MEM Membach 45.77 328 P **P 16 49 54.7 +0.1**
comp=Z,10nm,1.3s
MK01 Makanchi Array 45.86 38 *e*P **P 16 49 56.1 +0.7**
MK01 Makanchi Array 45.86 38 *e*P **P 16 49 56.1 +0.7**
MK31 Makanchi Array 45.86 38 *e*P **P 16 49 56.3 +0.9**
MK31 Makanchi Array 45.86 38 *e*P **P 16 49 56.3 +0.9**
MK31 Makanchi Array 45.86 38 *e*P **P 16 49 56.3 +0.9**
MKAR Makanchi Array 45.86 38 P **P 16 49 56.5 +1.1**
comp=Z,5.0nm,0.8s,baz=232,slow=7.6,SNR=21
MKAR LR LR 17 11 56.2
comp=Z,210nm,19.1s,baz=242,slow=40
MKAR Makanchi Array 45.86 38 *e*P **P 16 49 56.3 +0.9**
MKAR Makanchi Array 45.86 38 *e*P **P 16 49 56.3 +0.9**
KURK Kurchatov 46.00 32 *e*P **P 16 49 56.5 +0.1**
KURK pmax pmax
comp=Z,5.0nm,1.0s
KURK Kurchatov 46.00 32 *e*P **P 16 49 56.5 +0.1**
comp=Z,5.4nm,1.0s
KURK Kurchatov 46.00 32 *e*P **P 16 49 56.5 +0.1**
comp=Z,5.4nm,1.0s
BCLA Clavier 46.02 328 P **P 16 49 56.8 +0.3**
comp=Z,19nm,1.5s
BCLA Clavier 46.02 328 P **P 16 49 56.8 +0.3**
comp=Z,19nm,1.5s
DOU Dourbes 46.20 327 P **P 16 49 57.7 -0.2**
comp=Z,8.1nm,1.0s
DOU Dourbes 46.20 327 P **P 16 49 57.7 -0.2**
comp=Z,8.1nm,1.0s
BOSA Boshof 46.52 201 LR LR 17 08 04.0
comp=Z,147nm,18.0s,baz=24,slow=34
SNF Seneffe 46.60 327 P **P 16 50 01.3 +0.3**
SNF Seneffe 46.60 327 P **P 16 50 01.3 +0.3**
DBIC Dimbokro 46.84 265 P **P 16 50 03.2 -0.3**
comp=Z,4.4nm,0.9s,baz=61,slow=13,SNR=3.9
DBIC LR LR 17 10 13.7
comp=Z,169nm,20.0s,baz=64,slow=37
ES19 SONSECA Array 46.95 311 *e*P **P 16 50 02.9 -1.2**
ES19 SONSECA Array 46.95 311 *e*P **P 16 50 02.9 -1.2**
ESDC Sonseca Array 46.99 310 P **P 16 50 04.0 -0.4**
comp=Z,0.2nm,0.3s,baz=108,slow=8.4,SNR=5.4
LSA Lhasa 47.20 64 P **P 16 50 08.5 +1.8**
LSA Lhasa 47.20 64 *e*P **P 16 50 06.8 +0.1**
LSA pmax pmax
comp=Z,32nm,1.6s
LSA Lhasa 47.20 64 *e*P **P 16 50 06.8 +0.1**
comp=Z,32nm,1.6s
FIA1 FINESS Array S 47.61 350 *e*P **P 16 50 06.4 -2.4**
FINES FINESS Array B 47.61 350 P **P 16 50 08.2 -0.6**
comp=Z,1.3nm,0.6s,baz=134,slow=8.2,SNR=7.1
FINES FINESS Array B 47.61 350 *i* P **P 16 50 09.0 +0.2**
FINES pmax pmax
comp=Z,2.0nm,0.7s
WMQ Urumqi 48.00 44 *e*P **P 16 50 13.8 +1.6**
WMQ pmax pmax
comp=Z,4.0nm,0.6s
WMQ pmax pmax
comp=Z,37nm,3.6s
WMQ LR LR
comp=Z,130nm,27.8s
WMQ LR LR
comp=Z,60nm,24.4s
NAO01 NORSAR Array S 50.86 341 *e*P **P 16 50 32.1 -1.6**
NAO01 NORSAR Array S 50.86 341 *e*P **P 16 50 32.1 -1.6**
NB2 NORSAR Subarra 50.91 341 P **P 16 50 33.3 -0.8**
comp=Z,9.3nm,1.2s,baz=140,slow=7.9
NB2 NORSAR Subarra 50.91 341 P **P 16 50 33.3 -0.8**
comp=Z,9.3nm,1.2s,SNR=5.0
NOA NORSAR Array B 50.91 341 P **P 16 50 32.6 -1.5**
comp=Z,2.1nm,0.9s,baz=139,slow=7.6,SNR=5.5
NOA LR LR 17 15 12.4
comp=Z,21nm,18.6s,baz=140,slow=40
ZAA0 Zalesovo Array 50.97 31 *e*P **P 16 50 35.7 +1.1**
ZAA0 Zalesovo Array 50.97 31 *e*P **P 16 50 35.7 +1.1**
ZALV Zalesovo Beam 50.97 31 P **P 16 50 35.7 +1.0**
comp=Z,10.0nm,0.8s,baz=236,slow=6.9,SNR=31
ZALV LR LR 17 15 38.8
comp=Z,115nm,18.4s,baz=252,slow=40
NBO02 NORSAR Array S 51.03 341 *e*P **P 16 50 32.0 -3.0**
NBO00 NORSAR Array S 51.04 341 *e*P **P 16 50 32.7 -2.3**
NC204 NORSAR Array S 51.23 341 *e*P **P 16 50 36.5 0.0**
NC204 NORSAR Array S 51.23 341 *e*P **P 16 50 36.5 0.0**
MHMT Maesarieng 53.35 78 P **P 16 50 59.7 +6.8**
comp=Z,6.0nm,1.2s
CHTO Chiang Mai 54.24 78 *e*P **P 16 50 59.4 -0.1**
CHTO pmax pmax
comp=Z,6.0nm,1.4s
CHTO Chiang Mai 54.24 78 *e*P **P 16 50 59.4 -0.1**
comp=Z,5.7nm,1.4s
CHTO Chiang Mai 54.24 78 *e*P **P 16 50 59.4 -0.1**
comp=Z,5.7nm,1.4s
CMMT Chiang Mai 54.25 78 P **P 16 51 06.5 +7.0**
comp=Z,3.0nm,1.2s
CM31 Chiang Mai Arr 54.28 78 *e*P **P 16 51 01.7 +2.0**
CM31 Chiang Mai Arr 54.28 78 *e*P **P 16 51 01.7 +2.0**
CMAR Chiang Mai Arr 54.28 78 P **P 16 50 59.2 -0.5**
comp=Z,2.0nm,0.8s,baz=279,slow=8.1,SNR=11
CM01 Chiang Mai Arr 54.30 78 *e*P **P 16 51 00.1 +0.2**
CM01 Chiang Mai Arr 54.30 78 *e*P **P 16 51 00.1 +0.2**
KHLT Khaolaem Dam 54.38 83 P **P 16 51 06.7 +6.2**
comp=Z,3.9nm,0.9s
LAMP Lampang 54.92 78 P **P 16 51 10.2 +5.8**
comp=Z,3.5nm,1.3s
ARCES ARCESS Array B 55.31 353 P **P 16 51 06.3 -0.1**
comp=Z,2.0nm,0.7s,baz=156,slow=6.6,SNR=8.6
CRAI Chiangrai 55.46 76 P P 16 51 12.1 +3.8
GTA Gaotai 55.61 52 *e*P **P 16 51 11.5 +2.3**
GTA pP sP 16 51 16.3 +2.6
GTA sP pP 16 51 19.0 +6.6
GTA S **S 16 58 59.0 +3.6**
GTA sS sS 16 59 07.0 +6.3
GTA SS **SS 17 02 46.3 +5.8**
GTA pmax pmax
comp=Z,4.0nm,1.0s
GTA pmax pmax
comp=Z,74nm,5.2s
GTA LR LR
comp=Z,190nm,13.8s
GTA LR LR
comp=Z,180nm,16.6s
GTA LR LR
comp=Z,220nm,15.7s
KMI Kunming 57.33 70 P **P 16 51 25.0 +3.2**
KMI pmax pmax
comp=Z,11nm,0.7s
KMI pmax pmax
comp=Z,84nm,5.1s
CD2 Chengdu 58.15 63 P **P 16 51 27.0 -0.3**
CD2 pmax pmax
comp=Z,2.0nm,0.6s
LZH Lanzhou 58.43 57 *e*P **P 16 51 30.0 +0.7**
LZH pP pP 16 51 32.8 +0.3
LZH sP sP 16 51 35.5 +1.8
LZH pmax pmax
comp=Z,11nm,1.0s
ZAK Zakamensk 60.10 40 *e*P **P 16 51 39.6 -0.9**
ZAK pmax pmax
comp=Z,2.0nm,1.8s
ULN Ulaanbaatar 62.08 44 *i* P **P 16 51 55.0 +0.9**
ULN pmax pmax
comp=Z,4.0nm,1.2s
ULN Ulaanbaatar 62.08 44 *e*P **P 16 51 53.1 -0.9**
comp=Z,3.0nm,1.0s
ULN Ulaanbaatar 62.08 44 *e*P **P 16 51 53.1 -0.9**
comp=Z,3.0nm,1.0s
XAN Xi'an 62.53 59 P P 16 52 00.8 +3.6
XAN pmax pmax
comp=Z,5.0nm,1.0s
HHC Hu-ho-hao-te 64.71 52 *e*P **P 16 52 12.8 +1.2**
HHC pmax pmax
comp=Z,19nm,1.3s
HHC pmax pmax
comp=Z,110nm,8.6s
BOD Bodaibo 67.61 33 *e*P **P 16 52 29.6 -0.1**
BOD pmax pmax
comp=Z,6.0nm,1.4s
TIXI Tiksi 74.66 19 *i* P **P 16 53 13.4 +1.2**
TIXI pmax pmax
comp=Z,2.0nm,0.7s
CN2 Changchun 74.86 48 *e*P **P 16 53 15.5 +1.6**
YAK Yakutsk 75.56 29 *e*P **P 16 53 16.4 -1.2**
YAK pmax pmax
comp=Z,3.0nm,0.9s
KSRS Korea Array 77.62 54 LR LR 17 32 40.3
comp=Z,66nm,18.6s,baz=80,slow=40
KLR Kul'dur 78.40 42 *i* P **P 16 53 32.4 -1.4**
MJAR Matsushiro Arr 85.85 53 LR LR 17 37 55.3
comp=Z,79nm,18.7s,baz=145,slow=39
RES Resolute Bay 86.37 350 *e*P **P 16 54 16.2 +1.2**
RES pmax pmax
comp=Z,13nm,1.8s
RES Resolute Bay 86.37 350 *e*P **P 16 54 16.1 +1.2**
comp=Z,13nm,1.8s
RES Resolute Bay 86.37 350 *e*P **P 16 54 16.1 +1.2**
comp=Z,13nm,1.8s
BILL Bilibino 87.84 18 *e*P **P 16 54 21.2 -1.1**
BILL pmax pmax
comp=Z,2.0nm,1.2s
ASAR Alice Springs 97.53 112 P Pdif 16 55 08.6 +0.6
comp=Z,1.1nm,1.2s,baz=210,slow=11,SNR=3.6
TXAR Lajitas Array 124.78 323 PKP **PKPdf 17 00 34.3 +0.5**
comp=Z,0.4nm,0.8s,baz=32,slow=3.3,SNR=4.4

IDC 29 17:03:01.0±6.1, **8.12S×74.19W, h139**km±68km, **mb3.4**/3, **mb1 3.6**/4, **mb1mx3.3**/25, **mbtmp3.7**/4, **Error ellipse: s-maj=88.9km s-min=26.8km az=43.0, Peru-Brazil border region**

Code	Station Name	Δ°	AZ°	Phase	ID Op	ID ISC	Time h m s	Res ISC
LPAZ	**La Paz**	**10.05**	**144**	P		Pn	17 05 22.6	+0.1
	0.2nm,0.3s,baz=318,slow=12,SNR=5.3							
LPAZ				S		Sn	17 07 14.3	+0.4
	0.3nm,0.3s,baz=229,slow=19,SNR=2.9							
CPUP	**Villa Florida**	**24.18**	**141**	P		P	17 08 04.6	0.0
	1.7nm,0.6s,baz=324,slow=12,SNR=6.1							
TXAR	**Lajitas Array**		**46.82 324**	P		P	17 11 16.9	-0.2
	0.3nm,0.5s,baz=153,slow=8.4,SNR=3.9							
TORD	**Torodi Ar. Bea**	**78.26**	**75**	P		P	17 14 46.1	0.0
	1.3nm,0.6s,baz=267,slow=4.5,SNR=9.9							

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*NIED **29** 17:04:00,35.50N×141.00E,h17km,Mw4.5 Best double couple: M0 7.11000×10^15 NP1:φ 171.00000°,δ 32.00000°, λ 148.00000°. NP2:φ 289.00000°,δ 74.00000°,λ 62.00000°.*
*IDC **29** 17:04:10.3±0.5,35.33N×140.90E,h0km,mb4.4/28, mb1 4.5/33,mb1mx4.5/45,mbtmp4.4/33,ML3.3/4,MS3.8/25, Ms1 3.9/25,ms1mx3.7/48,Error ellipse: s-maj=14.9km s-min=11.0km az=91.0*
*BJI **29** 17:04:10.7,35.10N×140.96E,h22km,mb4.5/54,mB4.8/42, Ms4.4/45,Ms7 4.1/43*
*ISCJB **29** 17:04:10.8±0.6,35.30N±0.02×140.93E±0.03,h15km±4km, mb4.7/131,MS4.0/35,Error ellipse: s-maj=4.5km s-min=3.7km az=40.6*
*JMA **29** 17:04:12.6±0.1,35.46N×140.92E,h24km±1km,M4.7 JMA Felt III J1.*
*MOS **29** 17:04:13.4±1.0,35.32N×140.92E,h33km,mb4.8/60,Error ellipse: s-maj=8.8km s-min=5.5km az=108.4*
*NEIC **29** 17:04:13.3±1.4,35.27N×140.88E,h21km±9km,mb4.9/76, Error ellipse: s-maj=4.4km s-min=3.4km az=126.0*
NEIC Felt at Narita. Recorded [3 JMA] in Chiba and Ibaraki.
ISC 29 17:04:12.7±0.8, **35.35N**±0.03×**140.92E**±0.04, **h17**km±4km, **n309,σ1$40**/307, **mb4.8**/131, **MS4.0**/36, **8C-6D, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase	ID Op	ID ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.36**	**352**	⇑P		Pg	17 04 18.8	-1.4
CHOJ				S		Sg	17 04 23.3	-2.0
KTR	**Katsuura**	**0.53**	**248**	⇓P		Pb	17 04 23.8	+0.3
KTR				*e*S		Sb	17 04 32.2	+1.3
JCN	**Nagara**	**0.59**	**277**	⇓P		Pb	17 04 24.7	+0.2
BSO4	**Boso 4**	**0.59**	**233**	P		Pn	17 04 26.0	-0.2
BSO3	**Boso 3**	**0.64**	**212**	⇑P		Pn	17 04 26.8	+0.1
BSO1	**Boso 1**	**0.69**	**176**	⇑P		Pn	17 04 27.0	-0.2
JYT	**Yasato**	**1.06**	**326**	⇓P		Pb	17 04 30.1	-2.4
JYT				S		Sb	17 04 43.1	-2.9
JHO	**Hitachi**	**1.29**	**347**	⇓P		Pn	17 04 33.2	-2.7
JHO				S		Sn	17 04 50.2	-2.6
JHJ2	**Mitsune**	**2.41**	**203**	*e*Pn		Pn	17 04 50.7	-0.6
JHJ	**Hachijo jima 2**	**2.41**	**203**	Pn		Pn	17 04 50.6	-0.7
	31nm,0.3s,baz=331,slow=19,SNR=26							
JHJ				LR		LR	17 05 58.2	
	comp=Z,2μm,19.6s,baz=60,slow=45							
MJAR	**Matsushiro Arr**	**2.50**	**299**	Pn		Pn	17 04 53.4	+0.9
	17nm,0.3s,baz=104,slow=5.5,SNR=82							
MJAR				LR		LR	17 05 43.6	
	comp=Z,382nm,18.8s,baz=120,slow=38							
MAJO	**Matsushiro**	**2.50**	**299**	*e*P		Pn	17 04 53.3	+0.7
MAJO	**Matsushiro**	**2.50**	**299**	*e*Pn		Pn	17 04 52.8	+0.3
MJB9	**Matsu-Tunnel**	**2.51**	**299**	*e*Pn		Pn	17 04 53.0	+0.4
INU	**Inuyama**	**3.19**	**271**	*e*Pn		Pn	17 05 02.5	+0.5
ERM	**Erimo**	**6.88**	**14**	*e*P		Pn	17 05 51.1	-1.6
ERM	**Erimo**	**6.88**	**14**	*e*Pn		Pn	17 05 49.8	-2.9
ERM				*e*Sn		Sn	17 07 09.5	-1.1
CBIJ	**Chichi jima**	**8.30**	**172**	*e*Pn		Pn	17 06 11.0	-1.2
CBIJ				*e*Sn		Sn	17 07 41.5	-4.0
JCJ	**Chichijima**	**8.30**	**172**	Pn		Pn	17 06 10.9	-1.2
	14nm,0.3s,baz=37,slow=8.8,SNR=7.5							
JCJ				Sn		Sn	17 07 41.5	-4.0
	5.7nm,0.3s,baz=78,slow=23,SNR=2.2							
JNU	**Nakatsue**	**8.60**	**258**	Pn		Pn	17 06 21.8	+5.4
	0.4nm,0.3s,baz=40,slow=9.0,SNR=4.4							
JNU				LR		LR	17 10 07.5	
	comp=Z,2μm,18.4s,baz=114,slow=42							

JNU	**Nakatsue**	**8.60**	**258**	*e*Pn		**Pn**	**17 06 16.1**	**-0.4**
ASAJ	**Asahikawa**	**8.85**	**8**	Pn		Pn	17 06 16.2	-3.5
	6.5nm,0.3s,baz=215,slow=11,SNR=52							
ASAJ				LR		LR	17 10 46.0	
	comp=Z,648nm,19.8s,baz=216,slow=45							
ASAJ	**Asahikawa**	**8.85**	**8**	*e*Pn		Pn	17 06 16.3	-3.4
YUK	**Yuzh-Kuril'sk**	**9.47**	**22**	*e*P		Pn	17 06 23.2	-5.0
YUK				pmax	pmax			
	comp=N,48nm,0.6s							
YUK				pmax	pmax			
	comp=E,105nm,0.6s							
YUK				pmax	pmax			
	comp=Z,99nm,0.6s							
YUK				MLR	MLR			
	comp=Z,943nm,13.0s							
SHO	**Shikotan**	**9.65**	**26**	*e*P		Pn	17 06 26.1	-4.6
SHO				pmax	pmax			
	comp=Z,69nm,0.6s							
SHO				pmax	pmax			
	comp=N,49nm,0.5s							
SHO				pmax	pmax			
	comp=E,43nm,0.7s							
KSRS	**Korea Array**	**10.68**	**285**	Pn		Pn	17 06 51.5	+6.6
	comp=E,0.2nm,0.3s,baz=101,slow=14,SNR=10.0							
KSRS				LR		LR	17 10 44.7	
	comp=E,164nm,21.3s,baz=95,slow=37							
KS01	**Wonju Array Si**	**10.71**	**285**	*e*Pn		**Pn**	**17 06 45.8**	**+0.6**
KS15	**Wonju Array Si**	**10.71**	**285**	*e*Pn		Pn	17 06 51.5	+6.2
KSAR	**Wonju Array Be**	**10.71**	**285**	P		Pn	17 06 51.5	+6.3
KSAR	**Wonju Array Be**	**10.71**	**285**	Pn		Pn	17 06 51.5	+6.2
USRK	**Ussuriysk Ar.**	**11.19**	**325**	Pn		**Pn**	**17 06 52.1**	**+0.4**
	comp=E,0.2nm,0.3s,baz=130,slow=12,SNR=12							
USRK				LR		LR	17 10 59.4	
	comp=E,590nm,18.0s,baz=125,slow=37							
KUR	**Kuril'sk**	**11.20**	**26**	*e*P		Pn	17 06 56.2	+4.3
KUR				*e*S		Sn	17 08 50.1	-6.6
KUR				pmax	pmax			
	comp=Z,27nm,0.6s							
KUR				smax	smax			
	comp=N,7.0nm,0.6s							
KUR				smax	smax			
	comp=E,16nm,0.6s							
YSS	**Yuzh-Sakhalins**	**11.68**	**6**	*e*P		Pn	17 06 54.3	-4.1
YSS				pmax	pmax			
	comp=Z,40nm,0.7s							
YSS				MLR	MLR			
	comp=Z,900nm,17.0s							
YSS				MLR	MLR			
	comp=N,900nm,14.0s							
YSS				MLR	MLR			
	comp=E,900nm,14.0s							
YSS	**Yuzh-Sakhalins**	**11.68**	**6**	*e*Pn		Pn	17 06 55.0	-3.3
MDJ	**Mudanjiang**	**12.68**	**320**	P		Pn	17 07 17.5	+5.4
MDJ				S		Sn	17 09 40.5	+7.6
MDJ				pmax	pmax			
	comp=E,12nm,1.4s							
MDJ				pmax	pmax			
	comp=E,69nm,5.3s							
MDJ				LR	LR			
	comp=E,330nm,18.4s							
MDJ				LR	LR			
	comp=E,300nm,18.4s							
MDJ				LR	LR			
	comp=E,580nm,13.3s							
MDJ	**Mudanjiang**	**12.68**	**320**	*e*Pn		P	17 07 18.0	-5.4
HABR	**Khabarovsk**	**13.82**	**343**	*e*P		Pn	17 07 24.0	-3.6
HABR				*e*S		Sn	17 09 54.2	-6.3
HABR				pmax	pmax			
	comp=E,62nm,2.0s							
HABR				pmax	pmax			
	comp=N,44nm,2.0s							
HABR				pmax	pmax			
	comp=Z,32nm,2.0s							
HABR				MLR	MLR			
	comp=Z,141nm,13.0s							
CN2	**Changchun**	**14.60**	**310**	*e*P		**Pn**	**17 07 41.0**	**+2.7**
CN2				*e*sP		P	17 07 50.5	+5.8
CN2				*e*S		**Sn**	**17 10 23.0**	**+3.4**
CN2				pmax	pmax			
	comp=Z,10.0nm,1.0s							
CN2				LR	LR			
	comp=Z,500nm,14.0s							
CN2				LR	LR			
	comp=Z,500nm,14.0s							
CN2				LR	LR			
	comp=Z,400nm,14.0s							
KLR	**Kul'dur**	**15.43**	**337**	Pn		**Pn**	**17 07 48.7**	**-0.7**
	comp=Z,0.3nm,0.3s,baz=128,slow=12,SNR=7.2							
KLR				LR		LR	17 13 42.8	
	comp=Z,437nm,18.4s,baz=146,slow=37							
TYV	**Tymovskoe**	**15.56**	**4**	*e*P		**Pn**	**17 07 48.5**	**-2.6**
TYV				pmax	pmax			
	comp=Z,22nm,0.8s							
TYV				MLR	MLR			
	comp=E,1μm,14.0s							
TYV				MLR	MLR			
	comp=Z,1μm,13.0s							
NJ2	**Nanjing**	**18.64**	**266**	*e*P		**P**	**17 08 27.8**	**-1.7**
NJ2				pmax	pmax			
	comp=Z,14nm,0.6s							
NJ2				LR	LR			
	comp=Z,300nm,10.8s							
TIA	**Tai'an**	**19.32**	**280**	⇓P		**Pn**	**17 08 41.8**	**+3.8**
TIA				pmax	pmax			
	comp=Z,20nm,1.2s							
BJI	**Beijing**	**20.11**	**291**	P		**P**	**17 08 45.8**	**+0.3**
BJI				S		**S**	**17 12 30.3**	**-0.3**
BJI				pmax	pmax			
	comp=Z,8.0nm,0.5s							
BJI				LR	LR			
	comp=Z,210nm,10.5s							
BJI				LR	LR			
	comp=Z,380nm,12.7s							
SSLB	**Suanglung**	**20.80**	**242**	*e*P		**P**	**17 08 52.8**	**-0.3**
	comp=Z,8.8nm,1.0s							
TWG	**Pinlang**	**21.32**	**239**	*e*P		**P**	**17 08 57.1**	**-1.6**
	comp=Z,95nm,1.3s							
TPUB	**Ta-pu**	**21.33**	**241**	*e*P		**P**	**17 08 57.4**	**-1.5**
	comp=Z,98nm,1.9s							
PEA0	**Petropavlovsk-**	**21.35**	**29**	*e*P		**P**	**17 08 59.6**	**+0.8**
PEA0B	**Petropavlovsk-**	**21.35**	**29**	*e*P		**P**	**17 09 00.0**	**+1.2**
	comp=Z,79nm,1.3s							
PETK	**Petropavlovsk-**	**21.35**	**29**	P		**P**	**17 08 59.1**	**+0.3**
	comp=Z,19nm,1.0s,baz=223,slow=7.7,SNR=7.9							
PETK				LR		LR	17 18 15.1	
	comp=Z,212nm,18.6s,baz=216,slow=40							
PEA1	**Petropavlovsk-**	**21.36**	**29**	*e*P		**P**	**17 08 59.1**	**+0.2**
PET	**Petropavlovsk**	**21.67**	**30**	*e*P		P	17 09 09.8	+7.6
PET				*e*S		**S**	**17 13 04.1**	**+2.8**
PET				pmax	pmax			
	comp=Z,18nm,0.8s							
PET				pmax	pmax			
	comp=Z,100nm,13.2s							
PET				MLR	MLR			
	comp=Z,200nm,17.0s							
PET	**Petropavlovsk**	**21.67**	**30**	*e*P		**P**	**17 09 03.6**	**+1.5**
	comp=Z,105nm,1.5s							
QZH	**Quanzhou**	**21.87**	**248**	⇑P		**P**	**17 09 06.0**	**+1.4**
QZH				*e*S		**S**	**17 13 00.0**	**-5.6**
QZH				LR	LR			
	comp=Z,470nm,14.3s							
WHN	**Wuhan**	**22.77**	**265**	P		**P**	**17 09 14.5**	**+0.3**
WHN				LR	LR			
	comp=Z,1μm,18.9s							
WHN				LR	LR			
	comp=Z,810nm,10.5s							
WHN				LR	LR			
	comp=Z,1μm,13.0s							
HHC	**Hu-ho-hao-te**	**23.68**	**292**	*e*P		**P**	**17 09 23.8**	**+0.3**
HHC				pmax	pmax			
	comp=Z,41nm,0.8s							
HHC				pmax	pmax			
	comp=Z,49nm,7.4s							
MA2	**Magadan**	**25.08**	**12**	P		**P**	**17 09 36.4**	**+0.4**
	comp=Z,42nm,0.8s,baz=218,slow=7.5,SNR=16							
MA2				LR		LR	17 20 05.8	
	comp=Z,242nm,19.1s,baz=196,slow=38							
XAN	**Xi'an**	**26.28**	**276**	P		**P**	**17 09 45.3**	**-1.9**
XAN				pP		pP	17 09 52.3	-0.2
XAN				pmax	pmax			
	comp=Z,8.0nm,1.2s							
XAN				pmax	pmax			
	comp=Z,69nm,8.0s							
XAN				LR	LR			
	comp=Z,200nm,16.3s							
XAN				LR	LR			
	comp=Z,220nm,15.4s							
ENH	**Enshi**	**26.83**	**268**	*e*P		**P**	**17 09 50.0**	**-2.2**
	comp=Z,30nm,0.7s							
YAK	**Yakutsk**	**27.63**	**349**	P		**P**	**17 09 58.3**	**-0.7**
	comp=Z,12nm,0.4s,baz=9.8,slow=1.2,SNR=14							
YAK				LR		LR	17 21 05.2	
	comp=Z,232nm,21.1s,baz=143,slow=37							
YAK	**Yakutsk**	**27.63**	**349**	*e*P		**P**	**17 09 58.2**	**-0.7**
YAK				pmax	pmax			
	comp=Z,28nm,1.0s							
YAK				pmax	pmax			
	comp=N,33nm,1.7s							
YAK				pmax	pmax			
	comp=E,8.0nm,1.5s							
YAK	**Yakutsk**	**27.63**	**349**	*e*P		**P**	**17 09 58.3**	**-0.7**
	comp=E,70nm,1.4s							
H11N2	**WAKE ISLAND Hy**	**27.68**	**117**	T		T	17 39 06.6	
	baz=310,slow=75,SNR=1645							
H11N1	**WAKE ISLAND Hy**	**27.69**	**117**	T		T	17 39 03.0	
	baz=310,slow=75,SNR=1428							
H11N3	**WAKE ISLAND Hy**	**27.70**	**117**	T		T	17 39 03.7	
	baz=310,slow=75,SNR=1483							
ULN	**Ulaanbaatar**	**28.01**	**307**	*i* P		**P**	**17 10 03.8**	**+1.1**
ULN				pmax	pmax			
	comp=Z,17nm,1.7s							
ULN	**Ulaanbaatar**	**28.01**	**307**	*e*P		**P**	**17 10 03.3**	**+0.6**
	comp=Z,14nm,1.2s							
H11S1	**WAKE ISLAND Hy**	**28.33**	**120**	T		T	17 39 47.1	
	baz=312,slow=76,SNR=3277							
H11S3	**WAKE ISLAND Hy**	**28.33**	**120**	T		T	17 39 51.2	
	baz=312,slow=76,SNR=2508							
H11S2	**WAKE ISLAND Hy**	**28.34**	**120**	T		T	17 39 52.4	
	baz=312,slow=76,SNR=1952							
SEY	**Seymchan**	**28.52**	**11**	P		**P**	**17 10 07.5**	**+0.6**
	comp=Z,8.6nm,0.9s,baz=198,slow=7.7,SNR=12							
SEY	**Seymchan**	**28.52**	**11**	*i* P		**P**	**17 10 07.3**	**+0.4**
BOD	**Bodaibo**	**28.76**	**330**	*e*P		**P**	**17 10 08.7**	**-0.4**
BOD				pmax	pmax			
	comp=Z,8.0nm,0.9s							
LZH	**Lanzhou**	**30.00**	**282**	*e*P		P	17 10 26.0	+5.5
LZH				pP		sP	17 10 32.5	+4.5
LZH				sP		pP	17 10 35.5	+10
LZH				PP		**PP**	**17 11 24.0**	**-4.2**
LZH				*e*S		**S**	**17 15 21.0**	**+3.2**
LZH				sS		sS	17 15 31.3	+4.7
LZH				SS		**ScP**	**17 16 58.3**	**-5.6**
LZH				pmax	pmax			
	comp=Z,29nm,1.0s							
LZH				pmax	pmax			
	comp=Z,100nm,4.2s							
LZH				LR	LR			
	comp=Z,320nm,15.3s							
LZH				LR	LR			
	comp=Z,260nm,14.6s							
LZH				LR	LR			
	comp=Z,330nm,14.7s							
GYA	**Guiyang**	**30.58**	**263**	⇑*i*P		**P**	**17 10 26.8**	**+1.1**
GYA				pP		sP	17 10 33.5	+0.3
GYA				PP		**PnPn**	**17 11 28.3**	**+3.4**
GYA				PcP		**PcP**	**17 13 26.0**	**+1.8**
GYA				S		**S**	**17 15 25.3**	**-1.7**
GYA				sS		sS	17 15 38.0	+2.3
GYA				SS		**ScP**	**17 17 07.3**	**+1.4**
GYA				ScS		**ScS**	**17 21 00.5**	**-1.9**
GYA				pmax	pmax			
	comp=Z,20nm,1.0s							
GYA				pmax	pmax			
	comp=Z,120nm,5.4s							
GYA				LR	LR			
	comp=Z,620nm,16.8s							
GYA				LR	LR			
	comp=Z,580nm,17.0s							
GYA				LR	LR			
	comp=Z,630nm,16.9s							
ZAK	**Zakamensk**	**31.03**	**311**	*e*P		P	17 10 33.0	+3.6
ZAK				pmax	pmax			
	comp=Z,4.0nm,1.2s							
TLY	**Talaya**	**31.16**	**313**	LR		LR	17 23 37.1	
	comp=Z,189nm,20.0s,baz=220,slow=37							
CD2	**Chengdu**	**31.31**	**273**	P		**P**	**17 10 30.8**	**-1.2**
CD2				sP		sP	17 10 41.3	+1.8
CD2				S		**S**	**17 15 36.8**	**-1.5**
CD2				sS		sS	17 15 49.3	+2.2
CD2				pmax	pmax			
	comp=Z,80nm,4.3s							
CD2				LR	LR			
	comp=Z,450nm,20.4s							
CD2				LR	LR			
	comp=Z,650nm,16.8s							
QIZ	**Qiongzhong**	**31.89**	**248**	P		**P**	**17 10 37.5**	**+0.3**
QIZ				S		**S**	**17 15 45.5**	**-1.9**
QIZ				LR	LR			
	comp=Z,79nm,16.0s							
QIZ				LR	LR			
	comp=Z,79nm,18.5s							
GTA	**Gaotai**	**32.71**	**290**	*e*P		**P**	**17 10 44.5**	**+0.1**
GTA				pP		pP	17 10 49.0	-0.7
GTA				sP		sP	17 10 51.5	-0.4
GTA				PcP		**PcP**	**17 13 31.0**	**+1.3**
GTA				S		**S**	**17 15 59.5**	**-0.7**
GTA				SS		**SnSn**	**17 17 54.5**	**-1.1**
GTA				pmax	pmax			
	comp=Z,6.0nm,0.9s							
GTA				pmax	pmax			
	comp=Z,71nm,5.5s							
GTA				LR	LR			
	comp=Z,150nm,18.5s							
GTA				LR	LR			
	comp=Z,170nm,19.0s							
GTA				LR	LR			
	comp=Z,200nm,18.5s							
KMI	**Kunming**	**34.34**	**263**	P		**P**	**17 11 00.3**	**+1.5**
KMI				pP		sP	17 11 07.5	+1.2
KMI				sP		pP	17 11 10.0	+5.9
KMI				PP		**PP**	**17 12 16.0**	**-0.6**
KMI				S		**S**	**17 16 25.0**	**-0.8**
KMI				sS		sS	17 16 36.3	+1.7
KMI				SS		**SnSn**	**17 18 33.0**	**-2.6**
KMI				pmax	pmax			
	comp=Z,10.0nm,0.7s							
KMI				pmax	pmax			
	comp=Z,100nm,6.6s							
KMI				LR	LR			
	comp=Z,250nm,14.0s							
KMI				LR	LR			
	comp=Z,340nm,15.4s							
KMI				LR	LR			
	comp=Z,290nm,15.7s							
BILL	**Bilibino**	**35.76**	**16**	*i* P		**P**	**17 11 09.3**	**-0.9**
BILL				*i*			17 11 16.6	
BILL				pmax	pmax			
	comp=Z,18nm,1.7s							
BILL				MLR	MLR			
	comp=Z,168nm,16.0s							
BILL	**Bilibino**	**35.76**	**16**	*e*P		**P**	**17 11 10.2**	**0.0**
	comp=Z,11nm,1.1s							
TNTI	**Ternate**	**36.64**	**203**	*e*P		P	17 11 13.6	-4.7
	comp=Z,17nm,0.8s							
TIXI	**Tiksi**	**36.92**	**354**	P		**P**	**17 11 19.3**	**-0.8**
	comp=Z,1.8nm,0.3s,baz=146,slow=6.1,SNR=14							
TIXI	**Tiksi**	**36.92**	**354**	*i* P		**P**	**17 11 19.9**	**-0.2**
TIXI				pmax	pmax			
	comp=Z,5.0nm,0.8s							
TIXI	**Tiksi**	**36.92**	**354**	*e*P		**P**	**17 11 19.5**	**-0.6**
	comp=Z,5.7nm,0.8s							
MANU	**Manus Island**	**37.68**	**169**	*e*P		**P**	**17 11 26.5**	**-0.7**
	comp=Z,15nm,0.8s							
KRAR	**Krasnoyarsk**	**38.42**	**318**	*e*P		**P**	**17 11 32.7**	**-0.3**
KRAR				pmax	pmax			
	comp=Z,17nm,1.0s							
FAKI	**Fak Fak**	**38.92**	**194**	*e*P		**P**	**17 11 36.7**	**-0.9**
	comp=Z,96nm,1.8s							
NIKH	**Nikolski High**	**39.20**	**47**	*e*P		**P**	**17 11 40.1**	**+0.5**
	comp=Z,224nm,1.4s							
LUWI	**Luwuk**	**39.98**	**209**	*e*P		**P**	**17 11 44.6**	**-1.8**
	comp=Z,10nm,1.0s							
CHTO	**Chiang Mai**	**40.51**	**257**	*e*P		**P**	**17 11 49.8**	**-1.1**
CHTO				pmax	pmax			
	comp=Z,3.0nm,0.9s							
CHTO	**Chiang Mai**	**40.51**	**257**	*e*P		**P**	**17 11 49.8**	**-1.1**
	comp=Z,3.4nm,0.9s							
CM31	**Chiang Mai Arr**	**40.70**	**257**	*e*P		**P**	**17 11 52.2**	**-0.3**
CM31				*e*PcP		**PcP**	**17 13 55.1**	**+1.2**
CMAR	**Chiang Mai Arr**	**40.70**	**257**	P		**P**	**17 11 53.0**	**+0.6**
	comp=Z,2.0nm,0.8s,baz=47,slow=6.6,SNR=15							
CMAR				PcP		**PcP**	**17 13 55.1**	**+1.2**
	comp=Z,1.1nm,0.9s,baz=14,slow=2.2,SNR=5.5							
CMAR				LR		LR	17 30 29.9	
	comp=Z,188nm,19.0s,baz=62,slow=39							
CM01	**Chiang Mai Arr**	**40.71**	**257**	*e*P		**P**	**17 11 53.2**	**+0.7**
WMQ	**Urumqi**	**41.27**	**298**	*e*P		**P**	**17 11 59.0**	**+2.1**
WMQ				pP		sP	17 12 05.0	+0.5
WMQ				sP		pP	17 12 09.0	+6.7
WMQ				S		**S**	**17 18 07.5**	**-2.6**
WMQ				pmax	pmax			
	comp=Z,5.0nm,0.6s							
WMQ				pmax	pmax			
	comp=Z,62nm,4.0s							
LSA	**Lhasa**	**41.99**	**277**	*e*P		**P**	**17 12 04.5**	**+1.0**
LSA				pmax	pmax			
	comp=Z,9.0nm,0.8s							
LSA	**Lhasa**	**41.99**	**277**	*e*P		**P**	**17 12 04.5**	**+1.0**
	comp=Z,9.3nm,0.8s							
TNA	**Tin City**	**42.52**	**29**	*e*P		**P**	**17 12 08.2**	**+1.5**
	comp=Z,5.5nm,0.9s							
ZAA0	**Zalesovo Array**	**42.77**	**314**	*e*P		**P**	**17 12 08.9**	**-0.1**
ZAA1	**Zalesovo Array**	**42.77**	**314**	*e*P		**P**	**17 12 09.2**	**+0.3**
ZAA1				*e*PcP		**PcP**	**17 14 00.9**	**+0.8**
ZALV	**Zalesovo Beam**	**42.77**	**314**	P		**P**	**17 12 09.2**	**+0.2**
	comp=Z,3.2nm,0.5s,baz=97,slow=6.8,SNR=16							
ZALV				PcP		**PcP**	**17 14 00.9**	**+0.8**
	comp=Z,1.0nm,0.6s,baz=114,slow=3.5,SNR=2.7							
ZALV				LR		LR	17 30 35.1	
	comp=Z,80nm,19.4s,baz=72,slow=37							
ZALV	**Zalesovo Beam**	**42.77**	**314**	P		**P**	**17 12 09.2**	**+0.2**
ZALV							17 14 01.0	
ZALV				pmax	pmax			
	comp=Z,10.0nm,0.8s							
ZALV				pmax	pmax			
	comp=Z,1.0nm,0.6s							
ZALV				MLR	MLR			
	comp=Z,80nm,19.4s							
NVS	**Novosibirsk**	**43.73**	**315**	⇑*i*P		**P**	**17 12 17.5**	**+0.8**
NVS				pmax	pmax			
	comp=N,5.0nm,1.1s							
NVS				pmax	pmax			
	comp=E,11nm,1.1s							
NVS				pmax	pmax			
	comp=Z,17nm,1.1s							
NRIK	**Noril'sk**	**44.64**	**336**	P		**P**	**17 12 22.9**	**-0.9**
	comp=Z,5.2nm,0.6s,baz=124,slow=8.7,SNR=6.2							
NRIK				LR		LR	17 31 49.8	
	comp=Z,148nm,18.9s,baz=124,slow=37							
MK01	**Makanchi Array**	**44.69**	**303**	*e*P		**P**	**17 12 26.3**	**+1.8**
MK31	**Makanchi Array**	**44.69**	**303**	P		**P**	**17 12 24.5**	**-0.1**
MK31				pmax	pmax			
	comp=Z,9.0nm,0.7s							
MK31	**Makanchi Array**	**44.69**	**303**	*e*P		**P**	**17 12 26.1**	**+1.5**
MK32	**Makanchi Array**	**44.69**	**303**	*e*P		**P**	**17 12 24.6**	**0.0**
MKAR	**Makanchi Array**	**44.69**	**303**	P		**P**	**17 12 24.6**	**0.0**
	comp=Z,1.5nm,0.5s,baz=87,slow=9.8,SNR=23							
MKAR				LR		LR	17 31 46.6	
	comp=Z,222nm,18.3s,baz=80,slow=37							
MKAR	**Makanchi Array**	**44.69**	**303**	*i* P		**P**	**17 12 26.7**	**+2.1**
MKAR				pmax	pmax			
	comp=Z,9.0nm,0.8s							
MKAR	**Makanchi Array**	**44.69**	**303**	*e*P		**P**	**17 12 26.1**	**+1.5**
MAKZ	**Makanchi**	**44.91**	**304**	*e*P		P	17 12 29.6	+3.3
MAKZ				pmax	pmax			
	comp=Z,17nm,1.0s							
MAKZ	**Makanchi**	**44.91**	**304**	*e*P		P	17 12 29.6	+3.3
	comp=Z,14nm,0.9s							
KURK	**Kurchatov**	**46.67**	**309**	*e*P		**P**	**17 12 40.0**	**-0.1**
KURK				pmax	pmax			
	comp=Z,29nm,1.0s							
KURK	**Kurchatov**	**46.67**	**309**	*e*P		**P**	**17 12 40.0**	**-0.1**
	comp=Z,29nm,1.0s							
PDGK	**Podgornoye**	**47.23**	**299**	P		**P**	**17 12 44.8**	**+0.2**
PDGK				pmax	pmax			
	comp=Z,25nm,1.1s							
SOEI	**Soe**	**47.54**	**203**	*e*P		**P**	**17 12 46.5**	**-0.8**
	comp=Z,45nm,0.8s							
KDAK	**Kodiak Island**	**48.63**	**41**	*i* P		**P**	**17 12 57.0**	**+1.8**
MTN	**Manton Dam**	**48.81**	**193**	*e*P		**P**	**17 12 56.6**	**-0.4**
	comp=Z,44nm,1.1s							
SPU	**Mount Spurr**	**48.82**	**36**	*e*P		**P**	**17 12 57.6**	**+0.9**
CAST	**Castle Rocks**	**48.85**	**33**	*e*P		**P**	**17 12 58.2**	**+1.3**
	comp=Z,17nm,0.5s							
BPAW	**Bear Paw Mtn.**	**49.36**	**32**	*e*P		**P**	**17 13 02.7**	**+2.0**
	comp=Z,17nm,0.5s							
KTH	**Kantishna Hill**	**49.37**	**33**	*e*P		**P**	**17 13 01.2**	**+0.3**
	comp=Z,547nm,0.3s							
MLY	**Manley**	**49.49**	**31**	*e*P		**P**	**17 13 03.5**	**+1.7**
	comp=Z,8.4nm,0.8s							
TKM2	**Tokmak 2**	**50.09**	**300**	*e*P		**P**	**17 13 08.9**	**+2.0**
TKM2				pmax	pmax			
	comp=Z,16nm,0.9s							
TKM2	**Tokmak 2**	**50.09**	**300**	*e*P		**P**	**17 13 08.9**	**+2.0**
	comp=Z,16nm,0.9s							
MCK	**McKinley**	**50.26**	**33**	*e*P		**P**	**17 13 09.4**	**+1.8**
MCK				pmax	pmax			
	comp=Z,10.0nm,0.6s							
MCK	**McKinley**	**50.26**	**33**	*e*P		**P**	**17 13 09.4**	**+1.8**
	comp=Z,9.5nm,0.6s							
RND	**Reindeer**	**50.30**	**33**	*e*P		**P**	**17 13 08.1**	**+0.1**
RND				pmax	pmax			
	comp=Z,15nm,0.6s							
RND	**Reindeer**	**50.30**	**33**	*e*P		**P**	**17 13 08.1**	**+0.1**
	comp=Z,15nm,0.6s							
MDM	**Murphy Dome**	**50.56**	**31**	*e*P		**P**	**17 13 10.8**	**+0.9**
	comp=Z,16nm,0.8s							
SML	**Sawmill**	**50.59**	**35**	*e*P		**P**	**17 13 11.0**	**+0.8**
SML				pmax	pmax			
	comp=Z,11nm,0.8s							
SML	**Sawmill**	**50.59**	**35**	*e*P		**P**	**17 13 11.0**	**+0.8**
	comp=Z,11nm,0.8s							
WRH	**Wood River Hil**	**50.62**	**32**	*e*P		**P**	**17 13 11.5**	**+1.2**
	comp=Z,8.7nm,1.3s							
COLA	**College**	**50.72**	**31**	*e*P		**P**	**17 13 10.2**	**-0.8**
COLA				pmax	pmax			
	comp=Z,6.0nm,0.9s							
CCB	**Clear Creek Bu**	**50.74**	**32**	*e*P		**P**	**17 13 13.1**	**+2.0**
	comp=Z,3.8nm,1.0s							
KSH	**Kashi**	**50.74**	**295**	*e*P		P	17 13 15.0	+3.2
KSH				*e*sP		sP	17 13 26.0	+6.6
KSH				*e*PcP		**PcP**	**17 14 32.5**	**+3.8**
KSH				S		**S**	**17 20 27.5**	**+0.9**
KSH				SS		**SS**	**17 23 59.3**	**-1.5**
KSH				pmax	pmax			
	comp=Z,100nm,3.7s							
KSH				LR	LR			
	comp=Z,78nm,4.5s							
KSH				LR	LR			
	comp=Z,69nm,4.9s							
KSH				LR	LR			
	comp=Z,140nm,7.0s							
FRU	**Bishkek**	**50.81**	**300**	*e*P		**P**	**17 13 09.0**	**-3.1**
FRU				*e*			17 13 16.0	
AAK	**Ala-Archa**	**50.95**	**299**	*i* P		**P**	**17 13 13.8**	**+0.5**
AAK				pmax	pmax			
	comp=Z,6.0nm,1.0s							
AAK	**Ala-Archa**	**50.95**	**299**	*e*P		**P**	**17 13 14.5**	**+1.2**
	comp=Z,6.2nm,1.0s							
SCM	**Sheep Creek Mo**	**51.07**	**35**	*e*P		**P**	**17 13 14.7**	**+0.9**
SCM				*e*			17 14 26.6	
SCM				pmax	pmax			
	comp=Z,66nm,1.6s							
SCM	**Sheep Creek Mo**	**51.07**	**35**	*e*P		**P**	**17 13 14.7**	**+0.9**
	comp=Z,66nm,1.6s							
SCM				*e*PcP		**PcP**	**17 14 26.6**	**-2.9**

	comp=Z,11nm,1.0s							
FYU	**Fort Yukon**	**51.77**	**29**	*e*P		**P**	**17 13 20.9**	**+2.0**
	comp=Z,16nm,0.8s							
PAX	**Paxson**	**51.85**	**34**	*e*P		**P**	**17 13 20.8**	**+1.1**
PAX				pmax	pmax			
	comp=Z,3.0nm,0.8s							
PAX	**Paxson**	**51.85**	**34**	*e*P		**P**	**17 13 20.8**	**+1.1**
	comp=Z,3.4nm,0.8s							
DIV	**Divide**	**51.87**	**36**	*e*P		**P**	**17 13 21.4**	**+1.6**
	comp=Z,14nm,1.0s							
MNAS	**Manas**	**52.41**	**300**	P		P	17 13 27.7	+3.5
MNAS				pmax	pmax			
	comp=Z,11nm,1.0s							
SFK	**Sufi-Kurgan**	**52.41**	**297**	P		**P**	**17 13 24.0**	**-0.4**
SFK				pmax	pmax			
	comp=Z,12nm,1.1s							
DOT	**Dot Lake**	**52.43**	**33**	*e*P		**P**	**17 13 23.9**	**0.0**
	comp=Z,15nm,0.8s							
BMRM	**Bremner River**	**52.45**	**36**	*e*P		**P**	**17 13 25.8**	**+1.7**
	comp=Z,13nm,1.0s							
MENT	**Mentasta**	**52.65**	**34**	*e*P		**P**	**17 13 25.3**	**-0.3**
	comp=Z,7.7nm,0.9s							
BALM	**Baldy**	**53.53**	**36**	*e*P		**P**	**17 13 32.5**	**+0.4**
BALM				pmax	pmax			
	comp=Z,6.0nm,0.8s							
BALM	**Baldy**	**53.53**	**36**	*e*P		**P**	**17 13 32.5**	**+0.4**
	comp=Z,6.1nm,0.8s							
EGAK	**Eagle**	**53.58**	**31**	*e*P		**P**	**17 13 32.0**	**-0.3**
	comp=Z,4.4nm,0.6s							
KK31	**Karatay Array**	**53.63**	**301**	*i* P		**P**	**17 13 34.3**	**+1.2**
KK31				pmax	pmax			
	comp=Z,13nm,1.2s							
KKAR	**Karatay Array**	**53.63**	**301**	*e*P		**P**	**17 13 32.9**	**-0.2**
KKAR	**Karatay Array**	**53.63**	**301**	*e*P		**P**	**17 13 32.9**	**-0.2**
FITZ	**Fitzroy Crossi**	**55.10**	**198**	*e*P		**P**	**17 13 43.7**	**-0.1**
	comp=Z,19nm,1.2s							
WRAB	**Tennant Creek**	**55.33**	**188**	*c i*P		**P**	**17 13 45.0**	**-0.5**
WRAB				pmax	pmax			
	comp=Z,122nm,1.7s							
WRAB	**Tennant Creek**	**55.33**	**188**	*e*P		**P**	**17 13 45.0**	**-0.5**
	comp=Z,26nm,0.9s							
WR1	**Warramunga Arr**	**55.34**	**188**	*e*P		**P**	**17 13 45.0**	**-0.5**
WRA	**Warramunga Arr**	**55.34**	**188**	P		**P**	**17 13 45.0**	**-0.5**
	comp=Z,20nm,0.8s,baz=6.1,slow=7.6,SNR=69							
INK	**Inuvik**	**56.07**	**27**	*e*P		**P**	**17 13 50.9**	**+0.7**
INK				pmax	pmax			
	comp=Z,6.0nm,0.6s							
INK	**Inuvik**	**56.07**	**27**	*e*P		**P**	**17 13 50.9**	**+0.7**
	comp=Z,5.5nm,0.6s							
SVE	**Sverdlovsk**	**56.15**	**319**	*e*P		**P**	**17 13 52.1**	**+1.1**
DZET	**Dzherino**	**56.23**	**297**	P		**P**	**17 13 52.5**	**+0.5**
DZET				pmax	pmax			
	comp=Z,8.0nm,0.6s							
ARU	**Arti**	**57.36**	**319**	P		**P**	**17 14 00.1**	**+0.5**
	comp=Z,5.8nm,0.6s,baz=74,slow=2.8,SNR=12							
ARU	**Arti**	**57.36**	**319**	*d i*P		**P**	**17 13 58.8**	**-0.8**
ARU							17 14 52.8	
ARU				S		**S**	**17 21 53.5**	**-1.8**
ARU							17 23 39.7	
ARU				SS		**SS**	**17 25 41.8**	**-2.4**
ARU				pmax	pmax			
	comp=Z,14nm,1.2s							
ARU	**Arti**	**57.36**	**319**	*e*P		**P**	**17 13 59.5**	**-0.1**
	comp=Z,16nm,0.9s							
HYB	**Hyderabad**	**57.77**	**269**	*i* P		**P**	**17 14 04.0**	**+0.9**
ABKAR	**Akbulak array**	**58.73**	**311**	*e*P		**P**	**17 14 09.0**	**-0.3**
AS01	**Alice Springs**	**59.06**	**187**	*e*P		**P**	**17 14 10.7**	**-1.1**
AS31	**Alice Springs**	**59.06**	**187**	*e*P		**P**	**17 14 12.1**	**+0.2**
	comp=Z,1.6nm,0.8s							
ASAR	**Alice Springs**	**59.07**	**188**	P		**P**	**17 14 11.5**	**-0.4**
	comp=Z,2.3nm,0.7s,baz=17,slow=10,SNR=30							
MBWA	**Marble Bar**	**59.68**	**203**	*e*P		**P**	**17 14 15.8**	**-0.3**
	comp=Z,14nm,0.8s							
DLBC	**Dease Lake**	**60.20**	**37**	*e*P		**P**	**17 14 21.4**	**+2.0**
	comp=Z,20nm,1.6s							
TMCR	**Tamitsa**	**64.03**	**332**	*e*P		P	17 14 50.4	+5.5
TMCR				pmax	pmax			
	comp=Z,23nm,0.6s							
GEYT	**Alibeck**	**64.31**	**299**	P		**P**	**17 14 49.0**	**+1.7**
	comp=Z,1.2nm,0.6s,baz=46,slow=6.4,SNR=4.1							
RES	**Resolute Bay**	**64.33**	**14**	*e*P		**P**	**17 14 46.6**	**-0.1**
RES				pmax	pmax			
	comp=Z,14nm,0.8s							
RES	**Resolute Bay**	**64.33**	**14**	*e*P		**P**	**17 14 46.6**	**-0.1**
	comp=Z,14nm,0.8s							
KLMR	**Klimovskoe**	**64.97**	**328**	*e*P		**P**	**17 14 49.3**	**-1.8**
KLMR				*e*			17 15 22.5	
KLMR				pmax	pmax			
	comp=Z,7.0nm,0.9s							
YKW3	**Yellowknife Ar**	**65.43**	**30**	*e*P		**P**	**17 14 54.4**	**+0.3**
	comp=Z,4.0nm,0.9s							
ARA0	**ARCESS Array S**	**65.43**	**340**	*e*P		**P**	**17 14 53.9**	**-0.1**
ARCES	**ARCESS Array B**	**65.43**	**340**	P		**P**	**17 14 53.9**	**-0.1**
	comp=Z,2.6nm,0.7s,baz=24,slow=9.3,SNR=8.2							
ARCES				LR		LR	17 47 18.2	
	comp=Z,104nm,18.2s,baz=44,slow=40							
YKA	**Yellowknife Ar**	**65.47**	**30**	P		**P**	**17 14 54.6**	**+0.3**
	comp=Z,1.5nm,0.7s,baz=301,slow=6.6,SNR=35							
YKB5	**Yellowknife Ar**	**65.47**	**30**	*e*P		**P**	**17 14 53.5**	**-0.8**
STKA	**Stephens Creek**	**66.87**	**179**	P		**P**	**17 15 04.0**	**+0.4**
	comp=Z,2.4nm,0.9s,baz=359,slow=5.5,SNR=5.7							
STKA	**Stephens Creek**	**66.87**	**179**	*e*P		**P**	**17 15 04.1**	**+0.5**
STKA				pmax	pmax			
	comp=Z,6.0nm,1.8s							
STKA	**Stephens Creek**	**66.87**	**179**	*e*P		**P**	**17 15 04.1**	**+0.5**
	comp=Z,5.5nm,1.8s							
DAG	**Danmarks Havn**	**67.42**	**355**	*i* P		**P**	**17 15 06.7**	**+0.1**
	comp=Z,3.6nm,0.8s							
DAG	**Danmarks Havn**	**67.42**	**355**	*i* P		**P**	**17 15 06.7**	**+0.1**
DAG				pmax	pmax			
	comp=Z,3.0nm,0.8s							
VRH	**Novokhopyorsk**	**68.56**	**318**	*e*P		P	17 15 18.3	+4.1
VRH				pmax	pmax			
	comp=Z,10.0nm,0.5s							
OBN	**Obninsk**	**69.21**	**323**	*e*P		**P**	**17 15 18.2**	**+0.1**
OBN				*i*			17 17 51.5	
OBN				*e*S		**S**	**17 24 26.0**	**+3.0**
OBN				pmax	pmax			
	comp=Z,5.0nm,0.8s							
OBN				MLR		MLR		
	comp=Z,133nm,15.0s							
LPSR	**Galich'ya Gora**	**69.34**	**320**	*e*P		P	17 15 23.7	+4.7
LPSR				pmax	pmax			
	comp=Z,10.0nm,0.9s							
VSR	**Storozhevoye**	**69.94**	**319**	*e*P		P	17 15 27.3	+4.6
VSR				pmax	pmax			
	comp=Z,10.0nm,1.1s							
FIA1	**FINESS Array S**	**70.12**	**332**	*e*P		**P**	**17 15 23.4**	**-0.2**
FIA0	**FINESS Array S**	**70.12**	**332**	*e*P		**P**	**17 15 23.4**	**-0.2**
FIA0	**FINESS Array S**	**70.12**	**332**	*e*P		**P**	**17 15 23.4**	**-0.2**
FINES	**FINESS Array B**	**70.12**	**332**	P		**P**	**17 15 23.4**	**-0.2**
	comp=Z,2.6nm,0.7s,baz=90,slow=4.6,SNR=13							
FINES				LR		LR	17 47 46.8	
	comp=Z,86nm,20.2s,baz=30,slow=37							
FINES	**FINESS Array B**	**70.12**	**332**	*i* P		**P**	**17 15 23.8**	**+0.2**
FINES				pmax	pmax			
	comp=Z,3.0nm,0.6s							
GOF	**Gofitskoye**	**70.92**	**312**⇑	*e*P		**P**	**17 15 30.7**	**+1.9**
NCK	**Nalchik**	**71.39**	**310**	*e*P		**P**	**17 15 32.6**	**+0.9**
NCK				pmax	pmax			
	comp=Z,5.0nm,0.8s							
ZEI	**Tsey**	**71.56**	**310**	*e*P		**P**	**17 15 33.3**	**+0.3**
ZEI				pmax	pmax			
	comp=Z,18nm,1.2s							
KBZ	**Khabaz**	**71.70**	**311**	P		**P**	**17 15 35.3**	**+1.8**
	comp=Z,5.7nm,0.8s,baz=39,slow=4.4,SNR=13							
KBZ				LR		LR	17 50 55.9	
	comp=Z,73nm,19.2s,baz=33,slow=39							
VSU	**Vasula**	**71.70**	**330**	*i* P		**P**	**17 15 33.5**	**+0.2**
VSU				pmax	pmax			
	comp=Z,69nm,2.5s							
KIV	**Kislovodsk**	**71.71**	**311**	*e*P		**P**	**17 15 34.9**	**+1.1**
KIV				*i*			17 15 55.8	
KIV				pmax	pmax			
	comp=Z,10.0nm,1.0s							
KIV				MLR		MLR		
	comp=Z,95nm,17.0s							
SUMG	**Summit**	**72.37**	**360**	*i* P		**P**	**17 15 39.1**	**+1.5**
	comp=Z,17nm,0.9s							
SUMG	**Summit**	**72.37**	**360**	*e*P		**P**	**17 15 39.0**	**+1.5**
SUMG				pmax	pmax			
	comp=Z,17nm,0.9s							
SUMG	**Summit**	**72.37**	**360**	*e*P		**P**	**17 15 39.0**	**+1.5**
	comp=Z,17nm,0.9s							
GNI	**Garni**	**72.39**	**307**	LR		LR	17 50 10.4	
	comp=Z,86nm,19.0s,baz=63,slow=38							
GNI	**Garni**	**72.39**	**307**	*e*P		**P**	**17 15 39.0**	**+1.0**
GNI				pmax	pmax			
	comp=Z,30nm,1.1s							
GNI	**Garni**	**72.39**	**307**	*e*P		**P**	**17 15 37.3**	**-0.7**
	comp=Z,9.5nm,0.9s							
SCO	**Scoresbysund**	**73.75**	**354**	*i* P		**P**	**17 15 46.9**	**+1.7**
	comp=Z,3.5nm,0.7s							
SCO	**Scoresbysund**	**73.75**	**354**	*e*P		**P**	**17 15 46.9**	**+1.7**
SCO				pmax	pmax			
	comp=Z,4.0nm,0.7s							
NC405	**NORSAR Array S**	**75.37**	**337**	*e*P		**P**	**17 15 54.9**	**+0.1**
AKASG	**Malin Array Be**	**75.39**	**322**	P		**P**	**17 15 54.6**	**-0.5**
	comp=Z,1.9nm,0.6s,baz=48,slow=6.2,SNR=11							
AKASG				LR		LR	17 51 50.2	
	comp=Z,142nm,19.3s,baz=30,slow=38							
NC303	**NORSAR Array S**	**75.39**	**337**	*e*P		**P**	**17 15 53.6**	**-1.4**
KIEV	**Kiev**	**75.40**	**322**	*e*P		**P**	**17 15 54.8**	**-0.4**
KIEV				pmax	pmax			
	comp=Z,6.0nm,0.9s							
KIEV	**Kiev**	**75.40**	**322**	*e*P		**P**	**17 15 54.8**	**-0.4**
	comp=Z,6.4nm,0.7s							
NC204	**NORSAR Array S**	**75.55**	**338**	*e*P		**P**	**17 15 56.2**	**+0.3**
NB201	**NORSAR Array S**	**75.55**	**337**	*e*P		**P**	**17 15 55.4**	**-0.5**
NB2	**NORSAR Subarra**	**75.58**	**337**	P		**P**	**17 15 56.7**	**+0.6**
	comp=Z,6.8nm,0.6s,baz=40,slow=6.2							
NB200	**NORSAR Array S**	**75.58**	**337**	*e*P		**P**	**17 15 56.6**	**+0.5**
NOA	**NORSAR Array B**	**75.58**	**337**	P		**P**	**17 15 56.6**	**+0.5**
	comp=Z,4.5nm,0.7s,baz=40,slow=5.7,SNR=26							
NOA				LR		LR	17 52 05.9	
	comp=Z,119nm,19.3s,baz=30,slow=38							
FCC	**Fort Churchill**	**75.69**	**26**	*e*P		**P**	**17 15 57.0**	**+0.4**
FCC				pmax	pmax			
	comp=Z,15nm,1.3s							
FCC	**Fort Churchill**	**75.69**	**26**	*e*P		**P**	**17 15 57.0**	**+0.4**
	comp=Z,15nm,1.3s							
NBO02	**NORSAR Array S**	**75.69**	**337**	*e*P		**P**	**17 15 56.5**	**-0.2**
NBO00	**NORSAR Array S**	**75.73**	**337**	*e*P		**P**	**17 15 57.4**	**+0.4**
DLMT	**Dillon**	**75.82**	**44**	*e*P		**P**	**17 15 58.9**	**+0.9**
	comp=Z,9.1nm,1.0s							
NAO01	**NORSAR Array S**	**75.84**	**337**	*e*P		**P**	**17 15 57.0**	**-0.5**
NV01	**Mina Array Sit**	**76.32**	**53**	*e*P		**P**	**17 16 02.2**	**+1.2**
NVAR	**Mina Array Bea**	**76.32**	**53**	P		**P**	**17 16 03.2**	**+2.2**
	comp=Z,1.8nm,0.7s,baz=296,slow=5.7,SNR=6.9							
H17A	**Grant Village**	**77.55**	**44**	*e*P		**P**	**17 16 10.7**	**+2.8**
	comp=Z,14nm,1.4s							
HVU	**Hansel Valley**	**77.84**	**47**	*e*P		**P**	**17 16 09.3**	**-0.1**
HVU				pmax	pmax			
	comp=Z,4.0nm,0.9s							
HVU	**Hansel Valley**	**77.84**	**47**	*e*P		**P**	**17 16 09.3**	**-0.1**
	comp=Z,4.1nm,0.9s							
MOOW	**Moose Ponds**	**77.85**	**45**	*e*P		**P**	**17 16 10.7**	**+1.2**
	comp=Z,3.4nm,1.0s							
LVV	**L'vov**	**78.50**	**324**	*e*P		P	17 16 17.6	+4.9
HWUT	**Hardware Ranch**	**78.67**	**47**	*e*P		**P**	**17 16 14.1**	**0.0**
	comp=Z,9.1nm,1.3s							
DUG	**Dugway, Tooele**	**78.77**	**49**	*e*P		**P**	**17 16 15.3**	**+0.8**
DUG				pmax	pmax			
	comp=Z,4.0nm,0.9s							
DUG	**Dugway, Tooele**	**78.77**	**49**	*e*P		**P**	**17 16 15.2**	**+0.8**
	comp=Z,4.1nm,0.9s							
BW06	**Boulder Array**	**79.14**	**45**	*e*P		**P**	**17 16 17.0**	**+0.4**
PD31	**Pinedale Array**	**79.14**	**45**	*e*P		**P**	**17 16 17.4**	**+0.8**
PDAR	**Pinedale Array**	**79.14**	**45**	P		**P**	**17 16 17.9**	**+1.2**
	comp=Z,1.1nm,0.5s,baz=275,slow=2.1,SNR=16							
BUR08	**Bucovina Ar. S**	**79.37**	**322**	*e*P		**P**	**17 16 18.1**	**+0.4**
BR101	**Keskin Array S**	**79.67**	**312**	*e*P		**P**	**17 16 20.8**	**+1.3**
BR131	**Keskin Array S**	**79.67**	**312**	*e*P		**P**	**17 16 20.4**	**+1.0**
BRTR	**Keskin Array B**	**79.67**	**312**	P		**P**	**17 16 20.8**	**+1.3**
	comp=Z,2.5nm,1.0s,baz=108,slow=3.1,SNR=8.2							
BRTR				LR		LR	17 56 58.4	
	comp=Z,23nm,18.6s,baz=54,slow=40							
BRTR	**Keskin Array B**	**79.67**	**312**	*i* P		**P**	**17 16 20.7**	**+1.3**
BRTR				pmax	pmax			
	comp=Z,2.0nm,0.8s							
BR231	**Keskin MP Arra**	**80.12**	**312**	*e*P		**P**	**17 16 20.9**	**-1.0**
CRVS	**Cervenica-Dubn**	**80.36**	**324**	*e*P		**P**	**17 16 25.8**	**+3.0**
CRVS	**Cervenica-Dubn**	**80.36**	**324**	*e*		**P**	**17 16 25.8**	**+3.0**
URZ	**Urewera**	**80.55**	**152**	P		**P**	**17 16 23.7**	**0.0**
	comp=Z,12nm,0.9s,baz=293,slow=12,SNR=3.8							
KECS	**Kecovo**	**81.11**	**325**	*e*P		P	17 16 31.7	+4.8
KECS	**Kecovo**	**81.11**	**325**	*e*		P	17 16 31.7	+4.8
OKC	**Ostrava-Krasne**	**81.23**	**327**	AMS		AMS	17 56 10.0	
	comp=Z,200nm,16.1s							
MORC	**Moravsky Berou**	**81.55**	**327**	*e*P		**P**	**17 16 29.5**	**+0.3**
MORC				pmax	pmax			
	comp=Z,24nm,1.0s							
MORC	**Moravsky Berou**	**81.55**	**327**	*e*P		**P**	**17 16 29.5**	**+0.3**
	comp=Z,24nm,1.0s							
DPC	**Dobruska-Polom**	**81.67**	**328**	*e*P		**P**	**17 16 31.1**	**+1.2**
DPC				*ep*P		**PcP**	**17 16 36.2**	**+0.5**
DPC				*ex*		x	17 16 44.6	
UPC	**Upice**	**81.69**	**328**	AMS		AMS	17 57 00.0	
	comp=Z,200nm,15.3s							
BRG	**Berggiesshubel**	**82.30**	**329**	*e*P		P	17 16 38.8	+5.8
	comp=Z,4.8nm,0.8s							
BRG	**Berggiesshubel**	**82.30**	**329**	*e*P		P	17 16 38.8	+5.7
BRG				pmax	pmax			
	comp=Z,5.0nm,0.8s							
CLL	**Collm**	**82.36**	**330**	*i* P		**P**	**17 16 33.6**	**+0.2**
	comp=Z,5.0nm,0.9s							
CLL				*i* pP		**PcP**	**17 16 38.8**	**+0.2**
	comp=Z,9.0nm,0.8s							
CLL				*i*			17 16 47.2	
CLL	**Collm**	**82.36**	**330**	*e*P		**P**	**17 16 33.5**	**+0.2**
CLL				pmax	pmax			
	comp=Z,11nm,0.8s							
CLL	**Collm**	**82.36**	**330**	*e*P		**P**	**17 16 33.5**	**+0.2**
	comp=Z,11nm,0.8s							
GOPC	**GO Pecny, Ondr**	**82.66**	**328**	AMS		AMS	17 57 50.0	
	comp=Z,200nm,15.4s							
PRU	**Pruhonice**	**82.71**	**328**	AMS		AMS	17 58 00.0	
	comp=Z,200nm,15.4s							
KHC	**Kasperske Hory**	**83.77**	**328**	*e*P		**P**	**17 16 40.1**	**-0.7**
KHC				*ep*P		**pP**	**17 16 46.6**	**+0.1**
KHC				AMS		AMS	17 58 30.0	
	comp=Z,200nm,9.7s							
KHC	**Kasperske Hory**	**83.77**	**328**	*e*P		**P**	**17 16 40.7**	**-0.1**
KHC				pmax	pmax			
	comp=Z,2.0nm,0.8s							
KHC	**Kasperske Hory**	**83.77**	**328**	*e*P		**P**	**17 16 40.6**	**-0.1**
	comp=Z,1.6nm,0.8s							
GEC2	**GERESS Array S**	**83.93**	**328**	*e*P		**P**	**17 16 43.2**	**+1.5**
GEC2				pmax	pmax			
	comp=Z,3.0nm,0.8s							
GEC2	**GERESS Array S**	**83.93**	**328**	*e*P		**P**	**17 16 43.2**	**+1.5**
	comp=Z,3.2nm,0.8s							
GERES	**GERESS Array B**	**83.93**	**328**	P		**P**	**17 16 41.3**	**-0.4**
	comp=Z,0.4nm,0.5s,baz=34,slow=5.2,SNR=4.3							
GERES				LR		LR	17 57 43.8	
	comp=Z,73nm,18.7s,baz=66,slow=38							
GEA0	**GERESS Array S**	**83.94**	**328**	*e*P		**P**	**17 16 41.7**	**0.0**
Q24A	**Divide**	**84.14**	**46**	*e*P		**P**	**17 16 41.1**	**-2.1**
	comp=Z,62nm,0.9s							
GRFO	**Grafenberg**	**84.33**	**330**	*e*P		**P**	**17 16 44.2**	**+0.6**
GRFO				pmax	pmax			
	comp=Z,11nm,0.8s							
GRFO	**Grafenberg**	**84.33**	**330**	*e*P		**P**	**17 16 44.2**	**+0.6**
	comp=Z,11nm,0.8s							
KSCO	**Kaye Shedlock'**	**85.56**	**44**	*e*P		**P**	**17 16 50.3**	**+0.1**
	comp=Z,59nm,0.5s							
ANMO	**Albuquerque**	**85.98**	**49**	*i* P		**P**	**17 16 51.0**	**-1.4**
ANMO				pmax	pmax			
	comp=Z,2.0nm,1.0s							
BFO	**Black Forest**	**86.57**	**331**	*e*P		**P**	**17 16 54.8**	**0.0**
BFO				pmax	pmax			
	comp=Z,8.0nm,0.8s							
BFO	**Black Forest**	**86.57**	**331**	*e*P		**P**	**17 16 54.8**	**0.0**
	comp=Z,8.2nm,0.8s							
SCHQ	**Schefferville**	**87.07**	**16**	P		**P**	**17 16 58.3**	**+1.2**
	comp=Z,3.9nm,0.8s,baz=346,slow=9.0,SNR=4.2							
SCHQ	**Schefferville**	**87.07**	**16**	*e*P		**P**	**17 16 58.3**	**+1.2**
	comp=Z,24nm,1.5s							
FUORN	**Ofenpass-Fuorn**	**87.12**	**328**	*e*P		**P**	**17 16 58.1**	**+0.2**
	comp=Z,5.2nm,0.7s							
MSTX	**Muleshoe**	**88.90**	**48**	*e*P		**P**	**17 17 05.5**	**-0.9**
	comp=Z,17nm,1.0s							
TX31	**Lajitas Ar. Si**	**91.47**	**52**	*e*P		**P**	**17 17 18.4**	**0.0**
LTX	**Lajitas**	**91.47**	**52**	*e*P		**P**	**17 17 19.9**	**+1.5**
LTX	**Lajitas**	**91.47**	**52**	*e*P		**P**	**17 17 19.9**	**+1.5**
TXAR	**Lajitas Array**	**91.47**	**52**	P		**P**	**17 17 19.9**	**+1.4**
	comp=Z,1.0nm,0.8s,baz=270,slow=1.3,SNR=7.3							
TXAR				LR		LR	17 54 27.4	
	comp=Z,38nm,20.0s,baz=0.0,slow=33							
H06N1	**SOCORRO T-PHAS**	**93.17**	**64**	T		T	19 00 59.9	
	SNR=11							
H06E1	**SOCORRO T-PHAS**	**93.27**	**64**	T		T	19 00 55.3	
	SNR=14							
TOA1	**Torodi Ar. Sit**	**118.22**	**314**	*e*PKPdf		**PKPdf**	**17 22 58.6**	**-0.9**
TORD	**Torodi Ar. Bea**	**118.22**	**314**	PKP		**PKPdf**	**17 22 58.6**	**-0.9**
	comp=Z,0.4nm,0.5s,baz=40,slow=1.5,SNR=4.4							
QSPA	**South Pole Qui**	**125.09**	**180**	*e*PKPdf		**PKPdf**	**17 23 11.1**	**0.0**
SAML	**Samuel**	**145.72**	**46**	*e*PKPdf		**PKPdf**	**17 23 50.7**	**-0.1**
LPAZ	**La Paz**	**147.87**	**61**	PKPbc		**PKPbc**	**17 23 58.8**	**+0.8**
	comp=Z,2.9nm,0.8s,baz=306,slow=2.3,SNR=9.3							
LPAZ	**La Paz**	**147.87**	**61**	*e*PKIKP		**PKPdf**	**17 23 52.4**	**-2.7**
LPAZ				*e*			17 23 58.8	
LPAZ	**La Paz**	**147.87**	**61**	*e*PKPdf		**PKPdf**	**17 23 52.4**	**-2.7**
LPAZ				*e*PKPbc		**PKPbc**	**17 23 58.8**	**+0.8**

JMA 29 17:04:19.0, 37.73N×139.93E, h8km±1km, M1.8, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFY	**Yanaizu**	**0.37**	**209**	P	Pg	17 04 26.2	0.0
JFY				S	Sg	17 04 31.1	0.0
JFT	**Otama**	**0.39**	**123**	P	Pg	17 04 26.6	+0.1
JNS	**Sasagawa**	**0.49**	**280**	P	Pg	17 04 28.6	0.0
JYS	**Shirataka**	**0.50**	**12**	S	Sg	17 04 36.1	+0.8
MAT	**Matsushiro**	**1.82**	**230**	P	Pg	17 04 53.4	-0.4
MAT				S	Sg	17 05 22.6	+5.2

*ISCJB **29** 17:21:59.0±0.2, 46.82N±0.02×12.36E±0.02, h7km±3km, Error ellipse: s-maj=2.9km s-min=1.8km az=19.3*
*VIE **29** 17:21:59.4±0.2, 46.82N×12.37E, h8km±4km, mb1.8/14, ml2.5/18, Error ellipse: s-maj=2.5km s-min=1.1km az=13.0, felt 3-4 ems98 at Innervillgraten / Tyrol*
*CSEM **29** 17:21:59.5±0.1, 46.80N×12.36E, h8km, ML2.9/25, Error ellipse: s-maj=1.8km s-min=1.1km az=17.0*
*ROM **29** 17:22:00.3±0.1, 46.77N×12.37E, h12km±1km, Md2.5/13, Ml1.9/11, Error ellipse: s-maj=1.5km s-min=0.8km az=177.0*
*ZUR **29** 17:22:01.4, 46.83N×12.22E, h13km±2km, ML2.2/8*
*PRU **29** 17:22:01.2, 46.88N×12.42E, h0km*

ISC 29 17:21:59.3±0.8, 46.83N±0.02×12.38E±0.01, h12km±5km, n92, σ0.962/160, 18C-7D, Northern Italy

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ABTA	**Abfaltersbach**	**0.12**	**130**	*e*Pg	**Pg**	**17 22 02.7**	**+0.2**
	90nm,0.1s,SNR=367						
ABTA				*i* Sg	**Sg**	**17 22 04.4**	**-0.4**
	151nm,0.1s						
ABTA	**Abfaltersbach**	**0.12**	**130**	Pg	**Pg**	**17 22 02.7**	**+0.2**
	90nm,0.1s,SNR=367						
ABTA				Sg	**Sg**	**17 22 04.4**	**-0.4**
	151nm,0.1s						
RISI	**Rein**	**0.24**	**301**⇑	*i*Pg	**Pg**	**17 22 04.8**	**+0.4**
	2μm,0.4s						
RISI				*i* Sg	**Sg**	**17 22 08.0**	**+0.1**
	2μm,0.4s						
RISI	**Rein**	**0.24**	**301**⇑	*i*Pg	**Pg**	**17 22 04.8**	**+0.4**
	2μm,0.4s						
RISI				*i* Sg	**Sg**	**17 22 08.0**	**+0.1**
	2μm,0.4s						
AFL	**Alpe Faloria**	**0.33**	**205**	*i* Pg	**Pg**	**17 22 06.3**	**+0.3**
AFL				*i* Sg	**Sg**	**17 22 10.9**	**+0.5**
AFL	**Alpe Faloria**	**0.33**	**205**⇓	*i*Pg	**Pg**	**17 22 06.3**	**+0.3**
AFL				*i* Sg	**Sg**	**17 22 10.8**	**+0.5**
FVI	**Forni Avoltri**	**0.36**	**129**	Pg	**Pg**	**17 22 06.8**	**+0.3**
FVI				Sg	**Sb**	**17 22 12.7**	**-0.6**
	101nm,0.2s						
FVI	**Forni Avoltri**	**0.36**	**129**	Pg	**Pg**	**17 22 06.8**	**+0.3**
FVI				Sg	**Sb**	**17 22 12.7**	**-0.6**
	101nm,0.2s						
CSMI	**Casera Mimoias**	**0.37**	**149**	*e*Pg	**Pg**	**17 22 07.0**	**+0.3**
CSMI				*e*Sg	**Sg**	**17 22 12.0**	**+0.4**
CSMI	**Casera Mimoias**	**0.37**	**149**⇑	*e*Pg	**Pg**	**17 22 07.0**	**+0.3**
CSMI				*e*Sg	**Sg**	**17 22 12.0**	**+0.4**
ZOU	**Zoufplan**	**0.49**	**123**	*e*Pg	**Pg**	**17 22 09.3**	**+0.3**
ZOU		

	15nm,0.4s							
VINO	**Villanova**	**0.85**	**132**	*e*Pg	**Pg**	17 22 15.4	**-0.2**
APPI	**Appiano**	**0.86**	**247**	Pg	**Pg**	17 22 15.7	**-0.3**
APPI				Sg	**Sg**	17 22 27.4	**+0.1**
	69nm,0.2s							
APPI	**Appiano**	**0.86**	**247**	Pg	**Pg**	17 22 15.7	**-0.3**
APPI				Sg	**Sg**	17 22 27.4	**+0.1**
	69nm,0.2s							
SQTA	**Sankt Quirin**	**0.89**	**297**	*i* Pg	**Pb**	17 22 16.7	**-0.1**
SQTA	**Sankt Quirin**	**0.89**	**297**	Pg	**Pb**	17 22 16.7	**-0.1**
MYKA	**Terra Mystica**	**0.89**	**102**	*e*Pg	**Pb**	17 22 16.9	**+0.1**
	3.1nm,0.2s							
MYKA				*e*Sg	**Sb**	17 22 28.9	**+0.3**
	6.8nm,0.1s							
MYKA	**Terra Mystica**	**0.89**	**102**	Pg	**Pb**	17 22 16.9	**+0.1**
	3.1nm,0.2s							
MYKA				Sg	**Sb**	17 22 28.9	**+0.3**
	6.8nm,0.1s							
OZOL	**Ozolo**	**1.00**	**246**	*e*Pg	**Pg**	17 22 18.3	**-0.4**
OZOL	**Ozolo**	**1.00**	**246**	*e*Pg	**Pg**	17 22 18.3	**-0.4**
MOTA	**Moosalm**	**1.01**	**301**	*e*Pg	**Pn**	17 22 19.7	**+0.2**
	4.4nm,0.2s,SNR=16							
MOTA				*i* Sg	**Sb**	17 22 32.8	**+0.6**
	7.7nm,0.2s							
MOTA	**Moosalm**	**1.01**	**301**	Pg	**Pn**	17 22 19.7	**+0.2**
	4.4nm,0.2s,SNR=16							
MOTA				Sg	**Sb**	17 22 32.8	**+0.6**
	7.7nm,0.2s							
PANI	**Panarotta**	**1.06**	**223**	*e*Pg	**Pg**	17 22 19.4	**-0.3**
PANI	**Panarotta**	**1.06**	**223**	*e*Pg	**Pg**	17 22 19.4	**-0.3**
FETA	**Feichten**	**1.15**	**280**	*e*Pg	**Pb**	17 22 21.0	**-0.1**
	1.9nm,0.1s,SNR=13							
FETA				*e*Sg	**Sb**	17 22 36.0	**0.0**
	4.7nm,0.1s,SNR=5.6							
FETA	**Feichten**	**1.15**	**280**	Pg	**Pb**	17 22 21.0	**-0.1**
	1.9nm,0.1s,SNR=13							
FETA				Sg	**Sb**	17 22 36.0	**0.0**
	4.7nm,0.1s,SNR=5.6							
SABO	**M.te Sabotino**	**1.20**	**135**	Pg	**Pg**	17 22 22.8	**+0.5**
SABO				Sg	**Sn**	17 22 38.3	**+0.2**
SABO	**M.te Sabotino**	**1.20**	**135**	Pg	**Pg**	17 22 22.8	**+0.5**
SABO				Sg	**Sn**	17 22 38.3	**+0.2**
SABO	**M.te Sabotino**	**1.20**	**135**	*e*Pg	**Pg**	17 22 22.9	**+0.5**
CARE	**Lago del Cares**	**1.23**	**252**	*e*Pg	**Pn**	17 22 22.3	**-0.2**
CARE	**Lago del Cares**	**1.23**	**252**	*e*Pg	**Pn**	17 22 22.3	**-0.2**
DDS	**Dosso del Somm**	**1.25**	**221**	*e*Pg	**Pb**	17 22 23.0	**+0.1**
DDS	**Dosso del Somm**	**1.25**	**221**	*e*Pg	**Pb**	17 22 23.0	**+0.1**
MOSI	**Grossmontoni**	**1.27**	**261**	*e*Pg	**Pb**	17 22 23.3	**0.0**
	146nm,0.2s							
MOSI	**Grossmontoni**	**1.27**	**261**	*e*Pg	**Pb**	17 22 23.3	**0.0**
	146nm,0.2s							
RETA	**Reutte**	**1.28**	**302**	*i* Pg	**Pg**	17 22 24.7	**+0.7**
	12nm,0.2s							
RETA				*e*Sg	**Sg**	17 22 42.5	**+1.8**
	14nm,0.2s							
RETA	**Reutte**	**1.28**	**302**	Pg	**Pg**	17 22 24.7	**+0.7**
	12nm,0.2s							
RETA				Sg	**Sg**	17 22 42.5	**+1.8**
	14nm,0.2s							
BRMO	**Bormio**	**1.42**	**257**	Pn	**Pb**	17 22 25.7	**-0.1**
BRMO				Sg	**Sg**	17 22 44.6	**-0.5**
	11nm,0.3s							
BRMO	**Bormio**	**1.42**	**257**	Pn	**Pb**	17 22 25.7	**-0.1**
BRMO				Sg	**Sg**	17 22 44.6	**-0.5**
	11nm,0.3s							
FUORN	**Ofenpass-Fuorn**	**1.47**	**263**	Pn	**Pb**	17 22 26.4	**-0.3**
FUORN				Sn	**Sb**	17 22 45.4	**0.0**
FUORN	**Ofenpass-Fuorn**	**1.47**	**263**	Pn	**Pb**	17 22 26.4	**-0.3**
FUORN				Sn	**Sb**	17 22 45.4	**0.0**
FUORN	**Ofenpass-Fuorn**	**1.47**	**263**	*i* Pg	**Pb**	17 22 26.6	**-0.1**
	31nm,0.3s							
ROVR	**Rover˜¤ Verone**	**1.49**	**218**	Pn	**Pb**	17 22 26.8	**-0.1**
ROVR				Sn	**Sn**	17 22 45.1	**-0.3**
	40nm,0.2s							
ROVR	**Rover˜¤ Verone**	**1.49**	**218**	Pn	**Pb**	17 22 26.8	**-0.1**
ROVR				Sn	**Sn**	17 22 45.1	**-0.3**
	40nm,0.2s							
MABI	**Malga Bissina**	**1.50**	**240**	Pn	**Pb**	17 22 27.1	**-0.1**
MABI				Sn	**Sb**	17 22 46.1	**-0.2**
	14nm,0.1s							
MABI	**Malga Bissina**	**1.50**	**240**	*i* Pg	**Pb**	17 22 27.1	**-0.1**
	64nm,0.1s							
MABI				Sn	**Sb**	17 22 46.1	**-0.2**
	14nm,0.1s							
MABI	**Malga Bissina**	**1.50**	**240**	*i* Pg	**Pb**	17 22 27.1	**-0.1**
	64nm,0.1s							
OBKA	**Obir**	**1.53**	**101**	*e*Pg	**Pg**	17 22 28.2	**-0.4**
	2.8nm,0.2s							
OBKA				*e*Sg	**Sg**	17 22 49.6	**+1.1**
	8.2nm,0.3s							
OBKA	**Obir**	**1.53**	**101**	Pg	**Pg**	17 22 28.2	**-0.4**
	2.8nm,0.2s							
OBKA				Sg	**Sg**	17 22 49.6	**+1.1**
	8.2nm,0.3s							
MOA	**Molln**	**1.64**	**51**	*e*Pg	**Pg**	17 22 32.1	**+1.3**
	3.8nm,0.2s							
MOA				*i* Sg	**Sg**	17 22 53.5	**+1.4**
	5.8nm,0.2s							
MOA	**Molln**	**1.64**	**51**	Pg	**Pg**	17 22 32.1	**+1.3**
	3.8nm,0.2s							
MOA				Sg	**Sg**	17 22 53.5	**+1.4**
	5.8nm,0.2s							
DAVA	**Damuels**	**1.77**	**286**	*e*Pg	**Pg**	17 22 33.5	**+0.3**
	6.2nm,0.2s							
DAVA				*e*Sg	**Sg**	17 22 58.2	**+2.1**
	7.3nm,0.2s							
DAVA	**Damuels**	**1.77**	**286**	Pg	**Pg**	17 22 33.5	**+0.3**
	6.2nm,0.2s							
DAVA				Sg	**Sg**	17 22 58.2	**+2.1**
	7.3nm,0.2s							
SOKA	**Soboth**	**1.83**	**94**	*e*Pg	**Pb**	17 22 33.4	**+0.6**
	0.8nm,0.2s,SNR=4.2							
SOKA				*e*Sg	**Sg**	17 22 58.8	**+0.6**
	2.6nm,0.3s							
SOKA	**Soboth**	**1.83**	**94**	Pg	**Pb**	17 22 33.4	**+0.6**
	0.8nm,0.2s,SNR=4.2							
SOKA				Sg	**Sg**	17 22 58.8	**+0.6**
	2.6nm,0.3s							
KHC	**Kasperske Hory**	**2.44**	**19**	*e*PN	**Pb**	17 22 41.4	**-1.8**
KHC				*e*PG	Pg	17 22 50.0	+3.9
KHC				*e*SN	**Sb**	17 23 11.7	**-1.6**
KHC				*e*SG	**Sg**	17 23 17.0	**-0.8**
	comp=Z,4.8nm,0.4s							
KHC	**Kasperske Hory**	**2.44**	**19**	Pn	**Pb**	17 22 41.4	**-1.8**
KHC				Sn	**Sb**	17 23 11.7	**-1.6**
KHC				Sg	**Sg**	17 23 17.0	**-0.8**
	4.8nm,0.4s							
PRU	**Pruhonice**	**3.48**	**24**	*e*SG	**Sg**	17 23 49.0	**-1.9**
	comp=Z,2.5nm,0.3s							
PRU	**Pruhonice**	**3.48**	**24**	Sg	**Sg**	17 23 49.0	**-1.9**
	2.5nm,0.3s							

IDC 29 17:23:11.7±3.6, 57°16S×145°49W, h0km, mb3.7/2, mb1 3.9/2, mb1mx3.6/25, mbtmp3.7/2, Error ellipse: s-maj=288.5km s-min=52.8km az=161.0, Pacific-Antarctic Ridge

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ASAR	**Alice Springs**	**65.40**	**264**	P	P	17 33 56.3	+0.3
	1.2nm,0.7s,baz=138,slow=6.3,SNR=19						
H01W1	**Cape Leeuwin H**	**66.61**	**242**	T	T	18 48 30.9	
	baz=142,slow=76,SNR=7.9						
H01W2	**Cape Leeuwin H**	**66.62**	**242**	T	T	18 48 30.1	
	baz=142,slow=76,SNR=13						
H01W3	**Cape Leeuwin H**	**66.63**	**242**	T	T	18 48 30.9	
	baz=142,slow=76,SNR=10						
WRA	**Warramunga Arr**	**68.17**	**267**	P	P	17 34 13.8	+0.2
	0.4nm,0.7s,baz=146,slow=5.6,SNR=4.3						
H10S3	**ASCENSION HYDR**	**102.85**	**130**	T	T	19 33 26.1	
	baz=207						
H10S2	**ASCENSION HYDR**	**102.85**	**130**	T	T	19 33 32.7	
	baz=207						
H10S1	**ASCENSION HYDR**	**102.86**	**130**	T	T	19 33 33.8	
	baz=207						
H10N3	**ASCENSION HYDR**	**103.92**	**130**	T	T	19 34 47.0	
	baz=208						
H10N1	**ASCENSION HYDR**	**103.92**	**130**	T	T	19 34 45.0	
	baz=208						
H10N2	**ASCENSION HYDR**	**103.93**	**130**	T	T	19 34 46.1	
	baz=208						
ILAR	**Eielson Array**	**121.61**	**359**	PKP	PKPdf	17 42 05.9	+0.3
	0.3nm,0.8s,baz=222,slow=1.2,SNR=3.2						
MKAR	**Makanchi Array**	**149.41**	**271**	PKPbc	PKPbc	17 42 59.5	-2.0
	0.6nm,0.9s,baz=108,slow=3.1,SNR=4.1						
ZALV	**Zalesovo Beam**	**151.89**	**285**	PKPbc	PKPbc	17 43 07.9	+0.8
	0.3nm,0.3s,baz=127,slow=0.7,SNR=3.7						
ZALV				PKPab	PKPab	17 43 15.0	-1.4
	0.4nm,0.5s,baz=24,slow=4.9,SNR=3.4						

*CSEM **29** 17:41:05.9, 38°.65N×29°.22W, h3km, ML2.7*
PDA 29 17:41:05.9±0.9, 38°.65N×29°.22W, h3km±4km, MD3.5, ML2.7, Error ellipse: s-maj=7.7km s-min=5.7km az=18.0, Azores Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PCED	**Cedros**	**0.41**	**92**	*e*P	Pg	17 41 13.0	-0.8
PCED				*e*S	Sg	17 41 18.7	-0.4
PCED	**Cedros**	**0.41**	**92**	*e*P	Pg	17 41 13.0	-0.8
PCED				*e*S	Sg	17 41 18.7	-0.4
PCED				A	A	17 41 21.3	
	415nm,0.3s						
CALA	**Caldeira**	**0.41**	**99**	*e*P	Pg	17 41 13.7	-0.2
CALA				*e*S	Sg	17 41 18.9	-0.3
CALA	**Caldeira**	**0.41**	**99**	*e*P	Pg	17 41 13.7	-0.2
CALA				*e*S	Sg	17 41 18.9	-0.3
HOR	**Horta**	**0.48**	**104**	*e*P	Pg	17 41 14.4	-0.7
HOR				*e*S	Sg	17 41 20.2	-1.1
HOR	**Horta**	**0.48**	**104**	*e*P	Pg	17 41 14.4	-0.7
HOR				*e*S	Sg	17 41 20.2	-1.1
HOR				A	A	17 41 21.8	
	603nm,0.3s						
PICO	**Pico**	**0.64**	**103**	*e*P	Pg	17 41 17.0	-1.2
PICO				*e*S	Sg	17 41 25.4	-1.1
PICO	**Pico**	**0.64**	**103**	*e*P	Pg	17 41 17.0	-1.2
PICO				*e*S	Sg	17 41 25.4	-1.1
PICO				A	A	17 41 26.3	
	520nm,0.3s						
ROSA	**Rosais**	**0.77**	**84**	*e*P	Pg	17 41 18.5	-2.2
ROSA				*e*S	Sg	17 41 28.4	-2.3
ROSA	**Rosais**	**0.77**	**84**	*e*P	Pg	17 41 18.5	-2.2
ROSA				*e*S	Sg	17 41 28.4	-2.3
ROSA				A	A	17 41 28.6	
	263nm,0.4s						
PMAN	**Manadas**	**0.89**	**91**	*e*P	Pg	17 41 20.0	-2.9
PMAN				*e*S	Sg	17 41 31.1	-3.3
PMAN	**Manadas**	**0.89**	**91**	*e*P	Pg	17 41 20.0	-2.9
PMAN				*e*S	Sg	17 41 31.1	-3.3
PMAN				A	A	17 41 34.2	
	114nm,0.4s						
PGRA	**Graciosa**	**1.04**	**68**	*e*S	Sg	17 41 34.8	-4.6
PGRA	**Graciosa**	**1.04**	**68**	*e*S	Sg	17 41 34.8	-4.6
PGRA				A	A	17 41 36.6	
	51nm,0.3s						

*ISCJB **29** 17:41:28.3±1.0, 23°.8N±0°.3×95°.0E±0°.2, h10km, mb3.4/3, Error ellipse: s-maj=42.7km s-min=11.9km az=33.1*
*IDC **29** 17:41:29.8±4.3, 24°.3S×95°.77E, h0km, mb3.4/3, mb1 3.6/3, mb1mx3.2/33, mbtmp3.4/3, Error ellipse: s-maj=439.0km s-min=27.5km az=59.0*
ISC 29 17:41:30.6±1.3, 23°.9N±0°.3×94°.9E±0°.2, h10km, n9, σ2°.54/10, mb3.5/3, Myanmar-India border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SHL	**Shillong**	**3.18**	**302**	*e*PN	**Pn**	17 42 24.0	**+3.0**
SHL				*i* SN	**Sn**	17 42 55.0	**-4.1**
GUN	**Gumba**	**9.03**	**298**	*e*P	**Pn**	17 43 43.1	**+1.7**
	4.6nm,0.2s						
PKIN	**Phulchoki**	**9.29**	**295**	*e*P	**Pn**	17 43 47.7	**+2.7**
	3.9nm,0.2s						
KKN	**Kakani**	**9.47**	**296**	*e*P	**Pn**	17 43 49.3	**+2.0**
	5.5nm,0.2s						
GKN	**Gorkha**	**10.07**	**296**	*e*P	**Pn**	17 43 57.1	**+1.5**
	6.4nm,0.2s						
KOLN	**Koldanda**	**10.86**	**293**	*e*P	**Pn**	17 44 07.4	**+1.0**
	2.4nm,0.2s						
MKAR	**Makanchi Array**	**24.98**	**339**	P	**P**	17 46 54.1	**-0.3**
	0.3nm,0.5s,baz=149,slow=9.4,SNR=6.0						
WRA	**Warramunga Arr**	**58.12**	**135**	P	**P**	17 51 23.7	**-1.0**
	0.3nm,0.6s,baz=326,slow=7.2,SNR=4.9						
ASAR	**Alice Springs**	**60.59**	**138**	P	**P**	17 51 41.0	**-0.7**
	0.3nm,0.5s,baz=318,slow=6.4,SNR=12						

WEL 29 17:48:02.4±0.1, 43°.59S×172°.42E, h10km, ML3.8/15, 10C-3D, Error ellipse: s-maj=0.7km s-min=0.6km az=0.0, South Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CRLZ	**Canterbury Las**	**0.15**	**85**	⇑PG	Pg	17 48 05.5	-0.1
CRLZ				SG	Sg	17 48 08.1	+0.2
CRLZ				AML	AML	17 48 08.4	
MQZ	**McQueen's Vall**	**0.21**	**125**	⇓*e*PG	Pg	17 48 06.7	+0.1
MQZ				SG	Sg	17 48 09.8	+0.2
MQZ				AML	AML	17 48 10.2	
OXZ	**Oxford**	**0.38**	**313**	⇓P*	Pg	17 48 10.0	+0.1
RPZ	**Rata Peaks**	**1.00**	**262**	P*	Pg	17 48 21.3	-0.2
RPZ				AML	AML	17 48 37.1	
RPZ				AML	AML	17 48 38.4	
INZ	**Inchbonnie**	**1.12**	**320**	P*	Pb	17 48 22.9	-0.9
WVZ	**Waitaha Valley**	**1.33**	**292**	⇓PN	Pn	17 48 26.4	-0.5
WVZ				AML	AML	17 48 46.7	
WVZ				AML	AML	17 48 49.0	
KHZ	**Kahutara**	**1.43**	**35**	⇑PN	Pn	17 48 26.9	-1.4
LBZ	**Lake Benmore**	**1.80**	**243**	⇑PN	Pn	17 48 32.6	-0.9
LBZ				AML	AML	17 49 08.9	
LBZ				AML	AML	17 49 08.9	
THZ	**Tophouse**	**1.86**	**11**	⇑PN	Pn	17 48 33.1	-1.2
THZ				AML	AML	17 49 08.1	
THZ				AML	AML	17 49 08.5	
FOZ	**Fox Glacier**	**1.90**	**271**	PN	Pn	17 48 35.0	+0.2
FOZ				AML	AML	17 48 59.6	
FOZ				AML	AML	17 49 02.0	
DSZ	**Denniston Nort**	**1.90**	**346**	⇑PN	Pn	17 48 34.3	-0.5
DSZ				AML	AML	17 49 04.4	
DSZ				AML	AML	17 49 06.5	
ODZ	**Otahua Downs**	**1.94**	**221**	⇑PN	Pn	17 48 34.0	-1.3
ODZ				AML	AML	17 49 07.7	
ODZ				AML	AML	17 49 12.4	
BSWZ	**Blackbirch Sta**	**2.16**	**30**	PN	Pn	17 48 37.4	-1.0
TUWZ	**Tuamarina**	**2.43**	**28**	PN	Pn	17 48 41.4	-0.7
NNZ	**Nelson**	**2.47**	**17**	PN	Pn	17 48 42.0	-0.7
HHSZ	**Highcliff Hill**	**2.64**	**209**	PN	Pn	17 48 43.7	-1.2
WKZ	**Wanaka**	**2.74**	**242**	PN	Pn	17 48 45.1	-1.3
WKZ				AML	AML	17 49 36.7	
WKZ				AML	AML	17 49 41.3	
QRZ	**Quartz Range**	**2.76**	**2**	PN	Pn	17 48 45.7	-0.9
QRZ				AML	AML	17 48 57.3	
QRZ				AML	AML	17 49 37.8	
EAZ	**Earnscleugh**	**2.77**	**233**	⇑PN	Pn	17 48 45.5	-1.3
EAZ				AML	AML	17 49 36.7	
EAZ				AML	AML	17 49 39.9	
WEL	**Wellington**	**2.88**	**38**	PN	Pn	17 48 47.1	-1.3
TUZ	**Tuapeka**	**3.09**	**219**	⇑PN	Pn	17 48 49.8	-1.3
TUZ				AML	AML	17 49 51.3	
TUZ				AML	AML	17 49 52.3	
KIW	**Kapiti Island**	**3.29**	**35**	PN	Pn	17 48 52.8	-1.1
MTW	**Mount Morrison**	**3.33**	**44**	PN	Pn	17 48 52.1	-2.4
MSZ	**Milford Sound**	**3.41**	**250**	PN	Pn	17 48 54.3	-1.2
MSZ				AML	AML	17 49 54.9	
MSZ				AML	AML	17 49 56.3	
OGWZ	**Otaki Gorge**	**3.44**	**37**	PN	Pn	17 48 54.9	-1.1
MLZ	**Mavora Lakes**	**3.56**	**239**	PN	Pn	17 48 56.0	-1.6
MRZ	**Mangatainoka R**	**3.75**	**40**	PN	Pn	17 48 57.8	-2.5
SYZ	**Scrubby Hill**	**3.75**	**217**	⇑PN	Pn	17 48 59.1	-1.2
SYZ				AML	AML	17 50 10.1	
SYZ				AML	AML	17 50 15.0	
WHZ	**Wether Hill Ro**	**3.93**	**233**	⇑PN	Pn	17 49 00.5	-2.3
BFZ	**Birch Farm**	**4.07**	**46**	PN	Pn	17 49 02.1	-2.4
DCZ	**Deep Cove**	**4.21**	**242**	PN	Pn	17 49 04.7	-1.8
WAZ	**Wanganui**	**4.29**	**27**	PN	Pn	17 49 11.2	+3.6
PREZ	**Palmer Road**	**4.44**	**18**	*e*PN	Pn	17 49 11.5	+1.8
APZ	**The Paps**	**4.51**	**222**	PN	Pn	17 49 08.9	-1.8
VRZ	**Vera Road**	**4.79**	**22**	PN	Pn	17 49 15.0	+0.4
PYZ	**Puysegur Point**	**4.83**	**236**	PN	Pn	17 49 12.6	-2.4

MEX 29 17:49:00.5±0.3, 14°.40N×92°.96W, h29km±17km, MD3.7, Near coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PCIG		**1.32**	**349**	*i* P	Pn	17 49 20.7	-2.2
PCIG				*i* S	Sn	17 49 36.5	-3.0
CCIG	**Comitan**	**2.03**	**23**	*i* P	Pn	17 49 30.5	-2.5
CCIG				*i* S	Sn	17 49 55.1	-2.4

*ISCJB **29** 18:10:00.4±0.4, 43°.65N±0°.03×105°.19W±0°.04, h0km, mb4.0/1, MS2.9/1, Error ellipse: s-maj=4.7km s-min=4.3km az=143.4*
*IDC **29** 18:10:00.9±0.9, 43°.46N×105°.39W, h0km, mb3.8/1, mb1 3.9/6, mb1mx3.5/51, mbtmp3.6/6, ML3.7/5, MS3.0/4, Ms1 3.0/4, ms1mx2.6/57, Error ellipse: s-maj=18.2km s-min=9.0km az=155.0*
*NEIC **29** 18:10:02.5±0.3, 43°.65N×105°.23W, h0km, ML3.6, Error ellipse: s-maj=3.8km s-min=3.4km az=52.0, Suspected Mining explosion.*
NEIC 73 km [45 miles] SSE of Gillette.
ISC 29 18:10:01.6±0.7, 43°.57N±0°.05×105°.23W±0°.05, h0km, n71, σ1°.35/65, Wyoming

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RSSD	**Black Hills**	**1.02**	**57**	*e*Pg	**Pg**	18 10 21.3	**+0.2**
K22A	**Casper**	**1.32**	**226**	*e*Pn	**Pg**	18 10 26.7	**-0.3**
PHWY	**Pilot Hill**	**2.28**	**184**	*e*Pn	**Pn**	18 10 43.3	**-0.4**
N23A	**Red Feather La**	**2.73**	**192**	*e*Pn	**Pn**	18 10 49.5	**+2.6**
BW06	**Boulder Array**	**3.27**	**257**	*e*Pn	**Pn**	18 10 54.6	**+0.3**
PD31	**Pinedale Array**	**3.27**	**257**	*e*Pn	**Pn**	18 10 54.6	**+0.4**
PDAR	**Pinedale Array**	**3.27**	**257**	Pn	**Pn**	18 10 54.7	**+0.4**
	7.3nm,0.3s,baz=82,slow=15,SNR=19						
PDAR				Lg	Lg	18 11 39.8	
	31nm,0.3s,baz=78,slow=32,SNR=7.4						
OGNE	**Ogallala**	**3.54**	**137**	*e*Pn	Pn	18 11 01.3	+3.5
ISCO	**Idaho Springs**	**3.78**	**185**	*e*Pn	Pn	18 11 04.9	+3.5
LKWY	**Lake**	**3.86**	**287**	*e*Pn	**Pn**	18 11 03.2	**+0.8**
GCMT	**Greycliff**	**3.87**	**307**	*e*Pn	**Pn**	18 11 02.4	**0.0**
LOHW	**Long Hollow**	**3.91**	**272**	*e*Pn	**Pn**	18 11 04.4	**+1.4**
H17A	**Grant Village**	**3.95**	**284**	*e*Pn	**Pn**	18 11 05.2	**+1.6**
FLWY	**Flagg Ranch**	**3.99**	**279**	*e*Pn	**Pn**	18 11 04.1	**-0.1**
MOOW	**Moose Ponds**	**4.01**	**274**	*e*Pn	**Pn**	18 11 05.3	**+0.9**
SNOW	**Snow King Moun**	**4.02**	**270**	*e*Pn	**Pn**	18 11 05.8	**+1.1**
REDW	**Red Top Meadow**	**4.10**	**269**	*e*Pn	**Pn**	18 11 06.8	**+1.0**
O20A	**White River Ci**	**4.11**	**214**	*e*Pn	**Pn**	18 11 08.1	**+2.3**
YFT	**Old Faithful**	**4.14**	**284**	*e*Pn	**Pn**	18 11 08.2	**+2.0**
IMW	**Indian Meadow**	**4.15**	**276**	*e*Pn	**Pn**	18 11 08.9	**+2.4**
FXWY	**Fox Creek**	**4.21**	**273**	*e*Pn	**Pn**	18 11 07.9	**+0.7**
YMR	**Madison River**	**4.28**	**287**	*e*Pn	**Pn**	18 11 09.3	**+1.2**
AHID	**Auburn Hatcher**	**4.37**	**261**	*e*Pn	**Pn**	18 11 10.2	**+0.8**
SMCO	**Snowmass**	**4.58**	**197**	*e*Pn	**Pn**	18 11 15.3	**+2.8**
QLMT	**Earthquake Lak**	**4.63**	**288**	*e*Pn	**Pn**	18 11 13.6	**+0.6**
DGMT	**Dagmar**	**4.95**	**8**	*e*Pn	**Pn**	18 11 18.8	**+1.6**
KSCO	**Kaye Shedlock'**	**4.96**	**156**	*e*Pn	**Pn**	18 11 19.2	**+1.8**
BOZ	**Bozeman (W)**	**5.02**	**297**	*e*Pb	**Pb**	18 11 31.1	**+0.7**
HWUT	**Hardware Ranch**	**5.08**	**249**	*e*Pn	**Pn**	18 11 19.7	**+0.7**
TCUT	**Toone Canyon**	**5.20**	**244**	*e*Pn	**Pn**	18 11 20.1	**-0.7**
P18A	**Preston Nutter**	**5.45**	**225**	*e*Pn	**Pn**	18 11 25.7	**+1.4**
EGMT	**Eagleton**	**5.46**	**326**	*e*Pb	**Pb**	18 11 39.1	**+1.3**
JLIJ	**Jordanelle**	**5.50**	**239**	*e*Pn	**Pn**	18 11 26.9	**+1.9**
DLMT	**Dillon**	**5.57**	**291**	*e*Pn	**Pn**	18 11 26.8	**+1.0**
LRM	**Limekiln Ridge**	**5.62**	**296**	*e*Pn	**Pn**	18 11 27.2	**+0.6**
MCMT	**McKenzie Canyo**	**5.62**	**286**	*e*Pn	**Pn**	18 11 27.4	**+0.8**
HRY	**Holter Researc**	**5.63**	**306**	*e*Pn	**Pn**	18 11 26.6	**0.0**
CTU	**Camp Tracy**	**5.64**	**242**	*e*Pn	**Pn**	18 11 28.3	**+1.5**
SPUT	**South Promonto**	**5.80**	**250**	*e*Pn	**Pn**	18 11 30.7	**+1.6**
P17A	**Butcher Ranch,**	**5.82**	**227**	*e*Pn	**Pn**	18 11 32.0	**+2.7**
HVU	**Hansel Valley**	**5.85**	**255**	*e*Pn	**Pn**	18 11 30.7	**+1.1**
S22A	**4UR Ranch, Cre**	**5.95**	**192**	*e*Pn	**Pn**	18 11 33.4	**+2.3**
MPU	**Maple Canyon**	**5.96**	**236**	*e*Pn	**Pn**	18 11 33.5	**+2.3**
SRU	**San Rafael Swe**	**5.98**	**224**	*e*Pn	**Pn**	18 11 33.3	**+1.8**
TMUT	**Trail Mountain**	**6.20**	**228**	*e*Pn	**Pn**	18 11 36.2	**+1.6**
ECSD	**EROS Data Cent**	**6.25**	**86**	*e*Pn	**Pn**	18 11 33.6	**-1.4**
NLU	**North Lily Min**	**6.27**	**237**	*e*Pn	**Pn**	18 11 36.6	**+1.1**
BGU	**Big Grassy Mou**	**6.37**	**248**	*e*Pn	**Pn**	18 11 37.2	**+0.5**
T25A	**Trinidad**	**6.46**	**174**	*e*Pn	**Pn**	18 11 39.5	**+1.4**
CHMT	**Chamberlain Mo**	**6.58**	**303**	*e*Pn	**Pn**	18 11 38.8	**-0.9**
DUG	**Dugway, Tooele**	**6.59**	**242**	*e*Pn	**Pn**	18 11 41.2	**+1.4**
MSU	**Marysvale**	**7.29**	**228**	*e*Pn	**Pn**	18 11 51.1	**+1.6**
SWMT	**Swartz Lake**	**7.31**	**306**	*e*Pn	**Pn**	18 11 49.0	**-0.7**
YBMT	**Yellow Bay**	**7.50**	**308**	*e*Pn	**Pn**	18

STKA	**Stephens Creek**	**26.76**	**237**	P		**P**	**18 20 35.0**	**+2.1**
	0.8nm,0.7s,baz=63,slow=14,SNR=2.5							
WRA	**Warramunga Arr**	**31.68**	**263**	P		**P**	**18 21 15.3**	**-1.5**
	0.5nm,0.7s,baz=85,slow=8.4,SNR=6.6							
ASAR	**Alice Springs**	**31.96**	**256**	P		**P**	**18 21 19.1**	**-0.2**
	1.0nm,0.6s,baz=85,slow=8.7,SNR=14							
FITZ	**Fitzroy Crossi**	**40.08**	**265**	P		**P**	**18 22 28.5**	**-0.2**
	2.3nm,0.9s,baz=163,slow=7.1,SNR=3.6							
NVAR	**Mina Array Bea**	**89.81**	**49**	P		**P**	**18 27 52.6**	**+0.6**
	0.8nm,0.7s,baz=225,slow=8.9,SNR=3.9							
ILAR	**Eielson Array**	**90.78**	**18**	P		**P**	**18 27 54.3**	**-1.3**
	0.5nm,0.8s,baz=215,slow=7.1,SNR=4.3							
GERES	**GERESS Array B**	**144.13**	**331**	PKP		**PKPab**	**18 34 26.7**	**+0.3**
	0.4nm,0.6s,baz=300,slow=1.1,SNR=3.8							

*NEIC **29** 18:14:54.4, 32.01N×115.03W, h6km, ML2.8(PAS), ML2.9(ECX), After ECX.*

ECX 29 18:14:54.4±0.5, 32.01N×115.03W, h10km, MD2.7, ML2.9, 2D, California-Baja California border region

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
CPBX	**Cerro Prieto**	**0.47**	**330**	*e*P		Pg	18 15 02.5	-1.0
CPBX				*e*S		Sg	18 15 09.6	-0.1
ECBX	**El Chinero**	**0.54**	**182**	*e*P		Pg	18 15 00.9	-4.0
ECBX				*e*S		Sg	18 15 08.4	-3.6
SPIG	**San Pedro Mart**	**1.03**	**201**	*e*P		Pg	18 15 12.7	-1.7
SPIG				*e*S		Sg	18 15 26.2	-1.6
SPX	**San Pedro Mart**	**1.03**	**201**	*e*P		Pg	18 15 12.6	-1.8
SPX				*e*S		Sg	18 15 26.8	-1.0
SPX				⇓*e*			18 15 27.9	
SPX					AML	AML	18 15 27.9	
	comp=E,196nm,0.3s							
SPX				⇓*e*			18 15 27.9	
GLA	**Glamis**	**1.05**	**9**	*e*Pg		Pg	18 15 10.7	-3.9
GLA				*e*Sg		Sg	18 15 25.3	-3.0
113A	**Mohawk Valley,**	**1.31**	**54**	*e*Pg		Pn	18 15 15.1	-3.6
113A				*e*Sn		Sb	18 15 30.9	-4.9
CBX	**Cerro Bola**	**1.42**	**283**	*e*P		Pn	18 15 19.1	-1.3
CBX				*e*S		Sn	18 15 37.7	-1.5
CBX				*e*			18 15 38.6	
CBX					AML	AML	18 15 38.6	
	comp=N,233nm,0.4s							
BAR	**Barrett**	**1.54**	**296**	*e*Pn		Pn	18 15 18.9	-3.1
BAR				*e*Sn		Sn	18 15 39.8	-2.3
Y12C	**Blythe**	**1.78**	**14**	*e*Pn		Pn	18 15 23.5	-1.8
PFO	**Pinyon Flats O**	**1.99**	**323**	*e*Pn		Pn	18 15 27.7	-0.6
Y14A	**Wickenburg**	**2.56**	**41**	*e*Pn		Pn	18 15 34.5	-1.6
W13A	**Hualapai Mount**	**3.22**	**17**	*e*Pn		Pn	18 15 42.7	-2.6
W13A				*e*Sn		Sb	18 16 33.0	+1.8
WASM	**Alta Sierra Ca**	**4.73**	**323**	*e*Lg		Lg	18 17 26.2	
EKU	**East Kanab**	**5.46**	**22**	*e*Pn		Pn	18 16 17.1	+1.1

IDC 29 18:15:30.3±7.5, 6.23S×146.38E, h0km, mb3.4/3, mb1 3.6/5, mb1mx3.4/42, mbtmp3.4/5, ML3.4/1, Error ellipse: s-maj=110.2km s-min=37.5km az=38.0, Eastern New Guinea region

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
PMG	**Port Moresby**	**3.25**	**166**	Pn		Pn	18 16 23.2	+0.7
	2.2nm,0.3s,baz=341,slow=8.4,SNR=22							
PMG				Sn		Sn	18 17 02.5	+0.5
	2.4nm,0.3s,baz=173,slow=20,SNR=11							
WRA	**Warramunga Arr**	**17.96**	**220**	P		Pn	18 19 41.7	0.0
	0.1nm,0.3s,baz=45,slow=12,SNR=7.9							
ASAR	**Alice Springs**	**21.09**	**213**	P		P	18 20 15.8	-0.7
	0.3nm,0.3s,baz=54,slow=9.1,SNR=18							
FITZ	**Fitzroy Crossi**	**23.43**	**238**	P		P	18 20 41.2	-0.2
	1.2nm,0.5s,baz=49,slow=11,SNR=12							
STKA	**Stephens Creek**	**25.91**	**189**	P		P	18 21 04.7	+0.5
	0.8nm,0.5s,baz=12,slow=9.3,SNR=3.3							

*NIED **29** 18:22:00, 39.40N×142.70E, h32km, Mw4.2 Best double couple: M◎2.37000×10^15 NP1:φs188.00000°, δ23.00000°, λ71.00000°. NP2:φs28.00000°, δ69.00000°, λ98.00000°.*
*ISCJB **29** 18:22:53.1±0.3, 39.50N±0.03×142.80E±0.04, h29km, mb4.2/46, MS3.5/15, Error ellipse: s-maj=5.9km s-min=3.3km az=39.7*
*JMA **29** 18:22:54.8±0.1, 39.44N×142.69E, h33km±1km, M3.9*
*MOS **29** 18:22:54.9±1.1, 39.56N×142.74E, h39km, mb4.4/22, Error ellipse: s-maj=9.4km s-min=6.0km az=90.8*
*BJI **29** 18:22:54.3, 39.50N×142.59E, h33km, mb4.5/27, mB4.7/13, Ms4.4/6, Ms7 4.2/6*
*IDC **29** 18:22:58.1±2.2, 39.48N×142.60E, h52km±20km, mb3.8/22, mb1 3.9/26, mb1mx3.8/47, mbtmp4.1/26, ML3.5/3, MS3.4/18, Ms1 3.4/18, ms1mx3.2/50, Error ellipse: s-maj=17.3km s-min=12.4km az=101.0*
*NEIC **29** 18:22:59.2±0.8, 39.55N×142.55E, h62km±6km, mb4.6/11, Error ellipse: s-maj=9.6km s-min=6.1km az=113.0*

ISC 29 18:22:55.2±0.5, 39.50N±0.04×142.69E±0.05, h29km, n138, σ1§34/127, mb4.2/46, MS3.5/15, 7C-3D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
MIYJ	**Miyakonagasawa**	**0.68**	**277**	P		**Pb**	**18 23 08.0**	**-0.6**
MIYJ				S		**Sb**	**18 23 17.6**	**-0.1**
JTH	**Tanohata**	**0.78**	**305**	P		**Pb**	**18 23 09.6**	**-0.6**
OFUJ	**Ofunato**	**0.90**	**243**	P		**Pn**	**18 23 10.7**	**-1.2**
JOM	**Ohasama**	**1.08**	**269**	P		**Pn**	**18 23 14.2**	**-0.3**
JKZ	**Kuzumaki**	**1.16**	**295**	P		**Pn**	**18 23 15.7**	**+0.2**
JKZ				S		**Sb**	**18 23 30.7**	**-0.6**
JANG	**Nango**	**1.26**	**314**	P		**Pn**	**18 23 16.9**	**0.0**
JMK	**Ichinoseki**	**1.27**	**245**	P		**Pn**	**18 23 16.4**	**-0.6**
JMK				S		**Sn**	**18 23 32.4**	**-0.6**
JIO	**Ouri**	**1.48**	**226**	P		**Pn**	**18 23 18.8**	**-1.0**
JIO				S		**Sn**	**18 23 36.8**	**-1.4**
ERM	**Erimo**	**2.54**	**8**	*i* P		**Pn**	**18 23 34.7**	**+0.2**
ERM	**Erimo**	**2.54**	**8**	*e*Pn		**Pn**	**18 23 35.9**	**+1.4**
MJAR	**Matsushiro Arr**	**4.61**	**232**	P		**Pn**	**18 24 05.2**	**+2.2**
	3.6nm,0.3s,baz=35,slow=12,SNR=76							
MJAR				LR		LR	18 25 57.0	
	comp=Z,308nm,20.7s,baz=60,slow=40							
MJB9	**Matsu-Tunnel**	**4.61**	**232**	*e*Pn		**Pn**	**18 24 05.2**	**+2.3**
MAJO	**Matsushiro**	**4.61**	**232**	*i* P		**Pn**	**18 24 05.1**	**+2.2**
MAJO	**Matsushiro**	**4.61**	**232**	*e*Pn		**Pn**	**18 24 05.2**	**+2.3**
MAT	**Matsushiro**	**4.61**	**232**	P		**Pn**	**18 24 04.8**	**+1.9**
MAT				S		**Sn**	**18 24 57.2**	**+1.7**
ASAJ	**Asahikawa**	**4.62**	**359**	P		**Pn**	**18 24 04.2**	**+1.2**
	1.2nm,0.3s,baz=200,slow=18,SNR=16							
ASAJ				S		**Sn**	**18 24 56.4**	**+0.7**
	3.0nm,0.3s,baz=287,slow=10,SNR=3.6							
ASAJ	**Asahikawa**	**4.62**	**359**	*e*Pn		**Pn**	**18 24 04.8**	**+1.7**
ASAJ				S		**Sn**	**18 24 56.4**	**+0.7**
YUK	**Yuzh-Kuril'sk**	**5.12**	**27**	*e*P		**Pn**	**18 24 09.4**	**-0.4**
YUK				*e*S		**Sn**	**18 25 05.6**	**-2.3**
YUK				pmax	pmax			
	comp=Z,92nm,0.3s							
YUK				pmax	pmax			
	comp=N,57nm,0.2s							
YUK				pmax	pmax			
	comp=E,35nm,0.3s							
SHO	**Shikotan**	**5.36**	**34**	*e*P		**Pn**	**18 24 11.0**	**-2.1**
SHO				*e*S		Sn	18 25 08.1	-5.7
SHO				pmax	pmax			
	comp=N,45nm,0.9s							
SHO				pmax	pmax			
	comp=E,38nm,0.9s							
SHO				pmax	pmax			
	comp=Z,50nm,0.9s							
INU	**Inuyama**	**6.13**	**229**	*e*Pn		**Pn**	**18 24 25.1**	**+1.3**
JHJ	**Hachijo jima 2**	**6.78**	**201**	P		**Pn**	**18 24 33.2**	**+0.4**
	comp=Z,3.6nm,0.3s,baz=246,slow=20,SNR=5.3							
JHJ				S		Sn	18 25 42.3	-6.7
	comp=Z,4.0nm,0.3s,baz=66,slow=20,SNR=2.6							
KUR	**Kuril'sk**	**6.89**	**32**	*e*P		**Pn**	**18 24 34.1**	**-0.1**
KUR				*e*S		**Sn**	**18 25 47.6**	**-4.1**
KUR				pmax	pmax			
	comp=N,11nm,0.8s							
KUR				pmax	pmax			
	comp=E,14nm,0.8s							
KUR				pmax	pmax			
	comp=Z,15nm,0.8s							
KUR				smax	smax			
	comp=E,32nm,0.4s							
KUR				smax	smax			
	comp=N,12nm,0.2s							
YSS	**Yuzh-Sakhalins**	**7.45**	**0**	*e*P		**Pn**	**18 24 43.5**	**+1.6**
YSS				pmax	pmax			
	comp=Z,20nm,1.5s							
USRK	**Ussuriysk Ar.**	**9.27**	**304**	P		**Pn**	**18 25 09.6**	**+2.8**
	comp=Z,0.3nm,0.3s,baz=114,slow=14,SNR=12							
USRK				LR		LR	18 28 35.6	
	comp=Z,397nm,19.4s,baz=124,slow=37							
JNU	**Nakatsue**	**11.45**	**240**	LR		LR	18 30 15.1	
	comp=Z,190nm,21.7s,baz=119,slow=38							
KSRS	**Korea Array**	**11.76**	**265**	P		Pn	18 25 45.5	+4.6
	comp=Z,0.2nm,0.3s,baz=85,slow=14,SNR=5.3							
KSRS				LR		LR	18 29 57.6	
	comp=Z,145nm,18.2s,baz=70,slow=36							
KS15	**Wonju Array Si**	**11.79**	**265**	*e*Pn		Pn	18 25 45.5	+4.1
KSAR	**Wonju Array Be**	**11.79**	**265**	P		Pn	18 25 45.5	+4.1
KSAR	**Wonju Array Be**	**11.79**	**265**	P		Pn	18 25 45.5	+4.1
CBIJ	**Chichi jima**	**12.38**	**182**	*e*Pn		P	18 25 55.6	-5.6
KLR	**Kul'dur**	**12.48**	**325**	LR		LR	18 30 40.6	
	comp=Z,213nm,19.9s,baz=136,slow=37							
KLR	**Kul'dur**	**12.48**	**325**	*i* P		**Pn**	**18 25 49.9**	**-0.8**
CN2	**Changchun**	**13.59**	**294**	*e*P		**Pn**	**18 26 06.5**	**+0.6**
PETK	**Petropavlovsk-**	**17.06**	**32**	LR		LR	18 34 17.7	
	comp=Z,75nm,18.5s,baz=211,slow=40							
MA2	**Magadan**	**20.74**	**12**	LR		LR	18 36 03.6	
	comp=Z,36nm,18.8s,baz=137,slow=38							
HHC	**Hu-ho-hao-te**	**23.77**	**283**	*e*P		**P**	**18 28 03.8**	**-1.5**
HHC				pmax	pmax			
	comp=Z,22nm,0.7s							
HHC				pmax	pmax			
	comp=Z,67nm,7.4s							
YAK	**Yakutsk**	**23.92**	**345**	P		**P**	**18 28 05.5**	**-0.8**
	comp=Z,5.1nm,0.3s,baz=352,slow=5.7,SNR=7.3							
YAK				LR		LR	18 38 37.7	
	comp=Z,35nm,21.6s,baz=154,slow=39							
YAK	**Yakutsk**	**23.92**	**345**	*e*P		**P**	**18 28 05.5**	**-0.8**
YAK				pmax	pmax			
	comp=Z,13nm,0.8s							
YAK	**Yakutsk**	**23.92**	**345**	*e*P		**P**	**18 28 05.2**	**-1.2**
	comp=Z,12nm,0.7s							
SSLB	**Suanglung**	**24.15**	**236**	*e*P		**P**	**18 28 09.2**	**+0.3**
	comp=Z,38nm,1.8s							
SEY	**Seymchan**	**24.18**	**11**	P		**P**	**18 28 09.8**	**+1.0**
	comp=Z,7.7nm,0.9s,baz=195,slow=5.8,SNR=12							
SEY	**Seymchan**	**24.18**	**11**	*ce*P		**P**	**18 28 10.0**	**+1.2**
TPUB	**Ta-pu**	**24.71**	**236**	*e*P		**P**	**18 28 12.2**	**-1.7**
	comp=Z,86nm,1.8s							
BOD	**Bodaibo**	**26.05**	**324**	*e*P		**P**	**18 28 25.0**	**-0.8**
BOD				pmax	pmax			
	comp=Z,4.0nm,0.8s							
ULN	**Ulaanbaatar**	**26.90**	**300**	*ce*P		**P**	**18 28 33.8**	**0.0**
ULN				pmax	pmax			
	comp=Z,3.0nm,1.2s							
SONA0	**Songino Array**	**27.34**	**300**	*e*P		**P**	**18 28 35.1**	**-2.6**
	comp=Z,16nm,0.8s							
SONM	**Songino Array**	**27.34**	**300**	P		**P**	**18 28 35.1**	**-2.6**
	comp=Z,3.7nm,0.5s,baz=116,slow=9.8,SNR=2.9							
XAN	**Xi'an**	**27.49**	**269**	P		**P**	**18 28 43.3**	**+4.2**
XAN				pmax	pmax			
	comp=Z,4.0nm,0.6s							
ENH	**Enshi**	**28.62**	**262**	*e*P		**P**	**18 28 47.9**	**-1.3**
	comp=Z,7.7nm,0.9s							
H11N2	**WAKE ISLAND Hy**	**28.67**	**126**	T		T	18 59 11.3	
	baz=318,slow=75,SNR=575							
H11N1	**WAKE ISLAND Hy**	**28.68**	**126**	T		T	18 59 30.4	
	baz=318,slow=75,SNR=329							
H11N3	**WAKE ISLAND Hy**	**28.69**	**126**	T		T	18 59 23.3	
	baz=318,slow=75,SNR=396							
H11S1	**WAKE ISLAND Hy**	**29.47**	**128**	T		T	19 00 20.6	
	baz=320,slow=76,SNR=32							
H11S3	**WAKE ISLAND Hy**	**29.47**	**128**	T		T	19 00 24.4	
	baz=320,slow=76,SNR=27							
H11S2	**WAKE ISLAND Hy**	**29.49**	**128**	T		T	19 00 25.4	
	baz=320,slow=76,SNR=34							
TLY	**Talaya**	**29.56**	**307**	P		**P**	**18 28 57.8**	**+0.6**
	comp=Z,1.7nm,0.5s,baz=73,slow=2.6,SNR=4.8							
TLY	**Talaya**	**29.56**	**307**	*e*P		**P**	**18 28 57.5**	**+0.2**
TLY				pmax	pmax			
	comp=Z,3.0nm,0.7s							
TLY				MLR	MLR			
	comp=Z,95nm,17.0s							
TLY	**Talaya**	**29.56**	**307**	*e*P		**P**	**18 28 55.9**	**-1.4**
	comp=Z,2.9nm,0.7s							
ZAK	**Zakamensk**	**29.62**	**305**	*e*P		**P**	**18 28 57.6**	**-0.3**
ZAK				pmax	pmax			
	comp=Z,5.0nm,1.2s							
BILL	**Bilibino**	**31.38**	**17**	*ce*P		**P**	**18 29 15.1**	**+2.0**
BILL				pmax	pmax			
	comp=Z,3.0nm,1.2s							
CD2	**Chengdu**	**32.74**	**267**	P		**P**	**18 29 24.0**	**-1.5**
CD2				pmax	pmax			
	comp=Z,1.0nm,0.5s							
GTA	**Gaotai**	**32.88**	**284**	*e*P		**P**	**18 29 28.0**	**+1.3**
GTA				pP	sP		18 29 38.5	-0.3
GTA				sP	pP		18 29 42.3	+7.0
GTA				S	**S**		**18 34 40.8**	**-1.8**
GTA				sS	sS		18 34 56.3	-0.3
GTA				SS	**SnSn**		**18 36 38.0**	**-2.4**
GTA				pmax	pmax			
	comp=Z,4.0nm,1.2s							
GTA				pmax	pmax			
	comp=Z,36nm,5.2s							
GTA				LR	LR			
	comp=Z,95nm,15.7s							
GTA				LR	LR			
	comp=Z,160nm,16.6s							
GTA				LR	LR			
	comp=Z,220nm,19.5s							
TIXI	**Tiksi**	**32.98**	**352**	*i* P		**P**	**18 29 27.9**	**+0.8**
KMI	**Kunming**	**36.38**	**259**	P		**P**	**18 29 58.8**	**+1.6**
KMI				pmax	pmax			
	comp=Z,8.0nm,0.5s							
KMI				pmax	pmax			
	comp=Z,64nm,4.5s							
WMQ	**Urumqi**	**40.68**	**295**	*e*P		**P**	**18 30 33.0**	**0.0**
WMQ				pP	pP		18 30 42.8	+1.2
WMQ				sP	sP		18 30 46.8	+1.6
WMQ				pmax	pmax			
	comp=Z,5.0nm,0.6s							
WMQ				pmax	pmax			
	comp=Z,16nm,3.6s							
ZAA1	**Zalesovo Array**	**41.05**	**310**	*e*P		**P**	**18 30 35.7**	**-0.1**
ZALV	**Zalesovo Beam**	**41.05**	**310**	P		**P**	**18 30 35.7**	**-0.1**
	comp=Z,2.9nm,0.7s,baz=94,slow=7.3,SNR=13							
ZALV				LR		LR	18 48 24.9	
	comp=Z,130nm,19.3s,baz=73,slow=37							
CHTO	**Chiang Mai**	**42.90**	**254**	*e*P		**P**	**18 30 50.9**	**-0.4**
CHTO				pmax	pmax			
	comp=Z,2.0nm,0.8s							
CHTO	**Chiang Mai**	**42.90**	**254**	*e*P		**P**	**18 30 50.9**	**-0.4**
	comp=Z,1.8nm,0.8s							
CMAR	**Chiang Mai Arr**	**43.12**	**254**	P		**P**	**18 30 52.9**	**-0.3**
	comp=Z,0.7nm,0.7s,baz=42,slow=6.3,SNR=8.5							
CMAR				LR		LR	18 49 04.8	
	comp=Z,16nm,19.1s,baz=200,slow=36							
CMAR	**Chiang Mai Arr**	**43.12**	**254**	*ce*P		**P**	**18 30 53.5**	**+0.4**
CMAR				pmax	pmax			
	comp=Z,1.0nm,0.7s							
MK01	**Makanchi Array**	**43.71**	**300**	*e*P		**P**	**18 30 56.8**	**-0.8**
MK31	**Makanchi Array**	**43.71**	**300**	*e*P		**P**	**18 30 57.4**	**-0.2**
MK31	**Makanchi Array**	**43.71**	**300**	*e*P		**P**	**18 30 57.4**	**-0.2**
MK32	**Makanchi Array**	**43.71**	**300**	*e*P		**P**	**18 30 57.1**	**-0.4**
MKAR	**Makanchi Array**	**43.71**	**300**	P		**P**	**18 30 57.1**	**-0.4**
	comp=Z,2.0nm,0.7s,baz=86,slow=9.6,SNR=22							
MKAR				LR		LR	18 49 56.8	
	comp=Z,96nm,19.2s,baz=70,slow=37							
MKAR	**Makanchi Array**	**43.71**	**300**	*e*P		**P**	**18 30 57.5**	**-0.1**
MKAR	**Makanchi Array**	**43.71**	**300**	*e*P		**P**	**18 30 57.5**	**-0.1**
KURK	**Kurchatov**	**45.25**	**306**	P		**P**	**18 31 09.9**	**+0.2**
KURK				pmax	pmax			
	comp=Z,6.0nm,0.6s							
KURK	**Kurchatov**	**45.25**	**306**	*e*P		**P**	**18 31 09.0**	**-0.8**
	comp=Z,7.4nm,0.9s							
KURBB	**Kurchatov Arra**	**45.32**	**306**	P		**P**	**18 31 09.9**	**-0.4**
	comp=Z,5.2nm,0.6s,baz=81,slow=8.4,SNR=56							
ILAR	**Eielson Array**	**46.88**	**34**	P		**P**	**18 31 23.3**	**+0.9**
	comp=Z,0.8nm,0.8s,baz=270,slow=7.1,SNR=9.2							
ILB	**Eielson Array**	**46.88**	**34**	*e*P		**P**	**18 31 23.4**	**+0.9**
GUN	**Gumba**	**47.95**	**274**	*e*P		**P**	**18 31 32.2**	**+0.5**
	comp=Z,28nm,1.0s							
KKN	**Kakani**	**48.47**	**274**	*e*P		**P**	**18 31 35.7**	**+0.2**
	comp=Z,14nm,0.8s							
PKIN	**Phulchoki**	**48.49**	**274**	*e*P		**P**	**18 31 37.7**	**+2.0**
	comp=Z,2.5nm,0.5s							
DMN	**Daman**	**48.69**	**274**	*e*P		**P**	**18 31 38.4**	**+1.1**
	comp=Z,11nm,1.0s							
GKN	**Gorkha**	**48.86**	**275**	*e*P		P	18 31 34.9	-3.6
	comp=Z,12nm,0.9s							
TKM2	**Tokmak 2**	**49.38**	**297**	*e*P		**P**	**18 31 42.4**	**+0.1**
TKM2				pmax	pmax			
	comp=Z,6.0nm,0.9s							
TKM2	**Tokmak 2**	**49.38**	**297**	*e*P		**P**	**18 31 42.4**	**+0.1**
	comp=Z,5.8nm,0.9s							
BVAR	**Borovoye Array**	**49.69**	**311**	P		**P**	**18 31 44.1**	**-0.2**
	comp=Z,1.4nm,0.6s,baz=52,slow=9.3,SNR=6.7							
KOLN	**Kolʼdanda**	**49.78**	**275**	*e*P		P	18 31 41.2	-4.3
	comp=Z,4.1nm,0.6s							
HNR	**Honiara**	**51.25**	**158**	LR		LR	18 51 31.7	
	comp=Z,49nm,19.5s,baz=358,slow=33							
INK	**Inuvik**	**51.74**	**28**	P		**P**	**18 32 00.9**	**+1.5**
	comp=Z,0.3nm,0.4s,baz=227,slow=5.7,SNR=2.7							
INK	**Inuvik**	**51.74**	**28**	P		**P**	**18 32 01.0**	**+1.5**
KKAR	**Karatay Array**	**52.79**	**299**	*e*P		**P**	**18 32 07.1**	**-0.6**
KKAR	**Karatay Array**	**52.79**	**299**	*e*P		**P**	**18 32 07.1**	**-0.6**
SVE	**Sverdlovsk**	**53.99**	**318**	*e*P		**P**	**18 32 17.3**	**+1.1**
SVE				pmax	pmax			
	comp=Z,12nm,0.9s							
ARU	**Arti**	**55.20**	**318**	*d* P		**P**	**18 32 25.1**	**0.0**
ARU				S		**S**	**18 40 06.1**	**-0.2**
ARU				SS		**SS**	**18 43 43.8**	**-6.2**
ARU				pmax	pmax			
	comp=Z,8.0nm,1.0s							
ARU	**Arti**	**55.20**	**318**	*e*P		**P**	**18 32 25.0**	**0.0**
	comp=Z,6.6nm,0.9s							
ABKAR	**Akbulak array**	**57.14**	**309**	*e*P		**P**	**18 32 37.8**	**-1.2**
WR1	**Warramunga Arr**	**59.64**	**189**	*e*P		**P**	**18 32 55.9**	**-0.8**
WRA	**Warramunga Arr**	**59.64**	**189**	P		**P**	**18 32 55.9**	**-0.8**
	comp=Z,0.8nm,0.9s,baz=5.0,slow=6.7,SNR=4.3							
WRA	**Warramunga Arr**	**59.64**	**189**	*ce*P		P	18 33 02.2	+5.5
WRA				pmax	pmax			
	comp=Z,1.0nm,0.6s							
YKA	**Yellowknife Ar**	**61.18**	**31**	P		**P**	**18 33 07.4**	**+0.7**
	comp=Z,0.4nm,0.7s,baz=302,slow=6.4,SNR=9.3							
ARA0	**ARCESS Array S**	**62.05**	**339**	*e*P		**P**	**18 33 12.7**	**+0.1**
ARCES	**ARCESS Array B**	**62.05**	**339**	P		**P**	**18 33 12.7**	**+0.1**
	comp=Z,1.5nm,0.8s,baz=22,slow=6.7,SNR=3.6							
ARCES				LR		LR	19 04 27.0	
	comp=Z,31nm,20.6s,baz=58,slow=40							
KLMR	**Klimovskoe**	**62.22**	**327**	*e*P		**P**	**18 33 12.7**	**-1.1**
KLMR				pmax	pmax			
	comp=Z,3.0nm,0.8s							
ASAR	**Alice Springs**	**63.37**	**189**	P		**P**	**18 33 21.9**	**+0.2**
	comp=Z,0.6nm,1.0s,baz=12,slow=6.0,SNR=3.9							
ASAR	**Alice Springs**	**63.37**	**189**	P		**P**	**18 33 22.0**	**+0.2**
ASAR				pmax	pmax			
	comp=Z,1.0nm,1.0s							
GEYT	**Alibeck**	**63.54**	**298**	P		**P**	**18 33 22.6**	**-0.4**
	comp=Z,1.4nm,0.7s,baz=60,slow=3.6,SNR=4.2							
OBN	**Obninsk**	**66.73**	**323**	⇓*e*P		**P**	**18 33 43.8**	**+0.5**
OBN				pmax	pmax			
	comp=Z,5.0nm,0.5s							
OBN				MLR	MLR			
	comp=Z,55nm,16.0s							
FIA0	**FINESS Array S**	**67.11**	**332**	*e*P		**P**	**18 33 44.8**	**-0.8**
FIA0	**FINESS Array S**	**67.11**	**332**	*e*P		**P**	**18 33 44.8**	**-0.8**
FINES	**FINESS Array B**	**67.11**	**332**	P		**P**	**18 33 44.8**	**-0.8**
	comp=Z,2.9nm,0.7s,baz=54,slow=9.7,SNR=16							
FINES	**FINESS Array B**	**67.11**	**332**	*ce*P		**P**	**18 33 46.0**	**+0.4**
FINES				pmax	pmax			
	comp=Z,3.0nm,0.7s							
KVAR	**Kislovodsk Arr**	**70.05**	**311**	LR		LR	19 07 17.8	
	comp=Z,42nm,19.8s,slow=38							
KIV	**Kislovodsk**	**70.06**	**311**	*d* P		**P**	**18 34 06.1**	**+1.6**
KIV				*i*			18 34 17.8	
KIV				pmax	pmax			
	comp=Z,12nm,0.8s							
KIV	**Kislovodsk**	**70.06**	**311**	*e*P		**P**	**18 34 05.7**	**+1.2**
	comp=Z,11nm,0.7s							
KBZ	**Khabaz**	**70.07**	**311**	P		**P**	**18 34 05.2**	**+0.8**
	comp=Z,3.7nm,0.9s,baz=322,slow=0.5,SNR=8.2							
STKA	**Stephens Creek**	**71.02**	**181**	P		**P**	**18 34 10.6**	**+0.5**
	comp=Z,0.6nm,0.5s,baz=351,slow=21,SNR=2.8							
NC204	**NORSAR Array S**	**72.25**	**338**	*e*P		**P**	**18 34 18.2**	**+0.8**
NB2	**NORSAR Subarra**	**72.30**	**337**	P		**P**	**18 34 17.5**	**-0.2**
	comp=Z,0.8nm,0.7s,baz=39,slow=6.2							
NB200	**NORSAR Array S**	**72.30**	**337**	*e*P		**P**	**18 34 17.9**	**+0.2**
NOA	**NORSAR Array B**	**72.30**	**337**	P		**P**	**18 34 17.9**	**+0.2**
	comp=Z,1.5nm,0.7s,baz=39,slow=6.0,SNR=8.1							
NOA				LR		LR	19 11 18.4	
	comp=Z,21nm,20.0s,baz=15,slow=40							
BZMT	**Bozeman Pass**	**72.71**	**45**	*e*P		P	18 34 24.8	+4.2
AKASG	**Malin Array Be**	**72.97**	**322**	P		**P**

σ1₹14/18, **mb3.1**/3, **Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
JIO	**Ouri**	**0.68**	**273**	P		**Pn**	**Pn**	**18 44 45.2**	**-0.9**
JIO				S			**Sn**	**18 44 53.8**	**-1.8**
OFUJ	**Ofunato**	**0.79**	**327**	P		**Pn**	**Pn**	**18 44 47.2**	**-0.4**
OFUJ				S			**Sn**	**18 44 57.4**	**-0.8**
JMK	**Ichinoseki**	**0.95**	**305**	P		**Pn**	**Pn**	**18 44 49.4**	**-0.3**
JOU	**Okura**	**1.22**	**268**	P		**Pn**	**Pn**	**18 44 53.4**	**-0.1**
JOU				S			**Sn**	**18 45 08.4**	**-0.4**
JMM	**Marumori**	**1.25**	**244**	P		**Pn**	**Pn**	**18 44 52.7**	**-1.2**
JOM	**Ohasama**	**1.28**	**326**	P		**Pn**	**Pn**	**18 44 54.6**	**+0.3**
JOM				S			**Sn**	**18 45 11.0**	**+0.8**
JFK	**Kawauchi**	**1.49**	**226**	P		**Pn**	**Pn**	**18 44 55.9**	**-1.3**
JYK	**Kaneyama**	**1.54**	**290**	P		**Pn**	**Pn**	**18 44 58.1**	**+0.3**
JFT	**Otama**	**1.74**	**239**	P		**Pn**	**Pn**	**18 45 00.8**	**+0.2**
MJAR	**Matsushiro Arr**	**3.70**	**241**	Pn		**Pn**	**Pn**	**18 45 30.5**	**+3.0**
	0.8nm,0.3s,baz=82,slow=14,SNR=5.6								
ASAJ	**Asahikawa**	**5.70**	**3**	Pn			**Pn**	**18 45 54.5**	**-0.5**
	0.2nm,0.3s,baz=291,slow=14,SNR=2.5								
MKAR	**Makanchi Array**	**43.94**	**301**	P			**P**	**18 52 36.5**	**+0.9**
	0.2nm,0.7s,baz=83,slow=9.3,SNR=4.1								
WRA	**Warramunga Arr**	**58.52**	**189**	P			**P**	**18 54 24.8**	**-0.3**
	0.5nm,0.7s,baz=6.6,slow=7.3,SNR=4.7								
ASAR	**Alice Springs**	**62.24**	**189**	P			**P**	**18 54 50.3**	**-0.2**
	0.1nm,0.6s,baz=3.1,slow=4.7,SNR=4.6								

*IDC **29** 18:44:57.2±0.9, 37.˝14N×144.˝14E, h0km, mb3.7/7, mb1 3.9/13, mb1mx3.7/60, mbtmp3.8/13, ML3.7/5, MS2.7/2, Ms1 2.7/2, ms1mx2.2/45, Error ellipse: s-maj=23.5km s-min=17.5km az=99.0*

*ISCJB **29** 18:45:00.1±0.8, 37.˝09N±0.˝08×144.˝00E±0.˝09, h33km, mb3.8/7, Error ellipse: s-maj=12.6km s-min=9.6km az=151.7*

ISC 29 18:45:02.4±0.9, 37.˝16N±0.˝08×144.˝0E±0.˝1, h35km, n15, σ1₹81/19, mb3.7/7, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
MJAR	**Matsushiro Arr**	**4.68**	**264**	Pn			**Pn**	**18 46 10.7**	**+0.2**
	8.6nm,0.3s,baz=88,slow=14,SNR=32								
MJAR					LR		LR	18 48 18.4	
	comp=Z,62nm,19.1s,baz=95,slow=42								
MAT	**Matsushiro**	**4.68**	**264**	P			**Pn**	**18 46 10.8**	**+0.3**
MAT				S			**Sn**	**18 47 03.0**	**-0.6**
JHJ	**Hachijo jima 2**	**5.30**	**222**	Pn			**Pn**	**18 46 17.4**	**-1.7**
	14nm,0.3s,baz=48,slow=16,SNR=5.3								
JHJ					Sn		**Sn**	**18 47 15.2**	**-3.7**
	22nm,0.3s,baz=65,slow=19,SNR=3.8								
ASAJ	**Asahikawa**	**7.03**	**352**	Pn			**Pn**	**18 46 40.6**	**-2.1**
	1.8nm,0.3s,baz=213,slow=16,SNR=11								
ASAJ					Sn		**Sn**	**18 47 58.3**	**-3.0**
	0.3nm,0.3s,baz=45,slow=17,SNR=2.2								
USRK	**Ussuriysk Ar.**	**11.50**	**311**	Pn			**Pn**	**18 47 43.9**	**-0.1**
	0.4nm,0.3s,baz=124,slow=14,SNR=5.7								
KSRS	**Korea Array**	**12.80**	**276**	Pn			**Pn**	**18 48 04.2**	**+2.4**
	0.1nm,0.3s,baz=95,slow=15,SNR=4.5								
KSRS					LR		LR	18 52 31.8	
	comp=Z,35nm,18.6s,baz=122,slow=35								
KLR	**Kul'dur**	**14.98**	**327**	Pn			**Pn**	**18 48 33.0**	**+1.7**
	0.2nm,0.3s,baz=112,slow=10,SNR=6.8								
ZALV	**Zalesovo Beam**	**43.35**	**212**	P			**P**	**18 53 01.5**	**+0.6**
	0.8nm,0.8s,baz=68,slow=8.0,SNR=2.4								
ZALV					PcP		**PcP**	**18 54 49.0**	**-0.1**
	0.7nm,0.5s,baz=96,slow=1.4,SNR=4.3								
CMAR	**Chiang Mai Arr**	**43.53**	**257**	P			**P**	**18 53 04.2**	**+1.4**
	0.6nm,0.7s,baz=46,slow=6.5,SNR=6.6								
MKAR	**Makanchi Array**	**45.79**	**302**	P			**P**	**18 53 20.4**	**-0.2**
	0.7nm,0.7s,baz=82,slow=8.8,SNR=5.5								
ILAR	**Eielson Array**	**48.28**	**32**	P			**P**	**18 53 38.9**	**-0.8**
	0.6nm,0.9s,baz=267,slow=6.8,SNR=5.0								
INK	**Inuvik**	**53.33**	**27**	P			**P**	**18 54 18.5**	**+0.9**
	0.8nm,0.6s,baz=261,slow=5.2,SNR=4.5								
WRA	**Warramunga Arr**	**57.52**	**191**	P			**P**	**18 54 48.0**	**-0.2**
	1.7nm,0.6s,baz=12,slow=7.5,SNR=19								
ASAR	**Alice Springs**	**61.24**	**191**	P			**P**	**18 55 14.2**	**+0.3**
	0.8nm,0.7s,baz=17,slow=9.4,SNR=12								
ASAL	**Salagasta**	**152.77**	**90**	*e*P			**PKPdf**	**19 04 51.5**	**+3.0**

*NEIC **29** 18:50:51.8, 38.˝61S×177.˝92E, h26km, mb4.2/2, ML4.0(WEL), After WEL.*

NEIC Felt at Gisborne.

WEL 29 18:50:52.0±0.1, 38.˝60S×177.˝87E, h25km±1km, ML4.0/23, **8C-6D, Error ellipse: s-maj=1.6km s-min=0.8km az=90.0, North Island**

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
RIGZ	**Rimuhau**	**0.14**	**217**	⇑P*			Pb	18 50 56.6	-0.5
RIGZ				S*			Sb	18 51 01.4	+0.9
TKGZ	**Te Karaka**	**0.16**	**355**	P*			Pb	18 50 56.2	-1.0
TKGZ				S*			Sb	18 51 00.3	-0.4
TKGZ	**Te Karaka**	**0.16**	**355**	P*			Pb	18 50 56.2	-1.0
CNGZ	**Carnagh Statio**	**0.29**	**67**	P*			Pb	18 50 59.3	+0.4
CNGZ				S*			Sn	18 51 08.4	+2.1
CNGZ	**Carnagh Statio**	**0.29**	**67**	P*			Pb	18 50 59.3	+0.4
CNGZ				S*			Sn	18 51 08.4	+2.1
PRGZ	**Paritu Road**	**0.33**	**178**	⇑P*			Pb	18 50 59.7	+0.2
PRGZ	**Paritu Road**	**0.33**	**178**	P*			Pb	18 50 59.8	+0.2
RAGZ	**Rawiri**	**0.37**	**286**	⇓P*			Pb	18 50 59.8	-0.4
RAGZ	**Rawiri**	**0.37**	**286**	P*			Pb	18 50 59.8	-0.4
MWZ	**Matawai**	**0.37**	**314**	⇓P*			Pb	18 50 59.6	-0.6
MWZ					AML		AML	18 51 06.1	
MWZ					AML		AML	18 51 06.3	
MWZ	**Matawai**	**0.37**	**314**	*e*Pn			Pb	18 50 59.6	-0.6
MWZ				*e*Sn			Sb	18 51 06.2	+0.4
TWGZ	**Tauwhareparae**	**0.43**	**12**	⇑P*			Pb	18 51 01.1	0.0
TWGZ				S*			Sn	18 51 09.4	-0.3
TWGZ	**Tauwhareparae**	**0.43**	**12**	P*			Pb	18 51 01.1	0.0
KNZ	**Kokohu**	**0.45**	**199**	⇑P*			Pb	18 51 01.6	+0.2
KNZ					AML		AML	18 51 14.7	
KNZ					AML		AML	18 51 15.8	
SNGZ	**Shannon Statio**	**0.45**	**246**	⇓P*			Pb	18 51 01.7	+0.2
SNGZ	**Shannon Statio**	**0.45**	**246**	P*			Pb	18 51 01.7	+0.2
MHGZ	**Mahia Peninsul**	**0.56**	**177**	P*			Pb	18 51 03.4	+0.1
MHGZ	**Mahia Peninsul**	**0.56**	**177**	P*			Pb	18 51 03.4	+0.1
PUZ	**Puketiti**	**0.61**	**31**	P*			Pb	18 51 03.7	-0.4
PUZ				S*			Sn	18 51 13.8	-0.3
PUZ					AML		AML	18 51 16.2	
PUZ	**Puketiti**	**0.61**	**31**	P*			Pb	18 51 03.6	-0.4
URZ	**Urewera**	**0.68**	**299**	P*			Pb	18 51 04.9	-0.4
URZ					AML		AML	18 51 16.9	
URZ					AML		AML	18 51 19.2	
URZ	**Urewera**	**0.68**	**299**	*e*Pn			Pb	18 51 04.9	-0.4
URZ				*e*Sn			Sn	18 51 15.5	-0.4
URZ				*e*Sn			Sb	18 51 16.9	+2.5
RAHZ	**Arahi**	**0.69**	**242**	P*			Pb	18 51 05.6	+0.2
RAHZ	**Arahi**	**0.69**	**242**	P*			Pb	18 51 05.7	+0.2
WHHZ	**Waihua**	**0.69**	**226**	P*			Pb	18 51 05.6	+0.2
PKGZ	**Pakihiroa**	**0.73**	**13**	⇑P*			Pb	18 51 05.8	-0.2
PKGZ				S*			Sn	18 51 17.3	+0.2
HAZ	**Te Kaha**	**0.84**	**355**	P*			Pb	18 51 07.1	-0.9
MUGZ	**Murupara**	**0.87**	**278**	⇑PN			Pb	18 51 08.3	-0.2
WMGZ	**Waiomatatini S**	**0.89**	**29**	PN			Pb	18 51 07.9	-0.8
WMGZ	**Waiomatatini S**	**0.89**	**29**	Pn			Pb	18 51 07.9	-0.8
ARHZ	**Aropaoanui**	**0.95**	**225**	PN			Pn	18 51 09.4	-0.4
ARHZ	**Aropaoanui**	**0.95**	**225**	Pn			Pn	18 51 09.4	-0.4
NMHZ	**Naumai**	**0.97**	**239**	PN			Pn	18 51 09.6	-0.5
NMHZ	**Naumai**	**0.97**	**239**	Pn			Pn	18 51 09.6	-0.5
EDRZ	**Edgecumbe**	**1.01**	**299**	PN			Pn	18 51 10.7	0.0
EDRZ					AML		AML	18 51 27.6	
EDRZ					AML		AML	18 51 31.0	
EDRZ	**Edgecumbe**	**1.01**	**299**	Pn			Pn	18 51 10.7	0.0
MXZ	**Matakaoa Point**	**1.09**	**19**	PN			Pn	18 51 10.8	-0.8
MXZ				SN			Sb	18 51 26.9	+0.9
MXZ					AML		AML	18 51 31.6	
MXZ	**Matakaoa Point**	**1.09**	**19**	*e*Sn			Sn	18 51 25.9	0.0
MXZ				*e*Sn			Sb	18 51 28.1	+2.2
MARZ	**Manawahe**	**1.12**	**303**	Pn			Pn	18 51 11.8	-0.3
TARZ	**Mount Tarawera**	**1.13**	**288**	PN			Pn	18 51 12.4	0.0
TARZ	**Mount Tarawera**	**1.13**	**288**	Pn			Pn	18 51 12.4	0.0
PRRZ	**Plateau Road**	**1.16**	**274**	PN			Pn	18 51 12.3	-0.4
PRRZ	**Plateau Road**	**1.16**	**274**	Pn			Pn	18 51 12.3	-0.4
WIZ	**White Island**	**1.19**	**333**	Pn			Pn	18 51 12.8	-0.4
BKZ	**Black Stump Fm**	**1.21**	**242**	PN			Pn	18 51 12.9	-0.6
BKZ					AML		AML	18 51 40.8	
BKZ					AML		AML	18 51 41.3	
BKZ	**Black Stump Fm**	**1.21**	**242**	*e*Pn			Pn	18 51 12.7	-0.8
CKHZ	**Cape Kidnapper**	**1.23**	**210**	PN			Pn	18 51 12.3	-1.3
CKHZ	**Cape Kidnapper**	**1.23**	**210**	Pn			Pn	18 51 12.3	-1.3
HLRZ	**Highlands Stat**	**1.24**	**286**	PN			Pn	18 51 14.1	+0.3
MCHZ	**McNeill Hill**	**1.24**	**227**	PN			Pn	18 51 13.3	-0.6
MCHZ	**McNeill Hill**	**1.24**	**227**	Pn			Pn	18 51 13.3	-0.6
HRRZ	**Handcock Road**	**1.26**	**279**	PN			Pn	18 51 14.3	+0.2
HRRZ	**Handcock Road**	**1.26**	**279**	Pn			Pn	18 51 14.3	+0.2
OMRZ	**Omania**	**1.27**	**292**	⇓PN			Pn	18 51 14.1	-0.2
OMRZ	**Omania**	**1.27**	**292**	Pn			Pn	18 51 14.1	-0.2
OPRZ	**Ohinepanea**	**1.28**	**306**	⇓PN			Pn	18 51 13.3	-1.0
OPRZ	**Ohinepanea**	**1.28**	**306**	Pn			Pn	18 51 13.3	-1.0
HSRZ	**Hossack Road**	**1.30**	**282**	PN			Pn	18 51 14.6	-0.1
KWHZ	**Kaweka Forest**	**1.40**	**233**	⇑PN			Pn	18 51 15.1	-0.9
KARZ	**Kaharoa**	**1.40**	**294**	⇑PN			Pn	18 51 15.5	-0.5
HATZ	**Hinemaiaia**	**1.42**	**257**	Pn			Pn	18 51 15.5	-0.7
KAHZ	**Kahuranaki**	**1.42**	**212**	PN			Pn	18 51 14.8	-1.6
KAHZ	**Kahuranaki**	**1.42**	**212**	Pn			Pn	18 51 14.8	-1.6
KRHZ	**Kereru**	**1.56**	**228**	⇓PN			Pn	18 51 17.1	-1.2
RITZ	**Rihia Road**	**1.61**	**256**	PN			Pn	18 51 19.7	+0.7
RITZ					AML		AML	18 51 57.5	
RITZ					AML		AML	18 51 59.6	
RITZ	**Rihia Road**	**1.61**	**256**	Pn			Pn	18 51 19.7	+0.7
PXZ	**Pawanui**	**1.63**	**208**	PN			Pn	18 51 17.0	-2.2
PXZ					AML		AML	18 52 06.9	
PXZ					AML		AML	18 52 13.0	
PXZ	**Pawanui**	**1.63**	**208**	*e*Pn			Pn	18 51 17.0	-2.1
RATZ	**Rangitukua**	**1.66**	**260**	PN			Pb	18 51 21.2	-0.8
RATZ					AML		AML	18 51 56.7	
RATZ					AML		AML	18 52 02.5	
RATZ	**Rangitukua**	**1.66**	**260**	Pn			Pb	18 51 21.2	-0.8
BHHZ	**Black Hill Sta**	**1.66**	**237**	PN			Pn	18 51 18.8	-0.9
BHHZ	**Black Hill Sta**	**1.66**	**237**	Pn			Pn	18 51 18.8	-0.9
OTVZ	**Oturere**	**1.81**	**251**	PN			Pn	18 51 22.0	+0.2
OTVZ					AML		AML	18 52 05.9	
OTVZ					AML		AML	18 52 10.9	
MOVZ	**Moawhango**	**1.83**	**243**	PN			Pn	18 51 21.5	-0.5
MOVZ					AML		AML	18 52 05.2	
MOVZ					AML		AML	18 52 05.9	
WPHZ	**Waipukurau**	**1.84**	**217**	PN			Pn	18 51 20.2	-1.8
WPHZ	**Waipukurau**	**1.84**	**217**	Pn			Pn	18 51 20.2	-1.8
PNHZ	**Pukenui**	**1.84**	**224**	PN			Pn	18 51 20.3	-1.9
PNHZ	**Pukenui**	**1.84**	**224**	Pn			Pn	18 51 20.3	-1.9
TUVZ	**Tukino**	**1.85**	**248**	PN			Pn	18 51 22.4	+0.1
TUVZ					AML		AML	18 52 06.0	
TUVZ					AML		AML	18 52 12.2	
WHVZ	**Whangaehu Hut**	**1.90**	**248**	PN			Pn	18 51 23.7	+0.6
WHVZ	**Whangaehu Hut**	**1.90**	**248**	Pn			Pn	18 51 23.7	+0.6
WNVZ	**Wahianoa**	**1.91**	**247**	PN			Pn	18 51 22.8	-0.4
WNVZ	**Wahianoa**	**1.91**	**247**	*e*Pn			Pn	18 51 22.8	-0.4
PRHZ	**Porangahau**	**1.92**	**209**	PN			Pn	18 51 21.3	-1.8
PRHZ	**Porangahau**	**1.92**	**209**	Pn			Pn	18 51 21.3	-1.8
TSZ	**Takapari Road**	**2.08**	**225**	PN			Pn	18 51 23.2	-2.1
TSZ					AML		AML	18 52 16.6	
TSZ					AML		AML	18 52 26.1	
TSZ	**Takapari Road**	**2.08**	**225**	Pn			Pn	18 51 23.2	-2.1
PKVZ	**Pokaka**	**2.08**	**250**	PN			Pn	18 51 27.1	+1.7
PKVZ					AML		AML	18 52 08.7	
PKVZ					AML		AML	18 52 12.2	
PKVZ	**Pokaka**	**2.08**	**250**	Pn			Pn	18 51 27.1	+1.7
DVHZ	**Dannevirke**	**2.15**	**217**	PN			Pn	18 51 23.8	-2.5
DVHZ	**Dannevirke**	**2.15**	**217**	Pn			Pn	18 51 23.8	-2.5
HIZ	**Hauiti**	**2.36**	**271**	*e*Pn			Pn	18 51 29.1	-0.1
POWZ	**Post Office Ro**	**2.42**	**221**	PN			Pn	18 51 28.0	-2.0
POWZ	**Post Office Ro**	**2.42**	**221**	Pn			Pn	18 51 28.0	-2.0
BFZ	**Birch Farm**	**2.43**	**210**	PN			Pn	18 51 26.9	-3.2
BFZ					AML		AML	18 52 38.4	
BFZ					AML		AML	18 52 41.5	
BFZ	**Birch Farm**	**2.43**	**210**	*e*Pn			Pn	18 51 26.9	-3.2
PRWZ	**Pori Road**	**2.44**	**216**	PN			Pn	18 51 28.2	-2.1
PRWZ	**Pori Road**	**2.44**	**216**	Pn			Pn	18 51 28.2	-2.1
WAZ	**Wanganui**	**2.52**	**242**	PN			Pn	18 51 31.4	0.0
WAZ					AML		AML	18 52 26.8	
WAZ					AML		AML	18 52 27.9	
WAZ	**Wanganui**	**2.52**	**242**	Pn			Pn	18 51 31.4	0.0
MKAZ	**Moumakai**	**2.61**	**304**	PN			Pn	18 51 31.9	-0.7
MRZ	**Mangatainoka R**	**2.71**	**220**	PN			Pn	18 51 30.8	-3.2
HOWZ	**Holdsworth Sta**	**2.93**	**218**	PN			Pn	18 51 33.7	-3.3
HOWZ	**Holdsworth Sta**	**2.93**	**218**	Pn			Pn	18 51 33.7	-3.3
TMWZ	**Te Maipa**	**2.93**	**211**	PN			Pn	18 51 33.7	-3.4
TMWZ	**Te Maipa**	**2.93**	**211**	Pn			Pn	18 51 33.7	-3.4
OGWZ	**Otaki Gorge**	**3.04**	**222**	PN			Pn	18 51 35.3	-3.2
OGWZ	**Otaki Gorge**	**3.04**	**222**	Pn			Pn	18 51 35.3	-3.2
MTW	**Mount Morrison**	**3.14**	**215**	Pn			Pn	18 51 36.1	-3.8
MTW					AML		AML	18 52 13.5	
MTW					AML		AML	18 53 16.2	
KIW	**Kapiti Island**	**3.21**	**224**	Pn			Pn	18 51 37.8	-3.1
KIW					AML		AML	18 52 17.5	
KIW	**Kapiti Island**	**3.21**	**224**	*e*Pn			Pn	18 51 37.8	-3.1
CAW	**Cannon Point**	**3.31**	**220**	PN			Pn	18 51 38.4	-3.8
CAW					AML		AML	18 52 23.5	
CAW					AML		AML	18 52 58.9	
CAW	**Cannon Point**	**3.31**	**220**	*e*Pn			Pn	18 51 38.4	-3.8
PAWZ	**Paruwai Farm**	**3.35**	**213**	PN			Pn	18 51 39.3	-3.6
PAWZ					AML		AML	18 53 12.3	
PAWZ					AML		AML	18 53 16.4	
PAWZ	**Paruwai Farm**	**3.35**	**213**	*e*Pn			Pn	18 51 39.3	-3.6
PLWZ	**Palliser**	**3.58**	**213**	PN			Pn	18 51 41.9	-4.1
PLWZ	**Palliser**	**3.58**	**213**	Pn			Pn	18 51 41.9	-4.1
SNZO	**South Karori**	**3.64**	**221**	*e*Pn			Pn	18 51 42.6	-4.2
DUWZ	**D'Urville Isla**	**3.76**	**233**	PN			Pn	18 51 45.4	-3.0
DUWZ	**D'Urville Isla**	**3.76**	**233**	*e*Pn			Pn	18 51 45.4	-3.0
TCW	**Tory Channel**	**3.80**	**225**	AML			AML	18 52 31.5	
NNZ	**Nelson**	**4.33**	**231**	PN			Pn	18 51 52.9	-3.4
NNZ	**Nelson**	**4.33**	**231**	Pn			Pn	18 51 52.9	-3.4
QRZ	**Quartz Range**	**4.68**	**240**	PN			Pn	18 51 57.5	-3.5
OUZ	**Omahuta**	**4.80**	**313**	*e*Pn			Pn	18 52 02.9	+0.2
THZ	**Tophouse**	**4.94**	**229**	PN			Pn	18 52 01.0	-3.7
THZ					AML		AML	18 52 58.8	
THZ	**Tophouse**	**4.94**	**229**	*e*Pn			Pn	18 52 00.8	-3.9
KHZ	**Kahutara**	**5.04**	**219**	PN			Pn	18 52 01.8	-4.2
KHZ	**Kahutara**	**5.04**	**219**	*e*Pn			Pn	18 52 02.0	-4.0
KHZ				*e*Sn			Sn	18 52 56.5	-6.9
LTZ	**Lake Taylor**	**5.96**	**224**	PN			Pn	18 52 12.7	-6.0
LTZ	**Lake Taylor**	**5.96**	**224**	*e*Pn			Pn	18 52 13.3	-5.4
CRLZ	**Canterbury Las**	**6.36**	**217**	*e*Pn			Pn	18 52 21.4	-2.7
CRLZ				*e*Sn			Sn	18 53 25.3	-10
INZ	**Inchbonnie**	**6.39**	**228**	PN			Pn	18 52 19.7	-4.8
MQZ	**McQueen's Vall**	**6.44**	**216**	*e*Pn			Pn	18 52 20.7	-4.6
MQZ				*e*Sn			Sn	18 53 26.7	-11
CTZ	**Chatham Island**	**6.61**	**143**	PN			Pn	18 52 25.7	-1.8
CTZ	**Chatham Island**	**6.61**	**143**	Pn			Pn	18 52 25.7	-1.8
RPZ	**Rata Peaks**	**7.25**	**223**	*e*Pn			Pn	18 52 32.5	-3.8
RPZ				*e*Sn			Sn	18 53 48.9	-9.0
FOZ	**Fox Glacier**	**7.83**	**228**	*e*Pn			Pn	18 52 41.5	-2.8
FOZ				*e*Sn			Sn	18 54 03.0	-9.0
LBZ	**Lake Benmore**	**8.16**	**222**	*e*Pn			Pn	18 52 43.4	-5.5
ODZ	**Otahua Downs**	**8.40**	**218**	*e*Pn			Pn	18 52 46.7	-5.4
ODZ				*e*Sn			Sn	18 54 15.5	-11
WKZ	**Wanaka**	**9.08**	**224**	*e*Pn			Pn	18 52 56.2	-5.3
WKZ				*e*Sn			Sn	18 54 31.2	-12
MLZ	**Mavora Lakes**	**9.92**	**224**	*e*Pn			Pn	18 53 08.0	-4.9
MLZ				*e*Sn			Sn	18 54 48.3	-15
DCZ	**Deep Cove**	**10.51**	**226**	*e*Pn			Pn	18 53 18.4	-2.6
DCZ				*e*Sn			Sn	18 55 06.4	-11

*IDC **29** 18:51:58.8±1.0, 19.˝39S×167.˝88E, h0km, mb4.0/7, mb1 4.2/8, mb1mx4.0/26, mbtmp4.0/8, ML3.7/1, MS3.4/1, Ms1 3.4/1, ms1mx2.7/30, Error ellipse: s-maj=33.9km s-min=18.9km az=123.0*

*NEIC **29** 18:52:00.2±0.7, 19.˝39S×167.˝87E, h10km, mb4.3/3, Error ellipse: s-maj=22.2km s-min=10.0km az=118.0*

*ISCJB **29** 18:52:01.3±0.8, 19.˝32S±0.˝08×167.˝7E±0.˝1, h26km, mb4.0/10, MS3.3/1, Error ellipse: s-maj=20.7km s-min=9.3km az=21.4*

ISC 29 18:52:02.9±0.8, 19.˝4S±0.˝1×167.˝9E±0.˝2, h26km, n26, σ1₹26/26, mb4.0/10, **Vanuatu Islands region**

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**2.99**	**207**	Pn			**Pn**	**18 52 49.2**	**+0.4**
	9.7nm,0.3s,baz=83,slow=9.6,SNR=147								
DZM					Sn		**Sn**	**18 53 23.9**	**0.0**
	50nm,0.3s,baz=306,slow=17,SNR=15								
STKA	**Stephens Creek**	**26.69**	**237**	P			**P**	**18 57 41.5**	**+1.5**
	1.7nm,0.9s,baz=66,slow=10,SNR=6.8								
STKA	**Stephens Creek**	**26.69**	**237**	*e*P			**P**	**18 57 41.6**	**+1.6**
	6.0nm,1.8s								
WR1	**Warramunga Arr**	**31.56**	**263**	*e*P			**P**	**18 58 23.3**	**-0.3**
WRA	**Warramunga Arr**	**31.56**	**263**	P			**P**	**18 58 23.3**	**-0.3**
	1.2nm,0.6s,baz=85,slow=8.4,SNR=22								
AS01	**Alice Springs**	**31.80**	**256**	*e*P			**P**	**18 58 23.4**	**-2.3**
AS01	**Alice Springs**	**31.80**	**256**	*e*P			**P**	**18 58 22.9**	**-2.8**
AS31	**Alice Springs**	**31.85**	**256**	*e*P			**P**	**18 58 23.5**	**-2.5**
	1.3nm,0.7s								
ASAR	**Alice Springs**	**31.85**	**256**	P			**P**	**18 58 23.9**	**-2.2**
	2.5nm,0.6s,baz=119,slow=6.2,SNR=32								
ASAR					LR		LR	19 10 36.8	
	comp=Z,74nm,21.6s,baz=216,slow=35								
FITZ	**Fitzroy Crossi**	**39.95**	**265**	*e*P			**P**	**18 59 37.0**	**+1.6**
	6.2nm,0.8s								
FITZ	**Fitzroy Crossi**	**39.95**	**265**	*e*P			**P**	**18 59 36.6**	**+1.1**
	6.2nm,0.8s								
VNDA	**Vanda**	**58.24**	**182**	P			**P**	**19 01 54.0**	**-0.6**
	0.4nm,0.8s,baz=349,slow=5.2,SNR=2.3								
PSI	**Prapat**	**71.19**	**280**	*e*P			**P**	**19 03 19.4**	**-0.8**
	6.6nm,1.0s								
PETK	**Petropavlovsk-**	**72.73**	**354**	P			**P**	**19 03 28.9**	**+0.4**
	2.3nm,0.7s,baz=171,slow=9.8,SNR=3.1								
PEA1	**Petropavlovsk-**	**72.73**	**354**	*e*P			**P**	**19 03 28.9**	**+0.4**
NVAR	**Mina Array Bea**	**89.86**	**49**	P			**P**	**19 04 59.5**	**-0.5**
	0.4nm,0.3s,baz=226,slow=8.1,SNR=4.1								
ILAR	**Eielson Array**	**90.76**	**18**	P			**P**	**19 05 03.4**	**+0.1**
	0.5nm,0.7s,baz=238,slow=5.4,SNR=6.5								
GERES	**GERESS Array B**	**144.01**	**331**	PKP			PKPbc	19 11 35.1	+1.0
	1.1nm,0.8s,baz=56,slow=5.0,SNR=5.7								
MOA	**Molln**	**144.44**	**329**	*i* PKPdf			**PKPdf**	**19 11 36.9**	**0.0**
	3.6nm,0.6s								
SOKA	**Soboth**	**144.85**	**327**	*e*PKPdf			**PKPdf**	**19 11 37.8**	**0.0**
	4.0nm,0.7s								
OBKA	**Obir**	**145.21**	**327**	*i* pPKPbc			**PKPdf**	**19 11 39.8**	**+1.4**
	3.7nm,0.8s								
KBA	**Koelnbreinsper**	**145.43**	**329**	*i* pPKPbc			**PKPab**	**19 11 39.4**	**+

INZ	Inchbonnie	0.70	316	⇑	*eP*	*	Pg	19 08 15.9	-0.9
RPZ	Rata Peaks	0.90	237		Pg		Pn	19 08 20.4	-0.8
	5µm,0.3s,baz=67,slow=1.9								
RPZ					Lg		Lg	19 08 32.0	
	3µm,0.3s,baz=316,slow=23,SNR=28								
RPZ	Rata Peaks	0.90	237	⇓	P	*	Pn	19 08 20.3	-1.0
RPZ						AML	AML	19 08 36.9	
RPZ						AML	AML	19 08 36.9	
RPZ	Rata Peaks	0.90	237		*e*Pn		Pn	19 08 20.5	-0.8
RPZ					*e*Sn		Sb	19 08 32.0	-0.3
RPZ					*e*Sg		Sn	19 08 32.7	-1.4
WVZ	Waitaha Valley	1.01	279	⇑	P	*	Pb	19 08 21.6	-0.8
WVZ						AML	AML	19 08 37.7	
WVZ						AML	AML	19 08 38.3	
KHZ	Kahutara	1.34	53		PN		Pb	19 08 27.8	-0.1
KHZ	Kahutara	1.34	53		*e*Pn		Pb	19 08 27.7	-0.1
KHZ					*e*Sn		Sg	19 08 46.1	0.0
DSZ	Denniston Nort	1.50	351		PN		Pn	19 08 29.3	-0.3
DSZ						AML	AML	19 08 51.8	
DSZ						AML	AML	19 08 51.8	
DSZ						AML	AML	19 08 51.8	
DSZ						AML	AML	19 08 51.8	
DSZ	Denniston Nort	1.50	351		*e*Pn		Pn	19 08 29.2	-0.3
THZ	Tophouse	1.59	22		PN		Pn	19 08 30.7	0.0
THZ						AML	AML	19 09 02.2	
THZ						AML	AML	19 09 04.3	
THZ	Tophouse	1.59	22		*e*Pn		Pn	19 08 30.9	+0.2
FOZ	Fox Glacier	1.69	259		PN		Pb	19 08 32.8	-1.2
FOZ						AML	AML	19 09 00.0	
FOZ						AML	AML	19 09 00.0	
FOZ						AML	AML	19 09 00.4	
FOZ						AML	AML	19 09 00.4	
FOZ	Fox Glacier	1.69	259		*e*Pn		Pb	19 08 32.7	-1.2
LBZ	Lake Benmore	1.80	230		PN		Pn	19 08 33.0	-0.7
LBZ						AML	AML	19 09 05.6	
LBZ						AML	AML	19 09 06.3	
LBZ	Lake Benmore	1.80	230		*e*Pn		Pn	19 08 33.0	-0.7
LBZ					*e*Pg		Pg	19 08 37.9	+0.2
BSWZ	Blackbirch Sta	2.01	41	⇑	PN		Pn	19 08 37.3	+0.9
BSWZ						AML	AML	19 09 20.2	
BSWZ						AML	AML	19 09 21.7	
ODZ	Otahua Downs	2.09	210		PN		Pn	19 08 36.9	-0.7
ODZ						AML	AML	19 09 13.4	
ODZ						AML	AML	19 09 13.4	
ODZ						AML	AML	19 09 17.3	
ODZ						AML	AML	19 09 17.3	
ODZ	Otahua Downs	2.09	210		*e*Pn		Pn	19 08 36.8	-0.7
ODZ					*e*Pg		Pg	19 08 42.9	-0.3
CMWZ	Cape Campbell	2.15	47		PN		Pn	19 08 39.4	+1.0
CMWZ						AML	AML	19 09 35.3	
CMWZ						AML	AML	19 09 43.0	
NNZ	Nelson	2.23	26		PN		Pn	19 08 40.3	+0.8
NNZ						AML	AML	19 09 24.3	
NNZ						AML	AML	19 09 24.4	
NNZ						AML	AML	19 09 32.4	
NNZ						AML	AML	19 09 32.4	
TUWZ	Tuamarina	2.26	38		PN		Pn	19 08 40.6	+0.7
TUWZ						AML	AML	19 09 28.3	
TUWZ						AML	AML	19 09 33.2	
QRZ	Quartz Range	2.43	8		PN		Pn	19 08 42.1	-0.1
QRZ						AML	AML	19 08 49.4	
QRZ						AML	AML	19 08 49.4	
QRZ						AML	AML	19 09 24.5	
QRZ						AML	AML	19 09 24.5	
QRZ	Quartz Range	2.43	8		*e*Pn		Pn	19 08 41.0	-1.2
JCZ	Jackson Bay	2.55	250		PN		Pn	19 08 43.2	-0.7
JCZ						AML	AML	19 09 32.1	
JCZ						AML	AML	19 09 32.2	
JCZ	Jackson Bay	2.55	250		*e*Pn		Pn	19 08 43.2	-0.7
TCW	Tory Channel	2.59	39		PN		Pn	19 08 44.4	0.0
TCW						AML	AML	19 08 55.5	
TCW						AML	AML	19 09 28.5	
SNZO	South Karori	2.73	46		*e*Pn		Pn	19 08 46.1	-0.1
SNZO					*e*Pg		Pg	19 08 54.5	-0.8
WKZ	Wanaka	2.74	233		PN		Pn	19 08 45.2	-1.3
WKZ						AML	AML	19 09 44.1	
WKZ						AML	AML	19 09 47.8	
WKZ	Wanaka	2.74	233		*e*Pn		Pn	19 08 45.5	-1.0
WKZ					*e*Pg		Pg	19 08 54.2	-1.3
BHW	Baring Head	2.75	49		PN		Pn	19 08 46.3	-0.2
BHW						AML	AML	19 09 45.6	
BHW						AML	AML	19 09 50.2	
BHW	Baring Head	2.75	49		*e*Pn		Pn	19 08 46.4	-0.2
WEL	Wellington	2.78	46		PN		Pn	19 08 47.1	+0.1
WEL						AML	AML	19 09 45.2	
WEL						AML	AML	19 09 54.8	
DUWZ	D'Urville Isla	2.78	30		PN		Pn	19 08 47.4	+0.3
DUWZ	D'Urville Isla	2.78	30		*e*Pn		Pn	19 08 47.4	+0.3
EAZ	Earnscleugh	2.83	224	⇓	PN		Pn	19 08 46.7	-1.0
EAZ						AML	AML	19 09 34.5	
EAZ						AML	AML	19 09 34.5	
EAZ						AML	AML	19 09 35.4	
EAZ						AML	AML	19 09 35.4	
EAZ	Earnscleugh	2.83	224		*e*Pn		Pn	19 08 46.7	-1.0
HHSZ	Highcliff Hill	2.86	202	⇓	PN		Pn	19 08 47.4	-0.8
PLWZ	Palliser	2.87	56		PN		Pn	19 08 47.8	-0.5
MSWZ	Moikau Station	2.96	53		PN		Pn	19 08 49.1	-0.4
MSWZ						AML	AML	19 09 23.7	
MSWZ						AML	AML	19 09 51.5	
CAW	Cannon Point	3.06	47	⇓	PN		Pn	19 08 50.6	-0.3
CAW						AML	AML	19 09 30.9	
CAW						AML	AML	19 09 59.0	
CAW	Cannon Point	3.06	47		*e*Pn		Pn	19 08 50.6	-0.3
PAWZ	Paruwai Farm	3.08	54		PN		Pn	19 08 50.5	-0.8
PAWZ						AML	AML	19 10 08.0	
PAWZ						AML	AML	19 10 13.2	
KIW	Kapiti Island	3.16	42	⇑	PN		Pn	19 08 52.3	0.0
KIW						AML	AML	19 09 58.7	
KIW						AML	AML	19 10 01.3	
KIW	Kapiti Island	3.16	42		*e*Pn		Pn	19 08 52.3	0.0
TRWZ	Traveller	3.23	57		PN		Pn	19 08 53.0	-0.3
TRWZ						AML	AML	19 10 12.1	
TRWZ						AML	AML	19 10 22.2	
TUZ	Tuapeka	3.24	212		PN		Pn	19 08 52.6	-0.8
TUZ						AML	AML	19 09 50.6	
TUZ						AML	AML	19 09 50.6	
TUZ						AML	AML	19 09 56.2	
TUZ						AML	AML	19 09 56.2	
MTW	Mount Morrison	3.27	52		PN		Pn	19 08 53.2	-0.6
MTW						AML	AML	19 10 13.7	
MTW						AML	AML	19 10 21.9	
OGWZ	Otaki Gorge	3.33	44	⇑	PN		Pn	19 08 54.1	-0.4
MSZ	Milford Sound	3.34	243		PN		Pn	19 08 53.2	-1.5
MSZ						AML	AML	19 09 55.2	
MSZ						AML	AML	19 09 55.2	
MSZ						AML	AML	19 09 55.6	
MSZ						AML	AML	19 09 55.6	
MSZ	Milford Sound	3.34	243		*e*Pn		Pn	19 08 53.2	-1.5
HOWZ	Holdsworth Sta	3.45	49		PN		Pn	19 08 55.3	-1.0
TMWZ	Te Maipa	3.53	54		PN		Pn	19 08 56.3	-1.1
MLZ	Mavora Lakes	3.57	232		PN		Pn	19 08 56.1	-1.9
MLZ						AML	AML	19 10 13.3	
MLZ						AML	AML	19 10 13.7	
MLZ	Mavora Lakes	3.57	232		*e*Pn		Pn	19 08 56.3	-1.6
MLZ					*e*Pg		Pg	19 09 08.9	-2.6
MRZ	Mangatainoka R	3.65	46		PN		Pn	19 08 58.0	-1.0
MRZ	Mangatainoka R	3.65	46		*e*Pn		Pn	19 08 58.0	-1.0
TIWZ	Tintock	3.74	50		PN		Pn	19 08 58.9	-1.4
TIWZ						AML	AML	19 09 50.6	
TIWZ						AML	AML	19 10 20.3	
OHWZ	Ohakea	3.86	40		PN		Pn	19 09 03.0	+1.0
SYZ	Scrubby Hill	3.92	212	⇑	PN		Pn	19 09 02.3	-0.4
SYZ						AML	AML	19 10 15.8	
SYZ						AML	AML	19 10 15.8	
SYZ						AML	AML	19 10 22.3	
SYZ						AML	AML	19 10 22.3	
PRWZ	Pori Road	3.94	48		PN		Pn	19 09 01.8	-1.2
POWZ	Post Office Ro	3.94	45		PN		Pn	19 09 01.8	-1.3
WHZ	Wether Hill Ro	3.98	227		PN		Pn	19 09 02.0	-1.6
WHZ						AML	AML	19 10 21.8	
WHZ						AML	AML	19 10 32.4	
WHZ	Wether Hill Ro	3.98	227		*e*Pn		Pn	19 09 02.0	-1.6
WHZ					*e*Pg		Pg	19 09 15.9	-3.5
BFZ	Birch Farm	4.01	52		PN		Pn	19 09 03.1	-0.8
BFZ						AML	AML	19 10 36.6	
BFZ						AML	AML	19 10 36.6	
BFZ						AML	AML	19 10 44.1	
BFZ						AML	AML	19 10 44.2	
BFZ	Birch Farm	4.01	52		*e*Pn		Pn	19 09 03.1	-0.8
BFZ					*e*Pg		Pg	19 09 18.4	-1.4
NMEZ	Namu Road	4.04	20		PN		Pn	19 09 06.5	+2.1
WAZ	Wanganui	4.09	33		PN		Pn	19 09 06.4	+1.3
WAZ						AML	AML	19 10 35.7	
WAZ						AML	AML	19 10 38.7	
LREZ	Lake Rotokare	4.15	25		PN		Pn	19 09 08.2	+2.4
NWEZ	Newall Road	4.17	19		PN		Pn	19 09 08.0	+1.8
PREZ	Palmer Road	4.18	22		PN		Pn	19 09 08.1	+1.7
KHEZ	Kahui Hut	4.19	21		PN		Pn	19 09 08.1	+1.6
DCZ	Deep Cove	4.19	236	⇑	PN		Pn	19 09 04.6	-1.8
DCZ						AML	AML	19 10 17.9	
DCZ						AML	AML	19 10 23.1	
DCZ	Deep Cove	4.19	236		*e*Pn		Pn	19 09 04.6	-1.8
DCZ					*e*Pg		Pg	19 09 20.3	-3.0
NEZ	North Egmont	4.24	21		PN		Pn	19 09 08.7	+1.5
PKE	Pukeiti	4.28	20		PN		Pn	19 09 09.1	+1.4
PKE						AML	AML	19 10 07.1	
PKE						AML	AML	19 10 09.4	
TSZ	Takapari Road	4.29	44		PN		Pn	19 09 06.5	-1.3
TSZ						AML	AML	19 10 22.7	
TSZ						AML	AML	19 10 23.3	
DREZ	Durham Road	4.34	22		PN		Pn	19 09 10.0	+1.4
MHEZ	Mangahewa	4.48	23		PN		Pn	19 09 13.4	+3.0
PNHZ	Pukenui	4.52	44		PN		Pn	19 09 09.4	-1.6
WPHZ	Waipukurau	4.54	47		PN		Pn	19 09 09.6	-1.6
VRZ	Vera Road	4.57	27		PN		Pn	19 09 12.6	+1.0
VRZ						AML	AML	19 10 44.6	
VRZ						AML	AML	19 10 51.1	
APZ	The Paps	4.63	218		PN		Pn	19 09 10.8	-1.7
APZ						AML	AML	19 10 43.2	
APZ						AML	AML	19 10 46.3	
APZ	The Paps	4.63	218		*e*Pn		Pn	19 09 10.8	-1.7
PKVZ	Pokaka	4.64	33		PN		Pn	19 09 13.0	+0.3
PKVZ						AML	AML	19 10 47.3	
PKVZ						AML	AML	19 11 03.2	
MOVZ	Moawhango	4.71	37		PN		Pn	19 09 13.5	-0.2
MOVZ						AML	AML	19 10 47.0	
MOVZ						AML	AML	19 10 57.0	
WNVZ	Wahianoa	4.71	35		PN		Pn	19 09 13.9	+0.2
WHVZ	Whangaehu Hut	4.74	35		PN		Pn	19 09 14.2	0.0
FWVZ	Far West T-bar	4.75	34		PN		Pn	19 09 14.3	0.0
FWVZ						AML	AML	19 10 48.2	
FWVZ						AML	AML	19 11 01.8	
TUVZ	Tukino	4.78	35	⇑	PN		Pn	19 09 15.1	+0.4
TUVZ						AML	AML	19 10 47.7	
TUVZ						AML	AML	19 11 01.2	
BHHZ	Black Hill Sta	4.78	40		PN		Pn	19 09 13.9	-0.8
PXZ	Pawanui	4.79	50		PN		Pn	19 09 13.4	-1.3
PXZ						AML	AML	19 10 23.1	
PXZ						AML	AML	19 10 48.1	
PXZ						AML	AML	19 11 03.7	
PXZ						AML	AML	19 11 06.4	
PXZ	Pawanui	4.79	50		*e*Pn		Pn	19 09 13.4	-1.3
KRHZ	Kereru	4.81	43		PN		Pn	19 09 13.1	-1.9
PYZ	Puysegur Point	4.85	231		PN		Pn	19 09 13.7	-1.8
PYZ	Puysegur Point	4.85	231		*e*Pn		Pn	19 09 15.0	-0.5
TWVZ	Taurewa	4.86	32		PN		Pn	19 09 15.5	-0.3
TWVZ						AML	AML	19 10 30.8	
TWVZ						AML	AML	19 10 56.6	
OTVZ	Oturere	4.87	35		PN		Pn	19 09 16.0	0.0
OTVZ						AML	AML	19 10 56.7	
OTVZ						AML	AML	19 11 02.4	
WTVZ	West Tongariro	4.88	34		PN		Pn	19 09 16.5	+0.4
WTVZ						AML	AML	19 10 37.5	
WTVZ						AML	AML	19 10 48.7	
KAHZ	Kahuranaki	4.96	48		PN		Pn	19 09 15.3	-1.8
KWHZ	Kaweka Forest	5.01	42		PN		Pn	19 09 16.9	-0.8
MCHZ	McNeill Hill	5.13	44		PN		Pn	19 09 18.5	-0.8
HIZ	Hauiti	5.16	25		PN		Pn	19 09 20.0	+0.2
HIZ	Hauiti	5.16	25		*e*Pn		Pn	19 09 20.0	+0.2
RATZ	Rangitukua	5.17	34		PN		Pn	19 09 20.0	0.0
RATZ						AML	AML	19 11 02.2	
RATZ						AML	AML	19 11 17.3	
BKZ	Black Stump Fm	5.24	41		PN		Pn	19 09 19.1	-1.8
BKZ						AML	AML	19 11 17.7	
BKZ						AML	AML	19 11 19.6	
BKZ	Black Stump Fm	5.24	41		*e*Pn		Pn	19 09 19.1	-1.8
WATZ	Wairara	5.29	32		AML		AML	19 11 18.0	
WATZ						AML	AML	19 11 32.9	
ARHZ	Aropaoanui	5.42	45		PN		Pn	19 09 22.9	-0.4
NMHZ	Naumai	5.45	42		PN		Pn	19 09 22.4	-1.4
TLZ	Tolley Road	5.55	29		PN		Pn	19 09 25.3	+0.1
RAHZ	Arahi	5.72	43		PN		Pn	19 09 27.4	-0.2
KNZ	Kokohu	5.95	47		PN		Pn	19 09 27.8	-2.8
KNZ						AML	AML	19 12 10.0	
KNZ						AML	AML	19 12 18.0	
KNZ	Kokohu	5.95	47		*e*Pn		Pn	19 09 27.8	-2.8
SNGZ	Shannon Statio	5.96	43		PN		Pn	19 09 29.0	-1.8
TOZ	Tahuroa Road	6.08	26		PN		Pn	19 09 33.1	+0.8
TOZ						AML	AML	19 11 38.4	
TOZ						AML	AML	19 11 38.8	
TOZ	Tahuroa Road	6.08	26		*e*Pn		Pn	19 09 33.1	+0.8
RIGZ	Rimuhau	6.23	45		PN		Pn	19 09 32.2	-2.3
URZ	Urewera	6.26	39		Pn		Pn	19 09 31.8	-3.0
	9.7nm,0.3s,baz=256,slow=5.5,SNR=39								
URZ						Sn		Sn	19 10 42.9	-3.1
	34nm,0.3s,baz=24,slow=12,SNR=7.1								
URZ						LR		LR	19 12 27.6	
	comp=Z,3µm,20.4s,baz=228,slow=43								
URZ	Urewera	6.26	39		PN		Pn	19 09 31.8	-3.0
URZ						AML	AML	19 11 54.5	
URZ						AML	AML	19 11 58.5	
MWZ	Matawai	6.39	42		*e*Pn		Pn	19 09 34.3	-2.4
AWAZ	Awhitu Peninsu	6.46	18		PN		Pn	19 09 38.7	+1.1
MKAZ	Moumakai	6.55	22		PN		Pn	19 09 39.0	+0.1
MKAZ						AML	AML	19 11 57.4	
MKAZ						AML	AML	19 12 09.0	
TWGZ	Tauwhareparae	6.74	43		PN		Pn	19 09 39.7	-1.8
WIAZ	Waiheke Island	6.84	21		PN		Pn	19 09 43.2	+0.4
HAZ	Te Kaha	6.97	40		PN		Pn	19 09 42.7	-2.0
PKGZ	Pakihiroa	7.01	42		PN		Pn	19 09 43.1	-2.2
WMGZ	Waiomatatini S	7.24	44		PN		Pn	19 09 46.6	-1.7
MXZ	Matakaoa Point	7.38	42		PN		Pn	19 09 48.2	-2.1
MXZ						AML	AML	19 10 28.8	
MXZ						AML	AML	19 10 36.2	
MXZ	Matakaoa Point	7.38	42		*e*Pn		Pn	19 09 47.8	-2.4
OUZ	Omahuta	8.09	9		*e*Pn		Pn	19 10 00.8	+0.9
RAO	Raoul Island	16.09	33		LR		LR	19 18 16.6	
	comp=Z,1µm,19.0s,baz=170,slow=38								
TAU	Tasmania Unive	18.10	263		*e*Pn		Pn	19 12 13.1	-0.8
	97nm,1.7s								
CAN	Canberra	19.51	286		*e*P		P	19 12 28.8	-1.0
	63nm,1.7s								
ARMA	Armidale	20.72	301		*e*P		Pn	19 12 44.4	-1.1
	59nm,1.6s								
DZM	Mont Dzumac	21.62	346		P		P	19 12 51.3	-1.5
	12nm,0.9s,baz=167,slow=18,SNR=2.1								
DZM						LR		LR	19 20 44.4	
	comp=Z,1µm,18.3s,baz=184,slow=36								
EIDS	Eidsvold	24.77	309		*e*P		P	19 13 26.1	+1.9
	30nm,1.4s								
MSVF	Nonsavu	25.92	13		*e*P		P	19 13 36.5	+1.8
	16nm,0.9s								
STKA	Stephens Creek	26.57	285		P		P	19 13 41.8	+1.3
	2.0nm,0.7s,baz=106,slow=9.9,SNR=8.7								
STKA						LR		LR	19 22 33.8	
	comp=Z,132nm,20.2s,baz=85,slow=33								
STKA	Stephens Creek	26.57	285		*e*P		P	19 13 41.2	+0.7
	1.6nm,1.1s								
BBOO	Buckleboo	30.03	278		*e*P		P	19 14 12.4	+1.0
	51nm,1.7s								
VNDA	Vanda	34.65	184		LR		LR	19 28 11.8	
	comp=Z,304nm,18.3s,baz=13,slow=35								
HNR	Honiara	35.31	339		LR		LR	19 26 56.6	
	comp=Z,287nm,19.4s,baz=130,slow=32								
AS01	Alice Springs	36.93	289		*e*P		P	19 15 11.4	-0.2
AS31	Alice Springs	36.96	289		*e*P		P	19 15 12.4	+0.6
	3.0nm,0.6s								
ASAR	Alice Springs	36.96	289		P		P	19 15 11.0	-0.8
	2.7nm,0.7s,baz=134,slow=9.8,SNR=27								
ASAR						LR		LR	19 31 28.9	
	comp=Z,188nm,18.1s,baz=163,slow=38								
WB2	Warramunga Arr	39.19	294		*e*P		P	19 15 33.9	+3.3
WR1	Warramunga Arr	39.20	294		*e*P		P	19 15 30.0	-0.6
WRA	Warramunga Arr	39.20	294		P		P	19 15 30.0	-0.6
	17nm,0.8s,baz=134,slow=7.7,SNR=32								
WRAB	Tennant Creek	39.20	294		*e*P		P	19 15 31.4	+0.8
	18nm,0.7s								
PAE	Paea	41.19	64		*e*T		T	19 58 22.2	
	4.1nm,0.3s								
PPT2	Papeete2	41.24	64		*e*LR		LR	19 27 07.4	
	325nm,23.8s								
FITZ	Fitzroy Crossi	46.40	288		LR		LR	19 35 51.3	
	comp=Z,225nm,19.0s,slow=36								
BATI	Baumata	53.31	293		LR		LR	19 40 02.9	
	comp=Z,227nm,19.7s,baz=104,slow=36								
TAOE	Nuku Hiva Isla	53.84	65		*e*LR		LR	19 32 58.0	
	323nm,24.4s								
MAW	Mawson	57.44	205		P		P	19 17 54.1	+3.5
	4.5nm,0.9s,baz=137,slow=7.7,SNR=6.0								
MAW						LR		LR	19 41 26.0	
	comp=Z,229nm,18.2s,baz=76,slow=35								
MAW	Mawson	57.44	205		*e*P		P	19 17 54.0	+3.4
	2.7nm,1.3s								
SYO	Syowa Base	62.69	197	⇑	*e*P		P	19 18 29.8	+3.1
DAV	Davao City (W)	65.44	308		LR		LR	19 46 25.7	
	comp=Z,2µm,21.2s,baz=65,slow=35								
PLCA	Paso Flores	79.13	137		P		P	19 20 09.0	+1.8
	3.6nm,1.0s,baz=216,slow=8.7,SNR=2.7								
PLCA	Paso Flores	79.13	137		*e*P		P	19 20 08.9	+1.8
	26nm,1.8s								
PSI	Prapat	79.74	284		LR		LR	19 58 19.9	
	comp=Z,81nm,18.3s,baz=141,slow=38								
KSRS	Korea Array	89.78	326		P		P	19 21 01.9	+1.4
	1.2nm,0.7s,baz=158,slow=9.0,SNR=3.3								
KSAR	Wonju Array Be	89.79	326		P		P	19 21 01.9	+1.3
CMAR	Chiang Mai Arr	90.79	295		P		P	19 21 07.8	+2.1
	0.3nm,0.3s,baz=152,slow=4.1,SNR=4.4								
KMI	Kunming	93.14	302		P		P	19 21 19.0	+2.2
KMI					pmax		pmax		
	comp=Z,5.0nm,0.7s								
KMI					pmax		pmax		
	comp=Z,54nm,4.5s								
CN2	Changchun	96.17	328		*e*P		P	19 21 33.8	+3.9
CD2	Chengdu	96.72	306		P		P	19 21 33.0	+0.2
CD2					pmax		pmax		
	comp=Z,2.0nm,0.6s								
CPUP	Villa Florida	97.21	137		LR		LR	20 01 19.4	
	comp=Z,70nm,20.9s,baz=201,slow=33								
HHC	Hu-ho-hao-te	99.91	318		*e*P		Pdif	19 21 48.8	+1.9
HHC					pmax		pmax		
	comp=Z,45nm,7.4s								
ILAR	Eielson Array	112.35	18		PKiKP		PKiKP	19 26 36.8	-0.3
	0.5nm,0.9s,baz=265,slow=1.8,SNR=4.2								
WMQ	Urumqi	114.80	307		*e*PKP		PKPdf	19 26 42.5	-0.1
INK	Inuvik	118.38	20		PKP		PKPdf	19 26 48.7	+0.1
	0.8nm,0.6s,baz=197,slow=7.3,SNR=4.4								
INK	Inuvik	118.38	20		*e*PKPdf		PKPdf	19 26 48.5	-0.1
MK32	Makanchi Array	119.62	308		*e*PKPdf		PKPdf	19 26 51.5	-0.2
MKAR	Makanchi Array	119.62	308		PKP		PKPdf	19 26 51.5	-0.2
	0.9nm,1.0s,baz=270,slow=0.6,SNR=3.0								
YKA	Yellowknife Ar	120.46	31		PKP		PKPdf	19 26 52.4	-0.4
	1.1nm,0.8s,baz=241,slow=1.6,SNR=21								
YKB5	Yellowknife Ar	120.46	31		*e*PKPdf		PKPdf	19 26 51.7	-1.1
ZALV	Zalesovo Beam	122.01	316		PKP		PKPdf	19 26 58.4	+2.4
	0.4nm,0.5s,baz=173,slow=3.8,SNR=2.3								
ZAA1	Zalesovo Array	122.01	316		*e*PKPdf		PKPdf	19 26 58.4	+2.4
ULM	Lac du Bonnet	122.67	50		PKP		PKPdf	19 27 00.1	+2.7
	2.5nm,0.6s,baz=265,slow=2.7,SNR=2.7								
RES	Resolute Bay	131.92	21		*e*PKPdf		PKPdf	19 27 14.0	-0.4
DBIC	Dimbokro	143.49	185		PKhKP		PKPpre	19 27 35.2	
	5.6nm,1.1s,baz=240,slow=8.1,SNR=2.6								
DBIC	Dimbokro	143.49	185		*e*PKPpre		PKPpre	19 27 35.0	
KBZ	Khabaz	143.62	289		PKP		PKPdf	19 27 35.5	-1.2
	1.7nm,1.0s,baz=140,slow=7.9,SNR=3.1								
LVZ	Lovozero	146.67	332		*e*PKPdf		PKPdf	19 27 41.9	+0.5
ARA0	ARCESS Array S	148.60	338		*e*PKPdf		PKPdf	19 27 44.9	+0.4
ARA0					*e*PKPdf		PKPbc	19 27 45.2	-3.0
ARA0					*e*PKPbc		PKiKP	19 27 48.5	-1.2
ARCES	ARCESS Array B	148.60	338		PKP		PKPdf	19 27 44.9	+0.4
	3.8nm,1.0s,baz=18,slow=13,SNR=14								
ARCES						PKPbc		PKPbc	19 27 48.5	+0.3
	2.9nm,0.8s,baz=57,slow=1.9,SNR=14								
TOA0	Torodi Ar. Sit	148.90	198		*e*PKPdf		PKPdf	19 27 47.0	+0.5
TOA0					*e*PKPbc		PKiKP	19 27 51.1	-0.8
TOA0					*e*PK

ellipse: s-maj=48.1km s-min=28.8km az=69.0
*ISCJB **29** 19:30:07.2±1.6,6°.37S±0°.09×147°.5E±0°.3,h63km,mb3.5/5, Error ellipse: s-maj=36.6km s-min=13.3km az=175.9*

ISC 29 19:30:09.1±1.7,6°.4S±0°.1×147°.5E±0°.4,h63km,n8,σ0s74/9, mb3.5/5,Eastern New Guinea region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**3.02**	**187**	P	**Pn**	**19 30 54.1**	**-0.3**
	24nm,0.3s,baz=51,slow=8.6,SNR=26						
PMG				S	**Sn**	**19 31 29.5**	**+0.1**
	11nm,0.3s,baz=8.7,slow=24,SNR=6.0						
WRA	**Warramunga Arr**	**18.57**	**222**	P	**P**	**19 34 20.2**	**-1.0**
	0.3nm,0.3s,baz=51,slow=11,SNR=16						
ASAR	**Alice Springs**	**21.59**	**216**	P	**P**	**19 34 54.2**	**+0.3**
	1.2nm,0.5s,baz=55,slow=8.7,SNR=36						
FITZ	**Fitzroy Crossi**	**24.30**	**239**	P	**P**	**19 35 21.6**	**+0.8**
	2.2nm,0.5s,baz=55,slow=6.6,SNR=19						
STKA	**Stephens Creek**	**25.95**	**192**	P	**P**	**19 35 35.4**	**-0.4**
	1.2nm,0.7s,baz=327,slow=10,SNR=3.1						
VNDA	**Vanda**	**71.50**	**177**	P	**P**	**19 41 23.2**	**+0.5**
	0.6nm,0.6s,baz=339,slow=7.6,SNR=13						
MKAR	**Makanchi Array**	**78.12**	**320**	P	**P**	**19 42 00.7**	**-0.7**
	0.1nm,0.5s,baz=81,slow=4.5,SNR=2.8						
TORD	**Torodi Ar. Bea**	**145.67**	**284**	PKPbc	**PKPab**	**19 49 42.9**	**+0.7**
	0.7nm,0.4s,baz=82,slow=3.5,SNR=5.8						

*ROM **29** 19:33:03.4±0.2,44°.39N×7°.32E,h12km±3km,Md2.6/13, Ml2.4/13,Error ellipse: s-maj=2.9km s-min=1.1km az=54.0*
*ISCJB **29** 19:33:03.1±0.2,44°.40N±0°.01×7°.29E±0°.03,h26km±2km, Error ellipse: s-maj=3.2km s-min=2.3km az=158.5*
*CSEM **29** 19:33:03.0±0.1,44°.41N×7°.30E,h10km,ML2.7/32,Error ellipse: s-maj=2.4km s-min=1.7km az=67.0*
*STR **29** 19:33:04.2±0.1,44°.38N×7°.28E,h5km,Ml2.7,Error ellipse: s-maj=0.0km s-min=0.0km az=0.0*
*LDG **29** 19:33:04.1±0.0,44°.38N×7°.32E,h6km,Md2.6/3,Ml2.6/34, Error ellipse: s-maj=0.8km s-min=0.6km az=65.0*
*GEN **29** 19:33:04.1,44°.37N×7°.30E,h11km,ML2.7*

ISC 29 19:33:03.1±0.8,44°.39N±0°.01×7°.33E±0°.02,h18km±4km, n104,σ0s91/196,Northern Italy

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DOI	**San Damiano**	**0.13**	**332**	Pg	**Pb**	**19 33 07.7**	**+1.5**
DOI				Sg	**Sg**	**19 33 10.0**	**0.0**
	8μm,0.2s						
DOI	**San Damiano**	**0.13**	**332**	Pg	**Pb**	**19 33 07.7**	**+1.5**
DOI				Sg	**Sg**	**19 33 10.0**	**0.0**
	8μm,0.2s						
STV	**Sant Anna di V**	**0.15**	**181**	Pg	**Pg**	**19 33 07.5**	**+0.1**
STV				Sg	**Sg**	**19 33 09.5**	**-0.8**
STV	**Sant Anna di V**	**0.15**	**181**	Pg	**Pg**	**19 33 07.5**	**+0.1**
STV				Sg	**Sg**	**19 33 09.5**	**-0.8**
ENR	**Entracque**	**0.18**	**159**	P	**Pg**	**19 33 07.9**	**+0.1**
ENR				S	**Sg**	**19 33 10.5**	**-0.5**
PZZ	**Stroppo**	**0.19**	**307**	Pg	**Pg**	**19 33 08.4**	**+0.3**
PZZ				Sg	**Sg**	**19 33 11.3**	**-0.1**
	3μm,0.2s						
CBBF	**Combe Brimond**	**0.40**	**301**	*e*Pg	**Pg**	**19 33 11.9**	**+0.5**
CBBF	**Combe Brimond**	**0.40**	**301**	*e*Pg	**Pg**	**19 33 11.9**	**+0.5**
LUCF	**Luceram**	**0.50**	**179**	Pg	**Pg**	**19 33 13.7**	**+0.5**
LUCF				Sg	**Sg**	**19 33 20.2**	**+0.2**
LUCF	**Luceram**	**0.50**	**179**	Pg	**Pg**	**19 33 13.7**	**+0.5**
LUCF				Sg	**Sg**	**19 33 20.2**	**+0.2**
OG22	**Abries**	**0.51**	**328**	Pg	**Pg**	**19 33 13.8**	**+0.3**
OG22				Sg	**Sg**	**19 33 20.9**	**+0.5**
OG22	**Abries**	**0.51**	**328**	Pg	**Pg**	**19 33 13.8**	**+0.3**
OG22				Sg	**Sg**	**19 33 20.9**	**+0.5**
MVIF	**Mont Vial**	**0.51**	**194**	Pg	**Pg**	**19 33 13.7**	**+0.2**
MVIF				Sg	**Sg**	**19 33 20.4**	**0.0**
MVIF	**Mont Vial**	**0.51**	**194**	Pg	**Pg**	**19 33 13.7**	**+0.2**
MVIF				Sg	**Sg**	**19 33 20.4**	**0.0**
MBDF	**Montbardon**	**0.52**	**310**	*e*Pg	**Pg**	**19 33 14.0**	**+0.4**
MBDF				*e*Sg	**Sg**	**19 33 21.5**	**+0.8**
	61nm,0.2s						
MBDF	**Montbardon**	**0.52**	**310**	*e*Pg	**Pg**	**19 33 14.0**	**+0.4**
MBDF				*e*Sg	**Sg**	**19 33 21.5**	**+0.8**
	30nm,0.2s						
SBF	**Sospel**	**0.54**	**172**	*e*Pg	**Pg**	**19 33 14.1**	**+0.2**
SBF				*e*Sg	**Sg**	**19 33 20.8**	**-0.3**
	245nm,0.2s						
SBF	**Sospel**	**0.54**	**172**	*e*Pg	**Pg**	**19 33 14.1**	**+0.2**
SBF				*e*Sg	**Sg**	**19 33 20.8**	**-0.3**
	122nm,0.2s						
RORO	**Rocca Rossa**	**0.60**	**118**	Pg	**Pb**	**19 33 15.4**	**+0.4**
RORO				Sg	**Sb**	**19 33 23.4**	**+0.3**
	152nm,0.2s						
RORO	**Rocca Rossa**	**0.60**	**118**	Pg	**Pb**	**19 33 15.4**	**+0.4**
RORO				Sg	**Sb**	**19 33 23.4**	**+0.3**
	152nm,0.2s						
NEGI	**Seborga**	**0.61**	**154**	P	**Pg**	**19 33 15.5**	**+0.3**
NEGI				S	**Sg**	**19 33 23.2**	**-0.1**
IMI	**Imperia**	**0.63**	**140**	Pg	**Pg**	**19 33 15.9**	**+0.3**
IMI				Sg	**Sg**	**19 33 24.1**	**+0.1**
	103nm,0.2s						
IMI	**Imperia**	**0.63**	**140**	P	**Pg**	**19 33 15.9**	**+0.3**
IMI				S	**Sg**	**19 33 24.1**	**+0.1**
REVF	**Revere**	**0.65**	**178**	Pg	**Pg**	**19 33 16.5**	**+0.5**
REVF				Sg	**Sb**	**19 33 25.4**	**+0.7**
REVF	**Revere**	**0.65**	**178**	Pg	**Pg**	**19 33 16.5**	**+0.5**
REVF				Sg	**Sb**	**19 33 25.4**	**+0.7**
RRL	**Rocca Remolon**	**0.65**	**324**	Pg	**Pg**	**19 33 16.4**	**+0.3**
RRL				Sg	**Sg**	**19 33 25.2**	**+0.3**
	58nm,0.2s						
RRL	**Rocca Remolon**	**0.65**	**324**	Pg	**Pg**	**19 33 16.4**	**+0.3**
RRL				Sg	**Sg**	**19 33 25.2**	**+0.3**
	58nm,0.2s						
CALN	**Calern**	**0.71**	**207**	Pg	**Pg**	**19 33 17.4**	**+0.2**
CALN				Sg	**Sg**	**19 33 26.9**	**+0.2**
CALN	**Calern**	**0.71**	**207**	Pg	**Pg**	**19 33 17.4**	**+0.2**
CALN				Sg	**Sg**	**19 33 26.9**	**+0.2**
QLNO	**Quiliano**	**0.73**	**95**	Pg	**Pb**	**19 33 18.0**	**+0.7**
QLNO				Sg	**Sb**	**19 33 27.5**	**+0.5**
	116nm,0.4s						
QLNO	**Quiliano**	**0.73**	**95**	Pg	**Pb**	**19 33 18.0**	**+0.7**
QLNO				Sg	**Sb**	**19 33 27.5**	**+0.5**
	116nm,0.4s						
FINB	**Finale Ligure**	**0.75**	**106**	Pg	**Pb**	**19 33 18.3**	**+0.8**
FINB				Sg	**Sb**	**19 33 27.7**	**+0.3**
	281nm,0.3s						
FINB	**Finale Ligure**	**0.75**	**106**	Pg	**Pb**	**19 33 18.3**	**+0.8**
FINB				Sg	**Sb**	**19 33 27.7**	**+0.3**
	281nm,0.3s						
RSP	**Reno Superiore**	**0.76**	**357**	Pg	**Pg**	**19 33 17.0**	**-1.0**
RSP				Sg	**Sg**	**19 33 28.0**	**-0.1**
	39nm,0.1s						
RSP	**Reno Superiore**	**0.76**	**357**	Pg	**Pg**	**19 33 17.0**	**-1.0**
RSP				Sg	**Sg**	**19 33 28.0**	**-0.1**
	39nm,0.1s						
MONC	**Moncucco Torin**	**0.80**	**32**	Pg	**Pg**	**19 33 19.5**	**+0.7**
	131nm,0.5s						
MONC	**Moncucco Torin**	**0.80**	**32**	Pg	**Pg**	**19 33 19.5**	**+0.7**
	131nm,0.5s						
PCP	**Piancastagn**	**0.88**	**80**	Pg	**Pn**	**19 33 20.8**	**+0.1**
PCP				Sg	**Sg**	**19 33 32.1**	**+0.1**
	81nm,0.3s						
PCP	**Piancastagn**	**0.88**	**80**	Pg	**Pn**	**19 33 20.8**	**+0.1**
PCP				Sg	**Sg**	**19 33 32.1**	**+0.1**
	81nm,0.3s						
FRF	**La Foret Royal**	**0.97**	**211**	*e*Pg	**Pb**	**19 33 21.6**	**+0.3**
FRF				*e*Sg	**Sb**	**19 33 33.9**	**+0.2**
	150nm,0.2s						
FRF	**La Foret Royal**	**0.97**	**211**	*e*Pg	**Pb**	**19 33 21.6**	**+0.3**
FRF				*e*Sg	**Sb**	**19 33 33.9**	**+0.2**
	75nm,0.2s						
LSD	**Lago del Serru**	**1.08**	**353**	Pg	**Pb**	**19 33 22.8**	**-0.5**
LSD				Sg	**Sb**	**19 33 38.1**	**+0.9**
	31nm,0.2s						
LSD	**Lago del Serru**	**1.08**	**353**	Pg	**Pb**	**19 33 22.8**	**-0.5**
LSD				Sg	**Sb**	**19 33 38.1**	**+0.9**
	31nm,0.2s						
TRAV	**Traversella**	**1.16**	**15**	Pg	**Pn**	**19 33 24.3**	**-0.2**
	19nm,0.6s						
TRAV	**Traversella**	**1.16**	**15**	Pg	**Pn**	**19 33 24.3**	**-0.2**
	19nm,0.6s						
ORIF	**Oris-en-Rattie**	**1.16**	**297**	*e*Pn	**Pb**	**19 33 25.5**	**+0.8**
ORIF				*e*Sn	**Sb**	**19 33 40.0**	**+0.6**
	19nm,0.2s						
ORIF	**Oris-en-Rattie**	**1.16**	**297**	*e*Pn	**Pb**	**19 33 25.5**	**+0.8**
ORIF				*e*Sn	**Sb**	**19 33 40.0**	**+0.6**
	9.6nm,0.2s						
LPG	**La Plagne**	**1.18**	**340**	*e*Pn	**Pn**	**19 33 25.3**	**+0.3**
LPG				*e*Sn	**Sb**	**19 33 41.1**	**+0.9**
	35nm,0.5s						
LPG	**La Plagne**	**1.18**	**340**	*e*Pn	**Pn**	**19 33 25.3**	**+0.3**
LPG				*e*Sn	**Sb**	**19 33 41.1**	**+0.9**
	18nm,0.5s						
LPL	**La Plagne**	**1.20**	**340**	*e*Pn	**Pn**	**19 33 25.6**	**+0.4**
LPL				*e*Sn	**Sb**	**19 33 41.3**	**+0.6**
	25nm,0.3s						
LPL	**La Plagne**	**1.20**	**340**	*e*Pn	**Pn**	**19 33 25.6**	**+0.4**
LPL				*e*Sn	**Sb**	**19 33 41.3**	**+0.6**
	12nm,0.3s						
LMR	**La Mourre**	**1.21**	**210**	*e*Pn	**Pn**	**19 33 25.8**	**+0.6**
LMR	**La Mourre**	**1.21**	**210**	*e*Pg	**Pb**	**19 33 26.5**	**+1.0**
LMR				*e*Sg	**Sb**	**19 33 41.6**	**+0.8**
	242nm,0.3s						
LMR	**La Mourre**	**1.21**	**210**	*e*Pn	**Pn**	**19 33 25.8**	**+0.6**
LMR	**La Mourre**	**1.21**	**210**	*e*Pg	**Pb**	**19 33 26.5**	**+1.0**
LMR				*e*Sg	**Sb**	**19 33 41.6**	**+0.8**
	121nm,0.3s						
SMRF	**Simiane la Rot**	**1.33**	**252**	*e*Pg	**Pg**	**19 33 29.0**	**+0.2**
SMRF				*e*Sg	**Sb**	**19 33 45.9**	**+1.7**
	64nm,0.3s						
SMRF	**Simiane la Rot**	**1.33**	**252**	*e*Pg	**Pg**	**19 33 29.0**	**+0.2**
SMRF				*e*Sg	**Sb**	**19 33 45.9**	**+1.7**
	32nm,0.3s						
MRGE	**Morge**	**1.39**	**352**	Pg	**Pn**	**19 33 28.2**	**+0.4**
	18nm,0.6s						
MRGE	**Morge**	**1.39**	**352**	Pg	**Pn**	**19 33 28.2**	**+0.4**
	18nm,0.6s						
VIVF	**Saint-Julien-l**	**1.95**	**285**	*e*Pn	**Pn**	**19 33 36.4**	**+1.0**
VIVF				*e*Sn	**Sn**	**19 33 59.1**	**-0.3**
VIVF				*e*Sg	**Sg**	**19 34 05.8**	**-0.2**
	5.6nm,0.3s						
VIVF	**Saint-Julien-l**	**1.95**	**285**	*e*Pn	**Pn**	**19 33 36.4**	**+1.0**
VIVF				*e*Sn	**Sn**	**19 33 59.1**	**-0.3**
VIVF				*e*Sg	**Sg**	**19 34 05.8**	**-0.2**
	2.8nm,0.3s						
PGF	**Pioggiola**	**2.21**	**146**	*e*Pn	**Pn**	**19 33 39.3**	**+0.4**
PGF				*e*Sn	**Sn**	**19 34 05.1**	**-0.7**
	4.0nm,0.3s						
PGF	**Pioggiola**	**2.21**	**146**	*e*Pn	**Pn**	**19 33 39.3**	**+0.4**
PGF				*e*Sn	**Sn**	**19 34 05.1**	**-0.7**
	2.0nm,0.3s						
CABF	**La Chapelle**	**2.38**	**339**	*e*Pn	**Pn**	**19 33 41.9**	**+0.5**
CABF	**La Chapelle**	**2.38**	**339**	*e*Pg	**Pg**	**19 33 48.7**	**-0.1**
CABF				*e*Sn	**Sn**	**19 34 09.8**	**-0.4**
	3.8nm,0.4s						
CABF	**La Chapelle**	**2.38**	**339**	*e*Pn	**Pn**	**19 33 41.9**	**+0.5**
CABF	**La Chapelle**	**2.38**	**339**	*e*Pg	**Pg**	**19 33 48.7**	**-0.1**
CABF				*e*Sn	**Sn**	**19 34 09.8**	**-0.4**
	1.9nm,0.4s						
LASF	**Ste Croix**	**2.52**	**264**	*e*Pn	**Pn**	**19 33 44.1**	**+1.0**
LASF	**Ste Croix**	**2.52**	**264**	*e*Pg	**Pg**	**19 33 51.0**	**-0.4**
LASF				*e*Sn	**Sn**	**19 34 12.2**	**-1.1**
	1.1nm,0.1s						
LASF				*e*Sg	**Sg**	**19 34 23.0**	**-1.0**
	1.6nm,0.2s						
LASF	**Ste Croix**	**2.52**	**264**	*e*Pn	**Pn**	**19 33 44.1**	**+1.0**
LASF	**Ste Croix**	**2.52**	**264**	*e*Pg	**Pg**	**19 33 51.0**	**-0.4**
LASF				*e*Sn	**Sn**	**19 34 12.2**	**-1.1**
	0.6nm,0.1s						
LASF				*e*Sg	**Sg**	**19 34 23.0**	**-1.0**
	0.8nm,0.2s						
SMF	**Signal de Mont**	**3.33**	**314**	*e*Pn	**Pn**	**19 33 54.9**	**+0.6**
SMF				*e*Sn	**Sn**	**19 34 32.3**	**-1.1**
	4.4nm,0.2s						
SMF	**Signal de Mont**	**3.33**	**314**	*e*Pn	**Pn**	**19 33 54.9**	**+0.6**
SMF				*e*Sn	**Sn**	**19 34 32.3**	**-1.1**
	2.2nm,0.2s						
HINF	**Hinteralfeld**	**3.44**	**355**	*e*Pn	**Pn**	**19 33 56.5**	**+0.7**
HINF				*e*Sn	**Sn**	**19 34 35.2**	**-0.9**
	2.4nm,0.3s						
HINF	**Hinteralfeld**	**3.44**	**355**	*e*Pn	**Pn**	**19 33 56.5**	**+0.7**
HINF				*e*Sn	**Sn**	**19 34 35.2**	**-0.9**
	1.2nm,0.3s						
HAU	**Haudompre**	**3.68**	**350**	*e*Pn	**Pn**	**19 34 00.0**	**+0.9**
HAU				*e*Sn	**Sn**	**19 34 40.9**	**-1.0**
	5.7nm,0.3s						
HAU	**Haudompre**	**3.68**	**350**	*e*Pn	**Pn**	**19 34 00.0**	**+0.9**
HAU				*e*Sn	**Sn**	**19 34 40.9**	**-1.0**
	2.8nm,0.3s						
AVF	**Avril sur Loir**	**3.68**	**312**	*e*Pn	**Pn**	**19 33 59.4**	**+0.3**
AVF				*e*Sn	**Sn**	**19 34 40.2**	**-1.8**
	1.7nm,0.3s						
AVF	**Avril sur Loir**	**3.68**	**312**	*e*Pn	**Pn**	**19 33 59.4**	**+0.3**
AVF				*e*Sn	**Sn**	**19 34 40.2**	**-1.8**
	0.9nm,0.3s						
LOR	**Lormes**	**3.76**	**321**	*e*Pn	**Pn**	**19 34 00.8**	**+0.6**
	baz=143						
LOR				*e*Sn	**Sn**	**19 34 42.7**	**-1.3**
	2.0nm,0.3s						
LOR	**Lormes**	**3.76**	**321**	*e*Pn	**Pn**	**19 34 00.8**	**+0.6**
LOR				*e*Sn	**Sn**	**19 34 42.7**	**-1.3**
	1.0nm,0.3s						
SSF	**Saint Saulge**	**3.78**	**316**	*e*Pn	**Pn**	**19 34 01.2**	**+0.8**
SSF				*e*Sn	**Sn**	**19 34 43.0**	**-1.4**
	3.1nm,0.4s						
SSF	**Saint Saulge**	**3.78**	**316**	*e*Pn	**Pn**	**19 34 01.2**	**+0.8**
SSF				*e*Sn	**Sn**	**19 34 43.0**	**-1.4**
	1.5nm,0.4s						
CAF	**Calviac**	**3.79**	**280**	*e*Pn	**Pn**	**19 34 01.0**	**+0.3**
CAF				*e*Sn	**Sn**	**19 34 43.1**	**-1.8**
	1.0nm,0.2s						
CAF	**Calviac**	**3.79**	**280**	*e*Pn	**Pn**	**19 34 01.0**	**+0.3**
CAF				*e*Sn	**Sn**	**19 34 43.1**	**-1.8**
	0.5nm,0.2s						
BGF	**Bois d'Agland**	**3.83**	**306**	*e*Pn	**Pn**	**19 34 01.8**	**+0.7**
BGF				*e*Sn	**Sn**	**19 34 44.1**	**-1.5**
	4.2nm,0.4s						
BGF	**Bois d'Agland**	**3.83**	**306**	*e*Pn	**Pn**	**19 34 01.8**	**+0.7**
BGF				*e*Sn	**Sn**	**19 34 44.1**	**-1.5**
	2.1nm,0.4s						
MTLF	**Montolieu**	**3.84**	**256**	*e*Pn	**Pn**	**19 34 01.7**	**+0.4**
MTLF	**Montolieu**	**3.84**	**256**	*e*Pg	**Pg**	**19 34 15.0**	**-1.7**
MTLF				*e*Sn	**Sn**	**19 34 43.8**	**-2.2**
	2.5nm,0.3s						
MTLF	**Montolieu**	**3.84**	**256**	*e*Pn	**Pn**	**19 34 01.7**	**+0.4**
MTLF	**Montolieu**	**3.84**	**256**	*e*Pg	**Pg**	**19 34 15.0**	**-1.7**
MTLF				*e*Sn	**Sn**	**19 34 43.8**	**-2.2**
	1.2nm,0.3s						
CDF	**Champ du Feu**	**4.02**	**359**	*e*Pn	**Pn**	**19 34 04.6**	**+0.8**
CDF				*e*Sn	**Sn**	**19 34 49.1**	**-1.4**
	1.6nm,0.3s						
CDF	**Champ du Feu**	**4.02**	**359**	*e*Pn	**Pn**	**19 34 04.6**	**+0.8**
CDF				*e*Sn	**Sn**	**19 34 49.1**	**-1.4**
	0.8nm,0.3s						
TCF	**Toulx Ste Croi**	**4.08**	**299**	*e*Pn	**Pn**	**19 34 05.2**	**+0.6**
TCF				*e*Sn	**Sn**	**19 34 49.9**	**-1.9**
	0.4nm,0.2s						
TCF	**Toulx Ste Croi**	**4.08**	**299**	*e*Pn	**Pn**	**19 34 05.2**	**+0.6**
TCF				*e*Sn	**Sn**	**19 34 49.9**	**-1.9**
	0.2nm,0.2s						
SFTF	**Sexfontaines**	**4.13**	**338**	*e*Pn	**Pn**	**19 34 05.5**	**+0.2**
	baz=154						
SFTF				*e*Sn	**Sn**	**19 34 51.5**	**-1.6**
	3.1nm,0.2s						
SFTF	**Sexfontaines**	**4.13**	**338**	*e*Pn	**Pn**	**19 34 05.5**	**+0.2**
SFTF				*e*Sn	**Sn**	**19 34 51.5**	**-1.6**
	1.5nm,0.2s						
RJF	**Les Rejaudoux**	**4.23**	**284**	*e*Pn	**Pn**	**19 34 07.3**	**+0.6**
RJF				*e*Sn	**Sn**	**19 34 53.4**	**-2.2**
	0.4nm,0.3s						
PAGF	**Fort de Pagny**	**4.31**	**346**	*e*Pn	**Pn**	**19 34 08.1**	**+0.4**
PAGF				*e*Sn	**Sn**	**19 34 55.4**	**-2.1**
	0.7nm,0.3s						
PAGF	**Fort de Pagny**	**4.31**	**346**	*e*Pn	**Pn**	**19 34 08.1**	**+0.4**
PAGF				*e*Sn	**Sn**	**19 34 55.4**	**-2.1**
	0.3nm,0.3s						
MEZF	**Maizieres J'vi**	**4.40**	**340**	*e*Pn	**Pn**	**19 34 09.6**	**+0.6**
MEZF				*e*Sn	**Sn**	**19 34 57.2**	**-2.5**
	0.8nm,0.2s						
MEZF	**Maizieres J'vi**	**4.40**	**340**	*e*Pn	**Pn**	**19 34 09.6**	**+0.6**
MEZF				*e*Sn	**Sn**	**19 34 57.2**	**-2.5**
	0.4nm,0.2s						
LFF	**La Frestale**	**4.73**	**279**	*e*Pn	**Pn**	**19 34 14.0**	**+0.5**
LFF				*e*Sn	**Sn**	**19 35 05.6**	**-2.3**
	1.9nm,0.3s						
LFF	**La Frestale**	**4.73**	**279**	*e*Pn	**Pn**	**19 34 14.0**	**+0.5**
LFF				*e*Sn	**Sn**	**19 35 05.6**	**-2.3**
	0.9nm,0.3s						

WEL 29 19:40:24.6±0.4,36°.18S×177°.61E,h207km±4km,ML3.8/10, 1D,Error ellipse: s-maj=6.9km s-min=5.8km az=90.0,

Off east coast of North Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HAZ	**Te Kaha**	**1.58**	**175**	PN	**Pn**	**19 40 59.7**	**+0.1**
HAZ				SN	S	**19 41 26.4**	**-0.3**
WMGZ	**Waiomatatini S**	**1.75**	**159**	SN	S	**19 41 28.9**	**-0.7**
TWGZ	**Tauwhareparae**	**2.01**	**172**	PN	**Pn**	**19 41 04.4**	**+0.6**
TWGZ				SN	S	**19 41 34.6**	**+0.4**
URZ	**Urewera**	**2.11**	**191**	PN	**Pn**	**19 41 05.1**	**+0.4**
URZ				SN	S	**19 41 36.8**	**+1.0**
MWZ	**Matawai**	**2.15**	**182**	PN	**Pn**	**19 41 05.4**	**+0.2**
CNGZ	**Carnagh Statio**	**2.35**	**169**	PN	**Pn**	**19 41 07.6**	**+0.4**
MUGZ	**Murupara**	**2.39**	**196**	PN	**Pn**	**19 41 08.4**	**+0.6**
RIGZ	**Rimuhau**	**2.52**	**177**	PN	**Pn**	**19 41 09.0**	**-0.2**
SNGZ	**Shannon Statio**	**2.60**	**185**	PN	**Pn**	**19 41 10.4**	**+0.3**
KNZ	**Kokohu**	**2.83**	**179**	PN	**Pn**	**19 41 12.3**	**-0.3**
MHGZ	**Mahia Peninsul**	**2.97**	**176**	PN	**Pn**	**19 41 14.1**	**-0.2**
NMHZ	**Naumai**	**2.98**	**192**	PN	**Pn**	**19 41 15.2**	**+0.8**
BKZ	**Black Stump Fm**	**3.11**	**196**	PN	**Pn**	**19 41 15.8**	**-0.1**
MCHZ	**McNeill Hill**	**3.34**	**192**	PN	**Pn**	**19 41 18.9**	**+0.4**
KWHZ	**Kaweka Forest**	**3.37**	**196**	PN	**Pn**	**19 41 18.9**	**-0.2**
BHHZ	**Black Hill Sta**	**3.52**	**200**	PN	**Pn**	**19 41 20.6**	**-0.2**
KRHZ	**Kereru**	**3.59**	**196**	PN	**Pn**	**19 41 21.0**	**-0.6**
KAHZ	**Kahuranaki**	**3.65**	**189**	PN	**Pn**	**19 41 22.0**	**-0.4**
PXZ	**Pawanui**	**3.89**	**189**	PN	**Pn**	**19 41 24.1**	**-1.1**
PNHZ	**Pukenui**	**3.89**	**196**	PN	**Pn**	**19 41 24.4**	**-0.9**
WPHZ	**Waipukurau**	**3.98**	**193**	PN	**Pn**	**19 41 25.2**	**-1.2**
TSZ	**Takapari Road**	**4.08**	**198**	PN	**Pn**	**19 41 26.3**	**-1.4**
DVHZ	**Dannevirke**	**4.26**	**195**	PN	**Pn**	**19 41 28.7**	**-1.3**
PRWZ	**Pori Road**	**4.55**	**196**	PN	**Pn**	**19 41 32.2**	**-1.3**
BFZ	**Birch Farm**	**4.62**	**193**	PN	**Pn**	**19 41 32.6**	**-1.7**
MRZ	**Mangatainoka R**	**4.75**	**199**	∥PN	**Pn**	**19 41 34.1**	**-1.9**
TIWZ	**Tintock**	**4.78**	**196**	PN	**Pn**	**19 41 34.8**	**-1.6**
HOWZ	**Holdsworth Sta**	**4.99**	**199**	PN	**Pn**	**19 41 36.4**	**-2.6**
OGWZ	**Otaki Gorge**	**5.01**	**202**	PN	**Pn**	**19 41 37.3**	**-1.9**
TMWZ	**Te Maipa**	**5.10**	**195**	PN	**Pn**	**19 41 38.4**	**-2.1**
KIW	**Kapiti Island**	**5.13**	**204**	PN	**Pn**	**19 41 38.4**	**-2.4**
MTW	**Mount Morrison**	**5.24**	**198**	PN	**Pn**	**19 41 39.6**	**-2.6**
CAW	**Cannon Point**	**5.31**	**201**	PN	**Pn**	**19 41 40.5**	**-2.5**
TCW	**Tory Channel**	**5.66**	**206**	PN	**Pn**	**19 41 45.1**	**-2.4**
PLWZ	**Palliser**	**5.69**	**198**	PN	**Pn**	**19 41 44.9**	**-3.0**
TUWZ	**Tuamarina**	**5.97**	**208**	PN	**Pn**	**19 41 48.8**	**-2.8**
QRZ	**Quartz Range**	**6.11**	**219**	PN	**Pn**	**19 41 51.0**	**-2.4**
THZ	**Tophouse**	**6.67**	**212**	PN	**Pn**	**19 41 57.7**	**-2.9**
KHZ	**Kahutara**	**6.98**	**206**	PN	**Pn**	**19 42 01.4**	**-3.1**
DSZ	**Denniston Nort**	**7.16**	**217**	PN	**Pn**	**19 42 05.4**	**-1.6**

*IDC **29** 19:53:19.1±1.2,4°.35S×122°.87E,h0km,mb3.7/4, mb1 3.9/6,mb1mx3.6/35,mbtmp3.7/6,ML3.2/2,Error ellipse: s-maj=34.4km s-min=20.6km az=51.0*
*ISCJB **29** 19:53:21.6±0.7,4°.33S±0°.08×122°.89E±0°.06,h33km, mb3.8/4,Error ellipse: s-maj=11.3km s-min=7.9km az=156.8*
*DJA **29** 19:53:23.5±0.5,4°.S±7°×12°.3E±°,h10km,M4.3/8,mb4.8/1, MLv4.0/8*

ISC 29 19:53:24.1±1.0,4°.3S±0°.1×122°.85E±0°.07,h35km,n13, σ1s06/12,mb3.7/4,Sulawesi

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BSSI	**Bau Bau, Buton**	**2.99**	**232**	P	**Pn**	**19 54 14.5**	**+5.5**
SPSI	**Sidrap Palu**	**3.09**	**276**	P	**Pn**	**19 54 10.3**	**-0.2**
KAPI	**Kappang**	**3.17**	**257**	P	**Pn**	**19 54 10.6**	**-1.0**
	4.9nm,0.3s,baz=146,slow=5.2,SNR=20						
KAPI				Sn	**Sn**	**19 54 48.1**	**-0.1**
	4.2nm,0.3s,baz=244,slow=20,SNR=11						
LUWI	**Luwuk**	**3.23**	**359**	P	**Pn**	**19 54 10.9**	**-1.5**
TTSI	**Tana Toraja**	**3.27**	**292**	P	Pn	19 54 20.8	+7.9
SANI	**Sanana**	**3.84**	**55**	P	**Pn**	**19 54 21.4**	**+0.6**
MRSI	**Marisa**	**4.82**	**349**	P	**Pn**	**19

*IDC **29** 20:02:16.3±4.4, 19°.84N×64°.36W, h32km±34km, mb3.9/21, mb1 4.1/24,mb1mx4.0/48, mbtmp4.1/24, ML3.7/3, MS3.3/11, Ms1 3.4/11, ms1mx3.1/45, Error ellipse: s-maj=13.6km s-min=12.5km az=43.0*

*NEIC **29** 20:02:17.7±2.9, 19°.74N×64°.46W, h43km±5km, mb4.9/67, Error ellipse: s-maj=11.4km s-min=9.4km az=100.0*

*BJI **29** 20:02:18.8, 19°.40N×64°.50W, h88km, mB5.1/1, Ms4.9/2, Ms7 4.6/2*

ISC 29 20:02:17.9±0.4, 19°.75N±0°.04×64°.44W±0°.04, h52km±3km, n185, σ2♀34/221, mb4.4/45, MS3.4/9, 1D, Virgin Islands

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
ABVI	**Anegada Island**	**1.02**	**175**	*e*Pn	**Pn**	**20 02 35.9**	**0.0**
ABVI				*e*Sn	**Sn**	**20 02 45.5**	**-3.7**
STVI	**Saint Thomas**	**1.47**	**200**	*e*Pn	**Pn**	**20 02 42.2**	**+0.1**
STVI				*e*Sn	**Sn**	**20 02 52.5**	**-7.8**
MTP	**Monte Pirata**	**1.95**	**213**	*e*Pn	**Pn**	**20 02 49.1**	**+0.4**
CBYP	**Canovanas**	**1.99**	**223**	*e*Pn	**Pn**	**20 02 48.7**	**-0.5**
CDVI	**St. Croix**	**2.01**	**189**	*e*Pn	**Pn**	**20 02 50.9**	**+1.5**
CDVI				*e*Sn	**Sn**	**20 03 18.3**	**+5.0**
HUMP	**Col San Antoni**	**2.08**	**220**	*e*Pn	**Pn**	**20 02 50.1**	**-0.3**
SMRT	**St. Maarten**	**2.12**	**142**	*e*P	**Pn**	**20 02 50.9**	**0.0**
SMRT				*e*S	**Sn**	**20 03 19.4**	**+3.2**
SMRT	**St. Maarten**	**2.12**	**142**	*e*Pn	**Pn**	**20 02 50.1**	**-0.9**
SJG	**San Juan**	**2.30**	**225**	Pn	**Pn**	**20 02 53.1**	**-0.3**
	87nm,0.3s,baz=56,slow=9.8,SNR=90						
SJG				Sn	**Sn**	**20 03 21.4**	**+0.9**
	342nm,0.3s,baz=257,slow=20,SNR=17						
SJG				LR	LR	20 04 06.1	
	comp=Z,284nm,18.1s,baz=99,slow=46						
SJG	**San Juan**	**2.30**	**225**	*e*Pn	**Pn**	**20 02 53.0**	**-0.3**
SJG				*e*Pn	Pn	20 02 53.1	-0.3
SJG				*e*Sn	Sn	20 03 11.1	-9.3
SJG				*e*Sn	Sn	20 03 21.4	+0.9
SABA	**Saba**	**2.40**	**152**	*e*P	**Pn**	**20 02 56.0**	**+1.2**
SABA				*e*S	**Sn**	**20 03 28.6**	**+5.6**
SABA	**Saba**	**2.40**	**152**	*e*Pn	**Pn**	**20 02 55.0**	**+0.3**
CELP	**Cerrillos**	**2.62**	**231**	*e*Pn	**Pn**	**20 02 57.5**	**-0.4**
SEUS	**St. Eustatius**	**2.63**	**148**	*e*P	**Pn**	**20 02 59.3**	**+1.4**
SEUS				*e*S	**Sn**	**20 03 33.5**	**+4.8**
SEUS	**St. Eustatius**	**2.63**	**148**	*e*Pn	**Pn**	**20 02 58.0**	**+0.1**
LRS	**Lares**	**2.70**	**238**	*e*Pn	**Pn**	**20 02 57.5**	**-1.4**
AGP	**Aguadilla**	**2.89**	**243**	*e*Pn	**Pn**	**20 02 59.7**	**-1.7**
MPR	**Mayaguez**	**2.98**	**240**	*e*Pn	**Pn**	**20 03 01.6**	**-1.1**
NEV	**Hard Times**	**3.14**	**145**	*e*P	**Pn**	**20 03 05.6**	**+0.7**
NEV				*e*S	**Sn**	**20 03 44.7**	**+3.4**
ANWB	**Willy Bob**	**3.25**	**129⇓**	*e*P	**Pn**	**20 03 03.4**	**-3.0**
ANWB				*e*S	**Sn**	**20 03 39.9**	**-4.1**
ANWB	**Willy Bob**	**3.25**	**129**	*e*Pn	**Pn**	**20 03 03.7**	**-2.7**
ANWB				*e*Sn	**Sn**	**20 03 35.0**	**-8.9**
BPA	**Boggy Peak**	**3.63**	**137**	*e*P	**Pn**	**20 03 09.2**	**-2.5**
BPA				*e*S	**Sn**	**20 03 51.7**	**-1.7**
GDHS	**Morne Mazeau,**	**4.29**	**143**	*e*Pn	**Pn**	**20 03 19.6**	**-1.1**
SEG	**Port Louis**	**4.34**	**140**	*e*P	**Pn**	**20 03 19.8**	**-1.6**
SSG	**Sans Toucher**	**4.49**	**144**	*e*P	**Pn**	**20 03 22.8**	**-0.7**
H05N1	**Guadeloupe/Mar**	**4.69**	**136**	Pn	**Pn**	**20 03 24.2**	**-2.0**
	SNR=68						
H05N1				Sn	**Sn**	**20 04 17.2**	**-2.1**
TBG	**Guadaloupe-3**	**4.70**	**145**	*e*P	**Pn**	**20 03 25.4**	**-0.9**
TBG	**Guadaloupe-3**	**4.70**	**145**	*e*S	**Sn**	**20 04 21.2**	**+1.7**
MGG	**Marie-Galante**	**4.83**	**142**	*e*P	**Pn**	**20 03 27.9**	**-0.2**
SDD	**Santo Domingo**	**5.34**	**257**	*e*Pn	**Pn**	**20 03 34.3**	**-0.8**
BANI	**BANI**	**5.76**	**257**	*e*Pn	**Pn**	**20 03 41.8**	**+0.8**
PCM	**Pelee Case Pet**	**5.79**	**147**	*e*P	**Pn**	**20 03 40.8**	**-0.5**
PCM	**Pelee Case Pet**	**5.79**	**147**	*e*P	**Pn**	**20 03 41.4**	**0.0**
PCM	**Pelee Case Pet**	**5.79**	**147**	*e*S	**Sn**	**20 04 46.3**	**-0.2**
CXM	**Morne La Croix**	**5.82**	**147**	*e*P	**Pn**	**20 03 41.7**	**-0.1**
CXM	**Morne La Croix**	**5.82**	**147**	*e*S	**Sn**	**20 04 49.4**	**+2.1**
BAMF	**Morne Balai**	**5.82**	**147**	*e*P	**Pn**	**20 03 41.2**	**-0.6**
GBMF	**Grand Be**	**5.83**	**147**	*e*P	**Pn**	**20 03 41.2**	**-0.7**
PML	**Morne Lenard**	**5.83**	**147**	*e*P	**Pn**	**20 03 41.4**	**-0.6**
FDF	**Fort de France**	**5.89**	**147**	*e*P	**Pn**	**20 03 42.1**	**-0.7**
FDF	**Fort de France**	**5.89**	**147**	*e*S	**Sn**	**20 04 47.9**	**-1.1**
FDF	**Fort de France**	**5.89**	**147**	*e*Pn	**Pn**	**20 03 41.3**	**-1.4**
LPMF	**Morne Lapointe**	**6.12**	**147**	*e*P	**Pn**	**20 03 44.3**	**-1.5**
LPMF	**Morne Lapointe**	**6.12**	**147**	*e*S	**Sn**	**20 04 55.9**	**+1.4**
MVM	**Montagne Vaucl**	**6.17**	**146**	*e*P	**Pn**	**20 03 45.4**	**-1.2**
H05S1	**Guadeloupe/Mar**	**6.31**	**146**	Pn	**Pn**	**20 03 49.0**	**+0.6**
H05S1				Sn	**Sn**	**20 04 58.5**	**-0.7**
	SNR=5.9						
GRTK	**Grand Turk**	**6.51**	**287**	*e*Pn	Pn	20 03 45.9	-5.2
SDDR	**Presa de Saban**	**6.51**	**264**	*e*Pn	**Pn**	**20 03 50.8**	**-0.4**
SVB	**Belmont**	**7.13**	**154**	*e*Pn	**Pn**	**20 04 01.2**	**+1.6**
GRGR	**Grenville**	**8.03**	**160**	*e*Pn	**Pn**	**20 04 09.3**	**-2.7**
GTBY	**Guantanamo Bay**	**10.05**	**273**	*e*Pn	**Pn**	**20 04 37.3**	**-2.4**
SDV	**Santo Domingo**	**12.35**	**210**	Pn	**Pn**	**20 05 13.3**	**+2.0**
	2.1nm,0.3s,baz=18,slow=8.1,SNR=15						
SDV				Sn	**Sn**	**20 07 30.1**	**+2.4**
	2.0nm,0.3s,baz=336,slow=21,SNR=4.3						
SDV				LR	LR	20 11 44.3	
	comp=Z,146nm,18.1s,baz=162,slow=46						
SDV	**Santo Domingo**	**12.35**	**210**	*e*Pn	**Pn**	**20 05 08.7**	**-2.6**
MTDJ	**Mount Denham**	**12.48**	**265**	*e*Pn	**Pn**	**20 05 10.8**	**-2.3**
BBSR	**BB Station**	**12.57**	**359**	*e*Pn	Pn	20 05 04.0	-10
CBRI	**Barrientos, No**	**14.45**	**215**	*e*P	**Pn**	**20 05 41.3**	**+1.6**
GRMC	**Gramalote, San**	**14.45**	**215**	*e*P	**Pn**	**20 05 37.3**	**-2.5**
PAMC	**Pamplona, Colo**	**14.71**	**214**	*e*P	**Pn**	**20 05 45.9**	**+2.4**
MOTC	**Monteria, Cord**	**15.40**	**226**	*e*P	**P**	**20 05 56.0**	**+0.4**
BARC	**Barichara**	**15.60**	**214**	*e*P	**Pn**	**20 05 54.9**	**+0.2**
HELC	**Santa Helena**	**17.26**	**220**	*e*Pn	Pn	20 06 09.0	-6.8
HELC				*e*P	**P**	**20 06 17.9**	**+1.2**
NORC	**Norcasia**	**17.38**	**217**	*e*P	**Pn**	**20 06 17.5**	**+0.6**
ROSC	**El Rosal**	**17.67**	**214**	P	**P**	**20 06 23.4**	**+2.1**
	2.4nm,0.3s,baz=119,slow=15,SNR=4.4						
ROSC				LR	LR	20 14 56.4	
	comp=Z,86nm,18.2s,baz=184,slow=43						
ROSC	**El Rosal**	**17.67**	**214**	*e*Pn	**Pn**	**20 06 21.0**	**+0.1**
	13nm,0.9s						
CSU	**Charleston Sou**	**19.20**	**316**	*e*P	**P**	**20 06 38.1**	**+0.5**
RGRS	**Roger Stewart**	**19.24**	**316**	*e*P	**Pn**	**20 06 41.5**	**+2.2**
	2µm,0.5s						
NHSC	**New Hope**	**19.35**	**317**	*e*P	**Pn**	**20 06 42.1**	**+1.5**
	128nm,1.1s						
PTGA	**Pitinga**	**20.82**	**167**	P	**P**	**20 06 52.6**	**-2.6**
	1.7nm,0.5s,baz=324,slow=19,SNR=3.0						
PTGA				LR	LR	20 15 28.6	
	comp=Z,68nm,18.2s,baz=314,slow=38						
PTGA	**Pitinga**	**20.82**	**167**	*e*P	**P**	**20 06 52.2**	**-3.1**
PTGA				*e*Pn	Pn	20 07 00.8	+2.7
URVA	**University of**	**21.11**	**330**	*e*P	**P**	**20 07 03.0**	**+4.8**
JSRW	**J. Sargeant Re**	**21.37**	**330**	*e*P	**P**	**20 06 59.9**	**-1.1**
JSRW				*e*pP	**pP**	**20 07 08.3**	**-4.5**
KMSC	**Kings Mountain**	**21.40**	**319**	*e*P	**P**	**20 06 59.1**	**-2.2**
KMSC				*e*pP	**pP**	**20 07 09.8**	**-3.4**
CBN	**Corbin Frederi**	**21.55**	**331**	*e*P	**P**	**20 07 08.7**	**+5.7**
	88nm,0.6s						
GOGA	**Godfrey**	**21.74**	**313**	*e*P	P	20 07 13.0	+8.0
	22nm,0.8s						
JTS	**JuntasAbangare**	**21.91**	**248**	P	**P**	**20 07 08.3**	**+1.3**
	2.9nm,0.4s,baz=339,slow=14,SNR=3.3						
JTS	**JuntasAbangare**	**21.91**	**248**	*e*P	**P**	**20 07 08.3**	**+1.3**
	13nm,1.1s						
VWCC	**Virginia Weste**	**22.09**	**325**	*e*P	**P**	**20 07 05.9**	**-2.9**
VWCC				*e*pP	**pP**	**20 07 19.2**	**-1.5**
BLA	**Blacksburg**	**22.31**	**325**	*e*P	**P**	**20 07 07.5**	**-3.7**
BLA				*e*pP	**pP**	**20 07 23.4**	**+0.5**
SDMD	**Soldier's Deli**	**22.32**	**334**	*e*P	**P**	**20 07 13.8**	**+2.6**
SDMD				*e*pP	**pP**	**20 07 20.9**	**-2.1**
TEIG	**Tepich**	**22.41**	**275**	P	**P**	**20 07 09.8**	**-2.5**
	1.3nm,0.7s,baz=89,slow=24,SNR=2.2						
TEIG	**Tepich**	**22.41**	**275**	*e*P	**P**	**20 07 09.9**	**-2.4**
	37nm,1.7s						
CPNY	**Central Park**	**22.50**	**341**	*e*P	**P**	**20 07 17.4**	**+4.3**
CPNY				*e*pP	**pP**	**20 07 24.6**	**-0.3**
BRNJ	**Basking Ridge**	**22.59**	**340**	*e*P	**P**	**20 07 15.3**	**+1.2**
BRNJ				*e*pP	**pP**	**20 07 26.4**	**+0.5**
PAL	**Palisades**	**22.68**	**341**	*e*P	**P**	**20 07 18.4**	**+3.4**
PAL				*e*pP	**pP**	**20 07 26.9**	**0.0**
YLE	**Yale**	**22.69**	**343**	*e*P	**P**	**20 07 20.8**	**+5.8**
YLE				*e*pP	**pP**	**20 07 27.7**	**+0.8**
LUPA	**Lehigh Univers**	**22.79**	**338**	*e*P	**P**	**20 07 19.3**	**+3.1**
LUPA				*e*pP	**pP**	**20 07 28.6**	**+0.5**
BRYW	**Bryant College**	**22.91**	**346**	*e*P	**P**	**20 07 23.3**	**+6.0**
	241nm,2.0s						
ODNJ	**Ogdensburg**	**22.97**	**340**	*e*P	**P**	**20 07 21.1**	**+3.2**
ODNJ				*e*pP	**pP**	**20 07 31.0**	**+1.1**
BCX	**Boston College**	**23.23**	**347**	*e*P	**P**	**20 07 21.4**	**+0.9**
BCX				*e*pP	**pP**	**20 07 33.7**	**+1.0**
TKL	**Tuckaleechee C**	**23.26**	**317**	P	**sP**	**20 07 36.4**	**-3.2**
	17nm,0.3s,baz=141,slow=12,SNR=28						
TKL				LR	LR	20 15 06.7	
	comp=Z,82nm,21.7s,baz=58,slow=33						
TKL	**Tuckaleechee C**	**23.26**	**317**	*e*P	**P**	**20 07 19.5**	**-1.5**
TKL				*e*pP	**sP**	**20 07 36.1**	**-3.5**
WES	**Weston**	**23.31**	**347**	*e*P	**P**	**20 07 24.4**	**+3.2**
	192nm,1.9s						
WES				*e*pP	**pP**	**20 07 34.9**	**+1.4**
HRV	**Adam Dziewonsk**	**23.47**	**347**	*e*P	**P**	**20 07 25.0**	**+2.1**
HRV				*e*pP	**pP**	**20 07 37.1**	**+1.7**
CPCT	**Cooper Cave**	**23.62**	**316**	*e*P	**P**	**20 07 25.7**	**+1.3**
CPCT				*e*pP	**sP**	**20 07 40.5**	**-2.9**
TZTN	**Tazewell**	**23.68**	**319**	*e*P	**P**	**20 07 26.4**	**+1.6**
TZTN				*e*pP	**pP**	**20 07 35.8**	**-1.8**
OTAV	**Otavalo**	**23.76**	**217**	*e*P	**P**	**20 07 20.4**	**-5.9**
	27nm,1.6s						
KSPA	**Keystone Colle**	**23.78**	**339**	*e*P	**P**	**20 07 32.4**	**+6.7**
KSPA				*e*pP	**sP**	**20 07 42.6**	**-2.2**
SSPA	**Standing Stone**	**23.79**	**334**	*e*P	**P**	**20 07 26.7**	**+0.8**
SSPA				*e*pP	**pP**	**20 07 40.0**	**+1.3**
MCWV	**Mont Chateau**	**23.87**	**330**	*e*P	**P**	**20 07 28.8**	**+2.3**
MCWV				*e*sP	**sP**	**20 07 45.3**	**-0.4**
LRAL	**Lakeview Retre**	**24.09**	**308**	*e*P	**P**	**20 07 28.4**	**-0.2**
	53nm,1.8s						
LRAL				*e*pP	**sP**	**20 07 46.3**	**-1.6**
TRY	**Troy**	**24.20**	**343**	*e*P	**P**	**20 07 31.8**	**+2.2**
TRY				*e*pP	**sP**	**20 07 47.2**	**-1.6**
SWET	**Sewanee**	**24.44**	**314**	*e*P	**P**	**20 07 32.0**	**+0.1**
SWET				*e*pP	**sP**	**20 07 51.0**	**-0.2**
HNH	**Hanover**	**24.78**	**346**	*e*P	**P**	**20 07 37.1**	**+2.3**
HNH				*e*pP	**sP**	**20 07 55.4**	**+1.3**
ACCN	**Adirondack Com**	**24.81**	**344**	*e*P	**P**	**20 07 37.8**	**+2.7**
ACCN				*e*pP	**sP**	**20 07 55.6**	**+1.2**
MDV	**Middlebury**	**25.26**	**345**	*e*P	**P**	**20 07 43.5**	**+4.3**
MDV				*e*pP	**sP**	**20 08 03.0**	**+4.6**
PKME	**Peaks-Kenny Pk**	**25.76**	**352**	*e*P	**P**	**20 07 46.0**	**+2.3**
	73nm,1.7s						
PKME				*e*pwP	**sP**	**20 08 08.1**	**+5.1**
ACSO	**Alum Creek Sta**	**25.88**	**326**	*e*P	**P**	**20 07 51.3**	**+6.5**
ACSO				*e*pwP	**sP**	**20 08 10.5**	**+6.5**
WVT	**Waverly**	**26.23**	**313**	*e*P	**P**	**20 07 48.1**	**0.0**
WVT				*e*sP	sP	20 08 14.8	+7.5
CCIG	**Comitan**	**26.55**	**267**	*e*P	**P**	**20 07 51.4**	**0.0**
	49nm,1.8s						
BLO	**Bloomington**	**27.16**	**320**	*e*P	**P**	**20 07 58.4**	**+2.0**
	63nm,0.5s						
TRQ	**Mont Tremblant**	**27.69**	**345**	*e*P	**P**	**20 08 04.7**	**+3.6**
TRQ				*e*		20 08 35.0	
SADO	**Sadowa**	**27.79**	**337**	LR	LR	20 18 57.3	
	comp=Z,67nm,18.9s,baz=204,slow=36						
SADO	**Sadowa**	**27.79**	**337**	*e*P	**P**	**20 08 03.2**	**+1.3**
SADO				*e*		20 08 34.2	
PARMO	**Parma**	**27.83**	**313**	*e*P	**P**	**20 08 02.4**	**0.0**
SIUC	**Southern Illin**	**28.02**	**315**	*e*P	**P**	**20 08 05.3**	**+1.2**
	18nm,0.8s						
SFIN	**Lafayette**	**28.27**	**322**	*e*P	**P**	**20 08 08.3**	**+2.0**
SFIN				*e*		20 08 42.9	
PBMO	**Poplar Bluff**	**28.36**	**312**	*e*P	**P**	**20 08 08.5**	**+1.3**
	9.9nm,0.6s						
SAML	**Samuel**	**28.54**	**177**	*e*P	**P**	**20 08 09.2**	**+0.2**
ATAH	**Atahualpa**	**30.04**	**209**	LR	LR	20 22 25.8	
	comp=Z,42nm,19.5s,baz=356,slow=40						
SIV	**San Ignacio**	**35.67**	**174**	P	**P**	**20 09 11.3**	**-0.1**
	3.0nm,0.8s,baz=34,slow=10,SNR=6.5						
LPAZ	**La Paz**	**35.99**	**186**	P	**P**	**20 09 16.5**	**+1.7**
	1.4nm,0.6s,baz=37,slow=5.7,SNR=5.7						
LPAZ				LR	LR	20 25 27.9	
	comp=Z,57nm,18.2s,baz=23,slow=39						
LTX	**Lajitas**	**36.80**	**293**	*e*P	**P**	**20 09 21.2**	**+0.2**
TXAR	**Lajitas Array**	**36.80**	**293**	P	**P**	**20 09 21.2**	**+0.2**
	0.4nm,0.8s,baz=76,slow=12,SNR=3.0						
ULM	**Lac du Bonnet**	**39.34**	**328**	LR	LR	20 27 11.9	
	comp=Z,48nm,18.6s,baz=334,slow=38						
PB11	**IPOC Station P**	**39.60**	**188**	*e*P	**P**	**20 09 40.9**	**-3.8**
	18nm,0.8s						
PD31	**Pinedale Array**	**44.22**	**312**	*e*P	**P**	**20 10 24.8**	**+2.5**
PDAR	**Pinedale Array**	**44.22**	**312**	P	**P**	**20 10 22.5**	**+0.2**
	1.2nm,0.9s,baz=122,slow=10,SNR=7.5						
PDAR				LR	LR	20 29 35.4	
	comp=Z,60nm,19.0s,baz=85,slow=37						
BW06	**Boulder Array**	**44.22**	**312**	*e*P	**P**	**20 10 24.4**	**+2.1**
RLMT	**Red Lodge**	**44.76**	**315**	*e*P	**P**	**20 10 29.2**	**+2.7**
	39nm,0.9s						
Y14A	**Wickenburg**	**45.19**	**299**	*e*P	**P**	**20 10 29.4**	**-0.6**
	32nm,0.8s						
CPUP	**Villa Florida**	**46.32**	**171**	P	**P**	**20 10 39.1**	**+0.4**
	2.4nm,0.6s,baz=8.9,slow=6.8,SNR=6.3						
CPUP				LR	LR	20 31 40.1	
	comp=Z,70nm,19.0s,baz=193,slow=38						
CPUP	**Villa Florida**	**46.32**	**171**	*e*P	**P**	**20 10 38.8**	**+0.1**
BOZ	**Bozeman (W)**	**46.50**	**315**	*e*P	**P**	**20 10 42.5**	**+2.2**
	4.1nm,0.9s						
MFID	**Camas Ranch**	**48.83**	**311**	*e*P	**P**	**20 10 57.6**	**-0.7**
	11nm,1.0s						
NV11	**Mina Array Sit**	**49.79**	**304**	*e*P	**P**	**20 11 06.5**	**+0.8**
	5.0nm,1.0s						
NV01	**Mina Array Sit**	**49.90**	**304**	*e*P	**P**	**20 11 07.0**	**+0.3**
NVAR	**Mina Array Bea**	**49.90**	**304**	P	**P**	**20 11 08.6**	**+1.9**
	1.2nm,0.8s,baz=99,slow=7.9,SNR=6.2						
AVFE	**Valle Fertil**	**50.20**	**183**	IAML		20 10 11.3	
	comp=Z,11nm,0.5s						
NEW	**Newport**	**50.85**	**317**	P	**P**	**20 11 15.1**	**+1.6**
	comp=Z,5.0nm,0.8s,baz=115,slow=6.1,SNR=5.7						
NEW	**Newport**	**50.85**	**317**	*e*P	**P**	**20 11 13.4**	**0.0**
	comp=Z,5.0nm,0.8s						
YKA	**Yellowknife Ar**	**54.72**	**334**	P	**P**	**20 11 40.7**	**-1.0**
	comp=Z,0.5nm,0.6s,baz=110,slow=7.4,SNR=5.8						
DBIC	**Dimbokro**	**59.17**	**94**	P	**P**	**20 12 14.5**	**+0.5**
	comp=Z,5.2nm,0.7s,baz=284,slow=5.2,SNR=9.1						
DBIC	**Dimbokro**	**59.17**	**94**	*e*P	**P**	**20 12 14.4**	**+0.5**
	comp=Z,74nm,2.0s						
PLCA	**Paso Flores**	**60.44**	**185**	P	**P**	**20 12 23.9**	**+1.6**
	comp=Z,2.2nm,0.7s,baz=38,slow=10,SNR=5.8						
PLCA	**Paso Flores**	**60.44**	**185**	*e*P	**P**	**20 12 23.6**	**+1.4**
	comp=Z,33nm,2.0s						
TOA1	**Torodi Ar. Sit**	**63.43**	**85**	*e*P	**P**	**20 12 42.8**	**0.0**
	comp=Z,26nm,1.9s						
TOA0	**Torodi Ar. Sit**	**63.44**	**85**	*e*P	**P**	**20 12 42.5**	**-0.4**
TORD	**Torodi Ar. Bea**	**63.44**	**85**	P	**P**	**20 12 42.8**	**0.0**
	comp=Z,2.8nm,0.8s,baz=292,slow=6.3,SNR=15						
INK	**Inuvik**	**64.10**	**337**	P	**P**	**20 12 45.2**	**-1.1**
	comp=Z,1.1nm,0.8s,baz=99,slow=7.7,SNR=4.3						
INK	**Inuvik**	**64.10**	**337**	*e*P	**P**	**20 12 45.6**	**-0.7**
TAM	**Tamanrasset**	**64.71**	**74**	*e*P	**P**	**20 12 53.1**	**+1.8**
	comp=Z,2.7nm,0.9s						
NB2	**NORSAR Subarra**	**65.98**	**31**	P	**P**	**20 12 58.4**	**-0.3**
	comp=Z,2.6nm,1.0s,baz=268,slow=6.5						
NB200	**NORSAR Array S**	**65.98**	**31**	*e*P	**P**	**20 12 58.6**	**-0.1**
NOA	**NORSAR Array B**	**65.98**	**31**	P	**P**	**20 12 58.6**	**-0.1**
	comp=Z,1.3nm,0.8s,baz=269,slow=6.5,SNR=6.3						
GERES	**GERESS Array B**	**67.66**	**44**	P	**P**	**20 13 10.0**	**+0.3**
	comp=Z,0.3nm,0.6s,baz=282,slow=4.9,SNR=2.9						
IL1	**Eielson Array**	**69.11**	**333**	*e*P	**P**	**20 13 17.3**	**-1.0**
ILAR	**Eielson Array**	**69.11**	**333**	P	**P**	**20 13 17.6**	**-0.8**
	comp=Z,2.0nm,0.9s,baz=98,slow=4.4,SNR=8.6						
ILB	**Eielson Array**	**69.11**	**333**	*e*P	**P**	**20 13 17.9**	**-0.5**
MDM	**Murphy Dome**	**69.68**	**333**	*e*P	**P**	**20 13 21.1**	**-0.8**
	comp=Z,5.2nm,0.9s						
BPAW	**Bear Paw Mtn.**	**70.93**	**332**	*e*P	**P**	**20 13 28.7**	**-0.9**
	comp=Z,5.5nm,1.1s						
KTH	**Kantishna Hill**	**70.96**	**332**	*e*P	**P**	**20 13 29.4**	**-0.5**
	comp=Z,30nm,1.9s						
ARA0	**ARCESS Array S**	**71.65**	**22**	*e*P	**P**	**20 13 33.4**	**-0.4**
ARCES	**ARCESS Array B**	**71.65**	**22**	P	**P**	**20 13 33.4**	**-0.4**
	comp=Z,1.5nm,0.8s,baz=270,slow=8.2,SNR=4.7						
FIA0	**FINESS Array S**	**73.11**	**30**	*e*P	**P**	**20 13 42.6**	**+0.1**
FINES	**FINESS Array B**	**73.11**	**30**	P	**P**	**20 13 42.6**	**+0.1**
	comp=Z,1.8nm,0.6s,baz=259,slow=3.9,SNR=8.7						
MLR	**Muntele Rosu**	**76.45**	**46**	*e*P	**P**	**20 14 03.3**	**+0.9**
	comp=Z,4.4nm,1.0s						
AKASG	**Malin Array Be**	**77.23**	**41**	P	**P**	**20 14 06.8**	**+0.3**
	comp=Z,0.4nm,0.4s,baz=267,slow=6.5,SNR=3.9						
BR231	**Keskin MP Arra**	**82.92**	**50**	*e*P	**P**	**20 14 40.1**	**+2.5**
BR101	**Keskin Array S**	**83.58**	**50**	*e*P	**P**	**20 14 41.5**	**+0.4**
BR131	**Keskin Array S**	**83.58**	**50**	*e*P	**P**	**20 14 40.1**	**-0.9**
BRTR	**Keskin Array B**	**83.58**	**50**	P	**P**	**20 14 41.5**	**+0.4**
	comp=Z,1.5nm,0.8s,baz=265,slow=3.9,SNR=11						
KBZ	**Khabaz**	**88.40**	**44**	P	**P**	**20 15 06.1**	**+1.6**
	comp=Z,1.2nm,0.7s,baz=322,slow=13,SNR=4.2						
WMQ	**Urumqi**	**111.77**	**21**	*e*PKP	**PKiKP**	**20 20 45.0**	**-2.3**
WMQ				LR	LR		
	comp=Z,61nm,19.2s						
WMQ				LR	LR		
	comp=Z,71nm,21.0s						
WMQ				LR	LR		
	comp=Z,59nm,17.0s						
CN2	**Changchun**	**116.12**	**352**	*e*PKP	**PKPdf**	**20 20 52.8**	**-2.7**
HHC	**Hu-ho-hao-te**	**119.60**	**3**	*e*PKP	**PKPdf**	**20 20 58.8**	**-3.7**
MAW	**Mawson**	**121.94**	**159**	PKP	**PKPdf**	**20 21 06.8**	**+1.0**
	comp=Z,2.7nm,0.7s,baz=250,slow=2.2,SNR=4.1						
MAW	**Mawson**	**121.94**	**159**	*e*PKPdf	**PKPdf**	**20 21 06.4**	**+0.6**
LZH	**Lanzhou**	**123.37**	**11**	*e*PKP	**PKPdf**	**20 21 07.0**	**-2.9**
LZH				sPKP		20 21 42.5	
CD2	**Chengdu**	**128.37**	**13**	PKP	**PKPdf**	**20 21 16.0**	**-3.5**
KMI	**Kunming**	**133.69**	**16**	PKP	**PKPdf**	**20 21 27.0**	**-2.9**
STKA	**Stephens Creek**	**153.71**	**237**	PKPbc	**PKPbc**	**20 22 12.6**	**+1.0**
	comp=Z,2.0nm,0.8s,baz=218,slow=1.6,SNR=4.9						
STKA				PKPab	**PKPab**	**20 22 24.8**	**+0.3**
	comp=Z,0.8nm,0.6s,baz=107,slow=16,SNR=3.6						
STKA	**Stephens Creek**	**153.71**	**237**	*e*PKPbc	**PKPbc**	**20 22 12.8**	**+1.2**
WR1	**Warramunga Arr**	**162.34**	**266**	*e*PKPab	**PKPab**	**20 23 02.8**	**+0.5**
WRA	**Warramunga Arr**	**162.34**	**266**	PKPab	**PKPab**	**20 23 02.8**	**+0.5**
	comp=Z,1.0nm,0.8s,baz=85,slow=4.3,SNR=7.6						
ASAR	**Alice Springs**	**162.52**	**254**	PKPab	**PKPab**	**20 23 04.0**	**+1.0**
	comp=Z,0.8nm,0.6s,baz=102,slow=4.7,SNR=11						

MAN 29 20:02:30, 17°.74N×119°.92E, h7km, mb4.6, ML3.5, MS3.4, 1C-3D, Philippine Islands region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
SIPP	**Brgy, Tapao**	**0.54**	**70⇓**	*i*P	Pb	20 02 41.5	-0.4
SIPP				*e*S	Sb	20 02 49.1	-0.8
ABRA	**Dolores**	**0.76**	**96**	*e*P	Pg	20 02 45.0	+0.4
PIP	**Pasuquin**	**0.89**	**48⇓**	*i*P	Pg	20 02 46.7	-0.3
PIP				*e*S	Sg	20 02 58.2	-0.4
APYP	**Conner**	**1.27**	**84**	*e*P	Pn	20 02 52.6	-1.5
APYP				*e*S	Sn	20 03 11.5	+0.1
BCPH	**Baguio City Da**	**1.49**	**155⇑**	*i*P	Pg	20 03 00.2	+1.6
BCPH	

PPBI	Pangkal Pinang	22.99	276	P		P	20 08 41.2	0.0
	13nm,0.9s							
RABL	Rabaul	23.10	89	*e*P		P	20 08 40.3	-2.1
	39nm,0.7s							
CGJI	Cibinong	23.24	265	P		P	20 08 41.5	-2.2
	50nm,1.2s							
KASI	Kota Agung	24.41	268	P		P	20 08 52.5	-2.2
	34nm,0.8s							
MDSI	Maura Dua	24.74	270	P		P	20 08 56.9	-0.9
	10nm,1.5s							
MYKOM	Kota Tinggi	26.02	284	*e*P		P	20 09 09.0	-0.4
	20nm,1.2s							
BBOO	Buckleboo	28.43	167	*e*P		P	20 09 30.6	-0.2
	14nm,0.8s							
STKA	Stephens Creek	29.22	158	P		P	20 09 37.8	-0.1
	6.2nm,1.0s,baz=337,slow=9.4,SNR=10							
STKA				LR		LR	20 21 36.1	
	comp=Z,297nm,20.6s,baz=341,slow=37							
STKA	Stephens Creek	29.22	158	*e*P		P	20 09 37.4	-0.4
	1.6nm,0.8s							
NWAO	Narrogin (SRO)	29.87	200	P		P	20 09 42.5	-1.0
	12nm,1.0s,baz=271,slow=0.3,SNR=3.3							
HNR	Honiara	31.00	100	P		P	20 09 54.4	+0.5
	86nm,0.8s,baz=256,slow=1.4,SNR=5.5							
HNR	Honiara	31.00	100	*e*P		P	20 09 53.8	0.0
	72nm,0.8s							
JOW	Kunigami	31.66	359	*e*P		P	20 09 59.8	+0.3
	36nm,0.8s							
CHBT	CHBT	31.84	304	P		P	20 10 11.2	+10
SKNT	Sakolnakorn	32.99	312	P		P	20 10 14.7	+3.4
CAN	Canberra	35.36	151	*e*P		P	20 10 32.1	+0.4
	27nm,1.1s							
CMAR	Chiang Mai Arr	37.71	309	P		P	20 10 54.0	+2.2
	1.9nm,0.4s,baz=134,slow=7.8,SNR=5.8							
JNU	Nakatsue	37.97	3	LR		LR	20 26 23.0	
	comp=Z,91nm,20.1s,baz=120,slow=36							
GYA	Guiyang	38.04	326	P		P	20 10 55.5	+0.9
GYA				pmax		pmax		
	comp=Z,10.0nm,0.8s							
JHJ	Hachijo jima 2	39.28	14	LR		LR	20 26 03.4	
	comp=Z,72nm,19.4s,baz=55,slow=34							
KMI	Kunming	39.36	321	P		P	20 11 07.0	+1.2
KMI				pmax		pmax		
	comp=Z,5.0nm,0.6s							
KMI				pmax		pmax		
	comp=Z,59nm,4.6s							
ENH	Enshi	39.75	333	*e*P		P	20 11 08.4	-0.5
	8.3nm,0.8s							
MAJO	Matsushiro	42.23	11	*e*P		P	20 11 28.3	-0.8
	19nm,0.7s							
MAT	Matsushiro	42.23	11	P		P	20 11 28.6	-0.5
MJAR	Matsushiro Arr	42.23	11	P		P	20 11 28.8	-0.2
	11nm,0.7s,baz=182,slow=9.0,SNR=57							
MJB9	Matsu-Tunnel	42.23	11	*e*P		P	20 11 28.6	-0.5
	4.7nm,0.7s							
KS15	Wonju Array Si	42.25	359	*e*P		P	20 11 30.6	+1.4
KSAR	Wonju Array Be	42.25	359	P		P	20 11 30.6	+1.4
KSRS	Korea Array	42.26	359	P		P	20 11 30.6	+1.3
	5.5nm,0.7s,baz=174,slow=8.3,SNR=12							
CD2	Chengdu	43.10	328	P		P	20 11 36.5	+0.2
CD2				pmax		pmax		
	comp=Z,1.0nm,0.5s							
XAN	Xi'an	43.23	335	P		P	20 11 36.5	-0.8
XAN				pP		pP	20 11 46.3	-1.3
XAN				pmax		pmax		
	comp=Z,11nm,0.9s							
XAN				pmax		pmax		
	comp=Z,49nm,6.0s							
LZH	Lanzhou	47.19	332	*e*P		P	20 12 10.0	+1.1
LZH				pP		pP	20 12 21.5	+2.2
LZH				sP		sP	20 12 26.3	+2.8
LZH				pmax		pmax		
	comp=Z,16nm,1.0s							
HHC	Hu-ho-hao-te	48.36	342	*e*P		P	20 12 21.0	+3.2
HHC				pmax		pmax		
	comp=Z,23nm,1.0s							
HHC				pmax		pmax		
	comp=Z,78nm,8.6s							
CN2	Changchun	48.69	357	*e*P		P	20 12 24.0	+3.9
USRK	Ussuriysk Ar.	49.06	3	P		P	20 12 23.8	+0.8
	9.6nm,0.6s,baz=182,slow=7.3,SNR=41							
LSA	Lhasa	50.09	316	*e*P		P	20 12 32.3	+0.7
	4.9nm,0.8s							
GTA	Gaotai	51.76	331	*e*P		P	20 12 44.3	+0.6
GTA				pP		pP	20 12 53.8	-0.4
GTA				sP		sP	20 12 58.0	-0.3
GTA				S		S	20 20 03.5	+0.1
GTA				sS		sS	20 20 20.3	-0.4
GTA				SS		SS	20 23 39.0	-1.5
GTA				pmax		pmax		
	comp=Z,8.0nm,0.8s							
GTA				pmax		pmax		
	comp=Z,44nm,5.2s							
GTA				LR		LR		
	comp=N,66nm,15.2s							
GTA				LR		LR		
	comp=E,86nm,15.7s							
GTA				LR		LR		
	comp=Z,85nm,17.1s							
GUN	Gumba	52.91	311	*e*P		P	20 12 52.0	-0.6
	38nm,0.9s							
PKIN	Phulchoki	53.10	310	*e*P		P	20 12 54.3	+0.3
	4.3nm,0.6s							
KKN	Kakani	53.30	310	*e*P		P	20 12 54.7	-0.7
	16nm,0.9s							
DMN	Daman	53.34	310	*e*P		P	20 12 55.7	0.0
	28nm,1.0s							
GKN	Gorkha	53.90	310	*e*P		P	20 12 59.1	-0.6
	11nm,0.4s							
KOLN	Koldanda	54.58	309	*e*P		P	20 13 04.0	-0.7
	18nm,0.8s							
ULN	Ulaanbaatar	56.08	342	*e*P		P	20 13 16.1	+1.0
	7.5nm,0.9s							
WMQ	Urumqi	61.20	327	*e*P		P	20 13 51.8	+1.1
WMQ				pmax		pmax		
	comp=Z,3.0nm,0.8s							
WMQ				pmax		pmax		
	comp=Z,15nm,3.8s							
PETK	Petropavlovsk-	62.77	19	P		P	20 14 02.0	+1.0
	3.5nm,0.6s,baz=194,slow=4.0,SNR=4.5							
PEA1	Petropavlovsk-	62.77	19	*e*P		P	20 14 02.0	+1.0
KSH	Kashi	65.89	317	*e*P		P	20 14 23.0	+1.1
KSH				*es*P		sP	20 14 41.5	+4.8
KSH				*e*ScP			20 18 51.5	
KSH				S		S	20 23 04.5	-2.4
KSH				pmax		pmax		
	comp=Z,81nm,6.4s							
KSH				LR		LR		
	comp=N,150nm,5.1s							
KSH				LR		LR		
	comp=E,170nm,6.0s							
KSH				LR		LR		
	comp=Z,150nm,5.6s							
MK01	Makanchi Array	66.01	327	*e*P		P	20 14 22.0	-0.3
MK31	Makanchi Array	66.03	327	*e*P		P	20 14 22.4	-0.1
MK32	Makanchi Array	66.03	327	*e*P		P	20 14 22.5	0.0
MKAR	Makanchi Array	66.03	327	P		P	20 14 22.5	0.0
	3.6nm,0.8s,baz=127,slow=7.9,SNR=38							
YAK	Yakutsk	66.85	0	*e*P		P	20 14 27.9	+0.6
	32nm,0.7s							
TKM2	Tokmak 2	67.83	320	*e*P		P	20 14 34.9	+0.6
	3.2nm,0.8s							
AAK	Ala-Archa	68.39	320	P		P	20 14 38.6	+0.8
	0.8nm,0.7s,baz=275,slow=8.1,SNR=3.5							
AAK	Ala-Archa	68.39	320	*e*P		P	20 14 38.0	+0.3
	4.4nm,1.0s							
ZAA0	Zalesovo Array	69.37	334	*e*P		P	20 14 42.5	-0.9
ZALV	Zalesovo Beam	69.37	334	P		P	20 14 43.0	-0.4
	2.6nm,0.7s,baz=107,slow=4.9,SNR=14							
ZAA1	Zalesovo Array	69.37	334	*e*P		P	20 14 43.0	-0.4
KURBB	Kurchatov Arra	70.31	329	P		P	20 14 49.0	-0.2
	2.8nm,0.6s,baz=130,slow=5.5,SNR=39							
KURK	Kurchatov	70.31	329	*e*P		P	20 14 48.8	-0.4
	12nm,1.0s							
VNDA	Vanda	74.53	173	P		P	20 15 14.0	+0.1
	1.4nm,0.8s,baz=301,slow=8.5,SNR=9.1							
BRVK	Borovoye	75.93	328	*e*P		P	20 15 21.8	-0.6
	15nm,1.2s							
TIXI	Tiksi	76.51	360	*e*P		P	20 15 24.4	-0.9
	5.5nm,0.7s							
GEYT	Allbeck	78.18	310	P		P	20 15 40.1	+4.7
	1.2nm,0.8s,baz=111,slow=3.2,SNR=2.8							
ABKAR	Akbulak array	80.34	322	*e*P		P	20 15 45.9	-1.1
QSPA	South Pole Qui	84.95	180	*e*P		P	20 16 10.3	-0.5
SYO	Syowa Base	85.14	201⇑	*e*P		P	20 16 04.8	-6.7
SYO	Syowa Base	85.14	201⇓	*e*P		P	20 16 14.8	+3.3
ILAR	Eielson Array	91.98	25	P		P	20 16 46.6	+2.5
	0.4nm,0.7s,baz=282,slow=3.9,SNR=3.8							
DOT	Dot Lake	93.09	27	*e*P		P	20 16 47.1	-2.2
	48nm,1.8s							
TORD	Torodi Ar. Bea	127.43	283	PKP		PKPdf	20 22 42.2	+0.6
	0.1nm,0.3s,baz=113,slow=36,SNR=3.5							
TOA1	Torodi Ar. Sit	127.43	283	*e*PKPdf		PKPdf	20 22 42.2	+0.6
CPUP	Villa Florida	148.25	169	PKPbc		PKPbc	20 23 22.8	+0.3
	5.2nm,0.9s,baz=98,slow=1.4,SNR=7.5							
CPUP	Villa Florida	148.25	169	*e*PKPbc		PKPbc	20 23 22.2	-0.3
LPAZ	La Paz	152.89	142	PKPbc		PKPbc	20 23 35.1	+0.5
	0.7nm,0.4s,baz=199,slow=3.1,SNR=3.1							
LPAZ				PKPab		PKPab	20 23 47.5	+1.9
	1.1nm,0.7s,baz=271,slow=3.3,SNR=5.6							

NIED ***29*** *20:21:00,36.7*0*N×140.6*0*E,h8km,Mw3.5 Best double couple: M*0*1.98000×10*14 *NP1:*φ*s161.00000°,*δ*42.00000°,* λ*-36.00000°. NP2:*φ*s279.00000°,*δ*67.00000°,* λ*-126.00000°.*

ISCJB ***29*** *20:21:12.5*±*0.6,36.7*5*N*±*0.*0*3×140.6*3*E*±*0.*0*5,h18km*±*5km, mb3.5/3, Error ellipse: s-maj=7.4km s-min=4.5km az=19.4*

JMA ***29*** *20:21:13.3,36.7*7*N×140.5*3*E,h10km*±*1km,M3.7 Broadband fault plane solution: P waves. NP1:* φ*s297.00000°,*δ*53.00000°,*λ*-118.00000°. NP2:* φ*s158.00000°,*δ*45.00000°,*λ*-59.00000°. Principal axes: T Plg4.0000°, Azm46.0000°; N Plg22.0000°, Azm314.0000°; P Plg68.0000°, Azm146.0000°;*

JMA Felt II J1.

IDC ***29*** *20:21:15.8*±*3.3,36.7*2*N×140.6*6*E,h39km*±*28km,mb3.3/3, mb1 3.6/5,mb1mx3.2/48,mbtmp3.7/5,ML3.4/2 Error ellipse: s-maj=33.7km s-min=19.6km az=80.0*

ISC 29 20:21:13.0±0.9**,36.7**8**N**±0.0**3×140.5**2**E**±0.0**4,h13**km±7km**, n21,**σ0°63/24,**mb3.6/3,7C,Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
JHO	Hitachi	0.17	166	⇑P		Pg		20 21 16.9	-0.1
JHO				S		Sg		20 21 19.5	-0.2
ONAJ	Iwakimizuishiy	0.40	35	⇑P		Pg		20 21 21.1	+0.2
JSB	Shiboa	0.52	292	⇑P		Pb		20 21 24.1	+0.1
JSB				S		Sb		20 21 31.4	0.0
JYT	Yasato	0.61	206	⇑P		Pg		20 21 24.8	0.0
JYT				S		Sg		20 21 32.8	-0.1
JFK	Kawauchi	0.66	26	⇑P		Pg		20 21 25.5	-0.3
JFK				S		Sg		20 21 34.4	0.0
JFT	Otama	0.75	349	⇑P		Pb		20 21 27.8	-0.3
JFT				S		Sb		20 21 37.9	-0.4
JFY	Yanaizu	0.90	314	P		Pb		20 21 30.9	+0.3
JAG	Ashikaga	0.93	248	⇑P		Pg		20 21 30.2	-0.7
JAG				S		Sg		20 21 42.5	-0.5
MJAR	Matsushiro Arr	1.87	263	Pn		Pn		20 21 45.5	+0.7
	21nm,0.3s,baz=86,slow=15,SNR=232								
MJAR				Sn		Sb		20 22 11.1	+0.7
	29nm,0.3s,baz=82,slow=29,SNR=16								
MAT	Matsushiro	1.87	264	P		Pn		20 21 45.9	+1.1
MAT				S		Sb		20 22 11.0	+0.6
JHJ	Hachijo jima 2	3.70	190	Pn		Pn		20 22 10.7	+0.8
	12nm,0.3s,baz=107,slow=20,SNR=5.4								
JHJ				Sn		Sn		20 22 53.5	+0.2
	9.3nm,0.3s,baz=256,slow=22,SNR=2.7								
ASAJ	Asahikawa	7.50	12	Pn		Pn		20 23 02.7	+0.6
	0.5nm,0.3s,baz=1.7,slow=29,SNR=3.9								
H11N2	WAKE ISLAND Hy	28.64	119	T		T		20 56 51.6	
	baz=313,slow=75,SNR=50								
H11N1	WAKE ISLAND Hy	28.65	119	T		T		20 56 58.2	
	baz=313,slow=75,SNR=68								
H11N3	WAKE ISLAND Hy	28.66	119	T		T		20 57 00.7	
	baz=313,slow=75,SNR=58								
H11S1	WAKE ISLAND Hy	29.33	121	T		T		20 57 46.3	
	baz=314,slow=76,SNR=270								
H11S3	WAKE ISLAND Hy	29.33	121	T		T		20 57 46.1	
	baz=314,slow=76,SNR=199								
H11S2	WAKE ISLAND Hy	29.35	121	T		T		20 57 47.3	
	baz=314,slow=76,SNR=168								
ZALV	Zalesovo Beam	41.56	313	P		P		20 29 00.8	+0.7
	0.2nm,0.3s,baz=99,slow=8.9,SNR=2.5								
KURBB	Kurchatov Arra	45.59	308	P		P		20 29 32.4	-0.3
	0.8nm,0.9s,baz=85,slow=8.3,SNR=5.7								
WRA	Warramunga Arr	56.71	187	P		P		20 30 54.8	-1.6
	0.3nm,0.5s,baz=4.0,slow=7.5,SNR=9.2								

IDC ***29*** *20:22:34.7*±*0.9,1.0*3*N×122.6*2*E,h0km,mb3.6/6, mb1 3.8/8,mb1mx3.5/43,mbtmp3.6/8,ML3.7/2, Error ellipse: s-maj=58.9km s-min=15.7km az=67.0*

ISCJB ***29*** *20:22:39.4*±*0.8,0.9*9*N*±*0.*1*×122.3*1*E*±*0.*2*,h51km,mb3.5/6, Error ellipse: s-maj=31.7km s-min=13.3km az=164.3*

ISC 29 20:22:41.5±1.2**,0.9N**±0.1**×122.4E**±0.3**,h51km,n8,σ0°85/8, mb3.5/6,Minahassa Peninsula, Sulawesi**

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
KAPI	Kappang	6.43	205	Pn		Pn		20 24 13.5	-0.2
	0.5nm,0.3s,baz=177,slow=1.9,SNR=4.4								
FITZ	Fitzroy Crossi	19.12	171	P		P		20 27 00.5	+0.1
	0.3nm,0.3s,baz=13,slow=8.8,SNR=12								
WRA	Warramunga Arr	23.76	151	P		P		20 27 49.2	-0.2
	1.5nm,0.9s,baz=336,slow=9.2,SNR=19								
ASAR	Alice Springs	26.82	156	P		P		20 28 17.2	-0.1
	0.3nm,0.5s,baz=342,slow=14,SNR=10								
STKA	Stephens Creek	37.29	153	P		P		20 29 49.0	+0.2
	2.3nm,0.8s,baz=326,slow=9.3,SNR=5.5								
MKAR	Makanchi Array	57.57	328	P		P		20 32 25.8	-0.3
	0.1nm,0.3s,baz=128,slow=9.3,SNR=2.6								
ZALV	Zalesovo Beam	61.28	336	P		P		20 32 50.4	-1.1
	0.3nm,0.4s,baz=148,slow=8.4,SNR=2.6								
KURBB	Kurchatov Arra	61.92	330	P		P		20 32 57.4	+1.5
	0.4nm,0.9s,baz=120,slow=6.2,SNR=3.4								

BJI ***29*** *20:24:31.9,3.7*8*S×100.7*6*E,h33km,mb5.2/76,mB5.1/57, Ms5.1/73,Ms7 4.9/67*

ISCJB ***29*** *20:24:33.9*±*0.2,3.4*6*S*±*0.*0*3×100.6*3*E*±*0.*0*2,h28km, mb5.1/138,MS4.7/43,Error ellipse: s-maj=4.6km s-min=2.9km az=33.9*

IDC ***29*** *20:24:34.8*±*2.5,3.4*7*S×100.6*5*E,h22km*±*14km,mb4.9/32, mb1 4.9/34,mb1mx4.8/41,mbtmp5.0/34,ML4.3/2,MS4.4/22, Ms1 4.4/22,ms1mx4.2/51,Error ellipse: s-maj=17.5km s-min=9.6km az=45.0*

GCMT ***29*** *20:24:34.4*±*0.3,3.6*4*S×100.3*3*E,h15km,MW5.3/51, Moment Tensor Solution. s46,c63; s51,c66; Duration: 1*0 *Moment tensor: Scale 10*17*Nm;* Mrr*0.33*±*.02;* Mθθ*-0.16*±*.01;* Mφφ*-0.17*±*.02;* Mrθ*0.63*±*.04;* Mθφ*0.11*±*.01;* Mφr*-0.78*±*.04; Best double couple: M*0*1.04600×10*17 *NP1:*φ*s141.00000°,*δ*82.00000°,*λ*91.00000°. NP2:* φ*s316.00000°,*δ*8.00000°,*λ*86.00000°. Principal axes: T 1.0730, Plg53.0000°, Azm52.0000°; N -0.0570, Plg1.0000°, Azm321.0000°; P -1.0180, Plg37.0000°, Azm230.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

NEIC ***29*** *20:24:34.4*±*1.6,3.5*3*S×100.6*3*E,h25km*±*10km,mb5.2/54 Error ellipse: s-maj=8.1km s-min=3.9km az=46.0*

MOS ***29*** *20:24:36.7*±*1.1,3.3*1*S×100.7*3*E,h47km,mb5.3/54, MS4.6/7,Error ellipse: s-maj=10.0km s-min=4.8km az=106.8*

KLM ***29*** *20:24:37.8,3.4*9*S×100.5*8*E,h50km,mb5.1,ML5.2,MS6.0*

DJA ***29*** *20:24:38.3*±*0.7,3.5*±*3.1*±*10.1*±*,h34km*±*6km,M4.9/44, mb5.2/44,mB5.4/29,MLv5.4/15,Mw(mB)4.8/29*

ISC 29 20:24:35.2±0.6**,3.5**1**S**±0.0**4×100.6**3**E**±0.0**5,h28km**±3km**, n27**km**:pP-P,n510,**σ1°60/529,**mb5.1/138,MS4.6/43, 35C-18D,Southern Sumatera**

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
PPSI	Pulau Pagai	0.97	320	P		Pn		20 24 52.8	-0.1
PPSI				S		Sb		20 25 18.7	+13
MASI	Maura Aman, Be	1.65	77	P		Pb		20 25 04.4	-0.6
MNAI	Manna	2.47	110	P		Pb		20 25 18.5	-0.5
MNAI	Manna	2.47	110	*e*Pn		Pn		20 25 14.5	+0.8
PDSI	Padang	2.59	356	P		Pn		20 25 14.8	-0.5
SDSI	Sungai Dareh	2.69	17	P		Pn		20 25 18.0	+1.4
LHSI	Lahat	2.91	96	P		Pn		20 25 21.9	+2.2
MDSI	Maura Dua	3.67	105	P		Pn		20 25 32.2	+2.0
LWLI	Liwa	3.74	114	P		Pn		20 25 32.7	+1.5
BKNI	Bangkinang	3.84	6	P		Pn		20 25 33.7	+1.3
BKNI	Bangkinang	3.84	6	*e*Pn		Pn		20 25 32.9	+0.5
PMBI	Palembang	4.18	82	P		Pn		20 25 39.5	+2.3
KASI	Kota Agung	4.35	118	P		Pn		20 25 40.6	+1.2
MNSI	Mandailing Nat	4.41	346	P		Pn		20 25 39.5	-0.8
KLI	Kotabumi	4.43	108	P		Pn		20 25 44.8	+4.2
BLSI	Bandar Lampung	4.96	112	P		Pb		20 25 57.7	-3.7
PPBI	Pangkal Pinang	5.67	76	P		Pn		20 25 59.8	+2.2
GSI	Gunungsitoli	5.67	327	P		Pn		20 25 59.9	+2.2
GSI	Gunungsitoli	5.67	327	*e*Pn		Pn		20 25 57.0	-0.7
TPRI	Tanjung Pinang	5.88	42	P		Pn		20 26 02.3	+1.7
CGJI	Cibinong	5.91	122	P		Pn		20 26 00.2	-0.8
SBJI	Serang	6.07	115	P		Pn		20 26 16.4	-3.8
KGM	Kluang	6.12	26	⇑P		Pn		20 26 05.6	+1.7
MYKOM	Kota Tinggi	6.17	32	*e*Pn		Pn		20 26 05.7	+1.1
PSI	Prapat	6.50	345	Pn		Pn		20 26 09.2	0.0
	2.6nm,0.3s,baz=162,slow=12,SNR=17								
PSI				Sn		Sn		20 27 11.4	-11
	2.6nm,0.3s,baz=127,slow=21,SNR=2.9								
PSI	Prapat	6.50	345	*e*P		Pn		20 26 09.5	+0.3
PSI								20 27 11.4	
PSI	Prapat	6.50	345	*e*Pn		Pn		20 26 09.5	+0.3
PSI				Sn		Sn		20 27 11.4	-11
FRIM	Kepong	6.78	8	⇑P		Pn		20 26 15.3	+2.4
CBJI	Citeko	6.84	115	P		Pn		20 26 18.0	+4.2
	1μm,0.7s,17μm4.6nm								
SKJI	Sukabumi	6.85	121	P		Pb		20 26 25.1	-8.5
TSI	Tuntungan	7.26	344	P		Pn		20 26 23.0	+3.4
	139nm,1.3s,2μm0.8nm								
CNJI	Cibinong	7.49	120	P		Pn		20 26 29.7	+7.0
	340nm,0.8s,4μm1.2nm								
KCSI	Kotacane, Aceh	7.55	338	P		Pn		20 26 27.5	+4.0
	39nm,0.9s,1μm0.6nm								
LEM	Lembang	7.70	116	Pn		Pn		20 26 33.4	+7.6
	3.7nm,0.3s,baz=175,slow=18,SNR=15								
LEM				LR		LR		20 28 59.2	
	comp=Z,804nm,18.5s,baz=265,slow=34								
LEM	Lembang	7.70	116	P		Pn		20 26 33.9	+8.2
	2μm,1.0s,26μm8.6nm								
IPM	Ipoh	7.95	3	⇑P		Pn		20 26 31.4	+2.4
IPM	Ipoh	7.95	3	*e*Pn		Pn		20 26 30.5	+1.5
JCJI	Jatiwangi	8.17	112	P		Pn		20 26 39.4	+7.4
	225nm,0.8s,5μm1.2nm								
CISI	Cisompet, Garu	8.21	120	P		Pn		20 26 32.0	-0.6
CISI	Cisompet, Garu	8.21	120	*e*Pn		Pn		20 26 31.4	-1.2
CISI				*e*Sn		Sn		20 27 54.4	-10
KULM	Kulim	8.74	0	*e*Pn		Pn		20 26 37.1	-2.8
MLSI	Meulaboh, Aceh	8.80	331	P		Pn		20 26 42.4	+1.7
	244nm,1.1s,0.7nm								
CMJI	Cimerak	8.87	119	P		Pn		20 26 47.6	+6.0
	237nm,0.7s,2μm0.9nm								
KTGM	Kuala Trenggan	9.13	16	⇑P		Pn		20 26 47.6	+2.4
LHMI	Lhok Sumawe	9.43	337	*e*Pn		Pn		20 26 48.4	-0.9
UGM	Wanagama	10.77	114	*e*Pn		Pn		20 27 06.5	-1.2
KSM	Kuching	10.87	63	*e*Pn		Pn		20 27 08.3	-0.8
WOJI	Wonogiri, Jawa	11.11	113	P		Pn		20 27 21.7	+9.4
TRTT	Trang	11.31	355	P		Pn		20 27 17.8	+2.7
	30nm,1.1s,589nm								
STKI	Sintang	11.41	72	P		Pn		20 27 24.7	+8.2
PWJI	Pagerwojo	11.99	112	P		Pn		20 27 34.3	+10
SURT	Suratani	12.52	352	P		P		20 27 44.2	+1.2
SBUM	Sibu	13.02	63	*e*Pn		Pn		20 27 40.3	+1.9
BTM	Bintulu	14.12	62	⇓P		Pn		20 27 56.0	+2.4
BBKI	Banjar Baru	14.19	90	P		P		20 27 58.9	-2.7
	417nm,0.8s,3μm								
ABJI	Asem Bagus	14.19	108	P		Pn		20 27 57.3	+2.8
	291nm,0.7s,3μm								
JAGI	Jajag, Banyuwa	14.32	111	P		P		20 28 02.2	-0.9
	128nm,0.8s								
JAGI	Jajag, Banyuwa	14.32	111	*e*Pn		Pn		20 27 54.3	-2.0
SRBI	Singaraja	15.20	108	P		P		20 28 15.6	+2.7
CHBT	CHBT	16.25	6	P		Pn		20 28 21.7	+0.1
	68nm,1.0s,1μm								
PATY	Pattaya	16.33	1	P		P		20 28 27.8	+2.4
TWSI	Taliwang, Sumb	16.97	109	P		P		20 28 34.3	+1.8
	35nm,0.6s								
SRDT	SRDT	17.81	355	P		P		20 28 43.9	+2.1
	36nm,1.2s,2μm								
PLAI	Plampang	17.84	108	P		Pn		20 28 41.0	-0.7
	62nm,0.7s								
KKM	Kota Kinabalu	18.23	59	⇓P		P		20 28 46.9	+0.3
KKM	Kota Kinabalu	18.23	59	*e*P		P		20 28 46.7	+0.1
	134nm,1.3s								
KHLT	Khaolaem Dam	18.30	354	P		P		20 28 46.7	-0.5
	17nm,1.0s								
SDKM	Sandakan	18.88	61	⇓P		Pn		20 28 54.3	-0.1
TSM	Tawau	18.90	66	⇓P		P		20 28 54.2	+0.5
SPSI	Sidrap Palu	19.11	92	P		Pn		20 28 56.9	-0.2
	73nm,0.9s,1μm								
KAPI	Kappang	19.13	95	P		P		20 28 56.0	-0.4
	2.8nm,0.3s,baz=278,slow=8.9,SNR=37								
KAPI	Kappang	19.13	95	*e*P		P		20 28 56.3	-0.1
	109nm,0.9s								
TTSI	Tana Toraja	19.17	89	P		Pn		20 28 58.9	+1.1
	72nm,1.1s,1μm								
KDM	Kudat	19

FITZ	**Fitzroy Crossi**	**28.46**	**122**	*e*P		**P**	**20 30 27.9**	**-0.2**
	comp=Z,22nm,0.7s								
KMI	**Kunming**	**28.54**	**4**	P		**P**	**20 30 29.8**	**+0.9**
KMI				pP		sP	20 30 39.5	-1.0
KMI				sP		pP	20 30 43.5	+6.4
KMI				PP		**PnPn**	**20 31 25.0**	**+5.8**
KMI				S		**S**	**20 35 15.0**	**-0.5**
KMI				sS		sS	20 35 32.3	+3.3
KMI				SS		**SnSn**	**20 36 45.0**	**+8.9**
KMI				pmax		pmax			
	comp=Z,22nm,1.2s								
KMI				pmax		pmax			
	comp=Z,150nm,6.3s								
KMI				LR		LR			
	comp=Z,2μm,15.0s								
KMI				LR		LR			
	comp=Z,1μm,16.3s								
KMI				LR		LR			
	comp=Z,2μm,13.8s								
HKC	**Hong Kong Obse**	**28.87**	**27**	P		P	20 30 40.0	+8.3	
GYA	**Guiyang**	**30.36**	**11**	⇑*i*P		**P**	**20 30 44.5**	**-0.5**	
GYA				pP		pP	20 30 54.5	+1.4	
GYA				PP		**PnPn**	**20 31 48.3**	**+4.4**	
GYA				PcP		**PcP**	**20 33 45.8**	**+1.0**	
GYA				S		**S**	**20 35 46.0**	**+2.0**	
GYA				sS		sS	20 36 01.0	+3.6	
GYA				SS		**ScP**	**20 37 24.5**	**-1.0**	
GYA				ScS		**ScS**	**20 41 20.0**	**-1.7**	
GYA				pmax		pmax			
	comp=Z,30nm,1.0s								
GYA				pmax		pmax			
	comp=Z,140nm,5.6s								
GYA				LR		LR			
	comp=Z,660nm,17.2s								
GYA				LR		LR			
	comp=Z,580nm,17.4s								
GYA				LR		LR			
	comp=Z,680nm,17.8s								
SWI	**Sorong**	**30.72**	**86**	P		**P**	**20 30 47.5**	**-0.7**	
	comp=Z,30nm,1.0s								
FAKI	**Fak Fak**	**31.58**	**90**	P		**P**	**20 30 56.2**	**+0.4**	
	comp=Z,42nm,1.0s								
FAKI	**Fak Fak**	**31.58**	**90**	*e*P		**P**	**20 30 53.8**	**-2.0**	
	comp=Z,46nm,1.1s								
TPUB	**Ta-pu**	**33.03**	**35**	*e*P		**P**	**20 31 07.5**	**-0.8**	
	comp=Z,29nm,0.9s								
NWAO	**Narrogin (SRO)**	**33.14**	**154**	P		P	20 31 16.4	+7.2	
	comp=Z,16nm,1.1s,baz=224,slow=0.1,SNR=3.5								
QZH	**Quanzhou**	**33.24**	**31**	⇑P		**P**	**20 31 06.0**	**-4.1**	
QZH				S		**S**	**20 36 22.3**	**-6.3**	
QZH				LR		LR			
	comp=Z,2μm,16.3s								
QZH				LR		LR			
	comp=Z,2μm,13.0s								
QZH				LR		LR			
	comp=Z,3μm,15.2s								
YULB	**Yu-li**	**33.49**	**36**	*e*P		**P**	**20 31 13.2**	**+0.8**	
	comp=Z,38nm,1.6s								
SSLB	**Suanglung**	**33.59**	**35**	*e*P		**P**	**20 31 12.5**	**-0.8**	
	comp=Z,16nm,0.7s								
H01W3	**Cape Leeuwin H**	**33.64**	**160**	T		T	21 06 50.9		
	baz=336,slow=76,SNR=83								
H01W2	**Cape Leeuwin H**	**33.65**	**160**	T		T	21 06 37.3		
	baz=336,slow=76,SNR=86								
H01W1	**Cape Leeuwin H**	**33.66**	**160**	T		T	21 06 42.8		
	baz=336,slow=76,SNR=63								
PKIN	**Phulchoki**	**34.22**	**336**	*e*P		**P**	**20 31 20.2**	**+1.2**	
	comp=Z,17nm,0.7s								
LSA	**Lhasa**	**34.25**	**345**	P		**P**	**20 31 20.5**	**+1.1**	
LSA				pmax		pmax			
	comp=Z,20nm,1.1s								
LSA	**Lhasa**	**34.25**	**345**	*e*P		**P**	**20 31 20.3**	**+0.8**	
LSA				pmax		pmax			
	comp=Z,45nm,1.1s								
LSA	**Lhasa**	**34.25**	**345**	*e*P		**P**	**20 31 20.2**	**+0.8**	
	comp=Z,45nm,1.1s								
NACB	**Ninganchiao**	**34.26**	**35**	*e*P		**P**	**20 31 18.7**	**-0.4**	
	comp=Z,31nm,0.8s								
GUN	**Gumba**	**34.32**	**336**	*e*P		**P**	**20 31 21.2**	**+1.3**	
	comp=Z,257nm,0.9s								
CD2	**Chengdu**	**34.36**	**5**	P		**P**	**20 31 20.5**	**+0.6**	
CD2				sP		sP	20 31 33.3	+1.8	
CD2				PP		**PP**	**20 32 39.3**	**+1.2**	
CD2				S		**S**	**20 36 48.3**	**+2.3**	
CD2				sS		sS	20 37 03.3	+3.7	
CD2				pmax		pmax			
	comp=Z,30nm,1.1s								
CD2				pmax		pmax			
	comp=Z,100nm,4.5s								
CD2				LR		LR			
	comp=Z,3μm,16.8s								
CD2				LR		LR			
	comp=Z,2μm,14.4s								
DMN	**Daman**	**34.37**	**335**	*e*P		**P**	**20 31 21.1**	**+0.8**	
	comp=Z,108nm,1.0s								
KKN	**Kakani**	**34.46**	**336**	*e*P		**P**	**20 31 22.1**	**+1.1**	
	comp=Z,110nm,0.9s								
YHNB	**Yeheng**	**34.52**	**35**	*e*P		**P**	**20 31 21.3**	**-0.1**	
	comp=Z,89nm,1.5s								
ENH	**Enshi**	**34.65**	**14**	*e*P		**P**	**20 31 21.6**	**-0.8**	
	comp=Z,68nm,1.1s								
GKN	**Gorkha**	**34.91**	**335**	*e*P		**P**	**20 31 25.7**	**+0.8**	
	comp=Z,42nm,0.5s								
KOLN	**Koldanda**	**35.16**	**333**	*e*P		**P**	**20 31 27.9**	**+0.8**	
	comp=Z,55nm,0.7s								
PYUN	**Piuthan**	**35.72**	**333**	*e*P		**P**	**20 31 32.8**	**+0.9**	
	comp=Z,143nm,0.9s								
WHN	**Wuhan**	**36.32**	**20**	P		**P**	**20 31 37.0**	**+0.4**	
WHN				S		**S**	**20 37 23.8**	**+7.8**	
WHN				pmax		pmax			
	comp=Z,61nm,0.9s								
WHN				pmax		pmax			
	comp=Z,460nm,4.8s								
WHN				LR		LR			
	comp=Z,5μm,12.0s								
WHN				LR		LR			
	comp=Z,4μm,17.5s								
WHN				LR		LR			
	comp=Z,7μm,13.8s								
WRA	**Warramunga Arr**	**36.70**	**119**	P		**P**	**20 31 39.8**	**-0.5**	
	comp=Z,8.3nm,0.5s,baz=292,slow=8.3,SNR=45								
WRA				S		**S**	**20 37 22.1**	**-0.2**	
	comp=Z,4.6nm,0.9s,baz=295,slow=16,SNR=9.1								
WRA				LR		LR	20 48 51.4		
	comp=Z,789nm,20.5s,baz=290,slow=40								
WR1	**Warramunga Arr**	**36.70**	**119**	*e*P		**P**	**20 31 39.8**	**-0.5**	
WR1				*e*S		**S**	**20 37 22.1**	**-0.2**	
WRAB	**Tennant Creek**	**36.71**	**119**	*e*P		**P**	**20 31 39.9**	**-0.4**	
WRAB	**Tennant Creek**	**36.71**	**119**	*e*P		**P**	**20 31 39.7**	**-0.6**	
	comp=Z,17nm,0.6s								
AS31	**Alice Springs**	**37.87**	**125**	*e*P		**P**	**20 31 50.3**	**+0.2**	
	comp=Z,9.1nm,0.6s								
ASAR	**Alice Springs**	**37.87**	**125**	P		**P**	**20 31 50.5**	**+0.4**	
	comp=Z,20nm,0.6s,baz=302,slow=7.9,SNR=64								
ASAR				S		**S**	**20 37 42.0**	**+2.0**	
	comp=Z,2.3nm,0.6s,baz=294,slow=13,SNR=13								
ASAR				LR		LR	20 49 09.9		
	comp=Z,1μm,21.1s,baz=301,slow=39								
AS01	**Alice Springs**	**37.91**	**125**	*e*P		**P**	**20 31 49.9**	**-0.5**	
XAN	**Xi'an**	**38.16**	**11**	P		**P**	**20 31 51.8**	**-0.6**	
XAN				pP		pP	20 31 59.5	-1.1	
XAN				PP		**PP**	**20 33 19.5**	**-0.5**	
XAN				S		**S**	**20 37 41.8**	**-2.3**	
XAN				pmax		pmax			
	comp=Z,130nm,1.0s								
XAN				pmax		pmax			
	comp=Z,170nm,7.0s								
XAN				LR		LR			
	comp=Z,2μm,16.3s								
XAN				LR		LR			
	comp=Z,2μm,13.6s								
NJ2	**Nanjing**	**39.38**	**25**	*e*P		**P**	**20 32 02.0**	**-0.6**	
NJ2				S		**S**	**20 38 09.0**	**+6.5**	
NJ2				pmax		pmax			
	comp=Z,11nm,0.8s								
NJ2				LR		LR			
	comp=Z,2μm,8.7s								
NJ2				LR		LR			
	comp=Z,1μm,10.8s								
NJ2				LR		LR			
	comp=Z,2μm,10.8s								
LZH	**Lanzhou**	**39.51**	**4**	*e*P		**P**	**20 32 04.5**	**+0.7**	
LZH				pP		sP	20 32 16.3	+0.9	
LZH				sP		pP	20 32 22.5	+10	
LZH				PP		**PnPn**	**20 33 42.3**	**+4.5**	
LZH				*e*S		**S**	**20 38 08.5**	**+3.9**	
LZH				sS		sS	20 38 22.5	+4.3	
LZH				SS		**SS**	**20 40 55.0**	**-4.9**	
LZH				pmax		pmax			
	comp=Z,66nm,1.1s								
LZH				pmax		pmax			
	comp=Z,240nm,4.0s								
LZH				LR		LR			
	comp=Z,2μm,13.4s								
LZH				LR		LR			
	comp=Z,1μm,14.6s								
LZH				LR		LR			
	comp=Z,2μm,15.2s								
SSE	**Sheshan**	**39.61**	**28**	*e*P		**P**	**20 32 04.5**	**+0.1**	
SSE				pP		**pP**	**20 32 14.0**	**+1.3**	
SSE				S		**S**	**20 38 05.0**	**-0.9**	
SSE				pmax		pmax			
	comp=Z,21nm,1.2s								
SSE				pmax		pmax			
	comp=Z,120nm,6.3s								
SSE				LR		LR			
	comp=Z,550nm,19.7s								
SSE				LR		LR			
	comp=Z,540nm,19.6s								
SSE				LR		LR			
	comp=Z,600nm,16.7s								
JOW	**Kunigami**	**40.30**	**40**	P		**P**	**20 32 11.1**	**+0.9**	
	comp=Z,31nm,0.8s,baz=215,slow=7.0,SNR=4.7								
JOW	**Kunigami**	**40.30**	**40**	*e*P		**P**	**20 32 10.7**	**+0.4**	
	comp=Z,51nm,1.1s								
TIA	**Tai'an**	**42.42**	**20**	⇑P		**P**	**20 32 26.8**	**-0.8**	
TIA				pmax		pmax			
	comp=Z,20nm,0.7s								
GTA	**Gaotai**	**42.72**	**359**	⇑P		**P**	**20 32 30.3**	**+0.2**	
GTA				pP		pP	20 32 38.0	-0.4	
GTA				sP		sP	20 32 41.3	-0.5	
GTA				PcP		**PcP**	**20 34 20.5**	**-1.0**	
GTA				S		**S**	**20 38 52.8**	**+0.7**	
GTA				sS		sS	20 39 05.0	-0.9	
GTA				SS		**SS**	**20 41 57.5**	**-6.0**	
GTA				pmax		pmax			
	comp=Z,30nm,1.1s								
GTA				pmax		pmax			
	comp=Z,210nm,8.6s								
GTA				LR		LR			
	comp=Z,920nm,15.2s								
GTA				LR		LR			
	comp=Z,1μm,18.1s								
GTA				LR		LR			
	comp=Z,1μm,15.2s								
THN	**Thein Dam**	**42.85**	**328**	*e*P		**P**	**20 32 28.6**	**-2.5**	
HHC	**Hu-ho-hao-te**	**45.27**	**12**	*e*P		**P**	**20 32 51.5**	**+1.0**	
HHC				S		**S**	**20 39 29.0**	**-0.3**	
HHC				pmax		pmax			
	comp=Z,58nm,1.2s								
HHC				pmax		pmax			
	comp=Z,260nm,6.3s								
HHC				LR		LR			
	comp=Z,1μm,15.2s								
HHC				LR		LR			
	comp=Z,2μm,16.6s								
HHC				LR		LR			
	comp=Z,1μm,15.1s								
BJT	**Baijiatuau**	**45.61**	**17**	*e*P		**P**	**20 32 53.5**	**+0.4**	
BJT				pmax		pmax			
	comp=Z,51nm,1.0s								
BJT	**Baijiatuau**	**45.61**	**17**	*e*P		**P**	**20 32 53.5**	**+0.4**	
	comp=Z,51nm,1.0s								
BJI	**Beijing**	**45.63**	**17**	P		**P**	**20 32 53.8**	**+0.6**	
BJI				PP		**PP**	**20 34 42.5**	**+2.0**	
BJI				S		**S**	**20 39 36.8**	**+2.5**	
BJI				pmax		pmax			
	comp=Z,46nm,0.8s								
BJI				pmax		pmax			
	comp=Z,300nm,3.7s								
BJI				LR		LR			
	comp=Z,2μm,16.1s								
BJI				LR		LR			
	comp=Z,460nm,11.6s								
BJI				LR		LR			
	comp=Z,1μm,17.4s								
JNU	**Nakatsue**	**46.33**	**36**	P		**P**	**20 32 58.9**	**-0.1**	
	comp=Z,90nm,1.0s,baz=196,slow=3.8,SNR=22								
JNU	**Natsue**	**46.33**	**36**	*e*P		**P**	**20 32 58.7**	**-0.3**	
	comp=Z,121nm,1.0s								
STKA	**Stephens Creek**	**47.69**	**131**	P		**P**	**20 33 10.5**	**+0.9**	
	comp=Z,8.6nm,0.8s,baz=290,slow=8.6,SNR=22								
STKA				LR		LR	20 54 47.8		
	comp=Z,930nm,21.0s,baz=297,slow=38								
STKA	**Stephens Creek**	**47.69**	**131**	*e*P		**P**	**20 33 10.5**	**+0.9**	
STKA				pmax		pmax			
	comp=Z,4.0nm,0.8s								
STKA	**Stephens Creek**	**47.69**	**131**	*e*P		**P**	**20 33 10.5**	**+0.9**	
	comp=Z,4.4nm,0.8s								
KS15	**Wonju Array Si**	**47.98**	**29**	*e*P		**P**	**20 33 11.7**	**0.0**	
KSAR	**Wonju Array Be**	**47.98**	**29**	P		**P**	**20 33 11.7**	**0.0**	
KSAR	**Wonju Array Be**	**47.98**	**29**	P		**P**	**20 33 11.7**	**0.0**	
KSRS	**Korea Array**	**48.01**	**29**	P		**P**	**20 33 11.7**	**-0.2**	
	comp=Z,58nm,1.0s,baz=219,slow=8.2,SNR=57								
KS01	**Wonju Array Si**	**48.01**	**29**	*e*P		**P**	**20 33 11.3**	**-0.6**	
KBL	**Kabul**	**48.12**	**325**	*e*P		**P**	**20 33 12.1**	**-1.0**	
KBL				pmax		pmax			
	comp=Z,8.0nm,0.6s								
KBL	**Kabul**	**48.12**	**325**	*e*P		**P**	**20 33 12.1**	**-1.0**	
	comp=Z,7.9nm,0.6s								
KSH	**Kashi**	**48.46**	**334**	P		**P**	**20 33 14.8**	**-0.7**	
KSH				*es*P		sP	20 33 29.0	+1.7	
KSH				*e*PP		**PP**	**20 35 06.8**	**-1.7**	
KSH				PcS		**PcS**	**20 38 37.0**	**-0.5**	
KSH				S		**S**	**20 40 10.8**	**-4.1**	
KSH				pmax		pmax			
	comp=Z,18nm,1.0s								
KSH				pmax		pmax			
	comp=Z,140nm,4.5s								
KSH				LR		LR			
	comp=Z,270nm,15.2s								
KSH				LR		LR			
	comp=Z,1μm,22.0s								
KSH				LR		LR			
	comp=Z,570nm,16.2s								
WMQ	**Urumqi**	**48.53**	**348**	P		**P**	**20 33 17.0**	**+1.1**	
WMQ				pP		pP	20 33 24.5	+0.1	
WMQ				sP		sP	20 33 28.5	+0.8	
WMQ				S		**S**	**20 40 13.8**	**-1.9**	
WMQ				sS		sS	20 40 31.5	+1.9	
WMQ				ScS		**ScS**	**20 43 03.0**	**-3.9**	
WMQ				pmax		pmax			
	comp=Z,38nm,1.0s								
WMQ				pmax		pmax			
	comp=Z,100nm,3.8s								
WMQ				LR		LR			
	comp=Z,280nm,16.4s								
WMQ				LR		LR			
	comp=Z,210nm,18.4s								
WMQ				LR		LR			
	comp=Z,230nm,24.6s								
SFK	**Sufi-Kurgan**	**49.96**	**333**	*i* P		**P**	**20 33 27.9**	**+0.8**	
SFK				pmax		pmax			
	comp=Z,33nm,1.0s								
PDGK	**Podgornoye**	**50.38**	**340**	*i* P		**P**	**20 33 31.2**	**+1.3**	
PDGK				pmax		pmax			
	comp=Z,100nm,1.0s								
AAA	**Alma-Ata**	**51.24**	**338**	*i* P		**P**	**20 33 37.1**	**+0.6**	
AAA				*i* S		**S**	**20 40 55.7**	**+2.2**	
AAA				pmax		pmax			
	comp=Z,300nm,5.6s								
AAA				smax		smax			
	comp=E,500nm,4.5s								
AAA				MLR		MLR			
	comp=Z,300nm,8.0s								
DZET	**Dzherino**	**51.33**	**328**	*i* P		**P**	**20 33 35.8**	**-1.5**	
DZET				pmax		pmax			
	comp=Z,14nm,0.7s								
SONA0	**Songino Array**	**51.38**	**5**	*e*P		**P**	**20 33 38.9**	**+1.3**	
	comp=Z,138nm,1.0s								
SONM	**Songino Array**	**51.38**	**5**	P		**P**	**20 33 38.9**	**+1.3**	
	comp=Z,92nm,0.9s,baz=189,slow=8.3,SNR=43								
SONA1	**Songino Array**	**51.40**	**5**	*e*P		**P**	**20 33 38.6**	**+0.9**	
TKM2	**Tokmak 2**	**51.46**	**337**	*i* P		**P**	**20 33 38.7**	**+0.4**	
TKM2				pmax		pmax			
	comp=Z,42nm,0.9s								
TKM2	**Tokmak 2**	**51.46**	**337**	*e*P		**P**	**20 33 38.8**	**+0.4**	
	comp=Z,40nm,0.9s								
ULN	**Ulaanbaatar**	**51.47**	**6**	*i* P		**P**	**20 33 39.3**	**+1.0**	
ULN				pmax		pmax			
	comp=Z,101nm,1.3s								
ULN	**Ulaanbaatar**	**51.47**	**6**	*e*P		**P**	**20 33 39.0**	**+0.8**	
	comp=Z,74nm,1.0s								
INU	**Inuyama**	**51.55**	**38**	*e*P		**P**	**20 33 37.1**	**-1.9**	
	comp=Z,37nm,1.5s								
AAK	**Ala-Archa**	**51.67**	**336**	P		**P**	**20 33 40.8**	**+1.0**	
	comp=Z,8.1nm,0.9s,baz=156,slow=5.3,SNR=12								
AAK	**Ala-Archa**	**51.67**	**336**	*i* P		**P**	**20 33 40.6**	**+0.7**	
AAK				pmax		pmax			
	comp=Z,20nm,1.4s								
AAK	**Ala-Archa**	**51.67**	**336**	*e*P		**P**	**20 33 40.4**	**+0.6**	
	comp=Z,14nm,1.0s								
FRU	**Bishkek**	**51.78**	**336**	*e*P		**P**	**20 33 39.5**	**-1.1**	
FRU				pmax		pmax			
	comp=Z,63nm,1.2s								
EKS2	**Erkin-Say**	**51.99**	**335**	*e*P		**P**	**20 33 42.8**	**+0.6**	
EKS2				pmax		pmax			
	comp=Z,33nm,0.8s								
EKS2	**Erkin-Say**	**51.99**	**335**	*e*P		**P**	**20 33 42.8**	**+0.6**	
	comp=Z,33nm,0.8s								
CN2	**Changchun**	**52.12**	**23**	⇑P		**P**	**20 33 42.5**	**-0.5**	
CN2				*e*pP		pP	20 33 49.8	-1.7	
CN2				*e*S		**S**	**20 41 04.5**	**-1.0**	
CN2				pmax		pmax			
	comp=Z,70nm,0.8s								
CN2				pmax		pmax			
	comp=Z,200nm,3.0s								
CN2				LR		LR			
	comp=Z,2μm,15.0s								
CN2				LR		LR			
	comp=Z,1μm,15.0s								
CN2				LR		LR			
	comp=Z,1μm,15.0s								
MNAS	**Manas**	**52.40**	**334**	*i* P		**P**	**20 33 45.8**	**+0.5**	
MNAS				pmax		pmax			
	comp=Z,35nm,1.2s								
MK01	**Makanchi Array**	**52.62**	**344**	*e*P		**P**	**20 33 46.7**	**0.0**	
MK31	**Makanchi Array**	**52.65**	**344**	*e*P		**P**	**20 33 46.9**	**0.0**	
MK31	**Makanchi Array**	**52.65**	**344**	*e*P		**P**	**20 33 46.9**	**0.0**	
MK32	**Makanchi Array**	**52.65**	**344**	*e*P		**P**	**20 33 47.3**	**+0.4**	
MKAR	**Makanchi Array**	**52.65**	**344**	P		**P**	**20 33 47.3**	**+0.4**	
	comp=Z,40nm,0.9s,baz=148,slow=7.9,SNR=201								
MKAR				LR		LR	21 01 03.3		
	comp=Z,356nm,18.3s,baz=155,slow=42								
MKAR	**Makanchi Array**	**52.65**	**344**	*ce*P		**P**	**20 33 47.2**	**+0.4**	
MKAR				pmax		pmax			
	comp=Z,41nm,0.9s								
MKAR	**Makanchi Array**	**52.65**	**344**	*e*P		**P**	**20 33 47.2**	**+0.3**	
MAKZ	**Makanchi**	**52.74**	**344**	*e*P		**P**	**20 33 47.4**	**-0.2**	
MAKZ				pmax		pmax			
	comp=Z,29nm,1.0s								
MAKZ	**Makanchi**	**52.74**	**344**	*e*P		**P**	**20 33 47.4**	**-0.2**	
	comp=Z,29nm,1.0s								
MAJO	**Matsushiro**	**53.06**	**38**	*i* P		**P**	**20 33 48.9**	**-1.2**	
MAJO				pmax		pmax			
	comp=Z,208nm,1.2s								
MAJO	**Matsushiro**	**53.06**	**38**	*e*P		**P**	**20 33 49.0**	**-1.2**	
	comp=Z,32nm,1.1s								
MAT	**Matsushiro**	**53.06**	**38**	P		**P**	**20 33 48.8**	**-1.4**	
MJB9	**Matsu-Tunnel**	**53.06**	**38**	*e*P		**P**	**20 33 49.1**	**-1.0**	
	comp=Z,8.3nm,1.1s								
MJAR	**Matsushiro Arr**	**53.06**	**38**	P		**P**	**20 33 48.8**	**-1.4**	
	comp=Z,28nm,1.0s,baz=220,slow=7.8,SNR=51								
ZAK	**Zakamensk**	**53.73**	**2**	*e*P		**P**	**20 33 54.1**	**-0.8**	
ZAK				pmax		pmax			
	comp=Z,15nm,1.4s								
KK31	**Karatay Array**	**53.78**	**333**	*e*P		**P**	**20 33 55.1**	**-0.2**	
KK31				pmax		pmax			
	comp=Z,7.0nm,0.9s								
KKAR	**Karatay Array**	**53.78**	**333**	*e*P		**P**	**20 33 54.8**	**-0.5**	
KKAR	**Karatay Array**	**53.78**	**333**	*e*P		**P**	**20 33 54.8**	**-0.5**	
MDJ	**Mudanjiang**	**54.47**	**25**	P		**P**	**20 34 01.0**	**+0.7**	
MDJ				pmax		pmax			
	comp=Z,19nm,0.9s								
MDJ				pmax		pmax			
	comp=Z,170nm,6.7s								
MDJ				LR		LR			
	comp=Z,260nm,18.7s								
MDJ				LR		LR			
	comp=Z,220nm,20.8s								
MDJ				LR		LR			
	comp=Z,470nm,18.7s								
MDJ	**Mudanjiang**	**54.47**	**25**	*e*P		**P**	**20 34 00.4**	**+0.1**	
	comp=Z,18nm,0.9s								
MOY	**Mondy**	**54.97**	**0**	*e*P		**P**	**20 34 04.7**	**+0.8**	
MOY				pmax		pmax			
	comp=Z,27nm,3.6s								
TLY	**Talaya**	**55.04**	**2**	P		**P**	**20 34 05.0**	**+0.7**	
	comp=Z,14nm,0.8s,baz=194,slow=6.9,SNR=23								
TLY	**Talaya**	**55.04**	**2**	*c i* P		**P**	**20 34 05.2**	**+0.9**	
TLY				*e*S		S	20 41 55.5	+11	
TLY				pmax		pmax			
	comp=Z,50nm,1.5s								
TLY				MLR		MLR			
	comp=Z,876nm,15.0s								
HIA	**Hailar**	**55.12**	**15**	*e*P		**P**	**20 34 04.7**	**-0.3**	
HIA				pmax		pmax			
	comp=Z,25nm,1.1s								
HIA	**Hailar**	**55.12**	**15**	*e*P		**P**	**20 34 04.7**	**-0.3**	
	comp=Z,25nm,1.1s								
USRK	**Ussuriysk Ar.**	**55.20**	**27**	P		**P**	**20 34 05.8**	**+0.2**	
	comp=Z,52nm,0.9s,baz=221,slow=6.2,SNR=58								
IRK	**Irkutsk**	**55.63**	**3**	*e*P		**P**	**20 34 08.8**	**+0.3**	
IRK				pmax		pmax			
	comp=Z,62nm,1.7s								
CIT	**Chita**	**56.41**	**10**	*e*P		**P**	**20 34 15.2**	**+1.1**	
CIT				*e*			20 34 23.5		
GEYT	**Alibeck**	**57.00**	**320**	P		**P**	**20 34 18.6**	**0.0**	
	comp=Z,15nm,1.0s,baz=149,slow=6.9,SNR=31								
GEYT				LR		LR	21 00 52.9		
	comp=Z,330nm,20.5s,baz=60,slow=38								
KURBB	**Kurchatov Arra**	**57.17**	**343**	P		**P**	**20 34 19.6**	**+0.1**	
	comp=Z,30nm,1.0s,baz=159,slow=6.6,SNR=177								
KURK	**Kurchatov**	**57.23**	**344**	*e*P		**P**	**20 34 19.6**	**-0.3**	
KURK	**Kurchatov**	**57.23**	**344**	*e*P		**P**	**20 34 19.6**	**-0.3**	
ZAA0	**Zalesovo Array**	**58.76**	**349**	*e*P		**P**	**20 34 29.8**	**-0.8**	
ZALV	**Zalesovo Beam**	**58.76**	**349**	P		**P**	**20 34 30.6**	**0.0**	
	comp=Z,69nm,0.9s,baz=163,slow=5.4,SNR=200								
ZAA1	**Zalesovo Array**	**58.77**	**349**	*e*P		**P**	**20 34 30.6**	**-0.1**	
KLR	**Kul'dur**	**59.06**	**23**	P		**P**	**20 34 32.6**	**-0.1**	
	comp=Z,19nm,0.9s,baz=237,slow=6.0,SNR=33								
HNR	**Honiara**	**59.18**	**99**	*e*P		**P**	**20 34 33.0**	**-1.2**	
HNR				pmax		pmax			
	comp=Z,117nm,0.9s								
HNR	**Honiara**	**59.18**	**99**	*e*P		**P**	**20 34 33.0**	**-1.2**	
	comp=Z,117nm,0.9s								
KRAR	**Krasnoyarsk**	**59.66**	**355**	*i* P		**P**	**20 34 36.8**	**0.0**	
KRAR				pmax		pmax			
	comp=Z,55nm,1.0s								
HABR	**Khabarovsk**	**59.84**	**26**	*e*P		**P**	**20 34 35.3**	**-2.8**	
HABR				*e**SP		**sP**	**20 34 49.4**

comp=Z,19nm,0.6s
ABKAR **Akbulak array** 63.26 331 *e*P P 20 35 00.6 -0.7
KMBO **Kilima Mbogo** 63.35 270 P P 20 35 11.0 +8.1
comp=Z,1.1nm,0.4s,baz=33,slow=9.6,SNR=5.6
KMBO LR LR 20 57 05.5
comp=Z,195nm,21.8s,baz=94,slow=31
KMBO Kilima Mbogo 63.35 270 *e*P P 20 35 02.8 -0.1
KMBO pmax pmax
comp=Z,9.0nm,1.4s
KMBO Kilima Mbogo 63.35 270 *e*P P 20 35 02.8 -0.1
comp=Z,8.6nm,1.4s
AKTO Aktyubinsk 64.98 331 *i*P P 20 35 11.8 -0.7
AKTO pmax pmax
comp=Z,15nm,1.1s
NKL Nikolayevsk 65.70 25 *e*P P 20 35 17.0 -0.1
NKL pmax pmax
comp=Z,30nm,0.9s
GNI Garni 67.04 316*ce*P P 20 35 26.9 +0.7
GNI pmax pmax
comp=Z,26nm,1.7s
GNI Garni 67.04 316 *e*P P 20 35 24.1 -2.2
comp=Z,20nm,1.0s
DGRG David-gareji 67.20 318 P P 20 35 34.3 +7.2
DGRG David-gareji 67.20 318 P P 20 35 34.2 +7.1
TBLG Delisi 67.75 318 P P 20 35 32.0 +1.5
TBLG Delisi 67.75 318 P P 20 35 32.0 +1.5
SVE Sverdlovsk 68.31 338‖ *e*P P 20 35 33.8 +0.1
SVE pmax pmax
comp=Z,46nm,1.1s
ZEI Tsey 68.78 319 *e*P P 20 35 36.7 -0.5
ZEI pmax pmax
comp=Z,17nm,0.6s
ARU Arti 68.83 336 LR LR 21 08 41.3
comp=Z,422nm,21.1s,baz=119,slow=38
ARU Arti 68.83 336*c i*P P 20 35 36.4 -0.5
ARU 20 38 08.6
ARU S S 20 44 39.9 +0.9
ARU SS SS 20 49 06.5 +1.9
ARU pmax pmax
comp=Z,21nm,1.0s
ARU MLR MLR
comp=Z,394nm,22.0s
ARU Arti 68.83 336 *e*P P 20 35 36.1 -0.8
comp=Z,27nm,1.2s
MAW Mawson 68.98 195 P P 20 35 41.5 +3.9
comp=Z,2.4nm,1.0s,baz=48,slow=13,SNR=2.4
MAW LR LR 20 59 18.0
comp=Z,593nm,21.9s,baz=56,slow=30
ONI Oni 68.99 318 P P 20 35 40.9 +2.6
ONI Oni 68.99 318 P P 20 35 40.9 +2.6
YAK Yakutsk 69.04 14 P P 20 35 36.9 -1.2
comp=Z,16nm,0.4s,baz=222,slow=0.8,SNR=23
YAK LR LR 21 10 07.0
comp=Z,898nm,18.6s,baz=247,slow=40
YAK Yakutsk 69.04 14*c i*P P 20 35 37.0 -1.2
YAK pmax pmax
comp=Z,90nm,1.0s
YAK pmax pmax
comp=N,39nm,1.3s
YAK pmax pmax
comp=E,25nm,1.3s
YAK Yakutsk 69.04 14 *e*P P 20 35 36.9 -1.2
comp=E,88nm,1.0s
NCK Nalchik 69.30 319 *i*P P 20 35 40.8 +0.7
NCK pmax pmax
comp=Z,9.0nm,0.4s
NEY Neytrino 69.76 319 *i*P P 20 35 44.3 +1.1
NEY pmax pmax
comp=Z,6.0nm,2.4s
KBZ Khabaz 69.85 319 P P 20 35 44.0 +0.5
comp=Z,6.3nm,0.9s,baz=122,slow=3.6,SNR=12
KVAR Kislovodsk Arr 70.08 319 LR LR 21 10 21.9
comp=Z,84nm,19.0s,slow=39
KIV Kislovodsk 70.09 319*c i*P P 20 35 45.4 +0.3
KIV *i* 20 35 54.3
KIV *i*S S 20 44 54.3 -0.2
KIV *i*SS SS 20 49 24.8 +0.1
KIV pmax pmax
comp=Z,7.0nm,1.0s
KIV MLR MLR
comp=Z,182nm,20.0s
KIV Kislovodsk 70.09 319 *e*P P 20 35 45.4 +0.3
comp=Z,12nm,1.0s
GOF Gofitskoye 70.35 321*c i*P P 20 35 55.6 +9.1
SOKR Solikamsk 71.71 338*c i*P P 20 35 52.7 -1.7
SOKR pmax pmax
comp=Z,47nm,1.1s
SOKR MLR MLR
comp=Z,401nm,20.0s
NRIK Noril'sk 73.25 355 P P 20 36 02.2 -1.2
comp=Z,24nm,1.1s,baz=163,slow=5.3,SNR=18
NRIK LR LR 21 08 55.3
comp=Z,332nm,18.2s,baz=158,slow=36
PETK Petropavlovsk- 73.83 32 P P 20 36 06.8 -0.4
comp=Z,13nm,0.9s,baz=230,slow=2.5,SNR=7.0
PETK LR LR 21 10 43.2
comp=Z,89nm,18.6s,baz=249,slow=38
PEA1 Petropavlovsk- 73.83 32 *e*P P 20 36 06.8 -0.4
VRH Novokhopyorsk 73.92 326 *e*P P 20 36 07.3 -0.4
VRH pmax pmax
comp=Z,40nm,0.9s
MA2 Magadan 74.15 24 P P 20 36 08.9 0.0
comp=Z,21nm,0.9s,baz=284,slow=7.2,SNR=3.8
PET Petropavlovsk 74.29 32 *e*P P 20 36 10.6 +0.7
PET *e* 20 38 58.7
PET *e*S S 20 45 41.9 -0.1
PET *e*SS SS 20 50 31.0 +2.7
PET pmax pmax
comp=Z,25nm,0.9s
PET MLR MLR
comp=Z,300nm,17.0s
BR101 Keskin Array S 74.80 313 *e*P P 20 36 12.7 -0.7
BR131 Keskin Array S 74.80 313 *e*P P 20 36 12.5 -0.8
BRTR Keskin Array B 74.80 313 P P 20 36 12.7 -0.7
comp=Z,3.2nm,0.8s,baz=128,slow=7.7,SNR=26
BRTR LR LR 21 11 30.9
comp=Z,200nm,20.2s,baz=112,slow=38
VSR Storozhevoye 75.37 325 *e*P P 20 36 15.4 -0.8
VSR pmax pmax
comp=Z,20nm,0.9s
BR231 Keskin MP Arra 75.47 313 *e*P P 20 36 13.3 -3.9
BOSA Boshof 75.48 241 LR LR 21 05 51.9
comp=Z,208nm,18.0s,baz=98,slow=33
LPSR Galich'ya Gora 76.09 326 *e*P P 20 36 20.0 -0.2
LPSR pmax pmax
comp=Z,10.0nm,0.9s
SIM Simferopol' 76.13 318 *e*P P 20 36 21.4 +0.7
SIM *e*S S 20 46 05.0 +2.1
SIM pmax pmax
comp=Z,15nm,0.9s
SEY Seymchan 76.79 22 P P 20 36 24.3 +0.3
comp=Z,9.9nm,1.0s,baz=241,slow=6.7,SNR=10
SEY Seymchan 76.79 22*ce*P P 20 36 23.5 -0.5
BKZ Black Stump Fm 76.84 129 *e*P P 20 36 25.4 +0.5
comp=Z,33nm,0.9s
URZ Urewera 77.22 128 LR LR 21 11 19.5
comp=Z,292nm,21.4s,baz=342,slow=36
TIXI Tiksi 77.24 9 P P 20 36 24.6 -1.8
comp=Z,19nm,1.1s,baz=192,slow=2.7,SNR=23
TIXI PP PP 20 39 20.3 -0.3
comp=Z,6.2nm,1.0s,baz=206,slow=4.8,SNR=4.5
TIXI Tiksi 77.24 9*c i*P P 20 36 25.2 -1.2
TIXI pmax pmax
comp=Z,17nm,1.0s
MOS Moscow 78.11 329 *e*P P 20 36 39.1 +7.6
MOS pmax pmax
comp=Z,55nm,0.9s
OBN Obninsk 78.40 328*c i*P P 20 36 33.2 +0.1
OBN *i* 20 36 42.1
OBN *e* 20 39 30.2
OBN *i*S S 20 46 36.9 +10
OBN pmax pmax
comp=Z,32nm,1.0s
OBN Obninsk 78.40 328 *e*P P 20 36 33.0 -0.1
comp=Z,29nm,0.9s
KLMR Klimovskoe 79.45 334 *e*P P 20 36 37.1 -1.7
KLMR *e* 20 36 44.9
KLMR pmax pmax
comp=Z,24nm,1.3s
TIRR Tirgusor 79.87 316‖ *i*P P 20 36 41.3 -0.1
TIRR Tirgusor 79.87 316 *e*P P 20 36 40.8 -0.6
TIRR pmax pmax
comp=Z,15nm,1.2s
TIRR Tirgusor 79.87 316 *e*P P 20 36 40.8 -0.6
comp=Z,15nm,1.2s
CFR Carcaliu 80.25 317‖ *i*P P 20 36 52.3 +8.8
MILM Milestii Mici 80.26 319⇑ *i*P P 20 36 43.9 +0.4
LEOM Leova 80.51 318‖ *i*P P 20 36 41.9 -2.9
VNDA Vanda 80.57 169 P P 20 36 45.7 +1.1
comp=Z,2.1nm,1.1s,baz=324,slow=5.2,SNR=3.8
SORM Soroca 80.89 320⇑ *i*P P 20 36 46.8 0.0
AKASG Malin Array Be 81.06 322 P P 20 36 47.0 -0.7
comp=Z,4.1nm,0.9s,baz=86,slow=4.9,SNR=15
KIEV Kiev 81.06 322⇑ *i*P P 20 36 47.0 -0.7
KIEV pmax pmax
comp=Z,7.0nm,1.2s
KIEV Kiev 81.06 322 *e*P P 20 36 46.6 -1.1
comp=Z,8.4nm,1.2s
AK11 Malin Array Si 81.08 322 *e*P P 20 36 46.2 -1.6
VRI Vrincioaia 81.38 317‖ *i*P P 20 36 50.7 +1.1
PLOR Plostina 81.43 317⇑ *i*P P 20 36 49.9 +0.1
TMCR Tamitsa 81.57 337 *e*P P 20 36 51.0 +0.9
TMCR pmax pmax
comp=Z,45nm,1.0s
TESR Tescani 81.59 318⇑ *i*P P 20 36 51.3 +0.7
GIRR Girov 81.80 318‖ *i*P P 20 36 52.6 +0.9
MLR Muntele Rosu 81.82 317‖ *i*P P 20 36 51.3 -0.8
MLR Muntele Rosu 81.82 317 *e*P P 20 36 52.6 +0.5
MLR pmax pmax
comp=Z,35nm,1.4s
MLR Muntele Rosu 81.82 317 *e*P P 20 36 52.6 +0.5
comp=Z,35nm,1.4s
PRAR RASCA 82.08 319⇑ *i*P P 20 36 53.6 +0.4
DOPR Dopca 82.31 317⇑ *i*P P 20 36 55.3 +0.8
VOIR 82.42 317‖ *i*P P 20 36 49.8 -5.3
ARR Arges 82.69 316‖ *i*P P 20 36 56.8 +0.3
BURAR Bucovina Array 82.80 319‖ *i*P P 20 36 58.2 +1.1
BUR08 Bucovina Ar. S 82.82 319 *e*P P 20 36 57.6 +0.5
NACGM Naroch 83.64 326 *e* P P 20 37 01.0 -0.1
LVV L'vov 84.06 321 *e*P P 20 37 04.0 +0.6
BILL Bilibino 84.35 20⇑ *i*P P 20 37 03.9 -0.5
BILL *e*S S 20 47 32.9 +4.6
BILL pmax pmax
comp=Z,9.0nm,0.9s
BILL Bilibino 84.35 20 *e*P P 20 37 04.0 -0.5
comp=Z,7.6nm,0.9s
BZS Buzias 84.82 316⇑ *i*P P 20 37 07.2 -0.1
KWP Kalwaria Pacla 84.86 320 *e*P P 20 37 08.3 +0.9
KWP Kalwaria Pacla 84.86 320‖ *i*P P 20 37 07.6 +0.2
KOLS Kolonicke sedl 85.00 320 *e*P P 20 37 09.3 +1.1
KOLS pmax pmax
comp=Z,17nm,1.0s
KOLS Kolonicke sedl 85.00 320 *e*P P 20 37 09.3 +1.1
SUW Suwalki 85.47 325 *e*P P 20 37 10.7 +0.3
CRVS Cervenica-Dubn 85.52 319 *e*P P 20 37 11.0 +0.2
CRVS Cervenica-Dubn 85.52 319 *e*P P 20 37 11.0 +0.2
FIA0 FINESS Array S 85.73 332 *e*P P 20 37 11.8 +0.3
FIA0 FINESS Array S 85.73 332 *e*P P 20 37 11.8 +0.3
FINES FINESS Array B 85.73 332 P P 20 37 11.8 +0.3
comp=Z,4.8nm,0.9s,baz=119,slow=7.4,SNR=15
FINES LR LR 21 19 42.5
comp=Z,276nm,20.6s,baz=105,slow=39
FINES FINESS Array B 85.73 332 *i*P P 20 37 12.1 +0.6
FINES pmax pmax
comp=Z,5.0nm,0.9s
STHS Stebnicka Huta 85.75 320 *e*P P 20 37 12.9 +1.0
STHS pmax pmax
comp=Z,6.0nm,1.0s
STHS Stebnicka Huta 85.75 320 *e*P P 20 37 12.9 +1.0
PDG Podgorica 85.99 313‖ *i*P P 20 37 13.4 +0.2
KECS Kecovo 86.08 319 *e*P P 20 37 14.2 +0.6
KECS pmax pmax
comp=Z,5.0nm,1.4s
KECS Kecovo 86.08 319 *e*P P 20 37 14.2 +0.6
PSZ Piszkesteto 86.38 318 *e*P P 20 37 14.8 -0.3
PSZ pmax pmax
comp=Z,6.0nm,0.9s
PSZ Piszkesteto 86.38 318 *e*P P 20 37 14.8 -0.3
comp=Z,5.8nm,0.9s
PKSM Moragy 86.97 316‖ *i*P P 20 37 18.6 +0.7
VYHS Vyhne 87.17 319 *e*P P 20 37 19.6 +0.7
VYHS pmax pmax
comp=Z,6.0nm,1.8s
VYHS Vyhne 87.17 319 *e*P P 20 37 19.6 +0.7
BLY Banja Luka 87.79 315⇑ *i*P P 20 37 22.7 +0.7
OKC Ostrava-Krasne 87.81 320 *e*P P 20 37 22.6 +0.7
OKC *ex* x 20 48 19.6
ARA0 ARCESS Array S 88.10 340 *e*P P 20 37 22.5 -0.4
ARCES ARCESS Array B 88.10 340 P P 20 37 23.7 +0.8
comp=Z,12nm,1.0s,baz=90,slow=4.0,SNR=23
ARCES LR LR 21 21 13.3
comp=Z,387nm,20.1s,baz=102,slow=39
ARE0 ARCESS Array S 88.10 340 *e*P P 20 37 23.4 +0.5
comp=Z,28nm,1.1s
MORC Moravsky Berou 88.19 320 *e*P P 20 37 24.1 +0.3
MORC pmax pmax
comp=Z,21nm,1.0s
MORC Moravsky Berou 88.19 320 *e*P P 20 37 24.1 +0.3
comp=Z,21nm,1.0s
CUC Castrocucco 88.26 310 *e*P P 20 37 23.1 -1.3
comp=Z,3.5nm,0.9s
KOGS Kog 88.64 317 *e*P P 20 37 26.6 +0.6
KRLC Kraliky 88.72 320 *e*P P 20 37 27.3 +1.0
GOLS Golise 89.03 316 *e*P P 20 37 28.7 +0.9
DPC Dobruska-Polom 89.04 320 *e*P P 20 37 28.4 +0.6
DPC *e*pP pP 20 37 37.1 +0.3
KSP Ksiaz 89.12 321 *e*P P 20 37 29.3 +1.2
TREC Trest 89.46 319 *e*P P 20 37 30.7 +0.9
LJU Ljubljana 89.79 316 *e*P P 20 37 32.3 +1.0
GOPC GO Pecny, Ondr 89.98 320 *e*P P 20 37 33.2 +1.0
GOPC *e*S S 20 48 24.3 +1.0
PRU Pruhonice 90.14 320 *e*P P 20 37 34.1 +1.2
PRU *e*S S 20 48 27.6 +2.8
AQU L'Aquila 90.29 312 *e*P P 20 37 34.4 +0.5
AQU pmax pmax
comp=Z,16nm,1.0s
AQU L'Aquila 90.29 312 *e*P P 20 37 34.4 +0.5
comp=Z,16nm,1.0s
GEA0 GERESS Array S 90.59 319 *e*P P 20 37 34.8 -0.3
GERES GERESS Array B 90.59 319 P P 20 37 35.7 +0.6
comp=Z,2.3nm,0.9s,baz=95,slow=3.2,SNR=16
GERES LR LR 21 23 43.9
comp=Z,94nm,18.7s,baz=84,slow=39
BRG Berggiesshubel 90.60 321 *e*P P 20 37 35.0 0.0
comp=Z,4.3nm,1.0s
BRG *e* 20 37 45.1
comp=Z,5.8nm,1.0s
BRG Berggiesshubel 90.60 321 *e*P P 20 37 35.0 0.0
BRG *e* 20 37 45.1
BRG pmax pmax
comp=Z,4.0nm,1.0s
KHC Kasperske Hory 90.69 319 *e*P P 20 37 35.6 0.0
KHC *e*pP pP 20 37 43.2 -1.3
KHC *e*S S 20 48 26.5 -3.5
CLL Collm 91.22 321 *e*P P 20 37 37.0 -0.9
comp=Z,4.0nm,1.0s
CLL *e*S S 20 48 33.0 -1.6
SPA0 Spitsbergen Ar 92.23 348 *e*P P 20 37 41.3 -0.8
NB2 NORSAR Subarra 92.76 331 P P 20 37 44.5 -0.4
comp=Z,0.9nm,1.0s,baz=93,slow=4.6
NB200 NORSAR Array S 92.76 331 *e*P P 20 37 44.8 -0.1
NB200 *e*PP PP 20 41 26.1 -0.9
NOA NORSAR Array B 92.76 331 P P 20 37 44.8 -0.1
comp=Z,1.6nm,0.9s,baz=92,slow=4.8,SNR=5.8
NOA PP PP 20 41 26.1 -0.9
comp=Z,0.9nm,0.8s,baz=98,slow=6.7,SNR=3.7
NBO02 NORSAR Array S 92.94 331 *e*P P 20 37 45.7 +0.1
TORD Torodi Ar. Bea 99.48 283 LR LR 21 19 24.2
comp=Z,198nm,21.9s,baz=30,slow=33
BPAW Bear Paw Mtn. 101.13 25 *e*Pdif Pdif 20 38 21.1 -1.6
ILAR Eielson Array 102.63 24 PP PP 20 42 42.5 0.0
comp=Z,0.9nm,0.8s,baz=285,slow=6.9,SNR=7.9
ILB Eielson Array 102.63 24 *e*PP PP 20 42 42.2 -0.2
INK Inuvik 105.89 18 PKiKP PKiKP 20 42 55.5 -0.4
comp=Z,0.4nm,0.3s,baz=318,slow=5.7,SNR=3.9
INK PP PP 20 43 09.3 +2.7
comp=Z,1.8nm,0.9s,baz=213,slow=4.7,SNR=4.7
PPT2 Papeete2 107.71 110 *e*LR LR 21 14 31.7
comp=Z,147nm,23.2s
YKA Yellowknife Ar 115.62 17 PKP PKPdf 20 43 13.8 -0.7
comp=Z,0.9nm,0.8s,baz=315,slow=2.3,SNR=13
YKA PP PP 20 44 12.0 -4.6
comp=Z,1.5nm,0.9s,baz=324,slow=6.3,SNR=8.0
YKB5 Yellowknife Ar 115.62 17 *e*PKPdf PKPdf 20 43 12.8 -1.7
YKB5 *e*PP PP 20 44 11.5 -5.0
RKT Rikitea 119.70 119 *e*LR LR 21 20 11.5
comp=Z,320nm,27.0s
I05D Terrebonne, OR 125.10 36 P PKPdf 20 43 34.6 +1.2
baz=305
J05D Fort Rock, OR 125.76 37 P PKPdf 20 43 36.0 +1.2
baz=305
M02C Callahan 125.81 40 P PKPdf 20 43 36.6 +1.7
baz=302
M04C Macdoel 126.23 39 P PKPdf 20 43 37.1 +1.4
baz=303
MOD Modoc Plateau 127.12 38 *e*PKPdf PKPdf 20 43 36.9 -0.6
MSO Missoula 127.49 29 P PKPdf 20 43 37.9 0.0
baz=314
WVOR Wild Horse Val 127.81 36 *e*PKiKP PKPdf 20 43 36.8 -2.0
WVOR Wild Horse Val 127.81 36 *e*PKPdf PKPdf 20 43 36.8 -2.0
EGMT Eagleton 128.55 26 P PKPdf 20 43 41.1 +1.2
baz=320
DLMT Dillon 129.19 30 *e*PKPdf PKPdf 20 43 38.2 -3.1
MCMT McKenzie Canyo 129.44 31 *e*PKPpre PKPpre 20 43 28.4
NV01 Mina Array Sit 130.35 40 *e*PKPpre PKPpre 20 43 40.7
NV01 *e*PKPdf PKiKP 20 43 45.7 +1.0
NV01 *e*SKPbc SKPbc 20 47 05.2 -0.1
NVAR Mina Array Bea 130.35 40 PKhKP PKPpre 20 43 41.4
comp=Z,1.9nm,0.8s,baz=319,slow=2.5,SNR=2.4
NVAR PKP PKiKP 20 43 46.0 +1.4
comp=Z,2.5nm,0.9s,baz=238,slow=1.9,SNR=7.2
NVAR SKPbc SKPbc 20 47 06.0 +0.7
comp=Z,1.2nm,0.7s,baz=278,slow=5.2,SNR=5.2
ULM Lac du Bonnet 131.38 14 PKP PKPdf 20 43 45.5 +0.4
comp=Z,3.2nm,0.8s,baz=7.8,slow=5.5,SNR=3.7
R11A Troy Canyon, C 132.13 39 P PKPdf 20 43 49.0 +1.8
baz=307
R11A Troy Canyon, C 132.13 39 *e*PKPdf PKPdf 20 43 49.0 +1.8
HWUT Hardware Ranch 132.36 33 *e*PKPdf PKPdf 20 43 47.8 +0.3
EDW2 Edwards Air Fo 132.52 44 P PKPdf 20 43 49.7 +1.9
baz=302
PDAR Pinedale Array 132.57 30 PKP PKPdf 20 43 48.1 +0.2
comp=Z,0.5nm,0.6s,baz=96,slow=4.5,SNR=5.1
RSSD Black Hills 134.07 25 P PKPdf 20 43 51.2 +0.5
baz=325
RSSD Black Hills 134.07 25 *e*PKIKP PKPdf 20 43 51.2 +0.5
RSSD Black Hills 134.07 25 *e*PKPdf PKPdf 20 43 51.2 +0.5
GMRC Granite Mounta 134.17 43 P PKPdf 20 43 52.8 +1.8
baz=305
LCMT Little Creek M 134.42 39 *e*PKPpre PKPpre 20 43 33.0
LCMT *e*PKPdf PKPdf 20 43 49.8 -1.6
W13A Hualapai Mount 135.18 41 *e*PKPdf PKPdf 20 43 52.7 -0.3
F36A Milaca 136.04 14 P PKPdf 20 43 54.0 0.0
baz=340
N34A Lincoln 139.76 20 P PKPdf 20 43 59.5 -1.5
baz=333
T34A McClaskey Farm 142.85 24 P PKPdf 20 44 03.7 -3.0
baz=330
U33A Lingo Farm, Me 142.97 25 P PKPdf 20 44 03.6 -3.3
baz=328
R39A Chumby, Stover 143.18 18 P PKPbc 20 44 03.7 -0.4
baz=337
CPUP Villa Florida 143.46 214 PKP PKPdf 20 44 13.3 +5.3
comp=Z,5.3nm,1.0s,baz=147,slow=4.2,SNR=7.5
T37A Cheneyville 18 143.63 21 P PKPbc 20 44 05.5 +0.1
baz=333
S39A Bolivar 143.66 19 P PKPbc 20 44 05.2 -0.3
baz=336
W33A Caddo, Fort Co 143.88 27 P PKPbc 20 44 07.0 +0.7
baz=326
T38A Diamond 143.93 20 P PKPab 20 44 05.5 -0.3
baz=334
S40A Lebanon 144.00 18 P PKPab 20 44 05.9 -0.1
baz=337
V35A Meyer Ranch, C 144.08 25 P PKPbc 20 44 06.5 -0.3
baz=329
W34A Bridge Creek, 144.12 26 P PKPbc 20 44 07.5 +0.5
baz=328
W34A Bridge Creek, 144.12 26 *e*PKPdf PKPbc 20 44 07.0 0.0
U37A Salina 144.19 22 P PKPbc 20 44 06.9 -0.3
baz=332
T39A Clever 144.25 19 P PKPab 20 44 06.8 -0.2
baz=336
SLBS Sierra La Lagu 144.31 53 *e*PKPdf PKPdf 20 44 09.0 -0.7
TUL1 Leonard 144.37 23 P PKPab 20 44 07.4 0.0
baz=331
TUL1 Leonard 144.37 23 *e*PKPdf PKPbc 20 44 07.7 -0.1
T40A Mansfield 144.41 18 P PKPab 20 44 07.0 -0.5
baz=337
V36A Jenks 144.42 23 P PKPbc 20 44 07.7 -0.1
baz=331
U38A Gravette 144.43 21 P PKPab 20 44 07.5 -0.2
baz=334
W35A Tecumseh 144.58 25 P PKPbc 20 44 08.3 -0.1
baz=329
X34A Smith Ranch, M 144.63 27 P PKPbc 20 44 08.9 +0.3
baz=327
V37A Hulbert 144.65 22 P PKPab 20 44 08.3 -0.1
baz=332
HHAR Hobbs 144.73 21 *e*PKPdf PKPab 20 44 08.3 -0.5
SIUC Southern Illin 144.79 14 *e*PKPdf PKPab 20 44 08.6 -0.2
U39A Green Forest 144.80 20 P PKPab 20 44 08.4 -0.6
baz=335
W36A Wetumka 144.87 24 P PKPab 20 44 09.1 -0.1
baz=330
WCI Wyandotte Cave 144.87 9 *e*PKIKP PKPab 20 44 08.7 -0.6
WCI Wyandotte Cave 144.87 9 *e*PKPdf PKPab 20 44 08.7 -0.6
V38A Canehill 144.94 22 P PKPab 20 44 09.0 -0.5
baz=333
U40A Yellville 145.03 19 P PKPbc 20 44 09.4 -0.5
baz=336
X35A Drake 145.18 26 P PKPbc 20 44 09.9 -0.5
baz=328
W37B Quinton 145.19 23 P PKPab 20 44 10.3 -0.1
baz=331
Y34A Reagan Ranch, 145.20 27 P PKPbc 20 44 10.1 -0.3
baz=327
V39A Pettigrew 145.23 21 P PKPbc 20 44 09.9 -0.7
baz=334
X36A Centrahoma 145.30 25 P PKPbc 20 44 10.5 -0.2
baz=329
ABTX Abilene, Hawle 145.37 31 P PKPab 20 44 11.4 +0.2
baz=323
ABTX Abilene, Hawle 145.37 31 *e*PKPbc PKPbc 20 44 10.7 -0.4
PBMO Poplar Bluff 145.37 16 *e*PKPbc PKPbc 20 44 10.2 -0.7
TX31 Lajitas Ar. Si 145.49 39 *e*PKPbc PKPab 20 44 12.1 +0.2
LTX Lajitas 145.49 39 *e*PKIKP PKPab 20 44 12.7 +0.8
LTX Lajitas 145.49 39 *e*PKPdf PKPab 20 44 12.7 +0.8
TXAR Lajitas Array 145.49 39 PKPbc PKPab 20 44 12.7 +0.8
comp=Z,45nm,0.8s,baz=287,slow=1.6,SNR=340
V40A Witts Springs 145.54 20 P PKPdf 20 44 11.1 -0.4
baz=336
Y35A Marietta 145.57 27 P PKPdf 20 44 11.2 -0.3
baz=328
W38A Poteau 145.60 22 P PKPbc 20 44 11.7 0.0
baz=333
Z34A Collier Ranch, 145.61 28 P PKPdf 20 44 11.4 -0.2
baz=326
PARMO Parma 145.65 15 *e*PKPdf PKPbc 20 44 11.6 -0.2
X37A Clayton 145.69 24 P PKPbc 20 44 11.8 -0.2
baz=331
HPIG 145.72 45 *e*PKPdf PKPab 20 44 13.3 +0.4
133A Hamilton Ranch 145.75 30 P PKPab 20 44 12.5 -0.1
baz=324
W39A Magazine 145.76 21 P PKPbc 20 44 12.0 -0.2
baz=334
X38A Whitesboro 145.84 23 P PKPab 20 44 12.6 -0.2
baz=332
Y36A Durant 145.90 26 P PKPdf 20 44 12.2 +0.1
baz=329
W40A Ferguson Farm, 146.02 20 P PKPbc 20 44 12.8 -0.1
baz=335
WHAR Wooly Hollow 146.19 19 *e*PKPdf PKPdf 20 44 12.7 +0.1
X301 Greenbrier Sit 146.20 19 *e*PKPdf PKPbc 20 44 13.1 -0.4
233A Rising Star 146.23 31 P PKPab 20 44 14.3 -0.2
baz=323
X39A Fountain Ranch 146.25 22 P PKPab 20 44 14.0 -0.5
baz=333
W41B Gary Mavity, V 146.31 19 P PKPbc 20 44 13.9 +0.1
baz=336
MIAR Mount Ida 146.42 21 P PKPbc 20 44 14.3 +0.1
baz=334
MIAR Mount Ida 146.42 21 *e*PKP2 PKPbc 20 44 13.6 -0.6
MIAR Mount Ida 146.42 21 *e*PKPdf PKPbc 20 44 13.6 -0.6
Y38A Idabel 146.52 24 P PKPbc 20 44 13.8 -0.7
baz=332
WVT Waverly 146.62 12 *e*PKP2 PKPbc 20 44 13.9 -0.8
WVT Waverly 146.62 12 *e*PKPdf PKPbc 20 44 13.9 -0.8
234A Clairette 146.62 30 P PKPbc 20 44 14.9 0.0
baz=324
UALR University of 146.64 20 *e*PKPdf PKPbc 20 44 14.4 -0.5
333A Richland Sprin 146.74 32 P PKPbc 20 44 15.6 +0.3
baz=322
X40A Basin Creek Fa 146.74 21 P PKPbc 20 44 15.0 -0.2
baz=335
Y39A Lockesburg 146.76 23 P PKPbc 20 44 15.1 -0.2

	baz=332							
JCT	**Junction City**	**146.95**	**34**	P	**PKPbc**	**20 44 14.9**	**-1.0**	
	baz=320							
JCT	**Junction City**	**146.95**	**34**	*e*PKP2	**PKPdf**	**20 44 14.3**	**+0.3**	
JCT	**Junction City**	**146.95**	**34**	*e*PKPdf	**PKPdf**	**20 44 14.3**	**+0.3**	
334A	**Lometa**	**147.11**	**31**	P	**PKPdf**	**20 44 14.3**	**+0.1**	
	baz=324							
434A	**Burnet**	**147.51**	**31**	P	**PKPdf**	**20 44 15.0**	**+0.1**	
	baz=323							
335A	**Moody**	**147.56**	**30**	P	**PKPbc**	**20 44 17.6**	**+0.1**	
	baz=325							
TKL	**Tuckaleechee C**	**147.75**	**7**	*e*PKP2	**PKPbc**	**20 44 17.7**	**-0.3**	
TKL	**Tuckaleechee C**	**147.75**	**7**	*e*PKPbc	**PKPbc**	**20 44 17.7**	**-0.3**	
OXF	**Oxford**	**147.78**	**16**	*e*PKIKP	**PKPdf**	**20 44 15.7**	**+0.5**	
OXF	**Oxford**	**147.78**	**16**	*e*PKPdf	**PKPdf**	**20 44 15.7**	**+0.5**	
Z41A	**Richland Creek**	**147.85**	**21**	P	**PKPbc**	**20 44 18.5**	**+0.2**	
	baz=334							
CPCT	**Cooper Cave**	**147.87**	**8**	*e*PKPbc	**PKPbc**	**20 44 17.9**	**-0.4**	
SWET	**Sewanee**	**147.87**	**10**	*e*PKPbc	**PKPbc**	**20 44 17.8**	**-0.6**	
435B	**Jarrell**	**147.89**	**30**	P	**PKPbc**	**20 44 18.6**	**+0.1**	
	baz=324							
534A	**Blanco**	**148.02**	**32**	P	**PKPbc**	**20 44 18.9**	**+0.1**	
	baz=322							
633A	**Saathoff Ranch**	**148.08**	**34**	P	**PKPbc**	**20 44 19.6**	**+0.6**	
	baz=320							
Z42A	**Norrel Spur, H**	**148.14**	**20**	P	**PKPbc**	**20 44 19.1**	**+0.1**	
	baz=336							
239A	**Gary**	**148.29**	**25**	P	**PKPbc**	**20 44 20.1**	**+0.6**	
	baz=330							
KMSC	**Kings Mountain**	**148.48**	**3**	P	**PKPbc**	**20 44 19.4**	**-0.5**	
	baz=356							
KMSC	**Kings Mountain**	**148.48**	**3**	*e*PKPbc	**PKPbc**	**20 44 19.1**	**-0.7**	
339A	**Huntington**	**148.85**	**26**	P	**PKPbc**	**20 44 21.3**	**+0.3**	
	baz=330							
Z48A	**Northport**	**149.32**	**13**	P	**PKPbc**	**20 44 21.5**	**-0.6**	
	baz=344							
145A	**Houston Renfro**	**149.41**	**18**	P	**PKPbc**	**20 44 22.8**	**+0.4**	
	baz=339							
933A	**Laredo**	**149.42**	**36**	P	**PKPbc**	**20 44 23.9**	**+1.4**	
	baz=318							
HKT	**Hockley**	**149.43**	**29**	*e*PKP2	**PKPbc**	**20 44 22.8**	**+0.5**	
HKT	**Hockley**	**149.43**	**29**	*e*PKPbc	**PKPbc**	**20 44 22.8**	**+0.5**	
834A	**Tilden**	**149.45**	**35**	P	**PKPbc**	**20 44 23.9**	**+1.3**	
	baz=320							
440A	**Kirbyville**	**149.61**	**25**	P	**PKPbc**	**20 44 23.9**	**+1.0**	
	baz=330							
244A	**Avery, Jackson**	**149.69**	**19**	P	**PKPbc**	**20 44 23.5**	**+0.5**	
	baz=337							
147A	**Livingston**	**149.81**	**15**	P	**PKPbc**	**20 44 23.2**	**-0.1**	
	baz=342							

MAN 29 20:38:50, 6˚44N × 125˚57E, h32km, mb4.3, ML3.1, MS2.9, 1D, Mindanao

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KCP	**Kidapawan**	**0.74**	**320**	⇓*i* P	Pb	20 39 05.4	+0.9
KCP				*i* S	Sn	20 39 15.4	+1.0
MATI	**Mati**	**0.85**	**54**	*e*P	Pb	20 39 06.9	+0.5
MATI				*e*S	Sn	20 39 17.4	+0.1
BUKP	**Musuan**	**1.52**	**341**	*e*P	Pn	20 39 15.8	+0.8
BUKP				*e*S	Sn	20 39 34.3	+0.6
PAGZ	**Pagadian**	**2.58**	**303**	*e*P	Pn	20 39 30.9	+1.4
IPIL	**Ipil**	**3.26**	**294**	*e*P	Pn	20 39 38.3	-0.6

NIED ***29*** *20:42:00, 37˚60N × 142˚30E, h14km, Mw4.4 Best double couple: M₀5.12000×10¹⁵ NP1:φs178.00000°, δ18.00000°, λ-124.00000°. NP2:φs33.00000°, δ75.00000°, λ-79.00000°.*

BJI ***29*** *20:42:07.2, 37˚49N × 142˚38E, h19km, mb4.7/62, mB5.0/30, Ms4.6/31, Ms7 4.4/32*

IDC ***29*** *20:42:07.5±0.5, 37˚55N × 142˚28E, h0km, mb4.4/40, mb1 4.5/46, mb1mx4.4/68, mbtmp4.4/46, ML4.3/4, MS3.9/10, Ms1 3.9/10, ms1mx3.4/55, Error ellipse: s-maj=13.5km s-min=10.6km az=102.0*

ISCJB ***29*** *20:42:07.2±0.8, 37˚54N±0˚02×142˚41E±0˚03, h15km±5km, mb4.7/123, MS4.3/24, Error ellipse: s-maj=4.7km s-min=3.7km az=40.2*

JMA ***29*** *20:42:09.5±0.2, 37˚60N × 142˚20E, h8km±3km, M4.5*

JMA Felt I J1.

NEIC ***29*** *20:42:10.6±1.3, 37˚54N × 142˚36E, h24km±9km, mb4.8/50, Error ellipse: s-maj=4.7km s-min=3.6km az=127.0*

NEIC Recorded [1 JMA] in Fukushima, Iwate and Miyagi.

MOS ***29*** *20:42:12.0±0.9, 37˚83N × 142˚22E, h33km, mb4.9/64, Error ellipse: s-maj=7.9km s-min=4.8km az=110.7*

ISC 29 20:42:07.3±1.1, 37˚54N±0˚03×142˚34E±0˚04, h3km±6km, n346, σ1§12/353, mb4.7/128, MS4.5/25, 24C-13D, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**1.18**	**262**	P	**Pg**	**20 42 29.9**	**0.0**
JIO	**Ouri**	**1.20**	**320**	P	**Pg**	**20 42 30.0**	**-0.3**
JIO				*e*S	**Sg**	**20 42 44.3**	**-1.6**
JMM	**Marumori**	**1.27**	**285**	P	**Pg**	**20 42 30.9**	**-0.7**
JMM				S	**Sg**	**20 42 46.9**	**-1.1**
ONAJ	**Iwakimizuishiy**	**1.30**	**251**	P	**Pg**	**20 42 31.8**	**-0.5**
JOU	**Okura**	**1.56**	**302**	P	**Pn**	**20 42 35.7**	**-0.2**
JOU				*e*S	**Sn**	**20 42 54.3**	**-2.3**
JFT	**Otama**	**1.59**	**270**	P	**Pn**	**20 42 36.5**	**+0.2**
JFT				S	**Sn**	**20 42 56.6**	**-0.8**
JMK	**Ichinoseki**	**1.66**	**328**	P	**Pb**	**20 42 38.7**	**+0.2**
JYS	**Shirataka**	**1.92**	**291**	P	**Pn**	**20 42 41.8**	**+0.9**
JYK	**Kaneyama**	**2.08**	**312**	P	**Pn**	**20 42 43.2**	**+0.2**
JOM	**Ohasama**	**2.09**	**337**	P	**Pb**	**20 42 44.6**	**-1.3**
JFY	**Yanaizu**	**2.10**	**267**	P	**Pb**	**20 42 45.4**	**-0.6**
JFY				S	**Sn**	**20 43 10.1**	**+0.2**
MJAR	**Matsushiro Arr**	**3.45**	**254**	Pn	**Pn**	**20 43 04.8**	**+2.9**
	16nm,0.3s,baz=83,slow=15,SNR=101						
MJAR				LR	LR	20 44 28.7	
	comp=Z,877nm,20.3s,baz=75,slow=42						
MAJO	**Matsushiro**	**3.45**	**254**	*d* P	**Pn**	**20 43 04.9**	**+3.0**
MAJO	**Matsushiro**	**3.45**	**254**	*e*Pn	**Pn**	**20 43 04.2**	**+2.2**
MAT	**Matsushiro**	**3.45**	**254**	P	**Pn**	**20 43 05.1**	**+3.2**
MAT				S	**Sb**	**20 43 48.2**	**-3.2**
MJB9	**Matsu-Tunnel**	**3.45**	**255**	*e*Pn	**Pn**	**20 43 04.9**	**+2.9**
ERM	**Erimo**	**4.51**	**8**	*e*P	**Pn**	**20 43 16.0**	**-0.5**
ERM	**Erimo**	**4.51**	**8**	*e*Pn	**Pn**	**20 43 15.5**	**-1.0**
INU	**Inuyama**	**4.81**	**245**	*e*Pn	**Pn**	**20 43 23.6**	**+2.9**
JHJ2	**Mitsune**	**4.88**	**206**	*e*Pn	**Pn**	**20 43 22.6**	**+1.1**
JHJ	**Hachijo jima 2**	**4.88**	**206**	Pn	**Pn**	**20 43 22.3**	**+0.7**
	36nm,0.3s,baz=339,slow=18,SNR=20						
JHJ				Sn	**Sn**	**20 44 18.1**	**-0.5**
	73nm,0.3s,baz=56,slow=20,SNR=4.6						
ASAJ	**Asahikawa**	**6.57**	**2**	Pn	**Pn**	**20 43 44.3**	**-0.4**
	7.5nm,0.3s,baz=192,slow=12,SNR=39						
ASAJ				Sn	**Sn**	**20 44 59.7**	**-0.5**
	1.8nm,0.3s,baz=6.3,slow=33,SNR=3.9						
ASAJ	**Asahikawa**	**6.57**	**2**	*e*Pn	**Pn**	**20 43 44.7**	**-0.1**
ASAJ				*e*Sn	**Sn**	**20 44 59.7**	**-0.5**
YUK	**Yuzh-Kuril'sk**	**7.01**	**21**	*e*P	**Pn**	**20 43 51.5**	**+0.7**
YUK				*e*S	**Sn**	**20 45 06.5**	**-4.6**
YUK				pmax	pmax		
	comp=Z,132nm,0.4s						
YUK				pmax	pmax		
	comp=N,38nm,0.2s						
YUK				pmax	pmax		
	comp=E,80nm,0.2s						
YUK				MLR	MLR		
	comp=Z,1μm,10.0s						
SHO	**Shikotan**	**7.18**	**27**	*e*P	**Pn**	**20 43 51.1**	**-2.1**
SHO				*e*S	Sn	20 45 06.5	-8.7
SHO				pmax	pmax		
	comp=Z,49nm,0.7s						
SHO				pmax	pmax		
	comp=E,45nm,0.4s						
KUR	**Kuril'sk**	**8.73**	**27**	P	Pn	20 44 07.2	-7.2
KUR				*e*S	Sn	20 45 44.5	-8.8
KUR				pmax	pmax		
	comp=Z,19nm,0.6s						
KUR				smax	smax		
	comp=N,43nm,0.5s						
KUR				smax	smax		
	comp=E,19nm,0.4s						
YSS	**Yuzh-Sakhalins**	**9.41**	**2**⇑	*e*P	**Pn**	**20 44 23.3**	**-0.4**
YSS				*e*S	**Sn**	**20 46 05.1**	**-4.8**
YSS				pmax	pmax		
	comp=Z,60nm,0.7s						
YSS				smax	smax		
	comp=N,30nm,1.2s						
YSS				MLR	MLR		
	comp=N,700nm,13.0s						
YSS				MLR	MLR		
	comp=Z,500nm,13.0s						
YSS	**Yuzh-Sakhalins**	**9.41**	**2**	*e*Pn	**Pn**	**20 44 23.7**	**0.0**
USRK	**Ussuriysk Ar.**	**10.27**	**314**	Pn	**Pn**	**20 44 37.7**	**+2.2**
	comp=Z,1.6nm,0.3s,baz=128,slow=14,SNR=42						
USRK				LR	LR	20 48 19.3	
	comp=Z,846nm,18.4s,baz=141,slow=36						
JNU	**Nakatsue**	**10.34**	**248**	Pn	Pn	20 44 40.6	+4.0
	comp=Z,1.0nm,0.3s,baz=208,slow=6.0,SNR=5.7						
JNU	**Nakatsue**	**10.34**	**248**	*e*Pn	**Pn**	**20 44 38.1**	**+1.6**
CBIJ	**Chichi jima**	**10.42**	**181**	*e*Pn	**Pn**	**20 44 36.0**	**-1.6**
CBIJ				*e*Sn	**Sn**	**20 46 31.4**	**-3.4**
JCJ	**Chichijima**	**10.42**	**181**	Pn	**Pn**	**20 44 37.1**	**-0.5**
	comp=Z,6.6nm,0.3s,baz=282,slow=21,SNR=4.9						
JCJ				Sn	**Sn**	**20 46 31.4**	**-3.4**
	comp=Z,14nm,0.3s,baz=93,slow=23,SNR=4.6						
KSRS	**Korea Array**	**11.45**	**274**	Pn	Pn	20 44 56.5	+4.8
	comp=Z,0.5nm,0.3s,baz=88,slow=13,SNR=12						
KSRS				LR	LR	20 49 06.3	
	comp=Z,599nm,18.2s,baz=220,slow=37						
KS01	**Wonju Array Si**	**11.47**	**274**	*e*Pn	Pn	20 44 47.8	-4.2
KS15	**Wonju Array Si**	**11.48**	**274**	*e*Pn	Pn	20 44 56.5	+4.3
KSAR	**Wonju Array Be**	**11.48**	**274**	P	Pn	20 44 56.5	+4.4
KSAR	**Wonju Array Be**	**11.48**	**274**	Pn	Pn	20 44 56.5	+4.3
MDJ	**Mudanjiang**	**11.93**	**310**	P	Pn	20 45 04.3	+6.2
MDJ				pmax	pmax		
	comp=Z,23nm,1.0s						
MDJ				pmax	pmax		
	comp=Z,120nm,5.9s						
MDJ	**Mudanjiang**	**11.93**	**310**	*e*Pn	Pn	20 45 01.6	+3.5
TYV	**Tymovskoe**	**13.32**	**1**	*e*P	**Pn**	**20 45 16.8**	**-0.3**
TYV				pmax	pmax		
	comp=Z,11nm,0.8s						
TYV				MLR	MLR		
	comp=N,1μm,15.0s						
TYV				MLR	MLR		
	comp=Z,1μm,14.0s						
KLR	**Kul'dur**	**13.97**	**330**	Pn	**Pn**	**20 45 25.2**	**-0.8**
	comp=Z,0.3nm,0.3s,baz=122,slow=12,SNR=5.4						
KLR				LR	LR	20 50 48.5	
	comp=Z,603nm,18.0s,baz=94,slow=37						
CN2	**Changchun**	**14.25**	**301**	*e*P	**Pn**	**20 45 33.0**	**+3.1**
JOW	**Kunigami**	**15.97**	**232**	Pn	**Pn**	**20 45 48.6**	**-4.3**
	comp=Z,0.6nm,0.3s,baz=121,slow=14,SNR=1.8						
JOW	**Kunigami**	**15.97**	**232**	*e*Pn	**Pn**	**20 45 48.6**	**-4.3**
	comp=Z,47nm,1.2s						
PETK	**Petropavlovsk-**	**18.88**	**30**	P	**Pn**	**20 46 29.9**	**+0.7**
	comp=Z,0.1nm,0.3s,baz=186,slow=11,SNR=3.5						
PETK				LR	LR	20 54 42.9	
	comp=Z,155nm,18.4s,baz=235,slow=40						
PEA1	**Petropavlovsk-**	**18.89**	**30**	*e*P	**Pn**	**20 46 29.9**	**+0.7**
TIA	**Tai'an**	**20.20**	**274**	*e*P	**P**	**20 46 42.5**	**-0.7**
TIA				S	S	20 50 19.0	-11
TIA				pmax	pmax		
	comp=Z,20nm,0.9s						
TIA				LR	LR		
	comp=Z,2μm,14.3s						
TIA				LR	LR		
	comp=Z,1μm,15.2s						
TIA				LR	LR		
	comp=Z,3μm,13.9s						
BJI	**Beijing**	**20.52**	**285**	P	**P**	**20 46 45.3**	**-1.3**
BJI				pmax	pmax		
	comp=Z,11nm,0.8s						
BJT	**Baijiatuan**	**20.53**	**285**	*e*P	**P**	**20 46 46.0**	**-0.7**
BJT				pmax	pmax		
	comp=Z,17nm,0.8s						
BJT	**Baijiatuan**	**20.53**	**285**	*e*P	**P**	**20 46 46.0**	**-0.7**
	comp=Z,17nm,0.8s						
MA2	**Magadan**	**22.71**	**11**	P	**P**	**20 47 11.3**	**+1.4**
	comp=Z,10.0nm,0.7s,baz=255,slow=11,SNR=4.2						
MA2				LR	LR	20 55 52.7	
	comp=Z,164nm,20.8s,baz=10,slow=36						
SSLB	**Suanglung**	**22.87**	**239**	*e*P	**P**	**20 47 10.3**	**-1.6**
	comp=Z,68nm,2.0s						
YULB	**Yu-li**	**22.90**	**238**	*e*P	**P**	**20 47 11.8**	**-0.5**
	comp=Z,11nm,0.9s						
TPUB	**Ta-pu**	**23.41**	**239**	*e*P	**P**	**20 47 16.3**	**-1.3**
	comp=Z,23nm,0.8s						
GUMO	**Guam**	**23.96**	**174**	LR	LR	20 56 34.5	
	comp=Z,93nm,19.7s,baz=110,slow=36						
HHC	**Hu-ho-hao-te**	**24.01**	**288**	*e*P	**P**	**20 47 24.0**	**+0.6**
HHC				S	**S**	**20 51 38.0**	**-3.1**
HHC				pmax	pmax		
	comp=Z,18nm,1.0s						
HHC				pmax	pmax		
	comp=Z,130nm,7.4s						
HHC				LR	LR		
	comp=Z,1μm,16.3s						
HHC				LR	LR		
	comp=Z,780nm,22.2s						
HHC				LR	LR		
	comp=Z,1μm,15.4s						
WHN	**Wuhan**	**24.16**	**262**	P	**P**	**20 47 25.0**	**+0.3**
CIT	**Chita**	**24.83**	**315**	*e*P	**P**	**20 47 30.9**	**+0.2**
CIT				*e*		20 47 35.5	
CIT				pmax	pmax		
	comp=Z,223nm,1.2s						
YAK	**Yakutsk**	**25.74**	**346**	P	**P**	**20 47 39.0**	**+0.2**
	comp=Z,14nm,0.4s,baz=292,slow=0.5,SNR=12						
YAK	**Yakutsk**	**25.74**	**346**	*e*P	**P**	**20 47 38.4**	**-0.3**
YAK				pmax	pmax		
	comp=Z,34nm,1.3s						
YAK				pmax	pmax		
	comp=E,9.0nm,1.3s						
YAK				pmax	pmax		
	comp=N,29nm,1.6s						
YAK	**Yakutsk**	**25.74**	**346**	*e*P	**P**	**20 47 38.4**	**-0.3**
	comp=N,74nm,0.8s						
SEY	**Seymchan**	**26.15**	**10**	P	**P**	**20 47 44.2**	**+1.7**
	comp=N,6.2nm,0.7s,baz=193,slow=8.5,SNR=16						
SEY	**Seymchan**	**26.15**	**10**	*ce*P	**P**	**20 47 43.3**	**+0.8**
XAN	**Xi'an**	**27.25**	**273**	P	**P**	**20 47 52.3**	**-0.4**
XAN				pP	sP	20 47 59.0	+4.9
XAN				pmax	pmax		
	comp=N,18nm,0.6s						
BOD	**Bodaibo**	**27.50**	**327**	*e*P	**P**	**20 47 53.8**	**-0.9**
BOD				pmax	pmax		
	comp=Z,18nm,0.8s						
ULN	**Ulaanbaatar**	**27.68**	**303**	*ce*P	**P**	**20 47 57.3**	**+0.7**
ULN				pmax	pmax		
	comp=Z,27nm,1.7s						
ULN	**Ulaanbaatar**	**27.68**	**303**	*e*P	**P**	**20 47 57.1**	**+0.4**
	comp=Z,9.7nm,0.7s						
H11N2	**WAKE ISLAND Hy**	**27.79**	**123**	T	T	21 17 07.2	
	baz=315,slow=75,SNR=3161						
H11N1	**WAKE ISLAND Hy**	**27.80**	**123**	T	T	21 17 07.8	
	baz=315,slow=75,SNR=2913						
H11N3	**WAKE ISLAND Hy**	**27.81**	**123**	T	T	21 17 06.9	
	baz=315,slow=75,SNR=1968						
ENH	**Enshi**	**28.11**	**265**	*e*P	**P**	**20 48 00.4**	**0.0**
	comp=Z,57nm,0.7s						
SONA1	**Songino Array**	**28.11**	**303**	*e*P	**P**	**20 48 00.7**	**+0.2**
SONA0	**Songino Array**	**28.12**	**303**	*e*P	**P**	**20 48 01.4**	**+1.0**
	comp=Z,20nm,0.7s						
SONM	**Songino Array**	**28.12**	**303**	P	**P**	**20 48 01.4**	**+1.0**
	comp=Z,20nm,0.7s,baz=97,slow=8.4,SNR=15						
SONM				LR	LR	20 59 23.5	
	comp=Z,1μm,18.4s,baz=228,slow=37						
H11S1	**WAKE ISLAND Hy**	**28.53**	**125**	T	T	21 18 04.0	
	baz=317,slow=76,SNR=2122						
H11S3	**WAKE ISLAND Hy**	**28.53**	**125**	T	T	21 18 07.9	
	baz=317,slow=76,SNR=2177						
H11S2	**WAKE ISLAND Hy**	**28.55**	**125**	T	T	21 18 06.1	
	baz=317,slow=76,SNR=1568						
ZAK	**Zakamensk**	**30.54**	**307**	*e*P	**P**	**20 48 21.1**	**-0.8**
ZAK				pmax	pmax		
	comp=Z,10.0nm,1.4s						
TLY	**Talaya**	**30.56**	**310**	P	**P**	**20 48 22.8**	**+0.8**
	comp=Z,7.6nm,0.9s,baz=72,slow=4.4,SNR=2.1						
TLY	**Talaya**	**30.56**	**310**	*e*P	**P**	**20 48 22.0**	**0.0**
TLY				pmax	pmax		
	comp=Z,10.0nm,1.0s						
TLY	**Talaya**	**30.56**	**310**	*e*P	**P**	**20 48 22.0**	**0.0**
	comp=Z,9.8nm,1.0s						
LZH	**Lanzhou**	**30.71**	**279**	*e*P	**P**	**20 48 24.5**	**+0.9**
LZH				pP	sP	20 48 28.5	+3.5
LZH				sP	pP	20 48 31.0	+6.4
LZH				pmax	pmax		
	comp=Z,20nm,1.0s						
LZH				pmax	pmax		
	comp=Z,120nm,4.1s						
LZH				LR	LR		
	comp=Z,380nm,13.4s						
LZH				LR	LR		
	comp=Z,500nm,12.3s						
LZH				LR	LR		
	comp=Z,560nm,14.1s						
GYA	**Guiyang**	**32.03**	**260**⇑	*i* P	**P**	**20 48 34.8**	**-0.5**
GYA				PP	**PnPn**	**20 49 42.3**	**+2.0**
GYA				PcP	**PcP**	**20 51 26.5**	**+1.4**
GYA				S	**S**	**20 53 47.0**	**-0.9**
GYA				ScP	**ScP**	**20 55 08.8**	**-0.6**
GYA				SS	**SnSn**	**20 55 39.3**	**+2.7**
GYA				ScS	**ScS**	**20 59 04.5**	**-3.7**
GYA				pmax	pmax		
	comp=Z,30nm,0.8s						
GYA				pmax	pmax		
	comp=Z,140nm,5.6s						
GYA				LR	LR		
	comp=Z,560nm,17.2s						
GYA				LR	LR		
	comp=Z,480nm,17.4s						
GYA				LR	LR		
	comp=Z,520nm,17.0s						
MOY	**Mondy**	**32.18**	**309**	*e*P	**P**	**20 48 36.8**	**+0.5**
MOY				pmax	pmax		
	comp=Z,25nm,3.5s						
CD2	**Chengdu**	**32.41**	**270**	P	**P**	**20 48 37.8**	**-0.7**
CD2				pmax	pmax		
	comp=Z,2.0nm,0.6s						
GTA	**Gaotai**	**33.12**	**287**	*e*P	**P**	**20 48 45.5**	**+0.8**
GTA				pP	sP	20 48 52.0	+5.9
GTA				sP	pP	20 48 55.3	+10
GTA				PcP	**PcP**	**20 51 29.0**	**+1.1**
GTA				pmax	pmax		
	comp=Z,9.0nm,1.0s						
BILL	**Bilibino**	**33.33**	**16**	*e*P	**P**	**20 48 46.1**	**0.0**
BILL				*i*		20 48 53.4	
BILL				pmax	pmax		
	comp=Z,7.0nm,1.3s						
BILL	**Bilibino**	**33.33**	**16**	*e*P	**P**	**20 48 45.6**	**-0.4**
	comp=Z,7.0nm,1.1s						
MIDW	**Midway**	**34.87**	**93**	*e*P	**P**	**20 49 00.2**	**+0.4**
	comp=Z,79nm,0.9s						
TIXI	**Tiksi**	**34.88**	**353**	P	**P**	**20 48 59.2**	**-0.2**
	comp=Z,1.3nm,0.3s,baz=322,slow=1.6,SNR=5.6						
TIXI	**Tiksi**	**34.88**	**353**	*i* P	**P**	**20 48 58.4**	**-1.0**
TIXI				pmax	pmax		
	comp=Z,5.0nm,1.8s						
TIXI	**Tiksi**	**34.88**	**353**	*e*P	**P**	**20 48 58.7**	**-0.7**
	comp=Z,3.1nm,0.8s						
KMI	**Kunming**	**35.76**	**261**	P	**P**	**20 49 08.5**	**+0.6**
KMI				pmax	pmax		
	comp=Z,22nm,1.0s						
KMI				pmax	pmax		
	comp=Z,660nm,13.8s						
NIKH	**Nikolski High**	**36.89**	**49**	*e*P	**P**	**20 49 16.0**	**-0.9**
	comp=Z,118nm,1.1s						
SKNT	**Sakolnakorn**	**39.41**	**249**	P	P	20 49 46.1	+7.5
	comp=Z,16nm,1.0s						
TNA	**Tin City**	**40.05**	**30**	*e*P	**P**	**20 49 42.4**	**-0.8**
	comp=Z,3.8nm,0.6s						
CRAI	**Chiangrai**	**40.22**	**257**	P	**P**	**20 49 46.8**	**+1.6**
	comp=Z,205nm,1.0s,comp=Z,77μm						
WMQ	**Urumqi**	**41.27**	**296**	P	**P**	**20 49 55.0**	**+1.2**
WMQ				pP	sP	20 49 59.5	+4.3
WMQ				sP	pP	20 50 02.3	+7.5
WMQ				PP	**PnPn**	**20 51 33.5**	**+0.2**
WMQ				S	**S**	**20 56 08.5**	**+0.1**
WMQ				pmax	pmax		
	comp=Z,12nm,0.8s						
WMQ				pmax	pmax		
	comp=Z,28nm,3.6s						
WMQ				LR	LR		
	comp=Z,76nm,18.8s						
WMQ				LR	LR		
	comp=Z,71nm,21.0s						
WMQ				LR	LR		
	comp=Z,62nm,23.2s						
ZAA1	**Zalesovo Array**	**42.12**	**312**	*e*P	**P**	**20 50 00.8**	**+0.3**
ZAA1				*e*PcP	**PcP**	**20 51 54.9**	**-0.1**
ZAA0	**Zalesovo Array**	**42.12**	**312**	*e*P	**P**	**20 49 59.9**	**-0.6**
ZAA0				*e*PcP	**PcP**	**20 51 54.5**	**-0.5**
ZALV	**Zalesovo Beam**	**42.12**	**312**	P	**P**	**20 50 00.8**	**+0.3**
	comp=Z,13nm,0.8s,baz=94,slow=6.8,SNR=54						
ZALV				PcP	**PcP**	**20 51 54.9**	**-0.1**
	comp=Z,4.6nm,0.7s,baz=90,slow=3.3,SNR=5.1						
CMMT	**Chiang Mai**	**42.13**	**256**	P	**P**	**20 50 02.1**	**+1.1**
	comp=Z,6.6nm,1.1s						
CHTO	**Chiang Mai**	**42.13**	**256**	P	**P**	**20 50 02.1**	**+1.1**
	comp=Z,30nm,2.4s						
CHTO	**Chiang Mai**	**42.13**	**256**	*e*P	**P**	**20 50 00.6**	**-0.4**
CHTO				pmax	pmax		
	comp=Z,4.0nm,0.8s						
CHTO	**Chiang Mai**	**42.13**	**256**	*e*P	**P**	**20 50 00.6**	**-0.4**
	comp=Z,4.2nm,0.8s						
SANI	**Sanana**	**42.21**	**205**	P	**P**	**20 50 03.4**	**+1.8**
	comp=Z,15nm,0.8s						
CM31	**Chiang Mai Arr**	**42.34**	**256**	*e*P	**P**	**20 50 03.6**	**+1.0**
CMAR	**Chiang Mai Arr**	**42.34**	**256**	P	**P**	**20 50 04.1**	**+1.4**
	comp=Z,1.0nm,0.6s,baz=44,slow=7.9,SNR=9.0						
CMAR				LR	LR	21 08 24.6	
	comp=Z,82nm,19.2s,baz=145,slow=37						
CMAR	**Chiang Mai Arr**	**42.34**	**256**	*ce*P	**P**	**20 50 05.8**	**+3.1**
CMAR				pmax	pmax		
	comp=Z,1.0nm,0.6s						
CM01	**Chiang Mai Arr**	**42.34**	**255**	*e*P	**P**	**20 50 02.6**	**-0.1**
LUWI	**Luwuk**	**42.45**	**210**	*e*P	**P**	**20 50 04.8**	**+1.3**
	comp=Z,29nm,1.0s						
LSA	**Lhasa**	**42.90**	**275**	P	**P**	**20 50 09.0**	**+1.3**
LSA				pmax	pmax		
	comp=Z,7.0nm,1.2s						
LSA	**Lhasa**	**42.90**	**275**	*e*P	**P**	**20 50 08.1**	**+0.4**
LSA				pmax	pmax		
	comp=Z,10.0nm,0.7s						
LSA	**Lhasa**	**42.90**	**275**	*e*P	**P**	**20 50 08.1**	**+0.4**
	comp=Z,10nm,0.7s						
NVS	**Novosibirsk**	**43.02**	**313**	*i* P	**P**	**20 50 08.4**	**+0.6**
NVS				pmax	pmax		
	comp=N,3.0nm,1.3s						
NVS				pmax	pmax		
	comp=E,11nm,1.3s						
NVS				pmax	pmax		
	comp=Z,18nm,1.

KOLN	**Koldanda**	**49.70**	**277**	*e*P		**P**	**20 51 01.2**	**+0.2**
	comp=Z,17nm,0.6s							
IPM	**Ipoh**	**50.03**	**239**	*e*P		**P**	**20 51 02.9**	**-0.4**
	comp=Z,9.8nm,0.8s							
PYUN	**Piuthan**	**50.03**	**277**	*e*P		**P**	**20 51 03.8**	**+0.3**
	comp=Z,90nm,0.9s							
TKM2	**Tokmak 2**	**50.04**	**298**	*i* P		**P**	**20 51 04.2**	**+0.9**
TKM2					pmax	pmax		
	comp=Z,10.0nm,0.5s							
TKM2	**Tokmak 2**	**50.04**	**298**	*e*P		**P**	**20 51 03.9**	**+0.6**
	comp=Z,14nm,0.6s							
TPRI	**Tanjung Pinang**	**50.39**	**233**	P		P	20 51 16.9	+11
OTUK	**Ortayu**	**50.73**	**306**	*i* P		**P**	**20 51 08.5**	**+0.3**
OTUK					pmax	pmax		
	comp=Z,9.0nm,0.8s							
BRVK	**Borovoye**	**50.83**	**312**	*ce*P		**P**	**20 51 08.7**	**-0.2**
BRVK					pmax	pmax		
	comp=Z,16nm,2.5s							
BRVK	**Borovoye**	**50.83**	**312**	*e*P		**P**	**20 51 08.7**	**-0.2**
	comp=Z,6.6nm,1.0s							
KSH	**Kashi**	**50.87**	**294**	P		P	20 51 14.5	+4.9
KSH				*ep*P		sP	20 51 19.0	+8.0
KSH				*es*P		pP	20 51 21.8	+11
KSH				*e*PP		PP	20 53 12.3	+6.7
KSH				S		**S**	**20 58 30.8**	**+4.2**
KSH					pmax	pmax		
	comp=Z,69nm,2.3s							
KSH				LR		LR		
	comp=Z,170nm,12.7s							
KSH				LR		LR		
	comp=Z,320nm,15.5s							
KSH				LR		LR		
	comp=Z,410nm,15.9s							
AAK	**Ala-Archa**	**50.90**	**298**	*i* P		**P**	**20 51 09.7**	**-0.1**
AAK					pmax	pmax		
	comp=Z,5.0nm,0.6s							
AAK	**Ala-Archa**	**50.90**	**298**	*e*P		**P**	**20 51 09.6**	**-0.1**
	comp=Z,5.8nm,0.6s							
EKS2	**Erkin-Say**	**51.39**	**299**	*e*P		**P**	**20 51 14.0**	**+0.6**
EKS2					pmax	pmax		
	comp=Z,6.0nm,0.7s							
EKS2	**Erkin-Say**	**51.39**	**299**	*e*P		**P**	**20 51 14.0**	**+0.6**
	comp=Z,6.4nm,0.7s							
MNAS	**Manas**	**52.34**	**299**	*i* P		**P**	**20 51 21.2**	**+0.7**
MNAS					pmax	pmax		
	comp=Z,14nm,0.8s							
SFK	**Sufi-Kurgan**	**52.48**	**295**	*i* P		**P**	**20 51 22.1**	**+0.4**
SFK					pmax	pmax		
	comp=Z,16nm,1.0s							
KKAR	**Karatay Array**	**53.51**	**300**	*e*P		**P**	**20 51 28.6**	**-0.4**
KKAR	**Karatay Array**	**53.51**	**300**	*e*P		**P**	**20 51 28.6**	**-0.4**
INK	**Inuvik**	**53.60**	**27**	P		**P**	**20 51 30.1**	**+0.9**
	comp=Z,1.2nm,0.8s,baz=306,slow=6.3,SNR=6.4							
LEM	**Lembang**	**54.75**	**224**	P		P	20 51 44.9	+6.4
	comp=Z,8.9nm,0.5s,baz=158,slow=21,SNR=3.1							
MDSI	**Maura Dua**	**54.83**	**229**	P		**P**	**20 51 38.5**	**-0.4**
	comp=Z,13nm,1.5s							
SVE	**Sverdlovsk**	**55.25**	**319**	⇓ *i* P		**P**	**20 51 42.5**	**+1.1**
SVE					pmax	pmax		
	comp=Z,29nm,0.9s							
KKH	**Kailua Kona**	**56.04**	**90**	*e*P		**P**	**20 51 47.0**	**-0.6**
KKH	**Kailua Kona**	**56.04**	**90**	*e*P		**P**	**20 51 47.0**	**-0.6**
ARU	**Arti**	**56.47**	**319**	P		**P**	**20 51 50.2**	**+0.1**
	comp=Z,14nm,0.7s,baz=86,slow=3.9,SNR=4.9							
ARU	**Arti**	**56.47**	**319**	*d* P		**P**	**20 51 50.1**	**-0.1**
ARU							20 52 48.8	
ARU							20 53 53.1	
ARU				PPP		PPP	20 55 13.6	
ARU				S		**S**	**20 59 40.3**	**-1.4**
ARU					pmax	pmax		
	comp=Z,27nm,1.2s							
ARU	**Arti**	**56.47**	**319**	*e*P		**P**	**20 51 49.8**	**-0.3**
	comp=Z,17nm,0.8s							
HPO	**Honuapo**	**56.71**	**91**	*e*P		**P**	**20 51 51.8**	**-0.6**
WRAB	**Tennant Creek**	**57.66**	**189**	*e*P		**P**	**20 51 58.5**	**-0.4**
WRAB					pmax	pmax		
	comp=Z,13nm,0.9s							
WRAB	**Tennant Creek**	**57.66**	**189**	*e*P		**P**	**20 51 58.5**	**-0.4**
	comp=Z,13nm,0.9s							
WB2	**Warramunga Arr**	**57.67**	**189**	*e*P		**P**	**20 51 58.4**	**-0.6**
	comp=Z,13nm,0.8s							
WR1	**Warramunga Arr**	**57.67**	**189**	*e*P		**P**	**20 51 58.9**	**-0.2**
	comp=Z,13nm,0.8s							
WRA	**Warramunga Arr**	**57.67**	**189**	P		**P**	**20 51 58.9**	**-0.2**
	comp=Z,4.5nm,0.6s,baz=6.6,slow=7.0,SNR=68							
DLBC	**Dease Lake**	**57.77**	**38**	P		**P**	**20 52 01.9**	**+2.4**
	comp=Z,1.2nm,0.6s,baz=301,slow=21,SNR=3.3							
DLBC	**Dease Lake**	**57.77**	**38**	*e*P		**P**	**20 52 01.9**	**+2.4**
	comp=Z,24nm,1.8s							
KBL	**Kabul**	**57.92**	**291**	*e*P		**P**	**20 52 00.3**	**-0.7**
KBL					pmax	pmax		
	comp=Z,10.0nm,1.0s							
KBL	**Kabul**	**57.92**	**291**	*e*P		**P**	**20 52 00.3**	**-0.7**
	comp=Z,10nm,1.0s							
ABKAR	**Akbulak array**	**58.17**	**310**	*e*P		**P**	**20 52 01.7**	**-0.6**
HYB	**Hyderabad**	**58.95**	**269**	*i* P		**P**	**20 52 08.5**	**+0.3**
SPITS	**Spitsbergen Ar**	**60.17**	**349**	P		**P**	**20 52 17.3**	**+1.6**
	comp=Z,1.5nm,0.6s,baz=73,slow=6.4,SNR=6.7							
AS01	**Alice Springs**	**61.39**	**189**	*e*P		**P**	**20 52 24.6**	**-0.1**
AS31	**Alice Springs**	**61.40**	**189**	*e*P		**P**	**20 52 24.9**	**+0.2**
	comp=Z,1.4nm,0.6s							
ASAR	**Alice Springs**	**61.40**	**189**	P		**P**	**20 52 25.1**	**+0.4**
	comp=Z,2.4nm,0.7s,baz=12,slow=7.3,SNR=33							
ASAR				LR		LR	21 19 29.2	
	comp=Z,108nm,19.1s,baz=328,slow=36							
RES	**Resolute Bay**	**61.92**	**15**	P		**P**	**20 52 27.9**	**+0.3**
	comp=Z,4.0nm,0.8s,baz=312,slow=6.7,SNR=22							
RES	**Resolute Bay**	**61.92**	**15**	*e*P		**P**	**20 52 27.4**	**-0.3**
TMCR	**Tamitsa**	**62.65**	**331**	*e*P		**P**	**20 52 33.0**	**+0.3**
TMCR					pmax	pmax		
	comp=Z,17nm,0.7s							
YKA	**Yellowknife Ar**	**63.00**	**31**	P		**P**	**20 52 35.1**	**+0.1**
	comp=Z,0.9nm,0.6s,baz=302,slow=6.6,SNR=24							
YKB5	**Yellowknife Ar**	**63.00**	**31**	*e*P		**P**	**20 52 35.1**	**+0.1**
KLMR	**Klimovskoe**	**63.72**	**328**	*e*P		**P**	**20 52 38.4**	**-1.4**
KLMR				*e*			20 54 57.8	
KLMR					pmax	pmax		
	comp=Z,7.0nm,0.9s							
ARA0	**ARCESS Array S**	**63.78**	**340**	*e*P		**P**	**20 52 40.3**	**+0.2**
ARCES	**ARCESS Array B**	**63.78**	**340**	P		**P**	**20 52 40.3**	**+0.2**
	comp=Z,2.7nm,0.8s,baz=41,slow=11,SNR=6.6							
GEYT	**Alibeck**	**64.23**	**299**	P		**P**	**20 52 43.9**	**+0.2**
	comp=Z,2.9nm,0.8s,baz=34,slow=3.7,SNR=9.3							
DAG	**Danmarks Havn**	**65.33**	**355**	*i* P		**P**	**20 52 49.5**	**-0.6**
	comp=Z,5.9nm,0.9s							
DAG	**Danmarks Havn**	**65.33**	**355**	*i* P		**P**	**20 52 49.5**	**-0.6**
DAG					pmax	pmax		
	comp=Z,5.0nm,0.9s							
VRH	**Novokhopyorsk**	**67.69**	**318**	*e*P		**P**	**20 53 05.2**	**-0.4**
VRH					pmax	pmax		
	comp=Z,5.0nm,0.4s							
VRH					MLR	MLR		
	comp=Z,440nm,17.0s							
OBN	**Obninsk**	**68.13**	**323**	P		**P**	**20 53 08.7**	**+0.4**
	comp=Z,8.9nm,0.5s,baz=127,slow=20,SNR=4.6							
OBN	**Obninsk**	**68.13**	**323**	⇑ *i* P		**P**	**20 53 08.6**	**+0.4**
OBN				*i*			20 53 17.6	
OBN				*e*			20 55 39.0	
OBN					pmax	pmax		
	comp=Z,25nm,1.6s							
OBN					MLR	MLR		
	comp=Z,142nm,18.0s							
LPSR	**Galich'ya Gora**	**68.38**	**320**	*e*P		**P**	**20 53 09.8**	**-0.1**
LPSR					pmax	pmax		
	comp=Z,8.0nm,0.6s							
LPSR					MLR	MLR		
	comp=Z,380nm,20.0s							
FIA1	**FINESS Array S**	**68.70**	**332**	*e*P		**P**	**20 53 11.4**	**-0.4**
	comp=Z,18nm,0.8s							
FIA0	**FINESS Array S**	**68.71**	**332**	*e*P		**P**	**20 53 11.8**	**0.0**
FIA0	**FINESS Array S**	**68.71**	**332**	*e*P		**P**	**20 53 11.8**	**0.0**
FINES	**FINESS Array B**	**68.71**	**332**	P		**P**	**20 53 11.8**	**0.0**
	comp=Z,13nm,0.7s,baz=52,slow=7.7,SNR=72							
VSR	**Storozhevoye**	**69.03**	**319**	*e*P		**P**	**20 53 13.9**	**-0.1**
VSR					pmax	pmax		
	comp=Z,8.0nm,0.4s							
VSR					MLR	MLR		
	comp=Z,340nm,14.0s							
STKA	**Stephens Creek**	**69.06**	**181**	P		**P**	**20 53 16.1**	**+1.8**
	comp=Z,0.4nm,0.3s,baz=24,slow=9.5,SNR=2.1							
STKA	**Stephens Creek**	**69.06**	**181**	*e*P		**P**	**20 53 16.1**	**+1.8**
	comp=Z,5.4nm,2.0s							
SUMG	**Summit**	**70.18**	**0**	*i* P		**P**	**20 53 21.3**	**+0.1**
SUMG				*i*			20 53 30.0	
SUMG	**Summit**	**70.18**	**0**	*e*P		**P**	**20 53 21.3**	**+0.1**
SUMG				*i*			20 53 30.0	
SUMG					pmax	pmax		
	comp=Z,3.0nm,0.7s							
SUMG	**Summit**	**70.18**	**0**	*e*P		**P**	**20 53 20.4**	**+0.1**
	comp=Z,11nm,1.1s							
GOF	**Gofitskoye**	**70.30**	**312**	⇑ *e*P		**P**	**20 53 22.4**	**+0.4**
GOF					pmax	pmax		
	comp=Z,18nm,0.8s							
VSU	**Vasula**	**70.39**	**330**	*ce*P		**P**	**20 53 23.0**	**+0.8**
VSU					pmax	pmax		
	comp=Z,49nm,1.2s							
ZEI	**Tsey**	**71.04**	**310**	*e*P		**P**	**20 53 25.3**	**-1.5**
ZEI					pmax	pmax		
	comp=Z,20nm,1.6s							
KVAR	**Kislovodsk Arr**	**71.12**	**311**	P		**P**	**20 53 28.1**	**+1.0**
	comp=Z,11nm,1.0s,baz=37,slow=14,SNR=3.8							
KBZ	**Khabaz**	**71.13**	**311**	P		**P**	**20 53 27.6**	**+0.6**
	comp=Z,6.3nm,0.8s,baz=53,slow=2.9,SNR=15							
KIV	**Kislovodsk**	**71.13**	**311**	*i* P		**P**	**20 53 28.9**	**+1.8**
	SNR=5.6							
KIV	**Kislovodsk**	**71.13**	**311**	⇓ *i* P		**P**	**20 53 27.5**	**+0.3**
KIV				*i*			20 53 42.1	
KIV					pmax	pmax		
	comp=Z,23nm,1.0s							
KIV					MLR	MLR		
	comp=Z,116nm,17.0s							
KIV	**Kislovodsk**	**71.13**	**311**	*e*P		**P**	**20 53 27.0**	**-0.2**
	comp=Z,18nm,0.9s							
WSAR	**Wadi Sarin**	**71.44**	**285**	P		**P**	**20 53 29.8**	**+0.5**
	comp=Z,3.1nm,0.7s,baz=78,slow=4.7,SNR=4.1							
GNI	**Garni**	**71.99**	**307**	P		**P**	**20 53 33.8**	**+1.3**
	comp=Z,2.1nm,0.5s							
GNI	**Garni**	**71.99**	**307**	*ce*P		**P**	**20 53 33.9**	**+1.4**
GNI					pmax	pmax		
	comp=Z,41nm,1.7s							
GNI	**Garni**	**71.99**	**307**	*e*P		**P**	**20 53 34.0**	**+1.4**
	comp=Z,9.4nm,1.1s							
UOSS	**Minazif**	**72.35**	**288**	*e*P		**P**	**20 53 34.8**	**+0.1**
	comp=Z,0.4nm,0.8s							
HATD	**Hatta, Dubai**	**72.47**	**288**	*i* P		**P**	**20 53 35.8**	**+0.3**
	SNR=9.0							
NACGM	**Naroch**	**72.70**	**327**	*e*		**P**	**20 53 36.0**	**-0.3**
MCMT	**McKenzie Canyo**	**73.64**	**46**	*e*P		**P**	**20 53 43.4**	**+1.0**
NC405	**NORSAR Array S**	**73.79**	**337**	*e*P		**P**	**20 53 42.5**	**-0.1**
NC303	**NORSAR Array S**	**73.81**	**338**	*e*P		**P**	**20 53 41.9**	**-0.9**
HFS	**Hagfors**	**73.93**	**336**	P		**P**	**20 53 43.5**	**+0.1**
	comp=Z,5.5nm,0.8s,baz=64,slow=6.9,SNR=14							
NC204	**NORSAR Array S**	**73.95**	**338**	*e*P		**P**	**20 53 43.9**	**+0.3**
NB201	**NORSAR Array S**	**73.97**	**338**	*e*P		**P**	**20 53 43.7**	**0.0**
NB2	**NORSAR Subarra**	**74.00**	**338**	P		**P**	**20 53 43.6**	**-0.3**
	comp=Z,11nm,1.0s,baz=38,slow=5.9							
NB200	**NORSAR Array S**	**74.00**	**338**	*e*P		**P**	**20 53 44.0**	**+0.1**
NOA	**NORSAR Array B**	**74.00**	**338**	P		**P**	**20 53 44.0**	**+0.1**
	comp=Z,5.0nm,0.8s,baz=39,slow=5.9,SNR=19							
NOA	**NORSAR Array B**	**74.00**	**338**	P		**P**	**20 53 44.0**	**+0.1**
NOA					pmax	pmax		
	comp=Z,5.0nm,0.9s							
NV01	**Mina Array Sit**	**74.09**	**54**	*e*P		**P**	**20 53 46.6**	**+1.6**
NVAR	**Mina Array Bea**	**74.09**	**54**	P		**P**	**20 53 46.7**	**+1.6**
	comp=Z,0.4nm,0.4s,baz=298,slow=3.8,SNR=3.2							
NBO02	**NORSAR Array S**	**74.10**	**338**	*e*P		**P**	**20 53 43.8**	**-0.6**
NBO00	**NORSAR Array S**	**74.14**	**338**	*e*P		**P**	**20 53 45.0**	**+0.3**
AKASG	**Malin Array Be**	**74.34**	**323**	P		**P**	**20 53 45.9**	**-0.1**
	comp=Z,6.3nm,0.6s,baz=45,slow=6.1,SNR=29							
AKASG	**Malin Array Be**	**74.34**	**323**	P		**P**	**20 53 45.9**	**-0.1**
AKASG					pmax	pmax		
	comp=Z,7.0nm,0.6s							
AKBB	**Malin Array Si**	**74.34**	**323**	*e*P		**P**	**20 53 45.9**	**-0.1**
AKBB					pmax	pmax		
	comp=Z,11nm,0.6s							
AKBB	**Malin Array Si**	**74.34**	**323**	*e*P		**P**	**20 53 45.9**	**-0.1**
	comp=Z,10nm,0.6s							
KIEV	**Kiev**	**74.36**	**323**	*d* P		**P**	**20 53 45.7**	**-0.4**
KIEV					pmax	pmax		
	comp=Z,11nm,0.8s							
KIEV	**Kiev**	**74.36**	**323**	*e*P		**P**	**20 53 45.1**	**-1.0**
	comp=Z,10nm,0.8s							
AK11	**Malin Array Si**	**74.39**	**323**	*e*P		**P**	**20 53 45.5**	**-0.8**
SUW	**Suwalki**	**74.85**	**328**	*e*P		**P**	**20 53 48.6**	**-0.3**
R11A	**Troy Canyon, C**	**75.87**	**52**	*e*P		**P**	**20 53 54.0**	**-1.3**
	comp=Z,2.1nm,0.8s							
SORM	**Soroca**	**76.46**	**321**	⇓ *i* P		**P**	**20 53 57.3**	**-0.9**
BW06	**Boulder Array**	**76.78**	**46**	*e*P		**P**	**20 54 00.1**	**-0.4**
PD31	**Pinedale Array**	**76.79**	**46**	*e*P		**P**	**20 54 01.2**	**+0.7**
PDAR	**Pinedale Array**	**76.79**	**46**	P		**P**	**20 54 01.2**	**+0.7**
	comp=Z,0.4nm,0.6s,baz=294,slow=1.5,SNR=5.5							
SFNV	**Sufian**	**77.12**	**306**	*e*P		**P**	**20 54 03.4**	**+1.2**
LVV	**L'vov**	**77.40**	**324**	*e*P		**P**	**20 54 03.6**	**+0.1**
KWP	**Kalwaria Pacla**	**78.14**	**325**	*e*P		**P**	**20 54 08.3**	**+0.6**
KWP	**Kalwaria Pacla**	**78.14**	**325**	⇑ *i* P		**P**	**20 54 08.7**	**+1.0**
KSRV	**Kasrt alli**	**78.17**	**306**	*e*P		**P**	**20 54 09.3**	**+1.3**
BUR08	**Bucovina Ar. S**	**78.35**	**322**	*e*P		**P**	**20 54 09.3**	**+0.3**
BURAR	**Bucovina Array**	**78.37**	**322**	⇓ *i* P		**P**	**20 54 09.8**	**+0.7**
TESR	**Tescani**	**78.41**	**321**	⇓ *i* P		**P**	**20 54 09.7**	**+0.5**
CFR	**Carcaliu**	**78.55**	**319**	⇑ *i* P		**P**	**20 54 10.1**	**+0.2**
VRI	**Vrincioaia**	**78.81**	**320**	⇓ *i* P		**P**	**20 54 12.2**	**+0.8**
KOLS	**Kolonicke sedl**	**78.84**	**324**	*e*P		**P**	**20 54 12.0**	**+0.5**
KOLS					pmax	pmax		
	comp=Z,5.0nm,1.0s							
KOLS	**Kolonicke sedl**	**78.84**	**324**	*e*P		**P**	**20 54 12.0**	**+0.5**
PLOR	**Plostina**	**78.86**	**320**	⇑ *i* P		**P**	**20 54 13.0**	**+1.2**
TIRR	**Tirgusor**	**78.89**	**318**	⇑ *i* P		**P**	**20 54 12.6**	**+0.8**
STHS	**Stebnicka Huta**	**78.96**	**325**	*e*P		**P**	**20 54 12.8**	**+0.6**
STHS					pmax	pmax		
	comp=Z,5.0nm,1.0s							
STHS	**Stebnicka Huta**	**78.96**	**325**	*e*P		**P**	**20 54 12.8**	**+0.6**
OJC	**Ojcow**	**79.03**	**327**	*e*P		**P**	**20 54 13.0**	**+0.5**
OJC	**Ojcow**	**79.03**	**327**	*e*P		**P**	**20 54 13.0**	**+0.5**
OJC					pmax	pmax		
	comp=Z,16nm,1.0s							
OJC	**Ojcow**	**79.03**	**327**	*e*P		**P**	**20 54 13.0**	**+0.5**
	comp=Z,16nm,1.0s							
BR101	**Keskin Array S**	**79.06**	**312**	*e*P		**P**	**20 54 13.4**	**+0.3**
BR131	**Keskin Array S**	**79.06**	**312**	*e*P		**P**	**20 54 13.3**	**+0.2**
BRTR	**Keskin Array B**	**79.06**	**312**	P		**P**	**20 54 13.4**	**+0.3**
	comp=Z,4.8nm,1.2s,baz=92,slow=3.7,SNR=15							
BRTR	**Keskin Array B**	**79.06**	**312**	*ce*P		**P**	**20 54 13.3**	**+0.2**
BRTR					pmax	pmax		
	comp=Z,5.0nm,1.2s							
CRVS	**Cervenica-Dubn**	**79.23**	**325**	*e*P		**P**	**20 54 14.5**	**+0.8**
CRVS	**Cervenica-Dubn**	**79.23**	**325**	*e*P		**P**	**20 54 14.5**	**+0.8**
NIE	**Niedzica**	**79.39**	**326**	*e*P		**P**	**20 54 15.5**	**+0.9**
DOPR	**Dopca**	**79.42**	**321**	⇑ *i* P		**P**	**20 54 16.0**	**+1.2**
MLR	**Muntele Rosu**	**79.47**	**320**	P		**P**	**20 54 15.8**	**+0.6**
	comp=Z,0.5nm,0.8s,baz=340,slow=11,SNR=4.7							
MLR	**Muntele Rosu**	**79.47**	**320**	⇑ *i* P		**P**	**20 54 15.9**	**+0.7**
MLR	**Muntele Rosu**	**79.47**	**320**	*e*P		**P**	**20 54 15.3**	**+0.1**
MLR					pmax	pmax		
	comp=Z,10.0nm,1.4s							
MLR	**Muntele Rosu**	**79.47**	**320**	*e*P		**P**	**20 54 15.3**	**+0.1**
	comp=Z,9.8nm,1.4s							
BR231	**Keskin MP Arra**	**79.50**	**312**	*e*P		**P**	**20 54 13.9**	**-1.5**
VOIR		**79.96**	**321**	⇓ *i* P		**P**	**20 54 18.4**	**+0.6**
OKC	**Ostrava-Krasne**	**80.03**	**327**	*e*P		**P**	**20 54 18.9**	**+1.0**
OKC					AMS	AMS	21 32 40.0	
	comp=Z,200nm,20.4s							
KSP	**Ksiaz**	**80.05**	**329**	*e*P		**P**	**20 54 18.6**	**+0.5**
ARR	**Arges**	**80.22**	**321**	⇑ *i* P		**P**	**20 54 20.8**	**+1.6**
MORC	**Moravsky Berou**	**80.33**	**327**	⇑ *i* P		**P**	**20 54 20.6**	**+0.9**
MORC	**Moravsky Berou**	**80.33**	**327**	*e*P		**P**	**20 54 20.1**	**+0.4**
MORC					pmax	pmax		
	comp=Z,30nm,0.9s							
MORC	**Moravsky Berou**	**80.33**	**327**	*e*P		**P**	**20 54 20.1**	**+0.4**
	comp=Z,30nm,0.9s							
DPC	**Dobruska-Polom**	**80.42**	**328**	*i* P		**P**	**20 54 21.1**	**+1.0**
DPC				*ep*P		**PcP**	**20 54 27.8**	**+0.6**
DPC					AMS	AMS	21 33 20.0	
	comp=Z,200nm,14.4s							
UPC	**Upice**	**80.42**	**329**	AMS		AMS	21 32 40.0	
	comp=Z,200nm,18.1s							
KRLC	**Kraliky**	**80.43**	**328**	*e*P		**P**	**20 54 21.1**	**+0.9**
PSZ	**Piszkesteto**	**80.67**	**325**	⇓ *i* P		**P**	**20 54 21.7**	**+0.1**
PSZ	**Piszkesteto**	**80.67**	**325**	*e*P		**P**	**20 54 21.6**	**+0.1**
PSZ					pmax	pmax		
	comp=Z,11nm,1.0s							
PSZ	**Piszkesteto**	**80.67**	**325**	*e*P		**P**	**20 54 21.6**	**+0.1**
	comp=Z,12nm,1.0s							
VYHS	**Vyhne**	**80.72**	**326**	*e*P		**P**	**20 54 22.4**	**+0.6**
VYHS					pmax	pmax		
	comp=Z,7.0nm,1.6s							
VYHS	**Vyhne**	**80.72**	**326**	*e*P		**P**	**20 54 22.4**	**+0.6**
MARH	**Ras Al Marh**	**80.93**	**306**	*e*P		**P**	**20 54 22.7**	**-0.8**
BRG	**Berggiesshubel**	**80.99**	**330**	*e*P		**P**	**20 54 23.5**	**+0.4**
	comp=Z,6.0nm,1.0s							
BRG	**Berggiesshubel**	**80.99**	**330**	*e*P		**P**	**20 54 23.5**	**+0.4**
BRG					pmax	pmax		
	comp=Z,6.0nm,1.0s							
PVCC	**Panska Ves**	**81.00**	**329**	*i* P		**P**	**20 54 24.4**	**+1.2**
PVCC					AMS	AMS	21 32 10.0	
	comp=Z,200nm,17.2s							
CLL	**Collm**	**81.02**	**331**	*i* P		**P**	**20 54 23.6**	**+0.4**
	comp=Z,8.0nm,1.0s							
CLL				*i*			20 54 29.8	
CLL				L		L	21 28 00.0	
	comp=Z,200nm,19.3s							
CLL	**Collm**	**81.02**	**331**	*e*P		**P**	**20 54 23.1**	**-0.2**
CLL					pmax	pmax		
	comp=Z,8.0nm,0.9s							
CLL	**Collm**	**81.02**	**331**	*e*P		**P**	**20 54 23.1**	**-0.2**
	comp=Z,7.7nm,0.9s							
ZALF	**Zalf**	**81.07**	**305**	*e*P		**P**	**20 54 24.9**	**+1.0**
VRAC	**Vranov**	**81.09**	**327**	P		**P**	**20 54 24.9**	**+1.2**
	comp=Z,5.7nm,1.0s,baz=50,slow=4.2,SNR=8.2							
VRAC	**Vranov**	**81.09**	**327**	⇓ *i* P		**P**	**20 54 24.9**	**+1.2**
GZR	**Gura Zlata**	**81.13**	**322**	⇑ *i* P		**P**	**20 54 24.6**	**+0.6**
GOPC	**GO Pecny, Ondr**	**81.39**	**329**	AMS		AMS	21 33 30.0	
	comp=Z,200nm,17.3s							
PRU	**Pruhonice**	**81.43**	**329**	*i* P		**P**	**20 54 25.8**	**+0.3**
PRU				*ep*P		**PcP**	**20 54 30.0**	**-1.5**
PRU					AMS	AMS	21 33 30.0	
	comp=Z,200nm,15.3s							
BZS	**Buzias**	**81.53**	**322**	⇓ *i* P		**P**	**20 54 25.9**	**-0.2**
TREC	**Trest**	**81.57**	**328**	*e*P		**P**	**20 54 26.9**	**+0.6**
NKC	**Novy Kostel**	**82.08**	**330**	AMS		AMS	21 34 00.0	
	comp=Z,200nm,14.7s							
MDVR	**Moldovita**	**82.09**	**322**	⇑ *i* P		**P**	**20 54 29.4**	**+0.3**
SDCO	**Great Sand Dun**	**82.41**	**48**	*e*P		P	20 54 28.0	-3.2
	comp=Z,18nm,0.8s							
CONA	**Conrad Observa**	**82.46**	**327**	*i* P		**P**	**20 54 32.0**	**+1.0**
	comp=Z,5.7nm,1.1s,SNR=5.6							
KHC	**Kasperske Hory**	**82.49**	**329**	*i* P		**P**	**20 54 31.6**	**+0.5**
KHC				*ep*P		**PcP**	**20 54 36.3**	**0.0**
KHC					AMS	AMS	21 33 40.0	
	comp=Z,100nm,21.6s							
KHC	**Kasperske Hory**	**82.49**	**329**	*e*P		**P**	**20 54 31.2**	**0.0**
KHC					pmax	pmax		
	comp=Z,3.0nm,1.1s							
KHC	**Kasperske Hory**	**82.49**	**329**	*e*P		**P**	**20 54 31.1**	**0.0**
	comp=Z,3.0nm,1.1s							
PKSM	**Moragy**	**82.51**	**324**	⇑ *i* P		**P**	**20 54 31.3**	**+0.1**
GEC2	**GERESS Array S**	**82.66**	**329**	*e*P		**P**	**20 54 32.2**	**+0.1**
GEC2					pmax	pmax		
	comp=Z,7.0nm,1.3s							
GEC2	**GERESS Array S**	**82.66**	**329**	*e*P		**P**	**20 54 32.2**	**+0.1**
	comp=Z,6.7nm,1.3s							
GERES	**GERESS Array B**	**82.66**	**329**	P		**P**	**20 54 32.4**	**+0.3**
	comp=Z,1.3nm,0.8s,baz=46,slow=5.8,SNR=12							
GEA0	**GERESS Array S**	**82.67**	**329**	*e*P		**P**	**20 54 31.4**	**-0.7**
EKA	**Eskdalemuir Ar**	**82.89**	**341**	P		**P**	**20 54 33.7**	**+0.6**
	comp=Z,1.5nm,0.6s,baz=25,slow=4.6,SNR=4.6							
MOA	**Molln**	**83.20**	**328**	*e*PcP		**P**	**20 54 36.2**	**+1.3**
	comp=Z,5.6nm,1.4s							
SOKA	**Soboth**	**83.78**	**327**	*e*P		**P**	**20 54 37.9**	**0.0**
	comp=Z,12nm,1.6s,SNR=9.7							
LTZ	**Lake Taylor**	**84.46**	**158**	*e*P		**P**	**20 54 39.7**	**-1.3**
	comp=Z,150nm,0.4s							
ABTA	**Abfaltersbach**	**84.81**	**328**	*i* PcP		**P**	**20 54 43.3**	**+0.2**
	comp=Z,3.1nm,0.8s							
MOTA	**Moosalm**	**84.92**	**329**	*i* PcP		**P**	**20 54 44.7**	**+1.0**
	comp=Z,2.7nm,0.9s							
RETA	**Reutte**	**84.94**	**329**	*e*PcP		**P**	**20 54 44.0**	**+0.2**
	comp=Z,12nm,1.6s,SNR=5.3							
PDG	**Podgorica**	**85.03**	**321**	⇑ *i* P		**P**	**20 54 43.6**	**-0.6**
BF

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MXZ	**Matakaoa Point**	**1.98**	**195**	PN	**Pn**	**21 10 46.1**	**-2.2**
MXZ				SN	**S**	**21 11 19.1**	**-1.0**
WMGZ	**Waiomatatini S**	**2.21**	**191**	PN	**Pn**	**21 10 49.4**	**-1.2**
WMGZ				SN	**S**	**21 11 25.4**	**+1.3**
HAZ	**Te Kaha**	**2.31**	**204**	PN	**Pn**	**21 10 49.8**	**-1.7**
PKGZ	**Pakihiroa**	**2.34**	**197**	PN	**Pn**	**21 10 50.5**	**-1.6**
PUZ	**Puketiti**	**2.48**	**193**	PN	**Pn**	**21 10 51.8**	**-1.6**
PUZ				SN	**S**	**21 11 29.5**	**+0.3**
PUZ				AML	AML	21 11 32.2	
TWGZ	**Tauwhareparae**	**2.64**	**197**	PN	**Pn**	**21 10 54.2**	**-1.0**
TWGZ				SN	**S**	**21 11 35.1**	**+2.9**
CNGZ	**Carnagh Statio**	**2.89**	**192**	PN	**Pn**	**21 10 57.0**	**-0.8**
MWZ	**Matawai**	**2.91**	**203**	PN	**Pn**	**21 10 56.9**	**-1.2**
MWZ				SN	**S**	**21 11 39.6**	**+2.0**
MWZ				AML	AML	21 11 57.6	
TKGZ	**Te Karaka**	**2.92**	**197** ⇓	PN	**Pn**	**21 10 56.9**	**-1.2**
URZ	**Urewera**	**3.00**	**209**	P	**Pn**	**21 10 57.7**	**-1.2**
	1.6nm,0.3s,baz=266,slow=4.8,SNR=25						
URZ				S	**S**	**21 11 41.2**	**+2.1**
	8.8nm,0.3s,baz=225,slow=23,SNR=20						
URZ	**Urewera**	**3.00**	**209**	PN	**Pn**	**21 10 57.7**	**-1.2**
URZ				AML	AML	21 11 42.0	
URZ				AML	AML	21 11 50.5	
RIGZ	**Rimuhau**	**3.20**	**197**	PN	**Pn**	**21 11 00.3**	**-1.0**
SNGZ	**Shannon Statio**	**3.38**	**202**	PN	**Pn**	**21 11 02.5**	**-0.9**
KNZ	**Kokohu**	**3.52**	**196**	PN	**Pn**	**21 11 03.9**	**-1.1**
NMHZ	**Naumai**	**3.84**	**206**	PN	**Pn**	**21 11 08.1**	**-0.8**
BKZ	**Black Stump Fm**	**4.02**	**208**	PN	**Pn**	**21 11 10.5**	**-0.5**
KWHZ	**Kaweka Forest**	**4.27**	**207**	PN	**Pn**	**21 11 12.5**	**-1.5**
KAHZ	**Kahuranaki**	**4.46**	**201**	PN	**Pn**	**21 11 15.2**	**-1.1**
BHHZ	**Black Hill Sta**	**4.47**	**210**	PN	**Pn**	**21 11 15.7**	**-0.8**
KRHZ	**Kereru**	**4.48**	**206**	PN	**Pn**	**21 11 14.8**	**-1.8**
PNHZ	**Pukenui**	**4.78**	**206**	PN	**Pn**	**21 11 18.8**	**-1.5**
TSZ	**Takapari Road**	**5.00**	**207**	PN	**Pn**	**21 11 22.1**	**-0.9**
BFZ	**Birch Farm**	**5.46**	**202**	PN	**Pn**	**21 11 27.0**	**-1.7**
TIWZ	**Tintock**	**5.66**	**204**	AML	AML	21 12 41.8	
TIWZ				AML	AML	21 12 42.2	
HOWZ	**Holdsworth Sta**	**5.90**	**206**	PN	**Pn**	**21 11 31.7**	**-2.6**
OGWZ	**Otaki Gorge**	**5.96**	**209**	PN	**Pn**	**21 11 32.7**	**-2.3**
KIW	**Kapiti Island**	**6.10**	**210**	PN	**Pn**	**21 11 34.0**	**-2.8**
MTW	**Mount Morrison**	**6.13**	**205**	PN	**Pn**	**21 11 34.5**	**-2.7**
TCW	**Tory Channel**	**6.66**	**212**	PN	Pn	21 11 39.6	-4.2
TUWZ	**Tuamarina**	**6.98**	**213**	PN	Pn	21 11 44.7	-3.3
KHZ	**Kahutara**	**7.96**	**210**	PN	Pn	21 11 57.2	-3.3
ASAR	**Alice Springs**	**40.61**	**274**	P	**P**	**21 17 25.6**	**0.0**
	0.2nm,0.3s,baz=114,slow=7.4,SNR=11						
WRA	**Warramunga Arr**	**42.09**	**280**	P	**P**	**21 17 38.0**	**+0.3**
	0.3nm,0.3s,baz=118,slow=7.4,SNR=13						
FINES	**FINESS Array B**	**149.00**	**335**	PKPbc	**PKPdf**	**21 29 25.1**	**+1.6**
	1.4nm,0.7s,baz=28,slow=4.5,SNR=5.8						

*NIED **29** 21:11:00,36˚30N×141˚10E,h32km,Mw4.1 Best double couple: M0 1.57000×10^15 NP1:ϕs 14.00000°,δ 9.00000°, λ -102.00000°. NP2:ϕs 206.00000°,δ 81.00000°, λ -88.00000°.*

*ISCJB **29** 21:11:35.5±0.7,36˚34N±0.˚03×141˚18E±0.˚07,h36km±7km, mb3.8/14,MS3.6/3, Error ellipse: s-maj=8.8km s-min=4.8km az=4.1*

*JMA **29** 21:11:36.4±0.1,36˚33N×141˚08E,h46km±1km,M4.0*

JMA Felt II J1.

*IDC **29** 21:11:39.7±2.0,36˚24N×141˚05E,h60km±20km,mb3.6/13, mb1 3.8/18,mb1mx3.6/47,mbtmp3.9/18,ML3.2/4,MS3.4/7, Ms1 3.4/7,ms1mx3.1/41,Error ellipse: s-maj=17.6km s-min=9.6km az=68.0*

ISC 29 21:11:36.0±1.2,36˚36N±0.˚03×141˚06E±0.˚06,h25km±9km, n36,σ 0.88/34,mb3.9/14,MS3.5/3,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHO	**Hitachi**	**0.47**	**302**	P	**Pn**	**21 11 47.1**	**+0.1**
JHO				S	**Sn**	**21 11 54.6**	**+0.1**
CHOJ	**Chosi**	**0.68**	**194**	P	**Pb**	**21 11 49.3**	**+0.1**
CHOJ				S	**Sb**	**21 11 58.4**	**+0.2**
JYT	**Yasato**	**0.71**	**259**	P	**Pn**	**21 11 50.3**	**-0.1**
JYT				S	**Sn**	**21 12 00.1**	**-0.4**
ONAJ	**Iwakimizuishiy**	**0.77**	**344**	P	**Pb**	**21 11 50.9**	**+0.2**
ONAJ				S	**Sb**	**21 12 01.2**	**+0.4**
JFK	**Kawauchi**	**1.01**	**352**	P	**Pn**	**21 11 54.3**	**-0.3**
JFK				S	**Sn**	**21 12 07.1**	**-0.9**
JFT	**Otama**	**1.29**	**334**	P	**Pb**	**21 11 59.8**	**+0.2**
JFT				S	**Sb**	**21 12 16.0**	**+0.2**
JAG	**Ashikaga**	**1.30**	**273**	P	**Pn**	**21 11 58.9**	**+0.4**
JAG				S	**Sn**	**21 12 15.2**	**+0.2**
MJAR	**Matsushiro Arr**	**2.31**	**275**	P	**Pn**	**21 12 13.8**	**+1.5**
	16nm,0.3s,baz=109,slow=9.2,SNR=99						
MJAR				S	**Sb**	**21 12 42.7**	**-2.3**
	16nm,0.3s,baz=85,slow=14,SNR=12						
MJAR				LR	LR	21 13 20.3	
	comp=Z,431nm,20.3s,baz=95,slow=44						
JHJ	**Hachijo jima 2**	**3.40**	**198**	P	**Pn**	**21 12 28.8**	**+1.4**
	14nm,0.3s,baz=132,slow=22,SNR=15						
JHJ				S	**Sn**	**21 13 07.4**	**+0.5**
	38nm,0.3s,baz=271,slow=24,SNR=6.7						
ASAJ	**Asahikawa**	**7.83**	**8**	P	**Pn**	**21 13 28.4**	**+0.2**
	0.9nm,0.3s,baz=203,slow=8.5,SNR=4.6						
ASAJ				S	**Sn**	**21 14 55.7**	**-0.3**
	0.4nm,0.3s,baz=129,slow=31,SNR=3.0						
JNU	**Nakatsue**	**8.98**	**252**	LR	LR	21 17 42.9	
	comp=Z,232nm,19.0s,baz=297,slow=41						
JCJ	**Chichijima**	**9.29**	**174**	P	**Pn**	**21 13 47.3**	**-0.9**
JCJ				S	Sn	21 15 24.3	-7.6
	5.6nm,0.3s,baz=283,slow=23,SNR=5.2						
USRK	**Ussuriysk Ar.**	**10.45**	**321**	P	Pn	21 14 09.2	+5.2
	0.4nm,0.3s,baz=135,slow=13,SNR=12						
USRK				LR	LR	21 17 55.2	
	comp=Z,186nm,18.4s,baz=161,slow=36						
KSRS	**Korea Array**	**10.58**	**280**	P	Pn	21 14 10.8	+4.9
	0.2nm,0.3s,baz=101,slow=15,SNR=4.9						
KSRS				LR	LR	21 18 05.3	
	comp=Z,150nm,19.7s,baz=135,slow=36						
H11N2	**WAKE ISLAND Hy**	**28.06**	**119**	T	T	21 46 40.7	
	baz=312,slow=75,SNR=40						
H11N1	**WAKE ISLAND Hy**	**28.07**	**119**	T	T	21 46 40.3	
	baz=312,slow=75,SNR=40						
H11N3	**WAKE ISLAND Hy**	**28.08**	**119**	T	T	21 46 42.1	
	baz=312,slow=75,SNR=29						
H11S1	**WAKE ISLAND Hy**	**28.74**	**121**	T	T	21 47 30.5	
	baz=314,slow=76,SNR=156						
H11S3	**WAKE ISLAND Hy**	**28.74**	**121**	T	T	21 47 30.3	
	baz=314,slow=76,SNR=42						
H11S2	**WAKE ISLAND Hy**	**28.76**	**121**	T	T	21 47 32.6	
	baz=314,slow=76,SNR=42						
TIXI	**Tiksi**	**35.92**	**353**	LR	LR	21 34 39.6	
	comp=Z,82nm,18.5s,baz=195,slow=38						
ZALV	**Zalesovo Beam**	**42.16**	**313**	P	**P**	**21 19 25.3**	**-0.9**
	0.9nm,0.4s,baz=86,slow=7.9,SNR=5.3						
MKAR	**Makanchi Array**	**44.24**	**303**	P	**P**	**21 19 44.5**	**+1.4**
	0.3nm,0.3s,baz=88,slow=7.6,SNR=5.7						
MKAR				LR	LR	21 38 14.9	
	comp=Z,55nm,18.2s,baz=98,slow=36						
KURBB	**Kurchatov Arra**	**46.19**	**308**	P	**P**	**21 19 57.9**	**-0.6**
	1.5nm,0.3s,baz=82,slow=7.9,SNR=20						
ILAR	**Eielson Array**	**50.21**	**32**	P	**P**	**21 20 29.9**	**+0.6**
	1.1nm,0.8s,baz=268,slow=6.7,SNR=10.0						
INK	**Inuvik**	**55.11**	**27**	P	**P**	**21 21 05.9**	**+0.5**
	0.9nm,0.6s,baz=310,slow=9.8,SNR=5.3						
WRA	**Warramunga Arr**	**56.36**	**188**	P	**P**	**21 21 13.1**	**-1.8**
	1.9nm,0.9s,baz=5.4,slow=7.1,SNR=10						
ASAR	**Alice Springs**	**60.09**	**188**	P	**P**	**21 21 39.8**	**-1.1**
	0.8nm,0.8s,baz=8.0,slow=7.9,SNR=9.7						
YKA	**Yellowknife Ar**	**64.53**	**30**	P	**P**	**21 22 10.0**	**-0.2**
	0.3nm,0.8s,baz=296,slow=6.7,SNR=6.1						
STKA	**Stephens Creek**	**67.89**	**180**	P	**P**	**21 22 31.8**	**-0.3**
	0.7nm,0.7s,baz=314,slow=13,SNR=2.9						
FINES	**FINESS Array B**	**69.28**	**332**	P	**P**	**21 22 41.7**	**+1.2**
	0.7nm,0.8s,baz=22,slow=12,SNR=3.9						
AKASG	**Malin Array Be**	**74.65**	**322**	LR	LR	21 58 23.5	
	comp=Z,56nm,18.9s,baz=315,slow=38						
NOA	**NORSAR Array B**	**74.69**	**337**	P	P	21 23 17.0	+4.0
	0.4nm,0.7s,baz=43,slow=5.5,SNR=3.2						
NVAR	**Mina Array Bea**	**75.62**	**53**	P	**P**	**21 23 20.0**	**+0.9**
	0.2nm,0.3s,baz=318,slow=4.2,SNR=3.6						
PDAR	**Pinedale Array**	**78.34**	**45**	P	**P**	**21 23 34.0**	**-0.3**
	0.2nm,0.4s,baz=285,slow=1.4,SNR=3.1						
TXAR	**Lajitas Array**	**90.75**	**52**	P	**P**	**21 24 37.6**	**+0.5**
	0.5nm,0.9s,baz=289,slow=3.8,SNR=4.8						

IDC 29 21:16:20.2±3.1,17˚13S×177˚73W,h0km,mb3.3/3, mb1 3.7/3,mb1mx3.5/27,mbtmp3.3/3,Error ellipse: s-maj=369.1km s-min=35.4km az=159.0,Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**45.42**	**259**	P	P	21 24 41.6	+0.4
	0.4nm,0.9s,baz=93,slow=6.9,SNR=4.6						
ASAR	**Alice Springs**	**45.63**	**253**	P	P	21 24 42.1	-0.7
	0.2nm,0.4s,baz=90,slow=8.0,SNR=4.2						
TXAR	**Lajitas Array**	**85.03**	**57**	P	P	21 28 58.3	0.0
	0.3nm,0.7s,baz=217,slow=6.1,SNR=3.8						

NNC 29 21:26:50.9±5.5,37˚45N×72˚16E,h0km,mb3.6,mpv3.2, 2C-2D,Error ellipse: s-maj=44.8km s-min=21.1km az=148.0,Tajikistan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZET	**Dzherino**	**2.96**	**298** ⇓	P	Pn	21 27 38.7	-0.6
	3.5nm,0.3s						
DZET				⇓S	Sn	21 28 17.0	+1.6
	17nm,0.5s						
MNAS	**Manas**	**5.04**	**3** ⇑	P	Pn	21 28 08.8	+1.0
	1.3nm,0.3s						
MNAS				⇑S	Sn	21 29 09.5	+2.7
	3.4nm,0.5s						
KK31	**Karatay Array**	**5.79**	**348**	P	Pn	21 28 17.0	-1.0
	0.7nm,0.3s,baz=162,slow=11,SNR=8.6						
KK31				S	Sn	21 29 23.8	-1.3
	0.3nm,0.3s,baz=148,slow=16,SNR=8.9						

*DDA **29** 21:49:28.1,35˚73N×30˚01E,h14km,Ml3.3*

*ISK **29** 21:49:30.9,35˚92N×30˚04E,h7km,MD3.8*

*CSEM **29** 21:49:31.8±0.6,35˚95N×30˚02E,h2km,ML3.3, Error ellipse: s-maj=15.4km s-min=5.5km az=12.0*

ISC 29 21:49:28.8±1.7,35.72N±0.˚08×30.01E±0.˚03,h15km±10km, n54,σ 1.93/58,Eastern Mediterranean Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AKAS	**Kas**	**0.60**	**327**	*i* P	**Pg**	**21 49 40.1**	**-0.6**
AKAS				*i* S	**Sb**	**21 49 48.6**	**-1.0**
AKAS	**Kas**	**0.60**	**327**	P	**Pg**	**21 49 40.1**	**-0.6**
AKAS				S	**Sb**	**21 49 48.6**	**-1.0**
ELL	**Elmali**	**1.03**	**356**	*e*Pg	**Pb**	**21 49 46.7**	**-1.7**
ELL	**Elmali**	**1.03**	**356**	*e*Pg	**Pb**	**21 49 46.7**	**-1.7**
FETY	**Fethiye**	**1.18**	**321**	*e*PG	**Pg**	**21 49 51.6**	**+0.1**
FETY				*e*SG	**Sn**	**21 50 06.6**	**0.0**
FETY	**Fethiye**	**1.18**	**321**	*e*Pg	**Pg**	**21 49 51.6**	**+0.1**
FETY				*e*Sg	**Sn**	**21 50 06.6**	**0.0**
KORT	**Korkueli**	**1.30**	**12**	*i* P	**Pb**	**21 49 52.6**	**-0.5**
KORT				*i* S	**Sg**	**21 50 15.2**	**+4.3**
KORT	**Korkueli**	**1.30**	**12**	P	**Pb**	**21 49 52.6**	**-0.5**
GLHS	**Glhisar (BURDU**	**1.49**	**344**	*e*Pn	**Pg**	**21 49 56.2**	**-1.2**
GLHS	**Glhisar (BURDU**	**1.49**	**344**	*e*Pn	**Pg**	**21 49 56.2**	**-1.2**
DALY	**Dalyan (Mu˘la**	**1.54**	**315**	*e*PN	**Pg**	**21 49 57.4**	**-1.1**
DALY	**Dalyan (Mu˘la**	**1.54**	**315**	*e*Pn	**Pg**	**21 49 57.4**	**-1.1**
TURN	**Turunc**	**1.61**	**316**	*i* P	**Pg**	**21 50 00.9**	**+1.1**
TURN				*i* S	**Sg**	**21 50 21.0**	**+0.2**
TURN	**Turunc**	**1.61**	**316**	P	**Pg**	**21 50 00.9**	**+1.1**
TURN				S	**Sg**	**21 50 21.0**	**+0.2**
SUTC	**Sutluce-Ispart**	**1.92**	**24**	*e*PN	**Pb**	**21 50 02.8**	**-0.9**
SUTC	**Sutluce-Ispart**	**1.92**	**24**	*e*Pn	**Pb**	**21 50 02.8**	**-0.9**
GAZI	**Gazipasa**	**1.94**	**74**	*i* P	**Pb**	**21 50 03.4**	**-0.5**
GAZI				*i* S	**Sb**	**21 50 27.5**	**-0.4**
YER	**Yerkesik**	**1.98**	**316**	*e*PN	**Pb**	**21 50 04.1**	**-0.5**
YER	**Yerkesik**	**1.98**	**316**	*e*Pn	**Pb**	**21 50 04.1**	**-0.5**
ISP	**Isparta**	**2.14**	**11**	*e*PN	**Pb**	**21 50 05.2**	**-2.1**
ISP	**Isparta**	**2.14**	**11**	*e*Pn	**Pb**	**21 50 05.2**	**-2.1**
DENT	**Denizli**	**2.17**	**339**	*e*PN	**Pb**	**21 50 06.1**	**-1.8**
DENT	**Denizli**	**2.17**	**339**	*e*Pn	**Pb**	**21 50 06.1**	**-1.8**
ERMK	**Ermenek**	**2.52**	**68**	*i* P	**Pb**	**21 50 14.4**	**+0.4**
ERMK				*i* S	**Sg**	**21 50 49.0**	**-0.9**
ERMK	**Ermenek**	**2.52**	**68**	P	**Pb**	**21 50 14.4**	**+0.4**
AYDN	**Tasoluk**	**2.58**	**319**	*i* P	**Pn**	**21 50 11.2**	**+1.1**
AYDN				*i* S	**Sb**	**21 50 45.9**	**-0.5**
AYDN	**Tasoluk**	**2.58**	**319**	P	**Pn**	**21 50 11.2**	**+1.1**
KHL	**Karahalli**	**2.62**	**352**	*e*PN	**Pn**	**21 50 12.2**	**+1.4**
KHL	**Karahalli**	**2.62**	**352**	*e*Pn	**Pn**	**21 50 12.2**	**+1.4**
KHAL	**Karahalli**	**2.67**	**351**	*i* P	**Pn**	**21 50 11.1**	**-0.4**
KHAL	**Karahalli**	**2.67**	**351**	P	**Pn**	**21 50 11.1**	**-0.4**
KMER	**Konya-Meram**	**2.79**	**42**	*i* P	**Pb**	**21 50 16.1**	**-2.3**
KMER	**Konya-Meram**	**2.79**	**42**	P	**Pb**	**21 50 16.1**	**-2.3**
AYDB	**Zeytinkoy-Aydi**	**2.79**	**323**	*e*PN	**Pn**	**21 50 14.5**	**+1.4**
AYDB	**Zeytinkoy-Aydi**	**2.79**	**323**	*e*Pn	**Pn**	**21 50 14.5**	**+1.4**
KONT	**Konya--Tatoy**	**2.91**	**40**	*e*PN	**Pn**	**21 50 16.7**	**+2.0**
KONT	**Konya--Tatoy**	**2.91**	**40**	*e*Pn	**Pn**	**21 50 16.7**	**+2.0**
KULA	**Kula-Manisa**	**2.99**	**339**	*e*PN	**Pn**	**21 50 17.7**	**+2.0**
KULA	**Kula-Manisa**	**2.99**	**339**	*e*Pn	**Pn**	**21 50 17.7**	**+2.0**
IKL	**Isikli**	**3.03**	**79**	*e*PN	**Pb**	**21 50 19.9**	**-2.5**
IKL	**Isikli**	**3.03**	**79**	*e*Pn	**Pb**	**21 50 19.9**	**-2.5**
BOLV	**Bolvadin**	**3.08**	**14**	*i* P	**Pb**	**21 50 21.7**	**-1.7**
KDHN	**Kadinhani**	**3.26**	**30**	*i* P	**Pn**	**21 50 20.9**	**+1.4**
KDHN	**Kadinhani**	**3.26**	**30**	P	**Pn**	**21 50 20.9**	**+1.4**
DEMI	**Demirci**	**3.47**	**343**	*i* P	Pb	21 50 25.6	-4.3
DEMI	**Demirci**	**3.47**	**343**	P	Pb	21 50 25.6	-4.4
KERG	**Konya-Eregli**	**3.72**	**62**	*i* P	Pb	21 50 29.6	-4.7
KERG	**Konya-Eregli**	**3.72**	**62**	P	Pb	21 50 29.6	-4.7
TVSB	**Tavsanli**	**3.75**	**354**	*e*PN	**Pn**	**21 50 28.2**	**+2.0**
TVSB	**Tavsanli**	**3.75**	**354**	*e*Pn	**Pn**	**21 50 28.2**	**+2.0**
ESKT	**Eskisehir**	**3.85**	**10**	*i* P	**Pn**	**21 50 29.7**	**+2.1**
SEYT	**Eskypehyr**	**3.85**	**10**	P	**Pn**	**21 50 29.7**	**+2.1**
BORA	**Eskisehir**	**4.17**	**5**	*i* P	Pn	21 50 34.7	+2.7
BORA	**Eskisehir**	**4.17**	**5**	P	Pn	21 50 34.7	+2.8

*ISCJB **29** 22:07:34.9±0.3,43˚21N±0.˚02×10˚73E±0.˚03,h25km±3km, Error ellipse: s-maj=4.1km s-min=3.2km az=27.6*

*CSEM **29** 22:07:34.8±0.1,43˚21N×10˚77E,h10km,ML2.8/16, Error ellipse: s-maj=3.0km s-min=2.1km az=24.0*

*LDG **29** 22:07:35.9±0.1,43˚22N×10˚83E,h10km,Ml2.5/15,Error ellipse: s-maj=1.9km s-min=1.1km az=57.0*

*ROM **29** 22:07:35.4±0.1,43˚21N×10˚84E,h7km±1km,Md2.8/19, Ml2.2/20, Error ellipse: s-maj=1.6km s-min=0.9km az=64.0*

*GEN **29** 22:07:36.0,43˚22N×10˚78E,h2km,ML2.0*

ISC 29 22:07:34.4±0.8,43˚23N±0.˚02×10.80E±0.˚02,h18km±2km, n92,σ 1.93/128,Central Italy

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SASS	**Sassa´´´´**	**0.08**	**291**	Pg	**Pg**	**22 07 38.5**	**+0.5**
SASS				Sg	**Sg**	**22 07 40.9**	**+0.5**
	4μm,0.5s						
SASS	**Sassa´´´´**	**0.08**	**291**	Pg	**Pg**	**22 07 38.5**	**+0.5**
SASS				Sg	**Sg**	**22 07 40.9**	**+0.5**
	4μm,0.5s						
TRIF	**Trifonti**	**0.14**	**145**	Pg	**Pb**	**22 07 38.1**	**+0.5**
TRIF				Sg	**Sb**	**22 07 40.0**	**+0.5**
	4μm,0.4s						
TRIF	**Trifonti**	**0.14**	**145**	Pg	**Pb**	**22 07 38.1**	**+0.5**
TRIF				Sg	**Sb**	**22 07 40.0**	**+0.5**
	4μm,0.4s						
CASP	**Castiglione de**	**0.44**	**173**	Pg	**Pb**	**22 07 44.2**	**+0.5**
CASP				Sg	**Sb**	**22 07 50.4**	**+0.4**
	334nm,0.8s						
CASP	**Castiglione de**	**0.44**	**173**	Pg	**Pb**	**22 07 44.2**	**+0.5**
CASP				Sg	**Sb**	**22 07 50.4**	**+0.4**
	334nm,0.8s						
ARCI	**Arcidosso**	**0.62**	**127**	Pg	**Pg**	**22 07 47.0**	**+0.1**
ARCI				Sg	**Sg**	**22 07 55.1**	**-0.1**
	154nm,0.4s						
ARCI	**Arcidosso**	**0.62**	**127**	Pg	**Pg**	**22 07 47.0**	**+0.1**
ARCI				Sg	**Sg**	**22 07 55.1**	**-0.1**
	154nm,0.4s						
MAIM	**Mastiano**	**0.72**	**342**	Pg	**Pn**	**22 07 50.1**	**+0.4**
MAIM				Sg	**Sn**	**22 08 01.1**	**+0.8**
	56nm,0.5s						
MAIM	**Mastiano**	**0.72**	**342**	P	**Pg**	**22 07 49.8**	**+1.2**
MAIM	**Mastiano**	**0.72**	**342**	Pg	**Pn**	**22 07 50.1**	**+0.4**
MAIM				S	**Sb**	**22 07 58.8**	**+0.8**
MAIM				Sg	**Sn**	**22 08 01.1**	**+0.8**
	56nm,0.5s						
MCIV	**Monte Civitell**	**0.79**	**125**	Pg	**Pg**	**22 07 50.0**	**+0.1**
MCIV				Sg	**Sg**	**22 08 00.7**	**+0.4**
	97nm,0.2s						
MCIV	**Monte Civitell**	**0.79**	**125**	Pg	**Pg**	**22 07 50.0**	**+0.1**
MCIV				Sg	**Sg**	**22 08 00.7**	**+0.4**
	97nm,0.2s						

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
POPM	**Popiglio**	**0.82**	**358**	P	**Pg**	**22 07 51.4**	**+1.0**
MAON	**Monte Argentar**	**0.84**	**163**	Pg	**Pn**	**22 07 51.8**	**+0.5**
MAON				Sg	**Sn**	**22 08 03.3**	**+0.2**
	158nm,0.7s						
MAON	**Monte Argentar**	**0.84**	**163**	Pg	**Pn**	**22 07 51.8**	**+0.5**
MAON				Sg	**Sn**	**22 08 03.3**	**+0.2**
	158nm,0.7s						
BDI	**Bagni Di Lucca**	**0.85**	**350**	Pg	**Pn**	**22 07 52.3**	**+0.8**
BDI				Sg	**Sn**	**22 08 04.3**	**+0.8**
	167nm,1.4s						
BDI	**Bagni Di Lucca**	**0.85**	**350**	Pg	**Pn**	**22 07 52.3**	**+0.8**
BDI				Sg	**Sn**	**22 08 04.3**	**+0.8**
	167nm,1.4s						
CAFI	**Castiglion Fio**	**0.86**	**83**	Pg	**Pb**	**22 07 51.1**	**+0.2**
CAFI				Sg	**Sn**	**22 08 03.7**	**-0.1**
	97nm,1.5s						
CAFI	**Castiglion Fio**	**0.86**	**83**	Pg	**Pb**	**22 07 51.1**	**+0.2**
CAFI				Sg	**Sn**	**22 08 03.7**	**-0.1**
	97nm,1.5s						
SACS	**San Casciano d**	**0.90**	**115**	Pg	Pn	**22 07 52.4**	**+0.1**
	59nm,1.0s						
VMG	**Vicchio**	**0.91**	**36**	Pg	Pn	**22 07 53.1**	**+0.7**
	76nm,0.4s						
VMG	**Vicchio**	**0.91**	**36**	Pg	Pn	**22 07 53.1**	**+0.7**
	76nm,0.4s						
ASQU	**Asqua**	**0.92**	**52**	Pg	**Pg**	**22 07 52.6**	**+0.2**
ASQU				Sg	**Sn**	**22 08 05.4**	**+0.1**
	55nm,0.4s						
ASQU	**Asqua**	**0.92**	**52**	Pg	**Pg**	**22 07 52.6**	**+0.2**
ASQU				Sg	**Sn**	**22 08 05.4**	**+0.1**
	55nm,0.4s						
SEI	**Scarperia**	**0.92**	**26**	Pg	Pn	**22 07 53.6**	**+1.1**
	299nm,0.8s						
SEI	**Scarperia**	**0.92**	**26**	Pg	Pn	**22 07 53.6**	**+1.1**
	299nm,0.8s						
CRE	**Caprese Michel**	**0.93**	**65**	Pg	Pn	**22 07 52.9**	**+0.2**
CRE				Sg	**Sn**	**22 08 05.3**	**-0.3**
	117nm,0.8s						
CRE	**Caprese Michel**	**0.93**	**65**	Pg	Pn	**22 07 52.9**	**+0.2**
CRE				Sg	**Sn**	**22 08 05.3**	**-0.3**
	117nm,0.8s						
LATE	**Laterza**	**0.96**	**129**	Pg	Pn	**22 07 54.0**	**+0.9**
	129nm,0.5s						
LATE	**Laterza**	**0.96**	**129**	Pg	Pn	**22 07 54.0**	**+0.9**
	129nm,0.5s						
FNVD	**Fontana Vidola**	**0.97**	**14**	Pg	Pg	**22 07 54.7**	**+1.4**
	108nm,0.9s						
FNVD	**Fontana Vidola**	**0.97**	**14**	Pg	Pg	**22 07 54.7**	**+1.4**
	108nm,0.9s						
SARO	**Sassorosso**	**1.00**	**344**	P	**Pg**	**22 07 54.6**	**+0.8**
MGAB	**Montegabbione**	**1.02**	**108**	Pg	Pn	**22 07 54.0**	**+0.2**
	45nm,0.8s						
MGAB	**Montegabbione**	**1.02**	**108**	Pg	Pn	**22 07 54.0**	**+0.2**
	45nm,0.8s						
SFI	**Santa Sofia**	**1.02**	**48**	Pg	Pg	**22 07 54.5**	**+0.2**
	73nm,1.0s						
SFI	**Santa Sofia**	**1.02**	**48**	Pg	Pg	**22 07 54.5**	**+0.2**
	73nm,1.0s						
BADI	**Badiali**	**1.09**	**75**	Pg	Pg	**22 07 55.6**	**0.0**
	55nm,0.7s						
BADI	**Badiali**	**1.09**	**75**	Pg	Pg	**22 07 55.6**	**0.0**
	55nm,0.7s						
PARC	**Parchiule**	**1.13**	**68**	Pg	Pg	**22 07 56.3**	**-0.1**
	39nm,0.6s						
PARC	**Parchiule**	**1.13**	**68**	Pg	Pg	**22 07 56.3**	**-0.1**
	39nm,0.6s						
ATTE	**AVT- Monte Tez**	**1.14**	**91**	Pg	Pg	**22 07 56.2**	**-0.3**
	50nm,0.9s						
ATTE	**AVT- Monte Tez**	**1.14**	**91**	Pg	Pg	**22 07 56.2**	**-0.3**
	50nm,0.9s						
ATVO	**AVT- Monte Val**	**1.19**	**82**	Pg	Pb	**22 07 56.7**	**+0.3**

ISC 29 22:13:40.4±1.6, 10°82'N±0'.05×62°25'W±0'.05, h116km±11km, n10, σ1§82/18, 1D, Near coast of Venezuela

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TCE	**Chacachacare**	**0.51**	**104**	*eS*	**Sn**	**22 14 10.3**	**-0.8**
TCE	**Chacachacare**	**0.51**	**104**	*eS*	**Sn**	**22 14 10.7**	**-0.4**
TRN	**Trinidad (W)**	**0.85**	**101**	*eP*	**Pn**	**22 14 02.0**	**+1.4**
TRN				*eS*	**Sn**	**22 14 13.6**	**-2.3**
GUNV	**Guanoco**	**0.94**	**226**	*eP*	**Pn**	**22 14 03.5**	**+2.0**
GUNV				*eS*	**Sn**	**22 14 17.4**	**+0.1**
CRUV	**Carupano**	**0.98**	**262**	*eP*	**Pn**	**22 14 02.0**	**+0.2**
CRUV				*eS*	**Sn**	**22 14 15.7**	**-2.3**
GRW	**Mount Saint Ca**	**1.46**	**23**	*eP*	**Pn**	**22 14 08.9**	**+1.7**
GRW				*eS*	**Sn**	**22 14 25.0**	**-2.5**
GRSS	**Sisters**	**1.60**	**23**	*eP*	**Pn**	**22 14 10.5**	**+1.7**
GRSS				*eS*	**Sn**	**22 14 28.8**	**-1.6**
GURV	**El Guri**	**3.15**	**195**	*eP*	**Pn**	**22 14 30.4**	**+1.8**
GURV				*eS*	**Sn**	**22 15 04.4**	**-1.3**
CUPV	**Cœpira**	**3.56**	**258§**	*eP*	**Pn**	**22 14 35.5**	**+1.4**
CUPV				*eS*	**Sn**	**22 15 14.1**	**-1.4**
LUEV	**Luepa**	**5.00**	**171**	*eP*	**Pn**	**22 14 54.2**	**+0.6**
LUEV				*eS*	**Sn**	**22 15 48.1**	**-2.3**

ISN 29 22:18:24.9±1.2, 34°.81N×44°.79E, h0km±6km, ML3.1
ISCJB 29 22:18:28.4±0.6, 34°.81N±0'.04×44°.78E±0'.06, h33km, Error ellipse: s-maj=8.0km s-min=5.5km az=150.9
CSEM 29 22:18:28.5, 34°.80N×44°.79E, h21km, ML3.1
TEH 29 22:18:28.5, 34°.80N×44°.79E, h21km, ML3.1
ISC 29 22:18:30.7±2.6, 34°.8N±0'.1×44°.8E±0°.1, h35km, n18, σ1§73/16, Iraq

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
IKRK	**Kirkuk**	**0.68**	**329**	*ePg*	Pn	22 18 41.0	-2.8
IKRK				*eSg*	Sn	22 18 51.0	-2.2
IGHG	**Ghaleghazi**	**1.57**	**108**	*ePn*	**Pn**	**22 18 55.2**	**-1.1**
IGHG				*eAMB*	AMB	22 19 25.9	
	comp=Z,5μm,0.2s						
IGHG	**Ghaleghazi**	**1.57**	**108**	*ePn*	**Pn**	**22 18 55.2**	**-1.1**
BHD	**Baghdad**	**1.58**	**192**	*ePn*	Pn	22 18 54.0	-2.2
BHD				*i* Sn	Sn	22 19 14.0	-1.3
IVIS	**Veis**	**1.74**	**99**	*ePn*	**Pn**	**22 18 57.4**	**-1.2**
IVIS				*eSg*	**Sn**	**22 19 22.4**	**+2.8**
IVIS				*eAMB*	AMB	22 19 24.9	
	comp=Z,3μm,0.2s						
IVIS	**Veis**	**1.74**	**99**	*ePn*	**Pn**	**22 18 57.4**	**-1.2**
IVIS				*eSg*	**Sn**	**22 19 22.4**	**+2.8**
ILIN	**Lien**	**1.81**	**86**	*ePn*	**Pn**	**22 18 58.3**	**-1.3**
ILIN				*eAMB*	AMB	22 19 28.7	
	comp=Z,3μm,0.2s						
ILIN	**Lien**	**1.81**	**86**	*ePn*	**Pn**	**22 18 58.3**	**-1.3**
MSL	**Mosul**	**2.08**	**320**	*ePn*	Pn	22 19 01.0	-2.0
MSL				*i* Sn	Sn	22 19 28.0	+0.3
HAKT	**HAKKARI**	**2.87**	**343**	*i* P	**Pn**	**22 19 13.9**	**-0.2**
SIRN	**S¨–rnak**	**3.28**	**325**	*i* P	Pn	22 19 25.6	+5.9
SIRN				*i* S	Sn	22 20 11.1	+14
IBST	**Bostanabad**	**3.35**	**30**	*ePn*	**Pn**	**22 19 20.2**	**-0.6**
IBST				*eAMB*	AMB	22 20 23.5	
	comp=N,133nm,0.4s						
IBST	**Bostanabad**	**3.35**	**30**	*ePn*	**Pn**	**22 19 20.2**	**-0.6**
ISHB	**Shabestar**	**3.53**	**11**	*ePn*	**Pn**	**22 19 21.7**	**-1.5**
ISHB				*eAMB*	AMB	22 19 34.7	
	comp=Z,257nm,0.3s						
ISRB	**Sarab**	**3.81**	**37**	*ePn*	**Pn**	**22 19 25.7**	**-1.4**
ISRB				*eAMB*	AMB	22 19 45.0	
	comp=Z,153nm,0.3s						
ISRB	**Sarab**	**3.81**	**37**	*ePn*	**Pn**	**22 19 25.7**	**-1.4**
IRAZ	**Razeghan**	**4.28**	**81**	*ePn*	**Pn**	**22 19 31.4**	**-2.1**
IRAZ				*eAMB*	AMB	22 20 55.7	
	comp=Z,117nm,0.4s						
IRAZ	**Razeghan**	**4.28**	**81**	*ePn*	**Pn**	**22 19 31.4**	**-2.1**

NIED 29 22:19:00, 38°.80N×142°.10E, h47km, Mw5.1 Best double couple: M0 5.91000×10^16 NP1:φs184.00000°, δ21.00000°, λ73.00000°. NP2:φs22.00000°, δ69.00000°, λ96.00000°.
BJI 29 22:19:27.1, 38°.72N×142°.32E, h44km, mb5.3/83, mB5.1/52, Ms4.8/88, Ms7 4.7/78
MOS 29 22:19:30.1±1.0, 38°.93N×142°.00E, h46km, mb5.6/99, MS4.8/31, Error ellipse: s-maj=6.7km s-min=4.3km az=97.6
JMA 29 22:19:30.9±0.1, 38°.84N×142°.11E, h44km±2km, M5.2 Broadband fault plane solution: P waves. NP1: φs15.00000°, δ62.00000°, λ96.00000°. NP2:φs183.00000°, δ28.00000°, λ79.00000°. Principal axes: T Plg72.0000°, Azm298.0000°; N Plg5.0000°, Azm193.0000°; P Plg17.0000°, Azm101.0000°;
JMA Felt III J1.
ISCJB 29 22:19:31.4±0.3, 38°.84N±0'.02×141°.95E±0'.02, h55km±2km, mb5.2/310, MS4.7/68 Error ellipse: s-maj=3.5km s-min=2.4km az=149.4
IDC 29 22:19:32.5±1.5, 38°.84N×142°.01E, h55km±13km, mb4.8/38, mb1 4.9/44, mb1mx4.7/63, mbtmp5.0/44, MS4.5/28, Ms1 4.5/28, ms1mx4.3/40, Error ellipse: s-maj=11.5km s-min=8.3km az=115.0
GCMT 29 22:19:33.4±0.2, 38°.92N×142°.19E, h50km, MW5.2/101, Moment Tensor Solution. s68,c114; s101,c191; Duration: 1§0 Moment tensor: Scale 10^17Nm; Mrr0.66±.02; Mθθ-0.03±.01; Mφφ-0.63±.01; Mrθ0.20±.01; Mθφ-0.11±.01; Mφr0.40±.01; Best double couple: M0 0.80000×10^17 NP1:φs19.00000°, δ62.00000°, λ99.00000°. NP2:φs181.00000°, δ29.00000°, λ74.00000°. Principal axes: T 0.8110, Plg72.0000°, Azm308.0000°; N -0.0230, Plg8.0000°, Azm195.0000°; P -0.7880, Plg17.0000°, Azm103.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.
NEIC 29 22:19:33.4±0.4, 38°.86N×141°.92E, h59km±3km, mb5.2/186 Error ellipse: s-maj=3.8km s-min=2.5km az=138.0
NEIC Recorded [3 JMA] in Iwate and Miyagi.
ISC 29 22:19:31.1±0.3, 38°.86N±0'.03×142°.07E±0'.03, h44km±2km, h43km; pP-P, n938, σ1§44/1032, mb5.3/329, MS4.8/71, 114C-44D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**0.38**	**305**	⇓P	**Pn**	**22 19 41.0**	**+0.4**
OFUJ				S	Sn	**22 19 48.0**	**+0.7**
JMK	**Ichinoseki**	**0.67**	**278**	⇓P	**Pn**	**22 19 44.6**	**+0.4**
JMK				S	**Sn**	**22 19 54.5**	**+0.8**
JIO	**Ouri**	**0.70**	**234**	⇓P	**Pn**	**22 19 44.5**	**-0.1**
JIO				S	**Sn**	**22 19 53.7**	**-0.6**
JOM	**Ohasama**	**0.86**	**315**	⇓P	**Pn**	**22 19 47.4**	**+0.6**
JOM				S	**Sn**	**22 19 58.8**	**+0.6**
JOU	**Okura**	**1.21**	**246**	⇓P	**Pn**	**22 19 51.9**	**+0.3**
JRG	**Rokugo**	**1.24**	**296**	⇓P	**Pn**	**22 19 52.8**	**+0.8**
JYK	**Kaneyama**	**1.34**	**273**	⇓P	**Pn**	**22 19 54.0**	**+0.7**
JMM	**Marumori**	**1.41**	**226**	⇓P	**Pn**	**22 19 54.1**	**-0.3**
JMM				S	**Sn**	**22 20 11.4**	**-0.4**
ERM	**Erimo**	**3.26**	**14**	*ceP*	**Pn**	**22 20 20.4**	**+0.8**
ERM				pmax	pmax		
	comp=Z,288nm,1.0s						
ERM	**Erimo**	**3.26**	**14**	*ePn*	**Pn**	**22 20 20.8**	**+1.2**
MAJO	**Matsushiro**	**3.84**	**234**	*d iP*	**Pn**	**22 20 29.8**	**+2.0**
MAJO	**Matsushiro**	**3.84**	**234**	*ePn*	**Pn**	**22 20 29.7**	**+2.0**
MAT	**Matsushiro**	**3.84**	**234**	P	**Pn**	**22 20 29.5**	**+1.8**
MAT				S	**Sn**	**22 21 16.3**	**+4.7**
MJAR	**Matsushiro Arr**	**3.84**	**234**	P	**Pn**	**22 20 29.6**	**+1.9**
	comp=Z,39nm,0.3s,baz=37,slow=12,SNR=201						
MJAR				LR	LR	22 22 09.5	
	comp=Z,7μm,19.9s,baz=65,slow=42						
MJB9	**Matsu-Tunnel**	**3.84**	**234**	*ePn*	**Pn**	**22 20 29.8**	**+2.0**
ASAJ	**Asahikawa**	**5.26**	**4**	P	**Pn**	**22 20 48.0**	**+0.8**
	comp=Z,9.0nm,0.3s,baz=214,slow=10,SNR=27						
ASAJ				S	**Sn**	**22 21 50.0**	**+3.4**
	comp=Z,8.9nm,0.3s,baz=151,slow=20,SNR=4.6						
INU	**Inuyama**	**5.35**	**231**	*ePn*	**Pn**	**22 20 50.6**	**+2.2**
YUK	**Yuzh-Kuril'sk**	**5.90**	**28**	*eP*	**Pn**	**22 20 54.9**	**-1.0**
YUK				*eS*	**Sn**	**22 21 58.4**	**-3.8**
YUK				pmax	pmax		
	comp=E,122nm,0.3s						
YUK				pmax	pmax		
	comp=Z,439nm,0.3s						
YUK				pmax	pmax		
	comp=N,49nm,0.2s						
YUK				MLR	MLR		
	comp=Z,2μm,14.0s						
JHJ2	**Mitsune**	**6.02**	**198**	*ePn*	**Pn**	**22 20 58.8**	**+1.1**
JHJ	**Hachijo jima 2**	**6.02**	**199**	P	**Pn**	**22 20 57.9**	**+0.2**
	comp=Z,51nm,0.3s,baz=344,slow=2.5,SNR=20						
JHJ				S	**Sn**	**22 22 03.1**	**-2.2**
	comp=Z,136nm,0.3s,baz=68,slow=23,SNR=7.2						
SHO	**Shikotan**	**6.15**	**34**	*eP*	**Pn**	**22 20 56.6**	**-2.8**
SHO				*eS*	**Sn**	**22 22 02.7**	**-5.7**
SHO				pmax	pmax		
	comp=Z,225nm,0.9s						
SHO				pmax	pmax		
	comp=E,101nm,0.5s						
SHO				pmax	pmax		
	comp=N,91nm,0.3s						
KUR	**Kuril'sk**	**7.69**	**32**	⇓*i*P	**Pn**	**22 21 20.3**	**-0.1**
KUR				*i* S	**Sn**	**22 22 40.7**	**-5.4**
KUR				pmax	pmax		
	comp=Z,100nm,0.6s						
KUR				pmax	pmax		
	comp=Z,529nm,5.1s						
KUR				smax	smax		
	comp=E,277nm,0.7s						
KUR				smax	smax		
	comp=N,112nm,0.8s						
KUR				pmax	pmax		
	comp=N,1μm,5.8s						
KUR				pmax	pmax		
	comp=E,1μm,5.8s						
YSS	**Yuzh-Sakhalins**	**8.10**	**3**	*eP*	**Pn**	**22 21 26.9**	**+0.8**
YSS				*eS*	**Sn**	**22 22 55.5**	**-0.8**
YSS				pmax	pmax		
	comp=Z,150nm,1.1s						
YSS				smax	smax		
	comp=E,130nm,1.1s						
YSS				smax	smax		
	comp=N,130nm,1.3s						
YSS				MLR	MLR		
	comp=Z,1μm,16.0s						
YSS				MLR	MLR		
	comp=N,2μm,21.0s						
YSS				MLR	MLR		
	comp=E,2μm,19.0s						
YSS	**Yuzh-Sakhalins**	**8.10**	**3**	*ePn*	**Pn**	**22 21 26.7**	**+0.6**
MSHR	**Mys Shultsa**	**9.08**	**298**	*ceP*	**Pn**	**22 21 40.4**	**+0.9**
USRK	**Ussuriysk Ar.**	**9.25**	**308**	P	**Pn**	**22 21 45.4**	**+3.6**
	comp=E,7.4nm,0.3s,baz=117,slow=15,SNR=106						
USRK				LR	LR	22 25 09.7	
	comp=E,4μm,19.6s,baz=116,slow=37						
JNU	**Nakatsue**	**10.72**	**241**	P	**Pn**	**22 22 04.3**	**+2.3**
	comp=E,1.7nm,0.3s,baz=57,slow=8.0,SNR=17						
JNU				LR	LR	22 26 29.5	
	comp=E,4μm,20.9s,baz=35,slow=39						
JNU	**Nakatsue**	**10.72**	**241**	*ePn*	**Pn**	**22 22 03.7**	**+1.6**
HABR	**Khabarovsk**	**10.86**	**334**	*eP*	**Pn**	**22 22 01.8**	**-2.1**
HABR				*eS*	**Sn**	**22 24 01.5**	**-2.5**
HABR				pmax	pmax		
	comp=N,51nm,2.1s						
HABR				pmax	pmax		
	comp=E,88nm,2.1s						
HABR				pmax	pmax		
	comp=Z,60nm,2.1s						
HABR				MLR	MLR		
	comp=Z,1μm,11.0s						
MDJ	**Mudanjiang**	**10.95**	**306**	P	Pn	22 22 10.5	+5.4
MDJ				S	Sn	22 24 16.0	+10
MDJ				pmax	pmax		
	comp=Z,240nm,1.1s						
MDJ				pmax	pmax		
	comp=Z,1μm,5.9s						
MDJ				LR	LR		
	comp=Z,1μm,24.9s						
MDJ				LR	LR		
	comp=Z,2μm,22.5s						
MDJ				LR	LR		
	comp=Z,4μm,22.5s						
MDJ	**Mudanjiang**	**10.95**	**306**	*ePn*	**Pn**	**22 22 07.6**	**+2.5**
	comp=Z,276nm,1.1s						
KSRS	**Korea Array**	**11.23**	**267**	P	**Pn**	**22 22 13.0**	**+4.1**
	comp=Z,2.6nm,0.3s,baz=78,slow=14,SNR=42						
KSRS				LR	LR	22 26 08.6	
	comp=Z,3μm,20.4s,baz=78,slow=35						
KS01	**Wonju Array Si**	**11.25**	**267**	*ePn*	**Pn**	**22 22 11.5**	**+2.3**
KS15	**Wonju Array Si**	**11.26**	**267**	*ePn*	**Pn**	**22 22 11.0**	**+1.6**
KSAR	**Wonju Array Be**	**11.26**	**267**	P	**Pn**	**22 22 13.0**	**+3.6**
KSAR	**Wonju Array Be**	**11.26**	**267**	P	**Pn**	**22 22 13.0**	**+3.6**
CBIJ	**Chichi jima**	**11.73**	**179**	P	**Pn**	**22 22 15.9**	**0.0**
JCJ	**Chichijima**	**11.73**	**179**	P	**Pn**	**22 22 15.9**	**0.0**
	comp=Z,22nm,0.3s,baz=275,slow=19,SNR=10						
TYV	**Tymovskoe**	**12.01**	**2**	*eP*	**Pn**	**22 22 19.8**	**+0.3**
TYV				*e*		22 24 31.0	
TYV				pmax	pmax		
	comp=Z,35nm,1.0s						
TYV				MLR	MLR		
	comp=N,2μm,18.0s						
TYV				MLR	MLR		
	comp=Z,2μm,18.0s						
INCN	**Inchon**	**12.23**	**268**	*ePn*	**Pn**	**22 22 23.5**	**+0.8**
KLR	**Kul'dur**	**12.73**	**328**	P	**Pn**	**22 22 30.0**	**+0.6**
	comp=Z,0.4nm,0.3s,baz=136,slow=12,SNR=93						
KLR				LR	LR	22 27 22.8	
	comp=Z,4μm,19.6s,baz=143,slow=37						
CN2	**Changchun**	**13.43**	**297**	*eP*	**Pn**	**22 22 42.0**	**+3.1**
CN2				*eS*	**Sn**	**22 25 09.3**	**+2.7**
CN2				pmax	pmax		
	comp=Z,70nm,1.4s						
CN2				pmax	pmax		
	comp=Z,1μm,4.0s						
CN2				LR	LR		
	comp=Z,1μm,16.0s						
CN2				LR	LR		
	comp=Z,2μm,16.0s						
CN2				LR	LR		
	comp=Z,2μm,19.0s						
NKL	**Nikolayevsk**	**14.32**	**357**	*eP*	**Pn**	**22 22 49.0**	**-2.0**
NKL				pmax	pmax		
	comp=N,50nm,1.1s						
NKL				pmax	pmax		
	comp=Z,100nm,1.1s						
NKL				MLR	MLR		
	comp=E,1μm,20.0s						
NKL				MLR	MLR		
	comp=N,1μm,15.0s						
NKL				MLR	MLR		
	comp=Z,1μm,15.0s						
SNY	**Shenyang**	**14.41**	**288**	⇑P	**P**	**22 22 57.0**	**-1.2**
SNY				pmax	pmax		
	comp=Z,41nm,1.4s						
SNY				pmax	pmax		
	comp=Z,700nm,4.7s						
SNY				LR	LR		
	comp=Z,890nm,20.6s						
SNY				LR	LR		
	comp=Z,2μm,18.4s						
SNY				LR	LR		
	comp=Z,3μm,19.1s						
PETK	**Petropavlovsk-**	**17.86**	**32**	P	**Pn**	**22 23 33.9**	**-2.2**
	comp=Z,0.1nm,0.3s,baz=205,slow=6.4,SNR=3.1						
PETK				LR	LR	22 31 30.5	
	comp=Z,480nm,19.5s,baz=217,slow=40						
PET	**Petropavlovsk**	**18.20**	**34**	*eP*	Pn	22 23 47.9	+7.7
PET				*eS*	**S**	**22 27 07.1**	**+1.2**
PET				pmax	pmax		
	comp=Z,100nm,13.3s						
PET				pmax	pmax		
	comp=Z,68nm,1.1s						
PET				MLR	MLR		
	comp=Z,700nm,21.0s						
SSE	**Sheshan**	**18.76**	**252**	⇓P	**Pn**	**22 23 48.0**	**+0.8**
SSE				S	**Sn**	**22 27 16.8**	**+0.6**
SSE				pmax	pmax		
	comp=Z,250nm,1.0s						
SSE				pmax	pmax		
	comp=Z,280nm,9.8s						
SSE				LR	LR		
	comp=Z,880nm,16.7s						
SSE				LR	LR		
	comp=Z,770nm,16.7s						
SSE				LR	LR		
	comp=Z,950nm,19.7s						
HIA	**Hailar**	**19.05**	**310**	*eP*	**P**	**22 23 47.4**	**-2.2**
HIA				pmax	pmax		
	comp=Z,68nm,0.9s						
HIA	**Hailar**	**19.05**	**310**	*eP*	**P**	**22 23 47.4**	**-2.2**
	comp=Z,68nm,0.9s						
TIA	**Tai'an**	**19.94**	**270**	⇑P	**P**	**22 23 57.8**	**-1.6**
TIA				sP	**sP**	**22 24 18.0**	**+2.6**
TIA				S	**S**	**22 27 35.5**	**-5.9**
TIA				pmax	pmax		
	comp=Z,160nm,0.9s						
TIA				LR	LR		
	comp=Z,1μm,13.5s						
TIA				LR	LR		
	comp=Z,1μm,13.5s						
TIA				LR	LR		
	comp=Z,2μm,20.2s						
BJI	**Beijing**	**20.01**	**282**	P	**P**	**22 23 57.8**	**-2.3**
BJI				S	**S**	**22 27 36.0**	**-6.6**
BJI				pmax	pmax		
	comp=Z,21nm,1.3s						
BJI				pmax	pmax		
	comp=Z,350nm,3.4s						
BJI				LR	LR		
	comp=Z,370nm,10.8s						
BJI				LR	LR		
	comp=Z,2μm,14.4s						
BJI				LR	LR		
	comp=Z,2μm,29.8s						
BJT	**Baijiatuan**	**20.02**	**282**	*eP*	**P**	**22 23 58.8**	**-1.4**
BJT				pmax	pmax		
	comp=Z,78nm,0.8s						
BJT	**Baijiatuan**	**20.02**	**282**	*eP*	**P**	**22 23 58.8**	**-1.4**
	comp=Z,78nm,0.8s						
NJ2	**Nanjing**	**20.07**	**257**	*eP*	**P**	**22 23 58.8**	**-1.9**
NJ2				S	Sn	22 27 48.5	+0.9
NJ2				pmax	pmax		
	comp=Z,97nm,0.5s						
NJ2				LR	LR		
	comp=Z,1μm,11.4s						
NJ2				LR	LR		
	comp=Z,1μm,10.3s						
NJ2				LR	LR		
	comp=Z,2μm,17.3s						
CLNS	**Chul'man**	**21.25**	**333**	*eP*	**P**	**22 24 12.9**	**-0.5**
CLNS				*e*		22 24 34.4	
CLNS				*eS*	**S**	**22 28 07.6**	**+0.6**
CLNS				*e*		22 28 16.2	
CLNS				*eSS*	**SnSn**	**22 28 34.0**	**+2.8**
CLNS				*e*		22 35 33.8	
CLNS				pmax	pmax		
	comp=N,121nm,1.1s						
CLNS				pmax	pmax		
	comp=Z,151nm,1.0s						
CLNS				pmax	pmax		
	comp=E,66nm,1.1s						
CLNS				pmax	pmax		
	comp=N,56nm,0.9s						
CLNS				pmax	pmax		
	comp=Z,50nm,0.9s						
CLNS				pmax	pmax		
	comp=E,84nm,1.1s						
CLNS				smax	smax		
	comp=E,290nm,9.2s						
CLNS				smax	smax		
	comp=N,207nm,9.6s						
CLNS				MLR	MLR		
	comp=Z,2μm,16.0s						
CLNS				MLR	MLR		
	comp=N,1μm,16.0s						
CLNS				MLR	MLR		
	comp=E,323nm,13.0s						
MA2	**Magadan**	**21.46**	**12**	P	**P**	**22 24 15.8**	**+0.3**
	comp=E,104nm,1.0s,baz=221,slow=10,SNR=15						
MA2				LR	LR	22 32 17.6	
	comp=E,524nm,21.7s,baz=214,slow=36						
MA2	**Magadan**	**21.46**	**12**	P	**P**	**22 24 15.8**	**+0.3**
MA2				pmax	pmax		
	comp=Z,115nm,1.1s						
MA2				MLR	MLR		
	comp=Z,524nm,21.7s						
TATO	**Taipei**	**22.22**	**238**	*eP*	**P**	**22 24 24.4**	**+0.5**
	comp=Z,101nm,0.9s						
YHNB	**Yeheng**	**22.51**	**237**	*eP*	**P**	**22 24 25.4**	**-1.8**
	comp=Z,150nm,1.5s						
NACB	**Ninganchiao**	**22.71**	**236**	*eP*	**P**	**22 24 26.3**	**-2.9**
	comp=Z,53nm,0.8s						
TIY	**Taiyuan**	**23.25**	**277**	*eP*	**P**	**22 24 33.8**	**-0.9**
TIY				SS	Sn	22 29 27.5	+24
TIY				pmax	pmax		
	comp=Z,78nm,0.7s						
TIY				LR	LR		
	comp=Z,1μm,17.8s						
TIY				LR	LR		
	comp=Z,1μm,14.7s						
TIY				LR	LR		
	comp=Z,2μm,16.9s						
SSLB	**Suanglung**	**23.40**	**236**	*eP*	**P**	**22 24 33.1**	**-3.0**
	comp=Z,65nm,1.1s						
SSLB				*eS*	**S**	**22 28 42.2**	**-3.9**
HHC	**Hu-ho-hao-te**	**23.45**	**285**	*eP*	**P**	**22 24 34.0**	**-2.6**
HHC				S	**S**	**22 28 39.3**	**-7.6**
HHC				pmax	pmax		
	comp=Z,70nm,1.1s						
HHC				pmax	pmax		
	comp=Z,260nm,8.8s						
HHC				LR	LR		
	comp=Z,2μm,15.1s						
HHC				LR	LR		
	comp=Z,2μm,17.1s						
HHC				LR	LR		
	comp=Z,3μm,15.3s						
YULB	**Yu-li**	**23.46**	**235**	*eP*	**P**	**22 24 32.6**	**-4.0**
	comp=Z,47nm,0.8s						
CIT	**Chita**	**23.77**	**313**	*eP*	**P**	**22 24 40.0**	**+0.6**
CIT				*e*		22 24 48.8	
CIT				*e*		22 24 56.1	
CIT				*e*		22 25 16.1	
CIT				pmax	pmax		
	comp=Z,414nm,1.3s						
TPUB	**Ta-pu**	**23.95**	**236**	*eP*	**P**	**22 24 38.5**	**-2.8**
	comp=Z,85nm,1.0s						
TWG	**Pinlang**	**24.01**	**234**	*eP*	**P**	**22 24 41.6**	**-0.3**
	comp=Z,422nm,1.0s						
WHN	**Wuhan**	**24.18**	**258**	P	**P**	**22 24 40.8**	**-2.6**
WHN				S	**S**	**22 28 52.0**	**-6.6**
WHN				pmax	pmax		
	comp=Z,350nm,1.3s						
WHN				pmax	pmax		
	comp=Z,580nm,4.2s						
WHN				LR	LR		
	comp=Z,2μm,16.4s						
WHN				LR	LR		
	comp=Z,4μm,18.5s						
WHN				LR	LR		
	comp=Z,4μm,17.8s						
QZH	**Quanzhou**	**24.20**	**242**	⇑*i*P	**P**	**22 24 37.8**	**-5.7**
QZH				S	**S**	**22 28 51.0**	**-7.9**
QZH				pmax	pmax		
	comp=Z,100nm,0.9s						
QZH				LR	LR		
	comp=Z,2μm,16.8s						
QZH				LR	LR		
	comp=Z,860nm,14.3s						
QZH				LR	LR		
	comp=Z,2μm,16.2s						
YAK	**Yakutsk**	**24.41**	**346**	P	**P**	**22 24 44.0**	**-1.2**
	comp=Z,251nm,0.9s,baz=348,slow=5.9,SNR=45						
YAK				LR	LR	22 34 49.8	
	comp=Z,851nm,18.9s,baz=169,slow=38						
YAK	**Yakutsk**	**24.41**	**346**	*eP*	**P**	**22 24 43.4**	**-1.8**
YAK				*e*PP	**pP**	**22 24 51.5**	**-5.3**
YAK				*e*PPP	PPP	22 25 20.8	
YAK				*e*		22 28 24.3	
YAK				*eS*	**S**	**22 28 58.6**	**-3.1**
YAK				*e*SS	**sS**	**22 29 16.0**	**-5.1**
YAK				*e*SSS	SSS	22 29 55.1	
YAK				*e*		22 35 49.9	
YAK				pmax	pmax		
	comp=Z,274nm,1.0s						
YAK				pmax	pmax		
	comp=N,115nm,1.0s						
YAK				pmax	pmax		
	comp=E,78nm,1.2s						
YAK				pmax	pmax		
	comp=Z,65nm,0.8s						
YAK				pmax	pmax		
	comp=N,148nm,1.3s						
YAK				pmax	pmax		
	comp=E,79nm,1.3s						
YAK				smax	smax		
	comp=E,203nm,1.4s						
YAK				smax	smax		
	comp=N,317nm,1.9s						
YAK	**Yakutsk**	**24.41**	**346**	*eP*	**P**	**22 24 43.1**	**-2.1**
	comp=N,238nm,0.9s						

SEY Seymchan 24.90 11 P **P** **22 24 50.8 +1.2**
comp=N,76nm,1.0s,baz=203,slow=7.4,SNR=83
SEY Seymchan 24.90 11⇑*i*P **P** **22 24 50.9 +1.3**
GUMO Guam 25.30 174 LR LR 22 34 57.5
comp=N,321nm,21.5s,baz=19,slow=37
BOD Bodaibo 26.29 325 *e*P **P** **22 25 01.5 -0.7**
BOD pmax pmax
comp=Z,88nm,1.2s
ULN Ulaanbaatar 26.81 301⇓*i*P **P** **22 25 07.4 +0.2**
ULN pmax pmax
comp=Z,58nm,1.2s
ULN Ulaanbaatar 26.81 301 *e*P **P** **22 25 06.9 -0.3**
comp=Z,42nm,1.0s
ULN Ulaanbaatar 26.81 301 P **P** **22 25 03.1 -4.1**
SNR=30
ULN Ulaanbaatar 26.81 301 P **P** **22 25 03.1 -4.1**
SNR=30
XAN Xi'an 27.00 270 P **P** **22 25 07.3 -1.7**
XAN pP pP 22 25 18.3 -2.3
XAN sP sP 22 25 23.8 -2.1
XAN S **S** **22 29 39.0 -4.5**
XAN pmax pmax
comp=Z,64nm,0.6s
XAN pmax pmax
comp=Z,160nm,6.7s
XAN LR LR
comp=Z,670nm,18.1s
XAN LR LR
comp=Z,1μm,20.0s
XAN LR LR
comp=Z,820nm,19.0s
SONA1 Songino Array 27.24 301 *e*P **P** **22 25 11.5 +0.4**
SONM Songino Array 27.24 301 P **P** **22 25 11.9 +0.8**
comp=Z,25nm,0.8s,baz=99,slow=7.0,SNR=19
SONM LR LR 22 36 29.0
comp=Z,1μm,18.8s,baz=86,slow=37
ENH Enshi 28.05 262 *e*P **P** **22 25 17.7 -0.6**
comp=Z,191nm,0.7s
H11N2 WAKE ISLAND Hy 28.70 125 T T 22 55 49.5
baz=317,slow=75,SNR=6318
H11N1 WAKE ISLAND Hy 28.70 125 T T 22 55 50.2
baz=317,slow=75,SNR=5298
H11N3 WAKE ISLAND Hy 28.71 125 T T 22 55 50.8
baz=317,slow=75,SNR=6422
IRK Irkutsk 29.29 310 *e*P **P** **22 25 27.9 -1.3**
IRK pmax pmax
comp=Z,142nm,1.3s
H11S1 WAKE ISLAND Hy 29.47 127 T T 22 56 45.8
baz=318,slow=76,SNR=1126
H11S3 WAKE ISLAND Hy 29.47 127 T T 22 56 46.2
baz=318,slow=76,SNR=1732
H11S2 WAKE ISLAND Hy 29.49 127 T T 22 56 45.3
baz=318,slow=76,SNR=1231
TLY Talaya 29.57 308 P **P** **22 25 32.1 +0.6**
comp=Z,52nm,0.9s,baz=103,slow=3.8,SNR=39
TLY LR LR 22 38 05.1
comp=Z,2μm,18.4s,baz=109,slow=38
TLY Talaya 29.57 308*c i*P **P** **22 25 31.4 -0.2**
TLY *e* 22 26 33.9
TLY *e*PPP PPP 22 26 44.2
TLY *e*S **S** **22 30 23.9 +0.5**
TLY pmax pmax
comp=Z,2μm,19.1s
TLY MLR MLR
comp=Z,2μm,20.0s
TLY Talaya 29.57 308 *e*P **P** **22 25 32.2 +0.6**
comp=Z,79nm,1.0s
ZAK Zakamensk 29.59 306 *e*P **P** **22 25 31.2 -0.7**
ZAK pmax pmax
comp=Z,98nm,1.1s
LZH Lanzhou 30.32 277⇑P **P** **22 25 38.5 -0.1**
LZH pP sP 22 25 55.0 -0.5
LZH PP **PnPn** **22 26 38.0 +0.2**
LZH *e*S **S** **22 30 32.0 -3.8**
LZH sS sS 22 30 56.3 +0.8
LZH pmax pmax
comp=Z,43nm,1.0s
LZH pmax pmax
comp=Z,150nm,4.0s
LZH LR LR
comp=Z,650nm,14.0s
LZH LR LR
comp=Z,1μm,15.3s
LZH LR LR
comp=Z,2μm,16.7s
MOY Mondy 31.19 308 *e*P **P** **22 25 46.4 +0.3**
MOY pmax pmax
comp=Z,86nm,2.7s
GYA Guiyang 32.07 258⇑*i*P **P** **22 25 53.3 -0.8**
GYA pP sP 22 26 09.0 -2.0
GYA sP pP 22 26 16.0 +10
GYA PP **PnPn** **22 27 02.3 +1.7**
GYA PcP **PcP** **22 28 44.5 +1.7**
GYA S **S** **22 30 58.0 -5.4**
GYA sS sS 22 31 25.5 +2.5
GYA ScP **ScP** **22 32 23.0 +0.3**
GYA SS **SnSn** **22 32 55.3 -0.6**
GYA ScS **ScS** **22 36 20.8 -0.9**
GYA pmax pmax
comp=Z,110nm,1.1s
GYA pmax pmax
comp=Z,120nm,5.6s
GYA LR LR
comp=Z,440nm,20.7s
GYA LR LR
comp=Z,800nm,17.8s
GYA LR LR
comp=Z,1μm,20.9s
BILL Bilibino 32.13 17*c i*P **P** **22 25 54.0 +0.1**
BILL *e* 22 28 41.5
BILL *e*S **S** **22 31 08.6 +5.5**
BILL pmax pmax
comp=Z,40nm,1.0s
BILL MLR MLR
comp=Z,294nm,19.0s
BILL Bilibino 32.13 17 *e*P **P** **22 25 54.0 +0.1**
comp=Z,59nm,1.3s
CD2 Chengdu 32.23 268 P **P** **22 25 54.8 -0.5**
CD2 sP sP 22 26 14.3 +2.0
CD2 PP **PP** **22 27 08.0 -0.6**
CD2 S **S** **22 31 04.0 -1.6**
CD2 sS sS 22 31 26.8 +1.6
CD2 pmax pmax
comp=Z,210nm,0.9s
CD2 pmax pmax
comp=Z,110nm,3.5s
CD2 LR LR
comp=Z,940nm,15.6s
CD2 LR LR
comp=Z,1μm,18.0s
GTA Gaotai 32.56 285⇑P **P** **22 25 57.5 -0.8**
GTA pP pP 22 26 08.5 -1.5
GTA sP sP 22 26 14.0 -1.3
GTA PP **PnPn** **22 27 08.5 +1.8**
GTA PcP **PcP** **22 28 44.5 +0.6**
GTA S **S** **22 31 09.5 -1.3**
GTA sS sS 22 31 29.0 -1.5
GTA ScP **ScP** **22 32 24.8 +0.6**
GTA PcS **PcS** **22 32 29.5 +0.3**
GTA SS **SnSn** **22 33 08.0 +0.5**
GTA pmax pmax
comp=Z,17nm,1.4s
GTA pmax pmax
comp=Z,200nm,6.2s
GTA LR LR
comp=Z,680nm,18.1s
GTA LR LR
comp=Z,2μm,17.1s
GTA LR LR
comp=Z,2μm,19.5s
TIXI Tiksi 33.54 352 P **P** **22 26 05.7 -0.6**
comp=Z,9.9nm,0.8s,baz=146,slow=6.4,SNR=29
TIXI Tiksi 33.54 352*c i*P **P** **22 26 05.5 -0.8**
TIXI pmax pmax
comp=Z,19nm,1.0s
TIXI Tiksi 33.54 352 *e*P **P** **22 26 05.4 -0.8**
comp=Z,21nm,1.1s
QIZ Qiongzhong 34.18 244 P **P** **22 26 12.5 +0.2**
QIZ pP **pP** **22 26 23.8 -0.3**
QIZ S **S** **22 31 39.0 +3.2**
QIZ sS **sS** **22 31 59.0 +3.4**
QIZ LR LR
comp=Z,170nm,11.4s
DAV Davao City (W) 34.98 209 LR LR 22 40 40.0
comp=Z,288nm,20.6s,baz=41,slow=36

KMI Kunming 35.78 259 P **P** **22 26 26.0 -0.4**
KMI pP sP 22 26 41.5 -1.9
KMI sP pP 22 26 47.3 +9.1
KMI PP **PP** **22 27 49.5 +1.3**
KMI S **S** **22 31 56.0 -4.9**
KMI sS sS 22 32 21.8 +1.1
KMI SS **SnSn** **22 34 21.0 -4.9**
KMI pmax pmax
comp=Z,97nm,1.3s
KMI pmax pmax
comp=Z,310nm,3.3s
KMI LR LR
comp=Z,710nm,18.7s
KMI LR LR
comp=Z,850nm,19.9s
KMI LR LR
comp=Z,1μm,20.0s
NIKH Nikolski High 36.20 51 *e*P **P** **22 26 30.1 +0.7**
comp=Z,469nm,1.8s
KRAR Krasnoyarsk 36.53 314⇑*i*P **P** **22 26 32.6 +0.5**
KRAR pmax pmax
comp=Z,339nm,1.2s
GAMB Gambell 36.89 32 *e*P **P** **22 26 35.5 +0.4**
comp=Z,10nm,1.0s
TNA Tin City 39.01 30 *e*P **P** **22 26 54.8 +1.8**
comp=Z,61nm,1.1s
KDM Kudat 39.12 222⇓P **P** **22 26 58.3 +3.9**
SKNT Sakolnakorn 39.70 248 P **P** **22 26 59.5 +0.2**
comp=Z,32nm,1.1s
MYLDM Lahad Datu 39.76 219 *e*P **P** **22 27 01.5 +1.7**
comp=Z,71nm,1.1s
SDKM Sandakan 40.01 221⇓P **P** **22 27 02.6 +0.7**
CRAI Chiangrai 40.34 255 P **P** **22 27 04.8 +0.2**
comp=Z,471nm,1.0s
WMQ Urumqi 40.51 295 P **P** **22 27 06.5 +0.7**
WMQ pP pP 22 27 19.0 +1.2
WMQ sP sP 22 27 24.3 +1.3
WMQ PP **PnPn** **22 28 44.0 +0.4**
WMQ PcP **PcP** **22 29 08.5 +0.9**
WMQ S **S** **22 33 11.5 -0.2**
WMQ sS sS 22 33 33.8 +2.1
WMQ ScS **ScS** **22 37 07.3 -0.4**
WMQ pmax pmax
comp=Z,110nm,0.8s
WMQ pmax pmax
comp=Z,210nm,3.6s
WMQ LR LR
comp=Z,140nm,16.4s
WMQ LR LR
comp=Z,270nm,16.4s
TSM Tawau 40.83 219⇑P **P** **22 27 08.7 +0.1**
KHON Khomkaen 40.96 248 P **P** **22 27 10.0 +0.3**
comp=Z,18nm,1.0s,comp=Z,503nm
ZAA0 Zalesovo Array 41.09 311 *e*P **P** **22 27 10.3 0.0**
ZALV Zalesovo Beam 41.09 311 P **P** **22 27 10.3 -0.1**
comp=Z,58nm,0.6s,baz=86,slow=6.8,SNR=304
ZALV PcP **PcP** **22 29 09.3 +0.1**
comp=Z,21nm,0.9s,baz=132,slow=2.2,SNR=5.3
ZALV LR LR 22 44 59.9
comp=Z,1μm,19.1s,baz=70,slow=37
UTTA Uttaradit 41.72 252 P **P** **22 27 16.4 +0.5**
comp=Z,8.0nm,0.8s,comp=Z,71nm
NRIK Noril'sk 41.84 334 P **P** **22 27 16.0 -0.2**
comp=Z,38nm,1.0s,baz=109,slow=9.5,SNR=49
NRIK LR LR 22 45 37.2
comp=Z,2μm,19.4s,baz=106,slow=37
LAMP Lampang 41.93 253 P **P** **22 27 18.7 +1.1**
comp=Z,9.9nm,0.8s,comp=Z,117nm
NVS Novosibirsk 41.98 312⇓*i*P **P** **22 27 18.2 +0.6**
NVS *i*S **S** **22 33 37.4 +4.4**
NVS pmax pmax
comp=N,26nm,1.4s
NVS pmax pmax
comp=E,113nm,1.4s
NVS pmax pmax
comp=Z,122nm,1.4s
NVS smax smax
comp=N,12nm,1.6s
NVS smax smax
comp=E,26nm,1.8s
PBKT Sadao Pong 42.16 250 P **P** **22 27 19.5 0.0**
comp=E,31nm,1.1s
CMMT Chiang Mai 42.26 254 P **P** **22 27 20.3 -0.1**
comp=E,39nm,0.8s,comp=E,330nm
CHTO Chiang Mai 42.27 254 P **P** **22 27 20.3 -0.1**
comp=E,120nm,1.0s,comp=E,1μm
CHTO Chiang Mai 42.27 254 *e*P **P** **22 27 20.5 +0.1**
CHTO pmax pmax
comp=Z,28nm,0.6s
CHTO Chiang Mai 42.27 254 *e*P **P** **22 27 20.5 +0.1**
comp=Z,28nm,0.6s
CHTO Chiang Mai 42.27 254 P **P** **22 27 16.1 -4.2**
SNR=18
MRSI Marisa 42.42 211 P **P** **22 27 21.2 -0.4**
comp=Z,83nm,1.2s,comp=Z,4μm
CM31 Chiang Mai Arr 42.48 254 *e*P **P** **22 27 22.9 +0.8**
CMAR Chiang Mai Arr 42.48 254 P **P** **22 27 22.4 +0.2**
comp=Z,3.3nm,0.7s,baz=48,slow=6.4,SNR=34
CMAR PcP **PcP** **22 29 15.3 +0.9**
comp=Z,3.9nm,0.8s,baz=24,slow=2.3,SNR=5.9
CMAR ScP **ScP** **22 33 00.9 -0.6**
comp=Z,1.2nm,0.8s,baz=25,slow=2.4,SNR=5.9
CMAR LR LR 22 46 57.5
comp=Z,270nm,18.9s,baz=65,slow=39
CM01 Chiang Mai Arr 42.49 254 *e*P **P** **22 27 21.6 -0.7**
LSA Lhasa 42.59 274 P **P** **22 27 24.5 +1.0**
LSA pmax pmax
comp=Z,22nm,1.0s
LSA Lhasa 42.59 274 *e*P **P** **22 27 24.3 +0.8**
LSA pmax pmax
comp=Z,69nm,1.1s
LSA Lhasa 42.59 274 *e*P **P** **22 27 24.2 +0.8**
comp=Z,69nm,1.1s
MHMT Maesarieng 43.41 254 P **P** **22 27 30.3 +0.6**
comp=Z,27nm,1.1s,comp=Z,289nm
LUWI Luwuk 43.49 209 P **P** **22 27 29.9 -0.4**
comp=Z,80nm,1.1s,comp=Z,4μm
MK01 Makanchi Array 43.61 301 *e*P **P** **22 27 30.3 -0.7**
MK31 Makanchi Array 43.61 301 *e*P **P** **22 27 31.4 +0.4**
MK31 Makanchi Array 43.61 301 *e*P **P** **22 27 31.4 +0.4**
MKAR Makanchi Array 43.61 301 P **P** **22 27 31.4 +0.4**
comp=Z,63nm,0.7s,baz=85,slow=9.6,SNR=519
MKAR LR LR 22 46 17.3
comp=Z,676nm,21.2s,baz=68,slow=37
MKAR Makanchi Array 43.61 301 *i*P **P** **22 27 31.3 +0.3**
MKAR pmax pmax
comp=Z,64nm,0.7s
TT01 Tatalina 43.63 36 *e*P **P** **22 27 32.2 +1.3**
TTA Tatalina 43.63 36 *e*P **P** **22 27 32.8 +1.8**
TTA pmax pmax
comp=Z,14nm,1.1s
TTA Tatalina 43.63 36 *e*P **P** **22 27 32.8 +1.8**
comp=Z,14nm,1.1s
CHBT CHBT 43.72 244 P **P** **22 27 32.5 +0.4**
comp=Z,40nm,1.1s
SVW2 Sparrevohn 43.76 38 *e*P **P** **22 27 33.2 +1.2**
comp=Z,32nm,1.0s
MAKZ Makanchi 43.82 301 *e*P **P** **22 27 33.2 +0.5**
MAKZ pmax pmax
comp=Z,123nm,1.0s
MAKZ Makanchi 43.82 301 *e*P **P** **22 27 33.2 +0.5**
comp=Z,123nm,1.0s
SHL Shillong 43.97 268 *i*P **P** **22 27 33.0 -1.3**
SHL eS **S** **22 34 00.0 -3.3**
BTM Bintulu 44.23 224⇑P **P** **22 27 37.4 +1.1**
PATY Pattaya 44.64 246 P **P** **22 27 40.7 +1.2**
comp=Z,9.6nm,1.1s,comp=Z,666nm
SRDT SRDT 44.95 249 P **P** **22 27 42.3 +0.3**
comp=Z,95nm,1.2s,comp=Z,2μm
KHLT Khaolaem Dam 45.05 250 P **P** **22 27 43.5 +0.7**
comp=Z,17nm,1.1s,comp=Z,252nm
RSO Redoubt South 45.15 39 *e*P **P** **22 27 45.4 +2.1**
KURK Kurchatov 45.23 307 *e*P **P** **22 27 43.8 -0.1**
KURK pmax pmax
comp=Z,286nm,0.8s
KURK Kurchatov 45.23 307 *e*P **P** **22 27 43.8 -0.1**
comp=Z,286nm,0.8s
PPLA Purkeypile 45.38 36 *e*P **P** **22 27 47.5 +2.4**
comp=Z,42nm,1.2s
CAST Castle Rocks 45.43 35 *e*P **P** **22 27 47.0 +1.8**
comp=Z,22nm,1.1s
BPAW Bear Paw Mtn. 45.92 34 *e*P **P** **22 27 50.6 +1.5**
comp=Z,22nm,1.3s
KTH Kantishna Hill 45.95 35 *e*P **P** **22 27 51.2 +1.7**
comp=Z,60nm,1.1s
MLY Manley 46.03 33 *e*P **P** **22 27 51.7 +1.7**
comp=Z,33nm,1.2s
TRF Thorofare Moun 46.24 35 *e*P **P** **22 27 53.9 +2.1**
comp=Z,14nm,1.0s
COLD Coldfoot 46.31 30 *e*P **P** **22 27 53.9 +1.8**
comp=Z,14nm,1.0s
BWN Browne 46.58 34 *e*P **P** **22 27 56.9 +2.6**
comp=Z,100nm,1.1s
RC01 Rabbit Creek A 46.60 38 *e*P **P** **22 27 55.8 +1.3**
comp=Z,50nm,1.2s
MTKI Muara Teweh, K 46.82 219 P **P** **22 27 58.3 +1.6**
comp=Z,100nm,1.1s,comp=Z,7μm
MCK McKinley 46.83 35 *e*P **P** **22 27 57.6 +1.3**
MCK pmax pmax
comp=Z,26nm,1.1s
MCK McKinley 46.83 35 *e*P **P** **22 27 57.5 +1.3**
comp=Z,26nm,1.1s
PMR Palmer 46.86 38 *e*P **P** **22 27 57.4 +0.9**
PMR pmax pmax
comp=Z,20nm,0.9s
PMR Palmer 46.86 38 *e*P **P** **22 27 57.4 +0.9**
comp=Z,20nm,0.9s
RND Reindeer 46.88 35 *e*P **P** **22 27 57.3 +0.5**
RND pmax pmax
comp=Z,44nm,1.2s
RND Reindeer 46.88 35 *e*P **P** **22 27 57.3 +0.5**
comp=Z,44nm,1.2s
MDM Murphy Dome 47.10 33 *e*P **P** **22 27 59.9 +1.5**
comp=Z,52nm,1.2s
WRH Wood River Hil 47.17 34 *e*P **P** **22 28 00.2 +1.3**
comp=Z,17nm,1.0s
KSM Kuching 47.19 226⇓P **P** **22 28 00.6 +1.0**
KSM Kuching 47.19 226 *e*P **P** **22 28 00.7 +1.0**
comp=Z,49nm,1.0s
SML Sawmill 47.22 37 *e*P **P** **22 28 00.7 +1.3**
SML pmax pmax
comp=Z,24nm,0.9s
SML Sawmill 47.22 37 *e*P **P** **22 28 00.7 +1.3**
comp=Z,24nm,0.9s
COLA College 47.26 33*c i*P **P** **22 28 00.9 +1.3**
COLA pmax pmax
comp=Z,14nm,0.9s
CCB Clear Creek Bu 47.29 33 *e*P **P** **22 28 00.9 +1.1**
comp=Z,27nm,1.5s
SPSI Sidrap Palu 47.34 211 P **P** **22 28 00.3 -0.4**
comp=Z,22nm,1.1s
GUN Gumba 47.51 274 *e*P **P** **22 28 02.6 +0.1**
comp=Z,223nm,0.8s
DHY Denali Highway 47.57 36 *e*P **P** **22 28 03.4 +1.1**
comp=Z,26nm,1.3s
HDA Harding Lake 47.67 34 *e*P **P** **22 28 03.7 +0.9**
comp=Z,27nm,1.1s
ILAR Eielson Array 47.68 33 P **P** **22 28 03.4 +0.6**
comp=Z,12nm,0.8s,baz=266,slow=5.9,SNR=84
ILB Eielson Array 47.68 33 *e*P **P** **22 28 03.4 +0.6**
IL1 Eielson Array 47.68 33 *e*P **P** **22 28 03.1 +0.2**
SCM Sheep Creek Mo 47.69 37 *e*P **P** **22 28 04.1 +1.0**
SCM pmax pmax
comp=Z,107nm,1.6s
SCM Sheep Creek Mo 47.69 37 *e*P **P** **22 28 04.1 +1.0**
comp=Z,107nm,1.6s
STKI Sintang 47.72 223 P **P** **22 28 04.8 +1.1**
comp=Z,40nm,1.0s,comp=Z,12μm
KKN Kakani 48.04 275 *e*P **P** **22 28 06.6 +0.2**
comp=Z,216nm,0.8s
PKIN Phulchoki 48.05 274 *e*P **P** **22 28 07.0 +0.5**
comp=Z,85nm,0.9s
AAA Alma-Ata 48.19 297 *i*P **P** **22 28 08.0 +0.8**
AAA *i*S **S** **22 34 55.4 -7.8**
AAA pmax pmax
comp=Z,200nm,1.3s
AAA smax smax
comp=E,200nm,3.4s
AAA MLR MLR
comp=Z,700nm,21.0s
DMN Daman 48.26 274 *e*P **P** **22 28 08.3 +0.1**
comp=Z,210nm,1.3s
FYU Fort Yukon 48.27 31 *e*P **P** **22 28 10.0 +2.6**
comp=Z,62nm,1.4s
KAPI Kappang 48.30 210 *e*P **P** **22 28 08.6 +0.4**
comp=Z,65nm,1.2s
KLU Klutina 48.40 38 *e*P **P** **22 28 09.9 +1.4**
comp=Z,19nm,0.8s
GKN Gorkha 48.44 275 *e*P **P** **22 28 09.3 -0.1**
comp=Z,464nm,1.0s
PAX Paxson 48.44 36 *e*P **P** **22 28 11.0 +2.1**
PAX pmax pmax
comp=Z,10.0nm,0.9s
PAX Paxson 48.44 36 *e*P **P** **22 28 11.0 +2.1**
comp=Z,10.0nm,0.9s
DIV Divide 48.51 38 *e*P **P** **22 28 11.1 +1.7**
comp=Z,37nm,1.0s
KTGM Kuala Trenggan 48.52 237⇓P **P** **22 28 10.5 +0.5**
EYAK Cordova Ski Ar 48.60 39 *e*P **P** **22 28 12.2 +2.2**
comp=Z,37nm,1.1s
SURT Suratani 48.84 244 P **P** **22 28 13.2 +0.9**
comp=Z,16nm,1.2s,comp=Z,210nm
TRTT Trang 49.00 242 P **P** **22 28 14.7 +1.1**
comp=Z,35nm,1.2s
DOT Dot Lake 49.00 35 *e*P **P** **22 28 13.4 +0.3**
comp=Z,45nm,1.3s
BMRM Bremner River 49.10 38 *e*P **P** **22 28 15.6 +1.7**
comp=Z,21nm,0.8s
RAGM Ragged Mountai 49.15 39 *e*P **P** **22 28 17.0 +2.7**
comp=Z,20nm,0.9s
TKM2 Tokmak 2 49.24 297 *e*P **P** **22 28 16.1 +0.7**
TKM2 pmax pmax
comp=Z,63nm,0.8s
TKM2 Tokmak 2 49.24 297 *e*P **P** **22 28 16.1 +0.7**
comp=Z,63nm,0.8s
MENT Mentasta 49.24 36 *e*P **P** **22 28 16.8 +1.9**
comp=Z,17nm,0.9s
KOLN Koldanda 49.35 275 *e*P **P** **22 28 16.8 +0.3**
comp=Z,97nm,0.7s
PYUN Piuthan 49.67 276 *e*P **P** **22 28 19.2 +0.3**
comp=Z,492nm,1.0s
BRVK Borovoye 49.80 311*c i*P **P** **22 28 19.4 +0.2**
BRVK pmax pmax
comp=Z,110nm,1.0s
BRVK Borovoye 49.80 311 *e*P **P** **22 28 19.5 +0.2**
comp=Z,107nm,1.0s
PKDT Phuket 49.91 244 P **P** **22 28 21.5 +1.0**
comp=Z,91nm,1.1s,comp=Z,1μm
FRU Bishkek 49.95 297⇑*i*P **P** **22 28 19.0 -1.6**
FRU *i* 22 28 31.0
FRU *e* 22 35 41.0
FRU pmax pmax
comp=Z,115nm,1.9s
AAK Ala-Archa 50.10 297*c i*P **P** **22 28 21.9 0.0**
AAK pmax pmax
comp=Z,49nm,0.8s
AAK Ala-Archa 50.10 297 *e*P **P** **22 28 22.2 +0.3**
comp=Z,18nm,0.8s
EGAK Eagle 50.12 33 *e*P **P** **22 28 21.9 +0.3**
comp=Z,20nm,1.0s
KSH Kashi 50.15 293 P **P** **22 28 26.5 +4.2**
KSH epP sP 22 28 39.3 -0.4
KSH esP pP 22 28 45.0 +10
KSH *e*PP **PP** **22 30 23.5 +5.9**
KSH eScP **ScP** **22 33 36.5 +3.1**
KSH PcS **PcS** **22 33 41.0 +2.6**
KSH S **S** **22 35 34.0 +2.9**
KSH SS **SS** **22 39 07.5 +3.1**
KSH pmax pmax
comp=Z,28nm,0.9s
KSH pmax pmax
comp=Z,220nm,4.6s
KSH LR LR
comp=Z,510nm,15.1s
KSH LR LR
comp=Z,290nm,14.0s
KSH LR LR
comp=Z,440nm,15.9s
BALM Baldy 50.17 38 *e*P **P** **22 28 23.7 +1.5**
BALM pmax pmax
comp=Z,13nm,0.9s
BALM Baldy 50.17 38 *e*P **P** **22 28 23.7 +1.5**
comp=Z,13nm,0.9s
KULM Kulim 50.19 239⇑P **P** **22 28 22.5 -0.2**
KULM Kulim 50.19 239 *e*P **P** **22 28 23.4 +0.7**
comp=Z,46nm,1.1s
IPM Ipoh 50.54 238⇑P **P** **22 28 25.3 0.0**
IPM Ipoh 50.54 238 *e*P **P** **22 28 25.2 -0.1**
comp=Z,64nm,1.0s
EKS2 Erkin-Say 50.59 297 *e*P **P** **22 28 25.7 +0.1**
EKS2 pmax pmax
comp=Z,21nm,0.8s
EKS2 Erkin-Say 50.59 297 *e*P **P** **22 28 25.7 +0.1**

comp=Z,22nm,0.8s
MMRI Maumere 50.73 206 *e*P P 22 28 26.9 +0.3
comp=Z,83nm,1.2s
MYKOM Kota Tinggi 50.77 233 ⇑P P 22 28 28.1 +1.1
MYKOM Kota Tinggi 50.77 233 *e*P P 22 28 27.7 +0.7
comp=Z,60nm,1.4s
DAWY Dawson 50.99 34 *e*P P 22 28 29.5 +1.3
comp=Z,5.8nm,1.0s
TPRI Tanjung Pinang 51.03 232 P P 22 28 28.1 -0.9
comp=Z,67nm,1.1s,comp=Z,20µm
FRIM Kepong 51.08 236 ⇑P P 22 28 30.1 +0.8
SOEI Soe 51.13 203 P P 22 28 34.3 +4.5
comp=Z,65nm,1.3s
SOEI Soe 51.13 203 *e*P P 22 28 29.4 -0.5
comp=Z,88nm,1.2s
MTN Manton Dam 52.44 193 *e*P P 22 28 39.5 +0.1
comp=Z,34nm,1.1s
INK Inuvik 52.53 28 P P 22 28 40.7 +1.2
comp=Z,20nm,1.0s,baz=294,slow=6.7,SNR=55
INK Inuvik 52.53 28 *e*P P 22 28 39.7 +0.3
INK pmax pmax
comp=Z,28nm,1.0s
INK Inuvik 52.53 28 *e*P P 22 28 39.7 +0.3
comp=Z,28nm,1.0s
PPBI Pangkal Pinang 52.53 228 P P 22 28 41.2 +1.0
comp=Z,28nm,1.3s,comp=Z,2µm
KKAR Karatay Array 52.67 299 *e*P P 22 28 41.0 0.0
KKAR Karatay Array 52.67 299 *e*P P 22 28 41.0 0.0
TWSI Taliwang, Sumb 52.84 212 P P 22 28 39.3 -3.1
comp=Z,29nm,1.0s
PSI Prapat 53.18 239 P P 22 28 45.2 +0.1
comp=Z,25nm,0.8s,baz=12,slow=5.4,SNR=22
PSI PcP **PcP** 22 29 52.7 -0.1
comp=Z,6.3nm,0.8s,baz=292,slow=2.6,SNR=3.7
PSI Prapat 53.18 239 P P 22 28 45.3 +0.1
PSI 22 29 52.7
PSI pmax pmax
comp=Z,31nm,1.0s
PSI pmax pmax
comp=Z,6.0nm,0.8s
PSI Prapat 53.18 239 *e*P P 22 28 45.2 +0.1
comp=Z,37nm,1.0s
PSI PcP **PcP** 22 29 52.7 -0.1
BKNI Bangkinang 53.67 235 P P 22 28 49.7 +1.1
comp=Z,209nm,1.0s,comp=Z,2µm
BKNI Bangkinang 53.67 235 *e*P P 22 28 49.6 +1.0
comp=Z,186nm,1.0s
SVE Sverdlovsk 54.13 318 *d* iP P 22 28 52.0 +0.6
SVE *e*S **S** 22 36 31.0 +6.2
SVE pmax pmax
comp=Z,253nm,1.0s
SVE MLR MLR
comp=Z,1µm,17.0s
SVE MLR MLR
comp=E,1µm,19.0s
MNSI Mandailing Nat 54.25 236 P P 22 28 52.6 -0.2
comp=E,25nm,1.2s
SDSI Sungai Dareh 54.39 233 P P 22 28 54.0 +0.2
comp=E,100nm,1.1s,comp=E,37µm
GSI Gunungsitoli 55.19 239 P P 22 28 58.4 -1.2
comp=E,130nm,1.2s
GSI Gunungsitoli 55.19 239 *e*P P 22 28 59.5 -0.1
comp=E,152nm,1.1s
SOKR Solikamsk 55.20 322 *c* iP P 22 28 57.3 -1.8
SOKR pmax pmax
comp=Z,110nm,1.3s
SOKR MLR MLR
comp=Z,329nm,14.0s
ARU Arti 55.35 318 *c* iP P 22 29 00.3 +0.1
ARU *PP **pP** 22 29 15.0 +2.4
ARU 22 29 58.2
ARU 22 31 01.7
ARU PPP PPP 22 32 18.7
ARU S **S** 22 36 41.8 +0.7
ARU 22 38 40.7
ARU SS **SS** 22 40 24.7 -0.7
ARU pmax pmax
comp=Z,199nm,1.0s
ARU MLR MLR
comp=Z,1µm,18.0s
ARU Arti 55.35 318 *e*P P 22 29 00.3 +0.1
comp=Z,181nm,1.0s
LHSI Lahat 55.40 229 P P 22 28 59.8 -1.3
comp=Z,118nm,1.1s,comp=Z,3µm
KLI Kotabumi 55.47 227 P P 22 29 03.1 +1.5
MDSI Maura Dua 55.55 228 P P 22 29 00.3 -1.9
comp=Z,60nm,1.3s
LEM Lembang 55.56 223 P P 22 29 04.2 +1.7
comp=Z,488nm,1.1s
DLBC Dease Lake 56.87 39 *e*P P 22 29 12.4 +1.2
comp=Z,14nm,1.1s
ABKAR Akbulak array 57.17 309 *e*P P 22 29 13.1 -0.2
KBL Kabul 57.26 290 *e*P P 22 29 13.9 -0.6
KBL pmax pmax
comp=Z,60nm,1.0s
KBL Kabul 57.26 290 *e*P P 22 29 13.9 -0.6
comp=Z,60nm,1.0s
FITZ Fitzroy Crossi 58.72 198 *e*P P 22 29 24.5 +0.1
comp=Z,40nm,1.4s
HYB Hyderabad 58.78 268 ⇑ iP P 22 29 24.5 -0.6
comp=Z,64nm,1.2s
HYB *e*PcP **PcP** 22 30 13.5 -1.0
SPA0 Spitsbergen Ar 58.83 349 *e*P P 22 29 25.5 +0.9
SPITS Spitsbergen Ar 58.83 349 LR LR 22 55 35.2
comp=Z,188nm,20.6s,baz=40,slow=37
WRAB Tennant Creek 58.93 188 *c* iP P 22 29 25.3 -0.6
WRAB pmax pmax
comp=Z,89nm,1.0s
WRAB Tennant Creek 58.93 188 *e*P P 22 29 25.2 -0.6
comp=Z,33nm,0.9s
WB2 Warramunga Arr 58.94 188 *e*P P 22 29 25.2 -0.7
comp=Z,32nm,0.8s
WRA Warramunga Arr 58.94 188 P P 22 29 25.2 -0.8
comp=Z,27nm,0.8s,baz=6.3,slow=7.0,SNR=129
KBS Kingsbay 58.95 350 *e*P P 22 29 26.7 +1.3
KBS IAmb IAmb 22 29 27.1
comp=Z,52nm,1.0s
KBS Kingsbay 58.95 350 *e*P P 22 29 26.5 +1.2
KBS pmax pmax
comp=Z,49nm,1.0s
KBS Kingsbay 58.95 350 *e*P P 22 29 26.5 +1.2
comp=Z,49nm,1.0s
HSPB Hornsund (broa 59.77 348 *e*P P 22 29 31.2 +0.1
HSPB IAmb IAmb 22 29 32.7
comp=Z,98nm,1.1s
LVZ Lovozero 60.66 336 *ce*P P 22 29 38.2 +0.9
LVZ pmax pmax
comp=Z,7.0nm,0.6s
LVZ Lovozero 60.66 336 *e*P P 22 29 37.1 -0.2
comp=Z,25nm,0.9s
RES Resolute Bay 60.70 15 P P 22 29 37.4 0.0
comp=Z,19nm,0.9s,baz=309,slow=7.0,SNR=66
RES Resolute Bay 60.70 15 *e*P P 22 29 37.4 0.0
comp=Z,30nm,1.1s
APA Apatity 61.24 335 ⇑ iP P 22 29 40.1 -1.1
APA pmax pmax
comp=Z,69nm,1.3s
APA MLR MLR
comp=Z,800nm,18.0s
TMCR Tamitsa 61.40 331 *e*P P 22 29 41.6 -0.7
TMCR pmax pmax
comp=Z,123nm,1.2s
KEV Kevo 61.92 339 *e*P P 22 29 46.2 +0.5
KEV pmax pmax
comp=Z,35nm,1.1s
KEV Kevo 61.92 339 *e*P P 22 29 46.2 +0.5
comp=Z,35nm,1.1s
YKW3 Yellowknife Ar 61.93 31 *e*P P 22 29 46.3 +0.4
comp=Z,33nm,1.5s
YKA Yellowknife Ar 61.97 31 P P 22 29 46.5 +0.3
comp=Z,9.8nm,1.0s,baz=296,slow=6.7,SNR=85
YKB5 Yellowknife Ar 61.97 31 *e*P P 22 29 45.5 -0.7
HAMF Hammerfest 62.27 341 *e*P P 22 29 47.2 -0.8
HAMF IAmb IAmb 22 29 48.6
comp=Z,30nm,1.1s
ARA0 ARCESS Array S 62.47 339 *e*P P 22 29 49.5 0.0
ARCES ARCESS Array B 62.47 339 P P 22 29 49.5 0.0
comp=Z,9.8nm,0.8s,baz=51,slow=7.4,SNR=21
ARCES LR LR 23 00 13.6
comp=Z,147nm,18.9s,baz=354,slow=39
ARE0 ARCESS Array S 62.47 339 *e*P P 22 29 49.2 -0.2
ARE0 IAmb IAmb 22 29 50.5
comp=Z,21nm,1.0s
ARE0 ARCESS Array S 62.47 339 *e*P P 22 29 49.6 +0.2
comp=Z,20nm,1.0s
KLMR Klimovskoe 62.49 327 *e*P P 22 29 47.5 -2.2
KLMR *e* 22 32 04.9
KLMR pmax pmax
comp=Z,92nm,1.4s
AS01 Alice Springs 62.66 188 *e*P P 22 29 50.1 -1.1
AS31 Alice Springs 62.67 188 *e*P P 22 29 50.9 -0.4
comp=Z,3.7nm,0.8s
ASAR Alice Springs 62.67 188 P P 22 29 51.0 -0.3
comp=Z,10nm,0.7s,baz=9.7,slow=6.2,SNR=102
ASAR LR LR 22 57 15.7
comp=Z,114nm,21.8s,baz=360,slow=36
ASAR Alice Springs 62.67 188 P P 22 29 51.0 -0.3
ASAR pmax pmax
comp=Z,10.0nm,0.7s
ASAR MLR MLR
comp=Z,114nm,21.8s
MBWA Marble Bar 63.27 203 *e*P P 22 29 54.8 -0.5
comp=Z,14nm,0.9s
GEYT Alibeck 63.41 298 P P 22 29 56.3 0.0
comp=Z,35nm,0.9s,baz=29,slow=3.4,SNR=90
GEYT LR LR 22 59 26.1
comp=Z,517nm,18.3s,baz=80,slow=38
KTK1 Kautokeino 63.43 339 *e*P P 22 29 56.0 +0.2
KTK1 IAmb IAmb 22 29 56.8
comp=Z,48nm,1.1s
DAG Danmarks Havn 64.00 355 ⇑ iP P 22 29 59.2 -0.2
comp=Z,47nm,1.1s
comp=Z,2µm,15.0s
DAG Danmarks Havn 64.00 355 ⇑ iP P 22 29 59.2 -0.2
DAG pmax pmax
comp=Z,60nm,1.1s
DAG MLR MLR
comp=Z,2µm,15.0s
TRO Tromso 64.16 341 *e*P P 22 30 00.6 +0.1
TRO IAmb IAmb 22 30 01.2
comp=Z,60nm,1.1s
B05A Bryant 65.68 47 P P 22 30 12.1 +1.3
baz=302
MOS Moscow 66.09 323 *e*P P 22 30 12.9 -0.4
MOS *e* 22 30 29.1
MOS *e* 22 32 37.4
MOS pmax pmax
comp=Z,200nm,1.6s
MOS pmax pmax
comp=Z,123nm,1.4s
MOS MLR MLR
comp=Z,1µm,17.0s
STEI Steigen 66.31 341 *e*P P 22 30 14.6 +0.1
STEI IAmb IAmb 22 30 15.1
comp=Z,21nm,0.9s
VRH Novokhopyorsk 66.58 318 *e*P P 22 30 15.9 -0.6
VRH *e* 22 32 38.5
VRH pmax pmax
comp=Z,50nm,0.9s
VRH MLR MLR
comp=Z,920nm,16.0s
PUL Pulkovo 66.89 329 ⇑ *e*P P 22 30 19.3 +1.0
PUL pmax pmax
comp=Z,139nm,0.4s
OBN Obninsk 66.95 323 *c* iP P 22 30 18.8 0.0
OBN *e* 22 30 35.5
OBN *e* 22 32 47.2
OBN *e*S **S** 22 39 06.1 -2.4
OBN pmax pmax
comp=Z,152nm,1.7s
OBN MLR MLR
comp=Z,567nm,15.0s
OBN Obninsk 66.95 323 *e*P P 22 30 18.7 0.0
comp=Z,96nm,1.1s
B08A Colville Reser 67.18 46 *e*P P 22 30 21.8 +1.3
comp=Z,10nm,1.0s
LPSR Galich'ya Gora 67.24 320 *e*P P 22 30 20.5 -0.2
LPSR *e* 22 32 45.3
LPSR pmax pmax
comp=Z,70nm,1.1s
LPSR MLR MLR
comp=Z,660nm,21.0s
I03D Drain, OR 67.36 52 P P 22 30 24.3 +2.7
baz=303
FIA1 FINESS Array S 67.44 332 *e*P P 22 30 21.8 -0.1
FINES FINESS Array B 67.44 332 P P 22 30 21.7 -0.1
comp=Z,50nm,0.8s,baz=51,slow=7.6,SNR=173
FINES LR LR 23 02 02.1
comp=Z,658nm,19.1s,baz=22,slow=38
MOR8 Moi Rana 67.83 340 *e*P P 22 30 22.8 -1.5
MOR8 IAmb IAmb 22 30 23.6
comp=Z,41nm,0.9s
I04A Tendick Farm, 67.88 51 P P 22 30 26.6 +1.6
baz=303
VSR Storozhevoye 67.90 319 *e*P P 22 30 24.6 -0.3
VSR pmax pmax
comp=Z,50nm,0.9s
VSR MLR MLR
comp=Z,1µm,21.0s
AFI Afiamalu 67.92 131 LR LR 22 54 20.1
comp=Z,321nm,21.7s,baz=324,slow=31
NEW Newport 68.46 45 P P 22 30 29.4 +0.8
comp=Z,7.3nm,0.9s,baz=296,slow=3.7,SNR=8.6
NEW Newport 68.46 45 P P 22 30 29.2 +0.7
baz=305
NEW Newport 68.46 45 *e*P P 22 30 29.9 +1.3
NEW Newport 68.46 45 *e*P P 22 30 29.9 +1.3
YBH Yreka Blue Hor 68.82 53 P P 22 30 32.6 +1.6
comp=Z,6.4nm,1.0s,baz=287,slow=6.2,SNR=6.8
YBH Yreka Blue Hor 68.82 53 *e*P P 22 30 33.5 +2.5
YBH pmax pmax
comp=Z,52nm,1.9s
YBH Yreka Blue Hor 68.82 53 *e*P P 22 30 33.5 +2.5
comp=Z,52nm,1.9s
SUMG Summit 68.86 0 ⇑ iP P 22 30 31.7 +0.6
comp=Z,2µm,15.0s
SUMG Summit 68.86 0 *e*P P 22 30 31.7 +0.6
SUMG pmax pmax
comp=Z,63nm,1.1s
SUMG Summit 68.86 0 *e*P P 22 30 31.7 +0.6
comp=Z,63nm,1.1s
J05D Fort Rock, OR 68.87 51 P P 22 30 32.7 +1.4
baz=304
VSU Vasula 69.14 329 *c* iP P 22 30 32.7 +0.2
VSU pmax pmax
comp=Z,402nm,1.7s
N02D Trinity Center 69.25 54 P P 22 30 35.2 +1.6
baz=304
GOF Gofitskoye 69.27 312 ⇑ iP P 22 30 33.8 +0.2
GOF pmax pmax
comp=Z,166nm,0.9s
M04C Macdoel 69.34 53 P P 22 30 35.9 +1.7
baz=304
K05A Summer Lake 69.39 51 *e*P P 22 30 37.3 +2.6
comp=Z,31nm,1.1s
WDC Whiskeytown Da 69.57 54 *e*P P 22 30 37.7 +2.2
WDC pmax pmax
comp=Z,10.0nm,1.0s
WDC Whiskeytown Da 69.57 54 *e*P P 22 30 37.7 +2.2
comp=Z,10nm,1.0s
WALA Waterton Lakes 69.74 43 *e*P P 22 30 37.5 +0.9
comp=Z,8.8nm,0.8s
NSS Namsos 69.76 339 *e*P P 22 30 36.2 +0.1
NSS IAmb IAmb 22 30 36.8
comp=Z,24nm,1.1s
NCK Nalchik 69.83 310 ⇑ iP P 22 30 37.3 +0.2
NCK pmax pmax
comp=Z,73nm,1.1s
GUDG Gudauri 69.88 309 P P 22 30 38.8 +1.2
DGRG David-gareji 69.90 307 P P 22 30 38.3 +0.7
DGRG David-gareji 69.90 307 P P 22 30 38.3 +0.7
ZEI Tsey 70.05 309 *e*P P 22 30 38.0 -0.7
ZEI pmax pmax
comp=Z,110nm,1.1s
KIV Kislovodsk 70.11 311 *i* P P 22 30 39.5 +0.6
SNR=99
KIV Kislovodsk 70.11 311 *c* iP P 22 30 39.4 +0.5
KIV *i* 22 30 47.7
KIV *i* 22 30 56.7
KIV *e* 22 33 15.5
KIV *e*S SKiKP 22 40 05.7 -15
KIV *e*SS **SS** **22 44 16.9 +0.7**
KIV pmax pmax
comp=Z,256nm,1.0s
KIV MLR MLR
comp=Z,297nm,17.0s
KIV Kislovodsk 70.11 311 *e*P P 22 30 39.5 +0.6
comp=Z,225nm,1.0s
KBZ Khabaz 70.11 310 P P 22 30 39.1 +0.4
comp=Z,61nm,0.9s,baz=64,slow=4.6,SNR=88
KBZ LR LR 23 06 13.2
comp=Z,258nm,18.4s,baz=62,slow=40
TBLG Delisi 70.13 308 P P 22 30 47.1 +8.1
TBLG Delisi 70.13 308 P P 22 30 47.1 +8.1
JTMT Jette 70.32 44 *e*P P 22 30 41.8 +1.6
JTMT *e*pP **sP** **22 30 55.9 -2.1**
SCO Scoresbysund 70.35 354 ⇑ iP P 22 30 40.3 +0.6
comp=Z,36nm,1.3s
comp=Z,2µm,16.0s
SCO Scoresbysund 70.35 354 ⇑ iP P 22 30 40.3 +0.6
SCO pmax pmax
comp=Z,36nm,1.3s
SCO MLR MLR
comp=Z,2µm,16.0s
STKA Stephens Creek 70.38 180 P P 22 30 40.0 -0.3
comp=Z,3.8nm,1.0s,baz=9.8,slow=9.9,SNR=5.8
STKA LR LR 23 01 20.9
comp=Z,137nm,21.5s,baz=23,slow=36
ONI Oni 70.43 309 P P 22 30 41.5 +0.7
ONI Oni 70.43 309 P P 22 30 41.5 +0.7
NEY Neytrino 70.49 310 *d* iP P 22 30 42.9 +1.6
NEY pmax pmax
comp=Z,8.0nm,1.0s
SWMT Swartz Lake 70.61 44 *e*P P 22 30 43.3 +1.3
WVOR Wild Horse Val 70.93 51 *e*P P 22 30 45.3 +1.4
WVOR pmax pmax
comp=Z,4.0nm,1.0s
WVOR Wild Horse Val 70.93 51 *e*P P 22 30 45.3 +1.4
comp=Z,4.4nm,1.0s
GNI Garni 71.03 306 *i* P P 22 30 45.1 +0.5
SNR=17
GNI Garni 71.03 306 *c* iP P 22 30 45.5 +0.8
GNI pmax pmax
comp=Z,204nm,1.2s
GNI Garni 71.03 306 *e*P P 22 30 45.6 +1.0
comp=Z,74nm,1.3s
GNI Garni 71.03 306 P P 22 30 40.6 -4.1
SNR=17
GNI Garni 71.03 306 P P 22 30 40.6 -4.1
SNR=17
MSO Missoula 71.05 45 P P 22 30 45.6 +1.0
baz=307
MSO Missoula 71.05 45 *e*P P 22 30 45.5 +1.0
comp=Z,5.9nm,0.9s
AKH Akhalkalaki 71.08 308 ⇓ iP P 22 30 46.2 +1.2
BIDO Bidbid 71.12 285 P P 22 30 47.0 +1.7
SNR=7.8
BIDO Bidbid 71.12 285 P P 22 30 45.2 0.0
BANOM Banah 71.12 288 *i* P P 22 30 45.5 +0.3
SNR=11
BANOM Banah 71.12 288 P P 22 30 46.7 +1.4
SNR=5.7
BANOM Banah 71.12 288 P P 22 30 45.3 +0.1
IZAR Zarasai 71.15 327 *e*P P 22 30 45.2 +0.4
IZAR IAmb IAmb 22 30 46.8
comp=Z,32nm,1.2s
CHVG Ch'k'valeri 71.18 310 P P 22 30 45.8 +0.5
CHVG Ch'k'valeri 71.18 310 ⇑ iP P 22 30 45.8 +0.5
IDID Didziasalis 71.23 327 *e*P P 22 30 45.7 +0.4
IDID IAmb IAmb 22 30 47.3
comp=Z,34nm,1.0s
TBLU Trondheim 71.23 339 *e*P P 22 30 44.5 -0.7
TBLU IAmb IAmb 22 30 45.1
comp=Z,41nm,1.1s
ISAL Salakas 71.32 327 *e*P P 22 30 46.3 +0.4
ISAL IAmb IAmb 22 30 47.9
comp=Z,54nm,1.0s
SMDO Samad 71.44 285 P P 22 30 47.8 +0.5
SNR=9.7
SMDO Samad 71.44 285 P P 22 30 47.8 +0.5
SNR=9.7
NACGM Naroch 71.49 327 *e*P P 22 30 47.0 +0.1
NACGM PM 22 30 48.0
comp=Z,0.3nm,1.0s
NACGM *e*LR LR 23 03 14.0
BBOO Buckleboo 71.53 185 *e*P P 22 30 47.6 +0.3
comp=Z,13nm,0.8s
UOSS Minazif 71.75 288 *e*P P 22 30 49.1 +0.1
comp=Z,4.3nm,1.1s
ILULI Ilulissat 71.80 5 ⇑ iP P 22 30 48.7 +0.2
comp=Z,2µm,13.0s
ILULI Ilulissat 71.80 5 ⇑ iP P 22 30 48.7 +0.2
ILULI MLR MLR
comp=Z,2µm,13.0s
HATD Hatta, Dubai 71.87 287 *i* P P 22 30 50.0 +0.3
SNR=28
ASHO Ashiyiah 72.01 287 *i* P P 22 30 50.8 +0.2
SNR=26
ASHO Ashiyiah 72.01 287 P P 22 30 49.2 -1.5
SNR=18
ASHO Ashiyiah 72.01 287 P P 22 30 49.2 -1.5
SNR=18
MFID Camas Ranch 72.02 49 *e*P P 22 30 52.0 +1.5
comp=Z,7.9nm,1.1s
SOC Sochi 72.07 312 *c* iP P 22 30 50.5 -0.1
SOC *e* 22 33 38.0
SOC *e*S **S** **22 40 10.1 +0.9**
SOC *e*SS **SS** **22 44 44.8 -1.2**
SOC pmax pmax
comp=Z,58nm,1.0s
SOC MLR MLR
comp=Z,431nm,17.0s
NAZ Nazwa, Dubai 72.13 288 *i* P P 22 30 51.2 -0.1
SNR=8.3
FCC Fort Churchill 72.14 27 *e*P P 22 30 50.4 -0.3
FCC pmax pmax
comp=Z,38nm,1.1s
FCC Fort Churchill 72.14 27 *e*P P 22 30 50.4 -0.3
comp=Z,38nm,1.1s
FAQ Al Faqa, Dubai 72.32 288 *i* P P 22 30 52.2 -0.2
SNR=23
CMB Columbia Colle 72.39 55 *e*P P 22 30 54.1 +1.4
CMB pmax pmax
comp=Z,15nm,1.3s
CMB Columbia Colle 72.39 55 *e*P P 22 30 54.1 +1.4
comp=Z,15nm,1.3s
ARQ Araqi 72.43 286 P P 22 30 53.3 +0.1
SNR=16
ARQ Araqi 72.43 286 P P 22 30 53.3 +0.1
SNR=16
LRM Limekiln Ridge 72.48 45 *e*P P 22 30 54.7 +1.3
NC405 NORSAR Array S 72.49 337 *e*P P 22 30 53.1 +0.2
NC303 NORSAR Array S 72.51 337 *e*P P 22 30 53.1 +0.1
EGMT Eagleton 72.56 42 P P 22 30 54.4 +0.7
baz=309
EGMT Eagleton 72.56 42 *e*P P 22 30 54.3 +0.7
comp=Z,20nm,1.1s
ANN Anapa 72.64 314 *c* iP P 22 30 53.7 -0.3
ANN *e*PP **pP** **22 31 07.8 +1.0**
ANN *e* 22 31 09.7
ANN *e*S **S** **22 40 13.2 -2.4**
ANN pmax pmax
comp=Z,88nm,1.4s
ANN MLR MLR
comp=N,219nm,15.0s
ANN MLR MLR
comp=Z,300nm,15.0s
ANN MLR MLR
comp=E,193nm,15.0s
NC204 NORSAR Array S 72.65 338 *e*P P 22 30 54.2 +0.4
NB201 NORSAR Array S 72.67 337 *e*P P 22 30 54.0 +0.1
NB2 NORSAR Subarra 72.70 337 P P 22 30 53.8 -0.3
comp=Z,60nm,1.1s,baz=39,slow=6.2
NB2 NORSAR Subarra 72.70 337 P P 22 30 53.8 -0.3
baz=39,slow=6.2
NOA NORSAR Array B 72.70 337 P P 22 30 54.0 -0.1
comp=Z,29nm,0.9s,baz=38,slow=5.9,SNR=81
NOA PP **PP** **22 33 35.3 -0.3**
comp=Z,3.0nm,0.9s,baz=20,slow=7.0,SNR=4.3
NOA LR LR 23 05 29.6
comp=Z,642nm,21.4s,baz=35,slow=38
NOA NORSAR Array B 72.70 337 P P 22 30 54.0 -0.1
NOA 22 33 35.3
NOA pmax pmax
comp=Z,30nm,1.0s
NOA pmax pmax
comp=Z,3.0nm,0.9s
NOA MLR MLR
comp=Z,642nm,21.4s
HLID Hailey 72.75 48 P P 22 30 56.3 +1.4
baz=308
HLID Hailey 72.75 48 *e*P P 22 30 56.5 +1.6
comp=Z,4.5nm,0.8s
NBO02 NORSAR Array S 72.80 337 *e*P P 22 30 54.6 -0.1
NBO00 NORSAR Array S 72.84 337 *e*P P 22 30 55.3 +0.4
NC602 NORSAR Array S 72.84 337 *e*P P 22 30 54.9 0.0
NC602 IAmb IAmb 22 30 55.6
comp=Z,31nm,1.1s

NC602 NORSAR Array S 72.84 337 eP P 22 30 54.6 -0.3
NAO01 NORSAR Array S 72.96 337 eP P 22 30 54.7 -0.9
AKN Aaknes 72.99 340 eP P 22 30 56.0 +0.1
BOZ Bozeman (W) 73.04 45 P P 22 30 57.5 +0.9
baz=309
BOZ Bozeman (W) 73.04 45 eP P 22 30 57.7 +1.1
BOZ pmax pmax
comp=Z,10.0nm,0.8s
BOZ Bozeman (W) 73.04 45 eP P 22 30 57.7 +1.1
comp=Z,9.7nm,0.8s
AKASG Malin Array Be 73.17 322 P P 22 30 56.7 -0.3
comp=Z,41nm,0.9s,baz=45,slow=6.6,SNR=147
AKASG PP PP 22 33 41.0 +1.2
comp=Z,3.9nm,0.8s,baz=44,slow=9.0,SNR=4.3
AKASG LR LR 23 06 03.6
comp=Z,755nm,18.6s,baz=350,slow=38
AKBB Malin Array Si 73.17 322 eP P 22 30 56.9 -0.1
AKBB pmax pmax
comp=Z,87nm,1.1s
AKBB Malin Array Si 73.17 322 eP P 22 30 56.9 -0.1
comp=Z,87nm,1.1s
KIEV Kiev 73.18 322 c iP P 22 30 56.8 -0.3
KIEV pmax pmax
comp=Z,81nm,1.1s
KIEV Kiev 73.18 322 eP P 22 30 56.7 -0.3
comp=Z,77nm,1.1s
AK11 Malin Array Si 73.21 322 eP P 22 30 56.8 -0.5
NV01 Mina Array Sit 73.48 54 eP P 22 31 00.1 +0.7
NVAR Mina Array Bea 73.48 54 P P 22 31 00.9 +1.5
comp=Z,5.8nm,0.8s,baz=285,slow=5.8,SNR=16
NVAR LR LR 23 00 32.0
comp=Z,175nm,18.9s,baz=280,slow=33
NV11 Mina Array Sit 73.58 54 eP P 22 31 01.3 +1.5
comp=Z,8.6nm,1.0s
SUW Suwalki 73.63 327 eP P 22 30 59.4 -0.3
OSL Oslo 73.72 337 eP P 22 31 00.5 +0.4
OSL IAmb IAmb 22 31 01.3
comp=Z,67nm,1.1s
ELK Elko 73.98 50 eP P 22 31 03.7 +1.4
ELK Elko 73.98 50 eP P 22 31 03.7 +1.4
SFJD Kangerlussuaq 74.02 5 P P 22 31 01.8 +0.2
comp=Z,22nm,1.0s,baz=352,slow=6.3,SNR=3.6
SFJD Kangerlussuaq 74.02 5 i P P 22 31 01.8 +0.2
comp=Z,1μm,15.0s
SFJD Kangerlussuaq 74.02 5 eP P 22 31 01.9 +0.2
SFJD pmax pmax
comp=Z,29nm,1.0s
SFJD Kangerlussuaq 74.02 5 eP P 22 31 01.9 +0.2
comp=Z,29nm,1.0s
YMR Madison River 74.02 45 eP P 22 31 04.8 +2.4
comp=Z,8.3nm,0.8s
HYA Hoyanger 74.05 339 eP P 22 31 02.4 +0.4
HYA IAmb IAmb 22 31 03.2
comp=Z,35nm,1.0s
KONO Kongsberg 74.30 337 eP P 22 31 03.7 +0.2
KONO IAmb IAmb 22 31 04.5
comp=Z,25nm,1.0s
KONO Kongsberg 74.30 337 eP P 22 31 03.5 0.0
KONO pmax pmax
comp=Z,27nm,1.0s
KONO Kongsberg 74.30 337 eP P 22 31 03.5 0.0
comp=Z,26nm,1.0s
SIM Simferopol' 74.39 315 eP P 22 31 04.7 +0.4
SIM eS SKiKP 22 40 30.0 +3.0
SIM pmax pmax
comp=Z,48nm,1.0s
H17A Grant Village 74.41 45 P P 22 31 07.4 +2.6
baz=310
H17A Grant Village 74.41 45 eP P 22 31 07.5 +2.7
comp=Z,19nm,1.1s
FLWY Flagg Ranch 74.54 46 eP P 22 31 08.5 +3.0
comp=Z,13nm,1.1s
FXWY Fox Creek 74.64 46 eP P 22 31 08.0 +2.0
comp=Z,7.7nm,0.9s
RLMT Red Lodge 74.67 44 P P 22 31 07.4 +1.2
baz=310
RLMT Red Lodge 74.67 44 eP P 22 31 07.8 +1.6
comp=Z,43nm,1.9s
MOOW Moose Ponds 74.73 46 eP P 22 31 08.1 +1.6
comp=Z,10nm,1.1s
HVU Hansel Valley 74.80 48 eP P 22 31 08.8 +1.8
HVU pmax pmax
comp=Z,10.0nm,0.9s
HVU Hansel Valley 74.80 48 eP P 22 31 08.8 +1.8
comp=Z,9.8nm,0.9s
ASK Askoy 74.89 339 eP P 22 31 07.5 +0.7
ASK IAmb IAmb 22 31 08.2
comp=Z,37nm,1.1s
LOHW Long Hollow 74.89 46 eP P 22 31 09.3 +1.8
comp=Z,4.3nm,1.0s
REDW Red Top Meadow 74.91 46 eP P 22 31 10.0 +2.3
comp=Z,12nm,1.1s
BER Bergen 74.93 339 eP P 22 31 06.9 -0.2
GRAC Grapevine Rang 74.94 55 P P 22 31 09.1 +1.4
baz=308
ODD1 Odda 74.96 339 eP P 22 31 07.9 +0.6
DAC Darwin (Calif) 75.23 55 eP P 22 31 10.5 +0.9
DAC e*PP sP 22 31 28.0 +0.6
DAC Darwin (Calif) 75.23 55 eP P 22 31 10.5 +0.9
DAC epP sP 22 31 28.0 +0.6
R11A Troy Canyon, C 75.23 53 P P 22 31 10.5 +0.9
baz=308
R11A Troy Canyon, C 75.23 53 eP P 22 31 10.7 +1.2
comp=Z,12nm,0.9s
A25A Svangstu Ranch 75.30 38 P P 22 31 10.7 +1.2
baz=313
SORM Soroca 75.31 321⇑ iP P 22 31 08.9 -0.6
BLS5 Blasjo 75.41 338 eP P 22 31 10.1 +0.1
BLS5 IAmb IAmb 22 31 11.5
comp=Z,36nm,1.1s
MPMC Manual Prospec 75.43 55 P P 22 31 11.4 +0.7
baz=308
HWUT Hardware Ranch 75.62 48 eP P 22 31 13.3 +1.7
comp=Z,14nm,1.1s
LRMC Laurel Mtn Rad 75.66 56 P P 22 31 13.0 +1.1
baz=308
TPNV Topopah Spring 75.68 54 P P 22 31 13.1 +1.0
baz=308
HOMB Homborsund 75.75 337 eP P 22 31 12.1 +0.3
HOMB IAmb IAmb 22 31 12.9
comp=Z,31nm,1.0s
DUG Dugway, Tooele 75.77 50 P P 22 31 13.6 +1.1
baz=309
DUG Dugway, Tooele 75.77 50 eP P 22 31 14.2 +1.7
DUG pmax pmax
comp=Z,12nm,0.9s
DUG Dugway, Tooele 75.77 50 eP P 22 31 14.2 +1.7
comp=Z,12nm,0.9s
EDW2 Edwards Air Fo 75.82 57 P P 22 31 13.8 +1.0
baz=308
KIS Kishinev 75.84 320 eP P 22 31 12.0 -0.6
KIS LRM MLR 23 07 12.0
comp=Z,600nm,16.0s
KIS Kishinev 75.84 320 eP P 22 31 12.0 -0.6
KIS e 22 31 28.0
KIS e 22 40 50.0
KIS e 22 41 10.0
KIS MLR MLR
comp=N,500nm,16.0s
KIS MLR MLR
comp=E,300nm,16.0s
KIS MLR MLR
comp=Z,1μm,16.0s
KIS MLR MLR
comp=Z,600nm,16.0s
MILM Milestii Mici 75.90 320 ⇓ iP P 22 31 12.6 -0.3
BW06 Boulder Array 76.02 46 P P 22 31 14.5 +0.5
baz=310
BW06 Boulder Array 76.02 46 eP P 22 31 15.0 +0.9
PD31 Pinedale Array 76.02 46 eP P 22 31 14.2 +0.2
PDAR Pinedale Array 76.02 46 P P 22 31 14.6 +0.5
comp=Z,4.7nm,0.9s,baz=272,slow=2.4,SNR=21
BSD Bornholm Skovb 76.08 332⇑ iP P 22 31 13.6 -0.2
comp=Z,580nm,16.0s
BSD Bornholm Skovb 76.08 332⇑ iP P 22 31 13.6 -0.2
BSD MLR MLR
comp=Z,580nm,16.0s
SNART Snartemo 76.09 337 eP P 22 31 13.9 +0.2
SNART IAmb IAmb 22 31 15.1
comp=Z,27nm,1.0s
PSUT Pine Spring 76.19 52 eP P 22 31 17.0 +2.0
PSUT ePcP PcP 22 31 24.5 -2.5
PSUT epP sP 22 31 39.7 +6.8
BEL Belsk 76.20 327 eP P 22 31 15.4 +0.9
LVV L'vov 76.21 324 eP P 22 31 14.6 -0.1
JLU Jordanelle 76.32 49 eP P 22 31 16.4 +0.6
comp=Z,8.5nm,1.2s
IAS Iasi 76.34 320 ⇓ iP P 22 31 15.6 +0.2
NLU North Lily Min 76.36 50 eP P 22 31 18.0 +2.0
NLU epP pP 22 31 30.3 +1.4
D25A Fairfield 76.42 40 P P 22 31 16.8 +0.8
baz=313
BFSC Mount Baldy Ra 76.43 57 P P 22 31 17.5 +1.2
baz=308
COP Copenhagen 76.53 333⇑ iP P 22 31 16.8 +0.5
comp=Z,41nm,0.9s
comp=Z,450nm,16.0s
COP Copenhagen 76.53 333⇑ iP P 22 31 16.8 +0.5
COP pmax pmax
comp=Z,41nm,0.9s
COP MLR MLR
comp=Z,460nm,16.0s
C26A Wahner Farm, P 76.56 39 P P 22 31 17.8 +1.1
baz=314
A28A Rude Farm, Bot 76.68 37 P P 22 31 18.1 +0.8
baz=315
E25A Miller Ranch, 76.82 40 P P 22 31 19.2 +0.9
baz=313
PRAR RASCA 76.88 321 ⇓ iP P 22 31 18.8 +0.3
HEC Hector,Ludlow 76.93 56 P P 22 31 20.1 +1.0
baz=308
KWP Kalwaria Pacla 76.95 324 eP P 22 31 19.7 +0.9
KWP Kalwaria Pacla 76.95 324 ⇓ iP P 22 31 19.5 +0.7
MUD Monsted U'grnd 77.01 335⇑ iP P 22 31 19.3 +0.3
comp=Z,39nm,1.0s
comp=Z,780nm,18.0s
MUD Monsted U'grnd 77.01 335⇑ iP P 22 31 19.3 +0.3
MUD pmax pmax
comp=Z,39nm,1.0s
MUD MLR MLR
comp=Z,780nm,18.0s
GIRR Girov 77.03 321⇑ iP P 22 31 19.6 +0.2
TLCR 77.07 318 ⇓ iP P 22 31 19.0 -0.5
A29A Manning Farm, 77.15 36 P P 22 31 20.4 +0.4
baz=316
BUR08 Bucovina Ar. S 77.19 322 eP P 22 31 20.9 +0.5
F25A Bowman 77.19 41 P P 22 31 21.2 +0.8
baz=313
BURAR Bucovina Array 77.20 322⇑ iP P 22 31 20.9 +0.5
MSU Marysvale 77.22 51 eP P 22 31 22.9 +2.0
MSU e*PP sP 22 31 38.3 -0.5
MSU Marysvale 77.22 51 eP P 22 31 22.9 +2.0
MSU epP sP 22 31 38.3 -0.5
KSRV Kasrt alli 77.23 306 eP P 22 31 21.6 +0.9
TESR Tescani 77.26 320⇑ iP P 22 31 20.8 +0.1
GMRC Granite Mounta 77.39 56 P P 22 31 22.6 +0.8
baz=309
B29A Wagenman Farm, 77.42 37 P P 22 31 22.3 +0.8
baz=316
CFR Carcaliu 77.42 319⇑ iP P 22 31 21.4 -0.1
P17A Butcher Ranch, 77.46 49 eP P 22 31 23.7 +1.6
comp=Z,17nm,0.8s
PETR Petresti 77.51 319 ⇓ iP P 22 31 24.0 +2.0
LCMT Little Creek M 77.52 52 eP P 22 31 24.4 +1.9
comp=Z,46nm,1.0s
A30A Hoffart Farm, 77.56 36 P P 22 31 23.4 +1.1
baz=316
ODBI Odobesti 77.58 319 ⇓ iP P 22 31 24.5 +2.1
KOLS Kolonicke sedl 77.65 324 eP P 22 31 23.1 +0.3
KOLS pmax pmax
comp=Z,25nm,1.2s
KOLS Kolonicke sedl 77.65 324 eP P 22 31 23.1 +0.3
KOLS ePP PP 22 34 17.0 -0.6
KOLS eL L 23 09 05.1
VRI Vrincioaia 77.67 320⇑ iP P 22 31 23.8 +0.8
JOSR Joseni 77.69 321 ⇓ iP P 22 31 24.9 +1.8
ULM Lac du Bonnet 77.69 34 P P 22 31 22.4 -0.6
comp=Z,12nm,1.1s,baz=321,slow=7.5,SNR=8.1
ULM Lac du Bonnet 77.69 34 eP P 22 31 23.1 +0.1
ULM e 22 31 31.6
ULM pmax pmax
comp=Z,22nm,1.3s
ULM Lac du Bonnet 77.69 34 eP P 22 31 23.1 +0.1
comp=Z,22nm,1.3s
ULM ePcP PcP 22 31 31.6 -1.4
PLOR Plostina 77.72 320 ⇓ iP P 22 31 23.9 +0.6
STHS Stebnicka Huta 77.76 325 eP P 22 31 24.3 +0.9
STHS pmax pmax
comp=Z,30nm,1.2s
STHS Stebnicka Huta 77.76 325 eP P 22 31 24.3 +0.9
STHS ePP PP 22 34 16.4 -2.2
TIRR Tirgusor 77.77 318 ⇓ iP P 22 31 24.0 +0.5
TIRR Tirgusor 77.77 318 eP P 22 31 23.7 +0.2
TIRR pmax pmax
comp=Z,38nm,1.1s
TIRR Tirgusor 77.77 318 eP P 22 31 23.7 +0.2
comp=Z,38nm,1.1s
OJC Ojcow 77.81 326 eP P 22 31 24.2 +0.5
OJC Ojcow 77.81 326 eP P 22 31 24.2 +0.5
OJC pmax pmax
comp=Z,112nm,1.2s
OJC Ojcow 77.81 326 eP P 22 31 24.2 +0.5
comp=Z,112nm,1.2s
UZH Uzhgorod 77.86 324⇑ iP P 22 31 24.0 +0.1
UZH e 22 31 35.8
UZH MLR MLR
comp=N,700nm,14.0s
UZH MLR MLR
comp=E,900nm,14.0s
UZH MLR MLR
comp=Z,600nm,14.0s
HARR Harsova 77.86 318⇑ iP P 22 31 24.5 +0.5
GRER 77.88 319 ⇓ iP P 22 31 26.2 +2.1
B30A Myrvik Farm, E 77.91 36 P P 22 31 24.6 +0.4
baz=316
ARCR ARCALIA 77.99 322 ⇓ iP P 22 31 26.3 +1.6
BR131 Keskin Array S 78.03 312 eP P 22 31 25.4 +0.1
BRTR Keskin Array B 78.03 312 P P 22 31 25.4 +0.1
comp=Z,12nm,0.9s,baz=88,slow=3.8,SNR=66
BRTR PP PP 22 34 19.5 -1.8
comp=Z,15nm,1.1s,baz=76,slow=5.2,SNR=10
BRTR LR LR 23 10 38.7
comp=Z,152nm,19.5s,baz=330,slow=39
CRVS Cervenica-Dubn 78.04 325 eP P 22 31 25.5 +0.5
CRVS e 22 34 17.0
CRVS Cervenica-Dubn 78.04 325 eP P 22 31 25.5 +0.5
CRVS ePP PP 22 34 17.0 -3.9
TRPA Tarpa 78.10 323⇑ eP P 22 31 26.0 +0.7
IRM Iron Mountain 78.11 56 P P 22 31 26.6 +0.9
baz=309
RSSD Black Hills 78.12 42 P P 22 31 25.9 +0.1
baz=313
RSSD Black Hills 78.12 42 eP P 22 31 26.4 +0.6
RSSD pmax pmax
comp=Z,13nm,1.0s
RSSD Black Hills 78.12 42 eP P 22 31 26.4 +0.6
comp=Z,13nm,1.0s
NIE Niedzica 78.18 325 eP P 22 31 26.7 +0.9
PGOR Pogoanele 78.20 319 ⇓ iP P 22 31 27.6 +1.7
DRWC Darouich 78.21 308 eP P 22 31 21.4 -4.8
BC3 Big Chuckawall 78.23 56 P P 22 31 27.3 +0.9
baz=309
DOPR Dopca 78.27 320⇑ iP P 22 31 29.4 +3.1
ISR Istrita 78.28 319 ⇓ iP P 22 31 27.9 +1.5
MLR Muntele Rosu 78.33 320⇑ iP P 22 31 27.4 +0.6
MLR Muntele Rosu 78.33 320 eP P 22 31 26.9 +0.1
MLR pmax pmax
comp=Z,57nm,1.3s
MLR Muntele Rosu 78.33 320 eP P 22 31 26.9 +0.1
comp=Z,57nm,1.3s
I25A Rochford 78.35 42 P P 22 31 27.2 +0.1
baz=314
A32A Rocking H Ranc 78.40 35 P P 22 31 26.9 -0.1
baz=317
PSN Preselentsi 78.42 317 P P 22 31 27.9 +0.8
ANTO Ankara 78.43 312 eP P 22 31 28.0 +0.7
ANTO pmax pmax
comp=Z,49nm,0.8s
ANTO Ankara 78.43 312 eP P 22 31 28.0 +0.7
comp=Z,49nm,0.8s
BR231 Keskin MP Arra 78.45 312 eP P 22 31 28.5 +0.9
U15A North Rim 78.48 52 eP P 22 31 29.9 +1.9
comp=Z,62nm,0.8s
O20A White River Ci 78.49 47 P P 22 31 28.2 +0.4
baz=312
O20A White River Ci 78.49 47 eP P 22 31 28.8 +0.9
comp=Z,14nm,1.0s
SECR 78.58 319 ⇓ iP P 22 31 29.1 +1.1
RAC Raciborz 78.60 327 eP P 22 31 28.4 +0.4
RAC MLR MLR
comp=Z,700nm,19.0s
CJR Cluj-Napoca 78.62 322⇑ iP P 22 31 29.4 +1.1
PDMCI Parker Dam,Lak 78.67 55 P P 22 31 29.7 +1.0
baz=310
BTCH Batrach 78.71 307 eP P 22 31 19.2 -10
LANS Liptovska Anna 78.75 326 eP P 22 31 30.3 +1.4
LANS Liptovska Anna 78.75 326 eP P 22 31 30.3 +1.4
KECS Kecovo 78.79 325 eP P 22 31 29.2 +0.1
KECS e 22 31 43.2
KECS e 22 34 26.2
KECS pmax pmax
comp=Z,8.0nm,1.1s
KECS Kecovo 78.79 325 eP P 22 31 29.2 +0.1
KECS e 22 31 43.2
KECS ePP PP 22 34 26.2 -0.9
OKC Ostrava-Krasne 78.81 327⇑ iP P 22 31 29.6 +0.4
OKC AMS AMS 23 08 50.0
comp=Z,500nm,19.5s
VOIR 78.81 320 ⇓ iP P 22 31 29.6 +0.2
KSP Ksiaz 78.82 328 eP P 22 31 29.9 +0.7
A33A Warroad 78.88 35 P P 22 31 29.4 -0.2
baz=318
GLA Glamis 79.01 56 P P 22 31 31.7 +1.1
baz=309
PV09 Paradox Valley 79.05 49 eP P 22 31 32.9 +1.8
ARR Arges 79.07 320⇑ iP P 22 31 32.4 +1.6
WRDH Warideh 79.08 307 eP P 22 31 31.9 +0.9
MORC Moravsky Berou 79.11 327 ⇓ iP P 22 31 31.5 +0.7
MORC Moravsky Berou 79.11 327 eP P 22 31 31.6 +0.7
MORC pmax pmax
comp=Z,210nm,1.1s
MORC Moravsky Berou 79.11 327 eP P 22 31 31.6 +0.7
comp=Z,210nm,1.1s
ARNB Al Arnab 79.13 307 eP P 22 31 32.0 +0.7
AGMN Agassiz Nation 79.14 35 P P 22 31 30.6 -0.4
baz=318
AGMN Agassiz Nation 79.14 35 eP P 22 31 30.6 -0.4
comp=Z,35nm,1.6s
PRD Provadia 79.17 317 P P 22 31 31.9 +0.7
DPC Dobruska-Polom 79.19 328⇑ iP P 22 31 32.2 +0.9
DPC AMS AMS 23 09 00.0
comp=Z,700nm,18.0s
J26A Sides Ranch, S 79.19 42 P P 22 31 31.8 +0.4
baz=314
UPC Upice 79.19 328⇑ iP P 22 31 32.0 +0.7
UPC AMS AMS 23 09 00.0
comp=Z,700nm,18.3s
N23A Red Feather La 79.28 46 P P 22 31 33.5 +1.2
baz=313
N23A Red Feather La 79.28 46 eP P 22 31 33.9 +1.6
comp=Z,20nm,1.1s
H28A Mission Ridge 79.29 40 P P 22 31 33.3 +1.3
baz=315
PV05 Paradox Valley 79.34 49 eP P 22 31 34.2 +1.6
LOT Lotru 79.44 321⇑ iP P 22 31 32.9 0.0
PSZ Piszkesteto 79.47 325⇑ iP P 22 31 34.0 +1.1
PSZ Piszkesteto 79.47 325⇑ eP P 22 31 33.7 +0.8
PSZ Piszkesteto 79.47 325 eP P 22 31 33.5 +0.6
PSZ pmax pmax
comp=Z,70nm,1.2s
PSZ Piszkesteto 79.47 325 eP P 22 31 33.5 +0.6
comp=Z,70nm,1.2s
E31A Nome 79.48 37 P P 22 31 33.6 +0.6
baz=317
HUMR Humele 79.49 320 ⇓ iP P 22 31 32.5 -0.5
VYHS Vyhne 79.52 326 eP P 22 31 33.8 +0.7
VYHS pmax pmax
comp=Z,18nm,1.2s
VYHS Vyhne 79.52 326 eP P 22 31 33.8 +0.7
VYHS ePP PP 22 34 29.9 -3.3
Y14A Wickenburg 79.62 55 eP P 22 31 35.3 +1.3
Y14A epP sP 22 31 49.6 -2.3
WUAZ Wupatki 79.63 53 P P 22 31 35.4 +1.2
baz=311
I28A Midland 79.69 41 P P 22 31 34.6 +0.5
baz=315
BRG Berggiesshubel 79.74 330 eP P 22 31 34.6 +0.4
comp=Z,33nm,1.0s
BRG e 22 31 50.2
comp=Z,11nm,0.9s
BRG Berggiesshubel 79.74 330 eP P 22 31 34.6 +0.4
BRG e 22 31 50.2
BRG pmax pmax
comp=Z,33nm,1.0s
PVCC Panska Ves 79.76 329⇑ iP P 22 31 35.1 +0.7
PVCC AMS AMS 23 09 40.0
comp=Z,800nm,17.7s
CLL Collm 79.77 330⇑ iP P 22 31 34.3 -0.1
comp=Z,68nm,1.0s
CLL ePlp 22 31 36.0
CLL ePP PP 22 34 34.0 -1.2
CLL e(PPP) 22 36 08.0
CLL e 23 09 48.0
CLL LmV 23 19 00.0
comp=Z,700nm,20.3s
CLL Collm 79.77 330 eP P 22 31 34.5 +0.1
CLL pmax pmax
comp=Z,79nm,1.0s
CLL Collm 79.77 330 eP P 22 31 34.5 +0.1
comp=Z,79nm,1.0s
SMCO Snowmass 79.86 48 eP P 22 31 36.9 +1.3
comp=Z,12nm,1.2s
SIRR Siria 79.87 323 ⇓ iP P 22 31 35.6 +0.6
VRAC Vranov 79.87 327⇑ iP P 22 31 35.9 +0.9
G30A Faulkton 79.91 39 P P 22 31 35.4 +0.1
baz=316
GZR Gura Zlata 79.97 321⇑ iP P 22 31 36.2 +0.6
D33A AnnSam, Waubun 80.01 36 P P 22 31 36.0 +0.2
baz=318
J28A Allard Ranch, 80.07 41 P P 22 31 37.2 +1.0
baz=315
JMB Yambol 80.11 317 P P 22 31 36.8 +0.4
SMOL Smolenice 80.12 326 eP P 22 31 37.4 +1.1
SMOL Smolenice 80.12 326 eP P 22 31 37.4 +1.1
I29A Vivian Onida 80.12 40 P P 22 31 38.0 +1.5
baz=316
GOPC GO Pecny, Ondr 80.15 329⇑ iP P 22 31 37.1 +0.6
GOPC ePCP PcP 22 31 43.2 -0.5
GOPC AMS AMS 23 09 30.0
comp=Z,700nm,17.5s
PRA Prague 80.17 329⇑ eP P 22 31 37.2 +0.6
PRA AMS AMS 23 09 40.0
comp=Z,700nm,16.2s
BUD Budapest 80.19 325⇑ eP P 22 31 37.6 +0.9
PRU Pruhonice 80.19 329⇑ iP P 22 31 37.2 +0.5
PRU ePCP PcP 22 31 43.6 -0.3
PRU epP sP 22 31 53.2 -1.4
PRU AMS AMS 23 09 40.0
comp=Z,700nm,16.8s
ISCO Idaho Springs 80.21 46 P P 22 31 38.2 +0.8
baz=313
ISCO Idaho Springs 80.21 46 eP P 22 31 38.9 +1.5
ISCO pmax pmax
comp=Z,27nm,1.6s
ISCO Idaho Springs 80.21 46 eP P 22 31 38.9 +1.5
comp=Z,27nm,1.6s
PVL Pavlikeni 80.23 319 P P 22 31 37.8 +0.8
MVCO Mesa Verde 80.27 50 P P 22 31 38.3 +0.6
baz=312
TREC Trest 80.34 328⇑ iP P 22 31 38.1 +0.5
TREC epP sP 22 31 54.4 -1.1
TREC AMS AMS 23 09 50.0
comp=Z,600nm,17.5s
BZS Buzias 80.36 322⇑ iP P 22 31 37.8 +0.1
C35A Jirik Farms, M 80.43 35 P P 22 31 37.9 -0.1
baz=319
PKS7 Kunszentmiklos 80.45 324 eP P 22 31 39.2 +1.1
SUSD Miller 80.49 39 P P 22 31 38.5 0.0
baz=316
PKSG 80.54 325 eP P 22 31 39.7 +1.1
PKS6 Bocsa 80.60 324⇑ eP P 22 31 39.4 +0.5
CSKK Cs˙˙tkako 80.62 325⇑ eP P 22 31 39.3 +0.3
F33A 5 Mile Ranch, 80.76 37 P P 22 31 40.2 +0.4
baz=318
PKST T˜˜s 80.80 325 eP P 22 31 40.3 +0.3
NKC Novy Kostel 80.84 330⇑ iP P 22 31 40.6 +0.4
NKC epP sP 22 31 57.3 -0.8
NKC AMS AMS 23 10 20.0
comp=Z,600nm,13.0s
C36A Pine Crest Far 80.89 34 P P 22 31 40.4 -0.1
baz=320
MDVR Moldovita 80.93 322⇑ iP P 22 31 40.9 +0.1
MPEP Malo Peshtene 80.95 319 P P 22 31 41.4 +0.5
DIM Dimitrovgrad 80.95 318 P P 22 31 41.9 +1.0
214A Organ Pipe Nat 81.02 56 eP P 22 31 42.6 +1.1

comp=Z,24nm,0.4s
J30A Dallas 81.03 41 P P 22 31 41.8 +0.5
baz=316
SOP Sopron 81.13 326⇑ eP P 22 31 42.7 +1.0
G33A Ortonville 81.17 38 P P 22 31 41.9 -0.1
baz=318
D36A Goodland 81.19 35 P P 22 31 41.9 -0.2
baz=320
C37A Embarrass 81.19 34 P P 22 31 42.0 -0.1
baz=320
PKS9 Tamasi 81.20 325 eP P 22 31 42.3 +0.2
CONA Conrad Observa 81.24 327 iP P 22 31 43.3 +0.9
comp=Z,39nm,1.0s,SNR=38
KHC Kasperske Hory 81.26 329⇑ iP P 22 31 42.9 +0.5
KHC ePCP PcP 22 31 48.5 -0.1
KHC epP sP 22 31 58.6 -1.8
KHC ex x 22 42 05.2
KHC AMS AMS 23 10 20.0
comp=Z,900nm,18.0s
KHC Kasperske Hory 81.26 329 eP P 22 31 43.0 +0.5
KHC pmax pmax
comp=Z,20nm,1.1s
KHC Kasperske Hory 81.26 329 eP P 22 31 43.0 +0.5
comp=Z,20nm,1.1s
KDZ Kurdzhali 81.30 317 P P 22 31 43.2 +0.4
PGB Panagyurishte 81.31 319 P P 22 31 43.5 +0.6
PKSM Moragy 81.31 324⇑ iP P 22 31 42.6 -0.1
PKSM Moragy 81.31 324⇑ eP P 22 31 42.6 -0.1
EYMN Ely 81.32 33 P P 22 31 42.5 -0.3
baz=321
EYMN Ely 81.32 33 eP P 22 31 42.6 -0.3
comp=Z,23nm,1.2s
H33A Prehn Over Nor 81.40 38 P P 22 31 43.9 +0.6
baz=318
GEC2 GERESS Array S 81.43 328 eP P 22 31 43.6 +0.1
GEC2 pmax pmax
comp=Z,28nm,1.2s
GEC2 GERESS Array S 81.43 328 eP P 22 31 43.5 +0.1
comp=Z,28nm,1.2s
GERES GERESS Array B 81.43 328 P P 22 31 43.5 +0.1
comp=Z,10nm,0.8s,baz=38,slow=5.0,SNR=46
J31A Geddes 81.43 40 P P 22 31 44.5 +1.0
baz=317
K30A Basset 81.44 41 P P 22 31 44.5 +1.0
baz=316
GEA0 GERESS Array S 81.44 328 eP P 22 31 43.5 0.0
WTSB Winterswijk 81.50 334 eP P 22 31 43.5 -0.1
C38A Sawbill Land. 81.59 33 P P 22 31 44.2 -0.1
baz=321
ESK Eskdalemuir 81.61 341 iP P 22 31 45.5 +1.4
ESK Eskdalemuir 81.61 341 eP P 22 31 44.8 +0.7
comp=Z,46nm,1.3s
RZN Rozhen 81.64 318 P P 22 31 45.8 +1.0
E36A McGregor 81.65 35 P P 22 31 44.0 -0.5
baz=320
GRFO Grafenberg 81.75 330 eP P 22 31 45.3 +0.3
GRFO pmax pmax
comp=Z,85nm,1.1s
GRFO Grafenberg 81.75 330 eP P 22 31 45.3 +0.3
comp=Z,85nm,1.1s
ARSA Arzberg 81.91 326 iP P 22 31 46.4 +0.5
comp=Z,27nm,1.1s,SNR=23
K31A O'Neill 81.91 41 P P 22 31 46.3 +0.2
baz=317
BEHE Becsehely 81.96 325⇑ eP P 22 31 46.6 +0.4
MOA Molln 81.98 327 iP P 22 31 46.5 +0.3
comp=Z,34nm,1.2s,SNR=17
C39A Grand Marais 82.00 33 P P 22 31 46.4 +0.1
baz=322
F36A Milaca 82.03 36 P P 22 31 46.1 -0.4
baz=320
ECSD EROS Data Cent 82.16 39 P P 22 31 47.3 0.0
baz=318
ECSD EROS Data Cent 82.16 39 eP P 22 31 47.3 0.0
comp=Z,18nm,1.0s
L31A Butterfield Fa 82.19 41 P P 22 31 48.0 +0.5
baz=317
KOGS Kog 82.21 326 iP P 22 31 47.0 -0.5
MMB Musomiste 82.23 318 P P 22 31 48.3 +0.6
H35A Sunnyside Ranc 82.30 37 P P 22 31 48.2 +0.2
baz=319
KKB Krupnik 82.36 319 P P 22 31 49.1 +0.7
PERS Pernice 82.56 326 iP P 22 31 49.6 +0.2
comp=Z,124nm,1.1s
SOKA Soboth 82.56 326 iP P 22 31 49.6 +0.2
comp=Z,90nm,1.1s,SNR=80
T25A Trinidad 82.72 48 P P 22 31 51.7 +1.1
baz=314
T25A Trinidad 82.72 48 eP P 22 31 51.8 +1.1
T25A epP sP 22 32 06.5 -2.0
HGN Heimansgroeve 82.81 334 eP P 22 31 50.0 -0.5
comp=Z,52nm,1.3s
HGN ePP PP 22 35 15.6 +15
HGN Heimansgroeve 82.81 334 eSS SS 22 48 09.6 +43
SPMN Marine on St. 82.84 36 P P 22 31 51.3 +0.6
baz=320
BEBN Eben Emael 82.87 334 P P 22 31 50.8 0.0
comp=Z,15nm,1.3s
OBKA Obir 82.91 326 iP P 22 31 51.1 -0.1
comp=Z,18nm,0.8s,SNR=13
SISC Sisak 82.91 325 iP P 22 31 50.7 -0.4
MEM Membach 82.91 334 P P 22 31 50.9 -0.1
comp=Z,22nm,1.2s
KBA Koelnbreinsper 82.97 328 iP P 22 31 51.6 -0.1
comp=Z,42nm,1.0s,SNR=31
LAZ Ladron 82.97 51 eP P 22 31 54.0 +2.0
ANMO Albuquerque 83.02 50 P P 22 31 53.5 +1.3
comp=Z,7.9nm,1.1s,baz=310,slow=6.5,SNR=9.4
ANMO Albuquerque 83.02 50 eP P 22 31 53.4 +1.3
baz=313
ANMO Albuquerque 83.02 50⇓ iP P 22 31 53.8 +1.6
ANMO pmax pmax
comp=Z,12nm,1.2s
ANMO Albuquerque 83.02 50 eP P 22 31 53.8 +1.6
comp=Z,66nm,1.3s
VAY Valandovo 83.02 319 iP P 22 31 52.2 +0.4
BLY Banja Luka 83.09 324⇓ iP P 22 31 52.7 +0.6
SKO Skopje 83.12 320 iP P 22 31 53.3 +0.9
PLE Pljevlja 83.13 322⇑ iP P 22 31 52.3 -0.2
I36A Fitzsimmons Fa 83.20 37 P P 22 31 52.9 +0.2
baz=320
MYKA Terra Mystica 83.20 327 iP P 22 31 52.3 -0.4
comp=Z,53nm,1.7s,SNR=18
IVA Berane 83.22 321 eP P 22 31 53.2 +0.3
URZ Urewera 83.23 153 eP P 22 31 55.0 +2.4
comp=Z,57nm,1.4s
STU Stuttgart 83.27 331 eP P 22 31 53.6 +0.7
STU pmax pmax
comp=Z,47nm,1.0s
STU Stuttgart 83.27 331 eP P 22 31 53.6 +0.7
comp=Z,47nm,1.0s
H37A Dierke Farm, C 83.28 36 P P 22 31 53.5 +0.4
baz=320
LJU Ljubljana 83.28 326 iP P 22 31 52.6 -0.4
comp=Z,66nm,1.3s
BCLA Clavier 83.31 334 P P 22 31 52.8 -0.4
comp=Z,21nm,1.4s
CWF Charnwood Fore 83.39 339 eP P 22 31 54.0 +0.5
comp=Z,33nm,1.0s
PVY Plav 83.40 321⇑ iP P 22 31 53.9 0.0
SCHQ Schefferville 83.44 16 P P 22 31 53.5 -0.3
comp=Z,12nm,0.9s,baz=336,slow=6.7,SNR=9.9
SCHQ Schefferville 83.44 16 eP P 22 31 54.1 +0.4
comp=Z,12nm,0.9s
UPM Unac-Piva 83.46 322⇑ iP P 22 31 53.9 -0.3
I37A Lemond, Waseca 83.49 37 P P 22 31 54.7 +0.5
baz=320
WATA Walderalm 83.50 329 iP P 22 31 54.4 0.0
comp=Z,22nm,1.0s
WTTA Wattenberg 83.53 329 iP P 22 31 54.7 +0.1
comp=Z,22nm,1.0s,SNR=7.6
ABTA Abfaltersbach 83.58 328 iP P 22 31 53.9 -0.8
comp=Z,34nm,1.1s,SNR=18
SNF Seneffe 83.58 334 P P 22 31 54.3 -0.1
JAVS Javornik 83.60 326 iP P 22 31 53.9 -0.9
comp=Z,80nm,1.0s
LANF Langenberg 83.62 332⇑ eP P 22 31 54.9 +0.1
WLF Walferdange 83.65 333 P P 22 31 55.5 +0.7
comp=Z,28nm,2.0s
WLF Walferdange 83.65 333 eP P 22 31 55.7 +0.8
WLF pmax pmax
comp=Z,30nm,1.2s
WLF Walferdange 83.65 333 eP P 22 31 55.7 +0.8
comp=Z,30nm,1.2s
MOTA Moosalm 83.68 329 iPcP P 22 31 56.3 +1.0
comp=Z,56nm,1.0s,SNR=36
RETA Reutte 83.70 329 iP P 22 31 55.6 +0.3
comp=Z,94nm,1.1s,SNR=55
NKY Niksic 83.71 322 eP P 22 31 55.1 -0.3
NKME Niksic 83.76 322 eP P 22 31 55.1 -0.5
COWI Conover 83.77 33 eP P 22 31 55.7 +0.1
comp=Z,9.3nm,1.0s
DOU Dourbes 83.83 334 P P 22 31 55.6 -0.2
comp=Z,12nm,1.6s
121A Cookes Peak, D 83.84 53 P P 22 31 57.8 +1.4
baz=313
121A Cookes Peak, D 83.84 53 eP P 22 31 57.6 +1.2
BRY Bratogost 83.86 322⇑ iP P 22 31 55.6 -0.7
PDG Podgorica 83.87 321⇑ iP P 22 31 56.1 0.0
TTG Podgorica 83.87 321⇑ iP P 22 31 56.1 0.0
TRI Trieste 83.87 326 eP P 22 31 55.0 -1.0
TRI pmax pmax
comp=Z,43nm,1.0s
TRI Trieste 83.87 326 eP P 22 31 55.0 -1.0
comp=Z,42nm,1.0s
BIA Bitola 83.88 319 iP P 22 31 56.1 -0.2
UDBI Udbina 83.91 325 iP P 22 31 55.9 -0.5
CEME Cevo 83.94 322⇑ iP P 22 31 56.1 -0.5
BFO Black Forest 83.96 331 iP P 22 31 56.8 +0.3
BFO Black Forest 83.96 331 eP P 22 31 56.6 +0.1
comp=Z,67nm,1.1s
I38A Scanlan Farm, 83.96 36 P P 22 31 56.4 -0.2
baz=320
OHR Ohrid 84.08 320 iP P 22 31 57.2 -0.1
DRME Dracevica, Mon 84.08 321⇑ iP P 22 31 57.0 -0.2
FETA Feichten 84.09 329 iP P 22 31 57.5 +0.1
comp=Z,48nm,1.1s,SNR=27
BUM Brajici-Budva 84.14 321⇑ iP P 22 31 57.0 -0.6
CBKS Cedar Bluff 84.15 44 P P 22 31 57.7 0.0
baz=316
P32A Huiting Farm, 84.17 43 P P 22 31 57.4 -0.4
baz=317
DAVA Damuels 84.22 330 iP P 22 31 58.2 +0.2
comp=Z,94nm,1.0s,SNR=34
ULC Ulcinj 84.22 321⇑ iP P 22 31 57.7 -0.3
HCY Herceg Novi 84.22 322⇑ iP P 22 31 57.3 -0.6
STON Ston 84.28 322 iP P 22 31 56.8 -1.4
NVLJ Novalja 84.28 325 iP P 22 31 57.3 -0.9
K37A Belmond 84.33 38 P P 22 31 58.7 +0.2
baz=320
TIR Tirane 84.38 320⇑ iP P 22 31 59.2 +0.5
TIR Tirane 84.38 320 eP P 22 31 58.9 +0.2
TIR pmax pmax
comp=Z,59nm,1.0s
TIR Tirane 84.38 320 eP P 22 31 58.9 +0.2
comp=Z,59nm,1.0s
SRIG Santa Rosalia 84.41 59 eP P 22 31 56.6 -2.5
ECH Echery 84.50 332⇑ eP P 22 31 59.2 0.0
FUORN Ofenpass-Fuorn 84.61 329 eP P 22 32 00.6 +0.4
comp=Z,112nm,1.0s
L37A Phoenix Point, 84.76 38 P P 22 32 00.7 +0.1
baz=320
MOF Molkenrain 84.81 331⇑ eP P 22 32 00.7 -0.2
AGG Agios Georgios 84.83 317 eP P 22 32 00.1 -1.0
AGG pmax pmax
comp=Z,59nm,1.0s
AGG Agios Georgios 84.83 317 eP P 22 32 00.1 -1.0
comp=Z,59nm,1.0s
THEF They Montfort 84.92 332⇑ eP P 22 32 01.4 +0.1
SANT Santorini 85.03 314 eP P 22 32 00.5 -1.7
comp=Z,57nm,1.0s
Q33A Connelly Farm, 85.03 43 P P 22 32 02.0 -0.1
baz=318
TUE Stuetta 85.09 329 eP P 22 32 02.6 +0.1
comp=Z,44nm,1.1s
P34A Walnut Farm, R 85.16 42 P P 22 32 02.2 -0.5
baz=318
LOMF Lomont 85.34 331⇑ eP P 22 32 03.7 +0.1
Q34A Chapman 85.56 42 P P 22 32 04.8 +0.1
baz=318
M38A Pleasantville 85.57 38 P P 22 32 05.3 +0.6
baz=320
N37A Lee Faris, Mou 85.57 39 P P 22 32 05.7 +0.9
baz=320
T32A Huddler Ranch, 85.78 44 P P 22 32 06.3 +0.5
baz=317
LAST Lasithi 85.88 313⇓ iP P 22 32 07.3 +0.9
LAST Lasithi 85.88 313 eP P 22 32 07.4 +0.9
comp=Z,72nm,0.9s
MSTX Muleshoe 85.89 49 eP P 22 32 07.5 +1.0
comp=Z,102nm,0.7s
MNTX Cornudas Mount 85.89 52 P P 22 32 07.3 +0.7
baz=314
MNTX Cornudas Mount 85.89 52 eP P 22 32 07.2 +0.7
comp=Z,2.6nm,0.7s
P36A Good Intent, A 85.93 41 P P 22 32 06.5 -0.1
baz=319
SENIN Lac Senin/Sane 85.98 330 eP P 22 32 06.8 -0.2
comp=Z,20nm,0.8s
Q35A Mercer Eighty, 86.08 42 P P 22 32 07.2 -0.1
baz=319
IDI Anoyia 86.12 313⇑ iP P 22 32 06.0 -1.6
IDI Anoyia 86.12 313 eP P 22 32 06.1 -1.6
comp=Z,26nm,0.8s
OG01 Vacheresse 86.25 331⇑ eP P 22 32 07.9 -0.2
S34A Willow Spring 86.37 43 P P 22 32 08.0 -0.8
baz=318
P37A Lathrop 86.39 40 P P 22 32 08.8 0.0
baz=320
R35A Emporia Munici 86.39 42 P P 22 32 09.0 +0.2
baz=318
MATE Matera 86.46 322⇓ iP P 22 32 08.9 -0.2
AQU L'Aquila 86.68 325 eP P 22 32 10.6 +0.3
AQU e 22 35 35.4
AQU pmax pmax
comp=Z,44nm,1.2s
AQU L'Aquila 86.68 325 eP P 22 32 10.6 +0.3
comp=Z,44nm,1.2s
AQU ePP PP 22 35 35.4 +3.3
R36A Gordon, Harris 86.75 42 P P 22 32 10.7 0.0
baz=319
P38A Dawn 86.77 40 P P 22 32 10.8 +0.1
baz=320
O39A Kirksville 86.78 39 P P 22 32 11.2 +0.5
baz=321
S35A Otter Creek Ra 86.81 43 P P 22 32 11.2 +0.3
baz=318
T34A McClaskey Farm 86.83 44 P P 22 32 11.8 +0.8
baz=318
DAMY Dhamar 86.83 286 eP P 22 32 12.5 +0.7
comp=Z,38nm,1.1s
R37A Teagarden Farm 87.11 41 P P 22 32 12.0 -0.4
baz=319
S36A Lake Cedric, C 87.16 42 P P 22 32 12.5 -0.1
baz=319
O40A La Belle 87.21 38 P P 22 32 12.9 +0.1
baz=321
Q38A Cooks Store, C 87.24 40 P P 22 32 12.7 -0.2
baz=320
T35A Sooner Cattle 87.27 43 P P 22 32 13.1 -0.1
baz=318
CUC Castrocucco 87.40 322 eP P 22 32 12.5 -1.3
comp=Z,4.3nm,1.0s
Q39A Willow Grove F 87.49 40 P P 22 32 14.4 +0.2
baz=320
T36A Boggs Farm, Ca 87.50 43 P P 22 32 14.6 +0.3
baz=319
S37A Fort Scott 87.53 42 P P 22 32 14.2 -0.2
baz=319
U35A Pawnee 87.56 44 P P 22 32 15.2 +0.7
baz=318
TIP Timpagrande 87.57 321⇓ iP P 22 32 14.3 -0.3
TIP Timpagrande 87.57 321 eP P 22 32 14.4 -0.3
comp=Z,26nm,1.2s
TIP ePP PP 22 35 41.0 +1.7
P40A Paris 87.58 39 P P 22 32 14.8 +0.2
baz=321
R38A Fenwick Farm, 87.68 41 P P 22 32 14.3 -0.8
baz=320
PLDF La Plantade 87.69 332⇑ eP P 22 32 16.5 +1.4
AGO Saint Agoulin 87.79 333⇑ eP P 22 32 17.0 +1.5
SSB Saint Sauveur 87.94 332 eP P 22 32 16.3 +0.1
SSB pmax pmax
comp=Z,10.0nm,1.0s
SSB Saint Sauveur 87.94 332 eP P 22 32 16.3 +0.1
comp=Z,10nm,1.0s
T37A Cheneyville 18 87.96 42 P P 22 32 16.4 -0.1
baz=319
Q40A Laux Farm, Aux 87.98 39 P P 22 32 16.7 +0.2
baz=321
R39A Chumby, Stover 88.02 40 P P 22 32 16.4 -0.3
baz=320
HDIL Hopedale 88.09 37 P P 22 32 17.2 +0.2
baz=323
HDIL Hopedale 88.09 37 eP P 22 32 17.6 +0.6
comp=Z,49nm,1.1s
PYM Petit Puy Mans 88.10 333⇑ eP P 22 32 18.2 +1.2
S38A Stockton 88.10 41 P P 22 32 16.8 -0.3
baz=320
T38A Diamond 88.35 42 P P 22 32 18.3 0.0
baz=320
S39A Bolivar 88.36 41 P P 22 32 17.8 -0.5
baz=320
W35A Tecumseh 88.39 45 P P 22 32 19.2 +0.6
baz=318
V36A Jenks 88.42 44 P P 22 32 18.9 +0.2
baz=319
R40A Maddies Statio 88.43 40 P P 22 32 18.6 0.0
baz=321
LBL Lubilhac 88.46 332 eP P 22 32 20.4 +1.7
TX31 Lajitas Ar. Si 88.60 53 eP P 22 32 20.5 +0.8
TXAR Lajitas Array 88.60 53 P P 22 32 20.4 +0.7
comp=Z,1.6nm,0.6s,baz=294,slow=3.0,SNR=16
ABTX Abilene, Hawle 88.68 48 P P 22 32 20.9 +0.9
baz=317
ABTX Abilene, Hawle 88.68 48 eP P 22 32 21.5 +1.5
comp=Z,49nm,0.8s
CEL Celeste 88.71 321 eP P 22 32 19.9 -0.1
comp=Z,42nm,1.0s
W36A Wetumka 88.75 44 P P 22 32 20.6 +0.3
baz=319
U38A Gravette 88.76 42 P P 22 32 20.7 +0.4
baz=320
V37A Hulbert 88.78 43 P P 22 32 20.7 +0.4
baz=319
SADO Sadowa 88.84 28 P P 22 32 18.7 -1.8
comp=Z,6.3nm,0.9s,baz=292,slow=2.0,SNR=4.1
S40A Lebanon 88.84 40 P P 22 32 20.5 -0.1
baz=321
X35A Drake 88.89 45 P P 22 32 21.0 +0.1
baz=318
TRQ Mont Tremblant 89.16 24 eP P 22 32 22.1 +0.1
T40A Mansfield 89.18 41 P P 22 32 22.0 -0.2
baz=321
W37B Quinton 89.18 44 P P 22 32 22.2 -0.1
baz=319
V38A Canehill 89.18 43 P P 22 32 22.2 -0.1
baz=320
SFIN Lafayette 89.24 35 P P 22 32 22.5 +0.1
baz=324
SFIN Lafayette 89.24 35 eP P 22 32 23.0 +0.6
comp=Z,26nm,1.1s
U39A Green Forest 89.27 42 P P 22 32 22.4 -0.3
baz=320
Z35A Perchaven, San 89.53 46 P P 22 32 24.2 +0.3
baz=318
233A Rising Star 89.55 48 P P 22 32 24.3 +0.2
baz=317
V39A Pettigrew 89.60 42 P P 22 32 24.0 -0.3
baz=320
U40A Yellville 89.62 41 P P 22 32 24.1 -0.2
baz=320
Y36A Durant 89.64 45 P P 22 32 24.7 +0.2
baz=319
W38A Poteau 89.72 43 P P 22 32 25.2 +0.4
baz=320
X38A Whitesboro 89.86 44 P P 22 32 25.7 +0.3
baz=319
333A Richland Sprin 90.00 48 P P 22 32 26.4 +0.2
baz=317
OLIL Olney 90.10 37 eP P 22 32 27.4 +1.0
comp=Z,32nm,1.0s
X39A Fountain Ranch 90.36 43 P P 22 32 28.3 +0.5
baz=320
SIUC Southern Illin 90.38 38 eP P 22 32 28.7 +0.9
comp=Z,36nm,1.0s
334A Lometa 90.43 48 P P 22 32 28.5 +0.3
baz=318
Z37A Pogue Cattle C 90.53 45 P P 22 32 29.0 +0.4
baz=319
MIAR Mount Ida 90.62 43 P P 22 32 29.4 +0.4
baz=320
MIAR Mount Ida 90.62 43 eP P 22 32 29.8 +0.8
MIAR pmax pmax
comp=Z,27nm,1.2s
MIAR Mount Ida 90.62 43 eP P 22 32 29.8 +0.8
comp=Z,27nm,1.2s
X301 Greenbrier Sit 90.71 42 eP P 22 32 30.1 +0.8
comp=Z,17nm,1.1s
WHAR Wooly Hollow 90.73 42 eP P 22 32 29.9 +0.4
comp=Z,25nm,1.1s
434A Burnet 90.80 48 P P 22 32 29.9 +0.1
baz=318
Y39A Lockesburg 90.81 44 P P 22 32 30.4 +0.6
baz=320
W41B Gary Mavity, V 90.84 42 P P 22 32 30.3 +0.3
baz=321
X40A Basin Creek Fa 91.06 43 P P 22 32 31.1 +0.1
baz=320
ACSO Alum Creek Sta 91.16 33 eP P 22 32 32.0 +0.6
comp=Z,23nm,1.0s
633A Saathoff Ranch 91.25 50 P P 22 32 32.6 +0.6
baz=317
534A Blanco 91.25 49 P P 22 32 32.2 +0.2
baz=317
WCI Wyandotte Cave 91.34 36 eP P 22 32 33.1 +0.8
WCI pmax pmax
comp=Z,59nm,1.9s
WCI Wyandotte Cave 91.34 36 eP P 22 32 33.1 +0.8
comp=Z,59nm,1.9s
WVT Waverly 92.31 38 eP P 22 32 37.2 +0.5
WVT pmax pmax
comp=Z,13nm,1.2s
WVT Waverly 92.31 38 eP P 22 32 37.2 +0.5
comp=Z,13nm,1.2s
OXF Oxford 92.81 40 eP P 22 32 39.5 +0.4
OXF pmax pmax
comp=Z,41nm,1.2s
OXF Oxford 92.81 40 eP P 22 32 39.5 +0.4
comp=Z,41nm,1.2s
Y44A Strider, Charl 92.84 41 P P 22 32 40.0 +0.8
baz=322
SWET Sewanee 93.95 38 eP P 22 32 44.8 +0.4
comp=Z,4.6nm,1.1s
TKL Tuckaleechee C 94.60 36 P P 22 32 47.0 -0.3
comp=Z,8.2nm,1.0s,baz=93,slow=1.5,SNR=5.5
FURI Furi 94.74 285 eP P 22 32 50.7 +2.0
comp=Z,38nm,1.2s
ES19 SONSECA Array 95.83 334 eP P 22 32 52.7 -0.3
ES19 ePP PP 22 36 45.8 +1.6
ESDC Sonseca Array 95.88 334 P P 22 32 52.4 -0.8
comp=Z,2.4nm,0.8s,baz=24,slow=3.7,SNR=10
ESDC PP PP 22 36 44.1 -0.4
comp=Z,8.1nm,1.2s,baz=29,slow=6.9,SNR=7.3
KMBO Kilima Mbogo 102.23 279 P Pdif 22 33 21.4 -0.8
comp=Z,4.0nm,1.0s,baz=40,slow=9.3,SNR=6.8
KMBO Kilima Mbogo 102.23 279 iP Pdif 22 33 22.3 +0.1
KMBO pmax pmax
comp=Z,4.0nm,1.0s
KMBO Kilima Mbogo 102.23 279 ePdif Pdif 22 33 22.2 0.0
TAM Tamanrasset 106.40 319 ePP PP 22 38 05.4 +0.9
SDV Santo Domingo 123.59 40 ePKPdf PKPdf 22 38 24.8 +0.2
DBIC Dimbokro 125.29 318 PKP PKPdf 22 38 25.2 -2.4
comp=Z,8.8nm,1.1s,baz=86,slow=6.1,SNR=3.8
LBTB Lobatse 125.35 265 ePKIKP PKPdf 22 38 27.0 -0.5
LBTB Lobatse 125.35 265 ePKPdf PKPdf 22 38 27.0 -0.5
BOSA Boshof 127.40 261 PKP PKPdf 22 38 31.1 -0.2
comp=Z,6.8nm,1.0s,baz=278,slow=0.8,SNR=4.5
QSPA South Pole Qui 128.60 180 ePKPdf PKPdf 22 38 31.4 -0.9
SYO Syowa Base 130.07 207⇑ ePdiff Pdif 22 35 28.8 +1.5
PTGA Pitinga 137.01 33 ePKPdf PKPdf 22 38 50.4 +0.6
SAML Samuel 142.58 44 ePKPdf PKPdf 22 39 01.0 +1.2
SNAA Sanae 142.65 197 PKP PKPpre 22 38 53.2
VNA2 Neumayer--Watz 144.22 197 PKP PKPbc 22 38 59.2 -0.1
baz=112,slow=2.7
VNA3 Neumayer Olymp 144.46 195 PKP PKPab 22 38 59.4 -0.4
VNA1 Neumayer--Stat 144.61 197 PKP PKPab 22 39 00.2 -0.2
LPAZ La Paz 145.30 58 PKPbc PKPbc 22 39 04.8 -0.3
comp=Z,14nm,1.1s,baz=350,slow=5.3,SNR=20
LPAZ La Paz 145.30 58 ePKPbc PKPab 22 39 05.1 -0.1
PB11 IPOC Station P 146.66 64 ePKPdf PKPbc 22 39 07.8 -0.7
RCBR Riachuelo 147.06 356 ePKPdf PKPbc 22 39 09.8 +0.1
PB01 IPOC Station P 147.62 66 ePKPdf PKPdf 22 39 09.3 +0.9
PB01 ePKPab PKPab 22 39 17.8 +4.4
LVC Limon Verde 149.02 68 ePKPbc PKPbc 22 39 16.7 +1.6
LCO Las Campanas 151.22 80 ePKPbc PKPbc 22 39 20.8 +0.7
PLCA Paso Flores 154.94 105 PKPbc PKPbc 22 39 26.5 -1.2
comp=Z,2.9nm,1.0s,baz=276,slow=7.6,SNR=3.9

TAP 29 22:22:37.6, 23.15N×120.82E, h6km, ML1.5, C, Taiwan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
STYT	**Tauyuan**	**0.06**	**284**	*i* P	Pg	22 22 39.3	0.0
	baz=283						
STYT				*i* S	Sg	22 22 40.8	+0.3
	baz=283						
ELDTW	**Lidau**	**0.18**	**77**	*e*P	Pg	22 22 42.1	+0.7
	baz=79						
ELDTW				S	Sg	22 22 45.1	+1.3
	baz=79						
WTP	**Ta-pu**	**0.22**	**297**	P	Pg	22 22 42.8	+0.9
	baz=297						
WTP				S	Sg	22 22 46.7	+1.8
	baz=297						
SGST	**Jiashian**	**0.23**	**254**	*e*P	Pg	22 22 43.2	+1.0
	baz=250						
CHN1	**Nanshi**	**0.28**	**278**	*e*P	Pb	22 22 44.4	-0.7
	baz=277						
ALS	**Alishan**	**0.36**	**357**	*e*P	Pg	22 22 45.0	+0.1
	baz=358						
ALS				*e*S	Sg	22 22 50.8	+1.2
	baz=358						
TWG	**Pinlang**	**0.40**	**145**	*e*P	Pb	22 22 47.2	+0.1
	baz=145						
TWG				*e*S	Sb	22 22 54.9	+1.4
	baz=145						
CHN5	**Tsauling**	**0.47**	**343**	*e*P	Pb	22 22 47.6	-0.8
	baz=343						
CHN5				*e*S	Sb	22 22 55.0	-0.6
	baz=343						

IDC ***29*** *22:23:43.9±2.3, 24.17S×174.01W, h0km, mb4.1/3, mb1 4.3/4, mb1mx3.9/46, mbtmp4.2/4, ML3.5/1, Error ellipse: s-maj=162.8km s-min=33.2km az=165.0*
ISCJB ***29*** *22:23:45.7±0.8, 24.35S×173.81W±0.1, h33km, mb4.7/6, Error ellipse: s-maj=28.4km s-min=15.1km az=161.4*
NEIC ***29*** *22:23:48.5±0.7, 24.36S×173.85W, h35km, mb4.3/3, Error ellipse: s-maj=26.6km s-min=14.3km az=159.0*

ISC 29 22:23:48.4±0.9, 24.4S±0.2×173.8W±0.1, h35km, n11, σ1°23/10, mb4.3/6, South of Tonga Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAR	**Rarotonga**	**13.35**	**79**	Pn	**Pn**	**22 26 54.9**	**-0.5**
	2.4nm,0.3s,baz=164,slow=10,SNR=5.0						
URZ	**Urewera**	**15.87**	**207**	*e*Pn	**Pn**	**22 27 29.1**	**0.0**
	8.6nm,0.8s						
ASAR	**Alice Springs**	**47.50**	**260**	P	**P**	**22 32 20.6**	**+0.2**
	1.6nm,0.8s,baz=87,slow=7.6,SNR=4.5						
WRAB	**Tennant Creek**	**47.97**	**265**	*e*P	**P**	**22 32 24.2**	**+0.1**
	5.8nm,1.2s						
WRA	**Warramunga Arr**	**47.98**	**265**	P	**P**	**22 32 22.8**	**-1.3**
	1.7nm,0.7s,baz=101,slow=8.1,SNR=5.6						
KSM	**Kuching**	**77.74**	**277**	*e*P	**P**	**22 35 41.8**	**-0.6**
	1.8nm,0.5s						
ANMO	**Albuquerque**	**86.88**	**49**	*e*P	P	22 36 24.6	-5.3
	1μm,1.9s						
CMAR	**Chiang Mai Arr**	**94.99**	**288**	P	**P**	**22 37 07.4**	**-0.4**
	0.8nm,0.8s,baz=116,slow=3.4,SNR=5.8						
ARCES	**ARCESS Array B**	**133.35**	**351**	PKP	**PKPdf**	**22 43 02.5**	**+2.5**
	1.2nm,0.7s,baz=49,slow=6.1,SNR=3.8						
AKASG	**Malin Array Be**	**148.22**	**332**	PKPbc	**PKPbc**	**22 43 29.7**	**-0.7**
	1.2nm,0.5s,baz=44,slow=4.3,SNR=7.6						
BRTR	**Keskin Array B**	**152.26**	**310**	PKPbc	**PKPbc**	**22 43 42.0**	**+1.2**
	0.6nm,0.7s,baz=63,slow=3.3,SNR=6.0						

IDC ***29*** *22:26:12.0±1.1, 37.14N×142.45E, h0km, mb3.8/5, mb1 4.0/8, mb1mx3.7/56, mbtmp3.9/8, ML3.9/3, Error ellipse: s-maj=32.5km s-min=19.3km az=99.0*
ISCJB ***29*** *22:26:12.1±1.5, 37.19N±0.05×142.40E±0.07, h15km±10km, mb3.9/8, Error ellipse: s-maj=9.4km s-min=8.2km az=42.5*
NEIC ***29*** *22:26:14.0±4.5, 37.17N×142.48E, h14km±28km, mb4.1/3, Error ellipse: s-maj=17.0km s-min=9.2km az=125.0*
JMA ***29*** *22:26:13.3±0.2, 37.17N×142.34E, h24km, M4.0*

ISC 29 22:26:12.3±2.3, 37.19N±0.06×142.31E±0.08, h2km±12km, n27, σ1°39/28, mb3.9/8, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**1.16**	**279**	P	**Pg**	**22 26 34.4**	**-0.2**
JFK				*e*S	**Sg**	**22 26 49.2**	**-0.4**
ONAJ	**Iwakimizuishiy**	**1.21**	**266**	P	**Pg**	**22 26 35.1**	**-0.5**
ONAJ				S	**Sg**	**22 26 52.2**	**+0.9**
JMM	**Marumori**	**1.39**	**300**	P	**Pn**	**22 26 37.8**	**-0.9**
JMM				S	**Sn**	**22 26 54.8**	**-2.3**
JIO	**Ouri**	**1.48**	**329**	P	**Pn**	**22 26 39.2**	**-0.7**
JHO	**Hitachi**	**1.51**	**248**	P	**Pn**	**22 26 39.0**	**-1.4**
JFT	**Otama**	**1.61**	**282**	P	**Pn**	**22 26 41.9**	**+0.1**
JFT				S	**Sn**	**22 27 01.9**	**-1.2**
JOU	**Okura**	**1.76**	**313**	P	**Pn**	**22 26 44.1**	**+0.3**
JOU				*e*S	**Sn**	**22 27 05.6**	**-1.2**
MJAR	**Matsushiro Arr**	**3.35**	**260**	Pn	**Pn**	**22 27 07.5**	**+1.8**
	6.3nm,0.3s,baz=90,slow=15,SNR=13						
MAJO	**Matsushiro**	**3.35**	**260**	*e*Pn	**Pn**	**22 27 08.5**	**+2.7**
MAT	**Matsushiro**	**3.35**	**260**	P	**Pn**	**22 27 08.4**	**+2.6**
MAT				S	**Sn**	**22 27 47.0**	**+0.8**
JHJ	**Hachijo jima 2**	**4.56**	**208**	Pn	**Pn**	**22 27 22.0**	**-0.2**
	35nm,0.3s,baz=342,slow=17,SNR=9.6						
JHJ				Sn	**Sn**	**22 28 12.6**	**-3.2**
	31nm,0.3s,baz=79,slow=22,SNR=4.0						
ERM	**Erimo**	**4.87**	**7**	*e*Pn	**Pn**	**22 27 26.7**	**+0.2**
ASAJ	**Asahikawa**	**6.93**	**2**	Pn	**Pn**	**22 27 55.0**	**+0.2**
	1.9nm,0.3s,baz=216,slow=14,SNR=7.0						
H11N2	**WAKE ISLAND Hy**	**27.61**	**122**	T	T	23 00 53.7	
	baz=315,slow=75,SNR=78						
H11N1	**WAKE ISLAND Hy**	**27.62**	**122**	T	T	23 00 52.8	
	baz=315,slow=75,SNR=57						
H11N3	**WAKE ISLAND Hy**	**27.63**	**122**	T	T	23 00 55.0	
	baz=315,slow=75,SNR=61						
H11S1	**WAKE ISLAND Hy**	**28.34**	**124**	T	T	23 01 46.9	
	baz=316,slow=76,SNR=37						
H11S3	**WAKE ISLAND Hy**	**28.35**	**124**	T	T	23 01 46.8	
	baz=316,slow=76,SNR=44						
H11S2	**WAKE ISLAND Hy**	**28.36**	**124**	T	T	23 01 49.5	
	baz=316,slow=76,SNR=53						
TLY	**Talaya**	**30.78**	**311**	*e*P	**P**	**22 32 30.5**	**+1.4**
	0.9nm,0.4s						
MKAR	**Makanchi Array**	**44.65**	**302**	P	**P**	**22 34 26.9**	**+0.6**
	0.6nm,0.6s,baz=99,slow=8.9,SNR=3.5						
KURK	**Kurchatov**	**46.40**	**308**	*e*P	**P**	**22 34 41.7**	**+1.6**
	5.4nm,0.6s						
ILAR	**Eielson Array**	**48.98**	**32**	P	**P**	**22 34 60.0**	**+0.1**
	0.6nm,1.0s,baz=262,slow=6.3,SNR=3.4						
AAK	**Ala-Archa**	**51.05**	**299**	*e*P	**P**	**22 35 15.6**	**-0.6**
	0.9nm,0.9s						
WRA	**Warramunga Arr**	**57.32**	**189**	P	**P**	**22 36 01.1**	**-0.6**
	1.3nm,0.6s,baz=7.0,slow=7.3,SNR=11						
ASAR	**Alice Springs**	**61.04**	**189**	P	**P**	**22 36 27.5**	**0.0**
	0.6nm,0.7s,baz=14,slow=7.2,SNR=5.1						
FINES	**FINESS Array B**	**69.01**	**333**	P	**P**	**22 37 19.2**	**+0.3**
	1.7nm,0.7s,baz=50,slow=7.5,SNR=3.8						

IDC 29 22:31:30.4±1.2, 2.45N×99.13E, h152km±9km, mb3.1/4, mb1 3.3/5, mb1mx3.0/39, mbtmp3.6/5, Error ellipse: s-maj=93.1km s-min=17.6km az=59.0, Northern Sumatera

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PSI	**Prapat**	**0.41**	**330**	P	Pn	22 31 52.9	+1.1
	38nm,0.3s,baz=285,slow=20,SNR=182						
PSI				S	Sn	22 32 08.7	+0.7
	9.7nm,0.3s,baz=315,slow=22,SNR=16						
CMAR	**Chiang Mai Arr**	**15.91**	**359**	P	P	22 35 07.3	+0.7
	0.2nm,0.3s,baz=192,slow=1.1,SNR=12						
WRA	**Warramunga Arr**	**41.10**	**124**	P	P	22 38 58.6	-1.0
	0.3nm,0.3s,baz=304,slow=9.0,SNR=6.7						
ASAR	**Alice Springs**	**42.65**	**129**	P	P	22 39 12.4	+0.2
	0.2nm,0.5s,baz=299,slow=7.2,SNR=3.4						
MKAR	**Makanchi Array**	**46.54**	**344**	P	P	22 39 42.5	-0.2
	0.2nm,0.4s,baz=159,slow=8.3,SNR=4.8						
ZALV	**Zalesovo Beam**	**52.66**	**349**	P	P	22 40 28.3	-0.4
	0.4nm,0.3s,baz=151,slow=8.3,SNR=3.7						

ISCJB ***29*** *22:31:56.3±0.2, 28.85N±0.02×112.99W±0.02, h10km, mb4.8/113, MS4.8/40, Error ellipse: s-maj=3.1km s-min=1.5km az=27.6*

BJI ***29*** *22:31:56.9, 28.78N×113.20W, h19km, mb4.8/6, mB5.5/6, Ms5.4/6, Ms7 5.0/6*
MEX ***29*** *22:31:56.4±0.3, 28.81N×113.19W, h8km±3km, MD5.1*
IDC ***29*** *22:31:56.6±0.6, 29.00N×113.10W, h0km, mb4.5/27, mb1 4.6/32, mb1mx4.5/45, mbtmp4.5/32, ML4.0/4, MS4.7/29, Ms1 4.7/29, ms1mx4.6/40, Error ellipse: s-maj=16.1km s-min=9.3km az=47.0*
MOS ***29*** *22:31:57.1±1.4, 28.77N×113.09W, h19km, mb5.2/37, MS5.0/4, Error ellipse: s-maj=7.5km s-min=3.9km az=94.7*
NEIC ***29*** *22:31:58.3±0.3, 28.74N×113.13W, h10km, mb5.0/127, MW5.2, Error ellipse: s-maj=4.9km s-min=3.3km az=42.0, Moment Tensor Solution. s16 Moment tensor: Scale 10^{16}Nm; M_{rr}0.51; $M_{\theta\theta}$-6.76; $M_{\phi\phi}$6.25; $M_{r\theta}$-0.15; $M_{\theta\phi}$-1.02; $M_{\phi r}$1.89; Best double couple: M○6.90000×10^{16} NP1: ϕs309.00000°, δ78.00000°, λ168.00000°. NP2: ϕs42.00000°, δ78.00000°, λ12.00000°. Principal axes: T 6.8900, Plg17.0000°, Azm266.0000°; N -0.0500, Plg73.0000°, Azm86.0000°; P -6.8400, Plg0.0000°, Azm356.0000°;*
NEIC Felt at Guerrero Negro, Baja California Sur.
GCMT ***29*** *22:31:58.3±0.2, 28.81N×113.12W, h17km, MW5.3/114, Moment Tensor Solution. s83,c108; s114,c201; Duration: 1s1 Moment tensor: Scale 10^{17}Nm; M_{rr}-0.40±.02; $M_{\theta\theta}$-0.80±.02; $M_{\phi\phi}$1.20±.02; $M_{r\theta}$-0.43±.06; $M_{\theta\phi}$-0.34±.02; $M_{\phi r}$-0.14±.05; Best double couple: $M_0$1.19500×10^{17} NP1:ϕs31.00000°, δ70.00000°, λ-25.00000°. NP2:ϕs130.00000°, δ66.00000°, λ-158.00000°. Principal axes: T 1.2580, Plg2.0000°, Azm81.0000°; N -0.1280, Plg58.0000°, Azm175.0000°; P -1.1330, Plg32.0000°, Azm350.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

ISC 29 22:32:00.6±0.9, 28.88N±0.04×113.06W±0.04, h27km±5km, n923, σ1°68/921, mb5.0/113, MS4.8/40, 1C-4D, Baja California

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SRIG	**Santa Rosalia**	**1.71**	**155**	*e*Pn	Pn	22 32 24.0	-4.8
SRIG				*e*S	**Sn**	**22 32 43.6**	**-6.1**
SRIG	**Santa Rosalia**	**1.71**	**155**	*e*P	Pn	22 32 23.1	-5.6
SRIG				*e*S	**Sn**	**22 32 43.6**	**-6.1**
SRIG	**Santa Rosalia**	**1.71**	**155**	*e*sP	Pn	22 32 23.4	-5.3
HSIG		**1.86**	**85**	*e*Pn	**Pn**	**22 32 27.5**	**-3.2**
HSIG				*i* S	**Sn**	**22 32 50.6**	**-2.7**
HSIG		**1.86**	**85**	*i* P	**Pn**	**22 32 26.9**	**-3.8**
HSIG				*i* S	**Sn**	**22 32 20.6**	**-2.7**
GUYB	**Guaymas**	**2.16**	**116**	*i* P	**Pn**	**22 32 30.3**	**-4.5**
GUYB				*e*S	**Sn**	**22 32 57.4**	**-3.3**
SPIG	**San Pedro Mart**	**3.00**	**317**	*i* P	Pn	22 32 42.0	-4.8
SPIG				*e*S	**Sn**	**22 33 16.6**	**-5.5**
214A	**Organ Pipe Nat**	**3.08**	**4**	P	**Pn**	**22 32 44.6**	**-2.9**
	baz=185,SNR=45						
113A	**Mohawk Valley,**	**3.92**	**351**	*e*Pn	**Pn**	**22 32 56.5**	**-2.6**
TUC	**Tucson**	**3.94**	**29**	P	**Pn**	**22 32 57.1**	**-2.4**
	baz=210						
TUC	**Tucson**	**3.94**	**29**	*e*P	**Pn**	**22 32 58.4**	**-1.1**
TUC	**Tucson**	**3.94**	**29**	*e*Pn	**Pn**	**22 32 58.4**	**-1.1**
MBIG	**Mexicali**	**3.97**	**333**	*i* P	Pn	22 32 50.0	-4.6
MBIG				*e*S	**Sn**	**22 33 40.9**	**-4.6**
319A	**Douglas**	**4.11**	**52**	*e*Pn	**Pn**	**22 33 00.2**	**-1.7**
GLA	**Glamis**	**4.43**	**340**	P	**Pn**	**22 33 03.6**	**-2.5**
	baz=161,SNR=26						
GLA	**Glamis**	**4.43**	**340**	*e*P	**Pn**	**22 33 04.2**	**-1.9**
GLA	**Glamis**	**4.43**	**340**	*e*Pn	**Pn**	**22 33 04.2**	**-1.9**
CGIG		**4.67**	**70**	*e*P	**Pn**	**22 33 07.4**	**-2.1**
CGIG				*i* S	**Sn**	**22 34 00.8**	**-2.2**
CGIG		**4.67**	**70**	*e*P	**Pn**	**22 33 07.4**	**-2.1**
CGIG				*i* S	**Sn**	**22 34 00.8**	**-2.2**
SWSC	**Sam W. Stewart**	**4.69**	**331**	P	**Pn**	**22 33 06.3**	**-3.3**
	baz=151						
TJIG	**Tijuana**	**4.72**	**320**	*e*P	Pn	22 33 15.5	+5.4
TJIG				*e*S	**Sn**	**22 34 08.5**	**+4.6**
BAR	**Barrett**	**4.90**	**322**	*e*Pn	**Pn**	**22 33 14.4**	**+1.8**
MONP2	**Monument Peak**	**4.94**	**325**	P	**Pn**	**22 33 10.5**	**-2.8**
	baz=145						
Y12C	**Blythe**	**5.02**	**346**	P	**Pn**	**22 33 11.6**	**-2.5**
	baz=166,SNR=15						
Y12C	**Blythe**	**5.02**	**346**	*e*Pn	**Pn**	**22 33 12.3**	**-1.8**
Y14A	**Wickenburg**	**5.04**	**1**	*e*Pn	**Pn**	**22 33 12.7**	**-1.9**
BC3	**Big Chuckawall**	**5.18**	**337**	P	**Pn**	**22 33 14.2**	**-2.4**
	baz=157,SNR=30						
109C	**Camp Elliot, M**	**5.30**	**320**	P	**Pn**	**22 33 16.0**	**-2.0**
	baz=140						
LPIG	**La Paz**	**5.36**	**152**	Pn	**Pn**	**22 33 18.7**	**-0.2**
	23nm,0.3s,baz=336,slow=1.3,SNR=25						
LPIG				Lg	Lg	22 34 50.7	
	24nm,0.3s,baz=278,slow=15,SNR=4.0						
LPIG				LR	LR	22 35 07.5	
	comp=Z,6μm,20.4s,baz=336,slow=35						
PDMCI	**Parker Dam,Lak**	**5.49**	**351**	P	**Pn**	**22 33 18.4**	**-2.2**
	baz=171,SNR=18						
PFO	**Pinyon Flats O**	**5.54**	**329**	Pn	**Pn**	**22 33 20.8**	**-0.7**
	0.5nm,0.3s,baz=149,slow=11,SNR=6.1						
PFO				Lg	Lg	22 34 54.3	
	20nm,0.3s,baz=205,slow=4.5,SNR=25						
PFO	**Pinyon Flats O**	**5.54**	**329**	P	**Pn**	**22 33 19.5**	**-2.0**
	baz=149						
PFO	**Pinyon Flats O**	**5.54**	**329**	*e*P	**Pn**	**22 33 22.6**	**+1.1**
PFO	**Pinyon Flats O**	**5.54**	**329**	*e*Pn	**Pn**	**22 33 22.6**	**+1.1**
IRM	**Iron Mountain**	**5.56**	**342**	P	**Pn**	**22 33 19.4**	**-2.2**
	baz=162,SNR=7.8						
BELC	**Belle Mtn. Jos**	**5.69**	**335**	P	**Pn**	**22 33 21.0**	**-2.6**
	baz=154						
X16A	**Lo Mia Camp, P**	**5.69**	**14**	*e*Pn	**Pn**	**22 33 22.6**	**-1.1**
121A	**Cookes Peak, D**	**5.82**	**50**	P	**Pn**	**22 33 24.3**	**-1.1**
	baz=232,SNR=13						
121A	**Cookes Peak, D**	**5.82**	**50**	*e*Pn	**Pn**	**22 33 24.9**	**-0.6**
	64nm,0.6s						
SLBS	**Sierra La Lagu**	**5.88**	**151**	*e*Pn	**Pn**	**22 33 26.0**	**-0.1**
SLBS	**Sierra La Lagu**	**5.88**	**151**	*e*P	**Pn**	**22 33 24.4**	**-1.7**
SLBS				*i* S	**Sn**	**22 34 28.4**	**-4.2**
MURC	**Murrieta**	**5.89**	**324**	P	**Pn**	**22 33 25.1**	**-1.1**
	baz=143						
NEE2	**Needles Airpor**	**6.02**	**348**	P	**Pn**	**22 33 25.6**	**-2.3**
	baz=168,SNR=9.5						
X18A	**Snowflake**	**6.23**	**24**	*e*Pn	**Pn**	**22 33 31.2**	**+0.3**
SCI2	**San Clemente I**	**6.24**	**312**	P	**Pn**	**22 33 27.7**	**-3.2**
	baz=131						
W13A	**Hualapai Mount**	**6.24**	**354**	*e*Pn	**Pn**	**22 33 29.7**	**-1.5**
GMRC	**Granite Mounta**	**6.29**	**340**	P	**Pn**	**22 33 29.6**	**-2.2**
	baz=160						
BBRC	**Big Bear Solar**	**6.30**	**329**	P	**Pn**	**22 33 29.0**	**-3.0**
	baz=149						
CIS	**Catalina Islan**	**6.43**	**316**	P	**Pn**	**22 33 31.2**	**-2.5**
	baz=134						
HEC	**Hector,Ludlow**	**6.55**	**336**	P	**Pn**	**22 33 33.6**	**-1.8**
	baz=155						
FMP	**Fort Macarthur**	**6.58**	**318**	P	**Pn**	**22 33 33.2**	**-2.4**
	baz=137						
BFSC	**Mount Baldy Ra**	**6.63**	**325**	P	**Pn**	**22 33 33.4**	**-3.1**
	baz=144						
WUAZ	**Wupatki**	**6.77**	**12**	P	**Pn**	**22 33 36.6**	**-1.8**
	baz=193,SNR=9.7						
WUAZ	**Wupatki**	**6.77**	**12**	*e*Pn	**Pn**	**22 33 38.9**	**+0.5**
HPIG		**6.82**	**105**	*e*Pn	**Pn**	**22 33 40.2**	**+1.0**
HPIG				*e*S	**Sn**	**22 34 55.1**	**-1.0**
HPIG		**6.82**	**105**	*e*P	**Pn**	**22 33 36.9**	**-2.3**
HPIG				*e*S	**Sn**	**22 34 55.1**	**-1.0**
MWC	**Mount Wilson**	**6.83**	**323**	*e*P	**Pn**	**22 33 43.4**	**+4.2**
MWC	**Mount Wilson**	**6.83**	**323**	*e*Pn	**Pn**	**22 33 43.4**	**+4.2**
W18A	**Petrified Fore**	**6.83**	**24**	P	**Pn**	**22 33 38.1**	**-1.2**
	baz=205						
W18A	**Petrified Fore**	**6.83**	**24**	*e*Pn	**Pn**	**22 33 40.2**	**+1.0**
RRX	**Edison Barstow**	**6.85**	**332**	P	**Pn**	**22 33 37.8**	**-1.6**
	baz=151						
PASC	**Pasadena Art C**	**6.85**	**322**	*e*Pn	**Pn**	**22 33 40.5**	**+1.1**
PASC				*e*Sg	**Sb**	**22 35 20.6**	**+0.2**
TUQ	**Turquoise Moun**	**6.97**	**340**	P	**Pn**	**22 33 38.1**	**-3.0**
	baz=160						
DECC	**Green Verdugo**	**7.00**	**321**	P	**Pn**	**22 33 39.0**	**-2.4**
	baz=140						
SNCC	**San Nicolas Is**	**7.05**	**310**	P	**Pn**	**22 33 40.0**	**-2.1**
	baz=128						
GSC	**Goldstone, Bar**	**7.15**	**335**	P	**Pn**	**22 33 42.2**	**-1.3**
	baz=154,SNR=17						
GSC	**Goldstone, Bar**	**7.15**	**335**	*e*P	**Pn**	**22 33 44.2**	**+0.7**
GSC	**Goldstone, Bar**	**7.15**	**335**	*e*Pn	**Pn**	**22 33 44.2**	**+0.7**
MNTX	**Cornudas Mount**	**7.21**	**65**	P	**Pn**	**22 33 43.1**	**-1.2**
	baz=248,SNR=10						
MNTX	**Cornudas Mount**	**7.21**	**65**	*e*Pn	**Pn**	**22 33 43.5**	**-0.8**
EDW2	**Edwards Air Fo**	**7.31**	**326**	P	**Pn**	**22 33 43.8**	**-1.9**
	baz=145						
BLG	**Laguna Peak, P**	**7.31**	**317**	P	**Pn**	**22 33 43.8**	**-1.9**
	baz=135						
Y22D	**IRIS PASSCAL I**	**7.37**	**44**	P	**Pn**	**22 33 44.4**	**-2.2**
	baz=226						
Y22D	**IRIS PASSCAL I**	**7.37**	**44**	*e*Pn	**Pn**	**22 33 48.2**	**+1.6**
LAZ	**Ladron**	**7.47**	**41**	*e*Pn	**Pn**	**22 33 49.0**	**+0.9**
OSI	**Osito Audit: C**	**7.48**	**321**	P	**Pn**	**22 33 45.9**	**-2.2**
	baz=140						
OSI	**Osito Audit: C**	**7.48**	**321**	*e*Pn	**Pn**	**22 33 48.3**	**+0.3**
SHOC	**Shoshone, Teco**	**7.51**	**340**	P	**Pn**	**22 33 46.3**	**-2.1**
	baz=159						
U15A	**North Rim**	**7.56**	**5**	*e*Pn	**Pn**	**22 33 49.5**	**+0.2**
SCZ2	**Santa Cruz Isl**	**7.58**	**314**	P	**Pn**	**22 33 46.4**	**-3.1**
	baz=132						
BNM	**Barren Site**	**7.60**	**45**	*e*Pn	**Pn**	**22 33 51.7**	**+1.9**
LRMC	**Laurel Mtn Rad**	**7.66**	**330**	P	**Pn**	**22 33 48.4**	**-2.2**
	baz=149,SNR=24						
LPM	**Los Pinos Moun**	**7.71**	**44**	*e*Pn	**Pn**	**22 33 51.7**	**+0.4**
ARVC	**Arvin**	**7.92**	**323**	P	**Pn**	**22 33 52.0**	**-2.0**
	baz=141,SNR=7.3						
SBC	**Santa Barbara**	**7.93**	**316**	P	**Pn**	**22 33 52.2**	**-1.9**
	baz=134						
SBC				Sb	**Sb**	**22 35 53.4**	**+2.1**
	baz=134						
MPMC	**Manual Prospec**	**8.08**	**334**	P	Pn	22 33 55.1	-1.3
	baz=152,SNR=10						
LCMT	**Little Creek M**	**8.11**	**359**	*e*Pn	**Pn**	**22 33 57.4**	**+0.6**
KNB	**Kanab**	**8.12**	**1**	*e*P	**Pn**	**22 33 57.8**	**+0.9**
KNB	**Kanab**	**8.12**	**1**	*e*Pn	**Pn**	**22 33 57.8**	**+0.9**
ISA	**Isabella, Lake**	**8.17**	**327**	P	**Pn**	**22 33 55.7**	**-1.8**
	baz=145						
ISA	**Isabella, Lake**	**8.17**	**327**	*e*P	**Pn**	**22 33 58.1**	**+0.6**
ISA	**Isabella, Lake**	**8.17**	**327**	*e*Pn	**Pn**	**22 33 58.1**	**+0.6**
EKU	**East Kanab**	**8.19**	**3**	*e*Sn	**Sn**	**22 35 35.4**	**+5.8**
EKU				*e*Sg	Sb	22 35 43.5	-15
FURC	**Furnace Creek,**	**8.22**	**338**	P	**Pn**	**22 33 56.3**	**-1.8**
	baz=157						
MAIG	**Mazatlaan**	**8.23**	**132**	*i* P	**Pn**	**22 34 00.8**	**+2.5**
MAIG	**Mazatlaan**	**8.23**	**132**	*i* P	**Pn**	**22 34 00.8**	**+2.5**
TX31	**Lajitas Ar. Si**	**8.23**	**85**	*e*Pn	**Pn**	**22 33 58.7**	**+0.3**
TXAR	**Lajitas Array**	**8.23**	**85**	Pn	**Pn**	**22 33 57.6**	**-0.8**
	15nm,0.3s,baz=255,slow=13,SNR=239						
TXAR				Lg	Lg	22 36 23.9	
	3.5nm,0.3s,baz=288,slow=41,SNR=5.6						
TXAR				LR	LR	22 37 32.4	
	comp=Z,8μm,18.4s,baz=0.0,slow=41						
ANMO	**Albuquerque**	**8.25**	**41**	Pn	**Pn**	**22 33 59.6**	**+0.9**
	1.9nm,0.3s,baz=222,slow=12,SNR=16						
ANMO				Lg	Lg	22 36 20.5	
	1.0nm,0.3s,baz=216,slow=21,SNR=3.4						
ANMO	**Albuquerque**	**8.25**	**41**	P	**Pn**	**22 33 56.5**	**-2.2**
	baz=224						
ANMO	**Albuquerque**	**8.25**	**41**	*e*P	**Pn**	**22 33 59.0**	**+0.2**
ANMO	**Albuquerque**	**8.25**	**41**	*e*Pn	**Pn**	**22 33 59.0**	**+0.2**
PKM	**Mcpherson Peak**	**8.30**	**318**	P	**Pn**	**22 33 57.5**	**-1.9**
	baz=135						
DAC	**Darwin (Calif)**	**8.31**	**334**	*e*P	**Pn**	**22 33 59.6**	**0.0**
DAC	**Darwin (Calif)**	**8.31**	**334**	*e*Pn	**Pn**	**22 33 59.6**	**0.0**
TPNV	**Topopah Spring**	**8.48**	**342**	P	**Pn**	**22 33 59.5**	**-2.4**
	baz=161						
TPNV	**Topopah Spring**	**8.48**	**342**	*e*P	**Pn**	**22 34 01.9**	**0.0**
TPNV	**Topopah Spring**	**8.48**	**342**	*e*Pn	**Pn**	**22 34 01.9**	**0.0**
PKCU	**Pink Cliffs**	**8.57**	**4**	*e*Pn	**Pn**	**22 34 02.0**	**-1.2**
SMMC	**Simmler**	**8.70**	**319**	P	**Pn**	**22 34 04.5**	**-0.3**
	baz=137						
GRAC	**Grapevine Rang**	**8.87**	**337**	P	**Pn**	**22 34 06.1**	**-1.0**
	baz=156						
ARUT	**Antelope Range**	**8.89**	**358**	*e*P	**Pn**	**22 34 09.9**	**+2.4**
ARUT	**Antelope Range**	**8.89**	**358**	*e*Pn	**Pn**	**22 34 09.9**	**+2.4**
RCTC	**Rector, Farmer**	**9.06**	**326**	P	**Pn**	**22 34 08.1**	**-1.4**
	baz=144						
MVCO	**Mesa Verde**	**9.15**	**24**	P	**Pn**	**22 34 09.2**	**-1.9**
	baz=206						
MVCO	**Mesa Verde**	**9.15**	**24**	*e*Pn	**Pn**	**22 34 14.6**	**+3.5**
MTPU	**Mount Pierson**	**9.17**	**4**	*e*Pn	**Pn**	**22 34 12.9**	**+1.5**
TIN	**Tinemaha, Big**	**9.24**	**333**	P	**Pn**	**22 34 10.2**	**-2.0**
	baz=151						
MSU	**Marysvale**	**9.64**	**4**	*e*P	**Pn**	**22 34 21.0**	**+3.2**
MSU	**Marysvale**	**9.64**	**4**	*e*Pn	**Pn**	**22 34 21.0**	**+3.2**
PSUT	**Pine Spring**	**9.65**	**356**	*e*Pn	**Pn**	**22 34 18

ISCO	Idaho Springs	12.51	27	eP	Pn	22 34 59.7	+2.6
ISCO	Idaho Springs	12.51	27	ePn	Pn	22 34 59.7	+2.6
233A	Rising Star	12.61	72	P	Pn	22 34 57.1	-1.3
	baz=259,SNR=5.6						
734A	La Parita Cree	12.71	87	P	Pn	22 34 57.9	-1.8
	baz=273						
133A	Hamilton Ranch	12.72	69	P	Pn	22 34 59.0	-0.8
	baz=256,SNR=23						
ORV	Oroville	12.73	329	eP	Pn	22 35 00.7	+0.9
ORV	Oroville	12.73	329	ePn	Pn	22 35 00.7	+0.9
HWUT	Hardware Ranch	12.76	5	ePn	Pn	22 35 03.0	+2.6
534A	Blanco	12.76	81	P	Pn	22 34 59.0	-1.4
	baz=268,SNR=7.7						
834A	Tilden	12.78	90	P	Pn	22 35 00.5	-0.2
	baz=276						
RSUT	Red Spur Mount	12.80	6	ePn	Pn	22 35 04.4	+3.2
034A	Hebbronville	12.84	95	P	Pn	22 35 01.0	-0.4
	baz=281						
634A	China Grove, S	12.87	84	P	Pn	22 35 01.2	-0.7
	baz=271						
HVU	Hansel Valley	12.88	1	eP	Pn	22 35 05.3	+3.3
HVU	Hansel Valley	12.88	1	ePn	Pn	22 35 05.3	+3.3
934A	Benavides	12.88	92	P	Pn	22 35 01.0	-1.0
	baz=278						
X32A	Elmer	12.97	61	P	Pn	22 35 02.7	-0.5
	baz=248						
434A	Burnet	12.98	78	P	Pn	22 35 02.3	-1.1
	baz=265,SNR=8.6						
Z33A	Whitaker Ranch	13.02	67	P	Pn	22 35 02.4	-1.4
	baz=254,SNR=21						
334A	Lometa	13.06	76	P	Pn	22 35 02.7	-1.8
	baz=262						
234A	Clairette	13.25	73	P	Pn	22 35 05.7	-1.3
	baz=260,SNR=5.4						
NPI	North Pocatell	13.25	2	ePn	Pn	22 35 08.6	+1.5
KSCO	Kaye Shedlock'	13.30	38	P	Pn	22 35 06.2	-1.6
	baz=223						
N23A	Red Feather La	13.33	24	P	Pn	22 35 08.3	0.0
	baz=208						
N23A	Red Feather La	13.33	24	ePn	Pn	22 35 12.5	+4.2
Y33A	Hilltop Ranch,	13.34	64	P	Pn	22 35 06.9	-1.3
	baz=251,SNR=8.8						
035A	Encino	13.37	95	P	Pn	22 35 07.6	-1.1
	baz=281						
735A	Kenedy	13.37	86	P	Pn	22 35 08.4	-0.2
	baz=273						
635A	Leesville	13.38	84	P	Pn	22 35 09.0	+0.3
	baz=271						
835A	Beeville	13.40	89	P	Pn	22 35 08.5	-0.6
	baz=276						
134A	White-Moore Ra	13.40	70	P	Pn	22 35 08.5	-0.6
	baz=257,SNR=9.8						
O03D	Paynes Creek	13.46	330	P	Pn	22 35 09.8	-0.1
	baz=146						
035Z	Hargill	13.50	97	P	Pn	22 35 10.7	+0.2
	baz=283						
535A	Dale	13.55	81	P	Pn	22 35 11.0	-0.1
	baz=268,SNR=6.9						
435B	Jarrell	13.57	78	P	Pn	22 35 10.1	-1.3
	baz=265						
X33A	Lawton	13.62	62	P	Pn	22 35 10.4	-1.6
	baz=249,SNR=7.1						
V32A	Arapaho	13.67	57	P	Pn	22 35 11.2	-1.6
	baz=244						
Z34A	Collier Ranch,	13.72	67	P	Pn	22 35 12.8	-0.7
	baz=254,SNR=9.9						
335A	Moody	13.75	76	P	Pn	22 35 12.0	-1.9
	baz=263						
WHTX	Lake Whitney,	13.82	73	P	Pn	22 35 13.2	-1.5
	baz=260						
WHTX	Lake Whitney,	13.82	73	ePn	Pn	22 35 14.9	+0.2
	293nm,1.5s						
W33A	Caddo, Fort Co	13.87	59	P	Pn	22 35 14.6	-0.8
	baz=247						
135A	Vickery Place,	13.95	71	P	Pn	22 35 15.9	-0.7
	baz=258,SNR=9.8						
536A	Bastrop	13.99	81	P	Pn	22 35 14.4	-2.6
	baz=266						
636A	Smothers Creek	14.00	84	P	Pn	22 35 15.8	-1.4
	baz=271						
U32A	Winter Ranch,	14.00	54	P	Pn	22 35 16.2	-1.1
	baz=241						
736A	Circle Diamond	14.01	86	P	Pn	22 35 16.0	-1.4
	baz=273						
Y34A	Reagan Ranch,	14.01	65	P	Pn	22 35 15.1	-2.3
	baz=252,SNR=11						
WDC	Whiskeytown Da	14.03	329	eP	Pn	22 35 20.3	+2.7
WDC	Whiskeytown Da	14.03	329	ePn	Pn	22 35 20.3	+2.7
BW06	Boulder Array	14.14	11	P	Pn	22 35 19.3	-0.1
	baz=193						
BW06	Boulder Array	14.14	11	ePn	Pn	22 35 20.9	+1.5
PD31	Pinedale Array	14.14	11	ePn	Pn	22 35 20.7	+1.3
PDAR	Pinedale Array	14.14	11	Pn	Pn	22 35 20.6	+1.3
	0.1nm,0.3s,baz=185,slow=11,SNR=14						
PDAR				Lg	Lg	22 39 26.0	
	0.1nm,0.3s,baz=173,slow=31,SNR=3.4						
PDAR				LR	LR	22 40 22.7	
	comp=Z,3µm,19.7s,baz=198,slow=36						
X34A	Smith Ranch, M	14.15	62	P	Pn	22 35 18.5	-0.9
	baz=250,SNR=7.2						
436A	Wall Ranch, Ga	14.25	78	P	Pn	22 35 19.5	-1.1
	baz=266						
Z35A	Perchaven, San	14.25	68	P	Pn	22 35 19.4	-1.3
	baz=256,SNR=9.7						
336A	Riesel	14.26	76	P	Pn	22 35 19.6	-1.2
	baz=264						
WVOR	Wild Horse Val	14.26	343	eP	Pn	22 35 18.1	-2.8
WVOR	Wild Horse Val	14.26	343	ePn	Pn	22 35 18.1	-2.8
MOD	Modoc Plateau	14.27	338	ePn	Pn	22 35 23.5	+2.5
V33A	Lossen Ranch,	14.27	57	P	Pn	22 35 19.9	-1.1
	baz=245						
KMRM	Mail Ridge	14.30	325	ePn	Pn	22 35 23.4	+2.0
N02D	Trinity Center	14.42	329	P	Pn	22 35 23.1	+0.1
	baz=144						
W34A	Bridge Creek,	14.42	60	P	Pn	22 35 21.9	-1.1
	baz=248						
W34A	Bridge Creek,	14.42	60	ePn	Pn	22 35 24.4	+1.3
T32A	Huddler Ranch,	14.45	51	P	Pn	22 35 23.9	+0.5
	baz=239						
REDW	Red Top Meadow	14.56	6	ePn	Pn	22 35 26.9	+1.8
Y35A	Marietta	14.57	66	P	Pn	22 35 22.9	-2.2
	baz=254,SNR=7.0						
737A	Port Lavaca	14.57	86	P	Pn	22 35 22.4	-2.6
	baz=274						
236A	Katherine and	14.60	74	P	Pn	22 35 23.5	-1.8
	baz=262						
637A	Eagle Lake	14.63	84	P	Pn	22 35 23.3	-2.5
	baz=271						
537A	Green Hill Far	14.64	81	P	Pn	22 35 24.6	-1.3
	baz=269						
U33A	Lingo Farm, Me	14.66	55	P	Pn	22 35 25.8	-0.5
	baz=243						
136A	Ennis	14.67	72	P	Pn	22 35 25.1	-1.3
	baz=260						
SNOW	Snow King Moun	14.67	7	ePn	Pn	22 35 28.5	+1.9
MFID	Camas Ranch	14.68	352	ePn	Pn	22 35 29.2	+2.7
HLID	Hailey	14.70	356	P	Pn	22 35 27.4	+0.6
	baz=176,SNR=35						
HLID	Hailey	14.70	356	ePn	Pn	22 35 29.8	+2.9
S32A	Newby Ranch, P	14.71	50	P	Pn	22 35 26.1	-0.9
	baz=237						
M04C	Macdoel	14.72	333	P	Pn	22 35 26.8	-0.4
	baz=149,SNR=16						
K22A	Casper	14.72	19	P	Pn	22 35 26.5	-0.7
	baz=203						
K22A	Casper	14.72	19	ePn	Pn	22 35 30.0	+2.8
X35A	Drake	14.76	64	P	Pn	22 35 26.6	-1.0
	baz=252,SNR=8.5						
KHMM	Horse Mountain	14.81	327	ePn	Pn	22 35 30.9	+2.4
437A	Phantom Ranch,	14.81	78	P	Pn	22 35 25.9	-2.4
	baz=266						
M02C	Callahan	14.82	330	P	Pn	22 35 26.9	-1.5
	baz=145,SNR=9.0						
FXWY	Fox Creek	14.82	6	ePn	Pn	22 35 30.7	+2.0
LOHW	Long Hollow	14.84	7	ePn	Pn	22 35 30.1	+1.2
CBKS	Cedar Bluff	14.84	45	P	Pn	22 35 27.4	-1.3
	baz=232						
V34A	Guthrie	14.85	58	P	Pn	22 35 27.2	-1.6
	baz=246						
V34A	Guthrie	14.85	58	ePn	Pn	22 35 29.8	+1.1
T33A	Patterson Ranc	14.87	53	P	Pn	22 35 28.0	-1.1
	baz=240						
Z36A	Blue Ridge	14.90	69	P	Pn	22 35 27.2	-2.3
	baz=257						
MOOW	Moose Ponds	14.96	7	ePn	Pn	22 35 31.9	+1.5
YBH	Yreka Blue Hor	15.04	331	Pn	Pn	22 35 32.6	+1.2
	0.1nm,0.3s,baz=169,slow=16,SNR=9.0						
YBH				LR	LR	22 41 17.7	
	comp=Z,5µm,18.6s,baz=225,slow=38						
YBH	Yreka Blue Hor	15.04	331	eP	Pn	22 35 33.7	+2.4
YBH				pmax	pmax		
	comp=Z,51nm,1.4s						
YBH	Yreka Blue Hor	15.04	331	ePn	Pn	22 35 33.7	+2.4
	comp=Z,51nm,1.4s						
OGNE	Ogallala	15.04	34	P	Pn	22 35 30.1	-1.4
	baz=220						
HKT	Hockley	15.05	82	eP	Pn	22 35 30.4	-1.1
HKT				pmax	pmax		
	comp=Z,314nm,1.9s						
HKT	Hockley	15.05	82	ePn	Pn	22 35 30.4	-1.1
	comp=Z,314nm,1.9s						
W35A	Tecumseh	15.08	61	P	Pn	22 35 30.6	-1.3
	baz=250,SNR=7.5						
U34A	Anderson Ranch	15.08	56	P	Pn	22 35 29.9	-2.1
	baz=244						
U34A	Anderson Ranch	15.08	56	ePn	Pn	22 35 33.3	+1.4
	comp=Z,182nm,1.3s						
IMW	Indian Meadow	15.09	6	ePn	Pn	22 35 35.1	+2.9
	comp=Z,212nm,1.4s						
K05A	Summer Lake	15.20	337	ePn	P	22 35 37.0	-1.4
	comp=Z,392nm,1.4s						
237A	Washetta, Mont	15.20	74	P	Pn	22 35 31.7	-1.8
	baz=262						
R32A	Long Quarter,	15.26	48	P	Pn	22 35 32.0	-2.3
	baz=235						
FLWY	Flagg Ranch	15.29	6	ePn	P	22 35 38.4	-1.1
	comp=Z,167nm,1.4s						
S33A	Kaszmaul Farm,	15.29	51	P	Pn	22 35 32.4	-2.3
	baz=239						
X36A	Centrahoma	15.30	64	P	Pn	22 35 32.6	-2.2
	baz=252						
V35A	Meyer Ranch, C	15.33	59	P	Pn	22 35 31.8	-3.4
	baz=248						
137A	Heron Place, G	15.34	72	P	Pn	22 35 32.2	-3.1
	baz=260						
538A	Harpers Horsep	15.35	81	P	Pn	22 35 32.2	-3.2
	baz=269						
438A	Sam Houston St	15.38	79	P	Pn	22 35 33.2	-2.7
	baz=267						
638A	Rosharon	15.40	84	P	Pn	22 35 35.9	-0.2
	baz=272						
K04D	Chiloquin, OR	15.41	335	P	Pn	22 35 35.2	-1.2
	baz=151						
Z37A	Pogue Cattle C	15.55	70	P	Pn	22 35 36.4	-1.7
	baz=258						
338A	Crockett	15.56	76	P	Pn	22 35 35.8	-2.4
	baz=265						
W36A	Wetumka	15.58	62	P	Pn	22 35 36.8	-1.6
	baz=251						
T34A	McClaskey Farm	15.59	55	P	Pn	22 35 37.0	-1.5
	baz=243						
H17A	Grant Village	15.61	7	P	Pn	22 35 37.0	-2.0
	baz=188,SNR=19						
H17A	Grant Village	15.61	7	ePn	P	22 35 42.3	-0.7
	comp=Z,85nm,1.4s						
U35A	Pawnee	15.64	57	P	Pn	22 35 36.9	-2.4
	baz=246						
YFT	Old Faithful	15.64	6	ePn	P	22 35 44.3	+0.9
	comp=Z,104nm,1.5s						
Q32A	Meitler Ranch,	15.68	46	P	Pn	22 35 38.7	-1.1
	baz=234,SNR=5.5						
Y37A	Hugo	15.73	67	P	Pn	22 35 37.2	-3.1
	baz=255,SNR=8.1						
L02D	Cave Junction,	15.77	330	P	Pn	22 35 42.2	+1.4
	baz=144						
238A	Jacksonville	15.78	74	P	Pn	22 35 34.9	-6.2
	baz=263						
LKWY	Lake	15.80	7	eP	Pn	22 35 41.1	-0.4
LKWY	Lake	15.80	7	ePn	Pn	22 35 41.1	-0.4
LKWY				esP	sP	22 35 53.8	-2.0
J05D	Fort Rock, OR	15.81	338	P	Pn	22 35 42.3	+0.8
	baz=153,SNR=34						
YMR	Madison River	15.85	5	ePn	P	22 35 45.5	-0.1
	comp=Z,139nm,1.6s						
138A	Matatall Enter	15.90	72	P	Pn	22 35 38.9	-3.7
	baz=261						
MCMT	McKenzie Canyo	15.92	1	ePn	P	22 35 47.0	+0.6
O31A	Woolen Ranch,	15.94	42	P	Pn	22 35 40.6	-2.4
	baz=229						
S34A	Willow Spring	15.96	52	P	Pn	22 35 44.7	+1.4
	baz=241						
QLMT	Earthquake Lak	15.98	4	ePn	P	22 35 47.2	+0.2
YHH	Holmes Hill	15.98	6	ePn	P	22 35 46.1	-1.0
439A	Center Grove,	15.99	79	P	Pn	22 35 43.6	-0.1
	baz=267						
V36A	Jenks	16.02	60	P	Pn	22 35 43.1	-1.0
	baz=249,SNR=7.4						
539A	Cross D Ranch,	16.02	81	P	Pn	22 35 44.1	+0.1
	baz=270						
T35A	Sooner Cattle	16.03	56	P	Pn	22 35 43.5	-0.7
	baz=244						
P32A	Hulling Farm,	16.03	44	P	Pn	22 35 45.2	+0.9
	baz=232						
X37A	Clayton	16.09	65	P	Pn	22 35 43.3	-1.7
	baz=254,SNR=11						
Z38A	Mt. Pleasant	16.09	70	P	Pn	22 35 43.3	-1.7
	baz=259						
NATX	Nacogdoches	16.15	75	P	Pn	22 35 42.8	-2.9
	baz=264						
NATX	Nacogdoches	16.15	75	ePn	Pn	22 35 45.9	+0.2
	comp=Z,192nm,1.4s						
NATX				eScP	ScP	22 44 11.5	-1.5
Q33A	Connelly Farm,	16.15	47	P	Pn	22 35 44.7	-1.1
	baz=236,SNR=17						
R34A	Isabella, Hill	16.17	50	P	Pn	22 35 45.1	-0.9
	baz=239,SNR=11						
TUL1	Leonard	16.17	60	P	Pn	22 35 44.5	-1.6
	baz=249,SNR=15						
TUL1	Leonard	16.17	60	ePn	Pn	22 35 45.8	-0.2
	comp=Z,103nm,1.1s						
W37B	Quinton	16.20	63	P	Pn	22 35 43.6	-2.7
	baz=252						
339A	Huntington	16.20	77	P	Pn	22 35 44.1	-2.3
	baz=266						
J25A	Sunshine Ranch	16.28	25	P	Pn	22 35 46.1	-1.4
	baz=210,SNR=5.3						
BMO	Blue Mountains	16.30	349	ePn	P	22 35 50.5	0.0
	comp=Z,135nm,1.6s						
239A	Gary	16.33	74	P	Pn	22 35 46.9	-1.2
	baz=263						
U36A	Oologah	16.39	58	P	Pn	22 35 48.4	-0.4
	baz=247						
Y38A	Idabel	16.43	68	P	Pn	22 35 46.6	-2.8
	baz=257						
DLMT	Dillon	16.46	1	ePn	P	22 35 53.7	+1.4
	comp=Z,137nm,1.8s						
139A	Bunkhouse Ranc	16.48	72	P	Pn	22 35 46.1	-4.0
	baz=261						
P33A	Williams Farm,	16.49	46	P	Pn	22 35 49.3	-0.8
	baz=235						
J26A	Sides Ranch, S	16.49	26	P	Pn	22 35 49.6	-0.6
	baz=212,SNR=20						
RLMT	Red Lodge	16.49	9	P	Pn	22 35 51.6	+1.4
	baz=192,SNR=28						
RLMT	Red Lodge	16.49	9	ePn	P	22 35 52.1	-0.6
	comp=Z,165nm,1.5s						
RLMT				ePcP	PcP	22 40 45.8	+4.9
S35A	Otter Creek Ra	16.51	54	P	Pn	22 35 49.1	-1.2
	baz=242						
X38A	Whitesboro	16.54	65	P	Pn	22 35 49.6	-1.1
	baz=254,SNR=24						
T36A	Boggs Farm, Ca	16.55	56	P	Pn	22 35 49.9	-0.9
	baz=245						
N31A	Bailey Ranch,	16.59	40	P	Pn	22 35 52.3	+0.9
	baz=228						
O32A	Brockman Farm,	16.62	43	P	P	22 35 54.4	+0.3
	baz=231						
V37A	Hulbert	16.66	61	P	Pn	22 35 51.1	-1.2
	baz=250,SNR=8.0						
540A	Vidor	16.66	81	P	Pn	22 35 53.5	+1.2
	baz=270						
I04A	Tendick Farm,	16.66	336	P	Pn	22 35 52.1	-0.2
	baz=151						
440A	Kirbyville	16.68	79	P	Pn	22 35 52.5	-0.1
	baz=268						
Q34A	Chapman	16.69	49	P	Pn	22 35 52.1	-0.6
	baz=238						
Z39A	Irene McRaven,	16.75	70	P	Pn	22 35 51.1	-2.3
	baz=260						
340A	Bronson	16.78	77	P	Pn	22 35 50.3	-3.5
	baz=266						
BOZ	Bozeman (W)	16.78	3	P	Pn	22 35 54.4	+0.6
	baz=184,SNR=33						
BOZ	Bozeman (W)	16.78	3	eP	P	22 35 56.2	+0.3
BOZ				pmax	pmax		
	comp=Z,129nm,1.8s						
BOZ	Bozeman (W)	16.78	3	ePn	P	22 35 56.2	+0.3
	comp=Z,129nm,1.8s						
I05D	Terrebonne, OR	16.79	339	P	Pn	22 35 54.7	+0.8
	baz=154,SNR=7.9						
RSSD	Black Hills	16.84	23	P	Pn	22 35 54.0	-0.6
	baz=208						
RSSD	Black Hills	16.84	23	eP	P	22 35 57.7	+1.1
RSSD				pmax	pmax		
	comp=Z,52nm,1.4s						
RSSD	Black Hills	16.84	23	ePn	P	22 35 57.7	+1.1
	comp=Z,52nm,1.4s						
I25A	Rochford	16.85	24	P	Pn	22 35 53.4	-1.4
	baz=209,SNR=7.7						
U37A	Salina	16.86	59	P	Pn	22 35 53.8	-1.0
	baz=248						
J27A	Elkhorn Farm,	16.88	29	P	Pn	22 35 53.3	-1.7
	baz=215						
R35A	Emporia Munici	16.89	52	P	Pn	22 35 53.7	-1.4
	baz=241						
W38A	Poteau	16.89	64	P	Pn	22 35 54.0	-1.1
	baz=253,SNR=10						
LRM	Limekiln Ridge	16.92	1	ePn	P	22 35 59.1	+1.6
M31A	Lambtecht Ranc	16.93	39	P	Pn	22 35 56.6	+1.0
	baz=227						
N32A	Stulken Farm,	16.93	42	P	P	22 35 57.2	-0.2
	baz=230						
O33A	Hebron	16.93	45	P	Pn	22 35 52.1	-3.5
	baz=233,SNR=5.2						
I03D	Drain, OR	16.93	334	P	Pn	22 35 56.6	+1.0
	baz=148						
240A	Hunter Patters	16.93	74	P	Pn	22 35 51.4	-4.3
	baz=264						
Y39A	Lockesburg	16.95	68	P	Pn	22 35 52.6	-3.3
	baz=257						
KSU1	Kansas State U	17.01	49	P	Pn	22 35 56.6	0.0
	baz=238						
KSU1	Kansas State U	17.01	49	ePn	P	22 35 59.6	+1.3
	comp=Z,99nm,0.9s						
S36A	Lake Cedric, C	17.04	54	P	Pn	22 35 57.2	+0.2
	baz=244						
X39A	Fountain Ranch	17.07	66	P	Pn	22 35 56.5	-0.9
	baz=256,SNR=14						
GCMT	Greycliff	17.09	8	ePn	Pn	22 35 57.3	-0.5
P34A	Walnut Farm, R	17.11	47	P	Pn	22 35 58.7	+0.8
	baz=236,SNR=6.3						
140A	Cam and Jess,	17.16	73	P	Pn	22 35 56.8	-1.7
	baz=262						
I26A	New Underwood	17.18	26	P	Pn	22 35 58.9	+0.1
	baz=212						
V38A	Canehill	17.21	61	P	Pn	22 35 58.1	-1.2
	baz=251,SNR=11						
T37A	Cheneyville 18	17.28	57	P	Pn	22 35 59.3	-0.7
	baz=246						
441A	DeRidder	17.35	79	P	Pn	22 35 59.6	-1.2
	baz=268						
J28A	Allard Ranch,	17.35	30	P	Pn	22 35 59.8	-1.1
	baz=217						
H04A	Detroit Lake	17.37	338	ePn	P	22 36 02.8	+0.5
	comp=Z,86nm,1.5s						
R36A	Gordon, Harris	17.37	53	P	Pn	22 36 00.6	-0.6
	baz=242,SNR=6.5						
F10A	Beach Ranch, E	17.38	350	ePn	P	22 36 03.2	+0.8
	comp=Z,110nm,1.5s						
341A	Kurthwood	17.39	77	P	Pn	22 36 00.7	-0.7
	baz=267						
G06A	Carlson Farm,	17.40	342	ePn	P	22 36 04.2	+1.6
	comp=Z,139nm,1.4s						
Z40A	Long Farm, Mag	17.40	71	P	Pn	22 36 00.2	-1.3
	baz=260,SNR=5.8						
N33A	J Bar K, Exete	17.41	43	P	Pn	22 36 00.4	-1.3
	baz=232						
TLIG	Tiapa	17.42	127	ePn	P	22 36 03.8	+0.7
	comp=Z,121nm,1.5s						
U38A	Gravette	17.42	60	P	Pn	22 35 59.7	-2.1
	baz=249						
H25A	Fruitdale	17.43	23	P	Pn	22 36 01.9	+0.1
	baz=209						
BGNE	Belgrade	17.43	40	P	Pn	22 36 01.8	-0.1
	baz=229						
W39A	Magazine	17.50	64	P	Pn	22 36 02.3	-0.5
	baz=254						
MIAR	Mount Ida	17.51	66	P	Pn	22 36 02.9	0.0
	baz=256						
MIAR	Mount Ida	17.51	66	eP	Pn	22 36 03.2	+0.3
MIAR				pmax	pmax		
	comp=Z,112nm,1.7s						
MIAR	Mount Ida	17.51	66	ePn	Pn	22 36 03.2	+0.3
	comp=Z,112nm,1.7s						
K30A	Basset	17.53	35	P	P	22 36 04.8	+0.7
	baz=222						
O34A	Beatrice	17.55	46	P	Pn	22 36 03.1	-0.2
	baz=235						
L31A	Butterfield Fa	17.57	37	P	Pn	22 36 03.1	-0.6
	baz=225						
G05D	Wamic, OR	17.60	340	P	Pn	22 36 03.4	-0.5
	baz=156,SNR=8.2						
S37A	Fort Scott	17.60	55	P	Pn	22 36 03.7	-0.3
	baz=245,SNR=29						
P35A	Duane Minner,	17.62	48	P	Pn	22 36 02.9	-1.4
	baz=238						
Y40A	Okolona	17.63	68	P	Pn	22 36 02.1	-2.2
	baz=258						
241A	Mo Tay, Goldon	17.65	75	P	Pn	22 36 02.8	-1.8
	baz=265						
Q36A	Arnold C. Orve	17.71	51	P	Pn	22 36 02.5	-2.8
	baz=240						
T38A	Diamond	17.71	58	P	Pn	22 36 02.7	-2.7
	baz=248,SNR=27						
WLAR	White Oak Lake	17.71	69	ePn	P	22 36 07.5	+1.5
	comp=Z,271nm,1.3s						
HHAR	Hobbs	17.71	60	ePn	Pn	22 36 05.1	-0.2
	comp=Z,133nm,1.5s						
H26A	Fairpoint	17.71	25	P	Pn	22 36 05.5	+0.1
	baz=211						
141A	Papa Simpson,	17.72	73	P	Pn	22 36 02.9	-2.6
	baz=263						
J29A	Okreek	17.74	32	P	Pn	22 36 04.6	-1.1
	baz=219						
V39A	Pettigrew	17.80	62	P	Pn	22 36 04.8	-1.7
	baz=252,SNR=7.7						
HRY	Holter Researc	17.83	3	ePn	P	22 36 09.9	+2.5
I28A	Midland	17.84	29	P	Pn	22 36 05.5	-1.4
	baz=216						
R37A	Teagarden Farm	17.84	53	P	Pn	22 36 07.2	+0.2
	baz=243						
Z41A	Richland Creek	17.89	71	P	Pn	22 36 06.1	-1.5
	baz=261,SNR=7.8						
542A	Morse	17.90	81	P	Pn	22 36 06.1	-1.6
	baz=271						
L32A	Elgin	17.91	39	P	Pn	22 36 05.4	-2.3
	baz=228						
K31A	O'Neill	17.93	36	P	Pn	22 36 06.9	-1.2
	baz=224						
MSO	Missoula	17.93	358	P	Pn	22 36 07.1	-1.1
	baz=178,SNR=35						
MSO	Missoula	17.93	358	ePn	P	22 36 10.1	+1.5
	comp=Z,116nm,1.4s						
G25A	Newell	17.99	23	P	Pn	22 36 07.8	-1.0
	baz=208						
H27A	Howes	17.99	26	P	Pn	22 36 06.1	-2.7
	baz=213						
442A	Mamou	18.00	79	P	Pn	22 36 05.4	-3.5
	baz=269						
CHMT	Chamberlain Mo	18.01	360	ePn	P	22 36 11.1	+1.7
N34A	Lincoln	18.05	44	P	Pn	22 36 09.3

HAWA Hanford 18.21 346 *e*Pn P 22 36 12.5 +1.0
comp=Z,292nm,1.5s
S38A Stockton 18.22 56 P Pn 22 36 11.8 +0.2
baz=247
I29A Vivian Onida 18.23 31 P Pn 22 36 11.8 +0.1
baz=218
242A Grayson 18.30 75 P Pn 22 36 10.3 -2.3
baz=265
Q37A Longview Farm, 18.36 52 P P 22 36 13.0 -0.2
baz=242
G26A Maurine 18.36 24 P P 22 36 12.8 -0.4
baz=210
K32A Verdigre 18.37 38 P P 22 36 12.8 -0.5
baz=226
T39A Clever 18.39 59 P P 22 36 12.8 -0.7
baz=249,SNR=16
M34A Aspy Farms, Fr 18.40 42 P P 22 36 13.6 0.0
baz=232
J31A Geddes 18.42 35 P P 22 36 13.1 -0.8
baz=223
L33A Hoskins 18.42 40 P Pn 22 36 15.0 +0.9
baz=229
V40A Witts Springs 18.43 63 P P 22 36 12.9 -1.1
baz=253,SNR=15
E07A Sunnyside 18.44 345 *e*P Pn 22 36 16.8 +2.6
comp=Z,447nm,1.6s
R38A Fenwick Farm, 18.44 55 P P 22 36 14.2 +0.1
baz=245,SNR=31
H28A Mission Ridge 18.45 28 P P 22 36 12.9 -1.3
baz=215
543A St. Martinvill 18.50 81 P P 22 36 14.2 -0.5
baz=271
142A Monroe 18.52 73 P P 22 36 13.9 -1.0
baz=264
UALR University of 18.55 66 *e*P Pn 22 36 17.5 +1.9
comp=Z,43nm,1.0s
I30A Oacoma 18.55 32 P Pn 22 36 17.1 +1.5
baz=220
443A Delano Plantat 18.56 79 P P 22 36 14.9 -0.6
baz=269
U40A Yellville 18.57 61 P P 22 36 15.4 -0.1
baz=252,SNR=18
N35A Tabor 18.59 45 P P 22 36 16.2 +0.4
baz=235
Z42A Norrel Spur, H 18.60 71 P P 22 36 15.9 +0.1
baz=262
X301 Greenbrier Sit 18.61 65 *e*P P 22 36 16.2 +0.3
comp=Z,304nm,1.4s
SWMT Swartz Lake 18.62 358 *e*P Pn 22 36 17.4 +1.0
F25A Bowman 18.62 21 P P 22 36 14.9 -1.2
baz=207
O36A Bolckow 18.63 48 P P 22 36 16.6 +0.4
baz=238
S39A Bolivar 18.67 57 P P 22 36 16.6 0.0
baz=247,SNR=5.1
G27A Dupree 18.68 25 P P 22 36 16.8 +0.1
baz=212
343A Vidalia 18.71 77 P P 22 36 17.1 0.0
baz=268
WHAR Wooly Hollow 18.71 65 *e*P Pn 22 36 18.1 +0.5
comp=Z,304nm,1.4s
W41A Tony Mavity, V 18.72 65 P P 22 36 17.1 0.0
baz=256,SNR=28
W41B Gary Mavity, V 18.72 65 P P 22 36 17.3 +0.2
baz=256,SNR=28
D08A Wollman Farm, 18.72 347 *e*P P 22 36 17.2 +0.2
comp=Z,137nm,1.4s
H29A Onida 18.75 30 P P 22 36 17.1 -0.4
baz=217
P37A Lathrop 18.77 50 P Pn 22 36 19.7 +1.5
baz=241
L34A Svendsen Farm, 18.81 42 P P 22 36 17.0 -1.2
baz=231
G28A Parade 18.82 28 P P 22 36 18.6 +0.4
baz=215
F26A Lodgepole 18.82 23 P Pn 22 36 19.0 +0.1
baz=209
Y42A Garnett, Star 18.82 69 P P 22 36 17.8 -0.4
baz=260
CCAR Cane Creek 18.85 69 *e*P Pn 22 36 24.2 +5.0
comp=Z,764nm,1.8s
243A Waterproof 18.85 76 P Pn 22 36 19.3 -0.1
baz=266
JTMT Jette 18.86 357 *e*P Pn 22 36 20.6 +1.2
K33A Hardington 18.86 39 P P 22 36 18.2 -0.6
baz=228
F04D Rainier, OR 18.88 338 P P 22 36 18.0 -0.8
baz=152
M35A Neola 18.91 44 P P 22 36 18.9 -0.4
baz=234
J32A Parkston 18.93 36 P P 22 36 18.1 -1.3
baz=225
YBMT Yellow Bay 18.97 358 *e*P Pn 22 36 21.9 +1.1
YBMT *es*P sP 22 36 40.1 +9.4
143A Socs Landing, 18.99 73 P P 22 36 20.2 0.0
baz=264
BSMT Bassoo Peak 18.99 356 *e*P Pn 22 36 21.6 +0.5
N36A Muff Farm, Cla 19.00 46 P Pn 22 36 22.9 +1.9
baz=236
I31A Royce, Wessing 19.07 34 P Pn 22 36 21.8 0.0
baz=222
F27A Lemmon 19.07 24 P Pn 22 36 22.2 +0.4
baz=211
T40A Mansfield 19.07 59 P Pn 22 36 22.3 +0.3
baz=250,SNR=9.0
544A White Castle 19.10 81 P P 22 36 20.5 -0.9
baz=271
LON Longmire 19.11 341 *e*P Pn 22 36 22.8 +0.4
LON pmax pmax
comp=Z,50nm,1.3s
LON Longmire 19.11 341 *e*P Pn 22 36 22.8 +0.4
comp=Z,50nm,1.3s
R39A Chumby, Stover 19.12 55 P Pn 22 36 22.4 -0.1
baz=246
BLMT Blacktail Moun 19.13 357 *e*P P 22 36 20.1 -1.7
E25A Miller Ranch, 19.16 21 P P 22 36 21.8 -0.1
baz=207,SNR=14
SUSD Miller 19.17 32 P P 22 36 21.7 -0.4
baz=220
Z43A Armstrong Fami 19.18 72 P P 22 36 21.7 -0.5
baz=262
O37A Wolven Farm, M 19.19 49 P Pn 22 36 23.2 -0.1
baz=240
S40A Lebanon 19.24 58 P P 22 36 22.6 -0.3
baz=249
LTY Liberty 19.29 344 *e*P Pn 22 36 25.2 +0.8
comp=Z,71nm,1.5s
EGMT Eagleton 19.29 7 P P 22 36 24.4 +1.0
baz=189,SNR=30
EGMT Eagleton 19.29 7 *e*P Pn 22 36 24.9 +0.3
comp=Z,222nm,1.5s
C09A Chrisman Ranch 19.32 349 *e*P P 22 36 24.1 +0.4
comp=Z,212nm,1.5s
G29A Hoven 19.33 29 P P 22 36 23.4 -0.4
baz=217
P38A Dawn 19.34 51 P P 22 36 24.7 +0.7
baz=242,SNR=6.9
J33A Davis 19.36 38 P P 22 36 24.2 0.0
baz=227
L35A Bielow Farm, R 19.39 42 P P 22 36 23.8 -0.6
baz=232
K34A Le Mars 19.43 40 P P 22 36 25.4 +0.5
baz=230
H31A Wolsey 19.43 33 P Pn 22 36 26.1 0.0
baz=221
E26A Carlson Angus 19.43 22 P P 22 36 25.3 +0.4
baz=209,SNR=6.5
N37A Lee Faris, Mou 19.45 47 P P 22 36 23.3 -1.8
baz=238
444A Pine Grove 19.45 79 P P 22 36 25.4 +0.2
baz=270
M36A Felix, Anita 19.45 45 P P 22 36 23.9 -1.2
baz=235
E03A Lebam 19.46 338 *e*P Pn 22 36 26.8 +0.2
comp=Z,186nm,1.2s
Q39A Willow Grove F 19.47 53 P P 22 36 25.6 +0.3
baz=244
344A Westbrook Farm 19.47 77 P Pn 22 36 26.6 -0.2
baz=268
F28A McLaughlin 19.50 26 P P 22 36 25.3 -0.4
baz=214
Y43A Makayla and Ka 19.54 70 P P 22 36 25.1 -1.0
baz=261
244A Avery, Jackson 19.54 75 P P 22 36 26.2 0.0
baz=266
D05A Enumclaw 19.56 342 *e*P Pn 22 36 28.8 +1.1
comp=Z,196nm,1.5s
I32A Karley and Nic 19.59 35 P P 22 36 27.4 +0.7
baz=224
NEW Newport 19.61 352 P P 22 36 27.4 +0.4
comp=Z,0.2nm,0.3s,baz=170,slow=12,SNR=33
NEW Newport 19.61 352 P P 22 36 24.8 -2.0
baz=170,SNR=23
NEW Newport 19.61 352 *e*P P 22 36 27.3 +0.4
NEW pmax pmax
comp=Z,71nm,1.3s
NEW Newport 19.61 352 *e*P P 22 36 27.3 +0.4
comp=Z,71nm,1.3s
O38A Galt 19.61 50 P P 22 36 26.8 -0.2
baz=241
G30A Faulkton 19.62 30 P P 22 36 27.3 +0.4
baz=219
645A Chauvin 19.62 83 P P 22 36 26.0 -1.1
baz=274
R40A Maddies Statio 19.67 56 P P 22 36 28.1 +0.6
baz=247
545A Edgard 19.69 81 P P 22 36 26.6 -1.2
baz=272
VBMS Vicksburg 19.69 75 P P 22 36 28.2 +0.3
baz=266
VBMS Vicksburg 19.69 75 *e*P Pn 22 36 31.2 +1.8
comp=Z,355nm,1.3s
E27A Carson 19.71 24 P P 22 36 27.5 -0.4
baz=211
D25A Fairfield 19.76 20 P P 22 36 28.7 +0.2
baz=206
445A Amite 19.80 79 P P 22 36 28.9 -0.1
baz=270
144A Alexander Plac 19.80 73 P P 22 36 29.1 +0.1
baz=265
ECSD EROS Data Cent 19.83 37 P P 22 36 29.6 +0.3
baz=227,SNR=8.1
ECSD EROS Data Cent 19.83 37 *e*P Pn 22 36 30.5 -0.5
Z44A Pea Ridge, Bel 19.86 72 P Pn 22 36 31.4 0.0
baz=263
F29A Eureka 19.88 28 P P 22 36 28.8 -1.0
baz=216
J34A George 19.89 39 P P 22 36 29.6 -0.3
baz=229
M37A Trindle Farm, 19.89 46 P Pn 22 36 31.5 -0.2
baz=237
L36A Harm Buss Farm 19.91 44 P P 22 36 28.3 -1.8
baz=234
D26A Manning 19.93 22 P P 22 36 29.7 -0.6
baz=208
K35A Storm Lake 19.94 41 P P 22 36 29.9 -0.6
baz=232
H32A Carlson Farm, 19.95 34 P P 22 36 30.6 0.0
baz=224
I33A Coleman 19.95 36 P P 22 36 30.0 -0.5
baz=226
C06D Leavenworth 19.96 344 P P 22 36 30.2 -0.4
baz=160
B08A Colville Reser 20.05 348 *e*P P 22 36 32.2 +0.6
comp=Z,82nm,1.4s
345A Thompson Farm, 20.07 77 P P 22 36 31.9 0.0
baz=269
Q40A Laux Farm, Aux 20.08 54 P P 22 36 32.1 0.0
baz=246,SNR=9.4
N38A Joes South For 20.10 49 P P 22 36 32.1 -0.2
baz=240
G31A Conde 20.11 32 P P 22 36 33.1 +0.7
baz=221
Y44A Strider, Charl 20.13 70 P Pn 22 36 33.9 -0.7
baz=261
E28A Huff 20.15 25 P P 22 36 33.6 +0.9
baz=213
WALA Waterton Lakes 20.16 358 *e*P P 22 36 33.4 +0.4
comp=Z,173nm,1.8s
245A Little AP, Sta 20.21 75 P P 22 36 33.8 +0.3
baz=267
145A Houston Renfro 20.22 74 P P 22 36 33.8 +0.2
baz=265
F30A Leola 20.22 29 P P 22 36 33.9 +0.4
baz=218
C25A Freed Ranch, W 20.29 19 P P 22 36 35.6 +1.3
baz=206
646A Port Sulphur 20.29 82 P P 22 36 33.4 -0.9
baz=273
O39A Kirksville 20.30 51 P P 22 36 35.2 +0.8
baz=242
D27A Center 20.30 23 P P 22 36 33.2 -1.2
baz=210,SNR=5.2
NLWA Neilton Lookou 20.31 338 *e*P Pn 22 36 36.3 -0.3
comp=Z,173nm,1.5s
P40A Paris 20.32 53 P P 22 36 35.0 +0.3
baz=245,SNR=14
546A Slidell 20.35 80 P P 22 36 35.0 0.0
baz=272
K36A Gilmore City 20.35 43 P P 22 36 35.5 +0.5
baz=233
J35A Milford 20.36 40 P P 22 36 35.6 +0.6
baz=230
CMIG Matias Romero 20.41 121 P Pn 22 36 37.5 -0.4
comp=Z,38nm,1.3s,baz=305,slow=11,SNR=7.3
CMIG LR LR 22 43 35.7
comp=Z,3µm,18.0s,baz=278,slow=34
H33A Prehn Over Nor 20.42 35 P P 22 36 36.9 +1.1
baz=225
I34A Hadley 20.44 38 P P 22 36 36.9 +1.0
baz=228
M38A Pleasantville 20.45 47 P P 22 36 36.8 +0.9
baz=238
G32A Webster 20.47 33 P P 22 36 37.0 +0.8
baz=222
L37A Phoenix Point, 20.48 45 P P 22 36 36.9 +0.6
baz=236,SNR=12
Z45A Winona 20.49 71 P P 22 36 37.1 +0.6
baz=263
E29A Napoleon 20.55 27 P P 22 36 35.6 -1.5
baz=215
346A Big Creek Wild 20.55 77 P P 22 36 37.4 +0.2
baz=269
B05A Bryant 20.58 343 P P 22 36 36.3 -1.0
baz=157
F31A Hecla 20.58 31 P P 22 36 37.4 0.0
baz=220
N39A Derby Farms, D 20.63 49 P P 22 36 36.1 -1.8
baz=241
446A Poplarville 20.64 79 P P 22 36 37.3 -0.9
baz=270
B06A Marblemount 20.66 344 *e*P P 22 36 39.4 +1.2
comp=Z,52nm,1.4s
Y45A Yeager Farm, C 20.67 70 P P 22 36 36.6 -1.9
baz=262
O40A La Belle 20.70 52 P P 22 36 37.4 -1.3
baz=243,SNR=17
D28A Regan 20.72 25 P P 22 36 38.8 -0.1
baz=212
DGMT Dagmar 20.72 17 P P 22 36 39.2 +0.2
baz=202,SNR=12
DGMT Dagmar 20.72 17 *e*P P 22 36 40.0 +1.0
comp=Z,171nm,1.3s
C26A Wahner Farm, P 20.74 21 P P 22 36 39.1 -0.1
baz=208
E30A Jud 20.80 28 P P 22 36 38.8 -1.0
baz=217
I35A Creekview Farm 20.80 39 P P 22 36 38.9 -0.9
baz=230
B25A Knox Farm, Ray 20.82 19 P P 22 36 39.7 -0.3
baz=205
J36A Seneca 1, Swea 20.83 41 P P 22 36 40.6 +0.4
baz=232
C27A Sayler Ranch, 20.84 22 P P 22 36 39.5 -0.6
baz=210
246A Jackson Lee, B 20.86 75 P P 22 36 38.8 -1.7
baz=267
OXF Oxford 20.87 68 *e*P P 22 36 41.6 +0.9
OXF pmax pmax
comp=Z,321nm,1.4s
OXF Oxford 20.87 68 *e*P P 22 36 41.6 +0.9
comp=Z,321nm,1.4s
H34A Spellman Lake, 20.91 36 P P 22 36 41.2 +0.3
baz=227
K37A Belmond 20.91 43 P P 22 36 42.0 +1.0
baz=234
G33A Ortonville 20.94 34 P P 22 36 40.0 -1.3
baz=224
146A Union 20.95 74 P P 22 36 40.7 -0.8
baz=266
D29A Pettibone, Tap 20.97 26 P P 22 36 41.3 -0.4
baz=215
L38A Oak Wood Farm, 20.98 46 P P 22 36 42.0 +0.2
baz=237
Z46A Louisville 21.10 72 P P 22 36 42.9 -0.2
baz=264
F32A Veblen 21.10 32 P P 22 36 43.0 0.0
baz=222
A04D Lummi Island 21.16 342 P P 22 36 43.2 -0.4
baz=156,SNR=8.7
B26A Jensen Ranch, 21.19 20 P P 22 36 44.5 +0.6
baz=207
C28A Hausauer Farms 21.22 24 P P 22 36 45.1 +0.7
baz=212
Y46A Houston 21.24 70 P P 22 36 43.8 -0.8
baz=263,SNR=17
447A Lucedale 21.25 79 P P 22 36 44.5 -0.2
baz=271
E31A Nome 21.28 30 P P 22 36 43.3 -1.6
baz=219
J37A Redenius Farm, 21.28 42 P P 22 36 42.7 -2.3
baz=234
247A Quitman 21.30 75 P P 22 36 44.1 -1.2
baz=268
PGC Sidney 21.30 341 *e*P P 22 36 46.1 +1.0
comp=Z,98nm,1.5s
GLAT Glass 21.32 64 *e*P P 22 36 48.0 +2.6
347A Saraland 21.34 77 P P 22 36 44.3 -1.4
baz=269,SNR=16
D30A Buchanan 21.35 28 P P 22 36 44.4 -1.2
baz=216
K38A Parkersburg 21.37 45 P P 22 36 45.6 -0.3
baz=236
G34A Benson 21.38 35 P P 22 36 45.5 -0.4
baz=226
H35A Sunnyside Ranc 21.43 38 P P 22 36 46.5 0.0
baz=228,SNR=6.0
A25A Svangstu Ranch 21.44 18 P P 22 36 46.6 0.0
baz=204,SNR=8.6
I36A Fitzsimmons Fa 21.44 40 P P 22 36 46.3 -0.4
baz=231
F33A 5 Mile Ranch, 21.47 33 P P 22 36 46.3 -0.7
baz=224
B27A Peters Farms, 21.52 22 P P 22 36 48.0 +0.5
baz=209
147A Livingston 21.62 74 P P 22 36 48.5 -0.2
baz=266
E32A Braaten, Kindr 21.67 31 P P 22 36 49.2 +0.1
baz=221
A26A Wade Farm, Ken 21.71 20 P P 22 36 49.8 +0.2
baz=207,SNR=7.1
D31A Mcclaflin, Tow 21.73 29 P P 22 36 49.5 -0.2
baz=219
SIUC Southern Illin 21.75 60 *e*P P 22 36 51.4 +1.4
comp=Z,50nm,0.9s
I37A Lemond, Waseca 21.79 41 P P 22 36 50.0 -0.4
baz=232
Z47A Carrollton 21.82 72 P P 22 36 50.3 -0.5
baz=265,SNR=16
H36A Jessenland, He 21.84 39 P P 22 36 50.4 -0.6
baz=230
B28A Dugan Ranch, T 21.86 23 P P 22 36 51.6 +0.5
baz=211
348A Jackson 21.89 77 P P 22 36 52.3 +0.7
baz=270,SNR=6.6
J38A Wedel Dairy, R 21.93 43 P P 22 36 52.0 +0.1
baz=235,SNR=10
448A Bay Minette 21.93 78 P P 22 36 50.6 -1.4
baz=271
C30A Mose, Pekin 21.94 27 P P 22 36 51.5 -0.5
baz=216
F34A Alexandria 21.95 35 P P 22 36 51.6 -0.6
baz=226
G35A Watkins 21.96 37 P P 22 36 51.4 -0.9
baz=228
248A Dixon Mills 22.04 75 P P 22 36 52.0 -1.2
baz=268
Y47A UCPARC, Winfie 22.07 71 P P 22 36 52.4 -1.2
baz=263
E33A Westby DABS, E 22.09 33 P P 22 36 53.5 -0.2
baz=223
D32A Dogwood Acres, 22.11 30 P P 22 36 52.9 -0.9
baz=220
B29A Wagenman Farm, 22.23 25 P P 22 36 55.0 -0.1
baz=213,SNR=7.7
A28A Rude Farm, Bot 22.29 23 P P 22 36 54.8 -1.0
baz=211,SNR=9.2
C31A Landman Farms, 22.31 28 P P 22 36 54.5 -1.5
baz=218,SNR=10
F35A Swanville 22.34 36 P P 22 36 55.1 -1.2
baz=227
G36A St. Michael 22.36 38 P P 22 36 55.9 -0.7
baz=230,SNR=6.5
H37A Dierke Farm, C 22.41 40 P P 22 36 56.2 -0.8
baz=232
I38A Scanlan Farm, 22.43 42 P P 22 36 56.6 -0.7
baz=234,SNR=15
WVT Waverly 22.43 65 *e*P P 22 36 58.4 +1.0
WVT pmax pmax
comp=Z,155nm,1.3s
WVT Waverly 22.43 65 *e*P P 22 36 58.4 +1.0
comp=Z,155nm,1.3s
E34A Wadena 22.50 34 P P 22 36 56.6 -1.5
baz=225
B30A Myrvik Farm, E 22.60 26 P P 22 36 58.0 -1.2
baz=215,SNR=24
D33A AnnSam, Waubun 22.64 32 P P 22 36 58.5 -1.0
baz=222
A29A Manning Farm, 22.66 24 P P 22 36 59.6 0.0
baz=213,SNR=7.2
HDIL Hopedale 22.67 53 P P 22 36 60.0 +0.1
baz=246,SNR=12
HDIL Hopedale 22.67 53 *e*P P 22 37 02.4 +2.5
comp=Z,227nm,1.3s
LRAL Lakeview Retre 22.71 73 *e*P P 22 37 02.1 +1.8
comp=Z,90nm,1.4s
C32A Crookston 22.85 30 P P 22 37 01.4 -0.3
baz=220
B31A Greenbush Farm 22.85 27 P P 22 37 01.3 -0.4
baz=217
SPMN Marine on St. 22.87 39 P P 22 37 01.9 0.0
baz=231,SNR=6.4
SPMN Marine on St. 22.87 39 *e*P P 22 37 03.7 +1.8
comp=Z,35nm,0.9s
F36A Milaca 22.89 37 P P 22 37 01.7 -0.4
baz=229,SNR=20
OLIL Olney 22.89 58 *e*P P 22 37 06.6 +4.4
comp=Z,234nm,1.8s
OLIL *e*ScP ScP 22 44 23.2 -5.1
D34A Park Rapids 22.90 33 P P 22 37 01.7 -0.6
baz=224
E35A Pequot Lakes 22.91 35 P P 22 37 02.6 +0.3
baz=226
A30A Hoffart Farm, 23.01 25 P P 22 37 03.5 0.0
baz=215
JFWS Jewell Farm 23.09 47 *e*P P 22 37 05.2 +0.9
JFWS pmax pmax
comp=Z,109nm,1.4s
JFWS Jewell Farm 23.09 47 *e*P P 22 37 05.2 +0.9
comp=Z,109nm,1.4s
C33A Trail 23.13 31 P P 22 37 03.6 -1.0
baz=221
B32A Ashes, Strandq 23.28 29 P P 22 37 06.1 0.0
baz=219,SNR=7.8
A31A Linda, St. Vin 23.44 27 P P 22 37 07.4 -0.2
baz=217
C34A RKJ Ranch, Bem 23.44 32 P P 22 37 07.1 -0.6
baz=223
D35A Remer 23.45 34 P P 22 37 07.5 -0.2
baz=226
E36A McGregor 23.46 36 P P 22 37 07.7 -0.2
baz=228,SNR=9.2
AGMN Agassiz Nation 23.50 30 P P 22 37 07.5 -0.7
baz=220,SNR=15
AGMN Agassiz Nation 23.50 30 *e*P P 22 37 08.4 +0.2
comp=Z,108nm,1.4s
AGMN *e*ScP ScP 22 44 28.7 -1.0
B33A Robert and Kas 23.60 30 P P 22 37 08.9 -0.2
baz=221,SNR=10
A32A Rocking H Ranc 23.71 28 P P 22 37 08.9 -1.4
baz=218
SWET Sewanee 23.81 68 *e*P P 22 37 12.0 +0.6
comp=Z,92nm,1.9s
C35A Jirik Farms, M 23.92 33 P P 22 37 11.8 -0.5
baz=225
E37A Wrenshall 23.94 37 P P 22 37 11.9 -0.5
baz=230
D36A Goodland 23.95 35 P P 22 37 12.1 -0.5
baz=227
TEIG Tepich 24.10 105 P P 22 37 16.1 +2.0
comp=Z,8.8nm,1.1s,baz=323,slow=8.6,SNR=3.1
TEIG LR LR 22 48 25.4
comp=Z,1µm,21.3s,baz=304,slow=41
WCI Wyandotte Cave 24.11 60 *e*P P 22 37 17.4 +3.3

WCI pmax pmax
comp=Z,44nm,1.1s
WCI Wyandotte Cave 24.11 60 *e*P **P 22 37 17.4 +3.3**
comp=Z,44nm,1.1s
SFIN Lafayette 24.16 55 P **P 22 37 14.3 -0.2**
baz=250,SNR=8.6
SFIN Lafayette 24.16 55 *e*P **P 22 37 14.6 0.0**
comp=Z,49nm,0.9s
B34A Aery, Baudette 24.17 31 P **P 22 37 12.5 -2.1**
baz=222,SNR=8.4
A33A Warroad 24.19 29 P **P 22 37 13.6 -1.1**
baz=220,SNR=10
BLO Bloomington 24.20 58 *e*P **P 22 37 18.5 +3.6**
BLO pmax pmax
comp=Z,141nm,1.8s
BLO Bloomington 24.20 58 *e*P **P 22 37 18.5 +3.6**
comp=Z,141nm,1.8s
D37A Cotton 24.32 36 P **P 22 37 15.6 -0.3**
baz=228
B35A Bob, Littlefor 24.51 32 P **P 22 37 16.8 -0.8**
baz=224,SNR=10.0
C36A Pine Crest Far 24.51 34 P **P 22 37 16.9 -0.8**
baz=227
C37A Embarrass 24.82 35 P **P 22 37 19.7 -0.8**
baz=228
CPCT Cooper Cave 24.98 67 *e*P **P 22 37 23.1 +1.0**
comp=Z,49nm,1.1s
ULM Lac du Bonnet 25.01 27 P **P 22 37 21.4 -0.7**
comp=Z,28nm,1.0s,baz=217,slow=10.0,SNR=16
ULM LR LR 22 47 55.7
comp=Z,1µm,18.9s,baz=220,slow=38
ULM Lac du Bonnet 25.01 27 *e*P **P 22 37 21.5 -0.7**
ULM pmax pmax
comp=Z,37nm,1.1s
ULM Lac du Bonnet 25.01 27 *e*P **P 22 37 21.4 -0.7**
comp=Z,37nm,1.1s
C38A Sawbill Land. 25.27 36 P **P 22 37 23.2 -1.5**
baz=230,SNR=8.4
EYMN Ely 25.31 35 P **P 22 37 23.7 -1.2**
baz=229,SNR=7.6
EYMN Ely 25.31 35 *e*P **P 22 37 24.5 -0.4**
comp=Z,25nm,1.0s
COWI Conover 25.46 41 *e*P **P 22 37 26.7 +0.4**
comp=Z,50nm,1.3s
COWI *e*ScP **ScP 22 44 31.6 -3.6**
TIGA Tifton 25.58 77 P **P 22 37 25.5 -2.0**
baz=272
TIGA Tifton 25.58 77 *e*P **P 22 37 29.2 +1.7**
comp=Z,214nm,1.6s
TKL Tuckaleechee C 25.61 67 P **P 22 37 28.6 +0.9**
comp=Z,24nm,0.9s,baz=232,slow=7.2,SNR=16
TKL LR LR 22 47 26.6
comp=Z,2µm,19.0s,baz=262,slow=36
TKL Tuckaleechee C 25.61 67 *e*P **P 22 37 28.8 +0.9**
TKL pmax pmax
comp=Z,156nm,1.3s
TKL Tuckaleechee C 25.61 67 *e*P **P 22 37 28.8 +0.9**
comp=Z,156nm,1.3s
GOGA Godfrey 25.68 72 *e*P **P 22 37 30.3 +1.8**
GOGA pmax pmax
comp=Z,52nm,1.3s
GOGA Godfrey 25.68 72 *e*P **P 22 37 30.3 +1.8**
comp=Z,52nm,1.3s
BBB Bella Bella 25.84 338 LR LR 22 47 33.1
comp=Z,3µm,20.2s,baz=170,slow=36
TZTN Tazewell 25.91 65 *e*P **P 22 37 31.6 +1.1**
comp=Z,86nm,1.3s
C39A Grand Marais 25.93 37 P **P 22 37 29.1 -1.5**
baz=231,SNR=20
ACSO Alum Creek Sta 27.11 57 *e*P **P 22 37 42.1 +0.7**
comp=Z,46nm,0.9s
KMSC Kings Mountain 27.54 69 P **P 22 37 44.1 -1.2**
baz=266,SNR=15
KMSC Kings Mountain 27.54 69 *e*P **P 22 37 45.7 +0.4**
comp=Z,63nm,1.0s
N54A Moraine State 29.50 57 P **P 22 38 01.4 -1.2**
baz=256,SNR=5.6
M54A Oil Creek Stat 29.87 56 P **P 22 38 05.0 -0.9**
baz=256
O56A Blue Knob Stat 30.41 59 P **P 22 38 09.6 -1.1**
baz=259
SSPA Standing Stone 30.99 58 *e*P **P 22 38 15.9 +0.2**
comp=Z,19nm,1.0s
SADO Sadowa 31.17 50 P **P 22 38 16.9 -0.4**
comp=Z,8.4nm,0.7s,baz=250,slow=11,SNR=4.5
SADO Sadowa 31.17 50 *e*P **P 22 38 17.3 0.0**
comp=Z,31nm,1.4s
DLBC Dease Lake 31.80 343 *e*P **P 22 38 23.8 +1.0**
comp=Z,43nm,1.5s
JTS JuntasAbangare 32.16 119 P **P 22 38 27.9 +1.6**
comp=Z,2.2nm,0.3s,baz=319,slow=15,SNR=4.4
JTS LR LR 22 52 44.2
comp=Z,1µm,19.2s,baz=311,slow=39
JTS JuntasAbangare 32.16 119 *e*P **P 22 38 22.2 -4.1**
JTS pmax pmax
comp=Z,16nm,1.1s
FCC Fort Churchill 32.62 18 *e*P **P 22 38 28.9 -0.9**
FCC pmax pmax
comp=Z,29nm,1.3s
FCC Fort Churchill 32.62 18 *e*P **P 22 38 28.9 -0.9**
comp=Z,29nm,1.3s
N59A State Game Lan 32.62 58 P **P 22 38 28.6 -1.5**
baz=260
YKA Yellowknife Ar 33.63 359 P **P 22 38 37.9 -0.8**
comp=Z,3.3nm,1.1s,baz=177,slow=8.4,SNR=28
YKA PcP **PcP 22 41 17.2 -1.0**
comp=Z,2.5nm,0.9s,baz=167,slow=2.3,SNR=5.2
YKB5 Yellowknife Ar 33.63 359 *e*P **P 22 38 37.4 -1.2**
YKB5 *e*PcP **PcP 22 41 16.9 -1.3**
YKW3 Yellowknife Ar 33.70 359 *e*P **P 22 38 38.6 -0.6**
comp=Z,30nm,1.6s
TRQ Mont Tremblant 34.69 49 *e*P **P 22 38 50.8 +2.7**
BALM Baldy 37.62 337 *e*P **P 22 39 14.7 +1.6**
BALM pmax pmax
comp=Z,54nm,1.6s
BALM Baldy 37.62 337 *e*P **P 22 39 14.7 +1.6**
comp=Z,54nm,1.6s
RAGM Ragged Mountai 38.01 335 *e*P **P 22 39 18.1 +1.8**
comp=Z,64nm,1.4s
BMRM Bremner River 38.37 336 *e*P **P 22 39 21.1 +1.8**
comp=Z,68nm,1.7s
EYAK Cordova Ski Ar 38.51 335 *e*P **P 22 39 22.4 +2.0**
comp=Z,70nm,1.5s
DIV Divide 38.90 335 *e*P **P 22 39 24.6 +0.8**
comp=Z,6.0nm,0.9s
DAWY Dawson 39.00 342 *e*P **P 22 39 25.4 +0.8**
comp=Z,38nm,1.4s
KLU Klutina 39.20 336 *e*P **P 22 39 28.1 +1.9**
comp=Z,41nm,1.8s
MENT Mentasta 39.44 338 *e*P **P 22 39 29.3 +1.1**
comp=Z,72nm,0.2s
MLOA Mauna Loa Obse 39.70 266 *e*P **P 22 39 33.6 +2.3**
PAX Paxson 40.03 338 *e*P **P 22 39 34.1 +0.9**
PAX pmax pmax
comp=Z,15nm,1.3s
PAX Paxson 40.03 338 *e*P **P 22 39 34.1 +0.9**
comp=Z,15nm,1.3s
EGAK Eagle 40.04 342 *e*P **P 22 39 33.8 +0.7**
comp=Z,15nm,1.3s
DOT Dot Lake 40.05 339 *e*P **P 22 39 34.0 +0.7**
comp=Z,72nm,1.6s
SML Sawmill 40.28 335 *e*P **P 22 39 36.0 +0.8**
SML pmax pmax
comp=Z,39nm,1.3s
SML Sawmill 40.28 335 *e*P **P 22 39 36.0 +0.8**
comp=Z,39nm,1.3s
MOTC Monteria, Cord 40.40 112 *e*P **P 22 39 35.2 -1.5**
PMR Palmer 40.45 334 *e*P **P 22 39 36.4 -0.1**
PMR pmax pmax
comp=Z,92nm,1.5s
PMR Palmer 40.45 334 *e*P **P 22 39 36.4 -0.1**
comp=Z,92nm,1.5s
DHY Denali Highway 40.75 337 *e*P **P 22 39 40.2 +1.0**
comp=Z,31nm,1.5s
INK Inuvik 41.28 349 P **P 22 39 43.5 +0.2**
comp=Z,20nm,1.2s,baz=147,slow=8.6,SNR=22
INK Inuvik 41.28 349 *e*P **P 22 39 43.5 +0.2**
INK pmax pmax
comp=Z,40nm,1.4s
INK Inuvik 41.28 349 *e*P **P 22 39 43.5 +0.2**
comp=Z,40nm,1.4s
SPU Mount Spurr 41.36 333 *e*P **P 22 39 44.7 +0.5**
RND Reindeer 41.48 337 *e*P **P 22 39 45.6 +0.5**
RND pmax pmax
comp=Z,30nm,1.4s
RND Reindeer 41.48 337 *e*P **P 22 39 45.6 +0.5**
comp=Z,30nm,1.4s

HDA Harding Lake 41.50 339 *e*P **P 22 39 45.9 +0.8**
comp=Z,16nm,1.3s
MCK McKinley 41.71 337 *e*P **P 22 39 47.6 +0.6**
MCK pmax pmax
comp=Z,43nm,1.4s
MCK McKinley 41.71 337 *e*P **P 22 39 47.6 +0.6**
comp=Z,43nm,1.4s
IL1 Eielson Array 41.73 339 *e*P **P 22 39 47.2 +0.2**
ILAR Eielson Array 41.73 339 P **P 22 39 47.4 +0.4**
comp=Z,9.7nm,1.0s,baz=150,slow=7.0,SNR=71
ILAR PcP **PcP 22 41 44.5 +1.5**
comp=Z,0.6nm,0.4s,baz=199,slow=12,SNR=6.6
ILAR LR LR 22 58 01.2
comp=Z,1µm,18.3s,baz=145,slow=38
ILB Eielson Array 41.73 339 *e*P **P 22 39 47.5 +0.5**
WRH Wood River Hil 41.91 338 *e*P **P 22 39 49.1 +0.6**
comp=Z,11nm,1.0s
CCB Clear Creek Bu 41.93 338 *e*P **P 22 39 48.7 0.0**
comp=Z,6.8nm,1.0s
GRGC Isla de Gorgon 41.98 121 *e*P **P 22 39 51.5 +1.8**
TRF Thorofare Moun 42.01 336 *e*P **P 22 39 50.0 +0.5**
comp=Z,92nm,1.5s
SCHQ Schefferville 42.02 39 P **P 22 39 49.5 -0.1**
comp=Z,9.5nm,1.0s,baz=252,slow=7.5,SNR=5.8
SCHQ LR LR 22 58 19.6
comp=Z,2µm,18.6s,baz=254,slow=38
SCHQ Schefferville 42.02 39 *e*P **P 22 39 50.1 +0.5**
comp=Z,14nm,0.9s
COLA College 42.10 339 *e*P **P 22 39 50.4 +0.4**
COLA pmax pmax
comp=Z,13nm,1.1s
BWN Browne 42.17 337 *e*P **P 22 39 51.3 +0.6**
comp=Z,47nm,1.2s
MDM Murphy Dome 42.28 339 *e*P **P 22 39 51.9 +0.4**
comp=Z,7.8nm,1.0s
KTH Kantishna Hill 42.30 336 *e*P **P 22 39 52.0 +0.2**
comp=Z,57nm,1.4s
PPLA Purkeypile 42.38 335 *e*P **P 22 39 53.1 +0.6**
comp=Z,136nm,1.3s
FYU Fort Yukon 42.50 342 *e*P **P 22 39 54.6 +1.4**
comp=Z,70nm,1.4s
CAST Castle Rocks 42.64 335 *e*P **P 22 39 54.4 -0.2**
comp=Z,39nm,1.3s
BPAW Bear Paw Mtn. 42.65 337 *e*P **P 22 39 54.7 +0.1**
comp=Z,68nm,1.4s
SVW2 Sparrevohn 42.78 331 *e*P **P 22 39 55.6 -0.1**
comp=Z,51nm,1.4s
MLY Manley 43.14 338 *e*P **P 22 39 59.2 +0.6**
comp=Z,16nm,0.8s
CBRI Barrientos, No 43.34 111 *e*P **P 22 40 02.4 +1.5**
OTAV Otavalo 43.63 125 *e*P **P 22 40 05.3 +1.7**
comp=Z,38nm,1.0s
BARC Barichara 43.66 113 *e*P **P 22 40 05.3 +1.7**
ROSC El Rosal 43.79 116 P **P 22 40 06.5 +1.7**
comp=Z,3.6nm,0.3s,baz=332,slow=16,SNR=7.2
ROSC LR LR 23 00 47.1
comp=Z,726nm,18.5s,baz=328,slow=39
TT01 Tatalina 43.86 333 *e*P **P 22 40 04.1 -0.2**
TTA Tatalina 43.87 333 *e*P **P 22 40 04.4 -0.1**
TTA pmax pmax
comp=Z,36nm,1.3s
TTA Tatalina 43.87 333 *e*P **P 22 40 04.4 -0.1**
comp=Z,36nm,1.3s
COLD Coldfoot 44.38 340 *e*P **P 22 40 09.6 +1.1**
comp=Z,26nm,1.4s
SDV Santo Domingo 44.49 108 *e*P **P 22 40 12.5 +2.3**
comp=Z,22nm,0.9s
FRB Frobisher Bay 44.89 26 LR LR 22 59 01.2
comp=Z,1µm,20.5s,baz=244,slow=36
TAOE Nuku Hiva Isla 45.72 219 *e*LQ LQ 22 51 08.3
comp=Z,3µm,25.6s
TAOE *e*LR LR 22 53 02.1
comp=Z,1µm,25.7s
RES Resolute Bay 46.79 7 P **P 22 40 26.5 -0.9**
comp=Z,5.4nm,1.3s,baz=221,slow=10.0,SNR=8.5
RES PcP **PcP 22 42 02.2 +2.0**
comp=Z,7.4nm,1.1s,baz=233,slow=5.8,SNR=4.7
TNA Tin City 49.69 334 *e*P **P 22 40 49.5 -0.3**
comp=Z,24nm,1.3s
GAMB Gambell 50.71 331 *e*P **P 22 40 57.8 +0.2**
comp=Z,24nm,1.3s
SFJD Kangerlussuaq 53.04 26 *i* P **P 22 41 14.6 -0.3**
SFJD Kangerlussuaq 53.04 26 *i* P **P 22 41 14.6 -0.3**
SFJD Kangerlussuaq 53.04 26 *e*P **P 22 41 15.3 +0.4**
comp=Z,55nm,1.4s
PMOR Pomariorio Ree 55.11 222 *e*T T 23 38 49.3
comp=Z,6.0nm,0.4s
RKT Rikea 55.84 205 *e*LR LR 22 57 51.2
comp=Z,950nm,26.2s
SUMG Summit 58.11 20 *i* P **P 22 41 51.2 -0.6**
comp=Z,22nm,1.0s
SUMG Summit 58.11 20 *e*P **P 22 41 51.2 -0.6**
SUMG pmax pmax
comp=Z,22nm,1.0s
SUMG Summit 58.11 20 *e*P **P 22 41 51.2 -0.6**
comp=Z,22nm,1.0s
PPT2 Paete2 58.13 222 *e*S **S 22 49 52.7 +0.7**
comp=Z,623nm,27.5s
PPT2 *e*LQ LQ 22 56 19.6
comp=Z,641nm,24.2s
PPT2 *e*LR LR 22 58 47.2
comp=Z,2µm,27.0s
PTGA Pitinga 58.63 111 *e*P **P 22 41 57.3 +1.5**
comp=Z,23nm,1.2s
BILL Bilibino 60.09 335 *d i*P **P 22 42 04.9 -0.2**
BILL pmax pmax
comp=Z,20nm,1.3s
BILL MLR MLR
comp=Z,484nm,17.0s
BILL Bilibino 60.09 335 *e*P **P 22 42 05.2 +0.1**
comp=Z,36nm,1.3s
SAML Samuel 61.04 120 *e*P **P 22 42 12.0 -0.3**
comp=Z,18nm,1.4s
LPAZ La Paz 62.46 130 P **P 22 42 23.0 +0.5**
comp=Z,2.9nm,0.7s,baz=325,slow=10,SNR=3.9
LPAZ LR LR 23 07 33.9
comp=Z,286nm,21.8s,baz=324,slow=34
LPAZ La Paz 62.46 130 *e*P **P 22 42 23.5 +1.0**
LPAZ pmax pmax
comp=Z,21nm,1.5s
LPAZ La Paz 62.46 130 *e*P **P 22 42 23.5 +1.0**
comp=Z,21nm,1.5s
DAG Danmarks Havn 63.13 15 *i* P **P 22 42 23.8 -1.6**
comp=Z,12nm,1.0s
DAG Danmarks Havn 63.13 15 *i* P **P 22 42 23.8 -1.6**
DAG pmax pmax
comp=Z,12nm,1.0s
PB11 IPOC Station P 63.98 134 *e*P **P 22 42 34.0 +2.0**
comp=Z,60nm,1.1s
PB01 IPOC Station P 65.04 135 *e*P **P 22 42 41.1 +2.2**
comp=Z,34nm,1.1s
LVC Limon Verde 66.56 135 *e*P **P 22 42 51.9 +2.9**
comp=Z,35nm,1.3s
SEY Seymchan 66.71 330 P **P 22 42 47.1 -1.8**
comp=Z,1.5nm,0.5s,baz=125,slow=6.3,SNR=5.2
PETK Petropavlovsk- 67.03 319 P **P 22 42 50.3 -0.8**
comp=Z,3.8nm,0.8s,baz=85,slow=20,SNR=3.5
PETK PcP **PcP 22 43 19.2 -0.2**
comp=Z,10nm,1.0s,baz=90,slow=10,SNR=3.7
PETK LR LR 23 06 41.3
comp=Z,108nm,22.0s,baz=83,slow=31
SPITS Spitsbergen Ar 69.19 10 P **P 22 43 02.0 -2.4**
comp=Z,8.3nm,1.0s,baz=314,slow=16,SNR=4.3
SPITS Spitsbergen Ar 69.19 10 P **P 22 43 02.0 -2.4**
TIXI Tiksi 71.03 343 P **P 22 43 13.7 -2.0**
comp=Z,5.0nm,1.0s,baz=43,slow=5.9,SNR=15
TIXI Tiksi 71.03 343 *d i*P **P 22 43 13.9 -1.8**
TIXI pmax pmax
comp=Z,10.0nm,1.3s
TIXI Tiksi 71.03 343 *e*P **P 22 43 13.6 -2.0**
comp=Z,32nm,1.6s
CPUP Villa Florida 76.63 130 P **P 22 43 50.3 +1.2**
comp=Z,13nm,1.0s,baz=341,slow=7.2,SNR=13
CPUP Villa Florida 76.63 130 *e*P **P 22 43 50.9 +1.8**
CPUP Villa Florida 76.63 130 *e*P **P 22 43 50.9 +1.8**
ARA0 ARCESS Array S 77.38 14 *e*P **P 22 43 55.6 +2.9**
ARCES ARCESS Array B 77.38 14 P **P 22 43 50.5 -2.2**
comp=Z,3.3nm,0.9s,baz=339,slow=6.5,SNR=6.6
ARCES LR LR 23 21 00.6
comp=Z,385nm,18.6s,baz=332,slow=38
PMOZ Porto Moniz, M 79.41 58 A A 23 17 22.7
comp=Z,390nm,20.0s
NBO00 NORSAR Array S 79.52 24 *e*P P 22 44 09.9 +5.2
NBO02 NORSAR Array S 79.53 24 *e*P **P 22 44 04.8 0.0**
NB2 NORSAR Subarra 79.67 24 P **P 22 44 04.6 -1.0**
comp=Z,1.1nm,0.8s,baz=312,slow=5.6
NOA NORSAR Array B 79.67 24 P **P 22 44 05.0 -0.5**

comp=Z,5.0nm,1.1s,baz=312,slow=5.2,SNR=7.3
PLCA Paso Flores 79.69 149 P **P 22 44 07.3 +1.5**
comp=Z,14nm,1.1s,baz=359,slow=7.5,SNR=7.8
PLCA LR LR 23 11 43.2
comp=Z,488nm,21.3s,baz=353,slow=30
PLCA Paso Flores 79.69 149 *e*P **P 22 44 08.7 +2.9**
PLCA pmax pmax
comp=Z,32nm,1.3s
PLCA Paso Flores 79.69 149 *e*P **P 22 44 08.7 +2.9**
comp=Z,32nm,1.3s
KONO Kongsberg 80.00 26 *e*P **P 22 44 08.2 +0.9**
KONO pmax pmax
comp=Z,18nm,1.3s
KONO Kongsberg 80.00 26 *e*P **P 22 44 08.2 +0.9**
comp=Z,18nm,1.3s
LVZ Lovozero 80.55 12 *c i*P **P 22 44 10.4 +0.2**
LVZ pmax pmax
comp=Z,25nm,1.2s
LVZ Lovozero 80.55 12 *e*P **P 22 44 10.3 +0.2**
comp=Z,39nm,1.3s
NRIK Noril'sk 80.92 353 P **P 22 44 11.2 -0.9**
comp=Z,2.4nm,0.9s,baz=64,slow=3.5,SNR=4.8
NRIK LR LR 23 22 33.3
comp=Z,384nm,19.3s,baz=6.5,slow=38
MVO Moncorvo 82.41 47 *e*P **P 22 44 24.4 +3.8**
comp=Z,31nm,1.7s
MVO A A 23 20 37.5
comp=Z,855nm,18.0s
MTE Manteigas 82.47 48 *e*P **P 22 44 21.6 +0.7**
MTE Manteigas 82.47 48 *e*LR LR 23 10 10.0
comp=Z,1µm,18.0s
PMTG Montargil 82.72 49 *e*P **P 22 44 20.6 -1.5**
comp=Z,39nm,1.8s
PMRV Marv??o 83.08 49 *e*P **P 22 44 22.8 -1.2**
comp=Z,41nm,1.6s
PMRV Marv??o 83.08 49 *e*LR LR 23 10 33.9
comp=Z,931nm,20.0s
KLR Kul'dur 83.22 323 *e*P **P 22 44 22.1 -2.4**
PESTR Estremoz 83.24 49 *e*P **P 22 44 25.6 +0.7**
MORF Marmelete 83.34 51 *e*P **P 22 44 28.2 +2.7**
PVAQ Vaqueiros 83.93 51 *e*LR LR 23 10 47.3
comp=Z,943nm,20.0s
FIA1 FINESS Array S 84.11 18 *e*P **P 22 44 28.4 -0.4**
FINES FINESS Array B 84.11 18 P **P 22 44 28.6 -0.3**
comp=Z,13nm,1.1s,baz=20,slow=6.1,SNR=14
FINES LR LR 23 22 00.8
comp=Z,1µm,20.3s,baz=328,slow=36
BOD Bodaibo 85.06 337 *e*P **P 22 44 31.7 -2.0**
BOD pmax pmax
comp=Z,10.0nm,1.4s
ESDC Sonseca Array 85.18 47 P **P 22 44 36.0 +1.2**
comp=Z,0.5nm,0.6s,baz=307,slow=5.8,SNR=4.9
ES19 SONSECA Array 85.20 47 *e*P **P 22 44 37.2 +2.4**
USRK Ussuriysk Ar. 86.12 319 P **P 22 44 38.4 -0.9**
comp=Z,0.8nm,0.5s,baz=359,slow=7.6,SNR=4.6
MJAR Matsushiro Arr 86.67 310 P **P 22 44 40.1 -2.1**
comp=Z,1.3nm,0.8s,baz=60,slow=3.4,SNR=5.9
MJAR LR LR 23 17 18.6
comp=Z,144nm,21.1s,baz=75,slow=31
MAJO Matsushiro 86.67 310 *e*P **P 22 44 39.3 -2.9**
MAJO pmax pmax
comp=Z,35nm,0.9s
CLL Collm 87.14 31 *i* P **P 22 44 44.0 -0.1**
KLMR Klimovskoe 87.83 13 *e*P **P 22 44 44.6 -2.6**
KLMR pmax pmax
comp=Z,12nm,1.4s
PVCC Panska Ves 88.39 30 AMS AMS 23 20 10.0
comp=Z,600nm,21.1s
PRA Prague 88.66 31 AMS AMS 23 23 50.0
comp=Z,700nm,17.2s
PRU Pruhonice 88.77 31 AMS AMS 23 23 50.0
comp=Z,700nm,17.2s
GOPC GO Pecny, Ondr 88.93 31 AMS AMS 23 24 00.0
comp=Z,700nm,18.1s
KHC Kasperske Hory 88.94 32 *e*P **P 22 44 49.4 -3.4**
KHC AMS AMS 23 24 50.0
comp=Z,700nm,16.9s
UPC Upice 89.04 30 AMS AMS 23 22 30.0
comp=Z,800nm,18.0s
FUORN Ofenpass-Fuorn 89.08 35 *e*P **P 22 44 53.5 -0.4**
comp=Z,4.9nm,1.0s
DPC Dobruska-Polom 89.29 30 *e*P **P 22 44 52.7 -1.7**
DPC AMS AMS 23 22 40.0
comp=Z,800nm,19.2s
TREC Trest 89.69 31 AMS AMS 23 29 10.0
comp=Z,800nm,15.8s
CN2 Changchun 90.02 322 *e*P **P 22 44 58.5 +0.6**
OKC Ostrava-Krasne 90.46 29 *e*P **P 22 44 58.2 -1.6**
OKC AMS AMS 23 24 20.0
comp=Z,400nm,17.8s
LANS Liptovska Anna 91.54 29 *e*P **P 22 45 05.3 +0.4**
LANS Liptovska Anna 91.54 29 *e*P **P 22 45 05.3 +0.4**
HNR Honiara 91.88 260 LR LR 23 21 33.0
comp=Z,547nm,18.3s,baz=43,slow=32
STHS Stebnicka Huta 92.08 28 *e*P **P 22 45 06.5 -0.9**
STHS pmax pmax
comp=Z,3.0nm,0.9s
STHS Stebnicka Huta 92.08 28 *e*P **P 22 45 06.5 -0.9**
OBN Obninsk 92.38 17 *i i*P **P 22 45 07.0 -1.6**
OBN *i* 22 45 11.2
OBN *e* 22 48 49.7
OBN pmax pmax
comp=Z,6.0nm,1.1s
OBN MLR MLR
comp=Z,530nm,17.0s
KECS Kecovo 92.48 29 *e*P **P 22 45 11.7 +2.5**
KECS pmax pmax
comp=Z,2.0nm,0.9s
KECS Kecovo 92.48 29 *e*P **P 22 45 11.7 +2.5**
DZM Mont Dzumac 92.59 246 LR LR 23 18 26.8
comp=Z,334nm,19.9s,baz=52,slow=30
KSRS Korea Array 92.73 316 LR LR 23 21 55.3
comp=Z,110nm,21.2s,baz=44,slow=32
KS01 Wonju Array Si 92.73 316 *e*P **P 22 45 09.6 -1.0**
GUMO Guam 93.79 288 LR LR 23 18 41.9
comp=Z,523nm,21.9s,baz=82,slow=30
AKASG Malin Array Be 94.04 23 P **P 22 45 14.4 -1.9**
comp=Z,0.6nm,0.5s,baz=320,slow=3.9,SNR=5.3
AKASG LR LR 23 26 08.1
comp=Z,484nm,18.8s,baz=320,slow=35
KIEV Kiev 94.04 23 *e*P **P 22 45 14.5 -1.8**
KIEV pmax pmax
comp=Z,3.0nm,1.1s
ARU Arti 94.73 5 *d i*P **P 22 45 18.4 -1.0**
ARU 22 49 07.8
ARU S **SKSac 22 55 54.0 +1.0**
ARU pmax pmax
comp=Z,10.0nm,1.2s
ARU MLR MLR
comp=Z,700nm,19.0s
ARU Arti 94.73 5 *e*P **P 22 45 18.6 -0.8**
comp=Z,11nm,1.3s
ZAK Zakamensk 94.77 338 *e*P P 22 45 15.4 -4.5
ZAK pmax pmax
comp=Z,3.0nm,1.5s
BUR08 Bucovina Ar. S 95.08 27 *e*P **P 22 45 24.4 +3.1**
ULN Ulaanbaatar 95.53 334 *e*P **P 22 45 22.3 -1.2**
ULN pmax pmax
comp=Z,3.0nm,1.1s
ULN Ulaanbaatar 95.53 334 *e*P **P 22 45 23.7 +0.2**
comp=Z,6.2nm,1.3s
SONM Songino Array 95.81 335 LR LR 23 30 50.8
comp=Z,253nm,18.3s,baz=39,slow=37
KEST Kesra 95.92 44 LR LR 23 28 14.0
comp=Z,702nm,18.6s,baz=326,slow=35
ZALV Zalesovo Beam 96.08 349 LR LR 23 32 55.6
comp=Z,154nm,19.4s,baz=63,slow=38
BRVK Borovoye 98.36 358 *e*P **P 22 45 34.3 -1.6**
BRVK pmax pmax
comp=Z,2.0nm,1.1s
HHC Hu-ho-hao-te 99.23 327 *e*P **Pdif 22 45 40.5 +0.2**
HHC pmax pmax
comp=Z,80nm,9.9s
KURK Kurchatov 100.09 352 *e*P **Pdif 22 45 42.3 -1.3**
KURK pmax pmax
comp=Z,2.0nm,1.2s
ANN Anapa 101.89 21 *e*P **Pdif 22 45 54.3 +2.5**
ANN *e* 22 50 05.2
ANN *e*PS **PS 22 59 09.3 +2.2**
ANN pmax pmax
comp=Z,25nm,1.2s
ANN MLR MLR
comp=N,636nm,18.0s
ANN MLR MLR
comp=Z,823nm,18.0s
ANN MLR MLR

comp=E,615nm,18.0s
BRTR Keskin Array B 105.04 26 PKKPbc PKKPbc 23 01 47.5 -0.4
comp=E,0.7nm,1.0s,baz=160,slow=3.9,SNR=3.7
WMQ Urumqi 105.19 345 Pdif **Pdif** **22 46 08.0 +1.3**
WMQ PP **PP** **22 50 33.3 +6.7**
WMQ SS SS 23 05 22.0 +2.6
WMQ AMB AMB
comp=E,26nm,13.0s
WMQ LR LR
comp=E,53nm,24.2s
WMQ LR LR
comp=E,100nm,24.2s
WMQ LR LR
comp=E,98nm,29.0s
CD2 Chengdu 110.97 327 PKP **PKiKP** **22 50 32.0 +0.1**
KSH Kashi 111.44 353 *e*PKP **PKiKP** **22 50 34.0 +1.3**
KSH *e*PP **PP** **22 51 15.0 +2.9**
KSH PKS **PKSdf** **22 54 09.0 -0.5**
KSH SKS **SKSdf** **22 57 44.0 +0.8**
KSH SKKS **SKKSac** **22 58 09.0 -5.6**
KSH AMB AMB
comp=E,67nm,3.4s
KSH LR LR
comp=E,190nm,11.3s
KSH LR LR
comp=E,130nm,10.4s
KSH LR LR
comp=E,340nm,18.6s
GYA Guiyang 113.06 321 *e*Pdif **Pdif** **22 46 41.3 -0.8**
GYA PKP **PKiKP** **22 50 36.0 -0.1**
GYA PP **PP** **22 51 27.8 +3.4**
GYA AMB AMB
comp=E,120nm,7.8s
KMI Kunming 116.23 324 PKP **PKPdf** **22 50 42.3 -0.1**
WRA Warramunga Arr 118.68 262 PKP **PKPdf** **22 50 47.4 +0.5**
comp=E,1.5nm,0.8s,baz=64,slow=2.0,SNR=11
AS01 Alice Springs 120.39 258 *e*PKPdf **PKPdf** **22 50 50.2 +0.2**
ASAR Alice Springs 120.43 258 PKP **PKPdf** **22 50 50.1 0.0**
comp=E,1.2nm,0.8s,baz=63,slow=1.9,SNR=12
CHTO Chiang Mai 123.40 323 *e*PKIKP **PKPdf** **22 50 57.9 +1.9**
CHTO Chiang Mai 123.40 323 *e*PKPdf **PKPdf** **22 50 57.9 +1.9**
CMAR Chiang Mai Arr 123.69 323 PKP **PKPdf** **22 50 55.6 -0.9**
comp=E,3.0nm,0.9s,baz=345,slow=2.0,SNR=18
KMBO Kilima Mbogo 140.46 51 *e*PKIKP **PKPdf** **22 51 32.8 +4.3**
KMBO Kilima Mbogo 140.46 51 *e*PKPdf **PKPdf** **22 51 32.8 +4.3**
MAW Mawson 141.17 178 PKP **PKPdf** **22 51 25.8 -2.0**
comp=E,3.2nm,0.8s,baz=250,slow=6.2,SNR=5.2
BOSA Boshof 143.59 100 PKP PKPbc 22 51 32.0 +1.1
comp=E,9.7nm,1.1s,baz=14,slow=1.1,SNR=4.5
BOSA Boshof 143.59 100 PKIKP PKPbc 22 51 32.0 +1.1

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*ISN **29** 22:42:34.2±1.2, 35.27N×44.88E, h0km±6km, ML3.3*
*ISCJB **29** 22:42:35.4±0.5, 35.24N±0.04×44.84E±0.04, h10km, Error ellipse: s-maj=6.7km s-min=4.0km az=35.5*
*CSEM **29** 22:42:37.5, 35.23N×44.80E, h17km, ML3.3*
*TEH **29** 22:42:37.5, 35.23N×44.80E, h17km, ML3.3*
ISC 29 22:42:36.6±1.0, 35°22N±0.06×44°80E±0.05, h10km, n28, σ1§56/28, Iraq

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
IKRK	**Kirkuk**	**0.42**	**296**	*e*Pg	Pg	22 42 45.0	+0.2
IKRK				*e*Sg	Sg	22 42 51.0	+0.6
IGHG	**Ghaleghazi**	**1.70**	**121**	*e*Sg	**Sb**	**22 43 30.9**	**+1.1**
IGHG				*e*Pn	**Pn**	**22 43 06.7**	**+0.1**
IGHG				*e*AMB	AMB	22 43 37.3	
	comp=Z,5μm,0.1s						
ILIN	**Lien**	**1.80**	**99**	*e*AMB	AMB	22 43 36.0	
	comp=Z,6μm,0.3s						
ILIN				*e*Pn	**Pn**	**22 43 07.7**	**-0.2**
MSL	**Mosul**	**1.81**	**311**	*e*Pn	Pn	22 43 07.0	-0.9
MSL				*i* Sn	Sn	22 43 30.0	-0.9
IVIS	**Veis**	**1.82**	**112**	*e*AMB	AMB	22 43 37.4	
	comp=Z,4μm,0.3s						
IVIS				*e*Pn	**Pn**	**22 43 08.1**	**0.0**
BHD	**Baghdad**	**1.97**	**190**	*e*Pn	Pn	22 43 09.0	-1.1
BHD				*i* Sn	Sn	22 43 35.0	+0.2
HAKT	**HAKKARI**	**2.50**	**340**	*i* P	**Pn**	**22 43 15.5**	**-2.1**
HAKT				*i* S	**Sg**	**22 43 58.7**	**+1.8**
SIRN	**S¨–rnak**	**2.98**	**320**	*i* P	Pn	22 43 27.6	+3.5
SIRN				*i* S	**Sb**	**22 44 09.6**	**+3.3**
IBST	**Bostanabad**	**3.00**	**34**	*e*Pn	**Pn**	**22 43 24.1**	**-0.3**
IBST				*e*AMB	AMB	22 44 18.8	
	comp=Z,663nm,0.3s						
IBST	**Bostanabad**	**3.00**	**34**	*e*Pn	**Pn**	**22 43 24.1**	**-0.3**
ISHB	**Shabestar**	**3.13**	**12**	*e*Pn	**Pn**	**22 43 25.5**	**-0.7**
ISHB				*e*AMB	AMB	22 43 33.3	
	comp=Z,908nm,0.2s						
ITBZ	**Tabriz**	**3.20**	**19**	*e*Pn	**Pn**	**22 43 27.1**	**0.0**
ITBZ				*e*AMB	AMB	22 43 35.8	
	comp=Z,458nm,0.2s						
ITBZ	**Tabriz**	**3.20**	**19**	*e*Pn	**Pn**	**22 43 27.1**	**0.0**
GEVA	**Gevas**	**3.39**	**336**	*i* P	**Pn**	**22 43 28.2**	**-1.5**
ISRB	**Sarab**	**3.48**	**41**	*e*Pn	**Pn**	**22 43 29.9**	**-1.1**
ISRB				*e*AMB	AMB	22 43 48.1	
	comp=Z,457nm,0.3s						
ISRB	**Sarab**	**3.48**	**41**	*e*Pn	**Pn**	**22 43 29.9**	**-1.1**
IMRD	**Marand**	**3.56**	**11**	*e*Pn	**Pb**	**22 43 38.0**	**-1.9**
IMRD				*e*AMB	AMB	22 43 49.7	
	comp=Z,600nm,0.2s						
IMRD	**Marand**	**3.56**	**11**	*e*Pn	**Pb**	**22 43 38.0**	**-1.9**
MARD	**Mardin**	**3.86**	**304**	*i* P	**Pb**	**22 43 43.9**	**-1.0**
MARD				*i* S	**Sg**	**22 44 37.7**	**-3.1**
BTMN	**Batman**	**3.90**	**314**	*i* P	**Pb**	**22 43 47.4**	**+1.9**
IRAZ	**Razeghan**	**4.20**	**86**	*e*Pn	**Pn**	**22 43 41.2**	**+0.3**
IRAZ				*e*AMB	AMB	22 44 02.5	
	comp=Z,383nm,0.3s						
IRAZ	**Razeghan**	**4.20**	**86**	*e*Pn	**Pn**	**22 43 41.2**	**+0.3**
IPIR	**Pirpir**	**5.66**	**115**	*e*Pn	**Pn**	**22 44 00.0**	**-1.0**
IPIR				*e*AMB	AMB	22 45 12.2	
	comp=Z,172nm,0.2s						
IPIR	**Pirpir**	**5.66**	**115**	*e*Pn	**Pn**	**22 44 00.0**	**-1.0**
IKLH	**Kolahrood**	**5.92**	**107**	*e*Pn	**Pn**	**22 44 03.6**	**-1.1**
IKLH				*e*AMB	AMB	22 45 26.4	
	comp=Z,112nm,0.1s						
IKLH	**Kolahrood**	**5.92**	**107**	*e*Pn	**Pn**	**22 44 03.6**	**-1.1**
GZT	**Gaziantep**	**6.22**	**292**	*i* P	**Pg**	**22 44 34.3**	**-1.4**
AKCD	**Akcadag**	**6.32**	**301**	*i* P	**Pg**	**22 44 40.5**	**+2.9**

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*ISCJB **29** 22:52:28.2±0.7, 35.29N±0.07×44.94E±0.06, h10km, Error ellipse: s-maj=12.2km s-min=4.9km az=30.2*
*ISN **29** 22:52:28.4±1.2, 35.26N×44.87E, h28km±16km, ML2.7*
*CSEM **29** 22:52:29.5, 35.24N×44.90E, h17km, ML2.7*
*TEH **29** 22:52:29.5, 35.24N×44.90E, h17km, ML2.7*
ISC 29 22:52:29.7±1.4, 35°4N±0.1×45°1E±0.1, h10km, n11, σ1§12/13, Iran-Iraq border region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
IKRK	**Kirkuk**	**0.60**	**273**	*e*Pg	Pg	22 52 38.0	-3.3
	baz=109						
IKRK				*e*Sg	Sg	22 52 45.0	-4.1
IGHG	**Ghaleghazi**	**1.61**	**130**	*e*Pn	**Pn**	**22 52 58.0**	**-0.4**
IGHG				*e*Sg	**Sb**	**22 53 21.1**	**+0.9**
IGHG				*e*AMB	AMB	22 53 31.6	
	comp=N,2μm,0.2s						
IGHG	**Ghaleghazi**	**1.61**	**130**	*e*Pn	**Pn**	**22 52 58.0**	**-0.4**
IGHG				*e*Sg	**Sb**	**22 53 21.1**	**+0.9**
ILIN	**Lien**	**1.61**	**106**	*e*Pn	**Pn**	**22 52 59.0**	**+0.5**
ILIN				*e*AMB	AMB	22 53 04.4	
	comp=Z,822nm,0.1s						
ILIN	**Lien**	**1.61**	**106**	*e*Pn	**Pn**	**22 52 59.0**	**+0.5**
IVIS	**Veis**	**1.69**	**119**	*e*Pn	**Pn**	**22 52 59.2**	**-0.1**
IVIS				*e*AMB	AMB	22 53 28.7	
	comp=Z,382nm,0.2s						
IVIS	**Veis**	**1.69**	**119**	*e*Pn	**Pn**	**22 52 59.2**	**-0.1**
MSL	**Mosul**	**1.89**	**303**	*e*Pg	Pn	22 53 00.0	-2.1
MSL				*e*Sg	Sn	22 53 23.0	-3.0
HAKT	**HAKKARI**	**2.44**	**334**	*i* P	**Pn**	**22 53 09.8**	**0.0**
HAKT				*i* S	**Sn**	**22 53 37.3**	**-2.6**
ISHB	**Shabestar**	**2.94**	**8**	*e*Pn	**Pn**	**22 53 17.5**	**+0.8**
ISHB				*e*AMB	AMB	22 53 24.9	
	comp=Z,134nm,0.2s						
SIRN	**S¨–rnak**	**3.01**	**315**	*i* P	**Pn**	**22 53 19.2**	**+1.7**
SIRN				*i* S	**Sb**	**22 54 00.6**	**+0.2**

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*DDA **29** 23:00:45.6, 41.28N×44.02E, h10km, Md2.8*
*TIF **29** 23:00:46.9, 41.20N×43.88E, h11km±1km*
*CSEM **29** 23:00:48.2±0.2, 41.20N×43.83E, h2km, ML1.8, Error ellipse: s-maj=6.0km s-min=4.2km az=150.0*
ISC 29 23:00:48.2±1.2, 41°22N±0.03×43°87E±0.03, h3km±11km, n15, σ0§31/26, Turkey-Georgia-Armenia border region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
AKH	**Akhalkalaki**	**0.34**	**305**	P	**Pg**	**23 00 54.6**	**-0.2**
AKH				S	**Sg**	**23 00 59.4**	**+0.1**
AKH	**Akhalkalaki**	**0.34**	**305**	P	**Pg**	**23 00 54.6**	**-0.2**
AKH				S	**Sg**	**23 00 59.4**	**+0.1**
EAK	**Akyaka**	**0.56**	**200**	*i* P	**Pg**	**23 00 58.8**	**-0.2**
EAK				*i* S	**Sg**	**23 01 06.7**	**+0.4**
EAK	**Akyaka**	**0.56**	**200**	P	**Pg**	**23 00 58.8**	**-0.2**
EAK				S	**Sg**	**23 01 06.7**	**+0.4**
TBLG	**Delisi**	**0.83**	**52**	P	**Pb**	**23 01 05.6**	**+0.3**
TBLG				S	**Sb**	**23 01 17.4**	**+0.4**
TBLG	**Delisi**	**0.83**	**52**	P	**Pb**	**23 01 05.6**	**+0.3**
TBLG				S	**Sb**	**23 01 17.4**	**+0.4**
EPOS	**Posof**	**0.90**	**289**	*i* P	**Pg**	**23 01 05.2**	**-0.3**
EPOS	**Posof**	**0.90**	**289**	P	**Pg**	**23 01 05.2**	**-0.3**
DGRG	**David-gareji**	**1.16**	**78**	P	**Pg**	**23 01 09.8**	**-0.6**
DGRG				S	**Sn**	**23 01 27.6**	**-0.2**
DGRG	**David-gareji**	**1.16**	**78**	P	**Pg**	**23 01 09.8**	**-0.6**
DGRG				S	**Sn**	**23 01 27.6**	**-0.2**
GUDG	**Gudauri**	**1.33**	**20**	P	**Pg**	**23 01 13.6**	**-0.1**
GUDG				S	**Sn**	**23 01 32.0**	**-0.2**
GUDG	**Gudauri**	**1.33**	**20**	P	**Pg**	**23 01 13.6**	**-0.1**
GUDG				S	**Sn**	**23 01 32.0**	**-0.2**
DAGI	**Agillar**	**1.48**	**265**	*i* P	**Pn**	**23 01 15.5**	**-0.3**
DAGI				*i* S	**Sb**	**23 01 35.6**	**-0.1**
DBAD	**Bademkaya**	**1.65**	**264**	*i* P	**Pn**	**23 01 18.2**	**0.0**
DBAD	**Bademkaya**	**1.65**	**264**	P	**Pn**	**23 01 18.2**	**0.0**

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*CSEM **29** 23:05:21.8±0.3, 39.03N×42.33E, h10km, MD2.8, Error ellipse: s-maj=9.2km s-min=6.4km az=78.0*
*ISCJB **29** 23:05:22.1±0.8, 39.01N±0.03×42.34E±0.06, h8km±7km, Error ellipse: s-maj=8.0km s-min=4.9km az=0.1*
*ISK **29** 23:05:22.0, 39.06N×42.34E, h8km, MD2.9*
*DDA **29** 23:05:22.5, 39.01N×42.26E, h7km, Md2.8*
ISC 29 23:05:21.0±1.5, 39°04N±0.04×42°32E±0.05, h1km±14km, n18, σ0§61/27, Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
EKAR	**Karacoban**	**0.29**	**317**	*i* P	**Pb**	**23 05 29.1**	**-0.1**
EKAR				*i* S	**Sb**	**23 05 37.0**	**+2.4**
EKAR	**Karacoban**	**0.29**	**317**	P	**Pb**	**23 05 29.1**	**-0.1**
TATV	**Tatvan**	**0.54**	**184**	*i* P	**Pg**	**23 05 30.7**	**-0.6**
TATV				*i* S	**Sg**	**23 05 38.6**	**+0.4**
TATV	**Tatvan**	**0.54**	**184**	P	**Pg**	**23 05 30.7**	**-0.6**
TATV				S	**Sg**	**23 05 38.6**	**+0.4**
VRTB	**Varto-Mus**	**0.68**	**280**	*e*PG	**Pb**	**23 05 35.8**	**0.0**
VRTB				*e*SG	**Sb**	**23 05 45.9**	**+0.1**
VRTB	**Varto-Mus**	**0.68**	**280**	*e*Pg	**Pb**	**23 05 35.8**	**0.0**
VRTB				*e*Sg	**Sb**	**23 05 45.9**	**+0.1**
EATA	**Eleskirt**	**0.83**	**9**	*i* P	**Pb**	**23 05 38.3**	**-0.2**
EATA				*i* S	**Sn**	**23 05 52.3**	**-0.9**
EATA	**Eleskirt**	**0.83**	**9**	P	**Pb**	**23 05 38.3**	**-0.2**
HOMI	**Horasan**	**1.05**	**343**	*i* P	**Pn**	**23 05 42.8**	**-0.4**
ERZM	**Erzurum**	**1.13**	**320**	*i* P	**Pn**	**23 05 44.3**	**0.0**
ERZM				*i* S	Sn	23 06 06.7	+6.0
ERZM	**Erzurum**	**1.13**	**320**	P	**Pn**	**23 05 44.3**	**0.0**
EZM	**Erzurum**	**1.14**	**320**	*e*PN	**Pn**	**23 05 44.0**	**-0.3**
EZM				*e*SN	**Sn**	**23 06 00.2**	**-0.5**
CLDR	**Caldiran**	**1.25**	**85**	*e*PN	**Pn**	**23 05 46.0**	**+0.1**
CLDR	**Caldiran**	**1.25**	**85**	*e*Pn	**Pn**	**23 05 46.0**	**+0.1**
BTMN	**Batman**	**1.41**	**216**	*i* P	**Pn**	**23 05 47.5**	**-0.5**
BTMN				*i* S	**Sn**	**23 06 07.4**	**+0.1**
BTMN	**Batman**	**1.41**	**216**	P	**Pn**	**23 05 47.5**	**-0.5**
BTMN				S	**Sn**	**23 06 07.4**	**+0.1**
SIRT	**Sirnak**	**1.54**	**176**	*e*PN	**Pg**	**23 05 50.7**	**+0.1**
SIRT	**Sirnak**	**1.54**	**176**	*e*Pn	**Pg**	**23 05 50.7**	**+0.1**

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*ISCJB **29** 23:24:55.9±0.3, 39.68N±0.01×1.35W±0.02, h2km±2km, Error ellipse: s-maj=2.9km s-min=1.8km az=39.6*
*CSEM **29** 23:24:57.4±0.1, 39.63N×1.24W, h2km, ML3.5/37, Error ellipse: s-maj=2.4km s-min=1.3km az=128.0*
*LDG **29** 23:24:59.7±0.1, 39.57N×1.16W, h10km, Ml3.3/16, Error ellipse: s-maj=2.0km s-min=1.0km az=126.0*
*MDD **29** 23:24:59.8±0.3, 39.59N×1.20W, h11km, mbLg3.1/41, Error ellipse: s-maj=3.2km s-min=1.8km az=121.0, PRXIMO*
MDD EMS: III INTENSIDAD MAXIMA.
*INMG **29** 23:24:59.6±1.8, 39.60N×1.22W, h0km, ML3.0, Error ellipse: s-maj=2.8km s-min=1.4km az=109.0*
*IGIL **29** 23:24:59.8, 39.59N×1.20W, h10km*
*SFS **29** 23:24:59.0, 39.58N×1.20W, h10km, ML2.9*
*STR **29** 23:25:15.3±0.4, 39.89N×1.14W, h10km, Ml3.3, Error ellipse: s-maj=0.0km s-min=0.0km az=0.0*
ISC 29 23:24:57.2±1.0, 39°63N±0.02×1°21W±0.02, h11km±9km, n219, σ1§50/371, 1C-2D, Spain

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
EMOS	**Mosqueruela**	**0.93**	**37**	⇑Pg	**Pn**	**23 25 17.3**	**+1.0**
	106nm,0.3s,SNR=18						
EMOS				Lg	Lg	23 25 30.8	
	402nm,0.3s,SNR=12						
EMOS	**Mosqueruela**	**0.93**	**37**	Pg	**Pn**	**23 25 17.3**	**+1.0**
	106nm,0.3s,SNR=18						
EMOS				Lg	Lg	23 25 30.8	
	402nm,0.3s,SNR=12						
ETOB	**Tobarra**	**1.02**	**195**	Pg	**Pb**	**23 25 17.4**	**+0.6**
	103nm,0.3s,SNR=18						
ETOB				Lg	Lg	23 25 31.2	
	232nm,0.3s,SNR=12						
ETOB	**Tobarra**	**1.02**	**195**	Pg	**Pb**	**23 25 17.4**	**+0.6**
	103nm,0.3s,SNR=18						
ETOB				Lg	Lg	23 25 31.2	
	232nm,0.3s,SNR=12						
AFON	**Font Roja**	**1.09**	**152**	Pg	**Pb**	**23 25 18.6**	**+0.5**
	46nm,0.4s,SNR=121						
AFON				Lg	Lg	23 25 33.9	
	60nm,0.3s,SNR=13						
AFON	**Font Roja**	**1.09**	**152**	Pg	**Pb**	**23 25 18.6**	**+0.5**
	46nm,0.4s,SNR=121						
AFON				Lg	Lg	23 25 33.9	
	60nm,0.3s,SNR=13						
EBR	**Ebro Roquetas**	**1.76**	**47**	Pg	**Pg**	**23 25 32.2**	**+1.2**
	226nm,0.8s,SNR=7.9						
EBR				Lg	Lg	23 25 57.0	
	639nm,1.2s,SNR=7.9						
EBR	**Ebro Roquetas**	**1.76**	**47**	Pg	**Pg**	**23 25 32.2**	**+1.2**
	226nm,0.8s,SNR=7.9						
EBR				Lg	Lg	23 25 57.0	
	639nm,1.2s,SNR=7.9						
ERTA	**Horta de San J**	**1.77**	**41**	Pn	**Pb**	**23 25 30.1**	**+0.4**
	53nm,0.3s,SNR=76						
ERTA				Pg	**Pg**	**23 25 32.7**	**+1.5**
	47nm,0.4s,SNR=13						
ERTA				Sn	**Sb**	**23 25 52.0**	**0.0**
	68nm,0.4s						
ERTA				Lg	Lg	23 25 56.5	
	133nm,0.4s,SNR=7.9						
ERTA	**Horta de San J**	**1.77**	**41**	Pn	**Pb**	**23 25 30.1**	**+0.4**
	53nm,0.3s,SNR=76						
ERTA	**Horta de San J**	**1.77**	**41**	Pg	**Pg**	**23 25 32.7**	**+1.5**
	47nm,0.4s,SNR=13						
ERTA				Sn	**Sb**	**23 25 52.0**	**0.0**
	68nm,0.4s						
ERTA				Lg	Lg	23 25 56.5	
	133nm,0.4s,SNR=7.9						
EMUR	**La Murta**	**1.78**	**181**	Pg	**Pg**	**23 25 32.1**	**+0.7**
	44nm,0.3s,SNR=93						
EMUR				Lg	Lg	23 25 54.6	
	204nm,0.4s,SNR=11						
EMUR	**La Murta**	**1.78**	**181**	Pg	**Pg**	**23 25 32.1**	**+0.7**
	44nm,0.3s,SNR=93						
EMUR				Lg	Lg	23 25 54.6	
	204nm,0.4s,SNR=11						
SESP	**Santiago Espad**	**1.83**	**215**	⇓Pn	**Pn**	**23 25 29.4**	**+0.6**
	10.0nm,0.2s,SNR=18						
SESP				Pg	**Pg**	**23 25 32.6**	**+0.3**
	17nm,0.2s,SNR=7.9						
SESP				Sn	**Sn**	**23 25 51.9**	**-0.1**
	30nm,0.2s,SNR=7.9						
SESP				Lg	Lg	23 25 56.6	
	110nm,0.2s,SNR=7.9						
SESP	**Santiago Espad**	**1.83**	**215**	Pn	**Pn**	**23 25 29.4**	**+0.6**
	10.0nm,0.2s,SNR=18						
CART	**Cartagena**	**2.04**	**175**	Pg	**Pb**	**23 25 35.0**	**+0.7**
CART				Lg	Lg	23 25 56.9	
CART	**Cartagena**	**2.04**	**175**	*e*P	**Pb**	**23 25 35.0**	**+0.7**
CART				*e*S	**Sn**	**23 25 56.9**	**0.0**
EIBI	**Ibiza**	**2.07**	**106**	Pn	**Pn**	**23 25 32.4**	**+0.6**
	33nm,0.9s,SNR=8.7						
EIBI				Pg	**Pg**	**23 25 36.2**	**-0.6**
	6.7nm,0.2s,SNR=7.9						
EIBI				Sn	**Sn**	**23 25 55.3**	**-2.2**
	29nm,0.4s						
EIBI	**Ibiza**	**2.07**	**106**	Pn	**Pn**	**23 25 32.4**	**+0.6**
	33nm,0.9s,SNR=8.7						
EHUE	**Huescar**	**2.11**	**211**	Pg	**Pg**	**23 25 37.8**	**+0.2**
	13nm,0.3s,SNR=4.6						
EHUE				Sn	**Sn**	**23 25 58.8**	**+0.1**
	34nm,0.3s,SNR=6.6						
EHUE				Lg	Lg	23 26 05.9	
	34nm,0.3s,SNR=7.4						
EHUE	**Huescar**	**2.11**	**211**	Pg	**Pg**	**23 25 37.8**	**+0.2**
	13nm,0.3s,SNR=4.6						
EHUE				Sn	**Sn**	**23 25 58.8**	**+0.1**
	34nm,0.3s,SNR=6.6						
EHUE				Lg	Lg	23 26 05.9	
	34nm,0.3s,SNR=7.4						
ESDC	**Sonseca Array**	**2.13**	**272**	Pn	**Pn**	**23 25 34.1**	**+1.4**
	2.8nm,0.3s,baz=92,slow=14,SNR=52						
ESDC				Pg	**Pg**	**23 25 37.7**	**-0.3**
	8.7nm,0.5s,baz=94,slow=17,SNR=7.4						
ESDC				Lg	Lg	23 26 06.0	
	26nm,0.3s,baz=94,slow=30,SNR=16						
ESDC	**Sonseca Array**	**2.13**	**272**	Pn	**Pn**	**23 25 34.1**	**+1.4**
	2.8nm,0.3s,SNR=52						
ESDC	**Sonseca Array**	**2.13**	**272**	Pg	**Pg**	**23 25 37.7**	**-0.3**
	8.7nm,0.5s,SNR=7.4						
ESDC				Lg	Lg	23 26 06.0	
	26nm,0.3s,SNR=16						
ESAC	**San Caprasio**	**2.17**	**15**	Pn	**Pn**	**23 25 34.8**	**+1.6**
	1.1nm,0.1s,SNR=7.9						
ESAC				Pg	**Pg**	**23 25 39.9**	**+1.2**
	84nm,0.3s,SNR=42						
ESAC				Lg	Lg	23 26 09.0	
	609nm,0.4s,SNR=17						
ESAC	**San Caprasio**	**2.17**	**15**	Pn	**Pn**	**23 25 34.8**	**+1.6**
	1.1nm,0.1s,SNR=7.9						
ESAC	**San Caprasio**	**2.17**	**15**	Pg	**Pg**	**23 25 39.9**	**+1.2**
	84nm,0.3s,SNR=42						
ESAC				Lg	Lg	23 26 09.0	
	609nm,0.4s,SNR=17						
EQES	**Quesada**	**2.33**	**219**	Pn	**Pn**	**23 25 36.7**	**+1.1**
	3.8nm,0.3s,SNR=28						
EQES				Pg	**Pg**	**23 25 41.8**	**-0.1**
	23nm,0.3s,SNR=44						
EQES				Lg	Lg	23 26 12.7	
	96nm,0.3s,SNR=6.0						
EQES	**Quesada**	**2.33**	**219**	Pn	**Pn**	**23 25 36.7**	**+1.1**
	3.8nm,0.3s,SNR=28						
EPOB	**Poblet**	**2.45**	**45**	Pn	**Pn**	**23 25 38.9**	**+1.8**
	4.2nm,0.3s,SNR=22						
EPOB				Pg	**Pg**	**23 25 44.5**	**+0.4**
	21nm,0.5s,SNR=33						
EPOB				Lg	Lg	23 26 15.9	
	20nm,0.3s						
EPOB	**Poblet**	**2.45**	**45**	Pn	**Pn**	**23 25 38.9**	**+1.8**
	4.2nm,0.3s,SNR=22						
EPOB	**Poblet**	**2.45**	**45**	Pg	**Pg**	**23 25 44.5**	**+0.4**
	21nm,0.5s,SNR=33						
EPOB				Lg	Lg	23 26 15.9	
	20nm,0.3s						
GUD	**Guadarrama**	**2.48**	**295**	Pn	**Pn**	**23 25 38.5**	**+0.9**
	0.5nm,0.1s,SNR=7.9						
GUD				Pg	**Pg**	**23 25 45.6**	**+0.9**
	24nm,0.4s,SNR=37						
GUD				Lg	Lg	23 26 19.3	
	108nm,0.4s,SNR=28						
GUD	**Guadarrama**	**2.48**	**295**	Pn	**Pn**	**23 25 38.5**	**+0.9**
	0.5nm,0.1s,SNR=7.9						
EBAN	**Banos Encina**	**2.49**	**235**	Pg	**Pg**	**23 25 44.8**	**-0.1**
	113nm,0.2s,SNR=7.9						
EBAN				Lg	Lg	23 26 17.3	
	50nm,0.2s,SNR=7.9						
EBAN	**Banos Encina**	**2.49**	**235**	Pg	**Pg**	**23 25 44.8**	**-0.1**
	113nm,0.2s,SNR=7.9						
EBAN				Lg	Lg	23 26 17.3	
	50nm,0.2s,SNR=7.9						
GORA	**Gorafe**	**2.58**	**214**	Pn	**Pb**	**23 25 41.9**	**-1.6**
	8.6nm,0.2s,SNR=7.9						
GORA				Pg	**Pg**	**23 25 47.1**	**+0.4**
	28nm,0.2s,SNR=7.9						
GORA				Sn	**Sn**	**23 26 09.7**	**-0.7**
	25nm,0.2s,SNR=7.9						
GORA				Lg	Lg	23 26 20.9	
	147nm,0.2s,SNR=7.9						
GORA	**Gorafe**	**2.58**	**214**	Pn	**Pb**	**23 25 41.9**	**-1.6**
	8.6nm,0.2s,SNR=7.9						
ENIJ	**Nijar**	**2.77**	**197**	Pn	**Pn**	**23 25 44.0**	**+2.6**
	1.0nm,0.3s,SNR=7.9						
ENIJ				Pg	**Pg**	**23 25 50.6**	**+0.4**
	2.3nm,0.2s,SNR=7.9						
ENIJ				Lg	Lg	23 26 26.2	
	63nm,0.4s,SNR=4.0						
ENIJ	**Nijar**	**2.77**	**197**	Pn	**Pn**	**23 25 44.0**	**+2.6**
	1.0nm,0.3s,SNR=7.9						
EQUE	**Quentar**	**2.99**	**217**	Pn	**Pn**	**23 25 47.5**	**+2.9**
	1.0nm,0.1s,SNR=7.9						
EQUE				Pg	**Pg**	**23 25 54.5**	**+0.1**
	2.6nm,0.3s,SNR=8.6						
EQUE				Lg	Lg	23 26 33.5	
	26nm,0.4s						
EQUE	**Quentar**	**2.99**	**217**	Pn	**Pn**	**23 25 47.5**	**+2.9**
	1.0nm,0.1s,SNR=7.9						
ECOG	**Cogollos-Vega**	**2.99**	**219**	Pn	**Pn**	**23 25 46.3**	**+1.7**
	2.6nm,0.2s,SNR=8.2						
ECOG				Pg	**Pg**	**23 25 54.1**	**-0.4**
	16nm,0.4s,SNR=12						
ECOG				Lg	Lg	23 26 33.4	
	111nm,0.4s,SNR=20						
ECOG	**Cogollos-Vega**	**2.99**	**219**	Pn	**Pn**	**23 25 46.3**	**+1.7**
	2.6nm,0.2s,SNR=8.2						
EADA	**Adamuz**	**3.01**	**242**	Pn	**

IPRE **Itoiz** **3.18 358** Pg **Pg** **23 25 58.9 +0.9**
1.6nm,0.2s,SNR=7.9
IPRE Lg Lg 23 26 41.9
15nm,0.3s,SNR=7.9
IELO Elcoad **3.21 360** Pn **Pn** **23 25 50.6 +3.0**
0.7nm,0.2s,SNR=7.9
IELO Pg **Pg** **23 25 59.0 +0.3**
2.9nm,0.2s,SNR=7.9
IELO Elcoad **3.21 360** Pn **Pn** **23 25 50.6 +3.0**
0.7nm,0.2s,SNR=7.9
IELO Elcoad **3.21 360** Pg **Pg** **23 25 59.0 +0.3**
2.9nm,0.2s,SNR=7.9
ECHI Chisagues Biel **3.21 19** Pg **Pg** **23 25 58.2 -0.5**
6.6nm,0.3s,SNR=7.9
ECHI Lg Lg 23 26 43.2
21nm,0.3s,SNR=7.9
ECHI Chisagues Biel **3.21 19** Pg **Pg** **23 25 58.2 -0.5**
6.6nm,0.3s,SNR=7.9
ECHI Lg Lg 23 26 43.2
21nm,0.3s,SNR=7.9
CSOR Sort **3.27 32** Pn **Pn** **23 25 50.8 +2.4**
2.2nm,0.3s,SNR=19
CSOR Pg **Pg** **23 26 00.4 +0.6**
15nm,0.5s,SNR=14
CSOR Sn **Sn** **23 26 30.6 +3.3**
14nm,0.4s,SNR=5.6
CSOR Lg Lg 23 26 41.7
46nm,0.3s,SNR=6.8
CSOR Sort **3.27 32** Pn **Pn** **23 25 50.8 +2.4**
2.2nm,0.3s,SNR=19
ETSF Etsaut **3.30 8** Pn **Pn** **23 25 50.8 +1.9**
ETSF Pg **Pg** **23 26 01.2 +0.7**
ETSF Sn **Sn** **23 26 28.5 +0.3**
ETSF Lg Lg 23 26 44.2
22nm,0.7s
ETSF Etsaut **3.30 8** *e*Pn **Pn** **23 25 50.8 +1.9**
ETSF Etsaut **3.30 8** *e*Pg **Pg** **23 26 01.2 +0.7**
ETSF *e*Sn **Sn** **23 26 28.5 +0.3**
ETSF *e*Sg **Sg** **23 26 44.2 +0.9**
44nm,0.7s
ETSF Etsaut **3.30 8** Pn **Pn** **23 25 50.8 +1.9**
ETSF Etsaut **3.30 8** Pg **Pg** **23 26 01.2 +0.7**
ETSF Sn **Sn** **23 26 28.5 +0.3**
ETSF *e*Sg **Sg** **23 26 44.2 +0.9**
22nm,0.7s
VIEF Viey **3.38 15** P **Pg** **23 26 04.2 +2.2**
VIEF S **Sg** **23 26 44.9 -0.9**
EGOR Sierra Gorda, **3.40 223** Pn **Pn** **23 25 51.6 +1.4**
1.4nm,0.2s,SNR=7.9
EGOR Pg **Pg** **23 26 00.8 -1.4**
2.1nm,0.2s,SNR=7.9
EGOR Sn **Sn** **23 26 34.4 +3.8**
3.5nm,0.3s,SNR=7.9
EGOR Lg Lg 23 26 46.6
29nm,0.3s,SNR=7.9
EGOR Sierra Gorda, **3.40 223** Pn **Pn** **23 25 51.6 +1.4**
1.4nm,0.2s,SNR=7.9
ATE Arette **3.48 6** Pn **Pn** **23 25 54.2 +3.0**
0.6nm,0.2s,SNR=7.9
ATE Pg **Pg** **23 26 03.9 +0.2**
1.9nm,0.3s,SNR=7.9
ATE Sn **Sn** **23 26 32.6 +0.3**
2.4nm,0.1s,SNR=7.9
ATE Lg Lg 23 26 48.4
26nm,0.7s,SNR=7.9
ATE Arette **3.48 6** Pn **Pn** **23 25 54.2 +3.0**
0.6nm,0.2s,SNR=7.9
SJPF Ste Jean **3.48 360** Pn **Pn** **23 25 53.4 +2.1**
SJPF Pg **Pg** **23 26 04.0 +0.1**
SJPF Sn **Sn** **23 26 33.1 +0.6**
SJPF Lg Lg 23 26 49.9
11nm,0.4s
SJPF Ste Jean **3.48 360** *e*Pn **Pn** **23 25 53.4 +2.1**
SJPF Ste Jean **3.48 360** *e*Pg **Pg** **23 26 04.0 +0.1**
SJPF *e*Sn **Sn** **23 26 33.1 +0.6**
SJPF *e*Sg **Sg** **23 26 49.9 +0.9**
21nm,0.4s
SJPF Ste Jean **3.48 360** Pn **Pn** **23 25 53.4 +2.1**
SJPF Ste Jean **3.48 360** Pg **Pg** **23 26 04.0 +0.1**
SJPF Sn **Sn** **23 26 33.1 +0.6**
SJPF *e*Sg **Sg** **23 26 49.9 +0.9**
11nm,0.4s
REYF Montagne du Re **3.49 10** P **Pg** **23 26 05.9 +1.8**
REYF S **Sg** **23 26 47.8 -1.5**
CFON Fontmartina **3.49 51** Pn **Pn** **23 25 53.2 +1.7**
4.2nm,0.3s,SNR=11
CFON Sn **Sn** **23 26 31.8 -1.0**
7.5nm,0.3s,SNR=9.6
CFON Lg Lg 23 26 49.8
19nm,0.3s
CFON Fontmartina **3.49 51** Pn **Pn** **23 25 53.2 +1.7**
4.2nm,0.3s,SNR=11
CFON Lg Lg 23 26 49.8
19nm,0.3s
LABF Labassere **3.55 15** P **Pg** **23 26 06.8 +1.6**
LABF S **Sg** **23 26 49.2 -2.0**
MELF Melles **3.56 24** P **Pg** **23 26 06.2 +0.8**
MELF S **Sg** **23 26 48.8 -2.8**
EPF Esparros **3.59 18** Pn **Pn** **23 25 54.5 +1.7**
EPF Pg **Pg** **23 26 05.3 -0.7**
EPF Sn **Sn** **23 26 35.5 +0.2**
EPF Lg Lg 23 26 53.1
30nm,0.4s
EPF Esparros **3.59 18** *e*Pn **Pn** **23 25 54.5 +1.7**
EPF Esparros **3.59 18** *e*Pg **Pg** **23 26 05.3 -0.7**
EPF *e*Sn **Sn** **23 26 35.5 +0.2**
EPF *e*Sg **Sg** **23 26 53.1 +0.5**
60nm,0.4s
EPF Esparros **3.59 18** Pn **Pn** **23 25 54.5 +1.7**
EPF Esparros **3.59 18** Pg **Pg** **23 26 05.3 -0.7**
EPF Sn **Sn** **23 26 35.5 +0.2**
EPF *e*Sg **Sg** **23 26 53.1 +0.5**
30nm,0.4s
EALK Alkurruntz **3.60 356** Pn Pn 23 25 56.7 +3.8
4.8nm,0.8s,SNR=9.3
EALK Pg **Pg** **23 26 07.2 +1.1**
11nm,0.4s,SNR=10
EALK Sn **Sn** **23 26 35.3 -0.1**
20nm,0.5s
EALK Lg Lg 23 26 54.3
42nm,0.4s
EALK Alkurruntz **3.60 356** Pn Pn 23 25 56.7 +3.8
4.8nm,0.8s,SNR=9.3
SALF Salau **3.61 29** P **Pg** **23 26 08.3 +1.9**
SALF S **Sg** **23 26 50.9 -2.3**
ECAB El Cabril **3.64 246** Pn **Pn** **23 25 54.3 +0.9**
2.7nm,0.3s,SNR=34
ECAB Pg **Pg** **23 26 06.2 -0.6**
11nm,0.3s,SNR=15
ECAB Sn **Sn** **23 26 35.8 -0.6**
9.8nm,0.3s,SNR=9.0
ECAB Lg Lg 23 26 51.7
32nm,0.4s,SNR=5.7
ECAB El Cabril **3.64 246** Pn **Pn** **23 25 54.3 +0.9**
2.7nm,0.3s,SNR=34
VALF Valcebollere **3.69 40** P **Pg** **23 26 08.9 +1.0**
VALF S **Sg** **23 26 53.5 -2.2**
CLLI Llivia **3.73 39** Pn **Pn** **23 25 57.3 +2.6**
2.8nm,0.3s,SNR=14
CLLI Pg **Pg** **23 26 07.9 -0.7**
15nm,0.7s,SNR=7.9
CLLI Sn **Sn** **23 26 38.9 +0.2**
19nm,0.9s,SNR=6.6
CLLI Lg Lg 23 26 56.9
27nm,0.7s
CLLI Llivia **3.73 39** Pn **Pn** **23 25 57.3 +2.6**
2.8nm,0.3s,SNR=14
EPLA Plasencia **3.78 278** ||Pn **Pn** **23 25 56.5 +1.1**
5.3nm,0.3s,SNR=18
EPLA Sn **Sn** **23 26 39.1 -0.7**
5.8nm,0.3s,SNR=5.7
EPLA Lg Lg 23 26 58.5
24nm,0.5s,SNR=6.2
EPLA Plasencia **3.78 278** Pn **Pn** **23 25 56.5 +1.1**
5.3nm,0.3s,SNR=18
EPLA Sn **Sn** **23 26 39.1 -0.7**
5.8nm,0.3s,SNR=5.7
EPLA Lg Lg 23 26 58.5
24nm,0.5s,SNR=6.2
EMAL Malaga-Limoner **3.83 223** Pg **Pb** **23 26 04.2 -0.4**
EMAL Lg Lg 23 26 54.6
CARF Carcanieres **3.97 38** P **Pg** **23 26 13.5 +0.3**
CARF S **Sg** **23 27 00.4 -4.2**
ELAN Lanestosa **3.97 336** Pn **Pn** **23 26 00.2 +2.2**
5.8nm,0.8s,SNR=15
ELAN Lg Lg 23 27 07.4
19nm,0.7s
ELAN Lanestosa **3.97 336** Pn **Pn** **23 26 00.2 +2.2**
5.8nm,0.8s,SNR=15
ELAN Lg Lg 23 27 07.4
19nm,0.7s
EMIJ Mijas **4.16 224** Pn **Pn** **23 26 03.0 +2.4**
2.4nm,0.3s,SNR=8.1
EMIJ Sn **Sn** **23 26 49.8 +0.7**
5.4nm,0.6s,SNR=5.4
EMIJ Lg Lg 23 27 11.5
13nm,0.4s
EMIJ Mijas **4.16 224** Pn **Pn** **23 26 03.0 +2.4**
2.4nm,0.3s,SNR=8.1
EMIJ Sn **Sn** **23 26 49.8 +0.7**
5.4nm,0.6s,SNR=5.4
EMIJ Lg Lg 23 27 11.5
13nm,0.4s
EJON La Jonquera **4.19 46** Pn **Pn** **23 26 03.3 +2.3**
0.7nm,0.1s,SNR=7.9
EJON Sn **Sn** **23 26 49.0 -0.9**
16nm,0.6s,SNR=4.7
EJON Lg Lg 23 27 10.1
9.4nm,0.3s,SNR=7.9
EJON La Jonquera **4.19 46** Pn **Pn** **23 26 03.3 +2.3**
0.7nm,0.1s,SNR=7.9
EJON Lg Lg 23 27 10.1
9.4nm,0.3s,SNR=7.9
SJAF Saint Jean de **4.21 46** Pn **Pn** **23 26 03.3 +2.1**
0.5nm,0.2s,SNR=7.9
SJAF Pg **Pg** **23 26 16.4 -1.3**
0.9nm,0.2s,SNR=7.9
SJAF Lg Lg 23 27 11.6
9.3nm,0.4s,SNR=7.9
SJAF Saint Jean de **4.21 46** Pn **Pn** **23 26 03.3 +2.1**
0.5nm,0.2s,SNR=7.9
MTLF Montolieu **4.51 34** Pn **Pn** **23 26 06.3 +0.9**
MTLF Pg **Pg** **23 26 22.6 -1.0**
MTLF Sn **Sn** **23 26 57.2 -0.7**
MTLF Lg Lg 23 27 21.4
13nm,0.6s
MTLF Montolieu **4.51 34** *e*Pn **Pn** **23 26 06.3 +0.9**
MTLF Montolieu **4.51 34** *e*Pg **Pg** **23 26 22.6 -1.0**
MTLF *e*Sn **Sn** **23 26 57.2 -0.7**
MTLF *e*Sg **Sg** **23 27 21.4 -0.6**
26nm,0.6s
MTLF Montolieu **4.51 34** Pn **Pn** **23 26 06.3 +0.9**
MTLF Montolieu **4.51 34** Pg **Pg** **23 26 22.6 -1.0**
MTLF *e*Sn **Sn** **23 26 57.2 -0.7**
MTLF *e*Sg **Sg** **23 27 21.4 -0.6**
13nm,0.6s
ESPR Espera **4.58 234** Pn **Pn** **23 26 08.2 +1.8**
1.9nm,0.3s,SNR=5.4
ESPR Sn **Sn** **23 26 58.3 -1.3**
5.9nm,0.4s
ESPR Lg Lg 23 27 26.7
12nm,0.3s,SNR=7.9
ESPR Espera **4.58 234** Pn **Pn** **23 26 08.2 +1.8**
1.9nm,0.3s,SNR=5.4
ESPR Lg Lg 23 27 26.7
12nm,0.3s,SNR=7.9
EBAD Badajoz **4.60 261** Pn **Pn** **23 26 06.9 +0.3**
1.2nm,0.3s,SNR=12
EBAD Pg **Pb** **23 26 18.9 +1.1**
2.7nm,0.3s,SNR=10
EBAD Sn **Sn** **23 26 58.7 -1.2**
5.0nm,0.2s,SNR=7.9
EBAD Lg Lg 23 27 25.4
23nm,0.3s,SNR=7.9
EBAD Badajoz **4.60 261** Pn **Pn** **23 26 06.9 +0.3**
1.2nm,0.3s,SNR=12
EBAD Sn **Sn** **23 26 58.7 -1.2**
5.0nm,0.2s,SNR=7.9
EBAD Lg Lg 23 27 25.4
23nm,0.3s,SNR=7.9
EMIN Mina Concepcio **4.66 248** Pn **Pn** **23 26 08.1 +0.6**
0.4nm,0.2s,SNR=6.4
EMIN Lg Lg 23 27 25.1
13nm,0.4s,SNR=7.9
EMIN Mina Concepcio **4.66 248** Pn **Pn** **23 26 08.1 +0.6**
0.4nm,0.2s,SNR=6.4
EMIN Lg Lg 23 27 25.1
13nm,0.4s,SNR=7.9
MVO Moncorvo **4.70 291** *e*Pn **Pn** **23 26 09.2 +1.1**
MVO *e*Sn **Sn** **23 27 02.9 +0.2**
MVO *e*Sg **Sg** **23 27 30.1 +1.9**
MVO A A 23 27 35.1
26nm,0.5s
MVO Moncorvo **4.70 291** Pn **Pn** **23 26 09.2 +1.1**
1.6nm,0.2s,SNR=14
MVO Sn **Sn** **23 27 00.8 -1.9**
7.8nm,0.7s,SNR=7.4
MVO Lg Lg 23 27 29.7
21nm,0.4s,SNR=5.6
MVO Moncorvo **4.70 291** Pn **Pn** **23 26 09.2 +1.1**
1.6nm,0.2s,SNR=14
MVO *e*Sn **Sn** **23 27 02.9 +0.2**
MVO Lg Lg 23 27 29.7
21nm,0.4s,SNR=5.6
MVO *e*Sg **Sg** **23 27 30.1 +1.9**
26nm,0.5s
PBRG Braganca **4.74 299** *e*Pn **Pn** **23 26 10.3 +1.8**
PBRG Braganca **4.74 299** *e*Pg **Pg** **23 26 29.3 +1.4**
PBRG *e*Sg **Sg** **23 27 30.7 +1.5**
PBRG A A 23 27 37.5
18nm,0.5s
PBRG Braganca **4.74 299** Pn **Pn** **23 26 10.3 +1.8**
PBRG Pg **Pg** **23 26 29.3 +1.4**
PBRG Lg Lg 23 27 30.7
9.2nm,0.5s
PBRG Braganca **4.74 299** Pn **Pn** **23 26 10.3 +1.8**
PBRG Braganca **4.74 299** Pg **Pg** **23 26 29.3 +1.4**
PBRG *e*Sg **Sg** **23 27 30.7 +1.5**
18nm,0.5s
EARI Arriondas **4.75 322** Pn **Pn** **23 26 11.4 +2.7**
109nm,1.5s,SNR=8.0
EARI Pg **Pg** **23 26 28.4 +0.3**
2.8nm,0.4s,SNR=7.9
EARI Sn **Sn** **23 27 02.5 -1.2**
0.4nm,0.2s,SNR=7.9
EARI Lg Lg 23 27 30.9
4.3nm,0.4s,SNR=7.9
EARI Arriondas **4.75 322** Pn **Pn** **23 26 11.4 +2.7**
109nm,1.5s,SNR=8.0
PBAR Barrancos **4.78 254** *e*Pn **Pn** **23 26 10.0 +1.0**
PBAR *e*Sg **Sg** **23 27 29.5 -1.0**
PBAR A A 23 27 33.0
52nm,0.6s
PBAR Barrancos **4.78 254** Pn **Pn** **23 26 10.0 +1.0**
PBAR Lg Lg 23 27 29.5
52nm,0.6s
PBAR Barrancos **4.78 254** Pn **Pn** **23 26 10.0 +1.0**
PBAR *e*Sg **Sg** **23 27 29.5 -1.0**
52nm,0.6s
PMRV Marv??o **4.79 270** *e*Pn **Pn** **23 26 10.5 +1.3**
PMRV *e*Sn **Sn** **23 27 05.0 +0.3**
PMRV *e*Sg **Sg** **23 27 27.6 -3.3**
PMRV A A 23 27 39.4
30nm,0.5s
PMRV Marv??o **4.79 270** Pn **Pn** **23 26 10.5 +1.3**
PMRV Sn **Sn** **23 27 05.0 +0.3**
PMRV Lg Lg 23 27 27.6
30nm,0.5s
PMRV Marv??o **4.79 270** Pn **Pn** **23 26 10.5 +1.3**
PMRV Sn **Sn** **23 27 05.0 +0.3**
PMRV *e*Sg **Sg** **23 27 27.6 -3.3**
30nm,0.5s
ECAL Calabor **4.79 301** Pn **Pn** **23 26 10.8 +1.4**
5.5nm,0.3s,SNR=19
ECAL Pg **Pg** **23 26 28.1 -0.9**
3.7nm,0.2s,SNR=7.9
ECAL Sn **Sn** **23 27 03.9 -1.0**
11nm,0.4s
ECAL Lg Lg 23 27 30.4
28nm,0.5s,SNR=7.9
ECAL Calabor **4.79 301** Pn **Pn** **23 26 10.8 +1.4**
5.5nm,0.3s,SNR=19
MTE Manteigas **4.93 281** *e*Pn **Pn** **23 26 12.3 +1.1**
MTE *e*Sn **Sn** **23 27 06.8 -1.4**
MTE A A 23 27 40.1
24nm,0.6s
MTE Manteigas **4.93 281** Pn **Pn** **23 26 12.3 +1.1**
MTE Sn **Sn** **23 27 06.8 -1.4**
12nm,0.6s
MTE Manteigas **4.93 281** Pn **Pn** **23 26 12.3 +1.1**
MTE *e*Sn **Sn** **23 27 06.8 -1.4**
24nm,0.6s
PESTR Estremoz **5.01 263** *e*Pn **Pn** **23 26 13.6 +1.3**
PESTR *e*Sg **Sg** **23 27 33.6 -4.5**
PESTR A A 23 27 43.6
20nm,0.4s
PESTR Estremoz **5.01 263** Pn **Pn** **23 26 13.6 +1.3**
PESTR Lg Lg 23 27 33.6
9.8nm,0.4s
PESTR Estremoz **5.01 263** Pn **Pn** **23 26 13.6 +1.3**
PESTR *e*Sg **Sg** **23 27 33.6 -4.5**
20nm,0.4s
POLO Lamas de Olo **5.32 291** *e*Pn **Pn** **23 26 17.4 +0.8**
POLO *e*Sn **Sn** **23 27 15.2 -2.6**
POLO *e*Sg **Sg** **23 27 48.6 +0.8**
POLO A A 23 27 57.3
6.4nm,0.5s
POLO Lamas de Olo **5.32 291** *e*Pn **Pn** **23 26 17.4 +0.8**
POLO *e*Sn **Sn** **23 27 15.2 -2.6**
POLO *e*Sg **Sg** **23 27 48.6 +0.8**
6.4nm,0.5s
EGRO El Granado **5.34 249** Pn **Pn** **23 26 17.2 +0.4**
0.4nm,0.2s,SNR=7.9
EGRO Sn **Sn** **23 27 16.9 -1.5**
1.4nm,0.2s,SNR=7.9
EGRO Lg Lg 23 27 49.1
18nm,0.6s,SNR=7.9
EGRO El Granado **5.34 249** Pn **Pn** **23 26 17.2 +0.4**
0.4nm,0.2s,SNR=7.9
EGRO Lg Lg 23 27 49.1
18nm,0.6s,SNR=7.9
EVO Evora **5.41 260** *e*Pn **Pn** **23 26 17.7 0.0**
EVO *e*Sn **Sn** **23 27 15.6 -4.4**
EVO *e*Sg **Sg** **23 27 49.5 -1.3**
EVO A A 23 27 59.5
16nm,0.5s
EVO Evora **5.41 260** Pn **Pn** **23 26 17.7 0.0**
EVO Sn **Sn** **23 27 15.6 -4.4**
EVO Lg Lg 23 27 49.5
16nm,0.5s
EVO Evora **5.41 260** Pn **Pn** **23 26 17.7 0.0**
EVO *e*Sg **Sg** **23 27 49.5 -1.3**
16nm,0.5s
PBEJ Beja **5.44 255** *e*Sg **Sg** **23 27 50.4 -1.4**
PBEJ A A 23 28 03.8
9.5nm,0.6s
PBEJ Beja **5.44 255** Lg Lg 23 27 50.4
4.8nm,0.6s
PBEJ Beja **5.44 255** *e*Sg **Sg** **23 27 50.4 -1.4**
9.5nm,0.6s
PMTG Montargil **5.47 266** *e*Pn **Pn** **23 26 19.6 +1.0**
PMTG *e*Sn **Sn** **23 27 20.2 -1.3**
PMTG A A 23 27 55.0
15nm,0.5s
PMTG Montargil **5.47 266** *e*Pn **Pn** **23 26 19.6 +1.0**
PMTG *e*Sn **Sn** **23 27 20.2 -1.3**
15nm,0.5s
LFF La Frestale **5.50 15** Pn **Pn** **23 26 20.1 +1.1**
LFF Pg **Pg** **23 26 41.6 -0.9**
LFF Sn **Sn** **23 27 20.9 -1.3**
LFF Lg Lg 23 27 52.7
4.9nm,0.5s
LFF La Frestale **5.50 15** *e*Pn **Pn** **23 26 20.1 +1.1**
LFF La Frestale **5.50 15** *e*Pg **Pg** **23 26 41.6 -0.9**
LFF *e*Sn **Sn** **23 27 20.9 -1.3**
LFF *e*Sg **Sg** **23 27 52.7 -1.0**
9.8nm,0.5s
LFF La Frestale **5.50 15** Pn **Pn** **23 26 20.1 +1.1**
LFF La Frestale **5.50 15** Pg **Pg** **23 26 41.6 -0.9**
LFF *e*Sg **Sg** **23 27 52.7 -1.0**
4.9nm,0.5s
PVAQ Vaqueiros **5.57 249** *e*Pn **Pn** **23 26 20.6 +0.7**
PVAQ A A 23 28 02.3
8.4nm,0.4s
PVAQ Vaqueiros **5.57 249** Pn **Pn** **23 26 20.6 +0.7**
PVAQ Vaqueiros **5.57 249** *e*Pn **Pn** **23 26 20.6 +0.7**
8.4nm,0.4s
PCAS Casmilo, Conde **5.63 277** *e*Pn **Pn** **23 26 22.0 +1.2**
PCAS *e*Sn **Sn** **23 27 23.9 -1.5**
PCAS A A 23 28 08.9
15nm,0.6s
PCAS Casmilo, Conde **5.63 277** *e*Pn **Pn** **23 26 22.0 +1.2**
ELOB Lobios **5.67 295** Pn **Pn** **23 26 22.1 +0.7**
0.5nm,0.2s,SNR=7.9
ELOB Sn **Sn** **23 27 23.8 -2.6**
1.2nm,0.1s,SNR=7.9
ELOB Lg Lg 23 27 59.0
20nm,0.5s,SNR=7.9
ELOB Lobios **5.67 295** Pn **Pn** **23 26 22.1 +0.7**
0.5nm,0.2s,SNR=7.9
ELOB Lg Lg 23 27 59.0
20nm,0.5s,SNR=7.9
PCVE Castro Verde **5.71 252** *e*Pn **Pn** **23 26 22.6 +0.7**
PCVE *e*Sg **Sg** **23 27 58.7 -1.7**
PCVE A A 23 28 12.8
9.6nm,0.6s
PCVE Castro Verde **5.71 252** Pn **Pn** **23 26 22.6 +0.7**
PCVE Lg Lg 23 27 58.7
9.6nm,0.6s
PCVE Castro Verde **5.71 252** Pn **Pn** **23 26 22.6 +0.7**
PCVE *e*Sg **Sg** **23 27 58.7 -1.7**
9.6nm,0.6s
MESJ Messejana **5.77 254** *e*Pn **Pn** **23 26 23.8 +1.1**
MESJ *e*Sg **Sg** **23 28 00.1 -2.2**
MESJ A A 23 28 07.3
13nm,0.9s
MESJ Messejana **5.77 254** Pn **Pn** **23 26 23.8 +1.1**
MESJ Lg Lg 23 28 00.1
13nm,0.9s
MESJ Messejana **5.77 254** Pn **Pn** **23 26 23.8 +1.1**
MESJ *e*Sg **Sg** **23 28 00.1 -2.2**
13nm,0.9s
PBDV Barranco-do-Ve **5.79 248** *e*Pn **Pn** **23 26 24.1 +1.1**
PBDV *e*Sn **Sn** **23 27 29.7 +0.2**
PBDV A A 23 28 13.8
9.2nm,0.5s
PBDV Barranco-do-Ve **5.79 248** Pn **Pn** **23 26 24.1 +1.1**
PBDV Sn **Sn** **23 27 29.7 +0.2**
9.2nm,0.5s
PBDV Barranco-do-Ve **5.79 248** Pn **Pn** **23 26 24.1 +1.1**
PBDV *e*Sn **Sn** **23 27 29.7 +0.2**
9.2nm,0.5s
EPON Pontenova **5.79 312** Pn **Pn** **23 26 24.3 +1.2**
0.6nm,0.3s,SNR=7.9
EPON Pg **Pg** **23 26 48.8 +0.6**
0.8nm,0.2s,SNR=7.9
EPON Lg Lg 23 28 02.8
5.9nm,0.3s,SNR=7.9
EPON Pontenova **5.79 312** Pn **Pn** **23 26 24.3 +1.2**
0.6nm,0.3s,SNR=7.9
CAF Calviac **5.82 24** Pn **Pn** **23 26 24.7 +1.3**
CAF Pg **Pg** **23 26 47.2 -1.4**
CAF Sn **Sn** **23 27 28.4 -1.8**
CAF Lg Lg 23 28 02.5
5.3nm,0.6s
CAF Calviac **5.82 24** *e*Pn **Pn** **23 26 24.7 +1.3**
CAF Calviac **5.82 24** *e*Pg **Pg** **23 26 47.2 -1.4**
CAF *e*Sn **Sn** **23 27 28.4 -1.8**
CAF *e*Sg **Sg** **23 28 02.5 -1.5**
11nm,0.6s
CAF Calviac **5.82 24** Pn **Pn** **23 26 24.7 +1.3**
CAF Calviac **5.82 24** Pg **Pg** **23 26 47.2 -1.4**
CAF *e*Sg **Sg** **23 28 02.5 -1.5**
5.3nm,0.6s
LASF Ste Croix **5.83 39** Pn **Pn** **23 26 25.0 +1.4**
LASF Pg **Pg** **23 26 47.0 -1.9**
LASF Lg Lg 23 28 02.4
8.9nm,0.9s
LASF Ste Croix **5.83 39** *e*Pn **Pn** **23 26 25.0 +1.4**
LASF Ste Croix **5.83 39** *e*Pg **Pg** **23 26 47.0 -1.9**
LASF *e*Sg **Sg** **23 28 02.4 -2.0**
18nm,0.9s
LASF Ste Croix **5.83 39** Pn **Pn** **23 26 25.0 +1.4**
LASF Lg Lg 23 28 02.4
8.9nm,0.9s
PNCL Nicolau / Gran **5.91 257** *e*Pn **Pn** **23 26 26.0 +1.4**
PNCL *e*Sn **Sn** **23 27 32.9 +0.6**
PNCL *e*Sg **Sg** **23 28 07.7 +0.8**
PNCL A A 23 28 13.2
11nm,0.6s
PNCL Nicolau / Gran **5.91 257** *e*Pn **Pn** **23 26 26.0 +1.4**
PNCL *e*Sn **Sn** **23 27 32.9 +0.6**
PNCL *e*Sg **Sg** **23 28 07.7 +0.8**
11nm,0.6s
RJF Les Rejaudoux **6.02 19** Pn **Pn** **23 26 27.9 +1.8**
RJF Sn **Sn** **23 27 33.2 -1.8**
RJF Lg Lg 23 28 08.8

	2.4nm,0.4s							
RJF	**Les Rejaudoux**	**6.02**	**19**	*e*Pn		**Pn**	**23 26 27.9**	**+1.8**
RJF				*e*Sg		**Sn**	**23 27 33.2**	**-1.8**
RJF				*e*Sg		**Sg**	**23 28 08.8**	**-1.5**
	4.8nm,0.4s							
RJF	**Les Rejaudoux**	**6.02**	**19**	Pn		**Pn**	**23 26 27.9**	**+1.8**
RJF				*e*Sg		**Sg**	**23 28 08.8**	**-1.5**
	2.4nm,0.4s							
EAGO	**Agolada(Pontev**	**6.08**	**304**	Sn		**Sn**	**23 27 33.1**	**-3.4**
	0.7nm,0.2s,SNR=7.9							
EAGO				Lg		Lg	23 28 09.3	
	9.1nm,0.5s,SNR=7.9							
PTEO	**Sao Teotonio**	**6.25**	**253**	*e*Sg		**Sg**	**23 28 19.0**	**+1.4**
PTEO				A		A	23 28 30.1	
	16nm,0.8s							
PTEO	**Sao Teotonio**	**6.25**	**253**	Lg		Lg	23 28 19.0	
	8.1nm,0.8s							
PTEO	**Sao Teotonio**	**6.25**	**253**	*e*Sg		**Sg**	**23 28 19.0**	**+1.4**
	16nm,0.8s							
MORF	**Marmelete**	**6.29**	**251**	*e*P		**Pn**	**23 26 30.2**	**+0.4**
MORF				*e*S		Sn	23 27 36.0	-5.6
MORF	**Marmelete**	**6.29**	**251**	*e*Pn		**Pn**	**23 26 31.1**	**+1.3**
MORF				*e*Sn		**Sn**	**23 27 42.1**	**+0.5**
MORF				A		A	23 28 30.8	
	6.1nm,0.9s							
MORF	**Marmelete**	**6.29**	**251**	Pn		**Pn**	**23 26 31.1**	**+1.3**
MORF				Sn		**Sn**	**23 27 42.1**	**+0.5**
	6.1nm,0.9s							
MORF	**Marmelete**	**6.29**	**251**	Pn		**Pn**	**23 26 31.1**	**+1.3**
MORF				*e*Sn		**Sn**	**23 27 42.1**	**+0.5**
	6.1nm,0.9s							
PFVI	**Vila Bisbo**	**6.49**	**250**	Pn		**Pn**	**23 26 32.8**	**+0.3**
	0.2nm,0.1s,SNR=7.9							
PFVI				Sn		**Sn**	**23 27 43.8**	**-2.6**
	1.9nm,0.1s,SNR=7.9							
PFVI	**Vila Bisbo**	**6.49**	**250**	Pn		**Pn**	**23 26 32.8**	**+0.3**
	0.2nm,0.1s,SNR=7.9							
PFVI				*e*Sn		**Sn**	**23 27 46.6**	**+0.1**
VIVF	**Saint-Julien-l**	**6.80**	**38**	Pn		**Pn**	**23 26 38.5**	**+1.6**
VIVF				Lg		Lg	23 28 32.6	
	5.3nm,0.7s							
VIVF	**Saint-Julien-l**	**6.80**	**38**	*e*Pn		**Pn**	**23 26 38.5**	**+1.6**
VIVF				*e*Sg		**Sg**	**23 28 32.6**	**-2.9**
	11nm,0.7s							
VIVF	**Saint-Julien-l**	**6.80**	**38**	Pn		**Pn**	**23 26 38.5**	**+1.6**
VIVF				Lg		Lg	23 28 32.6	
	5.3nm,0.7s							
MFF	**Saint Martin d**	**7.01**	**6**	Pn		**Pn**	**23 26 41.5**	**+1.8**
MFF				Sn		**Sn**	**23 27 57.4**	**-2.0**
	1.2nm,0.6s							
MFF	**Saint Martin d**	**7.01**	**6**	*e*Pn		**Pn**	**23 26 41.5**	**+1.8**
MFF				*e*Sn		**Sn**	**23 27 57.4**	**-2.0**
	2.3nm,0.6s							
MFF	**Saint Martin d**	**7.01**	**6**	Pn		**Pn**	**23 26 41.5**	**+1.8**
TCF	**Toulx Ste Croi**	**7.11**	**19**	Pn		**Pn**	**23 26 42.2**	**+1.1**
TCF				Lg		Lg	23 28 43.1	
	2.2nm,0.5s							
TCF	**Toulx Ste Croi**	**7.11**	**19**	*e*Pn		**Pn**	**23 26 42.2**	**+1.1**
TCF				*e*Sg		**Sg**	**23 28 43.1**	**-2.2**
	4.4nm,0.5s							
TCF	**Toulx Ste Croi**	**7.11**	**19**	Pn		**Pn**	**23 26 42.2**	**+1.1**
TCF				Lg		Lg	23 28 43.1	
	2.2nm,0.5s							
BGF	**Bois d'Agland**	**7.53**	**22**	Pn		**Pn**	**23 26 47.8**	**+0.9**
BGF				Lg		Lg	23 28 55.9	
	7.6nm,0.6s							
BGF	**Bois d'Agland**	**7.53**	**22**	*e*Pn		**Pn**	**23 26 47.8**	**+0.9**
BGF				*e*Sg		**Sg**	**23 28 55.9**	**-2.9**
	15nm,0.6s							
BGF	**Bois d'Agland**	**7.53**	**22**	Pn		**Pn**	**23 26 47.8**	**+0.9**
BGF				Lg		Lg	23 28 55.9	
	7.6nm,0.6s							
GRR	**Gorron**	**8.76**	**2**	Pn		**Pn**	**23 27 05.2**	**+1.5**
GRR				Sn		**Sn**	**23 28 39.2**	**-3.2**
	0.4nm,0.4s							
GRR	**Gorron**	**8.76**	**2**	*e*Pn		**Pn**	**23 27 05.2**	**+1.5**
GRR				*e*Sn		**Sn**	**23 28 39.2**	**-3.2**
	0.9nm,0.4s							
GRR	**Gorron**	**8.76**	**2**	Pn		**Pn**	**23 27 05.2**	**+1.5**

*IDC **29** 23:25:05.2±2.4,9.89S×112.32E,h0km,mb3.5/4, mb1 3.7/5,mb1mx3.4/43,mbtmp3.6/5,ML3.6/1,MS3.5/1, Ms1 3.5/1,ms1mx2.8/30,Error ellipse: s-maj=129.3km s-min=21.4km az=46.0*

*DJA **29** 23:25:15.2±0.6,10°S±5°×11°3E±°,h30km,M4.1/13, MLv4.1/13*

ISC 29 23:25:08.3±2.6,**9°65S**±0.09×**112°81E**±0.04,**h10**km±17km, **n17**,σ1**8**08/20,**mb3.5**/4,**South of Jawa**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
GMJI	**Gumukmas**	**1.51**	**25**	P	**Pb**	**23 25 36.6**	**+0.2**
GMJI				S	**Sg**	**23 25 56.6**	**-0.2**
JAGI	**Jajag, Banyuwa**	**1.77**	**49**	P	**Pb**	**23 25 41.1**	**+0.2**
PWJI	**Pagerwojo**	**1.90**	**328**	P	**Pb**	**23 25 42.2**	**-1.0**
PWJI				S	**Sn**	**23 26 05.2**	**+0.3**
PCJI	**Pacitan**	**2.17**	**312**	P	**Pb**	**23 25 47.4**	**-0.3**
PCJI				S	**Sg**	**23 26 17.6**	**-0.5**
ABJI	**Asem Bagus**	**2.32**	**37**	P	**Pb**	**23 25 50.5**	**+0.2**
ABJI				S	**Sg**	**23 26 21.5**	**-1.4**
WOJI	**Wonogiri, Jawa**	**2.59**	**314**	P	**Pb**	**23 25 53.5**	**-1.5**
NGJI	**Ngawi**	**2.63**	**329**	P	**Pb**	**23 25 56.5**	**+0.8**
NGJI				S	**Sg**	**23 26 34.7**	**+1.7**
SRBI	**Singaraja**	**2.84**	**57**	P	**Pb**	**23 25 59.0**	**-0.1**
UGM	**Wanagama**	**2.85**	**307**	P	**Pb**	**23 25 59.7**	**+0.4**
UGM				S	**Sb**	**23 26 35.7**	**+1.4**
TWSI	**Taliwang, Sumb**	**4.12**	**78**	P	Pb	23 26 17.2	-3.8
PLAI	**Plampang**	**4.97**	**81**	P	Pn	23 26 29.0	+5.9
FITZ	**Fitzroy Crossi**	**15.01**	**125**	Pn	**Pn**	**23 28 41.0**	**+0.3**
	0.2nm,0.3s,baz=287,slow=14,SNR=1.5						
FITZ				Sn	Sn	23 31 15.0	-12
	0.1nm,0.3s,baz=56,slow=22,SNR=2.3						
WRA	**Warramunga Arr**	**23.16**	**119**	P	**P**	**23 30 16.5**	**+1.2**
	0.9nm,0.8s,baz=290,slow=12,SNR=5.2						
ASAR	**Alice Springs**	**24.50**	**127**	P	**P**	**23 30 29.2**	**+1.2**
	0.6nm,0.7s,baz=304,slow=8.7,SNR=11						
MJAR	**Matsushiro Arr**	**51.79**	**26**	LR	LR	23 58 57.0	
	comp=Z,47nm,19.0s,baz=90,slow=39						
MKAR	**Makanchi Array**	**62.45**	**337**	P	**P**	**23 35 30.4**	**-1.4**
	0.9nm,0.5s,baz=147,slow=7.5,SNR=15						
KURBB	**Kurchatov Arra**	**67.01**	**337**	P	**P**	**23 35 59.9**	**-1.5**
	0.3nm,0.7s,baz=155,slow=6.2,SNR=3.1						

*ISCJB **29** 23:28:34.8±0.8,31°.13N±0°.05×49°.22E±0°.06,h10km, mb3.5/1,Error ellipse: s-maj=9.4km s-min=5.6km az=43.3*

*IDC **29** 23:28:34.6±2.4,31°.20N×49°.16E,h0km,mb3.5/1, mb1 3.6/5,mb1mx3.3/48,mbtmp3.6/5,ML3.3/4,Error ellipse: s-maj=46.4km s-min=27.9km az=15.0*

*TEH **29** 23:28:36.9,31°.23N×49°.26E,h5km,ML3.3*

*CSEM **29** 23:28:36.9±0.4,31°.24N×49°.33E,h5km,ML3.3,Error ellipse: s-maj=9.6km s-min=5.0km az=42.0*

ISC 29 23:28:36.0±1.0,**31°.17N**±0°.07×**49°.23E**±0°.06,**h10**km,**n40**, σ0**8**84/44,**Western Iran**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
SHGR	**Shooshtar-Gavs**	**1.00**	**339**	*e*Pg	**Pg**	**23 28 55.5**	**+0.2**
SHGR				*e*Sg	**Sn**	**23 29 10.6**	**+0.3**
IPIR	**Pirpir**	**2.07**	**43**	*e*Pn	**Pn**	**23 29 12.0**	**+0.9**
IPIR				*e*Sg	**Sb**	**23 29 39.5**	**-0.3**
IPIR				*e*AMB	AMB	23 29 47.8	
	comp=Z,3μm,0.3s						
IPIR	**Pirpir**	**2.07**	**43**	*e*Pn	**Pn**	**23 29 12.0**	**+0.9**
IPIR				*e*Sg	**Sb**	**23 29 39.5**	**-0.3**
KHMZ	**Khomeyn**	**2.63**	**13**	*e*Pn	**Pn**	**23 29 20.2**	**+1.4**
IKAZ	**Kazeroun**	**2.65**	**121**	*e*Pn	**Pn**	**23 29 20.2**	**+1.1**
IKAZ				*e*AMB	AMB	23 30 04.6	
	comp=Z,1μm,0.2s						
IKAZ	**Kazeroun**	**2.65**	**121**	*e*Pn	**Pn**	**23 29 20.2**	**+1.1**
IGAR	**Gharneh**	**2.69**	**62**	*e*Pn	**Pn**	**23 29 20.1**	**+0.5**
IGAR				*e*AMB	AMB	23 30 02.3	
	comp=Z,1μm,0.3s						
IRAM	**Ramesheh**	**2.77**	**76**	*e*Pn	**Pn**	**23 29 21.3**	**+0.7**
IRAM				*e*AMB	AMB	23 29 31.3	
	comp=Z,600nm,0.2s						
IRAM	**Ramesheh**	**2.77**	**76**	*e*Pn	**Pn**	**23 29 21.3**	**+0.7**
IKLH	**Kolahrood**	**2.93**	**42**	*e*Pn	**Pn**	**23 29 23.6**	**+0.8**
IKLH				*e*AMB	AMB	23 30 19.9	
	comp=Z,2μm,0.3s						
IKLH	**Kolahrood**	**2.93**	**42**	*e*Pn	**Pn**	**23 29 23.6**	**+0.8**
IZEF	**Zefreh**	**3.15**	**56**	*e*Pn	**Pn**	**23 29 26.1**	**+0.2**
IZEF				*e*AMB	AMB	23 29 35.8	
	comp=Z,361nm,0.1s						
IZEF	**Zefreh**	**3.15**	**56**	*e*Pn	**Pn**	**23 29 26.1**	**+0.2**
ASAO	**Ashtian**	**3.44**	**11**	*e*Pn	**Pn**	**23 29 31.2**	**+1.4**
NASN	**Na'in**	**3.45**	**61**	*e*Pn	**Pn**	**23 29 30.1**	**0.0**
ISRV	**Sarvestan**	**3.81**	**117**	*e*Pn	**Pn**	**23 29 36.1**	**+1.1**
ISRV				*e*AMB	AMB	23 31 31.2	
	comp=Z,616nm,0.5s						
ISRV	**Sarvestan**	**3.81**	**117**	*e*Pn	**Pn**	**23 29 36.1**	**+1.1**
IVIS	**Veis**	**3.90**	**330**	*e*Pn	**Pn**	**23 29 36.4**	**+0.3**
IVIS				*e*AMB	AMB	23 30 34.6	
	comp=Z,345nm,0.2s						
IVIS	**Veis**	**3.90**	**330**	*e*Pn	**Pn**	**23 29 36.4**	**+0.3**
SNGE	**Sanandaj**	**4.22**	**339**	*e*Pn	**Pn**	**23 29 42.2**	**+1.7**
IRAZ	**Razeghan**	**4.26**	**8**	*e*Pn	**Pn**	**23 29 41.9**	**+0.7**
IRAZ				*e*AMB	AMB	23 29 44.5	
	comp=Z,473nm,0.1s						
IRAZ	**Razeghan**	**4.26**	**8**	*e*Pn	**Pn**	**23 29 41.9**	**+0.7**
IVRN	**Varamin**	**4.35**	**28**	*e*Pn	**Pn**	**23 29 42.2**	**-0.1**
IVRN				*e*AMB	AMB	23 31 06.1	
	comp=Z,712nm,0.5s						
IVRN	**Varamin**	**4.35**	**28**	*e*Pn	**Pn**	**23 29 42.2**	**-0.1**
IDMV	**Damavand**	**4.98**	**27**	*e*Pn	**Pn**	**23 29 51.2**	**+0.1**
IDMV				*e*AMB	AMB	23 31 32.8	
	comp=Z,366nm,0.4s						
IDMV	**Damavand**	**4.98**	**27**	*e*Pn	**Pn**	**23 29 51.2**	**+0.1**
IAFJ	**Afjeh**	**5.11**	**23**	*e*Pn	**Pn**	**23 29 52.5**	**-0.4**
IAFJ				*e*AMB	AMB	23 31 27.9	
	comp=Z,245nm,0.3s						
IAFJ	**Afjeh**	**5.11**	**23**	*e*Pn	**Pn**	**23 29 52.5**	**-0.4**
ILAS	**Lasjerd**	**5.24**	**36**	*e*Pn	**Pn**	**23 29 53.8**	**-0.8**
ILAS	**Lasjerd**	**5.24**	**36**	*e*Pn	**Pn**	**23 29 53.8**	**-0.8**
IFIR	**Firoozkooh**	**5.35**	**33**	*e*Pn	**Pn**	**23 29 56.6**	**+0.5**
IFIR				*e*AMB	AMB	23 29 57.5	
	comp=Z,108nm,0.2s						
IFIR	**Firoozkooh**	**5.35**	**33**	*e*Pn	**Pn**	**23 29 56.6**	**+0.5**
ISHM	**Shahmirzad**	**5.74**	**35**	*e*Pn	**Pn**	**23 30 01.1**	**-0.4**
ISHM				*e*AMB	AMB	23 30 26.9	
	comp=Z,199nm,0.2s						
IANJ	**Anjilo**	**5.81**	**41**	*e*Pn	**Pn**	**23 30 01.6**	**-0.8**
IANJ				*e*AMB	AMB	23 32 01.4	
	comp=Z,134nm,0.4s						
IANJ	**Anjilo**	**5.81**	**41**	*e*Pn	**Pn**	**23 30 01.6**	**-0.8**
GEYT	**Alibeck**	**9.96**	**45**	Pn	**Pn**	**23 31 00.4**	**+1.3**
	comp=Z,0.3nm,0.3s,baz=232,slow=11,SNR=5.6						
ASF	**Jabal al Asfar**	**10.55**	**279**	Pn	**Pn**	**23 31 07.9**	**+0.5**
	comp=Z,0.3nm,0.3s,baz=274,slow=2.4,SNR=2.5						
ASF				Sn	**Sn**	**23 33 04.4**	**-1.3**
	comp=Z,0.1nm,0.3s,baz=241,slow=20,SNR=1.9						
WSAR	**Wadi Sarin**	**11.50**	**131**	Pn	**Pn**	**23 31 20.6**	**+0.2**
	comp=Z,0.2nm,0.3s,baz=324,slow=7.3,SNR=1.4						
BRTR	**Keskin Array B**	**15.29**	**308**	Pn	**P**	**23 32 15.4**	**-1.5**
	comp=Z,0.1nm,0.3s,baz=125,slow=12,SNR=9.2						
FINES	**FINESS Array B**	**33.86**	**340**	P	**P**	**23 35 17.0**	**-1.4**
	comp=Z,0.2nm,0.3s,baz=157,slow=8.5,SNR=1.8						

JMA 29 23:28:40.2±0.1,**36°.63N**×**141°.82E**,**h39**km±3km,**M3.5**, **Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.94**	**300**	P	Pn	23 28 57.1	+0.1
ONAJ				*e*S	Sn	23 29 09.9	+0.6
JHO	**Hitachi**	**1.01**	**269**	P	Pn	23 28 57.9	+0.1
JHO				S	Sn	23 29 11.1	+0.3
JFK	**Kawauchi**	**1.05**	**314**	P	Pn	23 28 58.5	0.0
JFT	**Otama**	**1.48**	**307**	P	Pn	23 29 06.0	+1.7
JFT				S	Sn	23 29 24.0	+1.5
JMM	**Marumori**	**1.48**	**327**	P	Pn	23 29 04.8	+0.5
JMM				S	Sn	23 29 22.9	+0.5
JIO	**Ouri**	**1.86**	**349**	P	Pn	23 29 09.9	+0.4
JIO				S	Sn	23 29 31.5	-0.2
JOU	**Okura**	**1.96**	**332**	P	Pn	23 29 12.8	+1.9
JOU				S	Sn	23 29 36.1	+1.8
MAT	**Matsushiro**	**2.91**	**269**	P	Pn	23 29 26.7	+2.7
MAT				S	Sn	23 30 01.6	+3.9

*ISCJB **29** 23:54:54.0±0.6,29°.77N±0°.07×138°.7E±0°.1,h421km, mb3.4/9,Error ellipse: s-maj=15.7km s-min=8.9km az=165.9*

*IDC **29** 23:54:55.5±0.7,29°.83N×138°.98E,h426km±8km,mb3.2/9, mb1 3.3/13,mb1mx3.0/34,mbtmp4.0/13,Error ellipse: s-maj=20.7km s-min=9.0km az=85.0*

ISC 29 23:54:55.2±0.7,**29°.81N**±0°.08×**138°.9E**±0°.1,**h421**km,**n13**, σ0**8**83/15,**mb3.4**/9,**Southeast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JHJ	**Hachijo jima 2**	**3.39**	**13**	P	**P**	**23 56 04.5**	**+1.5**
	15nm,0.3s,baz=94,slow=21,SNR=8.1						
JHJ				S	**S**	**23 56 59.2**	**+0.9**
	13nm,0.3s,baz=62,slow=23,SNR=2.1						
JCJ	**Chichijima**	**3.97**	**132**	P	**P**	**23 56 09.4**	**+1.1**
	4.9nm,0.3s,baz=5.6,slow=20,SNR=6.3						
JCJ				S	**S**	**23 57 06.7**	**-1.1**
	35nm,0.3s,baz=297,slow=21,SNR=18						
MJAR	**Matsushiro Arr**	**6.74**	**355**	P	**P**	**23 56 36.4**	**-0.3**
	1.1nm,0.3s,baz=169,slow=11,SNR=7.4						
USRK	**Ussuriysk Ar.**	**15.37**	**341**	P	**P**	**23 58 11.4**	**+0.6**
	0.2nm,0.3s,baz=153,slow=11,SNR=8.5						
CMAR	**Chiang Mai Arr**	**37.98**	**262**	P	**P**	**00 01 35.1**	**-0.2**
	1.2nm,0.3s,baz=52,slow=10,SNR=4.2						
WRA	**Warramunga Arr**	**49.65**	**186**	P	**P**	**00 03 06.8**	**+0.2**
	1.8nm,0.5s,baz=2.0,slow=7.7,SNR=42						
ASAR	**Alice Springs**	**53.38**	**186**	P	**P**	**00 03 34.1**	**+0.3**
	1.4nm,0.5s,baz=359,slow=5.8,SNR=27						
ILAR	**Eielson Array**	**56.77**	**30**	P	**P**	**00 03 56.3**	**-0.9**
	0.3nm,0.6s,baz=294,slow=8.6,SNR=5.7						
STKA	**Stephens Creek**	**61.40**	**177**	P	**P**	**00 04 29.2**	**+0.4**
	1.7nm,0.6s,baz=346,slow=5.4,SNR=9.5						
INK	**Inuvik**	**61.80**	**25**	P	**P**	**00 04 30.7**	**-0.2**
	0.5nm,0.5s,baz=270,slow=8.5,SNR=4.0						
ARCES	**ARCESS Array B**	**70.02**	**340**	P	**P**	**00 05 22.1**	**-0.6**
	0.5nm,0.5s,baz=67,slow=9.3,SNR=7.4						
YKA	**Yellowknife Ar**	**71.14**	**28**	P	**P**	**00 05 28.8**	**-0.6**
	0.4nm,0.4s,baz=298,slow=5.9,SNR=12						
FINES	**FINESS Array B**	**74.22**	**333**	P	**P**	**00 05 46.5**	**-0.8**
	0.4nm,0.5s,baz=64,slow=4.4,SNR=5.8						

JMA 29 23:56:04.5±0.3,**37°.13N**×**142°.33E**,**h21**km±4km,**M3.6**,**Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JFK	**Kawauchi**	**1.19**	**282**	P	Pn	23 56 26.0	+0.1
JFK				S	Sn	23 56 41.6	+0.2
ONAJ	**Iwakimizuishiy**	**1.23**	**269**	P	Pn	23 56 26.4	0.0
ONAJ				S	Sb	23 56 42.3	0.0
JMM	**Marumori**	**1.43**	**301**	P	Pn	23 56 29.1	0.0
JHO	**Hitachi**	**1.50**	**250**	P	Pn	23 56 30.4	+0.2
JIO	**Ouri**	**1.53**	**330**	P	Pn	23 56 31.0	+0.4
JIO				*e*S	Sb	23 56 50.8	-0.4
JFT	**Otama**	**1.64**	**284**	P	Pn	23 56 32.8	+0.8
JFT				S	Sb	23 56 54.0	-0.1
JOU	**Okura**	**1.81**	**314**	P	Pn	23 56 35.5	+1.1
JYS	**Shirataka**	**2.10**	**302**	P	Pb	23 56 40.4	-1.5
MAT	**Matsushiro**	**3.36**	**261**	P	Pn	23 56 58.5	+2.7
MAT				S	Sb	23 57 40.1	-3.6

*IDC **30** 00:10:50.7±1.1,19°.33S×167°.94E,h0km,mb4.0/7, mb1 4.2/8,mb1mx3.9/43,mbtmp3.9/8,ML3.9/1,Error ellipse: s-maj=48.6km s-min=20.6km az=143.0*

*NEIC **30** 00:10:52.3±0.4,19°.34S×167°.92E,h10km,mb4.4/4,Error ellipse: s-maj=16.8km s-min=9.4km az=131.0*

*ISCJB **30** 00:10:53.4±0.7,19°.36S±0°.08×167°.8E±0°.1,h26km, mb4.2/12,Error ellipse: s-maj=21.2km s-min=9.1km az=24.7*

ISC 30 00:10:54.7±0.7,**19°.4S**±0°.1×**167°.9E**±0°.2,**h26**km,**n22**, σ0**6**69/23,**mb4.1**/12,**Vanuatu Islands region**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
DZM	**Mont Dzumac**	**3.00**	**207**	Pn	**Pn**	**00 11 41.0**	**+0.3**
	14nm,0.3s,baz=228,slow=21,SNR=106						
DZM				Sn	**Sn**	**00 12 15.2**	**-0.7**
	62nm,0.3s,baz=123,slow=22,SNR=17						
STKA	**Stephens Creek**	**26.71**	**237**	P	**P**	**00 16 31.5**	**-0.5**
	0.9nm,0.5s,baz=85,slow=11,SNR=4.3						
WRAB	**Tennant Creek**	**31.59**	**263**	*e*P	**P**	**00 17 15.8**	**+0.2**
	1.3nm,0.6s						
WRA	**Warramunga Arr**	**31.60**	**263**	P	**P**	**00 17 15.4**	**-0.3**
	0.7nm,0.4s,baz=86,slow=8.1,SNR=5.7						
ASAR	**Alice Springs**	**31.88**	**256**	P	**P**	**00 17 18.6**	**+0.5**
	1.9nm,0.6s,baz=82,slow=8.9,SNR=23						
ENH	**Enshi**	**74.81**	**310**	*e*P	**P**	**00 22 33.2**	**+0.1**
	2.4nm,0.4s						
BJT	**Baijiatuao**	**76.27**	**322**	*e*P	**P**	**00 22 40.6**	**-0.5**
	5.8nm,0.5s						
SONM	**Songino Array**	**86.60**	**324**	P	**P**	**00 23 36.7**	**+0.9**
	0.7nm,0.3s,baz=127,slow=9.2,SNR=3.3						
BILL	**Bilibino**	**87.19**	**359**	*e*P	**P**	**00 23 38.0**	**-0.1**
	0.6nm,0.4s						
SNAA	**Sanae**	**88.95**	**183**	*e*P	**P**	**00 23 47.2**	**+0.5**
	109nm,0.9s						
NVAR	**Mina Array Bea**	**89.84**	**49**	P	**P**	**00 23 51.0**	**-0.6**
	0.3nm,0.3s,baz=236,slow=9.7,SNR=3.6						
NVAR	**Mina Array Bea**	**89.84**	**49**	P	**P**	**00 23 51.0**	**-0.6**
ILAR	**Eielson Array**	**90.75**	**18**	P	**P**	**00 23 53.5**	**-1.4**
	0.8nm,0.8s,baz=238,slow=6.3,SNR=7.3						
TXAR	**Lajitas Array**	**97.94**	**62**	P	**P**	**00 24 29.8**	**+0.9**
	0.1nm,0.7s,baz=198,slow=5.4,SNR=3.3						
YKA	**Yellowknife Ar**	**101.38**	**28**	P	**Pdif**	**00 24 44.4**	**+1.2**
	0.2nm,0.8s,baz=262,slow=4.3,SNR=3.0						
ARCES	**ARCESS Array B**	**124.89**	**345**	PKP	**PKPdf**	**00 29 51.2**	**-0.5**
	1.9nm,1.0s,baz=47,slow=2.3,SNR=5.0						
GERES	**GERESS Array B**	**144.03**	**331**	PKP	**PKPdf**	**00 30 27.7**	**-0.4**
	1.1nm,0.8s,baz=31,slow=4.6,SNR=6.9						
SOKA	**Soboth**	**144.87**	**327**	*i* PKPdf	**PKPdf**	**00 30 29.6**	**0.0**
	4.7nm,0.6s,SNR=7.8						
ABTA	**Abfaltersbach**	**146.09**	**329**	*i* pPKPdf	**PKPab**	**00 30 33.3**	**+0.1**
	6.2nm,0.7s,SNR=6.3						
MOTA	**Moosalm**	**146.31**	**331**	*i* pPKPdf	**PKPab**	**00 30 35.0**	**+0.9**
	3.5nm,0.8s,SNR=5.6						
BFO	**Black Forest**	**146.74**	**335**	*e*PKPab	**PKPab**	**00 30 35.2**	**-0.3**
AQU	**L'Aquila**	**148.56**	**322**	*e*PKPbc	**PKPbc**	**00 30 40.3**	**+0.8**

MEX 30 00:12:30.8±0.6,**27°.36N**×**111°.37W**,**h15**km,**MD3.6**,**Gulf of California**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
SRIG	**Santa Rosalia**	**0.78**	**267**	*i* P	Pg	00 12 43.0	-3.0
SRIG				*e*S	Sg	00 12 53.2	-3.1
HSIG		**1.70**	**12**	*i* P	Pn	00 12 57.0	-2.9
HSIG				*e*S	Sn	00 13 15.8	-5.6

*ISCJB **30** 00:14:03.6±0.8,24°.67N±0°.05×122°.55E±0°.02,h98km±7km, Error ellipse: s-maj=8.4km s-min=3.7km az=179.0*

*TAP **30** 00:14:03.1,24°.71N×122°.52E,h107km,ML3.3,C*

*JMA **30** 00:14:03.3±0.1,24°.56N×122°.53E,h106km±2km,M2.1*

ISC 30 00:14:04.1±1.8,**24°.66N**±0°.07×**122°.54E**±0°.03,**h97**km±13km, **n27**,σ0**9**64/48,**1D**,**Taiwan region**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JYNG	**Yonagunijimaku**	**0.42**	**120**	P	**Pn**	**00 14 19.2**	**+0.2**
JYNG				S	**Sn**	**00 14 31.0**	**+0.9**
TWB1	**Santiao Chiao**	**0.61**	**304**	*e*P	**Pn**	**00 14 20.6**	**+0.2**
	baz=298						
TWC	**Suao**	**0.64**	**265**	P	**Pn**	**00 14 20.3**	**-0.3**
	baz=256						
TWC				S	**Sn**	**00 14 32.7**	**-0.3**
	baz=256						
TWE	**Neicheng**	**0.80**	**274**	*e*P	**Pn**	**00 14 21.8**	**-0.3**
	baz=268						
TWE				S	**Sn**	**00 14 35.3**	**-0.4**
	baz=268						
NWF	**Wu-fen Shan**	**0.80**	**301**	*e*P	**Pn**	**00 14 21.9**	**-0.3**
	baz=292						
NWF				*e*S	**Sn**	**00 14 36.4**	**+0.5**
	baz=292						
ENTT	**Nioudou**	**0.89**	**269**	*e*P	**Pn**	**00 14 23.3**	**+0.2**
	baz=268						
ENTT				*e*S	**Sn**	**00 14 37.6**	**+0.2**
	baz=268						
TWD	**Chiawan**	**1.04**	**236**	*e*P	**Pn**	**00 14 24.1**	**-0.6**
	baz=229						
TWD				*e*S	**Sn**	**00 14 40.2**	**0.0**
	baz=229						
TWY	**Chenhua**	**1.05**	**306**	*e*P	**Pn**	**00 14 24.2**	**-0.6**
	baz=303						
NSK	**Sanguang**	**1.08**	**271**	P	**Pn**	**00 14 25.5**

KLR	**Kul'dur**	**32.63 343**	P		**P**	**00 35 02.1**	**0.0**
	6.9nm,0.6s,baz=151,slow=5.8,SNR=31						
WRA	**Warramunga Arr**	**39.68 196**	P		**P**	**00 36 00.9**	**0.0**
	1.2nm,0.6s,baz=21,slow=8.9,SNR=5.4						
WRA			ScP		**ScP**	**00 40 57.9**	**+1.3**
	0.6nm,1.0s,baz=14,slow=4.2,SNR=5.1						
FITZ	**Fitzroy Crossi**	**41.20 209**	P		**P**	**00 36 13.1**	**0.0**
	1.4nm,0.3s,baz=38,slow=14,SNR=11						
SONM	**Songino Array**	**43.17 322**	P		**P**	**00 36 28.4**	**-0.1**
	1.3nm,0.6s,baz=73,slow=5.0,SNR=5.2						
ASAR	**Alice Springs**	**43.35 195**	P		**P**	**00 36 29.9**	**-0.2**
	0.6nm,0.6s,baz=15,slow=7.2,SNR=8.6						
CMAR	**Chiang Mai Arr**	**43.99 278**	P		**P**	**00 36 35.4**	**+0.2**
	0.7nm,0.3s,baz=63,slow=7.2,SNR=6.7						
ZALV	**Zalesovo Beam**	**58.05 323**	P		**P**	**00 38 16.6**	**-0.4**
	0.9nm,0.5s,baz=115,slow=5.6,SNR=6.9						
ZALV			PcP		**PcP**	**00 39 01.7**	**-0.5**
	0.7nm,0.6s,baz=123,slow=3.9,SNR=3.8						
MKAR	**Makanchi Array**	**58.44 314**	P		**P**	**00 38 20.3**	**+0.5**
	1.4nm,0.6s,baz=91,slow=8.2,SNR=14						
MKAR			PcP		**PcP**	**00 39 03.8**	**-0.2**
	0.7nm,0.7s,baz=87,slow=5.0,SNR=4.3						
KURBB	**Kurchatov Arra**	**61.33 318**	P		**P**	**00 38 39.0**	**+0.1**
	10nm,0.8s,baz=98,slow=6.9,SNR=25						
NRIK	**Noril'sk**	**61.75 340**	P		**P**	**00 38 41.5**	**+0.2**
	6.7nm,0.6s,baz=109,slow=7.7,SNR=18						
ILAR	**Eielson Array**	**63.98 26**	P		**P**	**00 38 55.5**	**-0.4**
	1.3nm,0.6s,baz=248,slow=6.0,SNR=14						
BVAR	**Borovoye Array**	**66.50 320**	P		**P**	**00 39 12.1**	**+0.2**
	5.3nm,0.6s,baz=98,slow=7.6,SNR=25						
INK	**Inuvik**	**69.70 23**	P		**P**	**00 39 31.6**	**+0.5**
	1.3nm,0.7s,baz=260,slow=10,SNR=8.2						
DLBC	**Dease Lake**	**71.64 33**	P		**P**	**00 39 42.3**	**-0.6**
	1.5nm,0.7s,baz=262,slow=7.1,SNR=5.4						
ARU	**Arti**	**73.11 325**	P		**P**	**00 39 51.4**	**+0.1**
	4.4nm,0.5s,baz=87,slow=6.1,SNR=11						
AKTO	**Aktyubinsk**	**74.37 318**	P		**P**	**00 39 58.5**	**-0.2**
	0.9nm,0.5s,baz=80,slow=9.2,SNR=3.5						
GEYT	**Alibeck**	**76.83 306**	P		**P**	**00 40 13.2**	**+0.5**
	0.4nm,0.3s,baz=20,slow=4.7,SNR=3.6						
YKA	**Yellowknife Ar**	**78.33 28**	P		**P**	**00 40 20.9**	**+0.7**
	1.0nm,0.5s,baz=288,slow=5.0,SNR=20						
SPITS	**Spitsbergen Ar**	**79.37 351**	P		**P**	**00 40 25.8**	**+0.2**
	3.2nm,1.0s,baz=85,slow=3.6,SNR=8.6						
ARCES	**ARCESS Array B**	**82.64 342**	P		**P**	**00 40 42.7**	**+0.1**
	2.7nm,0.7s,baz=91,slow=8.2,SNR=19						
NVAR	**Mina Array Bea**	**83.50 52**	P		**P**	**00 40 49.2**	**+1.4**
	1.2nm,0.7s,baz=259,slow=4.6,SNR=5.7						
FINES	**FINESS Array B**	**87.00 335**	P		**P**	**00 41 02.5**	**-1.5**
	1.7nm,0.6s,baz=77,slow=4.0,SNR=12						
PDAR	**Pinedale Array**	**88.18 45**	P		**P**	**00 41 11.3**	**+1.1**
	0.1nm,0.4s,baz=318,slow=1.2,SNR=2.7						
NOA	**NORSAR Array B**	**92.71 340**	P		**P**	**00 41 29.5**	**-1.0**
	0.5nm,0.8s,baz=46,slow=4.6,SNR=3						
LPAZ	**La Paz**	**147.93 91**	PKPbc		**PKPbc**	**00 48 00.5**	**-2.3**
	2.2nm,0.6s,baz=243,slow=4.5,SNR=3.1						

*ISCJB **30** 00:37:59.8±0.4,35.05N±0.05×44.90E±0.05,h10km, mb3.7/12,MS3.1/1,Error ellipse: s-maj=6.8km s-min=5.0km az=24.4*

*IDC **30** 00:38:00.5±1.1,35.26N×44.76E,h0km,mb3.7/12, mb1 3.7/16,mb1mx3.7/37,mbtmpg3.6/16,ML3.8/4,MS2.9/2, Ms1 2.9/2,ms1mx2.4/50,Error ellipse: s-maj=23.6km s-min=13.1km az=171.0*

*ISK **30** 00:38:09.7,36.07N×45.31E,h5km,MD4.6,ML4.5*

*ISN **30** 00:38:17.1±0.3,36.55N×44.38E,h0km,ML3.7*

*CSEM **30** 00:38:49.3,35.75N×40.08E,h0km,ML3.0*

*NSSC **30** 00:38:49.3±0.9,35.75N×40.09E,h0km±6km,ML3.0*

ISC 30 00:38:01.3±0.6,35.11N±0.05×44.95E±0.05,h10km,n64,
σ1s88/62,mb3.7/12,Iraq

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
IKRK	**Kirkuk**	**0.58**	**300**	*e*Pg	Pn	00 38 40.0	+24
IKRK				*i* Sg	Sn	00 38 53.0	+28
BHD	**Baghdad**	**1.90**	**195**	*e*Pn	Pg	00 39 11.0	+33
BHD				*i* Sn	Sg	00 39 45.0	+43
MSL	**Mosul**	**1.98**	**311**	*i* Pg	Pg	00 38 40.0	+0.8
	baz=82						
MSL				*e*Sg	Sn	00 38 56.0	-3.6
MSL	**Mosul**	**1.98**	**311**	*e*Pn	Pg	00 38 41.0	+1.8
MSL				*e*Sn	Sn	00 38 56.0	-3.6
CUKT	**Cukurca**	**2.40**	**333**	*e*PN	**Pn**	**00 38 43.2**	**+2.5**
CUKT				*e*SN	**Sn**	**00 39 07.6**	**-2.6**
HAKT	**HAKKARI**	**2.64**	**338**	*i* P	**Pn**	**00 38 44.1**	**-0.1**
SIRT	**Sirnak**	**3.13**	**320**	*e*PN	**Pb**	**00 38 56.1**	**-1.1**
SIRN	**S¨–rnak**	**3.14**	**320**	*i* P	**Pn**	**00 38 50.4**	**-0.6**
SIRN				*i* S	**Sb**	**00 39 38.8**	**+3.1**
GEVA	**Gevas**	**3.54**	**335**	*i* P	**Pn**	**00 38 57.3**	**+0.8**
MZRK	**Al-Mazaregh**	**3.58**	**283**	*e*P	**Pn**	**00 38 58.6**	**+1.7**
MZRK	**Al-Mazaregh**	**3.58**	**283**	*e*P	**Pn**	**00 38 58.6**	**+1.7**
TVAN	**Van**	**3.63**	**340**	*i* P	**Pn**	**00 39 00.0**	**+2.3**
VANB	**Van**	**3.70**	**341**	*e*PN	**Pn**	**00 38 59.5**	**+0.9**
VMUR	**Van-Muradiye**	**4.03**	**344**	*i* P	**Pn**	**00 39 05.6**	**+2.5**
MARD	**Mardin**	**4.03**	**304**	*i* P	**Pn**	**00 39 02.0**	**-1.2**
KBSD	**Kabsdagh**	**4.04**	**299**	*e*P	**Pb**	**00 39 13.1**	**+0.5**
KBSD				*e*S	Sn	00 39 32.1	-18
KBSD				AML	AML	00 40 13.2	
	comp=Z,386nm,0.4s						
KBSD	**Kabsdagh**	**4.04**	**299**	*e*P	**Pb**	**00 39 13.1**	**+0.5**
KBSD				*e*S	Sn	00 39 32.2	-18
	comp=Z,386nm,0.4s						
BTMN	**Batman**	**4.06**	**314**	*i* P	**Pn**	**00 39 02.9**	**-0.7**
BTMN				*i* S	**Sb**	**00 40 07.5**	**+5.3**
CLDR	**Caldiran**	**4.11**	**349**	*e*PN	**Pn**	**00 39 04.0**	**-0.4**
SFNV	**Sufian**	**4.15**	**290**	*e*P	**Pn**	**00 39 02.6**	**-2.2**
SFNV	**Sufian**	**4.15**	**290**	*e*P	**Pn**	**00 39 02.6**	**-2.2**
SVAN	**Silvan-Diyarba**	**4.28**	**316**	*e*PN	**Pb**	**00 39 12.9**	**-3.8**
MAZI	**Mazidag**	**4.33**	**304**	*e*PN	**Pb**	**00 39 16.7**	**-0.9**
DIYA	**Diyarbakir**	**4.80**	**307**	*i* P	**Pb**	**00 39 28.9**	**+3.4**
DYBB	**Diyarbakir**	**4.80**	**308**	*e*PN	**Pb**	**00 39 22.3**	**-3.3**
BNGL	**BINGOL**	**4.89**	**323**	*i* P	**Pn**	**00 39 15.1**	**-0.1**
GNI	**Garni**	**5.03**	**358**	Pg	**Pb**	**00 39 28.2**	**-1.4**
	comp=Z,0.5nm,0.3s,baz=180,slow=20,SNR=2.9						
GNI				Lg	Lg	00 40 44.6	
	comp=Z,0.4nm,0.3s,baz=241,slow=19,SNR=1.9						
URFA	**Urfa**	**5.47**	**297**	*e*PN	**Pb**	**00 39 34.2**	**-2.8**
HOMI	**Horasan**	**5.49**	**335**	*i* P	**Pg**	**00 39 44.6**	**-1.8**
ELZG	**Elazig**	**5.86**	**307**	*i* P	**Pg**	**00 39 54.0**	**+0.5**
GZT	**Gaziantep**	**6.38**	**293**	*i* P	**Pb**	**00 39 55.0**	**+2.5**
RABH	**Abou Rabah**	**6.41**	**266**	*e*P	**Pn**	**00 39 35.0**	**-0.8**
RABH	**Abou Rabah**	**6.41**	**266**	*e*P	**Pn**	**00 39 35.0**	**-0.8**
AKCD	**Akcadag**	**6.48**	**306**	*i* P	**Pb**	**00 39 36.6**	**-0.3**
KUZU	**Kuzuini**	**6.60**	**287**	*i* P	**Pg**	**00 40 05.1**	**-2.6**
YAYL	**Yayladag**	**7.27**	**280**	*i* P	**Pn**	**00 39 48.5**	**+0.8**
ASF	**Jabal al Asfar**	**7.33**	**249**	Pn	**Pn**	**00 39 48.3**	**-0.1**
	comp=Z,1.0nm,0.3s,baz=6.7,slow=9.2,SNR=18						
ASF				Sn	Sn	00 41 22.0	+10
	comp=Z,1.2nm,0.3s,baz=213,slow=17,SNR=3.0						
ASF				Lg	Lg	00 41 48.6	
	comp=Z,2.3nm,0.3s,baz=42,slow=17,SNR=3.5						
MMAI	**Mount Meron Ar**	**8.19**	**258**	Pn	**Pn**	**00 40 00.8**	**+0.5**
	comp=Z,0.9nm,0.3s,baz=71,slow=15,SNR=9.1						
MMAI				Sn	**Sn**	**00 41 31.5**	**-1.5**
	comp=Z,0.6nm,0.3s,baz=96,slow=21,SNR=2.4						
MMAI				Lg	Lg	00 42 15.2	
	comp=Z,2.8nm,0.3s,baz=59,slow=44,SNR=4.4						
MMAI				LR	LR	00 43 08.9	
	comp=Z,35nm,19.9s,baz=230,slow=38						
EIL	**Elat**	**10.04**	**240**	Pn	**Pn**	**00 40 29.4**	**+3.8**
	comp=Z,0.1nm,0.3s,baz=70,slow=15,SNR=3.7						
EIL				Lg	Lg	00 43 19.3	
	comp=Z,0.8nm,0.3s,baz=45,slow=14,SNR=4.2						
BRTR	**Keskin Array B**	**10.11**	**300**	Pn	**Pn**	**00 40 28.6**	**+2.1**
	baz=123,slow=16,SNR=2.6						
GEYT	**Alibeck**	**10.96**	**71**	Pn	Pn	00 40 44.9	+6.7
	comp=Z,0.3nm,0.3s,baz=269,slow=17,SNR=3.5						
IDI	**Anoyia**	**16.40**	**276**	Pn	**Pn**	**00 41 53.0**	**+1.3**
	comp=Z,0.5nm,0.3s,baz=98,slow=14,SNR=5.1						
WSAR	**Wadi Sarin**	**16.79**	**131**	P	**Pn**	**00 41 56.2**	**-0.4**
	comp=Z,0.4nm,0.3s,baz=194,slow=4.2,SNR=6.1						
WSAR				S	**Sn**	**00 45 01.4**	**-1.7**
	comp=Z,0.1nm,0.3s,baz=183,slow=19,SNR=3.5						
MLR	**Muntele Rosu**	**17.78**	**311**	P	**Pn**	**00 42 09.0**	**0.0**
	comp=Z,0.0nm,0.3s,baz=201,slow=14,SNR=2.1						
AKTO	**Aktyubinsk**	**18.03**	**28**	P	**P**	**00 42 12.9**	**+0.6**
	comp=Z,0.2nm,0.3s,baz=219,slow=12,SNR=8.5						
AKASG	**Malin Array Be**	**19.31**	**329**	P	**P**	**00 42 25.1**	**-1.3**
	comp=Z,0.7nm,0.3s,baz=137,slow=12,SNR=4.5						
KOLS	**Kolonicke sedl**	**21.68**	**317**	*e*P	**P**	**00 42 53.0**	**+0.9**
CRVS	**Cervenica-Dubn**	**22.12**	**316**	*e*P	**P**	**00 42 59.6**	**+2.7**
STHS	**Stebnicka Huta**	**22.51**	**317**	*e*P	P	00 43 09.3	+8.3
ARU	**Arti**	**23.25**	**19**	P	**P**	**00 43 08.5**	**-0.2**
	comp=Z,1.0nm,0.4s,baz=220,slow=3.2,SNR=3.8						
AAK	**Ala-Archa**	**24.11**	**63**	LR	LR	00 54 27.9	
	comp=Z,57nm,18.2s,baz=186,slow=41						
BVAR	**Borovoye Array**	**25.37**	**37**	P	**P**	**00 43 29.5**	**+1.0**
	comp=Z,1.3nm,0.8s,baz=226,slow=8.0,SNR=5.0						
GERES	**GERESS Array B**	**26.77**	**310**	P	**P**	**00 43 40.4**	**-0.9**
	comp=Z,0.3nm,0.6s,baz=245,slow=35,SNR=3.2						
KURBB	**Kurchatov Arra**	**28.78**	**47**	P	**P**	**00 44 01.1**	**+1.9**
	comp=Z,0.9nm,0.8s,baz=254,slow=9.2,SNR=6.7						
FINES	**FINESS Array B**	**28.97**	**341**	P	**P**	**00 43 59.8**	**-0.9**
	comp=Z,1.9nm,1.0s,baz=141,slow=16,SNR=4.6						
MKAR	**Makanchi Array**	**30.25**	**56**	P	**P**	**00 44 14.4**	**+2.2**
	comp=Z,1.5nm,0.9s,baz=259,slow=7.1,SNR=10.0						
ZALV	**Zalesovo Beam**	**33.51**	**43**	P	**P**	**00 44 41.9**	**+1.2**
	comp=Z,0.3nm,0.4s,baz=263,slow=12,SNR=3.7						
NB2	**NORSAR Subarra**	**33.70**	**331**	P	**P**	**00 44 41.5**	**-0.8**
	comp=Z,1.5nm,0.8s,baz=127,slow=7.9						
NOA	**NORSAR Array B**	**33.70**	**331**	P	**P**	**00 44 41.1**	**-1.2**
	comp=Z,1.3nm,0.7s,baz=125,slow=8.8,SNR=6.7						
ESDC	**Sonseca Array**	**38.75**	**292**	P	**P**	**00 45 24.7**	**-1.1**
	comp=Z,0.7nm,0.7s,baz=58,slow=9.4,SNR=4.0						
CMAR	**Chiang Mai Arr**	**50.38**	**95**	P	**P**	**00 47 00.5**	**+1.6**
	comp=Z,2.2nm,0.3s,baz=299,slow=8.6,SNR=6.8						
KSRS	**Korea Array**	**64.75**	**61**	P	**P**	**00 48 40.5**	**+0.6**
	comp=Z,1.3nm,0.6s,baz=297,slow=7.7,SNR=3.4						
ILAR	**Eielson Array**	**80.01**	**5**	P	**P**	**00 50 08.7**	**-1.8**
	comp=Z,0.3nm,0.7s,baz=339,slow=4.8,SNR=3.5						
YKA	**Yellowknife Ar**	**81.35**	**351**	P	**P**	**00 50 16.5**	**-1.1**
	comp=Z,0.0nm,0.3s,baz=14,slow=4.9,SNR=2.7						

JMA 30 00:42:00.5±0.2,35.86N×143.16E,h15km,M3.6,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JHO	**Hitachi**	**2.23**	**290**	P	Pn	00 42 37.6	+0.8
JHO				S	Sn	00 43 05.0	+0.9
JFK	**Kawauchi**	**2.38**	**310**	*e*S	Sn	00 43 08.6	+0.8
BSO3	**Boso 3**	**2.41**	**245**	P	Pn	00 42 40.0	+0.9
JMM	**Marumori**	**2.76**	**317**	P	Pn	00 42 45.6	+1.4
JFT	**Otama**	**2.81**	**307**	P	Pn	00 42 46.6	+1.7
JFT				S	Sn	00 43 20.9	+2.4
JOD2	**Odawara 2**	**3.37**	**261**	*e*S	Sn	00 43 33.0	+0.6

IDC 30 00:42:34.4±2.0,62.35S×51.86W,h0km,mb4.2/2, mb1 4.3/2,mb1mx3.7/14,mbtmpg4.0/2,Error ellipse: s-maj=155.7km s-min=80.5km az=103.0,Southwestern Atlantic Ocean

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
H10S2	**ASCENSION HYDR**	**59.74**	**44**	T	T	01 58 05.9	
	baz=202,slow=75,SNR=102						
H10S3	**ASCENSION HYDR**	**59.74**	**44**	T	T	01 58 05.9	
	baz=202,slow=75,SNR=116						
H10S1	**ASCENSION HYDR**	**59.75**	**44**	T	T	01 58 07.1	
	baz=202,slow=75,SNR=119						
H10N3	**ASCENSION HYDR**	**60.84**	**44**	T	T	01 59 24.6	
	baz=202,slow=75,SNR=169						
H10N1	**ASCENSION HYDR**	**60.84**	**44**	T	T	01 59 25.4	
	baz=202,slow=75,SNR=187						
H10N2	**ASCENSION HYDR**	**60.85**	**44**	T	T	01 59 27.9	
	baz=202,slow=75,SNR=194						
ASAR	**Alice Springs**	**94.16**	**185**	P	P	00 55 55.2	+0.3
	0.1nm,0.3s,baz=171,slow=4.1,SNR=4.1						
WRA	**Warramunga Arr**	**97.84**	**186**	P	P	00 56 11.1	-0.6
	0.4nm,0.6s,baz=177,slow=4.2,SNR=7.7						
YKA	**Yellowknife Ar**	**133.17**	**326**	PKP	PKPdf	01 01 49.9	-0.4
	0.1nm,0.7s,baz=166,slow=1.9,SNR=4.4						
MKAR	**Makanchi Array**	**149.99**	**100**	PKPbc	PKPbc	01 02 25.2	-0.4
	0.2nm,0.6s,baz=231,slow=1.4,SNR=2.7						

*NEIC **30** 00:46:11.8,34.83S×178.42E,h284km,MG4.1(WEL), After WEL.*

WEL 30 00:46:28.6±0.8,35.83S×178.18E,h194km±11km,ML3.8/7, 2D,Error ellipse: s-maj=13.2km s-min=7.9km az=90.0, Off east coast of North Island

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MXZ	**Matakaoa Point**	**1.73**	**177**	PN	Pn	00 47 03.4	-0.5
MXZ	**Matakaoa Point**	**1.73**	**177**	Pn	Pn	00 47 03.4	-0.5
HAZ	**Te Kaha**	**1.95**	**189**	PN	Pn	00 47 06.0	-0.1
WMGZ	**Waiomatatini S**	**2.00**	**175**	⇓PN	Pn	00 47 06.8	+0.2
WMGZ	**Waiomatatini S**	**2.00**	**175**	Pn	Pn	00 47 06.8	+0.2
PKGZ	**Pakihiroa**	**2.06**	**182**	PN	Pn	00 47 07.3	+0.1
PUZ	**Puketiti**	**2.24**	**179**	PN	Pn	00 47 09.1	-0.1
PUZ					SN	00 47 10.5	-0.6
PUZ	**Puketiti**	**2.24**	**179**	Pn	Pn	00 47 09.1	-0.1
TWGZ	**Tauwhareparae**	**2.35**	**184**	PN	Pn	00 47 10.9	+0.5
TWGZ	**Tauwhareparae**	**2.35**	**184**	Pn	Pn	00 47 10.9	+0.5
MWZ	**Matawai**	**2.56**	**192**	PN	Pn	00 47 13.2	+0.5
MWZ	**Matawai**	**2.56**	**192**	Pn	Pn	00 47 13.2	+0.5
URZ	**Urewera**	**2.58**	**199**	PN	Pn	00 47 13.0	+0.1
URZ	**Urewera**	**2.58**	**199**	Pn	Pn	00 47 13.0	+0.1
TKGZ	**Te Karaka**	**2.62**	**186**	PN	Pn	00 47 13.3	-0.1
TKGZ	**Te Karaka**	**2.62**	**186**	Pn	Pn	00 47 13.3	-0.1
CNGZ	**Carnagh Statio**	**2.65**	**180**	PN	Pn	00 47 13.9	+0.2
CNGZ	**Carnagh Statio**	**2.65**	**180**	Pn	Pn	00 47 13.9	+0.2
RIGZ	**Rimuhau**	**2.89**	**187**	PN	Pn	00 47 16.3	-0.4
SNGZ	**Shannon Statio**	**3.02**	**193**	PN	Pn	00 47 18.4	+0.2
SNGZ	**Shannon Statio**	**3.02**	**193**	Pn	Pn	00 47 18.4	+0.2
RAHZ	**Arahi**	**3.21**	**196**	PN	Pn	00 47 20.4	+0.1
RAHZ	**Arahi**	**3.21**	**196**	Pn	Pn	00 47 20.4	+0.1
KNZ	**Kokohu**	**3.21**	**187**	PN	Pn	00 47 19.7	-0.7
KNZ	**Kokohu**	**3.21**	**187**	Pn	Pn	00 47 19.7	-0.7
MHGZ	**Mahia Peninsul**	**3.33**	**184**	Pn	Pn	00 47 21.4	-0.4
NMHZ	**Naumai**	**3.44**	**198**	PN	Pn	00 47 23.3	0.0
NMHZ	**Naumai**	**3.44**	**198**	Pn	Pn	00 47 23.3	0.0
ARHZ	**Aropaoanui**	**3.56**	**195**	Pn	Pn	00 47 24.3	-0.3
BKZ	**Black Stump Fm**	**3.59**	**201**	PN	Pn	00 47 24.8	-0.3
BKZ	**Black Stump Fm**	**3.59**	**201**	Pn	Pn	00 47 25.1	0.0
KWHZ	**Kaweka Forest**	**3.85**	**201**	PN	Pn	00 47 28.3	0.0
BHHZ	**Black Hill Sta**	**4.02**	**204**	PN	Pn	00 47 30.1	-0.3
BHHZ	**Black Hill Sta**	**4.02**	**204**	Pn	Pn	00 47 30.1	-0.3
MOVZ	**Moawhango**	**4.06**	**208**	Pn	Pn	00 47 29.8	-1.1
KRHZ	**Kereru**	**4.07**	**200**	PN	Pn	00 47 30.2	-0.9
KAHZ	**Kahuranaki**	**4.09**	**194**	PN	Pn	00 47 30.4	-0.9
KAHZ	**Kahuranaki**	**4.09**	**194**	Pn	Pn	00 47 30.4	-0.9
PXZ	**Pawanui**	**4.32**	**194**	PN	Pn	00 47 32.6	-1.5
PXZ	**Pawanui**	**4.32**	**194**	Pn	Pn	00 47 32.6	-1.5
PNHZ	**Pukenui**	**4.37**	**200**	PN	Pn	00 47 33.4	-1.4
PNHZ	**Pukenui**	**4.37**	**200**	Pn	Pn	00 47 33.4	-1.4
PRHZ	**Porangahau**	**4.60**	**195**	PN	Pn	00 47 35.9	-1.7
PRHZ	**Porangahau**	**4.60**	**195**	Pn	Pn	00 47 35.9	-1.7
DVHZ	**Dannevirke**	**4.74**	**199**	PN	Pn	00 47 37.5	-2.0
DVHZ	**Dannevirke**	**4.74**	**199**	Pn	Pn	00 47 37.5	-2.0
BFZ	**Birch Farm**	**5.08**	**197**	PN	Pn	00 47 41.6	-2.2
BFZ	**Birch Farm**	**5.08**	**197**	Pn	Pn	00 47 41.6	-2.2
MRZ	**Mangatainoka R**	**5.24**	**202**	⇓PN	Pn	00 47 43.7	-2.2
MRZ	**Mangatainoka R**	**5.24**	**202**	Pn	Pn	00 47 43.7	-2.2
TIWZ	**Tintock**	**5.26**	**199**	Pn	Pn	00 47 44.2	-1.9
HOWZ	**Holdsworth Sta**	**5.48**	**202**	PN	Pn	00 47 46.3	-2.7
HOWZ	**Holdsworth Sta**	**5.48**	**202**	Pn	Pn	00 47 46.3	-2.6
OGWZ	**Otaki Gorge**	**5.52**	**205**	PN	Pn	00 47 47.1	-2.3
OGWZ	**Otaki Gorge**	**5.52**	**205**	Pn	Pn	00 47 47.1	-2.3
TMWZ	**Te Maipa**	**5.57**	**198**	PN	Pn	00 47 47.5	-2.6
TMWZ	**Te Maipa**	**5.57**	**198**	Pn	Pn	00 47 47.5	-2.6
KIW	**Kapiti Island**	**5.65**	**206**	PN	Pn	00 47 48.6	-2.5
KIW	**Kapiti Island**	**5.65**	**206**	Pn	Pn	00 47 48.6	-2.5
MTW	**Mount Morrison**	**5.72**	**201**	PN	Pn	00 47 49.1	-3.0
MTW	**Mount Morrison**	**5.72**	**201**	Pn	Pn	00 47 49.1	-3.0
CAW	**Cannon Point**	**5.81**	**204**	Pn	Pn	00 47 50.4	-2.9
PLWZ	**Palliser**	**6.17**	**201**	Pn	Pn	00 47 54.7	-3.3
TCW	**Tory Channel**	**6.19**	**208**	Pn	Pn	00 47 55.2	-2.8
TUWZ	**Tuamarina**	**6.50**	**209**	Pn	Pn	00 47 59.2	-3.0
THZ	**Tophouse**	**7.22**	**213**	PN	Pn	00 48 09.8	-1.8
THZ	**Tophouse**	**7.22**	**213**	Pn	Pn	00 48 09.8	-1.8
KHZ	**Kahutara**	**7.50**	**207**	PN	Pn	00 48 11.9	-3.3
KHZ	**Kahutara**	**7.50**	**207**	Pn	Pn	00 48 11.9	-3.3
LTZ	**Lake Taylor**	**8.32**	**212**	Pn	Pn	00 48 21.3	-4.6

*IDC **30** 00:50:22.8±0.9,28.38N×104.93E,h0km,mb3.7/11, mb1 3.8/12,mb1mx3.6/46,mbtmpg3.7/12,ML3.6/1,MS3.2/1, Ms1 3.2/1,ms1mx2.4/42,Error ellipse: s-maj=36.8km s-min=17.1km az=59.0*

*ISCJB **30** 00:50:24.5±0.6,28.49N±0.06×105.0E±0.1,h19km, mb3.7/11,MS3.1/1,Error ellipse: s-maj=15.2km s-min=8.0km az=175.1*

*BJI **30** 00:50:25.0,28.36N×104.91E,h14km,ML3.4/15,Ms3.3/1, Ms7 3.1/3*

ISC 30 00:50:25.7±0.8,28.38N±0.08×104.9E±0.1,h19km,n18,
σ1s24/24,mb3.7/11,Sichuan

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
GYA	**Guiyang**	**2.47**	**140**	Pn	**Pb**	**00 51 08.3**	**-1.2**
GYA				Pg	**Pg**	**00 51 12.5**	**-0.6**
GYA				Sn	**Sb**	**00 51 40.0**	**+0.4**
GYA				Sg	**Sg**	**00 51 45.5**	**+0.3**
GYA				smax	smax		
	comp=N,320nm,0.7s						
GYA				smax	smax		
	comp=E,280nm,0.7s						
CD2	**Chengdu**	**2.71**	**339**	Pn	**Pn**	**00 51 10.3**	**+2.0**
CD2				Pg	**Pb**	**00 51 15.0**	**+1.3**
CD2				Sn	**Sb**	**00 51 44.3**	**-2.3**
CD2				Sg	**Sg**	**00 51 51.5**	**-1.5**
CD2				smax	smax		
	comp=N,610nm,0.7s						
CD2				smax	smax		
	comp=E,2μm,0.7s						
XAN	**Xi'an**	**6.61**	**30**	Pn	**Pn**	**00 52 02.8**	**+1.0**
LZH	**Lanzhou**	**7.74**	**354**	*e*Pn	**Pn**	**00 52 17.0**	**-0.5**
LZH				Pg	**Pb**	**00 52 42.5**	**+3.2**
LZH				Sn	**Sn**	**00 53 44.0**	**-0.6**
LZH				Sg	Sb	00 54 20.5	+9.3
LZH				smax	smax		
	comp=N,44nm,0.8s						
LZH				smax	smax		
	comp=E,63nm,1.0s						
LZH				LR	LR		
	comp=Z,90nm,6.5s						
CMAR	**Chiang Mai Arr**	**11.29**	**210**	Pn	Pn	00 53 10.9	+4.8
	baz=14,slow=12,SNR=7.9						
SONM	**Songino Array**	**19.46**	**3**	P	**Pn**	**00 54 52.0**	**-0.5**
	0.2nm,0.3s,baz=192,slow=11,SNR=6.9						
KSRS	**Korea Array**	**21.29**	**59**	P	**P**	**00 55 11.0**	**-0.1**
	2.3nm,0.8s,baz=242,slow=10,SNR=5.1						
MKAR	**Makanchi Array**	**25.52**	**322**	P	**P**	**00 55 54.1**	**+1.1**
	0.9nm,0.8s,baz=131,slow=11,SNR=7.4						
ZALV	**Zalesovo Beam**	**29.48**	**336**	P	**P**	**00 56 27.4**	**-0.9**
	0.7nm,0.6s,baz=147,slow=8.3,SNR=5.0						
KURBB	**Kurchatov Arra**	**29.85**	**325**	P	**P**	**00 56 32.9**	**+1.2**
	0.4nm,0.6s,baz=128,slow=10.0,SNR=5.3						
YAK	**Yakutsk**	**37.42**	**19

MMRI	**Maumere**	**24.32**	**263**	*e*P	**P**	**01 11 33.9**	**-0.2**
	41nm,0.8s							
DZM	**Mont Dzumac**	**24.89**	**132**	P	**P**	**01 11 40.2**	**+0.8**
	9.0nm,0.9s,baz=90,slow=15,SNR=5.1							
DZM				LR	LR	01 20 18.7		
	comp=Z,160nm,19.6s,baz=48,slow=34							
STKA	**Stephens Creek**	**26.09**	**190**	P	**P**	**01 11 49.8**	**-0.2**
	1.1nm,0.3s,baz=0.0,slow=16,SNR=5.7							
MBWA	**Marble Bar**	**30.05**	**237**	*e*P	**P**	**01 12 26.9**	**+1.4**
	4.4nm,0.7s							
KKM	**Kota Kinabalu**	**32.66**	**291**	*e*P	**P**	**01 12 48.5**	**-0.1**
	7.7nm,0.3s							
MJAR	**Matsushiro Arr**	**43.13**	**350**	P	**P**	**01 14 14.3**	**-1.9**
	0.4nm,0.5s,baz=257,slow=26,SNR=3.4							
KSRS	**Korea Array**	**46.70**	**339**	P	**P**	**01 14 44.6**	**+0.2**
	4.8nm,0.8s,baz=155,slow=8.6,SNR=9.4							
KSAR	**Wonju Array Be**	**46.70**	**339**	P	**P**	**01 14 44.6**	**+0.2**
KULM	**Kulim**	**47.27**	**283**	*e*P	**P**	**01 14 49.4**	**+0.1**
	5.0nm,0.4s							
USRK	**Ussuriysk Ar.**	**51.77**	**347**	P	**P**	**01 15 22.3**	**-0.6**
	1.5nm,0.6s,baz=174,slow=7.8,SNR=6.3							
CMAR	**Chiang Mai Arr**	**52.96**	**298**	P	**P**	**01 15 32.2**	**-0.1**
	2.0nm,0.3s,baz=137,slow=31,SNR=6.0							
PETK	**Petropavlovsk-**	**59.71**	**8**	P	**P**	**01 16 20.4**	**+0.8**
	2.8nm,0.7s,baz=148,slow=8.5,SNR=2.6							
SONM	**Songino Array**	**64.30**	**331**	P	**P**	**01 16 51.0**	**+0.5**
	0.5nm,0.5s,baz=165,slow=7.4,SNR=3.3							
SEY	**Seymchan**	**68.96**	**3**	P	**P**	**01 17 18.6**	**-1.1**
	1.0nm,0.5s,baz=228,slow=14,SNR=3.3							
VNDA	**Vanda**	**71.85**	**177**	P	**P**	**01 17 37.8**	**+0.6**
	1.8nm,0.7s,baz=332,slow=7.3,SNR=14							
MKAR	**Makanchi Array**	**77.33**	**321**	P	**P**	**01 18 09.2**	**-0.3**
	0.7nm,0.5s,baz=98,slow=8.3,SNR=7.1							
ZALV	**Zalesovo Beam**	**78.89**	**328**	P	**P**	**01 18 16.2**	**-1.6**
	1.1nm,0.4s,baz=101,slow=6.1,SNR=6.0							
KURK	**Kurchatov**	**81.06**	**323**	P	**P**	**01 18 28.9**	**-0.6**
KURBB	**Kurchatov Arra**	**81.08**	**323**	P	**P**	**01 18 28.9**	**-0.7**
	0.2nm,0.2s,baz=110,slow=4.6,SNR=4.3							
AAK	**Ala-Archa**	**81.14**	**315**	*e*P	**P**	**01 18 29.8**	**-0.7**
	1.3nm,0.8s							
MCK	**McKinley**	**84.45**	**24**	*e*P	**P**	**01 18 46.4**	**-0.5**
	3.2nm,0.4s							
ILAR	**Eielson Array**	**85.70**	**23**	P	**P**	**01 18 51.6**	**-1.5**
	3.4nm,0.8s,baz=255,slow=5.0,SNR=25							
INK	**Inuvik**	**91.87**	**21**	P	**P**	**01 19 21.2**	**-0.9**
	1.3nm,1.1s,baz=266,slow=6.3,SNR=4.7							
INK	**Inuvik**	**91.87**	**21**	*e*P	**P**	**01 19 21.9**	**-0.3**
	1.5nm,0.9s							
YKA	**Yellowknife Ar**	**99.42**	**28**	P	**Pdif**	**01 19 54.2**	**-2.4**
	0.6nm,0.9s,baz=277,slow=4.8,SNR=9.5							
LPAZ	**La Paz**	**139.05**	**123**	PKP	**PKPdf**	**01 25 41.6**	**-0.8**
	1.1nm,0.8s,baz=161,slow=1.9,SNR=4.7							
SAML	**Samuel**	**146.74**	**116**	*e*PKPbc	**PKPbc**	**01 25 56.5**	**-0.6**
DBIC	**Dimbokro**	**151.66**	**273**	PKPbc	**PKPbc**	**01 26 10.6**	**+1.1**
	4.2nm,0.8s,baz=144,slow=2.3,SNR=4.1							

*ISCJB **30** 01:07:15.3±0.5,30.79N±0.04×105.75W±0.03,h10km, Error ellipse: s-maj=6.1km s-min=3.9km az=180.0*
*NEIC **30** 01:07:16.8±0.4,30.76N×105.75W,h10km,ML4.2, MD4.6(MEX),Error ellipse: s-maj=6.5km s-min=3.6km az=180.0*
*MEX **30** 01:07:16.7±1.0,30.58N×105.45W,h20km±65km,MD4.6*
ISC 30 01:07:15.9±0.8,30.78N±0.03×105.86W±0.02,h10km,n40, σ2s02/61,Texas-Mexico border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MNTX	**Cornudas Mount**	**1.00**	**24**	*e*Pg	**Pg**	**01 07 34.0**	**-1.2**
MNTX				*e*Sg	**Sg**	**01 07 47.4**	**-0.8**
CGIG		**1.88**	**258**	*e*P	**Pb**	**01 07 50.2**	**-0.2**
CGIG				*e*S	**Sb**	**01 08 15.0**	**+1.0**
CGIG		**1.88**	**258**	*e*P	**Pb**	**01 07 50.2**	**-0.2**
CGIG				*e*S	**Sb**	**01 08 15.0**	**+1.0**
GDL2	**Guadalupe Moun**	**1.90**	**42**	*e*Pn	**Pb**	**01 07 49.3**	**-1.5**
CLNB	**Carlsbad**	**2.24**	**48**	*e*Pn	**Pn**	**01 07 54.1**	**+0.8**
TX31	**Lajitas Ar. Si**	**2.38**	**127**	*e*Pn	**Pn**	**01 07 55.0**	**-0.2**
121A	**Cookes Peak, D**	**2.40**	**317**	*e*Pn	**Pn**	**01 07 56.7**	**+1.2**
121A				*e*Sg	**Sg**	**01 08 35.4**	**+2.3**
121A	**Cookes Peak, D**	**2.40**	**317**	*e*P	**Pn**	**01 07 56.9**	**+1.5**
121A				*e*S	**Sg**	**01 08 31.7**	**-1.4**
319A	**Douglas**	**3.00**	**282**	*e*Pn	**Pn**	**01 08 05.2**	**+1.6**
319A	**Douglas**	**3.00**	**282**	*i* P	**Pn**	**01 08 05.3**	**+1.6**
319A				*e*S	**Sg**	**01 08 53.8**	**+1.5**
Y22D	**IRIS PASSCAL I**	**3.40**	**345**	*e*Pn	**Pn**	**01 08 11.3**	**+2.1**
BNM	**Barren Site**	**3.42**	**349**	*e*Pn	**Pn**	**01 08 11.8**	**+2.2**
LPM	**Los Pinos Moun**	**3.58**	**350**	*e*Pn	**Pn**	**01 08 13.2**	**+1.5**
LAZ	**Ladron**	**3.77**	**344**	*e*Pn	**Pn**	**01 08 16.1**	**+1.8**
HPIG		**3.84**	**177**	*e*P	**Pg**	**01 08 28.1**	**-1.4**
HPIG				*e*Sg	**Sg**	**01 09 17.5**	**-1.8**
HPIG		**3.84**	**177**	*e*P	**Pg**	**01 08 28.1**	**-1.4**
MSTX	**Muleshoe**	**4.11**	**39**	*e*Pn	**Pn**	**01 08 19.5**	**+0.5**
MSTX				*e*Sg	**Sg**	**01 09 24.6**	**-3.4**
ANMO	**Albuquerque**	**4.18**	**353**	*e*Pn	**Pn**	**01 08 21.5**	**+1.5**
ANMO				*e*Pg	**Pg**	**01 08 33.1**	**-3.0**
ANMO				*e*Sg	**Sg**	**01 09 27.9**	**-2.4**
ANMO	**Albuquerque**	**4.18**	**353**	*e*P	**Pn**	**01 08 22.1**	**+2.1**
ANMO				*e*S	**Sb**	**01 09 23.6**	**+3.2**
TUC	**Tucson**	**4.47**	**291**	*e*Pn	**Pn**	**01 08 25.8**	**+1.9**
TUC				*e*Sg	**Sg**	**01 09 40.2**	**+0.5**
HSIG		**4.76**	**250**	*e*Sg	**Sg**	**01 09 47.5**	**-1.3**
X18A	**Snowflake**	**5.09**	**318**	*e*Pn	Pn	01 08 35.7	+3.3
JCT	**Junction City**	**5.22**	**92**	*e*Pn	**Pn**	**01 08 33.9**	**-0.3**
JCT				*e*Pg	**Pb**	**01 08 48.7**	**+1.3**
JCT				*e*Sn	**Sn**	**01 09 33.4**	**-1.1**
JCT				*e*Sg	**Sb**	**01 09 54.4**	**+4.1**
AMTX	**Amarillo**	**5.39**	**40**	*e*Pn	**Pn**	**01 08 38.3**	**+1.7**
AMTX				*e*Sg	**Sg**	**01 10 04.6**	**-4.4**
W18A	**Petrified Fore**	**5.42**	**324**	*e*Pn	**Pn**	**01 08 38.1**	**+1.1**
	12nm,0.5s						
W18A				*e*Pg	**Pg**	**01 08 58.5**	**-1.2**
W18A				*e*Sg	**Sg**	**01 10 07.2**	**-2.6**
ABTX	**Abilene, Hawle**	**5.60**	**69**	*e*Pn	**Pn**	**01 08 38.8**	**-0.6**
	34nm,0.6s						
ABTX				*e*Pg	**Pb**	**01 08 55.6**	**+1.7**
ABTX				*e*Sg	**Sb**	**01 10 05.8**	**+4.7**
X16A	**Lo Mia Camp, P**	**5.95**	**309**	*e*Pn	**Pn**	**01 08 47.1**	**+2.9**
214A	**Organ Pipe Nat**	**6.06**	**283**	*e*Pn	**Pn**	**01 08 47.5**	**+1.8**
	32nm,0.7s						
214A				*e*Sg	**Sg**	**01 10 28.2**	**-2.4**
214A	**Organ Pipe Nat**	**6.06**	**283**	*i* S	**Sg**	**01 10 29.9**	**-0.7**
WUAZ	**Wupatki**	**6.61**	**317**	*e*Pn	**Pn**	**01 08 54.2**	**+0.8**
WUAZ				*e*Pg	Pg	01 09 18.9	-3.6
WUAZ				*e*Sg	**Sg**	**01 10 44.2**	**-4.0**
MVCO	**Mesa Verde**	**6.78**	**342**	*e*Pg	**Pg**	**01 09 24.1**	**-1.6**
MVCO				*e*Sg	**Sg**	**01 10 52.7**	**-0.7**
Y14A	**Wickenburg**	**6.82**	**299**	*e*Pn	**Pn**	**01 08 58.2**	**+2.1**
113A	**Mohawk Valley,**	**7.02**	**288**	*e*Pn	**Pn**	**01 09 01.0**	**+2.2**
113A				*e*Lg	Lg	01 11 01.2	
WMOK	**Wichita Mounta**	**7.14**	**55**	*e*Pn	**Pn**	**01 08 59.8**	**-0.7**
	7.5nm,0.6s						
WMOK				*e*Sg	Sg	01 10 56.5	-8.7
WHTX	**Lake Whitney,**	**7.28**	**78**	*e*Pn	**Pn**	**01 09 02.1**	**-0.3**
	29nm,0.4s						
WHTX				*e*Pg	Pg	01 09 28.5	-6.9
PV05	**Paradox Valley**	**7.75**	**341**	*e*Pn	**Pn**	**01 09 11.4**	**+2.3**
Y12C	**Blythe**	**7.91**	**294**	*e*Pn	**Pn**	**01 09 13.2**	**+2.2**
Y12C				*e*Lg	Lg	01 11 39.2	
GLA	**Glamis**	**7.96**	**289**	*e*Pn	**Pn**	**01 09 14.2**	**+2.6**
GLA				*e*Lg	Lg	01 11 33.1	
PV10	**Paradox Valley**	**8.02**	**342**	*e*Pn	Pn	01 09 05.4	-7.4
W34A	**Bridge Creek,**	**8.11**	**55**	*e*Pn	**Pn**	**01 09 13.7**	**-0.1**
	16nm,0.6s						
W34A				*e*Lg	Lg	01 11 22.4	

*ISCJB **30** 01:08:55.3±0.6,0.27S±0.05×124.78E±0.03,h79km±7km, mb4.2/30,Error ellipse: s-maj=8.1km s-min=5.5km az=165.8*
*NEIC **30** 01:08:57.7±0.9,0.26S×124.73E,h84km±9km,mb4.4/9, Error ellipse: s-maj=10.0km s-min=8.8km az=72.0*
*DJA **30** 01:08:57.9±0.3,0°S±4°×12°5E±°,h54km±10km,M4.7/11, mb5.1/7,mB5.2/7,MLv4.6/11,Mw(mB)4.6/7*
*IDC **30** 01:08:58.6±3.1,0.23S±124.63E,h92km±31km,mb3.9/20, mb1 4.0/21,mb1mx3.9/47,mbtmp4.2/21,MS3.1/5, Ms1 3.1/5,ms1mx2.8/32,Error ellipse: s-maj=21.2km s-min=13.9km az=75.0*
ISC 30 01:08:56.3±1.0,0.23S±0.06×124.76E±0.04,h72km±11km, n47,σ1s14/53,mb4.3/30,Southern Molucca Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LUWI	**Luwuk**	**2.15**	**248**	P	**Pn**	**01 09 30.6**	**+0.6**
LUWI				S	Sn	01 10 01.6	+5.9
LUWI	**Luwuk**	**2.15**	**248**	*e*Pn	**Pn**	**01 09 30.1**	**+0.1**
LUWI				*e*Sn	**Sn**	**01 09 55.7**	**0.0**
SANI	**Sanana**	**2.18**	**146**	P	**Pn**	**01 09 29.4**	**-1.1**
SANI				S	**Sn**	**01 09 56.3**	**-0.2**
LBMI	**Labuha**	**2.77**	**98**	P	**Pn**	**01 09 37.1**	**-1.3**
LBMI				S	**Sn**	**01 10 10.8**	**0.0**
TNTI	**Ternate**	**2.79**	**69**	P	**Pn**	**01 09 39.7**	**+1.0**
TNTI				S	**Sn**	**01 10 10.8**	**-0.5**
TNTI	**Ternate**	**2.79**	**69**	*e*Pn	**Pn**	**01 09 41.3**	**+2.6**
TNTI				*e*Sn	**Sn**	**01 10 10.8**	**-0.5**
MRSI	**Marisa**	**2.91**	**284**	P	**Pn**	**01 09 37.5**	**-2.8**
NLAI	**Namlea**	**3.79**	**142**	P	Pn	01 09 49.6	-2.8
NLAI				S	**Sn**	**01 10 33.2**	**-2.6**
MSAI	**Masohi**	**5.19**	**127**	P	**Pn**	**01 10 13.0**	**+1.6**
	93nm,0.7s,1μm0.4nm						
TTSI	**Tana Toraja**	**5.68**	**240**	P	**Pn**	**01 10 18.7**	**+0.6**
	116nm,0.7s,2μm0.6nm						
SPSI	**Sidrap Palu**	**6.22**	**233**	P	**Pn**	**01 10 26.3**	**+0.8**
	69nm,0.7s,1μm0.3nm						
KAPI	**Kappang**	**6.90**	**226**	P	**Pn**	**01 10 35.7**	**+0.9**
	5.2nm,0.3s,baz=34,slow=5.2,SNR=9.2						
KAPI				S	**Sn**	**01 11 51.8**	**-0.2**
	6.3nm,0.3s,baz=49,slow=20,SNR=4.2						
KAPI				LR	LR	01 13 45.3	
	comp=Z,153nm,19.1s,baz=89,slow=42						
DAV	**Davao City (W)**	**7.30**	**6**	LR	LR	01 13 52.2	
	comp=Z,187nm,20.8s,baz=96,slow=40						
PBKI	**Pangkalan Bun**	**13.32**	**259**	P	P	01 12 06.0	-3.5
	383nm,0.8s,7μm						
TPRI	**Tanjung Pinang**	**20.27**	**273**	P	Pn	01 13 29.8	+1.0
WRAB	**Tennant Creek**	**21.71**	**155**	*e*P	**P**	**01 13 40.9**	**-0.8**
WRA	**Warramunga Arr**	**21.72**	**155**	P	**P**	**01 13 41.2**	**-0.5**
	1.3nm,0.5s,baz=335,slow=11,SNR=3.8						
TPUB	**Ta-pu**	**23.73**	**351**	*e*P	**P**	**01 14 03.3**	**+1.1**
	77nm,1.4s						
ASAR	**Alice Springs**	**24.93**	**160**	P	**P**	**01 14 14.9**	**+1.9**
	0.7nm,0.6s,baz=346,slow=11,SNR=5.2						
ASAR				PcP	**PcP**	**01 17 47.6**	**+0.5**
	0.5nm,0.5s,baz=337,slow=1.9,SNR=4.0						
CMAR	**Chiang Mai Arr**	**31.44**	**308**	P	**P**	**01 15 12.2**	**+1.0**
	1.0nm,0.4s,baz=138,slow=6.9,SNR=5.7						
CMAR				PP	**PnPn**	**01 16 16.1**	**-0.7**
	1.6nm,0.5s,baz=111,slow=5.6,SNR=4.3						
CMAR				LR	LR	01 31 03.7	
	comp=Z,26nm,18.1s,baz=175,slow=42						
CHTO	**Chiang Mai**	**31.64**	**308**	*e*P	**P**	**01 15 13.3**	**+0.4**
	4.7nm,0.9s						
JNU	**Nakatsue**	**33.67**	**9**	P	**P**	**01 15 30.9**	**+0.4**
	11nm,0.8s,baz=185,slow=11,SNR=3.8						
STKA	**Stephens Creek**	**35.27**	**155**	P	**P**	**01 15 45.9**	**+1.6**
	1.4nm,0.4s,baz=338,slow=9.8,SNR=4.5						
KSAR	**Wonju Array Be**	**37.60**	**4**	P	**P**	**01 16 05.6**	**+1.5**
KSRS	**Korea Array**	**37.61**	**4**	P	**P**	**01 16 05.6**	**+1.4**
	1.9nm,0.7s,baz=173,slow=9.8,SNR=3.3						
KSRS				LR	LR	01 30 48.7	
	comp=Z,19nm,21.5s,baz=265,slow=35						
MJAR	**Matsushiro Arr**	**38.66**	**17**	P	**P**	**01 16 12.0**	**-1.0**
	2.2nm,0.7s,baz=189,slow=10.0,SNR=6.5						
USRK	**Ussuriysk Ar.**	**44.71**	**7**	P	**P**	**01 17 02.7**	**+0.5**
	4.5nm,0.4s,baz=190,slow=7.2,SNR=27						
KLR	**Kudur**	**49.64**	**6**	P	**P**	**01 17 41.1**	**+0.6**
	4.9nm,0.5s,baz=196,slow=6.2,SNR=18						
ULN	**Ulaanbaatar**	**50.32**	**345**	*e*P	**P**	**01 17 45.5**	**-0.5**
	2.8nm,0.7s						
SONM	**Songino Array**	**50.47**	**344**	P	**P**	**01 17 46.9**	**-0.2**
	2.5nm,0.8s,baz=164,slow=9.3,SNR=7.3						
MKAR	**Makanchi Array**	**59.74**	**328**	P	**P**	**01 18 53.0**	**-0.8**
	4.0nm,0.6s,baz=120,slow=8.2,SNR=21						
MKAR				PcP	**PcP**	**01 19 40.2**	**+0.2**
	1.1nm,0.6s,baz=130,slow=4.9,SNR=3.7						
MKAR				LR	LR	01 46 35.2	
	comp=Z,17nm,18.4s,baz=154,slow=38						
PETK	**Petropavlovsk-**	**59.82**	**22**	P	**P**	**01 18 55.2**	**+1.1**
	1.5nm,0.5s,baz=174,slow=1.8,SNR=4.5						
TKM2	**Tokmak 2**	**61.47**	**321**	*e*P	**P**	**01 19 06.5**	**+0.6**
	2.9nm,0.6s						
AAK	**Ala-Archa**	**62.03**	**320**	*e*P	**P**	**01 19 10.7**	**+1.1**
	4.3nm,0.9s						
EKS2	**Erkin-Say**	**62.51**	**320**	*e*P	**P**	**01 19 13.5**	**+0.8**
	8.7nm,1.0s						
ZALV	**Zalesovo Beam**	**63.26**	**335**	P	**P**	**01 19 16.8**	**-0.5**
	1.7nm,0.5s,baz=123,slow=5.1,SNR=7.1						
KURBB	**Kurchatov Arra**	**64.06**	**329**	P	**P**	**01 19 21.6**	**-1.0**
	3.5nm,0.6s,baz=131,slow=6.5,SNR=22						
KURK	**Kurchatov**	**64.06**	**329**	*e*P	**P**	**01 19 23.2**	**+0.6**
	15nm,0.6s						
BRVK	**Borovoye**	**69.67**	**328**	*e*P	**P**	**01 19 58.8**	**+0.6**
	4.4nm,0.8s						
NRIK	**Noril'sk**	**73.81**	**347**	P	**P**	**01 20 22.8**	**+0.1**
	3.0nm,0.6s,baz=125,slow=9.4,SNR=5.0						
ABKAR	**Akbulak array**	**74.00**	**322**	*e*P	**P**	**01 20 24.6**	**+0.4**
	2.2nm,0.6s						
ARU	**Arti**	**77.24**	**329**	*e*P	**P**	**01 20 43.4**	**+0.7**
	2.2nm,0.7s						
ILAR	**Eielson Array**	**89.50**	**25**	P	**P**	**01 21 44.0**	**-1.4**
	0.3nm,0.5s,baz=254,slow=6.5,SNR=3.7						
BRTR	**Keskin Array B**	**91.01**	**310**	P	**P**	**01 21 51.5**	**-1.6**
	0.2nm,0.5s,baz=144,slow=4.6,SNR=3.6						
ARCES	**ARCESS Array B**	**93.46**	**340**	P	**P**	**01 22 02.0**	**-1.6**
	1.3nm,0.7s,baz=76,slow=7.6,SNR=9.2						
FINES	**FINESS Array B**	**94.36**	**332**	P	**P**	**01 22 06.6**	**-1.3**
	0.4nm,0.5s,baz=47,slow=6.5,SNR=6.8						
INK	**Inuvik**	**94.55**	**21**	P	**P**	**01 22 07.5**	**-1.1**
	0.7nm,0.8s,baz=298,slow=5.3,SNR=3.1						

*SKHL **30** 01:14:16.9±0.1,44.92N×149.82E,h30km±4km,mb4.4/3*
*ISCJB **30** 01:14:17.6±0.7,44.98N±0.08×149.64E±0.08,h60km, mb3.5/8,Error ellipse: s-maj=13.1km s-min=6.3km az=151.1*
*IDC **30** 01:14:30.3±16.0,45.14N×149.54E,h156km±149km, mb3.1/8,mb1 3.4/8,mb1mx3.1/36,mbtmp3.5/8,Error ellipse: s-maj=32.5km s-min=23.7km az=162.0*
ISC 30 01:14:19.4±0.9,44.99N±0.09×149.60E±0.09,h60km,n20, σ0s85/18,mb3.5/8,Kuril Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KUR	**Kuril'sk**	**1.25**	**282**	*i* P	**Pn**	**01 14 39.9**	**-0.8**
KUR				AMB	AMB	01 14 41.2	
	170nm,0.5s						
KUR				*i* S	**Sn**	**01 14 57.1**	**+0.5**
KUR				A	A	01 15 01.8	
	110nm,0.2s						
KUR				A	A	01 15 01.8	
	510nm,0.2s						
SHO	**Shikotan**	**2.28**	**242**	*e*P	**Pn**	**01 14 53.7**	**-0.9**
SHO				AMB	AMB	01 14 55.7	
	60nm,0.3s						
SHO				*i* S	**Sn**	**01 15 21.4**	**0.0**
SHO				A	A	01 15 29.5	
	240nm,0.3s						
SHO				A	A	01 15 29.5	
	220nm,0.3s						
YUK	**Yuzh-Kuril'sk**	**2.84**	**252**	*e*P	**Pn**	**01 15 02.9**	**+0.7**
YUK				AMB	AMB	01 15 05.5	
	50nm,0.3s						
YUK				*e*S	**Sn**	**01 15 35.6**	**+0.4**
YUK				A	A	01 15 46.5	
	210nm,0.5s						
YUK				A	A	01 15 46.5	
	230nm,0.5s						
YSS	**Yuzh-Sakhalins**	**5.16**	**295**	*e*P	**Pn**	**01 15 35.7**	**+1.7**
MYR	**Moyori**	**5.32**	**242**	*e*P	**Pn**	**01 15 36.9**	**+0.8**
MYR				*e*S	**Sn**	**01 16 35.5**	**-0.5**
KROS	**Kirovskiy**	**17.35**	**311**	*e*P	**Pn**	**01 18 15.8**	**-1.4**
KROS				AMB	AMB	01 18 18.0	
	10.0nm,1.0s						
KROS				AMB	AMB	01 18 18.0	
	20nm,1.0s						
H11N2	**WAKE ISLAND Hy**	**28.99**	**145**	T	T	01 50 42.0	
	baz=335,slow=76,SNR=14						
H11N1	**WAKE ISLAND Hy**	**29.00**	**145**	T	T	01 50 55.1	
	baz=335,slow=76,SNR=89						
H11N3	**WAKE ISLAND Hy**	**29.01**	**145**	T	T	01 50 52.3	
	baz=335,slow=76,SNR=89						
H11S1	**WAKE ISLAND Hy**	**30.01**	**146**	T	T	01 52 17.1	
	baz=336,slow=76,SNR=157						
H11S3	**WAKE ISLAND Hy**	**30.02**	**146**	T	T	01 52 16.4	
	baz=336,slow=76,SNR=160						
H11S2	**WAKE ISLAND Hy**	**30.03**	**146**	T	T	01 52 18.5	
	baz=336,slow=76,SNR=160						
INK	**Inuvik**	**44.44**	**31**	P	**P**	**01 22 24.2**	**+0.3**
	0.6nm,0.8s,baz=295,slow=5.7,SNR=3.9						
KURBB	**Kurchatov Arra**	**46.38**	**304**	P	**P**	**01 22 39.9**	**+0.5**
	0.2nm,0.4s,baz=75,slow=9.2,SNR=2.8						
YKA	**Yellowknife Ar**	**53.79**	**35**	P	**P**	**01 23 35.3**	**0.0**
	0.4nm,0.8s,baz=298,slow=7.0,SNR=5.1						
FINES	**FINESS Array B**	**64.56**	**334**	P	**P**	**01 24 48.8**	**-0.8**
	0.2nm,0.4s,baz=41,slow=13,SNR=1.3						
ASAR	**Alice Springs**	**69.81**	**195**	P	**P**	**01 25 24.5**	**+1.1**
	0.4nm,0.8s,baz=14,slow=5.1,SNR=3.4						
KBZ	**Khabaz**	**70.28**	**312**	P	**P**	**01 25 25.9**	**-0.2**
	1.2nm,0.9s,baz=40,slow=4.3,SNR=2.5						
GERES	**GERESS Array B**	**78.91**	**332**	P	**P**	**01 26 15.5**	**-0.7**
	0.3nm,0.5s,baz=35,slow=4.9,SNR=3.8						
TXAR	**Lajitas Array**	**80.50**	**58**	P	**P**	**01 26 25.2**	**+0.1**
	0.3nm,0.5s,baz=304,slow=3.9,SNR=5.2						

*NIED **30** 01:34:00,38.30N×141.80E,h47km,Mw4.2 Best double couple: M0 2.53000×10^15 NP1:φs356.00000°,δ22.00000°, λ95.00000°. NP2:φs171.00000°,δ68.00000°,λ88.00000°.*
JMA 30 01:34:09.6±0.1,38.29N×141.78E,h57km±1km,M3.7, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**0.38**	**296**	P	Pn	01 34 20.1	+0.1
JIO				S	Sn	01 34 27.4	-0.2
JMK	**Ichinoseki**	**0.79**	**327**	P	Pn	01 34 25.2	+0.4
JMK				S	Sn	01 34 36.1	+0.1
OFUJ	**Ofunato**	**0.79**	**354**	P	Pn	01 34 24.9	0.0
OFUJ				S	Sn	01 34 35.8	-0.2
JOU	**Okura**	**0.88**	**275**	P	Pn	01 34 26.2	+0.2
JOU				S	Sn	01 34 38.2	+0.2
JMM	**Marumori**	**0.89**	**242**	P	Pn	01 34 25.7	-0.3
JMM				S	Sn	01 34 37.5	-0.6
JFK	**Kawauchi**	**1.17**	**218**	P	Pn	01 34 29.6	-0.2
JFK				S	Sn	01 34 44.5	-0.3
JOM	**Ohasama**	**1.24**	**342**	P	Pn	01 34 31.1	+0.4
JOM				S	Sn	01 34 47.0	+0.5
JYK	**Kaneyama**	**1.28**	**300**	P	Pn	01 34 31.4	+0.2
JYK				S	Sn	01 34 47.5	+0.1
MIYJ	**Miyakonagasawa**	**1.28**	**1**	P	Pn	01 34 31.1	-0.2
MIYJ				S	Sn	01 34 46.6	-1.0
JYS	**Shirataka**	**1.35**	**268**	P	Pn	01 34 32.7	+0.5
JYS				S	Sn	01 34 49.9	+0.7
JFT	**Otama**	**1.38**	**236**	P	Pn	01 34 32.9	+0.3
JFT				S	Sn	01 34 50.0	+0.2
JRG	**Rokugo**	**1.42**	**321**	P	Pn	01 34 33.8	+0.6
JRG				eS	Sn	01 34 52.5	+1.7
JKZ	**Kuzumaki**	**1.73**	**348**	P	Pn	01 34 37.9	+0.5
JKZ				S	Sn	01 34 59.1	+0.7
JANG	**Nango**	**2.09**	**354**	P	Pn	01 34 42.6	+0.3
MAT	**Matsushiro**	**3.34**	**240**	P	Pn	01 35 01.2	+1.9
MAT				*e*S	Sn	01 35 37.6	-0.1

*NIED **30** 01:54:00,39.70N×142.20E,h50km,Mw4.3 Best double couple: M0 3.68000×10^15 NP1:φs160.00000°,δ15.00000°, λ54.00000°. NP2:φs16.00000°,δ78.00000°,λ99.00000°.*
*ISCJB **30** 01:54:25.7±0.4,39.68N±0.03×142.16E±0.05,h56km±2km, mb4.4/75,MS3.5/23,Error ellipse: s-maj=6.3km s-min=3.8km az=22.3*
*MOS **30** 01:54:26.5±0.8,39.78N×142.10E,h60km,mb4.7/37,Error ellipse: s-maj=8.5km s-min=5.8km az=107.7*
*JMA **30** 01:54:26.7±0.1,39.67N×142.14E,h47km±1km,M4.2*
JMA Felt II J1.
*IDC **30** 01:54:28.9±1.7,39.65N×142.06E,h70km±15km,mb3.9/25, mb1 4.0/33,mb1mx3.9/57,mbtmp4.2/33,MS3.4/21, Ms1 3.4/21,ms1mx3.2/43,Error ellipse: s-maj=14.3km s-min=11.1km az=104.0*
*NEIC **30** 01:54:28.7±0.5,39.65N×142.13E,h69km±4km,mb4.6/20, Error ellipse: s-maj=6.7km s-min=4.6km az=113.0*
NEIC Recorded [2 JMA] in Iwate.
**ISC 30 01:54:26.8±0.6,39.66N±0.03×142.19E±0.05,h51km±4km, n177,σ1s32/191,mb4.4/75,MS3.5/23,4C-2D,Near east coast of eastern Honshu

JNU LR LR 02 02 18.0
comp=Z,64nm,18.1s,baz=114,slow=42
KSRS Korea Array 11.39 263 P Pn 01 57 09.7 +3.0
comp=Z,3.1nm,0.3s,baz=71,slow=14,SNR=26
KSRS LR LR 02 01 16.7
comp=Z,115nm,18.2s,baz=78,slow=36
KS01 Wonju Array Si 11.41 264 *e*Pn Pn 01 57 10.5 +3.5
KSAR Wonju Array Be 11.42 263 P **Pn** **01 57 09.7 +2.6**
KSAR Wonju Array Be 11.42 263 P **Pn** **01 57 09.7 +2.6**
KLR Kul'dur 12.12 326 P **Pn** **01 57 18.3 +1.7**
comp=Z,0.2nm,0.3s,baz=132,slow=13,SNR=8.0
KLR LR LR 02 01 58.7
comp=Z,142nm,18.8s,baz=138,slow=37
CBIJ Chichi jima 12.53 180 P **Pn** **01 57 23.9 +1.5**
JCJ Chichijima 12.53 180 P **Pn** **01 57 23.9 +1.5**
baz=277,slow=19
PETK Petropavlovsk- 17.13 33 LR LR 02 04 55.9
comp=Z,37nm,18.3s,baz=226,slow=36
BJI Beijing 19.96 279 P **P** **01 58 52.5 -2.1**
BJI pmax pmax
comp=Z,8.0nm,0.8s
TIA Tai'an 20.05 268 ⇑P **P** **01 58 54.8 -0.8**
TIA pmax pmax
comp=Z,10.0nm,0.6s
NJ2 Nanjing 20.35 255 *e*P **P** **01 58 57.0 -1.8**
NJ2 pmax pmax
comp=Z,14nm,0.5s
MA2 Magadan 20.66 12 LR LR 02 07 31.2
comp=Z,28nm,19.0s,baz=286,slow=38
YHNB Yeheng 23.03 236 *e*P **P** **01 59 25.5 -2.1**
comp=Z,8.1nm,0.7s
HHC Hu-ho-hao-te 23.35 283 *e*P **P** **01 59 29.5 -1.2**
HHC sP pP 01 59 42.5 -0.5
HHC S **S** **02 03 35.5 -4.2**
HHC pmax pmax
comp=Z,31nm,0.8s
HHC pmax pmax
comp=Z,91nm,6.4s
HHC LR LR
comp=N,1μm,14.8s
HHC LR LR
comp=E,1μm,13.6s
HHC LR LR
comp=Z,1μm,14.8s
YAK Yakutsk 23.67 345 LR LR 02 09 23.2
comp=Z,33nm,19.9s,baz=205,slow=38
YAK Yakutsk 23.67 345 *e*P **P** **01 59 31.6 -1.7**
YAK *e**PP **pP** **01 59 44.5 -1.4**
YAK *e* 02 00 01.8
YAK *e* 02 03 13.3
YAK *e*S **S** **02 03 43.3 -0.8**
YAK *e**SS Sn 02 04 08.7 +0.2
YAK *e*SS **SnSn** **02 04 28.2 +2.7**
YAK *e* 02 10 33.7
YAK pmax pmax
comp=Z,24nm,0.9s
YAK pmax pmax
comp=N,11nm,0.9s
YAK pmax pmax
comp=E,5.0nm,0.9s
YAK pmax pmax
comp=Z,84nm,2.8s
YAK pmax pmax
comp=N,71nm,3.2s
YAK smax smax
comp=N,22nm,1.2s
YAK smax smax
comp=E,14nm,1.5s
YAK Yakutsk 23.67 345 *e*P **P** **01 59 30.8 -2.4**
comp=E,31nm,0.7s
SEY Seymchan 24.10 11 P **P** **01 59 37.6 +0.4**
comp=E,6.1nm,0.9s,baz=186,slow=11,SNR=8.7
SEY Seymchan 24.10 11 *e*P **P** **01 59 36.4 -0.8**
BOD Bodaibo 25.69 324 ⇑*i*P **P** **01 59 50.9 -0.9**
BOD pmax pmax
comp=Z,9.0nm,1.4s
ULN Ulaanbaatar 26.49 300 *i* P **P** **01 59 57.9 -1.4**
ULN pmax pmax
comp=Z,7.0nm,1.2s
ULN Ulaanbaatar 26.49 300 *e*P **P** **01 59 59.5 +0.2**
comp=Z,5.0nm,0.9s
SONM Songino Array 26.93 300 P **P** **02 00 02.1 -1.1**
comp=Z,1.8nm,0.5s,baz=94,slow=8.3,SNR=8.5
SONM LR LR 02 11 14.9
comp=Z,124nm,19.5s,baz=68,slow=38
ENH Enshi 28.26 261 *e*P **P** **02 00 13.9 -1.3**
comp=Z,14nm,0.8s
H11N2 WAKE ISLAND Hy 29.08 126 T T 02 30 58.2
baz=318,slow=75,SNR=3722
H11N1 WAKE ISLAND Hy 29.09 126 T T 02 30 59.0
baz=318,slow=75,SNR=2226
H11N3 WAKE ISLAND Hy 29.10 126 T T 02 30 59.6
baz=318,slow=75,SNR=3051
TLY Talaya 29.15 307 LR LR 02 12 38.6
comp=Z,64nm,19.8s,baz=106,slow=38
TLY Talaya 29.15 307 *e*P **P** **02 00 22.9 0.0**
TLY pmax pmax
comp=Z,6.0nm,0.8s
TLY MLR MLR
comp=Z,71nm,21.0s
ZAK Zakamensk 29.20 304 *e*P **P** **02 00 22.2 -1.3**
ZAK pmax pmax
comp=Z,6.0nm,1.0s
H11S1 WAKE ISLAND Hy 29.88 128 T T 02 32 00.5
baz=320,slow=76,SNR=152
H11S3 WAKE ISLAND Hy 29.88 128 T T 02 31 59.6
baz=320,slow=76,SNR=136
H11S2 WAKE ISLAND Hy 29.89 128 T T 02 32 02.3
baz=320,slow=76,SNR=148
LZH Lanzhou 30.33 276 *e*P **P** **02 00 34.5 +0.9**
LZH pP pP 02 00 44.0 -2.7
LZH sP sP 02 00 48.0 -4.8
LZH pmax pmax
comp=Z,17nm,1.0s
MOY Mondy 30.79 307 *e*P **P** **02 00 37.2 -0.2**
BILL Bilibino 31.34 17 *e*P **P** **02 00 41.9 -0.1**
BILL *e* 02 01 51.6
BILL *e*PPP PPP 02 02 00.2
BILL pmax pmax
comp=Z,1.0nm,1.0s
BILL MLR MLR
comp=Z,35nm,16.0s
GYA Guiyang 32.34 257 *e*P **P** **02 00 50.3 -1.1**
GYA pmax pmax
comp=Z,10.0nm,0.8s
CD2 Chengdu 32.37 266 P **P** **02 00 49.8 -1.7**
CD2 pmax pmax
comp=Z,1.0nm,0.5s
GTA Gaotai 32.46 283 *e*P **P** **02 00 54.3 +2.0**
GTA pP pP 02 01 06.0 +0.5
GTA sP sP 02 01 11.3 -0.2
GTA S **S** **02 06 06.8 +3.2**
GTA sS sS 02 06 27.3 +1.5
GTA SS **SnSn** **02 08 08.0 +7.6**
GTA pmax pmax
comp=Z,4.0nm,1.0s
GTA pmax pmax
comp=Z,48nm,5.0s
GTA LR LR
comp=N,90nm,19.5s
GTA LR LR
comp=E,190nm,16.6s
GTA LR LR
comp=Z,150nm,17.1s
TIXI Tiksi 32.77 352 *i* P **P** **02 00 53.3 -1.1**
TIXI pmax pmax
comp=Z,3.0nm,0.7s
TIXI Tiksi 32.77 352 *e*P **P** **02 00 52.7 -1.7**
comp=Z,3.8nm,0.7s
KMI Kunming 36.03 258 P **P** **02 01 22.5 -0.9**
KMI pmax pmax
comp=Z,9.0nm,0.9s
KMI LR LR
comp=Z,64nm,24.5s
WMQ Urumqi 40.26 294 P **P** **02 02 00.0 +1.3**
WMQ pP pP 02 02 09.8 -2.3
WMQ sP sP 02 02 14.0 -4.1
WMQ pmax pmax
comp=Z,6.0nm,0.6s
WMQ pmax pmax
comp=Z,34nm,4.0s
WMQ LR LR
comp=N,4.0nm,20.8s
WMQ LR LR
comp=E,8.0nm,17.0s
WMQ LR LR

comp=Z,12nm,18.8s
ZAA0 Zalesovo Array 40.65 310 *e*P **P** **02 02 01.4 -0.2**
ZALV Zalesovo Beam 40.65 310 P **P** **02 02 01.4 -0.1**
comp=Z,10.0nm,0.4s,baz=91,slow=8.1,SNR=48
ZALV PcP **PcP** **02 04 02.5 0.0**
comp=Z,1.6nm,0.4s,baz=95,slow=2.5,SNR=4.6
ZALV LR LR 02 19 41.2
comp=Z,57nm,19.2s,baz=66,slow=37
NRIK Noril'sk 41.16 334 LR LR 02 20 10.6
comp=Z,94nm,19.1s,baz=130,slow=38
CMAR Chiang Mai Arr 42.80 253 P **P** **02 02 19.2 -0.4**
comp=Z,1.0nm,0.4s,baz=48,slow=6.1,SNR=7.1
CMAR LR LR 02 22 45.8
comp=Z,15nm,18.7s,baz=50,slow=40
CMAR Chiang Mai Arr 42.80 253 *i* P **P** **02 02 19.8 +0.2**
CMAR pmax pmax
comp=Z,1.0nm,0.4s
MK01 Makanchi Array 43.29 300 *e*P **P** **02 02 22.4 -0.9**
MK31 Makanchi Array 43.29 300 *i* P **P** **02 02 22.8 -0.5**
MK31 pmax pmax
comp=Z,7.0nm,0.6s
MK31 Makanchi Array 43.29 300 *e*P **P** **02 02 23.1 -0.2**
MKAR Makanchi Array 43.29 300 P **P** **02 02 22.8 -0.6**
comp=Z,8.4nm,0.7s,baz=84,slow=9.7,SNR=62
MKAR PcP **PcP** **02 04 09.8 -1.7**
comp=Z,0.7nm,0.7s,baz=72,slow=6.2,SNR=2.3
MKAR LR LR 02 21 13.8
comp=Z,43nm,20.2s,baz=58,slow=37
MKAR Makanchi Array 43.29 300 *i* P **P** **02 02 23.0 -0.3**
MKAR pmax pmax
comp=Z,9.0nm,0.7s
MKAR Makanchi Array 43.29 300 *e*P **P** **02 02 23.1 -0.3**
MKAR PcP **PcP** **02 04 09.8 -1.7**
MAKZ Makanchi 43.50 300 P **P** **02 02 24.3 -0.7**
MAKZ pmax pmax
comp=Z,7.0nm,0.8s
MAKZ Makanchi 43.50 300 *e*P **P** **02 02 24.8 -0.2**
comp=Z,6.6nm,0.8s
KURK Kurchatov 44.84 306 *e*P **P** **02 02 35.1 -0.5**
KURK pmax pmax
comp=Z,17nm,1.0s
KURK Kurchatov 44.84 306 *e*P **P** **02 02 35.1 -0.5**
comp=Z,17nm,1.0s
KURBB Kurchatov Arra 44.91 306 P **P** **02 02 35.7 -0.5**
comp=Z,13nm,0.5s,baz=81,slow=8.4,SNR=107
PDGK Podgornoye 46.14 296 P **P** **02 02 45.4 -0.5**
PDGK pmax pmax
comp=Z,3.0nm,0.6s
ILAR Eielson Array 46.96 34 P **P** **02 02 53.0 +0.8**
comp=Z,0.6nm,0.6s,baz=257,slow=5.4,SNR=7.8
ILAR Eielson Array 46.96 34 P **P** **02 02 53.0 +0.8**
GUN Gumba 47.55 274 *e*P **P** **02 02 57.5 -0.2**
comp=Z,37nm,0.6s
KKN Kakani 48.07 274 *e*P **P** **02 03 01.4 -0.1**
comp=Z,18nm,0.5s
GKN Gorkha 48.46 275 *e*P **P** **02 03 04.1 -0.4**
comp=Z,20nm,0.6s
TKM2 Tokmak 2 48.96 297 P **P** **02 03 08.1 -0.1**
TKM2 pmax pmax
comp=Z,9.0nm,0.9s
TKM2 Tokmak 2 48.96 297 *e*P **P** **02 03 08.6 +0.4**
comp=Z,6.8nm,0.7s
BVA0 Borovoye Array 49.29 311 *i* P **P** **02 03 09.5 -0.8**
BVA0 pmax pmax
comp=Z,2.0nm,0.6s
BRVK Borovoye 49.34 311*c i*P **P** **02 03 10.1 -0.6**
BRVK pmax pmax
comp=Z,9.0nm,1.3s
BRVK Borovoye 49.34 311 *e*P **P** **02 03 09.8 -0.9**
comp=Z,3.8nm,0.9s
KOLN Koldanda 49.38 275 *e*P **P** **02 03 11.4 -0.1**
comp=Z,10nm,0.4s
OTUK Ortayu 49.42 304 P **P** **02 03 11.0 -0.4**
OTUK pmax pmax
comp=Z,4.0nm,0.7s
PYUN Piuthan 49.68 276 *e*P **P** **02 03 13.9 0.0**
comp=Z,30nm,0.7s
AAK Ala-Archa 49.82 297 ⇑*i*P **P** **02 03 14.5 -0.2**
AAK pmax pmax
comp=Z,4.0nm,0.8s
AAK Ala-Archa 49.82 297 *e*P **P** **02 03 13.8 -0.9**
comp=Z,2.2nm,0.8s
EKS2 Erkin-Say 50.30 297 *e*P **P** **02 03 17.7 -0.6**
EKS2 pmax pmax
comp=Z,5.0nm,0.7s
EKS2 Erkin-Say 50.30 297 *e*P **P** **02 03 17.7 -0.6**
comp=Z,4.7nm,0.7s
MNAS Manas 51.24 297 P **P** **02 03 25.3 -0.1**
MNAS pmax pmax
comp=Z,8.0nm,0.6s
SFK Sufi-Kurgan 51.49 294 P **P** **02 03 27.1 -0.3**
SFK pmax pmax
comp=Z,3.0nm,0.7s
INK Inuvik 51.78 28 P **P** **02 03 29.9 +1.1**
comp=Z,1.0nm,0.4s,baz=284,slow=6.2,SNR=17
KKAR Karatay Array 52.37 299 *e*P **P** **02 03 33.2 -0.5**
KKAR pmax pmax
comp=Z,4.0nm,0.6s
KKAR Karatay Array 52.37 299 *e*P **P** **02 03 33.2 -0.5**
comp=Z,4.4nm,0.6s
SVE Sverdlovsk 53.61 318 *e*P **P** **02 03 43.0 +0.5**
SVE pmax pmax
comp=Z,20nm,0.8s
ARU Arti 54.82 318 *e*P **P** **02 03 51.0 -0.3**
ARU pmax pmax
comp=Z,16nm,0.7s
ARU Arti 54.82 318 *e*P **P** **02 03 51.0 -0.3**
comp=Z,16nm,0.7s
DZET Dzherino 55.29 294 P **P** **02 03 54.8 -0.3**
DZET pmax pmax
comp=Z,15nm,1.1s
ABKAR Akbulak array 56.74 309 *e*P **P** **02 04 04.8 -0.3**
comp=Z,15nm,0.6s
AKTO Aktyubinsk 57.40 311 P **P** **02 04 08.3 -1.5**
AKTO pmax pmax
comp=Z,7.0nm,0.8s
WRAB Tennant Creek 59.73 189 *e*P **P** **02 04 25.7 -0.6**
WRAB pmax pmax
comp=Z,2.0nm,0.6s
WRAB Tennant Creek 59.73 189 *e*P **P** **02 04 25.7 -0.6**
comp=Z,2.1nm,0.6s
WRA Warramunga Arr 59.74 189 P **P** **02 04 25.6 -0.7**
comp=Z,1.5nm,0.5s,baz=6.9,slow=7.0,SNR=30
RES Resolute Bay 59.91 15 P **P** **02 04 27.3 +0.5**
comp=Z,1.1nm,0.6s,baz=314,slow=5.6,SNR=11
YKA Yellowknife Ar 61.24 31 P **P** **02 04 36.8 +0.8**
comp=Z,0.2nm,0.4s,baz=300,slow=6.3,SNR=7.9
ARCES ARCESS Array B 61.76 339 P **P** **02 04 39.7 +0.2**
comp=Z,0.7nm,0.5s,baz=72,slow=9.1,SNR=4.9
ARCES LR LR 02 34 15.3
comp=Z,33nm,18.7s,baz=29,slow=39
KLMR Klimovskoe 61.87 327 *e*P **P** **02 04 38.6 -1.8**
KLMR *e* 02 06 55.3
KLMR pmax pmax
comp=Z,6.0nm,1.0s
GEYT Alibeck 63.12 298 P **P** **02 04 48.8 -0.4**
comp=Z,2.9nm,0.6s,baz=33,slow=3.5,SNR=5.5
ASAR Alice Springs 63.47 188 P **P** **02 04 51.2 -0.2**
comp=Z,1.2nm,0.7s,baz=11,slow=6.0,SNR=14
VRH Novokhopyorsk 66.05 317 *e*P **P** **02 05 07.5 -0.5**
VRH pmax pmax
comp=Z,4.0nm,0.3s
OBN Obninsk 66.37 323⇓*e*P **P** **02 05 09.2 -0.7**
OBN *e* 02 05 29.9
OBN *e* 02 05 36.0
OBN *e*S **S** **02 13 56.1 +0.4**
OBN *i* SS SS 02 18 04.0 -8.0
OBN pmax pmax
comp=Z,5.0nm,0.6s
OBN MLR MLR
comp=Z,54nm,16.0s
LPSR Galich'ya Gora 66.69 320 *e*P **P** **02 05 11.4 -0.6**
LPSR pmax pmax
comp=Z,6.0nm,0.9s
FIA1 FINESS Array S 66.78 332 *e*P **P** **02 05 12.0 -0.5**
FINES FINESS Array B 66.78 332 P **P** **02 05 12.2 -0.3**
comp=Z,6.1nm,0.7s,baz=32,slow=10,SNR=34
FINES LR LR 02 35 56.3
comp=Z,56nm,18.5s,baz=48,slow=37
FINES FINESS Array B 66.78 332 *i* P **P** **02 05 12.1 -0.4**
FINES pmax pmax
comp=Z,6.0nm,0.7s
VSR Storozhevoye 67.37 318 *e*P **P** **02 05 16.0 -0.4**
VSR pmax pmax
comp=Z,8.0nm,1.1s
SUMG Summit 68.06 0 *e*P **P** **02 05 20.4 -0.5**
SUMG pmax pmax
comp=Z,2.0nm,0.6s
SUMG Summit 68.06 0 *e*P **P** **02 05 20.4 -0.5**
comp=Z,2.2nm,0.6s
NCK Nalchik 69.39 310 *e*P **P** **02 05 28.8 -0.4**
NCK pmax pmax
comp=Z,7.0nm,1.0s
ZEI Tsey 69.62 309 *e*P **P** **02 05 29.4 -1.4**
ZEI pmax pmax
comp=Z,7.0nm,0.8s
KVAR Kislovodsk Arr 69.65 311 LR LR 02 37 37.5
comp=Z,44nm,19.8s,baz=40,slow=37
KIV Kislovodsk 69.66 311*de*P **P** **02 05 32.1 +1.2**
KIV *SP **pP** **02 05 46.0 +0.7**
KIV *e* 02 05 53.8
KIV *e* 02 08 05.2
KIV SSS SSS 02 22 12.0
KIV pmax pmax
comp=Z,17nm,1.0s
KIV MLR MLR
comp=Z,41nm,16.0s
KIV Kislovodsk 69.66 311 *e*P **P** **02 05 31.6 +0.7**
comp=Z,17nm,0.9s
KBZ Khabaz 69.67 310 P **P** **02 05 30.9 0.0**
comp=Z,4.1nm,0.9s,baz=341,slow=2.6,SNR=9.5
KBZ LR LR 02 38 21.3
comp=Z,45nm,19.1s,baz=162,slow=38
NEY Neytrino 70.05 310 *e*P **P** **02 05 34.1 +0.6**
NEY pmax pmax
comp=Z,1.0nm,0.9s
GNI Garni 70.64 306 *e*P **P** **02 05 36.4 -0.7**
GNI pmax pmax
comp=Z,12nm,1.1s
NC405 NORSAR Array S 71.80 337 *e*P **P** **02 05 43.9 +0.3**
NC204 NORSAR Array S 71.95 338 *e*P **P** **02 05 45.0 +0.5**
NB201 NORSAR Array S 71.97 337 *e*P **P** **02 05 44.9 +0.3**
NB2 NORSAR Subarra 72.00 337 P **P** **02 05 44.8 0.0**
comp=Z,1.7nm,0.4s,baz=36,slow=6.2
NOA NORSAR Array B 72.00 337 P **P** **02 05 44.6 -0.2**
comp=Z,2.6nm,0.6s,baz=38,slow=6.0,SNR=19
NOA LR LR 02 40 04.9
comp=Z,15nm,21.8s,baz=60,slow=38
AKASG Malin Array Be 72.60 322 P **P** **02 05 47.9 -0.5**
comp=Z,3.4nm,0.4s,baz=45,slow=6.4,SNR=19
AKASG LR LR 02 40 46.6
comp=Z,29nm,18.5s,baz=330,slow=38
KIEV Kiev 72.61 322 *e*P **P** **02 05 47.9 -0.6**
KIEV pmax pmax
comp=Z,3.0nm,0.8s
BZMT Bozeman Pass 72.86 45 *e*P **P** **02 05 51.7 +1.3**
FRB Frobisher Bay 74.08 14 P **P** **02 05 57.0 +0.1**
comp=Z,1.9nm,0.4s,baz=332,slow=6.4,SNR=11
PDAR Pinedale Array 75.40 46 P **P** **02 06 06.3 +1.1**
comp=Z,0.3nm,0.5s,baz=152,slow=0.3,SNR=5.8
KWP Kalwaria Pacla 76.36 324 *e*P **P** **02 06 11.2 +0.9**
BUR08 Bucovina Ar. S 76.62 322 *e*P **P** **02 06 12.0 0.0**
STHS Stebnicka Huta 77.17 325 *e*P **P** **02 06 14.6 -0.3**
STHS pmax pmax
comp=Z,3.0nm,1.0s
STHS Stebnicka Huta 77.17 325 *e*P **P** **02 06 14.6 -0.3**
OJC Ojcow 77.20 326 *e*P **P** **02 06 15.0 -0.1**
BRTR Keskin Array B 77.57 312 P **P** **02 06 17.4 -0.1**
comp=Z,0.4nm,0.5s,baz=64,slow=3.1,SNR=4.8
MORC Moravsky Berou 78.49 327 *e*P **P** **02 06 23.3 +1.0**
MORC pmax pmax
comp=Z,15nm,0.8s
MORC Moravsky Berou 78.49 327 *e*P **P** **02 06 23.3 +1.0**
comp=Z,15nm,0.8s
DPC Dobruska-Polom 78.56 328 *e*P **P** **02 06 23.0 +0.3**
DPC *e*PCP **PcP** **02 06 33.7 +2.1**
KRLC Kraliky 78.58 328 *e*P **P** **02 06 23.5 +0.7**
PRU Pruhonice 79.56 329 *e*P **P** **02 06 28.8 +0.7**
TREC Trest 79.72 328 *e*P **P** **02 06 29.6 +0.6**
KHC Kasperske Hory 80.62 329 *e*P **P** **02 06 34.3 +0.4**
KHC *e*PP **pP** **02 06 50.7 +2.1**
KHC Kasperske Hory 80.62 329 *e*P **P** **02 06 34.4 +0.5**
KHC pmax pmax
comp=Z,1.0nm,0.8s
KHC Kasperske Hory 80.62 329 *e*P **P** **02 06 34.4 +0.5**
comp=Z,1.4nm,0.8s
GERES GERESS Array B 80.80 328 P **P** **02 06 35.0 +0.1**
comp=Z,0.8nm,0.5s,baz=34,slow=5.8,SNR=8.8
GERES LR LR 02 44 05.3
comp=Z,34nm,18.4s,baz=52,slow=37
GERES GERESS Array B 80.80 328 P **P** **02 06 35.0 +0.1**
GEA0 GERESS Array S 80.81 328 *e*P **P** **02 06 34.8 -0.1**
SCHQ Schefferville 82.65 16 P **P** **02 06 44.5 +0.1**
comp=Z,3.0nm,1.0s,baz=270,slow=5.1,SNR=3.2
FUORN Ofenpass-Fuorn 83.97 329 *e*P **P** **02 06 52.4 +0.7**
comp=Z,6.0nm,0.9s
PPT Papeete 85.27 117 LR LR 02 35 34.2
comp=Z,38nm,21.7s,baz=19,slow=29
TXAR Lajitas Array 88.04 53 P **P** **02 07 11.7 -0.2**
comp=Z,0.2nm,0.6s,baz=305,slow=3.2,SNR=4.6
ESDC Sonseca Array 95.20 334 P **P** **02 07 44.1 -0.7**
comp=Z,0.3nm,0.5s,baz=18,slow=5.3,SNR=3.0
VNDA Vanda 117.54 175 PKP **PKPdf** **02 13 06.0 +0.6**
comp=Z,0.2nm,0.3s,baz=333,slow=4.5,SNR=2.5
LPAZ La Paz 144.80 57 PKP **PKPdf** **02 13 58.9 -0.2**
comp=Z,0.6nm,0.5s,baz=40,slow=7.9,SNR=2.9

*MOS **30** 01:59:59.4±0.6,55°.81N×163°.93E,h45km,mb4.2/1,Error ellipse: s-maj=14.5km s-min=12.5km az=141.1*
KRSC 30 01:59:57.4±0.8,55°.86N×163°.95E,h59km±19km,ML4.0,
Off east coast of Kamchatka Peninsula

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
KBG	**Krutoberegovo**	**0.80**	**300**	*e*P		Pn	02 00 11.9	-0.9
KBG				*e*S		Sn	02 00 23.5	-0.6
BKI	**Bering**	**1.33**	**119**	*e*P		Pn	02 00 22.1	+2.4
BKI				*e*S		Sn	02 00 39.5	+3.1
BKI	**Bering**	**1.33**	**119**	PN		Pn	02 00 22.1	+2.4
BKI				S		Sn	02 00 39.5	+3.1
SMKR	**Semkarok**	**1.56**	**299**	*e*P		Pn	02 00 24.7	+1.8
SMKR				*e*S		Sn	02 00 44.8	+2.7
SMKR	**Semkarok**	**1.56**	**299**	PN		Pn	02 00 24.7	+1.8
SMKR				S		Sn	02 00 44.8	+2.7
BDR	**Baidarnaya**	**1.69**	**296**	*e*P		Pn	02 00 26.8	+2.2
BDR				*e*S		Sn	02 00 48.1	+2.9
SRKR	**Sorokina**	**1.74**	**298**	*e*P		Pn	02 00 28.0	+2.6
SRKR	**Sorokina**	**1.74**	**298**	PN		Pn	02 00 28.0	+2.6
ZLN	**Zelenaya**	**1.77**	**276**	*e*P		Pn	02 00 28.5	+2.7
ZLN	**Zelenaya**	**1.77**	**276**	PN		Pn	02 00 28.5	+2.7
CIRR	**Tsirk**	**1.81**	**279**	*e*P		Pn	02 00 28.9	+2.5
CIRR	**Tsirk**	**1.81**	**279**	PN		Pn	02 00 28.9	+2.5
MKZ	**Mys Kozlova**	**1.82**	**225**	*e*P		Pn	02 00 27.5	+1.1
MKZ				*e*S		Sn	02 00 49.0	+0.6
MKZ	**Mys Kozlova**	**1.82**	**225**	PN		Pn	02 00 27.5	+1.1
MKZ				S		Sn	02 00 49.0	+0.6
LGNR	**Loginova**	**1.84**	**278**	*e*P		Pn	02 00 29.8	+2.9
LGNR	**Loginova**	**1.84**	**278**	PN		Pn	02 00 29.8	+2.9
KLY	**Klyuchi**	**1.90**	**285**	*e*P		Pn	02 00 28.4	+1.0
KLY				*e*S		Sn	02 00 51.4	+1.2
KRSR	**Krestovskiy**	**1.93**	**282**	*e*P		Pn	02 00 30.1	+2.2
KRSR				*e*S		Sn	02 00 54.2	+3.1
KRSR	**Krestovskiy**	**1.93**	**282**	PN		Pn	02 00 30.1	+2.2
KRSR				S		Sn	02 00 54.2	+3.1
TUMD	**Tumrok D**	**2.12**	**253**	*e*P		Pn	02 00 34.6	+4.1
ESO	**Esso**	**2.96**	**273**	*e*P		Pn	02 00 46.2	+4.4
ESO	**Esso**	**2.96**	**273**	PN		Pn	02 00 46.2	+4.4
OSSR	**Ossora**	**3.43**	**352**	*e*P		Pn	02 00 51.1	+2.8
OSSR				*e*S		Sn	02 01 29.7	+2.1
SDLR	**Sedlovina**	**3.92**	**231**	*e*P		Pn	02 00 58.0	+2.8
SDLR	**Sedlovina**	**3.92**	**231**	PN		Pn	02 00 58.0	+2.8
KRER	**Koryakskii**	**3.96**	**232**	*e*P		Pn	02 00 59.0	+3.2
SMAR	**Somma**	**3.97**	**231**	*e*P		Pn	02 00 58.7	+2.8
SMAR	**Somma**	**3.97**	**231**	PN		Pn	02 00 58.7	+2.8
KRX	**Arik**	**3.97**	**233**	*e*P		Pn	02 01 00.2	+4.3
AVH	**Avacha**	**4.00**	**231**	*e*P		Pn	02 00 59.6	+3.5
AVH	**Avacha**	**4.00**	**231**	PN		Pn	02 00 59.6	+3.5
UGLR	**Uglovaya**	**4.00**	**230**	*e*P		Pn	02 00 59.2	+3.0
GNL	**Ganaly**	**4.10**	**240**	*e*P		Pn	02 01 00.7	+3.1
GNL	**Ganaly**	**4.10**	**240**	PN		Pn	02 01 00.7	+3.1
DALK	**Dalny**	**4.15**	**229**	*e*P		Pn	02 01 00.7	+2.5
DALK				*e*S		Sn	02 01 46.7	+1.4
KRMR	**Karymshinskiy**	**4.56**	**231**	*e*P		Pn	02 01 07.9	+4.1
RUS	**Russkaya**	**4.69**	**225**	*e*P		Pn	02 01 08.5	+3.0
RUS	**Russkaya**	**4.69**	**225**	PN		Pn	02 01 08.5	+3.0
ASAK	**Asacha**	**4.98**	**228**	*e*P		Pn	02 01 13.5	+3.9

*ISK **30** 02:01:06.5, 40.85N×30.53E, h5km, MD2.5*
*ISCJB **30** 02:01:07.2±0.5, 40.84N±0.03×30.52E±0.03, h3km±6km, Error ellipse: s-maj=6.0km s-min=3.3km az=20.2*
*CSEM **30** 02:01:07.1±0.1, 40.85N×30.54E, h8km, MD2.5, Error ellipse: s-maj=3.4km s-min=2.0km az=27.0*
*DDA **30** 02:01:07.2, 40.83N×30.57E, h7km, Md2.5*

ISC 30 02:01:06.7±0.9, **40.85N**±0.03×**30.53E**±0.02, **h13**km±7km, **n30**, σ0**59**/**51**, **Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SPNC	**Sapanca-Adapaz**	**0.24**	**226**	*e*P**g**	**Pg**	**02 01 11.7**	**0.0**
SPNC				*e*S**g**	**Sg**	**02 01 15.5**	**+0.4**
SPNC	**Sapanca-Adapaz**	**0.24**	**226**	*e*P**g**	**Pg**	**02 01 11.7**	**0.0**
SPNC				*e*S**g**	**Sg**	**02 01 15.5**	**+0.4**
SAHE	**Sakarya_HENDEK**	**0.24**	**90**	*i* P	**Pg**	**02 01 11.9**	**+0.1**
SAHE				*i* S	**Sg**	**02 01 15.7**	**+0.4**
SAHE	**Sakarya_HENDEK**	**0.24**	**90**	P	**Pg**	**02 01 11.9**	**+0.1**
SAHE				S	**Sg**	**02 01 15.7**	**+0.4**
KAND	**Kocaeli-Kandir**	**0.35**	**313**	*i* P	**Pb**	**02 01 14.6**	**-0.3**
KAND				*i* S	**Sb**	**02 01 21.2**	**+0.8**
KAND	**Kocaeli-Kandir**	**0.35**	**313**	P	**Pb**	**02 01 14.6**	**-0.3**
KAND				S	**Sb**	**02 01 21.2**	**+0.8**
GULT	**Gulveren**	**0.42**	**182**	*e*P**g**	**Pg**	**02 01 15.2**	**+0.1**
GULT				*e*S**g**	**Sg**	**02 01 21.3**	**+0.6**
GULT	**Gulveren**	**0.42**	**182**	*e*P**g**	**Pg**	**02 01 15.2**	**+0.1**
GULT				*e*S**g**	**Sg**	**02 01 21.3**	**+0.6**
BTAS	**Taskesti**	**0.45**	**128**	*i* P	**Pg**	**02 01 15.6**	**0.0**
BTAS				*i* S	**Sg**	**02 01 21.6**	**-0.1**
BTAS	**Taskesti**	**0.45**	**128**	P	**Pg**	**02 01 15.6**	**0.0**
BTAS				S	**Sg**	**02 01 21.6**	**-0.1**
MDUB	**Mudurnu**	**0.63**	**127**	*e*P**G**	**Pb**	**02 01 19.3**	**-0.4**
MDUB				*e*S**G**	**Sb**	**02 01 28.0**	**-0.5**
MDUB	**Mudurnu**	**0.63**	**127**	*e*P**g**	**Pb**	**02 01 19.3**	**-0.4**
MDUB				*e*S**g**	**Sb**	**02 01 28.0**	**-0.5**
HRT	**Hereke**	**0.66**	**268**	*e*P**G**	**Pg**	**02 01 19.7**	**+0.2**
HRT				*e*S**G**	**Sg**	**02 01 28.7**	**+0.5**
HRT	**Hereke**	**0.66**	**268**	*e*P**g**	**Pg**	**02 01 19.7**	**+0.2**
HRT				*e*S**g**	**Sg**	**02 01 28.7**	**+0.5**
ADVT	**Abdulvahap**	**0.74**	**236**	*e*P**G**	**Pg**	**02 01 21.1**	**+0.2**
ADVT	**Abdulvahap**	**0.74**	**236**	*e*P**g**	**Pg**	**02 01 21.1**	**+0.2**
SILT	**Sile**	**0.74**	**294**	*e*P**G**	**Pg**	**02 01 21.2**	**+0.2**
SILT				*e*S**G**	**Sb**	**02 01 31.9**	**+0.5**
SILT	**Sile**	**0.74**	**294**	*e*P**g**	**Pg**	**02 01 21.2**	**+0.2**
SILT				*e*S**g**	**Sb**	**02 01 31.9**	**+0.5**
IZI	**Iznik**	**0.96**	**238**	*e*P**G**	**Pg**	**02 01 25.2**	**0.0**
IZI	**Iznik**	**0.96**	**238**	*e*P**g**	**Pg**	**02 01 25.2**	**0.0**
BORA	**Eskisehir**	**0.97**	**184**	*i* P	**Pg**	**02 01 25.5**	**+0.1**
BORA				*i* S	**Sn**	**02 01 40.4**	**+0.5**
BORA	**Eskisehir**	**0.97**	**184**	P	**Pg**	**02 01 25.5**	**+0.1**
BORA				S	**Sn**	**02 01 40.4**	**+0.5**
IGD	**Bursa**	**1.17**	**240**	*i* P	**Pn**	**02 01 27.4**	**-1.4**
IGD				*i* S	**Sb**	**02 01 42.8**	**-1.1**
AUMIH	**MIHALICIK**	**1.22**	**143**	*i* P	**Pg**	**02 01 31.2**	**+1.0**
AUMIH				*i* S	**Sg**	**02 01 46.8**	**+0.7**
AUMIH	**MIHALICIK**	**1.22**	**143**	P	**Pg**	**02 01 31.2**	**+1.0**
AUMIH				S	**Sg**	**02 01 46.8**	**+0.7**
ULDT	**Uludag**	**1.28**	**237**	*i* P	**Pg**	**02 01 31.7**	**+0.4**
ULDT	**Uludag**	**1.28**	**237**	P	**Pg**	**02 01 31.7**	**+0.4**
ESKT	**Eskisehir**	**1.35**	**170**	*i* P	**Pg**	**02 01 34.8**	**+2.1**
TVSB	**Tavsanli**	**1.62**	**211**	*e*PN	**Pb**	**02 01 36.4**	**-0.2**
TVSB	**Tavsanli**	**1.62**	**211**	*e*Pn	**Pb**	**02 01 36.4**	**-0.2**

*SGS **30** 02:21:08.6, 14.94N×41.50E, h18km*
*DHMR **30** 02:21:13.7±1.6, 15.07N×42.29E, h4km±34km, ML4.3*
*IDC **30** 02:21:14.0±1.3, 15.08N×42.08E, h0km, mb3.6/5, mb1 3.8/7, mb1mx3.6/47, mbtmp3.7/7, ML3.6/2, MS3.4/10, Ms1 3.4/10, ms1mx3.0/43, Error ellipse: s-maj=29.3km s-min=23.6km az=85.0*

ISC 30 02:21:13.8±3.3, **15.20N**±0.05×**42.18E**±0.06, **h0**km±20km, **n22**, σ1**31**/**20**, **mb3.8**/6, **MS3.4**/**7**, **2C**, **Western Arabian Peninsula**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HAJJ	**Hajjah**	**1.45**	**70**	i*P*	**Pn**	**02 21 38.8**	**-2.7**
HAJJ				*i* S	**Sg**	**02 22 00.9**	**+0.3**
HAJJ				AML	AML	02 22 18.8	
	comp=Z,2μm,0.6s						
FRSS	**Farasan al Kab**	**1.53**	**358**	S	**Sn**	**02 22 01.2**	**-1.7**
FRSS				P	Pn	02 21 38.7	-3.6
SANA	**San'a**	**1.96**	**84**	i*P*	**Pn**	**02 21 47.8**	**-0.8**
SANA				*i* S	**Sn**	**02 22 14.1**	**+0.1**
SANA				AML	AML	02 22 30.6	
	comp=E,7μm,0.8s						
UDYN	**Al 'Udayn**	**2.12**	**125**	*i* P	**Pn**	**02 21 49.8**	**-0.8**
UDYN				*i* S	**Sn**	**02 22 16.5**	**-1.3**
DHBB	**Dhamar BB**	**2.23**	**106**	*i* P	**Pn**	**02 21 51.5**	**-0.8**
DHBB				*i* S	**Sn**	**02 22 20.1**	**-0.5**
DJNS	**Zahran al Janu**	**2.81**	**28**	P	**Pn**	**02 21 59.3**	**-1.0**
ATD	**Arta Tunnel**	**3.71**	**170**	Pn	**Pn**	**02 22 11.5**	**-0.9**
	comp=E,5.5nm,0.3s,baz=286,slow=16,SNR=11						
ATD				Sn	**Sn**	**02 22 56.0**	**-0.8**
	comp=E,20nm,0.3s,baz=186,slow=18,SNR=6.2						
ATD				LR	LR	02 23 31.9	
	comp=E,167nm,18.4s,baz=76,slow=38						
NAMS	**An Nimas**	**3.95**	**0**	P	**Pn**	**02 22 14.5**	**-1.4**
TATS	**Tathlith**	**4.49**	**16**	P	**Pn**	**02 22 22.7**	**-0.5**
EIL	**Elat**	**15.87**	**336**	LR	LR	02 29 52.3	
	comp=E,108nm,20.7s,baz=11,slow=32						
WSAR	**Wadi Sarin**	**17.46**	**60**	P	**P**	**02 25 21.1**	**+1.0**
	comp=E,0.2nm,0.3s,baz=299,slow=20,SNR=4.0						
WSAR				LR	LR	02 33 46.5	
	comp=E,144nm,19.4s,baz=242,slow=43						
BRTR	**Keskin Array B**	**25.55**	**345**	P	**P**	**02 26 46.4**	**+1.9**
	comp=E,0.5nm,0.7s,baz=155,slow=15,SNR=5.1						
GEYT	**Alibeck**	**26.67**	**29**	LR	LR	02 38 40.9	
	comp=E,73nm,18.0s,baz=235,slow=39						
AKTO	**Aktyubinsk**	**37.41**	**17**	LR	LR	02 48 52.7	
	comp=E,30nm,18.2s,baz=196,slow=44						
TORD	**Torodi Ar. Bea**	**39.27**	**272**	P	**P**	**02 28 43.8**	**-0.8**
	comp=E,0.4nm,0.8s,baz=90,slow=8.6,SNR=3.4						
GERES	**GERESS Array B**	**40.87**	**331**	P	**P**	**02 28 57.7**	**+0.2**
	comp=E,1.9nm,0.9s,baz=133,slow=7.8,SNR=14						
MKAR	**Makanchi Array**	**45.84**	**38**	P	**P**	**02 29 38.0**	**+0.4**
	comp=E,0.7nm,0.8s,baz=228,slow=5.6,SNR=2.7						
MKAR				LR	LR	02 51 03.8	
	comp=E,40nm,18.9s,baz=235,slow=39						
BOSA	**Boshof**	**46.53**	**201**	LR	LR	02 48 37.3	
	comp=E,84nm,19.5s,baz=130,slow=35						
ZALV	**Zalesovo Beam**	**50.95**	**31**	P	**P**	**02 30 18.7**	**+1.8**
	comp=E,0.6nm,0.4s,baz=247,slow=5.9,SNR=3.2						
ZALV				LR	LR	02 55 02.6	
	comp=E,26nm,20.0s,baz=78,slow=40						
CMAR	**Chiang Mai Arr**	**54.25**	**78**	P	P	02 30 46.9	+5.0
	comp=E,0.5nm,0.3s,baz=285,slow=7.2,SNR=6.4						
SONM	**Songino Array**	**61.61**	**44**	LR	LR	03 01 57.9	
	comp=E,60nm,18.2s,baz=254,slow=40						
KSRS	**Korea Array**	**77.59**	**54**	LR	LR	03 10 50.1	
	comp=E,16nm,19.8s,baz=310,slow=38						

*NIED **30** 02:24:00, 37.50N×143.50E, h5km, Mw3.4 Best double couple: Mo1.51000×10^14 NP1:φs=333.00000°, δ45.00000°, λ=-150.00000°. NP2:φs=221.00000°, δ69.00000°, λ=-49.00000°.*
*ISCJB **30** 02:24:03.0±0.9, 37.49N±0.05×143.55E±0.07, h33km, mb3.7/4, Error ellipse: s-maj=8.4km s-min=7.8km az=160.2*
*JMA **30** 02:24:03.1±0.2, 37.53N×143.53E, h46km, MS3.7*
*IDC **30** 02:24:06.0±1.1, 36.60N×143.38E, h0km, mb3.5/4, mb1 3.8/6, mb1mx3.5/42, mbtmp3.6/6, ML3.5/2, MS2.2/1, Ms1 2.2/1, ms1mx2.0/48, Error ellipse: s-maj=35.2km s-min=21.6km az=126.0*

ISC 30 02:24:04.4±1.6, **37.54N**±0.06×**143.6E**±0.1, **h35**km, **n23**, σ1**18**/**23**, **mb3.7**/**4**, **Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**1.98**	**298**	P	**Pn**	**02 24 34.8**	**-0.6**
JIO				S	**Sn**	**02 24 58.1**	**-0.8**
JFK	**Kawauchi**	**2.15**	**266**	P	**Pn**	**02 24 37.3**	**-0.5**
JMM	**Marumori**	**2.23**	**279**	P	**Pn**	**02 24 38.2**	**-0.6**
ONAJ	**Iwakimizuishiy**	**2.25**	**260**	P	**Pn**	**02 24 38.8**	**-0.4**
ONAJ				S	**Sn**	**02 25 04.6**	**-1.1**
JMK	**Ichinoseki**	**2.33**	**308**	P	**Pn**	**02 24 39.8**	**-0.4**
JFT	**Otama**	**2.57**	**271**	S	**Sn**	**02 25 14.1**	**+0.5**
JOM	**Ohasama**	**2.63**	**318**	P	**Pn**	**02 24 43.9**	**-0.5**
JYK	**Kaneyama**	**2.88**	**300**	P	**Pn**	**02 24 48.2**	**+0.4**
JYK				*e*S	**Sn**	**02 25 20.7**	**-0.5**
JANG	**Nango**	**3.25**	**331**	P	**Pn**	**02 24 53.3**	**+0.4**
JAG	**Ashikaga**	**3.48**	**253**	P	**Pn**	**02 24 56.4**	**+0.4**
BSO1	**Boso 1**	**3.56**	**217**	P	**Pn**	**02 24 56.0**	**-0.6**
JRY	**Ryogami san**	**4.04**	**249**	P	**Pn**	**02 25 03.9**	**+0.1**
JRY				*e*S	**Sn**	**02 25 48.0**	**-1.9**
JOD2	**Odawara 2**	**4.27**	**239**	P	**Pn**	**02 25 06.5**	**-0.4**
MJAR	**Matsushiro Arr**	**4.40**	**259**	Pn	**Pn**	**02 25 10.3**	**+1.5**
	2.9nm,0.3s,baz=89,slow=15,SNR=16						
MJAR				Sn	**Sn**	**02 26 01.4**	**+2.7**
	1.4nm,0.3s,baz=89,slow=9.4,SNR=7.4						
MJAR				LR	LR	02 26 54.9	
	comp=Z,30nm,20.8s,baz=35,slow=41						
MAT	**Matsushiro**	**4.40**	**259**	P	**Pn**	**02 25 11.3**	**+2.6**
MAT				*e*S	**Sn**	**02 25 57.1**	**-1.7**
JHJ	**Hachijo jima 2**	**5.38**	**216**	Pn	Pn	02 25 15.3	-6.9
	7.6nm,0.3s,baz=72,slow=20,SNR=1.7						
JHJ				Sn	Sn	02 26 17.1	-5.9
	9.2nm,0.3s,baz=229,slow=19,SNR=2.1						
H11N2	**WAKE ISLAND Hy**	**26.97**	**125**	T	T	02 57 57.7	
	baz=314,slow=75						
H11N1	**WAKE ISLAND Hy**	**26.98**	**125**	T	T	02 57 58.3	
	baz=314						
H11N3	**WAKE ISLAND Hy**	**26.99**	**125**	T	T	02 57 57.8	
	baz=314,slow=75						
ILAR	**Eielson Array**	**48.15**	**33**	P	P	02 32 53.6	+13
	0.4nm,0.7s,baz=278,slow=6.3,SNR=3.0						
WRA	**Warramunga Arr**	**57.83**	**190**	P	**P**	**02 33 52.6**	**+0.2**
	1.0nm,0.5s,baz=8.3,slow=7.0,SNR=18						
ASAR	**Alice Springs**	**61.55**	**190**	P	**P**	**02 34 18.5**	**+0.5**
	0.9nm,1.0s,baz=15,slow=5.3,SNR=4.6						
YKA	**Yellowknife Ar**	**62.50**	**31**	P	P	02 34 37.0	+13
	0.1nm,0.7s,baz=303,slow=6.2,SNR=4.4						

*DDA **30** 02:25:28.0, 37.90N×26.82E, h7km, Md2.6*
*ISCJB **30** 02:25:29.8±1.0, 38.03N±0.06×26.92E±0.05, h1km±17km, Error ellipse: s-maj=11.4km s-min=5.1km az=27.9*
*CSEM **30** 02:25:29.1±0.6, 37.98N×26.87E, h2km, MD2.4, Error ellipse: s-maj=13.7km s-min=5.6km az=43.0*
*ISK **30** 02:25:30.5, 38.09N×26.96E, h5km, MD2.4*

ISC 30 02:25:28.3±1.8, **37.98N**±0.06×**26.86E**±0.05, **h4**km±13km, **n13**, σ0**49**/**22**, **Dodecanese Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ZEY	**¯zmir**	**0.38**	**313**	*i* P	**Pb**	**02 25 37.3**	**-0.3**
ZEY				*i* S	**Sb**	**02 25 43.4**	**-0.6**
BLCB	**Balcova**	**0.43**	**20**	*e*P**G**	**Pg**	**02 25 37.0**	**+0.5**
BLCB				*e*S**G**	**Sg**	**02 25 41.9**	**-0.3**
BLCB	**Balcova**	**0.43**	**20**	*e*P**g**	**Pg**	**02 25 37.1**	**+0.5**
BLCB				*e*S**g**	**Sg**	**02 25 41.9**	**-0.3**
URLA	**Izmir**	**0.43**	**332**	*i* P	**Pg**	**02 25 37.3**	**+0.6**
URLA				*i* S	**Sb**	**02 25 44.8**	**-0.7**
URLA	**Izmir**	**0.43**	**332**	P	**Pg**	**02 25 37.3**	**+0.6**
URLA				S	**Sb**	**02 25 44.8**	**-0.7**
IZM	**Izmir**	**0.53**	**37**	*e*P**G**	**Pg**	**02 25 38.6**	**+0.2**
IZM	**Izmir**	**0.53**	**37**	*e*P**g**	**Pg**	**02 25 38.6**	**+0.2**
AYDB	**Zeytinkoy-Aydi**	**0.82**	**92**	*e*P**G**	**Pb**	**02 25 45.4**	**+0.2**
AYDB				*e*S**G**	**Sb**	**02 25 56.2**	**-0.4**
AYDB	**Zeytinkoy-Aydi**	**0.82**	**92**	*e*P**g**	**Pb**	**02 25 45.4**	**+0.2**
AYDB				*e*S**g**	**Sb**	**02 25 56.2**	**-0.4**
AYDN	**Tasoluk**	**0.87**	**111**	*i* P	**Pg**	**02 25 44.9**	**-0.1**
AYDN				*i* S	**Sn**	**02 26 01.3**	**+0.7**
AYDN	**Tasoluk**	**0.87**	**111**	P	**Pg**	**02 25 44.9**	**-0.1**
AYDN				S	**Sn**	**02 26 01.3**	**+0.7**
KULA	**Kula-Manisa**	**1.52**	**69**	*e*PN	**Pg**	**02 25 57.4**	**0.0**
KULA	**Kula-Manisa**	**1.52**	**69**	*e*Pn	**Pg**	**02 25 57.4**	**0.0**

*CSEM **30** 02:51:01.8±0.3, 37.62N×35.58E, h12km, MD2.5, Error ellipse: s-maj=6.3km s-min=5.7km az=27.0*
*ISK **30** 02:51:01.4, 37.59N×35.53E, h19km, MD2.5*
*ISCJB **30** 02:51:02.7±0.5, 37.61N±0.03×35.56E±0.03, h17km±5km, Error ellipse: s-maj=5.7km s-min=3.7km az=174.2*
*DDA **30** 02:51:02.8, 37.51N×35.59E, h17km, Md2.7*

ISC 30 02:51:02.7±1.0, **37.56N**±0.03×**35.55E**±0.02, **h18**km±8km, **n35**, σ0**93**/**57**, **Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AKO	**Adana**	**0.13**	**222**	*i* P	**Pb**	**02 51 06.2**	**+0.6**
AKO				*i* S	**Sb**	**02 51 08.9**	**+1.5**
KARA	**Karaisali**	**0.49**	**233**	*e*P**G**	**Pg**	**02 51 12.0**	**-0.7**
KARA				*e*S**G**	**Sg**	**02 51 19.7**	**+0.3**
KARA	**Karaisali**	**0.49**	**233**	*e*P**g**	**Pg**	**02 51 12.0**	**-1.7**
KARA				*e*S**g**	**Sg**	**02 51 19.7**	**+0.3**
CEYT	**Ceyhan**	**0.57**	**164**	*e*P**G**	**Pg**	**02 51 13.9**	**0.0**
CEYT				*e*S**G**	**Sb**	**02 51 22.9**	**+1.2**
CEYT	**Ceyhan**	**0.57**	**164**	*e*P**g**	**Pg**	**02 51 14.0**	**0.0**
CEYT				*e*S**g**	**Sb**	**02 51 22.9**	**+1.2**
ANDN	**Andirin**	**0.63**	**88**	*i* P	**Pg**	**02 51 14.9**	**-0.3**
ANDN				*i* S	**Sb**	**02 51 25.1**	**+1.4**
ANDN	**Andirin**	**0.63**	**88**	P	**Pg**	**02 51 14.9**	**-0.3**
ANDN				S	**Sb**	**02 51 25.1**	**+1.4**
GULE	**Gulek**	**0.68**	**246**	*i* P	**Pg**	**02 51 16.5**	**+0.4**
GULE				*i* S	**Sb**	**02 51 26.9**	**+1.8**
GULE	**Gulek**	**0.68**	**246**	P	**Pg**	**02 51 16.5**	**+0.4**
GULE				S	**Sb**	**02 51 26.9**	**+1.8**
YURE	**YUREGIR**	**0.73**	**175**	*i* P	**Pb**	**02 51 16.9**	**0.0**
YURE				*i* S	**Sn**	**02 51 29.1**	**+0.2**
YURE	**YUREGIR**	**0.73**	**175**	P	**Pb**	**02 51 16.9**	**0.0**
YURE				S	**Sn**	**02 51 29.1**	**+0.2**
DED	**Mersin**	**0.84**	**226**	*i* P	**Pn**	**02 51 20.4**	**+0.7**
DED				*i* S	**Sb**	**02 51 30.8**	**+1.0**
NIG	**Nigde**	**0.93**	**307**	*e*P**G**	**Pb**	**02 51 19.3**	**-1.1**
NIG	**Nigde**	**0.93**	**307**	*e*P**g**	**Pb**	**02 51 19.3**	**-1.1**
KAMA	**Osmaniye**	**0.96**	**112**	*i* P	**Pb**	**02 51 20.4**	**-0.5**
KAMA				*i* S	**Sb**	**02 51 33.0**	**-0.3**
MERS	**Mersin**	**1.07**	**230**	*e*PN	**Pb**	**02 51 22.0**	**-0.8**
MERS	**Mersin**	**1.07**	**230**	*e*Pn	**Pb**	**02 51 22.0**	**-0.8**
KMRS	**Kahramanmaras**	**1.07**	**92**	*e*PN	**Pb**	**02 51 22.2**	**-0.5**
KMRS				*e*SN	**Sn**	**02 51 37.4**	**+0.1**
KMRS	**Kahramanmaras**	**1.07**	**92**	*e*Pn	**Pb**	**02 51 22.2**	**-0.5**
KMRS				*e*Sn	**Sn**	**02 51 37.4**	**+0.1**
HCB	**Kahramanmara¯**	**1.10**	**101**	*i* P	**Pb**	**02 51 23.1**	**-0.1**
HCB				*i* S	**Sg**	**02 51 38.9**	**+0.5**
KERG	**Konya-Eregli**	**1.14**	**263**	*i* P	Pn	02 51 15.6	-8.4
KERG				*i* S	Sb	02 51 24.5	-14
TAHT	**Tahtakopru-Hat**	**1.28**	**157**	*e*PN	**Pn**	**02 51 25.4**	**-0.2**
TAHT	**Tahtakopru-Hat**	**1.28**	**157**	*e*Pn	**Pn**	**02 51 25.5**	**-0.2**
GULA	**Gulagac**	**1.30**	**307**	*e*PN	**Pn**	**02 51 24.8**	**-1.3**
GULA	**Gulagac**	**1.30**	**307**	*e*Pn	**Pn**	**02 51 24.8**	**-1.3**
BNN	**Bunyan**	**1.31**	**10**	*e*PN	**Pn**	**02 51 24.9**	**-1.4**
BNN	**Bunyan**	**1.31**	**10**	*e*Pn	**Pn**	**02 51 24.9**	**-1.4**
AVNS	**Nevsehir-Avano**	**1.37**	**336**	*i* P	**Pb**	**02 51 28.0**	**+0.2**
AVNS				*i* S	**Sg**	**02 51 50.1**	**+3.1**
AVNS	**Nevsehir-Avano**	**1.37**	**336**	P	**Pb**	**02 51 28.0**	**+0.2**
KUZU	**Kuzuini**	**1.45**	**122**	*i* P	**Pn**	**02 51 27.8**	**-0.2**
KUZU				*i* S	**Sb**	**02 51 47.6**	**+0.4**
KUZU	**Kuzuini**	**1.45**	**122**	P	**Pn**	**02 51 27.8**	**-0.2**
KUZU				S	**Sb**	**02 51 47.6**	**+0.4**
KIZK	**Mersin**	**1.56**	**227**	*i* P	**Pg**	**02 51 32.6**	**-0.1**
KIZK				*i* S	**Sg**	**02 51 52.4**	**-0.6**
KIZK	**Mersin**	**1.56**	**227**	P	**Pg**	**02 51 32.6**	**-0.1**
KIZK				S	**Sg**	**02 51 52.4**	**-0.6**
YAYL	**Yayladag**	**1.58**	**163**	*i* P	**Pn**	**02 51 28.9**	**-1.0**
YAYL				*i* S	**Sb**	**02 51 51.6**	**+0.4**
YAYL	**Yayladag**	**1.58**	**163**	P	**Pn**	**02 51 28.9**	**-1.0**
YAYL				S	**Sb**	**02 51 51.6**	**+0.4**

*IDC **30** 03:01:58.6±5.4, 44.49S×80.23W, h0km, mb4.1/4, mb1 4.3/5, mb1mx3.9/28, mbtmp4.1/5, ML4.1/1, MS3.7/7, Ms1 3.7/7, ms1mx3.4/21, Error ellipse: s-maj=116.4km s-min=36.9km az=176.0*
*NEIC **30** 03:01:59.7±3.7, 44.59S×80.11W, h10km, mb4.0/2, Error ellipse: s-maj=74.0km s-min=18.5km az=188.0*

ISC 30 03:01:59.1±3.6, **44.8S**±0.5×**80.2W**±0.1, **h17**km, **n16**, σ1**93**/**10**, **mb4.0**/**6**, **MS3.7**/**6**, **Off coast of southern Chile**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PLCA	**Paso Flores**	**8.17**	**64**	Pn	**Pn**	**03 03 55.5**	**-1.5**
	0.6nm,0.3s,baz=257,slow=15,SNR=29						
PLCA				Sn	**Sn**	**03 05 30.0**	**+1.1**
	baz=183,slow=18,SNR=1.3						
PLCA				LR	LR	03 06 46.3	
	comp=Z,428nm,20.0s,baz=256,slow=36						
TRQA	**Tornquist**	**15.22**	**70**	*e*Pn	**Pn**	**03 05 32.9**	**-0.2**
LVC	**Limon Verde**	**23.98**	**26**	P	**P**	**03 07 12.4**	**-0.7**
	45nm,1.0s,baz=215,slow=6.8,SNR=7.2						
LVC				LR	LR	03 14 23.1	
	comp=Z,434nm,19.6s,baz=208,slow=31						
LVC	**Limon Verde**	**23.98**	**26**	*e*P	**P**	**03 07 13.8**	**+0.7**
	12nm,1.0s						
CPUP	**Villa Florida**	**26.03**	**53**	P	**P**	**03 07 32.9**	**+1.5**
	4.3nm,0.8s,baz=218,slow=11,SNR=8.0						
CPUP				LR	LR	03 17 44.6	
	comp=Z,116nm,21.8s,baz=208,slow=37						
LPAZ	**La Paz**	**30.17**	**24**	P	**P**	**03 08 09.0**	**-0.1**
	1.5nm,0.9s,baz=207,slow=11,SNR=5.0						
SAML	**Samuel**	**38.62**	**28**	*e*P	**P**	**03 09 20.6**	**-0.8**
	2.0nm,0.9s						
OTAV	**Otavalo**	**44.85**	**2**	*e*P	**P**	**03 10 12.9**	**-0.1**
	1.7nm,0.5s						
ROSC	**El Rosal**	**49.67**	**8**	LR	LR	03 28 58.7	
	comp=Z,86nm,21.7s,baz=192,slow=33						
VNDA	**Vanda**	**52.23**	**194**	LR	LR	03 29 44.6	
	comp=Z,48nm,18.8s,baz=128,slow=32						
TXAR	**Lajitas Array**	**76.80**	**339**	P	**P**	**03 13 50.3**	**+0.5**
	0.1nm,0.5s,baz=163,slow=9.4,SNR=2.4						
BOSA	**Boshof**	**80.36**	**121**	LR	LR	03 43 09.6	
	comp=Z,51nm,19.7s,baz=183,slow=31						
MATP	**Matopo**	**88.32**	**117**	LR	LR	03 47 52.1	
	comp=Z,26nm,20.5s,baz=190,slow=31						
H11S2	**WAKE ISLAND Hy**	**119.10**	**268**	T	T	05 30 46.5	
	baz=131						
H11S1	**WAKE ISLAND Hy**	**119.12**	**268**	T	T	05 30 44.5	
	baz=131						
H11S3	**WAKE ISLAND Hy**	**119.12**	**268**	T	T	05 30 43.5	
	baz=131						

*IDC **30** 03:02:58.8±0.9, 18.94S×167.74E, h0km, mb4.3/8, mb1 4.5/8, mb1mx4.1/35, mbtmp4.3/8, Error ellipse: s-maj=33.1km s-min=21.1km az=144.0*
*ISCJB **30** 03:02:59.6±0.6, 19.41S±0.08×167.9E±0.1, h20km, mb4.6/17, Error ellipse: s-maj=17.9km s-min=8.3km az=28.4*
*NEIC **30** 03:02:59.6±0.4, 19.37S×167.95E, h10km, mb4.7/8, Error ellipse: s-maj=15.9km s-min=9.2km az=136.0*

ISC 30 03:03:00.8±0.7, **19.4S**±0.1×**168.0E**±0.2, **h20**km, **n36**, σ1**21**/**36**, **mb4.6**/16, **1D**, **Vanuatu Islands region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**2.99**	**208**	Pn	**Pn**	**03 03 47.7**	**+0.5**
	14nm,0.3s,baz=93,slow=21,SNR=138						
DZM				Sn	**Sn**	**03 04 22.0**	**-0.5**
	35nm,0.3s,baz=260,slow=22,SNR=7.9						
PMG	**Port Moresby**	**22.46**	**293**	*e*P	**P**	**03 07 58.4**	**-0.6**
	27nm,1.1s						
RPZ	**Rata Peaks**	**24.34**	**175**	P	P	03 08 23.8	+6.4
	6.6nm,0.9s,baz=311,slow=12,SNR=3.5						
STKA	**Stephens Creek**	**26.73**	**237**	P	**P**	**03 08 39.8**	**+0.6**
	2.7nm,1.0s,baz=65,slow=9.7,SNR=5.9						
WRAB	**Tennant Creek**	**31.63**	**263**	*e*P	**P**	**03 09 22.4**	**-0.5**
	9.6nm,1.2s						
WRA	**Warramunga Arr**	**31.64**	**263**	P	**P**	**03 09 22.4**	**-0.5**
	1.7nm,0.8s,baz=87,slow=8.3,SNR=12						
ASAR	**Alice Springs**	**31.92**	**256**	P	**P**	**03 09 25.9**	**+0.6**
	4.1nm,0.8s,baz=88,slow=8.7,SNR=44						
MBWA	**Marble Bar**	**45.14**	**259**	*e*P	**P**	**03 11 17.1**	**+0.7**
	17nm,1.1s						
SYO	**Syowa Base**	**84.41**	**196**	*e*P	**P**	**03 15 29.4**	**-2.1**
GAMB	**Gambell**	**84.44**	**9**	*e*P	**P**	**03 15 31.8**	**+0.3**
	4.9nm,0.8s						
ULN	**Ulaanbaatar**	**86.31**	**324**	*e*P	**P**	**03 15 42.2**	**+0.7**
	7.2nm,1.1s						
SONM	**Songino Array**	**86.66**	**324**	P	**P**	**03 15 43.7**	**+0.5**
	2.3nm,0.8s,baz=142,slow=4.9,SNR=7.3		

AS31	**Alice Springs**	**31.64**	**256**	*e*P	**P**	**03 16 29.9**	**+1.0**
	6.2nm,1.5s							
ASAR	**Alice Springs**	**31.64**	**256**	P	**P**	**03 16 29.5**	**+0.6**
	3.6nm,0.7s,baz=86,slow=8.6,SNR=31							
ASAR				LR	LR	03 28 31.0		
	comp=Z,349nm,19.7s,baz=96,slow=35							
FITZ	**Fitzroy Crossi**	**39.73**	**265**	LR	LR	03 33 20.2		
	comp=Z,216nm,19.1s,baz=88,slow=35							
FITZ	**Fitzroy Crossi**	**39.73**	**265**	*e*P	**P**	**03 17 39.5**	**+1.2**
	3.0nm,0.5s							
PPT2	**Papeete2**	**40.53**	**95**	*e*LR	LR	03 28 50.0		
	322nm,28.5s							
PPT	**Papeete**	**40.54**	**95**	LR	LR	03 31 32.9		
	comp=Z,110nm,21.3s,baz=264,slow=32							
KAPI	**Kappang**	**48.76**	**281**	LR	LR	03 39 04.5		
	comp=Z,84nm,19.9s,baz=79,slow=36							
VNDA	**Vanda**	**58.27**	**181**	P	**P**	**03 19 58.8**	**-0.7**
	1.3nm,0.9s,baz=357,slow=8.3,SNR=6.3							
QSPA	**South Pole Qui**	**70.69**	**180**	*e*P	**P**	**03 21 20.1**	**-0.9**
	16nm,0.8s							
ULN	**Ulaanbaatar**	**86.07**	**324**	*e*P	**P**	**03 22 46.5**	**+0.4**
	1.3nm,0.4s							
SONM	**Songino Array**	**86.42**	**324**	P	**P**	**03 22 47.0**	**-0.8**
	1.2nm,0.8s,baz=131,slow=4.2,SNR=6.4							
SONM	**Songino Array**	**86.42**	**324**	P	**P**	**03 22 47.0**	**-0.8**
SONA1	**Songino Array**	**86.42**	**324**	*e*P	**P**	**03 22 48.1**	**+0.2**
TNA	**Tin City**	**86.68**	**10**	*e*P	**P**	**03 22 48.8**	**+0.3**
	4.7nm,0.9s							
VNA3	**Neumayer Olymp**	**89.61**	**181**	PKP	**P**	**03 23 00.8**	**-1.9**
VNA2	**Neumayer--Watz**	**89.89**	**182**	PKP	P	03 23 00.1	-3.8
	baz=152,slow=3.5							
NVAR	**Mina Array Bea**	**90.01**	**49**	LR	LR	03 55 23.3		
	comp=Z,55nm,20.5s,baz=246,slow=30							
NV11	**Mina Array Sit**	**90.12**	**49**	*e*P	**P**	**03 23 06.5**	**+0.8**
	7.1nm,1.2s							
VNA1	**Neumayer--Stat**	**90.18**	**181**	PKP	P	03 23 00.9	-4.4
ILAR	**Eielson Array**	**90.80**	**18**	LR	LR	03 55 18.0		
	comp=Z,18nm,20.7s,baz=215,slow=30							
PDAR	**Pinedale Array**	**97.80**	**48**	LR	LR	04 01 53.8		
	comp=Z,24nm,19.2s,baz=251,slow=32							
TXAR	**Lajitas Array**	**98.15**	**62**	P	**P**	**03 23 42.0**	**-0.7**
	0.3nm,0.9s,baz=280,slow=7.2,SNR=3.0							
TXAR				LR	LR	04 00 35.1		
	comp=Z,46nm,19.1s,baz=0.0,slow=31							
SDCO	**Great Sand Dun**	**99.19**	**53**	*e*P	**Pdif**	**03 23 48.0**	**+0.6**
	17nm,1.8s							
YKA	**Yellowknife Ar**	**101.47**	**28**	P	**Pdif**	**03 23 55.8**	**-0.7**
	0.2nm,0.6s,baz=258,slow=5.3,SNR=2.1							
CONA	**Conrad Observa**	**143.46**	**328**	*e*PKPdf	**PKPdf**	**03 29 38.6**	**-1.3**
	4.6nm,1.0s							
GERES	**GERESS Array B**	**143.87**	**331**	PKhKP	PKPpre	03 29 37.0		
	1.1nm,0.8s,baz=36,slow=2.5,SNR=7.4							
GEA0	**GERESS Array S**	**143.88**	**331**	*e*PKPpre	PKPpre	03 29 38.4		
ARSA	**Arzberg**	**144.08**	**327**	*i* PKPdf	**PKPdf**	**03 29 40.0**	**-0.9**
	7.6nm,1.3s							
MOA	**Molln**	**144.30**	**329**	*i* PKPdf	PKPbc	03 29 39.9	+0.2
	11nm,1.1s,SNR=6.8							
SOKA	**Soboth**	**144.71**	**327**	*i* PKPab	**PKPab**	**03 29 40.7**	**-0.2**
	12nm,1.1s,SNR=12							
OBKA	**Obir**	**145.07**	**327**	*i* PKPbc	**PKPbc**	**03 29 41.7**	**-0.5**
	8.1nm,1.1s,SNR=5.0							
KBA	**Koelnbreinsper**	**145.29**	**329**	*i* PKPbc	**PKPbc**	**03 29 42.4**	**-0.6**
	16nm,1.3s,SNR=8.1							
MEM	**Membach**	**145.58**	**339**	PKP	**PKPab**	**03 29 43.8**	**-0.1**
ABTA	**Abfaltersbach**	**145.93**	**329**	*i* PKPdf	**PKPdf**	**03 29 44.0**	**-0.3**
	20nm,1.3s,SNR=9.7							
BCLA	**Clavier**	**145.98**	**340**	PKP	**PKPdf**	**03 29 43.4**	**-0.7**
MOTA	**Moosalm**	**146.16**	**331**	*i* PKPab	**PKPab**	**03 29 46.2**	**-0.2**
	10nm,1.0s,SNR=7.3							
SNF	**Seneffe**	**146.22**	**341**	PKP	**PKPab**	**03 29 46.4**	**+0.2**
WLF	**Walferdange**	**146.33**	**338**	PKP	**PKPab**	**03 29 46.4**	**-0.3**
WLF	**Walferdange**	**146.33**	**338**	*e*PKPdf	**PKPab**	**03 29 46.7**	**0.0**
DOU	**Dourbes**	**146.49**	**340**	PKP	**PKPbc**	**03 29 46.4**	**+0.1**
FETA	**Feichten**	**146.57**	**331**	*e*PKPbc	**PKPbc**	**03 29 46.5**	**-0.5**
	10nm,1.1s							
BFO	**Black Forest**	**146.60**	**335**	*e*PKPdf	**PKPdf**	**03 29 45.8**	**+0.6**
FUORN	**Ofenpass-Fuorn**	**147.09**	**331**	*e*PKPdf	**PKPbc**	**03 29 48.2**	**-0.3**
DAVOX	**Davos/Dischmat**	**147.14**	**331**	PKPbc	**PKPbc**	**03 29 47.8**	**-0.8**
	7.6nm,0.9s,baz=183,slow=5.6,SNR=9.1							
TUE	**Stuetta**	**147.61**	**332**	*e*PKPdf	**PKPbc**	**03 29 49.5**	**-0.4**
TIP	**Timpagrande**	**148.05**	**314**	*e*PKPdf	**PKPbc**	**03 29 51.3**	**+0.2**
TIP				*e*PKPbc	**PKiKP**	**03 29 52.1**	**-0.8**
SENIN	**Lac Senin/Sane**	**148.59**	**333**	*e*PKPbc	**PKPbc**	**03 29 53.9**	**+1.3**

*ISCJB **30** 03:16:51.9±0.4,58°.02N±0°.04×157°.65W±0°.08,h150km, mb3.9/18, Error ellipse: s-maj=7.0km s-min=4.0km az=135.0*
*NEIC **30** 03:16:55.0,57°.74N×157°.41W,h172km,MG3.6(AEIC), After AEIC.*
*IDC **30** 03:16:56.3±0.9,58°.17N×157°.51W,h172km±6km,mb3.6/18, mb1 3.8/21,mb1mx3.6/59,mbtmp4.1/21, Error ellipse: s-maj=16.3km s-min=9.8km az=28.0*

ISC 30 03:16:53.9±0.7,58°.02N±0°.07×157°.52W±0°.07,h150km, n49,σ1§52/60,mb4.0/18**,Alaska Peninsula**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
CHGN	**Chignik**	**1.79**	**196**	*e*Pn	Pn	03 17 25.2	-1.3
OHAK	**Old Harbor**	**2.41**	**108**	*e*Pn	Pn	03 17 33.6	-0.2
OHAK				*e*Sn	**Sn**	**03 18 03.1**	**-1.4**
KDAK	**Kodiak Island**	**2.64**	**93**	P	Pn	03 17 52.5	+16
	45nm,0.3s,baz=230,slow=0.6,SNR=467						
KDAK				S	Sn	03 18 24.5	+15
	56nm,0.3s,baz=1.2,slow=22,SNR=28						
KDAK	**Kodiak Island**	**2.64**	**93**	*e*Pn	**Pn**	**03 17 37.0**	**+0.3**
KDAK				*e*Sn	**Sn**	**03 18 09.5**	**-0.1**
SDPT	**Sand Point**	**3.14**	**213**	*e*Pn	Pn	03 17 40.6	-2.3
SDPT				*e*Sn	Sn	03 18 17.8	-3.1
SEW	**Seward**	**4.66**	**60**	*e*Pn	**Pn**	**03 18 04.3**	**+1.7**
SEW				*e*Sn	**Sn**	**03 18 54.3**	**-1.9**
RC01	**Rabbit Creek A**	**5.01**	**49**	*e*Pn	**Pn**	**03 18 09.0**	**+1.7**
	86nm,0.4s						
RC01				*e*Sn	**Sn**	**03 19 05.6**	**+0.9**
PMR	**Palmer**	**5.54**	**46**	*e*Pn	**Pn**	**03 18 15.8**	**+1.4**
	23nm,0.3s						
PMR				*e*Sn	**Sn**	**03 19 16.2**	**-1.0**
PPLA	**Purkeypile**	**5.56**	**26**	*e*Pn	Pn	03 18 19.0	+4.4
	83nm,0.8s						
SML	**Sawmill**	**5.98**	**47**	*e*Pn	**Pn**	**03 18 20.0**	**-0.1**
	6.4nm,0.4s						
SML				*e*Sn	**Sn**	**03 19 26.0**	**-1.7**
KTH	**Kantishna Hill**	**6.42**	**27**	*e*Pn	**Pn**	**03 18 28.3**	**+2.3**
	24nm,0.6s						
TRF	**Thorofare Moun**	**6.50**	**30**	*e*Pn	**Pn**	**03 18 29.4**	**+2.2**
	23nm,0.2s						
UNV	**Unalaska Valle**	**6.55**	**234**	*e*Pn	Pn	03 18 25.4	-2.5
	66nm,0.5s						
DIV	**Divide**	**6.73**	**57**	*e*Pn	**Pn**	**03 18 31.1**	**+0.9**
	142nm,0.5s						
DIV				*e*Sn	**Sn**	**03 19 45.2**	**-0.5**
MCK	**McKinley**	**7.09**	**33**	*e*Pn	**Pn**	**03 18 36.3**	**+1.3**
	11nm,0.4s						
BMRM	**Bremner River**	**7.21**	**60**	*e*Pn	**Pn**	**03 18 37.3**	**+0.8**
	72nm,0.5s						
BMRM				*e*Sn	**Sn**	**03 19 56.7**	**-0.3**
PAX	**Paxson**	**7.74**	**45**	*e*Pn	**Pn**	**03 18 44.3**	**+0.6**
	27nm,0.6s						
PAX				*e*Sn	**Sn**	**03 20 09.1**	**-0.8**
COLA	**College**	**8.28**	**30**	*e*Pn	**Pn**	**03 18 50.5**	**-0.3**
	9.1nm,0.6s						
ILAR	**Eielson Array**	**8.47**	**32**	P	**Pn**	**03 18 52.4**	**-0.9**
	2.2nm,0.3s,baz=223,slow=13,SNR=68						
ILAR				S	**Sn**	**03 20 26.3**	**-0.9**
	1.5nm,0.3s,baz=215,slow=28,SNR=8.6						
DOT	**Dot Lake**	**8.65**	**44**	*e*Pn	**Pn**	**03 18 55.8**	**+0.1**
	23nm,0.4s						
COLD	**Coldfoot**	**9.83**	**17**	*e*Pn	**Pn**	**03 19 12.6**	**+1.3**
	3.3nm,0.6s						
EGAK	**Eagle**	**10.34**	**42**	*e*Pn	**Pn**	**03 19 17.6**	**-0.5**
	8.6nm,0.6s						
DAWY	**Dawson**	**10.65**	**48**	*e*Pn	**Pn**	**03 19 22.9**	**+0.7**
	6.6nm,0.5s						
DLBC	**Dease Lake**	**14.45**	**77**	P	**Pn**	**03 20 13.1**	**+1.9**
	0.4nm,0.3s,baz=280,slow=10,SNR=14						
DLBC				S	**Sn**	**03 22 53.2**	**+1.9**
	0.1nm,0.3s,baz=122,slow=19,SNR=4.0						
DLBC	**Dease Lake**	**14.45**	**77**	*e*Pn	**Pn**	**03 20 12.6**	**+1.4**
	22nm,1.6s						
INK	**Inuvik**	**14.83**	**36**	P	**Pn**	**03 20 14.2**	**-1.6**
	0.5nm,0.3s,baz=241,slow=10,SNR=17						
INK	**Inuvik**	**14.83**	**36**	*e*Pn	**Pn**	**03 20 14.5**	**-1.2**
	3.6nm,0.6s						
YKA	**Yellowknife Ar**	**21.44**	**60**	P	**P**	**03 21 29.8**	**0.0**
	9.3nm,0.7s,baz=276,slow=10.0,SNR=131						
YKA				S	**S**	**03 25 17.7**	**-0.3**
	0.3nm,0.9s,baz=271,slow=16,SNR=4.2						
YKA				PcP	**PcP**	**03 25 25.0**	**-1.3**
	0.3nm,0.4s,baz=281,slow=1.9,SNR=8.3						
YKA				ScP	**ScP**	**03 28 45.4**	**-3.5**
	0.9nm,0.6s,baz=286,slow=2.5,SNR=23						
NEW	**Newport**	**25.75**	**95**	P	**P**	**03 22 10.9**	**+0.6**
	0.9nm,0.4s,baz=132,slow=15,SNR=3.4						
YBH	**Yreka Blue Hor**	**27.31**	**111**	P	**P**	**03 22 26.2**	**+1.8**
	3.1nm,0.6s,baz=339,slow=6.1,SNR=8.8						
RES	**Resolute Bay**	**28.21**	**30**	PcP	**PcP**	**03 25 39.9**	**-1.3**
	0.2nm,0.4s,baz=270,slow=3.0,SNR=3.1						
NVAR	**Mina Array Bea**	**32.02**	**111**	P	**P**	**03 23 06.8**	**+0.8**
	2.5nm,0.6s,baz=311,slow=8.2,SNR=17						
NVAR				PcP	**PcP**	**03 25 51.3**	**-0.8**
	0.6nm,0.6s,baz=313,slow=2.9,SNR=4.1						
PDAR	**Pinedale Array**	**33.36**	**96**	P	**P**	**03 23 17.9**	**+0.2**
	1.4nm,0.5s,baz=305,slow=4.7,SNR=11						
ULM	**Lac du Bonnet**	**35.77**	**75**	P	**P**	**03 23 37.7**	**-0.3**
	1.3nm,0.4s,baz=212,slow=9.5,SNR=2.7						
SCHQ	**Schefferville**	**46.62**	**53**	P	**P**	**03 25 05.8**	**-0.6**
	3.9nm,0.6s,baz=307,slow=7.1,SNR=19						
TXAR	**Lajitas Array**	**46.62**	**104**	P	**P**	**03 25 06.7**	**-0.2**
	1.7nm,0.7s,baz=312,slow=5.4,SNR=22						
ARCES	**ARCESS Array B**	**52.73**	**359**	P	**P**	**03 25 51.3**	**-1.1**
	0.7nm,0.6s,baz=4.0,slow=6.4,SNR=9.5						
ZALV	**Zalesovo Beam**	**57.53**	**322**	pP	pP	03 27 07.0	+5.0
	0.7nm,0.3s,baz=30,slow=6.7,SNR=1.4						
FINES	**FINESS Array B**	**60.84**	**358**	P	**P**	**03 26 48.5**	**-1.1**
	1.0nm,0.4s,baz=6.4,slow=8.5,SNR=13						
FINES				pP	**pP**	**03 27 29.0**	**+4.1**
	0.9nm,0.8s,baz=17,slow=16,SNR=2.4						
NB2	**NORSAR Subarra**	**60.95**	**6**	P	**P**	**03 26 49.2**	**-1.2**
	comp=Z,1.1nm,0.8s,baz=354,slow=6.9						
NOA	**NORSAR Array B**	**60.95**	**6**	P	**P**	**03 26 49.6**	**-0.8**
	comp=Z,1.3nm,0.7s,baz=354,slow=8.8,SNR=10						
KURBB	**Kurchatov Arra**	**62.40**	**323**	P	**P**	**03 26 59.7**	**-0.5**
	comp=Z,0.5nm,0.9s,baz=90,slow=1.9,SNR=3.0						
KURBB				pP	**PcP**	**03 27 40.2**	**+2.0**
	comp=Z,0.5nm,0.8s,baz=28,slow=6.2,SNR=4.0						
BVAR	**Borovoye Array**	**62.66**	**330**	P	**P**	**03 27 01.1**	**-0.8**
	comp=Z,1.4nm,0.5s,baz=31,slow=7.2,SNR=9.1						
MKAR	**Makanchi Array**	**64.45**	**319**	pP	pP	03 27 55.2	+5.7
	comp=Z,0.3nm,0.6s,baz=51,slow=6.4,SNR=1.9						
AKTO	**Aktyubinsk**	**68.04**	**336**	P	**P**	**03 27 35.7**	**-0.9**
	comp=Z,0.6nm,0.3s,baz=26,slow=10.0,SNR=4.6						
AKTO				pP	**pP**	**03 28 17.1**	**+4.5**
	comp=Z,0.6nm,0.5s,baz=59,slow=12,SNR=1.5						
AKASG	**Malin Array Be**	**71.50**	**355**	P	**P**	**03 27 56.1**	**-1.5**
	comp=Z,1.2nm,0.4s,baz=8.0,slow=6.2,SNR=7.2						
AKASG				pP	**pP**	**03 28 37.1**	**+3.1**
	comp=Z,1.2nm,0.7s,baz=360,slow=5.6,SNR=2.1						
GERES	**GERESS Array B**	**73.25**	**6**	P	**P**	**03 28 07.5**	**-0.8**
	comp=Z,1.2nm,0.6s,baz=1.4,slow=5.3,SNR=10						
DAVOX	**Davos/Dischmat**	**75.04**	**9**	P	**P**	**03 28 18.7**	**0.0**
	comp=Z,2.0nm,0.5s,baz=164,slow=19						
ESDC	**Sonseca Array**	**80.18**	**20**	P	**P**	**03 28 46.6**	**-0.6**
	comp=Z,0.4nm,0.4s,baz=341,slow=5.2,SNR=9.9						

*IDC **30** 03:22:42.8±0.7,6°.29S×103°.85E,h0km,mb4.2/26, mb1 4.3/27,mb1mx4.2/62,mbtmp4.2/27,ML4.7/1,MS3.3/4, Ms1 3.4/4,ms1mx2.9/58, Error ellipse: s-maj=24.9km s-min=11.7km az=47.0*
*ISCJB **30** 03:22:47.2±0.4,6°.44S±0°.05×103°.79E±0°.04,h48km, mb4.2/35,MS4.0/4, Error ellipse: s-maj=7.8km s-min=5.1km az=37.6*
*NEIC **30** 03:22:49.9±1.1,6°.29S×103°.91E,h52km±9km,mb4.4/12, Error ellipse: s-maj=12.7km s-min=4.4km az=46.0*
*DJA **30** 03:22:50.1±0.7,6°.5S±5°×10°.4E±°,h30km,M4.4/10, MLv4.4/10*

ISC 30 03:22:49.3±0.6,**6°.33S**±0°.08×**103°.94E**±0°.07,**h48**km,**n70,** σ0§88/59,**mb4.3**/35,**MS3.5**/4**,Southwest of Sumatera**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
KASI	**Kota Agung**	**0.98**	**35**	P	**Pn**	**03 23 06.8**	**+0.1**
KASI				S	**Sn**	**03 23 19.0**	**-0.5**
LWLI	**Liwa**	**1.31**	**5**	P	**Pn**	**03 23 11.8**	**+0.4**
LWLI				S	Sn	03 23 31.8	+4.0
BLSI	**Bandar Lampung**	**1.62**	**54**	P	Pn	03 23 18.2	+2.8
KLI	**Kotabumi**	**1.72**	**32**	P	Pn	03 23 19.2	+2.3
CGJI	**Cibinong**	**1.77**	**99**	P	**Pn**	**03 23 18.5**	**+1.0**
MDSI	**Maura Dua**	**1.85**	**7**	P	Pn	03 23 20.4	+1.8
MNAI	**Manna**	**2.19**	**333**	P	**Pn**	**03 23 24.3**	**+1.0**
MNAI	**Manna**	**2.19**	**333**	*e*Pn	**Pn**	**03 23 23.6**	**+0.2**
LHSI	**Lahat**	**2.52**	**351**	P	Pn	03 23 30.2	+2.3
CBJI	**Citeko**	**2.90**	**92**	P	Pn	03 23 37.0	+4.0
LEM	**Lembang**	**3.69**	**98**	Pn	Pn	03 23 52.1	+8.1
	9.9nm,0.3s,baz=155,slow=14,SNR=4.7						
LEM				Sn	**Sn**	**03 24 30.4**	**+4.0**
	8.3nm,0.3s,baz=249,slow=17,SNR=4.3						
LEM				LR	LR	03 25 22.4	
	comp=Z,192nm,19.9s,baz=52,slow=42						
LEM	**Lembang**	**3.69**	**98**	P	Pn	03 23 52.5	+8.5
CISI	**Cisompet, Garu**	**4.04**	**108**	P	**Pn**	**03 23 48.5**	**-0.2**
CISI	**Cisompet, Garu**	**4.04**	**108**	*e*Pn	**Pn**	**03 23 47.0**	**-1.8**
CISI				*e*Sn	**Sn**	**03 24 32.2**	**-2.6**
BATI	**Baumata**	**19.89**	**102**	P	**Pn**	**03 27 18.8**	**-0.2**
	2.4nm,0.3s,baz=90,slow=20,SNR=2.4						
SOEI	**Soe**	**20.41**	**101**	*e*P	**P**	**03 27 22.6**	**-0.1**
	45nm,0.8s						
MBWA	**Marble Bar**	**21.24**	**135**	*e*P	**P**	**03 27 31.8**	**+0.3**
	7.7nm,0.8s						
FITZ	**Fitzroy Crossi**	**24.18**	**121**	P	**P**	**03 28 02.4**	**+0.9**
	0.9nm,0.7s,baz=275,slow=11,SNR=3.3						
CMAR	**Chiang Mai Arr**	**25.12**	**349**	P	**P**	**03 28 09.3**	**-0.6**
	4.0nm,0.7s,baz=182,slow=9.1,SNR=20						
CMAR				LR	LR	03 39 47.5	
	comp=Z,61nm,18.9s,baz=166,slow=41						
CHTO	**Chiang Mai**	**25.47**	**349**	*e*P	**P**	**03 28 12.7**	**-0.4**
	5.0nm,0.7s						
H01W3	**Cape Leeuwin H**	**29.93**	**163**	T	T	04 00 19.4	
	baz=341,slow=76,SNR=5.0						
H01W2	**Cape Leeuwin H**	**29.94**	**163**	T	T	04 00 21.4	
	baz=341,slow=76,SNR=8.4						
H01W1	**Cape Leeuwin H**	**29.94**	**163**	T	T	04 00 18.6	
	baz=341,slow=76,SNR=7.9						
H08S2	**Diego Garcia H**	**31.23**	**266**	T	T	04 01 27.7	
	baz=89,slow=75,SNR=14						
H08S3	**Diego Garcia H**	**31.24**	**266**	T	T	04 01 32.8	
	baz=89,slow=75,SNR=17						
H08S1	**Diego Garcia H**	**31.25**	**266**	T	T	04 01 48.2	
	baz=89,slow=75,SNR=14						
WRA	**Warramunga Arr**	**32.47**	**118**	P	**P**	**03 29 15.9**	**+0.3**
	2.4nm,0.7s,baz=287,slow=12,SNR=27						
WRAB	**Tennant Creek**	**32.48**	**118**	*e*P	**P**	**03 29 15.8**	**+0.2**
	3.1nm,0.5s						
ASAR	**Alice Springs**	**33.56**	**124**	P	**P**	**03 29 25.8**	**+0.7**
	2.0nm,0.9s,baz=301,slow=7.9,SNR=17						
ASAR				LR	LR	03 44 28.5	
	comp=Z,78nm,19.2s,baz=298,slow=39						
JAY	**Jayapura**	**36.84**	**86**	P	**P**	**03 29 53.0**	**-0.4**
	0.6nm,0.8s,baz=90,slow=20,SNR=2.8						
GUN	**Gumba**	**38.25**	**334**	*e*P	**P**	**03 30 05.6**	**+0.1**
	48nm,0.6s						
DMN	**Daman**	**38.34**	**332**	*e*P	**P**	**03 30 05.8**	**-0.3**
GKN	**Gorkha**	**38.89**	**332**	*e*P	**P**	**03 30 10.6**	**0.0**
KOLN	**Koldanda**	**39.19**	**331**	*e*P	**P**	**03 30 13.5**	**+0.4**
	30nm,0.7s						
PYUN	**Piuthan**	**39.76**	**330**	*e*P	**P**	**03 30 18.5**	**+0.6**
	35nm,0.7s						
STKA	**Stephens Creek**	**43.36**	**131**	P	**P**	**03 30 47.9**	**+0.7**
	2.9nm,0.6s,baz=303,slow=9.7,SNR=15						
STKA				LR	LR	03 51 32.9	
	comp=Z,70nm,18.2s,baz=203,slow=40						
KSAR	**Wonju Array Be**	**48.95**	**25**	P	**P**	**03 31 31.7**	**+0.8**
KSRS	**Korea Array**	**48.98**	**25**	P	**P**	**03 31 31.7**	**+0.6**
	1.8nm,0.6s,baz=222,slow=9.2,SNR=5.5						
MJAR	**Matsushiro Arr**	**53.38**	**34**	P	**P**	**03 32 04.8**	**+0.6**
	0.8nm,0.7s,baz=207,slow=7.4,SNR=9.1						
SONM	**Songino Array**	**53.98**	**2**	P	**P**	**03 32 07.9**	**-0.6**
	7.2nm,0.8s,baz=179,slow=8.6,SNR=19						
ULN	**Ulaanbaatar**	**54.03**	**3**	*e*P	**P**	**03 32 09.2**	**+0.3**
	4.5nm,0.9s						
TKM2	**Tokmak 2**	**55.37**	**335**	*e*P	**P**	**03 32 18.4**	**-0.4**
	3.5nm,0.6s						
AAK	**Ala-Archa**	**55.61**	**334**	P	**P**	**03 32 20.3**	**-0.2**
	0.9nm,0.5s,baz=165,slow=7.6,SNR=3.2						
AAK	**Ala-Archa**	**55.61**	**334**	*e*P	**P**	**03 32 20.0**	**-0.5**
	1.3nm,0.6s						
EKS2	**Erkin-Say**	**55.95**	**333**	*e*P	**P**	**03 32 22.8**	**-0.1**
	5.8nm,0.9s						
MKAR	**Makanchi Array**	**56.28**	**342**	P	**P**	**03 32 24.1**	**-0.9**
	2.5nm,0.5s,baz=148,slow=8.3,SNR=30						
USRK	**Ussuriysk Ar.**	**56.30**	**24**	P	**P**	**03 32 25.3**	**+0.1**
	2.5nm,0.5s,baz=204,slow=4.9,SNR=8.3						
KKAR	**Karatay Array**	**57.79**	**332**	*e*P	**P**	**03 32 34.8**	**-1.0**
	0.6nm,0.4s						
KLR	**Kul'dur**	**60.42**	**21**	P	**P**	**03 32 53.2**	**-0.7**
	1.7nm,0.5s,baz=237,slow=5.1,SNR=8.1						
KURBB	**Kurchatov Arra**	**60.83**	**342**	P	**P**	**03 32 56.5**	**0.0**
	3.5nm,0.9s,baz=159,slow=6.4,SNR=24						
KURK	**Kurchatov**	**60.88**	**342**	P	**P**	**03 32 56.5**	**-0.4**
GEYT	**Alibeck**	**61.27**	**320**	P	**P**	**03 33 00.3**	**+0.4**
	2.4nm,0.5s,baz=178,slow=7.4,SNR=4.3						
ZALV	**Zalesovo Beam**	**62.18**	**347**	P	**P**	**03 33 05.0**	**-0.7**
	2.8nm,0.4s,baz=159,slow=4.6,SNR=19						
BVAR	**Borovoye Array**	**65.60**	**338**	P	**P**	**03 33 27.8**	**-0.4**
	2.9nm,0.5s,baz=145,slow=8.5,SNR=17						
BRVK	**Borovoye**	**65.67**	**338**	*e*P	**P**	**03 33 27.9**	**-0.7**
	2.2nm,0.4s						
ABKAR	**Akbulak array**	**67.31**	**330**	*e*P	**P**	**03 33 38.5**	**-0.7**
	6.0nm,0.8s						
AKTO	**Aktyubinsk**	**69.03**	**331**	P	**P**	**03 33 49.5**	**-0.4**
	1.0nm,0.5s,baz=107,slow=11,SNR=3.2						
ARU	**Arti**	**72.73**	**336**	P	**P**	**03 34 12.2**	**-0.1**
	3.4nm,0.2s,baz=154,slow=2.4,SNR=6.5						
ARU	**Arti**	**72.73**	**336**	*e*P	**P**	**03 34 12.4**	**+0.1**
	3.1nm,0.4s						
KBZ	**Khabaz**	**74.13**	**319**	P	**P**	**03 34 21.0**	**+0.3**
	4.4nm,0.9s,baz=153,slow=6.8,SNR=8.3						
KVAR	**Kislovodsk Arr**	**74.36**	**319**	P	**P**	**03 34 23.1**	**+0.8**
	2.7nm,0.5s,baz=59,slow=0.9,SNR=3.8						
VNDA	**Vanda**	**77.19**	**169**	P	**P**	**03 34 38.0**	**+0.3**
	0.4nm,0.7s,baz=236,slow=12,SNR=5.2						
SEY	**Seymchan**	**78.22**	**20**	LR	LR	04 09 55.6	
	comp=Z,3μm,21.2s,baz=148,slow=36						
BRTR	**Keskin Array B**	**79.12**	**312**	P	**P**	**03 34 49.1**	**-0.2**
	1.2nm,0.8s,baz=138,slow=6.9,SNR=7.3						
AKASG	**Malin Array Be**	**85.29**	**322**	P	**P**	**03 35 20.6**	**-0.5**
	0.8nm,0.4s,baz=83,slow=5.3,SNR=5.0						
MLR	**Muntele Rosu**	**86.12**	**316**	P	**P**	**03 35 26.6**	**+1.0**
	1.0nm,1.0s,baz=100,slow=0.9,SNR=6.2						
FINES	**FINESS Array B**	**89.75**	**332**	P	**P**	**03 35 42.2**	**-0.1**
	1.3nm,0.9s,baz=131,slow=5.3,SNR=5.5						
YKA	**Yellowknife Ar**	**117.26**	**19**	PKP	**PKPdf**	**03 41 28.2**	**-0.9**
	0.2nm,0.8s,baz=328,slow=2.2,SNR=3.8						
TXAR	**Lajitas Array**	**145.34**	**45**	PKPbc	**PKPab**	**03 42 23.9**	**+1.1**
	1.7nm,0.6s,baz=272,slow=1.4,SNR=21						
JCT	**Junction City**	**147.22**	**40**	*e*PKPbc	**PKPab**	**03 42 29.1**	**-0.8**

*ISCJB **30** 03:31:59.8±0.3,51°.53N±0°.02×16°.19E±0°.03,h0km, mb3.4/1, Error ellipse: s-maj=2.6km s-min=2.4km az=19.5*
*CSEM **30** 03:32:02.0±0.2,51°.50N×16°.16E,h2km,ML3.6/10, Error ellipse: s-maj=3.4km s-min=3.0km az=37.0*
*IDC **30** 03:32:02.9±0.7,51°.47N×16°.10E,h0km, mb3.3/1, mb1 3.3/8,mb1mx3.2/59,mbtmp3.2/8,ML2.9/7, Error ellipse: s-maj=13.9km s-min=7.3km az=107.0*
*BGR **30** 03:32:03.6±0.5,51°.47N×16°.17E,h1km,ML3.0/9, Error ellipse: s-maj=6.7km s-min=3.3km az=23.0*
*UPP **30** 03:32:03.6±3.2,51°.48N×15°.38E,h0km,ML1.7, Suspected explosion*

ISC 30 03:32:01.6±0.7,**51°.51N**±0°.03×**16°.15E**±0°.02,**h0**km,**n101,** σ1§**25**/156,**2D,Poland**

| Code

NKC				*e*PG	**Pg**	**03 32 52.6**	**-0.2**
NKC				*e*SG	**Sg**	**03 33 28.8**	**+1.3**
	comp=Z,48nm,0.4s						
NKC	**Novy Kostel**	**2.67 243**		Pn	**Pn**	**03 32 46.5**	**+0.5**
NKC	**Novy Kostel**	**2.67 243**		Pg	**Pg**	**03 32 52.6**	**-0.2**
NKC				Sg	**Sg**	**03 33 28.8**	**+1.3**
	comp=Z,48nm,0.4s						
KHC	**Kasperske Hory**	**2.90 216**		*e*PN	**Pn**	**03 32 49.1**	**0.0**
KHC				*e*PG	**Pb**	**03 32 55.6**	**+1.4**
KHC				*e*SN	**Sn**	**03 33 24.2**	**-0.5**
KHC				*e*SG	**Sg**	**03 33 34.5**	**-0.3**
	comp=Z,33nm,0.6s						
KHC	**Kasperske Hory**	**2.90 216**		Pn	**Pn**	**03 32 49.1**	**0.0**
MANZ	**Manzenberg**	**2.99 241**		Pn	**Pn**	**03 32 51.2**	**+0.9**
MANZ	**Manzenberg**	**2.99 241**		*e*Pn	**Pn**	**03 32 51.2**	**+0.9**
MOX	**Moxa**	**2.99 255**		Pn	**Pn**	**03 32 51.2**	**+0.9**
MOX	**Moxa**	**2.99 255**		*e*Pn	**Pn**	**03 32 51.2**	**+0.9**
ROTZ	**Rotzenmuhle**	**3.06 237**		Pn	**Pn**	**03 32 52.3**	**+1.1**
ROTZ	**Rotzenmuhle**	**3.06 237**		*e*Pn	**Pn**	**03 32 52.3**	**+1.1**
GEC2	**GERESS Array S**	**3.10 211**		Pn	**Pn**	**03 32 53.1**	**+1.2**
GEC2	**GERESS Array S**	**3.10 211**		*e*Pn	**Pn**	**03 32 53.1**	**+1.2**
GERES	**GERESS Array B**	**3.10 211**		Pn	**Pn**	**03 32 52.9**	**+0.9**
	comp=Z,1.1nm,0.3s,baz=29,slow=13,SNR=29						
GERES				Sn	**Sn**	**03 33 29.2**	**-0.5**
	comp=Z,2.0nm,0.3s,baz=28,slow=24,SNR=3.0						
GERES				Lg	Lg	03 33 38.6	
	comp=Z,3.6nm,0.3s,baz=34,slow=26,SNR=7.2						
SMOL	**Smolenice**	**3.12 164**		*e*Pg	**Pg**	**03 33 01.7**	**+0.4**
SMOL	**Smolenice**	**3.12 164**		*e*PG	**Pg**	**03 33 01.7**	**+0.4**
WET	**Wettzell**	**3.17 223**		Pn	**Pn**	**03 32 53.3**	**+0.6**
WET	**Wettzell**	**3.17 223**		*e*Pn	**Pn**	**03 32 53.3**	**+0.6**
LANS	**Liptovska Anna**	**3.18 137**		*e*Pg	**Pg**	**03 33 01.4**	**-1.2**
LANS	**Liptovska Anna**	**3.18 137**		*e*PG	**Pg**	**03 33 01.4**	**-1.2**
VYHS	**Vyhne**	**3.48 149**		*e*Pg	**Pg**	**03 33 08.5**	**+0.1**
VYHS	**Vyhne**	**3.48 149**		*e*	**Pn**	**03 32 56.8**	**-0.3**
VYHS	**Vyhne**	**3.48 149**		*e*PG	**Pg**	**03 33 08.5**	**+0.1**
CONA	**Conrad Observa**	**3.59 183**		*i* Pn	**Pn**	**03 32 59.7**	**+1.0**
	comp=Z,0.6nm,0.2s						
CONA				Sg	**Sg**	**03 33 54.4**	**-2.6**
	comp=Z,20nm,0.5s						
CONA	**Conrad Observa**	**3.59 183**		Pn	**Pn**	**03 32 59.7**	**+1.0**
	comp=Z,0.6nm,0.2s						
CONA				Sg	**Sg**	**03 33 54.4**	**-2.6**
	comp=Z,20nm,0.5s						
BSD	**Bornholm Skovb**	**3.68 349**		*i* P	**Pn**	**03 32 59.5**	**-0.2**
BSD				*e*S	**Sn**	**03 33 40.8**	**-3.0**
BSD	**Bornholm Skovb**	**3.68 349**		*e*P	**Pn**	**03 32 59.5**	**-0.2**
BSD				*e*S	**Sn**	**03 33 40.8**	**-3.0**
MOA	**Molln**	**3.87 199**		*i* Pn	**Pn**	**03 33 03.1**	**+0.8**
	comp=Z,0.9nm,0.2s						
MOA				*e*Sg	**Sg**	**03 34 04.6**	**-1.2**
	comp=Z,28nm,0.6s						
MOA	**Molln**	**3.87 199**		Pn	**Pn**	**03 33 03.1**	**+0.8**
	comp=Z,0.9nm,0.2s						
MOA				Sg	**Sg**	**03 34 04.6**	**-1.2**
	comp=Z,28nm,0.6s						
STHS	**Stebnicka Huta**	**3.87 121**		*e*Pg	**Pg**	**03 33 15.4**	**-0.4**
STHS	**Stebnicka Huta**	**3.87 121**		*e*PG	**Pg**	**03 33 15.4**	**-0.4**
KECS	**Kecovo**	**4.13 136**		*e*Pg	**Pg**	**03 33 20.3**	**-0.4**
KECS	**Kecovo**	**4.13 136**		*e*PG	**Pg**	**03 33 20.3**	**-0.4**
KECS				*e*SN	**Sg**	**03 34 19.7**	**+5.6**
KECS				*e*LG	Lg	03 34 22.1	
ARSA	**Arzberg**	**4.29 186**		*i* Pn	**Pn**	**03 33 10.8**	**+2.7**
	comp=Z,1.1nm,0.3s						
ARSA				Sg	**Sg**	**03 34 17.8**	**-1.5**
	comp=Z,34nm,0.7s						
ARSA	**Arzberg**	**4.29 186**		Pn	**Pn**	**03 33 10.8**	**+2.7**
	comp=Z,1.1nm,0.3s						
ARSA				Sg	**Sg**	**03 34 17.8**	**-1.5**
	comp=Z,34nm,0.7s						
CRVS	**Cervenica-Dubn**	**4.30 125**		*e*Pg	**Pg**	**03 33 23.9**	**-0.1**
CRVS	**Cervenica-Dubn**	**4.30 125**		*e*PG	**Pg**	**03 33 23.9**	**-0.1**
KOLS	**Kolonicke sedl**	**4.70 121**		*e*Pg	**Pg**	**03 33 34.5**	**+2.8**
KOLS	**Kolonicke sedl**	**4.70 121**		*e*	**Pn**	**03 33 13.2**	**-0.6**
KOLS	**Kolonicke sedl**	**4.70 121**		*e*PG	**Pg**	**03 33 34.5**	**+2.8**
BJUU	**Bjuv**	**4.93 339**		P	**Pn**	**03 33 15.9**	**-1.0**
BJUU				S	**Sn**	**03 34 11.1**	**-3.5**
BJUU	**Bjuv**	**4.93 339**		P	**Pn**	**03 33 15.9**	**-1.0**
BJUU				S	**Sn**	**03 34 11.1**	**-3.5**
FABU	**Falkenberg**	**5.85 341**		P	**Pn**	**03 33 29.0**	**-0.5**
FABU				S	**Sn**	**03 34 34.8**	**-2.5**
FABU	**Falkenberg**	**5.85 341**		P	**Pn**	**03 33 29.0**	**-0.5**
EKSU	**Eksjoe**	**6.09 356**		P	**Pn**	**03 33 33.1**	**+0.3**
EKSU	**Eksjoe**	**6.09 356**		P	**Pn**	**03 33 33.1**	**+0.3**
DAVOX	**Davos/Dischmat**	**6.27 223**		Pn	**Pn**	**03 33 36.2**	**+0.6**
	comp=Z,0.2nm,0.3s,baz=10.0,slow=17,SNR=1.7						
DAVOX				Lg	Lg	03 35 20.9	
	comp=Z,0.4nm,0.3s,baz=342,slow=20,SNR=2.5						
FKPU	**Falk**	**6.80 349**		P	**Pn**	**03 33 43.0**	**+0.4**
FKPU	**Falk**	**6.80 349**		P	**Pn**	**03 33 43.0**	**+0.4**
VIKU	**Vikbolandet**	**7.01 2**		P	**Pn**	**03 33 45.9**	**+0.5**
VIKU	**Vikbolandet**	**7.01 2**		P	**Pn**	**03 33 45.9**	**+0.5**
AKASG	**Malin Array Be**	**8.27 91**		Pn	**Pn**	**03 34 00.8**	**-2.0**
	comp=Z,1.0nm,0.3s,baz=281,slow=12,SNR=4.7						
HFS	**Hagfors**	**8.75 352**		Pn	**Pn**	**03 34 08.4**	**-0.9**
	comp=Z,0.1nm,0.3s,baz=161,slow=14,SNR=6.0						
FINES	**FINESS Array B**	**11.35 25**		Pn	**Pn**	**03 34 42.8**	**-2.0**
	comp=Z,0.1nm,0.3s,baz=205,slow=11,SNR=7.5						
FINES				Sn	Sn	03 36 43.9	-8.3
	comp=Z,0.1nm,0.3s,baz=227,slow=22,SNR=1.5						
ARCES	**ARCESS Array B**	**18.61 10**		P	**P**	**03 36 20.1**	**-0.1**
	comp=Z,0.1nm,0.3s,baz=193,slow=12,SNR=6.8						
YKA	**Yellowknife Ar**	**59.86 336**		P	**P**	**03 42 09.7**	**+1.3**
	comp=Z,0.2nm,0.5s,baz=26,slow=7.0,SNR=7.8						

GUC 30 03:32:01.2±0.3, 22°37S×70°41W, h55km±2km, ML3.5, 3C-4D, Near coast of northern Chile

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
PB04	**IPOC Station P**	**0.24**	**82**	*i* P	Pn	03 32 10.8	+0.2
PB04				*i* S	Sn	03 32 18.1	+0.7
PB04				AML	AML	03 32 20.8	
	comp=E,3μm,0.3s						
PB07	**IPOC Station P**	**0.80**	**37**	*i* P	Pn	03 32 17.1	+0.5
PB07				*e*S	Sn	03 32 29.1	+1.2
PB07				AML	AML	03 32 29.7	
	comp=N,4μm,0.5s						
PB06	**IPOC Station P**	**0.84**	**114**	*i* P	Pn	03 32 17.5	+0.4
PB06				*i* S	Sn	03 32 30.0	+1.2
PB06				AML	AML	03 32 30.8	
	comp=E,2μm,0.4s						
PB10	**IPOC Station P**	**1.15**	**187**	*i* P	Pn	03 32 19.1	-2.0
PB10				*i* S	Sn	03 32 33.0	-2.9
PB10				AML	AML	03 32 34.6	
	comp=E,3μm,0.4s						
PB09	**IPOC Station P**	**1.22**	**62**	*i* P	Pn	03 32 23.8	+1.6
PB09				*i* S	Sn	03 32 40.0	+2.2
PB09				AML	AML	03 32 42.0	
	comp=E,3μm,0.3s						
PATCX	**Punta Patache**	**1.56**	**9**	*i* P	Pn	03 32 26.0	-0.7
PATCX				*i* S	Sn	03 32 44.6	-1.2
PB12	**IPOC Station P**	**3.74**	**1**	*i* P	Pn	03 32 55.0	-1.5
PB12				*e*S	Sn	03 33 32.8	-6.6

*ISCJB **30** 03:32:22.4±0.7, 15°.13N±0°.05×42°.22E±0°.05, h8km, mb3.5/5, MS3.5/1, Error ellipse: s-maj=7.8km s-min=7.1km az=135.4*
*IDC **30** 03:32:22.5±1.3, 15°.13N×42°.31E, h0km, mb3.6/5, mb1 3.7/6, mb1mx3.4/65, mbtmp3.6/6, ML3.6/1, MS2.9/4, Ms1 2.9/4, ms1mx2.6/38, Error ellipse: s-maj=32.7km s-min=23.7km az=90.0*
*DHMR **30** 03:32:26.2±0.6, 14°.98N×42°.52E, h2km, 22km, ML3.9*
ISC 30 03:32:23.8±0.9, 15°13N±0°.07×42°28E±0°.07, h8km, n12, σ0§48/13, mb3.5/5, Western Arabian Peninsula

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
HAJJ	**Hajjah**	**1.39**	**66**	*i* P	**Pn**	**03 32 49.8**	**+0.1**
HAJJ				*i* S	**Sb**	**03 33 08.2**	**0.0**
HAJJ				AML	AML	03 33 25.9	
	comp=Z,2μm,0.5s						
UDYN	**Al 'Udayn**	**2.00**	**125**	*i* P	**Pn**	**03 32 57.7**	**-0.3**
UDYN				*i* S	**Sn**	**03 33 23.1**	**-0.3**
DHBB	**Dhamar BB**	**2.12**	**105**	*i* P	**Pn**	**03 33 00.3**	**+0.6**
DHBB				*i* S	**Sn**	**03 33 26.3**	**-0.1**
ATD	**Arta Tunnel**	**3.62**	**171**	Pn	**Pn**	**03 33 20.1**	**-0.2**
	comp=Z,5.5nm,0.3s,baz=90,slow=3.4,SNR=8.6						
ATD				Sn	**Sn**	**03 34 04.2**	**+0.9**
	comp=Z,7.6nm,0.3s,baz=227,slow=19,SNR=1.5						
ATD				LR	LR	03 34 26.7	
	comp=Z,41nm,20.8s,baz=312,slow=34						
WSAR	**Wadi Sarin**	**17.41**	**60**	LR	LR	03 43 49.9	
	comp=Z,53nm,19.6s,baz=244,slow=40						
MMAI	**Mount Meron Ar**	**18.87**	**342**	LR	LR	03 43 14.8	
	comp=Z,35nm,18.3s,baz=250,slow=34						
BRTR	**Keskin Array B**	**25.64**	**344**	P	**P**	**03 37 54.4**	**+0.3**
	comp=Z,0.7nm,1.0s,baz=148,slow=8.5,SNR=4.5						
TORD	**Torodi Ar. Bea**	**39.37**	**272**	P	**P**	**03 39 54.1**	**-0.1**
	comp=Z,0.6nm,0.8s,baz=81,slow=8.9,SNR=4.1						
GERES	**GERESS Array B**	**40.97**	**331**	P	**P**	**03 40 07.3**	**+0.1**
	comp=Z,1.0nm,0.7s,baz=140,slow=6.4,SNR=12						
MKAR	**Makanchi Array**	**45.84**	**38**	P	**P**	**03 40 46.5**	**+0.2**
	comp=Z,0.2nm,0.3s,baz=238,slow=7.0,SNR=5.5						
ZALV	**Zalesovo Beam**	**50.96**	**31**	P	**P**	**03 41 24.9**	**-0.9**
	comp=Z,0.6nm,0.5s,baz=264,slow=8.5,SNR=2.1						
NRIK	**Noril'sk**	**61.07**	**17**	LR	LR	04 11 45.7	
	comp=Z,38nm,20.1s,baz=104,slow=39						

ISC 30 03:33:22.0±1.1, 50°.06N±0°.05×19°.19E±0°.06, h5km, n5, σ0§76/10, 2D, Poland

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
CHZP	**Chorzow**	**0.27**	**331**	*e*Pg	**Pg**	**03 33 27.9**	**+0.8**
CHZP				*e*Sg	**Sg**	**03 33 29.5**	**-1.1**
LANS	**Liptovska Anna**	**0.93**	**169**	*e*PG	**Pg**	**03 33 40.2**	**+0.5**
LANS				*e*SG	**Sn**	**03 33 54.8**	**-0.6**
NIE	**Niedzica**	**0.96**	**131**	*e*Pg	**Pg**	**03 33 39.9**	**-0.5**
NIE				*e*Sg	**Sb**	**03 33 54.9**	**+0.7**
STHS	**Stebnicka Huta**	**1.48**	**115**	*e*PG	**Pn**	**03 33 49.0**	**-0.2**
STHS				*e*SN	**Sg**	**03 34 10.1**	**+0.7**
STHS				*e*LG	Lg	03 34 11.5	
VYHS	**Vyhne**	**1.58**	**189**	*e*PN	**Pn**	**03 33 50.4**	**-0.3**
VYHS				*e*SN	**Sb**	**03 34 12.5**	**+0.5**
VYHS				*e*LG	Lg	03 34 15.3	

*CSEM **30** 03:33:56.6±0.4, 37°.19N×35°.89E, h2km, MD2.4, Error ellipse: s-maj=9.8km s-min=7.3km az=70.0*
*ISK **30** 03:33:56.6, 37°.16N×35°.83E, h4km, MD2.4*
*ISCJB **30** 03:33:57.5±0.5, 37°.15N±0°.03×35°.87E±0°.03, h7km±6km, Error ellipse: s-maj=5.1km s-min=3.9km az=19.9*
*DDA **30** 03:33:59.8, 37°.10N×35°.67E, h7km, Md2.7*
ISC 30 03:33:57.3±1.2, 37°.15N±0°.03×35°.85E±0°.03, h13km±9km, n19, σ1§17/32, Turkey

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
CEYT	**Ceyhan**	**0.16**	**211**	*e*PG	**Pg**	**03 34 01.4**	**+0.3**
CEYT	**Ceyhan**	**0.16**	**211**	*e*Pg	**Pg**	**03 34 01.4**	**+0.3**
YURE	**YUREGIR**	**0.37**	**209**	*i* P	**Pb**	**03 34 05.6**	**-0.1**
YURE				*i* S	Sb	03 34 20.6	+9.2
YURE	**YUREGIR**	**0.37**	**209**	P	**Pb**	**03 34 05.6**	**-0.1**
YURE				S	Sb	03 34 20.6	+9.2
AKO	**Adana**	**0.45**	**314**	*i* P	**Pg**	**03 34 05.6**	**-0.6**
AKO				*i* S	**Sb**	**03 34 14.0**	**+0.2**
ANDN	**Andirin**	**0.58**	**42**	*i* P	**Pg**	**03 34 07.5**	**-1.3**
ANDN				*i* S	**Sb**	**03 34 19.0**	**+1.2**
ANDN	**Andirin**	**0.58**	**42**	P	**Pg**	**03 34 07.5**	**-1.3**
ANDN				S	**Sb**	**03 34 19.0**	**+1.2**
KARA	**Karaisali**	**0.65**	**280**	*e*PG	**Pg**	**03 34 08.7**	**-1.3**
KARA				*e*SG	**Sb**	**03 34 18.6**	**-0.8**
KARA	**Karaisali**	**0.65**	**280**	*e*Pg	**Pg**	**03 34 08.7**	**-1.3**
KARA				*e*Sg	**Sb**	**03 34 18.6**	**-0.8**
KAMA	**Osmaniye**	**0.65**	**86**	*i* P	**Pg**	**03 34 09.5**	**-0.6**
KAMA				*i* S	**Sb**	**03 34 20.4**	**+0.7**
TAHT	**Tahtakopru-Hat**	**0.82**	**161**	*e*PG	**Pb**	**03 34 13.2**	**-0.2**
TAHT				*e*SG	**Sb**	**03 34 25.2**	**+0.9**
TAHT	**Tahtakopru-Hat**	**0.82**	**161**	*e*Pg	**Pb**	**03 34 13.2**	**-0.2**
TAHT				*e*Sg	**Sb**	**03 34 25.2**	**+0.9**
HCB	**Kahramanmara˜**	**0.87**	**77**	*i* P	**Pg**	**03 34 12.1**	**-2.0**
HCB				*i* S	**Sb**	**03 34 26.4**	**+0.6**
GULE	**Gulek**	**0.87**	**279**	*i* S	**Sn**	**03 34 28.9**	**+0.8**
GULE	**Gulek**	**0.87**	**279**	S	**Sn**	**03 34 28.9**	**+0.8**
YAYL	**Yayladag**	**1.13**	**169**	*i* P	**Pg**	**03 34 17.1**	**-2.0**
YAYL				*i* S	**Sn**	**03 34 35.3**	**+0.9**
YAYL	**Yayladag**	**1.13**	**169**	P	**Pg**	**03 34 17.1**	**-2.0**
YAYL				S	**Sn**	**03 34 35.3**	**+0.9**
NIG	**Nigde**	**1.38**	**315**	*e*PN	**Pb**	**03 34 22.8**	**-0.3**
NIG				*e*SN	**Sn**	**03 34 42.8**	**+2.1**
NIG	**Nigde**	**1.38**	**315**	*e*Pn	**Pb**	**03 34 22.8**	**-0.3**
NIG				*e*Sn	**Sn**	**03 34 42.8**	**+2.1**

*NIED **30** 03:41:00, 37°.80N×143°.80E, h5km, Mw3.7 Best double couple: Mo3.55000×10^14 NP1:φ=37.00000°, δ21.00000°, λ=-83.00000°. NP2:φ=209.00000°, δ69.00000°, λ=-93.00000°.*
*IDC **30** 03:41:21.3±1.2, 37°.18N×144°.45E, h0km, mb3.6/4, mb1 3.9/6, mb1mx3.5/39, mbtmp3.6/6, ML3.2/2, MS2.8/2, Ms1 2.8/2, ms1mx2.4/59, Error ellipse: s-maj=48.7km s-min=22.6km az=126.0*
*ISCJB **30** 03:41:24.5±0.8, 37°.42N±0°.05×144°.05E±0°.07, h33km, mb3.6/4, MS3.6/1, Error ellipse: s-maj=8.2km s-min=6.9km az=43.9*
*JMA **30** 03:41:25.9±0.3, 37°.76N×143°.83E, h0km, M3.7*
ISC 30 03:41:25.4±1.0, 37°38N±0°.05×144°11E±0°.08, h35km, n18, σ2§14/24, mb3.6/4, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**2.43**	**297**	P	**Pn**	**03 42 02.5**	**-0.1**
JIO				S	**Sn**	**03 42 29.9**	**-1.2**
JFK	**Kawauchi**	**2.57**	**271**	P	Pn	03 42 08.2	+3.6
JMK	**Ichinoseki**	**2.77**	**306**	P	**Pn**	**03 42 07.8**	**+0.6**
JMK				*e*S	**Sn**	**03 42 37.3**	**-2.1**
JOU	**Okura**	**2.90**	**291**	P	**Pn**	**03 42 10.3**	**+1.3**
JFT	**Otama**	**3.00**	**274**	P	**Pn**	**03 42 11.9**	**+1.4**
JFT				*e*S	**Sn**	**03 42 45.2**	**-0.1**
JOM	**Ohasama**	**3.04**	**314**	P	**Pn**	**03 42 11.1**	**+0.1**
JOM				*e*S	**Sn**	**03 42 44.3**	**-2.0**
JTH	**Tanohata**	**3.10**	**326**	*e*S	**Sn**	**03 42 45.2**	**-2.5**
JYK	**Kaneyama**	**3.33**	**299**	P	**Pn**	**03 42 15.8**	**+0.8**
JRY	**Ryogami san**	**4.40**	**254**	P	**Pn**	**03 42 30.3**	**+0.6**
JRY				*e*S	**Sn**	**03 43 17.5**	**-2.2**
MJAR	**Matsushiro Arr**	**4.79**	**262**	Pn	**Pn**	**03 42 37.3**	**+2.2**
	1.1nm,0.3s,baz=89,slow=15,SNR=6.4						
MJAR				Sn	**Sn**	**03 43 30.4**	**+0.9**
	0.4nm,0.3s,baz=93,slow=27,SNR=6.1						
MJAR				LR	LR	03 45 07.9	
	comp=Z,25nm,21.6s,baz=85,slow=45						
MAT	**Matsushiro**	**4.80**	**262**	P	**Pn**	**03 42 37.6**	**+2.4**
MAT				S	**Sn**	**03 43 25.6**	**-3.9**
JNBK	**Urakawa-nobuka**	**5.01**	**348**	S	**Sn**	**03 43 31.4**	**-3.2**
JHJ	**Hachijo jima 2**	**5.53**	**221**	Pn	**Pn**	**03 42 45.5**	**+0.3**
	2.2nm,0.3s,baz=58,slow=19,SNR=2.1						
JHJ				Sn	**Sn**	**03 43 42.0**	**-5.4**
	3.0nm,0.3s,baz=72,slow=20,SNR=1.6						
ILAR	**Eielson Array**	**48.05**	**33**	P	**P**	**03 50 02.4**	**+1.4**
	0.6nm,0.9s,baz=269,slow=5.9,SNR=5.5						
WRA	**Warramunga Arr**	**57.75**	**191**	P	**P**	**03 51 12.3**	**-0.5**
	0.6nm,0.5s,baz=9.9,slow=7.1,SNR=10						
ASAR	**Alice Springs**	**61.47**	**191**	P	**P**	**03 51 39.5**	**+1.0**
	0.5nm,0.9s,baz=22,slow=10,SNR=5.3						
PDAR	**Pinedale Array**	**75.88**	**47**	P	**P**	**03 53 09.2**	**+0.7**
	0.1nm,0.4s,baz=296,slow=9.6,SNR=2.1						
GERES	**GERESS Array B**	**83.53**	**330**	LR	LR	04 33 18.3	
	comp=Z,26nm,18.9s,baz=129,slow=37						

*IDC **30** 03:48:57.0±2.9, 36°.73N×142°.63E, h0km, mb3.3/2, mb1 3.5/4, mb1mx3.2/38, mbtmp3.5/4, ML3.5/2, MS3.5/1, Ms1 3.5/1, ms1mx2.5/20, Error ellipse: s-maj=61.7km s-min=32.6km az=63.0*
*ISCJB **30** 03:48:59.3±0.9, 36°.66N±0°.05×142°.35E±0°.07, h15km, mb3.4/2, MS3.5/1, Error ellipse: s-maj=8.6km s-min=6.4km az=163.2*
*JMA **30** 03:48:59.6±0.3, 36°.68N×142°.34E, h20km±4km, M3.5*
ISC 30 03:49:00.3±1.3, 36°.66N±0°.05×142°.30E±0°.08, h15km, n16, σ1§22/23, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**1.28**	**290**	P	**Pn**	**03 49 22.6**	**-1.2**
ONAJ				*e*S	**Sb**	**03 49 40.2**	**-0.4**
JFK	**Kawauchi**	**1.34**	**302**	P	**Pn**	**03 49 23.5**	**-1.1**
JFK				*e*S	**Sn**	**03 49 41.1**	**-1.1**
JHO	**Hitachi**	**1.40**	**268**	P	**Pn**	**03 49 24.5**	**-0.8**
JMM	**Marumori**	**1.70**	**315**	P	**Pn**	**03 49 29.2**	**-0.3**
JFT	**Otama**	**1.79**	**299**	P	**Pn**	**03 49 30.6**	**-0.1**
JFT				S	**Sn**	**03 49 53.7**	**+0.5**
JIO	**Ouri**	**1.94**	**337**	P	**Pn**	**03 49 32.7**	**-0.1**
JIO				*e*S	**Sn**	**03 49 57.2**	**+0.3**
JOU	**Okura**	**2.14**	**323**	P	**Pn**	**03 49 36.0**	**+0.4**
JOU				*e*S	**Sn**	**03 50 01.7**	**-0.2**
BSO1	**Boso 1**	**2.27**	**209**	P	**Pn**	**03 49 37.4**	**+0.5**
JAG	**Ashikaga**	**2.31**	**265**	P	**Pn**	**03 49 38.0**	**+0.2**
JMK	**Ichinoseki**	**2.44**	**340**	P	**Pn**	**03 49 40.1**	**+0.5**
MJAR	**Matsushiro Arr**	**3.30**	**269**	Pn	**Pn**	**03 49 52.7**	**+1.2**
	2.9nm,0.3s,baz=97,slow=9.2,SNR=27						
MJAR				Sn	**Sn**	**03 50 31.6**	**+1.2**
	1.0nm,0.3s,baz=84,slow=13,SNR=4.5						
MAT	**Matsushiro**	**3.30**	**269**	P	**Pn**	**03 49 53.1**	**+1.7**
MAT				S	**Sn**	**03 50 31.4**	**+1.0**
JHJ	**Hachijo jima 2**	**4.10**	**211**	Pn	**Pn**	**03 50 04.2**	**+1.8**
	12nm,0.3s,baz=72,slow=20,SNR=2.3						
JHJ				Sn	**Sn**	**03 50 46.4**	**-3.7**
	10nm,0.3s,baz=55,slow=18,SNR=2.1						
MKAR	**Makanchi Array**	**44.92**	**303**	P	**P**	**03 57 14.8**	**+0.4**
	0.2nm,0.3s,baz=92,slow=9.5,SNR=2.4						
LEM	**Lembang**	**54.10**	**224**	LR	LR	04 20 15.3	
	comp=Z,42nm,18.8s,slow=35						
WRA	**Warramunga Arr**	**56.80**	**189**	P	**P**	**03 58 43.6**	**-0.4**
	0.3nm,1.0s,baz=6.1,slow=8.4,SNR=3.0						

*IDC **30** 03:51:07.9±0.9, 37°.82N×144°.49E, h0km, mb3.8/11, mb1 4.0/16, mb1mx3.9/36, mbtmp3.8/16, ML3.8/5, MS2.7/5, Ms1 2.8/5, ms1mx2.5/63, Error ellipse: s-maj=23.8km s-min=16.6km az=144.0*
*ISCJB **30** 03:51:11.4±0.5, 37°.94N±0°.03×144°.34E±0°.04, h33km, mb4.0/17, MS2.6/2, Error ellipse: s-maj=5.2km s-min=3.9km az=160.6*
*NEIC **30** 03:51:11.0±3.0, 37°.85N×144°.51E, h21km±21km, mb4.2/7, Error ellipse: s-maj=13.6km s-min=7.7km az=126.0*
*JMA **30** 03:51:12.1±0.2, 37°.98N×144°.29E, h39km, M4.4*
ISC 30 03:51:13.2±0.7, 37°.92N±0°.05×144°.39E±0°.06, h35km, n56, σ1§38/63, mb4.0/17, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
OFUJ	**Ofunato**	**2.43**	**299**	P	**Pn**	**03 51 49.3**	**-1.1**
OFUJ				S	**Sn**	**03 52 16.6**	**-2.3**
JIO	**Ouri**	**2.45**	**284**	S	**Sn**	**03 52 17.3**	**-2.2**
JMK	**Ichinoseki**	**2.69**	**294**	P	**Pn**	**03 51 53.6**	**-0.4**
JMK				S	**Sn**	**03 52 24.4**	**-1.0**
JTH	**Tanohata**	**2.82**	**317**	P	**Pn**	**03 51 54.6**	**-1.2**
JTH				*e*S	**Sn**	**03 52 27.2**	**-1.3**
JFK	**Kawauchi**	**2.84**	**260**	P	**Pn**	**03 51 54.6**	**-1.5**
JFK				S	**Sn**	**03 52 26.5**	**-2.6**
JMM	**Marumori**	**2.84**	**270**	P	**Pn**	**03 51 55.3**	**-0.8**
JMM				*e*S	**Sn**	**03 52 26.9**	**-2.2**
JOM	**Ohasama**	**2.88**	**304**	P	**Pn**	**03 51 55.9**	**-0.7**
JOM				S	**Sn**	**03 52 28.6**	**-1.3**
JOU	**Okura**	**2.97**	**280**	P	**Pn**	**03 51 57.8**	**-0.1**
JOU				*e*S	**Sn**	**03 52 31.4**	**-0.8**
JFT	**Otama**	**3.23**	**264**	P	**Pn**	**03 52 01.5**	**0.0**
JFT				S	**Sn**	**03 52 37.7**	**-1.1**
JRG	**Rokugo**	**3.29**	**298**	P	**Pn**	**03 52 02.6**	**+0.4**
JRG				*e*S	**Sn**	**03 52 39.8**	**-0.3**
JANG	**Nango**	**3.32**	**319**	P	**Pn**	**03 52 01.8**	**-0.8**
JYK	**Kaneyama**	**3.32**	**289**	P	**Pn**	**03 52 02.4**	**-0.2**
JYK				S	**Sn**	**03 52 40.4**	**-0.4**
JTM	**Tenmabayashi**	**3.85**	**319**	P	**Pn**	**03 52 09.4**	**-0.5**
JTM				S	**Sn**	**03 52 50.9**	**-3.1**
ERM	**Erimo**	**4.20**	**347**	*e*Pn	**Pn**	**03 52 13.9**	**-0.8**
ERM				*e*Sn	**Sn**	**03 53 02.6**	**+0.1**
JNBK	**Urakawa-nobuka**	**4.54**	**344**	P	**Pn**	**03 52 18.2**	**-1.1**
JNBK				S	**Sn**	**03 53 08.7**	**-2.1**
JKB	**Kayabe**	**4.73**	**328**

ms1mx3.3/37, Error ellipse: s-maj=163.1km s-min=31.7km az=153.0, South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAR	**Rarotonga**	**15.79**	**82**	LR	LR	04 00 24.3	
	comp=Z,105nm,21.2s,baz=258,slow=29						
DZM	**Mont Dzumac**	**15.80**	**275**	LR	LR	04 00 46.0	
	comp=Z,86nm,18.5s,baz=262,slow=31						
PPT	**Papeete**	**26.05**	**80**	LR	LR	04 06 33.0	
	comp=Z,52nm,19.4s,baz=316,slow=32						
STKA	**Stephens Creek**	**37.48**	**249**	P	P	03 59 56.3	+1.1
	1.2nm,0.8s,baz=111,slow=14,SNR=3.0						
STKA				LR	LR	04 14 03.3	
	comp=Z,220nm,18.1s,baz=122,slow=34						
ASAR	**Alice Springs**	**45.06**	**260**	P	P	04 00 56.3	-1.3
	0.3nm,0.3s,baz=96,slow=7.9,SNR=8.7						
ASAR				LR	LR	04 18 56.4	
	comp=Z,121nm,18.5s,baz=147,slow=35						
WRA	**Warramunga Arr**	**45.51**	**265**	P	P	04 01 00.9	-0.3
	0.3nm,0.3s,baz=102,slow=8.3,SNR=16						
PETK	**Petropavlovsk-**	**80.33**	**345**	LR	LR	04 37 01.6	
	comp=Z,24nm,19.1s,baz=150,slow=33						
PLCA	**Paso Flores**	**85.67**	**133**	LR	LR	04 38 29.3	
	comp=Z,76nm,18.1s,baz=197,slow=32						
ANMO	**Albuquerque**	**88.79**	**51**	LR	LR	04 37 54.2	
	comp=Z,25nm,21.6s,baz=264,slow=31						
PDAR	**Pinedale Array**	**90.86**	**43**	P	P	04 05 44.8	-0.5
	0.2nm,0.3s,baz=249,slow=15,SNR=2.0						
NNA	**Nana**	**93.78**	**105**	LR	LR	04 40 53.0	
	comp=Z,20nm,18.1s,baz=190,slow=31						
NB2	**NORSAR Subarra**	**142.95**	**354**	PKP	PKPdf	04 12 12.9	-1.9
	comp=Z,0.6nm,0.8s,baz=17,slow=3.4						
NOA	**NORSAR Array B**	**142.95**	**354**	PKP	PKPdf	04 12 13.5	-1.3
	comp=Z,0.3nm,0.8s,baz=19,slow=2.8,SNR=4.8						
AKASG	**Malin Array Be**	**147.01**	**329**	PKPbc	PKPdf	04 12 22.6	+0.5
	comp=Z,0.2nm,0.3s,baz=48,slow=2.8,SNR=2.0						
BRTR	**Keskin Array B**	**150.35**	**308**	PKPbc	PKPbc	04 12 33.6	+0.4
	comp=Z,0.5nm,0.8s,baz=69,slow=6.8,SNR=4.3						
BRTR				PKPab	PKPab	04 12 40.4	+0.8
	comp=Z,0.6nm,0.7s,baz=92,slow=3.8,SNR=4.8						

JMA 30 04:06:03.0±0.2, 39.62N×143.78E, h13km, M3.6, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JTH	**Tanohata**	**1.51**	**283**	P	Pn	04 06 29.9	+0.1
JTH				*e*S	Sb	04 06 49.7	-0.2
MIYJ	**Miyakonagasawa**	**1.52**	**269**	P	Pn	04 06 30.0	+0.2
OFUJ	**Ofunato**	**1.72**	**252**	P	Pn	04 06 33.1	+0.4
JOM	**Ohasama**	**1.93**	**266**	P	Pn	04 06 36.4	+0.9
JMK	**Ichinoseki**	**2.10**	**252**	P	Pn	04 06 38.7	+0.9
JRG	**Rokugo**	**2.44**	**266**	P	Pn	04 06 44.4	+1.8
JAH	**Hinai**	**2.48**	**284**	P	Pn	04 06 44.8	+1.7
JOU	**Okura**	**2.73**	**244**	P	Pn	04 06 48.3	+1.7
JYK	**Kaneyama**	**2.75**	**256**	P	Pn	04 06 48.4	+1.7

IDC 30 04:07:12.4±46.0, 16.93S×171.93W, h0km, mb3.9/3, mb1 4.1/3, mb1mx3.6/35, mbtmp3.9/3, Error ellipse: s-maj=897.8km s-min=185.1km az=80.0, Samoa Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
STKA	**Stephens Creek**	**44.53**	**242**	P	P	04 15 26.6	+0.6
	0.8nm,0.5s,baz=86,slow=9.2,SNR=4.2						
WRA	**Warramunga Arr**	**50.89**	**258**	P	P	04 16 14.9	-0.8
	0.3nm,0.5s,baz=98,slow=6.8,SNR=10						
ASAR	**Alice Springs**	**51.00**	**253**	P	P	04 16 16.5	0.0
	2.6nm,0.6s,baz=89,slow=8.5,SNR=46						

*NNC **30** 04:09:12.5±3.0, 36.75N×70.65E, h0km, mb3.9, mpv3.6, Error ellipse: s-maj=23.7km s-min=15.2km az=3.0*
*IDC **30** 04:09:14.3±8.3, 36.35N×71.37E, h65km±56km, mb2.9/1, mb1 3.4/7, mb1mx3.1/59, mbtmp3.6/7, ML3.4/6, MS2.8/1, Ms1 2.8/1, ms1mx2.2/24, Error ellipse: s-maj=74.1km s-min=54.1km az=153.0*

ISC 30 04:09:11.7±2.2, 36.4N±0.2×71.0E±0.2, h35km, n16, σ1s56/14, 7C-7D, Hindu Kush region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZET	**Dzherino**	**2.99**	**326**	⇑Pg	Pn	04 09 57.7	+1.0
	19nm,0.3s						
DZET				⇑Lg	Lg	04 10 33.6	
	164nm,0.6s						
SFK	**Sufi-Kurgan**	**4.16**	**28**	⇓Pn	Pn	04 10 16.5	+3.6
	2.6nm,0.3s						
SFK				⇑Lg	Lg	04 11 16.6	
	8.7nm,0.3s						
MNAS	**Manas**	**6.24**	**10**	⇓Pn	**Pn**	**04 10 41.0**	**-0.4**
	2.8nm,0.6s						
MNAS				⇑Sn	**Sn**	**04 11 50.2**	**-1.3**
	3.9nm,0.5s						
KK31	**Karatay Array**	**6.75**	**357**	⇓Pn	Pn	04 10 47.1	-1.3
	0.6nm,0.2s,baz=179,slow=13,SNR=43						
KK31				⇑Sn	**Sn**	**04 12 02.2**	**-1.8**
	5.3nm,0.5s,baz=173,slow=22						
KK31				⇓Lg	Lg	04 12 33.4	
	7.0nm,0.7s,baz=168,slow=26,SNR=6.0						
AAK	**Ala-Archa**	**6.83**	**22**	P	**Pn**	**04 10 50.8**	**+1.2**
	1.1nm,0.3s,baz=196,slow=6.0,SNR=9.4						
AAK				S	**Sn**	**04 12 06.7**	**+0.4**
	baz=263,slow=17,SNR=2.8						
AAK	**Ala-Archa**	**6.83**	**22**	⇓Pn	**Pn**	**04 10 50.5**	**+0.8**
	2.1nm,0.5s						
AAK				⇓Sn	**Sn**	**04 12 08.3**	**+2.1**
	4.5nm,0.7s						
TKM2	**Tokmak 2**	**7.46**	**27**	⇓Pn	**Pn**	**04 10 59.3**	**+1.1**
	8.6nm,0.7s						
GEYT	**Alibeck**	**10.39**	**283**	LR	LR	04 16 57.3	
	comp=Z,46nm,19.3s,baz=230,slow=43						
MKAR	**Makanchi Array**	**13.42**	**35**	P	**Pn**	**04 12 19.2**	**-0.3**
	0.1nm,0.3s,baz=222,slow=14,SNR=5.4						
AB31	**Akbulak array**	**15.21**	**331**	⇑P	Pn	04 12 37.6	-6.1
	0.1nm,0.2s,baz=168,slow=11,SNR=8.7						
KURBB	**Kurchatov Arra**	**15.27**	**19**	P	**Pn**	**04 12 46.1**	**+1.6**
	0.1nm,0.3s,baz=207,slow=10,SNR=7.2						
BVAR	**Borovoye Array**	**16.68**	**359**	P	**Pn**	**04 13 02.9**	**+0.3**
	0.2nm,0.3s,baz=161,slow=10,SNR=5.2						
AKTO	**Aktyubinsk**	**16.90**	**330**	P	**Pn**	**04 13 08.0**	**+2.6**
	0.3nm,0.3s,baz=136,slow=17,SNR=5.3						
AKTO	**Aktyubinsk**	**16.90**	**330**	⇑P	Pn	04 13 04.1	-1.3
	1.7nm,0.7s						
ZALV	**Zalesovo Beam**	**20.05**	**24**	P	**P**	**04 13 39.7**	**-2.0**
	0.7nm,0.3s,baz=214,slow=11,SNR=9.5						
YKA	**Yellowknife Ar**	**81.39**	**3**	P	**P**	**04 21 23.8**	**-0.7**
	0.1nm,0.5s,baz=351,slow=5.1,SNR=5.4						

*ISCJB **30** 04:17:15.1±0.4, 33.22N±0.02×116.03W±0.02, h1km±4km, Error ellipse: s-maj=3.4km s-min=3.0km az=158.8*
*NEIC **30** 04:17:16.5, 33.23N×116.05W, h9km, ML3.0(PAS), After PAS.*
*ECX **30** 04:17:16.8±0.5, 33.22N×116.04W, h4km, MD2.8, ML2.9*

ISC 30 04:17:14.8±1.1, 33.25N±0.02×116.09W±0.02, h4km±11km, n36, σ0s73/52, 1C-4D, Southern California

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ERRC	**Elmore Ranch**	**0.26**	**122**	⇓*i*P	**Pb**	**04 17 21.1**	**-0.9**
SWSC	**Sam W. Stewart**	**0.40**	**142**	⇓*i*P	**Pg**	**04 17 22.9**	**+0.5**
SWSC	**Sam W. Stewart**	**0.40**	**142**	P	**Pg**	**04 17 22.9**	**+0.5**
	baz=326,SNR=109						
SWSC				S	**Sg**	**04 17 27.8**	**+0.2**
	baz=326						
MONP2	**Monument Peak**	**0.46**	**218**	P	**Pb**	**04 17 24.9**	**-0.6**
	baz=41,SNR=55						
MONP2				S	**Sg**	**04 17 30.6**	**+0.9**
	baz=41						
PFO	**Pinyon Flats O**	**0.47**	**319**	P	**Pb**	**04 17 25.9**	**+0.2**
	baz=136,SNR=59						
PFO				S	**Sb**	**04 17 32.6**	**-0.4**
	baz=136						
PFO	**Pinyon Flats O**	**0.47**	**319**	*e*Pg	**Pb**	**04 17 25.5**	**-0.2**
PFO				*e*Sg	**Sb**	**04 17 32.1**	**-0.9**
COK	**Cook Ranch**	**0.50**	**143**	⇓*i*P	**Pb**	**04 17 25.4**	**-0.7**
RMX	**La Rumorosa**	**0.65**	**180**	*e*P	**Pg**	**04 17 27.1**	**-0.2**
RMX				*i* S	**Sg**	**04 17 35.4**	**-0.3**
RMX				AML	AML	04 17 37.0	
	comp=N,652nm,0.2s						
BC3	**Big Chuckawall**	**0.66**	**53**	P	**Pg**	**04 17 28.2**	**+0.8**
	baz=231,SNR=64						
BC3				S	**Sg**	**04 17 37.3**	**+1.2**
	baz=231						
SGL	**Mount Signal**	**0.68**	**153**	⇓*i*P	**Pg**	**04 17 27.8**	**+0.1**
BELC	**Belle Mtn. Jos**	**0.75**	**6**	P	**Pb**	**04 17 30.5**	**0.0**
	baz=183,SNR=25						
BELC				S	**Sb**	**04 17 41.3**	**+0.2**
	baz=183						
BAR	**Barrett**	**0.76**	**221**	*e*P	**Pb**	**04 17 30.1**	**-0.3**
SDRC	**San Diego Road**	**0.89**	**235**	*e*P	**Pb**	**04 17 32.5**	**-0.2**
109C	**Camp Elliot, M**	**0.93**	**247**	P	**Pb**	**04 17 33.6**	**+0.2**
	baz=67,SNR=20						
109C				S	**Sb**	**04 17 45.5**	**-0.6**
	baz=67						
MURC	**Murrieta**	**0.99**	**291**	P	**Pn**	**04 17 35.2**	**-0.4**
	baz=110,SNR=51						
CPBX	**Cerro Prieto**	**1.06**	**142**	*e*S	**Sg**	**04 17 48.2**	**-0.7**
CPBX				⇑*e*		04 17 50.5	
CPBX				AML	AML	04 17 50.5	
	comp=E,1μm,0.2s						
GLA	**Glamis**	**1.07**	**100**	P	**Pg**	**04 17 33.8**	**-1.5**
	baz=282,SNR=31						
IRM	**Iron Mountain**	**1.19**	**41**	P	**Pg**	**04 17 37.2**	**-0.4**
	baz=220,SNR=29						
IRM				S	**Sg**	**04 17 53.2**	**0.0**
	baz=220						
BBRC	**Big Bear Solar**	**1.22**	**326**	P	**Pn**	**04 17 39.4**	**+0.6**
	baz=144,SNR=15						
BBRC				S	**Sn**	**04 17 56.1**	**+0.2**
	baz=144						
Y12C	**Blythe**	**1.40**	**69**	P	**Pn**	**04 17 38.9**	**-2.1**
	baz=249,SNR=10.0						
GMRC	**Granite Mounta**	**1.56**	**13**	P	**Pg**	**04 17 45.0**	**+0.2**
	baz=192,SNR=24						
HEC	**Hector,Ludlow**	**1.58**	**353**	Pb	**Pg**	**04 17 45.8**	**+0.7**
	baz=171,SNR=21						
ECNX	**Esteban Cantu**	**1.65**	**195**	*e*P	**Pn**	**04 17 44.6**	**0.0**
ZAX	**El Zacaton**	**1.74**	**185**	*e*P	**Pn**	**04 17 46.5**	**+0.6**
ZAX				AML	AML	04 18 12.1	
	comp=E,101nm,0.4s						
PDMCI	**Parker Dam,Lak**	**1.93**	**57**	S	**Sb**	**04 18 14.4**	**-0.4**
	baz=237						
NEE2	**Needles Airpor**	**1.94**	**38**	S	**Sb**	**04 18 15.9**	**+0.7**
	baz=218						
CIS	**Catalina Islan**	**1.95**	**275**	S	**Sg**	**04 18 17.2**	**-0.1**
	baz=94						
PASC	**Pasadena Art C**	**1.98**	**298**	*e*Pn	**Pb**	**04 17 50.4**	**-0.8**
PASC				*e*Sg	**Sg**	**04 18 17.9**	**-0.4**
ECBX	**El Chinero**	**1.98**	**154**	*e*P	**Pn**	**04 17 49.7**	**+0.7**
ECBX				*e*S	**Sn**	**04 18 15.1**	**+0.8**
ECBX				AML	AML	04 18 16.4	
	comp=E,91nm,0.4s						
EDW2	**Edwards Air Fo**	**2.27**	**316**	Pb	**Pg**	**04 17 58.4**	**+0.2**
	baz=135,SNR=11						
EDW2				Sb	**Sg**	**04 18 27.3**	**-0.3**
	baz=135						
LRMC	**Laurel Mtn Rad**	**2.58**	**330**	Sb	**Sg**	**04 18 38.1**	**+0.3**
	baz=148						
MPMC	**Manual Prospec**	**3.03**	**338**	Pb	**Pg**	**04 18 12.0**	**-0.8**
	baz=157						
214A	**Organ Pipe Nat**	**3.05**	**114**	*e*Pn	**Pn**	**04 18 03.9**	**+0.1**
214A				*e*Pg	**Pg**	**04 18 12.5**	**-0.7**
214A				*e*Sg	**Sb**	**04 18 49.6**	**+2.4**
DAC	**Darwin (Calif)**	**3.26**	**338**	*e*Pg	**Pg**	**04 18 17.1**	**-0.2**
DAC				*e*Sg	**Sg**	**04 18 59.7**	**+0.2**
WUAZ	**Wupatki**	**4.50**	**59**	*e*Pn	**Pn**	**04 18 24.4**	**+0.5**
TUC	**Tucson**	**4.56**	**100**	*e*Pn	**Pn**	**04 18 24.8**	**+0.1**

JMA 30 04:23:00.7, 37.80N×140.00E, h9km±1km, M2.1, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFT	**Otama**	**0.39**	**136**	P	Pg	04 23 08.3	0.0
JFT				*i* S	Sg	04 23 13.3	-0.1
JYS	**Shirataka**	**0.42**	**7**	S	Sg	04 23 15.4	+0.8
JFY	**Yanaizu**	**0.46**	**211**	S	Sg	04 23 15.5	-0.1
JNS	**Sasagawa**	**0.54**	**272**	P	Pg	04 23 11.2	0.0
JNS				S	Sg	04 23 18.2	-0.1
JMM	**Marumori**	**0.63**	**84**	P	Pg	04 23 12.7	-0.2

IDC 30 04:23:49.8±1.6, 37.73N×140.64E, h0km, mb3.4/3, mb1 3.6/4, mb1mx3.3/53, mbtmp3.2/4, ML2.6/1, Error ellipse: s-maj=62.3km s-min=29.3km az=125.0, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MAT	**Matsushiro**	**2.27**	**239**	P	Pn	04 24 28.6	-0.1
MAT				S	Sg	04 25 07.0	+4.1
MJAR	**Matsushiro Arr**	**2.27**	**239**	Pn	Pn	04 24 28.3	-0.3
	1.6nm,0.3s,baz=98,slow=11,SNR=12						
WRA	**Warramunga Arr**	**57.67**	**187**	P	P	04 33 42.2	+0.2
	0.7nm,1.1s,baz=11,slow=7.5,SNR=4.9						
ASAR	**Alice Springs**	**61.40**	**187**	P	P	04 34 07.5	-0.2
	0.5nm,0.8s,baz=12,slow=4.9,SNR=4.4						
YKA	**Yellowknife Ar**	**63.52**	**30**	P	P	04 34 21.5	0.0
	0.1nm,0.7s,baz=299,slow=7.7,SNR=2.4						

IDC 30 04:26:03.0±5.2, 16.75N×85.41W, h0km, mb3.1/4, mb1 3.7/6, mb1mx3.4/50, mbtmp3.4/6, ML3.6/2, MS3.1/2, Ms1 3.0/2, ms1mx2.4/15, Error ellipse: s-maj=95.0km s-min=51.5km az=165.0, North of Honduras

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TEIG	**Tepich**	**4.40**	**322**	Pn	Pn	04 27 09.5	-1.6
	6.7nm,0.3s,baz=270,slow=23,SNR=47						
TEIG				Sn	Sn	04 27 52.9	-10
	7.2nm,0.3s,baz=14,slow=21,SNR=6.6						
CMIG	**Matias Romero**	**9.07**	**274**	Pn	Pn	04 28 13.4	-1.9
	0.3nm,0.3s,baz=85,slow=12,SNR=4.0						
TXAR	**Lajitas Array**	**20.92**	**310**	P	P	04 30 47.6	+0.2
	0.5nm,0.7s,baz=126,slow=10,SNR=8.1						
SADO	**Sadowa**	**28.43**	**9**	LR	LR	04 43 13.2	
	comp=Z,32nm,19.2s,baz=339,slow=36						
ULM	**Lac du Bonnet**	**34.47**	**348**	LR	LR	04 46 58.4	
	comp=Z,28nm,19.4s,baz=340,slow=36						
NVAR	**Mina Array Bea**	**35.99**	**313**	P	P	04 33 07.7	+1.7
	0.2nm,0.3s,baz=114,slow=11,SNR=2.9						
YKA	**Yellowknife Ar**	**50.06**	**343**	P	P	04 34 59.9	+0.7
	0.1nm,0.5s,baz=137,slow=7.9,SNR=3.9						
ILAR	**Eielson Array**	**62.94**	**335**	P	P	04 36 29.7	-1.3
	0.2nm,0.5s,baz=91,slow=7.2,SNR=3.5						

IDC 30 04:28:11.7±24.0, 24.12S×179.66E, h604km±251km, mb3.2/4, mb1 3.4/4, mb1mx2.9/36, mbtmp4.3/4, Error ellipse: s-maj=179.9km s-min=83.8km az=83.0, South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CTA	**Charters Tower**	**31.17**	**271**	P	P	04 33 43.9	+0.4
	6.4nm,0.4s,baz=92,slow=11,SNR=17						
STKA	**Stephens Creek**	**34.36**	**248**	P	P	04 34 09.6	-0.5
	2.0nm,0.4s,baz=89,slow=10,SNR=11						
ASAR	**Alice Springs**	**41.70**	**261**	P	P	04 35 09.5	-0.1
	0.6nm,0.4s,baz=92,slow=7.1,SNR=12						
WRA	**Warramunga Arr**	**42.09**	**266**	P	P	04 35 12.5	-0.1
	1.3nm,0.3s,baz=97,slow=8.3,SNR=67						
HFS	**Hagfors**	**142.70**	**348**	PKP	PKPdf	04 46 36.2	-0.5
	0.4nm,0.4s,baz=9.9,slow=3.4,SNR=5.8						

*NIED **30** 04:30:00, 35.60N×135.70E, h340km, Mw3.9 Best double couple: M0 7.63000×10^14 NP1:φs190.00000°, δ52.00000°, λ-154.00000°. NP2:φs83.00000°, δ70.00000°, λ-41.00000°.*
*ISCJB **30** 04:30:23.9±0.3, 35.56N±0.06×135.72E±0.06, h354km±3km, mb3.2/13, Error ellipse: s-maj=9.1km s-min=7.1km az=156.9*
*JMA **30** 04:30:24.5±0.2, 35.56N×135.73E, h350km±2km, M3.6*
*IDC **30** 04:30:24.9±0.7, 35.46N×135.74E, h357km±8km, mb3.1/13, mb1 3.2/20, mb1mx3.1/70, mbtmp3.8/20, Error ellipse: s-maj=12.9km s-min=10.2km az=56.0*

ISC 30 04:30:24.7±0.6, 35.54N±0.07×135.72E±0.05, h349km±5km, n43, σ0s91/53, mb3.3/13, Western Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFM	**Mihama**	**0.22**	**94**	P	**Pn**	**04 31 08.1**	**-0.2**
JFM				S	S	04 31 37.2	-6.1
JWT	**Wachi**	**0.37**	**225**	P	**Pn**	**04 31 08.7**	**+0.1**
JWT				S	**S**	**04 31 42.8**	**-0.9**
JGM	**Miyama**	**0.83**	**79**	P	**Pn**	**04 31 09.6**	**-0.1**
JGM				S	**S**	**04 31 45.3**	**-0.4**
JKG	**Kaga**	**0.89**	**34**	P	**Pn**	**04 31 09.9**	**+0.2**
JKG				*e*S	**S**	**04 31 45.0**	**-0.9**
JWY	**Kouya**	**1.33**	**184**	P	**Pn**	**04 31 11.9**	**0.0**
JIE	**Ise**	**1.41**	**144**	P	**Pn**	**04 31 12.4**	**+0.2**
JIE				S	**S**	**04 31 48.4**	**-1.9**
JWZ	**Kozaga**	**2.01**	**180**	P	**Pn**	**04 31 15.6**	**-0.4**
JAI	**Aioi**	**2.04**	**211**	P	**Pn**	**04 31 16.3**	**+0.1**
TTO1	**TONANKAI O.B.S**	**2.11**	**155**	P	**Pn**	**04 31 17.4**	**+1.1**
JHS	**Saijyo**	**2.20**	**256**	P	**Pn**	**04 31 17.6**	**+0.3**
MAT	**Matsushiro**	**2.25**	**63**	P	**Pn**	**04 31 16.8**	**-0.8**
MAT				*e*S	**S**	**04 32 00.8**	**+0.6**
MAT	**Matsushiro**	**2.25**	**63**	P	**Pn**	**04 31 17.9**	**+0.3**
MJAR	**Matsushiro Arr**	**2.25**	**63**	P	**Pn**	**04 31 17.9**	**+0.2**
	1.7nm,0.3s,baz=255,slow=8.3,SNR=9.7						
JYN	**Shimob**	**2.31**	**90**	P	**Pn**	**04 31 17.7**	**-0.5**
TK02	**Tokai 2**	**2.32**	**133**	P	**Pn**	**04 31 18.6**	**+0.7**
JSZ	**Suzu**	**2.32**	**34**	P	**Pn**	**04 31 18.2**	**+0.2**
JMN	**Monobe**	**2.36**	**220**	P	**Pn**	**04 31 18.9**	**+0.3**
JRY	**Ryogami san**	**2.63**	**79**	P	**Pn**	**04 31 20.9**	**+0.2**
JRY				*e*S	**S**	**04 32 05.8**	**0.0**
JOD2	**Odawara 2**	**2.77**	**95**	P	**Pn**	**04 31 22.5**	**+0.6**
JOD2				*e*S	**S**	**04 32 09.9**	**+2.0**
JHT	**Toyohira**	**2.84**	**253**	P	**Pn**	**04 31 23.0**	**+0.4**
JAG	**Ashikaga**	**3.15**	**73**	P	**Pn**	**04 31 24.0**	**-1.3**
JAG				*e*S	**S**	**04 32 11.5**	**-2.6**
JSD	**Sado**	**3.22**	**39**	P	**Pn**	**04 31 25.9**	**+0.1**
JTO	**Tosashimizu**	**3.61**	**223**	P	**Pn**	**04 31 29.7**	**0.0**
JHJ	**Hachijo jima 2**	**4.14**	**125**	P	**Pn**	**04 31 37.1**	**+2.0**
	9.1nm,0.3s,baz=329,slow=19,SNR=3.0						
JHJ				S	**S**	**04 32 32.9**	**+1.0**
	11nm,0.3s,baz=73,slow=19,SNR=3.5						
JNU	**Nakatsue**	**4.68**	**240**	P	**Pn**	**04 31 41.4**	**+0.6**
	2.3nm,0.3s,baz=100,slow=6.1,SNR=15						
KSRS	**Korea Array**	**6.56**	**289**	P	**P**	**04 32 03.2**	**+1.4**
	1.1nm,0.3s,baz=106,slow=12,SNR=34						
USRK	**Usuriysk Ar.**	**9.11**	**343**	P	**Pn**	**04 32 32.8**	**+1.1**
	0.6nm,0.3s,baz=164,slow=12,SNR=13						
ASAJ	**Asahikawa**	**10.06**	**30**	P	**Pn**	**04 32 42.8**	**-0.3**
	1.4nm,0.3s,baz=219,slow=14,SNR=6.1						
KLR	**Kul'dur**	**13.98**	**349**	P	**P**	**04 33 28.9**	**+1.0**
	0.3nm,0.3s,baz=182,slow=8.0,SNR=5.8						
SONM	**Songino Array**	**24.94**	**309**	P	**P**	**04 35 18.1**	**+0.6**
	2.0nm,0.7s,baz=113,slow=9.6,SNR=4.5						
ZALV	**Zalesovo Beam**	**39.57**	**314**	P	**P**	**04 37 23.8**	**+0.8**
	0.6nm,0.5s,baz=86,slow=8.6,SNR=3.6						
ZALV				PcP	**PcP**	**04 39 20.7**	**-1.6**
	0.8nm,0.4s,baz=101,slow=3.0,SNR=3.7						
MKAR	**Makanchi Array**	**41.03**	**303**	P	**P**	**04 37 35.5**	**+0.4**
	0.4nm,0.4s,baz=93,slow=10.0,SNR=6.7						
KURBB	**Kurchatov Arra**	**43.31**	**309**	P	**P**	**04 37 53.0**	**-0.1**
	0.5nm,0.7s,baz=90,slow=8.1,SNR=6.5						
ILAR	**Eielson Array**	**53.19**	**31**	P	**P**	**04 39 07.6**	**0.0**
	1.0nm,0.5s,baz=262,slow=5.9,SNR=20						
WRA	**Warramunga Arr**	**55.20**	**182**	P	**P**	**04 39 20.9**	**-1.6**
	0.8nm,0.4s,baz=357,slow=7.6,SNR=20						
ASAR	**Alice Springs**	**58.91**	**182**	P	**P**	**04 39 47.0**	**-1.2**
	0.4nm,0.6s,baz=14,slow=14,SNR=8.2						
ARCES	**ARCESS Array B**	**63.73**	**338**	P	**P**	**04 40 19.4**	**-0.2**
	2.2nm,0.9s,baz=58,slow=8.6,SNR=3.9						
YKA	**Yellowknife Ar**	**67.35**	**28**	P	**P**	**04 40 42.6**	**0.0**
	0.2nm,0.3s,baz=299,slow=6.2,SNR=18						
FINES	**FINESS Array B**	**67.92**	**331**	P	**P**	**04 40 45.5**	**-0.7**
	0.6nm,0.8s,baz=52,slow=9.0,SNR=3.0						
NOA	**NORSAR Array B**	**73.69**	**335**	P	**P**	**04 41 19.9**	**-0.8**
	0.3nm,0.5s,baz=46,slow=5.6,SNR=3.0						
NVAR	**Mina Array Bea**	**79.52**	**50**	P	**P**	**04 41 53.8**	**0.0**
	0.7nm,0.8s,baz=292,slow=6.9,SNR=3.7						
TXAR	**Lajitas Array**	**94.62**	**49**	P	**P**	**04 43 07.3**	**+0.4**
	0.1nm,0.7s,baz=298,slow=2.7,SNR=4.1						
LPAZ	**La Paz**	**151.36**	**54**	PKPbc	**PKPbc**	**04 49 38.4**	**-0.3**
	1.0nm,0.9s,baz=348,slow=2.2,SNR=3.7						

WEL 30 04:35:00.6±0.4, 41.26S×172.54E, h212km±3km, ML3.6/7, 5C, Error ellipse: s-maj=2.7km s-min=2.0km az=90.0, South Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
QRZ	**Quartz Range**	**0.44**	**359**	⇑PN	Pn	04 35 28.6	-0.3
QRZ				SN	S	04 35 49.9	-1.0
THZ	**Tophouse**	**0.57**	**151**	⇑PN	Pn	04 35 29.5	+0.2
NNZ	**Nelson**	**0.64**	**86**	⇑PN	Pn	04 35 29.3	-0.2
DSZ	**Denniston Nort**	**0.73**	**229**	⇑PN	Pn	04 35 29.7	-0.3
DSZ				SN	S	04 35 51.7	-1.4
TUWZ	**Tuamarina**	**1.07**	**99**	PN	Pn	04 35 32.0	0.0
BSWZ	**Blackbirch Sta**	**1.10**	**115**	PN	Pn	04 35 32.2	0.0
DUWZ	**D'Urville Isla**	**1.14**	**67**	⇑PN	Pn	04 35 32.2	-0.4
TCW	**Tory Channel**	**1.31**	**88**	PN	Pn	04 35 33.6	-0.2
KHZ	**Kahutara**	**1.37**	**147**	PN	Pn	04 35 34.0	-0.1
LTZ	**Lake Taylor**	**1.53**	**187**	PN	Pn	04 35 35.5	-0.1
KIW	**Kapiti Island**	**1

MI1.5/3, Error ellipse: s-maj=1.5km s-min=1.2km az=17.0, Central Italy

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RM29	**Verrico (Monte**	**0.04**	**228**	Pg	Pg	05 02 00.1	+0.2
RM29				Sg	Sg	05 02 01.2	+0.1
	997nm,0.3s						
RM29	**Verrico (Monte**	**0.04**	**228**	Pg	Pg	05 02 00.1	+0.2
RM29				Sg	Sg	05 02 01.2	+0.1
	997nm,0.3s						
RM32	**Poggio Cancell**	**0.04**	**116**	Pg	Pg	05 02 00.1	+0.1
RM32				Sg	Sg	05 02 01.3	+0.2
	514nm,0.2s						
RM32	**Poggio Cancell**	**0.04**	**116**	Pg	Pg	05 02 00.1	+0.1
RM32				Sg	Sg	05 02 01.3	+0.2
	514nm,0.2s						
SMA1	**SAN MARTINO**	**0.08**	**58**	Pg	Pg	05 02 01.1	+0.7
SMA1				Sg	Sg	05 02 03.1	+1.2
	291nm,0.2s						
SMA1	**SAN MARTINO**	**0.08**	**58**	Pg	Pg	05 02 01.1	+0.7
SMA1				Sg	Sg	05 02 03.1	+1.2
	291nm,0.2s						
RM33	**Pellescritta (**	**0.08**	**195**	Pg	Pg	05 02 00.7	+0.3
RM33				Sg	Sg	05 02 02.2	+0.3
	236nm,0.4s						
RM33	**Pellescritta (**	**0.08**	**195**	Pg	Pg	05 02 00.7	+0.3
RM33				Sg	Sg	05 02 02.2	+0.3
	236nm,0.4s						
LNSS	**Leonessa**	**0.15**	**276**	Pg	Pg	05 02 02.1	+0.6
LNSS				Sg	Sg	05 02 04.8	+1.1
	182nm,0.2s						
LNSS	**Leonessa**	**0.15**	**276**	Pg	Pg	05 02 02.1	+0.6
LNSS				Sg	Sg	05 02 04.8	+1.1
	182nm,0.2s						
NRCA	**Norcia**	**0.26**	**339**	Pg	Pg	05 02 04.0	+0.5
NRCA				Sg	Sg	05 02 08.6	+1.5
	70nm,0.1s						
NRCA	**Norcia**	**0.26**	**339**	Pg	Pg	05 02 04.0	+0.5
NRCA				Sg	Sg	05 02 08.6	+1.5
	70nm,0.1s						
TERO	**Teramo**	**0.27**	**82**	Pg	Pg	05 02 03.9	+0.3
TERO				Sg	Sg	05 02 08.5	+1.3
	40nm,0.5s						
TERO	**Teramo**	**0.27**	**82**	Pg	Pg	05 02 03.9	+0.3
TERO				Sg	Sg	05 02 08.5	+1.3
	40nm,0.5s						
FDMO	**Fiordimonte**	**0.46**	**346**	Pg	Pg	05 02 07.7	+0.4
FDMO				Sg	Sb	05 02 15.8	-0.1
FDMO	**Fiordimonte**	**0.46**	**346**	Pg	Pg	05 02 07.7	+0.4
FDMO				Sg	Sb	05 02 15.8	-0.1
VCEL	**Villa Celiera**	**0.48**	**113**	Pg	Pb	05 02 08.6	-0.6
VCEL				Sg	Sb	05 02 16.4	-0.1
VCEL	**Villa Celiera**	**0.48**	**113**	Pg	Pb	05 02 08.6	-0.6
VCEL				Sg	Sb	05 02 16.4	-0.1

*IDC **30** 05:02:24.8±3.2, 6°.43S×103°.69E, h0km, mb4.1/7, mb1 4.2/7, mb1mx3.8/43, mbtmp4.1/7, MS2.8/1, Ms1 2.8/1, ms1mx2.5/43, Error ellipse: s-maj=143.1km s-min=17.6km az=55.0*

*ISCJB **30** 05:02:28.9±0.8, 6°.51S±0°.07×103°.66E±0°.06, h48km, mb4.1/7, Error ellipse: s-maj=10.4km s-min=8.0km az=38.6*

*DJA **30** 05:02:29.8±0.8, 7°.5S×10°.4E, h30km, MA1.1/7, MLv4.1/7*

ISC 30 05:02:31.7±1.0, 6°.41S±0°.08×103°.81E±0°.08, h48km, n21, σ1°.76/18, mb4.1/7, Southwest of Sumatera

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KASI	**Kota Agung**	**1.12**	**38**	P	**Pn**	**05 02 49.3**	**-1.8**
KASI				S	**Sn**	**05 03 03.4**	**-2.0**
LWLI	**Liwa**	**1.41**	**10**	P	**Pn**	**05 02 54.7**	**-0.4**
LWLI				S	**Sn**	**05 03 16.1**	**+3.5**
BLSI	**Bandar Lampung**	**1.77**	**54**	P	**Pn**	**05 02 59.2**	**-0.7**
BLSI				S	**Sn**	**05 03 23.2**	**+1.9**
CGJI	**Cibinong**	**1.89**	**96**	P	**Pn**	**05 03 00.2**	**-1.3**
MNAI	**Manna**	**2.21**	**337**	P	**Pn**	**05 03 05.7**	**-0.3**
LHSI	**Lahat**	**2.58**	**354**	P	**Pn**	**05 03 11.5**	**+0.4**
LEM	**Lembang**	**3.81**	**96**	Pn	Pn	05 03 35.2	+7.2
	4.6nm,0.3s,baz=294,slow=20,SNR=1.9						
LEM				Sn	**Sn**	**05 04 16.0**	**+4.3**
	5.9nm,0.3s,baz=343,slow=19,SNR=3.8						
LEM				LR	LR	05 04 55.6	
	comp=Z,117nm,19.0s,baz=199,slow=38						
CMAR	**Chiang Mai Arr**	**25.17**	**349**	P	**P**	**05 07 51.9**	**-0.9**
	1.4nm,0.3s,baz=185,slow=8.8,SNR=9.8						
H01W3	**Cape Leeuwin H**	**29.89**	**163**	T	T	05 39 39.8	
	baz=340,slow=76,SNR=8.0						
H01W2	**Cape Leeuwin H**	**29.91**	**163**	T	T	05 39 40.8	
	baz=340,slow=76,SNR=11						
H01W1	**Cape Leeuwin H**	**29.91**	**163**	T	T	05 39 45.4	
	baz=340,slow=76,SNR=8.1						
H08S2	**Diego Garcia H**	**31.10**	**266**	T	T	05 41 25.2	
	baz=89,slow=75,SNR=6.9						
H08S3	**Diego Garcia H**	**31.11**	**266**	T	T	05 41 27.8	
	baz=89,slow=75,SNR=7.4						
H08S1	**Diego Carcia H**	**31.12**	**266**	T	T	05 41 23.3	
	baz=89,slow=75,SNR=3.8						
WRA	**Warramunga Arr**	**32.55**	**117**	P	**P**	**05 08 58.4**	**-0.3**
	0.9nm,0.6s,baz=287,slow=12,SNR=16						
ASAR	**Alice Springs**	**33.63**	**124**	P	**P**	**05 09 07.8**	**-0.2**
	0.6nm,0.6s,baz=307,slow=7.7,SNR=9.6						
STKA	**Stephens Creek**	**43.41**	**131**	P	**P**	**05 10 30.5**	**+0.6**
	1.1nm,0.3s,baz=286,slow=9.4,SNR=5.0						
SONM	**Songino Array**	**54.06**	**2**	P	**P**	**05 11 51.7**	**+0.1**
	1.8nm,0.5s,baz=186,slow=9.0,SNR=5.8						
MKAR	**Makanchi Array**	**56.31**	**342**	P	**P**	**05 12 07.1**	**-0.6**
	1.1nm,0.4s,baz=152,slow=8.7,SNR=15						
ZALV	**Zalesovo Beam**	**62.23**	**347**	P	**P**	**05 12 47.4**	**-1.0**
	1.6nm,0.3s,baz=162,slow=6.1,SNR=4.7						
TXAR	**Lajitas Array**	**145.49**	**45**	PKPbc	**PKPab**	**05 22 06.0**	**+0.3**
	0.5nm,0.5s,baz=298,slow=1.1,SNR=7.2						

*NIED **30** 05:06:00, 36°.80N×141°.30E, h8km, Mw5.0 Best double couple: M04.01000×10^16 NP1:φs153.00000°, δ66.00000°, λ-156.00000°. NP2:φs52.00000°, δ68.00000°, λ-26.00000°.*

*IDC **30** 05:06:29.2±0.4, 36°.75N×141°.19E, h0km, mb5.0/32, mb1 5.1/37, mb1mx5.0/44, mbtmp5.0/37, ML4.5/4, MS4.3/20, Ms1 4.4/20, ms1mx4.2/40, Error ellipse: s-maj=13.8km s-min=9.5km az=102.0*

*JMA **30** 05:06:31.1±0.1, 36°.76N×141°.28E, h37km±2km, M5.3 JMA Felt IV J1.*

*ISCJB **30** 05:06:33.5±0.4, 36°.81N±0°.02×141°.08E±0°.02, h31km±2km, mb5.1/353, MS4.8/61, Error ellipse: s-maj=3.5km s-min=2.3km az=160.4*

*BJI **30** 05:06:33.8, 36°.93N×141°.12E, h40km, mb4.8/73, mB4.8/47, Ms5.0/73, Ms7 4.7/70*

*MOS **30** 05:06:34.9±0.8, 37°.12N×141°.03E, h33km, mb5.4/119, MS4.8/24, Error ellipse: s-maj=6.1km s-min=4.0km az=102.5*

*NEIC **30** 05:06:35.9±0.4, 36°.79N×141°.07E, h39km±4km, mb5.2/257, Error ellipse: s-maj=3.3km s-min=2.1km az=142.0*

NEIC Recorded [4 JMA] in Fukushima and Ibaraki.

*GCMT **30** 05:06:35.9±0.2, 36°.86N×141°.27E, h20km, MW5.1/94, Moment Tensor Solution. s41,c58; s94,c143; Duration: 0 Moment tensor: Scale 10^16Nm; Mrr-3.43±.23; Mθθ-2.64±.14; Mφφ6.07±.17; Mrθ-1.31±.30; Mrφ2.30±.11; Mθφ0.15±.25; Best double couple: M05.63800×10^16 NP1:φs48.00000°, δ59.00000°, λ-38.00000°. NP2: φs160.00000°, δ58.00000°, λ-143.00000°. Principal axes: T 6.6430, Plg1.0000°, Azm104.0000°; N -2.0100, Plg43.0000°, Azm195.0000°; P -4.6330, Plg47.0000°, Azm13.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

ISC 30 05:06:33.8±0.4, 36°.83N±0°.03×141°.18E±0°.03, h28km±2km, h27km:pP-P, n1044, σ1°.936/1090, mb5.2/357, MS4.8/61, 29C-33D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.41**	**312**	⇑P	**Pb**	**05 06 41.7**	**-1.0**
ONAJ				S	**Sb**	**05 06 49.5**	**+0.8**
JHO	**Hitachi**	**0.54**	**246**	⇑P	**Pb**	**05 06 42.7**	**-2.0**
JHO				S	**Sb**	**05 06 51.1**	**-1.0**
JFK	**Kawauchi**	**0.59**	**336**	⇑P	**Pb**	**05 06 44.2**	**-1.4**
JFK				S	**Sb**	**05 06 53.6**	**0.0**
JFT	**Otama**	**0.96**	**316**	⇑P	**Pn**	**05 06 50.8**	**-0.7**
JFT				S	**Sn**	**05 07 04.6**	**+0.4**
JMM	**Marumori**	**1.08**	**344**	P	**Pn**	**05 06 51.6**	**-1.5**
JMM				S	**Sn**	**05 07 06.6**	**-0.5**
JFY	**Yanaizu**	**1.31**	**296**	⇑P	**Pn**	**05 06 56.1**	**-0.2**
JFY				S	**Sb**	**05 07 15.1**	**+0.9**
JAG	**Ashikaga**	**1.45**	**254**	P	**Pn**	**05 06 57.2**	**-0.9**
JAG				S	**Sn**	**05 07 16.1**	**-0.1**
MJAR	**Matsushiro Arr**	**2.40**	**264**	Pn	**Pn**	**05 07 11.5**	**+0.2**
	152nm,0.3s,baz=90,slow=14,SNR=92						
MJAR				Sn	**Sb**	**05 07 45.2**	**-0.4**
	220nm,0.3s,baz=97,slow=17,SNR=6.5						
MAJO	**Matsushiro**	**2.41**	**264**	*c* iP	**Pn**	**05 07 11.4**	**0.0**
MAJO	**Matsushiro**	**2.41**	**264**	*e*Pn	**Pn**	**05 07 11.9**	**+0.6**
MAT	**Matsushiro**	**2.41**	**264**	P	**Pn**	**05 07 11.3**	**-0.1**
MAT				*e*S	**Sn**	**05 07 41.7**	**+1.8**
MJB9	**Matsu-Tunnel**	**2.41**	**264**	*e*Pn	**Pn**	**05 07 12.0**	**+0.6**
INU	**Inuyama**	**3.68**	**248**	*e*Pn	**Pn**	**05 07 30.0**	**+1.1**
JHJ2	**Mitsune**	**3.88**	**197**	*e*Pn	**Pn**	**05 07 30.4**	**-1.2**
JHJ	**Hachijo jima 2**	**3.88**	**198**	Pn	**Pn**	**05 07 31.1**	**-0.5**
	164nm,0.3s,baz=303,slow=17,SNR=12						
JHJ				Sn	**Sn**	**05 08 15.6**	**-0.7**
	158nm,0.3s,baz=90,slow=20,SNR=3.5						
JHJ				LR	LR	05 08 28.8	
	comp=Z,951nm,20.2s,baz=78,slow=32						
ERM	**Erimo**	**5.40**	**16**	*i* P	**Pn**	**05 07 51.0**	**-1.4**
ERM				pmax	pmax		
	comp=Z,212nm,1.2s						
ERM	**Erimo**	**5.40**	**16**	*e*Pn	**Pn**	**05 07 51.2**	**-1.2**
ASAJ	**Asahikawa**	**7.36**	**8**	Pn	**Pn**	**05 08 18.1**	**-1.2**
	comp=Z,13nm,0.3s,baz=230,slow=8.5,SNR=29						
ASAJ				Sn	**Sn**	**05 09 41.3**	**-0.6**
	baz=270,slow=20,SNR=1.7						
YUK	**Yuzh-Kuril'sk**	**8.03**	**25**	*e*P	**Pn**	**05 08 25.8**	**-2.8**
YUK				*e*S	**Sn**	**05 09 54.5**	**-3.9**
YUK				pmax	pmax		
	comp=Z,366nm,0.4s						
YUK				pmax	pmax		
	comp=N,38nm,0.2s						
YUK				pmax	pmax		
	comp=E,94nm,0.2s						
YUK				MLR	MLR		
	comp=Z,3μm,13.0s						
YUK				MLR	MLR		
	comp=N,3μm,12.0s						
YUK				MLR	MLR		
	comp=E,3μm,15.0s						
SHO	**Shikotan**	**8.25**	**30**	*e*P	**Pn**	**05 08 27.4**	**-4.1**
SHO				*e*S	**Sn**	**05 09 57.3**	**-6.4**
SHO				pmax	pmax		
	comp=Z,230nm,0.6s						
SHO				pmax	pmax		
	comp=N,98nm,0.4s						
SHO				pmax	pmax		
	comp=E,151nm,0.4s						
JNU	**Nakatsue**	**9.23**	**249**	Pn	**Pn**	**05 08 46.9**	**+1.9**
	comp=E,1.2nm,0.3s,baz=69,slow=9.5,SNR=9.7						
JNU				LR	LR	05 12 13.7	
	comp=E,1μm,21.3s,baz=72,slow=37						
JNU	**Nakatsue**	**9.23**	**249**	*e*Pn	**Pn**	**05 08 47.7**	**+2.6**
CBIJ	**Chichi jima**	**9.74**	**175**	*e*Pn	**Pn**	**05 08 48.0**	**-4.1**
CBIJ				Sn	Sn	05 10 31.0	-10
JCJ	**Chichijima**	**9.74**	**175**	Pn	**Pn**	**05 08 47.8**	**-4.4**
	baz=318,slow=12						
JCJ				Sn	Sn	05 10 31.0	-10
	comp=E,32nm,0.3s,baz=294,slow=20,SNR=3.6						
USRK	**Ussuriysk Ar.**	**10.15**	**319**	Pn	**Pn**	**05 09 01.8**	**+4.2**
	comp=E,2.9nm,0.3s,baz=134,slow=13,SNR=80						
YSS	**Yuzh-Sakhalins**	**10.18**	**6**	*e*P	**Pn**	**05 08 58.3**	**+0.2**
YSS				*e*S	**Sn**	**05 10 47.6**	**-3.6**
YSS				pmax	pmax		
	comp=Z,70nm,0.7s						
YSS				MLR	MLR		
	comp=Z,3μm,12.0s						
YSS	**Yuzh-Sakhalins**	**10.18**	**6**	*e*Pn	**Pn**	**05 08 58.2**	**+0.2**
KSRS	**Korea Array**	**10.60**	**277**	Pn	**Pn**	**05 09 08.1**	**+4.2**
	comp=Z,1.0nm,0.3s,baz=92,slow=14,SNR=12						
KSRS				LR	LR	05 12 51.5	
	comp=Z,2μm,19.5s,baz=108,slow=36						
KS01	**Wonju Array Si**	**10.62**	**277**	*e*Pn	**Pn**	**05 09 08.1**	**+4.0**
KS15	**Wonju Array Si**	**10.63**	**277**	*e*Pn	**Pn**	**05 09 08.0**	**+3.7**
KSAR	**Wonju Array Be**	**10.63**	**277**	P	**Pn**	**05 09 08.1**	**+3.8**
KSAR	**Wonju Array Be**	**10.63**	**277**	Pn	**Pn**	**05 09 08.1**	**+3.8**
MDJ	**Mudanjiang**	**11.73**	**315**	P	Pn	05 09 24.0	+4.8
MDJ				S	**Sn**	**05 11 35.5**	**+6.4**
MDJ				PcP	**PcP**	**05 15 06.5**	**-0.8**
MDJ				ScS	**ScS**	**05 22 13.0**	**-0.6**
MDJ				pmax	pmax		
	comp=Z,59nm,1.1s						
MDJ				pmax	pmax		
	comp=Z,380nm,8.4s						
MDJ				LR	LR		
	comp=Z,4μm,17.6s						
MDJ				LR	LR		
	comp=Z,3μm,18.1s						
MDJ				LR	LR		
	comp=Z,2μm,14.4s						
MDJ	**Mudanjiang**	**11.73**	**315**	*e*Pn	Pn	05 09 24.6	+5.4
HABR	**Khabarovsk**	**12.47**	**341**	*e*P	**Pn**	**05 09 26.9**	**-2.4**
HABR				*e*S	**Sn**	**05 11 44.6**	**-2.6**
HABR				pmax	pmax		
	comp=Z,36nm,2.0s						
HABR				pmax	pmax		
	comp=E,68nm,2.0s						
HABR				pmax	pmax		
	comp=N,52nm,2.0s						
HABR				MLR	MLR		
	comp=Z,1μm,15.0s						
CN2	**Changchun**	**13.86**	**305**	*e*P	**Pn**	**05 09 49.5**	**+1.1**
CN2				*e*S	**Sn**	**05 12 23.8**	**+2.5**
CN2				pmax	pmax		
	comp=Z,10.0nm,1.5s						
CN2				LR	LR		
	comp=Z,3μm,16.0s						
CN2				LR	LR		
	comp=Z,3μm,16.0s						
CN2				LR	LR		
	comp=Z,4μm,14.0s						
TYV	**Tymovskoe**	**14.07**	**4**	*e*P	**Pn**	**05 09 50.7**	**-0.4**
TYV				pmax	pmax		
	comp=Z,40nm,0.8s						
TYV				MLR	MLR		
	comp=E,5μm,14.0s						
TYV				MLR	MLR		
	comp=Z,5μm,14.0s						
KLR	**Kul'dur**	**14.16**	**334**	Pn	**Pn**	**05 09 53.3**	**+0.9**
	comp=Z,0.5nm,0.3s,baz=134,slow=13,SNR=12						
SNY	**Shenyang**	**14.50**	**296**	⇓P	**P**	**05 10 05.0**	**+1.6**
SNY				S	**S**	**05 12 47.0**	**-8.9**
SNY				pmax	pmax		
	comp=Z,35nm,1.0s						
SNY				pmax	pmax		
	comp=Z,740nm,10.0s						
SNY				LR	LR		
	comp=N,4μm,13.4s						
SNY				LR	LR		
	comp=E,3μm,14.7s						
SNY				LR	LR		
	comp=Z,4μm,13.7s						
DL2	**Dalian**	**15.58**	**284**	⇓*i*P	**P**	**05 10 22.0**	**+6.6**
DL2				S	**S**	**05 13 15.5**	**-2.5**
DL2				pmax	pmax		
	comp=Z,64nm,0.8s						
DL2				pmax	pmax		
	comp=Z,640nm,9.8s						
DL2				LR	LR		
	comp=N,2μm,11.9s						
DL2				LR	LR		
	comp=E,2μm,12.5s						
DL2				LR	LR		
	comp=Z,3μm,12.4s						
NKL	**Nikolayevsk**	**16.32**	**359**	*e*P	**Pn**	**05 10 19.0**	**-1.8**
NKL				pmax	pmax		
	comp=Z,36nm,1.1s						
NKL				MLR	MLR		
	comp=N,2μm,13.0s						
NKL				MLR	MLR		
	comp=E,2μm,13.0s						
NKL				MLR	MLR		
	comp=Z,4μm,13.0s						
SKR	**Severo-Kuril's**	**17.50**	**33**	*e*P	**Pn**	**05 10 31.6**	**-4.1**
SKR				pmax	pmax		
	comp=Z,220nm,1.0s						
SKR				MLR	MLR		
	comp=Z,3μm,14.0s						
SKR				MLR	MLR		
	comp=N,3μm,16.0s						
SKR				MLR	MLR		
	comp=E,4μm,14.0s						
SSE	**Sheshan**	**17.53**	**257**	*e*P	**Pn**	**05 10 34.0**	**-2.2**
SSE				PP	**sP**	**05 10 48.5**	**+0.5**
SSE				S	**Sn**	**05 13 45.8**	**-4.8**
SSE				pmax	pmax		
	comp=E,20nm,0.8s						
SSE				pmax	pmax		
	comp=E,84nm,3.5s						
SSE				LR	LR		
	comp=E,3μm,24.0s						
SSE				LR	LR		
	comp=E,970nm,24.0s						
SSE				LR	LR		
	comp=E,800nm,24.0s						
NJ2	**Nanjing**	**19.01**	**262**	*e*P	**P**	**05 10 53.0**	**-0.4**
NJ2				pmax	pmax		
	comp=E,16nm,0.5s						
BJI	**Beijing**	**19.83**	**287**	P	**P**	**05 11 01.5**	**-0.8**
BJI				S	**S**	**05 14 40.5**	**-3.6**
BJI				pmax	pmax		
	comp=E,6.0nm,1.0s						
BJI				pmax	pmax		
	comp=E,190nm,4.5s						
BJI				LR	LR		
	comp=E,2μm,15.3s						
BJI				LR	LR		
	comp=E,610nm,20.7s						
BJI				LR	LR		
	comp=E,960nm,30.6s						
BJT	**Baijiatuao**	**19.83**	**287**	*e*P	**Pn**	**05 11 03.3**	**-0.7**
BJT				pmax	pmax		
	comp=Z,40nm,0.9s						
BJT	**Baijiatuao**	**19.83**	**287**	*e*P	**Pn**	**05 11 03.3**	**-0.7**
	comp=Z,40nm,0.9s						
YOJ	**Yonaguni jima**	**19.87**	**237**	*e*P	**P**	**05 11 02.1**	**-0.7**
YOJ				pmax	pmax		
	comp=Z,163nm,1.3s						
YOJ	**Yonaguni jima**	**19.87**	**237**	*e*P	**P**	**05 11 02.1**	**-0.7**
	comp=Z,163nm,1.3s						
HIA	**Hailar**	**19.91**	**315**	*e*P	**Pn**	**05 11 05.1**	**+0.2**
HIA				pmax	pmax		
	comp=Z,20nm,0.8s						
HIA	**Hailar**	**19.91**	**315**	*e*P	**Pn**	**05 11 05.1**	**+0.2**
	comp=Z,20nm,0.8s						
PEA0	**Petropavlovsk-**	**19.96**	**30**	*e*P	**P**	**05 11 03.9**	**+0.3**
PEA0B	**Petropavlovsk-**	**19.96**	**30**	*e*P	**P**	**05 11 04.4**	**+0.8**
	comp=Z,76nm,1.0s						
PETK	**Petropavlovsk-**	**19.96**	**30**	P	**P**	**05 11 03.7**	**+0.1**
	comp=Z,19nm,0.8s,baz=217,slow=7.9,SNR=12						
PETK				LR	LR	05 18 13.9	
	comp=Z,755nm,21.7s,baz=216,slow=35						
PET	**Petropavlovsk**	**20.29**	**32**	*d* iP	**P**	**05 11 06.2**	**-0.9**
PET				*e*S	**S**	**05 14 49.0**	**-4.1**
PET				pmax	pmax		
	comp=Z,108nm,1.3s						
PET				pmax	pmax		
	comp=Z,500nm,7.6s						
PET				MLR	MLR		
	comp=Z,1μm,16.0s						
PET	**Petropavlovsk**	**20.29**	**32**	*e*P	**P**	**05 11 07.8**	**+0.6**
	comp=Z,129nm,1.2s						
YHNB	**Yeheng**	**20.85**	**240**	*e*P	Pn	05 11 14.9	-1.2
	comp=Z,23nm,0.6s						
NACB	**Ninganchiao**	**21.02**	**239**	*e*P	**P**	**05 11 16.1**	**+0.8**
	comp=Z,17nm,0.7s						
SSLB	**Suanglung**	**21.71**	**239**	*e*P	**P**	**05 11 23.6**	**+0.8**
	comp=Z,20nm,1.0s						
YULB	**Yu-li**	**21.74**	**238**	*e*P	**P**	**05 11 21.6**	**-1.5**
	comp=Z,18nm,0.8s						
TPUB	**Ta-pu**	**22.26**	**238**	*e*P	**P**	**05 11 29.6**	**+0.9**
	comp=Z,84nm,1.2s						
TWG	**Pinlang**	**22.28**	**237**	*e*P	**P**	**05 11 29.2**	**+0.3**
	comp=Z,252nm,1.1s						
QZH	**Quanzhou**	**22.66**	**245**	*e*P	**P**	**05 11 36.3**	**+3.4**
QZH				S	**S**	**05 15 33.3**	**-6.0**
QZH				LR	LR		
	comp=Z,2μm,14.9s						
QZH				LR	LR		
	comp=Z,1μm,10.7s						
QZH				LR	LR		
	comp=Z,2μm,13.6s						
WHN	**Wuhan**	**23.14**	**262**	P	**P**	**05 11 37.3**	**-0.6**
WHN				S	**S**	**05 15 43.0**	**-4.6**
WHN				LR	LR		
	comp=Z,4μm,13.2s						
WHN				LR	LR		
	comp=Z,3μm,14.2s						
WHN				LR	LR		
	comp=Z,6μm,16.9s						
HHC	**Hu-ho-hao-te**	**23.36**	**289**	*e*P	**P**	**05 11 39.5**	**-0.6**
HHC				sP	sP	05 11 52.5	+1.2
HHC				S	**S**	**05 15 44.0**	**-7.2**
HHC				pmax	pmax		
	comp=Z,29nm,0.7s						
HHC				pmax	pmax		
	comp=Z,120nm,7.4s						
HHC				LR	LR		
	comp=Z,4μm,12.3s						
HHC				LR	LR		
	comp=Z,4μm,12.7s						
HHC				LR	LR		
	comp=Z,4μm,11.7s						
MA2	**Magadan**	**23.59**	**12**	P	**P**	**05 11 42.1**	**+0.1**
	comp=Z,58nm,0.7s,baz=228,slow=9.0,SNR=19						
YAK	**Yakutsk**	**26.23**	**348**	P	**P**	**05 12 05.5**	**-0.6**
	comp=Z,50nm,0.4s,baz=73,slow=1.7,SNR=18						
YAK	**Yakutsk**	**26.23**	**348**	*e*P	**P**	**05 12 05.4**	**-0.6**
YAK				*e**PP	**pP**	**05 12 12.0**	**-2.1**
YAK				*e*		05 12 41.9	
YAK				*e*PPP	PPP	05 12 52.1	
YAK				*e*S	**S**	**05 16 35.6**	**-0.7**
YAK				*e*SS	**SnSn**	**05 17 35.2**	**-1.3**
YAK				*e*SSS	SSS	05 17 59.5	
YAK				pmax	pmax		
	comp=Z,77nm,1.1s						
YAK				pmax	pmax		
	comp=N,50nm,1.1s						
YAK				pmax	pmax		
	comp=E,19nm,1.0s						
YAK				pmax	pmax		
	comp=Z,119nm,2.0s						
YAK				pmax	pmax		
	comp=N,72nm,2.0s						
YAK				pmax	pmax		
	comp=E,130nm,2.6s						
YAK				smax	smax		
	comp=N,221nm,1.9s						
YAK				smax	smax		
	comp=E,148nm,2.5s						
YAK				MLR	MLR		
	comp=Z,769nm,13.0s						
YAK				MLR	MLR		
	comp=N,631nm,12.0s						
YAK				MLR	MLR		
	comp=E,764nm,14.0s						
YAK	**Yakutsk**	**26.23**	**348**	*e*P	**P**	**05 12 05.7**	**-0.4**
YAK				*e*pP	**P**	**05 12 05.9**	**-0.2**
XAN	**Xi'an**	**26.36**	**274**	P	**P**	**05 12 10.0**	**+2.3**
XAN				pP	sP	05 12 18.8	-0.3
XAN				pmax	pmax		
	comp=E,14nm,0.8s						
XAN				pmax	pmax		
	comp=E,120nm,6.2s						
XAN				LR	LR		
	comp=E,1μm,13.2s						
XAN				LR	LR		
	comp=E,2μm,13.2s						
SEY	**Seymchan**	**27.02**	**11**	P	**P**	**05 12 14.2**	**+0.9**
	comp=E,12nm,0.6s,baz=195,slow=8.9,SNR=25						
SEY	**Seymchan**	**27.02**	**11**	⇓*i*P	**P**	**05 12 14.3**	**+1.0**
ENH	**Enshi**	**27.13**	**265**	*e*P	**P**	**05 12 14.9**	**+0.3**
	comp=E,58nm,0.6s						
ULN	**Ulaanbaatar**	**27.31**	**305**	*i* P	**P**	**05 12 16.0**	**-0.2**
ULN				pmax	pmax		
	comp=Z,21nm,1.2s						
ULN	**Ulaanbaatar**	**27.31**	**305**	*e*P	**P**	**05 12 15.7**	**-0.5**
	comp=Z,15nm,0.9s						
BOD	**Bodaibo**	**27.60**	**328**	⇑*i*P	**P**	**05 12 17.9**	**-0.6**
BOD				pmax	pmax		
	comp=Z,36nm,0.9s						
SONA1	**Songino Array**	**27.74**

H11N2 WAKE ISLAND Hy 28.21 120 T T 05 41 45.2
baz=313,slow=75,SNR=2454
H11N1 WAKE ISLAND Hy 28.22 120 T T 05 41 49.1
baz=313,slow=75,SNR=4580
H11N3 WAKE ISLAND Hy 28.23 120 T T 05 41 50.3
baz=313,slow=75,SNR=2559
H11S1 WAKE ISLAND Hy 28.91 122 T T 05 43 18.1
baz=314,slow=76,SNR=3895
H11S3 WAKE ISLAND Hy 28.91 122 T T 05 43 18.1
baz=314,slow=76,SNR=3036
H11S2 WAKE ISLAND Hy 28.93 122 T T 05 43 19.8
baz=314,slow=76,SNR=2765
LZH Lanzhou 29.91 280 *e*P **P** **05 12 41.3 +1.8**
LZH pP sP 05 12 52.5 +1.5
LZH sP pP 05 12 59.5 +12
LZH PP **PnPn** **05 13 41.3 +5.2**
LZH PcP **PcP** **05 15 37.3 -4.6**
LZH *e*S **S** **05 17 33.5 -1.8**
LZH sS sS 05 17 52.8 +4.1
LZH pmax pmax
comp=Z,28nm,1.2s
LZH pmax pmax
comp=Z,97nm,4.9s
LZH LR LR
comp=Z,840nm,13.2s
LZH LR LR
comp=Z,1μm,12.1s
LZH LR LR
comp=Z,2μm,13.4s
ZAK Zakamensk 30.25 309 *e*P **P** **05 12 43.1 +0.9**
ZAK *e* 05 15 42.9
ZAK pmax pmax
comp=Z,5.0nm,1.1s
ZAK pmax pmax
comp=Z,4.0nm,1.0s
TLY Talaya 30.32 311 *e*P **P** **05 12 39.0 -3.8**
TLY *e* 05 13 50.9
TLY *e*S **S** **05 17 41.5 +0.4**
TLY pmax pmax
comp=Z,11nm,0.8s
TLY MLR MLR
comp=Z,1μm,13.0s
GYA Guiyang 31.00 260⇑ *i*P **P** **05 12 48.0 -1.1**
GYA pP sP 05 13 01.0 +0.4
GYA PP **PnPn** **05 13 52.3 +1.8**
GYA PcP **PcP** **05 15 45.5 +0.7**
GYA S **S** **05 17 50.3 -2.1**
GYA sS sS 05 18 09.8 +4.0
GYA ScP **ScP** **05 19 24.5 -1.2**
GYA ScS **ScS** **05 23 19.5 -3.4**
GYA pmax pmax
comp=Z,50nm,0.8s
GYA pmax pmax
comp=Z,140nm,5.5s
GYA LR LR
comp=Z,840nm,16.9s
GYA LR LR
comp=Z,700nm,17.4s
GYA LR LR
comp=Z,1μm,17.3s
CD2 Chengdu 31.48 270 P **P** **05 12 52.5 -0.8**
CD2 sP sP 05 13 09.0 +4.2
CD2 S **S** **05 17 57.8 -2.0**
CD2 sS sS 05 18 17.0 +3.8
CD2 pmax pmax
comp=Z,20nm,0.4s
CD2 pmax pmax
comp=Z,50nm,4.1s
CD2 LR LR
comp=Z,3μm,16.8s
CD2 LR LR
comp=Z,2μm,18.0s
MOY Mondy 31.93 311 *e*P **P** **05 12 57.4 +0.4**
GTA Gaotai 32.44 287 *e*P **P** **05 13 01.3 -0.4**
GTA pP pP 05 13 10.3 +0.5
GTA sP sP 05 13 14.3 +1.1
GTA PcP **PcP** **05 15 50.0 +1.5**
GTA S **S** **05 18 12.8 -1.9**
GTA sS sS 05 18 29.3 +1.2
GTA SS **SnSn** **05 20 10.0 +1.4**
GTA pmax pmax
comp=Z,7.0nm,0.9s
GTA pmax pmax
comp=Z,54nm,5.2s
GTA LR LR
comp=Z,800nm,16.6s
GTA LR LR
comp=Z,900nm,11.9s
GTA LR LR
comp=Z,800nm,12.8s
QIZ Qiongzhong 32.67 246 P **P** **05 13 04.8 +1.1**
QIZ S **S** **05 18 19.8 +1.4**
QIZ LR LR
comp=Z,540nm,15.3s
QIZ LR LR
comp=Z,510nm,14.2s
DAV Davao City (W) 32.87 209 LR LR 05 24 34.9
comp=Z,707nm,21.9s,baz=22,slow=33
BILL Bilibino 34.27 16*d i*P **P** **05 13 17.1 -0.1**
BILL *e* 05 14 33.0
BILL *e*PPP PPP 05 14 44.5
BILL *e*S **S** **05 18 43.4 +1.2**
BILL *e*SSS SSS 05 21 15.6
BILL pmax pmax
comp=Z,26nm,1.0s
BILL MLR MLR
comp=Z,637nm,17.0s
BILL Bilibino 34.27 16 *e*P **P** **05 13 17.4 +0.2**
comp=Z,37nm,1.3s
KMI Kunming 34.74 261 P **P** **05 13 23.0 +1.0**
KMI pP sP 05 13 35.0 +1.5
KMI sP pP 05 13 38.8 +8.7
KMI PP **PP** **05 14 44.5 +3.6**
KMI S **S** **05 18 48.8 -2.0**
KMI sS sS 05 19 09.8 +5.5
KMI SS **SnSn** **05 21 04.5 -0.4**
KMI pmax pmax
comp=Z,16nm,0.7s
KMI pmax pmax
comp=Z,39nm,3.9s
KMI LR LR
comp=Z,1μm,16.0s
KMI LR LR
comp=Z,740nm,18.2s
KMI LR LR
comp=Z,960nm,13.5s
TIXI Tiksi 35.47 353 P **P** **05 13 27.2 -0.2**
comp=Z,20nm,0.8s,baz=166,slow=8.2,SNR=57
TIXI Tiksi 35.47 353 *e*P **P** **05 13 27.1 -0.3**
comp=Z,25nm,0.8s
KRAR Krasnoyarsk 37.48 316 *e*P **P** **05 13 44.0 -0.7**
KRAR pmax pmax
comp=Z,25nm,1.2s
NIKH Nikolski High 38.05 49 *e*P **P** **05 13 50.9 +1.2**
comp=Z,113nm,1.0s
SKNT Sakolnakorn 38.30 249 P **P** **05 13 54.4 +2.3**
comp=Z,32nm,1.2s
SWI Sorong 38.62 196 P **P** **05 13 55.3 +0.6**
comp=Z,46nm,1.0s,comp=Z,1μm
GAMB Gambell 38.99 31 *e*P **P** **05 13 58.4 +1.1**
comp=Z,10nm,1.1s
GENI Genyem 39.23 182 P **P** **05 13 57.6 -2.3**
comp=Z,52nm,1.0s
KHON Khomkaen 39.56 249 P P 05 14 09.3 +6.6
comp=Z,12nm,0.9s
MRSI Marisa 40.32 211 P **P** **05 14 10.5 +1.6**
comp=Z,28nm,1.2s,comp=Z,2μm
FAKI Fak Fak 40.41 194 P **P** **05 14 08.2 -1.5**
comp=Z,50nm,1.2s,comp=Z,671nm
FAKI Fak Fak 40.41 194 *e*P **P** **05 14 09.0 -0.7**
comp=Z,30nm,0.8s
UTTA Uttaradit 40.43 253 P **P** **05 14 11.8 +1.9**
comp=Z,4.9nm,1.0s,comp=Z,46nm
LAMP Lampang 40.69 255 P P 05 14 17.9 +5.9
comp=Z,6.7nm,0.8s
WMQ Urumqi 40.76 297 P **P** **05 14 14.0 +1.5**
WMQ pP sP 05 14 26.3 +2.2
WMQ sP pP 05 14 30.5 +10
WMQ PcP **PcP** **05 16 14.0 +0.6**
WMQ S **S** **05 20 21.0 -0.4**
WMQ sS sS 05 20 41.8 +6.8
WMQ pmax pmax
comp=Z,22nm,0.8s
WMQ pmax pmax
comp=Z,100nm,3.6s
WMQ LR LR
comp=Z,1μm,15.2s
WMQ LR LR
comp=Z,300nm,18.6s
WMQ LR LR
comp=Z,410nm,20.2s
PBKT Sadao Pong 40.82 251 P **P** **05 14 15.3 +2.2**
comp=Z,34nm,0.9s,comp=Z,1μm
CMMT Chiang Mai 41.06 256 P **P** **05 14 18.3 +3.2**
comp=Z,11nm,1.4s
CHTO Chiang Mai 41.06 256 P **P** **05 14 18.4 +3.3**
comp=Z,46nm,1.4s
CHTO Chiang Mai 41.06 256 *e*P **P** **05 14 16.8 +1.7**
CHTO pmax pmax
comp=Z,36nm,1.8s
CHTO Chiang Mai 41.06 256 *e*P **P** **05 14 16.8 +1.7**
comp=Z,36nm,1.8s
TNA Tin City 41.12 29 *e*P **P** **05 14 16.8 +1.8**
comp=Z,102nm,1.6s
SANI Sanana 41.18 203 P **P** **05 14 16.9 +0.9**
comp=Z,49nm,0.8s,comp=Z,636nm
CMAR Chiang Mai Arr 41.26 255 P **P** **05 14 16.3 -0.5**
comp=Z,1.3nm,0.4s,baz=49,slow=7.2,SNR=4.0
CMAR LR LR 05 32 26.7
comp=Z,385nm,18.8s,baz=52,slow=38
MSAI Masohi 41.57 199 P **P** **05 14 19.6 +0.4**
comp=Z,35nm,0.4s,comp=Z,1μm
ZALV Zalesovo Beam 41.91 313 P **P** **05 14 21.4 -0.2**
comp=Z,45nm,0.8s,baz=95,slow=6.6,SNR=132
ZALV PcP **PcP** **05 16 16.8 0.0**
comp=Z,9.6nm,0.8s,baz=94,slow=3.9,SNR=4.2
LSA Lhasa 42.04 275 P **P** **05 14 24.3 +0.7**
LSA pmax pmax
comp=Z,5.0nm,1.4s
LSA Lhasa 42.04 275 *e*P **P** **05 14 24.6 +1.0**
LSA pmax pmax
comp=Z,15nm,0.9s
LSA Lhasa 42.04 275 *e*P **P** **05 14 24.6 +1.0**
comp=Z,15nm,0.9s
MHMT Maesarieng 42.21 256 P **P** **05 14 29.2 +4.7**
comp=Z,10nm,1.2s
CHBT CHBT 42.22 246 P P 05 14 33.8 +9.2
comp=Z,40nm,0.9s,comp=Z,4μm
SHL Shillong 43.22 269 *ex* P 05 14 26.5 -6.3
NRIK Noril'sk 43.37 335 P **P** **05 14 33.3 0.0**
comp=Z,11nm,0.6s,baz=114,slow=9.5,SNR=17
NRIK LR LR 05 32 33.8
comp=Z,491nm,19.2s,baz=112,slow=36
SRDT SRDT 43.58 250 P **P** **05 14 39.1 +3.5**
comp=Z,48nm,1.5s,comp=Z,4μm
KHLT Khaolaem Dam 43.71 251 P **P** **05 14 40.5 +3.8**
comp=Z,9.5nm,1.1s
MK01 Makanchi Array 44.06 302 *e*P **P** **05 14 38.6 -0.6**
MK31 Makanchi Array 44.07 302 *i* P **P** **05 14 39.1 -0.2**
MK31 pmax pmax
comp=Z,21nm,0.7s
MK31 Makanchi Array 44.07 302 *e*P **P** **05 14 39.5 +0.3**
MKAR Makanchi Array 44.07 302 P **P** **05 14 39.2 0.0**
comp=Z,20nm,0.6s,baz=88,slow=10.0,SNR=168
MKAR LR LR 05 32 56.5
comp=Z,516nm,21.6s,baz=87,slow=36
MKAR Makanchi Array 44.07 302 *i* P **P** **05 14 39.2 0.0**
MKAR pmax pmax
comp=Z,21nm,0.6s
MKAR Makanchi Array 44.07 302 *e*P **P** **05 14 39.5 +0.2**
MAKZ Makanchi 44.28 302 *e*P **P** **05 14 40.7 -0.2**
MAKZ pmax pmax
comp=Z,23nm,0.6s
MAKZ Makanchi 44.28 302 *e*P **P** **05 14 40.7 -0.2**
comp=Z,23nm,0.6s
KSM Kuching 45.28 226 *e*P **P** **05 14 49.1 0.0**
comp=Z,35nm,1.0s
SAUI Saumlaki 45.53 194 *e*P **P** **05 14 52.0 +0.8**
comp=Z,515nm,1.0s
TT01 Tatalina 45.69 35 *e*P **P** **05 14 53.3 +1.4**
TTA Tatalina 45.69 35 *e*P **P** **05 14 53.7 +1.7**
TTA pmax pmax
comp=Z,20nm,1.1s
TTA Tatalina 45.69 35 *e*P **P** **05 14 53.7 +1.7**
comp=Z,20nm,1.1s
STKI Sintang 45.77 224 P P 05 15 01.6 +8.6
comp=Z,45nm,0.4s,comp=Z,19μm
SVW2 Sparrevohn 45.80 37 *e*P **P** **05 14 54.9 +2.1**
comp=Z,58nm,1.1s
KURK Kurchatov 45.91 308 *e*P **P** **05 14 53.8 0.0**
KURK pmax pmax
comp=Z,191nm,1.5s
KURK Kurchatov 45.91 308 *e*P **P** **05 14 53.8 0.0**
comp=Z,190nm,1.5s
KAPI Kappang 46.19 210 P **P** **05 14 55.7 -0.6**
comp=Z,30nm,1.1s,baz=52,slow=8.5,SNR=7.6
KAPI LR LR 05 32 03.5
comp=Z,180nm,21.9s,baz=37,slow=33
KAPI Kappang 46.19 210 *e*P **P** **05 14 56.1 -0.2**
comp=Z,35nm,0.9s
PMG Port Moresby 46.33 172 *e*P **P** **05 14 57.9 +0.5**
PMG pmax pmax
comp=Z,52nm,1.0s
PDGK Podgornoye 46.71 298 P **P** **05 15 00.0 -0.1**
PDGK pmax pmax
comp=Z,63nm,1.2s
GUN Gumba 46.99 276 *e*P **P** **05 15 03.7 +0.7**
comp=Z,185nm,1.0s
BBKI Banjar Baru 47.01 217 P **P** **05 15 02.7 0.0**
comp=Z,46nm,1.2s,comp=Z,10μm
RSO Redoubt South 47.18 38 *e*P **P** **05 15 05.5 +1.6**
SKLT Songkhla 47.24 241 P **P** **05 15 06.4 +1.7**
SURT Suratani 47.33 245 P P 05 15 12.6 +7.3
comp=Z,12nm,0.9s
KDAK Kodiak Island 47.38 42 *i* P **P** **05 15 05.5 +0.4**
KDAK Kodiak Island 47.38 42 *e*P **P** **05 15 05.7 +0.5**
comp=Z,61nm,1.1s
PPLA Purkeypile 47.44 35 *e*P **P** **05 15 08.0 +2.2**
comp=Z,95nm,1.4s
TRTT Trang 47.44 243 P P 05 15 13.6 +7.4
comp=Z,17nm,1.0s
CAST Castle Rocks 47.50 34 *e*P **P** **05 15 07.7 +1.6**
comp=Z,24nm,0.9s
SPU Mount Spurr 47.51 37 *e*P **P** **05 15 08.2 +2.0**
KKN Kakani 47.52 276 *e*P **P** **05 15 07.8 +0.8**
comp=Z,134nm,0.9s
DMN Daman 47.73 276 *e*P **P** **05 15 09.8 +1.1**
comp=Z,47nm,0.9s
GKN Gorkha 47.94 276 *e*P **P** **05 15 10.9 +0.7**
comp=Z,170nm,0.8s
BPAW Bear Paw Mtn. 48.00 33 *e*P **P** **05 15 11.6 +1.6**
comp=Z,59nm,1.6s
KTH Kantishna Hill 48.02 34 *e*P **P** **05 15 12.0 +1.8**
comp=Z,62nm,1.1s
MLY Manley 48.12 32 *e*P **P** **05 15 12.5 +1.6**
comp=Z,33nm,0.9s
TRF Thorofare Moun 48.30 34 *e*P **P** **05 15 14.0 +1.4**
comp=Z,17nm,0.9s
COLD Coldfoot 48.42 29 *e*P **P** **05 15 14.7 +1.5**
comp=Z,60nm,1.9s
AAA Alma-Ata 48.51 299 *e*P P 05 15 23.2 +8.9
AAA pmax pmax
comp=Z,200nm,4.9s
AAA MLR MLR
comp=Z,1μm,13.0s
RC01 Rabbit Creek A 48.63 37 *e*P **P** **05 15 16.4 +1.5**
comp=Z,35nm,1.0s
BWN Browne 48.66 33 *e*P **P** **05 15 17.8 +2.8**
comp=Z,135nm,1.1s
KOLN Koldanda 48.87 277 *e*P **P** **05 15 18.2 +0.8**
IPM Ipoh 48.88 239 *e*P **P** **05 15 17.5 +0.2**
comp=Z,19nm,0.9s
PMR Palmer 48.90 37 *e*P **P** **05 15 17.5 +0.6**
PMR pmax pmax
comp=Z,37nm,1.0s
PMR Palmer 48.90 37 *e*P **P** **05 15 17.5 +0.6**
comp=Z,37nm,1.0s
MCK McKinley 48.91 34 *e*P **P** **05 15 18.3 +1.4**
MCK pmax pmax
comp=Z,30nm,1.0s
MCK McKinley 48.91 34 *e*P **P** **05 15 18.3 +1.4**
comp=Z,30nm,1.0s
RND Reindeer 48.95 34 *e*P **P** **05 15 18.1 +0.7**
RND pmax pmax
comp=Z,43nm,1.0s
RND Reindeer 48.95 34 *e*P **P** **05 15 18.1 +0.7**
comp=Z,43nm,1.0s
SOEI Soe 48.99 202 *e*P **P** **05 15 17.8 -0.4**
comp=Z,102nm,1.0s
MDM Murphy Dome 49.19 32 *e*P **P** **05 15 20.6 +1.5**
comp=Z,72nm,1.0s
PYUN Piuthan 49.21 277 *e*P **P** **05 15 21.0 +1.0**
comp=Z,380nm,0.9s
WRH Wood River Hil 49.26 33 *e*P **P** **05 15 20.7 +1.1**
comp=Z,22nm,0.8s
SML Sawmill 49.27 36 *e*P **P** **05 15 20.7 +0.9**
SML pmax pmax
comp=Z,33nm,0.9s
SML Sawmill 49.27 36 *e*P **P** **05 15 20.6 +0.9**
comp=Z,33nm,0.9s
COLA College 49.35 32*d i*P **P** **05 15 21.2 +0.9**
COLA pmax pmax
comp=Z,17nm,0.9s
COLA College 49.35 32 *e*P **P** **05 15 22.1 +1.9**
comp=Z,24nm,0.9s
CCB Clear Creek Bu 49.38 32 *e*P **P** **05 15 21.8 +1.3**
comp=Z,7.7nm,0.8s
TKM2 Tokmak 2 49.56 298 P **P** **05 15 23.5 +1.0**
TKM2 pmax pmax
comp=Z,61nm,1.7s
TKM2 Tokmak 2 49.56 298 *e*P **P** **05 15 23.6 +1.0**
comp=Z,82nm,1.4s
DHY Denali Highway 49.63 35 *e*P **P** **05 15 23.9 +1.2**
comp=Z,23nm,1.2s
SCM Sheep Creek Mo 49.74 36 *e*P **P** **05 15 25.0 +1.6**
SCM pmax pmax
comp=Z,37nm,1.0s
SCM Sheep Creek Mo 49.74 36 *e*P **P** **05 15 25.0 +1.6**
comp=Z,37nm,1.0s
HDA Harding Lake 49.75 33 *e*P **P** **05 15 24.0 +0.6**
comp=Z,41nm,1.0s
IL1 Eielson Array 49.77 32 *e*P **P** **05 15 23.4 -0.1**
ILAR Eielson Array 49.77 32 P **P** **05 15 23.8 +0.3**
comp=Z,22nm,0.8s,baz=269,slow=6.3,SNR=202
ILAR LR LR 05 37 53.9
comp=Z,242nm,19.5s,baz=288,slow=38
ILB Eielson Array 49.77 32 *e*P **P** **05 15 24.1 +0.6**
FRU Bishkek 50.27 299⇓ *i*P P 05 15 17.0 -11
FRU *i* 05 15 35.0
FRU pmax pmax
comp=Z,60nm,1.8s
MTN Manton Dam 50.31 193 *e*P **P** **05 15 27.0 -1.1**
comp=Z,28nm,0.9s
CHKZ Chkalovo 50.31 313 P **P** **05 15 27.4 -0.3**
CHKZ pmax pmax
comp=Z,18nm,0.7s
KSH Kashi 50.31 294 P P 05 15 33.0 +4.8
KSH *e*pP sP 05 15 45.0 +5.1
KSH *e*sP pP 05 15 51.0 +14
KSH *e*ScP **ScP** **05 20 40.5 -0.1**
KSH PcS **PcS** **05 20 45.8 +1.9**
KSH S **S** **05 22 42.5 +3.2**
KSH pmax pmax
comp=Z,17nm,1.0s
KSH pmax pmax
comp=Z,110nm,2.7s
KSH LR LR
comp=Z,1μm,19.7s
KSH LR LR
comp=Z,980nm,16.3s
KSH LR LR
comp=Z,750nm,17.8s
FYU Fort Yukon 50.38 30 *e*P **P** **05 15 30.8 +2.8**
comp=Z,157nm,1.7s
OTUK Ortayu 50.39 306 P **P** **05 15 28.3 -0.2**
OTUK pmax pmax
comp=Z,19nm,0.9s
AAK Ala-Archa 50.42 298 P **P** **05 15 29.0 0.0**
AAK pmax pmax
comp=Z,9.0nm,0.8s
AAK Ala-Archa 50.42 298 *e*P **P** **05 15 29.9 +0.9**
comp=Z,13nm,0.9s
KLU Klutina 50.44 36 *e*P **P** **05 15 30.5 +1.7**
comp=Z,30nm,1.0s
PAX Paxson 50.51 35 *e*P **P** **05 15 31.0 +1.8**
PAX pmax pmax
comp=Z,27nm,0.7s
PAX Paxson 50.51 35 *e*P **P** **05 15 31.0 +1.8**
comp=Z,27nm,0.7s
COEN Coen 50.55 177 *e*P **P** **05 15 29.6 -0.3**
comp=Z,33nm,1.2s
DIV Divide 50.55 37 *e*P **P** **05 15 31.2 +1.6**
comp=Z,50nm,1.0s
BRVK Borovoye 50.62 312 *e*P **P** **05 15 30.3 +0.1**
BRVK pmax pmax
comp=Z,18nm,0.9s
BRVK Borovoye 50.62 312 *e*P **P** **05 15 30.2 +0.1**
comp=Z,18nm,0.9s
EYAK Cordova Ski Ar 50.63 38 *e*P **P** **05 15 32.1 +2.0**
comp=Z,37nm,1.0s
EKS2 Erkin-Say 50.92 299 *e*P **P** **05 15 33.5 +0.8**
EKS2 pmax pmax
comp=Z,8.0nm,0.8s
EKS2 Erkin-Say 50.92 299 *e*P **P** **05 15 33.5 +0.8**
comp=Z,7.7nm,0.8s
DOT Dot Lake 51.08 34 *e*P **P** **05 15 34.1 +0.7**
comp=Z,45nm,0.4s
BMRM Bremner River 51.13 37 *e*P **P** **05 15 35.9 +2.0**
comp=Z,32nm,1.0s
LHMI Lhok Sumawe 51.20 243 *e*P **P** **05 15 35.8 +0.9**
comp=Z,60nm,0.8s
MENT Mentasta 51.31 34 *e*P **P** **05 15 37.1 +1.9**
comp=Z,36nm,0.3s
ZRNK Zerenda 51.40 313 P **P** **05 15 35.8 -0.2**
ZRNK pmax pmax
comp=Z,23nm,0.8s
PSI Prapat 51.53 239 P **P** **05 15 37.0 -0.6**
comp=Z,4.7nm,0.6s,baz=12,slow=7.3,SNR=1.9
PSI Prapat 51.53 239 *e*P **P** **05 15 36.9 -0.6**
PSI pmax pmax
comp=Z,22nm,0.8s
PSI Prapat 51.53 239 *e*P **P** **05 15 36.9 -0.7**
comp=Z,22nm,0.8s
MNAS Manas 51.87 299 P **P** **05 15 40.1 +0.3**
MNAS pmax pmax
comp=Z,25nm,0.8s
SFK Sufi-Kurgan 51.95 296 P **P** **05 15 41.1 +0.5**
SFK pmax pmax
comp=Z,34nm,1.0s
EGAK Eagle 52.21 32 *e*P **P** **05 15 42.6 +0.8**
comp=Z,26nm,1.1s
BALM Baldy 52.21 37 *e*P **P** **05 15 43.8 +1.7**
BALM pmax pmax
comp=Z,17nm,1.0s
BALM Baldy 52.21 37 *e*P **P** **05 15 43.8 +1.7**
comp=Z,17nm,1.0s
KK31 Karatay Array 53.06 300 *i* P **P** **05 15 48.8 +0.3**
KK31 pmax pmax
comp=Z,26nm,1.1s
KKAR Karatay Array 53.06 300 *e*P **P** **05 15 48.8 +0.3**
KKAR Karatay Array 53.06 300 *e*P **P** **05 15 48.8 +0.3**
DAWY Dawson 53.07 33 *e*P **P** **05 15 50.0 +1.6**
comp=Z,31nm,1.6s
THN Thein Dam 53.10 286 *e*P **P** **05 15 47.4 -1.5**
GSI Gunungsitoli 53.53 239 *e*P **P** **05 15 52.2 0.0**
comp=Z,119nm,0.7s
LEM Lembang 53.60 223 LR LR 05 39 13.2
comp=Z,200nm,19.6s,baz=354,slow=37
INK Inuvik 54.65 27 *e*P **P** **05 16 00.7 +1.0**
INK pmax pmax
comp=Z,62nm,1.6s
INK Inuvik 54.65 27 *e*P **P** **05 16 00.7 +1.0**
comp=Z,62nm,1.6s
SVE Sverdlovsk 55.17 319*c i*P **P** **05 16 04.4 +0.8**
SVE pmax pmax
comp=Z,71nm,1.0s
SVE MLR MLR
comp=Z,1μm,17.0s
DZET Dzherino 55.77 296 P **P** **05 16 08.0 -0.3**
DZET pmax pmax
comp=Z,32nm,0.5s
SKAG Skagway 55.97 38 *e*P **P** **05 16 11.5 +2.2**
comp=Z,28nm,1.1s
SOKR Solikamsk 56.37 323 *i* P **P** **05 16 10.9 -1.2**
SOKR pmax pmax
comp=Z,43nm,1.3s
SOKR MLR MLR
comp=Z,394nm,14.0s
ARU Arti 56.39 319*d i*P **P** **05 16 12.5 +0.2**
ARU 05 17 09.8
ARU 05 18 17.3
ARU S **S** **05 24 03.4 +2.4**
ARU SS **SS** **05 27 45.9 -1.7**
ARU pmax pmax
comp=Z,86nm,1.0s
ARU MLR MLR
comp=Z,538nm,15.0s
ARU Arti 56.39 319 *e*P **P** **05 16 12.2 -0.1**

comp=E,64nm,0.8s
FITZ Fitzroy Crossi 56.57 198 P **P** **05 16 13.0 -1.0**
comp=E,12nm,1.0s,baz=16,slow=8.3,SNR=12
FITZ Fitzroy Crossi 56.57 198 *eP* **P** **05 16 13.7 -0.3**
comp=E,48nm,1.6s
WRAB Tennant Creek 56.83 188 *eP* **P** **05 16 14.1 -1.7**
WRAB pmax pmax
comp=E,25nm,1.0s
WRAB Tennant Creek 56.83 188 *eP* **P** **05 16 14.1 -1.7**
comp=E,25nm,1.0s
WB2 Warramunga Arr 56.83 188 *eP* **P** **05 16 14.3 -1.6**
comp=E,55nm,1.4s
WRA Warramunga Arr 56.84 188 P **P** **05 16 14.2 -1.7**
comp=E,13nm,0.5s,baz=6.4,slow=7.5,SNR=163
KBL Kabul 57.31 291 *eP* **P** **05 16 19.7 +0.2**
KBL pmax pmax
comp=E,41nm,1.1s
KBL Kabul 57.31 291 *eP* **P** **05 16 19.7 +0.2**
comp=E,41nm,1.1s
AB31 Akbulak array 57.92 310 *i* P **P** **05 16 22.6 -0.7**
AB31 pmax pmax
comp=E,7.0nm,0.6s
ABKAR Akbulak array 57.92 310 *eP* **P** **05 16 23.0 -0.3**
HYB Hyderabad 58.01 268 *i* P **P** **05 16 25.0 +0.6**
HYB *e* 05 16 31.5
DLBC Dease Lake 58.90 38 *eP* **P** **05 16 32.6 +2.5**
comp=E,23nm,1.0s
AS01 Alice Springs 60.56 188 *eP* **P** **05 16 39.9 -1.8**
AS31 Alice Springs 60.56 188 *eP* **P** **05 16 40.7 -1.1**
comp=E,3.9nm,1.0s
ASAR Alice Springs 60.56 188 P **P** **05 16 40.4 -1.4**
comp=E,13nm,1.0s,baz=8.3,slow=5.0,SNR=51
KBS Kingsbay 60.82 350 *eP* **P** **05 16 44.4 +1.5**
KBS pmax pmax
comp=E,25nm,0.8s
KBS Kingsbay 60.82 350 *eP* **P** **05 16 44.4 +1.5**
comp=E,25nm,0.8s
MBWA Marble Bar 61.13 203 *eP* **P** **05 16 46.8 +1.1**
comp=E,16nm,0.8s
POO Poona 61.19 272 *eP* **P** **05 16 44.0 -2.3**
LVZ Lovozero 62.22 336 *i* P **P** **05 16 52.3 -0.2**
LVZ pmax pmax
comp=E,14nm,1.0s
APA Apatity 62.79 336⇑ *i* P **P** **05 16 56.6 +0.3**
APA pmax pmax
comp=E,26nm,1.0s
APA MLR MLR
comp=E,900nm,15.0s
TMCR Tamitsa 62.83 331 *eP* **P** **05 16 56.8 +0.2**
TMCR pmax pmax
comp=E,42nm,0.8s
RES Resolute Bay 62.84 14 *eP* **P** **05 16 56.6 +0.1**
RES pmax pmax
comp=E,26nm,1.1s
RES Resolute Bay 62.84 14 *eP* **P** **05 16 56.6 +0.1**
comp=E,26nm,1.1s
KEV Kevo 63.56 339 *eP* **P** **05 17 01.2 -0.1**
KEV pmax pmax
comp=E,15nm,0.8s
KEV Kevo 63.56 339 *eP* **P** **05 17 01.2 -0.1**
comp=E,15nm,0.8s
GEYT Alibeck 63.77 299 P **P** **05 17 04.0 +0.7**
comp=E,20nm,0.8s,baz=27,slow=3.5,SNR=30
GEYT LR LR 05 46 29.4
comp=Z,325nm,18.8s,baz=70,slow=38
KLMR Klimovskoe 63.83 328 *eP* **P** **05 17 01.9 -1.3**
KLMR *e**SP **sP** **05 17 14.7 -0.4**
KLMR *e* 05 19 21.9
KLMR pmax pmax
comp=E,23nm,0.8s
YKW3 Yellowknife Ar 64.04 30 *eP* **P** **05 17 04.7 +0.1**
comp=E,39nm,1.8s
YKA Yellowknife Ar 64.08 30 P **P** **05 17 05.0 +0.2**
comp=E,4.0nm,0.7s,baz=303,slow=6.7,SNR=121
YKB5 Yellowknife Ar 64.08 30 *eP* **P** **05 17 04.5 -0.4**
ARA0 ARCESS Array S 64.12 339 *eP* **P** **05 17 05.5 +0.5**
ARCES ARCESS Array B 64.12 339 P **P** **05 17 05.2 +0.1**
comp=E,9.7nm,0.7s,baz=46,slow=6.9,SNR=35
ARCES LR LR 05 48 38.0
comp=E,375nm,18.0s,baz=46,slow=39
ARE0 ARCESS Array S 64.12 339 *eP* **P** **05 17 05.7 +0.6**
comp=E,14nm,0.8s
DAG Danmarks Havn 65.96 355 *i* P **P** **05 17 16.7 -0.2**
comp=E,26nm,1.0s
DAG Danmarks Havn 65.96 355 *i* P **P** **05 17 16.7 -0.2**
DAG pmax pmax
comp=E,26nm,1.0s
MOS Moscow 67.30 323 *eP* **P** **05 17 25.2 -0.5**
MOS *eS* **S** **05 26 18.5 -0.4**
MOS pmax pmax
comp=E,100nm,1.3s
MOS pmax pmax
comp=E,65nm,1.0s
MOS MLR MLR
comp=E,1μm,16.0s
B05A Bryant 67.59 46 P **P** **05 17 29.4 +1.7**
baz=301
E03A Lebam 67.59 48 *eP* **P** **05 17 29.5 +1.8**
comp=E,50nm,1.1s
VRH Novokhopyorsk 67.60 318 *eP* **P** **05 17 26.8 -0.9**
VRH *e**PP **pP** **05 17 34.0 -2.4**
VRH pmax pmax
comp=E,30nm,0.6s
VRH MLR MLR
comp=E,720nm,13.0s
B06A Marblemount 67.81 45 *eP* **P** **05 17 29.8 +0.8**
comp=E,47nm,1.7s
OBN Obninsk 68.14 323 *deP* **P** **05 17 31.3 +0.2**
OBN *i* *PP **pP** **05 17 38.5 -1.2**
OBN *SP **sP** **05 17 44.0 +1.0**
OBN *eS* **S** **05 26 31.7 +2.7**
OBN *eSS* **SS** **05 30 49.7 -1.3**
OBN pmax pmax
comp=E,66nm,1.7s
OBN MLR MLR
comp=E,614nm,15.0s
OBN Obninsk 68.14 323 *eP* **P** **05 17 31.2 +0.2**
comp=E,43nm,1.1s
D05A Enumclaw 68.20 47 *eP* **P** **05 17 34.2 +2.6**
comp=E,87nm,1.7s
LPSR Galich'ya Gora 68.33 320 *eP* **P** **05 17 32.2 -0.1**
LPSR *e**PP **pP** **05 17 39.4 -1.6**
LPSR pmax pmax
comp=E,10.0nm,0.8s
LPSR MLR MLR
comp=E,540nm,13.0s
STKA Stephens Creek 68.35 180 P **P** **05 17 31.8 -0.7**
comp=E,4.2nm,0.6s,baz=358,slow=7.9,SNR=10
STKA Stephens Creek 68.35 180 *eP* **P** **05 17 31.9 -0.6**
comp=E,4.1nm,1.4s
F04A Amboy 68.59 48 *eP* **P** **05 17 35.9 +1.8**
comp=E,38nm,0.8s
FIA1 FINESS Array S 68.90 332 *eP* **P** **05 17 36.0 +0.3**
comp=E,34nm,0.8s
FINES FINESS Array B 68.90 332 P **P** **05 17 35.8 0.0**
comp=E,25nm,0.7s,baz=57,slow=8.0,SNR=108
FINES FINESS Array B 68.90 332 *i* P **P** **05 17 35.9 +0.2**
FINES pmax pmax
comp=E,25nm,0.7s
LTY Liberty 68.93 46 *eP* **P** **05 17 37.3 +1.0**
comp=E,8.9nm,0.8s
VSR Storozhevoye 68.96 319 *eP* **P** **05 17 35.6 -0.6**
VSR *e**PP **pP** **05 17 42.4 -2.5**
VSR pmax pmax
comp=E,20nm,0.9s
VSR MLR MLR
comp=E,450nm,12.0s
B08A Colville Reser 69.11 45 *eP* **P** **05 17 38.5 +1.2**
comp=E,10nm,1.0s
I03D Drain, OR 69.18 51 P **P** **05 17 39.8 +2.0**
baz=301
H04A Detroit Lake 69.38 49 *eP* **P** **05 17 40.2 +1.2**
comp=E,34nm,1.0s
G05D Wamic, OR 69.61 48 P **P** **05 17 42.1 +1.7**
baz=302
I04A Tendick Farm, 69.71 50 P **P** **05 17 42.4 +1.3**
baz=302,SNR=6.4
L02D Cave Junction, 69.83 52 P **P** **05 17 43.7 +1.9**
baz=302
C09A Chrisman Ranch 70.01 45 *eP* **P** **05 17 43.9 +1.0**
comp=E,12nm,0.8s
G06A Carlson Farm, 70.02 48 *eP* **P** **05 17 45.1 +2.0**
comp=E,16nm,1.0s
D08A Wollman Farm, 70.05 46 *eP* **P** **05 17 44.2 +1.1**
comp=E,13nm,0.9s
HAWA Hanford 70.05 47 *eP* **P** **05 17 44.9 +1.8**
comp=Z,11nm,1.0s
I05D Terrebonne, OR 70.08 49 P **P** **05 17 44.9 +1.5**
baz=302
GOF Gofitskoye 70.09 312⇑ *eP* P 05 17 38.1 -5.2
GOF pmax pmax
comp=E,51nm,0.9s
NEW Newport 70.41 44 P **P** **05 17 46.4 +1.2**
baz=304,SNR=13
NEW Newport 70.41 44 *eP* **P** **05 17 46.5 +1.2**
NEW pmax pmax
comp=E,11nm,0.9s
NEW Newport 70.41 44 *eP* **P** **05 17 46.5 +1.2**
comp=E,11nm,0.9s
VSU Vasula 70.53 330 *d* *iP* **P** **05 17 46.0 +0.2**
VSU pmax pmax
comp=Z,99nm,1.0s
NCK Nalchik 70.59 310 *eP* **P** **05 17 46.9 +0.4**
NCK pmax pmax
comp=E,13nm,0.7s
GUDG Gudauri 70.59 309 P **P** **05 17 49.1 +2.3**
YBH Yreka Blue Hor 70.62 52 *eP* **P** **05 17 48.9 +2.1**
YBH pmax pmax
comp=E,21nm,1.0s
YBH Yreka Blue Hor 70.62 52 *eP* **P** **05 17 48.9 +2.1**
comp=E,21nm,1.0s
J05D Fort Rock, OR 70.70 50 P **P** **05 17 49.4 +2.0**
baz=303,SNR=6.4
M02C Callahan 70.71 52 P **P** **05 17 49.5 +2.2**
baz=302,SNR=5.7
K04D Chiloquin, OR 70.74 51 P **P** **05 17 49.6 +2.1**
baz=303
ZEI Tsey 70.78 309 *eP* **P** **05 17 46.8 -1.1**
ZEI pmax pmax
comp=E,31nm,0.8s
E09A Wood Farm, Sta 70.79 46 *eP* **P** **05 17 49.2 +1.6**
comp=E,25nm,1.1s
WBK Wadi Bani Khal 70.81 284 P **P** **05 17 49.2 +1.0**
SNR=10
SUMG Summit 70.89 360 *i* P **P** **05 17 49.4 +1.2**
comp=Z,32nm,1.0s
SUMG Summit 70.89 360 *i* P **P** **05 17 49.4 +1.2**
SUMG pmax pmax
comp=Z,32nm,1.0s
SUMG Summit 70.89 360 *eP* **P** **05 17 49.2 +0.9**
comp=E,38nm,1.1s
KBZ Khabaz 70.89 311 P **P** **05 17 49.3 +1.1**
comp=Z,20nm,0.9s,baz=51,slow=4.2,SNR=37
KBZ LR LR 05 50 12.6
comp=Z,401nm,18.7s,baz=60,slow=37
KIV Kislovodsk 70.89 311 *i* P **P** **05 17 49.2 +0.8**
SNR=7.8
KIV Kislovodsk 70.89 311 *d* *iP* **P** **05 17 49.0 +0.6**
KIV *e**PP **pP** **05 17 56.8 -0.3**
KIV *e**SP **sP** **05 18 02.6 +2.2**
KIV *e* 05 18 06.5
KIV *eS* **S** **05 27 05.7 +3.6**
KIV *e* 05 27 52.2
KIV *eSS* **SS** **05 31 34.3 +0.1**
KIV pmax pmax
comp=E,64nm,1.0s
KIV MLR MLR
comp=Z,397nm,18.0s
KIV Kislovodsk 70.89 311 *eP* **P** **05 17 49.1 +0.6**
comp=E,69nm,1.0s
BIDO Bidbid 70.98 285 P **P** **05 17 49.9 +0.8**
SNR=5.1
N02D Trinity Center 71.03 53 P **P** **05 17 51.4 +2.1**
baz=303,SNR=5.5
BANOM Banah 71.09 289 *i* P **P** **05 17 50.8 +0.9**
SNR=10.0
BANOM Banah 71.09 289 P **P** **05 17 50.7 +0.9**
SNR=7.1
M04C Macdoel 71.14 52 P **P** **05 17 51.9 +1.9**
baz=303,SNR=10
ONI Oni 71.17 309 P **P** **05 17 51.7 +1.6**
ONI Oni 71.17 309 P **P** **05 17 51.6 +1.6**
K05A Summer Lake 71.22 50 *eP* **P** **05 17 52.6 +2.1**
comp=E,39nm,1.0s
NEY Neytrino 71.26 310 *eP* **P** **05 17 51.0 +0.3**
NEY pmax pmax
comp=E,2.0nm,0.8s
SMDO Samad 71.28 285 P **P** **05 17 52.2 +1.1**
SNR=8.7
WDC Whiskeytown Da 71.34 53 *eP* **P** **05 17 53.1 +2.0**
WDC pmax pmax
comp=E,22nm,1.1s
WDC Whiskeytown Da 71.34 53 *eP* **P** **05 17 53.1 +2.0**
comp=E,22nm,1.1s
JMDO Jabal Madar 71.61 284 P **P** **05 17 53.4 +0.4**
SNR=6.9
F10A Beach Ranch, E 71.62 46 *eP* **P** **05 17 54.4 +1.6**
comp=E,11nm,1.1s
GNI Garni 71.67 307 *d* *iP* **P** **05 17 54.5 +1.2**
GNI pmax pmax
comp=E,65nm,1.5s
GNI Garni 71.67 307 *eP* **P** **05 17 55.0 +1.7**
comp=E,17nm,0.8s
GNI Garni 71.67 307 P **P** **05 17 54.6 +1.2**
SNR=6.5
UOSS Minazif 71.69 288 *eP* **P** **05 17 54.2 +0.8**
comp=Z,2.3nm,0.9s
WALA Waterton Lakes 71.71 42 *eP* **P** **05 17 54.2 +0.9**
comp=E,12nm,0.9s
AKH Akhalkalaki 71.78 308 P P 05 18 01.2 +7.2
AKH Akhalkalaki 71.78 308⇓ *iP* **P** **05 17 55.8 +1.9**
AKH Akhalkalaki 71.78 308 P P 05 18 01.1 +7.2
HATD Hatta, Dubai 71.81 288 *i* P **P** **05 17 55.1 +0.9**
SNR=13
BSMT Bassoo Peak 71.93 43 *eP* **P** **05 17 56.2 +1.4**
CHVG Ch'k'valeri 71.94 310⇑ *iP* **P** **05 17 55.7 +1.1**
ASHO Ashiyiah 71.94 288 *i* P **P** **05 17 55.7 +0.7**
SNR=16
ASHO Ashiyiah 71.94 288 P **P** **05 17 55.7 +0.7**
SNR=13
O03D Paynes Creek 71.97 53 P **P** **05 17 56.2 +1.2**
baz=303,SNR=7.6
MOD Modoc Plateau 72.03 51 *eP* **P** **05 17 56.6 +1.2**
comp=E,13nm,1.0s
NAZ Nazwa, Dubai 72.08 288 *i* P **P** **05 17 56.1 +0.4**
SNR=5.4
BSY Bisya 72.11 285 P **P** **05 17 56.4 +0.4**
SNR=10
BMO Blue Mountains 72.20 47 *eP* **P** **05 17 57.8 +1.5**
BMO pmax pmax
comp=E,18nm,0.9s
BMO Blue Mountains 72.20 47 *eP* **P** **05 17 57.8 +1.5**
comp=E,18nm,0.9s
JTMT Jette 72.27 43 *eP* **P** **05 17 58.2 +1.5**
SCO Scoresbysund 72.29 354 *i* P **P** **05 17 56.9 +0.7**
comp=Z,19nm,1.2s
SCO Scoresbysund 72.29 354 *i* P **P** **05 17 56.9 +0.7**
SCO pmax pmax
comp=Z,19nm,1.2s
ARQ Araqi 72.31 286 P **P** **05 17 58.0 +0.8**
SNR=11
YBMT Yellow Bay 72.35 43 *eP* **P** **05 17 58.6 +1.4**
MICGM Minsk 72.56 326 *e* **P** **05 17 59.0 +0.9**
MNK Minsk 72.56 326 *eP* **P** **05 17 59.0 +0.9**
SWMT Swartz Lake 72.56 43 *eP* **P** **05 17 59.0 +0.5**
ORV Oroville 72.57 53 *eP* **P** **05 17 59.5 +1.0**
ORV pmax pmax
comp=Z,27nm,1.3s
ORV Oroville 72.57 53 *eP* **P** **05 17 59.5 +1.0**
comp=Z,27nm,1.3s
NACGM Naroch 72.79 327 *e* **P** **05 18 01.0 +1.6**
NACGM *eLQ* LQ 05 46 06.0
NACGM *eLR* LR 05 50 10.0
SOC Sochi 72.89 312 *eP* **P** **05 18 00.0 -0.3**
SOC *e* 05 20 39.4
SOC *eS* **S** **05 27 25.2 +0.4**
SOC pmax pmax
comp=E,18nm,0.7s
SOC MLR MLR
comp=Z,1μm,20.0s
MSO Missoula 72.99 44 P **P** **05 18 02.0 +0.9**
baz=306,SNR=9.7
MSO Missoula 72.99 44 *eP* **P** **05 18 01.9 +0.9**
comp=Z,12nm,1.0s
AFDM Forest Hills D 73.25 54 *eP* **P** **05 18 04.0 +1.5**
comp=Z,18nm,1.3s
CHMT Chamberlain Mo 73.33 44 *eP* **P** **05 18 04.0 +1.0**
ANN Anapa 73.53 314 *eP* **P** **05 18 02.6 -1.4**
ANN *e**PP **pP** **05 18 11.3 -1.4**
ANN *eS* **S** **05 27 29.8 -2.2**
ANN pmax pmax
comp=E,51nm,1.2s
ANN MLR MLR
comp=E,356nm,20.0s
ANN MLR MLR
comp=N,1μm,20.0s
ANN MLR MLR
comp=Z,482nm,20.0s
MFID Camas Ranch 73.90 48 *eP* **P** **05 18 07.9 +1.5**
comp=Z,16nm,1.0s
NC405 NORSAR Array S 74.09 337 *eP* **P** **05 18 07.5 +0.5**
NC303 NORSAR Array S 74.11 337 *eP* **P** **05 18 07.6 +0.5**
CMB Columbia Colle 74.14 54 *eP* **P** **05 18 08.8 +1.0**
CMB pmax pmax
comp=Z,32nm,1.1s
CMB Columbia Colle 74.14 54 *eP* **P** **05 18 08.8 +1.0**
comp=Z,32nm,1.1s
NC204 NORSAR Array S 74.25 338 *eP* **P** **05 18 08.6 +0.5**
FCC Fort Churchill 74.27 26 *eP* **P** **05 18 08.2 +0.2**
FCC pmax pmax
comp=E,72nm,1.7s
FCC Fort Churchill 74.27 26 *eP* **P** **05 18 08.2 +0.2**
comp=Z,72nm,1.7s
NB201 NORSAR Array S 74.27 337 *eP* **P** **05 18 08.6 +0.5**
NB2 NORSAR Subarra 74.30 337 P **P** **05 18 08.3 0.0**
comp=Z,20nm,0.8s,baz=39,slow=6.2
NB2 NORSAR Subarra 74.30 337 P **P** **05 18 08.3 0.0**
baz=39,slow=6.2
NOA NORSAR Array B 74.30 337 P **P** **05 18 08.5 +0.2**
comp=Z,17nm,0.7s,baz=38,slow=5.9,SNR=111
NOA LR LR 05 54 16.3
comp=Z,539nm,19.2s,baz=40,slow=38
AKASG Malin Array Be 74.34 322 P **P** **05 18 08.3 -0.3**
comp=E,6.1nm,0.4s,baz=46,slow=6.3,SNR=51
AKASG LR LR 05 53 06.9
comp=Z,214nm,18.8s,baz=35,slow=38
AKBB Malin Array Si 74.34 322 *eP* **P** **05 18 08.4 -0.2**
AKBB pmax pmax
comp=E,55nm,1.4s
AKBB Malin Array Si 74.34 322 *eP* **P** **05 18 08.4 -0.2**
comp=Z,55nm,1.4s
KIEV Kiev 74.35 322 *d* *iP* **P** **05 18 08.4 -0.3**
KIEV pmax pmax
comp=E,18nm,1.0s
KIEV Kiev 74.35 322 *eP* **P** **05 18 08.3 -0.4**
comp=E,53nm,1.4s
AK11 Malin Array Si 74.38 322 *eP* **P** **05 18 08.7 -0.2**
NBO02 NORSAR Array S 74.40 337 *eP* **P** **05 18 09.3 +0.4**
LRM Limekiln Ridge 74.42 44 *eP* **P** **05 18 10.6 +1.1**
NC602 NORSAR Array S 74.43 337 *eP* **P** **05 18 08.9 0.0**
NBO00 NORSAR Array S 74.44 337 *eP* **P** **05 18 09.6 +0.5**
WAKR Walker 74.49 53 *eP* **P** **05 18 11.8 +1.7**
EGMT Eagleton 74.55 41 P **P** **05 18 11.5 +1.4**
baz=308
EGMT Eagleton 74.55 41 *eP* **P** **05 18 11.3 +1.2**
comp=E,38nm,0.9s
NAO01 NORSAR Array S 74.55 337 *eP* **P** **05 18 10.3 +0.6**
DLMT Dillon 74.62 45 *eP* **P** **05 18 11.8 +1.2**
comp=E,28nm,0.8s
HLID Hailey 74.65 47 P **P** **05 18 12.1 +1.3**
baz=306,SNR=13
HLID Hailey 74.65 47 *eP* **P** **05 18 12.1 +1.3**
comp=Z,13nm,1.2s
SUW Suwalki 74.96 327 *eP* **P** **05 18 12.1 0.0**
BOZ Bozeman (W) 74.99 44 P **P** **05 18 13.9 +1.2**
baz=308,SNR=26
BOZ Bozeman (W) 74.99 44 *eP* **P** **05 18 13.9 +1.2**
BOZ pmax pmax
comp=E,26nm,0.9s
BOZ Bozeman (W) 74.99 44 *eP* **P** **05 18 13.9 +1.2**
comp=E,26nm,0.9s
NV01 Mina Array Sit 75.26 53 *eP* **P** **05 18 15.3 +0.8**
NVAR Mina Array Bea 75.26 53 P **P** **05 18 15.3 +0.8**
comp=Z,14m,0.7s,baz=286,slow=5.9,SNR=82
SIM Simferopol' 75.34 315 *deP* **P** **05 18 14.9 +0.4**
SIM pmax pmax
comp=Z,20nm,0.7s
NV11 Mina Array Sit 75.35 53 *eP* **P** **05 18 16.5 +1.6**
comp=Z,49nm,1.6s
QLMT Earthquake Lak 75.60 45 *eP* **P** **05 18 18.2 +1.9**
ELK Elko 75.82 50 *eP* **P** **05 18 19.5 +1.8**
ELK pmax pmax
comp=Z,7.0nm,0.8s
ELK Elko 75.82 50 *eP* **P** **05 18 19.4 +1.8**
comp=Z,6.8nm,0.8s
RCTC Rector, Farmer 75.88 55 P **P** **05 18 19.5 +1.7**
baz=306
KONO Kongsberg 75.89 337 *eP* **P** **05 18 18.2 +0.8**
KONO pmax pmax
comp=Z,11nm,0.8s
KONO Kongsberg 75.89 337 *eP* **P** **05 18 18.2 +0.8**
comp=Z,11nm,0.8s
YMR Madison River 75.96 44 *eP* **P** **05 18 20.2 +1.8**
comp=Z,16nm,0.8s
SFJD Kangerlussuaq 76.10 5 *i* P **P** **05 18 19.2 +0.7**
comp=Z,13nm,0.9s
SFJD Kangerlussuaq 76.10 5 *i* P **P** **05 18 19.2 +0.7**
SFJD pmax pmax
comp=Z,13nm,0.9s
SFJD Kangerlussuaq 76.10 5 *eP* **P** **05 18 19.5 +1.0**
comp=Z,17nm,1.0s
YFT Old Faithful 76.16 45 *eP* **P** **05 18 22.8 +3.2**
comp=Z,21nm,0.9s
LKWY Lake 76.34 44 *eP* **P** **05 18 23.6 +3.0**
LKWY pmax pmax
comp=Z,24nm,1.1s
LKWY Lake 76.34 44 *eP* **P** **05 18 23.6 +3.0**
comp=Z,24nm,1.1s
H17A Grant Village 76.34 44 P **P** **05 18 23.6 +3.0**
baz=308,SNR=44
H17A Grant Village 76.34 44 *eP* **P** **05 18 23.6 +3.0**
comp=Z,42nm,0.9s
SORM Soroca 76.43 321⇑ *iP* **P** **05 18 20.7 0.0**
IMW Indian Meadow 76.45 45 *eP* **P** **05 18 23.1 +1.8**
comp=Z,24nm,0.8s
FLWY Flagg Ranch 76.47 45 *eP* **P** **05 18 23.7 +2.4**
comp=Z,26nm,1.1s
RLMT Red Lodge 76.62 43 P **P** **05 18 23.8 +1.6**
baz=309,SNR=8.9
RLMT Red Lodge 76.62 43 *eP* **P** **05 18 23.8 +1.6**
comp=Z,36nm,1.5s
MOOW Moose Ponds 76.65 45 *eP* **P** **05 18 24.0 +1.7**
comp=Z,14nm,1.0s
HVU Hansel Valley 76.68 48 *eP* **P** **05 18 24.3 +1.8**
HVU pmax pmax
comp=Z,14nm,0.8s
HVU Hansel Valley 76.68 48 *eP* **P** **05 18 24.3 +1.8**
comp=Z,14nm,0.8s
GRAC Grapevine Rang 76.70 54 P **P** **05 18 24.3 +1.8**
baz=306,SNR=6.0
ISA Isabella, Lake 76.76 55 P **P** **05 18 24.3 +1.4**
baz=306
LOHW Long Hollow 76.82 45 *eP* **P** **05 18 25.1 +1.8**
comp=Z,8.1nm,0.9s
SNOW Snow King Moun 76.82 45 *eP* **P** **05 18 25.1 +1.7**
comp=E,15nm,0.8s
REDW Red Top Meadow 76.83 45 *eP* **P** **05 18 25.1 +1.8**
comp=E,18nm,1.0s
KIS Kishinev 76.92 319 *eP* **P** **05 18 23.0 -0.5**
KIS LRM MLR 05 55 08.0
comp=Z,800nm,16.0s
KIS Kishinev 76.92 319 *eP* **P** **05 18 23.0 -0.5**
KIS MLR MLR
comp=Z,2μm,16.0s
KIS MLR MLR
comp=N,500nm,15.0s
KIS MLR MLR
comp=E,500nm,16.0s
KIS MLR MLR
comp=Z,800nm,16.0s
DAC Darwin (Calif) 76.97 54 *eP* **P** **05 18 25.3 +1.0**
DAC pmax pmax
comp=Z,25nm,1.4s
DAC Darwin (Calif) 76.97 54 *eP* **P** **05 18 25.3 +1.0**
comp=Z,25nm,1.4s
R11A Troy Canyon, C 77.03 52 P **P** **05 18 25.6 +1.1**
baz=307,SNR=32
R11A Troy Canyon, C 77.03 52 *eP* **P** **05 18 25.6 +1.1**
comp=Z,22nm,1.1s
BGU Big Grassy Mou 77.05 48 *eP* **P** **05 18 26.3 +1.7**
comp=Z,10nm,0.9s
AHID Auburn Hatcher 77.06 46 *eP* **P** **05 18 26.0 +1.3**
comp=Z,11nm,0.8s
DGMT Dagmar 77.11 38 P **P** **05 18 25.6 +1.0**
baz=312
DGMT Dagmar 77.11 38 *eP* **P** **05 18 25.6 +1.0**
comp=E,38nm,0.8s
MPMC Manual Prospec 77.17 55 P **P** **05 18 26.5 +1.1**
baz=306,SNR=9.5
OSI Osito Audit: C 77.20 56 P **P** **05 18 26.8 +1.4**

baz=306
A25A Svangstu Ranch 77.33 38 P P 05 18 27.0 +1.1
baz=312
FURC Furnace Creek, 77.34 54 P P 05 18 27.3 +1.3
baz=307
LRMC Laurel Mtn Rad 77.39 55 P P 05 18 27.8 +1.3
baz=306
LVV L'vov 77.43 324 eP P 05 18 27.0 +0.7
LVV eS S 05 28 14.2 -0.9
LVV MLR MLR
comp=N,200nm,14.0s
LVV MLR MLR
comp=E,400nm,14.0s
LVV MLR MLR
comp=Z,400nm,14.0s
TPNV Topopah Spring 77.45 53 P P 05 18 28.1 +1.2
baz=307,SNR=12
TPNV Topopah Spring 77.45 53 eP P 05 18 27.9 +1.0
TPNV pmax pmax
comp=Z,31nm,1.1s
TPNV Topopah Spring 77.45 53 eP P 05 18 27.9 +1.0
comp=Z,31nm,1.1s
HWUT Hardware Ranch 77.50 47 eP P 05 18 28.8 +1.6
comp=Z,22nm,1.0s
BEL Belsk 77.51 327 eP P 05 18 27.6 +0.9
BSD Bornholm Skovb 77.53 332 i P P 05 18 33.6 +6.9
comp=E,46nm,1.0s
BSD Bornholm Skovb 77.53 332 eP P 05 18 33.6 +6.9
BSD pmax pmax
comp=Z,46nm,1.0s
EDW2 Edwards Air Fo 77.53 56 P P 05 18 28.7 +1.4
baz=306,SNR=6.4
DUG Dugway, Tooele 77.63 49 P P 05 18 29.1 +1.3
baz=308,SNR=16
DUG Dugway, Tooele 77.63 49 eP P 05 18 29.2 +1.4
DUG pmax pmax
comp=Z,20nm,0.8s
DUG Dugway, Tooele 77.63 49 eP P 05 18 29.2 +1.4
comp=Z,20nm,0.8s
DECC Green Verdugo 77.68 56 P P 05 18 29.1 +1.1
baz=306
TCUT Toone Canyon 77.90 48 eP P 05 18 31.1 +1.7
comp=Z,28nm,0.8s
BW06 Boulder Array 77.94 45 P P 05 18 30.1 +0.5
baz=309,SNR=18
BW06 Boulder Array 77.94 45 eP P 05 18 30.1 +0.5
comp=Z,10nm,0.8s
PD31 Pinedale Array 77.94 45 eP P 05 18 30.1 +0.4
PDAR Pinedale Array 77.94 45 P P 05 18 30.0 +0.4
comp=Z,7.6nm,0.7s,baz=265,slow=2.5,SNR=87
CTU Camp Tracy 77.96 48 eP P 05 18 31.5 +1.8
comp=Z,12nm,0.8s
PSUT Pine Spring 78.01 51 eP P 05 18 31.6 +1.6
comp=Z,17nm,0.9s
GSC Goldstone, Bar 78.07 55 P P 05 18 31.3 +1.0
baz=307
GSC Goldstone, Bar 78.07 55 eP P 05 18 31.5 +1.2
GSC pmax pmax
comp=Z,8.0nm,0.8s
GSC Goldstone, Bar 78.07 55 eP P 05 18 31.5 +1.2
comp=Z,8.4nm,0.8s
BFSC Mount Baldy Ra 78.14 56 P P 05 18 31.9 +1.2
baz=307
B26A Jensen Ranch, 78.14 38 P P 05 18 31.9 +1.5
baz=313
KWP Kalwaria Pacla 78.18 324 eP P 05 18 31.6 +1.1
KWP Kalwaria Pacla 78.18 324⇑iP P 05 18 30.7 +0.2
JLU Jordanelle 78.20 48 eP P 05 18 32.5 +1.5
comp=Z,15nm,1.0s
NLU North Lily Min 78.22 49 eP P 05 18 32.8 +1.5
comp=Z,14nm,0.9s
A27A Ledoux Ranch, 78.23 37 P P 05 18 32.4 +1.6
baz=314
BUR08 Bucovina Ar. S 78.34 322 eP P 05 18 32.3 +0.8
BURAR Bucovina Array 78.35 322⇑iP P 05 18 32.1 +0.5
TESR Tescani 78.37 320⇑iP P 05 18 31.8 +0.2
D25A Fairfield 78.44 39 P P 05 18 33.1 +1.1
baz=312
MPU Maple Canyon 78.45 48 eP P 05 18 34.0 +1.6
comp=Z,22nm,1.0s
CFR Carcaliu 78.47 318⇑iP P 05 18 32.7 +0.6
TUQ Turquoise Moun 78.56 54 P P 05 18 34.8 +1.7
baz=307
C26A Wahner Farm, P 78.59 38 P P 05 18 34.1 +1.3
baz=313,SNR=6.3
BBRC Big Bear Solar 78.61 56 P P 05 18 35.0 +1.5
baz=307
HEC Hector,Ludlow 78.66 55 P P 05 18 35.0 +1.4
baz=307
A28A Rude Farm, Bot 78.72 36 P P 05 18 35.0 +1.4
baz=314
VRI Vrincioaia 78.76 320⇑iP P 05 18 34.7 +0.9
MURC Murrieta 78.82 56 P P 05 18 35.6 +1.2
baz=307
E25A Miller Ranch, 78.83 39 P P 05 18 35.4 +1.2
baz=312,SNR=7.9
BR131 Keskin Array S 78.84 311 eP P 05 18 35.3 +0.8
BRTR Keskin Array B 78.84 311 P P 05 18 34.9 +0.3
comp=Z,5.6nm,0.8s,baz=92,slow=3.8,SNR=36
BRTR LR LR 05 55 34.1
comp=Z,186nm,20.6s,baz=34,slow=37
BRTR Keskin Array B 78.84 311 i P P 05 18 35.2 +0.7
BRTR pmax pmax
comp=Z,6.0nm,0.8s
KOLS Kolonicke sedl 78.87 324 eP P 05 18 34.8 +0.5
KOLS e 05 18 42.5
KOLS pmax pmax
comp=Z,11nm,1.1s
KOLS MLR MLR
comp=Z,500nm,17.0s
KOLS Kolonicke sedl 78.87 324 eP P 05 18 34.8 +0.5
KOLS e 05 18 42.5
KOLS eL L 05 56 19.9
C27A Sayler Ranch, 78.96 38 P P 05 18 36.1 +1.3
baz=314,SNR=5.9
D26A Manning 78.96 39 P P 05 18 36.0 +1.1
baz=313
B28A Dugan Ranch, T 79.00 37 P P 05 18 36.3 +1.3
baz=314
STHS Stebnicka Huta 79.01 325 eP P 05 18 36.6 +1.5
STHS pmax pmax
comp=Z,11nm,1.0s
STHS Stebnicka Huta 79.01 325 eP P 05 18 36.6 +1.5
MSU Marysvale 79.06 50 eP P 05 18 37.5 +1.7
MSU Marysvale 79.06 50 eP P 05 18 37.5 +1.7
UZH Uzhgorod 79.08 324 eP P 05 18 34.4 -1.0
UZH e 05 18 44.2
UZH e 05 21 40.6
UZH e 05 29 27.2
UZH MLR MLR
comp=N,1μm,15.0s
UZH MLR MLR
comp=E,1μm,15.0s
UZH MLR MLR
comp=Z,700nm,15.0s
OJC Ojcow 79.10 326 eP P 05 18 36.3 +0.7
OJC Ojcow 79.10 326 eP P 05 18 35.5 -0.1
OJC pmax pmax
comp=Z,39nm,1.1s
OJC Ojcow 79.10 326 eP P 05 18 35.5 -0.1
comp=Z,39nm,1.1s
GMRC Granite Mounta 79.13 55 P P 05 18 37.2 +1.0
baz=307,SNR=8.5
TMUT Trail Mountain 79.16 49 eP P 05 18 38.4 +1.9
comp=Z,34nm,1.6s
F25A Bowman 79.19 40 P P 05 18 37.2 +1.0
baz=313
A29A Manning Farm, 79.20 36 P P 05 18 37.3 +1.1
baz=315
ANTO Ankara 79.26 312 eP P 05 18 38.1 +1.4
ANTO pmax pmax
comp=Z,38nm,1.4s
ANTO Ankara 79.26 312 eP P 05 18 38.1 +1.4
comp=Z,38nm,1.4s
CRVS Cervenica-Dubn 79.28 324 eP P 05 18 37.1 +0.5
CRVS Cervenica-Dubn 79.28 324 eP P 05 18 37.1 +0.5
BR231 Keskin MP Arra 79.29 312 eP P 05 18 38.0 +1.0
TRPA Tarpa 79.31 323⇓eP P 05 18 37.7 +1.0
PFO Pinyon Flats O 79.31 56 P P 05 18 38.3 +1.2
baz=307
PFO Pinyon Flats O 79.31 56 eP P 05 18 38.6 +1.4
PFO pmax pmax
comp=Z,23nm,1.3s
PFO Pinyon Flats O 79.31 56 eP P 05 18 38.6 +1.4
comp=Z,23nm,1.3s
109C Camp Elliot, M 79.31 57 P P 05 18 38.4 +1.4
baz=307
LDFC Landfair 79.31 54 eP P 05 18 38.7 +1.5
comp=Z,56nm,1.1s
LCMT Little Creek M 79.32 52 eP P 05 18 39.0 +1.8
comp=Z,20nm,0.9s
P17A Butcher Ranch, 79.33 48 eP P 05 18 37.2 -0.1
comp=Z,36nm,0.9s
E26A Carlson Angus 79.33 39 P P 05 18 38.2 +1.2
baz=313,SNR=5.6
MTPU Mount Pierson 79.34 50 eP P 05 18 39.3 +1.8
comp=Z,20nm,0.8s
D27A Center 79.36 38 P P 05 18 38.2 +1.1
baz=314
BELC Belle Mtn. Jos 79.38 56 P P 05 18 38.5 +1.0
baz=307
DOPR Dopca 79.38 320⇑iP P 05 18 38.0 +0.8
MLR Muntele Rosu 79.42 320⇑iP P 05 18 38.4 +0.9
MLR Muntele Rosu 79.42 320 eP P 05 18 38.4 +0.9
MLR pmax pmax
comp=Z,18nm,1.3s
MLR Muntele Rosu 79.42 320 eP P 05 18 38.4 +0.9
comp=Z,18nm,1.3s
NIE Niedzica 79.45 325 eP P 05 18 38.7 +1.2
B29A Wagenman Farm, 79.47 36 P P 05 18 38.8 +1.2
baz=315
P18A Preston Nutter 79.53 48 eP P 05 18 40.0 +1.6
comp=Z,21nm,0.9s
KNB Kanab 79.58 51 eP P 05 18 40.2 +1.6
KNB pmax pmax
comp=Z,23nm,1.0s
KNB Kanab 79.58 51 eP P 05 18 40.2 +1.6
comp=Z,23nm,1.0s
A30A Hoffart Farm, 79.62 35 P P 05 18 39.7 +1.3
baz=316,SNR=5.5
F26A Lodgepole 79.65 40 P P 05 18 39.8 +1.1
baz=313,SNR=6.7
SRU San Rafael Swe 79.69 49 eP P 05 18 40.2 +1.0
SRU pmax pmax
comp=Z,37nm,0.8s
SRU San Rafael Swe 79.69 49 eP P 05 18 40.2 +1.0
comp=Z,37nm,0.8s
G25A Newell 79.71 40 P P 05 18 39.9 +0.9
baz=313
K22A Casper 79.73 44 P P 05 18 40.3 +0.9
baz=311,SNR=11
K22A Casper 79.73 44 eP P 05 18 40.2 +0.9
comp=Z,18nm,0.9s
BAR Barrett 79.73 57 eP P 05 18 40.0 +0.7
comp=Z,18nm,0.9s
MONP2 Monument Peak 79.77 57 P P 05 18 41.0 +1.2
baz=307
ULM Lac du Bonnet 79.78 33 P P 05 18 39.4 +0.1
comp=Z,9.0nm,0.7s,baz=322,slow=7.1,SNR=14
ULM Lac du Bonnet 79.78 33 eP P 05 18 39.2 0.0
ULM pmax pmax
comp=Z,16nm,0.9s
ULM Lac du Bonnet 79.78 33 eP P 05 18 39.2 0.0
comp=Z,16nm,0.9s
MMU Miners Mountai 79.79 50 eP P 05 18 41.1 +1.2
E27A Carson 79.81 39 P P 05 18 40.8 +1.2
baz=314,SNR=5.7
IRM Iron Mountain 79.85 55 P P 05 18 41.2 +1.2
baz=308,SNR=7.4
VOIR 79.92 320⇑iP P 05 18 41.2 +1.0
BC3 Big Chuckawall 79.95 56 P P 05 18 41.6 +1.0
baz=308
B30A Myrvik Farm, E 79.96 36 P P 05 18 41.3 +1.0
baz=316,SNR=8.3
F27A Lemmon 79.96 39 P P 05 18 41.3 +0.9
baz=314,SNR=8.4
H25A Fruitdale 80.00 41 P P 05 18 41.5 +0.9
baz=313
LANS Liptovska Anna 80.02 325 eP P 05 18 42.3 +1.7
LANS Liptovska Anna 80.02 325 eP P 05 18 42.3 +1.7
KECS Kecovo 80.03 324 eP P 05 18 40.9 +0.3
KECS pmax pmax
comp=Z,4.0nm,1.0s
KECS Kecovo 80.03 324 eP P 05 18 40.9 +0.3
G26A Maurine 80.06 40 P P 05 18 41.7 +0.8
baz=313,SNR=5.7
W13A Hualapai Mount 80.09 54 eP P 05 18 42.8 +1.3
comp=Z,7.2nm,0.9s
RSSD Black Hills 80.10 42 P P 05 18 41.6 +0.2
baz=312
RSSD Black Hills 80.10 42 eP P 05 18 41.6 +0.2
RSSD pmax pmax
comp=Z,17nm,1.0s
RSSD Black Hills 80.10 42 eP P 05 18 41.6 +0.2
comp=Z,17nm,1.0s
OKC Ostrava-Krasne 80.11 327⇓eP P 05 18 41.9 +0.9
OKC epP pP 05 18 49.6 -0.3
OKC AMS AMS 05 59 20.0
comp=Z,400nm,14.0s
SWSC Sam W. Stewart 80.15 56 P P 05 18 42.3 +0.7
baz=308
KSP Ksiaz 80.17 328 eP P 05 18 42.2 +0.8
ARR Arges 80.18 320⇑iP P 05 18 43.1 +1.5
U15A North Rim 80.28 52 eP P 05 18 44.4 +1.8
comp=Z,17nm,0.8s
I25A Rochford 80.33 42 P P 05 18 43.2 +0.6
baz=313,SNR=12
G27A Dupree 80.35 40 P P 05 18 43.5 +1.0
baz=314,SNR=8.4
O20A White River Ci 80.39 47 P P 05 18 44.0 +1.0
baz=310,SNR=14
O20A White River Ci 80.39 47 eP P 05 18 43.8 +0.9
comp=Z,23nm,0.9s
PDMCI Parker Dam,Lak 80.41 54 P P 05 18 44.0 +1.1
baz=308,SNR=6.7
C30A Mose, Pekin 80.42 36 P P 05 18 43.8 +1.0
baz=316
MORC Moravsky Berou 80.42 327⇑iP P 05 18 43.2 +0.4
MORC Moravsky Berou 80.42 327 eP P 05 18 43.7 +0.9
MORC pmax pmax
comp=Z,120nm,1.4s
MORC Moravsky Berou 80.42 327 eP P 05 18 43.7 +0.9
comp=Z,120nm,1.4s
H26A Fairpoint 80.43 41 P P 05 18 44.0 +1.0
baz=313,SNR=8.1
A32A Rocking H Ranc 80.47 34 P P 05 18 43.5 +0.5
baz=317,SNR=6.4
Y12C Blythe 80.50 55 P P 05 18 44.7 +1.2
baz=308
Y12C Blythe 80.50 55 eP P 05 18 45.0 +1.6
comp=Z,19nm,0.8s
DPC Dobruska-Polom 80.53 328⇓iP P 05 18 44.6 +1.3
DPC epP pP 05 18 52.0 -0.2
DPC AMS AMS 05 58 10.0
comp=Z,500nm,16.1s
KRLC Kraliky 80.53 327⇓iP P 05 18 44.2 +0.8
KRLC ePCP pP 05 18 51.6 -0.6
UPC Upice 80.54 328⇓iP P 05 18 44.3 +0.9
UPC AMS AMS 05 58 50.0
comp=Z,800nm,14.9s
F28A McLaughlin 80.59 39 P P 05 18 44.9 +1.1
baz=314,SNR=7.2
C31A Landman Farms, 80.71 36 P P 05 18 45.1 +0.8
baz=316
PSZ Piszkesteto 80.71 324⇑iP P 05 18 45.8 +1.4
PSZ Piszkesteto 80.71 324⇓eP P 05 18 45.0 +0.6
PSZ Piszkesteto 80.71 324 eP P 05 18 45.4 +1.0
PSZ pmax pmax
comp=Z,25nm,1.0s
PSZ Piszkesteto 80.71 324 eP P 05 18 45.4 +1.0
comp=Z,25nm,1.0s
D30A Buchanan 80.71 37 P P 05 18 44.6 +0.3
baz=315
J25A Sunshine Ranch 80.72 42 P P 05 18 45.1 +0.5
baz=313
GLA Glamis 80.73 56 P P 05 18 46.0 +1.2
baz=308,SNR=7.2
GLA Glamis 80.73 56 eP P 05 18 46.2 +1.4
GLA pmax pmax
comp=Z,19nm,0.8s
GLA Glamis 80.73 56 eP P 05 18 46.2 +1.4
comp=Z,19nm,0.8s
VYHS Vyhne 80.78 325 eP P 05 18 45.3 +0.6
VYHS pmax pmax
comp=Z,22nm,1.8s
VYHS Vyhne 80.78 325 eP P 05 18 45.3 +0.6
VYHS eL L 05 58 12.0
H27A Howes 80.78 40 P P 05 18 45.7 +0.8
baz=314,SNR=25
I26A New Underwood 80.79 41 P P 05 18 45.9 +1.0
baz=313,SNR=16
B32A Ashes, Strandq 80.83 35 P P 05 18 45.3 +0.4
baz=317,SNR=13
PV09 Paradox Valley 80.91 48 eP P 05 18 46.7 +0.7
A33A Warroad 80.95 34 P P 05 18 45.8 +0.2
baz=317,SNR=16
PV10 Paradox Valley 81.05 48 eP P 05 18 48.1 +1.5
E30A Jud 81.07 37 P P 05 18 46.8 +0.6
baz=315
G28A Parade 81.08 39 P P 05 18 47.1 +0.8
baz=314,SNR=6.0
F29A Eureka 81.09 38 P P 05 18 47.1 +0.7
baz=315
GZR Gura Zlata 81.10 321⇑iP P 05 18 47.4 +0.9
PV04 Paradox Valley 81.12 48 eP P 05 18 48.2 +1.3
BRG Berggiesshubel 81.13 329 eP P 05 18 47.1 +0.6
comp=Z,14nm,0.9s
BRG e 05 18 54.9
comp=Z,13nm,1.1s
comp=N,690nm,13.9s
comp=E,361nm,13.9s
comp=Z,620nm,14.9s
BRG Berggiesshubel 81.13 329 eP P 05 18 47.1 +0.6
BRG e 05 18 54.9
BRG pmax pmax
comp=Z,14nm,0.9s
BRG MLR MLR
comp=N,690nm,13.9s
BRG MLR MLR
comp=E,361nm,13.9s
BRG MLR MLR
comp=Z,620nm,14.9s
PVCC Panska Ves 81.13 329⇓eP P 05 18 47.8 +1.3
PVCC epP pP 05 18 55.2 -0.1
PVCC AMS AMS 05 57 50.0
comp=Z,700nm,17.4s
J26A Sides Ranch, S 81.16 42 P P 05 18 48.1 +1.2
baz=313,SNR=7.6
CLL Collm 81.18 330 i P P 05 18 46.7 0.0
comp=Z,26nm,1.0s
CLL i 05 18 54.4
comp=Z,23nm,1.0s
CLL LmH 05 54 00.0
comp=N,500nm,18.0s
CLL LmH 05 54 00.0
comp=E,500nm,19.9s
CLL L L 05 57 00.0
comp=Z,300nm,18.5s
CLL Collm 81.18 330 eP P 05 18 46.7 0.0
CLL pmax pmax
comp=Z,26nm,0.9s
CLL Collm 81.18 330 eP P 05 18 46.7 0.0
comp=Z,26nm,0.9s
I27A Quinn 81.19 41 P P 05 18 47.7 +0.7
baz=314,SNR=27
VRAC Vranov 81.19 327⇓iP P 05 18 47.5 +0.7
PV05 Paradox Valley 81.20 49 eP P 05 18 48.8 +1.3
AGMN Agassiz Nation 81.21 35 P P 05 18 46.7 -0.3
baz=317,SNR=6.8
AGMN Agassiz Nation 81.21 35 eP P 05 18 46.7 -0.3
comp=Z,14nm,0.8s
N23A Red Feather La 81.21 45 P P 05 18 49.1 +1.6
baz=312,SNR=20
N23A Red Feather La 81.21 45 eP P 05 18 48.8 +1.3
comp=Z,29nm,0.9s
PHWY Pilot Hill 81.21 44 eP P 05 18 48.6 +1.1
comp=Z,8.3nm,0.9s
H28A Mission Ridge 81.30 40 P P 05 18 49.0 +1.5
baz=314,SNR=6.3
Y14A Wickenburg 81.38 54 eP P 05 18 49.2 +1.0
comp=Z,69nm,0.8s
WUAZ Wupatki 81.43 52 P P 05 18 50.5 +1.9
baz=309,SNR=9.9
WUAZ Wupatki 81.43 52 eP P 05 18 50.3 +1.7
comp=Z,28nm,0.9s
PV01 Paradox Valley 81.49 48 eP P 05 18 50.0 +1.1
GOPC GO Pecny, Ondr 81.51 328⇓eP P 05 18 49.3 +0.8
GOPC AMS AMS 05 59 30.0
comp=Z,700nm,14.2s
D32A Dogwood Acres, 81.52 36 P P 05 18 49.3 +0.6
baz=317
E31A Nome 81.52 37 P P 05 18 49.6 +1.0
baz=316
BZS Buzias 81.53 322⇑iP P 05 18 49.2 +0.5
PRA Prague 81.54 329⇓eP P 05 18 49.7 +1.1
PRA AMS AMS 05 58 00.0
comp=Z,800nm,17.4s
PRU Pruhonice 81.56 328⇓iP P 05 18 49.6 +0.9
PRU ePCP pP 05 18 57.1 -0.5
PRU AMS AMS 05 59 30.0
comp=Z,600nm,14.6s
113A Mohawk Valley, 81.61 55 eP P 05 18 50.3 +1.0
comp=Z,12nm,0.9s
B34A Aery, Baudette 81.62 34 P P 05 18 49.3 +0.2
baz=318,SNR=5.7
C33A Trail 81.64 35 P P 05 18 49.4 +0.2
baz=317
TREC Trest 81.68 327⇓iP P 05 18 50.2 +0.8
TREC ePCP pP 05 18 57.7 -0.6
TREC AMS AMS 05 59 20.0
comp=Z,800nm,14.8s
I28A Midland 81.69 40 P P 05 18 50.5 +0.8
baz=314,SNR=24
H29A Onida 81.75 39 P P 05 18 50.6 +0.7
baz=315
SMCO Snowmass 81.75 47 eP P 05 18 51.5 +1.0
comp=Z,15nm,0.9s
J27A Elkhorn Farm, 81.77 41 P P 05 18 51.1 +0.9
baz=314,SNR=11
F31A Hecla 81.85 37 P P 05 18 51.0 +0.6
baz=316,SNR=5.6
G30A Faulkton 81.93 38 P P 05 18 51.4 +0.6
baz=315,SNR=12
MPEP Malo Peshtene 82.03 319 P P 05 18 52.0 +0.6
CSS Mathiatis 82.04 308 eP P 05 18 52.3 +0.7
comp=Z,6.5nm,1.2s
J28A Allard Ranch, 82.06 41 P P 05 18 52.1 +0.5
baz=314,SNR=12
D33A AnnSam, Waubun 82.06 35 P P 05 18 51.8 +0.3
baz=317
MDVR Moldovita 82.07 321⇑iP P 05 18 51.6 0.0
X16A Lo Mia Camp, P 82.08 53 eP P 05 18 53.8 +1.7
comp=Z,18nm,1.0s
B35A Bob, Littlefor 82.12 33 P P 05 18 52.1 +0.4
baz=319,SNR=7.8
I29A Vivian Onida 82.12 40 P P 05 18 52.9 +0.9
baz=315,SNR=6.4
ISCO Idaho Springs 82.13 46 P P 05 18 53.5 +1.1
baz=312,SNR=17
ISCO Idaho Springs 82.13 46 eP P 05 18 53.6 +1.2
ISCO pmax pmax
comp=Z,11nm,0.7s
ISCO Idaho Springs 82.13 46 eP P 05 18 53.6 +1.2
comp=Z,11nm,0.7s
MVCO Mesa Verde 82.13 49 P P 05 18 53.9 +1.6
baz=311,SNR=5.5
MVCO Mesa Verde 82.13 49 eP P 05 18 54.1 +1.8
comp=Z,18nm,0.8s
NKC Novy Kostel 82.23 330 ⇓AMS AMS 05 59 00.0
comp=Z,800nm,14.9s
KDZ Kurdzhali 82.31 317 P P 05 18 53.8 +0.9
G31A Conde 82.32 38 P P 05 18 53.8 +0.9
baz=316
F32A Veblen 82.39 37 P P 05 18 53.7 +0.5
baz=317
SOP Sopron 82.41 326⇓eP P 05 18 54.5 +1.2
C35A Jirik Farms, M 82.50 34 P P 05 18 53.8 0.0
baz=318,SNR=12
SUSD Miller 82.51 39 P P 05 18 54.5 +0.6
baz=316
PKSM Moragy 82.54 324⇑iP P 05 18 54.4 +0.4
PKSM Moragy 82.54 324⇓eP P 05 18 54.0 0.0
CONA Conrad Observa 82.54 326 i P P 05 18 55.3 +1.2
comp=Z,24nm,1.5s,SNR=12
J29A Okreek 82.55 40 P P 05 18 54.8 +0.7
baz=315,SNR=8.8
KHC Kasperske Hory 82.61 328⇓eP P 05 18 54.8 +0.4
KHC epP pP 05 19 02.9 -0.3
KHC AMS AMS 06 00 00.0
comp=Z,700nm,13.9s
KHC Kasperske Hory 82.61 328 eP P 05 18 54.6 +0.2
KHC pmax pmax
comp=Z,7.0nm,0.9s
KHC Kasperske Hory 82.61 328 eP P 05 18 54.6 +0.2
comp=Z,6.6nm,0.9s
I30A Oacoma 82.65 39 P P 05 18 55.4 +0.7
baz=315,SNR=19
G32A Webster 82.65 37 P P 05 18 55.3 +0.7
baz=316,SNR=8.9
RZN Rozhen 82.66 317 P P 05 18 55.9 +0.9

W18A **Petrified Fore** 82.72 51 P P 05 18 56.4 +1.0
baz=310
W18A **Petrified Fore** 82.72 51 *e*P P 05 18 57.2 +1.8
comp=Z,8.6nm,0.8s
H31A **Wolsey** 82.73 39 P P 05 18 56.0 +1.0
baz=316,SNR=5.3
214A **Organ Pipe Nat** 82.75 55 P P 05 18 56.5 +1.1
baz=309,SNR=6.8
214A **Organ Pipe Nat** 82.75 55 *e*P P 05 18 56.4 +1.1
comp=Z,154nm,1.9s
S22A **4UR Ranch, Cre** 82.78 48 P P 05 18 57.0 +1.2
baz=312,SNR=17
S22A **4UR Ranch, Cre** 82.78 48 *e*P P 05 18 57.4 +1.6
comp=Z,18nm,0.9s
GEC2 **GERESS Array S** 82.78 328 *e*P P
GEC2 pmax pmax
comp=Z,7.0nm,0.7s
GEC2 **GERESS Array S** 82.78 328 *e*P P 05 18 55.3 0.0
comp=Z,7.2nm,0.7s
GERES **GERESS Array B** 82.78 328 P P 05 18 55.4 0.0
comp=Z,5.5nm,0.6s,baz=38,slow=5.0,SNR=46
GEA0 **GERESS Array S** 82.79 328 *e*P P 05 18 55.3 -0.1
F33A **5 Mile Ranch,** 82.81 36 P P 05 18 56.0 +0.6
baz=317,SNR=6.4
D35A **Remer** 82.93 34 P P 05 18 56.0 0.0
baz=318
Q24A **Divide** 82.95 46 *e*P P 05 18 56.0 -0.7
comp=Z,12nm,0.8s
X18A **Snowflake** 82.96 52 *e*P P 05 18 58.1 +1.5
comp=Z,15nm,1.1s
C36A **Pine Crest Far** 82.97 33 P P 05 18 56.4 +0.2
baz=319,SNR=8.0
J30A **Dallas** 83.03 40 P P 05 18 57.4 +0.7
baz=315,SNR=8.0
GRFO **Grafenberg** 83.15 330 *e*P P 05 18 58.4 +1.3
GRFO pmax pmax
comp=Z,26nm,0.9s
GRFO **Grafenberg** 83.15 330 *e*P P 05 18 58.4 +1.3
comp=Z,26nm,0.9s
E35A **Pequot Lakes** 83.16 35 P P 05 18 57.4 +0.2
baz=318
ARSA **Arzberg** 83.20 326 *i* P P 05 18 58.1 +0.6
comp=Z,9.4nm,1.2s
G33A **Ortonville** 83.21 37 P P 05 18 58.1 +0.6
baz=317,SNR=5.3
H32A **Carlson Farm,** 83.22 38 P P 05 18 58.0 +0.3
baz=316
D36A **Goodland** 83.26 34 P P 05 18 57.9 +0.1
baz=319
MMB **Musomiste** 83.27 318 P P 05 18 58.7 +0.8
MOA **Molln** 83.30 327 *i* P P 05 18 58.9 +1.0
comp=Z,14nm,1.2s,SNR=7.4
EYMN **Ely** 83.41 33 P P 05 18 58.8 +0.4
baz=320,SNR=7.7
EYMN **Ely** 83.41 33 *e*P P 05 18 58.9 +0.4
comp=Z,25nm,0.9s
KKB **Krupnik** 83.42 318 P P 05 18 59.5 +0.9
K30A **Basset** 83.43 40 P P 05 18 59.8 +1.1
baz=315,SNR=9.5
H33A **Prehn Over Nor** 83.44 37 P P 05 18 59.4 +0.7
baz=317,SNR=27
I32A **Karley and Nic** 83.56 38 P P 05 18 59.8 +0.5
baz=317
G34A **Benson** 83.56 37 P P 05 19 00.4 +1.1
baz=318
SDCO **Great Sand Dun** 83.56 47 P P 05 19 00.9 +1.1
baz=312,SNR=22
SDCO **Great Sand Dun** 83.56 47 *e*P P 05 19 00.9 +1.1
comp=Z,13nm,0.9s
D37A **Cotton** 83.60 34 P P 05 18 59.7 +0.2
baz=320
F35A **Swanville** 83.61 36 P P 05 19 00.1 +0.6
baz=318
C38A **Sawbill Land.** 83.68 33 P P 05 19 00.4 +0.5
baz=320,SNR=11
E36A **McGregor** 83.72 34 P P 05 19 00.4 +0.3
baz=319,SNR=5.0
J32A **Parkston** 83.84 39 P P 05 19 01.2 +0.4
baz=316
PERS **Pernice** 83.85 326 *i* P P 05 19 01.2 +0.4
PERS *i* 05 19 09.1
TUC **Tucson** 83.85 54 P P 05 19 02.1 +1.0
baz=310
TUC **Tucson** 83.85 54 *e*P P 05 19 02.5 +1.4
TUC pmax pmax
comp=Z,11nm,0.9s
TUC **Tucson** 83.85 54 *e*P P 05 19 02.5 +1.4
comp=Z,10nm,0.9s
SOKA **Soboth** 83.86 326 *i* P P 05 19 01.4 +0.5
comp=Z,46nm,1.9s,SNR=25
I33A **Coleman** 83.87 38 P P 05 19 01.8 +0.8
baz=317,SNR=6.0
K31A **O'Neill** 83.91 40 P P 05 19 01.9 +0.7
baz=316,SNR=9.3
VAY **Valandovo** 84.07 318 *i* P P 05 19 02.8 +0.8
G35A **Watkins** 84.12 36 P P 05 19 03.4 +1.2
baz=318
L31A **Butterfield Fa** 84.19 40 P P 05 19 03.4 +0.8
baz=316,SNR=11
ECSD **EROS Data Cent** 84.19 38 P P 05 19 02.9 +0.3
baz=317,SNR=20
ECSD **EROS Data Cent** 84.19 38 *e*P P 05 19 02.7 +0.1
comp=Z,21nm,0.8s
OBKA **Obir** 84.20 326 *i* P P 05 19 02.6 -0.1
comp=Z,2.9nm,0.6s
OBKA *i* P P 05 19 02.7 +0.1
comp=Z,3.6nm,0.7s
SKO **Skopje** 84.21 319 *i* P P 05 19 04.3 +1.6
PMOR **Pomariorio Ree** 84.27 113 *e*T T 06 51 02.9
comp=Z,23nm,0.2s
K32A **Verdigre** 84.29 40 P P 05 19 03.4 +0.3
baz=316
KBA **Koelnbreinsper** 84.30 327 *i* PcP P 05 19 04.4 +1.2
comp=Z,11nm,0.9s,SNR=6.8
J33A **Davis** 84.32 39 P P 05 19 03.5 +0.3
baz=317
H35A **Sunnyside Ranc** 84.35 36 P P 05 19 04.2 +0.9
baz=318,SNR=13
KSCO **Kaye Shedlock'** 84.36 45 *e*P P 05 19 03.8 +0.1
comp=Z,24nm,0.9s
MEM **Membach** 84.41 333 P P 05 19 04.0 +0.5
G36A **St. Michael** 84.45 36 P P 05 19 04.7 +0.8
baz=319
MYKA **Terra Mystica** 84.51 327 *i* P P 05 19 04.0 -0.2
comp=Z,5.3nm,0.5s
OXZ **Oxford** 84.58 158 *e*P P 05 19 04.4 +0.3
comp=Z,19nm,1.1s
VISS **Visnje** 84.61 326 *i* P P 05 19 04.4 -0.2
VISS *i* 05 19 12.4
T25A **Trinidad** 84.61 47 P P 05 19 06.4 +1.3
baz=313,SNR=37
T25A **Trinidad** 84.61 47 *e*P P 05 19 05.9 +0.8
comp=Z,36nm,0.8s
BOJS **Bojanci** 84.65 325 *e*P P 05 19 04.9 +0.1
BOJS *i* 05 19 12.6
STU **Stuttgart** 84.69 330 *e*P P 05 19 05.5 +0.5
STU pmax pmax
comp=Z,22nm,0.8s
STU **Stuttgart** 84.69 330 *e*P P 05 19 05.5 +0.5
comp=Z,22nm,0.8s
PPT2 **Papeete2** 84.73 116 *e*LR LR 05 45 30.7
comp=Z,559nm,30.2s
PPT2 **Papeete2** 84.73 116 *e*T T 06 51 38.5
comp=Z,3.9nm,0.3s
L32A **Elgin** 84.74 40 P P 05 19 06.2 +0.8
baz=316
LAZ **Ladron** 84.80 50 *e*P P 05 19 07.7 +1.6
BCLA **Clavier** 84.81 333 P P 05 19 05.9 +0.4
comp=Z,14nm,1.8s
K33A **Hardington** 84.82 39 P P 05 19 06.7 +0.9
baz=317
ANMO **Albuquerque** 84.86 50 P P 05 19 08.2 +1.9
baz=312
ANMO **Albuquerque** 84.86 50*d* *i*P P 05 19 06.0 -0.4
ANMO pmax pmax
comp=Z,16nm,1.0s
ANMO **Albuquerque** 84.86 50 *e*P P 05 19 07.9 +1.6
comp=Z,16nm,0.9s
H36A **Jessenland, He** 84.86 36 P P 05 19 07.1 +1.2
baz=319,SNR=7.0
TIAR **Tiarei** 84.87 116 *e*T T 06 51 48.4
comp=Z,3.6nm,0.2s
WTTA **Wattenberg** 84.88 328 *e*P P 05 19 06.4 +0.2
WTTA *i* P P 05 19 06.4 +0.2
comp=Z,5.2nm,1.1s
JAVS **Javornik** 84.89 326 *i* P P 05 19 05.5 -0.7
JAVS *i* 05 19 13.4
SPMN **Marine on St.** 84.90 35 P P 05 19 06.8 +0.7
baz=320
SPMN **Marine on St.** 84.90 35 *e*P P 05 19 07.0 +0.8
comp=Z,11nm,0.9s
BIA **Bitola** 84.95 319 *i* P P 05 19 06.6 +0.1
PDG **Podgorica** 85.00 321 ǁ *i*P P 05 19 07.0 +0.4
L33A **Hoskins** 85.00 39 P P 05 19 07.5 +0.7
baz=317
CWF **Charwood Fore** 85.01 338 *e*P P 05 19 07.7 +1.2
comp=Z,64nm,1.7s
RETA **Reutte** 85.08 329 *i* PcP P 05 19 07.6 +0.6
comp=Z,15nm,0.8s,SNR=13
BGNE **Belgrade** 85.10 40 P P 05 19 08.1 +0.9
baz=316
BGNE **Belgrade** 85.10 40 *e*P P 05 19 07.7 +0.5
comp=Z,66nm,0.9s
SNF **Seneffe** 85.10 334 P P 05 19 07.1 +0.1
UDBI **Udbina** 85.15 324 P P 05 19 07.2 -0.2
J35A **Milford** 85.15 38 P P 05 19 08.1 +0.6
baz=318
OHR **Ohrid** 85.16 319 *i* P P 05 19 07.8 +0.2
LPM **Los Pinos Moun** 85.18 50 *e*P P 05 19 09.2 +1.3
K34A **Le Mars** 85.22 38 P P 05 19 08.2 +0.4
baz=318,SNR=7.8
BNM **Barren Site** 85.29 50 *e*P P 05 19 10.0 +1.4
H37A **Dierke Farm, C** 85.34 36 P P 05 19 09.0 +0.7
baz=319
DOU **Dourbes** 85.34 334 P P 05 19 08.2 0.0
O31A **Woolen Ranch,** 85.38 42 P P 05 19 09.0 +0.4
baz=316
BFO **Black Forest** 85.39 331 *i* P P 05 19 09.0 +0.5
BFO **Black Forest** 85.39 331 *e*P P 05 19 08.8 +0.3
comp=Z,27nm,1.0s
319A **Douglas** 85.43 54 *e*P P 05 19 10.4 +1.2
comp=Z,25nm,1.2s
STON **Ston** 85.45 322 P P 05 19 07.8 -1.1
FETA **Feichten** 85.46 329 *i* P P 05 19 09.3 +0.2
comp=Z,12nm,1.0s,SNR=5.2
M33A **Taylor Creek F** 85.47 40 P P 05 19 09.4 +0.3
baz=317
TIR **Tirane** 85.47 320 *e*P P 05 19 09.7 +0.7
TIR pmax pmax
comp=Z,21nm,0.8s
TIR **Tirane** 85.47 320 *e*P P 05 19 09.7 +0.7
comp=Z,21nm,0.8s
NVLJ **Novalja** 85.54 325 P P 05 19 08.5 -0.7
I37A **Lemond, Waseca** 85.54 36 P P 05 19 10.4 +1.1
baz=319
SCHQ **Schefferville** 85.58 16 P P 05 19 09.6 +0.2
comp=Z,8.2nm,1.0s,baz=327,slow=4.8,SNR=12
SCHQ LR LR 05 58 40.5
comp=Z,296nm,21.0s,baz=342,slow=37
SCHQ **Schefferville** 85.58 16 *e*P P 05 19 10.1 +0.7
comp=Z,24nm,1.4s
DAVA **Damuels** 85.60 329 *i* PcP P 05 19 10.1 +0.3
comp=Z,18nm,0.8s,SNR=6.6
J36A **Seneca 1, Swea** 85.60 37 P P 05 19 10.5 +0.8
baz=319
L34A **Svendsen Farm,** 85.60 39 P P 05 19 10.6 +0.9
baz=317
121A **Cookes Peak, D** 85.63 52 P P 05 19 11.7 +1.5
baz=312,SNR=10
121A **Cookes Peak, D** 85.63 52 *e*P P 05 19 11.7 +1.5
comp=Z,15nm,0.9s
AGG **Agios Georgios** 85.83 317 *e*P P
AGG pmax pmax
comp=Z,37nm,1.2s
AGG **Agios Georgios** 85.83 317 *e*P P 05 19 10.4 -0.4
comp=Z,37nm,1.2s
HSIG 85.85 57 *e*P P 05 19 12.5 +1.3
comp=Z,8.4nm,0.7s
COWI **Conover** 85.86 32 *e*P P 05 19 11.2 +0.3
comp=Z,11nm,0.8s
FUORN **Ofenpass-Fuorn** 85.97 329 *e*P P 05 19 12.3 +0.6
comp=Z,17nm,0.8s
J37A **Redenius Farm,** 86.00 37 P P 05 19 12.6 +1.0
baz=319
MEH **Mehetia** 86.00 116 *e*T T 06 53 13.0
comp=Z,60nm,0.3s
I38A **Scanlan Farm,** 86.02 36 P P 05 19 12.5 +0.8
baz=320,SNR=7.4
CBKS **Cedar Bluff** 86.11 43 P P 05 19 12.8 +0.5
baz=316
P32A **Huiting Farm,** 86.14 42 P P 05 19 12.5 +0.1
baz=316,SNR=7.4
TAOE **Nuku Hiva Isla** 86.31 104 *e*LR LR 05 46 17.6
comp=Z,436nm,33.9s
M35A **Neola** 86.32 39 P P 05 19 13.9 +0.6
baz=318,SNR=7.5
O33A **Hebron** 86.36 41 P P 05 19 13.5 0.0
baz=317
L36A **Harm Buss Farm** 86.36 38 P P 05 19 14.1 +0.6
baz=318
K37A **Belmond** 86.36 37 P P 05 19 14.1 +0.6
baz=319,SNR=5.1
N34A **Lincoln** 86.37 40 P P 05 19 13.4 -0.1
baz=317,SNR=8.6
TUE **Stuetta** 86.47 329 *e*P P 05 19 13.9 -0.3
comp=Z,13nm,1.2s
J38A **Wedel Dairy, R** 86.50 36 P P 05 19 14.6 +0.5
baz=320
Q32A **Meitler Ranch,** 86.62 42 P P 05 19 15.0 +0.2
baz=316,SNR=5.8
LAST **Lasithi** 86.72 312 Ĥ *i*P P 05 19 16.5 +1.0
LAST **Lasithi** 86.72 312 *e*P P 05 19 16.1 +0.7
comp=Z,54nm,1.1s
O34A **Beatrice** 86.75 41 P P 05 19 15.4 0.0
baz=317
P33A **Williams Farm,** 86.76 42 P P 05 19 15.8 +0.4
baz=317,SNR=6.4
M36A **Felix, Anita** 86.78 39 P P 05 19 16.0 +0.5
baz=318,SNR=6.9
N35A **Tabor** 86.79 39 P P 05 19 16.7 +1.1
baz=318
L37A **Phoenix Point,** 86.79 38 P P 05 19 16.2 +0.7
baz=319
K38A **Parkersburg** 86.87 37 P P 05 19 16.4 +0.4
baz=320
R32A **Long Quarter,** 86.95 43 P P 05 19 16.7 +0.3
baz=316
IDI **Anoyia** 86.99 313 *e*P P 05 19 16.6 -0.1
comp=Z,28nm,1.0s
Q33A **Connelly Farm,** 87.01 42 P P 05 19 16.9 +0.3
baz=317,SNR=7.6
O35A **Humboldt** 87.09 40 P P 05 19 17.5 +0.5
baz=318
P34A **Walnut Farm, R** 87.14 41 P P 05 19 17.5 +0.2
baz=317,SNR=18
L38A **Oak Wood Farm,** 87.17 37 P P 05 19 18.1 +0.7
baz=320
N36A **Muff Farm, Cla** 87.17 39 P P 05 19 18.3 +0.9
baz=318,SNR=8.0
M37A **Trindle Farm,** 87.19 38 P P 05 19 18.0 +0.5
baz=319
SCIA **State Center** 87.22 37 *e*P P 05 19 18.8 +1.1
comp=Z,30nm,0.7s
S32A **Newby Ranch, P** 87.34 44 P P 05 19 18.9 +0.6
baz=316,SNR=5.9
R33A **Olander Ranch,** 87.42 43 P P 05 19 19.1 +0.4
baz=317
Q34A **Chapman** 87.54 42 P P 05 19 19.5 +0.2
baz=317,SNR=5.6
P35A **Duane Minner,** 87.58 41 P P 05 19 19.9 +0.5
baz=318
KSU1 **Kansas State U** 87.58 41 P P 05 19 19.8 +0.4
baz=317,SNR=8.7
KSU1 **Kansas State U** 87.58 41 *e*P P 05 19 19.8 +0.4
comp=Z,42nm,0.8s
N37A **Lee Faris, Mou** 87.59 39 P P 05 19 20.2 +0.7
baz=319,SNR=10.0
M38A **Pleasantville** 87.60 38 P P 05 19 20.2 +0.7
baz=319,SNR=9.9
O36A **Bolckow** 87.68 40 P P 05 19 20.8 +1.0
baz=318,SNR=12
MNTX **Cornudas Mount** 87.70 52 P P 05 19 21.0 +0.8
baz=313,SNR=6.3
MNTX **Cornudas Mount** 87.70 52 *e*P P 05 19 21.0 +0.8
comp=Z,5.3nm,1.1s
T32A **Huddler Ranch,** 87.72 44 P P 05 19 20.8 +0.6
baz=316
MSTX **Muleshoe** 87.76 48 P P 05 19 21.3 +0.8
baz=314
MSTX **Muleshoe** 87.76 48 *e*P P 05 19 21.3 +0.8
comp=Z,5.5nm,0.9s
AMTX **Amarillo** 87.77 47 P P 05 19 21.4 +0.8
baz=315
AMTX **Amarillo** 87.77 47 *e*P P 05 19 21.7 +1.2
comp=Z,26nm,0.9s
JFWS **Jewell Farm** 87.85 35 *e*P P 05 19 20.8 +0.1
JFWS pmax pmax
comp=Z,15nm,0.8s
JFWS **Jewell Farm** 87.85 35 *e*P P 05 19 20.8 +0.1
comp=Z,15nm,0.8s
AQU **L'Aquila** 87.92 324 *e*P P 05 19 22.1 +1.0
AQU pmax pmax
comp=Z,19nm,1.0s
AQU **L'Aquila** 87.92 324 *e*P P 05 19 22.1 +1.0
comp=Z,19nm,1.0s
S33A **Kaszmaul Farm,** 87.93 43 P P 05 19 22.0 +0.9
baz=317
P36A **Good Intent, A** 87.94 40 P P 05 19 21.5 +0.4
baz=318,SNR=7.1
N38A **Joes South For** 88.05 38 P P 05 19 22.5 +0.8
baz=319
Q35A **Mercer Eighty,** 88.06 41 P P 05 19 22.3 +0.5
baz=318,SNR=12
O37A **Wolven Farm, M** 88.07 39 P P 05 19 22.8 +1.1
baz=319
T33A **Patterson Ranc** 88.17 44 P P 05 19 23.3 +1.0
baz=316
S34A **Willow Spring** 88.34 42 P P 05 19 23.9 +0.8
baz=317
N39A **Derby Farms, D** 88.35 38 P P 05 19 23.9 +0.9
baz=320,SNR=8.5
R35A **Emporia Munici** 88.37 42 P P 05 19 24.5 +1.3
baz=318,SNR=5.4
P37A **Lathrop** 88.40 40 P P 05 19 24.1 +0.8
baz=319
O38A **Galt** 88.44 39 P P 05 19 24.4 +0.9
baz=319
V32A **Arapaho** 88.70 45 P P 05 19 26.2 +1.4
baz=316
U33A **Lingo Farm, Me** 88.71 44 P P 05 19 26.2 +1.3
baz=316
R36A **Gordon, Harris** 88.74 41 P P 05 19 25.8 +0.8
baz=318
S35A **Otter Creek Ra** 88.78 42 P P 05 19 26.1 +0.9
baz=318,SNR=8.9
P38A **Dawn** 88.79 39 P P 05 19 26.0 +0.9
baz=319,SNR=6.9
T34A **McClaskey Farm** 88.79 43 P P 05 19 26.2 +0.9
baz=317
O39A **Kirksville** 88.80 38 P P 05 19 26.2 +1.0
baz=320
W32A **Sentinel** 89.01 45 P P 05 19 27.5 +1.2
baz=316,SNR=6.3
U34A **Anderson Ranch** 89.03 44 P P 05 19 27.6 +1.2
baz=317,SNR=6.9
U34A **Anderson Ranch** 89.03 44 *e*P P 05 19 27.7 +1.4
comp=Z,31nm,0.9s
R37A **Teagarden Farm** 89.10 41 P P 05 19 26.8 +0.2
baz=318
S36A **Lake Cedric, C** 89.14 42 P P 05 19 27.4 +0.5
baz=318,SNR=6.5
O40A **La Belle** 89.24 38 P P 05 19 28.0 +0.8
baz=320,SNR=7.1
T35A **Sooner Cattle** 89.24 43 P P 05 19 27.9 +0.6
baz=318
Q38A **Cooks Store, C** 89.24 40 P P 05 19 27.5 +0.2
baz=319,SNR=6.3
W33A **Caddo, Fort Co** 89.43 45 P P 05 19 28.5 +0.2
baz=316
T36A **Boggs Farm, Ca** 89.47 42 P P 05 19 29.3 +0.9
baz=318,SNR=10
V34A **Guthrie** 89.47 44 P P 05 19 29.2 +0.7
baz=317,SNR=8.2
V34A **Guthrie** 89.47 44 *e*P P 05 19 29.1 +0.7
comp=Z,34nm,0.8s
X32A **Elmer** 89.49 46 P P 05 19 29.2 +0.6
baz=316,SNR=6.0
Q39A **Willow Grove F** 89.51 39 P P 05 19 29.4 +0.9
baz=320,SNR=11
S37A **Fort Scott** 89.52 41 P P 05 19 29.1 +0.5
baz=318,SNR=12
WMOK **Wichita Mounta** 89.55 45 *e*P P 05 19 29.7 +0.8
WMOK pmax pmax
comp=Z,8.0nm,0.9s
WMOK **Wichita Mounta** 89.55 45 *e*P P 05 19 29.7 +0.8
comp=Z,8.4nm,0.9s
P40A **Paris** 89.60 38 P P 05 19 29.6 +0.6
baz=320,SNR=11
R38A **Fenwick Farm,** 89.68 40 P P 05 19 28.9 -0.4
baz=319
W34A **Bridge Creek,** 89.77 45 P P 05 19 31.2 +1.4
baz=317
W34A **Bridge Creek,** 89.77 45 *e*P P 05 19 31.2 +1.4
comp=Z,19nm,0.9s
CEL **Celeste** 89.81 320 *e*P P 05 19 30.1 +0.1
comp=Z,26nm,1.0s
X33A **Lawton** 89.86 45 P P 05 19 31.0 +0.7
baz=316
V35A **Meyer Ranch, C** 89.91 44 P P 05 19 31.2 +0.7
baz=317
T37A **Cheneyville 18** 89.94 42 P P 05 19 31.4 +0.8
baz=318
Q40A **Laux Farm, Aux** 90.00 39 P P 05 19 31.6 +0.7
baz=320
R39A **Chumby, Stover** 90.03 40 P P 05 19 31.5 +0.5
baz=320,SNR=9.3
U36A **Oologah** 90.05 43 P P 05 19 31.9 +0.8
baz=318
S38A **Stockton** 90.10 41 P P 05 19 31.5 +0.1
baz=319,SNR=6.7
HDIL **Hopedale** 90.14 36 P P 05 19 31.8 +0.4
baz=322
HDIL **Hopedale** 90.14 36 *e*P P 05 19 32.2 +0.8
comp=Z,21nm,0.8s
Y33A **Hilltop Ranch,** 90.17 46 P P 05 19 32.4 +0.7
baz=316,SNR=8.6
X34A **Smith Ranch, M** 90.19 45 P P 05 19 32.6 +0.8
baz=317,SNR=5.2
W35A **Tecumseh** 90.33 44 P P 05 19 32.8 +0.3
baz=317,SNR=8.4
T38A **Diamond** 90.34 41 P P 05 19 32.7 +0.2
baz=319,SNR=24
S39A **Bolivar** 90.36 40 P P 05 19 32.6 0.0
baz=319,SNR=15
TUL1 **Leonard** 90.37 43 P P 05 19 33.5 +0.9
baz=318,SNR=7.4
TUL1 **Leonard** 90.37 43 *e*P P 05 19 33.8 +1.2
comp=Z,22nm,0.6s
U37A **Salina** 90.37 42 P P 05 19 33.2 +0.6
baz=318
V36A **Jenks** 90.38 43 P P 05 19 33.4 +0.7
baz=318,SNR=6.2
TX31 **Lajitas Ar. Si** 90.39 52 *e*P P 05 19 33.6 +0.6
TXAR **Lajitas Array** 90.39 52 P P 05 19 33.5 +0.5
comp=Z,9.8nm,0.8s,baz=297,slow=3.3,SNR=103
R40A **Maddies Statio** 90.44 39 P P 05 19 33.2 +0.3
baz=320,SNR=8.4
ABTX **Abilene, Hawle** 90.56 47 P P 05 19 34.9 +1.2
baz=316
ABTX **Abilene, Hawle** 90.56 47 *e*P P 05 19 34.8 +1.2
comp=Z,18nm,0.8s
Z33A **Whitaker Ranch** 90.60 46 P P 05 19 34.4 +0.7
baz=316
W36A **Wetumka** 90.70 44 P P 05 19 34.9 +0.7
baz=318,SNR=5.1
Y34A **Reagan Ranch,** 90.70 45 P P 05 19 34.7 +0.6
baz=317
HPIG 90.73 55 *e*P P 05 19 34.9 +0.2
comp=Z,7.6nm,0.8s
U38A **Gravette** 90.74 42 P P 05 19 34.8 +0.5
baz=319,SNR=8.6
V37A **Hulbert** 90.75 43 P P 05 19 34.9 +0.6
baz=318,SNR=6.5
X35A **Drake** 90.83 45 P P 05 19 35.2 +0.5
baz=317,SNR=11
T39A **Clever** 90.83 41 P P 05 19 35.2 +0.5
baz=319,SNR=5.6
S40A **Lebanon** 90.85 40 P P 05 19 35.2 +0.4
baz=320,SNR=9.4
133A **Hamilton Ranch** 91.00 47 P P 05 19 36.6 +0.9
baz=316,SNR=5.6
Z34A **Collier Ranch,** 91.03 46 P P 05 19 36.5 +0.8
baz=317,SNR=5.8
X36A **Centrahoma** 91.05 44 P P 05 19 36.6 +0.8
baz=318,SNR=16
HHAR **Hobbs** 91.09 42 *e*P P 05 19 36.6 +0.6
comp=Z,17nm,0.8s
W37B **Quinton** 91.14 43 P P 05 19 37.0 +0.8
baz=318
V38A **Canehill** 91.16 42 P P 05 19 36.7 +0.4
baz=319,SNR=14
T40A **Mansfield** 91.18 40 P P 05 19 36.7 +0.3

baz=320
SLM Saint Louis 91.19 38 *e*P P 05 19 37.1 +0.8
SLM pmax pmax
comp=Z,17nm,0.4s
SLM Saint Louis 91.19 38 *e*P P 05 19 37.1 +0.8
comp=Z,17nm,0.4s
AAM Ann Arbor 91.25 32 *e*P P 05 19 37.8 +1.3
AAM pmax pmax
comp=Z,23nm,0.5s
AAM Ann Arbor 91.25 32 *e*P P 05 19 37.8 +1.3
comp=Z,23nm,0.5s
U39A Green Forest 91.26 41 P P 05 19 37.3 +0.5
baz=319,SNR=11
TRQ Mont Tremblant 91.29 24 *e*P P 05 19 37.5 +0.7
SFIN Lafayette 91.30 35 P P 05 19 37.6 +0.7
baz=323
SFIN Lafayette 91.30 35 *e*P P 05 19 37.5 +0.7
comp=Z,11nm,0.9s
LMQ La Malbaie 91.39 21 *e*P P 05 19 38.3 +1.2
comp=Z,19nm,1.0s
233A Rising Star 91.44 47 P P 05 19 38.6 +0.9
baz=316,SNR=7.2
Z35A Perchaven, San 91.44 46 P P 05 19 38.6 +1.0
baz=317,SNR=8.2
134A White-Moore Ra 91.52 47 P P 05 19 39.1 +1.1
baz=317,SNR=5.4
X37A Clayton 91.58 44 P P 05 19 38.9 +0.7
baz=318
Y36A Durant 91.58 45 P P 05 19 38.9 +0.7
baz=318
V39A Pettigrew 91.58 42 P P 05 19 38.8 +0.5
baz=319,SNR=7.1
U40A Yellville 91.61 41 P P 05 19 38.4 0.0
baz=320,SNR=22
W38A Poteau 91.69 43 P P 05 19 39.4 +0.7
baz=319,SNR=6.6
X38A Whitesboro 91.82 43 P P 05 19 40.4 +1.1
baz=318,SNR=7.7
333A Richland Sprin 91.88 48 P P 05 19 40.9 +1.2
baz=316,SNR=8.3
Y37A Hugo 91.89 44 P P 05 19 40.5 +0.8
baz=318
234A Clairette 91.89 47 P P 05 19 40.8 +1.0
baz=316,SNR=12
135A Vickery Place, 91.92 46 P P 05 19 41.1 +1.2
baz=317
Z36A Blue Ridge 91.96 45 P P 05 19 40.9 +0.8
baz=318
JCT Junction City 91.99 49 P P 05 19 41.1 +0.9
baz=316
JCT Junction City 91.99 49 *e*P P 05 19 41.2 +0.9
JCT pmax pmax
comp=Z,12nm,0.7s
JCT Junction City 91.99 49 *e*P P 05 19 41.2 +0.9
comp=Z,12nm,0.7s
W39A Magazine 91.99 42 P P 05 19 40.6 +0.4
baz=319
V40A Witts Springs 92.05 41 P P 05 19 40.6 +0.2
baz=320,SNR=5.5
OLIL Olney 92.14 36 *e*P P 05 19 41.7 +1.0
comp=Z,9.6nm,0.7s
433A Art 92.22 48 P P 05 19 41.9 +0.5
baz=316
WHTX Lake Whitney, 92.30 47 P P 05 19 43.0 +1.4
baz=317
WHTX Lake Whitney, 92.30 47 *e*P P 05 19 43.1 +1.4
comp=Z,34nm,0.8s
334A Lometa 92.32 47 P P 05 19 42.5 +0.8
baz=316,SNR=12
X39A Fountain Ranch 92.33 43 P P 05 19 42.6 +0.9
baz=319,SNR=12
W40A Ferguson Farm, 92.38 42 P P 05 19 42.6 +0.7
baz=320,SNR=7.1
SIUC Southern Illin 92.41 38 *e*P P 05 19 43.0 +1.0
comp=Z,18nm,0.8s
Y38A Idabel 92.42 44 P P 05 19 42.6 +0.4
baz=318
Z37A Pogue Cattle C 92.47 45 P P 05 19 43.9 +1.6
baz=318
PBMO Poplar Bluff 92.53 39 *e*P P 05 19 43.2 +0.6
comp=Z,12nm,0.9s
MIAR Mount Ida 92.59 42 P P 05 19 43.8 +0.9
baz=319,SNR=15
MIAR Mount Ida 92.59 42 *e*P P 05 19 43.8 +0.9
MIAR pmax pmax
comp=Z,21nm,0.8s
MIAR Mount Ida 92.59 42 *e*P P 05 19 43.8 +0.9
comp=Z,21nm,0.8s
434A Burnet 92.67 48 P P 05 19 44.0 +0.6
baz=316
X301 Greenbrier Sit 92.70 41 *e*P P 05 19 44.5 +1.1
comp=Z,12nm,0.5s
WHAR Wooly Hollow 92.72 41 *e*P P 05 19 44.3 +0.8
comp=Z,23nm,0.8s
Y39A Lockesburg 92.77 43 P P 05 19 44.6 +0.9
baz=319,SNR=12
W41A Tony Mavity, V 92.83 41 P P 05 19 44.6 +0.6
baz=320,SNR=5.9
W41B Gary Mavity, V 92.83 41 P P 05 19 44.5 +0.5
baz=320,SNR=5.9
236A Katherine and 92.83 46 P P 05 19 44.2 +0.1
baz=317
PARMO Parma 92.97 39 *e*P P 05 19 45.4 +0.8
X40A Basin Creek Fa 93.04 42 P P 05 19 46.1 +1.1
baz=320,SNR=5.9
633A Saathoff Ranch 93.10 49 P P 05 19 45.9 +0.6
baz=316
435B Jarrell 93.10 47 P P 05 19 46.1 +0.8
baz=317
534A Blanco 93.11 49 P P 05 19 45.9 +0.4
baz=316,SNR=6.0
Y40A Okolona 93.16 43 P P 05 19 46.2 +0.7
baz=319
ACSO Alum Creek Sta 93.25 32 *e*P P 05 19 46.9 +1.0
comp=Z,14nm,0.9s
HBAR Harrisburg 93.37 40 *e*P P 05 19 47.6 +1.1
WCI Wyandotte Cave 93.40 36 *e*P P 05 19 47.5 +0.9
WCI pmax pmax
comp=Z,8.0nm,0.9s
WCI Wyandotte Cave 93.40 36 *e*P P 05 19 47.5 +0.9
comp=Z,8.0nm,0.9s
832A Faith Ranch, C 93.44 51 P P 05 19 46.9 -0.1
baz=315
WLAR White Oak Lake 93.49 43 *e*P P 05 19 47.9 +0.8
comp=Z,16nm,0.8s
M54A Oil Creek Stat 93.54 29 P P 05 19 47.6 +0.4
baz=328
733A Divot King Ran 93.55 50 P P 05 19 48.6 +1.1
baz=316
535A Dale 93.66 48 P P 05 19 48.7 +0.8
baz=317
N54A Moraine State 93.88 30 P P 05 19 49.6 +0.8
baz=328
WVT Waverly 94.34 38 *e*P P 05 19 51.7 +0.8
WVT pmax pmax
comp=Z,6.0nm,0.9s
WVT Waverly 94.34 38 *e*P P 05 19 51.7 +0.8
comp=Z,5.8nm,0.9s
933A Laredo 94.35 51 P P 05 19 52.9 +1.7
baz=316
O56A Blue Knob Stat 95.03 29 P P 05 19 54.5 +0.4
baz=329
034A Hebbronville 95.11 51 P P 05 19 56.8 +2.1
baz=316
ZAIG Zacatecas 95.62 56 *e*P P 05 19 58.4 +1.0
comp=Z,5.4nm,1.0s
SWET Sewanee 96.00 37 *e*P P 05 19 58.8 +0.2
comp=Z,12nm,1.9s
ES19 SONSECA Array 97.34 334 *e*P P 05 20 04.5 -0.1
ESDC Sonseca Array 97.39 334 P P 05 20 04.4 -0.4
comp=Z,1.1nm,0.8s,baz=17,slow=4.3,SNR=8.5
ESDC LR LR 06 08 43.5
comp=Z,301nm,18.2s,baz=65,slow=38
RKT Rikitea 98.85 112 *e*SS SS 05 38 22.6 -4.9
comp=Z,171nm,34.0s
RKT Rikitea 98.85 112 *e*LR LR 05 51 53.3
comp=Z,242nm,30.5s
VNDA Vanda 114.79 175 PKP PKPdf 05 25 10.3 -0.1
comp=Z,1.1nm,1.0s,baz=310,slow=3.4,SNR=5.4
TOA0 Torodi Ar. Sit 117.34 315 *e*PKPdf **PKPdf** 05 25 17.0 -0.2
TORD Torodi Ar. Bea 117.34 315 PKP **PKPdf** 05 25 16.5 -0.7
comp=Z,1.1nm,0.7s,baz=36,slow=1.0,SNR=9.3
TORD PP **PP** 05 26 22.5 -5.1
comp=Z,3.3nm,1.0s,baz=33,slow=6.5,SNR=8.7
OCAC Ocana 124.72 43 *e*P **PKPdf** 05 25 32.3 +0.7
SDV Santo Domingo 125.60 40 *e*PKPdf **PKPdf** 05 25 34.0 +0.6
GUYC Guyana, Colomb 126.00 47 *e*P **PKPdf** 05 25 35.4 +0.9
DBIC Dimbokro 126.31 316 PKP **PKPdf** 05 25 34.1 -0.4
comp=Z,5.2nm,0.7s,baz=14,slow=3.8,SNR=8.0
QSPA South Pole Qui 126.58 180 *e*PKPdf **PKPdf** 05 25 33.5 0.0
RUSC La Rusia 126.78 44 *e*P **PKPdf** 05 25 33.1 -2.9
POPC Popayan, Colom 127.34 50 *e*P **PKPdf** 05 25 36.0 -0.8
OTAV Otavalo 127.99 54 *e*P **PKPdf** 05 25 37.9 -0.4
VNA2 Neumayer--Watz 142.07 196 PKP PKPpre 05 25 55.3
baz=101,slow=2.6
VNA3 Neumayer Olymp 142.32 195 PKP PKPpre 05 25 57.8
VNA1 Neumayer--Stat 142.47 196 PKP **PKPdf** 05 26 01.1 -1.7
SAML Samuel 144.52 45 *e*PKPdf PKPbc 05 26 06.9 +0.2
LPAZ La Paz 146.96 60 PKPbc **PKPbc** 05 26 14.6 -0.4
comp=Z,31nm,0.8s,baz=334,slow=3.3,SNR=11.5
LPAZ La Paz 146.96 60 *e*PKPdf **PKPbc** 05 26 14.8 -0.2
PB11 IPOC Station P 148.15 66 *e*PKPdf **PKPdf** 05 26 15.7 +1.3
RCBR Riachuelo 149.03 354 *e*PKPbc **PKPbc** 05 26 20.5 +0.6
PB01 IPOC Station P 149.06 68 *e*PKPbc **PKPbc** 05 26 20.3 +0.4
PB04 IPOC Station P 149.32 71 *e*PKPbc **PKPbc** 05 26 21.6 +1.0
LVC Limon Verde 150.42 70 *e*PKPbc **PKPbc** 05 26 24.3 +0.8
LCO Las Campanas 152.22 83 *e*PKPbc **PKPbc** 05 26 28.0 +0.6

IDC 30 05:20:15.3±2.0, 0.75N×96.99E, h0km, mb3.6/3, mb1 3.7/4, mb1mx3.4/39, mbtmp3.5/4, ML3.1/1, Error ellipse: s-maj=54.6km s-min=27.1km az=62.0, Off west coast of northern Sumatera

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
PSI	**Prapat**	**2.81**	**43**	Pn		Pn	Pn	05 21 01.1	-0.5
	3.4nm,0.3s,baz=276,slow=6.7,SNR=12								
H08S2	**Diego Garcia H**	**25.82**	**251**	T		T	T	05 52 44.5	
	baz=72,slow=76,SNR=482								
H08S3	**Diego Garcia H**	**25.82**	**251**	T		T	T	05 52 36.6	
	baz=72,slow=76,SNR=496								
H08S1	**Diego Garcia H**	**25.83**	**251**	T		T	T	05 52 37.3	
	baz=72,slow=76,SNR=741								
H01W3	**Cape Leeuwin H**	**38.91**	**157**	T		T	T	06 08 57.2	
	baz=333,slow=76,SNR=145								
H01W2	**Cape Leeuwin H**	**38.92**	**157**	T		T	T	06 08 58.1	
	baz=333,slow=76,SNR=156								
H01W1	**Cape Leeuwin H**	**38.93**	**157**	T		T	T	06 09 01.9	
	baz=333,slow=76,SNR=153								
WRA	**Warramunga Arr**	**41.98**	**121**	P		P	P	05 28 08.3	-0.2
	0.5nm,0.8s,baz=304,slow=8.9,SNR=6.6								
ASAR	**Alice Springs**	**43.29**	**127**	P		P	P	05 28 19.2	0.0
	0.3nm,0.4s,baz=300,slow=8.1,SNR=5.3								
MKAR	**Makanchi Array**	**47.63**	**346**	P		P	P	05 28 53.2	+0.1
	0.6nm,0.5s,baz=162,slow=8.6,SNR=8.4								
TXAR	**Lajitas Array**	**144.16**	**32**	PKP		PKPbc	PKPbc	05 39 52.2	+0.1
	0.1nm,0.4s,baz=316,slow=2.5,SNR=2.9								

JMA 30 05:23:55.6±0.1, 36.80N×141.22E, h37km±1km, M2.7, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.45**	**312**	P		Pn	Pn	05 24 05.2	-0.3
ONAJ				S		Sn	Sn	05 24 12.2	-0.4
JHO	**Hitachi**	**0.56**	**250**	P		Pn	Pn	05 24 06.7	-0.4
JHO				S		Sn	Sn	05 24 14.6	-0.5
JFK	**Kawauchi**	**0.63**	**334**	P		Pn	Pn	05 24 07.8	-0.4
JFK				S		Sn	Sn	05 24 16.5	-0.5
JFT	**Otama**	**1.01**	**316**	P		Pn	Pn	05 24 14.4	+1.2
JMM	**Marumori**	**1.12**	**342**	P		Pn	Pn	05 24 15.1	+0.4
MAT	**Matsushiro**	**2.44**	**265**	P		Pn	Pn	05 24 37.5	+4.7
MAT				*e*S		Sn	Sn	05 25 08.3	+6.9

*NIED **30** 05:29:00, 36.80N×141.30E, h5km, Mw3.8 Best double couple: M0 6.55000×10^14 NP1:φ=51.00000°, δ=84.00000°, λ=3.00000°. NP2:φ=321.00000°, δ=87.00000°, λ=174.00000°.*
*ISCJB **30** 05:29:47.5±1.1, 36.70N±0.03×141.37E±0.06, h15km±7km, mb3.7/13, MS2.9/1, Error ellipse: s-maj=7.7km s-min=5.2km az=19.9*
*IDC **30** 05:29:47.6±0.8, 36.63N×141.25E, h0km, mb3.6/10, mb1 3.8/14, mb1mx3.7/52, mbtmp3.7/14, ML3.9/4, MS3.0/2, Ms1 3.0/2, ms1mx2.8/49, Error ellipse: s-maj=21.8km s-min=15.4km az=98.0*
*JMA **30** 05:29:49.6±0.1, 36.75N×141.25E, h35km±1km, M4.1*
JMA Felt III J1.
*NEIC **30** 05:29:52.9±0.9, 36.63N×141.18E, h39km±11km, mb4.3/3, Error ellipse: s-maj=14.5km s-min=9.6km az=101.0*
NEIC Recorded [3 JMA] in Ibaraki.

ISC 30 05:29:49.1±1.5, 36.75N±0.04×141.28E±0.06, h10km±9km, n38, σ0°97/35, mb3.7/13, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.52**	**313**	P		P	**Pg**	**05 29 59.8**	**+0.5**
ONAJ				S		S	**Sg**	**05 30 07.0**	**+0.8**
JHO	**Hitachi**	**0.58**	**257**	P		P	**Pg**	**05 30 00.7**	**+0.2**
JHO				S		S	**Sg**	**05 30 09.0**	**+0.8**
JFK	**Kawauchi**	**0.70**	**333**	P		P	**Pg**	**05 30 02.3**	**-0.3**
JFK				S		S	**Sg**	**05 30 11.4**	**-0.3**
JFT	**Otama**	**1.07**	**316**	P		P	**Pb**	**05 30 09.0**	**-0.8**
JFT				S		S	**Sb**	**05 30 22.5**	**-1.4**
JMM	**Marumori**	**1.18**	**341**	P		P	**Pn**	**05 30 09.8**	**-1.9**
JMM				S		S	**Sb**	**05 30 25.6**	**-1.3**
JFY	**Yanaizu**	**1.42**	**298**	P		P	**Pn**	**05 30 14.3**	**-0.7**
JFY				S		S	**Sn**	**05 30 32.7**	**-1.0**
MJAR	**Matsushiro Arr**	**2.47**	**266**	Pn		Pn	**Pn**	**05 30 29.5**	**0.0**
	8.4nm,0.3s,baz=88,slow=15,SNR=30								
MJAR						Sn	**Sn**	**05 31 00.0**	**+0.3**
	23nm,0.3s,baz=85,slow=17,SNR=6.0								
MAJO	**Matsushiro**	**2.48**	**266**	*e*Pn		Pn	**Pn**	**05 30 29.4**	**-0.1**
MAT	**Matsushiro**	**2.48**	**266**	P		Pn	**Pn**	**05 30 29.4**	**-0.1**
MAT				*e*S		Sn	**Sn**	**05 30 59.6**	**-0.2**
JHJ2	**Mitsune**	**3.82**	**199**	*e*Pn		Pn	**Pn**	**05 30 48.5**	**+0.5**
JHJ	**Hachijo jima 2**	**3.82**	**199**	Pn		Pn	**Pn**	**05 30 46.8**	**-1.2**
	30nm,0.3s,baz=94,slow=19,SNR=8.6								
JHJ						Sn	**Sn**	**05 31 31.4**	**-1.5**
	39nm,0.3s,baz=77,slow=19,SNR=3.7								
ERM	**Erimo**	**5.46**	**15**	*e*Pn		Pn	Pn	05 31 15.6	+5.1
ERM				*e*Sn			**Sn**	**05 32 14.1**	**+0.9**
ASAJ	**Asahikawa**	**7.43**	**7**	Pn		Pn	**Pn**	**05 31 38.8**	**+1.3**
	1.2nm,0.3s,baz=198,slow=20,SNR=3.5								
CBIJ	**Chichi jima**	**9.65**	**175**	*e*Pn		Pn	**Pn**	**05 32 06.4**	**-1.7**
CBIJ						Sn	Sn	05 33 46.4	-10
JCJ	**Chichijima**	**9.65**	**175**	Pn		Pn	Pn	05 32 04.7	-3.4
	8.8nm,0.3s,baz=320,slow=18,SNR=5.2								
JCJ						Sn	Sn	05 33 46.4	-10
	baz=270,slow=20								
JCJ						LR	LR	05 35 45.4	
	comp=Z,94nm,21.2s,baz=77,slow=38								
USRK	**Ussuriysk Ar.**	**10.26**	**319**	Pn		Pn	Pn	05 32 20.8	+4.5
	0.2nm,0.3s,baz=132,slow=12,SNR=2.4								
KSRS	**Korea Array**	**10.69**	**278**	Pn		Pn	Pn	05 32 26.8	+4.6
	0.2nm,0.3s,baz=88,slow=14,SNR=2.8								
KSAR	**Wonju Array Be**	**10.72**	**278**	Pn		Pn	Pn	05 32 26.8	+4.2
MA2	**Magadan**	**23.66**	**12**	LR		LR	LR	05 45 09.7	
	comp=Z,50nm,21.7s,baz=288,slow=39								
SONM	**Songino Array**	**27.85**	**304**	P		P	**P**	**05 35 39.5**	**+0.6**
	0.8nm,0.5s,baz=90,slow=7.8,SNR=2.4								
H11N2	**WAKE ISLAND Hy**	**28.10**	**120**	T		T	T	06 05 04.4	
	baz=313,slow=75,SNR=170								
H11N1	**WAKE ISLAND Hy**	**28.11**	**120**	T		T	T	06 05 04.2	
	baz=313,slow=75,SNR=132								
H11N3	**WAKE ISLAND Hy**	**28.12**	**120**	T		T	T	06 05 05.2	
	baz=313,slow=75,SNR=131								
H11S1	**WAKE ISLAND Hy**	**28.80**	**122**	T		T	T	06 06 34.5	
	baz=314,slow=76,SNR=282								
H11S3	**WAKE ISLAND Hy**	**28.80**	**122**	T		T	T	06 06 34.1	
	baz=314,slow=76,SNR=236								
H11S2	**WAKE ISLAND Hy**	**28.82**	**122**	T		T	T	06 06 34.0	
	baz=314,slow=76,SNR=247								
ZALV	**Zalesovo Beam**	**42.03**	**313**	P		P	**P**	**05 37 40.1**	**-0.3**
	0.7nm,0.4s,baz=90,slow=4.3,SNR=1.9								
MKAR	**Makanchi Array**	**44.18**	**302**	P		P	**P**	**05 37 57.5**	**-0.5**
	0.3nm,0.5s,baz=81,slow=8.3,SNR=3.3								
KURK	**Kurchatov**	**46.02**	**308**	*e*P		P	P	05 38 18.1	+5.5
	11nm,1.0s								
ILAR	**Eielson Array**	**49.80**	**32**	P		P	**P**	**05 38 42.1**	**+0.5**
	0.3nm,0.8s,baz=270,slow=5.4,SNR=3.8								
INK	**Inuvik**	**54.69**	**27**	P		P	**P**	**05 39 19.6**	**+1.7**
	0.5nm,0.9s,baz=286,slow=2.8,SNR=3.2								
WRAB	**Tennant Creek**	**56.75**	**188**	*e*P		P	**P**	**05 39 32.5**	**-0.7**
	3.8nm,1.0s								
WRA	**Warramunga Arr**	**56.76**	**188**	P		P	**P**	**05 39 32.4**	**-0.9**
	0.8nm,0.4s,baz=5.4,slow=7.3,SNR=28								
ABKAR	**Akbulak array**	**58.04**	**310**	*e*P		P	**P**	**05 39 42.0**	**-0.1**
	0.3nm,0.4s								
ASAR Alice Springs 60.49 188 P P 05 39 58.9 -0.4
0.1nm,0.4s,baz=15,slow=12,SNR=3.6
YKA Yellowknife Ar 64.11 30 P P 05 40 23.9 +0.8
0.1nm,0.9s,baz=306,slow=7.1,SNR=2.8
ARCES ARCESS Array B 64.22 339 P P 05 40 24.7 +1.0
2.7nm,1.0s,baz=52,slow=5.8,SNR=3.2
FINES FINESS Array B 69.02 332 P P 05 40 55.7 +1.3
1.0nm,0.7s,baz=52,slow=9.0,SNR=2.6

IDC 30 05:40:07.5±1.7, 0.71N×121.99E, h0km, mb3.5/3, mb1 3.8/4, mb1mx3.4/52, mbtmp3.6/4, ML3.7/1, Error ellipse: s-maj=137.2km s-min=25.3km az=63.0, Minahassa Peninsula, Sulawesi

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**19.03**	**169**	P		P		05 44 31.3	+0.1
	0.2nm,0.3s,baz=340,slow=12,SNR=7.0								
WRA	**Warramunga Arr**	**23.83**	**150**	P		P		05 45 22.6	+0.1
	2.1nm,0.6s,baz=326,slow=10,SNR=59								
ASAR	**Alice Springs**	**26.85**	**155**	P		P		05 45 50.0	-0.1
	0.2nm,0.4s,baz=344,slow=14,SNR=11								
MKAR	**Makanchi Array**	**57.49**	**329**	P		P		05 49 58.5	-0.1
	0.2nm,0.4s,baz=118,slow=9.0,SNR=3.7								

*IDC **30** 05:40:19.3±0.9, 19.33S×167.96E, h0km, mb4.4/12, mb1 4.6/13, mb1mx4.3/46, mbtmp4.4/13, ML3.7/1, Error ellipse: s-maj=24.4km s-min=20.5km az=135.0*
*NEIC **30** 05:40:21.7±0.5, 19.39S×167.82E, h10km, mb4.4/6, Error ellipse: s-maj=14.0km s-min=10.5km az=163.0*
*ISCJB **30** 05:40:22.2±0.5, 19.37S±0.07×167.83E±0.08, h26km, mb4.3/16, Error ellipse: s-maj=11.4km s-min=8.9km az=37.9*

ISC 30 05:40:24.0±0.6, 19.40S±0.09×167.83E±0.10, h26km, n28, σ0°88/27, mb4.4/16, Vanuatu Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**2.96**	**206**	Pn		**Pn**	**Pn**	**05 41 08.1**	**-1.3**
	8.7nm,0.3s,baz=46,slow=19,SNR=95								
DZM						Sn	**Sn**	**05 41 44.7**	**+0.5**
	9.1nm,0.3s,baz=144,slow=20,SNR=3.8								
MSVF	**Nonsavu**	**9.84**	**82**	*e*Pn		**Pn**	**Pn**	**05 42 45.6**	**+1.7**
	90nm,1.5s								
EIDS	**Eidsvold**	**16.58**	**246**	*e*P		**P**	**P**	**05 44 18.8**	**+1.6**
	8.6nm,1.0s								
CTA	**Charters Tower**	**20.32**	**264**	P		Pn	Pn	05 45 00.5	+0.1
	20nm,1.0s,baz=88,slow=13,SNR=7.7								
RPZ	**Rata Peaks**	**24.40**	**174**	P		**P**	**P**	**05 45 40.7**	**+0.4**
	13nm,1.0s,baz=78,slow=6.7,SNR=5.8								
STKA	**Stephens Creek**	**26.64**	**237**	P		**P**	**P**	**05 46 01.5**	**+0.8**
	6.2nm,1.0s,baz=66,slow=8.8,SNR=9.7								
WRAB	**Tennant Creek**	**31.50**	**263**	*e*P		**P**	**P**	**05 46 43.1**	**-1.0**
	3.9nm,0.9s								
WRA	**Warramunga Arr**	**31.51**	**263**	P		**P**	**P**	**05 46 43.3**	**-0.8**
	3.7nm,0.9s,baz=92,slow=9.0,SNR=16								
ASAR	**Alice Springs**	**31.79**	**256**	P		**P**	**P**	**05 46 46.7**	**0.0**
	6.9nm,0.8s,baz=84,slow=8.9,SNR=66								
FITZ	**Fitzroy Crossi**	**39.90**	**265**	P		**P**	**P**	**05 47 56.2**	**+0.1**
	17nm,1.0s,baz=115,slow=8.6,SNR=19								
FITZ	**Fitzroy Crossi**	**39.90**	**265**	*e*P		**P**	**P**	**05 47 56.2**	**+0.1**
	20nm,1.1s								
MBWA	**Marble Bar**	**45.01**	**259**	*e*P		**P**	**P**	**05 48 38.2**	**+0.5**
	4.8nm,1.2s								
KAPI	**Kappang**	**48.93**	**281**	*e*P		**P**	**P**	**05 49 09.2**	**+0.9**
	5.2nm,1.0s								
VNDA	**Vanda**	**58.24**	**182**	P		**P**	**P**	**05 50 15.2**	**-0.5**
	1.1nm,0.8s,baz=350,slow=7.8,SNR=4.5								
QSPA	**South Pole Qui**	**70.66**	**180**	*e*P		**P**	**P**	**05 51 37.3**	**0.0**
	10.0nm,1.0s								
PSI	**Prapat**	**71.13**	**280**	P		**P**	**P**	**05 51 40.3**	**-0.7**
	4.0nm,0.7s,baz=190,slow=5.0,SNR=3.9								
CMAR	**Chiang Mai Arr**	**77.35**	**295**	P		**P**	**P**	**05 52 17.8**	**+0.7**
	0.5nm,0.3s,baz=117,slow=4.2,SNR=4.1								
GTA	**Gaotai**	**86.27**	**314**	*e*P		P	P	05 53 07.3	+3.6
GTA				pP		pP	pP	05 53 10.8	-1.4
GTA				sP		sP	sP	05 53 13.3	-1.9
GTA				pmax		pmax			
	comp=Z,4.0nm,1.0s								
SONM	**Songino Array**	**86.55**	**324**	P		**P**	**P**	**05 53 05.3**	**+0.4**
	comp=Z,2.3nm,0.7s,baz=125,slow=7.2,SNR=4.4								
SNAA	**Sanae**	**88.94**	**183**	PKP		**P**	**P**	**05 53 15.6**	**-0.4**
VNA3	**Neumayer Olymp**	**89.58**	**181**	PKP		**P**	**P**	**05 53 18.4**	**-0.5**
VNA2	**Neumayer--Watz**	**89.86**	**182**	PKP		**P**	**P**	**05 53 20.1**	**-0.1**
	baz=146,slow=4.3								
NVAR	**Mina Array Bea**	**89.91**	**49**	P		**P**	**P**	**05 53 20.1**	**-1.1**
	comp=Z,0.9nm,0.8s,baz=229,slow=8.8,SNR=5.3								
VNA1	**Neumayer--Stat**	**90.15**	**181**	PKP		**P**	**P**	**05 53 21.6**	**0.0**
ILAR	**Eielson Array**	**90.78**	**18**	P		**P**	**P**	**05 53 22.8**	**-1.6**
	comp=Z,0.6nm,0.8s,baz=230,slow=5.9,SNR=6.6								
YKA	**Yellowknife Ar**	**101.42**	**28**	P		**Pdif**	**P**	**05 54 11.4**	**-1.3**
	comp=Z,0.2nm,0.9s,baz=255,slow=4.6,SNR=3.7								
BFO	**Black Forest**	**146.71**	**335**	*e*PKPbc		**PKPbc**	**PKPbc**	**06 00 03.4**	**-0.2**
TUE	**Stuetta**	**147.72**	**332**	*e*PKPbc		**PKPbc**	**PKPbc**	**06 00 06.6**	**-0.1**

*BJI **30** 05:45:32.3, 3.09S×148.89E, h5km, mb5.0/62, mB5.3/56, Ms5.4/69, Ms7 5.3/65*
*IDC **30** 05:45:33.1±0.4, 3.32S×148.55E, h0km, mb4.8/30, mb1 4.9/31, mb1mx4.8/41, mbtmp4.8/31, ML4.8/1, MS5.2/32, Ms1 5.2/32, ms1mx5.1/36, Error ellipse: s-maj=13.3km s-min=8.4km az=99.0*
*ISCJB **30** 05:45:35.3±0.1, 3.32S±0.02×148.63E±0.03, h21km, mb5.1/174, MS5.4/415, Error ellipse: s-maj=3.6km s-min=3.0km az=173.6*
*GCMT **30** 05:45:35.0±0.1, 3.20S×148.67E, h15km, MW5.8/131, Moment Tensor Solution. s112,c211; s131,c389; Duration: 1ˢ8 Moment tensor: Scale 10^17 Nm; Mrr=0.29±.04; Mθθ=3.74±.04; Mφφ=-3.44±.04; Mrθ=1.40±.13; Mθφ=3.37±.04; Mφr=0.88±.13; Best double couple: M0=5.16200×10^17 NP1:φ=23.00000°, δ=82.00000°, λ=166.00000°. NP2:φ=115.00000°, δ=76.00000°, λ=8.00000°. Principal axes: T 5.5290, Plg16.0000°, Azm338.0000°; N -0.7280, Plg74.0000°, Azm173.0000°; P -4.7960, Plg4.0000°, Azm69.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface/mantle waves, cutoff=50s.*
*NEIC **30** 05:45:35.0±0.0, 3.26S×148.62E, h15km, Moment Tensor Solution. s10 Moment tensor: Scale 10^17 Nm; Mrr=0.93; Mθθ=2.85; Mφφ=-1.93; Mrθ=2.92; Mθφ=2.34; Mφr=0.63; Best double couple: M0=4.60000×10^17 NP1:φ=287.00000°, δ=89.00000°, λ=-39.00000°. NP2:φ=18.00000°, δ=51.00000°, λ=-178.00000°. Principal axes: T 5.2300, Plg25.0000°, Azm339.0000°; N -2.0700, Plg50.0000°, Azm105.0000°; P -3.1600, Plg27.0000°, Azm235.0000°;*
*NEIC **30** 05:45:35.0±0.1, 3.26S×148.63E, h8km, mb5.3/110, MS5.4/296, MW5.6, MW5.7 Error ellipse: s-maj=4.2km s-min=3.5km az=88.0, Moment Tensor Solution. s24 Moment tensor: Scale 10^17 Nm; Mrr=0.16; Mθθ=2.43; Mφφ=-2.59; Mrθ=1.10; Mθφ=2.29; Mφr=0.66; Best double couple: M0=3.60000×10^17 NP1:φ=116.00000°, δ=74.00000°, λ=11.00000°. NP2:φ=22.00000°, δ=79.00000°, λ=164.00000°. Principal axes: T 3.7600, Plg19.0000°, Azm338.0000°; N -0.2600, Plg70.0000°, Azm170.0000°; P -3.4900, Plg4.0000°, Azm69.0000°;*
*DJA **30** 05:45:37.2±0.9, 3.3S±8.1×14.9E±1.2, h10km, MS.3/29, mb5.2/29, mB5.8/22, MLv5.6/2, Mw(mB)5.3/22, Mwp5.1/1*
*MOS **30** 05:45:37.9±1.1, 3.30S×148.54E, h41km,

PMG Sn **Sn** **05 48 19.1 -0.6**
JAY **Jayapura** **8.05 275** Pn **Pn** **05 47 32.7 -0.2**
comp=Z,0.2nm,0.3s,baz=272,slow=24,SNR=46
JAY Sn **Sn** **05 49 00.6 -2.8**
comp=Z,0.1nm,0.3s,baz=270,slow=20,SNR=2.0
JAY LR LR 05 50 20.9
comp=Z,923nm,19.1s,baz=8.0,slow=36
JAY **Jayapura** **8.05 275** P **Pn** **05 47 33.7 +0.8**
comp=Z,300nm,1.4s,comp=Z,4μmcomp=Z,1.2nm
GENI **Genyem** **8.58 274** P **Pn** **05 47 41.4 +1.3**
comp=Z,763nm,1.7s,comp=Z,15μm
COEN **Coen** **11.94 207** P **Pn** **05 48 26.6 +0.5**
baz=12,SNR=4.1
COEN **Coen** **11.94 207** *e*Pn **Pn** **05 48 27.0 +0.8**
HNR **Honiara** **12.71 119** Pn **Pn** **05 48 39.2 +2.6**
comp=Z,4.8nm,0.3s,baz=203,slow=13,SNR=2.3
HNR LR LR 05 53 57.4
comp=Z,10μm,18.9s,baz=290,slow=39
HNR **Honiara** **12.71 119** *e*P P 05 49 04.0 +16
HNR **Honiara** **12.71 119** *e*P **Pn** **05 48 40.0 +3.4**
HNR **Honiara** **12.71 119** *e*Pn **Pn** **05 48 40.0 +3.4**
MTSU **Mount Surprise** **15.38 196** P **Pn** **05 49 13.5 +0.5**
baz=16,SNR=9.3
FAKI **Fak Fak** **16.46 271** P **Pn** **05 49 24.0 -2.9**
comp=Z,199nm,1.6s,comp=Z,4μm
FAKI **Fak Fak** **16.46 271** *e*Pn **Pn** **05 49 26.0 -0.9**
comp=Z,333nm,1.3s
CTA **Charters Tower** **16.88 188** Pn **P** **05 49 32.8 -1.3**
comp=Z,0.3nm,0.3s,baz=5.5,slow=13,SNR=9.1
CTA Sn **S** **05 52 47.9 -1.5**
comp=Z,0.2nm,0.3s,baz=221,slow=20,SNR=2.1
CTA LR LR 05 56 33.5
comp=Z,11μm,19.4s,baz=358,slow=39
GUMO **Guam** **17.19 347** LR LR 05 56 11.5
comp=Z,6μm,18.1s,baz=143,slow=37
SWI **Sorong** **17.63 277** P **Pn** **05 49 39.4 -2.1**
comp=Z,143nm,1.4s,comp=Z,3μm
KDU **Kakadu** **18.60 239** P **P** **05 49 50.7 -2.4**
baz=19,SNR=22
QIS **Mount Isa** **19.34 207** P **Pn** **05 50 01.8 -0.5**
baz=19,SNR=21
MSAI **Masohi** **19.77 269** P **Pn** **05 50 07.3 -0.3**
comp=Z,33nm,1.3s,comp=Z,855nm
MTN **Manton Dam** **19.83 240** P **P** **05 50 05.6 -0.9**
baz=20,SNR=16
MTN **Manton Dam** **19.83 240** *e*P **P** **05 50 05.7 -0.9**
comp=Z,227nm,1.2s
LBMI **Labuha** **21.38 277** P **P** **05 50 25.2 +1.8**
comp=Z,309nm,1.8s,comp=Z,6μm
WB0 **Warramunga Arr** **21.55 219** PFAKE 05 50 40.0 +15
WB0 LR LR
comp=Z,10μm,18.0s
WB9 **Warramunga Arr** **21.58 219** PFAKE 05 50 40.0 +15
WB9 LR LR
comp=Z,21μm,18.0s
WB8 **Warramunga Arr** **21.59 219** PFAKE 05 50 40.0 +14
WB8 LR LR
comp=Z,11μm,18.0s
NLAI **Namlea** **21.60 269** P **P** **05 50 31.6 +5.9**
comp=Z,117nm,2.1s,comp=Z,2μm
WR0 **Warramunga Arr** **21.60 219** PFAKE 05 50 40.0 +14
WR0 LR LR
comp=Z,10μm,18.0s
WR9 **Warramunga Arr** **21.62 219** PFAKE 05 50 40.0 +14
WR9 LR LR
comp=Z,10μm,18.0s
WR8 **Warramunga Arr** **21.62 219** PFAKE 05 50 40.0 +14
WR8 LR LR
comp=Z,10μm,18.0s
WB6 **Warramunga Arr** **21.63 219** PFAKE 05 50 40.0 +14
WB6 LR LR
comp=Z,10μm,18.0s
WR7 **Warramunga Arr** **21.64 219** PFAKE 05 50 40.0 +14
WR7 LR LR
comp=Z,10μm,18.0s
WB5 **Warramunga Arr** **21.65 219** PFAKE 05 50 40.0 +14
WB5 LR LR
comp=Z,11μm,18.0s
WR6 **Warramunga Arr** **21.65 219** PFAKE 05 50 40.0 +14
WR6 LR LR
comp=Z,10μm,18.0s
WR5 **Warramunga Arr** **21.66 219** PFAKE 05 50 40.0 +14
WR5 LR LR
comp=Z,10μm,18.0s
WB4 **Warramunga Arr** **21.67 219** PFAKE 05 50 40.0 +13
WB4 LR LR
comp=Z,10μm,18.0s
WR4 **Warramunga Arr** **21.68 219** PFAKE 05 50 40.0 +13
WR4 LR LR
comp=Z,10μm,18.0s
WC2 **Warramunga Arr** **21.69 219** PFAKE 05 50 40.0 +13
WC2 LR LR
comp=Z,13μm,18.0s
WR3 **Warramunga Arr** **21.69 219** PFAKE 05 50 40.0 +13
WR3 LR LR
comp=Z,10μm,19.0s
WB3 **Warramunga Arr** **21.69 219** PFAKE 05 50 40.0 +13
WB3 LR LR
comp=Z,12μm,18.0s
WC1 **Warramunga Arr** **21.70 219** PFAKE 05 50 40.0 +13
WC1 LR LR
comp=Z,9μm,18.0s
WRAB **Tennant Creek** **21.70 219** *d i*P **P** **05 50 25.5 -1.3**
WRAB pmax pmax
comp=Z,234nm,1.3s
WRAB **Tennant Creek** **21.70 219** *e*P **P** **05 50 25.2 -1.6**
comp=Z,126nm,0.8s
WRAB LR LR
comp=Z,11μm,18.0s
WR2 **Warramunga Arr** **21.70 219** PFAKE 05 50 40.0 +13
WR2 LR LR
comp=Z,10μm,18.0s
WC3 **Warramunga Arr** **21.71 219** PFAKE 05 50 40.0 +13
WC3 LR LR
comp=Z,12μm,18.0s
WB2 **Warramunga Arr** **21.71 219** *e*P **P** **05 50 25.1 -1.8**
comp=Z,341nm,1.4s
WB2 LR LR
comp=Z,12μm,18.0s
WR1 **Warramunga Arr** **21.71 219** PFAKE 05 50 40.0 +13
WR1 LR LR
comp=Z,11μm,18.0s
WRA **Warramunga Arr** **21.72 219** P **P** **05 50 25.3 -1.7**
comp=Z,28nm,0.7s,baz=46,slow=11,SNR=100
WRA S **S** **05 54 24.0 -2.5**
comp=Z,2.2nm,1.0s,baz=37,slow=11,SNR=3.5
WRA LR LR 06 00 07.8
comp=Z,10μm,18.6s,baz=40,slow=40
WRA **Warramunga Arr** **21.72 219** *i* P **P** **05 50 25.0 -2.0**
WRA pmax pmax
comp=Z,28nm,0.7s
WC4 **Warramunga Arr** **21.73 219** PFAKE 05 50 40.0 +13
WC4 LR LR
comp=Z,11μm,19.0s
EIDS **Eidsvold** **22.08 174** P **P** **05 50 30.9 +0.2**
baz=22,SNR=15
EIDS **Eidsvold** **22.08 174** *e*P **P** **05 50 31.0 +0.2**
comp=Z,82nm,0.9s
EIDS LR LR
comp=Z,12μm,22.0s
KWAJ **Kwajalein Atol** **22.32 57** PFAKE 05 50 50.0 +16
KWAJ LR LR
comp=Z,5μm,20.0s
SANI **Sanana** **22.75 273** P **P** **05 50 38.8 +0.7**
comp=Z,93nm,1.4s,comp=Z,3μm
RMQ **Roma** **23.07 180** P **P** **05 50 41.2 -0.1**
baz=23,SNR=22
QLP **Quilpie** **23.57 190** P **P** **05 50 45.9 -0.3**
baz=24,SNR=14
TARA **Tarawa** **24.61 80** *e*P **P** **05 50 56.5 +0.3**
comp=Z,407nm,1.4s
TARA LR LR
comp=Z,13μm,18.0s
AS01 **Alice Springs** **24.80 214** *e*P **P** **05 50 57.2 -0.5**
AS31 **Alice Springs** **24.82 214** *e*P **P** **05 50 57.0 -0.9**
comp=Z,63nm,1.4s
ASAR **Alice Springs** **24.82 214** P **P** **05 50 56.8 -1.2**
comp=Z,35nm,0.9s,baz=46,slow=7.9,SNR=114
ASAR S **S** **05 55 20.1 +0.4**
comp=Z,2.8nm,1.1s,baz=37,slow=9.3,SNR=2.1
ASAR LR LR 06 00 51.4
comp=Z,8μm,21.6s,baz=40,slow=37
SOEI **Soe** **25.13 254** P **P** **05 51 03.1 +2.1**
comp=Z,294nm,1.6s,comp=Z,8μm
SOEI **Soe** **25.13 254** *e*P **P** **05 51 01.0 0.0**
comp=Z,838nm,1.6s
SOEI LR LR
comp=Z,3μm,21.0s
DAV **Davao City (W)** **25.30 294** LR LR 06 01 02.9
comp=Z,3μm,18.1s,baz=91,slow=37
DZM **Mont Dzumac** **25.39 139** P **P** **05 51 02.6 -0.5**
comp=Z,36nm,0.9s,baz=319,slow=10,SNR=24
DZM LR LR 05 59 53.8
comp=Z,17μm,18.8s,baz=312,slow=34
BATI **Baumata** **25.82 253** LR LR 06 03 47.1
comp=Z,6μm,19.1s,baz=160,slow=43
LUWI **Luwuk** **26.04 274** P **P** **05 51 10.2 +1.1**
comp=Z,232nm,1.7s,comp=Z,3μm
LUWI **Luwuk** **26.04 274** *e*P **P** **05 51 08.9 -0.2**
comp=Z,1μm,1.9s
LUWI LR LR
comp=Z,4μm,19.0s
MMRI **Maumere** **26.87 257** P **P** **05 51 17.7 +1.1**
comp=Z,192nm,1.3s
MMRI **Maumere** **26.87 257** *e*P **P** **05 51 15.2 -1.5**
comp=Z,169nm,1.2s
MMRI LR LR
comp=Z,5μm,22.0s
FITZ **Fitzroy Crossi** **27.00 235** P **P** **05 51 14.9 -2.8**
comp=Z,90nm,1.0s,baz=65,slow=9.9,SNR=34
FITZ S **S** **05 56 01.2 +7.0**
comp=Z,5.1nm,1.0s,baz=35,slow=17,SNR=1.9
FITZ LR LR 06 02 25.8
comp=Z,8μm,18.4s,baz=60,slow=38
FITZ **Fitzroy Crossi** **27.00 235** P **P** **05 51 15.3 -2.4**
baz=27,SNR=40
FITZ **Fitzroy Crossi** **27.00 235** *e*P **P** **05 51 18.6 +1.0**
comp=Z,159nm,1.0s
FITZ S **S** **05 56 01.2 +7.0**
MRSI **Marisa** **27.04 277** P **P** **05 51 19.6 +1.5**
comp=Z,42nm,1.2s
ARMA **Armidale** **27.13 175** P **P** **05 51 19.1 +0.2**
baz=27,SNR=8.1
ARMA **Armidale** **27.13 175** *e*P **P** **05 51 19.4 +0.5**
comp=Z,86nm,1.4s
ARMA LR LR
comp=Z,6μm,20.0s
H11S3 **WAKE ISLAND Hy** **27.95 39** T T 06 20 40.6
baz=220,slow=76
H11S2 **WAKE ISLAND Hy** **27.95 39** T T 06 20 43.7
baz=220,slow=76
H11S1 **WAKE ISLAND Hy** **27.96 39** T T 06 20 41.6
baz=220,slow=76,SNR=7753
BSSI **Bau Bau, Buton** **28.29 263** P **P** **05 51 30.6 +1.3**
comp=Z,97nm,1.4s,comp=Z,2μm
TTSI **Tana Toraja** **28.87 270** P **P** **05 51 33.5 -1.0**
comp=Z,56nm,1.3s,comp=Z,2μm
KAPI **Kappang** **28.96 266** P **P** **05 51 33.2 -2.1**
comp=Z,5.1nm,0.6s,baz=240,slow=2.6,SNR=6.3
KAPI LR LR 06 03 46.0
comp=Z,2μm,20.7s,baz=84,slow=38
KAPI **Kappang** **28.96 266** *e*P **P** **05 51 34.8 -0.4**
comp=Z,71nm,1.2s
STKA **Stephens Creek** **29.23 193** P **P** **05 51 35.5 -1.9**
comp=Z,6.1nm,0.6s,baz=354,slow=7.2,SNR=21
STKA LR LR 06 04 00.7
comp=Z,12μm,19.9s,baz=9.7,slow=38
STKA **Stephens Creek** **29.23 193** P **P** **05 51 35.5 -1.9**
baz=29,SNR=5.4
STKA **Stephens Creek** **29.23 193** *e*P **P** **05 51 35.9 -1.6**
STKA pmax pmax
comp=Z,9.0nm,1.2s
STKA **Stephens Creek** **29.23 193** *e*P **P** **05 51 35.9 -1.6**
comp=Z,8.9nm,1.2s
WRKA **Warakurna** **29.24 220** P **P** **05 51 35.6 -2.1**
baz=29,SNR=29
JCJ **Chichijima** **30.85 349** LR LR 06 03 51.3
comp=Z,4μm,18.2s,baz=154,slow=36
YNG **Young** **30.86 181** P **P** **05 51 51.7 -0.2**
baz=31,SNR=9.6
MYLDM **Lahad Datu** **31.35 285** PFAKE 05 52 10.0 +14
MYLDM LR LR
comp=Z,9μm,20.0s
HTT **Hallett** **31.37 196** P **P** **05 51 55.3 -1.1**
baz=32,SNR=9.3
BBOO **Buckleboo** **31.69 201** P **P** **05 51 57.8 -1.3**
baz=32,SNR=9.0
BBOO **Buckleboo** **31.69 201** *e*P **P** **05 51 58.2 -0.9**
comp=Z,75nm,1.4s
BBOO LR LR
comp=Z,7μm,18.0s
CAN **Canberra** **31.88 180** *e*P **P** **05 52 00.9 0.0**
CAN pmax pmax
comp=Z,113nm,1.7s
CAN MLR MLR
comp=Z,13μm,18.0s
CAN **Canberra** **31.88 180** *e*P **P** **05 52 00.8 0.0**
comp=Z,113nm,1.7s
CAN LR LR
comp=Z,13μm,18.0s
MSVF **Nonsavu** **32.13 119** PFAKE 05 52 20.0 +17
MSVF LR LR
comp=Z,5μm,20.0s
MBWA **Marble Bar** **33.34 235** *e*P **P** **05 52 15.0 +1.2**
comp=Z,75nm,1.6s
MBWA LR LR
comp=Z,7μm,20.0s
KKM **Kota Kinabalu** **33.77 286** PFAKE 05 52 30.0 +12
KKM LR LR
comp=Z,2μm,21.0s
ARPS **Mount Arapiles** **33.93 190** P **P** **05 52 17.9 -0.8**
baz=34,SNR=9.6
TOO **Toolangi** **34.26 185** P **P** **05 52 21.2 -0.4**
baz=34,SNR=7.7
JAGI **Jajag, Banyuwa** **34.77 260** PFAKE 05 52 40.0 +14
JAGI LR LR
comp=Z,3μm,20.0s
JOW **Kunigami** **35.87 328** P **P** **05 52 34.0 -1.7**
comp=Z,52nm,1.2s,baz=148,slow=11,SNR=4.4
JOW LR LR 06 04 59.0
comp=Z,4μm,18.7s,baz=132,slow=33
SBUM **Sibu** **36.94 278** *e*P **P** **05 52 43.9 -1.1**
comp=Z,119nm,1.6s
JHJ2 **Mitsune** **37.17 348** PFAKE 05 53 00.0 +13
JHJ2 LR LR
comp=Z,6μm,18.0s
JHJ **Hachijo jima 2** **37.18 348** LR LR 06 06 04.9
comp=Z,3μm,19.4s,baz=128,slow=33
YOJ **Yonaguni jima** **37.23 319** *e*P **P** **05 52 46.1 -1.1**
YOJ pmax pmax
comp=Z,183nm,0.9s
YOJ MLR MLR
comp=Z,5μm,20.0s
YOJ **Yonaguni jima** **37.23 319** *e*P **P** **05 52 46.1 -1.1**
comp=Z,183nm,0.9s
YOJ LR LR
comp=Z,5μm,20.0s
TWG **Pinlang** **37.44 315** PFAKE 05 53 00.0 +11
TWG LR LR
comp=Z,15μm,19.0s
YULB **Yu-li** **37.66 316** *e*P **P** **05 52 49.5 -1.4**
comp=Z,52nm,0.9s
YULB LR LR
comp=Z,5μm,20.0s
KMBL **Kambalda** **37.69 219** P **P** **05 52 49.4 -1.7**
baz=38,SNR=5.4
NACB **Ninganchiao** **37.97 317** *e*P **P** **05 52 53.5 0.0**
comp=Z,125nm,1.1s
NACB LR LR
comp=Z,5μm,20.0s
TPUB **Ta-pu** **38.06 315** *e*P **P** **05 52 53.2 -1.2**
comp=Z,62nm,1.2s
TPUB LR LR
comp=Z,4μm,22.0s
SSLB **Suanglung** **38.15 316** *e*P **P** **05 52 53.7 -1.4**
comp=Z,28nm,0.8s
SSLB LR LR
comp=Z,6μm,19.0s
YHNB **Yeheng** **38.45 318** *e*P **P** **05 52 57.9 +0.2**
comp=Z,222nm,1.1s
YHNB LR LR
comp=Z,6μm,22.0s
TATO **Taipei** **38.58 318** *e*P **P** **05 52 58.8 +0.2**
comp=Z,145nm,0.9s
TATO LR LR
comp=Z,7μm,20.0s
KSM **Kuching** **38.70 276** *e*P **P** **05 52 58.2 -1.6**
comp=Z,51nm,1.1s
MOO **Moorlands** **39.02 182** P **P** **05 53 02.2 +0.1**
baz=39,SNR=4.1
OUZ **Omahuta** **39.26 147** PFAKE 05 53 20.0 +16
OUZ LR LR
comp=Z,7μm,21.0s
TAU **Tasmania Unive** **39.48 182** PFAKE 05 53 20.0 +14
TAU LR LR
comp=Z,10μm,19.0s
KNTN **Kanton** **39.49 90** PFAKE 05 53 20.0 +14
KNTN LR LR
comp=Z,4μm,21.0s
JNU **Nakatsue** **39.95 336** P **P** **05 53 08.4 -1.7**
comp=Z,90nm,0.9s,baz=127,slow=4.0,SNR=24
JNU **Nakatsue** **39.95 336** *e*P **P** **05 53 09.2 -0.9**
comp=Z,163nm,1.1s
JNU LR LR
comp=Z,3μm,18.0s
INU **Inuyama** **39.97 345** *e*P **P** **05 53 08.8 -1.3**
comp=Z,48nm,1.3s
INU LR LR
comp=Z,4μm,20.0s
AFI **Afiamalu** **40.38 108** PFAKE 05 53 30.0 +16
AFI LR LR
comp=Z,3μm,19.0s
KLBR **Kellerberrin** **40.53 223** P **P** **05 53 12.7 -2.1**
baz=41,SNR=8.3
QZH **Quanzhou** **40.54 315** ⇑ *i*P P 05 53 09.0 -6.0
QZH S **S** **05 59 21.0 -2.3**
QZH SS **SS** **06 02 25.0 +1.5**
QZH pmax pmax
comp=Z,170nm,1.2s
QZH LR LR
comp=N,3μm,14.3s
QZH LR LR
comp=E,6μm,18.9s
QZH LR LR
comp=Z,14μm,37.7s
BLDU **Ballidu** **40.66 225** P **P** **05 53 14.0 -2.0**
baz=41,SNR=6.8
MJAR **Matsushiro Arr** **40.82 347** P **P** **05 53 13.2 -3.9**
comp=Z,3.3nm,0.9s,baz=166,slow=7.5,SNR=5.6
MJAR PcP **PcP** **05 55 18.6 +0.6**
comp=Z,3.2nm,0.9s,baz=167,slow=3.2,SNR=4.4
MJAR LR LR 06 08 10.3
comp=Z,4μm,19.3s,baz=180,slow=33
MAJO **Matsushiro** **40.82 347** *d i*P **P** **05 53 18.1 +1.0**
MAJO pmax pmax
comp=Z,201nm,1.2s
MAJO **Matsushiro** **40.82 347** *e*P **P** **05 53 16.0 -1.1**
comp=Z,34nm,1.3s
MAJO LR LR
comp=Z,6μm,18.0s
MAT **Matsushiro** **40.82 347** P **P** **05 53 13.8 -3.3**
MAT S **S** **05 59 29.6 +2.4**
MJB9 **Matsu-Tunnel** **40.82 347** *e*P **P** **05 53 16.3 -0.8**
comp=Z,9.3nm,1.3s
MJB9 LR LR
comp=Z,2μm,18.0s
CISI **Cisompet, Garu** **40.94 262** *e*P **P** **05 53 16.5 -2.1**
comp=Z,259nm,1.3s
CISI LR LR
comp=Z,2μm,21.0s
LEM **Lembang** **41.10 263** P **P** **05 53 24.2 +4.2**
comp=Z,15nm,0.5s,baz=151,slow=5.8,SNR=6.9
HIZ **Hauiti** **42.40 149** PFAKE 05 53 40.0 +10
HIZ LR LR
comp=Z,4μm,19.0s
SSE **Sheshan** **43.10 325** *e*P **P** **05 53 36.3 +0.4**
SSE pP **pP** **05 53 42.5 +0.1**
SSE S **S** **06 00 01.5 +0.5**
SSE sS **sS** **06 00 06.8 -5.0**
SSE pmax pmax
comp=Z,35nm,1.3s
SSE pmax pmax
comp=Z,300nm,4.7s
SSE LR LR
comp=Z,3μm,23.9s
SSE LR LR
comp=Z,3μm,23.9s
SSE LR LR
comp=Z,4μm,23.3s
GZH **Guangzhou** **43.34 309** *e*P **P** **05 53 36.0 -1.9**
GZH S **S** **06 00 06.5 +1.8**
GZH pmax pmax
comp=Z,830nm,10.6s
URZ **Urewera** **43.40 147** P **P** **05 53 37.6 -0.6**
comp=Z,8.0nm,0.8s,baz=278,slow=6.7,SNR=5.1
URZ **Urewera** **43.40 147** P **P** **05 53 37.6 -0.6**
URZ LR LR
comp=Z,8μm,21.0s
MXZ **Matakaoa Point** **43.57 145** PFAKE 05 53 50.0 +10
MXZ LR LR
comp=Z,5μm,20.0s
BKZ **Black Stump Fm** **43.73 148** *e*P **P** **05 53 41.0 +0.1**
comp=Z,69nm,1.6s
BKZ LR LR
comp=Z,7μm,22.0s
THZ **Tophouse** **44.02 154** *e*P **P** **05 53 43.0 -0.2**
comp=Z,37nm,1.3s
THZ LR LR
comp=Z,5μm,20.0s
QIZ **Qiongzhong** **44.22 302** P **P** **05 53 45.5 +0.5**
QIZ sP **pP** **05 53 49.0 -2.6**
QIZ S **S** **06 00 17.5 -0.2**
QIZ LR LR
comp=Z,470nm,15.2s
QIZ LR LR
comp=Z,1μm,18.1s
FOZ **Fox Glacier** **44.23 158** PFAKE 05 54 00.0 +15
FOZ LR LR
comp=Z,3μm,18.0s
SNZO **South Karori** **44.48 152** PFAKE 05 54 00.0 +13
SNZO LR LR
comp=Z,9μm,20.0s
LTZ **Lake Taylor** **44.57 155** *e*P **P** **05 53 47.4 -0.3**
comp=Z,124nm,1.8s
LTZ LR LR
comp=Z,8μm,19.0s
BFZ **Birch Farm** **44.74 150** *e*P **P** **05 53 50.2 +1.2**
comp=Z,122nm,1.5s
BFZ LR LR
comp=Z,12μm,20.0s
KHZ **Kahutara** **44.82 154** *e*P **P** **05 53 49.7 +0.2**
comp=Z,124nm,1.9s
KHZ LR LR
comp=Z,8μm,20.0s
RPZ **Rata Peaks** **44.86 157** P **P** **05 53 49.4 -0.4**
comp=Z,16nm,0.8s,baz=31,slow=5.2,SNR=10
RPZ **Rata Peaks** **44.86 157** *e*P **P** **05 53 49.7 -0.1**
comp=Z,25nm,0.9s
RPZ LR LR
comp=Z,7μm,19.0s
KSRS **Korea Array** **44.91 336** P **P** **05 53 48.7 -1.5**
comp=Z,9.8nm,1.0s,baz=149,slow=9.2,SNR=13
KSRS LR LR 06 11 09.6
comp=Z,3μm,20.9s,baz=153,slow=34
KSAR **Wonju Array Be** **44.91 336** P **P** **05 53 48.7 -1.6**
KSAR **Wonju Array Be** **44.91 336** P **P** **05 53 48.7 -1.6**
OXZ **Oxford** **44.93 156** PFAKE 05 54 00.0 +10
OXZ LR LR
comp=Z,7μm,19.0s
KS01 **Wonju Array Si** **44.94 336** *e*P **P** **05 53 49.3 -1.2**
DCZ **Deep Cove** **45.01 162** *e*P **P** **05 53 51.1 +0.2**
comp=Z,57nm,1.2s
DCZ LR LR
comp=Z,3μm,19.0s
WKZ **Wanaka** **45.06 160** *e*P **P** **05 53 53.0 +1.5**
comp=Z,64nm,1.3s
WKZ LR LR
comp=Z,4μm,20.0s
LBZ **Lake Benmore** **45.10 158** PFAKE 05 54 00.0 +8.3
LBZ LR LR
comp=Z,5μm,19.0s
MYKOM **Kota Tinggi** **45.15 276** *e*P **P** **05 53 51.5 -1.1**
comp=Z,152nm,2.0s
MYKOM LR LR
comp=Z,2μm,21.0s
NJ2 **Nanjing** **45.16 323** *e*P **P** **05 53 51.3 -1.1**
NJ2 pmax pmax
comp=Z,8.0nm,0.5s
MLZ **Mavora Lakes** **45.23 161** *e*P **P** **05 53 53.1 +0.3**
comp=Z,50nm,1.2s
MLZ LR LR
comp=Z,3μm,20.0s
ERM **Erimo** **45.37 354** PFAKE 05 54 10.0 +16
ERM LR LR
comp=Z,5μm,21.0s
CRLZ **Canterbury Las** **45.37 156** *e*P **P** **05 53 56.5 +2.6**
comp=Z,123nm,1.5s
CRLZ LR LR
comp=Z,5μm,20.0s
INCN **Inchon** **45.46 335** PFAKE 05 54 10.0 +15
INCN LR LR
comp=Z,3μm,21.0s

MQZ	**McQueen's Vall**	**45.49 156**	PFAKE		05 54 10.0	+15			
MQZ			LR	LR					
	comp=Z,4μm,19.0s								
PYZ	**Puysegur Point**	**45.49 163**	PFAKE		05 54 10.0	+15			
PYZ			LR	LR					
	comp=Z,3μm,18.0s								
WHZ	**Wether Hill Ro**	**45.64 161**	*eP*	**P**	**05 53 55.7**	**-0.3**			
	comp=Z,37nm,1.2s								
WHZ			LR	LR					
	comp=Z,3μm,18.0s								
MNAI	**Manna**	**45.68 267**	PFAKE		05 54 10.0	+13			
MNAI			LR	LR					
	comp=Z,2μm,20.0s								
JOHN	**Johnston Islan**	**45.77 63**	PFAKE		05 54 10.0	+13			
JOHN			LR	LR					
	comp=Z,3μm,19.0s								
ODZ	**Otahua Downs**	**45.83 158**	PFAKE		05 54 10.0	+12			
ODZ			LR	LR					
	comp=Z,4μm,18.0s								
WHN	**Wuhan**	**46.99 318**	P	**P**	**05 54 07.3**	**+0.5**			
WHN			S	**S**	**06 00 48.5**	**-8.9**			
WHN			pmax	pmax					
	comp=Z,880nm,9.5s								
WHN			LR	LR					
	comp=Z,5μm,19.6s								
WHN			LR	LR					
	comp=Z,6μm,16.3s								
WHN			LR	LR					
	comp=Z,12μm,19.8s								
ASAJ	**Asahikawa**	**47.50 354**	LR	LR	06 12 43.4				
	comp=Z,3μm,21.7s,baz=195,slow=34								
ASAJ	**Asahikawa**	**47.50 354**	*eP*	**P**	**05 54 09.4**	**-1.1**			
	comp=Z,137nm,1.6s								
BKNI	**Bangkinang**	**47.80 273**	*eP*	**P**	**05 54 12.7**	**-0.7**			
	comp=Z,73nm,0.5s								
IPM	**Ipoh**	**48.29 279**	*eP*	**P**	**05 54 15.8**	**-1.4**			
	comp=Z,47nm,1.7s								
IPM			LR	LR					
	comp=Z,2μm,22.0s								
SKNT	**Sakolnakorn**	**48.55 296**	P	**P**	**05 54 18.7**	**-0.4**			
	comp=Z,77nm,1.7s,comp=Z,1μm								
CHBT	**CHBT**	**48.76 290**	P	**P**	**05 54 20.6**	**-0.2**			
	comp=Z,45nm,1.0s,comp=Z,4μm								
KULM	**Kulim**	**48.78 280**	*eP*	**P**	**05 54 19.7**	**-1.3**			
KULM			LR	LR					
	comp=Z,2μm,21.0s								
DL2	**Dalian**	**48.86 332**	P	**P**	**05 54 20.5**	**-0.7**			
DL2			PcP	**PcP**	**05 55 45.3**	**-0.3**			
DL2			S	**S**	**06 01 21.8**	**-1.9**			
DL2			pmax	pmax					
	comp=Z,29nm,0.9s								
DL2			LR	LR					
	comp=Z,3μm,17.9s								
DL2			LR	LR					
	comp=Z,3μm,20.2s								
DL2			LR	LR					
	comp=Z,4μm,25.3s								
SKLT	**Songkhla**	**49.13 282**	P	**P**	**05 54 26.1**	**+2.5**			
	comp=Z,32nm,1.9s,comp=Z,930nm								
USRK	**Ussuriysk Ar.**	**49.60 344**	P	**P**	**05 54 25.5**	**-1.2**			
	comp=Z,9.0nm,0.8s,baz=172,slow=8.4,SNR=14								
USRK			LR	LR	06 13 10.6				
	comp=Z,4μm,20.0s,baz=139,slow=33								
PSI	**Prapat**	**50.15 276**	P	**P**	**05 54 29.9**	**-1.8**			
	comp=Z,3.7nm,0.5s,baz=129,slow=3.9,SNR=9.4								
PSI	**Prapat**	**50.15 276**	*eP*	**P**	**05 54 30.3**	**-1.3**			
PSI			pmax	pmax					
	comp=Z,118nm,2.0s								
PSI			MLR	MLR					
	comp=Z,2μm,21.0s								
PSI	**Prapat**	**50.15 276**	*eP*	**P**	**05 54 30.3**	**-1.3**			
	comp=Z,118nm,2.0s								
PSI			LR	LR					
	comp=Z,2μm,21.0s								
TRTT	**Trang**	**50.16 283**	P	**P**	**05 54 31.4**	**-0.1**			
	comp=Z,35nm,1.2s,comp=Z,1μm								
ENH	**Enshi**	**50.18 315**	*eP*	**P**	**05 54 31.0**	**-0.5**			
	comp=Z,88nm,1.8s								
ENH			LR	LR					
	comp=Z,2μm,22.0s								
GYA	**Guiyang**	**50.27 309**	P	**P**	**05 54 33.0**	**+0.7**			
GYA			PcP	**PcP**	**05 55 51.3**	**+0.1**			
GYA			PP	**PP**	**05 56 29.8**	**+1.9**			
GYA			ScP	**ScP**	**05 59 47.5**	**+1.4**			
GYA			S	**S**	**06 01 44.0**	**0.0**			
GYA			SS	**SS**	**06 05 14.3**	**-3.6**			
GYA			pmax	pmax					
	comp=Z,30nm,1.0s								
GYA			pmax	pmax					
	comp=Z,150nm,6.9s								
GYA			LR	LR					
	comp=Z,820nm,19.9s								
GYA			LR	LR					
	comp=Z,700nm,20.4s								
GYA			LR	LR					
	comp=Z,780nm,19.3s								
YSS	**Yuzh-Sakhalins**	**50.30 355**⇓	*eP*	**P**	**05 54 33.4**	**+1.4**			
YSS			*eS*	**S**	**06 01 44.0**	**+0.5**			
YSS	**Yuzh-Sakhalins**	**50.30 355**	PFAKE		05 54 40.0	+8.0			
YSS			LR	LR					
	comp=Z,1μm,20.0s								
SNY	**Shenyang**	**50.38 336**	⇑P	P	05 54 55.5	+23			
SNY			S	**S**	**06 01 45.5**	**+0.6**			
SNY			pmax	pmax					
	comp=Z,26nm,1.9s								
SNY			pmax	pmax					
	comp=Z,530nm,7.5s								
SNY			LR	LR					
	comp=N,1μm,15.9s								
SNY			LR	LR					
	comp=E,1μm,16.1s								
SNY			LR	LR					
	comp=Z,4μm,34.2s								
MDJ	**Mudanjiang**	**50.67 342**	P	**P**	**05 54 35.0**	**+0.2**			
MDJ			pP	pP	05 54 38.3	-3.2			
MDJ			sP	sP	05 54 39.5	-4.5			
MDJ			PP	**PP**	**05 56 31.0**	**0.0**			
MDJ			ScP	**ScP**	**05 59 48.0**	**+0.8**			
MDJ			S	**S**	**06 01 47.5**	**-1.2**			
MDJ			ScS	**ScS**	**06 04 24.8**	**+0.2**			
MDJ			pmax	pmax					
	comp=Z,9.0nm,0.6s								
MDJ			pmax	pmax					
	comp=Z,350nm,7.3s								
MDJ			LR	LR					
	comp=Z,3μm,21.3s								
MDJ			LR	LR					
	comp=Z,2μm,26.7s								
MDJ			LR	LR					
	comp=Z,4μm,33.1s								
MDJ	**Mudanjiang**	**50.67 342**	*eP*	**P**	**05 54 33.8**	**-1.1**			
	comp=Z,26nm,1.1s								
MDJ			LR	LR					
	comp=Z,2μm,22.0s								
PBKT	**Sadao Pong**	**51.14 294**	P	**P**	**05 54 39.4**	**+0.6**			
	comp=Z,36nm,1.9s,comp=Z,834nm								
SURT	**Suratani**	**51.24 284**	P	**P**	**05 54 40.7**	**+1.0**			
	comp=Z,9.5nm,1.3s,comp=Z,244nm								
CN2	**Changchun**	**51.33 338**	*eP*	**P**	**05 54 41.0**	**+1.2**			
CN2			*eS*	**S**	**06 01 53.0**	**-5.0**			
CN2			pmax	pmax					
	comp=Z,20nm,2.0s								
CN2			LR	LR					
	comp=Z,1μm,20.0s								
CN2			LR	LR					
	comp=Z,2μm,20.0s								
CN2			LR	LR					
	comp=Z,2μm,21.0s								
PKDT	**Phuket**	**51.49 283**	P	**P**	**05 54 41.3**	**-0.2**			
	comp=Z,48nm,1.4s,comp=Z,4μm								
UTTA	**Uttaradit**	**51.89 295**	P	**P**	**05 54 44.5**	**+0.1**			
	comp=Z,9.0nm,0.8s,comp=Z,102nm								
SRDT	**SRDT**	**52.20 291**	P	**P**	**05 54 47.5**	**+0.7**			
	comp=Z,130nm,2.0s,comp=Z,8μm								
BJI	**Beijing**	**52.44 329**	P	**P**	**05 54 47.3**	**-0.8**			
BJI			PP	**PP**	**05 56 47.0**	**-0.2**			
BJI			S	**S**	**06 02 13.3**	**0.0**			
BJI			SS	**SS**	**06 05 52.5**	**+0.9**			
BJI			pmax	pmax					
	comp=Z,10.0nm,1.0s								
BJI			LR	LR					
	comp=Z,3μm,21.0s								
BJI			LR	LR					
	comp=Z,2μm,22.7s								
BJI			LR	LR					
	comp=Z,5μm,30.5s								

XAN	**Xi'an**	**52.76 318**	P	**P**	**05 54 50.0**	**-0.7**			
XAN			pP	pP	05 54 57.8	+0.4			
XAN			S	**S**	**06 02 18.8**	**+0.8**			
XAN			SS	**SS**	**06 05 56.8**	**-0.2**			
XAN			pmax	pmax					
	comp=Z,19nm,1.8s								
XAN			pmax	pmax					
	comp=Z,290nm,8.8s								
XAN			LR	LR					
	comp=Z,2μm,18.8s								
XAN			LR	LR					
	comp=Z,3μm,17.8s								
KMI	**Kunming**	**52.79 305**	P	**P**	**05 54 52.8**	**+1.5**			
KMI			pP	pP	05 54 55.5	-2.5			
KMI			sP	sP	05 54 57.3	-3.2			
KMI			S	**S**	**06 02 19.8**	**+0.7**			
KMI			sS	sS	06 02 25.3	-4.7			
KMI			SS	**SS**	**06 05 59.0**	**+0.9**			
KMI			pmax	pmax					
	comp=Z,20nm,1.3s								
KMI			pmax	pmax					
	comp=Z,170nm,3.7s								
KMI			LR	LR					
	comp=Z,1μm,25.8s								
KMI			LR	LR					
	comp=Z,2μm,23.3s								
KMI			LR	LR					
	comp=Z,2μm,28.4s								
KHLT	**Khaolaem Dam**	**52.81 291**	P	**P**	**05 54 52.1**	**+0.8**			
	comp=Z,24nm,1.9s,comp=Z,457nm								
LAMP	**Lampang**	**52.97 296**	P	**P**	**05 54 54.6**	**+2.1**			
	comp=Z,5.6nm,1.2s,comp=Z,102nm								
RAR	**Rarotonga**	**53.10 114**	P	**P**	**05 54 53.6**	**+0.2**			
	comp=Z,13nm,0.9s,baz=216,slow=6.3,SNR=4.6								
CM01	**Chiang Mai Arr**	**53.54 296**	*eP*	**P**	**05 54 55.9**	**-0.8**			
CM31	**Chiang Mai Arr**	**53.57 296**	*eP*	**P**	**05 54 57.3**	**+0.4**			
CMAR	**Chiang Mai Arr**	**53.57 296**	P	**P**	**05 54 56.0**	**-0.8**			
	comp=Z,3.1nm,0.6s,baz=120,slow=5.8,SNR=16								
CMAR			LR	LR	06 18 11.7				
	comp=Z,934nm,18.8s,baz=114,slow=37								
CMMT	**Chiang Mai**	**53.67 296**	P	**P**	**05 55 00.0**	**+2.3**			
	comp=Z,40nm,1.3s,comp=Z,628nm								
CHTO	**Chiang Mai**	**53.68 296**	P	**P**	**05 55 00.1**	**+2.4**			
	comp=Z,106nm,2.1s,comp=Z,2μm								
CHTO	**Chiang Mai**	**53.68 296**	*eP*	**P**	**05 54 57.6**	**-0.1**			
CHTO			pmax	pmax					
	comp=Z,88nm,1.8s								
CHTO			MLR	MLR					
	comp=Z,1μm,20.0s								
CHTO	**Chiang Mai**	**53.68 296**	*eP*	**P**	**05 54 57.6**	**-0.1**			
	comp=Z,88nm,1.8s								
CHTO			LR	LR					
	comp=Z,1μm,20.0s								
TYV	**Tymovskoe**	**54.19 355**	*eP*	P	05 54 56.0	-4.8			
KLR	**Kul'dur**	**54.34 346**	P	**P**	**05 55 00.7**	**-1.2**			
	comp=Z,13nm,0.8s,baz=150,slow=5.2,SNR=27								
KLR			LR	LR	06 16 25.8				
	comp=Z,3μm,19.4s,baz=154,slow=34								
CD2	**Chengdu**	**54.69 312**	P	**P**	**05 55 05.0**	**0.0**			
CD2			sP	pP	05 55 09.5	-2.1			
CD2			PP	**PP**	**05 57 07.5**	**-0.2**			
CD2			S	**S**	**06 02 46.0**	**+1.7**			
CD2			sS	sS	06 02 51.5	-3.8			
CD2			SS	**SS**	**06 06 29.5**	**+1.8**			
CD2			pmax	pmax					
	comp=Z,30nm,0.5s								
CD2			pmax	pmax					
	comp=Z,50nm,4.1s								
CD2			LR	LR					
	comp=Z,3μm,20.4s								
CD2			LR	LR					
	comp=Z,3μm,19.2s								
HHC	**Hu-ho-hao-te**	**55.49 326**	*eP*	P	05 55 17.0	+6.4			
HHC			sP	sP	05 55 24.3	+4.4			
HHC			PP	**PP**	**05 57 22.3**	**+7.5**			
HHC			S	**S**	**06 03 00.3**	**+5.4**			
HHC	**Hu-ho-hao-te**	**55.49 326**	SS	**SS**	**06 06 43.5**	**+3.4**			
HHC			pmax	pmax					
	comp=Z,14nm,0.8s								
HHC			pmax	pmax					
	comp=Z,410nm,6.4s								
HHC			LR	LR					
	comp=N,2μm,18.5s								
HHC			LR	LR					
	comp=E,2μm,19.3s								
HHC			LR	LR					
	comp=Z,4μm,18.5s								
NKL	**Nikolayevsk**	**56.63 354**	*eP*	**P**	**05 55 18.0**	**-0.3**			
NKL			pmax	pmax					
	comp=Z,30nm,1.1s								
NKL			MLR	MLR					
	comp=N,700nm,21.0s								
NKL			MLR	MLR					
	comp=E,1μm,18.0s								
NKL			MLR	MLR					
	comp=Z,2μm,18.0s								
PEA0	**Petropavlovsk-**	**56.69 6**	*eP*	**P**	**05 55 19.5**	**+0.7**			
PEA0B	**Petropavlovsk-**	**56.69 6**	*eP*	**P**	**05 55 19.6**	**+0.8**			
	comp=Z,124nm,1.4s								
PEA0B			LR	LR					
	comp=Z,3μm,22.0s								
PETK	**Petropavlovsk-**	**56.69 6**	P	**P**	**05 55 18.3**	**-0.5**			
	comp=Z,14nm,1.0s,baz=158,slow=5.9,SNR=11								
PETK			LR	LR	06 15 56.8				
	comp=Z,2μm,21.9s,baz=189,slow=32								
PET	**Petropavlovsk**	**56.72 7**	*eP*	**P**	**05 55 19.5**	**+0.5**			
PET			*eS*	**S**	**06 03 10.7**	**+0.3**			
PET			eSSS	SSS	06 06 58.2				
PET			MLR	MLR					
	comp=Z,2μm,21.0s								
PET	**Petropavlovsk**	**56.72 7**	PFAKE		05 55 30.0	+11			
PET			LR	LR					
	comp=Z,2μm,18.0s								
LZH	**Lanzhou**	**57.34 317**	*eP*	**P**	**05 55 24.3**	**+0.3**			
LZH			pP	pP	05 55 29.0	-1.7			
LZH			sP	sP	05 55 31.5	-1.8			
LZH			PP	**PP**	**05 57 36.0**	**+4.5**			
LZH			*eS*	**S**	**06 03 19.0**	**-0.7**			
LZH			sS	sS	06 03 26.3	-4.4			
LZH			SS	**SS**	**06 07 12.3**	**+2.8**			
LZH			pmax	pmax					
	comp=Z,65nm,1.4s								
LZH			pmax	pmax					
	comp=Z,290nm,4.2s								
LZH			LR	LR					
	comp=Z,1μm,15.0s								
LZH			LR	LR					
	comp=Z,2μm,15.2s								
LZH			LR	LR					
	comp=Z,2μm,16.2s								
HIA	**Hailar**	**58.06 338**	*eP*	**P**	**05 55 28.8**	**+0.2**			
HIA			pmax	pmax					
	comp=Z,67nm,1.1s								
HIA	**Hailar**	**58.06 338**	*eP*	**P**	**05 55 28.8**	**+0.2**			
	comp=Z,67nm,1.1s								
HLK	**Haleakala**	**58.96 64**	PFAKE		05 55 50.0	+14			
HLK			LR	LR					
	comp=Z,4μm,18.0s								
HPAH	**Hawaii Prepara**	**59.24 64**	PFAKE		05 55 50.0	+13			
HPAH			LR	LR					
	comp=Z,3μm,20.0s								
POHA	**Pohakuloa**	**59.31 65**	PFAKE		05 55 50.0	+12			
POHA			LR	LR					
	comp=Z,4μm,18.0s								
UWE	**Uwekahuna**	**59.44 65**	PFAKE		05 55 50.0	+11			
UWE			LR	LR					
	comp=Z,4μm,20.0s								
GTA	**Gaotai**	**61.82 319**	*eP*	**P**	**05 55 54.0**	**-0.7**			
GTA			pP	pP	05 55 58.5	-3.0			
GTA			sP	sP	05 56 01.0	-3.1			
GTA			S	**S**	**06 04 17.5**	**+0.2**			
GTA			sS	sS	06 04 25.8	-2.6			
GTA			SS	**SS**	**06 08 21.8**	**+2.2**			
GTA			pmax	pmax					
	comp=Z,4.0nm,0.8s								
GTA			pmax	pmax					
	comp=Z,230nm,6.7s								
GTA			LR	LR					
	comp=Z,1μm,20.4s								
GTA			LR	LR					
	comp=Z,2μm,20.4s								
GTA			LR	LR					
	comp=Z,2μm,20.9s								
PPT	**Papeete**	**62.05 108**	LR	LR	06 18 55.2				
	comp=Z,740nm,19.4s,baz=275,slow=32								
SHL	**Shillong**	**62.05 301**	*eP*	**P**	**05 55 56.0**	**-0.6**			

SHL			*eS*	**S**	**06 04 26.0**	**+5.2**			
PPT2	**Papeete2**	**62.05 108**	*eS*	**S**	**06 04 17.9**	**-2.9**			
	comp=Z,2μm,26.0s								
PPT2			*eLQ*	LQ	06 11 37.5				
	comp=Z,9μm,32.8s								
PPT2			*eLR*	LR	06 14 19.8				
	comp=Z,4μm,28.0s								
ULN	**Ulaanbaatar**	**62.61 330**	*c iP*	**P**	**05 55 59.8**	**-0.1**			
ULN			pmax	pmax					
	comp=Z,36nm,1.7s								
ULN	**Ulaanbaatar**	**62.61 330**	*eP*	**P**	**05 56 00.4**	**+0.4**			
	comp=Z,22nm,1.1s								
ULN			LR	LR					
	comp=Z,2μm,20.0s								
MA2	**Magadan**	**62.69 1**	LR	LR	06 23 05.2				
	comp=Z,973nm,18.9s,baz=201,slow=36								
MA2	**Magadan**	**62.69 1**	*eP*	**P**	**05 56 00.3**	**+0.3**			
SONM	**Songino Array**	**62.92 329**	P	**P**	**05 56 01.3**	**-0.7**			
	comp=Z,10.0nm,0.8s,baz=143,slow=8.1,SNR=16								
SONM			LR	LR	06 23 47.8				
	comp=Z,2μm,19.4s,baz=118,slow=36								
SONA1	**Songino Array**	**62.93 329**	*eP*	**P**	**05 56 02.1**	**+0.1**			
PMOR	**Pomariorio Ree**	**63.45 105**	*eP*	**P**	**05 56 05.0**	**-0.9**			
	comp=Z,98nm,1.1s								
VAH	**Vaihoa**	**63.72 105**	*eP*	**P**	**05 56 06.6**	**-1.1**			
	comp=Z,57nm,1.1s								
LSA	**Lhasa**	**64.05 305**	*eP*	**P**	**05 56 10.1**	**-0.1**			
LSA			pmax	pmax					
	comp=Z,31nm,1.5s								
LSA			MLR	MLR					
	comp=Z,998nm,21.0s								
LSA	**Lhasa**	**64.05 305**	*eP*	**P**	**05 56 10.1**	**-0.1**			
	comp=Z,31nm,1.5s								
LSA			LR	LR					
	comp=Z,998nm,21.0s								
SEY	**Seymchan**	**66.09 2**	P	**P**	**05 56 22.1**	**-0.1**			
	comp=Z,12nm,1.0s,baz=198,slow=4.4,SNR=8.5								
ZAK	**Zakamensk**	**66.13 330**	*eP*	**P**	**05 56 22.2**	**-0.7**			
ZAK			pmax	pmax					
	comp=Z,19nm,1.1s								
NIKH	**Nikolski High**	**66.39 26**	PFAKE		05 56 40.0	+16			
NIKH			LR	LR					
	comp=Z,2μm,20.0s								
YAK	**Yakutsk**	**66.75 350**	LR	LR	06 24 07.1				
	comp=Z,951nm,21.6s,baz=144,slow=35								
YAK	**Yakutsk**	**66.75 350**	*eP*	**P**	**05 56 27.4**	**+1.0**			
YAK			*e*PP*	**sP**	**05 56 40.9**	**+5.2**			
YAK			*e*		05 56 57.1				
YAK			*e*		05 58 54.7				
YAK			*e*PPP	PPP	06 00 31.4				
YAK			*e*S	**S**	**06 05 16.0**	**-1.1**			
YAK			*e**SS	sS	06 05 42.6	+14			
YAK			*e*		06 06 19.7				
YAK			pmax	pmax					
	comp=Z,16nm,1.0s								
YAK			pmax	pmax					
	comp=N,12nm,1.3s								
YAK			pmax	pmax					
	comp=E,5.0nm,1.3s								
YAK			pmax	pmax					
	comp=Z,215nm,6.3s								
YAK			pmax	pmax					
	comp=N,96nm,4.0s								
YAK			pmax	pmax					
	comp=E,129nm,6.3s								
YAK			smax	smax					
	comp=N,455nm,8.4s								
YAK			smax	smax					
	comp=E,213nm,6.5s								
TLY	**Talaya**	**66.77 331**	P	**P**	**05 56 26.9**	**0.0**			
	comp=E,2.5nm,0.5s,baz=204,slow=6.9,SNR=5.7								
TLY	**Talaya**	**66.77 331**	*c iP*	**P**	**05 56 25.7**	**-1.2**			
TLY			*eS*	**S**	**06 05 17.6**	**-0.3**			
TLY			pmax	pmax					
	comp=Z,21nm,1.4s								
TLY	**Talaya**	**66.77 331**	*eP*	**P**	**05 56 27.1**	**+0.2**			
	comp=Z,21nm,1.3s								
TLY			LR	LR					
	comp=Z,2μm,20.0s								
IRK	**Irkutsk**	**66.84 332**	*eP*	**P**	**05 56 26.4**	**-0.8**			
IRK			pmax	pmax					
	comp=Z,44nm,2.6s								
BOD	**Bodaibo**	**66.98 341**	*eP*	**P**	**05 56 27.1**	**-0.9**			
BOD			pmax	pmax					
	comp=Z,16nm,1.5s								
UNV	**Unalaska Valle**	**68.02 27**	PFAKE		05 56 50.0	+15			
UNV			LR	LR					
	comp=Z,2μm,19.0s								
MOY	**Mondy**	**68.06 330**	*eP*	**P**	**05 56 34.9**	**-0.2**			
MOY			pmax	pmax					
	comp=Z,53nm,1.8s								
CASY	**Casey**	**68.32 196**	*eP*	**P**	**05 56 36.1**	**-0.3**			
	comp=Z,19nm,1.9s								
CASY			LR	LR					
	comp=Z,5μm,20.0s								
AKUT	**Akutan**	**68.54 27**	PFAKE		05 56 50.0	+12			
AKUT			LR	LR					
	comp=Z,2μm,21.0s								
TAOE	**Nuku Hiva Isla**	**70.85 98**	*e*LR	LR	06 18 26.5				
	comp=Z,3μm,32.1s								
WMQ	**Urumqi**	**71.90 318**	P	**P**	**05 56 58.3**	**-0.5**			
WMQ			pP	pP	05 57 02.5	-3.2			
WMQ			sP	sP	05 57 05.5	-2.7			
WMQ			S	**S**	**06 06 17.5**	**-1.4**			
WMQ			sS	sS	06 06 25.5	-4.7			
WMQ			ScS	**SKSac**	**06 07 00.3**	**-1.5**			
WMQ			SS	**SS**	**06 10 53.5**	**-2.2**			
WMQ			pmax	pmax					
	comp=Z,8.0nm,0.8s								
WMQ			pmax	pmax					
	comp=Z,170nm,4.6s								
WMQ			LR	LR					
	comp=Z,810nm,19.0s								
WMQ			LR	LR					
	comp=Z,510nm,16.4s								
WMQ			LR	LR					
	comp=Z,540nm,21.8s								
HYB	**Hyderabad**	**72.17 289**	*i* P	**P**	**05 57 00.0**	**-0.9**			
HYB			*e*		05 57 23.5				
BILL	**Bilibino**	**72.22 7**⇑	*iP*	**P**	**05 57 00.7**	**+0.6**			
BILL			*e*		05 57 24.9				
BILL			*i* S	**S**	**06 06 21.1**	**-0.3**			
BILL			eSSS	SSS	06 14 13.6				
BILL			pmax	pmax					
	comp=Z,29nm,1.7s								
BILL			MLR	MLR					
	comp=Z,1μm,19.0s								
BILL	**Bilibino**	**72.22 7**	*eP*	**P**	**05 57 00.8**	**+0.6**			
	comp=Z,29nm,1.4s								
BILL			LR	LR					
	comp=Z,1μm,20.0s								
GAMB	**Gambell**	**73.08 17**	*eP*	**P**	**05 57 06.4**	**+1.1**			
	comp=Z,39nm,1.3s								
GAMB			LR	LR					
	comp=Z,1μm,19.0s								
CHGN	**Chignik**	**73.21 28**	*eP*	**P**	**05 57 05.9**	**-0.3**			
MIR	**Mirnyy**	**73.91 200**	*i* P	**P**	**05 57 13.5**	**+3.3**			
MIR			pmax	pmax					
	comp=Z,6.0nm,1.5s								
VNDA	**Vanda**	**74.51 177**	P	**P**	**05 57 13.1**	**-0.5**			
	comp=Z,5.9nm,1.0s,baz=329,slow=6.1,SNR=12								
VNDA			LR	LR	06 25 56.7				
	comp=Z,1μm,20.3s,baz=359,slow=32								
TNA	**Tin City**	**75.50 17**	*eP*	**P**	**05 57 17.9**	**-1.4**			
	comp=Z,16nm,1.3s								
TNA			LR	LR					
	comp=Z,1μm,21.0s								
TIXI	**Tiksi**	**75.91 354**	P	**P**	**05 57 21.3**	**-0.3**			
	comp=Z,5.7nm,0.8s,baz=150,slow=6.7,SNR=8.6								
TIXI	**Tiksi**	**75.91 354**⇓	*eP*	**P**	**05 57 22.4**	**+0.8**			
TIXI			pmax	pmax					
	comp=Z,16nm,1.7s								
TIXI	**Tiksi**	**75.91 354**	*eP*	**P**	**05 57 20.9**	**-0.7**			
	comp=Z,29nm,1.7s								
TIXI			LR	LR					
	comp=Z

MK31 Makanchi Array 76.54 320 *e*P **P 05 57 26.0 +0.2**
MK31 Makanchi Array 76.54 320 *e*P **P 05 57 26.0 +0.2**
MKAR Makanchi Array 76.54 320 P **P 05 57 25.2 -0.6**
comp=Z,7.4nm,0.9s,baz=99,slow=7.5,SNR=13
MKAR PP PP 06 00 09.1 -9.0
comp=Z,0.6nm,0.5s,baz=93,slow=8.4,SNR=4.1
MKAR LR LR 06 31 53.5
comp=Z,2μm,18.3s,baz=108,slow=36
MKAR Makanchi Array 76.54 320 *i*P **P 05 57 25.8 0.0**
MKAR pmax pmax
comp=Z,7.0nm,0.9s
MKAR Makanchi Array 76.54 320 *e*P **P 05 57 26.0 +0.2**
MKAR PP PP 06 00 09.1 -9.0
MAKZ Makanchi 76.74 320 *e*P **P 05 57 27.1 +0.2**
MAKZ pmax pmax
comp=Z,30nm,1.3s
MAKZ MLR MLR
comp=Z,3μm,19.0s
MAKZ Makanchi 76.74 320 *e*P **P 05 57 27.1 +0.2**
comp=Z,30nm,1.3s
MAKZ LR LR
comp=Z,3μm,19.0s
SVW2 Sparrevohn 77.07 24 *e*P **P 05 57 30.6 +2.1**
comp=Z,20nm,1.1s
SVW2 LR LR
comp=Z,2μm,21.0s
ZAA0 Zalesovo Array 77.66 327 *e*P **P 05 57 31.3 -0.6**
ZALV Zalesovo Beam 77.66 327 P **P 05 57 30.8 -1.1**
comp=Z,10nm,0.9s,baz=107,slow=5.0,SNR=15
TT01 Tatalina 77.88 23 *e*P **P 05 57 33.5 +0.7**
TTA Tatalina 77.89 23 *e*P **P 05 57 34.6 +1.5**
TTA pmax pmax
comp=Z,18nm,1.2s
TTA MLR MLR
comp=Z,1μm,20.0s
TTA Tatalina 77.89 23 *e*P **P 05 57 34.6 +1.5**
comp=Z,18nm,1.2s
TTA LR LR
comp=Z,1μm,20.0s
KSH Kashi 78.88 311 P **P 05 57 40.8 +1.7**
KSH *ep*P pP 05 57 46.0 -0.1
KSH *es*P PcP 05 57 48.0 +0.2
KSH *e*PP **PP 06 00 41.5 +3.5**
KSH S **S 06 07 37.5 +0.9**
KSH SKS **SKSac 06 07 50.3 -3.6**
KSH SS **SS 06 12 46.5 +4.5**
KSH pmax pmax
comp=Z,200nm,5.9s
KSH LR LR
comp=Z,560nm,16.8s
KSH LR LR
comp=Z,2μm,18.1s
KSH LR LR
comp=Z,1μm,17.1s
SEW Seward 79.22 27 PFAKE 05 57 50.0 +10
SEW LR LR
comp=Z,2μm,20.0s
PPLA Purkeypile 79.37 24 *e*P **P 05 57 42.8 +1.4**
comp=Z,68nm,1.6s
PPLA LR LR
comp=Z,2μm,20.0s
RC01 Rabbit Creek A 79.54 26 *e*P **P 05 57 43.9 +1.8**
comp=Z,58nm,1.4s
RC01 LR LR
comp=Z,2μm,21.0s
CAST Castle Rocks 79.67 23 *e*P **P 05 57 43.3 +0.5**
comp=Z,46nm,1.4s
CAST LR LR
comp=Z,1μm,19.0s
TKM2 Tokmak 2 79.97 314 *e*P **P 05 57 45.5 +0.4**
TKM2 pmax pmax
comp=Z,16nm,1.3s
TKM2 MLR MLR
comp=Z,1μm,21.0s
TKM2 Tokmak 2 79.97 314 *e*P **P 05 57 45.5 +0.4**
comp=Z,16nm,1.3s
TKM2 LR LR
comp=Z,1μm,21.0s
PMR Palmer 80.03 25 *e*P **P 05 57 45.0 +0.3**
PMR pmax pmax
comp=Z,85nm,1.9s
PMR MLR MLR
comp=Z,2μm,21.0s
PMR Palmer 80.03 25 *e*P **P 05 57 45.0 +0.3**
comp=Z,85nm,1.9s
PMR LR LR
comp=Z,2μm,21.0s
KURK Kurchatov 80.09 323 *e*P **P 05 57 44.6 -0.7**
KURK pmax pmax
comp=Z,32nm,1.1s
KURK MLR MLR
comp=Z,2μm,20.0s
KURK Kurchatov 80.09 323 *e*P **P 05 57 44.6 -0.7**
comp=Z,32nm,1.1s
KURK LR LR
comp=Z,2μm,20.0s
KURBB Kurchatov Arra 80.12 323 P **P 05 57 44.6 -0.9**
comp=Z,10nm,0.9s,baz=102,slow=5.0,SNR=19
KTH Kantishna Hill 80.19 23 *e*P **P 05 57 44.9 -0.8**
comp=Z,55nm,1.4s
KTH LR LR
comp=Z,2μm,19.0s
TRF Thorofare Moun 80.39 23 *e*P **P 05 57 47.6 +0.7**
comp=Z,24nm,1.4s
TRF LR LR
comp=Z,2μm,20.0s
BPAW Bear Paw Mtn. 80.43 23 *e*P **P 05 57 48.1 +1.2**
comp=Z,28nm,1.4s
SML Sawmill 80.46 25 *e*P **P 05 57 47.5 +0.4**
SML pmax pmax
comp=Z,43nm,1.2s
SML MLR MLR
comp=Z,2μm,22.0s
SML Sawmill 80.46 25 *e*P **P 05 57 47.5 +0.4**
comp=Z,43nm,1.2s
SML LR LR
comp=Z,2μm,22.0s
FRU Bishkek 80.65 314 *e*P **P 05 57 48.0 -0.5**
FRU *e* 05 58 08.0
FRU pmax pmax
comp=Z,50nm,2.0s
AAK Ala-Archa 80.69 314↓ *e*P **P 05 57 49.4 +0.5**
AAK pmax pmax
comp=Z,15nm,1.2s
AAK Ala-Archa 80.69 314 *e*P **P 05 57 49.1 +0.1**
comp=Z,17nm,1.3s
AAK LR LR
comp=Z,2μm,20.0s
SCM Sheep Creek Mo 80.90 26 *e*P **P 05 57 50.7 +1.1**
SCM pmax pmax
comp=Z,97nm,1.7s
SCM MLR MLR
comp=Z,2μm,21.0s
SCM Sheep Creek Mo 80.90 26 *e*P **P 05 57 50.7 +1.1**
comp=Z,97nm,1.7s
SCM LR LR
comp=Z,2μm,21.0s
RND Reindeer 80.95 24 *e*P **P 05 57 49.1 -0.7**
RND pmax pmax
comp=Z,25nm,1.0s
RND MLR MLR
comp=Z,3μm,19.0s
RND Reindeer 80.95 24 *e*P **P 05 57 49.1 -0.7**
comp=Z,25nm,1.0s
RND LR LR
comp=Z,3μm,19.0s
MLY Manley 80.97 22 *e*P **P 05 57 50.6 +0.8**
comp=Z,29nm,1.2s
MLY LR LR
comp=Z,1μm,21.0s
BWN Browne 81.05 23 *e*P **P 05 57 52.3 +2.1**
comp=Z,97nm,1.4s
MCK McKinley 81.06 24 *e*P **P 05 57 50.3 0.0**
MCK pmax pmax
comp=Z,59nm,1.2s
MCK MLR MLR
comp=Z,2μm,19.0s
MCK McKinley 81.06 24 *e*P **P 05 57 50.2 0.0**
comp=Z,59nm,1.2s
MCK LR LR
comp=Z,2μm,19.0s
EYAK Cordova Ski Ar 81.08 27 PFAKE 05 58 00.0 +10
EYAK LR LR
comp=Z,2μm,20.0s
EKS2 Erkin-Say 81.21 314 *e*P **P 05 57 52.4 +0.7**
EKS2 pmax pmax
comp=Z,15nm,1.1s
EKS2 MLR MLR
comp=Z,1μm,20.0s
EKS2 Erkin-Say 81.21 314 *e*P **P 05 57 52.4 +0.7**
comp=Z,15nm,1.1s
EKS2 LR LR
comp=Z,1μm,20.0s
DIV Divide 81.30 27 *e*P **P 05 57 52.5 +0.9**
comp=Z,38nm,1.4s
DIV LR LR
comp=Z,1μm,20.0s
KLU Klutina 81.38 26 *e*P **P 05 57 53.7 +1.6**
comp=Z,36nm,1.4s
KLU LR LR
comp=Z,2μm,22.0s
DHY Denali Highway 81.41 24 *e*P **P 05 57 52.8 +0.5**
comp=Z,41nm,1.4s
DHY LR LR
comp=Z,2μm,21.0s
RAGM Ragged Mountai 81.51 27 PFAKE 05 58 00.0 +7.3
RAGM LR LR
comp=Z,2μm,20.0s
WRH Wood River Hil 81.72 23 *e*P **P 05 57 53.0 -0.7**
comp=Z,26nm,1.2s
BMRM Bremner River 81.76 27 *e*P **P 05 57 56.0 +1.9**
comp=Z,58nm,1.5s
BMRM LR LR
comp=Z,2μm,20.0s
MDM Murphy Dome 81.88 23 *e*P **P 05 57 56.7 +2.1**
comp=Z,37nm,1.8s
MDM LR LR
comp=Z,2μm,22.0s
CCB Clear Creek Bu 81.91 23 *e*P **P 05 57 54.3 -0.4**
comp=Z,52nm,1.7s
COLA College 81.99 23↓ *e*P **P 05 57 55.9 +0.8**
COLA pmax pmax
comp=Z,22nm,1.3s
COLA College 81.99 23 *e*P **P 05 57 55.1 0.0**
comp=Z,22nm,1.2s
HDA Harding Lake 82.14 23 PFAKE 05 58 10.0 +14
HDA LR LR
comp=Z,1μm,20.0s
PAX Paxson 82.16 25 *e*P **P 05 57 57.5 +1.3**
PAX pmax pmax
comp=Z,26nm,1.5s
PAX Paxson 82.16 25 *e*P **P 05 57 57.5 +1.3**
comp=Z,26nm,1.5s
COLD Coldfoot 82.20 20 *e*P **P 05 57 57.4 +1.2**
comp=Z,21nm,1.4s
COLD LR LR
comp=Z,2μm,22.0s
IL1 Eielson Array 82.32 23 *e*P **P 05 57 55.4 -1.4**
ILAR Eielson Array 82.32 23 P **P 05 57 55.5 -1.4**
comp=Z,6.5nm,1.1s,baz=249,slow=5.2,SNR=12
ILAR LR LR 06 30 42.8
comp=Z,776nm,21.6s,baz=257,slow=33
ILB Eielson Array 82.32 23 *e*P **P 05 57 56.1 -0.8**
BALM Baldy 82.81 27 *e*P **P 05 58 02.1 +2.5**
BALM pmax pmax
comp=Z,52nm,1.6s
BALM MLR MLR
comp=Z,1μm,20.0s
BALM Baldy 82.81 27 *e*P **P 05 58 02.1 +2.5**
comp=Z,52nm,1.6s
BALM LR LR
comp=Z,1μm,20.0s
MENT Mentasta 82.89 25 PFAKE 05 58 10.0 +10
MENT LR LR
comp=Z,2μm,20.0s
DOT Dot Lake 83.01 24 *e*P **P 05 58 01.1 +0.6**
comp=Z,54nm,1.1s
NRIK Noril'sk 83.24 342 P **P 05 58 01.2 -0.3**
comp=Z,5.4nm,0.8s,baz=126,slow=5.2,SNR=14
KBL Kabul 83.37 305 PFAKE 05 58 10.0 +6.7
KBL LR LR
comp=Z,600nm,20.0s
KKAR Karatay Array 83.65 314 *e*P **P 05 58 04.7 +0.4**
KKAR Karatay Array 83.65 314 *e*P **P 05 58 04.7 +0.4**
FYU Fort Yukon 83.68 22 *e*P **P 05 58 04.7 +0.9**
comp=Z,47nm,1.4s
FYU LR LR
comp=Z,800nm,19.0s
EGAK Eagle 84.59 24 *e*P **P 05 58 08.7 +0.1**
comp=Z,18nm,1.2s
EGAK LR LR
comp=Z,2μm,20.0s
DAWY Dawson 85.09 25 *e*P **P 05 58 11.9 +0.7**
MAW Mawson 85.41 203 P **P 05 58 12.8 +0.3**
comp=Z,14nm,1.2s,baz=70,slow=9.7,SNR=4.6
MAW LR LR 06 34 06.5
comp=Z,3μm,21.1s,baz=79,slow=34
MAW Mawson 85.41 203 P **P 05 58 13.9 +1.3**
baz=85,SNR=5.7
MAW Mawson 85.41 203 *e*P **P 05 58 12.4 -0.2**
MAW pmax pmax
comp=Z,9.0nm,1.5s
MAW Mawson 85.41 203 *e*P **P 05 58 12.4 -0.2**
comp=Z,8.7nm,1.5s
BRVK Borovoye 85.68 324↓ *e*P **P 05 58 13.6 -0.6**
BRVK pmax pmax
comp=Z,21nm,1.7s
BRVK Borovoye 85.68 324 *e*P **P 05 58 14.4 +0.2**
comp=Z,49nm,1.6s
BRVK LR LR
comp=Z,2μm,20.0s
CRAG Craig 85.98 34 PFAKE 05 58 30.0 +14
CRAG LR LR
comp=Z,2μm,20.0s
WRAK Wrangell Islan 86.60 33 PFAKE 05 58 30.0 +11
WRAK LR LR
comp=Z,2μm,20.0s
QSPA South Pole Qui 86.67 180 *e*P **P 05 58 19.2 +0.2**
QSPA LR LR
comp=Z,2μm,18.0s
DLBC Dease Lake 88.19 31 *e*P **P 05 58 28.9 +2.5**
comp=Z,56nm,1.6s
DLBC LR LR
comp=Z,2μm,21.0s
INK Inuvik 88.51 21 P **P 05 58 27.3 -0.3**
comp=Z,9.3nm,1.2s,baz=271,slow=4.2,SNR=7.9
INK Inuvik 88.51 21 *e*P **P 05 58 27.9 +0.3**
INK MLR MLR
comp=Z,2μm,22.0s
INK Inuvik 88.51 21 *e*P **P 05 58 27.9 +0.3**
INK LR LR
comp=Z,2μm,22.0s
JCC Jacoby Creek, 90.03 49 PFAKE 05 58 50.0 +15
JCC LR LR
comp=Z,2μm,20.0s
KMRM Mail Ridge 90.23 50 PFAKE 05 58 50.0 +14
KMRM LR LR
comp=Z,3μm,19.0s
KHMM Horse Mountain 90.26 49 PFAKE 05 58 50.0 +13
KHMM LR LR
comp=Z,3μm,22.0s
HOPS Hopland Field 90.64 51 PFAKE 05 58 50.0 +12
HOPS LR LR
comp=Z,2μm,20.0s
MCCM Marconi Confer 90.73 52 PFAKE 05 58 50.0 +11
MCCM LR LR
comp=Z,2μm,20.0s
F03A Seaside 90.73 44 PFAKE 05 58 50.0 +11
F03A LR LR
comp=Z,2μm,20.0s
E03A Lebam 90.78 44 PFAKE 05 58 50.0 +11
E03A LR LR
comp=Z,1μm,18.0s
COR Corvallis 90.83 46 PFAKE 05 58 50.0 +11
COR LR LR
comp=Z,2μm,21.0s
HUMO Hull Mountain 90.95 48 PFAKE 05 58 50.0 +10
HUMO LR LR
comp=Z,2μm,19.0s
PGC Sidney 90.99 42 PFAKE 05 58 50.0 +10
PGC LR LR
comp=Z,1μm,20.0s
YBH Yreka Blue Hor 91.08 48 *e*P **P 05 58 39.8 -0.6**
YBH pmax pmax
comp=Z,25nm,1.5s
YBH MLR MLR
comp=Z,2μm,20.0s
YBH Yreka Blue Hor 91.08 48 *e*P **P 05 58 39.8 -0.6**
comp=Z,25nm,1.5s
YBH LR LR
comp=Z,2μm,20.0s
WDC Whiskeytown Da 91.14 50 *e*P **P 05 58 40.6 0.0**
WDC pmax pmax
comp=Z,17nm,1.3s
WDC MLR MLR
comp=Z,3μm,20.0s
WDC Whiskeytown Da 91.14 50 *e*P **P 05 58 40.5 0.0**
comp=Z,17nm,1.3s
WDC LR LR
comp=Z,3μm,20.0s
TUM Tumwater 91.25 43 PFAKE 05 58 50.0 +9.1
TUM LR LR
comp=Z,900nm,21.0s
F04A Amboy 91.53 44 PFAKE 05 58 50.0 +7.8
F04A LR LR
comp=Z,1μm,22.0s
H04A Detroit Lake 91.63 46 PFAKE 05 58 50.0 +7.2
H04A LR LR
comp=Z,1μm,21.0s
ABKAR Akbulak array 91.67 319 *e*P **P 05 58 41.5 -1.3**
SAO San Andreas Ge 91.80 53 PFAKE 05 59 00.0 +16
SAO LR LR
comp=Z,1μm,21.0s
ORV Oroville 91.89 51 PFAKE 05 59 00.0 +16
ORV LR LR
comp=Z,1μm,22.0s
D05A Enumclaw 91.89 43 PFAKE 05 59 00.0 +16
D05A LR LR
comp=Z,1μm,22.0s
AFDM Forest Hills D 92.27 51 *e*P **P 05 58 48.4 +2.5**
comp=Z,14nm,1.3s
AFDM LR LR
comp=Z,1μm,19.0s
B06A Marblemount 92.29 42 PFAKE 05 59 00.0 +14
B06A LR LR
comp=Z,900nm,19.0s
K05A Summer Lake 92.48 48 PFAKE 05 59 00.0 +13
K05A LR LR
comp=Z,1μm,19.0s
GEYT Alibeck 92.48 308 LR LR 06 43 08.0
comp=Z,883nm,19.1s,baz=100,slow=37
CMB Columbia Colle 92.69 52 PFAKE 05 59 00.0 +12
CMB LR LR
comp=Z,1μm,18.0s
LTY Liberty 92.79 43 PFAKE 05 59 00.0 +12
LTY LR LR
comp=Z,1μm,22.0s
ARU Arti 92.81 326 *d*P **P 05 58 48.2 +0.3**
ARU 06 02 30.3
ARU S **SKSac 06 09 21.7 +1.2**
ARU SP **SP 06 11 00.2 -3.0**
ARU pmax pmax
comp=Z,7.0nm,1.0s
ARU MLR MLR
comp=Z,4μm,23.0s
ARU Arti 92.81 326 *e*P **P 05 58 48.0 +0.2**
comp=Z,10nm,1.1s
ARU LR LR
comp=Z,4μm,22.0s
MOD Modoc Plateau 92.89 48 *e*P **P 05 58 49.1 +0.3**
comp=Z,18nm,1.5s
MOD LR LR
comp=Z,2μm,20.0s
SNCC San Nicolas Is 93.24 57 PFAKE 05 59 00.0 +10
SNCC LR LR
comp=Z,2μm,21.0s
HAWA Hanford 93.55 44 *e*P **P 05 58 53.4 +1.8**
comp=Z,16nm,1.4s
B08A Colville Reser 93.72 42 *e*P **P 05 58 54.1 +1.8**
comp=Z,11nm,1.3s
SYO Syowa Base 93.72 200↑ *e*P **P 05 58 53.6 +1.7**
SYO Syowa Base 93.72 200↓ *ep*P **P 05 58 55.8 +3.9**
OSI Osito Audit: C 93.94 56 PFAKE 05 59 10.0 +16
OSI LR LR
comp=Z,2μm,19.0s
D08A Wollman Farm, 93.98 43 PFAKE 05 59 10.0 +16
D08A LR LR
comp=Z,1μm,21.0s
WVOR Wild Horse Val 94.14 48 PFAKE 05 59 10.0 +15
WVOR LR LR
comp=Z,2μm,21.0s
ISA Isabella, Lake 94.16 55 PFAKE 05 59 10.0 +15
ISA LR LR
comp=Z,1μm,19.0s
NVAR Mina Array Bea 94.34 52 LR LR 06 35 19.9
comp=Z,1μm,19.5s,baz=272,slow=32
PASC Pasadena Art C 94.37 56 PFAKE 05 59 10.0 +14
PASC LR LR
comp=Z,1μm,19.0s
C09A Chrisman Ranch 94.42 42 PFAKE 05 59 10.0 +14
C09A LR LR
comp=Z,1μm,19.0s
NV11 Mina Array Sit 94.46 52 *e*P **P 05 58 57.1 +0.9**
comp=Z,13nm,1.3s
NV11 LR LR
comp=Z,2μm,22.0s
MWC Mount Wilson 94.48 56 PFAKE 05 59 10.0 +14
MWC LR LR
comp=Z,1μm,20.0s
E09A Wood Farm, Sta 94.51 44 *e*P **P 05 58 57.5 +1.6**
comp=Z,15nm,1.1s
E09A LR LR
comp=Z,1μm,19.0s
NEW Newport 95.19 42 *e*P **P 05 59 00.4 +1.3**
NEW pmax pmax
comp=Z,11nm,1.4s
NEW Newport 95.19 42 *e*P **P 05 59 00.4 +1.3**
comp=Z,11nm,1.4s
GSC Goldstone, Bar 95.52 55 PFAKE 05 59 10.0 +9.0
GSC LR LR
comp=Z,1μm,19.0s
BAR Barrett 95.62 58 PFAKE 05 59 10.0 +8.6
BAR LR LR
comp=Z,2μm,18.0s
PFO Pinyon Flats O 95.81 57 PFAKE 05 59 10.0 +7.6
PFO LR LR
comp=Z,2μm,20.0s
YKW3 Yellowknife Ar 95.97 28 *e*P **P 05 59 02.0 -0.2**
comp=Z,12nm,1.3s
TPNV Topopah Spring 95.97 53 PFAKE 05 59 10.0 +6.9
TPNV LR LR
comp=Z,1μm,20.0s
YKA Yellowknife Ar 95.98 28 P **P 05 59 01.9 -0.3**
comp=Z,1.5nm,0.5s,baz=273,slow=4.9,SNR=28
YKA Yellowknife Ar 95.98 28 P **P 05 59 02.0 -0.3**
YKB5 Yellowknife Ar 95.98 28 *e*P **P 05 59 01.6 -0.7**
R11A Troy Canyon, C 96.48 52 PFAKE 05 59 20.0 +15
R11A LR LR
comp=Z,1μm,20.0s
ELK Elko 96.70 50 PFAKE 05 59 20.0 +14
ELK LR LR
comp=Z,1μm,18.0s
BSMT Bassoo Peak 96.77 42 *e*P **P 05 59 09.1 +2.6**
LDFC Landfair 96.91 55 PFAKE 05 59 20.0 +13
LDFC LR LR
comp=Z,1μm,19.0s
GLA Glamis 97.17 57 PFAKE 05 59 20.0 +11
GLA LR LR
comp=Z,2μm,19.0s
WALA Waterton Lakes 97.29 41 *e*P Pdif 05 59 10.3 +1.5
comp=Z,18nm,1.5s
WALA LR LR
comp=Z,1μm,21.0s
Y12C Blythe 97.42 57 PFAKE 05 59 20.0 +10
Y12C LR LR
comp=Z,1μm,20.0s
PSUT Pine Spring 97.83 52 PFAKE 05 59 20.0 +8.4
PSUT LR LR
comp=Z,1μm,20.0s
W13A Hualapai Mount 97.92 55 PFAKE 05 59 20.0 +7.9
W13A LR LR
comp=Z,1μm,19.0s
113A Mohawk Valley, 98.07 58 PFAKE 05 59 20.0 +7.5
113A LR LR
comp=Z,2μm,19.0s
CCUT Cedar City 98.26 53 PFAKE 05 59 30.0 +16
CCUT LR LR
comp=Z,1μm,18.0s
BGU Big Grassy Mou 98.36 49 PFAKE 05 59 30.0 +16
BGU LR LR
comp=Z,1μm,18.0s
LCMT Little Creek M 98.37 53 PFAKE 05 59 30.0 +16
LCMT LR LR
comp=Z,1μm,20.0s
DLMT Dillon 98.42 45 PFAKE 05 59 30.0 +16
DLMT LR LR
comp=Z,2,900nm,20.0s
HVU Hansel Valley 98.51 48 PFAKE 05 59 30.0 +16
HVU LR LR
comp=Z,2μm,18.0s

Y14A Wickenburg 98.68 56 PFAKE 05 59 30.0 +15
Y14A LR LR
comp=Z,5μm,18.0s
KNB Kanab 98.71 53 *e*P **P 05 59 13.9 -1.6**
KNB pmax pmax
comp=Z,9.0nm,1.2s
KNB MLR MLR
comp=Z,1μm,19.0s
KNB Kanab 98.71 53 *e*P **P 05 59 13.9 -1.6**
KNB
comp=Z,9.3nm,1.2s
LR LR
comp=Z,1μm,19.0s
SPUT South Promonto 98.78 49 PFAKE 05 59 30.0 +14
SPUT LR LR
comp=Z,900nm,18.0s
U15A North Rim 99.16 54 PFAKE 05 59 30.0 +12
U15A LR LR
comp=Z,800nm,20.0s
CTU Camp Tracy 99.35 49 PFAKE 05 59 30.0 +12
CTU LR LR
comp=Z,1μm,20.0s
SRIG Santa Rosalia 99.51 63 PFAKE 05 59 30.0 +11
SRIG LR LR
comp=Z,1μm,20.0s
TCUT Toone Canyon 99.58 49 PFAKE 05 59 30.0 +11
TCUT LR LR
comp=Z,2μm,18.0s
JLU Jordanelle 99.58 50 PFAKE 05 59 30.0 +11
JLU LR LR
comp=Z,1μm,19.0s
YMR Madison River 99.63 45 PFAKE 05 59 30.0 +11
YMR LR LR
comp=Z,1μm,22.0s
IMW Indian Meadow 99.71 46 PFAKE 05 59 30.0 +10
IMW LR LR
comp=Z,1μm,20.0s
REDW Red Top Meadow 99.82 47 PFAKE 05 59 30.0 +10
REDW LR LR
comp=Z,2μm,20.0s
TMUT Trail Mountain 99.86 51 PFAKE 05 59 30.0 +9.3
TMUT LR LR
comp=Z,1μm,19.0s
FLWY Flagg Ranch 99.87 46 PFAKE 05 59 30.0 +9.5
FLWY LR LR
comp=Z,1μm,20.0s
SNOW Snow King Moun 99.88 47 PFAKE 05 59 30.0 +9.3
SNOW LR LR
comp=Z,2μm,21.0s
RES Resolute Bay 99.94 14 PFAKE 05 59 30.0 +10
RES LR LR
comp=Z,1μm,22.0s
X16A Lo Mia Camp, P 99.95 56 PFAKE 05 59 30.0 +8.9
X16A LR LR
comp=Z,1μm,20.0s
LOHW Long Hollow 99.98 46 PFAKE 05 59 30.0 +8.9
LOHW LR LR
comp=Z,2μm,20.0s
P17A Butcher Ranch, 100.20 51 PFAKE 05 59 30.0 +7.9
P17A LR LR
comp=Z,1μm,21.0s
SRU San Rafael Swe 100.40 51 PFAKE 05 59 30.0 +7.0
SRU LR LR
comp=Z,1μm,18.0s
P18A Preston Nutter 100.57 50 PFAKE 05 59 40.0 +16
P18A LR LR
comp=Z,2μm,22.0s
HSIG 100.61 61 PFAKE 05 59 40.0 +16
HSIG LR LR
comp=Z,1μm,18.0s
TUC Tucson 100.61 58 PFAKE 05 59 40.0 +16
TUC LR LR
comp=Z,2μm,20.0s
X18A Snowflake 101.18 56 PFAKE 05 59 40.0 +13
X18A LR LR
comp=Z,1μm,19.0s
W18A Petrified Fore 101.31 55 PFAKE 05 59 40.0 +13
W18A LR LR
comp=Z,1μm,20.0s
KBS Kingsbay 101.33 352 PFAKE 05 59 40.0 +14
KBS LR LR
comp=Z,800nm,20.0s
SLBS Sierra La Lagu 101.68 67 PFAKE 05 59 40.0 +11
SLBS LR LR
comp=Z,2μm,21.0s
319A Douglas 101.93 59 PFAKE 05 59 40.0 +10
319A LR LR
comp=Z,2μm,20.0s
LVZ Lovozero 101.93 339 PFAKE 05 59 40.0 +11
LVZ LR LR
comp=Z,1μm,20.0s
O20A White River Ci 102.06 50 PFAKE 05 59 40.0 +10
O20A LR LR
comp=Z,2μm,21.0s
APA Apatity 102.50 339 *e*P **Pdif 05 59 29.0 -2.4**
APA pmax pmax
comp=Z,54nm,1.5s
APA MLR MLR
comp=Z,900nm,15.0s
GNI Garni 102.80 310 PFAKE 05 59 40.0 +6.4
GNI LR LR
comp=Z,700nm,20.0s
SNAA Sanae 102.94 189 PFAKE 05 59 40.0 +6.6
SNAA LR LR
comp=Z,222μm,20.0s
K22A Casper 103.05 47 PFAKE 05 59 50.0 +15
K22A LR LR
comp=Z,1μm,21.0s
S22A 4UR Ranch, Cre 103.41 52 PFAKE 05 59 50.0 +13
S22A LR LR
comp=Z,1μm,20.0s
KEV Kevo 103.65 342 PFAKE 05 59 50.0 +14
KEV LR LR
comp=Z,900nm,21.0s
Y22D IRIS PASSCAL I 103.71 56 PFAKE 05 59 50.0 +12
Y22D LR LR
comp=Z,2μm,20.0s
N23A Red Feather La 103.71 49 PFAKE 05 59 50.0 +12
N23A LR LR
comp=Z,900nm,21.0s
KIV Kislovodsk 103.81 314 PFAKE 05 59 50.0 +12
KIV LR LR
comp=Z,1μm,19.0s
ANMO Albuquerque 104.01 55 PFAKE 05 59 50.0 +11
ANMO LR LR
comp=Z,1μm,20.0s
PHWY Pilot Hill 104.02 48 PFAKE 05 59 50.0 +11
PHWY LR LR
comp=Z,900nm,19.0s
RSSD Black Hills 104.62 45 PFAKE 05 59 50.0 +8.3
RSSD LR LR
comp=Z,1μm,20.0s
DAMY Dhamar 104.69 284 PFAKE 05 59 50.0 +7.3
DAMY LR LR
comp=Z,2μm,19.0s
MNTX Cornudas Mount 105.23 58 PFAKE 06 04 10.0
MNTX LR LR
comp=Z,2μm,20.0s
OBN Obninsk 105.24 327 PFAKE 06 04 10.0
OBN LR LR
comp=Z,2μm,20.0s
HPIG 105.39 63 PFAKE 06 04 10.0
HPIG LR LR
comp=Z,2μm,19.0s
T25A Trinidad 105.40 52 PFAKE 06 04 10.0
T25A LR LR
comp=Z,900nm,20.0s
KSCO Kaye Shedlock' 106.51 50 PFAKE 06 04 10.0
KSCO LR LR
comp=Z,2μm,20.0s
FCC Fort Churchill 106.63 29 PFAKE 06 04 10.0
FCC LR LR
comp=Z,1μm,20.0s
TXAR Lajitas Array 106.94 60 PP PP 06 04 15.0 -3.5
comp=Z,0.4nm,0.9s,baz=278,slow=6.3,SNR=2.6
MSTX Muleshoe 107.15 56 PFAKE 06 04 10.0
MSTX LR LR
comp=Z,900nm,22.0s
AMTX Amarillo 107.91 54 PFAKE 06 04 20.0
AMTX LR LR
comp=Z,1μm,18.0s
ZAIG Zacatecas 108.50 67 PFAKE 06 04 20.0
ZAIG LR LR
comp=Z,2μm,20.0s
ULM Lac du Bonnet 108.57 38 PFAKE 06 04 20.0
ULM LR LR
comp=Z,1μm,18.0s
ABTX Abilene, Hawle 109.94 57 PFAKE 06 04 20.0
ABTX LR LR
comp=Z,1μm,19.0s
MOIG Morelia 110.00 70 PFAKE 06 04 20.0
MOIG LR LR
comp=Z,3μm,18.0s
JCT Junction City 110.12 59 PFAKE 06 04 20.0
JCT LR LR
comp=Z,2μm,19.0s
WMOK Wichita Mounta 110.29 54 PFAKE 06 04 20.0
WMOK LR LR
comp=Z,1μm,20.0s
FURI Furi 110.31 278 PFAKE 06 04 20.0
FURI LR LR
comp=Z,900nm,22.0s
SUMG Summit 110.65 2 PFAKE 06 04 20.0
SUMG LR LR
comp=Z,800nm,19.0s
AKBB Malin Array Si 110.89 324 PFAKE 06 04 20.0
AKBB LR LR
comp=Z,1μm,20.0s
KIEV Kiev 110.90 324 PFAKE 06 04 20.0
KIEV LR LR
comp=Z,1μm,22.0s
U34A Anderson Ranch 110.95 52 PFAKE 06 04 20.0
U34A LR LR
comp=Z,1μm,19.0s
W34A Bridge Creek, 111.00 54 PFAKE 06 04 20.0
W34A LR LR
comp=Z,1μm,20.0s
V34A Guthrie 111.09 53 PFAKE 06 04 20.0
V34A LR LR
comp=Z,2μm,20.0s
KMBO Kilima Mbogo 111.37 268 PFAKE 06 04 20.0
KMBO LR LR
comp=Z,600nm,20.0s
ANTO Ankara 111.86 312 PFAKE 06 04 20.0
ANTO LR LR
comp=Z,600nm,22.0s
WHTX Lake Whitney, 111.87 57 PFAKE 06 04 20.0
WHTX LR LR
comp=Z,1μm,20.0s
UNM Universidad Na 111.92 71 PFAKE 06 04 20.0
UNM LR LR
comp=Z,2μm,20.0s
SPMN Marine on St. 112.12 42 PFAKE 06 04 20.0
SPMN LR LR
comp=Z,1μm,19.0s
TUL1 Leonard 112.44 52 PFAKE 06 04 20.0
TUL1 LR LR
comp=Z,1μm,19.0s
CSS Mathiatis 112.59 307 PFAKE 06 04 20.0
CSS LR LR
comp=Z,200nm,22.0s
TLIG Tlapa 112.62 72 PFAKE 06 04 30.0
TLIG LR LR
comp=Z,4μm,19.0s
HKT Hockley 113.60 59 PFAKE 06 04 30.0
HKT LR LR
comp=Z,3μm,19.0s
TIRR Tirgusor 113.62 318 PFAKE 06 04 30.0
TIRR LR LR
comp=Z,700nm,19.0s
HHAR Hobbs 113.82 52 PFAKE 06 04 30.0
HHAR LR LR
comp=Z,1μm,19.0s
ISP Isparta 114.11 310 PFAKE 06 04 30.0 +15
ISP LR LR
comp=Z,500nm,20.0s
NATX Nacogdoches 114.25 57 PFAKE 06 04 30.0 +14
NATX LR LR
comp=Z,1μm,20.0s
MLR Muntele Rosu 114.88 319 PFAKE 06 04 30.0 +13
MLR LR LR
comp=Z,1μm,20.0s
SFJD Kangerlussuaq 114.99 8 PFAKE 06 04 30.0 +14
SFJD LR LR
comp=Z,1μm,20.0s
WLAR White Oak Lake 115.10 54 PFAKE 06 04 30.0 +13
WLAR LR LR
comp=Z,1μm,20.0s
X301 Greenbrier Sit 115.29 52 PFAKE 06 04 30.0 +12
X301 LR LR
comp=Z,1μm,20.0s
WHAR Wooly Hollow 115.36 52 PFAKE 06 04 30.0 +12
WHAR LR LR
comp=Z,1μm,19.0s
UALR University of 115.45 53 PFAKE 06 04 30.0 +12
UALR LR LR
comp=Z,2μm,19.0s
KONO Kongsberg 115.62 338 PFAKE 06 04 30.0 +13
KONO LR LR
comp=Z,1μm,20.0s
SLM Saint Louis 116.00 48 PFAKE 06 04 30.0 +11
SLM LR LR
comp=Z,2μm,20.0s
CCAR Cane Creek 116.12 54 PFAKE 06 04 30.0 +11
CCAR LR LR
comp=Z,1μm,20.0s
PBMO Poplar Bluff 116.41 50 PFAKE 06 04 30.0 +10
PBMO LR LR
comp=Z,1μm,20.0s
HBAR Harrisburg 116.58 52 PFAKE 06 04 30.0 +10
HBAR LR LR
comp=Z,2951μm,21.0s
PARMO Parma 116.96 50 PFAKE 06 04 30.0 +9.3
PARMO LR LR
comp=Z,2416μm,20.0s
SIUC Southern Illin 117.05 49 PFAKE 06 04 30.0 +9.1
SIUC LR LR
comp=Z,1μm,20.0s
MET Memphis--Engin 117.27 52 PFAKE 06 04 30.0 +8.7
MET LR LR
comp=Z,1μm,18.0s
KARP Karpathos 117.33 309 PFAKE 06 04 30.0 +8.5
KARP LR LR
comp=Z,200nm,22.0s
GLAT Glass 117.44 51 PFAKE 06 04 30.0 +8.4
GLAT LR LR
comp=Z,2240μm,19.0s
OLIL Olney 117.56 48 PFAKE 06 04 30.0 +8.2
OLIL LR LR
comp=Z,2μm,20.0s
VBMS Vicksburg 117.57 55 PFAKE 06 04 30.0 +8.0
VBMS LR LR
comp=Z,1μm,20.0s
PSZ Piszkesteto 117.60 324 PFAKE 06 04 30.0 +8.3
PSZ LR LR
comp=Z,1μm,19.0s
OKC Ostrava-Krasne 117.64 326 AMS AMS 06 53 40.0
comp=Z,1μm,22.4s
SFIN Lafayette 117.71 46 PFAKE 06 04 30.0 +8.0
SFIN LR LR
comp=Z,1μm,20.0s
OXF Oxford 117.85 52 PFAKE 06 04 30.0 +7.5
OXF LR LR
comp=Z,2μm,19.0s
MORC Moravsky Berou 118.00 326 PFAKE 06 04 30.0 +7.6
MORC LR LR
comp=Z,7μm,21.0s
USIN University of 118.13 48 PFAKE 06 04 30.0 +7.1
USIN LR LR
comp=Z,1μm,20.0s
LSZ Lusaka 118.35 251 PFAKE 06 04 40.0 +16
LSZ LR LR
comp=Z,1μm,19.0s
DPC Dobruska-Polom 118.36 327 *e*PKP **PKPdf 06 04 28.5 +5.4**
DPC *e*PS **PS 06 15 24.6 -1.3**
DPC *e*SS SS 06 21 48.6 -5.3
DPC AMS AMS 06 55 40.0
comp=Z,2μm,20.0s
SANT Santorini 118.40 310 PFAKE 06 04 40.0 +16
SANT LR LR
comp=Z,500nm,21.0s
UPC Upice 118.44 328 *e*PS PS 06 15 28.0 +1.5
UPC AMS AMS 06 56 20.0
comp=Z,2μm,20.1s
BLO Bloomington 118.56 47 PFAKE 06 04 40.0 +16
BLO LR LR
comp=Z,1μm,19.0s
WVT Waverly 118.60 50 PFAKE 06 04 40.0 +16
WVT LR LR
comp=Z,2μm,19.0s
LAST Lasithi 118.76 309 PFAKE 06 04 40.0 +16
LAST LR LR
comp=Z,500nm,22.0s
CCIG Comitan 118.86 73 PFAKE 06 04 40.0 +15
CCIG LR LR
comp=Z,2μm,19.0s
WCI Wyandotte Cave 119.06 48 PFAKE 06 04 40.0 +15
WCI LR LR
comp=Z,2μm,20.0s
IDI Anoyia 119.18 309 PFAKE 06 04 40.0 +15
IDI LR LR
comp=Z,400nm,22.0s
PVCC Panska Ves 119.19 328 AMS AMS 06 57 30.0
comp=Z,1μm,18.5s
SUR Sutherland 119.27 230 PFAKE 06 04 40.0 +14
SUR LR LR
comp=Z,3μm,20.0s
BRG Berggiesshubel 119.32 329 *e*PKP **PKPdf 06 04 27.1 +2.3**
comp=Z,2.3nm,0.9s
BRG PP **PP 06 05 42.0 -3.4**
BRG PS **PS 06 15 31.0 -3.3**
BRG SS SS 06 22 13.0 +7.0
comp=N,229nm,18.8s
comp=E,226nm,19.1s
comp=Z,329nm,20.9s
BRG Berggiesshubel 119.32 329 *e*PKIKP **PKPdf 06 04 27.1 +2.3**
BRG 06 05 42.0
BRG PS **PS 06 15 31.0 -3.3**
BRG SS SS 06 22 13.0 +7.0
BRG pmax pmax
comp=Z,2.0nm,0.9s
BRG MLR MLR
comp=N,229nm,18.8s
BRG MLR MLR
comp=E,226nm,19.1s
BRG MLR MLR
comp=Z,329nm,20.9s
TREC Trest 119.39 327 AMS AMS 06 55 40.0
comp=Z,2μm,21.2s
GOPC GO Pecny, Ondr 119.42 328 *e*PS PS 06 15 33.1 -2.3
GOPC *ex* x 06 22 28.8
GOPC AMS AMS 06 57 00.0
comp=Z,2μm,20.2s
PRU Pruhonice 119.51 328 *e*PS PS 06 15 37.0 +0.8
PRU *e*SS SS 06 22 07.4 -1.3
PRU AMS AMS 06 57 00.0
comp=Z,2μm,20.3s
PRA Prague 119.52 328 *e*PS PS 06 15 43.6 +7.4
PRA AMS AMS 06 56 40.0
comp=Z,2μm,21.5s
CLL Collm 119.54 330 *e*PP PP 06 05 42.0 -4.9
CLL *e*PPP PPP 06 08 17.0
CLL *e*PS **PS 06 15 34.0 -2.3**
CLL *e* 06 17 22.0
CLL *e*SS SS 06 22 14.0 +5.2
CLL *e*SSS SSS 06 26 31.0
CLL L L 06 56 00.0
comp=Z,2μm,21.9s
CLL Collm 119.54 330 PFAKE 06 04 40.0 +15
CLL LR LR
comp=Z,2μm,22.0s
AGG Agios Georgios 119.81 314 PFAKE 06 04 40.0 +14
AGG LR LR
comp=Z,2μm,21.0s
LRAL Lakeview Retre 120.20 53 PFAKE 06 04 40.0 +13
LRAL LR LR
comp=Z,1μm,19.0s
SWET Sewanee 120.36 51 PFAKE 06 04 40.0 +13
SWET LR LR
comp=Z,300nm,20.0s
NKC Novy Kostel 120.47 329 AMS AMS 06 59 40.0
comp=Z,2μm,18.0s
KHC Kasperske Hory 120.52 327 *e*PKP **PKPdf 06 04 27.9 +0.6**
KHC *e*SS SS 06 22 28.6 +6.9
KHC AMS AMS 06 57 40.0
comp=Z,2μm,20.5s
TIR Tirane 120.61 317 PFAKE 06 04 40.0 +12
TIR LR LR
comp=Z,900nm,21.0s
GEC2 GERESS Array S 120.62 327 PFAKE 06 04 40.0 +12
GEC2 LR LR
comp=Z,2μm,20.0s
GERES GERESS Array B 120.62 327 PKP **PKPdf 06 04 27.1 -0.4**
comp=Z,0.7nm,0.5s,baz=62,slow=3.2,SNR=7.1
GEA0 GERESS Array S 120.62 327 *e*PKPdf **PKPdf 06 04 27.4 -0.2**
PAYG Puerto Ayora 120.88 93 PFAKE 06 04 40.0 +11
PAYG LR LR
comp=Z,2μm,20.0s
SCHQ Schefferville 121.08 23 PKP **PKPdf 06 04 28.1 -0.1**
comp=Z,1.6nm,0.7s,baz=34,slow=3.6,SNR=3.8
SCHQ Schefferville 121.08 23 PKP **PKPdf 06 04 28.1 -0.1**
SCHQ LR LR
comp=Z,1μm,20.0s
SADO Sadowa 121.12 38 PFAKE 06 04 40.0 +12
SADO LR LR
comp=Z,1μm,19.0s
CPCT Cooper Cave 121.36 50 PFAKE 06 04 40.0 +11
CPCT LR LR
comp=Z,700nm,22.0s
GRFO Grafenberg 121.42 329 PFAKE 06 04 40.0 +11
GRFO LR LR
comp=Z,2μm,21.0s
TZTN Tazewell 121.71 48 PFAKE 06 04 40.0 +10
TZTN LR LR
comp=Z,1μm,20.0s
TKL Tuckaleechee C 121.86 50 PFAKE 06 04 40.0 +10
TKL LR LR
comp=Z,1μm,21.0s
ALLY Alegheny Colle 121.99 42 PFAKE 06 04 40.0 +10
ALLY LR LR
comp=Z,1μm,22.0s
TEIG Tepich 122.01 68 PFAKE 06 04 40.0 +9.2
TEIG LR LR
comp=Z,700nm,18.0s
TRI Trieste 122.34 324 PFAKE 06 04 40.0 +9.2
TRI LR LR
comp=Z,1μm,19.0s
STU Stuttgart 123.04 329 PFAKE 06 04 40.0 +7.9
STU LR LR
comp=Z,2μm,21.0s
ESK Eskdalemuir 123.39 341 PFAKE 06 04 40.0 +7.5
ESK LR LR
comp=Z,1μm,19.0s
PLCA Paso Flores 123.39 145 PKP **PKPdf 06 04 34.1 +1.0**
comp=Z,1.2nm,0.6s,baz=290,slow=2.5,SNR=5.5
TIGA Tifton 123.44 54 PFAKE 06 04 50.0 +17
TIGA LR LR
comp=Z,1μm,20.0s
TIP Timpagrande 123.69 316 PFAKE 06 04 50.0 +16
TIP LR LR
comp=Z,800nm,20.0s
TGUH Tegucigalpa,Un 123.74 75 PFAKE 06 04 50.0 +16
TGUH LR LR
comp=Z,2μm,20.0s
BFO Black Forest 123.76 329 PFAKE 06 04 50.0 +17
BFO LR LR
comp=Z,2μm,21.0s
FUORN Ofenpass-Fuorn 123.80 327 PFAKE 06 04 50.0 +16
FUORN LR LR
comp=Z,3μm,22.0s
KMSC Kings Mountain 123.90 49 PFAKE 06 04 50.0 +16
KMSC LR LR
comp=Z,1μm,21.0s
CUC Castrocucco 123.97 317 PFAKE 06 04 50.0 +16
CUC LR LR
comp=Z,600nm,22.0s
SSPA Standing Stone 123.97 42 PFAKE 06 04 50.0 +16
SSPA LR LR
comp=Z,1μm,18.0s
TUE Stuetta 124.39 327 PFAKE 06 04 50.0 +15
TUE LR LR
comp=Z,2μm,20.0s
FRNY Flat Rock 124.41 35 PFAKE 06 04 50.0 +15
FRNY LR LR
comp=Z,1μm,20.0s
NCB Newcomb 124.53 37 PFAKE 06 04 50.0 +15
NCB LR LR
comp=Z,2μm,21.0s
LMQ La Malbaie 124.54 31 PFAKE 06 04 50.0 +15
LMQ LR LR
comp=Z,1μm,19.0s
CEL Celeste 124.71 315 PFAKE 06 04 50.0 +14
CEL LR LR
comp=Z,800nm,22.0s
CWF Charnwood Fore 124.83 338 PFAKE 06 04 50.0 +15
CWF LR LR

comp=Z,2μm,19.0s
VLC Villacollemand 125.20 324 PFAKE 06 04 50.0 +14
VLC LR LR
comp=Z,600nm,22.0s
ACCN Adirondack Com 125.20 37 PFAKE 06 04 50.0 +14
ACCN LR LR
comp=Z,1μm,20.0s
SENIN Lac Senin/Sane 125.56 328 PFAKE 06 04 50.0 +13
SENIN LR LR
comp=Z,2μm,22.0s
DWPF Disney Wildern 126.27 57 PFAKE 06 04 50.0 +11
DWPF LR LR
comp=Z,1μm,20.0s
JTS JuntasAbangare 126.30 80 PFAKE 06 04 50.0 +11
JTS LR LR
comp=Z,2μm,19.0s
FFD Franklin Falls 126.34 36 PFAKE 06 04 50.0 +11
FFD LR LR
comp=Z,2μm,20.0s
BNI Bardonecchia 126.74 327 PFAKE 06 04 50.0 +11
BNI LR LR
comp=Z,2μm,20.0s
WVL Waterville 126.81 34 PFAKE 06 04 50.0 +11
WVL LR LR
comp=Z,2μm,20.0s
YLE Yale 126.81 39 PFAKE 06 04 50.0 +11
YLE LR LR
comp=Z,2μm,21.0s
HRV Adam Dziewonsk 126.97 37 PFAKE 06 04 50.0 +10
HRV LR LR
comp=Z,1μm,19.0s
TSUM Tsumeb 127.03 243 PFAKE 06 04 50.0 +9.3
TSUM LR LR
comp=Z,1μm,22.0s
HDC Heredia 127.14 80 PFAKE 06 04 50.0 +9.0
HDC LR LR
comp=Z,2μm,21.0s
BRYW Bryant College 127.33 37 PFAKE 06 04 50.0 +10
BRYW LR LR
comp=Z,3μm,19.0s
DYA Yadsworthy 127.65 338 PFAKE 06 04 50.0 +9.2
DYA LR LR
comp=Z,1μm,20.0s
SSB Saint Sauveur 127.73 329 PFAKE 06 04 50.0 +8.8
SSB LR LR
comp=Z,2μm,22.0s
LMN Caledonia Moun 128.48 30 PFAKE 06 04 50.0 +7.4
LMN LR LR
comp=Z,2μm,22.0s
DRLN Deer Lake 129.03 22 PFAKE 06 05 00.0 +17
DRLN LR LR
comp=Z,2μm,21.0s
NNA Nana 132.23 109 PFAKE 06 05 00.0 +9.4
NNA LR LR
comp=Z,2μm,20.0s
OTAV Otavalo 132.75 93 PFAKE 06 05 00.0 +7.9
OTAV LR LR
comp=Z,2μm,22.0s
GTBY Guantanamo Bay 134.16 65 PFAKE 06 05 10.0 +16
GTBY LR LR
comp=Z,800nm,19.0s
LPAZ La Paz 138.70 119 PKP **PKPdf 06 05 03.2 -0.1**
comp=Z,7.3nm,1.1s,baz=296,slow=1.5,SNR=11
LPAZ La Paz 138.70 119 *e*PKPdf **PKPdf 06 05 03.5 +0.2**
CPUP Villa Florida 141.24 141 PKP **PKPdf 06 05 08.0 +1.1**
comp=Z,5.1nm,1.1s,baz=7.1,slow=3.0,SNR=4.2
CPUP Villa Florida 141.24 141 PKIKP **PKPdf 06 05 08.0 +1.1**
CPUP pmax pmax
comp=Z,5.0nm,1.1s
CPUP Villa Florida 141.24 141 *e*PKPdf **PKPdf 06 05 07.4 +0.4**
SMRT St. Maarten 145.56 62 *e*PKPdf **PKPbc 06 05 14.9 +0.1**
SAML Samuel 145.94 111 *e*PKPdf **PKPdf 06 05 14.9 -0.6**
TOA0 Torodi Ar. Sit 145.98 289 *e*PKPdf **PKPbc 06 05 15.2 -0.4**
TOA0 *e*PKPdf **PKPbc 06 05 15.8 -0.5**
TORD Torodi Ar. Bea 145.98 289 PKPbc **PKPdf 06 05 15.3 -0.2**
comp=Z,9.6nm,0.8s,baz=68,slow=3.2,SNR=41
PTGA Pitinga 151.04 97 *e*PKPbc **PKPbc 06 05 29.2 -0.4**
DBIC Dimbokro 153.48 278 PKPbc **PKPbc 06 05 34.1 -1.0**
comp=Z,7.7nm,1.0s,baz=134,slow=1.4,SNR=4.8

NIED ***30*** *05:46:00,37.30N×141.30E,h23km,Mw4.4 Best double couple: M₀3.93000×10¹⁵ NP1:φ=89.00000°,δ18.00000°, λ-51.00000°. NP2:φ=229.00000°,δ76.00000°, λ-102.00000°.*

IDC ***30*** *05:46:55.1±0.5,37.33N×141.21E,h0km,mb4.5/25, mb1 4.6/29,mb1mx4.5/51,mbtmp4.5/29,ML4.8/3,MS3.7/3, Ms1 3.7/3,ms1mx3.3/49,Error ellipse: s-maj=15.5km s-min=11.2km az=96.0*

BJI ***30*** *05:46:58.0,37.40N×141.20E,h15km,mb4.6/22,mB4.8/12, Ms4.6/10,Ms7 4.2/10*

JMA ***30*** *05:46:59.3±0.1,37.34N×141.30E,h33km±1km,M4.5 JMA Felt IV J1.*

ISCJB ***30*** *05:46:59.4±0.2,37.35N±0.02×141.26E±0.03,h33km, mb4.7/142,MS3.9/3,Error ellipse: s-maj=3.6km s-min=2.6km az=143.6*

MOS ***30*** *05:47:01.0±0.9,37.73N×141.14E,h33km,mb4.9/40,Error ellipse: s-maj=7.9km s-min=5.6km az=88.0*

NEIC ***30*** *05:47:01.9±0.5,37.39N×141.20E,h40km±4km,mb4.7/104, Error ellipse: s-maj=4.5km s-min=3.1km az=134.0*

NEIC Recorded [4 JMA] in Fukushima.

ISC 30 05:46:57.0±1.3,37.34N±0.03×141.26E±0.04,h9km±8km, n267,σ1§10/269,mb4.7/142,MS3.9/3,11C-2D,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	Op	ID	Time h m s	Res ISC
JFK	**Kawauchi**	**0.31**	**275**		S	**Sb**	**05 47 12.6**	**+2.8**
ONAJ	**Iwakimizuishiy**	**0.44**	**237**		P	**Pn**	**05 47 08.9**	**-0.6**
ONAJ					S	**Sb**	**05 47 15.4**	**+1.8**
JMM	**Marumori**	**0.64**	**325**		P	**Pn**	**05 47 11.9**	**-0.3**
JMM					S	**Sn**	**05 47 20.7**	**-1.8**
JFT	**Otama**	**0.76**	**284**		P	**Pn**	**05 47 14.4**	**+0.6**
JFT					S	**Sn**	**05 47 25.2**	**-0.1**
JHO	**Hitachi**	**0.91**	**217**		P	**Pb**	**05 47 15.0**	**0.0**
JHO					S	**Sb**	**05 47 26.5**	**-0.7**
JIO	**Ouri**	**1.11**	**4**		P	**Pg**	**05 47 18.0**	**-0.4**
JIO					*e*S	**Sg**	**05 47 31.9**	**-1.0**
JOU	**Okura**	**1.13**	**336**		P	**Pn**	**05 47 19.7**	**+0.8**
JOU					S	**Sn**	**05 47 34.9**	**+0.4**
MJAR	**Matsushiro Arr**	**2.57**	**253**		Pn	**Pb**	**05 47 40.6**	**-2.6**
	26nm,0.3s,baz=80,slow=16,SNR=70							
MJAR					Sn	**Sb**	**05 48 15.9**	**+1.0**
	51nm,0.3s,baz=45,slow=14,SNR=5.5							
MAJO	**Matsushiro**	**2.57**	**253**	*c*	*i*P	**Pb**	**05 47 41.2**	**-2.1**
MAJO	**Matsushiro**	**2.57**	**253**		*e*Pn	**Pb**	**05 47 41.1**	**-2.1**
MAT	**Matsushiro**	**2.57**	**253**		P	**Pb**	**05 47 41.0**	**-2.2**
MAT					*e*S	**Sb**	**05 48 12.1**	**-2.8**
MJB9	**Matsu-Tunnel**	**2.57**	**253**		*e*Pn	**Pb**	**05 47 41.2**	**-2.1**
INU	**Inuyama**	**3.96**	**241**		*e*Pn	Pn	05 48 00.8	+3.0
JHJ	**Hachijo jima 2**	**4.38**	**196**		Pn	**Pn**	**05 48 04.6**	**+1.0**
	94nm,0.3s,baz=74,slow=22,SNR=11							
JHJ					Sn	**Sn**	**05 48 52.4**	**-2.4**
	219nm,0.3s,baz=77,slow=24,SNR=8.6							
JHJ2	**Mitsune**	**4.38**	**196**		*e*Pn	**Pn**	**05 48 04.4**	**+0.8**
ERM	**Erimo**	**4.89**	**17**	*ce*	P	**Pn**	**05 48 10.9**	**+0.3**
ERM	**Erimo**	**4.89**	**17**		*e*Pn	**Pn**	**05 48 10.2**	**-0.5**
ASAJ	**Asahikawa**	**6.84**	**8**		Pn	**Pn**	**05 48 37.2**	**-0.3**
	15nm,0.3s,baz=221,slow=10,SNR=40							
ASAJ					Sn	**Sn**	**05 49 55.2**	**-0.3**
	4.5nm,0.3s,baz=75,slow=19,SNR=2.0							
YUK	**Yuzh-Kuril'sk**	**7.54**	**26**		*e*P	**Pn**	**05 48 44.5**	**-2.6**
YUK					*e*S	Sn	05 50 05.4	-7.3
YUK					pmax	pmax		
	comp=Z,238nm,0.5s							
YUK					pmax	pmax		
	comp=E,50nm,0.3s							
YUK					pmax	pmax		
	comp=N,219nm,0.4s							
SHO	**Shikotan**	**7.78**	**31**		*e*P	Pn	05 48 46.3	-3.9
SHO					*e*S	Sn	05 50 08.5	-10
SHO					pmax	pmax		
	comp=Z,67nm,0.7s							
SHO					pmax	pmax		
	comp=N,75nm,0.5s							
SHO					pmax	pmax		
	comp=E,37nm,0.7s							
JNU	**Nakatsue**	**9.47**	**247**		*e*Pn	Pn	05 49 18.8	+5.1
YSS	**Yuzh-Sakhalins**	**9.67**	**6**		*e*P	**Pn**	**05 49 16.1**	**-0.1**
YSS	**Yuzh-Sakhalins**	**9.67**	**6**		*e*Pn	**Pn**	**05 49 16.6**	**+0.4**
USRK	**Ussuriysk Ar.**	**9.81**	**317**		Pn	Pn	05 49 23.1	+5.0
	comp=E,1.6nm,0.3s,baz=132,slow=13,SNR=54							
USRK					LR	LR	05 52 56.7	
	comp=E,528nm,18.4s,baz=84,slow=37							
CBIJ	**Chichi jima**	**10.24**	**175**	*e*	Pn	**Pn**	**05 49 22.4**	**-1.8**
CBIJ					Sn	Sn	05 51 05.9	-13
JCJ	**Chichijima**	**10.24**	**175**		Pn	**Pn**	**05 49 22.3**	**-1.8**
	comp=E,14nm,0.3s,baz=302,slow=21,SNR=9.6							
JCJ					Sn	Sn	05 51 05.9	-13
	comp=E,13nm,0.3s,baz=319,slow=19,SNR=3.6							
KSRS	**Korea Array**	**10.61**	**275**		Pn	Pn	05 49 33.7	+4.6
	comp=E,0.3nm,0.3s,baz=94,slow=13,SNR=7.6							
KSRS					LR	LR	05 53 24.6	
	comp=E,303nm,19.6s,baz=44,slow=37							
KSAR	**Wonju Array Be**	**10.64**	**275**		P	Pn	05 49 33.7	+4.1
KSAR	**Wonju Array Be**	**10.64**	**275**		Pn	Pn	05 49 33.7	+4.1
MDJ	**Mudanjiang**	**11.42**	**313**		P	Pn	05 49 45.8	+5.6
MDJ					pmax	pmax		
	comp=E,30nm,0.8s							
MDJ					pmax	pmax		
	comp=E,64nm,4.3s							
INCN	**Inchon**	**11.63**	**275**	*e*	Pn	Pn	05 49 47.5	+4.3
TYV	**Tymovskoe**	**13.56**	**4**	*e*	P	Pn	05 50 06.0	-3.3
KLR	**Kul'dur**	**13.74**	**333**		Pn	**Pn**	**05 50 13.7**	**+1.9**
	comp=E,0.3nm,0.3s,baz=126,slow=12,SNR=9.3							
KLR					LR	LR	05 55 24.9	
	comp=E,340nm,18.9s,baz=119,slow=37							
PEA0	**Petropavlovsk-**	**19.49**	**31**	*e*	P	**Pn**	**05 51 26.4**	**+1.1**
PETK	**Petropavlovsk-**	**19.49**	**31**		P	**P**	**05 51 23.7**	**-0.3**
	comp=E,0.1nm,0.3s,baz=199,slow=7.0,SNR=3.1							
BJT	**Baijiatuau**	**19.75**	**286**	*e*	P	**Pn**	**05 51 28.5**	**-0.1**
BJT					pmax	pmax		
	comp=Z,24nm,1.3s							
BJT	**Baijiatuau**	**19.75**	**286**	*e*	P	**Pn**	**05 51 28.4**	**-0.1**
	comp=Z,24nm,1.3s							
SSLB	**Suanglung**	**22.03**	**238**		P	**P**	**05 51 55.5**	**+3.7**
	comp=Z,59nm,1.9s							
YULB	**Yu-li**	**22.07**	**237**	*e*	P	**P**	**05 51 54.8**	**+2.6**
	comp=Z,52nm,0.9s							
MA2	**Magadan**	**23.08**	**12**		P	**P**	**05 52 01.9**	**-0.7**
	comp=Z,22nm,0.6s,baz=213,slow=9.1,SNR=10.0							
HHC	**Hu-ho-hao-te**	**23.26**	**288**	*e*	P	**P**	**05 52 05.8**	**+1.0**
HHC					sP	sP	05 52 16.0	+7.4
HHC					S	**S**	**05 56 12.0**	**-5.1**
HHC					pmax	pmax		
	comp=Z,21nm,0.8s							
HHC					pmax	pmax		
	comp=Z,120nm,6.4s							
HHC					LR	LR		
	comp=Z,500nm,12.3s							
HHC					LR	LR		
	comp=Z,650nm,12.9s							
HHC					LR	LR		
	comp=Z,460nm,13.6s							
YAK	**Yakutsk**	**25.74**	**347**		P	**P**	**05 52 27.3**	**-0.2**
	comp=Z,22nm,0.3s,baz=338,slow=0.6,SNR=4.1							
YAK	**Yakutsk**	**25.74**	**347**	*e*	P	**P**	**05 52 27.1**	**-0.4**
YAK					pmax	pmax		
	comp=Z,17nm,1.0s							
YAK					pmax	pmax		
	comp=N,5.0nm,1.2s							
SEY	**Seymchan**	**26.52**	**11**		P	**P**	**05 52 35.3**	**+0.9**
	comp=N,10.0nm,0.8s,baz=193,slow=8.1,SNR=18							
ULN	**Ulaanbaatar**	**27.08**	**304**	*ij*	*e*P	**P**	**05 52 39.6**	**-0.4**
ULN					pmax	pmax		
	comp=Z,5.0nm,1.2s							
ULN	**Ulaanbaatar**	**27.08**	**304**	*e*	P	**P**	**05 52 39.0**	**-0.9**
	comp=Z,9.1nm,1.2s							
BOD	**Bodaibo**	**27.20**	**328**	*ij*	*i*P	**P**	**05 52 39.2**	**-1.5**
BOD					pmax	pmax		
	comp=Z,6.0nm,0.8s							
ENH	**Enshi**	**27.24**	**264**	*e*	P	**P**	**05 52 42.4**	**+1.1**
	comp=Z,8.6nm,0.6s							
SONA1	**Songino Array**	**27.51**	**304**	*e*	P	**P**	**05 52 43.9**	**+0.1**
SONM	**Songino Array**	**27.51**	**304**		P	**P**	**05 52 42.9**	**-0.9**
	comp=Z,4.8nm,0.7s,baz=99,slow=9.4,SNR=10							
ZAK	**Zakamensk**	**29.98**	**308**	*e*	P	**P**	**05 53 05.5**	**-0.2**
ZAK					pmax	pmax		
	comp=Z,4.0nm,1.2s							
TLY	**Talaya**	**30.04**	**311**	*e*	P	**P**	**05 53 06.7**	**+0.6**
TLY					pmax	pmax		
	comp=Z,3.0nm,0.8s							
TLY	**Talaya**	**30.04**	**311**	*e*	P	**P**	**05 53 05.9**	**-0.2**
	comp=Z,3.4nm,0.7s							
CD2	**Chengdu**	**31.55**	**270**		P	**P**	**05 53 19.5**	**-0.2**
CD2					pmax	pmax		
	comp=Z,2.0nm,0.5s							
BILL	**Bilibino**	**33.77**	**17**	*e*	P	**P**	**05 53 39.5**	**+0.9**
BILL				*e*			05 54 51.0	
BILL				*e*	PPP	PPP	05 55 01.5	
BILL					pmax	pmax		
	comp=Z,2.0nm,1.0s							
BILL					MLR	MLR		
	comp=Z,212nm,25.0s							
TIXI	**Tiksi**	**34.97**	**353**	*ij*	*e*P	P	05 53 38.0	-11
TIXI					pmax	pmax		
	comp=Z,1.0nm,0.5s							
KHON	**Khomkaen**	**39.80**	**249**		P	**P**	**05 54 30.9**	**+0.4**
	comp=Z,11nm,0.7s							
WMQ	**Urumqi**	**40.59**	**296**		P	**P**	**05 54 38.8**	**+1.9**
WMQ					pP	sP	05 54 45.5	+4.6
WMQ					sP	pP	05 54 49.8	+10
WMQ					PP	**PnPn**	**05 56 17.5**	**+3.3**
WMQ					pmax	pmax		
	comp=Z,4.0nm,0.6s							
WMQ					pmax	pmax		
	comp=Z,61nm,4.0s							
WMQ					LR	LR		
	comp=Z,120nm,19.4s							
WMQ					LR	LR		
	comp=Z,220nm,24.8s							
WMQ					LR	LR		
	comp=Z,140nm,23.0s							
ZALV	**Zalesovo Beam**	**41.62**	**312**		P	**P**	**05 54 44.4**	**-0.7**
	comp=Z,7.4nm,0.4s,baz=91,slow=6.8,SNR=36							
ZALV					PcP	**PcP**	**05 56 41.6**	**-0.3**
	comp=Z,1.2nm,0.5s,baz=72,slow=3.1,SNR=3.5							
MK01	**Makanchi Array**	**43.85**	**302**	*e*	P	**P**	**05 55 02.9**	**-0.5**
MK31	**Makanchi Array**	**43.85**	**302**	*e*	P	**P**	**05 55 03.0**	**-0.4**
MK31	**Makanchi Array**	**43.85**	**302**	*e*	P	**P**	**05 55 03.0**	**-0.4**
MKAR	**Makanchi Array**	**43.85**	**302**		P	**P**	**05 55 02.9**	**-0.5**
	comp=Z,7.3nm,0.7s,baz=86,slow=10.0,SNR=40							
MKAR	**Makanchi Array**	**43.85**	**302**	*ce*	P	**P**	**05 55 03.4**	**0.0**
MKAR					pmax	pmax		
	comp=Z,7.0nm,0.7s							
MAKZ	**Makanchi**	**44.06**	**302**	*e*	P	**P**	**05 55 05.2**	**+0.1**
MAKZ					pmax	pmax		
	comp=Z,7.0nm,0.8s							
MAKZ	**Makanchi**	**44.06**	**302**	*e*	P	**P**	**05 55 05.2**	**+0.1**
	comp=Z,7.1nm,0.8s							
TT01	**Tatalina**	**45.24**	**35**	*e*	P	**P**	**05 55 14.9**	**+0.7**
TTA	**Tatalina**	**45.24**	**35**	*e*	P	**P**	**05 55 16.2**	**+1.8**
TTA					pmax	pmax		
	comp=Z,19nm,2.0s							
TTA	**Tatalina**	**45.24**	**35**	*e*	P	**P**	**05 55 16.1**	**+1.8**
	comp=Z,19nm,2.0s							
SVW2	**Sparrevohn**	**45.35**	**38**	*e*	P	**P**	**05 55 16.7**	**+1.5**
	comp=Z,45nm,2.0s							
KURK	**Kurchatov**	**45.65**	**308**		P	**P**	**05 55 17.6**	**0.0**
KURK					pmax	pmax		
	comp=Z,10.0nm,0.4s							
KURK	**Kurchatov**	**45.65**	**308**	*e*	P	**P**	**05 55 17.3**	**-0.3**
	comp=Z,22nm,0.8s							
KURBB	**Kurchatov Arra**	**45.72**	**308**		P	**P**	**05 55 17.6**	**-0.6**
	comp=Z,9.6nm,0.4s,baz=84,slow=8.3,SNR=77							
OHAK	**Old Harbor**	**46.62**	**43**	*e*	P	**P**	**05 55 24.9**	**-0.2**
	comp=Z,33nm,1.4s							
KAPI	**Kappang**	**46.66**	**210**	*e*	P	**P**	**05 55 26.8**	**+0.8**
	comp=Z,34nm,1.4s							
KDAK	**Kodiak Island**	**46.95**	**42**	*e*	P	**P**	**05 55 28.2**	**+0.5**
KDAK					pmax	pmax		
	comp=Z,52nm,1.4s							
KDAK	**Kodiak Island**	**46.95**	**42**	*e*	P	**P**	**05 55 28.2**	**+0.5**
	comp=Z,52nm,1.4s							
PPLA	**Purkeypile**	**46.99**	**35**	*e*	P	**P**	**05 55 29.3**	**+1.1**
	comp=Z,26nm,1.5s							
CAST	**Castle Rocks**	**47.04**	**34**	*e*	P	**P**	**05 55 29.8**	**+1.3**
	comp=Z,3.7nm,0.9s							
BPAW	**Bear Paw Mtn.**	**47.54**	**33**	*e*	P	**P**	**05 55 32.5**	**+0.2**
	comp=Z,3.0nm,0.8s							
KTH	**Kantishna Hill**	**47.56**	**34**	*e*	P	**P**	**05 55 33.1**	**+0.5**
	comp=Z,9.8nm,1.0s							
MLY	**Manley**	**47.66**	**32**	*e*	P	**P**	**05 55 34.5**	**+1.3**
	comp=Z,10nm,1.6s							
TRF	**Thorofare Moun**	**47.85**	**34**	*e*	P	**P**	**05 55 36.4**	**+1.5**
	comp=Z,12nm,1.4s							
RC01	**Rabbit Creek A**	**48.19**	**37**	*e*	P	**P**	**05 55 38.9**	**+1.5**
	comp=Z,34nm,1.2s							
SEW	**Seward**	**48.40**	**39**	*e*	P	**P**	**05 55 39.4**	**+0.5**
	comp=Z,198nm,2.0s							
PMR	**Palmer**	**48.45**	**37**	*e*	P	**P**	**05 55 39.5**	**+0.2**
PMR					pmax	pmax		
	comp=Z,33nm,1.7s							
PMR	**Palmer**	**48.45**	**37**	*e*	P	**P**	**05 55 39.5**	**+0.2**
	comp=Z,33nm,1.7s							
RND	**Reindeer**	**48.49**	**34**	*e*	P	**P**	**05 55 39.9**	**+0.1**
RND					pmax	pmax		
	comp=Z,43nm,2.0s							
RND	**Reindeer**	**48.49**	**34**	*e*	P	**P**	**05 55 39.9**	**+0.1**
	comp=Z,43nm,2.0s							
MDM	**Murphy Dome**	**48.72**	**32**	*e*	P	**P**	**05 55 42.5**	**+1.1**
	comp=Z,7.6nm,0.9s							
WRH	**Wood River Hil**	**48.80**	**33**	*e*	P	**P**	**05 55 42.2**	**+0.2**
	comp=Z,11nm,1.5s							
SML	**Sawmill**	**48.82**	**36**	*e*	P	**P**	**05 55 42.7**	**+0.4**
SML					pmax	pmax		
	comp=Z,37nm,1.6s							
SML	**Sawmill**	**48.82**	**36**	*e*	P	**P**	**05 55 42.7**	**+0.4**
	comp=Z,37nm,1.6s							
COLA	**College**	**48.89**	**32**		P	**P**	**05 55 43.0**	**+0.4**
COLA					pmax	pmax		
	comp=Z,4.0nm,0.8s							
CCB	**Clear Creek Bu**	**48.91**	**33**	*e*	P	**P**	**05 55 44.1**	**+1.2**
	comp=Z,5.8nm,1.4s							
MMRI	**Maumere**	**49.08**	**205**	*e*	P	**P**	**05 55 46.4**	**+1.7**
	comp=Z,33nm,0.9s							
DHY	**Denali Highway**	**49.18**	**35**	*e*	P	**P**	**05 55 45.2**	**0.0**
	comp=Z,5.2nm,1.0s							
HDA	**Harding Lake**	**49.29**	**33**	*e*	P	**P**	**05 55 46.1**	**+0.3**
	comp=Z,6.3nm,1.0s							
SCM	**Sheep Creek Mo**	**49.29**	**36**	*e*	P	**P**	**05 55 45.9**	**0.0**
SCM					pmax	pmax		
	comp=Z,73nm,1.9s							
SCM	**Sheep Creek Mo**	**49.29**	**36**	*e*	P	**P**	**05 55 45.9**	**0.0**
	comp=Z,73nm,1.9s							
ILAR	**Eielson Array**	**49.30**	**32**		P	**P**	**05 55 45.4**	**-0.4**
	comp=Z,3.8nm,0.8s,baz=270,slow=6.5,SNR=42							
ILB	**Eielson Array**	**49.30**	**32**	*e*	P	**P**	**05 55 45.9**	**0.0**
IL1	**Eielson Array**	**49.30**	**32**	*e*	P	**P**	**05 55 45.7**	**-0.2**
TKM2	**Tokmak 2**	**49.38**	**298**	*e*	P	**P**	**05 55 47.5**	**+0.5**
TKM2					pmax	pmax		
	comp=Z,6.0nm,0.6s							
TKM2	**Tokmak 2**	**49.38**	**298**	*e*	P	**P**	**05 55 47.5**	**+0.5**
	comp=Z,6.3nm,0.6s							
FYU	**Fort Yukon**	**49.91**	**30**	*e*	P	**P**	**05 55 51.2**	**+0.8**
	comp=Z,26nm,1.8s							
KLU	**Klutina**	**49.99**	**37**	*e*	P	**P**	**05 55 52.0**	**+0.7**
	comp=Z,5.7nm,0.7s							
AAK	**Ala-Archa**	**50.24**	**298**	*ĵ*	*e*P	**P**	**05 55 54.4**	**+0.9**
AAK					pmax	pmax		
	comp=Z,3.0nm,0.5s							
AAK	**Ala-Archa**	**50.24**	**298**	*e*	P	**P**	**05 55 54.7**	**+1.2**
	comp=Z,2.8nm,0.9s							
BRVK	**Borovoye**	**50.33**	**312**		P	**P**	**05 55 54.0**	**+0.2**
BRVK					pmax	pmax		
	comp=Z,4.0nm,0.8s							
BRVK	**Borovoye**	**50.33**	**312**	*e*	P	**P**	**05 55 52.3**	**-1.5**
	comp=Z,6.6nm,0.9s							
DOT	**Dot Lake**	**50.62**	**34**	*e*	P	**P**	**05 55 56.0**	**+0.1**
	comp=Z,8.4nm,0.7s							
BMRM	**Bremner River**	**50.69**	**37**	*e*	P	**P**	**05 55 56.2**	**-0.3**
	comp=Z,11nm,1.0s							
EKS2	**Erkin-Say**	**50.73**	**298**	*e*	P	**P**	**05 55 58.4**	**+1.2**
EKS2					pmax	pmax		
	comp=Z,4.0nm,0.9s							
EKS2	**Erkin-Say**	**50.73**	**298**	*e*	P	**P**	**05 55 58.4**	**+1.2**
	comp=Z,4.0nm,0.9s							
RAGM	**Ragged Mountai**	**50.74**	**38**	*e*	P	**P**	**05 55 59.8**	**+3.0**
	comp=Z,34nm,1.1s							
MENT	**Mentasta**	**50.85**	**35**	*e*	P	**P**	**05 55 59.1**	**+1.4**
	comp=Z,4.9nm,0.8s							
COEN	**Coen**	**51.05**	**178**	*e*	P	**P**	**05 56 00.4**	**+0.8**
	comp=Z,69nm,1.8s							
EGAK	**Eagle**	**51.75**	**32**	*e*	P	**P**	**05 56 04.5**	**+0.2**
	comp=Z,13nm,1.6s							
DAWY	**Dawson**	**52.61**	**33**	*e*	P	**P**	**05 56 12.7**	**+1.8**
	comp=Z,12nm,1.8s							
KKAR	**Karatay Array**	**52.86**	**300**	*e*	P	**P**	**05 56 13.2**	**+0.2**
KKAR	**Karatay Array**	**52.86**	**300**	*e*	P	**P**	**05 56 13.2**	**+0.2**
GSI	**Gunungsitoli**	**53.85**	**239**	*e*	P	**P**	**05 56 21.5**	**+1.0**
	comp=Z,71nm,1.2s							
INK	**Inuvik**	**54.17**	**27**		P	**P**	**05 56 22.2**	**+0.1**
	comp=Z,2.6nm,0.6s,baz=300,slow=6.9,SNR=23							
INK	**Inuvik**	**54.17**	**27**	*e*	P	**P**	**05 56 22.8**	**+0.7**
INK					pmax	pmax		
	comp=Z,4.0nm,0.7s							
INK	**Inuvik**	**54.17**	**27**	*e*	P	**P**	**05 56 22.8**	**+0.7**
	comp=Z,4.0nm,0.7s							
SVE	**Sverdlovsk**	**54.84**	**318**	*e*	P	**P**	**05 56 27.4**	**+0.3**
SVE					pmax	pmax		
	comp=Z,17nm,0.9s							
ARU	**Arti**	**56.05**	**318**	*c*	*i*P	**P**	**05 56 35.4**	**-0.5**
ARU							05 57 30.6	
ARU							05 58 40.5	
ARU					S	**S**	**06 04 24.0**	**-0.3**
ARU					SS	**SS**	**06 08 10.4**	**+0.6**
ARU					pmax	pmax		
	comp=Z,7.0nm,0.7s							
ARU	**Arti**	**56.05**	**318**	*e*	P	**P**	**05 56 35.6**	**-0.2**
	comp=Z,11nm,0.9s							
FITZ	**Fitzroy Crossi**	**57.08**	**198**		P	**P**	**05 56 43.5**	**0.0**
	comp=Z,6.3nm,0.7s,baz=21,slow=8.6,SNR=6.8							
FITZ	**Fitzroy Crossi**	**57.08**	**198**	*e*	P	**P**	**05 56 43.7**	**+0.2**
	comp=Z,64nm,1.7s							
MLOA	**Mauna Loa Obse**	**57.31**	**89**	*e*	P	**P**	**05 56 46.2**	**+0.3**
WRAB	**Tennant Creek**	**57.34**	**188**	*e*	P	**P**	**05 56 44.8**	**-0.6**
WRAB					pmax	pmax		
	comp=Z,90nm,1.8s							
WRAB	**Tennant Creek**	**57.34**	**188**	*e*	P	**P**	**05 56 44.8**	**-0.6**
	comp=Z,90nm,1.8s							
WB2	**Warramunga Arr**	**57.35**	**188**	*e*	P	**P**	**05 56 44.9**	**-0.5**
	comp=Z,101nm,1.9s							
WRA	**Warramunga Arr**	**57.35**	**188**		P	**P**	**05 56 44.3**	**-1.1**
	comp=Z,3.7nm,0.4s,baz=6.0,slow=7.4,SNR=32							
ABKAR	**Akbulak array**	**57.65**	**310**	*e*	P	**P**	**05 56 46.8**	**-0.5**
CRAG	**Craig**	**57.92**	**42**	*e*	P	**P**	**05 56 50.3**	**+1.2**
	comp=Z,62nm,1.4s							
SPA0	**Spitsbergen Ar**	**60.20**	**349**	*e*	P	**P**	**05 57 05.2**	**+0.5**
AS01	**Alice Springs**	**61.07**	**188**

YBH	**Yreka Blue Hor**	**70.25**	**52**	*e*P		**P**		**05 58 12.0**	**+1.4**
YBH					pmax	pmax			
	comp=Z,25nm,1.5s								
YBH	**Yreka Blue Hor**	**70.25**	**52**	*e*P		**P**		**05 58 12.0**	**+1.4**
	comp=Z,25nm,1.5s								
SUMG	**Summit**	**70.38**	**360**	*e*P		**P**		**05 58 11.9**	**+0.8**
SUMG					pmax	pmax			
	comp=Z,5.0nm,0.9s								
SUMG	**Summit**	**70.38**	**360**	*e*P		**P**		**05 58 11.9**	**+0.8**
	comp=Z,5.4nm,0.9s								
KBZ	**Khabaz**	**70.61**	**311**	P		**P**		**05 58 12.8**	**+0.2**
	comp=Z,1.8nm,0.5s,baz=34,slow=6.0,SNR=4.8								
KIV	**Kislovodsk**	**70.61**	**311**	*ce*P		**P**		**05 58 14.9**	**+2.2**
KIV				*i* *PP		sP		05 58 21.8	+5.0
KIV				*e**SP		**PcP**		**05 58 28.7**	**-5.1**
KIV				*i*				05 58 33.9	
KIV				*e*SSS		SSS		06 14 59.9	
KIV					pmax	pmax			
	comp=Z,7.0nm,0.6s								
K05A	**Summer Lake**	**70.85**	**51**	*e*P		**P**		**05 58 15.7**	**+1.4**
	comp=Z,15nm,1.0s								
WALA	**Waterton Lakes**	**71.29**	**42**	*e*P		**P**		**05 58 17.3**	**+0.5**
	comp=Z,18nm,1.5s								
SWMT	**Swartz Lake**	**72.15**	**44**	*e*P		**P**		**05 58 22.6**	**+0.6**
MFID	**Camas Ranch**	**73.51**	**48**	*e*P		**P**		**05 58 30.9**	**+0.8**
	comp=Z,3.2nm,0.8s								
NC405	**NORSAR Array S**	**73.64**	**337**	*e*P		**P**		**05 58 30.6**	**+0.1**
NC303	**NORSAR Array S**	**73.67**	**337**	*e*P		**P**		**05 58 30.5**	**-0.1**
FCC	**Fort Churchill**	**73.78**	**27**	*e*P		**P**		**05 58 30.9**	**-0.3**
FCC					pmax	pmax			
	comp=Z,8.0nm,1.1s								
FCC	**Fort Churchill**	**73.78**	**27**	*e*P		**P**		**05 58 30.9**	**-0.3**
	comp=Z,8.2nm,1.1s								
CMB	**Columbia Colle**	**73.79**	**54**	*e*P		**P**		**05 58 32.4**	**+0.6**
CMB					pmax	pmax			
	comp=Z,7.0nm,1.0s								
CMB	**Columbia Colle**	**73.79**	**54**	*e*P		**P**		**05 58 32.4**	**+0.6**
	comp=Z,6.6nm,1.0s								
NC204	**NORSAR Array S**	**73.81**	**338**	*e*P		**P**		**05 58 31.6**	**+0.2**
NB201	**NORSAR Array S**	**73.82**	**337**	*e*P		**P**		**05 58 31.6**	**0.0**
NB2	**NORSAR Subarra**	**73.86**	**337**	P		**P**		**05 58 31.2**	**-0.5**
	comp=Z,3.0nm,0.6s,baz=40,slow=6.2								
NOA	**NORSAR Array B**	**73.86**	**337**	P		**P**		**05 58 31.4**	**-0.4**
	comp=Z,3.6nm,0.7s,baz=38,slow=5.9,SNR=28								
NBO02	**NORSAR Array S**	**73.96**	**337**	*e*P		**P**		**05 58 32.1**	**-0.2**
AKASG	**Malin Array Be**	**73.98**	**322**	P		**P**		**05 58 31.6**	**-0.9**
	comp=Z,2.5nm,0.4s,baz=45,slow=6.2,SNR=12								
AKASG	**Malin Array Be**	**73.98**	**322**	*ce*P		**P**		**05 58 31.8**	**-0.8**
AKASG					pmax	pmax			
	comp=Z,3.0nm,0.4s								
NC602	**NORSAR Array S**	**73.99**	**337**	*e*P		**P**		**05 58 31.6**	**-0.9**
KIEV	**Kiev**	**73.99**	**322**	*e*P		**P**		**05 58 32.0**	**-0.6**
KIEV					pmax	pmax			
	comp=Z,10.0nm,0.9s								
KIEV	**Kiev**	**73.99**	**322**	*e*P		**P**		**05 58 31.9**	**-0.6**
	comp=Z,9.8nm,0.9s								
NBO00	**NORSAR Array S**	**74.00**	**337**	*e*P		**P**		**05 58 32.5**	**0.0**
LRM	**Limekiln Ridge**	**74.01**	**44**	*e*P		**P**		**05 58 33.8**	**+0.6**
AK11	**Malin Array Si**	**74.02**	**322**	*e*P		**P**		**05 58 33.1**	**+0.3**
NAO01	**NORSAR Array S**	**74.11**	**337**	*e*P		**P**		**05 58 33.3**	**+0.1**
EGMT	**Eagleton**	**74.12**	**41**	*e*P		**P**		**05 58 34.0**	**+0.4**
	comp=Z,9.1nm,0.7s								
DLMT	**Dillon**	**74.21**	**45**	*e*P		**P**		**05 58 35.0**	**+0.7**
	comp=Z,6.1nm,0.8s								
HLID	**Hailey**	**74.25**	**47**	*e*P		**P**		**05 58 35.9**	**+1.3**
	comp=Z,2.8nm,1.0s								
MCMT	**McKenzie Canyo**	**74.39**	**45**	*e*P		**P**		**05 58 36.9**	**+1.4**
BOZ	**Bozeman (W)**	**74.58**	**44**	*e*P		**P**		**05 58 37.2**	**+0.8**
BOZ					pmax	pmax			
	comp=Z,5.0nm,0.8s								
BOZ	**Bozeman (W)**	**74.58**	**44**	*e*P		**P**		**05 58 37.1**	**+0.8**
	comp=Z,5.2nm,0.8s								
NV01	**Mina Array Sit**	**74.90**	**53**	*e*P		**P**		**05 58 38.8**	**+0.3**
NVAR	**Mina Array Bea**	**74.90**	**53**	P		**P**		**05 58 38.6**	**+0.1**
	comp=Z,4.nm,0.8s,baz=290,slow=6.0,SNR=15								
KONO	**Kongsberg**	**75.45**	**337**	*e*P		**P**		**05 58 40.7**	**-0.2**
KONO					pmax	pmax			
	comp=Z,27nm,1.9s								
KONO	**Kongsberg**	**75.45**	**337**	*e*P		**P**		**05 58 40.7**	**-0.2**
	comp=Z,27nm,1.9s								
YMR	**Madison River**	**75.55**	**45**	*e*P		**P**		**05 58 43.1**	**+1.0**
	comp=Z,4.3nm,0.8s								
GCMT	**Greycliff**	**75.56**	**43**	*e*P		**P**		**05 58 43.4**	**+1.4**
YFT	**Old Faithful**	**75.76**	**45**	*e*P		**P**		**05 58 44.8**	**+1.5**
	comp=Z,4.3nm,0.8s								
LKWY	**Lake**	**75.93**	**44**	*e*P		**P**		**05 58 45.5**	**+1.2**
LKWY					pmax	pmax			
	comp=Z,5.0nm,1.0s								
LKWY	**Lake**	**75.93**	**44**	*e*P		**P**		**05 58 45.5**	**+1.2**
	comp=Z,4.6nm,1.0s								
H17A	**Grant Village**	**75.94**	**45**	*e*P		**P**		**05 58 46.8**	**+2.4**
	comp=Z,6.9nm,0.8s								
IMW	**Indian Meadow**	**76.05**	**45**	*e*P		**P**		**05 58 46.2**	**+1.1**
	comp=Z,5.5nm,0.8s								
MOOW	**Moose Ponds**	**76.25**	**45**	*e*P		**P**		**05 58 47.2**	**+1.2**
	comp=Z,4.5nm,1.1s								
SNOW	**Snow King Moun**	**76.42**	**45**	*e*P		**P**		**05 58 48.3**	**+1.2**
	comp=Z,16nm,1.6s								
R11A	**Troy Canyon, C**	**76.67**	**52**	*e*P		**P**		**05 58 48.8**	**+0.3**
	comp=Z,4.4nm,1.2s								
TPNV	**Topopah Spring**	**77.09**	**53**	*e*P		**P**		**05 58 51.5**	**+0.6**
TPNV					pmax	pmax			
	comp=Z,6.0nm,1.0s								
TPNV	**Topopah Spring**	**77.09**	**53**	*e*P		**P**		**05 58 51.5**	**+0.6**
	comp=Z,6.0nm,1.0s								
DUG	**Dugway, Tooele**	**77.25**	**49**	*e*P		**P**		**05 58 52.5**	**+0.8**
DUG					pmax	pmax			
	comp=Z,5.0nm,0.8s								
DUG	**Dugway, Tooele**	**77.25**	**49**	*e*P		**P**		**05 58 52.5**	**+0.8**
	comp=Z,4.9nm,0.8s								
BW06	**Boulder Array**	**77.54**	**45**	*e*P		**P**		**05 58 53.5**	**+0.1**
	comp=Z,2.5nm,0.8s								
PD31	**Pinedale Array**	**77.54**	**45**	*e*P		**P**		**05 58 53.4**	**0.0**
PDAR	**Pinedale Array**	**77.54**	**45**	P		**P**		**05 58 53.2**	**-0.2**
	comp=Z,1.7nm,0.6s,baz=261,slow=2.3,SNR=20								
PSUT	**Pine Spring**	**77.64**	**51**	*e*P		**P**		**05 58 54.8**	**+0.8**
	comp=Z,4.9nm,1.0s								
BUR08	**Bucovina Ar. S**	**77.98**	**322**	*e*P		**P**		**05 58 56.9**	**+1.3**
MPU	**Maple Canyon**	**78.07**	**49**	*e*P		**P**		**05 58 57.1**	**+0.7**
	comp=Z,4.2nm,0.8s								
BRTR	**Keskin Array B**	**78.56**	**311**	P		**P**		**05 58 58.6**	**-0.3**
	comp=Z,0.5nm,0.4s,baz=126,slow=3.2,SNR=4.8								
BRTR	**Keskin Array B**	**78.56**	**311**	*ce*P		**P**		**05 58 58.9**	**-0.1**
BRTR					pmax	pmax			
	comp=Z,1.0nm,0.5s								
MSU	**Marysvale**	**78.68**	**50**	*e*P		**P**		**05 59 01.0**	**+1.2**
MSU	**Marysvale**	**78.68**	**50**	*e*P		**P**		**05 59 01.0**	**+1.2**
CRVS	**Cervenica-Dubn**	**78.90**	**324**	*e*		P		05 59 06.1	+5.5
P17A	**Butcher Ranch,**	**78.94**	**49**	*e*P		**P**		**05 59 02.1**	**+0.9**
	comp=Z,7.1nm,1.0s								
MTPU	**Mount Pierson**	**78.97**	**50**	*e*P		**P**		**05 59 02.9**	**+1.3**
	comp=Z,3.4nm,0.8s								
BR231	**Keskin MP Arra**	**79.00**	**312**	*e*P		**P**		**05 59 00.1**	**-1.3**
P18A	**Preston Nutter**	**79.14**	**48**	*e*P		**P**		**05 59 03.9**	**+1.5**
	comp=Z,8.3nm,0.3s								
SRU	**San Rafael Swe**	**79.30**	**49**	*e*P		**P**		**05 59 03.7**	**+0.6**
SRU					pmax	pmax			
	comp=Z,7.0nm,1.0s								
SRU	**San Rafael Swe**	**79.30**	**49**	*e*P		**P**		**05 59 03.7**	**+0.6**
	comp=Z,6.9nm,1.0s								
O20A	**White River Ci**	**79.99**	**47**	*e*P		**P**		**05 59 07.5**	**+0.6**
	comp=Z,3.7nm,0.8s								
DPC	**Dobruska-Polom**	**80.13**	**328**	*e*P		P		05 59 13.3	+6.0
KRLC	**Kraliky**	**80.14**	**327**	*e*P		P		05 59 12.3	+5.0
KRLC				*e*pP		PcP		05 59 22.0	+7.4
PV10	**Paradox Valley**	**80.66**	**49**	*e*P		**P**		**05 59 11.6**	**+0.9**
CLL	**Collm**	**80.77**	**330**	*e*P		**P**		**05 59 10.0**	**-0.6**
N23A	**Red Feather La**	**80.81**	**45**	*e*P		**P**		**05 59 12.3**	**+0.9**
	comp=Z,7.9nm,1.3s								
PV05	**Paradox Valley**	**80.82**	**49**	*e*P		**P**		**05 59 12.4**	**+0.9**
Y14A	**Wickenburg**	**81.03**	**54**	*e*P		**P**		**05 59 12.6**	**+0.2**
	comp=Z,11nm,0.5s								
WUAZ	**Wupatki**	**81.07**	**52**	*e*P		**P**		**05 59 14.1**	**+1.4**
	comp=Z,6.3nm,1.0s								
PV01	**Paradox Valley**	**81.10**	**49**	*e*P		**P**		**05 59 13.5**	**+0.6**
113A	**Mohawk Valley,**	**81.27**	**55**	*e*P		**P**		**05 59 13.7**	**+0.1**
	comp=Z,2.6nm,0.9s								
SMCO	**Snowmass**	**81.36**	**47**	*e*P		**P**		**05 59 15.0**	**+0.5**
	comp=Z,3.6nm,1.1s								
X16A	**Lo Mia Camp, P**	**81.73**	**53**	*e*P		**P**		**05 59 17.1**	**+0.8**
	comp=Z,3.1nm,0.9s								
KHC	**Kasperske Hory**	**82.22**	**328**	*e*P		**P**		**05 59 18.1**	**-0.3**
KHC				*ex*		x		05 59 27.0	
KHC	**Kasperske Hory**	**82.22**	**328**	*e*P		**P**		**05 59 17.8**	**-0.6**
KHC					pmax	pmax			
	comp=Z,1.0nm,0.8s								
KHC	**Kasperske Hory**	**82.22**	**328**	*e*P		**P**		**05 59 17.8**	**-0.6**
	comp=Z,1.4nm,0.8s								
GERES	**GERESS Array B**	**82.39**	**328**	P		**P**		**05 59 18.8**	**-0.5**
	comp=Z,0.8nm,0.6s,baz=28,slow=6.0,SNR=6.9								
GEA0	**GERESS Array S**	**82.39**	**328**	*e*P		**P**		**05 59 18.9**	**-0.5**
S22A	**4UR Ranch, Cre**	**82.39**	**48**	*e*P		**P**		**05 59 20.9**	**+1.0**
	comp=Z,3.7nm,0.8s								
SDCO	**Great Sand Dun**	**83.17**	**47**	*e*P		**P**		**05 59 24.5**	**+0.6**
	comp=Z,3.2nm,1.0s								
ECSD	**EROS Data Cent**	**83.75**	**38**	*e*P		**P**		**05 59 26.0**	**-0.4**
	comp=Z,25nm,1.9s								
THZ	**Tophouse**	**83.87**	**157**	*e*P		**P**		**05 59 27.7**	**+1.0**
	comp=Z,45nm,1.7s								
T25A	**Trinidad**	**84.22**	**47**	*e*P		**P**		**05 59 29.7**	**+0.5**
	comp=Z,5.8nm,0.8s								
ANMO	**Albuquerque**	**84.48**	**50**	*e*P		**P**		**05 59 31.7**	**+1.2**
ANMO					pmax	pmax			
	comp=Z,5.0nm,1.1s								
ANMO	**Albuquerque**	**84.48**	**50**	*e*P		**P**		**05 59 31.7**	**+1.2**
	comp=Z,5.2nm,1.1s								
BFO	**Black Forest**	**84.98**	**331**	*ce*P		**P**		**05 59 33.4**	**+0.9**
BFO	**Black Forest**	**84.98**	**331**	*e*P		**P**		**05 59 32.4**	**-0.2**
	comp=Z,3.9nm,1.0s								
FUORN	**Ofenpass-Fuorn**	**85.57**	**329**	*e*P		**P**		**05 59 35.9**	**0.0**
	comp=Z,13nm,0.9s								
TX31	**Lajitas Ar. Si**	**90.03**	**52**	*e*P		**P**		**05 59 57.5**	**+0.1**
TXAR	**Lajitas Array**	**90.03**	**52**	P		**P**		**05 59 57.3**	**-0.1**
	comp=Z,1.9nm,0.7s,baz=300,slow=3.5,SNR=25								
LPAZ	**La Paz**	**146.64**	**59**	PKPbc		**PKPdf**		**06 06 39.1**	**+0.5**
	comp=Z,2.9nm,0.5s,baz=352,slow=3.5,SNR=21								
LPAZ	**La Paz**	**146.64**	**59**	*e*PKP2		**PKPbc**		**06 06 39.9**	**-0.3**
LPAZ	**La Paz**	**146.64**	**59**	*e*PKPdf		**PKPbc**		**06 06 39.9**	**-0.3**
LCO	**Las Campanas**	**152.09**	**82**	*e*PKPbc		**PKPbc**		**06 06 53.4**	**+0.1**

IDC 30 05:52:52.8±1.2, 3.30S×148.62E, h0km, mb3.9/6, mb1 4.1/6, mb1mx3.8/38, mbtmpg3.9/6, Error ellipse: s-maj=50.1km s-min=23.8km az=97.0, Bismarck Sea

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**21.63**	**219**	P		P		05 57 44.2	-0.7
	2.6nm,0.9s,baz=41,slow=11,SNR=3.6								
ASAR	**Alice Springs**	**24.75**	**214**	P		P		05 58 16.3	-0.1
	5.8nm,1.1s,baz=46,slow=8.3,SNR=3.7								
H11S3	**WAKE ISLAND Hy**	**28.03**	**39**	T		T		06 27 54.7	
	baz=220,slow=76,SNR=54								
H11S2	**WAKE ISLAND Hy**	**28.04**	**39**	T		T		06 27 56.2	
	baz=220,slow=76,SNR=67								
H11S1	**WAKE ISLAND Hy**	**28.05**	**39**	T		T		06 27 57.0	
	baz=220,slow=76,SNR=57								
H11N1	**WAKE ISLAND Hy**	**29.07**	**37**	T		T		06 29 15.9	
	baz=219,slow=76,SNR=16								
H11N3	**WAKE ISLAND Hy**	**29.09**	**37**	T		T		06 29 14.8	
	baz=219,slow=76,SNR=14								
H11N2	**WAKE ISLAND Hy**	**29.09**	**37**	T		T		06 29 17.8	
	baz=219,slow=76,SNR=19								
VNDA	**Vanda**	**74.50**	**177**	P		P		06 04 32.9	+0.1
	0.7nm,0.5s,baz=352,slow=5.9,SNR=13								
MKAR	**Makanchi Array**	**76.48**	**320**	P		P		06 04 44.2	-0.5
	0.8nm,0.9s,baz=110,slow=6.3,SNR=3.9								
ZALV	**Zalesovo Beam**	**77.62**	**327**	P		P		06 04 51.0	0.0
	0.5nm,0.3s,baz=100,slow=4.8,SNR=3.1								
YKA	**Yellowknife Ar**	**96.05**	**28**	P		P		06 06 21.3	-0.7
	0.1nm,0.8s,baz=274,slow=4.6,SNR=3.3								
TORD	**Torodi Ar. Bea**	**145.88**	**289**	PKPbc		PKPab		06 12 36.0	+0.2
	0.8nm,0.9s,baz=75,slow=4.2,SNR=3.1								

IDC 30 05:56:20.1±1.4, 3.19S×148.46E, h0km, mb3.9/7, mb1 4.1/7, mb1mx3.8/41, mbtmpg3.9/7, Error ellipse: s-maj=62.1km s-min=21.2km az=118.0
ISCJB 30 05:56:21.9±1.0, 3.11S±0.08×148.3E±0.2, h18km, mb3.8/7, Error ellipse: s-maj=35.7km s-min=10.0km az=9.5

ISC 30 05:56:23.5±1.0, 3.1S±0.1×148.3E±0.3, h18km, n9, σ0.9 4/10, mb3.9/7, Bismarck Sea

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**6.41**	**190**	Pn		**Pn**		**05 57 57.8**	**+0.7**
	0.5nm,0.3s,baz=351,slow=19,SNR=2.6								
PMG				Sn		**Sn**		**05 59 10.1**	**+0.2**
	0.8nm,0.3s,baz=52,slow=11,SNR=3.1								
WRA	**Warramunga Arr**	**21.63**	**218**	P		**P**		**06 01 11.6**	**-1.4**
	5.2nm,0.8s,baz=42,slow=12,SNR=10								
ASAR	**Alice Springs**	**24.78**	**213**	P		**P**		**06 01 43.3**	**-1.3**
	2.6nm,0.8s,baz=43,slow=7.4,SNR=12								
FITZ	**Fitzroy Crossi**	**26.79**	**234**	P		**P**		**06 02 03.1**	**+0.3**
	7.2nm,1.1s,baz=43,slow=12,SNR=3.7								
MKAR	**Makanchi Array**	**76.10**	**320**	P		**P**		**06 08 11.2**	**+0.9**
	0.7nm,0.9s,baz=101,slow=5.7,SNR=3.9								
ZALV	**Zalesovo Beam**	**77.26**	**327**	P		**P**		**06 08 16.7**	**+0.1**
	0.5nm,0.3s,baz=111,slow=7.9,SNR=2.9								
ILAR	**Eielson Array**	**82.28**	**23**	P		**P**		**06 08 44.2**	**+0.5**
	0.2nm,0.6s,baz=260,slow=5.1,SNR=4.2								
YKA	**Yellowknife Ar**	**95.97**	**28**	P		**P**		**06 09 48.5**	**-0.8**
	0.3nm,0.8s,baz=275,slow=4.9,SNR=5.3								
TORD	**Torodi Ar. Bea**	**145.52**	**289**	PKPbc		**PKPdf**		**06 16 01.5**	**-0.2**
	1.0nm,0.9s,baz=76,slow=3.3,SNR=3.6								

KRSC 30 05:57:40.8±1.0, 52.51N×158.65E, h148km±7km, ML3.5, Near east coast of Kamchatka Peninsula

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
RUS	**Russkaya**	**0.12**	**227**	*e*P		Pn		05 58 01.8	+1.2
RUS				*e*S		Sn		05 58 16.8	+1.2
MTVR	**Mutnovka**	**0.29**	**264**	*e*P		Pn		05 58 02.6	+1.4
MTVR				*e*S		Sn		05 58 18.1	+1.4
KRMR	**Karymshinskiy**	**0.45**	**315**	*e*P		Pn		05 58 02.5	+0.9
KRMR				*e*S		Sn		05 58 18.3	+0.8
ASAK	**Asacha**	**0.48**	**254**	*e*P		Pn		05 58 03.3	+1.5
ASAK				*e*S		Sn		05 58 19.2	+1.3
PET	**Petropavlovsk**	**0.51**	**360**	*e*P		Pn		05 58 03.0	+1.2
PET				*e*S		Sn		05 58 18.7	+0.7
DALK	**Dalny**	**0.52**	**7**	*e*P		Pn		05 58 03.3	+1.4
DALK				*e*S		Sn		05 58 19.0	+0.9
UGLR	**Uglovaya**	**0.70**	**8**	*e*P		Pn		05 58 04.8	+1.6
UGLR				*e*S		Sn		05 58 21.8	+1.5
AVH	**Avacha**	**0.76**	**4**	*e*P		Pn		05 58 05.0	+1.5
AVH				*e*S		Sn		05 58 22.3	+1.4
SMAR	**Somma**	**0.76**	**7**	*e*P		Pn		05 58 05.3	+1.7
SDLR	**Sedlovina**	**0.78**	**10**	*e*P		Pn		05 58 05.0	+1.3
KOK	**Koryaka**	**0.78**	**359**	*e*P		Pn		05 58 05.1	+1.4
KOK				*e*S		Sn		05 58 22.6	+1.4
NLC	**Nalytchevo**	**0.78**	**32**	*e*P		Pn		05 58 05.1	+1.6
NLC				*e*S		Sn		05 58 22.1	+1.2
KRER	**Koryakskii**	**0.79**	**4**	*e*P		Pn		05 58 05.2	+1.3
KRER				*e*S		Sn		05 58 22.6	+1.0
KRX	**Arik**	**0.85**	**360**	*e*P		Pn		05 58 05.3	+1.1
APC	**Apacha**	**1.00**	**295**	*e*P		Pn		05 58 05.7	+0.5
APC				*e*S		Sn		05 58 23.4	-0.6
GNL	**Ganaly**	**1.26**	**340**	*e*P		Pn		05 58 08.0	+0.2
GNL				*e*S		Sn		05 58 28.0	-0.5
KII	**Karymskiy**	**1.60**	**17**	*e*S		Sn		05 58 36.4	+1.7
SKR	**Severo-Kuril's**	**2.42**	**222**	*e*S		Sn		05 58 52.2	+0.7
MKZ	**Mys Kozlova**	**2.75**	**41**	*e*P		Pn		05 58 26.1	+1.4
MKZ				*e*S		Sn		05 58 58.4	-0.4
ZLN	**Zelenaya**	**3.73**	**19**	*e*P		Pn		05 58 40.7	+3.3
BKI	**Bering**	**5.10**	**55**	*e*S		Sn		05 59 52.8	-0.7

ISCJB 30 06:02:31.2±0.8, 46.94N±0.10×152.5E±0.2, h67km, mb3.3/4, Error ellipse: s-maj=19.8km s-min=4.4km az=43.7
SKHL 30 06:02:33.0±0.6, 46.85N×152.57E, h90km±5km, mb4.8/5, msh5.3/4
IDC 30 06:02:35.3±3.1, 46.91N×152.90E, h90km±27km, mb3.2/4, mb1 3.4/7, mb1mx3.1/49, mbtmpg3.7/7, Error ellipse: s-maj=34.8km s-min=23.5km az=106.0
MOS 30 06:02:36.5±1.6, 47.00N×151.80E, h101km, mb4.1/1, Error ellipse: s-maj=27.8km s-min=16.3km az=60.9

ISC 30 06:02:33.7±1.0, 47.0N±0.1×152.4E±0.1, h67km, n21, σ1 9/38, mb3.5/4, Kuril Islands

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
KUR	**Kuril'sk**	**3.62**	**243**	*i* P		**Pn**		**06 03 28.0**	**+0.7**
KUR					AMB	AMB		06 03 29.8	
	30nm,0.4s								
KUR				*i* S		**Sn**		**06 04 09.2**	**+0.5**
KUR					A	A		06 04 28.7	
	90nm,0.5s								
KUR					A	A		06 04 28.7	
	100nm,0.5s								
KUR	**Kuril'sk**	**3.62**	**243**	*e*PN		**Pn**		**06 03 28.0**	**+0.7**
KUR					pmax	pmax			
	comp=Z,30nm,0.4s								
SKR	**Severo-Kuril's**	**4.44**	**32**	*i* P		**Pn**		**06 03 37.8**	**-0.7**
SKR					AMB	AMB		06 03 41.5	
	comp=Z,80nm,0.5s								
SKR				*i* S		**Sn**		**06 04 26.3**	**-2.5**
SKR					A	A		06 04 29.9	
	comp=Z,50nm,0.2s								
SKR	**Severo-Kuril's**	**4.44**	**32**	*e*PN		Pn		06 03 35.5	-3.0
SKR					pmax	pmax			
	comp=N,60nm,0.5s								
SKR					pmax	pmax			
	comp=E,60nm,0.5s								
SKR					pmax	pmax			
	comp=Z,80nm,0.5s								
SHO	**Shikotan**	**5.01**	**234**	*e*P		**Pn**		**06 03 46.5**	**+0.2**
SHO					AMB	AMB		06 03 57.1	
	comp=Z,60nm,0.4s								
SHO				*i* S		**Sn**		**06 04 42.2**	**-0.7**
SHO					A	A		06 04 55.3	
	comp=Z,110nm,0.4s								
SHO	**Shikotan**	**5.01**	**234**	*e*PN		**Pn**		**06 03 46.5**	**+0.2**
SHO				*i* S		**Sn**		**06 04 42.2**	**-0.7**
SHO					pmax	pmax			
	comp=Z,60nm,0.4s								
SHO					smax	smax			
	comp=N,160nm,0.4s								
SHO					smax	smax			
	comp=E,130nm,0.4s								
PAU	**Pauzhetka**	**5.34**	**31**	*i* P		**Pn**		**06 03 50.6**	**-0.1**
PAU					AMB	AMB		06 03 55.8	
	comp=E,100nm,0.8s								
PAU				*i* S		**Sn**		**06 04 48.7**	**-2.1**
PAU					A	A		06 04 51.4	
	comp=E,100nm,0.5s								
PAU	**Pauzhetka**	**5.34**	**31**	*e*PN		**Pn**		**06 03 50.6**	**-0.1**
PAU					pmax	pmax			
	comp=Z,100nm,0.8s								
YUK	**Yuzh-Kuril'sk**	**5.47**	**240**	*e*P		**Pn**		**06 03 52.2**	**-0.4**
YUK				*e*S		**Sn**		**06 04 51.7**	**-2.4**
YUK					A	A		06 04 59.2	
	comp=Z,40nm,0.4s								
YUK	**Yuzh-Kuril'sk**	**5.47**	**240**	*e*PN		**Pn**		**06 03 52.2**	**-0.4**
YUK				*e*S		**Sn**		**06 04 51.7**	**-2.4**
YUK					smax	smax			
	comp=E,40nm,0.4s								
PETK	**Petropavlovsk-**	**7.02**	**27**	P		**Pn**		**06 04 14.0**	**+0.3**
	comp=E,0.5nm,0.3s,baz=179,slow=10,SNR=12								
PET	**Petropavlovsk**	**7.26**	**31**	*e*P		**Pn**		**06 04 19.9**	**+2.9**
PET					AMB	AMB		06 04 25.0	
	comp=E,10.0nm,0.6s								
PET				*e*S		**Sn**		**06 05 40.1**	**+2.1**
PET					A	A		06 06 04.9	
	comp=E,20nm,0.6s								
PET	**Petropavlovsk**	**7.26**	**31**	*e*PN		Pn		06 04 24.8	+7.8
PET					pmax	pmax			
	comp=Z,11nm,0.6s								
ASAJ	**Asahikawa**	**7.47**	**251**	P		Pn		06 04 25.6	+5.6
	comp=Z,1.8nm,0.3s,baz=90,slow=15,SNR=7.5								
TYV	**Tymovskoe**	**7.53**	**305**	*e*P		**Pn**		**06 04 21.0**	**+0.4**
TYV	**Tymovskoe**	**7.53**	**305**	*e*PN		Pn		06 04 17.7	-2.9
USRK	**

TYV	**Tymovskoe**	**14.11**	**4**	*eP*		**Pn**		**06 07 43.8**	**+2.5**	
TYV				pmax		pmax				
	comp=Z,13nm,0.8s									
KLR	**Kul'dur**	**14.18**	**334**	Pn		**P**		**06 07 47.0**	**-2.5**	
	comp=Z,0.3nm,0.3s,baz=150,slow=9.9,SNR=9.4									
JOW	**Kunigami**	**14.74**	**231**	LR		LR		06 13 22.4		
	comp=Z,2μm,19.9s,baz=339,slow=37									
YOJ	**Yonaguni jima**	**19.80**	**237**	*eP*		**P**		**06 08 50.9**	**-0.9**	
YOJ				pmax		pmax				
	comp=Z,109nm,1.1s									
YOJ	**Yonaguni jima**	**19.80**	**237**	*eP*		**P**		**06 08 50.9**	**-0.9**	
	comp=Z,109nm,1.1s									
PET	**Petropavlovsk**	**20.35**	**32**	*eP*		**P**		**06 08 57.6**	**+0.1**	
PET				pmax		pmax				
	comp=Z,67nm,2.5s									
YULB	**Yu-li**	**21.68**	**237**	*eP*		**P**		**06 09 11.1**	**-1.0**	
	comp=Z,24nm,1.5s									
TPUB	**Ta-pu**	**22.19**	**238**	*eP*		**P**		**06 09 17.9**	**+0.2**	
	comp=Z,100nm,1.7s									
TWG	**Pinlang**	**22.22**	**237**	*eP*		**P**		**06 09 16.1**	**-1.9**	
	comp=Z,65nm,0.8s									
WHN	**Wuhan**	**23.09**	**262**	P		**P**		**06 09 24.3**	**-2.8**	
HHC	**Hu-ho-hao-te**	**23.32**	**289**	*eP*		**P**		**06 09 28.3**	**-1.2**	
HHC				PP		**PnPn**		**06 10 01.0**	**+5.4**	
HHC				S		**S**		**06 13 36.8**	**-3.8**	
HHC				pmax		pmax				
	comp=Z,28nm,0.7s									
HHC				pmax		pmax				
	comp=Z,240nm,8.5s									
HHC				LR		LR				
	comp=Z,800nm,14.8s									
HHC				LR		LR				
	comp=Z,540nm,14.8s									
HHC				LR		LR				
	comp=Z,1μm,14.8s									
MA2	**Magadan**	**23.64**	**12**	P		**P**		**06 09 31.9**	**-0.3**	
	comp=Z,4.4nm,0.4s,baz=214,slow=12,SNR=4.6									
XAN	**Xi'an**	**26.31**	**274**	P		**P**		**06 09 57.3**	**+0.3**	
XAN				pP		pP		06 10 05.0	+0.7	
XAN				sP		sP		06 10 09.0	+1.6	
XAN				pmax		pmax				
	comp=Z,7.0nm,0.7s									
SEY	**Seymchan**	**27.07**	**11**	P		**P**		**06 10 03.6**	**+0.1**	
	comp=Z,2.7nm,0.7s,baz=147,slow=4.0,SNR=5.3									
ULN	**Ulaanbaatar**	**27.29**	**305**⇑	*eP*		**P**		**06 10 08.0**	**+2.2**	
ULN				pmax		pmax				
	comp=Z,5.0nm,1.2s									
BOD	**Bodaibo**	**27.60**	**328**	*eP*		**P**		**06 10 06.9**	**-1.4**	
BOD				pmax		pmax				
	comp=Z,9.0nm,0.8s									
SONA1	**Songino Array**	**27.72**	**304**	*eP*		**P**		**06 10 09.9**	**+0.3**	
SONM	**Songino Array**	**27.72**	**304**	P		**P**		**06 10 10.0**	**+0.4**	
	comp=Z,6.0nm,0.6s,baz=98,slow=8.8,SNR=16									
H11N2	**WAKE ISLAND Hy**	**28.24**	**120**	T		T		06 39 36.9		
	baz=313,slow=75,SNR=1405									
H11N1	**WAKE ISLAND Hy**	**28.24**	**120**	T		T		06 39 36.6		
	baz=313,slow=75,SNR=827									
H11N3	**WAKE ISLAND Hy**	**28.25**	**120**	T		T		06 39 37.7		
	baz=313,slow=75,SNR=800									
H11S3	**WAKE ISLAND Hy**	**28.94**	**122**	T		T		06 40 30.4		
	SNR=204									
LZH	**Lanzhou**	**29.87**	**280**	*eP*		P		06 10 25.3	-3.6	
LZH				pP		pP		06 10 33.8	-2.5	
LZH				sP		sP		06 10 38.0	-1.3	
LZH				pmax		pmax				
	comp=Z,41nm,1.4s									
TLY	**Talaya**	**30.31**	**311**	*eP*		**P**		**06 10 32.3**	**-0.1**	
TLY								06 17 27.6		
TLY				pmax		pmax				
	comp=Z,8.0nm,0.7s									
TLY				MLR		MLR				
	comp=Z,1μm,15.0s									
TLY	**Talaya**	**30.31**	**311**	*eP*		**P**		**06 10 32.5**	**0.0**	
	comp=Z,8.3nm,0.6s									
GYA	**Guiyang**	**30.94**	**260**	*eP*		**P**		**06 10 39.8**	**+1.4**	
GYA				pmax		pmax				
	comp=Z,10.0nm,0.8s									
CD2	**Chengdu**	**31.43**	**270**	P		**P**		**06 10 41.0**	**-1.6**	
CD2				pmax		pmax				
	comp=Z,1.0nm,0.6s									
GTA	**Gaotai**	**32.40**	**287**	*eP*		**P**		**06 10 48.8**	**-2.4**	
GTA				pP		pP		06 10 55.5	-3.0	
GTA				sP		sP		06 10 58.5	-3.1	
GTA				S		**S**		**06 16 00.0**	**-4.2**	
GTA				pmax		pmax				
	comp=Z,3.0nm,0.7s									
GTA				LR		LR				
	comp=Z,1μm,16.6s									
GTA				LR		LR				
	comp=Z,740nm,17.6s									
GTA				LR		LR				
	comp=Z,740nm,17.6s									
GSTR	**Great Sitkin T**	**33.64**	**49**	*eP*		**P**		**06 11 00.7**	**-1.0**	
BILL	**Bilibino**	**34.32**	**16**⇑	*eP*		**P**		**06 11 06.6**	**-0.8**	
BILL				*e*				06 12 19.5		
BILL				pmax		pmax				
	comp=Z,7.0nm,2.5s									
KMI	**Kunming**	**34.69**	**261**	P		**P**		**06 11 12.0**	**+0.7**	
KMI				pmax		pmax				
	comp=Z,17nm,0.9s									
TIXI	**Tiksi**	**35.50**	**353**	P		**P**		**06 11 16.8**	**-0.7**	
	comp=Z,5.7nm,0.9s,baz=174,slow=9.2,SNR=4.5									
TIXI	**Tiksi**	**35.50**	**353**	*i* P		**P**		**06 11 16.8**	**-0.7**	
TIXI				pmax		pmax				
	comp=Z,5.0nm,1.0s									
TIXI	**Tiksi**	**35.50**	**353**	*eP*		**P**		**06 11 16.9**	**-0.5**	
	comp=Z,4.2nm,0.8s									
FAKI	**Fak Fak**	**40.37**	**194**	*eP*		**P**		**06 11 59.6**	**+0.6**	
	comp=Z,14nm,0.7s									
WMQ	**Urumqi**	**40.73**	**297**	P		**P**		**06 12 03.0**	**+1.0**	
WMQ				pP		pP		06 12 09.3	-0.2	
WMQ				sP		sP		06 12 12.0	-0.5	
WMQ				PP		**PnPn**		**06 13 40.5**	**+0.4**	
WMQ				ScP		**ScP**		**06 17 53.8**	**+2.8**	
WMQ				SS		**SS**		**06 21 10.0**	**-1.8**	
WMQ				pmax		pmax				
	comp=Z,15nm,0.8s									
WMQ				pmax		pmax				
	comp=Z,170nm,5.8s									
WMQ				LR		LR				
	comp=Z,820nm,19.0s									
WMQ				LR		LR				
	comp=Z,510nm,17.8s									
WMQ				LR		LR				
	comp=Z,540nm,19.0s									
CHTO	**Chiang Mai**	**41.00**	**256**	*eP*		**P**		**06 12 04.7**	**+0.3**	
CHTO				pmax		pmax				
	comp=Z,4.0nm,0.8s									
CHTO	**Chiang Mai**	**41.00**	**256**	*eP*		**P**		**06 12 04.7**	**+0.3**	
	comp=Z,3.8nm,0.8s									
CMAR	**Chiang Mai Arr**	**41.20**	**255**	P		**P**		**06 12 06.0**	**-0.1**	
	comp=Z,1.8nm,0.3s,baz=42,slow=8.0,SNR=4.8									
CMAR	**Chiang Mai Arr**	**41.20**	**255**	P		**P**		**06 12 06.0**	**-0.1**	
CMAR	**Chiang Mai Arr**	**41.20**	**255**	P		**P**		**06 12 06.0**	**-0.1**	
CM01	**Chiang Mai Arr**	**41.21**	**255**	*eP*		**P**		**06 12 06.1**	**0.0**	
ZAA0	**Zalesovo Array**	**41.90**	**313**	*eP*		**P**		**06 12 11.6**	**+0.3**	
ZALV	**Zalesovo Beam**	**41.90**	**313**	P		**P**		**06 12 11.6**	**+0.3**	
	comp=Z,15nm,0.7s,baz=96,slow=6.4,SNR=46									
ZALV				PcP		**PcP**		**06 14 06.4**	**-0.2**	
	comp=Z,2.6nm,0.6s,baz=116,slow=2.9,SNR=4.3									
LSA	**Lhasa**	**41.99**	**275**	*eP*		**P**		**06 12 14.0**	**+1.0**	
LSA				pmax		pmax				
	comp=Z,5.0nm,0.7s									
LSA	**Lhasa**	**41.99**	**275**	*eP*		**P**		**06 12 14.0**	**+1.0**	
	comp=Z,5.1nm,0.7s									
NRIK	**Noril'sk**	**43.38**	**335**	P		**P**		**06 12 22.0**	**-1.2**	
	comp=Z,2.9nm,0.5s,baz=106,slow=10,SNR=4.3									
NRIK	**Noril'sk**	**43.38**	**335**	P		**P**		**06 12 22.0**	**-1.2**	
NRIK				pmax		pmax				
	comp=Z,3.0nm,0.5s									
MK01	**Makanchi Array**	**44.04**	**302**	*eP*		**P**		**06 12 29.3**	**+0.5**	
MK31	**Makanchi Array**	**44.04**	**302**	*eP*		**P**		**06 12 29.3**	**+0.4**	
MK31	**Makanchi Array**	**44.04**	**302**	*eP*		**P**		**06 12 29.2**	**+0.4**	
MKAR	**Makanchi Array**	**44.04**	**302**	P		**P**		**06 12 29.0**	**+0.1**	
	comp=Z,9.0nm,0.6s,baz=88,slow=10.0,SNR=95									
MKAR	**Makanchi Array**	**44.04**	**302**	*i* P		**P**		**06 12 29.2**	**+0.4**	
MKAR				pmax		pmax				
	comp=Z,9.0nm,0.6s									
MKAR	**Makanchi Array**	**44.04**	**302**	*eP*		**P**		**06 12 29.2**	**+0.4**	
MAKZ	**Makanchi**	**44.25**	**302**	*eP*		**P**		**06 12 30.7**	**+0.2**	
MAKZ				pmax		pmax				
	comp=Z,9.0nm,0.6s									
MAKZ	**Makanchi**	**44.25**	**302**	*eP*		**P**		**06 12 30.7**	**+0.2**	
	comp=Z,9.3nm,0.6s									
KSM	**Kuching**	**45.21**	**226**	*eP*		**P**		**06 12 39.0**	**+0.6**	
	comp=Z,20nm,0.6s									
TT01	**Tatalina**	**45.75**	**35**	*eP*		**P**		**06 12 42.9**	**+0.7**	
SVW2	**Sparrevohn**	**45.86**	**37**	*eP*		**P**		**06 12 44.3**	**+1.2**	
	comp=Z,15nm,1.2s									
KURK	**Kurchatov**	**45.89**	**308**	*eP*		**P**		**06 12 43.7**	**+0.3**	
KURK				pmax		pmax				
	comp=Z,27nm,1.2s									
KURK	**Kurchatov**	**45.89**	**308**	*eP*		**P**		**06 12 43.7**	**+0.3**	
	comp=Z,28nm,1.2s									
KAPI	**Kappang**	**46.13**	**210**	P		**P**		**06 12 45.5**	**-0.1**	
	comp=Z,18nm,0.8s,baz=69,slow=3.7,SNR=9.6									
KAPI	**Kappang**	**46.13**	**210**	*eP*		**P**		**06 12 46.3**	**+0.6**	
	comp=Z,32nm,0.9s									
GUN	**Gumba**	**46.94**	**276**	*eP*		**P**		**06 12 52.9**	**+0.5**	
	comp=Z,45nm,0.8s									
RSO	**Redoubt South**	**47.24**	**38**	*eP*		**P**		**06 12 54.9**	**+0.8**	
KKN	**Kakani**	**47.47**	**276**	*eP*		**P**		**06 12 56.9**	**+0.5**	
	comp=Z,35nm,0.8s									
CAST	**Castle Rocks**	**47.56**	**34**	*eP*		**P**		**06 12 57.7**	**+1.4**	
	comp=Z,4.9nm,1.0s									
SPU	**Mount Spurr**	**47.57**	**37**	*eP*		**P**		**06 12 57.3**	**+0.8**	
GKN	**Gorkha**	**47.89**	**276**	*eP*		**P**		**06 13 00.0**	**+0.4**	
	comp=Z,60nm,0.9s									
KTH	**Kantishna Hill**	**48.08**	**34**	*eP*		**P**		**06 13 01.6**	**+1.1**	
	comp=Z,11nm,1.0s									
MLY	**Manley**	**48.18**	**32**	*eP*		**P**		**06 13 02.5**	**+1.3**	
	comp=Z,5.5nm,0.8s									
IPM	**Ipoh**	**48.81**	**239**	*eP*		**P**		**06 13 06.7**	**+0.1**	
	comp=Z,8.9nm,0.6s									
KOLN	**Koldanda**	**48.82**	**277**	*eP*		**P**		**06 13 07.3**	**+0.5**	
	comp=Z,15nm,0.6s									
SOEI	**Soe**	**48.94**	**202**	*eP*		**P**		**06 13 08.1**	**+0.5**	
	comp=Z,50nm,1.0s									
MCK	**McKinley**	**48.97**	**34**	*eP*		**P**		**06 13 08.1**	**+0.9**	
MCK				pmax		pmax				
	comp=Z,10.0nm,1.2s									
MCK	**McKinley**	**48.97**	**34**	*eP*		**P**		**06 13 08.1**	**+0.9**	
	comp=Z,9.9nm,1.2s									
PYUN	**Piuhan**	**49.16**	**277**	*eP*		**P**		**06 13 10.4**	**+1.0**	
	comp=Z,97nm,0.9s									
MDM	**Murphy Dome**	**49.25**	**32**	*eP*		**P**		**06 13 10.5**	**+1.1**	
	comp=Z,15nm,1.0s									
WRH	**Wood River Hil**	**49.32**	**33**	*eP*		**P**		**06 13 11.1**	**+1.3**	
	comp=Z,6.7nm,0.9s									
SML	**Sawmill**	**49.33**	**36**	*eP*		**P**		**06 13 10.6**	**+0.6**	
SML				pmax		pmax				
	comp=Z,15nm,1.2s									
SML	**Sawmill**	**49.33**	**36**	*eP*		**P**		**06 13 10.6**	**+0.6**	
	comp=Z,16nm,1.2s									
COLA	**College**	**49.41**	**32**	P		**P**		**06 13 12.0**	**+1.5**	
COLA				pmax		pmax				
	comp=Z,10.0nm,1.7s									
TKM2	**Tokmak 2**	**49.53**	**299**	*eP*		**P**		**06 13 13.0**	**+0.9**	
TKM2				pmax		pmax				
	comp=Z,38nm,1.8s									
TKM2	**Tokmak 2**	**49.53**	**299**	*eP*		**P**		**06 13 13.0**	**+0.9**	
	comp=Z,38nm,1.8s									
IL1	**Eielson Array**	**49.83**	**32**	*eP*		**P**		**06 13 13.8**	**+0.1**	
ILAR	**Eielson Array**	**49.83**	**32**	P		**P**		**06 13 13.2**	**-0.5**	
	comp=Z,4.2nm,0.8s,baz=270,slow=6.5,SNR=46									
ILB	**Eielson Array**	**49.83**	**32**	*eP*		**P**		**06 13 13.8**	**+0.1**	
FRU	**Bishkek**	**50.25**	**299**	*eP*		P		06 13 25.0	+7.7	
MTN	**Manton Dam**	**50.26**	**193**	*eP*		**P**		**06 13 17.2**	**-0.2**	
	comp=Z,14nm,0.7s									
KSH	**Kashi**	**50.28**	**294**	P		P		06 13 22.5	+4.8	
KSH				*e*pP		sP		06 13 28.5	+0.1	
KSH				PcS		**PcS**		**06 18 37.0**	**+3.4**	
KSH				S		**S**		**06 20 34.8**	**+5.9**	
KSH				pmax		pmax				
	comp=Z,100nm,5.0s									
KSH				LR		LR				
	comp=Z,1μm,18.3s									
KSH				LR		LR				
	comp=Z,340nm,13.3s									
KSH				LR		LR				
	comp=Z,1μm,21.1s									
AAK	**Ala-Archa**	**50.39**	**298**⇑	*eP*		**P**		**06 13 19.2**	**+0.7**	
AAK				pmax		pmax				
	comp=Z,11nm,1.2s									
AAK	**Ala-Archa**	**50.39**	**298**	*eP*		**P**		**06 13 19.3**	**+0.7**	
	comp=Z,3.0nm,0.8s									
FYU	**Fort Yukon**	**50.44**	**30**	*eP*		**P**		**06 13 20.1**	**+1.9**	
	comp=Z,44nm,1.9s									
COEN	**Coen**	**50.52**	**177**	*eP*		**P**		**06 13 19.9**	**+0.5**	
	comp=Z,93nm,1.9s									
BRVK	**Borovoye**	**50.61**	**312**⇑	*eP*		**P**		**06 13 20.0**	**+0.2**	
BRVK				pmax		pmax				
	comp=Z,5.0nm,1.0s									
BRVK	**Borovoye**	**50.61**	**312**	*eP*		**P**		**06 13 20.2**	**+0.4**	
	comp=Z,3.7nm,0.7s									
EKS2	**Erkin-Say**	**50.89**	**299**	*eP*		**P**		**06 13 22.9**	**+0.7**	
EKS2				pmax		pmax				
	comp=Z,3.0nm,0.8s									
EKS2	**Erkin-Say**	**50.89**	**299**	*eP*		**P**		**06 13 22.9**	**+0.7**	
	comp=Z,2.6nm,0.8s									
DOT	**Dot Lake**	**51.14**	**34**	*eP*		**P**		**06 13 23.8**	**+0.1**	
	comp=Z,7.5nm,0.8s									
MENT	**Mentasta**	**51.37**	**34**	*eP*		**P**		**06 13 25.5**	**+0.1**	
	comp=Z,25nm,0.2s									
EGAK	**Eagle**	**52.27**	**32**	*eP*		**P**		**06 13 32.3**	**+0.3**	
	comp=Z,8.5nm,1.4s									
UGM	**Wanagama**	**52.92**	**219**	*eP*		**P**		**06 13 37.3**	**-0.2**	
	comp=Z,506nm,1.9s									
KKAR	**Karatay Array**	**53.03**	**300**	*eP*		**P**		**06 13 39.6**	**+1.5**	
KKAR	**Karatay Array**	**53.03**	**300**	*eP*		**P**		**06 13 39.6**	**+1.5**	
DAWY	**Dawson**	**53.13**	**33**	*eP*		P		06 13 41.9	+3.4	
	comp=Z,6.6nm,1.4s									
GSI	**Gunungsitoli**	**53.47**	**239**	*eP*		**P**		**06 13 42.1**	**+0.5**	
	comp=Z,218nm,1.6s									
INK	**Inuvik**	**54.71**	**27**	P		**P**		**06 13 49.7**	**-0.2**	
	comp=Z,1.7nm,0.7s,baz=288,slow=7.8,SNR=10.0									
INK	**Inuvik**	**54.71**	**27**	*eP*		**P**		**06 13 50.3**	**+0.4**	
INK				pmax		pmax				
	comp=Z,16nm,1.7s									
INK	**Inuvik**	**54.71**	**27**	*eP*		**P**		**06 13 50.3**	**+0.4**	
	comp=Z,16nm,1.7s									
SVE	**Sverdlovsk**	**55.17**	**319**⇑	*eP*		**P**		**06 13 53.8**	**+0.4**	
SVE				pmax		pmax				
	comp=Z,19nm,0.9s									
ARU	**Arti**	**56.38**	**319**	*d i* P		**P**		**06 14 01.9**	**-0.1**	
ARU								06 14 54.4		
ARU								06 16 04.0		
ARU				S		**S**		**06 21 52.4**	**+1.4**	
ARU				SS		**SS**		**06 25 35.2**	**-2.3**	
ARU				pmax		pmax				
	comp=Z,19nm,0.7s									
ARU	**Arti**	**56.38**	**319**	*eP*		**P**		**06 14 02.0**	**-0.1**	
	comp=Z,22nm,0.9s									
FITZ	**Fitzroy Crossi**	**56.52**	**198**	*eP*		**P**		**06 14 04.0**	**+0.6**	
	comp=Z,9.3nm,1.2s									
WRAB	**Tennant Creek**	**56.78**	**188**	*de*P		**P**		**06 14 04.3**	**-1.0**	
WRAB				pmax		pmax				
	comp=Z,58nm,1.4s									
WRAB	**Tennant Creek**	**56.78**	**188**	*eP*		**P**		**06 14 04.5**	**-0.8**	
	comp=Z,12nm,0.8s									
WB2	**Warramunga Arr**	**56.79**	**188**	*eP*		**P**		**06 14 04.4**	**-0.9**	
	comp=Z,35nm,1.4s									
WRA	**Warramunga Arr**	**56.79**	**188**	P		**P**		**06 14 04.3**	**-1.1**	
	comp=Z,9.2nm,0.5s,baz=5.6,slow=7.3,SNR=203									
WRA	**Warramunga Arr**	**56.79**	**188**	*i* P		**P**		**06 14 02.2**	**-3.2**	
WRA				pmax		pmax				
	comp=Z,9.0nm,0.5s									
KBL	**Kabul**	**57.27**	**291**	*eP*		**P**		**06 14 08.7**	**-0.4**	
KBL				pmax		pmax				
	comp=Z,12nm,1.0s									
KBL	**Kabul**	**57.27**	**291**	*eP*		**P**		**06 14 08.7**	**-0.4**	
	comp=Z,12nm,1.0s									
ABKAR	**Akbulak array**	**57.91**	**310**	*eP*		**P**		**06 14 12.9**	**-0.2**	
HYB	**Hyderabad**	**57.95**	**268**	*i* P		**P**		**06 14 14.0**	**+0.2**	
AS01	**Alice Springs**	**60.51**	**188**	*eP*		**P**		**06 14 30.4**	**-0.8**	
AS31	**Alice Springs**	**60.52**	**188**	*eP*		**P**		**06 14 30.7**	**-0.6**	
	comp=Z,2.2nm,0.9s									
ASAR	**Alice Springs**	**60.52**	**188**	P		**P**		**06 14 30.6**	**-0.6**	
	comp=Z,5.3nm,0.7s,baz=11,slow=6.1,SNR=49									
MBWA	**Marble Bar**	**61.08**	**203**	*eP*		**P**		**06 14 34.9**	**-0.2**	
	comp=Z,27nm,1.4s									
TMCR	**Tamitsa**	**62.84**	**331**	*eP*		**P**		**06 14 45.6**	**-0.8**	
TMCR				pmax		pmax				
	comp=Z,13nm,0.4s									
RES	**Resolute Bay**	**62.89**	**14**	*eP*		**P**		**06 14 46.6**	**-0.1**	
RES				pmax		pmax				
	comp=Z,8.0nm,1.2s									
RES	**Resolute Bay**	**62.89**	**14**	*eP*		**P**		**06 14 46.6**	**-0.1**	
	comp=Z,7.8nm,1.2s									
KEV	**Kevo**	**63.58**	**339**	*eP*		**P**		**06 14 51.8**	**+0.5**	
KEV				pmax		pmax				
	comp=Z,78nm,1.9s									
KEV	**Kevo**	**63.58**	**339**	*eP*		**P**		**06 14 51.8**	**+0.5**	
	comp=Z,78nm,1.9s									
GEYT	**Alibeck**	**63.74**	**299**	P		**P**		**06 14 53.5**	**+0.6**	
	comp=Z,8.9nm,0.9s,baz=58,slow=3.7,SNR=10									
KLMR	**Klimovskoe**	**63.83**	**328**	*eP*		**P**		**06 14 51.4**	**-1.6**	
KLMR				pmax		pmax				
	comp=Z,6.0nm,0.8s									
ARA0	**ARCESS Array S**	**64.14**	**339**	*eP*		**P**		**06 14 55.2**	**+0.2**	
ARCES	**ARCESS Array B**	**64.14**	**339**	P		**P**		**06 14 54.9**	**-0.1**	
	comp=Z,3.6nm,0.8s,baz=53,slow=7.9,SNR=11									
ARE0	**ARCESS Array S**	**64.14**	**339**	*eP*		**P**		**06 14 55.3**	**+0.4**	
	comp=Z,18nm,1.2s									
YKA	**Yellowknife Ar**	**64.14**	**30**	P		**P**		**06 14 54.5**	**-0.6**	
	comp=Z,1.0nm,0.7s,baz=302,slow=6.7,SNR=28									
YKB5	**Yellowknife Ar**	**64.14**	**30**	*eP*		**P**		**06 14 54.2**	**-0.8**	
DAG	**Danmarks Havn**	**65.99**	**355**	*i* P		**P**		**06 15 06.4**	**-0.5**	
	comp=Z,4.8nm,0.8s									
DAG	**Danmarks Havn**	**65.99**	**355**	*i* P		**P**		**06 15 06.4**	**-0.5**	
DAG				pmax		pmax				
	comp=Z,4.0nm,0.8s									
OBN	**Obninsk**	**68.14**	**323**⇑	*eP*		**P**		**06 15 20.9**	**0.0**	
OBN				*e**PP		**sP**		**06 15 30.9**	**-0.8**	
OBN				*SP		PcP		06 15 38.0	-8.7	
OBN								06 15 51.0		
OBN				pmax		pmax				
	comp=Z,29nm,2.0s									
OBN				MLR		MLR				
	comp=Z,3μm,24.0s									
STKA	**Stephens Creek**	**68.32**	**180**	P		**P**		**06 15 21.6**	**-0.5**	
	comp=Z,3.1nm,0.5s,baz=339,slow=7.0,SNR=11									
STKA	**Stephens Creek**	**68.32**	**180**	*eP*		**P**		**06 15 22.0**	**-0.1**	
STKA				pmax		pmax				
	comp=Z,7.0nm,2.0s									
STKA	**Stephens Creek**	**68.32**	**180**	*eP*		**P**		**06 15 21.9**	**-0.1**	
	comp=Z,6.5nm,2.0s									
LPSR	**Galich'ya Gora**	**68.33**	**320**	*eP*		**P**		**06 15 21.0**	**-1.1**	
LPSR				pmax		pmax				
	comp=Z,8.0nm,0.3s									
F04A	**Amboy**	**68.65**	**48**	*eP*		**P**		**06 15 25.1**	**+0.9**	
	comp=Z,24nm,1.4s									
FIA1	**FINESS Array S**	**68.91**	**332**	*eP*		**P**		**06 15 25.6**	**0.0**	
	comp=Z,8.6nm,0.8s									
FINES	**FINESS Array B**	**68.91**	**332**	P		**P**		**06 15 25.5**	**-0.1**	
	comp=Z,6.0nm,0.7s,baz=61,slow=9.0,SNR=31									
VSR	**Storozhevoye**	**68.95**	**319**	*eP*		**P**		**06 15 25.8**	**-0.2**	
VSR				pmax		pmax				
	comp=Z,10.0nm,0.8s									
LTY	**Liberty**	**68.99**	**46**	*eP*		**P**		**06 15 26.8**	**+0.3**	
	comp=Z,35nm,2.0s									
BBOO	**Buckleboo**	**69.41**	**185**	*eP*		**P**		**06 15 28.6**	**-0.2**	
	comp=Z,62nm,1.9s									
NEW	**Newport**	**70.47**	**44**	P		**P**		**06 15 35.6**	**+0.1**	
	comp=Z,3.0nm,0.9s,baz=351,slow=6.6,SNR=4.4									
NEW	**Newport**	**70.47**	**44**	*eP*		**P**		**06 15 36.2**	**+0.7**	
NEW				pmax		pmax				
	comp=Z,7.0nm,1.2s									
NEW	**Newport**	**70.47**	**44**	*eP*		**P**		**06 15 36.2**	**+0.7**	
	comp=Z,7.0nm,1.2s									
VSU	**Vasula**	**70.54**	**329**	*c i*P		**P**		**06 15 36.0**	**+0.4**	
VSU				pmax		pmax				
	comp=Z,21nm,1.7s									
NCK	**Nalchik**	**70.57**	**310**	P		**P**		**06 15 35.0**	**-1.2**	
YBH	**Yreka Blue Hor**	**70.68**	**52**	P		**P**		**06 15 37.4**	**+0.5**	
	comp=Z,3.4nm,0.9s,baz=334,slow=7.2,SNR=4.5									
YBH	**Yreka Blue Hor**	**70.68**	**52**	*eP*		**P**		**06 15 38.3**	**+1.4**	
	comp=Z,18nm,1.6s									
ZEI	**Tsey**	**70.76**	**309**	*eP*		**P**		**06 15 35.6**	**-2.0**	
ZEI				pmax		pmax				
	comp=Z,13nm,1.3s									
KBZ	**Khabaz**	**70.87**	**311**	P		**P**		**06 15 38.3**	**+0.4**	
	comp=Z,5.7nm

	comp=Z,7.1nm,0.9s							
FLWY	**Flagg Ranch**	76.53	45	*e*P		P	06 16 13.5	+2.0
	comp=Z,18nm,1.4s							
RLMT	**Red Lodge**	76.68	43	*e*P		P	06 16 12.9	+0.6
	comp=Z,4.4nm,0.6s							
LOHW	**Long Hollow**	76.88	45	*e*P		P	06 16 14.9	+1.5
	comp=Z,10nm,1.3s							
SNOW	**Snow King Moun**	76.89	45	*e*P		P	06 16 15.0	+1.5
	comp=Z,44nm,1.9s							
R11A	**Troy Canyon, C**	77.10	52	*e*P		P	06 16 15.8	+1.0
	comp=Z,13nm,1.3s							
TCUT	**Toone Canyon**	77.97	47	*e*P		P	06 16 20.4	+0.8
	comp=Z,7.2nm,0.7s							
BW06	**Boulder Array**	78.01	45	*e*P		P	06 16 20.2	+0.4
	comp=Z,16nm,1.6s							
PD31	**Pinedale Array**	78.01	45	*e*P		P	06 16 20.0	+0.2
PDAR	**Pinedale Array**	78.01	45	P		P	06 16 19.8	0.0
	comp=Z,1.8nm,0.6s,baz=268,slow=2.3,SNR=13							
KWP	**Kalwaria Pacla**	78.18	324	*e*P		P	06 16 20.3	0.0
BUR08	**Bucovina Ar. S**	78.34	322	*e*P		P	06 16 21.8	+0.4
MPU	**Maple Canyon**	78.52	48	*e*P		P	06 16 23.4	+0.8
	comp=Z,12nm,1.0s							
BR131	**Keskin Array S**	78.83	311	*e*P		P	06 16 25.4	+1.1
BRTR	**Keskin Array B**	78.83	311	P		P	06 16 24.4	+0.1
	comp=Z,1.8nm,0.8s,baz=98,slow=3.7,SNR=11							
BRTR	**Keskin Array B**	78.83	311	*i* P		P	06 16 24.7	+0.4
BRTR				pmax	pmax			
	comp=Z,2.0nm,0.8s							
KOLS	**Kolonicke sedl**	78.87	324	*e*P		P	06 16 24.6	+0.4
KOLS	**Kolonicke sedl**	78.87	324	*e*P		P	06 16 24.6	+0.4
STHS	**Stebnicka Huta**	79.01	325	*e*P		P	06 16 25.8	+0.9
STHS	**Stebnicka Huta**	79.01	325	*e*P		P	06 16 25.8	+0.9
OJC	**Ojcow**	79.10	326	*e*P		P	06 16 25.8	+0.4
MSU	**Marysvale**	79.12	50	*e*P		P	06 16 27.0	+1.0
MSU	**Marysvale**	79.12	50	*e*P		P	06 16 27.0	+1.0
BR231	**Keskin MP Arra**	79.27	312	*e*P		P	06 16 26.2	-0.5
CRVS	**Cervenica-Dubn**	79.28	324	*e*P		P	06 16 26.6	+0.2
CRVS	**Cervenica-Dubn**	79.28	324	*e*P		P	06 16 26.6	+0.2
MTPU	**Mount Pierson**	79.41	50	*e*P		P	06 16 29.1	+1.3
	comp=Z,36nm,2.0s							
KNB	**Kanab**	79.65	51	*e*P		P	06 16 30.0	+1.2
KNB				pmax	pmax			
	comp=Z,9.0nm,1.1s							
KNB	**Kanab**	79.65	51	*e*P		P	06 16 30.0	+1.2
	comp=Z,9.4nm,1.1s							
SRU	**San Rafael Swe**	79.75	49	*e*P		P	06 16 30.2	+0.8
SRU				pmax	pmax			
	comp=Z,9.0nm,0.9s							
SRU	**San Rafael Swe**	79.75	49	*e*P		P	06 16 30.2	+0.8
	comp=Z,8.6nm,0.9s							
LANS	**Liptovska Anna**	80.02	325	*e*P		P	06 16 32.8	+2.4
LANS	**Liptovska Anna**	80.02	325	*e*P		P	06 16 32.8	+2.4
KSP	**Ksiaz**	80.18	328	*e*P		P	06 16 31.6	+0.4
MORC	**Moravsky Berou**	80.43	327	*e*P		P	06 16 33.5	+0.8
MORC				pmax	pmax			
	comp=Z,75nm,1.8s							
MORC	**Moravsky Berou**	80.43	327	*e*P		P	06 16 33.5	+0.8
	comp=Z,75nm,1.8s							
DPC	**Dobruska-Polom**	80.53	328	*e*P		P	06 16 33.9	+0.7
DPC				*e*pP		sP	06 16 44.3	+0.2
KRLC	**Kraliky**	80.54	327	*e*P		P	06 16 33.7	+0.5
VYHS	**Vyhne**	80.78	325	*e*P		P	06 16 35.1	+0.6
VYHS	**Vyhne**	80.78	325	*e*P		P	06 16 35.1	+0.6
PV10	**Paradox Valley**	81.11	48	*e*P		P	06 16 38.1	+1.3
BRG	**Berggiesshubel**	81.13	329	*i* P		P	06 16 36.5	+0.2
	comp=Z,5.4nm,0.9s							
BRG	**Berggiesshubel**	81.13	329	*i* P		P	06 16 36.5	+0.2
BRG				pmax	pmax			
	comp=Z,5.0nm,0.9s							
CLL	**Collm**	81.18	330	*i* P		P	06 16 36.5	-0.1
	comp=Z,6.0nm,0.8s							
PV05	**Paradox Valley**	81.27	49	*e*P		P	06 16 38.1	+0.5
GOPC	**GO Pecny, Ondr**	81.51	328	*e*P		P	06 16 39.1	+0.7
PRU	**Pruhonice**	81.56	328	*e*P		P	06 16 39.2	+0.6
SMCO	**Snowmass**	81.81	47	*e*P		P	06 16 40.9	+0.2
	comp=Z,2.8nm,0.9s							
X16A	**Lo Mia Camp, P**	82.15	53	*e*P		P	06 16 43.5	+1.2
	comp=Z,3.5nm,0.9s							
KHC	**Kasperske Hory**	82.62	328	*e*P		P	06 16 44.5	+0.3
KHC	**Kasperske Hory**	82.62	328	*e*P		P	06 16 44.6	+0.3
KHC				pmax	pmax			
	comp=Z,2.0nm,0.9s							
KHC	**Kasperske Hory**	82.62	328	*e*P		P	06 16 44.5	+0.3
	comp=Z,1.7nm,0.9s							
GEC2	**GERESS Array S**	82.79	328	*e*P		P	06 16 45.5	+0.3
GEC2				pmax	pmax			
	comp=Z,15nm,1.8s							
GEC2	**GERESS Array S**	82.79	328	*e*P		P	06 16 45.5	+0.3
	comp=Z,14nm,1.8s							
GERES	**GERESS Array B**	82.79	328	P		P	06 16 45.0	-0.2
	comp=Z,1.5nm,0.5s,baz=34,slow=5.0,SNR=13							
GEA0	**GERESS Array S**	82.79	328	*e*P		P	06 16 45.0	-0.2
S22A	**4UR Ranch, Cre**	82.84	48	*e*P		P	06 16 47.5	+1.5
	comp=Z,6.9nm,1.1s							
ECSD	**EROS Data Cent**	84.25	38	*e*P		P	06 16 52.7	0.0
	comp=Z,4.0nm,0.8s							
T25A	**Trinidad**	84.68	47	*e*P		P	06 16 56.1	+0.8
	comp=Z,8.7nm,0.8s							
ANMO	**Albuquerque**	84.93	50	P		P	06 16 56.6	+0.1
	comp=Z,2.6nm,0.9s,baz=276,slow=3.0,SNR=4.1							
ANMO	**Albuquerque**	84.93	50	*e*P		P	06 16 57.3	+0.8
ANMO	**Albuquerque**	84.93	50	*e*P		P	06 16 57.3	+0.8
BFO	**Black Forest**	85.39	331	*i* P		P	06 16 58.9	+0.5
FUORN	**Ofenpass-Fuorn**	85.97	328	*e*P		P	06 17 02.0	+0.5
	comp=Z,5.5nm,0.8s							
LAST	**Lasithi**	86.71	312	*e*P		P	06 17 05.2	0.0
	comp=Z,150nm,2.0s							
KSU1	**Kansas State U**	87.65	41	*e*P		P	06 17 09.5	-0.1
	comp=Z,12nm,0.8s							
TUL1	**Leonard**	90.44	43	*e*P		P	06 17 23.2	+0.4
	comp=Z,45nm,1.8s							
TX31	**Lajitas Ar. Si**	90.46	52	*e*P		P	06 17 23.6	+0.5
TXAR	**Lajitas Array**	90.46	52	P		P	06 17 23.3	+0.2
	comp=Z,1.9nm,0.8s,baz=300,slow=3.5,SNR=11							
MIAR	**Mount Ida**	92.66	42	*e*P		P	06 17 33.5	+0.4
MIAR				pmax	pmax			
	comp=Z,8.0nm,0.8s							
MIAR	**Mount Ida**	92.66	42	*e*P		P	06 17 33.5	+0.4
	comp=Z,8.4nm,0.8s							
WHAR	**Wooly Hollow**	92.78	41	*e*P		P	06 17 34.2	+0.6
	comp=Z,38nm,1.8s							
TORD	**Torodi Ar. Bea**	117.33	314	PKP		PKPdf	06 23 05.9	-1.2
	comp=Z,0.5nm,0.7s,baz=18,slow=1.8,SNR=3.1							
TORD				PP		PP	06 24 17.1	-0.2
	comp=Z,0.8nm,1.1s,baz=23,slow=7.2,SNR=3.5							
QSPA	**South Pole Qui**	126.54	180	*e*PKPdf		PKPdf	06 23 23.6	+0.4
SAML	**Samuel**	144.59	45	*e*PKPdf		PKPdf	06 23 58.5	+0.3
LPAZ	**La Paz**	147.02	60	PKPbc		PKPbc	06 24 04.8	-0.2
	comp=Z,9.1nm,0.8s,baz=322,slow=1.9,SNR=43							
LPAZ	**La Paz**	147.02	60	*e*PKPdf		PKPbc	06 24 04.3	-0.6
RCBR	**Riachuelo**	149.06	354	PKPbc		PKPbc	06 24 09.9	+0.1
LVC	**Limon Verde**	150.48	70	*e*PKPbc		PKPbc	06 24 14.4	+1.0

*IDC **30** 06:06:46.7±0.6,37.˚38N×143.˚65E,h0km,mb4.2/21, mb1 4.4/27,mb1mx4.3/49,mbtmp4.3/27,ML3.7/4, Error ellipse: s-maj=16.3km s-min=12.5km az=120.0*
*ISCJB **30** 06:06:50.0±0.3,37.˚46N±0.˚03×143.˚47E±0.˚04, h33km, mb4.3/36, Error ellipse: s-maj=5.2km s-min=3.6km az=140.2*
*JMA **30** 06:06:49.8±0.2,37.˚54N×143.˚46E,h42km,M4.7*
*NEIC **30** 06:06:52.1±0.4,37.˚45N×143.˚58E,h35km,mb4.6/15, Error ellipse: s-maj=9.7km s-min=6.4km az=134.0*

ISC 30 06:06:52.4±0.5, 37.˚55N±0.˚05×143.˚49E±0.˚06, h35km, n84, σ1s73/89, mb4.4/36, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	1.91	299	P	Pn	06 07 21.0	-1.5
JIO				S	Sn	06 07 43.7	-1.6
JFK	**Kawauchi**	2.09	266	P	Pn	06 07 23.0	-1.9
JFK				S	Sn	06 07 47.1	-2.6
OFUJ	**Ofunato**	2.09	317	P	Pn	06 07 23.0	-1.9
JMK	**Ichinoseki**	2.26	309	P	Pn	06 07 25.9	-1.4
JFT	**Otama**	2.50	270	P	Pn	06 07 29.9	-0.7
JFT				S	Sn	06 07 59.2	-0.8
JOM	**Ohasama**	2.58	319	P	Pn	06 07 30.3	-1.3
JOM				*e*S	Sn	06 07 59.9	-1.8
JYK	**Kaneyama**	2.81	300	P	Pn	06 07 34.2	-0.7
JANG	**Nango**	3.21	332	P	Pn	06 07 40.1	-0.2
JANG				*e*S	Sn	06 08 14.0	-3.3
JNS	**Sasagawa**	3.32	276	P	Pn	06 07 41.1	-0.7
JAG	**Ashikaga**	3.42	252	P	Pn	06 07 42.2	-1.0
JAG				*e*S	Sn	06 08 20.0	-2.5
JAW	**Awa shima**	3.46	286	P	Pn	06 07 43.0	-0.8
BSO1	**Boso 1**	3.54	216	P	Pn	06 07 42.1	-2.2
BSO1				S	Sn	06 08 23.8	-0.8
JRY	**Ryogami san**	3.99	249	P	Pn	06 07 49.7	-1.4
JRY				S	Sn	06 08 34.0	-2.6
JOD2	**Odawara 2**	4.22	239	P	Pn	06 07 52.6	-1.7
JOD2				*e*S	Sn	06 08 37.8	-4.5
JOT	**Ohata**	4.26	335	P	Pn	06 07 53.8	-1.0
JOT				*e*S	Sn	06 08 39.6	-3.7
MJAR	**Matsushiro Arr**	4.34	258	Pn	Pn	06 07 55.9	0.0
	87nm,0.3s,baz=90,slow=15,SNR=14						
MJAR				Sn	Sn	06 08 47.3	+2.0
	16nm,0.3s,baz=85,slow=28,SNR=4.0						
MAJO	**Matsushiro**	4.34	258	*e*Pn	Pn	06 07 55.9	-0.1
MAT	**Matsushiro**	4.34	258	P	Pn	06 07 56.4	+0.5
MAT				S	Sn	06 08 45.7	+0.4
ERM	**Erimo**	4.46	357	*e*Pn	Pn	06 07 55.4	-2.1
ERM				*e*Sn	Sn	06 08 44.3	-3.9
JKB	**Kayabe**	4.72	337	P	Pn	06 08 00.7	-0.4
JCH	**Churui**	5.05	359	P	Pn	06 08 02.8	-2.9
JCH				*e*S	Sn	06 08 55.3	-7.5
JHJ2	**Mitsune**	5.35	215	P	Pn	06 08 06.9	-2.9
JHJ2				*e*S	Sn	06 09 02.9	-7.3
JHJ2	**Mitsune**	5.35	215	*e*Pn	Pn	06 08 05.7	-4.0
JHJ2				*e*Sn	Sn	06 09 05.9	-4.3
JHJ	**Hachijo jima 2**	5.36	215	Pn	Pn	06 08 06.3	-3.6
	152nm,0.3s,baz=252,slow=22,SNR=14						
JHJ				Sn	Sn	06 09 04.0	-6.3
	95nm,0.3s,baz=59,slow=19,SNR=6.4						
ASAJ	**Asahikawa**	6.59	354	Pn	Pn	06 08 24.5	-2.2
	7.7nm,0.3s,baz=185,slow=21,SNR=13						
ASAJ				Sn	Sn	06 09 36.5	-4.1
	3.5nm,0.3s,baz=216,slow=18,SNR=2.3						
ASAJ	**Asahikawa**	6.59	354	*e*Pn	Pn	06 08 25.8	-0.9
ASAJ				Sn	Sn	06 09 36.5	-4.1
YSS	**Yuzh-Sakhalins**	9.41	357	*e*Pn	Pn	06 09 04.5	-0.9
CBIJ	**Chichi jima**	10.49	186	Pn	Pn	06 09 13.4	-6.8
CBIJ				Sn	Sn	06 11 03.4	-13
JCJ	**Chichijima**	10.49	186	Pn	Pn	06 09 13.4	-6.8
	25nm,0.3s,baz=281,slow=23,SNR=9.3						
JCJ				Sn	Sn	06 11 03.4	-13
	baz=348,slow=20						
USRK	**Ussuriysk Ar.**	10.94	311	Pn	Pn	06 09 27.0	+0.6
	1.6nm,0.3s,baz=114,slow=13,SNR=12						
JNU	**Nakatsue**	11.20	251	Pn	Pn	06 09 29.8	-0.3
	0.7nm,0.3s,baz=162,slow=23,SNR=4.4						
KSRS	**Korea Array**	12.36	274	Pn	Pn	06 09 47.7	+1.9
	1.5nm,0.3s,baz=84,slow=14,SNR=18						
KSAR	**Wonju Array Be**	12.39	274	Pn	Pn	06 09 47.7	+1.4
KLR	**Kul'dur**	14.43	328	Pn	Pn	06 10 11.4	-2.6
	0.6nm,0.3s,baz=131,slow=14,SNR=8.3						
PETK	**Petropavlovsk-**	18.43	28	P	Pn	06 11 04.4	-0.5
	0.3nm,0.3s,baz=189,slow=8.3,SNR=3.6						
BJT	**Baijiatuan**	21.41	285	*e*P	P	06 11 38.4	+1.3
	16nm,0.6s						
MA2	**Magadan**	22.53	10	P	P	06 11 49.5	+0.5
	5.5nm,0.6s,baz=162,slow=12,SNR=2.8						
SEY	**Seymchan**	25.99	9	P	P	06 12 22.1	+0.5
	7.4nm,0.7s,baz=195,slow=9.1,SNR=8.2						
ULN	**Ulaanbaatar**	28.44	303	*e*P	P	06 12 46.4	+2.4
	11nm,0.8s						
SONM	**Songino Array**	28.88	303	P	P	06 12 49.1	+1.2
	4.0nm,0.6s,baz=117,slow=8.0,SNR=8.8						
ENH	**Enshi**	29.02	266	*e*P	P	06 12 50.6	+1.4
	33nm,0.8s						
TLY	**Talaya**	31.25	310	*e*P	P	06 13 11.4	+2.8
	12nm,0.8s						
ZALV	**Zalesovo Beam**	42.79	312	P	P	06 14 47.2	+0.8
	8.4nm,0.5s,baz=84,slow=6.2,SNR=18						
ZALV				PcP	PcP	06 16 38.4	+1.2
	0.9nm,0.5s,baz=63,slow=3.5,SNR=2.0						
CMAR	**Chiang Mai Arr**	43.23	256	P	P	06 14 50.6	+0.3
	0.9nm,0.3s,baz=46,slow=6.8,SNR=5.9						
SHL	**Shillong**	45.06	270	*e*P	P	06 15 10.0	+4.8
MKAR	**Makanchi Array**	45.24	302	P	P	06 15 06.7	+0.5
	4.9nm,0.6s,baz=84,slow=9.6,SNR=10						
KTH	**Kantishna Hill**	46.39	34	*e*P	P	06 15 16.0	+0.9
	46nm,1.8s						
KURK	**Kurchatov**	46.91	308	*e*P	P	06 15 19.4	+0.1
ILAR	**Eielson Array**	48.17	33	P	P	06 15 28.9	0.0
	3.4nm,0.7s,baz=262,slow=6.4,SNR=17						
GUN	**Gumba**	48.74	276	*e*P	P	06 15 40.3	+6.1
	54nm,0.5s						
KKN	**Kakani**	49.27	276	*e*P	P	06 15 45.3	+7.2
	52nm,0.6s						
DMN	**Daman**	49.49	276	*e*P	P	06 15 47.5	+7.7
	6.1nm,0.3s						
KOLN	**Koldanda**	50.61	277	*e*P	P	06 15 55.9	+7.7
	7.8nm,0.4s						
TKM2	**Tokmak 2**	50.83	299	*e*P	P	06 15 51.0	+1.3
PYUN	**Piuthan**	50.94	278	*e*P	P	06 15 58.8	+8.1
	32nm,0.4s						
BRVK	**Borovoye**	51.50	312	*e*P	P	06 15 55.1	+0.8
	6.5nm,0.9s						
AAK	**Ala-Archa**	51.69	299	*e*P	P	06 15 59.8	+3.6
	5.5nm,0.9s						
EKS2	**Erkin-Say**	52.19	299	*e*P	P	06 16 00.5	+0.7
	3.5nm,0.7s						
INK	**Inuvik**	53.17	27	P	P	06 16 06.7	+0.3
	1.3nm,0.6s,baz=300,slow=4.2,SNR=7.0						
INK	**Inuvik**	53.17	27	*e*P	P	06 16 06.6	+0.2
	8.5nm,1.2s						
KKAR	**Karatay Array**	54.29	300	*e*P	P	06 16 15.4	+0.3
	9.3nm,1.0s						
WRAB	**Tennant Creek**	57.82	190	*e*P	P	06 16 39.0	-1.4
	14nm,0.7s						
WRA	**Warramunga Arr**	57.83	190	P	P	06 16 38.9	-1.6
	11nm,0.6s,baz=6.8,slow=8.3,SNR=40						
ABKAR	**Akbulak array**	58.86	310	*e*P	P	06 16 47.3	-0.2
ASAR	**Alice Springs**	61.56	190	P	P	06 17 05.0	-1.1
	5.2nm,0.7s,baz=4.8,slow=7.4,SNR=19						
RES	**Resolute Bay**	61.68	15	*e*P	P	06 17 05.8	-0.5
	2.6nm,1.0s						
YKA	**Yellowknife Ar**	62.52	31	P	P	06 17 12.0	-0.1
	0.8nm,0.6s,baz=301,slow=6.4,SNR=9.4						
ARCES	**ARCESS Array B**	64.09	340	P	P	06 17 23.3	+0.9
	3.0nm,1.0s,baz=74,slow=9.5,SNR=4.1						
GEYT	**Alibeck**	65.02	300	P	P	06 17 32.4	+3.3
	1.7nm,0.3s,baz=12,slow=7.4,SNR=3.5						
STKA	**Stephens Creek**	69.09	182	P	P	06 17 52.6	-2.1
	2.9nm,0.6s,baz=344,slow=7.2,SNR=8.2						
FINES	**FINESS Array B**	69.11	333	P	P	06 17 55.1	+0.6
	2.2nm,0.8s,baz=201,slow=1.6,SNR=4.7						
KBZ	**Khabaz**	71.81	311	P	P	06 18 12.4	+1.1
	2.8nm,0.9s,baz=146,slow=2.4,SNR=3.7						
FCC	**Fort Churchill**	72.79	27	*e*P	P	06 18 16.4	-0.5
	5.5nm,0.8s						
NB2	**NORSAR Subarra**	74.33	338	P	P	06 18 26.4	+0.4
	comp=Z,1.6nm,0.8s,baz=38,slow=5.9						
NOA	**NORSAR Array B**	74.33	338	P	P	06 18 26.5	+0.4
	comp=Z,0.9nm,0.7s,baz=39,slow=5.8,SNR=3.3						
H17A	**Grant Village**	74.53	46	*e*P	P	06 18 29.2	+1.5
	comp=Z,3.4nm,0.9s						
AKASG	**Malin Array Be**	74.89	323	P	P	06 18 29.1	-0.2
	comp=Z,0.3nm,0.3s,baz=45,slow=6.2,SNR=3.4						
PDAR	**Pinedale Array**	76.12	47	P	P	06 18 37.5	+0.6
	comp=Z,0.5nm,0.6s,baz=270,slow=3.6,SNR=4.3						
BRTR	**Keskin Array B**	79.73	313	P	P	06 18 58.9	+2.0
	comp=Z,0.3nm,0.5s,baz=102,slow=3.1,SNR=2.7						
KHC	**Kasperske Hory**	82.95	329	*e*P	P	06 19 13.5	-0.2
KHC				*e*pP	pP	06 19 26.0	+1.3
KHC	**Kasperske Hory**	82.95	329	*e*P	P	06 19 13.8	+0.2
GERES	**GERESS Array B**	83.12	329	P	P	06 19 16.9	+2.2
	comp=Z,0.5nm,0.6s,baz=46,slow=3.9,SNR=3.8						
TXAR	**Lajitas Array**	88.49	54	P	P	06 19 41.5	-0.1
	comp=Z,0.1nm,0.5s,baz=328,slow=4.4,SNR=3.7						
LPAZ	**La Paz**	145.00	61	PKP	PKPdf	06 26 27.4	+0.3
	comp=Z,0.6nm,0.5s,baz=245,slow=0.9,SNR=3.0						

*ISCJB **30** 06:07:50.5±0.4,28.˚77N±0.˚04×113.˚14W±0.˚03, h8km, mb4.2/8,MS3.5/1, Error ellipse: s-maj=6.0km s-min=2.5km az=36.4*
*MEX **30** 06:07:51.8±0.4,28.˚95N×113.˚18W,h4km,MD4.2*
*NEIC **30** 06:07:52.8±0.7,28.˚71N×113.˚19W,h10km,mb4.2/21, MW4.2,MD4.2(MEX),ML4.4(ECX), Error ellipse: s-maj=10.5km s-min=5.4km az=49.0,Moment Tensor Solution. s10 Moment tensor: Scale 10^{15}Nm; M_{rr}0.15; $M_{\theta\theta}$-2.62; $M_{\phi\phi}$2.47; $M_{r\theta}$0.47; $M_{\theta\phi}$-0.47; $M_{\phi r}$-0.80; Best double couple: M_o2.80000×10^{15} NP1:ϕ_s221.00000°, δ71.00000°, λ.7.00000°. NP2:ϕ_s129.00000°, δ83.00000°, λ161.00000°. Principal axes: T 2.7800, Plg18.0000°, Azm83.0000°; N -0.0600, Plg70.0000°, Azm290.0000°; P -2.7200, Plg8.0000°, Azm176.0000°;*
*IDC **30** 06:07:53.5±2.0,29.˚04N×112.˚83W,h0km,mb3.6/2, mb1 4.0/8,mb1mx3.7/47,mbtmp3.7/8,ML3.6/5,MS3.8/2, Ms1 3.8/2,ms1mx3.1/32 Error ellipse: s-maj=30.99km s-min=14.1km az=35.0*

ISC 30 06:07:51.6±0.6, 28.˚67N±0.˚04×113.˚20W±0.˚04, h8km, n247, σ1s31/259, mb4.6/9, Baja California

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SRIG	**Santa Rosalia**	1.59	147	*e*Pn	Pb	06 08 21.4	+0.1
SRIG				*e*Sn	Sg	06 08 43.7	+1.0
SRIG	**Santa Rosalia**	1.59	147	*e*P	Pn	06 08 20.6	+0.6
SRIG				*e*S	Sg	06 08 42.4	-0.4
HSIG		2.01	79	*e*P	Pn	06 08 21.8	-4.1
HSIG				*e*Pn	Pb	06 08 27.1	-1.4
HSIG		2.01	79	*e*P	Pn	06 08 21.8	-4.1
GUYB	**Guaymas**	2.19	110	*e*P	Pn	06 08 27.7	-0.7
SPIG	**San Pedro Mart**	3.08	321	*i* P	Pb	06 08 48.3	+1.4
SPIG	**San Pedro Mart**	3.08	321	*i* P	Pb	06 08 48.3	+1.4
214A	**Organ Pipe Nat**	3.30	6	P	Pn	06 08 40.2	-3.4
	baz=186						
214A				Sb	Sb	06 09 32.0	+1.3
	baz=186						
113A	**Mohawk Valley,**	4.12	353	*e*Pn	Pn	06 08 51.7	-3.1
TUC	**Tucson**	4.19	29	P	Pn	06 08 53.0	-2.9
	baz=211						
TUC				Pb	Pb	06 09 05.9	+0.3
	baz=211						
TUC				Sb	Sb	06 09 59.9	+3.5
	baz=211						
TUC	**Tucson**	4.19	29	*e*Pn	Pn	06 08 54.3	-1.6
GLA	**Glamis**	4.59	343	P	Pn	06 08 59.2	-2.2
	baz=162						
GLA	**Glamis**	4.59	343	*e*Pn	Pn	06 08 59.3	-2.1
SWSC	**Sam W. Stewart**	4.81	333	Pg	Pg	06 09 22.8	-1.0
	baz=151,SNR=14						
BAR	**Barrett**	4.99	324	*e*Pn	Pn	06 09 05.2	-1.7
MONP2	**Monument Peak**	5.04	327	Pb	Pb	06 09 19.3	-1.0
	baz=146,SNR=28						
MONP2				Sb	Sb	06 10 25.5	+4.4
	baz=146						
Y12C	**Blythe**	5.19	348	P	Pn	06 09 08.2	-1.4
	baz=167						
Y12C	**Blythe**	5.19	348	*e*Pn	Pn	06 09 07.4	-2.2
LPIG	**La Paz**	5.24	150	Pn	Pn	06 09 13.3	+3.1
	8.6nm,0.3s,baz=343,slow=5.3,SNR=4.2						
LPIG				Lg	Lg	06 10 39.6	
	1.3nm,0.3s,baz=356,slow=18,SNR=2.7						
Y14A	**Wickenburg**	5.26	2	*e*Pn	Pn	06 09 08.2	-2.3
BC3	**Big Chuckawall**	5.33	339	P	Pn	06 09 10.2	-1.4
	baz=158						
109C	**Camp Elliot, M**	5.38	322	Pb	Pb	06 09 25.6	-0.3
	baz=140,SNR=8.3						
109C				Sb	Sb	06 10 33.2	+2.5
	baz=140						
PFO	**Pinyon Flats O**	5.66	331	Pb	Pb	06 09 29.9	-0.9
	baz=149,SNR=15						
PFO				Sb	Sb	06 10 43.4	+4.4
	baz=149						
PFO	**Pinyon Flats O**	5.66	331	*e*Pg	Pg	06 09 35.9	-4.2
PDMCI	**Parker Dam,Lak**	5.68	352	P	Pn	06 09 14.1	-2.1
	baz=172						
IRM	**Iron Mountain**	5.72	344	P	Pn	06 09 15.2	-1.7
	baz=162						
SLBS	**Sierra La Lagu**	5.76	149	*e*Pn	Pn	06 09 20.5	+3.0
BELC	**Belle Mtn. Jos**	5.83	337	P	Pn	06 09 17.0	-1.5
	baz=155						
X16A	**Lo Mia Camp, P**	5.93	14	*e*Pn	Pn	06 09 17.7	-2.2
MURC	**Murrieta**	5.99	326	Pb	Pb	06 09 36.0	-0.3
	baz=144						
MURC				Sb	Sb	06 10 51.8	+3.5
	baz=144						
121A	**

O20A	White River Ci baz=201	12.15	18	P		Pn	06 10 44.7 -0.5
833A	Chaparral WMA, baz=275	12.15	88	P		Pn	06 10 44.6 -0.5
633A	Saathoff Ranch baz=270	12.30	83	P		Pn	06 10 47.0 -0.2
ABTX	Abilene, Hawle baz=255	12.32	68	P		Pn	06 10 46.9 -0.6
ABTX	Abilene, Hawle	12.32	68	ePn		Pn	06 10 47.9 +0.4
433A	Art baz=264	12.44	77	P		Pn	06 10 48.7 -0.4
333A	Richland Sprin baz=262	12.61	74	P		Pn	06 10 51.0 -0.4
ISCO	Idaho Springs baz=212	12.75	27	P		Pn	06 10 53.1 -0.5
233A	Rising Star baz=259	12.80	71	P		Pn	06 10 52.7 -1.3
133A	Hamilton Ranch baz=256	12.91	69	P		Pn	06 10 54.4 -1.1
534A	Blanco baz=268	12.92	80	P		Pn	06 10 55.3 -0.4
HWUT	Hardware Ranch	12.98	5	ePn		Pn	06 10 57.5 +1.0
HVU	Hansel Valley	13.09	1	ePn		Pn	06 10 59.6 +1.6
434A	Burnet baz=265	13.15	77	P		Pn	06 10 58.5 -0.3
X32A	Elmer baz=248	13.18	61	P		Pn	06 10 59.1 0.0
Z33A	Whitaker Ranch baz=254,SNR=8.4	13.21	66	P		Pn	06 10 57.9 -1.8
334A	Lometa baz=262	13.24	75	P		Pn	06 10 59.0 -1.0
234A	Clairette baz=260	13.43	72	P		Pn	06 11 02.2 -0.4
035A	Encino baz=281	13.48	94	P		Pn	06 11 03.2 -0.1
W32A	Sentinel baz=245	13.49	58	P		Pn	06 11 03.0 -0.3
635A	Leesville baz=271	13.52	83	P		Pn	06 11 03.1 -0.7
Y33A	Hilltop Ranch, baz=251,SNR=5.3	13.55	63	P		Pn	06 11 03.8 -0.4
134A	White-Moore Ra baz=257	13.59	70	P		Pn	06 11 03.9 -0.8
WMOK	Wichita Mounta	13.68	60	ePn		Pn	06 11 05.8 -0.3
X33A	Lawton baz=249,SNR=6.2	13.83	61	P		Pn	06 11 07.3 -0.7
Z34A	Collier Ranch, baz=254	13.92	67	P		Pn	06 11 08.3 -1.0
335A	Moody baz=263	13.92	75	P		Pn	06 11 09.1 -0.2
WHTX	Lake Whitney, baz=260	14.00	72	P		Pn	06 11 09.5 -0.9
W33A	Caddo, Fort Co baz=247	14.08	59	P		Pn	06 11 11.3 -0.1
135A	Vickery Place, baz=258	14.14	70	P		Pn	06 11 12.1 -0.2
536A	Bastrop baz=268	14.14	80	P		Pn	06 11 12.2 -0.1
636A	Smothers Creek baz=271	14.15	83	P		Pn	06 11 12.4 0.0
736A	Circle Diamond baz=273	14.15	85	P		Pn	06 11 12.6 +0.1
Y34A	Reagan Ranch, baz=252	14.21	64	P		Pn	06 11 12.8 -0.5
U32A	Winter Ranch, baz=241	14.23	54	P		Pn	06 11 13.2 -0.2
X34A	Smith Ranch, M baz=250	14.36	62	P		Pn	06 11 15.0 -0.4
BW06	Boulder Array baz=193	14.38	11	P		Pn	06 11 15.6 -0.1
BW06	Boulder Array	14.38	11	ePn		Pn	06 11 15.5 -0.1
BW06				eP		P	06 11 23.6 +0.8
PD31	Pinedale Array	14.38	11	ePn		Pn	06 11 17.6 +1.9
PDAR	Pinedale Array 0.0nm,0.3s,baz=177,slow=13,SNR=5.1	14.38	11	Pn		Pn	06 11 15.5 -0.2
MOD	Modoc Plateau	14.41	338	eP		P	06 11 24.1 +1.0
T32A	Huddler Ranch, baz=239	14.68	51	P		Pn	06 11 19.8 +0.1
737A	Port Lavaca baz=274	14.71	86	P		Pn	06 11 19.6 -0.5
Y35A	Marietta baz=254	14.77	65	P		Pn	06 11 20.8 -0.1
537A	Green Hill Far baz=269	14.79	80	P		Pn	06 11 22.1 +0.9
M04C	Macdoel baz=149	14.86	334	P		Pn	06 11 21.7 -0.4
136A	Ennis baz=260	14.86	71	P		Pn	06 11 21.9 -0.1
MFID	Camas Ranch	14.87	353	ePn		Pn	06 11 23.8 +1.5
MFID				eP		P	06 11 29.9 +1.8
HLID	Hailey baz=176	14.90	357	P		Pn	06 11 24.2 +1.5
K22A	Casper baz=203	14.96	19	P		Pn	06 11 23.6 0.0
K22A	Casper	14.96	19	ePn		Pn	06 11 24.3 +0.7
X35A	Drake baz=252	14.97	63	P		Pn	06 11 21.9 -1.7
LOHW	Long Hollow	15.06	7	ePn		Pn	06 11 26.9 +2.0
V34A	Guthrie baz=246,SNR=5.1	15.06	58	P		Pn	06 11 24.6 -0.3
V34A	Guthrie	15.06	58	ePn		P	06 11 29.4 -0.8
CBKS	Cedar Bluff baz=232	15.08	44	P		Pn	06 11 26.6 +1.5
Z36A	Blue Ridge baz=257	15.10	68	P		Pn	06 11 25.0 -0.3
T33A	Patterson Ranc baz=241	15.10	52	P		Pn	06 11 25.2 -0.1
YBH	Yreka Blue Hor comp=Z,450nm,18.6s,baz=268,slow=38	15.16	332	LR		LR	06 17 21.4
MOOW	Moose Ponds 6.7nm,1.1s	15.18	7	ePn		Pn	06 11 28.4 +1.9
337A	Centerville baz=265	15.24	76	P		Pn	06 11 27.2 0.0
IMW	Indian Meadow 6.1nm,0.9s	15.31	6	ePn		Pn	06 11 30.4 +2.1
K05A	Sumner Lake 32nm,1.3s	15.35	338	ePn		Pn	06 11 28.2 -0.5
Y36A	Durant baz=255	15.37	66	P		Pn	06 11 28.1 -0.8
R32A	Long Quarter, baz=235	15.50	47	Pn		Pn	06 11 31.3 +0.7
X36A	Centrahoma baz=252	15.51	63	P		Pn	06 11 30.3 -0.4
FLWY	Flagg Ranch 5.7nm,1.1s	15.52	7	ePn		P	06 11 33.7 -1.7
137A	Heron Place, G baz=260	15.52	71	P		Pn	06 11 30.6 -0.3
T34A	McClaskey Farm baz=243	15.81	54	P		Pn	06 11 34.5 -0.1
Q32A	Meitler Ranch, baz=234	15.92	46	P		P	06 11 39.4 -0.3
Y37A	Hugo baz=255	15.93	66	P		Pn	06 11 35.7 -0.5
J05D	Fort Rock, OR baz=154	15.96	338	P		Pn	06 11 36.8 +0.2
V36A	Jenks baz=249	16.23	60	P		Pn	06 11 39.5 -0.5
T35A	Sooner Cattle baz=244	16.25	55	P		Pn	06 11 39.9 -0.4
X37A	Clayton baz=254	16.29	64	P		Pn	06 11 40.5 -0.3
Q33A	Connelly Farm, baz=236,SNR=5.2	16.39	47	P		P	06 11 44.7 -0.2
TUL1	Leonard baz=249,SNR=5.2	16.39	59	P		Pn	06 11 41.3 -0.8
TUL1	Leonard 21nm,1.0s	16.39	59	ePn		Pn	06 11 41.0 -1.1
RLMT	Red Lodge baz=192	16.72	10	P		P	06 11 47.8 -1.0
RLMT	Red Lodge 21nm,1.9s	16.72	10	ePn		Pn	06 11 46.6 +0.2
P33A	Williams Farm, baz=235	16.73	46	P		P	06 11 48.5 -0.2
S35A	Otter Creek Ra baz=242	16.73	53	P		Pn	06 11 47.2 +0.8
X38A	Whitesboro baz=254,SNR=6.5	16.74	64	P		Pn	06 11 46.5 0.0
O32A	Brockman Farm, baz=231	16.86	43	P		Pn	06 11 47.8 -0.3
Q34A	Chapman baz=238	16.93	49	P		Pn	06 11 48.8 -0.1
W38A	Poteau baz=253	17.10	63	P		P	06 11 51.9 -0.9
KSU1	Kansas State U baz=238	17.24	49	P		Pn	06 11 52.3 -0.5
KSU1	Kansas State U 37nm,1.5s	17.24	49	ePn		P	06 11 55.0 +0.7
X39A	Fountain Ranch	17.27	65	P		Pn	06 11 52.2 -0.9
	baz=256						
140A	Cam and Jess, baz=262	17.35	72	P		Pn	06 11 53.7 -0.5
T37A	Cheneyville 18 baz=246	17.50	57	P		P	06 11 56.6 -0.6
Z40A	Long Farm, Mag baz=260	17.59	70	P		Pn	06 11 56.3 -0.8
R36A	Gordon, Harris baz=242	17.60	52	P		Pn	06 11 57.1 -0.2
MIAR	Mount Ida baz=256	17.71	66	P		Pn	06 11 58.2 -0.4
G05D	Wamic, OR baz=156	17.75	341	P		Pn	06 11 59.0 -0.1
S37A	Fort Scott baz=245,SNR=5.4	17.83	55	P		Pn	06 11 59.5 -0.6
P35A	Duane Minner, baz=238	17.86	48	P		Pn	06 12 00.2 -0.2
141A	Papa Simpson, baz=263	17.90	72	P		Pn	06 12 00.7 -0.3
T38A	Diamond baz=248,SNR=5.7	17.93	57	P		Pn	06 12 00.1 -1.2
R37A	Teagarden Farm baz=243	18.07	53	P		P	06 12 03.5 0.0
Z41A	Richland Creek baz=261	18.08	70	P		Pn	06 12 02.9 -0.3
MSO	Missoula baz=178	18.14	358	P		Pn	06 12 03.9 -0.1
MSO	Missoula 9.1nm,1.4s	18.14	358	ePn		P	06 12 04.7 +0.4
CHMT	Chamberlain Mo	18.22	360	ePn		P	06 12 06.7 +1.4
S38A	Stockton baz=247	18.44	56	P		Pn	06 12 06.9 -0.7
242A	Grayson baz=265	18.48	74	P		P	06 12 07.7 -0.3
T39A	Clever baz=249	18.60	58	P		P	06 12 09.2 -0.2
V40A	Witts Springs baz=253	18.64	62	P		P	06 12 09.0 -0.8
R38A	Fenwick Farm, baz=245	18.67	54	P		P	06 12 09.7 -0.3
X301	Greenbrier Sit 27nm,1.2s	18.82	64	eP		P	06 12 10.9 -0.8
S39A	Bolivar baz=247	18.89	56	P		P	06 12 12.2 -0.4
WHAR	Wooly Hollow 24nm,1.2s	18.92	64	eP		P	06 12 12.4 -0.4
W41A	Tony Mavity, V baz=256	18.92	65	P		P	06 12 12.1 -0.7
W41B	Gary Mavity, V baz=256	18.92	65	P		P	06 12 11.9 -0.9
P37A	Lathrop baz=241	19.00	50	P		P	06 12 13.5 -0.2
143A	Socs Landing, baz=264	19.17	72	P		Pn	06 12 16.2 -0.3
YBMT	Yellow Bay	19.18	358	eP		Pn	06 12 17.7 +1.1
BSMT	Bassoo Peak	19.19	357	eP		Pn	06 12 17.8 +0.9
Q38A	Cooks Store, C baz=244	19.21	53	P		P	06 12 16.3 +0.3
T40A	Mansfield baz=250	19.29	59	P		P	06 12 16.6 -0.4
R39A	Chumby, Stover baz=246	19.34	55	P		Pn	06 12 18.3 -0.2
S40A	Lebanon baz=249	19.46	57	P		Pn	06 12 23.4 +3.4
EGMT	Eagleton baz=189	19.51	7	P		Pn	06 12 20.5 -0.1
EGMT	Eagleton 12nm,1.2s	19.51	7	eP		P	06 12 20.1 +0.8
EGMT				eSn		S	06 16 00.9 +1.0
344A	Westbrook Farm baz=268	19.64	76	P		P	06 12 20.9 +0.1
NEW	Newport 0.1nm,0.3s,baz=168,slow=11,SNR=4.4	19.80	352	P		P	06 12 22.5 0.0
NEW	Newport baz=170	19.80	352	P		P	06 12 22.9 +0.5
NEW	Newport 4.3nm,1.0s	19.80	352	eP		P	06 12 23.0 +0.5
R40A	Maddies Statio baz=247	19.89	56	P		P	06 12 24.2 +0.7
ECSD	EROS Data Cent baz=227	20.07	37	P		P	06 12 25.7 +0.2
ECSD	EROS Data Cent 4.0nm,0.9s	20.07	37	eP		P	06 12 25.6 +0.1
Q40A	Last Farm, Aux baz=246	20.31	54	P		P	06 12 27.8 -0.2
245A	Little AP, Sta baz=267	20.39	75	P		P	06 12 29.7 +0.8
P40A	Paris baz=245	20.55	53	P		P	06 12 30.3 -0.4
L37A	Phoenix Point, baz=236	20.71	44	P		P	06 12 32.3 -0.1
N39A	Derby Farms, D baz=241	20.86	49	P		P	06 12 33.7 -0.3
O40A	La Belle baz=244,SNR=6.2	20.93	51	P		P	06 12 34.5 -0.2
OXF	Oxford 46nm,1.4s	21.07	68	eP		P	06 12 35.9 -0.4
L38A	Oak Wood Farm, baz=237	21.22	45	P		P	06 12 37.6 -0.2
Y46A	Houston baz=263,SNR=8.1	21.43	70	P		P	06 12 40.5 +0.3
247A	Quitman baz=268	21.48	75	P		P	06 12 41.1 +0.4
347A	Saraland baz=269	21.52	77	P		P	06 12 41.6 +0.5
Z47A	Carrollton baz=265	22.01	72	P		P	06 12 46.6 +0.2
Z48A	Northport baz=265	22.45	71	P		P	06 12 50.8 -0.4
G36A	St. Michael baz=230	22.60	38	P		P	06 12 53.6 +0.9
WVT	Waverly 13nm,1.1s	22.64	64	eP		P	06 12 53.3 +0.2
I38A	Scanlan Farm, baz=234	22.67	42	P		P	06 12 53.5 +0.1
HDIL	Hopedale baz=246	22.90	53	P		P	06 12 56.5 +0.7
HDIL	Hopedale 26nm,1.3s	22.90	53	eP		P	06 12 56.8 +1.0
F36A	Milnca baz=229	23.13	37	P		P	06 12 59.4 +1.2
JFWS	Jewell Farm 20nm,1.4s	23.33	46	eP		P	06 13 00.3 0.0
B32A	Ashes, Strandq baz=219	23.53	29	P		P	06 13 02.9 +0.8
C35A	Jirik Farms, M baz=225	24.16	33	P		P	06 13 09.0 +0.7
SFIN	Lafayette baz=250	24.39	55	P		P	06 13 09.4 -1.0
B34A	Aery, Baudette baz=222	24.42	31	P		P	06 13 10.8 +0.2
B35A	Bob, Littlefor baz=224	24.75	32	P		P	06 13 14.9 +1.3
CPCT	Cooper Cave 5.5nm,0.9s	25.18	67	eP		P	06 13 17.4 -0.2
TKL	Tuckaleechee C 4.7nm,0.9s,baz=241,slow=10,SNR=5.3	25.81	67	P		P	06 13 22.4 -0.9
TKL				LR		LR	06 24 11.9
TKL	Tuckaleechee C 69nm,2.0s	25.81	67	eP		P	06 13 23.0 -0.3
KMSC	Kings Mountain baz=266	27.74	68	P		P	06 13 40.0 -0.7
KMSC	Kings Mountain 15nm,1.1s	27.74	68	eP		P	06 13 40.6 -0.2
YKA	Yellowknife Ar 0.1nm,0.8s,baz=176,slow=8.6,SNR=3.9	33.84	359	P		P	06 14 32.8 -1.5
DIV	Divide 23nm,1.4s	39.04	335	eP		P	06 15 19.0 +0.3

IDC 30 06:18:00.7±6.2, 3.44S×148.97E, h76km±59km, mb3.4/5, mb1 3.6/6, mb1mx3.4/32, mbtmp3.7/6, Error ellipse: s-maj=73.9km s-min=36.1km az=123.0, Bismarck Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	Port Moresby baz=38,slow=14,SNR=2.4	6.20	197	P	Pn	06 19 30.5	+0.9
PMG				S	Sn	06 20 46.5	+7.4
WRA	Warramunga Arr 0.7nm,0.3s,baz=37,slow=22,SNR=3.3	21.75	220	P	P	06 22 45.0	-1.2
ASAR	Alice Springs 1.6nm,0.8s,baz=45,slow=11,SNR=8.8	24.83	215	P	P	06 23 15.9	-0.2
FITZ	Fitzroy Crossi 1.0nm,0.9s,baz=44,slow=7.7,SNR=9.0	27.10	236	P	P	06 23 37.3	+0.7
H11S3	3.2nm,1.0s,baz=56,slow=11,SNR=3.2 WAKE ISLAND Hy 27.92		38	T	T	06 52 54.4	
	baz=220,slow=76,SNR=168						
H11S2	WAKE ISLAND Hy 27.93 baz=220,slow=76,SNR=190		38	T	T	06 52 57.3	
H11S1	WAKE ISLAND Hy 27.94 baz=220,slow=76,SNR=177		38	T	T	06 52 58.1	
H11N1	WAKE ISLAND Hy 28.97 baz=219,slow=76,SNR=38		37	T	T	06 54 14.3	
H11N3	WAKE ISLAND Hy 28.99 baz=219,slow=76,SNR=29		37	T	T	06 54 16.8	
H11N2	WAKE ISLAND Hy 28.99 baz=219,slow=76,SNR=62		37	T	T	06 54 15.6	
MKAR	Makanchi Array 0.2nm,0.4s,baz=98,slow=7.5,SNR=3.9	76.81	320	P	P	06 29 44.0	-0.3
YKA	Yellowknife Ar 0.1nm,0.8s,baz=272,slow=5.0,SNR=2.6	96.00	28	P	P	06 31 18.5	-0.7
TORD	Torodi Ar. Bea 0.4nm,0.6s,baz=72,slow=4.7,SNR=2.4	146.25	289	PKPbc	PKPab	06 37 34.3	-0.3

*TRN **30** 06:28:17.1, 17.76N×64.60W, h178km*
*ISCJB **30** 06:28:18.4±1.3, 17.7N±0.2×64.61W±0.04, h167km±15km, Error ellipse: s-maj=25.4km s-min=6.5km az=5.5*
*RSPR **30** 06:28:21.2, 17.93N×64.70W, h160km±3km, MD3.6/11*
*NEIC **30** 06:28:21.2, 17.93N×64.70W, h160km, MD3.6(RSPR), After RSPR.*

ISC 30 06:28:16.5±2.0, 17.8N±0.1×64.59W±0.04, h189km±15km, n41, σ1§11/55, 17C-16D, Virgin Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CDVI	St. Croix	0.18	253	ǁiP	Pn	06 28 42.5	+1.1
CDVI	St. Croix	0.18	253	ǁiP	Pn	06 28 42.5	+1.1
CDVI	St. Croix	0.18	253	ǁiP	Pn	06 28 42.5	+1.1
STVI	Saint Thomas	0.65	327	ǁeP	Pn	06 28 44.0	+1.1
STVI	Saint Thomas	0.65	327	ǁeP	Pn	06 28 44.0	+1.1
STVI	Saint Thomas	0.65	327	ǁeP	Pn	06 28 44.0	+1.1
ABV	Anegada	0.95	15	ǁeP	Pn	06 28 46.3	+1.5
ABV	Anegada	0.95	15	ǁeP	Pn	06 28 46.3	+1.5
ABVI	Anegada Island	0.95	15	ǁeP	Pn	06 28 46.3	+1.5
MTP	Monte Pirata	0.97	288	ǁeP	Pn	06 28 45.9	+1.0
MTP	Monte Pirata	0.97	288	ǁeP	Pn	06 28 45.9	+1.0
MTP	Monte Pirata	0.97	288	ǁeP	Pn	06 28 45.9	+1.0
HUMP	Col San Antoni	1.25	286	ǁeP	Pn	06 28 48.4	+1.4
HUMP	Col San Antoni	1.25	286	eS	Sn	06 29 09.3	-1.4
HUMP	Col San Antoni	1.25	286	ǁeP	Pn	06 28 48.4	+1.4
HUMP				eS	Sn	06 29 09.3	-1.4
HUMP	Col San Antoni	1.25	286	ǁeP	Pn	06 28 48.4	+1.4
HUMP				eS	Sn	06 29 09.3	-1.4
CBYP	Canovanas	1.30	291	ǁeP	Pn	06 28 48.5	+1.0
CBYP	Canovanas	1.30	291	eS	Sn	06 29 10.1	-1.4
CBYP	Canovanas	1.30	291	ǁeP	Pn	06 28 48.5	+1.0
CBYP				eS	Sn	06 29 10.1	-1.4
CBYP	Canovanas	1.30	291	ǁeP	Pn	06 28 48.5	+1.0
CBYP				eS	Sn	06 29 10.1	-1.4
SMRT	St. Maarten	1.46	80	eP	Pn	06 28 58.2	+9.3
SMRT				eS	Sn	06 29 13.4	-0.5
SJG	San Juan	1.52	282	ǁiP	Pn	06 28 50.4	+0.9
SJG				eS	Sn	06 29 14.2	-0.7
SJG	San Juan	1.52	282	ǁeP	Pn	06 28 50.3	+0.9
SJG				eS	Sn	06 29 13.9	-1.0
SJG	San Juan	1.52	282	ǁeP	Pn	06 28 50.3	+0.9
SJG				eS	Sn	06 29 13.9	-1.0
SJG	San Juan	1.52	282	ǁeP	Pn	06 28 50.3	+0.9
CELP	Cerrillos	1.92	278	ǁeP	Pn	06 28 54.1	+0.8
CELP				eS	Sn	06 29 21.1	-0.9
CELP	Cerrillos	1.92	278	ǁeP	Pn	06 28 54.1	+0.8
CELP				eS	Sn	06 29 21.1	-0.9
CELP	Cerrillos	1.92	278	ǁeP	Pn	06 28 54.1	+0.8
OBIP	Obispado Ponce	1.94	277	eS	Sn	06 29 22.0	-0.3
OBIP	Obispado Ponce	1.94	277	eS	Sn	06 29 22.0	-0.3
AOPR	Arecibo Observ	2.13	285	ǁeP	Pn	06 28 56.2	+0.5
AOPR	Arecibo Observ	2.13	285	eS	Sn	06 29 25.2	-0.8
AOPR	Arecibo Observ	2.13	285	ǁeP	Pn	06 28 56.2	+0.5
AOPR				eS	Sn	06 29 25.2	-0.8
AOPR	Arecibo Observ	2.13	285	ǁeP	Pn	06 28 56.2	+0.5
AOPR				eS	Sn	06 29 25.2	-0.8
LRS	Lares	2.20	283	ǁeP	Pn	06 28 57.0	+0.6
LRS				eS	Sn	06 29 26.4	-1.1
LRS	Lares	2.20	283	ǁeP	Pn	06 28 57.0	+0.6
LRS				eS	Sn	06 29 26.4	-1.1
LRS	Lares	2.20	283	ǁeP	Pn	06 28 57.0	+0.6
ANWB	Willy Bob	2.67	93	iP	Pn	06 29 01.8	+0.1
ANWB				eS	Sn	06 29 34.3	-2.6
MLG	Mont-d'or	3.25	122	eP	Pn	06 29 10.0	+1.2
SEG	Port Louis	3.26	115	ǁiP	Pn	06 29 09.7	+1.0
MGG	Marie-Galante	3.65	120	ǁiP	Pn	06 29 14.9	+1.4

*ISCJB **30** 06:33:22.8±1.5, 37.25N±0.04×141.67E±0.09, h27km±8km, mb3.4/4, Error ellipse: s-maj=12.0km s-min=6.7km az=10.5*
*JMA **30** 06:33:26.2±0.1, 37.29N×141.42E, h46km±1km, M3.4*
JMA Felt I J1.
*IDC **30** 06:33:28.1±4.9, 37.22N×141.43E, h63km±47km, mb3.0/4, mb1 3.2/5, mb1mx3.1/38, mbtmp3.2/5, ML2.8/1, Error ellipse: s-maj=44.7km s-min=27.6km az=107.0*

ISC 30 06:33:24.0±2.0, 37.28N±0.05×141.62E±0.08, h25km±14km, n17, σ1§11/22, mb3.4/4, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	Kawauchi	0.60	279	P	Pb	06 33 36.4	+0.5
JFK				S	Sb	06 33 43.4	-0.5
ONAJ	Iwakimizuishiy	0.68	255	P	Pb	06 33 37.5	+0.3
ONAJ				S	Sb	06 33 45.4	-0.8
JMM	Marumori	0.88	312	P	Pn	06 33 40.5	-0.2
JMM				S	Sb	06 33 50.9	-1.0
JFT	Otama	1.05	284	P	Pn	06 33 43.2	+0.1
JFT				S	Sn	06 33 55.2	-1.7
JHO	Hitachi	1.07	232	P	Pn	06 33 42.8	-0.6
JIO	Ouri	1.19	350	P	Pn	06 33 45.9	+0.8
JIO				S	Sn	06 33 56.9	-0.9
JOU	Okura	1.32	326	P	Pn	06 33 47.6	+0.7
JOU				S	Sn	06 34 03.5	-0.2
MJAR	Matsushiro Arr 1.7nm,0.3s,baz=76,slow=16,SNR=6.1	2.83	256	P	Pn	06 34 08.5	+0.9
MJAR				S	Sb	06 34 47.7	-0.2
MAT	Matsushiro	2.83	256	P	Pn	06 34 09.2	+1.6
MAT				eS	Sn	06 34 43.7	+2.8
JHJ	Hachijo jima 2 15nm,0.3s,baz=58,slow=22,SNR=3.4	4.41	200	S	Sn	06 35 19.0	-0.9
H11N2	WAKE ISLAND Hy 28.14 baz=315,slow=75,SNR=14		121	T	T	07 09 32.1	
H11N1	WAKE ISLAND Hy 28.14 baz=315,slow=75,SNR=16		121	T	T	07 09 32.8	
H11N3	WAKE ISLAND Hy 28.15 baz=315,slow=75,SNR=12		121	T	T	07 09 33.4	
MKAR	Makanchi Array 0.3nm,0.6s,baz=85,slow=9.3,SNR=3.7	44.13	302	P	P	06 41 29.3	-1.0
ILAR	Eielson Array 0.4nm,0.7s,baz=273,slow=6.9,SNR=4.9	49.20	32	P	P	06 42 10.5	+0.8
WRA	Warramunga Arr 0.7nm,0.9s,baz=5.1,slow=7.2,SNR=4.9	57.32	188	P	P	06 43 09.1	-0.8
YKA	Yellowknife Ar 0.1nm,0.6s,baz=302,slow=6.6,SNR=3.7	63.52	30	P	P	06 43 52.2	+0.5

*ISCJB **30** 06:39:54.0±0.2, 15.11N±0.03×42.12E±0.03, h10km, mb4.4/67, MS4.1/5, Error ellipse: s-maj=5.0km s-min=3.3km az=36.7*
*IDC **30** 06:39:54.0±1.0, 15.08N×42.07E, h0km, mb4.2/16, mb1 4.4/20, mb1mx4.2/38, mbtmp4.3/20, ML3.8/4, Error ellipse: s-maj=20.0km s-min=17.4km az=31.0*
*DHMR **30** 06:39:54.9±0.8, 15.06N×42.32E, h2km±57km, ML4.1*
*NEIC **30** 06:39:55.0±0.3, 15.00N×42.06E, h10km, mb4.6/24, Error ellipse: s-maj=6.7km s-min=4.8km az=205.0*
*MOS **30** 06:39:55.6±0.8, 15.08N×42.08E, h23km, mb4.6/29, Error ellipse: s-maj=11.9km s-min=5.7km az=95.3*
*CSEM **30** 06:39:55.6±0.2, 15.08N×42.13E, h10km, mb4.5/40, Error ellipse: s-maj=7.4km s-min=4.8km az=22.0*
*ARO **30** 06:39:56.4, 15.1N±0.53×4.2E±10.0, h15km±9.9km, MI3.9*

ISC 30 06:39:55.4±0.4, 15.12N±0.05×42.18E±0.05, h10km, n274, σ1§05/281, mb4.4/67, MS4.2/5, 12C-14D, Western Arabian Peninsula

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HAJJ	Hajjah	1.48	67	iP	Pn	06 40 20.6	-1.8

HAJJ *i* S **Sn** 06 40 41.0 -1.0
HAJJ AML AML 06 40 56.4
comp=Z,6µm,0.6s
UDYN Al 'Udayn 2.07 123 *i* P **Pn** 06 40 29.6 -0.9
UDYN *i* S **Sn** 06 40 57.5 +1.0
UDYN AML AML 06 41 14.0
comp=E,1µm,0.7s
DHBB Dhamar BB 2.21 104 *i* P **Pn** 06 40 32.5 +0.1
DHBB *i* S **Sn** 06 41 00.8 +0.9
DAMY Dhamar 2.21 104 *e*Pn **Pn** 06 40 33.5 +1.1
DAMY Dhamar 2.21 104 *e*Pn **Pn** 06 40 33.5 +1.1
OBO Obock 3.30 161 *e*P **Pn** 06 40 46.5 -0.7
OBO Obock 3.30 161 *e*P **Pn** 06 40 46.5 -0.7
TDD Tadjoura Ara 3.37 168 *e*P **Pn** 06 40 47.3 -0.9
TDD Tadjoura Ara 3.37 168 *e*P **Pn** 06 40 47.3 -0.9
MCAD Moucha 3.52 163 *e*P **Pn** 06 40 49.7 -0.5
MCAD Moucha 3.52 163 *e*P **Pn** 06 40 49.7 -0.5
ATD Arta Tunnel 3.63 170 Pn **Pn** 06 40 51.4 -0.3
comp=E,12nm,0.3s,baz=352,slow=8.5,SNR=43
ATD Sn **Sn** 06 41 36.5 +1.8
comp=E,6.5nm,0.3s,baz=270,slow=19,SNR=3.0
ATD Arta Tunnel 3.63 170 *e*P **Pn** 06 40 51.6 -0.2
ATD *e*S **Sn** 06 41 35.8 +1.1
ATD Arta Tunnel 3.63 170 *e*P **Pn** 06 40 51.6 -0.2
ATD *e*S **Sn** 06 41 35.8 +1.1
SGH Sud-Ghoubbet 3.69 173 *e*P **Pn** 06 40 51.7 -0.9
SGH Sud-Ghoubbet 3.69 173 *e*P **Pn** 06 40 51.7 -0.9
BSY Bisya 16.10 60 P **Pn** 06 43 41.2 -0.8
SNR=25
ASHO Ashiyiah 16.14 52 P **Pn** 06 43 39.0 -3.5
SNR=6.6
UOSS Minazif 16.39 51 *e*Pn **Pn** 06 43 43.0 -2.7
comp=E,1.3nm,0.8s
JMDO Jabal Madar 16.71 62 P **Pn** 06 43 49.7 -0.1
SNR=19
SMDO Samad 16.94 60 P **P** 06 43 55.1 +0.3
SNR=21
SMDO Samad 16.94 60 P **P** 06 43 55.1 +0.3
SNR=21
BIDO Bidbid 17.20 59 P **P** 06 43 57.8 +0.2
SNR=12
BIDO Bidbid 17.20 59 P **P** 06 43 57.8 +0.2
SNR=12
WSAR Wadi Sarin 17.50 60 P **P** 06 44 01.1 +0.2
comp=E,0.5nm,0.3s,baz=256,slow=8.5,SNR=8.3
WBK Wadi Bani Khal 17.54 62 P **Pn** 06 44 00.4 +0.2
SNR=18
WBK Wadi Bani Khal 17.54 62 P **Pn** 06 44 00.4 +0.2
SNR=18
ASF Jabal al Asfar 17.65 345 P **Pn** 06 44 02.0 +0.4
comp=E,0.1nm,0.3s,baz=135,slow=5.7,SNR=5.2
ASF Jabal al Asfar 17.65 345 P **Pn** 06 44 02.0 +0.4
MMAI Mount Meron Ar 18.85 342 P **Pn** 06 44 16.2 -0.1
comp=E,0.4nm,0.3s,baz=142,slow=16,SNR=6.5
CSS Mathiatis 21.30 340 *e*P **P** 06 44 43.5 +1.1
comp=E,6.8nm,1.1s
CSS Mathiatis 21.30 340 *e*P **P** 06 44 43.5 +1.1
comp=E,6.8nm,1.1s
LAST Lasithi 24.97 326 *e*P **P** 06 45 20.4 +1.1
comp=E,26nm,1.1s
LAST Lasithi 24.97 326 *e*P **P** 06 45 20.4 +1.1
comp=E,26nm,1.1s
GNI Garni 25.04 5 P **P** 06 45 21.3 +1.4
comp=E,5.2nm,0.4s,baz=172,slow=12,SNR=6.5
GNI Garni 25.04 5‖ *e*P **P** 06 45 19.7 -0.3
GNI pmax pmax
comp=Z,11nm,0.5s
GNI Garni 25.04 5 *e*P **P** 06 45 19.7 -0.3
comp=Z,11nm,0.5s
GNI Garni 25.04 5 *e*P **P** 06 45 21.6 +1.7
comp=Z,20nm,1.1s
IDI Anoyia 25.38 325 P **P** 06 45 23.4 +0.3
comp=Z,12nm,0.9s,baz=154,slow=7.3,SNR=6.0
IDI Anoyia 25.38 325 *e*P **P** 06 45 23.8 +0.8
comp=Z,102nm,1.8s
IDI Anoyia 25.38 325 *e*P **P** 06 45 23.8 +0.8
comp=Z,102nm,1.8s
BRTR Keskin Array B 25.63 345 P **P** 06 45 26.4 +1.0
comp=Z,2.8nm,1.0s,baz=153,slow=11,SNR=13
BRTR Keskin Array B 25.63 345 *i* P **P** 06 45 26.5 +1.2
BRTR pmax pmax
comp=Z,3.0nm,1.0s
BR131 Keskin Array S 25.63 345 *e*P **P** 06 45 26.2 +0.8
BR131 Keskin Array S 25.63 345 *e*P **P** 06 45 26.2 +0.8
BR231 Keskin MP Arra 25.97 343 *e*P **P** 06 45 27.2 -1.2
BR231 Keskin MP Arra 25.97 343 *e*P **P** 06 45 27.2 -1.2
ANTO Ankara 25.99 343 *e*P **P** 06 45 29.8 +1.3
ANTO pmax pmax
comp=Z,7.0nm,0.7s
ANTO Ankara 25.99 343 *e*P **P** 06 45 29.8 +1.3
comp=Z,7.0nm,0.7s
ANTO Ankara 25.99 343 *e*P **P** 06 45 29.8 +1.3
comp=Z,7.2nm,0.7s
GEYT Allbeck 26.74 29 P **P** 06 45 36.4 +1.1
comp=Z,2.2nm,0.5s,baz=224,slow=8.1,SNR=4.4
ZEI Tsey 27.61 3 *e*P **P** 06 45 42.4 -0.9
ZEI pmax pmax
comp=Z,12nm,0.9s
NEY Neytrino 28.04 1 P P 06 45 52.0 +5.0
NEY pmax pmax
comp=Z,8.0nm,3.1s
KBZ Khabaz 28.52 1 P **P** 06 45 52.0 +1.0
comp=Z,6.2nm,1.1s,baz=168,slow=4.7,SNR=6.1
KIV Kislovodsk 28.74 1‖ *e*P **P** 06 45 54.6 +1.4
KIV *e* 06 45 59.4
KIV *e* 06 46 46.2
KIV *e*PPP PPP 06 46 55.7
KIV *e* 06 49 04.1
KIV pmax pmax
comp=Z,14nm,1.2s
KIV MLR MLR
comp=Z,296nm,17.0s
KIV Kislovodsk 28.74 1 *e*P **P** 06 45 54.4 +1.2
comp=Z,10nm,0.8s
KIV Kislovodsk 28.74 1 *e*PcP **PcP** 06 49 04.1 +0.7
KIV Kislovodsk 28.74 1 *e*P **P** 06 45 54.4 +1.2
comp=Z,10nm,0.8s
AGG Agios Georgios 29.52 328 *e*P **P** 06 46 00.1 0.0
AGG pmax pmax
comp=Z,28nm,0.9s
AGG Agios Georgios 29.52 328 *e*P **P** 06 46 00.1 0.0
comp=Z,28nm,0.9s
AGG Agios Georgios 29.52 328 *e*P **P** 06 46 00.1 0.0
comp=Z,28nm,0.9s
GOF Gofitskoye 29.85 1 *ce*P **P** 06 46 01.2 -1.7
KBL Kabul 30.96 46 *e*P **P** 06 46 13.9 +0.8
KBL pmax pmax
comp=Z,4.0nm,0.7s
KBL Kabul 30.96 46 *e*P **P** 06 46 13.9 +0.8
comp=Z,3.8nm,0.7s
KBL Kabul 30.96 46 *e*P **P** 06 46 13.9 +0.8
comp=Z,3.8nm,0.7s
TIRR Tirgusor 31.50 341⇑ *i*P **P** 06 46 19.7 +2.3
TIRR Tirgusor 31.50 341 *e*P **P** 06 46 18.9 +1.5
TIRR pmax pmax
comp=Z,14nm,1.1s
TIRR Tirgusor 31.50 341 *e*P **P** 06 46 18.9 +1.5
comp=Z,14nm,1.1s
TIRR Tirgusor 31.50 341 *e*P **P** 06 46 18.9 +1.5
comp=Z,14nm,1.1s
MLR Muntele Rosu 33.23 339‖ *i*P **P** 06 46 34.7 +1.9
MLR Muntele Rosu 33.23 339‖ *i*P **P** 06 46 34.7 +1.9
VRI Vrincioaia 33.29 340‖ *i*P **P** 06 46 35.9 +2.7
VRI Vrincioaia 33.29 340‖ *i*P **P** 06 46 35.9 +2.7
PLOR Plostina 33.30 340‖ *i*P **P** 06 46 35.8 +2.4
PLOR Plostina 33.30 340‖ *i*P **P** 06 46 35.8 +2.4
VOIR 33.50 338‖ *i*P **P** 06 46 36.0 +0.9
VOIR 33.50 338‖ *i*P **P** 06 46 36.0 +0.9
ARR Arges 33.59 337⇑ *i*P **P** 06 46 36.7 +0.8
ARR Arges 33.59 337⇑ *i*P **P** 06 46 36.7 +0.8
PDG Podgorica 33.61 329‖ *i*P **P** 06 46 36.8 +0.8
PDG Podgorica 33.61 329‖ *i*P **P** 06 46 36.8 +0.8
GZR Gura Zlata 34.33 335⇑ *i*P **P** 06 46 41.9 -0.4
GZR Gura Zlata 34.33 335⇑ *i*P **P** 06 46 41.9 -0.4
BURAR Bucovina Array 35.32 340‖ *i*P **P** 06 46 52.4 +1.5
BURAR Bucovina Array 35.32 340‖ *i*P **P** 06 46 52.4 +1.5
BUR08 Bucovina Ar. S 35.35 340 *e*P **P** 06 46 51.8 +0.6
BUR08 Bucovina Ar. S 35.35 340 *e*P **P** 06 46 51.8 +0.6
TAM Tamanrasset 35.43 288 *e*P **P** 06 46 51.5 -0.7
TAM pmax pmax
comp=Z,4.0nm,0.8s
TAM Tamanrasset 35.43 288 *e*P **P** 06 46 51.5 -0.7
comp=Z,3.6nm,0.8s
TAM Tamanrasset 35.43 288 *e*P **P** 06 46 51.5 -0.7
comp=Z,3.6nm,0.8s

KKAR Karatay Array 36.95 35 *e*P **P** 06 47 07.0 +2.2
KKAR Karatay Array 36.95 35 *e*P **P** 06 47 07.0 +2.2
KKAR Karatay Array 36.95 35 *e*P **P** 06 47 07.0 +2.2
KIEV Kiev 37.00 346‖ *e*P **P** 06 47 04.4 -0.7
KIEV pmax pmax
comp=Z,4.0nm,0.9s
AKASG Malin Array Be 37.01 346 P **P** 06 47 04.5 -0.6
comp=Z,0.2nm,0.3s,baz=158,slow=6.9,SNR=8.9
ABKAR Akbulak array 37.02 19 *e*P **P** 06 47 07.2 +1.9
ABKAR Akbulak array 37.02 19 *e*P **P** 06 47 07.2 +1.9
KOLS Kolonicke sedl 37.47 338 *e*P **P** 06 47 09.5 +0.4
KOLS pmax pmax
comp=Z,5.0nm,1.3s
KOLS Kolonicke sedl 37.47 338 *e*P **P** 06 47 09.5 +0.4
comp=Z,5.4nm,1.3s
KOLS Kolonicke sedl 37.47 338 *e*P **P** 06 47 09.5 +0.4
PSZ Piszkesteto 37.54 335 *e*P **P** 06 47 09.9 +0.1
PSZ pmax pmax
comp=Z,5.0nm,0.9s
PSZ Piszkesteto 37.54 335 *e*P **P** 06 47 09.9 +0.1
comp=Z,4.7nm,0.9s
PSZ Piszkesteto 37.54 335 *e*P **P** 06 47 09.9 +0.1
comp=Z,4.7nm,0.9s
CRVS Cervenica-Dubn 37.73 338 *e*P **P** 06 47 11.7 +0.3
CRVS Cervenica-Dubn 37.73 338 *e*P **P** 06 47 11.7 +0.3
CRVS Cervenica-Dubn 37.73 338 *e*P **P** 06 47 11.7 +0.3
KECS Kecovo 37.76 336 *e*P **P** 06 47 11.6 0.0
KECS pmax pmax
comp=Z,2.0nm,1.0s
KECS Kecovo 37.76 336 *e*P **P** 06 47 11.6 0.0
comp=Z,2.0nm,1.0s
KECS Kecovo 37.76 336 *e*P **P** 06 47 11.6 0.0
BOJS Bojanci 37.83 329 *i*P **P** 06 47 12.8 +0.6
BOJS Bojanci 37.83 329 P **P** 06 47 12.8 +0.6
STHS Stebnicka Huta 38.24 338 *e*P **P** 06 47 16.4 +0.7
STHS pmax pmax
comp=Z,3.0nm,0.7s
STHS Stebnicka Huta 38.24 338 *e*P **P** 06 47 16.4 +0.7
comp=Z,2.8nm,0.7s
STHS Stebnicka Huta 38.24 338 *e*P **P** 06 47 16.4 +0.7
VISS Visnje 38.24 329 *i*P **P** 06 47 15.6 -0.1
VISS Visnje 38.24 329 *i*P **P** 06 47 15.6 -0.1
VYHS Vyhne 38.43 335 *e*P **P** 06 47 17.5 +0.2
VYHS pmax pmax
comp=Z,4.0nm,1.2s
VYHS Vyhne 38.43 335 *e*P **P** 06 47 17.5 +0.2
comp=Z,4.1nm,1.2s
VYHS Vyhne 38.43 335 *e*P **P** 06 47 17.4 +0.2
EKS2 Erkin-Say 38.57 38 *e*P **P** 06 47 20.0 +1.3
EKS2 pmax pmax
comp=Z,3.0nm,1.0s
EKS2 Erkin-Say 38.57 38 *e*P **P** 06 47 20.0 +1.3
comp=Z,3.0nm,1.0s
EKS2 Erkin-Say 38.57 38 *e*P **P** 06 47 20.0 +1.3
comp=Z,3.0nm,1.0s
PERS Pernice 38.70 330 *e*P **P** 06 47 20.0 +0.4
PERS Pernice 38.70 330 *e*P **P** 06 47 20.0 +0.4
LANS Liptovska Anna 38.70 336 *e*P **P** 06 47 20.4 +0.9
LANS Liptovska Anna 38.70 336 *e*P **P** 06 47 20.4 +0.9
LANS Liptovska Anna 38.70 336 *e*P **P** 06 47 20.4 +0.9
JAVS Javornik 38.70 328 *i*P **P** 06 47 19.6 -0.1
JAVS Javornik 38.70 328 *i*P **P** 06 47 19.6 -0.1
TRI Trieste 38.73 328 *e*P **P** 06 47 19.9 +0.2
TRI pmax pmax
comp=Z,19nm,1.0s
TRI Trieste 38.73 328 *e*P **P** 06 47 19.9 +0.2
comp=Z,19nm,1.0s
TRI Trieste 38.73 328 *e*P **P** 06 47 19.9 +0.2
comp=Z,19nm,1.0s
SOKA Soboth 38.77 330 *e*P **P** 06 47 21.1 +0.9
comp=Z,7.9nm,1.2s
SOKA Soboth 38.77 330 P **P** 06 47 21.1 +0.9
comp=Z,7.9nm,1.2s
ARSA Arzberg 38.94 331 *e*P **P** 06 47 22.5 +0.9
comp=Z,7.1nm,0.8s
ARSA Arzberg 38.94 331 P **P** 06 47 22.5 +0.9
comp=Z,7.1nm,0.8s
AAK Ala-Archa 38.99 39 P **P** 06 47 24.0 +1.8
AAK pmax pmax
comp=Z,7.0nm,1.3s
TOA0 Torodi Ar. Sit 39.27 272 *e*P **P** 06 47 23.9 -0.8
TOA0 Torodi Ar. Sit 39.27 272 *e*P **P** 06 47 23.9 -0.8
TORD Torodi Ar. Bea 39.27 272 P **P** 06 47 24.0 -0.8
comp=Z,3.2nm,1.0s,baz=91,slow=7.9,SNR=14
TORD Torodi Ar. Bea 39.27 272 P **P** 06 47 24.0 -0.8
CONA Conrad Observa 39.28 332 *i*P **P** 06 47 25.1 +0.6
comp=Z,8.0nm,1.2s
CONA Conrad Observa 39.28 332 P **P** 06 47 25.1 +0.6
comp=Z,8.0nm,1.2s
KBA Koelnbreinsper 39.87 329 *i*P **P** 06 47 30.0 +0.5
comp=Z,5.7nm,0.9s
KBA Koelnbreinsper 39.87 329 P **P** 06 47 30.0 +0.5
comp=Z,5.7nm,0.9s
PYUN Piuthan 39.89 64 *e*P **P** 06 47 31.2 +1.2
MORC Moravsky Berou 39.96 335 *e*P **P** 06 47 30.1 0.0
MORC pmax pmax
comp=Z,46nm,1.4s
MORC Moravsky Berou 39.96 335 *e*P **P** 06 47 30.1 0.0
comp=Z,46nm,1.4s
MORC Moravsky Berou 39.96 335 *e*P **P** 06 47 30.1 0.0
comp=Z,46nm,1.4s
MOA Molln 39.97 331 *i*P **P** 06 47 30.6 +0.5
comp=Z,7.3nm,0.8s
MOA Molln 39.97 331 P **P** 06 47 30.6 +0.5
comp=Z,7.3nm,0.8s
OBN Obninsk 40.15 355⇑ *e*P **P** 06 47 31.5 +0.1
OBN *SP **sP** 06 47 36.0 +0.2
OBN *e* 06 49 10.3
OBN pmax pmax
comp=Z,7.0nm,1.4s
OBN MLR MLR
comp=Z,288nm,17.0s
KOLN Koldanda 40.37 65 *e*P **P** 06 47 34.8 +0.8
comp=Z,24nm,0.8s
DPC Dobruska-Polom 40.90 335 *e*P **P** 06 47 37.6 -0.3
DPC Dobruska-Polom 40.90 335 P **P** 06 47 37.6 -0.3
GEA0 GERESS Array S 40.93 331 *e*P **P** 06 47 37.8 -0.4
GEA0 GERESS Array S 40.93 331 *e*P **P** 06 47 37.8 -0.4
GEC2 GERESS Array S 40.94 331 *e*P **P** 06 47 38.3 +0.1
GEC2 pmax pmax
comp=Z,11nm,0.9s
GEC2 GERESS Array S 40.94 331 *e*P **P** 06 47 38.3 +0.1
comp=Z,11nm,0.9s
GEC2 GERESS Array S 40.94 331 *e*P **P** 06 47 38.3 +0.1
comp=Z,11nm,0.9s
GERES GERESS Array B 40.94 331 P **P** 06 47 37.8 -0.4
comp=Z,6.2nm,0.8s,baz=133,slow=7.5,SNR=46
UPC Upice 41.15 335 *e*P **P** 06 47 39.7 -0.2
UPC Upice 41.15 335 P **P** 06 47 39.7 -0.2
KHC Kasperske Hory 41.20 331 *e*P **P** 06 47 39.5 -0.8
KHC Kasperske Hory 41.20 331 *e*P **P** 06 47 40.0 -0.3
KHC pmax pmax
comp=Z,4.0nm,1.2s
KHC Kasperske Hory 41.20 331 *e*P **P** 06 47 40.0 -0.3
comp=Z,4.1nm,1.2s
KHC Kasperske Hory 41.20 331 *e*P **P** 06 47 40.0 -0.3
comp=Z,4.1nm,1.2s
GOPC GO Pecny, Ondr 41.23 333 *e*P **P** 06 47 40.6 +0.1
GOPC GO Pecny, Ondr 41.23 333 P **P** 06 47 40.6 +0.1
GKN Gorkha 41.31 65 *e*P **P** 06 47 42.0 +0.3
PRU Pruhonice 41.39 333 *e*P **P** 06 47 41.4 -0.4
PRU Pruhonice 41.39 333 P **P** 06 47 41.4 -0.4
DMN Daman 41.66 65 *e*P **P** 06 47 45.3 +0.6
DAVA Damuels 41.79 327 *e*P **P** 06 47 44.9 -0.4
comp=Z,10nm,0.8s
DAVA Damuels 41.79 327 P **P** 06 47 44.9 -0.4
comp=Z,10nm,0.8s
KKN Kakani 41.84 65 *e*P **P** 06 47 46.5 +0.4
PKIN Phulchoki 41.91 65 *e*P **P** 06 47 47.2 +0.4
comp=Z,14nm,0.7s
BRG Berggiesshubel 42.30 334 *e*P **P** 06 47 48.5 -0.8
comp=Z,13nm,1.5s
BRG Berggiesshubel 42.30 334 *e*P **P** 06 47 48.5 -0.8
BRG pmax pmax
comp=Z,13nm,1.5s
GUN Gumba 42.38 65 *e*P **P** 06 47 51.1 +0.4
comp=Z,43nm,0.9s
SENIN Lac Senin/Sane 42.64 324 *e*P **P** 06 47 51.9 -0.4
comp=Z,10nm,1.3s
SENIN Lac Senin/Sane 42.64 324 *e*P **P** 06 47 51.9 -0.4
comp=Z,10nm,1.3s
CLL Collm 43.02 333 *i*P **P** 06 47 54.4 -0.6
comp=Z,11nm,1.3s
CLL Collm 43.02 333 *e*P **P** 06 47 54.5 -0.6
CLL pmax pmax
comp=Z,13nm,1.3s
CLL Collm 43.02 333 *e*P **P** 06 47 54.5 -0.6
comp=Z,12nm,1.3s
CLL Collm 43.02 333 *e*P **P** 06 47 54.5 -0.6
comp=Z,12nm,1.3s
ARU Arti 43.09 13*c i*P **P** 06 47 56.4 +0.9
ARU 06 49 34.9
ARU S **S** 06 54 25.7 +4.3
ARU pmax pmax
comp=Z,5.0nm,1.2s
ARU Arti 43.09 13 *e*P **P** 06 47 56.3 +0.7
comp=Z,8.7nm,1.4s
ARU Arti 43.09 13 *e*P **P** 06 47 56.3 +0.7
comp=Z,8.7nm,1.4s
BFO Black Forest 43.26 327 *i*P **P** 06 47 58.1 +1.0
BFO Black Forest 43.26 327 *e*P **P** 06 47 56.8 -0.3
comp=Z,11nm,1.2s
BFO Black Forest 43.26 327 *e*P **P** 06 47 56.8 -0.3
comp=Z,11nm,1.2s
BRVK Borovoye 43.87 24*c i*P **P** 06 48 02.5 +0.6
BRVK pmax pmax
comp=Z,7.0nm,2.5s
WLF Walferdange 45.21 327 P **P** 06 48 13.5 +0.9
WLF Walferdange 45.21 327 P **P** 06 48 13.5 +0.9
KLMR Klimovskoe 45.71 358 *e*P **P** 06 48 14.1 -2.3
KLMR *e* 06 49 52.8
KLMR pmax pmax
comp=Z,14nm,1.5s
KLMR Klimovskoe 45.71 358 *e*PcP **PcP** 06 49 52.8 -1.4
MAKZ Makanchi 45.73 38 *e*P **P** 06 48 17.7 +0.8
MAKZ pmax pmax
comp=Z,6.0nm,0.8s
MAKZ Makanchi 45.73 38 *e*P **P** 06 48 17.7 +0.8
comp=Z,5.6nm,0.8s
MAKZ Makanchi 45.73 38 *e*P **P** 06 48 17.7 +0.8
comp=Z,5.6nm,0.8s
MEM Membach 45.85 328 P **P** 06 48 18.0 +0.3
MEM Membach 45.85 328 P **P** 06 48 18.0 +0.3
MK01 Makanchi Array 45.90 38 *e*P **P** 06 48 18.8 +0.6
MK01 Makanchi Array 45.90 38 *e*P **P** 06 48 18.8 +0.6
MK31 Makanchi Array 45.90 38 *e*P **P** 06 48 19.0 +0.7
MK31 Makanchi Array 45.90 38 *e*P **P** 06 48 19.0 +0.7
MK31 Makanchi Array 45.90 38 *e*P **P** 06 48 18.9 +0.7
MKAR Makanchi Array 45.90 38 P **P** 06 48 19.1 +0.8
comp=Z,5.8nm,1.0s,baz=235,slow=6.7,SNR=26
MKAR Makanchi Array 45.90 38 *e*P **P** 06 48 19.0 +0.7
MKAR Makanchi Array 45.90 38 *e*P **P** 06 48 19.0 +0.7
MKAR Makanchi Array 45.90 38 *e*P **P** 06 48 18.9 +0.7
KURK Kurchatov 46.05 32 *e*P **P** 06 48 20.6 +1.3
KURK pmax pmax
comp=Z,6.0nm,1.1s
KURK Kurchatov 46.05 32 *e*P **P** 06 48 20.6 +1.3
comp=Z,6.4nm,1.1s
KURK Kurchatov 46.05 32 *e*P **P** 06 48 20.6 +1.3
comp=Z,6.4nm,1.1s
BCLA Clavier 46.10 328 P **P** 06 48 20.1 +0.4
comp=Z,10nm,1.2s
BCLA Clavier 46.10 328 P **P** 06 48 20.0 +0.4
comp=Z,10nm,1.2s
DOU Dourbes 46.27 327 P **P** 06 48 20.8 -0.3
comp=Z,8.4nm,1.6s
DOU Dourbes 46.27 327 P **P** 06 48 20.8 -0.3
comp=Z,8.4nm,1.6s
SNF Seneffe 46.68 327 P **P** 06 48 24.7 +0.5
SNF Seneffe 46.68 327 P **P** 06 48 24.7 +0.5
ESDC Sonseca Array 47.06 311 P **P** 06 48 27.1 -0.4
comp=Z,0.2nm,0.5s,baz=103,slow=8.5,SNR=4.8
FINES FINESS Array B 47.69 350 P **P** 06 48 31.7 -0.2
comp=Z,1.8nm,0.6s,baz=134,slow=8.0,SNR=8.6
FINES FINESS Array B 47.69 350 *i*P **P** 06 48 31.5 -0.4
FINES pmax pmax
comp=Z,2.0nm,0.6s
FIA1 FINESS Array S 47.69 350 *e*P **P** 06 48 32.3 +0.4
comp=Z,4.9nm,0.8s
FIA1 FINESS Array S 47.69 350 *e*P **P** 06 48 32.3 +0.4
comp=Z,4.9nm,0.8s
WMQ Urumqi 48.03 44 *e*P **P** 06 48 36.0 +1.0
WMQ pmax pmax
comp=Z,5.0nm,0.6s
WMQ LR LR
comp=N,39nm,15.8s
WMQ LR LR
comp=E,23nm,17.6s
WMQ LR LR
comp=Z,63nm,21.2s
KONO Kongsberg 50.46 339 *i*P P 06 48 49.5 -3.7
KONO pmax pmax
comp=Z,69nm,2.5s
NC405 NORSAR Array S 50.89 342 *e*P **P** 06 48 55.5 -1.0
NC405 NORSAR Array S 50.89 342 *e*P **P** 06 48 55.5 -1.0
NAO01 NORSAR Array S 50.94 341 *e*P **P** 06 48 57.2 +0.3
NAO01 NORSAR Array S 50.94 341 *e*P **P** 06 48 57.1 +0.3
NOA NORSAR Array B 50.99 341 P **P** 06 48 56.5 -0.7
comp=Z,2.2nm,1.0s,baz=137,slow=7.9,SNR=3.9
ZALV Zalesovo Beam 51.02 31 P **P** 06 48 57.7 +0.2
comp=Z,3.7nm,0.7s,baz=247,slow=7.7,SNR=13
NBO02 NORSAR Array S 51.11 341 *e*P **P** 06 48 58.4 +0.3
NBO02 NORSAR Array S 51.11 341 *e*P **P** 06 48 58.4 +0.3
CMAR Chiang Mai Arr 54.26 78 P **P** 06 49 23.1 +0.9
comp=Z,1.2nm,0.4s,baz=277,slow=7.0,SNR=7.9
CM01 Chiang Mai Arr 54.28 78 *e*P **P** 06 49 22.4 +0.1
CM01 Chiang Mai Arr 54.28 78 *e*P **P** 06 49 22.4 +0.1
ARA0 ARCESS Array S 55.39 353 *e*P **P** 06 49 29.9 +0.4
ARA0 ARCESS Array S 55.39 353 *e*P **P** 06 49 29.9 +0.4
ARCES ARCESS Array B 55.39 353 P **P** 06 49 29.5 0.0
comp=Z,2.3nm,0.7s,baz=169,slow=7.3,SNR=8.3
KEV Kevo 55.43 354 *e*P **P** 06 49 30.1 +0.4
KEV pmax pmax
comp=Z,31nm,1.3s
KEV Kevo 55.43 354 *e*P **P** 06 49 30.1 +0.4
comp=Z,31nm,1.3s
KEV Kevo 55.43 354 *e*P **P** 06 49 30.1 +0.4
comp=Z,31nm,1.3s
GTA Gaotai 55.64 52 *e*P **P** 06 49 32.0 +0.1
GTA pP sP 06 49 37.0 +0.6
GTA sP pP 06 49 39.5 +4.4
GTA S **S** 06 57 17.0 -1.2
GTA sS sS 06 57 26.0 +2.5
GTA Gaotai 55.64 52 SS **SS** 07 01 01.5 -1.9
GTA pmax pmax
comp=Z,3.0nm,1.0s
GTA LR LR
comp=N,140nm,17.1s
GTA LR LR
comp=E,220nm,16.6s
GTA LR LR
comp=Z,200nm,18.1s
KRAR Krasnoyarsk 56.08 32 P **P** 06 49 35.0 +0.4
KRAR pmax pmax
comp=Z,20nm,0.3s
KRAR Krasnoyarsk 56.08 32 P **P** 06 49 35.0 +0.4
comp=Z,20nm,0.3s
KMI Kunming 57.33 70 P P 06 49 48.8 +4.4
KMI pmax pmax
comp=Z,20nm,0.7s
CD2 Chengdu 58.16 63 P **P** 06 49 48.8 -1.1
CD2 pmax pmax
comp=Z,1.0nm,0.5s
SONM Songino Array 61.67 44 P **P** 06 50 14.8 +1.0
comp=Z,4.6nm,0.9s,baz=258,slow=6.7,SNR=10
SONA1 Songino Array 61.67 44 *e*P **P** 06 50 14.6 +0.7
SONA1 Songino Array 61.67 44 *e*P **P** 06 50 14.6 +0.7
ULN Ulaanbaatar 62.11 44 P **P** 06 50 19.0 +2.2
ULN pmax pmax
comp=Z,4.0nm,1.2s
ULN Ulaanbaatar 62.11 44 P **P** 06 50 19.0 +2.2
comp=Z,4.0nm,1.2s
SPA0 Spitsbergen Ar 64.35 354 *e*P **P** 06 50 31.3 +0.3
SPA0 Spitsbergen Ar 64.35 354 *e*P **P** 06 50 31.3 +0.3
HHC Hu-ho-hao-te 64.73 52 *e*P **P** 06 50 32.0 -2.3
HHC sP sP 06 50 39.5 +0.8
HHC S **S** 06 59 10.3 -4.7
HHC pmax pmax
comp=Z,17nm,0.8s
HHC pmax pmax
comp=Z,78nm,6.8s
HHC LR LR
comp=N,160nm,12.3s
HHC LR LR
comp=E,740nm,13.6s
HHC LR LR
comp=Z,130nm,13.6s
BOD Bodaibo 67.65 33 *e*P **P** 06 50 51.3 -1.2
BOD pmax pmax
comp=Z,4.0nm,1.2s

BOD	**Bodaibo**	**67.65**	**33**	*e*P		**P**	**06 50 51.3**	**-1.2**
	comp=Z,4.0nm,1.2s							
NJ2	**Nanjing**	**70.98**	**61**	*e*P		**P**	**06 51 12.8**	**-0.8**
NJ2				pmax	pmax			
	comp=Z,11nm,0.5s							
TIXI	**Tiksi**	**74.72**	**19**⇑	*e*P		**P**	**06 51 34.9**	**-0.2**
TIXI	**Tiksi**	**74.72**	**19**	*e*P		**P**	**06 51 34.9**	**-0.2**
BILL	**Bilibino**	**87.91**	**18**⇑	*e*P		**P**	**06 52 45.6**	**+0.5**
BILL				*e*			06 52 50.8	
BILL				*e*			06 56 16.5	
BILL				*e*PPP	PPP		06 58 08.4	
BILL				pmax	pmax			
	comp=Z,5.0nm,1.4s							
BILL	**Bilibino**	**87.91**	**18**	*e*P		**P**	**06 52 45.6**	**+0.5**
	comp=Z,5.0nm,1.4s							
YKA	**Yellowknife Ar**	**100.52**	**349**	P		**Pdif**	**06 53 43.2**	**+0.2**
	comp=Z,0.2nm,1.0s,baz=33,slow=4.6,SNR=3.0							
MCMT	**McKenzie Canyo**	**116.16**	**340**	*e*PKIKP		**PKPdf**	**06 58 37.7**	**-1.9**
MCMT	**McKenzie Canyo**	**116.16**	**340**	*e*PKPdf		**PKPdf**	**06 58 37.7**	**-1.9**
WVOR	**Wild Horse Val**	**120.07**	**344**	*e*PKIKP		**PKPdf**	**06 58 45.8**	**-1.2**
WVOR	**Wild Horse Val**	**120.07**	**344**	*e*PKPdf		**PKPdf**	**06 58 45.8**	**-1.2**
MNTX	**Cornudas Mount**	**124.01**	**327**	*e*PKIKP		**PKPdf**	**06 58 53.1**	**-1.6**
MNTX	**Cornudas Mount**	**124.01**	**327**	*e*PKPdf		**PKPdf**	**06 58 53.1**	**-1.6**
TX31	**Lajitas Ar. Si**	**124.86**	**323**	*e*PKIKP		**PKPdf**	**06 58 54.5**	**-2.0**
TX31	**Lajitas Ar. Si**	**124.86**	**323**	*e*PKPdf		**PKPdf**	**06 58 54.5**	**-2.0**

NNC 30 06:40:46.9±5.2, 35°98'N×69°40'E, h0km, mb3.5, mpv3.2, 6C-5D, Error ellipse: s-maj=39.0km s-min=29.1km az=17.0, Hindu Kush region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZET	**Dzherino**	**2.86**	**351**	⇑P	Pn	06 41 34.3	+0.5
	3.7nm,0.3s						
DZET				⇓S	Sn	06 42 11.1	+2.0
	25nm,0.5s						
SFK	**Sufi-Kurgan**	**5.17**	**38**	⇑P	Pn	06 42 06.5	+0.7
	0.9nm,0.2s						
SFK				⇑S	Sn	06 43 08.1	+1.9
	3.6nm,0.2s						
MNAS	**Manas**	**6.93**	**19**	⇓P	Pn	06 42 29.7	-0.1
	0.4nm,0.4s						
MNAS				⇓S	Sn	06 43 49.1	-0.4
	2.4nm,0.8s						
KK31	**Karatay Array**	**7.17**	**7**	⇑P	Pn	06 42 32.4	-0.6
	0.4nm,0.2s,baz=196,slow=14,SNR=11						
KK31				⇓S	Sn	06 43 54.9	-0.2
	0.4nm,0.3s,baz=196,slow=23,SNR=6.2						
AAK	**Ala-Archa**	**7.73**	**29**	⇑P	Pn	06 42 39.9	-0.9
	1.4nm,0.5s						
AAK				⇑S	Sn	06 44 07.7	-1.4
	2.1nm,0.5s						
AB31	**Akbulak array**	**14.97**	**335**	⇓P	Pn	06 44 16.4	-3.2
	0.1nm,0.2s,baz=162,slow=12,SNR=6.2						

IDC 30 07:02:57.7±2.8, 16°82S×175°70W, h225km±44km, mb3.5/3, mb1 3.8/4, mb1mx3.1/38, mbtmp4.1/4, Error ellipse: s-maj=248.7km s-min=23.6km az=143.0, Tonga Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AFI	**Afiamalu**	**4.76**	**53**	P	Pn	07 04 11.7	+1.8
	3.9nm,0.3s,baz=243,slow=9.0,SNR=7.1						
AFI				S	S	07 05 06.4	-0.4
	16nm,0.3s,baz=240,slow=20,SNR=8.4						
WRA	**Warramunga Arr**	**47.38**	**258**	P	P	07 11 09.5	-0.2
	1.4nm,0.5s,baz=96,slow=7.0,SNR=7.2						
ASAR	**Alice Springs**	**47.58**	**253**	P	P	07 11 11.0	-0.3
	5.6nm,0.6s,baz=88,slow=9.0,SNR=46						
ILAR	**Eielson Array**	**84.27**	**12**	P	P	07 15 03.5	-0.2
	0.3nm,0.6s,baz=220,slow=4.8,SNR=4.5						
BRTR	**Keskin Array B**	**145.79**	**318**	PKPbc	PKPbc	07 22 10.4	-0.4
	0.4nm,0.5s,baz=173,slow=2.5,SNR=3.5						

MEX 30 07:17:16.6±0.3, 28°72N×112°70W, h5km±12km, MD4.1, Gulf of California

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SRIG	**Santa Rosalia**	**1.45**	**164**	*e*P	Pn	07 17 39.9	-3.6
SRIG				*e*S	Sb	07 17 57.9	-5.0
HSIG		**1.57**	**79**	*i* P	Pn	07 17 41.2	-3.9
HSIG				*e*S	Sn	07 18 01.2	-4.6
CBX	**Cerro Bola**	**4.95**	**317**	*e*P	Pn	07 18 28.8	-2.9

*NNC **30** 07:23:39.3±1.1, 45°53N×82°49E, h0km, mb3.5, mpv3.5, Error ellipse: s-maj=9.5km s-min=4.8km az=113.0*
*SOME **30** 07:23:42.5, 45°40N×82°45E, h15km*
ISC 30 07:23:38.7±1.3, 45°41N±0°05×82°43E±0°05, h16km±12km, n28, σ1°34/44, 7C-8D, Kazakhstan-Xinjiang border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MK31	**Makanchi Array**	**1.39**	**356**	⇓P	**Pn**	**07 24 03.2**	**-0.1**
	13nm,0.2s,baz=173,slow=14,SNR=1682						
MK31				⇑S	**Sn**	**07 24 20.8**	**-0.6**
	31nm,0.2s,baz=173,slow=24,SNR=8.9						
DJR	**Jarkent**	**2.16**	**241**	⇓*i*P	**Pg**	**07 24 21.5**	**+1.3**
	48nm,0.5s						
DJR				*e*S	**Sg**	**07 24 50.5**	**+2.3**
	147nm,0.5s						
KAPS	**Kapalarasan**	**2.17**	**268**	*e*P	**Pg**	**07 24 21.4**	**+1.2**
	30nm,0.3s						
KAPS				⇓*i*S	**Sg**	**07 24 49.6**	**+1.2**
	117nm,0.3s						
ZSN	**Zaisan**	**2.45**	**33**	*e*P	**Pg**	**07 24 25.5**	**-0.1**
	24nm,0.3s						
ZSN				⇓*i*S	**Sg**	**07 24 57.0**	**-0.5**
	75nm,0.3s						
KTMS	**Ketmen**	**2.46**	**218**	*e*P	**Pg**	**07 24 26.6**	**+0.7**
	1.8nm,0.2s						
KTMS				*e*S	**Sg**	**07 24 58.3**	**+0.4**
	6.9nm,0.3s						
TDK	**Taldyqorghan**	**2.87**	**263**	*e*P	**Pg**	**07 24 34.3**	**+0.6**
	51nm,0.5s						
TDK				*e*S	**Sg**	**07 25 10.9**	**0.0**
	164nm,0.7s						
SHLS	**Shalkode**	**2.90**	**220**	*e*P	**Pg**	**07 24 34.7**	**+0.4**
	30nm,0.4s						
SHLS				*e*S	**Sg**	**07 25 12.9**	**+1.0**
	106nm,0.5s						
PDGK	**Podgornoye**	**2.97**	**226**	⇓Pg	**Pg**	**07 24 35.6**	**+0.1**
	4.5nm,0.3s						
PDGK				⇓Lg	Lg	07 25 15.2	
	29nm,0.5s						
MNBS	**Baschi**	**3.16**	**246**	*e*P	**Pg**	**07 24 39.1**	**-0.2**
	0.9nm,0.4s						
MNBS				*e*S	**Sg**	**07 25 18.5**	**-1.8**
	9.9nm,0.6s						
KPKS	**Kokpek**	**3.31**	**235**	*e*P	**Pg**	**07 24 41.2**	**-0.9**
	26nm,0.7s						
KPKS				*e*S	**Sg**	**07 25 24.0**	**-1.0**
	194nm,0.8s						
UZB	**Uzynbulak**	**3.33**	**228**	*e*P	**Pg**	**07 24 41.4**	**-1.1**
	9.4nm,0.5s						
UZB				*e*S	**Sg**	**07 25 23.6**	**-2.1**
	37nm,0.5s						
ARXS	**Arharly**	**3.49**	**252**	*e*P	**Pg**	**07 24 45.2**	**-0.2**
	0.8nm,0.2s						
ARXS				*e*S	**Sg**	**07 25 28.9**	**-1.8**
	6.0nm,0.5s						
SATY	**Saty**	**3.73**	**232**	*e*P	**Pg**	**07 24 49.3**	**-0.7**
	18nm,0.4s						
SATY				⇓*i*S	**Sg**	**07 25 37.4**	**-0.9**
	101nm,0.5s						
CHKK	**Chushkaly**	**4.17**	**250**	*e*P	**Pg**	**07 24 58.1**	**-0.4**
	2.2nm,0.8s						
CHKK				*e*S	**Sg**	**07 25 51.0**	**-1.5**
	2.0nm,0.4s						
KOTS	**Kotyrbulak**	**4.39**	**242**	*e*P	**Pg**	**07 25 02.3**	**-0.5**
KOTS				*e*S	**Sg**	**07 25 58.4**	**-1.3**
KTBS	**Karatobe**	**4.44**	**250**	*e*P	**Pg**	**07 25 02.5**	**-1.2**
KTBS				*e*S	**Sg**	**07 25 58.5**	**-2.8**
MDOK	**Medeo**	**4.47**	**242**	*e*P	**Pg**	**07 25 03.3**	**-0.9**
	7.6nm,0.5s						
MDOK				*e*S	**Sg**	**07 25 59.5**	**-2.7**
	18nm,0.6s						
TNSS	**Tian-Shan**	**4.60**	**241**	*e*P	**Pg**	**07 25 07.9**	**+1.2**
	7.9nm,0.5s						
TNSS				*e*S	**Sg**	**07 26 09.8**	**+3.5**
	8.5nm,0.4s						

KUU	**Kurty**	**4.60**	**253**	*e*P		**Pg**	**07 25 06.9**	**+0.2**
	7.7nm,0.6s							
KUU				*e*S		**Sg**	**07 26 05.8**	**-0.5**
	25nm,0.3s							
IZV	**Izvestkoviy**	**4.81**	**242**	*e*P		**Pg**	**07 25 10.6**	**-0.1**
	0.4nm,0.5s							
IZV				*e*S		**Sg**	**07 26 12.7**	**-0.2**
	2.1nm,0.5s							
DGS	**Degeres**	**5.24**	**248**	*e*P		**Pg**	**07 25 17.8**	**-1.2**
	0.5nm,0.5s							
DGS				*e*S		**Sg**	**07 26 25.1**	**-1.9**
	1.2nm,0.7s							
TKM2	**Tokmak 2**	**5.51**	**246**		Pg	**Pg**	**07 25 24.5**	**+0.4**
TKM2				⇑Lg	Lg		07 26 33.9	
	9.1nm,0.6s							
KURK	**Kurchatov**	**5.89**	**336**	⇓Lg	Lg		07 26 42.3	
	22nm,0.5s							
AAK	**Ala-Archa**	**6.36**	**247**	⇑Lg	Lg		07 27 09.2	
	3.3nm,0.6s							
OTUK	**Ortayu**	**7.48**	**296**	⇑Lg	Lg		07 27 33.7	
	9.9nm,0.8s							
KK31	**Karatay Array**	**8.86**	**259**	⇑Lg	Lg		07 28 22.8	
	1.4nm,0.5s,baz=70,slow=27,SNR=4.5							
ZRNK	**Zerenda**	**11.56**	**316**	⇑Pn	**Pn**		**07 26 22.7**	**-0.2**
	1.1nm,0.6s							
ZRNK				⇑Lg	Lg		07 29 41.7	
	0.6nm,0.5s							
AB31	**Akbulak array**	**15.71**	**292**	P	**P**		**07 27 25.1**	**+2.1**
	0.1nm,0.3s,baz=94,slow=7.7,SNR=4.2							

IDC 30 07:27:23.0±2.8, 42°85S×75°45W, h0km, mb4.0/3, mb1 4.1/4, mb1mx3.7/28, mbtmp4.0/4, ML3.9/1, MS3.9/1, Ms1 4.1/1, ms1mx3.4/19, Error ellipse: s-maj=165.1km s-min=43.4km az=141.0, Off coast of southern Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PLCA	**Paso Flores**	**4.23**	**62**	Pn	Pn	07 28 28.8	0.0
	1.6nm,0.3s,baz=250,slow=15,SNR=68						
PLCA				Sn	Sn	07 29 20.1	+1.2
	3.3nm,0.3s,baz=312,slow=20,SNR=3.1						
CPUP	**Villa Florida**	**22.15**	**48**	P	P	07 32 20.3	0.0
	4.7nm,0.7s,baz=225,slow=11,SNR=14						
LPAZ	**La Paz**	**27.20**	**16**	LR	LR	07 43 27.5	
	comp=Z,293nm,21.1s,baz=48,slow=36						
DBIC	**Dimbokro**	**80.53**	**72**	P	P	07 39 37.3	+0.1
	1.8nm,0.7s,baz=173,slow=8.1,SNR=3.1						
TORD	**Torodi Ar. Bea**	**89.64**	**72**	P	P	07 40 22.3	-0.6
	0.4nm,0.6s,baz=223,slow=5.6,SNR=3.1						
MKAR	**Makanchi Array**	**163.73**	**68**	PKPab	PKPab	07 48 19.8	+0.2
	0.6nm,0.7s,baz=279,slow=4.8,SNR=7.6						

IDC 30 07:27:58.9±3.4, 2°88S×101°22E, h0km, mb3.6/4, mb1 3.8/4, mb1mx3.5/31, mbtmp3.6/4, MS3.4/1, Ms1 3.4/1, ms1mx2.7/38, Error ellipse: s-maj=145.8km s-min=23.4km az=56.0, Southern Sumatera

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DAV	**Davao City (W)**	**26.24**	**68**	LR	LR	07 43 36.7	
	comp=Z,79nm,18.3s,baz=324,slow=36						
H08S2	**Diego Garcia H**	**28.99**	**259**	T	T	08 03 08.9	
	baz=83,slow=75,SNR=484						
H08S3	**Diego Garcia H**	**28.99**	**259**	T	T	08 03 10.3	
	baz=83,slow=75,SNR=444						
H08S1	**Diego Garcia H**	**29.01**	**259**	T	T	08 03 11.2	
	baz=83,slow=75,SNR=515						
H01W3	**Cape Leeuwin H**	**34.03**	**161**	T	T	08 10 02.2	
	baz=336,slow=76,SNR=4.7						
H01W2	**Cape Leeuwin H**	**34.05**	**161**	T	T	08 10 12.6	
	baz=336,slow=76,SNR=5.0						
H01W1	**Cape Leeuwin H**	**34.05**	**161**	T	T	08 10 08.1	
	baz=336,slow=76,SNR=4.1						
WRA	**Warramunga Arr**	**36.50**	**120**	P	P	07 35 05.1	-1.2
	0.3nm,0.3s,baz=304,slow=8.5,SNR=8.6						
ASAR	**Alice Springs**	**37.75**	**126**	P	P	07 35 17.7	+0.8
	0.4nm,0.3s,baz=301,slow=7.8,SNR=17						
SONM	**Songino Array**	**50.70**	**5**	P	P	07 37 01.8	+1.4
	1.0nm,0.5s,baz=185,slow=9.6,SNR=5.2						
MKAR	**Makanchi Array**	**52.20**	**344**	P	P	07 37 10.7	-0.8
	0.5nm,0.7s,baz=146,slow=7.3,SNR=5.7						
TXAR	**Lajitas Array**	**144.63**	**39**	PKP	PKPab	07 47 36.4	-0.5
	0.7nm,0.8s,baz=315,slow=0.9,SNR=8.3						

*ISK **30** 07:30:27.8, 41°17N×34°21E, h8km, MD2.8*
*ISCJB **30** 07:30:28.5±0.6, 41°16N±0°04×34°23E±0°04, h4km±7km, Error ellipse: s-maj=7.6km s-min=3.8km az=147.0*
*CSEM **30** 07:30:28.4±0.2, 41°17N×34°21E, h10km, MD2.8, Error ellipse: s-maj=4.6km s-min=2.5km az=145.0*
*DDA **30** 07:30:29.2, 41°11N×34°23E, h7km, Md2.6*
ISC 30 07:30:28.6±1.0, 41°17N±0°04×34°22E±0°03, h9km±9km, n20, σ0°65/36, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TOS	**Tosya**	**0.20**	**229**	PG	**Pg**	**07 30 32.3**	**-0.4**
TOS				*e*SG	**Sg**	**07 30 35.5**	**0.0**
TOS	**Tosya**	**0.20**	**229**	*i* Pg	**Pg**	**07 30 32.3**	**-0.4**
TOS				*e*Sg	**Sg**	**07 30 35.5**	**0.0**
ILGA	**Ilgaz**	**0.40**	**253**	*i* P	**Pg**	**07 30 36.4**	**0.0**
ILGA				*i* S	**Sg**	**07 30 43.2**	**+1.5**
ILGA	**Ilgaz**	**0.40**	**253**	P	**Pg**	**07 30 36.4**	**0.0**
ILGA				S	**Sg**	**07 30 43.2**	**+1.5**
BYBT	**Boyabat**	**0.51**	**54**	PG	**Pg**	**07 30 38.4**	**-0.1**
BYBT				*e*SG	**Sg**	**07 30 46.0**	**+0.8**
BYBT	**Boyabat**	**0.51**	**54**	*i* Pg	**Pg**	**07 30 38.4**	**-0.1**
BYBT				*e*Sg	**Sg**	**07 30 46.0**	**+0.8**
BOYT	**Boyabat**	**0.57**	**64**	*i* P	**Pg**	**07 30 39.3**	**-0.4**
BOYT				*i* S	**Sg**	**07 30 47.1**	**-0.1**
BOYT	**Boyabat**	**0.57**	**64**	P	**Pg**	**07 30 39.3**	**-0.4**
BOYT				S	**Sg**	**07 30 47.1**	**-0.1**
ELDT	**Eldivan**	**0.91**	**222**	*i* P	**Pb**	**07 30 46.1**	**-0.4**
ELDT				*i* S	**Sb**	**07 30 58.6**	**-0.2**
ELDT	**Eldivan**	**0.91**	**222**	P	**Pb**	**07 30 46.1**	**-0.4**
ELDT				S	**Sb**	**07 30 58.6**	**-0.2**
CORM	**Corum**	**1.03**	**162**	*e*PG	**Pb**	**07 30 48.3**	**-0.4**
CORM				*e*SG	**Sg**	**07 31 03.0**	**+1.1**
CORM	**Corum**	**1.03**	**162**	*e*Pg	**Pb**	**07 30 48.3**	**-0.4**
CORM				*e*Sg	**Sg**	**07 31 03.0**	**+1.1**
COAL	**Corum-Alaca**	**1.08**	**147**	*i* P	**Pb**	**07 30 48.5**	**-1.0**
COAL				*i* S	**Sb**	**07 31 03.7**	**0.0**
COAL	**Corum-Alaca**	**1.08**	**147**	P	**Pb**	**07 30 48.5**	**-1.0**
COAL				S	**Sb**	**07 31 03.7**	**0.0**
SNOP	**Sinop**	**1.13**	**41**	*e*PN	**Pn**	**07 30 50.0**	**-0.5**
SNOP	**Sinop**	**1.13**	**41**	*e*Pn	**Pn**	**07 30 50.0**	**-0.5**
HAVZ	**Havza**	**1.14**	**94**	*i* P	**Pb**	**07 30 51.1**	**+0.7**
HAVZ				*i* S	**Sn**	**07 31 06.2**	**-0.1**
HAVZ	**Havza**	**1.14**	**94**	P	**Pb**	**07 30 51.1**	**+0.7**
HAVZ				S	**Sn**	**07 31 06.2**	**-0.1**
YOZ	**Yozgat**	**1.74**	**151**	*e*PN	**Pn**	**07 30 59.5**	**+0.4**
YOZ	**Yozgat**	**1.74**	**151**	*e*Pn	**Pn**	**07 30 59.5**	**+0.4**

*ROM **30** 07:43:08.8±0.2, 44°94N×12°14E, h33km±2km, Md2.6/6, Ml2.1/6, Error ellipse: s-maj=5.4km s-min=1.5km az=85.0*
*ISCJB **30** 07:43:09.4±0.6, 44°94N±0°03×12°11E±0°08, h42km±9km, Error ellipse: s-maj=9.8km s-min=4.6km az=177.4*
*CSEM **30** 07:43:09.7±0.1, 44°93N×12°06E, h40km, ML3.1/5, Error ellipse: s-maj=5.2km s-min=2.7km az=85.0*
ISC 30 07:43:09.9±2.6, 44°94N±0°03×12°06E±0°05, h38km±4km, n35, σ0°67/47, 1D, Northern Italy

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ADRI	**Adria, Italy**	**0.11**	**345**	*e*Pg	Pn	07 43 16.4	-4.5
ADRI				*e*Sg	Sn	07 43 21.6	-9.4
ADRI	**Adria, Italy**	**0.11**	**345**	*e*Pg	Pn	07 43 16.4	-4.5
ADRI				*e*Sg	Sn	07 43 21.6	-9.4
CMPO	**Campotto Po**	**0.40**	**207**	Pg	**Pn**	**07 43 18.8**	**-0.2**
CMPO				Sg	**Sn**	**07 43 25.8**	**+0.1**
CMPO	**Campotto Po**	**0.40**	**207**	Pg	**Pn**	**07 43 18.8**	**-0.2**
CMPO				Sg	**Sn**	**07 43 25.8**	**+0.1**
TEOL	**Teolo**	**0.51**	**327**	Pg	**Pn**	**07 43 20.2**	**-0.5**
TEOL				Sg	**Sn**	**07 43 28.1**	**-0.2**
	127nm,0.3s						
TEOL	**Teolo**	**0.51**	**327**	Pg	**Pn**	**07 43 20.2**	**-0.5**
TEOL				Sg	**Sn**	**07 43 28.1**	**-0.2**
	127nm,0.3s						
TEOL	**Teolo**	**0.51**	**327**	⇓*e*Pg	**Pn**	**07 43 20.2**	**-0.5**
TEOL				*e*Sg	**Sn**	**07 43 27.9**	**-0.3**

MARN	**Marana (Italy)**	**0.92**	**320**	*e*Pg		**Pn**	**07 43 25.9**	**-0.5**
MARN	**Marana (Italy)**	**0.92**	**320**	*e*Pg		**Pn**	**07 43 25.9**	**-0.5**
CGRP	**Cima Grappa**	**0.96**	**349**	Pg		**Pn**	**07 43 27.0**	**-0.1**
CGRP				Sg		**Sn**	**07 43 40.2**	**+0.5**
	37nm,0.6s							
CGRP	**Cima Grappa**	**0.96**	**349**	Pg		**Pn**	**07 43 27.0**	**-0.1**
CGRP				Sg		**Sn**	**07 43 40.2**	**+0.5**
	37nm,0.6s							
CGRP	**Cima Grappa**	**0.96**	**349**	*e*Pg		**Pn**	**07 43 27.1**	**-0.1**
CGRP				*e*Sg		**Sn**	**07 43 40.3**	**+0.5**
ROVR	**Rover˜¤ Verone**	**0.99**	**316**	Pg		**Pn**	**07 43 26.8**	**-0.7**
ROVR				Sg		**Sn**	**07 43 42.0**	**+1.6**
	46nm,0.1s							
ROVR	**Rover˜¤ Verone**	**0.99**	**316**	Pg		**Pn**	**07 43 26.8**	**-0.7**
ROVR				Sg		**Sn**	**07 43 42.0**	**+1.6**
	46nm,0.1s							
VMG	**Vicchio**	**1.04**	**201**	Pg		**Pn**	**07 43 28.2**	**+0.2**
VMG				Sg		**Sn**	**07 43 42.9**	**+1.6**
	9.0nm,0.1s							
VMG	**Vicchio**	**1.04**	**201**	Pg		**Pn**	**07 43 28.2**	**+0.2**
VMG				Sg		**Sn**	**07 43 42.9**	**+1.6**
	9.0nm,0.1s							
SFI	**Santa Sofia**	**1.04**	**188**	Pg		**Pn**	**07 43 27.7**	**-0.3**
SFI				Sg		**Sn**	**07 43 41.7**	**+0.4**
	16nm,0.3s							
SFI	**Santa Sofia**	**1.04**	**188**	Pg		**Pn**	**07 43 27.7**	**-0.3**
SFI				Sg		**Sn**	**07 43 41.7**	**+0.4**
	16nm,0.3s							
DDS	**Dosso del Somm**	**1.13**	**327**	*e*Pg		**Pn**	**07 43 28.9**	**-0.4**
DDS	**Dosso del Somm**	**1.13**	**327**	*e*Pg		**Pn**	**07 43 28.9**	**-0.4**
PANI	**Panarotta**	**1.23**	**336**	*e*Pg		**Pn**	**07 43 30.8**	**0.0**
PANI	**Panarotta**	**1.23**	**336**	*e*Pg		**Pn**	**07 43 30.8**	**0.0**
MAGA	**Magasa**	**1.31**	**310**	Pg		**Pn**	**07 43 32.0**	**+0.2**
MAGA	**Magasa**	**1.31**	**310**	Pg		**Pn**	**07 43 32.0**	**+0.2**
STAL	**STALIGIAL**	**1.40**	**19**	Pg		**Pn**	**07 43 33.0**	**0.0**
	31nm,0.2s							
STAL	**STALIGIAL**	**1.40**	**19**	Pg		**Pn**	**07 43 33.0**	**0.0**
	31nm,0.2s							
PIEI	**Pieia**	**1.44**	**166**	Pg		**Pn**	**07 43 33.6**	**+0.1**
PIEI	**Pieia**	**1.44**	**166**	Pg		**Pn**	**07 43 33.6**	**+0.1**
SABO	**M.te Sabotino**	**1.51**	**46**	*e*Pg		**Pn**	**07 43 35.0**	**+0.5**
SABO	**M.te Sabotino**	**1.51**	**46**	*e*Pg		**Pn**	**07 43 35.0**	**+0.5**
SSFR	**Montelago di S**	**1.59**	**161**	Pg		**Pn**	**07 43 34.3**	**-1.3**
	14nm,0.2s							
SSFR	**Montelago di S**	**1.59**	**161**	Pg		**Pn**	**07 43 34.3**	**-1.3**
	14nm,0.2s							
DRE	**Drenchia**	**1.67**	**41**	*e*Pg		**Pn**	**07 43 36.5**	**-0.2**
DRE	**Drenchia**	**1.67**	**41**	*e*Pg		**Pn**	**07 43 36.5**	**-0.2**
ZOU	**Zoufplan**	**1.75**	**21**	*e*Pg		**Pn**	**07 43 37.0**	**-0.9**

*ISCJB **30** 07:44:28.4±0.4, 16°01S±0°09×173°5W±0°1, h10km, mb4.4/16, Error ellipse: s-maj=19.4km s-min=7.1km az=38.9*
*IDC **30** 07:44:28.5±0.7, 15°98S×173°54W, h0km, mb4.2/10, mb1 4.4/11, mb1mx4.2/28, mbtmp4.2/11, ML4.0/1, MS3.1/2, Ms1 3.1/2, ms1mx2.9/46, Error ellipse: s-maj=40.5km s-min=15.2km az=135.0*
*NEIC **30** 07:44:29.8±0.4, 16°10S×173°29W, h10km, mb4.5/6, Error ellipse: s-maj=15.2km s-min=9.7km az=134.0*
ISC 30 07:44:29.3±0.6, 16°09S±0°09×173°3W±0°1, h10km, n27, σ1°33/28, mb4.4/16, Tonga Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AFI	**Afiamalu**	**2.62**	**34**	Pn	**Pn**	**07 45 11.2**	**-0.5**
	26nm,0.3s,baz=199,slow=18,SNR=35						
AFI				Sn	**Sn**	**07 45 41.9**	**-1.8**
	111nm,0.3s,baz=135,slow=20,SNR=13						
AFI				LR	LR	07 46 14.2	
	comp=Z,357nm,21.3s,baz=226,slow=40						
AFI	**Afiamalu**	**2.62**	**34**	*e*Pn	**Pn**	**07 45 11.3**	**-0.5**
AFI				*e*Sn	**Sn**	**07 45 43.6**	**-0.1**
RAR	**Rarotonga**	**13.79**	**114**	*e*Pn	**Pn**	**07 47 43.7**	**-1.3**
DZM	**Mont Dzumac**	**20.04**	**250**	P	Pn	07 49 06.0	+1.4
	0.2nm,0.3s,baz=87,slow=18,SNR=3.5						
DZM				LR	LR	07 54 38.9	
	comp=Z,58nm,20.2s,baz=66,slow=31						
URZ	**Urewera**	**23.64**	**199**	P	**P**	**07 49 40.0**	**-0.8**
	5.3nm,0.3s,baz=110,slow=4.0,SNR=5.2						
URZ	**Urewera**	**23.64**	**199**	*e*P	**P**	**07 49 40.1**	**-0.8**
	5.1nm,0.5s						
OXZ	**Oxford**	**29.89**	**202**	*e*P	**P**	**07 50 37.8**	**+0.6**
MQZ	**McQueen's Vall**	**30.01**	**201**	*e*P	**P**	**07 50 40.3**	**+2.1**
RPZ	**Rata Peaks**	**30.58**	**203**	P	**P**	**07 50 46.0**	**+2.7**
	4.5nm,0.6s,baz=38,slow=4.9,SNR=5.4						
STKA	**Stephens Creek**	**43.78**	**241**	P	**P**	**07 52 34.5**	**-1.0**
	1.9nm,0.5s,baz=66,slow=10.0,SNR=6.9						
WRAB	**Tennant Creek**	**49.78**	**257**	*e*P	**P**	**07 53 22.3**	**-0.3**
	7.4nm,1.4s						
WRA	**Warramunga Arr**	**49.79**	**257**	P	**P**	**07 53 21.3**	**-1.4**
	0.5nm,0.3s,baz=96,slow=6.4,SNR=23						
ASAR	**Alice Springs**	**50.00**	**252**	P	**P**	**07 53 23.1**	**-1.2**
	4.6nm,0.5s,baz=88,slow=8.4,SNR=64						
GUMO	**Guam**	**50.79**	**303**	*e*P	**P**	**07 53 29.9**	**-0.

COAL	**Corum-Alaca**	**1.27**	**25**	P		**Pg**	**07 52 28.7**	**-0.1**
COAL				S		**Sn**	**07 52 47.3**	**-0.1**
CUSAR	**Sarkisla-SIVAS**	**1.56**	**78**	*i* P		**Pg**	**07 52 34.5**	**+0.1**
CUSAR				*i* S		**Sb**	**07 52 56.2**	**+1.6**
CUSAR	**Sarkisla-SIVAS**	**1.56**	**78**	P		**Pg**	**07 52 34.5**	**+0.1**
CUSAR				S		**Sb**	**07 52 56.2**	**+1.6**
KIZT	**Kizilcal**	**1.88**	**264**	*e*PG		Pn	07 52 22.5	-16
ILGA	**Ilgaz**	**1.99**	**348**	*i* P		**Pb**	**07 52 41.6**	**-0.1**
ILGA				*i* S		**Sg**	**07 53 08.8**	**+0.4**
ILGA	**Ilgaz**	**1.99**	**348**	P		**Pb**	**07 52 41.6**	**-0.1**
ILGA				S		**Sg**	**07 53 08.8**	**+0.4**

NEIC ***30*** *07:57:51.2, 16.°04N×97.°14W, h12km, MD4.0(MEX), After MEX.*

MEX 30 07:57:51.2±0.4, 16.°04N×97.°14W, h12km±8km, MD4.0, Oaxaca

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
PANG	**Puerto Angel**	**0.74**	**120**	*e*P	Pg	07 58 03.1	-2.4
PANG				*i* S	Sg	07 58 13.4	-1.9
PNIG	**Pinotepa**	**1.01**	**291**	*e*P	Pb	07 58 07.5	-3.2
PNIG				*e*S	Sg	07 58 19.8	-4.1
PNIG	**Pinotepa**	**1.01**	**291**	*e*P	Pb	07 58 07.5	-3.2
PNIG				*e*S	Sg	07 58 19.8	-4.1
HUIG	**Huatulco**	**1.03**	**105**	*e*P	Pb	07 58 07.6	-3.3
HUIG				*e*S	Sb	07 58 19.6	-4.8
HUIG	**Huatulco**	**1.03**	**105**	*e*P	Pb	07 58 07.6	-3.3
HUIG				*e*S	Sb	07 58 19.6	-4.8
OXBJ	**Oaxaca**	**1.10**	**21**	*e*P	Pb	07 58 08.8	-3.6
OXBJ				*i* S	Sb	07 58 22.6	-4.1
VHO	**Vista Hermosa**	**1.10**	**21**	*e*P	Pb	07 58 08.8	-3.5
VHO				*e*S	Sb	07 58 22.3	-4.5
VHO	**Vista Hermosa**	**1.10**	**21**	*e*P	Pb	07 58 08.8	-3.5
VHO				*e*S	Sb	07 58 22.3	-4.5
TLIG	**Tlapa**	**2.04**	**318**	*e*P	Pn	07 58 23.3	-2.3
TLIG				*i* S	Sn	07 58 48.4	-2.7
ACX	**Acapulco**	**2.74**	**288**	*i* P	Pn	07 58 27.1	-7.9
ACX				*e*S	Sn	07 59 04.4	-3.6
ACX	**Acapulco**	**2.74**	**288**	*i* P	Pn	07 58 27.1	-7.9
ACX				*e*S	Sn	07 59 04.4	-3.6
ACP2	**Acapulco**	**2.76**	**288**	*i* S	Sn	07 59 01.1	-7.6
PCIG		**3.79**	**94**	*e*P	Pn	07 58 47.8	-1.7
PCIG		**3.79**	**94**	*e*P	Pn	07 58 47.8	-1.7
TGIG		**3.93**	**79**	*e*P	Pb	07 58 56.0	-4.4
TGIG				*e*S	Sb	07 59 49.0	+1.0
TGIG		**3.93**	**79**	*e*P	Pb	07 58 56.0	-4.4
TGIG				*e*S	Sb	07 59 49.0	+1.0

JMA 30 07:58:51.1±0.1, 37.°40N×141.°57E, h14km±2km, M2.7, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JFK	**Kawauchi**	**0.56**	**267**	P	Pg	07 59 01.9	-0.1
JFK				*e*S	Sb	07 59 10.3	-0.2
ONAJ	**Iwakimizuishiy**	**0.68**	**244**	P	Pg	07 59 04.3	-0.1
ONAJ				S	Sg	07 59 13.3	-0.2
JMM	**Marumori**	**0.77**	**307**	P	Pg	07 59 05.6	-0.5
JMM				S	Sg	07 59 16.1	-0.2
JFT	**Otama**	**0.99**	**277**	P	Pb	07 59 09.7	-0.3
JFT				S	Sb	07 59 22.7	-0.2
JOU	**Okura**	**1.20**	**324**	P	Pn	07 59 13.5	0.0
JOU				S	Sn	07 59 29.6	0.0

IDC ***30*** *07:59:22.2±0.7, 37.°52N×143.°63E, h0km, mb3.7/10, mb1 4.0/13, mb1mx3.8/41, mbtmp3.8/13, ML3.7/3, MS3.0/4, Ms1 3.0/4, ms1mx2.7/54, Error ellipse: s-maj=24.5km s-min=15.5km az=119.0*

ISCJB ***30*** *07:59:25.2±0.6, 37.°50N±0.°10×143.°62E±0.°08, h33km, mb3.7/10, Error ellipse: s-maj=14.8km s-min=7.0km az=154.7*

ISC 30 07:59:26.9±0.7, 37.°44N±0.°09×143.°68E±0.°09, h35km, n16, σ1§44/17, mb3.7/10, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
MJAR	**Matsushiro Arr**	**4.47**	**260**	Pn	**Pn**	**08 00 32.2**	**0.0**
	4.6nm,0.3s,baz=88,slow=14,SNR=23						
MJAR				Sn	**Sn**	**08 01 24.3**	**+1.2**
	2.7nm,0.3s,baz=86,slow=27,SNR=6.0						
MJAR				LR	LR	08 02 27.8	
	comp=Z,180nm,20.5s,baz=90,slow=42						
MAT	**Matsushiro**	**4.47**	**260**	P	**Pn**	**08 00 32.5**	**+0.3**
MAT				S	**Sn**	**08 01 22.2**	**-0.9**
JHJ	**Hachijo jima 2**	**5.36**	**218**	Pn	**Pn**	**08 00 44.5**	**+0.1**
	9.8nm,0.3s,baz=84,slow=18,SNR=15						
JHJ				Sn	**Sn**	**08 01 41.0**	**-3.9**
	25nm,0.3s,baz=90,slow=20,SNR=8.9						
ASAJ	**Asahikawa**	**6.72**	**353**	Pn	**Pn**	**08 01 00.7**	**-2.3**
	1.3nm,0.3s,baz=149,slow=11,SNR=5.1						
ASAJ				LR	LR	08 03 56.4	
	comp=Z,92nm,18.2s,baz=14,slow=41						
JNU	**Nakatsue**	**11.32**	**251**	LR	LR	08 06 17.9	
	comp=Z,67nm,20.3s,baz=299,slow=37						
KSRS	**Korea Array**	**12.53**	**275**	LR	LR	08 07 07.4	
	comp=Z,74nm,18.5s,baz=65,slow=37						
MKAR	**Makanchi Array**	**45.44**	**302**	P	**P**	**08 07 42.0**	**-0.2**
	0.8nm,0.8s,baz=94,slow=7.7,SNR=6.1						
ILAR	**Eielson Array**	**48.18**	**33**	P	**P**	**08 08 03.5**	**+0.2**
	0.9nm,0.8s,baz=267,slow=6.2,SNR=11						
INK	**Inuvik**	**53.20**	**27**	P	**P**	**08 08 42.0**	**+0.9**
	0.4nm,0.8s,baz=290,slow=4.9,SNR=3.4						
WRA	**Warramunga Arr**	**57.75**	**190**	P	**P**	**08 09 15.1**	**+0.8**
	3.6nm,0.7s,baz=8.5,slow=7.1,SNR=42						
ASAR	**Alice Springs**	**61.47**	**190**	P	**P**	**08 09 40.9**	**+0.9**
	1.0nm,0.7s,baz=9.4,slow=6.9,SNR=14						
YKA	**Yellowknife Ar**	**62.54**	**31**	P	**P**	**08 09 46.6**	**0.0**
	0.3nm,0.7s,baz=302,slow=6.8,SNR=10						
FINES	**FINESS Array B**	**69.29**	**333**	P	**P**	**08 10 30.0**	**-0.1**
	0.8nm,0.8s,baz=46,slow=8.2,SNR=3.9						
AKASG	**Malin Array Be**	**75.07**	**323**	P	**P**	**08 11 04.3**	**-0.6**
	0.4nm,0.4s,baz=50,slow=4.8,SNR=4.1						
PDAR	**Pinedale Array**	**76.08**	**47**	P	**P**	**08 11 11.8**	**+0.6**
	0.3nm,0.6s,baz=256,slow=3.4,SNR=4.7						
TXAR	**Lajitas Array**	**88.43**	**54**	P	**P**	**08 12 17.4**	**+1.6**
	0.2nm,0.6s,baz=289,slow=2.8,SNR=3.4						

NIED ***30*** *08:00:00, 39.°30N×142.°90E, h14km, Mw3.8 Best double couple: M0 5.78000×10^14 NP1:φs119.00000°, δ14.00000°, λ-85.00000°. NP2:φs294.00000°, δ76.00000°, λ-91.00000°.*

JMA 30 08:00:27.8±0.1, 39.°29N×142.°87E, h23km±2km, M3.5, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
MIYJ	**Miyakonagasawa**	**0.86**	**290**	P	Pb	08 00 44.0	-0.1
MIYJ				*e*S	Sb	08 00 55.3	+0.1
OFUJ	**Ofunato**	**0.96**	**258**	P	Pb	08 00 45.4	-0.3
JTH	**Tanohata**	**1.01**	**310**	P	Pn	08 00 46.2	-0.4
JOM	**Ohasama**	**1.24**	**279**	S	Sb	08 01 06.2	+0.2
JMK	**Ichinoseki**	**1.33**	**256**	S	Sb	08 01 08.8	+0.2
JKZ	**Kuzumaki**	**1.38**	**301**	P	Pb	08 00 52.5	-0.4
JKZ				*e*S	Sb	08 01 09.8	-0.3
JANG	**Nango**	**1.50**	**316**	P	Pn	08 00 53.7	+0.3
JANG				S	Sn	08 01 12.7	+0.5
JAH	**Hinai**	**1.94**	**298**	P	Pn	08 01 00.9	+1.5
JTM	**Tenmabayashi**	**2.04**	**318**	P	Pn	08 01 02.1	+1.4
JTM				S	Sb	08 01 28.0	-1.0
JKB	**Kayabe**	**2.95**	**332**	*e*S	Sn	08 01 50.1	+2.3
JCH	**Churui**	**3.34**	**6**	S	Sn	08 01 55.2	-2.4

NEIC ***30*** *08:05:22.5, 32.°22N×115.°28W, h7km, ML2.8(PAS), ML2.9(ECX), After ECX.*

ECX 30 08:05:22.5±0.5, 32.°22N×115.°28W, h7km, MD2.7, ML2.9, 1D, California-Baja California border region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
CPBX	**Cerro Prieto**	**0.20**	**354**	*e*P	Pg	08 05 25.7	-0.7
CPBX				*e*S	Sg	08 05 29.5	+0.4
CPBX				AML	AML	08 05 30.9	
	comp=N,11μm,0.2s						
CPBX				*e*		08 05 30.9	
DREC	**Desert Rsrch C**	**0.60**	**346**	*e*P	Pg	08 05 33.4	-0.6
WESC	**Westside Schoo**	**0.66**	**325**	*e*P	Pg	08 05 34.2	-1.0
ECBX	**El Chinero**	**0.77**	**165**	*e*P	Pg	08 05 35.0	-2.4
ECBX				*e*S	Sg	08 05 45.5	-1.9
ECBX				AML	AML	08 05 47.1	
	comp=N,409nm,0.5s						
ECBX				⇓*e*		08 05 47.1	
CBX	**Cerro Bola**	**1.18**	**275**	*e*P	Pg	08 05 42.9	-2.2
CBX				*e*S	Sg	08 05 58.7	-1.7
SPIG	**San Pedro Mart**	**1.18**	**188**	*e*P	Pg	08 05 42.7	-2.6
SPIG				*e*S	Sg	08 05 59.1	-1.6
SPX	**San Pedro Mart**	**1.19**	**188**	*e*P	Pg	08 05 43.1	-2.2
SPX				*e*S	Sg	08 05 59.5	-1.2
BAR	**Barrett**	**1.26**	**292**	*e*P	Pn	08 05 44.5	-2.1
BAR	**Barrett**	**1.26**	**292**	*e*Pg	Pn	08 05 44.7	-1.9
BAR				*e*Sg	Sg	08 06 00.6	-2.5
PFO	**Pinyon Flats O**	**1.70**	**325**	*e*Pn	Pn	08 05 49.2	-3.5
214A	**Organ Pipe Nat**	**2.11**	**97**	*e*Pn	Pn	08 05 59.6	+1.3
Y14A	**Wickenburg**	**2.56**	**48**	*e*Pn	Pb	08 06 07.5	-1.4

ISCJB ***30*** *08:06:07.6±0.6, 37.°04N±0.°03×140.°69E±0.°07, h6km±6km, mb3.2/3, Error ellipse: s-maj=10.3km s-min=4.5km az=20.4*

JMA ***30*** *08:06:07.5, 37.°04N×140.°66E, h7km±2km, M2.6*

IDC ***30*** *08:06:07.1±2.1, 36.°75N×140.°75E, h0km, mb3.3/3, mb1 3.4/4, mb1mx3.2/43, mbtmp3.2/4, ML2.5/1, Error ellipse: s-maj=39.2km s-min=24.2km az=66.0*

ISC 30 08:06:06.6±1.2, 37.°02N±0.°04×140.°61E±0.°05, h5km±10km, n11, σ0§65/18, mb3.4/3, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.17**	**60**	P	**Pg**	**08 06 10.3**	**+0.3**
ONAJ				S	**Sg**	**08 06 12.3**	**0.0**
JFK	**Kawauchi**	**0.41**	**31**	P	**Pg**	**08 06 14.7**	**+0.2**
JFK				S	**Sg**	**08 06 19.9**	**+0.1**
JHO	**Hitachi**	**0.41**	**185**	P	**Pb**	**08 06 16.0**	**-0.3**
JHO				S	**Sb**	**08 06 22.0**	**-0.8**
JFT	**Otama**	**0.55**	**336**	P	**Pb**	**08 06 18.3**	**-0.4**
JFT				S	**Sb**	**08 06 25.9**	**-1.0**
JMM	**Marumori**	**0.86**	**10**	P	**Pg**	**08 06 23.1**	**0.0**
JMM				S	**Sg**	**08 06 34.3**	**0.0**
JOU	**Okura**	**1.35**	**2**	P	**Pg**	**08 06 32.5**	**+0.1**
JOU				S	**Sn**	**08 06 49.7**	**-0.7**
MJAR	**Matsushiro Arr**	**1.99**	**257**	Pn	**Pb**	**08 06 43.1**	**-0.2**
	1.8nm,0.3s,baz=84,slow=18,SNR=12						
MJAR				Sn	**Sb**	**08 07 08.6**	**+0.3**
	4.6nm,0.3s,baz=83,slow=30,SNR=13						
MAT	**Matsushiro**	**1.99**	**257**	P	**Pb**	**08 06 43.3**	**0.0**
MAT				S	**Sg**	**08 07 10.1**	**-0.5**
SONM	**Songino Array**	**27.26**	**304**	P	P	08 11 56.7	+4.8
	0.6nm,0.7s,baz=104,slow=9.1,SNR=2.6						
MKAR	**Makanchi Array**	**43.58**	**302**	P	**P**	**08 14 13.2**	**+1.7**
	0.1nm,0.3s,baz=78,slow=9.6,SNR=2.4						
WRA	**Warramunga Arr**	**56.96**	**187**	P	**P**	**08 15 52.5**	**-0.6**
	0.3nm,0.8s,baz=3.0,slow=7.1,SNR=5.7						

NIED ***30*** *08:18:00, 36.°30N×141.°10E, h35km, Mw4.1 Best double couple: M0 1.51000×10^15 NP1:φs233.00000°, δ17.00000°, λ116.00000°. NP2:φs26.00000°, δ75.00000°, λ82.00000°.*

JMA ***30*** *08:18:24.1±0.1, 36.°31N×141.°07E, h48km±1km, M3.9*

JMA Felt II J1.

IDC ***30*** *08:18:26.5±2.1, 36.°23N×141.°00E, h56km±21km, mb3.7/13, mb1 3.9/16, mb1mx3.7/42, mbtmp4.0/16, ML3.5/3, MS3.1/4, Ms1 3.1/4, ms1mx2.9/46, Error ellipse: s-maj=21.4km s-min=11.7km az=86.0*

ISC 30 08:18:21.2±1.5, 36.°31N±0.°04×141.°05E±0.°05, h14km±9km, n37, σ0§97/39, mb4.0/13, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JHO	**Hitachi**	**0.49**	**308**	P	**Pn**	**08 18 35.0**	**+1.1**
JHO				*e*S	**Sn**	**08 18 42.7**	**+0.5**
CHOJ	**Chosi**	**0.63**	**194**	P	**Pn**	**08 18 36.8**	**+1.1**
CHOJ				*e*S	**Sn**	**08 18 45.5**	**0.0**
JYT	**Yasato**	**0.69**	**263**	P	**Pn**	**08 18 38.0**	**+1.3**
JYT				S	**Sn**	**08 18 47.5**	**+0.3**
ONAJ	**Iwakimizuishiy**	**0.81**	**346**	P	**Pn**	**08 18 39.1**	**+0.7**
ONAJ				S	**Sn**	**08 18 49.5**	**-0.8**
JFK	**Kawauchi**	**1.06**	**353**	P	**Pg**	**08 18 42.3**	**+0.5**
JFK				S	**Sb**	**08 18 55.3**	**0.0**
JAG	**Ashikaga**	**1.29**	**276**	P	**Pg**	**08 18 46.5**	**+0.4**
JAG				*e*S	**Sg**	**08 19 03.2**	**+0.3**
JFT	**Otama**	**1.33**	**335**	P	**Pg**	**08 18 47.8**	**+0.9**
JFT				S	**Sg**	**08 19 04.4**	**+0.2**
JKT	**Katashina**	**1.52**	**288**	P	**Pg**	**08 18 53.3**	**-0.1**
JKT				*e*S	**Sb**	**08 19 08.6**	**+0.2**
JFY	**Yanaizu**	**1.53**	**316**	P	**Pn**	**08 18 47.7**	**-0.6**
MJAR	**Matsushiro Arr**	**2.30**	**277**	P	**Pb**	**08 19 01.4**	**-1.2**
	40nm,0.3s,baz=116,slow=9.0,SNR=273						
MJAR				LR	LR	08 20 14.1	
	comp=Z,269nm,19.0s,baz=115,slow=48						
MAT	**Matsushiro**	**2.30**	**277**	P	**Pb**	**08 19 01.3**	**-1.3**
MAT				S	**Sb**	**08 19 28.8**	**-2.1**
JHJ	**Hachijo jima 2**	**3.35**	**198**	P	**Pn**	**08 19 16.1**	**+2.9**
	40nm,0.3s,baz=103,slow=22,SNR=20						
JHJ				S	**Sn**	**08 19 52.6**	**-0.2**
	29nm,0.3s,baz=61,slow=19,SNR=6.4						
ASAJ	**Asahikawa**	**7.89**	**8**	P	**Pn**	**08 20 14.7**	**-0.8**
	2.1nm,0.3s,baz=238,slow=11,SNR=11						
JCJ	**Chichijima**	**9.24**	**174**	P	**Pn**	**08 20 32.1**	**-2.0**
	5.1nm,0.3s,baz=285,slow=20,SNR=4.0						
JCJ				S	Sn	08 22 05.9	-12
	3.7nm,0.3s,baz=24,slow=19,SNR=2.5						
JCJ				LR	LR	08 23 53.5	
	comp=Z,85nm,19.9s,baz=146,slow=36						
USRK	**Ussuriysk Ar.**	**10.48**	**322**	P	Pn	08 20 55.4	+4.3
	0.5nm,0.3s,baz=140,slow=13,SNR=8.2						
USRK				LR	LR	08 24 51.2	
	comp=Z,168nm,20.3s,baz=313,slow=37						
KSRS	**Korea Array**	**10.57**	**280**	P	Pn	08 20 58.9	+6.5
	0.2nm,0.3s,baz=93,slow=14,SNR=6.1						
KSRS				LR	LR	08 24 49.2	
	comp=Z,86nm,19.9s,baz=330,slow=36						
SEY	**Seymchan**	**27.55**	**11**	P	**P**	**08 24 08.7**	**+1.3**
	1.1nm,0.4s,baz=178,slow=3.1,SNR=4.6						
SONM	**Songino Array**	**27.95**	**305**	P	**P**	**08 24 11.1**	**-0.2**
	1.3nm,0.5s,baz=103,slow=9.3,SNR=5.9						
H11N2	**WAKE ISLAND Hy**	**28.04**	**119**	T	T	08 53 42.2	
	baz=312,slow=74,SNR=48						
H11N1	**WAKE ISLAND Hy**	**28.05**	**119**	T	T	08 53 43.3	
	baz=312,slow=74,SNR=26						
H11N3	**WAKE ISLAND Hy**	**28.06**	**119**	T	T	08 53 42.0	
	baz=312,SNR=59						
H11S1	**WAKE ISLAND Hy**	**28.73**	**121**	T	T	08 54 37.1	
	baz=314,slow=75,SNR=100						
H11S3	**WAKE ISLAND Hy**	**28.73**	**121**	T	T	08 54 37.0	
	baz=314,slow=75,SNR=61						
H11S2	**WAKE ISLAND Hy**	**28.74**	**121**	T	T	08 54 37.8	
	baz=314,slow=75,SNR=64						
ZALV	**Zalesovo Beam**	**42.19**	**313**	P	**P**	**08 26 13.5**	**+0.1**
	3.5nm,0.5s,baz=92,slow=6.2,SNR=7.9						
MKAR	**Makanchi Array**	**44.26**	**303**	P	**P**	**08 26 31.1**	**+0.9**
	1.1nm,0.6s,baz=90,slow=10,SNR=14						
ILAR	**Eielson Array**	**50.26**	**32**	P	**P**	**08 27 17.2**	**+0.5**
	1.3nm,0.8s,baz=267,slow=6.7,SNR=14						
INK	**Inuvik**	**55.16**	**27**	P	**P**	**08 27 53.4**	**+0.5**
	1.1nm,0.6s,baz=303,slow=6.6,SNR=11						
WRA	**Warramunga Arr**	**56.31**	**188**	P	**P**	**08 28 01.1**	**-0.5**
	0.8nm,0.6s,baz=4.0,slow=7.5,SNR=12						
ASAR	**Alice Springs**	**60.03**	**188**	P	**P**	**08 28 27.6**	**-0.1**
	0.4nm,0.7s,baz=16,slow=8.6,SNR=6.7						
YKA	**Yellowknife Ar**	**64.58**	**30**	P	**P**	**08 28 58.0**	**+0.3**
	0.5nm,0.8s,baz=299,slow=6.4,SNR=9.7						
FINES	**FINESS Array B**	**69.31**	**332**	P	**P**	**08 29 27.9**	**0.0**
	2.1nm,0.9s,baz=100,slow=4.5,SNR=5.5						
AKASG	**Malin Array Be**	**74.69**	**322**	P	**P**	**08 29 59.8**	**-0.4**
	1.6nm,0.5s,baz=50,slow=7.6,SNR=6.2						
NB2	**NORSAR Subarra**	**74.74**	**337**	P	**P**	**08 30 00.3**	**-0.1**
	comp=Z,0.7nm,0.6s,baz=41,slow=5.6						
NOA	**NORSAR Array B**	**74.74**	**337**	P	**P**	**08 30 00.1**	**-0.3**
	comp=Z,1.3nm,0.8s,baz=40,slow=5.6,SNR=5.7						
GERES	**GERESS Array B**	**83.17**	**328**	P	**P**	**08 30 46.8**	**-0.2**
	comp=Z,0.5nm,0.4s,baz=40,slow=7.7,SNR=3.6						
LPAZ	**La Paz**	**147.31**	**60**	PKPbc	**PKPdf**	**08 38 04.5**	**+1.1**
	comp=Z,0.4nm,0.5s,baz=315,slow=2.9,SNR=3.9						

IDC ***30*** *08:19:14.3±0.5, 6.°86N×82.°52W, h0km, mb4.7/26, mb1 4.9/30, mb1mx4.9/35, mbtmp4.8/30, ML2.9/2, MS5.5/25, Ms1 5.5/25, ms1mx5.3/33, Error ellipse: s-maj=18.2km s-min=9.9km az=51.0*

MOS ***30*** *08:19:15.3±1.2, 6.°95N×82.°35W, h10km, mb5.9/60, MS5.7/73, Error ellipse: s-maj=9.9km s-min=4.6km az=110.7*

NEIC ***30*** *08:19:16.0±0.0, 6.°83N×82.°08W, h15km, Moment Tensor Solution. s59 Moment tensor: Scale 10^18Nm; Mrr=0.20; Mθθ=0.21; Mφφ=-0.01; Mrθ=-0.87; Mrφ=1.61; Mθφ=0.26; Best double couple: M0 1.90000×10^18 NP1:φs90.00000°, δ82.00000°, λ-28.00000°. NP2:φs184.00000°, δ62.00000°, λ-171.00000°. Principal axes: T 1.8300, Plg2.0000°, Azm140.0000°; N 0.0700, Plg60.0000°, Azm255.0000°; P -1.8900, Plg25.0000°, Azm43.0000°;*

BJI ***30*** *08:19:16.2, 6.°85N×82.°30W, h10km, mB5.7/31, Ms6.2/24, Ms7 6.0/37*

NEIC ***30*** *08:19:16.7±0.2, 6.°85N×82.°33W, h12km, mb5.8/280, ME6.1, MS5.7/298, MW6.0, MW6.1, ML6.0(UCR), Error ellipse: s-maj=5.1km s-min=3.5km az=199.0, Moment Tensor Solution. s68 Moment tensor: Scale 10^18Nm; Mrr=0.03; Mθθ=-0.03; Mφφ=-0.01; Mrθ=0.04; Mrφ=1.42; Mθφ=0.00; Best double couple: M0 1.40000×10^18 NP1:φs360.00000°, δ88.00000°, λ180.00000°. NP2:φs90.00000°, δ90.00000°, λ2.00000°. Principal axes: T 1.4100, Plg1.0000°, Azm315.0000°; N 0.0300, Plg88.0000°, Azm91.0000°; P -1.4400, Plg1.0000°, Azm225.0000°; Broadband fault plane solution: P waves. NP1:φs95.00000°, δ90.00000°, λ5.00000°. NP2:φs5.00000°, δ85.00000°, λ-180.00000°. Principal axes: T Plg4.0000°, Azm320.0000°; N Plg0.0000°, Azm0.0000°; P Plg4.0000°, Azm230.0000°; Depth from synthetics of broadband displacement seismograms. Energy computed from BB mechanism.*

NEIC Felt [II] at Boquete and David. Also felt at Ancon, Atalaya, Bejuco, Bugaba, Cerro Punta, Los Algarrobos, Nueva Gorgona, Nuevo Arraijan, Panama, Penonome, Puerto Armuelles, Rio Hato, San Miguelito and Volcan. Felt [IV] at Talamanca, Costa Rica. Also felt at Escazu, Golfito, Heredia, San Isidro and San Vito.

GCMT ***30*** *08:19:16.3±0.1, 6.°88N×82.°39W, h21km, MW6.2/139, Moment Tensor Solution. s125,c276; s139,c517; Duration: 3§0 Moment tensor: Scale 10^18Nm; Mrr=0.13±.01; Mθθ=0.47±.01; Mφφ=-0.34±.01; Mrθ=0.28±.03; Mθφ=2.31±.01; Mrφ=-0.02±.03; Best double couple: M0 2.36300×10^18 NP1:φs275.00000°, δ90.00000°, λ-7.00000°. NP2:φs5.00000°, δ83.00000°, λ-180.00000°. Principal axes: T 2.4270, Plg5.0000°, Azm320.0000°; N -0.1260, Plg83.0000°, Azm91.0000°; P -2.2990, Plg5.0000°, Azm230.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface/mantle waves, cutoff=50s.*

ISCJB ***30*** *08:19:17.0±0.2, 7.°18N±0.°03×82.°35W±0.°02, h10km, mb5.6/307, MS5.7/477 Error ellipse: s-maj=4.8km s-min=2.5km az=17.3*

ISC 30 08:19:16.7±0.3, 6.°85N±0.°04×82.°36W±0.°04, h10km, n1460, σ1§94/1284, mb5.7/317, MS5.8/480, 9C-6D, South of Panama

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
ACR	**Cerro Adams**	**1.96**	**336**	*e*P	Pn	08 19 45.2	-5.0
ACR				*e*S	**Sn**	**08 20 14.7**	**-0.1**
BUS	**Buena Vista**	**3.02**	**333§**	*e*P	**Pn**	**08 20 00.8**	**-4.3**
ZANG	**Zanguenga, Cho**	**3.24**	**50**	*e*P	**Pn**	**08 20 04.4**	**-3.2**
URSC	**Urasca**	**3.28**	**335§**	*e*P	**Pn**	**08 20 04.3**	**-4.1**
BCIP	**Isla Barro Col**	**3.40**	**47**	*e*P	**Pn**	**08 20 06.1**	**-3.7**
BCIP	**Isla Barro Col**	**3.40**	**47**	*e*Pn	**Pn**	**08 20 06.1**	**-3.7**
BCIP	**Isla Barro Col**	**3.40**	**47**	*e*P	**Pn**	**08 20 05.9**	**-3.9**
HDC	**Heredia**	**3.58**	**331**	*e*Pn	**Pn**	**08 20 09.5**	**-3.0**
CGA2	**Cerro Gallo 2**	**3.77**	**327**	*e*P	**Pn**	**08 20 10.6**	**-4.6**
JTS	**JuntasAbangare**	**4.27**	**323**	Pn	**Pn**	**08 20 18.3**	**-3.6**
	474nm,0.3s,baz=76,slow=7.3,SNR=517						
JTS				Sn	**Sn**	**08 21 08.2**	**-3.7**
	40nm,0.3s,baz=124,slow=11,SNR=3.8						
JTS	**JuntasAbangare**	**4.27**	**323**	*c*P	Pn	08 20 16.9	-5.0
JTS	**JuntasAbangare**	**4.27**	**323**	*e*P	**Pn**	**08 20 17.6**	**-4.3**
JTS	**JuntasAbangare**	**4.27**	**323**	*e*Pn	**Pn**	**08 20 17.9**	**-4.0**
JTS				Sn	**Sn**	**08 21 08.2**	**-3.7**
SOLC	**Bahia Solano**	**4.96**	**97**	*e*P	Pn	08 20 24.4	-6.9
ESPN	**Las Esperanzas**	**5.64**	**340**	*e*P	**Pn**	**08 20 37.0**	**-3.7**
GRGC	**Isla de Gorgon**	**5.66**	**132**	*e*P	Pn	08 20 33.0	-8.0
MALC	**Bahia Malaga**	**5.74**	**119**	*e*P	**Pn**	**08 20 44.2**	**+2.1**
DBBC	**Dabeiba**	**6.11**	**88**	*e*P	**Pn**	**08 20 44.9**	**-2.3**
MASN	**Masaya**	**6.33**	**324**	*e*P	**Pn**	**08 20 47.9**	**-2.3**
CRUN	**El Crucero**	**6.41**	**323**	*e*P	**Pn**	**08 20 49.0**	**-2.4**
BOAB	**BOACO BROADBAN**	**6.45**	**330**	*e*P	Pn	08 20 47.0	-4.8
MGAN	**Managua**	**6.51**	**324**	*e*P	**Pn**	**08 20 49.8**	**-2.9**
TISN	**Laguna Tiscapa**	**6.52**	**324**	*e*P	**Pn**	**08 20 49.9**	**-2.9**
XAVN	**Gruta Xavier**	**6.56**	**324**	*e*P	**Pn**	**08 20 50.9**	**-2.4**
COPN	**Copaltepe**	**6.74**	**322**	*e*P	**Pn**	**08 20 51.7**	**-4.1**
HELC	**Santa Helena**	**6.82**	**95**	*e*P	**P

STH **Stony Hill** 12.40 25 *i* P Pn 08 22 10.7 -2.8
GWJ **Greenwich** 12.43 26 *e*P Pn 08 22 08.2 -5.8
BBJ **Bamboo Saint A** 12.49 23 *i* P Pn 08 22 14.4 -0.4
BNJ **Bonny Gate** 12.56 24 *i* P Pn 08 22 12.7 -3.0
CCIG **Comitan** 13.39 315 *e*Pn Pn 08 22 25.9 -1.3
ATAH **Atahualpa** 14.45 164 Pn Pn 08 22 44.5 +2.7
comp=Z,0.4nm,0.3s,baz=348,slow=9.3,SNR=12
ATAH LR LR 08 27 31.0
comp=Z,10µm,19.7s,baz=343,slow=34
TEIG **Tepich** 14.48 337 Pn Pn 08 22 42.7 +0.8
comp=Z,0.4nm,0.3s,baz=90,slow=20,SNR=5.7
TEIG LR LR 08 28 17.9
comp=Z,31µm,19.1s,baz=255,slow=38
TEIG **Tepich** 14.48 337 *e*P Pn 08 22 40.5 -1.4
TEIG **Tepich** 14.48 337 *e*P P 08 22 47.0 -1.7
GTBY **Guantanamo Bay** 14.78 28 *e*P Pn 08 22 43.5 -2.5
GTBY **Guantanamo Bay** 14.78 28 *e*Pn Pn 08 22 46.8 +0.8
CMIG **Matias Romero** 15.92 311 Pn Pn 08 22 58.9 -2.1
comp=Z,5.6nm,0.3s,baz=102,slow=9.3,SNR=27
CMIG Sn Sn 08 25 56.2 -1.4
comp=Z,0.4nm,0.3s,baz=197,slow=19,SNR=2.0
CMIG LR LR 08 28 21.6
comp=Z,21µm,18.9s,baz=127,slow=35
SDDR **Presa de Saban** 16.17 41 *e*P Pn 08 22 58.8 -5.4
SDDR **Presa de Saban** 16.17 41 *e*Pn Pn 08 23 02.8 -1.4
comp=Z,489nm,0.9s
BANI **BANI** 16.38 44 *e*Pn P 08 23 08.6 -1.3
SDD **Santo Domingo** 16.73 45 *e*Pn P 08 23 13.6 -0.1
comp=Z,1µm,1.1s
MPR **Mayaguez** 18.64 51 *e*P Pn 08 23 36.1 +1.0
comp=Z,5µm,0.9s
AGP **Aguadilla** 18.75 51 *e*P Pn 08 23 37.2 +0.7
comp=Z,418nm,0.9s
LRS **Lares** 18.92 52 *e*P P 08 23 37.9 0.0
CELP **Cerrillos** 19.00 53 *e*P P 08 23 38.3 -0.4
TLIG **Tlapa** 19.07 305 *e*P Pn 08 23 41.5 +1.1
SJG **San Juan** 19.36 53 P P 08 23 41.8 -0.9
comp=Z,5.5nm,0.3s,baz=264,slow=8.3,SNR=11
SJG LR LR 08 31 14.8
comp=Z,16µm,21.9s,baz=241,slow=37
SJG **San Juan** 19.36 53 *e*P P 08 23 41.2 -1.5
SJG pmax pmax
comp=Z,417nm,0.9s
SJG **San Juan** 19.36 53 *e*P P 08 23 41.2 -1.5
comp=Z,417nm,0.9s
NNA **Nana** 19.50 164 P P 08 23 43.1 -1.2
comp=Z,1.3nm,0.3s,baz=359,slow=9.8,SNR=6.1
NNA **Nana** 19.50 164 *i* P Pn 08 23 46.8 +1.3
NNA **Nana** 19.50 164 *e*P P 08 23 44.8 +0.5
comp=Z,242nm,0.9s
HUMP **Col San Antoni** 19.62 54 *e*P P 08 23 43.1 -2.4
comp=Z,346nm,1.0s
CBYP **Canovanas** 19.68 53 *e*P P 08 23 45.1 -1.2
comp=Z,2µm,1.8s
MTP **Monte Pirata** 19.83 54 *e*P P 08 23 47.5 -0.4
comp=Z,2µm,1.3s
CDVI **St. Croix** 20.30 56 *e*P P 08 23 52.3 -0.6
comp=Z,897nm,0.9s
STVI **Saint Thomas** 20.45 54 *e*P P 08 23 51.2 -3.3
comp=Z,891nm,1.3s
STVI LR LR
comp=Z,21µm,19.0s
UNM **Universidad Na** 20.52 309 *e*P P 08 23 56.4 +0.8
UNM pmax pmax
comp=Z,2µm,1.5s
UNM MLR MLR
comp=Z,28µm,21.0s
UNM **Universidad Na** 20.52 309 *e*P P 08 23 56.4 +0.8
comp=Z,2µm,1.5s
UNM LR LR
comp=Z,28µm,21.0s
TPP **Pointe-a-Pierr** 20.96 79 *e* P 08 23 57.9 -2.2
TRN **Trinidad (W)** 21.05 78 *e* P 08 24 00.2 -0.9
GRW **Mount Saint Ca** 21.08 74 *e* P 08 24 10.7 +9.2
GRGR **Grenville** 21.08 74 *e*P P 08 24 08.4 +7.0
GRGR **Grenville** 21.08 74 *e*P P 08 23 59.9 -1.6
GRGR *e*Pn sP 08 24 08.9 +3.3
GRGR LR LR
comp=Z,13µm,18.0s
GRHS **Sauteurs** 21.11 74 *e* P 08 24 03.1 +1.4
ABVI **Anegada Island** 21.15 54 *e*P P 08 23 59.7 -2.4
comp=Z,2µm,0.9s
ABVI LR LR
comp=Z,19µm,20.0s
GRSS **Sisters** 21.16 74 *e* P 08 24 11.3 +9.0
DWPF **Disney Wildern** 21.16 2 *e*P P 08 24 00.7 -1.5
DWPF *e*Pn sP 08 24 06.8 +0.4
DWPF LR LR
comp=Z,35µm,18.0s
TBH **Brigand Hill** 21.35 79 *e* P 08 23 58.6 -5.8
SABA **Saba** 21.51 58 *e*P P 08 24 09.3 +3.3
SABA **Saba** 21.51 58 *e*P P 08 24 05.0 -1.0
comp=Z,579nm,1.3s
SABA LR LR
comp=Z,28µm,22.0s
SEUS **St. Eustatius** 21.67 59 *e*P P 08 24 10.6 +2.9
SEUS **St. Eustatius** 21.67 59 *e*P P 08 24 06.2 -1.5
SEUS *es*P sP 08 24 11.5 -0.4
SEUS LR LR
comp=Z,25µm,21.0s
FCV **Fort Charlotte** 21.71 72 *e* P 08 24 12.8 +4.6
SVB **Belmont** 21.73 71 *e* P 08 24 09.5 +1.1
SVB **Belmont** 21.73 71 *e*P P 08 24 10.3 +1.9
SVB **Belmont** 21.73 71 *e* S 08 28 08.5 -0.7
SVB **Belmont** 21.73 71 *e*P P 08 24 10.3 +1.9
comp=Z,549nm,0.9s
SVB LR LR
comp=Z,24µm,21.0s
SVV **Soufriere Volc** 21.77 71 *e* P 08 24 11.7 +2.7
SMRT **St. Maarten** 21.85 58 *e*P P 08 24 10.1 +0.5
SMRT **St. Maarten** 21.85 58 *e*P P 08 24 10.2 +0.5
comp=Z,527nm,0.9s
SMRT LR LR
comp=Z,14µm,20.0s
TOSP **Speyside** 21.99 77 *e* P 08 24 07.2 -4.1
TOSP **Speyside** 21.99 77 *e* S 08 28 05.0 -9.2
MLYT **Lee's Yard** 22.02 62 *e* P 08 24 09.4 -2.1
MLYT **Lee's Yard** 22.02 62 *e* S 08 28 11.1 -3.7
DSHT **Scott's Head** 22.19 66 *e* P 08 24 16.6 +3.2
DPMT **Pointe Michel** 22.21 66 *e* P 08 24 13.7 +0.1
MDN **Morne-Daniel** 22.21 66 *e* P 08 24 16.9 +3.3
GDHS **Morne Mazeau,** 22.22 63 *e*P P 08 24 14.3 +0.5
comp=Z,2µm,1.2s
GDHS LR LR
comp=Z,21µm,21.0s
FDF **Fort de France** 22.24 68 *e*P P 08 24 15.2 +1.2
FDF **Fort de France** 22.24 68 *e*P P 08 24 15.6 +1.6
FDF **Fort de France** 22.24 68 *e*P P 08 24 14.2 +0.2
FDF pmax pmax
comp=Z,759nm,1.0s
FDF MLR MLR
comp=Z,22µm,22.0s
FDF **Fort de France** 22.24 68 *e*P P 08 24 14.2 +0.2
comp=Z,759nm,1.0s
FDF LR LR
comp=Z,22µm,22.0s
BIM **Bigot** 22.25 68 *e*P P 08 24 17.2 +3.1
CXM **Morne La Croix** 22.25 67 *e*P P 08 24 17.2 +3.0
MOIG **Morelia** 22.29 307 *e*P P 08 24 15.4 +0.7
comp=Z,640nm,1.2s
MOIG LR LR
comp=Z,25µm,21.0s
DWS **Wesley** 22.37 65 *e* P 08 24 14.6 -0.7
DWS **Wesley** 22.37 65 *e* Sn 08 28 34.3 +0.7
BPA **Boggy Peak** 22.45 61 *e* P 08 24 11.2 -4.9
BPA **Boggy Peak** 22.45 61 *e* S 08 28 21.3 -1.5
ANWB **Willy Bob** 22.77 60 *e*P P 08 24 18.1 -1.4
ANWB **Willy Bob** 22.77 60 *e*P P 08 24 18.4 -1.1
comp=Z,436nm,0.8s
ANWB LR LR
comp=Z,21µm,22.0s
DEG **La Desirade** 22.86 64 *e* P 08 24 20.5 -0.1
BBGH **Gun Hill** 23.30 73 PFAKE 08 24 30.0 +5.0
BBGH LR LR
comp=Z,8µm,18.0s
PTGA **Pitinga** 23.58 108 P P 08 24 27.5 -0.4
comp=Z,8.7nm,0.6s,baz=293,slow=11,SNR=11
PTGA **Pitinga** 23.58 108 *e*P P 08 24 24.1 -3.8
comp=Z,125nm,1.1s
PTGA LR LR
comp=Z,5µm,19.0s
646A **Port Sulphur** 23.68 344 P P 08 24 32.2 +3.5
baz=161
645A **Chauvin** 23.79 342 P P 08 24 32.9 +3.2
baz=159
546A **Slidell** 24.27 344 P P 08 24 36.1 +1.9
baz=162
545A **Edgard** 24.31 343 P P 08 24 36.5 +1.9
baz=160
TIGA **Tifton** 24.49 357 P P 08 24 35.9 -0.3
baz=177,SNR=15
TIGA **Tifton** 24.49 357 *e*P P 08 24 34.8 -1.5
comp=Z,122nm,0.8s
TIGA LR LR
comp=Z,16µm,19.0s
448A **Bay Minette** 24.50 349 P P 08 24 37.7 +1.3
baz=167
447A **Lucedale** 24.54 347 P P 08 24 38.2 +1.6
baz=165,SNR=20
544A **White Castle** 24.57 341 P P 08 24 38.3 +1.4
baz=159,SNR=29
035Z **Hargill** 24.58 324 P P 08 24 37.7 +0.6
baz=140
446A **Poplarville** 24.71 345 P P 08 24 39.6 +1.5
baz=163,SNR=27
SAML **Samuel** 24.73 129 *e*P P 08 24 34.9 -3.7
comp=Z,86nm,1.1s
SAML LR LR
comp=Z,3µm,22.0s
543A **St. Martinvill** 24.78 340 P P 08 24 40.6 +1.8
baz=157,SNR=14
445A **Anite** 24.91 344 P P 08 24 41.3 +1.3
baz=161,SNR=8.9
035A **Encino** 24.96 325 P P 08 24 41.4 +0.9
baz=140,SNR=11
348A **Jackson** 24.98 349 P P 08 24 42.2 +1.6
baz=167,SNR=40
444A **Pine Grove** 25.01 343 P P 08 24 43.0 +2.1
baz=160,SNR=21
542A **Morse** 25.06 339 P P 08 24 44.3 +3.0
baz=156
ZAIG **Zacatecas** 25.09 311 *e*P P 08 24 36.3 -5.8
ZAIG *ep*P pP 08 24 42.7 -2.3
ZAIG LR LR
comp=Z,22µm,22.0s
347A **Saraland** 25.10 347 P P 08 24 43.5 +1.8
baz=165,SNR=93
541A **Lake Charles** 25.23 338 P P 08 24 45.5 +2.6
baz=154
346A **Big Creek Wild** 25.30 346 P P 08 24 46.0 +2.4
baz=163,SNR=35
KVTX **Kingsville** 25.32 326 *e*P P 08 24 45.2 +1.5
comp=Z,2µm,1.8s
KVTX LR LR
comp=Z,27µm,21.0s
345A **Thompson Farm,** 25.37 345 P P 08 24 46.4 +2.3
baz=162
443A **Delano Plantat** 25.38 341 P P 08 24 46.5 +2.2
baz=158,SNR=11
034A **Hebbronville** 25.39 324 P P 08 24 46.7 +2.2
baz=140,SNR=24
737A **Port Lavaca** 25.54 330 P P 08 24 47.3 +1.6
baz=146
ARE **Arequipa** 25.54 155 *e*P P 08 24 45.0 -1.2
ARE **Arequipa** 25.54 155 *e*P P 08 24 45.0 -1.2
442A **Mamou** 25.55 340 P P 08 24 46.1 +0.3
baz=156,SNR=23
248A **Dixon Mills** 25.61 349 P P 08 24 46.6 +0.2
baz=168,SNR=86
638A **Rosharon** 25.62 333 P P 08 24 48.2 +1.8
baz=149
540A **Vidor** 25.68 336 P P 08 24 48.7 +1.7
baz=153
344A **Westbrook Farm** 25.70 343 P P 08 24 48.9 +1.7
baz=161,SNR=100
934A **Benavides** 25.71 325 P P 08 24 47.3 0.0
baz=140,SNR=40
247A **Quitman** 25.74 348 P P 08 24 49.4 +1.8
baz=156,SNR=78
343A **Vidalia** 25.81 342 P P 08 24 49.6 +1.4
baz=158
246A **Jackson Lee, B** 25.82 347 P P 08 24 49.6 +1.3
baz=164,SNR=20
441A **DeRidder** 25.85 338 P P 08 24 49.0 +0.5
baz=155,SNR=26
835A **Beeville** 25.86 327 P P 08 24 49.6 +0.9
baz=143,SNR=15
539A **Cross D Ranch,** 25.89 335 P P 08 24 49.0 +0.1
baz=151,SNR=25
736A **Circle Diamond** 26.00 330 P P 08 24 50.9 +0.9
baz=145,SNR=49
RGRS **Roger Stewart** 26.00 4 *e*P P 08 24 49.7 -0.2
comp=Z,662nm,0.6s
245A **Little AP, Sta** 26.02 345 P P 08 24 51.5 +1.4
baz=163,SNR=52
637A **Eagle Lake** 26.04 331 P P 08 24 51.7 +1.4
baz=147,SNR=13
CSU **Charleston Sou** 26.09 4 *e*P P 08 24 51.5 +0.9
342A **Flagon Creek P** 26.12 340 P P 08 24 51.0 0.0
baz=157,SNR=27
834A **Tilden** 26.13 326 P P 08 24 50.8 -0.3
baz=141,SNR=37
440A **Kirbyville** 26.14 337 P P 08 24 51.1 -0.1
baz=153,SNR=7.3
933A **Laredo** 26.15 324 P P 08 24 51.0 -0.4
baz=139,SNR=83
NHSC **New Hope** 26.20 4 *e*P P 08 24 51.9 +0.2
comp=Z,182nm,1.1s
NHSC LR LR
comp=Z,18µm,19.0s
244A **Avery, Jackson** 26.24 344 P P 08 24 52.0 0.0
baz=161,SNR=28
HKT **Hockley** 26.24 333 *e*P P 08 24 50.7 -1.3
HKT pmax pmax
comp=Z,462nm,1.4s
HKT **Hockley** 26.24 333 *e*P P 08 24 50.7 -1.3
comp=Z,462nm,1.4s
147A **Livingston** 26.28 349 P P 08 24 53.5 +1.2
baz=167,SNR=51
735A **Kenedy** 26.30 328 P P 08 24 52.7 0.0
baz=143,SNR=41
243A **Waterproof** 26.32 342 P P 08 24 52.9 +0.1
baz=159,SNR=14
538A **Harpers Horsep** 26.32 334 P P 08 24 54.2 +1.4
baz=150
VBMS **Vicksburg** 26.36 344 P P 08 24 55.1 +2.0
baz=162,SNR=9.5
VBMS **Vicksburg** 26.36 344 *e*P P 08 24 52.6 -0.5
comp=Z,567nm,1.4s
341A **Kurthwood** 26.37 339 P P 08 24 53.4 +0.1
baz=155,SNR=28
146A **Union** 26.40 347 P P 08 24 55.5 +2.0
baz=165,SNR=20
LRAL **Lakeview Retre** 26.41 351 *e*P P 08 24 54.2 +0.7
comp=Z,286nm,0.9s
636A **Smothers Creek** 26.43 330 P P 08 24 53.6 -0.2
baz=146,SNR=28
GOGA **Godfrey** 26.45 358 *e*P P 08 24 53.5 -0.4
GOGA pmax pmax
comp=Z,154nm,1.0s
GOGA MLR MLR
comp=Z,23µm,18.0s
GOGA **Godfrey** 26.45 358 *e*P P 08 24 53.5 -0.4
comp=Z,154nm,1.0s
GOGA LR LR
comp=Z,23µm,18.0s
439A **Center Grove,** 26.51 336 P P 08 24 55.8 +1.3
baz=152
537A **Green Hill Far** 26.57 332 P P 08 24 56.2 +1.1
baz=148,SNR=10
145A **Houston Renfro** 26.57 346 P P 08 24 56.4 +1.3
baz=163,SNR=31
242A **Grayson** 26.70 341 P P 08 24 57.4 +1.3
baz=158,SNR=26
734A **La Parita Cree** 26.70 327 P P 08 24 56.7 +0.5
baz=142,SNR=32
340A **Bronson** 26.71 338 P P 08 24 56.4 +0.1
baz=154,SNR=12
635A **Leesville** 26.71 329 P P 08 24 56.1 -0.3
baz=144,SNR=35
144A **Alexander Plac** 26.73 345 P P 08 24 60.0 +3.6
baz=162
Z47A **Carrollton** 26.75 349 P P 08 24 56.5 -0.2
baz=167,SNR=56
833A **Chaparral WMA,** 26.76 325 P P 08 24 56.4 -0.4
baz=140,SNR=48
438A **Sam Houston St** 26.77 334 P P 08 24 56.2 -0.7
baz=150
Z48A **Northport** 26.83 350 P P 08 24 56.8 -0.5
baz=168,SNR=65
339A **Huntington** 26.90 336 P P 08 24 57.2 -0.8
baz=152
241A **Mo Tay, Goldon** 26.91 340 P P 08 24 59.6 +1.4
baz=156
536A **Bastrop** 26.93 331 P P 08 24 57.7 -0.6
baz=146,SNR=29
LPAZ **La Paz** 26.96 149 P P 08 24 58.5 -0.9
comp=Z,9.0nm,1.2s,baz=326,slow=7.3,SNR=7.7
LPAZ LR LR 08 37 28.3
comp=Z,6µm,18.5s,baz=310,slow=40
LPAZ **La Paz** 26.96 149 *e*P P 08 24 57.8 -1.6
LPAZ pmax pmax
comp=Z,36nm,1.3s
LPAZ **La Paz** 26.96 149 *e*P P 08 24 57.8 -1.6
comp=Z,36nm,1.3s
733A **Divot King Ran** 27.00 326 P P 08 24 58.3 -0.7
baz=140,SNR=28
634A **China Grove, S** 27.01 328 P P 08 24 58.1 -0.9
baz=143,SNR=27
832A **Faith Ranch, C** 27.06 324 P P 08 24 58.8 -0.7
baz=139,SNR=44
143A **Socs Landing,** 27.06 343 P P 08 24 59.7 +0.2
baz=160
142A **Monroe** 27.08 342 P P 08 24 59.9 +0.2
baz=159,SNR=11
437A **Phantom Ranch,** 27.13 333 P P 08 25 00.1 0.0
baz=149
535A **Dale** 27.13 330 P P 08 24 59.4 -0.8
baz=145,SNR=34
240A **Hunter Patters** 27.23 338 P P 08 25 01.5 +0.6
baz=155
338A **Crockett** 27.23 335 P P 08 25 01.0 0.0
baz=151,SNR=44
Z45A **Winona** 27.25 347 P P 08 25 00.8 -0.3
baz=164,SNR=23
NATX **Nacogdoches** 27.32 337 P P 08 25 02.1 +0.3
baz=153,SNR=15
NATX **Nacogdoches** 27.32 337 *e*P P 08 25 02.3 +0.5
comp=Z,1µm,1.9s
NATX LR LR
comp=Z,12µm,21.0s
Z44A **Pea Ridge, Bel** 27.34 345 P P 08 25 01.8 -0.2
baz=162
436A **Wall Ranch, Ga** 27.38 332 P P 08 25 02.0 -0.4
baz=148,SNR=14
Y47A **UCPARC, Winfie** 27.39 350 P P 08 25 02.2 -0.2
baz=168,SNR=69
337A **Centerville** 27.43 334 P P 08 25 03.5 +0.6
baz=150,SNR=24
141A **Papa Simpson,** 27.44 340 P P 08 25 03.0 +0.1
baz=157,SNR=19
239A **Gary** 27.47 337 P P 08 25 03.0 -0.1
baz=153,SNR=15
Z43A **Armstrong Fami** 27.50 344 P P 08 25 03.5 +0.1
baz=161
633A **Saathoff Ranch** 27.51 327 P P 08 25 03.0 -0.6
baz=142,SNR=28
Y46A **Houston** 27.56 348 P P 08 25 03.4 -0.5
baz=166,SNR=47
534A **Blanco** 27.59 329 P P 08 25 03.6 -0.7
baz=144,SNR=46
Y45A **Yeager Farm, C** 27.69 347 P P 08 25 06.0 +0.9
baz=164,SNR=58
140A **Cam and Jess,** 27.70 339 P P 08 25 05.3 +0.1
baz=156,SNR=12
238A **Jacksonville** 27.71 336 P P 08 25 06.0 +0.7
baz=152,SNR=18
Z42A **Norrel Spur, H** 27.76 343 P P 08 25 06.1 +0.4
baz=159
435B **Jarrell** 27.76 331 P P 08 25 05.4 -0.3
baz=146,SNR=65
533A **Kerrville** 27.92 328 P P 08 25 06.9 -0.3
baz=143,SNR=44
336A **Riesel** 27.92 333 P P 08 25 06.6 -0.6
baz=148,SNR=36
Y44A **Strider, Charl** 27.94 346 P P 08 25 07.6 +0.2
baz=163,SNR=17
237A **Washetta, Mont** 27.99 335 P P 08 25 08.2 +0.4
baz=151,SNR=28
Z41A **Richland Creek** 28.01 341 P P 08 25 07.8 -0.2
baz=158,SNR=26
139A **Bunkhouse Ranc** 28.03 338 P P 08 25 08.2 +0.1
baz=154,SNR=7.2
Y43A **Makayla and Ka** 28.07 345 P P 08 25 09.2 +0.7
baz=162
335A **Moody** 28.10 332 P P 08 25 08.6 -0.2
baz=147,SNR=9.3
434A **Burnet** 28.12 330 P P 08 25 08.8 -0.2
baz=145,SNR=49
KMSC **Kings Mountain** 28.17 2 P P 08 25 09.2 -0.2
baz=182
KMSC **Kings Mountain** 28.17 2 *e*P P 08 25 09.1 -0.3
comp=Z,61nm,1.0s
KMSC LR LR
comp=Z,26µm,18.0s
Z40A **Long Farm, Mag** 28.20 340 P P 08 25 09.7 0.0
baz=156,SNR=19
Y42A **Garnett, Star** 28.24 343 P P 08 25 09.9 -0.1
baz=160,SNR=15
138A **Matatall Enter** 28.28 337 P P 08 25 09.7 -0.7
baz=153,SNR=32
OXF **Oxford** 28.29 348 *e*P P 08 25 09.3 -1.1
OXF pmax pmax
comp=Z,201nm,1.0s
OXF **Oxford** 28.29 348 *e*P P 08 25 09.3 -1.1
comp=Z,201nm,1.0s
236A **Katherine and** 28.30 334 P P 08 25 10.6 0.0
baz=149,SNR=6.9
CCAR **Cane Creek** 28.31 343 *e*P P 08 25 10.2 -0.4
comp=Z,377nm,1.3s
SWET **Sewanee** 28.42 354 *e*P P 08 25 10.9 -0.8
comp=Z,24nm,0.8s
SWET LR LR
comp=Z,6µm,19.0s
Z39A **Irene McRaven,** 28.46 339 P P 08 25 11.9 -0.1
baz=155
433A **Art** 28.49 329 P P 08 25 11.4 -0.9
baz=143,SNR=66
137A **Heron Place, G** 28.49 336 P P 08 25 12.3 0.0
baz=151,SNR=7.2
WLAR **White Oak Lake** 28.50 341 *e*P P 08 25 11.4 -0.9
comp=Z,496nm,1.5s
334A **Lometa** 28.53 331 P P 08 25 12.3 -0.4
baz=145,SNR=43
CPCT **Cooper Cave** 28.53 356 *e*P P 08 25 11.8 -0.8
comp=Z,37nm,1.0s
CPCT LR LR
comp=Z,7µm,19.0s
JCT **Junction City** 28.65 327 P P 08 25 13.2 -0.6
baz=142,SNR=30
JCT **Junction City** 28.65 327 *e*P P 08 25 12.3 -1.4
JCT pmax pmax
comp=Z,343nm,1.4s
JCT MLR MLR
comp=Z,8µm,21.0s
JCT **Junction City** 28.65 327 *e*P P 08 25 12.3 -1.4
comp=Z,343nm,1.4s
JCT LR LR
comp=Z,8µm,21.0s
TKL **Tuckaleechee C** 28.70 358 P P 08 25 11.8 -2.3
comp=Z,22nm,0.9s,baz=171,slow=12,SNR=28
TKL LR LR 08 37 02.3
comp=Z,18µm,18.4s,baz=181,slow=37
TKL **Tuckaleechee C** 28.70 358 *e*P P 08 25 13.5 -0.6
TKL pmax pmax
comp=Z,111nm,1.4s
TKL **Tuckaleechee C** 28.70 358 *e*P P 08 25 13.5 -0.6
comp=Z,111nm,1.4s
WHTX **Lake Whitney,** 28.71 333 P P 08 25 14.3 +0.1
baz=148,SNR=24
WHTX **Lake Whitney,** 28.71 333 *e*P P 08 25 14.3 +0.1
comp=Z,474nm,1.6s
WHTX LR LR
comp=Z,6µm,21.0s
136A **Ennis** 28.71 334 P P 08 25 14.3 +0.1
baz=150,SNR=34
Z38A **Mt. Pleasant** 28.76 338 P P 08 25 14.7 +0.1
baz=153,SNR=19
Y40A **Okolona** 28.86 341 P P 08 25 15.6 +0.1
baz=157,SNR=25
333A **Richland Sprin** 28.89 330 P P 08 25 15.9 0.0
baz=144,SNR=60
Z37A **Pogue Cattle C** 28.96 337 P P 08 25 16.7 +0.2
baz=152
MET **Memphis--Engin** 28.99 347 *e*P P 08 25 15.6 -1.1
comp=Z,1µm,1.7s
234A **Clairette** 29.03 332 P P 08 25 16.0 -1.2
baz=146,SNR=77
Y39A **Lockesburg** 29.06 340 P P 08 25 16.6 -0.7
baz=156,SNR=33
X40A **Basin Creek Fa** 29.15 342 P P 08 25 16.7 -1.5

baz=158,SNR=14
135A Vickery Place, 29.16 333 P P 08 25 17.1 -1.1
baz=148,SNR=12
UALR University of 29.27 343 eP P 08 25 17.4 -1.8
comp=Z,117nm,0.8s
Y38A Idabel 29.28 339 P P 08 25 18.1 -1.1
baz=154,SNR=29
Z36A Blue Ridge 29.36 335 P P 08 25 19.1 -0.8
baz=151,SNR=12
233A Rising Star 29.41 330 P P 08 25 19.2 -1.3
baz=145,SNR=66
MIAR Mount Ida 29.44 341 P P 08 25 19.5 -1.2
baz=157,SNR=28
MIAR Mount Ida 29.44 341 eP P 08 25 18.8 -1.9
MIAR pmax pmax
comp=Z,250nm,1.6s
MIAR MLR MLR
comp=Z,10µm,21.0s
MIAR Mount Ida 29.44 341 eP P 08 25 18.8 -1.9
comp=Z,250nm,1.6s
MIAR LR LR
comp=Z,10µm,21.0s
134A White-Moore Ra 29.48 332 P P 08 25 19.9 -1.2
baz=147,SNR=48
HBAR Harrisburg 29.57 346 eP P 08 25 21.8 0.0
WVT Waverly 29.57 351 eP P 08 25 20.5 -1.3
WVT pmax pmax
comp=Z,178nm,1.3s
WVT Waverly 29.57 351 eP P 08 25 20.5 -1.3
comp=Z,178nm,1.3s
TZTN Tazewell 29.57 358 eP P 08 25 21.4 -0.5
comp=Z,112nm,1.2s
TZTN LR LR
comp=Z,21µm,18.0s
X39A Fountain Ranch 29.59 340 P P 08 25 20.8 -1.2
baz=156,SNR=25
W41A Tony Mavity, V 29.62 343 P P 08 25 20.7 -1.5
baz=160,SNR=81
W41B Gary Mavity, V 29.62 343 P P 08 25 20.6 -1.7
baz=160,SNR=80
HALT Halls 29.62 348 eP P 08 25 22.3 0.0
Y37A Hugo 29.65 337 P P 08 25 21.9 -0.7
baz=153,SNR=62
X301 Greenbrier Sit 29.72 343 eP P 08 25 21.2 -2.0
comp=Z,124nm,0.9s
WHAR Wooly Hollow 29.74 343 eP P 08 25 21.8 -1.5
comp=Z,142nm,0.8s
Z35A Perchaven, San 29.75 334 P P 08 25 23.1 -0.4
baz=149,SNR=14
HPIG 29.83 315 eP P 08 25 24.6 +0.1
comp=Z,360nm,2.0s
HPIG LR LR
comp=Z,22µm,21.0s
Y36A Durant 29.84 336 P P 08 25 23.2 -1.1
baz=151
W40A Ferguson Farm, 29.88 342 P P 08 25 23.8 -0.7
baz=158,SNR=16
133A Hamilton Ranch 29.90 331 P P 08 25 24.0 -0.9
baz=146,SNR=32
UTMT University of 29.95 349 eP P 08 25 25.5 +0.4
comp=Z,309nm,0.9s
X38A Whitesboro 29.98 339 P P 08 25 25.3 -0.2
baz=155,SNR=36
TXAR Lajitas Array 30.06 321 P P 08 25 24.1 -2.3
comp=Z,5.8nm,0.8s,baz=135,slow=7.4,SNR=41
TXAR PcP PcP 08 28 28.7 +0.3
comp=Z,1.3nm,0.8s,baz=126,slow=4.6,SNR=3.8
TXAR LR LR 08 40 14.4
comp=Z,6µm,18.8s,baz=0.0,slow=42
TX31 Lajitas Ar. Si 30.06 321 eP P 08 25 26.9 +0.6
Z34A Collier Ranch, 30.08 333 P P 08 25 25.5 -0.9
baz=148,SNR=27
X37A Clayton 30.10 338 P P 08 25 26.1 -0.4
baz=154,SNR=17
W39A Magazine 30.10 341 P P 08 25 26.1 -0.4
baz=157,SNR=66
Y35A Marietta 30.16 335 P P 08 25 27.2 +0.2
baz=150,SNR=43
PVMO Portageville 30.18 348 eP P 08 25 27.2 0.0
comp=Z,354nm,1.1s
H06E1 SOCORRO T-PHAS 30.21 296 T T 08 57 04.8
SNR=55
H06S1 SOCORRO T 30.23 296 T T 08 57 17.6
W38A Poteau 30.23 340 P P 08 25 28.1 +0.4
baz=156,SNR=14
BBSR BB Station 30.26 31 e S 08 30 31.2 +3.5
BBSR BB Station 30.26 31 PFAKE 08 25 40.0 +12
BBSR LR LR
comp=Z,13µm,19.0s
ABTX Abilene, Hawle 30.27 330 P P 08 25 28.4 +0.3
baz=144,SNR=26
ABTX Abilene, Hawle 30.27 330 eP P 08 25 28.4 +0.3
comp=Z,123nm,1.1s
ABTX LR LR
comp=Z,10µm,22.0s
BLA Blacksburg 30.27 3 eP P 08 25 27.8 -0.3
BLA pmax pmax
comp=Z,38nm,0.8s
BLA MLR MLR
comp=Z,25µm,19.0s
BLA Blacksburg 30.27 3 eP P 08 25 27.8 -0.3
comp=Z,38nm,0.8s
BLA LR LR
comp=Z,25µm,19.0s
VWCC Virginia Weste 30.33 4 eP P 08 25 28.2 -0.4
V40A Witts Springs 30.37 343 P P 08 25 28.9 -0.1
baz=159,SNR=26
Z33A Whitaker Ranch 30.39 332 P P 08 25 29.5 +0.4
baz=146,SNR=64
X36A Centrahoma 30.46 337 P P 08 25 29.8 +0.1
baz=152,SNR=22
PB01 IPOC Station P 30.47 156 eP P 08 25 28.7 -1.3
comp=Z,35nm,1.1s
PB01 LR LR
comp=Z,3µm,18.0s
Y34A Reagan Ranch, 30.50 334 P P 08 25 30.4 +0.3
baz=149,SNR=52
X35A Drake 30.56 336 P P 08 25 30.5 -0.1
baz=150,SNR=40
W37B Quinton 30.61 339 P P 08 25 31.3 +0.2
baz=154,SNR=7.6
V39A Pettigrew 30.65 342 P P 08 25 31.2 -0.2
baz=158,SNR=19
PBMO Poplar Bluff 30.69 347 eP P 08 25 31.3 -0.3
comp=Z,200nm,1.5s
U40A Yellville 30.90 343 P P 08 25 33.4 -0.2
baz=159,SNR=43
W36A Wetumka 30.91 338 P P 08 25 32.7 -1.0
baz=152,SNR=17
V38A Canehill 30.92 341 P P 08 25 33.0 -0.7
baz=156,SNR=24
Y33A Hilltop Ranch, 30.93 333 P P 08 25 33.9 0.0
baz=147,SNR=37
X34A Smith Ranch, M 31.09 335 P P 08 25 35.4 +0.1
baz=149,SNR=46
U39A Green Forest 31.10 342 P P 08 25 35.2 -0.2
baz=158,SNR=9.3
HHAR Hobbs 31.15 342 eP P 08 25 35.5 -0.3
comp=Z,86nm,1.3s
HHAR LR LR
comp=Z,10µm,18.0s
W35A Tecumseh 31.17 337 P P 08 25 35.6 -0.5
baz=151,SNR=24
V37A Hulbert 31.18 340 P P 08 25 35.4 -0.7
baz=155,SNR=6.1
X33A Lawton 31.32 334 P P 08 25 36.7 -0.7
baz=148,SNR=114
SLBS Sierra La Lagu 31.33 305 eP P 08 25 39.4 +1.7
comp=Z,140nm,1.4s
SLBS LR LR
comp=Z,11µm,19.0s
USIN University of 31.34 352 eP P 08 25 36.1 -1.4
comp=Z,422nm,1.2s
USIN LR LR
comp=Z,13µm,18.0s
SIUC Southern Illin 31.35 350 eP P 08 25 36.5 -1.0
comp=Z,188nm,1.1s
PB04 IPOC Station P 31.37 158 PFAKE 08 25 50.0 +12
PB04 LR LR
comp=Z,2µm,18.0s
V36A Jenks 31.38 338 P P 08 25 37.1 -0.7
baz=153,SNR=34
TUL1 Leonard 31.44 339 P P 08 25 37.2 -1.1
baz=154,SNR=27
TUL1 Leonard 31.44 339 eP P 08 25 37.0 -1.3
comp=Z,177nm,1.3s
TUL1 LR LR
comp=Z,13µm,22.0s

U38A Gravette 31.44 341 P P 08 25 38.2 -0.2
baz=157,SNR=19
WCI Wyandotte Cave 31.44 354 eP P 08 25 37.4 -1.0
WCI pmax pmax
comp=Z,152nm,0.9s
WCI MLR MLR
comp=Z,14µm,18.0s
WCI Wyandotte Cave 31.44 354 eP P 08 25 37.4 -1.0
comp=Z,152nm,0.9s
WCI LR LR
comp=Z,14µm,18.0s
CBN Corbin Frederi 31.54 8 eP P 08 25 39.1 0.0
comp=Z,46nm,1.0s
CBN LR LR
comp=Z,23µm,20.0s
T40A Mansfield 31.55 344 P P 08 25 39.0 -0.3
baz=160
X32A Elmer 31.57 333 P P 08 25 39.4 -0.2
baz=147,SNR=24
W34A Bridge Creek, 31.61 335 P P 08 25 40.1 +0.3
baz=150,SNR=25
W34A Bridge Creek, 31.61 335 eP P 08 25 39.5 -0.3
comp=Z,157nm,1.0s
W34A LR LR
comp=Z,16µm,22.0s
WMOK Wichita Mounta 31.61 334 eP P 08 25 37.6 -2.4
WMOK pmax pmax
comp=Z,146nm,1.5s
WMOK MLR MLR
comp=Z,13µm,22.0s
WMOK Wichita Mounta 31.61 334 eP P 08 25 37.6 -2.4
comp=Z,146nm,1.5s
WMOK LR LR
comp=Z,13µm,22.0s
U37A Salina 31.65 340 P P 08 25 40.0 -0.2
baz=155
T39A Clever 31.67 343 P P 08 25 40.4 0.0
baz=159,SNR=22
V35A Meyer Ranch, C 31.69 337 P P 08 25 39.6 -1.0
baz=152,SNR=34
LPIG La Paz 31.82 306 P P 08 25 40.7 -1.2
comp=Z,8.9nm,0.7s,baz=186,slow=9.2,SNR=2.1
W33A Caddo, Fort Co 31.83 334 P P 08 25 41.5 -0.3
baz=149,SNR=28
U36A Oologah 31.85 339 P P 08 25 41.4 -0.5
baz=154
T38A Diamond 31.95 342 P P 08 25 42.2 -0.7
baz=157,SNR=25
S40A Lebanon 31.97 345 P P 08 25 42.5 -0.5
baz=161,SNR=44
V34A Guthrie 32.02 336 P P 08 25 42.5 -1.0
baz=151,SNR=24
V34A Guthrie 32.02 336 eP P 08 25 41.3 -2.2
comp=Z,97nm,0.9s
V34A LR LR
comp=Z,5µm,21.0s
LVC Limon Verde 32.10 156 P P 08 25 46.2 +1.5
comp=Z,24nm,1.0s,baz=247,slow=3.9,SNR=3.5
LVC Limon Verde 32.10 156 eP P 08 25 42.7 -2.0
LVC LR LR
comp=Z,3µm,19.0s
W32A Sentinel 32.14 333 P P 08 25 44.0 -0.6
baz=147,SNR=72
OLIL Olney 32.16 352 eP P 08 25 43.1 -1.6
comp=Z,566nm,1.3s
OLIL LR LR
comp=Z,11µm,21.0s
U35A Pawnee 32.19 338 P P 08 25 44.2 -0.7
baz=152,SNR=7.1
T37A Cheneyville 18 32.23 341 P P 08 25 44.5 -0.8
baz=156,SNR=76
S39A Bolivar 32.28 344 P P 08 25 45.2 -0.5
baz=159,SNR=58
PB10 IPOC Station P 32.31 159 PFAKE 08 26 00.0 +14
PB10 LR LR
comp=Z,3µm,18.0s
V33A Lossen Ranch, 32.32 335 P P 08 25 45.6 -0.5
baz=149,SNR=15
S38A Stockton 32.39 343 P P 08 25 46.4 -0.3
baz=158,SNR=48
BLO Bloomington 32.40 354 eP P 08 25 43.4 -3.3
BLO pmax pmax
comp=Z,132nm,0.8s
BLO MLR MLR
comp=Z,13µm,18.0s
BLO Bloomington 32.40 354 eP P 08 25 43.4 -3.3
comp=Z,132nm,0.8s
BLO LR LR
comp=Z,13µm,18.0s
SLM Saint Louis 32.44 348 eP P 08 25 46.4 -0.6
SLM pmax pmax
comp=Z,150nm,0.7s
SLM MLR MLR
comp=Z,10µm,22.0s
SLM Saint Louis 32.44 348 eP P 08 25 46.4 -0.6
comp=Z,150nm,0.7s
SLM LR LR
comp=Z,10µm,22.0s
T36A Boggs Farm, Ca 32.50 340 P P 08 25 47.2 -0.4
baz=154,SNR=27
U34A Anderson Ranch 32.55 337 P P 08 25 47.4 -0.8
baz=151
U34A Anderson Ranch 32.55 337 eP P 08 25 46.8 -1.4
comp=Z,112nm,1.1s
U34A LR LR
comp=Z,8µm,22.0s
V32A Arapaho 32.56 334 P P 08 25 47.6 -0.6
baz=148,SNR=44
R40A Maddies Statio 32.56 345 P P 08 25 47.4 -0.8
baz=162,SNR=48
T35A Sooner Cattle 32.59 339 P P 08 25 48.3 -0.2
baz=153,SNR=47
MCWV Mont Chateau 32.74 4 eP P 08 25 50.2 +0.5
comp=Z,46nm,1.3s
MCWV LR LR
comp=Z,8µm,18.0s
MNTX Cornudas Mount 32.76 322 P P 08 25 49.3 -0.7
baz=134,SNR=122
MNTX Cornudas Mount 32.76 322 eP P 08 25 49.7 -0.3
comp=Z,458nm,1.4s
MNTX LR LR
comp=Z,5µm,21.0s
U33A Lingo Farm, Me 32.78 336 P P 08 25 48.3 -1.8
baz=150
R39A Chumby, Stover 32.78 344 P P 08 25 49.9 -0.3
baz=160,SNR=40
S37A Fort Scott 32.79 342 P P 08 25 49.4 -0.8
baz=157,SNR=89
SDMD Soldier's Deli 32.80 8 eP P 08 25 49.9 -0.3
comp=Z,22nm,0.9s
SDMD LR LR
comp=Z,8µm,20.0s
R38A Fenwick Farm, 32.90 343 P P 08 25 50.2 -1.0
baz=159,SNR=36
MSTX Muleshoe 32.93 328 P P 08 25 51.4 -0.3
baz=140,SNR=33
MSTX Muleshoe 32.93 328 eP P 08 25 50.7 -0.9
comp=Z,153nm,1.0s
MSTX LR LR
comp=Z,8µm,21.0s
T34A McClaskey Farm 32.94 338 P P 08 25 51.0 -0.5
baz=152,SNR=28
S36A Lake Cedric, C 33.00 341 P P 08 25 51.6 -0.5
baz=155,SNR=52
AMTX Amarillo 33.09 330 P P 08 25 52.4 -0.6
baz=143
AMTX Amarillo 33.09 330 eP P 08 25 53.1 +0.1
comp=Z,110nm,1.1s
AMTX LR LR
comp=Z,12µm,22.0s
U32A Winter Ranch, 33.10 335 P P 08 25 52.7 -0.3
baz=149,SNR=21
Q40A Laux Farm, Aux 33.18 346 P P 08 25 53.1 -0.5
baz=162,SNR=54
S35A Otter Creek Ra 33.21 340 P P 08 25 53.0 -0.9
baz=154,SNR=45
ACSO Alum Creek Sta 33.24 359 eP P 08 25 53.0 -1.2
comp=Z,167nm,0.8s
ACSO LR LR
comp=Z,13µm,18.0s
R37A Teagarden Farm 33.30 342 P P 08 25 54.3 -0.3
baz=157,SNR=13
T33A Patterson Ranc 33.40 337 P P 08 25 55.2 -0.3
baz=150
O56A Blue Knob Stat 33.45 5 P P 08 25 56.0 0.0
baz=187,SNR=12
Q39A Willow Grove F 33.45 345 P P 08 25 55.5 -0.5
baz=161

S34A Willow Spring 33.51 339 P P 08 25 55.3 -1.2
baz=153,SNR=30
R36A Gordon, Harris 33.52 341 P P 08 25 55.7 -0.9
baz=156,SNR=38
Q38A Cooks Store, C 33.55 344 P P 08 25 55.6 -1.1
baz=160,SNR=45
SFIN Lafayette 33.65 353 P P 08 25 56.4 -1.3
baz=172,SNR=23
SFIN Lafayette 33.65 353 eP P 08 25 55.9 -1.8
comp=Z,102nm,0.9s
SFIN LR LR
comp=Z,13µm,19.0s
P40A Paris 33.68 346 P P 08 25 57.3 -0.6
baz=162,SNR=51
Q37A Longview Farm, 33.70 343 P P 08 25 57.5 -0.7
baz=158,SNR=25
R35A Emporia Munici 33.75 340 P P 08 25 58.2 -0.3
baz=155,SNR=12
S33A Kaszmaul Farm, 33.75 337 P P 08 25 58.4 -0.2
baz=151
T32A Huddler Ranch, 33.75 336 P P 08 25 58.3 -0.4
baz=149
SSPA Standing Stone 33.88 6 eP P 08 25 59.1 -0.6
comp=Z,68nm,1.0s
SSPA LR LR
comp=Z,16µm,22.0s
N54A Moraine State 34.03 3 P P 08 26 00.1 -0.9
baz=184,SNR=12
Q36A Arnold C. Orve 34.09 342 P P 08 26 00.9 -0.6
baz=156,SNR=21
R34A Isabella, Hill 34.09 339 P P 08 26 01.3 -0.2
baz=153,SNR=71
HDIL Hopedale 34.13 351 P P 08 26 01.2 -0.6
baz=168,SNR=27
HDIL Hopedale 34.13 351 eP P 08 25 59.8 -2.1
comp=Z,517nm,1.4s
HDIL LR LR
comp=Z,7µm,18.0s
P38A Dawn 34.14 345 P P 08 26 01.4 -0.5
baz=160,SNR=33
Q35A Mercer Eighty, 34.18 341 P P 08 26 01.8 -0.5
baz=155,SNR=38
LUPA Lehigh Univers 34.18 9 eP P 08 26 03.5 +1.2
comp=Z,77nm,1.0s
LUPA LR LR
comp=Z,28µm,20.0s
S32A Newby Ranch, P 34.20 336 P P 08 26 02.4 -0.2
baz=150
O40A La Belle 34.21 347 P P 08 26 01.5 -1.0
baz=163,SNR=23
P37A Lathrop 34.33 343 P P 08 26 03.1 -0.6
baz=159,SNR=46
R33A Olander Ranch, 34.37 338 P P 08 26 03.4 -0.6
baz=152,SNR=14
N59A State Game Lan 34.43 9 P P 08 26 04.0 -0.5
baz=192,SNR=8.2
O39A Kirksville 34.49 346 P P 08 26 04.6 -0.4
baz=162,SNR=50
Q34A Chapman 34.54 340 P P 08 26 05.2 -0.2
baz=154,SNR=27
KSU1 Kansas State U 34.59 340 P P 08 26 05.2 -0.6
baz=155,SNR=34
KSU1 Kansas State U 34.59 340 eP P 08 26 05.3 -0.5
comp=Z,108nm,0.8s
KSU1 LR LR
comp=Z,7µm,20.0s
M54A Oil Creek Stat 34.59 4 P P 08 26 05.2 -0.7
baz=185,SNR=8.7
O38A Galt 34.59 345 P P 08 26 05.9 0.0
baz=160,SNR=15
P36A Good Intent, A 34.61 342 P P 08 26 05.7 -0.3
baz=157,SNR=20
CPNY Central Park 34.62 11 PFAKE 08 26 20.0 +14
CPNY LR LR
comp=Z,16µm,20.0s
ALLY Alegheny Colle 34.71 3 eP P 08 26 06.3 -0.5
comp=Z,41nm,0.9s
ALLY LR LR
comp=Z,18µm,18.0s
R32A Long Quarter, 34.74 337 P P 08 26 07.1 -0.2
baz=151,SNR=39
P35A Duane Minner, 34.78 341 P P 08 26 06.6 -0.9
baz=156,SNR=59
ODNJ Ogdensburg 34.78 10 eP P 08 26 07.9 +0.4
comp=Z,31nm,1.0s
ODNJ LR LR
comp=Z,16µm,22.0s
O37A Wolven Farm, M 34.81 344 P P 08 26 07.4 -0.4
baz=159,SNR=19
121A Cookes Peak, D 34.82 321 P P 08 26 07.5 -0.6
baz=132,SNR=73
121A Cookes Peak, D 34.82 321 eP P 08 26 07.4 -0.8
comp=Z,785nm,1.5s
HSIG 34.83 313 eP P 08 26 08.2 +0.1
comp=Z,85nm,1.5s
HSIG LR LR
comp=Z,16µm,21.0s
PAL Palisades 34.84 11 eP P 08 26 08.3 +0.4
PAL pmax pmax
comp=Z,211nm,1.7s
PAL MLR MLR
comp=Z,17µm,20.0s
PAL Palisades 34.84 11 eP P 08 26 08.3 +0.4
comp=Z,211nm,1.7s
PAL LR LR
comp=Z,17µm,20.0s
SRIG Santa Rosalia 34.91 309 eP P 08 26 10.1 +1.3
comp=Z,123nm,1.0s
SRIG LR LR
comp=Z,9µm,21.0s
Q33A Connelly Farm, 34.92 339 P P 08 26 08.7 0.0
baz=152,SNR=19
O36A Bolckow 35.01 343 P P 08 26 08.4 -1.1
baz=158,SNR=32
319A Douglas 35.05 318 eP P 08 26 09.1 -1.1
comp=Z,622nm,1.4s
319A LR LR
comp=Z,13µm,18.0s
KSPA Keystone Colle 35.05 9 PFAKE 08 26 20.0 +10
KSPA LR LR
comp=Z,20µm,19.0s
P34A Walnut Farm, R 35.06 340 P P 08 26 09.6 -0.4
baz=154,SNR=39
N39A Derby Farms, D 35.07 347 P P 08 26 09.1 -0.9
baz=162,SNR=68
N38A Joes South For 35.17 346 P P 08 26 10.1 -0.8
baz=161,SNR=129
Q32A Meitler Ranch, 35.18 338 P P 08 26 11.0 0.0
baz=151,SNR=20
ERPA Erie 35.18 3 eP P 08 26 11.4 +0.5
comp=Z,50nm,0.9s
ERPA LR LR
comp=Z,19µm,18.0s
BNM Barren Site 35.22 324 eP P 08 26 11.4 -0.3
P33A Williams Farm, 35.26 339 P P 08 26 12.8 +1.1
baz=153
AAM Ann Arbor 35.32 358 eP P 08 26 12.3 +0.2
AAM pmax pmax
comp=Z,129nm,1.5s
AAM MLR MLR
comp=Z,22µm,18.0s
AAM Ann Arbor 35.32 358 eP P 08 26 12.3 +0.2
comp=Z,129nm,1.5s
AAM LR LR
comp=Z,22µm,18.0s
YLE Yale 35.33 12 eP P 08 26 11.4 -0.7
comp=Z,97nm,1.0s
YLE LR LR
comp=Z,18µm,21.0s
LPM Los Pinos Moun 35.34 324 eP P 08 26 11.7 -0.9
Y22D IRIS PASSCAL I 35.34 323 P P 08 26 12.1 -0.5
baz=135
Y22D IRIS PASSCAL I 35.34 323 PFAKE 08 26 20.0 +7.4
Y22D LR LR
comp=Z,8µm,22.0s
N37A Lee Faris, Mou 35.38 344 P P 08 26 12.5 -0.2
baz=159,SNR=48
O35A Humboldt 35.42 342 P P 08 26 11.6 -1.4
baz=156,SNR=27
CBKS Cedar Bluff 35.48 336 P P 08 26 12.7 -0.9
baz=149,SNR=6.2
CBKS Cedar Bluff 35.48 336 eP P 08 26 12.7 -0.9
CBKS pmax pmax
comp=Z,247nm,1.4s
CBKS MLR MLR
comp=Z,6µm,20.0s
CBKS Cedar Bluff 35.48 336 eP P 08 26 12.7 -0.9
comp=Z,246nm,1.4s

CBKS LR LR
comp=Z,6µm,20.0s
O34A Beatrice 35.59 341 P **P** 08 26 14.0 -0.5
baz=155,SNR=42
N36A Muff Farm, Cla 35.65 343 P **P** 08 26 14.0 -1.0
baz=158,SNR=15
ANMO Albuquerque 35.69 325 P **P** 08 26 14.1 -1.6
comp=Z,22nm,0.9s,baz=149,slow=8.3,SNR=30
ANMO Albuquerque 35.69 325 P **P** 08 26 14.6 -1.0
baz=136
ANMO Albuquerque 35.69 325 *i* P **P** 08 26 13.2 -2.5
ANMO pmax pmax
comp=Z,34nm,2.0s
ANMO MLR MLR
comp=Z,8µm,20.0s
ANMO Albuquerque 35.69 325 *eP* **P** 08 26 13.8 -1.9
comp=Z,442nm,2.0s
ANMO LR LR
comp=Z,8µm,21.0s
LAZ Ladron 35.70 324 *eP* **P** 08 26 14.4 -1.4
M38A Pleasantville 35.75 346 P **P** 08 26 14.9 -0.9
baz=161,SNR=47
P32A Huiting Farm, 35.75 338 P **P** 08 26 15.9 0.0
baz=152,SNR=31
O33A Hebron 35.79 340 P **P** 08 26 16.0 -0.2
baz=154,SNR=27
N35A Tabor 35.88 343 P **P** 08 26 16.1 -0.9
baz=157,SNR=25
M37A Trindle Farm, 35.95 345 P **P** 08 26 16.7 -0.8
baz=160,SNR=29
BUF Buffalo 36.06 4 *eP* **P** 08 26 17.3 -1.1
N34A Lincoln 36.12 342 P **P** 08 26 19.0 -0.1
baz=156,SNR=22
M36A Felix, Anita 36.19 344 P **P** 08 26 19.2 -0.5
baz=159,SNR=21
O32A Brockman Farm, 36.20 339 P **P** 08 26 19.7 0.0
baz=153,SNR=17
SCIA State Center 36.22 346 *eP* **P** 08 26 18.7 -1.1
comp=Z,215nm,0.9s
SCIA LR LR
comp=Z,14µm,21.0s
BRYW Bryant College 36.22 14 *eP* **P** 08 26 19.3 -0.6
comp=Z,97nm,0.9s
BRYW LR LR
comp=Z,26µm,20.0s
T25A Trinidad 36.23 329 P **P** 08 26 20.2 0.0
baz=141,SNR=83
T25A Trinidad 36.23 329 *eP* **P** 08 26 19.2 -1.1
comp=Z,323nm,1.4s
T25A LR LR
comp=Z,11µm,22.0s
N33A J Bar K, Exete 36.34 340 P **P** 08 26 20.8 -0.1
baz=154,SNR=17
L38A Oak Wood Farm, 36.38 347 P **P** 08 26 20.4 -0.8
baz=162,SNR=35
M35A Neola 36.46 343 P **P** 08 26 21.6 -0.3
baz=157,SNR=28
O31A Woolen Ranch, 36.48 338 P **P** 08 26 22.1 0.0
baz=151,SNR=10
TRY Troy 36.55 11 *eP* **P** 08 26 21.6 -1.0
comp=Z,96nm,0.9s
TRY LR LR
comp=Z,31µm,22.0s
L37A Phoenix Point, 36.55 346 P **P** 08 26 21.6 -1.1
baz=161,SNR=25
JFWS Jewell Farm 36.59 350 *eP* **P** 08 26 21.3 -1.6
JFWS pmax pmax
comp=Z,526nm,1.7s
JFWS MLR MLR
comp=Z,8µm,18.0s
JFWS Jewell Farm 36.59 350 *eP* **P** 08 26 21.3 -1.6
comp=Z,526nm,1.7s
JFWS LR LR
comp=Z,8µm,18.0s
TUC Tucson 36.63 318 P **P** 08 26 22.3 -1.3
baz=128
TUC Tucson 36.63 318 *eP* **P** 08 26 21.9 -1.7
TUC pmax pmax
comp=Z,95nm,1.0s
TUC MLR MLR
comp=Z,18µm,19.0s
TUC Tucson 36.63 318 *eP* **P** 08 26 21.9 -1.7
comp=Z,95nm,1.0s
TUC LR LR
comp=Z,18µm,19.0s
N32A Stulken Farm, 36.65 340 P **P** 08 26 23.9 +0.3
baz=153
BCX Boston College 36.70 14 *eP* **P** 08 26 25.1 +1.2
comp=Z,274nm,1.0s
BCX LR LR
comp=Z,35µm,20.0s
WES Weston 36.71 14 *eP* **P** 08 26 24.2 +0.2
WES pmax pmax
comp=Z,140nm,1.3s
WES MLR MLR
comp=Z,25µm,20.0s
WES Weston 36.71 14 *eP* **P** 08 26 24.2 +0.2
comp=Z,140nm,1.3s
WES LR LR
comp=Z,25µm,20.0s
M34A Aspy Farms, Fr 36.76 342 P **P** 08 26 24.4 0.0
baz=156
L36A Harn Buss Farm 36.76 345 P **P** 08 26 24.2 -0.3
baz=159,SNR=18
HRV Adam Dziewonsk 36.77 13 *eP* **P** 08 26 23.7 -0.8
HRV pmax pmax
comp=Z,48nm,1.0s
HRV MLR MLR
comp=Z,13µm,19.0s
HRV Adam Dziewonsk 36.77 13 *eP* **P** 08 26 23.7 -0.8
comp=Z,48nm,1.0s
HRV LR LR
comp=Z,13µm,19.0s
K38A Parkersburg 36.82 347 P **P** 08 26 24.3 -0.7
baz=163,SNR=22
KSCO Kaye Shedlock' 36.87 333 P **P** 08 26 25.0 -0.6
baz=145,SNR=36
KSCO Kaye Shedlock' 36.87 333 *eP* **P** 08 26 24.9 -0.8
comp=Z,136nm,0.7s
KSCO LR LR
comp=Z,14µm,22.0s
N31A Bailey Ranch, 36.93 339 P **P** 08 26 25.9 -0.1
baz=152
M33A Taylor Creek F 37.01 341 P **P** 08 26 26.6 0.0
baz=155
L35A Bielow Farm, R 37.01 344 P **P** 08 26 26.1 -0.6
baz=158,SNR=29
L34A Svendsen Farm, 37.12 343 P **P** 08 26 27.1 -0.4
baz=157
K37A Belmond 37.13 346 P **P** 08 26 26.7 -0.9
baz=161,SNR=25
BGNE Belgrade 37.17 340 P **P** 08 26 28.1 0.0
baz=154,SNR=11
BGNE Belgrade 37.17 340 *eP* **P** 08 26 27.9 -0.1
comp=Z,113nm,0.8s
BGNE LR LR
comp=Z,8µm,21.0s
ACCN Adirondack Com 37.18 11 *eP* **P** 08 26 27.0 -1.0
comp=Z,46nm,1.0s
ACCN LR LR
comp=Z,14µm,22.0s
K36A Gilmore City 37.21 345 P **P** 08 26 27.8 -0.5
baz=160,SNR=39
SDCO Great Sand Dun 37.25 329 P **P** 08 26 27.9 -1.1
baz=140,SNR=45
SDCO Great Sand Dun 37.25 329 *eP* **P** 08 26 27.9 -1.1
comp=Z,98nm,0.9s
SDCO LR LR
comp=Z,14µm,22.0s
LCO Las Campanas 37.38 163 PFAKE 08 26 40.0 +10
LCO LR LR
comp=Z,3µm,19.0s
J38A Wedel Dairy, R 37.40 348 P **P** 08 26 29.2 -0.6
baz=163
M31A Lambtecht Ranc 37.40 339 P **P** 08 26 29.4 -0.6
baz=152
K35A Storm Lake 37.49 344 P **P** 08 26 30.0 -0.7
baz=159,SNR=10
X18A Snowflake 37.49 321 *eP* **P** 08 26 31.0 0.0
comp=Z,624nm,1.4s
X18A LR LR
comp=Z,13µm,19.0s
L33A Hoskins 37.57 342 P **P** 08 26 28.5 -2.9
baz=155,SNR=13
J37A Redenius Farm, 37.63 347 P **P** 08 26 31.0 -0.8
baz=162
NCB Newcomb 37.66 10 PFAKE 08 26 40.0 +7.9
NCB LR LR
comp=Z,15µm,19.0s
L32A Elgin 37.66 341 P **P** 08 26 31.8 -0.3
baz=154,SNR=18
FFD Franklin Falls 37.67 13 *eP* **P** 08 26 30.5 -1.6
comp=Z,59nm,0.8s
FFD LR LR
comp=Z,18µm,21.0s
K34A Le Mars 37.70 343 P **P** 08 26 31.8 -0.6
baz=157,SNR=26
W18A Petrified Fore 37.75 322 P **P** 08 26 32.7 -0.5
baz=132,SNR=131
W18A Petrified Fore 37.75 322 *eP* **P** 08 26 32.3 -0.9
comp=Z,2µm,1.4s
W18A LR LR
comp=Z,9µm,20.0s
HNH Hanover 37.76 12 *eP* **P** 08 26 32.4 -0.5
comp=Z,60nm,0.8s
HNH LR LR
comp=Z,22µm,21.0s
214A Organ Pipe Nat 37.81 315 P **P** 08 26 34.6 +1.0
baz=125,SNR=70
214A Organ Pipe Nat 37.81 315 *eP* **P** 08 26 33.5 -0.1
comp=Z,1µm,1.3s
J36A Seneca 1, Swea 37.83 346 P **P** 08 26 32.2 -1.3
baz=160,SNR=24
MDV Middlebury 37.87 11 *eP* **P** 08 26 33.0 -0.8
SADO Sadowa 37.88 4 P **P** 08 26 31.4 -2.4
comp=Z,14nm,0.7s,baz=206,slow=8.8,SNR=18
SADO Sadowa 37.88 4 *eP* **P** 08 26 32.0 -1.8
comp=Z,193nm,1.9s
SADO LR LR
comp=Z,29µm,19.0s
K33A Hardington 37.89 342 P **P** 08 26 33.4 -0.7
baz=156,SNR=16
S22A 4UR Ranch, Cre 37.94 328 P **P** 08 26 33.8 -1.1
baz=138,SNR=61
S22A 4UR Ranch, Cre 37.94 328 *eP* **P** 08 26 33.0 -1.9
comp=Z,288nm,1.8s
S22A LR LR
comp=Z,8µm,20.0s
Q24A Divide 38.01 331 P **P** 08 26 35.0 -0.5
baz=141,SNR=25
Q24A Divide 38.01 331 *eP* **P** 08 26 35.5 -0.1
comp=Z,202nm,1.4s
Q24A LR LR
comp=Z,3µm,20.0s
I38A Scanlan Farm, 38.06 348 P **P** 08 26 34.3 -1.2
baz=164,SNR=19
J35A Milford 38.09 345 P **P** 08 26 34.7 -1.0
baz=159,SNR=7.3
L31A Butterfield Fa 38.09 340 P **P** 08 26 35.3 -0.5
baz=153,SNR=56
J34A George 38.21 344 P **P** 08 26 34.8 -1.9
baz=158,SNR=7.7
OGNE Ogallala 38.22 336 P **P** 08 26 36.0 -1.0
baz=147,SNR=20
OGNE Ogallala 38.22 336 *eP* **P** 08 26 38.5 +1.5
comp=Z,354nm,1.0s
OGNE LR LR
comp=Z,7µm,22.0s
LONY Lake Ozonia 38.23 9 *eP* **P** 08 26 37.4 +0.5
comp=Z,71nm,1.4s
LONY LR LR
comp=Z,23µm,21.0s
K32A Verdigre 38.24 341 P **P** 08 26 36.2 -0.8
baz=154,SNR=34
I37A Lemond, Waseca 38.26 347 P **P** 08 26 36.6 -0.5
baz=162
X16A Lo Mia Camp, P 38.37 320 *eP* **P** 08 26 37.1 -1.4
comp=Z,181nm,1.1s
X16A LR LR
comp=Z,14µm,19.0s
I36A Fitzsimmons Fa 38.41 346 P **P** 08 26 37.0 -1.4
baz=161
K31A O'Neill 38.46 340 P **P** 08 26 38.3 -0.6
baz=153,SNR=39
MVCO Mesa Verde 38.46 326 P **P** 08 26 37.6 -1.7
baz=135,SNR=51
MVCO Mesa Verde 38.46 326 *eP* **P** 08 26 37.1 -2.1
comp=Z,730nm,1.7s
MVCO LR LR
comp=Z,10µm,21.0s
I35A Creekview Farm 38.49 345 P **P** 08 26 38.0 -1.0
baz=160,SNR=5.9
J33A Davis 38.53 343 P **P** 08 26 38.3 -1.1
baz=156,SNR=17
FRNY Flat Rock 38.60 10 *eP* **P** 08 26 39.4 -0.6
comp=Z,121nm,1.8s
FRNY LR LR
comp=Z,15µm,19.0s
H37A Dierke Farm, C 38.70 348 P **P** 08 26 39.4 -1.4
baz=163,SNR=11
K30A Basset 38.80 340 P **P** 08 26 40.8 -0.9
baz=152,SNR=61
ECSD EROS Data Cent 38.81 343 P **P** 08 26 39.4 -2.3
baz=157,SNR=82
ECSD EROS Data Cent 38.81 343 *eP* **P** 08 26 40.2 -1.6
comp=Z,119nm,1.1s
ECSD LR LR
comp=Z,10µm,20.0s
J32A Parkston 38.84 342 P **P** 08 26 39.9 -2.2
baz=155,SNR=25
I34A Hadley 38.88 344 P **P** 08 26 41.0 -1.5
baz=158,SNR=19
ISCO Idaho Springs 38.89 331 P **P** 08 26 42.2 -0.7
baz=141,SNR=75
ISCO Idaho Springs 38.89 331 *eP* **P** 08 26 41.7 -1.2
ISCO pmax pmax
comp=Z,66nm,1.0s
ISCO MLR MLR
comp=Z,3µm,20.0s
ISCO Idaho Springs 38.89 331 *eP* **P** 08 26 41.7 -1.2
comp=Z,66nm,1.0s
ISCO LR LR
comp=Z,3µm,20.0s
H36A Jessenland, He 38.91 347 P **P** 08 26 41.9 -0.8
baz=162,SNR=22
113A Mohawk Valley, 38.94 316 *eP* **P** 08 26 43.8 +0.8
comp=Z,408nm,1.4s
113A LR LR
comp=Z,10µm,20.0s
WUAZ Wupatki 39.02 321 P **P** 08 26 42.5 -1.4
baz=130,SNR=123
WUAZ Wupatki 39.02 321 *eP* **P** 08 26 42.8 -1.1
comp=Z,680nm,1.3s
WUAZ LR LR
comp=Z,9µm,19.0s
J31A Geddes 39.05 341 P **P** 08 26 43.3 -0.5
baz=154
Y14A Wickenburg 39.10 318 *eP* **P** 08 26 42.7 -1.7
comp=Z,632nm,1.0s
Y14A LR LR
comp=Z,45µm,18.0s
I33A Coleman 39.15 343 P **P** 08 26 43.2 -1.5
baz=157,SNR=8.9
PV01 Paradox Valley 39.16 327 *eP* **P** 08 26 43.5 -1.6
WVL Waterville 39.17 14 *eP* **P** 08 26 44.7 0.0
comp=Z,110nm,0.9s
WVL LR LR
comp=Z,17µm,20.0s
H35A Sunnyside Ranc 39.24 346 P **P** 08 26 43.6 -1.7
baz=160,SNR=48
SPMN Marine on St. 39.29 348 P **P** 08 26 44.0 -1.7
baz=164,SNR=50
SPMN Marine on St. 39.29 348 *eP* **P** 08 26 44.5 -1.3
comp=Z,254nm,1.1s
SPMN LR LR
comp=Z,6µm,19.0s
I32A Karley and Nic 39.32 343 P **P** 08 26 45.1 -1.0
baz=156
J30A Dallas 39.33 340 P **P** 08 26 44.5 -1.7
baz=153,SNR=94
PV05 Paradox Valley 39.41 326 *eP* **P** 08 26 45.2 -2.0
H34A Spellman Lake, 39.45 345 P **P** 08 26 45.6 -1.5
baz=159,SNR=42
G36A St. Michael 39.50 347 P **P** 08 26 46.4 -1.1
baz=162,SNR=12
PV04 Paradox Valley 39.53 327 *eP* **P** 08 26 46.0 -2.1
COWI Conover 39.54 353 *eP* **P** 08 26 46.3 -1.5
comp=Z,170nm,1.5s
COWI LR LR
comp=Z,13µm,18.0s
PV10 Paradox Valley 39.59 326 *eP* **P** 08 26 46.0 -2.7
G35A Watkins 39.65 347 P **P** 08 26 47.3 -1.4
baz=161,SNR=6.1
I31A Royce, Wessing 39.65 342 P **P** 08 26 47.9 -0.9
baz=154
J29A Okreek 39.69 339 P **P** 08 26 47.7 -1.5
baz=151,SNR=80
H33A Prehn Over Nor 39.72 344 P **P** 08 26 47.9 -1.5
baz=157,SNR=93
PV09 Paradox Valley 39.73 326 *eP* **P** 08 26 49.2 -0.7
H32A Carlson Farm, 39.75 343 P **P** 08 26 49.0 -0.7
baz=156,SNR=38
TRQ Mont Tremblant 39.80 8 *eP* **P** 08 26 48.5 -1.6
GLA Glamis 39.83 315 P **P** 08 26 50.2 -0.4
baz=124,SNR=26
GLA Glamis 39.83 315 *eP* **P** 08 26 51.3 +0.7
GLA pmax pmax
comp=Z,568nm,1.3s
GLA MLR MLR
comp=Z,7µm,20.0s
GLA Glamis 39.83 315 *eP* **P** 08 26 51.3 +0.7
comp=Z,568nm,1.3s
GLA LR LR
comp=Z,7µm,20.0s
I30A Oacoma 39.83 341 P **P** 08 26 49.8 -0.6
baz=153,SNR=16
EMMW East Machias 39.89 17 *eP* **P** 08 26 50.1 -0.6
comp=Z,94nm,0.9s
EMMW LR LR
comp=Z,11µm,20.0s
N23A Red Feather La 39.90 332 P **P** 08 26 51.0 -0.3
baz=142,SNR=31
N23A Red Feather La 39.90 332 *eP* **P** 08 26 52.8 +1.5
comp=Z,230nm,1.9s
N23A LR LR
comp=Z,9µm,22.0s
PKME Peaks-Kenny Pk 39.92 14 *eP* **P** 08 26 51.7 +0.7
comp=Z,101nm,1.0s
PKME LR LR
comp=Z,11µm,20.0s
G34A Benson 39.95 345 P **P** 08 26 50.3 -0.9
baz=159
PHWY Pilot Hill 40.00 333 *eP* **P** 08 26 52.7 +0.6
comp=Z,156nm,1.8s
PHWY LR LR
comp=Z,10µm,22.0s
Y12C Blythe 40.02 316 P **P** 08 26 53.2 +1.2
baz=125,SNR=12
Y12C Blythe 40.02 316 *eP* **P** 08 26 52.5 +0.5
comp=Z,193nm,1.2s
Y12C LR LR
comp=Z,12µm,20.0s
J28A Allard Ranch, 40.03 339 P **P** 08 26 52.7 +0.6
baz=150,SNR=54
H31A Wolsey 40.04 342 P **P** 08 26 51.4 -0.6
baz=155,SNR=13
F36A Milaca 40.05 348 P **P** 08 26 50.7 -1.4
baz=163,SNR=57
PDMCI Parker Dam,Lak 40.07 317 P **P** 08 26 54.3 +1.8
baz=126,SNR=18
G33A Ortonville 40.11 345 P **P** 08 26 50.7 -1.9
baz=158,SNR=36
SUSD Miller 40.15 342 P **P** 08 26 52.2 -0.8
baz=154
J27A Elkhorn Farm, 40.17 338 P **P** 08 26 54.1 +0.9
baz=149,SNR=76
I29A Vivian Onida 40.22 340 P **P** 08 26 53.3 -0.3
baz=152,SNR=30
F35A Swanville 40.27 347 P **P** 08 26 52.8 -1.2
baz=161,SNR=22
W13A Hualapai Mount 40.37 319 *eP* **P** 08 26 54.0 -1.3
comp=Z,105nm,1.0s
W13A LR LR
comp=Z,10µm,18.0s
F34A Alexandria 40.37 346 P **P** 08 26 54.0 -0.8
baz=160,SNR=13
O20A White River Ci 40.45 329 P **P** 08 26 57.1 +1.4
baz=138,SNR=19
O20A White River Ci 40.45 329 *eP* **P** 08 26 56.3 +0.6
comp=Z,101nm,1.0s
O20A LR LR
comp=Z,8µm,22.0s
G32A Webster 40.46 343 P **P** 08 26 54.6 -0.9
baz=156,SNR=22
SWSC Sam W. Stewart 40.46 314 P **P** 08 26 58.6 +2.9
baz=123,SNR=16
E37A Wrenshall 40.50 349 P **P** 08 26 55.4 -0.4
baz=165
I28A Midland 40.51 339 P **P** 08 26 55.1 -0.8
baz=150,SNR=78
BC3 Big Chuckawall 40.60 316 P **P** 08 27 00.5 +3.5
baz=124,SNR=26
E36A McGregor 40.62 348 P **P** 08 26 55.3 -1.5
baz=163,SNR=18
J26A Sides Ranch, S 40.63 337 P **P** 08 26 57.1 0.0
baz=147,SNR=22
G31A Conde 40.63 343 P **P** 08 26 55.3 -1.7
baz=155,SNR=14
NEE2 Needles Airpor 40.66 318 P **P** 08 27 00.9 +3.5
baz=126
IRM Iron Mountain 40.67 316 P **P** 08 27 01.3 +3.8
baz=124,SNR=11
F33A 5 Mile Ranch, 40.67 345 P **P** 08 26 55.3 -2.0
baz=158,SNR=77
H29A Onida 40.73 340 P **P** 08 26 57.2 -0.6
baz=152,SNR=16
G30A Faulkton 40.83 342 P **P** 08 26 57.1 -1.5
baz=154,SNR=30
PKCU Pink Cliffs 40.84 323 *eP* **P** 08 26 58.9 -0.3
comp=Z,826nm,1.6s
PKCU LR LR
comp=Z,7µm,20.0s
MONP2 Monument Peak 40.88 314 P **P** 08 26 58.5 -0.9
baz=122,SNR=11
KNB Kanab 40.88 322 *eP* **P** 08 26 58.2 -1.1
KNB pmax pmax
comp=Z,984nm,1.7s
KNB MLR MLR
comp=Z,13µm,19.0s
KNB Kanab 40.88 322 *eP* **P** 08 26 58.2 -1.1
comp=Z,984nm,1.7s
KNB LR LR
comp=Z,13µm,19.0s
I27A Quinn 40.88 338 P **P** 08 26 59.5 +0.4
baz=149,SNR=63
E35A Pequot Lakes 40.90 347 P **P** 08 26 58.2 -0.9
baz=162,SNR=12
F32A Veblen 40.92 344 P **P** 08 26 57.7 -1.6
baz=157,SNR=10
SRU San Rafael Swe 40.93 326 *eP* **P** 08 26 57.8 -2.0
SRU pmax pmax
comp=Z,178nm,1.0s
SRU MLR MLR
comp=Z,11µm,20.0s
SRU San Rafael Swe 40.93 326 *eP* **P** 08 26 57.8 -2.0
comp=Z,178nm,1.0s
SRU LR LR
comp=Z,11µm,20.0s
BAR Barrett 40.94 313 PFAKE 08 27 10.0 +10
BAR LR LR
comp=Z,5µm,20.0s
CPUP Villa Florida 40.96 145 P **P** 08 26 58.4 -1.5
comp=Z,5.0nm,1.0s,baz=1.9,slow=11,SNR=4.5
CPUP LR LR 08 45 28.9
comp=Z,2µm,21.0s,baz=336,slow=38
CPUP Villa Florida 40.96 145 *eP* **P** 08 26 56.3 -3.6
CPUP Villa Florida 40.96 145 *eP* **P** 08 26 56.2 -3.6
J25A Sunshine Ranch 40.99 336 P **P** 08 27 01.0 +1.0
baz=146,SNR=39
E34A Wadena 41.03 347 P **P** 08 26 59.3 -0.9
baz=160,SNR=29
H28A Mission Ridge 41.04 340 P **P** 08 27 00.3 -0.1
baz=151
ROC1 El Roble 41.05 165 *eP* **P** 08 27 01.6 +0.8
comp=Z,44nm,0.8s
D37A Cotton 41.08 350 P **P** 08 26 59.9 -0.7
baz=165,SNR=13
G29A Hoven 41.13 341 P **P** 08 27 00.9 -0.2
baz=153
LCMT Little Creek M 41.14 321 *eP* **P** 08 27 02.8 +1.4
comp=Z,359nm,1.4s
LCMT LR LR
comp=Z,10µm,22.0s
P18A Preston Nutter 41.14 327 *eP* **P** 08 26 60.0 -1.6
comp=Z,176nm,1.4s
P18A LR LR
comp=Z,10µm,21.0s
I26A New Underwood 41.16 337 P **P** 08 27 00.8 -0.6
baz=148,SNR=38
MTPU Mount Pierson 41.16 323 *eP* **P** 08 27 01.4 -0.4
comp=Z,363nm,1.5s
MTPU LR LR
comp=Z,15µm,18.0s
BELC Belle Mtn. Jos 41.17 316 P P 08 27 08.2 +6.5

baz=123
LDFC Landfair 41.17 318 *e*P P 08 27 02.7 +1.0
comp=Z,157nm,1.1s
LDFC LR LR
comp=Z,12µm,19.0s
E33A Westby DABS, E 41.22 346 P P 08 27 01.0 -0.7
baz=159
F31A Hecla 41.22 343 P P 08 27 00.7 -1.1
baz=156,SNR=13
D36A Goodland 41.23 349 P P 08 27 00.5 -1.3
baz=164,SNR=31
PFO Pinyon Flats O 41.28 315 P P 08 26 59.8 -2.9
comp=Z,8.9nm,1.0s,baz=116,slow=7.7,SNR=3.9
PFO Pinyon Flats O 41.28 315 P P 08 27 05.4 +2.7
baz=122,SNR=21
PFO Pinyon Flats O 41.28 315 *e*P P 08 27 05.4 +2.7
PFO pmax pmax
comp=Z,140nm,1.1s
PFO MLR MLR
comp=Z,9µm,19.0s
PFO Pinyon Flats O 41.28 315 *e*P P 08 27 05.4 +2.7
comp=Z,140nm,1.1s
PFO LR LR
comp=Z,9µm,19.0s
P17A Butcher Ranch, 41.30 326 *e*P P 08 27 03.0 +0.2
comp=Z,272nm,1.4s
P17A LR LR
comp=Z,10µm,20.0s
D35A Remer 41.32 348 P P 08 27 01.3 -1.2
baz=162,SNR=13
C39A Grand Marais 41.35 352 P P 08 27 01.6 -1.2
baz=168,SNR=8.4
G28A Parade 41.36 340 P P 08 27 02.8 -0.2
baz=152
109C Camp Elliot, M 41.36 313 P P 08 27 05.8 +2.7
baz=121,SNR=15
GMRC Granite Mounta 41.38 317 P P 08 27 06.0 +2.6
baz=124,SNR=36
H27A Howes 41.38 339 P P 08 27 03.6 +0.4
baz=150,SNR=42
C38A Sawbill Land. 41.43 351 P P 08 27 02.2 -1.2
baz=167,SNR=11
F30A Leola 41.43 342 P P 08 27 02.8 -0.7
baz=155,SNR=17
TMUT Trail Mountain 41.44 326 *e*P P 08 27 04.8 +0.7
comp=Z,403nm,1.8s
TMUT LR LR
comp=Z,9µm,21.0s
MSU Marysvale 41.47 324 *e*P P 08 27 03.9 -0.3
MSU Marysvale 41.47 324 *e*P P 08 27 03.9 -0.3
I25A Rochford 41.48 337 P P 08 27 05.6 +1.4
baz=147,SNR=56
PQI Presque Isle 41.55 15 *e*P P 08 27 04.1 -0.3
comp=Z,1µm,1.2s
CCUT Cedar City 41.55 322 PFAKE 08 27 10.0 +5.1
CCUT LR LR
comp=Z,14µm,21.0s
K22A Casper 41.55 333 P P 08 27 06.0 +1.2
baz=142,SNR=35
K22A Casper 41.55 333 *e*P P 08 27 06.0 +1.2
comp=Z,250nm,1.6s
K22A LR LR
comp=Z,15µm,22.0s
E32A Braaten, Kindr 41.57 345 P P 08 27 03.7 -1.0
baz=158,SNR=5.3
D34A Park Rapids 41.57 347 P P 08 27 03.6 -1.1
baz=161,SNR=15
C37A Embarrass 41.59 350 P P 08 27 04.3 -0.4
baz=165,SNR=39
H26A Fairpoint 41.62 338 P P 08 27 06.3 +1.2
baz=149
F29A Eureka 41.67 342 P P 08 27 04.7 -0.9
baz=153,SNR=26
EYMN Ely 41.68 351 P P 08 27 04.9 -0.7
baz=166,SNR=13
EYMN Ely 41.68 351 *e*P P 08 27 04.2 -1.4
comp=Z,122nm,1.3s
EYMN LR LR
comp=Z,6µm,20.0s
RSSD Black Hills 41.69 336 P P 08 27 05.4 -0.5
baz=147
RSSD Black Hills 41.69 336 *e*P P 08 27 05.4 -0.5
RSSD pmax pmax
comp=Z,327nm,1.8s
RSSD MLR MLR
comp=Z,9µm,20.0s
RSSD Black Hills 41.69 336 *e*P P 08 27 05.4 -0.5
comp=Z,327nm,1.8s
RSSD LR LR
comp=Z,9µm,20.0s
LMN Caledonia Moun 41.72 18 *e*P P 08 27 05.4 -0.4
comp=Z,160nm,0.9s
LMN LR LR
comp=Z,12µm,21.0s
WCU Willow Creek 41.72 324 *e*P P 08 27 09.3 +2.9
C36A Pine Crest Far 41.73 349 P P 08 27 05.7 -0.3
baz=164,SNR=59
E31A Nome 41.76 344 P P 08 27 05.4 -0.8
baz=156,SNR=23
D33A AnnSam, Waubun 41.78 346 P P 08 27 05.4 -0.9
baz=160,SNR=12
MURC Murrieta 41.80 314 P P 08 27 08.0 +1.2
baz=122,SNR=22
LMQ La Malbaie 41.84 12 *e*P P 08 27 05.7 -1.2
comp=Z,83nm,0.8s
LMQ LR LR
comp=Z,11µm,21.0s
HEC Hector,Ludlow 41.86 316 P P 08 27 06.4 -0.9
baz=124,SNR=32
C35A Jirik Farms, M 41.90 348 P P 08 27 05.8 -1.5
baz=163,SNR=28
TUQ Turquoise Moun 41.92 317 P P 08 27 09.7 +1.9
baz=125
H25A Fruitdale 41.94 337 P P 08 27 09.5 +1.7
baz=148,SNR=15
BBRC Big Bear Solar 41.96 315 P P 08 27 10.8 +2.5
baz=123
G27A Dupree 41.97 339 P P 08 27 08.2 +0.2
baz=150,SNR=28
E30A Jud 42.00 343 P P 08 27 07.7 -0.5
baz=155,SNR=19
F28A McLaughlin 42.00 341 P P 08 27 08.2 0.0
baz=152,SNR=22
C34A RKJ Ranch, Bem 42.04 347 P P 08 27 07.7 -0.8
baz=161
D32A Dogwood Acres, 42.06 345 P P 08 27 07.9 -0.7
baz=158
G26A Maurine 42.14 339 P P 08 27 09.1 -0.3
baz=149,SNR=5.8
D31A Mcclaflin, Tow 42.16 344 P P 08 27 08.3 -1.2
baz=157,SNR=9.5
E29A Napoleon 42.28 342 P P 08 27 10.0 -0.4
baz=154
C33A Trail 42.34 347 P P 08 27 11.9 +1.0
baz=160
RRX Edison Barstow 42.34 316 P P 08 27 12.3 +1.1
baz=123,SNR=17
G25A Newell 42.35 338 P P 08 27 11.9 +0.7
baz=148,SNR=16
NLU North Lily Min 42.38 326 *e*P P 08 27 12.0 +0.4
comp=Z,279nm,1.8s
NLU LR LR
comp=Z,11µm,20.0s
F27A Lemmon 42.43 340 P P 08 27 11.3 -0.4
baz=150
GSC Goldstone, Bar 42.44 317 P P 08 27 13.1 +1.0
baz=124,SNR=47
GSC Goldstone, Bar 42.44 317 *e*P P 08 27 13.6 +1.5
GSC pmax pmax
comp=Z,356nm,1.4s
GSC MLR MLR
comp=Z,10µm,22.0s
GSC Goldstone, Bar 42.44 317 *e*P P 08 27 13.6 +1.5
comp=Z,356nm,1.4s
GSC LR LR
comp=Z,10µm,22.0s
SCI2 San Clemente I 42.46 313 P P 08 27 14.2 +2.1
baz=120
BFSC Mount Baldy Ra 42.46 315 P P 08 27 12.5 +0.2
baz=122,SNR=11
B35A Bob, Littlefor 42.48 349 P P 08 27 11.3 -0.7
baz=163,SNR=17
PSUT Pine Spring 42.48 323 *e*P P 08 27 12.6 +0.2
comp=Z,298nm,1.3s
PSUT LR LR
comp=Z,15µm,21.0s
JLU Jordanelle 42.48 327 *e*P P 08 27 12.2 -0.2
comp=Z,271nm,1.5s
JLU LR LR
comp=Z,12µm,20.0s
D30A Buchanan 42.51 343 P P 08 27 11.6 -0.7
baz=156,SNR=39
CIS Catalina Islan 42.57 313 P P 08 27 15.9 +2.9
baz=120,SNR=12
C32A Crookston 42.58 346 P P 08 27 13.0 +0.1
baz=159
E28A Huff 42.61 341 P P 08 27 13.4 +0.2
baz=153,SNR=20
FMP Fort Macarthur 42.64 314 P P 08 27 12.9 -0.6
baz=121
F26A Lodgepole 42.64 339 P P 08 27 14.2 +0.7
baz=150
RPN Rapa Nui 42.70 217 PFAKE 08 27 20.0 +5.9
RPN LR LR
comp=Z,13µm,21.0s
D29A Pettibone, Tap 42.70 343 P P 08 27 14.1 +0.2
baz=154
CTU Camp Tracy 42.71 327 *e*P P 08 27 12.2 -2.1
comp=Z,174nm,1.3s
CTU LR LR
comp=Z,12µm,18.0s
MWC Mount Wilson 42.73 315 PFAKE 08 27 20.0 +5.4
MWC LR LR
comp=Z,8µm,22.0s
E27A Carson 42.76 340 P P 08 27 14.9 +0.4
baz=151,SNR=32
B33A Robert and Kas 42.78 347 P P 08 27 13.8 -0.7
baz=160,SNR=26
B34A Aery, Baudette 42.78 348 P P 08 27 13.5 -1.0
baz=162,SNR=71
PASC Pasadena Art C 42.80 314 *e*P P 08 27 12.9 -2.0
comp=Z,276nm,1.4s
PASC LR LR
comp=Z,7µm,22.0s
TCUT Toone Canyon 42.82 327 *e*P P 08 27 13.4 -1.8
comp=Z,541nm,1.6s
TCUT LR LR
comp=Z,12µm,20.0s
C31A Landman Farms, 42.85 345 P P 08 27 13.7 -1.4
baz=157,SNR=58
AGMN Agassiz Nation 42.87 347 P P 08 27 14.6 -0.6
baz=160,SNR=65
AGMN Agassiz Nation 42.87 347 *e*P P 08 27 14.4 -0.8
comp=Z,266nm,1.3s
AGMN LR LR
comp=Z,8µm,19.0s
DECC Green Verdugo 42.95 314 P P 08 27 15.8 -0.3
baz=121,SNR=11
DUG Dugway, Tooele 42.96 325 P P 08 27 17.2 +0.9
baz=132,SNR=70
DUG Dugway, Tooele 42.96 325 *e*P P 08 27 16.7 +0.5
DUG pmax pmax
comp=Z,347nm,1.5s
DUG MLR MLR
comp=Z,13µm,20.0s
DUG Dugway, Tooele 42.96 325 *e*P P 08 27 16.7 +0.5
comp=Z,347nm,1.5s
DUG LR LR
comp=Z,13µm,20.0s
C30A Mose, Pekin 42.97 344 P P 08 27 15.9 -0.1
baz=156,SNR=17
F25A Bowman 42.99 338 P P 08 27 17.1 +0.8
baz=148
TPNV Topopah Spring 43.01 319 P P 08 27 15.8 -0.9
baz=126,SNR=42
TPNV Topopah Spring 43.01 319 *e*P P 08 27 17.0 +0.2
TPNV pmax pmax
comp=Z,244nm,1.2s
TPNV MLR MLR
comp=Z,10µm,21.0s
TPNV Topopah Spring 43.01 319 *e*P P 08 27 16.9 +0.2
comp=Z,244nm,1.2s
TPNV LR LR
comp=Z,10µm,21.0s
EDW2 Edwards Air Fo 43.03 315 P P 08 27 17.0 +0.2
baz=122,SNR=26
PD31 Pinedale Array 43.07 330 *e*P P 08 27 16.8 -0.4
PDAR Pinedale Array 43.07 330 P P 08 27 14.5 -2.7
comp=Z,11nm,1.1s,baz=134,slow=8.5,SNR=41
PDAR PcP PcP 08 29 05.6 -1.6
comp=Z,9.9nm,1.1s,baz=131,slow=4.9,SNR=3.0
PDAR LR LR 08 49 13.5
comp=Z,7µm,18.3s,baz=130,slow=42
BW06 Boulder Array 43.07 330 P P 08 27 18.9 +1.6
baz=138,SNR=71
BW06 Boulder Array 43.07 330 *e*P P 08 27 16.2 -1.0
comp=Z,160nm,1.4s
BW06 LR LR
comp=Z,8µm,20.0s
E26A Carlson Angus 43.10 340 P P 08 27 17.5 +0.3
baz=150,SNR=9.2
B32A Ashes, Strandq 43.12 346 P P 08 27 16.5 -0.7
baz=159,SNR=114
D28A Regan 43.12 342 P P 08 27 17.4 +0.1
baz=153
FURC Furnace Creek, 43.13 318 P P 08 27 19.0 +1.5
baz=125,SNR=21
LRMC Laurel Mtn Rad 43.14 316 P P 08 27 19.1 +1.4
baz=123,SNR=21
HWUT Hardware Ranch 43.25 328 *e*P P 08 27 15.8 -2.9
comp=Z,219nm,1.3s
HWUT LR LR
comp=Z,12µm,21.0s
SNCC San Nicolas Is 43.30 312 PFAKE 08 27 30.0 +11
SNCC LR LR
comp=Z,5µm,19.0s
MPMC Manual Prospec 43.33 317 P P 08 27 20.2 +0.9
baz=124,SNR=34
D27A Center 43.35 341 P P 08 27 19.7 +0.5
baz=152,SNR=12
A33A Warroad 43.37 347 P P 08 27 17.9 -1.3
baz=161,SNR=74
OSI Osito Audit: C 43.41 315 P P 08 27 21.7 +1.9
baz=121
OSI Osito Audit: C 43.41 315 *e*P P 08 27 20.1 +0.3
comp=Z,242nm,1.6s
OSI LR LR
comp=Z,7µm,22.0s
B31A Greenbush Farm 43.41 345 P P 08 27 19.2 -0.4
baz=158,SNR=18
R11A Troy Canyon, C 43.42 321 P P 08 27 21.2 +1.2
baz=128,SNR=42
R11A Troy Canyon, C 43.42 321 *e*P P 08 27 17.9 -2.1
comp=Z,405nm,1.4s
R11A LR LR
comp=Z,12µm,20.0s
E25A Miller Ranch, 43.46 339 P P 08 27 20.5 +0.5
baz=149,SNR=9.9
DAC Darwin (Calif) 43.52 317 *e*P P 08 27 21.4 +0.5
DAC pmax pmax
comp=Z,113nm,1.4s
DAC MLR MLR
comp=Z,10µm,21.0s
DAC Darwin (Calif) 43.52 317 *e*P P 08 27 21.4 +0.5
comp=Z,112nm,1.4s
DAC LR LR
comp=Z,10µm,21.0s
SPUT South Promonto 43.52 327 *e*P P 08 27 21.4 +0.6
comp=Z,376nm,1.5s
SPUT LR LR
comp=Z,9µm,19.0s
C28A Hausauer Farms 43.53 342 P P 08 27 20.5 -0.1
baz=154,SNR=6.1
BGU Big Grassy Mou 43.58 326 *e*P P 08 27 19.6 -1.6
comp=Z,573nm,1.7s
BGU LR LR
comp=Z,13µm,20.0s
D26A Manning 43.58 340 P P 08 27 21.4 +0.4
baz=150,SNR=18
A32A Rocking H Ranc 43.59 346 P P 08 27 20.6 -0.4
baz=159,SNR=18
B30A Myrvik Farm, E 43.62 345 P P 08 27 20.8 -0.5
baz=157,SNR=69
SCZ2 Santa Cruz Isl 43.74 313 P P 08 27 25.3 +2.8
baz=120
ARVC Arvin 43.75 315 P P 08 27 23.7 +1.2
baz=122,SNR=24
GRAC Grapevine Rang 43.77 318 P P 08 27 22.3 -0.4
baz=125,SNR=30
ISA Isabella, Lake 43.78 316 P P 08 27 25.2 +2.3
baz=122,SNR=20
ISA Isabella, Lake 43.78 316 *e*P P 08 27 24.2 +1.3
ISA pmax pmax
comp=Z,247nm,1.5s
ISA MLR MLR
comp=Z,5µm,19.0s
ISA Isabella, Lake 43.78 316 *e*P P 08 27 24.2 +1.3
comp=Z,247nm,1.5s
ISA LR LR
comp=Z,5µm,19.0s
AHID Auburn Hatcher 43.84 329 *e*P P 08 27 22.8 -0.6
comp=Z,49nm,0.9s
AHID LR LR
comp=Z,12µm,21.0s
C27A Sayler Ranch, 43.87 341 P P 08 27 23.7 +0.4
baz=152,SNR=20
B29A Wagenman Farm, 43.91 344 P P 08 27 23.8 +0.2
baz=155,SNR=48
D25A Fairfield 43.99 339 P P 08 27 25.6 +1.3
baz=149,SNR=6.1
HVU Hansel Valley 44.02 327 *e*P P 08 27 23.0 -1.8
HVU pmax pmax
comp=Z,342nm,1.7s
HVU MLR MLR
comp=Z,10µm,21.0s
HVU Hansel Valley 44.02 327 *e*P P 08 27 23.0 -1.8
comp=Z,342nm,1.7s
HVU LR LR
comp=Z,10µm,21.0s
A30A Hoffart Farm, 44.06 345 P P 08 27 24.1 -0.7
baz=157,SNR=18
REDW Red Top Meadow 44.15 330 *e*P P 08 27 23.1 -2.8
comp=Z,261nm,1.4s
REDW LR LR
comp=Z,8µm,20.0s
C26A Wahner Farm, P 44.16 341 P P 08 27 25.3 -0.4
baz=151,SNR=23
SNOW Snow King Moun 44.17 330 *e*P P 08 27 24.0 -2.1
comp=Z,249nm,1.5s
SNOW LR LR
comp=Z,7µm,20.0s
B28A Dugan Ranch, T 44.18 343 P P 08 27 26.3 +0.5
baz=154,SNR=6.2
LOHW Long Hollow 44.21 330 *e*P P 08 27 24.1 -2.3
comp=Z,173nm,1.6s
LOHW LR LR
comp=Z,5µm,20.0s
A29A Manning Farm, 44.29 344 P P 08 27 26.2 -0.4
baz=156,SNR=48
PKM Mcpherson Peak 44.32 314 P P 08 27 28.3 +0.9
baz=120,SNR=13
TIN Tinemaha, Big 44.37 318 P P 08 27 29.7 +2.1
baz=124
MOOW Moose Ponds 44.38 330 *e*P P 08 27 27.0 -0.8
comp=Z,113nm,1.7s
MOOW LR LR
comp=Z,6µm,22.0s
B27A Peters Farms, 44.41 342 P P 08 27 27.8 +0.2
baz=153,SNR=5.8
C25A Freed Ranch, W 44.45 340 P P 08 27 28.4 +0.4
baz=150
A28A Rude Farm, Bot 44.57 343 P P 08 27 28.7 -0.3
baz=154,SNR=17
IMW Indian Meadow 44.58 330 *e*P P 08 27 28.9 -0.6
comp=Z,40nm,0.8s
IMW LR LR
comp=Z,5µm,21.0s
FLWY Flagg Ranch 44.60 331 *e*P P 08 27 28.1 -1.4
comp=Z,65nm,0.9s
FLWY LR LR
comp=Z,10µm,20.0s
RCTC Rector, Farmer 44.65 316 P P 08 27 30.9 +1.2
baz=122,SNR=23
SMMC Simmler 44.66 315 P P 08 27 29.1 -0.8
baz=120,SNR=11
B26A Jensen Ranch, 44.69 341 P P 08 27 29.9 0.0
baz=151
ULM Lac du Bonnet 44.71 348 P P 08 27 27.4 -2.5
comp=Z,152nm,1.1s,baz=158,slow=7.3,SNR=40
ULM Lac du Bonnet 44.71 348 *e*P P 08 27 28.5 -1.5
ULM pmax pmax
comp=Z,280nm,1.1s
ULM Lac du Bonnet 44.71 348 *e*P P 08 27 28.5 -1.5
comp=Z,280nm,1.1s
ELK Elko 44.71 324 *e*P P 08 27 30.9 +0.4
ELK pmax pmax
comp=Z,321nm,1.4s
ELK MLR MLR
comp=Z,9µm,20.0s
ELK Elko 44.71 324 *e*P P 08 27 30.9 +0.4
comp=Z,321nm,1.4s
ELK LR LR
comp=Z,9µm,20.0s
RLMT Red Lodge 44.72 333 P P 08 27 31.4 +0.9
baz=140,SNR=19
RLMT Red Lodge 44.72 333 *e*P P 08 27 31.2 +0.8
comp=Z,62nm,0.9s
RLMT LR LR
comp=Z,4µm,19.0s
H17A Grant Village 44.78 331 P P 08 27 30.0 -0.9
baz=138,SNR=28
H17A Grant Village 44.78 331 *e*P P 08 27 31.6 +0.7
comp=Z,110nm,1.5s
H17A LR LR
comp=Z,25µm,19.0s
LKWY Lake 44.82 332 *e*P P 08 27 31.9 +0.6
LKWY pmax pmax
comp=Z,52nm,1.1s
LKWY MLR MLR
comp=Z,21µm,21.0s
LKWY Lake 44.82 332 *e*P P 08 27 31.9 +0.6
comp=Z,52nm,1.1s
LKWY LR LR
comp=Z,21µm,21.0s
A27A Ledoux Ranch, 44.89 342 P P 08 27 31.7 +0.2
baz=153,SNR=19
B25A Knox Farm, Ray 44.90 340 P P 08 27 32.6 +1.0
baz=150
YFT Old Faithful 44.94 331 *e*P P 08 27 32.9 +0.7
comp=Z,278nm,1.8s
YFT LR LR
comp=Z,20µm,22.0s
MLAC Mammoth, Mammo 45.09 318 P P 08 27 32.5 -1.0
baz=124
NV11 Mina Array Sit 45.10 320 *e*P P 08 27 33.6 +0.1
comp=Z,210nm,1.1s
NV11 LR LR
comp=Z,12µm,18.0s
YMR Madison River 45.17 331 *e*P P 08 27 32.5 -1.5
comp=Z,290nm,1.9s
YMR LR LR
comp=Z,12µm,22.0s
NV01 Mina Array Sit 45.19 319 *e*P P 08 27 33.4 -0.9
NVAR Mina Array Bea 45.19 319 P P 08 27 32.3 -2.0
comp=Z,16nm,0.7s,baz=129,slow=7.1,SNR=31
NVAR LR LR 08 47 20.7
comp=Z,11µm,18.6s,baz=128,slow=38
GCMT Greycliff 45.41 333 *e*P P 08 27 37.4 +1.5
QLMT Earthquake Lak 45.51 331 *e*P P 08 27 37.3 +0.6
SPB Sao Paulo 45.60 133 PFAKE 08 27 50.0 +13
SPB LR LR
comp=Z,8µm,18.0s
WAKR Walker 45.97 319 *e*P P 08 27 40.0 -0.5
HLID Hailey 46.12 328 P P 08 27 41.1 -0.4
baz=133,SNR=62
HLID Hailey 46.12 328 *e*P P 08 27 39.1 -2.5
comp=Z,410nm,1.9s
HLID LR LR
comp=Z,10µm,22.0s
MCMT McKenzie Canyo 46.20 330 *e*P P 08 27 40.4 -1.8
BOZ Bozeman (W) 46.21 332 P P 08 27 41.3 -0.8
baz=138,SNR=47
BOZ Bozeman (W) 46.21 332 *e*P P 08 27 40.8 -1.3
BOZ pmax pmax
comp=Z,195nm,1.5s
BOZ MLR MLR
comp=Z,12µm,22.0s
BOZ Bozeman (W) 46.21 332 *e*P P 08 27 40.8 -1.3
comp=Z,195nm,1.5s
BOZ LR LR
comp=Z,12µm,22.0s
CMB Columbia Colle 46.34 318 *e*P P 08 27 43.3 +0.1
CMB pmax pmax
comp=Z,128nm,1.7s
CMB MLR MLR
comp=Z,5µm,22.0s
CMB Columbia Colle 46.34 318 *e*P P 08 27 43.3 +0.1
comp=Z,128nm,1.7s
CMB LR LR
comp=Z,5µm,22.0s
SAO San Andreas Ge 46.41 316 *e*P P 08 27 45.0 +1.3
SAO pmax pmax
comp=Z,101nm,1.3s
SAO MLR MLR

comp=Z,7µm,21.0s
SAO San Andreas Ge 46.41 316 *e*P P 08 27 45.0 +1.3
comp=Z,101nm,1.3s
SAO LR LR
comp=Z,7µm,21.0s
DLMT Dillon 46.46 331 *e*P P 08 27 44.1 0.0
comp=Z,164nm,1.4s
DLMT LR LR
comp=Z,15µm,22.0s
LRM Limekiln Ridge 46.73 331 *e*P P 08 27 45.3 -1.1
MFID Camas Ranch 46.78 327 *e*P P 08 27 46.5 -0.2
comp=Z,553nm,1.9s
MFID LR LR
comp=Z,9µm,21.0s
HRY Holter Researc 47.09 332 *e*P P 08 27 50.1 +1.1
DRLN Deer Lake 47.17 22 *e*P P 08 27 48.9 -0.5
comp=Z,168nm,0.9s
DRLN LR LR
comp=Z,10µm,20.0s
EGMT Eagleton 47.18 335 P P 08 27 49.4 -0.2
baz=142,SNR=9.9
EGMT Eagleton 47.18 335 *e*P P 08 27 50.7 +1.0
comp=Z,361nm,1.8s
EGMT LR LR
comp=Z,5µm,21.0s
AFDM Forest Hills D 47.22 318 *e*P P 08 27 52.1 +2.1
comp=Z,53nm,1.4s
AFDM LR LR
comp=Z,5µm,22.0s
WVOR Wild Horse Val 47.76 324 *e*P P 08 27 55.3 +1.0
WVOR pmax pmax
comp=Z,1µm,1.4s
WVOR MLR MLR
comp=Z,7µm,19.0s
WVOR Wild Horse Val 47.76 324 *e*P P 08 27 55.2 +1.0
comp=Z,1µm,1.4s
WVOR LR LR
comp=Z,7µm,19.0s
ORV Oroville 47.89 319 *e*P P 08 27 56.1 +0.9
ORV pmax pmax
comp=Z,656nm,1.9s
ORV MLR MLR
comp=Z,6µm,21.0s
ORV Oroville 47.89 319 *e*P P 08 27 56.1 +0.9
comp=Z,656nm,1.9s
ORV LR LR
comp=Z,6µm,21.0s
CHMT Chamberlain Mo 47.90 332 *e*P P 08 27 56.3 +0.8
RCBR Riachuelo 48.04 104 PFAKE 08 28 10.0 +13
RCBR LR LR
comp=Z,18µm,18.0s
MCCM Marconi Confer 48.09 316 *e*P P 08 27 58.3 +1.6
comp=Z,555nm,1.0s
MCCM LR LR
comp=Z,5µm,20.0s
MSO Missoula 48.17 331 P P 08 27 57.1 -0.3
baz=136,SNR=23
MSO Missoula 48.17 331 *e*P P 08 27 56.7 -0.7
comp=Z,172nm,1.6s
MSO LR LR
comp=Z,14µm,21.0s
MOD Modoc Plateau 48.44 322 *e*P P 08 28 00.5 +0.9
comp=Z,195nm,1.4s
MOD LR LR
comp=Z,9µm,20.0s
O03D Paynes Creek 48.48 320 P P 08 27 59.3 -0.5
baz=123,SNR=5.9
BMO Blue Mountains 48.53 327 *e*P P 08 27 59.2 -0.9
comp=Z,107nm,1.4s
BMO LR LR
comp=Z,10µm,20.0s
TRQA Tornquist 48.55 158 PFAKE 08 28 10.0 +10
TRQA LR LR
comp=Z,2µm,20.0s
PLCA Paso Flores 48.58 168 P P 08 27 58.0 -2.5
comp=Z,1.9nm,0.7s,baz=3.0,slow=9.6,SNR=7.1
PLCA Paso Flores 48.58 168 *e*P P 08 27 59.4 -1.1
PLCA pmax pmax
comp=Z,90nm,1.4s
PLCA Paso Flores 48.58 168 *e*P P 08 27 59.4 -1.1
comp=Z,90nm,1.4s
HOPS Hopland Field 48.64 317 PFAKE 08 28 10.0 +9.0
HOPS LR LR
comp=Z,8µm,20.0s
SWMT Swartz Lake 48.68 332 *e*P P 08 28 02.4 +1.1
YBMT Yellow Bay 48.95 332 *e*P P 08 28 04.3 +1.0
JTMT Jette 48.99 332 *e*P P 08 28 03.3 -0.4
WDC Whiskeytown Da 49.11 319 *e*P P 08 28 04.9 +0.3
WDC pmax pmax
comp=Z,58nm,1.4s
WDC MLR MLR
comp=Z,5µm,22.0s
WDC Whiskeytown Da 49.11 319 *e*P P 08 28 04.9 +0.3
comp=Z,58nm,1.4s
WDC LR LR
comp=Z,5µm,22.0s
BLMT Blacktail Moun 49.22 332 *e*P P 08 28 07.0 +1.5
F10A Beach Ranch, E 49.23 328 *e*P P 08 28 05.2 -0.3
comp=Z,328nm,1.8s
F10A LR LR
comp=Z,12µm,21.0s
K05A Summer Lake 49.27 323 *e*P P 08 28 08.4 +2.4
comp=Z,112nm,1.2s
K05A LR LR
comp=Z,9µm,20.0s
BSMT Bassoo Peak 49.30 332 *e*P P 08 28 05.5 -0.6
M04C Macdoel 49.32 321 P P 08 28 07.3 +1.0
baz=124,SNR=42
N02D Trinity Center 49.43 320 P P 08 28 10.8 +3.7
baz=122
SCHQ Schefferville 49.45 12 P P 08 28 04.3 -2.6
comp=Z,16nm,0.8s,baz=231,slow=6.3,SNR=18
SCHQ LR LR 08 49 07.2
comp=Z,11µm,21.5s,baz=205,slow=36
SCHQ Schefferville 49.45 12 *e*P P 08 28 06.1 -0.8
comp=Z,66nm,0.9s
KMRM Mail Ridge 49.69 318 *e*P P 08 28 08.7 -0.4
comp=Z,251nm,1.3s
KMRM LR LR
comp=Z,9µm,19.0s
K04D Chiloquin, OR 49.74 322 P P 08 28 11.7 +2.2
baz=124,SNR=9.6
M02C Callahan 49.74 320 P P 08 28 12.7 +3.2
baz=122
WALA Waterton Lakes 49.77 333 *e*P P 08 28 10.8 +1.1
comp=Z,58nm,1.3s
WALA LR LR
comp=Z,7µm,21.0s
J05D Fort Rock, OR 49.80 323 P P 08 28 11.8 +1.8
baz=125
YBH Yreka Blue Hor 49.84 321 P P 08 28 08.0 -2.2
comp=Z,5.2nm,0.8s,baz=195,slow=5.3,SNR=3.6
YBH LR LR 08 50 56.5
comp=Z,9µm,19.4s,baz=142,slow=38
YBH Yreka Blue Hor 49.84 321 *e*P P 08 28 09.8 -0.4
YBH pmax pmax
comp=Z,31nm,1.0s
YBH Yreka Blue Hor 49.84 321 *e*P P 08 28 09.8 -0.4
comp=Z,30nm,1.0s
KHMM Horse Mountain 50.04 319 *e*P P 08 28 12.0 +0.1
comp=Z,159nm,1.2s
KHMM LR LR
comp=Z,11µm,18.0s
E09A Wood Farm, Sta 50.06 328 *e*P P 08 28 12.0 +0.3
comp=Z,232nm,1.2s
E09A LR LR
comp=Z,12µm,21.0s
JCC Jacoby Creek, 50.20 319 PFAKE 08 28 20.0 +7.2
JCC LR LR
comp=Z,7µm,21.0s
HUMO Hull Mountain 50.47 321 *e*P P 08 28 17.5 +2.6
comp=Z,402nm,1.6s
HUMO LR LR
comp=Z,8µm,20.0s
I05D Terrebonne, OR 50.48 324 P P 08 28 14.8 -0.2
baz=126,SNR=22
G06A Carlson Farm, 50.61 326 *e*P P 08 28 16.9 +0.9
comp=Z,869nm,1.8s
G06A LR LR
comp=Z,9µm,22.0s
L02D Cave Junction, 50.63 321 P P 08 28 17.0 +0.9
baz=122
NEW Newport 50.71 331 P P 08 28 16.2 -0.4
baz=133,SNR=41
NEW Newport 50.71 331 *e*P P 08 28 16.3 -0.4
NEW pmax pmax
comp=Z,182nm,1.6s
NEW MLR MLR
comp=Z,14µm,22.0s
NEW Newport 50.71 331 *e*P P 08 28 16.2 -0.4
comp=Z,182nm,1.6s
NEW LR LR
comp=Z,14µm,22.0s
HAWA Hanford 50.72 327 *e*P P 08 28 16.6 -0.1
comp=Z,272nm,1.6s
HAWA LR LR
comp=Z,9µm,21.0s
I04A Tendick Farm, 50.79 323 P P 08 28 18.7 +1.3
baz=124,SNR=29
D08A Wollman Farm, 50.82 328 *e*P P 08 28 15.3 -2.1
comp=Z,60nm,1.0s
D08A LR LR
comp=Z,7µm,20.0s
C09A Chrisman Ranch 50.97 329 *e*P P 08 28 19.9 +1.3
comp=Z,215nm,1.8s
C09A LR LR
comp=Z,8µm,21.0s
G05D Wamic, OR 51.00 325 P P 08 28 21.5 +2.7
baz=127,SNR=53
H04A Detroit Lake 51.17 324 *e*P P 08 28 18.8 -1.4
comp=Z,188nm,1.1s
H04A LR LR
comp=Z,10µm,21.0s
I03D Drain, OR 51.30 322 P P 08 28 22.2 +1.1
baz=124,SNR=6.5
COR Corvallis 51.77 323 *e*P P 08 28 26.2 +1.6
COR pmax pmax
comp=Z,248nm,1.2s
COR MLR MLR
comp=Z,7µm,22.0s
COR Corvallis 51.77 323 *e*P P 08 28 26.2 +1.6
comp=Z,248nm,1.2s
COR LR LR
comp=Z,7µm,22.0s
LTY Liberty 51.87 328 *e*P P 08 28 25.6 +0.2
comp=Z,386nm,1.8s
LTY LR LR
comp=Z,9µm,22.0s
B08A Colville Reser 51.88 329 *e*P P 08 28 26.0 +0.6
comp=Z,201nm,1.6s
B08A LR LR
comp=Z,10µm,22.0s
F04A Amboy 52.03 325 *e*P P 08 28 27.2 +0.7
comp=Z,188nm,1.4s
F04A LR LR
comp=Z,9µm,18.0s
G03D McMinnville, O 52.10 324 P P 08 28 28.1 +1.1
baz=125,SNR=10.0
LON Longmire 52.17 326 *e*P P 08 28 27.9 +0.2
LON pmax pmax
comp=Z,55nm,1.0s
LON MLR MLR
comp=Z,7µm,21.0s
LON Longmire 52.17 326 *e*P P 08 28 27.9 +0.2
comp=Z,55nm,1.0s
LON LR LR
comp=Z,7µm,21.0s
C06D Leavenworth 52.40 328 P P 08 28 29.7 +0.4
baz=129,SNR=9.3
F04D Rainier, OR 52.45 325 P P 08 28 30.0 +0.4
baz=125
D05A Enumclaw 52.54 327 *e*P P 08 28 30.4 +0.1
comp=Z,211nm,1.1s
D05A LR LR
comp=Z,8µm,21.0s
FCC Fort Churchill 52.57 352 *e*P P 08 28 29.8 -0.4
FCC pmax pmax
comp=Z,96nm,1.2s
FCC MLR MLR
comp=Z,10µm,20.0s
FCC Fort Churchill 52.57 352 *e*P P 08 28 29.8 -0.4
comp=Z,96nm,1.2s
FCC LR LR
comp=Z,10µm,20.0s
PNT Penticton 52.64 330 P P 08 28 28.3 -2.8
PNT Penticton 52.64 330 P P 08 28 28.3 -2.8
F03A Seaside 52.68 325 *e*P P 08 28 31.5 +0.1
comp=Z,469nm,1.2s
F03A LR LR
comp=Z,12µm,21.0s
E03A Lebam 53.03 325 *e*P P 08 28 35.0 +1.1
comp=Z,230nm,1.1s
E03A LR LR
comp=Z,8µm,20.0s
B06A Marblemount 53.08 328 *e*P P 08 28 35.0 +0.7
comp=Z,115nm,1.1s
B06A LR LR
comp=Z,8µm,20.0s
B05A Bryant 53.25 328 P P 08 28 36.6 +1.1
baz=128,SNR=6.6
NLWA Neilton Lookou 53.69 326 *e*P P 08 28 39.4 +0.6
comp=Z,491nm,1.6s
NLWA LR LR
comp=Z,17µm,20.0s
A04D Lummi Island 53.85 328 P P 08 28 39.7 -0.2
baz=127
PGC Sidney 54.20 327 *e*P P 08 28 44.5 +2.1
comp=Z,265nm,1.5s
PGC LR LR
comp=Z,6µm,21.0s
PTCN Pitcairn Islan 56.24 234 PFAKE 08 29 10.0 +12
PTCN LR LR
comp=Z,5µm,20.0s
RKT Rikitea 59.42 238 *e*S S 08 37 30.7 +1.3
comp=Z,9µm,31.5s
RKT *e*LR LR 08 46 52.7
comp=Z,11µm,36.2s,baz=70
TAOE Nuku Hiva Isla 59.67 256 *e*S S 08 37 31.9 -1.3
comp=Z,3µm,29.6s
TAOE *e*LQ LQ 08 44 22.1
comp=Z,18µm,35.3s
TAOE *e*LR LR 08 46 51.6
comp=Z,2µm,23.6s
TAOE Nuku Hiva Isla 59.67 256 *e*T T 09 33 48.9
comp=Z,36nm,0.2s
CMLA Cha da Macela 59.82 50 PFAKE 08 29 30.0 +7.5
CMLA LR LR
comp=Z,5µm,22.0s
YKA Yellowknife Ar 60.34 343 P P 08 29 25.0 -0.6
comp=Z,26nm,0.8s,baz=141,slow=6.6,SNR=128
YKA Yellowknife Ar 60.34 343 P P 08 29 25.0 -0.6
YKB5 Yellowknife Ar 60.34 343 *e*P P 08 29 25.4 -0.2
YKW3 Yellowknife Ar 60.40 343 *e*P P 08 29 24.9 -1.1
comp=Z,58nm,0.9s
NRS Narsarsuaq 60.76 20 *i*P P 08 29 33.9 +5.4
comp=Z,6µm,20.0s
NRS Narsarsuaq 60.76 20 *e*P P 08 29 33.9 +5.4
NRS MLR MLR
comp=Z,6µm,20.0s
EFI East Falkland 61.91 163 PFAKE 08 29 50.0 +14
EFI LR LR
comp=Z,4µm,22.0s
CRAG Craig 62.93 330 PFAKE 08 29 50.0 +6.8
CRAG LR LR
comp=Z,7µm,22.0s
WRAK Wrangell Islan 63.05 331 PFAKE 08 29 50.0 +6.0
WRAK LR LR
comp=Z,5µm,21.0s
DLBC Dease Lake 63.09 334 *e*P P 08 29 44.3 -0.1
comp=Z,70nm,1.0s
DLBC LR LR
comp=Z,11µm,19.0s
SFJD Kangerlussuaq 63.84 13 *i*P P 08 29 47.0 -2.0
comp=Z,11µm,20.0s
SFJD Kangerlussuaq 63.84 13 *e*P P 08 29 47.7 -1.3
SFJD pmax pmax
comp=Z,29nm,1.0s
SFJD MLR MLR
comp=Z,13µm,21.0s
SFJD Kangerlussuaq 63.84 13 *e*P P 08 29 47.7 -1.3
comp=Z,29nm,1.0s
SFJD LR LR
comp=Z,13µm,21.0s
PMOZ Porto Moniz, M 65.47 57 *e*S S 08 38 53.9 +8.2
PMOZ *e*LQ LQ 08 46 37.2
PMOZ *e*LR LR 08 49 42.2
comp=Z,3µm,20.0s
ILULI Ilulissat 65.56 12 *i*P P 08 30 02.3 +2.1
ILULI *i*S S 08 38 38.7 -6.5
comp=Z,9µm,22.0s
ILULI Ilulissat 65.56 12 *e*P P 08 30 02.3 +2.1
ILULI *i*S S 08 38 38.7 -6.5
ILULI MLR MLR
comp=Z,8µm,22.0s
SKAG Skagway 65.97 333 *e*P P 08 30 03.3 +0.3
comp=Z,222nm,2.0s
SKAG LR LR
comp=Z,7µm,20.0s
YKU2 Yakutat 67.95 332 PFAKE 08 30 30.0 +14
YKU2 LR LR
comp=Z,7µm,20.0s
RES Resolute Bay 68.17 356 *e*P P 08 30 16.3 -0.5
RES pmax pmax
comp=Z,36nm,1.1s
RES MLR MLR
comp=Z,9µm,19.0s
RES Resolute Bay 68.17 356 *e*P P 08 30 16.3 -0.5
comp=Z,36nm,1.1s
RES LR LR
comp=Z,9µm,19.0s
KULLO Kullorsuaq 69.23 7 *i*P P 08 30 22.3 -1.1
comp=Z,13µm,18.0s
KULLO Kullorsuaq 69.23 7 *e*P P 08 30 22.3 -1.1
KULLO MLR MLR
comp=Z,13µm,18.0s
ASCN Ascension 69.38 101 PFAKE 08 30 30.0 +4.6
ASCN LR LR
comp=Z,4µm,21.0s
BALM Baldy 69.80 333 *e*P P 08 30 27.3 0.0
BALM pmax pmax
comp=Z,83nm,1.3s
BALM MLR MLR
comp=Z,7µm,21.0s
BALM Baldy 69.80 333 *e*P P 08 30 27.3 0.0
comp=Z,83nm,1.3s
BALM LR LR
comp=Z,7µm,21.0s
DAWY Dawson 69.88 337 *e*P P 08 30 27.2 -0.4
comp=Z,61nm,1.3s
DAWY LR LR
comp=Z,11µm,22.0s
INK Inuvik 70.03 342 P P 08 30 28.0 -0.4
comp=Z,30nm,1.1s,baz=127,slow=5.7,SNR=36
INK Inuvik 70.03 342 *e*P P 08 30 28.4 0.0
INK pmax pmax
comp=Z,253nm,1.4s
INK MLR MLR
comp=Z,9µm,19.0s
INK Inuvik 70.03 342 *e*P P 08 30 28.4 0.0
comp=Z,253nm,1.4s
INK LR LR
comp=Z,9µm,19.0s
RAGM Ragged Mountai 70.61 332 PFAKE 08 30 40.0 +7.8
RAGM LR LR
comp=Z,8µm,22.0s
PPT Papeete 70.66 249 LR LR 08 54 58.3
comp=Z,1µm,19.7s,baz=67,slow=30
PPT2 Papeete2 70.66 249 *e*SS SS 08 44 19.4 -0.7
comp=Z,1µm,26.5s
PPT2 *e*LQ LQ 08 48 27.2
comp=Z,4µm,33.0s
PPT2 *e*LR LR 08 51 58.3
comp=Z,6µm,29.8s,baz=67
BMRM Bremner River 70.79 333 *e*P P 08 30 34.0 +0.7
comp=Z,82nm,1.2s
BMRM LR LR
comp=Z,8µm,20.0s
SUMG Summit 70.82 13 *i*P P 08 30 33.0 -0.7
SUMG *i*S S 08 39 44.7 -4.1
comp=Z,12µm,21.0s
SUMG Summit 70.82 13 *e*P P 08 30 33.0 -0.7
SUMG *i*S S 08 39 44.7 -4.1
SUMG MLR MLR
comp=Z,12µm,21.0s
SUMG Summit 70.82 13 *e*P P 08 30 32.8 -1.0
comp=Z,84nm,1.0s
SUMG LR LR
comp=Z,12µm,20.0s
EGAK Eagle 70.88 337 PFAKE 08 30 40.0 +6.3
EGAK LR LR
comp=Z,7µm,18.0s
MENT Mentasta 71.15 335 *e*P P 08 30 35.0 -0.4
comp=Z,34nm,1.0s
MENT LR LR
comp=Z,9µm,20.0s
EYAK Cordova Ski Ar 71.17 332 PFAKE 08 30 50.0 +15
EYAK LR LR
comp=Z,10µm,22.0s
DIV Divide 71.38 333 *e*P P 08 30 38.2 +1.3
comp=Z,64nm,1.1s
DIV LR LR
comp=Z,8µm,20.0s
DOT Dot Lake 71.57 336 *e*P P 08 30 38.4 +0.4
comp=Z,185nm,0.8s
DOT LR LR
comp=Z,20µm,20.0s
KLU Klutina 71.57 333 *e*P P 08 30 40.1 +2.0
comp=Z,56nm,1.2s
KLU LR LR
comp=Z,8µm,21.0s
UWE Uwekahuna 71.69 288 PFAKE 08 30 50.0 +10
UWE LR LR
comp=Z,8µm,21.0s
BORG Borgarnes 71.74 23 PFAKE 08 30 50.0 +11
BORG LR LR
comp=Z,6µm,20.0s
PAX Paxson 71.91 335 *e*P P 08 30 41.7 +1.7
PAX pmax pmax
comp=Z,124nm,1.6s
PAX MLR MLR
comp=Z,6µm,18.0s
PAX Paxson 71.91 335 *e*P P 08 30 41.7 +1.7
comp=Z,124nm,1.6s
PAX LR LR
comp=Z,6µm,18.0s
POHA Pohakuloa 71.91 288 PFAKE 08 30 50.0 +8.9
POHA LR LR
comp=Z,8µm,21.0s
HOPE Hope Point 71.98 154 PFAKE 08 30 50.0 +10
HOPE LR LR
comp=Z,2µm,20.0s
HPAH Hawaii Prepara 72.06 289 PFAKE 08 30 50.0 +8.2
HPAH LR LR
comp=Z,8µm,21.0s
SCM Sheep Creek Mo 72.32 333 *e*P P 08 30 44.4 +1.8
SCM pmax pmax
comp=Z,118nm,1.3s
SCM MLR MLR
comp=Z,6µm,21.0s
SCM Sheep Creek Mo 72.32 333 *e*P P 08 30 44.4 +1.8
comp=Z,118nm,1.3s
SCM LR LR
comp=Z,6µm,21.0s
HLK Haleakala 72.56 290 PFAKE 08 30 50.0 +5.0
HLK LR LR
comp=Z,7µm,21.0s
PMST Lisbon--Monsan 72.63 52 *e*P P 08 30 48.8 +4.1
comp=Z,82nm,1.4s
LIS Lisbon 72.65 52 *e*P P 08 30 44.7 -0.2
LIS *e*S S 08 40 10.5 +0.3
LIS AMS AMS 08 53 17.1
comp=N,6µm,18.9s
LIS Lisbon 72.65 52 *e*P P 08 30 44.7 -0.2
LIS *e*S S 08 40 10.5 +0.3
DHY Denali Highway 72.76 334 PFAKE 08 30 50.0 +4.8
DHY LR LR
comp=Z,4µm,19.0s
SML Sawmill 72.77 333 *e*P P 08 30 46.6 +1.4
SML pmax pmax
comp=Z,133nm,1.2s
SML MLR MLR
comp=Z,7µm,21.0s
SML Sawmill 72.77 333 *e*P P 08 30 46.6 +1.4
comp=Z,133nm,1.2s
SML LR LR
comp=Z,7µm,21.0s
SEW Seward 72.77 331 *e*P P 08 30 47.1 +1.9
comp=Z,80nm,1.2s
SEW LR LR
comp=Z,7µm,18.0s
PFVI Vila Bisbo 72.77 53 *e*P P 08 30 51.4 +5.8
comp=Z,132nm,1.6s
PFVI *e*S SKiKP 08 40 18.8 -1.3
PFVI Vila Bisbo 72.77 53 PFAKE 08 31 00.0 +14
PFVI LR LR
comp=Z,5µm,21.0s
MORF Marmelete 72.92 53 *e*P P 08 30 46.0 -0.6
MORF *e*S S 08 40 13.2 -0.3
MORF AMS AMS 08 57 33.4
comp=Z,6µm,23.3s
MORF Marmelete 72.92 53 *e*P P 08 30 52.2 +5.6

comp=Z,99nm,1.5s
MORF eS **SKiKP** **08 40 21.7 +1.3**
MORF Marmelete 72.92 53 eP **P** **08 30 46.0 -0.6**
MORF eS **S** **08 40 13.2 -0.3**
HDA Harding Lake 73.03 336 eP **P** **08 30 46.8 +0.2**
comp=Z,133nm,1.1s
HDA LR LR
comp=Z,8µm,21.0s
PMR Palmer 73.06 333 eP **P** **08 30 46.9 +0.1**
PMR pmax pmax
comp=Z,65nm,1.4s
PMR MLR MLR
comp=Z,9µm,18.0s
PMR Palmer 73.06 333 eP **P** **08 30 46.9 +0.1**
comp=Z,65nm,1.4s
PMR LR LR
comp=Z,9µm,18.0s
PNCL Nicolau / Gran 73.08 52 eP P 08 30 53.2 +5.7
PNCL eS **SKiKP** **08 40 19.7 -0.8**
IL1 Eielson Array 73.14 336 eP **P** **08 30 47.2 0.0**
ILAR Eielson Array 73.14 336 P **P** **08 30 46.9 -0.4**
comp=Z,10.0nm,1.0s,baz=118,slow=3.9,SNR=47
ILAR PP **PP** **08 33 27.9 -2.1**
comp=Z,6.3nm,0.9s,baz=108,slow=5.8,SNR=6.5
ILAR LR LR 09 08 51.5
comp=Z,3µm,18.4s,baz=106,slow=41
ILB Eielson Array 73.14 336 eP **P** **08 30 46.6 -0.7**
FYU Fort Yukon 73.16 338 eP **P** **08 30 47.1 -0.3**
comp=Z,113nm,1.4s
FYU LR LR
comp=Z,8µm,21.0s
RC01 Rabbit Creek A 73.19 332 eP **P** **08 30 49.4 +1.8**
comp=Z,78nm,1.2s
RC01 LR LR
comp=Z,6µm,20.0s
PCAS Casmilo, Conde 73.27 50 eP **P** **08 30 51.4 +2.8**
comp=Z,134nm,1.4s
PCAS eS **S** **08 40 18.6 +1.3**
PTOM Tomar 73.30 51 eP **P** **08 30 51.9 +3.2**
comp=Z,74nm,1.4s
MESJ Messejana 73.31 53 eP **P** **08 30 48.6 -0.2**
MESJ eS **S** **08 40 17.3 -0.5**
MESJ AMS AMS 08 55 59.9
comp=Z,4µm,25.4s
MESJ Messejana 73.31 53 eP P 08 30 54.6 +5.8
comp=Z,37nm,1.5s
MESJ Messejana 73.31 53 eP **P** **08 30 48.6 -0.2**
MESJ eS **S** **08 40 17.2 -0.5**
PMTG Montargil 73.40 51 eP **P** **08 30 50.6 +1.3**
comp=Z,45nm,1.6s
PMTG eS **SKiKP** **08 40 23.8 +2.9**
PCVE Castro Verde 73.44 53 eP P 08 30 55.0 +5.4
comp=Z,65nm,1.8s
PCVE eS **SKiKP** **08 40 28.0 +7.0**
CCB Clear Creek Bu 73.46 336 eP **P** **08 30 49.8 +0.6**
comp=Z,23nm,1.0s
CCB LR LR
comp=Z,7µm,21.0s
PBDV Barranco-do-Ve 73.49 53 eP P 08 30 56.1 +6.1
PBDV eS **SKiKP** **08 40 28.8 +7.6**
RND Reindeer 73.50 335 eP **P** **08 30 49.9 +0.4**
RND pmax pmax
comp=Z,174nm,1.2s
RND MLR MLR
comp=Z,6µm,19.0s
RND Reindeer 73.50 335 eP **P** **08 30 49.9 +0.4**
comp=Z,174nm,1.2s
RND LR LR
comp=Z,6µm,19.0s
EVO Evora 73.52 52 eP P 08 30 55.5 +5.4
comp=Z,34nm,1.5s
WRH Wood River Hil 73.52 336 eP **P** **08 30 50.6 +1.1**
comp=Z,25nm,1.0s
WRH LR LR
comp=Z,8µm,21.0s
COLA College 73.56 336 *d i* P **P** **08 30 49.8 +0.1**
COLA pmax pmax
comp=Z,21nm,1.1s
COLA MLR MLR
comp=Z,6µm,22.0s
COLA College 73.56 336 eP **P** **08 30 50.7 +1.0**
comp=Z,47nm,1.1s
COLA LR LR
comp=Z,6µm,22.0s
PBEJ Beja 73.60 52 eP P 08 30 55.9 +5.4
comp=Z,48nm,1.7s
VAL Valentia 73.63 38 eP **P** **08 30 49.7 -0.7**
VAL Valentia 73.63 38 ǁ *i* S **SKiKP** **08 40 27.5 +6.7**
MCK McKinley 73.63 335 eP **P** **08 30 51.2 +1.0**
MCK pmax pmax
comp=Z,85nm,1.2s
MCK MLR MLR
comp=Z,8µm,22.0s
MCK McKinley 73.63 335 eP **P** **08 30 51.2 +1.0**
comp=Z,85nm,1.2s
MCK LR LR
comp=Z,8µm,22.0s
PVAQ Vaqueiros 73.67 53 eP P 08 30 56.8 +5.8
comp=Z,63nm,1.7s
PVAQ eS **S** **08 40 23.1 +1.2**
PVAQ eLQ LQ 08 50 07.0
PVAQ eLR LR 08 53 30.3
comp=Z,5µm,22.0s
HOM Homer 73.72 330 PFAKE 08 31 00.0 +9.3
HOM LR LR
comp=Z,4µm,18.0s
KDAK Kodiak Island 73.74 328 PFAKE 08 31 00.0 +9.1
KDAK LR LR
comp=Z,3µm,20.0s
MDM Murphy Dome 73.74 336 eP **P** **08 30 51.0 +0.1**
comp=Z,84nm,1.4s
MDM LR LR
comp=Z,5µm,21.0s
PESTR Estremoz 73.88 52 eS **S** **08 40 30.4 +6.2**
POLO Lamas de Olo 73.92 49 eP **P** **08 30 55.2 +2.7**
comp=Z,24nm,1.4s
POLO eS **S** **08 40 28.6 +3.8**
SCO Scoresbysund 73.95 18 *i* P **P** **08 30 53.9 +2.0**
comp=Z,4µm,17.0s
SCO Scoresbysund 73.95 18 eP **P** **08 30 53.9 +2.0**
SCO MLR MLR
comp=Z,4µm,17.0s
PVRL Vila Real 73.97 49 eP P 08 30 58.1 +5.4
comp=Z,52nm,1.7s
OHAK Old Harbor 73.98 328 eP **P** **08 30 52.8 +0.4**
comp=Z,70nm,1.2s
OHAK LR LR
comp=Z,5µm,21.0s
BWN Browne 73.99 335 eP **P** **08 30 53.8 +1.5**
comp=Z,308nm,1.5s
BWN LR LR
comp=Z,7µm,21.0s
PMRV Marv??o 74.07 51 eP P 08 30 58.3 +5.0
comp=Z,41nm,1.5s
PMRV eS **S** **08 40 27.4 +1.0**
PMRV Marv??o 74.07 51 eLR LR 08 53 49.4
comp=Z,5µm,24.0s
TRF Thorofare Moun 74.12 334 eP **P** **08 30 53.4 +0.1**
comp=Z,37nm,1.0s
TRF LR LR
comp=Z,5µm,18.0s
HON Honolulu 74.19 290 PFAKE 08 31 00.0 +5.7
HON LR LR
comp=Z,9µm,20.0s
OPA Opana 74.19 291 PFAKE 08 31 00.0 +5.7
OPA LR LR
comp=Z,6µm,21.0s
KIP Kipapa 74.20 290 PFAKE 08 31 00.0 +5.7
KIP LR LR
comp=Z,6µm,21.0s
PBAR Barrancos 74.26 52 eP P 08 31 00.3 +5.9
comp=Z,101nm,1.6s
PBAR eS **S** **08 40 31.3 +2.8**
SPU Mount Spurr 74.30 332 eP **P** **08 30 55.3 +1.1**
KTH Kantishna Hill 74.43 334 eP **P** **08 30 56.0 +1.1**
comp=Z,52nm,1.2s
KTH LR LR
comp=Z,5µm,20.0s
RSO Redoubt South 74.45 331 eP **P** **08 30 56.6 +1.3**
MVO Moncorvo 74.48 49 eP P 08 31 01.2 +5.5
comp=Z,45nm,1.2s
MVO eS **S** **08 40 31.2 +0.2**
MVO Moncorvo 74.48 49 eLR LR 08 53 57.9
comp=Z,4µm,22.0s
BPAW Bear Paw Mtn. 74.61 335 eP **P** **08 30 55.6 -0.4**
comp=Z,42nm,0.9s
BPAW LR LR
comp=Z,7µm,21.0s
PBRG Braganca 74.75 49 eP **P** **08 30 58.9 +1.7**
comp=Z,60nm,1.5s
PBRG eS **S** **08 40 35.6 +1.7**
MLY Manley 74.78 336 eP **P** **08 30 56.6 -0.4**
comp=Z,44nm,0.9s
MLY LR LR
comp=Z,4µm,20.0s
PPLA Purkeypile 74.80 334 eP **P** **08 30 58.2 +1.0**
comp=Z,83nm,1.2s
PPLA LR LR
comp=Z,7µm,20.0s
CAST Castle Rocks 74.89 334 eP **P** **08 30 57.9 +0.3**
comp=Z,32nm,1.0s
CAST LR LR
comp=Z,6µm,22.0s
XMAS Kiritimati 74.95 270 PFAKE 08 31 10.0 +11
XMAS LR LR
comp=Z,2.0nm,19.0s
COLD Coldfoot 75.23 338 eP **P** **08 30 58.4 -1.0**
comp=Z,90nm,1.4s
COLD LR LR
comp=Z,8µm,21.0s
SVW2 Sparrevohn 75.95 331 eP **P** **08 31 04.2 +0.5**
comp=Z,29nm,0.9s
SVW2 LR LR
comp=Z,4µm,19.0s
DSB Dublin 76.16 37 PFAKE 08 31 10.0 +5.0
DSB LR LR
comp=Z,4µm,22.0s
PAB San Pablo 76.43 51 eP **P** **08 31 08.4 +1.4**
PAB pmax pmax
comp=Z,30nm,1.2s
PAB MLR MLR
comp=Z,5µm,22.0s
PAB San Pablo 76.43 51 eP **P** **08 31 08.4 +1.4**
comp=Z,30nm,1.2s
PAB LR LR
comp=Z,5µm,22.0s
TT01 Tatalina 76.51 333 eP **P** **08 31 06.0 -0.8**
TTA Tatalina 76.51 333 eP **P** **08 31 06.2 -0.7**
TTA pmax pmax
comp=Z,35nm,1.0s
TTA Tatalina 76.51 333 eP **P** **08 31 06.2 -0.7**
comp=Z,35nm,1.0s
CHGN Chignik 76.60 326 eP **P** **08 31 08.6 +1.2**
TIC Toumodi 76.71 85 ePKP1 **P** **08 31 11.6 +2.6**
ESDC Sonseca Array 76.73 51 P **P** **08 31 09.4 +0.8**
comp=Z,1.9nm,0.6s,baz=286,slow=4.8,SNR=9.0
ESDC LR LR 08 58 54.2
comp=Z,3µm,21.5s,baz=270,slow=31
ESLA Sonseca Array 76.73 51 eP **P** **08 31 09.4 +0.8**
comp=Z,31nm,1.0s
ESLA LR LR
comp=Z,5µm,22.0s
LIC Lamto 76.75 85 ePKP1 **P** **08 31 12.2 +3.1**
comp=Z,73nm,1.5s
ES19 SONSECA Array 76.78 51 eP **P** **08 31 07.3 -1.6**
DBIC Dimbokro 76.87 85 P **P** **08 31 11.0 +1.2**
comp=Z,6.6nm,0.9s,baz=300,slow=6.5,SNR=4.3
DBIC LR LR 09 03 26.4
comp=Z,2µm,20.9s,baz=258,slow=34
DBIC Dimbokro 76.87 85 eP **P** **08 31 08.1 -1.7**
DBIC pmax pmax
comp=Z,25nm,0.9s
DBIC Dimbokro 76.87 85 eP **P** **08 31 08.1 -1.7**
comp=Z,25nm,0.9s
KIC Kosan Boka 77.02 85 ePKP1 **P** **08 31 12.7 +2.0**
comp=Z,77nm,1.1s
DYA Yadsworthy 77.38 40 PFAKE 08 31 20.0 +8.0
DYA LR LR
comp=Z,4µm,20.0s
DAG Danmarks Havn 77.49 12 *i* P **P** **08 31 11.1 -1.0**
comp=Z,11µm,20.0s
DAG Danmarks Havn 77.49 12 eP **P** **08 31 11.1 -1.0**
DAG MLR MLR
comp=Z,11µm,20.0s
SDPT Sand Point 77.64 325 PFAKE 08 31 20.0 +6.7
SDPT LR LR
comp=Z,2µm,21.0s
ESK Eskdalemuir 78.23 35 PFAKE 08 31 30.0 +13
ESK LR LR
comp=Z,4µm,19.0s
JMIC Jan Mayen 78.32 19 eP P 08 31 22.0 +5.3
SHEL Horse Pasture 79.12 108 PFAKE 08 31 30.0 +7.7
SHEL LR LR
comp=Z,7µm,18.0s
CWF Charnwood Fore 79.17 38 PFAKE 08 31 30.0 +8.2
CWF LR LR
comp=Z,5µm,22.0s
FALS False Pass 79.28 324 eP **P** **08 31 24.2 +1.8**
comp=Z,445nm,1.8s
REYF Montagne du Re 79.50 48 eP P 08 31 32.3 +8.4
VIEF Viey 79.80 48 eP P 08 31 34.5 +8.9
AKUT Akutan 80.63 324 PFAKE 08 31 40.0 +10
AKUT LR LR
comp=Z,4µm,20.0s
SALF Salau 80.66 48 eP P 08 31 35.8 +5.6
UNV Unalaska Valle 81.05 323 PFAKE 08 31 40.0 +8.1
UNV LR LR
comp=Z,2µm,22.0s
PYM Petit Puy Mans 81.91 45 eP P 08 31 42.4 +5.6
TNA Tin City 81.97 335 eP **P** **08 31 37.7 +1.1**
comp=Z,5nm,1.1s
TNA LR LR
comp=Z,5µm,22.0s
AGO Saint Agoulin 81.99 45 eP P 08 31 42.4 +5.3
LBL Lubilhac 82.09 45ǁ eP P 08 31 43.8 +6.0
PLDF La Plantade 82.33 45 eP **P** **08 31 41.5 +2.5**
NIKH Nikolski High 82.47 322 PFAKE 08 31 50.0 +11
NIKH LR LR
comp=Z,3µm,20.0s
SUE Sulen 82.66 29 eP **P** **08 31 44.6 +4.3**
TOC5 Torodi Ar. Sit 82.69 78 PFAKE 08 31 50.0 +8.6
TOC5 LR LR
comp=Z,4µm,22.0s
TOC7 Torodi Ar. Sit 82.69 78 PFAKE 08 31 50.0 +8.6
TOC7 LR LR
comp=Z,5µm,22.0s
TOB5 Torodi Ar. Sit 82.69 78 PFAKE 08 31 50.0 +8.6
TOB5 LR LR
comp=Z,5µm,22.0s
TOB4 Torodi Ar. Sit 82.69 78 PFAKE 08 31 50.0 +8.6
TOB4 LR LR
comp=Z,5µm,22.0s
TOA1 Torodi Ar. Sit 82.70 78 PFAKE 08 31 50.0 +8.6
TOA1 LR LR
comp=Z,4µm,22.0s
TOB1 Torodi Ar. Sit 82.70 78 PFAKE 08 31 50.0 +8.6
TOB1 LR LR
comp=Z,5µm,22.0s
TOA0 Torodi Ar. Sit 82.70 78 eP **P** **08 31 42.7 +1.2**
comp=Z,116nm,1.8s
TOA0 LR LR
comp=Z,4µm,22.0s
TORD Torodi Ar. Bea 82.70 78 P **P** **08 31 42.2 +0.8**
comp=Z,5.5nm,1.0s,baz=285,slow=7.0,SNR=9.4
TORD LR LR 09 07 33.5
comp=Z,3µm,21.5s,baz=265,slow=35
TOC1 Torodi Ar. Sit 82.71 78 PFAKE 08 31 50.0 +8.5
TOC1 LR LR
comp=Z,5µm,22.0s
TOC4 Torodi Ar. Sit 82.71 78 PFAKE 08 31 50.0 +8.5
TOC4 LR LR
comp=Z,4µm,22.0s
TOB3 Torodi Ar. Sit 82.72 78 PFAKE 08 31 50.0 +8.5
TOB3 LR LR
comp=Z,4µm,22.0s
TOB2 Torodi Ar. Sit 82.72 78 PFAKE 08 31 50.0 +8.5
TOB2 LR LR
comp=Z,4µm,22.0s
TOC2 Torodi Ar. Sit 82.73 78 PFAKE 08 31 50.0 +8.4
TOC2 LR LR
comp=Z,5µm,22.0s
TOC3 Torodi Ar. Sit 82.73 78 PFAKE 08 31 50.0 +8.4
TOC3 LR LR
comp=Z,4µm,22.0s
FOO Floro 82.78 29 eP **P** **08 31 42.0 +1.1**
FOO eS **S** **08 41 58.0 -0.9**
DOU Dourbes 82.84 40 E 08 31 45.3
DOU E 08 31 51.6
ASK Askoy 82.88 30 eP **P** **08 31 45.2 +3.7**
KMY Karmoy 82.94 31 eP **P** **08 31 38.8 -2.9**
BER Bergen 82.95 30 eP **P** **08 31 46.2 +4.4**
SSB Saint Sauveur 83.00 45 PFAKE 08 31 50.0 +7.5
SSB LR LR
comp=Z,2µm,20.0s
STAV Stavanger 83.18 31 eS **S** **08 42 02.5 -0.6**
BLS5 Blasjo 83.55 31 eP P 08 31 50.1 +5.1
GAMB Gambell 83.61 333 eP **P** **08 31 46.1 +1.0**
comp=Z,148nm,1.8s
GAMB LR LR
comp=Z,5µm,21.0s
ODD1 Odda 83.61 30 eP **P** **08 31 49.7 +4.4**
AKN Aaknes 83.69 28 eP **P** **08 31 46.8 +1.1**
THEF They Montfort 83.84 42 eP **P** **08 31 50.3 +3.6**
WLF Walferdange 83.87 41 PFAKE 08 32 00.0 +13
WLF LR LR
comp=Z,7µm,22.0s
KBS Kingsbay 84.15 11 eP P 08 31 52.6 +5.0
KBS IAMs_20 IAMs_20 09 11 19.0
comp=Z,8µm,19.5s
KBS IVMs_BB IVMs_BB 09 11 31.7
comp=Z,3µm,21.4s
KBS Kingsbay 84.15 11 PFAKE 08 32 00.0 +12
KBS LR LR
comp=Z,8µm,20.0s
LOMF Lomont 84.46 43 eP **P** **08 31 53.5 +3.5**
BNI Bardonecchia 84.53 45 PFAKE 08 32 00.0 +10
BNI LR LR
comp=Z,3µm,20.0s
ECH Echery 84.62 42 eP **P** **08 31 53.4 +2.7**
MOF Molkenrain 84.63 43ǁ eP **P** **08 31 54.9 +4.1**
HOMB Homborsund 84.68 32 eP P 08 31 58.2 +7.5
HOMB eSKSac **SKSac** **08 42 10.4 -4.5**
SENIN Lac Senin/Sane 84.86 44 PFAKE 08 32 00.0 +7.8
SENIN LR LR
comp=Z,3µm,20.0s
LANF Langenberg 84.99 41ǁ eP P 08 31 57.3 +4.8
TBLU Trondheim 85.12 27 eP **P** **08 31 54.4 +1.6**
SPA0 Spitsbergen Ar 85.13 12 eP **P** **08 31 51.8 -0.9**
SPA0 eSKSac **SKSac** **08 42 16.6 -0.6**
SPA0 IVMs_BB IVMs_BB 09 09 33.1
comp=Z,3µm,18.0s
SPA0 IAMs_20 IAMs_20 09 09 39.1
comp=Z,9µm,20.5s
SPA0 Spitsbergen Ar 85.13 12 eP **P** **08 31 54.3 +1.7**
KONO Kongsberg 85.13 31 eP **P** **08 31 55.0 +2.1**
KONO eSKSac **SKSac** **08 42 15.5 -2.2**
KONO IVMs_BB IVMs_BB 09 02 42.5
comp=Z,2µm,21.6s
KONO Kongsberg 85.13 31 PFAKE 08 32 00.0 +7.1
KONO LR LR
comp=Z,4µm,20.0s
HSPB Hornsund (broa 85.15 13 eP **P** **08 31 52.6 -0.1**
HSPB IAMs_20 IAMs_20 09 06 59.4
comp=Z,8µm,18.6s
HSPB IVMs_BB IVMs_BB 09 07 13.3
comp=Z,3µm,25.5s
MUD Monsted U'grnd 85.19 34 *i* P **P** **08 31 55.8 +2.5**
comp=Z,3µm,18.0s
MUD Monsted U'grnd 85.19 34 eP **P** **08 31 55.8 +2.5**
MUD MLR MLR
comp=Z,3µm,18.0s
JOHN Johnston Islan 85.36 286 PFAKE 08 32 00.0 +5.1
JOHN LR LR
comp=Z,280nm,19.0s
BFO Black Forest 85.39 42 eP **P** **08 31 55.9 +1.3**
BFO pmax pmax
comp=Z,15nm,1.0s
BFO MLR MLR
comp=Z,4µm,22.0s
BFO Black Forest 85.39 42 eP **P** **08 31 55.9 +1.3**
comp=Z,15nm,1.0s
BFO LR LR
comp=Z,4µm,22.0s
TAM Tamanrasset 85.44 68 eP **P** **08 31 56.3 +0.8**
TAM pmax pmax
comp=Z,52nm,1.2s
TAM MLR MLR
comp=Z,4µm,21.0s
TAM Tamanrasset 85.44 68 eP **P** **08 31 56.3 +0.8**
comp=Z,52nm,1.2s
TAM LR LR
comp=Z,4µm,21.0s
NC204 NORSAR Array S 85.55 29 eP **P** **08 31 56.0 +0.9**
NBO00 NORSAR Array S 85.58 29 eP **P** **08 31 55.6 +0.4**
NBO02 NORSAR Array S 85.62 29 eP **P** **08 31 53.8 -1.6**
NAO01 NORSAR Array S 85.65 29 eP **P** **08 31 55.6 +0.1**
OSL Oslo 85.67 30 eP **P** **08 31 59.0 +3.5**
NSS Namsos 85.73 26 eP **P** **08 31 57.5 +1.7**
NSS IAmb IAmb 08 32 08.8
comp=Z,46nm,1.3s
NB2 NORSAR Subarra 85.79 29 P **P** **08 31 51.9 -4.4**
comp=Z,64nm,1.4s,baz=274,slow=4.8
NB2 NORSAR Subarra 85.79 29 P **P** **08 31 51.9 -4.4**
baz=274,slow=4.8
NOA NORSAR Array B 85.79 29 P **P** **08 31 54.9 -1.4**
comp=Z,2.4nm,0.9s,baz=281,slow=4.6,SNR=6.5
NOA LR LR 09 08 29.1
comp=Z,2µm,19.1s,baz=270,slow=34
NB201 NORSAR Array S 85.83 29 eP **P** **08 31 55.0 -1.5**
NC303 NORSAR Array S 85.84 29 eP **P** **08 31 56.7 +0.2**
STU Stuttgart 85.93 42 PFAKE 08 32 10.0 +13
STU LR LR
comp=Z,5µm,20.0s
STOK Stokkvaagen 85.94 24 eS **S** **08 42 30.4 +0.1**
NC602 NORSAR Array S 85.98 29 eP **P** **08 31 56.8 -0.4**
NC602 eSKSac **SKSac** **08 42 19.1 -4.0**
NC602 NORSAR Array S 85.98 29 eP **P** **08 31 59.6 +2.4**
NC405 NORSAR Array S 86.02 29 eP **P** **08 31 58.6 +1.2**
TUE Stuetta 86.26 44 PFAKE 08 32 10.0 +11
TUE LR LR
comp=Z,4µm,18.0s
DAVA Damuels 86.54 43 *i* sP **P** **08 32 05.0 +4.5**
comp=Z,29nm,0.8s,SNR=11
STEI Steigen 86.56 22 eP **P** **08 32 00.9 +1.1**
FUORN Ofenpass-Fuorn 86.87 44 PFAKE 08 32 10.0 +7.8
FUORN LR LR
comp=Z,4µm,18.0s
VSL Villasalto 87.03 51 PFAKE 08 32 10.0 +7.2
VSL LR LR
comp=Z,3µm,21.0s
COP Copenhagen 87.09 34 *i* P P 08 32 10.2 +7.5
comp=Z,1µm,22.0s
COP Copenhagen 87.09 34 eP P 08 32 10.2 +7.5
COP MLR MLR
comp=Z,1µm,22.0s
GRFO Grafenberg 87.14 40 PFAKE 08 32 10.0 +6.9
GRFO LR LR
comp=Z,7µm,22.0s
FETA Feichten 87.14 43 esP **P** **08 32 08.1 +4.7**
comp=Z,27nm,1.4s,SNR=7.1
VLC Villacollemand 87.25 46 PFAKE 08 32 10.0 +6.2
VLC LR LR
comp=Z,1µm,20.0s
MOTA Moosalm 87.36 43 esP **P** **08 32 09.0 +4.5**
comp=Z,10nm,0.9s
HOPEN Hopen 87.39 13 esP **P** **08 32 08.0 +4.3**
KEST Kesra 87.43 54 LR LR 09 06 53.8
comp=Z,2µm,21.5s,baz=234,slow=33
TRO Tromso 87.54 20 eP **P** **08 32 06.6 +2.0**
RGN Rugen 87.76 35 PFAKE 08 32 20.0 +14
RGN LR LR
comp=Z,4µm,20.0s
NKC Novy Kostel 87.86 40 eP **P** **08 32 10.2 +3.6**
NKC AMS AMS 09 04 20.0
comp=Z,9µm,25.0s
CLL Collm 88.05 39 *i* P **P** **08 32 10.2 +2.8**
comp=Z,17nm,1.0s
CLL *e*Plp 08 32 13.0
CLL *i* 08 32 19.3
comp=Z,73nm,1.6s
CLL *e*PP **PP** **08 35 35.0 +1.2**
comp=Z,200nm,11.3s
CLL *e*SKSac **SKSac** **08 42 33.0 -3.1**
CLL *e*S **SKKSac** **08 42 48.0 +1.7**
comp=N,1µm,17.2s
CLL *e*S **SKKSac** **08 42 48.0 +1.7**
comp=E,1µm,17.3s
CLL *e*S **SKKSac** **08 42 48.0 +1.7**
comp=Z,400nm,13.2s
CLL *e*PS **PnS** **08 43 50.0 -3.2**
CLL *e* 08 45 30.0
CLL *e*SS **SS** **08 48 41.0 +2.0**
CLL *e*SSS SSS 08 52 22.0
CLL L L 09 07 00.0
comp=Z,4µm,20.3s
CLL Collm 88.05 39 eP **P** **08 32 10.0 +2.5**
CLL pmax pmax

comp=Z,134nm,1.8s
CLL MLR MLR
CLL Collm 88.05 39 eP P 08 32 09.9 +2.5
comp=Z,134nm,1.8s
CLL LR LR
comp=Z,5µm,18.0s
ABTA Abfaltersbach 88.39 43 esP P 08 32 13.9 +4.6
comp=Z,49nm,1.5s,SNR=9.6
BSD Bornholm Skovb 88.58 35 i P P 08 32 15.8 +6.0
comp=Z,3µm,20.0s
BSD Bornholm Skovb 88.58 35 eP P 08 32 15.8 +6.0
BSD MLR MLR
comp=Z,3µm,20.0s
BRG Berggiesshubel 88.70 39 eP P 08 32 13.4 +2.9
comp=Z,12nm,1.3s
BRG i 08 32 22.4
comp=Z,44nm,1.6s
BRG Berggiesshubel 88.70 39 S SKSac 08 42 43.0 +2.9
BRG SS SS 08 48 18.0 -31
comp=N,3µm,23.8s
comp=E,4µm,23.4s
comp=Z,6µm,22.6s
BRG Berggiesshubel 88.70 39 eP P 08 32 13.4 +2.9
BRG i 08 32 22.4
BRG S S 08 42 43.0 -15
BRG pmax pmax
comp=Z,12nm,1.3s
BRG MLR MLR
comp=N,3µm,23.8s
BRG MLR MLR
comp=E,4µm,23.4s
BRG MLR MLR
comp=Z,6µm,22.6s
KHC Kasperske Hory 88.75 41 eP P 08 32 13.5 +2.7
KHC ex x 08 32 22.2
KHC eSKS SKSac 08 42 38.2 -2.3
KHC eSS SS 08 48 54.0 +4.6
KHC AMS AMS 09 04 20.0
comp=Z,8µm,23.4s
KHC Kasperske Hory 88.75 41 eP P 08 32 11.3 +0.4
KHC pmax pmax
comp=Z,34nm,1.9s
KHC MLR MLR
comp=Z,2µm,21.0s
KHC Kasperske Hory 88.75 41 eP P 08 32 11.2 +0.4
comp=Z,34nm,1.9s
KHC LR LR
comp=Z,2µm,21.0s
GEC2 GERESS Array S 88.87 41 eP P 08 32 14.1 +2.6
GEC2 pmax pmax
comp=Z,40nm,1.4s
GEC2 MLR MLR
comp=Z,4µm,19.0s
GEC2 GERESS Array S 88.87 41 eP P 08 32 14.1 +2.6
comp=Z,40nm,1.4s
GEC2 LR LR
comp=Z,4µm,19.0s
GERES GERESS Array B 88.87 41 P P 08 32 12.9 +1.5
comp=Z,5.3nm,0.8s,baz=282,slow=6.7,SNR=15
GERES LR LR 09 09 55.4
comp=Z,2µm,18.1s,baz=275,slow=34
GERES GERESS Array B 88.87 41 P P 08 32 13.0 +1.5
GEA0 GERESS Array S 88.87 41 eP P 08 32 13.1 +1.6
KBA Koelnbreinsper 88.91 43 i sP P 08 32 16.3 +4.5
comp=Z,23nm,1.2s
PRA Prague 89.14 40 eSKS SKSac 08 42 49.2 +6.5
PRA eSS SS 08 49 03.9 +8.9
PRA AMS AMS 09 05 10.0
comp=Z,10µm,23.8s
PVCC Panska Ves 89.15 39 eP P 08 32 18.0 +5.3
PVCC AMS AMS 09 05 00.0
comp=Z,7µm,23.9s
PRU Pruhonice 89.23 40 eP P 08 32 16.9 +3.9
PRU eSKS SKSac 08 42 46.0 +2.8
PRU eSP SPn 08 44 04.5 -1.1
PRU eSS SS 08 48 58.4 +2.2
PRU AMS AMS 09 05 20.0
comp=Z,10µm,23.4s
GOPC GO Pecny, Ondr 89.39 40 eSKS SKSac 08 42 44.1 -0.2
GOPC AMS AMS 09 05 20.0
comp=Z,9µm,24.2s
MOA Molln 89.40 42 i sP P 08 32 18.2 +4.3
comp=Z,9.7nm,1.5s
TRI Trieste 89.41 44 PFAKE 08 32 20.0 +6.1
TRI LR LR
comp=Z,3µm,19.0s
JAVS Javornik 89.59 44 i P P 08 32 25.1 +10
JAVS eSKSac SKSac 08 42 52.5 +6.8
AQU L'Aquila 89.68 48 PFAKE 08 32 20.0 +4.6
AQU LR LR
comp=Z,3µm,21.0s
ARCES ARCESS Array B 89.78 20 P P 08 32 15.6 +0.4
comp=Z,6.9nm,0.8s,baz=306,slow=4.2,SNR=9.5
ARCES LR LR 09 11 45.1
comp=Z,2µm,19.6s,baz=292,slow=35
ARE0 ARCESS Array S 89.78 20 eP P 08 32 19.4 +4.2
ARE0 eSKSac SKSac 08 42 41.3 -4.5
ARE0 ARCESS Array S 89.78 20 PFAKE 08 32 20.0 +4.8
ARE0 LR LR
comp=Z,3µm,22.0s
ARA0 ARCESS Array S 89.78 20 eP P 08 32 16.1 +0.8
TREC Trest 89.95 40 eP P 08 32 21.5 +5.0
TREC AMS AMS 09 05 20.0
comp=Z,8µm,22.8s
UPC Upice 90.06 39 eP P 08 32 21.4 +4.5
UPC eSKS SKSac 08 42 49.2 +1.1
UPC eSP SP 08 44 17.2 +1.5
UPC AMS AMS 09 05 30.0
comp=Z,6µm,23.5s
SOKA Soboth 90.12 43 i sP P 08 32 21.1 +3.8
comp=Z,7.0nm,0.8s,SNR=5.8
VISS Visnje 90.14 44 eP P 08 32 22.6 +5.3
VISS eSKSac SKSac 08 42 52.8 +4.0
KSP Ksiaz 90.18 39 eP P 08 32 23.2 +5.8
KSP eS S 08 43 18.1 +6.8
KSP LMZ LR 09 05 41.6
PERS Pernice 90.18 43 i P P 08 32 22.5 +4.9
KEV Kevo 90.20 19 PFAKE 08 32 30.0 +13
KEV LR LR
comp=Z,4µm,21.0s
CLTB Caltabellotta 90.27 52 PFAKE 08 32 30.0 +12
CLTB LR LR
comp=Z,4µm,19.0s
DPC Dobruska-Polom 90.29 39 eP P 08 32 22.4 +4.4
DPC eSKS SKSac 08 42 49.4 -0.1
DPC eSP SP 08 44 21.1 +2.9
DPC AMS AMS 09 05 40.0
comp=Z,6µm,22.6s
ARSA Arzberg 90.34 42 esP P 08 32 22.3 +4.0
comp=Z,12nm,1.2s
CONA Conrad Observa 90.45 42 esP P 08 32 23.5 +4.6
comp=Z,10.0nm,0.9s,SNR=6.7
BOJS Bojanci 90.47 44 eP P 08 32 27.9 +9.0
KRLC Kraliky 90.63 40 eP P 08 32 24.6 +5.0
SOP Sopron 90.95 42⇓eP P 08 32 33.3 +12
AFI Afiamalu 91.06 256 PFAKE 08 32 30.0 +7.7
AFI LR LR
comp=Z,2µm,19.0s
MORC Moravsky Berou 91.17 40 PFAKE 08 32 30.0 +7.8
MORC LR LR
comp=Z,30µm,22.0s
MIDW Midway 91.19 298 PFAKE 08 32 30.0 +7.4
MIDW LR LR
comp=Z,3µm,20.0s
BILL Bilibino 91.51 339 eP P 08 32 23.5 +0.2
BILL pmax pmax
comp=Z,221nm,1.9s
BILL MLR MLR
comp=Z,5µm,20.0s
BILL Bilibino 91.51 339 eP P 08 32 23.5 +0.2
comp=Z,221nm,1.9s
BILL LR LR
comp=Z,5µm,20.0s
OKC Ostrava-Krasne 91.54 40 eP P 08 32 27.7 +3.9
OKC eSKS SKSac 08 43 01.8 +5.2
OKC eSP SPn 08 44 34.3 +1.6
OKC AMS AMS 09 06 30.0
comp=Z,7µm,23.0s
WDD Wied Dalam 91.58 54 PFAKE 08 32 30.0 +5.7
WDD LR LR
comp=Z,2µm,21.0s
CUC Castrocucco 91.87 50 PFAKE 08 32 40.0 +14
CUC LR LR
comp=Z,2µm,20.0s
CEL Celeste 92.24 51 PFAKE 08 32 40.0 +13
CEL LR LR
comp=Z,4µm,22.0s
VYHS Vyhne 92.28 41 eP P 08 32 32.0 +4.7
VYHS pmax pmax
comp=Z,12nm,1.6s
VYHS Vyhne 92.28 41 eP P 08 32 32.0 +4.7
VYHS Vyhne 92.28 41 eS SKSac 08 42 59.0 -1.9
OJC Ojcow 92.49 39 eP P 08 32 33.7 +5.5
OJC eS S 08 43 41.4 +9.0
OJC LMZ LR 09 07 08.2
LANS Liptovska Anna 92.54 40 eP P 08 32 35.2 +6.7
LANS Liptovska Anna 92.54 40 eP P 08 32 35.2 +6.7
LANS e 08 47 58.6
PKSM Moragy 92.65 43⇓eP P 08 32 38.0 +9.0
FINES FINESS Array B 92.69 27 P P 08 32 29.6 +0.8
comp=Z,1.1nm,0.6s,baz=244,slow=12,SNR=2.9
FINES LR LR 09 12 20.1
comp=Z,3µm,19.9s,baz=284,slow=34
TIP Timpagrande 92.74 50 PFAKE 08 32 40.0 +10
TIP LR LR
comp=Z,4µm,21.0s
NIE Niedzica 93.00 40 eP P 08 32 37.3 +6.7
NIE eS S 08 43 46.7 +10
NIE LMZ LR 09 07 44.8
PSZ Piszkesteto 93.10 41⇓eP P 08 32 35.6 +4.4
PSZ Piszkesteto 93.10 41 PFAKE 08 32 40.0 +8.8
PSZ LR LR
comp=Z,3µm,21.0s
SNAA Sanae 93.17 162 P P 08 32 31.1 +0.2
APA Apatity 93.22 20 eP P 08 32 38.0 +6.8
APA i S S 08 43 40.0 +1.8
APA i SS SS 08 49 50.0 -2.8
APA MLR MLR
comp=Z,3µm,19.0s
LVZ Lovozero 93.50 20 PFAKE 08 32 40.0 +7.5
LVZ LR LR
comp=Z,3µm,22.0s
STHS Stebnicka Huta 93.60 39 eP P 08 32 39.8 +6.4
STHS pmax pmax
comp=Z,6.0nm,1.3s
STHS Stebnicka Huta 93.60 39 eP P 08 32 39.8 +6.4
STHS e 08 47 52.3
CRVS Cervenica-Dubn 93.87 40 eP P 08 32 40.0 +5.4
CRVS Cervenica-Dubn 93.87 40 eP P 08 32 40.0 +5.4
CRVS e 08 32 54.4
CRVS Cervenica-Dubn 93.87 40 eS S 08 43 53.9 +9.2
CRVS e 08 47 51.7
KOLS Kolonicke sedl 94.38 40 eP P 08 32 46.3 +9.4
KOLS eS SKSac 08 43 14.7 +2.3
KOLS pmax pmax
comp=Z,10.0nm,1.3s
KOLS Kolonicke sedl 94.38 40 eP P 08 32 46.3 +9.4
KOLS e 08 32 56.9
KOLS Kolonicke sedl 94.38 40 eS SKSac 08 43 14.7 +2.3
KOLS e 08 47 48.0
UZH Uzhgorod 94.47 40 eP P 08 32 46.0 +8.7
UZH e 08 36 31.6
UZH e 08 43 12.8
TIR Tirane 94.61 48 PFAKE 08 32 50.0 +12
TIR LR LR
comp=Z,3µm,21.0s
QSPA South Pole Qui 96.86 180 PFAKE 08 33 00.0 +12
QSPA LR LR
comp=Z,1µm,22.0s
AGG Agios Georgios 97.00 49 PFAKE 08 33 00.0 +11
AGG LR LR
comp=Z,4µm,21.0s
MLR Muntele Rosu 97.77 42 P Pdif 08 32 53.9 +1.3
comp=Z,0.6nm,0.9s,baz=262,slow=7.2,SNR=3.2
MLR LR LR 09 13 50.9
comp=Z,324nm,19.7s,baz=290,slow=34
KIEV Kiev 98.09 37 PFAKE 08 33 00.0 +6.3
KIEV LR LR
comp=Z,4µm,21.0s
AKASG Malin Array Be 98.09 37 LR LR 09 13 33.3
comp=Z,3µm,21.1s,baz=320,slow=33
AKBB Malin Array Si 98.09 37 PFAKE 08 33 00.0 +6.2
AKBB LR LR
comp=Z,4µm,22.0s
KLMR Klimovskoe 98.82 25 eP P 08 32 55.8 -1.0
KLMR e 08 36 57.2
KLMR pmax pmax
comp=Z,10.0nm,1.5s
TIXI Tiksi 99.01 350⇓eP Pdif 08 32 57.9 +0.5
TIXI pmax pmax
comp=Z,3.0nm,0.8s
TIXI MLR MLR
comp=Z,5µm,20.0s
TIXI Tiksi 99.01 350 PFAKE 08 33 10.0 +13
TIXI LR LR
comp=Z,6µm,20.0s
KIS Kishinev 99.16 40 ePP PP 08 37 12.0 +11
KIS eSKS SKSac 08 43 43.0 +5.8
KIS Kishinev 99.16 40 ePS PS 08 46 00.0 +2.7
KIS LRM MLR 09 11 36.0
comp=Z,4µm,24.0s
TIRR Tirgusor 99.76 43 PFAKE 08 33 10.0 +8.7
TIRR LR LR
comp=Z,3µm,19.0s
IDI Anoyia 99.95 52 PFAKE 08 33 10.0 +7.5
IDI LR LR
comp=Z,1µm,20.0s
SANT Santorini 100.09 51 PFAKE 08 33 10.0 +6.9
SANT LR LR
comp=Z,1µm,20.0s
OBN Obninsk 100.31 31⇑eP Pdif 08 33 15.9 +12
OBN pmax pmax
comp=Z,4.0nm,0.4s
OBN Obninsk 100.31 31 PFAKE 08 33 10.0 +6.5
OBN LR LR
comp=Z,3µm,20.0s
LAST Lasithi 100.44 52 PFAKE 08 33 10.0 +5.3
LAST LR LR
comp=Z,1µm,22.0s
MSVF Nonsavu 101.16 253 PFAKE 08 33 20.0 +12
MSVF LR LR
comp=Z,671nm,19.0s
PET Petropavlovsk 101.32 327 PFAKE 08 33 20.0 +12
PET LR LR
comp=Z,2µm,22.0s
MXZ Matakaoa Point 101.53 233 PFAKE 08 33 20.0 +11
MXZ LR LR
comp=Z,2µm,22.0s
TSUM Tsumeb 101.58 108 PFAKE 08 33 20.0 +10
TSUM LR LR
comp=Z,3µm,19.0s
MA2 Magadan 101.61 335 PFAKE 08 33 20.0 +11
MA2 LR LR
comp=Z,17nm,21.0s
PEA0B Petropavlovsk- 101.78 328 PFAKE 08 33 20.0 +10
PEA0B LR LR
comp=Z,4µm,22.0s
URZ Urewera 102.47 232 PFAKE 08 33 20.0 +6.5
URZ LR LR
comp=Z,1µm,20.0s
BKZ Black Stump Fm 102.93 231 PFAKE 08 33 30.0 +14
BKZ LR LR
comp=Z,2µm,21.0s
ISP Isparta 103.50 49 PFAKE 08 33 30.0 +12
ISP LR LR
comp=Z,2µm,19.0s
SNZO South Karori 104.20 229 PFAKE 08 33 30.0 +8.9
SNZO LR LR
comp=Z,1µm,22.0s
HIZ Hauiti 104.23 232 PFAKE 08 33 30.0 +8.7
HIZ LR LR
comp=Z,1µm,19.0s
ANTO Ankara 104.43 46 PFAKE 08 33 30.0 +7.7
ANTO LR LR
comp=Z,2µm,20.0s
TARA Tarawa 104.44 273 PFAKE 08 33 30.0 +7.2
TARA LR LR
comp=Z,2µm,18.0s
SUR Sutherland 104.75 122 PFAKE 08 33 30.0 +6.0
SUR LR LR
comp=Z,3µm,19.0s
THZ Tophouse 105.52 229 PFAKE 08 37 50.0
THZ LR LR
comp=Z,1µm,19.0s
MQZ McQueen's Vall 105.53 227 PFAKE 08 37 50.0
MQZ LR LR
comp=Z,2µm,18.0s
OXZ Oxford 106.02 227 PFAKE 08 37 50.0
OXZ LR LR
comp=Z,2µm,20.0s
CSS Mathiatis 106.61 51 PFAKE 08 37 50.0
CSS LR LR
comp=Z,400nm,22.0s
YAK Yakutsk 107.00 345 PFAKE 08 37 50.0
YAK LR LR
comp=Z,4µm,20.0s
H11S2 WAKE ISLAND Hy107.42 292 T T 10 33 41.2
baz=77,slow=75,SNR=24
H11S1 WAKE ISLAND Hy107.42 292 T T 10 33 40.7
baz=77,slow=75,SNR=22
H11S3 WAKE ISLAND Hy107.43 292 T T 10 33 41.8
baz=77,slow=75,SNR=21
SYO Syowa Base 107.45 161⇑eX Pdif 08 33 29.2 -5.7
MLZ Mavora Lakes 108.54 224 PFAKE 08 38 00.0
MLZ LR LR
comp=Z,2µm,22.0s
KWAJ Kwajalein Atol 108.55 282 PFAKE 08 38 00.0
KWAJ LR LR
comp=Z,2µm,20.0s
WHZ Wether Hill Ro 108.57 224 PFAKE 08 38 00.0
WHZ LR LR
comp=Z,2µm,18.0s
ARU Arti 109.25 22 PFAKE 08 38 00.0
ARU LR LR
comp=Z,3µm,21.0s
KIV Kislovodsk 109.26 39 PFAKE 08 38 00.0
KIV LR LR
comp=Z,3µm,21.0s
LSZ Lusaka 111.55 104 PFAKE 08 38 00.0
LSZ LR LR
comp=Z,2µm,22.0s
GNI Garni 112.52 41 PFAKE 08 38 00.0
GNI LR LR
comp=Z,2µm,22.0s
YSS Yuzh-Sakhalins 113.18 328 PFAKE 08 38 00.0
YSS LR LR
comp=Z,1µm,21.0s
MAW Mawson 114.96 166 PFAKE 08 38 10.0 +13
MAW LR LR
comp=Z,300nm,22.0s
ASAJ Asahikawa 115.08 326 PFAKE 08 38 10.0 +11
ASAJ LR LR
comp=Z,4µm,20.0s
HABR Khabarovsk 115.88 333 eP Pdif 08 34 09.5 -3.4
HABR i 08 37 56.9
HABR e 08 38 00.6
HABR e 08 38 59.9
HABR e 08 41 32.8
HABR eSP SP 08 48 39.4 -2.9
HABR eSS SS 08 55 01.9 -1.5
HABR pmax pmax
comp=E,80nm,2.2s
HABR pmax pmax
comp=N,34nm,2.2s
HABR pmax pmax
comp=Z,54nm,2.2s
HABR MLR MLR
comp=Z,2µm,22.0s
BRVK Borovoye 115.97 18 PFAKE 08 38 10.0 +10
BRVK LR LR
comp=Z,4µm,21.0s
ERM Erimo 116.07 324 PFAKE 08 38 10.0 +10
ERM LR LR
comp=Z,2µm,20.0s
LHI Lord Howe Isla 117.86 238 PFAKE 08 38 10.0 +5.8
LHI LR LR
comp=Z,2µm,18.0s
PATS Pohnpei 117.97 281 PFAKE 08 38 10.0 +5.1
PATS LR LR
comp=Z,4µm,20.0s
HNR Honiara 118.33 263 PFAKE 08 38 20.0 +14
HNR LR LR
comp=Z,2µm,20.0s
ZALV Zalesovo Beam 118.47 9 PP PP 08 39 20.8 +0.4
comp=Z,4.8nm,0.8s,baz=339,slow=8.6,SNR=7.8
FURI Furi 119.19 76 PFAKE 08 38 20.0 +12
FURI LR LR
comp=Z,2µm,20.0s
KMBO Kilima Mbogo 119.53 87 PFAKE 08 38 20.0 +12
KMBO LR LR
comp=Z,2µm,19.0s
CASY Casey 120.00 186 PFAKE 08 38 20.0 +13
CASY LR LR
comp=Z,398nm,21.0s
KURK Kurchatov 120.35 14 PP PP 08 39 32.5 -0.9
KURK LR LR
comp=Z,5µm,19.0s
KURBB Kurchatov Arra 120.42 14 PP PP 08 39 32.5 -1.4
comp=Z,2.2nm,0.9s,baz=335,slow=6.1,SNR=4.4
USRK Ussuriysk Ar. 120.48 332 PKP PKPdf 08 38 11.4 +2.5
comp=Z,0.6nm,0.6s,baz=66,slow=3.5,SNR=2.6
HIA Hailar 120.87 343 PFAKE 08 38 20.0 +10
HIA LR LR
comp=Z,6µm,22.0s
MDJ Mudanjiang 121.25 334 PKP PKPdf 08 38 11.5 +1.1
MDJ SS SS 08 56 19.5 +6.5
MDJ AMB AMB
comp=Z,160nm,6.9s
MDJ LR LR
comp=Z,3µm,39.7s
MDJ Mudanjiang 121.25 334 PFAKE 08 38 20.0 +10
MDJ LR LR
comp=Z,3µm,19.0s
TLY Talaya 121.47 356 PFAKE 08 38 20.0 +9.4
TLY LR LR
comp=Z,3µm,21.0s
MAJO Matsushiro 122.49 322 PFAKE 08 38 20.0 +7.0
MAJO LR LR
comp=Z,2µm,21.0s
MJB9 Matsu-Tunnel 122.49 322 PFAKE 08 38 20.0 +7.0
MJB9 LR LR
comp=Z,400nm,21.0s
DAMY Dhamar 123.07 68 PFAKE 08 38 20.0 +5.0
DAMY LR LR
comp=Z,2µm,21.0s
TAU Tasmania Unive 123.53 222 PFAKE 08 38 20.0 +5.3
TAU LR LR
comp=Z,2µm,19.0s
JHJ2 Mitsune 123.58 317 PFAKE 08 38 20.0 +4.8
JHJ2 LR LR
comp=Z,2µm,21.0s
INU Inuyama 124.00 321 PFAKE 08 38 30.0 +14
INU LR LR
comp=Z,2µm,21.0s
MAKZ Makanchi 124.79 13 PFAKE 08 38 30.0 +13
MAKZ LR LR
comp=Z,4µm,20.0s
MKAR Makanchi Array 124.88 13 PKP PKPdf 08 38 16.5 -0.8
comp=Z,0.5nm,0.7s,baz=342,slow=1.8,SNR=3.2
ULN Ulaanbaatar 124.89 352 i PKIKP PKPdf 08 38 22.0 +4.5
ULN Ulaanbaatar 124.89 352 PFAKE 08 38 30.0 +13
ULN LR LR
comp=Z,3µm,20.0s
MK01 Makanchi Array 124.90 13 ePKPdf PKPdf 08 38 16.4 -0.9
SONA1 Songino Array 124.99 353 ePKPdf PKPdf 08 38 21.6 +3.9
SONM Songino Array 125.00 353 PKP PKPdf 08 38 16.7 -1.0
comp=Z,0.7nm,0.8s,baz=9.5,slow=1.8,SNR=3.2
SONM PP PP 08 40 01.2 -3.8
comp=Z,1.6nm,0.8s,baz=2.9,slow=5.8,SNR=2.6
CAN Canberra 125.12 231 PFAKE 08 38 30.0 +12
CAN LR LR
comp=Z,926nm,19.0s
RABL Rabaul 125.69 270 PFAKE 08 38 30.0 +10
RABL LR LR
comp=Z,2µm,19.0s
EKS2 Erkin-Say 126.14 22 PFAKE 08 38 30.0 +10
EKS2 LR LR
comp=Z,4µm,20.0s
AAK Ala-Archa 126.43 21 i PKIKP PKPdf 08 38 20.0 -0.6
AAK Ala-Archa 126.43 21 PFAKE 08 38 30.0 +9.4
AAK LR LR
comp=Z,4µm,20.0s
TKM2 Tokmak 2 126.56 20 PFAKE 08 38 30.0 +9.1
TKM2 LR LR
comp=Z,3µm,20.0s
KSRS Korea Array 127.63 330 PKP PKPdf 08 38 22.9 +0.2
comp=Z,1.9nm,0.8s,baz=338,slow=0.9,SNR=4.1
KSAR Wonju Array Be 127.66 330 PKIKP PKPdf 08 38 23.0 +0.1
KSAR Wonju Array Be 127.66 330 PKP PKPdf 08 38 22.9 +0.1
INCN Inchon 128.25 331 PFAKE 08 38 30.0 +6.0
INCN LR LR
comp=Z,3µm,22.0s
UOSS Minazif 128.76 50 PFAKE 08 38 30.0 +4.7

UOSS				LR	LR				
	comp=Z,2µm,22.0s								
WMQ	**Urumqi**	**128.77**	**9**	PKP	**PKPdf**	**08 38 25.0**	**+0.1**		
WMQ				PP	**PP**	**08 40 36.0**	**+6.2**		
WMQ				SKKS		08 47 24.5			
WMQ				SS	**SS**	**08 57 53.5**	**+6.5**		
WMQ				LR	LR				
	comp=Z,850nm,24.4s								
WMQ				LR	LR				
	comp=Z,2µm,21.4s								
WMQ				LR	LR				
	comp=Z,2µm,24.4s								
GUMO	**Guam**	**128.90**	**293**	PFAKE		08 38 40.0	+14		
GUMO				LR	LR				
	comp=Z,2µm,20.0s								
DL2	**Dalian**	**129.32**	**336**	*e*PKP	**PKPdf**	**08 38 23.8**	**-2.2**		
DL2				*e*PP	**PP**	**08 40 41.0**	**+7.3**		
DL2				AMB	AMB				
	comp=Z,310nm,4.5s								
KSH	**Kashi**	**129.70**	**22**	*e*PKP	**PKPdf**	**08 38 26.5**	**-0.4**		
KSH				*e*PP	**PP**	**08 40 37.0**	**+0.8**		
KSH				PKS	**PKSdf**	**08 42 01.8**	**-1.7**		
KSH				SKS	**SKSdf**	**08 45 37.8**	**-1.2**		
KSH				SKKS	**SKKSac**	**08 47 29.8**	**-5.0**		
KSH				AMB	AMB				
	comp=Z,110nm,6.5s								
KSH				LR	LR				
	comp=Z,5µm,29.9s								
BJI	**Beijing**	**130.30**	**341**	PKP	**PKPdf**	**08 38 28.0**	**+0.2**		
BJI				PP	**PP**	**08 40 39.5**	**-0.4**		
BJI				SS	SS	08 58 07.3	+1.2		
BJI				LR	LR				
	comp=Z,2µm,27.9s								
BJI				LR	LR				
	comp=Z,3µm,24.9s								
BJI				LR	LR				
	comp=Z,4µm,27.9s								
BJT	**Baijiatuau**	**130.32**	**341**	PFAKE		08 38 40.0	+12		
BJT				LR	LR				
	comp=Z,4µm,21.0s								
HHC	**Hu-ho-hao-te**	**130.84**	**346**	*e*PKP	**PKPdf**	**08 38 33.3**	**+4.3**		
HHC				SKKS		08 47 38.8			
HHC				SS	**SS**	**08 58 12.0**	**-0.7**		
HHC				LR	LR				
	comp=Z,3µm,18.5s								
HHC				LR	LR				
	comp=Z,2µm,18.5s								
HHC				LR	LR				
	comp=Z,2µm,18.5s								
PMG	**Port Moresby**	**130.94**	**264**	PFAKE		08 38 40.0	+10		
PMG				LR	LR				
	comp=Z,2µm,20.0s								
CTAO	**Charters Tower**	**131.11**	**249**	PFAKE		08 38 40.0	+10		
CTAO				LR	LR				
	comp=Z,850nm,20.0s								
PAF	**Port-aux-Franc**	**131.76**	**156**	PFAKE		08 38 40.0	+10		
PAF				LR	LR				
	comp=Z,3µm,21.0s								
STKA	**Stephens Creek**	**132.10**	**233**	PKP	**PKPdf**	**08 38 30.6**	**-0.8**		
	comp=Z,1.0nm,0.4s,baz=133,slow=7.0,SNR=4.2								
STKA				SKPbc	**SKPbc**	**08 41 56.0**	**-2.0**		
	comp=Z,1.1nm,0.6s,baz=204,slow=12,SNR=3.1								
GTA	**Gaotai**	**133.93**	**358**	*e*PKP	**PKPdf**	**08 38 35.5**	**+0.6**		
GTA				PP	**PP**	**08 41 09.3**	**+6.1**		
GTA				SKS	**SKSdf**	**08 45 45.0**	**-1.6**		
GTA				SKKS	**SKKSac**	**08 48 00.5**	**-0.2**		
GTA				SS	**SS**	**08 58 55.5**	**+5.3**		
GTA				AMB	AMB				
	comp=Z,280nm,7.8s								
GTA				LR	LR				
	comp=Z,3µm,21.9s								
GTA				LR	LR				
	comp=Z,2µm,20.4s								
GTA				LR	LR				
	comp=Z,4µm,21.4s								
SSE	**Sheshan**	**136.05**	**330**	*e*PKP	**PKPdf**	**08 38 39.3**	**+0.4**		
SSE				PP	PP	08 41 25.0	+8.0		
SSE				SS	SS	08 59 18.3	+1.9		
SSE				AMB	AMB				
	comp=Z,120nm,12.0s								
SSE				LR	LR				
	comp=Z,1µm,24.0s								
SSE				LR	LR				
	comp=Z,3µm,24.0s								
SSE				LR	LR				
	comp=Z,2µm,20.8s								
NJ2	**Nanjing**	**136.34**	**334**	*e*PKP	**PKPdf**	**08 38 40.0**	**+0.6**		
NJ2				PP	**PP**	**08 41 21.0**	**+2.3**		
NJ2				AMB	AMB				
	comp=Z,1µm,10.6s								
NJ2				LR	LR				
	comp=Z,2µm,29.8s								
NJ2				LR	LR				
	comp=Z,3µm,29.3s								
NJ2				LR	LR				
	comp=Z,2µm,29.3s								
LZH	**Lanzhou**	**136.89**	**353**	*e*PKP	**PKPdf**	**08 38 38.8**	**-1.8**		
LZH				sPKP		08 38 45.5			
LZH				PP	**PP**	**08 41 25.0**	**+3.0**		
LZH				PKS	**PKSdf**	**08 42 18.5**	**+1.5**		
LZH				SKS	**SKSdf**	**08 45 46.5**	**-5.5**		
LZH				AMB	AMB				
	comp=Z,260nm,6.9s								
LZH				LR	LR				
	comp=Z,4µm,19.7s								
LZH				LR	LR				
	comp=Z,960nm,18.2s								
LZH				LR	LR				
	comp=Z,4µm,20.1s								
RER	**Riviere de l'E**	**137.09**	**114**	PFAKE		08 38 50.0	+8.8		
RER				LR	LR				
	comp=Z,4µm,20.0s								
TATO	**Taipei**	**140.76**	**325**	PFAKE		08 39 00.0	+12		
TATO				LR	LR				
	comp=Z,2µm,21.0s								
YHNB	**Yeheng**	**141.06**	**324**	PFAKE		08 39 00.0	+12		
YHNB				LR	LR				
	comp=Z,2µm,20.0s								
ENH	**Enshi**	**141.38**	**343**	PFAKE		08 39 00.0	+11		
ENH				LR	LR				
	comp=Z,3µm,22.0s								
ASAR	**Alice Springs**	**141.39**	**240**	PKhKP	PKPpre	08 38 42.5			
	comp=Z,1.7nm,0.9s,baz=117,slow=3.7,SNR=7.9								
CD2	**Chengdu**	**142.00**	**351**	PKP	**PKPdf**	**08 38 47.3**	**-2.6**		
CD2				sPKP		08 38 52.0			
CD2				PP	**PP**	**08 41 52.5**	**-0.8**		
CD2				SKS	**SKSdf**	**08 45 57.3**	**-3.0**		
CD2				SKKS	**SKKSac**	**08 48 44.8**	**-3.8**		
CD2				SS	**SS**	**09 00 26.0**	**+0.3**		
CD2				AMB	AMB				
	comp=Z,250nm,9.0s								
CD2				LR	LR				
	comp=Z,3µm,24.0s								
CD2				LR	LR				
	comp=Z,4µm,25.2s								
WB2	**Warramunga Arr**	**142.10**	**246**	*e*PKPdf	**PKPdf**	**08 38 48.7**	**-1.5**		
WRAB	**Tennant Creek**	**142.10**	**246**	*e*PKIKP	**PKPdf**	**08 38 48.7**	**-1.5**		
WRAB				MLR	MLR				
	comp=Z,2µm,20.0s								
WRAB	**Tennant Creek**	**142.10**	**246**	*e*PKPdf	**PKPdf**	**08 38 48.7**	**-1.5**		
WRAB				LR	LR				
	comp=Z,2µm,20.0s								
WRA	**Warramunga Arr**	**142.11**	**246**	PKhKP	PKPpre	08 38 43.6			
	comp=Z,4.2nm,1.0s,baz=102,slow=3.2,SNR=18								
PYUN	**Piuthan**	**142.48**	**22**	*e*P	**PKPdf**	**08 38 48.5**	**-2.5**		
	comp=Z,44nm,1.0s								
KOLN	**Koldanda**	**143.00**	**21**	*e*P	**PKPdf**	**08 38 49.8**	**-2.1**		
	comp=Z,20nm,1.0s								
LSA	**Lhasa**	**143.13**	**9**	PFAKE		08 39 00.0	+7.6		
LSA				LR	LR				
	comp=Z,4µm,22.0s								
GKN	**Gorkha**	**143.14**	**19**	*e*P	PKPbc	08 38 50.1	+1.2		
GUN	**Gumba**	**143.62**	**18**	*e*P	PKPbc	08 38 51.1	+0.6		
	comp=Z,156nm,1.2s								
DMN	**Daman**	**143.66**	**19**	*e*P	PKPbc	08 38 50.6	+0.1		
	comp=Z,64nm,1.2s								
PKIN	**Phulchoki**	**143.78**	**19**	*e*P	PKPbc	08 38 50.6	-0.3		
POO	**Poona**	**145.55**	**43**	*e*P	**PKPdf**	**08 38 56.0**	**-0.4**		
GYA	**Guiyang**	**145.75**	**346**	⇑*i*PKPbc	**PKPdf**	**08 38 56.0**	**-0.6**		
GYA				PKS	**PKSdf**	**08 42 29.8**	**-2.5**		
GYA				SKKS		08 49 06.5			
GYA				SS	**SS**	**09 01 09.3**	**+0.1**		
GYA				AMB	AMB				
	comp=Z,180nm,8.2s								
GYA				LR	LR				
	comp=Z,320nm,22.6s								
GYA				LR	LR				
	comp=Z,280nm,23.4s								
GYA				LR	LR				
	comp=Z,240nm,22.3s								
MTN	**Manton Dam**	**146.49**	**257**	*e*PKPdf	**PKPdf**	**08 38 58.5**	**+0.5**		
GZH	**Guangzhou**	**146.52**	**333**	PKPbc	**PKPdf**	**08 38 55.0**	**-2.8**		
GZH				SS	SS	09 01 17.5	-0.7		
GZH				LR	LR				
	comp=Z,5µm,20.9s								
SHL	**Shillong**	**147.29**	**10**	*e*P	**PKPdf**	**08 39 00.0**	**+0.7**		
KLRI	**Killari**	**147.68**	**40**	*e*PKiKP	**PKPbc**	**08 39 03.5**	**+0.8**		
KMI	**Kunming**	**147.83**	**351**	PKPbc	**PKPdf**	**08 38 58.8**	**-1.5**		
KMI				PP	**PP**	**08 42 32.5**	**+4.1**		
KMI				SS	SS	09 01 28.8	-4.0		
KMI				AMB	AMB				
	comp=Z,440nm,9.6s								
KMI				LR	LR				
	comp=Z,2µm,23.4s								
KMI				LR	LR				
	comp=Z,2µm,20.5s								
KMI				LR	LR				
	comp=Z,3µm,24.6s								
SRSP	**Sriramsagar**	**148.09**	**36**	*e*PKiKP	**PKPbc**	**08 39 03.7**	**0.0**		
H01W1	**Cape Leeuwin H**	**148.22**	**206**	T	T	11 25 18.1			
	baz=151,slow=74,SNR=13								
H01W2	**Cape Leeuwin H**	**148.22**	**206**	T	T	11 25 20.3			
	baz=151,slow=74,SNR=11								
H01W3	**Cape Leeuwin H**	**148.23**	**206**	T	T	11 25 19.8			
	baz=151,SNR=10								
NWAO	**Narrogin (SRO)**	**148.30**	**212**	PFAKE		08 39 10.0	+3.1		
NWAO				LR	LR				
	comp=Z,2µm,20.0s								
RPR	**Rampur**	**148.70**	**35**	*e*PKiKP	**PKPbc**	**08 39 05.1**	**-0.2**		
DAV	**Davao City (W)**	**148.89**	**296**	PFAKE		08 39 10.0	+0.2		
DAV				LR	LR				
	comp=Z,1µm,21.0s								
HYBB	**Hyderabad (bro**	**149.38**	**38**	*e*PKiKP	**PKPbc**	**08 39 06.8**	**-0.3**		
HYB	**Hyderabad**	**149.39**	**38**	*i* PKP	**PKPab**	**08 39 15.0**	**+3.3**		
URV	**Uravakonda**	**150.38**	**43**	*e*PKiKP	**PKPbc**	**08 39 09.2**	**-0.4**		
NJS	**Nagarjunasagar**	**150.51**	**38**	*e*PKiKP	**PKPbc**	**08 39 09.4**	**-0.4**		
FITZ	**Fitzroy Crossi**	**150.51**	**245**	*e*PKPbc	**PKPbc**	**08 39 08.4**	**-1.4**		
SRLM	**Srisailam**	**150.60**	**39**	*e*PKiKP	**PKPbc**	**08 39 09.2**	**-0.9**		
RCLA	**Racherla**	**151.12**	**40**	*e*PKiKP	**PKPbc**	**08 39 10.5**	**-0.8**		
PVM	**Polavaram**	**151.29**	**33**	*e*PKiKP	**PKPbc**	**08 39 10.9**	**-0.7**		
ADKI	**Addanki**	**151.46**	**38**	*e*PKPbc	**PKPbc**	**08 39 10.6**	**-1.4**		
CHLP	**Challavanipeta**	**151.46**	**28**	*e*PKPbc	**PKPbc**	**08 39 10.0**	**-2.0**		
QIZ	**Qiongzhong**	**151.61**	**335**	PKPbc	**PKPdf**	**08 39 04.8**	**-1.3**		
QIZ				PP	**PP**	**08 42 55.0**	**+4.7**		
QIZ				LR	LR				
	comp=Z,420nm,22.7s								
QIZ				LR	LR				
	comp=Z,1µm,22.1s								
MBWA	**Marble Bar**	**154.33**	**234**	PFAKE		08 39 20.0	+1.7		
MBWA				LR	LR				
	comp=Z,2µm,22.0s								
CHTO	**Chiang Mai**	**154.47**	**357**	PFAKE		08 39 20.0	+1.4		
CHTO				LR	LR				
	comp=Z,2µm,22.0s								
CMAR	**Chiang Mai Arr**	**154.82**	**357**	PKPbc	**PKPbc**	**08 39 18.0**	**-1.4**		
	comp=Z,1.9nm,0.6s,baz=314,slow=2.0,SNR=4.6								
CMAR				PP	**PP**	**08 43 04.0**	**-4.1**		
	comp=Z,2.7nm,0.5s,baz=352,slow=5.5,SNR=7.8								
CM01	**Chiang Mai Arr**	**154.85**	**357**	*e*PKPbc	**PKPbc**	**08 39 19.8**	**+0.3**		
DGAR	**Diego Garcia**	**155.00**	**93**	PFAKE		08 39 20.0	+8.9		
DGAR				LR	LR				
	comp=Z,2µm,19.0s								
KKM	**Kota Kinabalu**	**157.47**	**304**	PFAKE		08 39 20.0	+5.5		
KKM				LR	LR				
	comp=Z,1µm,21.0s								
KAPI	**Kappang**	**157.93**	**274**	PFAKE		08 39 20.0	+5.0		
KAPI				LR	LR				
	comp=Z,1µm,22.0s								
KSM	**Kuching**	**164.89**	**303**	PFAKE		08 39 30.0	+7.7		
KSM				LR	LR				
	comp=Z,1µm,22.0s								
KULM	**Kulim**	**167.57**	**346**	PFAKE		08 39 30.0	+5.6		
KULM				LR	LR				
	comp=Z,2µm,20.0s								
COCO	**West Island**	**174.64**	**172**	PFAKE		08 39 40.0	+12		
COCO				LR	LR				
	comp=Z,3µm,21.0s								

IDC ***30*** *08:20:00.9±0.7,38.72N×144.26E,h0km,mb3.9/13, mb1 4.1/18,mb1mx4.0/45,mbtmp4.0/18,ML4.0/4, Error ellipse: s-maj=20.6km s-min=16.5km az=103.0*

ISCJB ***30*** *08:20:02.8±0.4,38.80N±0.03×144.16E±0.04,h23km, mb3.9/17, Error ellipse: s-maj=5.1km s-min=4.3km az=169.4*

NEIC ***30*** *08:20:02.4±0.4,38.76N×144.30E,h10km,mb4.2/5, Error ellipse: s-maj=9.6km s-min=6.9km az=120.0*

JMA ***30*** *08:20:04.6±0.2,38.81N×144.11E,h41km, M4.1*

ISC 30 08:20:04.9±0.7,38.81N±0.05×144.15E±0.07,h23km,n50, σ1§65/63,mb4.0/17,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
OFUJ	**Ofunato**	**1.96**	**279**	P	**Pn**	**08 20 36.0**	**-0.6**
OFUJ				*e*S	**Sn**	**08 20 59.0**	**-1.5**
MIYJ	**Miyakonagasawa**	**1.97**	**294**	P	**Pn**	**08 20 35.8**	**-1.0**
MIYJ				*e*S	**Sn**	**08 20 59.3**	**-1.5**
JTH	**Tanohata**	**2.10**	**303**	*e*S	**Sn**	**08 21 02.4**	**-1.7**
JIO	**Ouri**	**2.23**	**262**	P	**Pn**	**08 20 39.9**	**-0.4**
JMK	**Ichinoseki**	**2.29**	**274**	P	**Pn**	**08 20 41.3**	**0.0**
JMK				*e*S	**Sn**	**08 21 08.0**	**-0.8**
JOM	**Ohasama**	**2.32**	**288**	P	**Pn**	**08 20 41.4**	**-0.3**
JOM				*e*S	**Sn**	**08 21 08.2**	**-1.3**
JKZ	**Kuzumaki**	**2.48**	**299**	P	**Pn**	**08 20 43.3**	**-0.6**
JKZ				*e*S	**Sn**	**08 21 12.0**	**-1.5**
JRG	**Rokugo**	**2.80**	**283**	*e*S	**Sn**	**08 21 20.9**	**-0.4**
JMM	**Marumori**	**2.81**	**251**	P	**Pn**	**08 20 47.4**	**-0.9**
JMM				*e*S	**Sn**	**08 21 20.1**	**-1.3**
JFK	**Kawauchi**	**2.96**	**242**	P	**Pn**	**08 20 49.4**	**-1.1**
JYK	**Kaneyama**	**2.96**	**273**	P	**Pn**	**08 20 51.3**	**+0.8**
JAH	**Hinai**	**3.05**	**298**	S	**Sn**	**08 21 27.5**	**0.0**
JTM	**Tenmabayashi**	**3.09**	**311**	P	**Pn**	**08 20 51.6**	**-0.6**
JTM				*e*S	**Sn**	**08 21 26.0**	**-2.4**
JFT	**Otama**	**3.27**	**248**	P	**Pn**	**08 20 55.3**	**+0.6**
JFT				S	**Sn**	**08 21 33.4**	**+0.4**
ERM	**Erimo**	**3.29**	**347**	*e*Pn	**Pn**	**08 20 53.9**	**-1.1**
ERM				*e*Sn	**Sn**	**08 21 28.5**	**-4.8**
JEM	**Erimo**	**3.29**	**347**	P	**Pn**	**08 20 54.5**	**-0.5**
JYA	**Atsumi**	**3.48**	**268**	S	**Sn**	**08 21 38.5**	**+0.4**
JHO	**Hitachi**	**3.59**	**233**	P	**Pn**	**08 20 57.5**	**-1.6**
JFY	**Yanaizu**	**3.78**	**250**	P	**Pn**	**08 21 02.0**	**+0.3**
JFY				S	**Sn**	**08 21 45.1**	**-0.3**
CHOJ	**Chosi**	**4.06**	**221**	P	**Pn**	**08 21 04.4**	**-1.2**
JYT	**Yasato**	**4.07**	**232**	P	**Pn**	**08 21 04.7**	**-0.9**
MAJO	**Matsushiro**	**5.23**	**246**	*e*Pn	**Pn**	**08 21 22.9**	**+1.3**
MJAR	**Matsushiro Arr**	**5.23**	**246**	Pn	**Pn**	**08 21 22.3**	**+0.6**
	11nm,0.3s,baz=17,slow=15,SNR=5.4						
MAT	**Matsushiro**	**5.23**	**246**	P	**Pn**	**08 21 22.7**	**+1.0**
ASAJ	**Asahikawa**	**5.43**	**348**	Pn	**Pn**	**08 21 22.7**	**-1.7**
	2.6nm,0.3s,baz=197,slow=18,SNR=6.9						
ASAJ				Sn	**Sn**	**08 22 22.1**	**-4.1**
	0.8nm,0.3s,baz=127,slow=20,SNR=3.3						
JHJ2	**Mitsune**	**6.68**	**213**	*e*Pn	**Pn**	**08 21 39.3**	**-2.3**
JHJ	**Hachijo jima 2**	**6.69**	**213**	Pn	**Pn**	**08 21 39.8**	**-2.0**
	19nm,0.3s,baz=75,slow=19,SNR=5.8						
JHJ				Sn	**Sn**	**08 22 49.8**	**-7.4**
	18nm,0.3s,baz=90,slow=20,SNR=3.6						
USRK	**Ussuriysk Ar.**	**10.59**	**304**	Pn	**Pn**	**08 22 37.4**	**+2.2**
	0.7nm,0.3s,baz=99,slow=14,SNR=9.3						
MDJ	**Mudanjiang**	**12.33**	**303**	*e*Pn	**Pn**	**08 22 59.5**	**+0.6**
	19nm,1.1s						
KSRS	**Korea Array**	**12.85**	**269**	Pn	**Pn**	**08 23 07.5**	**+1.4**
	0.4nm,0.3s,baz=76,slow=14,SNR=5.6						
KSAR	**Wonju Array Be**	**12.89**	**269**	Pn	**Pn**	**08 23 07.5**	**+0.9**
SONM	**Songino Array**	**28.67**	**301**	P	**P**	**08 26 01.0**	**+1.1**
	1.4nm,1.0s,baz=90,slow=12,SNR=3.2						
ENH	**Enshi**	**29.66**	**264**	*e*P	**P**	**08 26 10.8**	**+2.1**
	14nm,0.9s						
ZALV	**Zalesovo Beam**	**42.35**	**311**	P	**P**	**08 27 57.5**	**+0.6**
	1.0nm,0.4s,baz=90,slow=8.6,SNR=2.5						
MKAR	**Makanchi Array**	**45.04**	**301**	P	**P**	**08 28 18.7**	**+0.1**
	0.7nm,0.5s,baz=82,slow=11,SNR=4.2						
ILAR	**Eielson Array**	**46.83**	**33**	P	**P**	**08 28 33.5**	**+0.9**
	0.4nm,0.6s,baz=262,slow=5.7,SNR=4.5						
TKM2	**Tokmak 2**	**50.70**	**298**	*e*P	**P**	**08 29 03.7**	**+0.9**
	1.8nm,0.7s						
INK	**Inuvik**	**51.81**	**28**	P	**P**	**08 29 10.9**	**+0.5**
	1.0nm,0.5s,baz=295,slow=7.0,SNR=9.9						
INK	**Inuvik**	**51.81**	**28**	*e*P	**P**	**08 29 10.8**	**+0.3**
	1.3nm,0.6s						
ABKAR	**Akbulak array**	**58.46**	**310**	*e*P	**P**	**08 29 59.1**	**+0.4**
WRAB	**Tennant Creek**	**59.15**	**191**	*e*P	**P**	**08 30 02.7**	**-1.1**
	4.2nm,1.0s						
WRA	**Warramunga Arr**	**59.16**	**191**	P	**P**	**08 30 02.5**	**-1.3**
	1.7nm,0.8s,baz=12,slow=7.5,SNR=10						
WRA				PcP	**PcP**	**08 30 52.5**	**+0.3**
	1.0nm,0.8s,baz=358,slow=2.5,SNR=4.1						
RES	**Resolute Bay**	**60.33**	**15**	*e*P	**P**	**08 30 11.3**	**+0.1**
	0.3nm,0.4s						
ASAR	**Alice Springs**	**62.88**	**191**	P	**P**	**08 30 27.9**	**-1.2**
	0.7nm,0.8s,baz=11,slow=6.5,SNR=5.7						
FINES	**FINESS Array B**	**68.24**	**333**	P	**P**	**08 31 03.2**	**-0.1**
	0.7nm,0.6s,baz=73,slow=6.6,SNR=4.9						
KBZ	**Khabaz**	**71.38**	**311**	P	**P**	**08 31 22.8**	**0.0**
	2.7nm,0.8s,baz=36,slow=9.5,SNR=4.9						
NOA	**NORSAR Array B**	**73.37**	**338**	P	**P**	**08 31 34.7**	**+0.1**
	0.8nm,0.6s,baz=38,slow=6.0,SNR=4.8						
AKASG	**Malin Array Be**	**74.20**	**323**	P	**P**	**08 31 39.5**	**0.0**
	0.8nm,0.4s,baz=49,slow=6.6,SNR=5.5						
PDAR	**Pinedale Array**	**74.88**	**47**	P	**P**	**08 31 42.7**	**-1.2**
	0.7nm,0.9s,baz=349,slow=1.8,SNR=3.2						
TXAR	**Lajitas Array**	**87.32**	**54**	P	**P**	**08 32 50.5**	**+0.3**
	0.6nm,1.1s,baz=294,slow=4.8,SNR=2.7						

JMA 30 08:21:21.8±0.1,36.80N×141.22E,h37km±1km,M2.9, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.45**	**312**	P	Pn	08 21 31.5	-0.2
ONAJ				S	Sn	08 21 38.5	-0.3
JHO	**Hitachi**	**0.56**	**250**	P	Pn	08 21 33.0	-0.3
JHO				S	Sn	08 21 40.9	-0.4
JHO	**Hitachi**	**0.56**	**250**	S	Sn	08 21 40.9	-0.4
JFK	**Kawauchi**	**0.63**	**334**	P	Pn	08 21 34.1	-0.3
JFK				S	Sn	08 21 42.9	-0.3
JMM	**Marumori**	**1.12**	**342**	S	Sn	08 21 56.0	+1.0
JOU	**Okura**	**1.62**	**344**	S	Sn	08 22 10.6	+3.1

MEX 30 08:22:16.5±0.3,18.12N×103.17W,h13km±3km,MD3.8, Near coast of Michoacan

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MMIG	**Aquila**	**0.23**	**315**	*i* P	Pg	08 22 21.1	-0.4
MMIG				*e*S	Sg	08 22 24.7	-0.3
R15V		**1.29**	**324**	*e*P	Pn	08 22 36.7	-3.6
R15V				*e*S	Sb	08 22 52.4	-4.9
EZ5V		**1.41**	**343**	*e*P	Pn	08 22 38.5	-3.6
EZ5V				*i* S	Sn	08 22 55.6	-5.0
ZIIG	**Zihuatanejo**	**1.70**	**107**	*e*P	Pn	08 22 43.3	-2.6

NNC 30 08:23:09.8±5.3,37.19N×71.23E,h0km,mb3.5,mpv3.1, 3C-4D,Error ellipse: s-maj=45.3km s-min=18.0km az=169.0,Afghanistan-Tajikistan border region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
DZET	**Dzherino**	**2.49**	**311**	⇓Pn	Pn	08 23 51.5	-0.3
	2.5nm,0.3s						
DZET				⇑Sn	Sb	08 24 25.1	-1.7
	8.5nm,0.4s						
SFK	**Sufi-Kurgan**	**3.34**	**32**	⇓Pn	Pn	08 24 03.6	+0.1
	1.0nm,0.1s						
SFK				⇑Sn	Sn	08 24 47.1	+3.1
	4.5nm,0.2s						
MNAS	**Manas**	**5.38**	**10**	⇓Pn	Pn	08 24 29.7	-1.8
	0.7nm,0.4s						
MNAS				⇓Sn	Sn	08 25 34.1	-0.2
	1.8nm,0.4s						
KK31	**Karatay Array**	**5.94**	**355**	⇑Pn	Pn	08 24 36.3	-2.7
	1.2nm,0.3s,baz=171,slow=12,SNR=11						
KK31				Sn	Sn	08 25 45.4	-2.3
	0.3nm,0.2s,baz=177,slow=22,SNR=6.1						

NIED ***30*** *08:35:00,24.70N×121.90E,h98km,Mw5.1 Best double couple: M0:4.65000×10¹⁶ NP1:ϕ=57.00000°,δ82.00000°, λ176.00000°. NP2:ϕ=147.00000°,δ86.00000°,λ8.00000°.*

BKK ***30*** *08:35:32.9±0.6,25.5N±5.5°×12.2E±°,h10km,M5.0/24, mB5.1/8,mb4.6/24,MLv6.0/1,Mw(mB)4.4/8*

ISCJB ***30*** *08:35:37.7±0.1,24.67N±0.01×121.85E±0.01,h81km±1km, mb4.6/132,Error ellipse: s-maj=2.3km s-min=1.6km az=144.8*

IDC ***30*** *08:35:38.3±0.5,24.61N×121.85E,h78km±3km,mb4.1/37, mb1 4.2/43,mb1mx4.2/60,mbtmp4.5/43,MS4.8/3, Ms1 4.8/3,ms1mx3.6/55,Error ellipse: s-maj=10.5km s-min=10.0km az=41.0*

TAP ***30*** *08:35:38.4,24.65N×121.81E,h75km,ML5.8,B*

MOS ***30*** *08:35:38.3±1.1,24.61N×121.85E,h91km,mb4.8/40, MS5.4/4,Error ellipse: s-maj=9.2km s-min=5.5km az=112.1*

NEIC ***30*** *08:35:38.8±0.3,24.62N×121.85E,h79km±3km,mb4.9/82, MW5.1,Error ellipse: s-maj=4.2km s-min=3.5km az=104.0, Moment Tensor Solution. s19 Moment tensor: Scale 10¹⁶Nm; M_rr1.32; M_θθ3.47; M_ϕϕ-4.80; M_rθ-1.99; M_θϕ-2.27; M_ϕr-0.17; Best double couple: M0:5.30000×10¹⁶ NP1: ϕ=332.00000°,δ67.00000°,λ16.00000°. NP2: ϕ=236.00000°,δ75.00000°,λ156.00000°. Principal axes: T 5.0200, Plg27.0000°, Azm192.0000°; N 0.4200, Plg62.0000°, Azm27.0000°; P -5.4500, Plg6.0000°, Azm286.0000°;*

*NEIC Felt [IV] at Taipei. Felt in much of Taiwan. Recorded [4 TAP] in Yilan; [3 TAP] in Hualien, Miaoli, Nantou and Taoyuan; [2 TAP] in Changhua, Chiayi, Hsinchu, Ta

baz=245
NNS eS Sn 08 36 01.6 -0.5
baz=245
NACB Ninganchiao 0.55 206 ePn Pn 08 35 51.6 -0.9
NACB eSn Sn 08 36 03.1 +0.5
TWS1 Kuangyinshan 0.59 317⇑ iP Pn 08 35 52.9 0.0
baz=312
TWS1 eS Sn 08 36 02.2 -1.2
baz=312
TWD Chiawan 0.63 202⇓ iP Pn 08 35 52.4 -1.0
baz=206
TWD eS Sn 08 36 02.6 -1.5
baz=206
TWY Chenhua 0.65 339⇓ iP Pn 08 35 53.6 +0.1
baz=335
NCU National Centr 0.68 296⇑ iP Pn 08 35 53.6 -0.3
baz=291
NCU S Sn 08 36 04.5 -0.6
baz=291
HWA Hwalien 0.72 199 ⇓P Pn 08 35 53.7 -0.7
baz=205
TWT Tachien 0.75 237⇑ iP Pn 08 35 55.2 +0.4
baz=230
WHF Hehuan Shan 0.75 226⇓ iP Pn 08 35 54.7 -0.4
baz=220
NSTT Nanjuang 0.78 268⇑ iP Pn 08 35 54.3 -0.6
baz=268
HSN Hsinchu 0.82 280⇑ iP Pn 08 35 54.6 -0.8
baz=283
HSN S Sn 08 36 06.1 -1.6
baz=283
ESF Shoufeng Towns 0.85 202 eP Pn 08 35 55.4 -0.5
baz=205
ESF eS Sn 08 36 08.0 -0.5
baz=205
ESL Shilin 0.93 205⇓ iP Pn 08 35 55.1 -1.7
baz=202
TEGC Jichi Village 1.00 197 eP Pn 08 35 57.8 +0.3
baz=203
JYNG Yonagunijimaku 1.01 102 P Pn 08 35 57.5 -0.2
JYNG S Sn 08 36 11.7 -0.1
NSY Sanyi 1.03 256⇑ iP Pn 08 35 57.9 -0.1
baz=255
NSY S Sn 08 36 11.6 -0.6
baz=255
TWQ1 Liyutan 1.04 252⇑ iP Pn 08 35 57.7 -0.3
baz=251
TWQ1 S Sn 08 36 11.2 -1.2
baz=251
YOJ Yonaguni jima 1.07 101 P Pn 08 35 58.2 -0.2
YOJ S Sn 08 36 12.9 -0.1
YOJ Yonaguni jima 1.07 101⇓ iP Pn 08 35 58.4 0.0
baz=100
YOJ i S Sn 08 36 13.0 -0.1
baz=100
YOJ Yonaguni jima 1.07 101 ePn Pn 08 35 58.2 -0.2
YOJ eSn Sn 08 36 12.7 -0.4
SMLT Sun Moon Lake 1.17 228⇑P Pn 08 36 00.1 +0.3
baz=234
SMLT eS Sn 08 36 16.5 +1.0
baz=234
TYC Yuchr 1.19 230⇑ iP Pn 08 36 00.0 +0.1
baz=236
TYC eS Sn 08 36 15.2 -0.5
baz=236
TCU Taichung 1.20 245⇑ iP Pn 08 35 59.9 -0.1
baz=252
TCU eS Sn 08 36 14.6 -1.2
baz=252
SSLB Suanglung 1.20 224 ePn Pn 08 36 00.7 +0.6
SSLB eSn Sn 08 36 16.6 +0.4
EHY Hungye 1.26 203 eP Pn 08 35 58.8 -2.0
baz=200
EHY eS Sn 08 36 15.7 -1.6
baz=200
WNT Mingjian 1.33 234⇑P Pn 08 36 01.7 0.0
baz=242
WNT S Sn 08 36 18.6 -0.3
baz=242
YULB Yu-li 1.37 202 ePn Pn 08 36 01.1 -1.1
YULB eSn Sn 08 36 20.7 +0.8
TWF1 Yuli 1.41 202⇓ iP Pn 08 36 00.8 -2.0
baz=199
TWF1 eS Sn 08 36 18.9 -1.8
baz=199
YUS Yu-Shan 1.44 215⇓ iP Pn 08 36 03.8 +0.2
baz=206
YUS eS Sn 08 36 21.6 -0.5
baz=206
ALS Alishan 1.50 220 ⇓P Pn 08 36 04.6 +0.4
baz=227
ALS eS Sn 08 36 25.2 +1.8
baz=227
CHN5 Tsauling 1.52 226⇓ iP Pn 08 36 04.3 0.0
baz=232
WGK Gukeng 1.54 231 ⇓P Pn 08 36 04.5 +0.1
baz=239
WGK S Sn 08 36 23.9 +0.2
baz=239
CHKT Chengkung 1.62 196 eP Pn 08 36 04.6 -1.0
baz=185
CHKT eS Sn 08 36 24.1 -1.8
baz=185
WTCT Ta-ch'eng 1.65 241 eP Pn 08 36 05.0 -0.8
baz=239
WTCT S Sn 08 36 24.9 -1.4
baz=239
ELDTW Lidau 1.66 208⇓ eP Pn 08 36 04.9 -1.3
baz=197
ELDTW eS Sn 08 36 26.6 -0.2
baz=197
CHN2 Minshiung 1.70 229 P Pn 08 36 06.6 +0.1
baz=235
CHN2 eS Sn 08 36 27.3 -0.2
baz=235
IRIF Iriomote-Funau 1.74 101 P Pn 08 36 06.9 -0.1
IRIF S Sn 08 36 28.4 -0.1
CHN4 Tsaushan 1.75 222 ⇓P Pn 08 36 07.4 +0.2
baz=219
CHN4 eS Sn 08 36 30.2 +1.5
baz=219
CHY Chiayi 1.75 229 ⇓P Pn 08 36 07.2 0.0
baz=235
CHY S Sn 08 36 28.3 -0.5
baz=235
TPUB Ta-pu 1.77 220 ePn Pn 08 36 07.7 +0.2
TPUB eSn Sn 08 36 32.7 +3.5
STYT Tauyuan 1.81 214 ⇓P Pn 08 36 08.6 +0.5
baz=223
STYT eS Sn 08 36 31.8 +1.6
baz=223
WSF Szhu 1.81 236 eP Pn 08 36 07.7 -0.3
baz=233
WSF S Sn 08 36 29.3 -1.0
baz=233
WTP Ta-pu 1.82 219 eP Pn 08 36 08.1 0.0
baz=227
WTP eS Sn 08 36 30.2 -0.2
baz=227
TWK Hsinying 1.88 222 eP Pn 08 36 08.9 -0.1
baz=220
TWK eS Sn 08 36 32.1 +0.2
baz=220
HATJ Hateruma jima 1.88 108 P Pn 08 36 09.0 +0.1
HATJ eS Sn 08 36 31.3 -0.5
CHN1 Nanshi 1.91 220 ⇓P Pn 08 36 09.3 -0.1
baz=218
CHN1 eS Sn 08 36 32.1 -0.6
baz=218
SGST Jiashian 1.96 217⇓ iP Pn 08 36 10.4 +0.3
baz=223
SGST S Sn 08 36 34.4 +0.5
baz=223
TWG Pinlang 1.97 202⇓ eP Pn 08 36 08.2 -2.0
baz=189
TWG eS Sn 08 36 31.4 -2.7
baz=189
TWG Pinlang 1.97 202 ePn Pn 08 36 08.9 -1.3
TWG eSn Sn 08 36 34.5 +0.4
CHN8 Yiju 2.00 229 eP Pn 08 36 10.0 -0.6
baz=227
CHN8 S Sn 08 36 34.1 -0.7
baz=227
JKRS Kuro-shima 2.01 102 P Pn 08 36 10.9 +0.3
JKRS S Sn 08 36 35.3 +0.4
TTN Taitung 2.01 199 eP Pn 08 36 09.6 -1.1
baz=188
TTN eS Sn 08 36 34.2 -0.9
baz=188
CHN3 Shinhua 2.09 221 eP Pn 08 36 12.4 +0.6
baz=229
CHN3 eS Sn 08 36 38.3 +1.4
baz=229
JIJ Ishigaki jima 2.10 98 P Pn 08 36 11.6 -0.3
JIJ S Sn 08 36 36.8 -0.4
SCLT Jiali 2.13 226 eP Pn 08 36 11.9 -0.3
baz=223
SCLT eS Sn 08 36 37.4 -0.4
baz=223
TAI1 Yung-k'ang 2.20 223 eP Pn 08 36 13.4 +0.1
baz=230
TAI1 eS Sn 08 36 39.1 -0.5
baz=230
SSD Sandimen 2.22 211⇓ eP Pn 08 36 14.1 +0.6
baz=208
SSD eS Sn 08 36 40.6 +0.6
baz=208
ECL Taimali 2.22 202 eP Pn 08 36 12.4 -1.2
baz=193
JISG Ishigakijimahi 2.23 92 P Pn 08 36 13.7 0.0
JISG S Sn 08 36 40.2 -0.1
TWM1 Shoushan 2.26 216⇓ eP Pn 08 36 15.2 +1.2
baz=215
SGLT Jiouru 2.30 213 eP Pn 08 36 15.8 +1.2
baz=221
SGLT eS Sn 08 36 45.9 +3.8
baz=221
PNG Penghu 2.37 243⇑P Pn 08 36 14.0 -1.5
baz=241
PNG S Sn 08 36 39.9 -3.8
baz=241
WDGT Dungji 2.45 236⇓ eP Pn 08 36 15.3 -1.3
baz=233
WDGT eS Sn 08 36 42.9 -2.7
baz=233
EAST Anshuo 2.46 202⇓ eP Pn 08 36 15.1 -1.7
baz=190
EAST eS Sn 08 36 47.6 +1.8
baz=190
TAW Tawu 2.46 201 eP Pn 08 36 15.2 -1.6
baz=190
TAW eS Sn 08 36 44.8 -1.1
baz=190
KAU Kaohsiung 2.53 215 eP Pn 08 36 17.9 +0.3
baz=223
JTJ Tarama 2.59 90 P Pn 08 36 19.0 +0.6
JTJ S Sn 08 36 49.9 +1.0
LAY Lan-yu 2.63 186 eP Pn 08 36 17.6 -1.5
baz=181
LAY eS Sn 08 36 46.6 -3.5
baz=181
TWP Hsiaoliuchiu 2.69 211 eP Pn 08 36 21.2 +1.3
baz=221
HEN Hengchun 2.84 201⇓P Pn 08 36 22.8 +0.9
baz=210
HEN eS Sn 08 36 55.7 +0.6
baz=210
TWK1 Hengchun 2.88 200 eP Pn 08 36 21.2 -1.2
baz=198
TWK1 eS Sn 08 36 56.1 +0.1
baz=198
TSEB Hengchuen, Pin 2.89 198 eP Pn 08 36 22.6 +0.1
baz=197
TSEB eS Sn 08 36 56.5 +0.2
baz=197
QZH Quanzhou 2.98 276⇓ iPn Pn 08 36 18.3 -5.5
QZH Sn Sn 08 36 50.0 -8.5
QZH smax smax
comp=N,6μm,0.7s
QZH smax smax
comp=E,5μm,0.5s
QZH LR LR
comp=Z,5μm,6.0s
JIRB Irabujima 3.02 86 P Pn 08 36 25.0 +0.7
JIRB S Sn 08 37 00.4 +1.1
JIKM Ikemajima 3.09 85 P Pn 08 36 26.2 +0.9
JIKM S Sn 08 37 01.9 +0.8
JMJ Miyako jima 2 3.13 87 P Pn 08 36 26.9 +1.1
JMJ S Sn 08 37 03.3 +1.3
JMJ Miyako jima 2 3.13 87 eP Pn 08 36 27.3 +1.5
baz=89
KNM Kinmen 3.13 266⇑ iP Pn 08 36 26.1 +0.3
baz=265
JOGS Gusukube 3.23 88 P Pn 08 36 28.3 +1.2
JOGS S Sn 08 37 05.3 +0.8
JKE Kume jima 2 4.75 69 P Pn 08 36 49.5 +1.6
JAGN Aguni-jima 5.22 67 P Pn 08 36 55.5 +1.2
JAGN eS Sn 08 37 55.2 +2.0
JJT2 Tamagusuku 2 5.52 73 P Pn 08 36 59.2 +0.7
JJT2 eS Sn 08 38 01.5 +0.9
JNTH Nagotoyohara 5.86 70 P Pn 08 37 03.2 +0.1
JNTH eS Sn 08 38 08.7 -0.2
JIH Iheya 5.99 66 P Pn 08 37 05.2 +0.4
JOW Kunigami 6.17 68 P Pn 08 37 07.1 -0.2
comp=Z,83nm,0.3s,baz=171,slow=11,SNR=156
JOW S Sn 08 38 15.1 -1.5
comp=Z,15nm,0.3s,baz=270,slow=19,SNR=1.9
JOW Kunigami 6.17 68 P Pn 08 37 07.1 -0.2
JOW eS Sn 08 38 15.1 -1.5
JOW Kunigami 6.17 68⇓ eP Pn 08 37 07.1 -0.2
baz=72
SGCP Mt. Cagua 6.40 178 eP Pn 08 37 10.6 +0.2
SSE Sheshan 6.43 355⇑P Pn 08 37 09.8 -1.0
SSE S Sn 08 38 19.5 -3.3
SSE pmax pmax
comp=Z,330nm,0.7s
SSE pmax pmax
comp=Z,77nm,3.5s
JOKE Okinoerabujima 6.61 65 P Pn 08 37 12.7 -0.6
APYP Conner 6.80 185 eP Pn 08 37 15.6 -0.3
SIPP Brgy, Tapao 6.84 191⇓ eP Pn 08 37 16.3 -0.1
ABRA Dolores 7.07 189 eP Pn 08 37 20.5 +1.0
JTK Tokunoshima 7.08 62 P Pn 08 37 19.1 -0.7
JAMN Amaminishikomi 7.46 60 P Pn 08 37 23.8 -1.1
JAMN S Sn 08 38 49.9 +1.9
CAUP Cauayan 7.68 180 eP Pn 08 37 30.9 +2.9
NJ2 Nanjing 7.82 341 eP Pn 08 37 28.5 -1.3
NJ2 S Sn 08 38 53.3 -3.4
NJ2 pmax pmax
comp=Z,210nm,0.8s
NJ2 smax smax
comp=Z,950nm,1.0s
NJ2 smax smax
comp=Z,880nm,1.2s
NJ2 LR LR
comp=Z,3μm,15.1s
NJ2 LR LR
comp=Z,8μm,15.0s
NJ2 LR LR
comp=Z,2μm,16.4s
JAM Amami Oshima 7.88 60 P Pn 08 37 29.3 -1.3
JTAJ Takarajima 7.93 54 P Pn 08 37 32.2 +0.9
GZH Guangzhou 7.95 260⇓ iP Pn 08 37 25.0 -6.6
GZH S Sn 08 38 42.8 -17
GZH smax smax
comp=N,2μm,0.9s
GZH smax smax
comp=E,2μm,1.0s
MCO Taipa Grande 8.03 253 P Pn 08 37 32.0 -0.8
JZK Kikaishima 8.12 62 P Pn 08 37 32.9 -1.1
BCPH Baguio City Da 8.33 188⇓ eP Pn 08 37 35.6 -1.4
BOLP Bolinao 8.44 193 eP Pn 08 37 39.1 +0.7
JMZ Minamidaito 2 8.55 80 P Pn 08 37 36.2 -3.6
JMZ eS Sn 08 39 05.5 -9.3
WHN Wuhan 8.87 313 P Pn 08 37 42.0 -2.1
WHN S Sn 08 39 15.5 -6.8
WHN LR LR
comp=E,7μm,5.0s
WHN LR LR
comp=E,5μm,5.4s
BALP Baler 8.88 182 eP Pn 08 37 45.6 +1.2
JNU Nakatsue 11.54 41 P Pn 08 38 22.6 +2.0
comp=E,0.9nm,0.3s,baz=209,slow=2.0,SNR=7.3
JNU Nakatsue 11.54 41 ePKPdf Pn 08 38 24.6 +4.0
JNU Nakatsue 11.54 41 ePn Pn 08 38 24.2 +3.5
TIA Tai'an 12.21 342⇑P Pn 08 38 29.5 -0.1
TIA S Sn 08 40 51.3 +7.4
TIA pmax pmax
comp=E,20nm,0.7s
TIA LR LR
comp=E,690nm,6.8s
TIA LR LR
comp=E,1μm,4.5s
TIA LR LR
comp=E,540nm,4.6s
ENH Enshi 12.32 300 ePn Pn 08 38 31.1 -0.1
QIZ Qiongzhong 12.48 246 P Pn 08 38 33.0 -0.5
QIZ S Sn 08 40 50.3 -0.5
QIZ pmax pmax
comp=E,10.0nm,0.9s
QIZ LR LR
comp=E,180nm,5.4s
QIZ LR LR
comp=E,280nm,6.9s
INCN Inchon 13.41 17 eP P 08 38 50.0 -2.6
KSAR Wonju Array Be 13.74 21 P Pn 08 38 52.3 +2.2
KSAR Wonju Array Be 13.74 21 P Pn 08 38 52.3 +2.2
KSRS Korea Array 13.76 21 P Pn 08 38 52.3 +1.9
comp=E,2.0nm,0.3s,baz=205,slow=13,SNR=30
KSRS LR LR 08 45 13.1
comp=E,445nm,18.6s,baz=166,slow=42
GYA Guiyang 13.83 281 P Pn 08 38 51.0 -0.6
GYA pP P 08 39 02.5 +5.0
GYA S Sn 08 41 15.3 -8.4
GYA sS S 08 41 42.0 +0.7
GYA pmax pmax
comp=E,20nm,0.8s
GYA pmax pmax
comp=E,130nm,4.8s
GYA LR LR
comp=E,820nm,12.6s
GYA LR LR
comp=E,780nm,13.4s
GYA LR LR
comp=E,640nm,14.3s
DL2 Dalian 14.20 359 P P 08 39 00.0 -1.3
DL2 pP pP 08 39 09.0
DL2 S Sn 08 41 38.8 +6.6
DL2 sS S 08 41 50.8 +2.4
DL2 pmax pmax
comp=E,110nm,1.2s
XAN Xi'an 14.63 313 P Pn 08 39 01.8 -0.1
XAN S Sn 08 41 41.8 -1.1
XAN pmax pmax
comp=E,42nm,1.0s
XAN pmax pmax
comp=E,230nm,4.3s
XAN LR LR
comp=E,820nm,7.0s
XAN LR LR
comp=E,380nm,7.0s
XAN LR LR
comp=E,480nm,6.7s
TIY Taiyuan 15.29 330 eP P 08 39 12.5 -1.0
TIY pP pP 08 39 23.5 -5.0
TIY SS S 08 42 18.0 +7.1
TIY pmax pmax
comp=E,370nm,5.4s
TIY LR LR
comp=E,710nm,5.8s
TIY LR LR
comp=E,610nm,6.7s
TIY LR LR
comp=E,460nm,7.8s
BJT Baijiatuau 16.04 344 eP P 08 39 21.3 -0.4
BJT pmax pmax
comp=Z,36nm,1.1s
BJT Baijiatuau 16.04 344 eP P 08 39 21.3 -0.4
comp=Z,36nm,1.1s
BJI Beijing 16.06 344 P Pn 08 39 20.0 +0.1
BJI S Sn 08 42 15.3 -1.9
BJI pmax pmax
comp=E,7.0nm,0.9s
BJI pmax pmax
comp=Z,79nm,3.7s
CD2 Chengdu 17.17 295 P Pn 08 39 32.5 -1.4
CD2 pP pP 08 39 48.3 -1.2
CD2 sP sP 08 39 58.0 -1.0
CD2 S Sn 08 42 43.5 -0.9
CD2 SS SnSn 08 43 04.5 +5.5
CD2 pmax pmax
comp=Z,190nm,1.0s
CD2 pmax pmax
comp=Z,580nm,5.4s
CD2 LR LR
comp=Z,820nm,7.8s
CD2 LR LR
comp=Z,710nm,8.8s
SNY Shenyang 17.18 4⇓P P 08 39 38.5 +4.2
SNY pmax pmax
comp=Z,42nm,1.6s
SNY pmax pmax
comp=Z,300nm,9.9s
SNY LR LR
comp=Z,610nm,12.9s
SNY LR LR
comp=Z,560nm,10.7s
SNY LR LR
comp=Z,510nm,10.8s
KMI Kunming 17.35 276 P P 08 39 40.5 +3.8
KMI pP pP 08 39 46.8 -4.9
KMI S Sn 08 42 47.5 -1.6
KMI SS SnSn 08 43 10.3 +6.6
KMI pmax pmax
comp=Z,55nm,1.1s
KMI LR LR
comp=Z,740nm,8.5s
KMI LR LR
comp=Z,410nm,6.9s
KMI LR LR
comp=Z,630nm,10.9s
PANO Nakornpanom 17.75 248 P Pn 08 39 41.6 +0.6
comp=Z,32nm,1.2s
JHJ Hachijo jima 2 17.80 58 P Pn 08 39 42.8 +1.4
comp=Z,16nm,0.3s,baz=198,slow=22,SNR=7.8
JHJ2 Mitsune 17.82 58 eP Pn 08 39 42.7 +1.0
comp=Z,311nm,1.1s
HHC Hu-ho-hao-te 18.29 334 eP Pn 08 39 49.3 +1.9
HHC sP sP 08 40 12.8 +1.4
HHC pmax pmax
comp=Z,26nm,1.4s
HHC pmax pmax
comp=Z,280nm,4.3s
HHC LR LR
comp=Z,1μm,14.8s
HHC LR LR
comp=Z,2μm,14.8s
HHC LR LR
comp=Z,1μm,14.8s
KDM Kudat 18.30 196⇓P Pn 08 39 49.0 +1.4
MJAR Matsushiro Arr 18.36 46 P Pn 08 39 48.5 +0.2
comp=Z,0.8nm,0.3s,baz=223,slow=7.2,SNR=5.8
CBIJ Chichi jima 18.45 78 eP P 08 39 47.7 -0.7
comp=Z,118nm,0.9s
JCJ Chichijima 18.45 78 P P 08 39 48.0 -0.4
baz=264,slow=18
LZH Lanzhou 19.23 310 eP Pn 08 39 59.3 +0.5
LZH pP pP 08 40 09.8 -2.5
LZH sP sP 08 40 17.8 -4.0
LZH eS S 08 43 31.5 +0.3
LZH sS sS 08 43 47.0 -8.9
LZH pmax pmax
comp=Z,170nm,1.4s
LZH pmax pmax
comp=Z,280nm,5.7s
LZH LR LR
comp=Z,2μm,11.0s
LZH LR LR
comp=Z,1μm,11.8s
LZH LR LR
comp=Z,1μm,12.6s
KKM Kota Kinabalu 19.29 197⇑P P 08 39 58.4 +0.6
KKM Kota Kinabalu 19.29 197 eP P 08 39 57.6 -0.2
comp=Z,215nm,1.3s
CN2 Changchun 19.31 8 eP Pn 08 39 59.8 +0.3
CN2 eS S 08 43 31.5 -0.9
CN2 pmax pmax
comp=Z,10.0nm,1.0s
CN2 pmax pmax
comp=Z,100nm,3.0s
CN2 LR LR
comp=Z,500nm,22.0s
SDKM Sandakan 19.44 194⇓P P 08 39 58.9 -0.5
MYLDM Lahad Datu 19.64 190⇓P Pn 08 40 03.2 -0.4
MYLDM Lahad Datu 19.64 190 eP Pn 08 40 02.9 -0.7
comp=Z,144nm,1.3s
KHON Khomkaen 19.65 249 P Pn 08 40 06.3 +2.7
comp=Z,23nm,0.7s

LOEI	**Loei**	**20.48**	**254**	P	**P**	**08 40 09.8**	**-0.8**
CHAI	**Chaiyaphum**	**20.56**	**249**	P	**P**	**08 40 12.6**	**+1.1**
	comp=Z,16nm,1.1s,comp=Z,122nm						
MDJ	**Mudanjiang**	**20.88**	**16**	P	**P**	**08 40 15.5**	**+0.9**
MDJ				pP	pP	08 40 30.0	-0.1
MDJ				sP	sP	08 40 39.0	-0.5
MDJ				S	**S**	**08 44 03.5**	**+0.4**
MDJ				sS	sS	08 44 28.8	+0.2
MDJ				ScP	**ScP**	**08 47 51.0**	**+0.7**
MDJ				ScS	**ScS**	**08 51 35.3**	**+1.7**
MDJ				pmax	pmax		
	comp=Z,8.0nm,0.9s						
MDJ				pmax	pmax		
	comp=Z,73nm,4.0s						
MDJ				LR	LR		
	comp=Z,1µm,25.5s						
MDJ				LR	LR		
	comp=Z,1µm,29.4s						
MDJ				LR	LR		
	comp=Z,410nm,21.4s						
MDJ	**Mudanjiang**	**20.88**	**16**	*e*P	**P**	**08 40 16.0**	**+1.4**
	comp=Z,48nm,0.9s						
UTTA	**Uttaradit**	**21.01**	**255**	P	P	08 40 22.7	+6.4
	comp=Z,66nmcomp=Z,4.8nm,0.9s						
PBKT	**Sadao Pong**	**21.13**	**252**	P	**P**	**08 40 19.9**	**+2.3**
	comp=Z,35nm,1.4s,comp=Z,1µm						
USRK	**Ussuriysk Ar.**	**21.17**	**21**	P	**P**	**08 40 18.8**	**+1.1**
	comp=Z,2.4nm,0.4s,baz=209,slow=7.7,SNR=23						
LAMP	**Lampang**	**21.54**	**258**	P	**P**	**08 40 25.0**	**+3.0**
	comp=Z,12nm,1.0s						
NAYO	**Nakonnayok**	**21.90**	**246**	P	**P**	**08 40 27.6**	**+1.8**
	comp=Z,17nm,1.2s						
CHBT	**CHBT**	**21.93**	**241**	P	**P**	**08 40 29.9**	**+3.7**
	comp=Z,50nm,1.2s,comp=Z,2µm						
CMMT	**Chiang Mai**	**22.05**	**259**	P	**P**	**08 40 29.5**	**+2.0**
	comp=Z,35nm,1.2s						
CHTO	**Chiang Mai**	**22.05**	**259**	P	**P**	**08 40 29.6**	**+2.1**
	comp=Z,157nm,1.3s						
CHTO	**Chiang Mai**	**22.05**	**259**	*e*P	**P**	**08 40 29.1**	**+1.6**
CHTO				pmax	pmax		
	comp=Z,26nm,0.9s						
CHTO	**Chiang Mai**	**22.05**	**259**	*e*P	**P**	**08 40 29.1**	**+1.6**
	comp=Z,26nm,0.9s						
CM01	**Chiang Mai Arr**	**22.17**	**258**	*e*P	**P**	**08 40 30.9**	**+2.1**
CMAR	**Chiang Mai Arr**	**22.18**	**258**	P	**P**	**08 40 29.9**	**+1.1**
	comp=Z,8.6nm,0.8s,baz=61,slow=8.7,SNR=13						
GTA	**Gaotai**	**23.69**	**314**	*e*P	**P**	**08 40 43.3**	**-0.5**
GTA				pP	pP	08 40 56.5	-4.1
GTA				sP	sP	08 41 04.3	-5.5
GTA				S	**S**	**08 44 53.5**	**+0.2**
GTA				sS	Sn	08 45 18.3	-2.4
GTA				pmax	pmax		
	comp=Z,33nm,1.6s						
GTA				pmax	pmax		
	comp=Z,210nm,5.7s						
GTA				LR	LR		
	comp=Z,320nm,13.3s						
GTA				LR	LR		
	comp=Z,280nm,14.3s						
GTA				LR	LR		
	comp=Z,280nm,13.8s						
SRDT	**SRDT**	**23.73**	**249**	P	**P**	**08 40 47.0**	**+2.8**
	comp=Z,65nm,1.2s,comp=Z,4µm						
SBUM	**Sibu**	**23.97**	**204**	*e*P	**P**	**08 40 44.7**	**-1.6**
	comp=Z,162nm,1.4s						
PHET	**Kaeng Krachan**	**24.03**	**245**	P	P	08 40 51.7	+4.8
	comp=Z,7.2nm,1.1s						
MRSI	**Marisa**	**24.05**	**180**	P	**P**	**08 40 48.1**	**+1.1**
	comp=Z,27nm,1.1s						
HIA	**Hailar**	**24.61**	**357**	*e*P	**P**	**08 40 53.0**	**+1.1**
HIA				pmax	pmax		
	comp=Z,62nm,1.3s						
HIA	**Hailar**	**24.61**	**357**	*e*P	**P**	**08 40 53.0**	**+1.1**
	comp=Z,62nm,1.3s						
LUWI	**Luwuk**	**25.57**	**178**	P	**P**	**08 41 02.8**	**+1.9**
	comp=Z,80nm,1.1s						
LUWI	**Luwuk**	**25.57**	**178**	*e*P	**P**	**08 41 02.6**	**+1.8**
	comp=Z,81nm,1.0s						
KSM	**Kuching**	**25.62**	**208**	*e*P	**P**	**08 41 00.5**	**-0.8**
	comp=Z,85nm,1.2s						
KLR	**Kul'dur**	**25.71**	**15**	P	**P**	**08 41 02.5**	**+0.6**
	comp=Z,5.1nm,0.5s,baz=204,slow=7.3,SNR=37						
ASAJ	**Asahikawa**	**25.74**	**36**	P	**P**	**08 41 01.4**	**-0.9**
	comp=Z,3.2nm,0.5s,baz=220,slow=10,SNR=5.2						
ASAJ				pP	**pP**	**08 41 21.6**	**+1.8**
	comp=Z,30nm,0.7s,baz=239,slow=12,SNR=10						
ASAJ	**Asahikawa**	**25.74**	**36**	*e*P	**P**	**08 41 01.8**	**-0.4**
	comp=Z,35nm,0.8s						
ASAJ				pP	**pP**	**08 41 21.6**	**+1.8**
HABR	**Khabarovsk**	**25.94**	**20**	*e*P	**pP**	**08 41 20.8**	**-0.6**
HABR				*e*		08 41 44.6	
HABR				S	**S**	**08 45 28.0**	**-0.7**
HABR				*e**SS	sS	08 46 01.0	+2.0
HABR				*e*SS	**SnSn**	**08 46 34.7**	**+1.7**
HABR				*e*		08 51 49.2	
HABR				pmax	pmax		
	comp=Z,35nm,1.4s						
HABR				pmax	pmax		
	comp=E,40nm,1.3s						
HABR				MLR	MLR		
	comp=Z,248nm,18.0s						
ULN	**Ulaanbaatar**	**25.96**	**337**	*d* iP	**P**	**08 41 04.4**	**+0.1**
ULN				pmax	pmax		
	comp=Z,24nm,1.7s						
ULN	**Ulaanbaatar**	**25.96**	**337**	*e*P	**P**	**08 41 04.5**	**+0.2**
	comp=Z,22nm,0.7s						
SONM	**Songino Array**	**26.17**	**336**	P	**P**	**08 41 06.3**	**+0.1**
	comp=Z,9.8nm,0.8s,baz=154,slow=8.7,SNR=15						
SONM				pP	**pP**	**08 41 25.3**	**+1.6**
	comp=Z,45nm,0.9s,baz=149,slow=6.4,SNR=19						
SONA1	**Songino Array**	**26.18**	**336**	*e*P	**P**	**08 41 06.3**	**0.0**
MTKI	**Muara Teweh, K**	**26.34**	**196**	P	**P**	**08 41 09.8**	**+2.0**
	comp=Z,120nm,0.7s,comp=Z,26µm						
STKI	**Sintang**	**26.44**	**204**	P	**P**	**08 41 10.4**	**+1.6**
	comp=Z,61nm,0.7s,comp=Z,25µm						
SURT	**Suratani**	**26.97**	**239**	P	**P**	**08 41 16.8**	**+3.2**
	comp=Z,8.0nm,1.4s						
LSA	**Lhasa**	**27.73**	**287**	*e*P	**P**	**08 41 22.0**	**+1.2**
LSA				pmax	pmax		
	comp=Z,21nm,1.0s						
LSA	**Lhasa**	**27.73**	**287**	*e*P	**P**	**08 41 22.0**	**+1.2**
	comp=Z,21nm,1.0s						
KULM	**Kulim**	**28.04**	**230**	*e*P	**P**	**08 41 23.6**	**+0.5**
	comp=Z,11nm,1.0s						
IPM	**Ipoh**	**28.36**	**228**	*e*P	**P**	**08 41 26.0**	**0.0**
	comp=Z,16nm,0.9s						
MYKOM	**Kota Tinggi**	**28.63**	**220**	*e*P	**P**	**08 41 27.8**	**-0.5**
	comp=Z,17nm,1.1s						
BBKI	**Banjar Baru**	**28.78**	**195**	P	**P**	**08 41 31.2**	**+1.6**
	comp=Z,52nm,1.5s,comp=Z,10µm						
FAKI	**Fak Fak**	**29.22**	**158**	P	**P**	**08 41 35.7**	**+2.1**
	comp=Z,28nm,1.1s						
FAKI	**Fak Fak**	**29.22**	**158**	*e*P	**P**	**08 41 33.0**	**-0.6**
	comp=Z,33nm,1.1s						
KAPI	**Kappang**	**29.57**	**184**	*e*P	**P**	**08 41 36.1**	**-0.5**
	comp=Z,27nm,1.2s						
TLY	**Talaya**	**30.36**	**337**	*e*P	**P**	**08 41 43.6**	**+0.2**
TLY				pmax	pmax		
	comp=Z,5.0nm,0.6s						
PSI	**Prapat**	**31.01**	**229**	*e*P	**P**	**08 41 49.4**	**-0.2**
PSI				pmax	pmax		
	comp=Z,12nm,1.0s						
PSI	**Prapat**	**31.01**	**229**	*e*P	**P**	**08 41 49.4**	**-0.2**
	comp=Z,12nm,1.0s						
MNSI	**Mandailing Nat**	**32.06**	**226**	P	**P**	**08 41 58.1**	**-0.5**
BOD	**Bodaibo**	**33.60**	**352**	*e*P	P	08 42 06.6	-5.0
BOD				pmax	pmax		
	comp=Z,7.0nm,1.8s						
WMQ	**Urumqi**	**33.77**	**313**	P	**P**	**08 42 14.8**	**+1.4**
WMQ				pP	pP	08 42 32.8	+1.5
WMQ				sP	sP	08 42 41.8	+1.8
WMQ				S	**S**	**08 47 29.3**	**-2.4**
WMQ				ScP	**ScP**	**08 48 31.0**	**+1.7**
WMQ				SS	**SnSn**	**08 49 43.3**	**-0.1**
WMQ				pmax	pmax		
	comp=Z,10.0nm,0.8s						
WMQ				pmax	pmax		
	comp=Z,91nm,5.2s						
KRAR	**Krasnoyarsk**	**37.78**	**334**	*e*P	**P**	**08 42 46.8**	**-0.6**
MTN	**Manton Dam**	**38.37**	**165**	*e*P	**P**	**08 42 49.9**	**-2.8**
	comp=Z,16nm,0.8s						
MK01	**Makanchi Array**	**38.41**	**315**	*e*P	**P**	**08 42 52.5**	**-0.4**
MK31	**Makanchi Array**	**38.42**	**315**	*e*P	**P**	**08 42 52.7**	**-0.3**
MK31	**Makanchi Array**	**38.42**	**315**	*e*P	**P**	**08 42 52.7**	**-0.3**
MKAR	**Makanchi Array**	**38.42**	**315**	P	**P**	**08 42 52.7**	**-0.3**
	comp=Z,3.5nm,0.5s,baz=101,slow=10,SNR=21						
MKAR				pP	**pP**	**08 43 11.5**	**+0.3**
	comp=Z,12nm,0.8s,baz=108,slow=10,SNR=10						
MAKZ	**Makanchi**	**38.63**	**315**	*e*P	**P**	**08 42 54.6**	**-0.2**
MAKZ				pmax	pmax		
	comp=Z,13nm,0.8s						
MAKZ	**Makanchi**	**38.63**	**315**	*e*P	**P**	**08 42 54.6**	**-0.2**
	comp=Z,13nm,0.8s						
NDI	**New Delhi**	**39.92**	**286**	*e*P	P	08 43 02.0	-3.7
ZAA0	**Zalesovo Array**	**40.18**	**327**	*e*P	**P**	**08 43 06.6**	**-0.8**
ZALV	**Zalesovo Beam**	**40.18**	**327**	P	**P**	**08 43 06.2**	**-1.2**
	comp=Z,3.3nm,0.5s,baz=109,slow=7.9,SNR=9.9						
ZALV				pP	**pP**	**08 43 25.1**	**-0.6**
	comp=Z,12nm,0.7s,baz=111,slow=7.8,SNR=8.6						
KSH	**Kashi**	**41.16**	**302**	P	P	08 43 19.3	+3.4
KSH				*e*pP	pP	08 43 37.8	+3.6
KSH				*e*PP	**PnPn**	**08 44 59.5**	**+2.4**
KSH				*e*ScP	**ScP**	**08 48 59.0**	**+1.8**
KSH				PcS	**PcS**	**08 49 07.5**	**+2.3**
KSH				S	**S**	**08 49 28.8**	**+5.0**
KSH				SS	**SS**	**08 52 30.0**	**+0.9**
KSH				ScS	**ScS**	**08 53 14.5**	**+1.4**
KSH				pmax	pmax		
	comp=Z,12nm,0.9s						
KSH				pmax	pmax		
	comp=Z,160nm,5.8s						
KSH				LR	LR		
	comp=Z,470nm,11.1s						
KSH				LR	LR		
	comp=Z,540nm,12.9s						
KSH				LR	LR		
	comp=Z,580nm,20.3s						
H11N1	**WAKE ISLAND Hy**	**41.85**	**88**	T	T	09 28 46.3	
	baz=283,slow=75,SNR=16						
H11N2	**WAKE ISLAND Hy**	**41.85**	**88**	T	T	09 28 47.4	
	baz=283,slow=75,SNR=17						
H11N3	**WAKE ISLAND Hy**	**41.87**	**88**	T	T	09 28 49.7	
	baz=283,slow=75,SNR=17						
PMG	**Port Moresby**	**41.91**	**141**	*de*P	**P**	**08 43 23.1**	**+1.0**
PMG				pmax	pmax		
	comp=Z,147nm,1.2s						
PMG	**Port Moresby**	**41.91**	**141**	*e*P	**P**	**08 43 22.4**	**+0.3**
	comp=Z,26nm,1.0s						
TKM2	**Tokmak 2**	**41.96**	**307**	*e*P	**P**	**08 43 23.2**	**+0.7**
TKM2				pmax	pmax		
	comp=Z,24nm,0.8s						
TKM2	**Tokmak 2**	**41.96**	**307**	*e*P	**P**	**08 43 23.2**	**+0.7**
	comp=Z,24nm,0.8s						
H11S3	**WAKE ISLAND Hy**	**41.99**	**89**	T	T	09 28 58.6	
	baz=284,slow=74,SNR=34						
H11S1	**WAKE ISLAND Hy**	**42.00**	**89**	T	T	09 28 59.7	
	baz=284,slow=74,SNR=24						
H11S2	**WAKE ISLAND Hy**	**42.01**	**89**	T	T	09 28 58.6	
	baz=284,slow=74,SNR=27						
KURK	**Kurchatov**	**42.12**	**320**	*e*P	**P**	**08 43 23.0**	**-0.4**
KURK				*PP	**pP**	**08 43 41.8**	**0.0**
KURK				pmax	pmax		
	comp=Z,8.0nm,0.9s						
KURK	**Kurchatov**	**42.12**	**320**	*e*P	**P**	**08 43 23.0**	**-0.4**
	comp=Z,7.6nm,0.9s						
KURK				pP	**pP**	**08 43 41.8**	**0.0**
KURBB	**Kurchatov Arra**	**42.14**	**319**	P	**P**	**08 43 22.8**	**-0.8**
	comp=Z,1.9nm,0.4s,baz=109,slow=9.9,SNR=19						
KURBB				pP	**pP**	**08 43 41.8**	**-0.2**
	comp=Z,3.2nm,0.5s,baz=110,slow=8.4,SNR=6.1						
FRU	**Bishkek**	**42.65**	**307**	*e*P	**P**	**08 43 27.0**	**-0.9**
FRU				*e*		08 43 49.0	
AAK	**Ala-Archa**	**42.71**	**307**	P	**P**	**08 43 28.6**	**+0.1**
	comp=Z,2.8nm,0.7s,baz=66,slow=5.3,SNR=6.9						
AAK	**Ala-Archa**	**42.71**	**307**	*e*P	**P**	**08 43 29.4**	**+0.9**
AAK				pmax	pmax		
	comp=Z,10.0nm,1.0s						
AAK	**Ala-Archa**	**42.71**	**307**	*e*P	**P**	**08 43 29.4**	**+0.9**
	comp=Z,9.9nm,1.0s						
EKS2	**Erkin-Say**	**43.23**	**307**	*e*P	**P**	**08 43 33.8**	**+1.1**
EKS2				pmax	pmax		
	comp=Z,6.0nm,0.8s						
EKS2	**Erkin-Say**	**43.23**	**307**	*e*P	**P**	**08 43 33.8**	**+1.1**
	comp=Z,5.8nm,0.8s						
COEN	**Coen**	**43.66**	**149**	*e*P	**P**	**08 43 36.8**	**+0.5**
	comp=Z,36nm,0.9s						
KKAR	**Karatay Array**	**45.67**	**307**	*e*P	**P**	**08 43 52.7**	**+0.6**
KKAR	**Karatay Array**	**45.67**	**307**	*e*P	**P**	**08 43 52.7**	**+0.6**
WRAB	**Tennant Creek**	**45.97**	**164**	*j* iP	**P**	**08 43 53.2**	**-1.3**
WRAB				pmax	pmax		
	comp=Z,44nm,1.1s						
WRAB	**Tennant Creek**	**45.97**	**164**	*e*P	**P**	**08 43 52.8**	**-1.7**
	comp=Z,17nm,0.8s						
WRA	**Warramunga Arr**	**45.98**	**164**	P	**P**	**08 43 52.8**	**-1.7**
	comp=Z,2.7nm,0.3s,baz=347,slow=8.6,SNR=87						
WRA				PcP	**PcP**	**08 45 29.7**	**-0.6**
	comp=Z,1.4nm,0.5s,baz=346,slow=3.0,SNR=3.4						
WRA	**Warramunga Arr**	**45.98**	**164**	*i* P	**P**	**08 43 52.7**	**-1.9**
WRA				pmax	pmax		
	comp=Z,3.0nm,0.3s						
WB2	**Warramunga Arr**	**45.98**	**164**	*e*P	**P**	**08 43 52.9**	**-1.7**
	comp=Z,20nm,0.8s						
KBL	**Kabul**	**46.52**	**295**	*e*P	**P**	**08 43 59.9**	**+0.9**
KBL				pmax	pmax		
	comp=Z,23nm,1.0s						
KBL	**Kabul**	**46.52**	**295**	*e*P	**P**	**08 43 59.9**	**+0.9**
	comp=Z,23nm,1.0s						
TIXI	**Tiksi**	**47.18**	**3**	P	**P**	**08 44 02.6**	**-0.8**
	comp=Z,2.9nm,0.4s,baz=225,slow=0.6,SNR=10						
TIXI				pP	**pP**	**08 44 21.3**	**-0.8**
	comp=Z,13nm,0.9s,baz=154,slow=5.6,SNR=6.3						
TIXI	**Tiksi**	**47.18**	**3**	*de*P	**P**	**08 44 02.3**	**-1.1**
TIXI				pmax	pmax		
	comp=Z,14nm,1.2s						
TIXI	**Tiksi**	**47.18**	**3**	*e*P	**P**	**08 44 02.5**	**-0.8**
	comp=Z,22nm,1.2s						
TIXI				pP	**pP**	**08 44 21.3**	**-0.8**
BVAR	**Borovoye Array**	**47.69**	**320**	P	**P**	**08 44 06.5**	**-1.1**
	comp=Z,5.7nm,0.6s,baz=106,slow=8.0,SNR=28						
BRVK	**Borovoye**	**47.76**	**320**	*d* iP	**P**	**08 44 07.3**	**-0.9**
BRVK				pmax	pmax		
	comp=Z,13nm,1.2s						
BRVK	**Borovoye**	**47.76**	**320**	*e*P	**P**	**08 44 07.7**	**-0.5**
	comp=Z,28nm,1.4s						
NRIK	**Noril'sk**	**49.10**	**345**	P	**P**	**08 44 17.2**	**-1.0**
	comp=Z,3.8nm,0.6s,baz=135,slow=7.1,SNR=5.3						
NRIK				pP	**pP**	**08 44 35.9**	**-1.1**
	comp=Z,34nm,0.9s,baz=128,slow=8.5,SNR=13						
AS31	**Alice Springs**	**49.45**	**165**	*e*P	**P**	**08 44 20.5**	**-0.9**
	comp=Z,3.5nm,0.6s						
ASAR	**Alice Springs**	**49.45**	**165**	P	**P**	**08 44 20.1**	**-1.3**
	comp=Z,5.0nm,0.8s,baz=339,slow=6.7,SNR=44						
ASAR				PcP	**PcP**	**08 45 41.9**	**-0.7**
	comp=Z,1.7nm,0.5s,baz=344,slow=3.5,SNR=4.1						
AS01	**Alice Springs**	**49.45**	**165**	*e*P	**P**	**08 44 20.0**	**-1.4**
BILL	**Bilibino**	**51.02**	**20**	*c*P	**P**	**08 44 31.9**	**-0.9**
BILL				*i*		08 44 52.5	
BILL				*e*		08 45 51.2	
BILL				*e*		08 46 31.6	
BILL				pmax	pmax		
	comp=Z,3.0nm,1.1s						
BILL	**Bilibino**	**51.02**	**20**	*e*P	**P**	**08 44 32.9**	**+0.2**
	comp=Z,16nm,1.4s						
ABKAR	**Akbulak array**	**53.55**	**314**	*e*P	**P**	**08 44 51.6**	**-0.1**
AKTO	**Aktyubinsk**	**54.86**	**315**	P	**P**	**08 45 01.2**	**-0.1**
	comp=Z,1.8nm,0.4s,baz=157,slow=2.5,SNR=7.0						
GEYT	**Alibeck**	**55.09**	**300**	P	**P**	**08 45 04.2**	**+1.0**
	comp=Z,6.1nm,0.8s,baz=64,slow=3.4,SNR=8.3						
ARU	**Arti**	**55.09**	**323**	P	**P**	**08 45 01.7**	**-1.1**
	comp=Z,2.5nm,0.3s,baz=209,slow=2.4,SNR=5.3						
ARU				pP	**pP**	**08 45 22.2**	**+0.2**
	comp=Z,4.6nm,0.4s,baz=86,slow=4.6,SNR=3.3						
ARU	**Arti**	**55.09**	**323**	*d* iP	**P**	**08 45 01.6**	**-1.3**
ARU				*e**PP	**pP**	**08 45 21.7**	**-0.3**
ARU						08 46 01.3	
ARU						08 47 05.8	
ARU				S	**S**	**08 52 39.1**	**-0.6**
ARU				pmax	pmax		
	comp=Z,4.0nm,0.7s						
ARU	**Arti**	**55.09**	**323**	*e*P	**P**	**08 45 01.8**	**-1.1**
	comp=Z,22nm,1.1s						
ARU				pP	**pP**	**08 45 22.2**	**+0.2**
WSAR	**Wadi Sarin**	**57.33**	**283**	P	**P**	**08 45 19.8**	**+0.4**
	comp=Z,2.6nm,0.6s,baz=114,slow=9.4,SNR=4.4						
STKA	**Stephens Creek**	**59.31**	**160**	P	**P**	**08 45 31.6**	**-1.1**
	comp=Z,3.7nm,0.5s,baz=340,slow=6.6,SNR=18						
STKA	**Stephens Creek**	**59.31**	**160**	*e*P	**P**	**08 45 31.7**	**-1.1**
STKA				pmax	pmax		
	comp=Z,5.0nm,1.5s						
STKA	**Stephens Creek**	**59.31**	**160**	*e*P	**P**	**08 45 31.6**	**-1.1**
	comp=Z,5.2nm,1.5s						
GUDG	**Gudauri**	**64.77**	**307**	P	**P**	**08 46 11.4**	**+1.7**
TT01	**Tatalina**	**64.78**	**30**	*e*P	**P**	**08 46 09.5**	**+0.4**
TTA	**Tatalina**	**64.78**	**30**	*e*P	**P**	**08 46 09.6**	**+0.4**
TTA				pmax	pmax		
	comp=Z,12nm,1.4s						
TTA	**Tatalina**	**64.78**	**30**	*e*P	**P**	**08 46 09.6**	**+0.4**
	comp=Z,12nm,1.4s						
KLMR	**Klimovskoe**	**65.08**	**328**	*e*P	**P**	**08 46 09.1**	**-2.0**
KLMR				*e**PP	**pP**	**08 46 29.1**	**-1.6**
KLMR				*e**SP	**sP**	**08 46 38.6**	**-0.4**
KLMR				pmax	pmax		
	comp=Z,9.0nm,0.9s						
VRH	**Novokhopyorsk**	**65.12**	**317**	*e*P	**P**	**08 46 10.8**	**-0.7**
VRH				*e*		08 46 41.3	
VRH				pmax	pmax		
	comp=Z,10.0nm,0.6s						
VRH				MLR	MLR		
	comp=Z,6µm,26.0s						
ZEI	**Tsey**	**65.12**	**307**	*e*P	**P**	**08 46 10.0**	**-2.0**
ZEI				pmax	pmax		
	comp=Z,15nm,0.6s						
TMCR	**Tamitsa**	**65.42**	**331**	*e*P	**P**	**08 46 12.8**	**-0.4**
ONI	**Oni**	**65.49**	**307**	P	**P**	**08 46 15.6**	**+1.5**
ONI	**Oni**	**65.49**	**307**	P	**P**	**08 46 15.6**	**+1.5**
KBZ	**Khabaz**	**65.66**	**309**	P	**P**	**08 46 14.7**	**-0.4**
	comp=Z,3.9nm,0.8s,baz=129,slow=2.6,SNR=9.6						
KBZ				pP	**pP**	**08 46 35.3**	**+0.6**
	comp=Z,7.0nm,0.9s,baz=128,slow=5.7,SNR=6.3						
KBZ				LR	LR	09 19 53.6	
	comp=Z,2µm,21.9s,baz=295,slow=40						
KIV	**Kislovodsk**	**65.76**	**309**	*e*P	**P**	**08 46 16.5**	**+0.6**
KIV				*i* *PP	**pP**	**08 46 36.7**	**+1.1**
KIV				*i* *SP	**PcP**	**08 46 47.7**	**+1.1**
KIV				pmax	pmax		
	comp=Z,9.0nm,0.7s						
KIV				MLR	MLR		
	comp=Z,3µm,23.0s						
KIV	**Kislovodsk**	**65.76**	**309**	*e*P	**P**	**08 46 16.2**	**+0.2**
	comp=Z,26nm,1.0s						
NEY	**Neytrino**	**65.88**	**308**	*c i*P	**P**	**08 46 17.8**	**+1.0**
NEY				pmax	pmax		
	comp=Z,1.0nm,0.7s						
CAST	**Castle Rocks**	**66.50**	**29**	*e*P	**P**	**08 46 20.3**	**+0.1**
	comp=Z,24nm,1.6s						
LPSR	**Galich'ya Gora**	**66.60**	**319**	*e*P	**P**	**08 46 19.6**	**-1.4**
LPSR				*e*		08 46 49.9	
LPSR				pmax	pmax		
	comp=Z,10.0nm,0.6s						
LPSR				MLR	MLR		
	comp=Z,3µm,28.0s						
VSR	**Storozhevoye**	**66.71**	**317**	*e*P	**P**	**08 46 19.3**	**-2.4**
VSR				*e*		08 46 49.6	
VSR				pmax	pmax		
	comp=Z,7.0nm,0.7s						
VSR				MLR	MLR		
	comp=Z,4µm,24.0s						
COLD	**Coldfoot**	**66.73**	**25**	*e*P	**P**	**08 46 21.4**	**-0.2**
	comp=Z,4.1nm,1.0s						
MLY	**Manley**	**66.84**	**27**	*e*P	**P**	**08 46 23.1**	**+0.7**
	comp=Z,8.4nm,1.2s						
BPAW	**Bear Paw Mtn.**	**66.88**	**28**	*e*P	**P**	**08 46 23.4**	**+0.8**
	comp=Z,4.7nm,0.8s						
KDAK	**Kodiak Island**	**67.16**	**35**	*i* P	**P**	**08 46 24.5**	**+0.1**
MCK	**McKinley**	**67.83**	**29**	*e*P	**P**	**08 46 29.2**	**+0.5**
MCK				pmax	pmax		
	comp=Z,15nm,1.3s						
MCK	**McKinley**	**67.83**	**29**	*e*P	**P**	**08 46 29.2**	**+0.5**
	comp=Z,15nm,1.3s						
MDM	**Murphy Dome**	**67.90**	**27**	*e*P	**P**	**08 46 29.6**	**+0.5**
	comp=Z,20nm,1.4s						
RND	**Reindeer**	**67.93**	**29**	*e*P	**P**	**08 46 28.8**	**-0.5**
RND				pmax	pmax		
	comp=Z,15nm,0.9s						
RND	**Reindeer**	**67.93**	**29**	*e*P	**P**	**08 46 28.8**	**-0.5**
	comp=Z,15nm,0.9s						
WRH	**Wood River Hil**	**68.06**	**28**	*e*P	**P**	**08 46 29.9**	**-0.1**
	comp=Z,18nm,1.7s						
COLA	**College**	**68.08**	**27**	*e*P	**P**	**08 46 30.6**	**+0.5**
COLA				pmax	pmax		
	comp=Z,3.0nm,0.8s						
CCB	**Clear Creek Bu**	**68.14**	**28**	*e*P	**P**	**08 46 30.7**	**+0.2**
	comp=Z,15nm,1.9s						
PMR	**Palmer**	**68.16**	**31**	*e*P	**P**	**08 46 30.2**	**-0.5**
PMR				pmax	pmax		
	comp=Z,26nm,1.6s						
PMR	**Palmer**	**68.16**	**31**	*e*P	**P**	**08 46 30.2**	**-0.5**
	comp=Z,26nm,1.6s						
SML	**Sawmill**	**68.49**	**31**	*e*P	**P**	**08 46 32.5**	**-0.3**
SML				pmax	pmax		
	comp=Z,17nm,1.1s						
SML	**Sawmill**	**68.49**	**31**	*e*P	**P**	**08 46 32.5**	**-0.3**
	comp=Z,17nm,1.1s						
ILAR	**Eielson Array**	**68.50**	**27**	P	**P**	**08 46 32.3**	**-0.5**
	comp=Z,0.9nm,0.5s,baz=271,slow=5.1,SNR=14						
ILB	**Eielson Array**	**68.50**	**27**	*e*P	**P**	**08 46 33.0**	**+0.2**
KEV	**Kevo**	**68.76**	**338**	*e*P	**P**	**08 46 34.1**	**-0.1**
KEV				pmax	pmax		
	comp=Z,25nm,1.1s						
KEV	**Kevo**	**68.76**	**338**	*e*P	**P**	**08 46 34.1**	**-0.1**
	comp=Z,25nm,1.1s						
FYU	**Fort Yukon**	**68.78**	**25**	*e*P	**P**	**08 46 35.4**	**+0.9**
	comp=Z,24nm,1.5s						
SCM	**Sheep Creek Mo**	**68.95**	**31**	*e*P	**P**	**08 46 35.5**	**-0.2**
SCM				pmax	pmax		
	comp=Z,13nm,0.8s						
SCM	**Sheep Creek Mo**	**68.95**	**31**	*e*P	**P**	**08 46 35.5**	**-0.2**
	comp=Z,13nm,0.8s						
SPA0	**Spitsbergen Ar**	**69.14**	**348**	*e*P	**P**	**08 46 36.1**	**-0.5**
SPITS	**Spitsbergen Ar**	**69.14**	**348**	P	**P**	**08 46 36.1**	**-0.5**
	comp=Z,3.0nm,0.5s,baz=85,slow=10,SNR=26						
SPITS				pP	**pP**	**08 46 55.8**	**-0

comp=Z,9.8nm,0.8s,baz=62,slow=5.6
NOA NORSAR Array B 78.09 332 P **P** 08 47 29.1 -0.1
comp=Z,3.3nm,0.8s,baz=60,slow=5.6,SNR=11
NOA pP **pP** 08 47 48.9 -0.5
comp=Z,8.3nm,0.8s,baz=59,slow=5.7,SNR=15
RES Resolute Bay 78.09 9 P **P** 08 47 28.8 -0.2
comp=Z,0.9nm,0.7s,baz=22,slow=3.2,SNR=6.3
RES Resolute Bay 78.09 9 *e*P **P** 08 47 29.9 +0.9
RES pmax pmax
comp=Z,8.0nm,1.4s
RES Resolute Bay 78.09 9 *e*P **P** 08 47 29.9 +0.9
comp=Z,8.3nm,1.4s
NC204 NORSAR Array S 78.16 333 *e*P **P** 08 47 28.8 -0.9
DLBC Dease Lake 78.22 31 P **P** 08 47 30.4 +0.3
comp=Z,1.2nm,0.5s,baz=284,slow=4.4,SNR=7.8
DLBC Dease Lake 78.22 31 *e*P **P** 08 47 30.8 +0.7
comp=Z,4.2nm,1.0s
OJC Ojcow 78.70 320 *e*P **P** 08 47 32.4 -0.4
OJC pmax pmax
comp=Z,48nm,1.5s
OJC Ojcow 78.70 320 *e*P **P** 08 47 32.4 -0.4
comp=Z,48nm,1.5s
KECS Kecovo 79.02 318 *e* pP 08 47 55.3 +0.5
VYHS Vyhne 80.01 319 *e*P **P** 08 47 38.1 -1.9
VYHS *e* 08 48 00.9
VYHS pmax pmax
comp=Z,14nm,1.2s
VYHS Vyhne 80.01 319 *e*P **P** 08 47 38.1 -1.9
VYHS *e* 08 48 00.9
DPC Dobruska-Polom 80.64 321 *e*P **P** 08 47 44.7 +1.3
DPC *e*pP **pP** 08 48 04.9 +1.3
VRAC Vranov 80.97 320 P **P** 08 47 43.5 -1.7
comp=Z,1.1nm,0.3s,baz=158,slow=19,SNR=2.3
VRAC pP **pP** 08 48 05.2 -0.2
comp=Z,8.7nm,1.0s,baz=73,slow=5.1,SNR=4.1
DCZ Deep Cove 81.05 150 *e*P **P** 08 47 44.8 -0.5
comp=Z,13nm,1.1s
LAST Lasithi 81.08 304 *e*P **P** 08 47 45.2 -0.9
comp=Z,78nm,1.7s
IDI Anoyia 81.47 305 *e*P **P** 08 47 47.0 -1.1
comp=Z,41nm,1.6s
BKZ Black Stump Fm 81.47 140 *e*P **P** 08 47 47.1 -0.7
comp=Z,53nm,1.6s
RPZ Rata Peaks 81.64 146 *e*P **P** 08 47 48.4 -0.2
comp=Z,27nm,1.2s
KHZ Kahutara 82.02 144 *e*P **P** 08 47 49.7 -0.8
comp=Z,23nm,1.1s
CLL Collm 82.04 323 *e*(P) P 08 47 57.0 +6.3
YKW3 Yellowknife Ar 82.24 23 *e*P **P** 08 47 50.8 -0.7
comp=Z,4.2nm,0.9s
YKA Yellowknife Ar 82.29 23 P **P** 08 47 50.4 -1.3
comp=Z,1.6nm,0.5s,baz=311,slow=5.1,SNR=114
YKB5 Yellowknife Ar 82.29 23 *e*P **P** 08 47 50.3 -1.5
KHC Kasperske Hory 82.79 321 *e*P **P** 08 47 53.6 -1.1
KHC *e*pP **pP** 08 48 15.7 +0.7
GERES GERESS Array B 82.86 321 P **P** 08 47 54.1 -1.0
comp=Z,1.3nm,0.7s,baz=329,slow=1.6,SNR=4.1
GEA0 GERESS Array S 82.86 321 *e*P **P** 08 47 54.9 -0.3
KMBO Kilima Mbogo 85.56 267 P **P** 08 48 07.6 -2.0
comp=Z,0.7nm,0.2s,baz=53,slow=20,SNR=2.2
KMBO pP **pP** 08 48 30.5 +0.4
comp=Z,1.9nm,0.5s,baz=53,slow=7.4,SNR=3.3
KMBO LR LR 09 29 08.5
comp=Z,1μm,19.0s,baz=274,slow=38
FUORN Ofenpass-Fuorn 85.99 320 *e*P **P** 08 48 12.0 +0.7
D05A Enumclaw 88.28 38 *e*P **P** 08 48 23.2 +1.3
comp=Z,42nm,1.5s
LTY Liberty 88.97 37 *e*P **P** 08 48 25.5 +0.2
comp=Z,5.2nm,0.8s
B08A Colville Reser 89.04 36 *e*P **P** 08 48 26.1 +0.5
comp=Z,7.7nm,0.9s
NEW Newport 90.26 35 P **P** 08 48 30.5 -0.8
comp=Z,3.0nm,1.0s,baz=295,slow=4.3,SNR=6.4
NEW Newport 90.26 35 *e*P **P** 08 48 31.9 +0.6
NEW pmax pmax
comp=Z,5.0nm,0.9s
NEW Newport 90.26 35 *e*P **P** 08 48 31.9 +0.6
comp=Z,5.0nm,0.9s
HUMO Hull Mountain 90.34 42 *e*P **P** 08 48 32.3 +0.5
comp=Z,41nm,1.9s
CASY Casey 91.07 185 *e*P **P** 08 48 33.6 -0.6
comp=Z,31nm,0.6s
K05A Summer Lake 91.51 41 *e*P **P** 08 48 38.3 +0.9
comp=Z,32nm,1.4s
FCC Fort Churchill 91.70 18 *e*P **P** 08 48 37.5 -0.1
FCC pmax pmax
comp=Z,5.0nm,1.1s
FCC Fort Churchill 91.70 18 *e*P **P** 08 48 37.5 -0.1
comp=Z,4.7nm,1.1s
BSMT Bassoo Peak 91.73 34 *e*P **P** 08 48 38.9 +0.6
YBMT Yellow Bay 92.11 34 *e*P **P** 08 48 40.8 +0.8
WVOR Wild Horse Val 93.02 40 *e*P **P** 08 48 44.4 +0.1
WVOR pmax pmax
comp=Z,15nm,0.9s
WVOR Wild Horse Val 93.02 40 *e*P **P** 08 48 44.4 +0.1
comp=Z,15nm,0.9s
MCMT McKenzie Canyo 94.73 36 *e*P **P** 08 48 53.5 +1.3
NV01 Mina Array Sit 95.66 43 *e*P **P** 08 48 56.9 +0.3
NVAR Mina Array Bea 95.66 43 P **P** 08 48 56.5 -0.1
comp=Z,1.1nm,0.8s,baz=287,slow=6.0,SNR=7.8
SYO Syowa Base 110.06 202‖ *e*Pdiff **Pdif** 08 50 04.0 +4.4
TXAR Lajitas Array 110.75 42 PKiKP **PKiKP** 08 54 02.3 -1.3
comp=Z,0.1nm,0.4s,baz=346,slow=1.7,SNR=4.7
SDV Santo Domingo 144.49 22 PKP **PKPab** 08 55 05.1 -0.9
comp=Z,5.9nm,0.4s,baz=315,slow=17,SNR=2.8
GRMC Gramalote, San 144.78 26 *e*P **PKPab** 08 55 03.8 -3.2
CBRI Barrientos, No 144.78 26 *e*P **PKPab** 08 55 06.0 -1.1
BRRC Barranca, Sant 144.96 28 *e*P **PKPab** 08 55 05.6 -1.9
HELC Santa Helena 144.96 31 *e*P **PKPab** 08 55 05.6 -2.4
PAMC Pamplona, Colo 145.17 26 *e*P **PKPab** 08 55 08.8 0.0
BARC Barichara 145.65 27 *e*P **PKPdf** 08 55 06.8 -2.9
NORC Norcasia 145.82 31 *e*P **PKPdf** 08 55 07.6 -2.1
HOPE Hope Point 146.31 203 *e*PKPdf **PKPab** 08 55 11.6 +0.3
RUSC La Rusia 146.32 28 *e*P **PKPdf** 08 55 11.3 +0.2
CMBC Cumbal 148.19 40 *e*P **PKPbc** 08 55 18.7 +1.2
OTAV Otavalo 148.38 41 *e*P **PKPbc** 08 55 19.1 +1.1
RCBR Riachuelo 151.60 308 *e*PKPbc **PKPbc** 08 55 24.1 -1.3
LPAZ La Paz 167.47 50 PKP **PKPdf** 08 55 36.3 -1.4
comp=Z,1.2nm,0.9s,baz=240,slow=3.4,SNR=4.2

*DDA **30** 08:39:18.6,38.66N×30.24E,h7km,Md2.7*
*ISCJB **30** 08:39:19.4±0.6,38.68N±0.03×30.23E±0.03,h7km±5km,*
Error ellipse: s-maj=4.7km s-min=4.3km az=171.1
*CSEM **30** 08:39:19.8±0.2,38.71N×30.23E,h8km,MD2.7,Error*
ellipse: s-maj=4.5km s-min=3.5km az=162.0
*ISK **30** 08:39:20.6,38.73N×30.17E,h20km,MD2.7*
ISC 30 08:39:19.3±1.2,38.69N±0.02×30.24E±0.02,h3km±14km,
n23,σ0s37/40,Turkey

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
					Op	ISC	h m s	ISC
BOLV	**Bolvadin**	**0.56**	**87**	*i*P		**Pg**	**08 39 39.9**	**-0.2**
BOLV				*i*S		**Sg**	**08 39 37.7**	**+0.4**
BOLV	**Bolvadin**	**0.56**	**87**	P		**Pg**	**08 39 29.9**	**-0.2**
BOLV				S		**Sg**	**08 39 37.7**	**+0.4**
KHAL	**Karahalli**	**0.67**	**242**	*i*P		**Pg**	**08 39 31.9**	**-0.2**
KHAL				*i*S		**Sg**	**08 39 40.8**	**+0.1**
KHAL	**Karahalli**	**0.67**	**242**	P		**Pg**	**08 39 31.9**	**-0.2**
KHAL				S		**Sg**	**08 39 40.8**	**+0.1**
KHL	**Karahalli**	**0.67**	**237**	*e*PG		**Pb**	**08 39 33.7**	**0.0**
KHL				*e*SG		**Sb**	**08 39 43.4**	**0.0**
KHL	**Karahalli**	**0.67**	**237**	*e*Pg		**Pb**	**08 39 33.7**	**0.0**
KHL				*e*Sg		**Sb**	**08 39 43.4**	**0.0**
GDZ	**Gediz**	**0.71**	**304**	*i*P		**Pg**	**08 39 33.4**	**+0.4**
GDZ				*i*S		**Sg**	**08 39 42.9**	**+0.7**
GDZ	**Gediz**	**0.71**	**304**	P		**Pg**	**08 39 33.4**	**+0.4**
GDZ				S		**Sg**	**08 39 42.9**	**+0.7**
BAGO	**Egridir - ISPA**	**0.82**	**148**	*i*P		**Pg**	**08 39 35.0**	**-0.1**
BAGO				*i*S		**Sg**	**08 39 45.1**	**-0.6**
ESKT	**Eskisehir**	**0.96**	**30**	*i*P		**Pg**	**08 39 38.6**	**-0.1**
ESKT				*i*S		**Sg**	**08 39 50.1**	**0.0**
SEYT	**Eskypehyr**	**0.96**	**30**	P		**Pb**	**08 39 38.6**	**-0.1**
SEYT				S		**Sg**	**08 39 50.1**	**0.0**
TVSB	**Tavsanli**	**0.97**	**322**	*e*PG		**Pb**	**08 39 38.5**	**-0.4**
TVSB				*e*SG		**Sb**	**08 39 51.6**	**-0.6**
TVSB	**Tavsanli**	**0.97**	**322**	*e*Pg		**Pb**	**08 39 38.5**	**-0.4**
TVSB				*e*Sg		**Sb**	**08 39 51.6**	**-0.6**
BORA	**Eskisehir**	**1.20**	**8**	*i*P		**Pg**	**08 39 42.3**	**-0.1**
BORA				*i*S		**Sb**	**08 39 58.5**	**-0.3**
BORA	**Eskisehir**	**1.20**	**8**	P		**Pg**	**08 39 42.3**	**-0.1**
BORA				S		**Sb**	**08 39 58.5**	**-0.3**
KULA	**Kula-Manisa**	**1.25**	**262**	*e*PN		**Pg**	**08 39 42.9**	**-0.3**
KULA				*e*SN		**Sg**	**08 39 59.0**	**-0.4**
KULA	**Kula-Manisa**	**1.25**	**262**	*e*Pn		**Pg**	**08 39 42.9**	**-0.3**
KULA				*e*Sn		**Sg**	**08 39 59.0**	**-0.4**
KIZT	**Kizilcal**	**1.30**	**81**	*e*PN		**Pn**	**08 39 45.0**	**+0.5**
KIZT	**Kizilcal**	**1.30**	**81**	*e*Pn		**Pn**	**08 39 45.0**	**+0.5**
SUTC	**Sutluce-Ispart**	**1.35**	**153**	*e*PN		**Pb**	**08 39 45.9**	**+0.5**
SUTC	**Sutluce-Ispart**	**1.35**	**153**	*e*Pn		**Pb**	**08 39 45.9**	**+0.5**
LADK	**Ladik-KONYA**	**1.74**	**106**	*e*PN		**Pb**	**08 39 51.5**	**-0.5**
LADK	**Ladik-KONYA**	**1.74**	**106**	*e*Pn		**Pb**	**08 39 51.5**	**-0.5**

JMA 30 08:47:46.7±0.1,38.31N×142.10E,h36km±1km,M3.6,
Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
					Op	ISC	h m s	ISC
JIO	**Ouri**	**0.61**	**284**	P		Pn	08 47 58.7	-0.2
JIO				S		Sn	08 48 06.8	-0.6
OFUJ	**Ofunato**	**0.84**	**336**	P		Pn	08 48 02.0	0.0
OFUJ				S		Sn	08 48 13.1	-0.1
JMK	**Ichinoseki**	**0.94**	**313**	P		Pn	08 48 03.8	+0.4
JMK				S		Sn	08 48 15.5	-0.1
JMM	**Marumori**	**1.12**	**247**	P		Pn	08 48 05.6	-0.2
JMM				S		Sn	08 48 19.0	-1.0
JOU	**Okura**	**1.13**	**273**	P		Pn	08 48 06.8	+0.8
JOU				S		Sn	08 48 20.9	+0.6
MIYJ	**Miyakonagasawa**	**1.28**	**350**	P		Pn	08 48 08.2	+0.1
MIYJ				S		Sn	08 48 23.7	-0.3
JOM	**Ohasama**	**1.32**	**332**	P		Pn	08 48 09.7	+1.1
JOM				S		Sn	08 48 26.0	+1.0
JRG	**Rokugo**	**1.58**	**314**	P		Pn	08 48 13.5	+1.4
JFT	**Otama**	**1.60**	**241**	P		Pn	08 48 13.4	+0.9
JFT				S		Sn	08 48 32.4	+0.5
JYS	**Shirataka**	**1.60**	**267**	P		Pn	08 48 13.8	+1.3
JKZ	**Kuzumaki**	**1.78**	**341**	P		Pn	08 48 16.4	+1.5
JANG	**Nango**	**2.11**	**348**	P		Pn	08 48 21.1	+1.7

*ISCJB **30** 08:48:12.7±1.1,40.05N±0.05×27.00E±0.06,h4km±14km,*
Error ellipse: s-maj=9.5km s-min=6.6km az=144.2
*CSEM **30** 08:48:12.8±0.2,40.05N×27.02E,h10km,MD2.6,Error*
ellipse: s-maj=6.1km s-min=3.9km az=45.0
*ISK **30** 08:48:12.1,40.05N×27.04E,h7km,MD2.6*
*DDA **30** 08:48:12.2,40.05N×27.04E,h7km,Md2.5*
ISC 30 08:48:11.7±2.0,40.09N±0.04×27.02E±0.04,h0km±17km,
n15,σ0s30/24,Turkey

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
					Op	ISC	h m s	ISC
LPK	**Lapseki**	**0.34**	**326**	*e*PG		**Pb**	**08 48 20.2**	**-0.5**
LPK	**Lapseki**	**0.34**	**326**	*e*Pg		**Pb**	**08 48 20.2**	**-0.5**
GELI	**Tayfur-Gelibol**	**0.52**	**307**	*e*PG		**Pb**	**08 48 23.4**	**-0.2**
GELI				*e*SG		**Sb**	**08 48 31.6**	**-0.1**
GELI	**Tayfur-Gelibol**	**0.52**	**307**	*e*Pg		**Pb**	**08 48 23.4**	**-0.2**
GELI				*e*Sg		**Sb**	**08 48 31.6**	**-0.1**
RKY	**Sarkoy-Tekirda**	**0.61**	**12**	*e*PG		**Pb**	**08 48 25.1**	**-0.2**
RKY				*e*SG		**Sb**	**08 48 34.5**	**+0.1**
RKY	**Sarkoy-Tekirda**	**0.61**	**12**	*e*Pg		**Pb**	**08 48 25.1**	**-0.2**
RKY				*e*Sg		**Sb**	**08 48 34.5**	**+0.1**
ERIK	**Erikli-Kesan**	**0.70**	**327**	*e*PG		**Pb**	**08 48 26.8**	**+0.1**
ERIK				*e*SG		**Sb**	**08 48 37.5**	**+0.7**
ERIK	**Erikli-Kesan**	**0.70**	**327**	*e*Pg		**Pb**	**08 48 26.8**	**+0.1**
ERIK				*e*Sg		**Sb**	**08 48 37.5**	**+0.7**
BOZC	**Bozcaada**	**0.78**	**252**	*i* P		**Pg**	**08 48 26.7**	**+0.1**
BOZC				*i* S		**Sb**	**08 48 38.9**	**-0.3**
ALN	**Alexandroupoli**	**1.09**	**318**	*e*PN		**Pn**	**08 48 34.2**	**0.0**
ALN	**Alexandroupoli**	**1.09**	**318**	*e*Pn		**Pn**	**08 48 34.2**	**0.0**
DURS	**Dursunbey**	**1.23**	**113**	*i* P		**Pb**	**08 48 35.6**	**-0.1**
DURS				*i* S		**Sn**	**08 48 53.4**	**0.0**
DURS	**Dursunbey**	**1.23**	**113**	P		**Pb**	**08 48 35.6**	**-0.1**
DURS				S		**Sn**	**08 48 53.4**	**0.0**
SIGR	**SIGRI**	**1.25**	**226**	*e*PN		**Pb**	**08 48 36.2**	**0.0**
SIGR	**SIGRI**	**1.25**	**226**	*e*Pn		**Pb**	**08 48 36.2**	**0.0**

IDC 30 08:53:50.7±1.5,4.64N×126.20E,h0km,mb3.5/6,
mb1 3.7/6,mb1mx3.5/56,mbtmp3.5/6,Error ellipse:
s-maj=106.9km s-min=18.6km az=68.0,Talaud Islands

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
					Op	ISC	h m s	ISC
FITZ	**Fitzroy Crossi**	**22.61**	**181**	P		P	08 58 53.9	+0.7
	0.4nm,0.3s,baz=349,slow=11,SNR=4.9							
WRA	**Warramunga Arr**	**25.71**	**162**	P		P	08 59 23.4	+0.5
	0.5nm,0.4s,baz=340,slow=9.7,SNR=15							
ASAR	**Alice Springs**	**29.12**	**165**	P		P	08 59 53.5	-0.1
	0.3nm,0.4s,baz=340,slow=7.1,SNR=13							
STKA	**Stephens Creek**	**39.16**	**159**	P		P	09 01 19.1	-1.3
	1.3nm,0.9s,baz=343,slow=11,SNR=4.6							
MKAR	**Makanchi Array**	**56.51**	**325**	P		P	09 03 35.0	+0.3
	0.2nm,0.4s,baz=124,slow=7.7,SNR=2.9							
KURBB	**Kurchatov Arra**	**60.69**	**327**	P		P	09 04 03.5	-0.3
	0.3nm,0.5s,baz=131,slow=6.2,SNR=4.6							

SOME 30 08:54:02.9,40.85N×69.58E,h10km,Tajikistan

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
					Op	ISC	h m s	ISC
IUG	**luzhnay**	**1.34**	**14**	*e*P		Pg	08 54 29.3	+0.7
	44nm,0.3s							
IUG				*e*S		Sg	08 54 48.9	+2.9
	16nm,0.3s							
BRLS	**Borolday**	**1.94**	**2**	*e*P		Pb	08 54 38.3	0.0
	4.5nm,0.3s							
BRLS				*e*S		Sg	08 55 04.1	-1.1
	6.0nm,0.7s							
KK31	**Karatay Array**	**2.36**	**17**	Pn		Pb	08 54 45.1	-0.3
	0.6nm,0.3s,baz=198,slow=16,SNR=35							
KK31					Sn	Sb	08 55 15.7	+1.1
	0.9nm,0.3s,baz=204,slow=27,SNR=11							

*IDC **30** 08:55:10.1±1.3,30.61N×57.33E,h0km,mb3.7/9,*
mb1 3.8/11,mb1mx3.6/56,mbtmp3.7/11,ML3.8/2,Error
ellipse: s-maj=28.7km s-min=20.5km az=146.0
*CSEM **30** 08:55:12.5±0.2,30.68N×57.35E,h10km,ML4.1,Error*
ellipse: s-maj=7.5km s-min=5.5km az=119.0
*ISCJB **30** 08:55:12.4±0.4,30.74N±0.04×57.30E±0.05,h15km,*
mb3.6/9,Error ellipse: s-maj=6.3km s-min=4.9km az=34.5
*THR **30** 08:55:13.2±0.8,30.84N×57.08E,h14km±7km,ML3.7*
*TEH **30** 08:55:13.0,30.73N×57.35E,h6km,ML4.1*
*NEIC **30** 08:55:13.0,30.73N×57.35E,h6km,mb3.8/1,ML3.7(THR),*
MN4.1(TEH),After TEH.
ISC 30 08:55:13.0±0.6,30.71N±0.04×57.35E±0.03,h15km,n72,
σ1s15/74,mb3.7/9,1C,Northern and central Iran

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
					Op	ISC	h m s	ISC
KHGB	**Koh Gabri**	**0.82**	**246**	*e*Pg		**Pg**	**08 55 27.5**	**-1.6**
KHGB	**Koh Gabri**	**0.82**	**246**	*e*Pg		**Pg**	**08 55 27.5**	**-1.6**
CHMN	**Cheshme madani**	**0.86**	**169**	*e*Pg		**Pg**	**08 55 28.8**	**-1.0**
CHMN	**Cheshme madani**	**0.86**	**169**	*e*Pg		**Pg**	**08 55 28.8**	**-1.0**
TVBK	**TV Kerman**	**0.88**	**215**	*e*Pg		**Pg**	**08 55 30.1**	**-0.1**
TVBK	**TV Kerman**	**0.88**	**215**	*e*Pg		**Pg**	**08 55 30.1**	**-0.1**
KRBR	**Kerman**	**0.89**	**215**	*e*Pg		**Pg**	**08 55 30.1**	**-0.1**
KRBR					AML	AML	08 55 56.6	
	comp=E,2μm,0.6s							
KRBR	**Kerman**	**0.89**	**215**	Pg		**Pb**	**08 55 30.0**	**-0.3**
KRBR	**Kerman**	**0.89**	**215**	Pg		**Pb**	**08 55 30.0**	**-0.3**
NGRK	**Negar Kerman**	**1.19**	**207**	*e*Pn		**Pb**	**08 55 35.7**	**+0.2**
NGRK	**Negar Kerman**	**1.19**	**207**	*e*Pn		**Pb**	**08 55 35.7**	**+0.2**
IBAF	**Bafgh**	**1.76**	**300**‖	*e*Pn		**Pb**	**08 55 44.0**	**-1.2**
IBAF				*e*Sg		**Sb**	**08 56 07.3**	**+0.1**
IBAF				*e*AMB		AMB	08 56 11.1	
	comp=Z,14μm,0.2s							
IBAF	**Bafgh**	**1.76**	**300**	Pn		**Pb**	**08 55 43.9**	**-1.2**
IBAF				Sg		**Sb**	**08 56 07.2**	**+0.1**
IBAF	**Bafgh**	**1.76**	**300**	Pn		**Pb**	**08 55 43.9**	**-1.2**
IBAF				Sg		**Sb**	**08 56 07.2**	**+0.1**
IKOO	**Kooshah**	**2.22**	**39**	*e*Pn		**Pn**	**08 55 49.8**	**+0.3**
IKOO				*e*AMB		AMB	08 56 27.4	
	comp=Z,27μm,0.2s							
IKOO	**Kooshah**	**2.22**	**39**	Pn		**Pn**	**08 55 49.7**	**+0.3**
IKOO	**Kooshah**	**2.22**	**39**	Pn		**Pn**	**08 55 49.7**	**+0.3**
IMEH	**Mehriz**	**2.45**	**287**	*e*Pn		**Pn**	**08 55 53.7**	**+1.1**
IMEH				*e*AMB		AMB	08 56 29.3	
	comp=Z,7μm,0.2s							
IMEH	**Mehriz**	**2.45**	**287**	*e*Pn		**Pn**	**08 55 53.7**	**+1.1**
TABS	**Tabas**	**2.94**	**356**	*e*Pn		**Pn**	**08 55 59.4**	**+0.1**
TABS				*e*Sg		**Sb**	**08 56 40.0**	**-0.9**
TABS					AML	AML	08 56 58.7	
	comp=N,306nm,0.3s							
TABS	**Tabas**	**2.94**	**356**	*e*Pn		**Pn**	**08 55 59.4**	**+0.1**
TABS				Sg		**Sb**	**08 56 40.0**	**-0.9**
TABS	**Tabas**	**2.94**	**356**	Pn		**Pn**	**08 55 59.0**	**-0.2**
TABS				Sg		**Sb**	**08 56 40.0**	**-0.9**
ICHK	**Chekchek**	**2.94**	**302**	*e*Pn		**Pn**	**08 56 00.3**	**+0.9**
ICHK				*e*AMB		AMB	08 56 58.1	
	comp=Z,6μm,0.3s							
ICHK	**Chekchek**	**2.94**	**302**	*e*Pn		**Pn**	**08 56 00.3**	**+0.9**
ICHK	**Chekchek**	**2.94**	**302**	Pn		**Pn**	**08 56 00.3**	**+0.9**
IDAH	**Dahanechah**	**2.95**	**46**	*e*Pn		**Pn**	**08 56 00.7**	**+1.2**
IDAH				*e*AMB		AMB	08 57 01.3	
	comp=Z,5μm,0.3s							
IDAH	**Dahanechah**	**2.95**	**46**	Pn		**Pn**	**08 56 00.6**	**+1.1**
IDAH	**Dahanechah**	**2.95**	**46**	Pn		**Pn**	**08 56 00.6**	**+1.1**
ZHSF	**Zahedan**	**3.16**	**109**	*e*Pn		**Pb**	**08 56 08.3**	**-0.7**
ZHSF	**Zahedan**	**3.16**	**109**	Pn		**Pb**	**08 56 08.0**	**-1.0**
ZHSF	**Zahedan**	**3.16**	**109**	Pn		**Pb**	**08 56 08.0**	**-1.0**
IMON	**Monand**	**3.16**	**38**	*e*Pn		**Pn**	**08 56 02.8**	**+0.3**
IMON				*e*AMB		AMB	08 56 58.1	
	comp=Z,4μm,0.1s							
IMON	**Monand**	**3.16**	**38**	Pn		**Pn**	**08 56 02.7**	**+0.3**
IMON	**Monand**	**3.16**	**38**	Pn		**Pn**	**08 56 02.7**	**+0.3**
NIAN	**Nian**	**3.17**	**188**	*e*Pn		**Pb**	**08 56 08.7**	**+0.6**
ISAD	**Sadrabad**	**3.36**	**292**	*e*Pn		**Pn**	**08 56 06.1**	**+0.9**
ISAD	**Sadrabad**	**3.36**	**292**	*e*Pn		**Pn**	**08 56 06.1**	**+0.9**
ISAD	**Sadrabad**	**3.36**	**292**	Pn		**Pn**	**08 56 06.1**	**+0.9**
GENO	**Geno**	**3.46**	**198**	*e*Pn		Pb	08 56 10.4	-3.6
BNDS	**Bandar-Abbas**	**3.46**	**198**	*e*Pn		Pn	08 56 10.2	+3.7
BNDS					AML	AML	08 57 11.4	
	comp=E,109nm,0.4s							
BNDS	**Bandar-Abbas**	**3.46**	**198**	Pn		Pn	08 56 10.0	+3.6
BNDS	**Bandar-Abbas**	**3.46**	**198**	Pn		Pn	08 56 10.0	+3.6
IZEF	**Zefreh**	**4.80**	**298**	*e*Pn		**Pn**	**08 56 25.2**	**+0.2**
IZEF				*e*AMB		AMB	08 57 52.0	
	comp=E,487nm,0.2s							
IZEF	**Zefreh**	**4.80**	**298**	*e*Pn		**Pn**	**08 56 25.2**	**+0.2**
IZEF	**Zefreh**	**4.80**	**298**	Pn		**Pn**	**08 56 25.2**	**+0.2**
SHRO	**Shahrood**	**5.38**	**348**	*e*Pn		**Pn**	**08 56 33.3**	**+0.4**
SHRO	**Shahrood**	**5.38**	**348**	*e*Pn		**Pn**	**08 56 33.3**	**+0.4**
MRVT	**Maraveh tapeh**	**7.01**	**352**	*e*Pn		**Pn**	**08 56 55.4**	**+0.2**
MRVT	**Maraveh tapeh**	**7.01**	**352**	*e*Pn		**Pn**	**08 56 55.4**	**+0.2**
MRVT	**Maraveh tapeh**	**7.01**	**352**	Pn		**Pn**	**08 56 55.0**	**-0.2**
GEYT	**Alibeck**	**7.23**	**5**	Pn		Pn	08 57 03.0	+4.9
	comp=E,0.5nm,0.3s,baz=192,slow=13,SNR=3.1							
WSAR	**Wadi Sarin**	**7.53**	**171**	Pn		**Pn**	**08 57 00.8**	**-1.4**
	comp=E,1.4nm,0.3s,baz=23,slow=9.3,SNR=16							
WSAR					Sn	**Sn**	**08 58 23.4**	**-4.0**
	comp=E,0.1nm,0.3s,baz=267,slow=19,SNR=1.6							
AAK	**Ala-Archa**	**18.15**	**44**	Pn		**P**	**08 59 28.0**	**+3.2**
	comp=E,0.1nm,0.3s,baz=190,slow=8.0,SNR=4.4							
AAK	**Ala-Archa**	**18.15**	**44**	Pn		**P**	**08 59 28.0**	**+3.2**
ABKAR	**Akbulak array**	**18.63**	**5**	*e*P		**Pn**	**08 59 31.4**	**+1.2**
	comp=E,8.9nm,1.3s							
ABKAR	**Akbulak array**	**18.63**	**5**	*e*P		**Pn**	**08 59 31.4**	**+1.2**
	comp=E,9.0nm,1.3s							
AKTO	**Aktyubinsk**	**19.71**	**1**	P		**P**	**08 59 41.2**	**-0.5**
	comp=E,0.2nm,0.3s,baz=173,slow=12,SNR=8.6							
BRTR	**Keskin Array B**	**21.31**	**301**	P		**P**	**08 59 59.3**	**0.0**
	comp=E,1.6nm,0.6s,baz=125,slow=13,SNR=4.3							
BVAR	**Borovoye Array**	**24.24**	**19**	P		**P**	**09 00 30.3**	**+1.1**
	comp=E,0.9nm,0.6s,baz=202,slow=7.2,SNR=6.2							
MKAR	**Makanchi Array**	**25.07**	**43**	P		**P**	**09 00 36.4**	**-0.4**
	comp=E,0.5nm,0.6s,baz=215,slow=7.0,SNR=6.4							
KURBB	**Kurchatov Arra**	**25.41**	**32**	P		**P**	**09 00 40.9**	**+1.1**
	comp=E,1.2nm,0.7s,baz=231,slow=9.0,SNR=13							
KURK	**Kurchatov**	**25.51**	**32**	P		**P**	**09 00 40.8**	**+0.1**
KURK	**Kurchatov**	**25.51**	**32**	P		**P**	**09 00 40.9**	**+0.1**
ZALV	**Zalesovo Beam**	**30.50**	**32**	P		**P**	**09 01 25.4**	**+0.1**
	comp=E,2.5nm,0.7s,baz=237,slow=9.4,SNR=5.3							
KOLS	**Kolonicke sedl**	**32.13**	**315**	*e*P		**P**	**09 01 42.2**	**+2.4**
KOLS	**Kolonicke sedl**	**32.13**	**315**	*e*P		**P**	**09 01 42.2**	**+2.4**
VYHS	**Vyhne**	**34.14**	**312**	*e*P		**P**	**09 01 59.1**	**+1.8**
VYHS	**Vyhne**	**34.14**	**312**	*e*P		**P**	**09 01 59.1**	**+1.8**
FINES	**FINESS Array B**	**36.93**	**335**	P		**P**	**09 02 21.5**	**+0.5**
	comp=E,1.4nm,0.6s,baz=116,slow=6.3,SNR=5.2							
GERES	**GERESS Array B**	**37.52**	**312**	P		**P**	**09 02 26.5**	**+0.1**
	comp=E,0.9nm,0.6s,baz=143,slow=2.5,SNR=3.4							
TORD	**Torodi Ar. Bea**	**53.97**	**264**	P		**P**	**09 04 35.5**	**-1.1**
	comp=E,1.

SWI	Sorong	15.78	286	P		P	09 07 10.7	-1.7	
	85nm,0.7s								
MTN	Manton Dam	16.84	243	*e*P		Pn	09 07 24.9	-0.3	
	18nm,0.6s								
WRAB	Tennant Creek	18.67	218	*e*P		Pn	09 07 45.0	-1.8	
	67nm,0.8s								
WB2	Warramunga Arr	18.68	218	*e*P		Pn	09 07 45.1	-1.8	
	60nm,0.7s								
WB2				*e*S		S	09 11 17.4	+11	
WRA	Warramunga Arr	18.69	218	P		Pn	09 07 44.8	-2.2	
	6.7nm,0.3s,baz=42,slow=11,SNR=436								
WRA				S		S	09 11 07.2	+0.8	
	baz=38,slow=21,SNR=5.6								
AS01	Alice Springs	21.83	212	*e*P		P	09 08 18.4	+1.0	
AS31	Alice Springs	21.86	212	*e*P		P	09 08 18.7	+1.0	
	10nm,0.4s								
ASAR	Alice Springs	21.86	212	P		P	09 08 18.6	+0.9	
	15nm,0.6s,baz=44,slow=7.7,SNR=413								
ASAR				S		S	09 12 07.6	+2.4	
	1.1nm,0.7s,baz=27,slow=25,SNR=3.3								
FITZ	Fitzroy Crossi	23.95	236	P		P	09 08 37.2	+0.3	
	24nm,0.7s,baz=53,slow=8.3,SNR=51								
FITZ	Fitzroy Crossi	23.95	236	*e*P		P	09 08 37.4	+0.5	
	22nm,0.6s								
DZM	Mont Dzumac	25.53	133	P		P	09 08 51.2	-0.1	
	6.7nm,0.9s,baz=313,slow=19,SNR=4.5								
STKA	Stephens Creek	26.79	189	P		P	09 09 02.4	+0.1	
	2.9nm,0.4s,baz=5.4,slow=8.2,SNR=31								
STKA	Stephens Creek	26.79	189	*e*P		P	09 09 03.0	+0.7	
	8.5nm,1.9s								
MSVF	Nonsavu	33.27	114	*e*P		P	09 10 00.0	+0.3	
	11nm,0.9s								
MJAR	Matsushiro Arr	42.36	350	P		P	09 11 14.0	-1.4	
	1.6nm,0.8s,baz=188,slow=8.1,SNR=3.7								
URZ	Urewera	43.02	144	P		P	09 11 20.8	+0.2	
	4.3nm,0.3s,baz=240,slow=4.7,SNR=5.9								
RPZ	Rata Peaks	43.95	154	P		P	09 11 28.7	+0.7	
	10.0nm,0.6s,baz=280,slow=2.5,SNR=14								
NJ2	Nanjing	45.52	327	*e*P		P	09 11 41.3	+0.8	
NJ2				pmax		pmax			
	comp=Z,21nm,0.5s								
KSRS	Korea Array	45.93	339	P		P	09 11 43.3	-0.3	
	comp=Z,2.4nm,0.8s,baz=158,slow=9.2,SNR=6.1								
KSAR	Wonju Array Be	45.94	339	P		P	09 11 43.3	-0.4	
GYA	Guiyang	49.82	311	*e*P		P	09 12 16.0	+2.2	
GYA				pP		pP	09 12 57.8	-0.2	
GYA				sP		sP	09 13 19.0	-1.2	
GYA				PcP		PcP	09 13 33.3	+1.8	
GYA				PP		PP	09 14 13.0	+2.3	
GYA				ScP		ScP	09 17 09.5	+1.3	
GYA				S		S	09 19 10.0	+1.8	
GYA				sS		sS	09 20 43.5	+18	
GYA				pmax		pmax			
	comp=Z,10.0nm,1.0s								
USRK	Ussuriysk Ar.	51.00	347	P		P	09 12 23.1	+0.9	
	comp=Z,2.2nm,0.5s,baz=158,slow=7.8,SNR=7.6								
KMI	Kunming	52.14	308	P		P	09 12 30.0	-1.3	
KMI				pmax		pmax			
	comp=Z,19nm,0.6s								
CD2	Chengdu	54.41	314	P		P	09 12 47.3	-0.2	
HHC	Hu-ho-hao-te	55.97	328	*e*P		P	09 12 59.0	+0.5	
HHC				pP		pP	09 13 42.5	-1.2	
HHC				sP		sP	09 14 03.3	-2.4	
HHC				S		S	09 20 31.8	+0.8	
HHC				pmax		pmax			
	comp=Z,18nm,0.8s								
HHC				pmax		pmax			
	comp=Z,220nm,8.5s								
PETK	Petropavlovsk-	59.00	8	P		P	09 13 20.3	+1.0	
	comp=Z,5.5nm,0.8s,baz=158,slow=6.1,SNR=8.2								
GTA	Gaotai	61.87	320	*e*P		P	09 13 40.8	+1.6	
GTA				pP		pP	09 14 22.3	-2.9	
GTA				sP		sP	09 14 43.0	-4.0	
GTA				pmax		pmax			
	comp=Z,6.0nm,0.8s								
ULN	Ulaanbaatar	63.26	331	*e*P		P	09 13 49.6	+1.4	
	comp=Z,6.3nm,0.7s								
SONM	Songino Array	63.55	331	P		P	09 13 51.0	+0.9	
	comp=Z,3.0nm,0.7s,baz=159,slow=9.2,SNR=9.1								
SONA1	Songino Array	63.55	331	*e*P		P	09 13 51.3	+1.2	
CASY	Casey	65.74	195	*e*P		P	09 14 04.6	+0.8	
	comp=Z,1.1nm,0.5s								
WMQ	Urumqi	71.92	319	*e*P		P	09 14 43.0	+0.6	
WMQ				pmax		pmax			
	comp=Z,4.0nm,0.6s								
WMQ				LR		LR			
	comp=N,730nm,16.0s								
WMQ				LR		LR			
	comp=E,640nm,17.6s								
WMQ				LR		LR			
	comp=Z,860nm,20.4s								
VNDA	Vanda	72.61	177	P		P	09 14 47.1	+1.3	
	comp=Z,9.2nm,0.6s,baz=331,slow=6.9,SNR=93								
BILL	Bilibino	74.53	8	*e*P		P	09 14 58.0	+1.0	
	comp=Z,8.8nm,1.0s								
CHGN	Chignik	76.09	28	*e*P		P	09 15 05.8	-0.3	
MK01	Makanchi Array	76.61	321	*e*P		P	09 15 09.7	+0.3	
MKAR	Makanchi Array	76.62	321	P		P	09 15 09.8	+0.4	
	comp=Z,1.2nm,0.6s,baz=105,slow=7.2,SNR=9.0								
TIXI	Tiksi	77.70	354	*e*P		P	09 15 14.8	0.0	
	comp=Z,3.6nm,0.7s								
ZALV	Zalesovo Beam	78.15	328	P		P	09 15 17.0	-0.7	
	comp=Z,2.2nm,0.5s,baz=112,slow=6.0,SNR=7.6								
RC01	Rabbit Creek A	82.38	26	*e*P		P	09 15 40.4	+0.3	
	comp=Z,5.6nm,0.4s								
CAST	Castle Rocks	82.45	24	*e*P		P	09 15 41.0	+0.5	
MAW	Mawson	82.64	203	P		P	09 15 42.0	+0.7	
	comp=Z,5.3nm,0.7s,baz=96,slow=7.0,SNR=18								
MAW	Mawson	82.64	203	*e*P		P	09 15 42.3	+0.9	
BPAW	Bear Paw Mtn.	83.20	23	*e*P		P	09 15 44.7	+0.4	
MLY	Manley	83.72	22	*e*P		P	09 15 47.7	+0.7	
RND	Reindeer	83.75	24	*e*P		P	09 15 47.1	-0.1	
MCK	McKinley	83.85	24	*e*P		P	09 15 47.8	+0.1	
NRIK	Noril'sk	84.47	342	P		P	09 15 50.9	+0.3	
	comp=Z,7.7nm,0.8s,baz=115,slow=5.4,SNR=6.9								
WRH	Wood River Hil	84.50	23	*e*P		P	09 15 50.6	-0.3	
QSPA	South Pole Qui	84.63	180	*e*P		P	09 15 52.1	+0.4	
MDM	Murphy Dome	84.65	23	*e*P		P	09 15 51.4	-0.2	
CCB	Clear Creek Bu	84.69	23	*e*P		P	09 15 51.3	-0.5	
COLD	Coldfoot	84.91	20	*e*P		P	09 15 54.3	+1.4	
HDA	Harding Lake	84.93	24	*e*P		P	09 15 52.8	-0.2	
IL1	Eielson Array	85.10	23	*e*P		P	09 15 52.8	-1.0	
ILAR	Eielson Array	85.10	23	P		P	09 15 53.0	-0.8	
	comp=Z,14nm,0.6s,baz=252,slow=5.0,SNR=140								
ILB	Eielson Array	85.10	23	*e*P		P	09 15 53.3	-0.5	
FYU	Fort Yukon	86.43	22	*e*P		P	09 16 01.8	+1.5	
EGAK	Eagle	87.39	24	*e*P		P	09 16 05.7	+0.7	
DAWY	Dawson	87.92	25	*e*P		P	09 16 09.0	+1.5	
SYO	Syowa Base	91.02	200	||*e*P		P	09 16 21.4	-0.5	
SYO	Syowa Base	91.02	200	||*e*PcP		PcP	09 16 24.6	+1.8	
NVAR	Mina Array Bea	97.41	52	P		Pdif	09 16 52.0	-0.2	
	comp=Z,0.9nm,0.8s,baz=249,slow=8.2,SNR=4.8								
YKA	Yellowknife Ar	98.85	28	P		Pdif	09 16 57.8	+0.2	
	comp=Z,0.5nm,0.5s,baz=276,slow=5.0,SNR=18								
YKA				PKKPbc		PKKPbc	09 33 23.0	-4.1	
	comp=Z,0.1nm,0.6s,baz=78,slow=3.0,SNR=4.5								
PDAR	Pinedale Array	103.89	47	Pdiff		Pdif	09 17 21.2	+0.3	
	comp=Z,0.2nm,0.7s,baz=259,slow=4.2,SNR=2.2								
ARCES	ARCESS Array B	105.45	342	PKKPbc		PKKPbc	09 33 04.0	-4.0	
	comp=Z,0.6nm,0.6s,baz=294,slow=1.2,SNR=4.0								
LPAZ	La Paz	139.62	123	PKhKP		PKPpre	09 22 38.5		
	comp=Z,0.5nm,0.4s,baz=225,slow=7.5,SNR=2.6								
TORD	Torodi Ar. Bea	144.37	285	PKP		PKPdf	09 22 52.6	-1.5	
	comp=Z,3.9nm,0.8s,baz=84,slow=3.7,SNR=23								
SAML	Samuel	147.25	116	*e*PKPdf		PKPbc	09 22 58.9	-2.7	
SAML				*e*PKPbc		PKiKP	09 23 01.8	-1.9	

*ISCJB **30** 09:10:51.5±0.6, 12°.10S±0°.09×166°.48E±0°.08, h83km, mb4.3/12, Error ellipse: s-maj=14.3km s-min=8.2km az=36.8*
*IDC **30** 09:10:52.0±3.4, 12°.01S×166°.59E, h74km±28km, mb4.1/10, mb1 4.3/12, mb1mx3.9/40, mbtmp4.5/12, MS4.3/1, Ms1 4.3/1, ms1mx3.4/31, Error ellipse: s-maj=24.6km s-min=17.1km az=69.0*
*NEIC **30** 09:10:53.3±1.0, 12°.05S×166°.58E, h86km±9km, mb4.8/2, Error ellipse: s-maj=11.8km s-min=8.5km az=218.0*

ISC 30 09:10:53.1±0.6, 12°.11S±0°.08×166°.52E±0°.09, h83km, n25, σ1s02/26, mb4.4/12, Santa Cruz Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
HNR	Honiara	6.99	292	P	Pn	09 12 33.6	+0.8
	59nm,0.3s,baz=141,slow=6.3,SNR=13						
HNR				S	Sn	09 13 49.8	-1.0
	20nm,0.3s,baz=142,slow=19,SNR=2.6						
HNR	Honiara	6.99	292	*e*P	Pn	09 12 32.0	-0.8
HNR				*e*S		09 12 51.0	
HNR	Honiara	6.99	292	*e*Pn	Pn	09 12 33.6	+0.8
	293nm,0.6s						
HNR				S	Sn	09 13 49.8	-1.0
DZM	Mont Dzumac	9.91	180	P	Pn	09 13 12.9	+0.2
	0.6nm,0.3s,baz=25,slow=17,SNR=2.9						
DZM				S	Sn	09 14 59.3	-3.0
	0.2nm,0.3s,baz=315,slow=6.4,SNR=2.3						
MSVF	Nonsavu	12.46	118	*e*Pn	Pn	09 13 48.1	+0.6
	18nm,1.3s						
AFI	Afiamalu	21.22	97	LR	LR	09 23 08.1	
	comp=Z,697nm,18.0s,baz=77,slow=35						
STKA	Stephens Creek	30.22	225	P	P	09 16 57.4	+1.4
	11nm,0.7s,baz=38,slow=9.2,SNR=36						
H11S2	WAKE ISLAND Hy	30.40	0	T	T	09 47 52.7	
	baz=184						
H11S3	WAKE ISLAND Hy	30.41	0	T	T	09 47 56.7	
	baz=184						
H11S1	WAKE ISLAND Hy	30.42	0	T	T	09 47 54.4	
	baz=184						
RPZ	Rata Peaks	31.74	174	P	P	09 17 10.0	+0.9
	4.9nm,0.8s,baz=351,slow=17,SNR=3.7						
RPZ	Rata Peaks	31.74	174	P	P	09 17 10.0	+0.9
WRA	Warramunga Arr	31.85	252	P	P	09 17 10.3	-0.2
	5.0nm,0.8s,baz=83,slow=8.9,SNR=17						
WRA				PcP	PcP	09 20 00.1	+0.4
	0.6nm,0.8s,baz=68,slow=3.4,SNR=4.1						
ASAR	Alice Springs	33.02	245	P	P	09 17 20.4	-0.3
	4.9nm,0.7s,baz=70,slow=9.6,SNR=43						
ASAR				PcP	PcP	09 20 02.8	0.0
	0.5nm,0.9s,baz=76,slow=2.2,SNR=3.2						
VNDA	Vanda	65.45	181	P	P	09 21 27.1	+0.3
	1.6nm,0.8s,baz=353,slow=4.2,SNR=7.6						
IPM	Ipoh	67.15	280	*e*P	P	09 21 39.6	+0.9
	19nm,1.1s						
ENH	Enshi	69.15	309	*e*P	P	09 21 51.4	+0.4
	5.3nm,0.6s						
CMAR	Chiang Mai Arr	73.23	294	P	P	09 22 16.6	+0.8
	5.4nm,0.3s,baz=117,slow=5.5,SNR=26						
SONM	Songino Array	79.97	324	P	P	09 22 52.4	-0.9
	1.2nm,0.6s,baz=118,slow=5.5,SNR=2.7						
ILAR	Eielson Array	84.27	18	P	P	09 23 14.2	-1.1
	0.9nm,0.7s,baz=242,slow=5.1,SNR=9.3						
MKAR	Makanchi Array	94.81	317	P	P	09 24 06.2	+0.5
	2.7nm,0.7s,baz=96,slow=6.2,SNR=22						
YKA	Yellowknife Ar	95.56	27	P	P	09 24 07.1	-1.5
	0.2nm,0.9s,baz=258,slow=4.6,SNR=4.8						
ARCES	ARCESS Array B	117.55	346	PKP	PKPdf	09 29 28.3	-0.6
	2.7nm,0.9s,baz=75,slow=1.6,SNR=9.5						
FINES	FINESS Array B	123.03	339	PKP	PKPdf	09 29 39.3	-0.2
	0.7nm,0.7s,baz=108,slow=13,SNR=4.1						
TORD	Torodi Ar. Bea	165.16	276	PKPab	PKPab	09 31 46.3	0.0
	1.2nm,0.9s,baz=98,slow=4.2,SNR=6.5						

*ISCJB **30** 09:24:18.7±0.5, 40°.92N±0°.04×29°.72E±0°.03, h2km±7km, Error ellipse: s-maj=6.0km s-min=4.1km az=13.8*
*DDA **30** 09:24:18.2, 40°.93N×29°.71E, h7km, Md2.6*
*CSEM **30** 09:24:19.0±0.1, 40°.92N×29°.73E, h5km, MD2.5, Error ellipse: s-maj=3.0km s-min=2.1km az=15.0*
*ISK **30** 09:24:19.0, 40°.90N×29°.68E, h6km, MD2.5*

ISC 30 09:24:19.1±1.0, 40°.92N±0°.03×29°.74E±0°.02, h6km±10km, n28, σ0s37/40, Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
HRT	Hereke	0.11	209	*e*PG	Pg	09 24 21.2	-0.3
HRT	Hereke	0.11	209	*e*Pg	Pg	09 24 21.2	-0.3
KAND	Kocaeli-Kandir	0.39	63	*i* P	Pg	09 24 26.1	-0.5
KAND				*i* S	Sg	09 24 32.1	+0.4
KAND	Kocaeli-Kandir	0.39	63	P	Pg	09 24 26.1	-0.5
KAND				S	Sg	09 24 32.1	+0.4
IZI	Iznik	0.61	199	*e*PG	Pg	09 24 30.7	-0.2
IZI				*e*SG	Sg	09 24 39.2	+0.3
IZI	Iznik	0.61	199	*e*Pg	Pg	09 24 30.7	-0.2
IZI				*e*Sg	Sg	09 24 39.2	+0.3
KLYT	Kilyos	0.62	303	*e*PG	Pg	09 24 31.1	0.0
KLYT				*e*SG	Sg	09 24 39.8	+0.6
KLYT	Kilyos	0.62	303	*e*Pg	Pg	09 24 31.1	0.0
KLYT				*e*Sg	Sg	09 24 39.8	+0.6
GULT	Gulveren	0.77	129	*e*PG	Pb	09 24 34.6	-0.2
GULT	Gulveren	0.77	129	*e*Pg	Pb	09 24 34.6	-0.2
SAHE	Sakarya_HENDEK	0.85	94	*i* P	Pg	09 24 34.9	-0.5
SAHE				*i* S	Sb	09 24 48.0	+0.1
SAHE	Sakarya_HENDEK	0.85	94	P	Pg	09 24 34.9	-0.5
SAHE				S	Sb	09 24 48.0	+0.1
CTKS	Kestanelik-??a	0.98	289	*e*PG	Pg	09 24 37.6	-0.4
CTKS				*e*SG	Sb	09 24 51.2	-0.5
CTKS	Kestanelik-??a	0.98	289	*e*Pg	Pg	09 24 37.6	-0.4
CTKS				*e*Sg	Sb	09 24 51.2	-0.5
BORA	Eskisehir	1.17	152	*i* P	Pg	09 24 41.1	-0.5
BORA				*i* S	Sb	09 24 57.5	+0.3
BORA	Eskisehir	1.17	152	P	Pg	09 24 41.1	-0.5
BORA				S	Sb	09 24 57.5	+0.3
MDUB	Mudurnu	1.20	111	*e*PN	Pn	09 24 43.0	+0.6
MDUB	Mudurnu	1.20	111	*e*Pn	Pn	09 24 43.0	+0.6
CTYL	Yalikoy Yolu	1.23	297	*e*PN	Pg	09 24 42.3	-0.3
CTYL	Yalikoy Yolu	1.23	297	*e*Pn	Pg	09 24 42.3	-0.3
KCTX	Karacabey (Bur	1.24	239	*e*PN	Pg	09 24 42.5	-0.3
KCTX	Karacabey (Bur	1.24	239	*e*Pn	Pg	09 24 42.5	-0.3
TVSB	Tavsanli	1.48	188	*e*PN	Pn	09 24 46.5	+0.1
TVSB	Tavsanli	1.48	188	*e*Pn	Pn	09 24 46.5	+0.1
EDC	Edincik	1.54	249	*e*PN	Pn	09 24 47.0	+0.1
EDC	Edincik	1.54	249	*e*Pn	Pn	09 24 47.1	+0.1
MRMT	Marmara Adasi	1.66	260	*e*PN	Pn	09 24 48.8	+0.1
MRMT	Marmara Adasi	1.66	260	*e*Pn	Pn	09 24 48.8	+0.1

*CSEM **30** 09:38:28.9±0.4, 38°.48N×35°.09E, h10km, MD2.4, Error ellipse: s-maj=11.2km s-min=6.6km az=139.0*
*ISK **30** 09:38:28.2, 38°.54N×35°.05E, h5km, MD2.4*
*DDA **30** 09:38:34.4, 38°.82N×35°.12E, h7km, Md2.5*

ISC 30 09:38:29.5±1.2, 38°.51N±0°.04×35°.07E±0°.04, h10km, n14, σ0s83/22, Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
AVNS	Nevsehir-Avano	0.35	330	*i* P	Pg	09 38 36.2	-0.2
AVNS				*i* S	Sb	09 38 42.5	-0.9
AVNS	Nevsehir-Avano	0.35	330	P	Pg	09 38 36.2	-0.2
AVNS				S	Sb	09 38 42.5	-0.9
NIG	Nigde	0.54	223	*e*PG	Pg	09 38 39.5	-0.5
NIG				*e*SG	Sg	09 38 47.7	+0.6
NIG	Nigde	0.54	223	*e*Pg	Pg	09 38 39.5	-0.5
NIG				*e*Sg	Sg	09 38 47.7	+0.6
GULA	Gulagac	0.68	256	*e*PG	Pg	09 38 41.8	-0.8
GULA				*e*SG	Sg	09 38 51.6	+0.3
GULA	Gulagac	0.68	256	*e*Pg	Pg	09 38 41.8	-0.8
GULA				*e*Sg	Sg	09 38 51.7	+0.3
BNN	Bunyan	0.70	60	*e*PG	Pg	09 38 42.4	-0.6
BNN	Bunyan	0.70	60	*e*Pg	Pg	09 38 42.4	-0.6
YOZ	Yozgat	1.15	10	*e*PN	Pg	09 38 50.0	-1.5
YOZ	Yozgat	1.15	10	*e*Pn	Pg	09 38 50.0	-1.5
CDAG	Cicekdag	1.24	334	*i* P	Pg	09 38 53.5	+0.2
CDAG				*i* S	Sn	09 39 11.0	+1.2
CDAG	Cicekdag	1.24	334	P	Pg	09 38 53.5	+0.2
CDAG				S	Sn	09 39 11.0	+1.2
CUSAR	Sarkisla-SIVAS	1.29	45	*i* P	Pg	09 38 54.6	+0.4
CUSAR	Sarkisla-SIVAS	1.29	45	P	Pg	09 38 54.7	+0.4

*ISK **30** 09:39:46.2, 36°.83N×34°.03E, h5km, MD2.2*
*ISCJB **30** 09:39:48.9±1.1, 36°.58N±0°.07×34°.28E±0°.09, h17km±14km, Error ellipse: s-maj=16.4km s-min=5.7km az=42.6*
*CSEM **30** 09:39:48.7±0.3, 36°.63N×34°.23E, h5km, MD2.5, Error ellipse: s-maj=14.3km s-min=5.3km az=128.0*
*DDA **30** 09:39:48.9, 36°.65N×34°.17E, h7km, Md2.5*

ISC 30 09:39:47.9±1.2, 36°.64N±0°.04×34°.19E±0°.06, h16km±10km, n12, σ0s30/24, Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
KIZK	Mersin	0.16	192	*i* P	Pb	09 39 52.5	-0.1
KIZK				*i* S	Sb	09 39 56.0	+0.4
KIZK	Mersin	0.16	192	P	Pb	09 39 52.5	-0.1
KIZK				S	Sb	09 39 56.0	+0.4
MERS	Mersin	0.35	50	*e*PG	Pg	09 39 55.0	-0.3
MERS				*e*SG	Sb	09 40 01.5	+0.1
MERS	Mersin	0.35	50	*e*Pg	Pg	09 39 55.0	-0.3
MERS				*e*Sg	Sb	09 40 01.5	+0.1
IKL	Isikli	0.57	226	*e*PG	Pb	09 39 59.7	+0.2
IKL				*e*SG	Sn	09 40 09.9	-0.5
IKL	Isikli	0.57	226	*e*Pg	Pb	09 39 59.7	+0.2
IKL				*e*Sg	Sn	09 40 09.9	-0.5
KERG	Konya-Eregli	0.78	356	*i* P	Pb	09 40 03.2	0.0
KERG				*i* S	Sn	09 40 15.7	-0.2
KERG	Konya-Eregli	0.78	356	P	Pb	09 40 03.2	0.0
KERG				S	Sn	09 40 15.7	-0.2
GULE	Gulek	0.80	36	*i* P	Pb	09 40 03.5	-0.1
GULE				*i* S	Sn	09 40 16.7	+0.2
GULE	Gulek	0.80	36	P	Pb	09 40 03.5	-0.1
GULE				S	Sn	09 40 16.7	+0.2
KARA	Karaisali	0.93	48	*e*PG	Pb	09 40 05.5	-0.2
KARA				*e*SG	Sg	09 40 18.8	+0.4
KARA	Karaisali	0.93	48	*e*Pg	Pb	09 40 05.6	-0.2
KARA				*e*Sg	Sg	09 40 18.8	+0.4

CASC 30 09:41:54.8±1.9, 6°.85N×82°.34W, h30km±93km, MD4.1, 1C, South of Panama

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
TBS2		1.96	351	*e*P	Pn	09 42 27.6	+1.4
TBS2				*e*S	Sn	09 42 51.3	+1.5
BRU2	Volcan	1.97	350	*e*P	Pn	09 42 25.5	-0.7
BRU2				*e*S	Sn	09 42 51.9	+2.0
BUS	Buena Vista	3.04	333	||*e*P	Pn	09 42 41.3	+0.1
BUS				*e*S	Sn	09 43 18.6	+1.8
QCR	Quepos	3.13	325	*e*P	Pn	09 42 41.5	-0.6
URSC	Urasca	3.29	335	*e*P	Pn	09 42 44.8	+0.3
URSC				*e*S	Sn	09 43 25.1	+2.4
CGA2	Cerro Gallo 2	3.79	326	*e*P	Pn	09 42 51.1	-0.1

*IDC **30** 09:45:05.2±2.5, 1°.50N×126°.98E, h170km±23km, mb3.6/7, mb1 3.7/9, mb1mx3.3/59, mbtmp4.0/9, Error ellipse: s-maj=24.6km s-min=10.7km az=78.0*

ISC 30 09:44:56.8±1.1, 1°.8N±0°.1×127°.6E±0°.2, h103km, n11, σ1s41/13, mb4.0/8, Halmahera

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
KAPI	Kappang	10.30	229	P	Pn	09 47 21.8	+0.2
	1.2nm,0.3s,baz=10,slow=12,SNR=4.5						
KAPI				S	Sn	09 49 09.3	-5.9
	1.1nm,0.3s,baz=101,slow=19,SNR=6.5						
FITZ	Fitzroy Crossi	19.83	185	P	P	09 49 19.5	0.0
	0.5nm,0.3s,baz=7.8,slow=7.4,SNR=5.6						
WRA	Warramunga Arr	22.57	163	P	P	09 49 50.0	+1.3
	4.6nm,0.5s,baz=342,slow=11,SNR=68						
WRA				PcP	PcP	09 53 38.8	+0.1
	1.5nm,1.0s,baz=336,slow=2.2,SNR=5.8						
WRA				S	S	09 53 45.6	-3.2
	2.3nm,1.1s,baz=336,slow=20,SNR=3.0						
ASAR	Alice Springs	26.02	167	P	P	09 50 21.4	+0.9
	0.6nm,0.4s,baz=342,slow=10,SNR=22						
ASAR				PcP	PcP	09 53 46.2	0.0
	0.3nm,0.5s,baz=336,slow=2.3,SNR=5.6						
JCJ	Chichijima	28.84	28	P	P	09 50 52.9	+7.4
	100nm,0.9s,baz=261,slow=19,SNR=3.4						
STKA	Stephens Creek	36.01	159	P	P	09 51 49.6	+1.5
	4.2nm,0.7s,baz=339,slow=8.0,SNR=11						
MKAR	Makanchi Array	59.63	326	P	P	09 54 50.5	+0.3
	0.6nm,0.5s,baz=117,slow=8.7,SNR=9.1						
KURBB	Kurchatov Arra	63.83	328	P	P	09 55 18.1	-0.1
	1.2nm,0.6s,baz=128,slow=6.6,SNR=12						
VNDA	Vanda	81.38	173	P	P	09 57 01.0	-0.7
	0.5nm,0.6s,baz=281,slow=3.9,SNR=3.7						
MAW	Mawson	82.21	200	P	P	09 57 06.4	+0.3
	1.4nm,0.6s,baz=42,slow=12,SNR=4.2						
TORD	Torodi Ar. Bea	124.30	287	PKP	PKPdf	10 03 42.7	-2.0
	0.1nm,0.3s,baz=62,slow=1.7,SNR=3.1						

JMA 30 09:46:27.2±0.3, 36°.38N×143°.35E, h53km, M3.5, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JFK	Kawauchi	2.22	297	P	Pn	09 47 02.4	+0.9
JFK				S	Sn	09 47 28.6	+0.8
JHO	Hitachi	2.25	277	P	Pn	09 47 02.9	+0.9
JMM	Marumori	2.52	307	P	Pn	09 47 07.0	+1.3
JMM				*e*S	Sn	09 47 36.6	+1.3
JIO	Ouri	2.61	323	P	Pn	09 47 08.2	+1.3
JIO				S	Sn	09 47 37.9	+0.5
J

38nm,0.2s
STV Sant Anna di V 0.92 277 Pg Pb 10 06 59.1 +0.7
STV Sg Sb 10 07 11.2 +0.9
35nm,0.3s
STV Sant Anna di V 0.92 277 Pg Pb 10 06 59.1 +0.7
STV Sg Sb 10 07 11.2 +0.9
35nm,0.3s
DOI San Damiano 1.03 291 Pg Pb 10 07 00.5 +0.1
DOI Sg Sb 10 07 14.3 +0.7
89nm,0.5s
DOI San Damiano 1.03 291 Pg Pb 10 07 00.5 +0.1
DOI Sg Sb 10 07 14.3 +0.7
89nm,0.5s
PZZ Stroppo 1.12 290 Pg Pn 10 07 01.8 -0.2
PZZ Sg Sn 10 07 17.6 +0.6
92nm,0.5s
RSP Reno Superiore 1.38 317 Pg Pb 10 07 07.1 +0.7
RSP Sg Sb 10 07 25.5 +1.7
17nm,0.4s
RSP Reno Superiore 1.38 317 Pg Pb 10 07 07.1 +0.7
RSP Sg Sb 10 07 25.5 +1.7
17nm,0.4s
MBDF Montbardon 1.43 295 *e*Pn Pn 10 07 05.8 -0.4
MBDF Montbardon 1.43 295 *e*Pg Pb 10 07 07.7 +0.5
MBDF *e*Sg Sn 10 07 24.8 +0.2
47nm,0.5s
MBDF Montbardon 1.43 295 *e*Pn Pn 10 07 05.8 -0.4
MBDF Montbardon 1.43 295 *e*Pg Pb 10 07 07.7 +0.5
MBDF *e*Sg Sn 10 07 24.8 +0.2
24nm,0.5s
FRF La Foret Royal 1.52 248 *e*Pn Pn 10 07 06.8 -0.5
FRF La Foret Royal 1.52 248 *e*Pg Pb 10 07 09.9 +1.2
FRF *e*Sg Sb 10 07 29.4 +1.7
17nm,0.3s
FRF La Foret Royal 1.52 248 *e*Pn Pn 10 07 06.8 -0.5
FRF La Foret Royal 1.52 248 *e*Pg Pb 10 07 09.9 +1.2
FRF *e*Sg Sb 10 07 29.4 +1.7
8.7nm,0.3s
PGF Pioggiola 1.62 169 *e*Pn Pb 10 07 10.4 -0.1
PGF *e*Sn Sn 10 07 30.0 +0.8
4.1nm,0.3s
PGF Pioggiola 1.62 169 *e*Pn Pb 10 07 10.4 -0.1
PGF *e*Sn Sn 10 07 30.0 +0.8
2.0nm,0.3s
LMR La Mourre 1.71 243 *e*Pn Pn 10 07 09.1 -0.8
LMR La Mourre 1.71 243 *e*Pg Pg 10 07 14.0 0.0
LMR *e*Sn Sn 10 07 29.3 -2.0
LMR *e*Sg Sg 10 07 35.9 -0.3
11nm,0.2s
LMR La Mourre 1.71 243 *e*Pn Pn 10 07 09.1 -0.8
LMR La Mourre 1.71 243 *e*Pg Pg 10 07 14.0 0.0
LMR *e*Sn Sn 10 07 29.3 -2.0
LMR *e*Sg Sg 10 07 35.9 -0.3
5.7nm,0.2s
LPG La Plagne 1.89 317 *e*Pn Pn 10 07 11.8 -0.8
LPG La Plagne 1.89 317 *e*Pg Pb 10 07 15.6 +0.5
LPG *e*Sg Sb 10 07 38.7 +0.3
6.2nm,0.3s
LPG La Plagne 1.89 317 *e*Pn Pn 10 07 11.8 -0.8
LPG La Plagne 1.89 317 *e*Pg Pb 10 07 15.6 +0.5
LPG *e*Sg Sb 10 07 38.7 +0.3
3.1nm,0.3s
LPL La Plagne 1.91 317 *e*Pn Pn 10 07 11.9 -1.0
LPL La Plagne 1.91 317 *e*Pg Pb 10 07 16.8 +1.4
LPL *e*Sg Sb 10 07 39.3 +0.3
8.5nm,0.3s
LPL La Plagne 1.91 317 *e*Pn Pn 10 07 11.9 -1.0
LPL La Plagne 1.91 317 *e*Pg Pb 10 07 16.8 +1.4
LPL *e*Sg Sb 10 07 39.3 +0.3
4.2nm,0.3s
ORIF Oris-en-Rattie 2.09 293 *e*P Pn 10 07 16.2 +1.0
ORIF Oris-en-Rattie 2.09 293 *e*Pg Pb 10 07 19.7 +1.3
ORIF *e*Sn Sn 10 07 38.4 -2.4
12nm,0.3s
ORIF Oris-en-Rattie 2.09 293 *e*P Pn 10 07 16.2 +1.0
ORIF Oris-en-Rattie 2.09 293 *e*Pg Pb 10 07 19.7 +1.3
ORIF *e*Sn Sn 10 07 38.4 -2.4
5.8nm,0.3s
SMRF Simiane la Rot 2.18 267 *e*Pn Pn 10 07 16.2 -0.2
SMRF Simiane la Rot 2.18 267 *e*Pg Pb 10 07 21.5 +1.5
SMRF *e*Sg Sb 10 07 49.0 +2.3
13nm,0.4s
SMRF Simiane la Rot 2.18 267 *e*Pn Pn 10 07 16.2 -0.2
SMRF Simiane la Rot 2.18 267 *e*Pg Pb 10 07 21.5 +1.5
SMRF *e*Sg Sb 10 07 49.0 +2.3
6.7nm,0.4s
VIVF Saint-Julien-l 2.89 286 *e*Pn Pn 10 07 25.5 -0.7
VIVF Saint-Julien-l 2.89 286 *e*Pg Pb 10 07 34.1 +2.0
VIVF *e*Sn Sn 10 07 57.7 -2.9
1.5nm,0.2s
VIVF Saint-Julien-l 2.89 286 *e*Pn Pn 10 07 25.5 -0.7
VIVF Saint-Julien-l 2.89 286 *e*Pg Pb 10 07 34.1 +2.0
VIVF *e*Sn Sn 10 07 57.7 -2.9
0.8nm,0.2s
CABF La Chapelle 3.04 325 *e*P Pn 10 07 29.6 +1.4
CABF La Chapelle 3.04 325 *e*P Pn 10 07 29.6 +1.4
LASF Ste Croix 3.41 271 *e*Pn Pn 10 07 32.9 -0.4
LASF Ste Croix 3.41 271 *e*Pg Pg 10 07 44.7 -1.7
LASF *e*Sn Sn 10 08 10.3 -3.0
LASF Ste Croix 3.41 271 *e*Pn Pn 10 07 32.9 -0.4
LASF Ste Croix 3.41 271 *e*Pg Pg 10 07 44.7 -1.7
LASF *e*Sn Sn 10 08 10.3 -3.0
HINF Hinteralfeld 3.87 342 *e*P Pn 10 07 40.5 +0.8
HINF Hinteralfeld 3.87 342 *e*P Pn 10 07 40.5 +0.8
HAU Haudompre 4.17 339 *e*P Pn 10 07 44.7 +1.0
HAU Haudompre 4.17 339 *e*P Pn 10 07 44.7 +1.0
AVF Avril sur Loir 4.54 308 *e*P Pn 10 07 50.2 +1.4
AVF Avril sur Loir 4.54 308 *e*P Pn 10 07 50.2 +1.4
BGF Bois d'Agland 4.72 303 *e*Pn Pn 10 07 50.8 -0.4
BGF Bois d'Agland 4.72 303 *e*Pn Pn 10 07 50.8 -0.4

*NIED **30** 10:08:00,37°.20N×142°.50E,h17km,Mw4.1 Best double couple: M0 1.75000×10^15 NP1:φs243.00000°,δ87.00000°, λ3.00000°. NP2:φs153.00000°,δ87.00000°,λ177.00000°.*
*ISCJB **30** 10:08:27.7±1.4,37°.16N±0°.03×142°.57E±0°.04,h7km±9km, mb3.9/17, Error ellipse: s-maj=6.0km s-min=4.7km az=28.4*
*JMA **30** 10:08:28.8±0.3,37°.18N×142°.48E,h10km,M4.2*
*IDC **30** 10:08:28.4±0.7,37°.10N×142°.57E,h0km,mb3.8/13, mb1 3.9/19,mb1mx3.8/41,mbtmp3.9/19,ML3.6/6, Error ellipse: s-maj=21.0km s-min=14.0km az=115.0*
*NEIC **30** 10:08:29.7±0.3,37°.08N×142°.60E,h10km,mb4.6/4, Error ellipse: s-maj=7.5km s-min=4.7km az=121.0*

ISC 30 10:08:28.5±2.4,37°.17N±0°.04×142°.46E±0°.05,h2km±15km, n52,σ1°53/56,mb4.0/17,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JFK	**Kawauchi**	**1.28**	**279**	P	**Pn**	**10 08 52.4**	**-1.0**
JFK				S	**Sg**	**10 09 10.5**	**+0.9**
ONAJ	**Iwakimizuishiy**	**1.33**	**268**	P	**Pb**	**10 08 53.7**	**-0.5**
JMM	**Marumori**	**1.50**	**298**	P	**Pn**	**10 08 55.7**	**-0.7**
JMM				*e*S	**Sn**	**10 09 15.5**	**-1.0**
JIO	**Ouri**	**1.56**	**326**	P	**Pn**	**10 08 56.4**	**-0.8**
JHO	**Hitachi**	**1.61**	**250**	P	**Pn**	**10 08 57.0**	**-1.0**
JFT	**Otama**	**1.73**	**282**	P	**Pn**	**10 08 59.9**	**-1.0**
JFT				*e*S	**Sb**	**10 09 22.9**	**-0.2**
JOU	**Okura**	**1.86**	**311**	P	**Pn**	**10 09 01.2**	**-0.2**
JOU				*e*S	**Sn**	**10 09 24.0**	**-1.5**
CHOJ	**Chosi**	**1.95**	**222**	P	**Pb**	**10 09 03.5**	**-1.2**
JMK	**Ichinoseki**	**2.03**	**332**	P	**Pb**	**10 09 04.1**	**-2.1**
JYK	**Kaneyama**	**2.41**	**317**	P	**Pn**	**10 09 09.2**	**+0.3**
JAG	**Ashikaga**	**2.52**	**254**	P	**Pn**	**10 09 10.7**	**+0.2**
BSO1	**Boso 1**	**2.78**	**206**	P	**Pn**	**10 09 15.0**	**+1.5**
BSO1				*e*S	**Sn**	**10 09 48.9**	**+1.5**
MJAR	**Matsushiro Arr**	**3.46**	**261**	Pn	**Pn**	**10 09 25.0**	**+1.6**
	5.8nm,0.3s,baz=82,slow=15,SNR=46						
MJAR				Sn	**Sb**	**10 10 11.9**	**-1.2**
	10nm,0.3s,baz=96,slow=13,SNR=5.3						
MAJO	**Matsushiro**	**3.46**	**261**	*e*Pn	**Pn**	**10 09 25.6**	**+2.1**
MAT	**Matsushiro**	**3.46**	**261**	P	**Pn**	**10 09 25.0**	**+1.5**
MAT				*e*S	**Sb**	**10 10 09.2**	**-3.9**
JHJ2	**Mitsune**	**4.59**	**209**	*e*Pn	**Pn**	**10 09 38.2**	**-0.7**
JHJ2				*e*Sn	**Sn**	**10 10 34.1**	**+1.4**
JHJ	**Hachijo jima 2**	**4.59**	**209**	Pn	**Pn**	**10 09 38.8**	**-0.2**
	23nm,0.3s,baz=329,slow=21,SNR=17						
JHJ				Sn	**Sn**	**10 10 28.5**	**-4.4**
	30nm,0.3s,baz=67,slow=23,SNR=6.6						
ERM	**Erimo**	**4.87**	**6**	*e*Pn	**Pn**	**10 09 42.6**	**-0.2**
ERM				*e*Sn	**Sn**	**10 10 40.3**	**+0.5**
ASAJ	**Asahikawa**	**6.94**	**1**	Pn	**Pn**	**10 10 11.5**	**+0.3**
	2.0nm,0.3s,baz=207,slow=11,SNR=18						
ASAJ				Sn	**Sn**	**10 11 27.2**	**-3.6**
	1.2nm,0.3s,baz=258,slow=19,SNR=1.8						
ASAJ	**Asahikawa**	**6.94**	**1**	*e*Pn	**Pn**	**10 10 12.6**	**+1.3**
ASAJ				Sn	**Sn**	**10 11 27.2**	**-3.6**
ASAJ				*e*Sn	**Sn**	**10 11 29.6**	**-1.2**
YSS	**Yuzh-Sakhalins**	**9.78**	**1**	*e*Pn	**Pn**	**10 10 51.4**	**+1.2**
CBIJ	**Chichi jima**	**10.04**	**181**	Pn	**Pn**	**10 10 52.0**	**-1.8**
CBIJ				Sn	Sn	10 12 38.8	-8.3
JCJ	**Chichijima**	**10.04**	**181**	Pn	**Pn**	**10 10 52.0**	**-1.8**
	2.9nm,0.3s,baz=1.9,slow=18,SNR=2.4						
JCJ				Sn	Sn	10 12 38.8	-8.3
	baz=45,slow=2.9						
JNU	**Nakatsue**	**10.30**	**250**	Pn	**Pn**	**10 10 59.5**	**+2.1**
	0.2nm,0.3s,baz=16,slow=19,SNR=2.9						
USRK	**Ussuriysk Ar.**	**10.60**	**315**	Pn	Pn	10 11 06.0	+4.6
	0.4nm,0.3s,baz=126,slow=13,SNR=8.1						
KSRS	**Korea Array**	**11.58**	**276**	Pn	Pn	10 11 20.4	+5.6
	0.2nm,0.3s,baz=88,slow=14,SNR=4.6						
KSAR	**Wonju Array Be**	**11.61**	**276**	Pn	Pn	10 11 20.4	+5.2
PETK	**Petropavlovsk-**	**19.16**	**29**	P	**Pn**	**10 12 54.4**	**+0.5**
	0.1nm,0.3s,baz=218,slow=8.0,SNR=3.7						
SEY	**Seymchan**	**26.51**	**10**	P	**P**	**10 14 07.7**	**+0.6**
	2.8nm,0.7s,baz=181,slow=9.3,SNR=5.9						
H11N2	**WAKE ISLAND Hy**	**27.51**	**122**	T	T	10 43 08.6	
	baz=315,slow=75,SNR=194						
H11N1	**WAKE ISLAND Hy**	**27.52**	**122**	T	T	10 43 08.1	
	baz=315,slow=75,SNR=153						
H11N3	**WAKE ISLAND Hy**	**27.52**	**122**	T	T	10 43 10.9	
	baz=315,slow=75,SNR=189						
ULN	**Ulaanbaatar**	**27.97**	**304**	P	**P**	**10 14 21.6**	**+1.0**
	4.5nm,1.4s						
ENH	**Enshi**	**28.17**	**266**	P	**P**	**10 14 23.4**	**+1.0**
	15nm,0.7s						
H11S1	**WAKE ISLAND Hy**	**28.24**	**125**	T	T	10 44 00.5	
	baz=317,slow=76,SNR=86						
H11S3	**WAKE ISLAND Hy**	**28.24**	**125**	T	T	10 44 00.5	
	baz=317,slow=76,SNR=105						
H11S2	**WAKE ISLAND Hy**	**28.26**	**125**	T	T	10 44 01.1	
	baz=317,slow=76,SNR=73						
SONM	**Songino Array**	**28.41**	**304**	P	**P**	**10 14 24.9**	**+0.4**
	2.0nm,0.8s,baz=91,slow=9.2,SNR=6.2						
ZALV	**Zalesovo Beam**	**42.44**	**312**	P	**P**	**10 16 25.8**	**+1.3**
	0.7nm,0.4s,baz=89,slow=5.9,SNR=2.6						
MKAR	**Makanchi Array**	**44.75**	**302**	P	**P**	**10 16 44.0**	**+0.7**
	1.4nm,0.7s,baz=87,slow=7.5,SNR=5.9						
KURK	**Kurchatov**	**46.51**	**308**	*e*P	**P**	**10 16 58.1**	**+1.0**
	8.3nm,0.6s						
ILAR	**Eielson Array**	**48.94**	**32**	P	**P**	**10 17 15.9**	**+0.2**
	0.8nm,0.8s,baz=265,slow=7.4,SNR=9.7						
INK	**Inuvik**	**53.89**	**27**	P	**P**	**10 17 54.0**	**+1.3**
	0.8nm,0.9s,baz=292,slow=7.8,SNR=4.6						
WRA	**Warramunga Arr**	**57.31**	**189**	P	**P**	**10 18 17.8**	**-0.1**
	1.2nm,0.8s,baz=6.2,slow=7.3,SNR=14						
ABKAR	**Akbulak array**	**58.49**	**310**	*e*P	**P**	**10 18 26.7**	**+0.8**
	1.2nm,0.5s						
ASAR	**Alice Springs**	**61.04**	**189**	P	**P**	**10 18 43.8**	**0.0**
	0.6nm,0.8s,baz=32,slow=5.3,SNR=5.7						
RES	**Resolute Bay**	**62.26**	**15**	P	**P**	**10 18 52.2**	**+0.9**
	0.7nm,0.7s,baz=307,slow=7.6,SNR=7.1						
YKA	**Yellowknife Ar**	**63.27**	**30**	P	**P**	**10 18 57.8**	**-0.4**
	0.3nm,0.9s,baz=301,slow=6.8,SNR=4.2						
FINES	**FINESS Array B**	**69.08**	**333**	P	**P**	**10 19 36.4**	**+0.8**
	0.9nm,0.5s,baz=41,slow=13,SNR=6.0						
PDAR	**Pinedale Array**	**76.98**	**46**	P	**P**	**10 20 22.0**	**-1.0**
	0.2nm,0.8s,baz=250,slow=6.6,SNR=2.6						
TXAR	**Lajitas Array**	**89.38**	**53**	P	**P**	**10 21 27.3**	**+0.3**
	0.1nm,0.6s,baz=289,slow=2.8,SNR=2.4						
LPAZ	**La Paz**	**145.90**	**61**	PKPbc	**PKPab**	**10 28 09.8**	**-1.4**
	0.4nm,0.4s,baz=274,slow=2.5,SNR=2.9						

MAN 30 10:19:23,14°.62N×123°.30E,h68km,mb4.5,ML3.4,MS3.3, 2D,Luzon

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
GQP	**Guinayangan**	**1.09**	**229**	*i*P	Pn	10 19 44.2	+1.6
GQP				*i* S	Sn	10 19 58.9	+1.7
AUQP	**San Andres**	**1.43**	**205**	*e*P	Pn	10 19 47.0	+0.1
LQP	**Lukban**	**1.78**	**254**	*e*P	Sn	10 20 17.2	+3.5
BOAC	**Boac**	**1.82**	**231**	*e*P	Pn	10 19 54.5	+2.2
BOAC				*e*S	Sn	10 20 17.0	+2.6
BALP	**Baler**	**2.00**	**304**	*e*P	Pn	10 19 55.5	+0.9
BALP				*e*S	Sn	10 20 20.2	+1.4
CAUP	**Cauayan**	**2.71**	**329**	*e*P	Pn	10 20 06.9	+2.6
SJMP	**San Jose**	**3.02**	**225**	*e*P	Pn	10 20 10.6	+2.1
BCPH	**Baguio City Da**	**3.15**	**304**	*e*P	Pn	10 20 16.4	+6.0
BCPH				*e*S	Sn	10 20 53.7	+6.7
BOLP	**Bolinao**	**3.71**	**299**	*e*P	Pn	10 20 20.3	+2.5

*IDC **30** 10:19:47.1±1.2,48°.79N×156°.92E,h0km,mb3.3/3, mb1 3.6/5,mb1mx3.3/44,mbtmp3.5/5,ML3.4/2,Error ellipse: s-maj=57.5km s-min=23.4km az=120.0*
*MOS **30** 10:19:50.9±1.4,49°.08N×156°.31E,h41km,mb4.4/1, Error ellipse: s-maj=41.1km s-min=8.2km az=77.0*
*KRSC **30** 10:19:55.7±2.2,49°.46N×157°.03E,h41km±17km,ML4.2*

ISC 30 10:19:49.1±1.1,49°.06N±0°.10×156°.6E±0°.1,h10km,n32, σ2°11/29,mb3.6/3,Kuril Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SKR	**Severo-Kuril's**	**1.65**	**349**	*i* P	**Pn**	**10 20 17.3**	**-0.8**
SKR				*i* S	Sn	10 20 34.0	-5.3
SKR	**Severo-Kuril's**	**1.65**	**349**	*e*Pn	Pn	10 20 14.0	-4.1
SKR				pmax	pmax		
	comp=Z,90nm,0.3s						
ASAK	**Asacha**	**3.43**	**14**	*e*P	**Pn**	**10 20 44.3**	**+1.7**
MTVR	**Mutnovka**	**3.57**	**16**	*e*P	**Pn**	**10 20 46.6**	**+2.0**
MTVR				*e*S	Sn	10 21 22.8	-4.1
RUS	**Russkaya**	**3.59**	**19**	*e*P	**Pn**	**10 20 46.2**	**+1.5**
RUS				*e*S	Sn	10 21 23.5	-3.6
RUS	**Russkaya**	**3.59**	**19**	PN	**Pn**	**10 20 46.2**	**+1.5**
KRMR	**Karymshinskiy**	**3.90**	**14**	*e*P	**Pn**	**10 20 51.4**	**+2.5**
KRMR				*e*S	Sn	10 21 31.6	-3.1
PETK	**Petropavlovsk-**	**4.11**	**9**	Pn	**Pn**	**10 20 54.3**	**+2.3**
	comp=Z,1.2nm,0.3s,baz=162,slow=13,SNR=41						
PETK				Sn	**Sb**	**10 21 52.1**	**+0.9**
	comp=Z,0.1nm,0.3s,baz=200,slow=30,SNR=2.5						
PET	**Petropavlovsk**	**4.17**	**17**	*e*P	**Pn**	**10 20 55.4**	**+2.6**
PET				*e*S	**Sn**	**10 21 38.7**	**-2.8**
PET	**Petropavlovsk**	**4.17**	**17**	*e*PN	**Pn**	**10 20 55.1**	**+2.3**
DALK	**Dalny**	**4.20**	**18**	*e*P	**Pn**	**10 20 54.8**	**+1.7**
DALK				*e*S	Sn	10 21 38.3	-3.9
UGLR	**Uglovaya**	**4.38**	**18**	*e*P	**Pn**	**10 20 58.5**	**+2.7**
AVH	**Avacha**	**4.42**	**17**	*e*P	**Pn**	**10 20 59.1**	**+2.9**
AVH	**Avacha**	**4.42**	**17**	PN	**Pn**	**10 20 59.1**	**+2.9**
SMAR	**Somma**	**4.43**	**17**	*e*P	**Pn**	**10 20 58.7**	**+2.2**
SMAR	**Somma**	**4.43**	**17**	PN	**Pn**	**10 20 58.7**	**+2.2**
SDLR	**Sedlovina**	**4.46**	**18**	*e*P	**Pn**	**10 20 58.6**	**+1.8**
SDLR	**Sedlovina**	**4.46**	**18**	PN	**Pn**	**10 20 58.6**	**+1.8**
NLC	**Nalytchevo**	**4.46**	**22**	*e*S	Sn	10 21 45.0	-3.7
GNL	**Ganaly**	**4.71**	**10**	*e*P	**Pn**	**10 21 02.6**	**+2.3**
GNL	**Ganaly**	**4.71**	**10**	PN	**Pn**	**10 21 02.6**	**+2.3**
MKZ	**Mys Kozlova**	**6.36**	**28**	*e*P	**Pn**	**10 21 23.9**	**+1.2**
MKZ				*e*S	**Sn**	**10 22 32.2**	**-3.0**
MKZ	**Mys Kozlova**	**6.36**	**28**	PN	**Pn**	**10 21 23.9**	**+1.2**
BKI	**Bering**	**8.43**	**40**	*e*S	Sn	10 23 19.4	-6.8
ASAJ	**Asahikawa**	**10.82**	**248**	Pn	**Pn**	**10 22 25.1**	**+1.1**
	comp=Z,0.8nm,0.3s,baz=43,slow=19,SNR=8.2						
H11S1	**WAKE ISLAND Hy**	**31.56**	**161**	T	T	11 00 12.8	
	baz=347,slow=76,SNR=9.0						
H11S3	**WAKE ISLAND Hy**	**31.57**	**161**	T	T	11 00 13.4	
	baz=347,slow=76,SNR=10						
H11S2	**WAKE ISLAND Hy**	**31.58**	**161**	T	T	11 00 13.4	
	baz=347,slow=76,SNR=6.6						
YKA	**Yellowknife Ar**	**47.66**	**39**	P	**P**	**10 28 25.1**	**0.0**
	comp=Z,0.1nm,0.6s,baz=279,slow=8.7,SNR=2.9						
WRA	**Warramunga Arr**	**71.50**	**202**	P	**P**	**10 31 09.0**	**-0.9**
	comp=Z,0.4nm,0.5s,baz=15,slow=6.6,SNR=4.4						
WRA	**Warramunga Arr**	**71.50**	**202**	P	**P**	**10 31 09.0**	**-0.9**
ASAR	**Alice Springs**	**75.18**	**201**	P	**P**	**10 31 29.8**	**-1.8**
	comp=Z,0.3nm,0.5s,baz=14,slow=5.3,SNR=8.2						

*IDC **30** 10:21:41.6±0.7,36°.77N×141°.30E,h0km,mb3.7/13, mb1 3.9/16,mb1mx3.7/46,mbtmp3.7/16,ML3.1/3,MS3.9/1, Ms1 3.9/1,ms1mx2.8/69,Error ellipse: s-maj=19.8km s-min=15.0km az=118.0*
*ISCJB **30** 10:21:42.9±0.9,36°.78N±0°.03×141°.36E±0°.05,h21km±6km, mb3.7/14,MS3.9/1,Error ellipse: s-maj=7.3km s-min=4.6km az=28.8*

*JMA **30** 10:21:44.0±0.1,36°.77N×141°.25E,h37km±1km,M3.6*
JMA Felt I J1.
*NEIC **30** 10:21:44.7±3.4,36°.82N×141°.25E,h20km±21km,mb4.8/1, Error ellipse: s-maj=12.1km s-min=7.8km az=119.0*

ISC 30 10:21:43.5±1.6,36.79N±0°.04×141°.28E±0°.06,h13km±9km, n41,σ0°86/43,mb3.7/14,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.50**	**309**	P	**Pb**	**10 21 54.2**	**+0.1**
ONAJ				S	**Sb**	**10 22 01.4**	**0.0**
JHO	**Hitachi**	**0.60**	**253**	P	**Pg**	**10 21 55.2**	**0.0**
JHO				S	**Sg**	**10 22 03.5**	**+0.3**
JFK	**Kawauchi**	**0.66**	**330**	P	**Pg**	**10 21 56.7**	**+0.4**
JFK				S	**Sb**	**10 22 05.8**	**-0.3**
JFT	**Otama**	**1.05**	**314**	P	**Pb**	**10 22 03.2**	**-0.3**
JFT				S	**Sb**	**10 22 17.0**	**-0.2**
JMM	**Marumori**	**1.14**	**340**	P	**Pb**	**10 22 04.1**	**-1.0**
JMM				S	**Sb**	**10 22 18.5**	**-1.4**
JFY	**Yanaizu**	**1.40**	**296**	P	**Pn**	**10 22 08.7**	**-0.1**
JFY				S	**Sn**	**10 22 27.2**	**-0.1**
JAG	**Ashikaga**	**1.52**	**257**	P	**Pn**	**10 22 09.6**	**-0.8**
JAG				S	**Sn**	**10 22 28.1**	**-1.9**
JKT	**Katashina**	**1.63**	**270**	P	**Pn**	**10 22 12.3**	**+0.2**
MJAR	**Matsushiro Arr**	**2.48**	**265**	Pn	**Pn**	**10 22 23.9**	**+0.3**
	2.6nm,0.3s,baz=88,slow=15,SNR=27						
MJAR				Sn	**Sn**	**10 22 55.3**	**+1.3**
	5.1nm,0.3s,baz=83,slow=15,SNR=6.3						
MAJO	**Matsushiro**	**2.49**	**265**	*e*Pn	**Pn**	**10 22 24.3**	**+0.5**
MAT	**Matsushiro**	**2.49**	**265**	P	**Pn**	**10 22 24.0**	**+0.3**
MAT				S	**Sn**	**10 22 55.2**	**+1.2**
JHJ2	**Mitsune**	**3.86**	**199**	Pn	**Pn**	**10 22 43.5**	**+0.9**
JHJ	**Hachijo jima 2**	**3.87**	**199**	Pn	**Pn**	**10 22 43.1**	**+0.5**
	4.9nm,0.3s,baz=75,slow=20,SNR=3.4						
JHJ				Sn	**Sn**	**10 23 27.2**	**-0.7**
	4.4nm,0.3s,baz=78,slow=19,SNR=2.9						
ERM	**Erimo**	**5.42**	**15**	*e*Pn	**Pn**	**10 23 03.0**	**-0.9**
ERM				*e*Sn	**Sn**	**10 24 07.1**	**+1.0**
ASAJ	**Asahikawa**	**7.39**	**7**	Pn	**Pn**	**10 23 31.4**	**+0.4**
	0.4nm,0.3s,baz=173,slow=17,SNR=2.4						
ASAJ				Sn	**Sn**	**10 24 55.6**	**+0.9**
	0.4nm,0.3s,baz=196,slow=18,SNR=2.9						
USRK	**Ussuriysk Ar.**	**10.23**	**319**	Pn	Pn	10 24 19.6	+10
	0.3nm,0.3s,baz=120,slow=13,SNR=7.7						
KSRS	**Korea Array**	**10.69**	**278**	Pn	Pn	10 24 26.1	+10
	0.1nm,0.3s,baz=92,slow=14,SNR=3.9						
KSAR	**Wonju Array Be**	**10.72**	**277**	Pn	Pn	10 24 26.1	+9.4
SEY	**Seymchan**	**27.05**	**11**	P	**P**	**10 27 25.4**	**+0.1**
	1.1nm,0.6s,baz=163,slow=19,SNR=3.1						
SONM	**Songino Array**	**27.84**	**304**	P	**P**	**10 27 33.8**	**+1.1**
	0.4nm,0.4s,baz=97,slow=11,SNR=2.8						
H11N2	**WAKE ISLAND Hy**	**28.11**	**120**	T	T	10 57 00.2	
	baz=313,slow=75,SNR=86						
H11N1	**WAKE ISLAND Hy**	**28.12**	**120**	T	T	10 56 59.5	
	baz=313,slow=75,SNR=91						
H11N3	**WAKE ISLAND Hy**	**28.13**	**120**	T	T	10 57 00.0	
	baz=313,slow=75,SNR=63						
H11S1	**WAKE ISLAND Hy**	**28.82**	**122**	T	T	10 57 53.5	
	baz=318						
H11S3	**WAKE ISLAND Hy**	**28.82**	**122**	T	T	10 57 51.8	
	baz=318						
H11S2	**WAKE ISLAND Hy**	**28.83**	**122**	T	T	10 57 55.0	
	baz=318						
ZALV	**Zalesovo Beam**	**42.00**	**313**	P	**P**	**10 29 34.3**	**0.0**
	1.1nm,0.4s,baz=93,slow=7.2,SNR=3.0						
MKAR	**Makanchi Array**	**44.16**	**302**	P	**P**	**10 29 51.6**	**-0.2**
	0.4nm,0.7s,baz=94,slow=6.1,SNR=4.2						
KURK	**Kurchatov**	**46.00**	**308**	*e*P	**P**	**10 30 03.6**	**-2.8**
	6.9nm,0.6s						
ILAR	**Eielson Array**	**49.76**	**32**	P	**P**	**10 30 35.0**	**-0.3**
	0.8nm,0.8s,baz=272,slow=6.7,SNR=10.0						
AAK	**Ala-Archa**	**50.51**	**299**	LR	LR	10 51 15.9	
	comp=Z,118nm,19.4s,baz=110,slow=35						
WRA	**Warramunga Arr**	**56.81**	**188**	P	**P**	**10 31 26.9**	**-0.7**
	0.6nm,0.6s,baz=4.9,slow=7.3,SNR=5.7						
ASAR	**Alice Springs**	**60.53**	**188**	P	**P**	**10 31 53.4**	**-0.2**
	0.7nm,0.8s,baz=16,slow=3.7,SNR=6.1						
YKA	**Yellowknife Ar**	**64.07**	**30**	P	**P**	**10 32 16.4**	**-0.3**
	0.1nm,0.6s,baz=297,slow=5.5,SNR=4.1						
FINES	**FINESS Array B**	**68.98**	**332**	P	**P**	**10 32 48.0**	**-0.2**
	1.2nm,0.7s,baz=29,slow=13,SNR=4.3						
NOA	**NORSAR Array B**	**74.37**	**337**	P	**P**	**10 33 20.8**	**+0.1**
	0.4nm,0.7s,baz=39,slow=5.7,SNR=3.3						
NVAR	**Mina Array Bea**	**75.22**	**53**	P	**P**	**10 33 27.6**	**+1.4**
	0.5nm,0.6s,baz=293,slow=6.1,SNR=5.0						
PDAR	**Pinedale Array**	**77.91**	**45**	P	**P**	**10 33 42.2**	**+0.8**
	0.4nm,0.8s,baz=298,slow=3.2,SNR=3.6						
TXAR	**Lajitas Array**	**90.35**	**52**	P	**P**	**10 34 45.3**	**+0.5**
	0.3nm,0.8s,baz=306,slow=4.2,SNR=3.4

ASAJ eS S 10 32 29.8 +1.1
JMP Maruseppu 1.71 178 ⇑P Pn 10 31 52.0 0.0
JTKR Abashiri--Toko 1.80 165 ⇑P Pn 10 31 52.9 +0.4
JTKR eS S 10 32 30.1 -0.2
JYG Yagishiri 1.83 226 P Pn 10 31 53.1 +0.4
JKK2 Kamakawa 2 1.88 192 ⇑P Pn 10 31 53.7 +0.6
JKK2 eS S 10 32 31.6 +0.3
JRA Rausu 2.21 143 P Pn 10 31 56.0 +0.4
JRA eS S 10 32 35.9 +0.1
JHR Hokuryu 2.26 210 P Pn 10 31 56.5 +0.5
JAR Ashorobuto 2.44 171 ⇑P Pn 10 31 57.9 +0.4
JAR eS S 10 32 38.8 -0.6
YUK Yuzh-Kuril'sk 2.49 131 eP Pn 10 31 58.1 +0.2
YUK AMB AMB 10 32 01.1
comp=N,430nm,4.0s
YUK eS S 10 32 38.5 -1.5
YUK A A 10 32 40.0
comp=N,1μm,3.0s
YUK A A 10 32 40.0
comp=N,498nm,3.0s
YUK A A 10 32 44.7
comp=N,435nm,1.0s
JFR Furan 2.59 191 ⇑P Pn 10 31 59.1 +0.2
JFR eS S 10 32 41.6 -0.2
JAK Akkeshi 2.90 159 P Pn 10 32 00.6 -1.0
JAK eS S 10 32 43.8 -2.9
NEM2 Nemuro 2 2.94 142 P Pn 10 31 59.9 -2.0
NEM2 eS S 10 32 43.3 -4.0
JSK Shakotan 3.09 221 P Pn 10 32 03.9 +0.5
JCH Churui 3.10 179 ⇑P Pn 10 32 02.3 -1.2
JCH eS S 10 32 45.3 -4.9
SHO Shikotan 3.13 125 iP Pn 10 32 03.4 -0.4
SHO AMB AMB 10 32 03.9
comp=N,50nm,0.2s
SHO AMB AMB 10 32 06.7
comp=N,1μm,4.0s
SHO iS S 10 32 48.0 -2.7
SHO A A 10 32 49.1
comp=N,440nm,0.4s
JEW Eniwo 3.16 205 ⇑P Pn 10 32 04.9 +0.9
KUR Kuril'sk 3.27 97 eP Pn 10 32 05.4 +0.4
KUR AMB AMB 10 32 06.1
comp=N,24nm,0.3s
KUR AMB AMB 10 32 06.3
comp=N,250nm,3.0s
KUR eS S 10 32 53.0 0.0
KUR A A 10 32 57.0
comp=N,480nm,3.0s
KUR A A 10 32 57.0
comp=N,550nm,3.0s
KUR A A 10 33 00.8
comp=N,20nm,0.3s
KUR A A 10 33 00.8
comp=N,10.0nm,0.3s
KUR Kuril'sk 3.27 97 PN Pn 10 32 05.1 +0.1
KUR S S 10 32 53.6 +0.6
KUR pmax pmax
comp=Z,24nm,0.6s
KUR pmax pmax
comp=N,17nm,0.5s
KUR smax smax
comp=N,20nm,1.1s
KUR smax smax
comp=E,10.0nm,0.7s
JNBK Urakawa-nobuka 3.45 186 P Pn 10 32 06.0 -1.0
JNBK eS S 10 32 53.6 -2.9
UGL Uglegorsk 3.46 347 eP Pn 10 32 07.3 +0.4
UGL AMB AMB 10 32 07.8
comp=E,80nm,0.6s
ERM Erimo 3.70 181 cePN Pn 10 32 09.4 -0.1
ERM Erimo 3.70 181 ePn Pn 10 32 09.6 +0.1
ERM eS S 10 32 59.0 -2.0
JKB Kayabe 4.15 204 ⇑P Pn 10 32 13.5 -0.8
JKB eS S 10 33 05.0 -4.7
JOSM Okushiri--Mats 4.55 218 P Pn 10 32 18.5 -0.1
JOT Ohata 4.62 201 P Pn 10 32 18.3 -1.1
JOT eS S 10 33 14.2 -4.9
TEY Ternei 4.75 264 eP Pn 10 32 22.0 +1.3
TEY AMB AMB 10 32 23.2
comp=E,19nm,0.5s
TYV Tymovskoe 5.17 356 eP Pn 10 32 26.0 +0.6
TYV AMB AMB 10 32 27.0
comp=E,12nm,0.4s
HABR Khabarovsk 6.25 299 ePN Pn 10 32 36.2 -1.8
HABR eS S 10 33 50.9 -2.1
HABR pmax pmax
comp=N,12nm,1.0s
HABR pmax pmax
comp=E,45nm,1.0s
HABR pmax pmax
comp=Z,83nm,1.0s
HABR MLR MLR
comp=Z,192nm,15.0s
GRNR Gornyy 6.82 320 eP Pn 10 32 40.0 -4.7
GRNR AMB AMB 10 32 44.7
comp=Z,95nm,0.9s
GRNR eS S 10 34 04.8 -0.4
USRK Ussuriysk Ar. 8.14 263 P Pn 10 33 01.5 +0.8
comp=Z,3.8nm,0.3s,baz=69,slow=12,SNR=50
USRK S S 10 34 34.0 -0.6
baz=73,slow=21,SNR=5.4
KLR Kul'dur 8.56 298 P Pn 10 33 06.3 +0.6
comp=Z,1.3nm,0.3s,baz=112,slow=11,SNR=31
MSHR Mys Shultsa 9.26 255 ePN Pn 10 33 14.1 -0.1
MDJ Mudanjiang 9.73 268 P Pn 10 33 20.8 +0.9
MDJ pmax pmax
comp=Z,25nm,1.2s
MDJ pmax pmax
comp=Z,230nm,9.2s
MDJ Mudanjiang 9.73 268 ePn Pn 10 33 20.9 +1.0
comp=Z,32nm,1.0s
MDJ eS S 10 35 15.6 +5.7
MJB9 Matsu-Tunnel 9.92 204 ePn Pn 10 33 22.7 +0.3
MAJO Matsushiro 9.92 204 d iPN Pn 10 33 22.9 +0.5
MAJO pmax pmax
comp=Z,59nm,0.6s
MAJO Matsushiro 9.92 204 ePn Pn 10 33 22.5 +0.1
MAT Matsushiro 9.92 204 P Pn 10 33 22.7 +0.3
MAT eS S 10 35 21.7 +7.1
MJAR Matsushiro Arr 9.92 204 P Pn 10 33 23.2 +0.8
comp=Z,3.2nm,0.3s,baz=7.9,slow=12,SNR=50
EKMR Ekimchan 9.97 321 eP Pn 10 33 22.8 +0.1
EKMR AMB AMB 10 33 23.1
comp=Z,15nm,0.5s
EKMR iS S 10 35 15.5 +0.4
INU Inuyama 11.39 207 ePn Pn 10 33 39.5 -0.6
PETK Petropavlovsk- 11.95 47 P P 10 33 47.3 0.0
comp=Z,0.4nm,0.3s,baz=221,slow=9.2,SNR=6.2
JHJ Hachijo jima 2 12.86 193 P Pn 10 33 58.9 +1.1
comp=Z,12nm,0.3s,baz=47,slow=19,SNR=7.8
BMKR Bomnak 12.88 320 eP P 10 33 57.4 -0.2
BMKR AMB AMB 10 33 59.0
comp=Z,10.0nm,0.6s
ZEA Zeya 13.09 314 eP Pn 10 34 00.5 +0.3
ZEA AMB AMB 10 34 01.5
comp=Z,30nm,0.7s
KROS Kirovskiy 13.60 316 eP P 10 34 05.5 -0.1
KROS AMB AMB 10 34 07.3
comp=Z,6.0nm,0.6s
KSRS Korea Array 14.13 240 P Pn 10 34 12.9 +0.3
comp=Z,0.3nm,0.3s,baz=53,slow=10,SNR=8.6
KSRS Korea Array 14.13 240 P Pn 10 34 13.0 +0.3
MA2 Magadan 14.60 15 P Pn 10 34 17.2 -0.7
comp=Z,1.6nm,0.3s,baz=220,slow=9.7,SNR=15
SEY Seymchan 18.02 14 P P 10 34 53.5 0.0
comp=Z,2.6nm,0.3s,baz=200,slow=8.1,SNR=62
YAK Yakutsk 18.14 339 P P 10 34 53.9 -0.9
comp=Z,0.0nm,0.3s,baz=136,slow=3.0,SNR=5.9
BOD Bodaibo 21.59 315 eP P 10 35 26.9 -2.7
BOD pmax pmax
comp=Z,3.0nm,1.3s
HHC Hu-ho-hao-te 23.50 269 eP P 10 35 47.5 +0.3
HHC pmax pmax
comp=Z,30nm,0.7s
HHC pmax pmax
comp=Z,160nm,8.4s
ULN Ulaanbaatar 24.75 288 deP P 10 35 58.8 +0.3
ULN pmax pmax
comp=Z,4.0nm,0.6s
ULN Ulaanbaatar 24.75 288 eP P 10 35 59.0 +0.5
comp=Z,5.2nm,0.6s
SONA1 Songino Array 25.19 288 eP P 10 36 02.5 +0.1
SONM Songino Array 25.19 288 P P 10 36 02.3 -0.1
comp=Z,2.5nm,0.5s,baz=81,slow=9.6,SNR=12
BILL Bilibino 25.35 20 ⇑eP P 10 36 04.9 +1.5
BILL pmax pmax
comp=Z,11nm,3.0s
GTA Gaotai 32.31 274 eP P 10 37 07.0 +1.9
GTA pP pP 10 37 11.5 -55
GTA sP sP 10 37 14.0 -90
GTA pmax pmax
comp=Z,8.0nm,1.0s
CD2 Chengdu 33.97 258 P P 10 37 19.0 -0.4
CD2 pmax pmax
comp=Z,1.0nm,0.5s
WMQ Urumqi 38.83 288 eP P 10 38 01.0 +1.0
WMQ pmax pmax
comp=Z,3.0nm,0.6s
WMQ LR LR
comp=N,26nm,21.0s
WMQ LR LR
comp=E,30nm,21.0s
WMQ LR LR
comp=Z,36nm,22.6s
KDAK Kodiak Island 39.99 49 i P P 10 38 09.4 +0.2
COLD Coldfoot 40.02 34 eP P 10 38 08.4 -0.9
comp=Z,3.8nm,1.1s
COLA College 41.15 37 ⇑eP P 10 38 19.0 +0.5
COLA pmax pmax
comp=Z,9.0nm,1.5s
MK31 Makanchi Array 41.24 294 eP P 10 38 19.4 -0.2
MK31 Makanchi Array 41.24 294 eP P 10 38 19.4 -0.2
MKAR Makanchi Array 41.24 294 P P 10 38 19.8 +0.2
comp=Z,1.0nm,0.5s,baz=80,slow=9.0,SNR=14
MKAR Makanchi Array 41.24 294 eP P 10 38 19.2 -0.3
MK01 Makanchi Array 41.24 294 eP P 10 38 19.4 -0.2
MAKZ Makanchi 41.43 294 eP P 10 38 20.8 -0.3
MAKZ pmax pmax
comp=Z,2.0nm,0.4s
MAKZ Makanchi 41.43 294 eP P 10 38 20.8 -0.3
comp=Z,1.6nm,0.4s
ILAR Eielson Array 41.57 37 P P 10 38 21.4 -0.6
comp=Z,1.4nm,0.5s,baz=255,slow=6.0,SNR=25
ILAR PcP PcP 10 40 11.3 -0.9
comp=Z,0.3nm,0.5s,baz=272,slow=3.2,SNR=4.1
ILB Eielson Array 41.57 37 eP P 10 38 21.6 -0.4
KURK Kurchatov 42.14 301 P P 10 38 26.9 +0.2
KURK 10 40 15.4
KURK pmax pmax
comp=Z,2.0nm,0.5s
KURBB Kurchatov Arra 42.23 301 P P 10 38 26.9 -0.5
comp=Z,1.5nm,0.4s,baz=74,slow=8.8,SNR=11
KURBB PcP PcP 10 40 15.4 +0.8
comp=Z,0.3nm,0.4s,baz=82,slow=3.2,SNR=3.0
EGAK Eagle 43.99 37 eP P 10 38 40.4 -0.7
comp=Z,7.6nm,1.3s
BVAR Borovoye Array 46.12 307 P P 10 38 57.1 -0.9
comp=Z,0.6nm,0.5s,baz=71,slow=9.6,SNR=4.1
INK Inuvik 46.12 31 eP P 10 38 56.8 -0.9
INK pmax pmax
comp=Z,3.0nm,0.4s
INK Inuvik 46.12 31 eP P 10 38 56.8 -0.9
comp=Z,3.3nm,0.4s
TKM2 Tokmak 2 47.18 292 eP P 10 39 07.3 +0.7
TKM2 pmax pmax
comp=Z,4.0nm,0.8s
TKM2 Tokmak 2 47.18 292 eP P 10 39 07.3 +0.7
comp=Z,3.7nm,0.8s
AAK Ala-Archa 48.03 292 P P 10 39 13.0 0.0
comp=Z,0.9nm,0.3s,baz=8.9,slow=7.1,SNR=3.5
AAK Ala-Archa 48.03 292 ⇑eP P 10 39 13.4 +0.4
AAK pmax pmax
comp=Z,6.0nm,1.3s
KKAR Karatay Array 50.37 295 eP P 10 39 30.8 +0.5
KKAR Karatay Array 50.37 295 eP P 10 39 30.8 +0.5
SPITS Spitsbergen Ar 52.31 348 P P 10 39 42.3 -1.8
comp=Z,1.4nm,0.6s,baz=84,slow=9.3,SNR=15
SPITS PcP PcP 10 40 50.3 0.0
comp=Z,7.1nm,1.0s,baz=83,slow=2.1,SNR=4.5
ABKAR Akbulak array 53.67 306 eP P 10 39 54.4 0.0
RES Resolute Bay 53.87 16 eP P 10 39 54.5 -0.8
RES pmax pmax
comp=Z,7.0nm,0.6s
RES Resolute Bay 53.87 16 eP P 10 39 54.5 -0.8
comp=Z,7.3nm,0.6s
AKTO Aktyubinsk 54.15 308 P P 10 39 56.8 -1.0
comp=Z,0.6nm,0.4s,baz=14,slow=19,SNR=2.9
YKW3 Yellowknife Ar 55.65 33 eP P 10 40 07.8 -0.4
comp=Z,3.8nm,0.6s
YKA Yellowknife Ar 55.69 33 P P 10 40 08.3 -0.2
comp=Z,3.9nm,0.5s,baz=306,slow=7.1,SNR=164
YKA PcP PcP 10 41 04.2 +0.7
comp=Z,0.3nm,0.5s,baz=308,slow=3.6,SNR=5.9
YKB5 Yellowknife Ar 55.69 33 eP P 10 40 07.6 -0.9
ARCES ARCESS Array B 56.42 338 P P 10 40 12.9 -0.6
comp=Z,1.1nm,0.7s,baz=32,slow=7.1,SNR=4.1
FINES FINESS Array B 61.84 331 P P 10 40 49.7 -0.8
comp=Z,2.7nm,0.4s,baz=45,slow=7.9,SNR=39
SUMG Summit 62.01 1 eP P 10 40 51.6 -0.3
SUMG pmax pmax
comp=Z,5.0nm,0.7s
SUMG Summit 62.01 1 eP P 10 40 51.6 -0.3
comp=Z,5.0nm,0.7s
NEW Newport 63.08 48 eP P 10 40 59.3 +0.4
NEW pmax pmax
comp=Z,3.0nm,0.8s
NEW Newport 63.08 48 eP P 10 40 59.3 +0.4
comp=Z,2.7nm,0.8s
SWMT Swartz Lake 65.17 47 eP P 10 41 13.4 +0.8
MSO Missoula 65.65 47 eP P 10 41 15.5 -0.1
comp=Z,3.8nm,1.1s
FCC Fort Churchill 65.67 29 eP P 10 41 15.0 -0.3
FCC pmax pmax
comp=Z,4.0nm,0.6s
FCC Fort Churchill 65.67 29 eP P 10 41 15.0 -0.3
comp=Z,4.4nm,0.6s
WRA Warramunga Arr 65.84 189 P P 10 41 17.5 +0.6
comp=Z,0.2nm,0.7s,baz=7.0,slow=6.7,SNR=3.6
WRA PcP PcP 10 41 46.3 +1.3
comp=Z,0.2nm,0.6s,baz=10,slow=5.2,SNR=3.8
NB2 NORSAR Subarra 66.74 337 P P 10 41 21.6 -0.5
comp=Z,0.7nm,0.4s,baz=32,slow=6.9
NOA NORSAR Array B 66.74 337 P P 10 41 20.0 -2.1
comp=Z,0.6nm,0.6s,baz=36,slow=6.2,SNR=5.6
HFS Hagfors 66.78 335 P P 10 41 21.4 -0.9
comp=Z,1.6nm,0.4s,baz=54,slow=7.5,SNR=15
DLMT Dillon 67.33 48 eP P 10 41 27.0 +0.8
comp=Z,4.9nm,0.6s
BOZ Bozeman (W) 67.64 47 eP P 10 41 29.0 +0.9
BOZ pmax pmax
comp=Z,3.0nm,0.6s
BOZ Bozeman (W) 67.64 47 eP P 10 41 29.0 +0.9
comp=Z,3.1nm,0.6s
NV01 Mina Array Sit 68.84 56 eP P 10 41 36.3 +0.6
NVAR Mina Array Bea 68.84 56 P P 10 41 37.1 +1.4
comp=Z,2.2nm,0.7s,baz=296,slow=5.7,SNR=18
H17A Grant Village 69.04 48 eP P 10 41 37.0 +0.1
comp=Z,2.6nm,0.8s
MOOW Moose Ponds 69.40 48 eP P 10 41 39.7 +0.7
comp=Z,2.5nm,1.1s
ASAR Alice Springs 69.57 189 P P 10 41 42.1 +2.1
comp=Z,0.6nm,0.6s,baz=0.7,slow=5.4,SNR=15
ASAR pP pP 10 42 53.0 +1.1
comp=Z,0.3nm,0.8s,baz=20,slow=4.0,SNR=4.3
R11A Troy Canyon, C 70.47 55 eP P 10 41 46.8 +1.2
comp=Z,1.9nm,0.6s
BW06 Boulder Array 70.71 48 eP P 10 41 47.3 +0.3
comp=Z,2.6nm,0.8s
PD31 Pinedale Array 70.71 48 eP P 10 41 47.4 +0.4
PDAR Pinedale Array 70.71 48 P P 10 41 47.8 +0.7
comp=Z,3.2nm,0.7s,baz=277,slow=1.0,SNR=27
ULM Lac du Bonnet 71.56 36 P P 10 41 50.9 -0.7
comp=Z,1.9nm,0.5s,baz=272,slow=7.3,SNR=3.5
CLL Collm 74.27 330 i (P) P 10 42 07.6 +0.2
comp=Z,4.0nm,0.9s
EKA Eskdalemuir Ar 75.41 341 P P 10 42 13.6 -0.1
comp=Z,0.3nm,0.3s,baz=27,slow=5.6,SNR=3.9
EKA Eskdalemuir Ar 75.41 341 P P 10 42 13.6 -0.1
EKA pmax pmax
comp=Z,1.0nm,0.5s
SCHQ Schefferville 76.63 17 P P 10 42 20.4 -0.3
comp=Z,2.1nm,0.5s,baz=355,slow=7.2,SNR=9.6
ANMO Albuquerque 78.03 52 ⇓eP P 10 42 30.9 +1.9
ANMO pmax pmax
comp=Z,11nm,3.9s
DAVOX Davos/Dischmat 79.19 329 P P 10 42 35.8 +0.7
comp=Z,2.0nm,0.8s,baz=163,slow=22,SNR=2.9
TUL1 Leonard 82.86 45 eP P 10 42 54.8 +0.5
comp=Z,5.7nm,0.8s
TX31 Lajitas Ar. Si 83.79 54 eP P 10 42 59.6 +0.5
TXAR Lajitas Array 83.79 54 P P 10 43 00.2 +1.0
comp=Z,1.1nm,0.4s,baz=293,slow=4.3,SNR=23
ESDC Sonseca Array 90.06 335 P P 10 43 28.1 -0.9
comp=Z,0.1nm,0.2s,baz=352,slow=6.2,SNR=3.0

*ISCJB **30** 10:37:38.7±0.7,39°.53N±0°.04×36°.81E±0°.05,h0km, Error ellipse: s-maj=6.3km s-min=5.2km az=143.4*
*CSEM **30** 10:37:38.6±0.5,39°.55N×36°.82E,h1km,MD2.9, Error ellipse: s-maj=12.4km s-min=11.3km az=47.0, Suspected Mining explosion.*
*ISK **30** 10:37:38.1,39°.58N×36°.71E,h9km,MD2.9*
*DDA **30** 10:37:40.0,39°.55N×36°.91E,h7km,Md2.7, Suspected Mining explosion.*

ISC 30 10:37:38.5±0.9, 39°.55N±0°.04×36°.82E±0°.03, h0km, n18, σ1§09/25, Turkey

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
SVSK	**Karacayir**	**0.39**	**21**	*e*PG		**Pg**		**10 37 46.5**	**+0.5**
SVSK				*e*SG		**Sg**		**10 37 52.6**	**+1.5**
SVSK	**Karacayir**	**0.39**	**21**	*e*Pg		**Pg**		**10 37 46.5**	**+0.5**
SVSK				*e*Sg		**Sg**		**10 37 52.6**	**+1.5**
CUSAR	**Sarkisla-SIVAS**	**0.46**	**254**	*i* P		**Pb**		**10 37 49.9**	**+0.3**
CUSAR				*i* S		**Sb**		**10 37 59.0**	**+2.0**
CUSAR	**Sarkisla-SIVAS**	**0.46**	**254**	P		**Pb**		**10 37 49.9**	**+0.3**
CUKAN	**kangal_SIVAS**	**0.55**	**115**	*i* P		**Pg**		**10 37 48.6**	**-0.5**
CUKAN				*i* S		**Sb**		**10 37 58.0**	**-1.7**
CUKAN	**kangal_SIVAS**	**0.55**	**115**	P		**Pg**		**10 37 48.6**	**-0.5**
TOKT	**Tokat**	**0.80**	**345**	*e*PG		**Pg**		**10 37 53.0**	**-0.8**
TOKT	**Tokat**	**0.80**	**345**	*e*Pg		**Pg**		**10 37 53.0**	**-0.8**
CUZAR	**Zara_SIVAS**	**0.81**	**65**	*i* P		**Pb**		**10 37 54.9**	**-0.6**
CUZAR				*i* S		**Sb**		**10 38 06.2**	**-0.8**
CUZAR	**Zara_SIVAS**	**0.81**	**65**	P		**Pb**		**10 37 54.9**	**-0.6**
DARE	**Darende-Malaty**	**1.10**	**152**	*e*PN		**Pn**		**10 38 01.1**	**-0.2**
DARE	**Darende-Malaty**	**1.10**	**152**	*e*Pn		**Pn**		**10 38 01.1**	**-0.2**
ERBA	**Erbaa**	**1.13**	**358**	*i* P		**Pb**		**10 38 00.9**	**0.0**
ERBA				*i* S		**Sn**		**10 38 18.6**	**+0.7**
ERBA	**Erbaa**	**1.13**	**358**	P		**Pb**		**10 38 00.9**	**0.0**
ERBA				S		**Sn**		**10 38 18.6**	**+0.7**
CORM	**Corum**	**1.80**	**291**	*e*PN		**Pn**		**10 38 08.7**	**-2.1**
CORM	**Corum**	**1.80**	**291**	*e*Pn		**Pn**		**10 38 08.7**	**-2.1**
PTK	**Pertek**	**2.10**	**107**	*e*PN		**Pn**		**10 38 15.8**	**+0.7**
PTK	**Pertek**	**2.10**	**107**	*e*Pn		**Pn**		**10 38 15.8**	**+0.7**

*NIED **30** 10:46:00,38°.30N×142°.20E,h47km,Mw3.9 Best double couple: M0 7.39000×10^14 NP1:φ=43.00000°,δ=56.00000°,λ=143.00000°. NP2:φ=155.00000°,δ=60.00000°,λ=40.00000°.*
*IDC **30** 10:46:19.3±0.8,38°.30N×142°.38E,h0km,mb3.5/8, mb1 3.8/12,mb1mx3.6/53,mbtmp3.6/12,ML3.3/4,MS2.8/1, Ms1 2.8/1,ms1mx2.4/67,Error ellipse: s-maj=23.4km s-min=16.7km az=111.0*
*JMA **30** 10:46:23.5±0.2,38°.31N×142°.12E,h37km±2km,M4.0*
JMA Felt I J1.

ISC 30 10:46:19.1±1.7, 38°.20N±0°.04×142°.16E±0°.06, h9km±11km, n28, σ1§46/26, mb3.6/8, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
JIO	**Ouri**	**0.69**	**292**	P		**Pn**		**10 46 35.9**	**+0.8**
JIO				S		**Sn**		**10 46 44.1**	**-1.8**
OFUJ	**Ofunato**	**0.96**	**337**	P		**Pn**		**10 46 38.9**	**0.0**
OFUJ				S		**Sb**		**10 46 50.1**	**-0.8**
JMK	**Ichinoseki**	**1.05**	**316**	P		**Pn**		**10 46 40.8**	**+0.7**
JMM	**Marumori**	**1.13**	**253**	P		**Pn**		**10 46 42.3**	**+1.2**
JMM				eS		**Sn**		**10 46 56.6**	**-0.2**
JOU	**Okura**	**1.19**	**279**	P		**Pg**		**10 46 43.9**	**+2.0**
JOU				S		**Sn**		**10 46 58.6**	**+0.3**
JFK	**Kawauchi**	**1.31**	**231**	P		**Pg**		**10 46 45.7**	**+1.4**
JFK				S		**Sg**		**10 47 01.2**	**-0.1**
JOM	**Ohasama**	**1.44**	**332**	P		**Pg**		**10 46 46.4**	**-0.4**
MJAR	**Matsushiro Arr**	**3.55**	**244**	Pn		**Pb**		**10 47 19.9**	**-2.3**
	1.1nm,0.3s,baz=85,slow=17,SNR=13								
MJAR				LR		LR		10 48 47.3	
	comp=Z,132nm,19.5s,baz=225,slow=40								
MAT	**Matsushiro**	**3.56**	**244**	P		**Pb**		**10 47 19.8**	**-2.4**
MAT				eS		**Sb**		**10 48 03.6**	**-1.9**
JHJ	**Hachijo jima 2**	**5.42**	**202**	Pn		Pn		10 47 42.6	+2.4
	15nm,0.3s,baz=274,slow=23,SNR=12								
JHJ						Sn		**10 48 40.8**	**-2.0**
	5.2nm,0.3s,baz=90,slow=20,SNR=3.9								
ASAJ	**Asahikawa**	**5.92**	**3**	Pn		**Pn**		**10 47 48.1**	**+1.1**
	1.0nm,0.3s,baz=226,slow=17,SNR=12								
ASAJ						Sn		**10 48 53.2**	**-1.8**
	0.7nm,0.3s,baz=225,slow=20,SNR=2.7								
USRK	**Ussuriysk Ar.**	**9.73**	**311**	Pn		Pn		10 48 42.4	+3.2
	0.4nm,0.3s,baz=116,slow=13,SNR=3.7								
JCJ	**Chichijima**	**11.07**	**180**	Pn		**Pn**		**10 48 56.5**	**-1.2**
	baz=15,slow=20								
H11N2	**WAKE ISLAND Hy**	**28.27**	**124**	T		T		11 22 01.8	
	baz=319,SNR=278								
H11N1	**WAKE ISLAND Hy**	**28.27**	**124**	T		T		11 21 59.1	
	baz=319,slow=74,SNR=240								
H11N3	**WAKE ISLAND Hy**	**28.28**	**124**	T		T		11 22 01.9	
	baz=319,slow=74,SNR=279								
H11S1	**WAKE ISLAND Hy**	**29.02**	**126**	T		T		11 22 58.6	
	baz=318,slow=76,SNR=75								
H11S3	**WAKE ISLAND Hy**	**29.03**	**126**	T		T		11 23 00.3	
	baz=318,slow=76,SNR=43								
H11S2	**WAKE ISLAND Hy**	**29.04**	**126**	T		T		11 22 59.8	
	baz=318,slow=76,SNR=32								
MKAR	**Makanchi Array**	**44.01**	**301**	P		**P**		**10 54 29.0**	**+2.0**
	0.4nm,0.5s,baz=82,slow=8.8,SNR=5.0								
KURBB	**Kurchatov Arra**	**45.76**	**307**	P		**P**		**10 54 41.8**	**+1.1**
	1.1nm,0.3s,baz=81,slow=7.8,SNR=7.5								
ILAR	**Eielson Array**	**48.20**	**33**	P		**P**		**10 54 58.7**	**-0.9**
	0.5nm,0.7s,baz=262,slow=6.6,SNR=7.1								
WRA	**Warramunga Arr**	**58.30**	**189**	P		P		10 56 16.3	+2.0
	0.2nm,0.3s,baz=7.6,slow=6.9,SNR=8.1								
ASAR	**Alice Springs**	**62.02**	**189**	P		P		10 56 42.3	+2.4
	0.2nm,0.6s,baz=1.7,slow=5.4,SNR=4.1								
YKA	**Yellowknife Ar**	**62.51**	**31**	P		**P**		**10 56 43.4**	**+0.8**
	0.1nm,0.7s,baz=291,slow=7.1,SNR=5.3								
PDAR	**Pinedale Array**	**76.43**	**46**	P		**P**		**10 58 09.6**	**+0.2**
	0.4nm,0.5s,baz=70,slow=1.7,SNR=5.4								
TXAR	**Lajitas Array**	**88.95**	**53**	P		**P**		**10 59 15.8**	**+1.3**
	0.2nm,0.6s,baz=308,slow=4.6,SNR=4.3								
LPAZ	**La Paz**	**145.59**	**59**	PKPbc		**PKPab**		**11 06 00.8**	**+1.3**
	0.7nm,0.5s,baz=339,slow=6.5,SNR=4.3								

IDC 30 10:47:04.5±3.0, 33°.35S×178°.01W, h0km, mb3.5/2, mb1 3.8/3, mb1mx3.5/39, mbtmp3.6/3, ML3.2/1, Error ellipse: s-maj=75.7km s-min=44.8km az=130.0, South of Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
URZ	**Urewera**	**6.30**	**218**	Pn		Pn		10 48 38.4	-0.3
	0.5nm,0.3s,baz=45,slow=20,SNR=3.5								
URZ						Sn	Sn	10 49 46.4	-5.0
	2.5nm,0.3s,baz=119,slow=8.6,SNR=7.9								
ASAR	**Alice Springs**	**43.02**	**270**	P		P		10 55 06.0	0.0
	0.4nm,0.6s,baz=109,slow=7.1,SNR=12								
WRA	**Warramunga Arr**	**44.28**	**275**	P		P		10 55 15.9	-0.2
	0.3nm,0.3s,baz=116,slow=7.6,SNR=12								
FINES	**FINESS Array B**	**147.89**	**338**	PKPbc		PKPbc		11 06 50.1	-0.6
	0.6nm,0.8s,baz=3.8,slow=8.4,SNR=2.5								

IDC 30 10:51:39.0±1.6, 3°.68S×150°.04E, h0km, mb3.6/6, mb1 3.8/6, mb1mx3.6/44, mbtmp3.6/6, Error ellipse: s-maj=71.9km s-min=23.2km az=122.0, New Ireland region

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**22.27**	**222**	P		P		10 56 37.6	-0.4
	0.8nm,0.8s,baz=41,slow=10.0,SNR=5.8								
ASAR	**Alice Springs**	**25.26**	**217**	P		P		10 57 06.7	-0.4
	0.3nm,0.7s,baz=46,slow=8.3,SNR=9.7								
FITZ	**Fitzroy Crossi**	**27.86**	**237**	P		P		10 57 31.4	+0.7
	3.0nm,0.7s,baz=68,slow=10.0,SNR=6.8								
MKAR	**Makanchi Array**	**77.68**	**319**	P		P		11 03 37.9	+0.1
	0.1nm,0.4s,baz=101,slow=6.6,SNR=2.6								
ILAR	**Eielson Array**	**82.17**	**23**	P		P		11 04 01.5	-0.1
	0.2nm,0.7s,baz=258,slow=4.3,SNR=3.2								
YKA	**Yellowknife Ar**	**95.72**	**28**	P		P		11 05 06.6	-0.1
	0.1nm,0.7s,baz=277,slow=5.5,SNR=4.7								

*DDA **30** 10:52:46.3,36°.28N×30°.99E,h20km, Ml3.6*

*CSEM **30** 10:52:46.5±0.1, 36˚.17N×30˚.91E, h10km, ML3.6, Error ellipse: s-maj=3.0km s-min=2.6km az=23.0*
*ISK **30** 10:52:46.3, 36˚.24N×30˚.91E, h13km, ML3.2*
*IDC **30** 10:52:48.3±4.8, 36˚.27N×30˚.92E, h36km±47km, mb3.4/3, mb1 3.4/5, mb1mx3.1/52, mbtmp3.5/5, ML3.4/2, Error ellipse: s-maj=37.5km s-min=23.6km az=110.0*
*HLW **30** 10:52:54.4, 35˚.67N×30˚.60E, h25km±13km, Md4.0, Ml3.4*

ISC 30 10:52:46.0±1.2, **36˚.24N**±0˚.03×**30˚.93E**±0˚.02, **h10**km±9km, **n131**, σ1**$36**/156, **mb3.4**/3, **Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KORT	**Korkueli**	**0.89**	**329**	*i* P	**Pn**	**10 53 06.5**	**+1.8**
KORT				*i* S	**Sn**	**10 53 21.3**	**+3.6**
KORT	**Korkueli**	**0.89**	**329**	P	**Pg**	**10 53 06.5**	**+1.8**
ELL	**Elmali**	**0.97**	**302**	*e*PG	**Pb**	**10 53 05.1**	**+0.2**
ELL				*e*SG	**Sb**	**10 53 18.9**	**+1.2**
ELL	**Elmali**	**0.97**	**302**	*e*Pg	**Pb**	**10 53 05.1**	**+0.2**
ELL				*e*Sg	**Sb**	**10 53 18.9**	**+1.2**
GAZI	**Gazipasa**	**1.12**	**90**	*i* P	**Pg**	**10 53 07.0**	**-0.7**
GAZI				*i* S	**Sg**	**10 53 20.9**	**-1.3**
GAZI	**Gazipasa**	**1.12**	**90**	P	**Pg**	**10 53 06.9**	**-0.7**
SUTC	**Sutluce-Ispart**	**1.24**	**3**	*e*PN	**Pg**	**10 53 09.9**	**0.0**
SUTC	**Sutluce-Ispart**	**1.24**	**3**	*e*Pn	**Pg**	**10 53 09.9**	**0.0**
BCK	**Bucak**	**1.25**	**348**	*e*PN	**Pg**	**10 53 10.0**	**-0.1**
BCK	**Bucak**	**1.25**	**348**	*e*Pn	**Pg**	**10 53 10.0**	**-0.1**
GLHS	**Gihisar (BURDU**	**1.47**	**309**	*e*PN	**Pn**	**10 53 12.9**	**+0.4**
GLHS	**Gihisar (BURDU**	**1.47**	**309**	*e*Pn	**Pn**	**10 53 13.0**	**+0.4**
FETY	**Fethiye**	**1.54**	**286**	*e*PN	**Pn**	**10 53 13.9**	**+0.4**
FETY	**Fethiye**	**1.54**	**286**	*e*Pn	**Pn**	**10 53 13.9**	**+0.4**
ISP	**Isparta**	**1.62**	**349**	*e*PN	**Pn**	**10 53 15.1**	**+0.5**
ISP	**Isparta**	**1.62**	**349**	*e*Pn	**Pn**	**10 53 15.1**	**+0.5**
ERMK	**Ermenek**	**1.65**	**75**	*i* P	**Pn**	**10 53 16.2**	**+1.0**
ERMK				*i* S	**Sg**	**10 53 39.4**	**+0.2**
ERMK	**Ermenek**	**1.65**	**75**	P	**Pn**	**10 53 16.2**	**+1.0**
ERMK				S	**Sg**	**10 53 39.4**	**+0.2**
AKMC	**Akamas**	**1.66**	**136**	P	**Pb**	**10 53 17.6**	**+0.9**
ALFC	**Alefka**	**1.74**	**128**	P	**Pn**	**10 53 15.7**	**-0.5**
AKDN	**Akdeniz- K¨–br**	**1.91**	**119**	*e*PN	**Pn**	**10 53 19.4**	**+0.9**
AKDN	**Akdeniz- K¨–br**	**1.91**	**119**	*e*Pn	**Pn**	**10 53 19.4**	**+0.9**
KMER	**Konya-Meram**	**1.92**	**37**	*i* P	**Pn**	**10 53 20.1**	**+1.3**
KMER				*i* S	**Sn**	**10 53 43.6**	**+0.6**
KMER	**Konya-Meram**	**1.92**	**37**	P	**Pn**	**10 53 20.1**	**+1.3**
KMER				S	**Sn**	**10 53 43.6**	**+0.6**
DALY	**Dalyan (Mu¨la**	**1.92**	**288**	*e*PN	**Pn**	**10 53 19.4**	**+0.7**
DALY	**Dalyan (Mu¨la**	**1.92**	**288**	*e*Pn	**Pn**	**10 53 19.4**	**+0.7**
TURN	**Turunc**	**1.98**	**289**	*i* P	**Pg**	**10 53 23.9**	**+0.1**
TURN				*i* S	**Sg**	**10 53 49.7**	**+0.2**
KONT	**Konya--Tatoy**	**2.06**	**33**	*e*PN	**Pn**	**10 53 21.5**	**+0.9**
KONT	**Konya--Tatoy**	**2.06**	**33**	*e*Pn	**Pn**	**10 53 21.5**	**+0.9**
DENT	**Denizli**	**2.14**	**316**	*e*PN	**Pn**	**10 53 23.0**	**+1.2**
DENT	**Denizli**	**2.14**	**316**	*e*Pn	**Pn**	**10 53 23.0**	**+1.2**
SZAC	**Souni**	**2.17**	**132**	P	**Pg**	**10 53 27.8**	**+0.1**
IKL	**Isikli**	**2.23**	**89**	*e*PN	**Pn**	**10 53 24.1**	**+1.2**
IKL	**Isikli**	**2.23**	**89**	*e*Pn	**Pn**	**10 53 24.2**	**+1.2**
LADK	**Ladik-KONYA**	**2.27**	**30**	*e*PN	**Pn**	**10 53 24.6**	**+0.9**
LADK	**Ladik-KONYA**	**2.27**	**30**	*e*Pn	**Pn**	**10 53 24.6**	**+0.9**
YER	**Yerkesik**	**2.31**	**294**	*e*PN	**Pn**	**10 53 24.8**	**+0.7**
YER	**Yerkesik**	**2.31**	**294**	*e*Pn	**Pn**	**10 53 24.8**	**+0.7**
LFK	**Lefkose**	**2.33**	**113**	*e*PN	**Pn**	**10 53 25.3**	**+1.0**
LFK	**Lefkose**	**2.33**	**113**	*e*Pn	**Pn**	**10 53 25.3**	**+1.0**
CSS	**Mathiatis**	**2.34**	**122**	P	**Pn**	**10 53 25.2**	**+0.8**
KHL	**Karahalli**	**2.37**	**332**	*e*PN	**Pn**	**10 53 25.7**	**+0.8**
KHL	**Karahalli**	**2.37**	**332**	*e*Pn	**Pn**	**10 53 25.7**	**+0.8**
KHAL	**Karahalli**	**2.42**	**332**	*i* P	**Pn**	**10 53 26.9**	**+1.2**
KHAL				*i* S	**Sn**	**10 53 56.8**	**+1.4**
KHAL	**Karahalli**	**2.42**	**332**	P	**Pn**	**10 53 26.9**	**+1.2**
KHAL				S	**Sn**	**10 53 56.8**	**+1.4**
KDHN	**Kadinhani**	**2.47**	**22**	*i* P	**Pn**	**10 53 27.0**	**+0.6**
KDHN				*i* S	**Sn**	**10 53 54.6**	**-2.0**
KDHN	**Kadinhani**	**2.47**	**22**	P	**Pn**	**10 53 27.0**	**+0.6**
BOLV	**Bolvadin**	**2.48**	**0**	*i* P	**Pn**	**10 53 28.4**	**+1.9**
BOLV				*i* S	**Sn**	**10 53 55.5**	**-1.3**
BOLV	**Bolvadin**	**2.48**	**0**	P	**Pn**	**10 53 28.4**	**+1.9**
KIZK	**Mersin**	**2.61**	**84**	*i* P	**Pn**	**10 53 31.1**	**+2.9**
KIZK				*i* S	**Sn**	**10 54 03.2**	**+3.3**
KIZK	**Mersin**	**2.61**	**84**	P	**Pn**	**10 53 31.1**	**+2.9**
KIZK				S	**Sn**	**10 54 03.2**	**+3.3**
KIZT	**Kizilcal**	**2.75**	**16**	*e*PN	**Pn**	**10 53 31.1**	**+0.9**
KIZT	**Kizilcal**	**2.75**	**16**	*e*Pn	**Pn**	**10 53 31.1**	**+0.9**
CHBY	**Cihanbeyli**	**2.82**	**33**	*e*PN	**Pn**	**10 53 32.3**	**+1.2**
CHBY	**Cihanbeyli**	**2.82**	**33**	*e*Pn	**Pn**	**10 53 32.3**	**+1.2**
AYDN	**Tasoluk**	**2.82**	**301**	*i* P	**Pn**	**10 53 32.0**	**+0.8**
AYDN				*i* S	**Sn**	**10 54 05.4**	**+0.1**
AYDN	**Tasoluk**	**2.82**	**301**	P	**Pn**	**10 53 32.0**	**+0.8**
AYDN				S	**Sn**	**10 54 05.4**	**+0.1**
KERG	**Konya-Eregli**	**2.82**	**64**	*i* P	**Pn**	**10 53 33.1**	**+1.9**
KERG				*i* S	**Sn**	**10 54 06.4**	**+1.0**
KERG	**Konya-Eregli**	**2.82**	**64**	P	**Pn**	**10 53 33.2**	**+1.9**
KERG				S	**Sn**	**10 54 06.4**	**+1.0**
KULA	**Kula-Manisa**	**2.90**	**322**	*e*PN	**Pn**	**10 53 33.4**	**+1.1**
KULA	**Kula-Manisa**	**2.90**	**322**	*e*Pn	**Pn**	**10 53 33.4**	**+1.1**
MERS	**Mersin**	**2.96**	**77**	*e*PN	**Pn**	**10 53 34.7**	**+1.6**
MERS	**Mersin**	**2.96**	**77**	*e*Pn	**Pn**	**10 53 34.7**	**+1.6**
AYDB	**Zeytinkoy-Aydi**	**2.97**	**306**	*e*PN	**Pn**	**10 53 34.2**	**+1.1**
AYDB	**Zeytinkoy-Aydi**	**2.97**	**306**	*e*Pn	**Pn**	**10 53 34.3**	**+1.1**
BODT	**Bodrum**	**3.02**	**287**	*e*PN	**Pn**	**10 53 35.2**	**+1.3**
BODT	**Bodrum**	**3.02**	**287**	*e*Pn	**Pn**	**10 53 35.2**	**+1.3**
GDZ	**Gediz**	**3.07**	**339**	*i* P	**Pn**	**10 53 35.9**	**+1.3**
GDZ				*i* S	**Sn**	**10 54 11.1**	**-0.4**
GDZ	**Gediz**	**3.07**	**339**	P	**Pn**	**10 53 35.9**	**+1.3**
GDZ				S	**Sn**	**10 54 11.1**	**-0.4**
KANP	**Karpathos**	**3.13**	**258**	*e*PN	**Pn**	**10 53 36.7**	**+1.3**
KARP	**Karpathos**	**3.13**	**258**	*e*Pn	**Pn**	**10 53 36.7**	**+1.3**
DED	**Mersin**	**3.20**	**76**	*i* P	**Pn**	**10 53 38.8**	**+2.5**
DED				*i* S	**Sn**	**10 54 16.0**	**+1.5**
SVRH	**Sivrihisar-ESK**	**3.24**	**8**	*e*PN	**Pn**	**10 53 38.3**	**+1.4**
SVRH	**Sivrihisar-ESK**	**3.24**	**8**	*e*Pn	**Pn**	**10 53 38.3**	**+1.4**
GULE	**Gulek**	**3.26**	**70**	*i* P	Pn	10 53 41.4	+4.1
GULE				*i* S	**Sn**	**10 54 18.4**	**+2.0**
GULA	**Gulagac**	**3.38**	**50**	*e*PN	**Pn**	**10 53 40.3**	**+1.5**
GULA	**Gulagac**	**3.38**	**50**	*e*Pn	**Pn**	**10 53 40.3**	**+1.5**
TVSB	**Tavsanli**	**3.41**	**341**	*e*PN	**Pn**	**10 53 40.7**	**+1.4**
TVSB	**Tavsanli**	**3.41**	**341**	*e*Pn	**Pn**	**10 53 40.7**	**+1.4**
KARA	**Karaisali**	**3.47**	**72**	*e*PN	**Pn**	**10 53 42.0**	**+2.0**
KARA	**Karaisali**	**3.47**	**72**	*e*Pn	**Pn**	**10 53 42.0**	**+2.0**
NIG	**Nigde**	**3.49**	**56**	*e*PN	**Pn**	**10 53 41.9**	**+1.4**
NIG	**Nigde**	**3.49**	**56**	*e*Pn	**Pn**	**10 53 41.9**	**+1.4**
AKS	**Akhisar**	**3.62**	**318**	*e*PN	**Pn**	**10 53 43.7**	**+1.7**
AKS	**Akhisar**	**3.62**	**318**	*e*Pn	**Pn**	**10 53 43.7**	**+1.7**
AFSR	**Af˙ar-Bala (A**	**3.63**	**27**	*e*PN	**Pn**	**10 53 43.9**	**+1.6**
AFSR	**Af˙ar-Bala (A**	**3.63**	**27**	*e*Pn	**Pn**	**10 53 43.9**	**+1.6**
IZM	**Izmir**	**3.63**	**308**	*e*PN	**Pn**	**10 53 43.2**	**+0.9**
IZM	**Izmir**	**3.63**	**308**	*e*Pn	**Pn**	**10 53 43.2**	**+0.9**
AKO	**Adana**	**3.83**	**70**	*i* P	**Pn**	**10 53 48.0**	**+3.1**
AKO				*i* S	**Sn**	**10 54 31.2**	**+1.3**
KAMT	**Kaman**	**3.83**	**34**	*e*PN	**Pn**	**10 53 46.8**	**+1.8**
KAMT	**Kaman**	**3.83**	**34**	*e*Pn	**Pn**	**10 53 46.8**	**+1.8**
CAVI	**Cavuskoy**	**4.05**	**348**	*e*PN	**Pn**	**10 53 49.9**	**+1.9**
CAVI	**Cavuskoy**	**4.05**	**348**	*e*Pn	**Pn**	**10 53 49.9**	**+1.9**
BRTR	**Keskin Array B**	**4.09**	**31**	Pn	**Pn**	**10 53 49.5**	**+0.9**
	2.0nm,0.3s,baz=207,slow=13,SNR=44						
BRTR				Sn	**Sn**	**10 54 34.2**	**-2.4**
	2.4nm,0.3s,baz=215,slow=30,SNR=13						
ARNB	**Al Arnab**	**4.11**	**94**	*e*P	**Pn**	**10 53 48.0**	**-0.8**
YAYL	**Yayladag**	**4.20**	**91**	*i* P	**Pn**	**10 53 50.5**	**+0.4**
YAYL				*i* S	**Sn**	**10 54 39.9**	**+0.6**
YAYL	**Yayladag**	**4.20**	**91**	P	**Pn**	**10 53 50.5**	**+0.4**
YAYL				S	**Sn**	**10 54 39.9**	**+0.6**
SLNF	**Slenfeh**	**4.35**	**97**	*e*P	Pn	10 53 47.9	-4.3
APE	**Apeiranthos**	**4.42**	**282**	*e*PN	**Pn**	**10 53 54.9**	**+1.8**
APE	**Apeiranthos**	**4.42**	**282**	*e*Pn	**Pn**	**10 53 54.9**	**+1.8**
THR5	**Thira Island,**	**4.51**	**274**	*e*PN	**Pn**	**10 53 56.3**	**+2.0**
THR5	**Thira Island,**	**4.51**	**274**	*e*Pn	**Pn**	**10 53 56.3**	**+2.0**
ARMT	**Armutlu**	**4.62**	**340**	*e*PN	**Pn**	**10 53 57.9**	**+2.1**
ARMT	**Armutlu**	**4.62**	**340**	*e*Pn	**Pn**	**10 53 57.9**	**+2.1**
MMAI	**Mount Meron Ar**	**4.89**	**130**	Pn	**Pn**	**10 54 00.1**	**+0.4**
	1.5nm,0.3s,baz=309,slow=13,SNR=9.2						
MMAI				Sn	Sn	10 54 51.2	-5.1
	1.7nm,0.3s,baz=320,slow=24,SNR=3.4						
RKY	**Sarkoy-Tekirda**	**5.33**	**328**	*e*PN	**Pn**	**10 54 08.1**	**+2.5**
RKY	**Sarkoy-Tekirda**	**5.33**	**328**	*e*Pn	**Pn**	**10 54 08.1**	**+2.5**
HMAT	**Matruh**	**6.04**	**213**	P	**Pn**	**10 54 14.3**	**-1.0**
	baz=214						
HMAT				S	Sn	10 55 13.6	-11
	baz=214						
HMAT	**Matruh**	**6.04**	**213**	P	**Pn**	**10 54 14.3**	**-1.0**
KOT	**Kottamia**	**6.34**	**173**	P	**Pn**	**10 54 19.2**	**-0.2**
	baz=169						
KOT				AMP		10 55 00.0	
	comp=N,60μm,0.2s,logA/T=5.4,baz=169						
KOT				S	Sn	10 55 24.0	-7.9
	baz=169						
KOT	**Kottamia**	**6.34**	**173**	P	**Pn**	**10 54 19.2**	**-0.2**
HHAG	**Hagoal**	**6.34**	**171**	P	**Pn**	**10 54 19.5**	**0.0**
	baz=167						
HHAG				AMP		10 55 00.0	
	comp=E,30μm,0.3s,logA/T=5.0,baz=167						
HHAG	**Hagoal**	**6.34**	**171**	P	**Pn**	**10 54 19.5**	**0.0**
SUZ	**Suez**	**6.58**	**165**	P	**Pn**	**10 54 22.6**	**-0.1**
	baz=161						
SUZ	**Suez**	**6.58**	**165**	P	**Pn**	**10 54 22.6**	**-0.1**
HSAF	**As Saff**	**6.62**	**175**	P	**Pn**	**10 54 23.1**	**-0.3**
	baz=172						
HSAF	**As Saff**	**6.62**	**175**	P	**Pn**	**10 54 23.1**	**-0.3**
GLL	**Jalalah**	**6.67**	**174**	P	**Pn**	**10 54 23.6**	**-0.5**
	baz=170						
GLL	**Jalalah**	**6.67**	**174**	P	**Pn**	**10 54 23.6**	**-0.5**
SLUM	**Salum**	**6.71**	**227**	P	**Pn**	**10 54 23.5**	**-1.0**
	baz=229						
SLUM				AMP		10 55 00.0	
	comp=N,40μm,0.1s,logA/T=5.6,baz=229						
SLUM				S	Sn	10 55 31.9	-9.0
	baz=229						
SLUM	**Salum**	**6.71**	**227**	P	**Pn**	**10 54 23.5**	**-1.0**
AWBH		**8.07**	**193**	P	**Pn**	**10 54 42.5**	**-0.8**
	baz=192						
AWBH		**8.07**	**193**	P	**Pn**	**10 54 42.5**	**-0.8**
SWA2		**8.36**	**215**	P	**Pn**	**10 54 45.8**	**-1.3**
	baz=216						
SWA2				AMP		10 56 00.0	
	comp=N,50μm,0.2s,logA/T=5.3,baz=216						
SWA2				S	Sn	10 56 10.5	-11
	baz=216						
SWA2		**8.36**	**215**	P	**Pn**	**10 54 45.8**	**-1.3**
SWA2				S	Sn	10 56 10.5	-11
HFRF	**Wahat Farafira**	**9.33**	**195**	P	**Pn**	**10 54 59.6**	**-0.9**
	baz=194						
HFRF	**Wahat Farafira**	**9.33**	**195**	P	**Pn**	**10 54 59.6**	**-0.9**
FINES	**FINESS Array B**	**25.41**	**355**	P	**P**	**10 58 12.3**	**-1.1**
	comp=N,4.9nm,1.1s,baz=181,slow=15,SNR=3.6						
TORD	**Torodi Ar. Bea**	**34.89**	**236**	P	**P**	**10 59 36.2**	**-1.5**
	comp=N,0.4nm,0.8s,baz=48,slow=8.7,SNR=3.0						
MKAR	**Makanchi Array**	**39.25**	**58**	P	**P**	**11 00 12.8**	**-1.7**
	comp=N,0.2nm,0.5s,baz=278,slow=9.9,SNR=2.5						

*IDC **30** 11:00:34.3±5.2, 38˚.04N×74˚.08E, h166km±35km, mb3.1/4, mb1 3.1/9, mb1mx2.9/70, mbtmp3.5/9, Error ellipse: s-maj=60.0km s-min=32.7km az=147.0*
*NNC **30** 11:00:36.8±2.1, 38˚.39N×73˚.91E, h166km±14km, mb2.0, mpv3.2, Error ellipse: s-maj=20.9km s-min=10.1km az=139.0*

ISC 30 11:00:33.7±1.5, **38˚.2N**±0˚.1×**74˚.10E**±0˚.10, **h152**km, **n15**, σ1**$27**/21, **mb3.4**/4, **5C-7D, Tajikistan-Xinjiang border region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SFK	**Sufi-Kurgan**	**1.87**	**346**	⇓P	**Pn**	**11 01 09.1**	**+1.5**
	7.0nm,0.1s						
SFK				⇑S	**Sn**	**11 01 34.8**	**+0.9**
	34nm,0.3s						
DZET	**Dzherino**	**4.18**	**280**	⇓P	**Pn**	**11 01 38.0**	**+1.5**
	1.0nm,0.2s						
DZET				⇓S	**Sn**	**11 02 24.9**	**-0.3**
	10nm,0.4s						
AAK	**Ala-Archa**	**4.44**	**4**	P	**Pn**	**11 01 41.4**	**+1.6**
	0.7nm,0.3s,baz=162,slow=9.2,SNR=5.2						
AAK				S	**Sn**	**11 02 31.5**	**+0.1**
	0.7nm,0.3s,baz=141,slow=22,SNR=8.8						
AAK	**Ala-Archa**	**4.44**	**4**	⇓P	**Pn**	**11 01 41.1**	**+1.3**
	2.0nm,0.6s						
AAK				⇓S	**Sn**	**11 02 33.5**	**+2.0**
	7.3nm,0.6s						
MNAS	**Manas**	**4.46**	**345**	⇑P	**Pn**	**11 01 41.4**	**+1.4**
	1.8nm,0.4s						
MNAS				⇓S	**Sn**	**11 02 30.5**	**-1.3**
	10nm,0.3s						
TKM2	**Tokmak 2**	**4.86**	**13**	⇓P	**Pn**	**11 01 46.0**	**+0.7**
	1.2nm,0.3s						
TKM2				⇑S	**Sn**	**11 02 39.8**	**-1.4**
	7.9nm,0.6s						
KK31	**Karatay Array**	**5.61**	**332**	⇑P	**Pn**	**11 01 56.0**	**+0.9**
	0.4nm,0.2s,baz=149,slow=15,SNR=14						
KK31				⇑S	**Sn**	**11 02 56.6**	**-2.3**
	5.2nm,0.4s,baz=147,slow=24,SNR=11						
MKAR	**Makanchi Array**	**10.50**	**32**	P	Pn	11 03 04.1	+4.0
	0.1nm,0.3s,baz=206,slow=13,SNR=3.2						
KURBB	**Kurchatov Arra**	**12.82**	**13**	P	**P**	**11 03 33.8**	**-1.4**
	0.0nm,0.3s,baz=205,slow=10,SNR=4.5						
BVAR	**Borovoye Array**	**15.05**	**351**	P	**P**	**11 04 00.3**	**+0.2**
	0.2nm,0.3s,baz=171,slow=10,SNR=4.1						
ZALV	**Zalesovo Beam**	**17.39**	**22**	P	**P**	**11 04 25.6**	**-0.2**
	0.5nm,0.3s,baz=219,slow=13,SNR=5.5						
FINES	**FINESS Array B**	**37.51**	**324**	P	**P**	**11 07 33.0**	**+0.6**
	0.5nm,0.6s,baz=86,slow=5.9,SNR=4.5						
ARCES	**ARCESS Array B**	**40.56**	**336**	P	**P**	**11 07 57.9**	**+0.2**
	2.9nm,1.0s,baz=94,slow=9.9,SNR=4.7						
TORD	**Torodi Ar. Bea**	**68.21**	**270**	P	**P**	**11 11 17.1**	**-1.0**
	0.3nm,0.5s,baz=43,slow=5.7,SNR=6.2						
YKA	**Yellowknife Ar**	**79.41**	**4**	P	**P**	**11 12 22.1**	**-0.3**
	0.1nm,0.5s,baz=346,slow=5.6,SNR=3.3						

*JMA **30** 11:02:33.8±0.2, 24˚.62N×121˚.80E, h76km±2km, M3.1*
*ISCJB **30** 11:02:34.9±0.4, 24˚.66N±0˚.02×121˚.86E±0˚.02, h73km±3km, Error ellipse: s-maj=4.2km s-min=2.4km az=151.4*
*TAP **30** 11:02:34.9, 24˚.68N×121˚.80E, h75km, ML3.7, B*

ISC 30 11:02:35.5±1.3, **24˚.65N**±0˚.03×**121˚.86E**±0˚.02, **h71**km±6km, **n58**, σ0**$89**/115, **1D, Taiwan**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TWC	**Suao**	**0.04**	**192**	P	**Pn**	**11 02 45.9**	**+0.2**
	baz=143						
TWC				S	**Sn**	**11 02 54.3**	**+1.0**
	baz=143						
ILA	**Ilan**	**0.15**	**319**	*e*P	**Pn**	**11 02 46.4**	**+0.3**
	baz=334						
ILA				S	**Sn**	**11 02 55.2**	**+1.5**
	baz=334						
TWE	**Neicheng**	**0.19**	**292**	*i* P	**Pn**	**11 02 46.3**	**+0.1**
	baz=287						
TWE				*i* S	**Sn**	**11 02 54.6**	**+0.6**
	baz=287						
EGS		**0.20**	**19**	P	**Pn**	**11 02 46.5**	**+0.2**
	baz=40						
EGS				*e*S	**Sn**	**11 02 55.4**	**+1.2**
	baz=40						
ENA	**Nanau**	**0.25**	**206**	*e*P	**Pn**	**11 02 46.9**	**+0.4**
	baz=189						
ENA				S	**Sn**	**11 02 55.5**	**+1.0**
	baz=189						
ENTT	**Nioudou**	**0.27**	**268**	*i* P	**Pn**	**11 02 46.4**	**-0.2**
	baz=257						
ENTT				*i* S	**Sn**	**11 02 54.9**	**+0.2**
	baz=257						
TWB1	**Santiao Chiao**	**0.38**	**18**	⇓*i*P	**Pn**	**11 02 47.2**	**-0.2**
	baz=29						
TWB1				*i* S	**Sn**	**11 02 55.9**	**-0.2**
	baz=29						
NWF	**Wu-fen Shan**	**0.42**	**350**	P	**Pn**	**11 02 47.6**	**-0.3**
	baz=357						
NWF				S	**Sn**	**11 02 57.3**	**+0.4**
	baz=357						
NSK	**Sanguang**	**0.46**	**273**	P	**Pn**	**11 02 47.1**	**-0.9**
	baz=268						
NSK				S	**Sn**	**11 02 56.0**	**-1.3**
	baz=268						
NNS	**Nan Shan**	**0.49**	**245**	P	**Pn**	**11 02 48.0**	**-0.5**
	baz=237						
NNS				S	**Sn**	**11 02 57.2**	**-0.8**
	baz=237						
TAP1	**Taipei**	**0.49**	**322**	*e*P	**Pn**	**11 02 47.3**	**-1.0**
	baz=323						
TAP1				S	**Sn**	**11 02 56.9**	**-0.8**
	baz=323						
TAP	**Taipei**	**0.50**	**320**	*e*P	**Pn**	**11 02 48.3**	**-0.1**
	baz=323						
TAP				S	**Sn**	**11 02 57.4**	**-0.5**
	baz=323						
TWS1	**Kuangyinshan**	**0.60**	**318**	*i* P	**Pn**	**11 02 49.0**	**-0.4**
	baz=320						
TWS1				S	**Sn**	**11 02 59.6**	**0.0**
	baz=320						
TWD	**Chiawan**	**0.62**	**203**	*e*P	**Pn**	**11 02 48.8**	**-0.8**
	baz=196						
TWD				S	**Sn**	**11 02 58.7**	**-1.3**
	baz=196						
TWY	**Chenhua**	**0.67**	**339**	P	**Pn**	**11 02 49.7**	**-0.4**
	baz=343						
TWY				S	**Sn**	**11 03 01.3**	**+0.4**
	baz=343						
NCU	**National Centr**	**0.69**	**298**	P	**Pn**	**11 02 49.6**	**-0.8**
	baz=297						
NCU				S	**Sn**	**11 03 00.8**	**-0.6**
	baz=297						
HWA	**Hwalien**	**0.71**	**199**	*e*P	**Pn**	**11 02 50.7**	**+0.1**
	baz=193						
HWA				*e*S	**Sn**	**11 03 03.3**	**+1.6**
	baz=193						
TWT	**Tachien**	**0.74**	**238**	*i* P	**Pn**	**11 02 51.3**	**+0.3**
	baz=233						
TWT				*i* S	**Sn**	**11 03 02.7**	**+0.1**
	baz=233						
WHF	**Hehuan Shan**	**0.74**	**227**	*e*P	**Pn**	**11 02 51.0**	**-0.4**
	baz=221						
WHF				S	**Sn**	**11 03 02.2**	**-0.9**
	baz=221						
NSTT	**Nanjuang**	**0.78**	**269**	P	**Pn**	**11 02 50.4**	**-1.0**
	baz=265						
NSTT				S	**Sn**	**11 03 02.0**	**-1.1**
	baz=265						
HSN	**Hsinchu**	**0.82**	**281**	*e*P	**Pn**	**11 02 51.2**	**-0.6**
	baz=281						
HSN				*e*S	**Sn**	**11 03 02.6**	**-1.4**
	baz=281						
ESL	**Shilin**	**0.92**	**205**	*e*P	**Pn**	**11 02 51.4**	**-1.6**
	baz=200						
ESL				*e*S	**Sn**	**11 03 04.7**	**-1.4**
	baz=200						
PCYT	**Pengchaiyu**	**0.99**	**11**	P	**Pn**	**11 02 53.8**	**-0.2**
	baz=15						
PCYT				*e*S	**Sn**	**11 03 08.7**	**+1.0**
	baz=15						
JYNG	**Yonaqunijimaku**	**1.01**	**101**	P	**Pn**	**11 02 53.5**	**-0.6**
JYNG				S	**Sn**	**11 03 07.1**	**-0.9**
NSY	**Sanyi**	**1.03**	**257**	P	**Pn**	**11 02 54.0**	**-0.3**
	baz=254						
NSY				S	**Sn**	**11 03 08.2**	**-0.3**
	baz=254						
TWQ1	**Liyutan**	**1.03**	**253**	P	**Pn**	**11 02 53.8**	**-0.6**
	baz=250						
TWQ1				*e*S	**Sn**	**11 03 08.5**	**-0.2**
	baz=250						
YOJ	**Yonaguni jima**	**1.07**	**100**	P	**Pn**	**11 02 54.2**	**-0.6**
YOJ				S	**Sn**	**11 03 08.6**	**-0.7**
SMLT	**Sun Moon Lake**	**1.16**	**229**	*e*P	**Pn**	**11 02 56.1**	**-0.1**
	baz=225						
SMLT				*e*S	**Sn**	**11 03 11.8**	**+0.1**
	baz=225						
TYC	**Yuchr**	**1.18**	**231**	*e*P	**Pn**	**11 02 56.1**	**-0.2**
	baz=227						
TYC				*e*S	**Sn**	**11 03 12.4**	**+0.6**
	baz=227						
TCU	**Taichung**	**1.19**	**245**	*e*P	**Pn**	**11 02 56.7**	**+0.3**
	baz=242						
TCU				*e*S	**Sn**	**11 03 11.7**	**-0.4**
	baz=242						
EHY	**Hungye**	**1.24**	**203**	*e*P	**Pn**	**11 02 55.1**	**-2.0**
	baz=200						
EHY				S	**Sn**	**11 03 11.3**	**-2.0**
	baz=200						
WNT	**Mingjian**	**1.32**	**235**	*e*P	**Pn**	**11 02 58.4**	**+0.3**
	baz=231						
WNT				*e*S	**Sn**	**11 03 15.4**	**+0.3**
	baz=231						
TWF1	**Yuli**	**1.39**	**202**	*e*P	**Pn**	**11 02 57.2**	**-1.9**
	baz=198						
TWF1				*e*S	**Sn**	**11 03 16.8**	**0.0**
	baz=198

mb1 3.4/6,mb1mx3.1/62,mbtmp3.7/6,Error ellipse: s-maj=46.9km s-min=21.5km az=40.0

ISC 30 11:06:51.0±2.0, **8°34S**±0.1×**118.7E**±0.2, **h152km, n6, σ0.46/7, Sumbawa region**

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
KAPI	**Kappang**	**3.55**	**17**	P		**Pn**		**11 07 45.7**	**+0.2**
	0.5nm,0.3s,baz=238,slow=9.5,SNR=4.4								
BATI	**Baumata**	**5.18**	**110**	P		**Pn**		**11 08 07.3**	**+0.4**
	baz=287,slow=19								
BATI				S		**Sn**		**11 09 05.8**	**-0.5**
	4.5nm,0.3s,baz=270,slow=20,SNR=4.1								
FITZ	**Fitzroy Crossi**	**11.73**	**146**	P		Pn		11 09 29.6	-4.1
	0.1nm,0.3s,baz=318,slow=9.0,SNR=5.7								
FITZ				S		Sn		11 11 33.5	-10
	0.6nm,0.3s,baz=168,slow=21,SNR=15								
WRA	**Warramunga Arr**	**18.95**	**129**	P		**P**		**11 11 00.4**	**-0.3**
	0.3nm,0.3s,baz=302,slow=12,SNR=28								
WRA				S		**S**		**11 14 28.6**	**+0.6**
	0.1nm,0.3s,baz=305,slow=22,SNR=4.1								
ASAR	**Alice Springs**	**21.00**	**138**	P		**P**		**11 11 22.4**	**-0.2**
	1.1nm,0.5s,baz=309,slow=9.2,SNR=54								
STKA	**Stephens Creek**	**31.56**	**141**	P		**P**		**11 12 59.1**	**-0.1**
	1.1nm,0.7s,baz=302,slow=9.2,SNR=3.2								

*DJA **30** 11:11:26.5±1.7, 11°N±8°×9°5E±2°0, h10km, M5.3/8, mb5.2/8,mB5.8/6,MLv5.3/5,Mw(mB)5.3/6*

*ISCJB **30** 11:12:14.9±0.5, 7°47N±0°05×97°67E±0°07, h10km, mb3.9/10, Error ellipse: s-maj=9.5km s-min=7.5km az=5.8*

*IDC **30** 11:12:14.3±0.9, 7°37N×97°55E, h0km, mb4.0/10, mb1 4.0/12,mb1mx3.7/75,mbtmp3.9/12,ML3.8/2, Error ellipse: s-maj=45.6km s-min=12.2km az=67.0*

ISC 30 11:12:15.2±0.6, **7°36N**±0°04×**97°61E**±0°09, **h10km, n22, σ1.9/45/23, mb4.1/10, Nicobar Islands region**

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
PKDT	**Phuket**	**0.90**	**53**	P		**Pg**		**11 12 30.7**	**-1.8**
KRAB	**Krabi**	**1.79**	**61**	P		**Pn**		**11 12 45.2**	**-1.0**
SURT	**Suratani**	**1.98**	**36**	P		**Pn**		**11 12 47.4**	**-1.4**
TRTT	**Trang**	**2.12**	**77**	P		**Pn**		**11 12 49.8**	**-0.9**
LHMI	**Lhok Sumawe**	**2.21**	**197**	P		**Pb**		**11 12 55.2**	**-0.1**
	325nm,0.7s,9μm1.9nm								
SKLT	**Songkhla**	**2.99**	**93**	P		**Pn**		**11 13 03.6**	**+0.9**
MLSI	**Meulaboh, Aceh**	**3.29**	**201**	P		**Pb**		**11 13 11.5**	**-2.3**
	172nm,0.7s,3μm0.8nm								
KCSI	**Kotacane, Aceh**	**3.81**	**178**	P		**Pg**		**11 13 25.1**	**-3.2**
	254nm,0.9s,5μm								
TSI	**Tuntungan**	**3.94**	**166**	P		**Pg**		**11 13 29.3**	**-1.6**
	179nm,1.1s,6μm								
PSI	**Prapat**	**4.71**	**164**	Pn		**Pn**		**11 13 28.2**	**+1.8**
	1.5nm,0.3s,baz=330,slow=7.7,SNR=6.2								
PSI				Pg		**Pg**		**11 13 44.2**	**-1.3**
	11nm,0.3s,baz=338,slow=16,SNR=20								
PSI				Lg		Lg		11 14 48.9	
	17nm,0.3s,baz=47,slow=18,SNR=9.0								
CMAR	**Chiang Mai Arr**	**11.11**	**7**	Pn		**Pn**		**11 14 55.8**	**+1.5**
	0.3nm,0.3s,baz=202,slow=13,SNR=5.0								
CMAR				Lg		Lg		11 18 05.9	
	0.5nm,0.3s,baz=195,slow=31,SNR=11								
SHL	**Shillong**	**18.92**	**344**	*e*P		**Pn**		**11 16 37.0**	**-0.1**
AAK	**Ala-Archa**	**40.62**	**334**	P		**P**		**11 19 57.4**	**+1.9**
	0.4nm,0.3s,baz=161,slow=4.4,SNR=4.4								
MKAR	**Makanchi Array**	**41.44**	**344**	P		**P**		**11 20 02.7**	**+0.6**
	1.7nm,0.9s,baz=153,slow=8.2,SNR=9.3								
WRA	**Warramunga Arr**	**45.19**	**128**	P		**P**		**11 20 33.6**	**+0.8**
	1.6nm,0.9s,baz=304,slow=8.3,SNR=14								
KURBB	**Kurchatov Arra**	**45.96**	**343**	P		**P**		**11 20 39.1**	**+0.7**
	0.9nm,0.2s,baz=157,slow=7.6,SNR=4.9								
ASAR	**Alice Springs**	**46.98**	**132**	P		**P**		**11 20 47.8**	**+0.9**
	2.0nm,0.7s,baz=304,slow=7.6,SNR=35								
ZALV	**Zalesovo Beam**	**47.60**	**350**	P		**P**		**11 20 51.6**	**+0.5**
	1.0nm,0.6s,baz=157,slow=7.9,SNR=3.6								
AKTO	**Aktyubinsk**	**54.09**	**330**	P		**P**		**11 21 40.5**	**+0.4**
	0.9nm,0.5s,baz=110,slow=5.2,SNR=3.8								
STKA	**Stephens Creek**	**57.29**	**135**	P		**P**		**11 22 04.4**	**+0.9**
	1.9nm,1.1s,baz=322,slow=13,SNR=2.9								
FINES	**FINESS Array B**	**74.78**	**332**	P		**P**		**11 23 54.0**	**-1.3**
	1.1nm,0.5s,baz=72,slow=6.2,SNR=7.2								
ILAR	**Eielson Array**	**93.91**	**23**	P		**P**		**11 25 33.3**	**+0.4**
	0.3nm,0.6s,baz=274,slow=4.4,SNR=3.1								

*NIED **30** 11:13:00,35°20N×141°80E,h14km,Mw5.0 Best double couple: M04.01000×10^16 NP1:φ203.00000°,δ37.00000°, λ101.00000°. NP2:φ10.00000°,δ54.00000°,λ82.00000°.*

*BJI **30** 11:13:46.3,35°29N×141°59E,h6km,mb4.6/55,mB5.0/51, Ms5.0/63,Ms7 4.8/58*

*IDC **30** 11:13:47.6±0.5,35°12N×141°57E,h0km,mb4.3/38, mb1 4.4/44,mb1mx4.3/76,mbtmp4.3/44,ML3.5/5,MS4.5/26, Ms1 4.5/26,ms1mx4.4/37,Error ellipse: s-maj=12.8km s-min=10.9km az=118.0*

*JMA **30** 11:13:49.6±0.2,35°18N×141°81E,h53km±4km,M4.9*

*ISCJB **30** 11:13:50.0±0.7,35°12N±0°03×141°64E±0°03,h28km±4km, mb4.7/124,MS4.8/56,Error ellipse: s-maj=4.6km s-min=3.8km az=143.6*

*MOS **30** 11:13:50.9±1.3,35°20N×141°56E,h33km,mb5.1/48, MS4.8/15,Error ellipse: s-maj=8.9km s-min=4.6km az=117.8*

*GCMT **30** 11:13:51.1±0.4,35°09N×141°79E,h24km±1km,MW5.0/72, Moment Tensor Solution. s20,c22; s72,c96; Duration: 0 Moment tensor: Scale 10^16Nm; Mrr3.79±.32; Mθθ-0.68±.18; Mφφ-3.11±.19; Mrθ0.85±.26; Mrφ-1.27±.10; Mθφ2.19±.22; Best double couple: M04.40100×10^16 NP1:φ22.00000°,δ61.00000°,λ89.00000°. NP2: φ204.00000°,δ29.00000°,λ92.00000°. Principal axes: T 4.4700, Plg74.0000°, Azm290.0000°; N -0.1380, Plg1.0000°, Azm23.0000°; P -4.3320, Plg16.0000°, Azm113.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

*NEIC **30** 11:13:51.1±1.7,35°15N×141°59E,h23km±12km,mb4.9/60 Error ellipse: s-maj=5.7km s-min=4.5km az=117.0*

ISC 30 11:13:51.0±0.4, **35°18N**±0°03×**141°69E**±0°03, **h26km**±2km, **h25km:pP-P,n339,σ1.9/85/395, mb4.8/126, MS4.9/57, 17C-16D, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
BSO1	**Boso 1**	**0.78**	**228**	P		**Pb**		**11 14 05.6**	**0.0**
CHOJ	**Chosi**	**0.86**	**308**	P		**Pn**		**11 14 07.0**	**-0.4**
BSO3	**Boso 3**	**1.03**	**249**	P		**Pb**		**11 14 09.8**	**-0.3**
BSO3				*e*S		**Sn**		**11 14 23.2**	**+0.1**
BSO4	**Boso 4**	**1.12**	**261**	P		**Pb**		**11 14 11.2**	**-0.4**
KTR	**Katsuura**	**1.12**	**269**	P		**Pn**		**11 14 10.8**	**-0.2**
KTR				*e*S		**Sb**		**11 14 26.8**	**+0.9**
JCN	**Nagara**	**1.24**	**282**	P		**Pb**		**11 14 13.5**	**-0.2**
JOD2	**Odawara 2**	**2.13**	**273**	P		**Pn**		**11 14 24.3**	**-0.6**
JAG	**Ashikaga**	**2.20**	**305**	P		**Pn**		**11 14 26.3**	**+0.4**
JFK	**Kawauchi**	**2.28**	**344**	*e*S		**Sn**		**11 14 52.7**	**-1.7**
JHJ2	**Mitsune**	**2.58**	**218**	*e*Pn		**Pn**		**11 14 30.8**	**-0.3**
JHJ2				*e*Sn		**Sn**		**11 15 00.8**	**-0.7**
JHJ	**Hachijo jima 2**	**2.59**	**218**	Pn		**Pn**		**11 14 30.7**	**-0.5**
	80nm,0.3s,baz=324,slow=15,SNR=63								
JHJ				Sn		**Sn**		**11 14 58.6**	**-3.2**
	121nm,0.3s,baz=30,slow=20,SNR=10.0								
MJAR	**Matsushiro Arr**	**3.14**	**297**	Pn		**Pn**		**11 14 39.0**	**+0.2**
	9.5nm,0.3s,baz=98,slow=12,SNR=101								
MJAR				LR		LR		11 16 02.2	
	comp=Z,7μm,20.9s,baz=120,slow=44								
MAJO	**Matsushiro**	**3.14**	**297**	*c* iP		**Pn**		**11 14 39.3**	**+0.5**
MAJO	**Matsushiro**	**3.14**	**297**	*e*Pn		**Pn**		**11 14 39.6**	**+0.8**
MAJO				*e*Sn		**Sn**		**11 15 17.9**	**+2.5**
MAT	**Matsushiro**	**3.14**	**297**	P		**Pn**		**11 14 39.0**	**+0.2**
MAT				S		**Sb**		**11 15 24.7**	**+0.8**
MJB9	**Matsu-Tunnel**	**3.14**	**297**	*e*Pn		**Pn**		**11 14 39.8**	**+1.0**
INU	**Inuyama**	**3.83**	**274**	*e*Pn		**Pn**		**11 14 49.8**	**+1.6**
ERM	**Erimo**	**6.93**	**9**	‖*e*P		**Pn**		**11 15 28.3**	**-2.5**
ERM	**Erimo**	**6.93**	**9**	*e*Pn		**Pn**		**11 15 29.0**	**-1.8**
ERM				*e*Sn		**Sn**		**11 16 43.3**	**-5.4**
CBIJ	**Chichi jima**	**8.06**	**177**	*e*Pn		**Pn**		**11 15 45.2**	**-1.3**
CBIJ				Sn		**Sn**		**11 17 10.1**	**-6.8**
JCJ	**Chichijima**	**8.06**	**177**	Pn		**Pn**		**11 15 43.9**	**-2.6**
	baz=0.0,slow=17								
JCJ				Sn		**Sn**		**11 17 10.1**	**-6.8**
	baz=288,slow=19								
JCJ				LR		LR		11 19 39.5	
	comp=Z,2μm,18.6s,baz=360,slow=44								
ASAJ	**Asahikawa**	**8.96**	**4**	Pn		**Pn**		**11 15 55.5**	**-3.2**
	6.3nm,0.3s,baz=195,slow=9.3,SNR=32								
ASAJ				Sn		**Sn**		**11 17 33.7**	**-5.0**
	1.2nm,0.3s,baz=241,slow=19,SNR=4.6								
ASAJ	**Asahikawa**	**8.96**	**4**	*e*Pn		**Pn**		**11 15 58.3**	**-0.4**
ASAJ				*e*Sn		**Sn**		**11 17 36.6**	**-2.0**
JNU	**Nakatsue**	**9.19**	**260**	Pn		**Pn**		**11 16 01.6**	**-0.4**
	0.6nm,0.3s,baz=52,slow=8.5,SNR=9.2								
JNU	**Nakatsue**	**9.19**	**260**	*e*Pn		**Pn**		**11 16 02.3**	**+0.3**
MSHR	**Mys Shultsa**	**11.04**	**315**	*c* iP		**Pn**		**11 16 27.6**	**+0.4**
KUR	**Kuril'sk**	**11.10**	**23**	*e*P		**Pn**		**11 16 31.7**	**+3.8**
KUR				pmax		pmax			
	comp=Z,26nm,1.1s								
KUR				pmax		pmax			
	comp=N,19nm,0.8s								
KUR				pmax		pmax			
	comp=E,22nm,0.8s								
KUR				MLR		MLR			
	comp=E,1μm,13.0s								
KUR				MLR		MLR			
	comp=Z,900nm,13.0s								
KSRS	**Korea Array**	**11.34**	**286**	Pn		**Pn**		**11 16 34.2**	**+3.0**
	comp=Z,0.2nm,0.3s,baz=101,slow=12,SNR=11								
KSRS				LR		LR		11 21 15.5	
	comp=Z,7μm,18.7s,baz=89,slow=40								
KS01	**Wonju Array Si**	**11.36**	**286**	*e*Pn		**Pn**		**11 16 33.2**	**+1.6**
KS15	**Wonju Array Si**	**11.37**	**286**	*e*Pn		Pn		11 16 37.4	+5.8
KSAR	**Wonju Array Be**	**11.37**	**286**	P		**Pn**		**11 16 34.3**	**+2.6**
KSAR	**Wonju Array Be**	**11.37**	**286**	P		**Pn**		**11 16 34.2**	**+2.6**
USRK	**Ussuriysk Ar.**	**11.70**	**323**	Pn		**Pn**		**11 16 36.3**	**+0.1**
	comp=Z,0.6nm,0.3s,baz=138,slow=12,SNR=14								
USRK				LR		LR		11 21 14.4	
	comp=Z,5μm,18.3s,baz=130,slow=38								
YSS	**Yuzh-Sakhalins**	**11.80**	**4**	*e*P		**Pn**		**11 16 37.1**	**-0.4**
YSS				*e*S		**Sn**		**11 18 44.2**	**-4.0**
YSS				pmax		pmax			
	comp=Z,30nm,1.0s								
YSS				MLR		MLR			
	comp=Z,3μm,14.0s								
YSS				MLR		MLR			
	comp=N,3μm,12.0s								
MDJ	**Mudanjiang**	**13.22**	**319**	*e*Pn		**Pn**		**11 16 58.1**	**+1.2**
	comp=N,82nm,1.6s								
HABR	**Khabarovsk**	**14.17**	**342**	*e*P		**Pn**		**11 17 07.7**	**-2.2**
HABR				*e*S		**Sn**		**11 19 43.2**	**-3.0**
HABR				pmax		pmax			
	comp=Z,87nm,2.5s								
HABR				MLR		MLR			
	comp=Z,2μm,15.0s								
JOW	**Kunigami**	**14.18**	**238**	LR		LR		11 22 46.8	
	comp=Z,1μm,18.7s,baz=115,slow=38								
CN2	**Changchun**	**15.19**	**309**	*e*P		**Pn**		**11 17 22.0**	**-1.7**
CN2				pmax		pmax			
	comp=Z,10.0nm,1.8s								
CN2				pmax		pmax			
	comp=Z,200nm,10.0s								
CN2				LR		LR			
	comp=Z,2μm,14.0s								
CN2				LR		LR			
	comp=Z,2μm,14.0s								
CN2				LR		LR			
	comp=Z,2μm,16.0s								
SNY	**Shenyang**	**15.64**	**301**	⇑P		**Pn**		**11 17 26.5**	**-3.1**
SNY				S		**Sn**		**11 20 15.0**	**-7.1**
SNY				pmax		pmax			
	comp=Z,24nm,1.4s								
SNY				pmax		pmax			
	comp=Z,620nm,11.2s								
SNY				LR		LR			
	comp=Z,1μm,13.2s								
SNY				LR		LR			
	comp=Z,2μm,15.7s								
SNY				LR		LR			
	comp=Z,3μm,15.0s								
TYV	**Tymovskoe**	**15.70**	**2**	*e*P		**Pn**		**11 17 29.0**	**-1.2**
TYV				pmax		pmax			
	comp=Z,11nm,0.8s								
TYV				MLR		MLR			
	comp=N,4μm,12.0s								
TYV				MLR		MLR			
	comp=Z,5μm,12.0s								
KLR	**Kul'dur**	**15.84**	**336**	Pn		**Pn**		**11 17 29.9**	**-2.2**
	comp=Z,0.1nm,0.3s,baz=138,slow=6.8,SNR=4.7								
KLR				LR		LR		11 23 55.5	
	comp=Z,2μm,18.2s,baz=149,slow=38								
DL2	**Dalian**	**16.44**	**289**	P		**Pn**		**11 17 39.5**	**-0.3**
DL2				S		**Sn**		**11 20 40.5**	**-1.0**
DL2				pmax		pmax			
	comp=Z,46nm,1.2s								
DL2				pmax		pmax			
	comp=Z,500nm,6.3s								
DL2				LR		LR			
	comp=Z,2μm,15.1s								
DL2				LR		LR			
	comp=Z,4μm,18.5s								
DL2				LR		LR			
	comp=Z,5μm,18.6s								
SSE	**Sheshan**	**17.64**	**262**	*e*P		**Pn**		**11 17 54.8**	**-0.1**
SSE				S		**Sn**		**11 21 12.3**	**+1.6**
SSE				pmax		pmax			
	comp=Z,16nm,0.8s								
SSE				pmax		pmax			
	comp=Z,310nm,12.0s								
SSE				LR		LR			
	comp=Z,750nm,16.1s								
SSE				LR		LR			
	comp=Z,2μm,16.2s								
SSE				LR		LR			
	comp=Z,3μm,16.2s								
NKL	**Nikolayevsk**	**17.99**	**358**	*e*P		P		11 18 07.8	+8.4
NKL				MLR		MLR			
	comp=N,2μm,15.0s								
NKL				MLR		MLR			
	comp=Z,3μm,15.0s								
NJ2	**Nanjing**	**19.26**	**267**	*e*P		**Pn**		**11 18 14.8**	**+0.1**
NJ2				pmax		pmax			
	comp=Z,11nm,0.5s								
TIA	**Tai'an**	**19.97**	**280**	⇑P		**Pn**		**11 18 25.5**	**+2.4**
TIA				pmax		pmax			
	comp=Z,20nm,1.2s								
YHNB	**Yeheng**	**20.45**	**245**	*e*P		**P**		**11 18 27.4**	**+0.7**
	comp=Z,174nm,1.9s								
BJI	**Beijing**	**20.76**	**291**	P		**P**		**11 18 26.0**	**-3.8**
BJI				S		**S**		**11 22 18.5**	**-1.7**
BJI				pmax		pmax			
	comp=Z,12nm,1.4s								
BJI				LR		LR			
	comp=Z,2μm,15.9s								
BJI				LR		LR			
	comp=Z,910nm,21.2s								
BJI				LR		LR			
	comp=Z,840nm,21.6s								
BJT	**Baijiatuan**	**20.76**	**291**	*e*P		**P**		**11 18 27.5**	**-2.3**
BJT				*e*S		**S**		**11 22 20.6**	**+0.3**
BJT				pmax		pmax			
	comp=Z,133nm,1.6s								
BJT	**Baijiatuan**	**20.76**	**291**	*e*P		**P**		**11 18 27.5**	**-2.3**
	comp=Z,133nm,1.6s								
BJT				*e*S		**S**		**11 22 20.6**	**+0.3**
PETK	**Petropavlovsk-**	**21.21**	**27**	LR		LR		11 26 58.4	
	comp=Z,500nm,21.0s,baz=214,slow=37								
HIA	**Hailar**	**21.40**	**318**	*e*P		**P**		**11 18 34.6**	**-2.1**
HIA				pmax		pmax			
	comp=Z,22nm,1.1s								
HIA	**Hailar**	**21.40**	**318**	*e*P		**P**		**11 18 34.6**	**-2.1**
	comp=Z,22nm,1.1s								
PET	**Petropavlovsk**	**21.51**	**29**	*e*P		**P**		**11 18 42.5**	**+4.8**
PET				*e*S		**S**		**11 22 38.4**	**+3.6**
PET				pmax		pmax			
	comp=Z,200nm,14.0s								
PET				MLR		MLR			
	comp=Z,800nm,18.0s								
QZH	**Quanzhou**	**22.39**	**249**	P		**P**		**11 18 49.0**	**+1.5**
QZH				S		**S**		**11 22 49.5**	**-2.6**
QZH				LR		LR			
	comp=Z,3μm,16.8s								
QZH				LR		LR			
	comp=Z,920nm,10.2s								
QZH				LR		LR			
	comp=Z,2μm,19.8s								
WHN	**Wuhan**	**23.39**	**266**	P		**P**		**11 18 56.0**	**-1.8**
WHN				S		**S**		**11 23 02.8**	**-6.5**
WHN				pmax		pmax			
	comp=Z,460nm,11.2s								
WHN				LR		LR			
	comp=Z,3μm,10.8s								
WHN				LR		LR			
	comp=Z,4μm,12.4s								
WHN				LR		LR			
	comp=Z,9μm,16.6s								
TIY	**Taiyuan**	**23.63**	**285**	*e*P		**P**		**11 19 00.0**	**-0.1**
TIY				pmax		pmax			
	comp=Z,240nm,7.5s								
TIY				LR		LR			
	comp=Z,2μm,19.8s								
TIY				LR		LR			
	comp=Z,3μm,14.9s								
TIY				LR		LR			
	comp=Z,4μm,16.3s								
HHC	**Hu-ho-hao-te**	**24.33**	**292**	*e*P		**P**		**11 19 07.0**	**+0.3**
HHC				sP		sP		11 19 17.0	-0.4
HHC				S		**S**		**11 23 23.3**	**-1.2**
HHC				pmax		pmax			
	comp=Z,23nm,1.2s								
HHC				pmax		pmax			
	comp=Z,210nm,7.4s								
HHC				LR		LR			
	comp=Z,1μm,14.8s								
HHC				LR		LR			
	comp=Z,1μm,14.8s								
HHC				LR		LR			
	comp=Z,910nm,14.6s								
MA2	**Magadan**	**25.13**	**11**	P		**P**		**11 19 14.3**	**+0.7**
	comp=Z,15nm,1.0s,baz=212,slow=9.7,SNR=6.2								
XAN	**Xi'an**	**26.93**	**277**	P		**P**		**11 19 28.8**	**-1.4**
XAN				pP		pP		11 19 36.0	-1.8
XAN				S		**S**		**11 24 11.5**	**+5.7**
XAN				pmax		pmax			
	comp=Z,22nm,1.3s								
XAN				pmax		pmax			
	comp=Z,210nm,8.6s								
XAN				LR		LR			
	comp=Z,2μm,16.0s								
XAN				LR		LR			
	comp=Z,2μm,14.1s								
XAN				LR		LR			
	comp=Z,4μm,14.1s								
H11N2	**WAKE ISLAND Hy**	**27.04**	**118**	T		T		11 47 54.8	
	baz=310,slow=75,SNR=12								
H11N1	**WAKE ISLAND Hy**	**27.05**	**118**	T		T		11 47 53.6	
	baz=310,slow=75,SNR=13								
H11N3	**WAKE ISLAND Hy**	**27.06**	**118**	T		T		11 47 54.8	
	baz=310,slow=75,SNR=13								
ENH	**Enshi**	**27.46**	**269**	*e*P		**P**		**11 19 33.2**	**-1.8**
	comp=Z,73nm,1.3s								
H11S1	**WAKE ISLAND Hy**	**27.70**	**120**	T		T		11 48 40.8	
	baz=312,slow=76,SNR=33								
H11S3	**WAKE ISLAND Hy**	**27.70**	**120**	T		T		11 48 40.2	
	baz=312,slow=76,SNR=18								
H11S2	**WAKE ISLAND Hy**	**27.71**	**120**	T		T		11 48 41.3	
	baz=312,slow=76,SNR=18								
YAK	**Yakutsk**	**27.93**	**348**	P		**P**		**11 19 38.5**	**-0.3**
	comp=Z,8.3nm,0.3s,baz=154,slow=13,SNR=5.5								
YAK				LR		LR		11 31 28.1	
	comp=Z,1μm,20.0s,baz=160,slow=38								
YAK	**Yakutsk**	**27.93**	**348**	*e*P		**P**		**11 19 39.0**	**+0.2**
YAK				*e**PP		**pP**		**11 19 44.8**	**-1.6**
YAK				*e*				11 20 24.4	
YAK				*e*PPP		PPP		11 20 34.7	
YAK				*e*				11 22 51.4	
YAK				*e*S		**S**		**11 24 21.5**	**+0.7**
YAK				*e*SSS		SSS		11 25 54.4	
YAK				pmax		pmax			
	comp=Z,15nm,1.0s								
YAK				pmax		pmax			
	comp=N,16nm,1.4s								
YAK				pmax		pmax			
	comp=E,5.0nm,1.5s								
YAK				pmax		pmax			
	comp=Z,85nm,2.7s								
YAK				pmax		pmax			
	comp=N,127nm,2.4s								
YAK				pmax		pmax			
	comp=E,60nm,2.6s								
YAK				smax		smax			
	comp=N,69nm,3.3s								
YAK				smax		smax			
	comp=E,119nm,4.0s								
YAK				MLR		MLR			
	comp=Z,1μm,17.0s								
YAK				MLR		MLR			
	comp=N,886nm,17.0s								
YAK				MLR		MLR			
	comp=E,1μm,17.0s								
SEY	**Seymchan**	**28.57**	**10**	P		**P**		**11 19 45.8**	**+1.2**
	comp=E,1.6nm,0.7s,baz=180,slow=20,SNR=3.8								
SEY	**Seymchan**	**28.57**	**10**	‖*e*P		**P**		**11 19 46.8**	**+2.3**
ULN	**Ulaanbaatar**	**28.61**	**307**	*c* iP		**P**		**11 19 45.2**	**-0.1**
ULN				pmax		pmax			
	comp=Z,32nm,1.7s								
ULN	**Ulaanbaatar**	**28.61**	**307**	*e*P		**P**		**11 19 45.4**	**+0.1**
	comp=Z,71nm,1.6s								
SONA1	**Songino Array**	**29.04**	**307**	*e*P		**P**		**11 19 49.4**	**+0.3**
SONM	**Songino Array**	**29.04**	**307**	P		**P**		**11 19 49.8**	**+0.7**
	comp=Z,17nm,1.2s,baz=108,slow=6.5,SNR=32								
SONM				LR		LR		11 32 51.1	
	comp=Z,1μm,20.4s,baz=93,slow=39								
BOD	**Bodaibo**	**29.23**	**329**	*e*P		**P**		**11 19 49.9**	**-0.5**
BOD				pmax		pmax			
	comp=Z,39nm,1.8s								
LZH	**Lanzhou**	**30.65**	**283**	*e*P		**P**		**11 20 03.8**	**+0.3**
LZH				pP		sP		11 20 13.0	-1.2
LZH				PcP		**PcP**		**11 23 01.8**	**+0.5**
LZH				*e*S		**S**		**11 25 05.5**	**+1.0**
LZH				sS		sS		11 25 15.0	-2.0
LZH				pmax		pmax			
	comp=Z,39nm,1.3s								
LZH				pmax		pmax			
	comp=Z,130nm,4.7s								
LZH				LR		LR			
	comp=Z,1μm,13.2s								
LZH				LR		LR			
	comp=Z,2μm,14.6s								
LZH				LR		LR			
	comp=Z,3μm,16.4s								
GYA	**Guiyang**	**31.18**	**264**	P		**P**		**11 20 09.0**	**+0.8**
GYA				pP		pP		11 20 15.5	-0.3
GYA				PP		**PnPn**		**11 21 12.3**	**+2.1**
GYA				PcP		**PcP**		**11 23 04.0**	**+1.2**
GYA				S		**S**		**11 25 14.8**	**+1.9**
GYA				sS		sS		11 25 25.0	-0.4
GYA				ScP		**ScP**		**11 26 43.3**	**-0.7**
GYA				SS		**SnSn**		**11 27 00.0**	**+4.3**
GYA				ScS		**ScS**		**11 30 40.8**	**-0.7**
GYA				pmax		pmax			
	comp=Z,20nm,0.8s						

comp=Z,410nm,13.7s
GTA Gaotai 33.36 290 *e*P P **11 20 27.0 -0.2**
GTA pP pP 11 20 34.3 -0.5
GTA sP sP 11 20 37.0 -1.0
GTA PP **PP** **11 21 40.5 -2.3**
GTA PcP **PcP** **11 23 07.5 -1.1**
GTA S **S** **11 25 47.5 +0.8**
GTA sS sS 11 25 59.0 -0.2
GTA SS **SnSn** **11 27 52.0 +3.5**
GTA pmax pmax
comp=Z,11nm,1.3s
GTA pmax pmax
comp=Z,190nm,5.0s
GTA LR LR
comp=Z,1μm,15.2s
GTA LR LR
comp=Z,1μm,14.3s
GTA LR LR
comp=Z,1μm,19.0s
KMI Kunming 34.95 264 P **P** **11 20 41.8 +0.6**
KMI pP pP 11 20 49.3 +0.5
KMI sP sP 11 20 52.0 +0.1
KMI S **S** **11 26 10.0 -1.6**
KMI SS **SnSn** **11 28 28.0 +0.7**
KMI pmax pmax
comp=Z,12nm,1.0s
KMI pmax pmax
comp=Z,110nm,4.7s
KMI LR LR
comp=Z,2μm,14.4s
KMI LR LR
comp=Z,3μm,14.9s
KMI LR LR
comp=Z,4μm,15.1s
BILL Bilibino 35.75 16*de*P **P** **11 20 48.4 +1.1**
BILL *e* 11 22 11.4
BILL *e*PPP PPP 11 22 24.0
BILL *e*S **S** **11 26 13.9 -8.7**
BILL *e*SS **SnSn** **11 28 48.8 +3.4**
BILL pmax pmax
comp=Z,12nm,2.5s
BILL MLR MLR
comp=Z,554nm,19.0s
BILL Bilibino 35.75 16 *e*P **P** **11 20 47.8 +0.4**
comp=Z,4.8nm,1.1s
TIXI Tiksi 37.16 353 P **P** **11 20 59.2 -0.1**
comp=Z,1.3nm,0.5s,baz=144,slow=8.2,SNR=5.1
TIXI LR LR 11 38 01.4
comp=Z,1μm,18.6s,baz=166,slow=39
TIXI Tiksi 37.16 353 ⇓*i*P **P** **11 20 59.5 +0.2**
TIXI pmax pmax
comp=Z,6.0nm,1.7s
TIXI Tiksi 37.16 353 *e*P **P** **11 20 58.6 -0.6**
comp=Z,7.2nm,1.0s
FAKI Fak Fak 38.91 195 *e*P **P** **11 21 16.2 +1.6**
FAKI *e*pwP **sP** **11 21 25.9 +0.5**
KRAR Krasnoyarsk 38.97 318⇓*e*P **P** **11 21 12.7 -2.1**
KRAR pmax pmax
comp=Z,25nm,0.4s
CHTO Chiang Mai 41.09 258 *e*P **P** **11 21 30.9 -1.9**
CHTO pmax pmax
comp=Z,9.0nm,1.0s
CHTO Chiang Mai 41.09 258 *e*P **P** **11 21 30.9 -1.9**
comp=Z,9.1nm,1.0s
CMAR Chiang Mai Arr 41.28 258 P **P** **11 21 32.6 -1.8**
comp=Z,2.5nm,0.7s,baz=48,slow=7.0,SNR=10
CMAR PcP **PcP** **11 23 33.8 +0.9**
comp=Z,0.6nm,0.5s,baz=41,slow=2.9,SNR=3.7
CMAR LR LR 11 38 48.0
comp=Z,352nm,21.7s,baz=52,slow=36
CM01 Chiang Mai Arr 41.28 258 *e*P **P** **11 21 33.5 -0.9**
WMQ Urumqi 41.90 299 P **P** **11 21 40.5 +1.2**
WMQ pP pP 11 21 48.3 +1.3
WMQ sP sP 11 21 51.3 +1.2
WMQ PP **PnPn** **11 23 21.8 +0.4**
WMQ S **S** **11 27 57.5 +1.5**
WMQ sS sS 11 28 10.5 +1.8
WMQ SS **SS** **11 30 57.0 -5.7**
WMQ ScS **ScS** **11 31 39.5 -0.9**
WMQ pmax pmax
comp=Z,11nm,1.4s
WMQ pmax pmax
comp=Z,140nm,4.6s
WMQ LR LR
comp=Z,260nm,16.6s
WMQ LR LR
comp=Z,220nm,13.0s
WMQ LR LR
comp=Z,190nm,20.4s
SBUM Sibu 42.53 227 *e*P **P** **11 21 43.1 -1.4**
comp=Z,37nm,1.7s
ZAA0 Zalesovo Array 43.34 314 *e*P **P** **11 21 51.8 +1.0**
ZALV Zalesovo Beam 43.34 314 P **P** **11 21 50.8 0.0**
comp=Z,2.9nm,0.5s,baz=69,slow=8.6,SNR=8.0
ZALV LR LR 11 40 51.7
comp=Z,384nm,19.5s,baz=74,slow=38
NVS Novosibirsk 44.30 315 *e*P **P** **11 21 58.3 -0.1**
NVS pmax pmax
comp=Z,39nm,1.5s
NVS pmax pmax
comp=E,29nm,1.4s
KSM Kuching 44.45 228 *e*P **P** **11 21 59.0 -1.1**
comp=E,13nm,1.0s
KAPI Kappang 44.99 212 P **P** **11 22 04.4 +0.2**
comp=E,22nm,1.0s,baz=360,slow=3.4,SNR=9.2
KAPI Kappang 44.99 212 *e*P **P** **11 22 04.8 +0.5**
comp=E,60nm,1.3s
NRIK Noril'sk 45.05 336 P **P** **11 22 04.4 +0.2**
comp=E,3.5nm,0.5s,baz=120,slow=6.4,SNR=5.8
NRIK LR LR 11 43 21.3
comp=E,1μm,18.6s,baz=100,slow=39
MK01 Makanchi Array 45.31 304 *e*P **P** **11 22 06.7 +0.1**
MK31 Makanchi Array 45.31 304 *e*P **P** **11 22 06.5 -0.2**
MK31 Makanchi Array 45.31 304 *e*P **P** **11 22 06.5 -0.2**
MKAR Makanchi Array 45.31 304 P **P** **11 22 05.9 -0.8**
comp=E,2.6nm,0.9s,baz=92,slow=7.8,SNR=5.3
MKAR Makanchi Array 45.31 304 *e*P **P** **11 22 06.7 +0.1**
MKAR Makanchi Array 45.31 304 *e*P **P** **11 22 06.7 +0.1**
MAKZ Makanchi 45.52 304 *e*P **P** **11 22 08.4 +0.1**
MAKZ pmax pmax
comp=Z,23nm,1.1s
MAKZ Makanchi 45.52 304 *e*P **P** **11 22 08.4 +0.1**
comp=Z,23nm,1.1s
KURK Kurchatov 47.27 310 *e*P **P** **11 22 21.4 -0.5**
KURK pmax pmax
comp=Z,131nm,1.6s
KURK Kurchatov 47.27 310 *e*P **P** **11 22 21.4 -0.5**
comp=Z,131nm,1.6s
KURBB Kurchatov Arra 47.33 309 P **P** **11 22 22.3 -0.2**
comp=Z,2.0nm,0.3s,baz=86,slow=8.3,SNR=33
GUN Gumba 47.59 277 *e*P **P** **11 22 25.1 0.0**
comp=Z,125nm,1.2s
SOEI Soe 47.63 204 *e*P **P** **11 22 24.1 -1.1**
comp=Z,112nm,1.1s
KULM Kulim 48.10 241 *e*P **P** **11 22 27.9 -0.9**
comp=Z,17nm,1.1s
KKN Kakani 48.12 278 *e*P **P** **11 22 28.9 -0.2**
comp=Z,117nm,1.3s
DMN Daman 48.34 277 *e*P **P** **11 22 30.8 0.0**
IPM Ipoh 48.39 240 *e*P **P** **11 22 29.6 -1.5**
comp=Z,26nm,1.1s
GKN Gorkha 48.56 278 *e*P **P** **11 22 32.3 -0.1**
MTN Manton Dam 48.79 194 *e*P **P** **11 22 33.8 -0.1**
comp=Z,54nm,1.4s
KOLN Koldanda 49.49 278 *e*P **P** **11 22 39.6 0.0**
comp=Z,128nm,1.5s
PYUN Piuthan 49.85 279 *e*P **P** **11 22 42.6 +0.2**
comp=Z,274nm,1.3s
MDM Murphy Dome 50.38 31 *e*P **P** **11 22 48.2 +2.5**
comp=Z,14nm,1.1s
COLA College 50.54 31 P **P** **11 22 50.0 +3.3**
COLA pmax pmax
comp=Z,9.0nm,2.0s
TKM2 Tokmak 2 50.73 300 *e*P **P** **11 22 49.8 +1.0**
TKM2 pmax pmax
comp=Z,76nm,1.5s
TKM2 Tokmak 2 50.73 300 *e*P **P** **11 22 49.8 +1.0**
comp=Z,76nm,1.5s
ILAR Eielson Array 50.95 32 P **P** **11 22 50.5 +0.6**
comp=Z,1.8nm,0.8s,baz=271,slow=5.3,SNR=18
ILB Eielson Array 50.95 32 *e*P **P** **11 22 49.7 -0.2**
IL1 Eielson Array 50.95 32 *e*P **P** **11 22 49.3 -0.6**
PSI Prapat 51.05 241 P **P** **11 22 50.5 -1.0**
baz=26,slow=7.5
PSI Prapat 51.05 241 *e*P **P** **11 22 50.6 -0.9**
PSI pmax pmax
comp=Z,17nm,1.0s
PSI Prapat 51.05 241 *e*P **P** **11 22 50.6 -0.9**
comp=Z,17nm,1.0s
KSH Kashi 51.38 296 *e*P P 11 22 58.5 +4.8
KSH *ep*P sP 11 23 06.0 +1.3
KSH *es*P pP 11 23 09.3 +7.7
KSH *e*PP **PP** **11 24 57.8 +7.1**
KSH S **S** **11 30 18.0 +6.2**
KSH ScS **ScS** **11 32 44.0 +1.4**
KSH pmax pmax
comp=Z,130nm,7.9s
KSH LR LR
comp=Z,650nm,13.4s
KSH LR LR
comp=Z,570nm,13.5s
KSH LR LR
comp=Z,1μm,17.5s
FRU Bishkek 51.45 300 *e*P **P** **11 22 54.0 0.0**
FRU *i* 11 23 06.0
FRU pmax pmax
comp=Z,60nm,2.0s
AAK Ala-Archa 51.59 300 P **P** **11 22 54.8 -0.3**
comp=Z,0.7nm,0.4s,baz=92,slow=12,SNR=8.1
AAK Ala-Archa 51.59 300*c i*P **P** **11 22 54.9 -0.3**
AAK pmax pmax
comp=Z,28nm,1.8s
AAK Ala-Archa 51.59 300 *e*P **P** **11 22 55.3 +0.1**
comp=Z,12nm,1.1s
AAK *ep*wP **sP** **11 23 06.7 +0.5**
BVAR Borovoye Array 52.00 313 P **P** **11 22 58.1 +0.2**
comp=Z,2.9nm,0.9s,baz=79,slow=7.7,SNR=12
BRVK Borovoye 52.05 313*c i*P **P** **11 22 58.3 0.0**
BRVK pmax pmax
comp=Z,13nm,1.2s
BRVK Borovoye 52.05 313 *e*P **P** **11 22 58.6 +0.3**
BRVK *ep*P **pP** **11 23 04.7 -1.5**
LEM Lembang 52.69 224 P P 11 23 08.6 +4.9
comp=Z,47nm,1.0s,baz=95,slow=6.5,SNR=12
GSI Gunungsitoli 53.06 241 *e*P **P** **11 23 05.0 -1.2**
comp=Z,144nm,1.0s
KKAR Karatay Array 54.26 301 *e*P **P** **11 23 15.0 +0.2**
KKAR Karatay Array 54.26 301 *e*P **P** **11 23 15.0 +0.2**
NDI New Delhi 54.26 282 *e*P **P** **11 23 11.0 -4.0**
FITZ Fitzroy Crossi 55.13 199 *e*P **P** **11 23 21.2 +0.1**
comp=Z,25nm,1.3s
WRAB Tennant Creek 55.24 188⇓*e*P **P** **11 23 21.8 -0.2**
WRAB pmax pmax
comp=Z,34nm,1.7s
WRAB Tennant Creek 55.24 188 *e*P **P** **11 23 21.4 -0.5**
comp=Z,22nm,1.0s
WB2 Warramunga Arr 55.25 188 *e*P **P** **11 23 22.1 +0.1**
comp=Z,21nm,0.9s
WRA Warramunga Arr 55.26 188 P **P** **11 23 22.0 0.0**
comp=Z,5.6nm,0.7s,baz=6.1,slow=7.6,SNR=24
INK Inuvik 55.94 27 P **P** **11 23 28.1 +1.6**
comp=Z,1.6nm,0.8s,baz=287,slow=6.5,SNR=9.3
INK Inuvik 55.94 27 *e*P **P** **11 23 26.3 -0.1**
INK pmax pmax
comp=Z,13nm,1.5s
INK Inuvik 55.94 27 *e*P **P** **11 23 26.3 -0.1**
comp=Z,12nm,1.5s
SVE Sverdlovsk 56.69 319⇑*e*P **P** **11 23 32.8 +0.8**
SVE pmax pmax
comp=Z,32nm,1.4s
SVE MLR MLR
comp=Z,1μm,15.0s
ARU Arti 57.91 319 P **P** **11 23 41.0 +0.5**
comp=Z,2.4nm,0.2s,baz=75,slow=5.0,SNR=18
ARU Arti 57.91 319*c i*P **P** **11 23 40.5 0.0**
ARU 11 24 33.4
ARU 11 25 53.5
ARU **11 31 39.2 +0.5**
ARU 11 33 24.9
ARU SS **SS** **11 35 24.6 -4.6**
ARU pmax pmax
comp=Z,41nm,1.7s
ARU MLR MLR
comp=Z,1μm,18.0s
ARU Arti 57.91 319 *e*P **P** **11 23 40.6 0.0**
comp=Z,23nm,1.0s
SOKR Solikamsk 57.94 323⇑*i*P **P** **11 23 39.8 -0.9**
SOKR pmax pmax
comp=Z,13nm,1.2s
SOKR MLR MLR
comp=Z,1μm,22.0s
HYB Hyderabad 58.40 270 *i* P **P** **11 23 45.0 +0.4**
HYB *e* 11 23 56.0
AS01 Alice Springs 58.98 188 *e*P **P** **11 23 48.9 +0.5**
AS31 Alice Springs 58.98 188 *e*P **P** **11 23 48.1 -0.3**
comp=Z,1.7nm,0.6s
ASAR Alice Springs 58.98 188 P **P** **11 23 48.0 -0.3**
comp=Z,0.6nm,0.5s,baz=1.1,slow=7.0,SNR=13
ASAR LR LR 11 48 33.4
comp=Z,140nm,20.2s,baz=9.0,slow=35
ASAR PKP2bc 11 53 35.2
comp=Z,0.4nm,1.0s,baz=191,slow=4.3,SNR=3.3
ABKAR Akbulak array 59.31 311 *e*P **P** **11 23 50.6 +0.1**
MBWA Marble Bar 59.77 204 *e*P **P** **11 23 54.2 +0.3**
comp=Z,27nm,1.1s
DLBC Dease Lake 59.96 37 P **P** **11 23 57.1 +2.2**
comp=Z,1.8nm,0.8s,baz=328,slow=7.3,SNR=5.6
AKTO Aktyubinsk 60.09 313 P **P** **11 23 55.5 -0.3**
comp=Z,0.7nm,0.3s,baz=87,slow=11,SNR=7.1
POO Poona 61.68 273 *e*P **P** **11 24 05.0 -2.2**
RES Resolute Bay 64.34 14 P **P** **11 24 24.4 +0.6**
comp=Z,2.0nm,0.9s,baz=310,slow=5.7,SNR=9.3
RES Resolute Bay 64.34 14 *e*P **P** **11 24 23.9 0.0**
RES pmax pmax
comp=Z,6.0nm,1.0s
RES Resolute Bay 64.34 14 *e*P **P** **11 24 23.9 0.0**
comp=Z,6.1nm,1.0s
GEYT Alibeck 64.94 300 P **P** **11 24 28.4 0.0**
comp=Z,4.8nm,1.0s,baz=38,slow=2.6,SNR=6.6
GEYT LR LR 11 55 43.8
comp=Z,551nm,18.6s,baz=45,slow=39
YKA Yellowknife Ar 65.31 30 P **P** **11 24 30.7 +0.4**
comp=Z,0.7nm,0.8s,baz=298,slow=6.4,SNR=17
YKB5 Yellowknife Ar 65.31 30 *e*P **P** **11 24 29.8 -0.5**
KLMR Klimovskoe 65.45 328 *e*P **P** **11 24 29.8 -1.5**
KLMR *e* 11 26 53.9
KLMR pmax pmax
comp=Z,17nm,1.6s
ARCES ARCESS Array B 65.81 340 LR LR 11 58 03.2
comp=Z,503nm,18.0s,baz=46,slow=40
STKA Stephens Creek 66.70 180 LR LR 11 53 04.1
comp=Z,213nm,19.9s,baz=13,slow=35
MOS Moscow 68.88 324 *e*P **P** **11 24 53.1 0.0**
MOS *e* 11 27 22.9
MOS *e*S **S** **11 33 56.3 +0.9**
MOS pmax pmax
comp=Z,37nm,1.3s
MOS MLR MLR
comp=Z,900nm,16.0s
VRH Novokhopyorsk 69.11 318 *e*P **P** **11 24 54.2 -0.5**
VRH pmax pmax
comp=Z,7.0nm,0.6s
VRH MLR MLR
comp=Z,1μm,18.0s
OBN Obninsk 69.72 324 P **P** **11 24 58.8 +0.5**
comp=Z,15nm,0.6s,baz=12,slow=23,SNR=5.6
OBN Obninsk 69.72 324*d i*P **P** **11 24 59.0 +0.7**
OBN *e*PP **sP** **11 25 10.3 +0.8**
OBN *e*SP **PcP** **11 25 15.0 -6.0**
OBN *e* 11 25 21.7
OBN *e*PPP PPP 11 29 09.5
OBN *e*S **S** **11 34 06.0 +0.6**
OBN *e*SS **SS** **11 38 34.1 +1.1**
OBN pmax pmax
comp=Z,43nm,1.7s
OBN MLR MLR
comp=Z,894nm,16.0s
LPSR Galich'ya Gora 69.87 321 *e*P **P** **11 24 59.0 -0.3**
LPSR pmax pmax
comp=Z,10.0nm,0.9s
LPSR MLR MLR
comp=Z,950nm,17.0s
B08A Colville Reser 70.00 45 *e*P **P** **11 25 00.5 +0.1**
B08A *e*PcP **pP** **11 25 07.7 -0.7**
VSR Storozhevoye 70.48 319 *e*P **P** **11 25 03.0 -0.1**
VSR pmax pmax
comp=Z,20nm,1.2s
VSR MLR MLR
comp=Z,1μm,19.0s
FIA1 FINESS Array S 70.56 333 *e*P **P** **11 25 03.1 -0.3**
FINES FINESS Array B 70.56 333 P **P** **11 25 03.7 +0.3**
comp=Z,2.9nm,0.8s,baz=72,slow=12,SNR=9.3
NEW Newport 71.31 44 *e*P **P** **11 25 08.3 0.0**
NEW pmax pmax
comp=Z,13nm,1.4s
NEW Newport 71.31 44 *e*P **P** **11 25 08.3 0.0**
comp=Z,13nm,1.4s
K05A Summer Lake 71.96 50 *e*P **P** **11 25 15.7 +3.2**
comp=Z,18nm,1.1s
NCK Nalchik 71.98 311⇓*e*P **P** **11 25 13.4 +1.0**
ZEI Tsey 72.15 310 *e*P **P** **11 25 11.3 -2.4**
ZEI pmax pmax
comp=Z,24nm,1.5s
VSU Vasula 72.17 330⇓*e*P **P** **11 25 15.3 +2.2**
VSU pmax pmax
comp=Z,38nm,1.7s
KBZ Khabaz 72.28 311 P **P** **11 25 14.8 +0.7**
comp=Z,7.3nm,1.1s,baz=100,slow=3.0,SNR=13
KBZ LR LR 11 59 06.1
comp=Z,242nm,20.2s,baz=37,slow=38
KVAR Kislovodsk Arr 72.29 312 P **P** **11 25 15.3 +1.0**
comp=Z,38nm,1.3s,baz=56,slow=7.3,SNR=14
KIV Kislovodsk 72.30 312*c i*P **P** **11 25 15.2 +0.9**
KIV *i* 11 25 26.0
KIV *e* 11 25 32.6
KIV *e*S **S** **11 34 39.9 +4.0**
KIV *e*SSS SSS 11 42 28.3
KIV pmax pmax
comp=Z,31nm,1.2s
KIV MLR MLR
comp=Z,297nm,16.0s
KIV Kislovodsk 72.30 312 *e*P **P** **11 25 14.9 +0.6**
comp=Z,30nm,1.3s
SUMG Summit 72.54 0 *e*P **P** **11 25 15.3 -0.4**
SUMG *e* 11 25 40.9
SUMG Summit 72.54 0 *e*P **P** **11 25 15.3 -0.4**
SUMG *e*PcP **PcP** **11 25 40.9 +7.6**
NEY Neytrino 72.65 311 P **P** **11 25 18.0 +1.4**
NEY pmax pmax
comp=Z,2.0nm,1.3s
GNI Garni 73.00 307 P **P** **11 25 19.6 +1.0**
comp=Z,3.0nm,0.3s,baz=182,slow=8.1,SNR=7.0
GNI Garni 73.00 307*c i*P **P** **11 25 20.4 +1.7**
GNI pmax pmax
comp=Z,52nm,1.1s
GNI Garni 73.00 307 *e*P **P** **11 25 19.5 +0.8**
comp=Z,37nm,1.4s
JTMT Jette 73.19 43 *e*P **P** **11 25 19.7 0.0**
SWMT Swartz Lake 73.48 43 *e*P **P** **11 25 23.8 +2.5**
MSO Missoula 73.90 44 *e*P **P** **11 25 23.2 -0.6**
MSO *ep*P **pP** **11 25 26.4 -5.6**
MFID Camas Ranch 74.71 48 *e*P **P** **11 25 31.1 +2.5**
comp=Z,7.0nm,1.2s
ANN Anapa 74.98 314 *e*P **P** **11 25 27.8 -2.1**
ANN *e**PP **pP** **11 25 39.4 +1.3**
ANN *e* 11 28 13.5
ANN *e*S **S** **11 35 02.9 -3.1**
ANN pmax pmax
comp=Z,43nm,1.6s
LRM Limekiln Ridge 75.32 44 *e*P **P** **11 25 34.6 +2.3**
DLMT Dillon 75.51 45 *e*P **P** **11 25 35.6 +2.5**
comp=Z,7.8nm,1.1s
FCC Fort Churchill 75.56 26 *e*P **P** **11 25 33.3 +0.3**
FCC pmax pmax
comp=Z,15nm,1.4s
FCC Fort Churchill 75.56 26 *e*P **P** **11 25 33.3 +0.3**
comp=Z,15nm,1.4s
HFS Hagfors 75.87 336 P **P** **11 25 36.2 +1.4**
comp=Z,1.9nm,0.8s,baz=0.0,slow=5.8,SNR=3.2
BOZ Bozeman (W) 75.89 44 *e*P **P** **11 25 38.1 +2.7**
BOZ pmax pmax
comp=Z,8.0nm,1.2s
BOZ Bozeman (W) 75.89 44 *e*P **P** **11 25 38.1 +2.7**
comp=Z,7.6nm,1.2s
AKASG Malin Array Be 75.90 323 P **P** **11 25 35.1 0.0**
comp=Z,2.4nm,0.6s,baz=46,slow=6.5,SNR=33
AKASG LR LR 12 02 23.2
comp=Z,1μm,18.3s,baz=35,slow=38
AKBB Malin Array Si 75.90 323 *e*P **P** **11 25 35.8 +0.6**
AKBB Malin Array Si 75.90 323 *e*P **P** **11 25 35.8 +0.6**
KIEV Kiev 75.92 323*c i*P **P** **11 25 34.8 -0.4**
KIEV pmax pmax
comp=Z,24nm,1.4s
KIEV Kiev 75.92 323 *e*P **P** **11 25 35.7 +0.5**
comp=Z,13nm,0.9s
NV01 Mina Array Sit 75.93 53 *e*P **P** **11 25 38.0 +2.2**
NVAR Mina Array Bea 75.93 53 P **P** **11 25 38.0 +2.2**
comp=Z,2.4nm,0.8s,baz=280,slow=6.7,SNR=17
NVAR LR LR 11 51 48.8
comp=Z,138nm,21.9s,baz=311,slow=30
NC204 NORSAR Array S 75.94 338 *e*P **P** **11 25 36.1 +0.8**
NB2 NORSAR Subarra 75.98 338 P **P** **11 25 35.9 +0.4**
comp=Z,16nm,1.1s,baz=40,slow=5.9
NOA NORSAR Array B 75.98 338 P **P** **11 25 35.8 +0.3**
comp=Z,5.5nm,1.1s,baz=40,slow=5.8,SNR=6.9
NBO02 NORSAR Array S 76.09 338 *e*P **P** **11 25 37.1 +1.1**
SIM Simferopol' 76.81 316 P **P** **11 25 42.1 +1.7**
SIM pmax pmax
comp=Z,22nm,8.2s
IMW Indian Meadow 77.33 45 *e*P **P** **11 25 44.0 +0.3**
comp=Z,5.4nm,1.0s
FLWY Flagg Ranch 77.35 45 *e*P **P** **11 25 46.3 +2.6**
comp=Z,5.8nm,0.9s
KLNR Kaliningrad 77.44 329 *e*P **P** **11 25 43.7 0.0**
KLNR pmax pmax
comp=Z,92nm,0.9s
MOOW Moose Ponds 77.53 45 *e*P **P** **11 25 47.1 +2.4**
comp=Z,16nm,1.9s
REDW Red Top Meadow 77.70 45 *e*P **P** **11 25 45.8 +0.1**
REDW *ep*P **pP** **11 25 54.0 +0.1**
R11A Troy Canyon, C 77.73 52 *e*P **P** **11 25 48.5 +2.6**
comp=Z,6.9nm,1.4s
SORM Soroca 77.97 321⇑*i*P **P** **11 25 47.1 +0.3**
HWUT Hardware Ranch 78.33 47 *e*P **P** **11 25 52.0 +2.8**
comp=Z,6.5nm,1.0s
BW06 Boulder Array 78.81 45 *e*P **P** **11 25 52.4 +0.5**
PDAR Pinedale Array 78.81 45 P **P** **11 25 53.6 +1.6**
comp=Z,1.0nm,0.7s,baz=276,slow=2.6,SNR=10
LVV L'vov 79.01 324 *e*P **P** **11 25 52.8 +0.2**
KWP Kalwaria Pacla 79.77 325 *e*P **P** **11 25 58.2 +1.5**
BUR08 Bucovina Ar. S 79.90 322 *e*P **P** **11 25 58.0 +0.4**
TESR Tescani 79.90 321⇓*i*P **P** **11 25 59.5 +2.0**
BURAR Bucovina Array 79.91 322⇓*i*P **P** **11 25 58.7 +1.1**
LCMT Little Creek M 80.02 52 *e*P **P** **11 25 57.5 -1.0**
comp=Z,17nm,1.6s
MTPU Mount Pierson 80.08 50 *e*P **P** **11 25 58.0 -1.1**
MTPU *e*PcP **PcP** **11 26 05.8 -0.7**
BR131 Keskin Array S 80.25 312 *e*P **P** **11 25 59.8 +0.1**
BRTR Keskin Array B 80.25 312 P **P** **11 26 00.6 +0.9**
comp=Z,2.9nm,0.9s,baz=103,slow=3.9,SNR=17
BRTR LR LR 12 06 20.9
comp=Z,140nm,18.1s,baz=40,slow=39
VRI Vrincioaia 80.29 320⇓*i*P **P** **11 26 01.0 +1.4**
KNB Kanab 80.29 51 *e*P **P** **11 25 58.6 -1.4**
KNB pmax pmax
comp=Z,27nm,1.4s
KNB Kanab 80.29 51 *e*P **P** **11 25 58.6 -1.4**
comp=Z,27nm,1.4s
PLOR Plostina 80.34 320⇓*i*P P 11 26 13.3 +13
KOLS Kolonicke sedl 80.46 324 *e*P **P** **11 26 00.5 +0.1**
KOLS *e* 11 26 13.2
KOLS *e* 11 29 10.8
KOLS pmax pmax
comp=Z,10.0nm,1.2s
KOLS Kolonicke sedl 80.46 324 *e*P **P** **11 26 00.5 +0.1**
KOLS *e* 11 26 13.2
KOLS *e*PP PP 11 29 10.8 +7.7
KOLS *e*L L 12 07 56.7
UZH Uzhgorod 80.66 324 *e*P **P** **11 26 03.2 +1.7**
UZH *e* 11 26 13.4
UZH *e*S **S** **11 36 08.0 +0.9**
BR231 Keskin MP Arra 80.70 312 *e*P **P** **11 26 01.2 -0.9**
OJC Ojcow 80.71 326 *e*P **P** **11 26 03.0 +1.3**
OJC Ojcow 80.71 326 *e*P **P** **11 26 02.0 +0.3**
OJC *e* 11 26 12.9
OJC Ojcow 80.71 326 *e*P **P** **11 26 02.0 +0.3**
OJC *e*PcP **sP** **11 26 12.9 -0.1**
CRVS Cervenica-Dubn 80.86 325 *e*P **P** **11 26 02.9 +0.3**
CRVS Cervenica-Dubn 80.86 325 *e*P **P** **11 26 02.9 +0.3**
DOPR Dopca 80.92 321⇓*i*P P 11 26 10.3 +7.3
MLR Muntele Rosu 80.95 320 P **P** **11 26 04.4 +1.2**
comp=Z,0.6nm,1.0s,baz=0.2,slow=5.7,SNR=6.0
MLR Muntele Rosu 80.95 320⇑*i*P **P** **11 26 05.3 +2.0**
MLR Muntele Rosu 80.95 320 *e*P **P** **11 26 02.0 -1.3**
MLR pmax pmax
comp=Z,13nm,1.4s

MLR **Muntele Rosu** 80.95 320 *eP* **P** 11 26 02.0 -1.3
comp=Z,12nm,1.4s
NIE **Niedzica** 81.04 326 *eP* **P** 11 26 05.3 +1.7
KECS **Kecovo** 81.62 325 *eP* **P** 11 26 07.7 +1.1
KECS pmax pmax
comp=Z,6.0nm,1.3s
KECS **Kecovo** 81.62 325 *eP* **P** 11 26 07.7 +1.1
LANS **Liptovska Anna** 81.62 326 *eP* **P** 11 26 09.1 +2.4
LANS **Liptovska Anna** 81.62 326 *eP* **P** 11 26 09.1 +2.4
ARR **Arges** 81.72 321 ⇓ *iP* **P** 11 26 09.6 +2.3
OKC **Ostrava-Krasne** 81.72 327 *eP* **P** 11 26 08.0 +0.9
OKC *esP* **sP** 11 26 19.2 +0.8
OKC AMS AMS 12 06 10.0
comp=Z,900nm,15.2s
KSP **Ksiaz** 81.80 329 *eP* **P** 11 26 08.9 +1.4
PV04 **Paradox Valley** 81.91 48 *eP* **P** 11 26 08.6 0.0
MORC **Moravsky Berou** 82.04 327 *eP* **P** 11 26 09.5 +0.7
MORC pmax pmax
comp=Z,48nm,1.1s
MORC **Moravsky Berou** 82.04 327 *eP* **P** 11 26 09.5 +0.7
comp=Z,48nm,1.1s
WUAZ **Wupatki** 82.13 52 *eP* **P** 11 26 09.1 -0.7
comp=Z,5.5nm,0.9s
DPC **Dobruska-Polom** 82.15 328 *eP* **P** 11 26 10.8 +1.4
DPC *esP* **sP** 11 26 20.5 -0.2
DPC AMS AMS 12 08 20.0
comp=Z,600nm,15.3s
UPC **Upice** 82.17 328 *eP* **P** 11 26 10.7 +1.2
UPC *esP* **sP** 11 26 21.9 +1.2
UPC AMS AMS 12 07 30.0
comp=Z,700nm,15.7s
PV01 **Paradox Valley** 82.27 49 *eP* **P** 11 26 13.4 +2.8
PSZ **Piszkesteto** 82.30 325 ⇑ *iP* **P** 11 26 11.3 +1.0
PSZ **Piszkesteto** 82.30 325 *eP* **P** 11 26 11.2 +1.0
PSZ pmax pmax
comp=Z,25nm,1.1s
PSZ **Piszkesteto** 82.30 325 *eP* **P** 11 26 11.2 +0.9
comp=Z,25nm,1.1s
VYHS **Vyhne** 82.38 326 *eP* **P** 11 26 11.3 +0.7
VYHS *e* 11 26 23.1
VYHS pmax pmax
comp=Z,7.0nm,1.2s
VYHS MLR MLR
comp=Z,500nm,16.3s
VYHS **Vyhne** 82.38 326 *eP* **P** 11 26 11.3 +0.7
VYHS *e* 11 26 23.1
PVCC **Panska Ves** 82.76 329 AMS AMS 12 09 10.0
comp=Z,700nm,15.4s
BRG **Berggiesshubel** 82.76 330 *eP* **P** 11 26 13.0 +0.5
comp=Z,12nm,1.4s
BRG *i* 11 26 24.2
comp=Z,10.0nm,1.0s
comp=N,436nm,14.4s
comp=E,592nm,16.9s
comp=Z,722nm,16.4s
BRG **Berggiesshubel** 82.76 330 *eP* **P** 11 26 13.0 +0.5
BRG *i* 11 26 24.2
BRG pmax pmax
comp=Z,12nm,1.4s
BRG MLR MLR
comp=N,436nm,14.4s
BRG MLR MLR
comp=E,592nm,16.9s
BRG MLR MLR
comp=Z,722nm,16.4s
VRAC **Vranov** 82.80 327 P **P** 11 26 13.9 +1.1
comp=Z,1.6nm,0.4s,baz=49,slow=4.8,SNR=9.6
CLL **Collm** 82.82 330 *i* P **P** 11 26 12.8 0.0
comp=Z,13nm,1.3s
CLL *i* pP **sP** 11 26 24.5 +0.4
comp=Z,23nm,1.1s
CLL *eS* **S** 11 36 27.0 -2.3
CLL **Collm** 82.82 330 *eP* **P** 11 26 13.0 +0.2
CLL pmax pmax
comp=Z,20nm,0.9s
CLL **Collm** 82.82 330 *eP* **P** 11 26 12.9 +0.2
comp=Z,20nm,0.9s
MVCO **Mesa Verde** 82.90 49 *eP* **P** 11 26 16.5 +2.7
comp=Z,25nm,1.8s
GOPC **GO Pecny, Ondr** 83.13 329 *eP* **P** 11 26 16.4 +1.9
GOPC AMS AMS 12 10 00.0
comp=Z,800nm,15.7s
PRA **Prague** 83.17 329 *eP* **P** 11 26 16.1 +1.4
PRA AMS AMS 12 07 10.0
comp=Z,900nm,15.8s
PRU **Pruhonice** 83.18 329 *eP* **P** 11 26 15.8 +1.1
PRU *esP* **sP** 11 26 26.9 +0.9
PRU AMS AMS 12 10 10.0
comp=Z,1μm,15.5s
TREC **Trest** 83.30 328 AMS AMS 12 09 50.0
comp=Z,600nm,16.6s
S22A **4UR Ranch, Cre** 83.58 48 *eP* **P** 11 26 18.9 +1.5
comp=Z,7.9nm,1.2s
PPT **Papeete** 83.61 117 LR LR 11 58 34.3
comp=Z,140nm,19.6s,baz=342,slow=32
PPT2 **Papeete2** 83.62 117 *e*LR LR 11 52 23.9
comp=Z,221nm,21.2s
X18A **Snowflake** 83.66 52 *eP* **P** 11 26 21.0 +3.3
NKC **Novy Kostel** 83.87 330 *eP* **P** 11 26 19.0 +0.7
NKC *esP* **sP** 11 26 30.1 +0.5
NKC AMS AMS 12 07 30.0
comp=Z,900nm,16.1s
PKSM **Moragy** 84.12 324 ⇓ *iP* **P** 11 26 19.8 +0.2
CONA **Conrad Observa** 84.15 327 *i* PcP **P** 11 26 21.0 +1.2
comp=Z,17nm,1.4s,SNR=9.0
KHC **Kasperske Hory** 84.24 329 *eP* **P** 11 26 20.9 +0.6
KHC *esP* **sP** 11 26 32.3 +0.8
KHC AMS AMS 12 10 40.0
comp=Z,900nm,16.3s
KHC **Kasperske Hory** 84.24 329 *eP* **P** 11 26 20.8 +0.5
KHC pmax pmax
comp=Z,8.0nm,1.1s
KHC **Kasperske Hory** 84.24 329 *eP* **P** 11 26 20.8 +0.5
comp=Z,7.7nm,1.1s
SDCO **Great Sand Dun** 84.39 47 *eP* **P** 11 26 23.6 +2.1
comp=Z,10nm,1.4s
GEC2 **GERESS Array S** 84.41 328 *eP* **P** 11 26 21.4 +0.2
GEC2 pmax pmax
comp=Z,10.0nm,1.1s
GEC2 **GERESS Array S** 84.41 328 *eP* **P** 11 26 21.4 +0.2
comp=Z,10.0nm,1.1s
GERES **GERESS Array B** 84.41 328 P **P** 11 26 21.4 +0.2
comp=Z,1.4nm,0.7s,baz=44,slow=6.1,SNR=6.8
GEA0 **GERESS Array S** 84.41 328 *eP* **P** 11 26 21.2 0.0
ARSA **Arzberg** 84.81 326 *i* P **P** 11 26 23.7 +0.6
comp=Z,9.9nm,1.3s,SNR=6.4
MOA **Molln** 84.92 328 *i* P **P** 11 26 24.2 +0.5
comp=Z,11nm,1.5s,SNR=5.4
T25A **Trinidad** 85.44 47 *eP* **P** 11 26 28.1 +1.3
comp=Z,6.2nm,1.0s
PERS **Pernice** 85.45 326 *i* P **P** 11 26 26.7 +0.2
SOKA **Soboth** 85.46 326 *i* P **P** 11 26 26.7 +0.3
comp=Z,16nm,1.3s,SNR=10
TAOE **Nuku Hiva Isla** 85.51 104 *e*LR LR 11 52 51.5
comp=Z,606nm,29.0s
ANMO **Albuquerque** 85.61 50 ⇑ *eP* **P** 11 26 30.1 +2.5
ANMO pmax pmax
comp=Z,7.0nm,1.7s
ANMO **Albuquerque** 85.61 50 *eP* **P** 11 26 29.8 +2.1
comp=Z,7.8nm,1.1s
VISS **Visnje** 86.21 326 *i* P **P** 11 26 30.6 +0.5
BOJS **Bojanci** 86.24 325 *i* P **P** 11 26 30.1 -0.1
BCLA **Clavier** 86.48 334 P **P** 11 26 31.4 +0.1
JAVS **Javornik** 86.49 326 *eP* **P** 11 26 30.8 -0.8
RETA **Reutte** 86.70 329 *e*PcP **P** 11 26 32.8 +0.2
comp=Z,15nm,1.0s
BFO **Black Forest** 87.03 331 *i* P **P** 11 26 35.1 +1.0
BFO **Black Forest** 87.03 331 *eP* **P** 11 26 34.7 +0.6
BFO *esP* **sP** 11 26 44.9 -0.5
SCHQ **Schefferville** 87.06 16 LR LR 12 06 19.8
comp=Z,296nm,21.8s,baz=340,slow=36
DAVA **Damuels** 87.23 329 *i* P **P** 11 26 34.2 -1.1
comp=Z,17nm,1.3s
FUORN **Ofenpass-Fuorn** 87.60 329 *eP* **P** 11 26 37.5 +0.4
comp=Z,18nm,1.0s
TX31 **Lajitas Ar. Si** 91.08 53 *eP* **P** 11 26 55.4 +1.7
TXAR **Lajitas Array** 91.08 53 P **P** 11 26 55.3 +1.6
comp=Z,0.9nm,0.8s,baz=273,slow=3.0,SNR=9.1
TXAR LR LR 12 01 35.6
comp=Z,90nm,21.5s,baz=0.0,slow=32
KEST **Kesra** 96.63 323 LR LR 12 16 14.4
comp=Z,411nm,19.1s,baz=353,slow=39
RKT **Rikitea** 97.84 113 *e*LR LR 11 59 01.6
comp=Z,264nm,27.8s
ESDC **Sonseca Array** 99.05 334 LR LR 12 17 03.7
comp=Z,396nm,19.7s,baz=30,slow=38

LPAZ **La Paz** 147.40 62 PKPbc **PKPbc** 11 33 34.2 +0.5
comp=Z,3.5nm,0.9s,baz=344,slow=3.2,SNR=11

*NEIC **30** 11:14:19.3, 63.°26N × 145.°16W, h6 km, ML2.7(AEIC), After AEIC.*
*PGC **30** 11:14:19.8, 63.°20N × 145.°12W, h9 km, ML2.6/5, 221km Ese of Fairbanks, Ak Central Alaska*
ISC 30 11:14:18.8 ± 1.0, **63.°25N** ± 0.°03 × **145.°13W** ± 0.°02, **h10** km ± 9km, **n26**, σ 1°**33**/48, **Central Alaska**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PAX	**Paxson**	**0.32**	**209**	P	**Pg**	**11 14 25.4**	**+0.2**
PAX				S	**Sg**	**11 14 28.9**	**-0.5**
PAX	**Paxson**	**0.32**	**209**	*e*Pg	**Pg**	**11 14 25.5**	**+0.2**
PAX				*e*Sg	**Sg**	**11 14 29.6**	**+0.2**
DOT	**Dot Lake**	**0.63**	**49**	P	**Pg**	**11 14 31.5**	**+0.5**
DOT				S	**Sg**	**11 14 39.2**	**0.0**
DOT	**Dot Lake**	**0.63**	**49**	*e*Pg	**Pg**	**11 14 31.5**	**+0.5**
DOT				*e*Sg	**Sg**	**11 14 39.4**	**+0.1**
MCK	**McKinley**	**1.77**	**288**	*e*Pn	**Pb**	**11 14 51.9**	**+0.4**
COLA	**College**	**2.02**	**325**	*e*Pn	**Pb**	**11 14 55.8**	**+0.1**
COLA				*e*Sg	**Sg**	**11 15 22.8**	**-1.0**
SML	**Sawmill**	**2.07**	**227**	*e*Pn	**Pn**	**11 14 54.1**	**+0.5**
SML				*e*Sn	**Sn**	**11 15 18.8**	**-0.7**
BVCY	**Beaver Creek**	**2.13**	**111**	Pn	**Pn**	**11 14 55.0**	**+0.6**
BVCY				Sn	**Sn**	**11 15 21.8**	**+0.9**
BVCY				Sg	**Sg**	**11 15 26.7**	**-0.5**
DIV	**Divide**	**2.15**	**188**	Pn	**Pn**	**11 14 55.2**	**+0.5**
DIV				Sn	**Sn**	**11 15 20.2**	**-1.2**
DIV				Sg	**Sb**	**11 15 24.2**	**-0.2**
DIV	**Divide**	**2.15**	**188**	*e*Pn	**Pn**	**11 14 55.5**	**+0.8**
DIV				*e*Sn	**Sb**	**11 15 25.6**	**+1.2**
BMRM	**Bremner River**	**2.30**	**174**	*e*Pn	**Pn**	**11 14 58.3**	**+1.5**
BMRM				*e*Sg	**Sb**	**11 15 30.5**	**+1.6**
EGAK	**Eagle**	**2.33**	**47**	*e*Pn	**Pn**	**11 14 58.1**	**+0.9**
EGAK				*e*Sg	**Sg**	**11 15 33.0**	**-0.6**
YUK1	**Sand Pete Hill**	**2.39**	**115**	Pn	**Pn**	**11 14 58.2**	**+0.1**
YUK1				Sg	**Sg**	**11 15 34.0**	**-1.5**
YUK2	**White River**	**2.47**	**124**	Pn	**Pn**	**11 14 59.8**	**+0.6**
YUK2				Sg	**Sg**	**11 15 36.4**	**-1.8**
PMR	**Palmer**	**2.49**	**230**	*e*Pn	**Pn**	**11 15 01.1**	**+1.7**
PMR				*e*Sn	**Sn**	**11 15 30.6**	**+0.9**
YUK3	**Moose Creek**	**2.62**	**122**	Pn	**Pn**	**11 15 02.2**	**+0.8**
YUK3				Sg	**Sb**	**11 15 40.6**	**+2.3**
KTH	**Kantishna Hill**	**2.62**	**279**	*e*Pn	**Pn**	**11 15 00.7**	**-0.6**
KTH				*e*Sg	**Sg**	**11 15 44.4**	**+1.4**
DAWY	**Dawson**	**2.69**	**70**	P	**Pn**	**11 15 02.8**	**+0.7**
DAWY				Sg	**Sg**	**11 15 44.6**	**-0.5**
BPAW	**Bear Paw Mtn.**	**2.75**	**291**	*e*Pn	**Pn**	**11 15 03.2**	**+0.3**
BPAW				*e*Sg	**Sg**	**11 15 46.1**	**-0.9**
RC01	**Rabbit Creek A**	**3.06**	**227**	*e*Pn	**Pb**	**11 15 10.8**	**-2.5**
PPLA	**Purkeypile**	**3.23**	**267**	*e*Pn	**Pn**	**11 15 12.7**	**+3.0**
HYT	**Haines Junctio**	**4.34**	**121**	Pn	**Pn**	**11 15 25.0**	**+0.2**
COLD	**Coldfoot**	**4.53**	**334**	Pn	**Pn**	**11 15 28.2**	**+0.9**
COLD	**Coldfoot**	**4.53**	**334**	*e*Pn	**Pn**	**11 15 28.3**	**+0.9**
COLD				*e*Sg	**Sg**	**11 16 39.7**	**-4.4**
WHY	**Whitehorse**	**5.49**	**114**	Pn	**Pn**	**11 15 41.1**	**+0.5**
WHY				Sn	**Sn**	**11 16 40.9**	**-2.9**
INK	**Inuvik**	**6.96**	**38**	Pn	**Pn**	**11 16 00.9**	**+0.2**

*NEIC **30** 11:17:25.9, 17.°24N × 94.°69W, h125 km, MD4.2(MEX), After MEX.*
MEX 30 11:17:25.9 ± 0.9, **17.°24N** × **94.°69W**, **h125** km ± 24km, **MD4.2, Chiapas**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
TUIG	**Tuzandepetl**	**0.83**	**18**	*i* P	Pn	11 17 45.0	-1.9
TUIG				*i* S	Sn	11 18 01.8	-0.9
TUIG	**Tuzandepetl**	**0.83**	**18**	*i* P	Pn	11 17 45.0	-1.9
TUIG				*i* S	Sn	11 18 01.8	-0.9
TGIG		**1.57**	**107**	*e*P	Pn	11 17 52.9	-1.6
TGIG				*e*S	Sn	11 18 14.8	-1.6
TGIG		**1.57**	**107**	*e*P	Pn	11 17 52.9	-1.6
TGIG				*e*S	Sn	11 18 14.8	-1.6
OXBJ	**Oaxaca**	**1.95**	**265**	*e*P	Pn	11 17 57.5	-1.7
OXBJ				*e*S	Sn	11 18 24.4	-0.3
VHO	**Vista Hermosa**	**1.96**	**265**	*e*P	Pn	11 17 58.9	-0.4
VHO				*e*S	Sn	11 18 23.3	-1.5
VHO	**Vista Hermosa**	**1.96**	**265**	*e*P	Pn	11 17 58.9	-0.4
VHO				*e*S	Sn	11 18 23.3	-1.5
HUIG	**Huatulco**	**2.00**	**223**	*e*P	Pn	11 17 57.8	-1.8
HUIG				*e*S	Sn	11 18 22.6	-2.8
HUIG	**Huatulco**	**2.00**	**223**	*e*P	Pn	11 17 57.8	-1.8
HUIG				*e*S	Sn	11 18 22.6	-2.8
PCIG		**2.08**	**137**	*e*P	Pn	11 18 00.0	-0.6
PCIG				*e*S	Sn	11 18 24.8	-2.3
PCIG		**2.08**	**137**	*e*P	Pn	11 18 00.0	-0.6
PCIG				*e*S	Sn	11 18 24.8	-2.3
PANG	**Puerto Angel**	**2.32**	**228**	*e*P	Pn	11 18 01.5	-2.0
PANG				*e*S	Sn	11 18 29.4	-3.1
TPIG	**Tehuac#an**	**2.80**	**295**	*i* P	Pn	11 18 08.3	-1.6
TPIG				*i* S	Sn	11 18 41.7	-2.2
TPIG	**Tehuac#an**	**2.80**	**295**	*i* P	Pn	11 18 08.3	-1.6
TPIG				*i* S	Sn	11 18 41.7	-2.2
PNIG	**Pinotepa**	**3.40**	**256**	*e*P	Pn	11 18 14.5	-3.1
PNIG				*e*S	Sn	11 18 50.7	-6.9
PNIG	**Pinotepa**	**3.40**	**256**	*e*P	Pn	11 18 14.5	-3.1
PNIG				*e*S	Sn	11 18 50.7	-6.9

*NSSC **30** 11:32:55.9 ± 1.3, 36.°20N × 36.°74E, h0 km ± 5km, ML1.9*
*DDA **30** 11:32:55.4, 36.°17N × 36.°73E, h6 km, Md2.8*
*CSEM **30** 11:32:56.5 ± 0.2, 36.°22N × 36.°67E, h10 km, ML2.1, Error ellipse: s-maj=8.9km s-min=3.5km az=112.0*
ISC 30 11:32:55.5 ± 0.9, **36.°17N** ± 0.°03 × **36.°77E** ± 0.°03, **h16** km ± 7km, **n25**, σ 0°**93**/43, **Jordan-Syria region**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
BTCH	**Batrach**	**0.28**	**243**	*e*P	**Pg**	**11 33 01.4**	**-0.2**
BTCH				*e*S	**Sb**	**11 33 06.2**	**-0.6**
BTCH				AML	AML	11 33 15.0	
	comp=N,343nm,0.4s						
BTCH				AML	AML	11 33 16.4	
	comp=E,330nm,0.7s						
BTCH	**Batrach**	**0.28**	**243**	*e*P	**Pg**	**11 33 01.4**	**-0.2**
BTCH				*e*S	**Sg**	**11 33 06.0**	**+0.2**
BTCH				AML	AML	11 33 12.2	
	comp=Z,208nm,0.5s						
BTCH				AML	AML	11 33 16.4	
	comp=E,330nm,0.7s						
BTCH				AML	AML	11 33 19.2	
	comp=N,438nm,0.5s						
BTCH	**Batrach**	**0.28**	**243**	*e*P	**Pg**	**11 33 01.4**	**-0.2**
BTCH				*e*S	**Sg**	**11 33 06.0**	**+0.2**
	comp=N,439nm,0.5s						
DRWC	**Darouich**	**0.46**	**350**	*e*P	**Pg**	**11 33 04.9**	**+0.1**
DRWC				*e*S	**Sg**	**11 33 10.8**	**-0.2**
DRWC				AML	AML	11 33 17.8	
	comp=N,65nm,0.6s						
DRWC				AML	AML	11 33 18.7	
	comp=E,80nm,0.4s						
DRWC	**Darouich**	**0.46**	**350**	*e*P	**Pg**	**11 33 04.9**	**+0.1**
DRWC				*e*S	**Sg**	**11 33 11.1**	**0.0**
DRWC				AML	AML	11 33 17.8	
	comp=N,65nm,0.6s						
DRWC				AML	AML	11 33 21.0	
	comp=Z,108nm,0.4s						
DRWC				AML	AML	11 33 24.6	
	comp=E,94nm,0.5s						
DRWC	**Darouich**	**0.46**	**350**	*e*P	**Pg**	**11 33 04.9**	**+0.1**
DRWC				*e*S	**Sg**	**11 33 11.1**	**0.0**
	comp=E,94nm,0.5s						
YAYL	**Yayladag**	**0.55**	**256**	*i* P	**Pg**	**11 33 05.3**	**-1.2**
YAYL				*i* S	**Sb**	**11 33 13.7**	**-0.9**
YAYL	**Yayladag**	**0.55**	**256**	P	**Pg**	**11 33 05.3**	**-1.2**
YAYL				S	**Sb**	**11 33 13.7**	**-0.9**
KUZU	**Kuzuini**	**0.65**	**22**	*i* P	**Pg**	**11 33 08.5**	**+0.1**
KUZU				*i* S	**Sb**	**11 33 18.1**	**+0.6**
KUZU	**Kuzuini**	**0.65**	**22**	P	**Pg**	**11 33 08.5**	**+0.1**
KUZU				S	**Sb**	**11 33 18.1**	**+0.6**
ARNB	**Al Arnab**	**0.71**	**245**	*e*P	**Pb**	**11 33 09.7**	**0.0**
ARNB				*e*S	**Sn**	**11 33 20.9**	**-0.8**
ARNB				AML	AML	11 33 26.1	
	comp=N,25nm,0.3s						
ARNB				AML	AML	11 33 28.8	
	comp=E,28nm,0.5s						

WRDH Warideh 0.72 204 *e*P **Pb** 11 33 10.8 +1.1
WRDH *e*S **Sn** 11 33 21.2 -0.6
WRDH Warideh 0.72 204 *e*P **Pb** 11 33 10.8 +1.1
WRDH *e*S **Sn** 11 33 21.2 -0.6
SLNF Slenfeh 0.72 218 *e*P **Pg** 11 33 09.5 -0.2
SLNF AML AML 11 33 24.9
comp=N,58nm,0.7s
SLNF AML AML 11 33 24.9
comp=E,18nm,0.5s
SLNF Slenfeh 0.72 218 *e*P **Pn** 11 33 11.3 +0.1
SLNF AML AML 11 33 26.2
comp=Z,85nm,0.6s
SLNF AML AML 11 33 33.9
comp=N,66nm,0.5s
SLNF Slenfeh 0.72 218 *e*P **Pn** 11 33 11.3 +0.1
SLMH Al Salmeh 0.94 87 *e*P **Pb** 11 33 10.5 -2.9
SLMH *e*S **Sb** 11 33 23.8 -1.9
KAMA Osmaniye 1.02 355 *i* P **Pg** 11 33 15.1 -0.1
KAMA *i* S **Sn** 11 33 29.5 +0.1
HCB Kahramanmara¯ 1.18 5 *i* P **Pg** 11 33 19.9 +1.6
HCB *i* S **Sg** 11 33 35.0 +1.3
BIDA Albida 1.21 198 *eP* **Pg** 11 33 19.1 +0.3
BIDA *eS* **Sg** 11 33 36.0 +1.4
BIDA AML AML 11 33 42.2
comp=N,46nm,0.3s
BIDA AML AML 11 33 44.9
comp=E,87nm,0.4s
BIDA Albida 1.21 198 *eP* **Pg** 11 33 19.5 +0.7
BIDA Albida 1.21 198 *eP* **Pg** 11 33 19.5 +0.7
GZT Gaziantep 1.35 28 *i* P **Pg** 11 33 22.1 +0.7
GZT *i* S **Sg** 11 33 40.6 +1.5
HAWK Haweek 1.67 190 *eP* **Pb** 11 33 26.8 +0.9
HAWK Haweek 1.67 190 *eP* **Pb** 11 33 26.8 +0.9

*ISCJB **30** 11:33:25.4 ± 0.6, 37.°46N ± 0.°03 × 143.°54E ± 0.°05, h33 km, mb4.1/7, Error ellipse: s-maj=5.9km s-min=4.9km az=15.8*
*IDC **30** 11:33:25.8 ± 2.1, 37.°00N × 143.°59E, h0 km, mb3.6/3, mb1 3.9/6, mb1mx3.5/39, mbtmp3.9/6, ML3.8/3, Error ellipse: s-maj=38.7km s-min=28.5km az=52.0*
*JMA **30** 11:33:26.3 ± 0.2, 37.°50N × 143.°47E, h43 km, M3.7*
*NEIC **30** 11:33:26.9 ± 0.8, 37.°33N × 143.°78E, h35 km, mb4.5/4, Error ellipse: s-maj=17.3km s-min=10.6km az=100.0*
ISC 30 11:33:26.1 ± 1.0, **37.°47N** ± 0.°05 × **143.°63E** ± 0.°08, **h35** km, **n29**, σ 1°**65**/41, **mb4.3/7, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**2.05**	**299**	P	**Pn**	**11 33 57.5**	**-0.6**
JIO				*e*S	**Sn**	**11 34 20.6**	**-1.9**
JFK	**Kawauchi**	**2.19**	**268**	P	**Pn**	**11 33 59.5**	**-0.6**
JFK				*e*S	**Sn**	**11 34 23.8**	**-2.3**
JMM	**Marumori**	**2.29**	**281**	P	**Pn**	**11 34 00.9**	**-0.4**
JMM				S	**Sn**	**11 34 26.4**	**-1.8**
ONAJ	**Iwakimizuishiy**	**2.29**	**262**	P	**Pn**	**11 34 01.1**	**-0.3**
ONAJ				S	**Sn**	**11 34 26.5**	**-1.9**
JMK	**Ichinoseki**	**2.41**	**309**	P	**Pn**	**11 34 02.5**	**-0.5**
JFT	**Otama**	**2.62**	**272**	P	**Pn**	**11 34 06.4**	**+0.5**
JFT				S	**Sn**	**11 34 35.9**	**-0.6**
JOM	**Ohasama**	**2.71**	**318**	P	**Pn**	**11 34 06.8**	**-0.4**
JOM				*e*S	**Sn**	**11 34 37.5**	**-1.3**
JYK	**Kaneyama**	**2.95**	**300**	P	**Pn**	**11 34 10.9**	**+0.4**
JANG	**Nango**	**3.33**	**331**	P	**Pn**	**11 34 17.0**	**+1.3**
JANG				*e*S	**Sn**	**11 34 52.8**	**-1.3**
JAG	**Ashikaga**	**3.50**	**254**	P	**Pn**	**11 34 18.8**	**+0.7**
JAG				*e*S	**Sn**	**11 34 57.1**	**-1.2**
BSO1	**Boso 1**	**3.54**	**218**	P	**Pn**	**11 34 18.7**	**+0.7**
BSO1				*e*S	**Sn**	**11 34 59.5**	**+1.1**
JRY	**Ryogami san**	**4.07**	**250**	P	**Pn**	**11 34 26.2**	**+0.4**
JRY				S	**Sn**	**11 35 10.4**	**-1.8**
JOD2	**Odawara 2**	**4.28**	**240**	P	**Pn**	**11 34 29.2**	**+0.5**
MJAR	**Matsushiro Arr**	**4.44**	**260**	Pn	**Pn**	**11 34 32.9**	**+2.0**
	3.6nm,0.3s,baz=86,slow=14,SNR=30						
MJAR				Sn	**Sn**	**11 35 23.7**	**+2.4**
	1.0nm,0.3s,baz=105,slow=23,SNR=4.3						
MAJO	**Matsushiro**	**4.44**	**260**	*e*Pn	**Pn**	**11 34 33.0**	**+2.1**
MAT	**Matsushiro**	**4.44**	**260**	P	**Pn**	**11 34 32.8**	**+1.9**
MAT				S	**Sn**	**11 35 21.2**	**-0.2**
ERM	**Erimo**	**4.55**	**356**	Pn	Pn	11 34 36.6	+4.1
JHJ2	**Mitsune**	**5.35**	**217**	*e*Pn	**Pn**	**11 34 43.2**	**-0.3**
JHJ2				*e*Sn	**Sn**	**11 35 41.3**	**-2.6**
JHJ	**Hachijo jima 2**	**5.36**	**217**	Pn	**Pn**	**11 34 42.5**	**-1.1**
	8.5nm,0.3s,baz=343,slow=19,SNR=33						
JHJ				Sn	**Sn**	**11 35 39.6**	**-4.4**
	7.4nm,0.3s,baz=73,slow=19,SNR=3.8						
ASAJ	**Asahikawa**	**6.69**	**354**	Pn	**Pn**	**11 35 03.4**	**+1.7**
	0.5nm,0.3s,baz=192,slow=18,SNR=6.8						
ASAJ				Sn	**Sn**	**11 36 15.1**	**-1.6**
	0.2nm,0.3s,baz=214,slow=7.2,SNR=2.3						
CBIJ	**Chichi jima**	**10.42**	**187**	Pn	**Pn**	**11 35 50.4**	**-2.6**
JCJ	**Chichijima**	**10.42**	**187**	Pn	**Pn**	**11 35 50.4**	**-2.6**
	1.8nm,0.3s,baz=15,slow=20,SNR=4.1						
ENH	**Enshi**	**29.13**	**266**	*e*P	**P**	**11 39 25.7**	**+2.0**
	3.9nm,0.3s						
MKAR	**Makanchi Array**	**45.38**	**302**	P	P	11 41 47.6	+6.6
	0.3nm,0.5s,baz=69,slow=6.9,SNR=2.7						
KURK	**Kurchatov**	**47.05**	**308**	*e*P	P	11 42 01.5	+7.5
	1.9nm,0.6s						
WRAB	**Tennant Creek**	**57.76**	**190**	*e*P	**P**	**11 43 14.2**	**+0.5**
	5.5nm,1.2s						
WRA	**Warramunga Arr**	**57.77**	**190**	P	**P**	**11 43 15.5**	**+1.7**
	1.0nm,0.7s,baz=7.5,slow=7.0,SNR=15						
ASAR	**Alice Springs**	**61.50**	**190**	P	**P**	**11 43 40.8**	**+1.5**
	0.2nm,0.5s,baz=4.0,slow=7.0,SNR=5.3						
WMOK	**Wichita Mounta**	**87.70**	**47**	*e*P	**P**	**11 46 10.8**	**-0.5**
	3.2nm,0.9s						

*IDC **30** 11:37:49.7 ± 1.9, 36.°76N × 142.°04E, h0 km, mb3.6/3, mb1 3.7/6, mb1mx3.3/38, mbtmp3.7/6, ML3.2/3, MS3.4/1, Ms1 3.4/1, ms1mx2.6/46, Error ellipse: s-maj=36.5km s-min=25.2km az=81.0*
*ISCJB **30** 11:37:50.4 ± 1.1, 36.°78N ± 0.°09 × 142.°02E ± 0.°09, h19 km, mb3.5/3, Error ellipse: s-maj=13.6km s-min=10.4km az=158.0*
ISC 30 11:37:51.8 ± 1.0, **36.°75N** ± 0.°07 × **142.°05E** ± 0.°08, **h19** km, **n15**, σ 1°**89**/11, **mb3.5/3, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MJAR	**Matsushiro Arr**	**3.09**	**267**	Pn	**Pn**	**11 38 39.8**	**+0.2**
	12nm,0.3s,baz=87,slow=13,SNR=30						
MJAR				Sn	**Sn**	**11 39 16.1**	**+0.1**
	2.8nm,0.3s,baz=81,slow=31,SNR=6.5						
MAT	**Matsushiro**	**3.09**	**267**	P	**Pn**	**11 38 39.9**	**+0.3**
MAT				S	**Sn**	**11 39 13.9**	**-2.2**
JHJ	**Hachijo jima 2**	**4.07**	**208**	Pn	**Pn**	**11 38 54.0**	**+1.0**
	11nm,0.3s,baz=319,slow=23,SNR=16						
JHJ				Sn	**Sn**	**11 39 36.4**	**-3.7**
	19nm,0.3s,baz=73,slow=22,SNR=6.7						
ASAJ	**Asahikawa**	**7.37**	**3**	Pn	**Pn**	**11 39 38.5**	**+0.1**
	0.1nm,0.3s,baz=230,slow=17,SNR=1.9						
ASAJ				Sn	**Sn**	**11 40 58.8**	**-2.7**
	0.3nm,0.3s,baz=150,slow=20,SNR=2.0						
JCJ	**Chichijima**	**9.62**	**179**	Sn	Sn	11 41 51.0	-5.9
	baz=285,slow=20						
USRK	**Ussuriysk Ar.**	**10.67**	**317**	LR	LR	11 43 50.3	
	comp=Z,191nm,20.0s,baz=91,slow=34						
H11N2	**WAKE ISLAND Hy**	**27.57**	**121**	T	T	12 12 52.6	
	baz=313,slow=75,SNR=14						
H11N1	**WAKE ISLAND Hy**	**27.57**	**121**	T	T	12 12 53.2	
	baz=

SIPP	**Brgy, Tapao**	**0.95**	**202**⇑	*eP*	Pn	11 42 29.3	+1.3
SIPP				*eS*	Sn	11 42 43.4	+2.9
APYP	**Conner**	**1.01**	**158**	*eP*	Pn	11 42 29.4	+0.5
APYP				*eS*	Sn	11 42 43.7	+1.7
ABRA	**Dolores**	**1.16**	**186**	*eP*	Pn	11 42 31.8	+0.9
SGCP	**Mt. Cagua**	**1.27**	**116**	*eP*	Pn	11 42 34.5	+2.1
CAUP	**Cauayan**	**2.08**	**153**	*eP*	Pn	11 42 46.7	+3.3

DJA 30 11:46:43.2±0.6, 4°S±7′×12°3E±′, h10km, M3.8/9, MLv3.8/9, Sulawesi

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BSSI	**Bau Bau, Buton**	**3.03**	**234**	P	Pn	11 47 31.6	+0.3
BSSI				S	Sn	11 47 41.2	-27
SPSI	**Sidrap Palu**	**3.22**	**277**	P	Pn	11 47 33.6	-0.2
SPSI				S	Sn	11 47 41.8	-30
LUWI	**Luwuk**	**3.31**	**357**	P	Pn	11 47 35.2	+0.1
TTSI	**Tana Toraja**	**3.41**	**293**	P	Pn	11 47 36.7	+0.2
SANI	**Sanana**	**3.79**	**53**	P	Pn	11 47 41.5	-0.3
SANI				S	Sn	11 48 28.2	+1.7
MRSI	**Marisa**	**4.92**	**348**	P	Pn	11 47 57.4	+0.1

*TIF **30** 11:59:33.0, 42°.54N×43°.44E, h14km*
*CSEM **30** 11:59:34.1±0.3, 42°.53N×43°.40E, h2km, ML2.5, Error ellipse: s-maj=7.5km s-min=4.7km az=1.0*
*DDA **30** 12:00:45.8, 42°.23N×42°.51E, h36km, Md2.8*
ISC 30 11:59:33.4±0.9, 42°.54N±0°.04×43°.42E±0°.03, h12km±6km, n20, σ0↟89/39, Western Caucasus

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONI	**Oni**	**0.06**	**27**	P	**Pg**	**11 59 35.9**	**0.0**
ONI				S	**Sg**	**11 59 37.7**	**+0.1**
ONI	**Oni**	**0.06**	**27**	P	**Pg**	**11 59 35.9**	**0.0**
ONI				S	**Sg**	**11 59 37.7**	**+0.1**
GUDG	**Gudauri**	**0.79**	**95**	P	**Pb**	**11 59 48.8**	**-0.4**
GUDG				S	**Sb**	**11 59 59.2**	**-0.7**
GUDG	**Gudauri**	**0.79**	**95**	P	**Pb**	**11 59 48.8**	**-0.4**
GUDG				S	**Sb**	**11 59 59.2**	**-0.7**
CHVG	**Ch'k'valeri**	**1.00**	**281**	P	**Pb**	**11 59 52.4**	**-0.3**
CHVG				S	**Sn**	**12 00 07.9**	**+0.6**
CHVG	**Ch'k'valeri**	**1.00**	**281**	P	**Pb**	**11 59 52.4**	**-0.3**
CHVG				S	**Sn**	**12 00 07.9**	**+0.6**
AKH	**Akhalkalaki**	**1.13**	**177**	P	**Pb**	**11 59 54.2**	**-0.8**
AKH				S	**Sn**	**12 00 10.0**	**-0.8**
AKH	**Akhalkalaki**	**1.13**	**177**	P	**Pb**	**11 59 54.2**	**-0.8**
AKH				S	**Sn**	**12 00 10.0**	**-0.8**
EPOS	**Posof**	**1.16**	**207**	S	**Sn**	**12 00 10.9**	**-0.5**
TBLG	**Delisi**	**1.27**	**129**	P	**Pg**	**11 59 59.5**	**+1.7**
TBLG				S	**Sg**	**12 00 16.2**	**+1.9**
TBLG	**Delisi**	**1.27**	**129**	P	**Pg**	**11 59 59.5**	**+1.7**
TBLG				S	**Sg**	**12 00 16.2**	**+1.9**
ARTV	**Artvin**	**1.75**	**220**	*i* P	**Pb**	**12 00 05.5**	**-0.1**
ARTV				*i* S	**Sb**	**12 00 27.5**	**-0.2**
ARTV	**Artvin**	**1.75**	**220**	P	**Pb**	**12 00 05.5**	**-0.1**
ARTV				S	**Sb**	**12 00 27.5**	**-0.2**
DBOC	**Borcka**	**1.77**	**228**	*i* P	**Pb**	**12 00 05.1**	**-0.7**
DBOC				*i* S	**Sb**	**12 00 28.7**	**+0.7**
DBOC	**Borcka**	**1.77**	**228**	P	**Pb**	**12 00 05.1**	**-0.7**
DBOC				S	**Sb**	**12 00 28.7**	**+0.7**
DGRG	**David-gareji**	**1.82**	**126**	P	**Pg**	**12 00 07.0**	**-1.3**
DGRG				S	**Sg**	**12 00 32.3**	**+0.4**
DGRG	**David-gareji**	**1.82**	**126**	P	**Pg**	**12 00 07.0**	**-1.3**
DGRG				S	**Sg**	**12 00 32.3**	**+0.4**
DAGI	**Agillar**	**1.84**	**218**	*i* P	**Pb**	**12 00 06.7**	**-0.4**
DAGI				*i* S	**Sg**	**12 00 31.2**	**-1.5**
DBAD	**Bademkaya**	**1.99**	**221**	*i* P	**Pb**	**12 00 09.2**	**-0.4**
DBAD				*i* S	**Sb**	**12 00 35.4**	**+0.9**
DBAD	**Bademkaya**	**1.99**	**221**	P	**Pb**	**12 00 09.2**	**-0.4**
DBAD				S	**Sb**	**12 00 35.4**	**+0.9**

*SOME **30** 12:03:21.6, 41°.62N×82°.25E, h20km*
*NNC **30** 12:03:27.7±4.1, 42°.08N×82°.11E, h0km, mb3.7, mpv3.3, Error ellipse: s-maj=38.8km s-min=23.3km az=161.0*
ISC 30 12:03:29.5±3.4, 41°.72N±0°.10×81°.7E±0°.1, h4km±18km, n23, σ1↟41/37, 7C-7D, Southern Xinjiang

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SHLS	**Shalkode**	**1.97**	**317**	*eP*	**Pn**	**12 04 04.1**	**+0.3**
SHLS	63nm,0.3s			*eS*	**Sg**	**12 04 33.9**	**+1.0**
	90nm,0.8s						
KTMS	**Ketmen**	**1.99**	**330**	*eP*	**Pn**	**12 04 02.4**	**-1.7**
KTMS	97nm,0.3s			*eS*	**Sb**	**12 04 30.6**	**-1.0**
	173nm,0.4s						
PDGK	**Podgornoye**	**2.30**	**315**	⇑Pn	**Pn**	**12 04 07.2**	**-0.9**
PDGK	11nm,0.4s			⇓Lg	Lg	12 04 40.8	
	67nm,0.5s						
UZB	**Uzynbulak**	**2.45**	**307**	⇑*i*P	**Pb**	**12 04 12.8**	**-1.4**
UZB	18nm,0.3s			⇑*i*S	**Sg**	**12 04 49.5**	**+1.4**
	182nm,0.4s						
ZHN	**Zhinishke**	**2.82**	**302**	*eP*	**Pb**	**12 04 20.4**	**-0.1**
ZHN	18nm,0.4s			*eS*	**Sg**	**12 05 02.4**	**+2.3**
	49nm,0.2s						
KPKS	**Kokpek**	**2.83**	**309**	*eP*	**Pn**	**12 04 16.2**	**+0.6**
KPKS	33nm,0.3s			*eS*	**Sb**	**12 04 54.5**	**-1.3**
	181nm,0.5s						
DJR	**Jarkent**	**2.96**	**332**	*eP*	**Pn**	**12 04 18.7**	**+1.3**
DJR	21nm,0.5s			⇓*i*S	**Sb**	**12 04 58.8**	**-0.7**
	44nm,0.5s						
KURS	**Kuram**	**3.15**	**305**	*eP*	**Pg**	**12 04 29.0**	**-0.9**
KURS	10nm,0.6s			*eS*	Sg	12 05 17.0	+6.3
	29nm,0.8s						
MNBS	**Baschi**	**3.38**	**315**	*eP*	**Pn**	**12 04 25.1**	**+1.9**
MNBS	8.3nm,0.3s			*eS*	**Sb**	**12 05 11.0**	**-0.6**
	31nm,0.5s						
KOTS	**Kotyrbulak**	**3.72**	**296**	*eP*	**Pb**	**12 04 37.2**	**+1.3**
KOTS				*eS*	**Sg**	**12 05 33.0**	**+4.0**
MDOK	**Medeo**	**3.74**	**294**	*eP*	**Pb**	**12 04 35.5**	**-0.7**
MDOK	8.0nm,0.4s			*eS*	**Sg**	**12 05 28.5**	**-1.0**
	21nm,0.9s						
TNSS	**Tian-Shan**	**3.77**	**292**	*eP*	**Pb**	**12 04 36.3**	**-0.5**
TNSS	9.7nm,0.5s			*eS*	**Sg**	**12 05 30.0**	**-0.5**
	24nm,0.8s						
ARXS	**Arharly**	**3.78**	**312**	*eP*	**Pb**	**12 04 37.1**	**+0.2**
ARXS	13nm,0.4s			*eS*	**Sg**	**12 05 31.7**	**+0.7**
KAPS	**Kapalarasan**	**3.95**	**335**	*eP*	**Pn**	**12 04 33.3**	**+2.4**
KAPS	15nm,0.3s			*eS*	**Sb**	**12 05 27.4**	**-0.5**
	28nm,0.6s						
IZV	**Izvestkoviy**	**4.00**	**291**	*eP*	**Pb**	**12 04 41.0**	**+0.4**
IZV	8.9nm,0.6s			*eS*	**Sg**	**12 05 38.4**	**+0.5**
	29nm,0.9s						
CHKK	**Chushkaly**	**4.08**	**303**	*eP*	**Pb**	**12 04 42.9**	**+1.0**
CHKK	6.8nm,0.4s			*eS*	**Sg**	**12 05 40.4**	**0.0**
	28nm,0.6s						
KUU	**Kurty**	**4.51**	**301**	*eP*	**Pb**	**12 04 48.6**	**-0.6**
KUU	6.2nm,0.5s			*eS*	**Sg**	**12 05 53.2**	**-1.0**
	19nm,0.4s						
DGS	**Degeres**	**4.64**	**291**	*eP*	**Pb**	**12 04 54.1**	**+2.5**
DGS	4.9nm,0.5s			*eS*	**Sg**	**12 06 00.7**	**+2.0**
	29nm,0.7s						
TKM2	**Tokmak 2**	**4.69**	**287**	⇑Pg	**Pb**	**12 04 51.9**	**-0.4**
TKM2	4.7nm,0.7s			⇑Lg	Lg	12 06 04.3	
	9.2nm,0.4s						
MK31	**Makanchi Array**	**5.09**	**5**	⇓Pn	Pn	12 04 40.4	-6.1
MK31	0.4nm,0.2s,baz=190,slow=12,SNR=49			⇓Lg	Lg	12 05 56.1	
	6.1nm,0.5s,baz=95,slow=25,SNR=4.0						
AAK	**Ala-Archa**	**5.44**	**282**	⇑Pg	**Pg**	**12 05 12.4**	**-1.2**
AAK	1.4nm,0.5s			⇓Lg	Lg	12 06 30.6	
	9.2nm,0.6s						

MNAS	**Manas**	**6.89**	**279**	⇓Lg	Lg	12 07 13.3	
	4.1nm,0.8s						
KK31	**Karatay Array**	**8.40**	**283**	⇑Pg	**Pg**	**12 06 09.4**	**-0.9**
KK31	1.6nm,0.9s,baz=87,slow=16,SNR=3.5			⇓Lg	Lg	12 08 06.9	
	1.6nm,0.6s,baz=95,slow=25,SNR=3.5						

*BJI **30** 12:04:43.7, 12°.10S×166°.50E, h35km, mb4.7/17, mB5.0/8, Ms4.6/4, Ms7 4.3/4*
*NEIC **30** 12:04:43.6±0.5, 11°.99S×166°.72E, h35km, mb4.7/7, Error ellipse: s-maj=10.7km s-min=9.4km az=54.0*
*ISCJB **30** 12:04:48.7±0.5, 12°.26S±0°.05×166°.38E±0°.08, h83km, mb4.3/27, Error ellipse: s-maj=11.1km s-min=7.0km az=161.0*
*IDC **30** 12:04:48.3±3.4, 12°.10S×166°.62E, h75km±30km, mb3.8/12, mb1 4.1/14, mb1mx3.8/46, mbtmp4.2/14, MS3.6/14, Ms1 3.6/14, ms1mx3.3/38, Error ellipse: s-maj=22.4km s-min=18.9km az=84.0*
ISC 30 12:04:50.2±0.6, 12°.26S±0°.07×166°.42E±0°.09, h83km, n48, σ1↟82/48, mb4.3/27, Santa Cruz Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HNR	**Honiara**	**6.96**	**293**	P	**Pn**	**12 06 29.3**	**-0.2**
	57nm,0.3s,baz=143,slow=5.5,SNR=23						
HNR				S	**Sn**	**12 07 44.4**	**-2.7**
	42nm,0.3s,baz=0.0,slow=20,SNR=3.9						
HNR				LR	LR	12 09 28.2	
	comp=Z,425nm,21.8s,baz=145,slow=40						
HNR	**Honiara**	**6.96**	**293**	*eP*	**Pn**	**12 06 28.0**	**-1.5**
HNR				*eS*	**Sn**	**12 07 46.0**	**-1.2**
HNR	**Honiara**	**6.96**	**293**	Pn	**Pn**	**12 06 27.1**	**-2.5**
HNR				*eS*n	**Sn**	**12 07 46.4**	**-0.8**
DZM	**Mont Dzumac**	**9.76**	**180**	P	**Pn**	**12 07 08.2**	**+0.4**
	1.6nm,0.3s,baz=285,slow=23,SNR=16						
DZM				S	**Sn**	**12 08 55.1**	**-0.6**
	1.0nm,0.3s,baz=164,slow=20,SNR=2.7						
DZM				LR	LR	12 10 46.6	
	comp=Z,371nm,18.6s,baz=12,slow=36						
MSVF	**Nonsavu**	**12.48**	**117**	*eP*n	Pn	12 07 36.5	-8.3
	16nm,1.3s						
PMG	**Port Moresby**	**19.13**	**277**	LR	LR	12 15 51.4	
	comp=Z,238nm,21.9s,baz=111,slow=34						
EIDS	**Eidsvold**	**19.49**	**226**	*eP*	**Pn**	**12 09 12.0**	**-0.8**
EIDS				*epP*	**pP**	**12 09 30.5**	**+3.3**
CTA	**Charters Tower**	**20.86**	**246**	P	Pn	12 09 27.8	-1.1
	4.2nm,0.9s,baz=74,slow=16,SNR=2.5						
ARMA	**Armidale**	**22.68**	**215**	*eP*	**P**	**12 09 46.1**	**+1.1**
	2.3nm,0.6s						
URZ	**Urewera**	**27.59**	**162**	LR	LR	12 19 28.0	
	comp=Z,164nm,19.4s,baz=325,slow=32						
STKA	**Stephens Creek**	**30.05**	**226**	P	**P**	**12 10 53.2**	**+1.7**
	4.9nm,0.7s,baz=34,slow=11,SNR=17						
STKA				LR	LR	12 21 48.2	
	comp=Z,178nm,21.9s,baz=32,slow=34						
STKA	**Stephens Creek**	**30.05**	**226**	*eP*	**P**	**12 10 52.8**	**+1.2**
	1.4nm,0.8s						
STKA				*epP*	**pP**	**12 11 06.6**	**-4.1**
RPZ	**Rata Peaks**	**31.59**	**174**	P	**P**	**12 11 05.5**	**+0.5**
	3.4nm,0.7s,baz=13,slow=5.5,SNR=6.3						
RPZ				LR	LR	12 23 44.1	
	comp=Z,132nm,18.7s,baz=304,slow=36						
WRAB	**Tennant Creek**	**31.70**	**252**	*eP*	**P**	**12 11 06.3**	**0.0**
	2.5nm,0.9s						
WRA	**Warramunga Arr**	**31.72**	**252**	P	**P**	**12 11 06.2**	**-0.2**
	2.9nm,0.7s,baz=81,slow=7.9,SNR=20						
AS31	**Alice Springs**	**32.87**	**245**	*eP*	**P**	**12 11 15.7**	**-0.7**
	1.4nm,1.0s						
ASAR	**Alice Springs**	**32.87**	**245**	P	**P**	**12 11 16.1**	**-0.4**
	2.4nm,0.7s,baz=68,slow=9.8,SNR=40						
ASAR				LR	LR	12 23 24.8	
	comp=Z,158nm,20.8s,baz=112,slow=34						
GUMO	**Guam**	**33.41**	**320**	LR	LR	12 25 39.8	
	comp=Z,63nm,18.2s,baz=106,slow=37						
MTN	**Manton Dam**	**34.44**	**265**	*eP*	**P**	**12 11 29.9**	**-0.2**
	14nm,1.3s						
MTN				*ePcP*	**PcP**	**12 14 04.5**	**+0.4**
FITZ	**Fitzroy Crossi**	**39.73**	**256**	LR	LR	12 27 32.6	
	comp=Z,112nm,18.2s,baz=126,slow=34						
FITZ	**Fitzroy Crossi**	**39.73**	**256**	*eP*	**P**	**12 12 14.9**	**0.0**
	23nm,1.6s						
MBWA	**Marble Bar**	**45.45**	**252**	*eP*	**P**	**12 13 01.4**	**+0.1**
	44nm,1.8s						
JCJ	**Chichijima**	**45.65**	**329**	LR	LR	12 29 59.6	
	comp=Z,36nm,19.8s,baz=118,slow=33						
KSRS	**Korea Array**	**61.25**	**326**	LR	LR	12 40 14.2	
	comp=Z,8.9nm,18.6s,baz=45,slow=35						
NJ2	**Nanjing**	**63.35**	**315**	*eP*	**P**	**12 15 11.3**	**+0.5**
NJ2				pmax	pmax		
	comp=Z,15nm,0.7s						
VNDA	**Vanda**	**65.30**	**181**	P	**P**	**12 15 22.8**	**-0.1**
	1.0nm,0.7s,baz=350,slow=8.3,SNR=5.8						
PETK	**Petropavlovsk-**	**65.53**	**354**	LR	LR	12 37 34.1	
	comp=Z,6.4nm,20.1s,baz=130,slow=30						
IPM	**Ipoh**	**67.09**	**280**	*eP*	**P**	**12 15 35.1**	**-0.4**
	12nm,0.9s						
ENH	**Enshi**	**69.17**	**309**	*eP*	**P**	**12 15 47.7**	**-0.5**
	7.8nm,1.0s						
KMI	**Kunming**	**72.32**	**301**	P	P	12 16 12.8	+5.1
KMI				pmax	pmax		
	comp=Z,12nm,1.2s						
CM01	**Chiang Mai Arr**	**73.18**	**294**	*eP*	**P**	**12 16 13.5**	**+0.9**
HHC	**Hu-ho-hao-te**	**73.18**	**320**	*eP*	**P**	**12 16 13.8**	**+1.5**
HHC				sP	PcP	12 16 28.8	+0.3
HHC				S	**SKiKP**	**12 25 40.5**	**+3.9**
HHC				SS	**SS**	**12 30 21.8**	**+4.5**
HHC				pmax	pmax		
	comp=Z,16nm,0.8s						
HHC				pmax	pmax		
	comp=Z,67nm,7.8s						
HHC				LR	LR		
	comp=N,96nm,13.6s						
HHC				LR	LR		
	comp=E,130nm,13.6s						
HHC				LR	LR		
	comp=Z,98nm,14.2s						
CMAR	**Chiang Mai Arr**	**73.20**	**294**	P	**P**	**12 16 13.8**	**+1.1**
	3.6nm,0.9s,baz=122,slow=4.8,SNR=20						
CHTO	**Chiang Mai**	**73.32**	**294**	*eP*	**P**	**12 16 13.6**	**+0.2**
	8.4nm,1.3s						
CD2	**Chengdu**	**73.86**	**307**	P	**P**	**12 16 16.0**	**-0.4**
CD2				pmax	pmax		
	comp=Z,1.0nm,0.6s						
LZH	**Lanzhou**	**76.06**	**312**	*eP*	**P**	**12 16 30.3**	**+1.2**
LZH				pP	PcP	12 16 41.3	+0.2
LZH				sP	pP	12 16 46.8	-4.2
LZH				pmax	pmax		
	comp=Z,13nm,1.0s						
QSPA	**South Pole Qui**	**77.75**	**180**	*eP*	**P**	**12 16 38.9**	**+0.8**
ULN	**Ulaanbaatar**	**79.67**	**324**	*eP*	**P**	**12 16 48.9**	**0.0**
ULN				*epP*	pP	12 17 04.0	-6.8
SONM	**Songino Array**	**80.03**	**324**	P	**P**	**12 16 50.0**	**-0.8**
	1.2nm,0.8s,baz=120,slow=5.7,SNR=4.4						
GTA	**Gaotai**	**80.38**	**314**	*eP*	**P**	**12 16 53.8**	**+0.9**
GTA				pP	pP	12 17 10.0	-4.9
GTA				S	**S**	**12 26 53.3**	**+0.9**
GTA				SKS	**SKSac**	**12 27 02.5**	**-1.1**
GTA				SS	**SS**	**12 32 12.0**	**+6.0**
GTA				pmax	pmax		
	comp=Z,5.0nm,1.0s						
GTA				pmax	pmax		
	comp=Z,99nm,4.8s						
GTA				LR	LR		
	comp=N,73nm,17.1s						
GTA				LR	LR		
	comp=E,96nm,16.2s						
GTA				LR	LR		
	comp=Z,130nm,15.7s						
RAGM	**Ragged Mountai**	**82.18**	**22**	*eP*	P	12 17 06.8	+5.0
	210nm,0.7s						
ILAR	**Eielson Array**	**84.45**	**18**	P	**P**	**12 17 10.8**	**-2.5**
	0.6nm,0.7s,baz=232,slow=4.9,SNR=9.7						
ILAR				LR	LR	12 48 57.5	
	comp=Z,35nm,21.3s,baz=212,slow=31						
NVAR	**Mina Array Bea**	**86.30**	**50**	P	**P**	**12 17 23.1**	**-0.4**
	0.2nm,0.5s,baz=240,slow=7.2,SNR=1.9						
NVAR				LR	LR	12 49 00.5	
	comp=Z,76nm,18.4s,baz=304,slow=31						
MK01	**Makanchi Array**	**94.84**	**317**	*eP*	**P**	**12 18 02.5**	**-0.5**
MK01				*epP*	PcP	12 18 12.4	+9.1
MKAR	**Makanchi Array**	**94.86**	**317**	P	**P**	**12 18 02.1**	**-0.9**
	1.4nm,0.6s,baz=84,slow=6.0,SNR=12						
YKA	**Yellowknife Ar**	**95.74**	**27**	P	P	12 18 02.9	-3.7
	0.1nm,0.4s,baz=256,slow=4.4,SNR=5.5						

ARCES	**ARCESS Array B**	**117.67**	**346**	PKP	**PKPdf**	**12 23 24.5**	**-1.7**
	1.7nm,0.8s,baz=46,slow=2.6,SNR=15						
FINES	**FINESS Array B**	**123.14**	**339**	PKP	**PKPdf**	**12 23 35.1**	**-1.8**
	0.8nm,0.8s,baz=270,slow=0.6,SNR=6.6						

IDC 30 12:12:48.0±2.6, 15°.38S×66°.64E, h0km, mb3.7/4, mb1 3.8/4, mb1mx3.4/47, mbtmp3.7/4, MS3.5/4, Ms1 3.6/4, ms1mx3.1/39, Error ellipse: s-maj=94.0km s-min=36.4km az=54.0, Mid-Indian Ridge

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
H08S1	**Diego Carcia H**	**9.58**	**37**	T	T	12 24 32.1	
	baz=216,slow=75,SNR=870						
H08S2	**Diego Garcia H**	**9.59**	**37**	T	T	12 24 22.3	
	baz=216,slow=75,SNR=1080						
H08S3	**Diego Garcia H**	**9.60**	**37**	T	T	12 24 22.9	
	baz=216,slow=75,SNR=659						
H08N3	**Diego Garcia H**	**9.94**	**26**	T	T	12 24 56.7	
	baz=204,slow=76,SNR=1373						
H08N1	**Diego Garcia H**	**9.96**	**26**	T	T	12 24 57.6	
	baz=204,slow=76,SNR=691						
H08N2	**Diego Garcia H**	**9.96**	**26**	T	T	12 24 50.7	
	baz=204,slow=76,SNR=1259						
OPO	**Ambohidratompo**	**18.87**	**258**	LR	LR	12 22 41.6	
	comp=Z,175nm,19.3s,baz=20,slow=32						
CMAR	**Chiang Mai Arr**	**46.29**	**45**	LR	LR	12 39 06.6	
	comp=Z,41nm,18.4s,baz=174,slow=34						
H01W3	**Cape Leeuwin H**	**46.70**	**124**	T	T	13 11 23.7	
	baz=283,slow=75,SNR=12						
H01W2	**Cape Leeuwin H**	**46.70**	**124**	T	T	13 11 10.6	
	baz=283,slow=75,SNR=11						
H01W1	**Cape Leeuwin H**	**46.72**	**124**	T	T	13 11 19.0	
	baz=283,slow=75,SNR=12						
ASAR	**Alice Springs**	**63.45**	**109**	P	P	12 23 19.9	-0.4
	0.4nm,0.9s,baz=262,slow=5.9,SNR=4.1						
MKAR	**Makanchi Array**	**63.47**	**12**	P	P	12 23 19.9	+0.1
	0.8nm,1.0s,baz=193,slow=5.9,SNR=3.9						
WRA	**Warramunga Arr**	**64.30**	**105**	P	P	12 23 26.3	+0.4
	1.1nm,1.0s,baz=272,slow=5.4,SNR=5.0						
SONM	**Songino Array**	**72.25**	**27**	P	P	12 24 15.1	-0.1
	0.6nm,0.5s,baz=249,slow=7.6,SNR=2.9						
KSRS	**Korea Array**	**77.92**	**46**	LR	LR	13 01 30.9	
	comp=Z,18nm,18.0s,baz=305,slow=38						
YAK	**Yakutsk**	**91.50**	**25**	LR	LR	13 06 22.8	
	comp=Z,29nm,18.3s,baz=90,slow=35						
YKA	**Yellowknife Ar**	**132.94**	**1**	PKP	PKPdf	12 32 04.6	-0.3
	0.1nm,0.8s,baz=350,slow=3.1,SNR=3.5						
PDAR	**Pinedale Array**	**152.51**	**354**	PKPbc	PKPbc	12 32 46.8	-0.1
	0.4nm,0.6s,baz=52,slow=0.5,SNR=4.8						

*GUC **30** 12:18:30.0±0.7, 34°.52S×71°.88W, h18km±9km, ML3.9*
ISC 30 12:18:29.5±2.0, 34°.50S±0°.07×72°.0W±0°.2, h31km±13km, n16, σ1↟34/17, 3C-1D, Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHPI	**Pichilemu**	**0.11**	**4**⇓	*i*P	**Pb**	**12 18 35.1**	**+0.1**
CHPI				*i* S	**Sb**	**12 18 38.1**	**-0.7**
ANTU	**Antumapu**	**1.47**	**51**	*eP*	**Pb**	**12 18 56.1**	**-0.2**
ANTU				*eS*	**Sb**	**12 19 14.7**	**0.0**
ANTU				IAML		12 19 20.4	
	comp=N,3μm,0.3s						
CLCH	**Cerro Calan**	**1.65**	**49**⇑	*i*P	**Pb**	**12 18 58.9**	**-0.4**
CLCH				*i* S	**Sb**	**12 19 20.4**	**+0.7**
CLCH				IAML		12 19 24.2	
	comp=N,3μm,0.6s						
ROC1	**El Roble**	**1.73**	**29**	*eP*	**Pb**	**12 18 59.9**	**-1.0**
ROC1				*eS*	**Sb**	**12 19 25.6**	**+3.3**
ROCH	**El Roble**	**1.74**	**29**	IAML		12 19 30.5	
	comp=E,2μm,0.9s						
PEL	**Peldehue**	**1.75**	**40**⇑	*i*P	**Pb**	**12 19 00.4**	**-0.6**
PEL				*i* S	**Sb**	**12 19 23.8**	**+1.3**
PEL				IAML		12 19 28.3	
	comp=N,2μm,0.8s						
YECH	**El Yeso**	**1.80**	**63**	IAML		12 19 25.7	
	comp=N,2μm,0.7s						
CCHI	**Chillan**	**2.10**	**181**⇑	*i*P	**Pb**	**12 19 06.4**	**-0.5**
CCHI				*i* S	**Sb**	**12 19 33.6**	**+1.0**
CCHI				IAML		12 19 37.9	
	comp=N,4μm,0.7s						
AAGR	**Agrelo**	**3.00**	**63**	*eP*	**Pb**	**12 19 21.8**	**-0.6**
ARCO	**CERRO ARCO**	**3.05**	**58**	*eP*	**Pb**	**12 19 22.9**	**-0.4**
ARCO				IAML		12 19 27.8	
	comp=Z,238nm,0.5s						
AUSP	**Uspallata**	**3.16**	**45**	*eP*	**Pb**	**12 19 24.3**	**-0.8**
ASAL	**Salagasta**	**3.27**	**55**	*eP*	**Pb**	**12 19 25.7**	**-1.1**
RTLS	**Leoncito**	**3.53**	**41**	*eP*	**Pb**	**12 19 29.3**	**-2.1**
RTCV	**Cerro Valdivia**	**3.92**	**49**	*eP*	Pb	12 19 34.0	-4.0
AMOG	**MOGNA**	**4.63**	**41**	*eP*	Pn	12 19 42.7	+5.3
VCA	**Vinchina**	**6.60**	**30**	IAML		12 21 47.6	
	comp=Z,31nm,0.5s						

*ISCJB **30** 12:20:56.3±0.4, 17°.87S±0°.06×168°.04E±0°.06, h32km, mb4.5/29, MS3.5/9, Error ellipse: s-maj=9.5km s-min=7.7km az=135.8*
*IDC **30** 12:20:59.2±3.6, 18°.09S×168°.18E, h42km±30km, mb4.2/10, mb1 4.4/12, mb1mx3.9/48, mbtmp4.5/12, ML4.7/2, MS3.5/11, Ms1 3.5/11, ms1mx3.3/32, Error ellipse: s-maj=24.6km s-min=18.8km az=73.0*
*NEIC **30** 12:21:01.5±1.3, 17°.96S×168°.07E, h65km±13km, mb4.6/18, Error ellipse: s-maj=13.1km s-min=9.1km az=213.0*
NEIC Felt at Port-Vila.
ISC 30 12:20:58.0±0.6, 17°.98S±0°.07×168°.06E±0°.09, h32km, n50, σ1↟52/42, mb4.6/27, MS3.5/9, Vanuatu Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**4.34**	**200**	P	**Pn**	**12 22 02.6**	**+0.7**
	20nm,0.3s,baz=54,slow=9.8,SNR=420						
DZM				S	**Sn**	**12 22 49.7**	**-1.8**
	81nm,0.3s,baz=132,slow=22,SNR=12						
MSVF	**Nonsavu**	**9.52**	**90**	*eP*n	**Pn**	**12 23 15.2**	**+2.1**
HNR	**Honiara**	**11.58**	**316**	P	Pn	12 23 46.0	+4.8
	11nm,0.3s,baz=42,slow=7.8,SNR=4

	comp=Z,65nm,19.1s,baz=158,slow=34							
WB2	**Warramunga Arr**	**31.91 261**	*e*P		**P**		**12 27 19.5**	**-1.4**
	8.1nm,0.9s							
WRAB	**Tennant Creek**	**31.91 261**	*e*P		**P**		**12 27 17.9**	**-3.0**
	7.2nm,0.6s							
WRA	**Warramunga Arr**	**31.92 261**	P		**P**		**12 27 20.6**	**-0.3**
	1.2nm,0.4s,baz=95,slow=8.0,SNR=17							
AS01	**Alice Springs**	**32.32 254**	*e*P		**P**		**12 27 24.6**	**+0.1**
AS31	**Alice Springs**	**32.37 254**	*e*P		**P**		**12 27 24.9**	**0.0**
	2.7nm,0.6s							
ASAR	**Alice Springs**	**32.37 254**	P		**P**		**12 27 25.2**	**+0.3**
	8.4nm,0.8s,baz=80,slow=9.0,SNR=53							
ASAR			LR		LR		12 40 10.0	
	comp=Z,98nm,18.3s,baz=126,slow=36							
FITZ	**Fitzroy Crossi**	**40.27 263**	P		**P**		**12 28 33.5**	**+1.2**
	32nm,0.7s,baz=99,slow=6.5,SNR=35							
FITZ	**Fitzroy Crossi**	**40.27 263**	*e*P		**P**		**12 28 33.4**	**+1.0**
	31nm,0.8s							
PPT	**Papeete**	**40.28 96**	LR		LR		12 40 27.7	
	comp=Z,106nm,21.9s,baz=280,slow=29							
MBWA	**Marble Bar**	**45.51 258**	*e*P		**P**		**12 29 13.6**	**-1.2**
	22nm,0.9s							
NWAO	**Narrogin (SRO)**	**47.80 242**	P		**P**		**12 29 32.3**	**-0.4**
	14nm,0.7s,baz=202,slow=0.0,SNR=7.5							
VNDA	**Vanda**	**59.65 182**	P		**P**		**12 30 59.8**	**+1.1**
	0.5nm,0.5s,baz=7.8,slow=6.9,SNR=3.6							
VNDA			LR		LR		12 53 48.8	
	comp=Z,65nm,18.5s,baz=334,slow=33							
MDJ	**Mudanjiang**	**71.49 332**	P		**P**		**12 32 14.3**	**-1.2**
MDJ			pmax		pmax			
	comp=Z,3.0nm,0.6s							
MDJ			pmax		pmax			
	comp=Z,70nm,4.3s							
QSPA	**South Pole Qui**	**72.07 180**	*e*P		**P**		**12 32 17.6**	**-1.4**
CMAR	**Chiang Mai Arr**	**76.97 294**	P		**P**		**12 32 49.0**	**+1.0**
	comp=Z,1.0nm,0.6s,baz=127,slow=4.8,SNR=4.9							
MA2	**Magadan**	**78.56 351**	LR		LR		13 03 04.5	
	comp=Z,18nm,19.4s,baz=290,slow=32							
CD2	**Chengdu**	**78.58 308**	P		P		12 32 53.0	-3.8
CD2			pmax		pmax			
	comp=Z,1.0nm,0.5s							
ULN	**Ulaanbaatar**	**85.19 324**	*e*P		**P**		**12 33 31.3**	**-0.1**
	comp=Z,6.5nm,1.3s							
GTA	**Gaotai**	**85.45 314**	*e*P		**P**		**12 33 33.5**	**+0.7**
GTA			pP		sP		12 33 47.5	+0.8
GTA			sP		pP		12 33 51.5	+8.5
GTA			pmax		pmax			
	comp=Z,5.0nm,1.0s							
RAGM	**Ragged Mountai**	**86.88 21**	*e*P		P		12 33 34.9	-4.4
	comp=Z,253nm,0.5s							
NVAR	**Mina Array Bea**	**88.82 49**	P		**P**		**12 33 47.5**	**-1.8**
	comp=Z,0.5nm,0.6s,baz=229,slow=7.6,SNR=4.0							
VNA3	**Neumayer Olymp**	**90.99 181**	P		**P**		**12 33 56.5**	**-2.2**
VNA2	**Neumayer--Watz**	**91.27 181**	P		**P**		**12 33 57.7**	**-2.2**
	baz=220,slow=2.0							
WMQ	**Urumqi**	**95.53 314**	*e*P		**P**		**12 34 17.0**	**-3.0**
WMQ			pmax		pmax			
	comp=Z,4.0nm,0.6s							
MKAR	**Makanchi Array**	**100.06 316**	P		**Pdif**		**12 34 41.4**	**+1.1**
	comp=Z,0.5nm,0.7s,baz=108,slow=4.7,SNR=3.5							
YKA	**Yellowknife Ar**	**100.07 27**	P		**Pdif**		**12 34 40.6**	**+0.7**
	comp=Z,0.1nm,0.6s,baz=253,slow=4.7,SNR=3.5							
ARCES	**ARCESS Array B**	**123.57 345**	PKP		**PKPdf**		**12 39 49.5**	**-2.2**
	comp=Z,1.0nm,0.8s,baz=90,slow=1.2,SNR=5.1							

*IDC **30** 12:24:25.3±1.5, 19°.49S×168°.04E, h0km, mb4.0/5, mb1 4.2/6, mb1mx3.8/42, mbtmp4.0/6, ML3.5/1, Error ellipse: s-maj=51.9km s-min=22.0km az=132.0*
*ISCJB **30** 12:24:28.2±1.1, 19°.4S±0°.1×167°.8E±0°.2, h26km, mb4.0/5, Error ellipse: s-maj=34.9km s-min=10.9km az=24.0*

ISC 30 12:24:29.5±1.2, 19°.5S±0°.2×168°.0E±0°.3, h26km, n6, σ1§21/7, mb3.9/5, Vanuatu Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**2.97**	**208**	Pn	**Pn**	**12 25 15.4**	**+0.3**
	6.7nm,0.3s,baz=53,slow=14,SNR=8.5						
DZM				Sn	**Sn**	**12 25 49.6**	**-0.4**
	10nm,0.3s,baz=128,slow=22,SNR=6.5						
WRA	**Warramunga Arr**	**31.63**	**263**	P	**P**	**12 30 50.0**	**-0.7**
	0.7nm,0.6s,baz=101,slow=8.4,SNR=5.2						
ASAR	**Alice Springs**	**31.91**	**256**	P	**P**	**12 30 53.8**	**+0.6**
	2.4nm,0.7s,baz=83,slow=9.0,SNR=7.8						
PETK	**Petropavlovsk-**	**72.80**	**354**	P	**P**	**12 35 56.6**	**+1.1**
	2.7nm,0.8s,baz=63,slow=6.9,SNR=4.3						
NVAR	**Mina Array Bea**	**89.84**	**49**	P	**P**	**12 37 27.1**	**+0.6**
	0.6nm,0.8s,baz=222,slow=7.5,SNR=4.6						
ILAR	**Eielson Array**	**90.79**	**18**	P	**P**	**12 37 28.2**	**-1.8**
	0.5nm,0.8s,baz=224,slow=3.8,SNR=5.6						

*DJA **30** 12:37:57.5±1.8, 1°.S±6°.×13°.0E±1°.0, h10km, M4.0/2, MLv4.0/2*
*IDC **30** 12:37:57.1±5.0, 0°.55S×131°.72E, h0km, mb3.5/2, mb1 3.7/3, mb1mx3.4/23, mbtmp3.5/3, ML3.4/1, Error ellipse: s-maj=329.8km s-min=28.1km az=73.0*
*ISCJB **30** 12:38:00.6±1.2, 1°.02S±0°.09×130°.54E±0°.08, h33km, mb3.5/2, Error ellipse: s-maj=13.1km s-min=10.9km az=146.6*

ISC 30 12:38:03.0±1.3, 1°.03S±0°.09×130°.63E±0°.10, h35km, n6, σ2§60/8, Irian Jaya region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SWI	**Sorong**	**0.65**	**75**	P	**Pn**	**12 38 13.6**	**-2.2**
SWI				S	**Sn**	**12 38 24.7**	**-0.1**
FAKI	**Fak Fak**	**2.48**	**139**	P	**Pn**	**12 38 38.4**	**-2.6**
FAKI				S	**Sn**	**12 39 12.1**	**+2.1**
BNDI	**Bandanaira**	**3.55**	**192**	P	**Pn**	**12 38 52.5**	**-3.1**
WRA	**Warramunga Arr**	**19.15**	**169**	P	**Pn**	**12 42 24.9**	**+0.3**
	0.1nm,0.3s,baz=352,slow=11,SNR=7.3						
ASAR	**Alice Springs**	**22.73**	**172**	P	**P**	**12 43 04.8**	**+2.7**
	1.8nm,0.9s,baz=359,slow=10,SNR=24						
MKAR	**Makanchi Array**	**63.66**	**325**	P	**P**	**12 48 31.9**	**+1.0**
	0.3nm,0.6s,baz=104,slow=6.1,SNR=3.7						

*ISCJB **30** 12:43:31.4±0.6, 36°.98N±0°.03×140°.63E±0°.05, h9km±6km, mb3.5/2, Error ellipse: s-maj=7.3km s-min=5.2km az=17.1*
*JMA **30** 12:43:31.6, 36°.99N×140°.61E, h7km±2km, MS3.2*
*IDC **30** 12:43:32.5±2.7, 36°.73N×140°.59E, h0km, mb3.3/2, mb1 3.6/2, mb1mx3.1/27, mbtmp3.3/2, Error ellipse: s-maj=46.5km s-min=27.8km az=33.0*

ISC 30 12:43:31.5±1.0, 36°.98N±0°.04×140°.64E±0°.05, h15km±9km, n10, σ0§58/16, 3C, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.18**	**46**	S	**Sg**	**12 43 38.9**	**+0.2**
JHO	**Hitachi**	**0.37**	**189**	⇑P	**Pg**	**12 43 38.9**	**-0.1**
JHO				S	**Sg**	**12 43 44.3**	**+0.2**
JFK	**Kawauchi**	**0.43**	**26**	P	**Pg**	**12 43 40.1**	**-0.1**
JFK				S	**Sg**	**12 43 46.2**	**+0.1**
JSB	**Shiboa**	**0.58**	**269**	P	**Pg**	**12 43 42.9**	**+0.1**
JSB				S	**Sg**	**12 43 50.5**	**0.0**
JFT	**Otama**	**0.59**	**336**	⇑P	**Pg**	**12 43 42.9**	**-0.2**
JFT				S	**Sg**	**12 43 50.6**	**-0.4**
JYT	**Yasato**	**0.83**	**206**	⇑P	**Pb**	**12 43 47.0**	**-0.5**
JYT				S	**Sb**	**12 43 57.9**	**-0.6**
MJAR	**Matsushiro Arr**	**2.00**	**258**	Pn	**Pn**	**12 44 05.8**	**+1.1**
	6.9nm,0.3s,baz=80,slow=16,SNR=82						
MJAR				Sn	**Sb**	**12 44 32.2**	**-0.1**
	7.9nm,0.3s,baz=84,slow=28,SNR=16						
MAT	**Matsushiro**	**2.00**	**258**	P	**Pn**	**12 44 05.8**	**+1.1**
MAT				S	**Sb**	**12 44 31.5**	**-0.8**
WRA	**Warramunga Arr**	**56.92**	**187**	P	**P**	**12 53 15.8**	**-0.2**
	0.5nm,0.7s,baz=9.4,slow=6.8,SNR=5.2						
ASAR	**Alice Springs**	**60.65**	**187**	P	P	12 53 45.1	+3.2
	0.2nm,0.8s,baz=11,slow=12,SNR=3.7						

*ISCJB **30** 12:44:22.7±0.8, 37°.02N±0°.04×2°.91E±0°.07, h12km, Error ellipse: s-maj=7.9km s-min=5.7km az=159.3*
*CRAAG **30** 12:44:22.6, 36°.92N×3°.11E, Ml3.0*
*CSEM **30** 12:44:23.1±0.5, 36°.97N×2°.97E, h5km, ML3.0, Error ellipse: s-maj=14.6km s-min=8.8km az=76.0*
*MDD **30** 12:44:23.3±0.8, 36°.97N×3°.05E, h0km, mb3.9/4, Error ellipse: s-maj=16.2km s-min=4.8km az=79.0, PRXIMO*

ISC 30 12:44:22.7±1.2, 36°.99N±0°.05×3°.04E±0°.07, h12km, n26, σ1§56/38, Northern Algeria

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ABA	**Alger-Bouzarea**	**0.19**	**182**	P	**Pg**	**12 44 26.1**	**-0.8**
ABA	**Alger-Bouzarea**	**0.19**	**182**	P	**Pg**	**12 44 26.1**	**-0.8**
ABA	**Alger-Bouzarea**	**0.19**	**182**	P	**Pg**	**12 44 26.1**	**-0.8**
EMHD	**Djebel Mahouad**	**0.79**	**185**	P	**Pg**	**12 44 37.5**	**-0.5**
EMHD	**Djebel Mahouad**	**0.79**	**185**	P	**Pg**	**12 44 37.5**	**-0.5**
EMHD	**Djebel Mahouad**	**0.79**	**185**	P	**Pg**	**12 44 37.5**	**-0.5**
EIBI	**Ibiza**	**2.44**	**327**	P	**Pn**	**12 45 03.6**	**+1.3**
	5.8nm,0.2s,SNR=8.1						
EIBI				S	**Sn**	**12 45 31.3**	**-0.7**
	11nm,0.2s,SNR=7.9						
EIBI	**Ibiza**	**2.44**	**327**	P	**Pn**	**12 45 03.6**	**+1.3**
	5.8nm,0.2s,SNR=8.1						
EIBI				S	**Sn**	**12 45 31.3**	**-0.7**
	11nm,0.2s,SNR=7.9						
ETOS	**Mallorca**	**2.78**	**356**	P	**Pn**	**12 45 08.5**	**+1.5**
	3.7nm,0.2s,SNR=20						
ETOS				S	**Sn**	**12 45 39.8**	**-0.7**
	1.2nm,0.2s,SNR=4.0						
ETOS	**Mallorca**	**2.78**	**356**	P	**Pn**	**12 45 08.5**	**+1.5**
	3.7nm,0.2s,SNR=20						
ETOS				S	**Sn**	**12 45 39.8**	**-0.7**
	1.2nm,0.2s,SNR=4.0						
ETOB	**Tobarra**	**3.99**	**296**	P	**Pn**	**12 45 25.6**	**+1.8**
	0.5nm,0.1s,SNR=73						
ETOB				S	**Sn**	**12 46 08.9**	**-1.6**
	1.2nm,0.2s,SNR=7.9						
ETOB	**Tobarra**	**3.99**	**296**	P	**Pn**	**12 45 25.6**	**+1.8**
	0.5nm,0.1s,SNR=73						
ETOB				S	**Sn**	**12 46 08.9**	**-1.6**
	1.2nm,0.2s,SNR=7.9						
EMOS	**Mosqueruela**	**4.35**	**322**	P	**Pn**	**12 45 30.5**	**+1.8**
	1.0nm,0.1s,SNR=18						
EMOS				S	**Sn**	**12 46 18.1**	**-1.3**
	1.2nm,0.2s,SNR=7.9						
EMOS	**Mosqueruela**	**4.35**	**322**	P	**Pn**	**12 45 30.5**	**+1.8**
	1.0nm,0.1s,SNR=18						
EMOS				S	**Sn**	**12 46 18.1**	**-1.3**
	1.2nm,0.2s,SNR=7.9						
ERTA	**Horta de San J**	**4.49**	**333**	S	**Sn**	**12 46 20.7**	**-2.0**
	1.3nm,0.2s,SNR=7.9						
ERTA	**Horta de San J**	**4.49**	**333**	S	**Sn**	**12 46 20.7**	**-2.0**
	1.3nm,0.2s,SNR=7.9						
SESP	**Santiago Espad**	**4.58**	**286**	S	**Sn**	**12 46 24.1**	**-1.0**
	2.0nm,0.2s,SNR=7.9						
SESP	**Santiago Espad**	**4.58**	**286**	S	**Sn**	**12 46 24.1**	**-1.0**
	2.0nm,0.2s,SNR=7.9						
EPOB	**Poblet**	**4.61**	**341**	P	**Pn**	**12 45 35.1**	**+2.8**
	0.3nm,0.1s,SNR=7.9						
EPOB				S	**Sn**	**12 46 24.0**	**-1.9**
	0.4nm,0.3s,SNR=7.9						
EPOB	**Poblet**	**4.61**	**341**	P	**Pn**	**12 45 35.1**	**+2.8**
	0.3nm,0.1s,SNR=7.9						
EPOB				S	**Sn**	**12 46 24.0**	**-1.9**
	0.4nm,0.3s,SNR=7.9						
CFON	**Fontmartina**	**4.79**	**355**	P	**Pn**	**12 45 36.2**	**+1.5**
	1.1nm,0.2s,SNR=7.9						
CFON	**Fontmartina**	**4.79**	**355**	P	**Pn**	**12 45 36.2**	**+1.5**
	1.1nm,0.2s,SNR=7.9						
EQES	**Quesada**	**4.94**	**281**	P	**Pn**	**12 45 38.9**	**+2.2**
	0.2nm,0.1s,SNR=7.9						
EQES				S	**Sn**	**12 46 32.5**	**-1.3**
	0.8nm,0.2s,SNR=7.9						
EQES	**Quesada**	**4.94**	**281**	P	**Pn**	**12 45 38.9**	**+2.2**
	0.2nm,0.1s,SNR=7.9						
EQES				S	**Sn**	**12 46 32.5**	**-1.3**
	0.8nm,0.2s,SNR=7.9						
CSOR	**Sort**	**5.57**	**345**	P	**Pn**	**12 45 46.5**	**+1.0**
	SNR=7.9						
CSOR	**Sort**	**5.57**	**345**	P	**Pn**	**12 45 46.5**	**+1.0**
	SNR=7.9						

*NIED **30** 12:57:00, 37°.00N×140°.60E, h8km, Mw3.6 Best double couple: M○2.84000×10^14 NP1:φs301.00000°, δ46.00000°, λ-130.00000°. NP2:φs171.00000°, δ57.00000°, λ-56.00000°.*
*IDC **30** 12:57:47.0±0.9, 36°.95N×140°.65E, h0km, mb3.6/6, mb1 3.8/8, mb1mx3.5/39, mbtmp3.7/8, ML3.2/2, MS2.9/1, Ms1 2.9/1, ms1mx2.2/36, Error ellipse: s-maj=24.7km s-min=18.0km az=107.0*
*ISCJB **30** 12:57:48.0±0.5, 37°.00N±0°.03×140°.69E±0°.04, h17km±4km, mb3.5/6, MS2.8/1, Error ellipse: s-maj=6.3km s-min=4.3km az=25.6*
*JMA **30** 12:57:48.6, 37°.03N×140°.59E, h9km±1km, M3.6 Broadband fault plane solution: P waves. NP1: φs154.00000°, δ50.00000°, λ-58.00000°. NP2: φs290.00000°, δ50.00000°, λ-122.00000°. Principal axes: T Plg0.0000°, Azm222.0000°; N Plg24.0000°, Azm312.0000°; P Plg66.0000°, Azm132.0000°;*
JMA Felt II J1.

ISC 30 12:57:47.4±1.3, 36°.97N±0°.04×140°.56E±0°.03, h1km±9km, n26, σ0§75/29, mb3.6/6, 7C, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.23**	**55**	⇑P	**Pg**	**12 57 52.5**	**+0.6**
ONAJ				S	**Sg**	**12 57 55.3**	**+0.3**
JHO	**Hitachi**	**0.35**	**179**	⇑P	**Pb**	**12 57 56.7**	**+0.2**
JHO				S	**Sb**	**12 58 02.6**	**0.0**
JFK	**Kawauchi**	**0.47**	**32**	⇑P	**Pg**	**12 57 56.4**	**-0.1**
JFK				S	**Sg**	**12 58 02.0**	**-0.6**
JSB	**Shiboa**	**0.51**	**270**	⇑P	**Pb**	**12 57 59.8**	**+0.6**
JSB				S	**Sb**	**12 58 07.4**	**+0.2**
JFT	**Otama**	**0.58**	**342**	⇑P	**Pg**	**12 57 59.0**	**+0.5**
JFT				S	**Sg**	**12 58 06.2**	**+0.2**
JFY	**Yanaizu**	**0.81**	**303**	⇑P	**Pb**	**12 58 04.0**	**-0.3**
JFY				S	**Sg**	**12 58 14.3**	**+0.8**
JMM	**Marumori**	**0.92**	**12**	⇑P	**Pg**	**12 58 04.2**	**-0.8**
JMM				S	**Sg**	**12 58 15.9**	**-1.0**
MJAR	**Matsushiro Arr**	**1.93**	**258**	Pn	**Pb**	**12 58 22.9**	**-0.6**
	27nm,0.3s,baz=82,slow=17,SNR=132						
MJAR				Sn	**Sg**	**12 58 49.6**	**0.0**
	36nm,0.3s,baz=95,slow=26,SNR=17						
MAT	**Matsushiro**	**1.94**	**258**	P	**Pb**	**12 58 22.9**	**-0.6**
MAT				S	**Sg**	**12 58 49.3**	**-0.3**
JHJ	**Hachijo jima 2**	**3.89**	**190**	Pn	**Pn**	**12 58 49.3**	**+1.0**
	11nm,0.3s,baz=81,slow=20,SNR=10						
JHJ				Sn	**Sn**	**12 59 33.4**	**-1.3**
	7.2nm,0.3s,baz=248,slow=19,SNR=3.3						
ASAJ	**Asahikawa**	**7.31**	**12**	Pn	**Pn**	**12 59 34.8**	**-0.5**
	0.3nm,0.3s,baz=192,slow=9.3,SNR=3.2						
ASAJ				Sn	**Sn**	**13 01 00.3**	**+1.4**
	0.3nm,0.3s,baz=321,slow=18,SNR=2.2						
USRK	**Ussuriysk Ar.**	**9.73**	**321**	Pn	Pn	13 00 13.5	+5.1
	0.2nm,0.3s,baz=122,slow=14,SNR=5.8						
SONM	**Songino Array**	**27.26**	**304**	P	**P**	**13 03 33.2**	**0.0**
	0.6nm,0.5s,baz=98,slow=8.9,SNR=3.0						
H11N2	**WAKE ISLAND Hy**	**28.71**	**120**	T	T	13 33 36.3	
	baz=313,slow=75,SNR=52						
H11N1	**WAKE ISLAND Hy**	**28.71**	**120**	T	T	13 33 35.3	
	baz=313,slow=75,SNR=43						
H11N3	**WAKE ISLAND Hy**	**28.72**	**120**	T	T	13 33 36.1	
	baz=313,slow=75,SNR=41						
H11S1	**WAKE ISLAND Hy**	**29.40**	**122**	T	T	13 34 26.0	
	baz=314,slow=76,SNR=123						
H11S3	**WAKE ISLAND Hy**	**29.40**	**122**	T	T	13 34 28.6	
	baz=314,slow=76,SNR=102						
H11S2	**WAKE ISLAND Hy**	**29.42**	**122**	T	T	13 34 26.8	
	baz=314,slow=76,SNR=60						
ZALV	**Zalesovo Beam**	**41.45**	**312**	LR	LR	13 21 44.4	
	comp=Z,14nm,19.7s,baz=70,slow=35						
WRA	**Warramunga Arr**	**56.91**	**187**	P	**P**	**13 07 33.3**	**-0.8**
	1.2nm,0.7s,baz=4.0,slow=7.3,SNR=19						
ASAR	**Alice Springs**	**60.63**	**187**	P	**P**	**13 07 59.3**	**-0.7**
	0.4nm,0.8s,baz=16,slow=4.9,SNR=6.6						
YKA	**Yellowknife Ar**	**64.21**	**30**	P	**P**	**13 08 24.7**	**+1.2**
	0.1nm,0.8s,baz=292,slow=6.6,SNR=3.0						
FINES	**FINESS Array B**	**68.55**	**332**	P	**P**	**13 08 51.3**	**0.0**
	0.9nm,0.8s,baz=79,slow=7.2,SNR=3.3						
NOA	**NORSAR Array B**	**73.98**	**337**	P	**P**	**13 09 23.0**	**-1.3**
	0.5nm,0.7s,baz=39,slow=5.7,SNR=3.0						
LPAZ	**La Paz**	**147.31**	**59**	PKPbc	**PKPdf**	**13 17 32.2**	**+0.6**
	0.5nm,0.5s,baz=206,slow=5.9,SNR=2.8						

*TIF **30** 13:02:08.0, 42°.52N×43°.45E, h13km*
*CSEM **30** 13:02:08.8±0.1, 42°.55N×43°.39E, h2km, mb4.0, Error ellipse: s-maj=2.9km s-min=2.7km az=118.0*
*MOS **30** 13:02:08.9±1.0, 42°.56N×43°.41E, h8km, mb4.0/1, Error ellipse: s-maj=7.8km s-min=5.0km az=78.3*

*AZER **30** 13:02:09.4±0.2, 42°.15N×43°.35E, h5km, Error ellipse: s-maj=7.4km s-min=4.5km az=356.0*
*ISK **30** 13:02:10.7, 42°.53N×43°.36E, h22km, MD4.0*
*DDA **30** 13:02:38.3, 42°.60N×43°.49E, h11km, Md3.7*

ISC 30 13:02:09.0±0.8, 42°.53N±0°.02×43°.41E±0°.01, h6km±6km, n97, σ0§96/153, 13C-16D, Western Caucasus

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONI	**Oni**	**0.06**	**28**	P	**Pg**	**13 02 10.7**	**-0.1**
ONI				S	**Sg**	**13 02 12.5**	**+0.6**
ONI	**Oni**	**0.06**	**28**	PG	**Pg**	**13 02 10.6**	**-0.1**
DIGR	**Digorskoe uzhe**	**0.39**	**19**	⇓*i*PG	**Pg**	**13 02 15.9**	**-0.7**
DIGR				*i* S	**Sg**	**13 02 21.8**	**+0.1**
DIGR	**Digorskoe uzhe**	**0.39**	**19**	*i* Pg	**Pg**	**13 02 15.9**	**-0.7**
DIGR				*i* Sg	**Sg**	**13 02 21.8**	**+0.1**
ZEI	**Tsey**	**0.44**	**55**	⇓*i*PG	**Pg**	**13 02 16.5**	**-1.1**
ZEI				*e*S	**Sg**	**13 02 22.7**	**-0.7**
ZEI	**Tsey**	**0.44**	**55**	*i* Pg	**Pg**	**13 02 16.5**	**-1.1**
ZEI				*e*Sg	**Sg**	**13 02 22.7**	**-0.7**
LACR	**Lac**	**0.72**	**66**	*d*PG	**Pg**	**13 02 20.2**	**-2.5**
GUDG	**Gudauri**	**0.79**	**95**	P	**Pg**	**13 02 23.3**	**-0.9**
GUDG				S	**Sg**	**13 02 33.5**	**-0.9**
GUDG	**Gudauri**	**0.79**	**95**	P	**Pg**	**13 02 23.3**	**-0.9**
GUDG				S	**Sg**	**13 02 33.5**	**-0.9**
LSNR	**Lesken**	**0.80**	**22**	*e*PG	**Pg**	**13 02 24.0**	**-0.4**
LSNR	**Lesken**	**0.80**	**22**	*e*Pg	**Pg**	**13 02 24.0**	**-0.4**
NEY	**Neytrino**	**0.88**	**325**	*c*PG	**Pg**	**13 02 25.2**	**-0.6**
NEY	**Neytrino**	**0.88**	**325**	*i* Pg	**Pg**	**13 02 25.2**	**-0.6**
ARNR	**Ardon**	**0.91**	**44**	*c*PG	**Pg**	**13 02 26.3**	**-0.2**
ARNR	**Ardon**	**0.91**	**44**	*i* Pg	**Pg**	**13 02 26.3**	**-0.2**
STDR	**Stavd-Durt**	**0.96**	**30**	⇓*i*PG	**Pb**	**13 02 28.0**	**-0.1**
STDR				*e*S	**Sb**	**13 02 41.7**	**+0.7**
STDR	**Stavd-Durt**	**0.96**	**30**	*i* Pg	**Pb**	**13 02 28.0**	**-0.1**
STDR				*e*Sg	**Sb**	**13 02 41.7**	**+0.7**
NCK	**Nalchik**	**0.97**	**8**	*c*ePG	**Pg**	**13 02 27.8**	**+0.2**
NCK	**Nalchik**	**0.97**	**8**	*e*Pg	**Pg**	**13 02 27.8**	**+0.2**
CHVG	**Ch'k'valeri**	**1.00**	**281**	P	**Pg**	**13 02 28.0**	**-0.1**
CHVG				S	**Sb**	**13 02 42.6**	**+0.6**
CHVG	**Ch'k'valeri**	**1.00**	**281**	P	**Pg**	**13 02 28.0**	**-0.1**
CHVG				S	**Sb**	**13 02 42.6**	**+0.6**
DUS	**Dusheti**	**1.05**	**114**	P	**Pn**	**13 02 31.1**	**+0.7**
DUS				S	**Sb**	**13 02 44.4**	**+0.7**
DUS	**Dusheti**	**1.05**	**114**	PG	**Pn**	**13 02 31.0**	**+0.7**
DUS				S	**Sb**	**13 02 44.4**	**+0.7**
DUS	**Dusheti**	**1.05**	**114**	Pg	**Pn**	**13 02 31.0**	**+0.7**
DUS				S	**Sb**	**13 02 44.4**	**+0.7**
VLKR	**Vladikavkaz**	**1.06**	**61**	*e*PG	**Pg**	**13 02 29.4**	**0.0**
VLKR	**Vladikavkaz**	**1.06**	**61**	*e*Pg	**Pg**	**13 02 29.4**	**0.0**
AKH	**Akhalkalaki**	**1.12**	**177**	P	**Pg**	**13 02 29.1**	**-1.4**
AKH				S	**Sg**	**13 02 44.4**	**-0.7**
AKH	**Akhalkalaki**	**1.12**	**177**	PG	**Pg**	**13 02 29.1**	**-1.4**
AKH				S	**Sg**	**13 02 44.4**	**-0.7**
AKH	**Akhalkalaki**	**1.12**	**177**	P	**Pg**	**13 02 29.1**	**-1.4**
AKH				S	**Sg**	**13 02 44.4**	**-0.7**
EPOS	**Posof**	**1.15**	**207**	*i* P	**Pg**	**13 02 29.9**	**-1.1**
EPOS				*i* S	**Sb**	**13 02 46.4**	**-0.1**
EPOS	**Posof**	**1.15**	**207**	P	**Pg**	**13 02 29.9**	**-1.1**
EPOS				S	**Sb**	**13 02 46.4**	**-0.1**
BTKR	**Batakoyurt**	**1.18**	**44**	⇓*i*PG	**Pn**	**13 02 32.3**	**+0.2**
BTKR				*e*S	**Sn**	**13 02 48.2**	**-0.2**
BTKR	**Batakoyurt**	**1.18**	**44**	*i* Pg	**Pn**	**13 02 32.3**	**+0.2**
BTKR				*e*Sg	**Sn**	**13 02 48.2**	**-0.2**
KMGR	**Komgaron**	**1.19**	**63**	⇓*i*PG	**Pg**	**13 02 31.6**	**-0.2**
KMGR				*e*S	**Sg**	**13 02 47.4**	**+0.1**
KMGR	**Komgaron**	**1.19**	**63**	*i* Pg	**Pg**	**13 02 31.6**	**-0.2**
KMGR				*e*Sg	**Sg**	**13 02 47.4**	**+0.1**
TBLG	**Delisi**	**1.27**	**129**	*e*PN	**Pb**	**13 02 34.3**	**+1.0**
TBLG				*e*SN	**Sn**	**13 02 51.5**	**+0.8**
TBLG	**Delisi**	**1.27**	**129**	P	**Pb**	**13 02 33.5**	**+0.2**
TBLG				S	**Sn**	**13 02 51.3**	**+0.6**
TBLG	**Delisi**	**1.27**	**129**	PG	**Pb**	**13 02 33.5**	**+0.2**
TBLG				S	**Sn**	**13 02 51.3**	**+0.6**
TBLG	**Delisi**	**1.27**	**129**	P	**Pb**	**13 02 33.5**	**+0.2**
TBLG	**Delisi**	**1.27**	**129**	*e*Pn	**Pb**	**13 02 34.3**	**+1.0**
TBLG				*e*Sn	**Sn**	**13 02 51.5**	**+0.8**
SHA1	**Shidzhatmaz**	**1.32**	**336**	*e*PG	**Pn**	**13 02 33.8**	**-0.4**
SHA1				*e*S	**Sg**	**13 02 51.3**	**-0.3**
SHA1	**Shidzhatmaz**	**1

SEKA	**Sheki** SNR=9.3	**3.12**	**114**	⇑P	**Pn**	**13 03 01.4**	**+2.6**
SEKA				⇑S	**Sb**	**13 03 42.8**	**-0.5**
SEKA	**Sheki** SNR=9.3	**3.12**	**114**	P	**Pn**	**13 03 01.4**	**+2.6**
GUMT	**Gumushane**	**3.61**	**236**	*e*PN	**Pn**	**13 03 06.6**	**+1.1**
GUMT	**Gumushane**	**3.61**	**236**	*e*Pn	**Pn**	**13 03 06.6**	**+1.1**
PTK	**Pertek**	**4.75**	**221**	*e*PN	**Pn**	**13 03 23.0**	**+1.7**
PTK	**Pertek**	**4.75**	**221**	*e*Pn	**Pn**	**13 03 23.0**	**+1.7**
ANN	**Anapa**	**4.89**	**300**	*e*PN	**Pn**	**13 03 23.3**	**+0.3**
ANN				*e*		13 04 22.4	
ANN	comp=Z,17nm,0.9s			pmax	pmax		
ANN	**Anapa** comp=Z,17nm,0.9s	**4.89**	**300**	*e*Pn	**Pn**	**13 03 23.3**	**+0.3**
ANN				*e*Sn	**Sn**	**13 04 22.4**	**+2.5**
ARU	**Arti**	**16.98**	**30**	*d i*P	**Pn**	**13 06 06.7**	**-0.2**
ARU				S	**Sn**	**13 09 16.1**	**+0.4**
ARU	comp=Z,2.0nm,0.8s			pmax	pmax		
ARU	**Arti** comp=Z,2.0nm,0.8s	**16.98**	**30**	*i* P	**Pn**	**13 06 06.7**	**-0.2**
VSU	**Vasula**	**19.06**	**332**	⇓*e*P	**P**	**13 06 28.8**	**-2.9**
VSU	comp=Z,20nm,0.8s			pmax	pmax		
BRVK	**Borovoye**	**20.77**	**50**	⇓*i*P	**P**	**13 06 49.0**	**-1.5**
BRVK	comp=Z,4.0nm,0.8s			pmax	pmax		
BRVK	**Borovoye** comp=Z,4.0nm,0.8s	**20.77**	**50**	*i* P	**P**	**13 06 49.0**	**-1.5**
AAK	**Ala-Archa**	**22.83**	**79**	⇑*i*P	**P**	**13 07 13.8**	**+1.0**
AAK	comp=Z,3.0nm,1.0s			pmax	pmax		
AAK	**Ala-Archa** comp=Z,3.0nm,1.0s	**22.83**	**79**	*i* P	**P**	**13 07 13.8**	**+1.0**

MEX 30 13:11:08.2±0.9, 15°49N×93°56W, h84km±10km, MD3.8, Near coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PCIG		**0.39**	**56**	*e*P	Pn	13 11 20.2	-1.3
PCIG				*e*S	Sn	13 11 29.7	-1.7
TGIG		**1.35**	**18**	*e*P	Pn	13 11 31.2	-0.7
TGIG				*i* S	Sn	13 11 47.5	-2.2
THIG		**1.37**	**115**	*e*P	Pn	13 11 29.5	-2.6
CCIG	**Comitan**	**1.58**	**60**	*e*S	Sn	13 11 54.0	-1.0
HUIG	**Huatulco**	**2.48**	**277**	*e*P	Pn	13 11 45.1	-1.5
HUIG				*e*S	Sn	13 12 10.5	-5.5
VHO	**Vista Hermosa**	**3.43**	**298**	*e*P	Pn	13 12 00.1	+0.5
VHO				*e*S	Sn	13 12 38.2	-1.2

WEL 30 13:18:34.1±0.1, 43°18S×172°00E, h5km, ML2.9/5, 1C-1D, Error ellipse: s-maj=1.4km s-min=0.7km az=90.0, South Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OXZ	**Oxford**	**0.14**	**168**	PG	Pg	13 18 37.3	+0.2
OXZ				SG	Sg	13 18 40.1	+1.1
LTZ	**Lake Taylor**	**0.45**	**27**	⇑PG	Pg	13 18 43.3	+0.5
LTZ				SG	Sg	13 18 49.7	+1.0
CRLZ	**Canterbury Las**	**0.60**	**131**	P*	Pg	13 18 46.0	+0.3
INZ	**Inchbonnie**	**0.61**	**318**	P*	Pg	13 18 46.2	+0.3
MQZ	**McQueen's Vall**	**0.71**	**138**	⇓P*	Pg	13 18 47.8	0.0
MQZ				AML	AML	13 18 58.7	
MQZ				AML	AML	13 18 59.1	
RPZ	**Rata Peaks**	**0.87**	**232**	AML	AML	13 18 53.5	
WVZ	**Waitaha Valley**	**0.93**	**276**	AML	AML	13 18 53.5	

WEL 30 13:19:18.6±0.1, 43°60S×172°67E, h10km, ML3.6/16, 2C-1D, Error ellipse: s-maj=0.9km s-min=0.6km az=90.0, South Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CRLZ	**Canterbury Las**	**0.04**	**312**	PG	Pg	13 19 20.3	-0.1
CRLZ				AML	AML	13 19 21.5	
CRLZ				AML	AML	13 19 21.5	
CRLZ				AML	AML	13 19 21.5	
CRLZ				AML	AML	13 19 21.6	
MQZ	**McQueen's Vall**	**0.10**	**185**	⇑PG	Pg	13 19 21.4	+0.2
MQZ				SG	Sg	13 19 23.3	+0.2
MQZ				AML	AML	13 19 23.4	
OXZ	**Oxford**	**0.54**	**301**	P*	Pg	13 19 28.9	-0.1
OXZ				S*	Sg	13 19 36.5	+0.5
LTZ	**Lake Taylor**	**0.87**	**340**	P*	Pg	13 19 35.2	-0.2
LTZ				S*	Sb	13 19 47.3	-0.3
LTZ				AML	AML	13 19 48.6	
RPZ	**Rata Peaks**	**1.18**	**264**	P*	Pb	13 19 39.9	-1.2
RPZ				AML	AML	13 19 58.4	
RPZ				AML	AML	13 19 58.6	
INZ	**Inchbonnie**	**1.25**	**314**	P*	Pn	13 19 41.2	-1.0
INZ				S*	Sn	13 19 59.4	+0.2
KHZ	**Kahutara**	**1.35**	**29**	PN	Pn	13 19 41.9	-1.6
WVZ	**Waitaha Valley**	**1.50**	**290**	PN	Pn	13 19 44.8	-0.8
WVZ				AML	AML	13 20 09.9	
WVZ				AML	AML	13 20 10.2	
THZ	**Tophouse**	**1.85**	**6**	⇑PN	Pn	13 19 48.9	-1.5
THZ				AML	AML	13 20 26.0	
THZ				AML	AML	13 20 30.7	
LBZ	**Lake Benmore**	**1.96**	**246**	PN	Pn	13 19 51.3	-0.6
LBZ				AML	AML	13 20 26.8	
LBZ				AML	AML	13 20 32.5	
DSZ	**Denniston Nort**	**1.96**	**341**	AML	AML	13 18 25.6	
DSZ				PN	Pn	13 19 50.9	-1.1
DSZ				AML	AML	13 20 25.8	
DSZ				AML	AML	13 20 25.9	
ODZ	**Otahua Downs**	**2.04**	**225**	PN	Pn	13 19 51.9	-1.2
ODZ				AML	AML	13 20 29.9	
ODZ				AML	AML	13 20 34.5	
FOZ	**Fox Glacier**	**2.07**	**271**	⇓PN	Pn	13 19 54.0	+0.5
FOZ				AML	AML	13 20 29.5	
NNZ	**Nelson**	**2.44**	**13**	PN	Pn	13 19 57.5	-1.0
TCW	**Tory Channel**	**2.67**	**27**	AML	AML	13 20 33.8	
QRZ	**Quartz Range**	**2.78**	**358**	AML	AML	13 20 15.4	
QRZ				AML	AML	13 20 57.1	
PLWZ	**Palliser**	**2.79**	**44**	PN	Pn	13 20 01.1	-2.3
WEL	**Wellington**	**2.79**	**35**	PN	Pn	13 20 01.7	-1.7
JCZ	**Jackson Bay**	**2.85**	**259**	AML	AML	13 21 02.2	
EAZ	**Earnscleugh**	**2.91**	**235**	PN	Pn	13 20 03.9	-1.0
EAZ				AML	AML	13 21 02.1	
EAZ				AML	AML	13 21 05.8	
CAW	**Cannon Point**	**3.06**	**36**	AML	AML	13 20 41.1	
CAW				AML	AML	13 20 43.5	
TUZ	**Tuapeka**	**3.19**	**222**	PN	Pn	13 20 07.7	-1.2
TUZ				AML	AML	13 21 14.2	
TUZ				AML	AML	13 21 14.4	
KIW	**Kapiti Island**	**3.21**	**32**	PN	Pn	13 20 07.3	-1.8
OGWZ	**Otaki Gorge**	**3.35**	**35**	PN	Pn	13 20 09.0	-2.1
MRZ	**Mangatainoka R**	**3.65**	**37**	PN	Pn	13 20 12.8	-2.4
BFZ	**Birch Farm**	**3.95**	**44**	PN	Pn	13 20 16.7	-2.6
BHHZ	**Black Hill Sta**	**4.84**	**33**	PN	Pn	13 20 30.4	-1.2

*DDA **30** 13:19:19.9, 37°35N×31°74E, h4km, Md3.0*
*CSEM **30** 13:19:23.8±0.3, 37°31N×31°87E, h2km, MD2.7, Error ellipse: s-maj=7.2km s-min=6.2km az=6.0*
*ISK **30** 13:19:24.6, 37°41N×31°84E, h9km, MD2.7*
ISC 30 13:19:22.8±1.5, 37°35N±0°04×31°89E±0°03, h1km±15km, n18, σ0°92/30, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KONT	**Konya--Tatoy**	**0.70**	**32**	*e*PG	**Pb**	**13 19 38.2**	**+0.3**
KONT				*e*SG	**Sb**	**13 19 48.1**	**0.0**
KONT	**Konya--Tatoy**	**0.70**	**32**	*e*Pg	**Pb**	**13 19 38.2**	**+0.3**
KONT				*e*Sg	**Sb**	**13 19 48.1**	**0.0**
SUTC	**Sutluce-Ispart**	**0.72**	**281**	*e*PG	**Pb**	**13 19 38.1**	**-0.2**
SUTC				*e*SG	**Sb**	**13 19 47.9**	**-0.9**
SUTC	**Sutluce-Ispart**	**0.72**	**281**	*e*Pg	**Pb**	**13 19 38.1**	**-0.2**
SUTC				*e*Sg	**Sb**	**13 19 47.9**	**-0.9**
LADK	**Ladik-KONYA**	**0.93**	**24**	*e*PG	**Pn**	**13 19 42.3**	**-0.9**
LADK				*e*SG	**Sb**	**13 19 55.0**	**+0.3**
LADK	**Ladik-KONYA**	**0.93**	**24**	*e*Pg	**Pn**	**13 19 42.3**	**-0.9**
LADK				*e*Sg	**Sb**	**13 19 55.0**	**+0.3**
ERMK	**Ermenek**	**1.08**	**130**	*i* P	**Pg**	**13 19 43.0**	**-0.4**
ERMK				*i* S	**Sb**	**13 19 58.5**	**-0.5**
ERMK	**Ermenek**	**1.08**	**130**	P	**Pg**	**13 19 43.0**	**-0.4**
ERMK				S	**Sb**	**13 19 58.5**	**-0.5**
KORT	**Korkueli**	**1.28**	**255**	*i* P	**Pb**	**13 19 47.4**	**-0.4**
KORT				*i* S	**Sn**	**13 20 07.4**	**+1.6**
KORT	**Korkueli**	**1.28**	**255**	P	**Pb**	**13 19 47.4**	**-0.4**
KORT				S	**Sn**	**13 20 07.4**	**+1.6**
KIZT	**Kizilcal**	**1.53**	**360**	*e*PN	**Pb**	**13 19 52.1**	**+0.1**
KIZT	**Kizilcal**	**1.53**	**360**	*e*Pn	**Pb**	**13 19 52.1**	**+0.1**
KERG	**Konya-Eregli**	**1.78**	**87**	*i* P	**Pb**	**13 19 55.7**	**-0.6**
KERG				*i* S	**Sg**	**13 20 21.4**	**+1.4**
KERG	**Konya-Eregli**	**1.78**	**87**	P	**Pb**	**13 19 55.7**	**-0.6**
KERG				S	**Sg**	**13 20 21.4**	**+1.4**
IKL	**Isikli**	**1.81**	**127**	*e*PN	**Pg**	**13 19 57.9**	**+0.3**
IKL	**Isikli**	**1.81**	**127**	*e*Pn	**Pg**	**13 19 57.9**	**+0.3**
AFSR	**Af˙ar-Bala (A**	**2.29**	**23**	*e*PN	**Pb**	**13 20 03.1**	**-1.9**
AFSR	**Af˙ar-Bala (A**	**2.29**	**23**	*e*Pn	**Pb**	**13 20 03.1**	**-1.9**

*IDC **30** 13:21:59.6±4.5, 36°69N×141°51E, h0km, mb3.5/2, mb1 3.7/4, mb1mx3.3/35, mbtmp3.5/4, ML3.2/2, MS2.4/1, Ms1 2.4/1, ms1mx2.0/40, Error ellipse: s-maj=81.6km s-min=32.4km az=23.0*
*NIED **30** 13:22:00, 36°20N×141°00E, h20km, Mw3.5 Best double couple: M₀2.24000×10¹⁴ NP1:φ₉103.00000°, δ51.00000°, λ-42.00000°. NP2:φ₉222.00000°, δ59.00000°, λ-133.00000°.*
*ISCJB **30** 13:22:07.0±0.9, 36°25N±0°05×141°09E±0°09, h31km, mb3.5/2, Error ellipse: s-maj=10.5km s-min=6.4km az=165.4*
*JMA **30** 13:22:07.9±0.1, 36°22N×140°99E, h39km±1km, M3.5*
JMA Felt I J1.
ISC 30 13:22:05.5±1.3, 36°13N±0°04×141°11E±0°07, h31km, n17, σ1°86/15, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.48**	**206**	P	**Pn**	**13 22 18.8**	**+2.6**
JHO	**Hitachi**	**0.65**	**318**	P	**Pn**	**13 22 18.7**	**+0.1**
JHO				S	**Sn**	**13 22 26.5**	**-1.3**
JYT	**Yasato**	**0.75**	**278**	P	**Pb**	**13 22 20.8**	**+0.7**
JYT				S	**Sn**	**13 22 30.2**	**-0.1**
ONAJ	**Iwakimizuishiy**	**1.00**	**345**	P	**Pb**	**13 22 23.7**	**-0.7**
JFK	**Kawauchi**	**1.25**	**351**	P	**Pb**	**13 22 27.2**	**-1.3**
JAG	**Ashikaga**	**1.37**	**283**	P	**Pb**	**13 22 29.4**	**-1.2**
MJAR	**Matsushiro Arr** 3.7nm,0.3s,baz=84,slow=8.8,SNR=40	**2.38**	**281**	Pn	**Pn**	**13 22 42.7**	**+0.2**
MJAR				Sn	**Sb**	**13 23 18.9**	**+2.3**
	6.7nm,0.3s,baz=218,slow=34,SNR=5.7						
MJAR				LR	LR	13 23 48.1	
	comp=Z,63nm,18.4s,baz=140,slow=41						
MAT	**Matsushiro**	**2.38**	**281**	P	**Pb**	**13 22 44.8**	**-2.9**
MAT				*e*S	**Sb**	**13 23 16.6**	**-0.1**
JHJ	**Hachijo jima 2** 6.6nm,0.3s,baz=133,slow=22,SNR=7.5	**3.20**	**200**	Pn	**Pb**	**13 22 59.4**	**-2.3**
JHJ				Sn	**Sb**	**13 23 37.5**	**-2.7**
	13nm,0.3s,baz=65,slow=19,SNR=5.7						
H11N2	**WAKE ISLAND Hy 27.91** baz=312,slow=75,SNR=49	**119**		T	T	13 57 10.7	
H11N1	**WAKE ISLAND Hy 27.92** baz=312,slow=75,SNR=52	**119**		T	T	13 57 17.1	
H11N3	**WAKE ISLAND Hy 27.93** baz=312,slow=75,SNR=47	**119**		T	T	13 57 18.3	
H11S1	**WAKE ISLAND Hy 28.59** baz=314,slow=76,SNR=124	**121**		T	T	13 58 06.4	
H11S3	**WAKE ISLAND Hy 28.59** baz=314,slow=76,SNR=93	**121**		T	T	13 58 05.2	
H11S2	**WAKE ISLAND Hy 28.60** baz=314,slow=76,SNR=74	**121**		T	T	13 58 06.4	
WRA	**Warramunga Arr** 0.2nm,0.6s,baz=5.3,slow=7.5,SNR=6.3	**56.14**	**188**	P	P	13 31 46.2	+4.0
ASAR	**Alice Springs** 0.2nm,0.2s,baz=14,slow=8.6,SNR=3.1	**59.86**	**188**	P	**P**	**13 32 10.0**	**+1.7**

*ISN **30** 13:23:41.4±0.3, 34°98N×44°32E, h0km, ML2.9*
TEH 30 13:23:47.2, 34°67N×44°52E, h18km, ML2.9, Iraq

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
IDHR	**Dehrash**	**1.54**	**88**	*e*Pn	Pn	13 24 14.0	0.0
IDHR				*e*Sg	Sb	13 24 35.1	+0.5
IDHR				*e*AMB	AMB	13 24 36.7	
	comp=Z,2μm,0.1s						
IVIS	**Veis**	**1.93**	**94**	*e*Pn	Pn	13 24 18.7	-0.5
IVIS				*e*Sg	Sg	13 24 48.0	-1.4
IVIS				*e*AMB	AMB	13 24 50.8	
	comp=Z,570nm,0.3s						
ILIN	**Lien**	**2.03**	**82**	*e*Pn	Pn	13 24 21.0	+0.3
ILIN				*e*AMB	AMB	13 24 49.5	
	comp=Z,878nm,0.3s						
MSL	**Mosul** baz=145	**2.07**	**327**	*e*Pg	Pn	13 24 20.0	-1.1
MSL				*e*Sg	Sn	13 24 47.0	+0.5

*DDA **30** 13:36:24.9, 39°46N×35°35E, h7km, Md2.8, Suspected Mining explosion.*
*ISCJB **30** 13:36:25.6±0.6, 39°53N±0°04×35°39E±0°04, h0km, Error ellipse: s-maj=6.1km s-min=4.0km az=10.2*
*ISK **30** 13:36:26.5, 39°63N×35°41E, h9km, MD2.6*
*CSEM **30** 13:36:26.1±0.3, 39°54N×35°40E, h2km, MD2.6, Error ellipse: s-maj=6.7km s-min=4.8km az=7.0, Suspected Mining explosion.*
ISC 30 13:36:25.9±0.9, 39°53N±0°04×35°40E±0°02, h0km, n22, σ0°54/32, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
YOZ	**Yozgat**	**0.12**	**332**	*e*PG	**Pg**	**13 36 28.9**	**+0.5**
YOZ	**Yozgat**	**0.12**	**332**	*e*Pg	**Pg**	**13 36 28.9**	**+0.5**
CUSAR	**Sarkisla-SIVAS**	**0.67**	**99**	*i* P	**Pg**	**13 36 38.4**	**-0.3**
CUSAR				*i* S	**Sg**	**13 36 46.9**	**-0.4**
CUSAR	**Sarkisla-SIVAS**	**0.67**	**99**	P	**Pg**	**13 36 38.4**	**-0.3**
CUSAR				S	**Sg**	**13 36 46.9**	**-0.4**
COAL	**Corum-Alaca**	**0.79**	**337**	*i* P	**Pg**	**13 36 40.9**	**-0.2**
COAL				*i* S	**Sb**	**13 36 53.3**	**-0.7**
COAL	**Corum-Alaca**	**0.79**	**337**	P	**Pg**	**13 36 40.9**	**-0.2**
COAL				S	**Sb**	**13 36 53.3**	**-0.7**
CDAG	**Cicekdag**	**0.80**	**277**	*i* P	**Pg**	**13 36 40.0**	**-1.2**
CDAG				*i* S	**Sg**	**13 36 50.9**	**-0.6**
CDAG	**Cicekdag**	**0.80**	**277**	P	**Pg**	**13 36 40.0**	**-1.2**
CDAG				S	**Sg**	**13 36 50.9**	**-0.6**
CORM	**Corum**	**0.88**	**318**	*e*PG	**Pg**	**13 36 42.5**	**-0.3**
CORM				*e*SG	**Sg**	**13 36 54.1**	**+0.1**
CORM	**Corum**	**0.88**	**318**	*e*Pg	**Pg**	**13 36 42.5**	**-0.3**
CORM				*e*Sg	**Sg**	**13 36 54.2**	**+0.1**
SVSK	**Karacayir**	**1.29**	**72**	*e*PN	**Pg**	**13 36 50.8**	**0.0**
SVSK	**Karacayir**	**1.29**	**72**	*e*Pn	**Pg**	**13 36 50.8**	**0.0**
KAMT	**Kaman**	**1.31**	**264**	*e*PN	**Pg**	**13 36 51.2**	**+0.1**
KAMT	**Kaman**	**1.31**	**264**	*e*Pn	**Pg**	**13 36 51.2**	**+0.1**
GULA	**Gulagac**	**1.49**	**218**	*e*PN	**Pb**	**13 36 55.4**	**+0.8**
GULA	**Gulagac**	**1.49**	**218**	*e*Pn	**Pb**	**13 36 55.4**	**+0.8**
SERE	**Sereflikochisa**	**1.54**	**248**	*e*PN	**Pg**	**13 36 55.4**	**0.0**
SERE	**Sereflikochisa**	**1.54**	**248**	*e*Pn	**Pg**	**13 36 55.4**	**0.0**
ERBA	**Erbaa**	**1.55**	**42**	*i* P	**Pg**	**13 36 55.5**	**-0.2**
ERBA				*i* S	**Sn**	**13 37 15.3**	**-0.5**
ERBA	**Erbaa**	**1.55**	**42**	P	**Pg**	**13 36 55.5**	**-0.2**
ERBA				S	**Sn**	**13 37 15.3**	**-0.5**
AFSR	**Af˙ar-Bala (A**	**1.80**	**268**	*e*PN	**Pn**	**13 36 58.8**	**+0.5**
AFSR	**Af˙ar-Bala (A**	**1.80**	**268**	*e*Pn	**Pn**	**13 36 58.8**	**+0.5**

IDC 30 13:42:32.1±4.7, 21°82S×169°84E, h0km, mb3.2/2, mb1 3.5/3, mb1mx3.4/31, mbtmp3.3/3, ML3.7/1, MS3.4/2, Ms1 3.4/2, ms1mx3.0/15, Error ellipse: s-maj=216.9km s-min=48.0km az=158.0, Southeast of Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac** 9.9nm,0.3s,baz=121,slow=2.6,SNR=157	**3.16**	**265**	Pn	Pn	13 43 23.2	+0.1
DZM				Sn	Sn	13 43 57.6	-4.1
	17nm,0.3s,baz=209,slow=21,SNR=8.9						
PMG	**Port Moresby** comp=Z,65nm,19.2s,baz=198,slow=32	**25.04**	**296**	LR	LR	13 55 40.1	
ASAR	**Alice Springs** 0.4nm,0.9s,baz=89,slow=8.4,SNR=6.1	**33.14**	**260**	P	P	13 49 10.3	0.0
WRA	**Warramunga Arr** 0.3nm,0.9s,baz=99,slow=8.5,SNR=3.8	**33.17**	**267**	P	P	13 49 10.4	-0.3
FITZ	**Fitzroy Crossi** comp=Z,56nm,18.3s,baz=162,slow=35	**41.60**	**267**	LR	LR	14 06 37.8	
GERES	**GERESS Array B**	**147.01**	**331**	PKPbc	PKPbc	14 02 16.1	-0.7
	0.6nm,0.6s,baz=57,slow=3.6,SNR=4.0						

*DHMR **30** 13:48:42.7±1.5, 14°89N×42°10E, h3km±99km, ML4.6*
*ISCJB **30** 13:48:46.7±0.3, 15°09N±0°03×42°15E±0°04, h10km, mb4.2/37, MS3.2/11, Error ellipse: s-maj=6.6km s-min=4.0km az=151.1*
*IDC **30** 13:48:46.8±1.0, 15°05N×42°12E, h0km, mb4.1/16, mb1 4.3/18, mb1mx4.1/47, mbtmp4.1/18, ML3.5/1, MS3.3/12, Ms1 3.3/12, ms1mx3.0/42, Error ellipse: s-maj=20.3km s-min=18.6km az=23.0*
*MOS **30** 13:48:47.9±1.0, 15°14N×42°16E, h17km, mb4.5/20, Error ellipse: s-maj=16.7km s-min=7.5km az=90.8*
*CSEM **30** 13:48:48.4±0.2, 15°08N×42°16E, h10km, mb4.3/20, Error ellipse: s-maj=10.4km s-min=7.6km az=52.0*
*NEIC **30** 13:48:48.1±0.5, 15°04N×42°14E, h10km, mb4.3/5, Error ellipse: s-maj=11.2km s-min=8.8km az=222.0*
*ARO **30** 13:48:49.4, 15°N±26°×4°2E±10°0, h15km±99km, ML3.9*
ISC 30 13:48:48.4±0.4, 15°07N±0°05×42°16E±0°05, h10km, n109, σ1°09/115, mb4.1/37, MS3.2/11, 5C-5D, Western Arabian Peninsula

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HAJJ	**Hajjah**	**1.52**	**66**	*i* P	Pn	13 49 12.2	-3.6
HAJJ				*i* S	**Sg**	**13 49 37.2**	**-0.1**
UDYN	**Al 'Udayn**	**2.06**	**122**	*i* P	Pn	13 49 20.1	-3.2
UDYN				*i* S	**Sn**	**13 49 47.4**	**-1.7**
DHBB	**Dhamar BB**	**2.21**	**103**	*i* P	**Pn**	**13 49 22.6**	**-2.8**
DHBB				*i* S	**Sn**	**13 49 53.5**	**+0.5**
DHBB	comp=N,6μm,0.7s			AML	AML	13 50 07.6	
DAMY	**Dhamar**	**2.21**	**103**	*e*Pn	**Pn**	**13 49 24.2**	**-1.2**
DAMY	**Dhamar**	**2.21**	**103**	*e*Pn	**Pn**	**13 49 24.2**	**-1.2**
OBO	**Obock**	**3.26**	**160**	*e*P	**Pn**	**13 49 38.9**	**-0.7**
TDD	**Tadjoura Ara**	**3.33**	**167**	*e*P	**Pn**	**13 49 40.2**	**-0.3**
MCAD	**Moucha**	**3.48**	**163**	*e*P	**Pn**	**13 49 42.1**	**-0.4**
ATD	**Arta Tunnel** baz=318,slow=12	**3.58**	**169**	Pn	**Pn**	**13 49 44.2**	**0.0**
ATD				Sn	**Sn**	**13 50 28.5**	**+1.9**
	comp=N,37nm,0.3s,baz=260,slow=22,SNR=8.2						
ATD	**Arta Tunnel**	**3.58**	**169**	*e*P	**Pn**	**13 49 44.1**	**0.0**
SGH	**Sud-Ghoubbet**	**3.64**	**173**	*e*P	**Pn**	**13 49 44.6**	**-0.2**
ATA	**Atar**	**3.74**	**164**	*e*P	**Pn**	**13 49 46.3**	**+0.2**
FURI	**Furi**	**7.02**	**209**	P	**Pb**	**13 50 52.3**	**+1.6**
FURI				S	**Sg**	**13 52 29.7**	**-4.2**
EIL	**Elat** comp=N,122nm,21.0s,baz=238,slow=32	**15.98**	**337**	LR	LR	13 57 26.6	
KMBO	**Kilima Mbogo** comp=N,102nm,18.4s,baz=90,slow=35	**16.81**	**197**	LR	LR	13 58 40.0	
WSAR	**Wadi Sarin** comp=N,0.1nm,0.3s,baz=273,slow=8.3,SNR=5.4	**17.54**	**60**	P	**P**	**13 52 54.8**	**+0.5**
MMAI	**Mount Meron Ar** comp=N,40nm,21.5s,baz=160,slow=33	**18.89**	**342**	LR	LR	13 59 12.9	
GNI	**Garni** comp=N,5.1nm,0.4s,baz=211,slow=4.9,SNR=7.7	**25.09**	**5**	P	**P**	**13 54 15.1**	**+1.7**
GNI				LR	LR	14 04 49.5	
	comp=N,30nm,18.2s,baz=190,slow=38						
GNI	**Garni**	**25.09**	**5**	⇓*e*P	**P**	**13 54 14.9**	**+1.6**
GNI	comp=Z,41nm,0.9s			pmax	pmax		
GNI	**Garni** comp=Z,80nm,1.0s	**25.09**	**5**	*e*P	**P**	**13 54 13.8**	**+0.4**
GNI	**Garni** comp=Z,80nm,1.0s	**25.09**	**5**	*e*P	**P**	**13 54 13.8**	**+0.4**
IDI	**Amoyia** comp=Z,19nm,18.3s,baz=100,slow=34	**25.41**	**326**	LR	LR	14 03 07.8	
BRTR	**Keskin Array B** comp=Z,2.5nm,1.1s,baz=158,slow=10,SNR=11	**25.67**	**345**	P	**P**	**13 54 19.5**	**+0.9**
BRTR				LR	LR	14 03 46.8	
	comp=Z,23nm,18.3s,baz=132,slow=35						
GEYT	**Alibeck** comp=Z,2.6nm,0.8s,baz=208,slow=6.0,SNR=5.1	**26.79**	**29**	P	**P**	**13 54 29.2**	**+0.5**
GEYT				LR	LR	14 06 15.1	
	comp=Z,89nm,19.5s,baz=215,slow=39						
ZEI	**Tsey**	**27.66**	**3**	*e*P	**P**	**13 54 36.2**	**-0.4**
ZEI	comp=Z,12nm,0.8s			pmax	pmax		
KBZ	**Khabaz** comp=Z,2.8nm,1.0s,baz=73,slow=1.0,SNR=4.4	**28.57**	**1**	P	**P**	**13 54 45.7**	**+1.3**
KIV	**Kislovodsk**	**28.79**	**1**	*ce*P	**P**	**13 54 47.6**	**+1.0**
KIV				*e**PP	**pP**	**13 54 49.7**	**+0.1**
KIV				*e**SP	**sP**	**13 54 53.0**	**+2.1**
KIV	comp=Z,11nm,1.2s			pmax	pmax		
KIV	comp=Z,22nm,18.0s			MLR	MLR		
KIV	**Kislovodsk** comp=Z,11nm,1.2s	**28.79**	**1**	*e*P	**P**	**13 54 47.6**	**+1.0**
KVAR	**Kislovodsk Arr** comp=Z,5.3nm,0.7s,baz=170,slow=11,SNR=4.1	**28.79**	**1**	P	**P**	**13 54 47.9**	**+1.4**
KVAR	**Kislovodsk Arr**	**28.79**	**1**	P	**P**	**13 54 48.0**	**+1.4**
ANN	**Anapa**	**29.90**	**353**	*e*P	**P**	**13 54 55.0**	**-1.3**
ANN				*e**PP	**pP**	**13 54 58.0**	**-1.3**
ANN				*e*		13 55 51.5	
ANN				*e*S	**S**	**13 59 52.7**	**-0.8**
ANN	comp=Z,37nm,1.1s			pmax	pmax		
ANN	**Anapa** comp=Z,37nm,1.1s	**29.90**	**353**	*e*P	**P**	**13 54 55.0**	**-1.3**
ANN				*e*S	**S**	**13 59 52.7**	**-0.8**
KKAR	**Karatay Array**	**37.00**	**35**	*e*P	**P**	**13 55 57.6**	**-0.6**
KKAR	comp=Z,9.0nm,1.1s			pmax	pmax		
KKAR	**Karatay Array** comp=Z,9.2nm,1.1s	**37.00**	**35**	*e*P	**P**	**13 55 57.6**	**-0.6**
KKAR	**Karatay Array** comp=Z,9.2nm,1.1s	**37.00**	**35**	*e*P	**P**	**13 55 57.6**	**-0.6**
KIEV	**Kiev**	**37.04**	**346**	⇓*e*P	**P**	**13 55 57.5**	**-0.8**
KIEV	comp=Z,4.0nm,1.1s			pmax	pmax		
KIEV	**Kiev** comp=Z,4.0nm,1.1s	**37.04**	**346**	*e*P	**P**	**13 55 57.5**	**-0.8**
AKASG	**Malin Array Be** comp=Z,1.2nm,0.8s,baz=154,slow=7.0,SNR=7.4	**37.05**	**346**	P	**P**	**13 55 58.0**	**-0.4**
AKASG	**Malin Array Be**	**37.05**	**346**	P	**P**

comp=Z,5.6nm,0.9s,baz=133,slow=7.5,SNR=20

KHC	**Kasperske Hory**	**41.23**	**332**	*e*P		**P**	**13 56 32.0**	**-1.5**
KHC	**Kasperske Hory**	**41.23**	**332**	*e*P		**P**	**13 56 32.5**	**-1.0**
KHC					pmax	pmax		
	comp=Z,2.0nm,1.0s							
KHC	**Kasperske Hory**	**41.23**	**332**	*e*P		**P**	**13 56 32.5**	**-1.0**
	comp=Z,1.6nm,1.0s							
KHC	**Kasperske Hory**	**41.23**	**332**	*e*P		**P**	**13 56 32.5**	**-1.0**
	comp=Z,1.6nm,1.0s							
GKN	**Gorkha**	**41.35**	**65**	*e*P		**P**	**13 56 34.7**	**-0.2**
DMN	**Daman**	**41.70**	**65**	*e*P		**P**	**13 56 37.8**	**-0.1**
	comp=Z,20nm,0.9s							
KKN	**Kakani**	**41.88**	**65**	*e*P		**P**	**13 56 39.6**	**+0.3**
	comp=Z,22nm,0.9s							
PKIN	**Phulchoki**	**41.95**	**65**	*e*P		**P**	**13 56 39.9**	**-0.1**
	comp=Z,13nm,0.8s							
BRG	**Berggiesshubel**	**42.33**	**334**	*e*P		**P**	**13 56 41.7**	**-0.7**
	comp=Z,5.4nm,1.0s							
BRG	**Berggiesshubel**	**42.33**	**334**	*e*P		**P**	**13 56 41.7**	**-0.7**
BRG					pmax	pmax		
	comp=Z,5.0nm,1.0s							
BRG	**Berggiesshubel**	**42.33**	**334**	*e*P		**P**	**13 56 41.7**	**-0.7**
	comp=Z,5.0nm,1.0s							
GUN	**Gumba**	**42.42**	**65**	*e*P		**P**	**13 56 43.9**	**0.0**
	comp=Z,46nm,1.1s							
CLL	**Collm**	**43.06**	**333**	*i* P		**P**	**13 56 47.3**	**-1.0**
	comp=Z,5.0nm,1.1s							
ARU	**Arti**	**43.14**	**13***c*	*i* P		**P**	**13 56 48.7**	**-0.2**
ARU							13 58 25.6	
ARU					S	**S**	**14 03 17.4**	**+2.3**
ARU					SS	**SS**	**14 06 24.7**	**-3.0**
ARU					pmax	pmax		
	comp=Z,4.0nm,1.0s							
ARU	**Arti**	**43.14**	**13**	*i* P		**P**	**13 56 48.7**	**-0.2**
	comp=Z,4.0nm,1.0s							
BFO	**Black Forest**	**43.28**	**327**	*i* P		**P**	**13 56 51.0**	**+0.8**
BFO	**Black Forest**	**43.28**	**327**	*i* P		**P**	**13 56 51.0**	**+0.8**
BRVK	**Borovoye**	**43.92**	**24**⇓	*i*P		**P**	**13 56 56.2**	**+0.9**
BRVK					pmax	pmax		
	comp=Z,5.0nm,2.5s							
BRVK	**Borovoye**	**43.92**	**24**	*i* P		**P**	**13 56 56.2**	**+0.9**
	comp=Z,5.0nm,2.5s							
KLMR	**Klimovskoe**	**45.76**	**358**	*e*P		**P**	**13 57 07.9**	**-1.8**
KLMR					pmax	pmax		
	comp=Z,10.0nm,1.3s							
KLMR	**Klimovskoe**	**45.76**	**358**	*e*P		**P**	**13 57 07.9**	**-1.8**
	comp=Z,10.0nm,1.3s							
MKAR	**Makanchi Array**	**45.95**	**38**	P		**P**	**13 57 11.8**	**+0.2**
	comp=Z,3.1nm,0.9s,baz=232,slow=6.0,SNR=21							
MKAR					LR	LR	14 20 03.7	
	comp=Z,51nm,18.7s,baz=226,slow=41							
KURK	**Kurchatov**	**46.10**	**32**	P		**P**	**13 57 11.4**	**-1.2**
KURK					pmax	pmax		
	comp=Z,14nm,1.1s							
KURK	**Kurchatov**	**46.10**	**32**	P		**P**	**13 57 11.4**	**-1.2**
	comp=Z,14nm,1.1s							
KURK	**Kurchatov**	**46.10**	**32**	P		**P**	**13 57 11.4**	**-1.2**
	comp=Z,14nm,1.1s							
BOSA	**Boshof**	**46.41**	**201**	LR		LR	14 16 33.2	
	comp=Z,74nm,20.1s,baz=332,slow=36							
DBIC	**Dimbokro**	**46.84**	**265**	LR		LR	14 17 14.2	
	comp=Z,86nm,20.5s,baz=84,slow=36							
ESDC	**Sonseca Array**	**47.07**	**311**	P		**P**	**13 57 20.4**	**-0.2**
	comp=Z,0.6nm,0.7s,baz=113,slow=8.7,SNR=5.3							
FINES	**FINESS Array B**	**47.73**	**350**	P		**P**	**13 57 24.5**	**-0.6**
	comp=Z,0.9nm,0.7s,baz=152,slow=9.5,SNR=4.3							
NVS	**Novosibirsk**	**50.80**	**29**	*e*P		**P**	**13 57 48.7**	**-0.1**
NVS	**Novosibirsk**	**50.80**	**29**	*e*P		**P**	**13 57 48.7**	**-0.1**
NOA	**NORSAR Array B**	**51.03**	**341**	P		**P**	**13 57 49.3**	**-1.1**
	comp=Z,2.2nm,1.0s,baz=137,slow=7.9,SNR=3.8							
NOA	**NORSAR Array B**	**51.03**	**341**	*e*P		**P**	**13 57 49.5**	**-1.0**
NOA					pmax	pmax		
	comp=Z,3.0nm,1.0s							
NOA	**NORSAR Array B**	**51.03**	**341**	*e*P		**P**	**13 57 49.5**	**-1.0**
	comp=Z,3.0nm,1.0s							
ZALV	**Zalesovo Beam**	**51.07**	**31**	P		**P**	**13 57 49.6**	**-1.2**
	comp=Z,6.3nm,1.0s,baz=247,slow=7.7,SNR=16							
ZALV	**Zalesovo Beam**	**51.07**	**31**	*e*P		**P**	**13 57 50.1**	**-0.7**
ZALV					pmax	pmax		
	comp=Z,6.0nm,1.0s							
ZALV	**Zalesovo Beam**	**51.07**	**31**	*e*P		**P**	**13 57 50.1**	**-0.7**
	comp=Z,6.0nm,1.0s							
CMAR	**Chiang Mai Arr**	**54.29**	**78**	P		**P**	**13 58 15.7**	**+0.3**
	comp=Z,1.8nm,1.0s,baz=285,slow=7.2,SNR=7.0							
CMAR					LR	LR	14 21 31.1	
	comp=Z,14nm,18.6s,baz=245,slow=36							
CMAR	**Chiang Mai Arr**	**54.29**	**78**	*e*P		**P**	**13 58 15.6**	**+0.3**
CMAR					pmax	pmax		
	comp=Z,1.0nm,0.9s							
GTA	**Gaotai**	**55.68**	**52**	*e*P		**P**	**13 58 24.5**	**-0.7**
GTA				pP		pP	13 58 28.5	+0.1
GTA				sP		sP	13 58 31.5	+1.9
GTA					pmax	pmax		
	comp=Z,3.0nm,0.9s							
SONM	**Songino Array**	**61.71**	**44**	P		**P**	**13 59 07.5**	**+0.4**
	comp=Z,3.4nm,1.0s,baz=261,slow=7.4,SNR=12							
ULN	**Ulaanbaatar**	**62.16**	**44**⇑	*i*P		**P**	**13 59 10.7**	**+0.6**
ULN					pmax	pmax		
	comp=Z,3.0nm,1.2s							
ULN	**Ulaanbaatar**	**62.16**	**44**	*i* P		**P**	**13 59 10.7**	**+0.6**
	comp=Z,3.0nm,1.2s							
TIXI	**Tiksi**	**74.77**	**19**	P		**P**	**14 00 27.4**	**-0.9**
	comp=Z,0.6nm,0.5s,baz=16,slow=22,SNR=3.1							
TIXI	**Tiksi**	**74.77**	**19**⇑	*e*P		**P**	**14 00 27.3**	**-1.0**
TIXI					pmax	pmax		
	comp=Z,1.0nm,0.6s							
MAJO	**Matsushiro**	**85.91**	**53***d*	*i*P		**P**	**14 01 31.9**	**+2.9**
BILL	**Bilibino**	**87.96**	**18**	*e*P		**P**	**14 01 38.3**	**0.0**
BILL					pmax	pmax		
	comp=Z,1.0nm,1.1s							
BILL	**Bilibino**	**87.96**	**18**	*e*P		**P**	**14 01 38.3**	**0.0**
	comp=Z,1.0nm,1.1s							

JMA 30 14:00:29.3±0.1, 38°.82N×142°.34E, h35km±3km, M3.3, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**0.58**	**297**	P	Pn	14 00 41.0	-0.1
OFUJ				S	Sn	14 00 49.2	-0.3
MIYJ	**Miyakonagasawa**	**0.86**	**332**	P	Pn	14 00 44.7	-0.2
JIO	**Ouri**	**0.86**	**245**	P	Pn	14 00 44.7	-0.2
JMK	**Ichinoseki**	**0.88**	**279**	S	Sn	14 00 56.9	+0.1
JOM	**Ohasama**	**1.04**	**309**	P	Pn	14 00 48.2	+0.8
JOM				S	Sn	14 01 01.6	+0.8
JKZ	**Kuzumaki**	**1.40**	**326**	P	Pn	14 00 53.6	+1.2
MAT	**Matsushiro**	**3.99**	**237**	P	Pn	14 01 31.4	+3.4

*IDC **30** 14:04:53.1±1.5, 16°.23S×174°.18W, h0km, mb4.2/5, mb1 4.4/6, mb1mx3.9/40, mbtmp4.3/6, ML4.7/1, Error ellipse: s-maj=37.4km s-min=28.4km az=141.0*
*ISCJB **30** 14:05:01.0±0.8, 15°.9S±0°.2×173°.8W±0°.2, h115km, mb4.1/5, Error ellipse: s-maj=36.0km s-min=9.5km az=136.0*

ISC 30 14:05:02.6±0.9, 15°.8S±0°.2×173°.8W±0°.2, h115km, n6, σ1§51/7, mb4.2/5, Tonga Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AFI	**Afiamalu**	**2.72**	**46**	Pn	**Pn**	**14 05 45.7**	**+0.6**
	76nm,0.3s,baz=167,slow=1.0,SNR=121						
AFI				Sn	**Sn**	**14 06 16.7**	**-1.1**
	129nm,0.3s,baz=234,slow=15,SNR=13						
URZ	**Urewera**	**23.76**	**198**	P	**P**	**14 10 02.1**	**-2.2**
	9.8nm,0.7s,baz=1.7,slow=7.5,SNR=6.3						
STKA	**Stephens Creek**	**43.50**	**240**	P	**P**	**14 12 54.5**	**-0.3**
	1.8nm,0.5s,baz=90,slow=9.1,SNR=11						
WRA	**Warramunga Arr**	**49.38**	**257**	P	**P**	**14 13 41.0**	**+0.2**
	0.7nm,0.7s,baz=97,slow=6.7,SNR=19						
ASAR	**Alice Springs**	**49.62**	**252**	P	**P**	**14 13 42.8**	**+0.1**
	2.9nm,0.6s,baz=89,slow=7.7,SNR=85						
VNDA	**Vanda**	**62.93**	**186**	P	**P**	**14 15 17.9**	**+1.6**
	2.1nm,0.7s,baz=9.1,slow=7.5,SNR=15						

*KRSC **30** 14:07:16.5±0.4, 55°.78N×162°.45E, h69km±10km, ML5.0*
*ISCJB **30** 14:07:18.8±0.2, 55°.81N±0°.02×162°.28E±0°.03, h62km±2km, mb4.7/156, Error ellipse: s-maj=3.4km s-min=2.2km az=144.3*
*MOS **30** 14:07:18.6±1.0, 55°.80N×162°.23E, h59km, mb5.0/46, Error ellipse: s-maj=7.3km s-min=4.4km az=77.3*
*NEIC **30** 14:07:20.7±0.6, 55°.86N×162°.10E, h59km±5km, mb4.8/101, Error ellipse: s-maj=5.3km s-min=3.0km az=160.0*

*IDC **30** 14:07:22.5±2.0, 55°.84N×162°.09E, h75km±18km, mb4.2/30, mb1 4.3/36, mb1mx4.3/44, mbtmp4.5/36, MS3.7/23, Ms1 3.7/23, ms1mx3.6/37, Error ellipse: s-maj=12.6km s-min=8.7km az=154.0*

ISC 30 14:07:19.6±0.6, 55°.79N±0°.03×162°.36E±0°.03, h54km±4km, n627, σ1§09/663, mb4.8/156, MS3.7/27, 18C-17D, Near east coast of Kamchatka Peninsula

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KBG	**Krutoberegovo**	**0.50**	**22**	*i* P	**Pn**	**14 07 29.7**	**-1.5**
KBG				*i* S	**Sn**	**14 07 40.3**	**+0.8**
ZLN	**Zelenaya**	**0.91**	**285**	*i* P	**Pn**	**14 07 35.5**	**-0.8**
ZLN	**Zelenaya**	**0.91**	**285**	PN	**Pn**	**14 07 35.5**	**-0.8**
SMKR	**Semkarok**	**0.94**	**328**	*i* P	**Pn**	**14 07 36.1**	**-0.6**
SMKR	**Semkarok**	**0.94**	**328**	PN	**Pn**	**14 07 36.1**	**-0.6**
CIRR	**Tsirk**	**0.96**	**290**	*i* P	**Pn**	**14 07 36.3**	**-0.8**
CIRR	**Tsirk**	**0.96**	**290**	PN	**Pn**	**14 07 36.3**	**-0.8**
LGNR	**Loginova**	**0.98**	**288**	*i* P	**Pn**	**14 07 36.9**	**-0.6**
LGNR	**Loginova**	**0.98**	**288**	PN	**Pn**	**14 07 36.9**	**-0.6**
BDR	**Baidarnaya**	**1.01**	**321**	*i* P	**Pn**	**14 07 37.5**	**-0.2**
KLY	**Klyuchi**	**1.09**	**299**	*e*P	**Pn**	**14 07 36.6**	**-2.0**
KLY				*e*S	**Sn**	**14 07 50.9**	**-1.9**
SRKR	**Sorokina**	**1.09**	**323**	*i* P	**Pn**	**14 07 38.5**	**-0.2**
SRKR	**Sorokina**	**1.09**	**323**	PN	**Pn**	**14 07 38.5**	**-0.2**
KRSR	**Krestovskiy**	**1.09**	**294**	*i* P	**Pn**	**14 07 37.7**	**-1.1**
KRSR	**Krestovskiy**	**1.09**	**294**	PN	**Pn**	**14 07 37.7**	**-1.1**
TUMD	**Tumrok D**	**1.26**	**243**	*i* P	**Pn**	**14 07 40.3**	**-0.7**
TUMD				*e*S	**Sn**	**14 07 56.9**	**0.0**
MKZ	**Mys Kozlova**	**1.29**	**197**	*i* P	**Pn**	**14 07 40.0**	**-1.3**
MKZ				*e*S	**Sn**	**14 07 56.2**	**-1.3**
MKZ	**Mys Kozlova**	**1.29**	**197**	PN	**Pn**	**14 07 40.0**	**-1.3**
MKZ				S	**Sn**	**14 07 56.2**	**-1.3**
ESO	**Esso**	**2.07**	**275**	*i* P	**Pn**	**14 07 51.5**	**-0.4**
ESO				*e*S	**Sn**	**14 08 16.5**	**0.0**
ESO	**Esso**	**2.07**	**275**	PN	**Pn**	**14 07 51.5**	**-0.4**
ESO				S	**Sn**	**14 08 16.5**	**0.0**
BKI	**Bering**	**2.14**	**104**	*i* P	**Pn**	**14 07 51.3**	**-1.5**
BKI				*i* S	**Sn**	**14 08 16.3**	**-1.8**
BKI	**Bering**	**2.14**	**104**	PN	**Pn**	**14 07 51.3**	**-1.5**
BKI				S	**Sn**	**14 08 16.3**	**-1.8**
KII	**Karymskiy**	**2.43**	**225**	*e*P	**Pn**	**14 07 57.4**	**+0.4**
KII				*e*S	**Sn**	**14 08 27.8**	**+2.3**
KII	**Karymskiy**	**2.43**	**225**	PN	**Pn**	**14 07 57.4**	**+0.4**
KII				S	**Sn**	**14 08 27.8**	**+2.3**
NLC	**Nalytchevo**	**3.16**	**215**	*e*P	**Pn**	**14 08 06.5**	**-0.3**
NLC				*e*S	**Sn**	**14 08 42.5**	**-0.7**
NLC	**Nalytchevo**	**3.16**	**215**	PN	**Pn**	**14 08 06.5**	**-0.3**
NLC				S	**Sn**	**14 08 42.5**	**-0.7**
SDLR	**Sedlovina**	**3.23**	**220**	*e*P	**Pn**	**14 08 08.4**	**+0.5**
SDLR				*e*S	**Sn**	**14 08 46.4**	**+1.2**
SDLR	**Sedlovina**	**3.23**	**220**	PN	**Pn**	**14 08 08.4**	**+0.5**
SDLR				S	**Sn**	**14 08 46.4**	**+1.2**
KRX	**Arik**	**3.26**	**223**	*e*P	**Pn**	**14 08 08.4**	**+0.1**
KRX				*e*S	**Sn**	**14 08 46.3**	**+0.5**
KRER	**Koryakskii**	**3.26**	**222**	*e*P	**Pn**	**14 08 09.0**	**+0.6**
SMAR	**Somma**	**3.27**	**221**	*e*P	**Pn**	**14 08 09.0**	**+0.4**
SMAR				*e*S	**Sn**	**14 08 47.8**	**+1.4**
SMAR	**Somma**	**3.27**	**221**	PN	**Pn**	**14 08 09.0**	**+0.4**
SMAR				S	**Sn**	**14 08 47.8**	**+1.4**
AVH	**Avacha**	**3.29**	**221**	*e*P	**Pn**	**14 08 09.4**	**+0.6**
AVH				*e*S	**Sn**	**14 08 47.9**	**+1.2**
AVH	**Avacha**	**3.29**	**221**	PN	**Pn**	**14 08 09.4**	**+0.6**
AVH				S	**Sn**	**14 08 47.9**	**+1.2**
UGLR	**Uglovaya**	**3.31**	**220**	*e*P	**Pn**	**14 08 08.9**	**-0.1**
GNL	**Ganaly**	**3.31**	**232**	*e*P	**Pn**	**14 08 09.7**	**+0.7**
GNL				*e*S	**Sn**	**14 08 48.0**	**+0.8**
GNL	**Ganaly**	**3.31**	**232**	PN	**Pn**	**14 08 09.7**	**+0.7**
GNL				S	**Sn**	**14 08 48.0**	**+0.8**
KOK	**Koryaka**	**3.31**	**222**	*e*P	**Pn**	**14 08 09.4**	**+0.4**
KOK	**Koryaka**	**3.31**	**222**	PN	**Pn**	**14 08 09.4**	**+0.4**
DALK	**Dalny**	**3.48**	**219**	*e*P	**Pn**	**14 08 11.6**	**+0.5**
DALK				*e*S	**Sn**	**14 08 51.4**	**+0.4**
OSSR	**Ossora**	**3.49**	**6**	*i* P	**Pn**	**14 08 11.7**	**+0.4**
OSSR				*i* S	**Sn**	**14 08 50.9**	**-0.4**
PET	**Petropavlovsk**	**3.52**	**220**	*e*P	**Pn**	**14 08 12.2**	**+0.5**
PET				*e*S	**Sn**	**14 08 52.8**	**+0.8**
PET	**Petropavlovsk**	**3.52**	**220**	*e*PN	**Pn**	**14 08 12.4**	**+0.7**
PET				*e*S	**Sn**	**14 08 50.9**	**-1.1**
PET				pmax	pmax		
	comp=Z,410nm,0.7s						
PET				smax	smax		
	comp=N,1μm,0.7s						
PET				MLR	MLR		
	comp=Z,1μm,20.0s						
PET	**Petropavlovsk**	**3.52**	**220**	*e*Pn	**Pn**	**14 08 12.4**	**+0.7**
PET				*e*Sn	**Sn**	**14 08 52.1**	**+0.1**
PEA0B	**Petropavlovsk-**	**3.82**	**227**	*e*Pn	**Pn**	**14 08 16.2**	**+0.2**
PETK	**Petropavlovsk-**	**3.82**	**227**	P	**Pn**	**14 08 16.9**	**+1.0**
	comp=Z,11nm,0.3s,baz=60,slow=18,SNR=222						
PETK				S	Sn	14 09 08.8	+9.2
	comp=Z,13nm,0.3s,baz=80,slow=20,SNR=4.4						
PETK				LR	LR	14 10 03.1	
	comp=Z,1μm,20.5s,baz=76,slow=43						
KRMR	**Karymshinskiy**	**3.87**	**222**	*e*P	**Pn**	**14 08 17.2**	**+0.7**
KRMR				*e*S	**Sn**	**14 09 01.5**	**+1.0**
RUS	**Russkaya**	**4.05**	**216**	*e*P	**Pn**	**14 08 18.5**	**-0.6**
RUS				*e*S	**Sn**	**14 09 05.1**	**-0.1**
RUS	**Russkaya**	**4.05**	**216**	PN	**Pn**	**14 08 18.5**	**-0.6**
RUS				S	**Sn**	**14 09 05.1**	**-0.1**
MTVR	**Mutnovka**	**4.12**	**218**	*e*P	**Pn**	**14 08 20.7**	**+0.5**
MTVR				*e*S	**Sn**	**14 09 07.5**	**+0.3**
APC	**Apacha**	**4.18**	**229**	*e*P	**Pn**	**14 08 22.1**	**+1.3**
APC	**Apacha**	**4.18**	**229**	PN	**Pn**	**14 08 22.1**	**+1.3**
ASAK	**Asacha**	**4.31**	**219**	*e*P	**Pn**	**14 08 23.7**	**+1.1**
PAU	**Pauzhetka**	**5.45**	**220**	*e*P	**Pn**	**14 08 39.7**	**+1.6**
PAU	**Pauzhetka**	**5.45**	**220**	PN	**Pn**	**14 08 39.7**	**+1.6**
SKR	**Severo-Kuril's**	**6.34**	**219**	*e*P	**Pn**	**14 08 50.2**	**-0.2**
SKR				*e*S	**Sn**	**14 10 02.4**	**+1.1**
SKR	**Severo-Kuril's**	**6.34**	**219**	*e*PN	**Pn**	**14 08 48.5**	**-1.9**
SKR				pmax	pmax		
	comp=Z,220nm,1.0s						
MA2	**Magadan**	**7.28**	**306**	P	**Pn**	**14 09 04.7**	**+1.5**
	comp=Z,1.0nm,0.3s,baz=135,slow=15,SNR=7.4						
MA2				LR	LR	14 12 13.2	
	comp=Z,801nm,18.9s,baz=164,slow=41						
SEY	**Seymchan**	**8.78**	**329**	P	**Pn**	**14 09 25.3**	**+1.6**
	comp=Z,0.2nm,0.3s,baz=168,slow=21,SNR=5.0						
SEY	**Seymchan**	**8.78**	**329**⇑	*e*PN	Pn	14 09 28.6	+4.9
BILL	**Bilibino**	**12.43**	**7**⇑	*i*PN	Pn	14 10 18.3	+4.9
BILL				pmax	pmax		
	comp=Z,14nm,1.1s						
BILL				MLR	MLR		
	comp=Z,404nm,17.0s						
BILL	**Bilibino**	**12.43**	**7**	*e*Pn	**Pn**	**14 10 14.1**	**+0.6**
BILL				*e*Sn	**Sn**	**14 12 31.2**	**+1.2**
TYV	**Tymovskoe**	**12.75**	**255**	*e*PN	P	14 10 22.5	-4.9
TYV				pmax	pmax		
	comp=Z,11nm,0.8s						
NKL	**Nikolayevsk**	**12.87**	**267**	*e*PN	**P**	**14 10 29.8**	**+1.1**
NKL				pmax	pmax		
	comp=N,25nm,1.1s						
NKL				pmax	pmax		
	comp=E,33nm,1.1s						
NKL				pmax	pmax		
	comp=Z,60nm,1.1s						
NKL				MLR	MLR		
	comp=Z,500nm,19.0s						
YSS	**Yuzh-Sakhalins**	**15.06**	**242**	*e*P	**Pn**	**14 10 46.3**	**-2.5**
YSS				MLR	MLR		
	comp=Z,500nm,16.0s						
YSS	**Yuzh-Sakhalins**	**15.06**	**242**	*e*Pn	**Pn**	**14 10 47.0**	**-1.8**
GAMB	**Gambell**	**15.21**	**48**	*e*Pn	**Pn**	**14 10 51.1**	**+0.4**
	comp=Z,24nm,1.2s						
ASAJ	**Asahikawa**	**17.20**	**235**	P	**P**	**14 11 16.6**	**-0.2**
	comp=Z,1.8nm,0.3s,baz=78,slow=11,SNR=23						
ASAJ				LR	LR	14 17 40.2	
	comp=Z,240nm,20.4s,baz=36,slow=36						
ASAJ	**Asahikawa**	**17.20**	**235**	*e*Pn	**Pn**	**14 11 14.2**	**-1.7**
	comp=Z,31nm,1.0s						
TNA	**Tin City**	**17.35**	**44**	*e*Pn	**P**	**14 11 20.2**	**+1.9**
	comp=Z,32nm,1.3s						
YAK	**Yakutsk**	**17.84**	**304**	P	**P**	**14 11 23.8**	**+0.1**
	comp=Z,0.0nm,0.3s,baz=82,slow=3.2,SNR=10						
YAK				LR	LR	14 18 36.7	
	comp=Z,194nm,20.4s,baz=100,slow=38						
YAK	**Yakutsk**	**17.84**	**304**	*e*P	**P**	**14 11 25.1**	**+1.3**
YAK				*e*S	**S**	**14 14 43.4**	**-2.2**
YAK				pmax	pmax		
	comp=Z,12nm,0.9s						
YAK				pmax	pmax		
	comp=N,5.0nm,1.3s						
YAK				pmax	pmax		
	comp=E,18nm,1.3s						
YAK				smax	smax		
	comp=N,44nm,2.0s						
YAK				smax	smax		
	comp=E,92nm,3.4s						
YAK	**Yakutsk**	**17.84**	**304**	*e*Pn	**Pn**	**14 11 22.7**	**-1.0**
	comp=E,27nm,0.8s						
HABR	**Khabarovsk**	**18.21**	**258**	*e*P	**P**	**14 11 26.6**	**-1.2**
HABR				*e*S	**Sn**	**14 14 49.8**	**-0.6**
HABR				pmax	pmax		
	comp=N,26nm,1.5s						
HABR				pmax	pmax		
	comp=E,46nm,1.5s						
HABR				pmax	pmax		
	comp=Z,32nm,1.5s						
HABR				MLR	MLR		
	comp=Z,141nm,16.0s						
ERM	**Erimo**	**18.60**	**230**⇑	*e*P	**P**	**14 11 29.8**	**-2.4**
KLR	**Kul'dur**	**19.64**	**263**	P	**Pn**	**14 11 44.1**	**-1.2**
	comp=Z,0.5nm,0.3s,baz=60,slow=12,SNR=21						
KLR				LR	LR	14 20 18.1	
	comp=Z,297nm,18.0s,baz=58,slow=40						
TIXI	**Tiksi**	**21.26**	**331**	P	**P**	**14 12 01.8**	**+0.9**
	comp=Z,30nm,0.7s,baz=128,slow=11,SNR=77						
TIXI				PcP	**PcP**	**14 16 03.0**	**-0.4**
	comp=Z,1.1nm,0.4s,baz=84,slow=1.6,SNR=3.3						
TIXI	**Tiksi**	**21.26**	**331**⇓	*i*P	**P**	**14 12 01.8**	**+0.9**
TIXI				pmax	pmax		
	comp=Z,36nm,0.8s						
CHGN	**Chignik**	**21.72**	**72**	*e*P	**P**	**14 12 06.5**	**+0.7**
TT01	**Tatalina**	**22.03**	**54**	*e*P	**P**	**14 12 10.5**	**+1.4**
TTA	**Tatalina**	**22.04**	**54**	*e*P	**P**	**14 12 10.6**	**+1.3**
TTA				pmax	pmax		
	comp=Z,35nm,0.8s						
TTA	**Tatalina**	**22.04**	**54**	*e*P	**P**	**14 12 10.6**	**+1.3**
	comp=Z,35nm,0.8s						
SVW2	**Sparrevohn**	**22.33**	**59**	*e*P	**P**	**14 12 14.1**	**+1.7**
	comp=Z,1.9nm,1.0s						
USRK	**Ussuriysk Ar.**	**22.51**	**252**	P	**P**	**14 12 16.1**	**+1.7**
	comp=Z,0.7nm,0.5s,baz=43,slow=14,SNR=4.3						
USRK				LR	LR	14 22 15.8	
	comp=Z,167nm,18.4s,baz=50,slow=40						
MDJ	**Mudanjiang**	**23.54**	**255**	P	**P**	**14 12 23.3**	**-1.4**
MDJ				pP	pP	14 12 37.3	-0.4
MDJ				sP	sP	14 12 44.8	+0.5
MDJ				S	**S**	**14 16 30.8**	**-3.7**
MDJ				sS	Sn	14 16 56.3	-1.9
MDJ				ScP	**ScP**	**14 19 45.5**	**+3.9**
MDJ	**Mudanjiang**	**23.54**	**255**	ScS	ScS	14 23 27.5	-0.6
MDJ				pmax	pmax		
	comp=Z,11nm,1.4s						
MDJ				pmax	pmax		
	comp=Z,58nm,4.0s						
MDJ				LR	LR		
	comp=N,160nm,16.5s						
MDJ				LR	LR		
	comp=E,170nm,18.7s						
MDJ				LR	LR		
	comp=Z,230nm,19.4s						
RSO	**Redoubt South**	**23.78**	**60**	*e*P	**P**	**14 12 27.0**	**-0.1**
PPLA	**Purkeypile**	**23.79**	**54**	*e*P	**P**	**14 12 29.0**	**+2.0**
	comp=Z,61nm,1.0s						
CAST	**Castle Rocks**	**23.81**	**53**	*e*P	**P**	**14 12 28.3**	**+1.2**
	comp=Z,45nm,1.0s						
SPU	**Mount Spurr**	**24.02**	**58**	*e*P	**P**	**14 12 29.7**	**+0.6**
OHAK	**Old Harbor**	**24.20**	**68**	*e*P	**P**	**14 12 30.6**	**0.0**
	comp=Z,44nm,1.3s						
BPAW	**Bear Paw Mtn.**	**24.27**	**51**	*e*P	**P**	**14 12 31.1**	**-0.1**
	comp=Z,47nm,0.9s						
KTH	**Kantishna Hill**	**24.32**	**52**	*e*P	**P**	**14 12 32.4**	**+0.6**
	comp=Z,35nm,0.8s						
MLY	**Manley**	**24.36**	**49**	*e*P	**P**	**14 12 31.8**	**-0.3**
	comp=Z,40nm,0.9s						
KDAK	**Kodiak Island**	**24.42**	**67**	P	P	14 12 47.7	+15
	comp=Z,24nm,0.8s,baz=288,slow=6.6,SNR=22						
KDAK	**Kodiak Island**	**24.42**	**67**	*i* P	**P**	**14 12 32.4**	**-0.2**
KDAK	**Kodiak Island**	**24.42**	**67**	*e*P	**P**	**14 12 32.6**	**0.0**
	comp=Z,23nm,0.8s						
TRF	**Thorofare Moun**	**24.61**	**53**	*e*P	**P**	**14 12 35.5**	**+1.0**
	comp=Z,64nm,0.9s						
COLD	**Coldfoot**	**24.65**	**43**	*e*P	**P**	**14 12 34.7**	**0.0**
	comp=Z,29nm,1.2s						
BWN	**Browne**	**24.93**	**51**	*e*P	**P**	**14 12 38.8**	**+1.6**
	comp=Z,62nm,1.0s						
MCK	**McKinley**	**25.19**	**52**	*e*P	**P**

EGAK Eagle 28.45 49 *e*P P 14 13 08.8 -0.1
comp=Z,19nm,0.8s
KSRS Korea Array 29.49 246 P P 14 13 17.1 -1.3
comp=Z,1.4nm,0.6s,baz=33,slow=9.7,SNR=7.9
KSRS LR LR 14 24 53.5
comp=Z,77nm,18.8s,baz=52,slow=36
KSAR Wonju Array Be 29.52 246 P P 14 13 17.1 -1.5
KSAR Wonju Array Be 29.52 246 P P 14 13 17.1 -1.5
INK Inuvik 30.94 41 P P 14 13 32.0 +1.3
comp=Z,6.2nm,0.6s,baz=296,slow=7.6,SNR=62
INK PcP PcP 14 16 26.4 +0.7
comp=Z,2.7nm,0.5s,baz=326,slow=3.5,SNR=13
BJI Beijing 34.00 262 P P 14 13 56.5 -1.4
BJI S S 14 19 16.5 -2.6
BJI pmax pmax
comp=Z,4.0nm,0.6s
BJI LR LR
comp=N,200nm,10.5s
BJI LR LR
comp=E,77nm,16.8s
BJI LR LR
comp=Z,120nm,20.7s
ULN Ulaanbaatar 34.25 280⇑ *e*P P 14 14 02.0 +1.8
ULN pmax pmax
comp=Z,5.0nm,1.4s
SONM Songino Array 34.63 281 P P 14 14 03.5 +0.1
comp=Z,1.0nm,0.7s,baz=58,slow=6.8,SNR=7.2
SONM ScP ScP 14 20 17.0 +0.1
comp=Z,1.0nm,0.8s,baz=90,slow=1.4,SNR=4.6
ZAK Zakamensk 34.94 286 *e*P P 14 14 06.3 +0.2
ZAK pmax pmax
comp=Z,2.0nm,1.4s
DLBC Dease Lake 35.41 57 *e*P P 14 14 13.2 +3.2
comp=Z,7.9nm,0.8s
HHC Hu-ho-hao-te 36.05 267 *e*P P 14 14 15.5 -0.2
HHC pP pP 14 14 31.3 +1.7
HHC sP sP 14 14 39.0 +3.1
HHC S S 14 19 48.3 -2.5
HHC pmax pmax
comp=Z,21nm,0.9s
HHC pmax pmax
comp=Z,91nm,6.7s
HHC LR LR
comp=N,620nm,12.3s
HHC LR LR
comp=E,620nm,14.8s
HHC LR LR
comp=Z,690nm,16.0s
H11N2 WAKE ISLAND Hy 36.16 173 T T 14 52 55.5
baz=356,slow=74
H11N3 WAKE ISLAND Hy 36.18 173 T T 14 52 54.6
baz=356
H11N1 WAKE ISLAND Hy 36.18 173 T T 14 53 00.9
baz=356,slow=74
H11S1 WAKE ISLAND Hy 37.36 173 T T 14 54 46.7
baz=350,slow=70,SNR=31
H11S3 WAKE ISLAND Hy 37.38 173 T T 14 55 03.6
baz=350,slow=70,SNR=16
H11S2 WAKE ISLAND Hy 37.38 173 T T 14 55 11.5
baz=350,slow=70,SNR=30
NJ2 Nanjing 38.40 250 *e*P P 14 14 38.3 +2.8
NJ2 pmax pmax
comp=Z,12nm,0.7s
YKW3 Yellowknife Ar 40.26 45 *e*P P 14 14 51.5 +0.9
comp=Z,9.7nm,0.9s
YKA Yellowknife Ar 40.30 45 P P 14 14 52.1 +1.1
comp=Z,6.6nm,0.7s,baz=299,slow=8.0,SNR=109
YKA PcP PcP 14 16 54.1 +0.7
comp=Z,2.7nm,0.7s,baz=311,slow=3.5,SNR=17
YKB5 Yellowknife Ar 40.30 45 *e*P P 14 14 51.0 +0.1
ZALV Zalesovo Beam 42.47 301 P P 14 15 07.3 -1.5
comp=Z,0.4nm,0.4s,baz=46,slow=10,SNR=2.5
ZALV PcP PcP 14 16 59.9 -0.8
comp=Z,0.8nm,0.4s,baz=72,slow=4.7,SNR=5.5
ZALV LR LR 14 34 03.2
comp=Z,97nm,18.2s,baz=70,slow=38
GTA Gaotai 43.65 275 *e*P P 14 15 19.3 +0.5
GTA pP pP 14 15 35.3 +2.3
GTA sP sP 14 15 42.8 +3.5
GTA S S 14 21 42.5 -2.0
GTA sS sS 14 22 07.8 -0.6
GTA SS SS 14 24 51.8 -9.0
GTA pmax pmax
comp=Z,3.0nm,1.0s
GTA pmax pmax
comp=Z,30nm,5.9s
GTA LR LR
comp=N,100nm,17.1s
GTA LR LR
comp=E,140nm,19.0s
GTA LR LR
comp=Z,190nm,17.1s
LZH Lanzhou 43.71 269 *e*P P 14 15 23.0 +3.7
LZH pP pP 14 15 35.5 +2.0
LZH sP sP 14 15 42.5 +2.7
LZH PP **PP** **14 17 03.0 +1.4**
LZH *e*S **S** **14 21 46.8 +1.4**
LZH sS sS 14 22 13.5 +4.1
LZH SS SS 14 24 49.8 -12
LZH pmax pmax
comp=Z,55nm,1.5s
LZH pmax pmax
comp=Z,110nm,4.6s
LZH LR LR
comp=N,1μm,12.1s
LZH LR LR
comp=E,1μm,13.0s
LZH LR LR
comp=Z,1μm,15.0s
SPA0 Spitsbergen Ar 44.69 351 *e*P P 14 15 27.2 +0.8
B05A Bryant 44.91 66 P P 14 15 28.5 0.0
baz=310
SWFL Southwest Flan 46.19 69 *e*P P 14 15 44.0 +5.0
G03D McMinnville, O 46.27 70 P P 14 15 39.3 0.0
baz=311
B08A Colville Reser 46.27 65 *e*P P 14 15 42.1 +2.8
comp=Z,13nm,1.5s
I03D Drain, OR 47.23 72 P P 14 15 47.0 +0.2
baz=312
G05D Wamic, OR 47.28 69 P P 14 15 47.5 +0.3
baz=312
WMQ Urumqi 47.35 288 P P 14 15 48.0 +0.1
WMQ pP pP 14 16 05.5 +3.3
WMQ sP sP 14 16 10.5 +2.0
WMQ S S 14 22 34.5 -3.0
WMQ pmax pmax
comp=Z,5.0nm,0.6s
WMQ pmax pmax
comp=Z,24nm,3.6s
WMQ LR LR
comp=N,52nm,21.8s
WMQ LR LR
comp=E,46nm,23.8s
WMQ LR LR
comp=Z,68nm,25.6s
KURK Kurchatov 47.46 301 *e*P P 14 15 46.5 -1.9
KURK pmax pmax
comp=Z,7.0nm,0.5s
KURK Kurchatov 47.46 301 *e*P P 14 15 46.5 -1.9
comp=Z,6.8nm,0.5s
NEW Newport 47.46 63 P P 14 15 48.5 -0.1
baz=311
CD2 Chengdu 47.57 264 P P 14 15 47.0 -2.7
CD2 pmax pmax
comp=Z,1.0nm,0.5s
I04A Tendick Farm, 47.67 71 P P 14 15 50.4 0.0
baz=313
DAG Danmarks Havn 47.70 0 ||*i*P P 14 15 50.2 +0.2
comp=Z,9.1nm,0.7s
DAG Danmarks Havn 47.70 0 ||*i*P P 14 15 50.2 +0.2
DAG pmax pmax
comp=Z,6.0nm,0.7s
I05D Terrebonne, OR 47.88 70 P P 14 15 51.6 -0.3
baz=312
L02D Cave Junction, 48.14 74 P P 14 15 54.5 +0.5
baz=313
MKAR Makanchi Array 48.20 295 P P 14 15 52.4 -1.9
comp=Z,1.5nm,0.5s,baz=54,slow=7.4,SNR=13
MKAR LR LR 14 37 13.5
comp=Z,177nm,19.1s,baz=40,slow=37
MKAR Makanchi Array 48.20 295 *i*P P 14 15 53.9 -0.4
MKAR pmax pmax
comp=Z,2.0nm,0.6s
MK01 Makanchi Array 48.21 295 *e*P P 14 15 52.1 -2.3
MAKZ Makanchi 48.35 295 *e*P P 14 15 53.9 -1.6
MAKZ pmax pmax
comp=Z,5.0nm,1.0s
MAKZ Makanchi 48.35 295 *e*P P 14 15 53.9 -1.6
comp=Z,4.6nm,1.0s
WALA Waterton Lakes 48.54 61 *e*P P 14 15 58.3 +1.3
comp=Z,8.3nm,1.0s
J05D Fort Rock, OR 48.65 71 P P 14 15 58.4 +0.4
baz=313
K04D Chiloquin, OR 48.82 72 P P 14 15 59.9 +0.6
baz=314
BSMT Bassoo Peak 48.91 62 *e*P P 14 16 01.8 +1.8
YBH Yreka Blue Hor 48.92 74 P P 14 16 02.1 +2.1
comp=Z,1.9nm,0.8s,baz=352,slow=8.1,SNR=6.0
M02C Callahan 49.07 74 P P 14 16 01.8 +0.6
baz=314
JTMT Jette 49.23 62 *e*P P 14 16 04.3 +1.9
M04C Macdoel 49.35 73 P P 14 16 03.9 +0.5
baz=314
GYA Guiyang 49.38 257 *e*P P 14 16 04.0 +0.3
GYA pmax pmax
comp=Z,10.0nm,1.0s
N02D Trinity Center 49.44 74 P P 14 16 04.5 +0.5
baz=314
SWMT Swartz Lake 49.53 62 *e*P P 14 16 06.3 +1.7
BRVK Borovoye 49.79 308⇑ *e*P P 14 16 08.4 +2.0
BRVK pmax pmax
comp=Z,6.0nm,1.0s
BRVK Borovoye 49.79 308 P P 14 16 04.2 -2.1
comp=Z,5.6nm,0.8s
MSO Missoula 50.02 63 P P 14 16 08.8 +0.5
baz=313
O03D Paynes Creek 50.41 74 P P 14 16 12.0 +0.7
baz=315
FCC Fort Churchill 50.56 41 P P 14 16 10.6 -1.4
FCC pmax pmax
comp=Z,13nm,0.8s
FCC Fort Churchill 50.56 41 P P 14 16 10.6 -1.4
comp=Z,13nm,0.8s
WVOR Wild Horse Val 50.62 70 *e*P P 14 16 13.8 +0.9
WVOR pmax pmax
comp=Z,23nm,2.0s
WVOR Wild Horse Val 50.62 70 *e*P P 14 16 13.8 +0.9
comp=Z,23nm,2.0s
SUMG Summit 51.11 8 ||*i*P P 14 16 17.2 +0.7
SUMG Summit 51.11 8 ||*i*P P 14 16 17.2 +0.7
SUMG Summit 51.11 8 *e*P P 14 16 15.5 -1.1
comp=Z,29nm,1.1s
ARCES ARCESS Array B 51.13 342 P P 14 16 15.7 -0.5
comp=Z,5.2nm,0.9s,baz=37,slow=8.5,SNR=13
ARCES PcP PcP 14 17 30.8 -0.3
comp=Z,1.4nm,0.8s,baz=31,slow=5.6,SNR=4.9
ARCES LR LR 14 43 13.2
comp=Z,30nm,18.7s,baz=30,slow=42
EGMT Eagleton 51.27 59 P P 14 16 17.9 +0.1
baz=314
BOZ Bozeman (W) 52.00 63 P P 14 16 23.7 +0.5
baz=315,SNR=5.1
BOZ Bozeman (W) 52.00 63 *e*P P 14 16 23.6 +0.3
BOZ pmax pmax
comp=Z,16nm,1.8s
BOZ Bozeman (W) 52.00 63 *e*P P 14 16 23.6 +0.3
comp=Z,16nm,1.8s
HLID Hailey 52.04 66 P P 14 16 23.8 +0.2
baz=315
ARU Arti 52.31 317 *d i*P P 14 16 25.1 -0.1
ARU *PP **pP** 14 16 43.1 +3.3
ARU 14 17 34.5
ARU 14 18 24.6
ARU S S 14 23 47.1 +0.9
ARU SS SS 14 27 21.6 -2.0
ARU pmax pmax
comp=Z,4.0nm,1.0s
KMI Kunming 52.60 260 P P 14 16 26.8 -1.2
KMI pmax pmax
comp=Z,11nm,1.2s
KMI LR LR
comp=N,120nm,16.4s
KMI LR LR
comp=E,96nm,16.7s
KMI LR LR
comp=Z,87nm,18.5s
TMCR Tamitsa 52.97 333 *e*P P 14 16 29.6 -0.3
TMCR pmax pmax
comp=Z,14nm,0.5s
YMR Madison River 53.02 63 *e*P P 14 16 32.2 +1.3
comp=Z,8.0nm,1.3s
H17A Grant Village 53.41 63 P P 14 16 33.8 -0.1
baz=316,SNR=6.5
H17A Grant Village 53.41 63 *e*P P 14 16 37.0 +3.2
comp=Z,14nm,1.5s
RLMT Red Lodge 53.55 62 P P 14 16 34.9 +0.1
baz=316
FLWY Flagg Ranch 53.57 63 *e*P P 14 16 37.6 +2.6
comp=Z,16nm,1.5s
IMW Indian Meadow 53.58 64 *e*P P 14 16 37.6 +2.5
comp=Z,3.0nm,0.8s
NV01 Mina Array Sit 53.64 73 *e*P P 14 16 37.6 +2.0
NVAR Mina Array Bea 53.64 73 P P 14 16 37.7 +2.2
comp=Z,3.4nm,0.7s,baz=307,slow=7.4,SNR=22
NVAR LR LR 14 37 22.0
comp=Z,54nm,21.3s,baz=342,slow=33
NV11 Mina Array Sit 53.72 73 *e*P P 14 16 37.7 +1.7
comp=Z,22nm,1.8s
A25A Svangstu Ranch 53.77 55 P P 14 16 36.5 +0.3
baz=316
MLAC Mammoth, Mammo 53.93 74 P P 14 16 38.0 +0.3
baz=317
B25A Knox Farm, Ray 54.23 55 P P 14 16 39.6 +0.1
baz=316
A26A Wade Farm, Ken 54.29 54 P P 14 16 40.1 +0.2
baz=316
TKM2 Tokmak 2 54.31 295 *e*P P 14 16 39.5 -0.9
TKM2 pmax pmax
comp=Z,6.0nm,1.3s
TKM2 Tokmak 2 54.31 295 *e*P P 14 16 39.5 -0.9
comp=Z,5.5nm,1.3s
HWUT Hardware Ranch 54.91 66 *e*P P 14 16 46.8 +2.2
comp=Z,18nm,1.6s
C26A Wahner Farm, P 55.04 55 P P 14 16 45.6 +0.2
baz=317
AAK Ala-Archa 55.08 296 ||*e*P P 14 16 44.2 -1.7
AAK pmax pmax
comp=Z,10.0nm,0.9s
A28A Rude Farm, Bot 55.09 53 P P 14 16 46.2 +0.5
baz=317
BW06 Boulder Array 55.09 64 P P 14 16 47.3 +1.3
baz=317,SNR=8.2
BW06 Boulder Array 55.09 64 *e*P P 14 16 47.3 +1.3
PD31 Pinedale Array 55.09 64 *e*P P 14 16 47.6 +1.6
PDAR Pinedale Array 55.09 64 P P 14 16 47.5 +1.4
comp=Z,1.9nm,0.5s,baz=322,slow=3.1,SNR=22
PDAR LR LR 14 41 28.4
comp=Z,49nm,19.4s,baz=350,slow=37
R11A Troy Canyon, C 55.16 72 P P 14 16 48.0 +1.4
baz=317
GRAC Grapevine Rang 55.19 74 P P 14 16 48.1 +1.5
baz=318
CWC Cottonwood Cre 55.21 75 P P 14 16 47.4 +0.5
baz=318
KLMR Klimovskoe 55.27 330 *e*P P 14 16 45.5 -1.3
KLMR pmax pmax
comp=Z,10.0nm,0.6s
DUG Dugway, Tooele 55.28 68 P P 14 16 49.0 +1.6
baz=317
B28A Dugan Ranch, T 55.38 53 P P 14 16 48.2 +0.4
baz=317
EKS2 Erkin-Say 55.42 296 *e*P P 14 16 47.5 -0.8
EKS2 pmax pmax
comp=Z,5.0nm,0.8s
EKS2 Erkin-Say 55.42 296 *e*P P 14 16 47.5 -0.8
comp=Z,5.0nm,0.8s
SBC Santa Barbara 55.79 78 P P 14 16 51.3 +0.4
baz=318
MPMC Manual Prospec 55.81 75 P P 14 16 52.0 +0.7
baz=318
B29A Wagenman Farm, 55.83 53 P P 14 16 51.1 +0.1
baz=318
TPNV Topopah Spring 55.83 73 P P 14 16 52.4 +1.1
baz=318
TPNV Topopah Spring 55.83 73 *e*P P 14 16 53.9 +2.5
TPNV pmax pmax
comp=Z,20nm,1.4s
TPNV Topopah Spring 55.83 73 *e*P P 14 16 53.9 +2.5
comp=Z,20nm,1.4s
NLU North Lily Min 55.85 68 *e*P P 14 16 54.0 +2.5
comp=Z,7.1nm,1.1s
FURC Furnace Creek, 55.85 74 P P 14 16 52.6 +1.4
baz=318
A30A Hoffart Farm, 55.94 52 P P 14 16 53.2 +1.4
baz=318
PSUT Pine Spring 55.95 70 *e*P P 14 16 54.8 +2.6
comp=Z,4.0nm,0.8s
ULM Lac du Bonnet 56.03 49 P P 14 16 53.4 +1.0
comp=Z,12nm,0.8s,baz=318,slow=7.0,SNR=12
ULM LR LR 14 41 51.3
comp=Z,58nm,20.3s,baz=272,slow=37
ULM Lac du Bonnet 56.03 49 *e*P P 14 16 53.5 +1.2
comp=Z,20nm,1.1s
D28A Regan 56.21 55 P P 14 16 54.4 +0.7
baz=318
B30A Myrvik Farm, E 56.30 52 P P 14 16 55.9 +1.6
baz=318,SNR=7.5
EDW2 Edwards Air Fo 56.41 76 P P 14 16 57.2 +1.8
baz=318
KSH Kashi 56.60 292 *e*P P 14 17 01.3 +4.6
KSH *e*pP sP 14 17 17.5 -0.1
KSH *e*PP PP 14 19 10.0 +7.3
KSH S S **14 24 48.0 +3.5**
KSH pmax pmax
comp=Z,36nm,3.2s
KSH LR LR
comp=N,210nm,13.0s
KSH LR LR
comp=E,140nm,5.4s
KSH LR LR
comp=Z,100nm,7.5s
E28A Huff 56.61 55 P P 14 16 56.2 -0.4
baz=318
B31A Greenbush Farm 56.62 52 P P 14 16 57.5 +0.9
baz=318,SNR=7.5
G26A Maurine 56.67 57 P P 14 16 58.5 +1.4
baz=318
H25A Fruitdale 56.68 58 P P 14 16 58.2 +1.0
baz=318
DECC Green Verdugo 56.70 77 P P 14 16 58.3 +1.0
baz=319
K22A Casper 56.70 62 P P 14 16 58.6 +1.1
baz=318
KKAR Karatay Array 56.73 299 *e*P P 14 16 56.1 -1.4
KKAR Karatay Array 56.73 299 *e*P P 14 16 56.1 -1.4
GSC Goldstone, Bar 56.75 75 P P 14 16 59.0 +1.2
baz=318
A32A Rocking H Ranc 56.76 51 P P 14 16 57.9 +0.3
baz=319,SNR=7.7
TMUT Trail Mountain 56.78 68 *e*P P 14 17 00.7 +2.4
comp=Z,1.0nm,1.0s
RSSD Black Hills 56.84 59 P P 14 16 58.8 +0.3
baz=318
P17A Butcher Ranch, 56.90 67 *e*P P 14 17 01.6 +2.7
comp=Z,3.9nm,0.8s
P18A Preston Nutter 57.04 67 *e*P P 14 17 02.7 +2.6
comp=Z,8.9nm,1.1s
C31A Landman Farms, 57.05 52 P P 14 17 00.3 +0.6
baz=319,SNR=5.4
ABKAR Akbulak array 57.05 310 *e*P P 14 16 58.5 -1.1
I25A Rochford 57.06 59 P P 14 16 59.4 -0.6
baz=318
B32A Ashes, Strandq 57.13 51 P P 14 17 00.5 +0.3
baz=319
MTPU Mount Pierson 57.20 69 *e*P P 14 17 04.2 +3.0
comp=Z,6.6nm,1.2s
A33A Warroad 57.22 50 P P 14 17 01.2 +0.3
baz=319,SNR=12
SRU San Rafael Swe 57.28 67 *e*P P 14 17 04.2 +2.6
SRU pmax pmax
comp=Z,18nm,1.0s
SRU San Rafael Swe 57.28 67 *e*P P 14 17 04.2 +2.6
comp=Z,18nm,1.0s
HEC Hector,Ludlow 57.36 75 P P 14 17 02.3 +0.2
baz=319
LCMT Little Creek M 57.40 71 *e*P P 14 17 05.2 +2.7
comp=Z,11nm,1.3s
J25A Sunshine Ranch 57.50 60 P P 14 17 03.2 +0.1
baz=318
AGMN Agassiz Nation 57.50 51 P P 14 17 03.5 +0.7
baz=319,SNR=9.5
AGMN Agassiz Nation 57.50 51 *e*P P 14 17 03.9 +1.1
comp=Z,12nm,0.8s
B33A Robert and Kas 57.64 51 P P 14 17 04.0 +0.2
baz=319
O20A White River Ci 57.70 65 P P 14 17 04.9 +0.4
baz=318,SNR=14
O20A White River Ci 57.70 65 *e*P P 14 17 06.7 +2.1
comp=Z,19nm,0.8s
GMRC Granite Mounta 57.76 75 P P 14 17 04.7 -0.3
baz=319
MURC Murrieta 57.80 77 P P 14 17 05.2 0.0
baz=319
B34A Aery, Baudette 57.88 50 P P 14 17 06.0 +0.5
baz=320,SNR=6.8
J26A Sides Ranch, S 57.91 59 P P 14 17 06.6 +0.7
baz=319
E31A Nome 57.91 53 P P 14 17 05.7 0.0
baz=319,SNR=7.7
C33A Trail 57.95 51 P P 14 17 06.7 +0.8
baz=320
FIA1 FINESS Array S 58.16 337 *e*P P 14 17 06.8 -0.4
comp=Z,23nm,0.6s
FINES FINESS Array B 58.16 337 P P 14 17 07.1 -0.1
comp=Z,23nm,0.7s,baz=35,slow=8.4,SNR=146
FINES LR LR 14 44 36.6
comp=Z,51nm,21.0s,baz=4.5,slow=38
PFO Pinyon Flats O 58.20 76 P P 14 17 07.7 -0.4
baz=319
F31A Hecla 58.27 54 P P 14 17 08.3 +0.1
baz=319
N23A Red Feather La 58.30 63 P P 14 17 09.6 +0.7
baz=319,SNR=11
N23A Red Feather La 58.30 63 *e*P P 14 17 10.9 +2.1
comp=Z,14nm,0.8s
I28A Midland 58.31 57 P P 14 17 09.2 +0.6
baz=319
B35A Bob, Littlefor 58.38 49 P P 14 17 09.4 +0.5
baz=320,SNR=5.5
D33A AnnSam, Waubun 58.38 52 P P 14 17 09.5 +0.5
baz=320
C34A RKJ Ranch, Bem 58.41 51 P P 14 17 08.8 -0.4
baz=320
PV09 Paradox Valley 58.46 67 *e*P P 14 17 12.4 +2.4
J27A Elkhorn Farm, 58.47 59 P P 14 17 10.0 +0.2
baz=319
IRM Iron Mountain 58.50 75 P P 14 17 10.8 +0.8
baz=319
J28A Allard Ranch, 58.71 58 P P 14 17 12.2 +0.7
baz=319
D34A Park Rapids 58.71 51 P P 14 17 10.8 -0.5
baz=320,SNR=7.6
C35A Jirik Farms, M 58.78 50 P P 14 17 12.0 +0.2
baz=320
PV05 Paradox Valley 58.79 67 *e*P P 14 17 14.7 +2.4
E33A Westby DABS, E 58.80 52 P P 14 17 12.2 +0.3
baz=320
PV01 Paradox Valley 59.02 67 *e*P P 14 17 15.8 +1.9
J29A Okreek 59.16 57 P P 14 17 14.2 -0.3
baz=320
F33A 5 Mile Ranch, 59.18 53 P P 14 17 14.9 +0.4
baz=320,SNR=7.2
D35A Remer 59.22 51 P P 14 17 14.7 -0.1
baz=320
C36A Pine Crest Far 59.22 49 P P 14 17 14.9 +0.1
baz=321
ISCO Idaho Springs 59.29 64 P P 14 17 15.6 -0.2
baz=319,SNR=14
ISCO Idaho Springs 59.29 64 *e*P P 14 17 18.2 +2.4
ISCO pmax pmax
comp=Z,11nm,0.9s
ISCO Idaho Springs 59.29 64 *e*P P 14 17 18.2 +2.4
comp=Z,11nm,0.9s
WUAZ Wupatki 59.52 71 P P 14 17 17.7 +0.5
baz=319
WUAZ Wupatki 59.52 71 *e*P P 14 17 20.0 +2.8
comp=Z,16nm,1.3s
C37A Embarrass 59.52 49 P P 14 17 17.2 +0.3
baz=321
D36A Goodland 59.53 50 P P 14 17 17.0 0.0
baz=321
G33A Ortonville 59.60 54 P P 14 17 18.1 +0.6
baz=320,SNR=6.1
EYMN Ely 59.65 48 P P 14 17 18.1 +0.4
baz=321
F34A Alexandria 59.67 52 P P 14 17 18.2 +0.2
baz=320
Y14A Wickenburg 59.84 73 *e*P P 14 17 21.8 +2.5
comp=Z,24nm,0.9s
H33A Prehn Over Nor 59.86 54 P P 14 17 18.7 -0.5
baz=320

D37A **Cotton** 59.86 50 P P 14 17 18.6 -0.6
baz=321
C38A **Sawbill Land.** 59.92 48 P P 14 17 19.7 0.0
baz=322
GUN **Gumba** 59.93 276 eP P 14 17 19.2 -1.2
comp=Z,10nm,0.5s
G34A **Benson** 59.93 53 P P 14 17 20.0 +0.3
baz=321
F35A **Swanville** 59.93 52 P P 14 17 19.7 0.0
baz=321
E36A **McGregor** 60.00 51 P P 14 17 20.3 +0.1
baz=321,SNR=5.0
CMAR **Chiang Mai Arr** 60.03 258 P P 14 17 20.8 0.0
comp=Z,1.6nm,0.7s,baz=20,slow=6.6,SNR=13
CMAR PcP PcP 14 18 06.2 0.0
comp=Z,2.3nm,0.6s,baz=13,slow=3.9,SNR=9.8
CMAR LR LR 14 46 38.2
comp=Z,68nm,18.4s,baz=180,slow=39
CMAR **Chiang Mai Arr** 60.03 258 *i* P P 14 17 22.1 +1.4
CMAR pmax pmax
comp=Z,2.0nm,0.7s
CM01 **Chiang Mai Arr** 60.05 258 eP P 14 17 21.5 +0.6
Q24A **Divide** 60.15 64 P P 14 17 21.0 -0.7
baz=320
S22A **4UR Ranch, Cre** 60.22 66 P P 14 17 22.4 +0.2
baz=320,SNR=16
S22A **4UR Ranch, Cre** 60.22 66 eP P 14 17 24.6 +2.5
comp=Z,9.3nm,0.8s
X16A **Lo Mia Camp, P** 60.31 72 eP P 14 17 25.3 +2.6
J32A **Parkston** 60.35 56 P P 14 17 22.4 -0.3
baz=320
KKN **Kakani** 60.36 277 eP P 14 17 21.6 -1.5
F36A **Milaca** 60.39 51 P P 14 17 22.9 +0.1
baz=321
PKIN **Phulchoki** 60.45 276 eP P 14 17 22.5 -1.4
comp=Z,4.0nm,0.4s
G35A **Watkins** 60.47 52 P P 14 17 22.7 -0.6
baz=321
ECSD **EROS Data Cent** 60.65 55 P P 14 17 25.1 +0.4
baz=321,SNR=11
ECSD **EROS Data Cent** 60.65 55 eP P 14 17 25.6 +0.9
comp=Z,9.1nm,0.7s
VSU **Vasula** 60.67 335 eP P 14 17 24.7 +0.2
VSU pmax pmax
comp=Z,60nm,0.6s
H35A **Sunnyside Ranc** 60.71 53 P P 14 17 24.4 -0.7
baz=321,SNR=11
I34A **Hadley** 60.76 54 P P 14 17 25.4 0.0
baz=321
J33A **Davis** 60.80 55 P P 14 17 26.0 +0.3
baz=321
L31A **Butterfield Fa** 60.80 57 P P 14 17 25.9 +0.1
baz=320
K32A **Verdigre** 60.84 56 P P 14 17 25.5 -0.6
baz=321
SDCO **Great Sand Dun** 60.90 65 P P 14 17 27.3 +0.5
baz=320,SNR=12
SDCO **Great Sand Dun** 60.90 65 eP P 14 17 28.9 +2.1
comp=Z,6.2nm,0.9s
OBN **Obninsk** 60.95 328 eP P 14 17 24.6 -1.8
OBN *PP sP 14 17 46.0 -1.4
OBN *e* 14 18 08.5
OBN *e*SS SS 14 29 35.1 -4.0
OBN *e*SSS SSS 14 32 26.0
OBN pmax pmax
comp=Z,15nm,1.2s
OBN MLR MLR
comp=Z,83nm,18.0s
X18A **Snowflake** 61.02 71 eP P 14 17 30.2 +2.6
NC303 **NORSAR Array S** 61.11 344 eP P 14 17 27.4 0.0
NC204 **NORSAR Array S** 61.15 345 eP P 14 17 28.1 +0.3
NC405 **NORSAR Array S** 61.16 344 eP P 14 17 27.8 0.0
SPMN **Marine on St.** 61.21 51 P P 14 17 27.8 -0.6
baz=322
SPMN **Marine on St.** 61.21 51 eP P 14 17 29.7 +1.3
comp=Z,12nm,0.8s
H36A **Jessenland, He** 61.21 52 P P 14 17 28.8 +0.4
baz=322,SNR=7.0
NB201 **NORSAR Array S** 61.28 344 eP P 14 17 28.7 0.0
I35A **Creekview Farm** 61.30 54 P P 14 17 29.4 +0.4
baz=321,SNR=5.2
NB2 **NORSAR Subarra** 61.31 344 P P 14 17 27.9 -1.0
comp=Z,4.3nm,0.8s,baz=18,slow=6.9
NOA **NORSAR Array B** 61.31 344 P P 14 17 28.5 -0.4
comp=Z,3.8nm,0.7s,baz=18,slow=6.9,SNR=22
NOA LR LR 14 45 19.6
comp=Z,20nm,19.2s,baz=15,slow=37
KOLN **Koldanda** 61.31 278 eP P 14 17 27.9 -1.7
comp=Z,8.7nm,0.6s
K33A **Hardington** 61.34 56 P P 14 17 29.7 +0.3
baz=321
PYUN **Piuthan** 61.40 279 eP P 14 17 28.8 -1.4
214A **Organ Pipe Nat** 61.45 75 P P 14 17 30.7 +0.4
baz=320
L33A **Hoskins** 61.55 56 P P 14 17 30.8 0.0
baz=321
J35A **Milford** 61.58 54 P P 14 17 31.2 +0.2
baz=321
I36A **Fitzsimmons Fa** 61.61 53 P P 14 17 30.7 -0.5
baz=322
H37A **Dierke Farm, C** 61.66 52 P P 14 17 30.8 -0.7
baz=322
K34A **Le Mars** 61.70 55 P P 14 17 31.3 -0.5
baz=321,SNR=7.8
BGNE **Belgrade** 61.73 57 P P 14 17 31.6 -0.4
baz=321
I37A **Lemond, Waseca** 61.89 52 P P 14 17 32.6 -0.4
baz=322
T25A **Trinidad** 61.92 65 P P 14 17 33.2 -0.4
baz=320,SNR=5.6
T25A **Trinidad** 61.92 65 eP P 14 17 35.8 +2.1
comp=Z,11nm,1.1s
J36A **Seneca 1, Swea** 62.00 54 P P 14 17 33.6 -0.3
baz=322,SNR=6.1
K35A **Storm Lake** 62.07 55 P P 14 17 33.8 -0.5
baz=322,SNR=5.1
L34A **Svendsen Farm,** 62.13 56 P P 14 17 34.1 -0.5
baz=322
TUC **Tucson** 62.28 73 P P 14 17 36.3 +0.4
baz=321
TUC **Tucson** 62.28 73 eP P 14 17 37.9 +2.0
TUC pmax pmax
comp=Z,3.0nm,0.8s
TUC **Tucson** 62.28 73 eP P 14 17 37.9 +2.0
comp=Z,3.0nm,0.8s
LPSR **Galich'ya Gora** 62.34 325 eP P 14 17 35.2 -0.7
LPSR pmax pmax
comp=Z,10.0nm,0.8s
I38A **Scanlan Farm,** 62.35 52 P P 14 17 35.6 -0.5
baz=322
J37A **Redenius Farm,** 62.37 53 P P 14 17 36.5 +0.2
baz=322
M34A **Aspy Farms, Fr** 62.39 56 P P 14 17 36.3 -0.2
baz=322
L35A **Bielow Farm, R** 62.40 55 P P 14 17 36.1 -0.4
baz=322
K36A **Gilmore City** 62.49 54 P P 14 17 37.0 -0.1
baz=322
ANMO **Albuquerque** 62.55 68 P P 14 17 39.8 +2.0
comp=Z,7.6nm,0.9s,baz=319,slow=9.4,SNR=22
ANMO **Albuquerque** 62.55 68 P P 14 17 37.3 -0.5
baz=321
ANMO **Albuquerque** 62.55 68 *i* P P 14 17 39.4 +1.6
ANMO pmax pmax
comp=Z,8.0nm,1.0s
ANMO **Albuquerque** 62.55 68 eP P 14 17 39.8 +2.0
comp=Z,6.3nm,0.8s
VRH **Novokhopyorsk** 62.59 322 eP P 14 17 36.2 -1.4
VRH pmax pmax
comp=Z,10.0nm,0.6s
LAZ **Ladron** 62.61 69 eP P 14 17 41.1 +2.8
SCHQ **Schefferville** 62.64 30 P P 14 17 38.0 0.0
comp=Z,5.9nm,0.7s,baz=326,slow=8.2,SNR=5.1
SCHQ LR LR 14 46 45.0
comp=Z,42nm,20.2s,baz=26,slow=38
K37A **Belmond** 62.76 53 P P 14 17 38.5 -0.4
baz=322
L36A **Harm Buss Farm** 62.81 55 P P 14 17 39.5 +0.2
baz=322
M35A **Neola** 62.84 56 P P 14 17 39.4 0.0
baz=322
J38A **Wedel Dairy, R** 62.85 52 P P 14 17 39.5 +0.1
baz=322
P32A **Huiting Farm,** 62.89 59 P P 14 17 39.6 -0.3
baz=322
N34A **Lincoln** 62.95 57 P P 14 17 39.8 -0.3
baz=322

CBKS **Cedar Bluff** 62.97 60 P P 14 17 40.6 +0.2
baz=321
O33A **Hebron** 63.03 58 P P 14 17 40.4 -0.4
baz=322
K38A **Parkersburg** 63.25 53 P P 14 17 42.1 0.0
baz=323
M36A **Felix, Anita** 63.26 55 P P 14 17 42.3 +0.1
baz=322
N35A **Tabor** 63.34 56 P P 14 17 42.4 -0.3
baz=322
O34A **Beatrice** 63.37 57 P P 14 17 43.4 +0.4
baz=322
VSR **Storozhevoye** 63.44 324 eP P 14 17 41.9 -1.3
VSR pmax pmax
comp=Z,10.0nm,0.9s
L38A **Oak Wood Farm,** 63.56 53 P P 14 17 44.6 +0.4
baz=323
M37A **Trindle Farm,** 63.65 55 P P 14 17 45.0 +0.3
baz=322
121A **Cookes Peak, D** 63.71 70 P P 14 17 46.0 +0.4
baz=321
Q33A **Connelly Farm,** 63.75 59 P P 14 17 45.7 +0.2
baz=322
P34A **Walnut Farm, R** 63.81 58 P P 14 17 46.2 +0.3
baz=322,SNR=6.6
319A **Douglas** 63.81 72 eP P 14 17 48.4 +2.3
comp=Z,14nm,1.0s
M38A **Pleasantville** 64.03 54 P P 14 17 47.4 +0.2
baz=323,SNR=6.0
N37A **Lee Faris, Mou** 64.08 55 P P 14 17 48.1 +0.4
baz=323,SNR=7.5
P35A **Duane Minner,** 64.21 57 P P 14 17 48.6 +0.1
baz=322
R33A **Olander Ranch,** 64.22 59 P P 14 17 48.9 +0.3
baz=322
O36A **Bolckow** 64.23 56 P P 14 17 48.6 0.0
baz=322
Q34A **Chapman** 64.24 58 P P 14 17 48.9 +0.2
baz=322
O37A **Wolven Farm, M** 64.58 56 P P 14 17 51.5 +0.6
baz=323
R34A **Isabella, Hill** 64.58 59 P P 14 17 50.8 -0.2
baz=322
N39A **Derby Farms, D** 64.78 54 P P 14 17 52.2 +0.1
baz=323
O38A **Galt** 64.93 55 P P 14 17 52.8 -0.3
baz=323
P37A **Lathrop** 64.95 56 P P 14 17 53.5 +0.2
baz=323,SNR=7.9
R35A **Emporia Munici** 65.07 58 P P 14 17 53.8 -0.3
baz=323
S34A **Willow Spring** 65.12 59 P P 14 17 53.9 -0.5
baz=322
MSTX **Muleshoe** 65.22 66 P P 14 17 55.5 +0.2
baz=322
MSTX **Muleshoe** 65.22 66 eP P 14 17 56.8 +1.5
comp=Z,13nm,1.0s
U32A **Winter Ranch,** 65.24 61 P P 14 17 55.0 -0.2
baz=322
P38A **Dawn** 65.30 56 P P 14 17 56.0 +0.4
baz=323,SNR=8.0
R36A **Gordon, Harris** 65.40 58 P P 14 17 56.2 0.0
baz=323
Q37A **Longview Farm,** 65.47 57 P P 14 17 56.7 0.0
baz=323
S35A **Otter Creek Ra** 65.52 59 P P 14 17 56.7 -0.4
baz=323
T34A **McClaskey Farm** 65.62 60 P P 14 17 57.3 -0.4
baz=323
U33A **Lingo Farm, Me** 65.63 61 P P 14 17 57.4 -0.4
baz=323
MNTX **Cornudas Mount** 65.64 69 P P 14 17 58.6 +0.7
baz=322,SNR=15
MNTX **Cornudas Mount** 65.64 69 eP P 14 17 59.9 +2.0
comp=Z,15nm,0.9s
O40A **La Belle** 65.67 54 P P 14 17 58.4 +0.4
baz=324,SNR=5.5
Q38A **Cooks Store, C** 65.79 56 P P 14 17 59.0 +0.3
baz=323,SNR=10
S36A **Lake Cedric, C** 65.84 58 P P 14 17 58.8 -0.3
baz=323
Q39A **Willow Grove F** 66.02 56 P P 14 18 00.6 +0.3
baz=324,SNR=14
P40A **Paris** 66.06 55 P P 14 18 00.9 +0.4
baz=324,SNR=8.5
W32A **Sentinel** 66.11 62 P P 14 18 01.0 +0.2
baz=323
S37A **Fort Scott** 66.17 58 P P 14 18 00.8 -0.4
baz=323
T36A **Boggs Farm, Ca** 66.23 59 P P 14 18 01.2 -0.4
baz=323
R38A **Fenwick Farm,** 66.27 57 P P 14 18 01.7 -0.2
baz=323
Q40A **Laux Farm, Aux** 66.48 55 P P 14 18 03.4 +0.2
baz=324
HDIL **Hopedale** 66.48 52 P P 14 18 02.7 -0.4
baz=324
R39A **Chumby, Stover** 66.58 56 P P 14 18 03.9 +0.1
baz=324,SNR=15
SBUM **Sibu** 66.63 237 eP P 14 18 05.2 +0.8
comp=Z,28nm,1.1s
T37A **Cheneyville 18** 66.64 58 P P 14 18 04.4 +0.2
baz=323,SNR=6.0
X32A **Elmer** 66.64 63 P P 14 18 04.5 +0.2
baz=323
S38A **Stockton** 66.72 57 P P 14 18 04.5 -0.2
baz=324
GEYT **Alibeck** 66.72 303 P P 14 18 04.3 -0.5
comp=Z,2.0nm,0.7s,baz=32,slow=5.9,SNR=5.1
S39A **Bolivar** 66.94 57 P P 14 18 05.7 -0.4
baz=324
R40A **Maddies Statio** 66.96 56 P P 14 18 06.5 +0.3
baz=324,SNR=13
AKASG **Malin Array Be** 66.96 330 P P 14 18 05.3 -0.7
comp=Z,5.9nm,0.3s,baz=28,slow=6.9,SNR=31
AKASG LR LR 14 51 24.4
comp=Z,62nm,18.9s,baz=35,slow=40
KIEV **Kiev** 66.97 330 *d* P P 14 18 05.2 -0.9
KIEV pmax pmax
comp=Z,13nm,1.0s
KIEV **Kiev** 66.97 330 eP P 14 18 05.4 -0.7
comp=Z,13nm,1.0s
T38A **Diamond** 67.01 58 P P 14 18 06.7 +0.1
baz=324,SNR=5.7
U37A **Salina** 67.12 59 P P 14 18 07.5 +0.2
baz=324
TUL1 **Leonard** 67.19 60 P P 14 18 08.3 +0.6
baz=323
V36A **Jenks** 67.21 60 P P 14 18 08.6 +0.7
baz=323
W35A **Tecumseh** 67.26 61 P P 14 18 08.7 +0.5
baz=323
Y33A **Hilltop Ranch,** 67.30 63 P P 14 18 09.3 +0.9
baz=323
S40A **Lebanon** 67.41 56 P P 14 18 09.0 -0.1
baz=324,SNR=7.0
U38A **Gravette** 67.44 58 P P 14 18 09.4 0.0
baz=324
T39A **Clever** 67.45 57 P P 14 18 09.2 -0.2
baz=324
V37A **Hulbert** 67.52 59 P P 14 18 09.6 -0.3
baz=324
W36A **Wetumka** 67.59 60 P P 14 18 10.9 +0.6
baz=324
T40A **Mansfield** 67.76 56 P P 14 18 11.4 +0.1
baz=324,SNR=9.5
Y34A **Reagan Ranch,** 67.78 62 P P 14 18 11.7 +0.3
baz=323
HHAR **Hobbs** 67.78 58 eP P 14 18 12.0 +0.5
comp=Z,14nm,0.7s
Z33A **Whitaker Ranch** 67.80 63 P P 14 18 12.1 +0.4
baz=323
X35A **Drake** 67.81 61 P P 14 18 12.4 +0.7
baz=323
ABTX **Abilene, Hawle** 67.89 64 P P 14 18 13.0 +0.8
baz=323
ABTX **Abilene, Hawle** 67.89 64 eP P 14 18 13.6 +1.4
comp=Z,18nm,1.0s
V38A **Canehill** 67.89 59 P P 14 18 12.8 +0.6
baz=324,SNR=8.8
U39A **Green Forest** 67.92 58 P P 14 18 12.6 +0.2
baz=324,SNR=9.5
W37B **Quinton** 67.98 60 P P 14 18 12.8 +0.1
baz=324
X36A **Centrahoma** 67.98 61 P P 14 18 12.8 +0.1
baz=324
Z34A **Collier Ranch,** 68.16 63 P P 14 18 13.7 -0.2
baz=323

U40A **Yellville** 68.24 57 P P 14 18 14.6 +0.3
baz=324,SNR=6.1
133A **Hamilton Ranch** 68.27 64 P P 14 18 14.9 +0.3
baz=323
V39A **Pettigrew** 68.28 58 P P 14 18 15.0 +0.3
baz=324,SNR=15
TX31 **Lajitas Ar. Si** 68.40 70 eP P 14 18 17.1 +1.5
TXAR **Lajitas Array** 68.41 70 P P 14 18 17.2 +1.6
comp=Z,13nm,0.7s,baz=297,slow=4.7,SNR=138
KBZ **Khabaz** 68.47 317 P P 14 18 16.4 +0.8
comp=Z,5.8nm,0.9s,baz=76,slow=7.2,SNR=14
KBZ LR LR 14 53 17.8
comp=Z,68nm,18.0s,baz=22,slow=40
W38A **Poteau** 68.48 59 P P 14 18 16.4 +0.5
baz=324,SNR=6.5
Y36A **Durant** 68.55 61 P P 14 18 16.8 +0.5
baz=324
X38A **Whitesboro** 68.65 60 P P 14 18 17.1 +0.2
baz=324
V40A **Witts Springs** 68.70 58 P P 14 18 17.6 +0.4
baz=324,SNR=8.1
134A **White-Moore Ra** 68.72 63 P P 14 18 17.7 +0.3
baz=324
W39A **Magazine** 68.73 59 P P 14 18 17.7 +0.3
baz=324
233A **Rising Star** 68.75 64 P P 14 18 17.5 -0.1
baz=324
ZEI **Tsey** 68.88 316 eP P 14 18 17.8 -0.6
ZEI pmax pmax
comp=Z,14nm,0.9s
NEY **Neytrino** 68.94 317 P P 14 18 20.0 +1.2
NEY pmax pmax
comp=Z,1.0nm,1.2s
W40A **Ferguson Farm,** 69.08 58 P P 14 18 19.8 +0.2
baz=324,SNR=5.3
X39A **Fountain Ranch** 69.13 59 P P 14 18 20.3 +0.4
baz=324,SNR=8.2
333A **Richland Sprin** 69.26 65 P P 14 18 21.4 +0.7
baz=324
MIAR **Mount Ida** 69.36 59 P P 14 18 21.9 +0.6
baz=324,SNR=6.3
MIAR **Mount Ida** 69.36 59 eP P 14 18 22.3 +1.0
MIAR pmax pmax
comp=Z,9.0nm,0.9s
MIAR **Mount Ida** 69.36 59 eP P 14 18 22.2 +1.0
comp=Z,9.4nm,0.9s
X301 **Greenbrier Sit** 69.36 58 eP P 14 18 22.0 +0.7
comp=Z,8.1nm,0.7s
WHAR **Wooly Hollow** 69.37 57 eP P 14 18 22.1 +0.8
comp=Z,12nm,0.8s
W41A **Tony Mavity, V** 69.49 57 P P 14 18 22.6 +0.6
baz=325,SNR=6.4
W41B **Gary Mavity, V** 69.49 57 P P 14 18 22.5 +0.4
baz=325,SNR=5.3
SORM **Soroca** 69.52 329 *i* P P 14 18 21.3 -0.8
ANN **Anapa** 69.56 321 eP P 14 18 17.0 -5.3
ANN *e*PP pP 14 18 38.6 +1.2
ANN *e*S S 14 27 16.1 -10
ANN pmax pmax
comp=Z,60nm,1.5s
Y39A **Lockesburg** 69.60 60 P P 14 18 23.2 +0.4
baz=324
334A **Lometa** 69.63 64 P P 14 18 23.5 +0.5
baz=324
433A **Art** 69.66 65 P P 14 18 23.9 +0.6
baz=324,SNR=8.3
KWP **Kalwaria Pacla** 69.69 333 eP P 14 18 23.7 +0.6
KWP **Kalwaria Pacla** 69.69 333 *i* P P 14 18 24.1 +1.0
WCI **Wyandotte Cave** 69.72 51 eP P 14 18 24.0 +0.5
WCI pmax pmax
comp=Z,9.0nm,0.7s
WCI **Wyandotte Cave** 69.72 51 eP P 14 18 24.0 +0.5
comp=Z,9.1nm,0.7s
X40A **Basin Creek Fa** 69.76 58 P P 14 18 24.3 +0.5
baz=325
M54A **Oil Creek Stat** 69.77 45 P P 14 18 23.8 0.0
baz=328
OJC **Ojcow** 69.86 335 eP P 14 18 24.6 +0.5
OJC **Ojcow** 69.86 335 eP P 14 18 24.6 +0.5
OJC pmax pmax
comp=Z,26nm,1.3s
OJC **Ojcow** 69.86 335 eP P 14 18 24.6 +0.5
comp=Z,26nm,1.3s
Y40A **Okolona** 69.93 59 P P 14 18 25.5 +0.6
baz=325
434A **Burnet** 70.03 65 P P 14 18 26.2 +0.7
baz=324,SNR=8.1
KSP **Lisiaz** 70.06 338 eP P 14 18 25.6 +0.3
N54A **Moraine State** 70.10 46 P P 14 18 25.1 -0.6
baz=328
533A **Kerrville** 70.23 66 P P 14 18 27.7 +0.9
baz=324,SNR=6.8
STHS **Stebnicka Huta** 70.26 334 eP P 14 18 27.6 +1.0
STHS pmax pmax
comp=Z,9.0nm,0.8s
STHS **Stebnicka Huta** 70.26 334 eP P 14 18 27.6 +1.0
CLL **Colm** 70.28 340 *i* P P 14 18 26.7 0.0
comp=Z,10.0nm,1.5s
UPC **Upice** 70.43 338 eP P 14 18 28.4 +0.7
KOLS **Kolonicke sedl** 70.45 333 eP P 14 18 28.3 +0.5
KOLS pmax pmax
comp=Z,5.0nm,0.8s
KOLS **Kolonicke sedl** 70.45 333 eP P 14 18 28.3 +0.5
139A **Bunkhouse Ranc** 70.47 61 P P 14 18 27.9 -0.2
baz=325
NIE **Niedzica** 70.48 335 eP P 14 18 28.7 +0.7
Z40A **Long Farm, Mag** 70.49 60 P P 14 18 27.8 -0.4
baz=325
BRG **Berggiesshubel** 70.51 339 eP P 14 18 28.3 +0.2
comp=Z,15nm,1.8s
BRG **Berggiesshubel** 70.51 339 eP P 14 18 28.3 +0.2
BRG pmax pmax
comp=Z,15nm,1.8s
DPC **Dobruska-Polom** 70.52 338 *i* P P 14 18 28.9 +0.7
DPC *ex* x 14 18 36.6
534A **Blanco** 70.56 65 P P 14 18 28.5 -0.2
baz=324,SNR=8.7
OKC **Ostrava-Krasne** 70.60 336 eP P 14 18 29.4 +0.8
633A **Saathoff Ranch** 70.65 66 P P 14 18 29.1 -0.2
baz=324
KRLC **Kraliky** 70.68 337 eP P 14 18 29.7 +0.5
CRVS **Cervenica-Dubn** 70.68 334 eP P 14 18 29.9 +0.7
CRVS **Cervenica-Dubn** 70.68 334 eP P 14 18 29.9 +0.7
WVT **Waverly** 70.76 54 eP P 14 18 30.5 +0.6
WVT pmax pmax
comp=Z,9.0nm,0.9s
WVT **Waverly** 70.76 54 eP P 14 18 30.5 +0.6
comp=Z,8.6nm,0.9s
GNI **Garni** 70.77 314 *ce* P P 14 18 31.2 +1.1
GNI pmax pmax
comp=Z,39nm,1.5s
MORC **Moravsky Berou** 70.79 337 *i* P P 14 18 30.5 +0.6
MORC **Moravsky Berou** 70.79 337 eP P 14 18 30.4 +0.6
MORC pmax pmax
comp=Z,37nm,0.9s
MORC **Moravsky Berou** 70.79 337 eP P 14 18 30.4 +0.6
comp=Z,37nm,0.9s
BUR08 **Bucovina Ar. S** 70.86 331 eP P 14 18 30.4 0.0
BURAR **Bucovina Array** 70.88 331 *i* P P 14 18 30.5 0.0
LANS **Liptovska Anna** 70.93 335 eP P 14 18 32.2 +1.4
LANS **Liptovska Anna** 70.93 335 eP P 14 18 32.2 +1.4
PRU **Pruhonice** 71.23 339 eP P 14 18 33.0 +0.5
PRU *ex* x 14 18 45.0
GOPC **GO Pecny, Ondr** 71.25 339 eP P 14 18 35.2 +2.5
O56A **Blue Knob Stat** 71.26 45 P P 14 18 32.0 -0.9
baz=329
VRAC **Vranov** 71.44 337 *i* P P 14 18 34.8 +1.0
Y44A **Strider, Charl** 71.44 57 P P 14 18 33.7 -0.3
baz=326
TESR **Tescani** 71.48 329 *i* P P 14 18 33.7 -0.4
VYHS **Vyhne** 71.69 335 eP P 14 18 35.9 +0.6
VYHS pmax pmax
comp=Z,4.0nm,1.2s
VYHS **Vyhne** 71.69 335 eP P 14 18 35.8 +0.5
636A **Smothers Creek** 71.72 65 P P 14 18 36.3 +0.5
baz=324
N59A **State Game Lan** 71.80 43 P P 14 18 35.2 -0.8
baz=330
439A **Center Grove,** 71.81 62 P P 14 18 35.9 -0.4
baz=325
PSZ **Piszkesteto** 71.98 334 *i* P P 14 18 37.9 +0.8
834A **Tilden** 72.05 66 P P 14 18 38.2 +0.5
baz=324
PLOR **Plostina** 72.08 329 *i* P P 14 18 38.0 +0.3
933A **Laredo** 72.09 67 P P 14 18 38.7 +0.7
baz=324

Y46A	**Houston**	**72.14**	**56**	P		**P**	**14 18 38.8**	**+0.5**
	baz=326							
Z45A	**Winona**	**72.17**	**57**	P		**P**	**14 18 38.0**	**-0.4**
	baz=326							
KHC	**Kasperske Hory**	**72.24**	**339**	*i* P		**P**	**14 18 39.1**	**+0.5**
KHC				*ex*		x	14 18 48.2	
KHC	**Kasperske Hory**	**72.24**	**339**	*e*P		**P**	**14 18 39.5**	**+0.9**
KHC				pmax	pmax			
	comp=Z,4.0nm,1.2s							
KHC	**Kasperske Hory**	**72.24**	**339**	*e*P		**P**	**14 18 39.5**	**+0.9**
	comp=Z,3.9nm,1.2s							
835A	**Beeville**	**72.29**	**66**	P		**P**	**14 18 39.0**	**-0.2**
	baz=324							
DRGR		**72.31**	**332**	⇓*i*P		**P**	**14 18 39.4**	**+0.3**
SWET	**Sewanee**	**72.38**	**53**	*e*P		**P**	**14 18 40.1**	**+0.4**
	comp=Z,4.4nm,0.6s							
GEC2	**GERESS Array S**	**72.49**	**339**	*e*P		**P**	**14 18 40.7**	**+0.5**
GEC2				pmax	pmax			
	comp=Z,9.0nm,1.4s							
GEC2	**GERESS Array S**	**72.49**	**339**	*e*P		**P**	**14 18 40.7**	**+0.5**
	comp=Z,9.1nm,1.4s							
GERES	**GERESS Array B**	**72.49**	**339**	P		**P**	**14 18 40.5**	**+0.3**
	comp=Z,1.2nm,0.5s,baz=37,slow=6.9,SNR=14							
GERES				LR		LR	14 55 43.6	
	comp=Z,78nm,18.1s,baz=43,slow=40							
GEA0	**GERESS Array S**	**72.50**	**339**	*e*P		**P**	**14 18 40.2**	**0.0**
Y47A	**UCPARC, Winfie**	**72.60**	**55**	P		**P**	**14 18 40.7**	**-0.3**
	baz=326							
MLR	**Muntele Rosu**	**72.62**	**329**	⇓*i*P		**P**	**14 18 42.0**	**+1.0**
MLR	**Muntele Rosu**	**72.62**	**329**	*e*P		**P**	**14 18 41.2**	**+0.2**
MLR				pmax	pmax			
	comp=Z,11nm,0.7s							
MLR	**Muntele Rosu**	**72.62**	**329**	*e*P		**P**	**14 18 41.2**	**+0.2**
	comp=Z,11nm,0.7s							
244A	**Avery, Jackson**	**72.79**	**58**	P		**P**	**14 18 42.4**	**+0.3**
	baz=326							
TIRR	**Tirgusor**	**72.82**	**327**	⇑*i*P		**P**	**14 18 42.3**	**+0.2**
VOIR		**72.92**	**330**	⇑*i*P		**P**	**14 18 43.2**	**+0.4**
Z47A	**Carrollton**	**73.08**	**56**	P		**P**	**14 18 43.8**	**+0.1**
	baz=326							
146A	**Union**	**73.08**	**57**	P		**P**	**14 18 44.1**	**+0.3**
	baz=326							
ARR	**Arges**	**73.10**	**330**	⇑*i*P		**P**	**14 18 44.8**	**+1.0**
Z48A	**Northport**	**73.17**	**55**	P		**P**	**14 18 44.6**	**+0.3**
	baz=327							
MTN	**Manton Dam**	**73.22**	**212**	*e*P		**P**	**14 18 45.3**	**+0.7**
	comp=Z,16nm,0.6s							
147A	**Livingston**	**73.42**	**56**	P		**P**	**14 18 45.6**	**-0.2**
	baz=326							
BZS	**Buzias**	**73.69**	**332**	⇑*i*P		**P**	**14 18 47.2**	**0.0**
LRAL	**Lakeview Retre**	**73.71**	**55**	*e*P		**P**	**14 18 47.5**	**0.0**
	comp=Z,9.8nm,0.6s							
PKSM	**Moragy**	**73.88**	**335**	⇑*i*P		**P**	**14 18 48.3**	**0.0**
BFO	**Black Forest**	**73.99**	**342**	*i* P		**P**	**14 18 50.1**	**+1.1**
248A	**Dixon Mills**	**74.15**	**56**	P		**P**	**14 18 50.2**	**+0.2**
	baz=327							
KMSC	**Kings Mountain**	**74.47**	**50**	P		**P**	**14 18 51.5**	**-0.4**
	baz=329							
BR131	**Keskin Array S**	**75.36**	**322**	*e*P		**P**	**14 18 57.2**	**+0.1**
BRTR	**Keskin Array B**	**75.36**	**322**	P		**P**	**14 18 57.0**	**-0.1**
	comp=Z,2.8nm,0.6s,baz=64,slow=3.4,SNR=20							
BR231	**Keskin MP Arra**	**75.55**	**322**	*e*P		**P**	**14 18 57.4**	**-0.8**
WRAB	**Tennant Creek**	**79.08**	**207**	⇑*i*P		**P**	**14 19 18.3**	**+0.4**
WRAB				pmax	pmax			
	comp=Z,36nm,1.7s							
WRAB	**Tennant Creek**	**79.08**	**207**	*e*P		**P**	**14 19 18.2**	**+0.4**
WRA	**Warramunga Arr**	**79.09**	**207**	P		**P**	**14 19 17.9**	**+0.1**
	comp=Z,3.3nm,0.6s,baz=15,slow=6.0,SNR=37							
WRA	**Warramunga Arr**	**79.09**	**207**	P		**P**	**14 19 18.0**	**+0.1**
FITZ	**Fitzroy Crossi**	**79.88**	**215**	*e*P		**P**	**14 19 22.8**	**+0.6**
PMOR	**Pomariorio Ree**	**81.93**	**132**	*e*T		T	15 49 47.4	
	comp=Z,4.5nm,0.2s							
LAST	**Lasithi**	**82.22**	**326**	*e*P		**P**	**14 19 33.7**	**-1.1**
AS01	**Alice Springs**	**82.75**	**206**	*e*P		**P**	**14 19 37.8**	**+0.4**
AS31	**Alice Springs**	**82.77**	**206**	*e*P		**P**	**14 19 38.0**	**+0.6**
ASAR	**Alice Springs**	**82.77**	**206**	P		**P**	**14 19 38.0**	**+0.5**
	comp=Z,5.0nm,0.8s,baz=14,slow=5.4,SNR=65							
ASAR	**Alice Springs**	**82.77**	**206**	P		**P**	**14 19 38.0**	**+0.5**
PPT	**Papeete**	**83.54**	**134**	LR		LR	14 48 55.6	
	comp=Z,52nm,22.0s,baz=318,slow=30							
PPT2	**Papeete2**	**83.56**	**134**	*e*LR		LR	14 46 20.5	
	comp=Z,101nm,24.0s							
ESDC	**Sonseca Array**	**84.19**	**349**	P		**P**	**14 19 45.4**	**+0.6**
	comp=Z,2.4nm,0.8s,baz=1.3,slow=5.0,SNR=16							
KEST	**Kesra**	**85.97**	**338**	P		**P**	**14 19 54.0**	**+0.2**
	comp=Z,5.6nm,1.0s,baz=333,slow=2.3,SNR=4.6							
STKA	**Stephens Creek**	**89.11**	**198**	P		**P**	**14 20 09.2**	**+0.7**
	comp=Z,2.6nm,1.1s,baz=22,slow=7.0,SNR=3.6							
PLCA	**Paso Flores**	**142.68**	**89**	PKP		**PKPdf**	**14 26 46.3**	**+0.3**
	comp=Z,5.4nm,0.9s,baz=294,slow=4.7,SNR=7.6							

MOS ***30*** *14:14:52.2±1.9, 50.°07N×156.°07E, h13km, mb4.3/1, Error ellipse: s-maj=65.8km s-min=8.1km az=75.7*

KRSC 30 14:14:42.5±1.7, 49.°35N×156.°69E, h11km±24km, ML4.2, Kuril Islands

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
SKR	**Severo-Kuril's**	**1.39**	**345**	*i* P		Pn	14 15 06.0	-1.8
SKR				*e*S		Sn	14 15 24.2	-2.0
SKR	**Severo-Kuril's**	**1.39**	**345**	*e*Pn		Pn	14 15 02.5	-5.3
SKR				pmax	pmax			
	comp=N,70nm,0.4s							
SKR				pmax	pmax			
	comp=Z,80nm,0.4s							
PAU	**Pauzhetka**	**2.12**	**2**	*e*P		Pb	14 15 19.5	-1.5
PAU				*e*S		Sb	14 15 46.9	-0.5
PAU	**Pauzhetka**	**2.12**	**2**	PN		Pb	14 15 19.5	-1.5
ASAK	**Asacha**	**3.14**	**14**	*e*P		Pn	14 15 34.3	+2.4
MTVR	**Mutnovka**	**3.28**	**16**	*e*S		Sn	14 16 14.8	+1.8
RUS	**Russkaya**	**3.30**	**20**	*e*P		Pn	14 15 37.1	+3.0
RUS				*e*S		Sb	14 16 17.4	-3.8
RUS	**Russkaya**	**3.30**	**20**	PN		Pn	14 15 37.1	+3.0
RUS				S		Sb	14 16 17.4	-3.8
APC	**Apacha**	**3.59**	**5**	*e*P		Pn	14 15 41.2	+3.0
APC	**Apacha**	**3.59**	**5**	PN		Pn	14 15 41.2	+3.0
KRMR	**Karymshinskiy**	**3.60**	**14**	*e*P		Pb	14 15 42.7	-3.5
KRMR				*e*S		Sb	14 16 26.2	-3.7
PET	**Petropavlovsk**	**3.88**	**18**	*e*P		Pn	14 15 45.2	+3.1
PET				*e*S		Sn	14 16 32.7	+5.0
PET	**Petropavlovsk**	**3.88**	**18**	*e*PN		Pb	14 15 48.3	-2.7
PET				*e*S		Sb	14 16 33.7	-4.3
PET				smax	smax			
	comp=E,87nm,0.5s							
PET				smax	smax			
	comp=N,86nm,0.6s							
DALK	**Dalny**	**3.91**	**19**	*e*P		Pn	14 15 45.8	+3.3
DALK				*e*S		Sn	14 16 33.5	+5.1
UGLR	**Uglovaya**	**4.09**	**18**	*e*P		Pn	14 15 49.4	+4.3
AVH	**Avacha**	**4.13**	**17**	*e*P		Pn	14 15 50.1	+4.5
AVH				*e*S		Sn	14 16 38.5	+4.6
AVH	**Avacha**	**4.13**	**17**	PN		Pn	14 15 50.1	+4.5
AVH				S		Sn	14 16 38.5	+4.6
KOK	**Koryaka**	**4.13**	**16**	*e*P		Pb	14 15 50.6	-4.8
KOK	**Koryaka**	**4.13**	**16**	PN		Pb	14 15 50.6	-4.8
SMAR	**Somma**	**4.14**	**18**	*e*P		Pn	14 15 50.0	+4.1
SMAR	**Somma**	**4.14**	**18**	PN		Pn	14 15 50.0	+4.1
KRER	**Koryakskii**	**4.17**	**17**	*e*P		Pn	14 15 50.4	+4.2
SDLR	**Sedlovina**	**4.17**	**18**	*e*P		Pn	14 15 49.6	+3.4
SDLR	**Sedlovina**	**4.17**	**18**	PN		Pn	14 15 49.6	+3.4
KRX	**Arik**	**4.20**	**16**	*e*P		Pn	14 15 50.5	+3.9
GNL	**Ganaly**	**4.42**	**10**	*e*P		Pn	14 15 53.5	+3.8
GNL	**Ganaly**	**4.42**	**10**	PN		Pn	14 15 53.5	+3.8
MKZ	**Mys Kozlova**	**6.08**	**29**	*e*P		Pn	14 16 15.0	+2.8
MKZ	**Mys Kozlova**	**6.08**	**29**	PN		Pn	14 16 15.0	+2.8
BKI	**Bering**	**8.17**	**41**	S		Sn	14 18 17.5	+4.4

IDC 30 14:32:48.8±4.6, 21.°12S×178.°99W, h542km±54km, mb2.8/7, mb1 3.1/8, mb1mx2.9/37, mbtmp3.8/8, Error ellipse: s-maj=34.6km s-min=24.9km az=168.0, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
DZM	**Mont Dzumac**	**13.58**	**263**	P		P	14 35 44.4	+0.5
	0.3nm,0.3s,baz=83,slow=8.5,SNR=4.7							
RPZ	**Rata Peaks**	**24.01**	**198**	P		P	14 37 20.9	-0.2
	2.1nm,0.5s,baz=18,slow=6.4,SNR=3.7							
STKA	**Stephens Creek**	**36.68**	**245**	P		P	14 39 09.8	-0.3
	0.5nm,0.4s,baz=73,slow=11,SNR=4.4							
ASAR	**Alice Springs**	**43.48**	**257**	P		P	14 40 05.0	+0.3
	0.3nm,0.3s,baz=93,slow=8.6,SNR=8.1							
ASAR				PcP		PcP	14 41 41.1	+0.5
	0.2nm,0.5s,baz=111,slow=4.1,SNR=4.6							
WRA	**Warramunga Arr**	**43.60**	**263**	P		P	14 40 05.0	-0.6
	0.3nm,0.3s,baz=94,slow=7.8,SNR=15							
NVAR	**Mina Array Bea**	**82.11**	**44**	P		P	14 44 13.2	0.0
	0.5nm,0.7s,baz=214,slow=6.3,SNR=3.5							
TXAR	**Lajitas Array**	**88.17**	**58**	P		P	14 44 42.8	+0.1
	0.1nm,0.3s,baz=217,slow=4.2,SNR=3.6							
PDAR	**Pinedale Array**	**90.05**	**44**	P		P	14 44 51.0	-0.2
	0.3nm,0.6s,baz=243,slow=4.0,SNR=3.5							
AKASG	**Malin Array Be**	**143.09**	**330**	PKP		PKPbc	14 51 19.4	+0.2
	1.3nm,0.6s,baz=46,slow=3.8,SNR=6.2							

IDC ***30*** *14:41:07.3±2.0, 37.°38N×144.°85E, h0km, mb3.8/2, mb1 3.9/5, mb1mx3.4/43, mbtmp3.9/5, ML3.5/3, Error ellipse: s-maj=47.2km s-min=31.8km az=80.0*
JMA ***30*** *14:41:13.7±0.1, 37.°53N×144.°45E, h31km, M4.2*
ISCJB ***30*** *14:41:14.1±1.3, 37.°55N±0.°05×144.°50E±0.°09, h79km±17km, mb3.9/2, Error ellipse: s-maj=12.5km s-min=7.8km az=22.8*

ISC 30 14:41:14.4±3.4, 37.°44N±0.°08×144.°5E±0.°2, h51km±38km, n20, σ1§50/33, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op		ISC	h m s	ISC
JIO	**Ouri**	**2.69**	**293**	P		**Pn**	**14 41 55.5**	**+0.2**
JIO				S		**Sn**	**14 42 26.5**	**-0.1**
OFUJ	**Ofunato**	**2.77**	**307**	P		**Pn**	**14 41 56.2**	**-0.1**
OFUJ				S		**Sn**	**14 42 27.8**	**-0.7**
JFK	**Kawauchi**	**2.90**	**270**	P		**Pn**	**14 41 58.2**	**+0.1**
JFK				S		**Sn**	**14 42 31.9**	**+0.2**
JMM	**Marumori**	**2.98**	**279**	P		**Pn**	**14 41 59.2**	**0.0**
JMM				*e*S		**Sn**	**14 42 33.6**	**-0.1**
JMK	**Ichinoseki**	**3.00**	**301**	P		**Pn**	**14 41 59.7**	**+0.3**
JMK				*e*S		**Sn**	**14 42 34.3**	**+0.2**
JOU	**Okura**	**3.18**	**288**	P		**Pn**	**14 42 02.8**	**+0.9**
JOM	**Ohasama**	**3.24**	**310**	P		**Pn**	**14 42 03.3**	**+0.6**
JOM				S		**Sn**	**14 42 39.8**	**-0.2**
JFT	**Otama**	**3.32**	**273**	P		**Pn**	**14 42 04.9**	**+1.0**
JFT				*e*S		**Sn**	**14 42 42.5**	**+0.4**
JYK	**Kaneyama**	**3.59**	**295**	P		**Pn**	**14 42 08.6**	**+1.0**
JYK				*e*S		**Sn**	**14 42 48.7**	**+0.1**
JRG	**Rokugo**	**3.62**	**304**	P		**Pn**	**14 42 08.8**	**+0.9**
JRG				*e*S		**Sn**	**14 42 48.9**	**-0.4**
JANG	**Nango**	**3.74**	**322**	P		**Pn**	**14 42 10.3**	**+0.6**
JANG				S		**Sn**	**14 42 52.0**	**-0.5**
JTM	**Tenmabayashi**	**4.28**	**322**	P		**Pn**	**14 42 17.3**	**+0.3**
JOT	**Ohata**	**4.76**	**327**	*e*S		**Sn**	**14 43 17.6**	**+0.2**
MJAR	**Matsushiro Arr**	**5.12**	**262**	Pn		**Pn**	**14 42 29.9**	**+1.3**
	1.7nm,0.3s,baz=89,slow=15,SNR=21							
MJAR				Sn		**Sn**	**14 43 29.4**	**+2.9**
	0.9nm,0.3s,baz=197,slow=16,SNR=4.6							
MAT	**Matsushiro**	**5.12**	**262**	P		**Pn**	**14 42 30.3**	**+1.7**
JKB	**Kayabe**	**5.19**	**330**	P		**Pn**	**14 42 30.7**	**+1.3**
JHJ	**Hachijo jima 2**	**5.79**	**223**	Pn		**Pn**	**14 42 35.4**	**-2.3**
	4.4nm,0.3s,baz=331,slow=22,SNR=7.8							
JHJ				Sn		**Sn**	**14 43 37.3**	**-5.6**
	25nm,0.3s,baz=70,slow=20,SNR=13							
ASAJ	**Asahikawa**	**6.82**	**348**	Pn		**Pn**	**14 42 50.0**	**-1.9**
	0.8nm,0.3s,baz=191,slow=14,SNR=14							
ASAJ				Sn		**Sn**	**14 44 06.0**	**-2.1**
	baz=139,slow=20,SNR=2.1							
WRA	**Warramunga Arr**	**57.88**	**191**	P		**P**	**14 51 00.5**	**-0.6**
	1.1nm,0.5s,baz=10,slow=7.1,SNR=22							
ASAR	**Alice Springs**	**61.60**	**191**	P		**P**	**14 51 26.8**	**+0.1**
	0.3nm,0.5s,baz=9.4,slow=7.3,SNR=6.5							

AZER ***30*** *15:25:36.5±7.4, 37.°47N×39.°73E, h15km, Error ellipse: s-maj=91.4km s-min=55.6km az=153.0*
ISN ***30*** *15:25:59.3±0.3, 37.°99N×42.°76E, h0km, ML4.3*
MOS ***30*** *15:26:03.2±1.9, 38.°02N×42.°57E, h10km, mb4.0/12, Error ellipse: s-maj=9.7km s-min=4.8km az=93.8*
DDA ***30*** *15:26:03.5, 38.°18N×42.°53E, h5km, Ml4.5*
ISCJB ***30*** *15:26:04.8±0.5, 38.°14N±0.°02×42.°58E±0.°02, h10km±4km, mb3.7/16, MS3.0/8, Error ellipse: s-maj=3.4km s-min=2.5km az=143.1*
CSEM ***30*** *15:26:04.6±0.2, 38.°18N×42.°60E, h2km, mb4.0/12, Error ellipse: s-maj=4.9km s-min=3.8km az=167.0*
ISK ***30*** *15:26:04.2, 38.°20N×42.°64E, h8km, ML4.1*
TIF ***30*** *15:26:06.0, 42.°56N×43.°53E, h11km*
IDC ***30*** *15:26:06.9±3.3, 38.°17N×42.°56E, h23km±23km, mb3.5/10, mb1 3.6/18, mb1mx3.5/43, mbtmp3.7/18, ML3.3/7, MS3.1/11, Ms1 3.1/11, ms1mx2.8/54, Error ellipse: s-maj=17.9km s-min=10.7km az=156.0*
NSSC ***30*** *15:26:06.4±1.6, 38.°66N×41.°78E, h114km±31km, ML4.1*
NSSP ***30*** *15:26:08.2, 38.°10N×42.°60E, h4km, Ms4.1*

ISC 30 15:26:05.0±1.0, 38.°19N±0.°02×42.°57E±0.°01, h5km±7km, n205, σ1§38/239, mb3.9/16, MS3.0/8, 24C-25D, Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op		ISC	h m s	ISC
TATV	**Tatvan**	**0.40**	**324**	⇓*i*P		**Pg**	**15 26 12.0**	**-0.8**
TATV				*i* S		**Sg**	**15 26 17.8**	**-0.3**
TATV	**Tatvan**	**0.40**	**324**	P		**Pg**	**15 26 12.0**	**-0.8**
TATV				S		**Sg**	**15 26 17.8**	**-0.3**
GEVA	**Gevas**	**0.40**	**72**	⇑*i*P		**Pg**	**15 26 12.4**	**-0.4**
GEVA				*i* S		**Sb**	**15 26 20.5**	**-0.8**
GEVA	**Gevas**	**0.40**	**72**	P		**Pg**	**15 26 12.4**	**-0.4**
SIRT	**Sirnak**	**0.69**	**189**	*e*PG		**Pg**	**15 26 18.5**	**+0.2**
SIRT				*e*SG		**Sb**	**15 26 29.0**	**-0.5**
SIRT	**Sirnak**	**0.69**	**189**	*e*Pg		**Pg**	**15 26 18.5**	**+0.2**
SIRT				*e*Sg		**Sb**	**15 26 29.0**	**-0.5**
SIRN	**S¨–rnak**	**0.70**	**190**	⇓*i*P		**Pg**	**15 26 18.2**	**-0.2**
SIRN				*i* S		**Sb**	**15 26 29.6**	**-0.1**
SIRN	**S¨–rnak**	**0.70**	**190**	P		**Pg**	**15 26 18.2**	**-0.2**
SIRN				S		**Sb**	**15 26 29.6**	**-0.1**
TVAN	**Van**	**0.74**	**62**	⇑*i*P		**Pg**	**15 26 18.1**	**-1.1**
TVAN				*i* S		**Sb**	**15 26 32.1**	**+1.0**
TVAN	**Van**	**0.74**	**62**	P		**Pg**	**15 26 18.1**	**-1.1**
VANB	**Van**	**0.76**	**57**	*e*PG		**Pg**	**15 26 18.2**	**-1.4**
VANB	**Van**	**0.76**	**57**	*e*Pg		**Pg**	**15 26 18.2**	**-1.4**
BTMN	**Batman**	**1.07**	**254**	⇑*i*P		**Pg**	**15 26 25.2**	**-0.3**
BTMN				*i* S		**Sg**	**15 26 39.2**	**-0.1**
BTMN	**Batman**	**1.07**	**254**	P		**Pg**	**15 26 25.2**	**-0.3**
BTMN				S		**Sg**	**15 26 39.2**	**-0.1**
HAKT	**HAKKARI**	**1.10**	**125**	⇑*i*P		**Pg**	**15 26 25.0**	**-1.0**
HAKT				*i* S		**Sn**	**15 26 42.4**	**-0.5**
HAKT	**HAKKARI**	**1.10**	**125**	P		**Pg**	**15 26 25.0**	**-1.0**
VMUR	**Van-Muradiye**	**1.12**	**44**	⇑*i*P		**Pg**	**15 26 25.3**	**-1.3**
VMUR				*i* S		**Sb**	**15 26 41.5**	**-0.5**
VMUR	**Van-Muradiye**	**1.12**	**44**	P		**Pg**	**15 26 25.3**	**-1.3**
VMUR				S		**Sb**	**15 26 41.5**	**-0.5**
EKAR	**Karacoban**	**1.14**	**340**	⇓*i*P		**Pg**	**15 26 26.0**	**-0.9**
EKAR				*i* S		**Sn**	**15 26 43.8**	**-0.2**
EKAR	**Karacoban**	**1.14**	**340**	P		**Pg**	**15 26 26.0**	**-0.9**
EKAR				S		**Sn**	**15 26 43.8**	**-0.2**
CUKT	**Cukurca**	**1.25**	**138**	*e*PN		**Pg**	**15 26 28.0**	**-0.9**
CUKT	**Cukurca**	**1.25**	**138**	*e*Pn		**Pg**	**15 26 28.0**	**-0.9**
VRTB	**Varto-Mus**	**1.31**	**318**	*e*PN		**Pg**	**15 26 29.6**	**-0.5**
VRTB	**Varto-Mus**	**1.31**	**318**	*e*Pn		**Pg**	**15 26 29.6**	**-0.5**
BNGL	**BINGOL**	**1.35**	**305**	⇓*i*P		**Pn**	**15 26 29.6**	**-1.2**
BNGL				*i* S		**Sn**	**15 26 50.5**	**+1.3**
CLDR	**Caldiran**	**1.42**	**47**	*e*PN		**Pn**	**15 26 30.2**	**-1.6**
CLDR	**Caldiran**	**1.42**	**47**	*e*Pn		**Pn**	**15 26 30.2**	**-1.6**
DYDN	**Diyadin**	**1.61**	**32**	⇓*i*P		**Pn**	**15 26 34.0**	**-0.4**
DYDN				*i* S		**Sn**	**15 26 54.7**	**-1.0**
DYDN	**Diyadin**	**1.61**	**32**	P		**Pn**	**15 26 34.0**	**-0.4**
DYDN				S		**Sn**	**15 26 54.7**	**-1.0**
MARD	**Mardin**	**1.67**	**239**	⇑*i*P		**Pn**	**15 26 34.0**	**-1.0**
MARD				*i* S		**Sb**	**15 26 57.3**	**-0.3**
BNGB	**Bing¨¶l**	**1.69**	**299**	*e*PN		**Pn**	**15 26 35.3**	**0.0**
BGOL	**Bingol**	**1.69**	**299**	⇑*i*P		**Pn**	**15 26 35.1**	**-0.3**
BGOL				*i* S		**Sb**	**15 26 58.8**	**+0.5**
BGOL	**Bingol**	**1.69**	**299**	P		**Pn**	**15 26 35.1**	**-0.3**
BGOL				S		**Sb**	**15 26 58.8**	**+0.5**
BINT	**Bingol**	**1.77**	**294**	P		**Pn**	**15 26 36.2**	**-0.3**
BINT	**Bingol**	**1.77**	**294**	*e*Pn		**Pn**	**15 26 35.3**	**-1.2**
BINT	**Bingol**	**1.77**	**294**	P		**Pn**	**15 26 36.2**	**-0.3**
MAZI	**Mazidag**	**1.83**	**247**	*e*PN		**Pn**	**15 26 37.6**	**+0.3**
MAZI	**Mazidag**	**1.83**	**247**	*e*Pn		**Pn**	**15 26 37.6**	**+0.3**
MSL	**Mosul**	**1.83**	**166**	*i* Pg		Pn	15 26 35.0	-2.2
	baz=350							
MSL				*e*Sg		Sn	15 27 00.0	-0.8
ECAT	**Cat-ERZURUM**	**1.89**	**319**	⇓*i*P		**Pn**	**15 26 38.2**	**+0.1**
ECAT				*i* S		**Sg**	**15 27 05.8**	**+0.1**
ECAT	**Cat-ERZURUM**	**1.89**	**319**	P		**Pn**	**15 26 38.2**	**+0.1**
ECAT				S		**Sg**	**15 27 05.8**	**+0.1**
HOMI	**Horasan**	**1.93**	**345**	⇓*i*P		**Pn**	**15 26 38.8**	**0.0**
HOMI				*i* S		**Sg**	**15 27 06.8**	**-0.2**
DIYA	**Diyarbakir**	**1.95**	**263**	⇑*i*P		**Pn**	**15 26 37.5**	**-1.4**
DIYA				*i* S		**Sn**	**15 27 03.3**	**-0.5**
DIYA	**Diyarbakir**	**1.95**	**263**	P		**Pn**	**15 26 37.5**	**-1.4**
DIYA				S		**Sn**	**15 27 03.3**	**-0.5**
ERZM	**Erzurum**	**1.96**	**332**	*i* P		**Pn**	**15 26 40.1**	**+1.0**
ERZM	**Erzurum**	**1.96**	**332**	P		**Pn**	**15 26 40.1**	**+1.0**
EZM	**Erzurum**	**1.96**	**332**	*e*Pn		**Pn**	**15 26 38.7**	**-0.5**
KBSD	**Kabsdagh**	**2.00**	**234**	*e*P		**Pn**	**15 26 39.1**	**-0.4**
KBSD				*e*S		**Sn**	**15 27 02.2**	**-2.7**
KBSD				AML	AML		15 27 21.3	
	comp=Z,5μm,0.5s							
KOPT	**Kop Dagi**	**2.44**	**319**	*i* P		**Pb**	**15 26 48.7**	**-0.9**
KOPT				*i* S		**Sg**	**15 27 25.4**	**+2.0**
KOPT	**Kop Dagi**	**2.44**	**319**	P		**Pb**	**15 26 48.7**	**-0.9**
KARS	**Kars**	**2.47**	**9**	*e*PN		**Pn**	**15 26 45.5**	**-0.6**
KARS	**Kars**	**2.47**	**9**	P		**Pn**	**15 26 47.1**	**+1.0**
KARS	**Kars**	**2.47**	**9**	*e*Pn		**Pn**	**15 26 45.5**	**-0.6**
KARS	**Kars**	**2.47**	**9**	P		**Pn**	**15 26 47.1**	**+1.0**
NAX	**Nakhchivan**	**2.49**	**66**	P		**Pn**	**15 26 47.4**	**+1.1**
	SNR=7.8							
NAX				⇓S		**Sg**	**15 27 28.2**	**+3.2**
NAX	**Nakhchivan**	**2.49**	**66**	P		**Pn**	**15 26 47.4**	**+1.1**
	SNR=7.8							
TNCL	**Tunceli-Merkez**	**2.55**	**292**	*i* P		**Pn**	**15 26 46.3**	**-0.8**
TNCL				*i* S		**Sb**	**15 27 23.8**	**+0.9**
TNCL	**Tunceli-Merkez**	**2.55**	**292**	P		**Pn**	**15 26 46.3**	**-0.8**
GNI	**Garni**	**2.59**	**40**	Pn		**Pn**	**15 26 48.9**	**+1.2**
	comp=Z,5.6nm,0.3s,baz=240,slow=3.7,SNR=15							
GNI				Lg		Lg	15 27 28.9	
	comp=Z,10.0nm,0.3s,baz=157,slow=20,SNR=5.6							
GNI	**Garni**	**2.59**	**40**	⇑*i*P		**Pb**	**15 26 51.5**	**-0.4**
GNI				⇑*i*S		**Sg**	**15 27 27.0**	**-1.1**
GNI	**Garni**	**2.59**	**40**	*ce*P		**Pb**	**15 26 50.6**	**-1.4**
GNI				pmax	pmax			
	comp=Z,456nm,1.2s							
GNI	**Garni**	**2.59**	**40**	*e*P		**Pb**	**15 26 50.6**	**-1.4**
	comp=Z,456nm,1.2s							
PTK	**Pertek**	**2.59**	**287**	*e*PN		**Pn**	**15 26 48.3**	**+0.5**
PTK	**Pertek**	**2.59**	**287**	*e*Pn		**Pn**	**15 26 48.3**	**+0.5**
EAK	**Akyaka**	**2.62**	**17**	*i* P		**Pb**	**15 26 52.0**	**-0.6**
EAK				*i* S		**Sg**	**15 27 30.5**	**+1.2**
ERZN	**Erzincan**	**2.63**	**303**	*e*PN		**Pn**	**15 26 48.7**	**+0.5**
SFNV	**Sufian**	**2.64**	**229**	*e*P		**Pn**	**15 26 48.1**	**-0.2**
SFNV				*e*S		**Sn**	**15 27 17.6**	**-3.1**
SFNV				AML	AML		15 27 40.1	
	comp=Z,1μm,0.7s							
DDEM	**Demirkent**	**2.78**	**347**	*i* P		**Pn**	**15 26 50.6**	**+0.3**
DDEM				*i* S		**Sb**	**15 27 30.8**	**+1.2**
DDEM	**Demirkent**	**2.78**	**347**	P

RABH				*e*S		Sn	15 28 27.6	-9.3
KIV	**Kislovodsk**	**5.76**	**1**	*e*P		Pn	15 27 35.0	+3.7
KIV				pmax	pmax			
	comp=Z,6.0nm,1.0s							
KIV				MLR	MLR			
	comp=Z,89nm,13.0s							
SOC	**Sochi**	**5.81**	**339**	*e*P		**Pn**	**15 27 33.0**	**+1.2**
SOC				*e*			15 28 44.5	
SOC				pmax	pmax			
	comp=Z,19nm,0.4s							
SOC				smax	smax			
	comp=N,13nm,0.4s							
SOC				smax	smax			
	comp=E,6.0nm,0.4s							
SOC				MLR	MLR			
	comp=Z,164nm,11.0s							
SOC	**Sochi**	**5.81**	**339**	*e*P		**Pn**	**15 27 33.0**	**+1.2**
	comp=Z,19nm,0.4s							
ZALF	**Zalf**	**6.77**	**221**	*e*P		**Pn**	**15 27 44.2**	**-0.8**
BRTR	**Keskin Array B**	**7.13**	**285**	Pn		**Pn**	**15 27 51.5**	**+1.5**
	comp=Z,0.1nm,0.3s,baz=110,slow=15,SNR=10							
BRTR	**Keskin Array B**	**7.13**	**285**	*e*P		**Pn**	**15 27 52.6**	**+2.5**
BRTR	**Keskin Array B**	**7.13**	**285**	*e*P		**Pn**	**15 27 52.6**	**+2.5**
SALA	**Sala**	**7.25**	**223**	*e*P		**Pn**	**15 27 51.5**	**-0.3**
ASF	**Jabal al Asfar**	**7.58**	**219**	Pn		**Pn**	**15 27 55.9**	**-0.4**
	comp=Z,0.7nm,0.3s,baz=345,slow=16,SNR=6.6							
ASF				Lg		Lg	15 30 10.3	
	comp=Z,2.3nm,0.3s,baz=188,slow=23,SNR=7.6							
ANN	**Anapa**	**7.65**	**331**	*e*P		Pn	15 28 00.4	+3.3
ANN				*e*			15 29 32.0	
ANN				pmax	pmax			
	comp=Z,31nm,0.9s							
MMAI	**Mount Meron Ar**	**7.79**	**231**	Pn		**Pn**	**15 28 00.0**	**+0.9**
	comp=Z,1.5nm,0.3s,baz=69,slow=17,SNR=8.4							
MMAI				Lg		Lg	15 30 13.6	
	comp=Z,2.5nm,0.3s,baz=30,slow=26,SNR=4.6							
MMAI				LR		LR	15 30 34.8	
	comp=Z,22nm,18.0s,baz=50,slow=34							
EIL	**Elat**	**10.59**	**219**	LR		LR	15 33 06.8	
	comp=Z,170nm,18.9s,baz=57,slow=40							
GEYT	**Ailbeck**	**12.26**	**86**	Pn		**Pn**	**15 29 00.7**	**+0.4**
	comp=Z,0.3nm,0.3s,baz=265,slow=16,SNR=9.7							
VRH	**Novokhopyorsk**	**13.03**	**358**	*e*P		**Pn**	**15 29 11.0**	**+0.3**
VRH				pmax	pmax			
	comp=Z,10.0nm,0.7s							
VRH	**Novokhopyorsk**	**13.03**	**358**	*e*P		**Pn**	**15 29 11.0**	**+0.3**
	comp=Z,10.0nm,0.7s							
VSR	**Storozhevoye**	**13.25**	**351**	*e*P		**Pn**	**15 29 14.0**	**+0.3**
VSR				pmax	pmax			
	comp=Z,3.0nm,0.6s							
VSR	**Storozhevoye**	**13.25**	**351**	*e*P		**Pn**	**15 29 14.0**	**+0.3**
	comp=Z,3.0nm,0.6s							
LPSR	**Galich'ya Gora**	**14.64**	**351**	*e*P		**Pn**	**15 29 31.7**	**-1.0**
LPSR				pmax	pmax			
	comp=Z,20nm,1.4s							
AKASG	**Malin Array Be**	**15.70**	**327**	Pn		**Pn**	**15 29 46.2**	**-0.6**
	comp=Z,0.3nm,0.3s,baz=139,slow=12,SNR=5.0							
KIEV	**Kiev**	**15.70**	**327**	*e*P		**P**	**15 29 51.0**	**+0.1**
KIEV				pmax	pmax			
	comp=Z,5.0nm,1.0s							
KIEV	**Kiev**	**15.70**	**327**	*e*P		**P**	**15 29 51.0**	**+0.1**
	comp=Z,5.0nm,1.0s							
AKTO	**Aktyubinsk**	**16.45**	**37**	Pn		**Pn**	**15 29 56.2**	**-0.3**
	comp=Z,0.1nm,0.3s,baz=220,slow=13,SNR=6.1							
AKTO				LR		LR	15 38 12.2	
	comp=Z,31nm,18.5s,baz=73,slow=44							
KOLS	**Kolonicke sedl**	**18.16**	**313**	*e*P		**P**	**15 30 19.5**	**+1.3**
KOLS	**Kolonicke sedl**	**18.16**	**313**	*e*P		**P**	**15 30 19.5**	**+1.3**
KOLS	**Kolonicke sedl**	**18.16**	**313**	*e*P		**P**	**15 30 19.5**	**+1.3**
KOLS				*e*			15 41 22.0	
CRVS	**Cervenica-Dubn**	**18.62**	**312**	*e*P		**Pn**	**15 30 24.9**	**+1.5**
CRVS	**Cervenica-Dubn**	**18.62**	**312**	*e*P		**Pn**	**15 30 24.9**	**+1.5**
CRVS	**Cervenica-Dubn**	**18.62**	**312**	*e*P		**Pn**	**15 30 24.9**	**+1.5**
CRVS				*e*			15 41 16.5	
VYHS	**Vyhne**	**20.03**	**309**	*e*P		**P**	**15 30 39.4**	**+0.7**
VYHS				pmax	pmax			
	comp=Z,6.0nm,1.4s							
VYHS				pmax	pmax			
	comp=N,12nm,0.8s							
VYHS	**Vyhne**	**20.03**	**309**	*e*P		**P**	**15 30 39.4**	**+0.7**
	comp=N,12nm,0.8s							
VYHS	**Vyhne**	**20.03**	**309**	*e*P		**P**	**15 30 39.4**	**+0.7**
VYHS				*e*			15 41 04.5	
WSAR	**Wadi Sarin**	**20.27**	**133**	LR		LR	15 38 27.0	
	comp=N,74nm,22.0s,baz=314,slow=36							
ARU	**Arti**	**21.13**	**25**	P		**P**	**15 30 50.1**	**-0.4**
	comp=N,2.5nm,0.4s,baz=234,slow=7.2,SNR=7.0							
ARU				LR		LR	15 41 03.4	
	comp=N,15nm,21.4s,baz=190,slow=42							
ARU	**Arti**	**21.13**	**25**	*d* P		**P**	**15 30 50.0**	**-0.5**
ARU				PPP		PPP	15 31 15.7	
ARU				S		**S**	**15 34 47.1**	**+1.2**
ARU				pmax	pmax			
	comp=Z,6.0nm,1.0s							
ARU	**Arti**	**21.13**	**25**	*i* P		**P**	**15 30 50.0**	**-0.5**
	comp=Z,6.0nm,1.0s							
ARU				S		**S**	**15 34 47.1**	**+1.2**
VRAC	**Vranov**	**21.70**	**309**	LR		LR	15 40 27.5	
	comp=Z,47nm,18.4s,baz=165,slow=40							
KLMR	**Klimovskoe**	**22.77**	**356**	*e*P		**P**	**15 31 10.0**	**+2.0**
KLMR				pmax	pmax			
	comp=Z,13nm,1.3s							
KLMR	**Klimovskoe**	**22.77**	**356**	*e*P		**P**	**15 31 10.0**	**+2.0**
	comp=Z,13nm,1.3s							
GERES	**GERESS Array B**	**23.36**	**306**	LR		LR	15 41 38.1	
	comp=Z,38nm,19.3s,baz=116,slow=40							
BVAR	**Borovoye Array**	**24.27**	**43**	P		**P**	**15 31 22.0**	**-0.9**
	comp=Z,0.2nm,0.3s,baz=211,slow=8.2,SNR=2.6							
AAK	**Ala-Archa**	**24.63**	**69**	P		**P**	**15 31 27.0**	**+0.5**
AAK				pmax	pmax			
	comp=Z,12nm,1.9s							
AAK	**Ala-Archa**	**24.63**	**69**	P		**P**	**15 31 27.0**	**+0.5**
	comp=Z,12nm,1.9s							
FINES	**FINESS Array B**	**25.45**	**341**	P		**P**	**15 31 32.1**	**-1.4**
	comp=Z,1.3nm,0.5s,baz=138,slow=10,SNR=12							
FINES				LR		LR	15 42 18.2	
	comp=Z,69nm,19.3s,baz=316,slow=38							
KEST	**Kesra**	**26.59**	**275**	LR		LR	15 44 08.3	
	comp=Z,62nm,19.1s,baz=274,slow=41							
KURBB	**Kurchatov Arra**	**28.25**	**52**	P		**P**	**15 31 58.6**	**-0.2**
	comp=Z,0.2nm,0.4s,baz=260,slow=9.2,SNR=3.9							
KURK	**Kurchatov**	**28.33**	**52**	P		**P**	**15 31 58.6**	**-0.9**
KURK	**Kurchatov**	**28.33**	**52**	P		**P**	**15 31 58.6**	**-0.9**
HFS	**Hagfors**	**28.56**	**330**	P		**P**	**15 31 59.6**	**-1.9**
	comp=Z,1.8nm,0.9s,baz=105,slow=11,SNR=3.2							
NOA	**NORSAR Array B**	**30.08**	**330**	P		**P**	**15 32 14.0**	**-1.0**
	comp=Z,0.5nm,0.8s,baz=125,slow=8.6,SNR=2.2							
MKAR	**Makanchi Array**	**30.26**	**61**	P		**P**	**15 32 16.4**	**-0.3**
	comp=Z,0.3nm,0.4s,baz=270,slow=6.9,SNR=4.3							
ARCES	**ARCESS Array B**	**32.73**	**349**	P		**P**	**15 32 36.7**	**-1.5**
	comp=Z,1.1nm,0.7s,baz=162,slow=12,SNR=3.0							
ARCES				LR		LR	15 47 24.1	
	comp=Z,36nm,19.5s,baz=138,slow=39							
NRIK	**Noril'sk**	**39.34**	**23**	LR		LR	15 53 59.6	
	comp=Z,54nm,18.3s,baz=116,slow=42							
ULN	**Ulaanbaatar**	**46.86**	**56**	P		**P**	**15 34 36.0**	**-0.2**
ULN				pmax	pmax			
	comp=Z,3.0nm,1.7s							
ULN	**Ulaanbaatar**	**46.86**	**56**	P		**P**	**15 34 36.0**	**-0.2**
	comp=Z,3.0nm,1.7s							
BOD	**Bodaibo**	**49.13**	**42**	*e*P		**P**	**15 34 51.5**	**-1.8**
BOD				pmax	pmax			
	comp=Z,2.0nm,1.8s							
BOD	**Bodaibo**	**49.13**	**42**	*e*P		**P**	**15 34 51.5**	**-1.8**
	comp=Z,2.0nm,1.8s							
CMAR	**Chiang Mai Arr**	**52.56**	**95**	P		**P**	**15 35 18.5**	**-1.2**
	comp=Z,1.1nm,0.8s,baz=294,slow=8.3,SNR=6.3							
TIXI	**Tiksi**	**53.12**	**23**	*i* P		**P**	**15 35 24.9**	**+1.8**
TIXI				pmax	pmax			
	comp=Z,5.0nm,2.7s							
TIXI	**Tiksi**	**53.12**	**23**	*i* P		**P**	**15 35 24.9**	**+1.8**
	comp=Z,5.0nm,2.7s							
BILL	**Bilibino**	**66.05**	**20**	*e*P		**P**	**15 36 52.9**	**+0.6**
BILL				pmax	pmax			
	comp=Z,1.0nm,1.1s							
BILL	**Bilibino**	**66.05**	**20**	*e*P		**P**	**15 36 52.9**	**+0.6**
	comp=Z,1.0nm,1.1s							
YKA	**Yellowknife Ar**	**77.99**	**349**	P		**P**	**15 38 03.4**	**-0.6**
	comp=Z,0.1nm,0.5s,baz=15,slow=5.2,SNR=4.3							

CSEM ***30*** *15:31:51.9±0.4, 36.44N×28.73E, h5km, MD2.5, Error ellipse: s-maj=8.4km s-min=3.7km az=26.0*
ISK ***30*** *15:31:51.5, 36.50N×28.73E, h5km, MD2.5*
ISCJB ***30*** *15:31:52.1±1.2, 36.44N±0.06×28.75E±0.06, h8km±6km,*
Error ellipse: s-maj=12.4km s-min=5.4km az=31.6
DDA ***30*** *15:31:52.2, 36.52N×28.79E, h6km, Md2.6*

ISC 30 15:31:51.9±1.4, 36.44N±0.06×28.74E±0.04, h9km±10km, n19, σ0.9s50/30, Dodecanese Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
FETY	**Fethiye**	**0.34**	**55**	*e*PG		**Pg**	**15 31 58.9**	**+0.3**
FETY	**Fethiye**	**0.34**	**55**	*e*Pg		**Pg**	**15 31 58.9**	**+0.3**
DALY	**Dalyan (Mu˘la**	**0.38**	**349**	*e*PG		**Pg**	**15 31 59.0**	**-0.5**
DALY				*e*SG		**Sg**	**15 32 04.4**	**-0.1**
DALY	**Dalyan (Mu˘la**	**0.38**	**349**	*e*Pg		**Pg**	**15 31 59.0**	**-0.5**
DALY				*e*Sg		**Sg**	**15 32 04.4**	**-0.1**
TURN	**Turunc**	**0.45**	**346**	*i* P		**Pb**	**15 32 02.0**	**0.0**
TURN				*i* S		**Sb**	**15 32 10.1**	**+1.4**
AKAS	**Kas**	**0.73**	**106**	*i* P		**Pg**	**15 32 05.6**	**-0.4**
AKAS				*i* S		**Sb**	**15 32 17.1**	**+0.1**
AKAS	**Kas**	**0.73**	**106**	P		**Pg**	**15 32 05.6**	**-0.4**
AKAS				S		**Sb**	**15 32 17.1**	**+0.1**
YER	**Yerkesik**	**0.79**	**332**	*e*PG		**Pg**	**15 32 06.6**	**-0.5**
YER	**Yerkesik**	**0.79**	**332**	*e*Pg		**Pg**	**15 32 06.6**	**-0.5**
ELL	**Elmali**	**0.99**	**72**	*e*PG		**Pb**	**15 32 11.3**	**0.0**
ELL				*e*SG		**Sn**	**15 32 25.9**	**-0.3**
ELL	**Elmali**	**0.99**	**72**	*e*Pg		**Pb**	**15 32 11.3**	**0.0**
ELL				*e*Sg		**Sn**	**15 32 25.9**	**-0.3**
BODT	**Bodrum**	**1.31**	**299**	*e*PN		**Pb**	**15 32 16.9**	**+0.2**
BODT	**Bodrum**	**1.31**	**299**	*e*Pn		**Pb**	**15 32 16.9**	**+0.2**
AYDN	**Tasoluk**	**1.40**	**331**	*i* P		**Pn**	**15 32 18.2**	**+0.5**
AYDN				*i* S		**Sg**	**15 32 37.3**	**+0.3**
AYDN	**Tasoluk**	**1.40**	**331**	P		**Pn**	**15 32 18.2**	**+0.5**
AYDN				S		**Sg**	**15 32 37.3**	**+0.3**
AYDB	**Zeytinkoy-Aydi**	**1.65**	**336**	*e*PN		**Pb**	**15 32 22.1**	**-0.5**
AYDB	**Zeytinkoy-Aydi**	**1.65**	**336**	*e*Pn		**Pb**	**15 32 22.1**	**-0.5**
KHAL	**Karahalli**	**2.02**	**17**	*i* P		**Pn**	**15 32 26.5**	**+0.3**
KHAL				*i* S		**Sn**	**15 32 50.8**	**-0.8**
KHAL	**Karahalli**	**2.02**	**17**	P		**Pn**	**15 32 26.5**	**+0.3**
KHAL				S		**Sn**	**15 32 50.8**	**-0.8**

ISCJB ***30*** *15:40:07.0±0.2, 51.52N±0.01×16.13E±0.02, h0km, mb3.7/10, MS3.4/1, Error ellipse: s-maj=1.9km s-min=1.7km az=4.5*
IPEC ***30*** *15:40:08.7±0.3, 51.55N×16.19E, h0km, ML3.2/3, Error ellipse: s-maj=3.3km s-min=1.7km az=66.0*
MOS ***30*** *15:40:08.5±1.0, 51.59N×16.11E, h10km, mb4.1/6, Error ellipse: s-maj=9.6km s-min=5.1km az=85.9*
LDG ***30*** *15:40:08.2±0.1, 51.56N×16.17E, h1km, Ml3.7/20, Error ellipse: s-maj=3.1km s-min=1.7km az=177.0, Suspected Mining induced.*
IDC ***30*** *15:40:09.9±0.6, 51.50N×15.98E, h0km, mb3.7/7, mb1 3.7/15, mb1mx3.6/53, mbtmp3.7/15, ML3.5/8, MS3.4/1, Ms1 3.4/1, ms1mx2.0/54, Error ellipse: s-maj=9.7km s-min=6.7km az=99.0*
CSEM ***30*** *15:40:09.1±0.1, 51.52N×16.08E, h2km, mb4.0/6, ML3.9/18, Ms3.5, Error ellipse: s-maj=2.3km s-min=2.2km az=122.0*
PRU ***30*** *15:40:10.2, 51.49N×16.10E, h0km*
BGR ***30*** *15:40:11.2±0.4, 51.45N×16.08E, h1km, ML3.6/15, Error ellipse: s-maj=7.8km s-min=3.3km az=16.0*
VIE ***30*** *15:40:13.0±0.6, 51.25N×16.06E, h0km, mb3.0/15, ml3.2/16, ms3.5/1, Error ellipse: s-maj=4.5km s-min=3.5km az=39.0, Suspected Mining induced.*
UPP ***30*** *15:40:15.5±3.0, 51.89N×15.50E, h0km, ML2.0, Suspected explosion*

ISC 30 15:40:08.4±0.5, 51.55N±0.03×16.09E±0.02, h0km, n229, σ1.9s56/328, mb3.8/10, 11C-19D, Poland

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
KSP	**Ksiaz**	**0.72**	**170**	*i* Pg		**Pg**	**15 40 22.9**	**+0.8**
KSP				*i* Sg		**Sg**	**15 40 31.7**	**+0.3**
KSP				*e*			15 40 35.0	
KSP	**Ksiaz**	**0.72**	**170**	P		**Pg**	**15 40 22.9**	**+0.8**
KSP	**Ksiaz**	**0.72**	**170**	P		**Pg**	**15 40 22.9**	**+0.8**
KSP				*i* Sg		**Sg**	**15 40 31.7**	**+0.3**
KSP	**Ksiaz**	**0.72**	**170**	*e*Pg		**Pg**	**15 40 22.9**	**+0.8**
UPC	**Upice**	**1.04**	**183**	*i* PG		**Pg**	**15 40 28.9**	**+0.5**
UPC				*e*SG		**Sg**	**15 40 42.1**	**+0.2**
	comp=Z,408nm,0.4s							
UPC	**Upice**	**1.04**	**183**	P		**Pg**	**15 40 28.8**	**+0.4**
UPC	**Upice**	**1.04**	**183**	P		**Pg**	**15 40 28.8**	**+0.4**
UPC				Sg		**Sg**	**15 40 42.1**	**+0.2**
	408nm,0.4s							
DPC	**Dobruska-Polom**	**1.21**	**173**	*i* PG		**Pg**	**15 40 31.7**	**+0.2**
DPC				*e*SG		**Sg**	**15 40 46.5**	**-0.7**
	comp=Z,133nm,0.3s							
DPC	**Dobruska-Polom**	**1.21**	**173**	P		**Pg**	**15 40 31.6**	**0.0**
DPC	**Dobruska-Polom**	**1.21**	**173**	Pg		**Pg**	**15 40 31.7**	**+0.2**
DPC				Sg		**Sg**	**15 40 46.9**	**-0.3**
DPC	**Dobruska-Polom**	**1.21**	**173**	*e*Pg		**Pg**	**15 40 31.7**	**+0.2**
DPC				*e*Sg		**Sg**	**15 40 46.9**	**-0.3**
PVCC	**Panska Ves**	**1.40**	**224**	*i* PG		**Pg**	**15 40 35.6**	**+0.3**
PVCC				*e*SG		**Sb**	**15 40 54.2**	**+0.3**
	comp=Z,474nm,0.3s							
PVCC	**Panska Ves**	**1.40**	**224**	P		**Pg**	**15 40 35.7**	**+0.4**
PVCC	**Panska Ves**	**1.40**	**224**	Pg		**Pg**	**15 40 35.6**	**+0.3**
PVCC				Sg		**Sb**	**15 40 54.2**	**+0.3**
	474nm,0.3s							
BRG	**Berggiesshubel**	**1.51**	**244**	PN		**Pn**	**15 40 36.7**	**0.0**
BRG				PG		**Pg**	**15 40 38.8**	**+1.4**
BRG				SG		**Sn**	**15 40 58.2**	**+1.1**
	273nm,0.5s							
BRG	**Berggiesshubel**	**1.51**	**244**	P		**Pn**	**15 40 36.7**	**0.0**
BRG							15 40 58.2	
BRG				smax	smax			
	comp=N,273nm,0.5s							
BRG	**Berggiesshubel**	**1.51**	**244**	P		**Pn**	**15 40 36.7**	**0.0**
BRG	**Berggiesshubel**	**1.51**	**244**	*e*Pn		**Pn**	**15 40 36.8**	**+0.1**
BRG				*e*Pg		**Pg**	**15 40 38.7**	**+1.4**
BRG				*e*Sg		**Sn**	**15 40 58.3**	**+1.3**
KRLC	**Kraliky**	**1.54**	**163**	*i* PG		**Pn**	**15 40 37.2**	**0.0**
KRLC				*e*SG		**Sg**	**15 40 56.9**	**-0.9**
KRLC	**Kraliky**	**1.54**	**163**	Pg		**Pn**	**15 40 37.2**	**0.0**
KRLC				Sg		**Sg**	**15 40 56.9**	**-0.9**
PRA	**Prague**	**1.82**	**216**	*e*PN		**Pn**	**15 40 41.4**	**+0.5**
PRA				*e*PG		**Pg**	**15 40 43.7**	**+0.5**
PRA				*e*SG		**Sg**	**15 41 07.0**	**+0.3**
PRA	**Prague**	**1.82**	**216**	Pn		**Pn**	**15 40 41.4**	**+0.5**
FBE	**Freiberg**	**1.83**	**251**	Pn		**Pn**	**15 40 41.7**	**+0.6**
FBE				Sg		**Sg**	**15 41 08.3**	**+1.1**
FBE	**Freiberg**	**1.83**	**251**	*e*Pn		**Pn**	**15 40 41.7**	**+0.6**
FBE				*e*Sg		**Sg**	**15 41 08.3**	**+1.1**
GOPC	**GO Pecny, Ondr**	**1.83**	**207**	*i* PN		**Pn**	**15 40 41.4**	**+0.2**
GOPC				*e*PG		**Pb**	**15 40 43.3**	**+0.5**
GOPC				*e*SG		**Sb**	**15 41 07.0**	**+0.7**
GOPC	**GO Pecny, Ondr**	**1.83**	**207**	Pn		**Pn**	**15 40 41.4**	**+0.2**
GOPC	**GO Pecny, Ondr**	**1.83**	**207**	Pg		**Pb**	**15 40 43.3**	**+0.5**
GOPC				Sg		**Sb**	**15 41 07.0**	**+0.7**
PRU	**Pruhonice**	**1.85**	**213**	*i* PN		**Pn**	**15 40 41.3**	**0.0**
PRU				*e*PG		**Pb**	**15 40 43.1**	**+0.1**
PRU				*e*SG		**Sb**	**15 41 06.9**	**+0.3**
	comp=N,172nm,0.6s							
PRU	**Pruhonice**	**1.85**	**213**	P		**Pn**	**15 40 41.4**	**+0.1**
PRU	**Pruhonice**	**1.85**	**213**	P		**Pn**	**15 40 41.4**	**+0.1**
CLL	**Collm**	**1.95**	**264**	*i* Pn		**Pn**	**15 40 43.1**	**+0.4**
	comp=Z,23nm,0.5s							
CLL				*i* Pg		**Pg**	**15 40 46.3**	**+0.6**
CLL				*i*			15 40 50.4	
CLL				*i* Sg		**Sg**	**15 41 11.7**	**+0.8**
	comp=Z,121nm,0.5s							
CLL	**Collm**	**1.95**	**264**	P		**Pn**	**15 40 42.9**	**+0.2**
CLL	**Collm**	**1.95**	**264**	P		**Pn**	**15 40 42.9**	**+0.2**
CLL	**Collm**	**1.95**	**264**	Pn		**Pn**	**15 40 43.2**	**+0.5**
CLL				Sg		**Sg**	**15 41 12.4**	**+1.5**
CLL	**Collm**	**1.95**	**264**	*e*Pn		**Pn**	**15 40 43.2**	**+0.5**
CLL				*e*Sg		**Sg**	**15 41 12.4**	**+1.5**
RAC	**Raciborz**	**1.98**	**137**	*e*P		**Pb**	**15 40 45.9**	**+0.6**
RAC				*e*			15 41 12.3	
RAC	**Raciborz**	**1.98**	**137**	*e*P		**Pb**	**15 40 45.9**	**+0.6**
RAC				*e*Sg		**Sg**	**15 41 12.3**	**+0.2**
MORC	**Moravsky Berou**	**2.00**	**152**	*i* P		**Pn**	**15 40 43.4**	**0.0**
MORC	**Moravsky Berou**	**2.00**	**152**	P		**Pn**	**15 40 43.5**	**0.0**
MORC	**Moravsky Berou**	**2.00**	**152**	P		**Pn**	**15 40 43.5**	**0.0**
MORC				*e*Sg		**Sb**	**15 41 10.7**	**-0.4**
	comp=Z,122nm,0.5s							
MORC	**Moravsky Berou**	**2.00**	**152**	*e*Pn		**Pn**	**15 40 43.4**	**0.0**
OKC	**Ostrava-Krasne**	**2.16**	**142**	*i* PN		**Pn**	**15 40 45.0**	**-0.6**
OKC				*e*PG		**Pb**	**15 40 49.3**	**+1.0**
OKC				*e*SG		**Sb**	**15 41 16.1**	**+0.6**
	comp=Z,250nm,0.7s							
OKC	**Ostrava-Krasne**	**2.16**	**142**	P		**Pn**	**15 40 46.2**	**+0.6**
OKC	**Ostrava-Krasne**	**2.16**	**142**	P		**Pn**	**15 40 45.0**	**-0.6**
OKC	**Ostrava-Krasne**	**2.16**	**142**	P		**Pn**	**15 40 46.2**	**+0.6**
OKC	**Ostrava-Krasne**	**2.16**	**142**	*e*Pn		**Pb**	**15 40 48.9**	**+0.6**
OKC				*e*Sg		**Sb**	**15 41 16.1**	**+0.6**
CHZP	**Chorzow**	**2.23**	**123**	*i* PN		**Pn**	**15 40 45.9**	**-0.7**
CHZP				*i* PG		**Pg**	**15 40 51.6**	**+0.5**
CHZP				*i* SG		**Sb**	**15 41 18.6**	**+1.0**
VRAC	**Vranov**	**2.27**	**172**	Pn		**Pn**	**15 40 47.7**	**+0.6**
	comp=Z,8.3nm,0.3s,baz=336,slow=14,SNR=41							
VRAC				Sn		**Sb**	**15 41 19.7**	**+1.0**
	comp=Z,22nm,0.3s,baz=257,slow=20,SNR=12							
VRAC	**Vranov**	**2.27**	**172**	*i* P		**Pn**	**15 40 47.8**	**+0.6**
VRAC	**Vranov**	**2.27**	**172**	S		**Sg**	**15 41 20.4**	**-0.8**
VRAC	**Vranov**	**2.27**	**172**	*e*Pn		**Pn**	**15 40 47.3**	**+0.2**
VRAC	**Vranov**	**2.27**	**172**	P		**Pn**	**15 40 47.7**	**+0.6**
	comp=Z,8.0nm,0.3s							
VRAC				*e*Sg		**Sb**	**15 41 19.4**	**+0.7**
	comp=Z,127nm,0.5s							
VRAC				S		**Sb**	**15 41 19.7**	**+1.0**
	comp=Z,22nm,0.3s							
TREC	**Trest**	**2.29**	**190**	*i* PN		**Pn**	**15 40 48.0**	**+0.6**
TREC				*e*SG		**Sb**	**15 41 20.9**	**+1.5**
	comp=Z,133nm,0.5s							
TREC	**Trest**	**2.29**	**190**	P		**Pn**	**15 40 47.4**	**0.0**
TREC	**Trest**	**2.29**	**190**	P		**Pn**	**15 40 47.4**	**0.0**
TREC	**Trest**	**2.29**	**190**	Pn		**Pn**	**15 40 48.0**	**+0.6**
TREC				Sg		**Sb**	**15 41 20.9**	**+1.5**
	comp=Z,133nm,0.5s							
KRUC	**Moravsky**	**2.50**	**175**	*e*Pn		**Pn**	**15 40 50.6**	**+0.3**
KRUC				*e*Sg		**Sb**	**15 41 27.0**	**+1.6**
	comp=Z,110nm,0.7s							
TANN	**Tannenbergstha**	**2.56**	**245**	Sg		**Sg**	**15 41 29.7**	**-0.9**
TANN	**Tannenbergstha**	**2.56**	**245**	*e*Sg		**Sg**	**15 41 29.7**	**-0.9**
WERD	**Werda**	**2.63**	**247**	Pn		**Pn**	**15 40 53.1**	**+1.0**
WERD	**Werda**	**2.63**	**247**	*e*Pn		**Pn**	**15 40 53.1**	**+1.0**
NKC	**Novy Kostel**	**2.66**	**242**	*i* PN		**Pn**	**15 40 53.3**	**+0.8**
NKC				*e*PG		**Pg**	**15 41 00.2**	**+0.9**
NKC				*e*SG		**Sg**	**15 41 35.1**	**+1.4**
	comp=Z,156nm,0.3s							
NKC	**Novy Kostel**	**2.66**	**242**	P		**Pn**	**15 40 53.5**	**+1.0**
NKC	**Novy Kostel**	**2.66**	**242**	Pn		**Pn**	**15 40 53.3**	**+0.8**
NKC	**Novy Kostel**	**2.66**	**242**	Pg		**Pg**	**15 41 00.2**	**+0.9**
NKC				Sg		**Sg**	**15 41 35.1**	**+1.4**
	comp=Z,156nm,0.3s							
OJC	**Ojcow**	**2.70**	**118**	*e*Pn		**Pn**	**15 40 51.7**	**-1.4**
OJC				*e*Pg		**Pg**	**15 41 00.4**	**+0.3**
OJC				*e*Sg		**Sg**	**15 41 36.2**	**+1.1**
OJC	**Ojcow**	**2.70**	**118**	Pn		**Pn**	**15 40 53.7**	**+0.6**
OJC	**Ojcow**	**2.70**	**118**	*e*Pn		**Pn**	**15 40 53.7**	**+0.6**
OJC				*e*Pg		**Pg**	**15 41 00.7**	**+0.6**
KHC	**Kasperske Hory**	**2.91**	**215**	*i* PN		**Pn**	**15 40 56.2**	**+0.3**
KHC				*e*PG		**Pb**	**15 41 02.5**	**+1.4**
KHC				*e*SN		**Sn**	**15 41 30.0**	**-1.6**
KHC				*e*SG		**Sg**	**15 41 40.9**	**-0.8**
	comp=Z,68nm,0.6s							
KHC	**Kasperske Hory**	**2.91**	**215**	P		**Pn**	**15 40 56.6**	**+0.7**
KHC	**Kasperske Hory**	**2.91**	**215**	Pn		**Pn**	**15 40 56.2**	**+0.3**
KHC	**Kasperske Hory**	**2.91**	**215**	P		**Pn**	**15 40 56.6**	**+0.7**
MOX	**Moxa**	**2.96**	**254**	Pn		**Pn**	**15 40 57.6**	**+0.9**
MOX	**Moxa**	**2.96**	**254**	Pg		**Pg**	**15 41 05.8**	**+0

BJUU	**Bjuv**	**4.88**	**339**	P		**Pn**	**15 41 22.6**	**-0.4**
BJUU				S		**Sn**	**15 42 16.3**	**-3.9**
BJUU	**Bjuv**	**4.88**	**339**	P		**Pn**	**15 41 22.6**	**-0.4**
SOKA	**Soboth**	**4.92**	**189**	*i* Pn		**Pn**	**15 41 25.0**	**+1.3**
	comp=N,1,2nm,0.2s							
SOKA				*e*Sg		**Sg**	**15 42 43.8**	**-2.7**
	comp=N,8.0nm,0.6s							
SOKA	**Soboth**	**4.92**	**189**	Pn		**Pn**	**15 41 25.0**	**+1.3**
	comp=N,1.2nm,0.2s							
SOKA				Sg		**Sg**	**15 42 43.8**	**-2.7**
	comp=N,8.0nm,0.6s							
UZH	**Uzhgorod**	**4.95**	**124**	*e*P		**Pn**	**15 41 26.8**	**+2.9**
UZH				*e*S		**Sn**	**15 42 24.2**	**+2.4**
UZH	**Uzhgorod**	**4.95**	**124**	*e*P		**Pn**	**15 41 26.8**	**+2.9**
UZH				*e*S		**Sn**	**15 42 24.2**	**+2.4**
WATA	**Walderalm**	**5.14**	**217**	*i* Pn		**Pn**	**15 41 28.3**	**+1.5**
	comp=N,10nm,0.5s,SNR=7.6							
WATA				*e*Sg		**Sg**	**15 42 55.1**	**+1.6**
	comp=N,23nm,0.7s							
WATA	**Walderalm**	**5.14**	**217**	Pn		**Pn**	**15 41 28.3**	**+1.5**
	comp=N,10nm,0.5s,SNR=7.6							
WATA				Sg		**Sg**	**15 42 55.1**	**+1.6**
	comp=N,23nm,0.7s							
OBKA	**Obir**	**5.14**	**192**	*i* Pn		**Pn**	**15 41 29.0**	**+2.2**
	comp=N,2.2nm,0.3s							
OBKA	**Obir**	**5.14**	**192**	Pn		**Pn**	**15 41 29.0**	**+2.2**
	comp=N,2.2nm,0.3s							
WTTA	**Wattenberg**	**5.18**	**216**	*i* Pn		**Pn**	**15 41 29.2**	**+1.9**
	comp=N,2.8nm,0.3s,SNR=5.5							
WTTA				Sg		**Sg**	**15 42 54.2**	**-0.5**
	comp=N,27nm,0.6s							
WTTA	**Wattenberg**	**5.18**	**216**	Pn		**Pn**	**15 41 29.2**	**+1.9**
	comp=N,2.8nm,0.3s,SNR=5.5							
WTTA				Sg		**Sg**	**15 42 54.2**	**-0.5**
	comp=N,27nm,0.6s							
MOTA	**Moosalm**	**5.32**	**220**	*e*Pn		**Pn**	**15 41 29.5**	**+0.3**
	comp=N,8.0nm,0.4s,SNR=9.8							
MOTA				Sg		**Sg**	**15 42 59.4**	**+0.2**
	comp=N,16nm,0.6s							
MOTA	**Moosalm**	**5.32**	**220**	Pn		**Pn**	**15 41 29.5**	**+0.3**
	comp=N,8.0nm,0.4s,SNR=9.8							
MOTA				Sg		**Sg**	**15 42 59.4**	**+0.2**
	comp=N,16nm,0.6s							
LVV	**L'vov**	**5.34**	**106**	*e*P		**Pn**	**15 41 29.8**	**+0.5**
LVV				*e*S		**Sn**	**15 42 30.6**	**-0.8**
LVV	**L'vov**	**5.34**	**106**	*e*P		**Pn**	**15 41 29.8**	**+0.5**
LVV				*e*S		**Sn**	**15 42 30.6**	**-0.8**
RETA	**Reutte**	**5.34**	**223**	*i* Pn		**Pn**	**15 41 30.0**	**+0.6**
	comp=N,3.3nm,0.4s							
RETA	**Reutte**	**5.34**	**223**	Pn		**Pn**	**15 41 30.0**	**+0.6**
	comp=N,3.3nm,0.4s							
VXJU	**Vaexsjoe**	**5.43**	**353**	P		**Pn**	**15 41 31.4**	**+0.9**
VXJU	**Vaexsjoe**	**5.43**	**353**	P		**Pn**	**15 41 31.4**	**+0.9**
PKSM	**Moragy**	**5.60**	**162**⇓	*i*P		**Pn**	**15 41 34.4**	**+1.5**
PKSM	**Moragy**	**5.60**	**162**⇓	*e*Pn		**Pn**	**15 41 34.2**	**+1.3**
FETA	**Feichten**	**5.73**	**220**	*i* Pn		**Pn**	**15 41 35.7**	**+0.9**
	comp=N,0.9nm,0.2s							
FETA	**Feichten**	**5.73**	**220**	Pn		**Pn**	**15 41 35.7**	**+0.9**
	comp=N,0.9nm,0.2s							
WTSB	**Winterswijk**	**5.79**	**278**	*e*S		Sg	15 43 25.0	+11
FABU	**Falkenberg**	**5.81**	**341**	P		**Pn**	**15 41 35.6**	**0.0**
FABU	**Falkenberg**	**5.81**	**341**	P		**Pn**	**15 41 35.7**	**0.0**
DAVA	**Damuels**	**5.88**	**226**	*i* Pn		**Pn**	**15 41 37.3**	**+0.4**
	comp=N,4.0nm,0.3s							
DAVA	**Damuels**	**5.88**	**226**	Pn		**Pn**	**15 41 37.3**	**+0.4**
	comp=N,4.0nm,0.3s							
GNOU	**Gnosjoe**	**5.91**	**348**	P		**Pn**	**15 41 37.6**	**+0.4**
GNOU	**Gnosjoe**	**5.91**	**348**	P		**Pn**	**15 41 37.6**	**+0.4**
DAVOX	**Davos/Dischmat**	**6.27**	**223**	Pn		**Pn**	**15 41 43.3**	**+1.0**
	comp=N,1.4nm,0.3s,baz=47,slow=8.3,SNR=13							
DAVOX				Sn		**Sn**	**15 42 50.7**	**-4.0**
	comp=N,0.5nm,0.3s,baz=342,slow=20,SNR=2.0							
DAVOX				Lg		Lg	15 43 28.5	
	comp=N,1.2nm,0.3s,baz=163,slow=19,SNR=5.5							
HGN	**Heimansgroeve**	**6.44**	**267**	*e*S		**Sg**	**15 43 40.1**	**+5.0**
CDF	**Champ du Feu**	**6.49**	**245**	*e*Pn		**Pn**	**15 41 43.4**	**-1.8**
CDF				*e*Sg		**Sg**	**15 43 32.6**	**-4.2**
	comp=N,66nm,0.9s							
CDF	**Champ du Feu**	**6.49**	**245**	*e*Pn		**Pn**	**15 41 43.4**	**-1.8**
FKPU	**Falk**	**6.76**	**349**	P		**Pn**	**15 41 49.7**	**+0.9**
FKPU	**Falk**	**6.76**	**349**	P		**Pn**	**15 41 49.7**	**+0.9**
BZS	**Buzias**	**6.97**	**146**⇑	*i*P		**Pn**	**15 41 52.8**	**+1.0**
VIKU	**Vikbolandet**	**6.98**	**3**	P		**Pn**	**15 41 52.6**	**+0.9**
VIKU	**Vikbolandet**	**6.98**	**3**	P		**Pn**	**15 41 52.6**	**+0.9**
HINF	**Hinteralfeld**	**7.06**	**242**	*e*Pn		**Pn**	**15 41 51.3**	**-1.7**
HINF				*e*Sg		**Sg**	**15 43 50.8**	**-4.2**
	comp=N,21nm,0.6s							
HINF	**Hinteralfeld**	**7.06**	**242**	*e*Pn		**Pn**	**15 41 51.3**	**-1.7**
BURAR	**Bucovina Array**	**7.12**	**120**⇑	*i*P		**Pn**	**15 41 54.3**	**+0.5**
HAU	**Haudompre**	**7.24**	**244**	*e*Pn		**Pn**	**15 41 53.9**	**-1.5**
HAU				*e*Sg		**Sg**	**15 43 56.0**	**-4.6**
	comp=N,29nm,0.7s							
HAU	**Haudompre**	**7.24**	**244**	*e*Pn		**Pn**	**15 41 53.9**	**-1.5**
GIVF	**Givet**	**7.28**	**263**	*e*Pn		**Pn**	**15 41 54.6**	**-1.4**
GIVF				*e*Sg		**Sg**	**15 43 57.7**	**-4.5**
	comp=N,30nm,0.7s							
GIVF	**Givet**	**7.28**	**263**	*e*Pn		**Pn**	**15 41 54.6**	**-1.4**
PAGF	**Fort de Pagny**	**7.32**	**250**	*e*Pn		**Pn**	**15 41 54.2**	**-2.2**
	baz=64							
PAGF				*e*Sg		**Sg**	**15 43 58.9**	**-4.3**
	comp=N,20nm,1.2s							
NYNU	**Nynaeshamn**	**7.55**	**8**	P		**Pn**	**15 42 00.4**	**+0.8**
NYNU	**Nynaeshamn**	**7.55**	**8**	P		**Pn**	**15 42 00.4**	**+0.8**
NASU	**Vaermlandsnaes**	**7.58**	**349**	P		**Pn**	**15 42 00.7**	**+0.7**
NASU	**Vaermlandsnaes**	**7.58**	**349**	P		**Pn**	**15 42 00.7**	**+0.7**
GZR	**Gura Zlata**	**7.59**	**142**⇑	*i*P		**Pn**	**15 42 02.3**	**+2.0**
GZR	**Gura Zlata**	**7.59**	**142**⇑	*i*P		**Pn**	**15 42 02.3**	**+2.0**
ESKU	**Eskilstuna**	**7.70**	**1**	P		**Pn**	**15 42 02.6**	**+1.0**
ESKU	**Eskilstuna**	**7.70**	**1**	P		**Pn**	**15 42 02.6**	**+1.0**
MEZF	**Maizieres J'vi**	**7.74**	**251**	*e*Pn		**Pn**	**15 42 00.0**	**-2.2**
	baz=71							
MEZF				*e*Sg		**Sg**	**15 44 11.6**	**-5.1**
	comp=N,40nm,1.1s							
MDVR	**Moldovita**	**7.74**	**149**⇓	*i*P		Pn	15 41 56.1	-6.3
SFTF	**Sexfontaines**	**7.88**	**249**	*e*Pn		**Pn**	**15 42 02.2**	**-2.0**
SFTF				*e*Sg		**Sg**	**15 44 16.3**	**-5.1**
	comp=N,22nm,0.8s							
CABF	**La Chapelle**	**8.21**	**237**	*e*Pn		**Pn**	**15 42 06.8**	**-2.1**
CABF				*e*Sg		**Sg**	**15 44 26.8**	**-5.2**
	comp=N,110nm,1.4s							
KIEV	**Kiev**	**8.30**	**91**⇓	*e*P		**Pn**	**15 42 09.3**	**-0.6**
KIEV				pmax		pmax		
	comp=Z,7.0nm,0.5s							
KIEV	**Kiev**	**8.30**	**91**	*e*P		**Pn**	**15 42 09.3**	**-0.6**
	comp=Z,7.0nm,0.5s							
AKASG	**Malin Array Be**	**8.31**	**91**	Pn		**Pn**	**15 42 09.1**	**-0.9**
	comp=Z,3.1nm,0.3s,baz=280,slow=12,SNR=15							
AKASG				Sn		**Sn**	**15 43 39.9**	**-4.6**
	comp=Z,1.5nm,0.3s,baz=274,slow=23,SNR=4.3							
AKASG				Lg		Lg	15 44 34.4	
	baz=277,slow=29,SNR=3.1							
AKASG	**Malin Array Be**	**8.31**	**91**	*e*P		**Pn**	**15 42 11.1**	**+1.1**
AKASG				pmax		pmax		
	comp=Z,3.0nm,0.3s							
AKASG	**Malin Array Be**	**8.31**	**91**	*e*P		**Pn**	**15 42 11.1**	**+1.1**
	comp=Z,3.0nm,0.3s							
MTSE	**Matsula**	**8.43**	**29**	*e*P		**Pn**	**15 42 11.3**	**-0.3**
	SNR=46							
LPL	**La Plagne**	**8.66**	**229**	*e*Pn		**Pn**	**15 42 12.8**	**-2.2**
LPL				*e*Sn		Sn	15 43 46.0	-7.4
	comp=Z,1.7nm,0.6s							
LPG	**La Plagne**	**8.66**	**229**	*e*Pn		**Pn**	**15 42 13.0**	**-2.2**
LPG				*e*Sn		Sn	15 43 46.1	-7.5
	comp=Z,1.5nm,0.5s							
HFS	**Hagfors**	**8.71**	**352**	Pn		**Pn**	**15 42 16.0**	**+0.5**
	comp=Z,0.3nm,0.3s,baz=178,slow=16,SNR=8.0							
HFS				Sn		**Sn**	**15 43 49.3**	**-5.0**
	comp=Z,0.4nm,0.3s,baz=169,slow=24,SNR=3.6							
LOR	**Lormes**	**9.05**	**247**	*e*Pn		**Pn**	**15 42 18.3**	**-1.9**
	baz=69							
LOR				*e*Sg		Sn	15 44 53.2	+50
	comp=Z,26nm,1.1s							
VSU	**Vasula**	**9.23**	**37**⇑	*e*P		**Pn**	**15 42 23.8**	**+1.2**
VSU	**Vasula**	**9.23**	**37**	*e*P		**Pn**	**15 42 23.8**	**+1.2**
MBDF	**Montbardon**	**9.24**	**226**	*e*Pn		**Pn**	**15 42 20.9**	**-2.0**
MBDF				*e*Sn		Sn	15 43 59.5	-8.1
	comp=Z,5.3nm,0.8s							
SSF	**Saint Saulge**	**9.36**	**246**	*e*Pn		**Pn**	**15 42 22.8**	**-1.7**
SSF				*e*Sg		Sn	15 45 02.5	+52
	comp=Z,14nm,0.9s							
SSF	**Saint Saulge**	**9.36**	**246**	*e*Pn		**Pn**	**15 42 22.8**	**-1.7**
SMF	**Signal de Mont**	**9.41**	**243**	*e*Pn		**Pn**	**15 42 23.3**	**-1.9**
SMF				*e*Sg		Sn	15 45 04.2	+53
	comp=Z,38nm,1.2s							
SMF	**Signal de Mont**	**9.41**	**243**	*e*Pn		**Pn**	**15 42 23.3**	**-1.9**
ORIF	**Oris-en-Rattie**	**9.50**	**230**	*e*Pn		**Pn**	**15 42 24.3**	**-2.2**
ORIF				*e*Sn		Sn	15 44 06.1	-7.9
	comp=Z,1.4nm,0.4s							
AVF	**Avril sur Loir**	**9.60**	**245**	*e*Pn		**Pn**	**15 42 25.6**	**-2.2**
AVF				*e*Sg		Sn	15 45 10.1	+54
	comp=Z,22nm,1.2s							
MEF	**Metsahovi**	**9.85**	**25**	*e*P		**Pn**	**15 42 32.7**	**+1.6**
	SNR=46							
NOA	**NORSAR Array B**	**9.89**	**346**	Pn		**Pn**	**15 42 30.3**	**-1.4**
	comp=Z,0.3nm,0.3s,baz=127,slow=15,SNR=5.7							
NOA				Sn		**Sn**	**15 44 18.2**	**-5.1**
	comp=Z,0.2nm,0.3s,baz=126,slow=19,SNR=3.4							
FINES	**FINESS Array B**	**11.33**	**25**	Pn		**Pn**	**15 42 50.3**	**-1.1**
	comp=Z,0.5nm,0.3s,baz=208,slow=11,SNR=18							
FINES				Sn		Sn	15 44 51.9	-6.6
	comp=Z,0.6nm,0.3s,baz=208,slow=21,SNR=5.9							
FINES	**FINESS Array B**	**11.33**	**25**	*e*P		**Pn**	**15 42 50.6**	**-0.8**
FINES				pmax		pmax		
	comp=Z,1.0nm,0.3s							
FINES	**FINESS Array B**	**11.33**	**25**	*e*P		**Pn**	**15 42 50.6**	**-0.8**
	comp=Z,1.0nm,0.3s							
EKA	**Eskdalemuir Ar**	**12.08**	**296**	Pn		**Pn**	**15 42 59.5**	**-2.1**
	baz=105,slow=14,SNR=4.6							
ANN	**Anapa**	**15.72**	**107**	*e*P		Pn	15 43 46.5	-4.6
ANN				*e*S		**Sn**	**15 46 39.2**	**-6.6**
ANN				pmax		pmax		
	comp=Z,29nm,1.1s							
KLMR	**Klimovskoe**	**15.94**	**45**	*e*P		**Pn**	**15 43 52.7**	**-1.0**
KLMR				pmax		pmax		
	comp=Z,6.0nm,1.4s							
ARCES	**ARCESS Array B**	**18.59**	**10**	Pn		**P**	**15 44 23.9**	**-2.8**
	comp=Z,0.5nm,0.3s,baz=190,slow=14,SNR=16							
ARU	**Arti**	**25.13**	**62**	P		**P**	**15 45 36.1**	**+1.4**
	comp=Z,1.8nm,0.4s,baz=306,slow=0.5,SNR=4.0							
ARU	**Arti**	**25.13**	**62**	*d* P		**P**	**15 45 35.3**	**+0.6**
ARU							15 46 07.8	
ARU				S		**S**	**15 50 02.9**	**+2.7**
ARU				SS		**SnSn**	**15 50 53.8**	**+4.9**
ARU				pmax		pmax		
	comp=Z,3.0nm,1.0s							
ARU	**Arti**	**25.13**	**62**	*i* P		**P**	**15 45 35.3**	**+0.6**
	comp=Z,3.0nm,1.0s							
ARU				S		**S**	**15 50 02.9**	**+2.7**
AKTK	**Aktyubinsk**	**26.16**	**76**	P		**P**	**15 45 45.1**	**+1.0**
	comp=Z,1.0nm,0.3s							
AKTO	**Aktyubinsk**	**26.16**	**76**	P		**P**	**15 45 45.1**	**+1.0**
	comp=Z,0.6nm,0.3s,baz=294,slow=13,SNR=4.3							
BRVK	**Borovoye**	**32.51**	**66**⇑	*e*P		**P**	**15 46 42.6**	**+2.1**
BRVK				pmax		pmax		
	comp=Z,2.0nm,1.3s							
BRVK	**Borovoye**	**32.51**	**66**	*e*P		**P**	**15 46 42.6**	**+2.1**
	comp=Z,2.0nm,1.3s							
BVAR	**Borovoye Array**	**32.58**	**66**	P		**P**	**15 46 43.3**	**+2.1**
	comp=Z,0.7nm,0.6s,baz=286,slow=6.9,SNR=5.3							
AAK	**Ala-Archa**	**39.78**	**79**⇑	*e*P		**P**	**15 47 44.7**	**+1.7**
AAK				pmax		pmax		
	comp=Z,9.0nm,1.6s							
AAK	**Ala-Archa**	**39.78**	**79**	*e*P		**P**	**15 47 44.7**	**+1.7**
	comp=Z,9.0nm,1.6s							
TORD	**Torodi Ar. Bea**	**40.03**	**202**	P		**P**	**15 47 46.1**	**+1.0**
	comp=Z,0.6nm,0.6s,baz=8,9,slow=8.7,SNR=4.7							
ZALV	**Zalesovo Beam**	**40.19**	**59**	LR		LR	16 05 37.2	
	comp=Z,44nm,18.3s,baz=89,slow=38							
MKAR	**Makanchi Array**	**42.21**	**69**	P		**P**	**15 48 04.3**	**+1.5**
	comp=Z,0.2nm,0.4s,baz=299,slow=5.9,SNR=3.3							
YKA	**Yellowknife Ar**	**59.82**	**336**	P		**P**	**15 50 16.6**	**+1.7**
	comp=Z,0.6nm,0.7s,baz=30,slow=6.6,SNR=11							
PDAR	**Pinedale Array**	**74.90**	**322**	P		**P**	**15 51 52.9**	**+1.8**
	comp=Z,0.2nm,0.5s,baz=57,slow=5.5,SNR=3.8							

*DDA **30** 15:43:58.6,40˚.29N×29˚.12E,h5km,Md2.8*
*ISK **30** 15:43:58.4,40˚.29N×29˚.14E,h8km,MD2.6*
*CSEM **30** 15:43:59.0±0.1,40˚.28N×29˚.15E,h2km,MD2.6,Error ellipse: s-maj=2.3km s-min=2.0km az=147.0*
ISC 30 15:43:58.9±1.1,40˚.28N±0˚.02×29˚.15E±0˚.02,h1km±10km, n49,σ0s53/72,Turkey

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
					Op	ISC	h m s	ISC
IGD	**Bursa**	**0.04**	**108**	*i* P		**Pg**	**15 43 58.9**	**-0.9**
ULDT	**Uludag**	**0.14**	**183**	*i* P		**Pg**	**15 44 01.8**	**+0.2**
ULDT	**Uludag**	**0.14**	**183**	P		**Pg**	**15 44 01.8**	**+0.2**
GEMT	**Gemlik**	**0.16**	**12**	*e*Pg		**Pg**	**15 44 02.2**	**+0.2**
GEMT				*e*SG		**Sg**	**15 44 04.9**	**+0.8**
GEMT	**Gemlik**	**0.16**	**12**	*e*Pg		**Pg**	**15 44 02.2**	**+0.2**
GEMT				*e*Sg		**Sg**	**15 44 04.9**	**+0.8**
MDNY	**Mudanya-Bursa**	**0.22**	**295**	*e*PG		**Pg**	**15 44 03.1**	**0.0**
MDNY				*e*SG		**Sg**	**15 44 06.8**	**+0.8**
MDNY	**Mudanya-Bursa**	**0.22**	**295**	*e*Pg		**Pg**	**15 44 03.1**	**0.0**
MDNY				*e*Sg		**Sg**	**15 44 06.8**	**+0.8**
IZI	**Iznik**	**0.26**	**77**	*e*PG		**Pg**	**15 44 04.1**	**+0.2**
IZI	**Iznik**	**0.26**	**77**	*e*Pg		**Pg**	**15 44 04.1**	**+0.2**
ORLT	**Orhaneli**	**0.30**	**220**	*e*PG		**Pg**	**15 44 05.0**	**+0.4**
ORLT	**Orhaneli**	**0.30**	**220**	*e*Pg		**Pg**	**15 44 05.0**	**+0.4**
ARMT	**Armutlu**	**0.36**	**323**	*e*PG		**Pg**	**15 44 05.8**	**0.0**
ARMT				*e*SG		**Sg**	**15 44 11.3**	**+0.8**
ARMT	**Armutlu**	**0.36**	**323**	*e*Pg		**Pg**	**15 44 05.8**	**0.0**
ARMT				*e*Sg		**Sg**	**15 44 11.3**	**+0.8**
ADVT	**Abdulvahap**	**0.48**	**71**	*e*PG		**Pg**	**15 44 08.2**	**+0.1**
ADVT	**Abdulvahap**	**0.48**	**71**	*e*Pg		**Pg**	**15 44 08.2**	**+0.1**
CAVI	**Cavuskoy**	**0.54**	**98**	*e*PG		**Pg**	**15 44 08.8**	**-0.5**
CAVI	**Cavuskoy**	**0.54**	**98**	*e*Pg		**Pg**	**15 44 08.8**	**-0.5**
BUY	**Buyukada**	**0.57**	**358**	*i* P		**Pg**	**15 44 10.1**	**+0.2**
BUY	**Buyukada**	**0.57**	**358**	P		**Pg**	**15 44 10.1**	**+0.2**
KCTX	**Karacabey (Bur**	**0.60**	**269**	*e*PG		**Pg**	**15 44 10.0**	**-0.5**
KCTX	**Karacabey (Bur**	**0.60**	**269**	*e*Pg		**Pg**	**15 44 10.0**	**-0.5**
HRT	**Hereke**	**0.67**	**36**	*e*PG		**Pg**	**15 44 11.5**	**-0.3**
HRT	**Hereke**	**0.67**	**36**	*e*Pg		**Pg**	**15 44 11.5**	**-0.3**
DURS	**Dursunbey**	**0.85**	**218**	*i* P		**Pb**	**15 44 16.2**	**-0.3**
DURS				*i* S		**Sb**	**15 44 27.8**	**-0.6**
DURS	**Dursunbey**	**0.85**	**218**	P		**Pb**	**15 44 16.2**	**-0.3**
DURS				S		**Sb**	**15 44 27.8**	**-0.6**
TVSB	**Tavsanli**	**0.86**	**164**	*e*PG		**Pg**	**15 44 15.6**	**+0.2**
TVSB	**Tavsanli**	**0.86**	**164**	*e*Pg		**Pg**	**15 44 15.6**	**+0.2**
KLYT	**Kilyos**	**0.98**	**355**	*e*PG		**Pg**	**15 44 17.6**	**-0.1**
KLYT	**Kilyos**	**0.98**	**355**	*e*Pg		**Pg**	**15 44 17.6**	**-0.1**
EDC	**Edincik**	**0.98**	**274**	*e*PG		**Pg**	**15 44 17.8**	**0.0**
EDC				*e*SG		**Sb**	**15 44 31.7**	**-0.5**
EDC	**Edincik**	**0.98**	**274**	*e*Pg		**Pg**	**15 44 17.8**	**0.0**
EDC				*e*Sg		**Sb**	**15 44 31.7**	**-0.5**
GULT	**Gulveren**	**1.06**	**81**	*e*PG		**Pg**	**15 44 19.3**	**+0.1**
GULT	**Gulveren**	**1.06**	**81**	*e*Pg		**Pg**	**15 44 19.3**	**+0.1**
CTKS	**Kestanelik-??a**	**1.07**	**333**	*e*PG		**Pg**	**15 44 19.1**	**-0.4**
CTKS				*e*SG		**Sb**	**15 44 34.5**	**-0.3**
CTKS	**Kestanelik-??a**	**1.07**	**333**	*e*Pg		**Pg**	**15 44 19.1**	**-0.4**
CTKS				*e*Sg		**Sb**	**15 44 34.5**	**-0.3**
BORA	**Eskisehir**	**1.08**	**111**	*i* P		**Pb**	**15 44 20.2**	**-0.2**
BORA				*i* S		**Sn**	**15 44 37.9**	**+1.0**
BORA	**Eskisehir**	**1.08**	**111**	P		**Pb**	**15 44 20.2**	**-0.2**
BORA				S		**Sn**	**15 44 37.9**	**+1.0**
KAND	**Kocaeli-Kandir**	**1.14**	**44**	*i* P		**Pg**	**15 44 20.9**	**+0.2**
KAND				*i* S		**Sn**	**15 44 38.1**	**-0.1**
KAND	**Kocaeli-Kandir**	**1.14**	**44**	P		**Pg**	**15 44 20.9**	**+0.2**
KAND				S		**Sn**	**15 44 38.1**	**-0.1**
GDZ	**Gediz**	**1.22**	**168**	*i* P		**Pg**	**15 44 22.0**	**-0.2**
GDZ				*i* S		**Sn**	**15 44 41.2**	**+0.9**
GDZ	**Gediz**	**1.22**	**168**	P		**Pg**	**15 44 22.0**	**-0.2**
DEMI	**Demirci**	**1.28**	**195**	*i* P		**Pg**	**15 44 23.4**	**0.0**
DEMI				*i* S		**Sn**	**15 44 42.6**	**+0.9**
DEMI	**Demirci**	**1.28**	**195**	P		**Pg**	**15 44 23.4**	**0.0**
DEMI				S		**Sn**	**15 44 42.6**	**+0.9**
BALY	**Balya**	**1.29**	**246**	*i* P		**Pg**	**15 44 23.6**	**-0.1**
BALY				*i* S		**Sg**	**15 44 40.6**	**+0.4**
BALY	**Balya**	**1.29**	**246**	P		**Pg**	**15 44 23.5**	**-0.1**
BALY				S		**Sg**	**15 44 40.7**	**+0.4**
SAHE	**Sakarya_HENDEK**	**1.42**	**66**	*i* P		**Pn**	**15 44 25.1**	**-0.8**
SAHE				*i* S		**Sn**	**15 44 46.6**	**+1.4**
SAHE	**Sakarya_HENDEK**	**1.42**	**66**	P		**Pn**	**15 44 25.1**	**-0.8**
SAHE				S		**Sn**	**15 44 46.6**	**+1.4**
RKY	**Sarkoy-Tekirda**	**1.56**	**286**	*e*PN		**Pn**	**15 44 27.2**	**-0.6**
RKY	**Sarkoy-Tekirda**	**1.56**	**286**	*e*Pn		**Pn**	**15 44 27.2**	**-0.6**

*IDC **30** 15:49:36.7±3.1,6˚.81S×77˚.01W,h19km±21km,mb3.9/12, mb1 4.1/17,mb1mx4.0/34,mbtmp4.1/17,ML4.0/4,MS3.4/6, Ms1 3.4/6,ms1mx3.1/26,Error ellipse: s-maj=20.8km s-min=13.1km az=40.0*
*ISCJB **30** 15:49:38.7±0.3,6˚.81S±0˚.04×76˚.79W±0˚.05,h51km, mb4.1/16,MS3.5/1,Error ellipse: s-maj=8.1km s-min=5.0km az=159.0*

*NEIC **30** 15:49:40.0,6˚.92S×77˚.10W,h45km,mb4.5/4,After ARE.*
ISC 30 15:49:40.4±0.5,6˚.86S±0˚.05×76˚.83W±0˚.08,h51km,n47, σ1s18/50,mb4.2/16,Northern Peru

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
					Op	ISC	h m s	ISC
ATAH	**Atahualpa**	**1.58**	**260**	Pg		**Pn**	**15 50 03.7**	**-2.8**
	999nm,0.3s,baz=41,slow=5.6,SNR=2221							
ATAH				Lg		Lg	15 50 20.9	
	544nm,0.3s,baz=258,slow=12,SNR=19							
NNA	**Nana**	**5.10**	**180**	Pn		**Pn**	**15 50 54.5**	**+0.1**
	11nm,0.3s,baz=345,slow=12,SNR=19							
NNA				Sn		**Sn**	**15 51 50.1**	**-1.9**
	22nm,0.3s,baz=107,slow=23,SNR=8.9							
NNA				LR		LR	15 52 59.9	
	comp=Z,335nm,18.6s,baz=347,slow=40							
NNA	**Nana**	**5.10**	**180**	Sn		**Sn**	**15 51 50.1**	**-1.9**
NNA				*e*Sn		**Sn**	**15 51 52.1**	**+0.1**
NNA				*e*Sn		**Sn**	**15 51 52.1**	**+0.1**
OTAV	**Otavalo**	**7.23**	**347**	*e*Pn		**Pn**	**15 51 22.4**	**-1.6**
OTAV				*e*Sn		**Sn**	**15 52 44.9**	**-0.1**
OTAV	**Otavalo**	**7.23**	**347**	*e*P		**Pn**	**15 51 25.9**	**+1.9**
CMBC	**Cumbal**	**7.81**	**353**	*e*P		**Pn**	**15 51 32.7**	**+0.8**
FLOC	**Florencia**	**8.46**	**8**	*e*P		**Pn**	**15 51 39.5**	**-1.0**
SJAC	**San Juan de Ar**	**10.46**	**16**	*e*P		**Pn**	**15 52 08.4**	**+0.4**
VILC	**Villavicencio,**	**11.34**	**16**	*e*P		**Pn**	**15 52 19.7**	**-0.2**
ROSC	**El Rosal**	**11.88**	**12**	LR		LR	15 58 15.0	
	comp=Z,174nm,20.2s,baz=224,slow=44							
LPAZ	**La Paz**	**12.66**	**139**	Pn		**Pn**	**15 52 38.6**	**+0.2**
	0.2nm,0.3s,baz=338,slow=15,SNR=4.2							
LPAZ				Lg		Lg	15 56 23.6	
	0.2nm,0.3s,baz=112,slow=19,SNR=3.8							
LPAZ				LR		LR	15 58 38.8	
	comp=Z,85nm,19.5s,baz=320,slow=42							
LPAZ	**La Paz**	**12.66**	**139**	*e*Pn		**Pn**	**15 52 37.6**	**-0.8**
SAML	**Samuel**	**13.67**	**100**	*e*Pn		**Pn**	**15 52 48.9**	**-2.8**
SAML				*e*Sn		**Sn**	**15 55 20.4**	**-1.7**
LVC	**Limon Verde**	**17.42**	**155**	P		**P**	**15 53 42.1**	**+1.1**
	8.7nm,0.3s,baz=325,slow=8.8,SNR=5.7							
PTGA	**Pitinga**	**17.88**	**

comp=Z,11nm,18.0s,baz=20,slow=41
MKAR Makanchi Array 59.88 327 P P 16 23 42.4 -0.1
0.3nm,0.6s,baz=118,slow=8.8,SNR=5.2

*NIED **30** 16:17:00,37.40N×141.80E,h32km,Mw3.3 Best double couple: M₀9.70000×10¹³ NP1:φ₀290.00000°,δ51.00000°, λ-30.00000°. NP2:φ₀40.00000°,δ67.00000°, λ-137.00000°.*
*IDC **30** 16:17:10.7±2.0,37.45N×142.35E,h0km,mb3.4/2, mb1 3.6/5,mb1mx3.2/42,mbtmp3.5/5,ML2.7/3,MS2.4/2, Ms1 2.4/2,ms1mx2.0/33,Error ellipse: s-maj=46.7km s-min=23.4km az=92.0*
*JMA **30** 16:17:18.1±0.2,37.39N×141.76E,h42km±3km,M3.6*
ISC 30 16:17:13.5±2.0,37°35N±0.05×141°97E±0.07,h9km±11km, n20,σ1§51/21,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JFK	**Kawauchi**	**0.87**	**272**	P	**Pn**	**16 17 31.7**	**-0.2**
JFK				S	**Sg**	**16 17 40.9**	**-0.7**
ONAJ	**Iwakimizuishiy**	**0.97**	**256**	P	**Pn**	**16 17 33.2**	**0.0**
ONAJ				S	**Sg**	**16 17 43.9**	**-0.7**
JMM	**Marumori**	**1.07**	**299**	P	**Pg**	**16 17 34.4**	**+0.4**
JIO	**Ouri**	**1.21**	**336**	P	**Pg**	**16 17 37.2**	**+0.5**
JIO				S	**Sb**	**16 17 50.5**	**-1.8**
JFT	**Otama**	**1.31**	**278**	P	**Pb**	**16 17 38.5**	**+0.2**
JFT				S	**Sb**	**16 17 53.0**	**-2.2**
JHO	**Hitachi**	**1.34**	**237**	P	**Pn**	**16 17 38.5**	**+0.2**
JHO				S	**Sb**	**16 17 53.5**	**-2.5**
JOU	**Okura**	**1.45**	**315**	P	**Pb**	**16 17 40.7**	**+0.1**
MJAR	**Matsushiro Arr**	**3.12**	**256**	Pn	**Pn**	**16 18 04.2**	**+1.4**
	1.2nm,0.3s,baz=81,slow=16,SNR=16						
MJAR				Sn	**Sn**	**16 18 41.8**	**+1.7**
	1.6nm,0.3s,baz=77,slow=32,SNR=6.4						
MJAR				LR	LR	16 19 24.3	
	comp=Z,20nm,18.2s,baz=235,slow=39						
MAT	**Matsushiro**	**3.12**	**256**	P	**Pn**	**16 18 05.8**	**+3.0**
MAT				S	**Sn**	**16 18 41.9**	**+1.7**
JHJ	**Hachijo jima 2**	**4.58**	**204**	Pn	**Pn**	**16 18 24.2**	**+1.3**
	2.0nm,0.3s,baz=75,slow=20,SNR=3.7						
JHJ				Sn	**Sn**	**16 19 14.2**	**-2.0**
	5.9nm,0.3s,baz=80,slow=18,SNR=3.0						
ASAJ	**Asahikawa**	**6.78**	**4**	Pn	Pn	16 18 47.8	-5.3
	0.1nm,0.3s,baz=231,slow=14,SNR=1.9						
ASAJ				Sn	**Sn**	**16 20 09.8**	**-0.6**
	0.1nm,0.3s,baz=137,slow=19,SNR=2.9						
USRK	**Ussuriysk Ar.**	**10.20**	**315**	LR	LR	16 23 24.4	
	comp=Z,50nm,21.3s,baz=156,slow=36						
H11N2	**WAKE ISLAND Hy 27.93**	**122**		T	T	16 52 40.2	
	baz=315,slow=75,SNR=4.6						
H11N1	**WAKE ISLAND Hy 27.94**	**122**		T	T	16 52 41.1	
	baz=315,slow=75,SNR=6.5						
H11N3	**WAKE ISLAND Hy 27.95**	**122**		T	T	16 52 41.1	
	baz=315,slow=75,SNR=5.3						
H11S1	**WAKE ISLAND Hy 28.66**	**124**		T	T	16 53 35.5	
	baz=316,slow=76,SNR=5.4						
H11S3	**WAKE ISLAND Hy 28.66**	**124**		T	T	16 53 34.5	
	baz=316,slow=76,SNR=8.4						
H11S2	**WAKE ISLAND Hy 28.68**	**124**		T	T	16 53 38.1	
	baz=316,slow=76,SNR=6.0						
MKAR	**Makanchi Array**	**44.33**	**302**	P	**P**	**16 25 24.6**	**+0.8**
	0.1nm,0.2s,baz=85,slow=6.7,SNR=2.3						
WRA	**Warramunga Arr**	**57.43**	**189**	P	**P**	**16 27 02.3**	**-0.2**
	0.2nm,0.5s,baz=6.4,slow=7.4,SNR=6.5						

*NIED **30** 16:29:00,37.20N×142.30E,h8km,Mw3.5 Best double couple: M₀1.92000×10¹⁴ NP1:φ₀23.00000°,δ49.00000°, λ7.00000°. NP2:φ₀289.00000°,δ85.00000°,λ138.00000°.*
*IDC **30** 16:29:36.6±1.6,37.11N×142.65E,h0km,mb3.6/4, mb1 3.7/7,mb1mx3.5/41,mbtmp3.7/7,ML3.6/3,MS2.6/1, Ms1 2.6/1,ms1mx2.1/39,Error ellipse: s-maj=35.2km s-min=21.1km az=73.0*
*JMA **30** 16:29:39.5±0.3,37.25N×142.27E,h25km±5km,M3.6*
ISC 30 16:29:39.7±1.1,37°19N±0.05×142°14E±0.07,h19km,n21, σ1§41/19,mb3.6/4,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JFK	**Kawauchi**	**1.03**	**280**	P	**Pg**	**16 30 00.3**	**+0.6**
JFK				S	**Sg**	**16 30 14.1**	**+0.9**
JMM	**Marumori**	**1.27**	**302**	P	**Pb**	**16 30 02.7**	**-0.2**
JMM				S	**Sg**	**16 30 19.7**	**-1.1**
JIO	**Ouri**	**1.41**	**334**	P	**Pn**	**16 30 03.8**	**-0.5**
JOU	**Okura**	**1.66**	**315**	P	**Pb**	**16 30 08.8**	**-0.8**
JOU				eS	**Sb**	**16 30 29.7**	**-0.4**
JMK	**Ichinoseki**	**1.90**	**338**	P	**Pn**	**16 30 11.4**	**+0.3**
JAG	**Ashikaga**	**2.29**	**251**	P	**Pb**	**16 30 18.6**	**-1.8**
MJAR	**Matsushiro Arr**	**3.22**	**260**	Pn	**Pb**	**16 30 33.4**	**-2.9**
	2.2nm,0.3s,baz=83,slow=15,SNR=9.0						
MJAR				Sn	**Sb**	**16 31 17.0**	**+1.9**
	1.9nm,0.3s,baz=78,slow=11,SNR=5.2						
MAT	**Matsushiro**	**3.22**	**260**	P	Pb	16 30 33.0	-3.3
MAT				S	**Sb**	**16 31 14.7**	**-0.5**
JHJ	**Hachijo jima 2**	**4.50**	**206**	Pn	**Pn**	**16 30 47.3**	**+0.4**
	17nm,0.3s,baz=72,slow=21,SNR=7.8						
JHJ				Sn	**Sn**	**16 31 38.3**	**-0.4**
	7.4nm,0.3s,baz=73,slow=19,SNR=2.9						
ASAJ	**Asahikawa**	**6.92**	**3**	Pn	**Pn**	**16 31 19.9**	**-0.2**
	0.9nm,0.3s,baz=202,slow=14,SNR=16						
ASAJ				Sn	**Sn**	**16 32 36.5**	**-1.9**
	baz=18,slow=20,SNR=1.6						
JNU	**Nakatsue**	**10.07**	**250**	LR	LR	16 36 43.3	
	comp=Z,33nm,18.8s,baz=297,slow=41						
H11N2	**WAKE ISLAND Hy 27.73**	**122**		T	T	17 04 15.0	
	baz=315,slow=75,SNR=19						
H11N1	**WAKE ISLAND Hy 27.74**	**122**		T	T	17 04 16.7	
	baz=315,slow=75,SNR=15						
H11N3	**WAKE ISLAND Hy 27.75**	**122**		T	T	17 04 17.4	
	baz=315,slow=75,SNR=18						
SONM	**Songino Array**	**28.18**	**304**	P	**P**	**16 35 33.7**	**+2.7**
	0.3nm,0.3s,baz=112,slow=1.6,SNR=3.2						
H11S1	**WAKE ISLAND Hy 28.46**	**124**		T	T	17 05 12.6	
	baz=317,slow=76,SNR=21						
H11S3	**WAKE ISLAND Hy 28.46**	**124**		T	T	17 05 14.3	
	baz=317,slow=76,SNR=18						
H11S2	**WAKE ISLAND Hy 28.48**	**124**		T	T	17 05 15.5	
	baz=317,slow=76,SNR=17						
MKAR	**Makanchi Array**	**44.53**	**302**	P	P	16 37 53.3	+3.2
	0.1nm,0.2s,baz=77,slow=7.6,SNR=3.0						
WRA	**Warramunga Arr**	**57.30**	**189**	P	**P**	**16 39 25.4**	**-0.9**
	0.7nm,0.6s,baz=8.0,slow=7.2,SNR=11						
ASAR	**Alice Springs**	**61.03**	**189**	P	**P**	**16 39 52.6**	**+0.5**
	0.4nm,0.7s,baz=12,slow=7.3,SNR=7.3						

MEX 30 16:42:28.7±0.4,16°21N×98°07W,h7km±3km,MD3.7,Near coast of Guerrero

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
PNIG	**Pinotepa**	**0.19**	**343**	*i* P	Pg	16 42 32.2	-0.4
PNIG				*i* S	Sg	16 42 35.1	0.0
TLIG	**Tlapa**	**1.43**	**341**	*e*P	Pn	16 42 51.5	-3.7
TLIG				*e*S	Sb	16 43 09.0	-5.2
VHO	**Vista Hermosa**	**1.54**	**56**	*e*P	Pn	16 42 52.9	-4.0
VHO				*e*S	Sn	16 43 12.5	-4.7
HUIG	**Huatulco**	**1.94**	**103**	*e*P	Pn	16 42 58.7	-3.4
HUIG				*e*S	Sn	16 43 19.4	-7.3
MEIG	**Mezcala**	**2.26**	**319**	*e*P	Pb	16 43 08.8	-1.2
MEIG				*e*S	Sn	16 43 33.5	-1.3
CAIG	**El Cayaco**	**2.27**	**292**	*e*P	Pn	16 43 04.3	-2.4
CAIG				*e*S	Sn	16 43 28.2	-6.7
TPIG	**Tehuac#an**	**2.30**	**17**	*e*P	Pn	16 43 03.9	-3.4
TPIG				*e*S	Sn	16 43 33.9	-2.0

GUC 30 16:42:33.1±0.3,21°81S×68°70W,h131km±2km,ML3.5,2C, Chile-Bolivia border region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
PB09	**IPOC Station P**	**0.51**	**271**	⇑*i* P	Pn	16 42 53.1	+0.7
PB09				*i* S	Sn	16 43 08.0	+0.9
PB09				IAML		16 43 10.8	
	comp=E,3μm,0.1s						
PB01	**IPOC Station P**	**1.06**	**316**	*i* P	Pn	16 42 57.2	+0.5
PB01				*i* S	Sn	16 43 15.3	+0.7
PB01				IAML		16 43 17.8	
	comp=E,941nm,0.2s						
PB07	**IPOC Station P**	**1.11**	**274**	*i* P	Pn	16 42 57.9	+0.6
PB07				*i* S	Sn	16 43 16.8	+1.1
PB07				IAML		16 43 19.6	
	comp=N,769nm,0.2s						
PB06	**IPOC Station P**	**1.21**	**222**	⇑*i* P	Pn	16 42 58.8	+0.5
PB06				*i* S	Sn	16 43 18.5	+1.0
PB06				IAML		16 43 19.6	
	comp=E,1μm,0.2s						
PB04	**IPOC Station P**	**1.45**	**248**	*i* P	Pn	16 43 01.7	+0.9
PB04				*i* S	Sn	16 43 23.2	+1.3
PB04				IAML		16 43 25.4	
	comp=N,534nm,0.3s						
PATCX	**Punta Patache**	**1.68**	**306**	*i* P	Pn	16 43 04.0	+0.6
PATCX				*i* S	Sn	16 43 27.8	+1.4
PATCX				IAML		16 43 31.3	
	comp=N,512nm,0.2s						
HMBC	**Humberstone**	**1.89**	**324**	*e*P	Pn	16 43 05.9	+0.1
HMBC				*e*S	Sn	16 43 31.6	+0.7
HMBC				IAML		16 43 33.4	
	comp=N,549nm,0.2s						
PB11	**IPOC Station P**	**2.23**	**336**	*e*P	Pn	16 43 10.2	+0.2
PB11				*e*S	Sn	16 43 39.1	+0.7

*ISCJB **30** 16:45:07.5±0.5,37.91N±0.03×27.31E±0.04,h8km±8km, Error ellipse: s-maj=5.6km s-min=4.1km az=144.4*
*CSEM **30** 16:45:07.7±0.2,37.91N×27.30E,h8km,MD2.6,Error ellipse: s-maj=4.0km s-min=3.0km az=56.0*
*DDA **30** 16:45:07.8,37.88N×27.28E,h7km,Md2.6*
*ISK **30** 16:45:07.2,37.92N×27.29E,h6km,MD2.4*
ISC 30 16:45:07.8±1.0,37°91N±0.02×27°29E±0.03,h6km±11km, n21,σ0§25/34,Turkey

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
GCAM	**G?zelcaml?**	**0.21**	**191**	*i* P	**Pg**	**16 45 11.9**	**-0.1**
GCAM				*i* S	**Sg**	**16 45 14.8**	**-0.1**
GCAM	**G?zelcaml?**	**0.21**	**191**	P	**Pg**	**16 45 11.9**	**-0.1**
GCAM				S	**Sg**	**16 45 14.8**	**-0.1**
AYDB	**Zeytinkoy-Aydi**	**0.48**	**86**	*e*PG	**Pg**	**16 45 17.0**	**-0.1**
AYDB				*e*SG	**Sg**	**16 45 23.9**	**+0.5**
AYDB	**Zeytinkoy-Aydi**	**0.48**	**86**	*e*Pg	**Pg**	**16 45 17.0**	**-0.1**
AYDB				*e*Sg	**Sg**	**16 45 23.9**	**+0.5**
IZM	**Izmir**	**0.49**	**358**	*e*PG	**Pg**	**16 45 17.1**	**-0.1**
IZM	**Izmir**	**0.49**	**358**	*e*Pg	**Pg**	**16 45 17.1**	**-0.1**
BLCB	**Balcova**	**0.51**	**338**	*e*PG	**Pg**	**16 45 17.7**	**0.0**
BLCB				*e*SG	**Sg**	**16 45 24.5**	**+0.1**
BLCB	**Balcova**	**0.51**	**338**	*e*Pg	**Pg**	**16 45 17.7**	**0.0**
BLCB				*e*Sg	**Sg**	**16 45 24.5**	**+0.1**
AYDN	**Tasoluk**	**0.53**	**118**	*i* P	**Pg**	**16 45 18.3**	**+0.3**
AYDN				*i* S	**Sg**	**16 45 24.8**	**-0.2**
AYDN	**Tasoluk**	**0.53**	**118**	P	**Pg**	**16 45 18.3**	**+0.3**
AYDN				S	**Sg**	**16 45 24.8**	**-0.2**
ZEY	**˜zmir**	**0.70**	**298**	*i* P	**Pg**	**16 45 21.6**	**+0.4**
ZEY				*i* S	**Sb**	**16 45 31.8**	**-0.4**
URLA	**Izmir**	**0.70**	**310**	*i* P	**Pb**	**16 45 22.3**	**-0.2**
URLA				*i* S	**Sb**	**16 45 32.4**	**-0.1**
URLA	**Izmir**	**0.70**	**310**	P	**Pb**	**16 45 22.3**	**-0.2**
URLA				S	**Sb**	**16 45 32.4**	**-0.1**
BODT	**Bodrum**	**0.85**	**179**	*e*PG	**Pg**	**16 45 24.0**	**0.0**
BODT				*e*SG	**Sb**	**16 45 36.2**	**-0.3**
BODT	**Bodrum**	**0.85**	**179**	*e*Pg	**Pg**	**16 45 24.0**	**0.0**
BODT				*e*Sg	**Sb**	**16 45 36.2**	**-0.3**
AKS	**Akhisar**	**1.05**	**23**	*e*PG	**Pg**	**16 45 27.7**	**-0.3**
AKS	**Akhisar**	**1.05**	**23**	*e*Pg	**Pg**	**16 45 27.7**	**-0.3**
CHOS	**Chios island**	**1.08**	**296**	*e*PN	**Pg**	**16 45 28.5**	**0.0**
CHOS	**Chios island**	**1.08**	**296**	*e*Pn	**Pg**	**16 45 28.5**	**0.0**
APE	**Apeiranthos**	**1.63**	**239**	*e*PN	**Pn**	**16 45 37.4**	**+0.4**
APE	**Apeiranthos**	**1.63**	**239**	*e*Pn	**Pn**	**16 45 37.4**	**+0.4**

*ISCJB **30** 16:51:44.6±0.9,37.31N±0.05×72.1E±0.1,h142km,Error ellipse: s-maj=13.3km s-min=6.4km az=168.2*
*NNC **30** 16:51:50.5±2.9,37.73N×71.67E,h137km±41km,mb3.0, mpv3.8,Error ellipse: s-maj=27.0km s-min=23.1km az=60.0*
ISC 30 16:51:45.2±1.4,37°27N±0.10×72°0E±0.1,h142km,n11, σ0§79/12,7C-5D,Tajikistan

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
SFK	**Sufi-Kurgan**	**2.97**	**23**	⇓P	**Pn**	**16 52 33.4**	**+1.3**
	40nm,0.3s						
SFK				⇑S	**Sn**	**16 53 07.3**	**-1.0**
	31nm,0.2s						
MNAS	**Manas**	**5.22**	**4**	⇓P	**Pn**	**16 53 01.6**	**+0.2**
	20nm,0.3s						
MNAS				⇓S	Sn	16 53 56.9	-4.1
	19nm,0.4s						
AAK	**Ala-Archa**	**5.68**	**19**	⇑P	**Pn**	**16 53 08.3**	**+0.7**
	4.0nm,0.4s						
AAK				⇑S	Sn	16 54 09.5	-2.5
	8.4nm,0.5s						
KK31	**Karatay Array**	**5.94**	**349**	P	**Pn**	**16 53 10.7**	**-0.2**
	3.1nm,0.3s,baz=162,slow=11,SNR=66						
KK31				⇑S	Sn	16 54 12.4	-5.5
	9.5nm,0.3s,baz=172,slow=23,SNR=4.5						
TKM2	**Tokmak 2**	**6.27**	**25**	⇑P	**Pn**	**16 53 15.9**	**+0.3**
	1.4nm,0.6s						
TKM2				⇓S	**Sn**	**16 54 25.5**	**-0.7**
	2.4nm,0.8s						
PYUN	**Piuthan**	**12.99**	**132**	*e*P	Pn	16 54 43.6	-1.1
KOLN	**Koldanda**	**13.60**	**131**	*e*P	**Pn**	**16 54 51.8**	**-0.7**
GKN	**Gorkha**	**14.07**	**127**	*e*P	**Pn**	**16 54 58.9**	**+0.4**
	4.4nm,0.3s						
DMN	**Daman**	**14.65**	**127**	*e*P	**Pn**	**16 55 05.2**	**-0.6**
	3.5nm,0.4s						
AB31	**Akbulak array**	**14.84**	**328**	⇑P	**Pn**	**16 55 07.7**	**0.0**
	0.3nm,0.3s,baz=131,slow=15,SNR=20						
AB31				S	Sn	16 57 37.8	-14
	1.0nm,0.4s,baz=159,slow=23,SNR=12						
AKTO	**Aktyubinsk**	**16.55**	**327**	⇓P	**Pn**	**16 55 29.6**	**+0.9**
	1.5nm,0.7s						
AKTO				⇑S	Sn	16 58 22.3	-11
	1.7nm,0.6s						

*IDC **30** 17:00:31.1±53.0,21.81S×174.83W,h0km,mb4.4/3, mb1 4.6/3,mb1mx3.8/34,mbtmp4.4/3,Error ellipse: s-maj=990.0km s-min=164.4km az=86.0*
*ISCJB **30** 17:00:36.2±0.8,21.75S±0.2×174.9W±0.1,h53km,mb5.0/13, Error ellipse: s-maj=26.4km s-min=15.3km az=168.5*
*NEIC **30** 17:00:36.0±0.7,21.73S×174.82W,h35km,mb5.1/9,Error ellipse: s-maj=24.7km s-min=14.5km az=169.0*
ISC 30 17:00:37.9±0.9,21°7S±0.2×174°8W±0.1,h53km,n17, σ1§05/17,mb4.9/13,Tonga Islands

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
STKA	**Stephens Creek**	**39.96**	**246**	P	**P**	**17 08 07.2**	**-0.1**
	1.4nm,0.4s,baz=94,slow=10,SNR=9.4						
STKA	**Stephens Creek**	**39.96**	**246**	*e*P	**P**	**17 08 07.2**	**-0.1**
	3.5nm,1.7s						
PTCN	**Pitcairn Islan**	**41.06**	**104**	*e*P	**P**	**17 08 17.6**	**+1.2**
	324nm,1.0s						
BBOO	**Buckleboo**	**44.68**	**245**	*e*P	**P**	**17 08 45.0**	**-0.7**
	65nm,1.9s						
POHA	**Pohakuloa**	**45.34**	**26**	*e*P	**P**	**17 08 50.6**	**-0.6**
	160nm,1.6s						
AS01	**Alice Springs**	**47.09**	**257**	*e*P	**P**	**17 09 04.9**	**0.0**
AS31	**Alice Springs**	**47.13**	**257**	*e*P	**P**	**17 09 05.3**	**+0.1**
	1.9nm,0.5s						
ASAR	**Alice Springs**	**47.13**	**257**	P	**P**	**17 09 05.2**	**0.0**
	3.0nm,0.5s,baz=94,slow=6.9,SNR=143						
WRAB	**Tennant Creek**	**47.36**	**262**	*e*P	**P**	**17 09 07.1**	**+0.1**
	4.3nm,0.6s						
WR1	**Warramunga Arr**	**47.37**	**262**	*e*P	**P**	**17 09 07.1**	**+0.1**
WRA	**Warramunga Arr**	**47.37**	**262**	P	**P**	**17 09 07.1**	**0.0**
	1.7nm,0.3s,baz=102,slow=8.4,SNR=196						
MTN	**Manton Dam**	**52.13**	**270**	*e*P	**P**	**17 09 45.2**	**+2.0**
	20nm,1.5s						
FITZ	**Fitzroy Crossi**	**55.80**	**262**	*e*P	**P**	**17 10 12.0**	**+2.0**
	17nm,1.7s						
MBWA	**Marble Bar**	**60.47**	**257**	*e*P	**P**	**17 10 43.6**	**+1.0**
	28nm,1.4s						
DAV	**Davao City (W)**	**65.03**	**289**	*e*P	**P**	**17 11 12.9**	**-0.1**
	351nm,0.4s						
QSPA	**South Pole Qui**	**68.36**	**180**	*e*P	**P**	**17 11 32.3**	**-1.4**
KKM	**Kota Kinabalu**	**72.92**	**284**	*e*P	**P**	**17 12 00.7**	**-1.5**
	114nm,1.4s						

*IDC **30** 17:02:48.8±1.2,36.88N×141.31E,h0km,mb3.3/5, mb1 3.5/6,mb1mx3.3/37,mbtmp3.3/6,ML2.8/1,Error ellipse: s-maj=27.0km s-min=24.0km az=67.0*

*ISCJB **30** 17:02:50.0±1.2,36.93N±0.05×141.35E±0.07,h20km±7km, mb3.2/5,Error ellipse: s-maj=10.0km s-min=7.4km az=35.4*
*JMA **30** 17:02:52.0±0.1,36.95N×141.18E,h32km±1km,M3.4*
ISC 30 17:02:50.3±1.8,36°97N±0.05×141°27E±0.07,h8km±10km, n20,σ0§62/22,mb3.2/5,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.40**	**289**	P	**Pb**	**17 02 59.9**	**+0.2**
ONAJ				S	**Sb**	**17 03 05.6**	**-0.3**
JFK	**Kawauchi**	**0.50**	**321**	P	**Pb**	**17 03 01.9**	**+0.4**
JFK				S	**Sb**	**17 03 08.6**	**-0.4**
JHO	**Hitachi**	**0.67**	**237**	P	**Pg**	**17 03 03.5**	**+0.2**
JHO				eS	**Sg**	**17 03 11.9**	**-0.1**
JFT	**Otama**	**0.92**	**306**	P	**Pb**	**17 03 08.7**	**+0.1**
JMM	**Marumori**	**0.97**	**337**	P	**Pg**	**17 03 09.0**	**0.0**
JMM				eS	**Sg**	**17 03 21.4**	**-0.2**
JSB	**Shiboa**	**1.08**	**270**	P	**Pg**	**17 03 11.1**	**0.0**
JSB				S	**Sg**	**17 03 25.0**	**-0.2**
JFY	**Yanaizu**	**1.32**	**290**	P	**Pn**	**17 03 14.9**	**-0.2**
JFY				S	**Sb**	**17 03 31.4**	**-1.1**
MJAR	**Matsushiro Arr**	**2.50**	**261**	Pn	**Pn**	**17 03 31.6**	**+0.4**
	1.8nm,0.3s,baz=89,slow=15,SNR=29						
MJAR				Sn	**Sn**	**17 04 03.3**	**+1.4**
	2.8nm,0.3s,baz=79,slow=27,SNR=5.7						
MAT	**Matsushiro**	**2.50**	**261**	P	**Pn**	**17 03 31.7**	**+0.4**
MAT				S	**Sn**	**17 04 02.2**	**+0.3**
H11N2	**WAKE ISLAND Hy 28.21**	**120**		T	T	17 38 16.3	
	baz=313,slow=76,SNR=28						
H11N1	**WAKE ISLAND Hy 28.22**	**121**		T	T	17 38 16.4	
	baz=313,slow=76,SNR=45						
H11N3	**WAKE ISLAND Hy 28.23**	**120**		T	T	17 38 16.5	
	baz=313,slow=76,SNR=28						
H11S1	**WAKE ISLAND Hy 28.92**	**123**		T	T	17 39 08.1	
	baz=315,slow=76,SNR=19						
H11S3	**WAKE ISLAND Hy 28.92**	**123**		T	T	17 39 07.7	
	baz=315,slow=76,SNR=18						
H11S2	**WAKE ISLAND Hy 28.94**	**123**		T	T	17 39 08.0	
	baz=315,slow=76,SNR=16						
ZALV	**Zalesovo Beam**	**41.87**	**312**	P	**P**	**17 10 40.9**	**+0.2**
	0.2nm,0.4s,baz=91,slow=12,SNR=2.9						
MKAR	**Makanchi Array**	**44.05**	**302**	P	**P**	**17 10 58.2**	**-0.3**
	0.2nm,0.7s,baz=90,slow=8.6,SNR=2.9						
ILAR	**Eielson Array**	**49.60**	**32**	P	**P**	**17 11 42.4**	**+0.7**
	0.4nm,0.8s,baz=264,slow=7.2,SNR=4.1						
WRA	**Warramunga Arr**	**56.99**	**188**	P	**P**	**17 12 35.2**	**-1.1**
	0.2nm,0.5s,baz=3.6,slow=7.2,SNR=5.8						
ASAR	**Alice Springs**	**60.71**	**188**	P	**P**	**17 13 01.5**	**-0.8**
	0.2nm,0.9s,baz=15,slow=7.7,SNR=3.2						

*CSEM **30** 17:07:48.4,38.55N×14.49E,h15km,ML2.9/9*
ROM 30 17:07:48.4±0.2,38°55N×14°49E,h15km±3km,MI2.9/9, Error ellipse: s-maj=3.1km s-min=1.2km az=176.0, Sicily

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
IFIL	**Filicudi I Eol**	**0.06**	**80**	Pg	Pg	17 07 51.7	+0.4
IFIL				Sg	Sg	17 07 53.5	+0.4
	5μm,0.2s						
IFIL	**Filicudi I Eol**	**0.06**	**80**	Pg	Pg	17 07 51.7	+0.4
IFIL				Sg	Sg	17 07 53.5	+0.4
	5μm,0.2s						
IACL	**Alicudi**	**0.10**	**260**	Pg	Pg	17 07 51.9	+0.2
IACL				Sg	Sb	17 07 54.4	-0.3
	8μm,0.2s						
IACL	**Alicudi**	**0.10**	**260**	Pg	Pg	17 07 51.9	+0.2
IACL				Sg	Sb	17 07 54.4	-0.3
	8μm,0.2s						
LLI	**Lipari**	**0.38**	**106**	Pg	Pb	17 07 57.2	+0.4
	3μm,0.7s						
LLI	**Lipari**	**0.38**	**106**	Pg	Pb	17 07 57.2	+0.4
	3μm,0.7s						
VPL	**Vulcano Piano**	**0.43**	**114**	Pg	Pg	17 07 57.1	+0.2
	2μm,0.5s						
VPL	**Vulcano Piano**	**0.43**	**114**	Pg	Pg	17 07 57.1	+0.2
	2μm,0.5s						
PLLN	**Pollina**	**0.62**	**206**	Pg	Pg	17 08 00.4	-0.2
PLLN				Sg	Sg	17 08 08.9	0.0
	158nm,0.2s						
PLLN	**Pollina**	**0.62**	**206**	Pg	Pg	17 08 00.4	-0.2
PLLN				Sg	Sg	17 08 08.9	0.0
	158nm,0.2s						
MILZ	**Milazzo**	**0.65**	**115**	Pg	Pg	17 08 00.8	-0.3
MILZ				Sg	Sb	17 08 10.0	-0.3
MILZ	**Milazzo**	**0.65**	**115**	Pg	Pg	17 08 00.8	-0.3
MILZ				Sg	Sb	17 08 10.0	-0.3
GIB	**Gibilmanna**	**0.67**	**213**	Pg	Pg	17 08 01.5	0.0
GIB				Sg	Sb	17 08 10.8	-0.2
	465nm,0.6s						
GIB	**Gibilmanna**	**0.67**	**213**	Pg	Pg	17 08 01.5	0.0
GIB				Sg	Sb	17 08 10.8	-0.2
	465nm,0.6s						
NOV	**Novara**	**0.73**	**136**	Pg	Pg	17 08 02.5	-0.2
NOV	**Novara**	**0.73**	**136**	Pg	Pg	17 08 02.5	-0.2
MCSR	**Castroreale**	**0.77**	**129**	Pg	Pg	17 08 02.7	-0.8
MCSR				Sg	Sb	17 08 14.2	+0.2
MCSR	**Castroreale**	**0.77**	**129**	Pg	Pg	17 08 02.7	-0.8
MCSR				Sg	Sb	17 08 14.2	+0.2
MPNC	**Port Mandanici**	**0.79**	**121**	Pg	Pg	17 08 02.9	-0.9
	589nm,0.7s						
MPNC	**Port Mandanici**	**0.79**	**121**	Pg	Pg	17 08 02.9	-0.9

	IPM	**Ipoh**	**3.99**	**32**	⇓P	Pn	17 10 02.2	+3.1
	IPM	**Ipoh**	**3.99**	**32**	*e*Pn	**Pn**	**17 10 01.9**	**+2.8**
	MLSI	**Meulaboh, Aceh**	**4.05**	**322**	P	**Pn**	**17 10 01.6**	**+1.6**
	KGM	**Kluang**	**4.50**	**78**	⇑P	**Pn**	**17 10 08.7**	**+2.7**
	KULM	**Kulim**	**4.54**	**22**	⇑P	**Pn**	**17 10 08.7**	**+2.1**
	KULM	**Kulim**	**4.54**	**22**	*e*Pn	**Pn**	**17 10 08.3**	**+1.7**
	LHMI	**Lhok Sumawe**	**4.58**	**335**	*e*Pn	**Pn**	**17 10 09.5**	**+2.4**
	LHMI				*e*Sn	**Sn**	**17 10 56.6**	**-2.5**
	MYKOM	**Kota Tinggi**	**4.98**	**82**	⇓P	Pn	17 10 15.4	+2.8
	MYKOM	**Kota Tinggi**	**4.98**	**82**	*e*Pn	Pn	17 10 15.9	+3.3
	KTGM	**Kuala Trenggan**	**5.97**	**45**	⇓P	**Pn**	**17 10 27.6**	**+1.5**
	MNAI	**Manna**	**6.73**	**143**	*e*Pn	Pn	17 10 39.9	+3.5
	MNAI				*e*Sn	**Sn**	**17 11 49.2**	**-2.5**
	CM01	**Chiang Mai Arr**	**17.25**	**0**	*e*P	**Pn**	**17 12 55.8**	**+0.1**
	CM31	**Chiang Mai Arr**	**17.29**	**0**	*e*P	**Pn**	**17 12 56.0**	**-0.1**
	CMAR	**Chiang Mai Arr**	**17.29**	**0**	P	**Pn**	**17 12 56.2**	**0.0**
		0.7nm,0.3s,baz=190,slow=11,SNR=36						
	CHTO	**Chiang Mai**	**17.64**	**0**	*e*P	**P**	**17 13 00.5**	**+0.2**
		3.8nm,0.7s						
	MYLDM	**Lahad Datu**	**19.97**	**78**	*e*P	**P**	**17 13 25.1**	**-0.8**
		20nm,1.4s						
	WRA	**Warramunga Arr**	**40.51**	**123**	P	**P**	**17 16 30.4**	**-0.7**
		0.9nm,0.5s,baz=304,slow=8.9,SNR=15						
	HHC	**Hu-ho-hao-te**	**41.23**	**15**	*e*P	**P**	**17 16 37.8**	**+1.0**
	ASAR	**Alice Springs**	**41.95**	**128**	P	**P**	**17 16 42.1**	**-0.8**
		0.2nm,0.6s,baz=302,slow=8.0,SNR=4.1						
	WMQ	**Urumqi**	**43.73**	**348**	*e*P	**P**	**17 16 57.5**	**+0.5**
	WMQ				pmax	pmax		
		comp=Z,5.0nm,0.6s						
	KSRS	**Korea Array**	**45.01**	**33**	P	**P**	**17 17 06.1**	**-1.1**
		comp=Z,1.9nm,0.7s,baz=222,slow=8.8,SNR=6.2						
	SONM	**Songino Array**	**47.04**	**7**	P	**P**	**17 17 23.7**	**+0.5**
		comp=Z,3.2nm,0.6s,baz=188,slow=9.9,SNR=15						
	SONA1	**Songino Array**	**47.05**	**7**	*e*P	**P**	**17 17 23.3**	**0.0**
	ULN	**Ulaanbaatar**	**47.15**	**7**	*e*P	**P**	**17 17 24.1**	**+0.1**
		comp=Z,7.8nm,1.0s						
	MK01	**Makanchi Array**	**47.78**	**345**	*e*P	**P**	**17 17 28.3**	**-0.6**
	MK31	**Makanchi Array**	**47.81**	**345**	*e*P	**P**	**17 17 29.0**	**0.0**
	MKAR	**Makanchi Array**	**47.81**	**345**	P	**P**	**17 17 29.1**	**+0.1**
		comp=Z,1.2nm,0.4s,baz=158,slow=8.5,SNR=25						
	MKAR	**Makanchi Array**	**47.81**	**345**	*e*P	**P**	**17 17 28.9**	**-0.2**
	KURBB	**Kurchatov Arra**	**52.33**	**344**	P	**P**	**17 18 03.2**	**+0.1**
		comp=Z,1.0nm,0.7s,baz=165,slow=7.2,SNR=11						
	ZAA0	**Zalesovo Array**	**53.98**	**350**	*e*P	**P**	**17 18 14.7**	**-0.4**
	ZALV	**Zalesovo Beam**	**53.98**	**350**	P	**P**	**17 18 15.0**	**-0.1**
		comp=Z,1.9nm,0.4s,baz=168,slow=7.2,SNR=13						
	KLR	**Kul'dur**	**55.62**	**26**	P	**P**	**17 18 26.8**	**-0.3**
		comp=Z,3.1nm,0.4s,baz=237,slow=8.3,SNR=8.6						
	BRTR	**Keskin Array B**	**70.48**	**312**	P	**P**	**17 20 05.2**	**-0.8**
		comp=Z,0.4nm,0.6s,baz=136,slow=6.4,SNR=4.0						
	FINES	**FINESS Array B**	**80.92**	**332**	P	**P**	**17 21 04.4**	**-0.3**
		comp=Z,1.6nm,1.0s,baz=107,slow=4.8,SNR=2.5						
	TXAR	**Lajitas Array**	**142.85**	**34**	PKhKP	PKPpre	17 28 20.9	
		comp=Z,0.2nm,0.6s,baz=260,slow=0.5,SNR=2.5						

MAN 30 17:10:47,16.53N×120.24E,h96km,mb4.4,ML3.3,MS3.1, 1C,Luzon

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
BOLP	**Bolinao**	**0.35**	**244**	*e*P	Pn	17 11 03.0	+1.6
BOLP				*e*S	Sn	17 11 15.2	+3.1
BCPH	**Baguio City Da**	**0.36**	**114**	⇑*i*P	Pn	17 11 05.2	+3.5
BCPH				*i* S	Sn	17 11 15.8	+3.2
SCZP	**Santa Cruz**	**0.81**	**203**	*e*P	Pn	17 11 06.7	+1.5
ABRA	**Dolores**	**1.20**	**22**	*e*P	Pn	17 11 10.0	+0.6
BALP	**Baler**	**1.51**	**121**	*e*P	Pn	17 11 13.6	+0.4
CAUP	**Cauayan**	**1.57**	**75**	*e*P	Pn	17 11 15.1	+1.1
APYP	**Conner**	**1.64**	**36**	*e*P	Pn	17 11 15.8	+1.0

*NIED **30** 17:11:00,36.40N×141.00E,h5km,Mw4.7 Best double couple: M₀1.36000×10¹⁶ NP1:ϕs314.00000°,δ35.00000°, λ-156.00000°. NP2:ϕs203.00000°,δ76.00000°, λ-58.00000°.*

*IDC **30** 17:11:55.5±0.5,36.35N×140.88E,h0km,mb4.3/29, mb1 4.4/35,mb1mx4.4/53,mbtmp4.3/35,ML3.6/5,MS3.9/29, Ms1 3.9/29,ms1mx3.7/49,Error ellipse: s-maj=12.6km s-min=10.6km az=114.0*

*JMA **30** 17:11:57.0±0.1,36.39N×141.01E,h21km±1km,M4.9 JMA Felt III J1.*

*ISCJB **30** 17:11:57.5±0.6,36.37N±0.03×140.88E±0.03,h20km±3km, mb4.8/160,MS4.2/47,Error ellipse: s-maj=4.5km s-min=3.3km az=154.2*

*NEIC **30** 17:11:59.8±1.4,36.32N×140.80E,h27km±9km,mb4.9/100, Error ellipse: s-maj=4.6km s-min=3.5km az=141.0*

NEIC Recorded [3 JMA] in Chiba, Ibaraki and Tochigi.

*MOS **30** 17:12:01.4±1.4,36.69N×140.75E,h36km,mb5.1/55, MS4.0/14,Error ellipse: s-maj=6.9km s-min=4.6km az=109.0*

ISC 30 17:11:59.2±0.6,36.34N±0.04×140.92E±0.03,h24km±3km, n402,σ1s63/393,mb4.8/160,MS4.2/48,30C-8D,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JHO	**Hitachi**	**0.39**	**313**	P	**Pb**	**17 12 05.3**	**-2.3**
JHO				S	**Sb**	**17 12 12.1**	**-1.1**
JYT	**Yasato**	**0.60**	**259**	P	**Pb**	**17 12 09.8**	**-1.2**
JYT				S	**Sb**	**17 12 18.7**	**-0.4**
ONAJ	**Iwakimizuishiy**	**0.76**	**353**	P	**Pb**	**17 12 10.7**	**-3.2**
JSB	**Shiboa**	**1.02**	**308**	P	**Pb**	**17 12 16.5**	**-1.7**
JFK	**Kawauchi**	**1.02**	**358**	P	Pb	17 12 14.3	-4.0
MJAR	**Matsushiro Arr**	**2.19**	**276**	Pn	**Pn**	**17 12 33.6**	**-0.7**
	64nm,0.3s,baz=85,slow=10,SNR=359						
MJAR				Sn	**Sn**	**17 13 01.5**	**+0.8**
	150nm,0.3s,baz=94,slow=15,SNR=7.9						
MJAR				LR	LR	17 13 31.3	
	comp=Z,3μm,18.1s,baz=95,slow=45						
MAJO	**Matsushiro**	**2.20**	**276**	*c i*P	**Pn**	**17 12 34.2**	**-0.1**
MAJO	**Matsushiro**	**2.20**	**276**	*e*Pn	**Pn**	**17 12 34.1**	**-0.1**
MAT	**Matsushiro**	**2.20**	**276**	P	**Pn**	**17 12 33.7**	**-0.5**
MAT				S	**Sb**	**17 13 05.5**	**+0.4**
MJB9	**Matsu-Tunnel**	**2.20**	**276**	*e*Pn	**Pn**	**17 12 34.2**	**-0.1**
INU	**Inuyama**	**3.32**	**254**	*e*Pn	**Pn**	**17 12 50.0**	**+0.3**
JHJ	**Hachijo jima 2**	**3.35**	**197**	Pn	**Pn**	**17 12 50.9**	**+0.8**
	45nm,0.3s,baz=95,slow=20,SNR=22						
JHJ				Sn	**Sn**	**17 13 31.9**	**+2.8**
	149nm,0.3s,baz=218,slow=23,SNR=6.2						
JHJ				LR	LR	17 14 10.3	
	comp=Z,814nm,18.2s,baz=114,slow=40						
JHJ2	**Mitsune**	**3.35**	**196**	*e*Pn	**Pn**	**17 12 51.7**	**+1.6**
ERM	**Erimo**	**5.92**	**16**	⇓*e*P	**Pn**	**17 13 24.8**	**-0.6**
ERM	**Erimo**	**5.92**	**16**	*e*Pn	**Pn**	**17 13 25.1**	**-0.4**
ERM				*e*Sn	**Sn**	**17 14 28.9**	**-3.6**
ASAJ	**Asahikawa**	**7.87**	**9**	Pn	**Pn**	**17 13 50.3**	**-1.8**
	1.6nm,0.3s,baz=209,slow=11,SNR=22						
ASAJ				Sn	**Sn**	**17 15 19.6**	**-0.8**
	baz=151,slow=19,SNR=1.9						
ASAJ				LR	LR	17 17 08.7	
	comp=Z,664nm,20.1s,baz=223,slow=40						
ASAJ	**Asahikawa**	**7.87**	**9**	*e*Pn	**Pn**	**17 13 50.4**	**-1.7**
ASAJ				*e*Sn	**Sn**	**17 15 19.1**	**-1.2**
YUK	**Yuzh-Kuril'sk**	**8.56**	**25**	P	**Pn**	**17 14 02.3**	**+0.7**
YUK				*e*S	**Sn**	**17 15 32.5**	**-4.8**
YUK				pmax	pmax		
	comp=Z,105nm,0.4s						
YUK				pmax	pmax		
	comp=E,66nm,0.5s						
YUK				pmax	pmax		
	comp=N,40nm,0.2s						
YUK				MLR	MLR		
	comp=Z,791nm,12.0s						
SHO	**Shikotan**	**8.77**	**29**	*e*P	**Pn**	**17 14 03.8**	**-0.7**
SHO				*e*S	Sn	17 15 34.8	-7.8
SHO				pmax	pmax		
	comp=Z,45nm,0.7s						
SHO				pmax	pmax		
	comp=N,36nm,0.9s						
SHO				pmax	pmax		
	comp=E,29nm,0.7s						
JNU	**Nakatsue**	**8.87**	**252**	Pn	**Pn**	**17 14 05.9**	**0.0**
	comp=E,0.2nm,0.3s,baz=65,slow=14,SNR=2.4						
JNU				Lg	Lg	17 16 37.0	
	baz=106,slow=19,SNR=2.8						
JNU				LR	LR	17 17 47.1	
	comp=E,2μm,18.4s,baz=113,slow=40						
CBIJ	**Chichi jima**	**9.28**	**173**	*e*Pn	**Pn**	**17 14 09.3**	**-2.3**
CBIJ				*e*Sn	Sn	17 15 48.7	-6.5
JCJ	**Chichijima**	**9.28**	**173**	Pn	**Pn**	**17 14 09.6**	**-2.0**
	baz=318,slow=12						
JCJ				Sn	Sn	17 15 49.4	-5.9
	baz=0.0,slow=20						
JCJ				LR	LR	17 17 49.7	
	comp=E,835nm,21.6s,baz=10,slow=38						
KUR	**Kuril'sk**	**10.32**	**28**	*e*P	**Pn**	**17 14 25.5**	**-0.2**
KUR				*e*S	Sn	17 16 13.6	-6.9
KUR				pmax	pmax		
	comp=E,22nm,0.9s						
KUR				pmax	pmax		
	comp=Z,32nm,0.9s						
KUR				pmax	pmax		
	comp=N,14nm,0.5s						
KUR				MLR	MLR		
	comp=Z,990nm,16.0s						
KUR				MLR	MLR		
	comp=E,1μm,15.0s						
USRK	**Ussuriysk Ar.**	**10.39**	**322**	Pn	Pn	17 14 30.3	+3.6
	comp=E,0.5nm,0.3s,baz=129,slow=12,SNR=7.2						
USRK				LR	LR	17 17 56.9	
	comp=E,167nm,18.4s,baz=126,slow=35						
KSRS	**Korea Array**	**10.47**	**280**	Pn	Pn	17 14 31.5	+3.7
	comp=E,0.6nm,0.3s,baz=92,slow=14,SNR=13						
KSRS				LR	LR	17 18 36.0	
	comp=E,835nm,18.1s,baz=80,slow=38						
KS01	**Wonju Array Si**	**10.49**	**280**	*e*Pn	**Pn**	**17 14 28.6**	**+0.5**
KS15	**Wonju Array Si**	**10.50**	**280**	*e*Pn	**Pn**	**17 14 27.5**	**-0.7**
KSAR	**Wonju Array Be**	**10.50**	**280**	P	Pn	17 14 31.5	+3.3
KSAR	**Wonju Array Be**	**10.50**	**280**	Pn	Pn	17 14 31.5	+3.3
YSS	**Yuzh-Sakhalins**	**10.69**	**7**	*e*P	Pn	17 14 33.9	+3.2
YSS				MLR	MLR		
	comp=Z,2μm,13.0s						
YSS	**Yuzh-Sakhalins**	**10.69**	**7**	*e*Pn	Pn	17 14 27.5	-3.2
MDJ	**Mudanjiang**	**11.94**	**317**	P	Pn	17 14 50.8	+3.0
MDJ				S	**Sn**	**17 17 04.8**	**+4.7**
MDJ				PcP	**PcP**	**17 20 33.3**	**-0.2**
MDJ				ScP	**ScP**	**17 24 08.0**	**+3.2**
MDJ	**Mudanjiang**	**11.94**	**317**	*e*Pn	**Pn**	**17 14 50.5**	**+2.7**
HABR	**Khabarovsk**	**12.87**	**342**	*ce*P	**Pn**	**17 14 58.4**	**-2.1**
HABR				*e*S	**Sn**	**17 17 21.3**	**-1.6**
HABR				pmax	pmax		
	comp=N,40nm,1.5s						
HABR				pmax	pmax		
	comp=E,30nm,1.5s						
HABR				pmax	pmax		
	comp=Z,69nm,1.5s						
HABR				MLR	MLR		
	comp=Z,252nm,11.0s						
CN2	**Changchun**	**13.98**	**307**	*e*P	**Pn**	**17 15 16.0**	**+0.2**
CN2				*e*S	**Sn**	**17 17 48.5**	**-1.6**
CN2				pmax	pmax		
	comp=Z,10.0nm,1.1s						
CN2				pmax	pmax		
	comp=Z,100nm,5.0s						
CN2				LR	LR		
	comp=N,1μm,14.0s						
CN2				LR	LR		
	comp=E,400nm,14.0s						
CN2				LR	LR		
	comp=Z,600nm,14.0s						
KLR	**Kul'dur**	**14.52**	**335**	Pn	**Pn**	**17 15 23.1**	**+0.1**
	comp=Z,0.2nm,0.3s,baz=128,slow=12,SNR=6.3						
SNY	**Shenyang**	**14.53**	**297**	⇑P	**P**	**17 15 31.3**	**+1.7**
SNY				S	Sn	17 18 12.3	+8.8
SNY				pmax	pmax		
	comp=Z,14nm,0.7s						
SNY				pmax	pmax		
	comp=Z,430nm,9.0s						
SNY				LR	LR		
	comp=N,750nm,12.6s						
SNY				LR	LR		
	comp=E,2μm,15.7s						
SNY				LR	LR		
	comp=Z,2μm,15.9s						
TYV	**Tymovskoe**	**14.57**	**4**	*e*P	**Pn**	**17 15 22.2**	**-1.5**
TYV				pmax	pmax		
	comp=Z,14nm,0.6s						
TYV				MLR	MLR		
	comp=N,2μm,12.0s						
TYV				MLR	MLR		
	comp=Z,2μm,11.0s						
DL2	**Dalian**	**15.50**	**285**	P	**P**	**17 15 40.8**	**+0.4**
DL2				S	**S**	**17 18 36.0**	**-6.5**
DL2				pmax	pmax		
	comp=Z,200nm,4.4s						
DL2				LR	LR		
	comp=N,810nm,13.1s						
DL2				LR	LR		
	comp=E,1μm,15.0s						
DL2				LR	LR		
	comp=Z,2μm,13.6s						
NKL	**Nikolayevsk**	**16.81**	**360**	*e*P	**P**	**17 15 56.7**	**+1.9**
NKL				MLR	MLR		
	comp=N,600nm,16.0s						
NKL				MLR	MLR		
	comp=E,1μm,16.0s						
NKL				MLR	MLR		
	comp=Z,1μm,16.0s						
SSE	**Sheshan**	**17.22**	**258**	*e*P	**Pn**	**17 15 56.8**	**-1.4**
SSE				pP	**P**	**17 16 00.8**	**+1.2**
SSE				S	**Sn**	**17 19 04.5**	**-4.6**
SSE				sS	**S**	**17 19 13.8**	**-4.0**
SSE				pmax	pmax		
	comp=Z,18nm,0.7s						
SSE				pmax	pmax		
	comp=Z,82nm,3.6s						
SSE				LR	LR		
	comp=N,640nm,19.5s						
SSE				LR	LR		
	comp=E,210nm,19.5s						
SSE				LR	LR		
	comp=Z,300nm,16.0s						
NJ2	**Nanjing**	**18.74**	**263**	*e*P	**P**	**17 16 16.3**	**0.0**
NJ2				S	**Sn**	**17 19 46.5**	**+0.8**
NJ2				pmax	pmax		
	comp=Z,6.0nm,0.9s						
NJ2				LR	LR		
	comp=N,790nm,16.8s						
NJ2				LR	LR		
	comp=E,1μm,17.4s						
NJ2				LR	LR		
	comp=Z,820nm,15.2s						
TIA	**Tai'an**	**19.18**	**277**	⇑P	**Pn**	**17 16 23.8**	**+1.7**
TIA				pmax	pmax		
	comp=Z,30nm,0.9s						
BJI	**Beijing**	**19.78**	**288**	P	**P**	**17 16 25.8**	**-1.8**
BJI				S	**S**	**17 20 05.5**	**-3.7**
BJI				LR	LR		
	comp=Z,8μm,0.5s						
BJI				LR	LR		
	comp=N,670nm,14.1s						
BJI				LR	LR		
	comp=E,500nm,13.2s						
BJI				LR	LR		
	comp=Z,280nm,20.4s						
BJT	**Baijiatuao**	**19.78**	**288**	*e*P	**P**	**17 16 25.4**	**-2.3**
BJT				pmax	pmax		
	comp=Z,20nm,0.5s						
BJT	**Baijiatuao**	**19.78**	**288**	*e*P	**P**	**17 16 25.4**	**-2.3**
	comp=Z,20nm,0.5s						
PETK	**Petropavlovsk-**	**20.48**	**30**	P	Pn	17 16 38.5	+1.1
	comp=Z,3.3nm,0.6s,baz=229,slow=8.7,SNR=6.5						
PETK				LR	LR	17 25 23.0	
	comp=Z,219nm,18.1s,baz=215,slow=39						
PEA1	**Petropavlovsk-**	**20.48**	**30**	*e*P	Pn	17 16 38.5	+1.1
NACB	**Ninganchiao**	**20.59**	**239**	*e*P	P	17 16 30.6	-5.9
	comp=Z,21nm,1.0s						
PET	**Petropavlovsk**	**20.81**	**31**	*e*P	Pn	17 16 49.5	+8.3
PET				*e*S	Sn	17 20 43.7	+8.4
PET				pmax	pmax		
	comp=Z,100nm,13.2s						
PET				MLR	MLR		
	comp=Z,400nm,15.0s						
PET	**Petropavlovsk**	**20.81**	**31**	*e*P	Pn	17 16 40.1	-1.1
	comp=Z,76nm,1.4s						
SSLB	**Suanglung**	**21.29**	**240**	*e*P	**P**	**17 16 41.2**	**-2.8**
	comp=Z,10nm,0.8s						
YULB	**Yu-li**	**21.31**	**238**	*e*P	**P**	**17 16 41.8**	**-2.5**
	comp=Z,17nm,1.0s						
TPUB	**Ta-pu**	**21.83**	**239**	*e*P	**P**	**17 16 46.8**	**-3.1**
	comp=Z,33nm,1.0s						
TWG	**Pinlang**	**21.84**	**237**	*e*P	**P**	**17 16 47.4**	**-2.7**
	comp=Z,241nm,1.3s						
QZH	**Quanzhou**	**22.27**	**246**	*e*P	**P**	**17 16 51.8**	**-2.7**
QZH				*e*S	S	17 20 48.8	-10
QZH				LR	LR		
	comp=N,730nm,11.8s						
QZH				LR	LR		
	comp=E,880nm,11.5s						
QZH				LR	LR		
	comp=Z,1μm,15.8s						
WHN	**Wuhan**	**22.88**	**263**	P	**P**	**17 17 05.0**	**+4.0**
WHN				S	**S**	**17 21 06.0**	**-3.3**
WHN				LR	LR		
	comp=N,3μm,17.8s						
WHN				LR	LR		
	comp=E,1μm,14.4s						
WHN				LR	LR		
	comp=Z,2μm,17.2s						
HHC	**Hu-ho-hao-te**	**23.32**	**290**	*e*P	**P**	**17 17 04.5**	**-1.1**
HHC				sP	pP	17 17 12.5	+0.1
HHC				S	**S**	**17 21 11.0**	**-6.0**
HHC				SS	**SnSn**	**17 21 56.8**	**+4.7**
HHC				pmax	pmax		
	comp=Z,33nm,0.7s						
HHC				pmax	pmax		
	comp=Z,99nm,8.9s						
HHC				pmax	pmax		
	comp=Z,30nm,0.5s						
HHC				pmax	pmax		
	comp=Z,77nm,6.2s						
HHC				LR	LR		
	comp=N,3μm,14.8s						
HHC				LR	LR		
	comp=E,2μm,13.6s						
HHC				LR	LR		
	comp=Z,2μm,13.6s						
MA2	**Magadan**	**24.11**	**12**	P	**P**	**17 17 13.6**	**+0.8**
	comp=Z,13nm,0.6s,baz=216,slow=9.7,SNR=9.1						
MA2				LR	LR	17 27 29.4	
	comp=Z,231nm,18.1s,baz=219,slow=39						
CIT	**Chita**	**24.91**	**318**	*e*P	**P**	**17 17 17.0**	**-3.3**
CIT				*e*		17 18 05.6	
XAN	**Xi'an**	**26.19**	**274**	P	**P**	**17 17 32.0**	**0.0**
XAN				pP	pP	17 17 38.5	-0.6
XAN				S	**S**	**17 22 01.0**	**-1.7**
XAN				pmax	pmax		
	comp=Z,22nm,1.3s						
XAN				pmax	pmax		
	comp=Z,47nm,5.8s						
XAN				LR	LR		
	comp=E,380nm,14.1s						
XAN				LR	LR		
	comp=Z,460nm,14.1s						
YAK	**Yakutsk**	**26.66**	**348**	P	**P**	**17 17 36.1**	**+0.3**
	comp=Z,16nm,0.6s,baz=139,slow=1.3,SNR=14						
YAK				LR	LR	17 28 30.5	
	comp=Z,285nm,18.1s,baz=148,slow=37						
YAK	**Yakutsk**	**26.66**	**348**	*e*P	**P**	**17 17 38.8**	**+2.9**
YAK				*e**PP	**sP**	**17 17 48.9**	**+3.0**
YAK				*e*		17 18 18.8	
YAK				*e*PPP	PPP	17 18 31.1	
YAK				*e*		17 20 58.4	
YAK				*e*S	**S**	**17 22 12.5**	**+3.1**
YAK				*e*SS	**SnSn**	**17 23 17.7**	**+4.6**
YAK				*e*SSS	SSS	17 23 36.2	
YAK				pmax	pmax		
	comp=Z,17nm,0.9s						
YAK				pmax	pmax		
	comp=N,8.0nm,1.0s						
YAK				pmax	pmax		
	comp=Z,46nm,2.5s						
YAK				pmax	pmax		
	comp=N,115nm,4.2s						
YAK				pmax	pmax		
	comp=E,70nm,3.0s						
YAK				smax	smax		
	comp=N,212nm,4.0s						
YAK				smax	smax		
	comp=E,200nm,4.0s						
YAK				MLR	MLR		
	comp=Z,534nm,14.0s						
YAK				MLR	MLR		
	comp=N,408nm,15.0s						
YAK				MLR	MLR		
	comp=E,390nm,17.0s						
YAK	**Yakutsk**	**26.66**	**348**	*e*P	**P**	**17 17 35.0**	**-0.8**
	comp=E,23nm,0.8s						
ENH	**Enshi**	**26.88**	**266**	*e*P	**P**	**17 17 36.1**	**-2.2**
	comp=E,26nm,0.7s						
ULN	**Ulaanbaatar**	**27.42**	**305**	⇓*e*P	**P**	**17 17 43.3**	**+0.2**
ULN				pmax	pmax		
	comp=Z,2.0nm,0.5s						
ULN	**Ulaanbaatar**	**27.42**	**305**	*e*P	**P**	**17 17 40.8**	**-2.3**
	comp=Z,7.8nm,1.0s						
SEY	**Seymchan**	**27.54**	**11**	P	**P**	**17 17 44.9**	**+1.0**
	comp=Z,10.0nm,1.0s,baz=199,slow=8.4,SNR=12						
SEY	**Seymchan**	**27.54**	**11**	⇑*e*P	**P**	**17 17 44.7**	**+0.9**
SONA1	**Songino Array**	**27.85**	**305**	*e*P	**P**	**17 17 45.5**	**-1.5**
SONA0	**Songino Array**	**27.85**	**305**	*e*P	**P**	**17 17 46.1**	**-0.9**
	comp=Z,11nm,1.2s						
SONM	**Songino Array**	**27.85**	**305**	P	**P**	**17 17 46.1**	**-0.9**
	comp=Z,3.5nm,0.6s,baz=112,slow=9.1,SNR=8.8						
SONM				LR	LR	17 28 38.3	
	comp=Z,191nm,20.4s,baz=95,slow=36						
BOD	**Bodaibo**	**27.91**	**329**	*e*P	**P**	**17 17 45.2**	**-1.9**
BOD				pmax	pmax		
	comp=Z,9.0nm,1.5s						
H11N2	**WAKE ISLAND Hy**	**28.15**	**119**	T	T	17 47 13.1	
	baz=312,slow=75,SNR=1404						
H11N1	**WAKE ISLAND Hy**	**28.16**	**119**	T	T	17 47 14.9	
	baz=312,slow=75,SNR=1479						
H11N3	**WAKE ISLAND Hy**	**28.17**	**119**	T	T	17 47 14.7	
	baz=312,slow=75,SNR=1920						
H11S1	**WAKE ISLAND Hy**	**28.83**	**121**	T	T	17 48 02.4	
	baz=314,slow=76						
H11S3	**WAKE ISLAND Hy**	**28.83**	**121**	T	T	17 48 02.8	
	baz=314,slow=76,SNR=4569						
H11S2	**WAKE ISLAND Hy**	**28.85**	**121**	T	T	17 48 04.1	
	baz=314,slow=76,SNR=4412						
LZH	**Lanzhou**	**29.80**	**281**	*e*P	**P**	**17 18 07.0**	**+2.6**
LZH				pP	sP	17 18 13.0	-1.5
LZH				sP	pP	17 18 17.0	+5.5
LZH				PP	**PP**	**17 19 12.5**	**+0.8**
LZH				*e*S	**S**	**17 23 00.0**	**+0.2**
LZH				sS	sS	17 23 11.8	+0.3
LZH				SS	**SnSn**	**17 24 37.3**	**+6.9**
LZH				pmax	pmax		
	comp=Z,24nm,1.1s						
LZH				pmax	pmax		
	comp=Z,97nm,4.2s						
LZH				LR	LR		
	comp=N,690nm,14.6s						
LZH				LR	LR		
	comp=E,770nm,14.2s						
LZH				LR	LR		
	comp=Z,1μm,16.4s						
ZAK	**Zakamensk**	**30.39**	**309**	*e*P	**P**	**17 18 09.0**	**-0.4**
ZAK				pmax	pmax		
	comp=Z,3.0nm,1.3s						
TLY	**Talaya**	**30.49**	**312**	P	**P**	**17 18 12.9**	**+2.7**
	comp=Z,3.6nm,0.6s,baz=209,slow=3.8,SNR=6.0						
TLY				LR	LR	17 29 03.9	
	comp=Z,137nm,20.9s,baz=106,slow=34						
TLY	**Talaya**	**30.49**	**312**	*e*P	**P**	**17 18 12.1**	**+1.9**
TLY				*e*		17 19 20.4	
TLY				*e*S	**S**	**17 23 11.6**	**+1.6**
TLY				*e*SS	ScP	17 25 03.3	+13
TLY				pmax	pmax		
	comp=Z,8.0nm,1.2s						
TLY				MLR	MLR		
	comp=Z,142nm,11.0s						
TLY	**Tal

QIZ Qiongzhong 32.28 246 P **P** **17 18 25.5 -0.8**
QIZ S **S** **17 23 39.5 +0.9**
QIZ LR LR
comp=N,230nm,14.9s
QIZ LR LR
comp=E,230nm,16.3s
GTA Gaotai 32.39 288 *e*P **P** **17 18 28.0 +0.8**
GTA pP pP 17 18 33.5 -0.8
GTA sP sP 17 18 36.5 -0.8
GTA PcP PcP 17 21 20.0 +5.6
GTA S **S** **17 23 38.5 -1.7**
GTA sS sS 17 23 49.0 -3.0
GTA SS **SnSn** **17 25 33.3 -0.1**
GTA pmax pmax
comp=Z,5.0nm,1.1s
GTA pmax pmax
comp=Z,59nm,5.0s
GTA LR LR
comp=N,440nm,14.3s
GTA LR LR
comp=E,320nm,13.8s
GTA LR LR
comp=Z,270nm,16.6s
KMI Kunming 34.47 262 P P 17 18 50.3 +4.8
KMI pP sP 17 18 56.0 +0.4
KMI sP pP 17 18 58.8 +6.1
KMI PP **PP** **17 20 05.3 +1.6**
KMI S **S** **17 24 09.3 -3.5**
KMI sS sS 17 24 20.0 -4.6
KMI SS **SnSn** **17 26 24.0 -0.2**
KMI pmax pmax
comp=Z,25nm,1.1s
KMI pmax pmax
comp=Z,63nm,3.3s
KMI LR LR
comp=N,270nm,13.2s
KMI LR LR
comp=E,510nm,13.9s
KMI LR LR
comp=Z,520nm,13.2s
BILL Bilibino 34.80 16⇑ *e*P **P** **17 18 48.3 +0.7**
BILL *e*PPP PPP 17 20 19.5
BILL pmax pmax
comp=Z,10.0nm,1.7s
BILL MLR MLR
comp=Z,164nm,16.0s
BILL Bilibino 34.80 16 *e*P **P** **17 18 47.1 -0.5**
comp=Z,22nm,1.5s
TIXI Tiksi 35.93 354 P P **17 18 55.6 -1.6**
comp=Z,1.1nm,0.3s,baz=138,slow=8.2,SNR=10
TIXI Tiksi 35.93 354⇓ *e*P **P** **17 18 55.7 -1.6**
TIXI pmax pmax
comp=Z,14nm,1.7s
TIXI Tiksi 35.93 354 *e*P **P** **17 18 55.5 -1.8**
comp=Z,8.7nm,0.8s
PANO Nakornpanom 37.35 249 P P 17 19 16.5 +6.5
comp=Z,31nm,0.7s,comp=Z,2µm
SKNT Sakolnakorn 37.93 249 P P 17 19 20.6 +5.7
comp=Z,11nm,1.1s
LOEI Loei 39.68 252 P **P** **17 19 28.3 -1.3**
FAKI Fak Fak 39.89 194 *e*P **P** **17 19 30.8 -0.5**
comp=Z,29nm,1.0s
PBKT Sadao Pong 40.47 252 P P 17 19 44.8 +8.7
comp=Z,13nm,1.1s,comp=Z,2µm
CHTO Chiang Mai 40.74 256 *e*P **P** **17 19 39.7 +1.3**
CHTO pmax pmax
comp=Z,13nm,1.5s
CHTO Chiang Mai 40.74 256 *e*P **P** **17 19 39.7 +1.3**
comp=Z,13nm,1.5s
WMQ Urumqi 40.80 297 P **P** **17 19 40.0 +1.3**
WMQ pP sP 17 19 46.8 -2.1
WMQ sP pP 17 19 49.3 +3.3
WMQ PP **PnPn** **17 21 17.5 +0.5**
WMQ S **S** **17 25 49.0 +0.8**
WMQ sS sS 17 26 00.8 +0.6
WMQ ScS **ScS** **17 29 40.0 -2.4**
WMQ pmax pmax
comp=Z,7.0nm,0.6s
WMQ pmax pmax
comp=Z,46nm,3.6s
WMQ LR LR
comp=N,390nm,14.0s
WMQ LR LR
comp=E,120nm,14.0s
WMQ LR LR
comp=Z,89nm,18.8s
CM31 Chiang Mai Arr 40.94 256 *e*P **P** **17 19 40.0 -0.1**
CMAR Chiang Mai Arr 40.94 256 P **P** **17 19 40.1 0.0**
comp=Z,0.6nm,0.8s,baz=45,slow=7.5,SNR=6.6
CMAR LR LR 17 37 48.1
comp=Z,183nm,18.4s,baz=54,slow=38
CM01 Chiang Mai Arr 40.95 256 *e*P **P** **17 19 41.6 +1.4**
SRAK Srakaew 41.23 248 P **P** **17 19 43.6 +1.2**
LSA Lhasa 41.88 276 P **P** **17 19 48.5 +0.3**
LSA pmax pmax
comp=Z,6.0nm,1.6s
LSA Lhasa 41.88 276 *e*P **P** **17 19 47.7 -0.5**
LSA pmax pmax
comp=Z,23nm,1.1s
LSA Lhasa 41.88 276 *e*P **P** **17 19 47.6 -0.5**
comp=Z,23nm,1.1s
ZAA0 Zalesovo Array 42.09 313 *e*P **P** **17 19 47.5 -1.6**
ZAA1 Zalesovo Array 42.09 313 *e*P **P** **17 19 48.5 -0.5**
ZALV Zalesovo Beam 42.09 313 P **P** **17 19 48.5 -0.5**
comp=Z,8.3nm,0.6s,baz=96,slow=7.1,SNR=32
NVS Novosibirsk 43.03 314 *e*P **P** **17 19 55.2 -1.5**
NVS pmax pmax
comp=E,24nm,1.3s
NVS pmax pmax
comp=Z,29nm,1.3s
NRIK Noril'sk 43.73 336 P **P** **17 20 01.4 -0.7**
comp=Z,2.6nm,0.6s,baz=121,slow=4.2,SNR=5.6
NRIK LR LR 17 39 57.8
comp=Z,293nm,18.4s,baz=98,slow=38
MK01 Makanchi Array 44.15 303 *e*P **P** **17 20 04.5 -1.3**
MK31 Makanchi Array 44.15 303 *i* P **P** **17 20 04.5 -1.4**
MK31 pmax pmax
comp=Z,11nm,0.8s
MK31 Makanchi Array 44.15 303 *e*P **P** **17 20 04.8 -1.1**
MK32 Makanchi Array 44.15 303 *e*P **P** **17 20 05.3 -0.6**
MKAR Makanchi Array 44.15 303 P **P** **17 20 05.3 -0.6**
comp=Z,2.7nm,0.7s,baz=87,slow=8.8,SNR=29
MKAR LR LR 17 39 21.0
comp=Z,222nm,18.5s,baz=91,slow=37
MKAR Makanchi Array 44.15 303 *e*P **P** **17 20 05.5 -0.4**
MAKZ Makanchi 44.36 303 *e*P **P** **17 20 06.8 -0.8**
MAKZ pmax pmax
comp=Z,13nm,0.9s
MAKZ Makanchi 44.36 303 *e*P **P** **17 20 06.8 -0.8**
comp=Z,13nm,0.9s
KURK Kurchatov 46.05 309 *e*P **P** **17 20 19.2 -1.6**
KURK pmax pmax
comp=Z,29nm,0.7s
KURK Kurchatov 46.05 309 *e*P **P** **17 20 19.2 -1.6**
comp=Z,29nm,0.7s
KURBB Kurchatov Arra 46.12 308 P **P** **17 20 20.1 -1.2**
comp=Z,2.9nm,0.4s,baz=85,slow=8.0,SNR=34
TT01 Tatalina 46.21 34 *e*P **P** **17 20 21.7 -0.3**
PDGK Podgornoye 46.75 298 P **P** **17 20 25.6 -0.8**
PDGK pmax pmax
comp=Z,55nm,1.7s
KRAB Krabi 47.13 244 P P 17 20 35.3 +5.6
comp=Z,24nm,0.7s,comp=Z,356nm
KDAK Kodiak Island 47.88 41 *i* P **P** **17 20 35.9 +0.9**
CAST Castle Rocks 48.02 34 *e*P **P** **17 20 36.7 +0.7**
comp=Z,73nm,1.9s
SPU Mount Spurr 48.02 37 *e*P **P** **17 20 35.7 -0.5**
IPM Ipoh 48.45 239 *e*P **P** **17 20 39.4 -0.5**
comp=Z,16nm,1.2s
SOEI Soe 48.46 202 *e*P **P** **17 20 40.5 +0.5**
comp=Z,72nm,1.0s
BPAW Bear Paw Mtn. 48.52 33 *e*P **P** **17 20 41.8 +1.9**
comp=Z,41nm,1.9s
MLY Manley 48.64 32 *e*P **P** **17 20 42.1 +1.2**
comp=Z,49nm,1.8s
COLD Coldfoot 48.95 29 *e*P **P** **17 20 44.9 +1.8**
comp=Z,21nm,1.8s
MCK McKinley 49.43 33 *e*P **P** **17 20 49.6 +2.7**
MCK pmax pmax
comp=Z,71nm,2.0s
MCK McKinley 49.43 33 *e*P **P** **17 20 49.6 +2.7**
comp=Z,71nm,2.0s
RND Reindeer 49.47 34 *e*P P 17 20 51.0 +3.7
RND pmax pmax
comp=Z,17nm,1.0s
RND Reindeer 49.47 34 *e*P P 17 20 51.0 +3.7
comp=Z,17nm,1.0s
TKM2 Tokmak 2 49.61 299 P **P** **17 20 48.4 -0.4**
TKM2 pmax pmax
comp=Z,52nm,1.8s
TKM2 Tokmak 2 49.61 299 *e*P **P** **17 20 49.0 +0.2**
comp=Z,88nm,1.8s
MDM Murphy Dome 49.71 32 *e*P **P** **17 20 49.9 +0.8**
comp=Z,88nm,1.6s
WRH Wood River Hil 49.78 32 *e*P **P** **17 20 52.3 +2.7**
comp=Z,5.0nm,0.8s
MTN Manton Dam 49.79 193 *e*P **P** **17 20 50.0 -0.1**
comp=Z,27nm,1.0s
CCB Clear Creek Bu 49.90 32 *e*P **P** **17 20 51.8 +1.4**
comp=Z,11nm,1.4s
COEN Coen 50.07 177 *e*P **P** **17 20 52.8 +0.5**
comp=Z,75nm,1.6s
DHY Denali Highway 50.15 34 *e*P **P** **17 20 52.8 +0.2**
comp=Z,47nm,1.7s
HDA Harding Lake 50.28 33 *e*P **P** **17 20 53.5 +0.2**
comp=Z,12nm,0.8s
ILAR Eielson Array 50.29 32 P **P** **17 20 52.9 -0.5**
comp=Z,3.0nm,0.8s,baz=273,slow=5.6,SNR=23
ILAR LR LR 17 44 32.3
comp=Z,52nm,18.2s,baz=250,slow=39
ILB Eielson Array 50.29 32 *e*P **P** **17 20 53.6 +0.2**
IL1 Eielson Array 50.29 32 *e*P **P** **17 20 52.9 -0.5**
KSH Kashi 50.33 294 P P 17 20 58.3 +4.1
KSH *e*pP sP 17 21 04.0 -0.5
KSH *e*ScP **ScP** **17 26 09.5 +2.4**
KSH S **S** **17 28 10.0 +4.2**
KSH pmax pmax
comp=Z,13nm,1.0s
KSH pmax pmax
comp=Z,88nm,3.6s
KSH LR LR
comp=N,320nm,12.3s
KSH LR LR
comp=E,130nm,9.4s
KSH LR LR
comp=Z,410nm,18.4s
FRU Bishkek 50.33 299 *e*P **P** **17 20 54.0 -0.1**
FRU pmax pmax
comp=Z,60nm,1.9s
VOSK Vostochnaya 50.45 312 P **P** **17 20 53.7 -1.1**
VOSK pmax pmax
comp=Z,33nm,1.5s
VOSK Vostochnaya 50.45 312 *e*P **P** **17 20 53.9 -0.9**
comp=Z,37nm,1.4s
AAK Ala-Archa 50.47 299 P **P** **17 20 55.2 -0.1**
comp=Z,0.9nm,0.3s,baz=93,slow=12,SNR=5.8
AAK Ala-Archa 50.47 299 P **P** **17 20 56.0 +0.7**
AAK pmax pmax
comp=Z,32nm,1.7s
AAK Ala-Archa 50.47 299 *e*P **P** **17 20 54.8 -0.6**
comp=Z,5.5nm,0.9s
OTUK Ortayu 50.51 306 P **P** **17 20 54.5 -0.9**
OTUK pmax pmax
comp=Z,15nm,1.1s
BVA0 Borovoye Array 50.74 313 P **P** **17 20 55.7 -1.3**
BVA0 pmax pmax
comp=Z,19nm,1.5s
BRVK Borovoye 50.80 313⇑ *e*P **P** **17 20 57.9 +0.5**
BRVK pmax pmax
comp=Z,30nm,2.5s
BRVK Borovoye 50.80 313 *e*P **P** **17 20 57.1 -0.3**
comp=Z,15nm,1.2s
FYU Fort Yukon 50.90 30 *e*P **P** **17 20 59.3 +1.3**
comp=Z,114nm,1.8s
EKS2 Erkin-Say 50.97 299 *e*P **P** **17 20 59.5 +0.5**
EKS2 pmax pmax
comp=Z,24nm,1.8s
EKS2 Erkin-Say 50.97 299 *e*P **P** **17 20 59.5 +0.5**
comp=Z,24nm,1.8s
ZRNK Zerenda 51.58 313 P **P** **17 21 02.2 -1.1**
ZRNK pmax pmax
comp=Z,40nm,1.5s
ZRNK Zerenda 51.58 313 *e*P **P** **17 21 02.6 -0.7**
comp=Z,34nm,1.3s
DOT Dot Lake 51.60 33 *e*P **P** **17 21 03.7 +0.4**
comp=Z,25nm,0.8s
EGAK Eagle 52.73 32 *e*P **P** **17 21 13.1 +1.4**
comp=Z,9.0nm,0.6s
GSI Gunungsitoli 53.11 239 *e*P **P** **17 21 14.2 -0.9**
comp=Z,103nm,1.3s
KK31 Karatay Array 53.13 300 P **P** **17 21 14.0 -0.9**
KK31 pmax pmax
comp=Z,28nm,1.5s
KKAR Karatay Array 53.13 300 *e*P **P** **17 21 14.5 -0.5**
KKAR Karatay Array 53.13 300 *e*P **P** **17 21 14.5 -0.5**
INK Inuvik 55.18 27 P **P** **17 21 30.1 +0.7**
comp=Z,2.5nm,0.7s,baz=272,slow=9.3,SNR=5.5
INK Inuvik 55.18 27 *e*P **P** **17 21 30.1 +0.7**
INK pmax pmax
comp=Z,65nm,1.8s
INK Inuvik 55.18 27 *e*P **P** **17 21 30.1 +0.7**
comp=Z,66nm,1.8s
SVE Sverdlovsk 55.40 319 *e*P **P** **17 21 32.1 +0.9**
SVE pmax pmax
comp=Z,36nm,1.3s
FITZ Fitzroy Crossi 56.05 198 *e*P **P** **17 21 36.0 -0.2**
comp=Z,14nm,1.0s
WRAB Tennant Creek 56.31 187⇑ *i*P **P** **17 21 37.9 -0.2**
WRAB pmax pmax
comp=Z,62nm,1.7s
WRAB Tennant Creek 56.31 187 *e*P **P** **17 21 37.6 -0.5**
WR1 Warramunga Arr 56.33 187 *e*P **P** **17 21 37.6 -0.6**
WRA Warramunga Arr 56.33 187 P **P** **17 21 37.6 -0.6**
comp=Z,5.8nm,0.7s,baz=6.4,slow=7.5,SNR=80
ARU Arti 56.62 319 *d i*P **P** **17 21 38.3 -1.6**
ARU 17 22 35.8
ARU 17 23 42.0
ARU S **S** **17 29 28.6 -1.7**
ARU 17 31 20.4
ARU SS SS 17 33 09.2 -8.3
ARU pmax pmax
comp=Z,22nm,1.7s
ARU Arti 56.62 319 *e*P **P** **17 21 38.6 -1.3**
comp=Z,47nm,1.3s
SOKR Solikamsk 56.63 323⇑ *i*P P 17 21 43.6 +3.7
SOKR pmax pmax
comp=Z,27nm,1.4s
SOKR MLR MLR
comp=Z,155nm,15.0s
KBL Kabul 57.29 291 *e*P **P** **17 21 43.7 -1.6**
KBL pmax pmax
comp=Z,23nm,1.4s
KBL Kabul 57.29 291 *e*P **P** **17 21 43.7 -1.6**
comp=Z,23nm,1.4s
HYB Hyderabad 57.79 269 *i*P P 17 21 54.0 +5.2
AB31 Akbulak array 58.08 310 *i*P **P** **17 21 49.2 -1.2**
AB31 pmax pmax
comp=Z,6.0nm,0.7s
ABKAR Akbulak array 58.08 310 *e*P **P** **17 21 49.1 -1.2**
DLBC Dease Lake 59.41 38 P **P** **17 22 00.1 +0.5**
comp=Z,2.7nm,0.9s,baz=315,slow=4.6,SNR=5.0
DLBC Dease Lake 59.41 38 *e*P **P** **17 21 59.9 +0.3**
comp=Z,22nm,1.4s
AS01 Alice Springs 60.05 187 *e*P **P** **17 22 03.8 -0.4**
AS31 Alice Springs 60.05 187 *e*P **P** **17 22 03.7 -0.5**
comp=Z,1.8nm,0.8s
ASAR Alice Springs 60.05 187 P **P** **17 22 04.2 -0.1**
comp=Z,3.7nm,0.7s,baz=15,slow=6.7,SNR=70
TMCR Tamitsa 63.16 331 *e*P P 17 22 30.1 +5.4
TMCR pmax pmax
comp=Z,48nm,1.3s
RES Resolute Bay 63.37 14 *e*P **P** **17 22 25.2 -0.7**
RES pmax pmax
comp=Z,9.0nm,0.8s
RES Resolute Bay 63.37 14 *e*P **P** **17 22 25.2 -0.7**
comp=Z,9.0nm,0.8s
GEYT Alibeck 63.82 299 P **P** **17 22 29.3 -0.4**
comp=Z,1.8nm,0.7s,baz=46,slow=6.4,SNR=13
GEYT LR LR 17 50 24.8
comp=Z,99nm,20.8s,baz=260,slow=36
KLMR Klimovskoe 64.13 328 *e*P **P** **17 22 29.8 -1.4**
KLMR *e**PP **sP** **17 22 42.6 +1.0**
KLMR pmax pmax
comp=Z,22nm,1.1s
ARA0 ARCESS Array S 64.50 339 *e*P **P** **17 22 33.2 -0.4**
ARCES ARCESS Array B 64.50 339 P **P** **17 22 33.2 -0.4**
comp=Z,2.1nm,0.7s,baz=51,slow=6.8,SNR=7.2
ARCES LR LR 17 56 05.7
comp=Z,105nm,19.1s,baz=54,slow=41
YKW3 Yellowknife Ar 64.56 30 *e*P **P** **17 22 34.4 +0.4**
comp=Z,18nm,1.5s
YKA Yellowknife Ar 64.60 30 P **P** **17 22 34.1 -0.2**
comp=Z,0.6nm,0.7s,baz=298,slow=6.6,SNR=17
YKB5 Yellowknife Ar 64.60 30 *e*P **P** **17 22 33.7 -0.6**
AFI Afiamalu 67.00 129 LR LR 17 46 05.3
comp=Z,46nm,21.6s,baz=6.0,slow=31
MOS Moscow 67.57 323 *e*P **P** **17 22 51.6 -1.8**
MOS pmax pmax
comp=Z,100nm,1.7s
MOS pmax pmax
comp=Z,66nm,1.4s
VRH Novokhopyorsk 67.82 318 *e*P **P** **17 22 56.8 +1.7**
VRH pmax pmax
comp=Z,20nm,0.6s
STKA Stephens Creek 67.87 179 P **P** **17 22 55.0 -0.5**
comp=Z,2.6nm,0.7s,baz=341,slow=8.6,SNR=6.8
STKA Stephens Creek 67.87 179 *e*P **P** **17 22 55.4 0.0**
STKA pmax pmax
comp=Z,2.0nm,1.4s
STKA Stephens Creek 67.87 179 *e*P **P** **17 22 55.4 0.0**
comp=Z,2.3nm,1.4s
OBN Obninsk 68.41 323 P **P** **17 23 00.0 +1.3**
OBN pmax pmax
comp=Z,5.0nm,0.6s
OBN MLR MLR
comp=Z,126nm,15.0s
LPSR Galich'ya Gora 68.58 320 *e*P **P** **17 23 01.6 +1.8**
LPSR pmax pmax
comp=Z,20nm,0.7s
VSR Storozhevoye 69.19 319 *e*P **P** **17 23 05.6 +2.0**
VSR pmax pmax
comp=Z,20nm,0.7s
FIA1 FINESS Array S 69.24 332 *e*P **P** **17 23 03.8 0.0**
FIA0 FINESS Array S 69.24 332 *e*P **P** **17 23 03.5 -0.2**
FIA0 FINESS Array S 69.24 332 *e*P **P** **17 23 03.5 -0.2**
FINES FINESS Array B 69.24 332 P **P** **17 23 03.5 -0.2**
comp=Z,4.7nm,0.7s,baz=46,slow=11,SNR=16
FINES FINESS Array B 69.24 332 *i*P **P** **17 23 06.0 +2.2**
FINES pmax pmax
comp=Z,8.0nm,0.7s
GOF Gofitskoye 70.26 312 *ce*P **P** **17 23 11.6 +1.3**
VSU Vasula 70.85 329 *c i*P **P** **17 23 14.6 +0.9**
VSU pmax pmax
comp=Z,86nm,1.2s
ZEI Tsey 70.93 309 *e*P **P** **17 23 14.0 -0.8**
ZEI pmax pmax
comp=Z,17nm,0.8s
KBZ Khabaz 71.05 311 P **P** **17 23 15.4 +0.3**
comp=Z,3.2nm,0.9s,baz=79,slow=0.4,SNR=8.4
KBZ LR LR 17 55 49.3
comp=Z,171nm,19.1s,baz=52,slow=37
BANOM Banah 71.05 289 P P 17 23 20.8 +5.3
KIV Kislovodsk 71.06 311 *ce*P **P** **17 23 16.8 +1.4**
KIV pmax pmax
comp=Z,87nm,1.7s
KIV MLR MLR
comp=Z,117nm,18.0s
KIV Kislovodsk 71.06 311 *e*P **P** **17 23 15.7 +0.3**
comp=Z,36nm,0.8s
SUMG Summit 71.37 360 *e*P **P** **17 23 17.7 +0.6**
SUMG pmax pmax
comp=Z,11nm,0.9s
SUMG Summit 71.37 360 *e*P **P** **17 23 17.7 +0.6**
comp=Z,11nm,0.9s
NEY Neytrino 71.41 310⇑ *e*P **P** **17 23 20.4 +2.7**
NEY pmax pmax
comp=Z,3.0nm,2.3s
K05A Summer Lake 71.69 50 *e*P **P** **17 23 20.7 +1.3**
comp=Z,49nm,2.0s
GNI Garni 71.80 307 *e*P **P** **17 23 20.3 +0.3**
GNI pmax pmax
comp=Z,58nm,1.7s
GNI Garni 71.80 307 *e*P **P** **17 23 20.3 +0.3**
comp=Z,58nm,1.7s
ASHO Ashiyiah 71.89 288 *i*P P 17 23 27.2 +6.6
SNR=6.7
FAQ Al Faqa, Dubai 72.22 288 P P 17 23 27.3 +4.7
SOC Sochi 73.06 312 *e*P P 17 23 32.1 +4.9
SOC *e* 17 26 10.8
SOC *e*SS SS 17 37 35.5 +2.1
SOC pmax pmax
comp=Z,10.0nm,0.4s
SOC MLR MLR
comp=Z,560nm,19.0s
SWMT Swartz Lake 73.06 43 *e*P **P** **17 23 27.9 +0.5**
ANN Anapa 73.72 314 *e*P P 17 23 27.8 -3.3
ANN *e**PP pP 17 23 36.6 -2.1
ANN *e*S **SKiKP** **17 32 55.4 -3.6**
ANN pmax pmax
comp=Z,34nm,1.2s
NC405 NORSAR Array S 74.45 337 *e*P **P** **17 23 36.4 +1.2**
CMB Columbia Colle 74.59 54 *e*P **P** **17 23 36.8 +0.4**
CMB pmax pmax
comp=Z,9.0nm,1.1s
CMB Columbia Colle 74.59 54 *e*P **P** **17 23 36.8 +0.4**
comp=Z,8.7nm,1.1s
AKASG Malin Array Be 74.60 322 P **P** **17 23 35.2 -0.9**
comp=Z,1.2nm,0.4s,baz=47,slow=6.4,SNR=13
AKASG LR LR 17 58 03.6
comp=Z,100nm,18.7s,baz=65,slow=37
AKBB Malin Array Si 74.60 322 *e*P **P** **17 23 34.6 -1.5**
AKBB pmax pmax
comp=Z,15nm,0.9s
AKBB Malin Array Si 74.60 322 *e*P **P** **17 23 34.6 -1.5**
comp=Z,15nm,0.9s
KIEV Kiev 74.61 322 P **P** **17 23 35.0 -1.2**
KIEV pmax pmax
comp=Z,10.0nm,1.2s
KIEV Kiev 74.61 322 *e*P **P** **17 23 34.7 -1.4**
comp=Z,14nm,0.7s
NC204 NORSAR Array S 74.63 337 *e*P **P** **17 23 35.3 -0.8**
NB201 NORSAR Array S 74.64 337 *e*P **P** **17 23 35.2 -0.9**
AK11 Malin Array Si 74.64 322 *e*P **P** **17 23 36.9 +0.5**
NB2 NORSAR Subarra 74.67 337 P **P** **17 23 37.0 +0.6**
comp=Z,5.4nm,0.7s,baz=40,slow=6.2
NB200 NORSAR Array S 74.67 337 *e*P **P** **17 23 35.8 -0.6**
NOA NORSAR Array B 74.67 337 P **P** **17 23 35.8 -0.6**
comp=Z,2.1nm,0.9s,baz=39,slow=5.7,SNR=6.4
NOA LR LR 18 02 40.3
comp=Z,60nm,18.6s,baz=30,slow=41
NBO02 NORSAR Array S 74.77 337 *e*P **P** **17 23 37.4 +0.4**
FCC Fort Churchill 74.79 26 *e*P **P** **17 23 37.2 +0.1**
FCC pmax pmax
comp=Z,20nm,1.1s
FCC Fort Churchill 74.79 26 *e*P **P** **17 23 37.1 +0.1**
comp=Z,20nm,1.1s
NBO00 NORSAR Array S 74.81 337 *e*P **P** **17 23 38.0 +0.8**
LRM Limekiln Ridge 74.92 44 *e*P **P** **17 23 39.0 +0.6**
DLMT Dillon 75.11 44 *e*P **P** **17 23 40.3 +0.9**
comp=Z,14nm,1.3s
SUW Suwalki 75.25 327 *e*P P 17 23 45.0 +5.2
BOZ Bozeman (W) 75.48 44 *e*P **P** **17 23 42.4 +0.9**
BOZ pmax pmax
comp=Z,5.0nm,0.9s
BOZ Bozeman (W) 75.48 44 *e*P **P** **17 23 42.4 +0.9**
comp=Z,5.3nm,0.9s
NVAR Mina Array Bea 75.72 53 P **P** **17 23 44.2 +1.1**
comp=Z,4.7nm,1.0s,baz=280,slow=6.7,SNR=23
NVAR LR LR 17 48 21.9
comp=Z,38nm,21.7s,baz=252,slow=29
NV01 Mina Array Sit 75.72 53 *e*P **P** **17 23 43.9 +0.8**
NV11 Mina Array Sit 75.81 53 *e*P **P** **17 23 44.3 +0.8**
comp=Z,8.6nm,1.3s
SORM Soroca 76.67 321⇑ *i*P P 17 23 52.3 +4.3
H17A Grant Village 76.84 44 *e*P **P** **17 23 51.3 +1.9**
comp=Z,12nm,1.1s
IMW Indian Meadow 76.94 45 *e*P **P** **17 23 51.4 +1.3**
comp=Z,6.3nm,1.1s
FXWY Fox Creek 77.05 45 *e*P **P** **17 23 51.7 +1.1**
comp=Z,9.4nm,1.4s
MOOW Moose Ponds 77.14 45 *e*P **P** **17 23 51.7 +0.6**
comp=Z,8.0nm,1.4s
REDW Red Top Meadow 77.32 45 *e*P **P** **17 23 53.4 +1.3**
comp=Z,7.2nm,1.2s
R11A Troy Canyon, C 77.50 52 *e*P **P** **17 23 54.0 +0.9**
comp=Z,10nm,1.3s
LVV L'vov 77.70 324 *e*P P 17 23 58.8 +5.0
TPNV Topopah Spring 77.91 53 *e*P **P** **17 23 56.4 +1.0**
TPNV pmax pmax
comp=Z,7.0nm,0.9s
TPNV Topopah Spring 77.91 53 *e*P **P** **17 23 56.4 +1.0**
comp=Z,6.6nm,0.9s
HWUT Hardware Ranch 77.99 47 *e*P **P** **17 23 56.0 +0.2**
comp=Z,11nm,1.3s
DUG Dugway, Tooele 78.11 49 *e*P **P** **17 23 57.4 +0.9**
DUG pmax pmax
comp=Z,7.0nm,1.0s
DUG Dugway, Tooele 78.11 49 *e*P **P** **17 23 57.4 +0.9**

comp=Z,7.2nm,1.0s
GIRR Girov 78.39 320⇑ iP P 17 24 02.0 +4.3
BW06 Boulder Array 78.43 45 eP P 17 23 56.3 -2.0
PD31 Pinedale Array 78.43 45 eP P 17 23 58.3 0.0
PDAR Pinedale Array 78.43 45 P P 17 23 58.7 +0.4
comp=Z,0.6nm,0.6s,baz=298,slow=3.2,SNR=8.2
PDAR LR LR 17 59 01.2
comp=Z,24nm,18.0s,baz=334,slow=36
KWP Kalwaria Pacla 78.46 324 eP P 17 24 00.5 +2.5
PSUT Pine Spring 78.48 51 eP P 17 23 58.3 -0.3
comp=Z,7.6nm,1.3s
BUR08 Bucovina Ar. S 78.59 322 eP P 17 23 58.4 -0.5
BURAR Bucovina Array 78.61 322⇑ iP P 17 24 03.5 +4.5
TESR Tescani 78.61 320⇑ iP P 17 24 03.2 +4.3
NLU North Lily Min 78.70 49 eP P 17 24 00.7 +0.8
comp=Z,5.6nm,1.2s
MPU Maple Canyon 78.93 48 eP P 17 24 00.3 -0.8
comp=Z,7.1nm,1.1s
VRI Vrincioaia 78.99 320⇑ iP P 17 24 04.9 +3.9
BR101 Keskin Array S 79.01 311 eP P 17 24 02.1 +0.7
BR131 Keskin Array S 79.01 311 eP P 17 24 02.6 +1.2
BRTR Keskin Array B 79.01 311 P P 17 24 02.1 +0.7
comp=Z,5.9nm,0.9s,baz=106,slow=4.4,SNR=10
BRTR LR LR 18 02 19.0
comp=Z,63nm,18.6s,baz=40,slow=38
BRTR Keskin Array B 79.01 311 i P P 17 24 04.4 +3.0
BRTR pmax pmax
comp=Z,6.0nm,0.9s
TIRR Tirgusor 79.02 318⇑ iP P 17 24 05.9 +4.8
KOLS Kolonicke sedl 79.14 324 eP P 17 24 03.2 +1.4
KOLS pmax pmax
comp=Z,12nm,1.4s
KOLS Kolonicke sedl 79.14 324 eP P 17 24 03.2 +1.4
STHS Stebnicka Huta 79.29 325 eP P 17 24 05.2 +2.6
STHS e 17 24 07.9
STHS pmax pmax
comp=Z,5.0nm,0.9s
STHS Stebnicka Huta 79.29 325 eP P 17 24 05.2 +2.6
STHS e 17 24 07.9
UZH Uzhgorod 79.34 324 eP P 17 24 08.0 +5.1
UZH e 17 24 16.4
OJC Ojcow 79.39 326 eP P 17 24 05.3 +2.2
OJC Ojcow 79.39 326 eP P 17 24 04.6 +1.5
OJC pmax pmax
comp=Z,25nm,1.1s
OJC Ojcow 79.39 326 eP P 17 24 04.5 +1.5
comp=Z,25nm,1.1s
ANTO Ankara 79.43 312 eP P 17 24 04.5 +0.9
ANTO pmax pmax
comp=Z,13nm,0.8s
ANTO Ankara 79.43 312 eP P 17 24 04.5 +0.9
comp=Z,13nm,0.8s
BR231 Keskin MP Arra 79.46 312 eP P 17 24 02.9 -0.9
CRVS Cervenica-Dubn 79.55 324 eP P 17 24 06.0 +2.0
CRVS e 17 24 09.4
CRVS Cervenica-Dubn 79.55 324 eP P 17 24 06.0 +2.0
CRVS e 17 24 09.4
DOPR Dopca 79.62 320⇑ iP P 17 24 08.8 +4.3
MLR Muntele Rosu 79.65 320⇑ iP P 17 24 08.7 +3.9
MLR Muntele Rosu 79.65 320 eP P 17 24 04.6 -0.2
MLR pmax pmax
comp=Z,15nm,1.3s
MLR Muntele Rosu 79.65 320 eP P 17 24 04.6 -0.2
comp=Z,15nm,1.3s
NIE Niedzica 79.73 325 eP P 17 24 07.6 +2.6
LCMT Little Creek M 79.79 51 eP P 17 24 06.5 +0.8
comp=Z,3.9nm,0.9s
P17A Butcher Ranch, 79.81 48 eP P 17 24 06.8 +1.0
comp=Z,11nm,1.0s
MTPU Mount Pierson 79.81 50 eP P 17 24 07.1 +1.0
comp=Z,6.3nm,1.1s
P18A Preston Nutter 80.01 48 eP P 17 24 08.2 +1.1
comp=Z,5.0nm,0.9s
KNB Kanab 80.05 51 eP P 17 24 07.9 +0.7
KNB pmax pmax
comp=Z,14nm,1.3s
KNB Kanab 80.05 51 eP P 17 24 07.9 +0.7
comp=Z,14nm,1.3s
VOIR 80.16 320⇑ iP P 17 24 12.3 +4.8
SRU San Rafael Swe 80.17 48 eP P 17 24 08.5 +0.7
SRU pmax pmax
comp=Z,7.0nm,1.0s
SRU San Rafael Swe 80.17 48 eP P 17 24 08.5 +0.7
comp=Z,7.4nm,1.0s
LANS Liptovska Anna 80.30 325 eP P 17 24 10.4 +2.3
LANS Liptovska Anna 80.30 325 eP P 17 24 10.4 +2.3
OKC Ostrava-Krasne 80.41 326 eP P 17 24 10.5 +1.9
OKC AMS AMS 18 05 00.0
comp=Z,200nm,14.3s
ARR Arges 80.42 320⇑ iP P 17 24 12.4 +3.5
KSP Ksiaz 80.48 328 eP P 17 24 11.2 +2.2
MORC Moravsky Berou 80.72 327⇑ iP P 17 24 12.9 +2.5
MORC Moravsky Berou 80.72 327 eP P 17 24 11.6 +1.2
MORC pmax pmax
comp=Z,70nm,1.3s
MORC Moravsky Berou 80.72 327 eP P 17 24 11.6 +1.2
comp=Z,70nm,1.3s
LOT Lotru 80.81 321⇑ iP P 17 24 15.3 +4.3
DPC Dobruska-Polom 80.83 328 eP P 17 24 13.2 +2.3
DPC epP PcP **17 24 16.4 -1.1**
DPC AMS AMS 18 08 10.0
comp=Z,200nm,16.0s
UPC Upice 80.85 328 eP P 17 24 12.1 +1.1
UPC AMS AMS 18 07 10.0
comp=Z,200nm,17.1s
PSZ Piszkesteto 80.99 324⇑ iP P 17 24 14.7 +2.8
PSZ Piszkesteto 80.99 324 eP P 17 24 12.9 +1.0
PSZ pmax pmax
comp=Z,29nm,1.3s
PSZ Piszkesteto 80.99 324 eP P 17 24 12.9 +1.0
comp=Z,29nm,1.3s
VYHS Vyhne 81.06 325 eP P 17 24 13.3 +1.1
VYHS pmax pmax
comp=Z,14nm,1.6s
VYHS Vyhne 81.06 325 eP P 17 24 13.2 +1.1
VYHS e 17 24 17.6
PV09 Paradox Valley 81.39 48 eP P 17 24 14.8 +0.3
BRG Berggiesshubel 81.44 329 eP P 17 24 15.2 +1.1
comp=Z,14nm,1.7s
BRG e 17 24 19.1
comp=Z,9.4nm,1.1s
BRG Berggiesshubel 81.44 329 eP P 17 24 15.2 +1.1
BRG pmax pmax
comp=Z,14nm,1.7s
PVCC Panska Ves 81.44 329 eP P 17 24 16.3 +2.2
PVCC epP PcP **17 24 19.7 -0.4**
PVCC AMS AMS 18 05 00.0
comp=Z,200nm,18.6s
CLL Collm 81.50 330 i P P 17 24 14.8 +0.4
comp=Z,7.0nm,1.0s
CLL i 17 24 19.3
comp=Z,23nm,1.2s
CLL LmV 18 03 00.0
comp=Z,100nm,19.9s
CLL Collm 81.50 330 eP P 17 24 14.0 -0.4
CLL pmax pmax
comp=Z,35nm,1.4s
CLL Collm 81.50 330 eP P 17 24 14.0 -0.4
comp=Z,35nm,1.4s
PV10 Paradox Valley 81.53 48 eP P 17 24 16.0 +0.9
PV05 Paradox Valley 81.68 49 eP P 17 24 16.3 +0.4
N23A Red Feather La 81.70 45 eP P 17 24 16.7 +0.6
comp=Z,7.1nm,1.0s
BZS Buzias 81.78 322⇑ iP P 17 24 18.2 +2.2
GOPC GO Pecny, Ondr 81.81 328 eP P 17 24 18.1 +2.0
GOPC epP PcP **17 24 21.7 -0.1**
GOPC AMS AMS 18 08 40.0
comp=Z,200nm,18.1s
PRU Pruhonice 81.86 328 eP P 17 24 18.2 +1.9
PRU epP PcP **17 24 21.8 -0.2**
PRU AMS AMS 18 04 20.0
comp=Z,200nm,15.8s
WUAZ Wupatki 81.90 52 eP P 17 24 17.6 +0.6
comp=Z,6.1nm,1.1s
PV01 Paradox Valley 81.97 48 eP P 17 24 17.5 +0.1
TREC Trest 81.98 327 eP P 17 24 19.1 +2.1
TREC epP PcP **17 24 22.5 0.0**
TREC AMS AMS 18 08 40.0
comp=Z,300nm,16.2s
SMCO Snowmass 82.24 47 eP P 17 24 19.9 +0.8
comp=Z,5.0nm,1.0s
MPEP Malo Peshtene 82.26 319 eP P 17 24 21.5 +2.9
MDVR Moldovita 82.32 321⇑ iP P 17 24 23.0 +4.1
KDZ Kurdzhali 82.52 317 eP P 17 24 23.5 +3.5

NKC Novy Kostel 82.55 330 eP P 17 24 21.8 +1.8
NKC AMS AMS 18 04 10.0
comp=Z,300nm,16.4s
PKSM Moragy 82.81 324⇑ iP P 17 24 23.1 +1.7
RZN Rozhen 82.88 317 eP P 17 24 28.0 +5.9
KHC Kasperske Hory 82.92 328 eP P 17 24 23.6 +1.6
KHC epP PcP **17 24 27.2 +0.5**
KHC ex x 17 24 35.3
KHC AMS AMS 18 06 50.0
comp=Z,200nm,14.0s
KHC Kasperske Hory 82.92 328 eP P 17 24 23.3 +1.4
KHC pmax pmax
comp=Z,6.0nm,1.2s
KHC Kasperske Hory 82.92 328 eP P 17 24 23.3 +1.4
comp=Z,5.6nm,1.2s
GEC2 GERESS Array S 83.09 328 eP P 17 24 24.2 +1.3
GEC2 pmax pmax
comp=Z,16nm,1.5s
GEC2 GERESS Array S 83.09 328 eP P 17 24 24.2 +1.3
comp=Z,16nm,1.5s
GERES GERESS Array B 83.09 328 P P 17 24 23.8 +0.9
comp=Z,1.6nm,0.6s,baz=46,slow=9.6,SNR=5.2
GERES PP PP **17 27 38.2 +5.0**
comp=Z,0.2nm,0.5s,baz=28,slow=9.2,SNR=3.5
GERES LR LR 18 03 43.7
comp=Z,60nm,19.9s,baz=42,slow=37
GEA0 GERESS Array S 83.09 328 eP P 17 24 22.6 -0.3
S22A 4UR Ranch, Cre 83.26 48 eP P 17 24 25.5 +1.2
comp=Z,5.8nm,1.2s
GRFO Grafenberg 83.47 330 eP P 17 24 24.0 -0.7
GRFO e 17 24 30.5
GRFO Grafenberg 83.47 330 eP P 17 24 24.0 -0.7
GRFO ePcP **pP 17 24 30.4 -2.0**
MMB Musomiste 83.49 318 eP P 17 24 28.3 +3.3
SDCO Great Sand Dun 84.05 47 eP P 17 24 29.0 +0.7
comp=Z,4.1nm,1.1s
PMOR Pomariorio Ree 84.27 113 eT T 18 57 10.8
comp=Z,28nm,0.2s
VAY Valandovo 84.30 318 i P P 17 24 34.6 +5.5
SKO Skopje 84.44 319 i P P 17 24 35.9 +6.1
PPT Papeete 84.68 116 LR LR 17 54 37.7
comp=Z,51nm,21.4s,baz=312,slow=30
PPT2 Papeete2 84.70 116 eLR LR 17 50 56.5
comp=Z,142nm,26.8s
T25A Trinidad 85.10 47 eP P 17 24 33.1 -0.4
comp=Z,9.1nm,1.2s
ANMO Albuquerque 85.33 50⇓ iP P 17 24 35.1 +0.4
ANMO pmax pmax
comp=Z,5.0nm,1.1s
ANMO Albuquerque 85.33 50 eP P 17 24 35.5 +0.8
comp=Z,4.9nm,1.1s
APE Apeiranthos 85.57 314⇓ iP P 17 24 39.7 +4.1
BFO Black Forest 85.71 330 i P P 17 24 38.2 +2.1
BFO Black Forest 85.71 330 eP P 17 24 37.0 +0.9
comp=Z,22nm,1.4s
MEH Mehetia 85.98 115 eT T 18 59 20.3
comp=Z,28nm,0.3s
SCHQ Schefferville 86.11 16 LR LR 18 08 55.5
comp=Z,35nm,18.2s,baz=24,slow=40
FUORN Ofenpass-Fuorn 86.28 328 eP P 17 24 39.8 +0.5
comp=Z,16nm,1.1s
FUORN epP **pP 17 24 45.0 -2.1**
TAOE Nuku Hiva Isla 86.39 104 eLR LR 17 52 02.6
comp=Z,366nm,27.4s
LAST Lasithi 86.90 312⇓ iP P 17 24 46.4 +4.1
LAST Lasithi 86.90 312 eP P 17 24 45.2 +2.9
comp=Z,62nm,1.6s
IDI Anoyia 87.16 313⇓ iP P 17 24 47.5 +4.0
LTX Lajitas 90.86 52 eP P 17 25 01.5 +0.4
LTX Lajitas 90.86 52 eP P 17 25 01.4 +0.4
TX31 Lajitas Ar. Si 90.86 52 eP P 17 25 01.4 +0.3
TXAR Lajitas Array 90.86 52 P P 17 25 01.5 +0.3
comp=Z,1.8nm,0.9s,baz=278,slow=3.4,SNR=12
TXAR LR LR 18 05 58.2
comp=Z,28nm,18.0s,baz=0.0,slow=36
TOA1 Torodi Ar. Sit 117.53 314 ePKPdf PKPdf 17 30 42.8 -0.8
TORD Torodi Ar. Bea 117.53 314 PKP PKPdf 17 30 42.8 -0.8
comp=Z,0.1nm,0.4s,baz=5.7,slow=2.7,SNR=3.6
SAML Samuel 145.01 45 ePKPbc PKPab 17 31 34.3 -0.1
LPAZ La Paz 147.38 60 PKPbc PKPbc 17 31 42.2 0.0
comp=Z,3.1nm,0.8s,baz=331,slow=4.3,SNR=13
LPAZ La Paz 147.38 60 ePKIKP PKPdf 17 31 39.1 -0.6
LPAZ La Paz 147.38 60 ePKPdf PKPdf 17 31 39.1 -0.6
PB11 IPOC Station P 148.54 67 ePKPbc PKPbc 17 31 44.9 +0.3

MAN 30 17:16:58, 17.48N×120.29E, h33km, mb4.2, ML3.0, MS2.8, 1C, Luzon

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ABRA	**Dolores**	**0.43**	**67**	*eP*	Pn	17 17 08.7	+0.7
SIPP	**Brgy, Tapao**	**0.47**	**20⇑**	*iP*	Pn	17 17 09.6	+1.2
SIPP				*eS*	Sb	17 17 14.7	-0.2
APYP	**Conner**	**0.98**	**67**	*eP*	Pb	17 17 17.2	+0.7
APYP				*eS*	Sn	17 17 27.7	-0.5
CAUP	**Cauayan**	**1.56**	**110**	*eP*	Pn	17 17 24.4	+1.0

*CSEM **30** 17:17:29.7±0.5, 39.95N×40.03E, h5km, MD2.4, Error ellipse: s-maj=11.5km s-min=6.6km az=164.0*
*ISK **30** 17:17:29.3, 40.00N×40.11E, h5km, MD2.4*
*ISCJB **30** 17:17:30.3±0.6, 40.00N±0.04×40.01E±0.04, h3km±17km, Error ellipse: s-maj=7.2km s-min=5.0km az=145.8*
*DDA **30** 17:17:30.8, 40.10N×40.05E, h7km, Md2.8*

ISC 30 17:17:28.9±1.3, 39.96N±0.04×40.06E±0.03, h5km±16km, n12, σ0.38/20, Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
KOPT	**Kop Dagi**	**0.34**	**80**	*i* P	**Pb**	**17 17 37.3**	**-0.4**
KOPT				*i* S	**Sb**	**17 17 43.9**	**+0.3**
KOPT	**Kop Dagi**	**0.34**	**80**	P	**Pb**	**17 17 37.3**	**-0.4**
KOPT				S	**Sb**	**17 17 43.9**	**+0.3**
BAYT	**Ayd¨–ntepe-Bay**	**0.44**	**8**	*e*PG	**Pg**	**17 17 37.5**	**+0.1**
BAYT				*e*SG	**Sg**	**17 17 43.5**	**+0.3**
BAYT	**Ayd¨–ntepe-Bay**	**0.44**	**8**	*e*Pg	**Pg**	**17 17 37.5**	**+0.1**
BAYT				*e*Sg	**Sg**	**17 17 43.5**	**+0.3**
ERZN	**Erzincan**	**0.45**	**215**	*e*PG	**Pb**	**17 17 39.7**	**+0.2**
ERZN				*e*SG	**Sb**	**17 17 47.2**	**+0.6**
EZC	**Erzincan**	**0.58**	**249**	*e*Pg	**Pg**	**17 17 39.7**	**-0.4**
EZC				*e*Sg	**Sg**	**17 17 47.2**	**-0.4**
KELT	**Kelkit**	**0.64**	**287**	*i* P	**Pb**	**17 17 42.9**	**+0.1**
KELT				*i* S	**Sb**	**17 17 52.0**	**-0.2**
KELT	**Kelkit**	**0.64**	**287**	P	**Pb**	**17 17 42.9**	**+0.1**
KELT				S	**Sb**	**17 17 52.0**	**-0.2**
GUMT	**Gumushane**	**0.67**	**319**	*e*PG	**Pb**	**17 17 42.7**	**-0.5**
GUMT	**Gumushane**	**0.67**	**319**	*e*Pg	**Pb**	**17 17 42.7**	**-0.5**
ESPY	**Espiye-Giresun**	**1.40**	**314**	*e*PN	**Pg**	**17 17 56.0**	**+0.4**
ESPY	**Espiye-Giresun**	**1.40**	**314**	*e*Pn	**Pg**	**17 17 56.0**	**+0.4**

*ISCJB **30** 17:18:48.7±0.3, 41.83N±0.02×15.87E±0.03, h27km±3km, Error ellipse: s-maj=4.0km s-min=3.0km az=156.2*
*CSEM **30** 17:18:49.0±0.1, 41.80N×15.86E, h20km, ML3.0, Error ellipse: s-maj=3.2km s-min=2.4km az=79.0*
*ROM **30** 17:18:49.1±0.2, 41.77N×15.85E, h26km±1km, Md2.8/20, Ml3.0/19, Error ellipse: s-maj=2.5km s-min=1.9km az=59.0*

ISC 30 17:18:49.4±0.8, 41.78N±0.02×15.85E±0.02, h26km±4km, n76, σ0.74/115, Southern Italy

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MSAG	**Monte S. Angel**	**0.08**	**145**	Pg	**Pb**	**17 18 54.1**	**0.0**
MSAG				Sg	**Sb**	**17 18 57.5**	**+0.2**
	14μm,0.2s						
MSAG	**Monte S. Angel**	**0.08**	**145**	Pg	**Pb**	**17 18 54.1**	**0.0**
MSAG				Sg	**Sb**	**17 18 57.5**	**+0.2**
	14μm,0.2s						
SGRT	**San Giovanni R**	**0.08**	**256**	Pg	**Pb**	**17 18 54.0**	**-0.2**
SGRT				Sg	**Sb**	**17 18 57.2**	**-0.2**
	5μm,0.2s						
SGRT	**San Giovanni R**	**0.08**	**256**	Pg	**Pb**	**17 18 54.0**	**-0.2**
SGRT				Sg	**Sb**	**17 18 57.2**	**-0.2**
	5μm,0.2s						
MS1	**Monte Sant'Ang**	**0.10**	**136**	*i* Pg	**Pb**	**17 18 54.3**	**+0.1**
CIGN	**Sant'Elia a Pi**	**0.72**	**261**	Pg	**Pb**	**17 19 03.2**	**-0.1**
CIGN				Sg	**Sb**	**17 19 12.2**	**-0.6**
	139nm,0.4s						
CIGN	**Sant'Elia a Pi**	**0.72**	**261**	Pg	**Pb**	**17 19 03.2**	**-0.1**
CIGN				Sg	**Sb**	**17 19 12.2**	**-0.6**
	139nm,0.4s						
SGTA	**Sant Agata di**	**0.74**	**210**	Pg	**Pb**	**17 19 03.1**	**-0.5**
SGTA				Sg	**Sb**	**17 19 13.0**	**-0.3**
	671nm,0.6s						
SGTA	**Sant Agata di**	**0.74**	**210**	Pg	**Pb**	**17 19 03.1**	**-0.5**
SGTA				Sg	**Sb**	**17 19 13.0**	**-0.3**
	671nm,0.6s						
GATE	**Gambatesa**	**0.75**	**250**	Pg	**Pn**	**17 19 04.6**	**+0.2**
	177nm,0.3s						
GATE	**Gambatesa**	**0.75**	**250**	Pg	**Pn**	**17 19 04.6**	**+0.2**
	177nm,0.3s						
MRVN	**Minervino Murg**	**0.76**	**160**	Pg	**Pb**	**17 19 03.1**	**-0.9**
MRVN				Sg	**Sb**	**17 19 13.6**	**-0.4**
	684nm,0.3s						
MRVN	**Minervino Murg**	**0.76**	**160**	Pg	**Pb**	**17 19 03.1**	**-0.9**
MRVN				Sg	**Sb**	**17 19 13.6**	**-0.4**
	684nm,0.3s						
CDT	**Castel del Mon**	**0.76**	**155**	*i* Pg	**Pb**	**17 19 03.2**	**-0.8**
CDT				Sg	**Sb**	**17 19 14.3**	**+0.3**
PALZ	**Palazzo San Ge**	**0.83**	**174**	Pg	**Pb**	**17 19 04.4**	**-0.9**
PALZ				Sg	**Sn**	**17 19 16.8**	**-0.2**
	625nm,0.5s						
PALZ	**Palazzo San Ge**	**0.83**	**174**	Pg	**Pb**	**17 19 04.4**	**-0.9**
PALZ				Sg	**Sn**	**17 19 16.8**	**-0.2**
	625nm,0.5s						
VULT	**Monte Vulture**	**0.84**	**192**	Pg	**Pb**	**17 19 05.2**	**-0.2**
VULT				Sg	**Sn**	**17 19 16.7**	**-0.5**
	1μm,0.2s						
VULT	**Monte Vulture**	**0.84**	**192**	Pg	**Pb**	**17 19 05.2**	**-0.2**
VULT				Sg	**Sn**	**17 19 16.7**	**-0.5**
	1μm,0.2s						
CAFE	**Carife**	**0.88**	**212**	Pg	**Pb**	**17 19 05.4**	**-0.6**
CAFE				Sg	**Sn**	**17 19 17.9**	**-0.2**
	522nm,0.6s						
CAFE	**Carife**	**0.88**	**212**	Pg	**Pb**	**17 19 05.4**	**-0.6**
CAFE				Sg	**Sn**	**17 19 17.9**	**-0.2**
	522nm,0.6s						
FRES	**Fresagrandinar**	**0.90**	**283**	Pg	**Pb**	**17 19 06.5**	**+0.1**
FRES				Sg	**Sn**	**17 19 19.2**	**+0.5**
	321nm,0.5s						
FRES	**Fresagrandinar**	**0.90**	**283**	Pg	**Pb**	**17 19 06.5**	**+0.1**
FRES				Sg	**Sn**	**17 19 19.2**	**+0.5**
	321nm,0.5s						
ACER	**Acerenza**	**0.99**	**176**	Pg	**Pb**	**17 19 07.7**	**-0.2**
ACER				Sg	**Sn**	**17 19 21.7**	**+0.8**
ACER	**Acerenza**	**0.99**	**176**	Pg	**Pb**	**17 19 07.7**	**-0.2**
ACER				Sg	**Sn**	**17 19 21.7**	**+0.8**
BAI	**Bari**	**1.02**	**130**	*i* Pg	**Pn**	**17 19 07.3**	**-0.7**
BAI				Sg	**Sb**	**17 19 22.7**	**+1.3**
AMUR	**Altamura**	**1.04**	**147**	Pg	**Pn**	**17 19 07.3**	**-1.0**
AMUR				Sg	**Sb**	**17 19 22.8**	**+0.9**
	383nm,0.5s						
AMUR	**Altamura**	**1.04**	**147**	Pg	**Pn**	**17 19 07.3**	**-1.0**
AMUR				Sg	**Sb**	**17 19 22.8**	**+0.9**
	383nm,0.5s						
MRLC	**Muro Lucano**	**1.05**	**195**	Pg	**Pb**	**17 19 08.7**	**-0.3**
MRLC				Sg	**Sb**	**17 19 22.9**	**+0.5**
	282nm,0.3s						
MRLC	**Muro Lucano**	**1.05**	**195**	Pg	**Pb**	**17 19 08.7**	**-0.3**
MRLC				Sg	**Sb**	**17 19 22.9**	**+0.5**
	282nm,0.3s						
PTRJ	**Pietraroja**	**1.07**	**248**	Pg	**Pn**	**17 19 08.6**	**-0.3**
PTRJ				Sg	**Sb**	**17 19 23.9**	**+0.9**
	250nm,0.6s						
PTRJ	**Pietraroja**	**1.07**	**248**	Pg	**Pn**	**17 19 08.6**	**-0.3**
PTRJ				Sg	**Sb**	**17 19 23.9**	**+0.9**
	250nm,0.6s						
SG1	**Sgolgore (BA)**	**1.12**	**146**	*i* Pg	**Pn**	**17 19 08.7**	**-0.8**
SG1				Sg	**Sb**	**17 19 25.7**	**+1.3**
PZUN	**Potenza**	**1.13**	**182**	Pg	**Pb**	**17 19 10.8**	**+0.6**
	386nm,0.2s						
PZUN	**Potenza**	**1.13**	**182**	Pg	**Pb**	**17 19 10.8**	**+0.6**
	386nm,0.2s						
MIDA	**Miranda**	**1.20**	**264**	Pg	**Pn**	**17 19 10.6**	**0.0**
MIDA	**Miranda**	**1.20**	**264**	Pg	**Pn**	**17 19 10.6**	**0.0**
PAOL	**Paolisi**	**1.22**	**233**	Pg	**Pn**	**17 19 10.6**	**-0.2**
	151nm,1.0s						
PAOL	**Paolisi**	**1.22**	**233**	Pg	**Pn**	**17 19 10.6**	**-0.2**
	151nm,1.0s						
MIGL	**Miglionico**	**1.25**	**159**	Pg	**Pb**	**17 19 12.2**	**-0.1**
MIGL				Sg	**Sb**	**17 19 28.0**	**0.0**
	1μm,0.5s						
MIGL	**Miglionico**	**1.25**	**159**	Pg	**Pb**	**17 19 12.2**	**-0.1**
MIGL				Sg	**Sb**	**17 19 28.0**	**0.0**
	1μm,0.5s						
VAGA	**Valle Agricola**	**1.26**	**254**	Pg	**Pn**	**17 19 11.5**	**0.0**
	119nm,0.4s						
VAGA	**Valle Agricola**	**1.26**	**254**	Pg	**Pn**	**17 19 11.5**	**0.0**
	119nm,0.4s						
MATE	**Matera**	**1.30**	**150**	Pg	**Pb**	**17 19 13.2**	**+0.1**
MATE				Sg	**Sb**	**17 19 30.5**	**+1.2**
	407nm,0.3s						
MATE	**Matera**	**1.30**	**150**	Pg	**Pb**	**17 19 13.2**	**+0.1**
MATE				Sg	**Sb**	**17 19 30.5**	**+1.2**
	407nm,0.3s						
NOCI	**Noci**	**1.34**	**137**	Pg	**Pn**	**17 19 11.7**	**-0.8**
	311nm,0.2s						
NOCI	**Noci**	**1.34**	**137**	Pg	**Pn**	**17 19 11.7**	**-0.8**
	311nm,0.2s						
LTRZ	**Laterza**	**1.38**	**148**	Pg	**Pb**	**17 19 14.7**	**+0.2**
	191nm,0.5s						
LTRZ	**Laterza**	**1.38**	**148**	Pg	**Pb**	**17 19 14.7**	**+0.2**
	191nm,0.5s						
INTR	**Introdacqua**	**1.47**	**280**	Pg	**Pb**	**17 19 15.1**	**-1.0**
	201nm,0.8s						
INTR	**Introdacqua**	**1.47**	**280**	Pg	**Pb**	**17 19 15.1**	**-1.0**
	201nm,0.8s						
TAR1	**Taranto**	**1.65**	**139**	*e*Pn	**Pn**	**17 19 16.2**	**-0.5**
STON	**Ston**	**1.76**	**51**	*e*Pn	**Pn**	**17 19 17.7**	**-0.4**
STON				Sn	**Sn**	**17 19 36.8**	**-2.9**
STON	**Ston**	**1.76**	**51**	*e*Pn	**Pn**	**17 19 17.7**	**-0.4**
STON				Sn	**Sn**	**17 19 36.7**	**-2.9**
UDBI	**Udbina**	**2.75**	**359**	*e*Pn	**Pn**	**17 19 32.4**	**+0.4**
UDBI				Sn	**Sn**	**17 20 05.7**	**+1.3**
UDBI	**Udbina**	**2.75**	**359**	*e*Pn	**Pn**	**17 19 32.3**	**+0.4**
UDBI				Sn	**Sn**	**17 20 05.7**	**+1.3**
NVLJ	**Novalja**	**2.88**	**346**	*i* Pn	**Pn**	**17 19 33.1**	**-0.5**
NVLJ				Sn	**Sn**	**17 20 07.1**	**-0.3**
NVLJ	**Novalja**	**2.88**	**346**	*i* Pn	**Pn**	**17 19 33.0**	**-0.5**
NVLJ				Sn	**Sn**	**17 20 07.0**	**-0.3**
BBLS	**Lazići**	**3.35**	**50**	*e*Pn	**Pn**	**17 19 41.9**	**+1.8**
IVAS	**Ivanjica**	**3.65**	**59**	*e*Pn	**Pn**	**17 19 44.6**	**+0.4**
DIVS	**Divibare**	**3.83**	**51**	*e*Pn	**Pn**	**17 19 47.4**	**+0.7**
VISS	**Visnje**	**4.09**	**350**	*i* Pn	**Pn**	**17 19 50.1**	**-0.2**
VISS	**Visnje**	**4.09**	**350**	Pn	**Pn**	**17 19 50.1**	**-0.2**
GRUS	**Gruza**	**4.16**	**58**	*e*Pn	**Pn**	**17 19 50.1**	**-0.4**
CRNS	**Crni Vrh**	**4.46**	**346**	*i* Pn	**Pn**	**17 19 54.7**	**-0.6**
CRNS	**Crni Vrh**	**4.46**	**346**	*i* Pn	**Pn**	**17 19 54.7**	**-0.6**
OBKA	**Obir**	**4.83**	**349**	*i* Pn	**Pn**	**17 19 60.0**	**-0.4**
	0.7nm,0.1s						
OBKA	**Obir**	**4.83**	**349**	Pn	**Pn**	**17 20 00.0**	**-0.4**
	0.7nm,0.1s						
SOKA	**Soboth**	**4.94**	**353**	*i* Pn	**Pn**	**17 20 01.3**	**-0.7**
	1.9nm,0.2s						
SOKA	**Soboth**	**4.94**	**353**	Pn	**Pn**	**17 20 01.3**	**-0.7**
	1.9nm,0.2s						
ABTA	**Abfaltersbach**	**5.52**	**335**	*i* Pn	**Pn**	**17 20 08.9**	**-1.0**
	0.4nm,0.1s						
ABTA	**Abfaltersbach**	**5.52**	**335**	Pn	**Pn**	**17 20 08.9**	**-1.0**
	0.4nm,0.1s						
KBA	**Koelnbreinsper**	**5.60**	**342**	*i* Pn	**Pn**	**17 20 10.4**	**-0.7**
	2.0nm,0.3s,SNR=5.6						
KBA	**Koelnbreinsper**	**5.60**	**342**	Pn	**Pn**	**17 20 10.4**	**-0.7**
	2.0nm,0.3s,SNR=5.6						
MOA	**Molln**	**6.18**	**350**	*i* Pn	**Pn**	**17 20 18.7**	**-0.2**
	1.0nm,0.1s						
MOA	**Molln**	**6.18**	**350**	Pn	**Pn**	**17 20 18.7**	**-0.2**
	1.0nm,0.1s						
KIV	**Kislovodsk**	**19.76**	**75**	*i* P	**Pn**	**17 23 20.2**	**+1.1**
	SNR=6.8						

GUC 30 17:26:01.3±0.5, 24.32S×67.41W, h168km±15km, ML3.9, Chile-Argentina border region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
LVC	**Limon Verde**	**2.19**	**321**	*i* P	Pn	17 26 40.9	+0.7
LVC				*i* S	Sn	17 27 10.9	+0.7
PB06	**IPOC Station P**	**2.56**	**309**	*i* P	Pn	17 26 44.9	+0.7
PB06				*i* S	Sn	17 27 18.3	+0.9
PB06				IAML		17 27 21.2	
	comp=N,219nm,0.2s						
PB14	**IPOC Station P**	**2.74**	**263**	*i* P	Pn	17 26 47.5	+0.9
PB14				*i* S	Sn	17 27 22.6	+0.9

ANCH				IAML			17 27 27.4	
	comp=E,435nm,0.1s							
PB10	**IPOC Station P**	**2.99**	**285**	*i* P	Pn		17 26 49.9	+0.6
PB10				*i* S	Sn		17 27 27.0	+0.5
PB10				IAML			17 27 32.4	
	comp=E,202nm,0.5s							
PB09	**IPOC Station P**	**3.03**	**326**	*i* P	Pn		17 26 50.7	+0.7
PB09				*i* S	Sn		17 27 27.8	0.0
PB09				IAML			17 27 30.1	
	comp=E,224nm,0.5s							
PB04	**IPOC Station P**	**3.20**	**308**	*e*P	Pn		17 26 52.2	+0.1
PB04				*e*S	Sn		17 27 30.4	-1.3
PB04				IAML			17 27 38.9	
	comp=N,96nm,0.3s							
PB07	**IPOC Station P**	**3.45**	**318**	*e*P	Pn		17 26 55.1	-0.1
PB07				*e*S	Sn		17 27 35.4	-1.7
PB07				IAML			17 27 39.6	
	comp=E,102nm,0.5s							

*DDA **30** 17:29:32.8, 38˚.41N×27˚.15E, h7km, Md2.6*
*ISK **30** 17:29:33.4, 38˚.34N×27˚.23E, h6km, MD2.6*
*CSEM **30** 17:29:34.2±0.2, 38˚.36N×27˚.25E, h5km, MD2.6, Error ellipse: s-maj=5.9km s-min=3.7km az=65.0*
ISC 30 17:29:33.9±1.1, **38˚.36N**±0˚.03×**27˚.20E**±0˚.03, **h5**km±9km, **n25**, σ0**58**/34, **Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
IZM	**Izmir**	**0.07**	**52**	*e*PG	**Pg**	**17 29 35.5**	**0.0**
IZM	**Izmir**	**0.07**	**52**	*e*Pg	**Pg**	17 29 35.5	0.0
ZEY	**˙zmir**	**0.56**	**258**	*i* P	**Pg**	**17 29 43.3**	**-1.3**
ZEY				*i* S	**Sg**	17 29 51.5	-0.4
AYDB	**Zeytinkoy-Aydi**	**0.68**	**127**	*e*PG	**Pg**	**17 29 46.5**	**-0.5**
AYDB				*e*SG	**Sg**	17 29 56.0	+0.2
AYDB	**Zeytinkoy-Aydi**	**0.68**	**127**	*e*Pg	**Pg**	**17 29 46.5**	**-0.5**
AYDB				*e*Sg	**Sg**	17 29 56.1	+0.2
AKHS	**Akhisar**	**0.71**	**43**	*i* P	**Pg**	**17 29 46.3**	**-1.3**
AKHS				*i* S	**Sg**	17 29 56.6	-0.2
AKHS	**Akhisar**	**0.71**	**43**	P	**Pg**	**17 29 46.3**	**-1.3**
AKHS				S	**Sg**	17 29 56.6	-0.2
DKL	**Dikili**	**0.75**	**342**	*e*PG	**Pg**	**17 29 48.8**	**+0.5**
DKL	**Dikili**	**0.75**	**342**	*e*Pg	**Pg**	**17 29 48.8**	**+0.5**
AYDN	**Tasoluk**	**0.88**	**142**	*i* P	**Pg**	**17 29 51.1**	**+0.3**
AYDN				*i* S	**Sb**	**17 30 03.7**	**0.0**
AYDN	**Tasoluk**	**0.88**	**142**	P	**Pg**	17 29 51.1	+0.3
AYDN				S	**Sb**	**17 30 03.7**	**0.0**
KULA	**Kula-Manisa**	**1.16**	**82**	*e*PN	**Pg**	**17 29 55.6**	**-0.6**
KULA	**Kula-Manisa**	**1.16**	**82**	*e*Pn	**Pg**	**17 29 55.6**	**-0.6**
EZN	**Ezine**	**1.62**	**335**	*e*PN	**Pn**	**17 30 03.5**	**+0.5**
EZN				*e*SN	**Sg**	**17 30 25.6**	**-0.2**
EZN	**Ezine**	**1.62**	**335**	*e*Pn	**Pn**	17 30 03.5	+0.5
EZN				*e*Sn	**Sg**	**17 30 25.6**	**-0.2**
APE	**Apeiranthos**	**1.84**	**226**	*e*PN	**Pn**	**17 30 06.6**	**+0.4**
APE	**Apeiranthos**	**1.84**	**226**	*e*Pn	**Pn**	**17 30 06.6**	**+0.4**
TVSB	**Tavsanli**	**2.08**	**58**	*e*PN	**Pn**	**17 30 09.6**	**+0.2**
TVSB	**Tavsanli**	**2.08**	**58**	*e*Pn	**Pn**	**17 30 09.6**	**+0.2**
KCTX	**Karacabey (Bur**	**2.11**	**25**	*e*PN	**Pn**	**17 30 10.1**	**+0.3**
KCTX	**Karacabey (Bur**	**2.11**	**25**	*e*Pn	**Pn**	**17 30 10.1**	**+0.3**
RKY	**Sarkoy-Tekirda**	**2.33**	**360**	*e*PN	**Pn**	**17 30 13.6**	**+0.7**
RKY	**Sarkoy-Tekirda**	**2.33**	**360**	*e*Pn	**Pn**	**17 30 13.6**	**+0.7**
ARMT	**Armutlu**	**2.56**	**30**	*e*PN	**Pn**	**17 30 16.6**	**+0.7**
ARMT	**Armutlu**	**2.56**	**30**	*e*Pn	**Pn**	**17 30 16.6**	**+0.7**

*NEIC **30** 17:34:41.0, 38˚.25N×116˚.40W, h0km, ML3.8(REN), After REN.*
*IDC **30** 17:34:41.3±1.7, 38˚.27N×116˚.42W, h0km, mb2.7/1, mb1 3.3/3, mb1mx3.2/39, mbtmp3.0/3, ML3.5/2, Error ellipse: s-maj=19.3km s-min=6.2km az=155.0*
ISC 30 17:34:41.0±1.1, **38˚.26N**±0˚.02×**116˚.48W**±0˚.02, **h2**km±10km, **n96**, σ1**53**/135, **Nevada**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
R11A	**Troy Canyon, C**	**0.71**	**82**	P	**Pg**	**17 34 53.3**	**-1.3**
	baz=261						
R11A				S	**Sg**	17 35 02.8	-1.0
	baz=261						
R11A	**Troy Canyon, C**	**0.71**	**82**	*e*Pg	**Pg**	**17 34 53.0**	**-1.5**
R11A				*e*Pn	Pn	17 35 02.0	+3.9
TPNV	**Topopah Spring**	**1.32**	**172**	P	**Pn**	**17 35 05.6**	**-0.9**
	baz=355,SNR=683						
TPNV	**Topopah Spring**	**1.32**	**172**	*e*Pn	**Pn**	**17 35 05.4**	**-1.2**
TPNV				*e*Sn	**Sg**	**17 35 24.3**	**+0.9**
NV11	**Mina Array Sit**	**1.33**	**278**	*e*Pn	**Pg**	**17 35 09.6**	**+0.4**
NV11				*e*Sn	**Sb**	**17 35 23.3**	**-0.9**
GRAC	**Grapevine Rang**	**1.44**	**209**	P	**Pg**	**17 35 08.7**	**+0.1**
	baz=31,SNR=74						
GRAC				S	**Sg**	**17 35 28.9**	**+1.6**
	baz=31						
NV01	**Mina Array Sit**	**1.44**	**277**	*e*Pn	**Pn**	**17 35 06.5**	**-1.8**
NV01				*e*Sn	**Sg**	**17 35 27.2**	**-0.1**
NVAR	**Mina Array Bea**	**1.44**	**277**	Pg	**Pg**	**17 35 09.4**	**+0.7**
	57nm,0.3s,baz=102,slow=14,SNR=422						
NVAR				Lg	Lg	17 35 28.2	
	60nm,0.3s,baz=97,slow=23,SNR=8.9						
FURC	**Furnace Creek,**	**1.81**	**190**	P	**Pb**	**17 35 13.5**	**-1.3**
	baz=12,SNR=227						
FURC				Sg	**Sg**	**17 35 40.4**	**+1.2**
	baz=12						
TIN	**Tinemaha, Big**	**1.84**	**230**	Pb	**Pg**	**17 35 16.3**	**+0.1**
	baz=50,SNR=27						
TIN				Sb	**Sg**	**17 35 42.8**	**+2.8**
	baz=50						
MTUM	**Tungsten Hills**	**1.88**	**242**	*e*Pn	**Pg**	**17 35 17.1**	**0.0**
MLAC	**Mammoth, Mammo**	**1.96**	**252**	Pb	**Pg**	**17 35 18.5**	**-0.1**
	baz=72,SNR=19						
MLAC				Sb	**Sg**	**17 35 47.4**	**+3.3**
	baz=72						
PSUT	**Pine Spring**	**2.08**	**82**	*e*Pn	**Pn**	**17 35 14.9**	**-2.1**
PSUT				*e*Sn	**Sb**	**17 35 44.8**	**-1.1**
DAC	**Darwin (Calif)**	**2.17**	**205**	*e*Pn	**Pb**	**17 35 20.0**	**-1.0**
DAC				*e*Sn	**Sg**	**17 35 50.9**	**+0.3**
ICU	**Indian Springs**	**2.31**	**118**	*e*Sn	**Sb**	**17 35 53.1**	**+0.6**
WAKR	**Walker**	**2.34**	**277**	*e*Pn	**Pn**	**17 35 20.7**	**+0.2**
WAKR				*e*Sn	**Sg**	**17 35 56.6**	**+0.5**
MPMC	**Manual Prospec**	**2.34**	**200**	Pb	**Pb**	**17 35 24.4**	**+0.5**
	baz=21,SNR=43						
MPMC				Sb	**Sg**	**17 35 55.9**	**-0.2**
	baz=21						
RCWM	**Renegade Canyo**	**2.49**	**202**	*e*Pn	**Pg**	**17 35 28.0**	**-0.6**
WLHM	**Little Horse**	**2.56**	**215**	*e*Pn	**Pg**	**17 35 29.4**	**-0.6**
ELK	**Elko**	**2.66**	**21**	Pn	**Pn**	**17 35 24.5**	**-0.6**
	4.0nm,0.3s,baz=226,slow=0.0,SNR=4.9						
ELK				Pg	**Pg**	**17 35 31.1**	**-0.9**
	32nm,0.3s,baz=278,slow=0.0,SNR=16						
ELK				Sn	**Sn**	**17 35 57.2**	**-0.8**
	17nm,0.3s,baz=61,slow=0.0,SNR=3.6						
ELK				Lg	Lg	17 36 03.7	
	109nm,0.3s,baz=48,slow=0.0,SNR=12						
ELK	**Elko**	**2.66**	**21**	*e*Pn	**Pn**	**17 35 24.1**	**-1.0**
ELK				*e*Pg	**Pg**	**17 35 31.4**	**-0.6**
ELK				*e*Sn	**Sn**	**17 35 56.7**	**-1.3**
ELK				*e*Lg	Lg	17 36 03.5	
FSU	**Fish Springs**	**2.82**	**58**	*e*Pn	**Pn**	**17 35 26.1**	**-1.1**
TUQ	**Turquoise Moun**	**2.85**	**171**	Pb	**Pb**	**17 35 32.8**	**+0.2**
	baz=352,SNR=9.3						
BHU	**Blowhard Mount**	**2.94**	**102**	*e*Sn	**Sb**	**17 36 12.2**	**+1.4**
GSC	**Goldstone, Bar**	**2.96**	**185**	Pg	**Pg**	**17 35 36.3**	**-1.5**
	baz=6.2,SNR=37						
GSC				Sb	**Sg**	**17 36 15.5**	**-0.6**
	baz=6.2						
GSC	**Goldstone, Bar**	**2.96**	**185**	*e*Pn	**Pn**	**17 35 29.5**	**+0.5**
GSC				*e*Pg	**Pg**	**17 35 36.2**	**-1.5**
GSC				*e*Sg	**Sg**	**17 36 14.6**	**-1.5**
ISA	**Isabella, Lake**	**3.04**	**212**	Pb	**Pg**	**17 35 37.5**	**-1.8**
	baz=32,SNR=11						
ISA				Sb	**Sg**	**17 36 18.5**	**-0.2**
	baz=32						
ISA	**Isabella, Lake**	**3.04**	**212**	*e*Pn	**Pn**	**17 35 31.9**	**+1.8**
CMB	**Columbia Colle**	**3.09**	**267**	*e*Pn	**Pn**	**17 35 31.0**	**+0.3**
CMB				*e*Sg	**Sg**	**17 36 19.5**	**-0.6**
KNB	**Kanab**	**3.16**	**112**	*e*Pn	**Pn**	**17 35 31.7**	**-0.1**
KNB				*e*Sn	**Sn**	**17 36 11.9**	**+1.8**
LDFC	**Landfair**	**3.36**	**160**	*e*Pn	**Pn**	**17 35 36.3**	**+1.8**
EKU	**East Kanab**	**3.38**	**109**	*e*Pg	**Pb**	**17 35 43.4**	**+1.9**
MSU	**Marysvale**	**3.39**	**84**	*e*Pn	**Pn**	**17 35 35.7**	**+0.6**
MTPU	**Mount Pierson**	**3.39**	**92**	*e*Pn	**Pn**	**17 35 34.4**	**-0.9**
PKCU	**Pink Cliffs**	**3.40**	**103**	*e*Pn	**Pn**	**17 35 36.2**	**+0.9**
PKCU				*e*Pg	**Pg**	**17 35 45.1**	**-1.0**
PKCU				*e*Sg	**Sb**	**17 36 26.1**	**+2.1**
HEC	**Hector,Ludlow**	**3.42**	**178**	Pb	**Pb**	**17 35 43.9**	**+1.5**
	baz=359,SNR=16						
HEC				Sb	**Sg**	**17 36 29.0**	**-2.0**
	baz=359						
DUG	**Dugway, Tooele**	**3.44**	**55**	P	**Pn**	**17 35 35.0**	**-0.7**
	baz=236						
DUG				Sb	**Sb**	**17 36 26.8**	**+1.8**
	baz=236						
DUG	**Dugway, Tooele**	**3.44**	**55**	*e*Pn	**Pn**	**17 35 34.9**	**-0.8**
FLU	**Fool Peak**	**3.55**	**70**	*e*Pg	**Pb**	**17 35 46.3**	**+1.8**
AFDM	**Forest Hills D**	**3.58**	**282**	*e*Pn	**Pn**	**17 35 37.9**	**+0.4**
AFDM				*e*Pg	**Pg**	**17 35 49.9**	**+0.2**
AFDM				*e*Sg	**Sg**	**17 36 35.5**	**-0.6**
BGU	**Big Grassy Mou**	**3.77**	**44**	*e*Pn	**Pn**	**17 35 38.9**	**-1.3**
BGU				*e*Pg	**Pb**	**17 35 49.7**	**+1.5**
BGU				*e*Sg	**Sb**	**17 36 37.7**	**+3.3**
W13A	**Hualapai Mount**	**3.78**	**146**	*e*Pn	**Pn**	**17 35 39.7**	**-0.7**
U15A	**North Rim**	**3.81**	**117**	*e*Pn	**Pn**	**17 35 40.5**	**-0.4**
U15A				*e*Pg	**Pb**	**17 35 49.8**	**+0.8**
NLU	**North Lily Min**	**3.82**	**62**	*e*Pn	**Pn**	**17 35 41.8**	**+0.8**
NLU				*e*Pg	**Pb**	**17 35 50.9**	**+1.7**
OSI	**Osito Audit: C**	**4.06**	**207**	*e*Pn	Pb	17 35 48.7	-4.5
ORV	**Oroville**	**4.12**	**290**	*e*Pn	**Pn**	**17 35 47.1**	**+2.1**
ORV				*e*Sg	**Sg**	**17 36 49.5**	**-3.9**
MPU	**Maple Canyon**	**4.16**	**64**	*e*Pn	**Pn**	**17 35 43.6**	**-2.0**
MPU				*e*Pg	**Pg**	**17 35 58.4**	**-2.2**
SAO	**San Andreas Ge**	**4.22**	**251**	*e*Pn	**Pn**	**17 35 46.3**	**0.0**
MWC	**Mount Wilson**	**4.22**	**198**	*e*Pn	**Pn**	**17 35 48.4**	**+1.9**
TMUT	**Trail Mountain**	**4.25**	**74**	*e*Pn	**Pn**	**17 35 45.9**	**-1.0**
PASC	**Pasadena Art C**	**4.30**	**199**	*e*Pn	Pb	17 35 54.0	-3.4
CTU	**Camp Tracy**	**4.39**	**55**	*e*Pn	**Pn**	**17 35 49.6**	**+0.8**
CTU				*e*Pg	**Pg**	**17 36 03.9**	**-1.3**
WVOR	**Wild Horse Val**	**4.48**	**339**	*e*Pn	**Pn**	**17 35 51.2**	**+1.2**
WVOR				*e*Pg	**Pg**	**17 36 04.9**	**-1.9**
HVU	**Hansel Valley**	**4.52**	**38**	*e*Pn	**Pn**	**17 35 51.0**	**+0.4**
JLU	**Jordanelle**	**4.54**	**57**	*e*Pn	**Pn**	**17 35 51.9**	**+0.9**
JLU				*e*Pg	**Pg**	**17 36 06.1**	**-1.9**
DPD	**Davis Peak**	**4.59**	**230**	*e*Pn	**Pn**	**17 35 49.0**	**-2.3**
PFO	**Pinyon Flats O**	**4.64**	**180**	*e*Pn	**Pn**	**17 35 53.1**	**+1.0**
PFO				*e*Pg	**Pg**	**17 36 07.9**	**-1.9**
P17A	**Butcher Ranch,**	**4.64**	**73**	*e*Pn	**Pn**	**17 35 53.9**	**+1.6**
P17A				*e*Pg	Pg	17 36 06.6	-3.3
MOD	**Modoc Plateau**	**4.67**	**322**	*e*Pn	**Pn**	**17 35 53.7**	**+1.1**
MOD				*e*Pg	**Pg**	**17 36 10.3**	**-0.2**
SRU	**San Rafael Swe**	**4.74**	**78**	*e*Pn	**Pn**	**17 35 52.3**	**-1.2**
Y12C	**Blythe**	**4.77**	**160**	*e*Pn	**Pn**	**17 35 51.9**	**-1.9**
Y12C				*e*Pg	**Pg**	**17 36 11.6**	**-0.7**
TCUT	**Toone Canyon**	**4.84**	**52**	*e*Pn	**Pn**	**17 35 56.6**	**+1.5**
TCUT				*e*Pg	**Pg**	**17 36 12.1**	**-1.7**
WUAZ	**Wupatki**	**4.92**	**122**	*e*Pn	**Pn**	**17 35 56.7**	**+0.7**
WUAZ				*e*Pg	**Pb**	**17 36 09.1**	**+1.1**
WUAZ				*e*Sg	**Sb**	**17 37 10.6**	**+2.9**
HWUT	**Hardware Ranch**	**5.04**	**47**	*e*Pn	**Pn**	**17 35 58.0**	**+0.2**
P18A	**Preston Nutter**	**5.05**	**72**	*e*Pn	**Pn**	**17 36 00.2**	**+2.3**
Y14A	**Wickenburg**	**5.15**	**146**	*e*Pn	**Pn**	**17 35 59.2**	**+0.1**
Y14A				*e*Pg	Pg	17 36 16.4	-3.2
MFID	**Camas Ranch**	**5.17**	**5**	*e*Pn	**Pn**	**17 35 59.1**	**-0.4**
MFID				*e*Sg	**Sb**	**17 37 19.3**	**+4.4**
HLID	**Hailey**	**5.53**	**16**	*e*Pn	**Pn**	**17 36 05.3**	**+1.0**
HLID				*e*Sg	Sg	17 37 11.0	-6.5
BAR	**Barrett**	**5.57**	**182**	*e*Pn	**Pn**	**17 36 06.5**	**+1.6**
K05A	**Summer Lake**	**5.59**	**324**	*e*Pn	**Pn**	**17 36 06.8**	**+1.5**
X16A	**Lo Mia Camp, P**	**5.59**	**132**	*e*Pn	**Pn**	**17 36 06.5**	**+1.2**
X16A				*e*Pg	Pg	17 36 23.9	-4.1
PV09	**Paradox Valley**	**5.78**	**85**	*e*Pn	**Pn**	**17 36 09.9**	**+1.9**
PV05	**Paradox Valley**	**5.82**	**89**	*e*Pn	**Pn**	**17 36 10.1**	**+1.7**
PV10	**Paradox Valley**	**5.85**	**87**	*e*Pn	**Pn**	**17 36 11.1**	**+2.1**
113A	**Mohawk Valley,**	**5.91**	**157**	*e*Pn	**Pn**	**17 36 09.9**	**+0.4**
113A				*e*Pg	**Pg**	**17 36 35.0**	**+0.9**
AHID	**Auburn Hatcher**	**6.09**	**41**	*e*Pn	**Pn**	**17 36 12.8**	**+0.7**
PV01	**Paradox Valley**	**6.23**	**89**	*e*Pn	**Pn**	**17 36 12.3**	**-1.9**
MVCO	**Mesa Verde**	**6.41**	**97**	*e*Pn	**Pn**	**17 36 18.3**	**+1.7**
MVCO				*e*Pg	Pg	17 36 40.0	-3.8
X18A	**Snowflake**	**6.45**	**123**	*e*Pn	Pn	17 36 19.9	+2.8
X18A				*e*Pg	Pg	17 36 39.3	-5.2
REDW	**Red Top Meadow**	**6.65**	**38**	*e*Pn	**Pn**	**17 36 20.6**	**+0.8**
REDW				*e*Pg	Pg	17 36 43.1	-5.2
O20A	**White River Ci**	**6.67**	**71**	*e*Pn	**Pn**	**17 36 19.3**	**-0.8**
FXWY	**Fox Creek**	**6.78**	**36**	*e*Pn	**Pn**	**17 36 20.6**	**-1.0**
BW06	**Boulder Array**	**6.93**	**47**	*e*Pn	**Pn**	**17 36 25.2**	**+1.5**
PD31	**Pinedale Array**	**6.93**	**47**	*e*Pn	**Pn**	**17 36 25.1**	**+1.4**
PD31				*e*Lg	Lg	17 38 16.2	
PDAR	**Pinedale Array**	**6.93**	**47**	Pn	**Pn**	**17 36 25.8**	**+2.0**
	0.1nm,0.3s,baz=224,slow=12,SNR=8.4						
PDAR				Pg	Pb	17 36 46.6	+4.4
	0.4nm,0.3s,baz=219,slow=14,SNR=6.5						
PDAR				Lg	Lg	17 38 16.2	
	0.2nm,0.3s,baz=226,slow=27,SNR=2.8						
MOOW	**Moose Ponds**	**6.99**	**37**	*e*Pn	**Pn**	**17 36 26.5**	**+2.0**
IMW	**Indian Meadow**	**7.02**	**35**	*e*Pn	**Pn**	**17 36 26.8**	**+1.8**
MCMT	**McKenzie Canyo**	**7.11**	**21**	*e*Pn	**Pn**	**17 36 24.4**	**-1.7**
TUC	**Tucson**	**7.54**	**140**	*e*Pn	**Pn**	**17 36 32.4**	**+0.4**
TUC				*e*Pg	Pg	17 37 00.3	-5.2
KEBM	**Edson Butte**	**7.55**	**310**	*e*Sn	Sn	17 37 50.1	-8.0
S22A	**4UR Ranch, Cre**	**7.64**	**91**	*e*Pn	**Pn**	**17 36 33.2**	**-0.2**
S22A				*e*Pg	Pg	17 37 02.1	-5.1
F10A	**Beach Ranch, E**	**7.73**	**356**	*e*Pn	**Pn**	**17 36 34.6**	**+0.1**
VALT	**Mount Saint He**	**9.00**	**334**	*e*Pn	Pn	17 36 55.4	+3.3
C04A	**Brinnon**	**10.58**	**335**	*e*Sn	**Sn**	**17 39 06.6**	**-5.8**
EGMT	**Eagleton**	**10.92**	**25**	*e*Sn	Sn	17 39 12.8	-8.2
YKA	**Yellowknife Ar**	**24.29**	**2**	P	**P**	**17 39 60.0**	**+0.6**
	0.1nm,0.5s,baz=184,slow=9.1,SNR=6.0						

IDC 30 17:51:32.7±1.8, **37˚.46N**×**94˚.97E**, **h0**km, **mb3.3**/2, **mb1 3.5**/5, **mb1mx3.3**/47, **mbtmp3.4**/5, **ML3.1**/3, **MS3.9**/1, **Ms1 3.9**/1, **ms1mx2.5**/25, **Error ellipse: s-maj=89.9km s-min=26.5km az=59.0, Qinghai**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MKAR	**Makanchi Array**	**13.23**	**319**	Pn	Pn	17 54 38.1	-3.7
	0.3nm,0.3s,baz=135,slow=14,SNR=10						
MKAR				Sn	Sn	17 56 56.6	-13
	0.1nm,0.3s,baz=137,slow=20,SNR=2.9						
KURBB	**Kurchatov Arra**	**17.63**	**323**	Pn	Pn	17 55 36.3	-3.3
	0.1nm,0.3s,baz=134,slow=11,SNR=18						
ZALV	**Zalesovo Beam**	**17.92**	**340**	P	P	17 55 44.0	+0.2
	0.1nm,0.3s,baz=160,slow=13,SNR=3.6						
JCJ	**Chichijima**	**40.87**	**91**	LR	LR	18 17 53.2	
	comp=Z,134nm,18.9s,baz=113,slow=39						
ASAR	**Alice Springs**	**70.99**	**142**	P	P	18 02 52.4	+0.2
	0.2nm,0.6s,baz=333,slow=5.6,SNR=6.1						
YKA	**Yellowknife Ar**	**77.58**	**14**	P	P	18 03 29.9	-0.2
	0.1nm,0.5s,baz=340,slow=4.6,SNR=3.4						

*ISCJB **30** 18:07:06.7±1.2, 38˚.85N±0˚.05×142˚.1E±0˚.1, h49km±8km, mb3.5/5, Error ellipse: s-maj=17.4km s-min=7.4km az=19.6*
*JMA **30** 18:07:07.8±0.1, 38˚.84N×142˚.06E, h46km±1km, M3.7*
JMA Felt I J1.
*IDC **30** 18:07:09.6±2.8, 38˚.90N×142˚.28E, h68km±22km, mb3.4/5, mb1 3.4/9, mb1mx3.1/45, mbtmp3.5/9, Error ellipse: s-maj=35.9km s-min=17.0km az=104.0*
ISC 30 18:07:07.8±1.7, **38˚.80N**±0˚.07×**142˚.1E**±0˚.1, **h44**km±13km, **n17**, σ0**86**/21, **mb3.6/5, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**0.41**	**313**	P	**Pn**	**18 07 17.6**	**0.0**
OFUJ				S	**Sn**	**18 07 24.2**	**-0.4**
JIO	**Ouri**	**0.66**	**238**	P	**Pn**	**18 07 21.0**	**+0.3**
JIO				S	**Sn**	**18 07 29.8**	**-0.2**
JMK	**Ichinoseki**	**0.67**	**283**	P	**Pn**	**18 07 21.0**	**0.0**
JMK				S	**Sn**	**18 07 30.1**	**-0.3**
JOM	**Ohasama**	**0.90**	**319**	P	**Pn**	**18 07 23.8**	**-0.2**
JOM				S	**Sn**	**18 07 35.2**	**-0.7**
JOU	**Okura**	**1.18**	**249**	P	**Pn**	**18 07 28.2**	**+0.4**
JOU				S	**Sn**	**18 07 43.3**	**+0.6**
JRG	**Rokugo**	**1.26**	**299**	P	**Pn**	**18 07 28.9**	**0.0**
JYK	**Kaneyama**	**1.33**	**276**	P	**Pn**	**18 07 30.2**	**+0.2**
JMM	**Marumori**	**1.36**	**227**	P	**Pn**	**18 07 30.5**	**+0.1**
MJAR	**Matsushiro Arr**	**3.80**	**235**	P	Pn	18 08 07.6	+3.8
	1.2nm,0.3s,baz=35,slow=13,SNR=16						
ASAJ	**Asahikawa**	**5.33**	**4**	P	**Pn**	**18 08 25.9**	**+1.2**
	0.8nm,0.3s,baz=207,slow=17,SNR=18						
ASAJ				S	**Sn**	**18 09 23.9**	**-0.9**
	0.7nm,0.3s,baz=270,slow=20,SNR=3.9						
USRK	**Ussuriysk Ar.**	**9.28**	**309**	P	**Pn**	**18 09 21.9**	**+2.9**
	0.1nm,0.3s,baz=121,slow=13,SNR=4.7						
KSRS	**Korea Array**	**11.22**	**268**	P	Pn	18 09 50.4	+4.9
	0.1nm,0.3s,baz=76,slow=14,SNR=2.4						
SONM	**Songino Array**	**27.27**	**301**	P	**P**	**18 12 48.3**	**+0.2**
	0.3nm,0.3s,baz=76,slow=7.7,SNR=2.4						
ZALV	**Zalesovo Beam**	**41.12**	**311**	P	**P**	**18 14 47.2**	**-0.2**
	0.5nm,0.4s,baz=85,slow=7.7,SNR=3.2						
MKAR	**Makanchi Array**	**43.64**	**301**	P	**P**	**18 15 07.7**	**-0.2**
	0.5nm,0.4s,baz=80,slow=9.7,SNR=13						
WRA	**Warramunga Arr**	**58.88**	**188**	P	**P**	**18 17 02.1**	**-0.1**
	0.2nm,0.5s,baz=6.0,slow=6.9,SNR=5.2						
FINES	**FINESS Array B**	**67.49**	**332**	P	**P**	**18 17 58.3**	**-0.6**
	0.8nm,0.7s,baz=7.6,slow=17,SNR=3.6						

*ISCJB **30** 18:08:44.7±0.3, 39˚.86N±0˚.03×143˚.62E±0˚.04, h6km, mb4.3/70, MS3.9/21, Error ellipse: s-maj=4.6km s-min=3.3km az=44.3*
*IDC **30** 18:08:45.6±0.6, 39˚.84N×143˚.51E, h0km, mb4.1/25, mb1 4.2/29, mb1mx4.2/45, mbtmp4.1/29, ML3.8/4, MS3.6/17, Ms1 3.6/17, ms1mx3.4/37, Error ellipse: s-maj=16.2km s-min=12.5km az=107.0*
*NEIC **30** 18:08:48.1±2.2, 39˚.82N×143˚.55E, h18km±13km, mb4.5/30, Error ellipse: s-maj=6.8km s-min=4.4km az=113.0*
*MOS **30** 18:08:48.8±1.0, 39˚.89N×143˚.58E, h33km, mb4.6/29, Error ellipse: s-maj=8.8km s-min=5.3km az=97.2*
*JMA **30** 18:08:48.0±0.3, 39˚.90N×143˚.52E, h20km, M4.3*
ISC 30 18:08:46.6±0.4, **39˚.93N**±0˚.04×**143˚.56E**±0˚.04, **h6**km, **n202**, σ1**46**/203, **mb4.3**/70, **MS3.8**/21, **10C-5D, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JTH	**Tanohata**	**1.31**	**271**	P	**Pn**	**18 09 10.8**	**-0.5**
MIYJ	**Miyakonagasawa**	**1.39**	**256**	P	**Pn**	**18 09 12.1**	**-0.4**
JANG	**Nango**	**1.63**	**286**	P	**Pn**	**18 09 15.3**	**-0.5**
JANG				*e*S	**Sn**	**18 09 34.9**	**-2.2**
OFUJ	**Ofunato**	**1.69**	**240**	P	**Pn**	**18 09 16.2**	**-0.5**
JKZ	**Kuzumaki**	**1.72**	**272**	P	**Pn**	**18 09 17.5**	**+0.5**
JOM	**Ohasama**	**1.81**	**256**	P	**Pn**	**18 09 18.7**	**+0.4**
JMK	**Ichinoseki**	**2.06**	**242**	P	**Pn**	**18 09 21.5**	**-0.2**
JTM	**Tenmabayashi**	**2.09**	**295**	P	**Pn**	**18 09 22.7**	**+0.6**
JTM				*e*S	**Sn**	**18 09 48.8**	**+0.4**
ERM	**Erimo**	**2.10**	**352**	P	**Pn**	**18 09 24.0**	**+1.7**
ERM				pmax	pmax		
	comp=Z,205nm,1.2s						
ERM	**Erimo**	**2.10**	**352**	*e*Pn	**Pn**	**18 09 23.3**	**+1.1**
JAH	**Hinai**	**2.26**	**277**	P	**Pn**	**18 09 25.4**	**+0.9**
JAH				*e*S	**Sn**	**18 09 53.0**	**+0.3**
JIO	**Ouri**	**2.27**	**230**	P	**Pn**	**18 09 23.3**	**-1.2**
JRG	**Rokugo**	**2.32**	**258**	P	**Pn**	**18 09 26.4**	**+1.1**
JNBK	**Urakawa-nobuka**	**2.42**	**346**	P	**Pn**	**18 09 28.7**	**+2.0**
JSI2	**Shiura 2**	**2.65**	**296**	*e*S	**Sn**	**18 10 03.9**	**+1.6**
JYK	**K

comp=Z,15nm,1.0s
SEY Seymchan 23.64 10 P P 18 13 58.5 +0.4
comp=Z,7.5nm,0.7s,baz=195,slow=6.5,SNR=15
SEY Seymchan 23.64 10⇑ eP P 18 13 59.8 +1.6
YAK Yakutsk 23.69 344 P P 18 13 57.7 -1.0
comp=Z,28nm,0.7s,baz=1.7,slow=1.7,SNR=27
YAK Yakutsk 23.69 344 eP P 18 13 58.7 0.0
YAK e*PP sP 18 14 08.2 +7.0
YAK eS S 18 13 08.0 -5.7
YAK e 18 24 57.3
YAK pmax pmax
comp=Z,16nm,0.7s
YAK pmax pmax
comp=N,5.0nm,0.8s
YAK smax smax
comp=N,41nm,2.7s
YAK smax smax
comp=E,65nm,3.2s
YAK Yakutsk 23.69 344 eP P 18 13 57.5 -1.2
comp=E,37nm,0.9s
HHC Hu-ho-hao-te 24.32 283 eP P 18 14 03.8 -1.3
HHC sP sP 18 14 16.5 +8.9
HHC S S 18 18 17.5 -7.1
HHC pmax pmax
comp=Z,39nm,0.8s
HHC pmax pmax
comp=Z,110nm,8.4s
HHC LR LR
comp=N,1μm,12.3s
HHC LR LR
comp=E,1μm,12.3s
HHC LR LR
comp=Z,1μm,13.6s
SSLB Suanglung 24.95 237 eP P 18 14 08.5 -2.3
comp=Z,26nm,1.4s
YULB Yu-li 25.02 235 eP P 18 14 09.2 -2.1
comp=Z,77nm,1.9s
TPUB Ta-pu 25.51 236 eP P 18 14 13.1 -2.7
comp=Z,23nm,1.3s
WHN Wuhan 25.54 258 P P 18 14 15.8 -0.2
WHN S S 18 18 45.5 +1.5
WHN pmax pmax
comp=Z,56nm,0.5s
WHN LR LR
comp=N,700nm,10.9s
WHN LR LR
comp=E,660nm,15.4s
WHN LR LR
comp=Z,650nm,12.0s
TWG Pinlang 25.57 235 eP P 18 14 13.3 -3.0
comp=Z,85nm,1.0s
BOD Bodaibo 26.10 323 eP P 18 14 20.3 -0.5
BOD pmax pmax
comp=Z,7.0nm,1.0s
GUMO Guam 26.27 177 LR LR 18 23 10.9
comp=Z,53nm,20.6s,baz=77,slow=33
ULN Ulaanbaatar 27.27 299c iP P 18 14 32.4 +0.7
ULN pmax pmax
comp=Z,13nm,1.2s
ULN Ulaanbaatar 27.27 299 eP P 18 14 32.3 +0.6
comp=Z,8.0nm,0.8s
SONA1 Songino Array 27.71 299 eP P 18 14 36.2 +0.6
SONA0 Songino Array 27.71 299 eP P 18 14 36.5 +0.9
comp=Z,42nm,1.8s
SONM Songino Array 27.71 299 P P 18 14 36.5 +0.9
comp=Z,5.7nm,0.8s,baz=85,slow=8.8,SNR=22
SONM LR LR 18 26 26.2
comp=Z,312nm,18.1s,baz=92,slow=38
XAN Xi'an 28.17 269 P P 18 14 39.0 -0.8
XAN pmax pmax
comp=Z,7.0nm,0.8s
H11N2 WAKE ISLAND Hy 28.40 128 T T 18 43 26.5
baz=317,slow=75,SNR=129
H11N1 WAKE ISLAND Hy 28.41 128 T T 18 43 25.9
baz=317,slow=75,SNR=118
H11N3 WAKE ISLAND Hy 28.42 128 T T 18 43 27.2
baz=317,slow=75,SNR=72
H11S1 WAKE ISLAND Hy 29.23 130 T T 18 44 27.8
baz=318,slow=76,SNR=51
H11S3 WAKE ISLAND Hy 29.23 130 T T 18 44 25.6
baz=318,slow=76,SNR=56
H11S2 WAKE ISLAND Hy 29.24 130 T T 18 44 26.2
baz=318,slow=76,SNR=47
ENH Enshi 29.35 261 eP P 18 14 50.0 -0.3
comp=Z,19nm,0.9s
TLY Talaya 29.83 307 P P 18 14 52.6 -1.7
comp=Z,2.0nm,0.5s,baz=130,slow=18,SNR=2.9
TLY Talaya 29.83 307 eP P 18 14 58.4 +4.1
TLY pmax pmax
comp=Z,3.0nm,0.6s
TLY MLR MLR
comp=Z,185nm,15.0s
ZAK Zakamensk 29.93 304 eP P 18 14 55.7 +0.4
ZAK pmax pmax
comp=Z,3.0nm,1.4s
BILL Bilibino 30.77 16⇓ iP P 18 15 02.8 +0.4
BILL pmax pmax
comp=Z,2.0nm,1.0s
BILL MLR MLR
comp=Z,95nm,20.0s
BILL Bilibino 30.77 16 eP P 18 15 03.2 +0.8
comp=Z,5.6nm,1.2s
LZH Lanzhou 31.35 276 eP P 18 15 12.5 +4.4
LZH pP sP 18 15 16.5 +5.9
LZH sP pP 18 15 19.5 +10
LZH PP **PP 18 16 15.3 -3.4**
LZH PcP PcP 18 18 11.3 +9.4
LZH eS **S 18 20 12.0 -3.7**
LZH sS sS 18 20 28.3 +10
LZH SS **SnSn 18 22 07.0 +8.4**
LZH pmax pmax
comp=Z,15nm,1.0s
LZH pmax pmax
comp=Z,65nm,4.7s
LZH LR LR
comp=N,1μm,12.0s
LZH LR LR
comp=E,1μm,12.0s
LZH LR LR
comp=Z,1μm,13.3s
TIXI Tiksi 32.65 351⇓ eP P 18 15 19.0 +0.2
TIXI Tiksi 32.65 351 eP P 18 15 19.6 +0.8
comp=Z,1.5nm,0.8s
GTA Gaotai 33.43 283 eP P 18 15 26.8 +0.6
GTA pP sP 18 15 33.3 +4.5
GTA sP pP 18 15 36.3 +8.3
GTA PcP **PcP 18 18 10.5 +3.0**
GTA S **S 18 20 45.5 -2.4**
GTA sS sS 18 20 57.5 +6.5
GTA SS **SnSn 18 22 49.0 +0.1**
GTA pmax pmax
comp=Z,8.0nm,1.1s
GTA pmax pmax
comp=Z,31nm,4.8s
GTA LR LR
comp=N,160nm,15.7s
GTA LR LR
comp=E,300nm,16.6s
GTA LR LR
comp=Z,430nm,16.2s
KMI Kunming 37.12 259 P P 18 16 00.5 +2.3
KMI pP sP 18 16 07.5 +6.7
KMI sP pP 18 16 10.5 +10
KMI pmax pmax
comp=Z,9.0nm,0.6s
KMI LR LR
comp=N,160nm,16.2s
KMI LR LR
comp=E,170nm,18.4s
KMI LR LR
comp=Z,210nm,18.1s
WMQ Urumqi 41.11 294 eP P 18 16 31.3 0.0
WMQ pP sP 18 16 41.3 +7.4
WMQ sP pP 18 16 45.3 +12
WMQ S **S 18 22 41.3 -3.3**
WMQ SS SS 18 25 37.5 -9.2
WMQ pmax pmax
comp=Z,4.0nm,0.6s
WMQ pmax pmax
comp=Z,36nm,4.4s
WMQ LR LR
comp=N,31nm,14.4s
WMQ LR LR
comp=E,21nm,15.8s
WMQ LR LR
comp=Z,30nm,17.2s

ZAA1 Zalesovo Array 41.28 310 eP P 18 16 33.0 +0.6
ZAA1 ePcP **PcP 18 18 31.0 0.0**
ZALV Zalesovo Beam 41.28 310 P P 18 16 33.0 +0.6
comp=Z,4.6nm,0.7s,baz=87,slow=7.9,SNR=21
ZALV PcP **PcP 18 18 31.0 0.0**
comp=Z,0.9nm,0.8s,baz=71,slow=4.2,SNR=3.9
CM31 Chiang Mai Arr 43.89 254 eP P 18 16 52.8 -1.2
CMAR Chiang Mai Arr 43.89 254 P P 18 16 53.9 -0.1
comp=Z,0.7nm,0.7s,baz=36,slow=7.2,SNR=7.2
CMAR LR LR 18 37 05.5
comp=Z,59nm,19.1s,baz=90,slow=39
MK01 Makanchi Array 44.07 300 eP P 18 16 55.0 -0.2
MK31 Makanchi Array 44.07 300 eP P 18 16 55.3 +0.1
MK31 Makanchi Array 44.07 300 eP P 18 16 55.3 +0.1
MK32 Makanchi Array 44.07 300 eP P 18 16 55.4 +0.2
MKAR Makanchi Array 44.07 300 P P 18 16 55.4 +0.2
comp=Z,3.0nm,0.8s,baz=83,slow=9.5,SNR=30
MKAR Makanchi Array 44.07 300 iP P 18 16 55.7 +0.5
MKAR pmax pmax
comp=Z,3.0nm,0.7s
MKAR Makanchi Array 44.07 300 eP P 18 16 55.3 0.0
MAKZ Makanchi 44.28 300 eP P 18 16 56.5 -0.4
MAKZ pmax pmax
comp=Z,4.0nm,0.9s
MAKZ Makanchi 44.28 300 eP P 18 16 56.5 -0.4
comp=Z,3.8nm,0.9s
KURK Kurchatov 45.53 306 eP P 18 17 06.6 -0.1
KURK pmax pmax
comp=Z,9.0nm,0.6s
KURK Kurchatov 45.53 306 eP P 18 17 06.6 -0.1
comp=Z,9.0nm,0.6s
MDM Murphy Dome 45.57 34 eP P 18 17 11.2 +4.3
comp=Z,5.3nm,1.1s
ILAR Eielson Array 46.15 34 P P 18 17 12.4 +0.9
comp=Z,0.9nm,0.7s,baz=265,slow=6.6,SNR=11
ILB Eielson Array 46.15 34 eP P 18 17 12.3 +0.9
VOSK Vostochnaya 49.65 310 eP P 18 17 38.6 -0.1
VOSK pmax pmax
comp=Z,4.0nm,0.8s
VOSK Vostochnaya 49.65 310 eP P 18 17 38.6 -0.1
comp=Z,3.7nm,0.8s
TKM2 Tokmak 2 49.78 297 eP P 18 17 40.7 +0.6
TKM2 pmax pmax
comp=Z,11nm,0.8s
TKM2 Tokmak 2 49.78 297 eP P 18 17 40.7 +0.6
comp=Z,11nm,0.8s
BRVK Borovoye 49.96 311c iP P 18 17 41.7 +0.6
BRVK pmax pmax
comp=Z,4.0nm,0.8s
BRVK Borovoye 49.96 311 eP P 18 17 41.1 0.0
comp=Z,4.4nm,1.0s
AAK Ala-Archa 50.64 297⇑ iP P 18 17 46.7 +0.1
AAK pmax pmax
comp=Z,6.0nm,1.0s
AAK Ala-Archa 50.64 297 eP P 18 17 46.6 -0.1
comp=Z,2.9nm,1.0s
ZRNK Zerenda 50.74 311 eP P 18 17 47.1 +0.1
ZRNK pmax pmax
comp=Z,5.0nm,0.6s
ZRNK Zerenda 50.74 311 eP P 18 17 47.1 +0.1
comp=Z,4.9nm,0.6s
KSH Kashi 50.81 293 P P 18 17 52.5 +4.6
KSH epP sP 18 18 02.3 +12
KSH esP pP 18 18 06.3 +17
KSH ePP PP 18 19 49.8 +6.0
KSH eScP **ScP 18 23 01.8 +0.4**
KSH S **S 18 25 06.0 +1.8**
KSH Kashi 50.81 293 SS SS 18 28 38.8 +0.4
KSH pmax pmax
comp=Z,65nm,3.8s
KSH LR LR
comp=N,81nm,5.3s
KSH LR LR
comp=E,74nm,6.9s
KSH LR LR
comp=Z,220nm,13.4s
INK Inuvik 51.04 28 P P 18 17 50.2 +1.2
comp=Z,1.5nm,0.7s,baz=310,slow=4.2,SNR=7.9
INK Inuvik 51.04 28 eP P 18 17 49.5 +0.5
INK pmax pmax
comp=Z,5.0nm,1.3s
INK Inuvik 51.04 28 eP P 18 17 49.5 +0.5
comp=Z,4.5nm,1.3s
EKS2 Erkin-Say 51.12 297 eP P 18 17 49.8 -0.4
EKS2 pmax pmax
comp=Z,3.0nm,0.7s
EKS2 Erkin-Say 51.12 297 eP P 18 17 49.8 -0.4
comp=Z,3.4nm,0.7s
KKAR Karatay Array 53.17 299 eP P 18 18 05.0 -0.3
KKAR Karatay Array 53.17 299 eP P 18 18 05.0 -0.3
ARU Arti 55.33 318 eP P 18 18 20.9 +0.1
ARU pmax pmax
comp=Z,7.0nm,1.2s
ARU Arti 55.33 318 eP P 18 18 20.9 +0.1
comp=Z,7.3nm,1.2s
ABKAR Abkulak array 57.39 309 eP P 18 18 35.4 -0.2
RES Resolute Bay 59.37 15 eP P 18 18 48.9 -0.1
RES pmax pmax
comp=Z,2.0nm,0.8s
RES Resolute Bay 59.37 15 eP P 18 18 48.9 -0.1
comp=Z,2.2nm,0.8s
WRAB Tennant Creek 60.17 190 P P 18 18 55.8 +0.7
WR1 Warramunga Arr 60.18 190 eP P 18 18 53.7 -1.5
WRA Warramunga Arr 60.18 190 P P 18 18 53.7 -1.5
comp=Z,1.6nm,0.6s,baz=7.7,slow=6.9,SNR=16
YKA Yellowknife Ar 60.46 31 P P 18 18 57.1 +0.4
comp=Z,0.4nm,0.7s,baz=301,slow=6.4,SNR=11
YKB5 Yellowknife Ar 60.46 31 eP P 18 18 56.4 -0.2
ARA0 ARCESS Array S 61.88 339 eP P 18 19 06.9 +0.6
ARCES ARCESS Array B 61.88 339 P P 18 19 06.9 +0.6
comp=Z,1.7nm,0.8s,baz=8.9,slow=8.6,SNR=4.1
KLMR Klimovskoe 62.22 328 eP P 18 19 07.7 -0.9
KLMR e*SP sP 18 19 21.3 +10
KLMR e 18 19 48.8
KLMR pmax pmax
comp=Z,9.0nm,1.5s
AS31 Alice Springs 63.91 190 eP P 18 19 19.0 -1.2
comp=Z,0.9nm,1.0s
ASAR Alice Springs 63.91 190 P P 18 19 19.5 -0.8
comp=Z,0.8nm,0.6s,baz=6.3,slow=5.7,SNR=13
GEYT Alibeck 63.92 299 P P 18 19 20.3 0.0
comp=Z,1.3nm,0.7s,baz=354,slow=3.0,SNR=4.1
OBN Obninsk 66.79 323 eP P 18 19 39.0 +0.5
OBN *PP sP 18 19 49.0 +7.8
OBN *SP pP 18 19 54.0 +14
OBN e 18 20 07.0
OBN i S S 18 29 00.4 +29
OBN e 18 29 04.9
OBN pmax pmax
comp=Z,10.0nm,1.4s
OBN MLR MLR
comp=Z,185nm,15.0s
FIA0 FINESS Array S 67.03 332 eP P 18 19 40.4 +0.3
FIA0 FINESS Array S 67.03 332 eP P 18 19 40.4 +0.3
FINES FINESS Array B 67.03 332 P P 18 19 40.4 +0.3
comp=Z,2.9nm,0.7s,baz=52,slow=7.6,SNR=17
FINES LR LR 18 51 54.5
comp=Z,107nm,18.4s,baz=14,slow=39
VSU Vasula 68.81 330 P P 18 19 52.0 +0.8
VSU pmax pmax
comp=Z,24nm,0.9s
ZEI Tsey 70.26 310 eP P 18 20 00.0 -0.8
ZEI pmax pmax
comp=Z,7.0nm,0.8s
KIV Kislovodsk 70.28 311⇓ iP P 18 20 02.6 +1.9
KIV e*PP sP 18 20 12.7 +9.3
KIV e*SP PcP 18 20 14.7 -7.8
KIV e 18 20 21.4
KIV pmax pmax
comp=Z,13nm,1.0s
KIV Kislovodsk 70.28 311 eP P 18 20 01.5 +0.8
comp=Z,12nm,0.9s
KBZ Khabaz 70.29 311 P P 18 20 01.6 +1.0
comp=Z,4.6nm,0.9s,baz=36,slow=3.6,SNR=13
LRM Limekiln Ridge 70.91 46 eP P 18 20 03.0 -1.7
BOZ Bozeman (W) 71.47 46 eP P 18 20 11.5 +3.4
BOZ pmax pmax
comp=Z,2.0nm,0.9s
BOZ Bozeman (W) 71.47 46 eP P 18 20 11.5 +3.4
comp=Z,2.1nm,0.9s
STKA Stephens Creek 71.47 182 P P 18 20 07.5 -0.3
comp=Z,1.3nm,0.9s,baz=81,slow=9.2,SNR=3.1
STKA Stephens Creek 71.47 182 eP P 18 20 07.3 -0.4
STKA pmax pmax
comp=Z,4.0nm,1.8s

STKA Stephens Creek 71.47 182 eP P 18 20 07.3 -0.4
comp=Z,4.2nm,1.8s
NV01 Mina Array Sit 71.92 55 eP P 18 20 12.2 +1.2
NVAR Mina Array Bea 71.92 55 P P 18 20 12.6 +1.6
comp=Z,0.5nm,0.7s,baz=286,slow=6.0,SNR=4.4
NC204 NORSAR Array S 72.10 338 eP P 18 20 11.7 +0.3
NB2 NORSAR Subarra 72.16 338 P P 18 20 11.8 +0.1
comp=Z,0.9nm,0.7s,baz=36,slow=6.2
NB200 NORSAR Array S 72.16 339 eP P 18 20 12.2 +0.4
NOA NORSAR Array B 72.16 338 P P 18 20 12.2 +0.4
comp=Z,1.8nm,0.8s,baz=38,slow=6.0,SNR=8.8
NBO02 NORSAR Array S 72.25 338 eP P 18 20 12.2 0.0
LKWY Lake 72.83 46 eP P 18 20 16.5 +0.2
LKWY pmax pmax
comp=Z,25nm,1.4s
LKWY Lake 72.83 46 eP P 18 20 16.5 +0.2
comp=Z,25nm,1.4s
AKASG Malin Array Be 73.03 323 P P 18 20 17.1 +0.1
comp=Z,1.6nm,0.6s,baz=46,slow=6.8,SNR=9.6
AKASG LR LR 18 54 27.4
comp=Z,48nm,19.3s,baz=55,slow=38
KIEV Kiev 73.04 323⇓ eP P 18 20 17.4 +0.3
KIEV pmax pmax
comp=Z,3.0nm,0.6s
FRB Frobisher Bay 73.56 14 LR LR 18 56 42.1
comp=Z,48nm,19.0s,baz=271,slow=39
PD31 Pinedale Array 74.45 47 eP P 18 20 26.6 +0.8
PDAR Pinedale Array 74.45 47 P P 18 20 26.3 +0.4
comp=Z,0.3nm,0.7s,baz=291,slow=5.7,SNR=2.8
PDAR LR LR 18 57 27.9
comp=Z,7.2nm,18.0s,baz=18,slow=39
KWP Kalwaria Pacla 76.74 325 eP P 18 20 39.9 +1.3
KWP Kalwaria Pacla 76.74 325⇑ iP P 18 20 40.2 +1.6
BUR08 Bucovina Ar. S 77.06 322 eP P 18 20 40.7 +0.2
BURAR Bucovina Array 77.07 322⇑ iP P 18 20 41.1 +0.5
KOLS Kolonicke sedl 77.45 325 eP P 18 20 43.7 +1.1
KOLS pmax pmax
comp=Z,2.0nm,1.1s
KOLS Kolonicke sedl 77.45 325 eP P 18 20 43.7 +1.1
STHS Stebnicka Huta 77.54 326 eP P 18 20 44.8 +1.7
STHS pmax pmax
comp=Z,2.0nm,0.8s
STHS Stebnicka Huta 77.54 326 eP P 18 20 44.8 +1.7
OJC Ojcow 77.56 327 eP P 18 20 44.4 +1.3
BR101 Keskin Array S 78.18 312 eP P 18 20 47.5 +0.6
BRTR Keskin Array B 78.18 312 P P 18 20 47.5 +0.6
comp=Z,0.8nm,0.8s,baz=95,slow=2.6,SNR=5.5
BRTR LR LR 19 00 05.6
comp=Z,34nm,18.2s,baz=26,slow=39
LANS Liptovska Anna 78.51 326 eP P 18 20 49.9 +1.4
LANS Liptovska Anna 78.51 326 eP P 18 20 49.9 +1.4
BR231 Keskin MP Arra 78.59 313 eP P 18 20 47.8 -1.3
VOIR 78.72 321⇑ iP P 18 20 51.3 +1.5
MORC Moravsky Berou 78.83 328⇓ iP P 18 20 51.4 +1.1
MORC Moravsky Berou 78.83 328 eP P 18 20 50.7 +0.4
MORC pmax pmax
comp=Z,15nm,1.0s
MORC Moravsky Berou 78.83 328 eP P 18 20 50.7 +0.4
comp=Z,15nm,1.0s
DPC Dobruska-Polom 78.88 329 eP P 18 20 51.7 +1.2
KRLC Kraliky 78.91 328 eP P 18 20 51.8 +1.1
VYHS Vyhne 79.28 326 eP P 18 20 53.5 +0.8
VYHS pmax pmax
comp=Z,2.0nm,1.2s
VYHS Vyhne 79.28 326 eP P 18 20 53.5 +0.8
CLL Collm 79.41 331 iP P 18 20 53.5 +0.2
comp=Z,3.0nm,0.8s
CLL epP **PcP 18 21 02.0 +0.6**
CLL LmV 18 59 00.0
comp=Z,100nm,19.5s
PVCC Panska Ves 79.43 330 AMS AMS 19 00 10.0
comp=Z,100nm,18.3s
PRU Pruhonice 79.87 329 eP P 18 20 56.4 +0.5
KHC Kasperske Hory 80.94 329 eP P 18 21 02.4 +0.7
KHC Kasperske Hory 80.94 329 eP P 18 21 01.6 -0.1
KHC pmax pmax
comp=Z,1.0nm,0.9s
KHC Kasperske Hory 80.94 329 eP P 18 21 01.6 -0.1
comp=Z,1.4nm,0.9s
GERES GERESS Array B 81.12 329 P P 18 21 03.0 +0.3
comp=Z,0.5nm,0.5s,baz=130,slow=1.5,SNR=3.3
GERES LR LR 19 00 19.3
comp=Z,43nm,18.3s,baz=34,slow=38
LTX Lajitas 87.03 54 eP P 18 21 34.4 +1.2
LTX Lajitas 87.03 54 eP P 18 21 34.4 +1.2
TXAR Lajitas Array 87.03 54 P P 18 21 34.4 +1.2
comp=Z,0.2nm,0.3s,baz=311,slow=1.9,SNR=2.4

MAN 30 18:17:43,15°.75N×120°.03E,h11km,mb4.0,ML2.8,MS2.5, 1C,Luzon

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
SCZP	**Santa Cruz**	**0.11**	**285**	**eP**		Pb		18 17 48.8	+1.5
SCZP				eS		Sg		18 17 54.9	+6.9
BOLP	**Bolinao**	**0.64**	**350**	**eP**		Pg		18 17 55.8	+0.3
BCPH	**Baguio City Da**	**0.83**	**40⇑**	**iP**		Pb		18 17 59.8	+0.3
BCPH				*i* S		Sg		18 18 09.6	-0.3
BALP	**Baler**	**1.49**	**90**	**eP**		Pn		18 18 04.6	-5.2
ABRA	**Dolores**	**2.00**	**19**	**eP**		Pb		18 18 18.5	-1.0
CAUP	**Cauayan**	**2.10**	**55**	**eP**		Pn		18 18 16.4	-1.7
APYP	**Conner**	**2.41**	**29**	**eP**		Pn		18 18 23.9	+1.6

*IDC **30** 18:47:25.6±2.1,4°.45S×102°.13E,h0km,mb3.7/6, mb1 3.8/6,mb1mx3.5/38,mbtmp3.7/6,Error ellipse: s-maj=100.1km s-min=21.1km az=54.0*
*ISCJB **30** 18:47:29.1±0.9,4°.54S±0°.10×102°.00E±0°.08,h37km, mb3.7/6,Error ellipse: s-maj=14.4km s-min=10.3km az=19.6*
*DJA **30** 18:47:32.7±0.9,4°S±6°×10°2E±°,h33km±9km,M3.7/6, MLv3.7/6*

ISC 30 18:47:31.2±1.0,4°.5S±0°.1×102°.1E±0°.1,h37km,n15, σ0°.77/14,mb3.9/6,Southern Sumatera

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
MNAI	**Manna**	**0.85**	**81**		P		**Pn**	**18 47 46.9**	**+0.2**
MASI	**Maura Aman, Be**	**1.35**	**5**		P		**Pn**	**18 47 54.8**	**+1.2**
LHSI	**Lahat**	**1.56**	**65**		P		**Pn**	**18 47 56.2**	**-0.1**
LHSI					S		**Sn**	**18 48 15.7**	**+0.4**
LWLI	**Liwa**	**2.01**	**105**		P		**Pn**	**18 48 04.1**	**+1.4**
KASI	**Kota Agung**	**2.59**	**113**		P		**Pn**	**18 48 11.3**	**+0.8**
H01W3	**Cape Leeuwin H** baz=338	**32.23**	**161**		T		T	19 27 46.5	
H01W2	**Cape Leeuwin H** baz=338	**32.24**	**161**		T		T	19 27 52.5	
H01W1	**Cape Leeuwin H** baz=338	**32.24**	**161**		T		T	19 27 49.8	
WRA	**Warramunga Arr** 0.3nm,0.3s,baz=287,slow=9.5,SNR=5.1	**34.94**	**119**		P		**P**	**18 54 19.4**	**-0.5**
ASAR	**Alice Springs** 0.3nm,0.8s,baz=298,slow=7.7,SNR=6.8	**36.10**	**125**		P		**P**	**18 54 29.4**	**-0.4**
ASAR					PcP		**PcP**	**18 56 56.0**	**+0.5**
SONM	**Songino Array** 0.8nm,0.7s,baz=178,slow=10,SNR=7.5	**52.24**	**4**		P		**P**	**18 56 38.8**	**+0.1**
MKAR	**Makanchi Array** 0.5nm,0.4s,baz=151,slow=8.9,SNR=10	**53.99**	**343**		P		**P**	**18 56 51.0**	**-0.6**
ZALV	**Zalesovo Beam** 0.6nm,0.4s,baz=160,slow=5.6,SNR=4.2	**60.01**	**348**		P		**P**	**18 57 33.2**	**-0.8**
FINES	**FINESS Array B** 1.2nm,1.1s,baz=145,slow=7.0,SNR=3.8	**87.28**	**332**		P		**P**	**19 00 14.1**	**+0.3**
TXAR	**Lajitas Array** 0.1nm,0.4s,baz=8.5,slow=1.8,SNR=2.7	**145.27**	**42**		PKPbc		**PKPbc**	**19 07 04.9**	**-0.7**

IDC 30 19:00:10.2±2.4,3°.42S×135°.59E,h0km,mb3.7/3, mb1 3.8/4,mb1mx3.5/27,mbtmp3.6/4,ML3.4/1,MS3.7/1, Ms1 3.7/1,ms1mx2.5/37,Error ellipse: s-maj=112.3km s-min=28.0km az=75.0,Irian Jaya region

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr** 0.1nm,0.3s,baz=4.1,slow=12,SNR=8.5	**16.47**	**184**		Pn		Pn	19 04 03.6	+0.8
WRA					Sn		Sn	19 06 43.9	-22
ASAR	**Alice Springs** 0.1nm,0.3s,baz=2.6,slow=23,SNR=3.4	**20.19**	**184**		P		P	19 04 45.6	-1.1
STKA	**Stephens Creek** 2.5nm,0.6s,baz=7.7,slow=11,SNR=68	**28.87**	**169**		P		P	19 06 11.2	+0.5
JHJ	**Hachijo jima 2** 0.3nm,0.3s,baz=338,slow=5.4,SNR=6.2	**36.56**	**6**		LR		LR	19 20 31.3	

comp=Z,121nm,21.9s,baz=347,slow=33
MKAR Makanchi Array 68.48 324 P P 19 11 14.3 0.0
0.2nm,0.5s,baz=116,slow=7.3,SNR=3.8

MEX 30 19:07:34.6±0.7, 17.74N×100.22W, h62km±7km, MD3.6, Guerrero

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ARIG	**Puente Sto Nin**	**0.55**	**348**	*i* P	Pn	19 07 45.9	-1.5
ARIG				*i* S	Sn	19 07 54.8	-1.8
MEIG	**Mezcala**	**0.60**	**72**	*e*P	Pn	19 07 46.6	-1.4
MEIG				*i* S	Sn	19 07 56.0	-1.7
CAIG	**El Cayaco**	**0.69**	**183**	*i* P	Pn	19 07 47.3	-1.5
CAIG				*i* S	Sn	19 07 57.4	-1.8
ZIIG	**Zihuatanejo**	**1.19**	**264**	*i* P	Pn	19 07 53.8	-1.4
ZIIG				*e*S	Sn	19 08 07.2	-3.4
YAIG	**Yautepec**	**1.57**	**44**	*e*P	Pn	19 07 58.9	-1.5
YAIG				*e*S	Sn	19 08 16.1	-3.8
TLIG	**Tlapa**	**1.59**	**96**	*e*P	Pn	19 08 00.3	-0.3
TLIG				*e*S	Sn	19 08 17.8	-2.5
PNIG	**Pinotepa**	**2.41**	**123**	*e*P	Pn	19 08 11.8	+0.1

MAN 30 19:11:34, 18.10N×120.71E, h27km, mb4.1, ML2.9, MS2.6, 1D, Luzon

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SIPP	**Brgy, Tapao**	**0.30**	**234**	*e*P	Pn	19 11 43.0	+0.4
SIPP				*e*S	Sn	19 11 50.4	+2.3
ABRA	**Dolores**	**0.45**	**180**	*e*P	Pn	19 11 44.8	+0.1
APYP	**Conner**	**0.56**	**115**	*e*P	Pn	19 11 46.3	+0.1
APYP				*e*S	Sn	19 11 56.9	+2.3
SGCP	**Mt. Cagua**	**1.28**	**83**	*e*P	Pn	19 11 56.5	+0.4
CAUP	**Cauayan**	**1.57**	**137**	*e*P	Pb	19 12 05.9	+3.6

*ISCJB **30** 19:31:17.1±0.5, 18.05S±0.10×178.0W±0.1, h590km, mb3.9/15, Error ellipse: s-maj=15.6km s-min=11.9km az=25.1*
*IDC **30** 19:31:21.2±1.8, 18.07S×178.00W, h624km±22km, mb3.5/16, mb1 3.7/16, mb1mx3.5/27, mbtmp4.4/16, Error ellipse: s-maj=16.1km s-min=10.3km az=143.0*
ISC 30 19:31:18.1±0.6, 18.0S±0.1×178.0W±0.1, h590km, n41, σ0995/45, mb3.9/15, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
URZ	**Urewera**	**20.63**	**191**	P	**P**	**19 35 17.2**	**-0.6**
	4.3nm,0.4s,baz=262,slow=4.4,SNR=8.3						
STKA	**Stephens Creek**	**38.93**	**241**	P	**P**	**19 37 56.9**	**+2.2**
	5.0nm,0.8s,baz=86,slow=8.5,SNR=13						
WRA	**Warramunga Arr**	**45.00**	**260**	P	**P**	**19 38 43.2**	**+0.7**
	6.5nm,0.3s,baz=95,slow=7.1,SNR=370						
WRA				ScP	**ScP**	**19 43 07.0**	**-0.6**
	0.7nm,0.8s,baz=93,slow=4.1,SNR=4.3						
WRA				S	**S**	**19 44 36.1**	**-3.1**
	0.6nm,0.8s,baz=95,slow=13,SNR=4.1						
ASAR	**Alice Springs**	**45.14**	**254**	P	**P**	**19 38 44.9**	**+1.3**
	17nm,0.7s,baz=90,slow=8.1,SNR=570						
ASAR				PcP	**PcP**	**19 40 10.9**	**-0.2**
	1.2nm,0.5s,baz=99,slow=3.6,SNR=5.6						
ASAR				S	**S**	**19 44 39.5**	**-1.7**
	1.9nm,0.8s,baz=91,slow=16,SNR=15						
VNDA	**Vanda**	**60.38**	**185**	P	**P**	**19 40 31.0**	**+0.2**
	1.2nm,0.5s,baz=282,slow=20,SNR=23						
MJAR	**Matsushiro Arr**	**68.22**	**323**	P	**P**	**19 41 21.5**	**+0.6**
	4.1nm,0.5s,baz=153,slow=6.2,SNR=26						
MAT	**Matsushiro**	**68.22**	**323**	P	**P**	**19 41 21.5**	**+0.6**
PETK	**Petropavlovsk-**	**73.87**	**345**	P	**P**	**19 41 53.3**	**-0.2**
	5.3nm,0.6s,baz=119,slow=7.8,SNR=6.4						
KSRS	**Korea Array**	**75.03**	**318**	P	**P**	**19 42 01.7**	**+1.3**
	1.1nm,0.8s,baz=122,slow=5.7,SNR=4.1						
NVAR	**Mina Array Bea**	**79.22**	**44**	P	**P**	**19 42 24.0**	**+0.6**
	1.3nm,0.7s,baz=214,slow=7.7,SNR=8.5						
SEY	**Seymchan**	**83.96**	**347**	P	**P**	**19 42 46.2**	**-0.4**
	4.0nm,0.5s,baz=147,slow=6.0,SNR=23						
TXAR	**Lajitas Array**	**85.72**	**57**	P	**P**	**19 42 57.1**	**+1.1**
	0.7nm,0.6s,baz=222,slow=5.5,SNR=6.3						
ILAR	**Eielson Array**	**85.89**	**13**	P	**P**	**19 42 55.2**	**-0.8**
	1.3nm,0.4s,baz=218,slow=5.0,SNR=23						
PDAR	**Pinedale Array**	**87.15**	**43**	P	**P**	**19 43 02.8**	**+0.1**
	0.6nm,0.6s,baz=202,slow=3.5,SNR=8.1						
CMAR	**Chiang Mai Arr**	**89.29**	**290**	P	**P**	**19 43 14.6**	**+1.7**
	1.2nm,0.8s,baz=108,slow=2.3,SNR=8.8						
SNAA	**Sanae**	**90.49**	**178**	P	**P**	**19 43 16.8**	**-0.8**
VNA3	**Neumayer Olymp**	**90.62**	**176**	P	**P**	**19 43 17.6**	**-0.5**
VNA2	**Neumayer--Watz**	**91.06**	**177**	P	**P**	**19 43 19.7**	**-0.4**
	baz=196,slow=3.4						
SONM	**Songino Array**	**93.88**	**319**	P	**P**	**19 43 33.3**	**-0.3**
	0.3nm,0.6s,baz=126,slow=2.6,SNR=3.9						
YKA	**Yellowknife Ar**	**94.26**	**25**	P	**P**	**19 43 34.2**	**-0.5**
	0.5nm,0.6s,baz=242,slow=4.5,SNR=14						
MKAR	**Makanchi Array**	**69.48**	**314**	PKiKP	**PKiKP**	**19 48 40.7**	**-1.7**
	0.2nm,0.5s,baz=144,slow=1.2,SNR=8.0						
ARCES	**ARCESS Array B**	**126.48**	**350**	PKP	**PKPdf**	**19 49 13.6**	**-0.6**
	0.7nm,0.6s,baz=348,slow=1.4,SNR=7.5						
GEYT	**Alibeck**	**127.42**	**304**	PKP	**PKPdf**	**19 49 17.0**	**0.0**
	1.4nm,0.8s,baz=329,slow=5.5,SNR=4.5						
FINES	**FINESS Array B**	**133.39**	**344**	PKP	**PKPdf**	**19 49 26.6**	**-0.9**
	1.8nm,0.9s,baz=116,slow=3.9,SNR=7.7						
BRTR	**Keskin Array B**	**145.13**	**315**	PKPbc	**PKPbc**	**19 49 50.2**	**-0.5**
	2.8nm,0.7s,baz=136,slow=3.8,SNR=20						
CLL	**Collm**	**145.64**	**348**	*i* P	**PKPbc**	**19 49 51.7**	**+0.1**
	comp=Z,13nm,0.8s						
BRG	**Berggiesshubel**	**145.85**	**346**	*i* P	**PKPbc**	**19 49 52.1**	**-0.1**
	comp=Z,6.5nm,0.8s						
GERES	**GERESS Array B**	**147.81**	**345**	PKPbc	**PKPbc**	**19 49 57.3**	**-0.3**
	comp=Z,2.7nm,0.6s,baz=12,slow=3.0,SNR=22						
CONA	**Conrad Observa**	**148.08**	**342**	*i* PKPbc	**PKPbc**	**19 49 58.3**	**+0.1**
	comp=Z,3.0nm,0.7s						
MOA	**Molln**	**148.59**	**344**	*i* PKPbc	**PKPbc**	**19 49 59.8**	**+0.3**
	comp=Z,5.3nm,1.4s						
ARSA	**Arzberg**	**148.79**	**342**	*i* PKPbc	**PKPbc**	**19 49 60.0**	**0.0**
	comp=Z,2.2nm,0.9s						
SOKA	**Soboth**	**149.45**	**342**	*i* PKPbc	**PKPbc**	**19 50 01.0**	**-0.7**
	comp=Z,2.5nm,0.7s						
KBA	**Koelnbreinsper**	**149.54**	**345**	*i* PKPbc	**PKPbc**	**19 50 00.7**	**-1.3**
	comp=Z,2.6nm,0.5s						
WATA	**Walderalm**	**149.71**	**347**	*i* PKPbc	**PKPbc**	**19 50 02.1**	**-0.2**
	comp=Z,2.4nm,0.5s						
RETA	**Reutte**	**149.73**	**348**	*i* PKPbc	**PKPbc**	**19 50 02.4**	**+0.1**
	comp=Z,4.5nm,1.4s						
OBKA	**Obir**	**149.74**	**343**	*i* PKPbc	**PKPbc**	**19 50 02.0**	**-0.4**
	comp=Z,2.3nm,0.6s						
WTTA	**Wattenberg**	**149.76**	**347**	*i* PKPbc	**PKPbc**	**19 50 02.3**	**-0.2**
	comp=Z,6.4nm,0.7s						
MYKA	**Terra Mystica**	**149.88**	**344**	*i* PKPbc	**PKPbc**	**19 50 01.5**	**-1.2**
	comp=Z,3.1nm,0.6s						
ABTA	**Abfaltersbach**	**150.05**	**345**	*i* PKPbc	**PKPbc**	**19 50 02.3**	**-0.8**
	comp=Z,6.4nm,0.7s						
DAVA	**Damuels**	**150.09**	**349**	*i* PKPbc	**PKPbc**	**19 50 02.8**	**-0.5**
	comp=Z,3.0nm,0.7s						
FETA	**Feichten**	**150.18**	**348**	*i* PKPbc	**PKPbc**	**19 50 03.4**	**-0.1**
	comp=Z,3.7nm,0.9s						

*ATH **30** 19:53:38.8, 38.89N×26.82E, h25km±1km, ML3.3/4, Error ellipse: s-maj=3.9km s-min=1.1km az=249.0*
*DDA **30** 19:53:39.6, 38.92N×26.81E, h7km, Ml3.4*
*ISCJB **30** 19:53:39.7±0.3, 38.87N±0.01×26.74E±0.02, h10km±2km, Error ellipse: s-maj=2.5km s-min=2.3km az=155.2*
*ISK **30** 19:53:39.4, 38.87N×26.77E, h9km, ML3.4*
*CSEM **30** 19:53:40.1±0.1, 38.87N×26.74E, h10km, ML3.4, Error ellipse: s-maj=2.0km s-min=1.8km az=75.0*
*THE **30** 19:53:40.3, 38.86N×26.71E, h7km±1km, ML3.0/8, Error ellipse: s-maj=1.2km s-min=0.5km az=261.0*
ISC 30 19:53:39.9±0.9, 38.87N±0.01×26.75E±0.02, h10km±7km, n160, σ0964/213, Aegean Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DKL	**Dikili**	**0.24**	**31**	*e*PG	**Pg**	**19 53 44.7**	**-0.2**
DKL				*e*SG	**Sg**	**19 53 48.4**	**+0.2**
DKL	**Dikili**	**0.24**	**31**	*e*Pg	**Pg**	**19 53 44.7**	**-0.2**
DKL				*e*Sg	**Sg**	**19 53 48.4**	**+0.2**
AYVA	**Ayvalik**	**0.44**	**355**	*i* P	**Pg**	**19 53 48.4**	**-0.2**
AYVA				*i* S	Sg	19 53 48.4	-6.1
AYVA				*i* S	**Sg**	**19 53 55.1**	**+0.7**
AYVA	**Ayvalik**	**0.44**	**355**	P	**Pg**	**19 53 48.4**	**-0.2**
AYVA				S	**Sg**	**19 53 55.2**	**+0.7**
URLA	**Izmir**	**0.52**	**193**	*i* P	**Pg**	**19 53 50.0**	**0.0**
URLA				*i* S	**Sb**	**19 53 59.5**	**+0.7**
URLA	**Izmir**	**0.52**	**193**	P	**Pg**	**19 53 50.0**	**0.0**
URLA				S	**Sb**	**19 53 59.5**	**+0.7**
PRK	**Paraskevi**	**0.53**	**316**	P	**Pg**	**19 53 50.2**	**0.0**
PRK				S	**Sg**	**19 53 58.0**	**+0.8**
PRK	**Paraskevi**	**0.53**	**316**	P	**Pg**	**19 53 50.2**	**0.0**
PRK				S	**Sg**	**19 53 57.2**	**0.0**
PRK	**Paraskevi**	**0.53**	**316**	P	**Pg**	**19 53 50.2**	**0.0**
PRK				S	**Sg**	**19 53 57.2**	**0.0**
PRK				AML	AML	19 54 01.7	
	comp=N,3880μm,0.6s						
PRK				AML	AML	19 54 02.9	
	comp=E,4354μm,0.5s						
BLCB	**Balcova**	**0.53**	**154**	*e*PG	**Pg**	**19 53 49.7**	**-0.6**
BLCB				*e*SG	**Sg**	**19 53 57.5**	**+0.2**
BLCB	**Balcova**	**0.53**	**154**	*e*Pg	**Pg**	**19 53 49.7**	**-0.6**
BLCB				*e*Sg	**Sg**	**19 53 57.5**	**+0.2**
IZM	**Izmir**	**0.62**	**139**	*e*PG	**Pg**	**19 53 51.9**	**0.0**
IZM	**Izmir**	**0.62**	**139**	*e*Pg	**Pg**	**19 53 51.9**	**0.0**
ZEY	**¯zmir**	**0.65**	**197**	*i* P	**Pg**	**19 53 52.2**	**-0.4**
CHOS	**Chios island**	**0.72**	**229**	*e*PG	**Pb**	**19 53 54.4**	**-0.3**
CHOS				*e*SG	**Sb**	**19 54 05.2**	**+0.5**
CHOS	**Chios island**	**0.72**	**229**	P	**Pg**	**19 53 53.9**	**0.0**
CHOS				S	**Sb**	**19 54 04.0**	**-0.7**
CHOS	**Chios island**	**0.72**	**229**	P	**Pg**	**19 53 53.7**	**-0.2**
CHOS	**Chios island**	**0.72**	**229**	*e*Pg	**Pb**	**19 53 54.4**	**-0.3**
CHOS				S	**Sb**	**19 54 04.0**	**-0.7**
CHOS				*e*Sg	**Sb**	**19 54 05.2**	**+0.5**
CHOS	**Chios island**	**0.72**	**229**	P	**Pg**	**19 53 53.6**	**-0.2**
CHOS				S	**Sn**	**19 54 06.2**	**-1.2**
CHOS				AML	AML	19 54 07.6	
	comp=E,9813μm,0.3s						
CHOS				AML	AML	19 54 07.6	
	comp=N,4866μm,0.3s						
SIGR	**SIGRI**	**0.77**	**297**	*e*PG	**Pg**	**19 53 55.0**	**+0.1**
SIGR				*e*SG	**Sb**	**19 54 06.4**	**+0.3**
SIGR	**SIGRI**	**0.77**	**297**	P	**Pg**	**19 53 54.8**	**-0.1**
SIGR				S	**Sb**	**19 54 06.3**	**+0.2**
SIGR	**SIGRI**	**0.77**	**297**	P	**Pg**	**19 53 54.7**	**-0.1**
SIGR	**SIGRI**	**0.77**	**297**	*e*Pg	**Pg**	**19 53 55.0**	**+0.1**
SIGR				S	**Sb**	**19 54 06.3**	**+0.2**
SIGR	**SIGRI**	**0.77**	**297**	P	**Pg**	**19 53 54.7**	**-0.1**
SIGR				S	**Sn**	**19 54 08.0**	**-0.6**
SIGR				AML	AML	19 54 09.6	
	comp=N,3838μm,0.5s						
SIGR				AML	AML	19 54 15.9	
	comp=E,2357μm,0.4s						
AKHS	**Akhisar**	**0.83**	**89**	*i* P	**Pg**	**19 53 56.2**	**+0.2**
AKHS				*i* S	**Sb**	**19 54 07.9**	**0.0**
AKHS	**Akhisar**	**0.83**	**89**	P	**Pg**	**19 53 56.2**	**+0.2**
AKHS				S	**Sb**	**19 54 07.9**	**0.0**
AKS	**Akhisar**	**0.83**	**89**	*e*PG	**Pg**	**19 53 55.6**	**-0.4**
AKS				*e*SG	**Sb**	**19 54 07.5**	**-0.4**
AKS	**Akhisar**	**0.83**	**89**	*e*Pg	**Pg**	**19 53 55.6**	**-0.4**
AKS				*e*Sg	**Sb**	**19 54 07.5**	**-0.4**
EZN	**Ezine**	**1.01**	**341**	*e*PG	**Pg**	**19 53 58.1**	**-0.3**
EZN	**Ezine**	**1.01**	**341**	P	**Pg**	**19 53 58.7**	**-0.7**
EZN				S	**Sb**	**19 54 13.0**	**0.0**
EZN	**Ezine**	**1.01**	**341**	P	**Pg**	**19 53 58.7**	**-0.7**
EZN	**Ezine**	**1.01**	**341**	*e*Pg	**Pg**	**19 53 59.1**	**-0.3**
EZN				S	**Sb**	**19 54 13.0**	**0.0**
BALY	**Balya**	**1.11**	**38**	*i* P	Pg	19 53 55.4	-5.8
BOZC	**Bozcaada**	**1.11**	**331**	*i* P	**Pb**	**19 54 00.6**	**-0.7**
BOZC				*i* S	**Sn**	**19 54 17.2**	**+0.2**
SMG	**Samos**	**1.16**	**176**	P	**Pb**	**19 54 01.3**	**-0.8**
SMG				S	**Sn**	**19 54 18.8**	**+0.7**
SMG	**Samos**	**1.16**	**176**	P	**Pb**	**19 54 01.3**	**-0.8**
SMG				S	**Sn**	**19 54 18.4**	**+0.2**
SMG	**Samos**	**1.16**	**176**	P	**Pb**	**19 54 01.1**	**-1.0**
SMG				S	**Sn**	**19 54 18.4**	**+0.2**
SMG				AML	AML	19 54 21.0	
	comp=N,5104μm,0.5s						
SMG				AML	AML	19 54 21.7	
	comp=E,2779μm,0.4s						
BALB	**Balikesir**	**1.17**	**48**	*e*PN	**Pb**	**19 54 01.9**	**-0.4**
BALB	**Balikesir**	**1.17**	**48**	*e*Pn	**Pb**	**19 54 01.9**	**-0.4**
AYDB	**Zeytinkoy-Aydi**	**1.29**	**135**	*e*PN	**Pn**	**19 54 03.9**	**-0.2**
AYDB	**Zeytinkoy-Aydi**	**1.29**	**135**	*e*Pn	**Pn**	**19 54 03.9**	**-0.2**
GONE	**Gonen-Balikesi**	**1.39**	**31**	*e*PN	**Pn**	**19 54 05.2**	**-0.1**
GONE	**Gonen-Balikesi**	**1.39**	**31**	*e*Pn	**Pn**	**19 54 05.2**	**-0.1**
LPK	**Lapseki**	**1.50**	**0**	*e*PN	**Pn**	**19 54 06.9**	**-0.1**
LPK	**Lapseki**	**1.50**	**0**	*e*Pn	**Pn**	**19 54 06.9**	**-0.1**
KNL	**Bal¯–kesir**	**1.53**	**23**	*i* P	**Pn**	**19 54 06.0**	**-1.3**
KNL				*i* S	**Sn**	**19 54 27.3**	**0.0**
DURS	**Dursunbey**	**1.53**	**61**	*i* P	**Pn**	**19 54 06.9**	**-0.5**
DURS				*i* S	**Sn**	**19 54 27.0**	**-0.5**
DURS	**Dursunbey**	**1.53**	**61**	P	**Pn**	**19 54 06.9**	**-0.5**
DURS				S	**Sn**	**19 54 27.0**	**-0.5**
KULA	**Kula-Manisa**	**1.54**	**103**	*e*PN	**Pn**	**19 54 07.6**	**+0.1**
KULA	**Kula-Manisa**	**1.54**	**103**	P	**Pn**	**19 54 07.5**	**-0.1**
KULA				S	**Sb**	**19 54 28.1**	**-0.1**
KULA	**Kula-Manisa**	**1.54**	**103**	*e*Pn	**Pn**	**19 54 07.6**	**+0.1**
KULA				S	**Sb**	**19 54 28.1**	**-0.1**
GELI	**Tayfur-Gelibol**	**1.54**	**352**	*e*PN	**Pn**	**19 54 07.7**	**+0.1**
GELI	**Tayfur-Gelibol**	**1.54**	**352**	*e*Pn	**Pn**	**19 54 07.7**	**+0.1**
DEMI	**Demirci**	**1.55**	**83**	*i* P	**Pn**	**19 54 07.2**	**-0.5**
DEMI				*i* S	**Sg**	**19 54 29.6**	**-0.1**
DEMI	**Demirci**	**1.55**	**83**	P	**Pn**	**19 54 07.2**	**-0.5**
DEMI				S	**Sg**	**19 54 29.6**	**-0.1**
KRBG	**Karabiga-Canak**	**1.58**	**15**	*e*PN	**Pn**	**19 54 07.5**	**-0.6**
KRBG	**Karabiga-Canak**	**1.58**	**15**	*e*Pn	**Pn**	**19 54 07.5**	**-0.6**
LIA	**Limnos Island**	**1.59**	**311**	P	**Pn**	**19 54 07.9**	**-0.2**
LIA				S	**Sn**	**19 54 28.4**	**-0.4**
LIA	**Limnos Island**	**1.59**	**311**	P	**Pn**	**19 54 08.0**	**-0.2**
LIA				S	**Sn**	**19 54 28.4**	**-0.4**
EDC	**Edincik**	**1.71**	**30**	*e*PN	**Pn**	**19 54 09.4**	**-0.5**
EDC	**Edincik**	**1.71**	**30**	*e*Pn	**Pn**	**19 54 09.4**	**-0.5**
ERIK	**Erikli-Kesan**	**1.81**	**354**	*e*PN	**Pn**	**19 54 11.4**	**+0.2**
ERIK	**Erikli-Kesan**	**1.81**	**354**	*e*Pn	**Pn**	**19 54 11.4**	**+0.2**
RKY	**Sarkoy-Tekirda**	**1.85**	**10**	*e*PN	**Pn**	**19 54 12.1**	**+0.3**
RKY	**Sarkoy-Tekirda**	**1.85**	**10**	*e*Pn	**Pn**	**19 54 12.1**	**+0.3**
SART	**Tekirdag**	**1.85**	**10**	*i* P	**Pn**	**19 54 11.9**	**+0.1**
SART				*i* S	**Sg**	**19 54 39.5**	**+0.1**
SART	**Tekirdag**	**1.85**	**10**	P	**Pn**	**19 54 11.9**	**+0.1**
SART				S	**Sg**	**19 54 39.5**	**+0.1**
MRMT	**Marmara Adasi**	**1.85**	**20**	*e*PN	**Pn**	**19 54 11.9**	**0.0**
MRMT	**Marmara Adasi**	**1.85**	**20**	*e*Pn	**Pn**	**19 54 11.9**	**0.0**
BODT	**Bodrum**	**1.86**	**166**	*e*PN	**Pn**	**19 54 12.2**	**+0.3**
BODT	**Bodrum**	**1.86**	**166**	P	**Pn**	**19 54 11.7**	**-0.1**
BODT				S	**Sn**	**19 54 36.1**	**+0.7**
BODT	**Bodrum**	**1.86**	**166**	P	**Pn**	**19 54 11.7**	**-0.1**
BODT	**Bodrum**	**1.86**	**166**	*e*Pn	**Pn**	**19 54 12.2**	**+0.3**
BODT				S	**Sn**	**19 54 36.1**	**+0.7**
SMTH	**Samothraki Isl**	**1.86**	**330**	P	**Pn**	**19 54 11.4**	**-0.5**
SMTH				S	**Sn**	**19 54 35.5**	**+0.1**
SMTH	**Samothraki Isl**	**1.86**	**330**	P	**Pn**	**19 54 11.8**	**-0.1**
SMTH				S	**Sn**	**19 54 35.5**	**+0.1**
SMTH	**Samothraki Isl**	**1.86**	**330**	P	**Pn**	**19 54 11.8**	**-0.1**
KCTX	**Karacabey (Bur**	**1.87**	**41**	*e*PN	**Pn**	**19 54 11.2**	**-0.9**
KCTX	**Karacabey (Bur**	**1.87**	**41**	*e*Pn	**Pn**	**19 54 11.2**	**-0.9**
KARY	**Karystos**	**1.99**	**246**	P	**Pn**	**19 54 13.1**	**-0.6**
KARY				S	**Sn**	**19 54 38.2**	**-0.6**
KARY	**Karystos**	**1.99**	**246**	P	**Pn**	**19 54 13.1**	**-0.6**
KARY				S	**Sn**	**19 54 38.2**	**-0.6**
APE	**Apeiranthos**	**2.04**	**209**	P	**Pn**	**19 54 12.8**	**-1.5**
APE				S	**Sn**	**19 54 39.8**	**0.0**
APE	**Apeiranthos**	**2.04**	**209**	P	**Pn**	**19 54 12.8**	**-1.5**
APE				S	**Sn**	**19 54 39.8**	**0.0**
APE	**Apeiranthos**	**2.04**	**209**	P	Pn	19 54 11.1	-3.2
ALN	**Alexandroupoli**	**2.10**	**345**	*e*PN	**Pn**	**19 54 14.8**	**-0.4**
ALN	**Alexandroupoli**	**2.10**	**345**	P	**Pn**	**19 54 15.0**	**-0.2**
ALN				S	**Sn**	**19 54 42.2**	**+0.9**
ALN	**Alexandroupoli**	**2.10**	**345**	P	**Pn**	**19 54 15.0**	**-0.2**
ALN				S	**Sn**	**19 54 42.2**	**+0.9**
ALN	**Alexandroupoli**	**2.10**	**345**	P	**Pn**	**19 54 15.8**	**+0.7**
YER	**Yerkesik**	**2.11**	**144**	*e*PN	**Pn**	**19 54 15.9**	**+0.5**
YER	**Yerkesik**	**2.11**	**144**	P	**Pn**	**19 54 15.3**	**-0.1**
YER				S	**Sn**	**19 54 41.9**	**+0.1**
YER	**Yerkesik**	**2.11**	**144**	P	**Pn**	**19 54 15.3**	**-0.1**
YER	**Yerkesik**	**2.11**	**144**	*e*Pn	**Pn**	**19 54 15.9**	**+0.5**
YER				S	**Sn**	**19 54 41.9**	**+0.1**
TVSB	**Tavsanli**	**2.19**	**74**	*e*PN	**Pn**	**19 54 16.0**	**-0.6**
TVSB	**Tavsanli**	**2.19**	**74**	*e*Pn	**Pn**	**19 54 16.0**	**-0.6**
MDNY	**Mudanya-Bursa**	**2.23**	**47**	*e*PN	**Pn**	**19 54 17.4**	**+0.4**
MDNY	**Mudanya-Bursa**	**2.23**	**47**	*e*Pn	**Pn**	**19 54 17.4**	**+0.4**
KHL	**Karahalli**	**2.24**	**103**	*e*PN	**Pn**	**19 54 17.6**	**+0.3**
KHL	**Karahalli**	**2.24**	**103**	*e*Pn	**Pn**	**19 54 17.6**	**+0.3**
AOS	**Alonnisos**	**2.25**	**279**	P	**Pn**	**19 54 17.7**	**+0.4**
AOS	**Alonnisos**	**2.25**	**279**	P	**Pn**	**19 54 17.7**	**+0.4**
ARMT	**Armutlu**	**2.35**	**43**	*e*PN	**Pn**	**19 54 19.2**	**+0.5**
ARMT	**Armutlu**	**2.35**	**43**	*e*Pn	**Pn**	**19 54 19.2**	**+0.5**
CRLT	**Corlu**	**2.38**	**18**	*e*PN	**Pn**	**19 54 19.2**	**+0.1**
CRLT	**Corlu**	**2.38**	**18**	*e*Pn	**Pn**	**19 54 19.2**	**+0.1**
SERI	**Serifos**	**2.47**	**227**	P	**Pn**	**19 54 20.9**	**+0.6**
SERI	**Serifos**	**2.47**	**227**	P	**Pn**	**19 54 20.9**	**+0.6**
DALY	**Dalyan (Mu¯la**	**2.54**	**143**	*e*PN	**Pn**	**19 54 22.1**	**+0.8**
DALY	**Dalyan (Mu¯la**	**2.54**	**143**	*e*Pn	**Pn**	**19 54 22.1**	**+0.8**
IZI	**Iznik**	**2.57**	**54**	*e*PN	**Pn**	**19 54 22.5**	**+0.8**
IZI	**Iznik**	**2.57**	**54**	*e*Pn	**Pn**	**19 54 22.5**	**+0.8**
SKIA	**Skiathos**	**2.57**	**278**	P	**Pn**	**19 54 21.2**	**-0.5**
SKIA	**Skiathos**	**2.57**	**278**	P	**Pn**	**19 54 21.2**	**-0.5**
OUR	**Ouranopolis**	**2.59**	**305**	*e*PN	**Pn**	**19 54 23.2**	**+1.3**
OUR	**Ouranopolis**	**2.59**	**305**	P	**Pn**	**19 54 21.8**	**-0.1**
OUR				S	**Sn**	**19 54 52.9**	**-0.5**
OUR	**Ouranopolis**	**2.59**	**305**	P	**Pn**	**19 54 21.8**	**-0.1**
OUR	**Ouranopolis**	**2.59**	**305**	*e*Pn	**Pn**	**19 54 23.2**	**+1.3**
OUR				S	**Sn**	**19 54 52.9**	**-0.5**
OUR	**Ouranopolis**	**2.59**	**305**	P	**Pn**	**19 54 21.5**	**-0.4**
PAIG	**Paliouri**	**2.60**	**295**	P	**Pn**	**19 54 22.0**	**-0.1**
PAIG	**Paliouri**	**2.60**	**295**	P	**Pn**	**19 54 22.0**	**-0.1**
PAIG	**Paliouri**	**2.60**	**295**	P	**Pn**	**19 54 21.3**	**-0.8**
CTKS	**Kestanelik-??a**	**2.73**	**29**	*e*PN	**Pn**	**19 54 24.5**	**+0.7**
CTKS	**Kestanelik-??a**	**2.73**	**29**	*e*Pn	**Pn**	**19 54 24.5**	**+0.7**
KAVA	**Kavala**	**2.73**	**322**	P	**Pn**	**19 54 23.9**	**0.0**
KAVA	**Kavala**	**2.73**	**322**	P	**Pn**	**19 54 23.9**	**0.0**
BGKT	**Bogazkoy**	**2.79**	**33**	*e*PN	**Pn**	**19 54 25.4**	**+0.8**
BGKT	**Bogazkoy**	**2.79**	**33**	*e*Pn	**Pn**	**19 54 25.4**	**+0.8**
ADVT	**Abdulvahap**	**2.79**	**55**	*e*PN	**Pn**	**19 54 25.4**	**+0.7**
ADVT	**Abdulvahap**	**2.79**	**55**	*e*Pn	**Pn**	**19 54 25.4**	**+0.7**
ISK	**Istanbul-Kandi**	**2.83**	**38**	*e*PN	**Pn**	**19 54 25.9**	**+0.8**
ISK	**Istanbul-Kandi**	**2.83**	**38**	*e*Pn	**Pn**	**19 54 25.9**	**+0.8**
CTYL	**Yalikoy Yolu**	**2.86**	**24**	*e*PN	**Pn**	**19 54 26.5**	**+0.9**
CTYL	**Yalikoy Yolu**	**2.86**	**24**	*e*Pn	**Pn**	**19 54 26.5**	**+0.9**
KLYT	**Kilyos**	**2.96**	**36**	*e*PN	**Pn**	**19 54 28.0**	**+0.9**
KLYT	**Kilyos**	**2.96**	**36**	*e*Pn	**Pn**	**19 54 28.0**	**+0.9**
EDRB	**Edirne**	**2.98**	**360**	*e*PN	**Pn**	**19 54 27.9**	**+0.7**
EDRB	**Edirne**	**2.98**	**360**	P	**Pn**	**19 54 27.2**	**-0.1**
EDRB	**Edirne**	**2.98**	**360**	P	**Pn**	**19 54 27.2**	**-0.1**
EDRB	**Edirne**	**2.98**	**360**	*e*Pn	**Pn**	**19 54 28.0**	**+0.7**
HRT	**Hereke**	**2.98**	**48**	*e*PN	**Pn**	**19 54 28.0**	**+0.7**
HRT	**H

n29,σ0ˢ68/53, Taiwan region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JYNG	**Yonagunijimaku**	**0.53**	**30**	P	**Pn**	**20 02 07.5**	**-0.2**
JYNG				S	**Sn**	**20 02 14.9**	**-1.2**
YOJ	**Yonaguni jima**	**0.57**	**34**	P	**Pn**	**20 02 08.1**	**-0.1**
YOJ				S	**Sn**	**20 02 15.8**	**-1.3**
ENA	**Nanau** baz=294	**0.94**	**298**	*e*P	**Pn**	**20 02 13.5**	**+0.2**
ENA	baz=294			*e*S	**Sn**	**20 02 26.4**	**+0.1**
TWC	**Suao** baz=308	**0.96**	**310**	*e*P	**Pn**	**20 02 14.2**	**+0.6**
TWC	baz=308			*e*S	**Sn**	**20 02 25.8**	**-0.9**
TWD	**Chiawan** baz=270	**0.97**	**276**	*e*P	**Pn**	**20 02 14.0**	**+0.3**
IRIF	**Iriomote-Funau**	**1.04**	**70**	P	**Pn**	**20 02 16.1**	**+1.4**
IRIF				*e*S	**Sn**	**20 02 29.3**	**+0.7**
ESL	**Shilin** baz=251	**1.13**	**261**	*e*P	**Pb**	**20 02 17.0**	**+0.8**
ESL	baz=251			*e*S	**Sn**	**20 02 30.9**	**0.0**
TWE	**Neicheng** baz=299	**1.16**	**309**	*e*P	**Pb**	**20 02 16.8**	**+0.2**
TWE	baz=299			*e*S	**Sn**	**20 02 32.1**	**+0.5**
ENTT	**Nioudou** baz=301	**1.19**	**303**	*e*P	**Pb**	**20 02 17.3**	**+0.2**
ENTT	baz=301			*e*S	**Sn**	**20 02 32.5**	**+0.2**
NNS	**Nan Shan** baz=288	**1.25**	**291**	*e*P	**Pb**	**20 02 18.5**	**+0.2**
JKRS	**Kuro-shima**	**1.26**	**78**	*e*S	**Sb**	**20 02 35.9**	**+1.8**
WHF	**Hehuan Shan** baz=274	**1.28**	**277**	*e*P	**Pb**	**20 02 18.9**	**0.0**
WHF	baz=274			*e*S	**Sn**	**20 02 35.0**	**-0.2**
EHY	**Hungye** baz=257	**1.31**	**249**	*e*P	**Pb**	**20 02 19.0**	**-0.2**
EHY	baz=257			*e*S	**Sb**	**20 02 35.7**	**0.0**
NSK	**Sanguang** baz=287	**1.37**	**300**	*e*P	**Pb**	**20 02 20.6**	**+0.5**
NSK	baz=287			*e*S	**Sb**	**20 02 36.9**	**-0.3**
TWF1	**Yuli** baz=239	**1.40**	**243**	P	**Pb**	**20 02 21.2**	**+0.5**
TWF1	baz=239			*e*S	**Sb**	**20 02 38.1**	**+0.1**
JIJ	**Ishigaki jima**	**1.41**	**74**	P	**Pb**	**20 02 20.7**	**-0.1**
JIJ				S	**Sn**	**20 02 37.4**	**-0.3**
CHKT	**Chengkung** baz=220	**1.48**	**234**	*e*P	**Pb**	**20 02 22.8**	**+0.8**
CHKT	baz=220			*e*S	**Sn**	**20 02 39.1**	**-0.3**
SMLT	**Sun Moon Lake** baz=264	**1.61**	**267**	*e*P	**Pb**	**20 02 24.4**	**+0.1**
SMLT	baz=264			*e*S	**Sb**	**20 02 43.4**	**-0.8**
JISG	**Ishigakijimahi**	**1.62**	**68**	P	**Pb**	**20 02 23.6**	**-0.9**
JISG				*e*S	**Sn**	**20 02 42.2**	**-0.8**
TYC	**Yuchr** baz=265	**1.65**	**267**	*e*P	**Pb**	**20 02 25.2**	**+0.3**
TYC	baz=265			*e*S	**Sb**	**20 02 45.2**	**-0.1**
ELDTW	**Lidau** baz=239	**1.70**	**242**	*e*P	**Pn**	**20 02 24.8**	**+0.9**
ELDTW	baz=239			*e*S	**Sn**	**20 02 44.5**	**-0.6**
ALS	**Alishan** baz=252	**1.76**	**255**	*e*P	**Pb**	**20 02 26.9**	**-0.2**
ALS	baz=252			*e*S	**Sn**	**20 02 47.1**	**+0.2**
CHN5	**Tsauling** baz=248	**1.85**	**258**	*e*P	**Pb**	**20 02 28.9**	**+0.4**
CHN5	baz=248			*e*S	**Sb**	**20 02 51.3**	**0.0**
STYT	**Tauyuan** baz=236	**1.93**	**245**	*e*P	**Pb**	**20 02 29.4**	**-0.3**
STYT	baz=236			*e*S	**Sn**	**20 02 51.5**	**+0.9**
WTP	**Ta-pu** baz=246	**2.01**	**249**	*e*P	**Pb**	**20 02 30.6**	**-0.6**
WTP	baz=246			*e*S	**Sb**	**20 02 55.3**	**-0.5**
ECL	**Taimali** baz=236	**2.09**	**229**	*e*P	**Pb**	**20 02 32.7**	**+0.3**
ECL	baz=236			*e*S	**Sn**	**20 02 54.0**	**-0.5**
CHN1	**Nanshi** baz=246	**2.11**	**248**	*e*P	**Pb**	**20 02 33.2**	**+0.4**
CHN1	baz=246			*e*S	**Sb**	**20 02 57.6**	**-1.0**
SSD	**Sandimen** baz=229	**2.23**	**237**	*e*P	**Pb**	**20 02 33.2**	**-1.7**
EAST	**Anshuo** baz=232	**2.31**	**227**	*e*P	**Pn**	**20 02 31.4**	**-0.8**

*IDC **30** 20:08:46.5±1.6, 35°.31N×142°.83E, h0km, mb3.4/2, mb1 3.6/3, mb1mx3.1/46, mbtmp3.2/3, ML3.0/1, MS3.7/1, Ms1 3.7/1, ms1mx2.2/33, Error ellipse: s-maj=43.9km s-min=33.6km az=109.0*

*JMA **30** 20:08:50.3±0.2, 35°.55N×142°.66E, h84km, M3.0*

*ISCJB **30** 20:08:51.2±1.2, 35°.57N±0°.07×142°.64E±0°.09, h56km, mb3.5/2, MS3.7/1, Error ellipse: s-maj=10.5km s-min=9.5km az=177.1*

ISC 30 20:08:53.3±1.4, 35°.57N±0°.09×142°.59E±0°.10, h56km, n9, σ0ˢ82/11, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFT	**Otama**	**2.66**	**318**	P	**Pn**	**20 09 33.0**	**-0.7**
JFT				*e*S	**Sn**	**20 10 05.4**	**+0.7**
JAG	**Ashikaga**	**2.68**	**289**	P	**Pn**	**20 09 33.2**	**-0.8**
JAG				*e*S	**Sn**	**20 10 05.3**	**0.0**
JRY	**Ryogami san**	**3.03**	**279**	P	**Pn**	**20 09 38.8**	**0.0**
JRY				*e*S	**Sn**	**20 10 14.2**	**+0.3**
JMK	**Ichinoseki**	**3.54**	**342**	*e*S	**Sn**	**20 10 25.7**	**-0.7**
MJAR	**Matsushiro Arr** 1.0nm,0.3s,baz=92,slow=6.3,SNR=12	**3.68**	**286**	Pn	**Pn**	**20 09 48.0**	**+0.3**
JOM	**Ohasama**	**4.03**	**346**	*e*S	**Sn**	**20 10 37.9**	**-0.4**
BATI	**Baumata** comp=Z,79nm,18.6s,slow=40	**48.92**	**205**	LR	LR	20 41 14.7	
ILAR	**Eielson Array** 0.4nm,0.7s,baz=270,slow=5.4,SNR=4.4	**50.23**	**32**	P	**P**	**20 17 44.6**	**+1.4**
WRA	**Warramunga Arr** 0.4nm,0.8s,baz=5.7,slow=7.4,SNR=4.2	**55.76**	**189**	P	**P**	**20 18 23.5**	**-1.0**

*ISCJB **30** 20:12:38.0±1.2, 17°.9S±0°.2×177°.8W±0°.3, h590km, mb3.7/8, Error ellipse: s-maj=34.5km s-min=21.2km az=27.7*

*IDC **30** 20:12:40.2±6.2, 17°.92S×177°.88W, h600km±68km, mb3.2/8, mb1 3.4/8, mb1mx3.0/42, mbtmp4.1/8, Error ellipse: s-maj=37.8km s-min=23.8km az=86.0*

ISC 30 20:12:39.2±1.1, 17°.9S±0°.2×177°.8W±0°.2, h590km, n11, σ0ˢ70/13, mb3.8/8, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
STKA	**Stephens Creek** 2.0nm,0.7s,baz=65,slow=10,SNR=6.4	**39.12**	**241**	P	**P**	**20 19 17.4**	**+0.1**
WRA	**Warramunga Arr** 3.4nm,0.4s,baz=95,slow=7.0,SNR=175	**45.18**	**259**	P	**P**	**20 20 04.5**	**-0.4**
WRA	0.2nm,0.3s,baz=91,slow=3.5,SNR=3.0			PcP	**PcP**	**20 21 31.2**	**-1.2**
ASAR	**Alice Springs** 7.2nm,0.6s,baz=90,slow=8.2,SNR=177	**45.33**	**254**	P	**P**	**20 20 05.7**	**-0.4**
ASAR	0.5nm,0.5s,baz=103,slow=3.6,SNR=5.3			PcP	**PcP**	**20 21 31.9**	**-1.0**
VNDA	**Vanda** 0.3nm,0.5s,baz=352,slow=5.0,SNR=5.5	**60.50**	**185**	P	**P**	**20 21 53.0**	**+0.4**
MJAR	**Matsushiro Arr** 1.2nm,0.4s,baz=156,slow=5.9,SNR=9.3	**68.23**	**323**	P	**P**	**20 22 42.2**	**+0.2**
SEY	**Seymchan** 1.0nm,0.3s,baz=46,slow=23,SNR=6.0	**83.89**	**347**	P	**P**	**20 24 07.6**	**+0.3**
ILAR	**Eielson Array** 0.3nm,0.4s,baz=219,slow=5.4,SNR=6.3	**85.75**	**13**	P	**P**	**20 24 15.9**	**-0.5**
CMAR	**Chiang Mai Arr** 0.5nm,0.6s,baz=102,slow=3.8,SNR=3.9	**89.41**	**290**	P	**P**	**20 24 35.6**	**+1.1**
BRTR	**Keskin Array B** 0.7nm,0.5s,baz=140,slow=4.7,SNR=7.4	**145.17**	**315**	PKPbc	**PKPdf**	**20 31 11.3**	**+0.5**
CLL	**Collm** comp=Z,4.0nm,0.6s	**145.57**	**348**	*i* P	**PKPbc**	**20 31 12.1**	**-0.3**
GERES	**GERESS Array B** comp=Z,0.5nm,0.5s,baz=29,slow=3.8,SNR=7.2	**147.74**	**346**	PKPbc	**PKPbc**	**20 31 18.1**	**-0.4**

IDC 30 20:27:58.5±49.0, 17°.34S×178°.69W, h0km, mb3.9/3, mb1 4.1/3, mb1mx3.6/39, mbtmp3.9/3, Error ellipse: s-maj=892.5km s-min=146.8km az=78.0, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
STKA	**Stephens Creek** 0.5nm,0.4s,baz=56,slow=11,SNR=2.9	**38.68**	**240**	P	P	20 35 24.8	+0.6
WRA	**Warramunga Arr** 0.5nm,0.4s,baz=96,slow=7.4,SNR=29	**44.48**	**259**	P	P	20 36 11.7	-0.3
ASAR	**Alice Springs** 2.6nm,0.6s,baz=88,slow=8.7,SNR=69	**44.69**	**254**	P	P	20 36 13.1	-0.6

*DDA **30** 20:33:48.1, 38°.99N×29°.83E, h7km, Ml3.1*

*CSEM **30** 20:33:48.5±0.1, 38°.99N×29°.82E, h2km, ML3.1, Error ellipse: s-maj=3.1km s-min=2.5km az=153.0*

*ISK **30** 20:33:48.3, 38°.98N×29°.77E, h4km, MD2.8*

ISC 30 20:33:48.4±1.0, 38°.98N±0°.02×29°.83E±0°.02, h8km±9km, n48, σ0ˢ58/64, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GDZ	**Gediz**	**0.29**	**292**	*i* P	**Pg**	**20 33 54.2**	**-0.1**
GDZ				*i* S	**Sg**	**20 33 58.7**	**+0.5**
GDZ	**Gediz**	**0.29**	**292**	P	**Pg**	**20 33 54.2**	**-0.1**
GDZ				S	**Sg**	**20 33 58.7**	**+0.5**
TVSB	**Tavsanli**	**0.55**	**329**	*e*Pg	**Pg**	**20 33 58.5**	**-0.5**
TVSB	**Tavsanli**	**0.55**	**329**	*e*Pg	**Pg**	**20 33 58.5**	**-0.5**
AUKIR	**K¨rka- Seyitg**	**0.62**	**61**	*i* P	**Pg**	**20 34 00.4**	**-0.1**
AUKIR	**K¨rka- Seyitg**	**0.62**	**61**	P	**Pg**	**20 34 00.4**	**-0.1**
KHAL	**Karahalli**	**0.67**	**203**	*i* P	**Pg**	**20 34 01.1**	**-0.2**
KHAL				*i* S	**Sg**	**20 34 10.5**	**+0.5**
KHAL	**Karahalli**	**0.67**	**203**	P	**Pg**	**20 34 01.1**	**-0.2**
KHAL				S	**Sg**	**20 34 10.5**	**+0.5**
KHL	**Karahalli**	**0.70**	**200**	*e*PG	**Pg**	**20 34 02.0**	**+0.2**
KHL				*e*SG	**Sb**	**20 34 12.2**	**-0.5**
KHL	**Karahalli**	**0.70**	**200**	*e*Pg	**Pg**	**20 34 02.1**	**+0.2**
KHL				*e*Sg	**Sb**	**20 34 12.2**	**-0.5**
DEMI	**Demirci**	**0.87**	**274**	*i* P	**Pg**	**20 34 05.3**	**+0.2**
DEMI	**Demirci**	**0.87**	**274**	P	**Pg**	**20 34 05.3**	**+0.2**
BOLV	**Bolvadin**	**0.92**	**106**	*i* P	**Pb**	**20 34 06.3**	**-0.3**
BOLV				*i* S	**Sb**	**20 34 18.6**	**-0.4**
BOLV	**Bolvadin**	**0.92**	**106**	P	**Pb**	**20 34 06.3**	**-0.3**
BOLV				S	**Sb**	**20 34 18.6**	**-0.4**
ESKT	**Eskisehir**	**0.96**	**56**	*i* P	**Pg**	**20 34 06.1**	**-0.8**
SEYT	**Eskypehyr**	**0.96**	**56**	P	**Pg**	**20 34 06.1**	**-0.8**
AUKUT	**KUTAHYA**	**0.98**	**9**	*i* P	Pg	20 33 56.8	-11
BORA	**Eskisehir**	**1.02**	**28**	*i* P	**Pg**	**20 34 00.0**	**-1.0**
BORA				*i* S	**Sg**	**20 34 21.4**	**+0.1**
BORA	**Eskisehir**	**1.02**	**28**	P	**Pg**	**20 34 07.0**	**-1.0**
BORA				S	**Sg**	**20 34 21.4**	**+0.1**
KULA	**Kula-Manisa**	**1.02**	**243**	*e*PG	**Pg**	**20 34 07.8**	**-0.3**
KULA				*e*SG	**Sb**	**20 34 21.8**	**-0.2**
KULA	**Kula-Manisa**	**1.02**	**243**	*e*Pg	**Pg**	**20 34 07.8**	**-0.3**
KULA				*e*Sg	**Sb**	**20 34 21.8**	**-0.2**
DURS	**Dursunbey**	**1.22**	**301**	*i* P	**Pn**	**20 34 11.7**	**-0.1**
DURS				*i* S	**Sn**	**20 34 29.8**	**+1.3**
DURS	**Dursunbey**	**1.22**	**301**	P	**Pn**	**20 34 11.7**	**-0.1**
DURS				S	**Sn**	**20 34 29.8**	**+1.3**
CAVI	**Cavuskoy**	**1.22**	**1**	*e*PN	**Pg**	**20 34 12.0**	**+0.1**
CAVI	**Cavuskoy**	**1.22**	**1**	*e*Pn	**Pg**	**20 34 12.0**	**+0.1**
ULDT	**Uludag**	**1.28**	**335**	*i* P	**Pb**	**20 34 12.8**	**0.0**
ULDT	**Uludag**	**1.28**	**335**	P	**Pb**	**20 34 12.8**	**0.0**
IGD	**Bursa**	**1.37**	**340**	*i* P	**Pn**	**20 34 12.9**	**-0.9**
IGD				*i* S	**Sg**	**20 34 33.2**	**+0.8**
IZI	**Iznik**	**1.38**	**349**	*e*PN	**Pg**	**20 34 14.9**	**0.0**
IZI	**Iznik**	**1.38**	**349**	*e*Pn	**Pg**	**20 34 14.9**	**0.0**
SVRH	**Sivrihisar-ESK**	**1.40**	**70**	*e*PN	**Pg**	**20 34 15.3**	**+0.1**
SVRH	**Sivrihisar-ESK**	**1.40**	**70**	*e*Pn	**Pg**	**20 34 15.3**	**+0.1**
ADVT	**Abdulvahap**	**1.45**	**357**	*e*PN	**Pg**	**20 34 16.1**	**-0.2**
ADVT	**Abdulvahap**	**1.45**	**357**	*e*Pn	**Pg**	**20 34 16.1**	**-0.2**
AUMIH	**MIHALICIK**	**1.56**	**55**	*i* P	**Pg**	**20 34 18.1**	**-0.2**
AUMIH				*i* S	**Sg**	**20 34 40.2**	**+1.7**
AUMIH	**MIHALICIK**	**1.56**	**55**	P	**Pg**	**20 34 18.1**	**-0.2**
AUMIH				S	**Sg**	**20 34 40.2**	**+1.7**
MDNY	**Mudanya-Bursa**	**1.56**	**333**	*e*PN	**Pb**	**20 34 17.4**	**-0.1**
AKS	**Akhisar**	**1.57**	**267**	*e*PN	**Pb**	**20 34 17.5**	**-0.3**
KIZT	**Kizilcal**	**1.60**	**93**	*e*PN	**Pg**	**20 34 19.1**	**-0.1**
KIZT	**Kizilcal**	**1.60**	**93**	*e*Pn	**Pg**	**20 34 19.1**	**-0.1**
BALB	**Balikesir**	**1.65**	**294**	*e*PN	**Pb**	**20 34 18.2**	**-0.8**
BALB	**Balikesir**	**1.65**	**294**	*e*Pn	**Pb**	**20 34 18.2**	**-0.8**
KCTX	**Karacabey (Bur**	**1.71**	**319**	*e*PN	**Pb**	**20 34 19.7**	**-0.4**
KCTX	**Karacabey (Bur**	**1.71**	**319**	*e*Pn	**Pb**	**20 34 19.7**	**-0.4**
ARMT	**Armutlu**	**1.75**	**335**	*e*PN	**Pb**	**20 34 20.1**	**-0.7**
MDUB	**Mudurnu**	**1.82**	**35**	*e*PN	**Pb**	**20 34 21.8**	**-0.3**
MDUB	**Mudurnu**	**1.82**	**35**	*e*Pn	**Pb**	**20 34 21.8**	**-0.3**
AYDB	**Zeytinkoy-Aydi**	**1.84**	**236**	*e*PN	**Pb**	**20 34 21.2**	**-1.1**

CASC 30 20:55:35.4±2.7, 6°.67N×82°.50W, h39km±71km, MD4.1, 2C, South of Panama

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TBS2		**2.11**	**356**	*e*P	Pn	20 56 09.1	+0.7
TBS2				*e*S	Sn	20 56 34.3	+0.8
BUS	**Buena Vista**	**3.12**	**337**	*e*P	Pn	20 56 22.3	-0.3
BUS				*e*S	Sn	20 57 00.0	+1.2
QCR	**Quepos**	**3.19**	**329**	*e*P	Pn	20 56 22.4	-0.7
URSC	**Urasca**	**3.39**	**338**	*e*P	Pn	20 56 26.1	+0.2
URSC				*e*S	Sn	20 57 08.5	+3.5
BCIP	**Isla Barro Col**	**3.62**	**47**	*e*P	Pn	20 56 31.1	+2.2
BCIP				*e*S	Sn	20 57 10.7	+0.3
CGA2	**Cerro Gallo 2**	**3.85**	**330**	*e*P	Pn	20 56 32.7	+0.4
JCR	**Jicaral**	**4.08**	**321**	*e*P	Pn	20 56 35.1	-0.3
JTS	**JuntasAbangare**	**4.34**	**326**	*e*P	Pn	20 56 39.0	+0.1
JTS				*e*S	Sn	20 57 28.6	+0.4

*NIED **30** 20:58:00, 39°.70N×143°.70E, h23km, Mw3.5 Best double couple: M₀2.10000×10¹⁴ NP1:φs197.00000°, δ36.00000°, λ83.00000°. NP2:φs25.00000°, δ55.00000°, λ95.00000°.*

*ISCJB **30** 20:58:26.9±0.9, 39°.68N±0°.05×143°.72E±0°.08, h11km, mb3.5/3, Error ellipse: s-maj=10.3km s-min=4.6km az=37.9*

*JMA **30** 20:58:26.2±0.3, 39°.65N×143°.69E, h5km±4km, M3.8*

*IDC **30** 20:58:26.5±6.7, 39°.53N×143°.74E, h0km, mb3.6/3, mb1 3.5/5, mb1mx3.3/41, mbtmp3.5/5, ML3.3/2, MS3.1/2, Ms1 3.1/2, ms1mx2.4/42, Error ellipse: s-maj=128.6km s-min=37.2km az=118.0*

ISC 30 20:58:28.3±1.4, 39°.63N±0°.08×143°.65E±0°.08, h11km, n24, σ1ˢ35/27, mb3.5/3, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JTH	**Tanohata**	**1.41**	**283**	P	**Pn**	**20 58 52.8**	**-1.1**
JTH				S	**Sn**	**20 59 11.8**	**-0.7**
MIYJ	**Miyakonagasawa**	**1.42**	**268**	P	**Pn**	**20 58 52.9**	**-1.1**
OFUJ	**Ofunato**	**1.63**	**251**	P	**Pn**	**20 58 56.0**	**-1.0**
JANG	**Nango**	**1.80**	**295**	P	**Pn**	**20 58 57.8**	**-1.5**
JOM	**Ohasama**	**1.83**	**266**	P	**Pn**	**20 58 59.3**	**-0.4**
JMK	**Ichinoseki**	**2.00**	**251**	P	**Pn**	**20 59 01.6**	**-0.5**
JTM	**Tenmabayashi**	**2.29**	**301**	P	**Pn**	**20 59 06.0**	**0.0**
JRG	**Rokugo**	**2.35**	**265**	P	**Pn**	**20 59 07.2**	**+0.4**
JAH	**Hinai**	**2.38**	**284**	P	**Pn**	**20 59 07.2**	**-0.1**
JAH				S	**Sn**	**20 59 38.5**	**+2.0**
JYK	**Kaneyama**	**2.65**	**255**	P	**Pn**	**20 59 11.3**	**+0.3**
JNBK	**Urakawa-nobuka**	**2.73**	**346**	P	**Pn**	**20 59 13.3**	**+1.2**
JNBK				*e*S	**Sn**	**20 59 44.6**	**-0.5**
JCH	**Churui**	**2.99**	**356**	P	**Pn**	**20 59 16.4**	**+0.8**
JCH				*e*S	**Sn**	**20 59 49.1**	**-2.3**
JAR	**Ashorobuto**	**3.66**	**1**	P	**Pn**	**20 59 24.9**	**0.0**
JAR				*e*S	**Sn**	**21 00 05.7**	**-2.4**
NEM2	**Nemuro 2**	**4.05**	**22**	P	**Pn**	**20 59 30.8**	**+0.7**
NEM2				S	**Sn**	**21 00 14.6**	**-2.9**
JTKR	**Abashiri--Toko**	**4.34**	**2**	P	**Pn**	**20 59 34.9**	**+0.7**
JTKR				*e*S	**Sn**	**21 00 23.4**	**-1.3**
ASAJ	**Asahikawa** 1.4nm,0.3s,baz=251,slow=23,SNR=9.2	**4.55**	**350**	Pn	**Pn**	**20 59 39.9**	**+2.9**
MJAR	**Matsushiro Arr** 0.8nm,0.3s,baz=38,slow=12,SNR=12	**5.29**	**236**	Pn	**Pn**	**20 59 47.9**	**+0.7**
MJAR	comp=Z,36nm,19.6s,baz=50,slow=41			LR	LR	21 02 00.4	
JOW	**Kunigami**	**18.09**	**230**	LR	LR	21 08 17.8	
	comp=Z,287nm,20.7s,baz=273,slow=33						
SONM	**Songino Array** 0.6nm,0.8s,baz=96,slow=8.8,SNR=5.1	**27.92**	**299**	P	**P**	**21 04 18.9**	**+0.4**
H11N2	**WAKE ISLAND Hy** SNR=6.3	**28.16**	**128**	T	T	21 33 58.6	
H11N1	**WAKE ISLAND Hy** SNR=4.3	**28.17**	**128**	T	T	21 33 59.2	
H11N3	**WAKE ISLAND Hy**	**28.18**	**128**	T	T	21 33 53.5	
MKAR	**Makanchi Array** 0.7nm,0.9s,baz=93,slow=7.3,SNR=3.8	**44.28**	**300**	P	**P**	**21 06 38.1**	**+0.2**
FINES	**FINESS Array B** 1.1nm,0.9s,baz=64,slow=13,SNR=3.4	**67.33**	**333**	P	**P**	**21 09 23.3**	**+0.5**

*ISK **30** 21:04:52.5, 37°.92N×27°.32E, h3km, MD2.4*

*ISCJB **30** 21:04:53.4±0.6, 37°.93N±0°.04×27°.34E±0°.05, h7km±8km, Error ellipse: s-maj=8.2km s-min=4.5km az=135.4*

*CSEM **30** 21:04:53.5±0.2, 37°.93N×27°.34E, h10km, MD2.4, Error ellipse: s-maj=4.4km s-min=3.0km az=71.0*

*DDA **30** 21:04:53.5, 37°.94N×27°.31E, h7km, Md2.7*

ISC 30 21:04:53.1±1.1, 37°.92N±0°.03×27°.32E±0°.03, h13km±10km, n21, σ0ˢ18/30, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AYDB	**Zeytinkoy-Aydi**	**0.45**	**86**	*e*PG	**Pg**	**21 05 02.1**	**0.0**
AYDB	**Zeytinkoy-Aydi**	**0.45**	**86**	*e*Pg	**Pg**	**21 05 02.1**	**0.0**
IZM	**Izmir**	**0.48**	**355**	*e*PG	**Pg**	**21 05 02.8**	**+0.1**
IZM				*e*SG	**Sb**	**21 05 10.2**	**-0.2**
IZM	**Izmir**	**0.48**	**355**	*e*Pg	**Pg**	**21 05 02.8**	**+0.1**
IZM				*e*Sg	**Sb**	**21 05 10.2**	**-0.2**
AYDN	**Tasoluk**	**0.51**	**120**	*i* P	**Pb**	**21 05 03.8**	**-0.2**
AYDN				*i* S	**Sg**	**21 05 10.3**	**+0.2**
AYDN	**Tasoluk**	**0.51**	**120**	P	**Pb**	**21 05 03.8**	**-0.2**
AYDN				S	**Sg**	**21 05 10.3**	**+0.2**
BLCB	**Balcova**	**0.51**	**335**	*e*PG	**Pg**	**21 05 03.2**	**-0.1**
BLCB	**Balcova**	**0.51**	**335**	*e*Pg	**Pg**	**21 05 03.2**	**-0.1**
ZEY	**¨zmir**	**0.72**	**297**	*i* P	**Pg**	**21 05 06.7**	**-0.3**
ZEY				*i* S	**Sb**	**21 05 17.3**	**+0.1**
URLA	**Izmir**	**0.72**	**308**	*i* P	**Pb**	**21 05 07.6**	**+0.1**
URLA				*i* S	**Sn**	**21 05 20.1**	**+0.2**
URLA	**Izmir**	**0.72**	**308**	P	**Pb**	**21 05 07.6**	**+0.1**
URLA				S	**Sn**	**21 05 20.1**	**+0.2**
BODT	**Bodrum**	**0.85**	**180**	*e*PG	**Pg**	**21 05 09.7**	**0.0**
BODT	**Bodrum**	**0.85**	**180**	*e*Pg	**Pg**	**21 05 09.7**	**0.0**
BDRM	**Kayabasi**	**0.86**	**173**	*i* P	**Pg**	**21 05 09.6**	**-0.1**
BDRM				*i* S	**Sn**	**21 05 23.6**	**+0.4**
BDRM	**Kayabasi**	**0.86**	**173**	P	**Pg**	**21 05 09.6**	**-0.1**
BDRM				S	**Sn**	**21 05 23.6**	**+0.4**
AKS	**Akhisar**	**1.03**	**22**	*e*PG	**Pn**	**21 05 13.2**	**-0.1**
AKS	**Akhisar**	**1.03**	**22**	*e*Pg	**Pn**	**21 05 13.2**	**-0.1**
KULA	**Kula-Manisa**	**1.21**	**60**	*e*PN	**Pg**	**21 05 16.4**	**-0.1**
KULA	**Kula-Manisa**	**1.21**	**60**	*e*Pn	**Pg**	**21 05 16.4**	**-0.1**
APE	**Apeiranthos**	**1.66**	**240**	*e*PN	**Pb**	**21 05 23.4**	**-0.1**
APE	**Apeiranthos**	**1.66**	**240**	*e*Pn	**Pb**	**21 05 23.4**	**-0.1**

*ISCJB **30** 21:31:10.8±0.4, 0°.19S±0°.05×124°.65E±0°.04, h73km, mb3.9/12, Error ellipse: s-maj=7.2km s-min=5.5km az=31.5*

*DJA **30** 21:31:10.3±1.2, 0°.5S±5°×12°.5E±°, h13km±11km, M4.5/7, mB4.9/2, mb4.8/2, MLv4.4/7, Mw(mB)4.2/2*

*NEIC **30** 21:31:12.5±3.0, 0°.22S×124°.65E, h72km±28km, mb4.0/3, Error ellipse: s-maj=33.8km s-min=8.3km az=51.0*

*IDC **30** 21:31:13.2±4.8, 0°.23S×124°.57E, h75km±47km, mb3.6/9, mb1 3.8/10, mb1mx3.5/45, mbtmp4.0/10, ML4.1/1, MS2.7/1, Ms1 2.7/1, ms1mx2.3/34, Error ellipse: s-maj=34.0km s-min=16.3km az=61.0*

ISC 30 21:31:12.8±0.7, 0°.15S±0°.06×124°.64E±0°.05, h73km, n24, σ1ˢ33/29, mb4.1/12, Southern Molucca Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KMSI	**Cibinong**	**0.97**	**317**	P	**Pn**	**21 31 28.2**	**-2.9**
KMSI				S	**Sn**	**21 31 42.7**	**-2.0**
LUWI	**Luwuk**	**2.07**	**244**	P	**Pn**	**21 31 44.1**	**-1.4**
LUWI				S	**Sn**	**21 32 10.7**	**+0.4**
LUWI	**Luwuk**	**2.07**	**244**	*e*Pn	**Pn**	**21 31 44.3**	**-1.1**
LUWI				*e*Sn	**Sn**	**21 32 12.4**	**+2.0**
SANI	**Sanana**	**2.33**	**144**	P	**Pn**	**21 31 47.0**	**-2.0**
MRSI	**Marisa**	**2.77**	**283**	P	Pn	21 31 50.9	-4.0
MRSI				S	**Sn**	**21 32 28.6**	**+1.3**
LBMI	**Labuha**	**2.91**	**100**	P	**Pn**	**21 31 56.2**	**-0.6**
NLAI	**Namlea**	**3.94**	**141**	P	**Pn**	**21 32 08.7**	**-2.2**
MSAI	**Masohi** 51nm,0.8s,684nm0.2nm	**5.34**	**127**	P	**Pn**	**21 32 30.1**	**0.0**
TTSI	**Tana Toraja**	**5.61**	**239**	P	**Pn**	**21 32 32.8**	**-1.0**
KAPI	**Kappang** 4.0nm,0.3s,baz=27,slow=2.5,SNR=9.3	**6.87**	**225**	P	**Pn**	**21 32 50.7**	**-0.3**
KAPI	3.8nm,0.3s,baz=89,slow=15,SNR=4.6			S	**Sn**	**21 34 06.3**	**-1.4**
KAPI	comp=Z,60nm,19.1s,baz=94,slow=44			LR	LR	21 36 13.6	
KSM	**Kuching**	**14.42**	**276**	*e*Pn	**Pn**	**21 34 33.6**	**+0.2**
WRAB	**Tennant Creek** 7.9nm,1.1s	**21.85**	**155**	*e*P	**P**	**21 35 58.5**	**-1.1**
WRA	**Warramunga Arr** 1.3nm,0.5s,baz=332,slow=11,SNR=22	**21.85**	**155**	P	**P**	**21 35 58.2**	**-1.4**
KULM	**Kulim** 4.6nm,0.9s	**24.55**	**283**	*e*P	**P**	**21 36 26.2**	**+0.1**
ASAR	**Alice Springs** 1.2nm,0.7s,baz=328,slow=7.2,SNR=16	**25.05**	**160**	P	**P**	**21 36 30.2**	**-0.3**
ASAR	0.2nm,0.5s,baz=345,slow=1.9,SNR=5.5			PcP	**PcP**	**21 40 05.

AIES AML AML 21 47 08.5
comp=Z,15µm,0.2s
AIES eS Sn 21 47 18.3 -1.8
RTR El Retiro 0.72 7 eP Pn 21 47 07.6 -2.0
LFRS El Faro 0.79 56 eP Pn 21 47 08.8 -1.5
LFU La Fuente 0.83 47 eP Pn 21 47 09.7 -1.1
LBRS Las Brisas 0.87 50 eP Pn 21 47 10.2 -1.1
SNVI San Vicente 0.97 64 eP Pn 21 47 11.6 -1.0
SNVI eS Sn 21 47 25.9 -0.1
PACA Pacayal 1.40 78 eP Pn 21 47 17.7 -0.5
LCY Lacayo 1.42 80 eP Pn 21 47 18.2 -0.3
VSM San Miguel 1.44 80 eP Pn 21 47 18.2 -0.6
CAHU Cacacuatique 1.59 68 eP Pn 21 47 20.7 -0.2
CNCH Conchagua 1.85 87 eP Pn 21 47 24.2 -0.1
CSGN Cosiguina Volc 2.13 95 eP Pn 21 47 27.1 -0.9
CSGN eS Sn 21 47 53.4 0.0
TGUH Tegucigalpa,Un 2.55 70 eP Pn 21 47 33.5 0.0
TGUH Tegucigalpa,Un 2.55 70 ePn Pn 21 47 33.8 +0.2
TEL3 Telica 3 2.88 102 eP Pn 21 47 37.9 -0.3
TELN Telica 2.89 101 eP Pn 21 47 37.3 -1.0
THIG 3.00 305 P Pn 21 47 38.3 -1.4
THIG S Sn 21 48 08.4 -6.1
CNGN Cerro Negro 3.04 102 eP Pn 21 47 39.3 -1.0
CNGN eS Sn 21 48 14.2 -1.4
CNGN AML AML 21 48 20.9
comp=N,665nm,0.3s
MOMN Momotombo 3.21 103 eP Pn 21 47 41.1 -1.6
COPN Copaltepe 3.22 108 eP Pn 21 47 41.5 -1.3
ESTN Estel 3.28 91 eP Pn 21 47 43.6 0.0
APYN Apoyeque 3.43 105 eP Pn 21 47 45.2 -0.5
XAVN Gruta Xavier 3.48 107 eP Pn 21 47 45.8 -0.6
TISN Laguna Tiscapa 3.54 107 eP Pn 21 47 46.7 -0.4
MGAN Managua 3.56 106 eP Pn 21 47 46.5 -0.8
MGAN eS Sn 21 48 26.2 -2.0
CRUN El Crucero 3.56 109 eP Pn 21 47 46.6 -0.8
CCIG Comitan 3.86 323 ePn Pn 21 47 52.4 +0.7
BOAB BOACO BROADBAN 4.03 100 eP Pn 21 47 52.5 -1.4
PCIG 4.21 307 P Pn 21 47 54.6 -1.6
PCIG S Sn 21 48 37.9 -6.3
TGIG 4.85 318 P Pn 21 48 04.4 -0.8
TGIG S Sn 21 48 54.1 -6.0
JTS JuntasAbangare 5.49 121 P Pn 21 48 15.4 +1.4
comp=N,6.4nm,0.3s,baz=300,slow=23,SNR=31
JTS S Sn 21 49 12.1 -3.7
comp=N,7.8nm,0.3s,baz=292,slow=19,SNR=4.2
CMIG Matias Romero 6.31 309 P Pn 21 48 25.5 +0.3
comp=N,5.2nm,0.3s,baz=99,slow=10,SNR=46
CMIG S Sn 21 49 31.4 -4.5
comp=N,4.4nm,0.3s,baz=99,slow=13,SNR=5.1
CMIG LR LR 21 51 20.4
comp=N,966nm,21.4s,baz=110,slow=40
TEIG Tepich 7.15 11 P Pn 21 48 37.7 +1.2
comp=N,11nm,0.3s,baz=89,slow=24,SNR=128
TEIG LR LR 21 51 37.8
comp=N,399nm,21.6s,baz=187,slow=41
TEIG Tepich 7.15 11 ePn Pn 21 48 37.4 +0.9
TLIG Tlapa 9.57 298 ePn Pn 21 49 12.8 +3.1
TLIG eSn Sn 21 51 06.4 +11
BCIP Isla Barro Col 10.50 111 ePn Pn 21 49 22.2 -0.2
MOIG Morelia 12.74 302 ePn Pn 21 49 55.3 +2.0
MTDJ Mount Denham 12.77 65 ePn Pn 21 49 53.8 +0.2
ZAIG Zacatecas 15.48 310 ePn P 21 50 31.8 -0.9
comp=N,15nm,1.4s
034A Hebbronville 16.16 330 P P 21 50 41.5 +1.7
baz=147
738A Farr-Stevens R 16.53 341 P P 21 50 45.4 +1.5
baz=159
934A Benavides 16.53 332 P P 21 50 46.1 +2.1
baz=148
544A White Castle 16.90 356 P P 21 50 49.8 +1.8
baz=175
933A Laredo 16.90 330 P P 21 50 49.6 +1.5
baz=146
834A Tilden 16.99 332 P P 21 50 50.6 +1.5
baz=149
OTAV Otavalo 17.04 138 ePn P 21 50 50.0 -0.2
comp=N,11nm,1.5s
542A Morse 17.07 352 P P 21 50 50.8 +1.0
baz=170
736A Circle Diamond 17.11 338 P P 21 50 51.4 +0.9
baz=155
ROSC El Rosal 17.32 117 LR LR 21 58 45.1
comp=N,67nm,18.3s,baz=346,slow=41
636A Smothers Creek 17.59 338 P P 21 50 57.1 +1.5
baz=156
733A Divot King Ran 17.84 332 P Pn 21 50 59.4 +0.9
baz=148
537A Green Hill Far 17.89 341 P Pn 21 51 00.3 +1.3
baz=158
440A Kirbyville 17.91 348 P Pn 21 51 01.6 +2.2
baz=166
346A Big Creek Wild 18.12 1 P Pn 21 51 04.1 +2.2
baz=181
536A Bastrop 18.13 339 P Pn 21 51 05.5 +3.4
baz=156
439A Center Grove, 18.14 346 P Pn 21 51 04.4 +2.3
baz=164
347A Saraland 18.17 3 P Pn 21 51 04.9 +2.4
baz=184
344A Westbrook Farm 18.21 357 P Pn 21 51 05.2 +2.2
baz=177
348A Jackson 18.23 5 P Pn 21 51 04.9 +1.7
baz=185
342A Flagon Creek P 18.27 353 P Pn 21 51 06.2 +2.6
baz=172,SNR=5.6
535A Dale 18.27 338 P Pn 21 51 06.2 +2.5
baz=155
341A Kurthwood 18.34 351 P Pn 21 51 05.9 +1.3
baz=169
633A Saathoff Ranch 18.42 333 P Pn 21 51 07.4 +1.9
baz=150,SNR=7.4
340A Bronson 18.55 349 P Pn 21 51 07.2 +0.1
baz=167
339A Huntington 18.61 347 P Pn 21 51 09.4 +1.6
baz=165
534A Blanco 18.62 336 P Pn 21 51 08.8 +0.9
baz=152
436A Wall Ranch, Ga 18.68 341 P Pn 21 51 11.4 +2.8
baz=158
243A Waterproof 18.68 355 P Pn 21 51 08.7 +0.1
baz=174
245A Little AP, Sta 18.77 360 P Pn 21 51 10.4 +0.7
baz=179
244A Avery, Jackson 18.80 357 P Pn 21 51 11.8 +1.8
baz=177
338A Crockett 18.81 345 P Pn 21 51 11.8 +1.6
baz=163
533A Kerrville 18.89 334 P Pn 21 51 12.5 +1.3
baz=151
337A Centerville 18.92 344 P Pn 21 51 11.7 +0.2
baz=161
242A Grayson 18.93 354 P Pn 21 51 14.1 +2.5
baz=172
435B Jarrell 18.96 339 P Pn 21 51 13.3 +1.3
baz=156
VBMS Vicksburg 18.96 358 P Pn 21 51 14.2 +2.2
baz=177
VBMS Vicksburg 18.96 358 eP Pn 21 51 12.0 0.0
VBMS esP pP 21 51 26.9 +2.6
241A Mo Tay, Goldon 18.98 352 P Pn 21 51 13.6 +1.3
baz=170
TIGA Tifton 19.03 16 P Pn 21 51 13.4 +0.5
baz=198
NATX Nacogdoches 19.04 347 P Pn 21 51 12.9 -0.1
baz=165
NATX Nacogdoches 19.04 347 eP Pn 21 51 12.8 -0.1
comp=N,25nm,0.8s
SDV Santo Domingo 19.22 101 P P 21 51 12.6 -1.3
comp=N,0.7nm,0.3s,baz=308,slow=6.0,SNR=9.6
SDV Santo Domingo 19.22 101 eP P 21 51 13.7 -0.2
comp=N,12nm,0.8s
434A Burnet 19.24 337 P Pn 21 51 16.6 +1.2
baz=154
239A Gary 19.25 348 P Pn 21 51 16.3 +0.8
baz=166
335A Moody 19.36 340 P P 21 51 16.1 +1.0
baz=157
238A Jacksonville 19.38 346 P P 21 51 16.1 +0.9
baz=164
147A Livingston 19.45 4 P Pn 21 51 22.1 +4.3
baz=184
143A Socs Landing, 19.50 356 P P 21 51 17.1 +0.5
baz=175
433A Art 19.51 335 P P 21 51 17.7 +1.0
baz=152,SNR=10
237A Washetta, Mont 19.55 344 P P 21 51 18.1 +1.0
baz=162
141A Papa Simpson, 19.55 352 P Pn 21 51 20.6 +1.6
baz=171
JCT Junction City 19.57 333 P Pn 21 51 19.1 -0.2
baz=149
JCT Junction City 19.57 333 eP P 21 51 18.6 +1.2
comp=N,26nm,1.5s
140A Cam and Jess, 19.69 350 P P 21 51 19.7 +1.1
baz=169
334A Lometa 19.69 338 P P 21 51 19.7 +0.9
baz=155,SNR=9.3
236A Katherine and 19.75 343 P P 21 51 20.4 +1.2
baz=160
139A Bunkhouse Ranc 19.87 348 P P 21 51 21.2 +0.5
baz=166
LRAL Lakeview Retre 19.92 7 eP P 21 51 22.1 +0.9
comp=N,12nm,0.8s
Z46A Louisville 19.94 2 P Pn 21 51 25.6 +2.1
baz=182
333A Richland Sprin 19.97 336 P P 21 51 21.8 +0.1
baz=153,SNR=21
Z47A Carrollton 19.99 4 P Pn 21 51 26.5 +2.4
baz=184
138A Matatall Enter 20.00 347 P Pn 21 51 27.4 +3.1
baz=164
WHTX Lake Whitney, 20.02 341 P P 21 51 22.9 +0.6
baz=157
137A Heron Place, G 20.10 345 P Pn 21 51 26.8 +1.4
baz=163
Z45A Winona 20.10 0 P Pn 21 51 25.9 +0.5
baz=180
Z42A Norrel Spur, H 20.11 355 P Pn 21 51 26.5 +1.0
baz=174
Z41A Richland Creek 20.18 353 P Pn 21 51 29.0 +2.6
baz=171,SNR=6.7
Z48A Northport 20.20 5 P Pn 21 51 26.2 -0.5
baz=186
234A Clairette 20.26 339 P P 21 51 25.5 +0.6
baz=156
Z40A Long Farm, Mag 20.27 351 P P 21 51 26.3 +1.4
baz=170
135A Vickery Place, 20.53 341 P P 21 51 28.5 +0.7
baz=158
Z38A Mt. Pleasant 20.55 347 P P 21 51 28.9 +1.0
baz=165
233A Rising Star 20.55 337 P P 21 51 29.3 +1.2
baz=154
Y45A Yeager Farm, C 20.59 0 P Pn 21 51 32.9 +1.7
baz=180
Y46A Houston 20.63 2 P Pn 21 51 32.9 +1.3
baz=182,SNR=25
TXAR Lajitas Array 20.63 323 P Pn 21 51 31.9 0.0
comp=N,6.0nm,0.6s,baz=148,slow=11,SNR=76
TXAR PcP PcP 21 55 39.0 +1.5
comp=N,0.6nm,0.6s,baz=134,slow=4.5,SNR=6.1
TXAR LR LR 22 01 08.0
comp=N,61nm,19.9s,baz=0.0,slow=41
TX31 Lajitas Ar. Si 20.63 323 eP Pn 21 51 31.3 -0.6
TX31 ePcP PcP 21 55 39.5 +2.0
WLAR White Oak Lake 20.65 352 eP Pn 21 51 31.6 -0.2
comp=N,50nm,0.9s
Y43A Makayla and Ka 20.67 357 P Pn 21 51 33.6 +1.4
baz=176
Y44A Strc, Charl 20.70 359 P Pn 21 51 33.5 +1.1
baz=178
Y47A UCPARC, Winfie 20.70 4 P Pn 21 51 31.7 -0.8
baz=185,SNR=8.9
CCAR Cane Creek 20.73 355 eP P 21 51 31.1 +1.2
comp=N,34nm,1.0s
134A White-Moore Ra 20.76 340 P P 21 51 31.5 +1.2
baz=156
Z36A Blue Ridge 20.91 344 P P 21 51 33.3 +1.3
baz=161
GOGA Godfrey 20.94 15 eP P 21 51 33.0 +0.8
comp=N,15nm,0.9s
Y40A Okolona 20.99 352 P P 21 51 33.9 +1.2
baz=170
Y39A Lockesburg 21.04 350 P P 21 51 34.2 +1.0
baz=168
133A Hamilton Ranch 21.09 338 P P 21 51 35.1 +1.3
baz=154
Y38A Idabel 21.15 348 P P 21 51 35.7 +1.2
baz=166
Z35A Perchaven, San 21.20 342 P P 21 51 36.1 +1.1
baz=159
OXF Oxford 21.24 1 eP P 21 51 36.3 +0.9
OXF e 21 51 51.4
ABTX Abilene, Hawle 21.38 337 P P 21 51 38.2 +1.3
baz=152
ABTX Abilene, Hawle 21.38 337 eP P 21 51 37.2 +0.3
comp=N,11nm,0.8s
Y37A Hugo 21.39 346 P P 21 51 37.9 +1.0
baz=164
X40A Basin Creek Fa 21.40 353 P P 21 51 38.2 +1.1
baz=172
Z34A Collier Ranch, 21.44 341 P P 21 51 38.8 +1.2
baz=158
Y36A Durant 21.47 345 P P 21 51 38.9 +1.0
baz=162
MIAR Mount Ida 21.56 351 P P 21 51 39.7 +0.9
baz=170
MIAR Mount Ida 21.56 351 eP P 21 51 39.7 +0.9
comp=N,103nm,1.8s
X39A Fountain Ranch 21.61 350 P P 21 51 40.3 +1.0
baz=168
UALR University of 21.63 354 eP P 21 51 41.0 +1.5
comp=N,85nm,1.4s
Z33A Whitaker Ranch 21.65 339 P P 21 51 41.4 +1.6
baz=155,SNR=6.1
Y35A Marietta 21.68 343 P P 21 51 40.6 +0.5
baz=155,SNR=5.1
X38A Whitesboro 21.89 349 P P 21 51 45.1 +2.7
baz=166
X37A Clayton 21.92 347 P P 21 51 45.0 +2.3
baz=165
Y34A Reagan Ranch, 21.93 342 P P 21 51 43.4 +0.6
baz=158
W41A Tony Mavity, V 22.02 355 P P 21 51 46.1 +2.4
baz=173
W41B Gay Mavity, V 22.02 355 P P 21 51 45.8 +2.1
baz=173
X301 Greenbrier Sit 22.10 354 eP P 21 51 45.6 +1.0
comp=N,54nm,1.5s
W40A Ferguson Farm, 22.12 353 P P 21 51 47.1 +2.3
baz=171
X35A Drake 22.12 344 P P 21 51 45.3 +0.4
baz=161
X36A Centrahoma 22.13 345 P P 21 51 45.3 +0.4
baz=162,SNR=6.1
WHAR Wooly Hollow 22.14 354 eP P 21 51 46.2 +1.2
comp=N,63nm,1.3s
SWET Sewanee 22.21 8 eP P 21 51 46.2 +0.4
W38A Poteau 22.22 350 P P 21 51 46.6 +0.7
baz=167
W39A Magazine 22.23 351 P P 21 51 46.8 +0.9
baz=169
Y33A Hilltop Ranch, 22.26 340 P P 21 51 46.8 +0.5
baz=156
LPIG La Paz 22.29 302 P P 21 51 49.8 +3.1
comp=N,77nm,0.3s,baz=310,slow=0.4,SNR=8.1
W37B Quinton 22.46 348 P P 21 51 49.2 +0.7
baz=165,SNR=6.9
X34A Smith Ranch, M 22.56 342 P P 21 51 50.1 +0.5
baz=159
W36A Wetumka 22.64 346 P P 21 51 51.2 +0.8
baz=163
CPCT Cooper Cave 22.67 11 eP P 21 51 51.2 +0.4
comp=N,19nm,1.5s
V40A Witts Springs 22.70 353 P P 21 51 51.8 +0.7
baz=172
W35A Tecumseh 22.81 345 P P 21 51 52.1 -0.1
baz=162,SNR=8.1
V39A Pettigrew 22.84 352 P P 21 51 52.7 +0.1
baz=170
X32A Elmer 22.86 339 P P 21 51 52.6 -0.1
baz=155
WVT Waverly 22.92 4 eP P 21 51 53.7 +0.4
comp=N,13nm,0.9s
V38A Canehill 22.98 350 P P 21 51 54.7 +0.8
baz=168
WMOK Wichita Mounta 22.98 341 eP P 21 51 52.1 -1.9
comp=N,20nm,1.1s
TKL Tuckaleechee C 23.02 12 P P 21 51 53.9 -0.4
comp=N,7.0nm,0.7s,baz=174,slow=11,SNR=14
TKL LR LR 22 01 16.3
comp=N,356nm,21.6s,baz=184,slow=38
TKL Tuckaleechee C 23.02 12 eP P 21 51 54.5 +0.2
comp=N,26nm,1.0s
V37A Hulbert 23.13 349 P P 21 51 56.3 +1.0
baz=166
W34A Bridge Creek, 23.13 343 P P 21 51 54.9 -0.5
baz=160,SNR=7.3
W34A Bridge Creek, 23.13 343 eP P 21 51 54.6 -0.8
comp=N,60nm,0.8s
KMSC Kings Mountain 23.15 18 P P 21 51 55.6 0.0
baz=201
KMSC Kings Mountain 23.15 18 eP P 21 51 55.8 +0.3
comp=N,30nm,1.3s
V36A Jenks 23.20 347 P P 21 51 56.3 +0.2
baz=164
SJG San Juan 23.23 75 PcP PcP 21 55 43.4 +0.8
comp=N,7.9nm,0.6s,baz=29,slow=10,SNR=3.5
U40A Yellville 23.25 354 P P 21 51 58.3 +1.8
baz=172
W33A Caddo, Fort Co 23.26 342 P P 21 51 56.3 -0.4
baz=158,SNR=5.5
TUL1 Leonard 23.28 347 P P 21 51 57.5 +0.6
baz=165
TUL1 Leonard 23.28 347 eP P 21 51 57.8 +0.9
comp=N,20nm,1.1s
HHAR Hobbs 23.31 351 eP P 21 51 58.9 +1.8
HHAR epP pP 21 52 15.5 +4.0
MNTX Cornudas Mount 23.38 325 P P 21 51 58.2 +0.4
baz=138,SNR=12
MNTX Cornudas Mount 23.38 325 eP P 21 51 58.2 +0.4
comp=N,22nm,1.5s
V35A Meyer Ranch, C 23.38 345 P P 21 51 57.7 -0.1
baz=162
PARMO Parma 23.39 360 eP P 21 51 59.0 +1.3
PBMO Poplar Bluff 23.51 359 eP P 21 51 59.0 +0.1
comp=N,16nm,0.8s
HUMP Col San Antoni 23.51 75 eP P 21 51 59.4 +0.3
comp=N,58nm,1.6s
CBYP Canovanas 23.52 74 eP P 21 51 58.8 -0.6
comp=N,36nm,1.1s
U38A Gravette 23.54 351 P P 21 51 58.9 -0.3
baz=168
V34A Guthrie 23.62 344 P P 21 52 00.2 +0.2
baz=161
V34A Guthrie 23.62 344 eP P 21 52 00.2 +0.2
comp=N,10nm,0.5s
V34A e 21 52 11.5
U37A Salina 23.63 349 P P 21 52 00.1 0.0
baz=167
U36A Oologah 23.74 348 P P 21 52 01.5 +0.5
baz=165
V33A Lossen Ranch, 23.83 343 P P 21 52 02.1 +0.2
baz=159
MSTX Muleshoe 23.85 332 P P 21 52 02.5 +0.2
baz=147
MSTX Muleshoe 23.85 332 eP P 21 52 02.8 +0.5
comp=N,7.3nm,0.8s
TZTN Tazewell 23.92 12 eP P 21 52 03.3 +0.6
comp=N,35nm,1.5s
U35A Pawnee 23.93 346 P P 21 52 03.4 +0.6
baz=163
V32A Arapaho 23.96 341 P P 21 52 03.0 -0.1
baz=157
T39A Clever 23.97 353 P P 21 52 02.9 -0.2
baz=171
T40A Mansfield 24.00 355 P P 21 52 03.4 0.0
baz=173
T38A Diamond 24.11 351 P P 21 52 04.6 +0.2
baz=169
AMTX Amarillo 24.16 335 eP P 21 52 06.4 +1.4
comp=N,9.6nm,0.7s
U34A Anderson Ranch 24.20 345 P P 21 52 06.1 +0.9
baz=161
U34A Anderson Ranch 24.20 345 eP P 21 52 06.1 +0.9
comp=N,3.7nm,0.5s
U34A e 21 52 16.7
T37A Cheneyville 18 24.29 350 P P 21 52 06.2 +0.2
baz=168
U33A Lingo Farm, Me 24.35 343 P P 21 52 07.2 +0.6
baz=160
T35A Sooner Cattle 24.41 347 P P 21 52 07.3 +0.2
baz=164
T36A Boggs Farm, Ca 24.41 348 P P 21 52 07.1 0.0
baz=165
SIUC Southern Illin 24.44 1 eP P 21 52 08.3 +0.9
comp=N,113nm,1.3s
S40A Lebanon 24.45 355 P P 21 52 08.2 +0.8
baz=173
S39A Bolivar 24.62 353 P P 21 52 08.8 -0.3
baz=171,SNR=12
S38A Stockton 24.64 352 P P 21 52 09.8 +0.7
baz=170
T34A McClaskey Farm 24.66 346 P P 21 52 10.1 +0.7
baz=162
S37A Fort Scott 24.90 350 P P 21 52 12.1 +0.5
baz=168
S36A Lake Cedric, C 25.00 349 P P 21 52 13.1 +0.7
baz=166,SNR=5.9
S35A Otter Creek Ra 25.10 348 P P 21 52 14.3 +0.9
baz=165
R40A Maddies Statio 25.11 355 P P 21 52 14.3 +0.8
baz=174
WCI Wyandotte Cave 25.14 6 eP P 21 52 13.4 -0.4
comp=N,22nm,0.9s
R38A Fenwick Farm, 25.18 352 P P 21 52 13.7 -0.4
baz=170
R39A Chumby, Stover 25.20 354 P P 21 52 14.2 -0.1
baz=172
T32A Huddler Ranch, 25.28 343 P P 21 52 15.8 +0.7
baz=158
S34A Willow Spring 25.29 346 P P 21 52 16.2 +1.1
baz=163
BLA Blacksburg 25.34 18 eP P 21 52 15.8 +0.1
comp=N,39nm,1.6s
121A Cookes Peak, D 25.38 322 P P 21 52 17.0 +0.8
baz=135
R37A Teagarden Farm 25.44 351 P P 21 52 16.5 0.0
baz=168
OLIL Olney 25.49 3 eP P 21 52 17.1 +0.2
comp=N,29nm,0.9s
VWCC Virginia Weste 25.51 18 eP P 21 52 17.4 +0.4
R36A Gordon, Harris 25.56 349 P P 21 52 18.2 +0.6
baz=167
Q40A Laux Farm, Aux 25.80 356 P P 21 52 19.5 -0.2
baz=175
R34A Isabella, Hill 25.90 346 P P 21 52 23.5 +2.8
baz=163
Q38A Cooks Store, C 25.91 353 P P 21 52 20.6 -0.1
baz=171,SNR=6.5
BNM Barren Site 25.91 327 eP P 21 52 22.2 +1.2
Q39A Willow Grove F 25.92 354 P P 21 52 20.9 +0.1
baz=173
LPM Los Pinos Moun 26.04 327 eP P 21 52 24.3 +2.2
BLO Bloomington 26.05 6 eP P 21 52 23.3 +1.4
comp=N,16nm,1.1s
LENM Lemitar 26.11 326 eP P 21 52 24.4 +1.6
SMRT St. Maarten 26.11 76 eP P 21 52 23.2 +0.4
comp=N,57nm,1.0s
SEUS St. Eustatius 26.14 77 eP P 21 52 23.3 +0.3
comp=N,283nm,1.3s
P40A Paris 26.33 356 P P 21 52 24.7 +0.3
baz=175
LAZ Ladron 26.38 326 eP P 21 52 25.5 +0.3
ANMO Albuquerque 26.43 328 P P 21 52 27.4 +1.7
comp=N,0.9nm,0.5s,baz=138,slow=8.8,SNR=4.3
ANMO LR LR 22 05 26.5
comp=N,71nm,18.9s,baz=132,slow=42
ANMO Albuquerque 26.43 328 P P 21 52 26.3 +0.6
baz=141
ANMO Albuquerque 26.43 328 eP P 21 52 26.5 +0.8
comp=N,1.0nm,0.5s
KSU1 Kansas State U 26.53 348 eP P 21 52 27.8 +1.5
comp=N,11nm,0.8s
P38A Dawn 26.55 353 P P 21 52 27.2 +0.6
baz=172
URVA University of 26.62 22 eP P 21 52 27.9 +0.7
Q33A Connelly Farm, 26.70 346 P P 21 52 28.4 +0.5
baz=162
P36A Good Intent, A 26.78 351 P P 21 52 28.4 -0.1
baz=168
P35A Duane Minner, 26.83 349 P P 21 52 29.3 +0.3
baz=166
P34A Walnut Farm, R 27.00 348 P P 21 52 31.1 +0.5
baz=164
CBKS Cedar Bluff 27.03 343 eP P 21 52 31.4 +0.5
comp=N,18nm,0.7s
TUC Tucson 27.10 318 P P 21 52 32.4 +0.8
baz=130
TUC Tucson 27.10 318 eP P 21 52 33.1 +1.5
comp=N,3.9nm,1.0s
SFIN Lafayette 27.20 4 eP P 21 52 33.5 +1.2

	comp=N,76nm,1.9s						
T25A	**Trinidad**	27.23	334	P	P	21 52 33.8	+0.8
	baz=147						
T25A	**Trinidad**	27.23	334	*e*P	P	21 52 33.8	+0.8
	comp=N,4.7nm,0.8s						
CBN	**Corbin Frederi**	27.24	22	*e*P	P	21 52 33.5	+0.7
	comp=N,16nm,0.8s						
HDIL	**Hopedale**	27.27	1	*e*P	P	21 52 34.6	+1.6
	comp=N,32nm,1.3s						
GRGR	**Grenville**	27.41	89	*e*P	P	21 52 34.6	+0.1
	comp=N,257nm,1.3s						
O34A	**Beatrice**	27.59	348	P	P	21 52 35.9	0.0
	baz=165						
ACSO	**Alum Creek Sta**	27.60	11	*e*P	P	21 52 37.1	+1.3
	comp=N,26nm,1.6s						
N39A	**Derby Farms, D**	27.70	355	P	P	21 52 37.5	+0.7
	baz=174						
O32A	**Brockman Farm,**	28.00	346	P	P	21 52 40.6	+1.0
	baz=162						
NNA	**Nana**	28.08	152	LR	LR	22 02 11.8	
	comp=N,89nm,20.3s,baz=295,slow=32						
N34A	**Lincoln**	28.18	349	P	P	21 52 42.0	+0.9
	baz=166						
214A	**Organ Pipe Nat**	28.23	315	P	P	21 52 42.5	+0.8
	baz=126						
W18A	**Petrified Fore**	28.35	324	*e*P	P	21 52 44.4	+1.5
	comp=N,5.4nm,0.6s						
O56A	**Blue Knob Stat**	28.72	18	P	P	21 52 45.9	0.0
	baz=203						
S22A	**4UR Ranch, Cre**	28.83	331	P	P	21 52 48.1	+0.8
	baz=144						
X16A	**Lo Mia Camp, P**	28.89	321	*e*P	P	21 52 50.0	+2.3
	comp=N,10nm,1.6s						
MVCO	**Mesa Verde**	29.23	328	*e*P	P	21 52 52.1	+1.4
	comp=N,6.6nm,1.3s						
AAM	**Ann Arbor**	29.49	9	*e*P	P	21 52 53.7	+1.0
	comp=N,54nm,1.7s						
ISCO	**Idaho Springs**	29.98	335	P	P	21 52 57.9	+0.4
	baz=148						
J37A	**Redenius Farm,**	30.20	354	P	P	21 52 59.8	+0.8
	baz=172						
N59A	**State Game Lan**	30.22	21	P	P	21 52 59.3	+0.2
	baz=208						
K32A	**Verdigre**	30.23	348	P	P	21 52 59.8	+0.6
	baz=164						
GLA	**Glamis**	30.26	315	*e*P	P	21 53 01.3	+1.6
	comp=N,8.8nm,0.8s						
Y12C	**Blythe**	30.46	316	*e*P	P	21 53 02.4	+1.1
	comp=N,7.1nm,1.1s						
K30A	**Basset**	30.61	346	P	P	21 53 03.5	+0.8
	baz=161						
I38A	**Scanlan Farm,**	30.84	356	P	P	21 53 04.3	-0.3
	baz=175						
W13A	**Hualapai Mount**	30.86	319	*e*P	P	21 53 06.3	+1.2
	comp=N,20nm,1.8s						
J32A	**Parkston**	30.89	348	P	P	21 53 05.0	-0.1
	baz=164						
ECSD	**EROS Data Cent**	31.02	350	P	P	21 53 06.6	+0.4
	baz=167						
BC3	**Big Chuckawall**	31.03	315	P	P	21 53 08.9	+2.3
	baz=125,SNR=5.3						
J30A	**Dallas**	31.20	346	P	P	21 53 08.7	+0.9
	baz=161						
MONP2	**Monument Peak**	31.28	313	P	P	21 53 09.2	+0.3
	baz=123						
O20A	**White River Ci**	31.40	332	P	P	21 53 10.7	+0.9
	baz=144						
O20A	**White River Ci**	31.40	332	*e*P	P	21 53 11.4	+1.6
	comp=N,20nm,1.8s						
J29A	**Okreek**	31.47	345	P	P	21 53 10.3	+0.1
	baz=160						
BELC	**Belle Mtn. Jos**	31.60	315	P	P	21 53 12.3	+0.7
	baz=125						
H34A	**Spellman Lake,**	31.80	352	P	P	21 53 13.6	+0.5
	baz=169						
GMRC	**Granite Mounta**	31.82	317	P	P	21 53 15.3	+1.7
	baz=126,SNR=5.7						
SPMN	**Marine on St.**	32.05	356	P	P	21 53 15.4	+0.3
	baz=174						
SPMN	**Marine on St.**	32.05	356	*e*P	P	21 53 14.3	-0.9
	comp=N,21nm,1.2s						
MURC	**Murrieta**	32.21	314	P	P	21 53 17.3	+0.5
	baz=123						
PTGA	**Pitinga**	32.59	113	P	P	21 53 20.8	+0.5
	comp=N,6.7nm,0.7s,baz=310,slow=10,SNR=8.9						
PTGA	**Pitinga**	32.59	113	*e*P	P	21 53 21.6	+1.3
	comp=N,7.7nm,0.8s						
SADO	**Sadowa**	32.76	14	P	P	21 53 20.1	-1.3
	comp=N,5.5nm,0.6s,baz=221,slow=8.6,SNR=10.0						
SADO	**Sadowa**	32.76	14	*e*P	P	21 53 20.3	-1.1
	comp=N,6.8nm,0.6s						
G30A	**Faulkton**	32.84	348	P	P	21 53 23.6	+1.5
	baz=163						
BFSC	**Mount Baldy Ra**	32.88	314	P	P	21 53 23.2	+0.4
	baz=123						
GSC	**Goldstone, Bar**	32.89	317	P	P	21 53 23.3	+0.5
	baz=125						
EDW2	**Edwards Air Fo**	33.46	315	P	P	21 53 28.3	+0.6
	baz=123						
TPNV	**Topopah Spring**	33.51	320	P	P	21 53 30.4	+2.1
	baz=128,SNR=5.5						
TPNV	**Topopah Spring**	33.51	320	*e*P	P	21 53 31.1	+2.8
	comp=N,5.4nm,0.8s						
TPNV				*e*PcP	PcP	21 56 10.2	+2.2
FURC	**Furnace Creek,**	33.61	318	P	P	21 53 29.6	+0.7
	baz=127						
MPMC	**Manual Prospec**	33.78	317	P	P	21 53 32.5	+1.8
	baz=125,SNR=8.6						
R11A	**Troy Canyon, C**	33.99	322	P	P	21 53 34.2	+1.7
	baz=131						
BW06	**Boulder Array**	34.10	334	*e*P	P	21 53 30.8	-2.6
	comp=N,3.0nm,1.0s						
BW06				*e*PcP	PcP	21 56 10.0	+0.3
PDAR	**Pinedale Array**	34.10	334	PcP	PcP	21 56 09.8	+0.2
	comp=N,1.1nm,0.6s,baz=136,slow=4.9,SNR=8.8						
PDAR				LR	LR	22 09 49.3	
	comp=N,98nm,21.6s,baz=148,slow=40						
ARVC	**Arvin**	34.17	315	P	P	21 53 36.5	+2.7
	baz=122						
ISA	**Isabella, Lake**	34.22	316	P	P	21 53 36.1	+1.7
	baz=124						
GRAC	**Grapevine Rang**	34.25	319	P	P	21 53 37.0	+2.4
	baz=127						
SAML	**Samuel**	34.33	128	*e*P	P	21 53 35.5	+0.1
	comp=N,14nm,0.9s						
CWC	**Cottonwood Cre**	34.39	317	P	P	21 53 36.8	+0.8
	baz=125						
D30A	**Buchanan**	34.66	349	P	P	21 53 37.5	-0.5
	baz=164,SNR=7.9						
SMMC	**Simmler**	35.08	314	P	P	21 53 42.0	+0.3
	baz=121						
C31A	**Landman Farms,**	35.15	351	P	P	21 53 41.3	-0.8
	baz=166,SNR=6.9						
REDW	**Red Top Meadow**	35.15	333	*e*P	P	21 53 43.5	+1.0
	comp=N,5.8nm,0.9s						
C30A	**Mose, Pekin**	35.19	350	P	P	21 53 42.0	-0.5
	baz=165						
D27A	**Center**	35.24	346	P	P	21 53 42.5	-0.5
	baz=160						
AGMN	**Agassiz Nation**	35.38	353	P	P	21 53 43.3	-0.9
	baz=170,SNR=6.7						
AGMN	**Agassiz Nation**	35.38	353	*e*P	P	21 53 42.5	-1.7
	comp=N,11nm,0.6s						
B34A	**Aery, Baudette**	35.44	354	P	P	21 53 45.5	+0.9
	baz=172						
B32A	**Ashes, Strandq**	35.56	352	P	P	21 53 45.1	-0.6
	baz=168,SNR=6.5						
NV11	**Mina Array Sit**	35.61	320	*e*P	P	21 53 48.9	+2.5
	comp=N,11nm,0.8s						
NV11				*e*PcP	PcP	21 56 15.9	+1.9
NV01	**Mina Array Sit**	35.70	320	*e*P	P	21 53 49.3	+2.0
NV01				*e*PcP	PcP	21 56 16.0	+1.6
NVAR	**Mina Array Bea**	35.70	320	P	P	21 53 50.0	+2.7
	comp=N,12nm,0.7s,baz=134,slow=8.4,SNR=68						
NVAR				PcP	PcP	21 56 15.9	+1.5
	comp=N,4.2nm,0.8s,baz=141,slow=4.1,SNR=12						
NVAR				LR	LR	22 10 11.8	
	comp=N,203nm,20.3s,baz=94,slow=39						
C27A	**Sayler Ranch,**	35.81	346	P	P	21 53 47.2	-0.6
	baz=160						
B30A	**Myrvik Farm, E**	35.88	350	P	P	21 53 49.0	+0.6
	baz=166						
A33A	**Warroad**	35.96	354	P	P	21 53 48.4	-0.7
	baz=170,SNR=7.5						
C25A	**Freed Ranch, W**	36.23	345	P	P	21 53 52.2	+0.8
	baz=157						
LPAZ	**La Paz**	36.24	143	P	P	21 53 53.9	+1.4
	comp=N,1.2nm,0.6s,baz=305,slow=9.1,SNR=5.7						
LPAZ				LR	LR	22 09 02.4	
	comp=N,159nm,19.1s,baz=314,slow=36						
B28A	**Dugan Ranch, T**	36.26	348	P	P	21 53 51.5	-0.2
	baz=162						
A30A	**Hoffart Farm,**	36.35	350	P	P	21 53 52.7	+0.3
	baz=166						
WAKR	**Walker**	36.46	319	*e*P	P	21 53 56.5	+2.7
A29A	**Manning Farm,**	36.50	349	P	P	21 53 53.5	-0.1
	baz=164						
GCMT	**Greycliff**	36.63	336	*e*P	P	21 53 56.1	+1.2
B25A	**Knox Farm, Ray**	36.73	345	P	P	21 53 55.2	-0.4
	baz=158						
CMB	**Columbia Colle**	36.81	318	*e*P	P	21 53 58.7	+2.2
	comp=N,1.3nm,0.8s						
HLID	**Hailey**	36.97	330	P	P	21 53 59.4	+1.4
	baz=137						
MCMT	**McKenzie Canyo**	37.19	332	*e*P	P	21 54 01.8	+1.9
BOZ	**Bozeman (W)**	37.31	334	P	P	21 54 01.2	+0.5
	baz=143						
ULM	**Lac du Bonnet**	37.31	353	P	P	21 53 58.4	-2.1
	comp=N,4.6nm,0.6s,baz=178,slow=7.5,SNR=5.9						
ULM				LR	LR	22 11 42.6	
	comp=N,167nm,19.4s,baz=176,slow=40						
A25A	**Svangstu Ranch**	37.33	345	P	P	21 54 02.7	+1.9
	baz=158						
EGMT	**Eagleton**	38.53	338	P	P	21 54 11.0	+0.1
	baz=148						
O03D	**Paynes Creek**	38.99	320	P	P	21 54 15.6	+0.7
	baz=125						
MSO	**Missoula**	39.23	334	P	P	21 54 17.3	+0.5
	baz=141						
F10A	**Beach Ranch, E**	40.10	330	*e*P	P	21 54 25.1	+1.0
	comp=N,5.1nm,0.9s						
SIV	**San Ignacio**	40.54	135	P	P	21 54 28.6	+0.6
	comp=N,3.2nm,0.7s,baz=306,slow=11,SNR=7.4						
I04A	**Tendick Farm,**	41.42	324	P	P	21 54 36.4	+1.5
	baz=127						
SCHQ	**Schefferville**	45.26	18	P	P	21 55 04.1	-1.5
	comp=N,13nm,0.6s,baz=206,slow=7.4,SNR=8.6						
SCHQ				LR	LR	22 16 17.5	
	comp=N,107nm,18.2s,baz=332,slow=39						
FCC	**Fort Churchill**	45.62	357	*e*P	P	21 55 07.3	-1.0
	comp=N,3.2nm,0.6s						
CPUP	**Villa Florida**	50.35	141	P	P	21 55 45.5	+0.1
	comp=N,1.9nm,0.8s,baz=306,slow=2.9,SNR=3.4						
CPUP				LR	LR	22 16 51.6	
	comp=N,105nm,18.3s,baz=311,slow=36						
YKA	**Yellowknife Ar**	52.34	346	P	P	21 55 58.6	-1.1
	comp=N,3.4nm,0.7s,baz=145,slow=7.7,SNR=83						
YKA				PcP	PcP	21 57 10.1	+0.1
	comp=N,0.9nm,0.8s,baz=147,slow=4.0,SNR=6.4						
YKB5	**Yellowknife Ar**	52.34	346	*e*P	P	21 55 58.2	-1.6
YKW3	**Yellowknife Ar**	52.40	346	*e*P	P	21 55 59.0	-1.2
	comp=N,5.7nm,0.9s						
RES	**Resolute Bay**	61.56	358	*e*P	P	21 57 03.5	-1.3
	comp=N,5.7nm,0.6s						
INK	**Inuvik**	61.85	343	*e*P	P	21 57 06.3	-0.5
	comp=N,2.9nm,0.8s						
IL1	**Eielson Array**	64.46	336	*e*P	P	21 57 22.8	-1.3
ILAR	**Eielson Array**	64.46	336	P	P	21 57 23.2	-0.9
	comp=N,1.2nm,0.9s,baz=128,slow=4.0,SNR=8.3						
ILAR				LR	LR	22 29 48.6	
	comp=N,30nm,18.9s,baz=128,slow=40						
MLY	**Manley**	66.08	336	*e*P	P	21 57 34.0	-0.6
	comp=N,2.9nm,0.8s						
PPT	**Papeete**	66.50	244	LR	LR	22 18 57.6	
	comp=N,107nm,18.6s,baz=356,slow=29						
PPT2	**Papeete2**	66.50	244	*e*LR	LR	22 17 33.5	
	comp=N,180nm,25.2s						
ESDC	**Sonseca Array**	78.49	52	P	P	21 58 45.4	-3.8
	comp=N,0.6nm,0.6s,baz=284,slow=5.5,SNR=6.5						
ESDC				LR	LR	22 28 46.1	
	comp=N,36nm,20.3s,baz=255,slow=32						
ES19	**SONSECA Array**	78.54	52	*e*P	P	21 58 47.0	-2.5
DBIC	**Dimbokro**	83.54	85	P	P	21 59 14.7	-1.8
	comp=N,4.1nm,0.9s,baz=104,slow=0.8,SNR=3.7						
NOA	**NORSAR Array B**	83.81	29	P	P	21 59 14.4	-2.6
	comp=N,0.5nm,0.7s,baz=46,slow=9.7,SNR=3.8						
NOA				LR	LR	22 34 29.4	
	comp=N,33nm,20.3s,baz=280,slow=34						
ARCES	**ARCESS Array B**	86.22	19	P	P	21 59 27.2	-1.6
	comp=N,1.5nm,0.8s,baz=267,slow=5.2,SNR=5.8						
ARCES				LR	LR	22 38 28.1	
	comp=N,23nm,18.8s,baz=295,slow=36						
TORD	**Torodi Ar. Bea**	88.42	77	P	P	21 59 36.9	-3.7
	comp=N,0.6nm,0.6s,baz=288,slow=5.6,SNR=11						
GERES	**GERESS Array B**	88.82	40	LR	LR	22 35 09.8	
	comp=N,42nm,20.9s,baz=308,slow=33						
FINES	**FINESS Array B**	90.29	26	P	P	21 59 47.0	-1.3
	comp=N,0.5nm,0.9s,baz=42,slow=8.8,SNR=3.4						
FINES				LR	LR	22 37 38.9	
	comp=N,40nm,21.8s,baz=274,slow=34						
TIXI	**Tiksi**	91.50	349	*e*P	P	21 59 52.3	-1.5
AKASG	**Malin Array Be**	97.18	34	LR	LR	22 41 46.8	
	comp=N,30nm,21.4s,baz=270,slow=34						
NRIK	**Noril'sk**	97.67	1	LR	LR	22 45 36.8	
	comp=N,102nm,21.7s,baz=314,slow=36						
SONM	**Songino Array**	117.58	348	PKP	PKPdf	22 05 34.3	+0.6
	comp=N,0.5nm,0.5s,baz=48,slow=2.1,SNR=3.5						
KSRS	**Korea Array**	118.45	326	PKP	PKPdf	22 05 36.3	+0.9
	comp=N,1.3nm,0.7s,baz=17,slow=0.9,SNR=4.8						
KSAR	**Wonju Array Be**	118.48	326	PKP	PKPdf	22 05 36.3	+0.8
MKAR	**Makanchi Array**	119.88	6	PKP	PKPdf	22 05 37.5	-0.5
	comp=N,0.5nm,0.6s,baz=357,slow=2.6,SNR=6.5						
GEYT	**Alibeck**	120.89	29	PKP	PKPdf	22 05 40.0	-0.2
	comp=N,1.7nm,0.6s,baz=266,slow=7.0,SNR=4.9						
MAW	**Mawson**	122.73	168	PKP	PKPdf	22 05 43.6	+0.9
	comp=N,1.2nm,0.8s,baz=315,slow=5.7,SNR=3.8						
LZH	**Lanzhou**	129.35	346	*e*PKP	PKPdf	22 05 55.8	-0.8
LZH				sPKP		22 06 21.5	
STKA	**Stephens Creek**	129.56	239	PKP	PKPdf	22 05 57.2	+0.4
	comp=N,1.5nm,0.8s,baz=107,slow=5.1,SNR=3.9						
WRA	**Warramunga Arr**	137.32	255	PKhKP	PKPpre	22 06 03.1	
	comp=N,0.2nm,0.5s,baz=95,slow=3.3,SNR=6.3						
WRA				PKP	PKiKP	22 06 13.1	-0.6
	comp=N,2.4nm,0.6s,baz=88,slow=2.5,SNR=17						
ASAR	**Alice Springs**	137.45	249	PKhKP	PKPpre	22 06 08.1	
	comp=N,0.2nm,0.5s,baz=98,slow=3.5,SNR=5.4						
ASAR				PKP	PKiKP	22 06 13.2	-0.7
	comp=N,0.7nm,0.6s,baz=97,slow=2.0,SNR=6.7						
FITZ	**Fitzroy Crossi**	145.62	257	*e*PKPab	PKPab	22 06 28.7	+1.3
CMAR	**Chiang Mai Arr**	147.42	345	PKPbc	PKPdf	22 06 30.8	+1.1
	comp=N,6.6nm,0.6s,baz=339,slow=3.3,SNR=60						

ISCJB ***30*** *22:04:42.8± 1.0, 35.°65N± 0.°05 × 141.°2E± 0.°1, h36km± 8km, mb3.7/12, MS3.4/3, Error ellipse: s-maj=14.9km s-min=7.7km az=167.5*

JMA ***30*** *22:04:45.0± 0.1, 35.°73N × 140.°96E, h35km± 1km, M3.3*

JMA Felt I J1.

IDC ***30*** *22:04:46.1± 2.2, 35.°61N × 141.°04E, h47km± 20km, mb3.5/12, mb1 3.6/16, mb1mx3.5/39, mbtmp3.8/16, ML2.8/3, MS3.2/8, Ms1 3.2/8, ms1mx2.8/37, Error ellipse: s-maj=24.9km s-min=8.6km az=71.0*

ISC 30 22:04:43.6±1.4, 35.°63N± 0.°06 × 141.°18E± 0.°09, h29km± 8km, n30, σ 1s 64/25, mb3.7/12, MS3.0/3, 1C-3D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CHOJ	**Chosi**	0.27	286	↑P	Pb	22 04 50.8	+0.2
CHOJ				S	Sb	22 04 54.8	-0.5
JCN	**Nagara**	0.83	255	↓P	Pb	22 04 59.2	-0.2
JYT	**Yasato**	1.00	307	↓P	Pn	22 04 59.5	-2.1
JHO	**Hitachi**	1.10	333	↓P	Pn	22 05 01.6	-1.4
MJAR	**Matsushiro Arr**	2.57	292	P	Pn	22 05 23.1	-0.3
	7.1nm,0.3s,baz=94,slow=12,SNR=61						
MJAR				S	Sn	22 05 53.3	-0.3
	4.6nm,0.3s,baz=102,slow=31,SNR=6.1						
MJAR				LR	LR	22 06 26.4	
	comp=Z,257nm,19.5s,baz=110,slow=41						
JHJ	**Hachijo jima 2**	2.76	205	P	Pn	22 05 26.8	+0.9
	8.2nm,0.3s,baz=72,slow=16,SNR=4.5						
JHJ				S	Sn	22 05 58.5	+0.4
	60nm,0.3s,baz=74,slow=23,SNR=9.9						
JCJ	**Chichijima**	8.55	174	P	Pn	22 06 46.0	+0.5
	4.6nm,0.3s,baz=262,slow=17,SNR=5.4						
JCJ				S	Sn	22 08 15.8	-5.2
	baz=311,slow=19						
JNU	**Nakatsue**	8.88	257	LR	LR	22 10 42.4	
	comp=Z,230nm,18.4s,baz=118,slow=41						
KSRS	**Korea Array**	10.82	284	P	Pn	22 07 20.1	+3.6
	0.1nm,0.3s,baz=96,slow=14,SNR=2.5						
KSRS				LR	LR	22 11 25.5	
	comp=Z,80nm,21.7s,baz=118,slow=37						
USRK	**Ussuriysk Ar.**	11.09	323	P	Pn	22 07 21.1	+1.0
	0.1nm,0.3s,baz=129,slow=14,SNR=3.0						
USRK				LR	LR	22 11 23.4	
	comp=Z,108nm,18.2s,baz=140,slow=36						
KLR	**Kul'dur**	15.25	336	LR	LR	22 13 58.0	
	comp=Z,42nm,18.8s,baz=142,slow=36						
H11N2	**WAKE ISLAND Hy**	27.62	118	T	T	22 39 29.3	
	baz=311,slow=75,SNR=28						
H11N1	**WAKE ISLAND Hy**	27.63	118	T	T	22 39 28.8	
	baz=311,slow=75,SNR=38						
H11N3	**WAKE ISLAND Hy**	27.64	118	T	T	22 39 29.8	
	baz=311,slow=75,SNR=34						
H11S1	**WAKE ISLAND Hy**	28.29	120	T	T	22 40 23.2	
	baz=312,slow=75,SNR=58						
H11S3	**WAKE ISLAND Hy**	28.29	120	T	T	22 40 21.9	
	baz=312,slow=75,SNR=41						
H11S2	**WAKE ISLAND Hy**	28.30	120	T	T	22 40 21.2	
	baz=312,slow=75,SNR=30						
SONM	**Songino Array**	28.44	306	P	P	22 10 35.0	-0.8
	0.3nm,0.5s,baz=104,slow=10,SNR=2.7						
SONM				LR	LR	22 21 19.2	
	comp=Z,28nm,20.4s,baz=99,slow=35						
ZALV	**Zalesovo Beam**	42.73	314	P	P	22 12 37.5	-0.4
	0.6nm,0.5s,baz=97,slow=6.4,SNR=4.1						
NRIK	**Noril'sk**	44.47	336	P	P	22 12 52.0	+0.3
	1.4nm,0.3s,baz=104,slow=4.2,SNR=2.4						
MKAR	**Makanchi Array**	44.72	303	P	P	22 12 53.4	-0.6
	1.3nm,0.8s,baz=87,slow=9.2,SNR=9.3						
MKAR				LR	LR	22 34 16.3	
	comp=Z,19nm,18.2s,baz=108,slow=40						
ILAR	**Eielson Array**	50.78	32	P	P	22 13 42.8	+2.0
	0.4nm,0.6s,baz=270,slow=6.3,SNR=3.4						
WRA	**Warramunga Arr**	55.65	188	P	P	22 14 17.3	+0.3
	0.8nm,0.8s,baz=3.4,slow=7.2,SNR=11						
ASAR	**Alice Springs**	59.37	188	P	P	22 14 43.6	+0.4
	0.7nm,1.0s,baz=18,slow=6.3,SNR=4.5						
YKA	**Yellowknife Ar**	65.12	30	P	P	22 15 21.6	+0.3
	0.1nm,0.7s,baz=299,slow=6.3,SNR=2.9						
STKA	**Stephens Creek**	67.15	180	P	P	22 15 35.4	+0.8
	1.2nm,0.8s,baz=349,slow=5.2,SNR=2.6						
FINES	**FINESS Array B**	69.97	332	P	P	22 15 51.8	0.0
	2.5nm,1.1s,baz=191,slow=4.9,SNR=3.4						
WSAR	**Wadi Sarin**	71.05	285	LR	LR	22 47 59.6	
	comp=Z,144nm,21.9s,slow=37						
AKASG	**Malin Array Be**	75.29	322	P	P	22 16 22.7	-1.1
	0.4nm,0.5s,baz=50,slow=5.2,SNR=2.7						
NOA	**NORSAR Array B**	75.41	337	P	P	22 16 24.3	+0.1
	0.4nm,0.6s,baz=26,slow=5.1,SNR=3.3						

CSEM ***30*** *22:14:42.7± 0.1, 36.°48N × 28.°78E, h5km, ML3.0, Error ellipse: s-maj=2.8km s-min=1.9km az=166.0*

THE ***30*** *22:14:42.9, 36.°49N × 28.°81E, h2km± 2km, ML3.0/7, Error ellipse: s-maj=2.4km s-min=1.1km az=120.0*

ISK ***30*** *22:14:42.5, 36.°53N × 28.°77E, h8km, MD3.5*

ATH ***30*** *22:14:42.1, 36.°52N × 28.°79E, h21km± 1km, ML2.8/7, Error ellipse: s-maj=2.0km s-min=1.2km az=188.0*

ISCJB ***30*** *22:14:42.3± 0.5, 36.°48N± 0.°02 × 28.°77E± 0.°03, h5km± 4km, Error ellipse: s-maj=4.5km s-min=3.3km az=149.7*

DDA ***30*** *22:14:43.0, 36.°47N × 28.°69E, h6km, Md3.2*

ISC 30 22:14:42.6±1.1, 36.°49N± 0.°02 × 28.°75E± 0.°02, h2km± 10km, n96, σ 0s 66/143, Dodecanese Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
FETY	**Fethiye**	0.30	61	*e*PG	Pg	22 14 48.5	+0.1
FETY				*e*SG	Sg	22 14 53.0	+0.6
FETY	**Fethiye**	0.30	61	P	Pg	22 14 47.9	-0.5
FETY				S	Sg	22 14 53.2	+0.8
FETY	**Fethiye**	0.30	61	P	Pg	22 14 47.9	-0.5
FETY	**Fethiye**	0.30	61	*e*Pg	Pg	22 14 48.5	+0.1
FETY				S	Sg	22 14 53.2	+0.8
ARG	**Arkhangelos**	0.57	242	P	Pg	22 14 53.2	-0.4
ARG				S	Sb	22 15 03.1	-0.8
ARG	**Arkhangelos**	0.57	242	P	Pg	22 14 53.2	-0.4
ARG				S	Sb	22 15 03.1	-0.8
YER	**Yerkesik**	0.75	330	*e*PG	Pg	22 14 56.8	-0.1
YER				*e*SG	Sg	22 15 07.4	+0.8
YER	**Yerkesik**	0.75	330	P	Pg	22 14 56.6	-0.3
YER				S	Sb	22 15 08.8	-0.2
YER	**Yerkesik**	0.75	330	*e*Pg	Pg	22 14 56.8	-0.1
YER				*e*Sg	Sg	22 15 07.4	+0.8
YER				S	Sb	22 15 08.8	-0.2
KSL	**Kastellorizon**	0.75	117	P	Pg	22 14 56.3	-0.7
KSL				S	Sb	22 15 07.4	-1.6
KSL	**Kastellorizon**	0.75	117	P	Pg	22 14 56.2	-0.8
KSL				S	Sb	22 15 08.5	-0.5
KSL				AML	AML	22 15 11.4	
	comp=N,531μm,0.5s						
KSL				AML	AML	22 15 13.1	
	comp=E,1117μm,0.7s						
GLHS	**Glhisar (BURDU**	0.90	42	*e*PG	Pg	22 14 59.4	-0.3
GLHS	**Glhisar (BURDU**	0.90	42	*e*Pg	Pg	22 14 59.4	-0.3
ELL	**Elmali**	0.96	74	*e*PG	Pb	22 15 01.1	-1.0
ELL	**Elmali**	0.96	74	*e*Pg	Pb	22 15 01.1	-1.0
BDRM	**Kayabasi**	1.20	299	*i* P	Pg	22 15 05.4	-0.1
BDRM				*i* S	Sn	22 15 23.4	+0.2
BDRM	**Kayabasi**	1.20	299	P	Pg	22 15 05.4	-0.1
BDRM				S	Sn	22 15 23.4	+0.2
NIS1	**

KHAL				S	Sb	22 15 43.8	-0.4	
KULA	**Kula-Manisa**	**2.02 358**	*e*PN	**Pn**		22 15 17.4	-0.4	
KULA	**Kula-Manisa**	**2.02 358**	P	**Pn**		22 15 17.3	-0.4	
KULA				S	Sn	22 15 42.4	-1.3	
KULA	**Kula-Manisa**	**2.02 358**	*e*Pn	**Pn**		22 15 17.4	-0.4	
KULA				S	Sn	22 15 42.4	-1.3	
SUTC	**Sutluce-Ispart**	**2.05 61**	*e*PN	**Pn**		22 15 18.2	0.0	
SUTC	**Sutluce-Ispart**	**2.05 61**	*e*Pn	**Pn**		22 15 18.2	0.0	
IZM	**Izmir**	**2.24 329**	*e*PN	**Pn**		22 15 20.7	-0.1	
IZM	**Izmir**	**2.24 329**	*e*Pn	**Pn**		22 15 20.7	-0.1	
BLCB	**Balcova**	**2.33 325**	*e*PN	**Pn**		22 15 21.0	-0.9	
BLCB	**Balcova**	**2.33 325**	*e*Pn	**Pn**		22 15 21.0	-0.9	
ZKR	**Zakros**	**2.48 237**	P	**Pn**		22 15 24.1	+0.2	
ZKR	**Zakros**	**2.48 237**	P	**Pn**		22 15 24.1	+0.2	
ZKR	**Zakros**	**2.48 237**	P	**Pn**		22 15 25.2	+1.3	
AKS	**Akhisar**	**2.50 343**	*e*PN	**Pn**		22 15 23.7	-0.6	
AKS	**Akhisar**	**2.50 343**	*e*Pn	**Pn**		22 15 23.7	-0.6	
APE	**Apeiranthos**	**2.65 284**	*e*PN	**Pn**		22 15 26.9	+0.5	
APE	**Apeiranthos**	**2.65 284**	P	**Pn**		22 15 26.2	-0.2	
APE				S	Sn	22 15 59.0	-0.1	
APE	**Apeiranthos**	**2.65 284**	P	**Pn**		22 15 26.2	-0.2	
APE	**Apeiranthos**	**2.65 284**	*e*Pn	**Pn**		22 15 26.9	+0.5	
APE				S	Sn	22 15 59.0	-0.1	
APE	**Apeiranthos**	**2.65 284**	P	**Pn**		22 15 25.9	-0.5	
THR6	**Thira Island,**	**2.71 268**	P	**Pn**		22 15 26.8	-0.3	
THR6	**Thira Island,**	**2.71 268**	P	**Pn**		22 15 26.8	-0.3	
NPS	**Neapolis**	**2.83 245**	P	**Pn**		22 15 28.7	-0.1	
NPS	**Neapolis**	**2.83 245**	P	**Pn**		22 15 28.7	-0.1	
NPS				S	Sn	22 16 03.1	-0.4	
NPS	**Neapolis**	**2.83 245**	P	**Pn**		22 15 28.1	-0.7	
NPS				S	Sn	22 16 03.1	-0.4	
NPS				AML	AML	22 16 10.8		
	comp=N,150µm,0.5s							
NPS				AML	AML	22 16 11.9		
	comp=E,209µm,0.5s							
CHOS	**Chios island**	**2.86 312**	*e*PN	**Pn**		22 15 29.6	+0.3	
CHOS	**Chios island**	**2.86 312**	P	**Pn**		22 15 29.1	-0.2	
CHOS				S	Sn	22 16 04.5	+0.1	
CHOS	**Chios island**	**2.86 312**	P	**Pn**		22 15 29.1	-0.2	
CHOS	**Chios island**	**2.86 312**	*e*Pn	**Pn**		22 15 29.6	+0.3	
CHOS				S	Sn	22 16 04.5	+0.1	
CHOS	**Chios island**	**2.86 312**	P	**Pn**		22 15 29.4	+0.1	
CHOS				S	Sn	22 16 04.9	+0.5	
CHOS				AML	AML	22 16 08.5		
	comp=E,130µm,0.5s							
CHOS				AML	AML	22 16 09.9		
	comp=N,116µm,0.4s							
LAST	**Lasithi**	**2.97 244**	P	**Pn**		22 15 30.8	0.0	
LAST				S	Sn	22 16 08.0	+0.9	
LAST	**Lasithi**	**2.97 244**	P	**Pn**		22 15 30.8	0.0	
LAST				S	Sn	22 16 08.0	+0.9	
LAST	**Lasithi**	**2.97 244**	P	**Pn**		22 15 30.8	0.0	
KONT	**Konya--Tatoy**	**3.23 62**	*e*PN	**Pn**		22 15 34.9	+0.7	
KONT	**Konya--Tatoy**	**3.23 62**	*e*Pn	**Pn**		22 15 34.9	+0.7	
IDI	**Anoyia**	**3.36 250**	P	**Pn**		22 15 35.7	-0.4	
IDI				S	Sn	22 16 16.3	-0.3	
IDI	**Anoyia**	**3.36 250**	P	**Pn**		22 15 35.7	-0.4	
IDI				S	Sn	22 16 16.3	-0.3	
IDI	**Anoyia**	**3.36 250**	P	**Pn**		22 15 35.0	-1.1	
IDI				S	Sn	22 16 17.1	+0.5	
IDI				AML	AML	22 16 19.3		
	comp=N,63µm,0.6s							
IDI				AML	AML	22 16 23.8		
	comp=E,51µm,0.5s							
PRK	**Paraskevi**	**3.38 325**	P	**Pn**		22 15 35.4	-0.9	
PRK	**Paraskevi**	**3.38 325**	P	**Pn**		22 15 35.4	-0.9	
SIVA	**Sivas**	**3.53 247**	P	**Pn**		22 15 38.3	0.0	
SIVA	**Sivas**	**3.53 247**	P	**Pn**		22 15 38.3	0.0	
SIGR	**SIGRI**	**3.56 321**	P	**Pn**		22 15 38.8	+0.1	
SIGR	**SIGRI**	**3.56 321**	P	**Pn**		22 15 38.8	+0.1	
LIA	**Limnos Island**	**4.41 322**	P	**Pn**		22 15 50.9	+0.4	
VLI	**Veliai**	**4.69 275**	P	**Pn**		22 15 55.8	+1.5	
VLI	**Veliai**	**4.69 275**	P	**Pn**		22 15 55.8	+1.5	

IDC ***30*** *22:15:37.1±0.8, 35°.36N×141°.17E, h0km, mb3.5/13, mb1 3.7/17, mb1mx3.6/46, mbtmp3.6/17, ML3.5/4, MS2.6/4, Ms1 2.6/4, ms1mx2.4/34, Error ellipse: s-maj=21.8km s-min=15.0km az=95.0*

ISCJB ***30*** *22:15:40.4±0.5, 35°.42N±0°.04×141°.12E±0°.07, h33km, mb3.5/13, Error ellipse: s-maj=7.7km s-min=5.9km az=172.7*

JMA ***30*** *22:15:41.5±0.1, 35°.50N×141°.10E, h34km±1km, M3.2*

ISC 30 22:15:41.4±0.7, 35°.42N±0°.04×141°.06E±0°.06, h33km, n27, σ1§56/26, mb3.5/13, 2C-1D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.32 330**		⇑P	**Pn**	**22 15 49.1**	**-0.7**
CHOJ				S	**Sn**	**22 15 54.0**	**-1.1**
JCN	**Nagara**	**0.70 270**		S	**Sn**	**22 16 05.0**	**+0.4**
BSO4	**Boso 4**	**0.73 234**		⇓P	**Pb**	**22 15 56.7**	**+1.0**
BSO4				X		22 16 08.0	
BSO3	**Boso 3**	**0.76 216**		⇑P	**Pb**	**22 15 56.8**	**+0.6**
BSO3				X		22 16 08.9	
BSO1	**Boso 1**	**0.77 185**		P	**Pb**	**22 15 56.6**	**+0.5**
BSO1				X		22 16 08.8	
JYT	**Yasato**	**1.06 319**		P	**Pb**	**22 15 59.9**	**-1.5**
JHJ	**Hachijo jima 2**	**2.53 205**		Pn	**Pn**	**22 16 18.9**	**-1.3**
	4.6nm,0.3s,baz=49,slow=18,SNR=4.3						
JHJ				Sn	**Sn**	**22 16 50.1**	**+0.3**
	38nm,0.3s,baz=280,slow=22,SNR=7.7						
MJAR	**Matsushiro Arr**	**2.56 297**		Pn	Pb	22 16 22.9	-3.9
	5.0nm,0.3s,baz=118,slow=9.5,SNR=34						
MJAR				Sn	**Sb**	**22 16 58.0**	**+0.1**
	3.0nm,0.3s,baz=108,slow=31,SNR=7.1						
MJAR				LR	LR	22 17 37.0	
	comp=Z,104nm,19.9s,baz=120,slow=45						
MAT	**Matsushiro**	**2.57 297**		P	Pn	22 16 16.8	-3.9
MAT				S	**Sn**	**22 16 50.0**	**-0.8**
JCJ	**Chichijima**	**8.36 173**		Pn	**Pn**	**22 17 38.8**	**-1.5**
	2.9nm,0.3s,baz=348,slow=20,SNR=4.8						
JCJ				Sn	**Sn**	**22 19 07.9**	**-5.6**
	baz=287,slow=19						
JNU	**Nakatsue**	**8.73 258**		LR	LR	22 21 31.2	
	comp=Z,20nm,19.6s,baz=118,slow=40						
ASAJ	**Asahikawa**	**8.76 7**		Pn	**Pn**	**22 17 44.2**	**-1.6**
	0.7nm,0.3s,baz=218,slow=11,SNR=7.2						
KSRS	**Korea Array**	**10.77 285**		LR	LR	22 22 00.4	
	comp=Z,41nm,20.2s,baz=92,slow=35						
KLR	**Kul'dur**	**15.40 336**		LR	LR	22 24 59.7	
	comp=Z,38nm,19.3s,baz=176,slow=36						
SONM	**Songino Array**	**28.48 307**		P	P	22 21 36.3	+2.7
	0.3nm,0.6s,baz=108,slow=14,SNR=2.5						
ZALV	**Zalesovo Beam**	**42.80 314**		P	**P**	**22 23 36.6**	**+0.8**
	0.3nm,0.3s,baz=87,slow=7.4,SNR=3.2						
MKAR	**Makanchi Array**	**44.74 303**		P	**P**	**22 23 52.5**	**+0.9**
	0.6nm,0.9s,baz=79,slow=7.8,SNR=3.5						
KURBB	**Kurchatov Arra**	**46.78 309**		P	**P**	**22 24 08.8**	**+1.3**
	0.5nm,0.5s,baz=83,slow=8.2,SNR=4.6						
ILAR	**Eielson Array**	**51.01 32**		P	**P**	**22 24 40.2**	**+0.4**
	0.3nm,0.6s,baz=261,slow=4.5,SNR=3.5						
BVAR	**Borovoye Array**	**51.45 313**		P	**P**	**22 24 43.9**	**+0.6**
	0.1nm,0.3s,baz=82,slow=10,SNR=2.4						
WRA	**Warramunga Arr**	**55.43 188**		P	**P**	**22 25 13.2**	**+0.5**
	0.8nm,0.6s,baz=4.5,slow=7.4,SNR=16						
INK	**Inuvik**	**55.95 27**		P	**P**	**22 25 17.5**	**+1.6**
	0.4nm,0.9s,baz=292,slow=5.4,SNR=2.3						
ASAR	**Alice Springs**	**59.16 188**		P	**P**	**22 25 38.8**	**-0.2**
	0.2nm,0.6s,baz=17,slow=14,SNR=2.8						
YKA	**Yellowknife Ar**	**65.35 30**		P	**P**	**22 26 21.2**	**+1.2**
	0.3nm,0.8s,baz=300,slow=6.3,SNR=5.8						
FINES	**FINESS Array B**	**70.10 332**		P	**P**	**22 26 50.3**	**+0.3**
	1.5nm,0.9s,baz=54,slow=7.1,SNR=4.6						
NOA	**NORSAR Array B**	**75.56 337**		P	**P**	**22 27 24.3**	**+1.9**
	0.5nm,0.9s,baz=62,slow=7.8,SNR=3.3						
TXAR	**Lajitas Array**	**91.33 52**		P	**P**	**22 28 44.8**	**+0.6**
	0.2nm,0.7s,baz=339,slow=7.2,SNR=2.3						

ISK ***30*** *22:20:21.7, 38°.89N×26°.78E, h8km, MD2.9*

ATH ***30*** *22:20:22.4, 38°.86N×26°.67E, h31km±1km, ML2.0/6, Error ellipse: s-maj=3.6km s-min=1.0km az=256.0*

ISCJB ***30*** *22:20:22.2±0.4, 38°.89N±0°.02×26°.77E±0°.03, h8km±3km, Error ellipse: s-maj=4.0km s-min=2.9km az=149.1*

DDA ***30*** *22:20:22.7, 38°.89N×26°.77E, h7km, Ml3.1*

THE ***30*** *22:20:22.4, 38°.89N×26°.77E, h2km±2km, ML2.1/7, Error ellipse: s-maj=2.6km s-min=0.9km az=235.0*

CSEM ***30*** *22:20:22.3±0.1, 38°.88N×26°.76E, h10km, MD2.9, Error ellipse: s-maj=2.0km s-min=1.6km az=60.0*

ISC 30 22:20:22.2±1.0, 38°.88N±0°.02×26°.77E±0°.02, h9km±8km, n73, σ0§45/109, Aegean Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DKL	**Dikili**	**0.22 29**		*e*PG	**Pg**	**22 20 26.2**	**-0.4**
DKL	**Dikili**	**0.22 29**		*e*Pg	**Pg**	**22 20 26.2**	**-0.4**
AYVA	**Ayvalik**	**0.43 352**		*i* P	**Pg**	**22 20 31.0**	**+0.4**
AYVA				*i* S	**Sb**	**22 20 38.2**	**-0.4**
AYVA	**Ayvalik**	**0.43 352**		P	**Pg**	**22 20 31.0**	**+0.4**
AYVA				S	**Sb**	**22 20 38.2**	**-0.4**
PRK	**Paraskevi**	**0.53 314**		P	**Pg**	**22 20 32.5**	**0.0**
PRK				S	**Sg**	**22 20 40.4**	**+0.9**
PRK	**Paraskevi**	**0.53 314**		P	**Pg**	**22 20 32.5**	**0.0**
PRK				S	**Sg**	**22 20 40.3**	**+0.8**
PRK	**Paraskevi**	**0.53 314**		P	**Pg**	**22 20 32.9**	**+0.4**
PRK				S	**Sg**	**22 20 40.3**	**+0.8**
PRK				AML	AML	22 20 41.2	
	comp=N,401µm,0.3s						
PRK				AML	AML	22 20 42.2	
	comp=E,498µm,0.4s						
URLA	**Izmir**	**0.54 195**		*i* P	**Pg**	**22 20 32.7**	**+0.1**
URLA				*i* S	**Sb**	**22 20 42.1**	**+0.4**
URLA	**Izmir**	**0.54 195**		P	**Pg**	**22 20 32.7**	**+0.1**
URLA				S	**Sb**	**22 20 42.1**	**+0.4**
BLCB	**Balcova**	**0.54 156**		*e*PG	**Pg**	**22 20 32.5**	**-0.1**
BLCB	**Balcova**	**0.54 156**		*e*Pg	**Pg**	**22 20 32.6**	**-0.1**
IZM	**Izmir**	**0.62 141**		*e*PG	**Pg**	**22 20 34.4**	**+0.2**
IZM	**Izmir**	**0.62 141**		*e*Pg	**Pg**	**22 20 34.4**	**+0.2**
CHOS	**Chios island**	**0.74 229**		P	**Pg**	**22 20 36.2**	**-0.4**
CHOS				S	**Sb**	**22 20 48.9**	**+1.2**
CHOS	**Chios island**	**0.74 229**		P	**Pg**	**22 20 36.2**	**-0.4**
CHOS				S	**Sg**	**22 20 46.1**	**-0.2**
CHOS	**Chios island**	**0.74 229**		P	**Pg**	**22 20 36.4**	**-0.2**
CHOS				S	**Sg**	**22 20 46.1**	**-0.2**
CHOS				AML	AML	22 20 49.7	
	comp=E,1167µm,0.3s						
CHOS				AML	AML	22 20 51.0	
	comp=N,642µm,0.2s						
SIGR	**SIGRI**	**0.78 295**		*e*PG	**Pg**	**22 20 37.2**	**-0.1**
SIGR				*e*SG	**Sb**	**22 20 48.8**	**+0.1**
SIGR	**SIGRI**	**0.78 295**		P	**Pg**	**22 20 37.0**	**-0.3**
SIGR				S	**Sb**	**22 20 49.2**	**+0.5**
SIGR	**SIGRI**	**0.78 295**		*e*Pg	**Pg**	**22 20 37.2**	**-0.1**
SIGR	**SIGRI**	**0.78 295**		P	**Pg**	**22 20 37.5**	**+0.2**
SIGR				S	**Sg**	**22 20 47.1**	**-0.4**
SIGR				*e*Sg	**Sb**	**22 20 48.8**	**+0.1**
SIGR	**SIGRI**	**0.78 295**		P	**Pg**	**22 20 37.5**	**+0.2**
SIGR				S	**Sg**	**22 20 47.1**	**-0.4**
SIGR				AML	AML	22 20 51.3	
	comp=N,206µm,0.3s						
SIGR				AML	AML	22 20 57.8	
	comp=E,226µm,0.3s						
AKHS	**Akhisar**	**0.82 90**		*i* P	**Pb**	**22 20 38.5**	**-0.1**
AKHS				*i* S	**Sb**	**22 20 50.2**	**+0.5**
AKHS	**Akhisar**	**0.82 90**		P	**Pb**	**22 20 38.5**	**-0.1**
AKHS				S	**Sb**	**22 20 50.2**	**+0.5**
AKS	**Akhisar**	**0.82 90**		*e*PG	**Pg**	**22 20 37.8**	**-0.1**
AKS	**Akhisar**	**0.82 90**		*e*Pg	**Pg**	**22 20 37.8**	**-0.1**
EZN	**Ezine**	**1.00 340**		*e*PG	**Pg**	**22 20 41.2**	**-0.3**
EZN				*e*SG	**Sb**	**22 20 55.4**	**+0.3**
EZN	**Ezine**	**1.00 340**		P	**Pb**	**22 20 41.8**	**+0.1**
EZN				S	**Sb**	**22 20 55.0**	**-0.1**
EZN	**Ezine**	**1.00 340**		*e*Pg	**Pg**	**22 20 41.2**	**-0.3**
EZN	**Ezine**	**1.00 340**		P	**Pb**	**22 20 41.8**	**+0.1**
EZN				S	**Sb**	**22 20 55.0**	**-0.1**
BOZC	**Bozcaada**	**1.11 330**		*i* P	**Pg**	**22 20 43.3**	**-0.2**
BOZC				*i* S	**Sn**	**22 20 59.7**	**+0.4**
SMG	**Samos**	**1.17 177**		P	**Pb**	**22 20 43.8**	**-0.8**
SMG				S	**Sn**	**22 21 01.1**	**+0.2**
SMG	**Samos**	**1.17 177**		P	**Pb**	**22 20 43.9**	**-0.7**
SMG				S	**Sb**	**22 20 59.8**	**-0.1**
SMG	**Samos**	**1.17 177**		P	**Pb**	**22 20 43.9**	**-0.7**
SMG				S	**Sb**	**22 20 59.8**	**-0.1**
SMG				AML	AML	22 21 03.1	
	comp=N,381µm,0.4s						
SMG				AML	AML	22 21 04.0	
	comp=E,245µm,0.4s						
AYDB	**Zeytinkoy-Aydi**	**1.28 136**		*e*PN	**Pn**	**22 20 46.3**	**-0.1**
AYDB	**Zeytinkoy-Aydi**	**1.28 136**		*e*Pn	**Pn**	**22 20 46.3**	**-0.1**
GONE	**Gonen-Balikesi**	**1.36 31**		*e*PN	**Pn**	**22 20 47.4**	**0.0**
GONE	**Gonen-Balikesi**	**1.36 31**		*e*Pn	**Pn**	**22 20 47.4**	**0.0**
LPK	**Lapseki**	**1.49 360**		*e*PN	**Pn**	**22 20 49.3**	**+0.2**
LPK				*e*SN	**Sb**	**22 21 09.4**	**+0.3**
LPK	**Lapseki**	**1.49 360**		*e*Pn	**Pn**	**22 20 49.3**	**+0.2**
LPK				*e*Sn	**Sb**	**22 21 09.4**	**+0.3**
DURS	**Dursunbey**	**1.51 61**		*i* P	**Pn**	**22 20 49.3**	**-0.2**
DURS	**Dursunbey**	**1.51 61**		P	**Pn**	**22 20 49.3**	**-0.2**
KULA	**Kula-Manisa**	**1.53 103**		*e*PN	**Pn**	**22 20 49.9**	**+0.2**
KULA	**Kula-Manisa**	**1.53 103**		P	**Pb**	**22 20 50.3**	**-0.4**
KULA				S	**Sb**	**22 21 10.4**	**+0.2**
KULA	**Kula-Manisa**	**1.53 103**		*e*Pn	**Pn**	**22 20 49.9**	**+0.2**
KULA	**Kula-Manisa**	**1.53 103**		P	**Pn**	**22 20 50.3**	**-0.4**
KULA				S	**Sb**	**22 21 10.4**	**+0.2**
GELI	**Tayfur-Gelibol**	**1.53 352**		*e*PN	**Pn**	**22 20 50.0**	**+0.3**
GELI	**Tayfur-Gelibol**	**1.53 352**		*e*Pn	**Pn**	**22 20 50.0**	**+0.3**
KRBG	**Karabiga-Canak**	**1.56 15**		*e*PN	**Pn**	**22 20 49.9**	**-0.3**
KRBG	**Karabiga-Canak**	**1.56 15**		*e*Pn	**Pn**	**22 20 49.9**	**-0.3**
LIA	**Limnos Island**	**1.59 310**		P	**Pn**	**22 20 50.1**	**-0.5**
LIA				S	**Sg**	**22 21 13.2**	**-0.2**
LIA	**Limnos Island**	**1.59 310**		P	**Pn**	**22 20 50.6**	**0.0**
LIA				S	**Sn**	**22 21 09.1**	**-2.2**
EDC	**Edincik**	**1.69 30**		*e*PN	**Pn**	**22 20 51.5**	**-0.4**
EDC	**Edincik**	**1.69 30**		*e*Pn	**Pn**	**22 20 51.5**	**-0.4**
RKY	**Sarkoy-Tekirda**	**1.83 10**		*e*PN	**Pn**	**22 20 54.1**	**+0.2**
RKY	**Sarkoy-Tekirda**	**1.83 10**		*e*Pn	**Pn**	**22 20 54.1**	**+0.2**
MRMT	**Marmara Adasi**	**1.83 20**		*e*PN	**Pn**	**22 20 54.1**	**+0.1**
MRMT	**Marmara Adasi**	**1.83 20**		*e*Pn	**Pn**	**22 20 54.1**	**+0.1**
KCTX	**Karacabey (Bur**	**1.85 41**		*e*PN	**Pn**	**22 20 54.1**	**+0.1**
KCTX	**Karacabey (Bur**	**1.85 41**		*e*Pn	**Pn**	**22 20 54.2**	**+0.1**
SMTH	**Samothraki Isl**	**1.85 329**		P	**Pn**	**22 20 53.9**	**-0.2**
SMTH				S	**Sn**	**22 21 18.4**	**+0.7**
SMTH	**Samothraki Isl**	**1.85 329**		P	**Pn**	**22 20 54.0**	**-0.2**
SMTH				S	**Sn**	**22 21 17.4**	**-0.3**
SMTH	**Samothraki Isl**	**1.85 329**		P	**Pn**	**22 20 54.0**	**-0.2**
SMTH				S	**Sn**	**22 21 17.4**	**-0.3**
SMTH				AML	AML	22 21 22.1	
	comp=N,29µm,0.3s						
SMTH				AML	AML	22 21 24.6	
	comp=E,25µm,0.2s						
APE	**Apeiranthos**	**2.06 209**		*e*PN	**Pn**	**22 20 57.8**	**+0.8**
APE	**Apeiranthos**	**2.06 209**		*e*Pn	**Pn**	**22 20 57.8**	**+0.8**
ALN	**Alexandroupoli**	**2.09 345**		*e*PN	**Pn**	**22 20 57.8**	**+0.5**
ALN	**Alexandroupoli**	**2.09 345**		P	**Pn**	**22 20 58.3**	**+0.9**
ALN				S	**Sn**	**22 21 23.5**	**0.0**
ALN	**Alexandroupoli**	**2.09 345**		*e*Pn	**Pn**	**22 20 57.8**	**+0.5**
ALN	**Alexandroupoli**	**2.09 345**		P	**Pn**	**22 20 58.0**	**+0.6**
ALN				S	**Sn**	**22 21 23.5**	**0.0**
ALN	**Alexandroupoli**	**2.09 345**		P	**Pn**	**22 20 58.0**	**+0.6**
ALN				S	**Sn**	**22 21 23.0**	**-0.5**
ALN				AML	AML	22 21 32.4	
	comp=E,19µm,0.3s						
ALN				AML	AML	22 21 34.5	
	comp=N,25µm,0.7s						
TVSB	**Tavsanli**	**2.17 74**		*e*PN	**Pn**	**22 20 58.9**	**+0.3**
TVSB	**Tavsanli**	**2.17 74**		*e*Pn	**Pn**	**22 20 58.9**	**+0.3**
ARMT	**Armutlu**	**2.33 43**		*e*PN	**Pn**	**22 21 01.5**	**+0.8**
ARMT	**Armutlu**	**2.33 43**		*e*Pn	**Pn**	**22 21 01.5**	**+0.8**

CSEM ***30*** *22:25:57.2±0.4, 30°.90N×7°.06W, h10km, mb4.3, Error ellipse: s-maj=8.4km s-min=4.9km az=154.0*

CNRM ***30*** *22:25:57.6, 30°.78N×7°.02W, h4km, MD3.2*

MDD ***30*** *22:25:58.1±1.6, 30°.83N×7°.04W, h11km±12km, mb4.3/3, Error ellipse: s-maj=11.3km s-min=6.4km az=163.0, PRXIMO*

INMG ***30*** *22:25:59.6±1.2, 31°.07N×7°.19W, h0km, ML2.6, Error ellipse: s-maj=17.0km s-min=8.4km az=94.0*

ISC 30 22:25:58.1±2.1, 30°.97N±0°.06×7°.05W±0°.04, h16km±14km, n48, σ1§54/83, Morocco

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OUK	**Oukaimeden**	**0.74 289**		P	**Pb**	**22 26 13.0**	**+0.1**
OUK				S	**Sb**	**22 26 24.0**	**+1.1**
OUK	**Oukaimeden**	**0.74 289**		P	**Pb**	**22 26 13.0**	**+0.1**
OUK				S	**Sb**	**22 26 24.0**	**+1.1**
TZC	**Tazercounte**	**1.27 22**		P	**Pn**	**22 26 22.0**	**+0.5**
TZC				S	**Sn**	**22 26 41.0**	**+2.7**
TZC	**Tazercounte**	**1.27 22**		P	**Pn**	**22 26 22.0**	**+0.5**
TZC				S	**Sn**	**22 26 41.0**	**+2.7**
CIA	**Chichaoua**	**1.58 293**		P	**Pn**	**22 26 26.0**	**+0.5**
CIA				S	**Sb**	**22 26 47.0**	**+0.3**
CIA	**Chichaoua**	**1.58 293**		P	**Pn**	**22 26 26.0**	**+0.5**
CIA				S	**Sb**	**22 26 47.0**	**+0.3**
KIB	**El Ksiba**	**1.82 28**		P	**Pn**	**22 26 30.0**	**+1.1**
KIB				S	**Sg**	**22 26 56.0**	**-0.9**
KIB	**El Ksiba**	**1.82 28**		P	**Pn**	**22 26 30.0**	**+1.1**
KIB				*i* S	**Sg**	**22 26 56.0**	**-0.9**
YBT	**Youssef Ben Ta**	**2.39 243**		P	**Pn**	**22 26 35.0**	**-1.6**
YBT				S	**Sn**	**22 27 03.0**	**-2.6**
YBT	**Youssef Ben Ta**	**2.39 243**		P	**Pn**	**22 26 35.0**	**-1.6**
YBT				S	**Sn**	**22 27 03.0**	**-2.6**
ZFT	**Errachidia**	**2.54 65**		P	**Pn**	**22 26 39.0**	**+0.1**
ZFT				S	**Sn**	**22 27 09.0**	**-0.6**
ZFT	**Errachidia**	**2.54 65**		P	**Pn**	**22 26 39.0**	**+0.1**
ZFT				S	**Sn**	**22 27 09.0**	**-0.6**
CZD	**Col de Zad**	**2.68 39**		P	**Pn**	**22 26 43.0**	**+2.2**
CZD				S	**Sn**	**22 27 14.0**	**+0.9**
CZD	**Col de Zad**	**2.68 39**		P	**Pn**	**22 26 43.0**	**+2.2**
CZD				S	**Sn**	**22 27 14.0**	**+0.9**
EMIJ	**Mijas**	**5.90 18**		S	**Sn**	**22 28 31.8**	**-0.4**
	0.8nm,0.3s,SNR=7.9						
EMIJ	**Mijas**	**5.90 18**		S	**Sn**	**22 28 31.8**	**-0.4**
	0.8nm,0.3s,SNR=7.9						
PBDV	**Barranco-do-Ve**	**6.30 354**		*e*Pn	**Pn**	**22 27 31.3**	**+0.8**
PBDV				*e*Sn	**Sn**	**22 28 40.6**	**-1.6**
PBDV				A	A	22 28 52.6	
	2.5nm,0.3s						
PBDV	**Barranco-do-Ve**	**6.30 354**		*e*Pn	**Pn**	**22 27 31.3**	**+0.8**
PFVI	**Vila Bisbo**	**6.33 347**		*e*Pn	**Pn**	**22 27 32.1**	**+1.4**
PFVI				*e*Sn	**Sn**	**22 28 40.4**	**-2.2**
PFVI				A	A	22 28 50.4	
	4.7nm,0.6s						
PFVI	**Vila Bisbo**	**6.33 347**		P	**Pn**	**22 27 31.9**	**+1.2**
	1.7nm,0.2s,SNR=9.4						
PFVI				S	**Sn**	**22 28 40.1**	**-2.5**
	2.4nm,0.3s,SNR=5.7						
PFVI	**Vila Bisbo**	**6.33 347**		P	**Pn**	**22 27 31.9**	**+1.2**
	1.7nm,0.2s,SNR=9.4						
PVAQ	**Vaqueiros**	**6.45 355**		*e*Pn	**Pn**	**22 27 33.0**	**+0.6**
PVAQ				*e*Sn	**Sn**	**22 28 44.3**	**-1.3**
PVAQ				A	A	22 28 52.6	
	4.6nm,0.8s						
PVAQ	**Vaqueiros**	**6.45 355**		*e*Pn	**Pn**	**22 27 33.0**	**+0.6**
MORF	**Marmelete**	**6.46 349**		*e*Pn	**Pn**	**22 27 33.0**	**+0.3**
MORF				*e*Sn	**Sn**	**22 28 46.0**	**-0.1**
MORF	**Marmelete**	**6.46 349**		*e*Pn	**Pn**	**22 27 33.0**	**+0.3**
MORF				*e*Sn	**Sn**	**22 28 46.0**	**-0.1**
EGRO	**El Granado**	**6.56 357**		P	**Pn**	**22 27 35.3**	**+1.3**
	5.6nm,0.2s,SNR=4.9						
EGRO				S	**Sn**	**22 28 46.0**	**-2.4**
	1.7nm,0.2s,SNR=7.9						
EGRO	**El Granado**	**6.56 357**		P	**Pn**	**22 27 35.3**	**+1.3**
	5.6nm,0.2s,SNR=4.9						
PCVE	**Castro Verde**	**6.70 353**		*e*Pn	**Pn**	**22 27 36.9**	**+1.0**
PCVE				*e*Sn	**Sn**	**22 28 50.9**	**-1.0**
PCVE				A	A	22 28 59.0	
	4.6nm,0.5s						
PCVE	**Castro Verde**	**6.70 353**		*e*Pn	**Pn**	**22 27 36.9**	**+1.0**
PTEO	**Sao Teotonio**	**6.71 349**		*e*Pn	**Pn**	**22 27 37.3**	**+1.3**
PTEO				*e*Sn	**Sn**	**22 28 52.8**	**+0.8**
PTEO	**Sao Teotonio**	**6.71 349**		*e*Pn

*IDC **30** 22:35:59.4±0.7, 15°.12N×42°.10E, h0km, mb4.2/25, mb1 4.3/31, mb1mx4.2/55, mbtmp4.2/31, ML3.7/6, MS3.3/12, Ms1 3.3/12, ms1mx3.1/43, Error ellipse: s-maj=14.8km s-min=14.2km az=45.0*

*CSEM **30** 22:35:59.5±0.1, 15°.15N×42°.20E, h2km, mb4.5/56, Error ellipse: s-maj=6.4km s-min=5.0km az=39.0*

*MOS **30** 22:36:00.8±0.8, 15°.18N×42°.24E, h22km, mb4.6/40, Error ellipse: s-maj=10.2km s-min=5.1km az=93.7*

*NEIC **30** 22:36:01.1±0.3, 15°.20N×42°.24E, h10km, mb4.5/40, Error ellipse: s-maj=5.8km s-min=5.2km az=47.0*

*DSN **30** 22:36:12.3±34.0, 16°.28N×42°.65E, h10km, mb5.0, Error ellipse: s-maj=13.4km s-min=2.1km az=3.0*

ISC 30 22:36:00.8±0.4, **15°.19N**±0°.05×**42°.28E**±0°.04, **h8**km, **n294, s0°95/306, mb4.4**/91, **MS3.5**/14, **9C-1D, Western Arabian Peninsula**

Code	Station Name	Δ°	AZ°	Phase	Op	ID	Time	Res
							h m s	ISC
HAJJ	**Hajjah**	**1.37**	**68**	*i* P		**Pn**	**22 36 24.3**	**-2.1**
HAJJ				*i* S		**Sb**	**22 36 45.1**	**+0.6**
HAJJ				AML		AML	22 37 04.4	
	comp=E,3μm,0.5s							
SANA	**San'a**	**1.87**	**84**	*i* P		**Pn**	**22 36 32.3**	**-1.1**
SANA				*i* S		**Sb**	**22 36 59.4**	**+0.3**
UDYN	**Al 'Udayn**	**2.04**	**126**	*i* P		**Pn**	**22 36 34.7**	**-0.8**
UDYN				*i* S		**Sn**	**22 37 02.1**	**+0.7**
DHBB	**Dhamar BB**	**2.13**	**107**	*i* P		**Pn**	**22 36 37.0**	**0.0**
DHBB				*i* S		**Sb**	**22 37 05.5**	**-1.2**
DAMY	**Dhamar**	**2.13**	**107**	*e*Pn		**Pn**	**22 36 36.8**	**-0.2**
DAMY	**Dhamar**	**2.13**	**107**	*e*Pn		**Pn**	**22 36 36.8**	**-0.2**
ATD	**Arta Tunnel**	**3.68**	**171**	Pn		**Pn**	**22 36 56.4**	**-1.7**
	comp=E,16nm,0.3s,baz=243,slow=21,SNR=61							
ATD				LR		LR	22 37 38.3	
	comp=E,58nm,18.1s,baz=324,slow=27							
ATD				Sn		**Sn**	**22 37 42.0**	**+0.2**
	comp=E,18nm,0.3s,baz=40,slow=23,SNR=6.1							
FURI	**Furi**	**7.18**	**210**	*e*Pn		**Pn**	**22 37 48.9**	**+2.5**
FURI				*e*Sg		Sg	22 39 57.8	+6.4
FAQ	**Al Faqa, Dubai**	**15.70**	**51**	P		**Pn**	**22 39 40.5**	**-2.0**
NAZ	**Nazwa, Dubai**	**15.89**	**50**	*i* P		**Pn**	**22 39 43.4**	**-1.5**
	SNR=5.5							
EIL	**Elat**	**15.91**	**336**	Pn		**Pn**	**22 39 44.6**	**-0.5**
	comp=E,0.2nm,0.3s,baz=135,slow=3.0,SNR=4.7							
EIL				Sn		**Sn**	**22 42 43.7**	**+1.9**
	comp=E,0.1nm,0.3s,baz=162,slow=20,SNR=1.4							
HATD	**Hatta, Dubai**	**16.15**	**51**	*i* P		**Pn**	**22 39 47.1**	**-1.2**
	SNR=8.8							
UOSS	**Minazif**	**16.27**	**51**	*e*Pn		**Pn**	**22 39 47.1**	**-2.7**
	comp=E,1.3nm,0.7s							
BANOM	**Banah**	**16.91**	**49**	P		**Pn**	**22 39 57.4**	**-0.5**
KMBO	**Kilima Mbogo**	**16.96**	**197**	Pn		**Pn**	**22 39 58.4**	**-0.5**
	comp=E,0.3nm,0.3s,baz=30,slow=15,SNR=2.2							
WSAR	**Wadi Sarin**	**17.38**	**60**	P		**P**	**22 40 06.4**	**+1.2**
	comp=E,0.3nm,0.3s,baz=256,slow=3.3,SNR=9.4							
ASF	**Jabal al Asfar**	**17.60**	**345**	P		**Pn**	**22 40 06.8**	**+0.3**
	comp=E,0.2nm,0.3s,baz=313,slow=9.2,SNR=5.2							
MMAI	**Mount Meron Ar**	**18.81**	**342**	P		**Pn**	**22 40 22.6**	**+1.2**
	comp=E,0.2nm,0.3s,baz=119,slow=14,SNR=5.9							
MMAI				LR		LR	22 46 40.1	
	comp=E,24nm,18.2s,baz=210,slow=34							
CSS	**Mathiatis**	**21.27**	**339**	*e*P		**P**	**22 40 47.9**	**+0.3**
	comp=E,8.3nm,1.0s							
CSS	**Mathiatis**	**21.27**	**339**	*e*P		**P**	**22 40 47.9**	**+0.3**
	comp=E,8.3nm,1.0s							
GNI	**Garni**	**24.96**	**4**	P		**P**	**22 41 27.4**	**+2.5**
	comp=E,13nm,1.0s,baz=151,slow=3.3,SNR=9.1							
GNI	**Garni**	**24.96**	**4**	*i* P		**P**	**22 41 27.0**	**+2.0**
	SNR=7.0							
GNI	**Garni**	**24.96**	**4**	*e*P		**P**	**22 41 26.9**	**+2.0**
GNI				pmax		pmax		
	comp=Z,12nm,0.9s							
GNI	**Garni**	**24.96**	**4**	*e*P		**P**	**22 41 26.9**	**+2.0**
	comp=Z,12nm,0.9s							
GNI	**Garni**	**24.96**	**4**	*e*P		**P**	**22 41 26.9**	**+2.0**
	comp=Z,12nm,0.9s							
LAST	**Lasithi**	**24.96**	**326**	*e*P		**P**	**22 41 25.2**	**+0.3**
	comp=Z,32nm,1.1s							
LAST	**Lasithi**	**24.96**	**326**	*e*P		**P**	**22 41 25.2**	**+0.3**
	comp=Z,32nm,1.1s							
IDI	**Anoyia**	**25.37**	**325**	P		**P**	**22 41 28.1**	**-0.5**
	comp=Z,9.8nm,0.9s,baz=156,slow=12,SNR=7.2							
IDI	**Anoyia**	**25.37**	**325**	*e*P		**P**	**22 41 28.0**	**-0.6**
	comp=Z,21nm,1.2s							
IDI	**Anoyia**	**25.37**	**325**	*e*P		**P**	**22 41 28.0**	**-0.6**
	comp=Z,21nm,1.2s							
BR131	**Keskin Array S**	**25.59**	**344**	*e*P		**P**	**22 41 30.8**	**+0.2**
BR131	**Keskin Array S**	**25.59**	**344**	*e*P		**P**	**22 41 30.8**	**+0.2**
BRTR	**Keskin Array B**	**25.59**	**344**	P		**P**	**22 41 31.1**	**+0.5**
	comp=Z,2.7nm,1.0s,baz=165,slow=10,SNR=13							
BRTR				PcP		**PcP**	**22 45 00.7**	**-1.0**
	comp=Z,1.0nm,0.9s,baz=151,slow=5.8,SNR=4.9							
BRTR				LR		LR	22 51 23.5	
	comp=Z,16nm,19.0s,baz=210,slow=36							
BRTR	**Keskin Array B**	**25.59**	**344**	*ce*P		**P**	**22 41 32.0**	**+1.4**
BRTR				pmax		pmax		
	comp=Z,3.0nm,1.0s							
SANT	**Santorini**	**25.89**	**328**	*e*P		**P**	**22 41 32.5**	**-0.7**
	comp=Z,27nm,1.3s							
SANT	**Santorini**	**25.89**	**328**	*e*P		**P**	**22 41 32.5**	**-0.7**
	comp=Z,27nm,1.3s							
BR231	**Keskin MP Arra**	**25.93**	**343**	*e*P		**P**	**22 41 32.2**	**-1.4**
BR231	**Keskin MP Arra**	**25.93**	**343**	*e*PcP		**PcP**	**22 45 01.6**	**-0.8**
BR231	**Keskin MP Arra**	**25.93**	**343**	*e*P		**P**	**22 41 32.2**	**-1.4**
BR231				*e*PcP		**PcP**	**22 45 01.6**	**-0.8**
ANTO	**Ankara**	**25.95**	**343**	*e*P		**P**	**22 41 33.8**	**0.0**
ANTO				pmax		pmax		
	comp=Z,8.0nm,1.0s							
ANTO	**Ankara**	**25.95**	**343**	*e*P		**P**	**22 41 33.8**	**0.0**
	comp=Z,8.0nm,1.0s							
ANTO	**Ankara**	**25.95**	**343**	*e*P		**P**	**22 41 33.8**	**0.0**
	comp=Z,8.2nm,1.0s							
GEYT	**Alibeck**	**26.63**	**29**	P		**P**	**22 41 41.0**	**+1.1**
	comp=Z,2.9nm,0.8s,baz=216,slow=7.3,SNR=5.8							
ZEI	**Tsey**	**27.54**	**3**	*e*P		**P**	**22 41 49.2**	**+1.0**
ZEI				pmax		pmax		
	comp=Z,11nm,0.9s							
KBZ	**Khabaz**	**28.45**	**1**	P		**P**	**22 41 57.2**	**+1.2**
	comp=Z,4.5nm,1.0s,baz=102,slow=1.1,SNR=7.5							
KIV	**Kislovodsk**	**28.67**	**1**	*i* P		**P**	**22 41 59.8**	**+1.6**
	SNR=7.0							
KIV	**Kislovodsk**	**28.67**	**1**	*c i*P		**P**	**22 41 59.5**	**+1.3**
KIV				pmax		pmax		
	comp=Z,13nm,1.2s							
KIV				MLR		MLR		
	comp=Z,24nm,15.0s							
KIV	**Kislovodsk**	**28.67**	**1**	*e*P		**P**	**22 41 58.6**	**+0.4**
	comp=Z,12nm,1.1s							
KIV	**Kislovodsk**	**28.67**	**1**	*e*P		**P**	**22 41 58.6**	**+0.4**
	comp=Z,12nm,1.1s							
AGG	**Agios Georgios**	**29.51**	**327**	*e*P		**P**	**22 42 05.5**	**-0.2**
AGG				pmax		pmax		
	comp=Z,52nm,1.2s							
AGG	**Agios Georgios**	**29.51**	**327**	*e*P		**P**	**22 42 05.5**	**-0.2**
	comp=Z,52nm,1.2s							
AGG	**Agios Georgios**	**29.51**	**327**	*e*P		**P**	**22 42 05.5**	**-0.2**
	comp=Z,52nm,1.2s							
GOF	**Gofitskoye**	**29.78**	**1**	*ce*P		**P**	**22 42 09.0**	**+1.1**
GOF	**Gofitskoye**	**29.78**	**1**	*e*P		**P**	**22 42 09.0**	**+1.1**
ANN	**Anapa**	**29.80**	**353**	*e*P		**P**	**22 42 06.3**	**-1.7**
ANN				*e**PP		**pP**	**22 42 10.1**	**-0.4**
ANN				*e*			22 45 08.3	
ANN				*e*S		**S**	**22 47 02.9**	**-1.8**
ANN				pmax		pmax		
	comp=Z,25nm,1.0s							
ANN	**Anapa**	**29.80**	**353**	*e*P		**P**	**22 42 06.3**	**-1.7**
	comp=Z,25nm,1.0s							
KBL	**Kabul**	**30.84**	**46**	*e*P		**P**	**22 42 16.2**	**-1.5**
KBL				pmax		pmax		
	comp=Z,3.0nm,0.9s							
KBL	**Kabul**	**30.84**	**46**	*e*P		**P**	**22 42 16.2**	**-1.5**
	comp=Z,2.7nm,0.9s							
KBL	**Kabul**	**30.84**	**46**	*e*P		**P**	**22 42 16.2**	**-1.5**
	comp=Z,2.7nm,0.9s							
TIRR	**Tirgusor**	**31.46**	**341**	*e*P		**P**	**22 42 22.2**	**-0.5**
TIRR				pmax		pmax		
	comp=Z,19nm,1.5s							
TIRR	**Tirgusor**	**31.46**	**341**	*e*P		**P**	**22 42 22.2**	**-0.5**
	comp=Z,19nm,1.5s							
TIRR	**Tirgusor**	**31.46**	**341**	*e*P		**P**	**22 42 22.2**	**-0.5**
	comp=Z,19nm,1.5s							
WDD	**Wied Dalam**	**32.23**	**315**	*e*P		**P**	**22 42 30.6**	**+1.0**
	comp=Z,246nm,1.1s							
WDD	**Wied Dalam**	**32.23**	**315**	*e*P		**P**	**22 42 30.6**	**+1.0**
	comp=Z,246nm,1.1s							
TIR	**Tirane**	**32.50**	**328**	*e*P		**P**	**22 42 33.2**	**+1.3**
TIR				pmax		pmax		
	comp=Z,90nm,1.7s							
TIR	**Tirane**	**32.50**	**328**	*e*P		**P**	**22 42 33.2**	**+1.3**
	comp=Z,90nm,1.7s							
TIR	**Tirane**	**32.50**	**328**	*e*P		**P**	**22 42 33.2**	**+1.3**
	comp=Z,90nm,1.7s							
MLR	**Muntele Rosu**	**33.19**	**339**	*e*P		**P**	**22 42 38.9**	**+0.8**
MLR				pmax		pmax		
	comp=Z,5.0nm,1.0s							
MLR	**Muntele Rosu**	**33.19**	**339**	*e*P		**P**	**22 42 38.9**	**+0.8**
	comp=Z,4.8nm,1.0s							
MLR	**Muntele Rosu**	**33.19**	**339**	*e*P		**P**	**22 42 38.9**	**+0.8**
	comp=Z,4.8nm,1.0s							
BUR08	**Bucovina Ar. S**	**35.32**	**340**	*e*P		**P**	**22 42 57.2**	**+0.7**
BUR08	**Bucovina Ar. S**	**35.32**	**340**	*e*P		**P**	**22 42 57.2**	**+0.7**
TAM	**Tamanrasset**	**35.49**	**288**	*e*P		**P**	**22 42 57.9**	**-0.5**
TAM				pmax		pmax		
	comp=Z,4.0nm,0.8s							
TAM	**Tamanrasset**	**35.49**	**288**	*e*P		**P**	**22 42 57.9**	**-0.5**
	comp=Z,4.0nm,0.8s							
TAM	**Tamanrasset**	**35.49**	**288**	*e*P		**P**	**22 42 57.9**	**-0.5**
	comp=Z,4.0nm,0.8s							
TAM				*e*			22 43 12.7	
KEST	**Kesra**	**35.83**	**311**	P		**P**	**22 43 00.9**	**-0.2**
	comp=Z,5.0nm,1.0s,baz=105,slow=23,SNR=2.8							
VSR	**Storozhevoye**	**36.02**	**357**	*e*P		**P**	**22 43 01.7**	**-0.6**
VSR				pmax		pmax		
	comp=Z,3.0nm,0.9s							
KKAR	**Karatay Array**	**36.84**	**35**	*e*P		**P**	**22 43 10.4**	**+0.9**
KKAR				pmax		pmax		
	comp=Z,3.0nm,0.6s							
KKAR	**Karatay Array**	**36.84**	**35**	*e*P		**P**	**22 43 10.4**	**+0.9**
	comp=Z,3.0nm,0.6s							
KKAR	**Karatay Array**	**36.84**	**35**	*e*P		**P**	**22 43 10.4**	**+0.9**
	comp=Z,3.0nm,0.6s							
ABKAR	**Akbulak array**	**36.92**	**19**	*e*P		**P**	**22 43 09.1**	**-0.9**
ABKAR	**Akbulak array**	**36.92**	**19**	*e*P		**P**	**22 43 09.1**	**-0.9**
KIEV	**Kiev**	**36.95**	**346**	*e*P		**P**	**22 43 09.7**	**-0.6**
KIEV				pmax		pmax		
	comp=Z,4.0nm,1.0s							
KIEV	**Kiev**	**36.95**	**346**	*e*P		**P**	**22 43 09.4**	**-0.9**
	comp=Z,10nm,1.5s							
KIEV	**Kiev**	**36.95**	**346**	*e*P		**P**	**22 43 09.3**	**-0.9**
	comp=Z,10nm,1.5s							
AKASG	**Malin Array Be**	**36.96**	**346**	P		**P**	**22 43 09.8**	**-0.6**
	comp=Z,0.7nm,0.5s,baz=157,slow=7.0,SNR=9.5							
AKTO	**Aktyubinsk**	**37.39**	**17**	P		**P**	**22 43 14.9**	**+0.8**
	comp=Z,1.4nm,0.7s,baz=184,slow=12,SNR=3.8							
KOLS	**Kolonicke sedl**	**37.43**	**338**	*e*P		**P**	**22 43 15.0**	**+0.5**
KOLS				pmax		pmax		
	comp=Z,7.0nm,1.5s							
KOLS	**Kolonicke sedl**	**37.43**	**338**	*e*P		**P**	**22 43 15.0**	**+0.5**
	comp=Z,6.9nm,1.5s							
KOLS	**Kolonicke sedl**	**37.43**	**338**	*e*P		**P**	**22 43 15.0**	**+0.5**
PSZ	**Piszkesteto**	**37.51**	**335**	*e*P		**P**	**22 43 14.7**	**-0.5**
PSZ				pmax		pmax		
	comp=Z,4.0nm,0.9s							
PSZ	**Piszkesteto**	**37.51**	**335**	*e*P		**P**	**22 43 14.7**	**-0.5**
	comp=Z,4.3nm,0.9s							
PSZ	**Piszkesteto**	**37.51**	**335**	*e*P		**P**	**22 43 14.7**	**-0.5**
	comp=Z,4.3nm,0.9s							
CRVS	**Cervenica-Dubn**	**37.70**	**337**	*e*P		**P**	**22 43 16.9**	**+0.2**
CRVS	**Cervenica-Dubn**	**37.70**	**337**	*e*P		**P**	**22 43 16.9**	**+0.2**
CRVS	**Cervenica-Dubn**	**37.70**	**337**	*e*P		**P**	**22 43 16.9**	**+0.2**
BOJS	**Bojanci**	**37.81**	**329**	*e*P		**P**	**22 43 19.4**	**+1.7**
BOJS	**Bojanci**	**37.81**	**329**	*e*P		**P**	**22 43 19.4**	**+1.7**
KSH	**Kashi**	**38.15**	**44**	*e*P		**P**	**22 43 19.8**	**-1.0**
STHS	**Stebnicka Huta**	**38.21**	**338**	*e*P		**P**	**22 43 21.2**	**+0.2**
STHS				pmax		pmax		
	comp=Z,3.0nm,0.8s							
STHS	**Stebnicka Huta**	**38.21**	**338**	*e*P		**P**	**22 43 21.2**	**+0.2**
	comp=Z,3.1nm,0.8s							
STHS	**Stebnicka Huta**	**38.21**	**338**	*e*P		**P**	**22 43 21.2**	**+0.2**
VISS	**Visnje**	**38.23**	**329**	*i* P		**P**	**22 43 21.0**	**-0.3**
VISS	**Visnje**	**38.23**	**329**	*i* P		**P**	**22 43 21.0**	**-0.3**
MRIV	**Mauritius Mete**	**38.31**	**157**	*e*P		**P**	**22 43 22.4**	**+0.3**
MRIV	**Mauritius Mete**	**38.31**	**157**	*e*P		**P**	**22 43 22.4**	**+0.3**
VYHS	**Vyhne**	**38.40**	**335**	*e*P		**P**	**22 43 22.6**	**0.0**
VYHS				pmax		pmax		
	comp=Z,7.0nm,1.3s							
VYHS	**Vyhne**	**38.40**	**335**	*e*P		**P**	**22 43 22.6**	**0.0**
	comp=Z,7.1nm,1.3s							
VYHS	**Vyhne**	**38.40**	**335**	*e*P		**P**	**22 43 22.6**	**0.0**
EKS2	**Erkin-Say**	**38.46**	**38**	*e*P		**P**	**22 43 22.5**	**-0.8**
EKS2				pmax		pmax		
	comp=Z,5.0nm,1.2s							
EKS2	**Erkin-Say**	**38.46**	**38**	*e*P		**P**	**22 43 22.5**	**-0.8**
	comp=Z,4.9nm,1.2s							
EKS2	**Erkin-Say**	**38.46**	**38**	*e*P		**P**	**22 43 22.5**	**-0.8**
	comp=Z,4.9nm,1.2s							
PERS	**Pernice**	**38.68**	**330**	*i* P		**P**	**22 43 25.4**	**+0.3**
PERS	**Pernice**	**38.68**	**330**	*i* P		**P**	**22 43 25.4**	**+0.3**
JAVS	**Javornik**	**38.69**	**328**	*i* P		**P**	**22 43 25.1**	**0.0**
JAVS	**Javornik**	**38.69**	**328**	*i* P		**P**	**22 43 25.1**	**0.0**
TRI	**Trieste**	**38.72**	**328**	*e*P		**P**	**22 43 25.1**	**-0.2**
TRI				pmax		pmax		
	comp=Z,14nm,0.9s							
TRI	**Trieste**	**38.72**	**328**	*e*P		**P**	**22 43 25.1**	**-0.2**
	comp=Z,14nm,0.9s							
TRI	**Trieste**	**38.72**	**328**	*e*P		**P**	**22 43 25.1**	**-0.2**
	comp=Z,14nm,0.9s							
SOKA	**Soboth**	**38.75**	**330**	*i* P		**P**	**22 43 25.6**	**-0.1**
	comp=Z,9.3nm,1.3s							
SOKA	**Soboth**	**38.75**	**330**	P		**P**	**22 43 25.6**	**-0.1**
	comp=Z,9.3nm,1.3s							
AAK	**Ala-Archa**	**38.87**	**39**	LR		LR	23 02 08.4	
	comp=Z,181nm,20.0s,baz=264,slow=40							
AAK	**Ala-Archa**	**38.87**	**39**	*e*P		**P**	**22 43 27.9**	**+1.0**
AAK				pmax		pmax		
	comp=Z,6.0nm,1.2s							
AAK	**Ala-Archa**	**38.87**	**39**	*e*P		**P**	**22 43 27.5**	**+0.6**
	comp=Z,4.7nm,1.1s							
AAK	**Ala-Archa**	**38.87**	**39**	*e*P		**P**	**22 43 27.5**	**+0.6**
	comp=Z,4.7nm,1.1s							
ARSA	**Arzberg**	**38.92**	**331**	*i* P		**P**	**22 43 26.9**	**-0.2**
	comp=Z,7.2nm,0.8s							
ARSA	**Arzberg**	**38.92**	**331**	P		**P**	**22 43 26.9**	**-0.2**
	comp=Z,7.2nm,0.8s							
CONA	**Conrad Observa**	**39.26**	**332**	*i* P		**P**	**22 43 29.3**	**-0.6**
	comp=Z,7.5nm,1.3s							
CONA	**Conrad Observa**	**39.26**	**332**	P		**P**	**22 43 29.3**	**-0.6**
	comp=Z,7.5nm,1.3s							
TORD	**Torodi Ar. Bea**	**39.36**	**272**	P		**P**	**22 43 29.1**	**-2.0**
	comp=Z,3.3nm,1.0s,baz=88,slow=7.7,SNR=16							
TORD				LR		LR	23 00 05.2	
	comp=Z,146nm,18.7s,baz=90,slow=37							
OJC	**Ojcow**	**39.41**	**337**	*e*P		**P**	**22 43 30.9**	**-0.1**
OJC				pmax		pmax		
	comp=Z,4.0nm,0.9s							
OJC	**Ojcow**	**39.41**	**337**	*e*P		**P**	**22 43 30.9**	**-0.1**
	comp=Z,3.7nm,0.9s							
OJC	**Ojcow**	**39.41**	**337**	*e*P		**P**	**22 43 30.9**	**-0.1**
	comp=Z,3.7nm,0.9s							
VLC	**Villacollemand**	**39.57**	**323**	*e*P		**P**	**22 43 32.4**	**-0.1**
	comp=Z,22nm,1.3s							
VLC	**Villacollemand**	**39.57**	**323**	*e*P		**P**	**22 43 32.4**	**-0.1**
	comp=Z,22nm,1.3s							
TKM2	**Tokmak 2**	**39.70**	**39**	*e*P		**P**	**22 43 33.6**	**-0.3**
TKM2				pmax		pmax		
	comp=Z,7.0nm,1.5s							
TKM2	**Tokmak 2**	**39.70**	**39**	*e*P		**P**	**22 43 33.6**	**-0.3**
	comp=Z,7.4nm,1.5s							
TKM2	**Tokmak 2**	**39.70**	**39**	*e*P		**P**	**22 43 33.6**	**-0.3**
	comp=Z,7.4nm,1.5s							
OKC	**Ostrava-Krasne**	**39.74**	**336**	*e*P		**P**	**22 43 32.9**	**-0.9**
OKC	**Ostrava-Krasne**	**39.74**	**336**	P		**P**	**22 43 32.9**	**-0.9**
PYUN	**Piuthan**	**39.77**	**64**	*e*P		**P**	**22 43 35.9**	**+1.2**
MORC	**Moravsky Berou**	**39.93**	**335**	*e*P		**P**	**22 43 35.2**	**-0.3**
MORC				pmax		pmax		
	comp=Z,45nm,1.4s							
MORC	**Moravsky Berou**	**39.93**	**335**	*e*P		**P**	**22 43 35.2**	**-0.3**
	comp=Z,45nm,1.4s							
MORC	**Moravsky Berou**	**39.93**	**335**	*e*P		**P**	**22 43 35.1**	**-0.3**
	comp=Z,45nm,1.4s							
MOA	**Molln**	**39.95**	**330**	*i* P		**P**	**22 43 35.1**	**-0.5**
	comp=Z,16nm,1.5s							
MOA	**Molln**	**39.95**	**330**	P		**P**	**22 43 35.1**	**-0.5**
	comp=Z,16nm,1.5s							
OBN	**Obninsk**	**40.08**	**355**	*i* P		**P**	**22 43 36.7**	**+0.2**
OBN				*e*			22 43 42.7	
OBN				pmax		pmax		
	comp=Z,12nm,1.2s							
OBN	**Obninsk**	**40.08**	**355**	*e*P		**P**	**22 43 37.1**	**+0.6**
	comp=Z,8.3nm,0.8s							
OBN	**Obninsk**	**40.08**	**355**	*e*P		**P**	**22 43 37.1**	**+0.6**
	comp=Z,8.3nm,0.8s							
KOLN	**Koldanda**	**40.25**	**65**	*e*P		**P**	**22 43 39.8**	**+1.2**
	comp=Z,31nm,0.8s							
TREC	**Trest**	**40.44**	**333**	*e*P		**P**	**22 43 38.7**	**-0.9**
TREC	**Trest**	**40.44**	**333**	P		**P**	**22 43 38.7**	**-0.9**
KRLC	**Kraliky**	**40.48**	**335**	*e*P		**P**	**22 43 39.4**	**-0.6**
KRLC	**Kraliky**	**40.48**	**335**	P		**P**	**22 43 39.4**	**-0.6**
DPC	**Dobruska-Polom**	**40.88**	**335**	*e*P		**P**	**22 43 42.4**	**-0.9**
DPC				*ex*		x	22 43 51.5	
DPC	**Dobruska-Polom**	**40.88**	**335**	P		**P**	**22 43 42.4**	**-0.9**
GEA0	**GERESS Array S**	**40.91**	**331**	*e*P		**P**	**22 43 42.5**	**-1.2**
GEA0	**GERESS Array S**	**40.91**	**331**	*e*P		**P**	**22 43 42.5**	**-1.2**
GEC2	**GERESS Array S**	**40.92**	**331**	*e*P		**P**	**22 43 43.2**	**-0.5**
GEC2				pmax		pmax		
	comp=Z,12nm,1.0s							
GEC2	**GERESS Array S**	**40.92**	**331**	*e*P		**P**	**22 43 43.2**	**-0.5**
	comp=Z,12nm,1.0s							
GEC2	**GERESS Array S**	**40.92**	**331**	*e*P		**P**	**22 43 43.2**	**-0.5**
	comp=Z,12nm,1.0s							
GERES	**GERESS Array B**	**40.92**	**331**	P		**P**	**22 43 42.8**	**-0.9**
	comp=Z,5.3nm,0.8s,baz=134,slow=7.6,SNR=44							
WATA	**Walderalm**	**40.93**	**328**	*i* P		**P**	**22 43 42.2**	**-1.6**
	comp=Z,7.1nm,1.0s							
WATA	**Walderalm**	**40.93**	**328**	P		**P**	**22 43 42.2**	**-1.6**
	comp=Z,7.1nm,1.0s							
UPC	**Upice**	**41.13**	**335**	*e*P		**P**	**22 43 44.7**	**-0.6**
UPC	**Upice**	**41.13**	**335**	P		**P**	**22 43 44.7**	**-0.6**
FUORN	**Ofenpass-Fuorn**	**41.15**	**326**	*e*P		**P**	**22 43 46.4**	**+0.5**
	comp=Z,5.3nm,0.9s							
FUORN	**Ofenpass-Fuorn**	**41.15**	**326**	*e*P		**P**	**22 43 46.4**	**+0.5**
	comp=Z,5.3nm,0.9s							
FETA	**Feichten**	**41.16**	**327**	*e*P		**P**	**22 43 45.2**	**-0.6**
	comp=Z,8.2nm,1.0s							
FETA	**Feichten**	**41.16**	**327**	P		**P**	**22 43 45.2**	**-0.6**
	comp=Z,8.2nm,1.0s							
MOTA	**Moosalm**	**41.17**	**328**	*i* P		**P**	**22 43 45.4**	**-0.5**
	comp=Z,4.6nm,1.1s							
MOTA	**Moosalm**	**41.17**	**328**	P		**P**	**22 43 45.4**	**-0.5**
	comp=Z,4.6nm,1.1s							
KHC	**Kasperske Hory**	**41.18**	**331**	*e*P		**P**	**22 43 44.6**	**-1.2**
KHC	**Kasperske Hory**	**41.18**	**331**	*e*P		**P**	**22 43 44.9**	**-0.9**
KHC				pmax		pmax		
	comp=Z,4.0nm,1.2s							
KHC	**Kasperske Hory**	**41.18**	**331**	*e*P		**P**	**22 43 44.8**	**-0.9**
	comp=Z,4.1nm,1.2s							
KHC	**Kasperske Hory**	**41.18**	**331**	*e*P		**P**	**22 43 44.9**	**-0.9**
	comp=Z,4.1nm,1.2s							
GKN	**Gorkha**	**41.20**	**65**	*e*P		**P**	**22 43 46.6**	**+0.2**
	comp=Z,26nm,1.0s							
GOPC	**GO Pecny, Ondr**	**41.20**	**333**	*e*P		**P**	**22 43 45.6**	**-0.3**
GOPC	**GO Pecny, Ondr**	**41.20**	**333**	P		**P**	**22 43 45.6**	**-0.3**
PRU	**Pruhonice**	**41.37**	**333**	*e*P		**P**	**22 43 46.4**	**-0.8**
PRU	**Pruhonice**	**41.37**	**333**	P		**P**	**22 43 46.4**	**-0.8**
RETA	**Reutte**	**41.44**	**328**	*i* P		**P**	**22 43 46.4**	**-1.6**
	comp=Z,4.2nm,1.0s							
RETA	**Reutte**	**41.44**	**328**	P		**P**	**22 43 46.4**	**-1.6**
	comp=Z,4.2nm,1.0s							
PRA	**Prague**	**41.47**	**333**	*e*P		**P**	**22 43 47.5**	**-0.6**
PRA	**Prague**	**41.47**	**333**	P		**P**	**22 43 47.5**	**-0.6**
TUE	**Stuetta**	**41.56**	**326**	*e*P		P	22 43 52.6	+3.5
	comp=

	comp=Z,6.5nm,1.0s,baz=232,slow=6.4,SNR=28								
MKAR					PcP		**PcP**	**22 46 01.6**	**+1.1**
	comp=Z,0.4nm,0.7s,baz=204,slow=3.2,SNR=2.2								
MKAR	**Makanchi Array**	**45.79**	**38**	*ceP*			**P**	**22 44 24.1**	**+1.1**
MKAR					pmax		pmax		
	comp=Z,7.0nm,1.0s								
MKAR	**Makanchi Array**	**45.79**	**38**	*eP*			**P**	**22 44 23.8**	**+0.8**
MKAR	**Makanchi Array**	**45.79**	**38**	*eP*			**P**	**22 44 23.8**	**+0.8**
MKAR					PcP		**PcP**	**22 46 01.6**	**+1.1**
KURBB	**Kurchatov Arra**	**45.84**	**32**	P			**P**	**22 44 23.6**	**+0.3**
	comp=Z,1.6nm,0.7s,baz=234,slow=8.1,SNR=11								
MEM	**Membach**	**45.84**	**328**	P			**P**	**22 44 22.9**	**-0.3**
	comp=Z,7.0nm,1.2s								
MEM	**Membach**	**45.84**	**328**	P			**P**	**22 44 22.9**	**-0.3**
	comp=Z,7.0nm,1.2s								
KURK	**Kurchatov**	**45.94**	**32**	*eP*			**P**	**22 44 23.9**	**-0.2**
KURK					pmax		pmax		
	comp=Z,5.0nm,0.9s								
KURK	**Kurchatov**	**45.94**	**32**	*eP*			**P**	**22 44 23.9**	**-0.2**
	comp=Z,5.2nm,0.9s								
KURK	**Kurchatov**	**45.94**	**32**	*eP*			**P**	**22 44 23.9**	**-0.2**
	comp=Z,5.2nm,0.9s								
BCLA	**Clavier**	**46.09**	**328**	P			**P**	**22 44 24.8**	**-0.4**
	comp=Z,13nm,1.5s								
BCLA	**Clavier**	**46.09**	**328**	P			**P**	**22 44 24.8**	**-0.4**
	comp=Z,13nm,1.5s								
DOU	**Dourbes**	**46.26**	**327**	P			**P**	**22 44 25.8**	**-0.9**
DOU	**Dourbes**	**46.26**	**327**	P			**P**	**22 44 25.7**	**-0.9**
BOSA	**Boshof**	**46.56**	**201**	LR			LR	23 03 48.4	
	comp=Z,68nm,20.3s,baz=24,slow=36								
SNF	**Seneffe**	**46.67**	**327**	P			**P**	**22 44 29.6**	**-0.2**
SNF	**Seneffe**	**46.67**	**327**	P			**P**	**22 44 29.5**	**-0.2**
DBIC	**Dimbokro**	**46.96**	**265**	P			**P**	**22 44 30.6**	**-2.0**
	comp=Z,5.8nm,0.9s,baz=75,slow=9.4,SNR=4.9								
DBIC					LR		LR	23 04 07.8	
	comp=Z,86nm,19.6s,baz=90,slow=36								
DBIC	**Dimbokro**	**46.96**	**265**	*eP*			**P**	**22 44 32.6**	**-0.1**
DBIC					pmax		pmax		
	comp=Z,70nm,2.0s								
DBIC	**Dimbokro**	**46.96**	**265**	*eP*			**P**	**22 44 32.6**	**-0.1**
	comp=Z,70nm,2.0s								
DBIC	**Dimbokro**	**46.96**	**265**	*eP*			**P**	**22 44 32.6**	**-0.1**
	comp=Z,70nm,2.0s								
ES19	**SONSECA Array**	**47.04**	**310**	*eP*			**P**	**22 44 32.3**	**-0.7**
ES19	**SONSECA Array**	**47.04**	**310**	*eP*			**P**	**22 44 32.3**	**-0.7**
ESDC	**Sonseca Array**	**47.08**	**310**	P			**P**	**22 44 32.5**	**-0.9**
	comp=Z,0.8nm,0.8s,baz=103,slow=8.9,SNR=8.5								
FIA1	**FINESS Array S**	**47.63**	**350**	*eP*			**P**	**22 44 37.0**	**-0.1**
FIA1	**FINESS Array S**	**47.63**	**350**	*eP*			**P**	**22 44 37.0**	**-0.1**
FINES	**FINESS Array B**	**47.63**	**350**	P			**P**	**22 44 36.8**	**-0.4**
	comp=Z,1.8nm,0.6s,baz=132,slow=2.8,SNR=7.7								
WMQ	**Urumqi**	**47.91**	**44**	*eP*			**P**	**22 44 40.3**	**+0.6**
WMQ					pP		sP	22 44 43.5	+0.2
WMQ					sP		pP	22 44 45.5	+3.2
WMQ					PcP		**PcP**	**22 46 06.0**	**-2.2**
WMQ					pmax		pmax		
	comp=Z,1.0nm,0.6s								
WMQ					pmax		pmax		
	comp=Z,30nm,4.0s								
WMQ					LR		LR		
	comp=N,35nm,27.2s								
WMQ					LR		LR		
	comp=E,25nm,24.2s								
WMQ					LR		LR		
	comp=Z,37nm,21.2s								
NVS	**Novosibirsk**	**50.64**	**29**	*eP*			**P**	**22 45 00.3**	**0.0**
ZALV	**Zalesovo Beam**	**50.91**	**31**	P			**P**	**22 45 02.4**	**+0.1**
	comp=Z,9.1nm,1.1s,baz=249,slow=7.3,SNR=22								
NB2	**NORSAR Subarra**	**50.95**	**341**	P			**P**	**22 45 01.0**	**-1.6**
	comp=Z,7.8nm,1.2s,baz=141,slow=7.9								
NB2	**NORSAR Subarra**	**50.95**	**341**	P			**P**	**22 45 01.0**	**-1.6**
	comp=Z,7.8nm,1.2s,SNR=3.9								
NOA	**NORSAR Array B**	**50.95**	**341**	P			**P**	**22 45 01.8**	**-0.8**
	comp=Z,3.8nm,1.0s,baz=138,slow=7.9,SNR=4.3								
NOA					LR		LR	23 09 16.1	
	comp=Z,12nm,18.4s,baz=20,slow=39								
CMAR	**Chiang Mai Arr**	**54.16**	**78**	P			**P**	**22 45 27.6**	**+0.6**
	comp=Z,2.5nm,1.0s,baz=279,slow=8.3,SNR=14								
CMAR					LR		LR	23 09 52.9	
	comp=Z,28nm,18.0s,baz=80,slow=37								
ARA0	**ARCESS Array S**	**55.33**	**353**	*eP*			**P**	**22 45 33.8**	**-0.9**
ARA0	**ARCESS Array S**	**55.33**	**353**	*eP*			**P**	**22 45 33.8**	**-0.9**
ARCES	**ARCESS Array B**	**55.33**	**353**	P			**P**	**22 45 34.3**	**-0.4**
	comp=Z,1.5nm,0.7s,baz=170,slow=7.0,SNR=6.6								
GTA	**Gaotai**	**55.52**	**52**	*eP*			**P**	**22 45 37.8**	**+1.1**
GTA					pP		sP	22 45 42.3	+2.0
GTA					sP		pP	22 45 44.5	+5.2
GTA					S		**S**	**22 53 23.5**	**+1.0**
GTA					sS		sS	22 53 31.3	+4.6
GTA	**Gaotai**	**55.52**	**52**	SS			**SS**	**22 57 08.8**	**+1.5**
GTA					pmax		pmax		
	comp=Z,4.0nm,0.8s								
GTA					pmax		pmax		
	comp=Z,36nm,4.3s								
GTA					LR		LR		
	comp=N,56nm,15.2s								
GTA					LR		LR		
	comp=E,95nm,16.6s								
GTA					LR		LR		
	comp=Z,100nm,17.1s								
KMI	**Kunming**	**57.22**	**70**	P			**P**	**22 45 49.8**	**+0.6**
KMI					pP		sP	22 45 54.5	+1.7
KMI					pmax		pmax		
	comp=Z,5.0nm,1.0s								
KMI					LR		LR		
	comp=Z,51nm,26.6s								
LZH	**Lanzhou**	**58.33**	**57**	*eP*			P	22 46 03.3	+6.5
LZH					pP		sP	22 46 07.8	+7.5
LZH					sP		pP	22 46 10.8	+11
LZH					pmax		pmax		
	comp=Z,29nm,1.1s								
NRIK	**Noril'sk**	**61.01**	**17**	P			**P**	**22 46 15.3**	**+0.8**
	comp=Z,1.5nm,0.6s,baz=176,slow=4.6,SNR=4.0								
NRIK					LR		LR	23 15 26.0	
	comp=Z,22nm,20.8s,baz=100,slow=39								
SONM	**Songino Array**	**61.55**	**44**	P			**P**	**22 46 19.9**	**+1.2**
	comp=Z,4.0nm,1.0s,baz=260,slow=6.3,SNR=19								
SONM					LR		LR	23 16 43.1	
	comp=Z,96nm,18.3s,baz=274,slow=40								
SONA1	**Songino Array**	**61.56**	**44**	*eP*			**P**	**22 46 19.5**	**+0.8**
SONA1	**Songino Array**	**61.56**	**44**	*eP*			**P**	**22 46 19.5**	**+0.8**
ULN	**Ulaanbaatar**	**61.99**	**44**	*eP*			**P**	**22 46 22.5**	**+0.8**
ULN					pmax		pmax		
	comp=Z,3.0nm,1.2s								
ULN	**Ulaanbaatar**	**61.99**	**44**	*eP*			**P**	**22 46 23.1**	**+1.4**
ULN	**Ulaanbaatar**	**61.99**	**44**	*eP*			**P**	**22 46 23.1**	**+1.4**
HHC	**Hu-ho-hao-te**	**64.61**	**52**	*eP*			**P**	**22 46 38.8**	**-0.3**
HHC					pmax		pmax		
	comp=Z,23nm,0.8s								
HHC					pmax		pmax		
	comp=Z,66nm,7.0s								
BOD	**Bodaibo**	**67.54**	**33**	*eP*			**P**	**22 46 56.7**	**-0.8**
BOD					pmax		pmax		
	comp=Z,4.0nm,1.1s								
NJ2	**Nanjing**	**70.86**	**61**	*eP*			**P**	**22 47 19.0**	**+0.4**
NJ2					pmax		pmax		
	comp=Z,17nm,0.6s								
TIXI	**Tiksi**	**74.62**	**19**	*eP*			**P**	**22 47 39.7**	**-0.4**
TIXI					pmax		pmax		
	comp=Z,5.0nm,1.7s								
YAK	**Yakutsk**	**75.50**	**29**	LR			LR	23 24 38.4	
	comp=Z,24nm,20.1s,baz=202,slow=39								
YAK	**Yakutsk**	**75.50**	**29**	*eP*			**P**	**22 47 43.3**	**-2.1**
YAK					pmax		pmax		
	comp=Z,7.0nm,0.8s								
BILL	**Bilibino**	**87.81**	**18**	*eP*			**P**	**22 48 49.2**	**-1.1**
BILL				*e*				22 52 16.7	
BILL				*e*	PPP		PPP	22 54 12.5	
BILL					pmax		pmax		
	comp=Z,1.0nm,1.1s								
BILL	**Bilibino**	**87.81**	**18**	*eP*			**P**	**22 48 49.2**	**-1.1**
	comp=Z,1.0nm,1.1s								
FITZ	**Fitzroy Crossi**	**88.53**	**109**	P			**P**	**22 48 56.8**	**+2.2**
	comp=Z,2.2nm,0.9s,baz=304,slow=5.3,SNR=4.2								
WRA	**Warramunga Arr**	**96.95**	**109**	P			**P**	**22 49 33.8**	**+0.3**
	comp=Z,0.5nm,0.8s,baz=288,slow=3.9,SNR=2.9								
YKA	**Yellowknife Ar**	**100.46**	**349**	P			**Pdif**	**22 49 48.0**	**-0.4**
	comp=Z,0.1nm,0.8s,baz=21,slow=5.3,SNR=3.0								
TXAR	**Lajitas Array**	**124.86**	**323**	PKP			**PKPdf**	**22 55 02.7**	**+0.5**
	comp=Z,0.8nm,0.9s,baz=90,slow=2.5,SNR=4.3								

CSEM ***30*** *22:41:58.1,44.60N×10.06E,h26km,MD1.8/3*
ROM 30 22:41:58.1±0.2, 44.60N×10.06E, h26km±2km, Md1.8/3, Ml1.5/2, Error ellipse: s-maj=7.9km s-min=1.8km az=141.0, Northern Italy

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op	ISC		h m s	ISC
PRMA	**PARMA**	**0.25**	**47**	Pg	Pb		22 42 04.2	-0.3
PRMA				Sg	Sb		22 42 09.7	+0.9
PRMA	**PARMA**	**0.25**	**47**	Pg	Pb		22 42 04.2	-0.3
PRMA				Sg	Sb		22 42 09.7	+0.9
SC2M	**Scurtabo**	**0.42**	**243**	Pg	Pb		22 42 07.2	0.0
SC2M				Sg	Sn		22 42 14.4	-1.1
	31nm,0.5s							
SC2M	**Scurtabo**	**0.42**	**243**	Pg	Pb		22 42 07.2	0.0
SC2M				Sg	Sn		22 42 14.4	-1.1
	31nm,0.5s							
BOB	**Bobbio (Coli)**	**0.47**	**292**	Pg	Pb		22 42 07.7	-0.2
BOB				Sg	Sb		22 42 15.3	+0.7
	42nm,0.8s							
BOB	**Bobbio (Coli)**	**0.47**	**292**	Pg	Pb		22 42 07.7	-0.2
BOB				Sg	Sb		22 42 15.3	+0.7
	42nm,0.8s							
ROVR	**Rover˜¤ Verone**	**1.27**	**34**	Pg	Pn		22 42 20.7	+0.4
ROVR				Sg	Sb		22 42 38.1	+0.6
ROVR	**Rover˜¤ Verone**	**1.27**	**34**	Pg	Pn		22 42 20.7	+0.4
ROVR				Sg	Sb		22 42 38.1	+0.6

IDC 30 22:45:25.2±2.9, 5.91S×132.65E, h0km, mb3.3/1, mb1 3.3/4, mb1mx3.2/34, mbtmp3.2/4, ML2.9/3, Error ellipse: s-maj=122.5km s-min=29.4km az=81.0, Aru Islands region

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op	ISC		h m s	ISC
FITZ	**Fitzroy Crossi**	**13.91**	**209**	Pn	Pn		22 48 43.1	-0.8
	0.0nm,0.3s,baz=36,slow=14,SNR=2.9							
FITZ				Sn	Sn		22 51 05.4	-14
	0.0nm,0.3s,baz=143,slow=23,SNR=2.7							
WRA	**Warramunga Arr**	**14.04**	**173**	Pn	Pn		22 48 43.8	-1.8
	0.1nm,0.3s,baz=357,slow=13,SNR=5.4							
WRA				Sn	Sn		22 51 08.3	-14
	0.1nm,0.3s,baz=352,slow=24,SNR=2.9							
ASAR	**Alice Springs**	**17.69**	**176**	P	P		22 49 35.0	+0.7
	0.1nm,0.3s,baz=352,slow=8.5,SNR=4.1							
MKAR	**Makanchi Array**	**68.80**	**325**	P	P		22 56 31.4	0.0
	0.3nm,0.8s,baz=106,slow=5.1,SNR=2.9							

ISCJB ***30*** *22:47:58.1±0.9, 36.92N±0.04×140.85E±0.08, h17km±6km, mb3.5/3, MS3.4/1, Error ellipse: s-maj=10.5km s-min=5.2km az=18.5*
JMA ***30*** *22:47:59.2, 36.94N×140.70E, h6km±1km, M3.3*
JMA Felt I J1.
IDC ***30*** *22:48:03.9±6.8, 36.88N×140.71E, h50km±57km, mb3.2/3, mb1 3.4/4, mb1mx2.9/47, mbtmp3.4/4, ML3.0/1, MS3.3/1, Ms1 3.3/1, ms1mx2.1/20, Error ellipse: s-maj=52.7km s-min=26.0km az=72.0*
ISC 30 22:47:58.8±1.1, 36.93N±0.03×140.73E±0.07, h12km±8km, n12, σ0.954/19, mb3.6/3, 5C-1D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op	ISC		h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.18**	**18**	↑P	**Pg**		**22 48 02.8**	**0.0**
ONAJ				S	**Sg**		**22 48 05.8**	**+0.2**
JHO	**Hitachi**	**0.34**	**202**	↑P	**Pg**		**22 48 05.9**	**+0.2**
JHO				S	**Sg**		**22 48 10.8**	**+0.5**
JFK	**Kawauchi**	**0.45**	**15**	↑P	**Pg**		**22 48 07.7**	**+0.1**
JFK				S	**Sg**		**22 48 13.8**	**+0.2**
JSB	**Shiboa**	**0.65**	**273**	↑P	**Pb**		**22 48 12.1**	**0.0**
JSB				S	**Sb**		**22 48 20.9**	**-0.2**
JFT	**Otama**	**0.66**	**332**	↓P	**Pg**		**22 48 11.7**	**0.0**
JFT				S	**Sg**		**22 48 20.5**	**+0.1**
JYT	**Yasato**	**0.82**	**212**	↑P	**Pg**		**22 48 14.5**	**-0.2**
JYT				S	**Sb**		**22 48 26.0**	**-0.1**
MJAR	**Matsushiro Arr**	**2.06**	**260**	P	**Pb**		**22 48 34.9**	**-1.2**
	6.2nm,0.3s,baz=82,slow=16,SNR=48							
MJAR				S	**Sn**		**22 48 59.9**	**+1.0**
	14nm,0.3s,baz=80,slow=27,SNR=22							
MAT	**Matsushiro**	**2.06**	**260**	P	**Pb**		**22 48 35.2**	**-1.0**
MAT				S	**Sb**		**22 49 02.0**	**+0.2**
ZALV	**Zalesovo Beam**	**41.58**	**312**	P	**P**		**22 55 45.9**	**-0.3**
	0.3nm,0.4s,baz=70,slow=8.4,SNR=2.5							
KURBB	**Kurchatov Arra**	**45.63**	**308**	P	**P**		**22 56 19.4**	**+0.6**
	0.2nm,0.3s,baz=83,slow=8.4,SNR=3.7							
KURBB				pP	sP		22 56 41.0	+17
	0.4nm,0.4s,baz=81,slow=8.2,SNR=4.5							
PSI	**Prapat**	**51.27**	**239**	LR	LR		23 20 13.8	
	comp=Z,30nm,18.6s,baz=176,slow=38							
WRA	**Warramunga Arr**	**56.89**	**187**	P	**P**		**22 57 43.5**	**-0.1**
	0.5nm,0.7s,baz=4.5,slow=7.2,SNR=3.6							

MEX 30 22:50:38.4±0.6, 16.59N×93.67W, h146km±10km, MD3.9, Chiapas

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op	ISC		h m s	ISC
TGIG		**0.55**	**70**	*eP*	Pn		22 50 58.1	-1.6
TGIG				*eS*	Sn		22 51 13.7	-2.1
PCIG		**0.98**	**154**	*eP*	Pn		22 51 01.4	-1.3
PCIG				*eS*	Sn		22 51 19.4	-1.7
CCIG	**Comitan**	**1.50**	**102**	*eP*	Pn		22 51 07.2	-0.6
CCIG				*eS*	Sn		22 51 25.0	-5.3

JMA 30 22:58:03.3±0.2, 26.04N×128.64E, h42km±4km, M3.5, Ryukyu Islands

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op	ISC		h m s	ISC
JNTH	**Nagotoyohara**	**0.73**	**311**	P	Pn		22 58 17.1	-0.1
JNTH				S	Sn		22 58 27.0	-0.2
JJT2	**Tamagusuku 2**	**0.81**	**277**	P	Pn		22 58 18.5	+0.2
JJT2				S	Sn		22 58 29.4	+0.2
JOW	**Kunigami**	**0.85**	**338**	P	Pn		22 58 19.2	+0.3
JOW				S	Sn		22 58 30.4	+0.1
JIH	**Iheya**	**1.16**	**329**	P	Pn		22 58 24.0	+0.9
JIH				S	Sn		22 58 39.0	+1.3
JOKE	**Okinoerabujima**	**1.32**	**357**	P	Pn		22 58 25.7	+0.4
JOKE				S	Sn		22 58 42.2	+0.6
JAGN	**Aguni-jima**	**1.37**	**294**	P	Pn		22 58 26.9	+1.0
JAGN				S	Sn		22 58 44.3	+1.5
JKE	**Kume jima 2**	**1.69**	**280**	P	Pn		22 58 30.4	+0.1
JKE				*eS*	Sn		22 58 51.1	+0.3
JTK	**Tokunoshima**	**1.76**	**9**	P	Pn		22 58 31.5	+0.2
JTK				S	Sn		22 58 51.5	-1.0
JAMN	**Amaminishikomi**	**2.25**	**12**	P	Pn		22 58 38.2	+0.2
JAMN				S	Sn		22 59 04.6	+0.2
JMZ	**Minamidaito 2**	**2.33**	**95**	P	Pn		22 58 35.9	-3.3
JMZ				S	Sn		22 58 59.8	-6.8
JAM	**Amami Oshima**	**2.51**	**20**	P	Pn		22 58 41.3	-0.3
JAM				S	Sn		22 59 10.4	-0.7
JOGS	**Gusukube**	**3.19**	**247**	P	Pn		22 58 50.7	-0.3
JIKM	**Ikemajima**	**3.26**	**251**	P	Pn		22 58 51.4	-0.5
JIRB	**Irabujima**	**3.36**	**250**	P	Pn		22 58 52.5	-0.8
JTJ	**Tarama**	**3.83**	**249**	P	Pn		22 58 58.6	-1.1
JISG	**Ishigakijimahi**	**4.18**	**251**	P	Pn		22 59 02.8	-1.7
JIJ	**Ishigaki jima**	**4.40**	**249**	P	Pn		22 59 05.8	-1.8
JKRS	**Kuro-shima**	**4.56**	**248**	P	Pn		22 59 08.4	-1.4

ISCJB ***30*** *22:58:03.6±0.5, 37.91S±0.03×177.62E±0.04, h76km±4km, mb3.9/5, Error ellipse: s-maj=6.0km s-min=5.0km az=142.9*
NEIC ***30*** *22:58:05.6, 37.82S×177.58E, h43km, ML4.2(WEL), After WEL.*
IDC ***30*** *22:58:05.8±1.4, 38.08S×177.38E, h62km±7km, mb3.6/5, mb1 3.9/6, mb1mx3.7/28, mbtmp3.9/6, MS3.5/2, Ms1 3.5/2, ms1mx2.9/26, Error ellipse: s-maj=28.3km s-min=23.7km az=120.0*
WEL ***30*** *22:58:05.6±0.2, 37.82S×177.58E, h43km±2km, ML4.2/21, Error ellipse: s-maj=1.5km s-min=1.1km az=0.0*
ISC 30 22:58:04.6±0.6, 37.89S±0.03×177.60E±0.03, h68km±5km, n208, σ1.922/185, mb3.8/5, 6C-15D, Off east coast of North Island

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op	ISC		h m s	ISC
HAZ	**Te Kaha**	**0.20**	**48**	P*	Pn		22 58 12.4	-2.4
HAZ				S*	**Sn**		**22 58 17.9**	**-4.5**
PKGZ	**Pakihiroa**	**0.38**	**90**	↑PN	**Pn**		**22 58 14.6**	**-1.5**
TWGZ	**Tauwhareparae**	**0.42**	**134**	↑PN	**Pn**		**22 58 16.4**	**-0.1**
TWGZ	**Tauwhareparae**	**0.42**	**134**	Pn	**Pn**		**22 58 16.4**	**-0.1**
MWZ	**Matawai**	**0.45**	**187**	↓P*	**Pn**		**22 58 16.1**	**-0.7**
MWZ					AML	AML	22 58 25.0	
MWZ					AML	AML	22 58 27.9	
MWZ					AML	AML	22 58 27.9	
MWZ					AML	AML	23 00 24.2	
MWZ	**Matawai**	**0.45**	**187**	P*	**Pn**		**22 58 16.1**	**-0.7**
WIZ	**White Island**	**0.49**	**318**	P*	**Pn**		**22 58 15.1**	**-1.9**
WIZ	**White Island**	**0.49**	**318**	P*	**Pn**		**22 58 15.1**	**-1.9**
URZ	**Urewera**	**0.54**	**226**	P	**Pn**		**22 58 16.9**	**-0.6**
	240nm,0.3s,baz=72,slow=2.5,SNR=1157							
URZ				S	**Sn**		**22 58 25.8**	**-1.3**
	273nm,0.3s,baz=150,slow=20,SNR=76							
URZ	**Urewera**	**0.54**	**226**	P*	**Pn**		**22 58 17.0**	**-0.6**
URZ				S*	**Sn**		**22 58 25.8**	**-1.3**
URZ					AML	AML	22 58 26.5	
PUZ	**Puketiti**	**0.55**	**110**	↑PN	**Pn**		**22 58 17.6**	**-0.1**
PUZ					SN	**Sn**	**22 58 28.5**	**+1.1**
PUZ					AML	AML	22 58 30.8	
PUZ	**Puketiti**	**0.55**	**110**	Pn	Pn		**22 58 17.6**	**-0.1**
PUZ					Sn	**Sn**	**22 58 28.5**	**+1.1**
TKGZ	**Te Karaka**	**0.58**	**161**	↓PN	**Pn**		**22 58 18.7**	**+0.7**
TKGZ	**Te Karaka**	**0.58**	**161**	Pn	**Pn**		**22 58 18.7**	**+0.7**
RAGZ	**Rawiri**	**0.62**	**194**	P*	**Pn**		**22 58 19.0**	**+0.4**
RAGZ	**Rawiri**	**0.62**	**194**	P*	**Pn**		**22 58 19.0**	**+0.4**
MXZ	**Matakaoa Point**	**0.65**	**60**	P*	**Pn**		**22 58 18.0**	**-0.7**
MXZ					AML	AML	22 58 32.3	
MXZ					AML	AML	22 58 32.3	
MXZ					AML	AML	22 58 32.3	
MXZ					AML	AML	22 58 32.3	
MXZ	**Matakaoa Point**	**0.65**	**60**	P*	**Pn**		**22 58 18.0**	**-0.7**
WMGZ	**Waiomatatini S**	**0.65**	**84**	↓PN	**Pn**		**22 58 18.9**	**+0.1**
WMGZ	**Waiomatatini S**	**0.65**	**84**	Pn	**Pn**		**22 58 18.9**	**+0.1**
EDRZ	**Edgecumbe**	**0.71**	**252**	P*	**Pn**		**22 58 19.3**	**-0.3**
EDRZ	**Edgecumbe**	**0.71**	**252**	P*	**Pn**		**22 58 19.3**	**-0.3**
MARZ	**Manawahe**	**0.74**	**262**	↓P*	**Pn**		**22 58 19.1**	**-0.7**
MARZ	**Manawahe**	**0.74**	**262**	P*	**Pn**		**22 58 19.1**	**-0.7**
CNGZ	**Carnagh Statio**	**0.76**	**141**	↓PN	**Pn**		**22 58 20.8**	**+0.7**
CNGZ	**Carnagh Statio**	**0.76**	**141**	Pn	**Pn**		**22 58 20.8**	**+0.7**
RIGZ	**Rimuhau**	**0.83**	**171**	↓PN	**Pn**		**22 58 21.5**	**+0.6**
OPRZ	**Ohinepanea**	**0.83**	**273**	P*	**Pn**		**22 58 19.7**	**-1.1**
OPRZ	**Ohinepanea**	**0.83**	**273**	Pn	**Pn**		**22 58 19.7**	**-1.1**
MUGZ	**Murupara**	**0.88**	**228**	P*	**Pn**		**22 58 21.4**	**-0.1**
SNGZ	**Shannon Statio**	**0.92**	**193**	↓PN	**Pn**		**22 58 23.3**	**+1.4**
SNGZ	**Shannon Statio**	**0.92**	**193**	Pn	**Pn**		**22 58 23.3**	**+1.4**
TARZ	**Mount Tarawera**	**0.93**	**248**	↓P*	**Pn**		**22 58 22.5**	**+0.3**
TARZ	**Mount Tarawera**	**0.93**	**248**	Pn	**Pn**		**22 58 22.5**	**+0.3**
RRRZ	**Republican Roa**	**0.97**	**242**	P*	**Pn**		**22 58 22.7**	**+0.1**
RRRZ	**Republican Roa**	**0.97**	**242**	P*	**Pn**		**22 58 22.7**	**+0.1**
LIRZ	**Lichensteins R**	**0.97**	**263**	↓P*	**Pn**		**22 58 22.6**	**0.0**
LIRZ	**Lichensteins R**	**0.97**	**263**	P*	**Pn**		**22 58 22.6**	**0.0**
HLRZ	**Highlands Stat**	**1.05**	**249**	P*	**Pn**		**22 58 23.9**	**+0.3**
PRGZ	**Paritu Road**	**1.06**	**168**	PN	**Pn**		**22 58 23.9**	**+0.2**
PRGZ	**Paritu Road**	**1.06**	**168**	Pn	**Pn**		**22 58 23.9**	**+0.2**
KARZ	**Kaharoa**	**1.08**	**263**	↓P*	**Pn**		**22 58 23.9**	**-0.1**
KARZ	**Kaharoa**	**1.08**	**263**	P*	**Pn**		**22 58 23.9**	**-0.1**
RAHZ	**Arahi**	**1.10**	**201**	PN	**Pn**		**22 58 25.4**	**+1.1**
RAHZ	**Arahi**	**1.10**	**201**	Pn	**Pn**		**22 58 25.4**	**+1.1**
PRRZ	**Plateau Road**	**1.13**	**237**	P*	**Pn**		**22 58 24.8**	**+0.2**
PRRZ	**Plateau Road**	**1.13**	**237**	Pn	**Pn**		**22 58 24.8**	**+0.2**
KNZ	**Kokohu**	**1.13**	**177**	↓PN	**Pn**		**22 58 24.8**	**+0.2**
KNZ					AML	AML	22 59 01.3	
KNZ					AML	AML	22 59 07.0	
KNZ	**Kokohu**	**1.13**	**177**	Pn	**Pn**		**22 58 24.8**	**+0.2**
HRRZ	**Handcock Road**	**1.15**	**244**	P*	**Pn**		**22 58 25.4**	**+0.4**
HRRZ	**Handcock Road**	**1.15**	**244**	Pn	**Pn**		**22 58 25.4**	**+0.4**
ALRZ	**Allen Road**	**1.20**	**235**	↓P*	**Pn**		**22 58 25.8**	**+0.2**
ALRZ	**Allen Road**	**1.20**	**235**	Pn	**Pn**		**22 58 25.8**	**+0.2**
WHHZ	**Waihua**	**1.22**	**194**	PN	**Pn**		**22 58 27.1**	**+1.3**
MHGZ	**Mahia Peninsul**	**1.28**	**169**	PN	**Pn**		**22 58 27.1**	**+0.4**
MHGZ	**Mahia Peninsul**	**1.28**	**169**	Pn	**Pn**		**22 58 27.1**	**+0.4**
WPRZ	**Whakapapatarin**	**1.30**	**240**	P*	**Pn**		**22 58 27.3**	**+0.5**
**MRHZ

NEZ	**North Egmont**	**3.08 242**	Pn	Pn	22 58 54.4	+3.5	
TIWZ	**Tintock**	**3.18 204**	PN	**Pn**	**22 58 51.3**	**-0.9**	
TIWZ			AML	AML	22 59 28.7		
TIWZ			AML	AML	22 59 35.2		
TIWZ	**Tintock**	**3.18 204**	Pn	**Pn**	**22 58 51.3**	**-0.9**	
MRZ	**Mangatainoka R**	**3.18 209**	PN	**Pn**	**22 58 51.2**	**-1.0**	
MRZ	**Mangatainoka R**	**3.18 209**	Pn	**Pn**	**22 58 51.2**	**-1.0**	
CPWZ	**Castlepoint**	**3.21 199**	PN	**Pn**	**22 58 51.7**	**-0.9**	
CPWZ	**Castlepoint**	**3.21 199**	Pn	**Pn**	**22 58 51.7**	**-0.9**	
HOWZ	**Holdsworth Sta**	**3.41 208**	PN	**Pn**	**22 58 53.6**	**-1.8**	
HOWZ	**Holdsworth Sta**	**3.41 208**	Pn	**Pn**	**22 58 53.6**	**-1.8**	
TMWZ	**Te Maipa**	**3.48 202**	PN	**Pn**	**22 58 54.4**	**-1.9**	
TMWZ	**Te Maipa**	**3.48 202**	Pn	**Pn**	**22 58 54.4**	**-1.9**	
OGWZ	**Otaki Gorge**	**3.48 212**	PN	**Pn**	**22 58 55.2**	**-1.1**	
OGWZ	**Otaki Gorge**	**3.48 212**	Pn	**Pn**	**22 58 55.2**	**-1.1**	
KIW	**Kapiti Island**	**3.63 214**	PN	**Pn**	**22 58 57.3**	**-1.0**	
KIW			AML	AML	22 59 55.7		
KIW			AML	AML	23 00 01.4		
KIW	**Kapiti Island**	**3.63 214**	Pn	**Pn**	**22 58 57.3**	**-1.0**	
MTW	**Mount Morrison**	**3.65 206**	PN	**Pn**	**22 58 56.5**	**-2.1**	
MTW			AML	AML	22 59 38.9		
MTW			AML	AML	22 59 40.3		
MTW	**Mount Morrison**	**3.65 206**	Pn	**Pn**	**22 58 56.5**	**-2.1**	
CAW	**Cannon Point**	**3.77 211**	PN	**Pn**	**22 58 58.2**	**-1.9**	
CAW			AML	AML	22 59 46.6		
CAW			AML	AML	22 59 47.7		
CAW	**Cannon Point**	**3.77 211**	Pn	**Pn**	**22 58 58.2**	**-1.9**	
TRWZ	**Traveller**	**3.80 202**	PN	**Pn**	**22 58 58.6**	**-2.1**	
TRWZ			AML	AML	22 59 43.3		
TRWZ			AML	AML	22 59 43.5		
TRWZ	**Traveller**	**3.80 202**	Pn	**Pn**	**22 58 58.6**	**-2.1**	
PAWZ	**Paruwai Farm**	**3.87 205**	PN	Pn	22 58 59.3	-2.4	
PAWZ			AML	AML	22 59 45.2		
PAWZ			AML	AML	22 59 47.4		
PAWZ	**Paruwai Farm**	**3.87 205**	Pn	Pn	22 58 59.3	-2.4	
MSWZ	**Moikau Station**	**3.96 207**	PN	**Pn**	**22 59 00.7**	**-2.2**	
MSWZ			AML	AML	22 59 52.5		
MSWZ			AML	AML	23 00 24.3		
MSWZ	**Moikau Station**	**3.96 207**	Pn	**Pn**	**22 59 00.7**	**-2.2**	
WEL	**Wellington**	**4.04 212**	AML	AML	22 59 54.7		
WEL			AML	AML	23 00 12.4		
DUWZ	**D'Urville Isla**	**4.08 223**	PN	**Pn**	**22 59 03.3**	**-1.1**	
DUWZ	**D'Urville Isla**	**4.08 223**	Pn	**Pn**	**22 59 03.3**	**-1.1**	
PLWZ	**Palliser**	**4.10 205**	PN	Pn	22 59 02.1	-2.7	
PLWZ	**Palliser**	**4.10 205**	Pn	Pn	22 59 02.1	-2.7	
BHW	**Baring Head**	**4.10 210**	PN	Pn	22 59 02.3	-2.4	
BHW			AML	AML	22 59 52.0		
BHW			AML	AML	23 00 22.9		
BHW	**Baring Head**	**4.10 210**	Pn	Pn	22 59 02.4	-2.4	
TCW	**Tory Channel**	**4.20 217**	PN	**Pn**	**22 59 04.1**	**-2.0**	
TCW			AML	AML	22 59 55.3		
TCW			AML	AML	23 00 12.2		
TCW	**Tory Channel**	**4.20 217**	Pn	**Pn**	**22 59 04.1**	**-2.0**	
TUWZ	**Tuamarina**	**4.53 217**	PN	**Pn**	**22 59 08.6**	**-1.9**	
TUWZ			AML	AML	23 00 19.2		
TUWZ			AML	AML	23 00 20.6		
TUWZ	**Tuamarina**	**4.53 217**	Pn	**Pn**	**22 59 08.6**	**-1.9**	
NNZ	**Nelson**	**4.66 223**	PN	Pn	**22 59 11.0**	**-1.4**	
NNZ	**Nelson**	**4.66 223**	Pn	**Pn**	**22 59 11.0**	**-1.4**	
BSWZ	**Blackbirch Sta**	**4.78 216**	PN	Pn	**22 59 12.0**	**-2.0**	
BSWZ			AML	AML	23 00 28.6		
BSWZ	**Blackbirch Sta**	**4.78 216**	Pn	Pn	**22 59 12.0**	**-2.0**	
QRZ	**Quartz Range**	**4.91 232**	PN	**Pn**	**22 59 14.5**	**-1.3**	
QRZ	**Quartz Range**	**4.91 232**	Pn	**Pn**	**22 59 14.5**	**-1.3**	
THZ	**Tophouse**	**5.29 222**	⇑PN	**Pn**	**22 59 19.3**	**-1.8**	
THZ	**Tophouse**	**5.29 222**	Pn	**Pn**	**22 59 19.3**	**-1.8**	
KHZ	**Kahutara**	**5.49 213**	PN	Pn	22 59 21.1	-2.6	
KHZ	**Kahutara**	**5.49 213**	*e*Pn	**Pn**	**22 59 22.4**	**-1.3**	
114nm,0.3s							
OXZ	**Oxford**	**6.88 216**	PN	Pn	22 59 38.7	-4.1	
OXZ	**Oxford**	**6.88 216**	Pn	Pn	22 59 38.7	-4.1	
MQZ	**McQueen's Vall**	**6.92 211**	PN	Pn	22 59 39.0	-4.3	
MQZ	**McQueen's Vall**	**6.92 211**	Pn	Pn	22 59 39.0	-4.3	
CTZ	**Chatham Island**	**7.30 145**	PN	**Pn**	**22 59 48.4**	**-0.1**	
CTZ	**Chatham Island**	**7.30 145**	Pn	**Pn**	**22 59 48.4**	**-0.1**	
RPZ	**Rata Peaks**	**7.65 218**	P	**Pn**	**22 59 52.0**	**-1.3**	
1.7nm,0.3s,baz=31,slow=15,SNR=6.7							
RPZ			S	Sn	23 01 11.8	-6.6	
4.6nm,0.3s,baz=314,slow=21,SNR=11							
RPZ	**Rata Peaks**	**7.65 218**	PN	**Pn**	**22 59 51.3**	**-2.0**	
RPZ	**Rata Peaks**	**7.65 218**	*e*Pn	**Pn**	**22 59 51.8**	**-1.5**	
FOZ	**Fox Glacier**	**8.17 224**	PN	**Pn**	**22 59 59.0**	**-1.3**	
FOZ	**Fox Glacier**	**8.17 224**	Pn	**Pn**	**22 59 59.0**	**-1.3**	
LBZ	**Lake Benmore**	**8.57 218**	PN	Pn	23 00 02.1	-3.7	
LBZ	**Lake Benmore**	**8.57 218**	Pn	Pn	23 00 02.1	-3.7	
ODZ	**Otahua Downs**	**8.85 214**	PN	Pn	23 00 05.7	-3.9	
ODZ	**Otahua Downs**	**8.85 214**	Pn	Pn	23 00 05.8	-3.9	
JCZ	**Jackson Bay**	**9.09 224**	PN	Pn	23 00 09.3	-3.6	
JCZ	**Jackson Bay**	**9.09 224**	Pn	Pn	23 00 09.3	-3.6	
RAO	**Raoul Island**	**9.39 25**	LR	LR	23 04 00.4		
comp=Z,689nm,18.2s,baz=70,slow=37							
TUZ	**Tuapeka**	**10.01 214**	PN	Pn	23 00 22.4	-3.0	
TUZ	**Tuapeka**	**10.01 214**	Pn	Pn	23 00 22.4	-3.0	
STKA	**Stephens Creek**	**30.01 271**	P	**P**	**23 04 08.3**	**+1.4**	
1.2nm,0.8s,baz=119,slow=16,SNR=2.3							
PPT	**Papeete**	**15.14 64**	LR	LR	23 17 33.3		
comp=Z,28nm,20.3s,baz=322,slow=33							
ASAR	**Alice Springs**	**39.77 278**	P	**P**	**23 05 32.0**	**+1.0**	
1.2nm,0.6s,baz=125,slow=8.2,SNR=23							
ASAR			PcP	**PcP**	**23 07 35.4**	**-0.8**	
0.3nm,0.6s,baz=119,slow=3.7,SNR=4.1							
VNDA	**Vanda**	**40.31 185**	P	**P**	**23 05 35.9**	**+1.2**	
1.0nm,1.0s,baz=12,slow=6.5,SNR=3.3							
WRA	**Warramunga Arr**	**41.46 283**	P	**P**	**23 05 45.2**	**+0.3**	
0.6nm,0.4s,baz=123,slow=7.6,SNR=8.3							
CMAR	**Chiang Mai Arr**	**92.56 291**	P	**P**	**23 11 10.6**	**+1.8**	
1.4nm,0.7s,baz=146,slow=4.1,SNR=11							
ARCES	**ARCESS Array B**	**144.92 343**	PKPbc	**PKPdf**	**23 17 33.6**	**+0.8**	
1.4nm,0.8s,baz=34,slow=3.4,SNR=8.2							
FINES	**FINESS Array B**	**150.52 332**	PKPbc	**PKPab**	**23 17 50.2**	**-4.2**	
1.4nm,0.4s,baz=56,slow=5.2,SNR=9.6							
BRTR	**Keskin Array B**	**151.97 285**	PKPbc	**PKPbc**	**23 17 51.9**	**0.0**	
0.7nm,0.8s,baz=122,slow=5.4,SNR=5.7							
TORD	**Torodi Ar. Bea**	**155.09 190**	PKPbc	PKPdf	23 18 00.8	+11	
0.2nm,0.3s,baz=163,slow=1.5,SNR=8.5							

NIED ***30*** *23:03:00,39.˚50N×142.˚40E,h20km,Mw3.6 Best double couple: M₀2.59000×10¹⁴ NP1:φs173.00000°,δ12.00000°, λ14.00000°. NP2:φs69.00000°,δ87.00000°,λ101.00000°.*
ISCJB ***30*** *23:03:57.4±1.5,39.˚48N±0.˚03×142.˚48E±0.˚10, h16km±10km,mb3.2/4,Error ellipse: s-maj=12.9km s-min=5.3km az=12.1*
JMA ***30*** *23:03:59.4±0.1,39.˚51N×142.˚37E,h30km±1km,M3.8*
JMA Felt I J1.
IDC ***30*** *23:04:01.5±2.9,39.˚45N×142.˚66E,h53km±23km,mb3.1/4, mb1 3.2/6,mb1mx3.0/50,mbtmp3.3/6,ML3.3/2,MS2.7/1, Ms1 2.7/1,ms1mx2.1/17,Error ellipse: s-maj=35.1km s-min=11.8km az=110.0*

ISC 30 23:03:58.8±1.4,39.˚49N±0.˚04×142.˚40E±0.˚08,h19km±3km, n22,σ1s50/25,mb3.3/4,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MIYJ	**Miyakonagasawa**	**0.46**	**281**	P	**Pb**	**23 04 08.6**	**+0.3**
MIYJ				S	**Sb**	**23 04 14.7**	**-0.1**
JTH	**Tanohata**	**0.61**	**317**	P	**Pb**	**23 04 10.5**	**-0.3**
JTH				*e*S	**Sg**	**23 04 19.1**	**-0.1**
OFUJ	**Ofunato**	**0.70**	**235**	P	**Pg**	**23 04 12.4**	**-0.2**
OFUJ				S	**Sb**	**23 04 21.5**	**-0.1**
JOM	**Ohasama**	**0.86**	**269**	P	**Pb**	**23 04 14.9**	**-0.2**
JOM				S	**Sb**	**23 04 25.8**	**-0.4**
JKZ	**Kuzumaki**	**0.96**	**301**	P	**Pb**	**23 04 16.4**	**-0.5**
JKZ				S	**Sb**	**23 04 28.6**	**-0.7**
JMK	**Ichinoseki**	**1.07**	**240**	P	**Pb**	**23 04 17.9**	**-0.7**
JMK				S	**Sb**	**23 04 31.4**	**-0.7**
JANG	**Nango**	**1.12**	**323**	P	**Pn**	**23 04 18.1**	**-1.3**
JANG				S	**Sb**	**23 04 32.5**	**-1.1**
JIO	**Ouri**	**1.32**	**219**	P	**Pn**	**23 04 21.4**	**-0.8**
JIO				S	**Sn**	**23 04 37.5**	**-1.8**
JRG	**Rokugo**	**1.37**	**267**	P	**Pb**	**23 04 23.9**	**0.0**
MJAR	**Matsushiro Arr**	**4.43**	**230**	P	**Pn**	**23 05 07.7**	**+2.7**
0.6nm,0.3s,baz=38,slow=12,SNR=7.5							
MJAR				S	**Sn**	**23 05 60.0**	**+3.9**
0.7nm,0.3s,baz=117,slow=25,SNR=3.0							
ASAJ	**Asahikawa**	**4.62**	**2**	P	**Pn**	**23 05 08.7**	**+1.1**
1.3nm,0.3s,baz=196,slow=15,SNR=9.5							
ASAJ				S	**Sn**	**23 06 03.2**	**+2.5**
0.3nm,0.3s,baz=93,slow=20,SNR=2.5							
JCJ	**Chichijima**	**12.36**	**181**	LR	LR	23 14 03.4	
comp=Z,36nm,20.0s,baz=174,slow=49							
SONM	**Songino Array**	**27.15**	**300**	P	**P**	**23 09 43.0**	**+2.1**
0.2nm,0.4s,baz=95,slow=12,SNR=2.9							
H11N2	**WAKE ISLAND Hy**	**28.85**	**126**	T	T	23 40 20.4	
baz=318,slow=75,SNR=604							
H11N1	**WAKE ISLAND Hy**	**28.86**	**126**	T	T	23 40 23.9	
baz=318,slow=75,SNR=474							
H11N3	**WAKE ISLAND Hy**	**28.86**	**126**	T	T	23 40 26.4	
baz=318,slow=75,SNR=294							
H11S1	**WAKE ISLAND Hy**	**29.64**	**128**	T	T	23 41 23.3	
baz=320,slow=76,SNR=28							
H11S3	**WAKE ISLAND Hy**	**29.65**	**128**	T	T	23 41 23.7	
baz=320,slow=76,SNR=39							
H11S2	**WAKE ISLAND Hy**	**29.66**	**128**	T	T	23 41 24.9	
baz=320,slow=76,SNR=27							
MKAR	**Makanchi Array**	**43.52**	**300**	P	**P**	**23 12 00.1**	**-0.9**
0.1nm,0.4s,baz=92,slow=8.8,SNR=2.9							
KURBB	**Kurchatov Arra**	**45.14**	**306**	P	**P**	**23 12 13.1**	**-0.8**
0.5nm,0.5s,baz=80,slow=8.0,SNR=3.4							
WRA	**Warramunga Arr**	**59.60**	**189**	P	**P**	**23 13 59.9**	**-1.5**
0.2nm,0.5s,baz=6.6,slow=6.9,SNR=6.7							

NIED ***30*** *23:08:00,36.˚40N×141.˚00E,h8km,Mw4.0 Best double couple: M₀9.77000×10¹⁴ NP1:φs307.00000°,δ58.00000°, λ175.00000°. NP2:φs39.00000°,δ86.00000°,λ32.00000°.*
NEIC ***30*** *23:08:08.5±0.8,34.˚33N×140.˚42E,h35km±8km,mb4.2/17, Error ellipse: s-maj=9.5km s-min=7.3km az=65.0*
NEIC Recorded [2 JMA] in Chiba and Ibaraki.
ISCJB ***30*** *23:08:13.8±0.8,36.˚40N±0.˚04×140.˚95E±0.˚06,h29km±5km, mb4.1/38,MS3.3/3,Error ellipse: s-maj=9.0km s-min=5.7km az=26.5*
JMA ***30*** *23:08:13.3±0.1,36.˚40N×141.˚01E,h20km±1km,M4.2*
JMA Felt II J1.
IDC ***30*** *23:08:18.8±1.9,36.˚33N×140.˚83E,h54km±17km,mb3.6/24, mb1 3.8/29,mb1mx3.7/57,mbtmp3.9/29,ML3.5/4,MS3.2/7, Ms1 3.2/7,ms1mx2.8/51,Error ellipse: s-maj=14.8km s-min=9.0km az=66.0*

ISC 30 23:08:13.3±1.5,36.˚40N±0.˚04×140.˚98E±0.˚05,h13km±9km, n75,σ1s22/59,mb4.0/38,MS3.1/3,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHO	**Hitachi**	**0.39**	**303**	P	**Pg**	**23 08 21.5**	**+0.3**
JHO				*e*S	**Sb**	**23 08 28.3**	**+0.2**
JYT	**Yasato**	**0.66**	**255**	P	**Pg**	**23 08 26.2**	**+0.1**
JYT				S	**Sg**	**23 08 35.4**	**+0.7**
ONAJ	**Iwakimizuishiy**	**0.72**	**349**	P	**Pg**	**23 08 26.8**	**-0.5**
ONAJ				*e*S	**Sb**	**23 08 37.7**	**+0.2**
JFK	**Kawauchi**	**0.97**	**355**	P	**Pb**	**23 08 30.5**	**-1.5**
JAG	**Ashikaga**	**1.23**	**272**	P	**Pn**	**23 08 34.9**	**-1.3**
MJAR	**Matsushiro Arr**	**2.24**	**275**	P	**Pn**	**23 08 50.1**	**+0.1**
26nm,0.3s,baz=90,slow=8.8,SNR=126							
MJAR				S	**Sn**	**23 09 18.2**	**+0.6**
45nm,0.3s,baz=96,slow=27,SNR=6.7							
MJAR				LR	LR	23 09 48.0	
comp=Z,365nm,18.9s,baz=105,slow=43							
MAJO	**Matsushiro**	**2.24**	**275**	*e*Pn	**Pn**	**23 08 50.6**	**+0.6**
MAT	**Matsushiro**	**2.24**	**275**	P	**Pn**	**23 08 50.0**	**-0.1**
MAT				S	**Sb**	**23 09 20.7**	**-0.5**
JHJ	**Hachijo jima 2**	**3.41**	**197**	P	**Pn**	**23 09 06.6**	**+0.4**
29nm,0.3s,baz=311,slow=19,SNR=8.4							
JHJ				S	**Sn**	**23 09 46.4**	**-0.2**
40nm,0.3s,baz=59,slow=19,SNR=4.4							
ERM	**Erimo**	**5.86**	**16**	*e*Pn	Pg	23 10 02.3	-3.2
ASAJ	**Asahikawa**	**7.81**	**9**	P	**Pn**	**23 10 05.9**	**-0.7**
0.7nm,0.3s,baz=221,slow=17,SNR=4.4							
ASAJ				S	**Sn**	**23 11 33.3**	**-1.6**
0.2nm,0.3s,baz=179,slow=20,SNR=2.0							
ASAJ				LR	LR	23 14 20.3	
comp=Z,84nm,18.9s,baz=203,slow=46							
JNU	**Nakatsue**	**8.93**	**251**	LR	LR	23 14 03.6	
comp=Z,172nm,18.5s,baz=121,slow=39							
JCJ	**Chichijima**	**9.33**	**173**	P	**Pn**	**23 10 25.5**	**-2.0**
JCJ				S	Sn	23 12 03.7	-8.6
5.2nm,0.3s,baz=295,slow=24,SNR=3.5							
USRK	**Ussuriysk Ar.**	**10.38**	**321**	P	**Pn**	**23 10 43.8**	**+2.0**
0.1nm,0.3s,baz=139,slow=11,SNR=2.3							
KSRS	**Korea Array**	**10.51**	**280**	P	**Pn**	**23 10 45.0**	**+1.4**
0.2nm,0.3s,baz=92,slow=14,SNR=4.9							
KSRS				LR	LR	23 14 43.0	
comp=Z,82nm,19.9s,baz=84,slow=37							
INCN	**Inchon**	**11.53**	**280**	*e*Pn	Pn	23 10 51.8	-5.9
MDJ	**Mudanjiang**	**11.93**	**317**	*e*Pn	Pn	23 11 14.4	+11
KLR	**Kul'dur**	**14.49**	**335**	P	**Pn**	**23 11 41.1**	**+3.2**
0.1nm,0.3s,baz=155,slow=17,SNR=2.3							
BJT	**Baijiatuan**	**19.81**	**288**	*e*P	**P**	**23 12 39.6**	**-3.9**
4.1nm,0.5s							
HIA	**Hailar**	**20.11**	**316**	*e*P	Pn	23 12 52.7	+4.1
5.3nm,0.5s							
MA2	**Magadan**	**24.05**	**12**	LR	LR	23 23 36.9	
comp=Z,29nm,19.2s,baz=148,slow=38							
MA2	**Magadan**	**24.05**	**12**	*e*P	P	23 13 39.3	+11
2.7nm,0.6s							
SEY	**Seymchan**	**27.48**	**11**	P	**P**	**23 14 01.7**	**+2.8**
3.2nm,0.8s,baz=269,slow=5.3,SNR=4.6							
SONM	**Songino Array**	**27.86**	**305**	P	**P**	**23 14 01.7**	**-0.9**
0.5nm,0.5s,baz=106,slow=8.4,SNR=6.5							
H11N2	**WAKE ISLAND Hy**	**28.13**	**119**	T	T	23 43 27.6	
baz=315							
H11N1	**WAKE ISLAND Hy**	**28.14**	**119**	T	T	23 43 28.7	
baz=315,slow=74,SNR=80							
H11N3	**WAKE ISLAND Hy**	**28.15**	**119**	T	T	23 43 29.9	
baz=315,slow=74							
H11S1	**WAKE ISLAND Hy**	**28.82**	**121**	T	T	23 44 17.9	
baz=314,slow=76,SNR=421							
H11S3	**WAKE ISLAND Hy**	**28.82**	**121**	T	T	23 44 17.1	
baz=314,slow=76,SNR=219							
H11S2	**WAKE ISLAND Hy**	**28.83**	**121**	T	T	23 44 19.1	
baz=314,slow=76,SNR=202							
BILL	**Bilibino**	**34.74**	**16**	*e*P	P	23 15 12.2	+9.4
1.3nm,0.4s							
TIXI	**Tiksi**	**35.88**	**353**	P	**P**	**23 15 12.0**	**-0.5**
1.4nm,0.6s,baz=137,slow=7.5,SNR=4.0							
SIJI	**Sorong**	**38.16**	**196**	LR	LR	23 27 26.7	
comp=Z,298nm,21.6s,slow=30							
CMAR	**Chiang Mai Arr**	**41.00**	**256**	LR	LR	23 35 22.8	
comp=Z,23nm,18.4s,baz=295,slow=40							
ZALV	**Zalesovo Beam**	**42.09**	**313**	P	**P**	**23 16 04.5**	**-0.2**
4.0nm,0.6s,baz=96,slow=7.0,SNR=18							
MKAR	**Makanchi Array**	**44.16**	**303**	P	**P**	**23 16 21.5**	**-0.2**
1.2nm,0.8s,baz=89,slow=10.0,SNR=13							
KURK	**Kurchatov**	**46.05**	**309**	*e*P	**P**	**23 16 36.0**	**-0.5**
12nm,0.7s							
KURBB	**Kurchatov Arra**	**46.12**	**308**	P	**P**	**23 16 36.2**	**-0.8**
1.6nm,0.4s,baz=82,slow=7.4,SNR=19							
GUN	**Gumba**	**46.87**	**276**	*e*P	**P**	**23 16 44.1**	**+0.4**
6.1nm,0.5s							
KKN	**Kakani**	**47.40**	**276**	*e*P	P	23 16 44.4	-3.3
6.1nm,0.5s							
GKN	**Gorkha**	**47.83**	**277**	*e*P	**P**	**23 16 50.3**	**-0.6**
11nm,0.7s							
COLD	**Coldfoot**	**48.88**	**29**	P	P	23 17 03.8	+5.5
1.1nm,0.7s							
PYUN	**Piuthan**	**49.11**	**278**	*e*P	**P**	**23 17 01.2**	**+0.3**
TKM2	**Tokmak 2**	**49.63**	**299**	*e*P	**P**	**23 17 02.6**	**-2.0**
2.0nm,0.5s							
COLA	**College**	**49.80**	**32**	*e*P	P	23 17 13.4	+8.1
4.6nm,0.3s							
ILAR	**Eielson Array**	**50.22**	**32**	P	**P**	**23 17 09.4**	**+0.8**
1.0nm,0.7s,baz=266,slow=6.2,SNR=13							
AAK	**Ala-Archa**	**50.49**	**299**	*e*P	**P**	**23 17 08.2**	**-3.0**
0.6nm,0.6s							
BVAR	**Borovoye Array**	**50.74**	**313**	P	**P**	**23 17 12.2**	**-0.5**
0.6nm,0.5s,baz=85,slow=7.8,SNR=3.7							
EKS2	**Erkin-Say**	**50.98**	**299**	*e*P	P	23 17 10.6	-4.2
0.4nm,0.5s							
INK	**Inuvik**	**55.11**	**27**	P	**P**	**23 17 45.7**	**+1.1**
1.1nm,0.6s,baz=306,slow=7.4,SNR=9.1							
WRA	**Warramunga Arr**	**56.38**	**188**	P	**P**	**23 17 53.9**	**-0.4**
1.0nm,0.4s,baz=4.4,slow=7.2,SNR=36							
ARU	**Arti**	**56.61**	**319**	P	**P**	**23 17 55.3**	**-0.3**
2.9nm,0.4s,baz=84,slow=6.1,SNR=7.0							
ARU	**Arti**	**56.61**	**319**	*e*P	**P**	**23 17 55.3**	**-0.3**
5.9nm,0.8s							
ABKAR	**Akbulak array**	**58.08**	**310**	*e*P	**P**	**23 18 05.7**	**-0.4**
1.0nm,0.4s							
AKTO	**Aktyubinsk**	**58.84**	**312**	P	**P**	**23 18 11.3**	**-0.2**
0.8nm,0.6s,baz=102,slow=14,SNR=3.6							
WRAK	**Wrangell Islan**	**58.86**	**40**	*e*P	P	23 18 19.1	+7.7
2.1nm,0.4s							
ASAR	**Alice Springs**	**60.11**	**187**	P	**P**	**23 18 20.1**	**-0.3**
0.5nm,0.6s,baz=16,slow=6.5,SNR=12							
ARCES	**ARCESS Array B**	**64.47**	**339**	P	**P**	**23 18 48.9**	**-0.2**
1.5nm,0.9s,baz=50,slow=9.9,SNR=3.2							
YKA	**Yellowknife Ar**	**64.53**	**30**	P	**P**	**23 18 50.5**	**+0.9**
0.5nm,0.7s,baz=304,slow=6.7,SNR=9.0							
AFI	**Afiamalu**	**67.00**	**129**	P	**P**	**23 19 07.1**	**+1.0**
12nm,0.6s,baz=350,slow=11,SNR=2.8							
STKA	**Stephens Creek**	**67.92**	**179**	P	**P**	**23 19 11.5**	**0.0**
0.6nm,0.5s,baz=77,slow=24,SNR=2.7							
FINES	**FINESS Array B**	**69.21**	**332**	P	**P**	**23 19 19.0**	**-0.4**
1.5nm,0.8s,baz=47,slow=8.4,SNR=5.5							
KBZ	**Khabaz**	**71.05**	**311**	P	**P**	**23 19 31.2**	**+0.3**
1.5nm,0.7s,baz=14,slow=4.9,SNR=6.3							
AKASG	**Malin Array Be**	**74.59**	**322**	P	**P**	**23 19 51.2**	**-0.5**
0.6nm,0.3s,baz=46,slow=6.2,SNR=7.9							
NB2	**NORSAR Subarra**	**74.64**	**337**	P	**P**	**23 19 50.6**	**-1.4**
comp=Z,1.5nm,0.9s,baz=41,slow=5.9							
NOA	**NORSAR Array B**	**74.64**	**337**	P	**P**	**23 19 52.0**	**0.0**
comp=Z,0.8nm,0.7s,baz=39,slow=5.7,SNR=4.5							
EGMT	**Eagleton**	**74.98**	**41**	*e*P	P	23 19 57.6	+3.3
comp=Z,24nm,0.8s							
NVAR	**Mina Array Bea**	**75.65**	**53**	P	**P**	**23 20 00.6**	**+2.2**
comp=Z,0.6nm,0.7s,baz=294,slow=4.5,SNR=3.3							
R11A	**Troy Canyon, C**	**77.43**	**52**	*e*P	**P**	**23 20 09.3**	**+0.8**
comp=Z,0.7nm,0.6s							
PDAR	**Pinedale Array**	**78.36**	**45**	P	**P**	**23 20 15.2**	**+1.5**
comp=Z,0.5nm,0.5s,baz=285,slow=3.1,SNR=5.2							
BRTR	**Keskin Array B**	**79.01**	**311**	P	**P**	**23 20 16.6**	**-0.5**
comp=Z,0.4nm,0.7s,baz=126,slow=6.3,SNR=3.8							
GERES	**GERESS Array B**	**83.07**	**328**	P	**P**	**23 20 38.9**	**+0.3**
comp=Z,0.3nm,0.4s,baz=49,slow=9.2,SNR=3.5							
TXAR	**Lajitas Array**	**90.79**	**52**	P	P	23 21 22.9	+6.3
comp=Z,0.4nm,0.6s,baz=316,slow=3.8,SNR=3.8							
TORD	**Torodi Ar. Bea**	**117.53**	**314**	PKP	**PKPdf**	**23 26 59.7**	**+0.3**
comp=Z,0.1nm,0.6s,baz=61,slow=3.3,SNR=2.6							
LPAZ	**La Paz**	**147.32**	**60**	PKPbc	**PKPbc**	**23 27 57.9**	**+0.1**
comp=Z,0.4nm,0.5s,baz=217,slow=3.6,SNR=2.5							

JMA 30 23:10:20.6±0.1,37.˚63N×141.˚74E,h26km±2km,M3.7, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**0.74**	**249**	P	Pb	23 10 34.6	-0.2
JFK				S	Sb	23 10 43.9	-0.6
JMM	**Marumori**	**0.79**	**288**	P	Pb	23 10 35.5	-0.2
JMM				S	Sb	23 10 45.2	-0.7
JIO	**Ouri**	**0.88**	**340**	P	Pb	23 10 36.7	-0.5
JIO				S	Sb	23 10 47.3	-1.3
ONAJ	**Iwakimizuishiy**	**0.92**	**235**	P	Pn	23 10 37.3	-0.6
JFT	**Otama**	**1.12**	**265**	P	Pb	23 10 41.2	-0.1
JFT				*e*S	Sn	23 10 55.0	-0.2
JOU	**Okura**	**1.12**	**311**	P	Pb	23 10 41.2	-0.2
JOU				S	Sn	23 10 55.3	0.0
JHO	**Hitachi**	**1.38**	**223**	P	Pn	23 10 44.1	-0.1
JHO				S	Sn	23 10 59.9	-1.7
JYS	**Shirataka**	**1.45**	**295**	P	Pb	23 10 46.7	-0.2
JYS				S	Sb	23 11 04.6	-0.3

**IDC 30 23:14:21.9±1.9,15.˚56S×176.˚26W,h311km±39km, mb3

λ-173.00000°. NP2:ϕ±215.00000°, δ85.00000°, λ-44.00000°.

*ISCJB **30** 23:24:20.2±1.1, 36°.32N±0°.04×141°.11E±0°.05, h6km±6km, mb3.8/22, MS3.0/1, Error ellipse: s-maj=6.9km s-min=5.9km az=15.6*

*JMA **30** 23:24:23.0, 36°.40N×141°.00E, h20km±1km, M4.3*

JMA Felt II J1.

*IDC **30** 23:24:27.4±1.8, 36°.38N×140°.74E, h41km±17km, mb3.6/21, mb1 3.8/27, mb1mx3.7/52, mbtmp3.8/27, ML3.5/5, MS3.0/4, Ms1 3.0/4, ms1mx2.6/48, Error ellipse: s-maj=17.6km s-min=10.8km az=85.0*

ISC 30 23:24:21.6±1.9, 36°.36N×140°.99E±0°.06, h4km±11km, n44, σ1§20/42, mb3.9/22, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JHO	**Hitachi**	**0.42**	**306**	P	**Pg**	**23 24 31.1**	**+1.4**
JHO				S	**Sb**	**23 24 37.1**	**-1.3**
JYT	**Yasato**	**0.66**	**259**	P	**Pg**	**23 24 35.8**	**+1.6**
JYT				S	**Sb**	**23 24 45.5**	**+0.3**
ONAJ	**Iwakimizuishiy**	**0.76**	**348**	P	**Pg**	**23 24 36.5**	**+0.4**
JFK	**Kawauchi**	**1.01**	**355**	P	**Pg**	**23 24 40.1**	**-0.8**
JSB	**Shiboa**	**1.05**	**305**	P	**Pg**	**23 24 42.3**	**+0.5**
JSB				S	**Sb**	**23 24 56.6**	**0.0**
MJAR	**Matsushiro Arr**	**2.25**	**275**	P	**Pn**	**23 24 59.8**	**+0.1**
	21nm,0.3s,baz=89,slow=8.7,SNR=150						
MJAR				S	**Sb**	**23 25 30.6**	**-0.5**
	34nm,0.3s,baz=91,slow=30,SNR=11						
MJAR				LR	LR	23 25 57.4	
	comp=Z,274nm,18.3s,baz=85,slow=45						
MAT	**Matsushiro**	**2.25**	**275**	P	**Pn**	**23 24 59.9**	**+0.2**
MAT				S	**Sb**	**23 25 32.0**	**+0.9**
JHJ	**Hachijo jima 2**	**3.38**	**197**	P	**Pn**	**23 25 16.3**	**+1.1**
	25nm,0.3s,baz=272,slow=13,SNR=8.0						
JHJ				S	**Sn**	**23 25 56.6**	**+0.7**
	28nm,0.3s,baz=270,slow=20,SNR=4.2						
ASAJ	**Asahikawa**	**7.84**	**8**	P	Pn	23 26 19.8	+3.4
	2.0nm,0.3s,baz=218,slow=9.7,SNR=6.2						
ASAJ				S	**Sn**	**23 27 50.0**	**+4.4**
	0.2nm,0.3s,baz=192,slow=20,SNR=2.4						
ASAJ				LR	LR	23 29 42.7	
	comp=Z,75nm,19.4s,baz=348,slow=40						
JNU	**Nakatsue**	**8.93**	**252**	P	**Pn**	**23 26 29.1**	**-2.3**
	0.1nm,0.3s,baz=277,slow=4.2,SNR=2.2						
JNU				LR	LR	23 30 13.3	
	comp=Z,144nm,19.0s,baz=115,slow=40						
JCJ	**Chichijima**	**9.29**	**173**	P	**Pn**	**23 26 35.0**	**-1.4**
	9.6nm,0.3s,baz=76,slow=20,SNR=7.5						
JCJ				S	Sn	23 28 11.5	-10
	3.0nm,0.3s,baz=285,slow=14,SNR=2.3						
USRK	**Ussuriysk Ar.**	**10.41**	**321**	P	**Pn**	**23 26 51.4**	**-0.3**
	baz=138,slow=37,SNR=2.2						
KSRS	**Korea Array**	**10.52**	**280**	P	**Pn**	**23 26 52.1**	**-1.1**
	0.2nm,0.3s,baz=88,slow=14,SNR=3.5						
KLR	**Kul'dur**	**14.53**	**335**	P	P	23 27 51.2	-3.4
	0.1nm,0.3s,baz=162,slow=20,SNR=1.9						
SEY	**Seymchan**	**27.52**	**11**	P	**P**	**23 30 09.9**	**+0.9**
	1.8nm,0.7s,baz=205,slow=15,SNR=2.5						
SONM	**Songino Array**	**27.89**	**305**	P	**P**	**23 30 11.1**	**-1.5**
	0.5nm,0.5s,baz=102,slow=9.4,SNR=4.5						
H11N2	**WAKE ISLAND Hy 28.11**	**119**		T	T	23 59 40.4	
	baz=312,slow=75,SNR=202						
H11N1	**WAKE ISLAND Hy 28.11**	**119**		T	T	23 59 41.1	
	baz=312,slow=75,SNR=194						
H11N3	**WAKE ISLAND Hy 28.12**	**119**		T	T	23 59 39.4	
	baz=312,slow=75,SNR=216						
H11S1	**WAKE ISLAND Hy 28.79**	**121**		T	T	00 00 30.7	
	baz=314,slow=76,SNR=1347						
H11S3	**WAKE ISLAND Hy 28.80**	**121**		T	T	00 00 29.1	
	baz=314,slow=76,SNR=865						
H11S2	**WAKE ISLAND Hy 28.80**	**121**		T	T	00 00 30.3	
	baz=314,slow=76,SNR=771						
TIXI	**Tiksi**	**35.92**	**353**	P	**P**	**23 31 22.7**	**+0.1**
	1.9nm,0.6s,baz=323,slow=8.3,SNR=3.0						
TIXI				LR	LR	23 46 31.4	
	comp=Z,26nm,18.9s,baz=212,slow=37						
ZALV	**Zalesovo Beam**	**42.12**	**313**	P	**P**	**23 32 14.0**	**-0.7**
	3.0nm,0.5s,baz=97,slow=7.4,SNR=14						
NRIK	**Noril'sk**	**43.74**	**336**	P	**P**	**23 32 27.0**	**-0.6**
	0.9nm,0.3s,baz=90,slow=1.0,SNR=2.4						
MKAR	**Makanchi Array**	**44.19**	**303**	P	**P**	**23 32 30.6**	**-1.1**
	1.1nm,0.8s,baz=82,slow=9.2,SNR=10						
KURBB	**Kurchatov Arra**	**46.15**	**308**	P	**P**	**23 32 46.2**	**-0.9**
	2.0nm,0.6s,baz=84,slow=7.9,SNR=18						
ILAR	**Eielson Array**	**50.24**	**32**	P	**P**	**23 33 19.0**	**+0.5**
	0.6nm,0.6s,baz=273,slow=6.4,SNR=7.8						
INK	**Inuvik**	**55.14**	**27**	P	**P**	**23 33 56.0**	**+1.3**
	2.6nm,0.6s,baz=302,slow=5.2,SNR=4.3						
WRA	**Warramunga Arr**	**56.35**	**188**	P	**P**	**23 34 03.4**	**-0.5**
	0.5nm,0.4s,baz=5.4,slow=7.5,SNR=19						
ASAR	**Alice Springs**	**60.08**	**188**	P	**P**	**23 34 30.2**	**+0.3**
	0.4nm,0.6s,baz=14,slow=6.1,SNR=6.6						
ARCES	**ARCESS Array B**	**64.51**	**339**	P	**P**	**23 34 58.6**	**-0.6**
	0.6nm,0.6s,baz=64,slow=8.1,SNR=3.2						
YKA	**Yellowknife Ar**	**64.56**	**30**	P	**P**	**23 34 60.0**	**+0.5**
	0.2nm,0.6s,baz=302,slow=6.9,SNR=4.0						
FINES	**FINESS Array B**	**69.25**	**332**	P	**P**	**23 35 28.6**	**-0.8**
	0.5nm,0.5s,baz=48,slow=8.5,SNR=7.0						
KBZ	**Khabaz**	**71.08**	**311**	P	**P**	**23 35 40.6**	**-0.3**
	1.2nm,0.7s,baz=334,slow=3.8,SNR=4.6						
AKASG	**Malin Array Be**	**74.62**	**322**	P	**P**	**23 36 00.6**	**-1.2**
	0.6nm,0.3s,baz=47,slow=6.1,SNR=6.7						
NB2	**NORSAR Subarra**	**74.67**	**337**	P	**P**	**23 36 01.0**	**-1.0**
	comp=Z,0.7nm,0.5s,baz=41,slow=5.9						
NOA	**NORSAR Array B**	**74.67**	**337**	P	**P**	**23 36 01.8**	**-0.2**
	comp=Z,0.6nm,0.7s,baz=58,slow=9.4,SNR=3.0						
NVAR	**Mina Array Bea**	**75.66**	**53**	P	**P**	**23 36 09.8**	**+1.4**
	comp=Z,0.4nm,0.5s,baz=316,slow=5.0,SNR=3.4						
PDAR	**Pinedale Array**	**78.38**	**45**	P	**P**	**23 36 25.1**	**+1.4**
	comp=Z,0.5nm,0.6s,baz=285,slow=2.9,SNR=3.4						
BRTR	**Keskin Array B**	**79.04**	**311**	P	**P**	**23 36 28.2**	**+0.9**
	comp=Z,0.7nm,0.6s,baz=59,slow=4.2,SNR=3.3						
GERES	**GERESS Array B**	**83.10**	**328**	P	**P**	**23 36 48.8**	**+0.1**
	comp=Z,0.3nm,0.4s,baz=54,slow=9.1,SNR=2.6						
TXAR	**Lajitas Array**	**90.80**	**52**	P	P	23 37 29.7	+3.2
	comp=Z,0.3nm,0.7s,baz=305,slow=5.4,SNR=2.5						
LPAZ	**La Paz**	**147.32**	**60**	PKPbc	**PKPbc**	**23 44 07.2**	**-0.6**
	comp=Z,0.5nm,0.5s,baz=315,slow=1.4,SNR=3.4						

JMA 30 23:32:20.2±0.2, 38°.24N×144°.11E, h32km, M3.6, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
OFUJ	**Ofunato**	**2.09**	**294**	P	Pn	23 32 54.4	+1.5
OFUJ				*e*S	Sn	23 33 20.0	+2.2
JIO	**Ouri**	**2.18**	**276**	P	Pn	23 32 55.4	+1.2
JIO				S	Sn	23 33 21.7	+1.6
JMK	**Ichinoseki**	**2.37**	**288**	P	Pn	23 32 58.6	+1.7
JMK				S	Sn	23 33 27.2	+2.3
JTH	**Tanohata**	**2.44**	**315**	P	Pn	23 32 59.5	+1.8
JTH				*e*S	Sn	23 33 27.7	+1.3
JOM	**Ohasama**	**2.52**	**300**	P	Pn	23 33 01.2	+2.3
JOM				S	Sn	23 33 31.0	+2.5
JMM	**Marumori**	**2.65**	**263**	P	Pn	23 33 01.6	+1.0
JMM				S	Sn	23 33 32.3	+0.7
JOU	**Okura**	**2.71**	**274**	P	Pn	23 33 03.8	+2.2
JOU				S	Sn	23 33 35.8	+2.5
JANG	**Nango**	**2.93**	**317**	P	Pn	23 33 05.9	+1.3
JANG				*e*S	Sn	23 33 40.5	+1.8
JRG	**Rokugo**	**2.95**	**294**	P	Pn	23 33 07.2	+2.4
JRG				*e*S	Sn	23 33 41.7	+2.6
JYK	**Kaneyama**	**3.02**	**284**	P	Pn	23 33 08.0	+2.3
JYK				*e*S	Sn	23 33 43.5	+2.7
JFT	**Otama**	**3.07**	**258**	P	Pn	23 33 07.7	+1.2
JFT				*e*S	Sn	23 33 44.1	+2.0
JTM	**Tenmabayashi**	**3.46**	**318**	S	Sn	23 33 52.6	+0.8

*IDC **30** 23:32:26.9±0.5, 1°.42N×132°.54E, h0km, mb4.1/23, mb1 4.2/25, mb1mx4.1/46, mbtmp4.1/25, ML3.2/2, MS3.3/9, Ms1 3.3/9, ms1mx3.0/38, Error ellipse: s-maj=24.7km s-min=11.2km az=82.0*

*ISCJB **30** 23:32:29.8±0.3, 1°.35N±0°.03×132°.66E±0°.04, h33km, mb4.3/45, MS3.4/9, Error ellipse: s-maj=6.3km s-min=4.3km az=13.4*

*NEIC **30** 23:32:29.1±4.0, 1°.41N×132°.68E, h14km±26km, mb4.6/23, Error ellipse: s-maj=7.3km s-min=6.5km az=57.0*

*DJA **30** 23:32:32.9±0.8, 1°.1E×13°.3E±°, h10km, M4.1/8, mB5.2/2, mb4.5/8, MLv3.9/2, Mw(mB)4.5/2*

ISC 30 23:32:32.0±0.4, 1°.33N±0°.05×132°.65E±0°.07, h35km, n88, σ1§26/75, mb4.4/44, MS3.2/9, Irian Jaya region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SWI	**Sorong**	**2.58**	**213**	P	Pn	23 33 08.0	-3.3
SWI				S	**Sn**	**23 33 40.5**	**-1.0**
SIJI	**Sorong**	**2.58**	**212**	Pn	**Pn**	**23 33 09.2**	**-2.2**
	23nm,0.3s,baz=24,slow=18,SNR=2.6						
SIJI				Sn	**Sn**	**23 33 37.8**	**-3.8**
	24nm,0.3s,baz=91,slow=23,SNR=7.1						
FAKI	**Fak Fak**	**4.24**	**185**	P	**Pn**	**23 33 32.9**	**-1.2**
FAKI	**Fak Fak**	**4.24**	**185**	*e*Pn	**Pn**	**23 33 34.2**	**+0.1**
LBMI	**Labuha**	**5.51**	**249**	P	**Pn**	**23 33 52.0**	**+0.4**
NLAI	**Namlea**	**7.17**	**231**	P	**Pn**	**23 34 15.2**	**+0.8**
SANI	**Sanana**	**7.46**	**243**	P	**Pn**	**23 34 19.0**	**+0.6**
DAV	**Davao City (W)**	**9.07**	**309**	LR	LR	23 38 25.9	
	comp=Z,98nm,19.4s,baz=125,slow=40						
TTSI	**Tana Toraja**	**13.54**	**251**	P	P	23 35 56.5	+6.1
SOEI	**Soe**	**13.82**	**217**	P	P	23 35 58.7	+5.2
SPSI	**Sidrap Palu**	**13.91**	**248**	P	**Pn**	**23 35 47.0**	**+0.3**
	50nm,1.1s						
MTN	**Manton Dam**	**14.16**	**186**	*e*Pn	**Pn**	**23 35 47.8**	**-2.3**
KAPI	**Kappang**	**14.35**	**244**	LR	LR	23 41 00.5	
	comp=Z,150nm,20.0s,baz=87,slow=36						
BATI	**Baumata**	**14.54**	**218**	LR	LR	23 42 35.2	
	comp=Z,139nm,19.6s,baz=9.5,slow=42						
MANU	**Manus Island**	**15.09**	**103**	*e*Pn	**Pn**	**23 36 00.6**	**-2.1**
	23nm,1.3s						
PMG	**Port Moresby**	**17.96**	**127**	P	**P**	**23 36 40.6**	**+1.3**
	0.9nm,0.3s,baz=299,slow=11,SNR=4.3						
BBKI	**Banjar Baru**	**18.43**	**255**	P	**Pn**	**23 36 48.7**	**+3.9**
	36nm,1.1s,2μm						
TWSI	**Taliwang, Sumb**	**18.63**	**237**	P	**Pn**	**23 36 48.8**	**+1.5**
	27nm,1.2s						
SRBI	**Singaraja**	**19.75**	**241**	P	**Pn**	**23 37 01.1**	**+0.5**
	49nm,1.3s						
RABL	**Rabaul**	**20.25**	**106**	*e*P	**P**	**23 37 05.2**	**+0.6**
	47nm,0.5s						
SBUM	**Sibu**	**20.45**	**273**	*e*P	Pn	23 37 08.6	-0.4
	35nm,1.1s						
FITZ	**Fitzroy Crossi**	**20.50**	**199**	P	**P**	**23 37 07.8**	**+0.6**
	6.7nm,1.0s,baz=56,slow=12,SNR=8.1						
FITZ	**Fitzroy Crossi**	**20.50**	**199**	*e*P	**P**	**23 37 08.5**	**+1.3**
	15nm,1.2s						
WRAB	**Tennant Creek**	**21.19**	**176**	*e*P	**P**	**23 37 15.2**	**+0.5**
	9.4nm,0.6s						
WRA	**Warramunga Arr**	**21.20**	**176**	P	**P**	**23 37 14.7**	**-0.1**
	5.8nm,0.5s,baz=352,slow=11,SNR=49						
KSM	**Kuching**	**22.34**	**271**	*e*P	**P**	**23 37 27.7**	**+0.7**
	17nm,1.2s						
AS31	**Alice Springs**	**24.87**	**177**	*e*P	**P**	**23 37 52.7**	**+1.1**
	5.2nm,0.9s						
AS01	**Alice Springs**	**24.87**	**177**	*e*P	**P**	**23 37 52.5**	**+0.9**
ASAR	**Alice Springs**	**24.87**	**177**	P	**P**	**23 37 52.0**	**+0.4**
	22nm,1.0s,baz=360,slow=10,SNR=67						
SSLB	**Suanglung**	**25.04**	**334**	*e*P	**P**	**23 37 53.2**	**+0.1**
	12nm,1.0s						
CTA	**Charters Tower**	**25.11**	**149**	P	**P**	**23 37 55.3**	**+1.5**
	3.3nm,0.9s,baz=336,slow=12,SNR=2.3						
CISI	**Cisompet, Garu**	**26.30**	**250**	*e*P	**P**	**23 38 05.0**	**+0.3**
	39nm,1.1s						
CBIJ	**Chichi jima**	**27.21**	**19**	*e*P	**P**	**23 38 12.2**	**-0.4**
	12nm,1.1s						
HNR	**Honiara**	**29.21**	**112**	LR	LR	23 50 10.0	
	comp=Z,90nm,21.6s,baz=278,slow=36						
JNU	**Nakatsue**	**31.67**	**357**	P	**P**	**23 38 52.4**	**+0.2**
	12nm,0.9s,baz=160,slow=12,SNR=2.9						
JNU				LR	LR	23 51 22.4	
	comp=Z,39nm,18.9s,baz=124,slow=36						
IPM	**Ipoh**	**31.74**	**276**	*e*P	**P**	**23 38 51.2**	**-1.8**
	17nm,1.5s						
KULM	**Kulim**	**32.19**	**278**	*e*P	**P**	**23 38 57.4**	**+0.5**
	13nm,1.1s						
NJ2	**Nanjing**	**33.22**	**338**	*e*P	**P**	**23 39 05.8**	**+0.1**
NJ2				pmax	pmax		
	comp=Z,8.0nm,0.5s						
PSI	**Prapat**	**33.74**	**273**	*e*P	**P**	**23 39 10.6**	**0.0**
	comp=Z,5.2nm,1.0s						
STKA	**Stephens Creek**	**34.09**	**166**	P	**P**	**23 39 15.6**	**+2.2**
	comp=Z,1.3nm,0.7s,baz=354,slow=13,SNR=3.8						
GSI	**Gunungsitoli**	**35.07**	**270**	*e*P	**P**	**23 39 22.4**	**+0.3**
	comp=Z,24nm,1.0s						
MJAR	**Matsushiro Arr**	**35.42**	**8**	P	**P**	**23 39 22.3**	**-2.4**
	comp=Z,0.8nm,0.6s,baz=193,slow=7.2,SNR=3.2						
LHMI	**Lhok Sumawe**	**35.85**	**277**	*e*P	**P**	**23 39 29.0**	**+0.3**
	comp=Z,26nm,0.8s						
KSAR	**Wonju Array Be**	**36.21**	**354**	P	**P**	**23 39 30.1**	**-1.3**
KSRS	**Korea Array**	**36.21**	**354**	P	**P**	**23 39 30.1**	**-1.4**
	comp=Z,1.1nm,0.9s,baz=183,slow=13,SNR=3.4						
KSRS				LR	LR	23 54 12.6	
	comp=Z,28nm,18.9s,baz=159,slow=36						
CM01	**Chiang Mai Arr**	**37.16**	**299**	*e*P	**P**	**23 39 39.5**	**-0.4**
CMAR	**Chiang Mai Arr**	**37.19**	**299**	P	**P**	**23 39 39.5**	**-0.7**
	comp=Z,0.3nm,0.3s,baz=118,slow=6.7,SNR=4.5						
CMAR				LR	LR	23 54 30.2	
	comp=Z,23nm,20.1s,baz=152,slow=36						
KMI	**Kunming**	**37.32**	**312**	P	P	23 39 46.0	+4.5
KMI				pmax	pmax		
	comp=Z,10.0nm,0.9s						
KMI				LR	LR		
	comp=Z,72nm,32.7s						
H11S3	**WAKE ISLAND Hy**	**37.49**	**61**	T	T	00 19 45.5	
	baz=242,slow=74						
H11S2	**WAKE ISLAND Hy**	**37.50**	**61**	T	T	00 19 25.6	
	baz=242						
H11S1	**WAKE ISLAND Hy**	**37.51**	**61**	T	T	00 19 25.8	
	baz=242,slow=74						
H11N1	**WAKE ISLAND Hy**	**38.15**	**59**	T	T	00 20 18.2	
	baz=245,slow=75,SNR=24						
H11N2	**WAKE ISLAND Hy**	**38.17**	**59**	T	T	00 20 22.6	
	baz=245,slow=75,SNR=18						
H11N3	**WAKE ISLAND Hy**	**38.17**	**59**	T	T	00 20 15.3	
	baz=245,slow=75,SNR=27						
USRK	**Ussuriysk Ar.**	**42.69**	**359**	P	**P**	**23 40 25.0**	**-0.5**
	comp=Z,1.7nm,0.7s,baz=161,slow=9.2,SNR=3.8						
HHC	**Hu-ho-hao-te**	**43.73**	**337**	*e*P	**P**	**23 40 36.0**	**+1.9**
HHC				sP	sP	23 40 49.3	+0.7
HHC				S	**S**	**23 47 03.5**	**+1.4**
HHC				pmax	pmax		
	comp=Z,21nm,0.8s						
HHC				pmax	pmax		
	comp=Z,89nm,6.2s						
HHC				LR	LR		
	comp=N,490nm,15.9s						
HHC				LR	LR		
	comp=E,500nm,14.8s						
HHC				LR	LR		
	comp=Z,450nm,14.8s						
YSS	**Yuzh-Sakhalins**	**46.29**	**10**	*e*P	**P**	**23 40 54.0**	**-0.2**
	comp=Z,96nm,2.0s						
KLR	**Kul'dur**	**47.73**	**359**	P	**P**	**23 41 06.2**	**+0.8**
	comp=Z,0.4nm,0.3s,baz=165,slow=15,SNR=3.6						
ULN	**Ulaanbaatar**	**51.38**	**338**	*e*P	**P**	**23 41 32.7**	**-0.7**
	comp=Z,8.8nm,1.7s						
SONM	**Songino Array**	**51.61**	**338**	P	**P**	**23 41 34.7**	**-0.4**
	comp=Z,0.4nm,0.6s,baz=141,slow=9.3,SNR=3.7						
SONA1	**Songino Array**	**51.61**	**338**	*e*P	**P**	**23 41 35.2**	**+0.1**
PETK	**Petropavlovsk-**	**55.64**	**18**	P	**P**	**23 42 04.7**	**+0.3**
	comp=Z,3.2nm,0.9s,baz=190,slow=7.3,SNR=3.2						
WMQ	**Urumqi**	**58.13**	**323**	*e*P	**P**	**23 42 24.5**	**+2.2**
WMQ				pmax	pmax		
	comp=Z,2.0nm,0.6s						
WMQ				pmax	pmax		
	comp=Z,18nm,3.6s						
WMQ				LR	LR		
	comp=N,14nm,15.2s						
WMQ				LR	LR		
	comp=E,8.0nm,19.0s						
WMQ				LR	LR		
	comp=Z,8.0nm,19.0s						
MK01	**Makanchi Array**	**62.92**	**324**	*e*P	**P**	**23 42 55.3**	**+0.4**
MK31	**Makanchi Array**	**62.94**	**324**	*e*P	**P**	**23 42 57.1**	**+2.1**
MKAR	**Makanchi Array**	**62.94**	**324**	P	**P**	**23 42 54.9**	**-0.2**
	comp=Z,1.3nm,0.6s,baz=104,slow=8.1,SNR=17						
MKAR				LR	LR	00 11 23.0	
	comp=Z,21nm,20.4s,baz=114,slow=37						
MKAR	**Makanchi Array**	**62.94**	**324**	*e*P	**P**	**23 42 55.4**	**+0.4**
MAKZ	**Makanchi**	**63.14**	**323**	*e*P	**P**	**23 42 56.9**	**+0.6**
	comp=Z,2.9nm,0.8s						
SEY	**Seymchan**	**63.20**	**10**	P	**P**	**23 42 56.5**	**+0.2**
	comp=Z,3.1nm,0.7s,baz=204,slow=6.4,SNR=7.7						
ZAA0	**Zalesovo Array**	**65.47**	**331**	*e*P	**P**	**23 43 10.9**	**-0.5**
ZALV	**Zalesovo Beam**	**65.47**	**331**	P	**P**	**23 43 10.0**	**-1.3**
	comp=Z,0.3nm,0.4s,baz=122,slow=7.2,SNR=3.9						
KURK	**Kurchatov**	**66.98**	**326**	*e*P	**P**	**23 43 21.6**	**+0.4**
	comp=Z,3.2nm,0.8s						
TIXI	**Tiksi**	**70.26**	**359**	P	**P**	**23 43 40.4**	**-0.8**
	comp=Z,1.6nm,0.4s,baz=333,slow=1.9,SNR=5.2						
ZRNK	**Zerenda**	**73.33**	**326**	*e*P	**P**	**23 43 59.8**	**-0.2**
	comp=Z,9.9nm,1.7s						
NRIK	**Noril'sk**	**74.22**	**345**	P	**P**	**23 44 04.4**	**-0.5**
	comp=Z,2.0nm,0.6s,baz=110,slow=6.1,SNR=7.1						
NRIK				LR	LR	00 18 34.4	
	comp=Z,33nm,19.3s,baz=98,slow=37						
GEYT	**Alibeck**	**77.00**	**309**	P	**P**	**23 44 20.6**	**-1.0**
	comp=Z,0.5nm,0.8s,baz=126,slow=50,SNR=2.7						
PPT2	**Papeete2**	**78.75**	**108**	*e*LR	LR	00 09 57.5	
	comp=Z,87nm,24.8s						
VNDA	**Vanda**	**80.36**	**174**	P	**P**	**23 44 40.7**	**+1.5**
	comp=Z,1.3nm,0.8s,baz=309,slow=5.4,SNR=5.0						
MLY	**Manley**	**83.16**	**25**	*e*P	**P**	**23 44 54.4**	**+0.1**
	comp=Z,8.2nm,1.4s						
COLD	**Coldfoot**	**83.81**	**22**	*e*P	**P**	**23 44 57.8**	**+0.3**
	comp=Z,3.2nm,0.8s						
CCB	**Clear Creek Bu**	**84.33**	**25**	*e*P	**P**	**23 44 58.7**	**-1.5**
	comp=Z,4.9nm,1.0s						
IL1	**Eielson Array**	**84.73**	**25**	*e*P	**P**	**23 44 59.6**	**-2.6**
ILAR	**Eielson Array**	**84.73**	**25**	P	**P**	**23 45 01.2**	**-1.0**
	comp=Z,1.8nm,0.9s,baz=256,slow=5.1,SNR=13						
BRTR	**Keskin Array B**	**96.09**	**310**	P	**P**	**23 45 55.8**	**-0.7**
	comp=Z,0.2nm,0.3s,baz=121,slow=12,SNR=3.7						
YKA	**Yellowknife Ar**	**99.15**	**26**	P	**Pdif**	**23 46 08.9**	**-0.6**
	comp=Z,0.1nm,0.3s,baz=294,slow=4.6,SNR=8.3						
KOLS	**Kolonicke sedl**	**102.26**	**321**	*e*P	PKKPbc	00 02 01.6	+26
TORD	**Torodi Ar. Bea**	**129.29**	**288**	PKP	**PKPdf**	**23 51 37.4**	**-0.4**
	comp=Z,0.4nm,0.8s,baz=44,slow=2.0,SNR=3.1						
CPUP	**Villa Florida**	**153.35**	**160**	PKPbc	**PKPbc**	**23 52 27.7**	**+0.4**
	comp=Z,2.7nm,0.9s,baz=118,slow=3.0,SNR=4.9						
LPAZ	**La Paz**	**154.69**	**127**	PKPab	**PKPab**	**23 52 46.7**	**+0.7**
	comp=Z,1.4nm,0.7s,baz=350,slow=3.0,SNR=5.2						

*NEIC **30** 23:45:46.5±0.8, 19°.24N×109°.16W, h10km, mb4.0/70, Error ellipse: s-maj=11.9km s-min=5.3km az=203.0*

*IDC **30** 23:45:47.4±2.0, 19°.59N×109°.07W, h0km, mb3.7/6, mb1 4.0/11, mb1mx3.8/34, mbtmp3.8/11, ML3.5/5, MS3.3/12, Ms1 3.4/12, ms1mx3.2/29, Error ellipse: s-maj=40.7km s-min=25.1km az=44.0*

*ISCJB **30** 23:45:49.1±0.8, 19°.47N±0°.07×109°.09W±0°.05, h26km, mb4.0/29, MS3.3/8, Error ellipse: s-maj=11.5km s-min=5.5km az=28.2*

ISC 30 23:45:51.2±1.2, 19°.6N±0°.1×109°.08W±0°.10, h26km, n114, σ1§36/109, mb4.0/29, MS3.3/8, Revilla Gigedo Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
H06E1	**SOCORRO T-PHAS**	**1.93**	**245**	T	T	23 48 34.8	
	SNR=31						
H06N1	**SOCORRO T-PHAS**	**1.95**	**248**	T	T	23 48 30.9	
	SNR=47						
H06S1	**SOCORRO T**	**1.97**	**244**	T	T	23 48 26.1	
	SNR=44						
SLBS	**Sierra La Lagu**	**4.14**	**349**	*e*Pn	**Pn**	**23 46 51.9**	**-1.0**
LPIG	**La Paz**	**4.62**	**346**	Pn	**Pn**	**23 46 58.7**	**-0.7**
	2.0nm,0.3s,baz=350,slow=18,SNR=7.0						
LPIG				Sn	**Sn**	**23 47 53.7**	**+1.5**
	baz=52,slow=19,SNR=2.5						
LPIG				LR	LR	23 48 26.1	
	comp=Z,371nm,21.0s,baz=196,slow=34						
ZAIG	**Zacatecas**	**6.84**	**61**	*e*Pn	**Pn**	**23 47 30.7**	**+0.4**
MOIG	**Morelia**	**7.44**	**88**	*e*Pn	**Pn**	**23 47 39.5**	**+1.1**
SRIG	**Santa Rosalia**	**8.21**	**340**	*e*Pn	**Pn**	**23 47 50.7**	**+2.0**
TLIG	**Tlapa**	**10.18**	**100**	*e*Pn	Pn	23 48 11.2	-4.7
TX31	**Lajitas Ar. Si**	**10.87**	**26**	*e*Pn	**Pn**	**23 48 27.5**	**+2.3**
TXAR	**Lajitas Array**	**10.87**	**26**	Pn	**Pn**	**23 48 25.5**	**+0.3**
	0.1nm,0.3s,baz=201,slow=14,SNR=15						
TXAR				Sn	**Sn**	**23 50 24.2**	**-1.8**
	0.1nm,0.3s,baz=199,slow=25,SNR=3.0						
TXAR				LR	LR	23 52 10.4	
	comp=Z,141nm,19.2s,baz=0.0,slow=35						
319A	**Douglas**	**11.72**	**359**	*e*Pn	**Pn**	**23 48 38.5**	**+1.5**
MNTX	**Cornudas Mount**	**12.49**	**15**	*e*Pn	**

TMUT	**Trail Mountain**	**19.71**	**355**	*e*P		**Pn**	**23 50 20.8**	**+0.2**
	27nm,1.8s							
P17A	**Butcher Ranch,**	**19.85**	**356**	*e*P		**Pn**	**23 50 23.1**	**+0.9**
	8.2nm,0.9s							
P18A	**Preston Nutter**	**19.98**	**357**	*e*P		**P**	**23 50 22.6**	**+0.5**
	8.9nm,1.3s							
TUL1	**Leonard**	**20.02**	**33**	*e*P		**P**	**23 50 22.2**	**+0.1**
	5.6nm,0.9s							
KSCO	**Kaye Shedlock'**	**20.13**	**15**	*e*P		**P**	**23 50 23.9**	**+0.5**
	11nm,1.0s							
SAO	**San Andreas Ge**	**20.24**	**330**	*e*P		**P**	**23 50 24.8**	**+0.3**
	15nm,1.0s							
ISCO	**Idaho Springs**	**20.35**	**8**	*e*P		**P**	**23 50 26.9**	**+0.9**
	6.5nm,1.4s							
NV11	**Mina Array Sit**	**20.35**	**339**	*e*P		**P**	**23 50 27.0**	**+1.2**
	10nm,1.3s							
NV01	**Mina Array Sit**	**20.39**	**339**	*e*P		**P**	**23 50 27.1**	**+0.7**
NVAR	**Mina Array Bea**	**20.39**	**339**	P		**P**	**23 50 27.8**	**+1.4**
	3.1nm,0.9s,baz=161,slow=11,SNR=15							
NVAR				LR		LR	23 57 28.4	
	comp=Z,97nm,20.5s,baz=95,slow=34							
NLU	**North Lily Min**	**20.44**	**353**	*e*P		**P**	**23 50 27.8**	**+0.8**
	11nm,1.5s							
O20A	**White River Ci**	**20.47**	**2**	*e*P		**P**	**23 50 28.1**	**+0.8**
	8.2nm,0.9s							
DUG	**Dugway, Tooele**	**20.77**	**352**	*e*P		**P**	**23 50 32.0**	**+1.6**
	16nm,1.2s							
CMB	**Columbia Colle**	**20.83**	**334**	*e*P		**P**	**23 50 31.2**	**+0.3**
	3.9nm,1.0s							
WAKR	**Walker**	**20.86**	**337**	*e*P		**P**	**23 50 32.6**	**+1.1**
JLU	**Jordanelle**	**21.02**	**355**	*e*P		**P**	**23 50 33.7**	**+0.4**
	4.6nm,1.1s							
JLU				*e*S		Sn	23 54 34.2	+1.2
CTU	**Camp Tracy**	**21.14**	**354**	*e*P		**P**	**23 50 35.1**	**+0.7**
	4.9nm,1.0s							
N23A	**Red Feather La**	**21.39**	**7**	*e*P		**P**	**23 50 37.2**	**0.0**
	14nm,1.4s							
TCUT	**Toone Canyon**	**21.53**	**355**	*e*P		**P**	**23 50 40.8**	**+2.0**
	17nm,1.2s							
WHAR	**Wooly Hollow**	**21.54**	**40**	*e*P		**P**	**23 50 38.8**	**+0.2**
	13nm,1.2s							
ELK	**Elko**	**21.72**	**347**	*e*P		**P**	**23 50 41.5**	**+0.8**
	3.5nm,0.9s							
PHWY	**Pilot Hill**	**21.85**	**7**	*e*P		**P**	**23 50 43.2**	**+1.1**
	5.2nm,0.6s							
HWUT	**Hardware Ranch**	**22.03**	**355**	*e*P		**P**	**23 50 45.8**	**+1.8**
	4.3nm,1.0s							
HVU	**Hansel Valley**	**22.33**	**353**	*e*P		**P**	**23 50 47.0**	**-0.1**
	5.0nm,1.1s							
K22A	**Casper**	**23.08**	**5**	*e*P		**P**	**23 50 55.5**	**+0.5**
	10nm,0.9s							
BW06	**Boulder Array**	**23.09**	**359**	*e*P		**P**	**23 50 55.8**	**+0.6**
	4.8nm,1.4s							
PD31	**Pinedale Array**	**23.09**	**359**	*e*P		**P**	**23 50 55.9**	**+0.6**
PDAR	**Pinedale Array**	**23.09**	**359**	P		**P**	**23 50 56.2**	**+0.9**
	0.7nm,0.7s,baz=166,slow=8.8,SNR=9.1							
PDAR				LR		LR	23 59 22.0	
	comp=Z,64nm,19.4s,baz=178,slow=35							
PBMO	**Poplar Bluff**	**23.65**	**40**	*e*P		**P**	**23 51 01.9**	**+1.4**
	9.5nm,1.4s							
REDW	**Red Top Meadow**	**23.73**	**357**	*e*P		**P**	**23 51 02.3**	**+0.8**
	4.3nm,0.9s							
SNOW	**Snow King Moun**	**23.83**	**357**	*e*P		**P**	**23 51 02.6**	**+0.1**
	4.9nm,0.9s							
FXWY	**Fox Creek**	**24.02**	**357**	*e*P		**P**	**23 51 05.2**	**+1.0**
	4.7nm,1.0s							
KMRM	**Mail Ridge**	**24.08**	**332**	*e*P		**P**	**23 51 04.6**	**-0.1**
	42nm,1.4s							
WVOR	**Wild Horse Val**	**24.15**	**343**	*e*P		**P**	**23 51 05.5**	**+0.1**
MOD	**Modoc Plateau**	**24.18**	**339**	*e*P		**P**	**23 51 05.4**	**-0.3**
	8.2nm,1.2s							
IMW	**Indian Meadow**	**24.27**	**357**	*e*P		**P**	**23 51 06.5**	**-0.2**
	4.1nm,1.3s							
HLID	**Hailey**	**24.30**	**351**	*e*P		**P**	**23 51 07.7**	**+0.9**
	3.1nm,0.8s							
FLWY	**Flagg Ranch**	**24.44**	**357**	*e*P		**P**	**23 51 08.9**	**+0.8**
	19nm,1.8s							
H17A	**Grant Village**	**24.75**	**357**	*e*P		**P**	**23 51 11.5**	**+0.6**
	2.6nm,1.0s							
MCMT	**McKenzie Canyo**	**25.34**	**354**	*e*P		**P**	**23 51 16.3**	**0.0**
G06A	**Carlson Farm,**	**27.30**	**342**	*e*P		**P**	**23 51 34.5**	**+0.7**
	43nm,1.9s							
G06A				*e*S		**S**	**23 56 08.4**	**-3.3**
TKL	**Tuckaleechee C**	**27.42**	**49**	LR		LR	00 03 32.5	
	comp=Z,56nm,18.1s,baz=258,slow=39							
MSO	**Missoula**	**27.44**	**353**	*e*P		**P**	**23 51 35.6**	**+0.5**
	16nm,2.0s							
CHMT	**Chamberlain Mo**	**27.45**	**354**	*e*P		**P**	**23 51 35.9**	**+0.6**
NEW	**Newport**	**29.32**	**349**	LR		LR	00 02 19.3	
	comp=Z,28nm,19.7s,baz=260,slow=34							
ERPA	**Erie**	**33.30**	**41**	*e*P		**P**	**23 52 24.0**	**-2.8**
	19nm,0.3s							
YKA	**Yellowknife Ar**	**43.02**	**356**	P		**P**	**23 53 47.9**	**-0.4**
	0.5nm,0.8s,baz=172,slow=7.9,SNR=15							
YKA				PcP		**PcP**	**23 55 38.2**	**0.0**
	0.1nm,0.5s,baz=162,slow=3.1,SNR=3.2							
SCHQ	**Schefferville**	**47.48**	**32**	P		**P**	**23 54 23.4**	**-0.5**
	1.5nm,0.8s,baz=249,slow=18,SNR=2.8							
INK	**Inuvik**	**51.04**	**349**	P		**P**	**23 54 50.6**	**-0.2**
	0.7nm,0.7s,baz=154,slow=5.4,SNR=4.0							
ILAR	**Eielson Array**	**51.64**	**340**	LR		LR	00 15 09.1	
	comp=Z,29nm,18.3s,baz=205,slow=34							
LPAZ	**La Paz**	**53.78**	**129**	LR		LR	00 14 48.5	
	comp=Z,48nm,20.2s,baz=296,slow=32							
PPT	**Papeete**	**54.28**	**230**	LR		LR	00 12 09.5	
	comp=Z,50nm,21.3s,baz=326,slow=29							
ARCES	**ARCESS Array B**	**85.44**	**15**	P		**P**	**23 58 26.2**	**0.0**
	2.3nm,0.9s,baz=329,slow=4.5,SNR=5.0							
GERES	**GERESS Array B**	**94.98**	**34**	LR		LR	00 40 38.7	
	comp=Z,16nm,18.1s,baz=68,slow=35							

PRE 30 23:53:01.7±1.3, 27.02S×26.77E, h2km, ML3.5, South Africa

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
TLEK	**Tau Lekoa**	**0.10**	**301**	*e*P	Pg	23 53 04.8	+1.1
TLEK				*e*S	Sg	23 53 05.5	+0.4
TLEK				AML	AML	23 53 05.7	
	comp=Z,13μm,0.2s						
BFSD	**Buffelsfontein**	**0.15**	**5**	*e*P	Pg	23 53 05.3	+0.6
BFSD				*e*S	Sg	23 53 06.4	-0.2
BFSD				AML	AML	23 53 06.6	
	comp=Z,12μm,0.3s						
WDLM	**Western Deep L**	**0.83**	**45**	*e*P	Pg	23 53 18.2	+0.6
WDLM				*e*S	Sg	23 53 28.3	0.0
WDLM				AML	AML	23 53 29.4	
	comp=Z,697nm,0.2s						
KLOF	**Kloof**	**1.00**	**49**	*e*P	Pb	23 53 21.7	-0.2
KLOF				*e*S	Sb	23 53 34.9	-0.7
KLOF				AML	AML	23 53 41.4	
	comp=Z,1μm,0.2s						
SWZ	**Schweizer**	**1.29**	**262**	*e*P	Pg	23 53 26.1	-0.4
SWZ				*e*S	Sg	23 53 43.2	-0.2
SWZ				AML	AML	23 53 45.8	
	comp=Z,867nm,0.5s						
OBSV	**Observatory**	**1.43**	**55**	*e*P	Pg	23 53 29.1	0.0
OBSV				*e*S	Sn	23 53 48.4	+0.1
OBSV				AML	AML	23 53 50.4	
	comp=Z,2μm,0.2s						
ERPM	**east rand prop**	**1.48**	**63**	*e*P	Pg	23 53 30.1	+0.1
ERPM				*e*S	Sn	23 53 51.3	+1.8
ERPM				AML	AML	23 53 52.6	
	comp=Z,223nm,0.3s						
BNON	**Benoni**	**1.63**	**59**	*e*P	Pg	23 53 32.8	-0.1
BNON				*e*S	Sb	23 53 53.8	+0.1
BNON				AML	AML	23 53 56.1	
	comp=Z,862nm,0.3s						
KSD	**Kokstad**	**4.21**	**147**	*e*P	Pn	23 54 07.9	+0.8
KSD				*e*S	Sn	23 54 55.2	-1.7
KSD				AML	AML	23 55 17.8	
	comp=Z,16nm,0.6s						
POGA	**Pongola**	**4.33**	**96**	*e*P	Pn	23 54 11.0	+2.5
POGA				*e*S	Sn	23 54 59.7	+0.2
POGA				AML	AML	23 55 25.5	
	comp=Z,52nm,0.4s						
UPI	**Upington**	**5.07**	**253**	*e*P	Pn	23 54 19.2	+0.3
UPI				*e*S	Sn	23 55 16.4	-1.8
UPI				AML	AML	23 55 46.9	
	comp=Z,32nm,0.6s						
MSNA	**Messina**	**5.51**	**33**	*e*P	Pn	23 54 24.7	-0.1
MSNA				*e*S	Sn	23 55 24.8	-4.1
MSNA				AML	AML	23 55 58.9	
	comp=Z,24nm,0.5s						
GRM	**Grahamstown**	**6.28**	**182**	*e*P	Pn	23 54 36.8	+1.4
GRM				*e*S	Sn	23 55 45.7	-2.1
GRM				AML	AML	23 56 28.6	
	comp=Z,12nm,0.5s						
BUFB	**Buffelsbos**	**7.32**	**193**	*e*P	Pn	23 54 50.6	+1.0
BUFB				*e*S	Sn	23 56 09.5	-3.9
BUFB				AML	AML	23 56 18.1	
	comp=Z,7.1nm,0.5s						
CVNA	**Calvinia**	**7.57**	**232**	*e*P	Pn	23 54 54.4	+1.2
CVNA				*e*S	Sn	23 56 16.6	-3.0
CVNA				AML	AML	23 57 02.2	
	comp=Z,24nm,0.4s						
KOMG	**Komaggas**	**8.63**	**249**	*e*P	Pn	23 55 09.3	+1.6
KOMG				*e*S	Sn	23 56 41.5	-4.2
KOMG				AML	AML	23 57 36.6	
	comp=Z,11nm,0.5s						

*ISCJB **30** 23:54:35.4±0.8, 21.09S±0.04×68.8W±0.1, h143km±11km, mb3.2/1, Error ellipse: s-maj=19.7km s-min=6.2km az=0.9*
*GUC **30** 23:54:35.7±0.7, 21.08S×68.80W, h138km±6km, ML3.3*
*IDC **30** 23:54:38.1±8.8, 21.02S×68.45W, h149km±67km, mb3.2/1, mb1 3.2/2, mb1mx2.9/21, mbtmp3.6/2, Error ellipse: s-maj=123.2km s-min=76.3km az=87.0*

ISC 30 23:54:35.9±1.1, 21.08S±0.04×68.8W±0.1, h139km±11km, n13, σ0.51/24, 5C-3D, Chile-Bolivia border region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PB01	**IPOC Station P**	**0.68**	**273**	↓*i*P	**Pn**	**23 54 57.2**	**0.0**
PB01				*i* S	**Sn**	**23 55 13.0**	**-0.4**
PB01				IAML		23 55 15.8	
	comp=E,672nm,0.1s						
PB09	**IPOC Station P**	**0.84**	**212**	↑*i*P	**Pn**	**23 54 58.6**	**+0.1**
PB09				*i* S	**Sn**	**23 55 15.8**	**+0.1**
PB09				IAML		23 55 17.3	
	comp=E,1μm,0.6s						
PB07	**IPOC Station P**	**1.23**	**238**	↓*i*P	**Pn**	**23 55 02.5**	**+0.4**
PB07				*i* S	**Sn**	**23 55 22.1**	**+0.1**
PB07				IAML		23 55 24.5	
	comp=E,361nm,0.2s						
HMBC	**Humberstone**	**1.32**	**307**	↑*i*P	**Pn**	**23 55 03.0**	**0.0**
HMBC				*i* S	**Sn**	**23 55 23.8**	**+0.2**
HMBC				IAML		23 55 24.2	
	comp=N,1μm,0.3s						
PATCX	**Punta Patache**	**1.33**	**281**	*e*P	**Pn**	**23 55 03.6**	**+0.7**
PATCX				*i* S	**Sn**	**23 55 24.3**	**+0.8**
PATCX				IAML		23 55 26.3	
	comp=N,548nm,0.2s						
PB11	**IPOC Station P**	**1.56**	**327**	↑*i*P	**Pn**	**23 55 05.2**	**-0.3**
PB11				*i* S	**Sn**	**23 55 27.9**	**-0.3**
PB06	**IPOC Station P**	**1.78**	**205**	↑*i*P	**Pn**	**23 55 08.1**	**+0.1**
PB06				*i* S	**Sn**	**23 55 32.4**	**-0.2**
PB06				IAML		23 55 32.9	
	comp=E,318nm,0.4s						
PB04	**IPOC Station P**	**1.79**	**226**	↓*i*P	**Pn**	**23 55 08.4**	**+0.3**
PB04				*i* S	**Sn**	**23 55 32.9**	**+0.1**
PB04				IAML		23 55 37.4	
	comp=N,238nm,0.1s						
PSGC	**Pisagua**	**1.96**	**319**	*e*P	**Pn**	**23 55 09.4**	**-0.6**
PSGC				*i* S	**Sn**	**23 55 35.3**	**-0.8**
PSGC				IAML		23 55 38.7	
	comp=N,109nm,0.2s						
MNMC	**Minye Minye**	**2.10**	**338**	↑*i*P	**Pn**	**23 55 12.0**	**+0.1**
MNMC				*i* S	**Sn**	**23 55 40.0**	**+0.6**
MNMC				IAML		23 55 41.1	
	comp=N,605nm,0.5s						
LPAZ	**La Paz**	**4.81**	**7**	P	**Pn**	**23 55 48.1**	**+0.9**
	comp=N,1.1nm,0.3s,baz=192,slow=8.7,SNR=31						
LPAZ				S	**Sn**	**23 56 42.8**	**+0.2**
	comp=N,0.1nm,0.3s,baz=161,slow=20,SNR=1.4						
TORD	**Torodi Ar. Bea**	**77.08**	**70**	P	**P**	**00 06 13.4**	**-0.9**
	comp=N,0.5nm,0.7s,baz=249,slow=4.4,SNR=5.1						
MKAR	**Makanchi Array**	**145.22**	**36**	PKPbc	**PKPab**	**00 13 57.9**	**+0.7**
	comp=N,0.2nm,0.4s,baz=318,slow=1.9,SNR=3.2						

ISC Computed Locations for April 2011

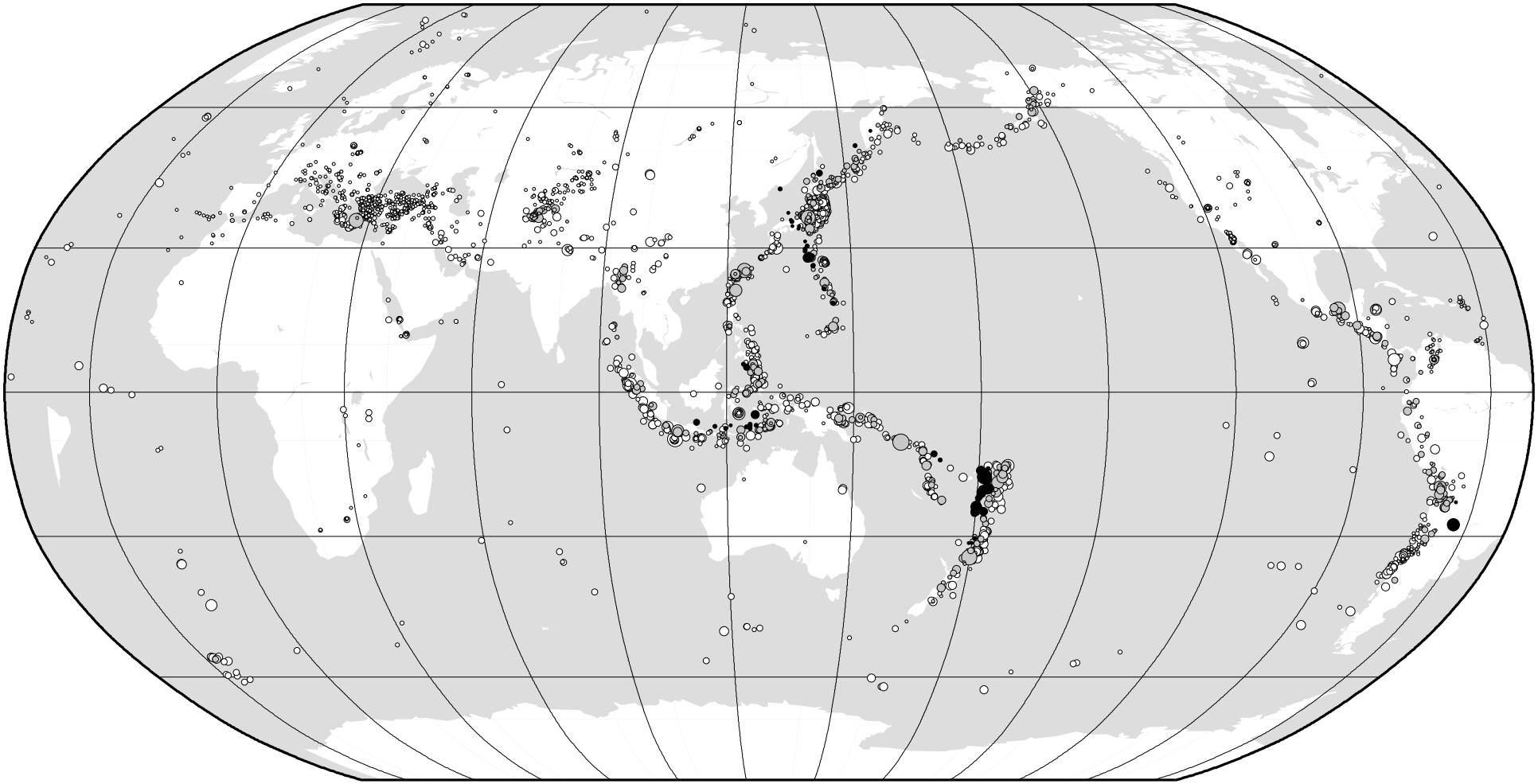

Depth (km)	0-70	70-300	>300
M=8	○	○	●
M=6.5	○	○	●
M=4	○	○	●

Robinson Projection, centred on 0˚N,130˚E

5088 Events